CE 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-ITCEP01V00
Report Version ： V1.0

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	:	EN 55022: 2010+AC: 2011 Class B EN 55024: 2010 EN 61000-3-2: 2006+A2: 2009 EN 61000-3-3: 2013 CISPR 22: 2008 CISPR 24: 2010 AS/NZS CISPR 22: 2009+A1: 2010
Test Result	:	Complied
Performed Location	:	Quietek Corporation (Linkou Laboratory) No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C. TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

Documented By : Rita Huang
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Reviewed By : Steven Tsai
(Engineer / Steven Tsai)

Approved By :
(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/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

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TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098 E-Mail : service@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:

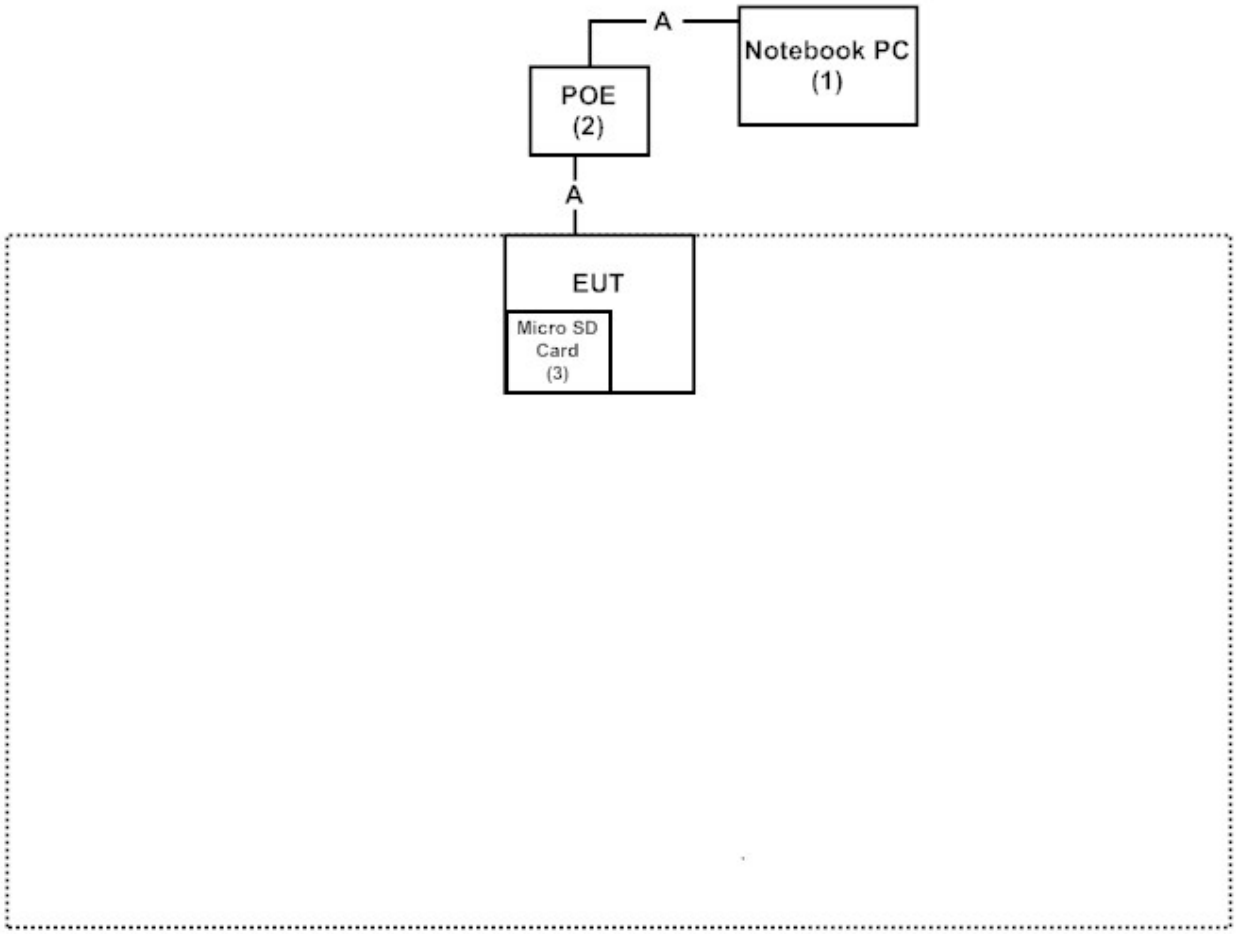
Pre-Test Mode	
Mode 1: POE	
Final Test Mode	
Impedance Stabilization Network Radiated Emission	Mode 1: POE
Immunity	Mode 1: POE

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

Connection Diagram


Signal Cable Type		Signal cable Description
A	LAN Cable	Non-Shielded, 7.0m, two PCS.

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	EN 55022: 2010+AC: 2011 AS/NZS CISPR 22: 2009+A1: 2010	No	No
Impedance Stabilization Network	EN 55022: 2010+AC: 2011 AS/NZS CISPR 22: 2009+A1: 2010	Yes	No
Radiated Emission	EN 55022: 2010+AC: 2011 AS/NZS CISPR 22: 2009+A1: 2010	Yes	No
Power Harmonics	EN 61000-3-2: 2006+A2: 2009	No	No
Voltage Fluctuation and Flicker	EN 61000-3-3: 2013	No	No

Immunity			
Performed Item	Normative References	Test Performed	Deviation
Electrostatic Discharge	IEC 61000-4-2 Ed. 2.0: 2008	Yes	No
Radiated susceptibility	IEC 61000-4-3 Ed. 3.2: 2010	Yes	No
Electrical fast transient/burst	IEC 61000-4-4 Ed. 3.0: 2012	Yes	No
Surge	IEC 61000-4-5 Ed. 2.0: 2005	Yes	No
Conducted susceptibility	IEC 61000-4-6 Ed.4.0: 2013	Yes	No
Power frequency magnetic field	IEC 61000-4-8 Ed. 2.0: 2009	Yes	No
Voltage dips and interruption	IEC 61000-4-11 Ed. 2.0: 2004	No	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

Electrostatic Discharge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
ESD Simulator System	Noiseken	ESS2002EX	ESS0929057	2015/06/11
ESD GUN	Noiseken	TC-815R	ESS0929097	2015/06/11
Horizontal Coupling Plane(HCP)	QuieTek	HCP AL50	N/A	N/A
Vertical Coupling Plane(VCP)	QuieTek	VCP AL50	N/A	N/A

Radiated susceptibility / CB5

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Signal Generator	R&S	SMB100A	106404	2015/05/08
Power Meter	R&S	NRVD(P.M)	100219	2015/05/08
Biconilog Antenna	EMCO	3149	00071675	N/A
Power Amplifier	A&R	30S1G3	309453	N/A
Power Amplifier	SCHAFFNER	CBA9413B	4020	N/A
uniform field calibration	QTK	N/A	N/A	2015/05/19

Electrical fast transient/burst / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2015/4/08

Surge / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2015/4/08

Conducted susceptibility / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TESEQ RF-Generator	TESEQ	NSG 4070B-30	37490	2015/01/20

Power frequency magnetic field / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2014/10/29
Magnetic Loop Coil	Schaffner	INA 702	160	2014/07/09

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.

Harmonic Current Emission

The measurement uncertainty is evaluated as 5.1 (mA/A).

Voltage Fluctuation and Flicker

The measurement uncertainty is evaluated as 0.6 (mV/V).

Electrostatic Discharge

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in ESD testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant ESD standards. The immunity test signal from the ESD system meet the required specifications in IEC 61000-4-2 through the calibration report with the calibrated uncertainty for the waveform of current and timing as being 2.5 % and 6%.

Radiated susceptibility

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in RS testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant RS standards. The immunity test signal from the RS system meet the required specifications in IEC 61000-4-3 through the calibration for the uniform field strength and monitoring for the test level with the uncertainty evaluation report for the electrical filed strength as being 3.57 dB.

Electrical fast transient/burst

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in EFT/Burst testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant EFT/Burst standards. The immunity test signal from the EFT/Burst system meet the required specifications in IEC 61000-4-4 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 8.4 % and 4.7%.

Surge

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in Surge testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant Surge standards. The immunity test signal from the Surge system meet the required specifications in IEC 61000-4-5 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 4.1 % and 3.9%.

Conducted susceptibility

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in CS testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant CS standards. The immunity test signal from the CS system meet the required specifications in IEC 61000-4-6 through the calibration for unmodulated signal and monitoring for the test level with the uncertainty evaluation report for the injected modulated signal level through CDN and EM Clamp/Direct Injection as being 2.0 dB and 2.61 dB.

Power frequency magnetic field

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in PFM testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant PFM standards. The immunity test signal from the PFM system meet the required specifications in IEC 61000-4-8 through the calibration report with the calibrated uncertainty for the Gauss Meter to verify the output level of magnetic field strength as being 1.0 %.

2.4. Test Environment

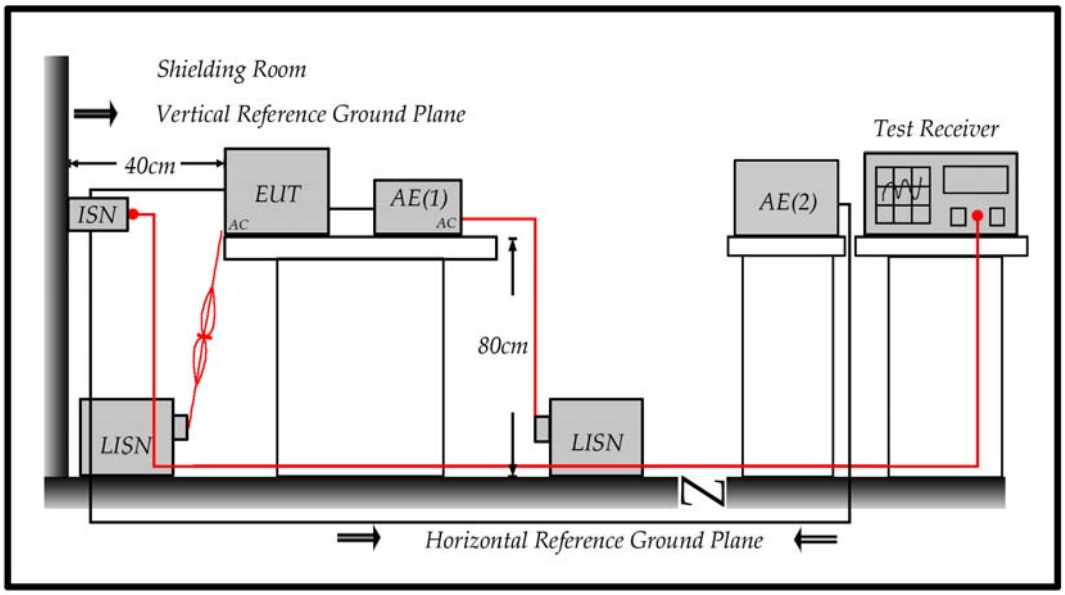
Performed Item	Items	Required	Actual
Impedance Stabilization Network	Temperature (°C)	15-35	21.8
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	21.8
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	950-1000
Electrostatic Discharge	Temperature (°C)	15-35	22
	Humidity (%RH)	30-60	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated susceptibility	Temperature (°C)	15-35	22
	Humidity (%RH)	25-75	53
	Barometric pressure (mbar)	860-1060	950-1000
Electrical fast transient/burst	Temperature (°C)	15-35	23
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Surge	Temperature (°C)	15-35	23
	Humidity (%RH)	10-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Conducted susceptibility	Temperature (°C)	15-35	23
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Power frequency magnetic field	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emissions (Telecommunication Ports)

3.1. Test Specification

According to EMC Standard : EN 55022 and AS/NZS CISPR 22

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:

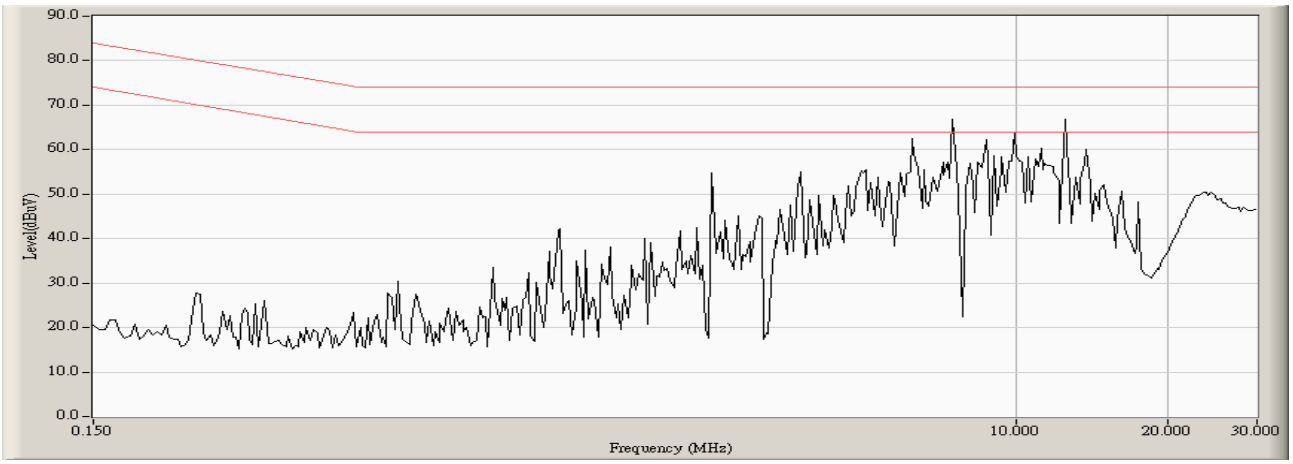
The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150 ohm impedance.
Both alternative cables are tested related to the LCL requested. 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

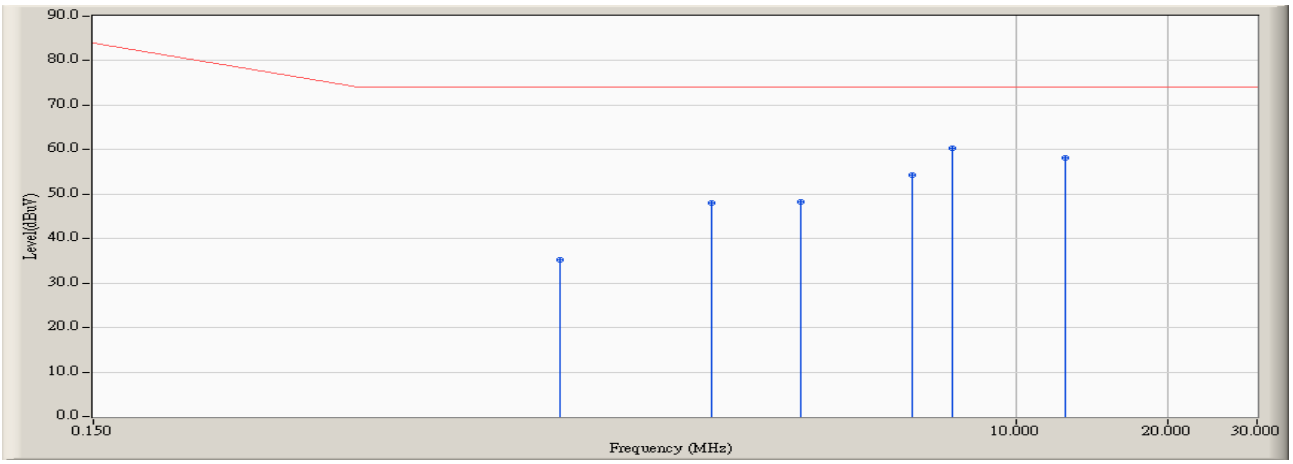
No deviation.

3.6. Test Result

Site : SR1	**Time : 2015/06/12 - 23:28**
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 - 23:30**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Stereo Camera	**Probe : TESEQ_T8 - Line1**
Power : BY POE	**Note : Mode 1: ISN 10M**

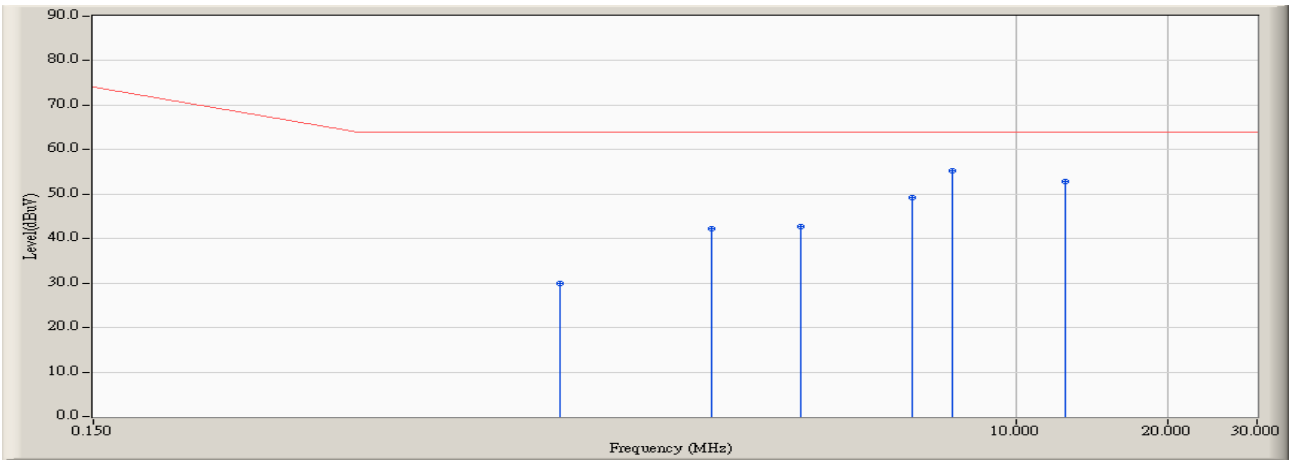


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.252	9.863	25.440	35.303	-38.697	74.000	QUASIPEAK
2		2.502	9.863	38.130	47.993	-26.007	74.000	QUASIPEAK
3		3.752	9.854	38.360	48.214	-25.786	74.000	QUASIPEAK
4		6.252	9.861	44.480	54.341	-19.659	74.000	QUASIPEAK
5	*	7.502	9.868	50.390	60.258	-13.742	74.000	QUASIPEAK
6		12.502	9.910	48.260	58.170	-15.830	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 - 23:30**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Stereo Camera	**Probe : TESEQ_T8 - Line1**
Power : BY POE	**Note : Mode 1: ISN 10M**

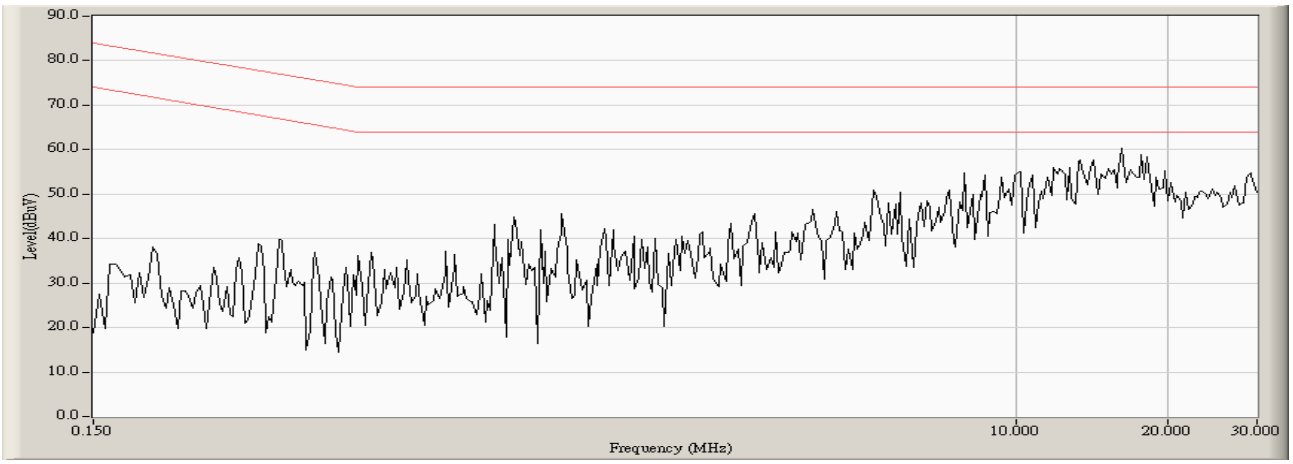


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.252	9.863	19.940	29.803	-34.197	64.000	AVERAGE
2		2.502	9.863	32.350	42.213	-21.787	64.000	AVERAGE
3		3.752	9.854	32.960	42.814	-21.186	64.000	AVERAGE
4		6.252	9.861	39.360	49.221	-14.779	64.000	AVERAGE
5	*	7.502	9.868	45.320	55.188	-8.812	64.000	AVERAGE
6		12.502	9.910	43.050	52.960	-11.040	64.000	AVERAGE

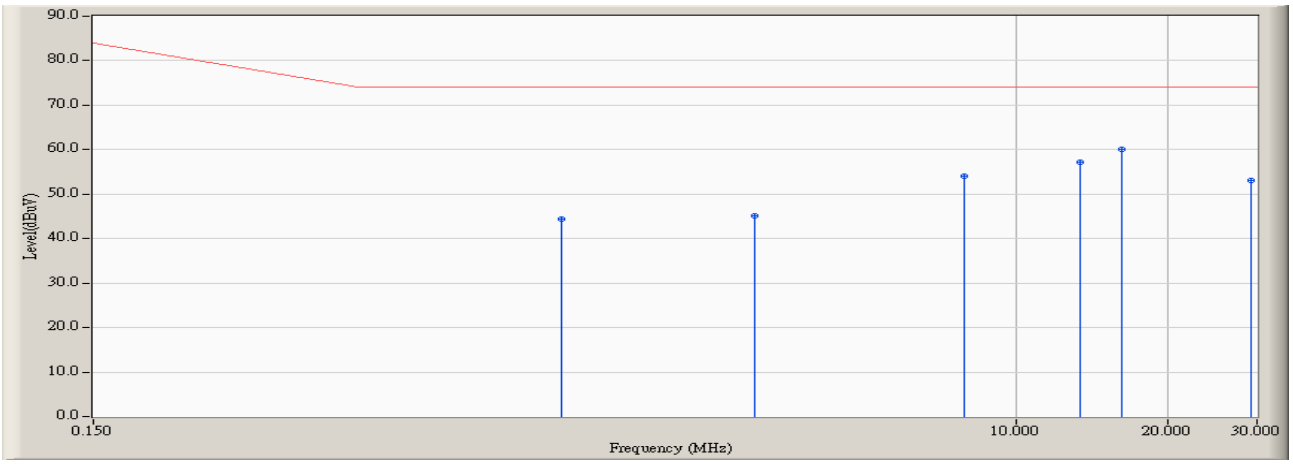
Note:

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 - 23:32**
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 - 23:33**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Stereo Camera	**Probe : TESEQ_T8 - Line1**
Power : BY POE	**Note : Mode 1: ISN 100M**

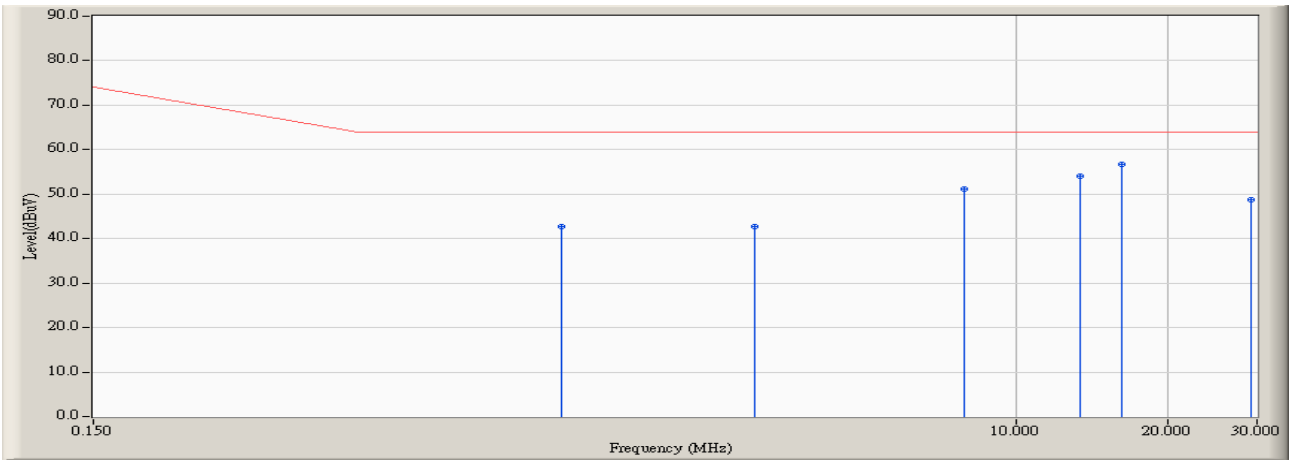


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		1.267	9.864	34.620	44.484	-29.516	74.000	QUASIPEAK
2		3.037	9.858	35.250	45.108	-28.892	74.000	QUASIPEAK
3		7.923	9.872	44.250	54.122	-19.878	74.000	QUASIPEAK
4		13.420	9.924	47.240	57.164	-16.836	74.000	QUASIPEAK
5	*	16.228	9.981	49.980	59.961	-14.039	74.000	QUASIPEAK
6		29.111	10.327	42.860	53.187	-20.813	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 - 23:33**
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		1.267	9.864	32.960	42.824	-21.176	64.000	AVERAGE
2		3.037	9.858	32.820	42.678	-21.322	64.000	AVERAGE
3		7.923	9.872	41.360	51.232	-12.768	64.000	AVERAGE
4		13.420	9.924	44.050	53.974	-10.026	64.000	AVERAGE
5	*	16.228	9.981	46.680	56.661	-7.339	64.000	AVERAGE
6		29.111	10.327	38.500	48.827	-15.173	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

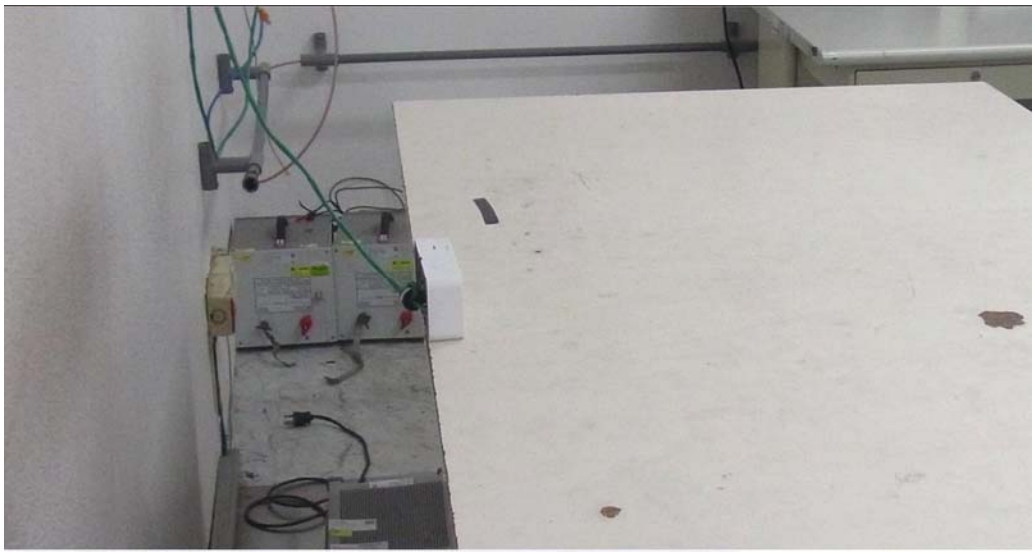
Description : Front View of ISN Test

Test Mode : Mode 1: POE

Description : Back View of ISN Test

Test Mode : Mode 1: POE

Description : Back View of ISN Test



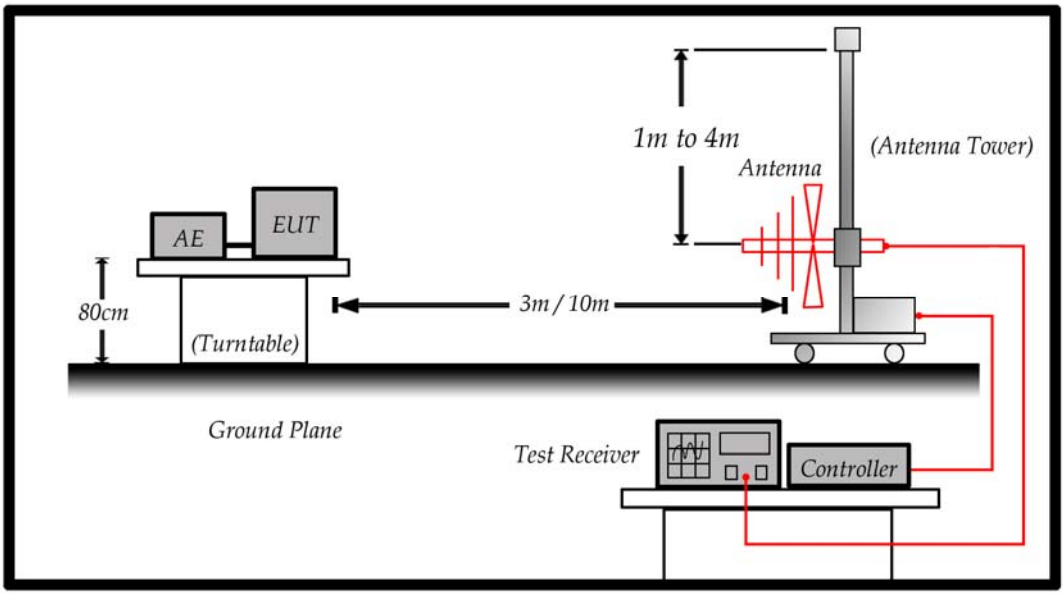
4. Radiated Emission

4.1. Test Specification

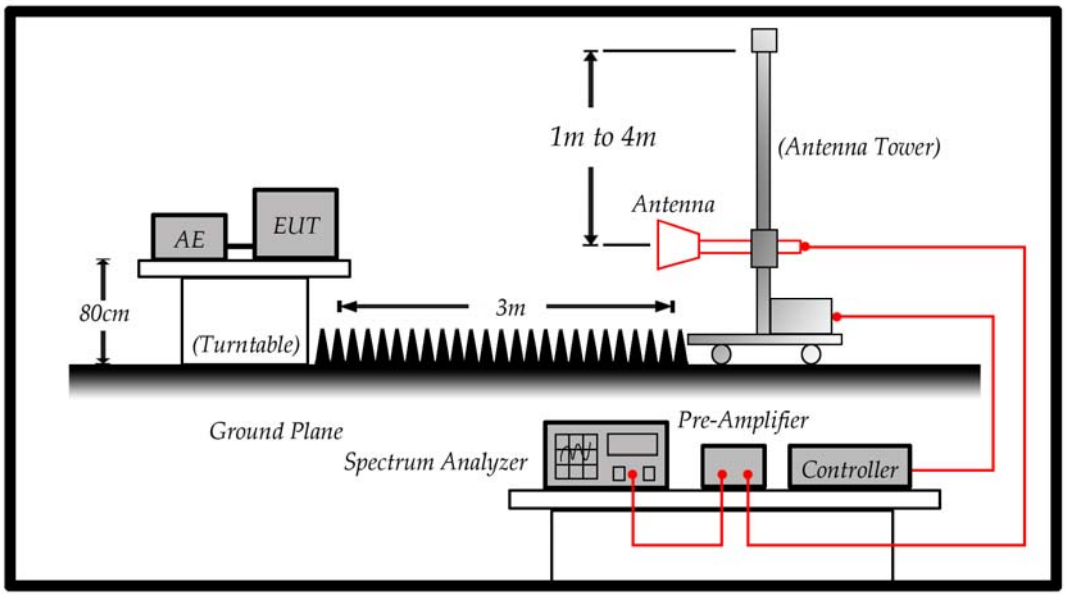
According to EMC Standard : EN 55022 and AS/NZS CISPR 22

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

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

Limits			
Frequency (GHz)	Distance (m)	Peak (dBuV/m)	Average (dBuV/m)
1 – 3	3	70	50
3 – 6	3	74	54

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.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5^{th} harmonic of the highest frequency or 6 GHz, whichever is lower

4.4. Test Procedure

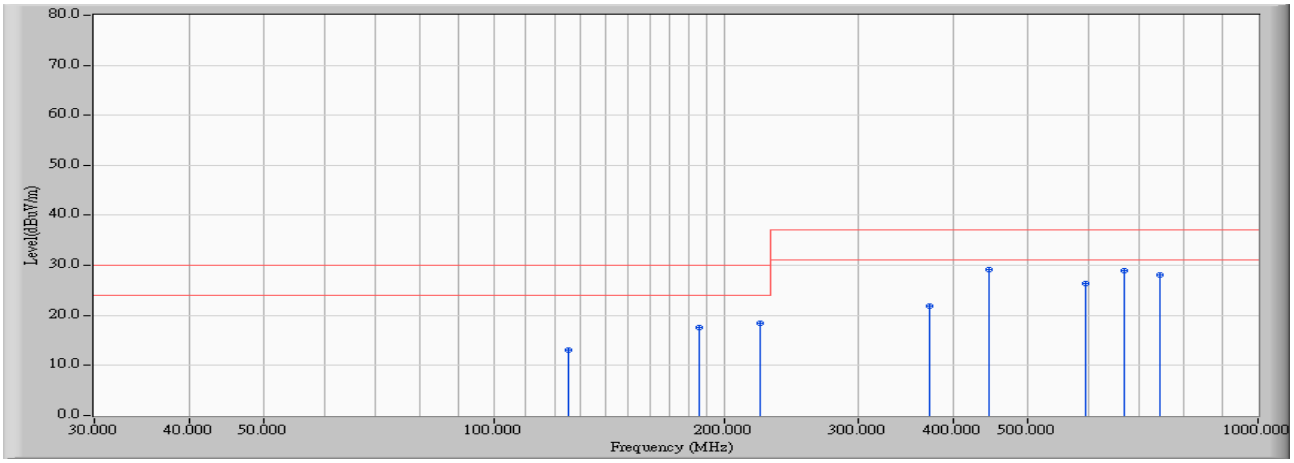
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3/10 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
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 invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120kHz and above 1GHz using a receiver bandwidth of 1MHz.
30MHz to1GHz Radiated was performed at an antenna to EUT distance of 10 meters.
Above1GHz Radiated was performed at an antenna to EUT distance of 3 meters.
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**

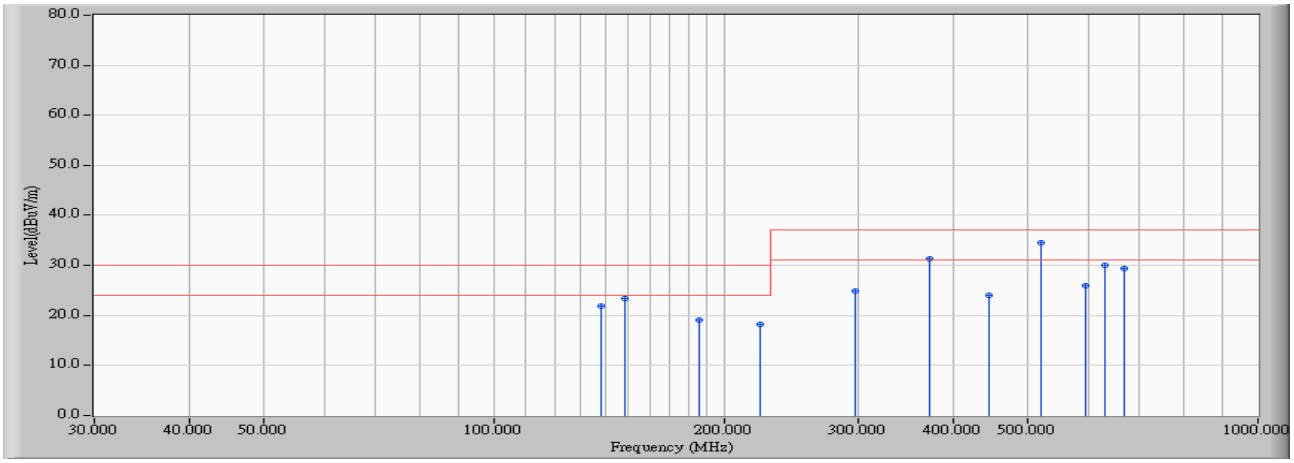


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	-18.188	31.200	13.012	-16.988	30.000	QUASIPEAK
2		185.620	-20.419	38.000	17.581	-12.419	30.000	QUASIPEAK
3		222.740	-19.497	37.900	18.403	-11.597	30.000	QUASIPEAK
4		371.230	-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**

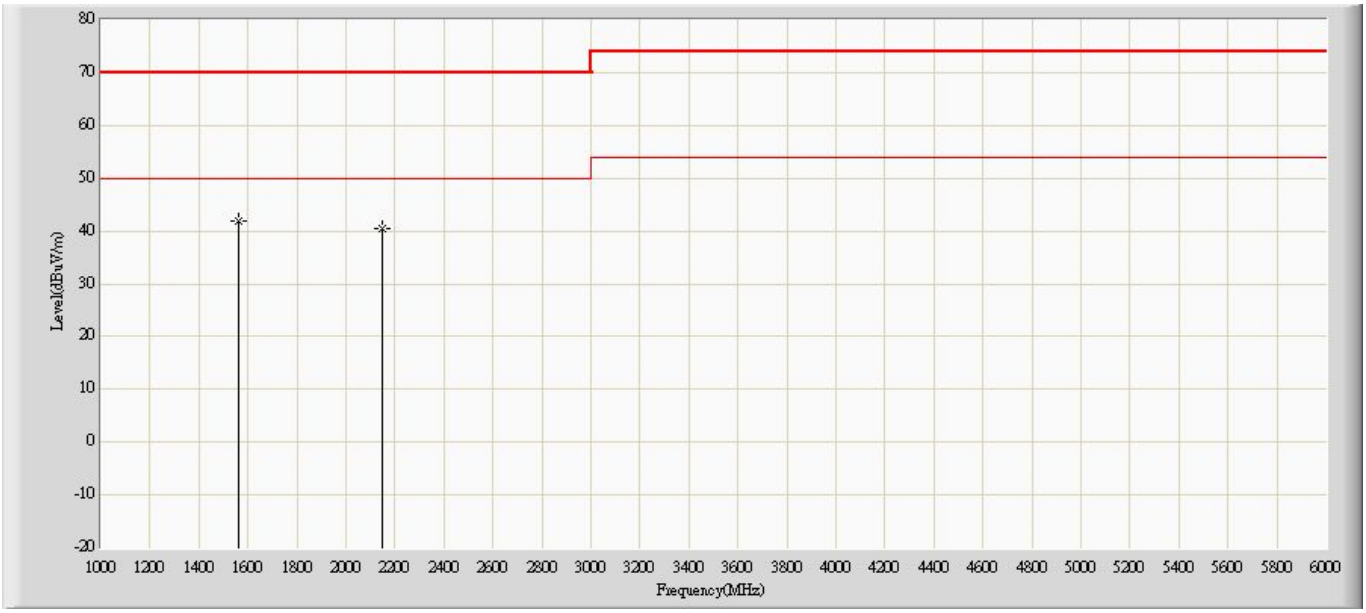


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		137.900	-18.654	40.500	21.846	-8.154	30.000	QUASIPEAK
2		148.490	-19.328	42.800	23.472	-6.528	30.000	QUASIPEAK
3		185.620	-20.419	39.600	19.181	-10.819	30.000	QUASIPEAK
4		222.745	-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 - 03:14
Limit: EN55022_B_(Above_1G)	Margin: 0
Probe: CB7_Horn_9120D_1411	Polarity: Horizontal
EUT: Stereo Camera	Power: BY POE
Note: Mode 1	

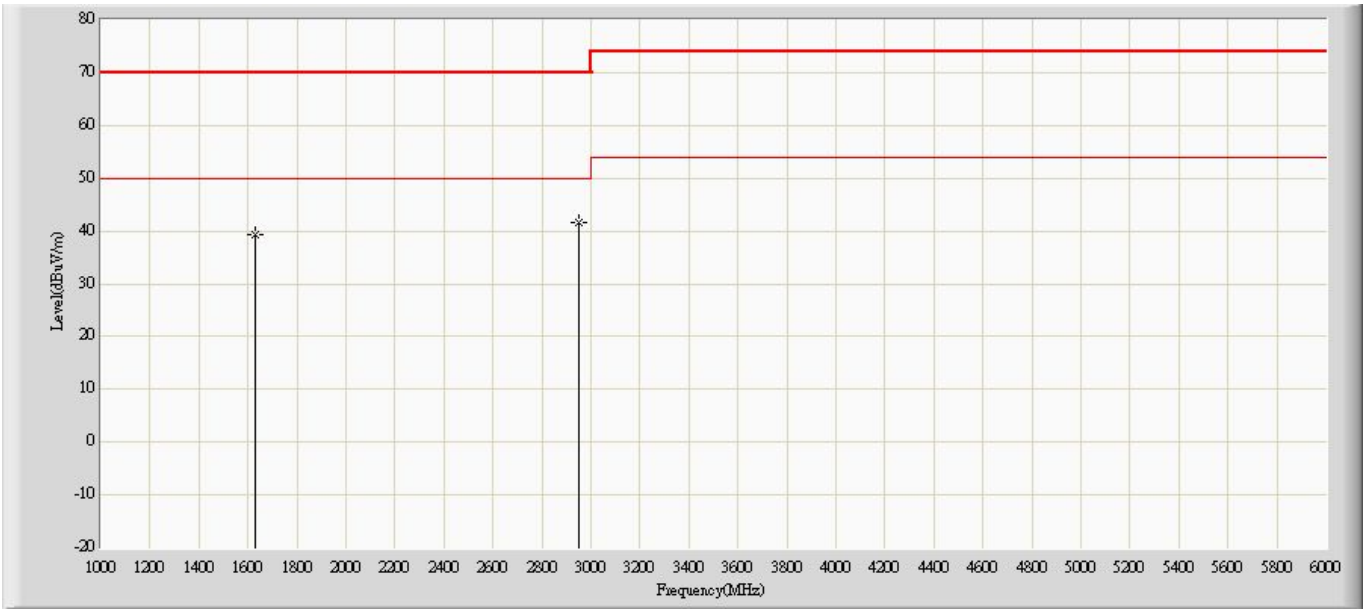


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	1560.000	41.873	39.491	-28.127	70.000	2.382	PK
2			2150.000	40.363	35.714	-29.637	70.000	4.649	PK

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 - 03:14
Limit: EN55022_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			1630.000	39.427	36.871	-30.573	70.000	2.556	PK
2		*	2950.000	41.675	34.900	-28.325	70.000	6.775	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

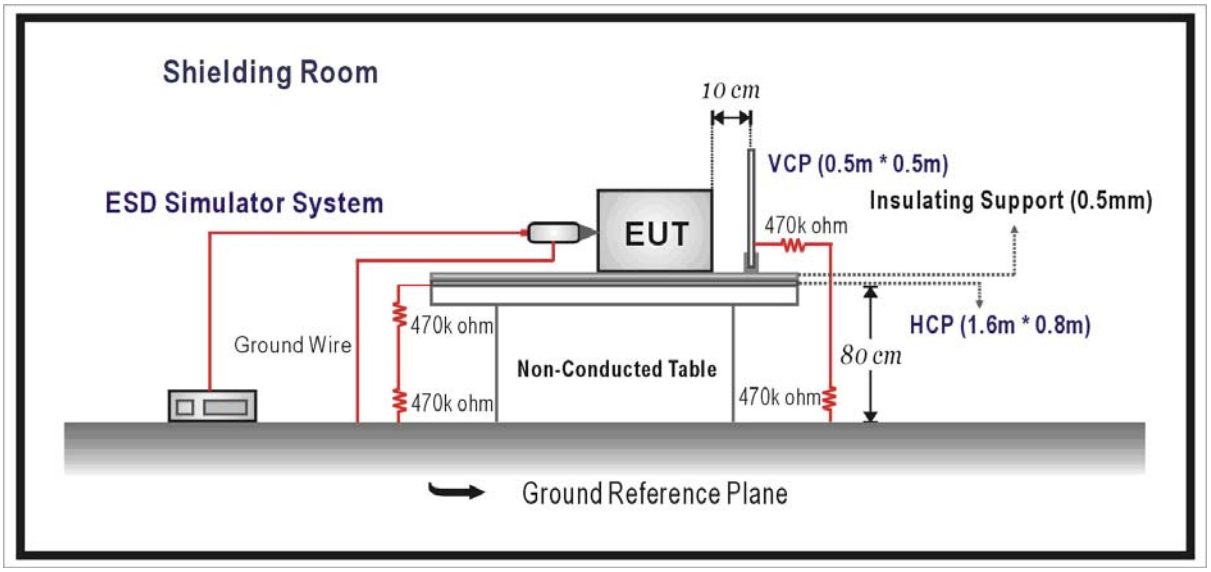
Description : Front View of High Frequency Radiated Test

5. Electrostatic Discharge

5.1. Test Specification

According to Standard : IEC 61000-4-2

5.2. Test Setup



5.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Electrostatic Discharge	kV(Charge Voltage)	±8 Air Discharge ±4 Contact Discharge	B

5.4. Test Procedure

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT.

Air discharges were applied only to non-conductive surfaces of the EUT.

During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

The selected point, which was performed with electrostatic discharge, was marked on the red label of the EUT.

Indirect application of discharges to the EUT:

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Product	Stereo Camera		
Test Item	Electrostatic Discharge		
Test Mode	Mode 1: POE		
Date of Test	2015/06/17	Test Site	No.6 Shielded Room

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria (A,B,C)	Results
Air Discharge	10	+8kV	B	A	Pass
	10	-8kV	B	A	Pass
Contact Discharge	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (HCP)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (VCP)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

NR: No Requirement

☒ Meet criteria A: Operate as intended during and after the test

☐ Meet criteria B: Operate as intended after the test

☐ Meet criteria C: Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at ____ kV.

☒ No false alarms or other malfunctions were observed during or after the test.

Remark:

The Contact discharges were applied at least total 200 discharges at a minimum of four test points.

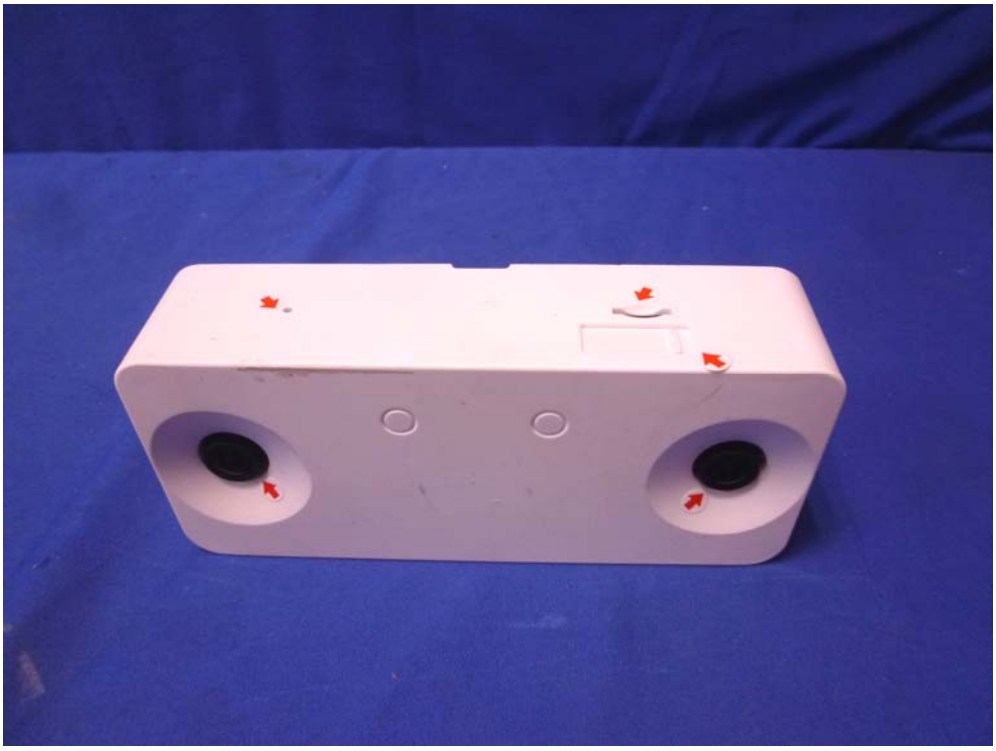
5.7. Test Photograph

Test Mode : Mode 1: POE

Description : ESD Test Setup

5.8. EUT to dot photo for ESD test

Test dot: (Air Discharge)



Test dot: (Air Discharge)

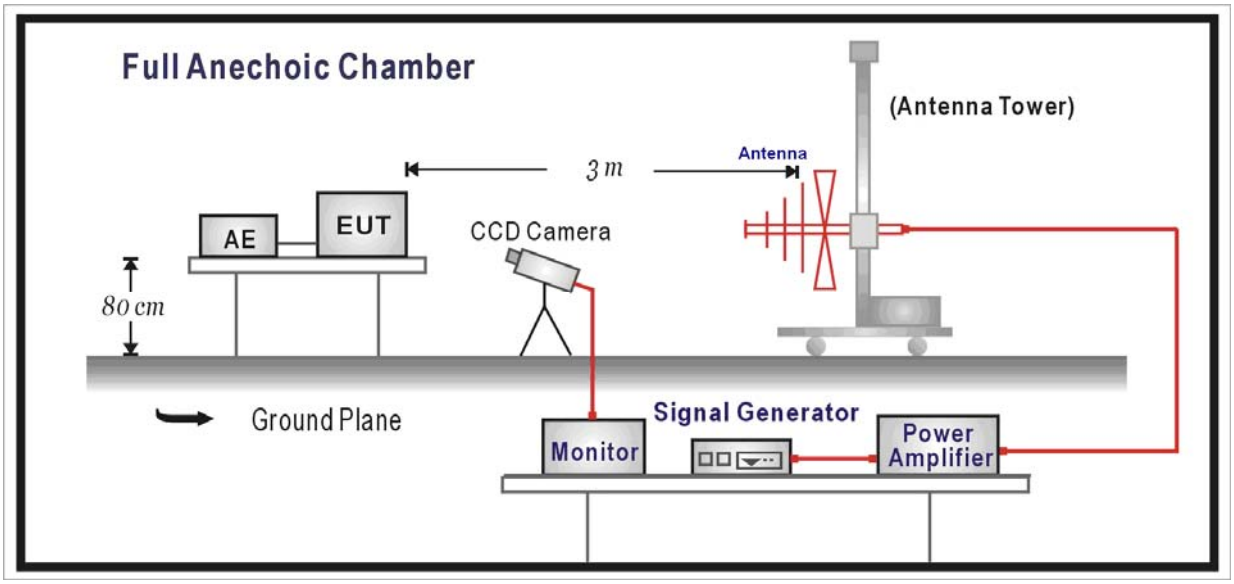
Test dot: (Contact Discharge)

6. Radiated Susceptibility

6.1. Test Specification

According to Standard : IEC 61000-4-3

6.2. Test Setup



6.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Radio-Frequency	MHz	80-1000	A
	Electromagnetic Field	V/m(Un-modulated, rms)	3	
	Amplitude Modulated	% AM (1kHz)	80	

6.4. Test Procedure

The EUT and load, which are placed on a table that is 0.8 meter above ground, are placed with one coincident with the calibration plane such that the distance from antenna to the EUT was 3 meters.
Both horizontal and vertical polarization of the antenna and four sides of the EUT are set on measurement.
In order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

All the scanning conditions are as follows:

	Condition of Test	Remarks
1.	Field Strength	3 V/m Level 2
2.	Radiated Signal	AM 80% Modulated with 1kHz
3.	Scanning Frequency	80MHz - 1000MHz
4	Dwell Time	3 Seconds
5.	Frequency step size Δf :	1%
6.	The rate of Swept of Frequency	1.5 x 10^{-3} decades/s

6.5. Deviation from Test Standard

No deviation.

6.6. Test Result

Product	Stereo Camera		
Test Item	Radiated susceptibility		
Test Mode	Mode 1: POE		
Date of Test	2015/06/16	Test Site	Chamber5

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Required Criteria	Complied To Criteria (A,B,C)	Results
80-1000	0°	H	3	A	A	PASS
80-1000	0°	V	3	A	A	PASS
80-1000	90°	H	3	A	A	PASS
80-1000	90°	V	3	A	A	PASS
80-1000	180°	H	3	A	A	PASS
80-1000	180°	V	3	A	A	PASS
80-1000	270°	H	3	A	A	PASS
80-1000	270°	V	3	A	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

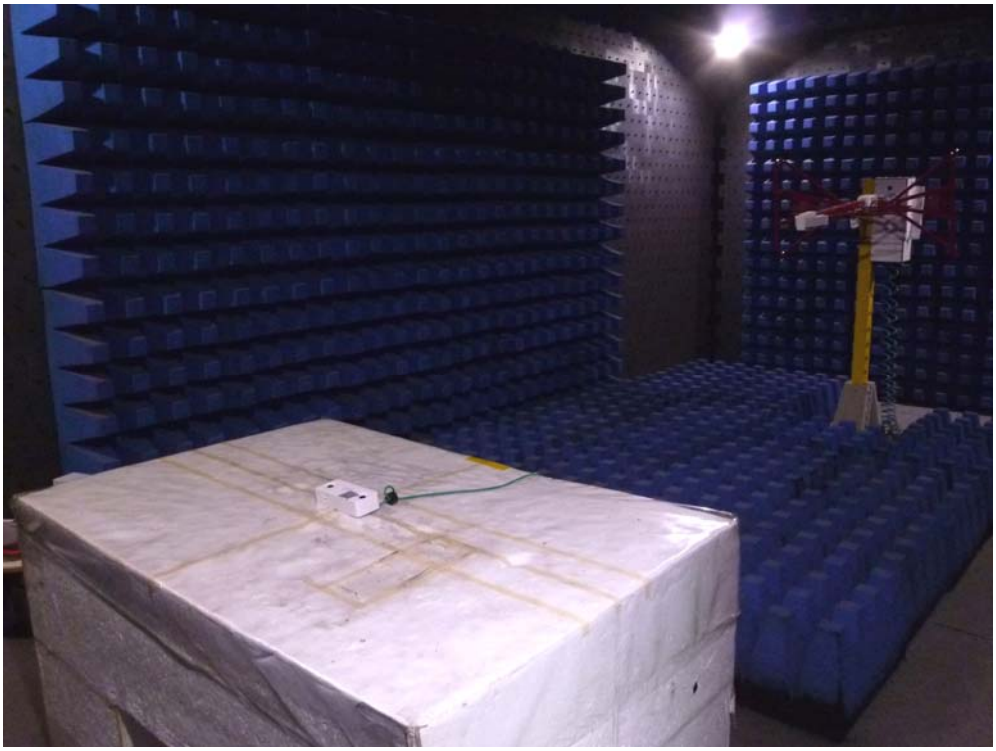
☒ Meet criteria A: Operate as intended during and after the test
☐ Meet criteria B: Operate as intended after the test
☐ Meet criteria C: Loss/Error of function
☐ Additional Information
  ☐ There was no observable degradation in performance.
  ☐ EUT stopped operation and could / could not be reset by operator at _____ V/m at frequency _____MHz.

☒ No false alarms or other malfunctions were observed during or after the test.

6.7. Test Photograph

Test Mode : Mode 1: POE

Description : Radiated Susceptibility Test Setup



Test Mode : Mode 1: POE

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: POE

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: POE

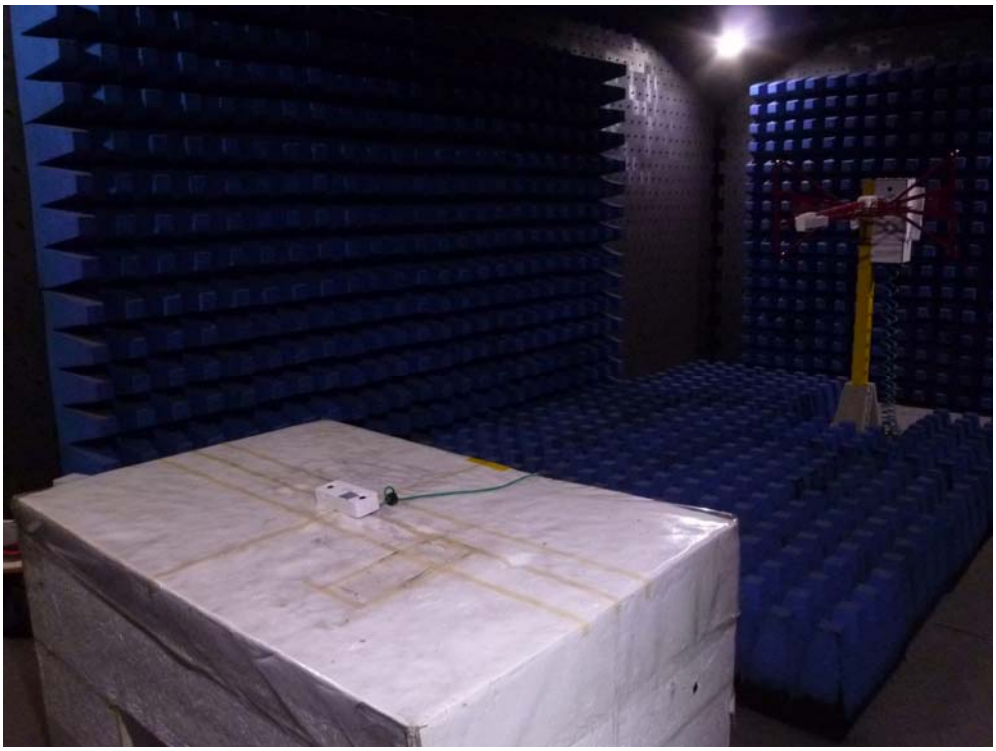
Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: POE

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: POE

Description : Radiated Susceptibility Test Setup

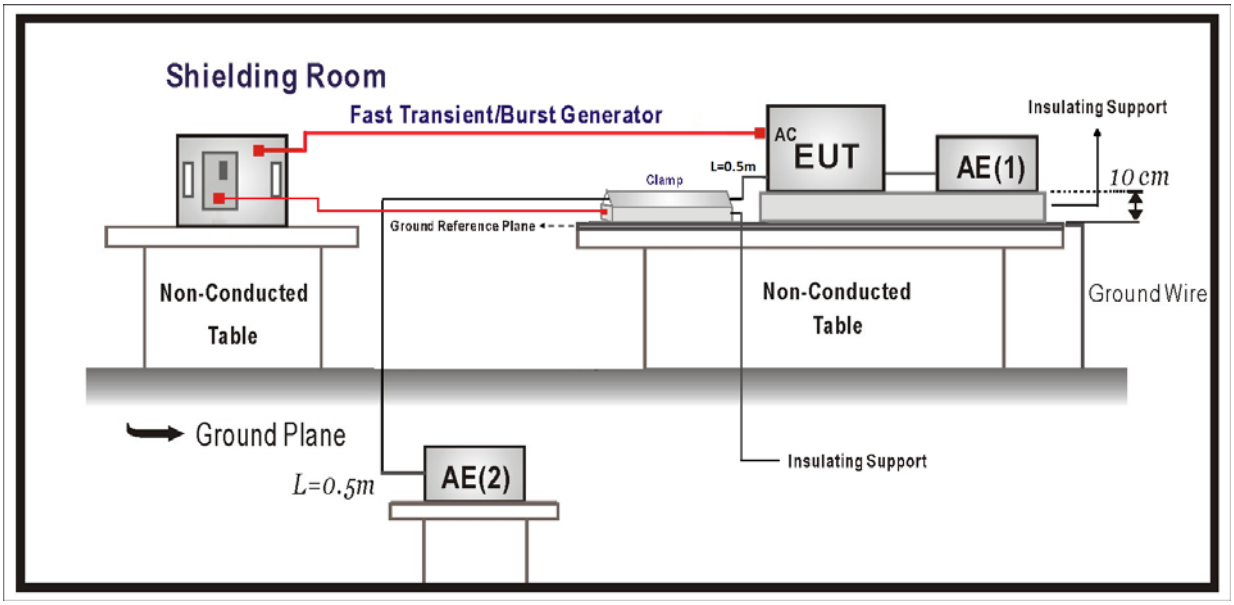


7. Electrical Fast Transient/Burst

7.1. Test Specification

According to Standard : IEC 61000-4-4

7.2. Test Setup



7.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
I/O and communication ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	±0.5 5/50 5	B
Input DC Power Ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	±0.5 5/50 5	B
Input AC Power Ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	±1 5/50 5	B

7.4. Test Procedure

The EUT is placed on a table that is 0.8 meter height. A ground reference plane is placed on the table, and uses a 0.1m insulation between the EUT and ground reference plane.
The minimum area of the ground reference plane is 1m*1m, and 0.65mm thick min, and projected beyond the EUT by at least 0.1m on all sides.

Test on I/O and communication ports:
The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 1minute.

Test on power supply ports:
The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal.
Each of the Line and Neutral conductors is impressed with burst noise for 1 minute.

The length of the signal and power lines between the coupling device and the EUT is 0.5m.

7.5. Deviation from Test Standard

No deviation.

7.6. Test Result

Product	Stereo Camera		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 1: POE		
Date of Test	2015/06/17	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
LAN	±	0.5kV	60	Clamp	B	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test
☐ Meet criteria B : Operate as intended after the test
☐ Meet criteria C : Loss/Error of function
☐ Additional Information
  ☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.
☒ No false alarms or other malfunctions were observed during or after the test.

7.7. Test Photograph

Test Mode : Mode 1: POE

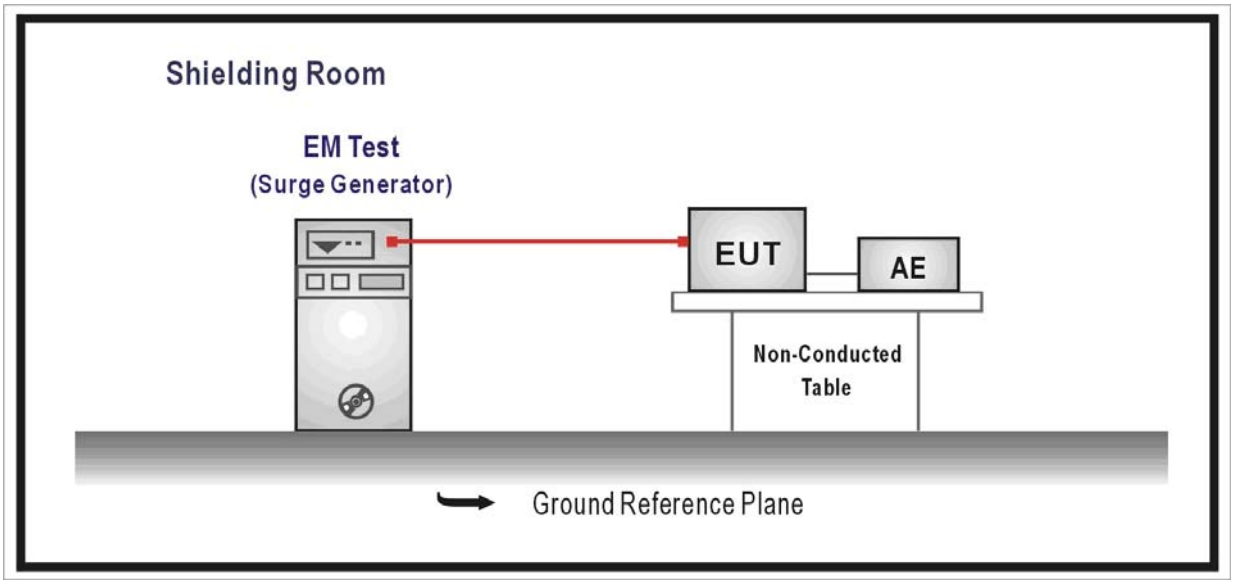
Description : EFT/B Test Setup - Clamp

8. Surge

8.1. Test Specification

According to Standard : IEC 61000-4-5

8.2. Test Setup



8.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports(See 1) and 2))				
	Surges Line to Ground	Tr/Th us kV	10/700 ± 1	C
Input DC Power Ports				
	Surges Line to Ground	Tr/Th us kV	1.2/50 (8/20) ± 0.5	B
AC Input and AC Output Power Ports				
	Surges Line to Line Line to Ground	Tr/Th us kV kV	1.2/50 (8/20) ± 1 ± 2	B

Notes:

1) Applicable only to ports which according to the manufacturer's specification may connect directly to outdoor cables.
2) Where the coupling network for the 10/700 μs waveform affects the functioning of high speed data ports, the test shall be carried out using a 1,2/50 (8/20) μs waveform and appropriate coupling network.

8.4. Test Procedure

The EUT and its load are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The length of power cord between the coupling device and the EUT shall be 2m or less.

For Input and Output AC Power or DC Input and DC Output Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the Surge interference signal.

The surge noise shall be applied synchronized to the voltage phase at 0^0, 90^0, 180^0, 270^0 and the peak value of the a.c. voltage wave. (Positive and negative)

Each of Line-Earth and Line-Line is impressed with a sequence of five surge voltages with interval of 1 min.

8.5. Deviation from Test Standard

No deviation.

8.6. Test Result

Product	Stereo Camera		
Test Item	Surge		
Test Mode	Mode 1: POE		
Date of Test	2015/06/17	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Angle	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
LAN	±	1kV	--	60	CDN	C	B	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☐ Meet criteria A : Operate as intended during and after the test
☒ Meet criteria B : Operate as intended after the test
☐ Meet criteria C : Loss/Error of function
☐ Additional Information
  ☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.
☒ No false alarms or other malfunctions were observed during or after the test.

8.7. Test Photograph

Test Mode : Mode 1: POE

Description : SURGE Test Setup - LAN

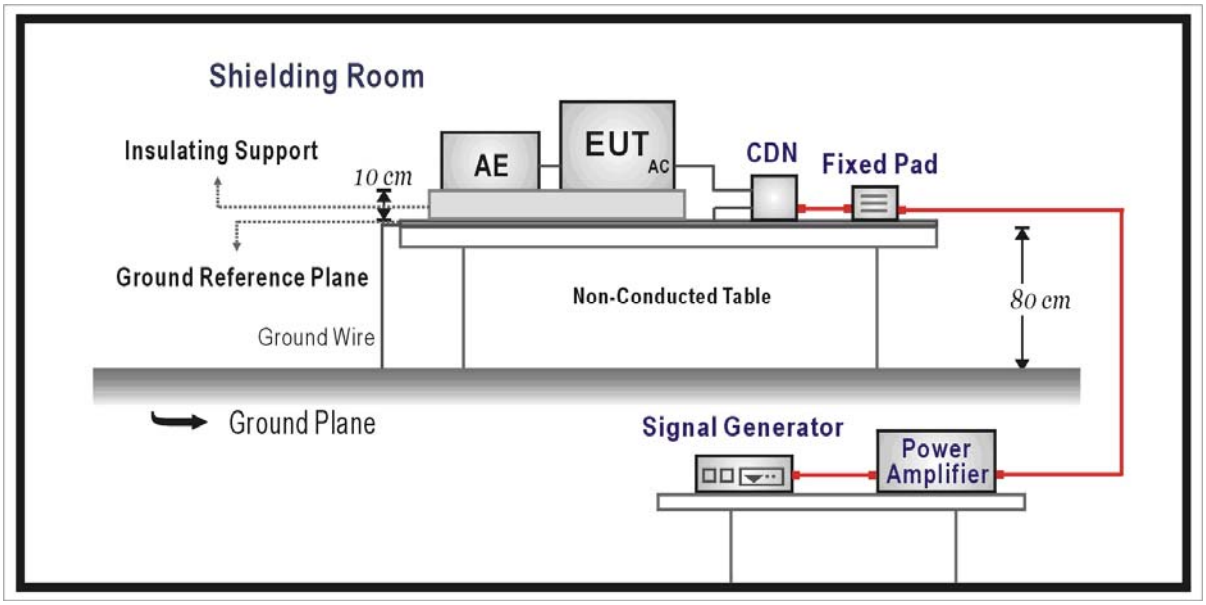
9. Conducted Susceptibility

9.1. Test Specification

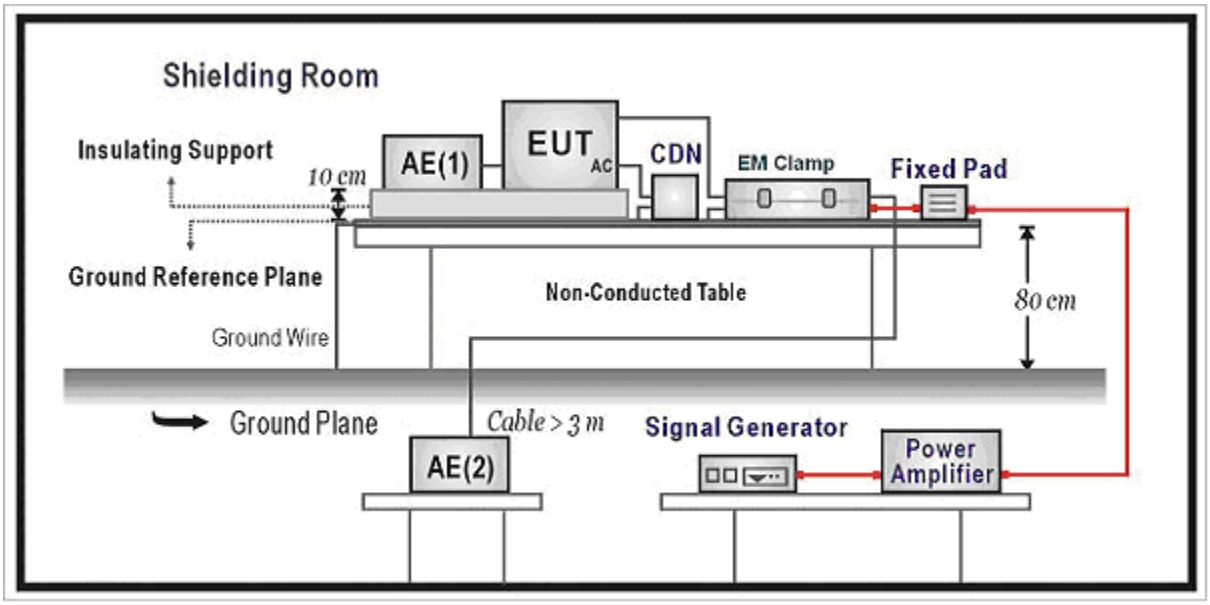
According to Standard : IEC 61000-4-6

9.2. Test Setup

CDN Inject Method



EM Clamp Inject Method



9.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A
Input DC Power Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A
Input AC Power Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A

9.4. Test Procedure

The EUT are placed on a table that is 0.8 meter height, and a Ground reference plane on the table, EUT are placed upon table and use a 10cm insulation between the EUT and Ground reference plane.
For Signal Ports and Telecommunication Ports
The disturbance signal is through a coupling and decoupling networks (CDN) or EM-clamp device couples to the signal and Telecommunication lines of the EUT.
For Input DC and AC Power Ports
The EUT is connected to the power mains through a coupling and decoupling networks for power supply lines. And directly couples the disturbances signal into EUT.
Used CDN-M2 for two wires or CDN-M3 for three wires.

All the scanning conditions are as follows:

	Condition of Test	Remarks
1.	Field Strength	130dBuV(3V) Level 2
2.	Radiated Signal	AM 80% Modulated with 1kHz
3.	Scanning Frequency	0.15MHz – 80MHz
4	Dwell Time	3 Seconds
5.	Frequency step size Δf :	1%
6.	The rate of Swept of Frequency	1.5 x 10^{-3} decades/s

9.5. Deviation from Test Standard

No deviation.

9.6. Test Result

Product	Stereo Camera		
Test Item	Conducted susceptibility		
Test Mode	Mode 1: POE		
Date of Test	2015/06/16	Test Site	No.6 Shielded Room

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	CDN	LAN	A	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test
☐ Meet criteria B : Operate as intended after the test
☐ Meet criteria C : Loss/Error of function
☐ Additional Information
- ☐ EUT stopped operation and could / could not be reset by operator at _____ dBuV(V) at frequency _____MHz.
- ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

9.7. Test Photograph

Test Mode : Mode 1: POE

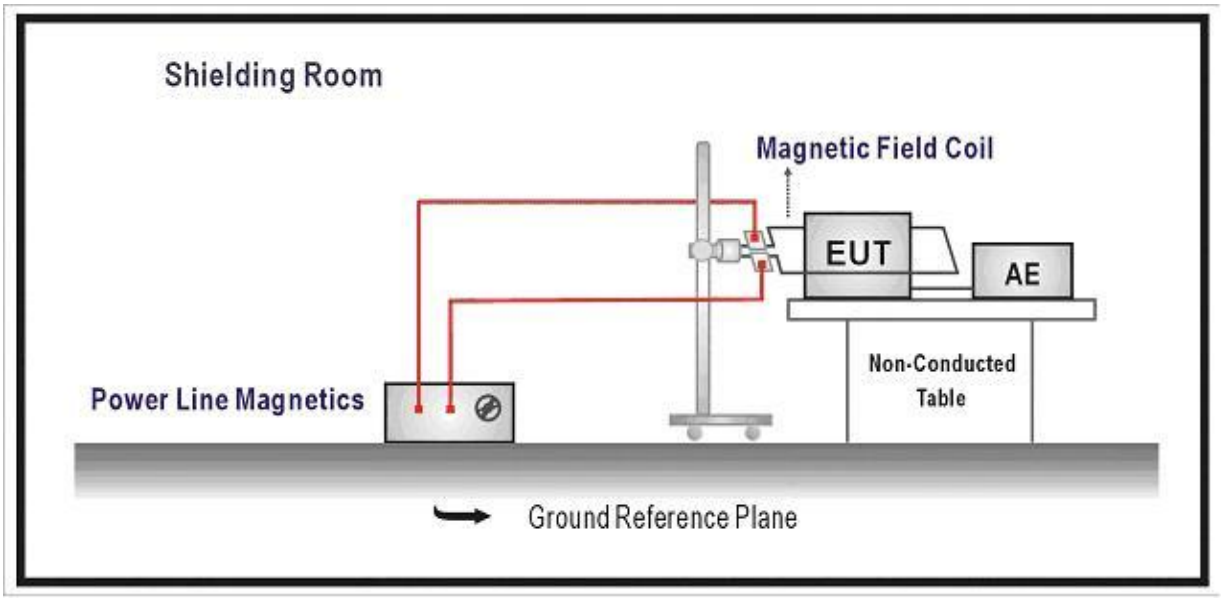
Description : Conducted Susceptibility Test Setup - CDN

10. Power Frequency Magnetic Field

10.1. Test Specification

According to Standard : IEC 61000-4-8

10.2. Test Setup



10.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Power-Frequency Magnetic Field	Hz A/m (r.m.s.)	50 1	A

10.4. Test Procedure

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured at least 1m*1m min. The test magnetic field shall be placed at central of the induction coil.

The test magnetic Field shall be applied 10 minutes by the immersion method to the EUT. And the induction coil shall be rotated by 90° in order to expose the EUT to the test field with different orientation (X, Y, Z Orientations).

10.5. Deviation from Test Standard

No deviation.

10.6. Test Result

Product	Stereo Camera		
Test Item	Power frequency magnetic field		
Test Mode	Mode 1: POE		
Date of Test	2015/06/17	Test Site	No.3 Shielded Room

Polarization	Frequency (Hz)	Inject Time(s)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	60	1	A	A	PASS
Y Orientation	50	60	1	A	A	PASS
Z Orientation	50	60	1	A	A	PASS

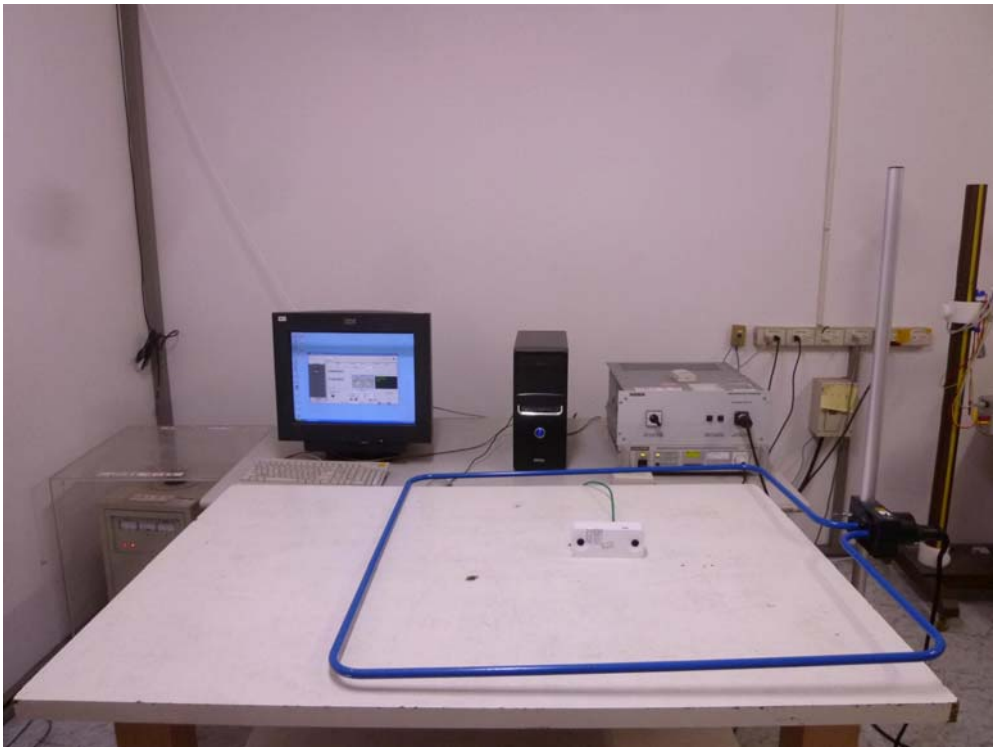
☒ Meet criteria A: Operate as intended during and after the test
☐ Meet criteria B: Operate as intended after the test
☐ Meet criteria C: Loss/Error of function
☐ Additional Information
☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

10.7. Test Photograph

Test Mode : Mode 1: POE

Description : Power Frequency Magnetic Field Test Setup



11. Attachment

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo

(3) EUT Photo

(4) EUT Photo