CE

Test Report

Product Name ： Network Camera

Model No. ： IP8152, IP8152-F4

Applicant ： VIVOTEK INC.

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

Date of Receipt ： 2012/12/12

Issued Date ： 2013/01/11

Report No. ： 12C236R-ITCEP11V04

Report Version ： V1.0

ilac-MRA TAF Testing Laboratory 0914

CE

Declaration of Conformity

We herewith confirm the following designated products to comply with the requirements set out in the Council Directive on the approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC) with applicable standards listed below.

Product	:	Network Camera
Trade name	:	VIVOTEK
Model Number	:	IP8152, IP8152-F4
Applicable Harmonized Standards under Directive 2004/108/EC	:	EN 55022: 2010, Class B EN 55024: 2010 EN 61000-3-2: 2006+A2: 2009 EN 61000-3-3: 2008 AS/NZS CISPR 22: 2009+A1: 2010 CISPR 22: 2008 CISPR 24: 2010

Company Name : _____

Company Address : _____

Telephone : _____ Facsimile : _____

Person in responsible for marking this declaration:

_____ _____

Name (Full Name) Title/ Department

_____ _____

Date Legal Signature

Date : Jan. 11, 2013
QTK No.: 12C236R-ITCEP11V04

CE

Statement of Conformity

This statement is to certify that the designated product below.

Product	:	Network Camera
Trade name	:	VIVOTEK
Model Number	:	IP8152, IP8152-F4
Company Name	:	VIVOTEK INC.
Applicable Standards	:	EN 55022: 2010, Class B
		EN 55024: 2010
		EN 61000-3-2: 2006+A2: 2009
		EN 61000-3-3: 2008
		AS/NZS CISPR 22: 2009+A1: 2010
		CISPR 22: 2008
		CISPR 24: 2010

One sample of the designated product has been tested and evaluated in our laboratory to find in compliance with the applicable standards above. The issued test report(s) show(s) it in detail.

Report Number : 12C236R-ITCEP11V04

TEST LABORATORY

Vincent Lin / Manager

The verification is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. Logo.

Quietek Corporation / No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
Tel: 866-2-8601-3788, Fax: +886-2-8601-3789, E-mail: service@quietek.com

Test Report Certification

Issued Date : 2013/01/11
Report No. : 12C236R-ITCEP11V04

Product Name	:	Network Camera
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.	:	IP8152, IP8152-F4
EUT Rated Voltage	:	By POE
EUT Test Voltage	:	By POE
Trade Name	:	VIVOTEK
Applicable Standard	:	EN 55022: 2010, Class B EN 55024: 2010 EN 61000-3-2:2006+A2: 2009 EN 61000-3-3:2008 AS/NZS CISPR 22: 2009+A1: 2010 CISPR 22: 2008 CISPR 24: 2010
Test Result	:	Complied
Performed Location	:	Quietek Corporation (Linkou Laboratory) No. 5-22, Rueishu Keng, Linkou Dist., New Taipei City 24451, Taiwan. R.O.C. TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

Documented By : Anny Chou
(Adm. Specialist / Anny Chou)

Reviewed By : kakira wu
(Assistant Engineer / Kakira Wu)

Approved By :
(Manager / 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**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
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/tw/ctg/cts/accreditations.htm
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:

HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

LinKou Testing Laboratory :

No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP®
NVLAP Lab Code: 200533-0

Suzhou (China) Testing Laboratory :

No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou,China.
TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098 E-Mail : service@quietek.com

TABLE OF CONTENTS

1. General Information

1.1. EUT Description

Product Name	Network Camera
Trade Name	VIVOTEK
Model No.	IP8152, IP8152-F4

Note: The EUT is including two models for different camera lens.

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: Normal Operation, POE Mode (IP8152) Mode 2: Normal Operation, POE Mode (IP8152-F4)	
Final Test Mode	
Impedance Stabilization Network	Mode 1: Normal Operation, POE Mode (IP8152) Mode 2: Normal Operation, POE Mode (IP8152-F4)
Radiated Emission	
Electrostatic Discharge	
Radiated susceptibility	
Electrical fast transient/burst	
Surge	
Conducted susceptibility	
Power frequency magnetic field	

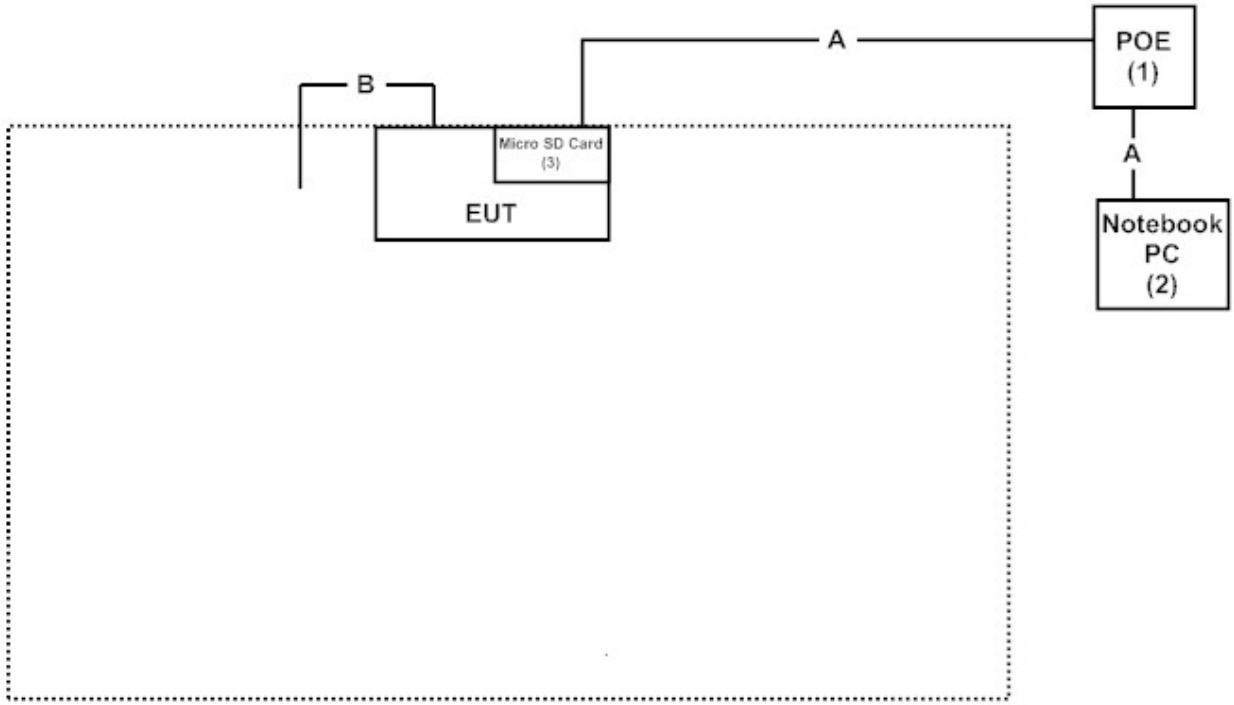
1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	POE	VIVOTEK	POE-IJ-1748NDN	N/A	Non-Shielded, 1.8m
2	Notebook PC	DELL	PP04X	C8YYM1S	Non-Shielded, 1.8m
3	Micro SD Card 1GB	SanDisk	N/A	0801002841D2N	N/A

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	LAN Cable	Non-Shielded, 3.0m, two PCS.
B	Signal Cable	Non-Shielded, 0.3m

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 AS/NZS CISPR 22: 2009+A1: 2010	No	No
Impedance Stabilization Network	EN 55022: 2010 AS/NZS CISPR 22: 2009+A1: 2010	Yes	No
Radiated Emission	EN 55022: 2010 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 61000-3-3:2008	No	No

Immunity			
Performed Item	Normative References	Test Performed	Deviation
Electrostatic Discharge	IEC 61000-4-2: 2008	Yes	No
Radiated susceptibility	IEC 61000-4-3: 2010	Yes	No
Electrical fast transient/burst	IEC 61000-4-4: 2012	Yes	No
Surge	IEC 61000-4-5: 2005	Yes	No
Conducted susceptibility	IEC 61000-4-6: 2008	Yes	No
Power frequency magnetic field	IEC 61000-4-8: 2009	Yes	No
Voltage dips and interruption	IEC 61000-4-11: 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	2012/11/19
EMI Test Receiver	R&S	ESCS 30	838251/001	2012/06/05
LISN	R&S	ENV216	100085	2012/02/13
LISN	R&S	ESH3-Z5	836679/023	2012/01/12
Pulse Limiter	R&S	ESH3-Z2	357.8810.52-1	2012/09/20
RF Current Probe	FCC	F-65 10KHz~1GHz	198	2012/10/12
BALANCED TELECOM ISN	FCC	FCC-TLISN-T2-02	20316	2012/07/22
Impedance Stabilization Network	Teseq	ISN T800	30303	2012/03/10

Radiated Emission / Site7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCI	100649	2012/04/25
Bilog Antenna	Schaffner Chase	CBL6112B	2930	2012/07/14
Pre-Amplifier	QTK	AP/0100A	CHM/1009094	2012/06/26
Site7 NSA	QTK	N/A	N/A	2012/06/26

Radiated Emission / CB7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESU	100433	2012/07/24
Horn Antenna	ETS-Lindgren	3117	00135205	2012/03/29
Horn Antenna	SCHWARZBECK	9120D	576	2012/11/19
Pre-Amplifier	QuieTek	AP-180C	CHM/071920	2012/06/27
CB7 VSWR	QTK	N/A	N/A	2012/07/25

Electrostatic Discharge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
ESD Simulator System	Noiseken	TC-815R	ESS0929097	2012/06/21
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
AF-BOX	R&S	AF-BOX ACCUST	100007	N/A
Audio Analyzer	R&S	UPL 16	100137	2012/05/15
Biconilog Antenna	EMCO	3149	00071675	N/A
Directional Coupler	A&R	DC 6180	22735	N/A
Power Amplifier	A&R	30S1G3	309453	N/A
Power Amplifier	A&R	100W10000M7	A285000010	N/A
Power Amplifier	SCHAFFNER	CBA9413B	4020	N/A
Power Amplifier	AR	75A250A	0325371	N/A
Power Meter	R&S	NRVD(P.M)	100219	2012/05/18
Pre-Amplifier	A&R	150A220	23067	N/A
Signal Generator	R&S	SMT03	100170	2012/05/16
uniform field calibration	QTK	N/A	N/A	2012/05/20

Electrical fast transient/burst / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMC immunity system	Thermo	EMCPRO PLUS	0411225	2012/08/20

Surge / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMC immunity system	Thermo	EMCPRO PLUS	0411225	2012/08/20

Conducted susceptibility / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TESEQ RF-Generator	TESEQ	NSG 4070A-30	032847	2012/08/08

Power frequency magnetic field / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Induction Coil Interface	Schaffner	INA 2141	6002	N/A
Magnetic Loop Coil	Schaffner	INA 702	160	N/A

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.

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 7.8 % and 3.2%.

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 8.3 % and 5.4%.

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 4.4 % and 5.9%.

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

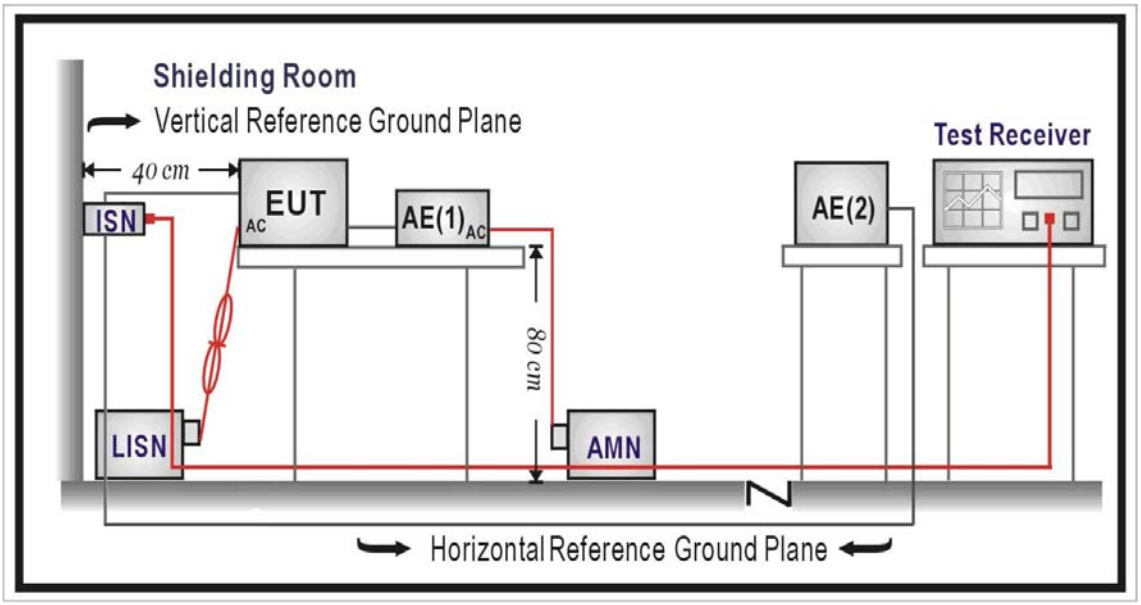
Performed Item	Items	Required	Actual
Impedance Stabilization Network	Temperature (°C)	15-35	22
	Humidity (%RH)	25-75	58
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	20.2
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Electrostatic Discharge	Temperature (°C)	15-35	18
	Humidity (%RH)	30-60	55
	Barometric pressure (mbar)	860-1060	950-1000
Radiated susceptibility	Temperature (°C)	15-35	19
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Electrical fast transient/burst	Temperature (°C)	15-35	19
	Humidity (%RH)	25-75	55
	Barometric pressure (mbar)	860-1060	950-1000
Surge	Temperature (°C)	15-35	19
	Humidity (%RH)	10-75	56
	Barometric pressure (mbar)	860-1060	950-1000
Conducted susceptibility	Temperature (°C)	15-35	19
	Humidity (%RH)	25-75	56
	Barometric pressure (mbar)	860-1060	950-1000
Power frequency magnetic field	Temperature (°C)	15-35	19
	Humidity (%RH)	25-75	55
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emissions (Telecommunication Ports)

3.1. Test Specification

According to EMC Standard : EN 55022

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:

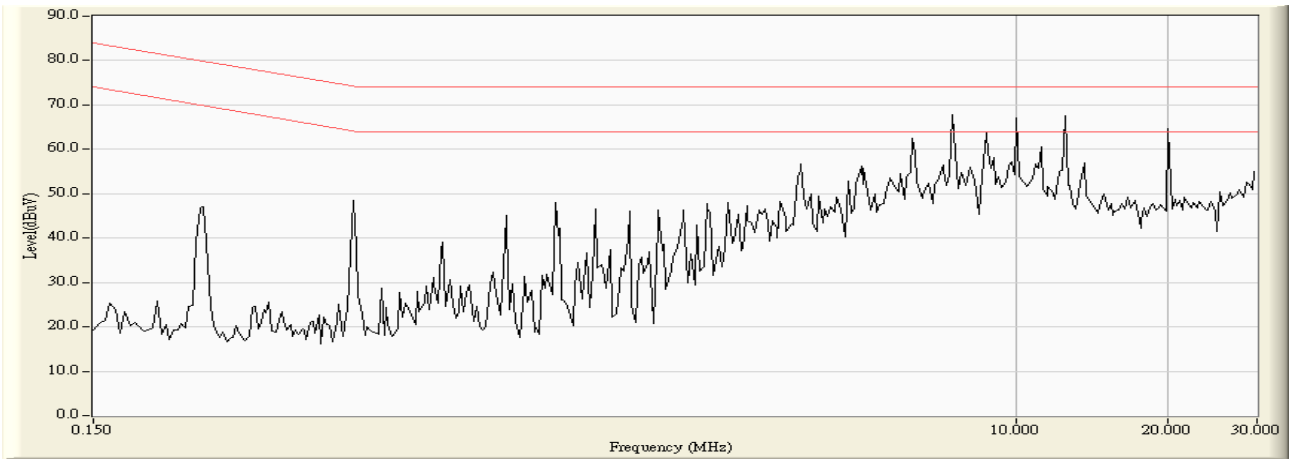
The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150 ohm impedance.
Both alternative cables are tested related to the LCL requested.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

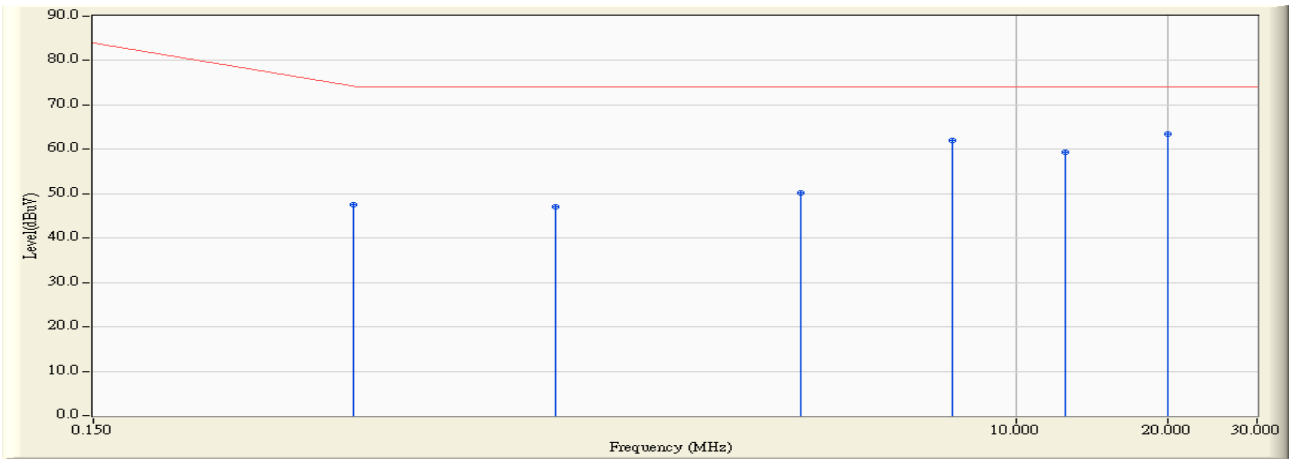
No deviation.

3.6. Test Result

Site : SR1	**Time : 2012/12/14 - 03:27**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 1, ISN 10M**



Site : SR1	**Time : 2012/12/14 - 03:28**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 1, ISN 10M**

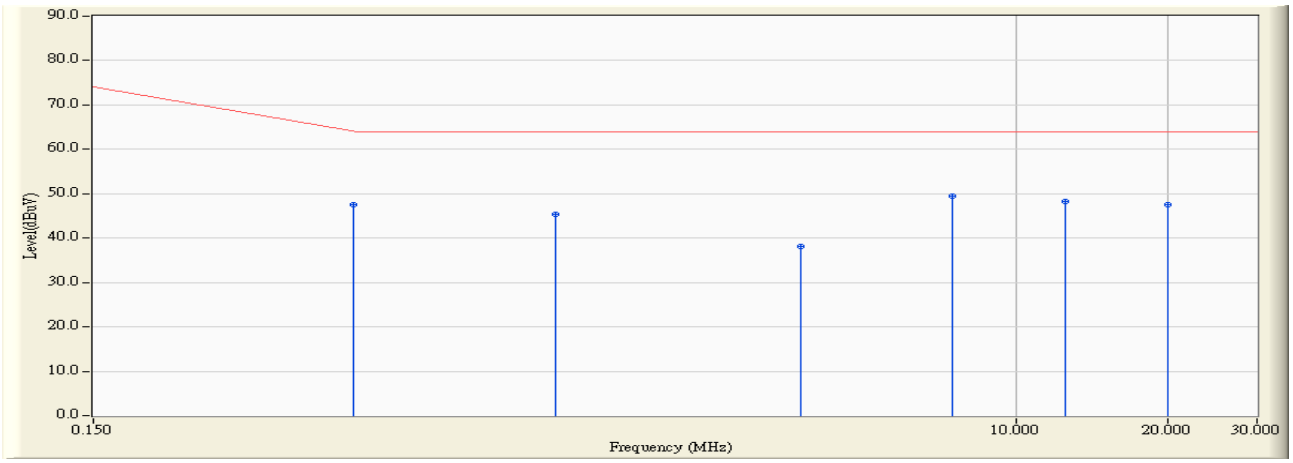


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	37.570	47.624	-26.662	74.286	QUASIPEAK
2		1.228	9.926	37.120	47.046	-26.954	74.000	QUASIPEAK
3		3.752	9.899	40.370	50.269	-23.731	74.000	QUASIPEAK
4		7.502	9.917	52.120	62.037	-11.963	74.000	QUASIPEAK
5		12.502	9.918	49.350	59.268	-14.732	74.000	QUASIPEAK
6	*	20.002	10.080	53.280	63.360	-10.640	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 : 2012/12/14 - 03:28**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 1, ISN 10M**

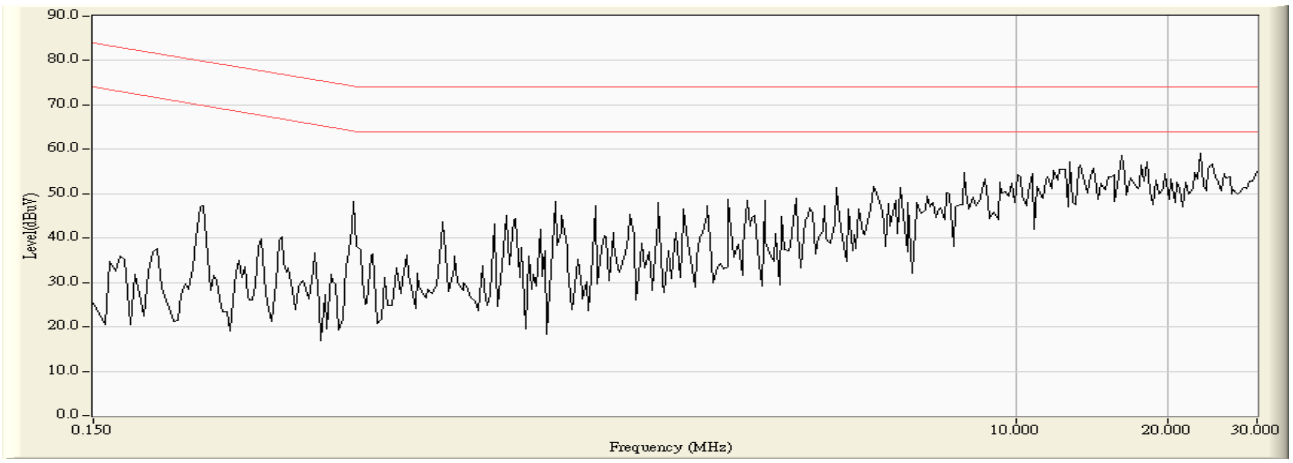


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	37.560	47.614	-16.672	64.286	AVERAGE
2		1.228	9.926	35.360	45.286	-18.714	64.000	AVERAGE
3		3.752	9.899	28.230	38.129	-25.871	64.000	AVERAGE
4	*	7.502	9.917	39.580	49.497	-14.503	64.000	AVERAGE
5		12.502	9.918	38.340	48.258	-15.742	64.000	AVERAGE
6		20.002	10.080	37.500	47.580	-16.420	64.000	AVERAGE

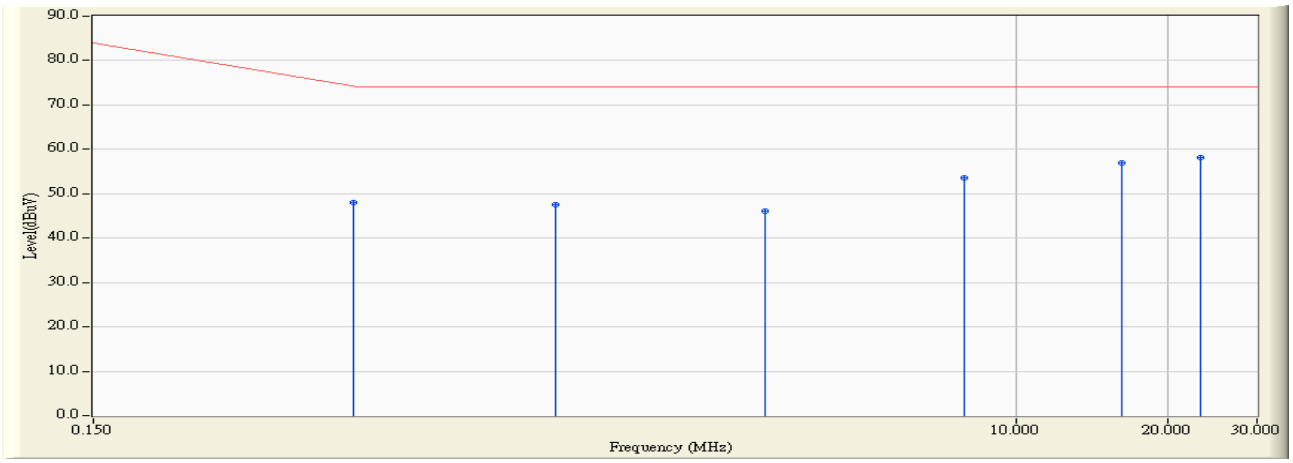
Note:

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 : 2012/12/14 - 03:29**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 1, ISN 100M**



Site : SR1	**Time : 2012/12/14 - 03:30**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 1, ISN 100M**

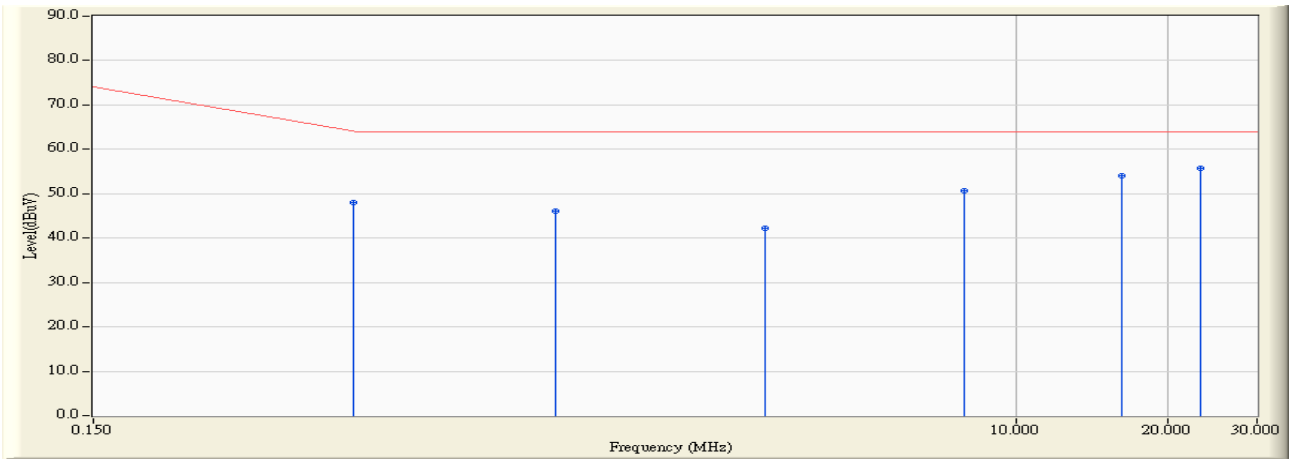


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	37.870	47.924	-26.362	74.286	QUASIPEAK
2		1.228	9.926	37.500	47.426	-26.574	74.000	QUASIPEAK
3		3.189	9.891	36.100	45.991	-28.009	74.000	QUASIPEAK
4		7.923	9.910	43.590	53.500	-20.500	74.000	QUASIPEAK
5		16.228	9.955	47.070	57.025	-16.975	74.000	QUASIPEAK
6	*	23.130	10.140	48.070	58.210	-15.790	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 : 2012/12/14 - 03:30**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 1, ISN 100M**

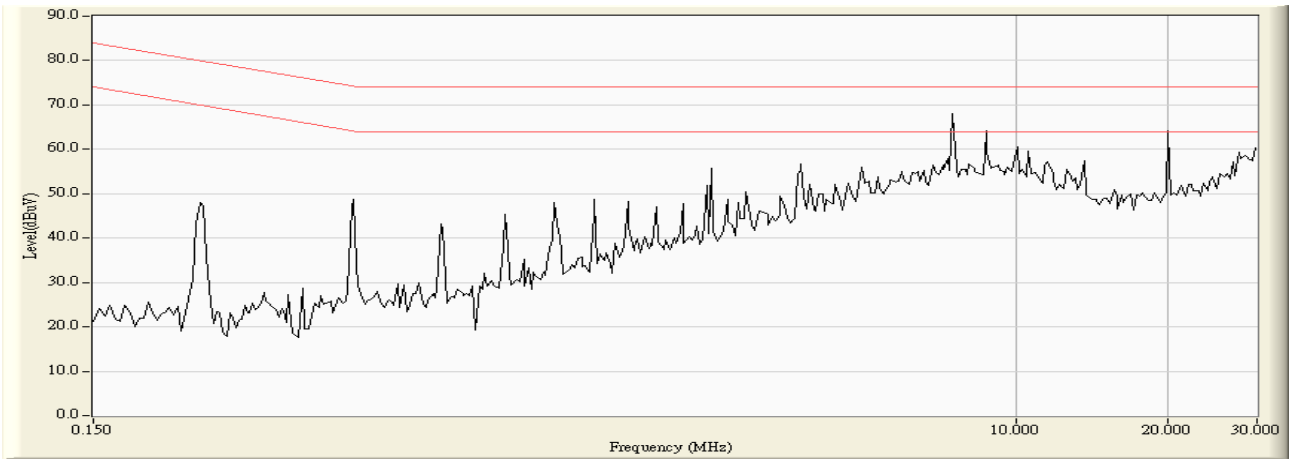


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	37.860	47.914	-16.372	64.286	AVERAGE
2		1.228	9.926	36.190	46.116	-17.884	64.000	AVERAGE
3		3.189	9.891	32.360	42.251	-21.749	64.000	AVERAGE
4		7.923	9.910	40.730	50.640	-13.360	64.000	AVERAGE
5		16.228	9.955	44.090	54.045	-9.955	64.000	AVERAGE
6	*	23.130	10.140	45.540	55.680	-8.320	64.000	AVERAGE

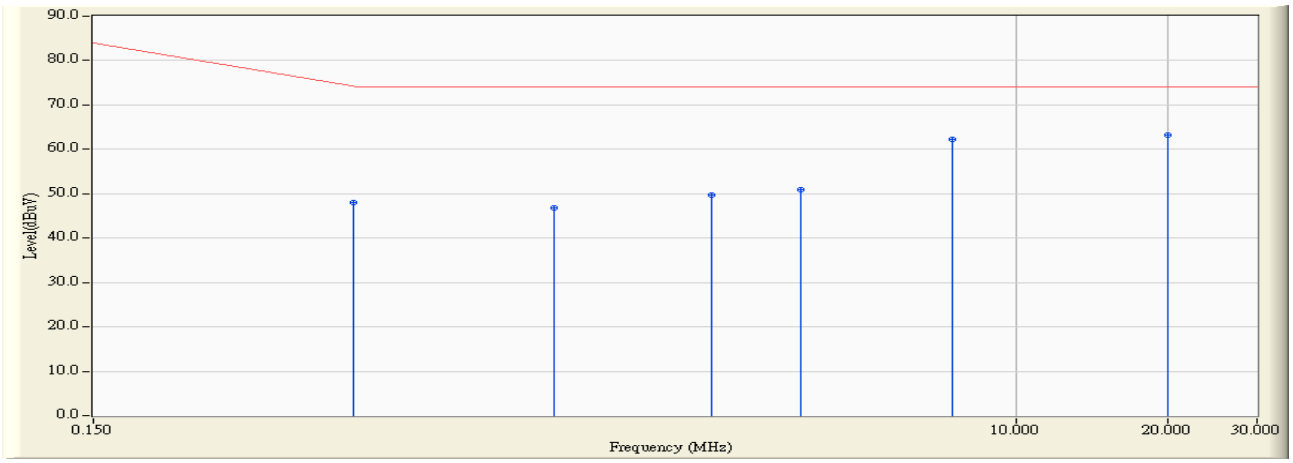
Note:

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 : 2012/12/14 - 03:11**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 2, ISN 10M**



Site : SR1	**Time : 2012/12/14 - 03:12**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 2, ISN 10M**

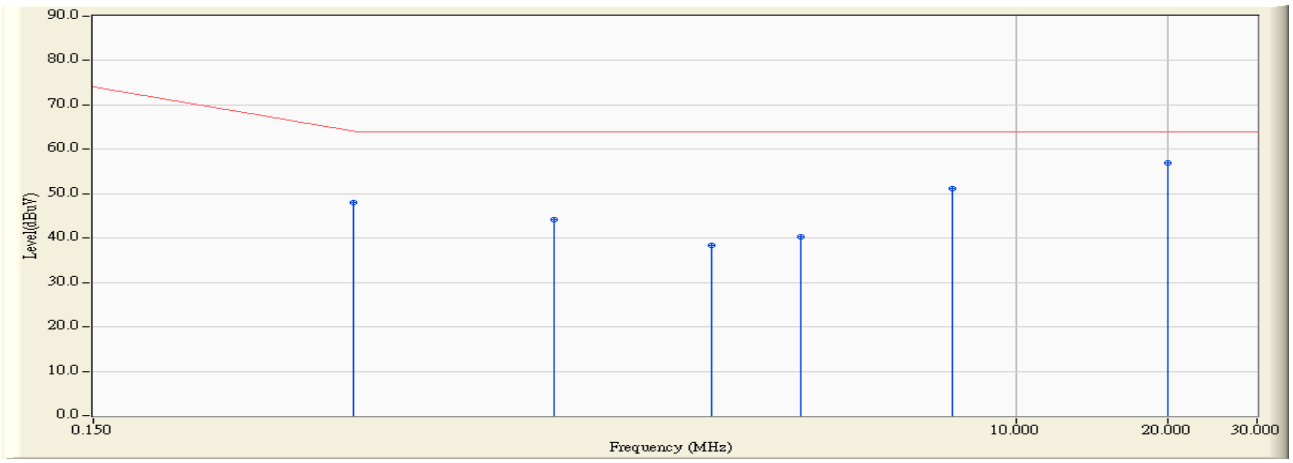


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	37.940	47.994	-26.292	74.286	QUASIPEAK
2		1.224	9.926	36.800	46.726	-27.274	74.000	QUASIPEAK
3		2.502	9.879	39.770	49.649	-24.351	74.000	QUASIPEAK
4		3.752	9.899	40.930	50.829	-23.171	74.000	QUASIPEAK
5		7.502	9.917	52.380	62.297	-11.703	74.000	QUASIPEAK
6	*	20.002	10.080	53.240	63.320	-10.680	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 : 2012/12/14 - 03:12**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 2, ISN 10M**

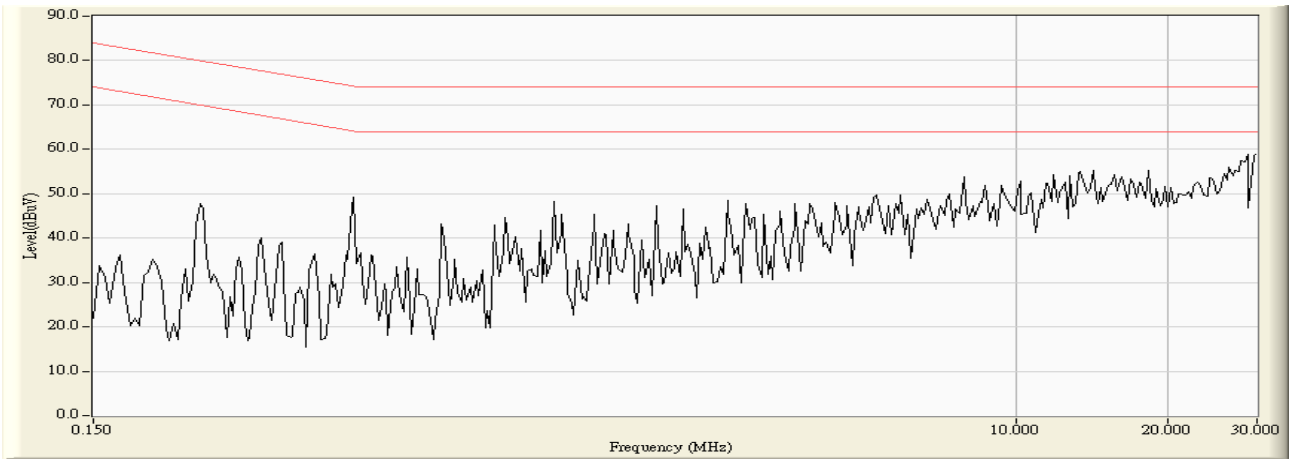


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	37.930	47.984	-16.302	64.286	AVERAGE
2		1.224	9.926	34.150	44.076	-19.924	64.000	AVERAGE
3		2.502	9.879	28.400	38.279	-25.721	64.000	AVERAGE
4		3.752	9.899	30.310	40.209	-23.791	64.000	AVERAGE
5		7.502	9.917	41.120	51.037	-12.963	64.000	AVERAGE
6	*	20.002	10.080	46.930	57.010	-6.990	64.000	AVERAGE

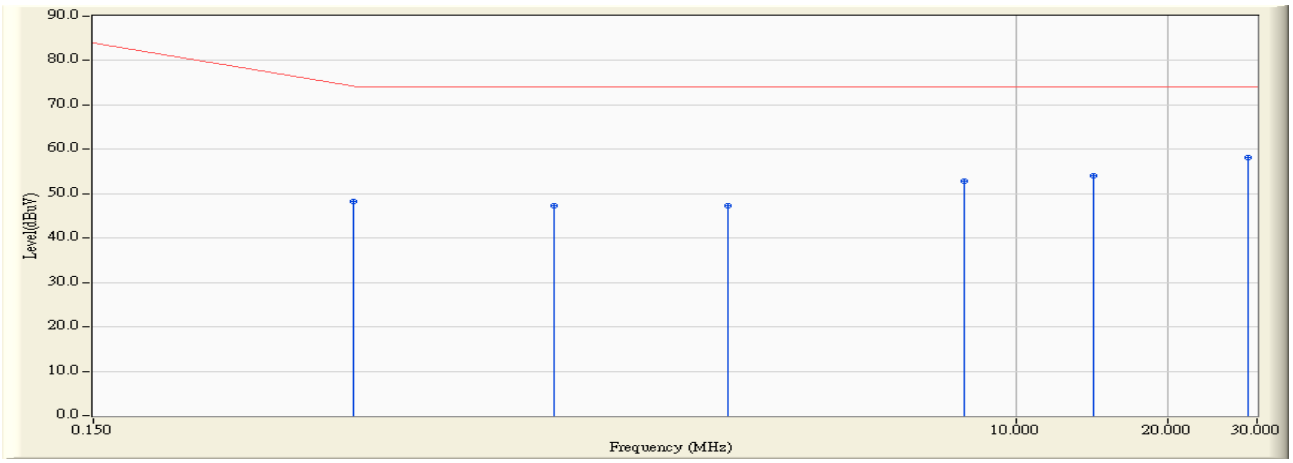
Note:

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 : 2012/12/14 - 03:08**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 2, ISN 100M**



Site : SR1	**Time : 2012/12/14 - 03:09**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 2, ISN 100M**

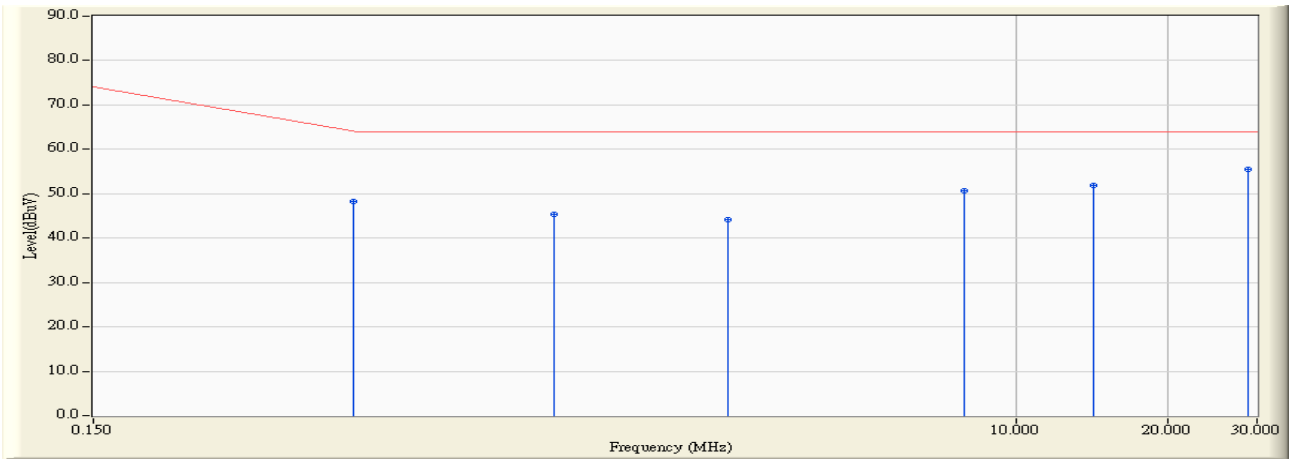


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	38.160	48.214	-26.072	74.286	QUASIPEAK
2		1.220	9.927	37.360	47.287	-26.713	74.000	QUASIPEAK
3		2.689	9.885	37.370	47.255	-26.745	74.000	QUASIPEAK
4		7.923	9.910	42.900	52.810	-21.190	74.000	QUASIPEAK
5		14.213	9.925	44.030	53.955	-20.045	74.000	QUASIPEAK
6	*	28.824	10.343	47.750	58.093	-15.907	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 : 2012/12/14 - 03:09**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Network Camera	**Probe : TESEQ_T8 - Line1**
Power : By POE	**Note : Mode 2, ISN 100M**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.054	38.150	48.204	-16.082	64.286	AVERAGE
2		1.220	9.927	35.450	45.377	-18.623	64.000	AVERAGE
3		2.689	9.885	34.290	44.175	-19.825	64.000	AVERAGE
4		7.923	9.910	40.830	50.740	-13.260	64.000	AVERAGE
5		14.213	9.925	41.930	51.855	-12.145	64.000	AVERAGE
6	*	28.824	10.343	45.070	55.413	-8.587	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: Normal Operation, POE Mode (IP8152)

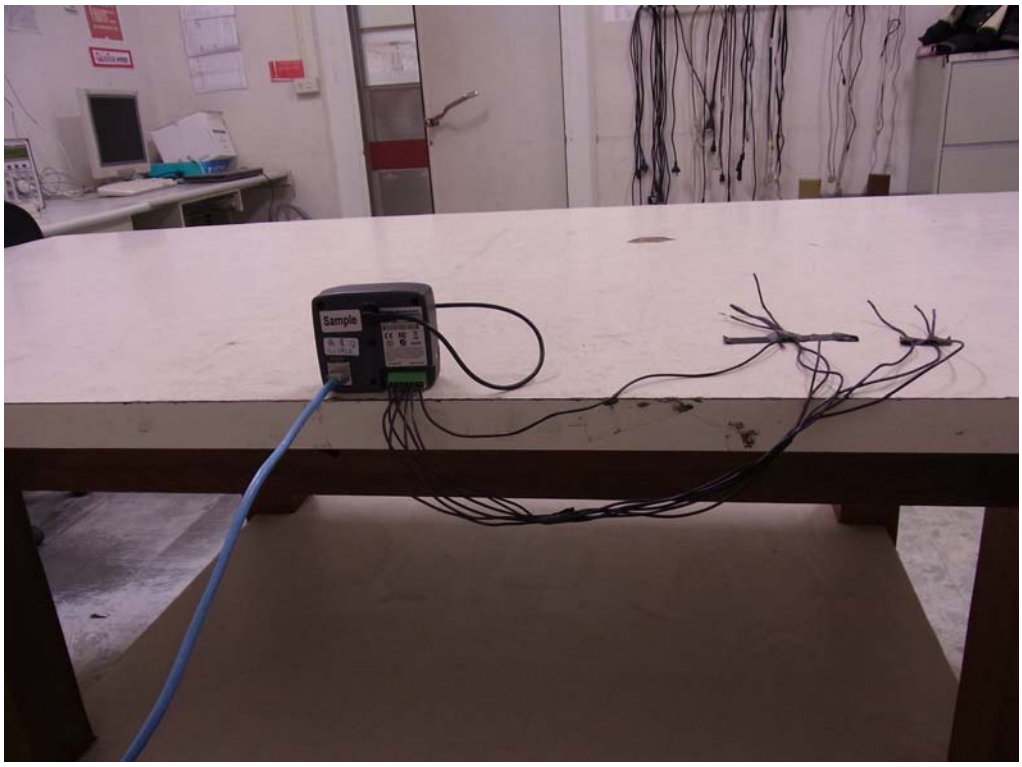
Description : Front View of ISN Test

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Back View of ISN Test

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Back View of ISN Test



Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

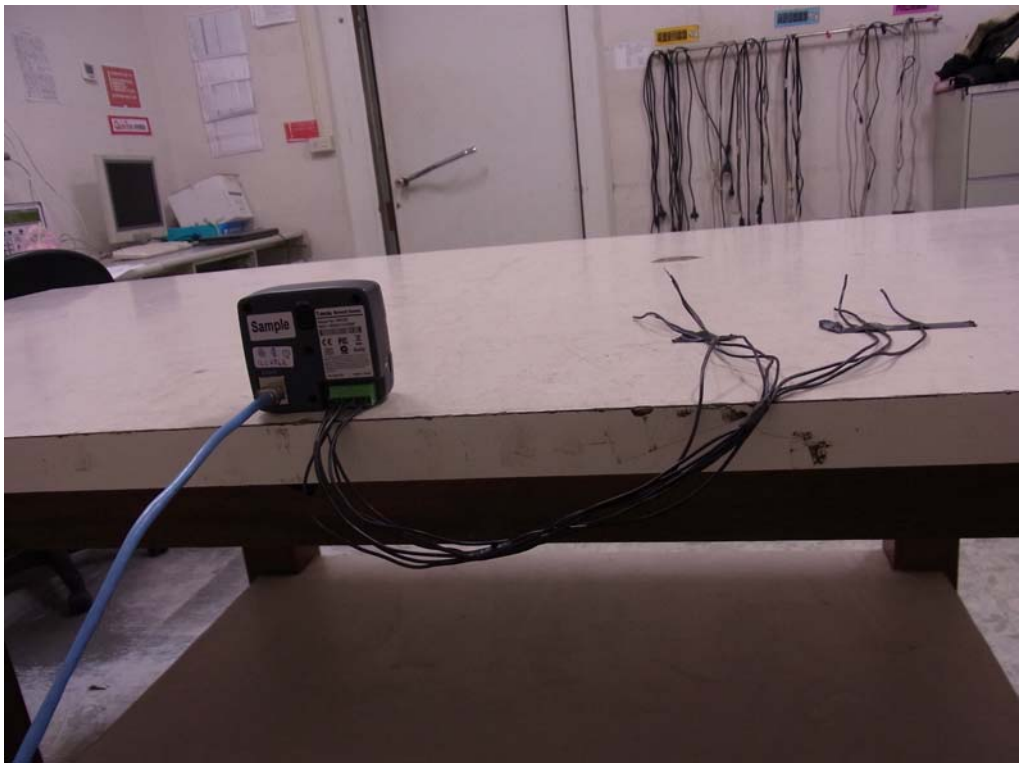
Description : Front View of ISN Test

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Back View of ISN Test

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Back View of ISN Test



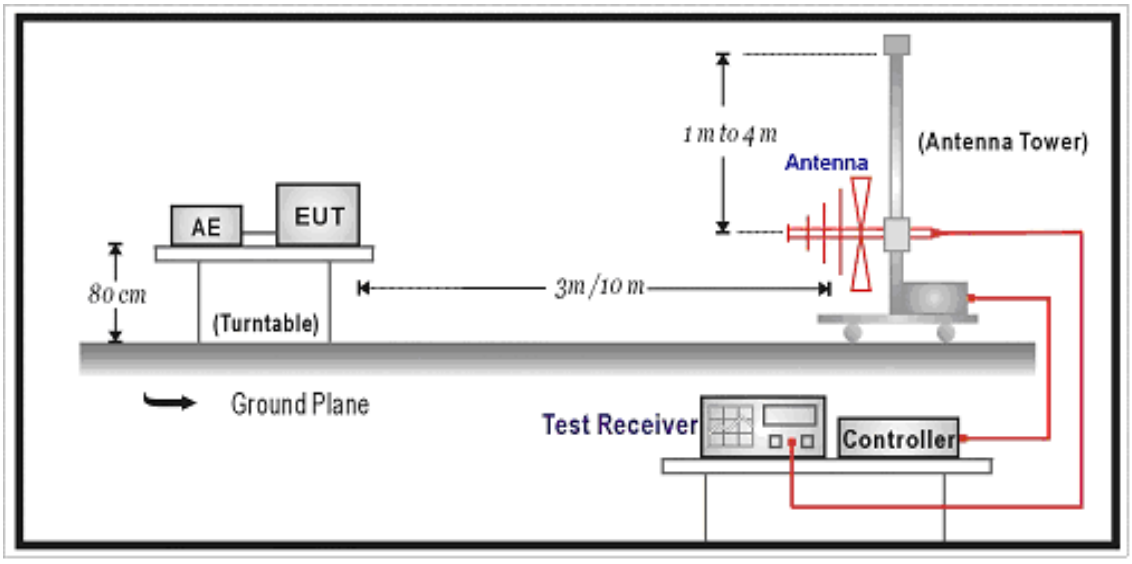
4. Radiated Emission

4.1. Test Specification

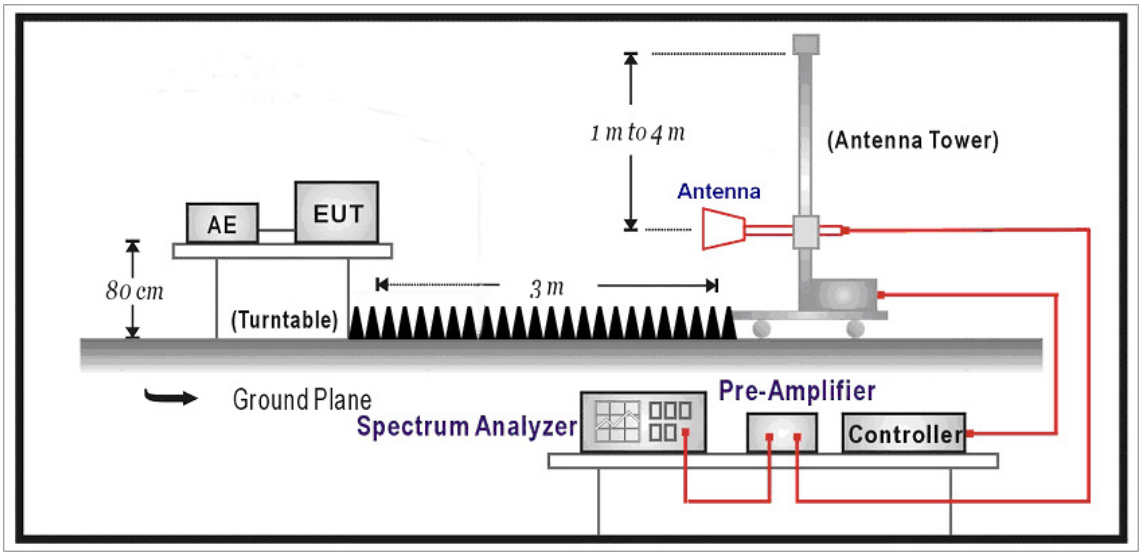
According to EMC Standard : EN 55022

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

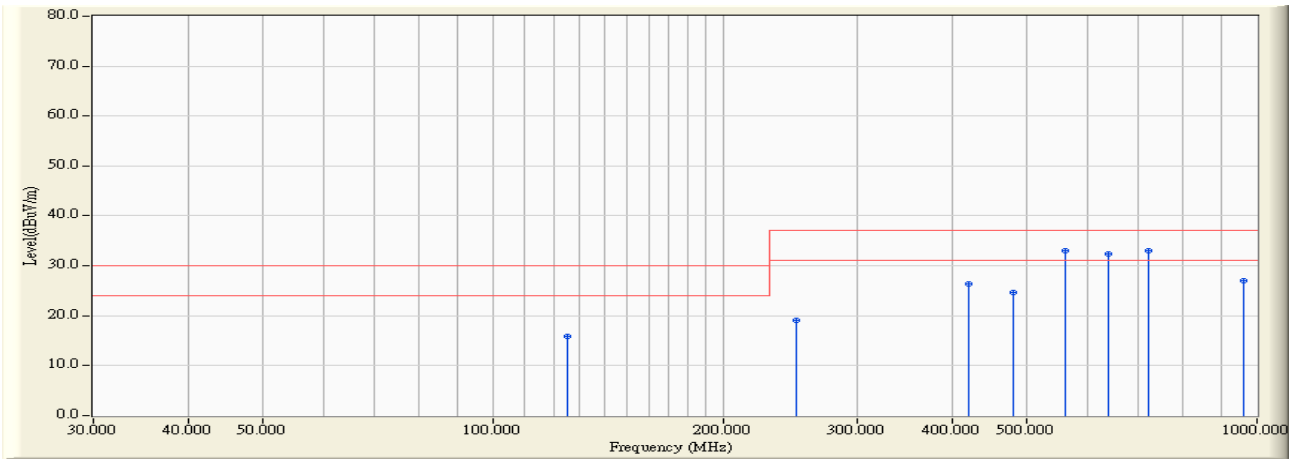
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3/10 meters.
The antenna can move up and down 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 : 2013/01/03 - 15:55**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Network Camera	**Probe : Site7_CBL6112_10M_1207 - HORIZONTAL**
Power : By POE	**Note : Mode 1**

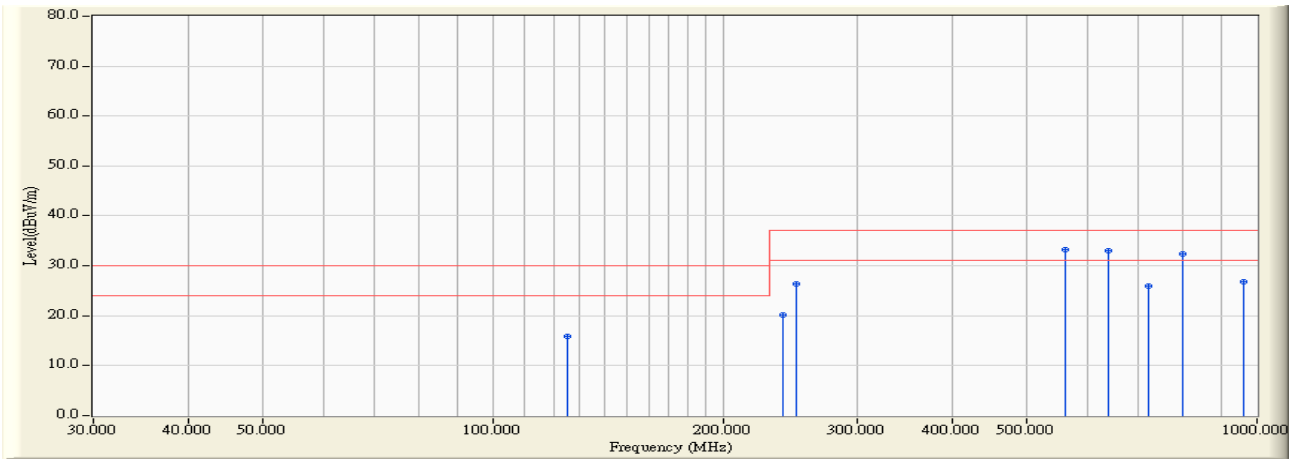


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	-18.349	34.300	15.952	-14.048	30.000	QUASIPEAK
2		250.000	-15.716	34.900	19.185	-17.815	37.000	QUASIPEAK
3		420.000	-10.838	37.200	26.362	-10.638	37.000	QUASIPEAK
4		480.000	-9.282	33.900	24.618	-12.382	37.000	QUASIPEAK
5	*	560.500	-6.620	39.600	32.980	-4.020	37.000	QUASIPEAK
6		640.060	-6.020	38.300	32.280	-4.720	37.000	QUASIPEAK
7		720.000	-5.123	38.100	32.977	-4.023	37.000	QUASIPEAK
8		960.000	-2.104	29.200	27.095	-9.905	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 : 2013/01/03 - 15:23**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Network Camera	**Probe : Site7_CBL6112_10M_1207 - VERTICAL**
Power : By POE	**Note : Mode 1**

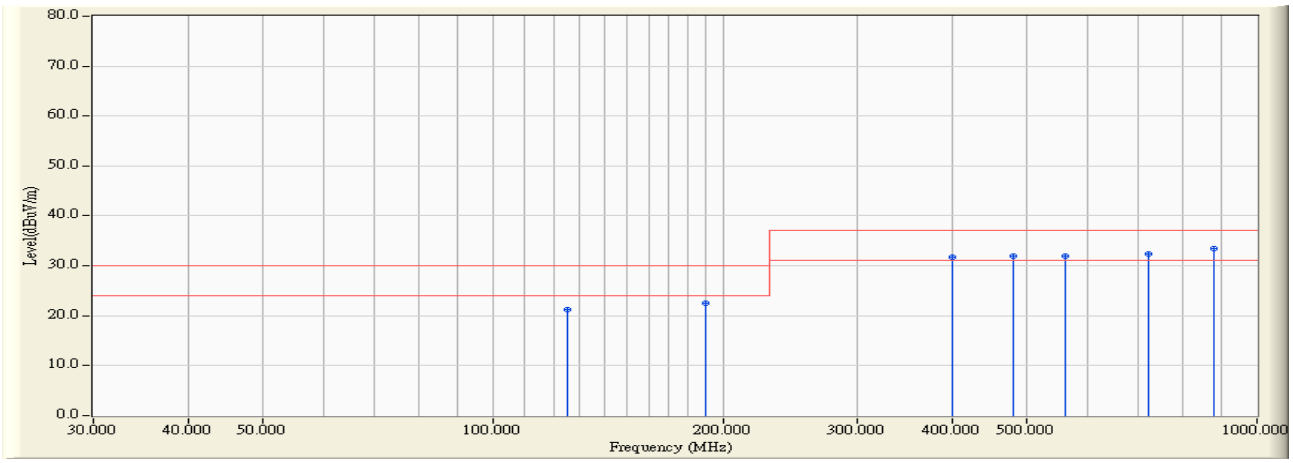


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	-18.349	34.200	15.852	-14.148	30.000	QUASIPEAK
2		240.000	-17.241	37.500	20.259	-16.741	37.000	QUASIPEAK
3		250.000	-15.716	42.100	26.385	-10.615	37.000	QUASIPEAK
4	*	560.050	-6.620	39.800	33.180	-3.820	37.000	QUASIPEAK
5		640.050	-6.020	39.000	32.980	-4.020	37.000	QUASIPEAK
6		720.000	-5.123	31.100	25.977	-11.023	37.000	QUASIPEAK
7		800.000	-3.702	36.000	32.298	-4.702	37.000	QUASIPEAK
8		960.000	-2.104	28.900	26.795	-10.205	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 : 2013/01/02 - 14:11**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Network Camera	**Probe : Site7_CBL6112_10M_1207 - HORIZONTAL**
Power : By POE	**Note : Mode 2**

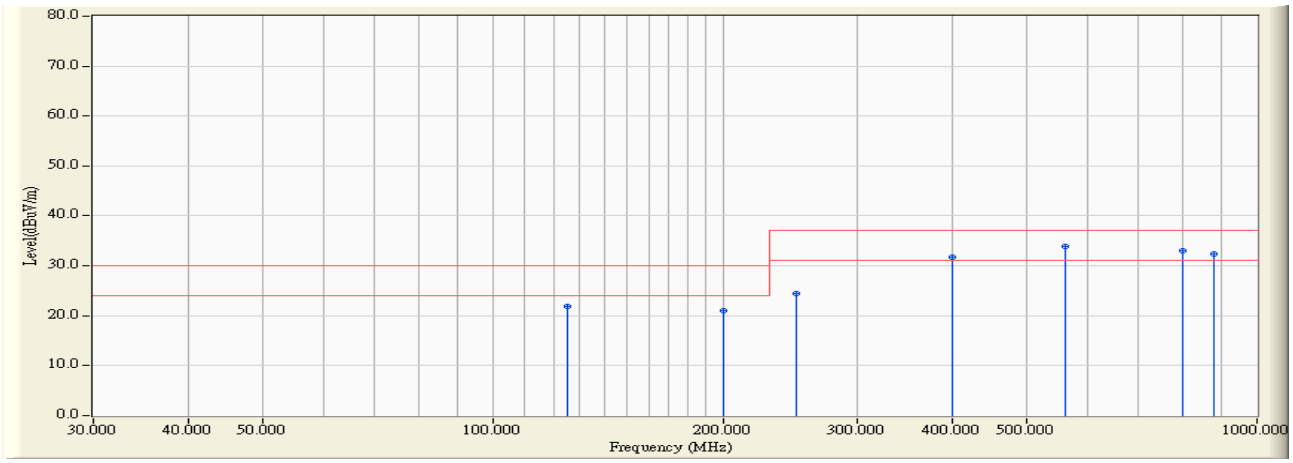


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	-18.349	39.500	21.152	-8.848	30.000	QUASIPEAK
2		189.540	-20.250	42.800	22.550	-7.450	30.000	QUASIPEAK
3		400.000	-11.401	43.100	31.699	-5.301	37.000	QUASIPEAK
4		480.050	-9.280	41.200	31.919	-5.081	37.000	QUASIPEAK
5		560.530	-6.620	38.500	31.880	-5.120	37.000	QUASIPEAK
6		720.000	-5.123	37.500	32.377	-4.623	37.000	QUASIPEAK
7	*	880.100	-3.020	36.500	33.480	-3.520	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 : 2013/01/02 - 13:48**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Network Camera	**Probe : Site7_CBL6112_10M_1207 - VERTICAL**
Power : By POE	**Note : Mode 2**

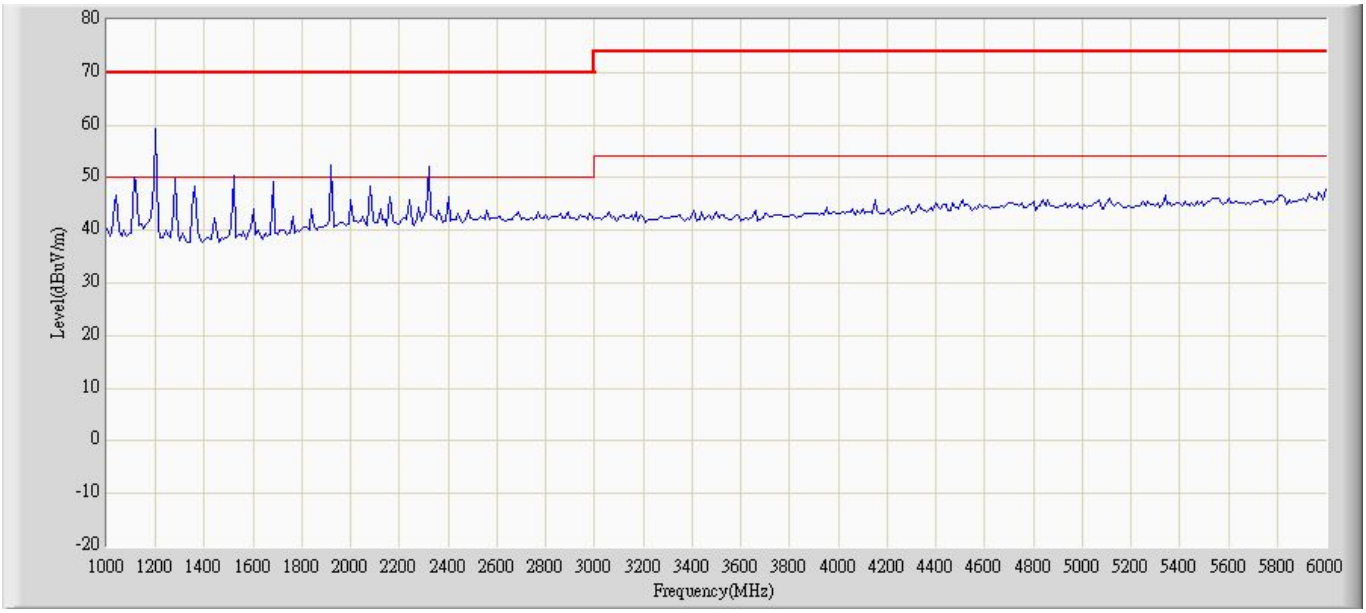


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	-18.349	40.200	21.852	-8.148	30.000	QUASIPEAK
2		200.000	-20.200	41.300	21.100	-8.900	30.000	QUASIPEAK
3		250.000	-15.716	40.200	24.485	-12.515	37.000	QUASIPEAK
4		400.000	-11.401	43.200	31.799	-5.201	37.000	QUASIPEAK
5	*	560.060	-6.620	40.500	33.880	-3.120	37.000	QUASIPEAK
6		800.100	-3.701	36.700	32.999	-4.001	37.000	QUASIPEAK
7		880.100	-3.020	35.400	32.380	-4.620	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: 2012/12/14 - 04:14**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Horizontal**
EUT : Network Camera	**Power : By POE**
Note : Mode 1	

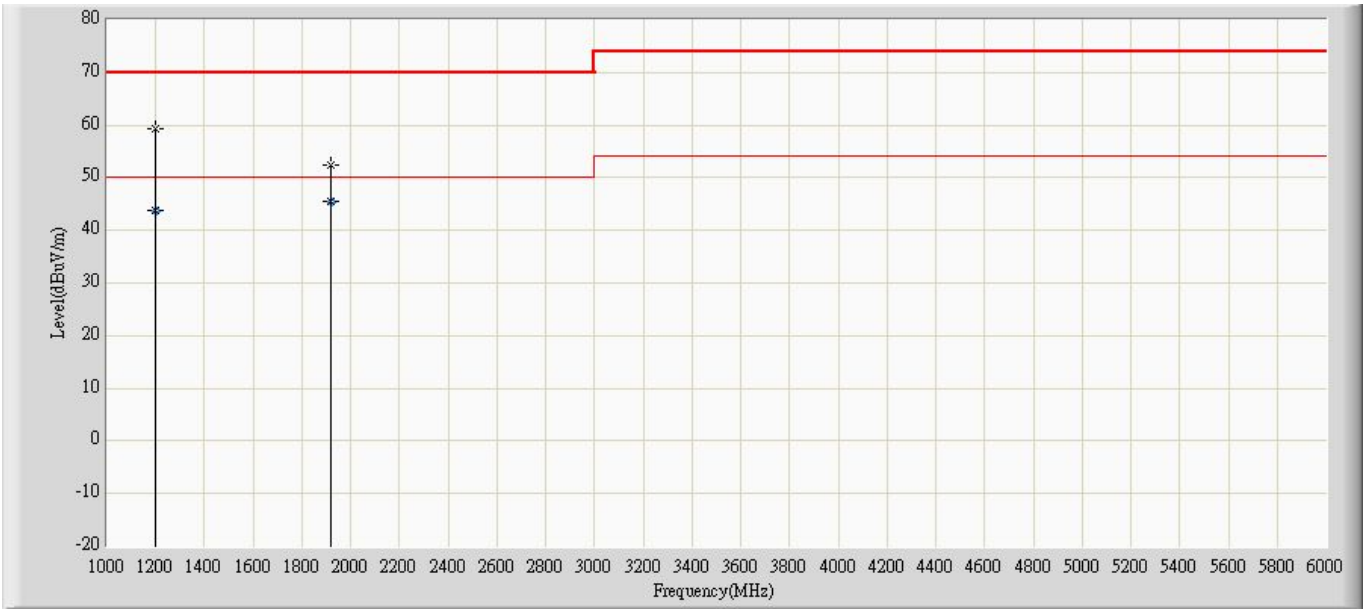


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type

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: 2012/12/14 - 04:24**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Horizontal**
EUT : Network Camera	**Power : By POE**
Note : Mode 1	

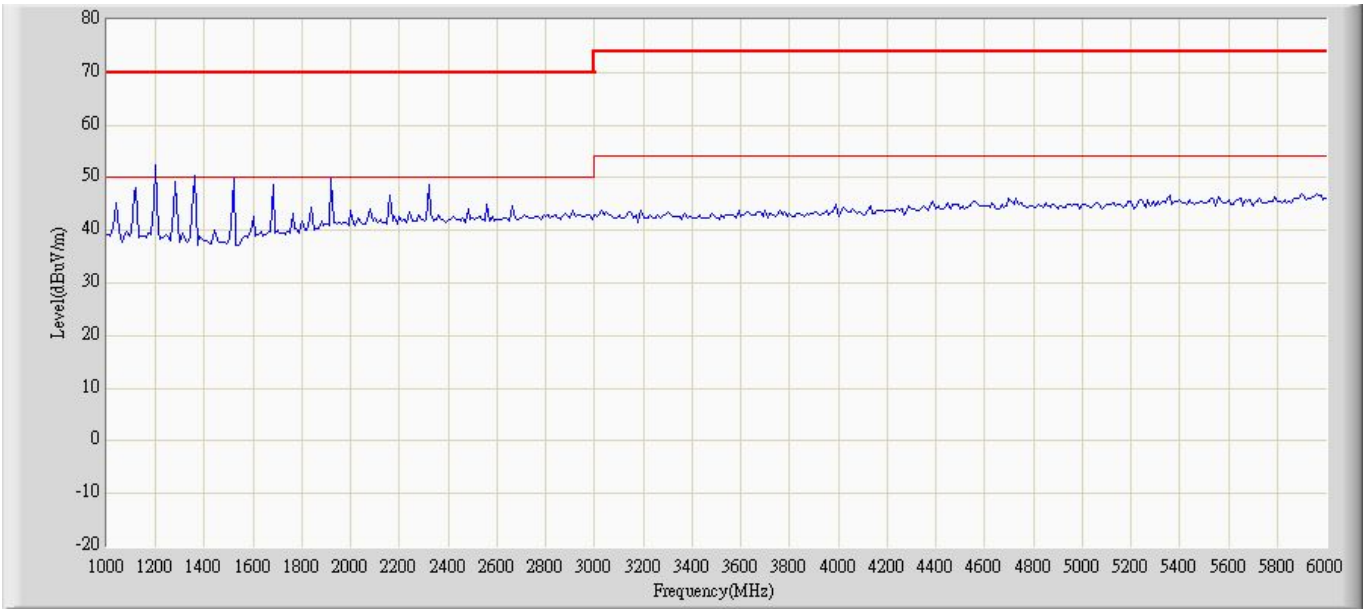


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1200.000	59.329	61.631	-10.671	70.000	-2.302	PK
2			1200.000	43.898	46.200	-6.102	50.000	-2.302	AV
3			1920.000	52.537	51.424	-17.463	70.000	1.113	PK
4		*	1920.000	45.613	44.500	-4.387	50.000	1.113	AV

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: 2012/12/14 - 04:24**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Vertical**
EUT : Network Camera	**Power : By POE**
Note : Mode 1	

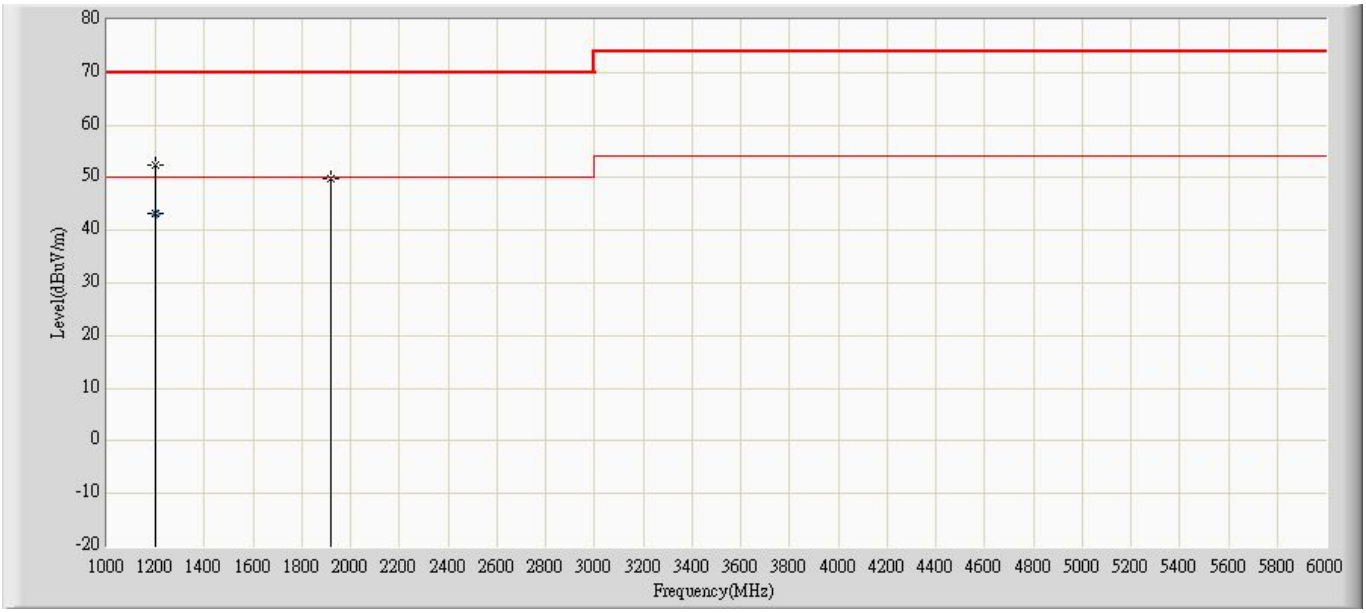


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type

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: 2012/12/14 - 04:28**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Vertical**
EUT : Network Camera	**Power : By POE**
Note : Mode 1	

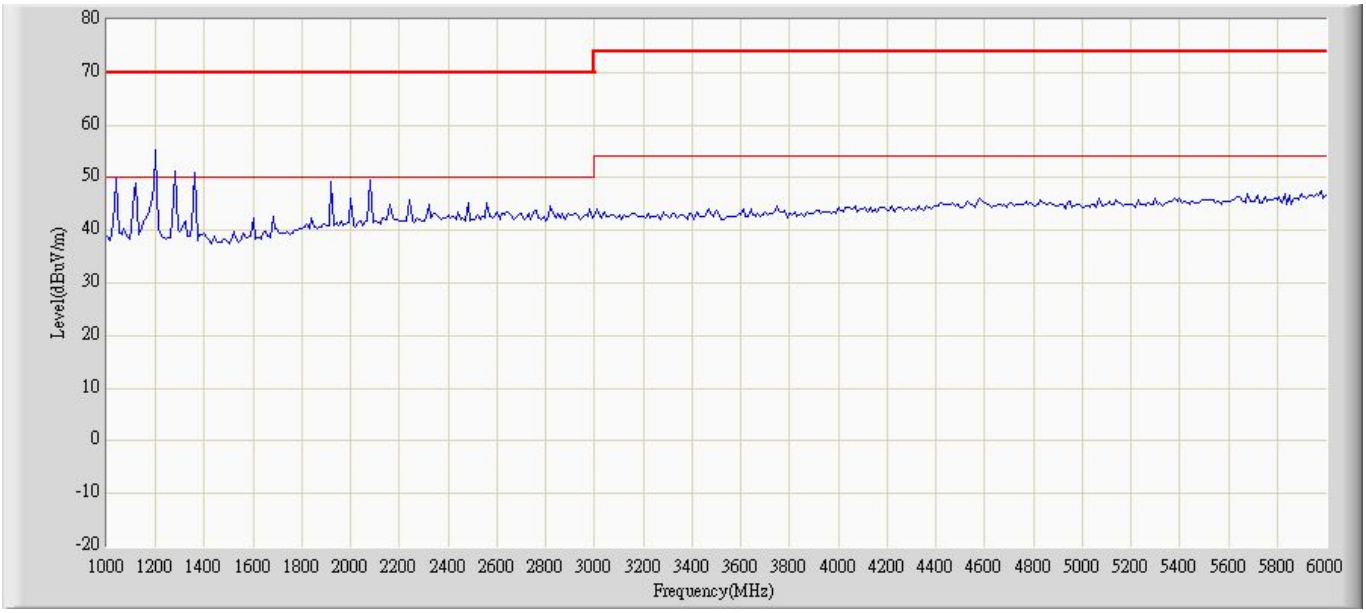


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1200.000	52.509	54.811	-17.491	70.000	-2.302	PK
2		*	1200.000	43.198	45.500	-6.802	50.000	-2.302	AV
3			1920.000	49.785	48.672	-20.215	70.000	1.113	PK

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: 2012/12/14 - 04:33**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Horizontal**
EUT : Network Camera	**Power : By POE**
Note : Mode 2	

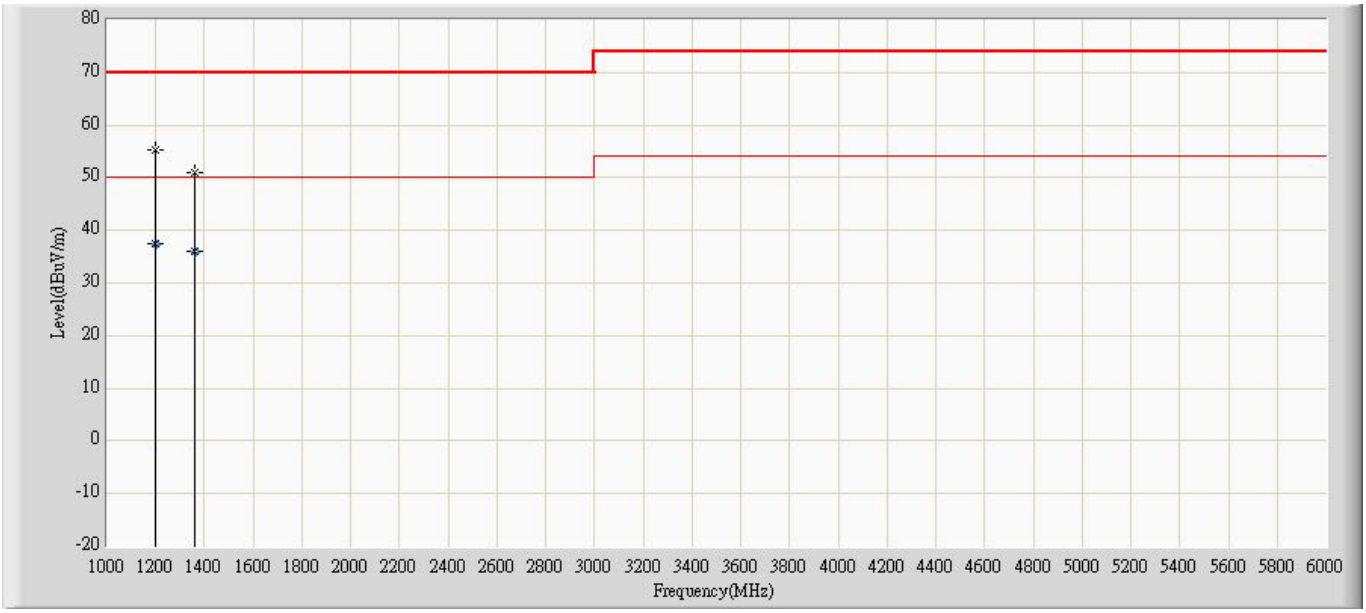


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type

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: 2012/12/14 - 04:47**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Horizontal**
EUT : Network Camera	**Power : By POE**
Note : Mode 2	

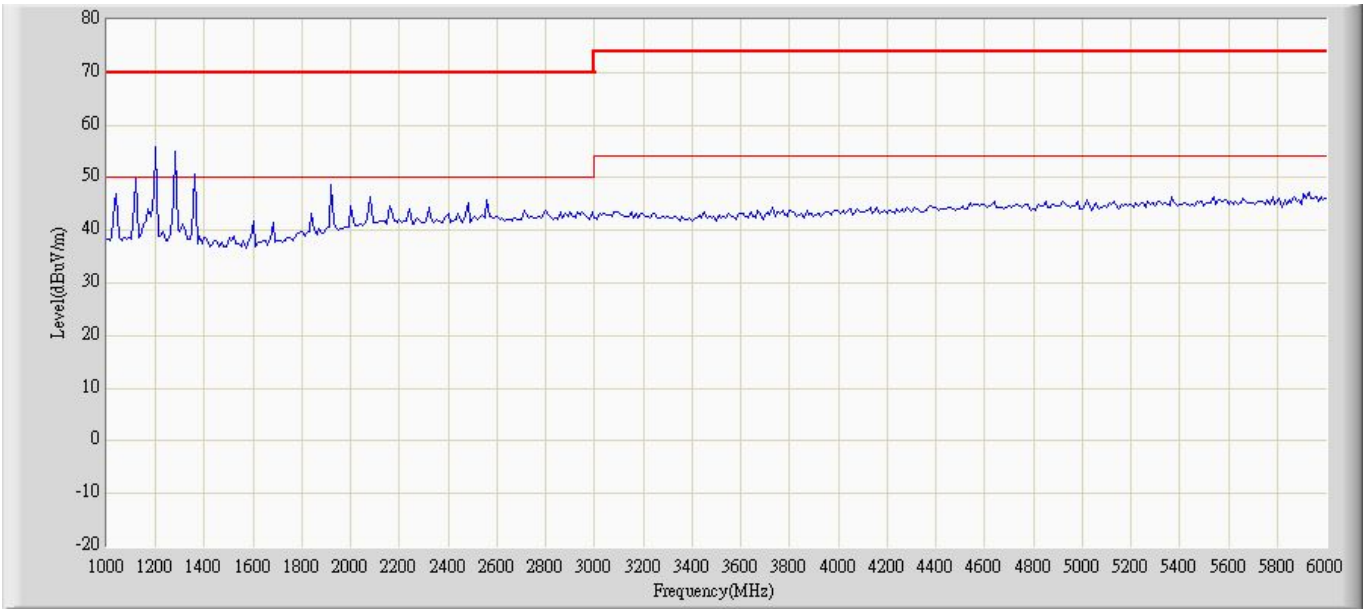


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1200.000	55.361	57.663	-14.639	70.000	-2.302	PK
2		*	1200.000	37.398	39.700	-12.602	50.000	-2.302	AV
3			1360.000	50.835	52.983	-19.165	70.000	-2.148	PK
4			1360.000	36.052	38.200	-13.948	50.000	-2.148	AV

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: 2012/12/14 - 04:48**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Vertical**
EUT : Network Camera	**Power : By POE**
Note : Mode 2	

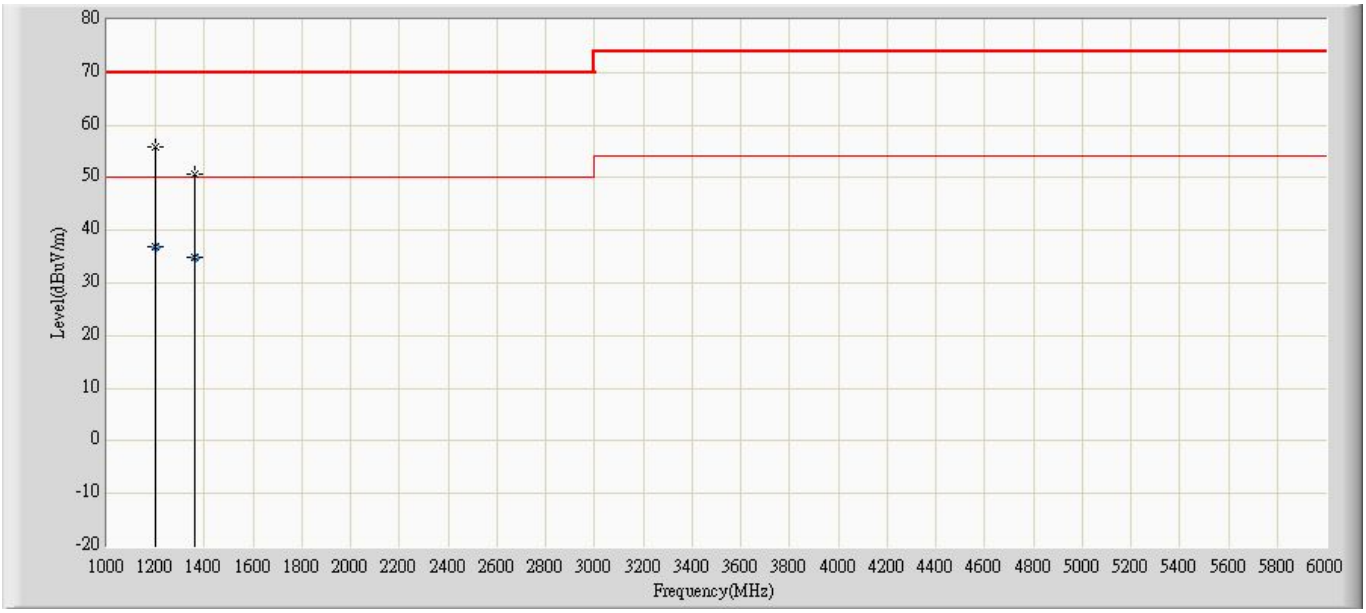


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type

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: 2012/12/14 - 04:50**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: CB7_Horn_3117_1204	**Polarity: Vertical**
EUT : Network Camera	**Power : By POE**
Note : Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1200.000	55.770	58.072	-14.230	70.000	-2.302	PK
2		*	1200.000	36.798	39.100	-13.202	50.000	-2.302	AV
3			1360.000	50.824	52.972	-19.176	70.000	-2.148	PK
4			1360.000	34.752	36.900	-15.248	50.000	-2.148	AV

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: Normal Operation, POE Mode (IP8152)

Description : Front View of Radiated Test

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Back View of Radiated Test

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Front View of High Frequency Radiated Test

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Front View of Radiated Test

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Back View of Radiated Test

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

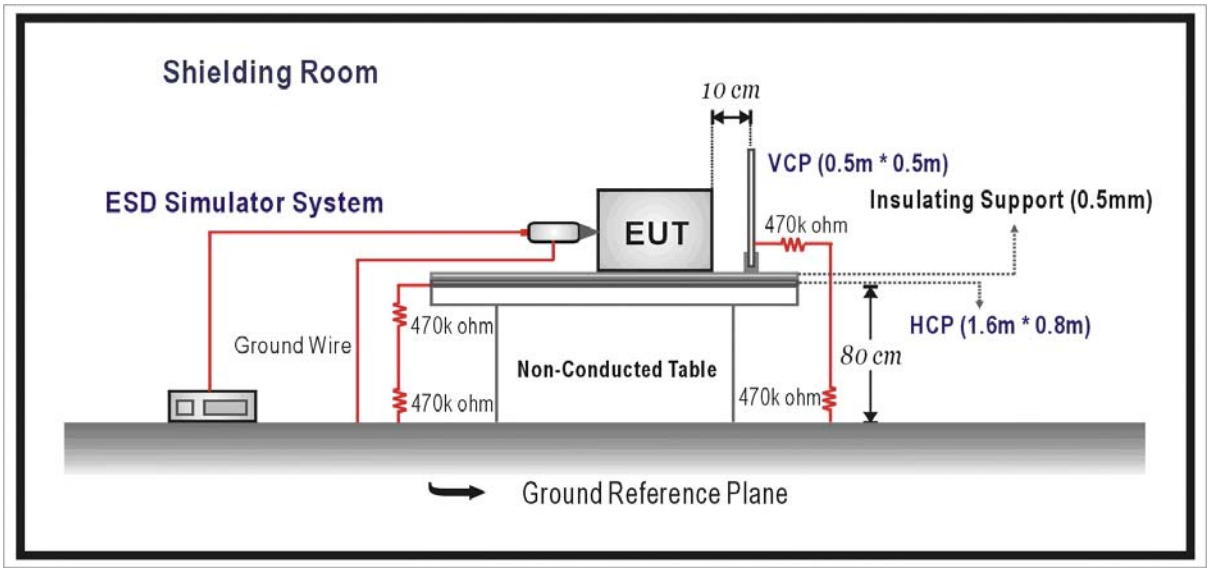
Description : Front View of High Frequency Radiated Test

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	Network Camera		
Test Item	Electrostatic Discharge		
Test Mode	Mode 1: Normal Operation, POE Mode (IP8152)		
Date of Test	2013/01/08	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	B	Pass
	10	-8kV	B	B	Pass
Contact Discharge	25	+4kV	B	B	Pass
	25	-4kV	B	B	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.

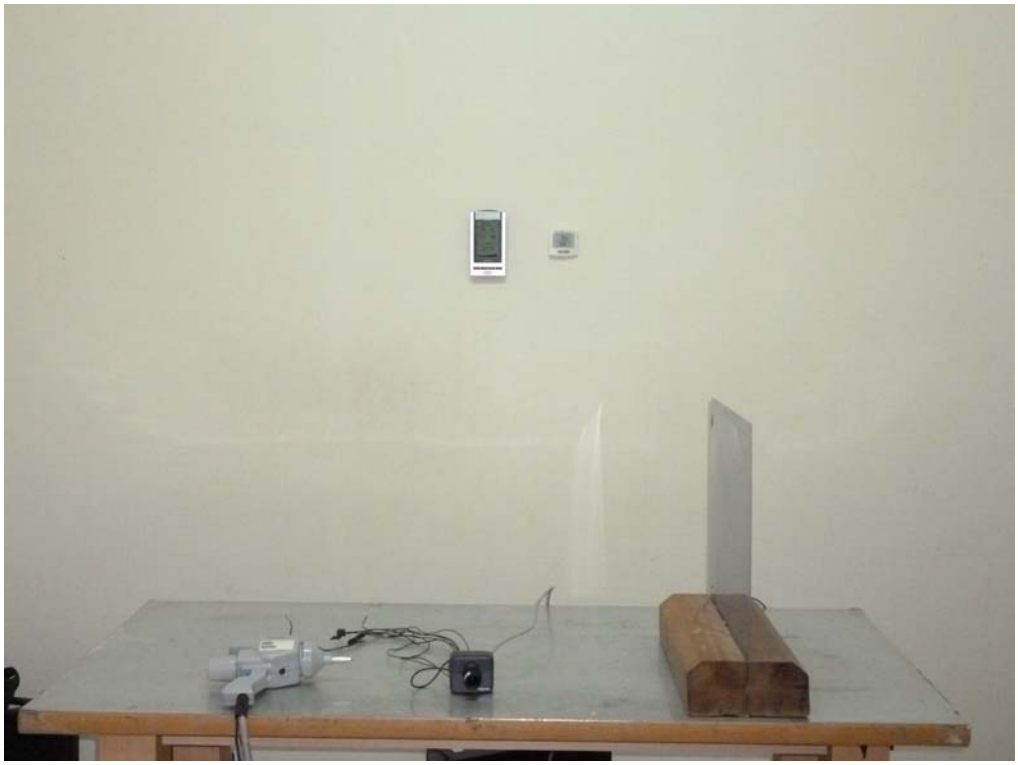
Remark:

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

5.7. Test Photograph

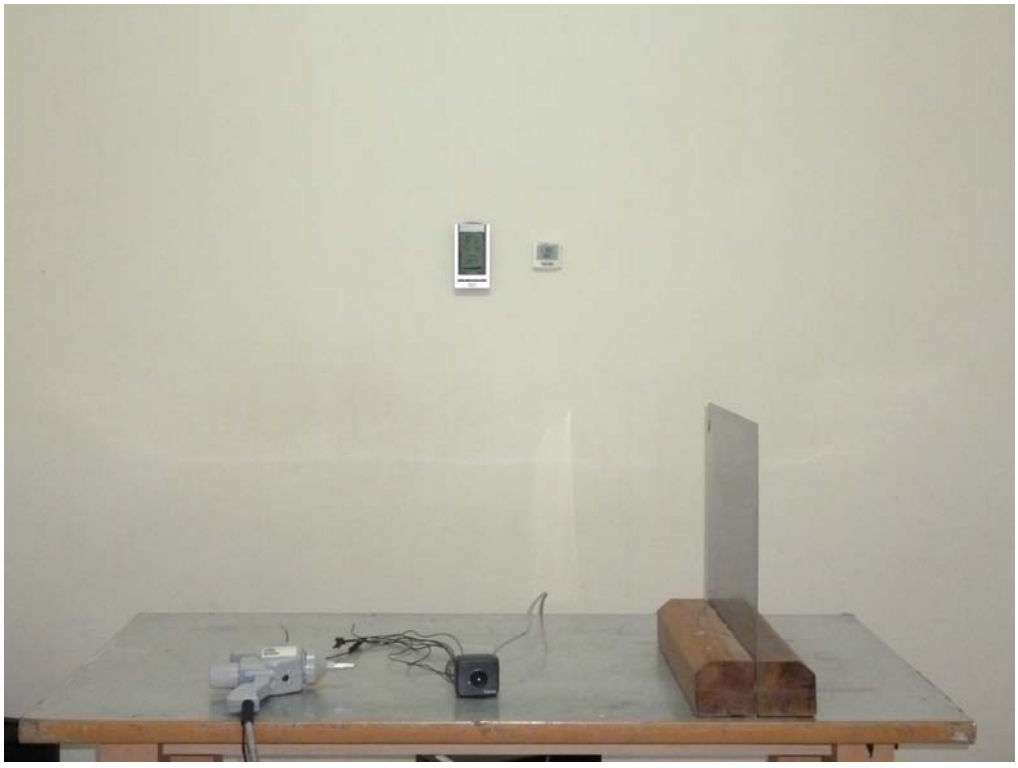
Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : ESD Test Setup



Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : ESD Test Setup

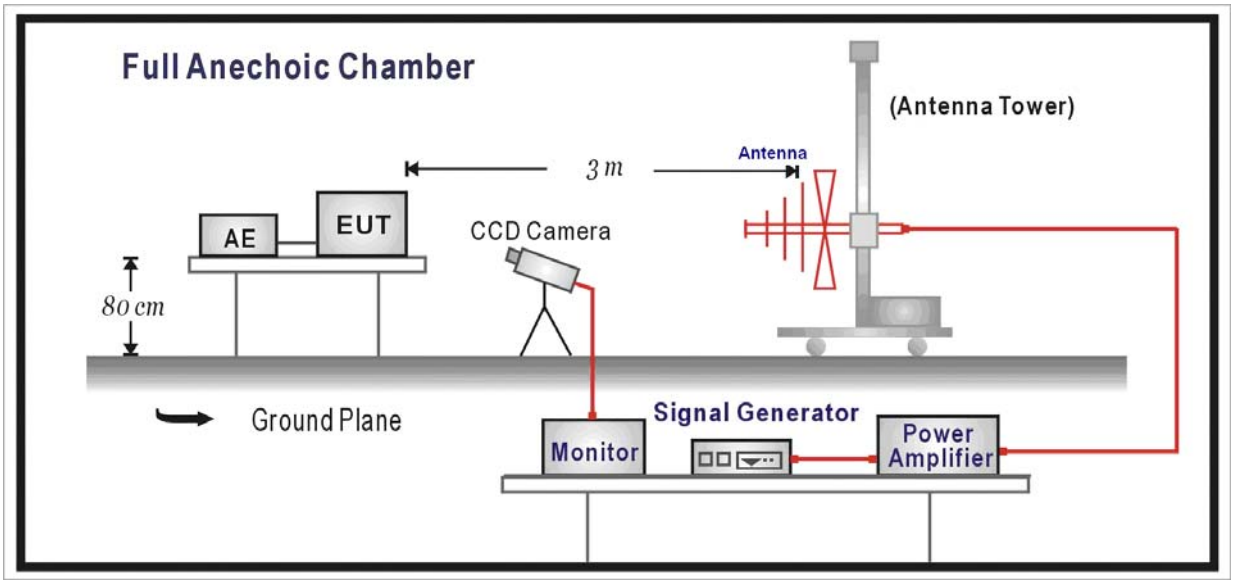


6. Radiated Susceptibility

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	Network Camera		
Test Item	Radiated susceptibility		
Test Mode	Mode 1: Normal Operation, POE Mode (IP8152)		
Date of Test	2013/01/07	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°	H	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.

Product	Network Camera		
Test Item	Radiated susceptibility		
Test Mode	Mode 2: Normal Operation, POE Mode (IP8152-F4)		
Date of Test	2013/01/07	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°	H	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.

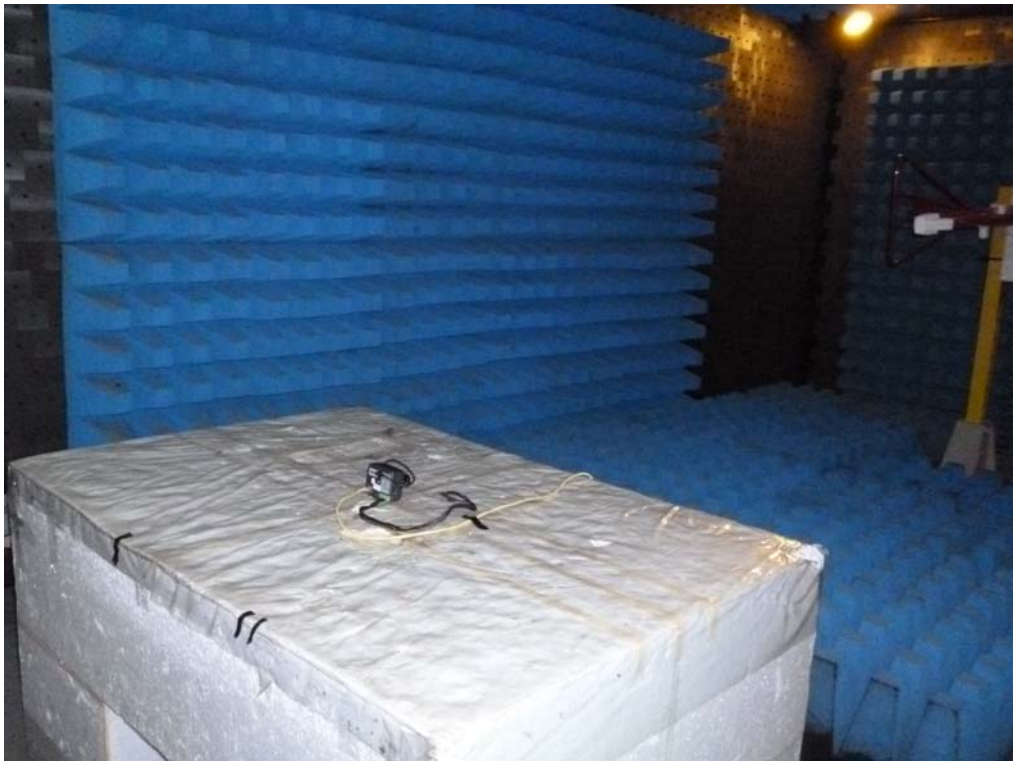
6.7. Test Photograph

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Radiated Susceptibility Test Setup

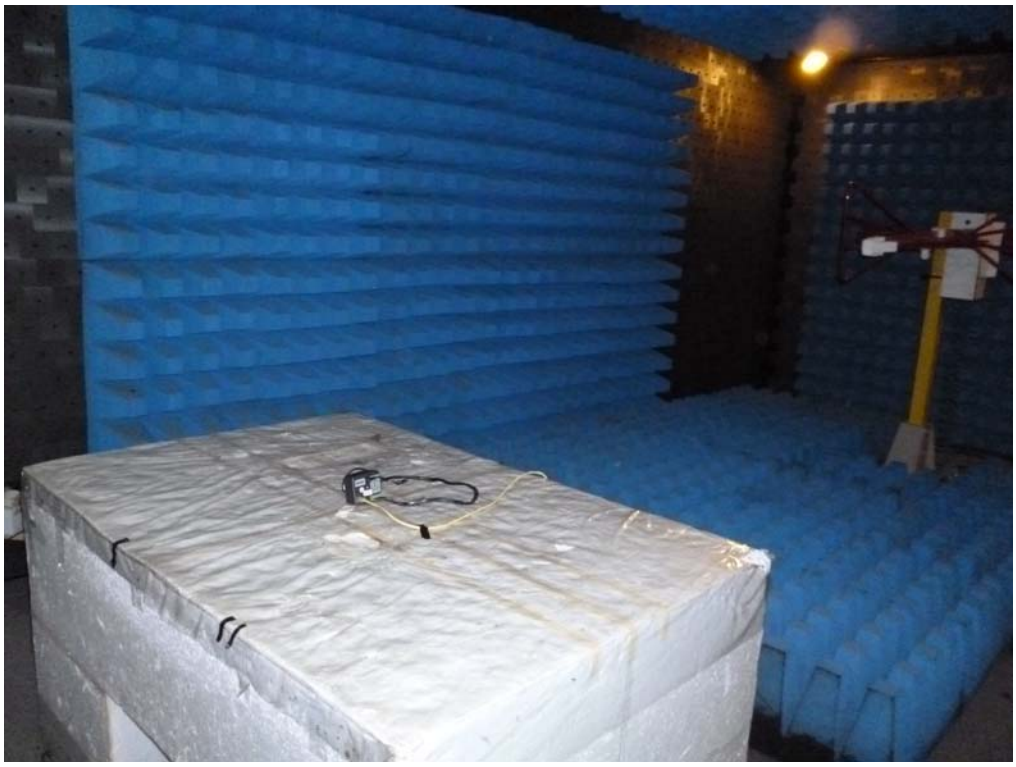


Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Radiated Susceptibility Test Setup

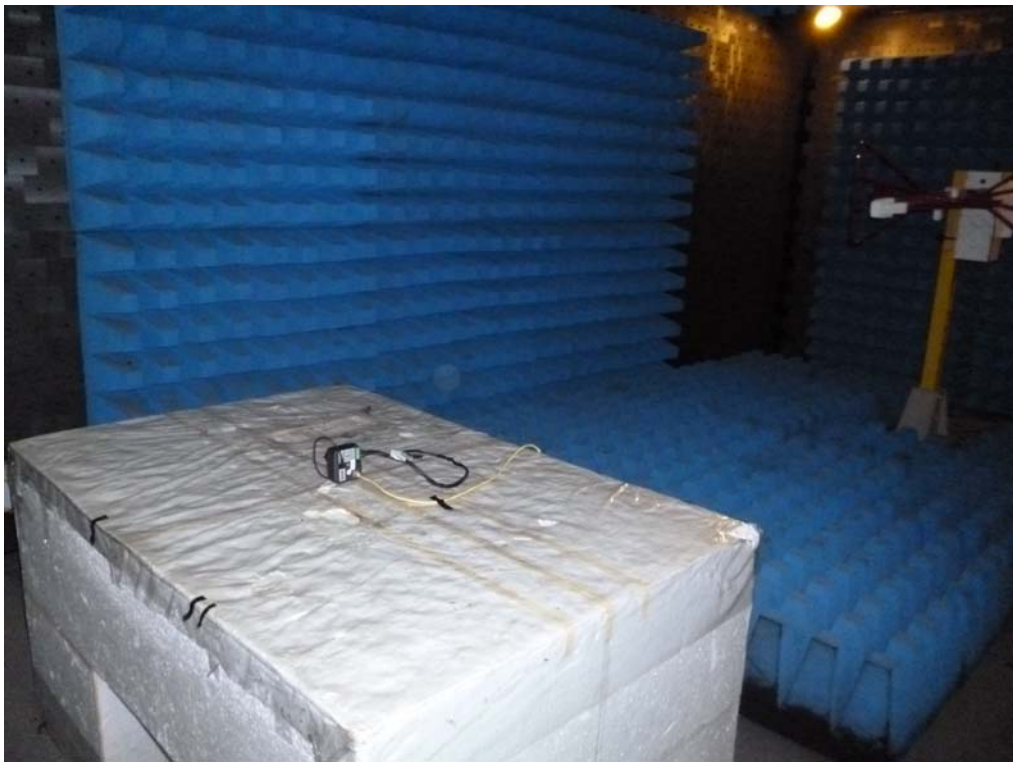


Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : Radiated Susceptibility Test Setup



Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

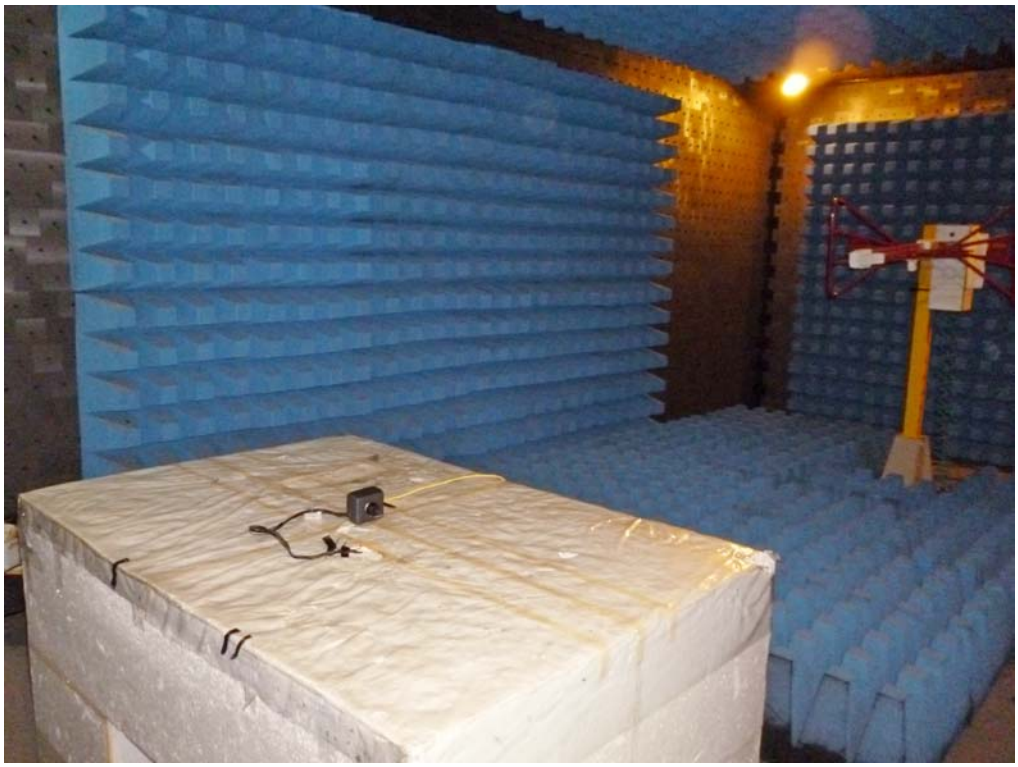
Description : Radiated Susceptibility Test Setup

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Radiated Susceptibility Test Setup

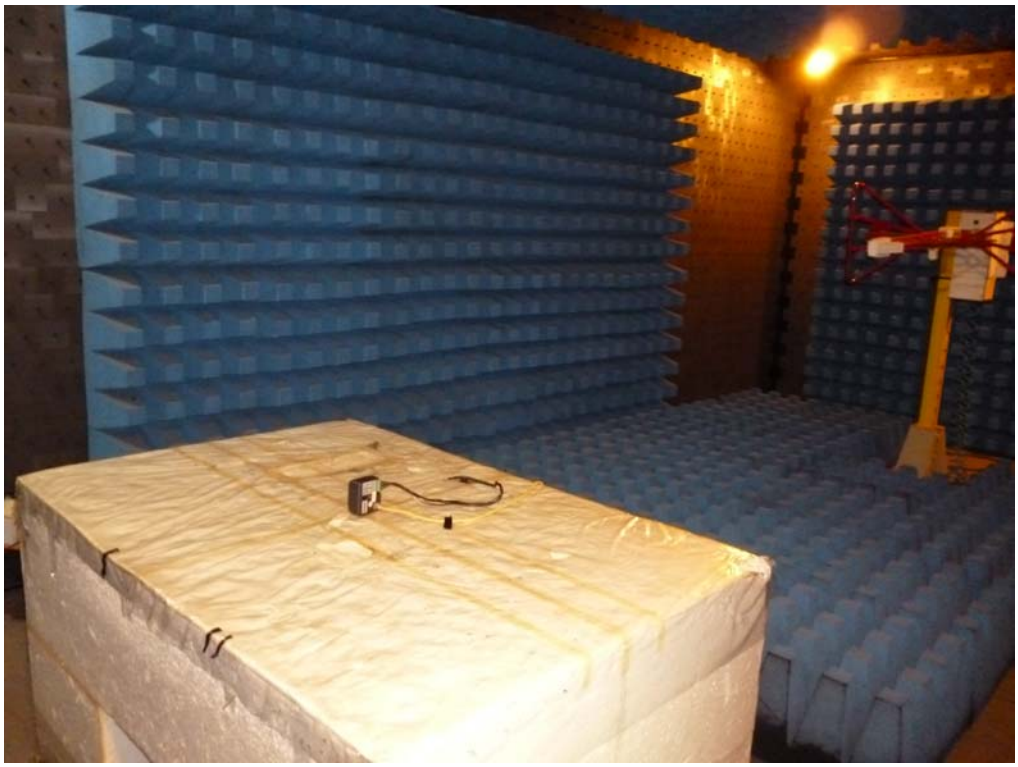


Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Radiated Susceptibility Test Setup

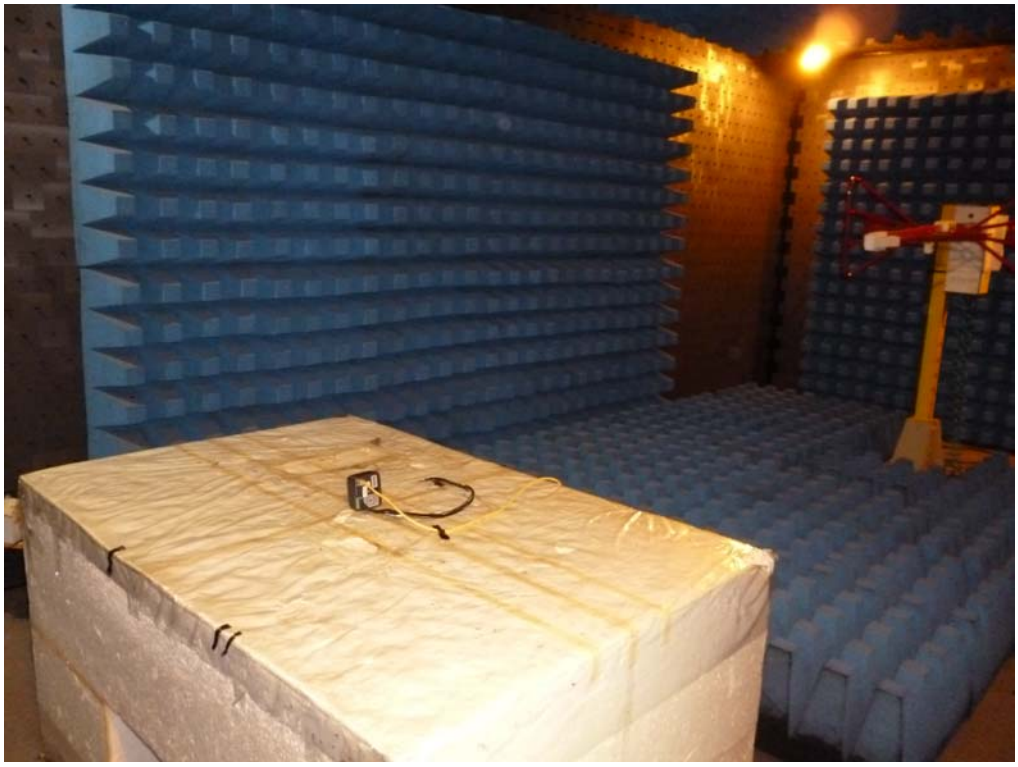
Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Radiated Susceptibility Test Setup



Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Radiated Susceptibility Test Setup

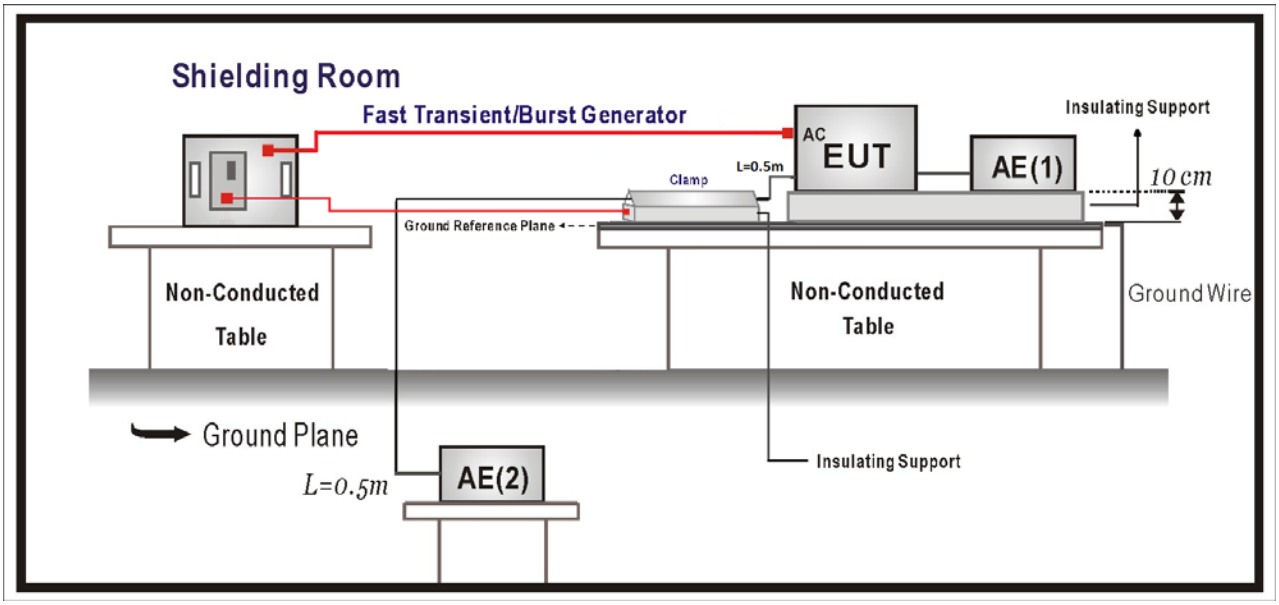


7. Electrical Fast Transient/Burst

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	Network Camera		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 1: Normal Operation, POE Mode (IP8152)		
Date of Test	2013/01/04	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
LAN	±	0.5 kV	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.

Product	Network Camera		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 2: Normal Operation, POE Mode (IP8152-F4)		
Date of Test	2013/01/04	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
LAN	±	0.5 kV	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: Normal Operation, POE Mode (IP8152)

Description : EFT/B Test Setup - Clamp

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

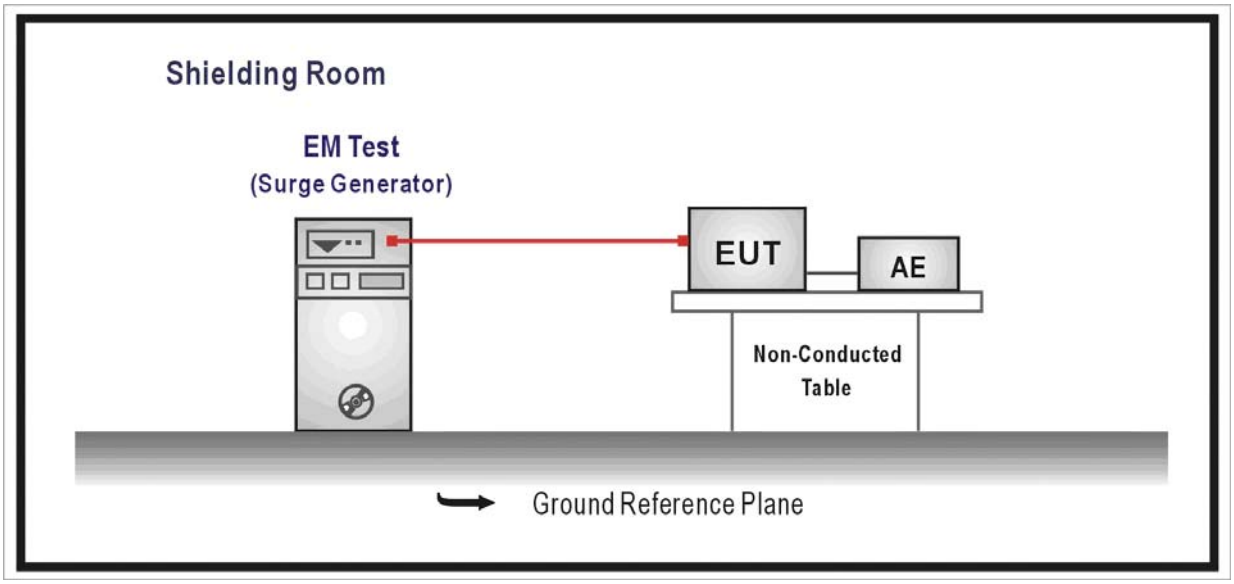
Description : EFT/B Test Setup - Clamp

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 may directly to outdoor cables.
2) Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, no immunity test shall be required.

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	Network Camera		
Test Item	Surge		
Test Mode	Mode 1: Normal Operation, POE Mode (IP8152)		
Date of Test	2013/01/07	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	Direct	C	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.

Product	Network Camera		
Test Item	Surge		
Test Mode	Mode 2: Normal Operation, POE Mode (IP8152-F4)		
Date of Test	2013/01/07	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	Direct	C	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.

8.7. Test Photograph

Test Mode : Mode 1: Normal Operation, POE Mode (IP8152)

Description : SURGE Test Setup

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : SURGE Test Setup

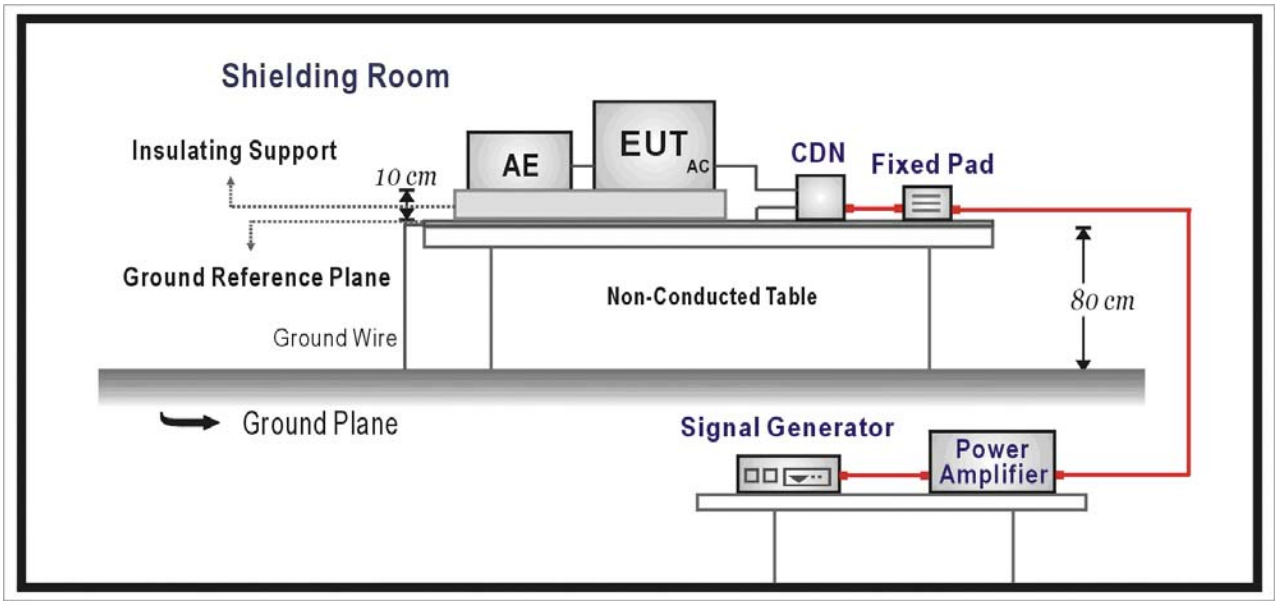
9. Conducted Susceptibility

9.1. Test Specification

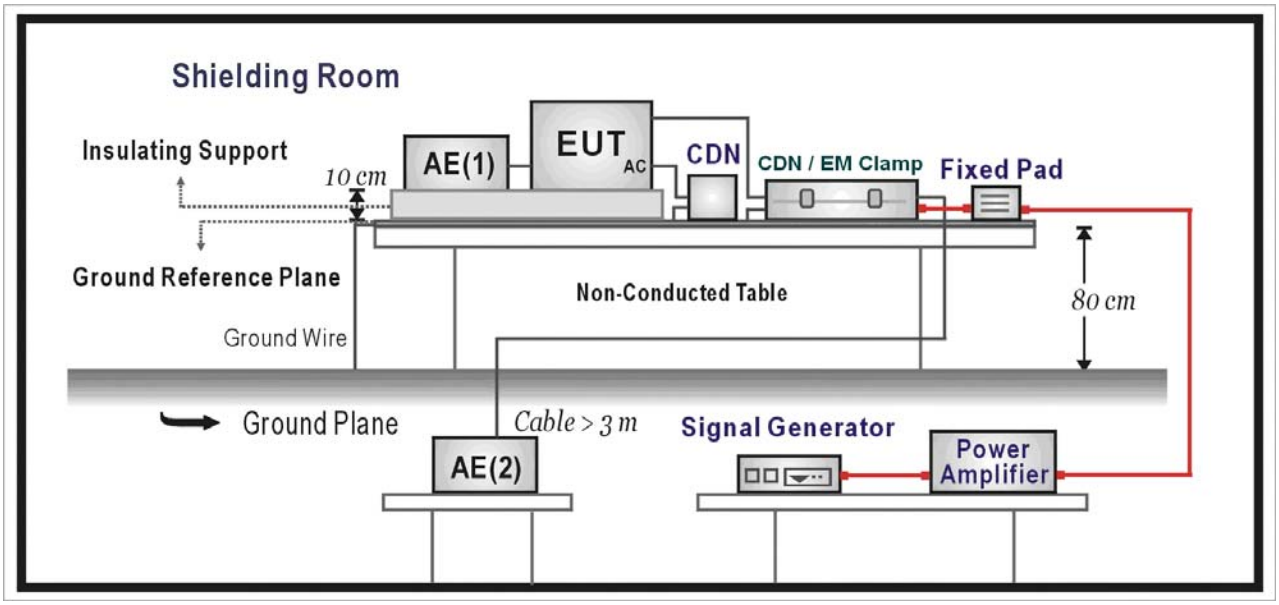
According to Standard : IEC 61000-4-6

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	Network Camera		
Test Item	Conducted susceptibility		
Test Mode	Mode 1: Normal Operation, POE Mode (IP8152)		
Date of Test	2013/01/07	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)	Clamp	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.

Product	Network Camera		
Test Item	Conducted susceptibility		
Test Mode	Mode 2: Normal Operation, POE Mode (IP8152-F4)		
Date of Test	2013/01/07	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)	Clamp	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: Normal Operation, POE Mode (IP8152)

Description : Conducted Susceptibility Test Setup - Clamp

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

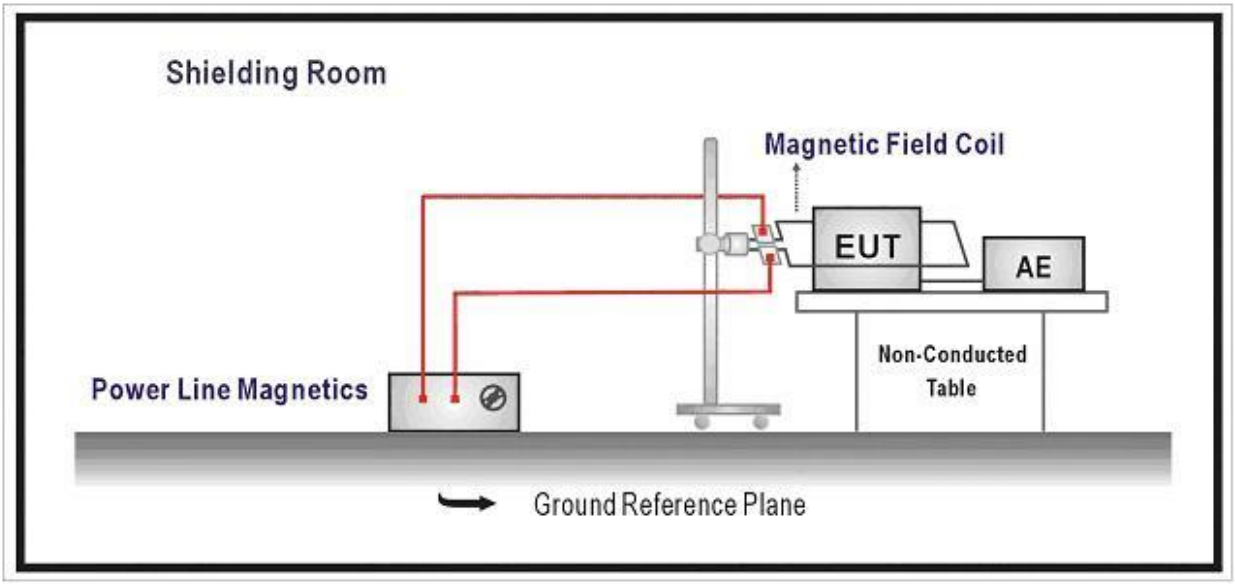
Description : Conducted Susceptibility Test Setup - Clamp

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	Network Camera		
Test Item	Power frequency magnetic field		
Test Mode	Mode 1: Normal Operation, POE Mode (IP8152)		
Date of Test	2013/01/08	Test Site	No.3 Shielded Room

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

Product	Network Camera		
Test Item	Power frequency magnetic field		
Test Mode	Mode 2: Normal Operation, POE Mode (IP8152-F4)		
Date of Test	2013/01/08	Test Site	No.3 Shielded Room

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	1	A	A	PASS
Y Orientation	50	1	A	A	PASS
Z Orientation	50	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: Normal Operation, POE Mode (IP8152)

Description : Power Frequency Magnetic Field Test Setup

Test Mode : Mode 2: Normal Operation, POE Mode (IP8152-F4)

Description : Power Frequency Magnetic Field Test Setup

11. Attachment

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo

(3) EUT Photo

(4) EUT Photo

(5) EUT Photo

(6) EUT Photo

12.

(7) EUT Photo

(8) EUT Photo