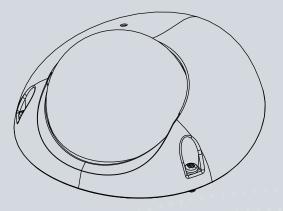


MD9582-H Mobile Dome Camera User's Manual

5MP • Mobile Surveillance • IP67 • IK10 • NEMA 4X • Day & Night • WDR Pro • Smart Stream III • SNV II • 20M Smart IR



Rev. 1.0



Table of Contents

Overview	3
Revision History	4
Read Before Use	4
Package Contents	7
Symbols and Statements in this Document	7
Dimension Drawing	8
Screw Pack	8
Physical Description	9
Hardware Installation	11
Software Installation	17
Network Deployment	29
Ready to Use	30
Accessing the Network Camera	33
Using Web Browsers	33
Using RTSP Players	36
Using 3GPP-compatible Mobile Devices	37
Using VIVOTEK Recording Software	38
Main Page	39
Client Settings	44
Configuration	49
System > General settings	50
System > Homepage layout	53
System > Logs	56
System > Parameters	59
System > Maintenance	60
Media > Image	63
Media > Video	75
Media > Video	76
Media > Video	77
Media > Audio	86
Media profiles	87
Network > General settings	88
Network > Streaming protocols	95
Network > SNMP (Simple Network Management Protocol)	
Network > FTP	105
Bonjour	
Security > User accounts	107
Security > HTTPS (Hypertext Transfer Protocol over SSL)	109
Security > Access List	116
PTZ > PTZ settings	
Event > Event settings	126
Applications > Motion detection	
Applications > DI and DO	
Applications > Tampering detection	141

lications > Audio detection	. 142
olications > Shock detection	
olications > Package management - a.k.a., VADP (VIVOTEK Application Development Platform)	. 145
cording > Recording settings	. 148
al storage > Storage management	. 153
rage > Content management	. 155
ldix	158
L Commands for the Network Camera	. 158
hnology License Notice	.433
ctromagnetic Compatibility (EMC)	. 434

Overview

VIVOTEK's MD9582-H is a compact or 5 megapixel network camera geared toward transportation applications such as buses, trains, and other vehicles. With EN50155, EN45545, IEC62236-3-2 compliance & IP67-rated rugged design, the camera can withstand shocks, vibration, humidity, dust, and temperature fluctuations to maintain stable and reliable video during vehicle movement. Furthermore, the vandal-proof IK10-rated metal housing provides effective and robust protection from vandalism. This combination of high-resolution imaging and protective-housing endows the camera with the rugged reliability required to maximize passenger safety and optimize mobile surveillance.

Featuring the Wide Dynamic Range Technology, WDR Pro, the camera provides improved visibility in high-contrast lighting environments. In addition, 3D Noise Reduction Technology enables the camera to capture clear, polished video under low-light conditions and reduce bandwidth from sensor noise. These features allow users to enjoy an increased level of image detail in bright as well as low-light environments.

Employing VIVOTEK's Smart Stream III technology, the camera can reduce both bandwidth and storage consumption by up to 50%* while maintaining high standards of image quality. PoE (Power-over-Ethernet) also allows the camera to be operated and powered with a single Ethernet cable, giving greater ease of installation. In order to facilitate on-board storage and data portability, the camera is also equipped with a MicroSD/SDHC/SDXC card slot for local recording. In addition to this, in corridor scenarios, its video rotation feature can provide wider vertical coverage for more depth and a larger useful field of view.

^{*} Depending on scene monitored.

Revision History

■ Rev. 1.0: Initial release.

Read Before Use

The use of surveillance devices may be prohibited by law in your country. The Network Camera is not only a high-performance web-ready camera but can also be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete according to the Package Contents listed below. Take note of the warnings in the Quick Installation Guide before the Network Camera is installed; then carefully read and follow the instructions in the Installation chapter to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended.

The Network Camera is a network device and its use should be straightforward for those who have basic networking knowledge. It is designed for various applications including video sharing, general security/surveillance, etc. The Configuration chapter suggests ways to best utilize the Network Camera and ensure proper operations. For creative and professional developers, the URL Commands of the Network Camera section serves as a helpful reference to customizing existing homepages or integrating with the current web server.

/ IMPORTANT:

- 1. The camera should be installed at least 10 centimeters away from the eave of a building.
- 2. If powered by a power adapter, the adapter should be properly grounded.
- 3. Maintenance and repair work must always be carried out by qualified technical personnel.
- 4. Disconnect power from the unit when performing a maintenance task.
- 5. Please contact VIVOTEK's certified dealers for power adapters.

NOTE:

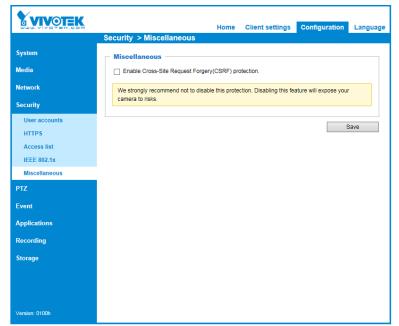
Camera Hardware Preventative Maintenance:

- 1. Visual inspection of all major components including accessories, cabling and connections where accessible for signs of deterioration or damage.
- 2. Check and clean cameras, lenses and housings inside and out as needed.
- Please do not scratch, damage, or leave fingerprints on the dome/front cover and/or lens because this may decrease image quality.
- For general cleaning of dirty areas, it is suggested to use compressed air to remove dust and/or other debris in order not to damage the on-board components.
- In order to clean oil stains, it is recommended to use a spray-type decomposing cleaner (absolutely avoid reciprocating wipes on the surface). After the oil has decomposed, spray it with water, dry with air, and/or absorb water with a cotton cloth or a soft cloth (dab, please avoid wiping).
- Do not use harsh detergents, gasoline, benzene or acetone, etc. to clean as they may deform or cause damage to the product. Also, excessive cleaning could damage the surface.
- 3. Check images for correct field of view (pan, tilt and zoom focus) and adjust as necessary.
- 4. Check and replace the Micro SD memory card as needed.
- Stop edge recording before removing the Micro SD memory card.
- Make sure that the Micro SD memory card is right side up and do not insert it with force, otherwise it may be damaged.
- When it is raining or the humidity is high, insertion or ejection of the Micro SD memory card is not recommended.
- 5. Disassembly of the dome/front cover carries the risk of internal dew condensation, so please remember to replace the desiccant bags on the inside of the cameras before reassembly.
- 6. Check that the camera view has not been blocked by obstacles and that you can see the property perimeter clearly.
- 7. Make sure the interiors of cameras and accessories, like mounting kits and/or enclosures, are clean and dry.
- 8. Make sure cameras are securely attached to the wall/ceiling/mounting kits.

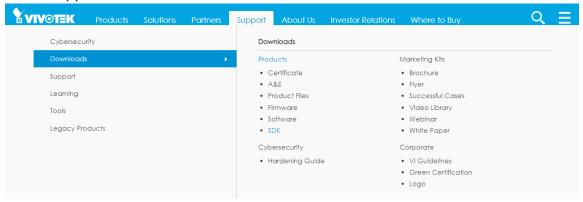
⚠ IMPORTANT:

For some customers who already have their own web site or web control application, the Network Camera/Video Server can be easily integrated through URL syntax. This section specifies the external HTTP-based application programming interface. The HTTP-based camera interface provides the functionality to request a single image, control camera functions (PTZ, output relay etc.), and get and set internal parameter values. The image and CGI-requests are handled by the built-in Web server.

 To send URL commands in the address bar of your web browser, please remember to disable the Cross-Site Request Forgery (CSRF) protection in Configuration > Security > Miscellaneous.



 For up-to-date documentation of URL commands, please go to VIVOTEK's website, register an account with a business mail address and submit for authorization for SDK in Support > Downloads > SDK.



• For any further technical support, please contact our technical support department.

Package Contents

- MD9582-H
- T10 torx screwdriver, desiccant bag, 4-pin and 2-pin terminals, screws, and hex nuts.
- Quick Installation Guide & alignment sticker.

MARNING:

- 1. IR lights emit from the product.
- 2. Use appropriate shielding or eye protection.

Symbols and Statements in this Document



INFORMATION: provides important messages or advices that might help prevent inconvenient or problem situations.



NOTE: Notices provide guidance or advices that are related to the functional integrity of the machine.



Tips: Tips are useful information that helps enhance or facilitae an installation, function, or process.



WARNING: or **IMPORTANT:**: These statements indicate situations that can be dangerous or hazardous to the machine or you.



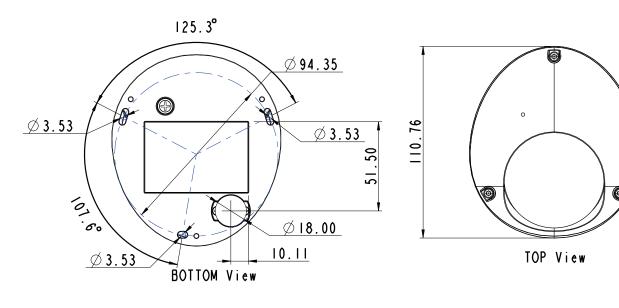
Electrical Hazard: This statement appears when high voltage electrical hazards might occur to an operator.

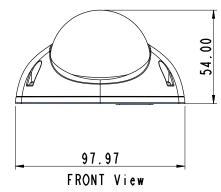
- 1. The camera is only to be connected to PoE networks without routing to outside plants.
- 2. For PoE connection, use only UL listed I.T.E. with PoE output.
- 1. La caméra ne doit être raccordée qu'à des réseaux PoE, sans routage vers des installations extérieures.
- 2. Pour les raccordements PoE, utilisez uniquement un équipement de TI homologué UL, avec une sortie PoE.

Use the camera only with a DC power supply that is UL listed, and limited power source (LPS) certified. The power supply should bear the UL listed and LPS marks. The power supply should also meet any safety and compliance requirements for the country of use.

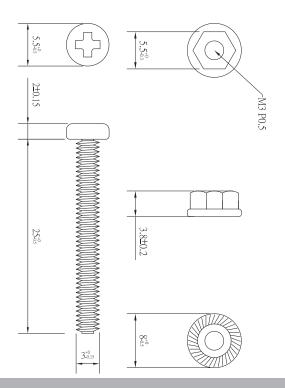
n'utilisez la caméra qu'avec un bloc d'alimentation CC homologué UL, ainsi qu'avec une alimentation limitée (LPS) certifiée. Le bloc d'alimentation doit porter les indications d'homologation UL et LPS. Il doit également répondre aux exigences en matière de sécurité et de conformité relatives au pays d'utilisation.

Dimension Drawing



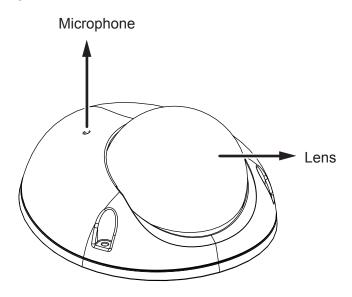


Screw Pack

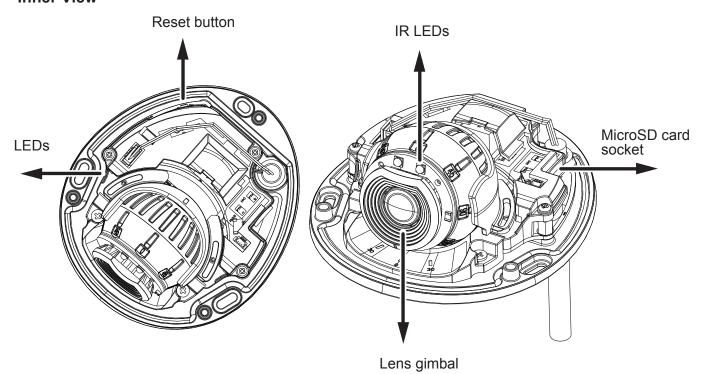


Physical Description

Outer View



Inner View





NOTE:

Some of the suffix syntax used in model naming are listed below:

E	w/ heater for extreme weather
Fx	Focal length w/ number
Т	w/ Remote focus lens
R	w/ PoE repeater
Н	w/ High Dynamic Range functionality

⚠ IMPORTANT:

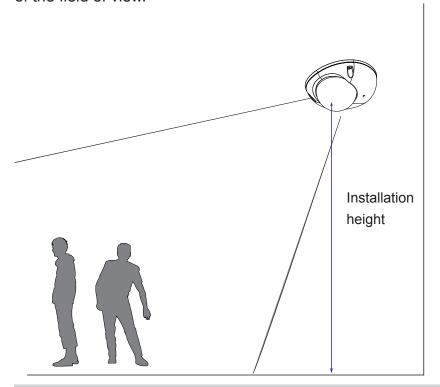


PoE 37V-57V---0.16A-0.11A

Hardware Installation

№ IMPORTANT:

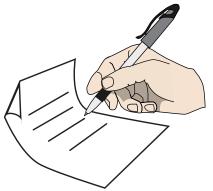
If you plan to use the Human Detection feature, make sure you measure the height of your camera. The height information is important for the accuracy of the video analytics results. Some of the other perspective information are automatically collected by the onboard S-sensor. The height information enables the horizontal and vertical keystone corrections of the field of view.



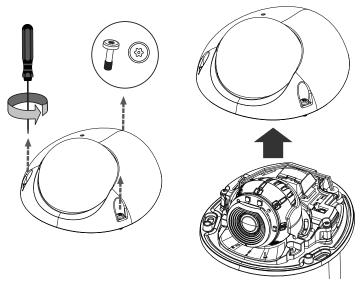


1. Jot down the camera's MAC address for later reference.

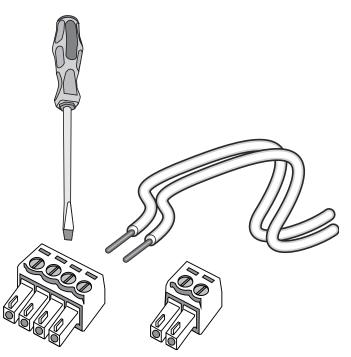




2. Loosen the T10 anti-tamper screws to temporarily remove the top cover.

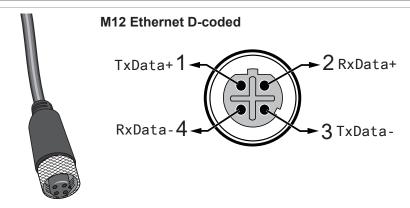


3. If preferred, connect the digital output, digital input, or audio line-in wires.

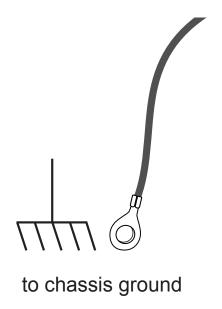


Name
DO+ (5V, max. 50mA)
GND
DI+ (any input <30V)
DI- GND

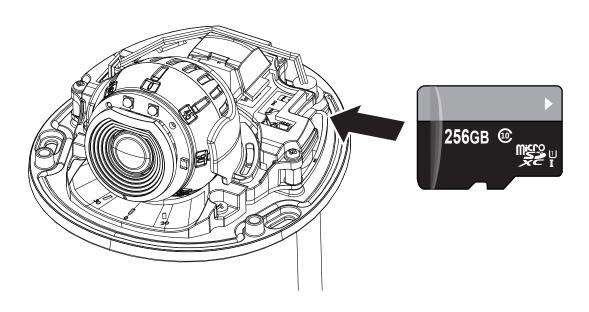
Name	
Audio Line-IN	
GND	



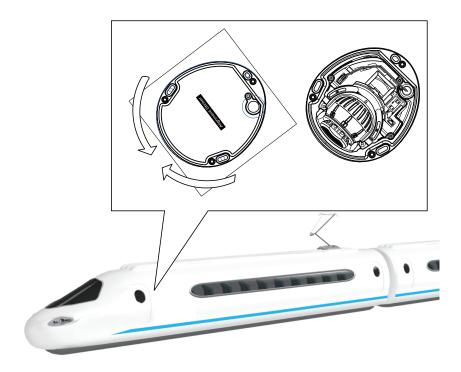
4. Connect the ground wire to the chassis ground.



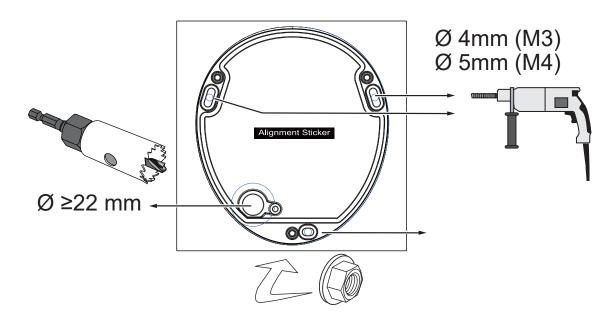
5. Install a MicroSD card if onboard storage is preferred.



6. Attach the alignment sticker to a preferred location. Aim the shooting direction on the sticker at a direction you prefer. Drill holes on the wall or ceiling to install the plasic anchors. Anchors may not be necessary for installation on different materials.

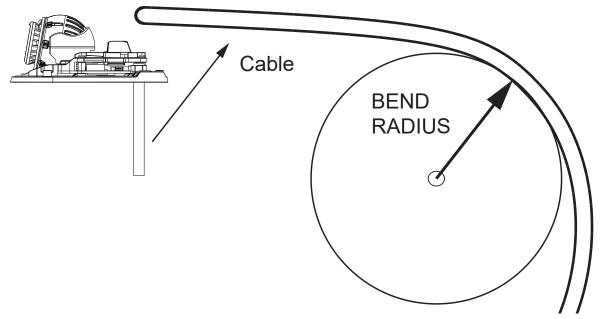


7. If preferred, drill one routing hole.





The combo cable is made of fire-retardant materials. It may be rigid when fitting it through the vehicle panel. Note the bend radius of the cable as shown below:



HL1: min. bend radius 67.5mm (9x O.D.) during installation

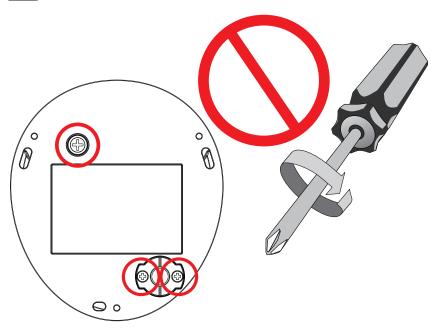
37.5mm (5x O.D.) during operation

HL3: min. bend radius 72mm (10x O.D.) during installation

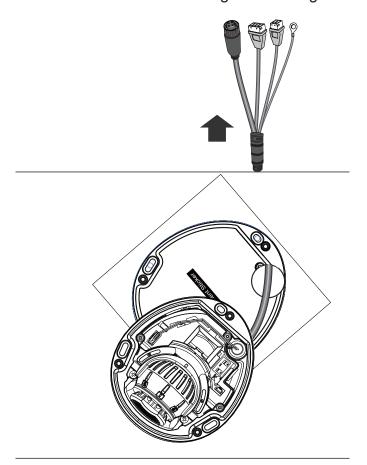
36mm (5x O.D.) during operation



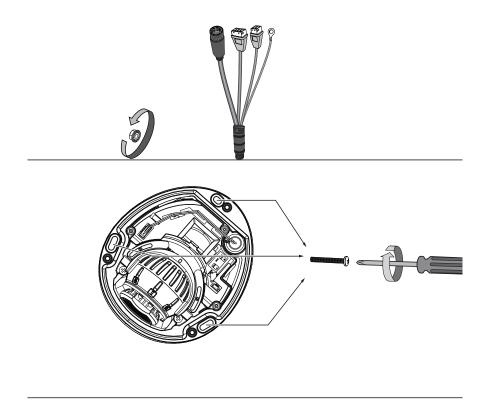
Do not loosen these crosshead screws. They are used to secure the components.



8. Pull the combo cable through the routing hole.

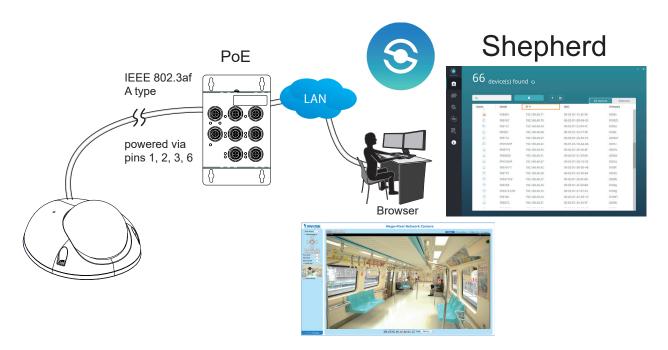


9. Secure the camera to the mount surface by driving 3 screws and tighten with hex nuts.



10. Please visit VIVOTEK's website to Install the "Shepherd" software utility. The program will search for VIVOTEK Video Receivers, Video Servers or Network Cameras on the same LAN.

Double-click on the camera's MAC address to open a web console to the camera.

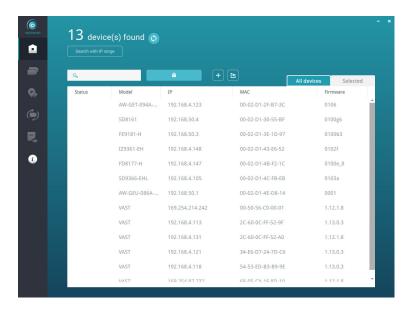


Software Installation

11. Install the Shepherd utility, which helps you locate and configure your Network Camera in the local network. If your camera comes without the CD, go to VIVOTEK's website, and locate the utility in the Downloads > Software page.

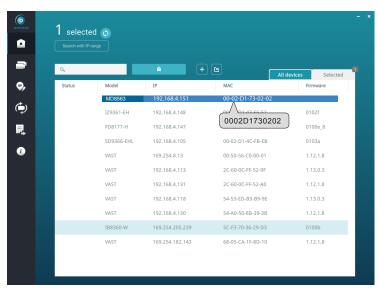


- 11-1. Run the Shepherd utility.
- 11-2. The program will conduct an analysis of your network environment.



- 11-3. The program will search for all VIVOTEK network devices on the same LAN.
- 11-4. After a brief search, the installer window will prompt. Click on the MAC and model name that matches the one printed on the product label. You can then double-click on the address to open a management session with the Network Camera.





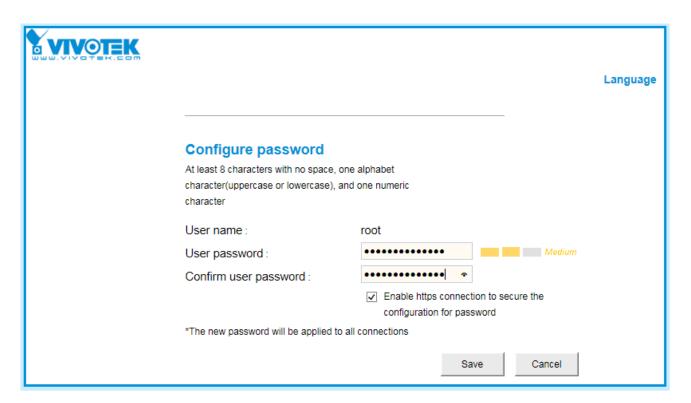
Forceful Password Configuration

12. The first time you log in to the camera, the firmware will prompt for a password configuration for security concerns.

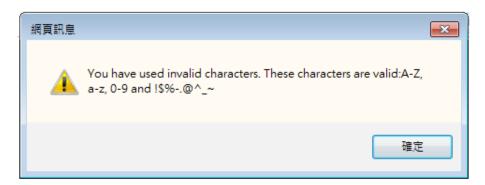
Since your camera is used for the first time, there is no password. Enter "root" as the user name, and nothting for the password.



Enter the combination of alphabetic and numeric characters to fulfill the password strength. requirement. The default name for the camera administrator is "root", and can not be changed.



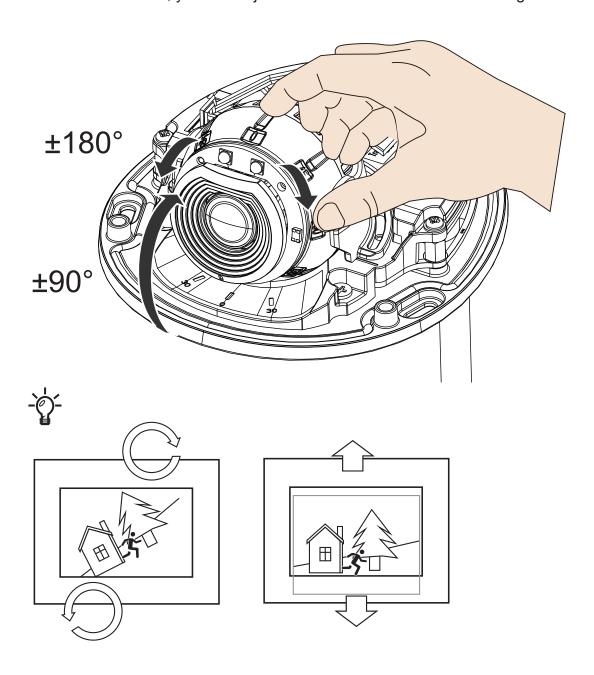
Some, but not all special ASCII characters are supported: !, \$, %, -, ., @, ^, _, and ~. You can use them in the password combination.



Another prompt will request for the password you configured. Enter the password and then you can start configure your camera and see the live view.

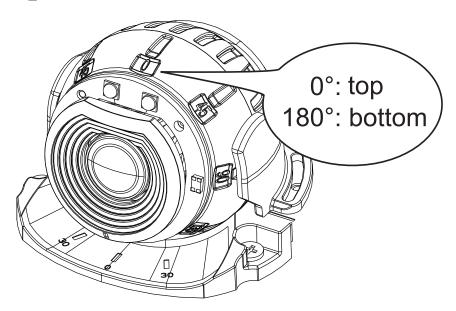


13. With a live video, you can adjust the camera lens tilt or rotation angle.

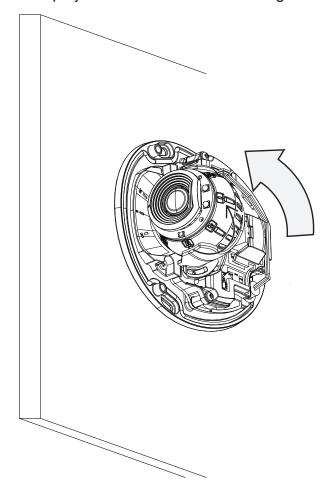




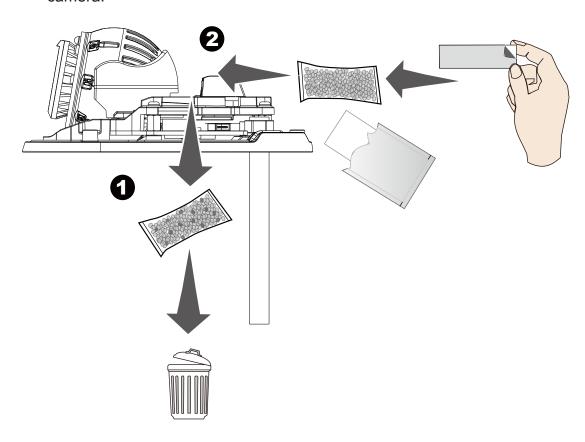
Note that the numeric markings on the lens gimbal can be used to indicate the degrees of rotation.



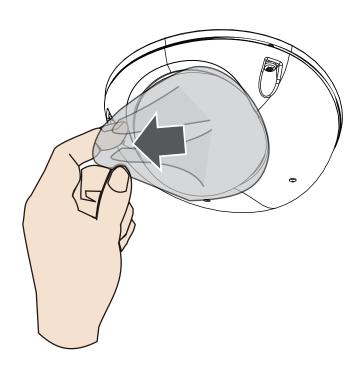
For example, if the camera is mounted on a vertical surface, and the lens is turned 90 degree to accommodate the mount position, the 90 degree marking should be displayed at the center of the lens gimbal.



14. When you acquire an optimal view, replace the desiccant bag at the center of the camera.

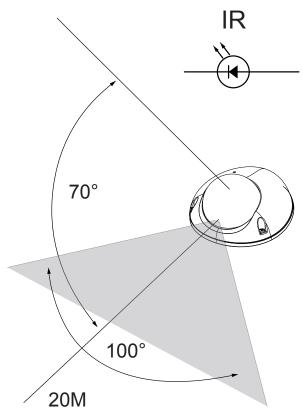


15. Remove the protective sheet from the top of lens cover.



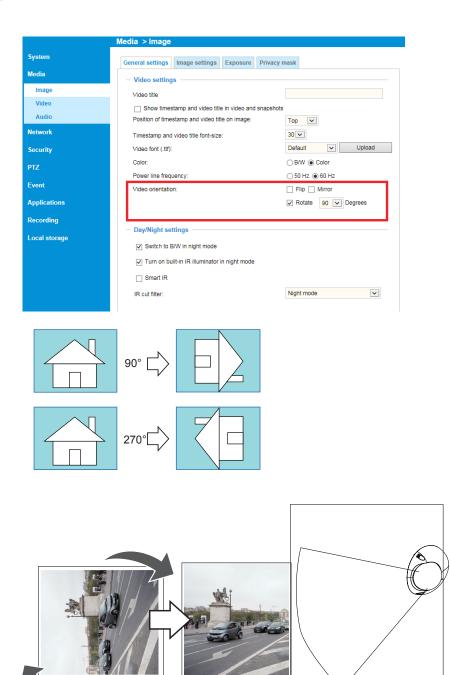


See below for the effective IR illumination range and coverage





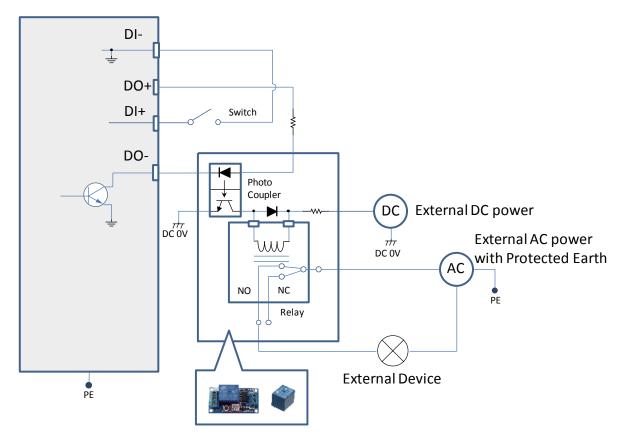
In addition to mechanically turning the shooting angles, you may also digitally turn the orientation of the image.



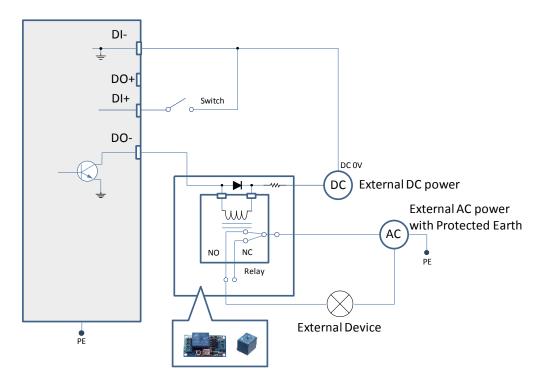
DI/DO Diagram

- 1. The DO+ pin provides a 5V output, and the max. load is 50mA.
- 2. The max. voltage for DO- pins is 30VDC (External power).
 In order to control AC devices, the following diagram can be taken into consideration.
 This diagram uses a relay to control the ON/OFF condition of the AC device.
- 3. An external relay can be triggered by using the DO+ or by an external power source, depending on the type of relay you use.
- 4. In case of using an individual relay (instead of using a relay module), for protection against voltage or current spikes, a transient voltage suppression diode must be connected in parallel with the inductive load.

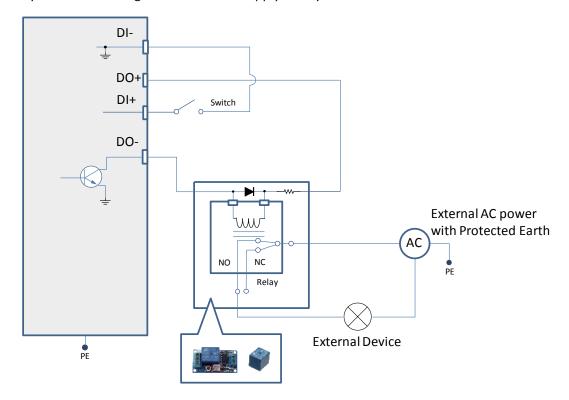
Dry contact with external DC power source to supply a relay. Dry contact is the safest connection to protect devices.



Wet contact with external DC power source to supply a relay.



Dry contact and using camera's DO+ to supply a relay.



LED Definitions

	Item	LED status	Description
LED	1	Steady Red	Powered and system booting, or network
Ü			failed
D		Red LED off	Power off
Definition		Green LED off	Network is disconnected
	2	Steady Red and Green LED blinks every 1	Connected to network
9		sec.	
	3	Green LED blinks every 1 sec. and RED	Upgrading firmware
		LED blinks consecutively every 0.15 sec.	
	4		Restoring defaults
		and RED light on, then blink again.	
	5	RED LED is on, Green LED blinks and RED	Status after a reset (network connected)
		LED is constantly on.	· ·
		Green and RED LEDs are constantly on.	Status after a reset (network
			disconnected)

Hardware Reset

The reset button is used to reset the system or restore the factory default settings. Sometimes resetting the system can return the camera to normal operation. If the system problems remain after reset, restore the factory settings and install again.

Reset: Press the recessed reset button. Wait for the Network Camera to reboot.

<u>Restore</u>: Press and hold the reset button until the status LED rapidly blinks. Note that all settings will be restored to factory default. Upon successful restore, the status LED will blink green and red during normal operation.

SD/SDHC/SDXC Card Capacity

This network camera is compliant with SD/SDHC/SDXC 16GB / 8GB / 32GB / 64GB / , and up to 512 / 1024GB and other preceding standard SD cards.

If DC power is preferred, it should comply with: O/P: 12VDC, 2A min., L.P.S. per IEC 60950-1.

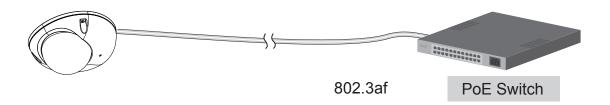
Si l'alimentation CC est préférable, elle devrait être conforme avec ce qui suit : Sortie : 12 VCC, 2 A min., alimentation limitée à conformité CEI 60950-1.

Network Deployment

General Connection (PoE)

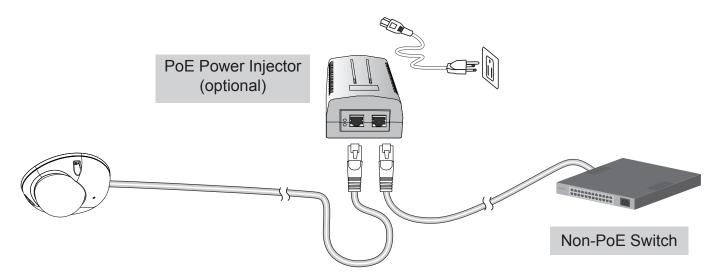
When using a PoE-enabled switch

The Network Camera is PoE-compliant, allowing transmission of power and data via a single Ethernet cable. Follow the below illustration to connect the Network Camera to a PoE-enabled switch via Ethernet cable.



When using a non-PoE switch

Use a PoE power injector (optional) to connect between the Network Camera and a non-PoE switch.



NOTE:

- 1. The camera is only to be connected to PoE networks without routing to outside plants.
- 2. For PoE connection, use only UL listed I.T.E. with PoE output.

Ready to Use

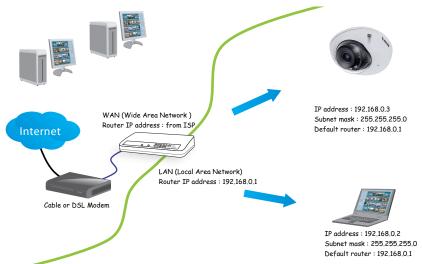
- 1. A browser session with the Network Camera should prompt as shown below.
- 2. You should be able to see live video from your camera. You may also install the 32-channel recording software from the software CD in a deployment consisting of multiple cameras. For its installation details, please refer to its related documents.



Internet connection via a router

Before setting up the Network Camera over the Internet, make sure you have a router and follow the steps below.

1. Connect your Network Camera behind a router, the Internet environment is illustrated below. Regarding how to obtain your IP address, please refer to Software Installation on page 20 for details.



2. In this case, if the Local Area Network (LAN) IP address of your Network Camera is 192.168.0.3, please forward the following ports for the Network Camera on the router.

HTTP port: default is 80RTSP port: default is 554

RTP port for video: default is 5556RTCP port for video: default is 5557

If you have changed the port numbers on the Network page, please open the ports accordingly on your router. For information on how to forward ports on the router, please refer to your router's user's manual.

3. Find out the public IP address of your router provided by your ISP (Internet Service Provider). Use the public IP and the secondary HTTP port to access the Network Camera from the Internet. Please refer to Network Type on page 89 for details.

Internet connection with static IP

Choose this connection type if you are required to use a static IP for the Network Camera. Please refer to LAN setting on page 88 for details.

Internet connection via PPPoE (Point-to-Point over Ethernet)

Choose this connection type if you are connected to the Internet via a DSL Line. Please refer to PPPoE on page 89 for details.

For example, your router and IP settings may look like this:

Device	IP Address: internal port	IP Address: External Port (Mapped port on the router)
Public IP of router	122.146.57.120	
LAN IP of router	192.168.2.1	
Camera 1	192.168.2.10:80	122.146.57.120:8000
Camera 2	192.168.2.11:80	122.146.57.120:8001

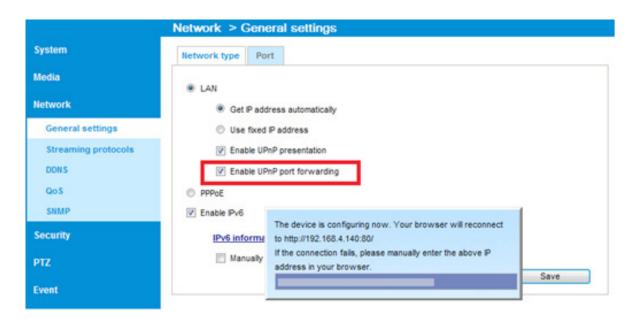
Configure the router, virtual server or firewall, so that the router can forward any data coming into a preconfigured port number to a network camera on the private network, and allow data from the camera to be transmitted to the outside of the network over the same path.

From	Forward to
122.146.57.120:8000	192.168.2.10:80
122.146.57.120:8001	192.168.2.11:80

When properly configured, you can access a camera behind the router using the HTTP request as follows: http://122.146.57.120:8000

If you change the port numbers on the Network configuration page, please open the ports accordingly on your router. For example, you can open a management session with your router to configure access through the router to the camera within your local network. Please consult your network administrator for router configuration if you have troubles with the configuration.

For more information with network configuration options (such as that of streaming ports), please refer to Configuration > Network Settings. VIVOTEK also provides the automatic port forwarding feature as an NAT traversal function with the precondition that your router must support the UPnP port forwarding feature.



Accessing the Network Camera

This chapter explains how to access the Network Camera through web browsers, RTSP players, 3GPP-compatible mobile devices, and VIVOTEK recording software.

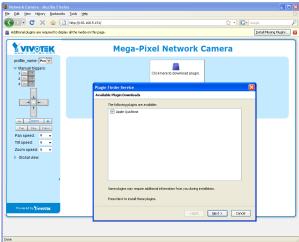
Using Web Browsers

Use Installation Wizard 2 (IW2) to access the Network Cameras on LAN.

If your network environment is not a LAN, follow these steps to access the Network Camera:

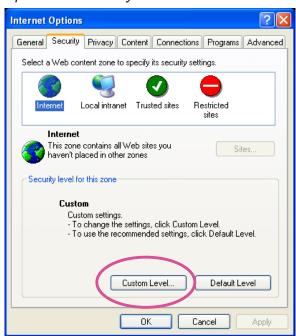
- 1. Launch your web browser (e.g., Microsoft® Internet Explorer or Mozilla Firefox).
- 2. Enter the IP address of the Network Camera in the address field. Press Enter.
- 3. Live video will be displayed in your web browser.
- 4. If it is the first time installing the VIVOTEK network camera, an information bar will prompt as shown below. Follow the instructions to install the required plug-in on your computer.



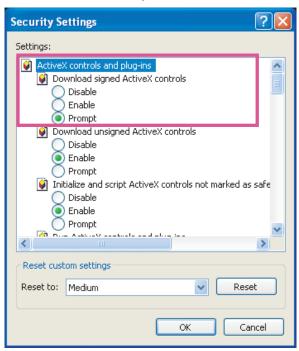


- ▶ By default, the Network Camera is not password-protected. To prevent unauthorized access, it is highly recommended to set a password for the Network Camera.

 For more information about how to enable password protection, please refer to Security on page 107.
- ► If you see a dialog box indicating that your security settings prohibit running ActiveX[®] Controls, please enable the ActiveX[®] Controls for your browser.
- 1. Choose Tools > Internet Options > Security > Custom Level.



2. Look for Download signed ActiveX[®] controls; select Enable or Prompt. Click **OK**.



3. Refresh your web browser, then install the ActiveX[®] control. Follow the instructions to complete installation.

№ IMPORTANT:

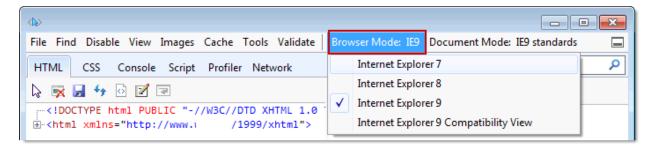
- Currently the Network Camera utilizes a 32-bit ActiveX plugin. You CAN NOT open a management/view session with the camera using a 64-bit IE browser.
- If you encounter this problem, try execute the lexplore.exe program from C:\Windows\ SysWOW64. A 32-bit version of IE browser will be installed.
- On Windows 7, the 32-bit explorer browser can be accessed from here:
 C:\Program Files (x86)\Internet Explorer\iexplore.exe
- If you open a web session from the Shepherd utility, a 32-bit IE browser will be opened.

- Tips:

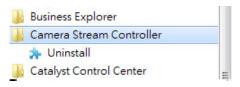
- The onscreen Java control can malfunction under the following situations: A PC connects to different cameras that are using the same IP address (or the same camera running different firmware versions). Removing your browser cookies will solve this problem.
- 2. If you encounter problems with displaying the configuration menus or UI items, try disable the Compatibility View on IE8 or IE9.



You may also press the F12 key to open the developer tools utility, and then change the Browser Mode to the genuine IE8 or IE9 mode.



 In the event of plug-in compatibility issues, you may try to uninstall the plug-in that was previously installed.



Using RTSP Players

To view the streaming media using RTSP players, you can use one of the following players that support RTSP streaming.



VLC media player

- 1. Launch the RTSP player.
- 2. Choose File > Open URL. A URL dialog box will pop up.
- 3. The address format is rtsp://<ip address>:<rtsp port>/<RTSP streaming access name for stream1 or stream2> only allow RTSP streaming through port number 554, please set the RTSP port to 554. For more information, please refer to RTSP Streaming on page 96.

For example:



4. The live video will be displayed in your player.

For more information on how to configure the RTSP access name, please refer to RTSP Streaming on page 96 for details.



Using 3GPP-compatible Mobile Devices

To view the streaming media through 3GPP-compatible mobile devices, make sure the Network Camera can be accessed over the Internet. For more information on how to set up the Network Camera over the Internet, please refer to Setup the Network Camera over the Internet on page 29.

To utilize this feature, please check the following settings on your Network Camera:

- 1. Because most players on 3GPP mobile phones do not support RTSP authentication, make sure the authentication mode of RTSP streaming is set to disable.

 For more information, please refer to RTSP Streaming on page 96.
- 2. As the the bandwidth on 3G networks is limited, you will not be able to use a large video size. Please set the video streaming parameters as listed below. For more information, please refer to Stream settings on page 76.

Video Mode	H.264
Frame size	176 x 144
Maximum frame rate	5 fps
Intra frame period	1S
Video quality (Constant bit rate)	40kbps

- 3. As most ISPs and players only allow RTSP streaming through port number 554, please set the RTSP port to 554. For more information, please refer to RTSP Streaming on page 96.
- 4. Launch the player on the 3GPP-compatible mobile devices (e.g., QuickTime).
- 5. Type the following URL commands into the player.

 The address format is rtsp://<public ip address of your camera>:<rtsp port>/<RTSP streaming access name for stream # with small frame size and frame rate>.

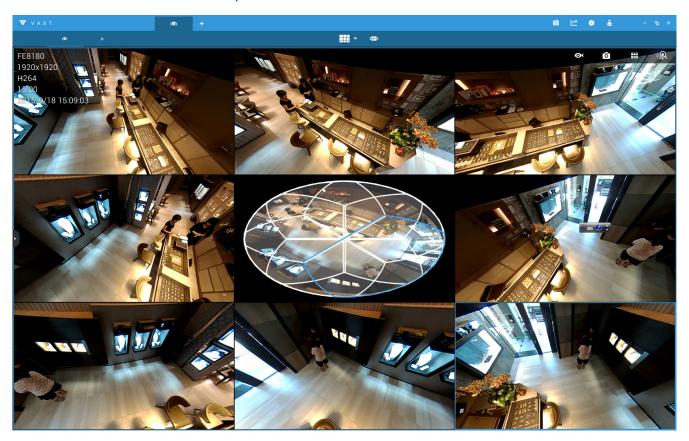
For example:



You can configure Stream #2 into the suggested stream settings as listed above for live viewing on a mobile device.

Using VIVOTEK Recording Software

The product software CD also contains a VAST recording software, allowing simultaneous monitoring and video recording for multiple Network Cameras. Please install the recording software; then launch the program to add the Network Camera to the Channel list. For detailed information about how to use the recording software, please refer to the user's manual of the software or download it from http://www.vivotek.com.





- 1. If you encounter problems with displaying live view or the onscreen plug-in control, you may try to remove the plug-ins that might have been installed on your computer. Remove the following folder: C:\Program Files (x86)\Camera Stream Controller\.
- 2. If you forget the root (administrator) password for the camera, you can restore the camera defaults by pressing the reset button for longer than 5 seconds.
- 3. If DHCP is enabled in your network, and the camera cannot be accessed, run the Shepherd utility to search the network. If the camera has been configured with fixed IP that does not comply with your local network, you may see its default IP 169.254.x.x. If you still cannot find the camera, you can restore the camera to its factory defaults.
- 4. If you change your network parameters, e.g., added a connection to a LAN card, re-start the Shepherd utility.

Main Page

This chapter explains the layout of the main page. It is composed of the following sections: VIVOTEK INC. Logo, Host Name, Camera Control Area, Configuration Area, Menu, and Live Video Window.



VIVOTEK INC. Logo

Click this logo to visit the VIVOTEK website.

Host Name

The host name can be customized to fit your needs. The name can be changed especially there are many cameras in your surveillance deployment. For more information, please refer to System on page 50.

Camera Control Area

Profile mode: 4 pre-configured streaming profiles are provided through here: Max. view, Recording view, Live view, and App. Each mode features a different stream source (channel), resolution, multicast, and metadata configuration.

The profiles can be configured in **Configuration > Media > Media profiles**.

<u>Manual Trigger</u>: Click to enable/disable an event trigger manually. Please configure an event setting on the Application page before you enable this function. A total of 3 event configuration can be configured. For more information about event setting, please refer to page 125. If you want to hide this item on the homepage, please go to **Configuration> System > Homepage Layout > General settings > Customized button** to deselect the "show manual trigger button" checkbox.

Configuration Area

<u>Client Settings</u>: Click this button to access the client setting page. For more information, please refer to Client Settings on page 44.

<u>Configuration</u>: Click this button to access the configuration page of the Network Camera. It is suggested that a password be applied to the Network Camera so that only the administrator can configure the Network Camera. For more information, please refer to Configuration on page 49.

Language: Click this button to choose a language for the user interface. Language options are available in: English, Deutsch, Español, Français, Italiano, 日本語, Português, 簡体中文, and 繁體中文. Please note that you can also change a language on the Configuration page; please refer to page 49.

Hide Button

You can click the hide button to hide or display the control panel.

Resize Buttons



Click the Auto button, the video cell will resize automatically to fit the monitor.

Click 100% is to display the original homepage size.

Click 50% is to resize the homepage to 50% of its original size.

Click 25% is to resize the homepage to 25% of its original size.

Live Video Window

■ The following window is displayed when the video mode is set to H.264 or H.265: H.265/264 Protocol and Media Options



<u>Video Title</u>: The video title can be configured. For more information, please refer to Video Settings on page 63.

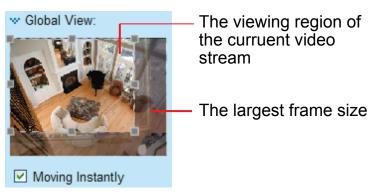
<u>H.264 or H. 265 Protocol and Media Options</u>: The transmission protocol and media options for H.264 or H.265 video streaming. For further configuration, please refer to Client Settings on page 44.

<u>Time</u>: Display the current time. For further configuration, please refer to Media > Image > Genral settings on page 63.

<u>Title and Time</u>: The video title and time can be stamped on the streaming video. For further configuration, please refer to Media > Image > General settings on page 68.

<u>PTZ Panel</u>: This Network Camera supports "digital" (e-PTZ) pan/tilt/zoom control, which allows roaming a smaller view frame within a large view frame. Please refer to PTZ settiings on page 122 for detailed information.

<u>Global View</u>: Click on this item to display the Global View window. The Global View window contains a full view image (the largest frame size of the captured video) and a floating frame (the viewing region of the current video stream). The floating frame allows users to control the e-PTZ function (Electronic Pan/Tilt/Zoom). For more information about e-PTZ operation, please refer to E-PTZ Operation on page 122. For more information about how to set up the viewing region of the current video stream, please refer to page 122.



Note that the PTZ buttons on the panel are not operational unless you are showing only a portion of the full image. If the live view window is displaying the full view, the PTZ buttons are not functional.

<u>Video Control Buttons</u>: Depending on the Network Camera model and Network Camera configuration, some buttons may not be available.

Snapshot: Click this button to capture and save still images. The captured images will be displayed in a pop-up window. Right-click the image and choose **Save Picture As** to save it in JPEG (*.jpg) or BMP (*.bmp) format.

<u>Digital Zoom</u>: Click and uncheck "Disable digital zoom" to enable the zoom operation. The navigation screen indicates the part of the image being magnified. To control the zoom level, drag the slider bar. To move to a different area you want to magnify, drag the navigation screen.



Pause: Pause the transmission of the streaming media. The button becomes the Resume button after clicking the Pause button.

Stop: Stop the transmission of the streaming media. Click the Resume button to continue transmission.

Start MP4 Recording: Click this button to record video clips in MP4 file format to your computer. Press the Stop MP4 Recording button to end recording. When you exit the web browser, video recording stops accordingly. To specify the storage destination and file name, please refer to MP4 Saving Options on page 45 for details.

Volume: When the Mute function is not activated, move the slider bar to adjust the volume on the local computer.

Mute: Turn off the volume on the local computer. The button becomes the Audio On button after clicking the Mute button.

Full Screen: Click this button to switch to full screen mode. Press the "Esc" key to switch back to normal mode.

NOTE:

- 1. For a megapixel camera, it is recommended to use monitors of the 24" size or larger, and are capable of 1600x1200 or better resolutions.
- 2. Below are the defaults for **Audio** settings:

For cameras with built-in microphone: Not Muted.

For cameras without built-in microphone: Muted.

To receive audio input from an external microphone, you may need to enable the audio input from Media > Audio. Refer to page 86 for more information.

■ The following window is displayed when the video mode is set to MJPEG:



<u>Video Title</u>: The video title can be configured. For more information, please refer to Media > Image on page 68.

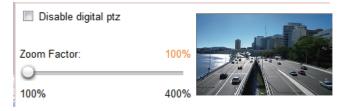
<u>Time</u>: Display the current time. For more information, please refer to Media > Image on page 68.

<u>Title and Time</u>: Video title and time can be stamped on the streaming video. For more information, please refer to Media > Image on page 68.

<u>Video Control Buttons</u>: Depending on the Network Camera model and Network Camera configuration, some buttons may not be available.

Snapshot: Click this button to capture and save still images. The captured images will be displayed in a pop-up window. Right-click the image and choose **Save Picture As** to save it in JPEG (*.jpg) or BMP (*.bmp) format.

<u>Digital Zoom</u>: Click and uncheck "Disable digital zoom" to enable the zoom operation. The navigation screen indicates the part of the image being magnified. To control the zoom level, drag the slider bar. To move to a different area you want to magnify, drag the navigation screen.



Start MP4 Recording: Click this button to record video clips in MP4 file format to your computer. Press the Stop MP4 Recording button to end recording. When you exit the web browser, video recording stops accordingly. To specify the storage destination and file name, please refer to MP4 Saving Options on page 45 for details.

Full Screen: Click this button to switch to full screen mode. Press the "Esc" key to switch back to normal mode.

Client Settings

This chapter explains how to select the stream transmission mode and saving options on the local computer. When completed with the settings on this page, click **Save** on the page bottom to enable the settings.

H.265/H.264 Protocol Options



Depending on your network environment, there are four transmission modes of H.264 streaming:

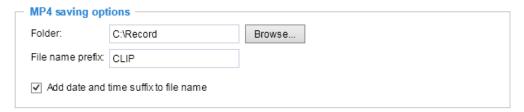
<u>UDP unicast</u>: This protocol allows for more real-time audio and video streams. However, network packets may be lost due to network burst traffic and images may be broken. Activate UDP connection when occasions require time-sensitive responses and the video quality is less important. Note that each unicast client connecting to the server takes up additional bandwidth and the Network Camera allows up to ten simultaneous accesses.

<u>UDP multicast</u>: This protocol allows multicast-enabled routers to forward network packets to all clients requesting streaming media. This helps to reduce the network transmission load of the Network Camera while serving multiple clients at the same time. Note that to utilize this feature, the Network Camera must be configured to enable multicast streaming at the same time. For more information, please refer to RTSP Streaming on page 96.

<u>TCP</u>: This protocol guarantees the complete delivery of streaming data and thus provides better video quality. The downside of this protocol is that its real-time effect is not as good as that of the UDP protocol.

<u>HTTP</u>: This protocol allows the same quality as TCP protocol without needing to open specific ports for streaming under some network environments. Users inside a firewall can utilize this protocol to allow streaming data through.

MP4 Saving Options



Users can record live video as they are watching it by clicking Start MP4 Recording on the main page. Here, you can specify the storage destination and file name.

<u>Folder</u>: Specify a storage destination on your PC for the recorded video files. The location can be changed.

<u>File name prefix</u>: Enter the text that will be appended to the front of the video file name. A specified folder will be automatically created on your local hard disk.

Add date and time suffix to the file name: Select this option to append the date and time to the end of the file name.



Local Streaming Buffer Time



In the case of encountering unsteady bandwidth, live streaming may lag and video streaming may not be very smoothly. If you enable this option, the live streaming will be stored temporarily on your PC's cache memory for a few milli seconds before being played on the live viewing window. This will help you see the streaming more smoothly. If you enter 3,000 Millisecond, the streaming will delay for 3 seconds.

Joystick settings

Enable Joystick

Connect a joystick to a USB port on your management computer. Supported by the plug-in (Microsoft's DirectX), once the plug-in for the web console is loaded, it will automatically detect if there is any joystick on the computer. The joystick should work properly without installing any other driver or software.

Then you can begin to configure the joystick settings of connected devices. Please follow the instructions below to enable joystick settings.

- 1. Select a detected joystick, if there are multiple, from the Selected joystick menu. If your joystick is not detected, if may be defective.
- 2. Click Calibrate or Configure buttons to configure the joystick-related settings.



NOTE:

- If you want to assign Preset actions to your joystick, the preset locations should be configured
 in advance in the Configuration > PTZ page. In Windows, use the search function on the Start
 menu to search for Game Controller.
- If your joystick is not working properly, it may need to be calibrated. Click the **Calibrate** button to open the Game Controllers window located in Microsoft Windows control panel and follow the instructions for trouble shooting.
- The joystick will appear in the **Game Controllers** list in the Windows Control panel. If you want to check out for your devices, go to the following page: Start -> Control Panel -> Game Controllers.

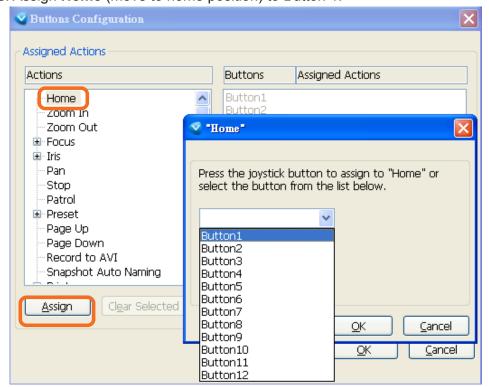


Buttons Configuration

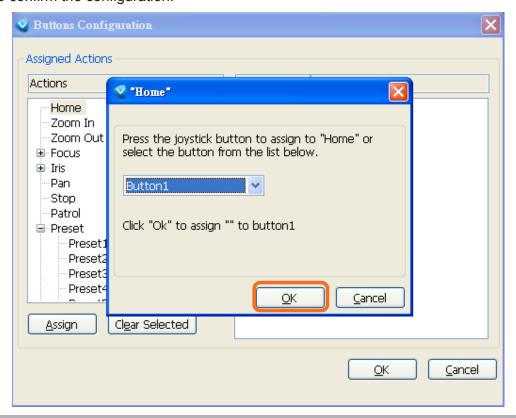
In the Button Configuration window, the left column shows the actions you can assign, and the right column shows the functional buttons and assigned actions. The number of buttons may differ from different joysticks.

Please follow the steps below to configure your joystick buttons:

1. Choosing one of the actions and click **Assign** will pop up a dialog. Then you can assign this action to a button by pressing the joystick button or select it from the drop-down list. For example: Assign **Home** (move to home position) to Button 1.



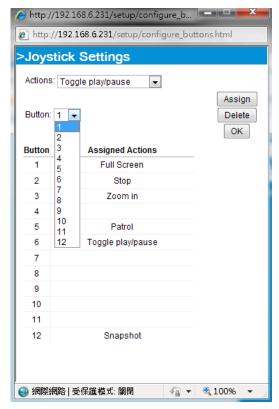
2. Click **OK** to confirm the configuration.



Buttons Configuration

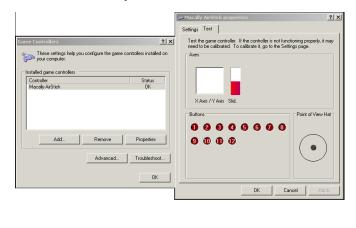
Click the **Configure Buttons** button, a window will prompt as shown below. Please follow the steps below to configure your joystick buttons:

1. Select a button number from the Button # pull-down menu.





If you are not sure of the locations of each button, use the **Properties** window in the **Game Controllers** utility.

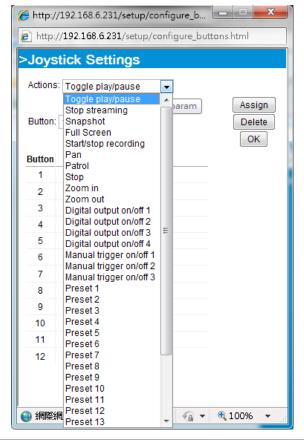


- 2. Select a corresponding action, such as Patrol or Preset#.
- 3. Click the **Assign** button to assign an action to the button. You can delete an association by selecting a button number, and then click the **Delete** button.

Repeat the process until you are done with the configuration of all preferred actions.

The buttons you define should appear on the button list accordingly.

Please remember to click the Save button on the Client settings page to preserver your settings.

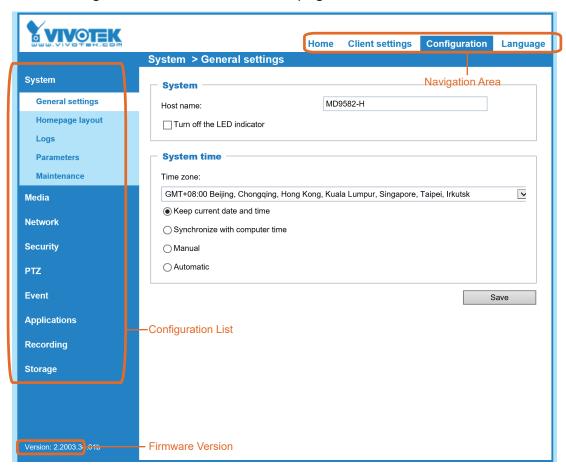


Configuration

Click **Configuration** on the main page to enter the camera setting pages. Note that only Administrators can access the configuration page.

VIVOTEK provides an easy-to-use user interface that helps you set up your network camera with minimal effort. In order to simplify the user interface, detailed information will be hidden unless you click on the function item. When you click on the first sub-item, the detailed information for the first sub-item will be displayed; when you click on the second sub-item, the detailed information for the second sub-item will be displayed and that of the first sub-item will be hidden.

The following is the interface of the main page:



Each function on the configuration list will be explained in the following sections.

The Navigation Area provides access to all different views from the **Home** page (for live viewing), **Configuration** page, and multi-language selection.

System > General settings

This section explains how to configure the basic settings for the Network Camera, such as the host name and system time. It is composed of the following two columns: System, and System Time. When finished with the settings on this page, click **Save** at the bottom of the page to enable the settings.

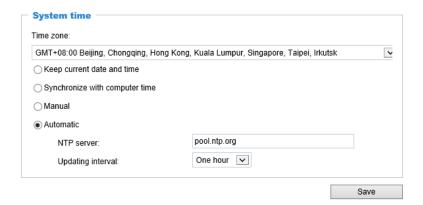
System



<u>Host name</u>: Enter a desired name for the Network Camera. The text will be displayed at the top of the main page, and also on the view cells of the ST7501 and VAST management software.

<u>Turn off the LED indicators</u>: If you do not want others to notice the network camera is in operation, you can select this option to turn off the LED indicators.

System time



Keep current date and time: Select this option to preserve the current date and time of the Network Camera. The Network Camera's internal real-time clock maintains the date and time even when the power of the system is turned off.

<u>Synchronize with computer time</u>: Select this option to synchronize the date and time of the Network Camera with the local computer. The read-only date and time of the PC is displayed as updated.

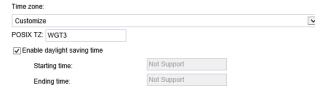
<u>Manual</u>: The administrator can enter the date and time manually. Note that the date and time format are [yyyy/mm/dd] and [hh:mm:ss].

<u>Automatic</u>: The Network Time Protocol is a protocol which synchronizes computer clocks by periodically querying an NTP Server.

<u>NTP server</u>: Assign the IP address or domain name of the time-server. Leaving the text box blank connects the Network Camera to the default time servers. The precondition is that the camera must have the access to the Internet.

<u>Update interval</u>: Select to update the time using the NTP server on an hourly, daily, weekly, or monthly basis.

<u>Time zone</u>: Select the appropriate time zone from the list. You can scroll down on the Time zone menu to find the Customize option and use the POSIX TZ variables. For example, http://www.gnu.org/software/libc/manual/html node/TZ-Variable.html.



Here are some examples for TZ values, including the appropriate Daylight Saving Time and its dates of applicability. In North American Eastern Standard Time (EST) and Eastern Daylight Time (EDT), the normal offset from UTC is 5 hours; since this is west of the prime meridian, the sign is positive. Summer time begins on March's second Sunday at 2:00am, and ends on November's first Sunday at 2:00am. EST+5EDT,M3.2.0/2,M11.1.0/2

Israel Standard Time (IST) and Israel Daylight Time (IDT) are 2 hours ahead of the prime meridian in winter, springing forward an hour on March's fourth Thursday (i.e., on the first Friday on or after March 23), and falling back on October's last Sunday. IST-2IDT,M3.4.4,M10.5.0

Western Argentina Summer Time (WARST) is 3 hours behind the prime meridian all year. There is a dummy fall-back transition on December 31 at 25:00 daylight saving time (i.e., 24:00 standard time, equivalent to January 1 at 00:00 standard time), and a simultaneous spring-forward transition on January 1 at 00:00 standard time, so daylight saving time is in effect all year and the initial WART is a placeholder.

The format is TZ = local_timezone,date/time,date/time.

Here, date is in the Mm.n.d format, where:

Mm (1-12) for 12 months n (1-5) 1 for the first week and 5 for the last week in the month d (0-6) 0 for Sunday and 6 for Saturday

CST6CDT is the name of the time zone
CST is the abbreviation used when DST is off
6 hours is the time difference from GMT
CDT is the abbreviation used when DST is on
,M3 is the third month
.2 is the second occurrence of the day in the month
.0 is Sunday
/2 is the time
,M11 is the eleventh month
.1 is the first occurrence of the day in the month
.0 is Sunday
/2 is the time

The minimum specifier is down to the hour.

System > Homepage layout

This section explains how to set up your own customized homepage layout.

General settings

This column shows the settings of your hompage layout. You can manually select the background and font colors in Theme Options (the second tab on this page). The settings will be displayed automatically in this Preview field. The following shows the homepage using the default settings:



■ Hide Powered by VIVOTEK: If you check this item, it will be removed from the homepage.

Logo graph

Here you can change the logo that is placed at the top of your homepage.

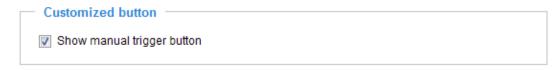


Follow the steps below to upload a new logo:

- 1. Click **Custom** and the Browse field will appear.
- 2. Select a logo from your files.
- 3. Click **Upload** to replace the existing logo with a new one.
- 4. Enter a website link if necessary.
- 5. Click **Save** to enable the settings.

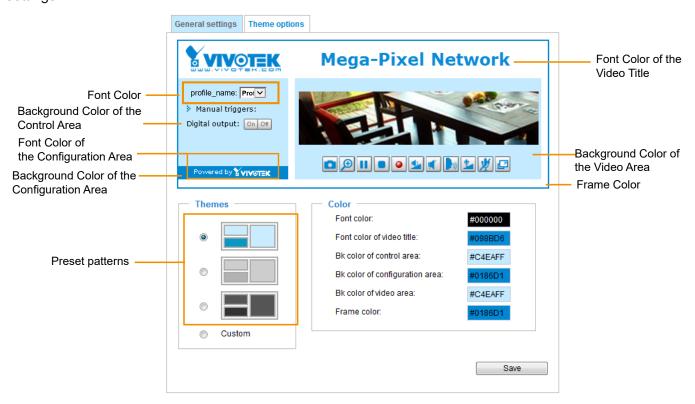
Customized button

If you want to hide manual trigger buttons on the homepage, please uncheck this item. This item is checked by default.



Theme Options

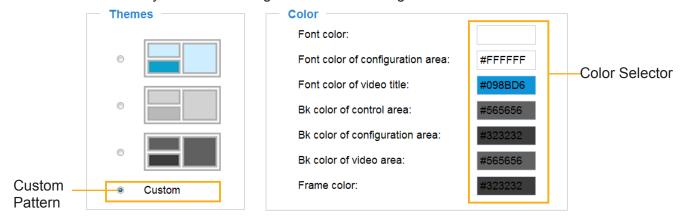
Here you can change the color of your homepage layout. There are three types of preset patterns for you to choose from. The new layout will simultaneously appear in the **Preview** filed. Click **Save** to enable the settings.



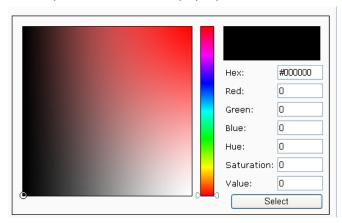


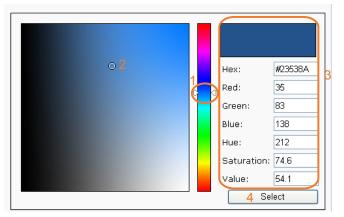


- Follow the steps below to set up the customized homepage:
- 1. Click **Custom** on the left column.
- 2. Click the field where you want to change the color on the right column.



3. The palette window will pop up as shown below.





- 4. Drag the slider bar and click on the left square to select a desired color.
- 5. The selected color will be displayed in the corresponding fields and in the **Preview** column.
- 6. Click **Save** to enable the settings.

System > Logs

This section explains how to configure the Network Camera to send the system log to a remote server as backup.

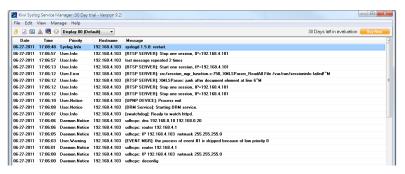
Log server settings



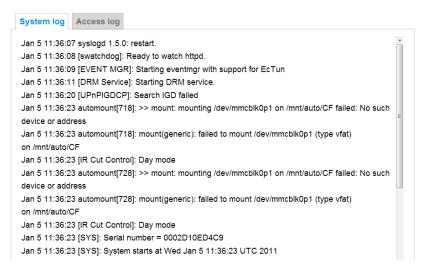
Follow the steps below to set up the remote log:

- 1. Select Enable remote log.
- 2. In the IP address text box, enter the IP address of the remote server.
- 2. In the port text box, enter the port number of the remote server.
- 3. When completed, click **Save** to enable the setting.

You can configure the Network Camera to send the system log file to a remote server as a log backup. Before utilizing this feature, it is suggested that the user install a log-recording tool to receive system log messages from the Network Camera. An example is Kiwi Syslog Daemon. Visit http://www.kiwisyslog.com/kiwi-syslog-daemon-overview/.

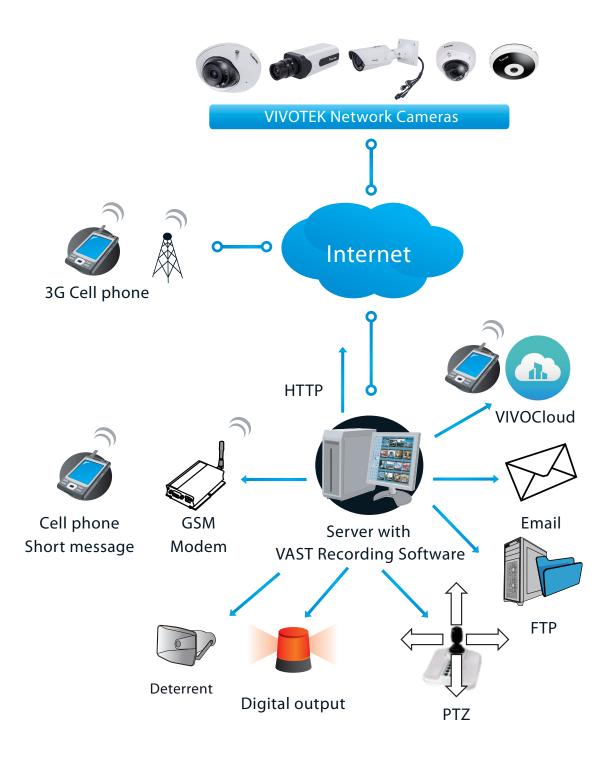


System log



This column displays the system log in a chronological order. The system log is stored in the Network Camera's buffer area and will be overwritten when reaching a certain limit.

You can install the included VAST recording software, which provides an Event Management function group for delivering event messages via emails, GSM short messages, onscreen event panel, or to trigger an alarm, etc. For more information, refer to the VAST User Manual.



Access log

```
System log Access log Set parameter log VADP log

Jan 5 11:36:28 [RTSP SERVER]: Start one session, IP=172.16.2.52

Jan 5 11:49:15 [RTSP SERVER]: Start one session, IP=192.168.4.105

Jan 5 13:11:20 [RTSP SERVER]: Start one session, IP=192.168.4.105
```

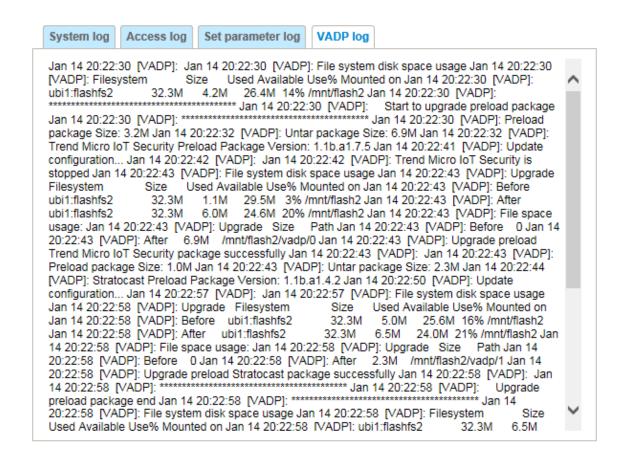
Access log displays the access time and IP address of all viewers (including operators and administrators) in a chronological order. The access log is stored in the Network Camera's buffer area and will be overwritten when reaching a certain limit.

Set Parameter log

VADP log contains the history of changes made to system parameters such as recording, imaging parameters, and all other parameters.

VADP log

VADP log contains the information for the onboard VADP packages, including memory usage, module load and unload information.



System > Parameters

The View Parameters page lists the entire system's parameters. If you need technical assistance, please provide the information listed on this page.

```
Parameters
 system hostname='MD9582-H'
 system ledoff='0'
system lowlight='1'
system date='2021/01/21'
system time='00:29:16'
system_datetime=''
system ntp=''
system daylight enable='0'
system daylight auto begintime='Not Support'
system daylight auto endtime='Not Support'
system daylight timezones=',-360,-320,-280,-240,-241,-200,-140,-121
system updateinterval='0'
system_info_modelname='MD9582-H'
system_info_extendedmodelname='MD9582-H'
system_info_serialnumber='0002D193F566'
system_info_firmwareversion='MD9582-VVTK-2.2003.34.01b'
system_info_language_count='10'
system_info_language_i0='English'
system_info_language_i1='Deutsch'
 system_info_language_i2='Español'
 system_info_language_i3='Français'
 system info language i4='Italiano'
system info language i5='日本語'
 system info language i6='Português'
 system info language i7='简体中文'
system_info_language_i8='繁體中文'
system info language i9='Русский'
system_info_language_i10=''
system_info_language_i11=''
system_info_language_i12=''
```

System > Maintenance

This chapter explains how to restore the Network Camera to factory default, upgrade firmware version, etc.

General settings > Upgrade firmware

 Upgrade firmware 		
Select firmware file:	Browse	Upgrade

This feature allows you to upgrade the firmware of your Network Camera. It takes a few minutes to complete the process.

Note: Do not power off the Network Camera during the upgrade!

Follow the steps below to upgrade the firmware:

- 1. Download the latest firmware file from the VIVOTEK website. The file is in .pkg file format.
- 2. Click **Browse...** and locate the firmware file.
- 3. Click **Upgrade**. The Network Camera starts to upgrade and will reboot automatically when the upgrade completes.

If the upgrade is successful, you will see "Reboot system now!! This connection will close". After that, reaccess the Network Camera.

The following message is displayed when the upgrade has succeeded.

Reboot system now!!
This connection will close.

The following message is displayed when you have selected an incorrect firmware file.

Starting firmware upgrade...
Do not power down the server during the upgrade.
The server will restart automatically after the upgrade is completed.
This will take about 1 - 5 minutes.
Wrong PKG file format
Unpack fail

General settings > Reboot



This feature allows you to reboot the Network Camera, which takes about one minute to complete. When completed, the live video page will be displayed in your browser. The following message will be displayed during the reboot process.

The device is rebooting now. Your browser will reconnect to http://192.168.5.151:80/
If the connection fails, please manually enter the above IP address in your browser.

If the connection fails after rebooting, manually enter the IP address of the Network Camera in the address field to resume the connection.

General settings > Restore

Restore —	
Restore all settings to factory default except settings in	
☐ Network ☐ Daylight saving time ☐ Custom language ☐ VADP	
	Restore

This feature allows you to restore the Network Camera to factory default settings.

<u>Network</u>: Select this option to retain the Network Type settings (please refer to Network Type on page 89).

<u>Daylight Saving Time</u>: Select this option to retain the Daylight Saving Time settings (please refer to Import/Export files below on this page).

<u>Custom Language</u>: Select this option to retain the Custom Language settings.

<u>VADP</u>: Retain the VADP modules (3rd-party software stored on the SD card) and related settings.

<u>Focus position</u>: Retain the lens focus position using the previously saved position parameters.

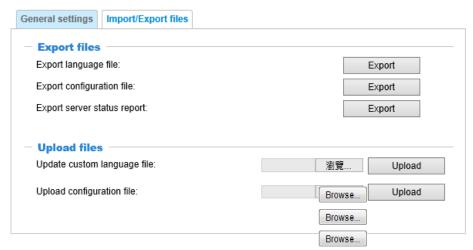
If none of the options is selected, all settings will be restored to factory default. The following message is displayed during the restoring process.

The device is rebooting now. Your browser will reconnect to http://192.168.5.151:80/

If the connection fails, please manually enter the above IP address in your browser.

Import/Export files

This feature allows you to Export / Update daylight saving time rules, custom language file, configuration file, and server status report.



The following message is displayed when attempting to upload an incorrect file format.



Export language file: Click to export language strings. VIVOTEK provides nine languages: English, Deutsch, Español, Français, Italiano, 日本語, Português, 簡体中文, and 繁體中文.

<u>Update custom language file</u>: Click **Browse...** and specify your own custom language file to upload.

Export configuration file: Click to export all parameters for the device and user-defined scripts.

<u>Update configuration file</u>: Click **Browse...** to update a configuration file. Please note that the model and firmware version of the device should be the same as the configuration file. If you have set up a fixed IP or other special settings for your device, it is not suggested to update a configuration file.

<u>Export server staus report</u>: Click to export the current server status report, such as time, logs, parameters, process status, memory status, file system status, network status, kernel message ... and so on.

-`⊘_- Tips:

• If a firmware upgrade is accidentally disrupted, say, by a power outage, you still have a last resort method to restore normal operation. See the following for how to bring the camera back to work:

Applicable scenario:

- (a) Power disconnected during firmware upgrade.
- (b) Unknown reason causing abnormal LED status, and a Restore cannot recover normal working condition.

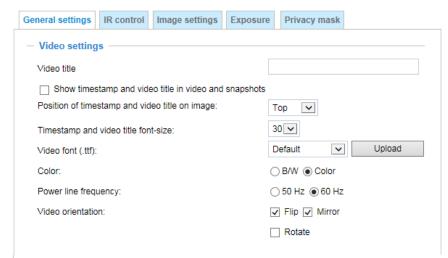
You can use the following methods to activate the camera with its backup firmware:

- (a) Press and hold down the reset button for at least one minute.
- (b) Power on the camera until the Red LED blinks rapidly.
- (c) After boot up, the firmware should return to the previous version before the camera hanged. (The procedure should take 5 to 10 minutes, longer than the normal boot-up process). When this process is completed, the LED status should return to normal.

Media > Image

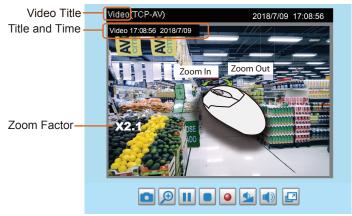
This section explains how to configure the image settings of the Network Camera. It is composed of the following columns: General settings, IR control, Image settings, Exposure, and Privacy mask. The Focus window is available only for models that come with motorized lens.

General settings



Video title

Show timestamp and video title in video and snapshots: Enter a name that will be displayed on the title bar of the live video as the picture shown below. A zoom indicator will be displayed on the Home page when you zoom in/out on the live viewing window as shown below. You may zoom in/out on the image by scrolling the mouse wheel inside the live viewing window, and the maximum zoom in will be up to 12 times.



<u>Position of timestamp and video title on image</u>: Select to display time stamp and video title on the top or at the bottom of the video stream.

<u>Timestamp and video title font size</u>: Select the font size for the time stamp and title.

<u>Video font (.ttf)</u>: You can select a True Type font file for the display of textual messages on video.

<u>Color</u>: Select to display color or black/white video streams.

<u>Power line frequency</u>: Set the power line frequency consistent with local utility settings to eliminate image flickering associated with fluorescent lights. Note that after the power line frequency is changed, you must disconnect and reconnect the power cord of the Network Camera in order for the new setting to take effect.

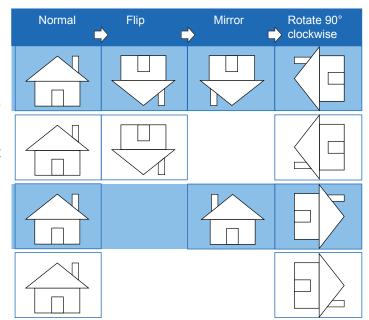
<u>Video orientation</u>: Flip - vertically reflect the display of the live video; Mirror - horizontally reflect the display of the live video. Select both options if the Network Camera is installed upside-down (e.g., on the ceiling) to correct the image orientation. Please note that if you have preset locations, those locations will be cleared after flip/mirror setting.

Rotate -



The rotation here indicates clockwise rotation. Rotation can be applied with flip, mirror, and physical lens rotation (see below) settings to adapt to different mounting locations.

The figures in the illustration are shown in a consecutive order.



The camera may be installed on a vertical, side-facing, or tilted surface in order to accommodate the interior or exterior design of a building. The interior of a building can be shaped as a narrow rectangular space, such as a corridor. The conventional HD image, such as that of a 16:9 aspect ratio, will be incongruous with its wide horizontal view. With video rotation, the camera can more readily cover the field of view on a tall and narrow scene.

Day/Night Settings



Switch to B/W in night mode

Select this to enable the Network Camera to automatically switch to Black/White during night mode.

IR cut filter

With a removable IR-cut filter, this Network Camera can automatically remove the filter to let Infrared light pass into the sensor during low light conditions.

- Auto mode (The **Day/Night Exposure Profile** will not be available if Auto mode is selected)
 The Network Camera automatically removes the filter by judging the level of ambient light.
- Day mode

In day mode, the Network Camera switches on the IR cut filter at all times to block infrared light from reaching the sensor so that the colors will not be distorted.

- Night mode
 - In night mode, the Network Camera switches off the IR cut filter at all times for the sensor to accept infrared light, thus helping to improve low light sensitivity.
- Synchronize with digital input

If an external IR device is connected that comes with its own light sensor, you can use a digital input from it to trigger the IR cut filter. Doing so can synchronize the detection of light level between the camera and the external IR device.

■ Schedule mode

The Network Camera switches between day mode and night mode based on a specified schedule. Enter the start and end time for day mode. Note that the time format is [hh:mm] and is expressed in 24-hour clock time. By default, the start and end time of day mode are set to 07:00 and 18:00.

Light sensor sensitivity

Tune the responsiveness of the IR filter to lighting conditions as Low, Normal, or High.

When completed with the settings on this page, click **Save** to enable the settings.

Illuminators

Turn on built-in IR illuminator in night mode

Select this to turn on the camera's onboard IR illuminator when the camera detects low light condition and enters the night mode.

Turn on external IR illuminator in night mode

Select this to turn on the external IR illuminator when the camera detects low light condition and enters the night mode. A Digital Output connection to external IR is needed.

Smart IR

<u>Anti-overexposure</u>: When enabled, the camera automatically adjusts the IR projection to adjacent objects in order to avoid over-exposure in the night mode.

The Smart IR function is more beneficial when the spot of intrusions or an object of your interest is close to the lens and the IR lights. For example, if an intruder has a chance of getting near the range of 3 meters, Smart IR can effectively reduce the over-exposure. For a surveillance area at a greater distance, e.g., 5 meters or farther away, the Smart IR function may not bring as significant benefits as in close range.

Smart IR disabled; distance: 5M



Smart IR enabled; distance: 5M



Smart IR disabled; distance: 3M



Smart IR enabled; distance: 3M



-orange - Tips:

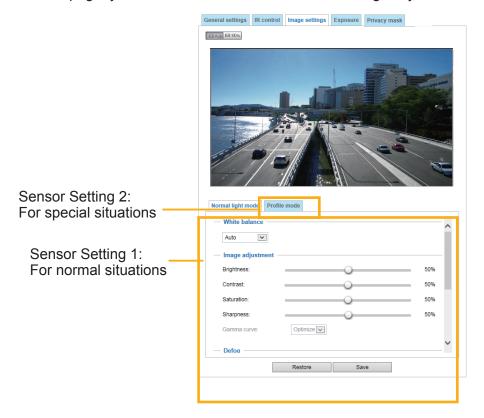
If there is an object in close proximity, the IR lights reflected back from it can mislead the Smart IR's calculation of light level. To solve this problem, you can place an "Exposure Exclude" window on an unavoidable object in the Exposure setting window. See page 70 for how to do it.

You can also configure the "Exposure Exclude" window in a night mode "Profile" setting so that your day time setting is not affected.



Image settings

On this page, you can tune the White balance and Image adjustment.



White balance: Adjust the value for the best color temperature.

- You may follow the steps below to adjust the white balance to the best color temperature.
- 1. Place a sheet of paper of white or cooler-color temperature color, such as blue, in front of the lens, then allow the Network Camera to automatically adjust the color temperature.
- 2. Click the **On** button to **Fix current value** and confirm the setting while the white balance is being measured.
- You may also manually tune the color temperature by pulling the RGain and BGain slide bars.

Image Adjustment

- Brightness: Adjust the image brightness level, which ranges from 0% to 100%.
- Contrast: Adjust the image contrast level, which ranges from 0% to 100%.
- Saturation: Adjust the image saturation level, which ranges from 0% to 100%.
- Sharpness: Adjust the image sharpness level, which ranges from 0% to 100%.
- Gamma curve: Adjust the image sharpness level, which ranges from 0.45 to 1, from Detailed to Contrast. You may let firmware **Optimize** your display or select the **Manual** mode, and pull the slide bar pointer to change the preferred level of Gamma correction towards higher contrast or towards the higher luminance for detailed expression for both dark and lighted areas of an image.

This option is disabled when the WDR feature is enabled.

<u>Defog</u>: Defog helps improve the visibility quality of captured image in poor weather conditions such as smog, fog, or smoke.

Highlight mask

■ Strong light sources will be masked from the scene, and the image contrast will be strengthened. This function is useful to prevent the spot-light effects in a high dynamic scene.

False color may be observed around the edges of strong light sources.

Noise reduction

- Enable noise reduction: Check to enable noise reduction in order to reduce noises and flickers in image. This applies to the onboard 3D Noise Reduction feature. Use the slide bar to adjust the reduction strength. Note that applying this function to the video channel will consume system computing power.
 - 3D Noise Reduction is mostly applied in low-light conditions. When enabled in a low-light condition with fast moving objects, trails of after-images may occur. You may then select a lower strength level or disable the function.

Enable digital image stabilizer

If you experience problems such as vibration occurs when on a pole mount, try enable the image stabilizer.

Scene mode:

Auto Mode:

- 1. Installed on the train/bus compartments
- 2. Provides a general live view for transportation security

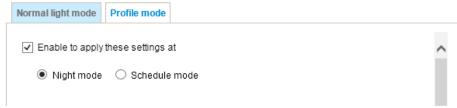
Signal light:

- 3. Installed on the front of train/bus
- 4. Reduces night glare from traffic signal lights to provide improved visibility, provides a live preview for signal light for a driver

Rail track:

- 5. Installed on the sides of a vehicle
- 6. Enables better clarity of other moving objects.

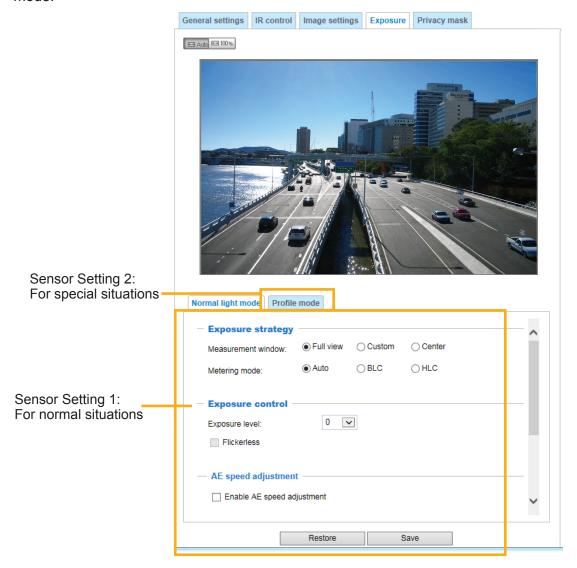
Note that the **Preview** button has been cancelled, all changes made to image settings is directly shown on screen. You can click **Restore** to recall the original settings without incorporating the changes. When completed with the settings on this page, click **Save** to enable the setting. You can also click on **Profile mode** to adjust all settings above in a tabbed window for special lighting conditions.



<u>Enable to apply these settings at</u>: Select the mode this profile to apply to: Day mode, Night mode, or Schedule mode. Please manually enter a range of time if you choose the Schedule mode. Then check **Save** to take effect.

Exposure

On this page, you can set the Exposure measurement window, Exposure level, Exposure mode, Exposure time, Gain control, and Day/Night mode settings. You can configure two sets of Exposure settings: one for normal situations, the other for special situations, such as the day/night/schedule mode.

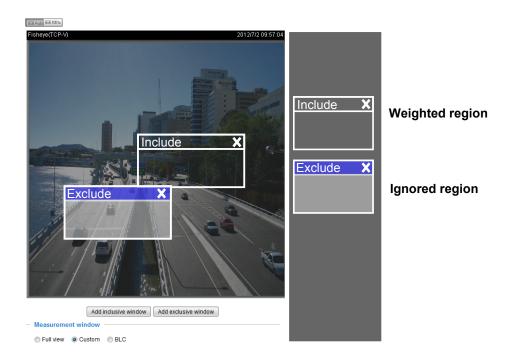


Exposure strategy:

Measurement window: This function allows users to set measurement window(s) for low light compensation. For example, where low-light objects are posed against an extremely bright background. You may want to exclude the bright sunlight shining through a building's corridor.

- Full view: Calculate the full range of view and offer appropriate light compensation.
- Custom: This option allows you to manually add customized windows as inclusive or exclusive regions. A total of 10 windows can be configured. Please refer to the next page for detailed illustration.

The inclusive window refers to the "weighted window"; the exclusive window refers to "ignored window". It adopts the weighted averages method to calculate the value. The inclusive windows have a higher priority. You can overlap these windows, and, if you place an exclusive window within a larger inclusive window, the exclusive part of the overlapped windows will be deducted from the inclusive window. An exposure value will then be calculated out of the remaining of the inclusive window.



■ Center: Use the center portion of the screen to determine the exposure level.

Metering mode:

- Auto: Firmware automatically determines an optimal exposure level.
- **BLC** (Back Light Compensation): This option will automatically add a "weighted region" in the middle of the window and give the necessary light compensation.
- HLC: (Highlight Compensation). Firmware detects strong light sources and compensates on affected spots to enhance the overall image quality. For example, the HLC helps reduce the glares produced by spotlights or headlights.

Exposure control:

■ Exposure level: You can manually set the Exposure level, which ranges from -2.0 to +2.0 (dark to bright). You can click and drag the semi-circular pointers on the Exposure time and Gain control slide bars to specify a range of shutter time and Gain control values within which the camera can automatically tune to an optimal imaging result. You may prefer a shorter shutter time to better capture moving objects, while a faster shutter reduces light and needs to be compensated by electrical brightness gains.

■ Exposure mode: (available when WDR Pro is disabled)

You can click and drag the semi-circular pointers on the **Exposure time** and **Gain control** slide bars to specify a range of shutter time and Gain control values within which the camera can automatically tune to an optimal imaging result. You can also configure the iris size to control the amount of light. For example, you may prefer a shorter shutter time to better capture moving objects, while a faster shutter reduces light and needs to be compensated by electrical brightness gains.

■ Flickerless: Under some circumstances when there is a difference between the video capture frequency and local AC power frequency (NTSC or PAL), the mismatch causes color shifts or flickering images. If the above mismatch occurs, select the Flickerless checkbox, and the range of Exposure time (the shutter time) will be limited to a range in order to match the AC power frequency. When selected, the exposure time will be forced to stay longer than 1/120 second. For cameras that come with fixed iris lens, setting the exposure time to longer than 1/120 second may introduce too much lights to the lens. Users can use this option to observe whether the result of long exposure time is satisfactory.

Auto: If you set Exposure mode as **Auto**, the Exposure time and Gain control will not be configurable since the sensor library will automatically adjust the value according to the ambient light. Then you can configure iris mode as "indoor" or "outdoor" to reach the best image quality.

■ AE Speed Adjustment:

This function applies when you need to monitor fast changing lighting conditions. For example, the camera may need to monitor a highway lane or entrance of a parking area at night where cars passing by with their lights on can bring fast changes in light levels. The same applies if the camera is installed on a vehicle, and when it needs to adapt to fast changes of light when entering and leaving a tunnel.

■ WDR Pro:

This refers to the Wide Dynamic Range function that enables the camera to capture details in a high contrast environment. Use the checkbox to enable the function, and use the slide bar to select the strength of the WDR Pro functionality, depending on the lighting condition at the installation site. You can select a higher effect when the contrast is high (between the shaded area and the light behind the objects).

<u>Enable WDR enhanced</u>: This function allows users to identify more image details with an extreme contrast from an object of interest with one shadowed side against a bright background, e.g., an entrance. You may select the **Enable WDR enhanced** checkbox, and then adjust the strength (low, medium, high) to reach the best image quality.

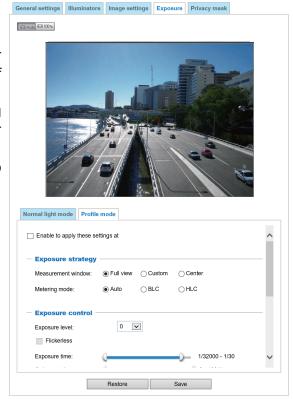
You can click **Restore** to recall the original settings without incorporating the changes. When completed with the settings on this page, click **Save** to enable the settings.

If you want to configure another sensor setting for day/night/schedule mode, please click **Profile** to open the Profile of exposure settings page as shown below.

<u>Activated period</u>: Select the mode this profile to apply to: Day mode, Night mode, or Schedule mode. Please manually enter a range of time if you choose Schedule mode. Then check **Save** to take effect.

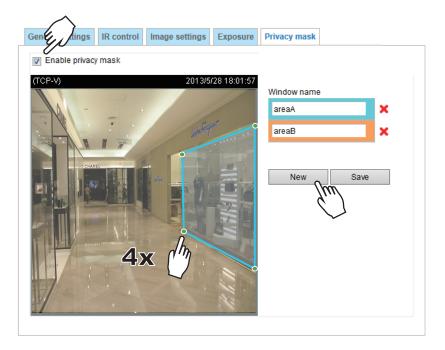
Please follow the steps below to set up a profile:

- 1. Select the **Profile mode** tab.
- 2. Select the applicable mode: Night mode or Schedule mode. Please manually enter a range of time if you choose the Schedule mode.
- Configure Exposure control settings in the following columns. Please refer to previous dicussions for detailed information.
- 4. Click **Save** to enable the setting and click **Close** to exit the page.



Privacy mask

Click **Privacy Mask** to open the settings page. On this page, you can block out sensitive zones to address privacy concerns.



- To configure privacy mask windows,
- 1. Click **New** to add a new window.
- 2. You can use 4 mouse clicks to create a new masking window, which is recommended to be at least twice the size of the object (height and width) you want to cover.
- 3. Enter a Window Name and click **Save** to enable the setting.
- 4. Click on the **Enable privacy mask** checkbox to enable this function.



- ▶ Up to 5 privacy mask windows can be configured on the same screen.
- ▶ If you want to delete the privacy mask window, please click the 'x' mark on the side of window name.

Media > Video

Mode



The applicable video modes include:

- 5MP (max. 30fps): This is the full resolution at 5 megapixels in a 4:3 screen aspect ratio.
- 4MP (16:9) (max. 30fps): At the 16:9 aspect ratio, the usable resolution is slightly reduced to 4MP.
- 1080P Full HD (16:9) (max. 60fps): If the need should arise for monitoring fast vehicles at 60fps, select this mode with a compromised resolution.

NOTE: The 2MP MD9560 has different resolution options.

Media > Video

Stream settings



This Network Camera supports multiple streams with frame sizes ranging from 480×352 to 2560×1920 pixels

The definition of multiple streams:

- Stream 1: Users can define the "Region of Interest" (viewing region) and the "Output Frame Size" (size of the live view window).
- Stream 2: The default frame size for Stream 2 is set to the 640 x 480.
- Stream 3: The default frame size for Stream 3 is set to the 2560 x 1920.

Click **Viewing Window** to open the viewing region settings page. On this page, you can configure the **Region of Interest** and the **Output Frame Size** for a video stream. For example, you can crop only a portion of the image that is of your interest, and thus save the bandwidth needed to transmit the video stream. As the picture shown below, the area of your interest in a parking lot should be the vehicles. The blue sky is of little value for the surveillance purpose.





Please follow the steps below to set up those settings for a stream:

- 1. Select a stream for which you want to set up the viewing region.
- 2. Select a **Region of Interest** from the drop-down list. The floating frame, the same as the one in the Gloabl View window on the home page, will resize accordingly. If you want to set up a customized viewing region, you can also resize and drag the floating frame to a desired position with your mouse.
- 3. Choose a proper **Output Frame Size** from the drop-down list according to the size of your monitoring device.

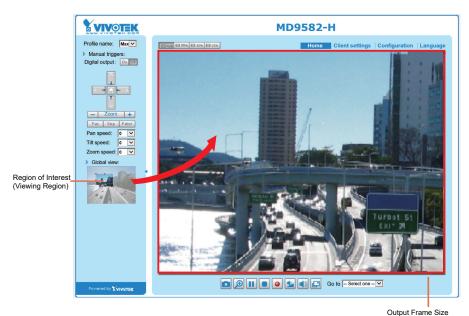


NOTE:

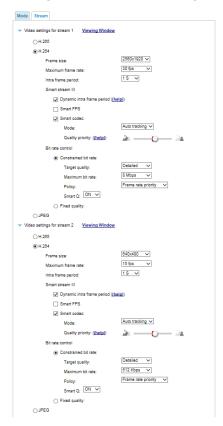
- ▶ All the items in the "Region of Interest" should not be larger than the "Output Frame Size" (current maximum resolution).
- The parameters of the multiple streams:

	Region of Interest	Output frame size			
Stream 1	2560 x 1920 ~ 480 x 352 (Selectable)	2560 x 1920 ~ 480 x 352 (Selectable)			
Stream 2	2560 x 1920 ~ 480 x 352 (Selectable)	2560 x 1920 ~ 480 x 352 (Selectable)			
Stream 3	Fixed	Fixed			

When completed with the settings in the Viewing Window, click **Save** to enable the settings and click **Close** to exit the window. The selected **Output Frame Size** will immediately be applied to the **Frame size** of each video stream. Then you can go back to the home page to test the e-PTZ function. For more information about the e-PTZ function, please refer to page 122.



Click the stream item to display the detailed information. The maximum frame size will follow your settings in the above Viewing Window sections.



This Network Camera provides real-time H.265, H.264 and MJPEG compression standards (Triple Codec) for real-time viewing. If the H.265 or H.264 mode is selected, the video is streamed via RTSP protocol. There are several parameters through which you can adjust the video performance:



Frame size

You can set up different video resolutions for different viewing devices. For example, you can configure a smaller frame size and lower bit rate for remote viewing on mobile phones and a larger video size and a higher bit rate for live viewing on web browsers, or recording the stream to an NVR. Note that a larger frame size takes up more bandwidth.

Maximum frame rate

This limits the maximum refresh frame rate per second. Set the frame rate higher for smoother video quality and for recognizing moving objects in the field of view.

If the power line frequency is set to 50Hz , the frame rates are selectable at 1fps, 2fps, 3fps, 5fps, 8fps, 10fps, 12fps, 15fps, and up to 25fps. If the power line frequency is set to 60Hz, the frame rates are selectable at 1fps, 2fps, 3fps, 5fps, 8fps, 10fps, 12fps, 15fps, and up to 30fps. You can also select **Customize** and manually enter a value. The IB9365 supports a frame rate of up to 60fps.

The frame rate will decrease if you select a higher resolution.

■ Intra frame period

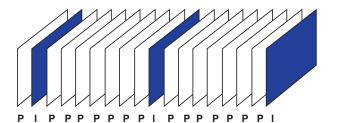
Determine how often for firmware to plant an I frame. The shorter the duration, the more likely you will get better video quality, but at the cost of higher network bandwidth consumption. Select the intra frame period from the following durations: 1/4 second, 1/2 second, 1 second, 2 seconds, 3 seconds, and 4 seconds.

■ Smart stream III

■ Dynamic Intra frame period

High quality motion codecs, such as H.265, utilize the redundancies between video frames to deliver video streams at a balance of quality and bit rate.

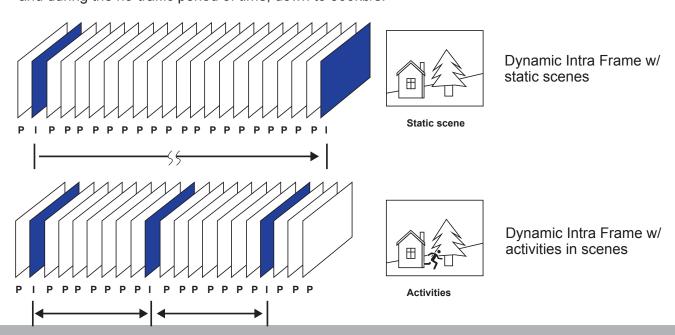
The encoding parameters are summarized and illustrated below. The **I-frames** are completely self-referential and they are largest in size. The **P-frames** are predicted frames. The encoder refers to the previous I- or P-frames for redundant image information.



H.264/265 Frame Types

By dynamically prolonging the intervals for I-frames insertion to up to 10 seconds, the bit rates required for streaming a video can be tremendously reduced. When streaming a video of a static scene, the Dynamic Intra frame feature can save up to 53% of bandwidth. The amount of bandwidth thus saved is also determined by the activities in the field of view. If activities occur in the scene, firmware automatically shortens the I-frame insertion intervals in order to maintain image quality. In the low light or night conditions, the sizes of P-frames tend to be enlarged due to the noises, and hence the bandwidth saving effect is also reduced.

Streaming a typical 2MP scene normally requires 3~4Mb/s of bandwidth. With the Dynamic Intra frame function, the bandwidth for streaming a medium-traffic scene can be reduced to 2~3Mb/s, and during the no-traffic period of time, down to 500kb/s.

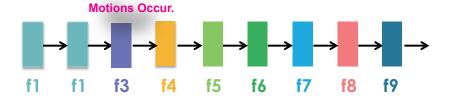


With the H.265 codec in an optimal scenario and when Dynamic Intra frame is combined with the Smart Stream function, an 80% of bandwidth saving can be achieved compared with using H.264 without enabling these bandwidth-saving features.

■ Smart FPS

In a static scene, the algorithm puts old frames in queue when no motions occur in scene. When motions occur, the encoding returns to normal to deliver real-time streaming.





By queuing the old frames from a static scene, both the computing efforts and the size of P frames are reduced. It is beneficial for keeping up with the frame rate requirements.

A default frame difference threshold, 1%, is embedded in firmware for returning from Smart FPS to normal encoding when motions occur.



NOTE:

Comparing with Smart Stream II, Smart Stream III has two more configurable options: Smart Q, and Smart FPS.

• <u>Smart codec:</u> Smart codec effectively reduces the quality of the whole or the noninterested areas on a screen and therefore reduces the bandwidth consumed.

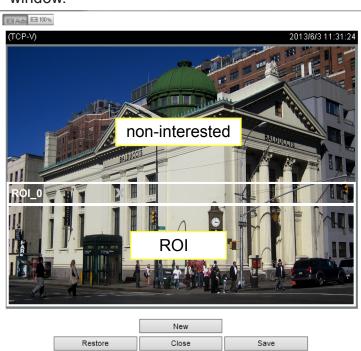
You can manually specify the video quality for the foreground and the background areas.



Select an operation mode if Smart codec is preferred.

- Auto tracking: The Auto mode configures the whole screen into the non-interested area. The video quality of part of the screen returns to normal when one or more objects move in that area. The remainder of the screen where there are no moving objects (no pixel changes) will still be transmitted in low-quality format.
- Manual: The Manual mode allows you to configure 3 ROI windows (Region of Interest, with Foreground quality) on the screen. Areas not included in any ROI windows will be considered as the non-interested areas. The details in the ROI areas will be transmitted in a higher-quality video format.

As illustrated below, the upper screen may contain little details of your interest, while the sidewalk on the lower screen is included in an ROI window.



As the result, the lower screen is constantly displayed in high details, while the upper half is transmitted using a lower-quality format. Although the upper half is transmitted using a lower quality format, you still have an awareness of what is happening on the whole screen.



- **Hybrid**: The major difference between the "Manual" mode and the "Hybrid" mode is that:

In the "**Hybrid**" mode, any objects entering the non-interested area will restore the video quality of the moving objects and the area around them. The video quality of the associated non-interested area is immediately restored to normal to cover the moving objects.

In the "Manual" mode, the non-interested area is always transmitted using a low-quality format regardless of the activities occurring inside.





- **Quality priority**: Use the slide bar to tune the quality contrast between the ROI and non-interested areas.

The farther the slide bar button is to the right, the higher the image quality of the ROI areas. On the contrary, the farther the slide bar button to the left, the higher the image quality of the non-interested area.

In this way, you may set up an ROI window as a privacy mask by covering a protected area using an ROI window, while the rest of the screen becomes the non-interested area. You may then configure the non-interested area to have a high image quality, or vice versa.

You should also select the Maximum bit rate from the pull-down menu as the threshold to contain the bandwidth consumption for both the high- and low-quality video sections in a smart stream.

■ Bit rate control

Constrained bit rate:

A complex scene generally produces a larger file size, meaning that higher bandwidth will be needed for data transmission. The bandwidth utilization is configurable to match a selected level, resulting in mutable video quality performance. The bit rates are selectable at the following rates: 20Kbps, 30Kbps, 40Kbps, 50Kbps, 64Kbps, 128Kbps, 256Kbps, 512Kbps, 768Kbps, 1Mbps, 2Mbps, 3Mbps, 4Mbps, 6Mbps, 8Mbps, 10Mbps, 12Mbps, 14Mbps, ~ to 40Mbps. You can also select **Customize** and manually enter a value up to 40Mbps.

- Target quality: Select a desired quality ranging from Medium to Excellent.
 - Maximum bit rate: select a bit rate from the pull-down menu. The bit rate ranges from 20kbps to a maximum of 40Mbps. The bit rate then becomes the Average or Upper bound bit rate number. The Network Camera will strive to deliver video streams around or within the bit rate limitation you impose.
 - Policy: If Frame Rate Priority is selected, the Network Camera will try to maintain the frame rate per second performance, while the image quality will be compromised. If Image quality priority is selected, the Network Camera may drop some video frames in order to maintain image quality.

Smart Q: Select ON or OFF to enable or disable the feature. Smart Q is scene-aware. The Smart Q reduces frame size and bit rate consumption through the following:

- Dynamically adjusting the image quality for scenes in different luminosities in low light frames. Less noises means less of the bandwidth consumed.
- Endorsing different qualities for the I frames and P frames, and hence reduces the frame size.
- Dividing a single frame into different sections, and giving these sections different qualities. For a highly complex area, such as an area with dense vegetation, screen windows, or repeated patterns (complex textiles patterns like wall paper), having a lower quality value actually poses little effects on human eyes.

Unnecessary quality is unrecognized by human eyes and wastes the bit rate.

The Smart Q streaming can save up to 50% to 80% of bandwidth in different illumination conditions while keeping the same imaging quality. These numbers come from the comparison between Smart Stream II and Smart Stream III streamings.

Fixed quality:

On the other hand, if **Fixed quality** is selected, all frames are transmitted with the same quality; bandwidth utilization is therefore unpredictable. The video quality can be adjusted to the following settings: Medium, Standard, Good, Detailed, and Excellent. You can also select **Customize** and manually enter a value.

Maximum bit rate: With the guaranteed image quality, you might still want to place a bit rate limitation to control the size of video streams for bandwidth and storage concerns. The configurable bit rate starts from 1Mbps to 40Mbps.

The Maximum bit rate setting in the Fixed quality configuration can ensure a reasonable and limited use of network bandwidth. For example, in low light conditions where a Fixed quality setting is applied, video packet sizes can tremendously increase when noises are produced with electrical gains.

You may also manually enter a bit rate number by selecting the **Customized** option.

If the JPEG mode is selected, the Network Camera sends consecutive JPEG images to the client, producing a moving effect similar to a filmstrip. Every single JPEG image transmitted guarantees the same image quality, which in turn comes at the expense of variable bandwidth usage. Because the media contents are a combination of JPEG images, no audio data is transmitted to the client. There are three parameters provided in MJPEG mode to control the video performance:

Frame size:	2560x1920	~
Maximum frame rate:	10 fps	~
Bit rate control		
Constrained bit rate:		
Fixed quality:		
Quality:	Good	~
Maximum bit rate:	40 Mbps	~

Frame size

You can set up different video resolution for different viewing devices. For example, set a smaller frame size and lower bit rate for remote viewing on mobile phones and a larger video size and a higher bit rate for live viewing on web browsers. Note that a larger frame size takes up more bandwidth.

Maximum frame rate

This limits the maximum refresh frame rate per second. Set the frame rate higher for smoother video quality.

If the power line frequency is set to 50Hz (at the 5MP resolution), the frame rates are selectable at 1fps, 2fps, 3fps, 5fps, 8fps, 10fps, and 15fps. If the power line frequency is set to 60Hz, the frame rates are selectable at 1fps, 2fps, 3fps, 5fps, 8fps, 10fps, and 15fps. You can also select **Customize** and manually enter a value. The frame rate will decrease if you select a higher resolution.

■ Video quality

Refer to the previous page setting an average or upper bound threshold for controlling the bandwidth consumed for transmitting motion jpegs. The configuration method is identical to that for H.264.

For Constant Bit Rate and other settings, refer to the previous page for details.

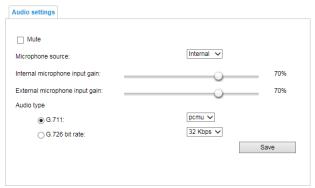


NOTE:

- Video quality and fixed quality refers to the compression rate, so a lower value will produce higher quality.
- ► Converting high-quality video may significantly increase the CPU loading, and you may encounter streaming disconnection or video loss while capturing a complicated scene. In the event of occurance, we suggest you customize a lower video resolution or reduce the frame rate to obtain smooth video.

Media > Audio

Audio Settings



<u>Mute</u>: Select this option to disable audio transmission from the Network Camera to all clients. Note that if muted, no audio data will be transmitted even if audio transmission is enabled on the Client Settings page. In that case, the following message is displayed:



External microphone input: Select the gain of the external audio input according to ambient conditions. Adjust the gain from 0% to 100%.

Audio type: Select audio codec and the sampling bit rate .

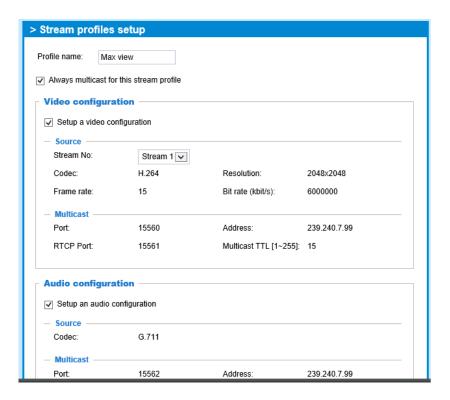
- G.711 also provides good sound quality and requires about 64Kbps. Select pcmu (µ-Law) or pcma (A-Law) mode.
- G.726 is a speech codec standard covering voice transmission at rates of 16, 24, 32, and 40kbit/s.

When completed with the settings on this page, click **Save** to enable the settings.

Media profiles

You can configure a different video stream for each of the 3 default profiles, Max. view, Recording, Live view, and App.

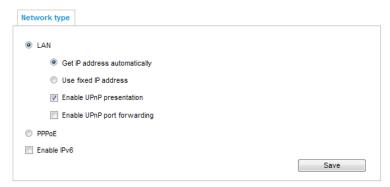
The related video stream information will display, including stream number, resolution, codec used, frame rate, etc. The Multicast port number, and address for video, audio, and Metadata configuration will also be listed.



Network > General settings

This section explains how to configure a wired network connection for the Network Camera.

Network Type

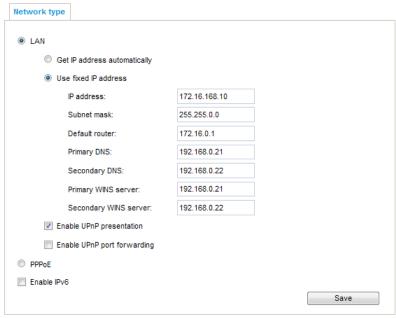


IAN

Select this option when the Network Camera is deployed on a local area network (LAN) and is intended to be accessed by local computers. The default setting for the Network Type is LAN. Please rememer to click on the **Save** button when you complete the Network setting.

Get IP address automatically: Select this option to obtain an available dynamic IP address assigned by the DHCP server each time the camera is connected to the LAN.

<u>Use fixed IP address</u>: Select this option to manually assign a static IP address to the Network Camera.



- 1. You can make use of VIVOTEK Installation Wizard 2 on the software CD to easily set up the Network Camera on LAN. Please refer to Software Installation on page 22 for details.
- 2. Enter the Static IP, Subnet mask, Default router, and Primary DNS provided by your ISP or network administrator.

<u>Subnet mask</u>: This is used to determine if the destination is in the same subnet. The default value is "255.255.255.0".

<u>Default router</u>: This is the gateway used to forward frames to destinations in a different subnet. Invalid router setting will disable the transmission to destinations across different subnets.

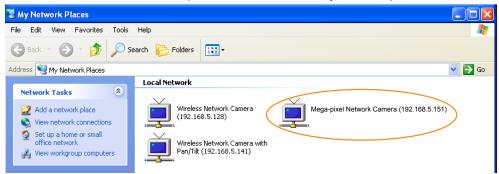
<u>Primary DNS</u>: The primary domain name server that translates hostnames into IP addresses.

Secondary DNS: Secondary domain name server that backups the Primary DNS.

<u>Primary WINS server</u>: The primary WINS server that maintains the database of computer names and IP addresses.

<u>Secondary WINS server</u>: The secondary WINS server that maintains the database of computer names and IP addresses.

Enable UPnP presentation: Select this option to enable UPnPTM presentation for your Network Camera so that whenever a Network Camera is presented to the LAN, the shortcuts to connected Network Cameras will be listed in My Network Places. You can click the shortcut to link to the web browser. Currently, UPnPTM is supported by Windows XP or later. Note that to utilize this feature, please make sure the UPnPTM component is installed on your computer.



Enable UPnP port forwarding: To access the Network Camera from the Internet, select this option to allow the Network Camera to open ports automatically on the router so that video streams can be sent out from a LAN. To utilize of this feature, make sure that your router supports UPnPTM and it is activated.

PPPoE (Point-to-point over Ethernet)

Select this option to configure your Network Camera to make it accessible from anywhere as long as there is an Internet connection. Note that to utilize this feature, it requires an account provided by your ISP.

Follow the steps below to acquire your Network Camera's public IP address.

- 1. Set up the Network Camera on the LAN.
- 2. Go to Configuration > Event > Event settings > Add server (please refer to Add server on page 130) to add a new email or FTP server.
- 3. Go to Configuration > Event > Event settings > Add media (please refer to Add media on page 135).
 - Select System log so that you will receive the system log in TXT file format which contains the Network Camera's public IP address in your email or on the FTP server.
- 4. Go to Configuration > Network > General settings > Network type. Select PPPoE and enter the user name and password provided by your ISP. Click **Save** to enable the setting.



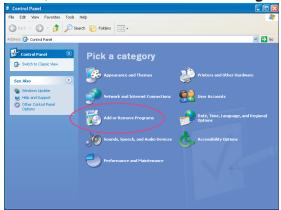
- 5. The Network Camera will reboot.
- 6. Disconnect the power to the Network Camera; remove it from the LAN environment.



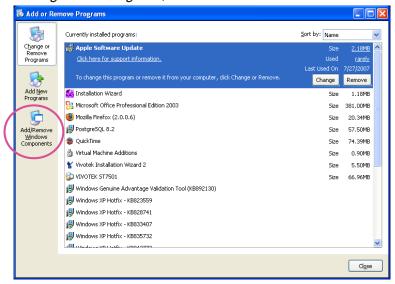
NOTE:

- ▶ If the default ports are already used by other devices connected to the same router, the Network Camera will select other ports for the Network Camera.
- ► If UPnP[™] is not supported by your router, you will see the following message: Error: Router does not support UPnP port forwarding.
- ► Steps to enable the UPnP[™] user interface on your computer:

 Note that you must log on to the computer as a system administrator to install the UPnP[™] components.
 - 1. Go to Start, click Control Panel, then click Add or Remove Programs.

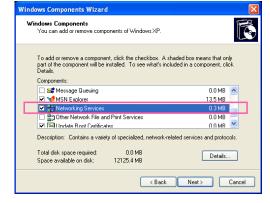


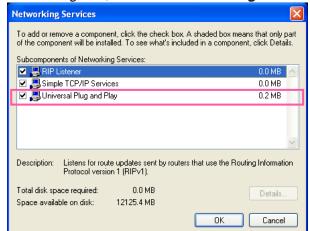
2. In the Add or Remove Programs dialog box, click Add/Remove Windows Components.



3. In the Windows Components Wizard dialog box, select **Networking Services** and click **Details**.

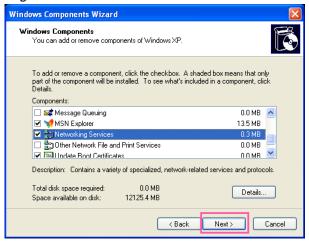






4. In the Networking Services dialog box, select Universal Plug and Play and click OK.

5. Click **Next** in the following window.



- 6. Click **Finish**. $UPnP^{TM}$ is enabled.
- ► How does UPnPTM work?

 UPnPTM networking technology provides automatic IP configuration and dynamic discovery of devices added to a network. Services and capabilities offered by networked devices, such as printing and file sharing, are available among each other without the need for cumbersome network configuration. In the case of Network Cameras, you will see Network Camera shortcuts under My Network Places.
- ▶ Enabling UPnP port forwarding allows the Network Camera to open a secondary HTTP port on the router-not HTTP port-meaning that you have to add the secondary HTTP port number to the Network Camera's public address in order to access the Network Camera from the Internet. For example, when the HTTP port is set to 80 and the secondary HTTP port is set to 8080, refer to the list below for the Network Camera's IP address.

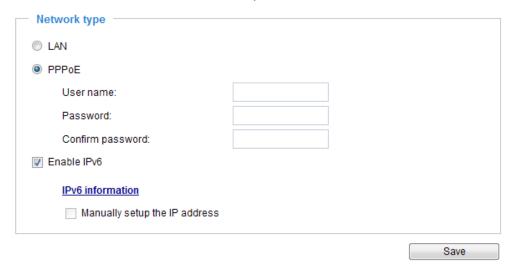
From the Internet	In LAN
http://203.67.124.123:8080	http://192.168.4.160 or http://192.168.4.160:8080

▶ If the PPPoE settings are incorrectly configured or the Internet access is not working, restore the Network Camera to factory default; please refer to Restore on page 61 for details. After the Network Camera is reset to factory default, it will be accessible on the LAN.

Enable IPv6

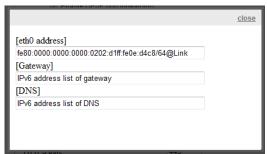
Select this option and click **Save** to enable IPv6 settings.

Please note that this only works if your network environment and hardware equipment support IPv6. The browser should be Microsoft[®] Internet Explorer 6.5, Mozilla Firefox 3.0 or above.



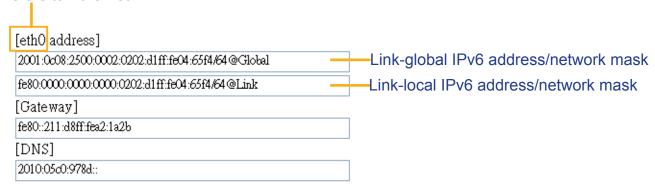
When IPv6 is enabled, by default, the network camera will listen to router advertisements and be assigned with a link-local IPv6 address accordingly.

IPv6 Information: Click this button to obtain the IPv6 information as shown below.



If your IPv6 settings are successful, the IPv6 address list will be listed in the pop-up window. The IPv6 address will be displayed as follows:

Refers to Ethernet



Please follow the steps below to link to an IPv6 address:

- 1. Open your web browser.
- 2. Enter the link-global or link-local IPv6 address in the address bar of your web browser.
- 3. The format should be:



4. Press **Enter** on the keyboard or click **Refresh** button to refresh the webpage. For example:

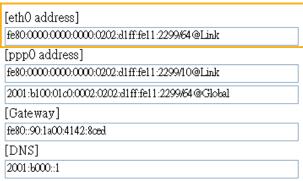


NOTE:

▶ If you have a Secondary HTTP port (the default value is 8080), you can also link to the webpage using the following address format: (Please refer to **HTTP** streaming on page 95 for detailed information.)



▶ If you choose PPPoE as the Network Type, the [PPP0 address] will be displayed in the IPv6 information column as shown below.



Manually setup the IP address: Select this option to manually set up IPv6 settings if your network environment does not have DHCPv6 server and router advertisements-enabled routers. If you check this item, the following blanks will be displayed for you to enter the corresponding information:

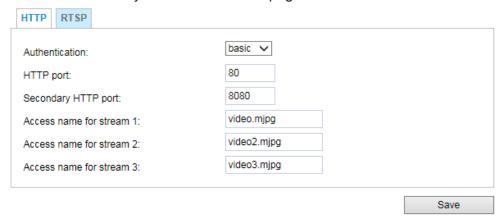
Enable IPv6

IPV6 Information			
Manually setup the IP address			
Optional IP address / Prefix length	ı	1	64
Optional default router			
Ontional primary DNS			

Network > Streaming protocols

HTTP streaming

To utilize HTTP authentication, make sure that your have set a password for the Network Camera first; please refer to Security > User account on page 107 for details.

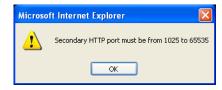


<u>Authentication</u>: Depending on your network security requirements, the Network Camera provides two types of security settings for an HTTP transaction: basic and digest.

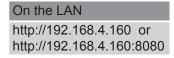
If **basic** authentication is selected, the password is sent in plain text format and there can be potential risks of being intercepted. If **digest** authentication is selected, user credentials are encrypted using MD5 algorithm and thus provide better protection against unauthorized accesses.

HTTP port / Secondary HTTP port: By default, the HTTP port is set to 80 and the secondary HTTP port is set to 8080. They can also be assigned to another port number between 1025 and 65535. If the ports are incorrectly assigned, the following warning messages will be displayed:





To access the Network Camera on the LAN, both the HTTP port and secondary HTTP port can be used to access the Network Camera. For example, when the HTTP port is set to 80 and the secondary HTTP port is set to 8080, refer to the list below for the Network Camera's IP address.

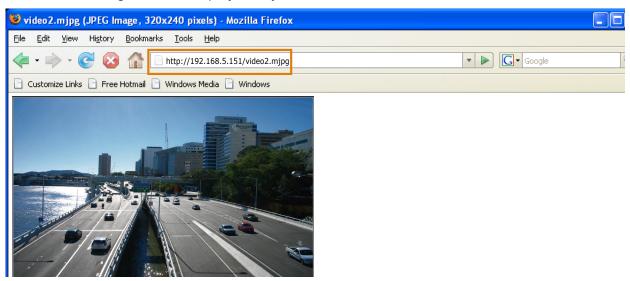


Access name for stream $1 \sim 3$: This Network camera supports multiple streams simultaneously. The access name is used to identify different video streams. Users can click **Media > Video > Stream settings** to set up the video quality of linked streams. For more information about how to set up the video quality, please refer to Stream settings on page 76.

When using **Mozilla Firefox** to access the Network Camera and the video mode is set to JPEG, users will receive video comprised of continuous JPEG images. This technology, known as "server push", allows the Network Camera to feed live pictures to Mozilla Firefox.

URL command -- http://<ip address>:<http port>/<access name for stream 1, 2, 3> For example, when the Access name for stream 2 is set to video2.mjpg:

- 1. Launch Mozilla Firefox or Netscape.
- 2. Type the above URL command in the address bar. Press Enter.
- 3. The JPEG images will be displayed in your web browser.



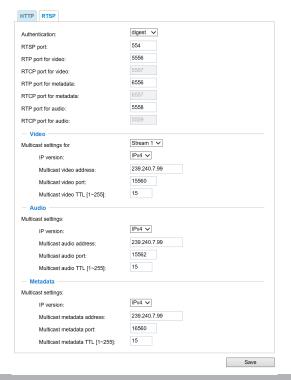


NOTE:

▶ Microsoft® Internet Explorer does not support server push technology; therefore, you will not be able to access a video stream using http://<ip address>:<http port>/<access name for stream 1, 2, 3>.

RTSP Streaming

To utilize RTSP streaming authentication, make sure that you have set a password for controlling the access to video stream first. Please refer to Security > User account on page 107 for details.



<u>Authentication</u>: Depending on your network security requirements, the Network Camera provides three types of security settings for streaming via RTSP protocol: disable, basic, and digest. If **basic** authentication is selected, the password is sent in plain text format, but there can be potential risks of it being intercepted. If **digest** authentication is selected, user credentials are encrypted using MD5 algorithm, thus providing better protection against unauthorized access. The availability of the RTSP streaming for the three authentication modes is listed below:

	VLC
Disable	0
Basic	0
Digest	X

Access name for stream $1 \sim 3$: This Network camera supports multiple streams simultaneously. The access name is used to differentiate the streaming source.

If you want to use an RTSP player to access the Network Camera, you have to set the video mode to H.264 or H.265 and use the following RTSP URL command to request transmission of the streaming data.

rtsp://<ip address>:<rtsp port>/<access name for stream 1 to 3>

For example, when the access name for stream 1 is set to live1s1.sdp:

- 1. Launch an RTSP player.
- 2. Choose File > Open URL. A URL dialog box will pop up.
- 3. Type the above URL command in the text box.
- 4. The live video will be displayed in your player as shown below.





RTSP port /RTP port for video, audio/ RTCP port for video, audio

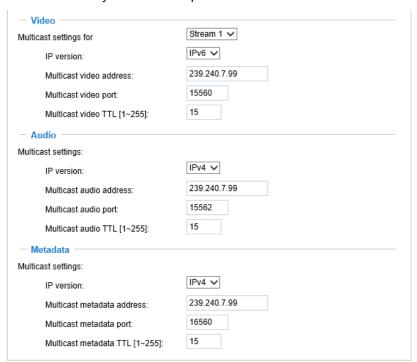
- RTSP (Real-Time Streaming Protocol) controls the delivery of streaming media. By default, the port number is set to 554.
- The RTP (Real-time Transport Protocol) is used to deliver video and audio data to the clients. By default, the RTP port for video is set to 5556.
- The RTCP (Real-time Transport Control Protocol) allows the Network Camera to transmit the data by monitoring the Internet traffic volume. By default, the RTCP port for video is set to 5557.

The ports can be changed to values between 1025 and 65535. The RTP port must be an even number and the RTCP port is the RTP port number plus one, and thus is always an odd number. When the RTP port changes, the RTCP port will change accordingly.

If the RTP ports are incorrectly assigned, the following warning message will be displayed:



<u>Multicast settings for streams</u>: Click the items to display the detailed configuration information. Select the Always multicast option to enable multicast for video streams.



Unicast video transmission delivers a stream through point-to-point transmission; multicast, on the other hand, sends a stream to the multicast group address and allows multiple clients to acquire the stream at the same time by requesting a copy from the multicast group address. Therefore, enabling multicast can effectively save Internet bandwith.

The ports can be changed to values between 1025 and 65535. The multicast RTP port must be an even number and the multicast RTCP port number is the multicast RTP port number plus one, and thus is always odd. When the multicast RTP port changes, the multicast RTCP port will change accordingly.

If the multicast RTP video ports are incorrectly assigned, the following warning message will be displayed:

Invalid port number. Multicast stream 1 video port must be an even number

Multicast TTL [1~255]: The multicast TTL (Time To Live) is the value that tells the router the range a packet can be forwarded.

OK

Initial TTL	Scope
0	Restricted to the same host
1	Restricted to the same subnetwork
32	Restricted to the same site
64	Restricted to the same region
128	Restricted to the same continent
255	Unrestricted in scope



IMPORTANT:

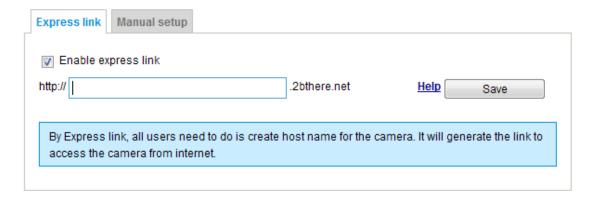
The Multicast metadata port is utilized by VIVOTEK VADP modules to transfer video analytics results, PTZ stream, textual data, and event messages between the camera and the client side running and observing the video analysis. If your client side computer is located outside the local network, you may need to open the associated TCP port on routers and firewall.

Network > DDNS

This section explains how to configure the dynamic domain name service for the Network Camera. DDNS is a service that allows your Network Camera, especially when assigned with a dynamic IP address, to have a fixed host and domain name.

Express link

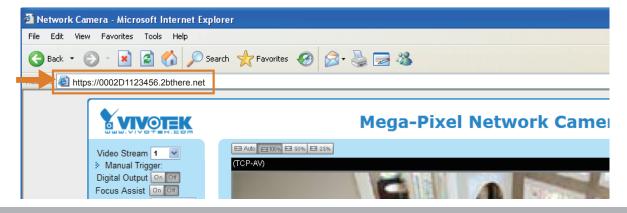
Express Link is a free service provided by VIVOTEK server, which allows users to register a domain name for a network device. One URL can only be mapped to one MAC address. This service will examine if the host name is valid and automatically open a port on your router. If using DDNS, the user has to manually configure UPnP port forwarding. Express Link is more convenient and easier to set up.



Please follow the steps below to enable Express Link:

- 1. Make sure that your router supports UPnP port forwarding and it is activated.
- 2. Check Enable express link.
- 3. Enter a host name for the network device and click **Save**. If the host name has been used by another device, a warning message will show up. If the host name is valid, it will display a message as shown below.





Manual setup

DDNS: Dynamic domain name service



Enable DDNS: Select this option to enable the DDNS setting.

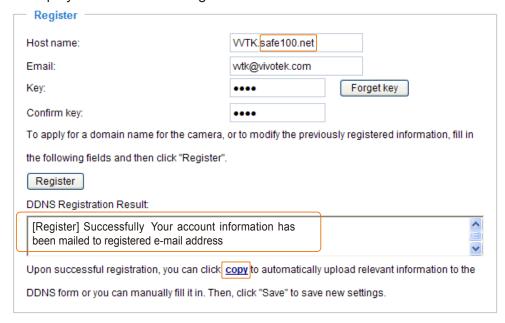
Provider: Select a DDNS provider from the provider drop-down list.

VIVOTEK offers **Safe100.net**, a free dynamic domain name service, to VIVOTEK customers. It is recommended that you register **Safe100.net** to access VIVOTEK's Network Cameras from the Internet. Additionally, we offer other DDNS providers, such as Dyndns.org(Dynamic), Dyndns.org(Custom), TZO.com, DHS.org, CustomSafe100, dyn-interfree.it.

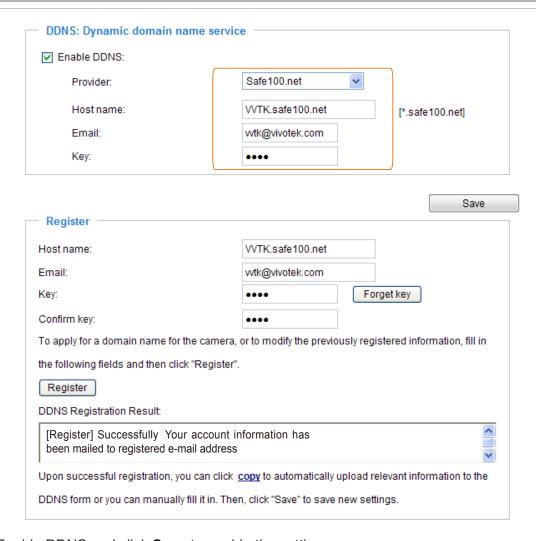
Note that before utilizing this function, please apply for a dynamic domain account first.

■ Safe100.net

- In the DDNS column, select Safe100.net from the drop-down list. Click I accept after reviewing the terms of the Service Agreement.
- 2. In the Register column, fill in the Host name (xxxx.safe100.net), Email, Key, and Confirm Key, and click **Register**. After a host name has been successfully created, a success message will be displayed in the DDNS Registration Result column.



3. Click **Copy** and all the registered information will automatically be uploaded to the corresponding fields in the DDNS column at the top of the page as seen in the picture.



4. Select Enable DDNS and click **Save** to enable the setting.

■ CustomSafe100

VIVOTEK offers documents to establish a CustomSafe100 DDNS server for distributors and system integrators. You can use CustomSafe100 to register a dynamic domain name if your distributor or system integrators offer such services.

- 1. In the DDNS column, select CustomSafe100 from the drop-down list.
- 2. In the Register column, fill in the Host name, Email, Key, and Confirm Key; then click **Register**. After a host name has been successfully created, you will see a success message in the DDNS Registration Result column.
- 3. Click **Copy** and all for the registered information will be uploaded to the corresponding fields in the DDNS column.
- 4. Select Enable DDNS and click **Save** to enable the setting.

<u>Forget key</u>: Click this button if you have forgotten the key to Safe100.net or CustomSafe100. Your account information will be sent to your email address.

Refer to the following links to apply for a dynamic domain account when selecting other DDNS providers:

Dyndns.org(Dynamic) / Dyndns.org(Custom): visit http://www.dyndns.com/

Network > QoS (Quality of Service)

Quality of Service refers to a resource reservation control mechanism, which guarantees a certain quality to different services on the network. Quality of service guarantees are important if the network capacity is insufficient, especially for real-time streaming multimedia applications. Quality can be defined as, for instance, a maintained level of bit rate, low latency, no packet dropping, etc.

The following are the main benefits of a QoS-aware network:

- The ability to prioritize traffic and guarantee a certain level of performance to the data flow.
- The ability to control the amount of bandwidth each application may use, and thus provide higher reliability and stability on the network.

Requirements for QoS

To utilize QoS in a network environment, the following requirements must be met:

- All network switches and routers in the network must include support for QoS.
- The network video devices used in the network must be QoS-enabled.

QoS models

CoS (the VLAN 802.1p model)

IEEE802.1p defines a QoS model at OSI Layer 2 (Data Link Layer), which is called CoS, Class of Service. It adds a 3-bit value to the VLAN MAC header, which indicates the frame priority level from 0 (lowest) to 7 (highest). The priority is set up on the network switches, which then use different queuing disciplines to forward the packets.

Below is the setting column for CoS. Enter the **VLAN ID** of your switch $(0\sim4095)$ and choose the priority for each application $(0\sim7)$.



If you assign Video the highest level, the switch will handle video packets first.



NOTE:

- A VLAN Switch (802.1p) is required. Web browsing may fail if the CoS setting is incorrect.
- ▶ The Class of Service technologies do not guarantee a level of service in terms of bandwidth and delivery time; they offer a "best-effort." Users can think of CoS as "coarsely-grained" traffic control and QoS as "finely-grained" traffic control.
- ▶ Although CoS is simple to manage, it lacks scalability and does not offer end-to-end guarantees since it is based on L2 protocol.

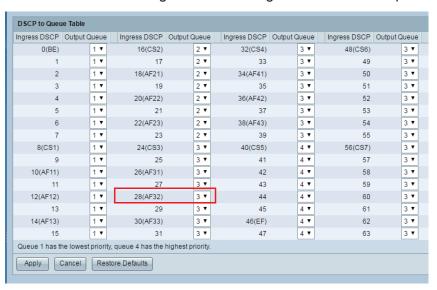
QoS/DSCP (the DiffServ model)

DSCP-ECN defines QoS at Layer 3 (Network Layer). The Differentiated Services (DiffServ) model is based on packet marking and router queuing disciplines. The marking is done by adding a field to the IP header, called the DSCP (Differentiated Services Codepoint). This is a 6-bit field that provides 64 different class IDs. It gives an indication of how a given packet is to be forwarded, known as the Per Hop Behavior (PHB). The PHB describes a particular service level in terms of bandwidth, queueing theory, and dropping (discarding the packet) decisions. Routers at each network node classify packets according to their DSCP value and give them a particular forwarding treatment; for example, how much bandwidth to reserve for it.

Below are the setting options of DSCP (DiffServ Codepoint). Specify the DSCP value for each application (0~63).



Note that different vendors of network devices might have different methodologies and unique implementations. Shown below is a sample corresponding information from a Cisco switch. You should enter a DSCP tag value according to the information provided by the network devices.





QoS Baseline/Technical Marketing Classification and Marking Recommendations					
Application	Layer3 Classification		Layer 2 CoS/MPLS EXP		
	IPP	PHB	DSCP		
IP Routing	6	CS6	48	6	
Voice	5	EF	46	5	
Interactive Video	4	AF41	34	4	QoS B
Streaming-Video	4	CS4	32	4	
Locally-defined Mission- Critical Data	3	-	25	3	
Call-signaling	3	AF31/CS3	26/24	3	
Transactional Data	2	AF21	18	2	
Network Management	2	CS2	16	2	
Bulk Data	1	AF11	10	1	

Network > SNMP (Simple Network Management Protocol)

This section explains how to use the SNMP on the network camera. The Simple Network Management Protocol is an application layer protocol that facilitates the exchange of management information between network devices. It helps network administrators to remotely manage network devices and find, solve network problems with ease.

- The SNMP consists of the following three key components:
- 1. Manager: Network-management station (NMS), a server which executes applications that monitor and control managed devices.
- 2. Agent: A network-management software module on a managed device which transfers the status of managed devices to the NMS.
- 3. Managed device: A network node on a managed network. For example: routers, switches, bridges, hubs, computer hosts, printers, IP telephones, network cameras, web server, and database.

Before configuring SNMP settings on the this page, please enable your NMS first.

SNMP Configuration

Enable SNMPv1, SNMPv2c

Select this option and enter the names of Read/Write community and Read Only community according to your NMS settings.



Enable SNMPv3

This option contains cryptographic security, a higher security level, which allows you to set the Authentication password and the Encryption password.

- Security name: According to your NMS settings, choose Read/Write or Read Only and enter the community name.
- Authentication type: Select MD5 or SHA as the authentication method.
- Authentication password: Enter the password for authentication (at least 8 characters).
- Encryption password: Enter a password for encryption (at least 8 characters).



Network > FTP

The newer firmware disabled the FTP port for security concerns. You can manually enable the FTP server service to enable the FTP function. You can disable the FTP server function when it is not in use.

<u>FTP port</u>: The FTP server allows the user to save recorded video clips. You can utilize VIVOTEK's Shepherd utility to upgrade the firmware via FTP server. By default, the FTP port is set to 21. It can also be assigned to another port number between 1025 and 65535.

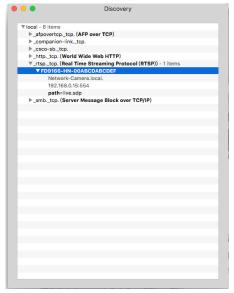


You can FTP the camera's IP address to download videos recorded in the SD card, or use the "http://ip/cgi-bin/admin/lsctrl.cgi?cmd=search" command to examine the recorded files on your SD card.

Bonjour

To access the camera from a Mac computer, go to Safari, click on Bonjour and select the camera from a drop-down list.

You can go to Safari > Preferences to enter your user name and password, and provide the root password the first time you access the camera. The camera main page will open in your browser.



Some later iOSes may come without the Bonjour option. Install the Discovery utility instead.

Find the Discovery (formerly Bonjour Browser) from the Mac App Store.

Discovery is a utility that displays all the Bonjour services on your local network or on Wide-Area Bonjour domains. The utility is previously called Bonjour Browser, it is now distributed on the Mac App Store.

Discovery requires macOS 10.12 or higher. For older versions of Mac OS you can download the old version of Bonjour Browser.

Bonjour Browser (obsolete)

http://www.tildesoft.com/files/BonjourBrowser.dmg - Version 1.5.6

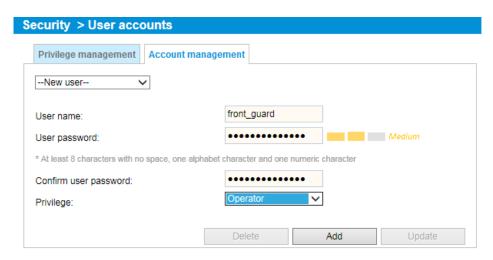
Discovery for iOS

https://itunes.apple.com/us/app/discovery-dns-sd-browser/id305441017?mt=8

Security > User accounts

This section explains how to enable password protection and create multiple accounts.

Account management



The administrator account name is "root", which is permanent and can not be deleted. If you want to add more accounts in the Account management window, please apply the password for the "root" account first.

The administrator can create up to 20 user accounts.

To create a new user,

- 1. Click to unfold the pull-down menu. Select **New user**.
- 2. Enter the new user's name and password. Type the password identically in both text boxes. Some, but not all special ASCII characters are supported: !, \$, %, -, ., @, ^, _, and ~. You can use them in the password combination.

The strength of your password combination is shown on the right, use the combination of alphabetic, numeric, upper case, and lower case characters until the password strength is good enough.

3. Select the privilege level for the new user account. Click **Add** to enable the setting. The privilege levels are listed below:

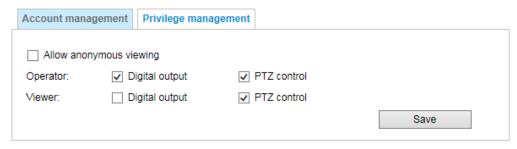
Administrator	Full control		
Operator	Control DO, white-light illuminator, snapshot, and PTZ;		
	unable to enter the camera Configuration page.		
Viewer	Control DO, white-light illuminator, view, listen, PTZ, and talk through the		
	camera interface.		

Access rights are sorted by user privilege (Administrator, Operator, and Viewer). Only administrators can access the Configuration page. Although operators cannot access the Configuration page, they can use the URL Commands to get and set the value of parameters. For more information, please refer to URL Commands of the Network Camera on page 158. Viewers can only access the main page for live viewing.

Here you also can change a user's access rights or delete user accounts.

- 1. Select an existing account to modify.
- 2. Make necessary changes and click **Update** or **Delete** to enable the setting.

Privilege management



<u>Digital Output & PTZ control</u>: You can modify the management privilege as operators or viewers. Select or de-select the checkboxes, and then click **Save** to enable the settings. If you give Viewers the privilege, Operators will also have the ability to control the Network Camera through the main page. (Please refer to Configuration on page 49).

Allow anonymous viewing: If you select this item, any client can access the live stream without entering a User ID and Password.

Security > HTTPS (Hypertext Transfer Protocol over SSL)

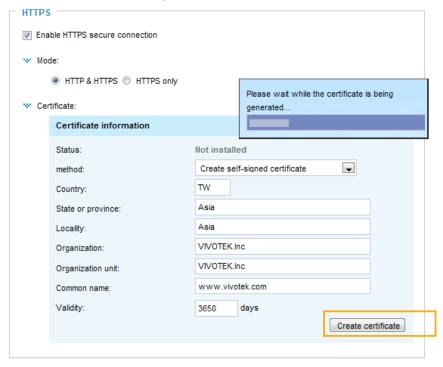
This section explains how to enable authentication and encrypted communication over SSL (Secure Socket Layer). It helps protect streaming data transmission over the Internet on higher security level.

Create and Install Certificate Method

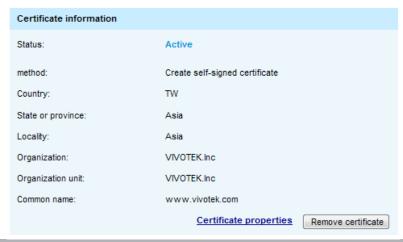
Before using HTTPS for communication with the Network Camera, a **Certificate** must be created first. There are three ways to create and install a certificate:

Create self-signed certificate

- 1. Select this option from a pull-down menu.
- 2. In the first column, select **Enable HTTPS secure connection**, then select a connection option: "HTTP & HTTPS" or "HTTPS only".
- 3. Click Create certificate to generate a certificate.

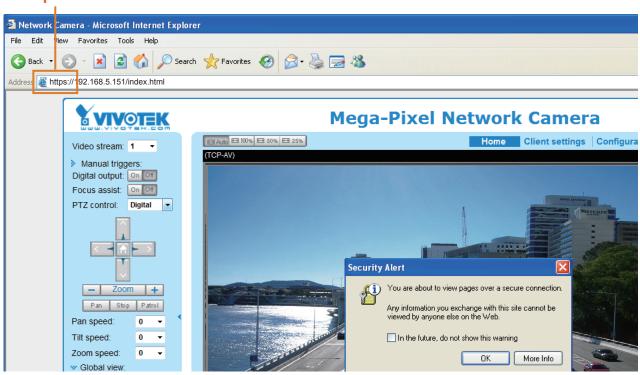


4. The Certificate Information will automatically be displayed as shown below. You can click **Certificate properties** to view detailed information about the certificate.

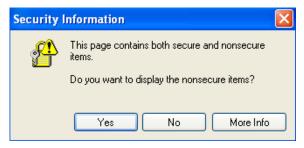


- 5. Click **Save** to preserve your configuration, and your current session with the camera will change to the encrypted connection.
- 6. If your web session does not automatically change to an encrypted HTTPS session, click **Home** to return to the main page. Change the URL address from "http://" to "https://" in the address bar and press **Enter** on your keyboard. Some Security Alert dialogs will pop up. Click **OK** or **Yes** to enable HTTPS.

https://





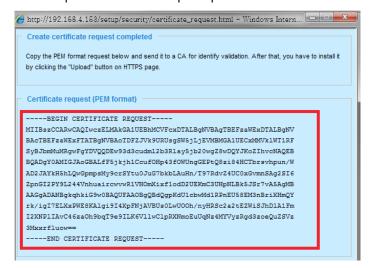


Create certificate request and install

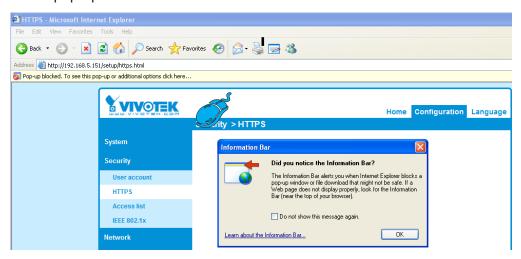
- 1. Select the option from the **Method** pull-down menu.
- 2. Click Create certificate to proceed.
- 3. The following information will show up in a pop-up window after clicking **Create**. Then click **Save** to generate the certificate request.



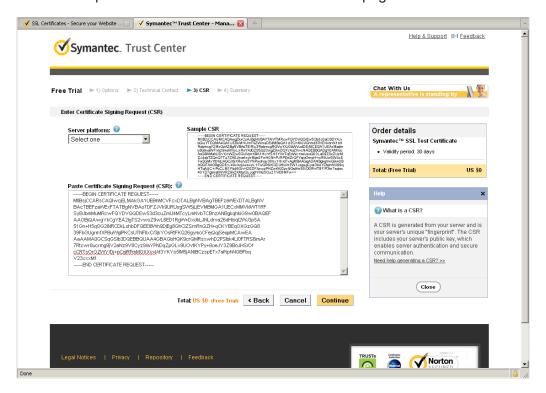
4. The Certificate request window will prompt.



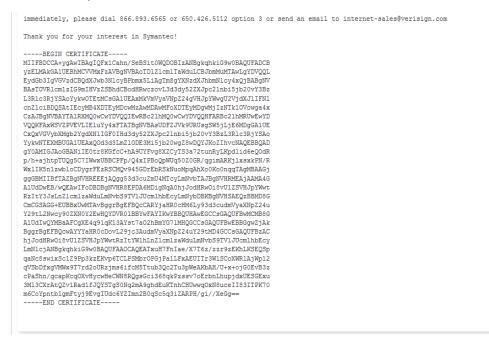
If you see the following Information bar, click **OK** and click on the Information bar at the top of the page to allow pop-ups.



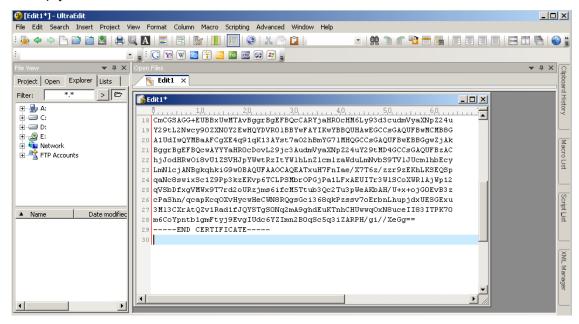
5. Look for a trusted certificate authority, such as Symantec's VeriSign Authentication Services, that issues digital certificates. Sign in and purchase the SSL certification service. Copy the certificate request from your request prompt and paste it in the CA's signing request window. Proceed with the rest of the process as CA's instructions on their webpage.



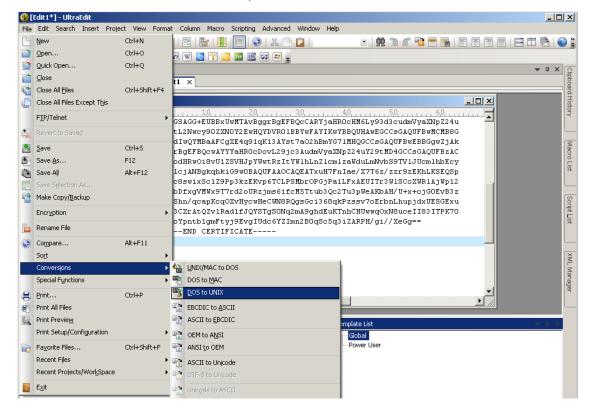
6. Once completed, your SSL certificate should be delivered to you via an email or other means. Copy the contents of the certificate in the email and paste it in a text/HTML/hex editor/converter, such as IDM Computer Solutions' UltraEdit.



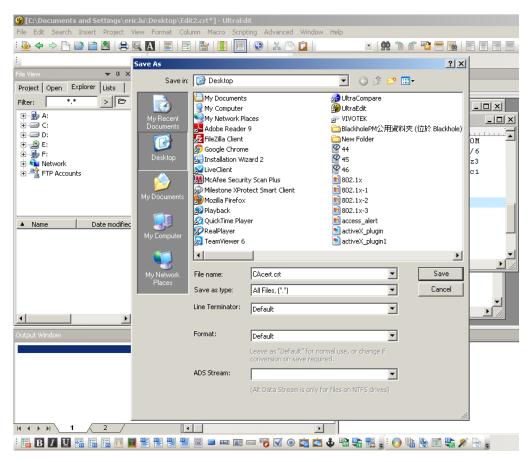
7. Open a new edit, paste the certificate contents, and press ENTER at the end of the contents to add an empty line.



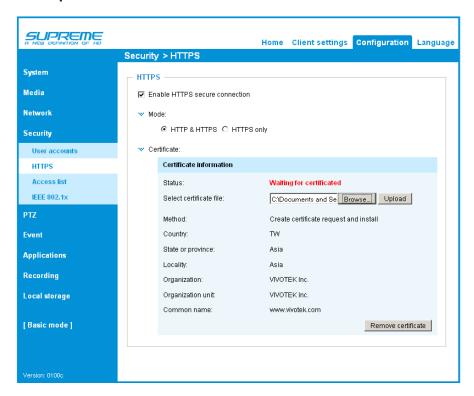
8. Convert file format from DOS to UNIX. Open File menu > Conversions > DOS to Unix.



9. Save the edit using the ".crt" extension, using a file name like "CAcert.crt."



10. Return to the original firmware session, use the **Browse** button to locate the crt certificate file, and click **Upload** to enable the certification.



11. When the certifice file is successfully loaded, its status will be stated as **Active**. Note that a certificate must have been created and installed before you can click on the "**Save**" button for the configuration to take effect.



12.To begin an encrypted HTTPS session, click **Home** to return to the main page. Change the URL address from "https://" to "https://" in the address bar and press **Enter** on your keyboard. Some Security Alert dialogs will pop up. Click **OK** or **Yes** to enable HTTPS.



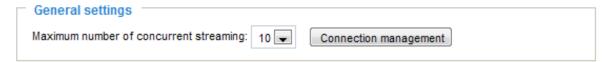




Security > Access List

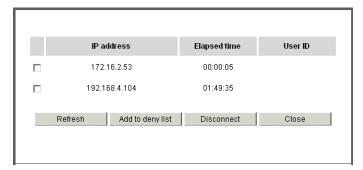
This section explains how to control access permission by verifying the client PC's IP address.

General Settings



Maximum number of concurrent streaming connection(s) limited to: Simultaneous live viewing for 1~10 clients (including stream 1 to stream 3). The default value is 10. If you modify the value and click **Save**, all current connections will be disconnected and automatically attempt to re-link (IE Explorer).

<u>View Information</u>: Click this button to display the connection status window showing a list of the current connections. For example:



Note that only consoles that are currently displaying live streaming will be listed in the View Information list.

- IP address: Current connections to the Network Camera.
- Elapsed time: How much time the client has been at the webpage.
- User ID: If the administrator has set a password for the webpage, the clients have to enter a user name and password to access the live video. The user name will be displayed in the User ID column. If the administrator allows clients to link to the webpage without a user name and password, the User ID column will be empty.

There are some situations that allow clients access to the live video without a user name and password:

- 1. The administrator does not set up a root password. For more information about how to set up a root password and manage user accounts, please refer to Security > User account on page 107.
- 2. The administrator has set up a root password, but set **RTSP Authentication** to "disable". For more information about **RTSP Authentication**, please refer to RTSP Streaming on page 96.
- 3. The administrator has set up a root password, but allows anonymous viewing. For more information about **Allow Anonymous Viewing**, please refer to page 107.

- Refresh: Click this button to refresh all current connections.
- Add to deny list: You can select entries from the Connection Status list and add them to the Deny List to deny access. Please note that those checked connections will only be disconnected temporarily and will automatically try to re-link again (IE Explorer). If you want to enable the denied list, please check **Enable access list filtering** and click **Save** in the first column.
- Disconnect: If you want to break off the current connections, please select them and click this button. Please note that those checked connections will only be disconnected temporarily and will automatically try to re-link again (IE Explorer).

Filter

<u>Enable access list filtering</u>: Check this item and click **Save** if you want to enable the access list filtering function.

<u>Filter type</u>: Select **Allow** or **Deny** as the filter type. If you choose **Allow Type**, only those clients whose IP addresses are on the Access List below can access the Network Camera, and the others cannot. On the contrary, if you choose **Deny Type**, those clients whose IP addresses are on the Access List below will not be allowed to access the Network Camera, and the others can.



Then you can **Add** a rule to the following Access List. Please note that the IPv6 access list column will not be displayed unless you enable IPv6 on the Network page. For more information about **IPv6 Settings**, please refer to Network > General settings on page 84 for detailed information.

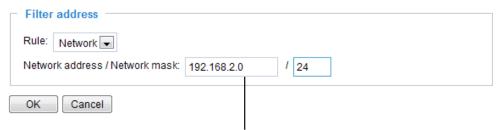
There are three types of rules:

<u>Single</u>: This rule allows the user to add an IP address to the Allowed/Denied list. For example:



<u>Network</u>: This rule allows the user to assign a network address and corresponding subnet mask to the Allow/Deny List. The address and network mask are written in CIDR format.

For example:



IP address range 192.168.2.x will be bolcked.

If IPv6 filter is preferred, you will be prompted by the following window. Enter the IPv6 address and the two-digit prefix length to specify the range of IP addresses in your configuration.



Range: This rule allows the user to assign a range of IP addresses to the Allow/Deny List. Note: This rule only applies to IPv4 addresses.

For example:



Administrator IP address

<u>Always allow the IP address to access this device</u>: You can check this item and add the Administrator's IP address in this field to make sure the Administrator can always connect to the device.

Administrator IP address		
Always allow the IP address to access this device		
	S	ave

Security > IEEE 802.1X

Enable this function if your network environment uses IEEE 802.1x, which is a port-based network access control. The network devices, intermediary switch/access point/hub, and RADIUS server must support and enable 802.1x settings.

The 802.1x standard is designed to enhance the security of local area networks, which provides authentication to network devices (clients) attached to a network port (wired or wireless). If all certificates between client and server are verified, a point-to-point connection will be enabled; if authentication fails, access on that port will be prohibited. 802.1x utilizes an existing protocol, the Extensible Authentication Protocol (EAP), to facilitate communication.

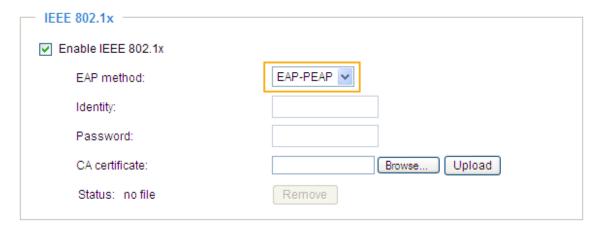
■ The components of a protected network with 802.1x authentication:



- 1. Supplicant: A client end user (camera), which requests authentication.
- 2. Authenticator (an access point or a switch): A "go between" which restricts unauthorized end users from communicating with the authentication server.
- 3. Authentication server (usually a RADIUS server): Checks the client certificate and decides whether to accept the end user's access request.
- VIVOTEK Network Cameras support two types of EAP methods to perform authentication: **EAP-PEAP** and **EAP-TLS**.

Please follow the steps below to enable 802.1x settings:

- 1. Before connecting the Network Camera to the protected network with 802.1x, please apply a digital certificate from a Certificate Authority (i.e., your network administrator) which can be validated by a RADIUS server.
- 2. Connect the Network Camera to a PC or notebook outside of the protected LAN. Open the configuration page of the Network Camera as shown below. Select **EAP-PEAP** or **EAP-TLS** as the EAP method. In the following blanks, enter your ID and password issued by the CA, then upload related certificate(s).



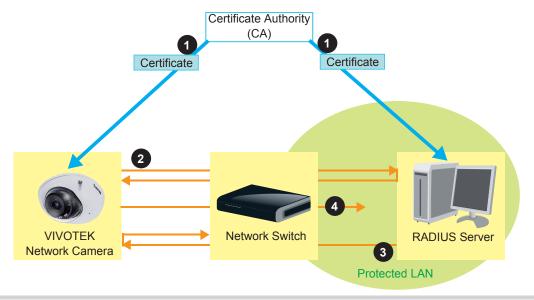


3. When all settings are complete, move the Network Camera to the protected LAN by connecting it to an 802.1x enabled switch. The devices will then start the authentication automatically.

0

NOTE:

- ► The authentication process for 802.1x:
- 1. The Certificate Authority (CA) provides the required signed certificates to the Network Camera (the supplicant) and the RADIUS Server (the authentication server).
- 2. A Network Camera requests access to the protected LAN using 802.1X via a switch (the authenticator). The client offers its identity and client certificate, which is then forwarded by the switch to the RADIUS Server, which uses an algorithm to authenticate the Network Camera and returns an acceptance or rejection back to the switch.
- 3. The switch also forwards the RADIUS Server's certificate to the Network Camera.
- 4. Assuming all certificates are validated, the switch then changes the Network Camera's state to authorized and is allowed access to the protected network via a pre-configured port.



Security > Miscellaneous

The embedded TrendMicro utitlity provides the protection against Cross-Site Request Forgery. Cross-site request forgery is also known as one-click attack or session riding and is abbreviated as CSRF. CSRF is a type of malicious exploit of a website, in this case, the camera. Unauthorized commands are transmitted from a user that the web application trusts, using the mechanism of forging a trusted user's own request with a request containing his own cookies, etc. Different ways can be used for a malicious website to transmit such commands. They can be specially-crafted image tags, hidden forms, and JavaScript XMLHttpRequests. The malicious attack can occur without users' interaction or even knowing it.



PTZ > PTZ settings

This section explains how to control the Network Camera's Pan/Tilt/Zoom operation.

Digital: Control the e-PTZ operation. Within a field of view, it allows users to quickly move the focus to a target area for close-up viewing without physically moving the camera.

Digital PTZ Operation (E-PTZ Operation)

The e-PTZ control settings section will be displayed as shown below:



For e-PTZ related details, please refer to page 124.

Auto pan/patrol speed: Select the speed from 1~5 (slow/fast) to set up the Auto pan/patrol speed control.

Zoom factor display

If you check this item, the zoom indicator will be displayed on the home page when you zoom in/out the live viewing window as the picture shown on the next page.

When completed with the e-PTZ settings, click **Save** to enable the settings on this page.

Home page in the E-PTZ Mode



- The e-Preset Positions will also be displayed on the home page. Select one from the drop-down list, and the Network Camera will move to the selected position.
- If you have set up different preset positions for different streams, you can select one of the video streams to display its separate preset positions.

Global View

In addition to using the e-PTZ control panel, you can also use the mouse to drag or resize the floating frame to pan/tilt/zoom the viewing region. The live view window will also move to the viewing region accordingly.

Moving Instantly

If you check this item, the live view window will switch to the new viewing region instantly after you move the floating frame. If not selected, the process of moving from one position to another will be shown.

Click on Image

The e-PTZ function also supports "Click on Image". When you click on any point of the Global View Window or Live View Window, the viewing region will also move to that point.

Note that the "Click on Image" function only applies when you have configured a smaller "Region of Interest" out of the maximum output frame! e.g., an 800 x 600 region from out of the camera's maximum frame size.

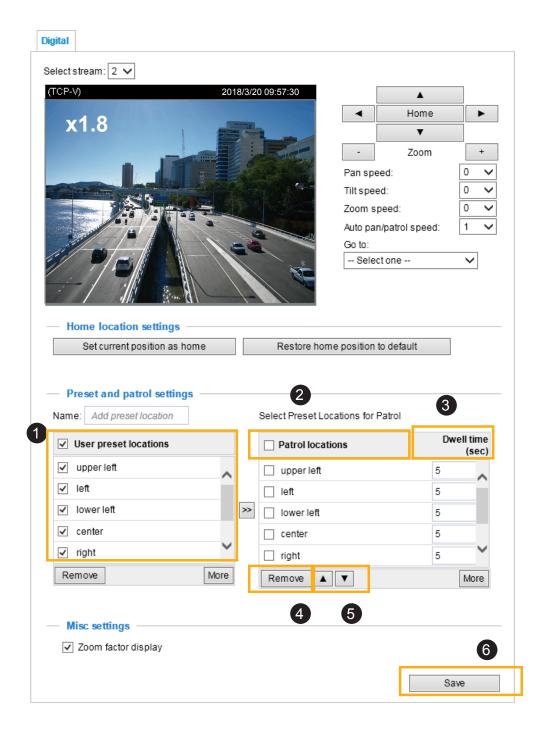
<u>Patrol button</u>: Click this button, then the Network Camera will patrol among the selected preset positions continuously.

Patrol settings

You can select some preset positions for the Network Camera to patrol.

Please follow the steps below to set up a patrol schedule:

- 1. Select the preset locations on the list, and click
- 2. The selected preset locations will be displayed on the **Patrol locations** list.
- 3. Set the **Dwelling time** for the preset location during an auto patrol.
- 4. If you want to delete a preset location from the Patrol locations list, select it and click **Remove**.
- 5. Select a location and click to rearrange the patrol order.
- 6. Select patrol locations you want to save in the list and click **Save** to enable the patrol settings.
- 7. To implement the patrol schedule, please go to homepage and click on the **Patrol** button.

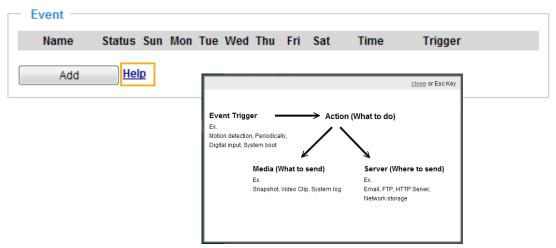


NOTE:

- The Preset Positions will also be displayed on the Home page. Select one from the Go to menu, and the Network Camera will move to the selected preset position.
- Click Patrol: The Network Camera will patrol along the selected positions repeatedly.

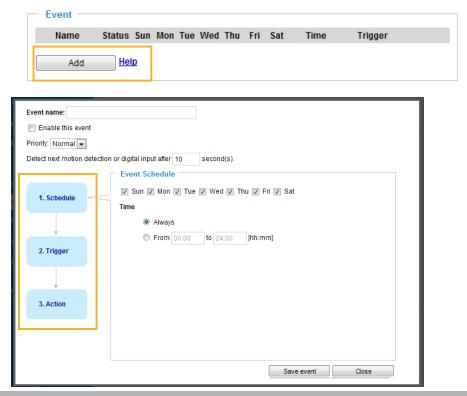
Event > Event settings

This section explains how to configure the Network Camera to respond to particular situations (event). A typical application is that when a motion is detected, the Network Camera sends buffered images to an FTP server or e-mail address as notifications. Click on **Help**, there is an illustration shown in the pop-up window explaining that an event can be triggered by many sources, such as motion detection or external digital input devices. When an event is triggered, you can specify what type of action that will be performed. You can configure the Network Camera to send snapshots or videos to your email address or FTP site.



Event

To configure an event with reactive measures such as recording video or snapshots, it is necessary to configure the server and media settings so that the Network Camera will know what action to take (such as which server to send the media files to) when a trigger is activated. An event is an action initiated by a user-defined trigger source. In the **Event** column, click **Add** to open the event settings window. Here you can arrange three elements -- Schedule, Trigger, and Action to set an event. A total of 3 event settings can be configured.



- Event name: Enter a name for the event setting.
- Enable this event: Select this checkbox to enable the event setting.
- Priority: Select the relative importance of this event (High, Normal, or Low). Events with a higher priority setting will be executed first.
- Detect next motion detection or digital input after

 seconds: Enter the duration in seconds to pause motion detection after a motion is detected. This can prevent event-related actions to take place too frequently.

1. Schedule

Specify the period of time during which the event trigger will take effect. Please select the days of the week and the time in a day (in 24-hr time format) for the event triggering schedule. For example, you may prefer an event to be triggered only during the off-office hours.

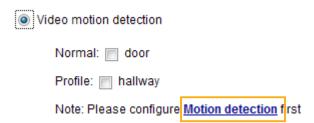
2. Trigger

This is the cause or stimulus which defines when to trigger the Network Camera. The trigger source can be configured to use the Network Camera's built-in motion detection mechanism or external digital input devices.

There are several choices of trigger sources as shown on the next page. Select the item to display the detailed configuration options.

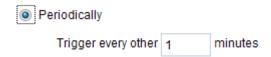
■ Video motion detection

This option makes use of the built-in motion detection mechanism as a trigger source. To enable this function, you need to configure a Motion Detection Window first. For more information, please refer to Motion Detection on page 139 for details.



■ Periodically

This option allows the Network Camera to trigger periodically for every other defined minute. Up to 999 minutes are allowed.



■ Digital input

This option allows the Network Camera to use an external digital input device or sensor as a trigger source. Depending on your application, there are many choices with digital input devices on the market which help detect changes in temperature, vibration, sound, light, etc.

System boot

This option triggers the Network Camera when the power to the Network Camera is disconnected and re-connected.

■ Recording notify

This option allows the Network Camera to trigger when the recording disk is full or when recording starts to overwrite older data.

■ Audio detection

A preset threshold can be configured with an external microphone as the trigger to system event. The triggering condition can be an input exceeding or falling below a threshold. Audio detection can take place as a complement to motion detection or as a method to detect activities not covered by the camera's view.

■ Camera tampering detection

This option allows the Network Camera to trigger when the camera detects that is is being tampered with. To enable this function, you need to configure the Tampering Detection option first. Please refer to page 141 for detailed information.

Camera tampering detection
▼ Tampering detection Too dark Too bright Too blurn
Note: Please configure Camera tampering detection first

Manual Triggers

This option allows users to enable event triggers manually by clicking the on/off button on the homepage. Please configure 1 to 3 associated events before using this function.





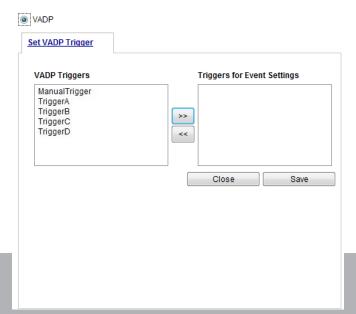
■ Shock detection

A shock accelerometer comes with the camera. If impact to the camera occurs, such as someone tries to destroy the camera, the impact can be detected and reported. The Shock detection configuration is found in Configuration > Applications > Shock detection.

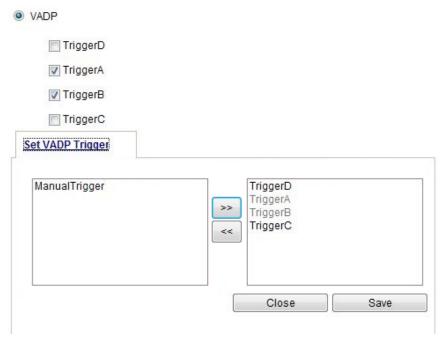
■ VADP

It is presumed that you already uploaded and enabled the VADP modules before you can associatee VADP triggers with an Event setting.

Click on the Set VADP Trigger button to open the VADP setup menu. The triggering conditions available with 3rd-party software modules known as VADP will be listed. Use the arrow buttons to select these triggers. Users may implant these modules for different purposes such as triggering motion detection, or applications related to video analysis, etc. Please refer to page 145 for the configuration options with VADP modules.

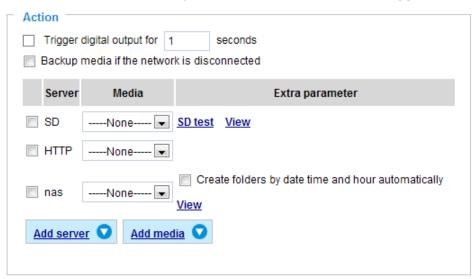


Once the triggers are configured, they will be listed under the VADP option.



3. Action

Define the actions to be performed by the Network Camera when a trigger is activated.



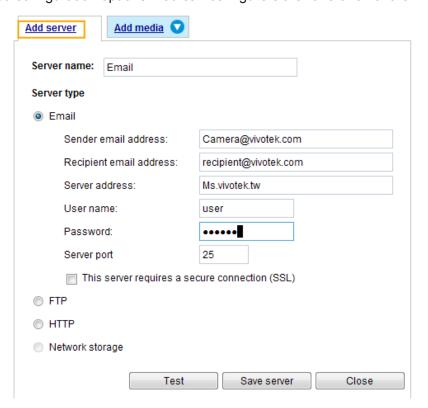
- Trigger digital output for
 seconds
 Select this option to turn on the external digital output device when a trigger is activated. Specify the length of the trigger interval in the text box.
- Backup media if the network is disconnected

 Select this option to backup media file on SD card if the network is disconnected. This function will only be displayed after you set up a network storage (NAS). The media to back up can include snapshot images, video, or system logs depending on your event settings.

Add server

It is necessary to configure the server and media settings so that the Network Camera will know what action to take (such as which server to send the media files to) when a trigger is activated. Click **Add server** to open the server setting window. You can specify where the notification messages are sent to when a trigger is activated. A total of 5 server settings can be configured.

There are four choices of server types available: Email, FTP, HTTP, and Network storage. Select the item to display the detailed configuration options. You can configure either one or all of them.



Server type - Email

Select to send the media files via email when a trigger is activated.

- Server name: Enter a name for the server setting.
- Sender email address: Enter the email address of the sender.
- Recipient email address: Enter the email address of the recipient.
- Server address: Enter the domain name or IP address of the email server.
- User name: Enter the user name of the email account if necessary.
- Password: Enter the password of the email account if necessary.
- Server port: The default mail server port is set to 25. You can also manually set another port.

If your SMTP server requires a secure connection (SSL), select **This server requires a secure** connection (SSL).

To verify if the email settings are correctly configured, click **Test**. The result will be shown in a pop-up window. If successful, you will also receive an email indicating the result.



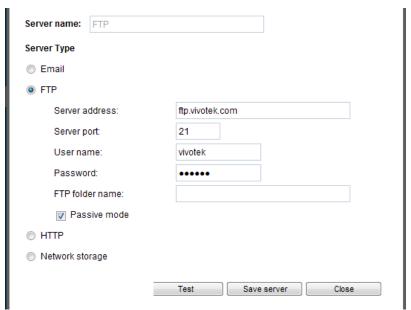
Click **Save server** to enable the settings.

Note that after you configure the first event server, the new event server will automatically display on the Server list. If you wish to add other server options, click **Add server**.



Server type - FTP

Select to send the media files to an FTP server when a trigger is activated.



- Server name: Enter a name for the server setting.
- Server address: Enter the domain name or IP address of the FTP server.
- Server port: By default, the FTP server port is set to 21. It can also be assigned to another port number between 1025 and 65535.
- User name: Enter the login name of the FTP account.
- Password: Enter the password of the FTP account.
- FTP folder name

Enter the folder where the media files will be placed. If the folder name does not exist, the Network Camera will automatically create one on the FTP server.

■ Passive mode

Most firewalls do not accept new connections initiated from external requests. If the FTP server supports passive mode, select this option to enable passive mode FTP and allow data transmission to pass through the firewall. The firmware default has the Passive mode checkbox selected.

To verify if the FTP settings are correctly configured, click **Test**. The result will be shown in a pop-up window as shown below. If successful, you will also receive a test.txt file on the FTP server.





Click **Save server** to enable the settings.

Server type - HTTP

Select to send the media files to an HTTP server when a trigger is activated.



- Server name: Enter a name for the server setting.
- URL: Enter the URL of the HTTP server.
- User name: Enter the user name if necessary.
- Password: Enter the password if necessary.

To verify if the HTTP settings are correctly configured, click **Test**. The result will be shown in a pop-up window as shown below. If successful, you will receive a test.txt file on the HTTP server.



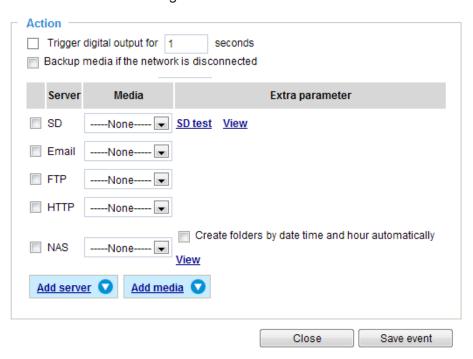


Click **Save server** to enable the settings.

Network storage:

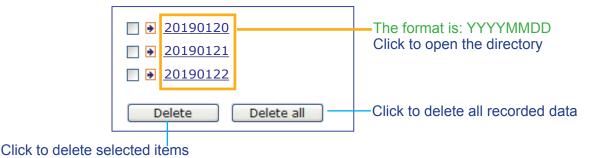
Select to send the media files to a networked storage when a trigger is activated. Please refer to **NAS server** on page 151 for details. Note that only one NAS server can be configured.

Click Save server to enable the settings.

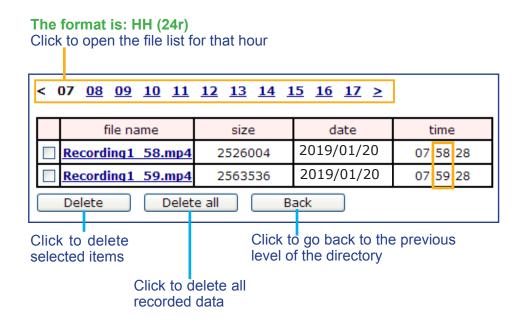


- SD Test: Click to test your SD card. The system will display a message indicating the result as a success or a failure. If you want to use your SD card for local storage, please format it before use. Please refer to page 135 for detailed information.
- View: Click this button to open a file list window. This function is only for SD card and Network Storage. If you click the View button for an SD card, a Local storage page will prompt so that you can manage the recorded files on SD card. For more information about Local storage, please refer to page 153. If you click the View button for a Network storage, a file directory window will prompt for you to view recorded data on Network storage. For detailed illustration, please refer to the next page.
- Create folders by date, time, and hour automatically: If you select this item, the system will automatically create folders by the date when video footages are stored onto the networked storage.

The following is an example of a file destination with video clips:



Click 20190120 to open the directory:

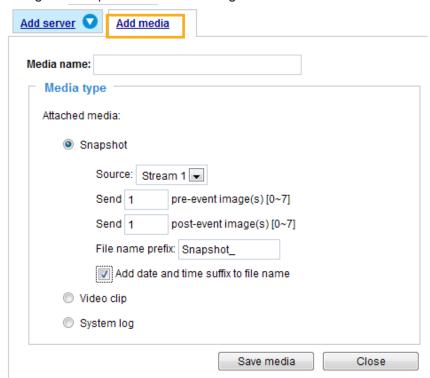




The format is: File name prefix + Minute (mm)
You can set up the file name prefix on Add media page. Please refer to next page for detailed information.

Add media

Click **Add media** to open the media setting window. You can specify the type of media that will be sent when a trigger is activated. A total of 5 media settings can be configured. There are three choices of media types available: Snapshot, Video Clip, and System log. Select the item to display the detailed configuration options. You can configure either one or all of them.



Media type - Snapshot

Select to send snapshots when a trigger is activated.

- Media name: Enter a name for the media setting.
- Source: Select to take snapshots from any of the video profiles.
- Send ☐ pre-event images

 The Network Camera has a buffer to temporarily hold data up to a certain limit. Enter a number to decide how many images to capture before a trigger is activated. Up to 7 images can be generated.
- Send ☐ post-event images Enter a number to decide how many images to capture after a trigger is activated. Up to 7 images can be generated.

For example, if both the Send pre-event images and Send post-event images are set to 7, a total of 15 images can be generated after a trigger is activated.



■ File name prefix Enter the text that will be appended to the front of the file name. Add date and time suffix to the file name Select this option to add a date/time suffix to the file name. For example:

Snapshot_20190513_100341

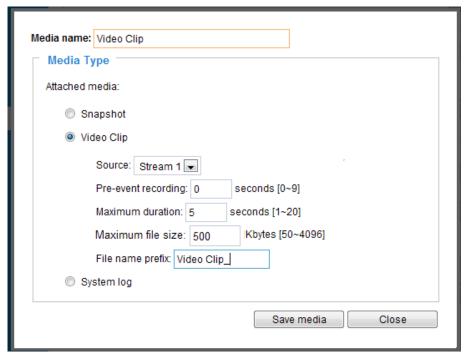
Tile name prefix
The format is: YYYYMMDD_HHMMSS

Click Save media to enable the settings.

Note that after you set up the first media server, a new column for media server will automatically display on the Media list. If you wish to add more media options, click **Add media**.

Media type - Video clip

Select to send video clips when a trigger is activated.

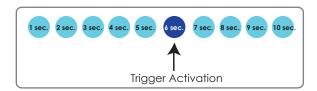


- Media name: Enter a name for the media setting.
- Source: Select a video stream profile as the source of video clip.
- Pre-event recording

The Network Camera has a buffer to temporarily hold data up to a certain limit. Enter a number to decide the duration of recording before a trigger is activated. Up to 9 seconds can be set.

Maximum duration

Specify the maximum recording duration in seconds. The duration can be up to 10 seconds. For example, if pre-event recording is set to five seconds and the maximum duration is set to ten seconds, the Network Camera continues to record for another 4 seconds after a trigger is activated.



- Maximum file size Specify the maximum file size allowed. Some users may need to stitch the video clips together when searching and packing up forensic evidence.
- File name prefix Enter the text that will be appended to the front of the file name.

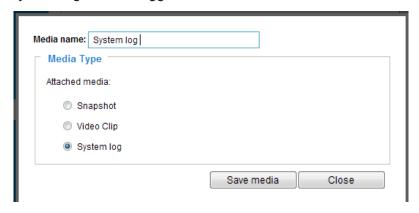
For example:



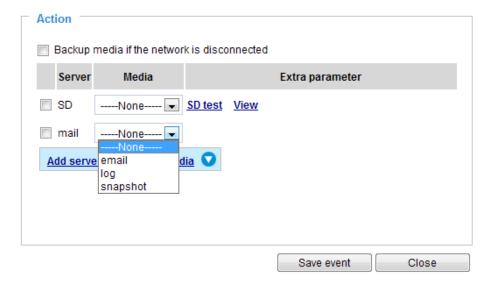
Click **Save media** to enable the settings.

Media type - System log

Select to send a system log when a trigger is activated.



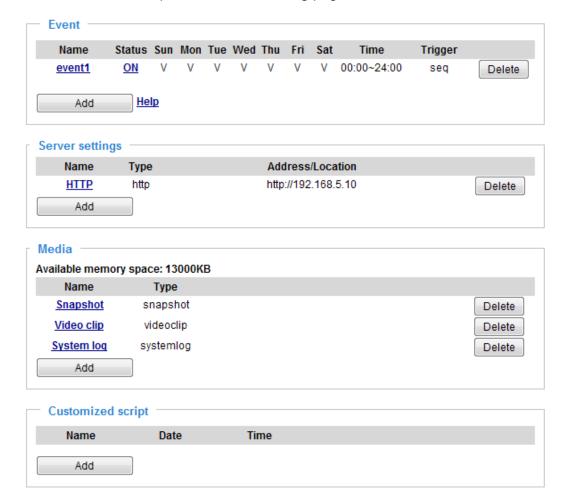
Click **Save media** to enable the settings, then click **Close** to exit the page.



In the Event settings column, the Servers and Medias you configured will be listed; please make sure the Event -> Status is indicated as **ON**, in order to enable the event triggering action.

When completed, click the **Save event** button to enable the settings and click **Close** to exit Event Settings page. The new Event / Server settings / Media will appear in the event drop-down list on the Event setting page.

Please see the example of the Event setting page below:



When the Event Status is **ON**, the event configuration above is triggered by motion detection, the Network Camera will automatically send snapshots via e-mail.

If you want to stop the event trigger, you can click on the **ON** button to turn it to **OFF** status or click the **Delete** button to remove the event setting.

To remove a server setting from the list, select a server name from the drop-down list and click **Delete**. Note that you can only delete a server setting when it is not applied in an existing event setting.

To remove a media setting from the list, select a media name from the drop-down list and click **Delete**. Note that you can only delete a media setting when it is not applied in an existing event setting.

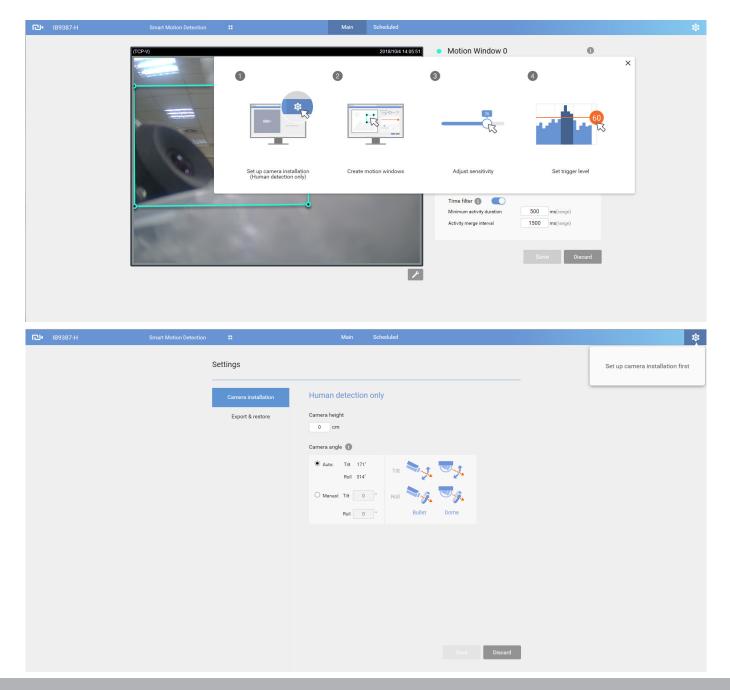
Applications > Motion detection

The camera comes with a Smart Motion Detection utility as its pre-loaded VCA package. Please refer to its User Guide for more information:

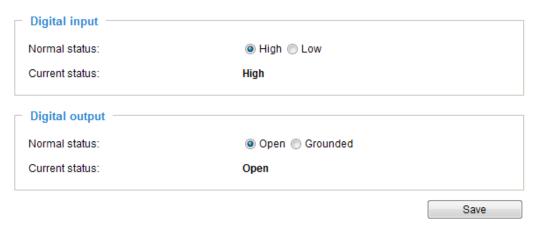
http://download.vivotek.com/downloadfile/solutions/vadp/smart-motion-detection-manual_en.pdf.

Click on Configuration > Applications > Motion detection. The Smart Motion utility will be automatically started.

If Human detection is applied, make sure you measured the height of your camera at the installation site. It is important for a correct video analysis. You should enter the installation height in the Motion detection Settings page.



Applications > DI and DO



<u>Digital input</u>: Select High or Low as the Normal status for the digital input connection. Connect the digital input pin of the Network Camera to an external device to detect the current connection status.

<u>Digital output</u>: Select Grounded or Open to define the normal status for the digital output. Connect the digital output pin of the Network Camera to an external device to determine the current status.

Set up the event source as DI on **Event > Event settings > Trigger.** Please refer to page 127 for detailed information.

Applications > Tampering detection

This section explains how to set up camera tamper detection. With tamper detection, the camera is capable of detecting incidents such as **redirection**, **blocking or defocusing**, or even **spray paint**.

Camera tampering detection	
cumera umpermy activation	
☐ Tampering detection	
Trigger duration 10 seconds [10~600]	
Trigger threshold 12 [0~100]	
☐ Image too dark detection	
T:	
Trigger duration 2 seconds [1~10]	
Trigger threshold 15 [0~100]	
☐ Image too bright detection	
Trigger duration 2 seconds [1~10]	
Trigger threshold 15 [0~100]	
☐ Image too blurry detection	
Trigger duration 7 seconds [1~10]	
Trigger threshold 12 [0~100]	
	Save

Please follow the steps below to set up the camera tamper detection function:

Click to select the checkbox before tampering conditions: Tampering detection, Image too dark, Image too bright, and Image too blurry. Enter the tamper trigger duration. (10 sec. ~ 10 min.). The duraction specifies the set of time before the tampering is considered as a real alarm. This helps avoid false alarms by short-lived changes.

The tamper alarm will be triggered only when the tampering factor (the difference between current frame and pre-saved background) exceeds the trigger threshold. Conditions such as image too dark, too bright, or too blurry (defocused) can also be configured as tampering conditions. The Trigger threshold determines how sensitive your is tamper detection setting. Lower the threshold number, easier to trigger.

Too bright: shining a flash light. The average lighting level of the scene is taken into consideration.

Too dark: covering the objective or spraying paint.

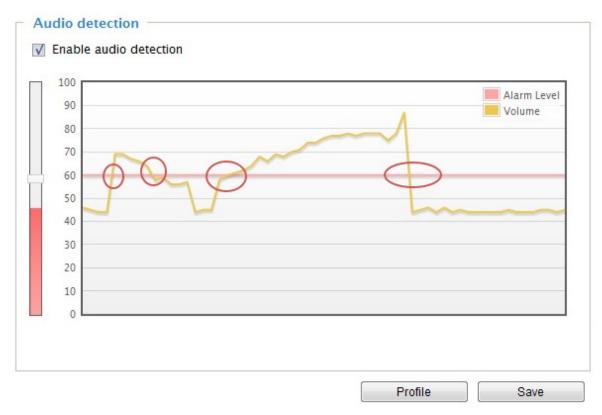
Too blurry: blurry scene can be the result of strong interference on the device, such as EMI interference.

2. You can configure Tampering Detection as a trigger element to the proactive event configurations in Event -> Event settings -> Trigger. For example, when the camera is tampered with, camera can be configured to send the pre- and post-event video clips to a networked storage device. Please refer to page 127 for detailed information.

Applications > Audio detection

Audio detection, along with video motion detection, is applicable in the following scenarios:

- 1. Detection of activities not covered by camera view, e.g., a loud input by gun shots or breaking a door/window.
- 2. A usually noisy environment, such as a factory, suddenly becomes quiet due to a breakdown of machines.
- 3. A PTZ camera can be directed to turn to a preset point by the occurrence of audio events.
- 4. Dark environments where video motion detection may not function well.



The red circles indicate where the audio alarms can be triggered when breaching or falling below the preset threshold.

How to configure Audio detection:

- 1. Once the Audio detection window is opened, the current sound input will be interactively indicated by a fluctuating yellow wave diagram.
- 2. Use a mouse click to drag the Alarm level tab to a preferred location on the slide bar.
- 3. Select the "Enable audio detection" checkbox and click Save to enable the feature.

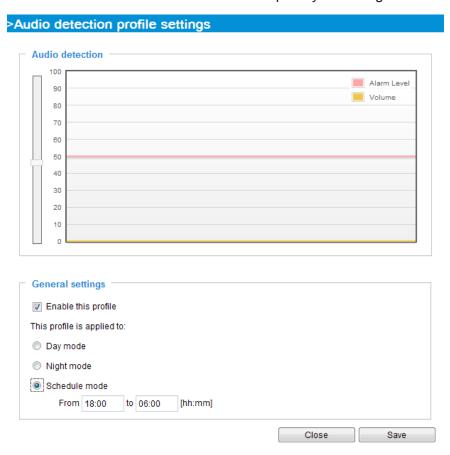


- Note that the volume numbers (0~100) on the side of wave diagram does not represent decibel (dB). Sound intensity level has already been mapped to preset values. You can, however, use the real-world inputs at your installation site that are shown on the wave diagram to configure an alarm level.
- 2. To configure this feature, you must not mute the audio in Configuration > Media > Audio.

 The default of the camera can be muted due to the lack of an internal microphone. An external microphone is provided by users.

You can use the **Profile** window to configure a different Audio detection setting. For example, a place can be noisy in the day time and become very quiet in the night.

- 1. Click on the **Enable this profile** checkbox. Once the Audio detection window is opened, the current sound input will be interactively indicated by a fluctuating yellow wave diagram.
- 2. Use a mouse click to drag the Alarm level tab to a preferred location on the slide bar.
- 3. Select the **Day**, **Night**, or **Schedule** mode check circles. You may also manually configure a period of time during which this profile will take effect.
- 4. Click **Save** and then click **Close** to complete your configuration.



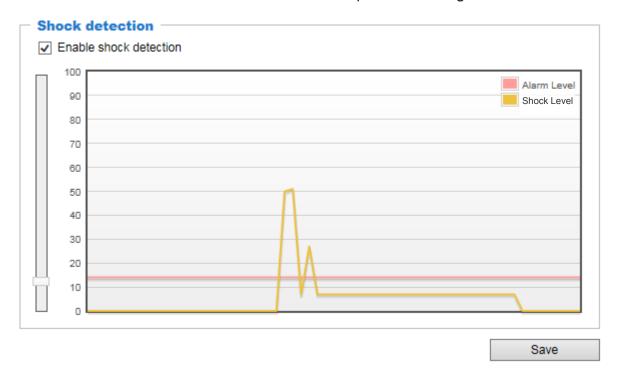
MPORTANT:

- If the Alarm level and the received volume are set within a range of 20% on the wave diagram, frequent alarms will be triggered. It is recommended to set the Alarm level farther apart from the detected sound level.
- To configure and enable this feature, you must not configure video stream #1 into Motion JPEG. If an external microphone input is connected and recording of audio stream is preferred, audio stream is transmitted between camera and viewer/recording station along with stream #1.
- Refer to page 86 for Audio settings, and page 78 for video streaming settings.

Applications > Shock detection

The camera comes with a shock accelerometer. The shock sensor can detect impacts to the camera. For example, when a person deliberately tries to destroy the camera, the camera can report the event to the administrator.

Normally, a 5kgm impact can cause the detected impact level to surge to 50% on the scale. Configure the Alarm Level to a preferred percentage on the chart. Click the **Enable shock detector** checkbox and click **Save** to complete the configuration.



You should then go to Event settings to configure the shock detection as a triggering source. See page 126 for Event configuration.

The measurement range of the sensor is ±16G.

For every one G force ($g = 9.8 \text{ m/s}^2$) perceived, the sensor acquires a reading of 512.

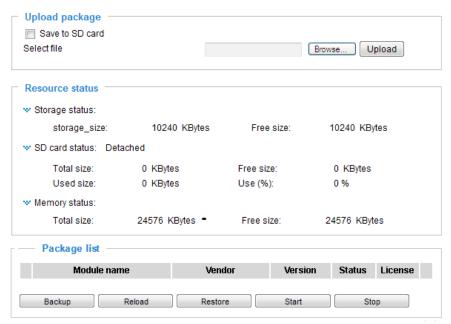
The value acquired by a 2 G acceleration will look like the following: 512 * 2/16 = 64

Suppose that all 3-axis readings are equal (for simplicity reasons only), the shock level shown on the Shock detection chart will be (64 + 64 + 64) *100 /1024 = 18.75.

Applications > Package management - a.k.a., VADP (VIVOTEK Application Development Platform)

The camera comes embedded with the Smart Motion Detection feature. The Smart Motion detection, with Human detection and tunable time filter, can eliminate the defects of traditional motion detection and facilitate the configuration at a surveillance site.

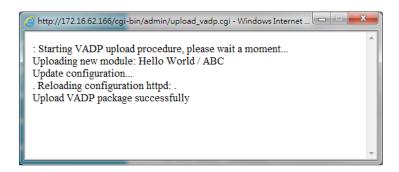
To learn more about this feature, download its User Guide in: http://download.vivotek.com/downloadfile/solutions/vadp/smart-motion-detection-manual_en.pdf



Users can store and execute VIVOTEK's or 3rd-party software modules onto the camera's flash memory or SD card. These software modules can apply in video analysis for intelligent video applications such as license plate recognition, object counting, or as an agent for edge recording, etc.

- Once the software package is successfully uploaded, the module configuration (vadp. xml) information is displayed. When uploading a module, the camera will examine whether the module fits the predefined VADP requirements. Please contact our technical support or the vendor of your 3rd-party module for the parameters contained within.
- Users can also run VIVOTEK's VADP packages as a means to access updated functionality instead of replacing the entire firmware.
- Note that for some cameras the flash is too small to hold VADP packages. These cameras will have its "Save to SD card" checkbox selected and grayed-out for all time.
- The file system of SD card (FAT32) does not support soft (symbolic) link. It will return failure if your module tries to create soft links on SD card.

To utilize a software module, acquire the software package and click **Browse** and **Upload** buttons. The screen message for a successful upload is shown below:



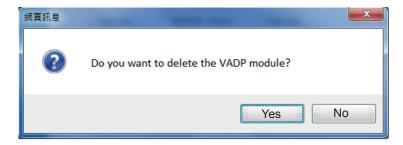
To start a module, select the checkcircle in front, and click the **Start** button.



If you should need to remove a module, select the checkcircle in front and then click the **Stop** button. By then the module status will become **OFF**, and the **X** button will appear at the end of the row. Click on the **X** button to remove an existing module.



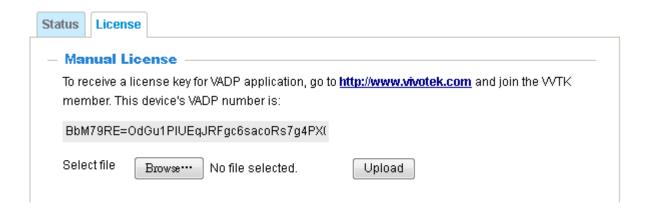
When prompted by a confirm message, Click **Yes** to proceed.



Note that the actual memory consumed while operating the module will be indicated on the **Memory status** field. This helps determine whether a running module has consumed too much of system resources.

On the License page, register and activate the license for using VIVOTEK's VADP modules. You should acquire the license key elsewhere, and manually upload to the network camera.

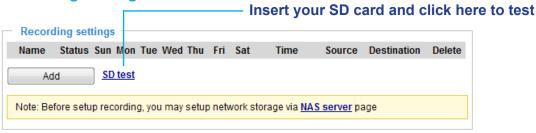
Follow the onscreen instruction on VIVOTEK's website for the registration procedure.



Recording > Recording settings

This section explains how to configure the recording settings for the Network Camera.

Recording Settings

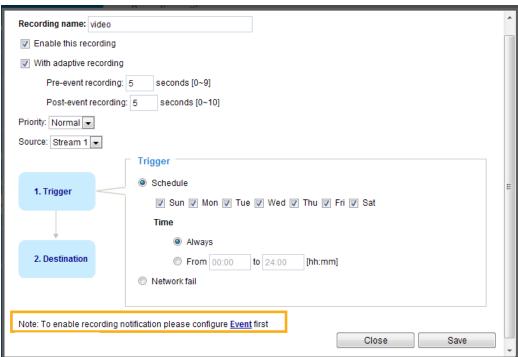




▶ Please remember to format your SD card via the camera's web console (in the Local storage . SD card management page) when using it for the first time. Please refer to page 153 for detailed information.

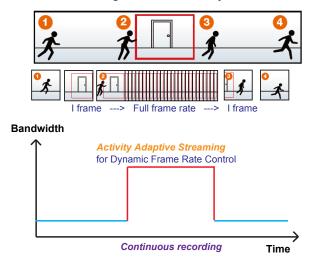
Recording Settings

Click **Add** to open the recording setting window. On this page, you can define the adaptive recording, recording source, recording schedule, and recording capacity. A total of 2 recording settings can be configured.



- Recording name: Enter a name for the recording setting.
- Enable this recording: Select this option to enable video recording.
- With adaptive recording:
 Select this option will activate the frame rate control according to alarm trigger.
 The frame control means that when there is a triggered alarm, the frame rate will raise up to the value you've configured on the Video quality page. Please refer to page 79 for more information.

If you enable adaptive recording on a camera, only when an event is triggered on Camera A will the server record the full frame rate streaming data; otherwise, it will only request the I frame data during normal monitoring, thus effectively saves bandwidths and storage space.





- ➤ To enable adaptive recording, please make sure you've set up the trigger source such as Motion Detection, DI Device, or Manual Trigger.
- ► When there is no alarm trigger:
 - JPEG mode: record 1 frame per second.
 - H.264 mode: record the I frame only.
- ▶ When the I frame period is >1s on Video settings page, firmware will force decrease the I frame period to 1s when adaptive recording is enabled.

The alarm trigger includes: motion detection and DI detection. Please refer to Event Settings on page 126.

- Pre-event recording and post-event recording
 The Network Camera has a buffer that temporarily holds data for a period of time. Therefore, when an event occurs, the camera can restrieve image frames taken several seconds ago. Enter a number to define the duration of recording before and after a trigger is activated.
- Priority: Select the relative importance of this recording (High, Normal, or Low). Recording with a higher priority setting will be executed first.
- Source: Select a video stream as the recording source.

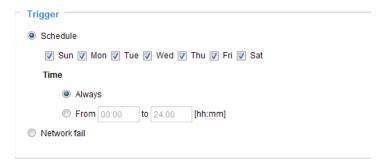


▶ To enable recording notification please configure **Event settings** first . Please refer to page 126.

Please follow the steps below to set up the recording.

1. Trigger

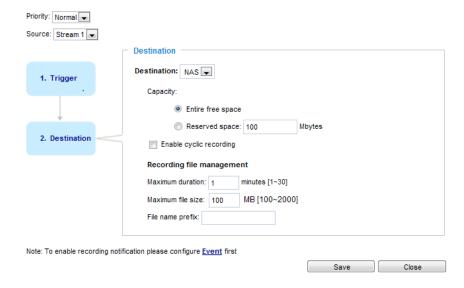
Select a trigger source.



- Schedule: The server will start to record files on the local storage or network storage (NAS).
- Network fail: Since network fail, the server will start to record files on the local storage (SD card).

2. Destination

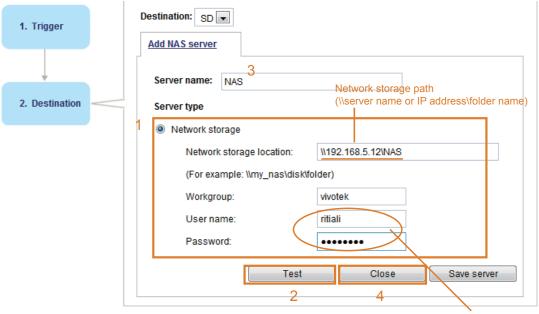
You can select the SD card or network storage (NAS) for the recorded video files. If you have not configured a NAS server, see details in the following.



NAS server

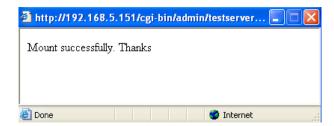
Click **Add NAS server** to open the server setting window and follow the steps below to set up:

1. Fill in the information for your server. For example:

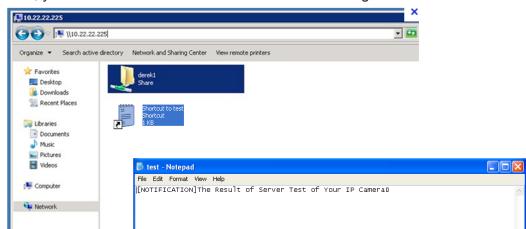


User name and password for your server

2. Click **Test** to check the setting. The result will be shown in the pop-up window.

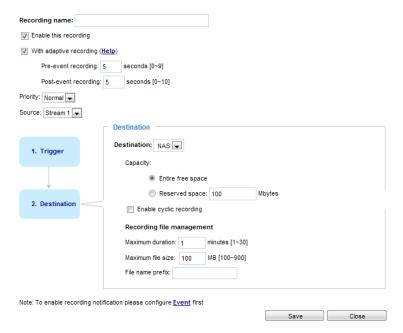






If successful, you will receive a test.txt file on the network storage server.

- 3. Enter a server name.
- 4. Click **Save** to complete the settings and click **Close** to exit the page.



- Capacity: You can choose either the entire free space available or limit the reserved space. The recording size limit must be larger than the reserved amount for cyclic recording. The reserved space is a small amount of space used only for the transaction stage when the capacity is about to be used up or recycled.
- Enable cyclic recording: If you check this item, when the maximum capacity is reached, the oldest file will be overwritten by the latest one. The reserved amount is reserved for the transaction stage when the storage space is about to be full and new data arrives. The minimum for the Reserved space must be larger than 15 MegaBytes.
- Recording file management: You can manually assign the Maximum duration and the Maximum file size for each recording footage. You may need to stitch individual files together under some circumstances. You may also designate a file name prefix by filling in the responsive text field.
- File name prefix: Enter the text that will be appended to the front of the file name.

f you want to enable recording notification, please click **<u>Event</u>** to configure event triggering settings. Please refer to **Event > Event settings** on page 126 for more details.

When completed, select **Enable this recording**. Click **Save** to enable the setting and click **Close** to exit this page. When the system begins recording, it will send the recorded files to the network storage. The new recording name will appear in the drop-down list on the recording page as shown below.

To remove a recording setting from the list, select a recording name from the drop-down list and click **Delete**.



- Click <u>recording</u> (Name): Opens the Recording Settings page to modify.
- Click ON (Status): The Status will become OFF and stop recording.
- Click <u>NAS</u> (**Destination**): Opens the file list of recordings as shown below. For more information about folder naming rules, please refer to page 133 for details.



Local storage > Storage management



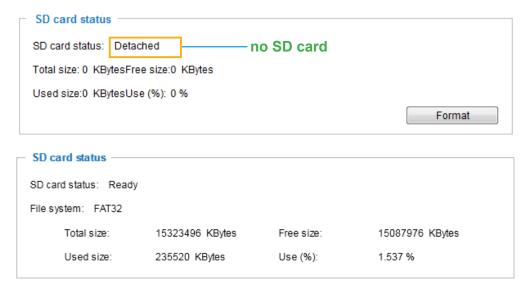
NOTE:

- It is recommended to turn OFF the recording activity before you remove an SD card from the camera.
- The lifespan of an SD card is limited. Regular replacement of the SD card can be necessary.
- Camera filesystem takes up several megabytes of memory space. The storage space cannot be used for recording.
- Using an SD card that already contains data recorded by another device should not be used in this camera.
- Please do not modify or change the folder names in the SD card. That may result in camera malfunctions.

This section explains how to manage the local storage on the Network Camera. Here you can view SD card status, and implement SD card control.

SD card staus

This column shows the status and reserved space of your SD card. Please remember to format the SD card when using for the first time.

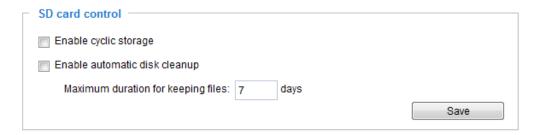


SD card format

The Linux kernel EXT4 file system format applies to SD card larger than 32GB. However, if EXT4 is applied, the computers running Windows will not be able to access the contents on the SD card unless using some 3rd-party software.



SD card control

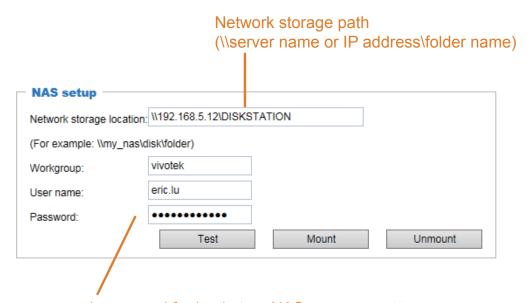


- Enable cyclic storage: Check this item if you want to enable cyclic recording. When the maximum capacity is reached, the oldest file will be overwritten by the latest one.
- Enable automatic disk cleanup: Check this item and enter the number of days you wish to retain a file. For example, if you enter "7 days", the recorded files will be stored on the SD card for 7 days.

Click Save to enable your settings.

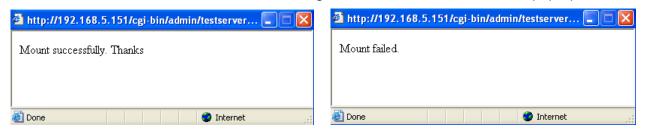
NAS management

On the NAS setup page you can configure your NAS (Networked Storage) configuration, test, mount, or unmount the networked storage.



User name and password for log in to a NAS user account

You can use the **Test** button to check the setting. The result will be shown in the pop-up window.

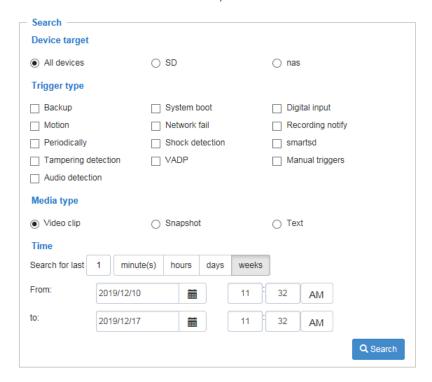


Storage > Content management

This section explains how to manage the content of recorded videos on the Network Camera. Here you can search and view the records and view the searched results.

Searching and Viewing the Records

This column allows the user to set up search criteria for recorded data. If you do not select any criteria and click **Search** button, all recorded data will be listed in the **Search Results** column.



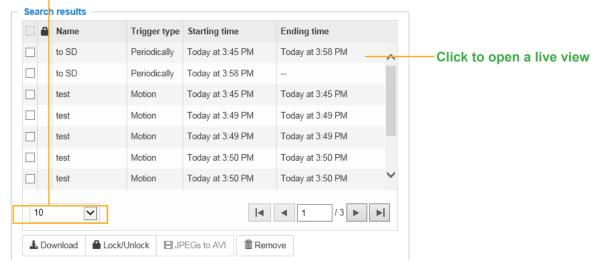
- File attributes: Select one or more items as your search criteria.
- Trigger time: Manually enter the time range you want to search for contents created at a specific point in time.

Click **Search** and the recorded data corresponding to the search criteria will be listed in **Search Results** window.

Search Results

The following is an example of search results. There are four columns: Trigger time, Media type, Trigger type, and Locked. Click to sort the search results in either direction.

Numbers of entries displayed on one page



■ Play: Click on a search result which will highlight the selected item. A Play window will appear on top for immediate review of the selected file.

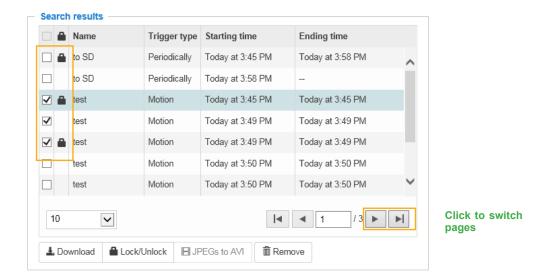
For example:



- Download: Click on a search result to highlight the selected item in purple as shown above. Then click the **Download** button and a file download window will pop up for you to save the file.
- JPEGs to AVI: This functions only applies to "JPEG" format files such as snapshots. You can select several snapshots from the list, then click this button. Those snapshots will be converted into an AVI file.

■ Lock/Unlock: Select the checkbox in front of a desired search result, then click this button. The selected items will become Locked, which will not be deleted during cyclic recording. You can click again to unlock the selections.

For example:



■ Remove: Select the desired search results, then click this button to delete the files.

Appendix

URL Commands for the Network Camera

1. Overview

For some customers who already have their own web site or web control application, the Network Camera/Video Server can be easily integrated through URL syntax. This section specifies the external HTTP-based application programming interface. The HTTP-based camera interface provides the functionality to request a single image, control camera functions (PTZ, output relay etc.), and get and set internal parameter values. The image and CGI-requests are handled by the built-in Web server.

2. Style Convention

In URL syntax and in descriptions of CGI parameters, text within angle brackets denotes content that is to be replaced with either a value or a string. When replacing the text string, the angle brackets should also be replaced. An example of this is the description of the name for the server, denoted with <servername> in the URL syntax description below, that is replaced with the string myserver in the URL syntax example further down in the page.

URL syntax is denoted with the word "Syntax:" written in bold face followed by a box with the referenced syntax as shown below. For example, name of the server is written as <servername> and is intended to be replaced with the name of the actual server. This can either be a name, e.g., "mywebcam" or "thecam. adomain.net" or the associated IP number for the server, e.g., 192.168.0.220.

Syntax:

http://<servername>/cgi-bin/viewer/video.jpg

Description of returned data is written with "Return:" in bold face followed by the returned data in a box. All data is returned in HTTP format, i.e., each line is separated with a Carriage Return and Line Feed (CRLF) printed as \r\n.

Return:

HTTP/1.0 <HTTP code> <HTTP text>\r\n

URL syntax examples are written with "**Example**:" in bold face followed by a short description and a light grey box with the example.

Example: request a single snapshot image

http://mywebserver/cgi-bin/viewer/video.jpg

3. General CGI URL Syntax and Parameters

CGI parameters are written in lower-case and as one word without any underscores or other separators. When the CGI request includes internal camera parameters, these parameters must be written exactly as they are named in the camera or video server. The CGIs are organized in functionally-related directories under the cgi-bin directory. The file extension .cgi is required.

Syntax:

http://<servername>/cgi-bin/<subdir>[/<subdir>...]/<cgi>..<ext>
[?<parameter>=<value>[&<parameter>=<value>...]]

Example: Set digital output #0 to active

http://mywebserver/cgi-bin/dido/setdo.cgi?do0=1

4. Security Level

SECURITY LEVEL	SUB-DIRECTORY	DESCRIPTION
0	anonymous	Unprotected.
1 [view]	viewer	Can view, listen, and talk to camera.
4 [operator]	operator	Operator access rights can modify most of the camera's
		parameters except some privileges and network options.
6 [admin]	admin	Administrator access rights can fully control the
		camera's operations.
7	N/A	Internal APIs. Unable to be changed by any external
		interfaces.

A viewer account can access all APIs with security level 0 and 1. An operator account can access all APIs with security level 0, 1, or 4. An admin account can access all APIs except internal APIs.

Access management is based on the URL directory structure and is described in following paragraphs.

5. Get Server Parameter Values

Note: The access right depends on the URL directory.

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/anonymous/getparam.cgi?[<parameter>]
[&<parameter>...]

http://<servername>/cgi-bin/viewer/getparam.cgi?[<parameter>]
[&<parameter>...]

http://<servername>/cgi-bin/operator/getparam.cgi?[<parameter>]
[&<parameter>...]

http://<servername>/cgi-bin/admin/getparam.cgi?[<parameter>]
[&<parameter>...]
```

Where the *<parameter>* should be *<group>*[_*<name>*] or *<group>*[.*<name>*]. If you do not specify any parameters, all the parameters on the server will be returned. If you specify only *<group>*, the parameters of therelated group will be returned.

When querying parameter values, the current parameter values are returned.

A successful control request returns parameter pairs as follows:

Return:

HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n Context-Length: <length>\r\n

 $r\n$

<parameter pair>

where<parameter pair> is

<parameter>=<value>\r\n

[<parameter pair>]

<length> is the actual length of content.

Example: Request IP address and its response

Request:

http://192.168.0.123/cgi-bin/admin/getparam.cgi?network_ipaddress

Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n

Context-Length: 33\r\n

 $r\n$

 $network.ipaddress = 192.168.0.123 \ r\ n$

6. Set Server Parameter Values

Note: The access right depends on the URL directory.

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/anonymous/setparam.cgi? <parameter>=<value>
[&<parameter>=<value>...][&return=<return page>]

http://<servername>/cgi-bin/viewer/setparam.cgi? <parameter>=<value>
[&<parameter>=<value>...][&return=<return page>]

http://<servername>/cgi-bin/operator/setparam.cgi? <parameter>=<value>
[&<parameter>=<value>...][&return=<return page>]

http://<servername>/cgi-bin/admin/setparam.cgi? <parameter>=<value>
[&<parameter>=<value>...][&return=<return page>]
```

PARAMETER	DESCRIPTION
<parameter></parameter>	A full path like: "videoin_c0_s0_h264_resolution",
	"videoin_c0_s0_h264_maxframe", etc.
<value></value>	The assigned <value> to the <parameter>.</parameter></value>
<return page=""></return>	Redirect to the page <return page="">after the <parameter> is assigned. The <return< th=""></return<></parameter></return>
	page>can be a full URL path or relative path according to the current path. If you
	omit this parameter, it will redirect to an empty page.
	(Note: The return page can be a general HTML file (.htm, .html). It cannot be a CGI command or have any extra parameters. This parameter must be placed at the end
	of the parameter list.

Return:

HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n

Context-Length: <length>\r\n

\r\n

<parameter pair></parameter pair>

where<parameter pair> is <parameter>=<value>\r\n

[<parameter pair>]

Only the parameters that you set and are readable will be returned.

Example: Set the IP address of server to 192.168.0.123:

Request:

http://myserver/cgi-bin/admin/setparam.cgi?network_ipaddress=192.168.0.123

Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n
Context-Length: 33\r\n

 $r\n$

 $network.ipaddress = 192.168.0.123 \\ \ r\\ \ n$

7. Available Parameters on the Server

Valid values:

VALID VALUES	DESCRIPTION	
string[<n>]</n>	Text strings shorter than 'n' characters. The characters ",',<,>,& are	
_	invalid.	
string[n~m]	Text strings longer than `n' characters and shorter than `m' characters.	
	The characters ",',<,>,& are invalid.	
password[<n>]</n>	The same as string but displays'*' instead.	
<integer></integer>	Any single integer number in 32-bits.	
	The range is -2147483648~2147483647.	
<positive integer=""></positive>	Any single positive integer number in 32-bits.	
	The range is 1~ 4294967295.	
<m> ~ <n></n></m>	Any number between 'm' and 'n'.	
domain name[<n>]</n>	A string limited to a domain name shorter than 'n' characters (eg.	
	www.ibm.com).	
email address [<n>]</n>	A string limited to an email address shorter than 'n' characters (eg.	
	joe@www.ibm.com).	
<ip address=""></ip>	A string limited to an IP address (eg. 192.168.1.1).	
<mac address=""></mac>	A string limited to contain a MAC address without hyphens or colons.	
<boolean></boolean>	A boolean value of 1 or 0 represents [Yes or No], [True or False],	
	[Enable or Disable].	
<value1>,</value1>	Enumeration. Only given values are valid.	
<value2>,</value2>		
<value3>,</value3>		
blank	A blank string.	
everything inside <>	A description	
integer primary key	SQLite data type. A 32-bit signed integer. The value is assigned a unique	
	integer by the server.	
<text></text>	SQLite data type. The value is a text string, stored using the database	
	encoding (UTF-8, UTF-16BE or UTF-16-LE).	
<coordinate></coordinate>	x, y coordinate (eg. 0,0)	
<window size=""></window>	window width and height (eg. 800x600)	
<w,h></w,h>	The format for coordinate in 2D.	
	W is the pixel number of width.	
	H is the pixel number of height.	
	EX: (176,144)	

VALID VALUES	DESCRIPTION	
<wxh></wxh>	The format for resolution.	
	W is the pixel number of width.	
	H is the pixel number of height.	
	Ex: 1920x1080, 2048x1536	
available	The API is listed in product WebAPIs.	
non-available	The API is not in product WebAPIs.	
valid	The API is listed in product WebAPIs, and is functional.	
non-valid	The API is listed in product WebAPIs, but is malfunction in this status.	
<decimal></decimal>	Any decimal number expressed in 32-bits ranging from	
	1.18e-38~3.40e+38.	

NOTE: The camera should not be restarted when parameters are changed.

7.1System

Group: system

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
hostname	string[64]	1/6	Host name of server
		_, ~	(Network Camera,
			Wireless Network Camera,
			Video Server,
			Wireless Video Server).
ledoff	<boolean></boolean>	6/6	Turn on (0) or turn off (1) all led
			indicators.
date	<yyyy dd<="" mm="" td=""><td>6/6</td><td>Current date of system. Set to 'keep' to</td></yyyy>	6/6	Current date of system. Set to 'keep' to
	>,		keep date unchanged. Set to 'auto' to
	keep,		use NTP to synchronize date.
	auto		
time	<hh:mm:ss>,</hh:mm:ss>	6/6	Current time of the system. Set to 'keep'
	keep,		to keep time unchanged. Set to 'auto' to
	auto		use NTP to synchronize time.
datetime	<mmddhhmm< td=""><td>6/6</td><td>Another current time format of the</td></mmddhhmm<>	6/6	Another current time format of the
	YYYY.ss>		system.
ntp	<domain< td=""><td>6/6</td><td>NTP server.</td></domain<>	6/6	NTP server.
	name>,		*Do not use "skip to invoke default
	<ip address="">,</ip>		server" for default value.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	<blank></blank>		
timezoneindex	-489 ~ 529	6/6	Indicate timezone and area.
<not recommended="" td="" to<=""><td></td><td></td><td>-480: GMT-12:00 Eniwetok, Kwajalein</td></not>			-480: GMT-12:00 Eniwetok, Kwajalein
use this>			-440: GMT-11:00 Midway Island, Samoa
			-400: GMT-10:00 Hawaii
			-360: GMT-09:00 Alaska
			-320: GMT-08:00 Las Vegas,
			San_Francisco,
			Vancouver
			-280: GMT-07:00 Mountain Time, Denver
			-281: GMT-07:00 Arizona
			-240: GMT-06:00 Central America,
			Central Time, Mexico City, Saskatchewan
			-200: GMT-05:00 Eastern Time, New
			York, Toronto
			-201: GMT-05:00 Bogota, Lima, Quito,
			Indiana
			-180: GMT-04:30 Caracas
			-160: GMT-04:00 Atlantic Time, Canada,
			La Paz, Santiago
			-140: GMT-03:30 Newfoundland
			-120: GMT-03:00 Brasilia, Buenos Aires,
			Georgetown, Greenland
			-80: GMT-02:00 Mid-Atlantic
			-40: GMT-01:00 Azores, Cape_Verde_IS.
			0: GMT Casablanca, Greenwich Mean
			Time: Dublin,
			Edinburgh, Lisbon, London
			40: GMT 01:00 Amsterdam, Berlin,
			Rome, Stockholm, Vienna, Madrid, Paris
			41: GMT 01:00 Warsaw, Budapest, Bern
			80: GMT 02:00 Athens, Helsinki, Istanbul,
			Riga
			81: GMT 02:00 Cairo
			82: GMT 02:00 Lebanon, Minsk
			83: GMT 02:00 Israel

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			120: GMT 03:00 Baghdad, Kuwait,
			Riyadh, Moscow, St. Petersburg, Nairobi
			121: GMT 03:00 Iraq
			140: GMT 03:30 Tehran
			160: GMT 04:00 Abu Dhabi, Muscat,
			Baku,
			Tbilisi, Yerevan
			180: GMT 04:30 Kabul
			200: GMT 05:00 Ekaterinburg, Islamabad,
			Karachi, Tashkent
			220: GMT 05:30 Calcutta, Chennai,
			Mumbai, New Delhi
			230: GMT 05:45 Kathmandu
			240: GMT 06:00 Almaty, Novosibirsk,
			Astana, Dhaka, Sri Jayawardenepura
			260: GMT 06:30 Rangoon
			280: GMT 07:00 Bangkok, Hanoi, Jakarta,
			Krasnoyarsk
			320: GMT 08:00 Beijing, Chongging,
			Hong Kong, Kuala Lumpur, Singapore,
			Taipei
			360: GMT 09:00 Osaka, Sapporo, Tokyo,
			Seoul, Yakutsk
			380: GMT 09:30 Adelaide, Darwin
			400: GMT 10:00 Brisbane, Canberra,
			Melbourne, Sydney, Guam, Vladivostok
			440: GMT 11:00 Magadan, Solomon Is.,
			New Caledonia
			480: GMT 12:00 Aucklan, Wellington, Fiji,
			Kamchatka, Marshall Is.
			520: GMT 13:00 Nuku'Alofa
			* We replace this parameter with
			"system_tz" when the version number
			(httpversion) is equal or greater than
			0314b.
daylight_enable	<boolean></boolean>	6/6	Enable automaticdaylight saving time in

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			time zone.
daylight_auto_begintim e	string[19]	6/7	Display the current daylight saving start time.
daylight_auto_endtime	string[19]	6/7	Display the current daylight saving end time.
daylight_timezones	string	6/6	List time zone index which support daylight saving time.
updateinterval	0, 3600, 86400, 604800, 2592000	6/6	O to Disable automatic time adjustment, otherwise, it indicates the seconds between NTP automatic update intervals.
utctime	<string></string>	6/7	Current UTC timestamp. * We support this parameter when the version number (httpversion) is equal or greater than 0314b.
tz	<posix tz<br="">string></posix>	6/6	POSIX timezone setting. * We support this parameter when the version number (httpversion) is equal or greater than 0314b.
restore	0, <positive integer></positive 	7/6	Restore the system parameters to default values after <value> seconds.</value>
reset	0, <positive integer></positive 	7/6	Restart the server after <value> seconds if <value> is non-negative.</value></value>
restoreexceptnet	0, <positive integer></positive 	7/6	Restore the system parameters to default values except (ipaddress, subnet, router, dns1, dns2, pppoe). This command can cooperate with other "restoreexceptXYZ" commands. When cooperating with others, the system parameters will be restored to the default value except for a union of the combined results.
restoreexceptdst	0,	7/6	Restore the system parameters to default

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	<positive integer=""></positive>		values except all daylight saving time settings. This command can cooperate with other "restoreexceptXYZ" commands. When cooperating with others, the system parameters will be restored to default values except for a union of combined results.
restoreexceptlang	0, <positive integer></positive 	7/6	Restore the system parameters to default values except the custom language file the user has uploaded. This command can cooperate with other "restoreexceptXYZ" commands. When cooperating with others, the system parameters will be restored to the default value except for a union of the combined results.
restoreexceptvadp	0, <positive integer></positive 	7/6	Restore the system parameters to default values except the vadp parameters and VADP modules that stored in the system. This command can cooperate with other "restoreexceptXYZ" commands. When cooperating with others, the system parameters will be restored to the default value except for a union of the combined results.
restoreexceptfocusvalu e	0, <positive integer></positive 	7/6	Restore the system parameters to default values except zoom and focus value. This command can cooperate with other "restoreexceptXYZ" commands. When cooperating with others, the system parameters will be restored to the default value except for a union of the combined results. * Only available when "capability_image_c<0~(n-1)>_remotefo

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			cus" != 0.
restoreexceptlen	0,	7/6	Restore the system parameters to default
	<positive< td=""><td></td><td>values except lens profile.</td></positive<>		values except lens profile.
	integer>		This command can cooperate with other
			"restoreexceptXYZ" commands. When
			cooperating with others, the system
			parameters will be restored to the
			default value except for a union of the
			combined results.
			* Only available when
			"capability_image_c<0~(n-1)>_lensconfig
			uration_support" != 0.
connection_timeout	<integer></integer>	6/6	Session connection timeout interval.
			* Only available when
			"capability_taics_support" = 1.

7.1.1 System.Info

Subgroup of **system**: **info** (The fields in this group are unchangeable.)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
modelname	string[40]	0/7	Internal model name of the server
extendedmodelname	string[40]	0/7	ODM specific model name of server (eg.
			DCS-5610). If it is not an ODM model,
			this field will be equal to "modelname"
serialnumber	<mac address=""></mac>	1/7	12 characters MAC address (without
			hyphens).
firmwareversion	string[40]	0/7	Firmware version, including model,
			company, and version number in the
			format: <model-brand-version></model-brand-version>
language_count	<positive< td=""><td>0/7</td><td>Number of webpage languages available</td></positive<>	0/7	Number of webpage languages available
	integer>		on the server.
language_i<0~(count-	string[16]	0/7	Available language lists.
1)>	language_i0 :		
	English		

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	language_i1 :		
	Deutsch		
	language_i2 :		
	Español		
	language_i3 :		
	Français		
	language_i4 :		
	Italiano		
	language_i5 :		
	日本語		
	language_i6 :		
	Português		
	language_i7 :		
	简体中文		
	language_i8 :		
	繁體中文		
customlanguage_max	0, <positive< td=""><td>0/6</td><td>Maximum number of custom languages</td></positive<>	0/6	Maximum number of custom languages
count	integer>		supported on the server.
customlanguage_coun	0, <positive< td=""><td>0/6</td><td>Number of custom languages which have</td></positive<>	0/6	Number of custom languages which have
t	integer>		been uploaded to the server.
customlanguage_i<0~	string	0/6	Custom language name.
(maxcount-1)>			

7.2Status

Group: status

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
di_i<0~(capability_ndi-1)>	<boolean></boolean>	1/7	0 => Inactive, normal
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			1 => Active, triggered
			(capability_ndi > 0)
do_i<0~(capability_ndo-1)>	<boolean></boolean>	1/7	0 => Inactive, normal
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			1 => Active, triggered
			(capability_ndo > 0)
onlinenum_rtsp	0, <positive< td=""><td>6/7</td><td>Current number of RTSP</td></positive<>	6/7	Current number of RTSP
	integer>		connections.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
onlinenum_httppush	0, <positive< td=""><td>6/7</td><td>Current number of HTTP push server</td></positive<>	6/7	Current number of HTTP push server
	integer>		connections.
onlinenum_sip	0, <positive< td=""><td>6/7</td><td>Current number of SIP connections.</td></positive<>	6/7	Current number of SIP connections.
	integer>		
eth_i0	<string></string>	1/7	Get network information from
			mii-tool.
vi_i<0~(capability_nvi-1)>	<boolean></boolean>	1/7	Virtual input
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			0 => Inactive
			1 => Active
			(capability_nvi > 0)

7.2.1 Status per Channel

Group: **status_c<0~(n-1)>** for n channel products n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
signal_detect	<boolean></boolean>	1/7	Indicates whether the video source is
			connected or not.
			* Only available when
			capability_videoin_type is 0 or 1.
signal_type	ntsc,pal	1/7	The actual modulation type.
			* Only available when
			capability_videoin_type is 0 or 1.

7.3 Digital Input Behavior Define

Group: $di_i<0^{(n-1)}$ for n is the value of "capability_ndi" (capability_ndi > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
normalstate	high,	1/1	Indicates open circuit or closed circuit
	low		(inactive status)

7.4 Digital Output Behavior Define

Group: $do_i<0^{(n-1)}$ for n is the value of "capability_ndo" (capability_ndo > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
normalstate	open,	1/1	Indicate open circuit or closed circuit
	grounded		(inactive status)

7.5 Security

Group: security

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
privilege_do	view, operator,	1/6	Indicate which privileges and above
	admin		can control digital output
			(capability_ndo > 0)
privilege_camctrl	view, operator,	1/6	Indicate which privileges and above
	admin		can control PTZ
			(capability_ptzenabled > 0 or
			capability_eptz > 0 or
			capability_fisheye > 0)
user_i0_name	string[64]	6/7	User name of root
user_i<1~20>_name	string[64]	6/7	User name
user_i0_pass	password[64]	7/6	Root password
user_i<1~20>_pass	password[64]	7/6	User password
user_i0_privilege	view,	6/7	Root privilege
	operator,		
	admin		
user_i<1~20>_ privilege	view,	6/6	User privilege
	operator,		
	admin		

7.6 Network

Group: network

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
preprocess	<positive integer=""></positive>	6/6	An 32-bit integer, each bit can be set
			separately as follows:
			Bit 0 => HTTP service;
			Bit 1=> HTTPS service;

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			Bit 2=> FTP service;
			Bit 3 => Two way audio and RTSP
			Streaming service;
			To stop service before changing its port
			settings. It's recommended to set this
			parameter when change a service port
			to the port occupied by another service
			currently. Otherwise, the service may
			fail.
			Stopped service will auto-start after
			changing port settings.
			Ex:
			Change HTTP port from 80 to 5556, and
			change RTP port for video from 5556 to
			20480.
			Then, set preprocess=9 to stop both
			service first.
			"/cgi-bin/admin/setparam.cgi?
			network_preprocess=9&network_http_
			port=5556&
t. (n.o.	lan	c Ic	network_rtp_videoport=20480"
type	lan,	6/6	Network connection type.
	pppoe		
resetip	<boolean></boolean>	6/6	1 => Get ipaddress, subnet, router,
•		,	dns1, dns2 from DHCP server at next
			reboot.
			0 => Use preset ipaddress, subnet,
			rounter, dns1, and dns2.
ipaddress	<ip address=""></ip>	6/6	IP address of server.
subnet	<ip address=""></ip>	6/6	Subnet mask.
router	<ip address=""></ip>	6/6	Default gateway.
dns1	<ip address=""></ip>	6/6	Primary DNS server.
dns2	<ip address=""></ip>	6/6	Secondary DNS server.
wins1	<ip address=""></ip>	6/6	Primary WINS server.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
wins2	<ip address=""></ip>	6/6	Secondary WINS server.

7.6.1 802.1x

Subgroup of **network**: **ieee8021x** (capability_protocol_ieee8021x > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable/disable IEEE 802.1x
eapmethod	eap-peap, eap-tls	6/6	Selected EAP method
identity_peap	string[64]	6/6	PEAP identity
identity_tls	string[64]	6/6	TLS identity
password	string[200]	7/6	Password for TLS
privatekeypassword	string[200]	7/6	Password for PEAP
ca_exist	<boolean></boolean>	6/6	CA installed flag
ca_time	0, <positive< td=""><td>6/7</td><td>CA installed time. Represented in</td></positive<>	6/7	CA installed time. Represented in
	integer>		EPOCH
ca_size	0, <positive< td=""><td>6/7</td><td>CA file size (in bytes)</td></positive<>	6/7	CA file size (in bytes)
	integer>		
certificate_exist	<boolean></boolean>	6/6	Certificate installed flag (for TLS)
certificate_time	0, <positive< td=""><td>6/7</td><td>Certificate installed time. Represented</td></positive<>	6/7	Certificate installed time. Represented
	integer>		in EPOCH
certificate_size	0, <positive< td=""><td>6/7</td><td>Certificate file size (in bytes)</td></positive<>	6/7	Certificate file size (in bytes)
	integer>		
privatekey_exist	<boolean></boolean>	6/6	Private key installed flag (for TLS)
privatekey_time	0, <positive< td=""><td>6/7</td><td>Private key installed time. Represented</td></positive<>	6/7	Private key installed time. Represented
	integer>		in EPOCH
privatekey_size	0, <positive< td=""><td>6/7</td><td>Private key file size (in bytes)</td></positive<>	6/7	Private key file size (in bytes)
	integer>		

7.6.2 QOS

Subgroup of **network**: **qos_cos** (capability_protocol_qos_cos > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable/disable CoS (IEEE 802.1p)
vlanid	1~4095	6/6	VLAN ID

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
video	0~7	6/6	Video channel for CoS
audio	0~7	6/6	Audio channel for CoS
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			(capability_naudioin > 0)
eventalarm	0~7	6/6	Event/alarm channel for CoS
management	0~7	6/6	Management channel for CoS
eventtunnel	0~7	6/6	Event/Control channel for CoS

Subgroup of **network**: **qos_dscp** (capability_protocol_qos_dscp > 0)

	_ 1 \ 1 /_1		- 1 /
NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable/disable DSCP
video	0~63	6/6	Video channel for DSCP
audio	0~63	6/6	Audio channel for DSCP
			(capability_naudioin > 0)
eventalarm	0~63	6/6	Event/alarm channel for DSCP
management	0~63	6/6	Management channel for DSCP
eventtunnel	0~63	6/6	Event/Control channel for DSCP

7.6.3 IPV6

Subgroup of **network**: **ipv6** (capability_protocol_ipv6 > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable IPv6.
addonipaddress	<ip address=""></ip>	6/6	IPv6 IP address.
addonprefixlen	0~128	6/6	IPv6 prefix length.
addonrouter	<ip address=""></ip>	6/6	IPv6 router address.
addondns	<ip address=""></ip>	6/6	IPv6 DNS address.
allowoptional	<boolean></boolean>	6/6	Allow manually setup of IP address
			setting.

7.6.4 FTP

Subgroup of network: ftp

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
port	21, 1025~65535	6/6	Local ftp server port.
enable	<boolean></boolean>	6/6	Enable ftp.

7.6.5 HTTP

Subgroup of network: http

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
port	80, 1025 ~	1/6	HTTP port.
	65535		
alternateport	1025~65535	6/6	Alternate HTTP port.
authmode	basic,	1/6	HTTP authentication mode.
	digest		
s<0~(capability_nmed	string[32]	1/6	Http server push access name for stream
iastream*capability_n			N, N=
videoin)-1)>_accessna			1~(capability_nmediastream*capability_
me			nvideoin)-1).
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			(capability_protocol_spush_mjpeg =1
<not recommended<="" td=""><td></td><td></td><td>and capability_nmediastream > 0)</td></not>			and capability_nmediastream > 0)
to use this>			The value are shown as
			video1s1.mjpg = c0_s0_accessname,
			(channel1stream1)
			video1s2.mjpg = c0_s1_accessname,
			(channel1stream2)
			video1s3.mjpg = c0_s2_accessname,
			(channel1stream3)
			video1s4.mjpg = c0_s3_accessname,
			(channel1stream4)
			etc.
			* We replace this parameter with
			"network_http_c<0~(capability_nvideoin
			-1)>_s<0~(capability_nmediastream-1)>_
			accessname
			" when the version number (httpversion)
			is equal or greater than 0311c.

7.6.6 HTTP per Channel

Subgroup of **network**: **http_c<0~(n-1)>** for n channel products n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
s<0~(capability_nmedia	string[32]	1/6	Http server push access name for
stream-1)>_accessname			channel N and stream M, N= 1~
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			capability_nvideoin, M= 1~
			capability_nmediastream.
			(capability_protocol_spush_mjpeg =1
			and capability_nmediastream > 0)
			The value are shown as
			video1s1.mjpg = c0_s0_accessname,
			(channel1stream1)
			video1s2.mjpg = c0_s1_accessname,
			(channel1stream2)
			video2s1.mjpg = c1_s0_accessname,
			(channel2stream1)
			video2s2.mjpg = c1_s1_accessname,
			(channel2stream2)
			etc.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0311c.

7.6.7 HTTS Port

Subgroup of **network**: **https** (capability_protocol_https > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
port	443, 1025 ~	1/6	HTTPS port.
	65535		

7.6.8 RTSP

Subgroup of **network**: **rtsp** (capability_protocol_rtsp > 0)

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
port	554, 1025 ~ 65535	1/6	RTSP port.
			(capability_protocol_rtsp=1)
authmode	disable,	1/6	RTSP authentication mode.
	basic,		(capability_protocol_rtsp=1)
	digest		
s<0~(capability_nmed	string[32]	1/6	RTSP access name for channel and
iastream*capability_n			stream.
videoin)-1)>_accessna			(capability_protocol_spush_mjpeg
me			=1 and capability_nmediastream > 0)
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			The value are shown as
			live1s1.sdp = s0_accessname,
			(channel1stream1)
			live1s2.sdp = s1_accessname,
			(channel1stream2)
			live1s3.sdp = s2_accessname,
			(channel1stream3)
			live1s4.sdp = s3_accessname,
			(channel1stream4)
			etc.
			* Values start with prefix "cgi-bin"
			are prohibited. For example, "c, cg,
			cgi, cgi-, cgi-b, cgi-bi, cgi-bin" are not
			allowed.
			* We modify the value of RTSP
			access name after version
			number(httpversion) is 0311c
c<0~(capability_nvide	string[32]	1/6	RTSP access name for channel N
oin)-1>_s<0~(capabilit			stream M, N= 1~
y_nmediastream)-1)>			capability_nvideoin, M =
_accessname			1~capability_nmediastream.
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			The value are shown as
			live1s1.sdp = c0_s0_accessname,
			(channel1stream1)
			live1s2.sdp = c0_s1_accessname,
			(channel1stream2)
			live1s3.sdp = c0_s2_accessname,

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
		(0 / /	(channel1stream3)
			live1s4.sdp = c0_s3_accessname,
			(channel1stream4)
			etc.
			* Values start with prefix "cgi-bin"
			are prohibited. For example, "c, cg,
			cgi, cgi-, cgi-b, cgi-bin" are not
			allowed.
			* We modify the value of RTSP
			access name after version
			number(httpversion) is 0311c
pimssm_enable	<boolean></boolean>	7/6	To enable the feature of Protocol
			Independent Multicast - Source
			Specific Multicast.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0313a.

7.6.9 RTSP Multicast

Subgroup of network: rtsp_s<0~(n-1)>_multicast

n denotes the value of "capability_nmediastream * capability_nvideoin"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
alwaysmulticast	<boolean></boolean>	4/4	Enable always multicast.
ipaddress	<ip< td=""><td>4/4</td><td>Multicast video IP address.</td></ip<>	4/4	Multicast video IP address.
	address>		* We replace
			"network_rtsp_s<0~(n-1)>_multicast_ipaddress"
			with "
			network_rtsp_s<0~(n-1)>_multicast_videoipadd
			ress ".
			* Reserved for compatibility, and suggest don't
			use this since [httpversion] > 0304a
videoipaddress	<ip< td=""><td>4/4</td><td>Multicast video IP address.</td></ip<>	4/4	Multicast video IP address.
	address>		* We support this parameter when the version
			number (httpversion) is equal or greater than

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			0304a.
audioipaddress	<ip< td=""><td>4/4</td><td>Multicast audio IP address.</td></ip<>	4/4	Multicast audio IP address.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	address>		* We support this parameter when the version
dependent>			number (httpversion) is equal or greater than
			0304a.
			* Only available when capability_naudioin > 0
metadataipaddres	<ip< td=""><td>4/4</td><td>Multicast metadata IP address.</td></ip<>	4/4	Multicast metadata IP address.
S	address>		* We support this parameter when the version
			number (httpversion) is equal or greater than
			0304a.
videoport	1025 ~	4/4	Multicast video port.
	65535		
audioport	1025 ~	4/4	Multicast audio port.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	65535		* Only available when capability_naudioin > 0
dependent>			
metadataport	1026~6553	4/4	Multicast metadata port.
	4		
ttl	1 ~ 255	4/4	Multicasttime to live value.

7.6.10 SIP Port

Subgroup of **network**: **sip** (capability_protocol_sip> 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
port	1025 ~ 65535	1/6	SIP port.

7.6.11 RTP Port

Subgroup of **network**: **rtp**

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
videoport	1025 ~ 65535	6/6	Video channel port for RTP.
audioport	1025 ~ 65535	6/6	Audio channel port for RTP.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
metadataport	1025 ~ 65535	6/6	Metadata channel port for RTP.

7.6.12 PPPoE

Subgroup of **network**: **pppoe** (capability_protocol_pppoe > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
user	string[128]	6/6	PPPoE account user name.
pass	password[64]	7/6	PPPoE account password.

7.6.13 Bonjour

Subgroup of **network**: **service bonjour**

sassioap oi nettroiki se			
NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable bonjour service feature.
			* We support this parameter when the
			version number (httpversion) is equal
			or greater than 0312a.
servicename	<string></string>	6/6	A friendly name for bonjour service.
			* We support this parameter when the
			version number (httpversion) is equal
			or greater than 0312a.

7.6.14 SFTP server

* Only available when bit 1 of "capability_protocol_ftp_server" is 1.

Subgroup of network: sftp

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
port	22,	6/6	Local sftp server port.
	1025~65535		
enable	<boolean></boolean>	6/6	Enable sftp.

7.7IP Filter

Group: ipfilter

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	6/6	Enable access list filtering.
admin_enable	<boolean></boolean>	6/6	Enable administrator IP address.
admin_ip	string[43]	6/6	Administrator IP address.
maxconnection	1~ "capability_protoc ol_maxconnection"	6/6	Maximum number of (s).
type	0, 1	6/6	Ipfilter policy :
			0 => allow
			1 => deny
ipv4list_i<0~9>	Single address: <ip address=""> Network address: <ip address="" mask="" network=""> Range address:<start -="" address="" end="" ip=""></start></ip></ip>	6/6	IPv4 address list.
ipv6list_i<0~9>	string[43]	6/6	IPv6 address list.

7.8 Video Input

<Not Recommended to use>

Group: videoin

* We do not support this parameter when "capability_nvideoin > 1".

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
cmosfreq	50, 60	4/4	CMOS frequency.
			* Only available when
			capability_videoin_type is 2.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
whitebalance	auto,	4/4	Modes of white balance.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	panorama,	(801/301/	"auto": Auto white balance
product dependent	manual,		"panorama": indicates that camera
	rbgain,		would try to balance the white
	widerange,		balance effect of every sensor.
	outdoor,		"rbgain": Use rgain and bgain to set
	indoor,		white balance manually.
	sodiumauto,		"manual": 2 cases:
	etc		a. if "rbgain" is not supported, this
			means keep current white balance
	(Available values		status.
	are listed in		b. if "rbgain" is supported, "rgain"
	"capability_image_		and "bgain" are updated to the
	c<0~(n-1)> wbmo		current values which is got from
	de")		white balance module. Then, act as
	,		rbgain mode
			"widerange": Auto Tracing White
			balance (2000K to 10000K).
			"outdoor": auto white balance mode
			specifically for outdoor.
			"indoor": auto white balance mode
			specifically for indoor.
			"sodiumauto": sodium vapor lamps.
			* Only available when
			"capability_image_c<0~(n-1)>_wbmo de" !="-"
			* We do not support this parameter
			when "capability nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
exposurelevel	0~12	4/4	Exposure level
			"0,12": This range takes the concept
			from DC's exposure tuning options.
			The definition is:
			0: EV -2.0
			1: EV -1.7

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			2: EV -1.3
			3: EV -1.0
			4: EV -0.7
			5: EV -0.3
			6: EV 0
			7: EV +0.3
			8: EV +0.7
			9: EV +1.0
			10: EV +1.3
			11: EV +1.7
			12: EV +2.0
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_mode" !=0
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
irismode	fixed, indoor,	4/4	Control DC-Iris mode.
	outdoor		"outdoor": Auto-setting DC-Iris to get
	<pre><pre><pre><pre></pre></pre></pre></pre>		best quality, but easy to meet rolling
	independent>		or flicker effect in indoor
			environment.
			"indoor": Avoid rolling and flicker
			effect first.
			"fixed": Open the iris to maximum.
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=dciris
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
enableblc	<boolean></boolean>	4/4	Enable backlight compensation.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
<not support<="" td=""><td></td><td></td><td>* Not support this parameter</td></not>			* Not support this parameter
anymore>			anymore when the version number
			(httpversion) is equal or greater than
			0301a.
			* It's recommanded to use
			"exposurewin_c<0~(n-1)>_mode" to
			switch on/off BLC.
color	0, 1	4/4	0 =>monochrome
			1 => color
			* Only available when "
			capability_videoin_c<0~(n-1)>_color_
			support" is 1.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
flip	<boolean></boolean>	4/4	Flip the image.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
mirror	<boolean></boolean>	4/4	Mirror the image.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
rotate	0,90,180,270	1/4	The rotation angle of image.
			Support only in Rotation mode.
			* Only available when "
			capability_videoin_c<0~(n-1)>_rotatio
			n"=1
			* We do not support this parameter
			when "capability_nvideoin > 1".

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
ptzstatus	0, <positive< td=""><td>1/7</td><td>A 32-bit integer, each bit can be set</td></positive<>	1/7	A 32-bit integer, each bit can be set
<not support<="" td=""><td>integer></td><td></td><td>separately as follows:</td></not>	integer>		separately as follows:
anymore>			Bit 0 => Support camera control
			function; 0(not support), 1(support)
			Bit 1 =>Built-in or external camera; 0
			(external), 1(built-in)
			Bit 2 => Support pan operation; 0(not
			support), 1(support)
			Bit 3 => Support tilt operation; 0(not
			support), 1(support)
			Bit 4 => Support zoom operation;
			O(not support), 1(support)
			Bit 5 => Support focus operation;
			O(not support), 1(support)(SD/PZ/IZ
			series only)
			* Not support this parameter
			anymore when the version number
			(httpversion) is equal or greater than
			0309a.
text	string[64]	1/4	Enclose caption.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
imprinttimestamp	<boolean></boolean>	4/4	Overlay time stamp on video.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
minexposure	<1~32000>,	4/4	Minimum exposure time
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>	<5~32000>,		1~32000 => 1s ~ 1/32000s

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	<1~8000>,		5~32000 => 1/5s ~ 1/32000s
	<5~8000>,		1~8000 => 1s ~ 1/8000s
	etc.		5~8000 => 1/5s ~ 1/8000s
			etc.
	* Available value is		* Only available when
	listed in		"capability_image_c<0~(n-1)>_exposu
	"capability_image_		re_minrange" != "-"
	c<0~(n-1)>_exposu		* Only valid when
	re_minrange"		"piris_mode"=manual or
			"irismode"=fixed
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
maxexposure	<1~32000>,	4/4	Maximum exposure time
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>	<5~32000>,		1~32000 => 1s ~ 1/32000s
	<1~8000>,		5~32000 => 1/5s ~ 1/32000s
	<5~8000>,		1~8000 => 1s ~ 1/8000s
	etc.		5~8000 => 1/5s ~ 1/8000s
			etc.
	* Available value is		* This parameter may also restrict
	listed in		image frame rate from sensor due to
	"capability_image_		sensor generates a frame per
	c<0~(n-1)>_exposu		exposure time. Ex: If this is set to 1/5s
	re_maxrange"		~ 1/8000s and camera takes 1/5s on
			the night, then sensor only outputs 5
			frame/s.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_maxrange" != "-"
			* Only valid when
			"piris_mode"=manual or

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			"irismode"=fixed
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
enablepreview	<boolean></boolean>	1/4	Usage for UI of exposure settings.
			Preview settings of video profile.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_mode" !=0
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.

7.8.1 Video Input Setting per Channel

Group: videoin_c<0~(n-1)> for n channel products, and m is stream number n denotes the value of "capability_nvideoin", m denotes the value of "capability_nmediastream"

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
cmosfreq	50, 60	4/4	CMOS frequency.
			* Only available when "
			capability_videoin_type " is 2
mode	0~	4/4	Indicate the video mode on use.
	"capability_videoin_c<0~(
	n-1)>_nmode"-1		
whitebalance	auto,	4/4	Modes of white balance.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	panorama,		"auto": Auto white balance
dependent>	manual,		"panorama": indicates that camera
	rbgain,		would try to balance the white

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
	widerange, outdoor, indoor, sodiumauto, etc (Available values are listed in "capability_image_c<0~(n- 1)>_wbmode")	get/set)	balance effect of every sensor. "rbgain": Use rgain and bgain to set white balance manually. "manual": 2 cases: a. if "rbgain" is not supported, this means keep current white balance status. b. if "rbgain" is supported, "rgain" and "bgain" are updated to the current values which is got from white balance module. Then, act as rbgain mode "widerange": Auto Tracing White balance (2000K to 10000K). "outdoor": auto white balance mode specifically for outdoor. "indoor": auto white balance mode specifically for indoor. "sodiumauto": sodium vapor lamps. * Only available when
rgain	0~100	4/4	"capability_image_c<0~(n-1)>_wbmo de" !="-" Manual set rgain value of gain control setting. 0: Weak <-> 100: Strong * Only available when "rbgain" is listed in "capability_image_c<0~(n-1)>_wbmo de". * Only valid when "videoin_c<0~(n-1)>_whitebalance" ! = auto * Normalized range.
bgain	0~100	4/4	Manual set bgain value of gain control setting. 0: Weak <-> 100: Strong

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
		Beriseri	* Only available when "rbgain" is
			listed in
			"capability_image_c<0~(n-1)>_wbmo
			de".
			* Only valid when
			"videoin_c<0~(n-1)>_whitebalance"!
			= auto
			* Normalized range.
exposurelevel	0~12	4/4	Exposure level
			"0,12": This range takes the concept
			from DC's exposure tuning options.
			The definition is:
			0: EV -2.0
			1: EV -1.7
			2: EV -1.3
			3: EV -1.0
			4: EV -0.7
			5: EV -0.3
			6: EV 0
			7: EV +0.3
			8: EV +0.7
			9: EV +1.0
			10: EV +1.3
			11: EV +1.7
			12: EV +2.0
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_mode" !=0
exposuremode	auto,	4/4	Select exposure mode.
<pre><pre><pre><pre></pre></pre></pre></pre>	shutterpriority,		"auto": Automatically adjust the Iris,
dependent>	irispriority,		Gain and Shutter Speed to fit the
	qualitypriority,		exposure level.
	manual,		"shutterpriority": Manually adjust
	etc		with variable Shutter Speed, and keep
			adjusting Iris, Gain automatically.
	(Available options are list		"irispriority": Manually adjust with

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
	in		variable Iris, and keep adjusting Gain
	"capability_image_c<0~(n-		and Shutter speed automatically.
	1)>_exposure_modetype")		"qualitypriority": Automatically
			adjust the Iris, Gain and Shutter Speed
			by VIVOTEK quality algorithm.
			"manual": Manually adjust with
			variable Shutter, Iris and Gain.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_mode" !=0
irismode	fixed, indoor, outdoor	4/4	Control DC-Iris mode.
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		"outdoor": Auto-setting DC-Iris to get
			best quality, but easy to meet rolling
			or flicker effect in indoor
			environment.
			"indoor": Avoid rolling and flicker
			effect first.
			"fixed": Open the iris to maximum.
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=dciris
piris_mode	manual, indoor, outdoor,-	1/4	Control P-Iris mode.
<pre><pre><pre>oduct</pre></pre></pre>			"outdoor": Auto-setting P-Iris to get
dependent>			best quality, but easy to meet rolling
			or flicker effect in indoor
			environment.
			"indoor": Avoid rolling and flicker
			effect first.
			"manual": Manual set P-Iris by
			"piris_position".
			"-": not support. (only available when
			"capability_image_c<0~(n-1)>_sensor
			type" is "smartsensor")

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=piris
piris_position	1~100	1/4	Manual set P-Iris.
<pre><pre><pre><pre></pre></pre></pre></pre>			1: Open <-> 100: Close
dependent>			* Only valid when
			"piris_mode"=manual or
			"capability_image_c<0~(n-1)>_sensor
			type" is "smartsensor"
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=piris
enableblc	<boolean></boolean>	4/4	Enable backlight compensation
<not support<="" td=""><td></td><td></td><td>* Not support this parameter</td></not>			* Not support this parameter
anymore>			anymore when the version number
			(httpversion) is equal or greater than
			0301a.
			* It's recommanded to use
			"exposurewin_c<0~(n-1)>_mode" to
			switch on/off BLC.
maxgain	0~100	4/4	Maximum gain value.
			0: Low <-> 100: High
			* Only available when
			"capability_image_c<0~(n-1)>_agc_m
			axgain" != "-"
			* Only valid when
			"piris_mode"=manual or
			"irismode"=fixed
			* Normalized range.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
ii	0~100	4/4	re_rangetype" is "twovalues".
mingain	0~100	4/4	Minimum gain value.
			0: Low <-> 100: High
			* Only available when
			"capability_image_c<0~(n-1)>_agc_mi

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
			ngain" != "-"
			* Only valid when
			"piris_mode"=manual or
			"irismode"=fixed
			* Normalized range.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
gainvalue	0~100	4/4	Gain value.
			0: Low <-> 100: High
			* Only available when
			"capability_image_c<0~(n-1)>_agc_m
			axgain" != "-" and
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "onevalue".
			* Normalized range.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
color	0, 1	4/4	0 =>monochrome
			1 => color
			* Only available when "
			capability_videoin_c<0~(n-1)>_color_
			support" is 1.
flip	<boolean></boolean>	4/4	Flip the image.
mirror	<boolean></boolean>	4/4	Mirror the image.
rotate	0,90,180,270	1/4	The rotation angle of image.
			Support only in Rotation mode
			(capability_videoin_c<0~(n-1)>_rotati
			on=1)
ptzstatus	0, <positive integer=""></positive>	1/7	A 32-bit integer, each bit can be set
<not support<="" td=""><td></td><td></td><td>separately as follows:</td></not>			separately as follows:
anymore>			Bit 0 => Support camera control
			function; 0(not support), 1(support)
			Bit 1 => Built-in or external camera; 0
			(external), 1(built-in)

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
			Bit 2 => Support pan operation; 0(not
			support), 1(support)
			Bit 3 => Support tilt operation; 0(not
			support), 1(support)
			Bit 4 => Support zoom operation;
			O(not support), 1(support)
			Bit 5 => Support focus operation;
			O(not support), 1(support)(SD/PZ/IZ
			series only)
			* Not support this parameter
			anymore when the version number
			(httpversion) is equal or greater than
			0309a.
text	string[64]	1/4	Enclose caption.
imprinttimesta	<boolean></boolean>	4/4	Overlay time stamp on video.
mp			
textonvideo_p	top, bottom	4/4	Text on video string position
osition			
textonvideo_si	20~40	4/4	Text on video font size
ze			
textonvideo_fo	/usr/share/font/Default.ttf	4/4	Choose camera default font file
ntpath	, /mnt/flash2/upload.ttf		(/usr/share/font/Default.ttf) or user
			uploaded font
			file(/mnt/flash2/upload.ttf).
textonvideo_u	Depends on the font file	1/7	Show the uploaded font file name.
ploadfilename	name uploaded by user		
minexposure	<1~32000>,	4/4	Minimum exposure time
<pre><pre><pre><pre></pre></pre></pre></pre>	<5~32000>,		1~32000 => 1s ~ 1/32000s
dependent>	<1~8000>,		5~32000 => 1/5s ~ 1/32000s
	<5~8000>,		1~8000 => 1s ~ 1/8000s
	etc.		5~8000 => 1/5s ~ 1/8000s
			etc.
	* Available value is listed		* Only available when
	in		"capability_image_c<0~(n-1)>_exposu
	"capability_image_c<0~(n-		re_minrange" != "-"
	1)>_exposure_minrange"		* Only valid when

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
			"piris_mode"=manual or
			"irismode"=fixed
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
maxexposure	<1~32000>,	4/4	Maximum exposure time
<pre><pre><pre><pre></pre></pre></pre></pre>	<5~32000>,		1~32000 => 1s ~ 1/32000s
dependent>	<1~8000>,		5~32000 => 1/5s ~ 1/32000s
	<5~8000>,		1~8000 => 1s ~ 1/8000s
	etc.		5~8000 => 1/5s ~ 1/8000s
	* Available value is listed		etc.
	in		* This parameter may also restrict
	"capability_image_c<0~(n-		image frame rate from sensor due to
	1)>_exposure_maxrange"		sensor generates a frame per
			exposure time. Ex: If this is set to 1/5s
			~ 1/8000s and camera takes 1/5s on
			the night, then sensor only outputs 5
			frame/s.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_maxrange" != "-"
			* Only valid when
			"piris_mode"=manual or
			"irismode"=fixed
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
shuttervalue	<1~32000>,	4/4	Exposure time
<pre><pre><pre><pre></pre></pre></pre></pre>	<5~32000>,		1~32000 => 1s ~ 1/32000s
dependent>	<1~8000>,		5~32000 => 1/5s ~ 1/32000s
	<5~8000>,		1~8000 => 1s ~ 1/8000s
	etc.		5~8000 => 1/5s ~ 1/8000s
			etc.
	* Available value is listed		* This parameter may also restrict
	in		image frame rate from sensor due to
	"capability_image_c<0~(n-		sensor generates a frame per

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
	1)>_exposure_maxrange"		exposure time. Ex: If this is set to 1/5s
			~ 1/8000s and camera takes 1/5s on
			the night, then sensor only outputs 5
			frame/s.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_maxrange" != "-" and
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "onevalue".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
enablepreview	<boolean></boolean>	1/4	Usage for UI of exposure settings.
			Preview settings of video profile.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_mode" !=0
meteringmode	auto,	4/4	"auto": The algorithm chooses the
	blc,		best metering strategy.
	hlc		"blc": This metering method increases
	* Available value is listed		the weight of dark area.
	in		"hlc": The metering method can
	"capability_image_c<0~(n-		detect strong light and make affected
	1)>_exposure_meteringm ode"		area clear.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0311a.
crop_position	<coordinate></coordinate>	1/7	Crop left-top corner coordinate.
	(x,y)		
crop_size	<window size=""></window>	1/7	Crop width and height.
	(WxH)		(width must be 16x or 32x and height
			must be 8x)
zoomratiodispl	<boolean></boolean>	1/4	Indicates multiple of zoom in is
ay			"on-screen display" or not.
			* We support this parameter when

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
			the version number (httpversion) is
			equal or greater than 0302a.
bracketing_lev el	1~100	4/4	 The total available lists (capability_image_c<0~(n-1)>_ex posure_bracketing_range) will be normalized to 1~100 scale. For example, the total available list is 7. (2x,3x,4x,5x,6x,7x,8x) 1 ~ 14 that correspond with 2x. 15 ~ 30 that correspond with 3x. *Only available when "capability_image_c<0~(n-1)>_exposu re_bracketing_mode"=1. * We support this parameter when the version number (httpversion) is equal or greater than 0310a.
s<0~(m-1)>_en	<boolean></boolean>	4/4	Indicate whether stream supprts eptz
ableeptz			or not
s<0~(m-1)>_co dectype	Listed at "capability_videoin_codec " Possible values are: mjpeg, h264,h265 <pre> <pre> <pre> <pre> <pre> codec</pre></pre></pre></pre></pre>	1/4	Codec type for this stream
s<0~(m-1)>_re solution	Available options are list in "capability_videoin_c<0~(n-1)>_resolution". Besides, available options is referred to "capability_videoin_c<0~(n-1)>_maxresolution" and "capability_videoin_c<0~(n-1)>_minresolution"	1/4	Video resolution in pixels.
s<0~(m-1)>_s martfps_enabl	<boolean></boolean>	4/4	Enable "Smart fps" function. * Only available when

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
е			"capability_videoin_c<0~(n-1)>_smart
			fps_support" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309a.
s<0~(m-1)>_h2	<boolean></boolean>	4/4	Enable "Dynamic intra frame period".
64_dintraperio			* Only available when
d_enable			"capability_videoin_c<0~(n-1)>_dintra
			period_support" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0301c.
s<0~(m-1)>_h2	250, 500, 1000, 2000,	4/4	The time interval between two
64_intraperiod	3000, 4000		I-frames (Intra coded picture).
			The unit is millisecond (ms).
s<0~(m-1)>_h2	cbr, vbr	4/4	cbr : Constant bit rate mode.
64_ratecontrol			vbr : Fixed quality mode, all frames are
mode			encoded in the same quality.
s<0~(m-1)>_h2	1~5,	4/4	Set the pre-defined quality level:
64_quant	99, 100		1: Medium
			2: Standard
			3: Good
			4: Detailed
			5: Excellent
			100: Use the quality level in
			"qpercent"
			99: Use the quality level in "qvalue"
			* Only valid when
			"h264_ratecontrolmode"= vbr.
s<0~(m-1)>_h2	0~51	4/4	Manual video quality level input. The
64_qvalue			Q value which is used by encoded
			library directly.
			* Only valid when
			"h264_ratecontrolmode"= vbr and
			s<0~(m-1)>_h264_quant = 99.
s<0~(m-1)>_h2	1~100	4/4	Select customized quality in a

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
64_qpercent			normalized full range.
			1: Worst quality
			100: Best quality
			* Only valid when
			"h264_ratecontrolmode"= vbr and
			"quant"= 100.
s<0~(m-1)>_h2	20000~"capability_videoin	4/4	The maximum allowed bit rate in fixed
64_maxvbrbitr	_c<0~(n-1)>_h264_maxbit		quality mode.
ate	rate"		When the bit rate exceeds this value,
			frames will be dropped to restrict the
			bit rate.
			* Only valid when
			"h264_ratecontrolmode"= vbr
s<0~(m-1)>_h2	1~5, 100	4/4	Set the pre-defined quality level:
64_cbr_quant			1: Medium
			2: Standard
			3: Good
			4: Detailed
			5: Excellent
			100: Use the quality level in
			"cbr_qpercent"
			* Only available when
			"h264_ratecontrolmode"= cbr.
s<0~(m-1)>_h2	1~100	4/4	Select customized quality in a
64_cbr_qperce			normalized full range.
nt			1: Worst quality
			100: Best quality
			* Only valid when
			"h264_ratecontrolmode"= cbr and
			"quant"= 100.
s<0~(m-1)>_h2	20000~"capability_videoin	4/4	The target bit rate in constant bit rate
64_bitrate	_c<0~(n-1)>_h264_maxbit		mode.
	rate"		* Only valid when
			"h264_ratecontrolmode"= cbr
s<0~(m-1)>_h2	framerate,imagequality	4/4	Set prioritypolicy
64_prioritypoli			* Only valid when

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
су			"h264_ratecontrolmode"= cbr
s<0~(m-1)>_h2	1~"capability_videoin_c<0	1/4	The maximum frame rates of a H264
64_maxframe	~(n-1)>_h264_maxframera		stream at different
	te"		resolutions("capability_videoin_c<0~(
			n-1)>_resolution") are recorded in
			"capability_videoin_c<0~(n-1)>_h264
			_maxframerate"
s<0~(m-1)>_h2	0~2	1/4	Indicate H264 profiles
64_profile	* Available values can also		0: baseline
	be <string> listed in</string>		1: main
	"capability_videoin_c <n>_</n>		2: high
	h264_profile"		* It's recommended to use available
			values from
			"capability_videoin_c <n>_h264_profil</n>
			e".
s<0~(m-1)>_h2	<boolean></boolean>	4/4	Enable "Smart Q" function.
64_smartq_en			* Only available when
able			"capability_videoin_c<0~(n-1)>_smart
			q_support" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309a.
s<0~(m-1)>_h2	<boolean></boolean>	4/4	Enable "Dynamic intra frame period".
65_dintraperio			* Only available when
d_enable			"capability_videoin_c<0~(n-1)>_dintra
			period_support" is 1 and h265 is listed
			in "capability_videoin_codec".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0301c.
s<0~(m-1)>_h2	250, 500, 1000, 2000,	4/4	The time interval between two
65_intraperiod	3000, 4000		I-frames (Intra coded picture).
			The unit is millisecond (ms).
			* Only available when h265 is listed in
			"capability_videoin_codec".
s<0~(m-1)>_h2	cbr, vbr	4/4	cbr: Constant bit rate mode.

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
65_ratecontrol			vbr : Fixed quality mode, all frames are
mode			encoded in the same quality.
			* Only available when h265 is listed in
			"capability_videoin_codec".
s<0~(m-1)>_h2	1~5,	4/4	Set the pre-defined quality level:
65_quant	99, 100		1: Medium
			2: Standard
			3: Good
			4: Detailed
			5: Excellent
			100: Use the quality level in
			"qpercent"
			99: Use the quality level in "qvalue"
			* Only available when h265 is listed in
			"capability_videoin_codec" .
			* Only valid when
			"h265_ratecontrolmode"= vbr
s<0~(m-1)>_h2	0~51	4/4	Manual video quality level input. The
65_qvalue			Q value which is used by encoded
			library directly.
			* Only available when h265 is listed in
			"capability_videoin_codec".
			* Only valid when
			"h265_ratecontrolmode"= vbr and
			s<0~(m-1)>_h265_quant = 99.
s<0~(m-1)>_h2	1~100	4/4	Select customized quality in a
65_qpercent			normalized full range.
			1: Worst quality
			100: Best quality
			* Only available when h265 is listed in
			"capability_videoin_codec".
			* Only valid when
			"h265_ratecontrolmode"= vbr and
			"quant"= 100.
s<0~(m-1)>_h2	20000~"capability_videoin	4/4	The maximum allowed bit rate in fixed
65_maxvbrbitr	_c<0~(n-1)>_h265_maxbit		quality mode.

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
ate	rate"		When the bit rate exceeds this value,
			frames will be dropped to restrict the
			bit rate.
			* Only available when h265 is listed in
			"capability_videoin_codec".
			* Only valid when
			"h265_ratecontrolmode"= vbr
s<0~(m-1)>_h2	1~5, 100	4/4	Set the pre-defined quality level:
65_cbr_quant			1: Medium
			2: Standard
			3: Good
			4: Detailed
			5: Excellent
			100: Use the quality level in
			"cbr_qpercent"
			* Only available when h265 is listed in
			"capability_videoin_codec" and
			"h265_ratecontrolmode"= cbr.
c<0~(m 1)> h2	1~100	4/4	Soloct customized quality in a
s<0~(m-1)>_h2 65_cbr_qperce	1 100	4/4	Select customized quality in a normalized full range.
nt			
THE STATE OF THE S			1: Worst quality 100: Best quality
			* Only available when h265 is listed in
			"capability videoin codec".
			* Only valid when
			"h265 ratecontrolmode"= cbr and
			"quant"= 100.
			quant – 100.
s<0~(m-1)>_h2	20000~"capability videoin	4/4	The target bit rate in constant bit rate
65_bitrate	c<0~(n-1)>_h265_maxbit		mode.
_	rate"		* Only available when h265 is listed in
			"capability_videoin_codec".
			* Only valid when
			"h265_ratecontrolmode"= cbr
s<0~(m-1)>_h2	framerate,imagequality	4/4	Set prioritypolicy

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
65 prioritypoli		8-44	* Only available when h265 is listed in
cy			"capability_videoin_codec".
			* Only valid when
			"h265 ratecontrolmode"= cbr
s<0~(m-1)>_h2	1~"capability_videoin_c<0	1/4	The maximum frame rates of a H265
65_maxframe	~(n-1)>_h265_maxframera		stream at different
	te"		resolutions("capability_videoin_c<0~(
			n-1)>_resolution") are recorded in
			"capability_videoin_c<0~(n-1)>_h265
			_maxframerate"
			* Only available when h265 is listed in
			"capability_videoin_codec".
s<0~(m-1)>_h2	Available values are listed	1/4	Indicate H265 profiles
65_profile	in "		* Only available when h265 is listed in
	capability_videoin_c<0~(n		"capability_videoin_codec".
	-1)>_h265_profile"		
s<0~(m-1)>_h2	<boolean></boolean>	4/4	Enable "Smart Q" function.
65_smartq_en			* Only available when h265 is listed in
able			"capability_videoin_codec".
			* Only available when
			"capability_videoin_c<0~(n-1)>_smart
			q_support" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309a.
s<0~(m-1)>_mj	cbr, vbr	4/4	cbr : Constant bit rate mode.
peg_ratecontr			vbr : Fixed quality mode, all frames are
olmode			encoded in the same quality.
s<0~(m-1)>_mj	1~5,	4/4	* Only valid when
peg_quant	99, 100		"mjpeg_ratecontrolmode"= vbr.
			Set the pre-defined quality level:
			1: Medium
			2: Standard
			3: Good
			4: Detailed

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
		Berlacel	5: Excellent
			100: Use the quality level in
			"gpercent"
			99: Use the quality level in "qvalue"
s<0~(m-1)>_mj	10~200	4/4	Manual video quality level input. The
peg_qvalue	(Only valid when		Q value which is used by encoded
	"capability_api_httpversio		library directly.
	n" format is XXXXX_1 or		* Only valid when
	XXXXX_3 or XXXXX_4		"mjpeg_ratecontrolmode"= vbr and
	ex: 0301a_1 or 0301a_3 or		s<0~(m-1)>_mjpeg_quant = 99
	0301a_4)		
	or 1~99		
	(Only valid when		
	"capability_api_httpversio		
	n" format is XXXXX_2,		
	ex: 0301a_2)		
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		
s<0~(m-1)>_mj	1~100	4/4	Select customized quality in a
peg_qpercent			normalized full range.
			1: Worst quality
			100: Best quality
			* Only valid when
			"mjpeg_ratecontrolmode"= vbr and
			s<0~(m-1)>_mjpeg_quant = 100.
s<0~(m-1)>_mj	20000~"capability_videoin	4/4	The maximum allowed bit rate in fixed
peg_maxvbrbit	_c<0~(n-1)>_mjpeg_maxbi		quality mode.
rate	trate"		When the bit rate exceeds this value,
			frames will be dropped to restrict the
			bit rate.
			* Only valid when
			"mjpeg_ratecontrolmode"= vbr
s<0~(m-1)>_mj	1~5, 100	4/4	Set the pre-defined quality level:
peg_cbr_quant			1: Medium
			2: Standard
			3: Good
			4: Detailed

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
		804,004	5: Excellent
			100: Use the quality level in
			"cbr qpercent"
			* Only valid when
			"mjpeg_ratecontrolmode"= cbr.
s<0~(m-1)>_mj	1~100	4/4	Select customized quality in a
peg_cbr_qperc		,, .	normalized full range.
ent			1: Worst quality
			100: Best quality
			* Only valid when
			"mjpeg_ratecontrolmode"= cbr and
			"quant"= 100.
s<0~(m-1)>_mj	20000~"capability_videoin	4/4	The target bit rate in constant bit rate
peg_bitrate	_c<0~(n-1)>_mjpeg_maxbi		mode.
	trate"		* Only valid when
			"mjpeg_ratecontrolmode"= cbr
s<0~(m-1)>_mj	framerate,imagequality	4/4	Set prioritypolicy
peg_prioritypo			* Only valid when
licy			"mjpeg_ratecontrolmode"= cbr
s<0~(m-1)>_mj	1~"capability_videoin_c<0	1/4	The maximum frame rates of a mjpeg
peg_maxframe	~(n-1)>_mjpeg_maxframer		stream at different
	ate"		resolutions("capability_videoin_c<0~(
			n-1)>_resolution") are recorded in
			"capability_videoin_c<0~(n-1)>_mjpe
			g_maxframerate"
s<0~(m-1)>_ra	<boolean></boolean>	1/4	Change resolution to fit 4:3 ratio.
tiocorrect			For PAL:
			D1/4CIF(720/704x576) -> (768x576)
			CIF(352x288)->(384x288)
			For NTSC:
			D1/4CIF(720/704x480) -> (640x480)
			CIF(352x240)->(320x240)
			* Only available when
			capability_videoin_type is 0 or 1.

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
wdrpro_mode	0, 1, 2	4/4	0: Disable WDR Pro.
<pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre>	0, 1, 2	', '	1: Enable WDR Pro.
dependent>			* Only valid when
dependent			"capability image c<0~(n-1)> wdrpro
			mode" = 1
			2: Enable WDR Pro II.
			* Only valid when
			"capability_image_c<0~(n-1)>_wdrpro
			_mode" = 2
wdrpro_streng	1~100	4/4	The strength of WDR Pro.
th			The bigger value means the stronger
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			strength of WDR Pro.
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_wdrpro
			_strength" is 1
wdrc_mode	<boolean></boolean>	4/4	Enable WDR enhanced.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			* Only available when
dependent>			"capability_image_c<0~(n-1)>_wdrc_
			mode" is 1
wdrc_strength	1~100	4/4	The strength of WDR enhanced.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			The bigger value means the stronger
dependent>			strength of WDR enhanced.
			* Only available when
			"capability_image_c<0~(n-1)>_wdrc_
			mode" is 1
aespeed_mod	<boolean></boolean>	4/4	Turning AE converge speed on or off.
е			0: off
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			1: on
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_aespee
			d" is 1
aespeed_spee	1~100	4/4	The speed level of AE converge speed.
dlevel			1~20: level 1
<pre><pre><pre><pre></pre></pre></pre></pre>			21~40: level 2
dependent>			41~60: level 3
			61~80: level 4

NAME	VALUE	SECURITY(get/set)	DESCRIPTION
aespeed_sensi tivity <product< td=""><td>1~100</td><td>4/4</td><td>81~100: level 5 Level 1~4(low ~ high) The higher speed level meas shorter AE converged time during AE executing. * Only available when "capability_image_c<0~(n-1)>_aespee d" is 1 The sensitivity of AE converge speed. 1~20: level 1 21~40: level 2</td></product<>	1~100	4/4	81~100: level 5 Level 1~4(low ~ high) The higher speed level meas shorter AE converged time during AE executing. * Only available when "capability_image_c<0~(n-1)>_aespee d" is 1 The sensitivity of AE converge speed. 1~20: level 1 21~40: level 2
dependent>			41~60: level 3 61~80: level 4 81~100: level 5 Level 1~4(low ~ high) The higher sensitivity level meas that it is easy to be trigger while scene changed. * Only available when "capability_image_c<0~(n-1)>_aespee d" is 1 and "capability_image_c<0~(n-1)>_aespee dsupportsensitivity" is 1.
flickerless <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	<boolean></boolean>	4/4	Turn on(1) or turn off(0) the flickerless mode * Only available when "capability_image_c<0~(n-1)>_flickerless" is 1.
mounttype	ceiling, wall, floor	1/6	Hardware installation. * Only available when "capability_videoin_c<0~(n-1)>_moun ttype" != "-".
enablewaterm ark <product dependent=""></product>	0, 1	1/6	0: Not to add watermarks on images 1: Add watermarks on images * Only available when "capability_fisheye" > 0

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
s<0~(m-2)>_fis	'10, 1P, 2P, 1R, 4R' for	1/4	Local dewarp mode.
heyedewarpm	ceiling/floor mount		"10" is original mode (disable).
ode	'10, 1P, 1R, 4R' for wall		Supported dewarp mode is different
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	mount		by mount type.
dependent>	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		* Only available when
	* Available value is listed		"capability_fisheyelocaldewarp_c<0~(
	in		capability_nvideoin)-1>" > 0
	"capability_videoin_c<0~(
	n-1)>_localdewarp_typece		
	ilingmount" and		
	"capability_videoin_c<0~(
	n-1)>_localdewarp_typew		
	allmount"		

Group: videoin_c<0~(n-1)>_s<0~(m-1)>_h264_smartstream2 (capability_smartstream_support=1 and capability_smartstream_version>=2.0)

Group: videoin_c<0~(n-1)>_s<0~(m-1)>_h265_smartstream2 (capability_smartstream_support=1, capability_smartstream_version>=2.0 and h265 is listed in "capability_videoin_codec")

n denotes the value of "capability nvideoin", m denotes the value of "capability nmediastream"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable or Disable smart codec
			function
mode	autotracking,manual,hybri	4/4	Set Smart stream mode
	d		"autotracking": only available when
			"capability_smartstream_mode_autot
			racking" is 1.
			"manual": only available when
			"capability_smartstream_mode_man
			ual" is 1.
			"hybrid": only available when
			"capability_smartstream_mode_hybri
			d" is 1.
qualitypriority	-5,-4,-3,-2,-1,1,2,3,4,5	4/4	The differential value of Q between
			the regions of interest (ROI) and the
			areas of non-interest (non-ROI) of the

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			display image.
			If the value is a positive number, the
			video quality of ROI is better than the
			non-ROI areas. The level is from 1 to
			5. Level 5 is the maximum level of the
			quality difference between the ROI
			and non-ROI areas.
			If the value is a negative number, the
			video quality of non-ROI areas is
			better than the ROI. The level is from
			-1 to -5. Level -5 is the maximum level
			of the quality difference between the
			ROI and non-ROI areas.

Group: $videoin_c<0^{(n-1)}_s<0^{(m-1)}_h264_smartstream2_win_i<0^{(k-1)}$ (capability_smartstream_support=1, capability_smartstream_version>=2.0 and capability_smartstream_mode_manual = 1)

Group: $videoin_c<0^{(n-1)}_s<0^{(m-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}_h265_smartstream2_win_i<0^{(k-1)}$

(capability_smartstream_support=1, capability_smartstream_version>=2.0 and h265 is listed in "capability videoin codec" and capability smartstream mode manual = 1)

n denotes the value of "capability_nvideoin",m denotes the value of "capability_nmediastream",k denotes the value of "capability_smartstream_nwindow_manual".

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	4/4	Enable or disable the window.
home	0~320,0~240	4/4	Left-top corner coordinate of the
			window.
size	0~320x0~240	4/4	Width and height of the window

7.8.1.1 Alternative Video Input Profiles per Channel

In addition to the primary setting of video input, there can be alternative profile video input setting for each channel which might be for different scene of light (daytime or nighttime).

Group: videoin_c<0~(n-1)>_profile_i<0~(m-1)> for n channel products and m profile n denotes the value of "capability_nvideoin" and m denotes the value of "capability nvideoinprofile" (capability nvideoinprofile> 0)

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable/disable this profile setting
policy	night, schedule <product dependent=""></product>	4/4	The mode which the profile is applied to. * Not support "policy=day" anymore when the version number (httpversion) is equal or greater than 0301a. * "policy=night" is only available when "capability_daynight_c<0~(n-1)>_sup port > 0".
begintime	hh:mm	4/4	Begin time of schedule mode.
endtime	hh:mm	4/4	End time of schedule mode.
minexposure <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	<1~32000>, <5~32000>, <1~8000>, <5~8000>, etc. * Available value is listed in "capability_image_c<0~(n-1)>_exposure_minrange"	4/4	Minimum exposure time 1~32000 => 1s ~ 1/32000s 5~32000 => 1/5s ~ 1/32000s 1~8000 => 1s ~ 1/8000s 5~8000 => 1/5s ~ 1/8000s etc. * Only available when "capability_image_c<0~(n-1)>_exposu re_minrange" != "-" * Only valid when "piris_mode"=manual or "irismode"=fixed * Only available when "capability_image_c<0~(n-1)>_exposu re_rangetype" is "twovalues".
maxexposure <pre><pre><pre>dependent></pre></pre></pre>	<1~32000>, <5~32000>, <1~8000>, <5~8000>, etc. * Available value is listed in	4/4	Maximum exposure time 1~32000 => 1s ~ 1/32000s 5~32000 => 1/5s ~ 1/32000s 1~8000 => 1s ~ 1/8000s 5~8000 => 1/5s ~ 1/8000s etc. * This parameter may also restrict image frame rate from sensor due to

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	"capability_image_c<0~(n-		sensor generates a frame per
	1)>_exposure_maxrange"		exposure time. Ex: If this is set to 1/5s
			~ 1/8000s and camera takes 1/5s on
			the night, then sensor only outputs 5
			frame/s.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_maxrange" != "-"
			* Only valid when
			"piris_mode"=manual or
			"irismode"=fixed
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
shuttervalue	<1~32000>,	4/4	Exposure time
<pre><pre><pre><pre></pre></pre></pre></pre>	<5~32000>,		1~32000 => 1s ~ 1/32000s
dependent>	<1~8000>,		5~32000 => 1/5s ~ 1/32000s
	<5~8000>,		1~8000 => 1s ~ 1/8000s
	etc.		5~8000 => 1/5s ~ 1/8000s
	* Available value is listed		etc.
	in		* This parameter may also restrict
	"capability_image_c<0~(n-		image frame rate from sensor due to
	1)>_exposure_maxrange"		sensor generates a frame per
			exposure time. Ex: If this is set to 1/5s
			~ 1/8000s and camera takes 1/5s on
			the night, then sensor only outputs 5
			frame/s.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_maxrange" != "-" and
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "onevalue".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
enableblc	<boolean></boolean>	4/4	Enable backlight compensation.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
<not support<="" td=""><td></td><td></td><td>* Not support this parameter</td></not>			* Not support this parameter
anymore>			anymore when the version number
			(httpversion) is equal or greater than
			0301a.
			* It's recommanded to use
			"exposurewin_c <n>_mode" to switch</n>
			on/off BLC.
exposurelevel	0~12	4/4	Exposure level
			"0,12": This range takes the concept
			from DC's exposure tuning options.
			The definition is:
			0: EV -2.0
			1: EV -1.7
			2: EV -1.3
			3: EV -1.0
			4: EV -0.7
			5: EV -0.3
			6: EV 0
			7: EV +0.3
			8: EV +0.7
			9: EV +1.0
			10: EV +1.3
			11: EV +1.7
			12: EV +2.0
			*Only available when
			"capability_image_c0_exposure_mod
			e" != 0
exposuremode	auto,	4/4	Select exposure mode.
<pre><pre><pre><pre></pre></pre></pre></pre>	shutterpriority,		"auto": Automatically adjust the Iris,
dependent>	irispriority,		Gain and Shutter Speed to fit the
	qualitypriority,		exposure level.
	manual,		"shutterpriority": Manually adjust
	etc		with variable Shutter Speed, and keep
			adjusting Iris, Gain automatically.
	(Available options are list		"irispriority": Manually adjust with
	in		variable Iris, and keep adjusting Gain

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	"capability_image_c<0~(n-	, ,	and Shutter speed automatically.
	1)>_exposure_modetype")		"qualitypriority": Automatically
			adjust the Iris, Gain and Shutter Speed
			by VIVOTEK quality algorithm.
			"manual": Manually adjust with
			variable Shutter, Iris and Gain.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
			*Only available when
			"capability_image_c0_exposure_mod
			e" != 0
whitebalance	auto,	4/4	Modes of white balance.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	panorama,		"auto": Auto white balance
dependent>	manual,		"panorama": indicates that camera
	rbgain,		would try to balance the white
	widerange,		balance effect of every sensor.
	outdoor,		"rbgain": Use rgain and bgain to set
	indoor,		white balance manually.
	sodiumauto,		"manual": 2 cases:
	etc		a. if "rbgain" is not supported, this
			means keep current white balance
	(Available values are listed		status.
	in		b. if "rbgain" is supported, "rgain"
	"capability_image_c<0~(n-		and "bgain" are updated to the
	1)>_wbmode")		current values which is got from
			white balance module. Then, act as
			rbgain mode
			"widerange": Auto Tracing White
			balance (2000K to 10000K).
			"outdoor": auto white balance mode
			specifically for outdoor.
			"indoor": auto white balance mode
			specifically for indoor.
			"sodiumauto": sodium vapor lamps.
			* Only available when

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			"capability_image_c<0~(n-1)>_wbmo de" !="-"
rgain	0~100	4/4	Manual set rgain value of gain control setting. 0: Weak <-> 100: Strong * Only available when "rbgain" is listed in "capability_image_c<0~(n-1)>_wbmo de". * Only valid when "videoin_c<0~(n-1)>_whitebalance"! = auto * Normalized range.
bgain	0~100	4/4	Manual set bgain value of gain control setting. 0: Weak <-> 100: Strong * Only available when "rbgain" is listed in "capability_image_c<0~(n-1)>_wbmo de". * Only valid when "videoin_c<0~(n-1)>_whitebalance"! = auto * Normalized range.
maxgain	0~100	4/4	Maximum gain value. 0: Low <-> 100: High * Only available when "capability_image_c<0~(n-1)>_agc_m axgain" != "-" * Only valid when "piris_mode"=manual or "irismode"=fixed * Normalized range. * Only available when "capability_image_c<0~(n-1)>_exposu re_rangetype" is "twovalues".

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
mingain	0~100	4/4	Minimum gain value.
			0: Low <-> 100: High
			* Only available when
			"capability_image_c<0~(n-1)>_agc_mi
			ngain" != "-"
			* Only valid when
			"piris_mode"=manual or
			"irismode"=fixed
			* Normalized range.
			* Only available when
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "twovalues".
gainvalue	0~100	4/4	Gain value.
			0: Low <-> 100: High
			* Only available when
			"capability_image_c<0~(n-1)>_agc_m
			axgain" != "-" and
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "onevalue".
			* Normalized range.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
meteringmode	auto,	4/4	"auto": The algorithm chooses the
	blc,		best metering strategy.
	hlc		" blc ": This metering method increases
			the weight of dark area.
	* Available value is listed		" hlc ": The metering method can
	in		detect strong light and make affected
	"capability_image_c<0~(n-		area clear.
	1)>_exposure_meteringm		* We support this parameter when
	ode"		the version number (httpversion) is
			equal or greater than 0311a.
piris_mode	manual, indoor, outdoor,-	1/4	Control P-Iris mode.
<pre><pre><pre><pre></pre></pre></pre></pre>			"outdoor": Auto-setting P-Iris to get
dependent>			best quality, but easy to meet rolling

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			or flicker effect in indoor
			environment.
			"indoor": Avoid rolling and flicker
			effect first.
			"manual": Manual set P-Iris by
			"piris_position".
			"-": not support (only available when
			"capability_image_c<0~(n-1)>_sensor
			type" is "smartsensor")
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=piris
piris_position	1~100	1/4	Manual set P-Iris.
<pre><pre><pre><pre></pre></pre></pre></pre>			1: Open <-> 100: Close
dependent>			* Only valid when
			"piris_mode"=manual or
			"capability_image_c<0~(n-1)>_sensor
			type" is "smartsensor"
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=piris
irismode	fixed, indoor, outdoor	4/4	Control DC-Iris mode.
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		"outdoor": Auto-setting DC-Iris to get
			best quality, but easy to meet rolling
			or flicker effect in indoor
			environment.
			"indoor": Avoid rolling and flicker
			effect first.
			"fixed": Open the iris to maximum.
			* Only available when
			"capability_image_c<0~(n-1)>_iristype
			"=dciris
wdrpro_mode	0, 1, 2	4/4	0: Disable WDR Pro.
<pre><pre><pre><pre></pre></pre></pre></pre>			1: Enable WDR Pro.
dependent>			* Only valid when
			"capability_image_c<0~(n-1)>_wdrpro

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	1.11.4
			_mode" = 1
			2: Enable WDR Pro II.
			* Only valid when
			"capability_image_c<0~(n-1)>_wdrpro
			_mode" = 2
wdrpro_streng	1~100	4/4	The strength of WDR Pro.
th			The bigger value means the stronger
<pre><pre><pre><pre></pre></pre></pre></pre>			strength of WDR Pro.
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_wdrpro
			_strength" is 1
wdrc_mode	<boolean></boolean>	4/4	Enable WDR enhanced.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			* Only available when
dependent>			"capability_image_c<0~(n-1)>_wdrc_
			mode" is 1
wdrc_strength	1~100	4/4	The strength of WDR enhanced.
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			The bigger value means the stronger
dependent>			strength of WDR enhanced.
			* Only available when
			"capability_image_c<0~(n-1)>_wdrc_
			mode" is 1
aespeed_mod	<boolean></boolean>	4/4	Turning AE converge speed on or off.
е			0: off
<pre><pre><pre><pre></pre></pre></pre></pre>			1: on
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_aespee
			d" is 1
aespeed_spee	1~100	4/4	The speed level of AE converge speed.
dlevel			1~20: level 1
<pre><pre><pre><pre></pre></pre></pre></pre>			21~40: level 2
dependent>			41~60: level 3
			61~80: level 4
			81~100: level 5
			Level 1~4(low ~ high)
			The higher speed level meas shorter
			AE converged time during AE

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			executing.
			* Only available when
			"capability_image_c<0~(n-1)>_aespee
			d" is 1
aespeed_sensi	1~100	4/4	The sensitivity of AE converge speed.
tivity			1~20: level 1
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			21~40: level 2
dependent>			41~60: level 3
			61~80: level 4
			81~100: level 5
			Level 1~4(low ~ high)
			The higher sensitivity level meas that
			it is easy to be trigger while scene
			changed.
			* Only available when
			"capability_image_c<0~(n-1)>_aespee
			d" is 1 and
			"capability_image_c<0~(n-1)>_aespee
			dsupportsensitivity" is 1.
flickerless	<boolean></boolean>	4/4	Turn on(1) or turn off(0) the flickerless
<pre><pre><pre><pre></pre></pre></pre></pre>			mode
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_flickerl
			ess" is 1

7.8.2 Multicast Settings for Video Streaming

Group: $videoin_c<0^{(n-1)}_s<0^{(m-1)}_multicast$ (capability_media_streamprofiles_support = 1) n denotes the value of "capability_nvideoin", m denotes the value of "capability_nmediastream"

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
ipaddress	<ip address=""></ip>	4/4	Multicast video IP address.
port	1025 ~ 65535	4/4	Multicast video port.
ipversion	IPv4, IPv6	4/4	The version of internet protocol.

ttl	1~255	4/4	Multicast video time to live value.

7.9Time Shift Settings

Group: **timeshift** for n channel products and m stream n denotes the value of "capability_nvideoin", m denotes the value of "capability_nmediastream" (capability_timeshift > 0)

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable time shift streaming.
<not< td=""><td></td><td></td><td>* We replace this parameter with "</td></not<>			* We replace this parameter with "
recommended			timeshift_c<0~(n-1)>_enable"
to use>			when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
c<0~(n-1)>_en	<boolean></boolean>	4/4	Enable time shift streaming.
able			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
c<0~(n-1)>_s<	<boolean></boolean>	4/4	Enable time shift streaming for
0~(m-1)>_allo			specific stream.
w			

7.10 IR Cut Control

<Not recommended to use this>

Group: ircutcontrol (capability_nvideoinprofile> 0 and capability_daynight_c<0 $^{(n-1)}$ >_support > 0) n denotes the value of "capability_nvideoin"

* We do not support these parameters when "capability_nvideoin > 1"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
mode	auto,	6/6	Set IR cut control mode

NAME	VALUE	SECURITY (set/set)	DESCRIPTION
		(get/set)	****
<not< td=""><td>day,</td><td></td><td>* We replace this parameter with</td></not<>	day,		* We replace this parameter with
recommended to	night,		"ircutcontrol_c0_mode" when the
use this>	di,		version number (httpversion) is equal
	scheduleetc		or greater than 0312a.
	* Available values are		* We do not support this parameter
	listed in		when "capability_nvideoin > 1".
	"capability_daynight_		* This parameter will not be used
	c<0~(n-1)>_mode"		after the version number (httpversion)
	<pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre>		is equal or greater than 0400a.
sir	<boolean></boolean>	6/6	Enable/disable Smart IR* Only
<pre><pre><pre><pre></pre></pre></pre></pre>			available when
dependent>			"capability_daynight_c<0~"capability_
<not< td=""><td></td><td></td><td>nvideoin"-1>_smartir" is 1</td></not<>			nvideoin"-1>_smartir" is 1
recommended to			* We replace this parameter with
use this>			"ircutcontrol_c<0~(n-1)>_sir" when
			the version number (httpversion) is
			equal or greater than 0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
daymodebegintime	00:00~23:59	6/6	Day mode begin time
<not< td=""><td></td><td></td><td>* We replace this parameter with</td></not<>			* We replace this parameter with
recommended to			"ircutcontrol_c<0~(n-1)>_daymodebe
use this>			gintime" when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
daymodeendtime	00:00~23:59	6/6	Day mod end time
<not< td=""><td></td><td></td><td>* We replace this parameter with</td></not<>			* We replace this parameter with
recommended to			"ircutcontrol_c<0~(n-1)>_daymodeen

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
use this>		(8-9//	dtime" when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
disableirled	<boolean></boolean>	6/6	Enable/disable built-in IR led
<not< td=""><td></td><td></td><td>* Only available when "</td></not<>			* Only available when "
recommended to			capability_daynight_c<0~"capability_
use this>			nvideoin"-1>_builtinir > 0".
			* We replace this parameter with
			"ircutcontrol_illuminators_builtin_irle
			d_enabled" when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
enableextled	<boolean></boolean>	1/6	Enable/disable external IR led
<not< td=""><td></td><td></td><td>* Only available when</td></not<>			* Only available when
recommended to			"capability_daynight_c<0~"capability_
use this>			nvideoin"-1>_externalir > 0".
			* We replace this parameter with
			"ircutcontrol_illuminators_external_d
			o_enabled" when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enablewled	<boolean></boolean>	6/6	Enable/disable built-in White led
<not< td=""><td></td><td></td><td>* Only available when "</td></not<>			* Only available when "
recommended to			capability_daynight_c<0~"capability_
use this>			nvideoin"-1> builtinwled > 0".
			* We replace this parameter with
			"ircutcontrol illuminators builtin whi
			teled_enabled" when the version
			number (httpversion) is equal or
			greater than 0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
bwmode	<boolean></boolean>	6/6	Switch to B/W in night mode if
<not< td=""><td></td><td></td><td>enabled.</td></not<>			enabled.
recommended to			* Only available when
use this>			"capability_daynight_c<0~(n-1)>_
			blackwhitemode" is 1.
			* We replace this parameter with
			"ircutcontrol_c<0~(n-1)>_bwmode"
			when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
sensitivity	low,normal,high,1~10	6/6	Sensitivity of day/night control.
<not< td=""><td>0</td><td></td><td>There are two value format:</td></not<>	0		There are two value format:
recommended to			"low,normal,high": if
use this>			capability_daynight_c<0~(n-1)>_ircuts
			ensitivity_type=options
			"1~100": if
			capability_daynight_c<0~(n-1)>_ircuts

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			ensitivity_type=normalize
			* Only available when
			"capability_daynight_c<0~(n-1)>
			_ircutsensitivity_type" is not "-".
			* We replace this parameter with
			ircutcontrol_c<0~(n-1)>_sensitivity"
			when the version number
			(httpversion) is equal or greater than
			0312a.
			* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
spectrum_mode	visible,	6/6	Set spectrum method .
<not< td=""><td>ir,</td><td></td><td>* Only available when</td></not<>	ir,		* Only available when
recommended to	irenhanced,		"capability_daynight_c<0~(n-1)>_spec
use this>	blueenhanced		trum_support" is 1.
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		* We replace this parameter with
	* Available values are		"ircutcontrol_illuminators_spectrum_
	listed in		mode" when the version number
	"capability_daynight_		(httpversion) is equal or greater than
	c<0~(n-1)>_spectrum		0312a.
	_mode".		* We do not support this parameter
			when "capability_nvideoin > 1".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.

7.10.1 IR cut control setting per channel

Group: $ircutcontrol_c<0^{(n-1)}$ for n channel products $(capability_daynight_c<0^{(n-1)})_support > 0$ 0)

n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURIT	DESCRIPTION
		Υ	

		(get/set)	
mode	auto,	6/6	Set IR cut control mode
	day,		* We support this parameter when
	night,		the version number (httpversion) is
	di,		equal or greater than 0312a.
	scheduleetc		
	* Available values		
	are listed in		
	"capability_daynig		
	ht_c<0~(n-1)>_mo		
	de"		
	<pre><pre><pre><pre></pre></pre></pre></pre>		
	dependent>		
sir	<boolean></boolean>	6/6	Enable/disable Smart IR
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			* Only available when
			"capability_daynight_c<0~"capability_
			nvideoin"-1>_smartir" is 1
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
daymodebegintime	00:00~23:59	6/6	Day mode begin time
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
daymodeendtime	00:00~23:59	6/6	Day mod end time
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
bwmode	<boolean></boolean>	6/6	Switch to B/W in night mode if
			enabled.
			* Only available when
			"capability_daynight_c<0~(n-1)>_
			blackwhitemode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
sensitivity	low,normal,high,1	6/6	Sensitivity of day/night control.
	~100		

There are two value format:
"low,normal,high": if
capability_daynight_c<0~(n-1)>_ircuts
ensitivity_type=options
"1~100" : if
capability_daynight_c<0~(n-1)>_ircuts
ensitivity_type=normalize
* Only available when
"capability_daynight_c<0~(n-1)>
_ircutsensitivity_type" is not "-".
* We support this parameter when
the version number (httpversion) is
equal or greater than 0312a.

7.10.2 IR cut control Illuminators

Group: $ircutcontrol_illuminators$ (capability_daynight_c<0~(n-1)>_support > 0) n denotes the value of "capability nvideoin"

NAME	VALUE	SECURIT	DESCRIPTION
		Υ	
		(get/set)	
builtin_irled_enabled	<boolean></boolean>	6/6	Enable/disable built-in IR led
			* Only available when
			"capability_daynight_illuminators_buil
			tin_support > 0" and "irled" is listed in
			"capability_daynight_ illuminators
			_builtin_type"
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
builtin_whiteled_enable	<boolean></boolean>	6/6	Enable/disable built-in white led
d			* Only available when
			"capability_daynight_illuminators_buil
			tin_support > 0" and "whiteled" is
			listed in "capability_daynight_
			illuminators _builtin_type"

			* We support this parameter when
I			the version number (httpversion) is
			equal or greater than 0312a.
external_do_enabled	<boolean></boolean>	1/6	Enable/disable external led mounted
			on do1
			* Only available when
			"capability_daynight_illuminators_ext
			ernal_support > 0" and "do" is listed
			in
			"capability_daynight_illuminators_ext
			ernal_interface".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
external_do<2~(capabili	<boolean></boolean>	1/6	Enable/disable external led mounted
ty_ndo)>_enabled			on do<
			2~(capability_ndo)>
			* Only available when "capability_ndo
			> 1"
			* Only available when
			"capability_daynight_illuminators_ext
			ernal_support > 0" and
			"do<2~(capability_ndo)>" are listed in
			"capability_daynight_illuminators_ext
			ernal_interface".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0312a.
spectrum_mode	visible,	6/6	Set spectrum method .
	ir,		* We support this parameter when
	irenhanced,		the version number (httpversion) is
	blueenhanced		equal or greater than 0312a.
	<pre><pre><pre><pre></pre></pre></pre></pre>		
	dependent>		* Only available when
	* Available values		"capability_daynight_illuminators_
	are listed in		spectrum _support > 0".
	"capability_daynig		
I	ht_illuminators		
	ir, irenhanced, blueenhanced <product dependent=""> * Available values are listed in "capability_daynig</product>	6/6	2~(capability_ndo)> * Only available when "capability_ndo > 1" * Only available when "capability_daynight_illuminators_ext ernal_support > 0" and "do<2~(capability_ndo)>" are listed in "capability_daynight_illuminators_ext ernal_interface". * We support this parameter when the version number (httpversion) is equal or greater than 0312a. Set spectrum method . * We support this parameter when the version number (httpversion) is equal or greater than 0312a. * Only available when "capability_daynight_illuminators_

_spectrum_mode"	

Image Setting per Channel 7.11

Group: image_c<0~(n-1)> for n channel products and m profile n denotes the value of "capability_nvideoin" and m denotes the value of "capability_nvideoinprofile"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
brightness	-5~5,100	4/4	-5: Darker <-> 5: Bright
<not< td=""><td></td><td></td><td>100: Use "</td></not<>			100: Use "
recommended to			image_c <n>_brightnesspercent"</n>
use this>			* Only available when bit 0 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1
			* We replace "brightness" with
			"brightnesspercent".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
contrast	-5~5,100	4/4	-5: Less contrast <-> 5: More contrast
<not< td=""><td></td><td></td><td>100: Use "</td></not<>			100: Use "
recommended to			image_c<0~(n-1)>_contrastpercent"
use this>			* Only available when bit 1 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
			* We replace "contrast" with
			"contrastpercent ".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
saturation	-5~5,100	4/4	-5: Less saturation <-> 5: More
<not< td=""><td></td><td></td><td>saturation</td></not<>			saturation
recommended to			100: Use "
use this>			image_c <n>_saturationpercent"</n>
			* Only available when bit 2 of
			"capability_image_c<0~(n-1)>_basicse

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			tting" is 1.
			* We replace "saturation" with
			"saturationpercent".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
sharpness	-3~3,100	4/4	-3: Softer <-> 3: Sharper
<not< td=""><td></td><td></td><td>100: Use "</td></not<>			100: Use "
recommended to			image_c<0~(n-1)>_sharpnesspercent"
use this>			* Only available when bit 3 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
			* We replace "sharpness" with
			"sharpnesspercent".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
brightnesspercent	0~100	4/4	Set brightness in the normalized
			range.
			0: Darker <-> 100: Bright
			* Only available when bit 0 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
contrastpercent	0~100	4/4	Set contrast in the normalized range.
			0: Less contrast <-> 100: More
			contrast
			* Only available when bit 1 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1
saturationpercent	0~100	4/4	Set saturation in the normalized
			range.
			0: Less saturation <-> 100: More
			saturation
			* Only available when bit 2 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
sharpnesspercent	0~100	4/4	Set sharpness in the normalized range. 0: Softer <-> 100: Sharper * Only available when bit 3 of "capability_image_c<0~(n-1)>_basicse tting" is 1
gammacurve <product dependent></product 	0~100	4/4	0: Fine-turned gamma curve by Vivotek. 1: Gamma value = 0.01 2: Gamma value = 0.02 3: Gamma value = 0.03 100: Gamma value = 1 * Note: Although we set gamma value to 100 level, but not all gamma values are valid. Internal module will take the closest valid one. For example, 1~45 may all be mapped to gamma value = 0.45, etc. * Only available when "capability_image_c<0~(n-1)>_gamm acurve" is 1
lowlightmode <product dependent></product 	<boolean></boolean>	4/4	Enable/disable low light mode. * Only available when "capability_image_c<0~(n-1)>_lowligh tmode" is 1
hlm <product dependent></product 	<boolean></boolean>	4/4	Enable/disable hightlight mask. * Only available when "capability_image_c<0~(n-1)>_hlm" is 1
dnr_mode <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	<boolean></boolean>	4/4	3D noise reduction. 0:disable 1:enable * Only available when "capability_image_c<0~(n-1)>_dnr" is 1

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
dnr_strength <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	1~100	4/4	Strength of 3DNR * Only available when "capability_image_c<0~(n-1)>_dnr" is 1
defog_mode <product dependent></product 	<boolean></boolean>	4/4	Enable/disable defog mode. 0:disable 1:enable * Only available when "capability_image_c<0~(n-1)>_defog_ mode" is 1
defog_strength <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	1~100	4/4	Strength of defog * Only available when "capability_image_c<0~(n-1)>_defog_ mode" is 1
eis_mode <product dependent></product 	<boolean></boolean>	4/4	Electronic image stabilizer 0:disable 1:enable * Only available when 'eis' is listed in "capability_image_c<0~(n-1)>_is_mod e".
eis_strength <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	1~100	4/4	* Only available when 'eis' is listed in "capability_image_c<0~(n-1)>_is_mod e".
dis_mode <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	<boolean></boolean>	4/4	Digital image stabilizer 0:disable 1:enable * Only available when 'dis' is listed in "capability_image_c<0~(n-1)>_is_mod e".
dis_strength <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	1~100	4/4	Strength of digital image stabilizer * Only available when 'dis' is listed in "capability_image_c<0~(n-1)>_is_mod e".

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
scene_mode	visibility,	4/4	Value of scene mode
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	noiseless,	4/4	* Only available when
dependent>	lpcparkinglot,		"capability_image_c<0~(n-1)>_scene
dependent>			
	lpcstreet,		mode_support" is 1
	lpchighway,		
	auto,		
	deblur,		
	Ipcfreeway		
	<pre><pre><pre><pre></pre></pre></pre></pre>		
	* Available values are		
	listed in		
	"capability_image_c<		
	0~(n-1)>_scenemode_		
	supporttype"		
restoreatwb	<positive integer=""></positive>	4/4	Restore of adjusting white balance of
			image according to mode settings
freeze	<boolean></boolean>	4/4	Enable/disable Image freeze while
<pre><pre><pre><pre></pre></pre></pre></pre>			patrolling.
dependent>			0: disable
			1: enable
			* Only available when
			"capability_image_c<0~(n-1)>_freeze"
			is 1
deinterlace_enable	<boolean></boolean>	4/4	Enable/disable deinterlace function.
			0: disable
			1: enable
			* Only available when
			"capability_image_c<0~(n-1)>_deinter
			lace_support" is 1.
deinterlace_mode	spatial,blend	4/4	Users can choose between two
			different deinterlacing techniques:
			Spatical mode provides the best
			image quality, while Blend mode
			provides better image quality (than
			not using the deinterlace function at
			all).

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			* Only available when
			"capability_image_c<0~(n-1)>_deinter
			lace_support" is 1.
xoffset	0~100	4/4	Adjusting the image to proper
			position horizontally.
			* Only available when the bit 4 of
			capability_image_c<0~(n-1)>_basicset
			ting is 1.
yoffset	0~100	4/4	Adjusting the image to proper
			position vertically.
			* Only available when the bit 5 of
			capability_image_c<0~(n-1)>_basicset
			ting is 1.
lens_alignment	0~100	4/4	Stitch the sensors together into
			focused position.
			* Only available when
			"capability_image_c<0~(n-1)>_lens_al
			ignment" is 1.
lens_ldc_mode	<boolean></boolean>	4/4	Enable/disable lens distortion
			correction.
			* Only available when
			"capability_image_c<0~(n-1)>_lens_ld
			c_support" is 1.
palette_mode	Available value is listed in	1/4	Set color palette option.
	"capability_image_c<		* Only available when
	0~(n-1)>_palette_mo		"capability_image_c<0~(n-1)>_palette
	de"		_support" is 1.
profile_i<0~(m-1)>	<boolean></boolean>	4/4	Enable/disable this profile setting
_enable			
profile_i<0~(m-1)>	night,	4/4	The mode which the profile is applied
_policy	schedule		to.
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		
			* Not support "policy=day" anymore
			when the version number

NAME	VALUE	SECURITY (got/set)	DESCRIPTION
		(get/set)	(httpversion) is equal or greater than 0301a. * "policy=night" is only available when "capability_daynight_c<0~(n-1)>_sup port > 0".
profile_i<0~(m-1)> _begintime	hh:mm	4/4	Begin time of schedule mode.
profile_i<0~(m-1)> _endtime	hh:mm	4/4	End time of schedule mode.
profile_i<0~(m-1)> _brightness <not recommended="" this="" to="" use=""></not>	-5~5,100	4/4	-5: Darker <-> 5: Bright 100: Use " image_c<0~(n-1)>_brightnesspercent" * Only available when bit 0 of
			"capability_image_c<0~(n-1)>_basicse tting" is 1 * We replace "profile_i0_brightness" with "profile_i0_brightnesspercent". * This parameter will not be used after the version number (httpversion)
profile_i<0~(m-1)> _contrast <not recommended="" this="" to="" use=""></not>	-5~5,100	4/4	is equal or greater than 0400a. -5: Less contrast <-> 5: More contrast 100: Use " image_c<0~(n-1)>_contrastpercent" * Only available when bit 1 of "capability_image_c<0~(n-1)>_basicse tting" is 1. * We replace "profile_i0_contrast" with "profile_i0_contrastpercent ". * This parameter will not be used after the version number (httpversion) is equal or greater than 0400a.
profile_i<0~(m-1)>	-5~5,100	4/4	-5: Less saturation <-> 5: More

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
_saturation			saturation
<not< td=""><td></td><td></td><td>100: Use "</td></not<>			100: Use "
recommended to			image_c<0~(n-1)>_saturationpercent"
use this>			
			* Only available when bit 2 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
			* We replace "profile_i0_saturation"
			with "profile_i0_saturationpercent".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
profile_i<0~(m-1)>	-3~3,100	4/4	-5: Less saturation <-> 5: More
_sharpness			saturation
<not< td=""><td></td><td></td><td>100: Use "</td></not<>			100: Use "
recommended to			image_c<0~(n-1)>_saturationpercent"
use this>			
			* Only available when bit 2 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
			* We replace "profile_i0_saturation"
			with "profile_i0_saturationpercent".
			* This parameter will not be used
			after the version number (httpversion)
			is equal or greater than 0400a.
profile_i<0~(m-1)>	0~100	4/4	Set brightness in the normalized
_brightnesspercent			range.
			0: Darker <-> 100: Bright
			* Only available when bit 0 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
profile_i<0~(m-1)>	0~100	4/4	Set contrast in the normalized range.
_contrastpercent			0: Less contrast <-> 100: More
			contrast

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			* Only available when bit 1 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1
profile_i<0~(m-1)>	0~100	4/4	Set saturation in the normalized
_saturationpercent			range.
			0: Less saturation <-> 100: More
			saturation
			* Only available when bit 2 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1.
profile_i<0~(m-1)>	0~100	4/4	Set sharpness in the normalized
_sharpnesspercent			range.
			0: Softer <-> 100: Sharper
			* Only available when bit 3 of
			"capability_image_c<0~(n-1)>_basicse
			tting" is 1
profile_i<0~(m-1)>	0~100	4/4	0: Fine-turned gamma curve by
_gammacurve			Vivotek.
			1: Gamma value = 0.01
			2: Gamma value = 0.02
			3: Gamma value = 0.03
			100: Gamma value = 1
			* Note: Although we set gamma value
			to 100 level, but not all gamma values
			are valid. Internal module will take the
			closest valid one. For example, 1~45
			may all be mapped to gamma value =
			0.45, etc.
			* Only available when
			"capability_image_c<0~(n-1)>_gamm
		_	acurve" is 1
profile_i<0~(m-1)>	<boolean></boolean>	4/4	Enable/disable low light mode.
_lowlightmode			* Only available when
<pre><pre><pre><pre></pre></pre></pre></pre>			"capability_image_c<0~(n-1)>_lowligh
dependent>			tmode" is 1

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
profile_i<0~(m-1)>	<boolean></boolean>	4/4	Enable/disable hightlight mask.
_hlm			* Only available when
<pre><pre><pre><pre></pre></pre></pre></pre>			"capability_image_c<0~(n-1)>_hlm" is
dependent>			1
profile_i<0~(m-1)>	<boolean></boolean>	4/4	3D noise reduction.
_dnr_mode			0:disable
<pre><pre><pre><pre></pre></pre></pre></pre>			1:enable
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_dnr" is
			1
profile_i<0~(m-1)>	1~100	4/4	Strength of 3DNR
_dnr_strength			* Only available when
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			"capability_image_c<0~(n-1)>_dnr" is
dependent>			1
profile_i<0~(m-1)>	<boolean></boolean>	4/4	Enable/disable defog mode.
_defog_mode			0:disable
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			1:enable
dependent>			* Only available when
			"capability_image_c<0~(n-1)>_defog_
			mode" is 1
profile_i<0~(m-1)>	1~100	4/4	Strength of defog
_defog_strength			* Only available when
<pre><pre><pre><pre></pre></pre></pre></pre>			"capability_image_c<0~(n-1)>_defog_
dependent>			mode" is 1
profile_i<0~(m-1)>	<boolean></boolean>	4/4	Electronic image stabilizer
_eis_mode			0:disable
<pre><pre><pre><pre></pre></pre></pre></pre>			1:enable
dependent>			* Only available when 'eis' is listed in
			"capability_image_c<0~(n-1)>_is_mod
			e".
profile_i<0~(m-1)>	1~100	4/4	Strength of electronic image stabilizer
_eis_strength			* Only available when 'eis' is listed in
<pre><pre><pre><pre></pre></pre></pre></pre>			"capability_image_c<0~(n-1)>_is_mod
dependent>			e".
profile_i<0~(m-1)>	<boolean></boolean>	4/4	Digital image stabilizer
_dis_mode			0:disable

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
<pre><pre><pre><pre></pre></pre></pre></pre>			1:enable
dependent>			* Only available when 'dis' is listed in
			"capability_image_c<0~(n-1)>_is_mod
			e".
profile_i<0~(m-1)>	1~100	4/4	Strength of digital image stabilizer
_dis_strength			* Only available when 'dis' is listed in
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>			"capability_image_c<0~(n-1)>_is_mod
dependent>			e".

7.12 Exposure Window Setting per Channel

Group: **exposurewin_c<0~(n-1)>** for n channel profucts n denotes the value of "capability_nvideoin"

(Only available when "capability_image_c<0 $^{(n-1)}$ >_exposure_mode"=1)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
mode	auto, custom,blc,hlc,center	4/4	"auto": Use full image view as the
			only exposure window.
	* Available values are listed		"custom": Use custom windows.
	in		"blc": Use BLC(Back Light
	"capability_image_c<0~(n-1)		Compensation), and the only
	>_exposure_winmode"		exposure window is located at the
			center of view.
			"hlc": Use HLC (High Light
			Compensation), and to perform the
			masking of bright light area.
			"center": Use Center window as
			metering area and give the necessary
			light compensation.

7.12.1. Exposure Window Setting for Each Window

Group: $exposurewin_c<0^{(n-1)}=win_i<0^{(k-1)}$

n denotes the value of "capability_nvideoin",

k denotes the value of "capability_image_c<0 $^{\sim}$ (n-1)>_exposure_winnum".

(Only available when "capability_image_c<0~(n-1)>_exposure_mode"=1 and when custom is listed in "capability_image_c<0~(n-1)>_exposure_winmode" and valid when

"exposurewin_c<0 $^{(n-1)}$ _mode"=custom or "exposurewin_c<0 $^{(n-1)}$ _mode"=hlc)

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable or disable the window.
policy	0~1	4/4	0: Indicate exclusive.
			1: Indicate inclusive.
			* Only available when exclusive is
			listed in
			"capability_image_c<0~(n-1)>_exposu
			re_wintype".
home	<0~320,0~240>	4/4	Left-top corner coordinate of the
			window.
			* Only available when qvga is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".
size	<0~320x0~240>	4/4	Width and height of the window.
			* Only available when qvga is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".
homepx	<0~W,0~H>	4/4	Left-top corner coordinate of the
			window.
	W: 0~ The current image width		
	-1		* Only available when px is listed in
	H: 0~ The current image height		"capability_image_c<0~(n-1)>_exposu
	-1		re_windomain".
sizepx	<0~Wx0~ H>	4/4	Width and height of the window.
	W: 0~ The current image width		* Only available when px is listed in
	-1		"capability_image_c<0~(n-1)>_exposu
	H: 0~ The current image height		re_windomain".
	-1		
homestd	<0~9999,0~9999>	4/4	Left-top corner coordinate of the window.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			* Only available when std is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".
sizestd	<0~9999x0~9999>	4/4	Width and height of the window.
			* Only available when std is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".

Group: exposurewin_c<0~(n-1)>_profile_i<0~(m-1)> for n channel profuct and m profile, n denotes the value of "capability_nvideoin", m denotes the value of "capability_nvideoinprofile", (Only available when "capability_image_c<0~(n-1)>_exposure_mode"=1)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
mode	auto, custom,blc,hlc,center	4/4	The mode indicates how to decide the
	* Available values are listed		exposure.
	in		"auto": Use full view as the only one
	"capability_image_c<0~(n-1)		exposure window.
	>_exposure_winmode"		"custom": Use inclusive and exclusive
			window.
			"blc": Use BLC(Back Light
			Compensation), and the only
			exposure window is located at the
			center of view.
			"hlc": Use HLC (High Light
			Compensation), and to perform the
			masking of bright light area.
			"center": Use Center window as
			metering area and give the necessary
			light compensation.

Group: **exposurewin_c<0~(n-1)>_profile_i<0~(m-1)>_win_i<0~(k-1)>** for m profile and n channel product,

n denotes the value of "capability_nvideoin", m denotes the value of "capability_nvideoinprofile", k denotes the value of "capability_image_c<0 $^{(n-1)}$ >_exposure_winnum".

(Only available when "capability_image_c<0~(n-1)>_exposure_mode"=1 and when custom is listed in "capability_image_c<0~(n-1)>_exposure_winmode" and valid when

"exposurewin_c<0 $^{(n-1)}$ _mode"=custom or "exposurewin_c<0 $^{(n-1)}$ >_mode"=hlc)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	4/4	Enable or disable the window.
policy	0~1	4/4	0: Indicate exclusive.
			1: Indicate inclusive.
			* Only available when exclusive is
			listed in
			"capability_image_c<0~(n-1)>_exposu
			re_wintype".
			* "policy=night" is only available when
			"capability_daynight_c<0~(n-1)>_sup
			port > 0".
home	<0~320,0~240>	4/4	Left-top corner coordinate of the
			window.
			* Only available when qvga is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".
size	<0~320x0~240>	4/4	Width and height of the window.
			* Only available when qvga is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".
homepx	<0~W,0~H>	4/4	Left-top corner coordinate of the
			window.
	W: 0~ The current image width		
	-1		* Only available when px is listed in
	H: 0~ The current image height		"capability_image_c<0~(n-1)>_exposu
	-1		re_windomain".
sizepx	<0~Wx0~ H>	4/4	Width and height of the window.
	W: 0 [~] The current image width		* Only available when px is listed in
	-1		"capability_image_c<0~(n-1)>_exposu
	H: 0~ The current image height		re_windomain".
	-1		

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
homestd	<0~9999,0~9999>	4/4	Left-top corner coordinate of the
			window.
			* Only available when std is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".
sizestd	<0~9999x0~9999>	4/4	Width and height of the window.
			* Only available when std is listed in
			"capability_image_c<0~(n-1)>_exposu
			re_windomain".

7.13 Audio Input per Channel

Group: audioin_c<0~(n-1)> (capability_naudioin>0)

n denotes the value of "capability_naudioin"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
source <not recommended="" this="" to="" use=""></not>	micin, linein <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	4/4	micin => use built-in microphone input. linein => use external microphone input. * We replace this parameter with
			"audioin_c<0~(n-1)>_input" when the version number (httpversion) is equal or greater than 0301a.
input	intmic, extmic <pre><pre><pre><pre>dependent></pre></pre></pre></pre>	4/4	intmic: Internal (built-in) microphone. (Only available when capability_audio_intmic = 1) extmic: External microphone input. (Only available when capability_audio_extmic =1) * Note: If physical microphone switch is showed on product, this value is updated during booting to fit switch status.
volume_internal	0~100	4/4	Volume when take internal microphone as input source.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			0: Minimum
			100: Maximum
			* Only available when the channel
			supports internal microphone (The related bit of
			"capability_audio_intmic" is equal to
			1).
volume_external	0~100	4/4	Volume when take external
			microphone as input source.
			0: Minimum
			100: Maximum
			* Only available when the channel
			supports external microphone (The
			related bit of
			"capability_audio_extmic" is equal to
			1).
mute	0, 1	1/4	0: Mute off
			1: Mute on
gain	0~100	4/4	Gain of input.
<not recommended="" this="" to="" use=""></not>			(audioin_c<0~(n-1)>_source = linein)
			* Reserved for compatibility, and
			suggest don't use this since the
			version number (httpversion) is equal
			or greater than 0301a.
			* We replace "gain" with
			"volume_internal" and
			"volume_external". More details,
			please refer the parameter
			description of "volume_internal" and
			"volume_external".
boostmic	0~100	4/4	Enable microphone boost.
<not recommended<="" td=""><td></td><td></td><td>Gain of input.</td></not>			Gain of input.
to use this>			(audioin_c<0~(n-1)>_source = micin)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			* Reserved for compatibility, and
			suggest don't use this since the
			version number (httpversion) is equal
			or greater than 0301a.
			* We replace "boostmic" with
			"volume_internal" and
			"volume_external". More details,
			please refer the parameter
			description of "volume_internal" and
			"volume_external".
s0_codectype	aac4, gamr, g711,	4/4	Set audio codec type for input.
	g726		aac4: Advanced Audio Coding (AAC)
	(Available codec are		gamr: Adaptive Multi-Rate (AMR)
	listed in		g711: G.711
	"capability_audioin_		g726: G.726
	codec")		
s0_aac4_bitrate	16000,	4/4	Set AAC4 bitrate in bps.
	32000,		* Only available if AAC is supported.
	48000,		
	64000,		
	96000,		
	128000		
s0_gamr_bitrate	4750,	4/4	AMR encoded bitrate in bps.
	5150,		* Only available if AMR is supported.
	5900,		
	6700,		
	7400,		
	7950,		
	10200,		
	12200		
s0_g711_mode	pcmu,	4/4	Set G.711 companding algorithm.
	pcma		pcmu: μ-law algorithm
			pcma: A-law algorithm
			* Only available if G.711 is supported.
s0_g726_bitrate	16000,	4/4	Set G.726 encoded bitrate in bps.
	24000,		* Only available if G.726 is supported.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	32000, 40000		
s0_g726_bitstreamp ackingmode	little, big	4/4	Set G.726 bit streaming packing mode. little: Little-endian bitstream format. big: Big-endian bitstream format. * Only available if G.726 is supported.
s0_g726_vlcmode	0, 1	4/4	Enable vlcmode for G.726. 0: Standard mode. 1: Solve compatibility problem with VLC player. * Only available if G.726 is supported.
aec_enable	<boolean></boolean>	4/4	Enable acoustic echo cancellation. * Only available when "capability_audio_aecmode" is "manual". * We support this parameter when the version number (httpversion) is equal or greater than 0306b.
alarm_enable	<boolean></boolean>	4/4	Enable audio detection
alarm_level	1~100	4/4	Audio detection alarm level
profile_i0_enable	<boolean></boolean>	4/4	Enable/disable this profile setting
profile_i0_policy	night, schedule <product dependent=""></product>	4/4	The mode which the profile is applied to. * Not support "policy=day" anymore when the version number (httpversion) is equal or greater than 0301a. * "policy=night" is only available when "capability_daynight_c<0~(n-1)>_sup port > 0".
profile_i0_begintime	hh:mm	4/4	Begin time of schedule mode.
profile_i0_endtime	hh:mm	4/4	End time of schedule mode.
profile_i0_alarm_lev el	1~100	4/4	Audio detection alarm level

7.13.1. Multicast Settings for Audio Streaming

Group: $audioin_c<0^{(n-1)}>s0_multicast$ (capability_naudioin > 0 and

capability_media_streamprofiles_support = 1)

n denotes the value of "capability_naudioin"

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
ipaddress	<ip address=""></ip>	4/4	Multicast audio IP address.
port	1025 ~ 65535	4/4	Multicast audio port.
ipversion	IPv4, IPv6	4/4	The version of internet protocol.
ttl	1~255	4/4	Multicast audio time to live value.

7.14 Audio Output per Channel

Group: audioout_c<0~(n-1)> for n channel products (capability_naudioout>0)

n denotes the value of "capability_naudioout"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
volume	0~100	4/4	Adjusting audio volume

7.15 Play an Audio Clip

Group: audioclip_i<0~1> (capability_audio_audioclip=1)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
name	string[40]	1/4	Specify the audio clip name that can
			be played when an event occurs.
size	0, <positive integer=""></positive>	1/4	The size of audio clip.

Group: audioclip (capability_audio_audioclip=1)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
prerecord_seconds	1~10	1/4	Indicates the seconds that can be
			waited before audio clip start to

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			record.

7.16 Motion Detection Settings

Group: motion_c<0~(n-1)> for n channel products n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	4/4	Enable motion detection.
win_sensitivity	0 ~ 100	4/4	Sensitivity of all motion detection
			windows.
			* The value "0" is reserved for
			compatibility and will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.

7.16.1. Motion Detection for Each Window

Group: $motion_c<0^{(n-1)}=win_i<0^{(k-1)}$

n denotes the value of "capability_nvideoin", k denotes the value of "capability_nmotion".

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	4/4	Enable motion detection window.
name	string[14]	4/4	Name of motion window.
polygonstd	0 ~ 9999,0 ~ 9999, 0	4/4	Coordinate of polygon window
	~ 9999,0 ~ 9999, 0 ~		position.
	9999,0 ~ 9999, 0 ~		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
	9999,0 ~ 9999		* Only available when
			"capability_motion_wintype" =
			polygon.
			* Only available when std is listed in
			"capability_motion_windomain"
objsize	1~100	4/4	Percent of motion detection window.
sensitivity	0~100	4/4	Sensitivity of motion detection window.
<not recommended<="" td=""><td></td><td></td><td>* We replace "sensitivity" with</td></not>			* We replace "sensitivity" with
to use this>			"win_sensitivity".
			* This parameter will not be used after

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			the version number (httpversion) is
			equal or greater than 0400a.
polygonpx	0 ~ W,0 ~ H, 0 ~ W,0	4/4	Coordinate of polygon window
<not recommended<="" td=""><td>~ H, 0 ~ W,0 ~ H, 0 ~</td><td></td><td>position.</td></not>	~ H, 0 ~ W,0 ~ H, 0 ~		position.
to use this>	W,0 ~ H		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
	W: 0~ The current		* Only available when
	image width -1		"capability_motion_wintype" =
	H: 0~ The current		polygon.
	image height -1		* Only available when px is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.
polygon	0 ~ 320,0 ~ 240, 0 ~	4/4	Coordinate of polygon window
<not recommended<="" td=""><td>320,0 ~ 240, 0 ~</td><td></td><td>position.</td></not>	320,0 ~ 240, 0 ~		position.
to use this>	320,0 ~ 240, 0 ~		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
	320,0 ~ 240		* Only available when
			"capability_motion_wintype" =
			polygon.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.
left	0 ~ 320	4/4	Left coordinate of window position.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
top	0~240	4/4	Top coordinate of window position.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.
width	0~320	4/4	Width of motion detection window.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.
height	0~240	4/4	Height of motion detection window.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is
			equal or greater than 0400a.

Group: motion_c<0~(n-1)>_profile_i<0~(m-1)> for m profile and n channel product, n denotes the value of "capability_nvideoin", m denotes the value of "capability_nmotionprofile ", (capability_nmotionprofile > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	

NAME	VALUE	SECURITY (set (set)	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	4/4	Enable profile 1 ~ (m-1).
policy	night,	4/4	The mode which the profile is applied to.
	schedule		
			* Not support "policy=day" anymore
			when the version number (httpversion) is
			equal or greater than 0301a.
			* "policy=night" is only available when
			"capability_daynight_c<0~(n-1)>_support
			>0".
begintime	hh:mm	4/4	Begin time of schedule mode.
endtime	hh:mm	4/4	End time of schedule mode.
win_sensitivity	0~100	4/4	Sensitivity of all motion detection
			windows.
			* The value "0" is reserved for
			compatibility and will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.

Group: $motion_c<0^{(n-1)}=profile_i<0^{(m-1)}=win_i<0^{(k-1)}=form profile and n channel$ product,

n denotes the value of "capability_nvideoin", m denotes the vaule of "capability_nmotionprofile", k denotes the value of "capability_nmotion".

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable motion detection window.
name	string[14]	4/4	Name of motion window.
polygonstd	0 ~ 9999,0 ~ 9999,	4/4	Coordinate of polygon window position.
	0 ~ 9999,0 ~ 9999,		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
	0 ~ 9999,0 ~ 9999,		* Only available when
	0 ~ 9999,0 ~ 9999		"capability_motion_wintype" = polygon.
			* Only available when std is listed in
			"capability_motion_windomain
objsize	1~100	4/4	Percent of motion detection window.
sensitivity	0~100	4/4	Sensitivity of motion detection window.
<not recommended<="" td=""><td></td><td></td><td>* We replace "sensitivity" with</td></not>			* We replace "sensitivity" with

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
to use this>			"win_sensitivity".
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
polygonpx	0 ~ W,0 ~ H, 0 ~	4/4	Coordinate of polygon window position.
<not recommended<="" td=""><td>W,0 ~ H, 0 ~ W,0 ~</td><td></td><td>(4 points: x0,y0,x1,y1,x2,y2,x3,y3)</td></not>	W,0 ~ H, 0 ~ W,0 ~		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
to use this>	H, 0 ~ W,0 ~ H		* Only available when
	W: 0~ The current		"capability_motion_wintype" = polygon.
	image width -1		* Only available when px is listed in
	H: 0~ The current		"capability_motion_windomain".
	image height -1		* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
polygon	0 ~ 320,0 ~ 240, 0 ~	4/4	Coordinate of polygon window position.
<not recommended<="" td=""><td>320,0 ~ 240, 0 ~</td><td></td><td>(4 points: x0,y0,x1,y1,x2,y2,x3,y3)</td></not>	320,0 ~ 240, 0 ~		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
to use this>	320,0 ~ 240, 0 ~		* Only available when
	320,0 ~ 240		"capability_motion_wintype" = polygon.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
left	0 ~ 320	4/4	Left coordinate of window position.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
top	0 ~ 240	4/4	Top coordinate of window position.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
width	0~320	4/4	Width of motion detection window.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
height	0 ~ 240	4/4	Height of motion detection window.
<not recommended<="" td=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
to use this>			"capability_motion_wintype" =
			rectangle.
			* Only available when qvga is listed in
			"capability_motion_windomain".
			* It's recommended to use polygonsd
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.

7.17 Tampering Detection Settings

Group: tampering_c<0~(n-1)> for n channel products (capability_tampering > 0) n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable or disable tamper detection.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
threshold	0~100	4/4	Threshold of tamper detection.
duration	10~600	4/4	If tampering value exceeds the
			"threshold" for more than "duration"
			second(s), then tamper detection is
			triggered.
ignorewidth	0, <positive< td=""><td>1/7</td><td>Indicate the width to offset to start to</td></positive<>	1/7	Indicate the width to offset to start to
	integer>		analysis the image.
dark_enable	<boolean></boolean>	4/4	Enable or disable image too dark
			detection
dark_threshold	0~100	4/4	Threshold of image too dark detection
dark_duration	1~10	4/4	If image too dark value exceeds the
			"threshold" for more than "duration"
			second(s), then image too dark
			detection is triggered.
bright_enable	<boolean></boolean>	4/4	Enable or disable image too bright
			detection
bright_threshold	0~100	4/4	Threshold of image too bright
			detection
bright_duration	1~10	4/4	If image too bright value exceeds the
			"threshold" for more than "duration"
			second(s), then image too bright
			detection is triggered.
blurry_enable	<boolean></boolean>	4/4	Enable or disable image too blurry
			detection
blurry_threshold	0~100	4/4	Threshold of image too blurry
			detection
blurry_duration	1~10	4/4	If image too blurry value exceeds the
			"threshold" for more than "duration"
			second(s), then image too blurry
			detection is triggered.

7.18 DDNS

Group: ddns (capability_protocol_ddns > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable or disable the dynamic DNS.
provider	DyndnsDynamic,	6/6	DyndnsDynamic => dyndns.org
	DyndnsCustom,		(dynamic)
	Safe100		DyndnsCustom => dyndns.org
			Safe100 => safe100.net
<pre><pre><pre><pre>ovider>_hostnam</pre></pre></pre></pre>	string[128]	6/6	Your DDNS hostname.
е			
<pre><pre><pre><pre>ovider>_usernam</pre></pre></pre></pre>	string[64]	6/6	Your user name or email to login to
eemail			the DDNS service provider
<pre><pre><pre>orovider>_passwor</pre></pre></pre>	string[64]	7/6	Your password or key to login to the
dkey			DDNS service provider.

7.19 Express Link

Group: expresslink

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable or disable express link.
state	onlycheck,	6/6	Camera will check the status of network
	onlyoffline,		environment and express link URL
	checkonline,		
	badnetwork		
url	string[64]	6/6	The url user define to link to camera

7.20 UPnP Presentation

Group: upnppresentation

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	6/6	Enable or disable the UPnP presentation service.

7.21 UPnP Port Forwarding

Group: upnpportforwarding

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	6/6	Enable or disable the UPnP port
			forwarding service.
upnpnatstatus	0~3	6/7	The status of UPnP port forwarding,
			used internally.
			0 = OK, 1 = FAIL, 2 = no IGD router, 3 =
			no need for port forwarding

7.22 System Log

Group: syslog

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enableremotelog	<boolean></boolean>	6/6	Enable remote log.
serverip	<ip address=""></ip>	6/6	Log server IP address.
serverport	514, 1025~65535	6/6	Server port used for log.
level	0~7	6/6	Levels used to distinguish the
			importance of the information:
			0: LOG_EMERG
			1: LOG_ALERT
			2: LOG_CRIT
			3: LOG_ERR
			4: LOG_WARNING
			5: LOG_NOTICE
			6: LOG_INFO
			7: LOG_DEBUG
setparamlevel	0~2	6/6	Show log of parameter setting.
			0: disable
			1: Show log of parameter setting set
			from external.
			2. Show log of parameter setting set
			from external and internal.

7.23 SNMP

Group: snmp (capability_protocol_snmp > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
v2	<boolean></boolean>	6/6	SNMP v2 enabled. 0 for disable, 1 for
			enable
v3	<boolean></boolean>	6/6	SNMP v3 enabled. 0 for disable, 1 for
			enable
secnamerw	string[31]	6/6	Read/write security name
secnamero	string[31]	6/6	Read only security name
authpwrw	string[8~128]	7/6	Read/write authentication password
authpwro	string[8~128]	7/6	Read only authentication password
authtyperw	MD5,SHA	6/6	Read/write authentication type
authtypero	MD5,SHA	6/6	Read only authentication type
encryptpwrw	string[8~128]	7/6	Read/write passwrd
encryptpwro	string[8~128]	7/6	Read only password
encrypttyperw	DES	6/6	Read/write encryption type
encrypttypero	DES	6/6	Read only encryption type
rwcommunity	string[31]	6/6	Read/write community
rocommunity	string[31]	6/6	Read only community
syslocation	string[128]	6/6	System location
syscontact	string[128]	6/6	System contact

7.24 Layout Configuration

Group: layout

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
logo_default	<boolean></boolean>	1/6	0 => Custom logo
			1 => Default logo
logo_link	string[128]	1/6	Hyperlink of the logo
	http://www.vivot		
	<u>ek.com</u>		
logo_powerbyvvtk_hidd	<boolean></boolean>	1/6	0 => display the power by vivotek logo
en			1 => hide the power by vivotek logo

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
custombutton_manualtr	<boolean></boolean>	1/6	Show or hide manual trigger (VI)
igger_show			button in homepage
			0 -> Hidden
			1 -> Visible
theme_option	1~4	1/6	1~3: One of the default themes.
			4: Custom definition.
theme_color_font	string[7]	1/6	Font color
theme_color_configfont	string[7]	1/6	Font color of configuration area.
theme_color_titlefont	string[7]	1/6	Font color of video title.
theme_color_controlba ckground	string[7]	1/6	Background color of control area.
theme_color_configbac kground	string[7]	1/6	Background color of configuration area.
theme_color_videoback ground	string[7]	1/6	Background color of video area.
theme_color_case	string[7]	1/6	Frame color
defaultpassword_specia	!%@^_~	6/7	Allowed special characters
lcharacter			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314b.
defaultpassword_type	<positive< td=""><td>6/7</td><td>Required character type for password.</td></positive<>	6/7	Required character type for password.
	integer>		An 32-bit integer, each bit can be set
			separately as follows:
			Bit 0 => Require English alphabet
			letter (uppercase or lowercase)
			Bit 1 => Require special character
			Bit 2 => Require digit number
			Bit 3 => Require lowercase letter
			Bit 4 => Require uppercase letter
			Bit 5 => Allow checking username and
			password; if "bit=1" means
			username=password is allowed,
			otherwise is not allowed.
			* We support this parameter when
			the version number (httpversion) is

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			equal or greater than 0314b.
defaultpassword_length	8 ~ 64	6/7	Allowed password length.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314b.

7.25 Privacy Mask

Group: $privacymask_c<0^{(n-1)}$ for n channel products and m privacy mask window. n denotes the value of "capability_nvideoin" and m denotes the value of "capability_videoin_c<0^(n-1)>_nprivacymask"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	4/4	Enable privacy mask.
win_i<0~(m-1)>_enable	<boolean></boolean>	4/4	Enable privacy mask window.
win_i<0~(m-1)>_name	string[14]	4/4	Name of the privacy mask window.
win_i<0~(m-1)>_left	0~320	4/4	Left coordinate of window position. * Only available when "capability_image_c<0~(n-1)>_privacy mask_wintype" = rectangle.
win_i<0~(m-1)>_top	0~240	4/4	Top coordinate of window position. * Only available when "capability_image_c<0~(n-1)>_privacy mask_wintype" = rectangle.
win_i<0~(m-1)>_width	0~320	4/4	Width of privacy mask window. * Only available when "capability_image_c<0~(n-1)>_privacy mask_wintype" = rectangle.
win_i<0~(m-1)>_height	0~240	4/4	Height of privacy mask window. * Only available when "capability_image_c<0~(n-1)>_privacy mask_wintype" = rectangle.
win_i<0~(m-1)>_polygo n	0 ~ 320,0 ~ 240, 0 ~ 320,0 ~ 240, 0 ~ 320,0 ~ 240, 0 ~ 320,0 ~ 240	4/4	Coordinate of polygon window position. (4 points: x0,y0,x1,y1,x2,y2,x3,y3) * Only available when "capability_image_c <n>_privacymask _wintype" = polygon. * Only available when qvga is listed in "capability_image_c<0~(n-1)>_privacymask_windomain".</n>
win_i<0~(m-1)>_polygo npx	0 ~ W,0 ~ H, 0 ~ W,0 ~ H,	4/4	Coordinate of polygon window position.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	0 ~ W,0 ~ H,		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
	0 ~ W,0 ~ H		* Only available when
	W: 0∼ The		"capability_image_c<0~(n-1)>_privacy
	current image		mask_wintype" = polygon.
	width -1		* Only available when px is listed in
	H: 0~ The current		"capability_image_c<0~(n-1)>_privacy
	image height -1		mask_windomain".
win_i<0~(m-1)>_polygo	0 ~ 9999,0 ~	4/4	Coordinate of polygon window
nstd	9999, 0 ~ 9999,0		position.
	~ 9999, 0 ~		(4 points: x0,y0,x1,y1,x2,y2,x3,y3)
	9999,0 ~ 9999, 0		* Only available when
	~ 9999,0 ~ 9999		"capability_image_c<0~(n-1)>_privacy
			mask_wintype" = polygon.
			* Only available when std is listed in
			"capability_image_c<0~(n-1)>_privacy
			mask_windomain".

7.26 3D Privacy Mask

Group: privacymask3d_c<0~(n-1)> for n channel products and m privacy mask window.

 $(capability_image_c<0^{\sim}(n-1)>_privacymask_wintype=3Drectangle)$

n denotes the value of "capability_nvideoin" and m denotes the value of

"capability_videoin_c<0~(n-1)>_nprivacymask"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	4/4	Enable the 3D privacy mask
color	0~"	4/4	Privacy mask color
	capability_image_c<0~(n-		
	1)>_privacymask_ncolor"		
	-1		
win_i<0~(m-1)>_name	string[40]	4/4	Name of the privacy mask
			window.
win_i<0~(m-1)>_pan	"capability_ptz_c<0~(n-1)	4/4	Pan position of window
	>_minpan" ~		position.
	"capability_ptz_c<0~(n-1)		* Only available when bit0 of
	>_maxpan"		"capability_camctrl_c<0~(n-1)>_

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			buildinpt" is "1"
win_i<0~(m-1)>_tilt	"capability_ptz_c<0~(n-1)	4/4	Tilt position of window position.
	>_mintilt" ~		* Only available when bit1 of
	"capability_ptz_c<0~(n-1)		"capability_camctrl_c<0~(n-1)>_
	>_maxtilt"		buildinpt" is "1"
win_i<0~(m-1)>_zoom	"capability_ptz_c<0~(n-1)	4/4	Zoom position of window
	>_minzoom" ~		position.
	"capability_ptz_c<0~(n-1)		
	>_maxzoom"		
win_i<0~(m-1)>_fliped	<boolean></boolean>	4/4	Flip side of window position.
			0: Non-flip side
			1: Flip side

7.27 Capability

Group: capability

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
api_httpversion	<string></string>	0/7	The version of VIVOTEK WebAPI with
	This number start		4 integers plus 1 alphabet, There are
	with 0301a.		composed by "major version", "minor
			version", "revision", "_platform". ex:
			0301a_1
			Major version
			Increase the major version when
			change, remove the old
			features/interfaces or the firmware
			has substantially change in
			architecture and not able to roll back
			to previous version. This may cause
			incompatibility with supporting
			software.
			Minor version
			Increase the minor version when add
			new features/interfaces without
			change the old features and

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			interfaces.
			Revision
			Increase the revision when fix bugs
			without change any features of the
			output.
			_platform
			This is a constant, it is used to
			distinguish between different
			platforms
			API version format:
			MMmmr_k
			Where "MM" is the major version,
			"mm" is the minor version and "r" is
			the revision.
			'M' and 'm' and 'k' are decimal digit
			from 0 to 9, while 'r' is an alphabetic.
			EX: 0302b_1 => Major version = 03,
			minor version = 02, revision = b,
			platform = 1
			The 4 integer numbers are WebAPI
			version, we use short name:
			[httpversion] for it in this document.
			The 5th character is model-based
			version for API bug-fix and it's default
			to "a".
			Ex: If some APIs in a model does not
			follow the API definition of 0301a_1,
			we will fix them and change this API
			value to 0301b_1.
bootuptime	<pre><positive integer=""></positive></pre>	0/7	Server bootup time.
nir	0,	0/7	Number of IR interfaces.
<not support<="" td=""><td><positive integer=""></positive></td><td></td><td>(Recommand to use</td></not>	<positive integer=""></positive>		(Recommand to use
anymore>			capability_daynight_c<0~"capability_
			nvideoin"-1>_builtinir for built-in IR
			and
			capability_daynight_c<0~"capability_

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			nvideoin"-1>_externalir for external IR) * Not support this parameter anymore when the version number (httpversion) is equal or greater than 0301a.
npir	0, <positive integer=""></positive>	0/7	Number of PIRs.
ndi	0, <positive integer=""></positive>	0/7	Number of digital inputs.
nvi	0, <positive integer=""></positive>	0/7	Number of virtual inputs (manual trigger)
ndo	0, <positive integer=""></positive>	0/7	Number of digital outputs.
naudioin	0, <positive integer=""></positive>	0/7	The number of audio input channel. 0 means no audio input support.
naudioout	0, <positive integer=""></positive>	0/7	The number of audio output channel
nvideoin	<positive integer=""></positive>	0/7	Number of video inputs.
nvideoout	0, <positive integer=""></positive>	0/7	Number of video out interface.
nvideoinprofile	<positive integer=""></positive>	0/7	Number of video input profiles.
nmediastream	<pre><positive integer=""></positive></pre>	0/7	Number of media stream per channels.
naudiosetting <not anymore="" support=""></not>	<positive integer=""></positive>	0/7	Number of audio settings per channel. * Not support this parameter anymore when the version number (httpversion) is equal or greater than 0301a. * We replace "naudiosetting" with "naudioin". More details, please refer the parameter description of "volume_internal" and "volume_external".
nuart	0, <positive integer=""></positive>	0/7	Number of UART interfaces.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
nmotion	<positive integer=""></positive>	0/7	The number of motion window.
nmotionprofile	0, <positive integer=""></positive>	0/7	Number of motion profiles.
nevent	0, <positive integer=""></positive>	0/7	Number of event.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0311c.
nrecording	0, <positive integer=""></positive>	0/7	Number of recording.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309a.
ptzenabled	0, <positive integer=""></positive>	0/7	An 32-bit integer, each bit can be set
			separately as follows:
			Bit 0 => Support camera control
			function;
			O(not support), 1(support)
			Bit 1 => (only available when bit0 is 1)
			Built-in or external video source;
			O(external), 1(built-in)
			Bit 2 => (only available when bit0 is 1)
			Support pan operation;
			O(not support), 1(support)
			Bit 3 => (only available when bit0 is 1)
			Support tilt operation;
			O(not support), 1(support)
			Bit 4 => (only available when bit0 is 1)
			Support zoom operation;
			O(not support), 1(support)
			(only available when RS-485 interface
			is supported or SD/PZ/PT/PD/video
			server series)
			Bit 5 => (only available when bit0 is 1)
			Support focus operation;
			O(not support), 1(support)
			(only available when RS-485 interface
			is supported or SD/PZ/PT/PD/video

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			server series)
			Bit 6 => (only available when bit0 is 1)
			Reserved bit; always 0.
			Bit 7 => (only available when bit0 is 1)
			External or built-in PT;
			0(built-in), 1(external)
windowless	<boolean></boolean>	0/7	Indicate whether to support
			windowless plug-in.
evctrlchannel	<boolean></boolean>	0/7	Indicate whether to support HTTP
			tunnel for event/control transfer.
joystick	<boolean></boolean>	0/7	Indicate whether to support joystick
			control.
remotefocus	0, <positive integer=""></positive>	0/7	An 4-bit integer, which indicates the
<not< td=""><td></td><td></td><td>supportive application of</td></not<>			supportive application of
recommended to			remotefocus.
use this>			If the value of this parameter is larger
			than 0, it means that the camera
			supports remotefocus function.
			bit 0 => Indicate whether to support
			both zoom and focus function.
			bit 1 => Only support zoom function.
			bit 2 => Only support focus
			function.
			bit 3 => Currently, this is a reserved
			bit, and the default value is 0.
			* It's strongly non-recommended to
			use this.
			* This is reserved for compatibility
			and will not be used after the version
			number (httpversion) is equal or
			greater than 0400a.
			* We replace
			"capability_remotefocus" with "
			capability_image_c0_remotefocus".
npreset	0, <positive integer=""></positive>	0/7	Number of preset locations

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
presettourdirection	<boolean></boolean>	0/7	Indicate whether to support preset tour direction function. It means users can choose which direction the preset tour goes. * We support this parameter when the version number (httpversion) is equal or greater than 0307a.
eptz	0, <positive integer=""></positive>	0/7	For "nvideoin" = 1, the definition is as following: A 32-bits integer, each bit can be set separately as follows: Bit 0 => 1st stream supports ePTZ or not. Bit 1 => 2nd stream supports ePTZ or not, and so on. For nvideoin >= 2, the definition is different: First all 32 bits are divided into groups for channel. Ex: nvideoin = 2, bit 0~15 are the 1st group for 1st channel, bit 16~31 are the 2nd group for 2nd channel. nvideoin = 3, bit 0~9 are the 1st group for 1st channel, bit 10~19 are the 2nd group for 3nd channel. Then, the 1st bit of the group indicates 1st stream of a channel support ePTZ or not. The 2nd bit of the group indicates 2nd stream of a channel support ePTZ or not, and so on. * For most products, the last stream of a channel will not support ePTZ. It is reserved for full view of the

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			channel. For some dual-stream
			products, both streams support ePTZ.
nanystream	0, <positive integer=""></positive>	0/7	number of any media stream per
			channel
iva	<boolean></boolean>	0/7	Indicate whether to support
			Intelligent Video analysis
whitelight	<boolean></boolean>	0/7	Indicate whether to support white
<not< td=""><td></td><td></td><td>light led.</td></not<>			light led.
recommended to			* We replace this parameter with
use this>			"capability_daynight_c<0~(n-1)>_built
			inwled" when the version number
			(httpversion) is equal or greater than
			0309d.
iris	<boolean></boolean>	0/7	Indicate whether to support iris
			control.
supportsd	<boolean></boolean>	0/7	Indicate whether to support local
			storage.
fisheye	<boolean></boolean>	0/7	The parameter is used to determine
			whether the product is fisheye or not.
tampering	<boolean></boolean>	0/7	Indicate whether to support
			tampering detection.
tamperingmode	tamper,toodark,toobri	0/7	Available tampering mode list.
	ght,tooblurry		* Only available when
			"capability_tampering" is 1.
adaptiverecording	<boolean></boolean>	0/7	Indicate whether to support adaptive
			recording.
adaptivestreaming	<boolean></boolean>	0/7	Indicate whether to support adaptive
			streaming.
supporttriggertype	seq,boot,motion,netw	0/7	list all the trigger types which are
S	orkfail,recnotify,tamp		supported in the camera:
	ering,vi,vadp,di,volala		"seq" = Periodic condition
	rm,temperature,pir,		"boot" = System boot
	visignal,		"motion" = Video motion detection
	backup,smartsd,		"networkfail" = network connection
	shockalarm, virestore		failure
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		"recnotify" = Recording notification.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			"tampering" = Tamper detection.
			"vi" = Virtual input (Manual trigger)
			"vadp" = VADP trigger.
			"di"= Digital input.
			"volalarm" = Audio detection.
			"temperature" = Temperature
			detection.
			"pir" = PIR detection.
			"visignal" = Video input signal loss.
			"backup" = Backing up recorded files.
			"smartsd" = Lifetime detection of SD
			card.
			"shockalarm" = Shock detection.
			"virestore" = Video input signal
			restore.
			* Only available when [httpversion] >=
			0301a
media_num	0, <positive integer=""></positive>	0/7	Number of media number.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0311c.
storage_dbenabled	<boolean></boolean>	0/7	Media files are indexed in database.
protocol_https	< boolean >	0/7	Indicate whether to support HTTP
			over SSL.
protocol_rtsp	< boolean >	0/7	Indicate whether to support RTSP.
protocol_sip	<boolean></boolean>	0/7	Indicate whether to support SIP.
protocol_maxconn	<positive integer=""></positive>	0/7	The maximum number of allowed
ection			simultaneous connections.
protocol_maxgenc	<positive integer=""></positive>	0/7	The maximum general streaming
onnection			connections .
<not< td=""><td></td><td></td><td>* We replaced this parameter with</td></not<>			* We replaced this parameter with
Recommended to			"capability_protocol_maxconnection"
use this>			when the version number
			(httpversion) is equal or greater than
			0311c.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
protocol_rtp_multi	<boolean></boolean>	0/7	Indicate whether to support scalable
cast_scalable			multicast.
protocol_rtp_multi	<boolean></boolean>	0/7	Indicate whether to support
cast_backchannel			backchannel multicast.
protocol_rtp_tcp	<boolean></boolean>	0/7	Indicate whether to support RTP over TCP.
protocol_rtp_http	<boolean></boolean>	0/7	Indicate whether to support RTP over HTTP.
protocol_spush_mj	<boolean></boolean>	0/7	Indicate whether to support server
peg			push MJPEG.
protocol_snmp	<boolean></boolean>	0/7	Indicate whether to support SNMP.
protocol_ipv6	<boolean></boolean>	0/7	Indicate whether to support IPv6.
protocol_pppoe	<boolean></boolean>	0/7	Indicate whether to support PPPoE.
protocol_ieee8021	<boolean></boolean>	0/7	Indicate whether to support
х			IEEE802.1x.
protocol_qos_cos	<boolean></boolean>	0/7	Indicate whether to support CoS.
protocol_qos_dscp	<boolean></boolean>	0/7	Indicate whether to support
			QoS/DSCP.
protocol_ddns	<boolean></boolean>	0/7	Indicate whether to support DDNS.
protocol_ftp_serve	<positive integer=""></positive>	0/7	An 32-bit integer, each bit can be set
r			separately as follows:
			Bit 0 => ftp;
			Bit 1=> sftp;
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314a.
protocol_ftp_client	<positive integer=""></positive>	0/7	An 32-bit integer, each bit can be set
			separately as follows:
			Bit 0 => ftp;
			Bit 1=> sftp;
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314a.
videoin_type	0, 1, 2	0/7	0 => Interlaced CCD

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			1 => Progressive CCD
			2 => CMOS
videoin_nresolutio	<positive integer=""></positive>	0/7	This equals
n			"capability_videoin_c0_nresolution".
			* This is kept for compatibility.
videoin_resolution	A list of <wxh></wxh>	0/7	This equals
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		"capability_videoin_c0_resolution".
			* This is kept for compatibility.
videoin_maxframer	A list of <integer></integer>	0/7	This equals
ate			"capability_videoin_c0_maxframerate
			".
			* This is kept for compatibility.
videoin_mjpeg_ma	A list of <integer> and</integer>	0/7	This equals
xframerate	"_"		"capability_videoin_c0_mjpeg_maxfra
			merate".
			* This is kept for compatibility.
videoin_h264_max	A list of <integer> and</integer>	0/7	This equals
framerate	"_"		"capability_videoin_c0_h264_maxfra
			merate".
			* This is kept for compatibility.
videoin_codec	mjpeg, h264, h265	0/7	Available codec of a device, split by
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		comma.
			The sequence is not limited.
			EX:
			FD8183 supports H.264 and MJPEG,
			then this is "mjpeg,h264".
			IP9171 supports H.264, MJPEG and
			H.265, then this is "mjpeg,h264,h265"
videoin_streamcod	A list of <positive< td=""><td>0/7</td><td>This equals</td></positive<>	0/7	This equals
ec	Integer>		"capability_videoin_c0_streamcodec".
			* This is kept for compatibility.
videoin_flexiblebitr	<boolean></boolean>	0/7	Indicate whether to support
ate			flexible bit rate control.
videoout_codec	A list of the available	0/7	Available codec list.
	codec types separated		"-": not supported

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	by commas	(800,300)	
	<pre><pre><pre>conings</pre></pre></pre>		
timeshift	 <boolean></boolean>	0/7	Indicate whether to support time shift caching stream.
audio aec	<boolean></boolean>	0/7	Indicate whether to support acoustic
			echo cancellation.
audio_aecmode	auto,	0/7	Indicate the acoustic echo
_	manual	,	cancellation control mode.
			"auto": control by camera
			automatically.
			"manual": Manually turn on/off the
			control mode.
			*Only available when
			"capability_audio_aec" is "1".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0306b.
audio_aecaffect	-,	0/7	When acoustic echo cancellation
	maxframerate:fixed:1		function is enabled, some features
	5		may become malfunction or be forced
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		to a given value. The affected
			functions are list here.
			The format is "Affect API
			name":"Policy":"Description"
			"Policy" can be categorized into
			following groups:
			- (disabled) : UI turns grey and users
			can't select it.
			- (unchanged) : UI keeps the status as
			before and user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			For example:
			"maxframerate: fixed:15" which
			means the max frame rate is 15fps
			when acoustic echo cancellation
			function is enabled.
			"-" means no feature is affected.
			* Only available when
			"capability_audio_aec" is "1".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0306b.
audio_mic	<boolean></boolean>	0/7	Indicate whether to support built-in
<not support<="" td=""><td></td><td></td><td>microphone input.</td></not>			microphone input.
anymore>			* Not support this parameter
			anymore when the version number
			(httpversion) is equal or greater than
			0301a.
			* We replace "audio_mic" with
			"audio_intmic".
audio_intmic	<0~Positive Integer>	0/7	Internal (Built-in) Microphone.
			0: Not support
			1: Support
			Bit 0 for CH0, bit 1 for CH1, and so on.
audio_extmic	<0~Positive Integer>	0/7	External Microphone.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			0: Not support
			1: Support
			Bit 0 for CH0, bit 1 for CH1, and so on.
audio_alarm	<0~Positive Integer>	0/7	0: Not support audio alarm.
			1: Support audio alarm.
			Bit 0 for CH0, bit 1 for CH1, and so on.
audio_linein	<boolean></boolean>	0/7	Indicate whether to support external
<not support<="" td=""><td></td><td></td><td>line input.</td></not>			line input.
anymore>			* Not support this parameter
			anymore when the version number
			(httpversion) is equal or greater than
			0301a.
			* It will be replaced by audio_intmic
			and audio_extmic.
audio_lineout	<boolean></boolean>	0/7	Indicate whether to support line
			output.
audio_michardwar	<boolean></boolean>	0/7	Indicate whether the hardware
eswitch			supports built-in/external mic switch
audio_headphoneo	<boolean></boolean>	0/7	Indicate whether to support
ut			headphone output.
<not support<="" td=""><td></td><td></td><td></td></not>			
anymore>			* Not support this parameter
			anymore when the version number
			(httpversion) is equal or greater than
			0301a.
audio_audioclip	<boolean></boolean>	0/7	Indicate whether to support audio clip
			function.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309a.
audioin_codec	aac4, gamr, g711,	0/7	Available audio codec. We take
_	g726, -		comma to split codec without any
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		space.
			"aac4": Advanced Audio Coding (AAC)
			"gamr": Adaptive Multi-Rate (AMR)
			" g711 ": G.711

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			"g 726 ": G.726
			"-": Not supported.
audioout_codec	g711, -	0/7	Available codec list for SIP.
	<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>		"-": Not supported.
motion_wintype	rectangle, polygon,-	0/7	The supported motion window type.
			"polygon": The window is a 2D
			polygon shape.
			"rectangle": The window is a 2D
			rectangle shape.
			"-": Not supported.
motion_windomai	qvga, px, std, -	0/7	The domain to set an motion window.
n			"qvga": a 320x240 range to represent
			the whole image.
			"px": Locate a window in the image
			with pixels.
			"std": A normalized 0~9999 range.
			"-": Not supported.
smartstream_supp	<boolean></boolean>	0/7	Indicate whether smart stream is
ort			supported.
smartstream_versi	<integer></integer>	0/7	Number of smart stream version.
on			* Only available when
			"capability_smartstream_support" is 1
smartstream_nstre	<positive integer=""></positive>	0/7	Number of stream that support smart
am			stream.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_wind	qvga, px, std, -	0/7	The domain to set an focus window.
omain			"qvga": a 320x240 range to represent
			the whole image.
			"px": Locate a window in the image
			with pixels.
			"std": A normalized 0~9999 range.
			"-": Not supported.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_mod	<boolean></boolean>	0/7	Indicate whether autotracking smart

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
e_autotracking			stream is supported.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_mod	<boolean></boolean>	0/7	Indicate whether manual smart
e_manual			stream is supported.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_mod	<boolean></boolean>	0/7	Indicate whether hybrid(autotracking+
e_hybrid			manual) smart stream is supported.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_nwin	<positive integer=""></positive>	0/7	Maximum number of tracking window
dow_autotracking			of autotracking.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_nwin	<positive integer=""></positive>	0/7	Maximum number of tracking window
dow_manual			of manual.
			* Only available when
			"capability_smartstream_support" is 1
smartstream_nwin	<positive integer=""></positive>	0/7	Maximum number of tracking window
dow_hybrid_autotr			of autotracking in hybrid mode.
acking			* Only available when
			"capability_smartstream_support" is 1
smartstream_nwin	<positive integer=""></positive>	0/7	Maximum number of tracking window
dow_hybrid_manu			of manual in hybrid mode.
al			* Only available when
			"capability_smartstream_support" is 1
vadp_supportfeatu	<positive integer=""></positive>	0/7	An 32-bit integer, each bit can be set
re			separately as follows:
			Bit 0 => VADP interface
			Bit 1 => Capture video raw data
			Bit 2 => Support encode jpeg
			Bit 3 => Capture audio raw data
			Bit 4 => Support event trigger
			Bit 5 => Support license registration
			Bit 6 => Support shared memory API

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			Bit 7 => Support digital signature of
			package
			Bit 8 => Support snapshot
			Bit 9 => Support upload encrypted
			package
vadp_npackage	<positive integer=""></positive>	0/7	Indicate the maximum number of
			VADP package that can be uploaded
			to the device.
camctrl_httptunnel	<boolean></boolean>	0/7	Indicate whether to support
<not support<="" td=""><td></td><td></td><td>httptunnel.</td></not>			httptunnel.
anymore>			* Not support this parameter
			anymore when the version number
			(httpversion) is equal or greater than
			0301b.
			* It will be replaced by
			capability_camctrl_ptztunnel.
camctrl_ptztunnel	<boolean></boolean>	0/7	Indicate whether to support
			ptztunnel.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0301b.
			This equals
			"capability_camctrl_c0_ptztunnel".
			* This is kept for compatibility.
camctrl_privilege	<boolean></boolean>	0/7	Indicate whether to support "Manage
			Privilege" of PTZ control in the
			security page.
			1: support both
			/cgi-bin/camctrl/camctrl.cgi and
			/cgi-bin/viewer/camctrl.cgi
			0: support only
			/cgi-bin/viewer/camctrl.cgi
			This is equivalent
			to"capability_camctrl_c0_privilege".
			* This is kept for compatibility.
uart_httptunnel	<boolean></boolean>	0/7	Indicate whether to support HTTP

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			tunnel for UART transfer.
transmission_mod e	Tx, Rx, Both	0/7	Indicate transmission mode of the machine: TX = server, Rx = receiver box, Both = DVR.
network_wire	<boolean></boolean>	0/7	Indicate whether to support Ethernet.
network_wireless	<boolean></boolean>	0/7	Indicate whether to support wireless.
network_dualmod e	<boolean></boolean>	0/7	Indicate whether network dual mode is supported. * Only available when "capability_network_wireless" is "1". * We support this parameter when the version number (httpversion) is equal or greater than 0305a.
wireless_s802dot1	<boolean></boolean>	0/7	Indicate whether to support wireless 802.11b+.
wireless_s802dot1	<boolean></boolean>	0/7	Indicate whether to support wireless 802.11g.
wireless_s802dot1	<boolean></boolean>	0/7	Indicate whether to support wireless 802.11n.
wireless_begincha	1~14	0/7	Indicate the begin channel of wireless network
wireless_endchann	1~14	0/7	Indicate the end channel of wireless network
wireless_encrypt_ wep	<boolean></boolean>	0/7	Indicate whether to support wireless WEP.
wireless_encrypt_ wpa	<boolean></boolean>	0/7	Indicate whether to support wireless WPA.
wireless_encrypt_ wpa2	<boolean></boolean>	0/7	Indicate whether to support wireless WPA2.
wireless_apmode_ enable	<boolean></boolean>	0/7	Indicate whether wireless AP mode is supported. * Only available when "capability_network_wireless" is "1". * We support this parameter when the version number (httpversion) is

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			equal or greater than 0305a.
wireless_apmode_ ssidprefix	<string></string>	0/7	Indicate the prefix of broadcasted SSID when camera is in wireless AP mode. * Only available when "capability_wireless_apmode_enable" is "1". * We support this parameter when the version number (httpversion) is equal or greater than 0305a.
derivative_brand	<boolean></boolean>	0/7	Indicate whether to support the upgrade function for the derivative brand. For example, if the value is true, the VVTK product can be upgraded to VVXX. (TCVV<->TCXX is excepted)
test_ac	<boolean></boolean>	0/7	Indicate whether to support test ac key.
version_onvifdaem on	<string></string>	0/7	Indicate ONVIF daemon version
version_onviftestto	<string></string>	0/7	Indicate ONVIF test tool version
version_genetec	<string></string>	0/7	Indicate Genetec daemon version * We support this parameter when the version number (httpversion) is equal or greater than 0312a.
media_totalspace	<pre><positive integer=""></positive></pre>	0/7	Available memory space (KB) for media.
media_snapshot_ maxpreevent	<positive integer=""></positive>	0/7	Maximum snapshot number before event occurred.
media_snapshot_ maxpostevent	<positive integer=""></positive>	0/7	Maximum snapshot number after event occurred.
media_snapshot_ maxsize	<positive integer=""></positive>	0/7	Maximum size (KB) of a snapshot.
media_videoclip_ maxsize	<positive integer=""></positive>	0/7	Maximum size (KB) of a videoclip.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
media_videoclip_	<positive integer=""></positive>	0/7	Maximum length (second) of a
maxlength			videoclip.
media_videoclip_	<positive integer=""></positive>	0/7	Maximum duration (second) after
maxpreevent			event occurred in a videoclip.
media_streamprofi	<boolean></boolean>	0/7	Indicates support of stream profile
les_support			feature.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0313a.
media_streamprofi	<positive integer=""></positive>	0/7	Maximum number of stream profiles.
les_num			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0313a.
image_iristype	<string></string>	0/7	Indicate iris type.
<not< td=""><td></td><td></td><td>• "piris": P-Iris</td></not<>			• "piris": P-Iris
recommended to			• "dciris": DC-Iris
use this>			• "-": No Iris control support
			* When "capability_iris"=0, this value
			must be "-".
			* Note: For some box-type cameras,
			this value may be varied depending on
			mounted lens.
			* We replace
			"capability_image_iristype" with
			"capability_image_c0_iristype".
			* Reserved for compatibility, and
			suggest don't use this since
			[httpversion] > 0301a
image_focusassist	<boolean></boolean>	0/7	Indicate whether to support focus
<not< td=""><td></td><td></td><td>assist.</td></not<>			assist.
recommended to			* We replace "capability_image_
use this>			focusassist "with
			"capability_image_c0_ focusassist".
			* Reserved for compatibility, and
			suggest don't use this since
			[httpversion] > 0301a

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
localstorage_mana	<boolean></boolean>	0/7	Indicate whether manageable local
geable			storage is supported.
			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
localstorage_seaml	0,	0/7	Indicate whether seamless recording
ess	<positive integer=""></positive>		is supported.
			One bit represents one channel.
			Ex: "3" means channel 0 and channel1
			support seamless recording .
			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
localstorage_modn	0,	0/7	The maximum MOD connection
um	<positive integer=""></positive>		numbers.
<not< td=""><td></td><td></td><td>* Only available when</td></not<>			* Only available when
recommended to			"capability_supportsd" is 1 or
use this>			"capability_storage_dbenabled" is 1.
			* We replace this parameter with
			"capability_storage_management_mo
			dnum" when the version number
			(httpversion) is equal or greater than
			0312a.
localstorage_modv	<string></string>	0/7	Indicate MOD daemon version.
ersion			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
localstorage_storm	<string></string>	0/7	Indicate storage manager daemon
grversion			version.
			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
localstorage_suppo	0,	0/7	An 32-bit integer, which indicates the
rtedge	<positive integer=""></positive>		supportive application of edge
			storage.
			If the value of this parameter is larger

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			than 0, it means that the camera
			supports edge recording function.
			bit 0 : It supports to record directly to
			an on-board SD-Card.
			bit 1~: Currently, they are reserved
			bit, and the default value is 0.
			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
localstorage_slcon	0, <positive integer=""></positive>	0/7	The maximum seamless connection
num			number for each channel.
			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
localstorage_smart	<boolean></boolean>	0/7	The "Lifetime and Log SD Card"
sd			feature allows users to obtain the
			card's remaining lifetime information.
			0: Non-support this feature
			1: Support this feature
			* Only Sony, Micron SD card can
			support this function now.
			* Only available when
			"capability_supportsd" is 1 or
			"capability_storage_dbenabled" is 1.
remotecamctrl_ma	0, <positive integer=""></positive>	0/7	Indicate whether to support remote
ster			auxiliary camera (master side), this
			value means supporting max number
			of auxiliary camera.
remotecamctrl_sla	<boolean></boolean>	0/7	Indicate whether to support remote
ve			camera control (slave side).
fisheyelocaldewarp	0, <positive integer=""></positive>	0/7	Indicate the supported streams of
_c<0~(capability_n			local dewarp. One bit represents
videoin)-1>			one supported stream. The LSB
<pre><pre><pre><pre></pre></pre></pre></pre>			indicates stream 0.
dependent>			Ex: "3" means stream 0 and stream 1
			support local dewarp.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			* Only available when
			"capability_fisheye" > 0
shockalarm_suppo	<boolean></boolean>	0/7	Indicate whether to support the shock
rt			detection.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0306e.
layout_redirection	<string></string>	0/7	Indicate which function will be
			redirected to the vadp package path.
			"-": Not supported.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309a.
securecam_suppor	<boolean></boolean>	0/7	Indicate support for security camera.
t			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314a.
securecam_version	<string></string>	0/7	Indicate the security camera feature
			phases.
			* Only available when
			capability_securecam_support=1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314a.
taics_support	<boolean></boolean>	0/7	Support the feature for Video
			Surveillance System Security from
			TAICS.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0314b.
taics_level	0, <positive integer=""></positive>	0/7	Indicate the support level for Video
			Surveillance System Security from
			TAICS.
			* Only available when
			"capability_taics_support" is 1.
			* We support this parameter when

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			the version number (httpversion) is
			equal or greater than 0314b.

7.27.1 Capability for Cametrl

Group: $capability_camctrl_c<0^{(n-1)}> n$ denotes the value of "capability_nvideoin" (capability_ptzenabled > 0)

* We support this group when the version number (httpversion) is equal or greater than 0303b.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ptztunnel	<boolean></boolean>	0/7	Indicate whether to support ptztunnel
			in this video input.
privilege	<boolean></boolean>	0/7	Indicate whether to support "Manage
			Privilege" of PTZ control in the security
			page in this video input.
			1: support both
			/cgi-bin/camctrl/camctrl.cgi and
			/cgi-bin/viewer/camctrl.cgi
			0: support only
			/cgi-bin/viewer/camctrl.cgi
rs485	<boolean></boolean>	0/7	An 32-bit integer, each bit can be set
			separately as follows:
			Bit 0 => support rs485-in
			Bit 1 => support rs485-out
buildinpt	<boolean></boolean>	0/7	An 32-bit integer, each bit can be set
			separately as follows:
			Bit 0 => support build-in pan
			Bit 1 => support build-in tilt

are al tween s that
IZ are al tween e s that
are al tween e s that
al tween e s that
al tween e s that
tween e s that
tween e s that
e s that
s that
anv
to be
gth is
cus
.us
,
to
ιο
sition
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
ically
, and
, and
ally
l the
ommo
n the
qual or
ci e

7.27.2 Capability for PTZ

Group: **capability_ptz_c<0~(n-1)>** n denotes the value of "capability_nvideoin" (capability_ptzenabled > 0 and capability_camctrl_c<0~(n-1)>_zoommodule !=0)

* We support this group when the version number (httpversion) is equal or greater than 0303b.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
panspeedlv	0, <positive integer=""></positive>	0/7	The maximum speed level of pan
			motion.
			*Only available when bit0 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"
minpan	0, <positive integer=""></positive>	0/7	The lower limit for pan position.
			*Only available when bit0 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"
maxpan	0, <positive integer=""></positive>	0/7	The upper limit for pan position.
			*Only available when bit0 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"
minpanangle	<integer></integer>	0/7	The lower limit for pan angle.
			*Only available when bit0 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"
maxpanangle	<integer></integer>	0/7	The upper limit for pan angle.
			*Only available when bit0 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"
tiltspeedly	0, <positive integer=""></positive>	0/7	The maximum speed level of tilt
			motion.
			*Only available when bit1 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"
mintilt	0, <positive integer=""></positive>	0/7	The lower limit for tilt position.
			*Only available when bit1 of
			"capability_camctrl_c<0~(n-1)>_buildin
			pt" is "1"

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
maxtilt	0, <positive integer=""></positive>	0/7	The upper limit for tilt position. *Only available when bit1 of "capability_camctrl_c<0~(n-1)>_buildin pt" is "1"
mintiltangle	<integer></integer>	0/7	The lower limit for tilt angle. *Only available when bit1 of "capability_camctrl_c<0~(n-1)>_buildin pt" is "1"
maxtiltangle	<integer></integer>	0/7	The upper limit for tilt angle. *Only available when bit1 of "capability_camctrl_c<0~(n-1)>_buildin pt" is "1"
zoomspeedlv	0, <positive integer=""></positive>	0/7	The maximum speed level of zoom motion. *Only available when the value of "capability_camctrl_c<0~(n-1)>_zoomm odule" is "1"
minzoom	0, <positive integer=""></positive>	0/7	The lower limit for zoom position. *Only available when the value of "capability_camctrl_c<0~(n-1)>_zoomm odule" is "1"
maxzoom	0, <positive integer=""></positive>	0/7	The upper limit for zoom position. *Only available when the value of "capability_camctrl_c<0~(n-1)>_zoomm odule" is "1"
maxdzoom	0, <positive integer=""></positive>	0/7	The upper limit for digital zoom position. *Only available when the value of "capability_camctrl_c<0~(n-1)>_zoomm odule" is "1"
focusspeedlv	0, <positive integer=""></positive>	0/7	The maximum speed level of focus motion. *Only available when the value of "capability_camctrl_c<0~(n-1)>_zoomm odule" is "1"

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
minfocus	0, <positive integer=""></positive>	0/7	The lower limit for focus position.
			*Only available when the value of
			"capability_camctrl_c<0~(n-1)>_zoomm
			odule" is "1"
maxfocus	0, <positive integer=""></positive>	0/7	The upper limit for focus position.
			*Only available when the value of
			"capability_camctrl_c<0~(n-1)>_zoomm
			odule" is "1"

7.27.3 Capability for IR Led

Group: capability_daynight_c<0~(n-1)> n denotes the value of "capability_nvideoin"

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
support	<boolean></boolean>	0/7	Indicate whether the camera supports
			day/night mode switch
builtinir	<boolean></boolean>	0/7	Indicate whether to support built-in IR
			led.
			* We replaced this parameter with
			"capability_daynight_illuminators_builti
			n_support" when the version number
			(httpversion) is equal or greater than
			0312a.
builtinwled	<boolean></boolean>	0/7	Indicate whether to support built-in
			white led.
			* We replaced this parameter with
			"capability_daynight_illuminators_builti
			n_type=whiteled" when the version
			number (httpversion) is equal or greater
			than 0312a.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
externalir	<boolean></boolean>	0/7	Indicate whether to support external IR
			led.
			* We replaced this parameter with
			"capability_daynight_illuminators_exter
			nal_support" when the version number
			(httpversion) is equal or greater than
			0312a.
optimizedir	<boolean></boolean>	0/7	Indicate whether to support optimized
			IR control technology.
			* We replaced this parameter with
			"capability_daynight_illumintators_opti
			mizedir" when the version number
			(httpversion) is equal or greater than
			0312a.
smartir	<boolean></boolean>	0/7	Indicate whether to support smart IR.
ircutfilter	<boolean></boolean>	0/7	Indicate whether to support IR cut.
lightsensor	<boolean></boolean>	0/7	Indicate whether to support light
			sensor.
blackwhitemode	<boolean></boolean>	0/7	Indicate whether to support
			automatically switch to Black & White
			display during the night mode.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0302a.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
ircutsensitivity type	<string></string>	0/7	Indicate the cgi interface of
"cutserisitivity_type	String?	0,7	"ircutcontrol sensitivity".
			"options": the value of
			"ircutcontrol_sensitivity" parameter is
			"low, normal,high".
			"normalize": the value of
			"ircutcontrol_sensitivity" parameter is
			"1~100"
			"-":not support
			* Only available when
			"capability daynight c<0~(n-1)> suppo
			rt" is 1.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0302a.
ircutsensitivity_supportle	0	0/7	The value indicate the support strength
vel	<pre><positive integer=""></positive></pre>	0,7	level of ircutsensitivity.
Vei	\positive integer>		* Only available when
			"capability_daynight_c<0~(n-1)>_suppo
			rt" is 1 and
			"capability_daynight_c<0~(n-1)>_ircuts
			ensitivity_type" is not "-".
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0302a.
extled_interface	do	0/7	The device interface of external IR led:
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		"do": digital output
	dependent>		* Only available when
			"capability_daynight_c<0~(n-1)>_extern
			alir" is 1
			* We replaced this parameter with
			"capability_daynight_illuminators_exter
			nal_interface" when the version
			number (httpversion) is equal or greater
			than 0312a.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
spectrum_support	<boolean></boolean>	(get/set) 0/7	Indicate whether to support proposed a brightness enhancement method based on CCM(Color Correction Matrix) model to improve the brightness effect of the images if the IR and blue light exists. * Only available when "capability_daynight_c<0~(n-1)>_support" is 1 * We replaced this parameter with "capability_daynight_illuminators_spect rum_support" when the version number (httpversion) is equal or greater
spectrum_mode	visible,ir,irenhanced, blueenhanced <product dependent></product 	0/7	Indicate the spectrum mode. "visible": The ideal default setting for visible light. "ir": The ideal default setting for IR light. "irenhanced": This CCM model increases the brightness effect of IR light. "blueenhanced": This CCM model increases the brightness effect of blue light. "blueenhanced": This CCM model increases the brightness effect of blue light. *Only available when "capability_daynight_c<0~(n-1)>_support" is 1 and "capability_daynight_c<0~(n-1)>_spectrum_support" is 1 * We replaced this parameter with "capability_daynight_illuminators_spectrum_mode" when the version number (httpversion) is equal or greater than 0312a.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
mode	auto,daynight,di,di2,	0/7	Indicate the day / night switch mode.
	di3,di4,schedule,-		"auto": The Camera automatically
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		judges the current operation mode by
	dependent>		the level of ambient light detected.
			"daynight": support day mode and night
			mode. In day mode, the camera
			streams color video. In night mode, the
			camera streams black and white video
			in low light environments.
			"di": the camera automatically switches
			the current mode when a ditigal input 1
			is triggered.
			"di2": the camera automatically
			switches the current mode when a
			ditigal input 2 is triggered.
			"di3": the camera automatically
			switches the current mode when a
			ditigal input 3 is triggered.
			"di4": the camera automatically
			switches the current mode when a
			ditigal input 4 is triggered.
			"schedule": The Camera switches
			between day mode and night mode
			based on a specified schedule.
			"-": not support
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0309d.

7.27.4 Capability for IR Illuminators

Group: capability_daynight_illuminators

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	

optimizedir	<boolean></boolean>	0/7	Indicate whether to support optimized IR
			control technology.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
builtin_support	<boolean></boolean>	0/7	Indicate whether to support built-in led.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
builtin_type	irled,whiteled,-	0/7	Indicate whether to support built-in led
	<pre><pre><pre><pre></pre></pre></pre></pre>		type.
	dependent>		"irled": IR led
			"whiteled": white led
			"-": not support
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
external_support	<boolean></boolean>	0/7	Indicate whether to support external led.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
external_interface	do,do2,do3,do4	0/7	The device interface of external led:
	<pre><pre><pre><pre></pre></pre></pre></pre>		"do": digital output 1
	dependent>		"do2": digital output 2
	* Available values		"do3": digital output 3
	are do,		"do4": digital output 4
	do<2~(capability_nd		* We support this parameter when the
	0)>		version number (httpversion) is equal or
			greater than 0312a.
			* Only available when
			"capability_daynight_illuminators_
			external_support" is 1

spectrum_support	<boolean></boolean>	0/7	Indicate whether to support proposed a
Speed ant_support	Sociedin	0, ,	brightness enhancement method based on
			CCM(Color Correction Matrix) model
			, ,
			to improve the brightness effect of the
			images if the IR and blue light exists.
			* Only available when
			"capability_daynight_c<0~(n-1)>_support"
			is 1
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
spectrum_mode	visible,ir,irenhanced,	0/7	Indicate the spectrum mode.
	blueenhanced		"visible": The ideal default setting for
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		visible light.
	dependent>		"ir": The ideal default setting for IR light.
			"irenhanced": This CCM model increases
			the brightness effect of IR light.
			"blueenhanced": This CCM model
			increases the brightness effect of blue
			light.
			*Only available when
			"capability_daynight_c<0~(n-1)>_support"
			is 1 and
			"capability_daynight_illuminators_spectru
			m_support " is 1
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.

7.27.5 Capability for Storage Management

Group: capability_storage_management

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ndevice	<positive integer=""></positive>	0/7	Indicate the number of storage devices.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.

device	sd, nas	0/7	Indicate the supported storage devices.
	<pre><pre><pre><pre></pre></pre></pre></pre>		* Only available when
	dependent>		"capability_storage_dbenabled" is 1.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
			* Note: If "nas" storage is supported, the
			media storage path format is "\ <mac< td=""></mac<>
			address>\date\hour". "\date\hour" format
			is "\YYYYMMDD\hh".
modnum	0,	0/7	The maximum MOD connection numbers.
	<positive integer=""></positive>		* Only available when
			"capability_storage_dbenabled" is 1.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.

7.27.6 Capability for Video Input

Group: capability_videoin_c<0~(n-1)> n denotes the value of "capability_nvideoin"

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
lens_type	fisheye, fixed,	0/7	The lens type of this channel.
	varifocal,		"fisheye": Fisheye lens
	changeable,		"fixed": Build-in fixed-focus lens.
	motor, ics,-		"varifocal": Build-in varifocal lens.
	<pre><pre><pre><pre></pre></pre></pre></pre>		"changeable": changeable lens. Like
	dependent>		box-type camera, users can install any
			C-Mount or CS-Mount lens as they wish.
			"motor": Lens with motor to support zoom,
			focus, etc.
			"ics": An i-CS lens is an intelligent CS-mount
			lens that contains information about,
			among other things, its own geometrical
			distortion and the exact position of its
			zoom, focus, and iris opening.
			"-": N/A
			* Only available when [httpversion] >=
			0301a

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
color_support	<boolean></boolean>	0/7	1 : camera can select to display color or
			black/white video streams.
			0: camera do not support this feature.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0310a.
eptz_zoomratio	<string></string>	0/7	Indicate the support zoom ratio of eptz.
			"-": not support ePTZ
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0310a.
rotation	<boolean></boolean>	0/7	Indicate current mode whether support
			video rotation

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
rotationaffect	-	0/7	When rotation is enabled, some features
	<pre><pre><pre><pre></pre></pre></pre></pre>		may become malfunction or be forced to a
	dependent>		given value. The affected functions are list
			here.
			The format is "Affect API
			name":"Policy":"Description"
			"Policy" can be categorized into following
			groups:
			- (disabled) : UI turns grey and users can't
			select it.
			- (unchanged) : UI keeps the status as before
			and user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple selections
			or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function is not
			available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:" which
			means blc exposure window is disabled. API
			name can be one word as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative integer
			or string or NULL.
			"-" means no feature is affected.
			* When "rotation"=0, this value must be "-"
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0304b.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
rotationangle	<string></string>	0/7	The different angles which camera supports
			for rotation.
			* Only avaliable when
			"capability_videoin_c<0~(n-1)>_rotation" is 1.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0309b.
orientation	flip,mirror,rotatio	0/7	Indicates the camera supports flip, mirror or
	n		rotation.
	<pre><pre><pre>oduct</pre></pre></pre>		* We support this parameter when the
	dependent>		version number (httpversion) is equal or
			greater than 0309b.
streamcodec	<positive integer=""></positive>	0/7	Represent supported codec types of each
			stream.
			This contains a list of positive integers, split
			by comma. Each one stands for a stream,
			and the definition is as following:
			Bit 0: Support MPEG4.
			Bit 1: Support MJPEG
			Bit 2: Support H.264
			Bit 3: Support H.265
mode	0, <positive integer=""></positive>	0/7	Indicate current video mode.
nmode	<positive integer=""></positive>	0/7	Indicate how many video modes supported
			by this channel.
maxsize	<wxh></wxh>	0/7	The maximum resolution of all modes in this
			channel, the unit is pixel.
nprivacymask	0, <positive< td=""><td>0/7</td><td>Number of privacy mask per channel</td></positive<>	0/7	Number of privacy mask per channel
	integer>		
nresolution	<positive integer=""></positive>	0/7	The maximum resolution options (listed in
			"resolution") in current video mode.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
resolution	A list of <wxh></wxh>	0/7	Resolution options in current video mode.
	<pre><pre><pre><pre></pre></pre></pre></pre>		These options are the possible options for
	dependent>		"videoin_c <n>_s<m>_resolution".</m></n>
			The last one is the maximum resolution in
			current mode.
maxresolution	A list of <integer></integer>	0/7	Represent supported maximum resolution
			of each stream in current video mode.
			* The element number is defined as
			"capability_nmediastream".
minresolution	A list of <integer></integer>	0/7	Represent supported minimum resolution
			of each stream in current video mode.
			* The element number is defined as
			"capability_nmediastream".
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0304b.
maxframerate	A list of <integer></integer>	0/7	Indicate frame rate that the video source
			outputs in current video mode.
			One to one mapping to the resolution in
			"resolution".
			* The element number is defined as
			"nresolution" in this group.
			* This parameter may be changed when
			"videoin_c <n>_cmosfreq"=50 or</n>
			"videoin_c <n>_modulation"=pal.</n>
			Ex: 30 fps is changed to 25 fps, 60 fps is
			changed to 50 fps, and so on.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
mjpeg_maxframerate	A list of <positive integer=""> and "-"</positive>	0/7	Maximum fps that the device can encoded with MJPEG on resolutions in current video mode. "-" means not support. * One to one mapping to the resolution in "resolution". * The element number is defined as "nresolution" in this group. * This parameter may be changed when "videoin_c <n>_cmosfreq"=50 or "videoin_c<n>_modulation"=pal. Ex: 30 fps is changed to 25 fps, 60 fps is changed to 50 fps, and so on.</n></n>
mjpeg_maxbitrate	<positive integer="">, -</positive>	0/7	* Only available when 'mjpeg' is listed in "capability_videoin_codec". Maximum bitrates of MJPEG. The unit is bps. "-" means MJPEG does not support bit rate control. * Only available when 'mjpeg' is listed in "capability_videoin_codec".
h264_maxframerate	A list of <positive integer=""> and "-"</positive>	0/7	Maximum fps that the device can encoded with H.264 on resolutions in current video mode. "-" means not support. * One to one mapping to the resolution in "resolution". * The element number is defined as "nresolution" in this group. * This parameter may be changed when "videoin_c <n>_cmosfreq"=50 or "videoin_c<n>_modulation"=pal. Ex: 30 fps is changed to 25 fps, 60 fps is changed to 50 fps, and so on. * Only available when 'h264' is listed in "capability_videoin_codec".</n></n>

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
h264 maxbitrate	<pre><positive integer=""></positive></pre>		Maximum bitrates of H.264.
_			The unit is bps.
			* Only available when 'h264' is listed in
			"capability_videoin_codec".
h264_profile	baseline,main,hig	0/7	Indicate H264 profiles
	h		* Only available when 'h264' is listed in
			"capability_videoin_codec".
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0309a.
h265_maxframerate	A list of <positive< td=""><td>0/7</td><td>Maximum fps that the device can encoded</td></positive<>	0/7	Maximum fps that the device can encoded
	Integer> and "-"		with H.265 on resolutions in current video
			mode.
			"-" means not support.
			* One to one mapping to the resolution in
			"resolution".
			* The element number is defined as
			"nresolution" in this group.
			* This parameter may be changed when
			"videoin_c <n>_cmosfreq"=50 or</n>
			"videoin_c <n>_modulation"=pal.</n>
			Ex: 30 fps is changed to 25 fps, 60 fps is
			changed to 50 fps, and so on.
			* Only available when 'h265' is listed in
			"capability_videoin_codec".
h265_maxbitrate	<pre><positive integer=""></positive></pre>	0/7	Maximum bitrates of H.265.
			The unit is bps.
			* Only available when 'h265' is listed in
			"capability_videoin_codec".
h265_profile	main,main10	0/7	Indicate H265 profiles
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		* Only available when 'h265' is listed in
	dependent>		"capability_videoin_codec".
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0309a.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
fisheye_mounttype	ceiling, wall, floor	0/7	Indicate the supported type.
<not recommended<="" td=""><td><pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre></td><td></td><td>wall mount: 180° panoramic view</td></not>	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		wall mount: 180° panoramic view
to use this>	dependent>		ceiling mount: 360° surround view without
			blind spots
			floor mount: 360° surround view without
			blind spots
			* Only available when "capability_fisheye" >
			0
			* It's recommended to use
			"capability_videoin_c<0~(n-1)>_mounttype"
mounttype	ceiling, wall,	0/7	Indicate the supported mount type.
	floor,-		"-": not support
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		* We support this parameter when the
	dependent		version number (httpversion) is equal or
	* Available values		greater than 0309c.
	are listed in "		
	capability_videoin		
	_c<0~(n-1)>_mou		
	nttype "		
dintraperiod_support	<boolean></boolean>	0/7	0: Non-support "Dynamic intra frame period"
			1: Support "Dynamic intra frame period"
			"Dynamic intra frame period" can be used
			to reduce bitrate by reducing the number of
			I-frame.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0301c.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
cameraunit_name	CU8131,	0/7	A "camera unit" name of a split-type camera
	CU8171,		system, which the camera unit and the
	CU8161-H,		video core are separated.
	CU8162-H,		-: If the camera is not a split-type camera
	CU8163-H,		system, the value of this parameter is "-".
	CU8361-H,		* We support this parameter when the
	,		version number (httpversion) is equal or
	-		greater than 0302b.
	<pre><pre><pre><pre></pre></pre></pre></pre>		
	dependent>		
cmosfreq_support	<boolean></boolean>	0/7	0: The power line frequency(50/60Hz) is
			detected by camera automatically.
			1: The power line frequency(50/60Hz) can
			be set by user.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0308a.
smartfps_support	<boolean></boolean>	0/7	Indicate whether to support Smart fps
			function.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0309a.
smartq_support	<boolean></boolean>	0/7	Indicate whether to support Smart Q
			function.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0309a.

7.27.7 Capability for Local Dewarp

Group: capability_videoin_c<0~(n-1)>_localdewarp

(capability_fisheyelocaldewarp_c<0 $^{\sim}$ (capability_nvideoin)-1> > 0)

n denotes the value of "capability_nvideoin"

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
typeceilingmount	10, 1P, 2P, 1R, 4R	0/7	Available dewarp types of ceiling and
			floor mount.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
typewallmount	10, 1P, 1R, 4R	0/7	Available dewarp types of wall mount.
resolutionC1P	A list of <wxh></wxh>	0/7	Available resolutions of 1P mode of ceiling and floor mount.
resolutionC2P	A list of <wxh></wxh>	0/7	Available resolutions of 2P mode of ceiling and floor mount.
resolutionC1R	A list of <wxh></wxh>	0/7	Available resolutions of 1R mode of ceiling and floor mount.
resolutionC4R	A list of <wxh></wxh>	0/7	Available resolutions of 4R mode of ceiling and floor mount.
resolutionW1P	A list of <wxh></wxh>	0/7	Available resolutions of 1P mode of wall mount.
resolutionW1R	A list of <wxh></wxh>	0/7	Available resolutions of 1R mode of wall mount.
resolutionW4R	A list of <wxh></wxh>	0/7	Available resolutions of 4R mode of wall mount.
panorama_pancontrol	<boolean></boolean>	0/7	Indicate whether to support localdewarp panorama pan control. * We support this parameter when the version number (httpversion) is equal or greater than 0312b.

7.27.8 Capability for Video Mode

Group: capability_videoin_c<0~(n-1)>_mode<0~(m-1)> n denotes the value of "capability_videoin_c<0~(n-1)>_nmode"

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
rotation	<boolean></boolean>	0/7	Indicate this mode whether support
			video rotation

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
eptz	0, <positive integer=""></positive>	0/7	Indicate this mode whether support eptz.
			For "nvideoin" = 1, the definition is as following:
			A 32-bits integer, each bit can be set separately as
			follows:
			Bit 0 => 1st stream supports ePTZ or not.
			Bit 1 => 2nd stream supports ePTZ or not, and so on.
			For nvideoin >= 2, the definition is different:
			First all 32 bits are divided into groups for channel.
			Ex:
			nvideoin = 2, bit 0~15 are the 1st group for 1st channel,
			bit 16~31 are the 2nd group for 2nd channel.
			nvideoin = 3, bit 0~9 are the 1st group for 1st channel,
			bit 10~19 are the 2nd group for 2nd channel, bit 20~31
			are the 3rd group for 3rd channel.
			Then, the 1st bit of the group indicates 1st stream of a
			channel support ePTZ or not. The 2nd bit of the group
			indicates 2nd stream of a channel support ePTZ or not,
			and so on.
			* We support this parameter when the version number
			(httpversion) is equal or greater than 0304b.
wdrpro	0, 1, 2	0/7	Indicate this mode whether support WDR pro.
			0: Non-support WDR Pro
			1: Support WDR Pro
			2: Support WDR Pro and WDR Pro II
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0304b.
effectivepixel	<wxh></wxh>	0/7	The visible area of full scene in this video
			mode.
			The unit is pixel in source.
			* If
			"effectivepixel"<"capability_videoin_c<0~
			(n-1)>_maxsize", then the visible area is
			located at the center of full scene.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
outputsize	<wxh></wxh>	0/7	The output size of source, equal to the captured size by device, in this video mode. The unit is pixel. This value is used as a basic coordinate system for many features, like ePTZ, privacy mask, motion, etc. * Source (most for image sensor) may perform scale or binning, etc on image data, and output data with smaller size. This parameter is designed to represent this.
binning	0, 1, 3	0/7	Indicate binning is used or not in this video mode. 0: No binning 1: 2x2 binning 3: 3x3 binning * Binning is a technology to increase light sensitivity by combining multiple pixels to one. The drawback is reduced resolution. We design this parameter to disclose this information.
nresolution	<positive integer=""></positive>	0/7	How many resolution options in this video mode.
resolution	A list of <wxh></wxh>	0/7	Resolution options in this video mode. The last one is the maximum resolution in this video mode. * The element number is defined as "nresolution" in this group.
maxresolution	A list of <integer></integer>	0/7	Represent supported maximum resolution of each stream in current video mode. * The element number is defined as "capability_nmediastream".

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
minresolution	A list of <integer></integer>	0/7	Represent supported minimum
			resolution of each stream in current
			video mode.
			* The element number is defined as
			"capability_nmediastream".
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0304b.
maxframerate	A list of <positive< td=""><td>0/7</td><td>Indicates frame rate that the video</td></positive<>	0/7	Indicates frame rate that the video
	Integer>		source outputs in this video mode.
			* One to one mapping to the resolution
			in "resolution".
			* The element number is defined as
			"nresolution" in this group.
			* This parameter records the frame rate
			when
			"videoin_c<0~(n-1)>_cmosfreq"=60 or
			"videoin_c<0~(n-1)>_modulation"=ntsc
maxfps_mjpeg	A list of <positive< td=""><td>0/7</td><td>Maximum fps which the device can</td></positive<>	0/7	Maximum fps which the device can
	Integer> and "-"		encoded with MJPEG on resolutions in
			this video mode.
			"-" means not support.
			* One to one mapping to the resolution
			in "resolution".
			* The element number is defined as
			"nresolution" in this group.
			* This parameter records the frame rate
			when
			"videoin_c<0~(n-1)>_cmosfreq"=60 or
			"videoin_c<0~(n-1)>_modulation"=ntsc
			* Only available when 'mjpeg' is listed in
			"capability_videoin_codec".

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
maxfps_h264	A list of <positive< td=""><td>0/7</td><td>Maximum fps which the device can</td></positive<>	0/7	Maximum fps which the device can
	Integer> and "-"		encoded with H.264 on resolutions in this
			video mode.
			"-" means not support.
			* One to one mapping to the resolution
			in "resolution".
			* The element number is defined as
			"nresolution" in this group.
			* This parameter records the frame rate
			when
			"videoin_c<0~(n-1)>_cmosfreq"=60 or
			"videoin_c<0~(n-1)>_modulation"=ntsc
			* Only available when 'h264' is listed in
			"capability_videoin_codec".
maxfps_h265	A list of <positive< td=""><td>0/7</td><td>Maximum fps which the device can</td></positive<>	0/7	Maximum fps which the device can
	Integer> and "-"		encoded with H.265 on resolutions in this
			video mode.
			"-" means not support.
			* One to one mapping to the resolution
			in "resolution".
			* The element number is defined as
			"nresolution" in this group.
			* This parameter records the frame rate
			when
			"videoin_c<0~(n-1)>_cmosfreq"=60 or
			"videoin_c<0~(n-1)>_modulation"=ntsc
			* Only available when 'h265' is listed in
			"capability_videoin_codec".
description	<string[128]></string[128]>	0/7	Description about this mode.

7.27.9 Capability for Image

Group: capability_image_c<0~(n-1)> n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
basicsetting	0, <positive< td=""><td>0/7</td><td>A 32-bits integer, each bit can be set</td></positive<>	0/7	A 32-bits integer, each bit can be set
	integer>		separately as follows:

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			Bit 0 => Supports Brightness or not.
			Bit 1 => Supports Contrast or not.
			Bit 2 => Supports Saturation or not.
			Bit 3 => Supports Sharpness or not.
			Bit 4 => Supports adjusting the image
			to proper position horizontally or not.
			Bit 5 => Supports adjusting the image
			to proper position vertically or not.
hlm	<boolean></boolean>	0/7	Hightlight Mask: The function will
			strengthen the image contrast and
			mask the specified zone of image if
			any strong spot-light exists.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0311a.
wdrpro_mode	0, 1, 2	0/7	0: Non-support WDR Pro
			1: Support WDR Pro
			2: Support WDR Pro and WDR Pro II
wdrpro_strength	0, 1	0/7	0: Non-support tuning strength of
			WDR Pro
			1: Support tuning strength of WDR Pro * If
			"capability_image_c<0~(n-1)>_wdrpro
			"=1, this may be either 0 or 1.
wdrpro_supportlevel	0, <positive< td=""><td>0/7</td><td>This contains a list of positive integers,</td></positive<>	0/7	This contains a list of positive integers,
	integer>		split by comma.
			If "wdrpro_mode" =1, then the value
			indicate the support strength level of
			WDR Pro.
			If "wdrpro_mode" =2, then the first
			number indicate the support strength
			level of WDR Pro, and the scecond
			number indicate the support strength
			level of WDR Pro II.
wdrpro_affect	-,	0/7	When WDR Pro is enabled, some
	exposurewin.mode		features may become malfunction or

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	:fixed:auto,	(8-9)	be forced to a given value. The
	exposurelevel:hidd		affected functions are list here.
	en:,		The format is "Affect API
	exposurelevel:fixed		name":"Policy":"Description"
	: <x>,</x>		"Policy" can be categorized into
	exposurelevel:fixed		following groups:
	: <x>/<x>,</x></x>		- (disabled) : UI turns grey and users
	exposuremode:fixe		can't select it.
	d:auto,		- (unchanged) : UI keeps the status as
	gammacurve:disabl		before and user can't change it.
	ed:,		- (hidden) : UI is hidden.
	exposurewin.mode		- (fixed) : UI is fixed to one selection or
	.blc:hidden:,		value.
	exposurewin.mode		- (ranged) : UI is fixed to multiple
	.hlc:hidden:,		selections or values.
	exposuretime:hidd		- (enabled) : UI is checked.
	en:,		- (notsupport) : the affected function
	gaincontrol:hidden:		is not available.
	,		- (onlyonce) : when wdrpro is enabled,
	flickerless:unchang		wdrc is checked; when wdrpro is
	ed:,		disable, wdrc is unchecked.
	wdrc:enabled:,		"Affect API name" can be described in
	wdrc:enabled:only		hierarchy, such as
	once,		"exposurewin.mode.blc:disabled:"
	wdrc:unchanged:,		which means blc exposure window is
	<x>: nonnegative</x>		disabled. API name can be one word
	integer		as well, such as
	<pre><pre><pre><pre></pre></pre></pre></pre>		"exposurelevel:fixed:6" which means
	dependent>		exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			For example:
			"exposurelevel:fixed:6/8/12" which
			means exposurelevel is fixed to level
			6, level 8 and level 12.
			"-" means no feature is affected.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			* When "wdrpro"=0, this value must
			be "-"
wdrpro_description	<string></string>	0/7	Description about WDR Pro mode.
			* Only available when
			"capability_image_c<0~(n-1)>_wdrpro
			_mode" > 0
wdrc_mode	0, 1	0/7	0: Non-support WDR Enhanced
			1: Support WDR Enhanced
wdrc_supportlevel	0, <positive< td=""><td>0/7</td><td>Indicate the support strength level of</td></positive<>	0/7	Indicate the support strength level of
	integer>		WDR Enhanced.
wdrc_affect	-,	0/7	When WDR Enhanced is enabled,
	gammacurve:disabl		some features may become
	ed:,		malfunction or be forced to a given
	<x>: nonnegative</x>		value. The affected functions are list
	integer		here.
	<pre><pre><pre><pre></pre></pre></pre></pre>		The format is "Affect API
	dependent>		name":"Policy":"Description"
			"Policy" can be categorized into
			following groups:
			- (disabled) : UI turns grey and users
			can't select it.
			- (unchanged) : UI keeps the status as
			before and user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
		(get/set)	as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			For example:
			"exposurelevel:fixed:6/8/12" which
			means exposurelevel is fixed to level
			6, level 8 and level 12.
			"-" means no feature is affected.
			* When "wdrc"=0, this value must be
			"_"
dnr	0,1	0/7	0: Non-support 3D digital noise
			reduction
			1: Support 3D digital noise reduction
dnrstrength	<positive integer=""></positive>	0/7	Indicate the support strength level of
			3D digital noise reduction.
			* Only available when
			"capability_image_c<0~(n-1)>_dnr" >
			0.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0306d.
dnrtype	2d,3d	0/7	Description about DNR type.
			* Only available when
			"capability_image_c<0~(n-1)>_dnr" >
			0.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0308a.
eis	0,1	0/7	0: Non-support electronic image
			stabilizer
			1: Support electronic image stabilizer
is_mode	eis,	0/7	Indicate the image stabilizer mode.
	dis,		"eis": electronic image stabilizer
	-		"dis": digital image stabilizer

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			"-": not support
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
is_strength	<boolean></boolean>	0/7	0: Non-support tuning strength of
			image stabilizer mode.
			1: Support tuning strength of image
			stabilizer mode.
			* Only available when
			"capability_image_c<0~(n-1)>_is_mod
			e" is not "-".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
is_supportlevel	0, <positive< td=""><td>0/7</td><td>Indicate the support strength level of</td></positive<>	0/7	Indicate the support strength level of
	integer>		image stabilizer mode.
			* Only available when
			"capability_image_c<0~(n-1)>_is_mod
			e" is not "-".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
is_affect	-,	0/7	When Is mode is not "-", some
	<x>: nonnegative</x>		features may become malfunction or
	integer		be forced to a given value. The
	<pre><pre><pre><pre></pre></pre></pre></pre>		affected functions are list here.
	dependent>		The format is "Affect API
			name":"Policy":"Description"
			"Policy" can be categorized into
			following groups:
			- (disabled) : UI turns grey and users
			can't select it.
			- (unchanged) : UI keeps the status as
			before and
			user can't change it.
			- (hidden) : UI is hidden.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc: disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when
			"capability_image_c<0~(n-1)>_is_mod
			e" is not "-".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
scenemode_support	0,1	0/7	0: Non-support scene mode
			1: Support scene mode
scenemode_supportty	visibility,	0/7	list all the scene mode which are
pe	noiseless,		supported in the camera.
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>	lpcparkinglot,		* Only available when
	lpcstreet,		"capability_image_c<0~(n-1)>_
	lpchighway,		scenemode_support" is 1
	auto,		
	deblur,		
	Ipcfreeway		
	<pre><pre><pre><pre></pre></pre></pre></pre>		
	dependent>		

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
wbmode	auto,	0/7	Available white balance mode.
	panorama,		"-" means white balance is not
	manual,		supported.
	rbgain,		
	widerange,		
	outdoor,indoor,		
	sodiumauto,		
	-		
	<pre><pre><pre><pre></pre></pre></pre></pre>		
	dependent>		
iristype	piris,	0/7	Indicate iris type.
	dciris,		"piris": P-Iris
	-		"dciris": DC-Iris
			"-": No Iris control support
			* Note: For some cameras, this value
			may be varied depending on mounted
			lens.
sensortype	rawsensor,	0/7	Indicate sensor type.
	smartsensor,		"rawsensor": Raw sensor
	thermalsensor,		"smartsensor": Smart sensor
	-		"thermalsensor": Thermal sensor
			"-": N/A
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_mode	0,1	0/7	0: Non-support exposure control.
			1: Support exposure control.
exposure_modetype	auto,	0/7	Available mode of exposure setting.
	shutterpriority,		* Only available when
	irispriority,		"capability_image_c<0~(n-1)>_
	manual		exposure_mode" is 1.
	<pre><pre><pre><pre></pre></pre></pre></pre>		* We support this parameter when
	dependent>		the version number (httpversion) is
			equal or greater than 0302a.
exposure_rangetype	onevalue,	0/7	Support interface of exposure range.
	twovalues		"onevalue": The parameter is a

NAME	VALUE	SECURITY (got/sot)	DESCRIPTION
		(get/set)	
			constant value.
			"twovalues": Need two parameters to
			indicate the exposure range.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_shuttervalu	fixed,	0/7	* One to one mapping to the mode
etype	maximum,		type in "exposure_modetype".
	-		"fixed": The shutter value is the
			assigned value
			(videoin_c<0 $^{\sim}$ (n-1)>_shuttervalue).
			"maximum": The shutter value can be
			up to the assigned value
			(videoin_c<0~(n-1)>_shuttervalue).
			"-": not support.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1 and
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "onevalue".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_gainvaluety	fixed,	0/7	* One to one mapping to the mode
pe	maximum,		type in "exposure_modetype".
	-		"fixed": The shutter value is the
			assigned value
			(videoin_c<0~(n-1)>_gainvalue).
			"maximum": The shutter value can be
			up to the assigned value
			(videoin_c<0~(n-1)>_gainvalue)
			"-": not support.
			* Only available when

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1 and
			"capability_image_c<0~(n-1)>_exposu
			re_rangetype" is "onevalue".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_automode_	-,	0/7	When exposure auto mode is
affect	exposurewin.mode		enabled, some features may become
	.blc:hidden:,		malfunction or be forced to a given
	defog:disabled:,		value. The affected functions are list
	wdrpro:disabled:,		here.
	exposurelevel:hidd		The format is "Affect API
	en:,		name":"Policy":"Description"
	defaultgain:fixed:x		"Policy" can be categorized into
	or others		following groups:
	<x>: nonnegative</x>		- (disabled) : UI turns grey and users
	integer		can't select it.
	<pre><pre><pre><pre></pre></pre></pre></pre>		- (unchanged) : UI keeps the status as
	dependent>		before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when auto is listed in
			"capability_image_c<0~(n-1)>_
			exposure_modetype" and
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_shutterprior	-,	0/7	When exposure shutter priority mode
itymode_affect	exposurewin.mode		is enabled, some features may
	.blc:hidden:,		become malfunction or be forced to a
	defog:disabled:,		given value. The affected functions
	wdrpro:disabled:,		are list here.
	exposurelevel:hidd		The format is "Affect API
	en:,		name":"Policy":"Description"
	defaultgain:fixed:x		"Policy" can be categorized into
	or others		following groups:
	<x>: nonnegative</x>		- (disabled) : UI turns grey and users
	integer		can't select it.
	<pre><pre><pre><pre></pre></pre></pre></pre>		- (unchanged) : UI keeps the status as
	dependent>		before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when shutterpriority
			is listed in
			"capability_image_c<0~(n-1)>_
			exposure_modetype" and
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_irispriority	-,	0/7	When exposure iris priority mode is
mode_affect	exposurewin.mode		enabled, some features may become
	.blc:hidden:,		malfunction or be forced to a given
	defog:disabled:,		value. The affected functions are list
	wdrpro:disabled:,		here.
	exposurelevel:hidd		The format is "Affect API
	en:,		name":"Policy":"Description"
	defaultgain:fixed:x		"Policy" can be categorized into
	or others		following groups:
	<x>: nonnegative</x>		- (disabled) : UI turns grey and users
	integer		can't select it.
	<pre><pre><pre><pre></pre></pre></pre></pre>		- (unchanged) : UI keeps the status as
	dependent>		before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when irispriority is
			listed in
			"capability_image_c<0~(n-1)>_
			exposure_modetype" and
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_qualityprior	-,	0/7	When exposure quality priority mode
itymode_affect	exposurewin.mode		is enabled, some features may
	.blc:hidden:,		become malfunction or be forced to a
	defog:disabled:,		given value. The affected functions
	wdrpro:disabled:,		are list here.
	exposurelevel:hidd		The format is "Affect API
	en:,		name":"Policy":"Description"
	defaultgain:fixed:x		"Policy" can be categorized into
	or others		following groups:
	<x>: nonnegative</x>		- (disabled) : UI turns grey and users
	integer		can't select it.
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		- (unchanged) : UI keeps the status as

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	dependent>		before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when qualitypriority
			is listed in
			"capability_image_c<0~(n-1)>_
			exposure_modetype" and
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0305a.
exposure_manualmod	-,	0/7	When exposure manual mode is
e_affect	exposurewin.mode		enabled, some features may become
	.blc:hidden:,		malfunction or be forced to a given
	defog:disabled:,		value. The affected functions are list
	wdrpro:disabled:,		here.
	exposurelevel:hidd		The format is "Affect API

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	en:,		name":"Policy":"Description"
	icrmode.auto:nots		"Policy" can be categorized into
	upport:		following groups:
	or others		- (disabled) : UI turns grey and users
	<x>: nonnegative</x>		can't select it.
	integer		- (unchanged) : UI keeps the status as
	<pre><pre><pre><pre></pre></pre></pre></pre>		before and
	dependent>		user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when manual is listed
			in "capability_image_c<0~(n-1)>_
			exposure_modetype" and
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
exposure_levelrange	-,	0/7	Available range for

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
	"0,12"		"videoin_c<0~(n-1)>_exposurelevel"
			* When "exposure_mode"=0, this
			value must be set to "-".
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_winmode	auto,	0/7	Available options for
	custom,		"exposurewin_c<0~(n-1)>_mode"
	blc,		* "-" means group: exposurewin is not
	hlc,		supported.
	center,		* When exposure_mode="0", this
	-		value must be set to "-".
	<pre><pre><pre><pre></pre></pre></pre></pre>		* Only available when
	dependent>		"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_meteringm	auto,	0/7	Available options for
ode	blc,		"videoin_c<0~(n-1)>_meteringmode"
	hlc		* Only available when
	<pre><pre><pre><pre></pre></pre></pre></pre>		"capability_image_c<0~(n-1)>_
	dependent>		exposure_mode" is 1.
exposure_hlcmode_s	<boolean></boolean>	0/7	Indicate whether to support exposure
upportwindow			window in hlc mode.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1 and hlc is listed
			in "capability_image_c<0~(n-1)>_
			exposure_winmode".
exposure_hlcmode_af	-,	0/7	When hic mode is enabled, some
fect	sir:hidden:		features may become malfunction or
	or others		be forced to a given value. The
	<x>: nonnegative</x>		affected functions are list here.
	integer		The format is "Affect API
	<pre><pre><pre><pre></pre></pre></pre></pre>		name":"Policy":"Description"
	dependent>		"Policy" can be categorized into
			following groups:
			- (disabled) : UI turns grey and users

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			can't select it.
			- (unchanged): UI keeps the status as
			before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* Only available when
			"capability image c<0~(n-1)>
			exposure_mode" is 1 and hlc is listed
			in "capability image c<0~(n-1)>
			exposure_winmode".
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0304a.
exposure_wintype	inclusive,	0/7	The supported exposure window type.
	exclusive,	,	"inclusive": The image inside a
	-		window is the target area of exposure
			control.
			"exclusive": The image inside a
			"exclusive": The image inside a

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			window is omitted by exposure
			control.
			"-": Not supported.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_windomain	qvga, px, std, -	0/7	The domain to set an exposure
			window.
			"qvga": a 320x240 range to represent
			the whole image.
			"px": Locate a window in the image
			with pixels.
			"std": A normalized 0~9999 range.
			"-": Not supported.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_winnum	0, <positive< td=""><td>0/7</td><td>Indicate the number of custom</td></positive<>	0/7	Indicate the number of custom
	Integer>		exposure windows.
			* If no "custom" is listed in
			"exposure_winmode", this should be
			0.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_ntsc_totalra	A list of <positive< td=""><td>0/7</td><td>Available total range for NTSC analog</td></positive<>	0/7	Available total range for NTSC analog
nge	Integer>		output.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0301a.
exposure_pal_totalra	A list of <positive< td=""><td>0/7</td><td>Available total range for PAL analog</td></positive<>	0/7	Available total range for PAL analog
nge	Integer>		output.
			* Only available when

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0301a.
exposure_maxrange	"1,32000",	0/7	Available range for
	"1,8000",		"videoin_c <n>_maxexposure"</n>
	-,		"1,32000" => 1s ~ 1/32000s
	or others		"1,8000" => 1s ~ 1/8000s
	<pre><pre><pre><pre></pre></pre></pre></pre>		etc.
	dependent>		"-" means maximum exposure time is
			not available.
			* When "exposure_mode"=0, this
			value must be set to "-".
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_minrange	"1,32000",	0/7	Available range for
	"1,8000",		"videoin_c <n>_minexposure"</n>
	- ,		"1,32000" => 1s ~ 1/32000s
	or others		"1,8000" => 1s ~ 1/8000s
	<pre><pre><pre><pre></pre></pre></pre></pre>		etc.
	dependent>		"-" means minimum exposure time is
			not available.
			* When "exposure_mode"=0, this
			value must be set to "-".
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
exposure_bracketing_	<boolean></boolean>	0/7	0: Non-support Auto Exposure
mode			Bracketing (AEB)
			1: Support Auto Exposure Bracketing
			(AEB)
			Auto Exposure Bracketing (AEB) is a
			term that is used to signify a process
			where the camera automatically takes

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			two or more exposures but with
			different exposure values.
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_mode" is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0310a.
exposure_bracketing_	A list of ratio	0/7	The input parameter decides how
range	For example:		much ratio of exposure compensation
	2x,3x,4x		will be expanded on the next stream,
			which is based on the original
			exposure time (first stream).
			* Only available when
			"capability_image_c<0~(n-1)>_
			exposure_bracketing_mode " is 1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0310a.
privacymask_wintype	rectangle,	0/7	The supported mask window type.
	polygon,		"polygon": The window is a 2D
	3Drectangle		polygon shape.
			"rectangle": The window is a 2D
			rectangle shape.
			"3Drectangle": The window is a 3D
			rectangle shape.
privacymask_windom	qvga, px, std, -	0/7	The domain to set an window.
ain			"qvga": a 320x240 range to represent
			the whole image.
			"px": Locate a window in the image
			with pixels.
			"std": A normalized 0~9999 range.
			"-": Not supported.
privacymask_ncolor	<positive integer=""></positive>	0/7	Available total color numbers of
			privacy mask.
agc_maxgain	"0,100",	0/7	Available range for

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	"_"		"videoin_c <n>_maxgain"</n>
			"0,100" => 0~100 percent
			"-" means "videoin_c <n>_maxgain" is</n>
			not available.
agc_mingain	"0,100",	0/7	Available range for
	п_п		"videoin_c <n>_mingain"</n>
			"0,100" => 0~100 percent
			"-" means "videoin_c <n>_mingain" is</n>
			not available.
flickerless	0,1	0/7	0: Non-support flickerless
			1: Support flickerless
flickerlessaffect	-,	0/7	When flickerless is enabled, some
	minexposure.lower		features may become malfunction or
	bound:fixed:x		be forced to a given value. The
	or others		affected functions are list here.
	<x>: nonnegative</x>		The format is "Affect API
	integer		name":"Policy":"Description"
	<pre><pre><pre><pre></pre></pre></pre></pre>		"Policy" can be categorized into
	dependent>		following groups:
			- (disabled) : UI turns grey and users
			can't select it.
			- (unchanged) : UI keeps the status as
			before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* When "flickerless" = 0, this value
			must be "-"
defog_mode	0,1	0/7	0: Non-support defog
			1: Support defog
defog_strength	0, 1	0/7	0: Non-support tuning strength of
			defog
			1: Support tuning strength of defog
			* If
			"capability_image_c<0~(n-1)>_defog_
			mode"=1, this may be either 0 or 1.
defog_supportlevel	0, <positive< td=""><td>0/7</td><td>The value indicate the support</td></positive<>	0/7	The value indicate the support
	integer>		strength level of defog.
defog_affect	-,	0/7	When defog is enabled, some features
	wdrc:unchanged:		may become malfunction or be forced
	contrast:hidden:		to a given value. The affected
	or others		functions are list here.
	<x>: nonnegative</x>		The format is "Affect API
	integer		name":"Policy":"Description"
	<pre><pre><pre><pre></pre></pre></pre></pre>		"Policy" can be categorized into
	dependent>		following groups:
			- (disabled) : UI turns grey and users
			can't select it.
			- (unchanged) : UI keeps the status as
			before and
			user can't change it.
			- (hidden) : UI is hidden.
			- (fixed) : UI is fixed to one selection or
			value.
			- (ranged) : UI is fixed to multiple

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			selections or values.
			- (enabled) : UI is checked.
			- (notsupport) : the affected function
			is not available.
			"Affect API name" can be described in
			hierarchy, such as
			"exposurewin.mode.blc:disabled:"
			which means blc exposure window is
			disabled. API name can be one word
			as well, such as
			"exposurelevel:fixed:6" which means
			exposurelevel is fixed to level 6.
			"Description" can be a nonnegative
			integer or string or NULL.
			"-" means no feature is affected.
			* When "defog" = 0, this value must
			be "-"
aespeed	0,1	0/7	0: Non-support AE speed
			1: Support AE speed
aespeedsupportlevel	<positive integer=""></positive>	0/7	The value indicate the support
			strength level of aespeed.
			* Only available when
			"capability_image_c<0~(n-1)>_aespee
			d" is 1.
aespeedsupportsensit	0,1	0/7	0: Non-support tuning the sensitivity
ivity			of AE converge speed.
			1: Support tuning the sensitivity of AE
			converge speed.
			* Only available when
			"capability_image_c<0~(n-1)>_aespee
			d" is 1.
gammacurve	0,1	0/7	0: Non-support tuning Gamma curve
			1: Support tuning Gamma curve
lowlightmode	-,0,1	0/7	-: Internal parameter, must not open
			to user.
			0: Non-support low light mode

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			1: Support low light mode
focusassist	0,1	0/7	0: Non-support focus assist
			1: Support focus assist
remotefocus	0, <positive< td=""><td>0/7</td><td>An 4-bit integer, which indicates the</td></positive<>	0/7	An 4-bit integer, which indicates the
	integer>		supportive application of remotefocus
			in this channel.
			If the value of this parameter is larger
			than 0, it means that the camera
			supports remotefocus function in this
			channel.
			bit 0 => Indicate whether to support
			both zoom and focus function.
			bit 1 => Only support zoom function.
			bit 2 => Only support focus
			function.
			bit 3 => Currently, this is a reserved
			bit, and the default value is 0.
focuswindomain	qvga, px, std, -	0/7	The domain to set a focus window.
			"qvga": a 320x240 range to represent
			the whole image.
			"px": Locate a window in the image
			with pixels.
			"std": A normalized 0~9999 range.
			"-": Not supported.
focuswindow_nwindo	0, <positive< td=""><td>0/7</td><td>Number of focus window</td></positive<>	0/7	Number of focus window
w	integer>		
focuswindow_range	<leftrange,rightran< td=""><td>0/7</td><td>Available range for focuswindow.</td></leftrange,rightran<>	0/7	Available range for focuswindow.
	ge,toprange,lowran		* We support this parameter when
	ge>		the version number (httpversion) is
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		equal or greater than 0305d.
	dependent>		*-: Not supported.
lensconfiguration_sup	0,1	0/7	Indicate whether to support different
port			image library configuration files for
			specific exchangeable lens.
freeze	<boolean></boolean>	0/7	0: Non-support image freeze feature
			1: Support image freeze feature

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
		10 / /	* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
autotrack_support	<boolean></boolean>	0/7	0: Non-support auto tracking feature
			1: Support auto tracking feature
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
smartsensor_iristotalr	A list of iris value	0/7	Available total step for iris value.
ange			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0302a.
			* Only available when
			"capability_image_c<0~(n-1)>_sensor
			type" is "smartsensor"
deinterlace_support	<boolean></boolean>	0/7	Indicate whether to support
			deinterlace function.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0308a.
deinterlace_mode	spatial, blend	0/7	Spatical mode provides the best
			image quality, while Blend mode
			provides better image quality (than
			not using the deinterlace function at
			all).
			* Only available when
			capability_image_c<0~(n-1)>_deinterl
			ace_support is 1
lens_alignment	<boolean></boolean>	0/7	Indicate whether to support lens
			alignment function.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309b.
lens_alignmentlevel	<positive integer=""></positive>	0/7	The value indicate the support level of
			alignment.
			* Only available when

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			"capability_image_c<0~(n-1)>_lens_al
			ignment" is 1.
lens_ldc_support	<boolean></boolean>	0/7	Indicate whether to support lens
			distortion correction function.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0309d.
palette_support	<boolean></boolean>	0/7	Indicate support color palettes or not.
			Thermal cameras provide a choice of
			color palettes on the camera, that
			help quickly distinguish thermal
			variations and patterns in an image.
			The color tones correspond to the
			apparent surface temperatures of the
			target.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0310a.
palette_mode	A list of palette	0/7	Palette options used in thermal
	options		surveillance.
			*Only available when
			"capability_image_c<0~(n-1)>_palette
			_support"=1.
			* We support this parameter when
			the version number (httpversion) is
			equal or greater than 0310a.

Capability for Peripheral Device 7.27.10

Group: $capability_peripheral_c<0^{(n-1)}> n denotes the value of "capability_nvideoin"$

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
devicecontrol	<boolean></boolean>	0/7	Indicate whether to support the
			peripheral device control.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0305c.

7.28 Event Setting

Group: **event_i<0~(n-1)>** n denotes the value of "capability_nevent" (capability_nevent > 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
name	string[40]	6/6	Identification of this entry.
enable	0, 1	6/6	Enable or disable this event.
priority	0, 1, 2	6/6	Indicate the priority of this event:
			"0"= low priority
			"1"= normal priority
			"2"= high priority
delay	1~999	6/6	Delay in seconds before detecting the
			next event.
trigger	boot,	6/6	Indicate the trigger condition:
	di,		"boot" = System boot.
	pir,		"di"= Digital input.
	motion,		"pir"= PIR detection.
	seq,		"motion" = Video motion detection.
	recnotify,		"seq" = Periodic condition.
	tampering,		"visignal" = Video input signal loss.
	vi,		"recnotify" = Recording notification.
	volalarm,		"tampering" = Tamper detection.
	visignal,		"vi"= Virtual input (Manual trigger).
	vadp,		"volalarm"= Audio detection.
	smartsd		"smartsd"= Lifetime detection of SD card.
	<pre><pre><pre>oduct</pre></pre></pre>		"shockalarm" = Shock detection.
	dependent>		"virestore" = Video input signal restore.
			"vadp" = VADP trigger.
			* "smartsd" is only valid when smart SD
			card is inserted
triggerstatus	string[40]	6/6	The status for event trigger

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
di	0, <positive< td=""><td>6/6</td><td>Indicate the source id of di trigger.</td></positive<>	6/6	Indicate the source id of di trigger.
	integer>		This field is required when trigger
			condition is "di".
			One bit represents one digital input. The
			LSB indicates DI 0.
			* Only available when "capability_ndi" >
			0
mdwin	0, <positive< td=""><td>6/6</td><td>Indicate the source window id of motion</td></positive<>	6/6	Indicate the source window id of motion
	integer>		detection.
			This field is required when trigger
			condition is "md".
			One bit represents one window.
			The LSB indicates the 1 st window.
			For example, to detect the 1 st and 3 rd
			windows, set mdwin as 5.
mdwin0	0, <positive< td=""><td>6/6</td><td>Similar to mdwin. The parameter takes</td></positive<>	6/6	Similar to mdwin. The parameter takes
	integer>		effect when profile 1 of motion detection
			is enabled.
vi	0, <positive< td=""><td>6/6</td><td>Indicate the source id of vi trigger.</td></positive<>	6/6	Indicate the source id of vi trigger.
	integer>		This field is required when trigger
			condition is "vi".
			One bit represents one digital input. The
			LSB indicates VI 0.
vadp	0, <positive< td=""><td>6/6</td><td>Indicate the source id of vadp event</td></positive<>	6/6	Indicate the source id of vadp event
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>	integer>		notification.
			Each bit corresponds to one vadp source,
			and the LSB indicates source id 0.
			For example, to detect event from any
			one of source id 0, 1 and 3, set vadp to
			11.
			* Only available when vadp is listed in
			"capability_supporttriggertypes"
valevel	0,1	6/6	Select audio detection event.
			0: not select
			1: select

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
valevel0	0,1	6/6	Select audio detection profile event.
			0: not select
			1: select
inter	1~999	6/6	Interval of snapshots in minutes.
			This field is used when trigger condition
			is "seq".
weekday	0~127	6/6	Indicate which weekday is scheduled.
			One bit represents one weekday.
			bit0 (LSB) = Saturday
			bit1 = Friday
			bit2 = Thursday
			bit3 = Wednesday
			bit4 = Tuesday
			bit5 = Monday
			bit6 = Sunday
			For example, to detect events on Friday
			and Sunday, set weekday as 66.
begintime	hh:mm	6/6	Begin time of the weekly schedule.
endtime	hh:mm	6/6	End time of the weekly schedule.
			(00:00 ~ 24:00 sets schedule as always
			on)
lowlightcondition	0, 1	6/6	Switch on white light LED in low light
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			condition
			0 => Do action at all times
			1 => Do action in low-light conditions
action_do_i<0~(ndo-1)>_	<boolean></boolean>	6/6	Enable or disable trigger digital output.
enable			* Only available when "capability_ndo" >
			0
action_do_i<0~(ndo-1)>_	1~999	6/6	Duration of the digital output trigger in
duration			seconds.
			* Only available when "capability_ndo" >
			0
action_cf_enable	<boolean></boolean>	6/6	Enable or disable sending media to SD
			card.
			* Only available when
			"capability_supportsd" > 0

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
action_cf_folder	string[128]	6/6	Path to store media.
<not recommended="" td="" to<=""><td></td><td></td><td>* Only available when</td></not>			* Only available when
use this>			"capability_supportsd" > 0
foldername	string[128]	6/6	Path to store media.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
action_cf_media	NULL, 0~4,101	6/6	Index of the attached media.
			101 means "Recording Notify"
			* Only available when
			"capability_supportsd" > 0
action_cf_datefolder	<boolean></boolean>	6/6	Enable this to create folders by date,
			time, and hour automatically.
			* Only available when
			"capability_supportsd" > 0
action_cf_backup	<boolean></boolean>	6/6	Enable or disable the function that send
			media to SD card for backup if network is
			disconnected.
			* Only available when
			"capability_supportsd" > 0
action_server_i<0~4>_en	<boolean></boolean>	6/6	Enable or disable this server action.
able			
action_server_i<0~4>_m	NULL, 0~4,101	6/6	Index of the attached media.
edia			101 means "Recording Notify"
action_server_i<0~4>_da	<boolean></boolean>	6/6	Enable this to create folders by date,
tefolder			time, and hour automatically.
action_goto_enable	<boolean></boolean>	6/6	Enable/disable ptz goto preset position
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			on event triggered.
			* Only available when
			"capability_ptzenabled" > 0.
action_goto_name	string[40]	6/6	Specify the preset name that ptz goto on
<pre><pre><pre>oduct dependent></pre></pre></pre>			event triggered.
			* Only available when
			"capability_ptzenabled" > 0.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
action_goto_sync	<boolean></boolean>	6/6	Capture media after moving to the
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			location.
			* Only avaliable when the bit4 of
			capability_ptzenabled is 1 and the bit7 of
			capability_ptzenabled is 0, or
			capability_camctrl_c0_zoommodule > 0
action_autotrack_enable	<boolean></boolean>	6/6	Enable/disable auto tracking on event
<pre><pre><pre><pre>oduct dependent></pre></pre></pre></pre>			triggerd.
			* Only avaliable when the bit4 of
			capability_ptzenabled is 1 and the bit7 of
			capability_ptzenabled is 0
action_audioclip_enable	<boolean></boolean>	6/6	Enable/disable the function the play an
			audio clip when an event is triggered.
			* Only avaliable when
			"capability_audio_audioclip" is 1.
action_audioclip_media	0, <positive< td=""><td>6/6</td><td>Indicate the source id of audioclip event</td></positive<>	6/6	Indicate the source id of audioclip event
	integer>		notification.
			* Only avaliable when
			"capability_audio_audioclip" is 1.
tampering	0, <positive< td=""><td>6/6</td><td>Indicate the source channel id of</td></positive<>	6/6	Indicate the source channel id of
	integer>		tampering detection.
			A 4-bit integer, each bit represents each
			channel.
			bit 0 => tampering detection for first
			channel.
			bit 1 => tampering detection for second
			channel.
			bit 2 => tampering detection for third
			channel.
			bit 3 => tampering detection for fourth
			channel.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0311c.

7.29 Server Setting for Event Action

Group: server i<0~4>

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
name	string[40]	6/6	Identification of this entry
type	email,	6/6	Indicate the server type:
	ftp,		"email" = email server
	http,		"ftp" = FTP server
	ns,		"http" = HTTP server
	sftp		"ns" = network storage
			"sftp" = secure FTP
			* "sftp" is only available when bit 1 of
			"capability_protocol_ftp_client" is 1.
http_url	string[128]	6/6	URL of the HTTP server to upload.
http_username	string[64]	6/6	Username to log in to the server.
http_passwd	string[64]	7/6	Password of the user.
ftp_address	string[128]	6/6	FTP server address.
ftp_username	string[64]	6/6	Username to log in to the server.
ftp_passwd	string[64]	7/6	Password of the user.
ftp_port	0~65535	6/6	Port to connect to the server.
ftp_location	string[128]	6/6	Location to upload or store the media.
ftp_passive	<boolean></boolean>	6/6	Enable or disable passive mode.
			0 = disable passive mode
			1 = enable passive mode
email_address	string[128]	6/6	Email server address.
email_sslmode	<boolean></boolean>	6/6	Enable support SSL.
email_port	0~65535	6/6	Port to connect to the server.
email_username	string[64]	6/6	Username to log in to the server.
email_passwd	string[64]	7/6	Password of the user.
email_senderemail	string[128]	6/6	Email address of the sender.
email_recipientemail	string[640]	6/6	Email address of the recipient.
			•

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ns_location	string[128]	6/6	Location to upload or store the media.
			* For httpversion is equal or greater than
			0312a:
			The media storage path format is "\ <mac< td=""></mac<>
			address>\date\hour". (Only available when
			"nas" is included in
			"capability_storage_management_device")
			* For httpversion smaller than 0312a:
			The media storage format is "\date\hour".
			* Note: "\date\hour" format is
			"\YYYYMMDD\hh".
ns_username	string[64]	6/6	Username to log in to the server.
ns_passwd	string[64]	7/6	Password of the user.
ns_workgroup	string[64]	6/6	Workgroup for network storage.

7.29.1. Server Setting for Event Action of sftp

Group: server_i<0~4>_sftp

* Only available when bit 1 of "capability_protocol_ftp_client" is 1.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
address	string[128]	6/6	Server address
loginmode	passwd,	6/6	authentication method:
	publickey		"passwd" = password authentication.
			You have to setup sftp_passwd for this
			login mode to work.
			"publickey" = Public key authentication
			is more secure than password
			authentication.
			Please see sftpclient.cgi for more detail
			settings.
username	string[64]	6/6	Username
passwd	string[64]	7/6	User password
port	0~65535	6/6	Server port
location	string[128]	6/6	Login path on server

fingerprint_enable	boolean	6/6	Verify server fingerprint to avoid
			connect to fake server.
fingerprint_content	string[128]	6/6	Server fingerprint(MD5).
			You can get it by calculate server host
			key(public) md5.
publickey_pairmode	auto,	6/6	"autopair": Autopair mode is selected
	download,		for this event server.
	upload		"downloadkey": Download key pair
			mode is selected for this event server.
			"uploadkey": Upload key pair mode is
			selected for this event server.
publickey_downloadkeytype	ed25519,	6/6	The keytype used for key pair.
	rsa,		"ed25519": faster to generate with
	ecdsa		higher security level, some old server
			might not support.
			"rsa": slower to generate with slightly
			lower security level than ed25519.
			"ecdsa": low security level.
publickey_passphrase_enable	boolean	6/6	The private key file be encrypted or
			not.
publickey_passphrase_conten	t string[128]	7/6	The encryption passphrase.

Media Setting for Event Action 7.30

Group: media_i<0~(n-1)> n denotes the value of "capability_media_num" (capability_media_num > 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
Name	string[40]	6/6	Identification of this entry
Туре	snapshot, systemlog,		Media type to send to the server or store on the server.
	videoclip,		
	recordmsg		

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
snapshot_channel	0~"capability_nvideoin"-1	6/6	Indicate the source of media
			channel.
			0 means the first channel.
			1 means the second channel.
			2 means the third channel.
			3 means the fourth channel.
			* We support this parameter
			when the version number
			(httpversion) is equal or greater
			than 0311c.
snapshot_source	0~"capability_nmediastream	6/6	Indicate the source of media
	"-1		stream.
			0 means the first stream.
			1 means the second stream and
			etc.
			2 means the third stream and etc.
			3 means the fourth stream and
			etc.
snapshot_prefix	string[16]	6/6	Indicate the prefix of the
			filename.
			media_i0=> Snapshot1_
			media_i1=> Snapshot2_
			media_i2=> Snapshot3_
			media_i3=> Snapshot4_
			media_i4=> Snapshot5_
snapshot_datesuffix	0, 1	6/6	Add date and time suffix to
			filename:
			1 = Add date and time suffix.
			0 = Do not add.
snapshot_preevent	0~"	6/6	Indicates the number of pre-event
	capability_media_snapshot_		images.
	maxpreevent"		
snapshot_postevent	0~"	6/6	Indicates the number of
	capability_media_snapshot_		post-event images.
	maxpostevent"		

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
videoclip_channel	0~"capability_nvideoin"-1	6/6	Indicate the source of media channel. 0 means the first channel. 1 means the second channel. 2 means the third channel. 3 means the fourth channel. * We support this parameter when the version number (httpversion) is equal or greater than 0311c.
videoclip_source	0~"capability_nmediastream "-1	6/6	Indicate the source of media stream. 0 means the first stream. 1 means the second stream and etc. 2 means the third stream and etc. 3 means the fourth stream and etc.
videoclip_prefix	string[16]	6/6	Indicate the prefix of the filename.
videoclip_preevent	0 ~ " capability_media_videoclip_ maxpreevent"	6/6	Indicates the time for pre-event recording in seconds.
videoclip_maxduration	1 ~ " capability_media_videoclip_ maxlength"	6/6	Maximum duration of one video clip in seconds.
videoclip_maxsize	50 ~ " capability_media_videoclip_ maxsize"	6/6	Maximum size of one video clip file in Kbytes.
videoclip_profiletoken	string[64]	6/6	Indicate the source for media profile. * We support this parameter when the version number (httpversion) is equal or greater than 0314b.

7.31 Recording

Group: recording_i<0~(n-1)> n denotes the value of "capability_nrecording" (capability_nrecording > 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
	-t-vi[40]	(get/set)	Industriantian of this contra
name	string[40]	6/6	Identification of this entry.
trigger	schedule,	6/6	The event trigger type
	networkfail		schedule: The event is triggered by
			schedule
			networkfail: The event is triggered by
			the failure of network connection.
enable	<boolean></boolean>	6/6	Enable or disable this recording.
priority	0, 1, 2	6/6	Indicate the priority of this recording:
			"0" indicates low priority.
			"1" indicates normal priority.
			"2" indicates high priority.
channel	0~"capability_nvideoin"-1	6/6	Indicate the source of recording
			channel.
			0 means the first channel.
			1 means the second channel.
			2 means the third channel.
			3 means the fourth channel.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0311c.
source	0~"capability_nmediastrea	6/6	Indicate the source of media stream.
	m"-1		0 means the first stream.
			1 means the second stream and so on.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
maxretentiontime	<string></string>	6/6	To specify the expired time for
			automatic clean up, and it only takes
			effect for video clip generated by
			recording_i <0~1>.
			Format is
			"'P[Y]Y[MM]M[DDD]DT[hh]H[mm]M[ss]
			S'
			, similar with ISO8601 with symbols P
			Ex. P7D, it means 7 days. P1DT10H, it
			means 1 days and 10 hours.
			The parameter takes effect when
			autocleanup_
			maxretentiontime_recording_enabled
			is enabled.
notify	<boolean></boolean>	6/6	0: Disable recording notification
			1: Enable recording notification
notifyserver	0~31	6/6	Indicate which notification server is
			scheduled.
			One bit represents one application
			server (server_i0~i4).
			bit0 (LSB) = server_i0.
			bit1 = server_i1.
			bit2 = server_i2.
			bit3 = server_i3.
			bit4 = server_i4.
			For example, enable server_i0,
			server_i2, and server_i4 as notification
			servers; the notifyserver value is 21.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
weekday	0~127	6/6	Indicate which weekday is scheduled.
			One bit represents one weekday.
			bit0 (LSB) = Saturday
			bit1 = Friday
			bit2 = Thursday
			bit3 = Wednesday
			bit4 = Tuesday
			bit5 = Monday
			bit6 = Sunday
			For example, to detect events on Friday
			and Sunday, set weekday as 66.
begintime	hh:mm	6/6	Start time of the weekly schedule.
endtime	hh:mm	6/6	End time of the weekly schedule.
			(00:00~24:00 indicates schedule always
			on)
prefix	string[16]	6/6	Indicate the prefix of the filename.
dest	cf,	6/6	The destination to store the recorded
	0~4		data.
			"cf" means local storage (CF or SD card).
			"0" means the index of the network
			storage.
cffolder	string[128]	6/6	Folder name.
<not< td=""><td></td><td></td><td></td></not<>			
recommended to			
use this>			
foldername	string[128]	6/6	Folder name.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
maxsize	100~2000	6/6	Unit: Mega bytes.
			When this condition is reached,
			recording file is truncated.
maxduration	60~3600	6/6	Unit: Second
			When this condition is reached,
			recording file is truncated.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
adaptive_enable	<boolean></boolean>	6/6	Indicate whether the adaptive
			recording is enabled
adaptive_preevent	0~9	6/6	Indicate when is the adaptive recording
			started before the event trigger point
			(seconds)
adaptive_postevent	0~10	6/6	Indicate when is the adaptive recording
			stopped after the event trigger point
			(seconds)
recordingjob_Sourc	string[64]	6/6	Indicate the source for media profile.
eToken_Token			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0314b.

7.32 HTTPS

Group: https (capability_protocol_https > 0)

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	6/6	To enable or disable secure HTTP.
policy	<boolean></boolean>	6/6	If the value is 1, it will force HTTP connection redirect to HTTPS connection
method	auto, manual, install	6/6	auto =>Create self-signed certificate automatically. manual =>Create self-signed certificate manually. install =>Create certificate request and install.
status	-3 ~ 1	6/6	Specify the https status. -3= Certificate not installed -2 = Invalid public key -1 = Waiting for certificate 0= Not installed 1 = Active
countryname	string[2]	6/6	Country name in the certificate information.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
stateorprovincen	string[128]	6/6	State or province name in the
ame			certificate information.
localityname	string[128]	6/6	The locality name in thecertificate
			information.
organizationname	string[64]	6/6	Organization name in the certificate
	VIVOTEK Inc.		information.
unit	string[64]	6/6	Organizational unit name in
	VIVOTEK Inc.		thecertificate information.
commonname	string[64]	6/6	Common name in the certificate
	www.vivotek.com		information.
validdays	0 ~ 825	6/6	Valid period for the certification.

7.33 Storage Management Setting

Group: disk_i<0~(n-1)> n denotes the value of "capability_storage_management_ndevice" (capability_storage_management_ndevice > 0)

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
cyclic_enabled	<boolean></boolean>	6/6	Enable cyclic storage method.
cyclic_reserve	10 ~ 99	6/6	The reserved percentage of this disk. * We support this parameter when the version number (httpversion) is equal or greater than 0312a.
type	sd, nas <product dependent></product 	6/7	The storage device type. * We support this parameter when the version number (httpversion) is equal or greater than 0312a.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
autocleanup_mode	targetbase,	6/6	Specify the automatic clean up method
	sourcebase		for storage devices, where "targetbase"
			indicate the automatic clean up is based
			on the attached devices such as nas or sd
			card, whereas "sourcebase" indicate
			automatic clean up is based on the
			selected recording track.
			* We support this parameter when the
			version number (httpversion) is equal or
			greater than 0312a.
autocleanup_enabled	<boolean></boolean>	6/6	Enable automatic clean up method.
<not recommended="" td="" to<=""><td></td><td></td><td>Expired and not locked media files will be</td></not>			Expired and not locked media files will be
use this>			deleted.
			* For forward compatibility reservations,
			but only group disk_i0_autocleanup is
			effective.
			* Not recommended to use this. Please
			refers "autocleanup" group.
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.
autocleanup_maxage	<positive integer=""></positive>	6/6	To specify the expired days for automatic
<not recommended="" td="" to<=""><td></td><td></td><td>clean up.</td></not>			clean up.
use this>			* For forward compatibility reservations,
			but only group disk_i0_autocleanup is
			effective.
			* Not recommended to use this. Please
			refers "autocleanup" group.
			* This parameter will not be used after
			the version number (httpversion) is equal
			or greater than 0400a.

7.34 Region of Interest

Group: $roi_c<0^{(n-1)}$ for n channel product and m is the index of video stream which support ePTZ. (capability_eptz > 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
s<0~(m-1)>_home	<w,h></w,h>	1/6	ROI left-top corner coordinate.* If the
	<pre><pre>oduct</pre></pre>		minimal window size is 64x64, then the
	dependent>		"win_i0_home"=(0~resolution_W-64,
			0~resolution_H-64), which the resolution
			is the value in current stream.
			* If the stream doesn't support ePTZ, the
			permissions of this parameter must be
			set as 1/7.
s<0~(m-1)>_size	<wxh></wxh>	1/6	ROI width and height. The width value
	<pre><pre><pre>oduct</pre></pre></pre>		must be multiples of 16 and the height
	dependent>		value must be multiples of 8
			* The minimal window size is 64x64, and
			then resolution_W, resolution_H is the
			value in current stream.
			* If the stream doesn't support ePTZ, the
			permissions of this parameter must be
			set as 1/7.

7.35 ePTZ Setting

Group: $eptz_c<0^{(n-1)}> for n channel product. (capability_eptz > 0)$

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
osdzoom	<boolean></boolean>	1/4	Indicates multiple of zoom in is
<not recommended="" td="" to<=""><td></td><td></td><td>"on-screen display" or not.</td></not>			"on-screen display" or not.
use this>			* Reserved for compatibility, and suggest
			don't use this since [httpversion] > 0302a
			* We replace
			"eptz_c<0~(n-1)>_osdzoom" with "
			videoin_c<0~(n-1)>_zoomratiodisplay".
smooth	<boolean></boolean>	1/4	Enable the ePTZ "move smoothly"
			feature

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
tiltspeed	-5 ~ 5	1/7	Tilt speed (It should be set by eCamCtrl.cgi rather than by setparam.cgi.)
panspeed	-5 ~ 5	1/7	Pan speed (It should be set by eCamCtrl.cgi rather than by setparam.cgi.)
zoomspeed	-5 ~ 5	1/7	Zoom speed (It should be set by eCamCtrl.cgi rather than by setparam.cgi.)
autospeed	1~5	1/7	Auto pan/patrol speed (It should be set by eCamCtrl.cgi rather than by setparam.cgi.)

7.35.1. ePTZ Settings for Each Stream

Group: $eptz_c<0^{(n-1)}>_s<0^{(m-1)}>$ for n channel product and m is the index of video stream. (capability_eptz > 0)

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
patrolseq	string[120]	1/4	The patrol sequence of ePTZ. All the patrol position indexes will be separated by ","
patroldwelling	string[160]	1/4	The dwelling time (unit: second) of each patrol point, separated by ",".
preset_i<0~19>_name	string[40]	1/7	Name of ePTZ preset. (It should be set by ePreset.cgi rather than by setparam.cgi.)
preset_i<0~19>_pos	<w,h> <product dependent=""></product></w,h>	1/7	Left-top corner coordinate of the preset. (It should be set by ePreset.cgi rather than by setparam.cgi.)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
preset_i<0~19>_size	<wxh></wxh>	1/7	Width and height of the preset.
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		(It should be set by ePreset.cgi rather
	dependent>		than by setparam.cgi.)

7.36 Focus Window Setting

Group: **focuswindow_c<0~(n-1)>** for n channel products n denotes the value of "capability_nvideoin".

(capability_image_c<0 $^{\sim}$ (n-1)>_focuswindow_nwindow > 0)

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
win_i0_enable	<boolean></boolean>	4/4	Enable or disable the window.
win_i0_home	<w,h> <product dependent=""></product></w,h>	4/4	Left-top corner coordinate of the window. * If the minimal window size is 192x144, then the "win_i0_home"=(0~resolution_W-192, 0~resolution_H-144), resolution_W and resolution_H based on "capability_image_ c<0~(n-1)> focuswindow range".
win_i0_size	<wxh> <product dependent=""></product></wxh>	4/4	Width and height of the window. * The minimal window size is 192x144, and resolution_W and resolution_H is based on "capability_image_ c<0~(n-1)>_focuswindow_range".

7.37 Seamless Recording Setting

<Not recommended to use>

Group: seamlessrecording

(capability_localstorage_seamless> 0)

* We do not support this parameter when "capability_nvideoin > 1".

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
diskmode	seamless,	1/6	"seamless" indicates enable seamless
	manageable	_, ~	recording.
			"manageable" indicates disable seamless
			recording.
			* We replace this parameter with
			"seamlessrecording_c<0~(n-1)>_diskmode"
			when the version number (httpversion) is
			equal or greater than 0312a.
			* We do not support this parameter when
			"capability_nvideoin > 1".
			* This parameter will not be used after the
			version number (httpversion) is equal or
			greater than 0400a.
maxconnection	3	1/7	Maximum number of connected seamless
			streaming.
			* We replace this parameter with
			"seamlessrecording_c<0~(n-1)>_maxconnecti
			on" when the version number (httpversion) is
			equal or greater than 0312a.
			* We do not support this parameter when
			"capability_nvideoin > 1".
			* This parameter will not be used after the
			version number (httpversion) is equal or
			greater than 0400a.
enable	<boolean></boolean>	1/7	Indicate whether seamless recording is
			recording to local storage or not at present.
			(Read only)
			* We replace this parameter with
			"seamlessrecording_c<0~(n-1)>_triggerrecord
			" when the version number (httpversion) is
			equal or greater than 0312a.
			* We do not support this parameter when
			"capability_nvideoin > 1".
			* This parameter will not be used after the
			version number (httpversion) is equal or
			greater than 0400a.

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
guid<0~2>_id	string[127]	1/7	The connected seamless streaming ID.
			(Read only)
			* We replace this parameter with
			"seamlessrecording_c<0~(n-1)>_guid<0~2>_i
			d" when the version number (httpversion) is
			equal or greater than 0312a.
			* We do not support this parameter when
			"capability_nvideoin > 1".
			* This parameter will not be used after the
			version number (httpversion) is equal or
			greater than 0400a.
guid<0~2>_number	0~3	1/7	Number of connected seamless streaming
			with guid<0~(k-1)>_id.
			(Read only)
			* We replace this parameter with
			"seamlessrecording_c<0~(n-1)>_guid<0~2>_n
			umber" when the version number
			(httpversion) is equal or greater than 0312a.
			* We do not support this parameter when
			"capability_nvideoin > 1".
			* This parameter will not be used after the
			version number (httpversion) is equal or
			greater than 0400a.

7.37.1 Seamless recording setting per channel

Group: **seamlessrecording_c<0~(n-1)>** for n channel products n denotes the value of "capability_nvideoin".

(capability_localstorage_seamless> 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	

diskmode	seamless, manageable	1/6	"seamless" indicates enable seamless recording. "manageable" indicates disable seamless recording. * We support this parameter when the version number (httpversion) is equal or greater than 0312a.
maxconnection	3	1/7	Maximum number of connected seamless streaming. * We support this parameter when the version number (httpversion) is equal or greater than 0312a.
triggerrecord	<boolean></boolean>	1/7	Indicate whether seamless recording is recording to local storage or not at present. (Read only) * We support this parameter when the version number (httpversion) is equal or greater than 0312a.
guid<0~(k-1)>_id	string[127]	1/7	The connected seamless streaming ID. (Read only) * k denotes the value of "seamlessrecording_c<0~(n-1)>_maxco nnection" * We support this parameter when the version number (httpversion) is equal or greater than 0312a.
guid<0~(k-1)>_number	0~3	1/7	Number of connected seamless streaming with guid<0~(k-1)>_id. (Read only) * k denotes the value of "seamlessrecording_c<0~(n-1)>_maxco nnection" * We support this parameter when the version number (httpversion) is equal or greater than 0312a.

7.38 VIVOTEK Application Development Platform Setting

Group: vadp

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
version	<string></string>	6/7	Indicate the VADP version.
resource_total_memory	0, <positive< td=""><td>6/7</td><td>Indicate total available memory size</td></positive<>	6/7	Indicate total available memory size
	integer>		for VADP modules.
resource_total_storage	0, <positive< td=""><td>6/7</td><td>Indicate total size of the internal</td></positive<>	6/7	Indicate total size of the internal
	integer>		storage space for storing VADP
			modules.
resource_free_memory	0, <positive< td=""><td>6/7</td><td>Indicate free memory size for VADP</td></positive<>	6/7	Indicate free memory size for VADP
	integer>		modules.
resource_free_storage	0, <positive< td=""><td>6/7</td><td>Indicate current free storage size for</td></positive<>	6/7	Indicate current free storage size for
	integer>		uploading VADP modules.
module_number	0, <positive< td=""><td>6/7</td><td>Record the total module number that</td></positive<>	6/7	Record the total module number that
	integer>		already stored in the system.
module_order	string[40]	6/6	The execution order of the enabled
			modules.
module_save2sd	<boolean></boolean>	6/6	Indicate if the module should be
			saved to SD card when user want to
			upload it.
			If the value is false, save module to
			the internal storage space and it will
			occupy storage size.
number	string[128]	6/7	This number is used to register
			license key for VADP application.
status	string[40]	6/7	Indicate the hardware restore status
developer_mode	<boolean></boolean>	6/6	Developer mode provide ways to
			establish communication between
			the developer of VADP vendor and
			your camera.
			* Only available when
			capability_securecam_support=1.

7.38.1. VADP Settings for Each Hyperlink

Group: vadp_hyperlink_i<0~(n-1)>

Maximum of n=10 hyperlink is supported.

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
moduleidx	0, <positive< td=""><td>1/7</td><td>Refer to the package index.</td></positive<>	1/7	Refer to the package index.
	integer>		
title	string[40]	1/7	Name of the vadp hyperlink.
url	string[120]	1/7	The URL address of vadp hyperlink.
status	string[40]	1/7	Value of "on" indicates a valid
			connection of vadp hyperlink.
			Value of "off" indicates a invalid
			connection of vadp hyperlink.

7.38.2. VADP Settings for Each Package

Group: vadp_module_i<0~(n-1)> for n VADP package number (capability_vadp_npackage > 0) n denotes the value of "capability_vadp_npackage".

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	6/6	Indicate if the module is enabled or
			not.
			If yes, also add the index of this module
			to the module_order.
name	string[40]	6/6	Module name
extendedname	string[40]	6/6	Extended module name. If this value is
			not blank, it will be shown on the VADP
			UI first instead of
			vadp_module_i <n>_name.</n>
url	string[120]	6/6	Define the URL string after the IP
			address if the module provides it own
			web page.
vendor	string[40]	6/6	The provider of the module.
vendorurl	string[120]	6/6	URL of the vendor.
version	string[40]	6/6	Version of the module.
license	string[40]	6/6	Indicate the license status of the
			module.
licmsg	string[128]	6/6	Indicate the message that will be show
			on license status when mouse over.
path	string[40]	6/6	Record the storage path of the module.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
initscr	string[40]	6/6	The script that will handle operation commands from the system.
status	string[40]	6/6	Indicate the running status of the module.
statmsg	string[128]	6/6	Indicate the message that will be show on the running status when mouse over.
vvtklicensemec	string[40]	6/7	Indicate the module use VIVOTEK license mechanism

7.38.3. VADP Schedule Settings

Group: vadp_schedule_i<0~(n-1)> for n VADP package number n denotes the value of "capability_vadp_npackage".

(Only available when "capability_vadp_npackage" > 0 and the version number of "vadp_version" >= "1.3.2.0")

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean></boolean>	6/6	Enable or disable the schedule mode to control the execution of the VADP package
begintime	hh:mm	6/6	Begin time of the schedule
endtime	hh:mm	6/6	End time of the schedule

7.38.4. VADP Event Settings

Group: vadp_event

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ntrigger	0, <positive< td=""><td>6/7</td><td>Indicate the number of topics to be</td></positive<>	6/7	Indicate the number of topics to be
	integer>		transferred to event manager for
			trigger.
triggerlist_i<0~(n-1)>_t	string[256]	6/6	Indicate the event notification with this
opic			topic will be transferred to event
			manager as trigger.
			n is equal to ntrigger above.

7.39 Camera PTZ Control

Group: camctrl (capability_camctrl_ptztunnel > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enableptztunnel	<boolean></boolean>	1/4	Enable PTZ tunnel for camera control.

Group: camctrl_c<0~(n-1)> for n channel products (capability_ptzenabled > 0)

n denotes the value of "capability_nvideoin" and k denotes the value of "capability_npreset"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
panspeed	-5 ~ 5	1/4	Pan speed
tiltspeed	-5 ~ 5	1/4	Tilt speed
zoomspeed	-5 ~ 5	1/4	Zoom speed
focusspeed	-5 ~ 5	1/4	Auto focus speed
patrolseq	string[120]	1/4	(For external device)
			The indexes of patrol points, separated
			by ","
patroldwelling	string[160]	1/4	(For external device)
			The dwelling time of each patrol point,
			separated by ","
			* only available when
			capability_camctrl_c0_rs485=2
preset_i<0~(k-1)>_nam	string[40]	1/4	Name of the preset location.
e			
preset_i<0~(k-1)>_	0 ~ 999	1/4	The dwelling time of each preset
dwelling			location
			* only available when
			capability_camctrl_c0_rs485=2
uart	0 ~ "	1/4	Select corresponding uart
	capability_nuar		(capability_nuart>0).
	t"-1		* only available when
			capability_camctrl_c0_rs485=2
cameraid	0~255	1/4	Camera ID controlling external PTZ
			camera.
isptz	0~2	1/4	0: disable PTZ commands.
			1: enable PTZ commands with PTZ

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			driver.
			2: enable PTZ commands with UART
			tunnel.
			* only available when
			capability_camctrl_c0_rs485=2
disablemdonptz	<boolean></boolean>	1/4	Disable motion detection on PTZ
			operation.

7.40 Camera PTZ Control (IZ Series)

Group: camctrl_c<0~(n-1)> for n channel products (capability_camctrl_c0_zoommodule = 1 and capability_camctrl_c0_buildinpt = 0)

n denotes the value of "capability_nvideoin" and k denotes the value of "capability_npreset"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ccdtype	string[16]	6/7	(Internal used, read only)
motortype	string[16]	6/7	(Internal used, read only)
cameraid	0 ~ 255	1/4	Camera ID controlling external PTZ
			camera.
			Note:
			Please set your speed dome to the
			appropriate baud rate, and Camera ID,
			e.g. 2400bps, camera ID 1,2,3,,,,etc.
			All Camera IDs on the same controlling
			system (NVR or rs485 keyboard) have to
			be distinct.
			Therefore, once you send a controlling
			signal, each camera will only accept the
			inputs with the corresponding ID.
panspeed	-5 ~ 5	1/4	Pan speed
tiltspeed	-5 ~ 5	1/4	Tilt speed
zoomspeed	-5 ~ 5	1/4	Zoom speed
autospeed	-5 ~ 5	1/4	Auto pan speed
focusspeed	-5 ~ 5	1/4	Auto focus speed
focusmode	auto,onetimeau	1/4	Indicate the focus control mode.
	to,spotlight,ma		

NAME	VALUE	SECURITY (net/ont)	DESCRIPTION
		(get/set)	
	nual		
	* Available		
	values are		
	listed in		
	"capability_cam		
	ctrl_c<0~(n-1)>		
	_focusmode"		
uart	0~	1/4	Select corresponding uart
	"capability_nua		(capability_nuart>0).
	rt"-1		* only available when
			capability_camctrl_c0_rs485=2
isptz	0~2	1/4	0: disable PTZ commands.
			1: enable PTZ commands with PTZ
			driver.
			2: enable PTZ commands with UART
			tunnel.
			* only available when
			capability_camctrl_c0_rs485=2
preset_i<0~(k-1)>_name	string[40]	1/4	Name of the preset location.
preset_i<0~(k-1)>_zoom	capability_ptz_	1/4	Zoom position at each preset location.
	c<0~(n-1)>_min		
	zoom ~		
	capability_ptz_		
	c<0~(n-1)>_ma		
	xzoom		
preset_i<0~(k-1)>_focus	capability_ptz_	1/4	Focus position at each preset location.
	c<0~(n-1)>_min		
	focus ~		
	capability_ptz_		
	c<0~(n-1)>_ma		
	xfocus		
preset_i<0~(k-1)>_	0~999	1/4	The dwelling time of each preset
dwelling			location
			* only available when
			capability_camctrl_c0_rs485=2
preset_i<0~(k-1)>_focus	sync,	1/4	The focus mode of each preset, which is

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
setting	fixcurrent		essential and should be grouped with
			"preset_i<0~(k-1)>_name."
			* We support this parameter when the
			version number (httpversion) is equal
			or greater than 0305b.
patrolseq	string[120]	1/4	(For external device)
			The indexes of patrol points, separated
			by ","
patroldwelling	string[160]	1/4	(For external device)
			The dwelling time of each patrol point,
			separated by ","
			* only available when
			capability_camctrl_c0_rs485=2
disablemdonptz	<boolean></boolean>	1/4	Disable motion detection on PTZ
			operation.
defaulthome	<boolean></boolean>	1/4	This field tells system to use default
			home position or not.
axisz	capability_ptz_	1/4	Custom home zoom position.
	c<0~(n-1)>_min		
	zoom ~		
	capability_ptz_		
	c<0~(n-1)>_ma		
	xzoom		
axisf	capability_ptz_	1/4	Custom home focus position.
	c<0~(n-1)>_min		
	focus ~		
	capability_ptz_		
	c<0~(n-1)>_ma		
	xfocus		
digitalzoom	<boolean></boolean>	1/4	Enable/disable digital zoom
zoomenhance	<boolean></boolean>	1/4	Enable /disable zoom enhancement
returnhome	<boolean></boolean>	1/4	Enable/disable return home while idle.
returnhomeinterval	1~999	1/4	While idle over this time interval, idle
			action will be taken.
idleaction_enable	<boolean></boolean>	1/4	Enable/disable idle action while idle
idleaction_type	home	1/4	This field tells what kind of action

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
			should be taken while idle.
idleaction_interval	1~999	1/4	While idle over this time interval, idle
			action will be taken.

PLEASE REFER TO PTZ CONTROL API

7.41 Camera PTZ Control (SD Series)

Group: camctrl_c<0~(n-1)> for n channel products (the bit7 of capability_ptzenabled is 0 and the bit4 of capability_ptzenabled is 1)

n denotes the value of "capability_nvideoin" and k denotes the value of "capability_npreset"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
ccdtype	string[16]	6/7	(Internal used, read only)
motortype	string[16]	6/7	(Internal used, read only)
cameraid	1~255	1/4	Camera ID controlling external
			PTZ camera.
			Note:
			Please set your speed dome to
			the appropriate baud rate, and
			Camera ID, e.g. 2400bps, camera
			ID 1,2,3,,,,etc.
			All Camera IDs on the same
			controlling system (NVR or rs485
			keyboard) have to be distinct.
			Therefore, once you send a
			controlling signal, each camera
			will only accept the inputs with
			the corresponding ID.
panspeed	-5 ~ 5	1/4	Pan speed
tiltspeed	-5 ~ 5	1/4	Tilt speed
zoomspeed	-5 ~ 5	1/4	Zoom speed
autospeed	-5 ~ 5	1/4	Auto pan speed
focusspeed	-5 ~ 5	1/4	Auto focus speed
focusmode	auto, one time auto, sp otlight, manual	1/4	Indicate the focus control mode.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
	* Available values are listed in "capability_camctrl_c <0~(n-1)>_focusmod e"		
preset i<0~(k-1)> name	string[40]	1/4	Name of the preset location.
preset_i<0~(k-1)>_pan	capability_ptz_c<0~(n-1)>_minpan ~ capability_ptz_c<0~(n-1)>_maxpan	1/4	Pan position at each preset location.
preset_i<0~(k-1)>_tilt	capability_ptz_c<0~(n-1)>_mintilt ~ capability_ptz_c<0~(n-1)>_maxtilt	1/4	Tilt position at each preset location.
preset_i<0~(k-1)>_zoom	capability_ptz_c<0~(n-1)>_minzoom ~ capability_ptz_c<0~(n-1)>_maxzoom	1/4	Zoom position at each preset location.
preset_i<0~(k-1)>_focus	capability_ptz_c<0~(n-1)>_minfocus ~ capability_ptz_c<0~(n-1)>_maxfocus	1/4	Focus position at each preset location.
preset_i<0~(k-1)>_focus setting	sync, fixcurrent	1/4	The focus mode of each preset, which is essential and should be grouped with "preset_i<0~(k-1)>_name." * We support this parameter when the version number (httpversion) is equal or greater than 0305b.
preset_i<0~(k-1)>_fliped	<boolean></boolean>	1/4	Flip side at each preset location.
patrol_i<0~39>_name	string[40]	1/4	(For internal device) The name of patrol location
patrol_i<0~39>_ dwelling	0~999	1/4	(For internal device) The dwelling time of each patrol location

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
disablemdonptz	<boolean></boolean>	1/4	Disable motion detection on PTZ operation.
defaulthome	<boolean></boolean>	1/4	This field tells system to use default home position or not.
axisx	capability_ptz_c<0~(n-1)>_minpan ~ capability_ptz_c<0~(n-1)>_maxpan	1/4	Custom home pan position.
axisy	capability_ptz_c<0~(n-1)>_mintilt ~ capability_ptz_c<0~(n-1)>_maxtilt	1/4	Custom home tilt position.
axisz	capability_ptz_c<0~(n-1)>_minzoom ~ capability_ptz_c<0~(n-1)>_maxzoom	1/4	Custom home zoom position.
axisf	capability_ptz_c<0~(n-1)>_minfocus ~ capability_ptz_c<0~(n-1)>_maxfocus	1/4	Custom home focus position.
axisflip	<boolean></boolean>	1/4	Custom home flip side.
returnhome	<boolean></boolean>	1/4	Enable/disable return home while idle.
returnhomeinterval	1~999	1/4	While idle over this time interval, idle action will be taken.
digitalzoom	<boolean></boolean>	1/4	Enable/disable digital zoom
idleaction_enable	<boolean></boolean>	1/4	Enable/disable idle action while idle
idleaction_type	pan,patrol,tour,home ,objtrack,prev	1/4	This field tells what kind of action should be taken while idle.
idleaction_interval	1~999	1/4	While idle over this time interval, idle action will be taken.
zoomenhance	<boolean></boolean>	1/4	Enable /disable zoom enhancement
tour_index	-1, 0~19	1/4	Index of the enabled tour group, from 0 to 19.

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
			Set -1 to disable all the tour
			groups.
tour_i<0~19>_name	string[40]	1/4	Name of the tour.
tour_i<0~19>_type	<boolean></boolean>	1/4	0 = Recorded tour
			1 = Preset tour
tour_i<0~19>_speed	-5 ~ 5	1/4	Preset tour: pan and tilt speed
			when moving between presets.
			Recorded tour: unnecessary.
tour_i<0~19>_direction	forward,backward,ra	1/4	User can choose which direction
	ndom		the preset tour goes.
			"forward": preset tour goes in
			forward order.
			"backward": preset tour goes in
			backward order.
			"random": the presets of the tour
			will be recalled randomly.
			* Only available when
			"capability_presettourdirection"
			is 1.
			* We support this parameter
			when the version number
			(httpversion) is equal or greater
			than 0307a.
tour_i<0~19>_checklist	string[512]	1/4	The indexes of preset positions,
			separated by ","
tour_i<0~19>_dwelltim	string[512]	1/4	Preset tour: time to wait before
е			moving to the next preset
			position, separated by ","
			Recorded tour: number of
			seconds to wait
			before continuing a loop tour.

PLEASE REFER TO PTZ CONTROL API

7.42 UART Control

Group: uart (capability_nuart > 0 and capability_fisheye = 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ptzdrivers_i<0~19,	string[40]	1/4	Name of the PTZ driver.
127>_name			
ptzdrivers_i<0~19,	string[128]	1/4	Full path of the PTZ driver.
127>_location			
enablehttptunnel	<boolean></boolean>	1/4	Enable HTTP tunnel channel to control
			UART.

Group: $uart_i<0^{(n-1)}$ n is uart port count (capability_nuart > 0 and capability_fisheye = 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
baudrate	300,600,1200,2400,	4/4	Set baud rate of COM port.
	4800,9600,19200,38		
	400,57600,115200		
databit	5,6,7,8	4/4	Data bits in a character frame.
paritybit	none,	4/4	For error checking.
	odd,		
	even		
stopbit	1,2	4/4	"1": One stop bit is transmitted to
			indicate the end of a byte.
			"2": Two stop bits are transmitted to
			indicate the end of a byte.
			If you want to transfer the stopbit for
			150% of the normal time used to
			transfer one bit, the
			uart_i<0~(n-1)>_stopbit should be set
			as 2 and the uart_i<0~(n-1)>_databit
			set as 5 as well.
uartmode	rs485,	4/4	RS485 or RS232.
	rs232		
customdrvcmd_i<0~	string[128]	1/4	PTZ command for custom camera.
9>			* only available when
			capability_camctrl_c0_rs485=2
speedlink_i<0~4>_n	string[40]	1/4	Additional PTZ command name.
ame			* only available when
_			capability_camctrl_c0_rs485=2

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
speedlink_i<0~4>_c	string[40]	1/4	Additional PTZ command list.
md			* only available when
			capability_camctrl_c0_rs485=2
ptzdriver	0~19,	1/4	The PTZ driver is used by this COM
	127 (custom),		port.
	128 (no driver)		* only available when
			capability_camctrl_c0_rs485=2

7.43 UART Control (SD Series)

Group: $uart_i<0^{(n-1)}>n$ is uart port count (capability_nuart > 0 and the bit7 of capability ptzenabled is 0, the bit4 of capability ptzenabled is 1)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
cameraid	1~255	4/4	Camera ID controlling external PTZ
			camera.
			Note:
			Please set your speed dome to the
			appropriate baud rate, and Camera ID,
			e.g. 2400bps, camera ID 1,2,3,,,,etc.
			All Camera IDs on the same controlling
			system (NVR or rs485 keyboard) have to
			be distinct.
			Therefore, once you send a controlling
			signal, each camera will only accept the
			inputs with the corresponding ID.
baudrate	2400,4800,9600,19	4/4	Set baud rate of COM port.
	200,38400,57600,1		
	15200		
databit	5,6,7,8	4/4	Data bits in a character frame.
paritybit	none,	4/4	For error checking.
	odd,		
	even		

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
stopbit	1,2	4/4	"1": One stop bit is transmitted to
			indicate the end of a byte.
			"2": Two stop bits are transmitted to
			indicate the end of a byte.
			If you want to transfer the stopbit for
			150% of the normal time used to
			transfer one bit, the
			uart_i<0~(n-1)>_stopbit should be set
			as 2 and the uart_i<0~(n-1)>_databit
			set as 5 as well.
uartmode	rs485	4/7	RS485 mode.

7.44 Lens Configuration

Group: **lens** for n channel products

n denotes the value of "capability_nvideoin"

(capability_image_c<0~(n-1)>_lensconfiguration_support = 1)

<u> </u>	· / _		,
NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
selected	<string></string>	6/7	Current selected lens profile.
			e.g. lens_selected=lens_default_i0, it
			means choosen lens configuration is i0
			lens of default group.

Group: lens_default

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
totalnumbers	0, <positive< td=""><td>6/7</td><td>Totoal support number of the default</td></positive<>	6/7	Totoal support number of the default
	integer>		lens profiles

Group: lens_user

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
totalnumbers	0, <positive integer=""></positive>	6/7	Totoal support number of the user lens profiles

Group: lens_default_i<0~(n-1)>

n denotes the value of "lens_default_totalnumbers"

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
name	<string></string>	6/7	Default lens name

Group: lens_user_i<0~(n-1)>

n denotes the value of "lens_user_totalnumbers"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
name	<string></string>	6/7	User-defined lens name

7.45 Fisheye Info.

Group: fisheyeinfo (capability_fisheye > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
revisedcenteraxis	<coordinate></coordinate>	1/7	The actual center axis coordinate
radius	0, <positive< td=""><td>1/7</td><td>The actual center radius</td></positive<>	1/7	The actual center radius
	integer>		

7.46 Fisheye Local Dewarp Setting

Group: fisheyedewarp_c<0 $^{(n-1)}$ > (capability_fisheyelocaldewarp_c<0 $^{(n-1)}$ > > 0)

n denotes the value of "capability_nvideoin", m denotes the value of "capability_nmediastream"

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
panspeed	-5 ~ 5	1/4	Pan speed of regional view
tiltspeed	-5 ~ 5	1/4	Tilt speed of regional view
zoomspeed	-5 ~ 5	1/4	Zoom speed of regional
s<0~(m-2)>_panora	0~359	1/4	Initial pan position of panorama view.
ma_panstart			(only available for 1P and 2P mode at
			ceiling or floor mount)
s<0~(m-2)>_region_	-90~359	1/4	Pan home angle of regional view (for
pan			1R mode)
			Pan range of ceiling/floor mount is
			[0~359].
			Pan range of wall mount is [-90~90].

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
s<0~(m-2)>_region_t	-90~90	1/4	Tilt home angle of regional view (for
ilt			1R mode)
			Tilt range of ceiling/floor mount is
			[0~90].
			Tilt range of wall mount is [-90~90].
s<0~(m-2)>_region_	100~300	1/4	Zoom home ratio of regional view (for
zoom			1R mode)
s<0~(m-2)>_region_r	-90~359	1/4	Pan home angle of regional view (for
<0~(i-1)>_pan			4R mode, i is the view index and range
			from 0 to 3)
			Pan range of ceiling/floor mount is
			[0~359].
			Pan range of wall mount is [-90~90].
s<0~(m-2)>_region_r	-90~90	1/4	Tilt home angle of regional view (for
<0~(i-1)>_tilt			4R mode, i is the view index and range
			from 0 to 3)
			Tilt range of ceiling/floor mount is
			[0~90].
			Tilt range of wall mount is
			[-90~90].
s<0~(m-2)>_region_r	100~300	1/4	Zoom home ratio of regional view (for
<0~(i-1)>_zoom			4R mode, i is the view index and range
			from 0 to 3)

7.47 PIR Behavior Define

Group: pir (capability_npir > 0)

NAME	VALUE	SECURITY	DESCRIPTION
		(get/set)	
enable	<boolean></boolean>	1/1	Enable/disable PIR

7.48 Auto Tracking Setting

Group: $autotrack_c<0^{(n-1)}> (capability_image_c<0^{(n-1)}>_autotrack_support>0)$ n denotes the value of "capability_nvideoin"

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
objsize_type	-1~2	1/4	Type of object size.
			-1 : customized width and height
			0 : object size = 30 x 30
			1 : object size = 10 x 20
			2 : object size = 10 x 10
objsize_customized_w	10~320	1/4	The minimum width of tracking target.
idth			
objsize_customized_h	10~240	1/4	The minimum height of tracking target.
eight			
sensitivity	0~2	1/4	Tracking sensitivity.
			0: Low
			1: Medium
			2: High

7.49 Wireless

Group: wireless (capability_network_wireless > 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
ssid	string[32]	6/6	SSID for wireless lan settings.
wlmode	Infra,	6/6	Wireless mode.
	Adhoc		Infra: Infrastructure
channel	1~11 or	6/6	A list of WLAN channels.
	1~13 or		Countries apply their own regulations
	10~11 or		to the allowable channels.
	10~13 or		1~11: USA and Canada
	1~14		1~13: Europe
			10~11: Spain
			10~13: France
			1~14: Japan
			* Only valid when "wireless_wlmode"
			is "Adhoc"

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
oncrypt	nono	6/6	Encryption method:
encrypt	none,	0/0	
	wep,		none: NONE,
	wpa,		wep: WEP,
	wpa2		wpa: WPA,
	ODEN CHARED	6.16	wpa2: WPA2PSK
authmode	OPEN, SHARED	6/6	Authentication mode.
			* Only valid when "wireless_encrypt" is
			"wep"
keylength	64, 128	6/6	Key length in bits.
			* Only valid when "wireless_encrypt" is
			"wep"
keyformat	HEX, ASCII	6/6	Key1 ~ key4 presentation format.
			* Only valid when "wireless_encrypt" is
			"wep"
keyselect	1 ~ 4	6/6	Default key number.
			* Only valid when "wireless_encrypt" is
			"wep"
key1	password [26]	6/6	WEP key1 for encryption.
			* Only valid when "wireless_encrypt" is
			"wep"
key2	password [26]	6/6	WEP key2 for encryption.
			* Only valid when "wireless_encrypt" is
			"wep"
key3	password [26]	6/6	WEP key3 for encryption.
,			* Only valid when "wireless_encrypt" is
			"wep"
key4	password [26]	6/6	WEP key4 for encryption.
,			* Only valid when "wireless_encrypt" is
			"wep"
algorithm	AES, TKIP	6/6	Algorithm
			* Only valid when "wireless_encrypt" is
			"wpa" or "wpa2"
presharedkey	password [64]	6/6	WPA/WPA2PSK mode pre-shared key.
,	hanger 2. or [0 .]		* Only valid when "wireless_encrypt" is
			"wpa" or "wpa2"
			νν μα Οι - W μα Ζ

7.50 Shock Detection

Group: shock_c<0~(n-1)> for n channel products

n denotes the value of "capability_nvideoin" (capability_shockalarm_support > 0)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
alarm_enable	<boolean></boolean>	4/4	Enable shock detection's alarm.
alarm_level	1~100	4/4	The value indicate the support strength
			level of shock detection's alarm.

7.51 Stream Profiles

Group: **streamprofile_i<0~(n-1)>** for n profiles product.

n denotes the value of "capability_media_streamprofiles_num"

(capability_media_streamprofiles_support = 1)

PARAMETER	VALUE	SECURITY	DESCRIPTION
		(get/set)	
profilename	<string></string>	1/6	Friendly name of the profile.
token	<string></string>	1/7	An unique identifier of the profile.
fixed	<boolean></boolean>	1/7	The value indicates whether the profile
			can be deleted or not.
			Ex. fixed=1 indicates the profile cannot
			be deleted.
occupied	<boolean></boolean>	1/6	Indicates the action of creating profile.
			Ex. If occupied=1 indicates the current
			profile is to be created; otherwise, if
			occupied=0 indicates the current
			profile is to be deleted.
alwaysmulticast	<boolean></boolean>	1/6	Enable always multicast.
videoconfiguration_en	<boolean></boolean>	1/6	To enable the selected
able			videoconfiguration source for this
			profile.

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
videoconfiguration_so	c<0~(n-1)>s<0~(m-1)	1/6	The videoconfiguration source for the
urce	>		profile.
			Ex. videoconfiguration_source=
	* n denotes the value		c<0~(n-1)>s<0~(m-1)> indicates video
	of		stream of channel n stream m is
	"capability_nvideoin,		selected for the profile.
	and m denotes the		
	value of		
	"capability_nmediastr		
	eam"		
audioconfiguration_en	<boolean></boolean>	1/6	To enable the selected
able			audioconfiguration source for this
			profile.
			* Only available when
			capability_naudioin > 0
audioconfiguration_so	c<0~(n-1)>s0	1/6	The audioconfiguration source for the
urce			profile.
	* n denotes the value		Ex. audioconfiguration_source=
	of		c<0~(n-1)>s0 indicates audio stream of
	"capability_naudioin"		channel n and stream 1 is selected for
			the profile.
			* Only available when
			capability_naudioin > 0
metadataconfiguratio	<boolean></boolean>	1/6	To enable the selected
n_enable			metadataconfiguration source for the
			profile.
metadataconfiguratio	c<0~(n-1)>s0	1/6	The metadataconfiguration source for
n_source			the profile
	* n denotes the value		Ex. metadataconfiguration_source=
	of		c<0~(n-1)>s0 indicates metadata
	"capability_nvideoin"		stream of channel n and stream 1 is
			selected for the profile.

7.52 Multicast Settings for Metadata Streaming

Group: metadata_c<0~(n-1)>_s0_multicast (capability_media_streamprofiles_support = 1) n denotes the value of "capability_nvideoin"

NAME	VALUE	SECURITY(DESCRIPTION
		get/set)	
ipaddress	<ip address=""></ip>	4/4	Multicast metadata IP address.
port	1025 ~ 65535	4/4	Multicast metadata port.
ipversion	IPv4, IPv6	4/4	The version of internet protocol.
ttl	1~255	4/4	Multicast metadata time to live value.

8. Useful Functions

8.1 Drive the Digital Output (capability_ndo > 0)

Note: This request requires Viewer privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/dido/setdo.cgi?do1=<*value*> [&do2=<value>] [&do3=<value>][&do4=<value>]

Where state is 0 or 1; "0" means inactive or normal state, while "1" means active or triggered state, and trigger time is indicated in seconds.

PARAMETER	VALUE	DESCRIPTION
do <num></num>	state[trigger time]	Ex: do1=1
		Setting digital output 1 to trigger state.
	Where "state" is 0, 1.	Ex: do1=0[30]
	"0" means inactive or	Setting digital output 1 to normal state, waiting 30
	normal state while	seconds, setting it to trigger state.
	"1" means active or	
	triggered state.	
	Where "trigger time"	
	is reset time after	
	state change.	

Example: Drive the digital output 1 to triggered state, reset do0 after 20 seconds and redirect to an empty page.

http://myserver/cgi-bin/dido/setdo.cgi?do1=1[20]

8.2Query Status of the Digital Input (capability_ndi > 0)

Note: This request requires Viewer privileges

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/dido/getdi.cgi?[di0][&di1][&di2][&di3]

If no parameter is specified, all of the digital input statuses will be returned.

Return:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n
Content-Length: <length>\r\n

 $r\n$

[di0=<state>]\r\n [di1=<state>]\r\n [di2=<state>]\r\n [di3=<state>]\r\n

where <state> can be 0 or 1.

Example: Query the status of digital input 1.

Request:

http://myserver/cgi-bin/dido/getdi.cgi?di1

Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: 7\r\n

 $\r \$ di1=1 $\r \$

8.3 Query Status of the Digital Output (capability_ndo > 0)

Note: This request requires Viewer privileges

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/dido/getdo.cgi?[do0][&do1][&do2][&do3]

If no parameter is specified, all the digital output statuses will be returned.

Return:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n Content-Length: <length>\r\n

 $r\n$

 $[do0=<state>]\r\n$

[do1=<state>]\r\n [do2=<state>]\r\n [do3=<state>]\r\n

where <state> can be 0 or 1.

Example: Query the status of digital output 1.

Request:

http://myserver/cgi-bin/dido/getdo.cgi?do1

Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n
Content-Length: 7\r\n

\r\n

 $do1=1\r\n$

8.4 Capture Single Snapshot

Note: This request requires Normal User privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/viewer/video.jpg?[channel=<value>][&resolution=<value>] [&quality=<value>][&streamid=<value>]

If the request contains invalid parameters, a full FOV snapshot will return.

PARAMETER	VALUE	DESCRIPTION
channel	0~(capability_nvideoin -1)	The channel number of the video
		source.
		Default: 0
resolution	Available options are list in	The resolution of the image.
	"capability_videoin_c<0 $^{\sim}$ (n-1)>_resolution".	
		Default: Returns snapshot of current
	Besides, available options is referred to	resolution by [channel] and
	"capability_videoin_c<0~(n-1)>_maxresolution	[streamid].
	" and	
	"capability_videoin_c<0 $^{\sim}$ (n-1)>_minresolution"	

PARAMETER	VALUE	DESCRIPTION
quality	1~5	The quality of the image.
streamid	0~(capability_nmediastream -1)	The stream number.
		Default: Returns snapshot of
		maxmum resolution for current
		channel.

The server will return the most up-to-date snapshot of the selected channel and stream in JPEG format. The size and quality of the image will be set according to the video settings on the server.

Return:

HTTP/1.0 200 OK\r\n

Content-Type: image/jpeg\r\n
[Content-Length: <image size>\r\n]

<binary JPEG image data>

8.5Account Management

Note: This request requires Administrator privileges.

Method: POST

Syntax:

http://<servername>/cgi-bin/admin/editaccount.cgi?

method=<value>&username=<name>[&userpass=<value>][&privilege=<value>][&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
method	add	Add an account to the server. When using this method,
		the"username" field is necessary. It will use the default
		value of other fields if not specified.
	delete	Remove an account from the server. When using this
		method, the "username" field is necessary, and others are
		ignored.
	edit	Modify the account password and privilege. When using
		this method, the "username" field is necessary, and other
		fields are optional. If not specified, it will keep the original
		settings.

PARAMETER	VALUE	DESCRIPTION
username	<name></name>	The name of the user to add, delete, or edit.
userpass	<value></value>	The password of the new user to add or that of the old
		user to modify. The default value is an empty string.
privilege	view	The privilege of the user to add or to modify.
	operator	"view" : Viewer privilege.
	•	"operator": Operator privilege.
	admin	"admin": Administrator privilege.
return	<return page=""></return>	Redirect to the page <return page=""> after the parameter is</return>
		assigned. The <return page=""> should be the relative path</return>
		according to the root of camera. If you omit this
		parameter, it will redirect to an empty page.
		* If the <return page=""> is invalid path, it will ignore this</return>
		parameter.

Note:

1. Rules of password settings is defined by layout defaultpassword group.

Example:

Request:

http://myserver/cgi-bin/admin/editaccount.cgi?method=add&username=test&userpass=123&privi lege=view

Response of success:

HTTP/1.1 200 OK\r\n

Content-Type: text/html\r\n

Content-Length: 2\r\n

 $r\n$

Response of failure:

HTTP/1.1 200 OK\r\n

Content-Type: text/html\r\n

Content-Length: <Error Message Length>\r\n

 $r\n$

<Error Message>

List of error message:

ERROR: Add user fail!
ERROR: Delete user fail!

ERROR: Update user's password fail!

ERROR: Update user's privilege fail!

8.6 Upgrade Firmware

Note: This request requires Administrator privileges.

Method: POST

Syntax:

http://<servername>/cgi-bin/admin/upgrade.cgi

Post data:

fimage=<file name>[&return=<return page>]\r\n

 $r\n$

<multipart encoded form data>

Server will accept the file named <file name> to upgradethe firmware and return with <return page> if indicated.

8.7ePTZ Camera Control (capability_eptz > 0 and

Capability_fisheye = 0)

Note: This request requires camctrl privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/camctrl/eCamCtrl.cgi?channel=<value>&stream=<value>

[&move=<value>] - Move home, up, down, left, right

[&auto=<value>] – Auto pan, patrol

[&zoom=<value>] -Zoom in, out

[&zooming=<value>&zs=<value>] –Zoom without stopping, used for joystick

[&x=<value>&y=<value>&w=<value>&h=<value>&resolution=<value>] - Zoom in, out on a specific area

[&vx=<value>&vy=<value>&vs=<value>] – Shift without stopping, used for joystick

[&x=<value>&y=<value>&videosize=<value>&resolution=<value>&stretch=<value>] -Click on image

(Move the center of image to the coordination (x,y) based on resolution or videosize.)

[[&speedpan=<value>][&speedtilt=<value>][&speedzoom=<value>][&speedapp=<value>]] — Set speeds

[&return=<return page>]

Example:

http://myserver/cgi-bin/camctrl/eCamCtrl.cgi?channel=0&stream=0&move=right
http://myserver/cgi-bin/camctrl/eCamCtrl.cgi?channel=0&stream=1&vx=2&vy=2&vz=2
http://myserver/cgi-bin/camctrl/eCamCtrl.cgi?channel=0&stream=1&x=100&y=100&
videosize=640x480&resolution=640x480&stretch=0

In zoom operation, there are two ways to control it, scale zoom and area zoom.

- ${\bf 1.} \ [{\it Scale zoom}] : contains \ two \ control \ method, \ relative \ movement \ and \ continuous \ movement$
- a. relative movement -

If you trigger a relative movement, it will only zoom certain ratio and stop by itself.

http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?stream=0&zoom=tele

http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?stream=0&zoom=wide

The zoom ratio to move by relative movement is according to the setting of speedzoom [-5~5]. http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?stream=0&speedzoom=5 b. continuous movement -

If you trigger a continuous movement, you have to handle the stop time by yourself.

A continuous movement is convenient to integrate a joystick control.

http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?stream=0&zooming=tele&zs=1

http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?stream=0&zooming=wide&zs=5

zooming is used to indicate the moving direction, and zs is used to indicate the speed.

To stop a continuous movement, you have to use the command as below:

http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?stream=0&zoom=stop&zs=0

2. [Area zoom]: it means to zoom in on a specific area, here is an example for a directly moving [x, y] is the desired coordinate, and it will be the center after movement

[w, h] is the scaled area size

[resolution] is the base range of this coordinate system

The example shows [w, h] = [864, 488], which means to zoom in to ratio x2.2 based on [1920x1080].

Pay attention to that [x, y, w, h] are essential parameters in an area zoom case, and the stream index is counted from 0 as the first stream.

http://IPAddr/cgi-bin/camctrl/eCamCtrl.cgi?channel=0&stream=0&x=912&y=297&w=864&h=488&resolution=1920x1080

PARAMETER	VALUE	DESCRIPTION
channel	<0~(n-1)>	Channel of video source.
stream	<0~(m-1)>	Stream.
move	home	Move to home ROI.
	up	Move up.
	down	Move down.
	left	Move left.
	right	Move right.
auto	pan	Auto pan.
	patrol	Auto patrol.
	stop	Stop auto pan/patrol.
zoom	wide	Zoom larger view with current speed.
	tele	Zoom further with current speed.
zooming	wide or tele	Zoom without stopping for larger view or further view with
		zs speed, used for joystick control.
zs	0 ~ 6	Set the speed of zooming, "0" means stop.
х	<integer></integer>	The desired coordinate, and it will be the center after

PARAMETER	VALUE	DESCRIPTION
у	<integer></integer>	movement
w	<integer></integer>	The scaled area size
h	<integer></integer>	
resolution	<window size=""></window>	The resolution of streaming.
vx	<integer></integer>	The direction of movement, used for joystick control.
vy	<integer></integer>	
vs	0~7	Set the speed of movement, "0" means stop.
х	<integer></integer>	x-coordinate clicked by user.
		It will be the x-coordinate of center after movement.
У	<integer></integer>	y-coordinate clicked by user.
		It will be the y-coordinate of center after movement.
videosize	<window size=""></window>	The size of plug-in (ActiveX)window in web page
resolution	<window size=""></window>	The resolution of streaming.
stretch	<boolean></boolean>	O indicates that it uses resolution (streaming size) as the
		range of the coordinate system.
		1 indicates that it usesvideosize(plug-in size) as the range
		of the coordinate system.
speedpan	-5 ~ 5	Set the pan speed.
speedtilt	-5 ~ 5	Set the tilt speed.
speedzoom	-5 ~ 5	Set the zoom speed.
speedapp	1~5	Set the auto pan/patrol speed.
return	<return page=""></return>	Redirect to the page <return page=""> after the parameter is</return>
		assigned. The <return page=""> should be the relative path</return>
		according to the root of camera. If you omit this
		parameter, it will redirect to an empty page.
		* If the <return page=""> is invalid path, it will ignore this</return>
		parameter.

8.8ePTZ Recall (capability_eptz > 0 and capability_fisheye = 0)

Note: This request requires camctrl privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/camctrl/eRecall.cgi?channel=<value>&stream=<value>&recall=<value>[&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
channel	<0~(n-1)>	Channel of the video source.
stream	<0~(m-1)>	Stream.
recall	Text string less than	One of the present positions to recall.
	40 characters	
return	<return page=""></return>	Redirect to the page <return page=""> after the parameter is</return>
		assigned. The <return page=""> should be the relative path</return>
		according to the root of camera. If you omit this
		parameter, it will redirect to an empty page.
		* If the <return page=""> is invalid path, it will ignore this</return>
		parameter.

8.9ePTZ Preset Locations (capability_eptz > 0 and

capability_fisheye = 0)

Note: This request requires Operator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/operator/ePreset.cgi?channel=<value>&stream=<value> [&addpos=<value>][&delpos=<value>][&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
channel	<0~(n-1)>	Channel of the video source.
stream	<0~(m-1)>	Stream.

PARAMETER	VALUE	DESCRIPTION
addpos	<text less="" string="" td="" than<=""><td>Add one preset location to the preset list.</td></text>	Add one preset location to the preset list.
	40 characters>	
delpos	<text less="" string="" td="" than<=""><td>Delete preset location from the preset list.</td></text>	Delete preset location from the preset list.
	40 characters>	
return	<return page=""></return>	Redirect to the page <return page=""> after the parameter is</return>
		assigned. The <return page=""> should be the relative path</return>
		according to the root of camera. If you omit this
		parameter, it will redirect to an empty page.
		* If the <return page=""> is invalid path, it will ignore this</return>
		parameter.

8.10 IP Filtering for ONVIF

Syntax:cproduct dependent>

http://<servername>/cgi-bin/admin/ipfilter.cgi?type[=<value>]

http://<servername>/cgi-bin/admin/ipfilter.cgi?method=add<v4/v6>&ip=<ipaddress>[&index=<value>][&return=<return page>]

http://<servername>/cgi-bin/admin/ipfilter.cgi?method=del<v4/v6>&index=<value>[&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
type	NULL	Get IP filter type
	allow, deny	Set IP filter type
method	addv4	Add IPv4 address into access list.
	addv6	Add IPv6 address into access list.
	delv4	Delete IPv4 address from access list.
	delv6	Delete IPv6 address from access list.
ip	<ip address=""></ip>	Single address: <ip address=""></ip>
		Network address: <ip address="" mask="" network=""></ip>
		Range address: <start -="" address="" end="" ip=""></start>
index	<value></value>	The start position to add or to delete.

8.11 UART HTTP Tunnel Channel (capability_nuart > 0)

Note: This request requires Operator privileges.

Method: GET and POST

Syntax:

http://<servername>/cgi-bin/operator/uartchannel.cgi?[channel=<value>]

GET /cgi-bin/operator/uartchannel.cgi?[channel=<value>]

x-sessioncookie: string[22]

accept: application/x-vvtk-tunnelled

pragma: no-cache

cache-control: no-cache

POST /cgi-bin/operator/uartchannel.cgi

x-sessioncookie: string[22]

content-type: application/x-vvtk-tunnelled

pragma : no-cache

cache-control: no-cache content-length: 32767

expires: Sun, 9 Jam 1972 00:00:00 GMT

User must use GET and POST to establish two channels for downstream and upstream. The x-sessioncookie in GET and POST should be the same to be recognized as a pair for one session. The contents of upstream should be base64 encoded to be able to pass through a proxy server.

This channel will help to transfer the raw data of UART over the network.

Please see UART tunnel spec for detail information

PARAMETER	VALUE	DESCRIPTION
channel	0 ~ (n-1)	The channel number of UART.

8.12 Event/Control HTTP Tunnel Channel

(capability_evctrlchannel > 0)

Note: This request requires Administrator privileges.

Method: GET and POST

Syntax:

http://<servername>/cgi-bin/admin/ctrlevent.cgi

GET /cgi-bin/admin/ctrlevent.cgi

x-sessioncookie: string[22]

accept: application/x-vvtk-tunnelled

pragma: no-cache

cache-control: no-cache

.----

POST /cgi-bin/admin/ ctrlevent.cgi

x-sessioncookie: string[22]

content-type: application/x-vvtk-tunnelled

pragma: no-cache

cache-control: no-cache content-length: 32767

expires: Sun, 9 Jam 1972 00:00:00 GMT

User must use GET and POST to establish two channels for downstream and upstream. The x-sessioncookie in GET and POST should be the same to be recognized as a pair for one session. The contents of upstream should be base64 encoded to be able to pass through the proxy server.

This channel will help perform real-time event subscription and notification as well as camera control more efficiently. The event and control formats are described in another document.

See Event/control tunnel spec for detail information

8.13 Get SDP of Streams

Note: This request requires Viewer access privileges.

Method: GET/POST

Syntax:

http://<servername>/<network rtsp s<0~(n*m)-1> accessname>

n denotes the value of "capability_nvideoin", m denotes the value of "capability_nmediastream". Example:

```
For m=2, the values are shown as network_rtsp_s0_accessname = live1s1.sdp
```

network rtsp s1 accessname = live1s2.sdp

network_rtsp_s2_accessname = live2s1.sdp
network_rtsp_s3_accessname = live2s2.sdp
etc.

* Note: RTSP access name format is modified to "live<n>s<m>.sdp" after version number(httpversion) is 0311c.

Please refer to the "subgroup of network: rtsp" for setting the accessname of SDP. You can get the SDP by HTTP GET.

When using scalable multicast, Get SDP file which contains the multicast information via HTTP.

8.14 Open the Network Stream

Note: This request requires Viewer access privileges.

Syntax:

For HTTP push server (MJPEG):

http://<servername>/<network_http_s<0~m-1>_accessname>

For RTSP (MP4), the user needs to input the URL below into an RTSP compatible player.

rtsp://<servername>/<network_rtsp_s<0~m-1>_accessname>

"m" is the stream number.

For details on streaming protocol, please refer to the "control signaling" and "data format" documents.

8.15 Send Data (capability_nuart > 0)

Note: This request requires Viewer privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/viewer/senddata.cgi?

[com=<value>][&data=<value>][&flush=<value>] [&wait=<value>] [&read=<value>]

PARAMETER	VALUE	DESCRIPTION
	1 ~ <max. com="" number="" port=""></max.>	The target COM/RS485 port number.

data	<hex decimal<="" th=""><th>The <hex data="" decimal=""> is a series of digits from 0 ~ 9, A ~</hex></th></hex>	The <hex data="" decimal=""> is a series of digits from 0 ~ 9, A ~</hex>
	data>[, <hex decimal<="" td=""><td>F. Each comma separates the commands by 200</td></hex>	F. Each comma separates the commands by 200
	data>]	milliseconds.
flush	yes,no	yes: Receive data buffer of the COM port will be cleared
		before read.
		no: Do not clear the receive data buffer.
wait	1 ~ 65535	Wait time in milliseconds before read data.
read	1~128	The data length in bytes to read. The read data will be in
		the return page.

Return:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <system information length>\r\n

 $r\n$

<hex decimal data>\r\n

Where hexadecimal data is digits from 0 ~ 9, A ~ F.

8.16 Storage Managements (capability_storage_dbenabled > 0)

Method: GET and POST

Note: This request requires administrator privileges.

In the past time, all the recorded files could be searched/updated/deleted independently. However, this implementation provides no abstraction of recorded video clips, and which is not easy to use.

Thus edge storage API try to provide a higher abstraction of these video clips.

Ability to change database content from lsctrl.cgi was removed, lsctrl.cgi is changed to read-only.

PLEASE REFER TO EDGE STORAGE API

Syntax:

http://<servername>/cgi-bin/admin/lsctrl.cgi?cmd=<cmd_type>[&<parameter>=<value>...]

The commands usage and their input arguments are as follows.

PARAMETER	VALUE	DESCRIPTION
cmd_type	<string></string>	Required.
		Command to be executed, including search and
		queryStatus.

Command: search

PARAMETER	VALUE	DESCRIPTION
label	<integer key="" primary=""></integer>	Optional.
		The integer primary key column will automatically be
		assigned a unique integer.
triggerType	<text></text>	Optional.
		Indicate the event trigger type.
		Please embrace your input value with single quotes.
		Ex. triggerType='vi'
mediaType	<text></text>	Optional.
		Indicate the file media type.
		Ex. mediaType=videoclip
		* logical "OR" is not supported for this parameter.
destPath	<text></text>	Optional.
		Indicate the file location in camera.
		Please embrace your input value with single quotes.
		Ex. destPath ='/mnt/auto/CF/NCMF/abc.mp4'
resolution	<text></text>	Optional.
		Indicate the media file resolution.
		Please embrace your input value with single quotes.
		Ex. resolution='800x600'
isLocked	<boolean></boolean>	Optional.
		Indicate if the file is locked or not.
		0: file is not locked.
		1: file is locked.
		A locked file would not be removed from UI or cyclic
		storage.
triggerTime	<text></text>	Optional.
		Indicate the event trigger time. (not the file created
		time)
		Format is "YYYY-MM-DD HH:MM:SS"
		Please embrace your input value with single quotes.
		Ex. triggerTime='2008-01-01 00:00:00'
		If you want to search for a time period, please apply
		"TO" operation.
		Ex. triggerTime='2008-01-01 00:00:00'+TO+'2008-01-01
		23:59:59' is to search for records from the start of Jan 1st
		2008 to the end of Jan 1 st 2008.

PARAMETER	VALUE	DESCRIPTION
limit	<positive integer=""></positive>	Optional.
		Limit the maximum number of returned search records.
offset	<positive integer=""></positive>	Optional.
		Specifies how many rows to skip at the beginning of the
		matched records.
		Note that the offset keyword is used after limit keyword.

To increase the flexibility of search command, you may use "OR" connectors for logical "OR" search operations. Moreover, to search for a specific time period, you can use "TO" connector.

Ex. To search records triggered by motion or di or sequential and also triggered between 2008-01-01 00:00:00 and 2008-01-01 23:59:59.

http://<servername>/cgi-bin/admin/lsctrl.cgi?cmd=search&triggerType='motion'+OR+'di'+OR+'seq' &triggerTime='2008-01-01 00:00:00'+TO+'2008-01-01 23:59:59'

Command: queryStatus

PARAMETER	VALUE	DESCRIPTION
retType	xml or javascript	Optional.
		Ex. retype=javascript
		The default return message is in XML format.

Ex. Query local storage status and call for javascript format return message.

http://<servername>/cgi-bin/admin/lsctrl.cgi?cmd=queryStatus&retType=javascript

8.17 Virtual Input (capability_nvi > 0)

Note: Change virtual input (manual trigger) status.

Method: GET

Syntax:

http://<servername>/cgi-bin/admin/setvi.cgi?vi0=<value>[&vi1=<value>][&vi2=<value>] [&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
vi <num></num>	state[(duration)nstate]	Ex: vi0=1
	Where "state" is 0, 1. "0"	Setting virtual input 0 to trigger state
	means inactive or normal	

PARAMETER	VALUE	DESCRIPTION
	state while "1" means	Ex: vi0=0(200)1
	active or triggered state.	Setting virtual input 0 to normal state, waiting 200
	Where "nstate" is next	milliseconds, setting it to trigger state.
	state after duration.	Note that when the virtual input is waiting for next
		state, it cannot accept new requests.
return	<return page=""></return>	Redirect to the page <return page=""> after the</return>
		parameter is assigned. The <return page=""> should</return>
		be the relative path according to the root of
		camera. If you omit this parameter, it will redirect
		to an empty page.
		* If the <return page=""> is invalid path, it will ignore</return>
		this parameter.

Return Code	Description	
200	The request is successfully executed.	
400	The request cannot be assigned, ex. incorrect parameters.	
	Examples:	
	setvi.cgi?vi0=0(10000)1(15000)0(20000)1	
	No multiple duration.	
	setvi.cgi?vi3=0	
	VI index is out of range.	
	setvi.cgi?vi=1	
	No VI index is specified.	
503	The resource is unavailable, ex. Virtual input is waiting for next state.	
	Examples:	
	setvi.cgi?vi0=0(15000)1	
	setvi.cgi?vi0=1	
	Request 2 will not be accepted during the execution time(15 seconds).	

8.18 Open Timeshift Stream (capability_timeshift > 0,

timeshift_enable=1, timeshift_c<n>_s<m>_allow=1)

Note: This request requires Viewer access privileges.

Syntax:

For HTTP push server (MJPEG):

http://<servername>/<network_http_s<m>_accessname>?maxsft=<value>[&tsmode=<value>&reft ime=<value>&forcechk&minsft=<value>]

For RTSP (MP4 and H264), the user needs to input the URL below into an RTSP compatible player.

rtsp://<servername>/<network_rtsp_s<m>_accessname>?maxsft=<value>[&tsmode=<value>&reftime=<value>&forcechk&minsft=<value>]

For details on timeshift stream, please refer to the "TimeshiftCaching" documents.

w many seconds
r. (>0)
ne for MP4 and
DI or motion
g is changed to
on non-timeshift
fined wording
neters are always
ift.
ntrol to eliminate
ncy.)
20
&reftime=12:30
les timeshift,
2.
1edia Type".
m client can
r. (>0)
1 2 8 16 m

[&]quot;n" is the channel index.

[&]quot;m" is the timeshift stream index.

Return Code	Description
400 Bad Request	Request is rejected because some parameter values are illegal.
415 Unsupported Media Type	Returned, if forcechk appears, when minsft is not achievable or
	the timeshift feature of the target stream is not enabled.

8.19 RemoteFocus

(capability_image_c<0~(n-1)>_remotefocus=1)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax: (for control API)

http://<servername>/cgi-bin/admin/remotefocus.cgi?channel=<value>&[function=<value>][&direct ion=<value>][&position=<value>][&steps=<value>][&iris]

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.
function	zoom,	zoom - Move focus motor
	focus,	focus – Move focus motor
	auto,	auto – Perform auto focus
	scan,	scan – Perform focus scan
	stop,	stop – Stop current operation
	positioning,	positioning – Position the motors
	irisopen,	irisopen – Fully open iris. It will maintain fully open iris
	irisenable	status until sending function=irisenable cgi.
		irisenable – return back to user setting status of iris.
	direct,	Motor's moving direction.
	forward,	It works only if function=zoom or function=focus.
	backward	

PARAMETER	VALUE	DESCRIPTION
position	<motor_start>~</motor_start>	Motor's position.
	<motor_end></motor_end>	It works only if function=zoom or function= focus and
		direction=direct.
		<motor_start> : remote_focus_zoom_motor_start or</motor_start>
		remote_focus_focus_motor_start,
		<motor_end> : remote_focus_zoom_motor_end or</motor_end>
		remote_focus_focus_motor_end replied from
		"function=getstatus"
steps	1~30	Motor's moving steps.
		It works only if function=zoom or function=focus and
		direction=forward and direction=backward.
		* Motor will stop when it reaches to <motor_start> or</motor_start>
		<motor_end>.</motor_end>
		* This parameter is for additional fine-tune, the value is
		from 1 to 30.
iris	N/A	Open iris or not.
		It works only if function=auto or function=scan.

Syntax: (for query API)

http://<servername>/cgi-bin/admin/remotefocus.cgi?channel=<value>&[function=<value>]

tstatus	
itstatus	Information of motors, return value as below:
I	remote_focus_zoom_motor_max: Maximum steps of zoom
I	motor
I	remote_focus_focus_motor_max: Maximum steps of focus
I	motor
I	remote_focus_zoom_motor_start: Start point of zoom motor
I	remote_focus_zoom_motor_end: End point of zoom motor
I	remote_focus_focus_motor_start: Start point of effective focal
I	length
I	remote_focus_focus_motor_end: End point of effective focal
I	length
I	remote_focus_zoom_motor: Current position of zoom motor
I	remote_focus_focus_motor: Current position of focus motor
I	remote_focus_zoom_enable: Current function of zoom motor
I	remote_focus_focus_enable: Current function of focus motor
I	remote_focus_iris_open: The current status of iris. 0: irisenable,
	1: irisopen
(Current function of zoom/focus motor, return value as below:
(0: no service
	1: zooming
	2. focusing
,	3: auto focus
4	4: focus scan
ļ	5: positioning (both zoom motor and focus motor)
	12: reset focus

8.20 BackFocus (capability_image_c<0~(n-1)>_remotefocus=4)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax: (for control API)

http://<servername>/cgi-bin/admin/remotefocus.cgi?channel=<value>&[function=<value>][&direct ion=<value>][&position=<value>][&steps=<value>][&iris]

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.

PARAMETER VALUE		DESCRIPTION
function	focus,	focus – Move focus motor
	auto,	auto – Perform auto focus
	scan,	scan – Perform focus scan
	stop,	stop – Stop current operation
	positioning,	positioning – Position the motors
	irisopen,	resetfocus - reset focus position to default
	irisenable,	irisopen – Fully open iris. It will maintain fully open iris
	resetfocus	status until sending function=irisenable cgi.
		irisenable – return back to user setting status of iris.
direction	direct,	Motor's moving direction.
	forward,	It works only if function= focus.
	backward	
position	<motor_start> ~</motor_start>	Motor's position.
	<motor_end></motor_end>	It works only if function=focus and direction=direct.
		<motor_start> : remote_focus_zoom_motor_start or</motor_start>
		remote_focus_focus_motor_start,
		<motor_end> : remote_focus_zoom_motor_end or</motor_end>
		remote_focus_focus_motor_end replied from
		"function=getstatus"
steps	1~30	Motor's moving steps.
		It works only if function=focus and direction=forward or
		direction=backward.
		* Motor will stop when it reaches to <motor_start> or</motor_start>
		<motor_end>.</motor_end>
		* This parameter is for additional fine-tune, the value is from 1
		to 30.
iris	N/A	Open iris or not.
		It works only if function=auto or function=scan.

Syntax: (for query API)

http://<servername>/cgi-bin/admin/remotefocus.cgi?channel=<value>&[function=<value>]

function	getstatus	Information of motors, return value as below:
		remote_focus_focus_motor_max: Maximum steps of
		focus motor
		remote_focus_focus_motor_start: Start point of
		effective focal length
		remote_focus_focus_motor_end: End point of effective
		focal length
		remote_focus_focus_motor: Current position of focus
		motor
		remote_focus_focus_enable: Current function of focus
		motor
		remote_focus_iris_open: The current status of iris. 0:
		irisenable, 1: irisopen
		Current function of zoom/focus motor, return value as
		below:
		0: no service
		1: zooming
		2. focusing
		3: auto focus
		4: focus scan
		5: positioning (both zoom motor and focus motor)
		12: reset focus

8.21 Export Files

Note: This request requires Administrator privileges.

Method: GET

Syntax:

For daylight saving time configuration file:

* This CGI is not supported when the version number (httpversion) is equal or greater than 0314b, please use "system_tz" as a replacement.

http://<servername>/cgi-bin/admin/exportDst.cgi

For language file:

http://<servername>/cgi-bin/admin/export_language.cgi?currentlanguage=<value>

PARAMETER	VALUE	DESCRIPTION

currentlanguage	0~20	Available language lists.
		Please refer to:
		system_info_language_i0 ~ system_info_language_i19.

For setting backup file:

http://<servername>/cgi-bin/admin/export backup.cgi?backup

8.22 Upload Files

Note: This request requires Administrator privileges.

Method: POST

Syntax:

For daylight saving time configuration file:

* This CGI is not supported when the version number (httpversion) is equal or greater than 0314b, please use "system_tz" as a replacement.

http://<servername>/cgi-bin/admin/upload dst.cgi

Post data:

filename =<file name>\r\n

 $r\n$

<multipart encoded form data>

For language file:

http://<servername>/cgi-bin/admin/upload_lan.cgi

Post data:

filename =<file name>\r\n

 $r\n$

<multipart encoded form data>

For setting backup file:

http://<servername>/cgi-bin/admin/upload backup.cgi

Post data:

filename =<file name>\r\n

 $r\n$

<multipart encoded form data>

Server will accept the file named <file name> to upload this one to camera.

8.23 Update Lens Configuration

(capability_image_c<0~(n-1)>_lensconfiguration_support > 0)

Note: This request requires Administrator privileges.

Method: GET

Syntax:

For list a name of lens currently used:

http://<servername>/cgi-bin/admin/update_lens.cgi?get_currentlens

For list all names of lens installed in camera:

http://<servername>/cgi-bin/admin/update_lens.cgi?list_lens

For choose selected lens configuration:

http://<servername>/cgi-bin/admin/update_lens.cgi?choose_lens=<value>

You need to reboot manually after you choose another lens configuration.

For choose selected lens configuration and reboot camera:

http://<servername>/cgi-bin/admin/update_lens.cgi?choose_reboot_lens=<value>

The camera will reboot after using this cgi.

For delete selected lens configuration:

http://<servername>/cgi-bin/admin/update lens.cgi?delete lens=<value>

PARAMETER	VALUE	DESCRIPTION
value	<string></string>	Available lens name.
		Please refer to:
		lens_default_i<0~(n-1)>_name
		lens_user_i<0~(n-1)>_name
		n is a positive integer.

Method: POST

Syntax:

For upload user-defined lens configuration:

http://<servername>/cgi-bin/admin/update lens.cgi?upload lens

Post data:

upload_lens_profile_input = <file name>\r\n \r\n <multipart encoded form data>

Server will accept the file named <file name> to upload the lens profile to camera.

8.24 Media on Demand (capability_localstorage.modnum > 0)

Media on demand allows users to select and receive/watch/listen to metadata/video/audio contents on demand.

Note: This request requires Viewer access privileges.

Syntax

rtsp://<servername>/mod.sdp?[&stime=<value>][&etime=<value>][&length =<value>][&loctime =<value>][&file=<value>][&tsmode=<value>]

PARAMETER	VALUE	DEFAULT	DESCRIPTION
stime	<yyyymmdd_hhmmss.mmm></yyyymmdd_hhmmss.mmm>	N/A	Start time.
etime	<yyyymmdd_hhmmss.mmm></yyyymmdd_hhmmss.mmm>	N/A	End time.
length	<positive integer=""></positive>	N/A	The length of media of interest.
			The unit is second.
loctime	<boolean></boolean>	0	Specify if start/end time is local time
			format.
			1 for local time, 0 for UTC+0
file	<string></string>	N/A	The media file to be played.
tsmode	<positive integer=""></positive>	N/A	Timeshift mode, the unit is second.

Ex.

stime	etime	length	file	Description
V	V	Х	X Play recordings between stime and etime	
				rtsp://10.10.1.2/mod.sdp?stime=20110312_040400.000&etime=2011_0312_040
				510.000
V	X	V	X	Play recordings for length seconds which start from
				stime
				rtsp://10.10.1.2/mod.sdp?stime=20110312_040400.000&length=120

X	V	V	Х	Play recordings for length seconds which ends at
				etime
				rtsp://10.10.1.2/mod.sdp?etime=20110312_040400.000&length=120
X	X	X	V	Play file file
				rtsp://10.10.1.2/mod.sdp?filename=/mnt/link0/

8.25 3D Privacy Mask

(Capability_image_c<0~(n-1)>_privacymask_wintype =

3Drectangle)

n denotes the value of "capability_nvideoin"

Note: This request requires admin user privilege

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/setpm3d.cgi?method=<value>&maskname=<value>&[maskhei ght=<value>&maskwidth=<value>&videosize=<value>&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
method	add	Add a 3D privacy mask at current location
	delete	Delete a 3D privacy mask
	edit	Edit a 3D privacy mask
maskname	string[40]	3D privacy mask name
maskheight	integer	3D privacy mask height
maskwidth	integer	3D privacy mask width
videosize	<window size=""></window>	Optimal.
		The size of plug-in (ActiveX) window in web page is the
		size of the privacy window size. This field is not
		necessary, it will use the default value if not specified.
		320x180 for 16:9 resolution and 320x240 for 4:3
		resolution.
return	<return page=""></return>	Redirect to the page <return page=""> after the parameter</return>
		is assigned. The <return page=""> should be the relative</return>
		path according to the root of camera. If you omit this
		parameter, it will redirect to an empty page.
		* If the <return page=""> is invalid path, it will ignore this</return>
		parameter.

8.26 Camera Control

(capability_camctrl_c<0~(n-1)>_zoommodule = 1)

Note: This request requires Viewer privileges.

Method: GET/POST

Syntax: (for control API)

http://<servername>/cgi-bin/camctrl/camctrl.cgi?[channel=<value>][&camid=<value>]

[&move=<value>] – Move home, up, down, left, right

[&focus=<value>] - Focus operation

[&zoom=<value>] - Zoom in, out

[&zooming=<value>&zs=<value>] – Zoom without stopping, used for joystick

[&vx=<value>&vy=<value>&vs=<value>] - Shift without stopping, used for joystick

[&x=<value>&y=<value>&videosize=<value>&resolution=<value>&stretch=<value>] – Click on .

image

(Move the center of image to the coordination (x,y) based on resolution or videosize.)

[[&speedpan=<value>][&speedtilt=<value>][&speedzoom=<value>][&speedapp=<value>][&speed

ink=<value>]] – Set speeds

[&return=<return page>]

Example:

http://myserver/cgi-bin/camctrl/camctrl.cgi?channel=0&camid=1&move=right

http://myserver/cgi-bin/camctrl/camctrl.cgi?channel=0&camid=1&zoom=tele

http://myserver/cgi-bin/camctrl/camctrl.cgi?channel=0&camid=1&x=300&y=200&resolution=704x

480&videosize=704x480&strech=1

Example: (set the ptz preset with focus mode)

* We support this function when the version number of the PTZ control module is equal or greater than 5.0.0.20.

http://myserver/cgi-bin/camctrl/camctrl.cgi?name=xxx&focussetting=sync&cam=getsetpreset

PARAMETER	VALUE	DESCRIPTION
channel	<0~(n-1)>	Channel of video source.
camid	0, <positive integer=""></positive>	Camera ID.
move	home	Move to camera to home position.
	ир	Move camera up.

PARAMETER	VALUE	DESCRIPTION
	down	Move camera down.
	left	Move camera left.
	right	Move camera right.
speedpan	-5 ~ 5	Set the pan speed.
speedtilt	-5 ~ 5	Set the tilt speed.
speedzoom	-5 ~ 5	Set the zoom speed.
speedfocus	-5 ~ 5	Set the focus speed.
speedapp	-5 ~ 5	Set the auto pan/patrol speed.
auto	pan	Auto pan.
	patrol	Auto patrol.
	stop	Stop camera.
zoom	wide	Zoom larger view with current speed.
	tele	Zoom further with current speed.
	stop	Stop zoom.
zooming	wide or tele	Zoom without stopping for larger view or further view with
		zs speed, used for joystick control.
zs	0~8 <sd8362></sd8362>	Set the speed of zooming, "0" means stop.
vx	<integer ,="" 0="" excluding=""></integer>	The slope of movement = vy/vx, used for joystick control.
vy	<integer></integer>	
vs	0~127	Set the speed of movement, "0" means stop.
х	<integer></integer>	x-coordinate clicked by user.
		It will be the x-coordinate of center after movement.
у	<integer></integer>	y-coordinate clicked by user.
		It will be the y-coordinate of center after movement.
videosize	<window size=""></window>	The size of plug-in (ActiveX) window in web page
resolution	<window size=""></window>	The resolution of streaming.
stretch	<boolean></boolean>	0 indicates that it uses resolution (streaming size) as the
		range of the coordinate system.
		1 indicates that it uses videosize (plug-in size) as the range
		of the coordinate system.

PARAMETER	VALUE	DESCRIPTION
focus	auto	Auto focus.
	far	Focus on further distance.
	near	Focus on closer distance.
focusseting	sync	Applies the selected focus mode in
		camctrl_c<0~(n-1)>_focusmode to this preset.
	fixcurrent	Applies the current focus position to this preset.
	* We support this fu	nction when the version number of the PTZ control module is
	equal or greater tha	n 5.0.0.20.
cam	getsetpreset	Adds a named preset at current position, and return the
		preset index.
		* We support this function when the version number of
		the PTZ control module is equal or greater than 5.0.0.20.

Syntax: (for query API)

http://<servername>/cgi-bin/camctrl/camctrl.cgi?[<parameter>] [&<parameter>...]

Example:

http://myserver/cgi-bin/camctrl/camctrl.cgi?getpan

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

pan=4117\r\n

PARAMETER	VALUE	DESCRIPTION
getversion	<string></string>	Get the version of the PTZ control module.
getaction	idle,	Get the current status of the camera.
	autopan,	
	tracking,	* We support this parameter when the version number
	tour,	(getversion) is equal or greater than 5.0.0.12
	patrol,	
getpan	0, <positive integer=""></positive>	Get the current pan position.
		*Only available when bit0 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"

PARAMETER	VALUE	DESCRIPTION
getpanangle	<integer></integer>	Get the current pan angle.
		*Only available when bit0 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
gettilt	0, <positive integer=""></positive>	Get the current tilt position.
		*Only available when bit1 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
gettiltangle	<integer></integer>	Get the current tilt angle.
		*Only available when bit1 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getzoom	0, <positive integer=""></positive>	Get the current zoom position.
getratio	<decimal></decimal>	Get the current zoom ratio.
getfocus	0, <positive integer=""></positive>	Get the current focus position.
getminspeedly	0, <positive integer=""></positive>	Get the minimum speed level of the PTZ control. Normally,
		the speed level is '0,' which denotes halting a continuous
		movement.
getmaxptspeedlv	0, <positive integer=""></positive>	Get the maximum speed level of pan/tilt moving.
		*Only available when
		"capability_camctrl_c<0~(n-1)>_buildinpt" > 0
getmaxzspeedlv	0, <positive integer=""></positive>	Get the maximum speed level of zoom moving.
getmaxfspeedlv	0, <positive integer=""></positive>	Get the maximum speed level of focus moving.
getminpan	0, <positive integer=""></positive>	Get the lower limit for pan position.
		*Only available when bit0 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getmaxpan	0, <positive integer=""></positive>	Get the upper limit for pan position.
		*Only available when bit0 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getminpanangle	<integer></integer>	Get the lower limit for pan angle.
		*Only available when bit0 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getmaxpanangle	<integer></integer>	Get the upper limit for pan angle.
		*Only available when bit0 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getmintilt	0, <positive integer=""></positive>	Get the lower limit for tilt position.
		*Only available when bit1 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getmaxtilt	0, <positive integer=""></positive>	Get the upper limit for tilt position.
		*Only available when bit1 of

PARAMETER	VALUE	DESCRIPTION
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getmintiltangle	<integer></integer>	Get the lower limit for tilt angle.
		*Only available when bit1 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getmaxtiltangle	<integer></integer>	Get the upper limit for tilt angle.
		*Only available when bit1 of
		"capability_camctrl_c<0~(n-1)>_buildinpt" is "1"
getminzoom	0, <positive integer=""></positive>	Get the lower limit for zoom position.
getmaxzoom	0, <positive integer=""></positive>	Get the upper limit for zoom position.
getmaxdzoom	0, <positive integer=""></positive>	Get the upper limit for digital zoom position.
getmaxratio	<decimal></decimal>	Get the maximum ratio of optical zoom.
		* We support this parameter when the version number
		(getversion) is equal or greater than 5.0.0.14
getmaxdratio	<decimal></decimal>	Get the maximum ratio of digital zoom.
		* We support this parameter when the version number
		(getversion) is equal or greater than 5.0.0.14
getminfocus	0, <positive integer=""></positive>	Get the lower limit for focus position.
getmaxfocus	0, <positive integer=""></positive>	Get the upper limit for focus position.

8.27 Recall (capability_camctrl_c<0~(n-1)>_zoommodule = 1)

Note: This request requires Viewer privileges.

Method: GET

Syntax:

http://<servername>/cgi-bin/viewer/recall.cgi? recall=<value>[&channel=<value>][&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
recall	string[30]	One of the present positions to recall.
channel	0~" capability_nvideoin"-1	Channel of the video source.

8.28 Preset Locations

(capability_camctrl_c<0~(n-1)>_zoommodule = 1)

Note: This request requires Operator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/operator/preset.cgi?[channel=<value>]
[&addpos=<value>][&delpos=<value>][&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
addpos	string[30]	Add one preset location to the preset list.
channel	0~"capability_nvideoin"-1	Channel of the video source.
delpos	string[30]	Delete preset location from preset list.
return	<return page=""></return>	Redirect to the page <return page=""> after the parameter</return>
		is assigned. The <return page=""> should be the relative</return>
		path according to the root of camera. If you omit this
		parameter, it will redirect to an empty page.
		* If the <return page=""> is invalid path, it will ignore this</return>
		parameter.

8.29 SmartSD (capability_localstorage_smartsd > 0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/smartsd.cgi?function=<value>

PARAMETER	VALUE	DESCRIPTION
function	getstatus	Function type
		getstauts: Information of smartSD internal status return
		value as below:
		smartsd_lifetime_num:
		Accumulated amount of data that has been written
		smartsd_lifetime_den:
		Card-guaranteed amount of data that can be written
		smartsd_lifetime_rate:
		The ratio of smartsd_lifetime_num to
		smartsd_lifetime_den.
		It means the accumulated percentage amount of flash
		block has been written. The range is from 0 to 100 (unit: %).
		The SD card is recommended to be replaced if the
		percentage reaches above 90%.
		smartsd_spare_block_rate:
		Usage rate of spare blocks.
		It means the usage percentage of total spare block. The
		range is from 0 to 100 (unit: %). The SD card is
		recommended to be replaced if the percentage reaches
		above 90%.
		smartsd_data_size_per_unit:
		Size (in sectors) of data to be written when Life
		Information1 is updated.
		smartsd_num_of_sudden_power_failure:
		Indicates how many times power disconnection occurred during write/erase
		operations
		smartsd_operation_mode:
		Enables/disables power-off detection and write error notification
		smartsd_attached:
		Indicate the smartSD is attached or not.

8.30 Connect to AP (capability_network_wireless > 0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/connect_ap.cgi

PARAMETER	VALUE	DESCRIPTION
N/A	N/A	Apply the wireless settings and connect to AP.

8.31 Get Wireless Information (capability_network_wireless >

0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/getwirelessinfo.cgi

PARAMETER	VALUE	DESCRIPTION
N/A	N/A	Get wireless information. Camera will return following
		information.
		1. Wireless channel
		2. Link quality
		3. Signal level
		4. Noise level
		5. SNR
		6. TX Rate
		7. RX Rate

8.32 Get Wireless Signal Strength (capability_network_wireless

> 0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/getwlsignalstrength.cgi

PARAMETER	VALUE	DESCRIPTION
N/A	N/A	Get wireless signal strength.

8.33 WPS Transaction (capability_network_wireless > 0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/start_wps.cgi

PARAMETER	VALUE	DESCRIPTION
N/A	N/A	Start WPS transaction.

8.34 Peripheral Control (capability_peripheral_c<0~(n-1)>_

devicecontrol > 0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax: (for control API)

http://<servername>/cgi-bin/admin/peripheral.cgi?channel=<value>&operation=set

[&washer_mode=<value>] – Set washer mode

[&washer status=<value>] – Set washer status

[&washer_dwelltime=<value>] - Set washer clean time

[&heater_status=<value>] – Set heater status

Example:

http://myserver/cgi-bin/admin/peripheral.cgi?channel=0&operation=set&washer_mode=wiper&washer_status=on

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

"washer_mode : OK\r\n"
"washer_status : FAIL\r\n"

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.
washer_mode	wiper	Apply the wiper to the mode of washer
		control system.
	washer	Apply the washer to the mode of washer
		control system.
washer_status	on	Enable the functionality of washer control
		system.
	off	Disable the functionality of washer control
		system.
washer_dwelltime	15~999	Apply washer washer control system
		operation time (including the time when
		spraying and wiper actions take place).
heater_status	auto	automatic control the heater component to
		keep the device in a workable environment.
	trigger	heater component is work in force heater
		once.

Syntax: (for query API)

http://<servername>/cgi-bin/admin/peripheral.cgi?channel=<value>&operation=get

[&supportdevice] –Get support peripheral device

[&washer_supportmode] – Get washer support modes

[&washer mode] – Get washer mode

[&washer status] – Get washer status

[&washer_dwelltime] – Get washer clean time

[&heater_supportstatus] – Get heater support control status

[&heater_status] – Get heater status

Example:

http://myserver/cgi-bin/admin/peripheral.cgi?channel=0&operation=get&supportdevice&washerstatus

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

\r\n

supportdevice=washer,heater\r\n

washer_status=off\r\n

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.
supportdevice	N/A	Get support peripheral device.
washer_supportmode	N/A	Get the support mode of washer control system.
washer_mode	N/A	Get the current mode of washer control system.
		It return the value of "washer_mode"
washer_status	N/A	Get the current status of washer control module.
		The status is 'off' as default, which means the
		washer is stopped; and the status 'on' means the
		washer is running.
washer_dwelltime	N/A	Get the current washer clean period of washer
		control system.
heater_supportstatus	N/A	Get the support status of heater control system.
heater_status	N/A	Get the current heater status.
		Normally it will be 'auto', it means the heater
		device is control by internal algorithm to keep in
		a suitable environment; Otherwise is 'trigger', it
		means the heater device is force enable to heat
		to an internal condition. 'trigger' status will be
		transfer to 'auto' after reach the internal
		condition.

8.35 Optimized IR control

(capability_daynight_c<0~(n-1)>_optimizedir > 0)

Note: This request requires Administrator privileges.

Method: GET/POST

Syntax:

http://<servername>/cgi-bin/admin/optimizedir.cgi?function=<value>[&channel=<value>]

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.
function	getstatus,	"onetimeauto": Camera will automatically adjust the IR
	onetimeauto	zone one time only.
		"getstatus": Information of optimized IR control status and
		return value as below:
		optimizedir_c<0~(n-1)>_irmode:
		Indicate the IR current mode, available value is "auto" and
		"manual" mode.
		optimizedir_c<0~(n-1)>_irnum:
		The number of IR that camera supports.
		optimizedir_c<0~(n-1)>_irstrength:
		Only available when irmode is set as manual. It's a set of
		integers, which indicate the strength of each IR LED (e.g.
		23,45,100,100).
		optimizedir_c<0~(n-1)>_irstatus:
		Current IR status, normal / adjusting:
		"normal": the IR LED strength has been fixed.
		"adjusting": the IR LED strength is adjusting.
		optimizedir_c<0~(n-1)>_supportmode:
		"auto": automatically adjust the IR control.
		"manual": manual adjustment.

Example:

http://myserver/cgi-bin/admin/optimizedir.cgi?function=getstatus

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

"optimizedir_c0_irmode='auto'"

"optimizedir c0 irnum='5'"

"optimizedir_c0_irstrength='1,97,100,100,100'"

"optimizedir c0 irstatus='normal'"

Syntax: (for control API)

http://<servername>/cgi-bin/admin/optimizedir.cgi?channel=<value>&operation=<value>&irmode=manual[&strength=<value>] – Set IR strength

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.
operation	set,	"set": set the strength of each IR LED separately
	settoall	"settoall": use fixed strength for all IR LED
irmode	auto,	Irmode needs to be set as manual for adjusting IR
	manual	LED strength.
strength	1~100	If the operation is set as "set", the number of
		strength values need to be the same as it of
		irnum. However, it needs only one value for
		strength when the operation is set as "settoall".

Example:

http://myserver/cgi-bin/admin/optimizedir.cgi?channel=0&operation=set&irmode=manual&strength=50,70,50,50,50

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

"optimizedir_c0_irstrength='50,70,50,50,50'"

"optimizedir_c0_irmode='manual'"

Example:

http://myserver/cgi-bin/admin/optimizedir.cgi?channel=0&operation=settoall&irmode=manual&strength=100

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

"optimizedir_c0_irstrength='100,100,100,100,100'"

"optimizedir c0 irmode='manual'"

Example:

http://myserver/cgi-bin/admin/optimizedir.cgi?channel=0&operation=set&irmode=auto&strength=50,70,50,50,50

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

ERROR: Parameter "irmode" must be set as "manual"!

Example:

http://myserver/cgi-bin/admin/optimizedir.cgi?channel=0&operation=set&strength=50,70,50,50,50

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

ERROR: Must have the "irmode=manual" argument!

Syntax: (for query API)

http://<servername>/cgi-bin/admin/optimizedir.cgi?channel=<value>&operation=get

[&support irmode] – list all adjustment mode that IR supports

[&irmode] – Get current IR mode

[&irnum] – Get the number of IR zone

PARAMETER	VALUE	DESCRIPTION
channel	0~"capability_nvideoin"-1	Channel of the video source.
support_irmode	N/A	List all adjustment mode that IR supports
irmode	N/A	Get the current IR control mode.
irnum	N/A	Get the number of IR that camera supports.

Example:

http://myserver/cgi-bin/admin/optimizedir.cgi?channel=0&operation=get&irmode

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

"optimizedir_c0_irmode='auto'"

8.36 Lens Thermal Control

(capabiltiy_image_c<0~(n-1)>_sensortype=thermalsensor)

Note: This request requires Administrator privileges.

Method: GET/POST
Syntax: (for control API)

http://<servername>/cgi-bin/admin/thermalctrl.cgi?operation=set

&action=<value>

Example:

http://myserver/cgi-bin/admin/thermalctrl.cgi?operation=set&action=shuttercompensate

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

\r\n	1
ОК	

Example:

http://myserver/cgi-bin/admin/thermalctrl.cgi?operation=set&action=shuttercompensate

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

ERROR: time out

Example:

http://myserver/cgi-bin/admin/thermalctrl.cgi?operation=set&action=shuttercompensate

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

ERROR: fail

PARAMETER	VALUE	DESCRIPTION
action	shuttercompensate	Camera will do shutter compensate.

Syntax: (for query API)

http://<servername>/cgi-bin/admin/thermalctrl.cgi?operation=get&version=<value>

PARAMETER	VALUE	DESCRIPTION
version	N/A	Indicate lensctrl thermal version

Example:

http://myserver/cgi-bin/admin/thermalctrl.cgi?operation=get&version

Response:

HTTP/1.0 200 OK\r\n

Cache-control: no-cache\r\n

Pragma: no-cache\r\n

 $r\n$

version=1120B15

8.37 Audio Clip Control (capability_audio_audioclip=1)

Note: This request requires Administrator privileges.

Method: GET/POST
Syntax: (for control API)

http://<servername>/cgi-bin/admin/audioclip.cgi?operation=<value>[&name=<value>][&index=<value>]

PARAMETER	VALUE	DESCRIPTION
operation	startrecording,	"startrecording" = Record a new audio clip.
	stoprecording,	"stoprecording" = Stop an ongoing recording.
	play,	"play" = Play an audio clip.
	stopplayback,	"stopplayback" = Stop to playback of an audio
	remove,	clip.
	download	"remove" = Delete a clip.
		"download" = Download a clip to the client.
		* Recording time is limited to 60 seconds.
name	<string></string>	Name of the audio clip.
		The audio clip the action applies to. We
		support two interfaces (name or index) to
		specify the media clip to be played.
index	0, 1	Number of the audio clip.
		The audio clip the action applies to. We
		support two interfaces (name or index) to
		specify the media clip to be played.

Syntax: (for control API)

Add a new audio clip by uploading a file:

- * File size is limited to 10MB.
- * Support .wav format only

http:// <servername>/cgi-bin/admin/upload audioclip.cgi[&clipname=<value>][&clipindex=<value>]</value></value></servername>			
PARAMETER	VALUE	DESCRIPTION	

clipname	<string></string>	Name of the audio clip.
clipindex	0, 1	Number of the audio clip.

8.38 Format SD card

Note: This request requires Administrator privileges.

Method: GET/POST Syntax: (for control API)

http://<servername>/cgi-bin/admin/format_sdcard.cgi?operation=set[&<parameter>=<value>]

If the user requests a size larger than all stream settings on the server, this request will fail. If the user requests include an invalid parameter value, we will use the default value.

PARAMETER	VALUE	DESCRIPTION
operation	Set	Set formatting parameters and start
		formatting
fstype	fat32, ext4	fat32: High compatibility for PC, but
		low stability for Data
		ext4 : Low compatibility for PC, but
		high stability for Data.
fullformat	0, 1	1: Completely clean data (fat32
		support only)
blockingmo	blocking	blocking : Send an HTTP response at
de		the end of the format.
		nonblocking: Send an HTTP response
		at the start of the format
index	0~N	which one SD card

Example:

Request of format SD card:

http://myserver/cgi-bin/admin/format_sdcard.cgi?operation=set&fstype=ext4

Response of success:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: 2\r\n

\r\n ok

Response of formatting fail:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Error Message Length>\r\n

 $r\n$

<Error Message>

Syntax: (for query API)

http://<servername>/cgi-bin/admin/ format sdcard.cgi?operation=get

PARAMETER	VALUE	DESCRIPTION
Get		Get formatting progress(0~100) or
		result(error message)
		*It is unnecessary when using the
		blocking mode.

Example:

Request of get formatting progress(0~100):

http://myserver/cgi-bin/admin/format sdcard.cgi?operation=get

Response of success:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Success Message Length>\r\n

 $r\n$

<Success Message>

List of success message:

0~100 and 100 represents formatting completed

List of error message:

ERROR: You cannot format an SD card repeatedly

ERROR: Format SD failed, but removed all contents success ERROR: Format SD failed, and failed to remove all contents

ERROR: Please insert SD card ERROR: Please use ext file system

ERROR: File system type is not supported

ERROR: The device does not exist or is busy

ERROR: Formatted successfully, but cannot create database

8.39 Methods for Accessing Streaming

8.39.1 Get Stream URI (capability_media_streamprofiles_support = 1)

Note: This request requires Viewer access privileges.

Syntax:

For RTSP, the user needs to input the URL below into a RTSP compatible player.

 $rtsp://<server name > :< port > / media 2 / stream. sdp?profile = < stream profile _ i < 0^(n-1) > _ token > [& < parameter > = < value >]$

- "n" is the maximum stream profile number (capability_media_streamprofiles_num)
- "streamprofile_i<x>_token" is the unique identifier for each profile, x is within 0~(capability_media_streamprofiles_num)-1.
- port is the rtsp port.

Please refer to the streamprofile group for requesting the stream profile token value for each profile.

PARAMETER	VALUE	DESCRIPTION
pimssm	1	1: Enable the feature of Protocol
		Independent Multicast - Source
		Specific Multicast.
		* This field is only required when
		using PIM-SSM feature.
		* Only valid when
		network_rtsp_pimssm_enable=1.

Example:

Request the streaming of streamprofile_i0_token=profile200, rtsp://192.168.1.1:554/media2/stream.sdp?profile=profile200

Note:

If the requested certain profile streamprofile_i<x>_occupied=0, which indicates stream profile <x> has not been created, the above method for requesting RTSP streaming will fail.

8.39.2 Get SDP for always multicast

(capability_media_streamprofiles_support = 1)

Note: This request requires Viewer access privileges.

Method: GET/POST

Syntax:

- "n" is the maximum stream profile number (capability media streamprofiles num)
- "streamprofile_i<x>_profilename" is a friendly name for certain profile, x is within 0~(capability_media_streamprofiles_num)-1.
- port is the http port.

Please refer to the streamprofile group for requesting the stream profile name value for each profile.

You can get the SDP by HTTP GET.

When using scalable multicast, Get SDP file which contains the multicast information via HTTP.

PARAMETER	VALUE	DESCRIPTION
pimssm	1	1: Enable the feature of Protocol
		Independent Multicast - Source
		Specific Multicast.
		* This field is only required when
		using PIM-SSM feature.
		* Only valid when
		network_rtsp_pimssm_enable=1.

Note:

- 1. This method is only valid when always multicast is enabled, i.e. streamprofile i<x> alwaysmulticast=1.
- 2. If the requested certain streamprofile_i<x>_profilename is empty, which indicates stream profile <x> doesn't have a valid SDP file, the above method of requesting SDP file will fail.
- 3. If there existed two or more streamprofile_i<x>_profilename which have the same value, the requested SDP file will be overwrite by the last request.

8.40 Accessing SFTP server and client

8.40.1 SFTP server setting for event action

* Only available when bit 1 of "capability protocol ftp client" is 1.

Syntax: (for control API)

http://<servername>/cgi-bin/admin/sftpclient.cgi?operation=<value>[¶meter=<value>]

PARAMETER	VALUE	DESCRIPTION
operation	automode, manualmode	"automode": Key pair will be generated, and
		automatically copy public key to server.
		"manualmode": Key should be downloaded or
		uploaded by user.
		* This field is required.
key	download, upload	"download": Download public key.
		"upload": Upload private key. Only support HTTP
		POST and "content-type: multipart/form-data".
		HTTP headers with its name="parameter" or
		name=" uploadKeyFile" will be describing the
		request body, see examples below.
		* Required when operation=manualmode
address	<sftp address="" or<="" server="" td=""><td>sftp server address or hostname</td></sftp>	sftp server address or hostname
	hostname>	
		* This field is required.
port	<sftp port=""></sftp>	sftp port
index	0~4	Event setting server index
		* This field is required.
username	string[64]	Sftp server username
		* This field is required.
passwd	string[64]	Sftp server password
		* Required when operation=automode.
fingerprint enable	<boolean></boolean>	Verify fingerprint
mgerprint_enable	\DOOIE all/	verny migerprint
		* Default is 1.
fingerprint_content	<128-bit hash value>	Fingerprint content
		* Required when fingerprint_enable=1.
passphrase_enable	<boolean></boolean>	Enable passphrase

		* Only valid when operation=manualmode and key=upload.
passphrase_content	<128-bit hash value >	Passphrase
		* Only valid when operation=manualmode and key=upload.
location	string[128]	sftp server file location
name	string[40]	Username for server_i <index>_name</index>
		* The default value is sftp <index>.</index>
keytype	ed25519, rsa, ecdsa	"ed25519": faster to generate with higher
		security level, some old server might not support.
		"rsa": slower to generate with slightly lower
		security level than ed25519.
		"ecdsa": low security level.
		A keytype will be automatically selected if the
		parameter is not provided. The selected order
		will be ed25519/rsa/ecdsa until successful
		pairing, an error message will return if all keytype
		failed.
		* Required when operation=download.

Example of download key:

Request:

http://<servername>/cgi-bin/admin/sftpclient.cgi?operation=manualmode&key=download&index= 1&address=<ip>&username=xxx&fingerprint_enable=1&fingerprint_content=<MD5 value>&keytype=ecdsa

Response of success:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Success Message Length>\r\n

\r\n ok

Request:

http://<servername>/cgi-bin/admin/sftpclient.cgi?operation=manualmode&key=download&index= 1&address=<ip>&username=xxx&fingerprint_enable=1&fingerprint_content=<MD5

value>&keytype=test

Response of failure:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Error Message Length>\r\n

 $r\n$

ERROR: Invalid keytype

Example of upload private key:

POST http://172.16.219.217/cgi-bin/admin/sftpclient.cgi HTTP/1.1

Accept: text/html, application/xhtml+xml, */*

Accept-Language: zh-TW

User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; Trident/7.0; rv:11.0) like Gecko Content-Type: multipart/form-data; boundary=-----7e1309282ed0f1a

Accept-Encoding: gzip, deflate

Host: 172.16.219.217 Content-Length: 6123 Connection: Keep-Alive

Pragma: no-cache

Cookie: webptzmode=continuous; activatedmode=digital; g_mode=1; viewsizemode=Auto;

4x3=false; lan=8

Authorization: Basic cm9vdDpGREQwMDAwMA==

-----7e1309282ed0f1a

Content-Disposition: form-data; name="parameter"

operation=manualmode&key=upload&index=1

-----7e1309282ed0f1a

Content-Disposition: form-data; name="uploadKeyFile"; filename="id_rsa"

Content-Type: text/plain

----BEGIN RSA PRIVATE KEY-----

Proc-Type: 4, ENCRYPTED

DEK-Info: AES-128-CBC,E6B9F3F257EF2DA03BA8A4832BC6386F

 TovnyQQANfyNLykEtP7U7Htxbdqg4dqYdFahJEBNs0QHxhmYHTESccKM4NOB0qMY 5+9gwlMZqNIymxGlGwylTMcV7gV6JaY/bX0K4J0B6AhNHjClOFErrQivp026TXj9 m+bnnrAt7v5uBMH4oclPC8oDHqd1jWwHIBcbqjRPWL37VW5B+YPZQ7FVUP496OKp riheNLTF6yOtYFw9syyoOnRF+gxpFpQrSO7skENGyv4CO7kH/S7Kpc7qmMgTk/rL s12230NogZsqghhTJlpg2vX5Ha3wCDIZZVKPUGItQl0MB6t74nsV1o8YVtRovI5F YX2d8sPIIkcTDWBO498+v98DQ7DH51/i39JoJouRoiz+n3ffsSGjY2AKEcTde2xI v2f81KqAxkraXllScl1SNEGXQpngXy3IK2GrVw9BzJILMSBuj30Ar2zfTbc0C5VC YqWK1FcMA5Jb6AvYwmpgijlb52T9P7g07RwFGJpumvaqTchBeSp8pXa3C++DoBdY 9zYohmuSSs52QLoIkTPzDjJJHvncddPi6VuUkSyaK5x75p0+aoljPjlAQHXbXsmt 8HAdPs9Fwab9GbC2aumH4XT1xoWFnYJ9lBHc3iZRiI/nSIPev2YneyyOhJg4tHYD swUUEydNC8Q5grbLfHESDrkHlx0sQiM7A/DyY1akkoxKEFW9LxgsJpcf7LM2TrlX IjSd+RMqL3yCFzM0aqcQNjd77nDP6+u9RYYyGT8dH5ud7pJVofxI+pvpQN3k5Tlb Pm9IM6OJPDy/Netcu6YEl3ULa6XHkYldgezJDnUfCBHe3OKjhue2FTBRmM2/j9Zl DkUrO7lQz7X88T/w5+rl2OnDlm3szOhzMCYPtHxf8ygMKXI/DKp3OR2/cu6ayGhb DezpoSyTjL1fTFINQAymDtP5tbomfESjFDW1fmfD9h1FivqYEy7017djPWrq8mjH N6nAhlaLVVuTVJ+xxaJAzYiQwMdwWY8SGUq062ksDvfixYCQfhXUd629oEX82fJU 80xF8CM0WEHFClotJVbFjDyT5lP4qln5EMeMlPE8jrmUKEEV+AJw9AbaqvCYUNaH EVZ7nlYjrnQqMCktYlO/Um8vSiVsOaMFLUdiYJwj2pzyceTzyW19/KEo//8ufOFD LaSp5EGH6lBCTBfQ9PGeOkB2ZVf0jLFB9Sage8Ln5frWYOAROxzumUJWSvOoBael 15OdV5hApqQiGrn1vbc/kC8p478ZCzx2iDyckPqyVpHSke70T5bV6vcDZcCTrwkA PHdD4Q0cqd7sX0R2OAScwJk2AkaQ+PsLwS05hw1nQBsQrC4m9e8Kmg32RgCGDAES xpV9dkSkvoaLZmN1qfBwnyOxsjmx9OAOBKWzMIW5PoPCR9z8Z1gsiACBnrT+K5ec NZdgsxvxMfdI7vfj6mkO89MvwLX8YEtnFrihIZmDnnVMuHfq6g5kbwlHbHVaoImo ----END RSA PRIVATE KEY----

-----7e1309282ed0f1a--

Syntax: (for query API)

http://<servername>/cgi-bin/admin/sftpclient.cgi?operation=<value>[¶meter=<value>]

PARAMETER	VALUE	DESCRIPTION
operation	getserverhostkey	"_getserverhostkey ": Auto scan
		SFTP server host key.
		* This field is required.
address	<sftp address="" hostname="" or="" server=""></sftp>	sftp server address or hostname

	* This field is required.

Example of scanning SFTP server host key:

Request:

http://<servername>/cgi-bin/admin/sftpclient.cgi?operation=getserverhostkey&address=<ip>

Response of success:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Success Message Length>\r\n

 $r\n$

<MD5 value>

8.40.2 SFTP Server Setting

* Only available when bit 1 of "capability_protocol_ftp_server" is 1.

Syntax: (for control API)

http://<servername>/cgi-bin/admin/sftpserver.cgi?operation=<value>

PARAMETER	VALUE	DESCRIPTION
operation	updatehostkey	"updatehostkey": Re-generate host key for SFTP server.
		* It might take several seconds to
		generate key, you can use
		"gethostkey" after key is generated.
		* This field is required.

Example of re-generate host key:

Request:

http://<servername>/cgi-bin/admin/sftpserver.cgi?operation=updatehostkey

Response of success:

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Success Message Length>\r\n

\r\n ok Syntax: (for query API)

http://<servername>/cgi-bin/admin/sftpserver.cgi?operation=<value>

PARAMETER	VALUE	DESCRIPTION
operation	gethostkey	"gethostkey": Get host key for
		SFTP server.
		* This field is required.
		* If "updatehostkey" is not yet
		finished, you will receive error
		message.

Example of get host key:

Request:

http://<servername>/cgi-bin/admin/sftpserver.cgi?operation=gethostkey

Response of success

HTTP/1.1 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <Success Message Length>\r\n

 $r\n$

MD5:a5:8a:7d:e2:2a:f8:c9:a0:ee:93:93:b8:0a:7a:18:97 (RSA) MD5:7a:f4:07:48:e3:70:d5:89:15:36:6f:d5:25:f2:7e:0d (ED25519)

<End of document>

Technology License Notice

AMR-NB Standard

THIS PRODUCT IS LICENSED UNDER THE AMR-NB STANDARD PATENT LICENSE AGREEMENT. WITH RESPECT TO THE USE OF THIS PRODUCT. THE FOLLOWING LICENSORS' PATENTS MAY APPLY:

TELEFONAKIEBOLAGET ERICSSON AB: US PAT. 6192335; 6275798; 6029125; 6424938; 6058359. NOKIA CORPORATION: US PAT. 5946651; 6199035. VOICEAGE CORPORATION: AT PAT. 0516621; BE PAT. 0516621; CA PAT. 2010830; CH PAT. 0516621; DE PAT. 0516621; DK PAT. 0516621; ES PAT. 0516621; FR PAT. 0516621; GB PAT. 0516621; IT PAT. 0516621; LI PAT. 0516621; LU PAT. 0516621; NL PAT. 0516621; SE PAT 0516621; US PAT 5444816; AT PAT. 819303/AT E 198805T1; AU PAT. 697256; BE PAT. 819303; BR PAT. 9604838-7; CA PAT. 2216315; CH PAT. 819303; CN PAT. ZL96193827.7; DE PAT. 819303/DE69611607T2; DK PAT. 819303; ES PAT. 819303; EP PAT. 819303; FR PAT. 819303; GB PAT. 819303; IT PAT. 819303; JP PAT. APP. 8-529817; NL PAT. 819303; SE PAT. 819303; US PAT. 5664053. THE LIST MAY BE UPDATED FROM TIME TO TIME BY LICENSORS AND A CURRENT VERSION OF WHICH IS AVAILABLE ON LICENSOR'S WEBSITE AT HTTP://WWW.VOICEAGE.COM.



Notices from HEVC Advance:

THIS PRODUCT IS SOLD WITH A LIMITED LICENSE AND IS AUTHORIZED TO BE USED ONLY IN CONNECTION WITH HEVC CONTENT THAT MEETS EACH OF THE THREE FOLLOWING QUALIFICATIONS: (1) HEVC CONTENT ONLY FOR PERSONAL USE; (2) HEVC CONTENT THAT IS NOT OFFERED FOR SALE; AND (3) HEVC CONTENT THAT IS CREATED BY THE OWNER OF THE PRODUCT. THIS PRODUCT MAY NOT BE USED IN CONNECTION WITH HEVC ENCODED CONTENT CREATED BY A THIRD PARTY, WHICH THE USER HAS ORDERED OR PURCHASED FROM A THIRD PARTY, UNLESS THE USER IS SEPARATELY GRANTED RIGHTS TO USE THE PRODUCT WITH SUCH CONTENT BY A LICENSED SELLER OF THE CONTENT. YOUR USE OF THIS PRODUCT IN CONNECTION WITH HEVC ENCODED CONTENT IS DEEMED ACCEPTANCE OF THE LIMITED AUTHORITY TO USE AS NOTED ABOVE.

H.264

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE HTTP://WWW.MPEGLA.COM

Electromagnetic Compatibility (EMC)

FCC Statement

This device compiles with FCC Rules Part 15. Operation is subject to the following two conditions.

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a partial installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI 規制について

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取扱いをして下さい。 VCCI-B

Liability

VIVOTEK Inc. cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. VIVOTEK Inc. makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for any particular purpose.