

VCCI Test Report

Product Name : Stereo Camera

Model No. : SC8131

Applicant : VIVOTEK INC.

Address : 6F, No.192, Lien-Cheng Rd., Chung-Ho,
New Taipei City, 235, Taiwan, R.O.C.

Date of Receipt : 2015/05/11

Issued Date : 2015/06/22

Report No. : 1550268R-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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Applicant : VIVOTEK INC.
Address : 6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City,
235, Taiwan, R.O.C.
Manufacturer : VIVOTEK INC.
Model No. : SC8131
EUT Rated Voltage : By PoE
EUT Test Voltage : By PoE
Trade Name : VIVOTEK
Applicable Standard : VCCI: 2015-04 Class B
Test Result : Complied
Performed Location : Quietek Corporation (Linkou Laboratory)
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Taiwan, R.O.C.
TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

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Approved By : [Signature]
(Director / Vincent Lin)

Laboratory Information

We , **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scopes:

Taiwan R.O.C.	:	BSMI, NCC, TAF
USA	:	FCC
Japan	:	VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://www.quietek.com/chinese/about/certificates.aspx?bval=5>
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

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1. General Information

1.1. EUT Description

Product Name	Stereo Camera
Trade Name	VIVOTEK
Model No.	SC8131

1.2. Mode of Operation

QuieTek 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:

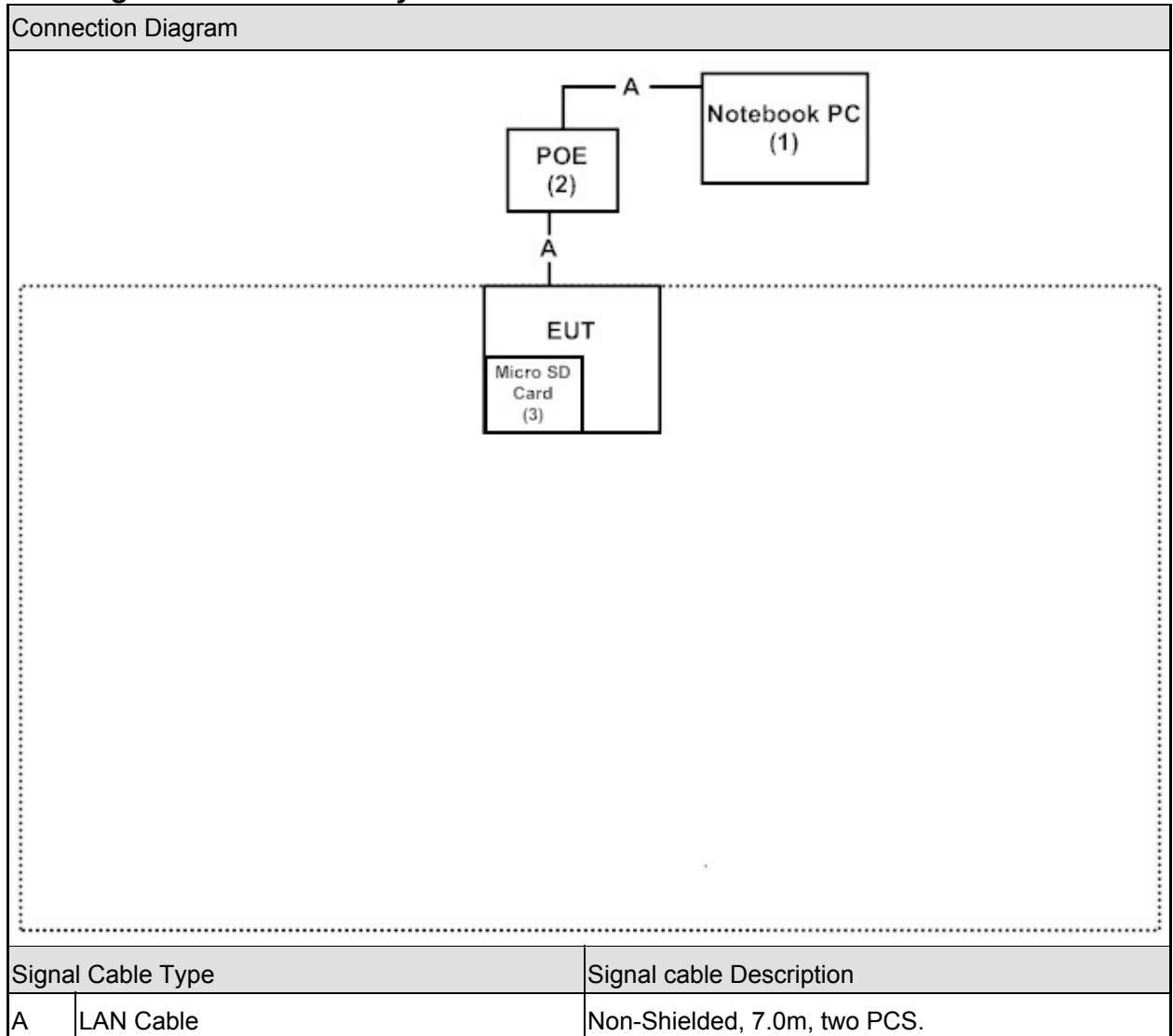
Pre-Test Mode	
Mode 1: POE	
Final Test Mode	
Impedance Stabilization Network Radiated Emission	Mode 1: POE

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	E5530	24QPXW1	Non-Shielded, 0.8m
2	POE	N/A	N/A	N/A	Non-Shielded, 1.8m
3	Micro SD Card (1GB)	SanDisk	N/A	0801002841D1B	N/A

1.4. Configuration of Tested System



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	The EUT will start to operate and display the video figure from the signal source.
4	The EUT will display “video figure” on monitor.
5	SD card works while the EUT is recording.
6	Repeat the above procedure (3) to (5).

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: 2015-04 Class B	No	No
Impedance Stabilization Network	VCCI: 2015-04 Class B	Yes	No
Radiated Emission	VCCI: 2015-04 Class B	Yes	No

2.2. List of Test Equipment

Impedance Stabilization Network / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Capacitive Voltage Probe	Schaffner	CVP2200A	18331	2014/10/23
EMI Test Receiver	R&S	ESCS 30	100367	2014/12/10
LISN	R&S	ENV216	100085	2015/01/19
LISN	R&S	ESH3-Z5	836679/023	2015/01/19
Pulse Limiter	R&S	ESH3-Z2	357.8810.52-1	2014/09/17
RF Current Probe	FCC	F-65 10KHz~1GHz	198	2014/10/23
Coaxial Cable	QTK(Arnist)	RG 400	LC016-RG	2014/06/25
Coupling Decoupling Network	Teseq	CDN ST08A	33998	2014/08/08
Coupling Decoupling Network	Teseq	CDN T800	30303	2015/03/30
BALANCED TELECOM ISN	FCC	FCC-TLISN-T2-02	20316	2014/07/25

Radiated Emission / Site 7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2930	2015/06/12
EMI Test Receiver	R&S	ESCI	100649	2015/04/22
Coaxial Cable	QTK(Arnist)	RG 214	LC007-RG	2014/06/22
Site7 NSA	QTK	N/A	N/A	2014/06/22
Pre-Amplifier	QTK	AP/0100A	CHM/1009094	2014/06/22

Radiated Emission / CB7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESU26	100433	2014/07/31
Horn Antenna	ETS-Lindgren	3117	00135205	2015/04/01
Horn Antenna	SCHWARZBECK	9120D	576	2014/11/21
Pre-Amplifier	COM-POWER	PAM-118	443019	2014/07/09
CB7 VSWR	QTK	N/A	N/A	2014/07/05

VCCI Test Site:

Test Item	Test Site	VCCI No.
Conducted Emission (Telecommunication Port)	SR1	T-1473
Radiated Emission	Site 7	R-3748
Radiated Emission (Above 1GHz)	CB7(9x6x6_Chamber)	G-35

2.3. Measurement Uncertainty

Impedance Stabilization Network

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

2.4. Test Environment

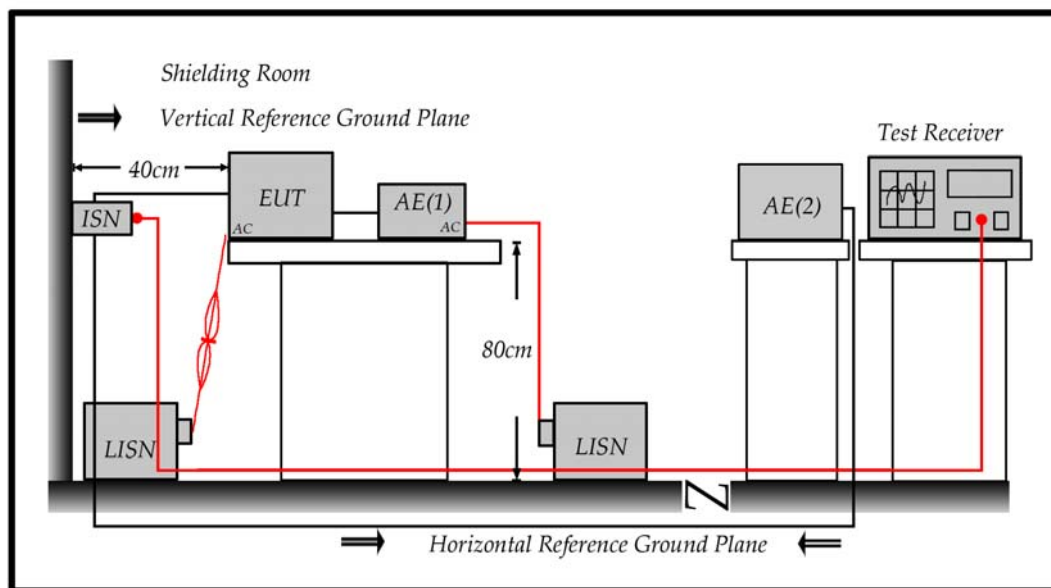
Performed Item	Items	Required	Actual
Impedance Stabilization Network	Temperature (°C)	15-35	21.8
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	21.8
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emissions (Telecommunication Ports)

3.1. Test Specification

According to EMC Standard : VCCI

3.2. Test Setup



3.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	84 – 74	74 – 64
0.50 - 30	74	64

Remarks:

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

3.4. 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.

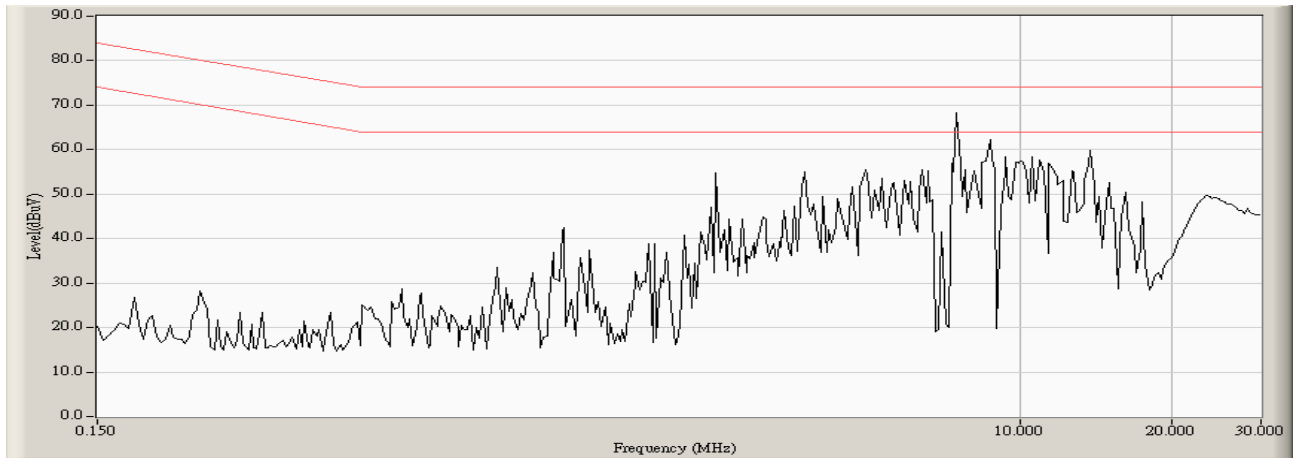
The 75dB LCL ISN is used for cat. 6 cable, the 65dB LCL ISN is used for cat. 5 cable, 55dB LCL ISN is used for cat. 3.

3.5. Deviation from Test Standard

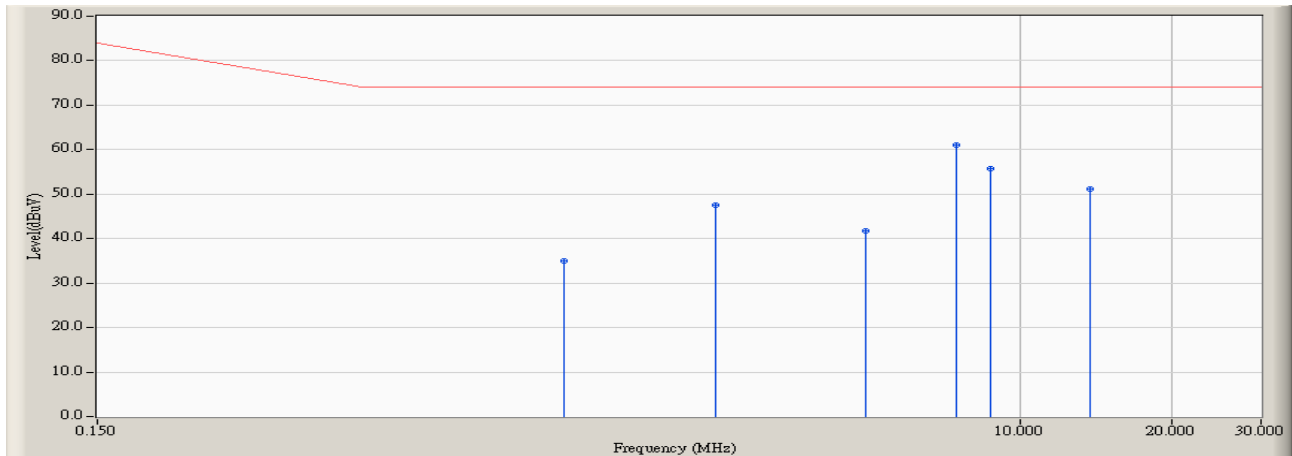
No deviation.

3.6. Test Result

Site : SR1	Time : 2015/06/12 - 23:05
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Stereo Camera	Probe : TESEQ_T8 - Line1
Power : BY POE	Note : Mode 1: ISN 10M



Site : SR1	Time : 2015/06/12 - 23:07
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Stereo Camera	Probe : TESEQ_T8 - Line1
Power : BY POE	Note : Mode 1: ISN 10M

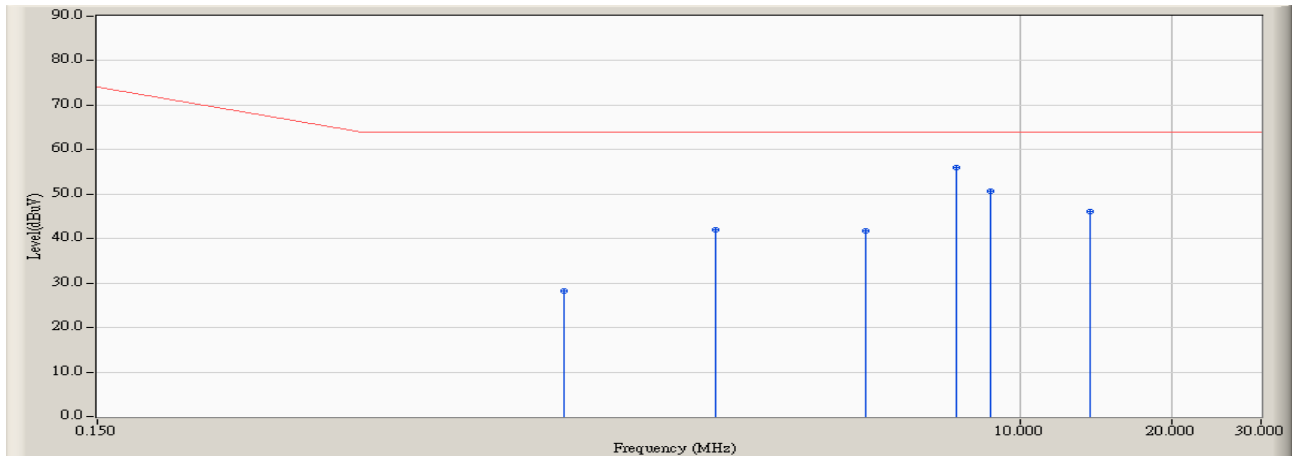


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.252	9.863	25.200	35.063	-38.937	74.000	QUASIPeAK
2		2.502	9.863	37.550	47.413	-26.587	74.000	QUASIPeAK
3		4.947	9.847	31.900	41.747	-32.253	74.000	QUASIPeAK
4	*	7.500	9.868	51.220	61.088	-12.912	74.000	QUASIPeAK
5		8.752	9.877	45.900	55.778	-18.222	74.000	QUASIPeAK
6		13.752	9.930	41.220	51.150	-22.850	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

Site : SR1	Time : 2015/06/12 - 23:07
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Stereo Camera	Probe : TESEQ_T8 - Line1
Power : BY POE	Note : Mode 1: ISN 10M

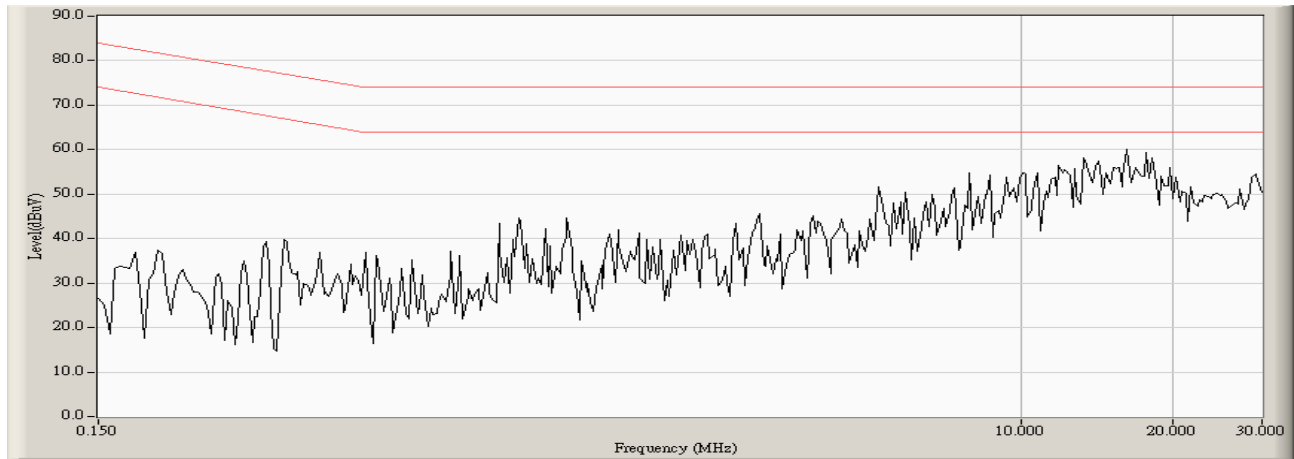


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.252	9.863	18.470	28.333	-35.667	64.000	AVERAGE
2		2.502	9.863	32.090	41.953	-22.047	64.000	AVERAGE
3		4.947	9.847	31.890	41.737	-22.263	64.000	AVERAGE
4	*	7.500	9.868	46.080	55.948	-8.052	64.000	AVERAGE
5		8.752	9.877	40.790	50.668	-13.332	64.000	AVERAGE
6		13.752	9.930	36.170	46.100	-17.900	64.000	AVERAGE

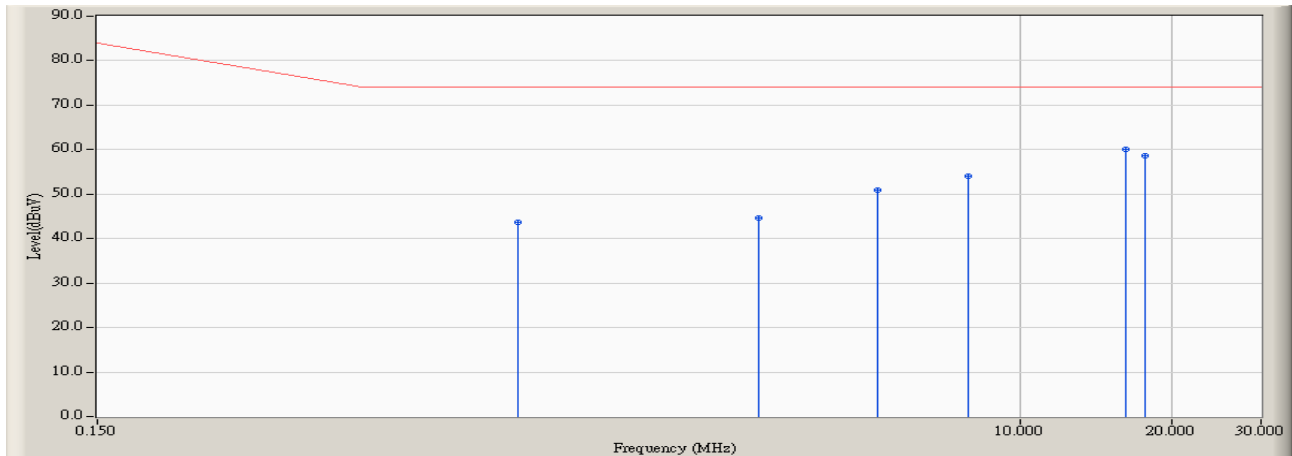
Note:

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

Site : SR1	Time : 2015/06/12 - 23:11
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Stereo Camera	Probe : TESEQ_T8 - Line1
Power : BY POE	Note : Mode 1: ISN 100M



Site : SR1	Time : 2015/06/12 - 23:12
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Stereo Camera	Probe : TESEQ_T8 - Line1
Power : BY POE	Note : Mode 1: ISN 100M

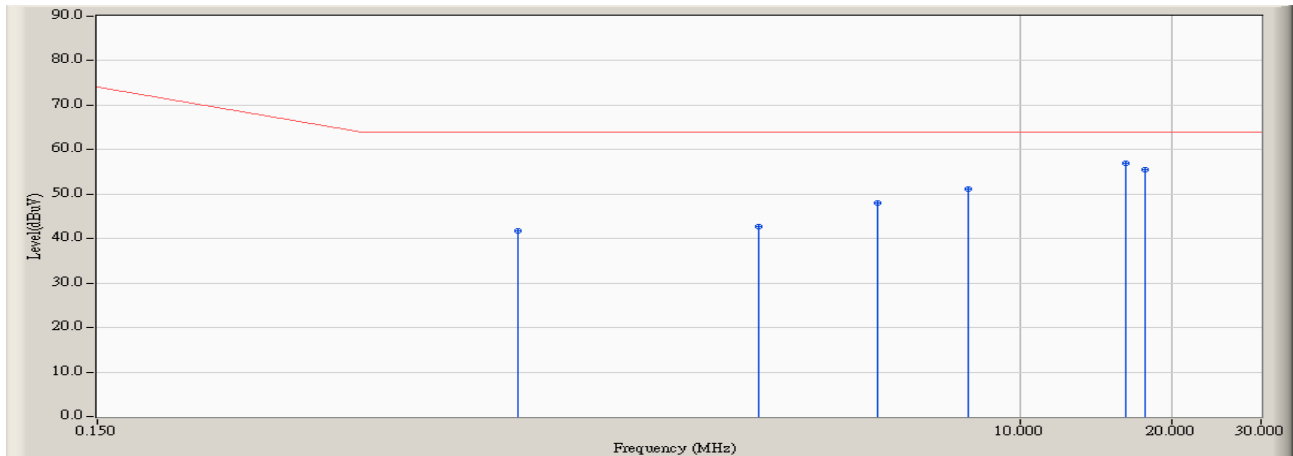


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.021	9.870	33.810	43.680	-30.320	74.000	QUASIPeAK
2		3.037	9.858	34.900	44.758	-29.242	74.000	QUASIPeAK
3		5.236	9.851	40.950	50.801	-23.199	74.000	QUASIPeAK
4		7.923	9.872	44.090	53.962	-20.038	74.000	QUASIPeAK
5	*	16.228	9.981	50.160	60.141	-13.859	74.000	QUASIPeAK
6		17.693	10.012	48.520	58.532	-15.468	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

Site : SR1	Time : 2015/06/12 - 23:12
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Stereo Camera	Probe : TESEQ_T8 - Line1
Power : BY POE	Note : Mode 1: ISN 100M



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.021	9.870	31.970	41.840	-22.160	64.000	AVERAGE
2		3.037	9.858	32.760	42.618	-21.382	64.000	AVERAGE
3		5.236	9.851	38.190	48.041	-15.959	64.000	AVERAGE
4		7.923	9.872	41.300	51.172	-12.828	64.000	AVERAGE
5	*	16.228	9.981	46.870	56.851	-7.149	64.000	AVERAGE
6		17.693	10.012	45.420	55.432	-8.568	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

3.7. Test Photograph

Test Mode : Mode 1: POE

Description : Front View of ISN Test



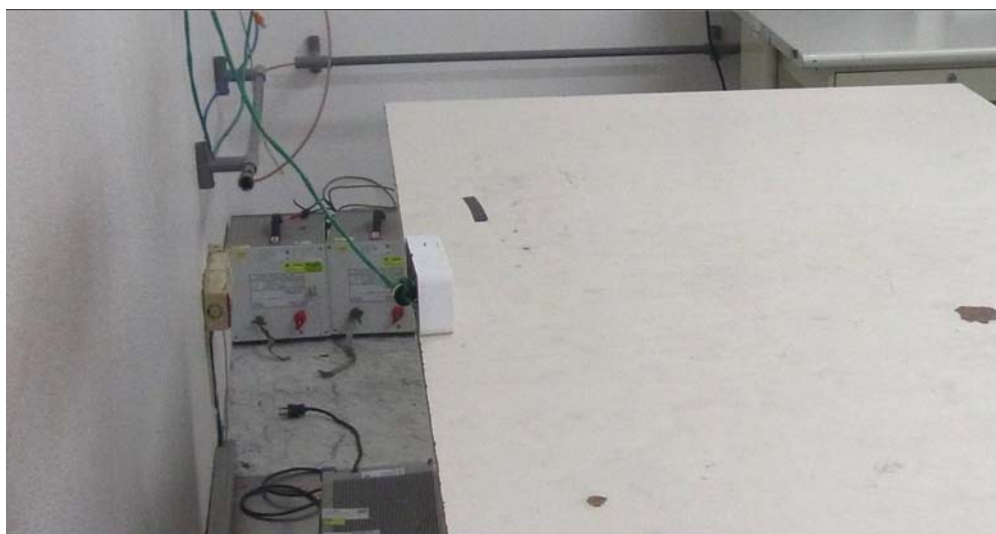
Test Mode : Mode 1: POE

Description : Back View of ISN Test



Test Mode : Mode 1: POE

Description : Back View of ISN Test



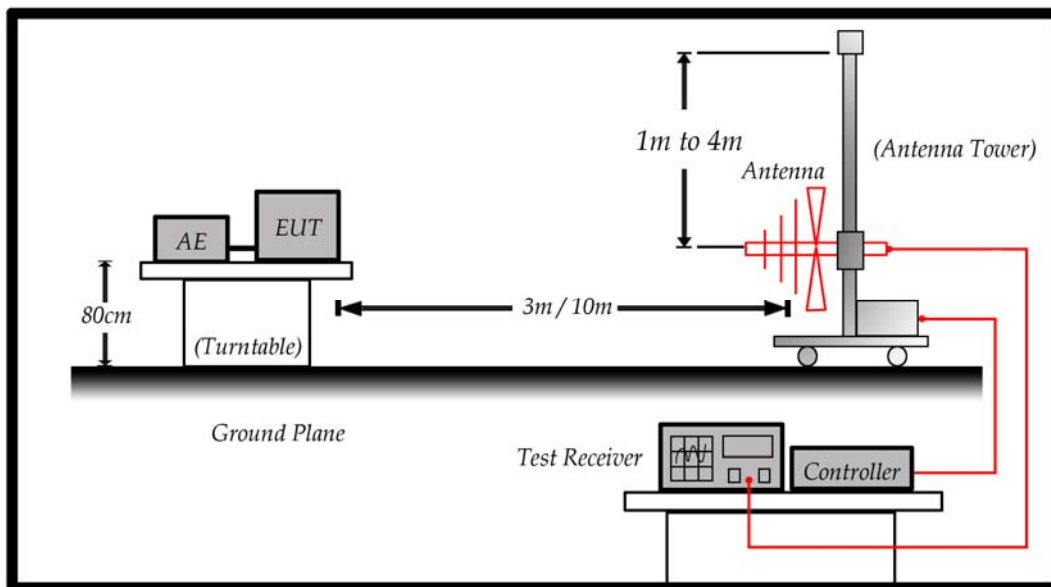
4. Radiated Emission

4.1. Test Specification

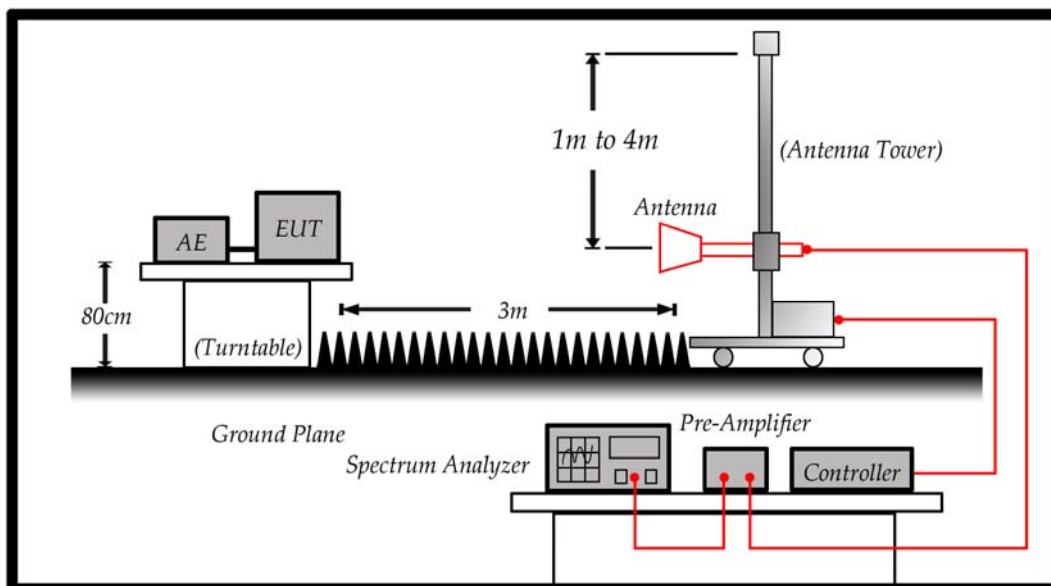
According to EMC Standard : VCCI

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Under 1GHz test shall not exceed the following value:

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Above 1GHz test shall not exceed the following value:

Limits (dBuV/m)			
Frequency (GHz)	Distance (m)	Peak limit dB(μV/m)	Average limit dB(μV/m)
1-3	3	70	50
3-6	3	74	54

NOTE: The lower limit applies at the transition frequency

4.4. 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 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 according to VCCI on radiated measurement.

Radiated emissions were investigated over the frequency range from 30MHz to 1GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 10 meters.

Conditional testing procedure:

The highest internal source of an EUT is defined as the highest frequency generated or used within the EUT or on which the EUT operates or tunes.

If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.

If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.

If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.

If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.

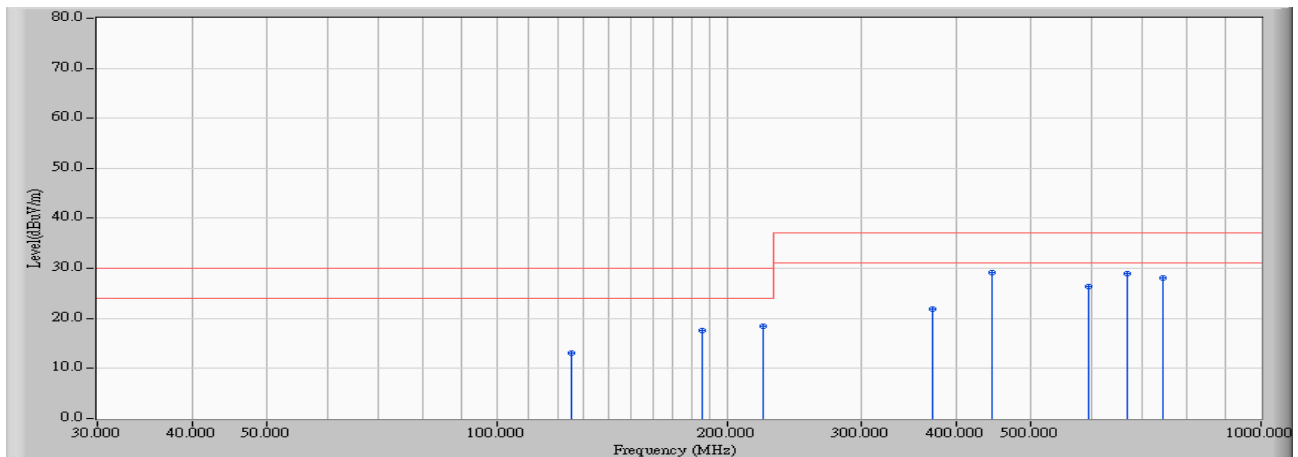
It is placed with absorb on the ground between EUT and Antenna.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Site : Site7	Time : 2015/06/11 - 15:51
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Stereo Camera	Probe : Site7_CBL6112_10M_1406 - HORIZONTAL
Power : BY POE	Note : Mode 1

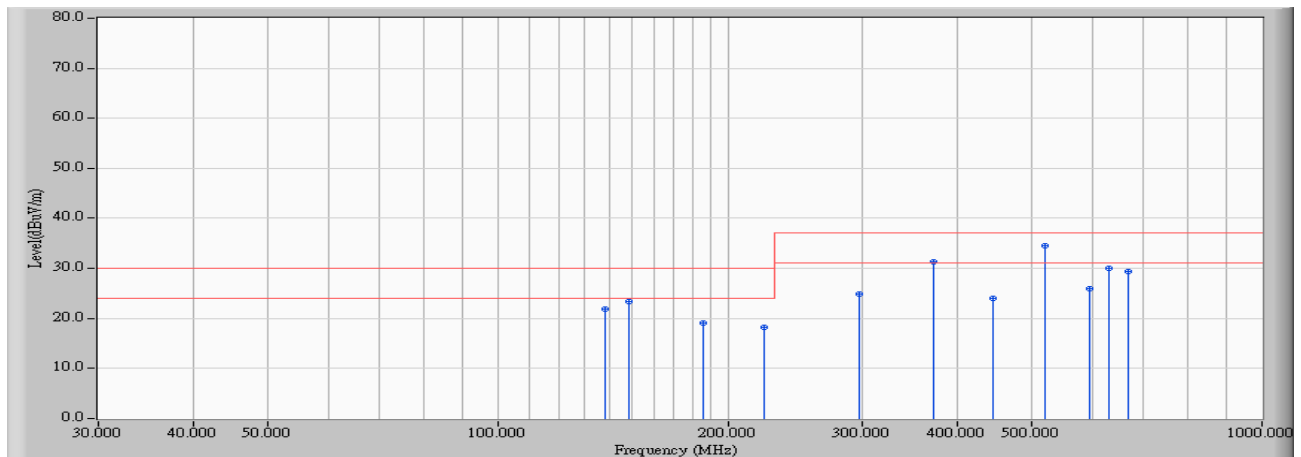


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	-18.188	31.200	13.012	-16.988	30.000	QUASIPeAK
2		185.620	-20.419	38.000	17.581	-12.419	30.000	QUASIPeAK
3		222.740	-19.497	37.900	18.403	-11.597	30.000	QUASIPeAK
4		371.230	-12.370	34.200	21.829	-15.171	37.000	QUASIPeAK
5	*	445.490	-9.910	39.000	29.090	-7.910	37.000	QUASIPeAK
6		594.000	-6.864	33.200	26.336	-10.664	37.000	QUASIPeAK
7		668.220	-6.160	35.200	29.040	-7.960	37.000	QUASIPeAK
8		742.480	-4.805	32.900	28.095	-8.905	37.000	QUASIPeAK

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

Site : Site7	Time : 2015/06/11 - 16:14
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Stereo Camera	Probe : Site7_CBL6112_10M_1406 - VERTICAL
Power : BY POE	Note : Mode 1

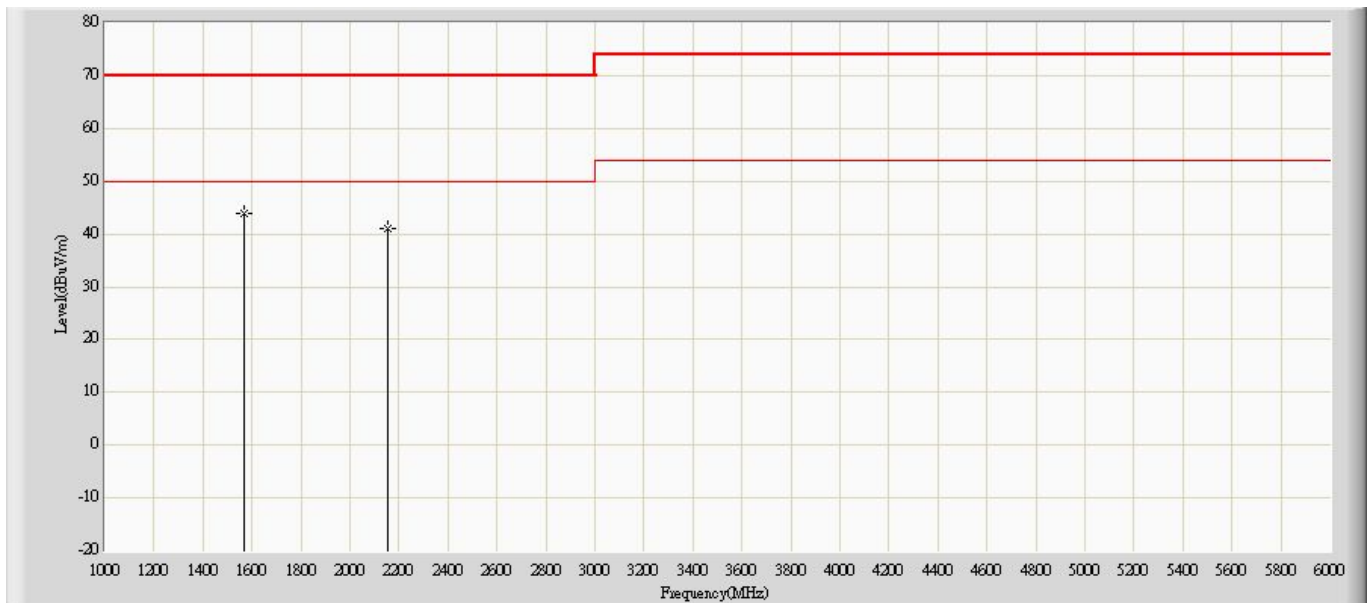


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		137.900	-18.654	40.500	21.846	-8.154	30.000	QUASIPeAK
2		148.490	-19.328	42.800	23.472	-6.528	30.000	QUASIPeAK
3		185.620	-20.419	39.600	19.181	-10.819	30.000	QUASIPeAK
4		222.745	-19.497	37.800	18.304	-11.696	30.000	QUASIPeAK
5		297.000	-15.104	40.000	24.895	-12.105	37.000	QUASIPeAK
6		371.240	-12.370	43.700	31.330	-5.670	37.000	QUASIPeAK
7		445.480	-9.910	34.000	24.090	-12.910	37.000	QUASIPeAK
8	*	519.740	-7.804	42.300	34.495	-2.505	37.000	QUASIPeAK
9		593.990	-6.864	32.900	26.036	-10.964	37.000	QUASIPeAK
10		631.110	-6.466	36.400	29.934	-7.066	37.000	QUASIPeAK
11		668.220	-6.160	35.600	29.440	-7.560	37.000	QUASIPeAK

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

Site: CB7	Time: 2015/06/13 - 03:12
Limit: VCCI_B_(Above_1G)	Margin: 0
Probe: CB7_Horn_9120D_1411	Polarity: Horizontal
EUT: Stereo camera	Power: BY POE
Note: Mode 1	

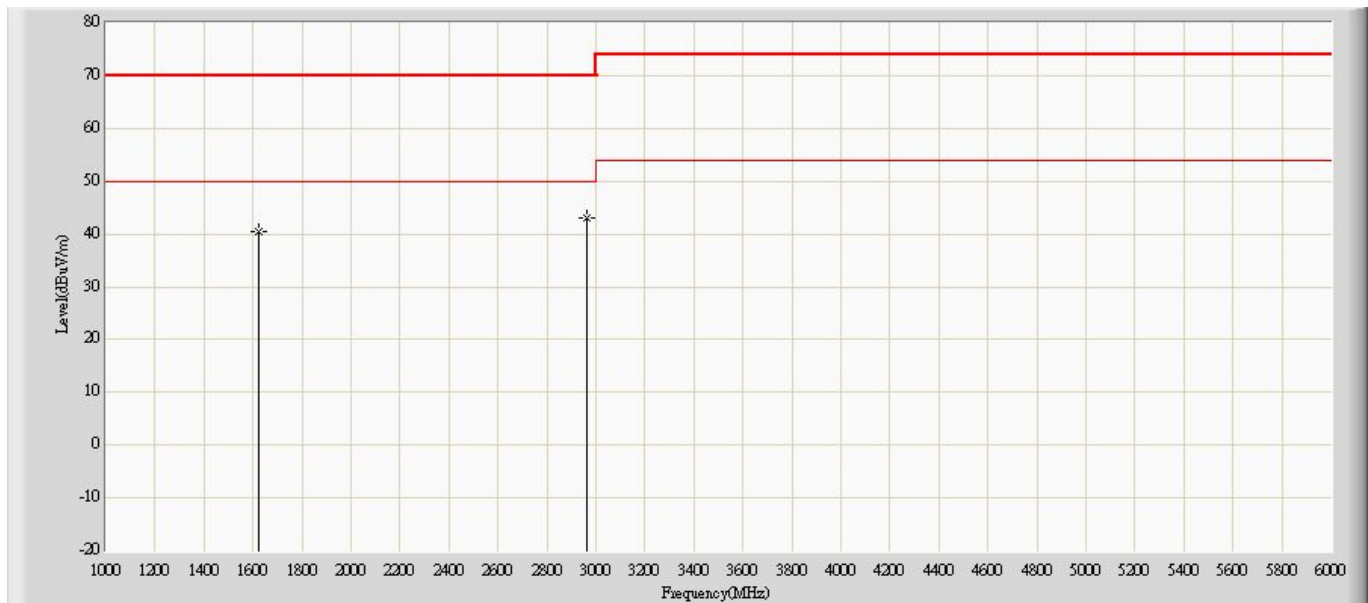


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	1566.000	44.009	41.600	-25.991	70.000	2.409	PK
2			2155.000	41.064	36.420	-28.936	70.000	4.644	PK

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: 2015/06/13 - 03:12
Limit: VCCI_B_(Above_1G)	Margin: 0
Probe: CB7_Horn_9120D_1411	Polarity: Vertical
EUT: Stereo camera	Power: BY POE
Note: Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1625.000	40.366	37.770	-29.634	70.000	2.596	PK
2		*	2960.000	43.075	36.220	-26.925	70.000	6.855	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).

4.7. Test Photograph

Test Mode : Mode 1: POE

Description : Front View of Radiated Test



Test Mode : Mode 1: POE

Description : Back View of Radiated Test



Test Mode : Mode 1: POE

Description : Front View of High Frequency Radiated Test



5. Attachment

➤ **EUT Photograph**

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo

