Test Report

Product Name ： Outdoor Dome Network Camera

Model No. ： FD8372

Applicant ： VIVOTEK INC.

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

Date of Receipt ： 2012/04/13

Issued Date ： 2012/04/25

Report No. ： 124317R-ITCEP11V03

Report Version ： V1.0

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	:	Outdoor Dome Network Camera
Trade name	:	VIVOTEK
Model Number	:	FD8372
Applicable Harmonized Standards under Directive 2004/108/EC	:	EN 55022: 2010, Class A EN 55024: 2010 EN 61000-3-2: 2006+A2: 2009 EN 61000-3-3:2008 AS/NZS CISPR 22: 2009

Company Name : _____

Company Address : _____

Telephone : _____ Facsimile : _____

Person in responsible for marking this declaration:

_____ _____

Name (Full Name) Title/ Department

_____ _____

Date Legal Signature

Date : Apr. 25, 2012
QTK No.: 124317R-ITCEP11V03

Statement of Conformity

This statement is to certify that the designated product below.

Product	:	Outdoor Dome Network Camera
Trade name	:	VIVOTEK
Model Number	:	FD8372
Company Name	:	VIVOTEK INC.
Applicable Standards	:	EN 55022: 2010, Class A
		EN 55024: 2010
		EN 61000-3-2: 2006+A2: 2009
		EN 61000-3-3:2008
		AS/NZS CISPR 22: 2009

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 : 124317R-ITCEP11V03

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 : 2011/04/25
Report No. : 124317R-ITCEP11V03

QuieTek

Product Name	:	Outdoor Dome 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.	:	FD8372
EUT Rated Voltage	:	AC 24V, By POE
EUT Test Voltage	:	AC 24V, By POE
Trade Name	:	VIVOTEK
Applicable Standard	:	EN 55022: 2010, Class A EN 55024: 2010 EN 61000-3-2:2006+A2: 2009 EN 61000-3-3:2008 AS/NZS CISPR 22: 2009
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 : Leven Huang
(Senior Adm. Specialist / Leven Huang)

Reviewed By : JoJolee jung
(Assistant Engineer / JoJoLee Jung)

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

NVLAP Lab Code : 200347-0

LinKou Testing Laboratory :

No. 5-22, Rueishu Keng, 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 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	Outdoor Dome Network Camera
Trade Name	VIVOTEK
Model No.	FD8372

Component	
Power Adapter (Optional)	MFR: PTC, M/N: N/A Input: 110/220V Output: AC 24V Power Cable: Non-Shielded, 1.2m

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: AC 24V Mode 2: POE	
Final Test Mode	
Conducted Emission	Mode 1: AC 24V
Impedance Stabilization Network	Mode 1: AC 24V Mode 2: POE
Radiated Emission	Mode 1: AC 24V Mode 2: POE
Immunity	Mode 1: AC 24V Mode 2: POE

1.3. Tested System Details

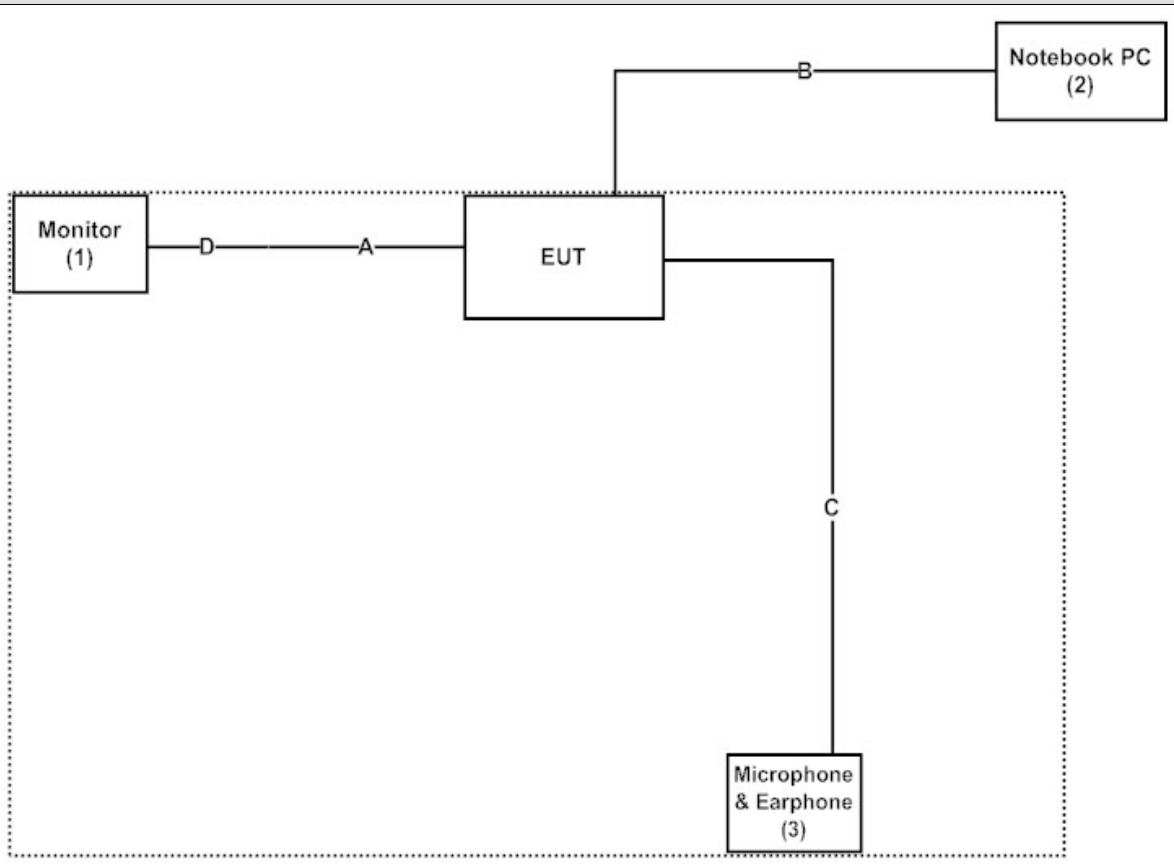
The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Test Mode		Mode 1			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor (EMI)	SONY	PVM-14M2U	2105742	Non-Shielded, 1.8m
	Monitor (EMS)	SONY	LMDV 1410	N/A	
2	Notebook PC	DELL	PP04X	C8YYM1S	Non-Shielded, 1.8m
3	Microphone & Earphone	Ergotech	ET-E201	N/A	N/A

Test Mode		Mode 2			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor (EMI)	SONY	PVM-14M2U	2105742	Non-Shielded, 1.8m
	Monitor (EMS)	SONY	LMDV 1410	N/A	
2	Notebook PC	DELL	PP04X	C8YYM1S	Non-Shielded, 1.8m
3	Microphone & Earphone	Ergotech	ET-E201	N/A	N/A
4	POE	VIVOTEK	POE-IJ-1748NDN	N/A	Non-Shielded, 0.5m

1.4. Configuration of Tested System

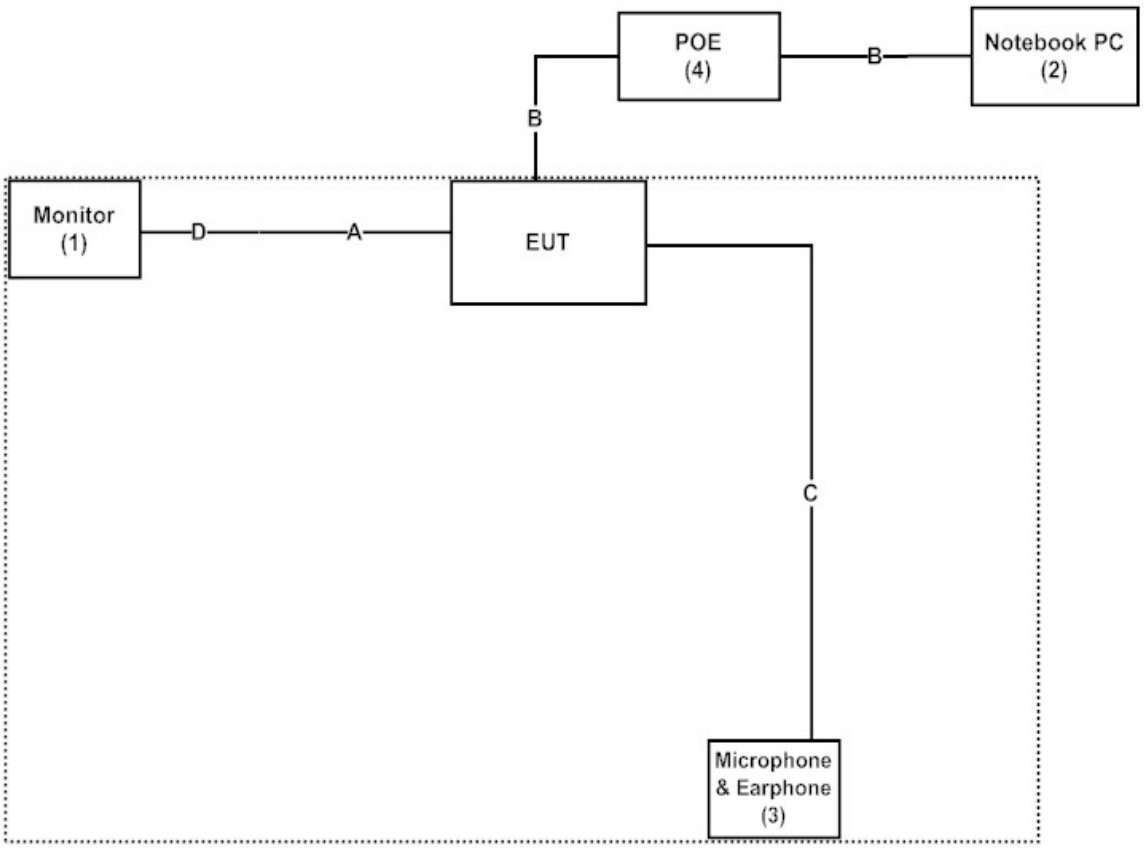
Test Mode	Mode 1
Connection Diagram	



Signal Cable Type		Signal cable Description
A	Signal to BNC Cable	Non-Shielded, 1.6m
B	LAN Cable	Non-Shielded, 3m
C	Microphone & Earphone Cable	Non-Shielded, 1.6m
D	Coaxial Cable	Shielded, 3m

Test Mode	Mode 2

Connection Diagram



Signal Cable Type		Signal cable Description
A	Signal to BNC Cable	Non-Shielded, 1.6m
B	LAN Cable	Non-Shielded, 3m, two PCS.
C	Microphone & Earphone Cable	Non-Shielded, 1.6m
D	Coaxial Cable	Shielded, 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	Repeat the above procedure (3) to (4).

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	Yes	No
Impedance Stabilization Network	EN 55022: 2010 AS/NZS CISPR 22: 2009	Yes	No
Radiated Emission	EN 55022: 2010 AS/NZS CISPR 22: 2009	Yes	No
Power Harmonics	EN 61000-3-2:2006+A2: 2009	Yes	No
Voltage Fluctuation and Flicker	EN 61000-3-3:2008	Yes	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: 2011	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	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	100366	2011/11/15
LISN	R&S	ESH3-Z5	836679/023	2012/01/12
LISN	R&S	ENV216	100085	2012/02/13
Pulse Limiter	R&S	ESH3-Z2	357.8810.52-1	2011/09/16

Impedance Stabilization Network / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Capacitive Voltage Probe	Schaffner	CVP2200A	18331	2011/11/23
EMI Test Receiver	R&S	ESCS 30	100366	2011/11/15
LISN	R&S	ENV216	100085	2012/02/13
LISN	R&S	ESH3-Z5	836679/023	2012/01/12
Pulse Limiter	R&S	ESH3-Z2	100324	2011/09/16
RF Current Probe	FCC	F-65 10KHz~1GHz	198	2011/10/25
BALANCED TELECOM ISN	FCC	FCC-TLISN-T2-02	20316	2011/07/09
Impedance Stabilization Network	Teseq	ISN T800	30303	2012/03/10

Radiated Emission / Site 7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCI	100648	2011/10/13
Bilog Antenna	Schaffner Chase	CBL6112B	2930	2011/07/22
Pre-Amplifier	QTK	AP-025C	071919	2011/07/07
Site7 NSA	QTK	N/A	N/A	2011/06/27

Radiated Emission / CB7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	Agilent	E4440A	MY46185846	2011/12/12
Horn Antenna	ETS-Lindgren	3117	00135205	2012/03/30
Horn Antenna	SCHWARZBECK	9120D	576	2011/11/14
Pre-Amplifier	QuieTek	AP-180C	CHM/071920	2011/07/12
CB7 VSWR	QTK	N/A	N/A	2011/08/25

Power Harmonics / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2011/09/13
IEC1000-4-X Analyzer(Flicker)	Schaffner	CCN 1000-1	X7 1887	2011/09/13

Voltage Fluctuation and Flicker / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2011/09/13
IEC1000-4-X Analyzer(Flicker)	Schaffner	CCN 1000-1	X7 1887	2011/09/13

Electrostatic Discharge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
ESD Simulator System	Noiseken	TC-815R	ESS0929097	2011/06/16
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	2011/05/09
Biconilog Antenna	EMCO	3149	00071675	N/A
Directional Coupler	A&R	DC 6180	22735	N/A
Dual Microphone Supply	B&K	5935	2426784	2012/04/21
Mouth Simulator	B&K	4227	2439692	2012/04/21
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	2011/05/09
Pre-Amplifier	A&R	150A220	23067	N/A
Probe Microphone	B&K	4182	2278070	2012/04/21
Signal Generator	R&S	SMT03	100170	2011/05/09
Calibration of field	QTK	N/A	N/A	2011/05/12

Electrical fast transient/burst / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2011/11/30

Surge / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2011/11/30

Conducted susceptibility / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2070 RF-Generator	Schaffner	N/A	N/A	2012/04/07

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

Voltage dips and interruption / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2011/11/30

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

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 4.7 (mA/A).

Voltage Fluctuation and Flicker

The measurement uncertainty is evaluated as 0.27 (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 voltage and timing as being 3.0 % and 3.8%.

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, frequency and timing as being 4 %, and 2.5%.

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 3.5 % and 0.1%.

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 2.0 %.

Voltage dips and interruption

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 DIP testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant DIP standards. The immunity test signal from the DIP system meet the required specifications in IEC 61000-4-11 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 3.5 % and 0.1%.

2.4. Test Environment

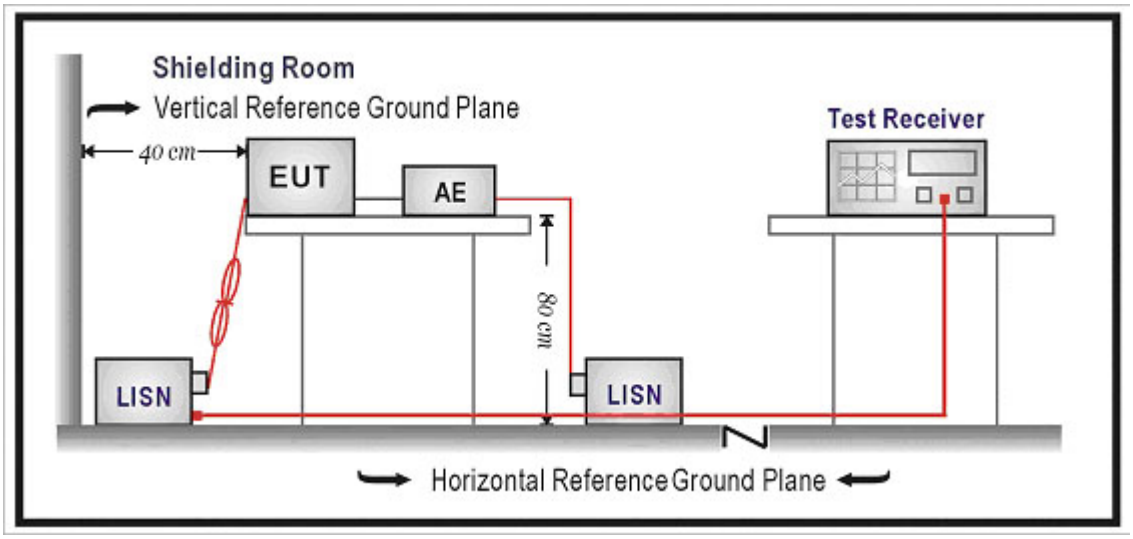
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	24
	Humidity (%RH)	25-75	66
	Barometric pressure (mbar)	860-1060	950-1000
Impedance Stabilization Network	Temperature (°C)	15-35	24
	Humidity (%RH)	25-75	66
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Electrostatic Discharge	Temperature (°C)	15-35	20
	Humidity (%RH)	30-60	52
	Barometric pressure (mbar)	860-1060	950-1000
Radiated susceptibility	Temperature (°C)	15-35	20
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Electrical fast transient/burst	Temperature (°C)	15-35	20
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Surge	Temperature (°C)	15-35	20
	Humidity (%RH)	10-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Conducted susceptibility	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	52
	Barometric pressure (mbar)	860-1060	950-1000
Power frequency magnetic field	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	52
	Barometric pressure (mbar)	860-1060	950-1000
Voltage dips and interruption	Temperature (°C)	15-35	20
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission (Main Terminals)

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	79	66
0.50-5.0	73	60
5.0 - 30	73	60

Remarks: In the above table, the tighter limit applies at the band edges.

3.4. Test Procedure

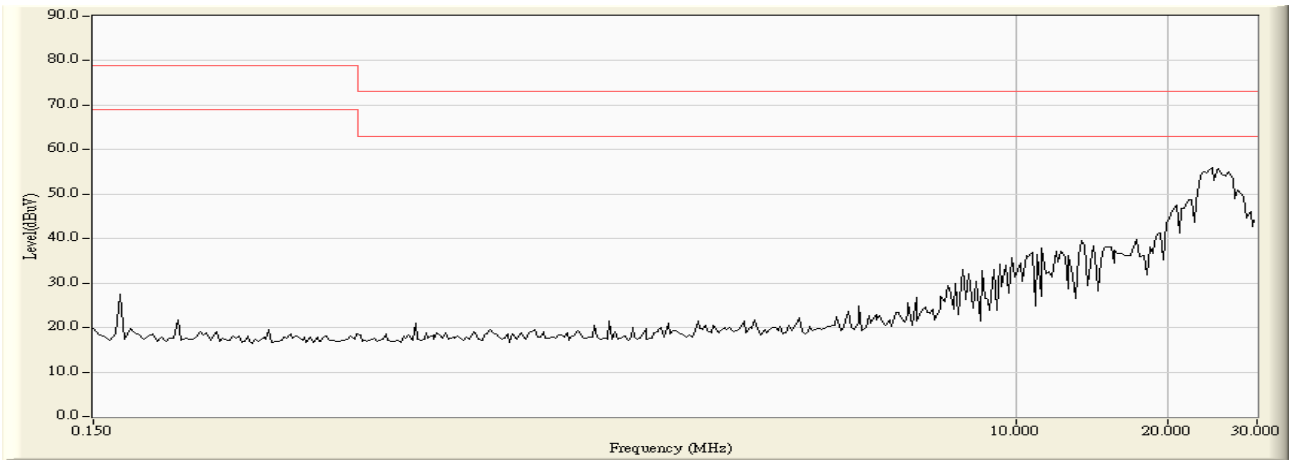
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.
(Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Deviation from Test Standard

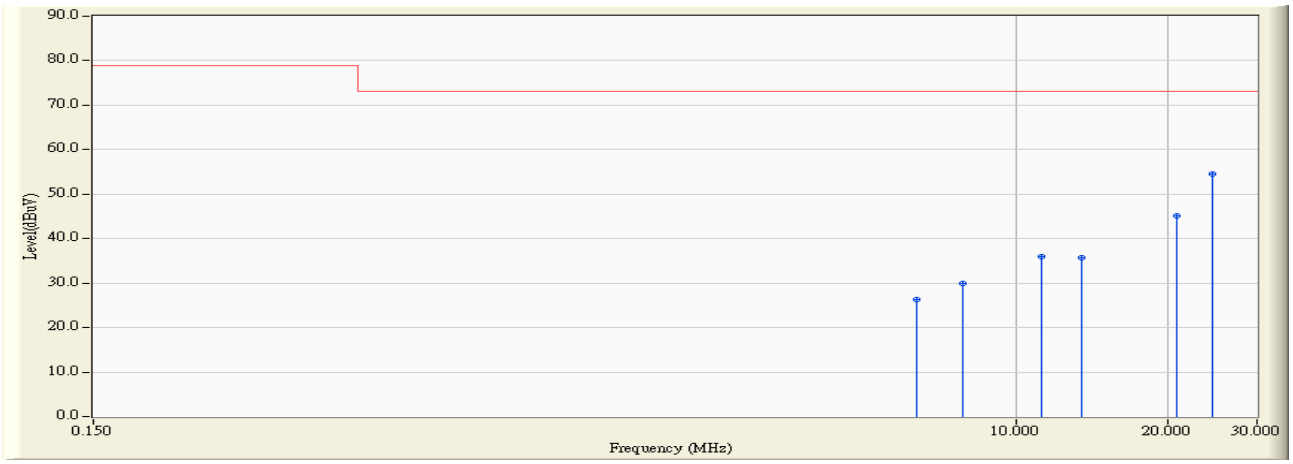
No deviation.

3.6. Test Result

Site : SR1	**Time : 2012/04/17 - 19:56**
Limit : CISPR_A_00M_QP	**Margin : 10**
EUT : Outdoor Dome Network Camera	**Probe : ENV_216_L1 - Line1**
Power : AC 24V	**Note : Mode 1**



Site : SR1	**Time : 2012/04/17 - 19:57**
Limit : CISPR_A_00M_QP	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ENV_216_L1 - Line1**
Power : AC 24V	**Note : Mode 1**

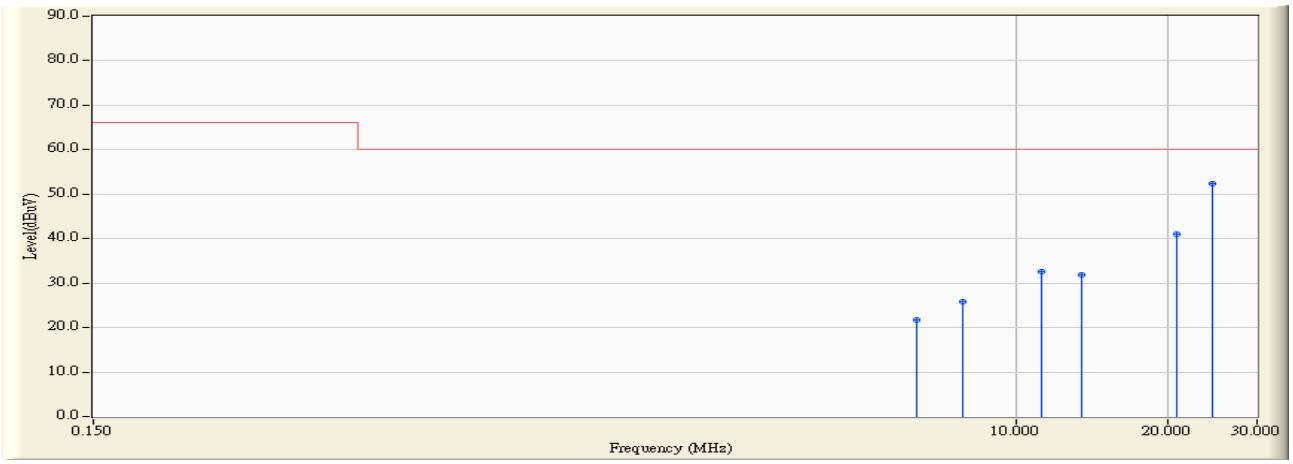


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		6.369	9.895	16.420	26.315	-46.685	73.000	QUASIPEAK
2		7.838	9.945	20.010	29.955	-43.045	73.000	QUASIPEAK
3		11.267	10.010	25.930	35.940	-37.060	73.000	QUASIPEAK
4		13.478	10.021	25.630	35.651	-37.349	73.000	QUASIPEAK
5		20.818	10.130	35.100	45.230	-27.770	73.000	QUASIPEAK
6	*	24.494	10.140	44.350	54.490	-18.510	73.000	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 : 2012/04/17 - 19:57**
Limit : CISPR_A_00M_AV	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ENV_216_L1 - Line1**
Power : AC 24V	**Note : Mode 1**

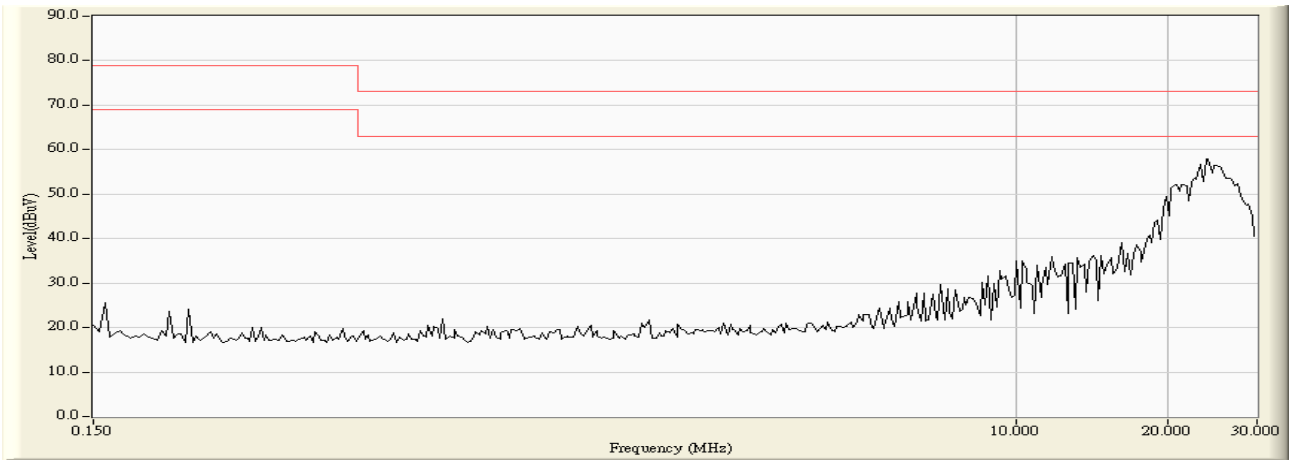


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		6.369	9.895	11.900	21.795	-38.205	60.000	AVERAGE
2		7.838	9.945	15.890	25.835	-34.165	60.000	AVERAGE
3		11.267	10.010	22.560	32.570	-27.430	60.000	AVERAGE
4		13.478	10.021	21.780	31.801	-28.199	60.000	AVERAGE
5		20.818	10.130	30.830	40.960	-19.040	60.000	AVERAGE
6	*	24.494	10.140	42.210	52.350	-7.650	60.000	AVERAGE

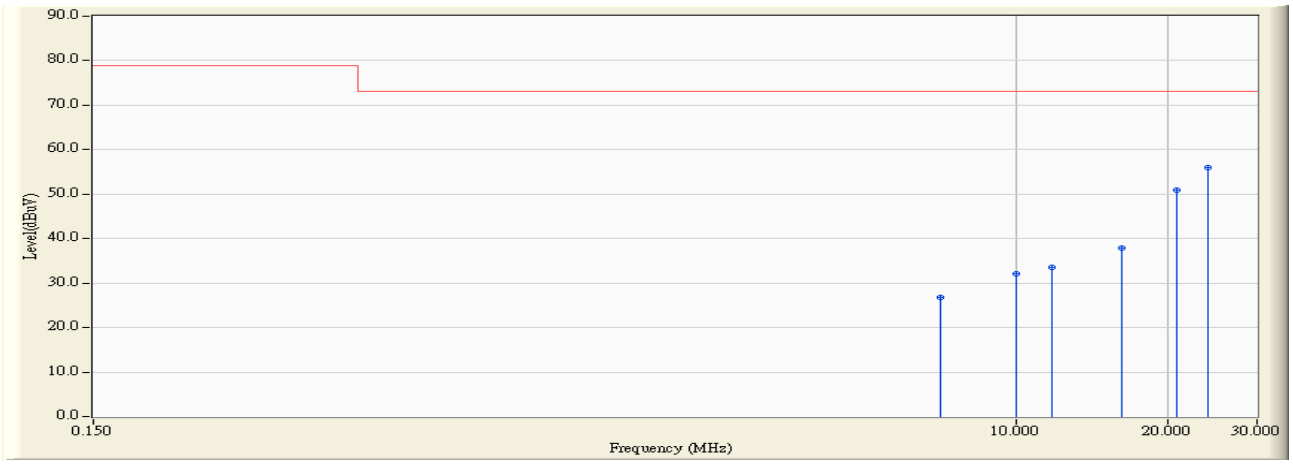
Note:

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 : 2012/04/17 - 19:58**
Limit : CISPR_A_00M_QP	**Margin : 10**
EUT : Outdoor Dome Network Camera	**Probe : ENV_216_N - Line2**
Power : AC 24V	**Note : Mode 1**



Site : SR1	**Time : 2012/04/17 - 19:59**
Limit : CISPR_A_00M_QP	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ENV_216_N - Line2**
Power : AC 24V	**Note : Mode 1**

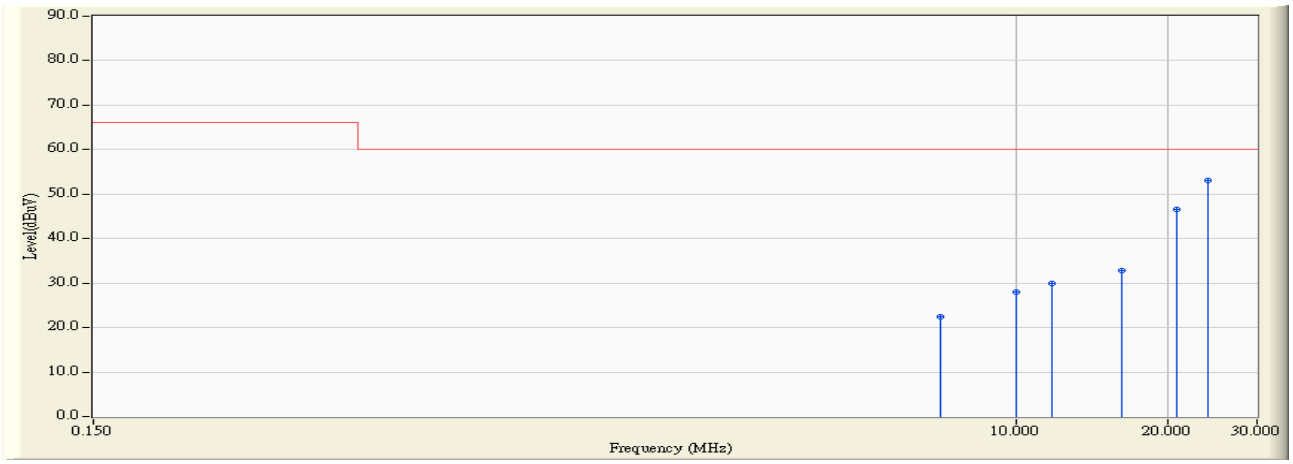


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		7.103	9.968	16.840	26.808	-46.192	73.000	QUASIPEAK
2		10.041	10.060	22.090	32.150	-40.850	73.000	QUASIPEAK
3		11.755	10.090	23.390	33.480	-39.520	73.000	QUASIPEAK
4		16.166	10.161	27.690	37.851	-35.149	73.000	QUASIPEAK
5		20.822	10.290	40.680	50.970	-22.030	73.000	QUASIPEAK
6	*	24.005	10.320	45.730	56.050	-16.950	73.000	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 : 2012/04/17 - 19:59**
Limit : CISPR_A_00M_AV	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ENV_216_N - Line2**
Power : AC 24V	**Note : Mode 1**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		7.103	9.968	12.390	22.358	-37.642	60.000	AVERAGE
2		10.041	10.060	17.940	28.000	-32.000	60.000	AVERAGE
3		11.755	10.090	19.830	29.920	-30.080	60.000	AVERAGE
4		16.166	10.161	22.750	32.911	-27.089	60.000	AVERAGE
5		20.822	10.290	36.380	46.670	-13.330	60.000	AVERAGE
6	*	24.005	10.320	42.780	53.100	-6.900	60.000	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: AC 24V

Description : Front View of Conducted Test

Test Mode : Mode 1: AC 24V

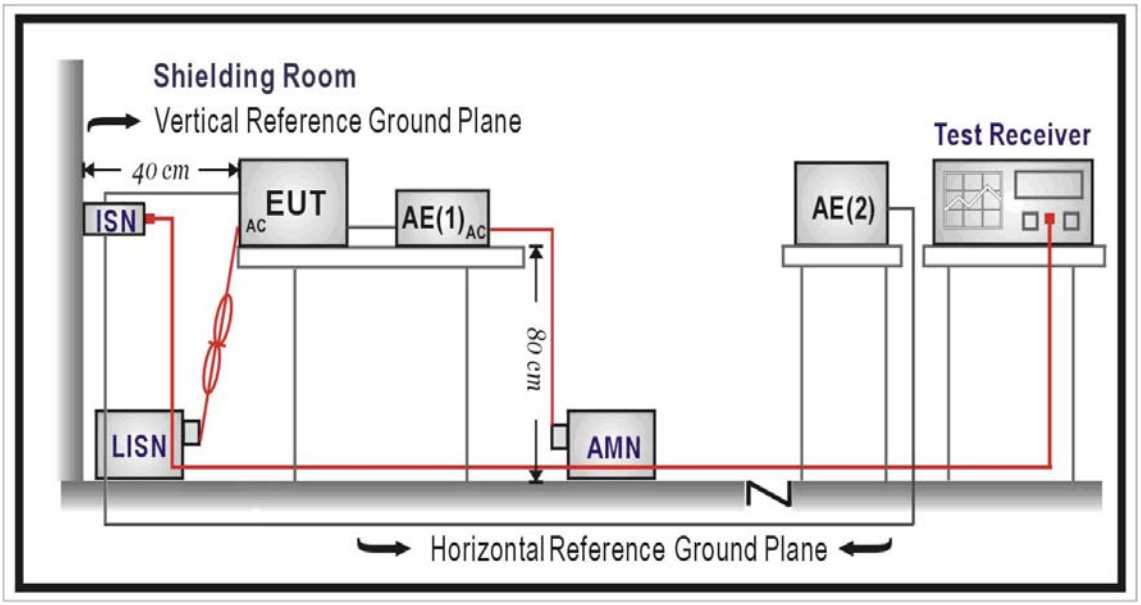
Description : Back View of Conducted Test

4. Conducted Emissions (Telecommunication Ports)

4.1. Test Specification

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

4.2. Test Setup



4.3. Limit

Limits		
Frequency (MHz)	**QP (dBuV)**	**AV (dBuV)**
0.15 - 0.50	97 – 87	84 – 74
0.50 - 30	87	74

Remarks:

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

4.4. Test Procedure

Telecommunication Port:

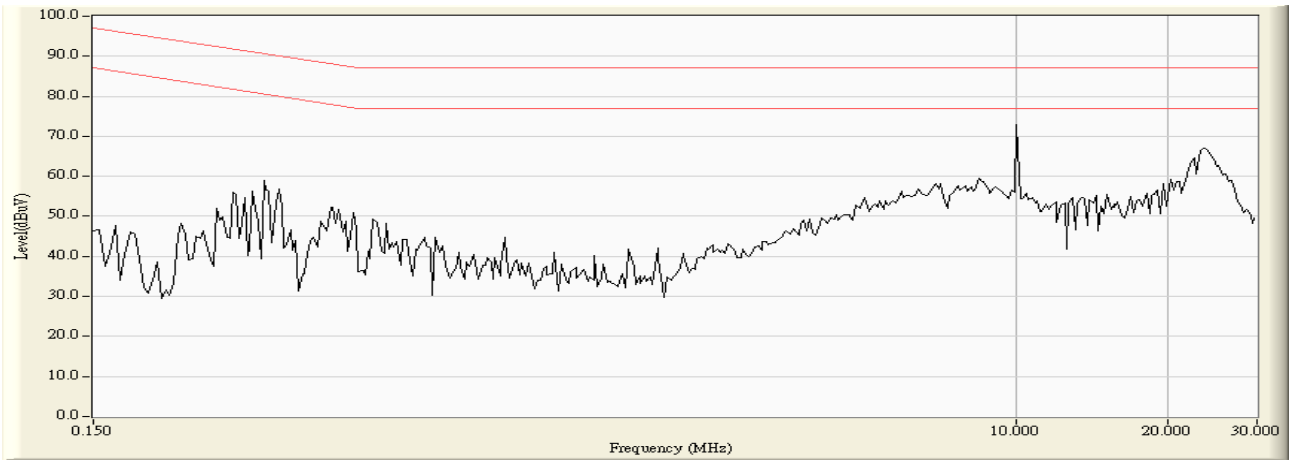
The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150 ohm impedance.
Both alternative cables are tested related to the LCL requested. The measurement range is from 150kHz to 30MHz. The bandwidth of measurement is set to 9kHz.
The 75dB LCL ISN is used for cat. 6 cable, the 65dB LCL ISN is used for cat. 5 cable, 55dB LCL ISN is used for cat. 3.

4.5. Deviation from Test Standard

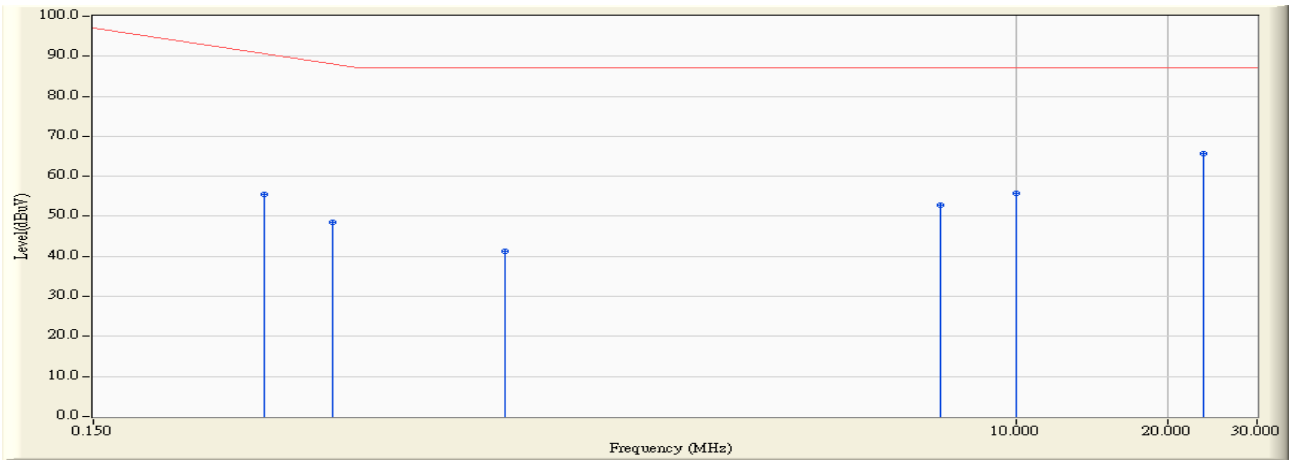
No deviation.

4.6. Test Result

Site : SR1	**Time : 2012/04/17 - 20:03**
Limit : ISN_Voltage_A_00M_QP	**Margin : 10**
EUT : Outdoor Dome Network Camera	**Probe : TESEQ_T8 - Line1**
Power : AC 24V	**Note : Mode 1,ISN 10M**



Site : SR1	**Time : 2012/04/17 - 20:04**
Limit : ISN_Voltage_A_00M_QP	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : TESEQ_T8 - Line1**
Power : AC 24V	**Note : Mode 1,ISN 10M**

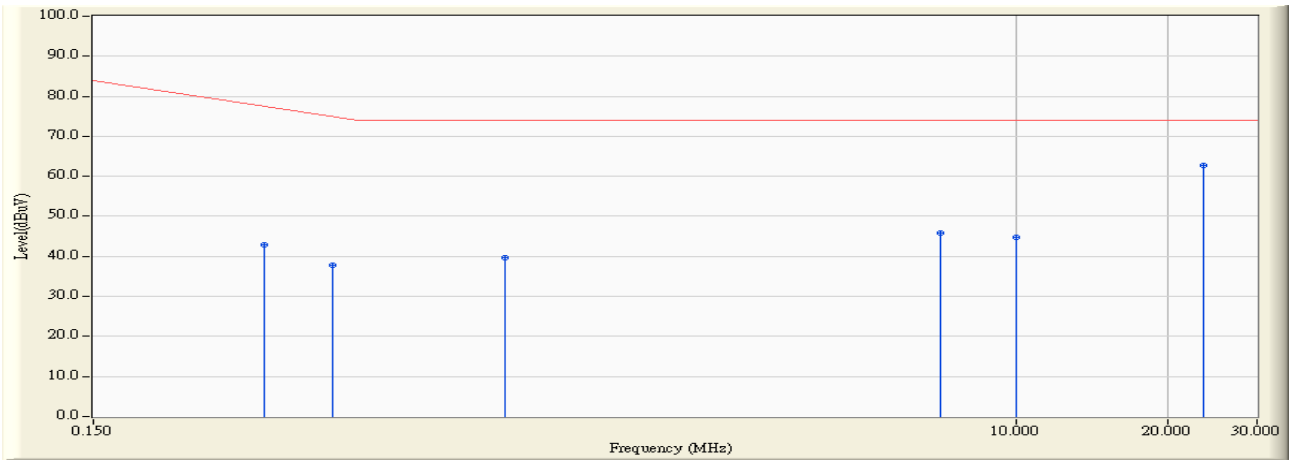


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.326	10.183	45.390	55.573	-36.398	91.971	QUASIPEAK
2		0.447	10.082	38.440	48.522	-39.992	88.514	QUASIPEAK
3		0.978	9.943	31.350	41.293	-45.707	87.000	QUASIPEAK
4		7.107	9.858	42.960	52.818	-34.182	87.000	QUASIPEAK
5		10.002	9.900	45.770	55.670	-31.330	87.000	QUASIPEAK
6	*	23.515	10.150	55.410	65.560	-21.440	87.000	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 : 2012/04/17 - 20:04**
Limit : ISN_Voltage_A_00M_AV	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : TESEQ_T8 - Line1**
Power : AC 24V	**Note : Mode 1,ISN 10M**

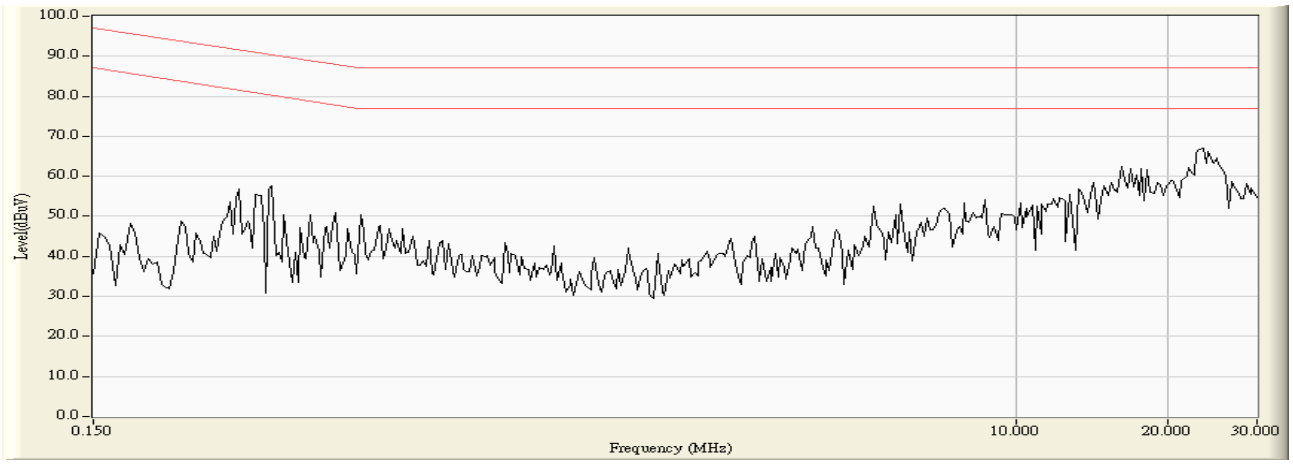


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.326	10.183	32.810	42.993	-35.978	78.971	AVERAGE
2		0.447	10.082	27.810	37.892	-37.622	75.514	AVERAGE
3		0.978	9.943	29.610	39.553	-34.447	74.000	AVERAGE
4		7.107	9.858	36.000	45.858	-28.142	74.000	AVERAGE
5		10.002	9.900	34.780	44.680	-29.320	74.000	AVERAGE
6	*	23.515	10.150	52.610	62.760	-11.240	74.000	AVERAGE

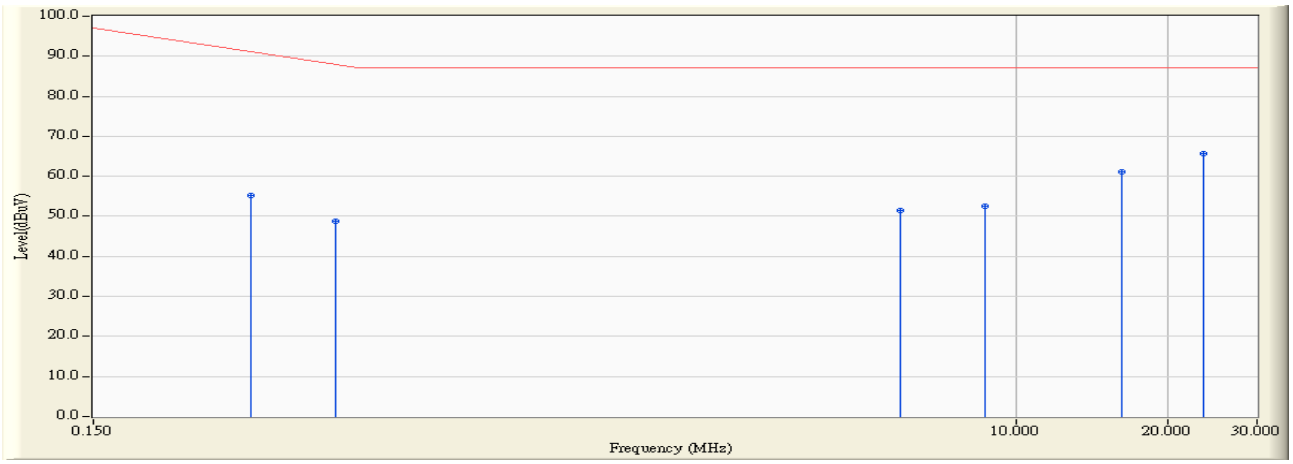
Note:

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 : 2012/04/17 - 20:01**
Limit : ISN_Voltage_A_00M_QP	**Margin : 10**
EUT : Outdoor Dome Network Camera	**Probe : TESEQ_T8 - Line1**
Power : AC 24V	**Note : Mode 1,ISN 100M**



Site : SR1	**Time : 2012/04/17 - 20:02**
Limit : ISN_Voltage_A_00M_QP	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : TESEQ_T8 - Line1**
Power : AC 24V	**Note : Mode 1,ISN 100M**

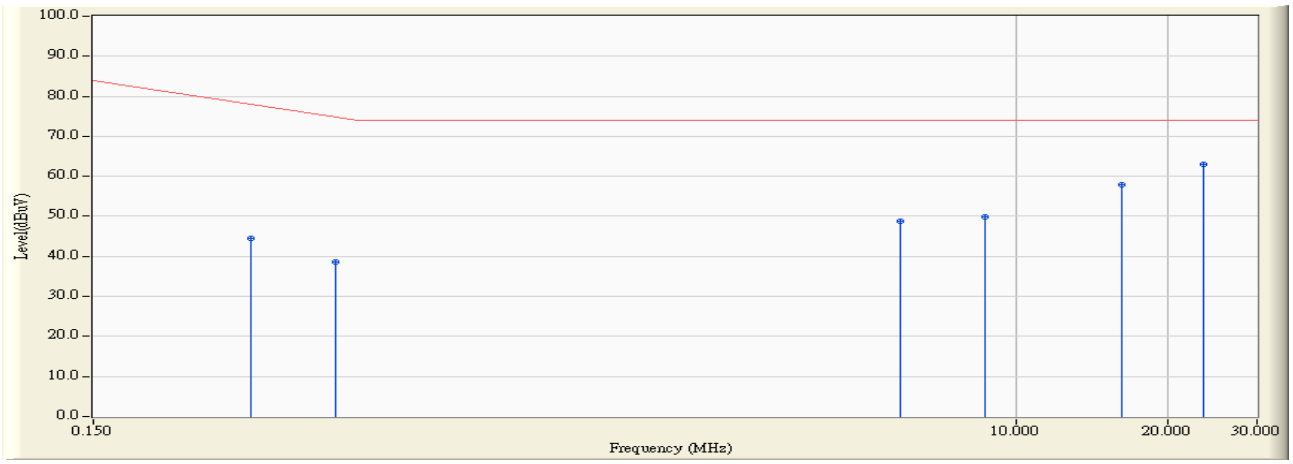


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.307	10.202	45.010	55.212	-37.302	92.514	QUASIPEAK
2		0.451	10.078	38.670	48.748	-39.652	88.400	QUASIPEAK
3		5.908	9.839	41.750	51.589	-35.411	87.000	QUASIPEAK
4		8.716	9.885	42.770	52.655	-34.345	87.000	QUASIPEAK
5		16.228	9.952	51.080	61.032	-25.968	87.000	QUASIPEAK
6	*	23.515	10.150	55.450	65.600	-21.400	87.000	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 : 2012/04/17 - 20:02**
Limit : ISN_Voltage_A_00M_AV	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : TESEQ_T8 - Line1**
Power : AC 24V	**Note : Mode 1,ISN 100M**

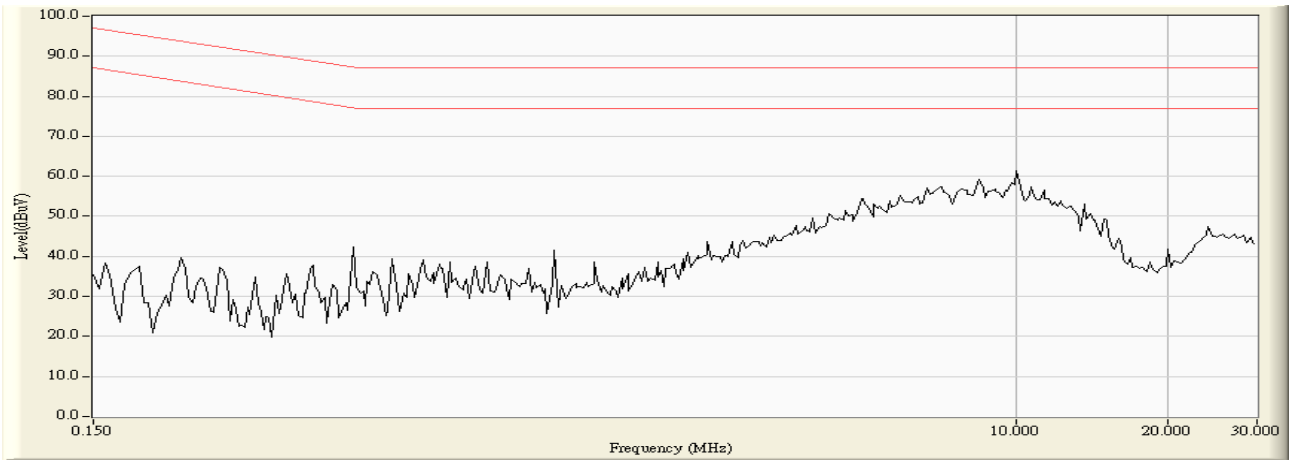


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.307	10.202	34.410	44.612	-34.902	79.514	AVERAGE
2		0.451	10.078	28.410	38.488	-36.912	75.400	AVERAGE
3		5.908	9.839	39.010	48.849	-25.151	74.000	AVERAGE
4		8.716	9.885	40.030	49.915	-24.085	74.000	AVERAGE
5		16.228	9.952	48.060	58.012	-15.988	74.000	AVERAGE
6	*	23.515	10.150	52.820	62.970	-11.030	74.000	AVERAGE

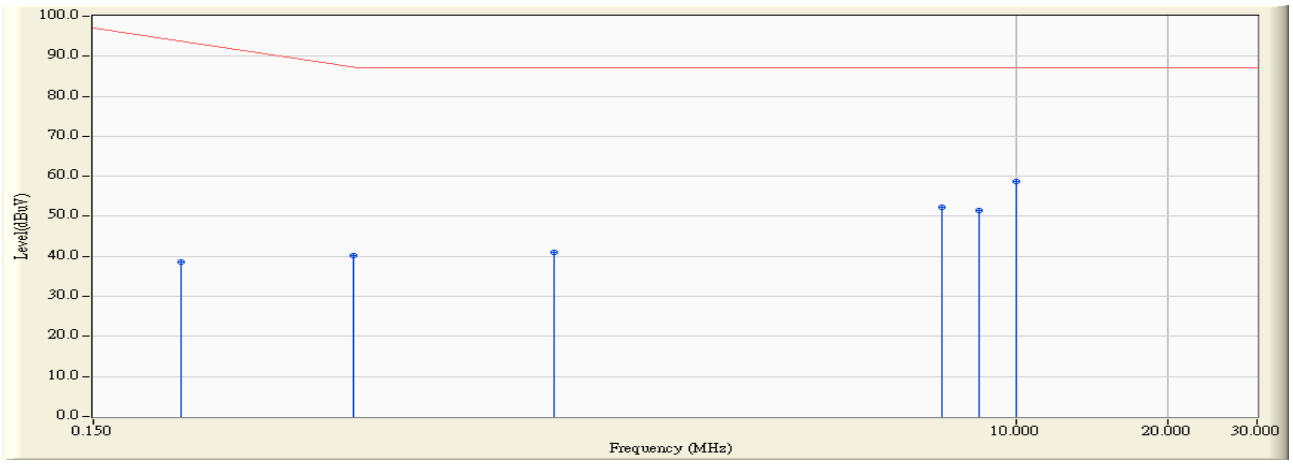
Note:

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 : 2012/04/17 - 20:33**
Limit : ISN_Voltage_A_00M_QP	**Margin : 10**
EUT : Outdoor Dome Network Camera	**Probe : ISN_T8 - Line1**
Power : By POE	**Note : Mode 2,ISN 10M**



Site : SR1	**Time : 2012/04/17 - 20:34**
Limit : ISN_Voltage_A_00M_QP	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ISN_T8 - Line1**
Power : By POE	**Note : Mode 2,ISN 10M**

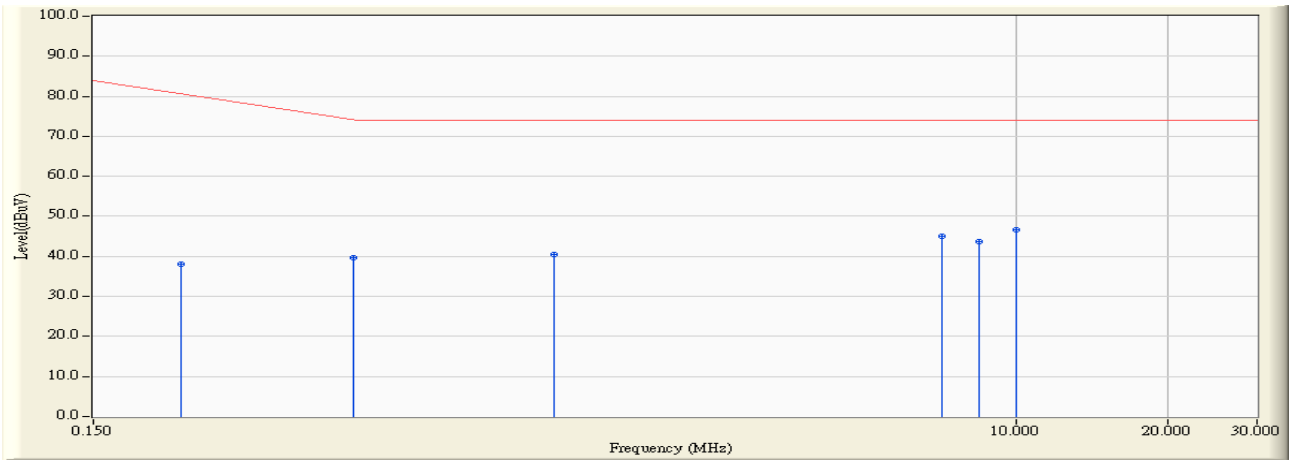


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.224	10.225	28.270	38.495	-56.391	94.886	QUASIPEAK
2		0.490	10.166	30.130	40.296	-46.990	87.286	QUASIPEAK
3		1.224	10.100	30.900	41.000	-46.000	87.000	QUASIPEAK
4		7.146	10.099	42.230	52.329	-34.671	87.000	QUASIPEAK
5		8.482	10.129	41.420	51.549	-35.451	87.000	QUASIPEAK
6	*	10.009	10.160	48.520	58.680	-28.320	87.000	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 : 2012/04/17 - 20:34**
Limit : ISN_Voltage_A_00M_AV	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ISN_T8 - Line1**
Power : By POE	**Note : Mode 2,ISN 10M**

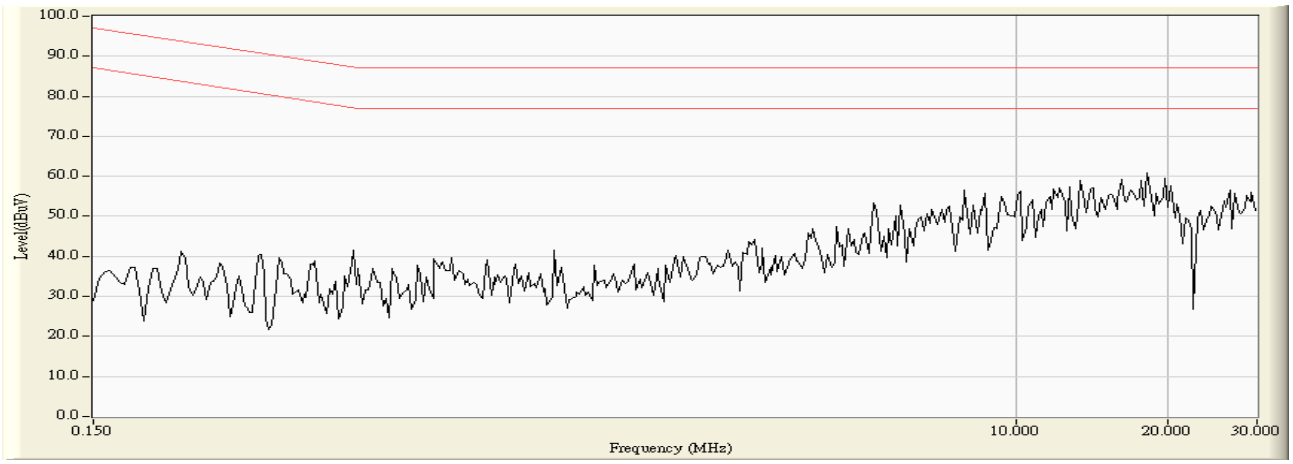


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.224	10.225	27.800	38.025	-43.861	81.886	AVERAGE
2		0.490	10.166	29.440	39.606	-34.680	74.286	AVERAGE
3		1.224	10.100	30.270	40.370	-33.630	74.000	AVERAGE
4		7.146	10.099	35.050	45.149	-28.851	74.000	AVERAGE
5		8.482	10.129	33.600	43.729	-30.271	74.000	AVERAGE
6	*	10.009	10.160	36.430	46.590	-27.410	74.000	AVERAGE

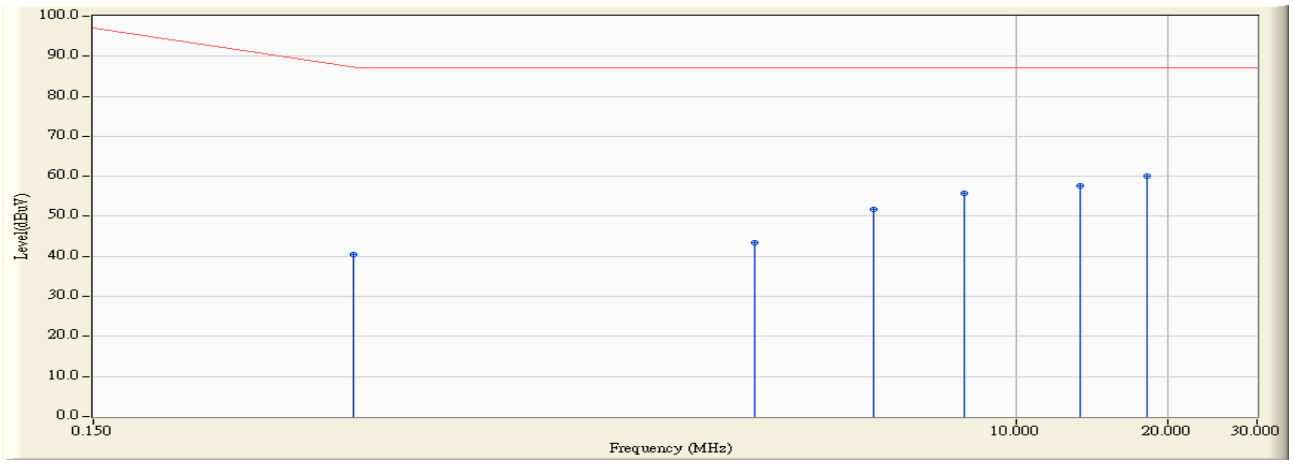
Note:

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 : 2012/04/17 - 20:32**
Limit : ISN_Voltage_A_00M_QP	**Margin : 10**
EUT : Outdoor Dome Network Camera	**Probe : ISN_T8 - Line1**
Power : By POE	**Note : Mode 2,ISN 100M**



Site : SR1	**Time : 2012/04/17 - 20:32**
Limit : ISN_Voltage_A_00M_QP	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ISN_T8 - Line1**
Power : By POE	**Note : Mode 2,ISN 100M**

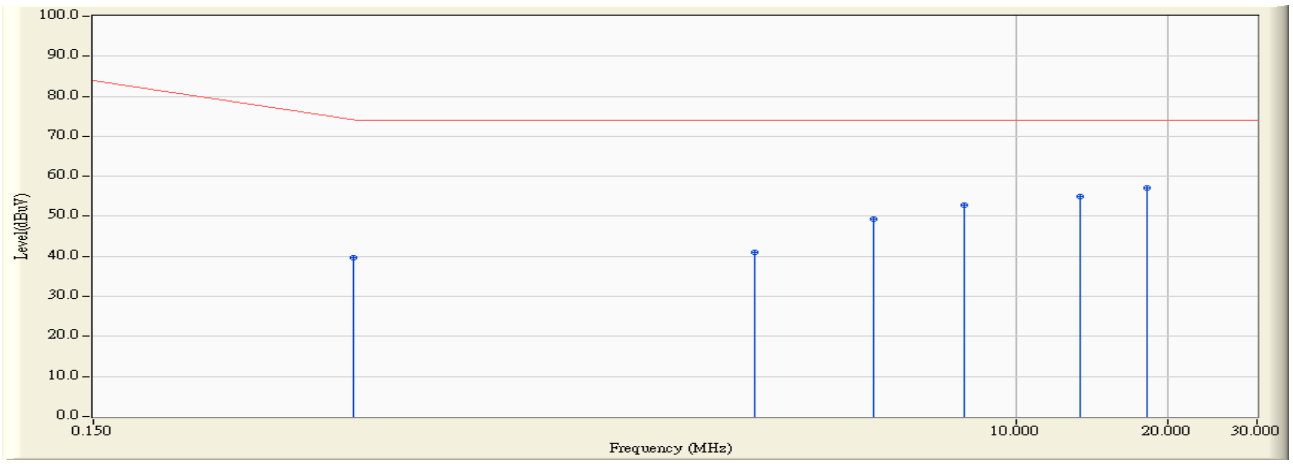


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.490	10.166	30.220	40.386	-46.900	87.286	QUASIPEAK
2		3.037	10.060	33.460	43.520	-43.480	87.000	QUASIPEAK
3		5.236	10.059	41.700	51.759	-35.241	87.000	QUASIPEAK
4		7.923	10.117	45.640	55.757	-31.243	87.000	QUASIPEAK
5		13.420	10.180	47.330	57.510	-29.490	87.000	QUASIPEAK
6	*	18.244	10.221	49.890	60.111	-26.889	87.000	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 : 2012/04/17 - 20:32**
Limit : ISN_Voltage_A_00M_AV	**Margin : 0**
EUT : Outdoor Dome Network Camera	**Probe : ISN_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	10.166	29.390	39.556	-34.730	74.286	AVERAGE
2		3.037	10.060	30.980	41.040	-32.960	74.000	AVERAGE
3		5.236	10.059	39.380	49.439	-24.561	74.000	AVERAGE
4		7.923	10.117	42.660	52.777	-21.223	74.000	AVERAGE
5		13.420	10.180	44.650	54.830	-19.170	74.000	AVERAGE
6	*	18.244	10.221	46.930	57.151	-16.849	74.000	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

4.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : Front View of ISN Test

Test Mode : Mode 1: AC 24V

Description : Back View of ISN Test

Test Mode : Mode 2: POE

Description : Front View of ISN Test

Test Mode : Mode 2: POE

Description : Back View of ISN Test

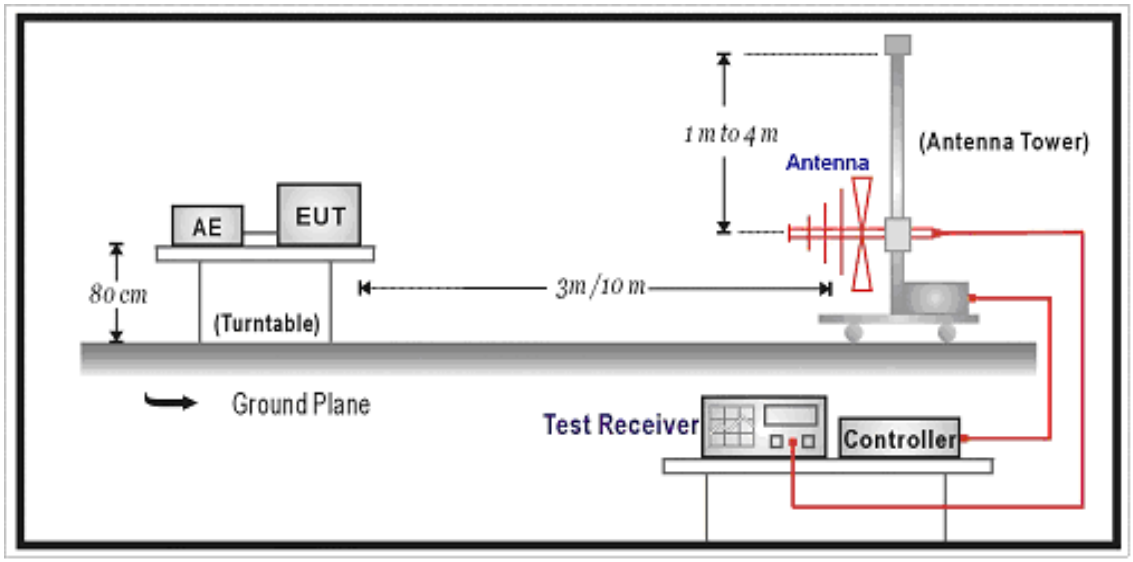
5. Radiated Emission

5.1. Test Specification

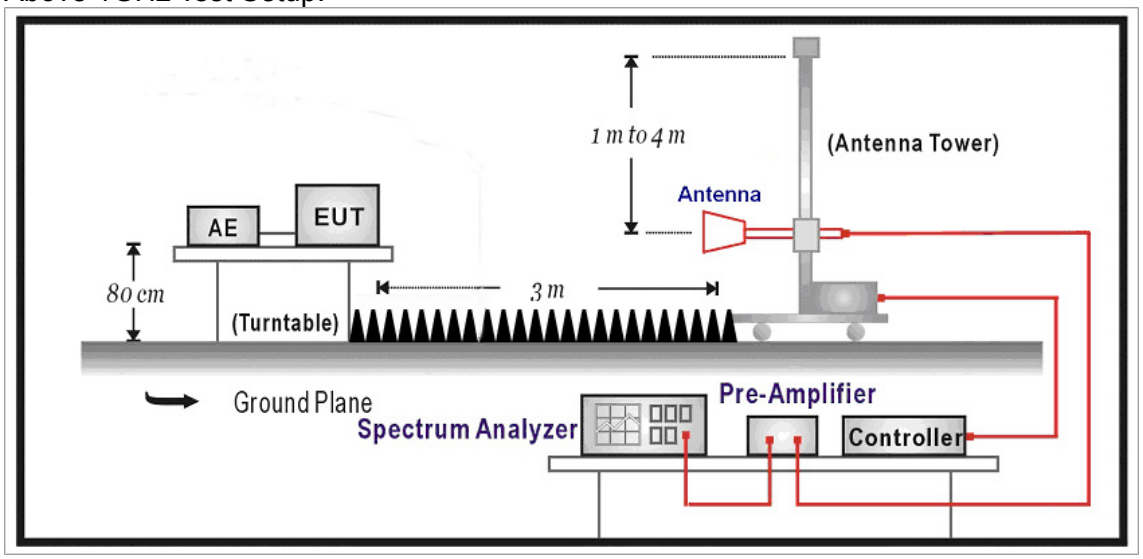
According to EMC Standard : EN 55022 and AS/NZS CISPR 22

5.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



5.3. Limit

Limits		
Frequency MHz	Distance (m)	dBuV/m
30 – 230	10	40
230 – 1000	10	47

Limits			
Frequency (GHz)	Distance (m)	Peak (dBuV/m)	Average (dBuV/m)
1 – 3	3	76	56
3 – 6	3	80	60

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

5.4. Test Procedure

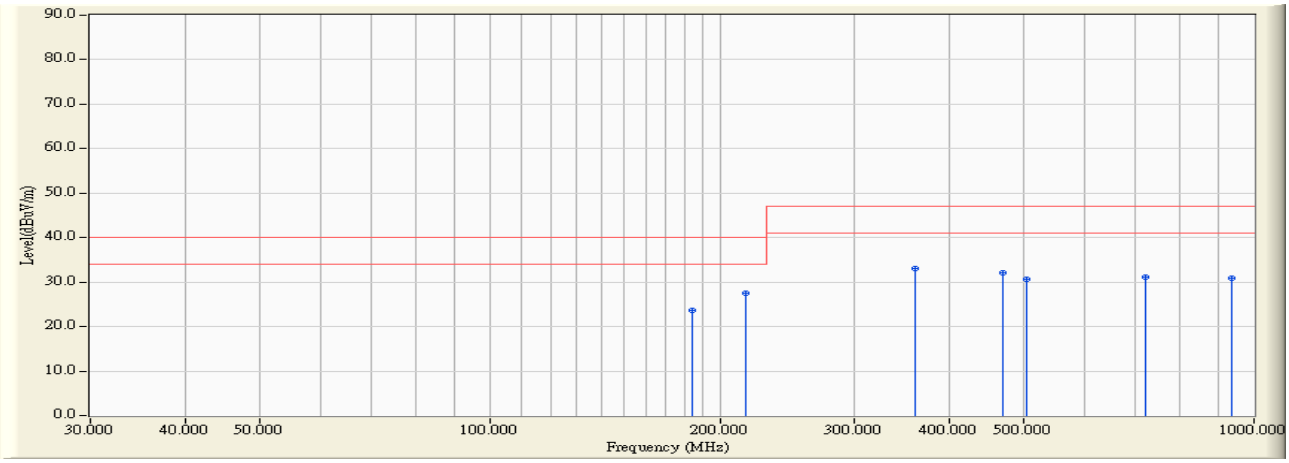
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3/10 meters.
The antenna can move up and down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

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Site : Site7	**Time : 2012/04/17 - 10:20**
Limit : CISPR_A_10M_QP	**Margin : 6**
EUT : Outdoor Dome Network Camera	**Probe : Site7_CBL6112_10M_0726 - HORIZONTAL**
Power : AC 24V	**Note : Mode 1**

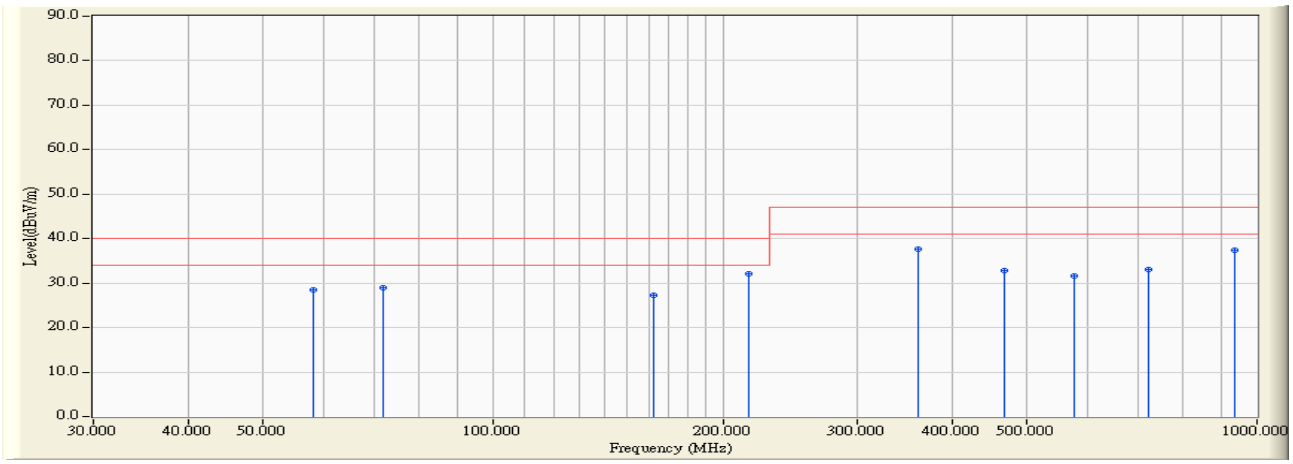


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		184.300	-20.260	43.900	23.641	-16.359	40.000	QUASIPEAK
2	*	216.000	-18.854	46.300	27.445	-12.555	40.000	QUASIPEAK
3		360.000	-12.159	45.300	33.141	-13.859	47.000	QUASIPEAK
4		468.200	-9.489	41.500	32.010	-14.990	47.000	QUASIPEAK
5		503.800	-7.846	38.600	30.754	-16.246	47.000	QUASIPEAK
6		720.000	-4.370	35.600	31.230	-15.770	47.000	QUASIPEAK
7		936.040	-1.759	32.600	30.841	-16.159	47.000	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 : 2012/04/17 - 10:05**
Limit : CISPR_A_10M_QP	**Margin : 6**
EUT : Outdoor Dome Network Camera	**Probe : Site7_CBL6112_10M_0726 - VERTICAL**
Power : AC 24V	**Note : Mode 1**

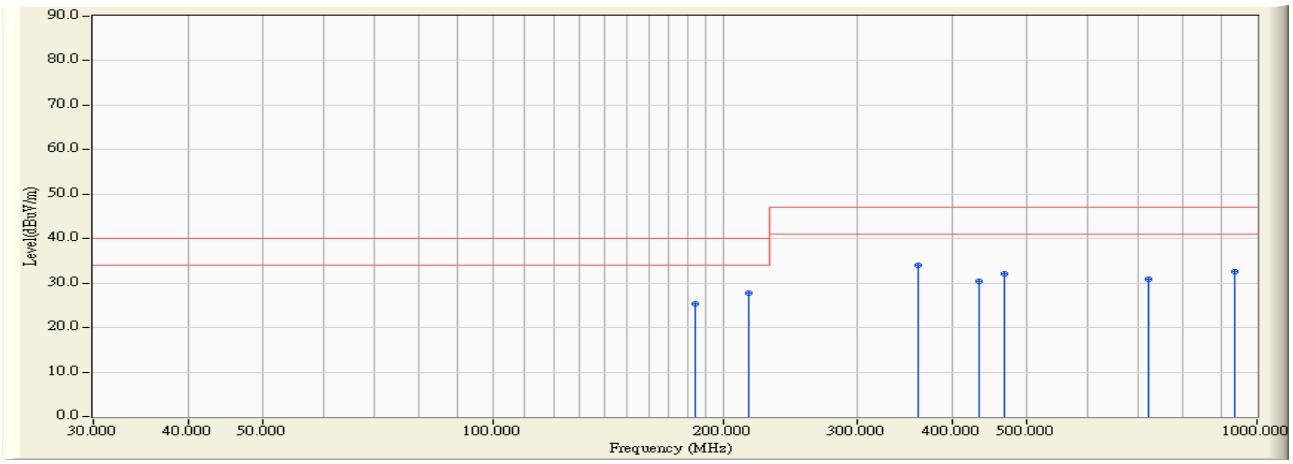


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		58.270	-24.753	53.200	28.447	-11.553	40.000	QUASIPEAK
2		71.830	-23.724	52.600	28.876	-11.124	40.000	QUASIPEAK
3		162.300	-19.410	46.700	27.290	-12.710	40.000	QUASIPEAK
4	*	216.000	-18.247	50.400	32.153	-7.847	40.000	QUASIPEAK
5		360.000	-12.390	50.100	37.710	-9.290	47.000	QUASIPEAK
6		468.000	-9.495	42.300	32.806	-14.194	47.000	QUASIPEAK
7		576.000	-7.112	38.600	31.488	-15.512	47.000	QUASIPEAK
8		720.000	-6.900	40.000	33.100	-13.900	47.000	QUASIPEAK
9		936.040	-1.900	39.200	37.300	-9.700	47.000	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 : 2012/04/17 - 10:48**
Limit : CISPR_A_10M_QP	**Margin : 6**
EUT : Outdoor Dome Network Camera	**Probe : Site7_CBL6112_10M_0726 - HORIZONTAL**
Power : By POE	**Note : Mode 2**

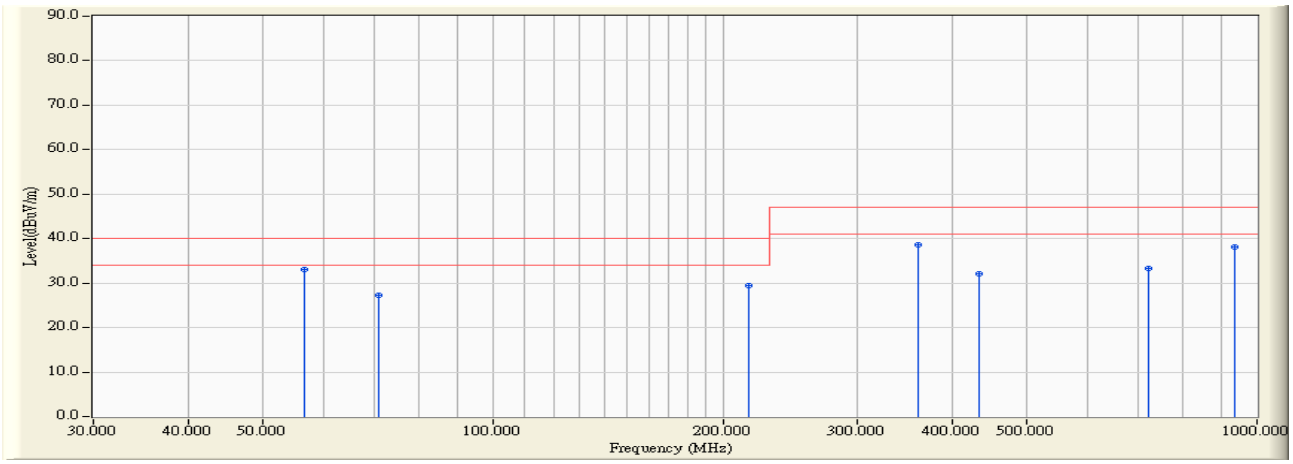


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		184.300	-20.260	45.700	25.441	-14.559	40.000	QUASIPEAK
2	*	216.000	-18.854	46.600	27.745	-12.255	40.000	QUASIPEAK
3		360.000	-12.159	46.100	33.941	-13.059	47.000	QUASIPEAK
4		432.000	-10.358	40.800	30.443	-16.557	47.000	QUASIPEAK
5		468.000	-9.499	41.600	32.102	-14.898	47.000	QUASIPEAK
6		720.000	-4.370	35.200	30.830	-16.170	47.000	QUASIPEAK
7		936.020	-1.760	34.300	32.540	-14.460	47.000	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 : 2012/04/17 - 11:00**
Limit : CISPR_A_10M_QP	**Margin : 6**
EUT : Outdoor Dome Network Camera	**Probe : Site7_CBL6112_10M_0726 - VERTICAL**
Power : By POE	**Note : Mode 2**

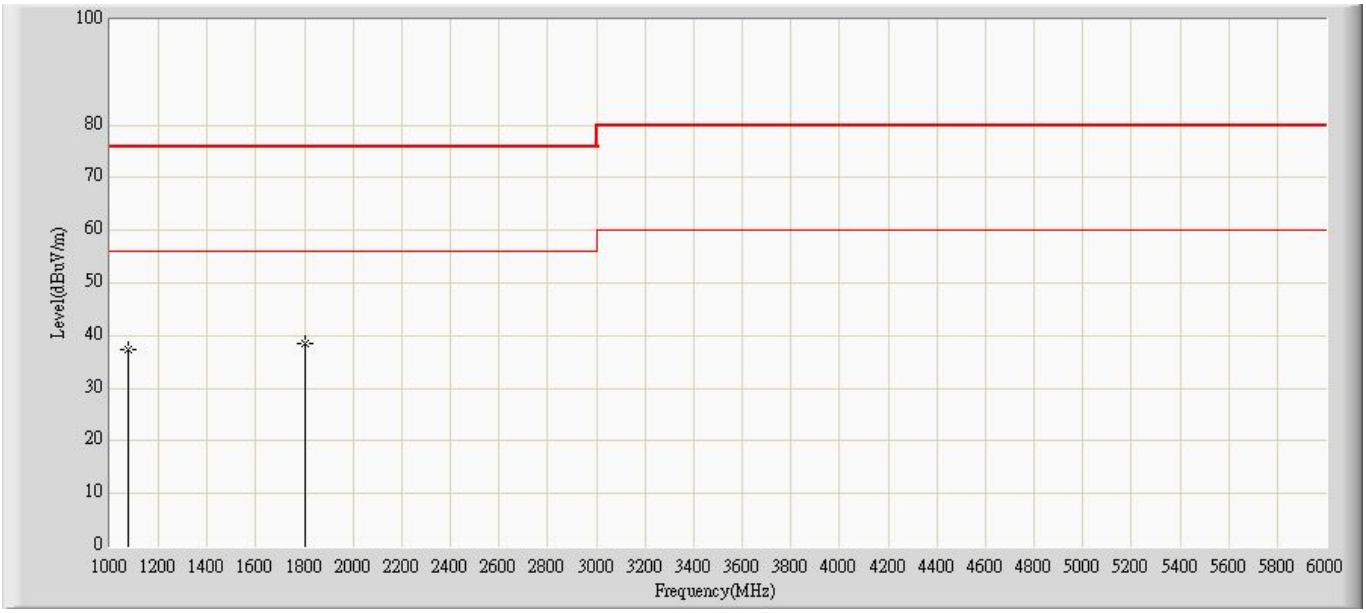


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	56.670	-24.258	57.300	33.042	-6.958	40.000	QUASIPEAK
2		70.920	-23.929	51.200	27.271	-12.729	40.000	QUASIPEAK
3		216.000	-18.247	47.800	29.553	-10.447	40.000	QUASIPEAK
4		360.000	-12.390	51.100	38.710	-8.290	47.000	QUASIPEAK
5		432.000	-10.358	42.500	32.143	-14.857	47.000	QUASIPEAK
6		720.000	-6.900	40.100	33.200	-13.800	47.000	QUASIPEAK
7		936.000	-1.900	40.000	38.100	-8.900	47.000	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: 2012/04/18 - 14:36
Limit: EN55022_A_(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1204	Polarity: Horizontal
EUT: Outdoor Dome Network Camera	Power : AC 24V
Note: Mode 1	

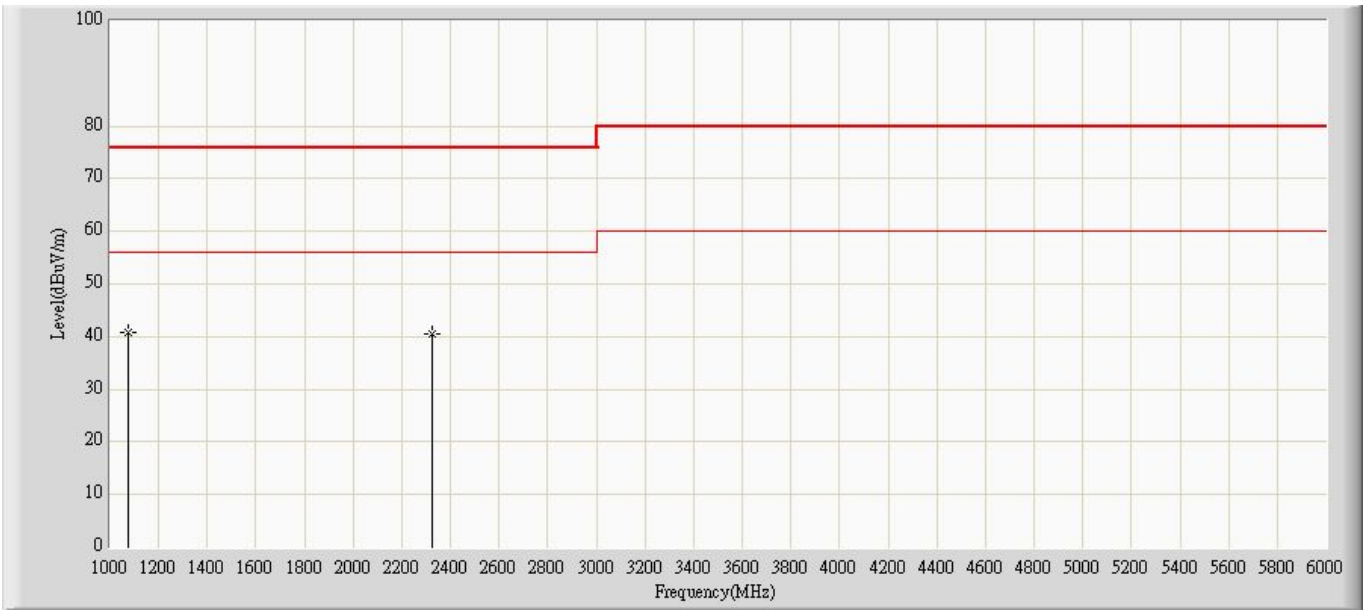


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1075.000	37.472	42.090	-38.528	76.000	-4.618	PK
2		*	1800.000	38.435	40.290	-37.565	76.000	-1.855	PK

Note:

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

Site: CB7	Time: 2012/04/18 - 14:41
Limit: EN55022_A_(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1204	Polarity: Vertical
EUT: Outdoor Dome Network Camera	Power : AC 24V
Note: Mode 1	

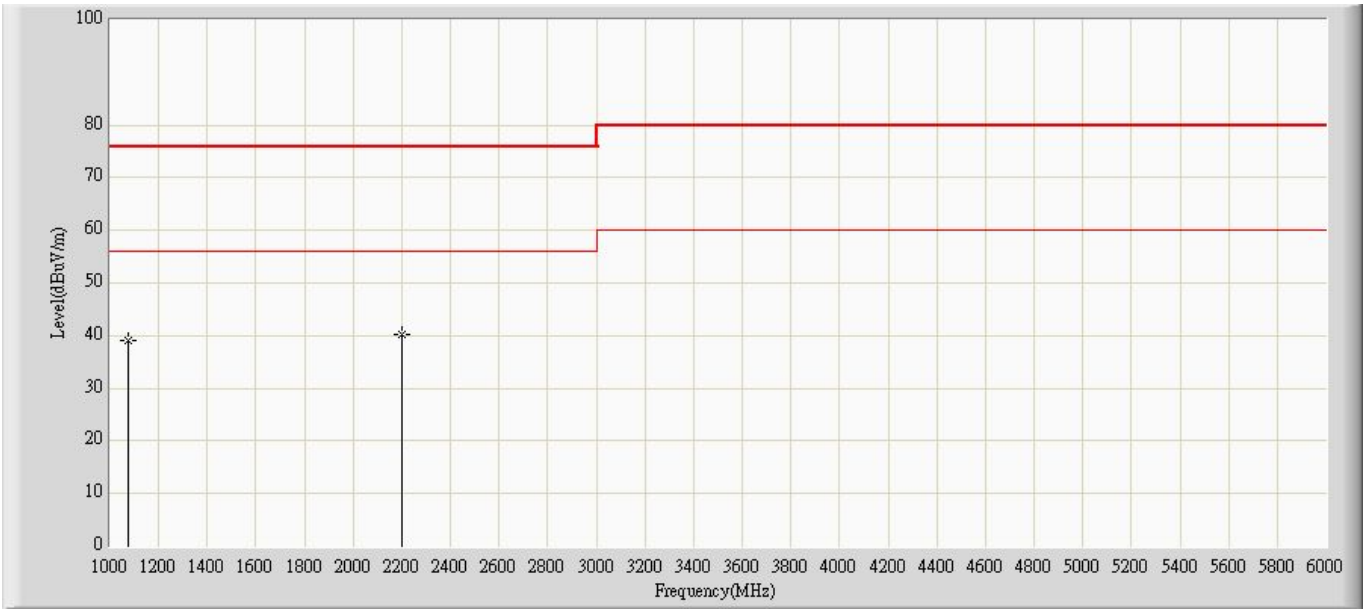


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	1075.000	40.762	45.380	-35.238	76.000	-4.618	PK
2			2325.000	40.644	40.210	-35.356	76.000	0.434	PK

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: 2012/04/18 - 14:18
Limit: EN55022_A_(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1204	Polarity: Horizontal
EUT: Outdoor Dome Network Camera	Power: By POE
Note: Mode 2	

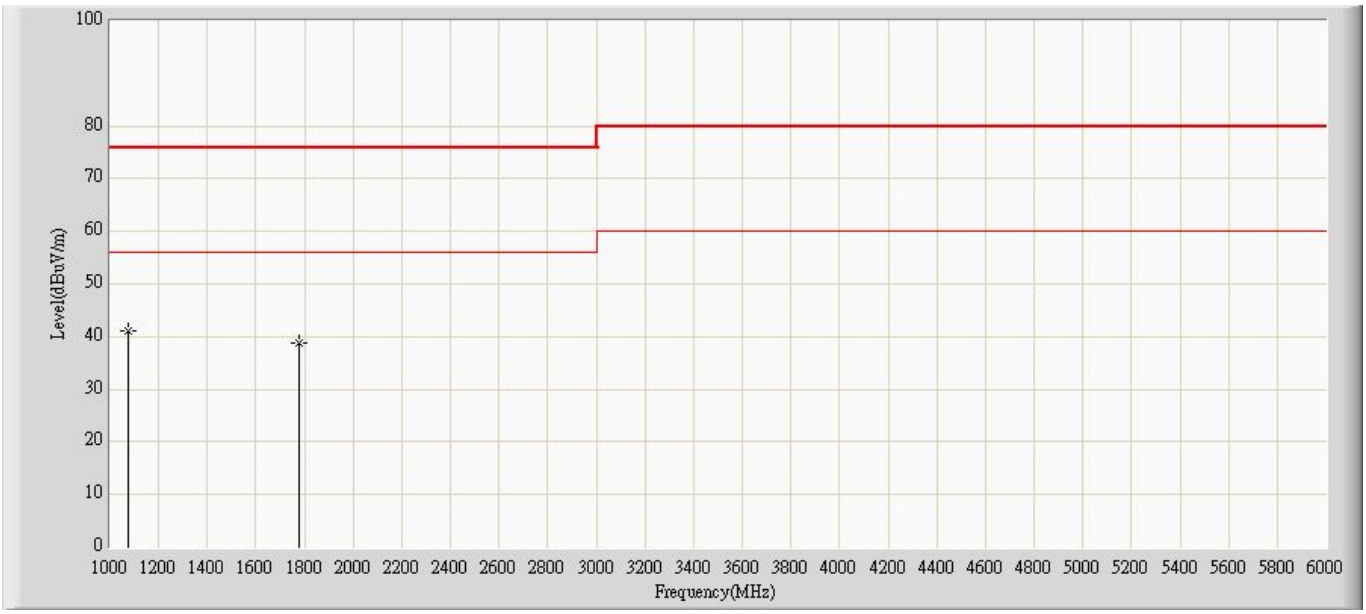


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1075.000	39.122	43.740	-36.878	76.000	-4.618	PK
2		*	2200.000	40.218	40.190	-35.782	76.000	0.028	PK

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: 2012/04/18 - 14:22
Limit: EN55022_A_(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_1204	Polarity: Vertical
EUT: Outdoor Dome 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		*	1075.000	41.152	45.770	-34.848	76.000	-4.618	PK
2			1775.000	38.910	40.860	-37.090	76.000	-1.950	PK

Note:

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

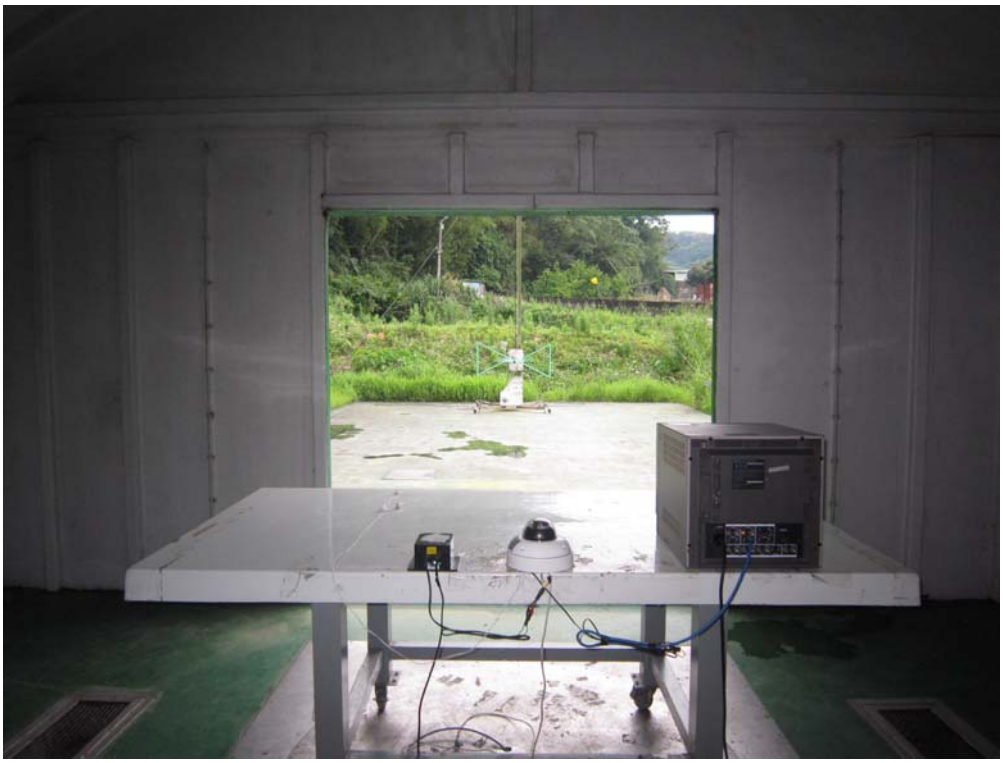
5.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : Front View of Radiated Test

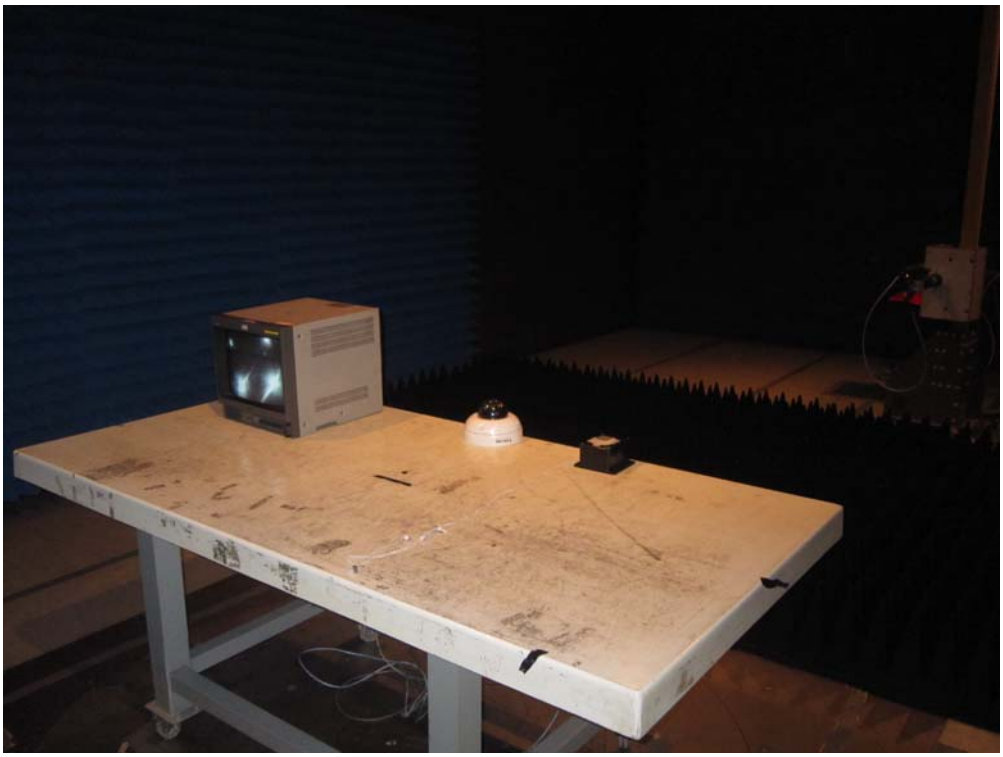
Test Mode : Mode 1: AC 24V

Description : Back View of Radiated Test



Test Mode : Mode 1: AC 24V

Description : Front View of High Frequency Radiated Test



Test Mode : Mode 2: POE

Description : Front View of Radiated Test

Test Mode : Mode 2: POE

Description : Back View of Radiated Test

Test Mode : Mode 2: POE

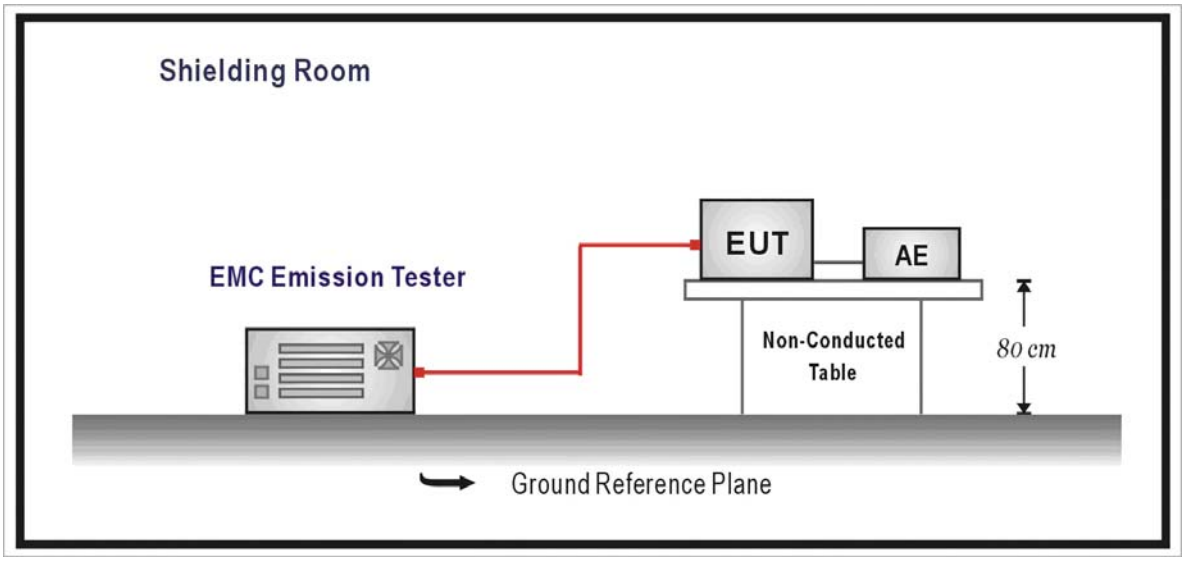
Description : Front View of High Frequency Radiated Test

6. Harmonic Current Emission

6.1. Test Specification

According to EMC Standard : EN 61000-3-2

6.2. Test Setup



6.3. Limit

(a) Limits of Class A Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current A	Harmonics Order n	Maximum Permissible harmonic current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	8 ≤ n ≤ 40	0.23 * 8/n
11	0.33		
13	0.21		
15 ≤ n ≤ 39	0.15 * 15/n		

(b) Limits of Class B Harmonics Currents

For Class B equipment, the harmonic of the input current shall not exceed the maximum permissible values given in table that is the limit of Class A multiplied by a factor of 1.5.

(c) Limits of Class C Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current Expressed as a percentage of the input current at the fundamental frequency %
2	2
3	30 · λ*
5	10
7	7
9	5
11 ≤ n ≤ 39 (odd harmonics only)	3
∗λ is the circuit power factor	

(d) Limits of Class D Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current per watt mA/W	Maximum Permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
11 ≤ n ≤ 39 (odd harmonics only)	3.85/n	See limit of Class A

6.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

6.5. Deviation from Test Standard

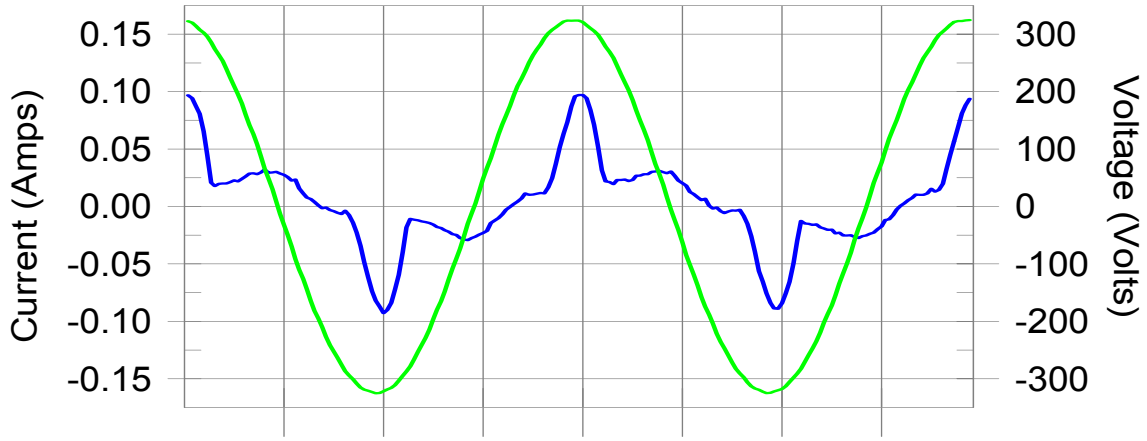
No deviation.

6.6. Test Result

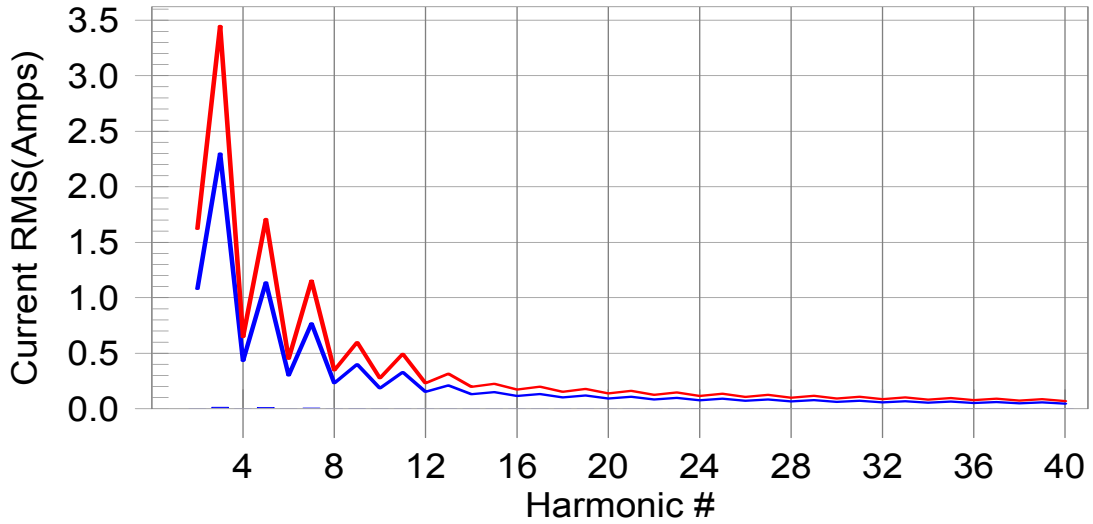
Product	Outdoor Dome Network Camera		
Test Item	Power Harmonics		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	Test Site	No.3 Shielded Room

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass Worst harmonic was #5 with 1.11% of the limit.

Test Result: Pass Source qualification: Normal

THC(A): 0.02 I-THD(%): 62.82 POHC(A): 0.001 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts):	229.59	Frequency(Hz):	50.00
I_Peak (Amps):	0.102	I_RMS (Amps):	0.039
I_Fund (Amps):	0.033	Crest Factor:	2.654
Power (Watts):	6.8	Power Factor:	0.764

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.000	1.080	0.0	0.000	1.620	0.03	Pass
3	0.014	2.300	0.6	0.014	3.450	0.40	Pass
4	0.000	0.430	0.0	0.000	0.645	0.04	Pass
5	0.013	1.140	1.1	0.013	1.710	0.75	Pass
6	0.000	0.300	0.0	0.000	0.450	0.04	Pass
7	0.007	0.770	0.9	0.007	1.155	0.59	Pass
8	0.000	0.230	0.0	0.000	0.345	0.03	Pass
9	0.003	0.400	0.7	0.003	0.600	0.48	Pass
10	0.000	0.184	0.0	0.000	0.276	0.01	Pass
11	0.001	0.330	0.3	0.001	0.495	0.18	Pass
12	0.000	0.153	0.1	0.000	0.230	0.08	Pass
13	0.001	0.210	0.6	0.001	0.315	0.40	Pass
14	0.000	0.131	0.0	0.000	0.197	0.02	Pass
15	0.001	0.150	0.7	0.001	0.225	0.45	Pass
16	0.000	0.115	0.0	0.000	0.173	0.02	Pass
17	0.001	0.132	0.4	0.001	0.199	0.27	Pass
18	0.000	0.102	0.1	0.000	0.153	0.06	Pass
19	0.000	0.118	0.4	0.000	0.178	0.27	Pass
20	0.000	0.092	0.0	0.000	0.138	0.04	Pass
21	0.000	0.107	0.5	0.001	0.161	0.32	Pass
22	0.000	0.084	0.1	0.000	0.125	0.07	Pass
23	0.000	0.098	0.4	0.000	0.147	0.26	Pass
24	0.000	0.077	0.1	0.000	0.115	0.07	Pass
25	0.000	0.090	0.3	0.000	0.135	0.21	Pass
26	0.000	0.071	0.0	0.000	0.106	0.05	Pass
27	0.000	0.083	0.3	0.000	0.125	0.22	Pass
28	0.000	0.066	0.0	0.000	0.099	0.05	Pass
29	0.000	0.078	0.3	0.000	0.116	0.20	Pass
30	0.000	0.061	0.1	0.000	0.092	0.08	Pass
31	0.000	0.073	0.2	0.000	0.109	0.16	Pass
32	0.000	0.058	0.0	0.000	0.086	0.06	Pass
33	0.000	0.068	0.3	0.000	0.102	0.18	Pass
34	0.000	0.054	0.0	0.000	0.081	0.08	Pass
35	0.000	0.064	0.2	0.000	0.096	0.18	Pass
36	0.000	0.051	0.1	0.000	0.077	0.07	Pass
37	0.000	0.061	0.2	0.000	0.091	0.13	Pass
38	0.000	0.048	0.1	0.000	0.073	0.06	Pass
39	0.000	0.058	0.2	0.000	0.087	0.12	Pass
40	0.000	0.046	0.1	0.000	0.069	0.07	Pass

1.Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.

2:According to EN61000-3-2 paragraph 7 the note 1 and 2 are valid for all applications having an active input power >75W. Others the result should be pass.

6.7. Test Photograph

Test Mode : Mode 1: AC 24V

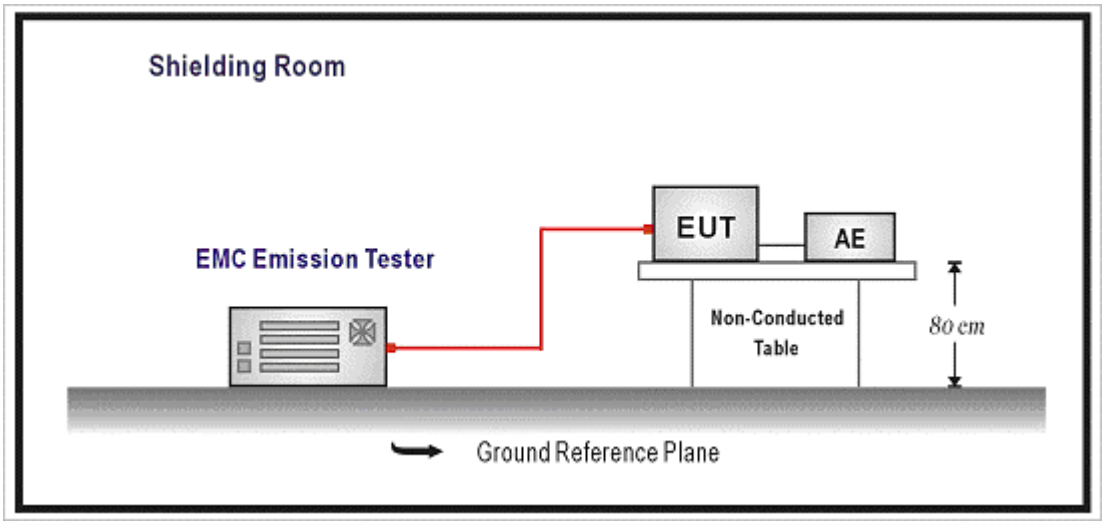
Description : Power Harmonics Test Setup

7. Voltage Fluctuation and Flicker

7.1. Test Specification

According to EMC Standard : EN 61000-3-3

7.2. Test Setup



7.3. Limit

The following limits apply:

- the value of P_{st} shall not be greater than 1.0;
- the value of P_{lt} shall not be greater than 0.65;
- the value of d(t) during a voltage change shall not exceed 3.3 % for more than 500 ms;
- the relative steady-state voltage change, d_c, shall not exceed 3.3 %;
- the maximum relative voltage change, d_{max}, shall not exceed;

a) 4 % without additional conditions;

b) 6 % for equipment which is:

- switched manually, or
- switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

NOTE The cycling frequency will be further limited by the P_{st} and P_{1t} limit.

For example: a d_{max} of 6%producing a rectangular voltage change characteristic twice per hour will give a P_{1t} of about 0.65.

c) 7 % for equipment which is:
- attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
- switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

P_{st} and P_{1t} requirements shall not be applied to voltage changes caused by manual switching.

7.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

7.5. Deviation from Test Standard

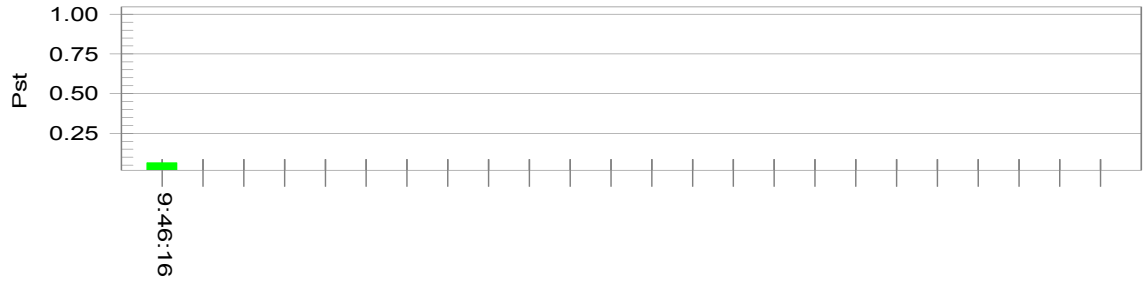
No deviation.

7.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Voltage Fluctuation and Flicker		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	Test Site	No.3 Shielded Room

Test Result: Pass Status: Test Completed

Pst_i and limit line European Limits



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.54			
Highest dt (%):	0.00	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

7.7. Test Photograph

Test Mode : Mode 1: AC 24V

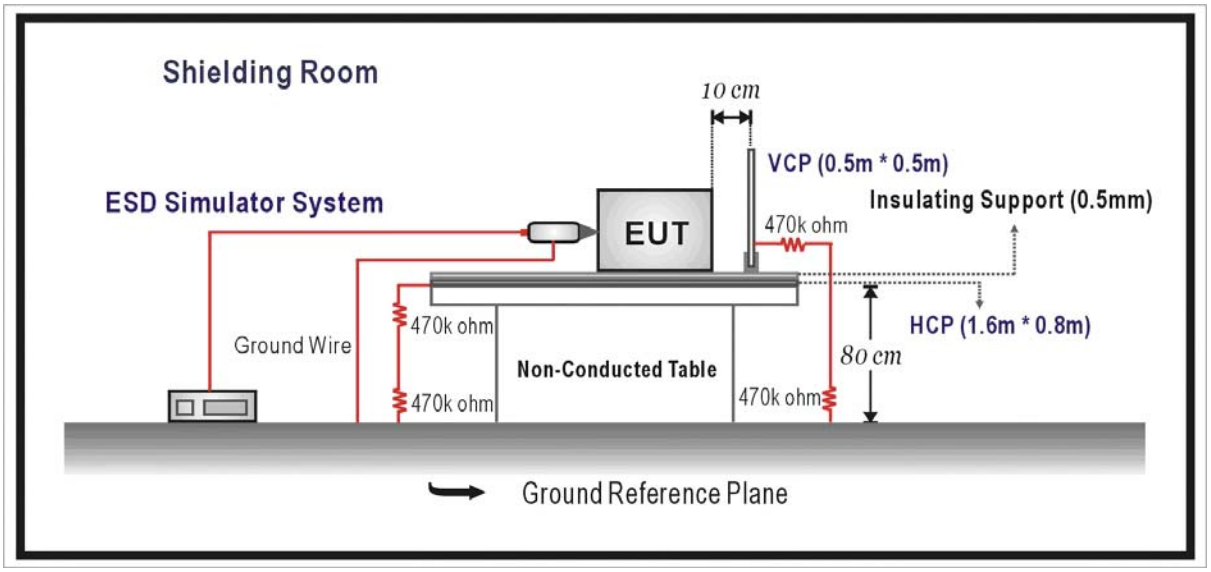
Description : Flicker Test Setup

8. Electrostatic Discharge

8.1. Test Specification

According to Standard : IEC 61000-4-2

8.2. Test Setup



8.3. Limit

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

8.4. 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.

8.5. Deviation from Test Standard

No deviation.

8.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Electrostatic Discharge		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	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.

Product	Outdoor Dome Network Camera		
Test Item	Electrostatic Discharge		
Test Mode	Mode 2: POE		
Date of Test	2012/04/23	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	B	Pass
	25	-4kV	B	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.

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.

8.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : ESD Test Setup

Test Mode : Mode 2: POE

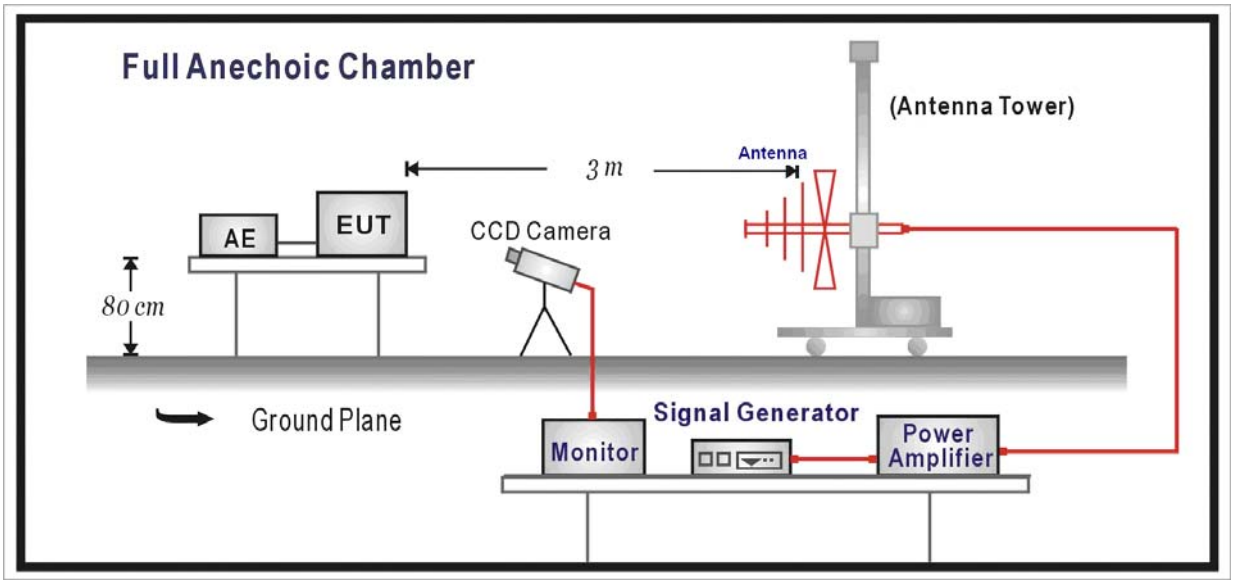
Description : ESD Test Setup

9. Radiated Susceptibility

9.1. Test Specification

According to Standard : IEC 61000-4-3

9.2. Test Setup



9.3. 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	

9.4. 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

9.5. Deviation from Test Standard

No deviation.

9.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Radiated susceptibility		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	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	FRONT	H	3	A	A	PASS
80-1000	FRONT	V	3	A	A	PASS
80-1000	BACK	H	3	A	A	PASS
80-1000	BACK	V	3	A	A	PASS
80-1000	RIGHT	H	3	A	A	PASS
80-1000	RIGHT	V	3	A	A	PASS
80-1000	LEFT	H	3	A	A	PASS
80-1000	LEFT	V	3	A	A	PASS
80-1000	UP	H	3	A	A	PASS
80-1000	UP	V	3	A	A	PASS
80-1000	DOWN	H	3	A	A	PASS
80-1000	DOWN	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	Outdoor Dome Network Camera		
Test Item	Radiated susceptibility		
Test Mode	Mode 2: POE		
Date of Test	2012/04/23	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	FRONT	H	3	A	A	PASS
80-1000	FRONT	V	3	A	A	PASS
80-1000	BACK	H	3	A	A	PASS
80-1000	BACK	V	3	A	A	PASS
80-1000	RIGHT	H	3	A	A	PASS
80-1000	RIGHT	V	3	A	A	PASS
80-1000	LEFT	H	3	A	A	PASS
80-1000	LEFT	V	3	A	A	PASS
80-1000	UP	H	3	A	A	PASS
80-1000	UP	V	3	A	A	PASS
80-1000	DOWN	H	3	A	A	PASS
80-1000	DOWN	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.

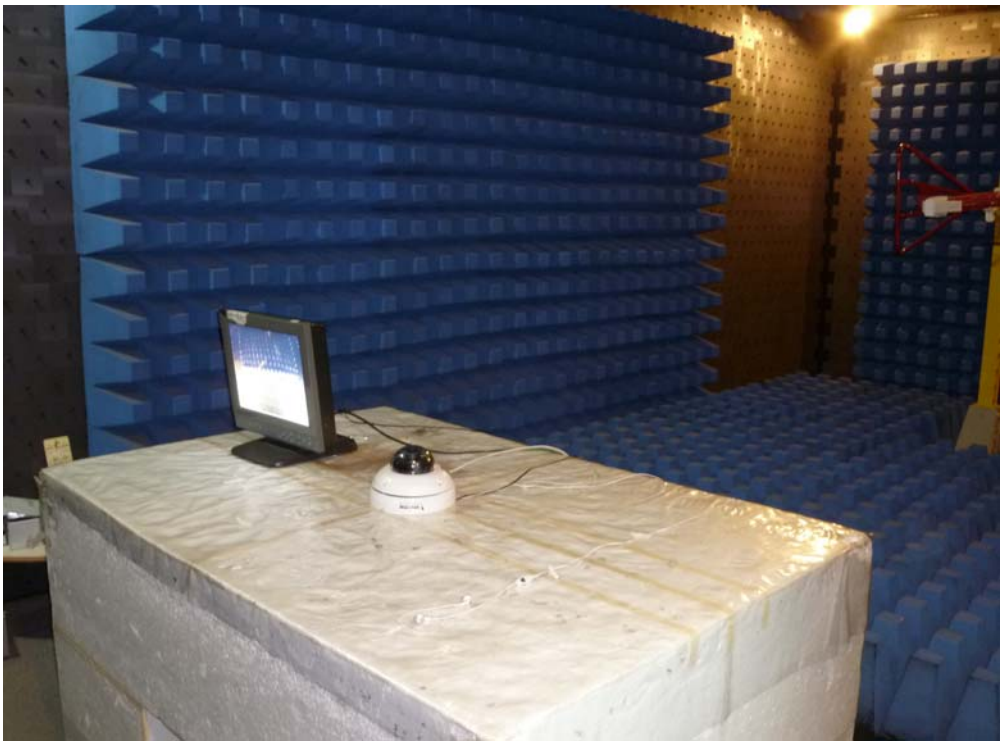
9.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : Radiated Susceptibility Test Setup

Test Mode : Mode 2: POE

Description : Radiated Susceptibility Test Setup

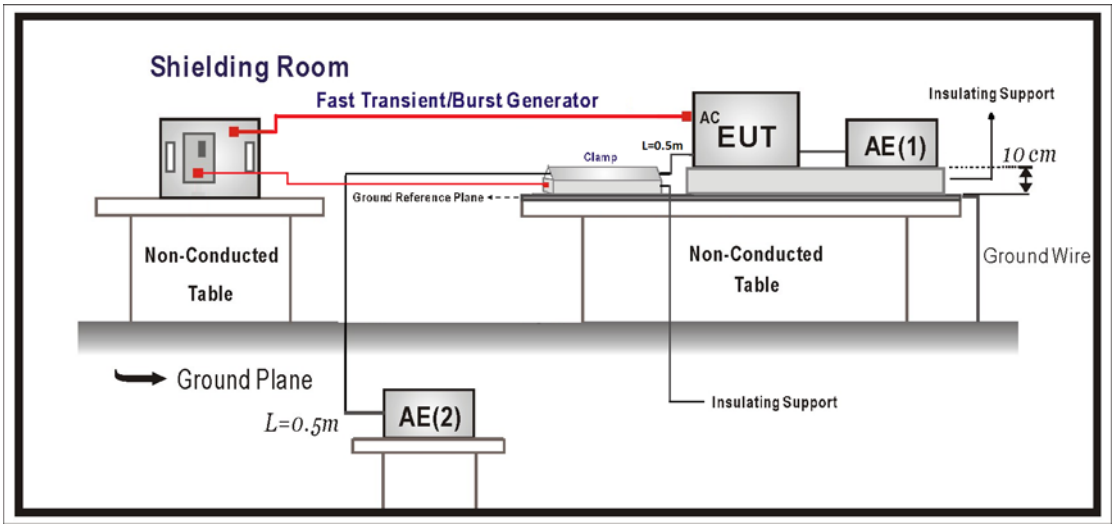


10. Electrical Fast Transient/Burst

10.1. Test Specification

According to Standard : IEC 61000-4-4

10.2. Test Setup



10.3. 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

10.4. 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.

10.5. Deviation from Test Standard

No deviation.

10.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L+N	±	1kV	60	Direct	B	A	PASS
LAN	±	0.5kV	60	Clamp	B	A	PASS
Coaxial	±	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.

Product	Outdoor Dome Network Camera		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 2: POE		
Date of Test	2012/04/23	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
Coaxial	±	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.

10.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : EFT/B Test Setup

Test Mode : Mode 1: AC 24V

Description : EFT/B Test Setup-Clamp

Test Mode : Mode 2: POE

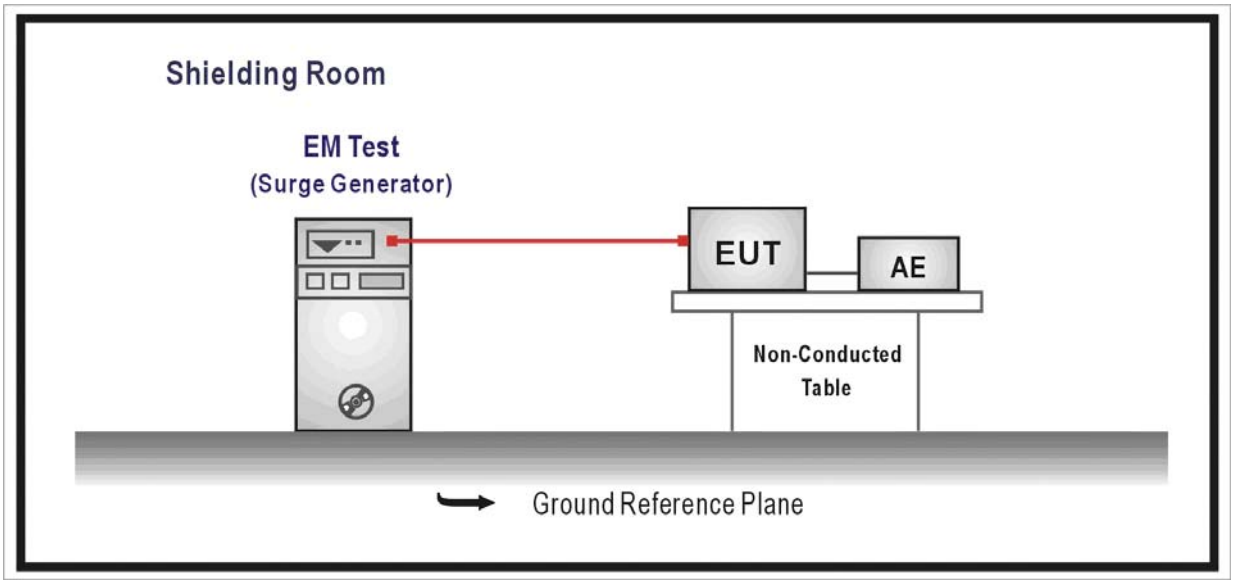
Description : EFT/B Test Setup-Clamp

11. Surge

11.1. Test Specification

According to Standard : IEC 61000-4-5

11.2. Test Setup



11.3. 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	1.2/50 (8/20) ± 1	B
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.

11.4. 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.

11.5. Deviation from Test Standard

No deviation.

11.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Surge		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Angle	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N	±	1kV	0	60	Direct	B	A	PASS
L-N	±	1kV	90	60	Direct	B	A	PASS
L-N	±	1kV	180	60	Direct	B	A	PASS
L-N	±	1kV	270	60	Direct	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.

11.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : SURGE Test Setup

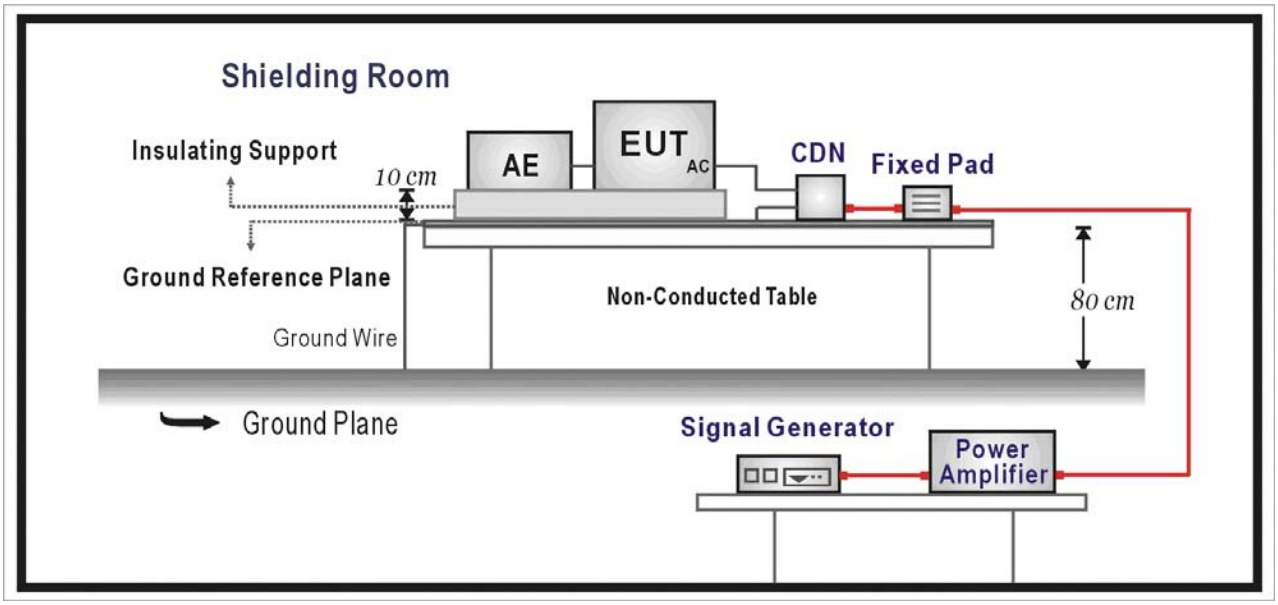
12. Conducted Susceptibility

12.1. Test Specification

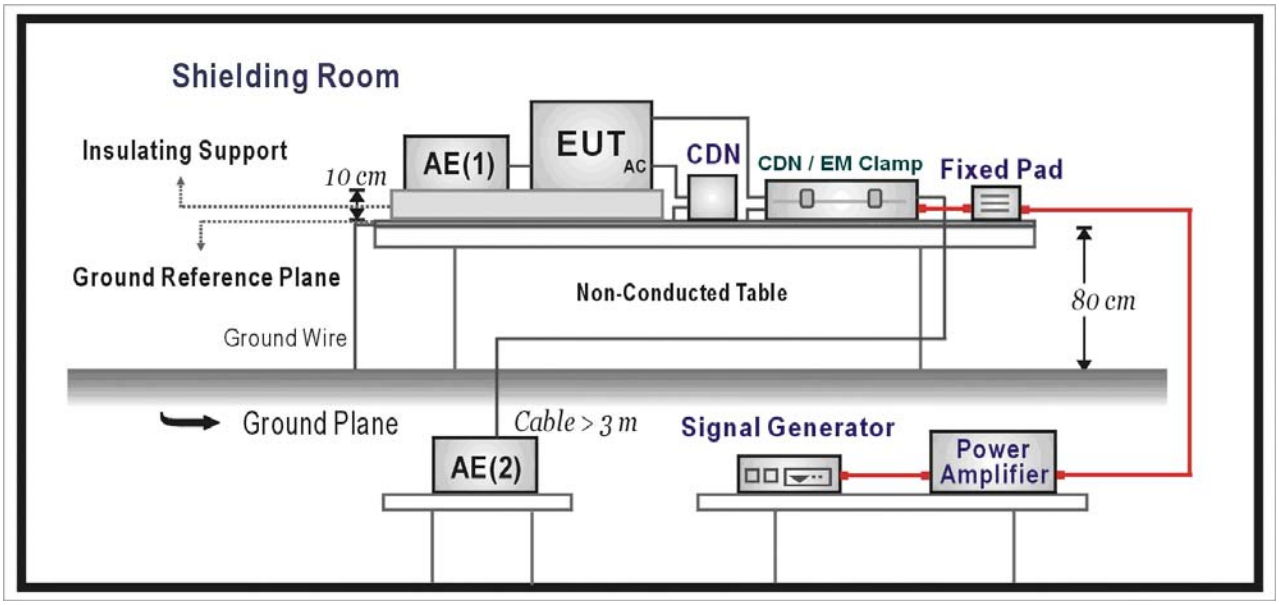
According to Standard : IEC 61000-4-6

12.2. Test Setup

CDN Inject Method



EM Clamp Inject Method



12.3. 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

12.4. 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

12.5. Deviation from Test Standard

No deviation.

12.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Conducted susceptibility		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	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	AC IN	A	A	PASS
0.15~80	130 (3V)	CDN	LAN	A	A	PASS
0.15~80	130 (3V)	Clamp	Coaxial	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	Outdoor Dome Network Camera		
Test Item	Conducted susceptibility		
Test Mode	Mode 2: POE		
Date of Test	2012/04/23	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
0.15~80	130 (3V)	Clamp	Coaxial	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.

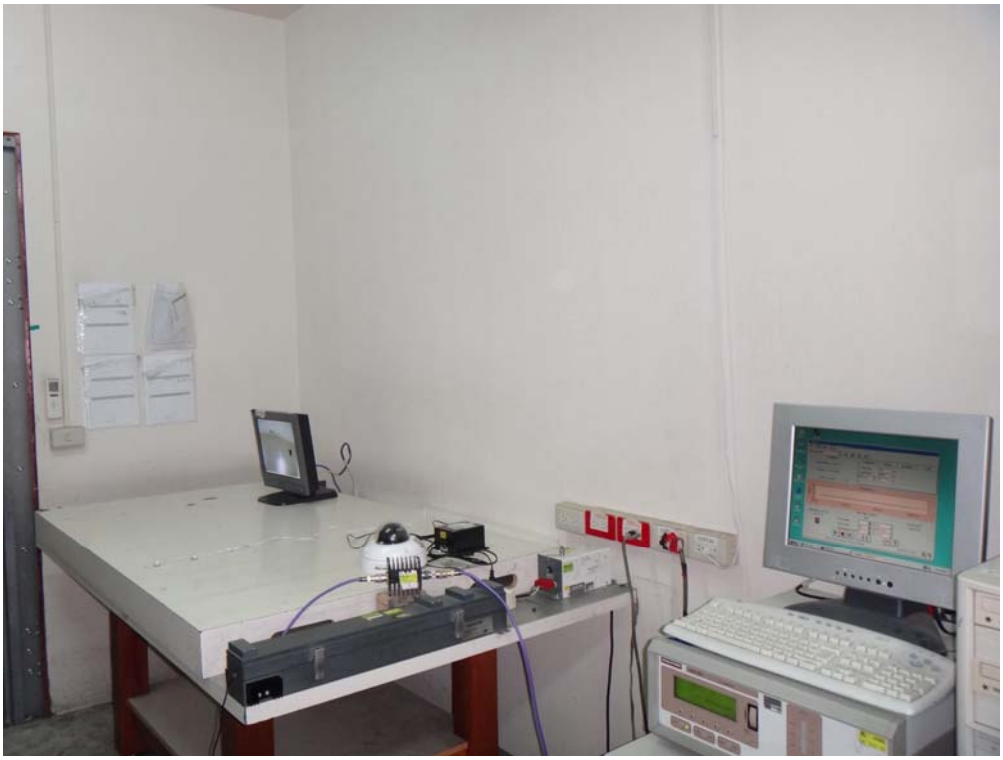
12.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : Conducted Susceptibility Test Setup

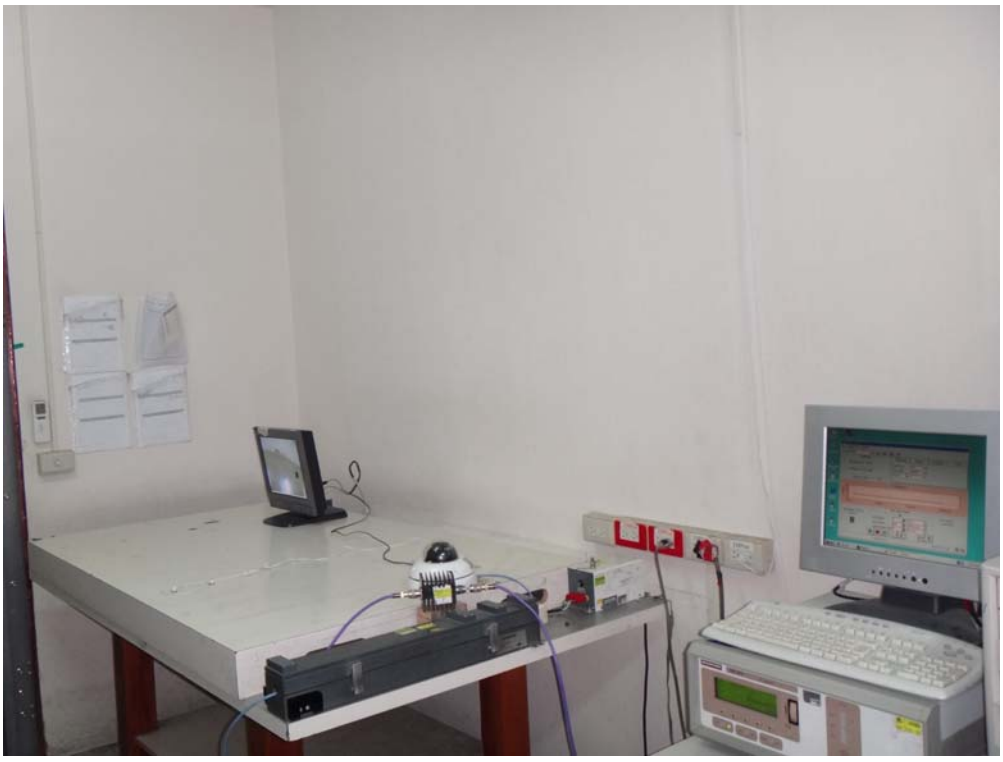
Test Mode : Mode 1: AC 24V

Description : Conducted Susceptibility Test Setup-Clamp



Test Mode : Mode 2: POE

Description : Conducted Susceptibility Test Setup-Clamp

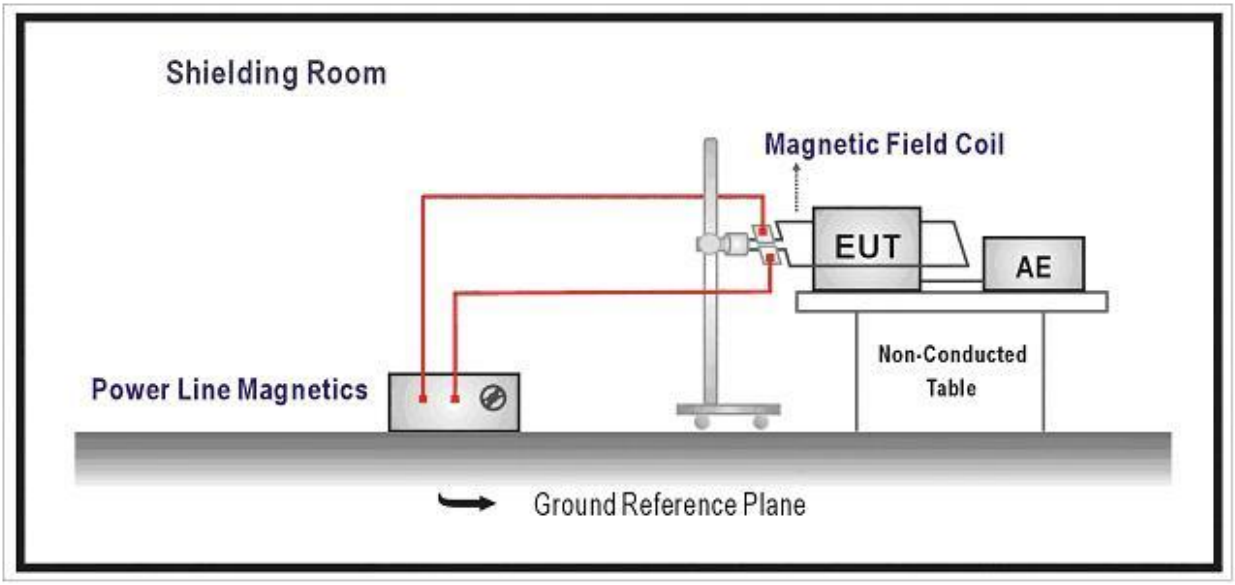


13. Power Frequency Magnetic Field

13.1. Test Specification

According to Standard : IEC 61000-4-8

13.2. Test Setup



13.3. Limit

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

13.4. 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).

13.5. Deviation from Test Standard

No deviation.

13.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Power frequency magnetic field		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	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	Outdoor Dome Network Camera		
Test Item	Power frequency magnetic field		
Test Mode	Mode 2: POE		
Date of Test	2012/04/23	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.

13.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : Power Frequency Magnetic Field Test Setup

Test Mode : Mode 2: POE

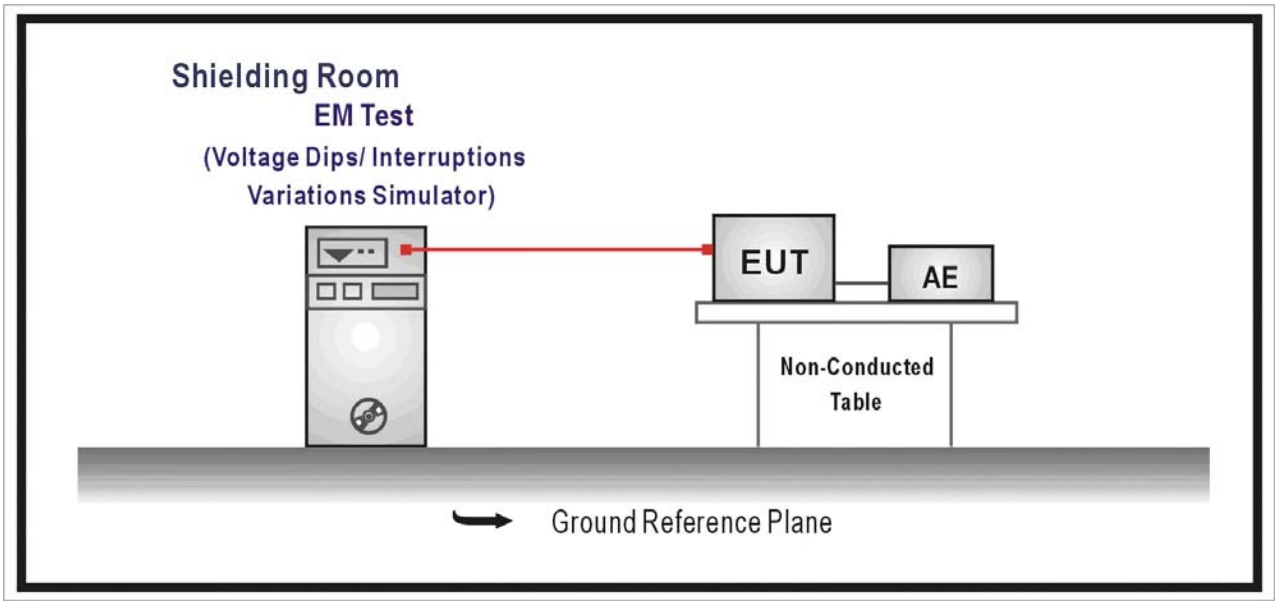
Description : Power Frequency Magnetic Field Test Setup

14. Voltage Dips and Interruption

14.1. Test Specification

According to Standard : IEC 61000-4-11

14.2. Test Setup



14.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Input AC Power Ports				
	Voltage Dips	% Reduction Period	30 25	C
		% Reduction Period	>95 0.5	B
	Voltage Interruptions	% Reduction Period	> 95 250	C

14.4. Test Procedure

The EUT and its load are placed on a table which 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 power cord shall be used the shortest power cord as specified by the manufacturer.

For Voltage Dips/ Interruptions test:

The selection of test voltage is based on the rated power range. If the operation range is large than 20% of lower power range, both end of specified voltage shall be tested. Otherwise, the typical voltage specification is selected as test voltage.

The EUT is connected to the power mains through a coupling device that directly couples to the Voltage Dips and Interruption Generator.

The EUT shall be tested for 30% voltage dip of supplied voltage and duration 25 Periods, for 95% voltage dip of supplied voltage and duration 0.5 Periods with a sequence of three voltage dips with intervals of 10 seconds, and for 95% voltage interruption of supplied voltage and duration 250 Periods with a sequence of three voltage interruptions with intervals of 10 seconds.

Voltage phase shifting are shall occur at 0^0, 45^0, 90^0 ,135^0 ,180^0 ,225^0, 270^0 ,315^0 of the voltage.

14.5. Deviation from Test Standard

No deviation.

14.6. Test Result

Product	Outdoor Dome Network Camera		
Test Item	Voltage dips and interruption		
Test Mode	Mode 1: AC 24V		
Date of Test	2012/04/23	Test Site	No.3 Shielded Room

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Performance Criteria Complied To	Test Result
30	0	25	C	A	PASS
30	45	25	C	A	PASS
30	90	25	C	A	PASS
30	135	25	C	A	PASS
30	180	25	C	A	PASS
30	225	25	C	A	PASS
30	270	25	C	A	PASS
30	315	25	C	A	PASS
>95	0	0.5	B	A	PASS
>95	45	0.5	B	A	PASS
>95	90	0.5	B	A	PASS
>95	135	0.5	B	A	PASS
>95	180	0.5	B	A	PASS
>95	225	0.5	B	A	PASS
>95	270	0.5	B	A	PASS
>95	315	0.5	B	A	PASS
>95	0	250	C	B	PASS
>95	45	250	C	B	PASS
>95	90	250	C	B	PASS
>95	135	250	C	B	PASS
>95	180	250	C	B	PASS
>95	225	250	C	B	PASS
>95	270	250	C	B	PASS
>95	315	250	C	B	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
  ☐ The nominal voltage of EUT is 230V.
  ☐ 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.

14.7. Test Photograph

Test Mode : Mode 1: AC 24V

Description : Voltage Dips Test Setup

15. Attachment

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo

(3) EUT Photo

(4) EUT Photo

(5) EUT Photo


Reset
Micro SD Card
Ethernet
1 2 3 4 5 6 7 8
Int.
NTSC
Ext.
ON
PAL
AV Out
Audio In