

VCCI Test Report

Product Name : Network Camera
Model No. : MD9560-DH, MD9560-H

Applicant : VIVOTEK INC.
Address : 6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City,
Taiwan, R.O.C.

Date of Receipt : 2019/05/29
Issued Date : 2019/07/15
Report No. : 1950436R-ITJPP01V00
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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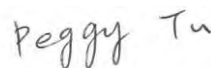
Test Report

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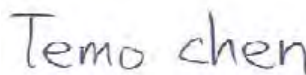
Product Name : Network Camera
Applicant : VIVOTEK INC.
Address : 6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City,
Taiwan, R.O.C.
Manufacturer : VIVOTEK INC.
Model No. : MD9560-DH, MD9560-H
EUT Rated Voltage : DC 12V, PoE
EUT Test Voltage : AC 100V / 50Hz to DC 12V, PoE
Trade Name : VIVOTEK
Applicable Standard : VCCI CISPR 32: 2016-11, Class B
Test Result : Complied
Performed Location : DEKRA Testing and Certification Co., Ltd.
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Taiwan R.O.C.	:	BSMI, NCC, TAF
Norway	:	DNVGL
USA	:	FCC
Japan	:	VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd.Web Site :

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd.laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx

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TABLE OF CONTENTS

Description	Page
1. General Information	5
1.1. EUT Description	5
1.2. Mode of Operation	6
1.3. Tested System Details	7
1.4. Configuration of Tested System	8
1.5. EUT Exercise Software	10
2. Technical Test	11
2.1. Summary of Test Result	11
2.2. List of Test Equipment	12
2.3. Measurement Uncertainty	13
2.4. Test Environment	14
3. Conducted Emission	15
3.1. Test Specification	15
3.2. Test Setup	15
3.3. Limit	15
3.4. Test Procedure	16
3.5. Deviation from Test Standard	16
3.6. Test Result	17
3.7. Test Photograph	23
4. Conducted Emissions (Telecommunication Ports)	24
4.1. Test Specification	24
4.2. Test Setup	24
4.3. Limit	25
4.4. Test Procedure	26
4.5. Deviation from Test Standard	26
4.6. Test Result	27
4.7. Test Photograph	39
5. Radiated Emission	41
5.1. Test Specification	41
5.2. Test Setup	41
5.3. Limit	42
5.4. Test Procedure	43
5.5. Deviation from Test Standard	43
5.6. Test Result	44
5.7. Test Photograph	52
6. Attachment	55
EUT Photograph	55

1. General Information

1.1. EUT Description

Product Name	Network Camera
Trade Name	VIVOTEK
Model No.	MD9560-DH, MD9560-H

Note: The different of the each model is shown as below:

Model Number	Voltage mode
MD9560-DH	DC12V
MD9560-H	POE

1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
Mode 1: MD9560-DH_DC12V Mode 2: MD9560-H_POE	
Final Test Mode	
Emission	Mode 1: MD9560-DH_DC12V Mode 2: MD9560-H_POE
Note: According to pre-test data, we choose the worst case mode 1, 2 as the final and full testing.	

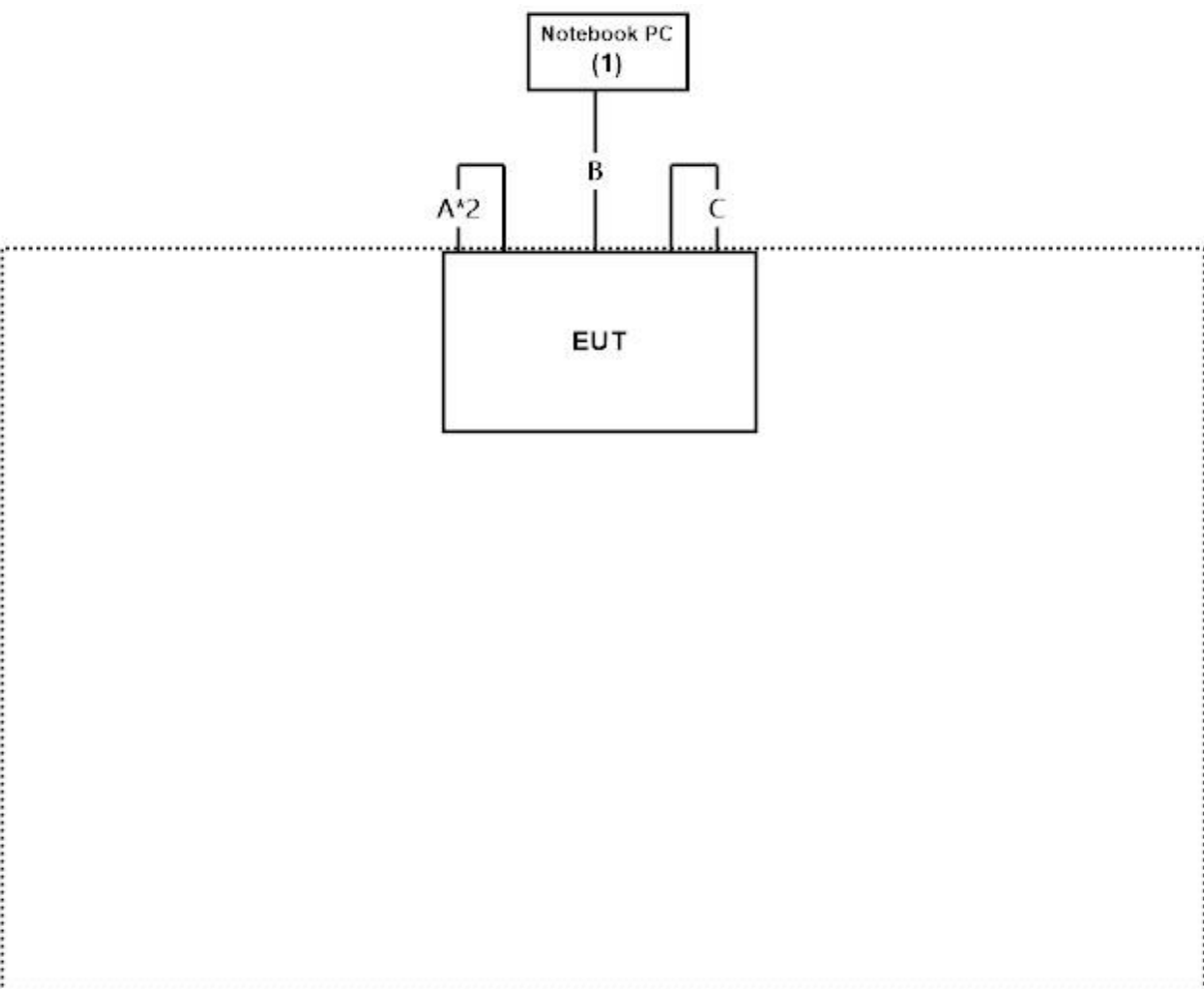
1.3. Tested System Details

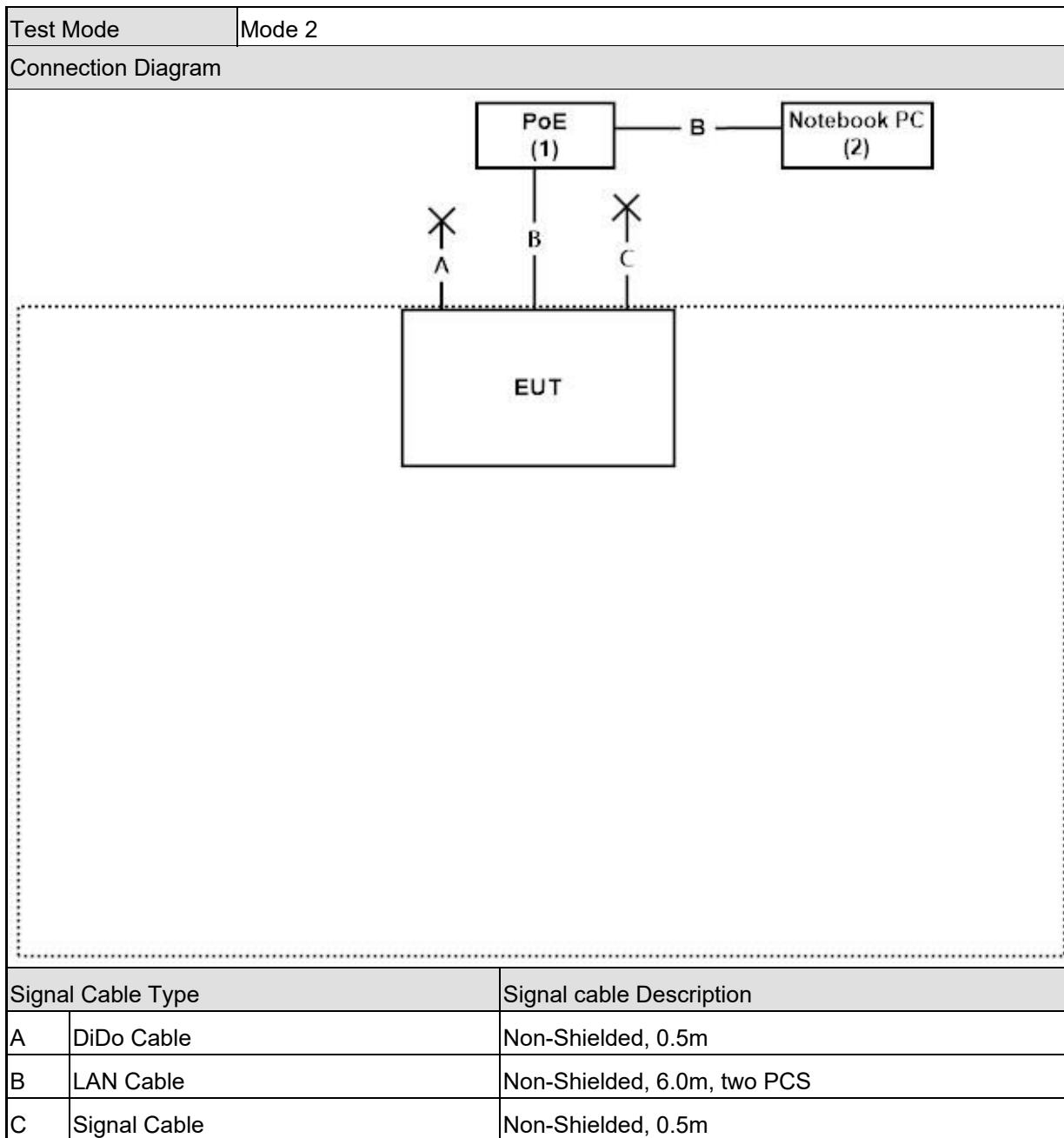
The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Test Mode		Mode 1			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	Lenovo	R400	L3AAF9A	Non-Shielded, 1.8m

Test Mode		Mode 2			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	PoE	N/A	N/A	N/A	Non-Shielded, 1.8m
2	Notebook PC	Lenovo	R400	L3AAF9A	Non-Shielded, 1.8m

1.4. Configuration of Tested System

Test Mode		Mode 1
Connection Diagram		
		
Signal Cable Type		Signal cable Description
A	DiDo Cable	Non-Shielded, 2.0m, 2 PCS
B	LAN Cable	Non-Shielded, 6.0m
C	Signal Cable	Non-Shielded, 2.0m



1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	All the features of the EUT operation normally.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
- ☐ Deviations from the test standards as below description:

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	VCCI CISPR 32: 2016-11 Class B	Yes	No
Impedance Stabilization Network	VCCI CISPR 32: 2016-11 Class B	Yes	No
Radiated Emission	VCCI CISPR 32: 2016-11 Class B	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR8

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	100369	2018/11/19
LISN	R&S	ENV216	100097	2019/02/18
LISN	R&S	ESH3-Z5	836679/017	2019/02/18
Coaxial Cable	DEKRA	RG 400	LC018-RG	2019/06/20

Impedance Stabilization Network / SR8

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	100369	2018/11/19
LISN	R&S	ENV216	100097	2019/02/18
LISN	R&S	ESH3-Z5	836679/017	2019/02/18
Coaxial Cable	DEKRA	RG 400	LC018-RG	2019/06/20
Capacitive Voltage Probe	Schaffner	CVP2200A	18331	2018/12/03
RF Current Probe	FCC	F-65	198	2018/12/13
BALANCED TELECOM ISN	FCC	FCC-TLISN-T2-02	20316	2018/09/14
Impedance Stabilization Network	Teseq	ISN T800	42815	2018/07/12

Radiated Emission / Site7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Broadband Antenna	Schwarzbeck	VULB 9168	0852	2019/06/23
EMI Test Receiver	R&S	ESCI	100649	2018/07/20
Coaxial Cable	DEKRA	RG 214	LC007-RG	2019/06/17
Pre-Amplifier	DEKRA	AP/0100A	CHM/1009094	2019/06/17
Site7 NSA	DEKRA	N/A	N/A	2019/06/17

Radiated Emission / CB7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESU26	100433	2018/11/13
Horn Antenna	ETS-Lindgren	3117	00202723	2018/08/08
Horn Antenna	SCHWARZBECK	9120D	576	2018/12/18
Pre-Amplifier	EMCI	EMC051845SE	980359	2018/10/24
CB7 VSWR	DEKRA	N/A	N/A	2019/06/25

VCCI Test Site:

Test Item	Test Site	VCCI No.
Conducted Emission	SR8	C-13723
Conducted Emission (Telecommunication Port)	SR8	T-11887
Radiated Emission	Site 7	R-3748
Radiated Emission (Above 1GHz)	CB7(9x6x6_Chamber)	G-10035

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 3.44 dB.

Impedance Stabilization Network

The measurement uncertainty is evaluated as ± 3.88 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 4.22 dB.

Radiated Emission Above 1GHz

The measurement uncertainty is evaluated as ± 5.08 dB.

2.4. Test Environment

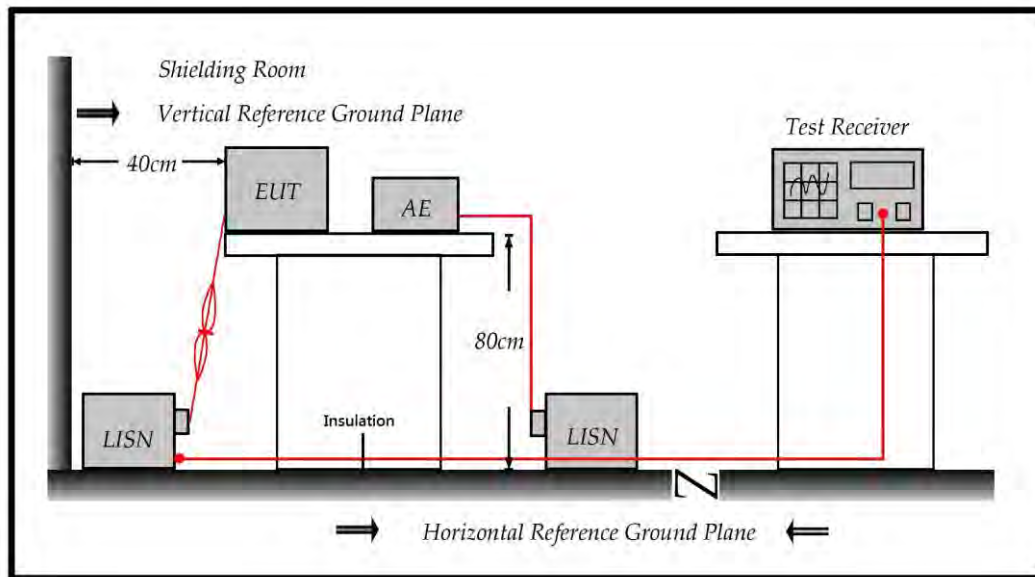
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	20
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Impedance Stabilization Network	Temperature (°C)	15-35	20
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	28.6
	Humidity (%RH)	25-75	65
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

3.1. Test Specification

According to EMC Standard : VCCI CISPR 32

3.2. Test Setup



3.3. Limit

Applicable to AC mains power ports			
Frequency range MHz	Coupling device	Detector type/ Bandwidth	Class B limits dB(μV)
0.15 – 0.5	AMN	Quasi Peak / 9 KHz	66 – 56
0.5 – 5			56
5 – 30			60
0.15 – 0.5	AMN	Average / 9 KHz	56 – 46
0.5 – 5			46
5 – 30			50
Both apply across the entire frequency range.			

Remarks:

If the limits for the average detector are met when using the quasi-peak detector, then the limits for the measurement with the average detector are considered to be met.

3.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.

(Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

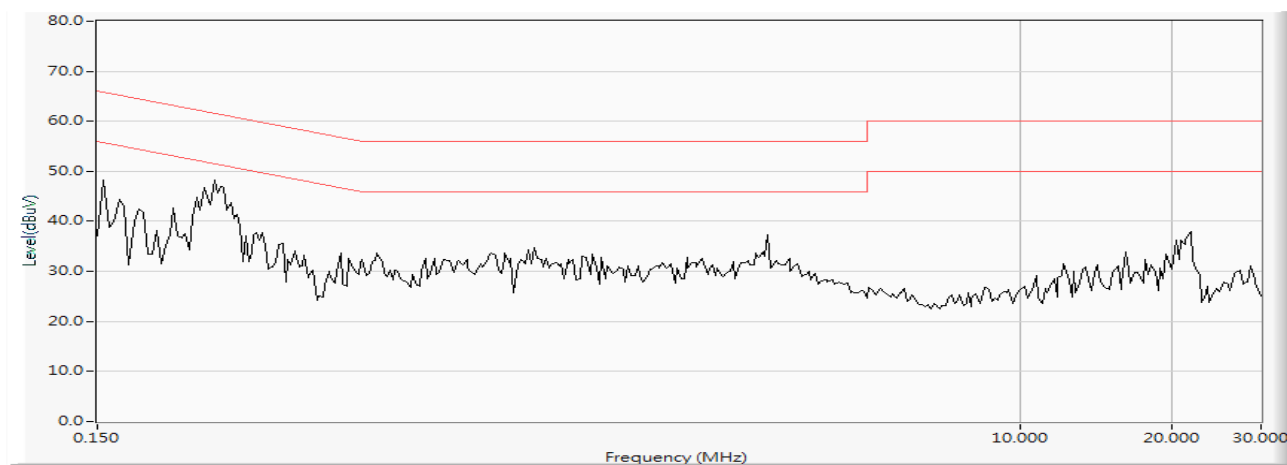
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Deviation from Test Standard

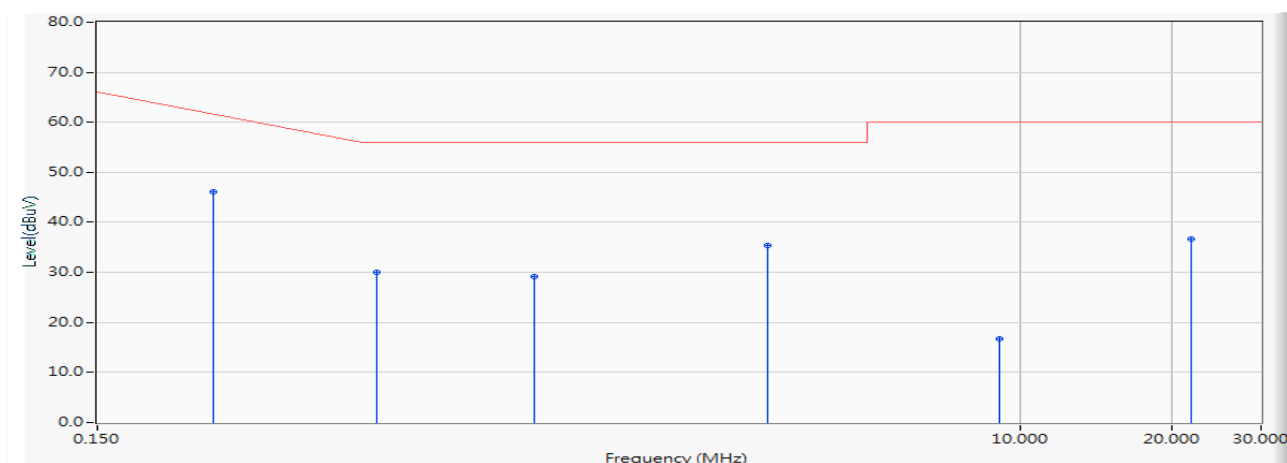
No deviation.

3.6. Test Result

Site : SR8	Time : 2019/06/11 - 13:46
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Network Camera	Probe : ENV216_L1_1068 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1



Site : SR8	Time : 2019/06/11 - 13:47
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Network Camera	Probe : ENV216_L1_1068 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1

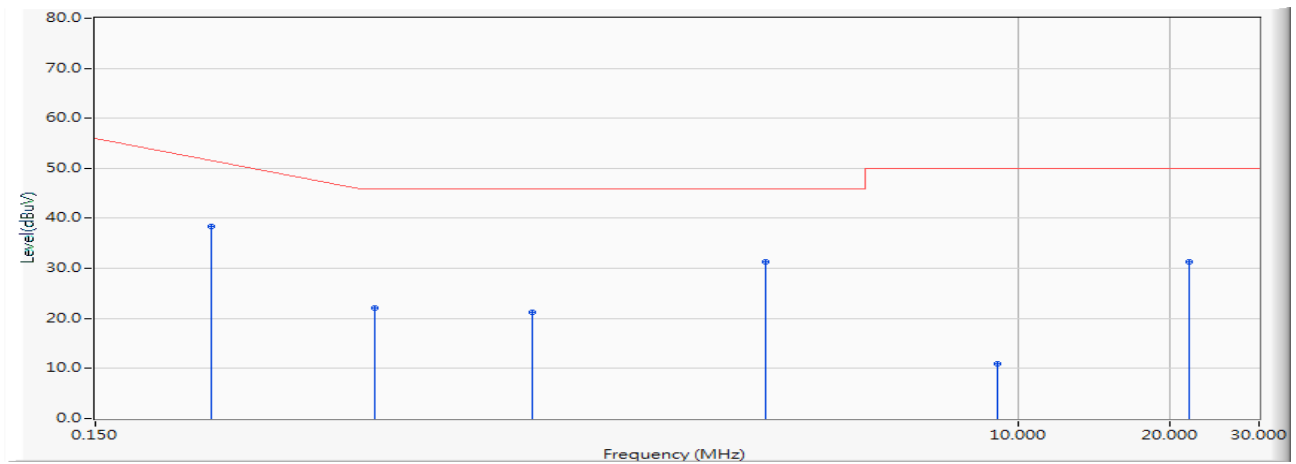


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.255	9.660	36.500	46.160	-16.840	63.000	QUASIPeAK
2		0.537	9.672	20.380	30.052	-25.948	56.000	QUASIPeAK
3		1.099	9.695	19.400	29.095	-26.905	56.000	QUASIPeAK
4		3.170	9.782	25.660	35.442	-20.558	56.000	QUASIPeAK
5		9.138	9.956	6.860	16.816	-43.184	60.000	QUASIPeAK
6		21.755	10.158	26.580	36.738	-23.262	60.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/06/11 - 13:47
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Network Camera	Probe : ENV216_L1_1068 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1

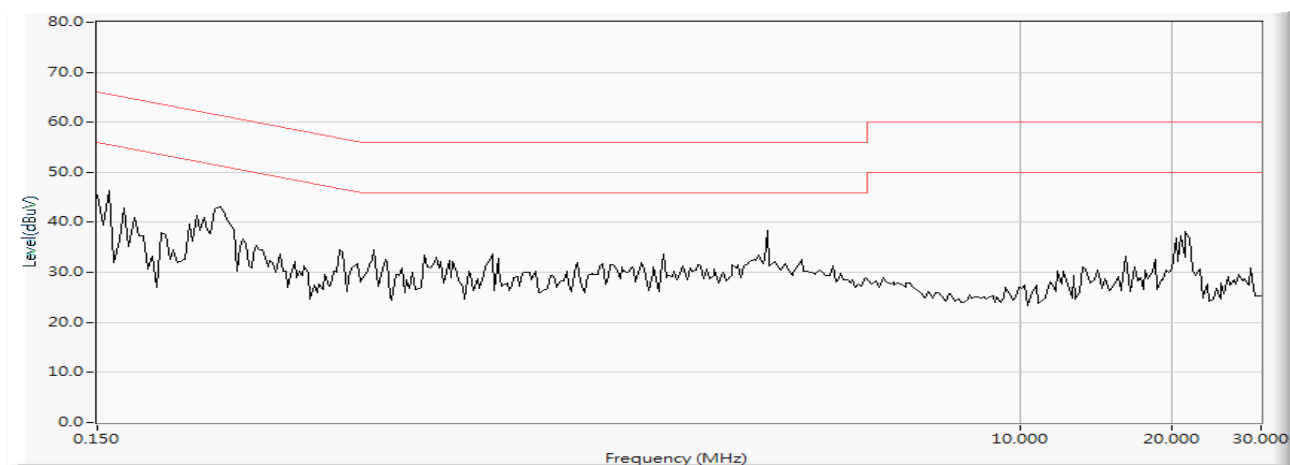


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.255	9.660	28.700	38.360	-14.640	53.000	AVERAGE
2		0.537	9.672	12.400	22.072	-23.928	46.000	AVERAGE
3		1.099	9.695	11.580	21.275	-24.725	46.000	AVERAGE
4		3.170	9.782	21.540	31.322	-14.678	46.000	AVERAGE
5		9.138	9.956	1.020	10.976	-39.024	50.000	AVERAGE
6		21.755	10.158	21.100	31.258	-18.742	50.000	AVERAGE

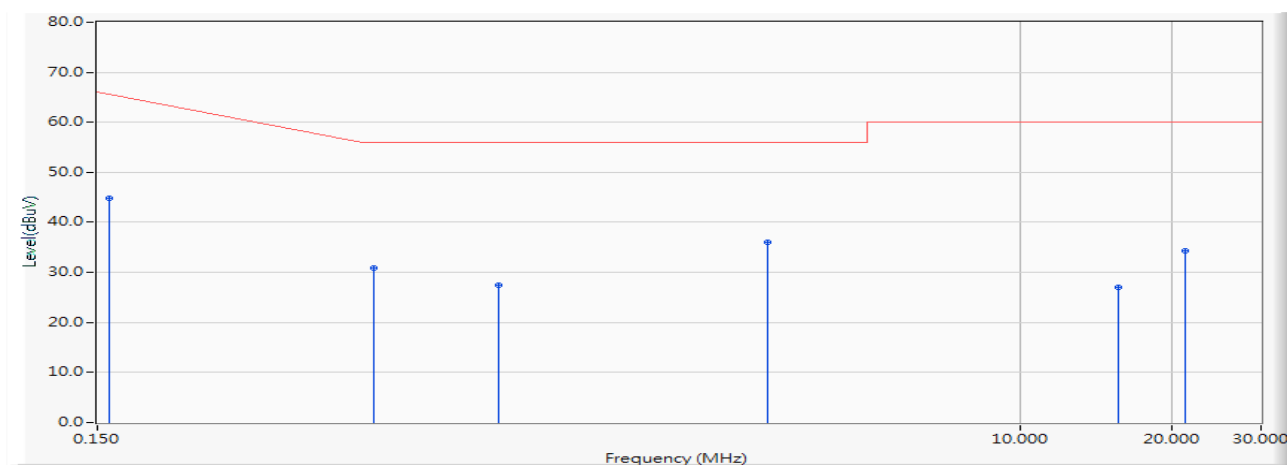
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/06/11 - 13:48
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Network Camera	Probe : ENV216_N_1068 - Line2
Power : AC 100V/50Hz to DC 12V	Note : Mode 1



Site : SR8	Time : 2019/06/11 - 13:48
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Network Camera	Probe : ENV216_N_1068 - Line2
Power : AC 100V/50Hz to DC 12V	Note : Mode 1

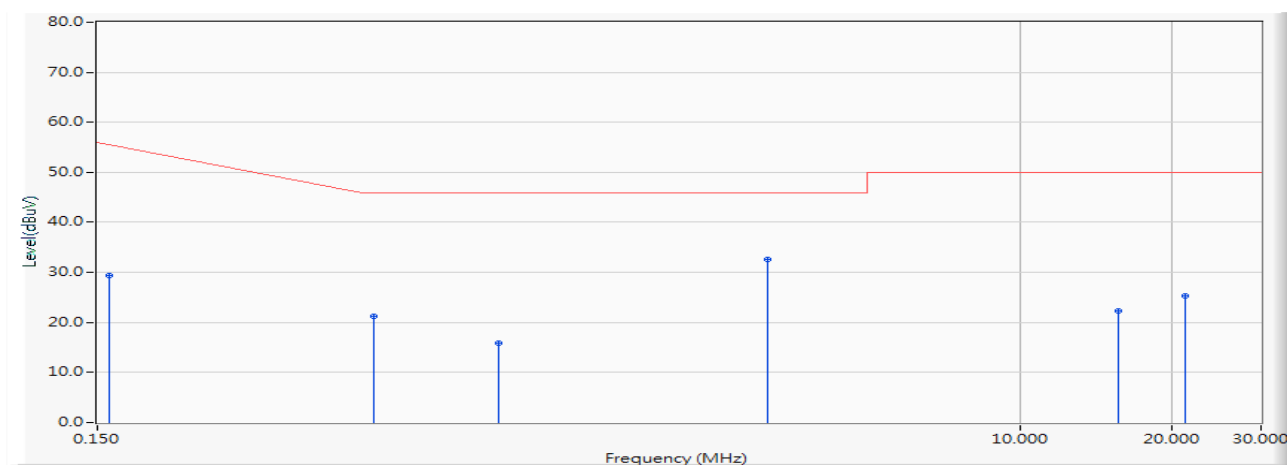


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	9.696	35.100	44.796	-20.975	65.771	QUASIPeAK
2		0.529	9.701	21.280	30.981	-25.019	56.000	QUASIPeAK
3		0.931	9.728	17.680	27.408	-28.592	56.000	QUASIPeAK
4	*	3.173	9.822	26.240	36.062	-19.938	56.000	QUASIPeAK
5		15.615	10.213	16.720	26.933	-33.067	60.000	QUASIPeAK
6		21.302	10.354	23.900	34.254	-25.746	60.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/06/11 - 13:48
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Network Camera	Probe : ENV216_N_1068 - Line2
Power : AC 100V/50Hz to DC 12V	Note : Mode 1



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	9.696	19.740	29.436	-26.335	55.771	AVERAGE
2		0.529	9.701	11.600	21.301	-24.699	46.000	AVERAGE
3		0.931	9.728	6.120	15.848	-30.152	46.000	AVERAGE
4	*	3.173	9.822	22.760	32.582	-13.418	46.000	AVERAGE
5		15.615	10.213	12.060	22.273	-27.727	50.000	AVERAGE
6		21.302	10.354	14.940	25.294	-24.706	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

3.7. Test Photograph

Test Mode : Mode 1: MD9560-DH_DC12V

Description : Front View of Conducted Test



Test Mode : Mode 1: MD9560-DH_DC12V

Description : Back View of Conducted Test

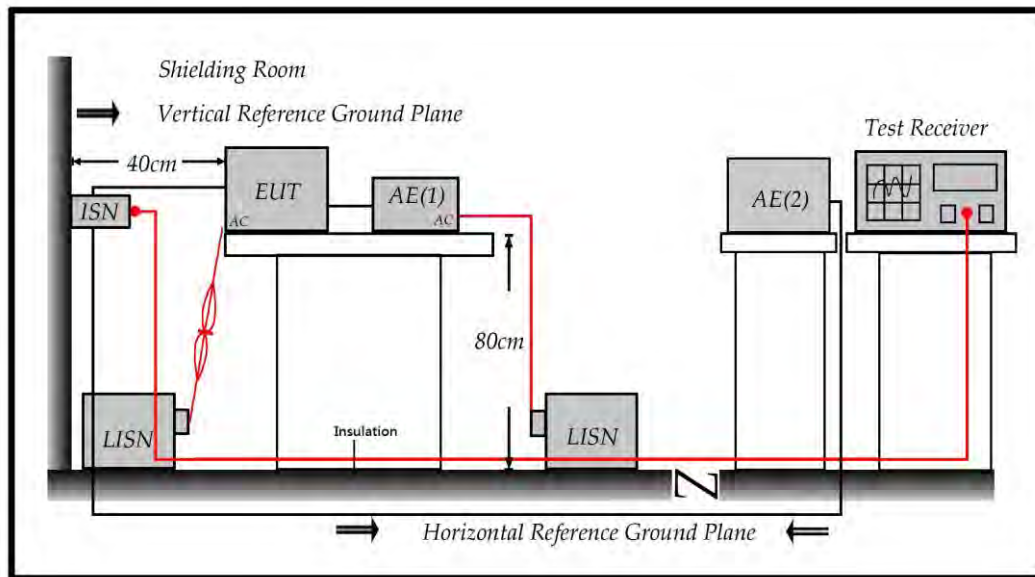


4. Conducted Emissions (Telecommunication Ports)

4.1. Test Specification

According to EMC Standard: VCCI CISPR 32

4.2. Test Setup



4.3. Limit

Applicable to				
1. wired network ports				
2. optical fibre port with metallic shield or tension members				
3. antenna ports				
Frequency range MHz	Coupling device	Detector type / Bandwidth	Class B voltage limits dB (μV)	Class B current limits dB (μA)
0.15 – 0.5	AAN	Quasi Peak / 9 KHz	84 – 74	N / A
0.5 – 30			74	
0.15 – 0.5	AAN	Average / 9 KHz	74 – 64	
0.5 – 30			64	
0.15 – 0.5	CVP And current probe	Quasi Peak / 9 KHz	84 – 74	40 – 30
0.5 – 30			74	30
0.15 – 0.5	CVP And current probe	Average / 9 KHz	74 – 64	30 – 20
0.5 – 30			64	20
0.15 – 0.5	Current Probe	Quasi Peak / 9 KHz	N / A	40 – 30
0.5 – 30				30
0.15 – 0.5	Current Probe	Average / 9 KHz		30 – 20
0.5 – 30				20

The choice of coupling device and measurement procedure is defined in EN55032:2012 Annex C.

Screened ports including TV broadcast receiver tuner ports are tested with a common-mode impedance of 150 Ω.

This is typically accomplished with the screen terminated by 150 Ω to earth.

AC mains ports that also have the function of a wired network port shall meet the limits given in EN55032:2012+AC 2013 Table A.9.

The test shall cover the entire frequency range.

The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to EN55032:2012+AC 2013 Table C.1 for applicability.

Testing is required at only one EUT supply voltage and frequency.

Applicable to ports listed above and intended to connect to cables longer than 3 m

The choice of coupling device and measurement procedure is defined in EN55032:2012 Annex C.

Screened ports including TV broadcast receiver tuner ports are tested with a common-mode impedance of 150 Ω.

This is typically accomplished with the screen terminated by 150 Ω to earth.

AC mains ports that also have the function of a wired network port shall meet the limits given in EN55032:2012+AC 2013 Table A.9.

The test shall cover the entire frequency range.

The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to EN55032:2012+AC 2013

Table C.1 for applicability.

Testing is required at only one EUT supply voltage and frequency.

Applicable to ports listed above and intended to connect to cables longer than 3 m

Remarks:

The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz.

4.4. Test Procedure

Telecommunication Port:

The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150 ohm impedance.

Both alternative cables are tested related to the LCL requested. The measurement range is from 150kHz to 30MHz. The bandwidth of measurement is set to 9kHz.

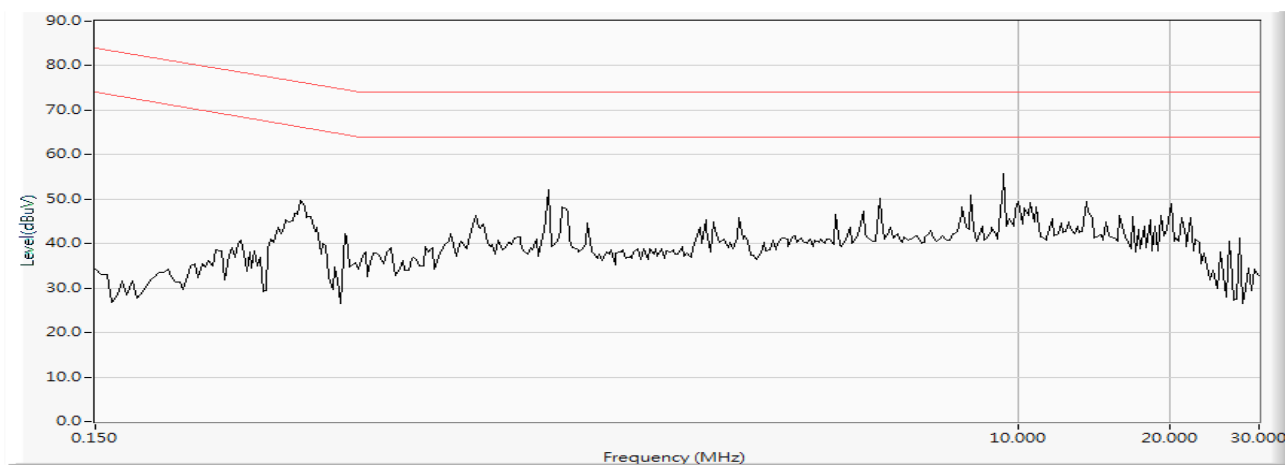
The 75dB LCL ISN is used for cat. 6 cable, the 65dB LCL ISN is used for cat. 5 cable, 55dB LCL ISN is used for cat. 3.

4.5. Deviation from Test Standard

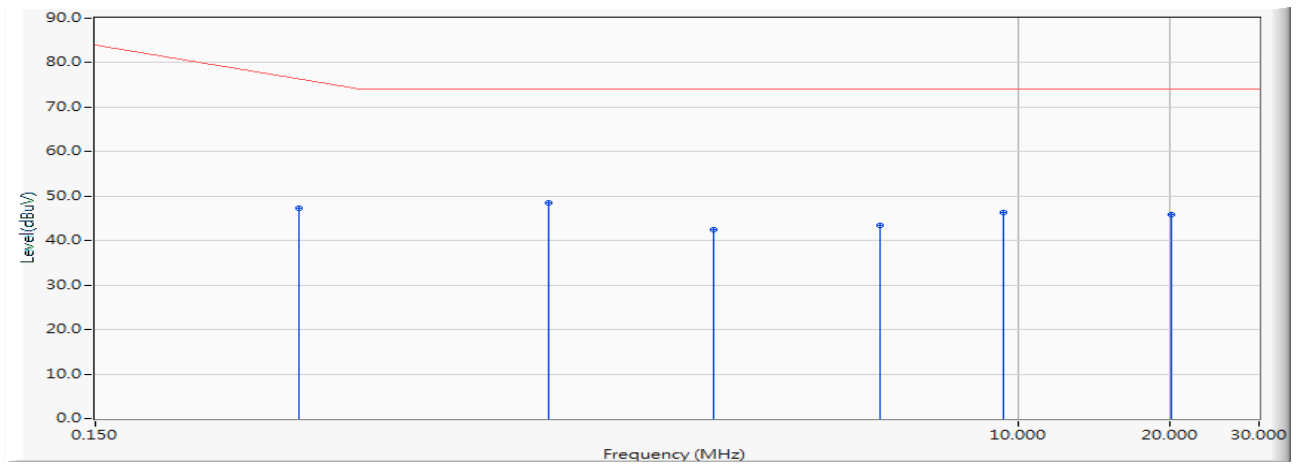
No deviation.

4.6. Test Result

Site : SR8	Time : 2019/05/14 - 11:39
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1, ISN 10M



Site : SR8	Time : 2019/05/14 - 11:40
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1, ISN 10M

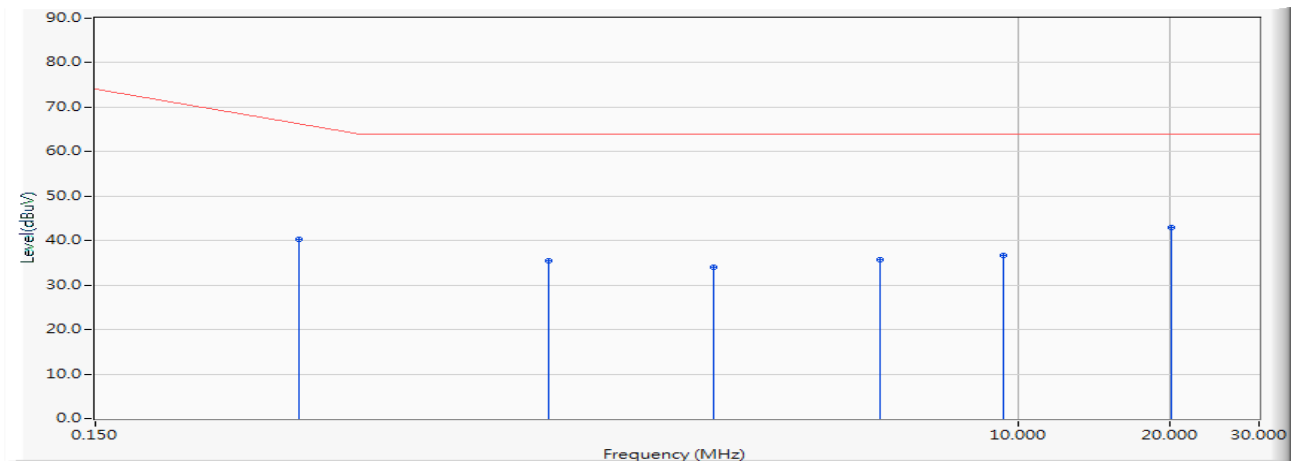


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.380	10.061	37.220	47.281	-30.148	77.429	QUASIPeAK
2	*	1.181	9.928	38.480	48.408	-25.592	74.000	QUASIPeAK
3		2.498	9.901	32.520	42.420	-31.580	74.000	QUASIPeAK
4		5.326	9.921	33.560	43.481	-30.519	74.000	QUASIPeAK
5		9.400	10.011	36.220	46.231	-27.769	74.000	QUASIPeAK
6		20.130	10.283	35.500	45.783	-28.217	74.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/14 - 11:40
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1, ISN 10M

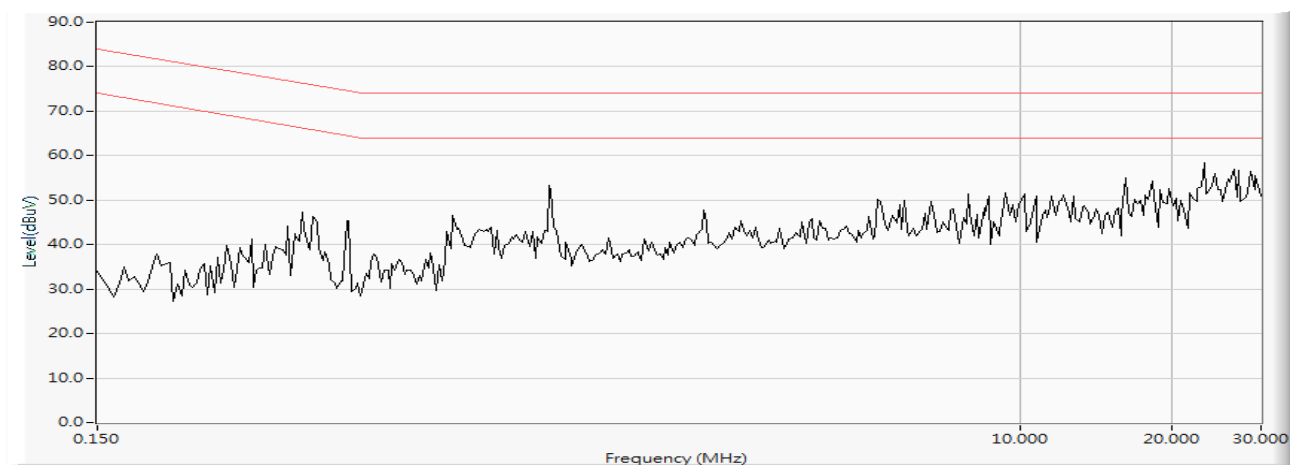


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.380	10.061	30.220	40.281	-27.148	67.429	AVERAGE
2		1.181	9.928	25.500	35.428	-28.572	64.000	AVERAGE
3		2.498	9.901	24.140	34.040	-29.960	64.000	AVERAGE
4		5.326	9.921	25.780	35.701	-28.299	64.000	AVERAGE
5		9.400	10.011	26.620	36.631	-27.369	64.000	AVERAGE
6	*	20.130	10.283	32.620	42.903	-21.097	64.000	AVERAGE

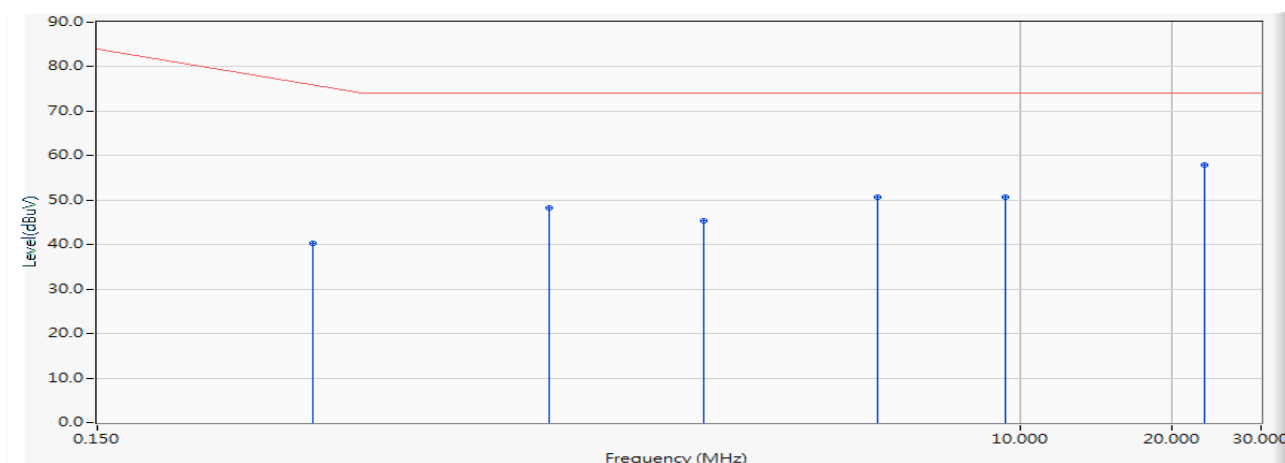
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/14 - 11:41
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1, ISN 100M



Site : SR8	Time : 2019/05/14 - 11:41
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1, ISN 100M

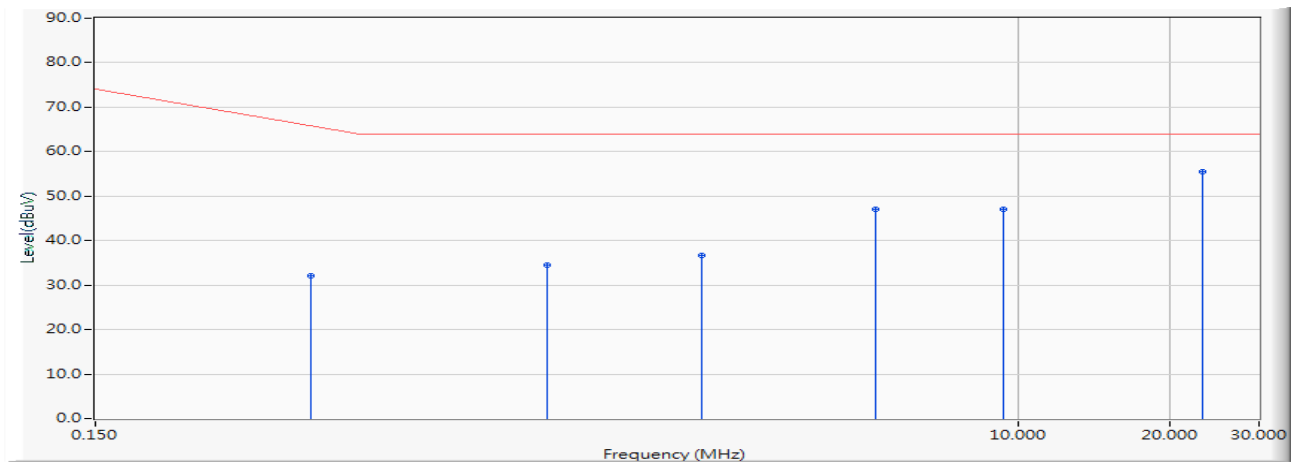


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.400	10.048	30.300	40.348	-36.509	76.857	QUASIPeAK
2		1.170	9.927	38.320	48.247	-25.753	74.000	QUASIPeAK
3		2.365	9.904	35.480	45.384	-28.616	74.000	QUASIPeAK
4		5.236	9.919	40.840	50.759	-23.241	74.000	QUASIPeAK
5		9.388	10.011	40.660	50.671	-23.329	74.000	QUASIPeAK
6	*	23.130	10.395	47.620	58.015	-15.985	74.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/14 - 11:41
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : AC 100V/50Hz to DC 12V	Note : Mode 1, ISN 100M

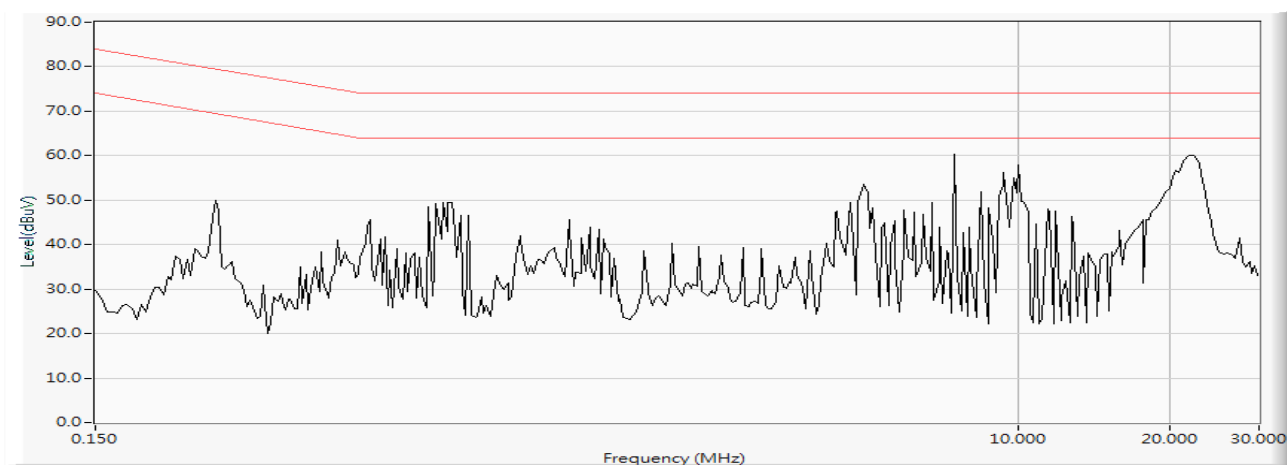


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.400	10.048	22.020	32.068	-34.789	66.857	AVERAGE
2		1.170	9.927	24.660	34.587	-29.413	64.000	AVERAGE
3		2.365	9.904	26.700	36.604	-27.396	64.000	AVERAGE
4		5.236	9.919	37.200	47.119	-16.881	64.000	AVERAGE
5		9.388	10.011	37.060	47.071	-16.929	64.000	AVERAGE
6	*	23.130	10.395	45.140	55.535	-8.465	64.000	AVERAGE

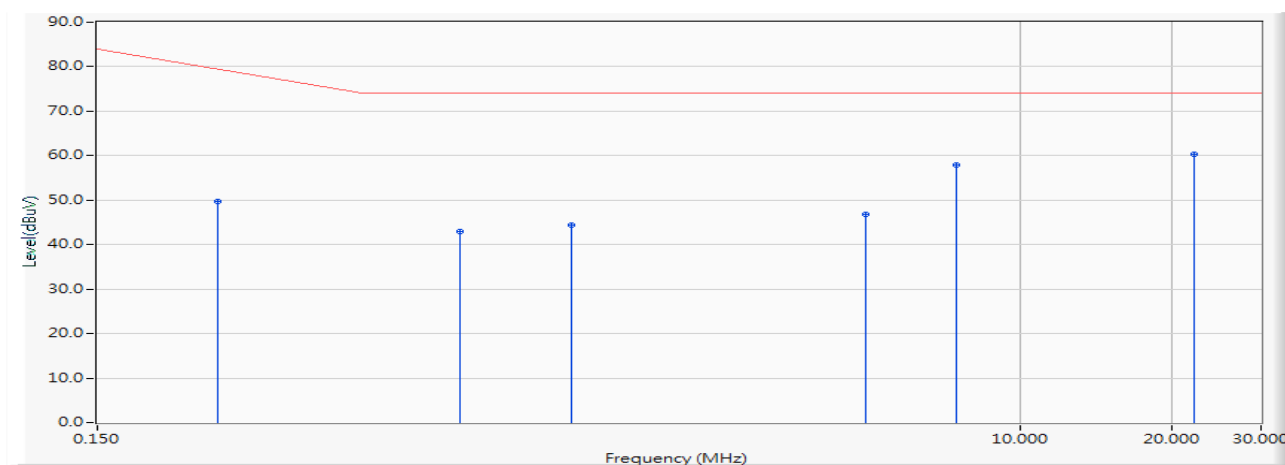
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/21 - 10:01
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : PoE	Note : Mode 2, ISN 10M



Site : SR8	Time : 2019/05/21 - 10:03
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : PoE	Note : Mode 2, ISN 10M

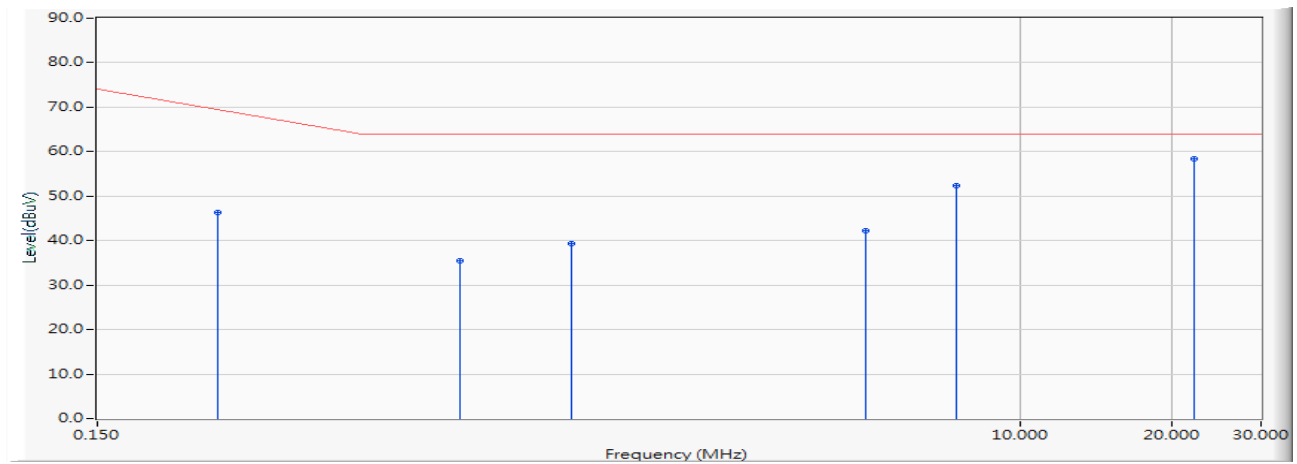


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.259	10.183	39.560	49.744	-31.142	80.886	QUASIPeak
2		0.780	9.952	32.920	42.872	-31.128	74.000	QUASIPeak
3		1.298	9.923	34.380	44.303	-29.697	74.000	QUASIPeak
4		4.946	9.912	37.000	46.912	-27.088	74.000	QUASIPeak
5		7.500	9.970	47.880	57.850	-16.150	74.000	QUASIPeak
6	*	22.064	10.351	49.960	60.311	-13.689	74.000	QUASIPeak

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/21 - 10:03
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : PoE	Note : Mode 2, ISN 10M

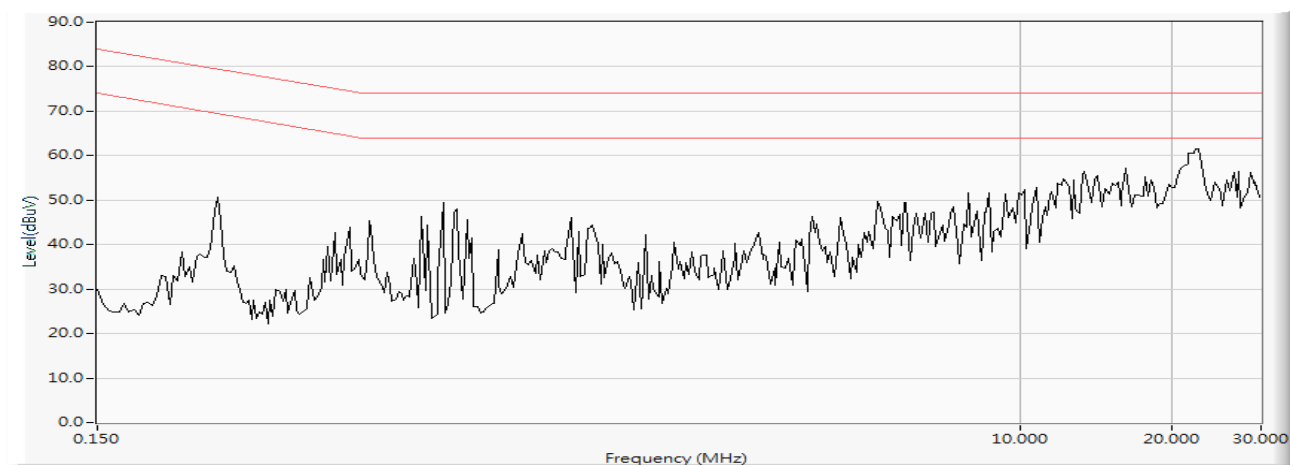


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.259	10.183	36.180	46.364	-24.522	70.886	AVERAGE
2		0.780	9.952	25.480	35.432	-28.568	64.000	AVERAGE
3		1.298	9.923	29.340	39.263	-24.737	64.000	AVERAGE
4		4.946	9.912	32.320	42.232	-21.768	64.000	AVERAGE
5		7.500	9.970	42.340	52.310	-11.690	64.000	AVERAGE
6	*	22.064	10.351	48.000	58.351	-5.649	64.000	AVERAGE

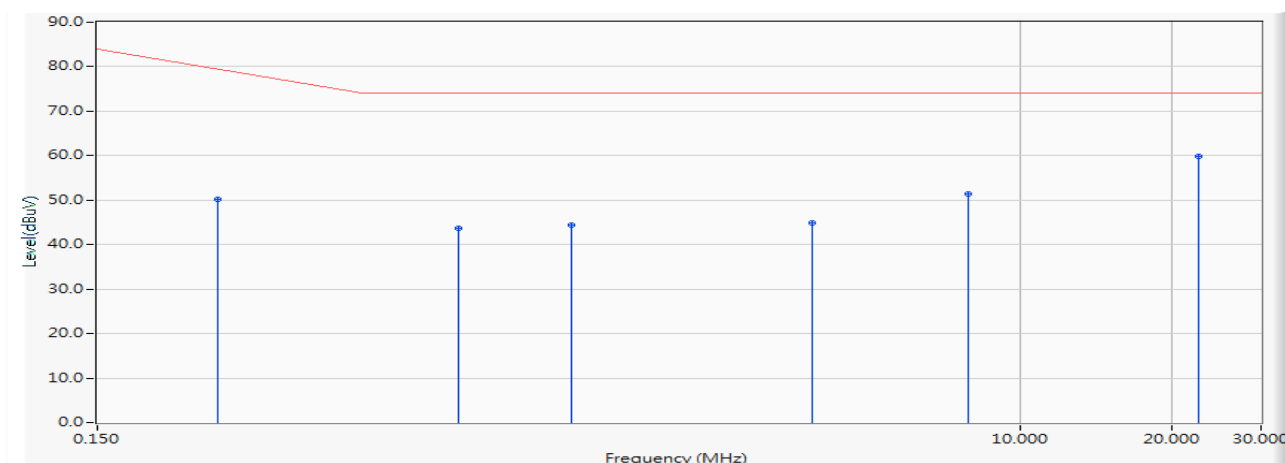
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/21 - 10:04
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : PoE	Note : Mode 2, ISN 100M



Site : SR8	Time : 2019/05/21 - 10:06
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : PoE	Note : Mode 2, ISN 100M

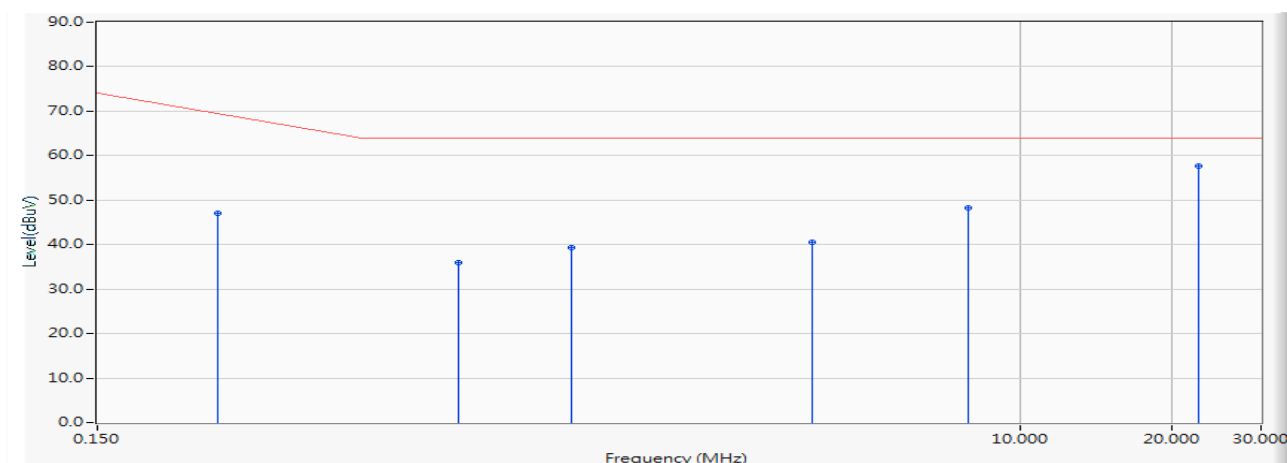


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.259	10.183	39.980	50.164	-30.722	80.886	QUASIPeAK
2		0.779	9.951	33.740	43.691	-30.309	74.000	QUASIPeAK
3		1.298	9.923	34.400	44.323	-29.677	74.000	QUASIPeAK
4		3.892	9.898	34.980	44.878	-29.122	74.000	QUASIPeAK
5		7.923	9.980	41.380	51.360	-22.640	74.000	QUASIPeAK
6	*	22.583	10.368	49.580	59.948	-14.052	74.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SR8	Time : 2019/05/21 - 10:06
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Network Camera	Probe : TESEQ_T8_42815 - Line1
Power : PoE	Note : Mode 2, ISN 100M



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.259	10.183	36.860	47.044	-23.842	70.886	AVERAGE
2		0.779	9.951	26.000	35.951	-28.049	64.000	AVERAGE
3		1.298	9.923	29.500	39.423	-24.577	64.000	AVERAGE
4		3.892	9.898	30.560	40.458	-23.542	64.000	AVERAGE
5		7.923	9.980	38.300	48.280	-15.720	64.000	AVERAGE
6	*	22.583	10.368	47.180	57.548	-6.452	64.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

4.7. Test Photograph

Test Mode : Mode 1: MD9560-DH_DC12V

Description : Front View of ISN Test



Test Mode : Mode 1: MD9560-DH_DC12V

Description : Back View of ISN Test



Test Mode : Mode 2: MD9560-H_POE

Description : Front View of ISN Test



Test Mode : Mode 2: MD9560-H_POE

Description : Back View of ISN Test



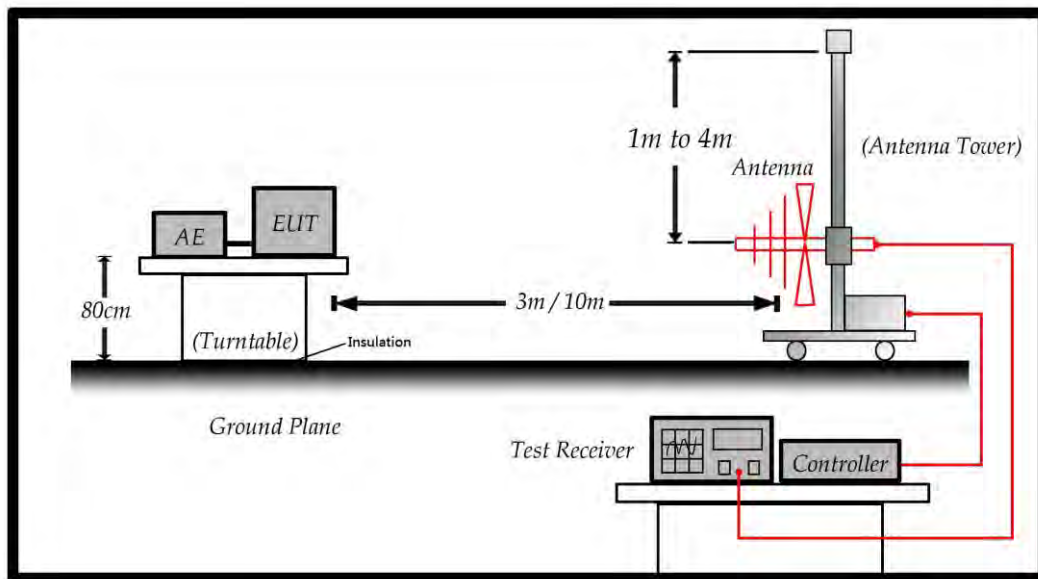
5. Radiated Emission

5.1. Test Specification

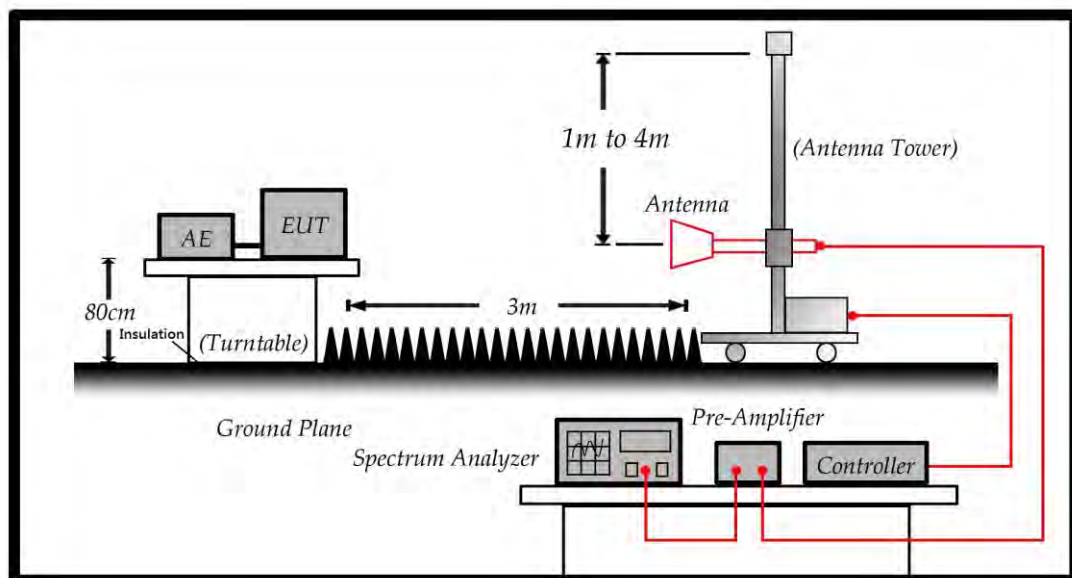
According to EMC Standard: VCCI CISPR 32

5.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



5.3. Limit

Radiated emissions at frequencies up to 1 GHz

for Class B equipment

Frequency range MHz	Measurement		Class B limits dB(μV/m)
	Distance m	Detector type/ Bandwidth	OATS / SAC
30-230	10	Quasi Peak / 120 KHz	30
230-1000			37
30-230	3		40
230-1000			47
Apply only 3m or 10m across the entire frequency range			

Radiated emissions at frequencies above 1 GHz

for Class B equipment

Frequency range MHz	Measurement		Class B limits dB(μV/m)
	Distance m	Detector type/ Bandwidth	OATS / SAC
1000-3000	3	Average / 1 MHz	50
3000-6000			54
1000-3000		Peak / 1 MHz	70
3000-6000			74
Both apply across the frequency range from 1000 MHz to the highest required frequency of measurement derived from			

Required highest frequency for radiated measurement

Highest internal frequency (F_x)	Highest measured frequency
$F_x \leq 108 \text{ MHz}$	1 GHz
$108 \text{ MHz} < F_x \leq 500 \text{ MHz}$	2 GHz
$500 \text{ MHz} < F_x \leq 1 \text{ GHz}$	5 GHz
$F_x > 1 \text{ GHz}$	$5 \times F_x$ up to a maximum of 6 GHz
NOTE 1 For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.	
NOTE 2 F_x is defined in 3.1.19.	

5.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3/10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

All cable leaving the table-top EUT for a connection outside the test site (for example, mains cable, telephone lines, connections to auxiliary equipment located outside the test area) shall be fitted with ferrite clamps placed on the floor at the point where the cable reached the floor. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

Radiated emissions were investigated over the frequency range from 30MHz to 1GHz using a receiver bandwidth of 120kHz and above 1GHz using a receiver bandwidth of 1MHz.

30MHz to 1GHz Radiated was performed at an antenna to EUT distance of 10 meters.

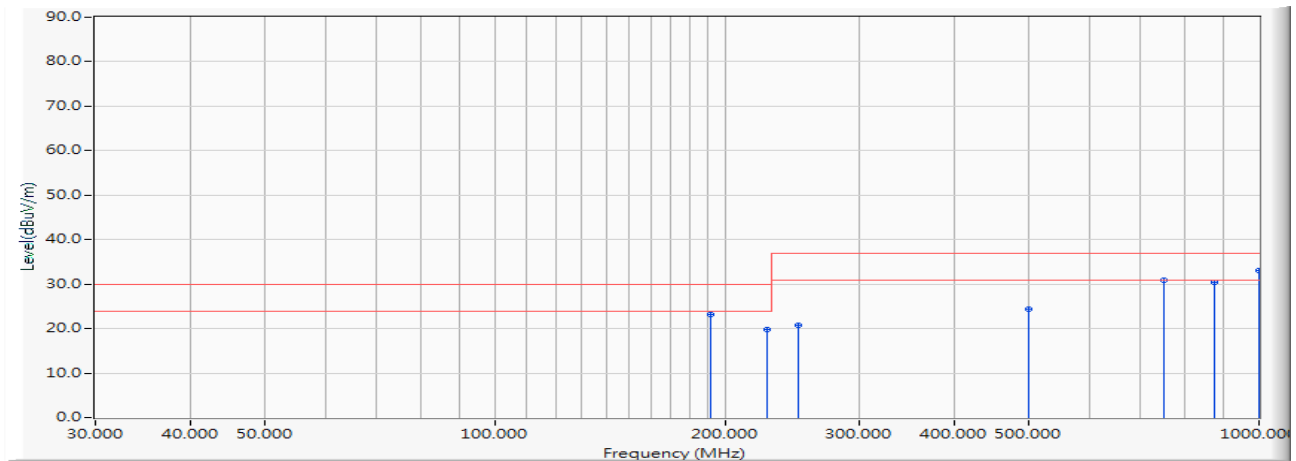
Above 1GHz Radiated was performed at an antenna to EUT distance of 3 meters.

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Site : SITE7	Time : 2019/06/10 - 14:34
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Network Camera	Probe : Site7_VULB9168_10m_1902 - HORIZONTAL
Power : AC 100V/50Hz to DC 12V	Note : Mode 1

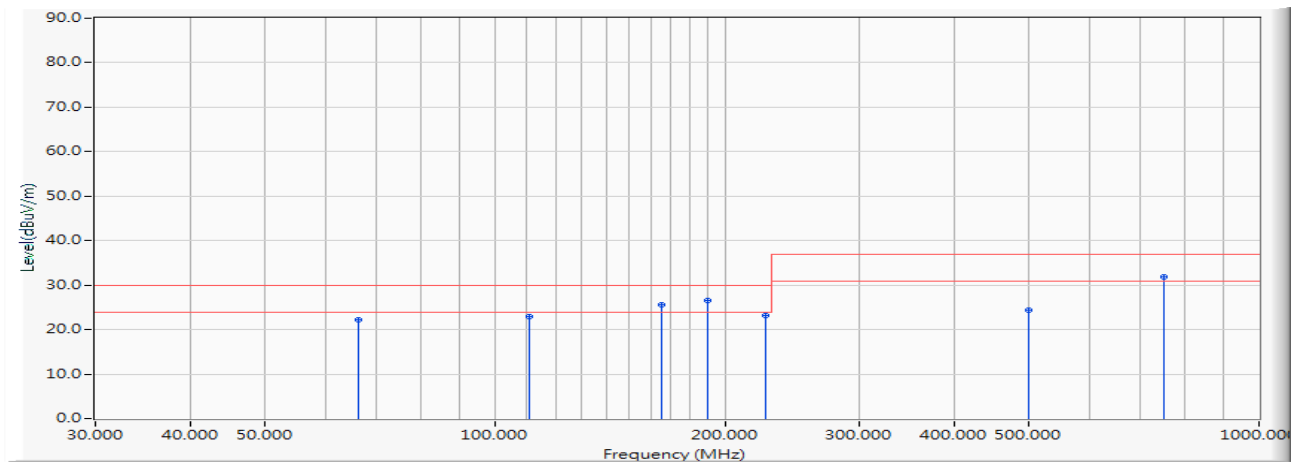


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		191.300	-12.438	35.600	23.161	-6.839	30.000	QUASIPeAK	380.000	-84.000
2		226.600	-12.186	32.000	19.814	-10.186	30.000	QUASIPeAK	380.000	41.000
3		250.000	-10.488	31.200	20.712	-16.288	37.000	QUASIPeAK	370.000	-134.000
4		500.000	-1.815	26.300	24.485	-12.515	37.000	QUASIPeAK	200.000	-49.000
5		750.000	4.566	26.400	30.965	-6.035	37.000	QUASIPeAK	120.000	31.000
6		875.000	6.141	24.300	30.441	-6.559	37.000	QUASIPeAK	110.000	39.000
7	*	1000.000	7.830	25.200	33.030	-3.970	37.000	QUASIPeAK	100.000	-94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe + Cable - Amp)

Site : SITE7	Time : 2019/06/10 - 14:34
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Network Camera	Probe : Site7_VULB9168_10m_1902 - VERTICAL
Power : AC 100V/50Hz to DC 12V	Note : Mode 1

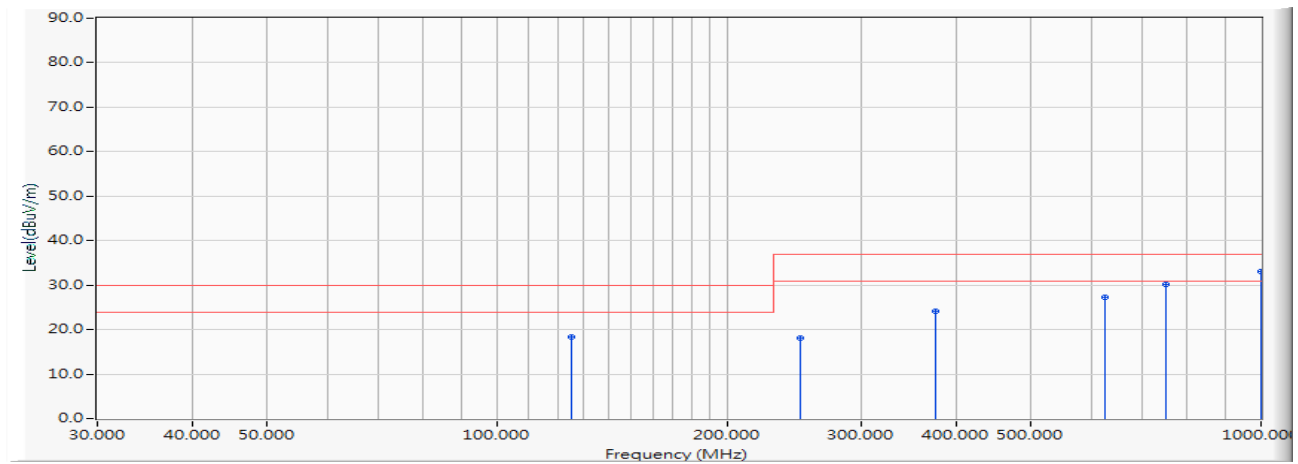


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	66.200	-12.748	35.000	22.252	-7.748	30.000	QUASIPeAK	100.000	45.000
2	110.760	-13.879	36.800	22.921	-7.079	30.000	QUASIPeAK	100.000	91.000
3	165.200	-10.337	35.800	25.462	-4.538	30.000	QUASIPeAK	100.000	91.000
4	* 190.200	-12.387	38.900	26.512	-3.488	30.000	QUASIPeAK	100.000	-189.000
5	226.400	-12.196	35.400	23.204	-6.796	30.000	QUASIPeAK	100.000	54.000
6	500.000	-1.815	26.200	24.385	-12.615	37.000	QUASIPeAK	300.000	-48.000
7	750.000	4.566	27.200	31.765	-5.235	37.000	QUASIPeAK	230.000	-51.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe + Cable - Amp)

Site : SITE7	Time : 2019/06/10 - 11:17
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Network Camera	Probe : Site7_VULB9168_10m_1902 - HORIZONTAL
Power : POE	Note : Mode 2

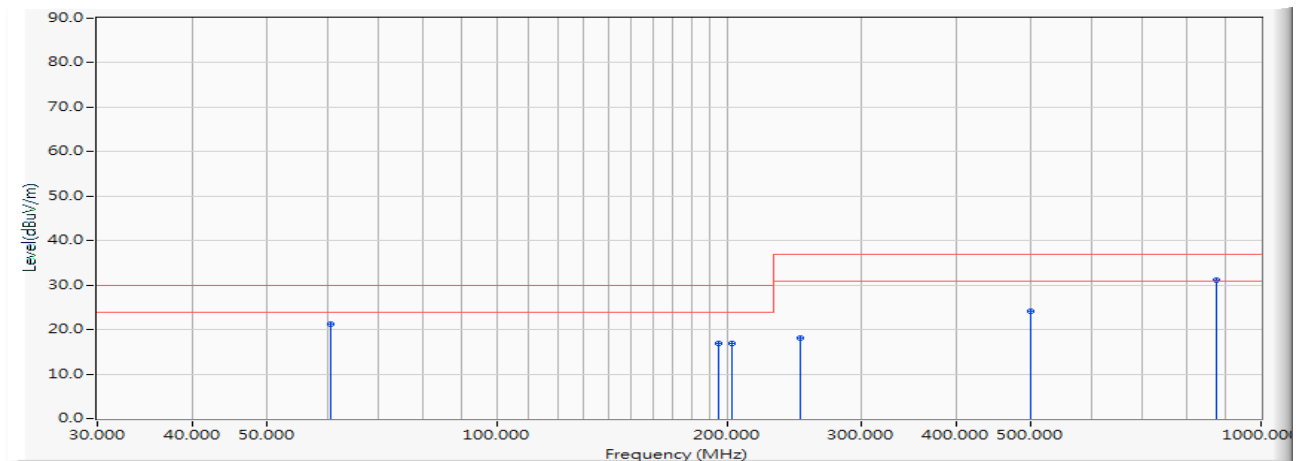


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		125.000	-12.365	30.600	18.235	-11.765	30.000	QUASIPeAK	390.000	51.000
2		250.000	-10.488	28.600	18.112	-18.888	37.000	QUASIPeAK	370.000	44.000
3		375.000	-5.843	30.000	24.157	-12.843	37.000	QUASIPeAK	300.000	-47.000
4		625.000	1.518	25.800	27.318	-9.682	37.000	QUASIPeAK	140.000	33.000
5		750.000	4.566	25.600	30.165	-6.835	37.000	QUASIPeAK	100.000	94.000
6	*	1000.000	7.830	25.300	33.130	-3.870	37.000	QUASIPeAK	100.000	64.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site : SITE7	Time : 2019/06/10 - 11:17
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Network Camera	Probe : Site7_VULB9168_10m_1902 - VERTICAL
Power : POE	Note : Mode 2

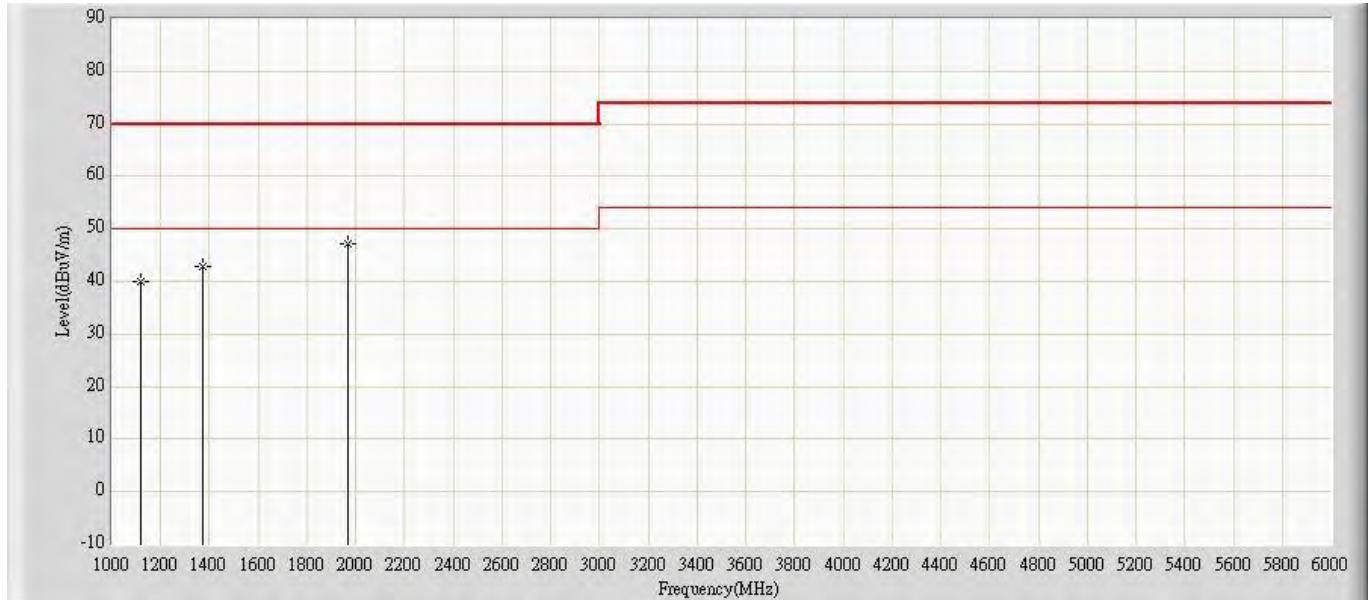


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		60.700	-11.663	33.000	21.337	-8.663	30.000	QUASIPeAK	100.000	41.000
2		195.000	-12.573	29.500	16.927	-13.073	30.000	QUASIPeAK	100.000	-48.000
3		203.000	-12.783	29.600	16.816	-13.184	30.000	QUASIPeAK	100.000	-47.000
4		250.000	-10.488	28.600	18.112	-18.888	37.000	QUASIPeAK	100.000	-47.000
5		500.000	-1.815	26.000	24.185	-12.815	37.000	QUASIPeAK	315.000	34.000
6	*	875.000	6.141	25.100	31.241	-5.759	37.000	QUASIPeAK	160.000	34.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor(Probe+Cable-Amp).

Site: CB7	Time: 2019/06/13 - 11:48
Limit: CISPR_B(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1808	Polarity: Horizontal
EUT: Network Camera	Power: AC 100V/50Hz to DC 12V
Note: Mode 1	

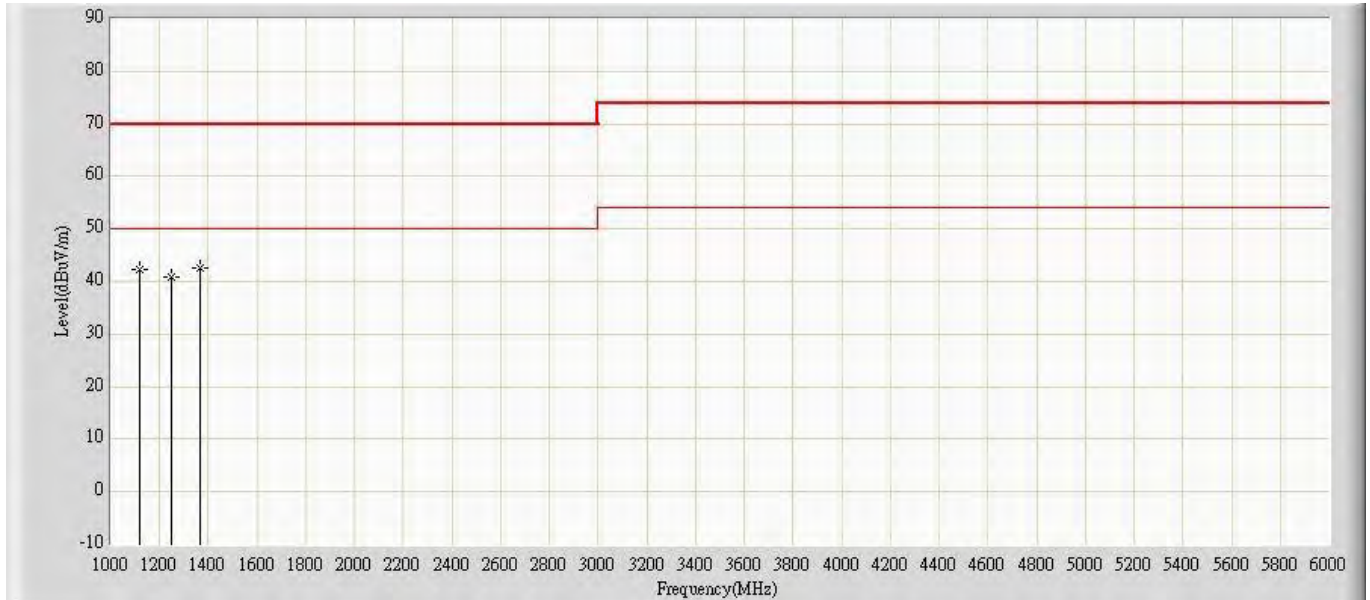


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Ant Pos (cm)	Table Pos (deg)	Type
1			1117.000	40.005	54.710	-29.995	70.000	-14.705	100	122	PK
2			1370.000	42.825	56.720	-27.175	70.000	-13.895	100	37	PK
3		*	1970.000	47.196	57.140	-22.804	70.000	-9.945	100	165	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: CB7	Time: 2019/06/13 - 11:52
Limit: CISPR_B(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1808	Polarity: Vertical
EUT: Network Camera	Power: AC 100V/50Hz to DC 12V
Note: Mode 1	

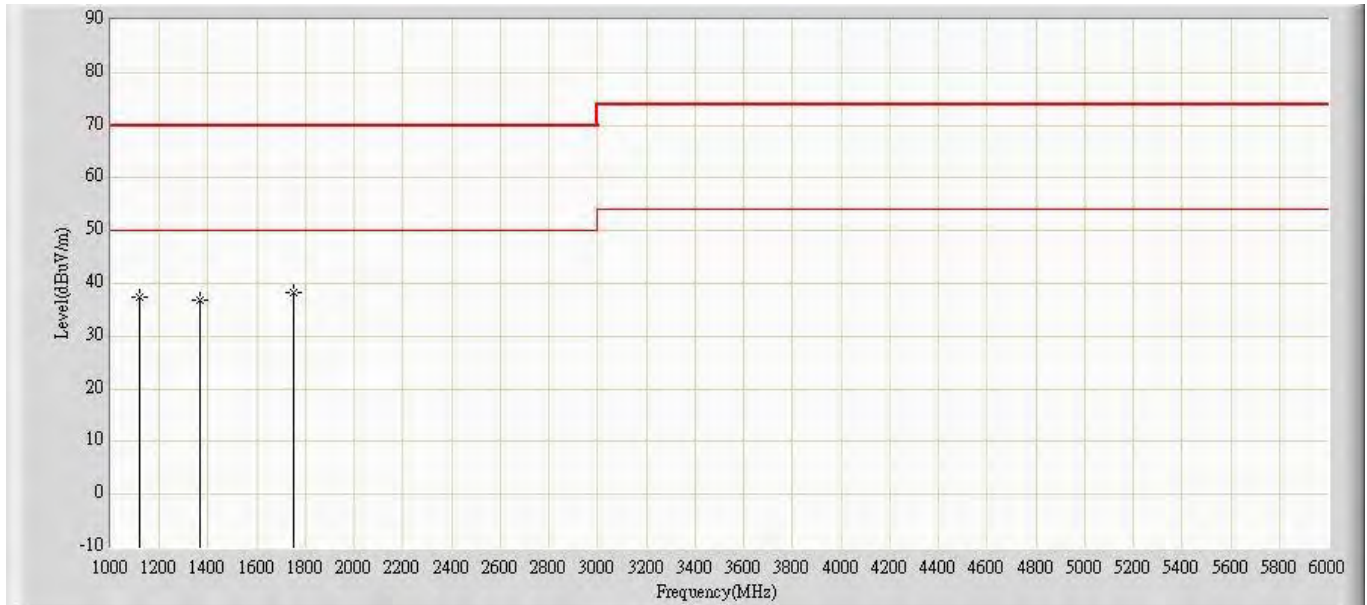


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Ant Pos (cm)	Table Pos (deg)	Type
1			1117.000	42.275	56.980	-27.725	70.000	-14.705	100	132	PK
2			1248.000	40.772	54.940	-29.228	70.000	-14.168	100	112	PK
3		*	1368.000	42.466	56.350	-27.534	70.000	-13.884	100	181	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: CB7	Time: 2019/06/13 - 13:14
Limit: CISPR_B(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1808	Polarity: Horizontal
EUT: Network Camera	Power: POE
Note: Mode 2	

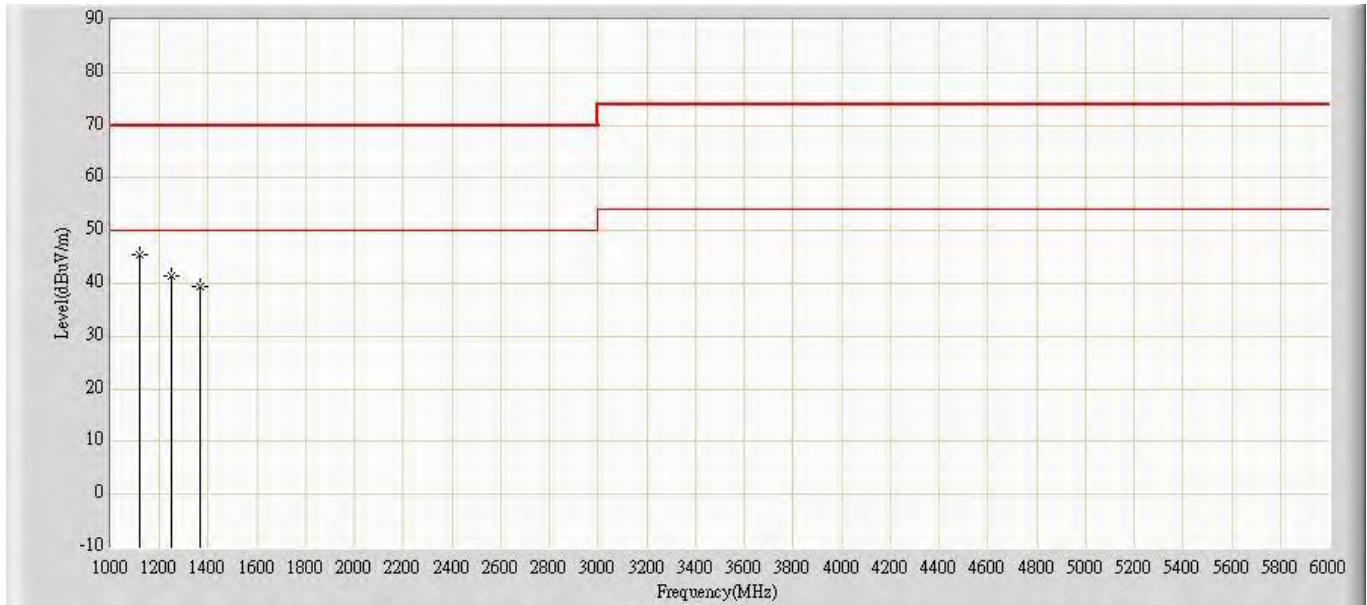


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Ant Pos (cm)	Table Pos (deg)	Type
1			1120.000	37.525	52.190	-32.475	70.000	-14.664	100	134	PK
2			1368.000	36.696	50.580	-33.304	70.000	-13.884	100	46	PK
3		*	1753.000	38.192	50.320	-31.808	70.000	-12.127	100	174	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: CB7	Time: 2019/06/13 - 13:19
Limit: CISPR_B(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1808	Polarity: Vertical
EUT: Network Camera	Power: POE
Note: Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Ant Pos (cm)	Table Pos (deg)	Type
1		*	1120.000	45.405	60.070	-24.595	70.000	-14.664	100	124	PK
2			1248.000	41.392	55.560	-28.608	70.000	-14.168	100	197	PK
3			1368.000	39.306	53.190	-30.694	70.000	-13.884	100	117	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

5.7. Test Photograph

Test Mode : Mode 1: MD9560-DH_DC12V

Description : Front View of Radiated Test



Test Mode : Mode 1: MD9560-DH_DC12V

Description : Back View of Radiated Test



Test Mode : Mode 1: MD9560-DH_DC12V

Description : Front View of High Frequency Radiated Test



Test Mode : Mode 2: MD9560-H_POE

Description : Front View of Radiated Test



Test Mode : Mode 2: MD9560-H_POE

Description : Back View of Radiated Test



Test Mode : Mode 2: MD9560-H_POE

Description : Front View of High Frequency Radiated Test



6. Attachment

➤ **EUT Photograph**

(1) EUT Photo (M/N: MD9560-DH)



(2) EUT Photo (M/N: MD9560-DH)



(3) EUT Photo (M/N: MD9560-DH)



(4) EUT Photo (M/N: MD9560-H)



(5) EUT Photo (M/N: MD9560-H)



(6) EUT Photo (M/N: MD9560-H)

