



CERTIFICATE

Issued Date: Aug. 20, 2012
Report No.: 128309R-ITCEP07V04

This is to certify that the following designated product

Product : Vehicle Mount Display
Trade name : NEXCOM
Model Number : VMD2002XXXXXXXXXXXXXXXXXX (where X may be any alphanumeric character or blank)
Company Name : NEXCOM International Co., LTD

This product, which has been issued the test report listed as above in QuieTek Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

EN 55022: 2010

EN 55024: 2010

IEC 61000-4-2: 2008

IEC 61000-4-3: 2010

IEC 61000-4-4: 2012

IEC 61000-4-6: 2008

IEC 61000-4-8: 2009

TEST LABORATORY

Vincent Lin / Manager



Test Report

Product Name : Vehicle Mount Display
Model No. : VMD2002XXXXXXXXXXXXXXXXXX (where X may be any alphanumeric character or blank)

Applicant : NEXCOM International Co., LTD
Address : 15F, No.920, Chung-Cheng Rd., Zhonghe Dist.,
New Taipei City 235, Taiwan.

Date of Receipt : 2012/08/08
Issued Date : 2012/08/20
Report No. : 128309R-ITCEP07V04
Report Version : V1.0



The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF, NVLAP or any agency of the Government.
The test report shall not be reproduced except in full without the written approval of Quietek Corporation.



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 : Vehicle Mount Display
Trade name : NEXCOM
Model Number : VMD2002XXXXXXXXXXXXXXXXXX (where X may be any alphanumeric character or blank)
Applicable Harmonized : EN 55022: 2010, Class B
Standards under Directive : EN 55024: 2010
2004/108/EC

Company Name :

Company Address : _____

Telephone :

Facsimile : _____

Person in responsible for marking this declaration:

Name (Full Name)

Title/ Department

Date

Legal Signature



Quietek Corporation

Date: Aug. 20, 2012
QTK No.: 128309R-ITCEP07V04



Statement of Conformity

This statement is to certify that the designated product below.

Product : Vehicle Mount Display
Trade name : NEXCOM
Model Number : VMD2002XXXXXXXXXXXXXXXXX (where X may be any alphanumeric character or blank)
Company Name : NEXCOM International Co., LTD
Applicable Standards : EN 55022: 2010, Class B
EN 55024: 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 : 128309R-ITCEP07V04

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.

Test Report Certification

Issued Date : 2012/08/20
Report No. : 128309R-ITCEP07V04



Product Name : Vehicle Mount Display

Applicant : NEXCOM International Co., LTD

Address : 15F, No.920, Chung-Cheng Rd.,Zhonghe Dist., New Taipei
City 235, Taiwan.

Manufacturer : NEXCOM International Co., LTD

Model No. : VMD2002XXXXXXXXXXXXXXXXX (where X may be any
alphanumeric character or blank)

EUT Rated Voltage : DC 9-36V

EUT Test Voltage : DC 24V

Trade Name : NEXCOM

Applicable Standard : EN 55022: 2010, Class B EN 55024: 2010

Test Result : Complied

Performed Location : Quietek Corporation (Linkou Laboratory)
No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451,
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Documented By : Anny Chou
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Reviewed By : Ryan Cheng
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Approved By : Vincent Lin
(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:

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E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

Product Name	Vehicle Mount Display
Trade Name	NEXCOM
Model No.	VMD2002XXXXXXXXXXXXXXXXXX (where X may be any alphanumeric character or blank)

Component	
D-SUB to DVI Cable	Shielded, 5m, with two ferrite cores bonded.
D-SUB to DVI Cable	Shielded, 1.5m, with two ferrite cores bonded.

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: D-SUB to DVI (800*600/60Hz), 5m	
Mode 2: D-SUB to DVI (800*600/60Hz), 1.5m	
Final Test Mode	
Emission	Mode 1: D-SUB to DVI (800*600/60Hz), 5m Mode 2: D-SUB to DVI (800*600/60Hz), 1.5m
Immunity	Mode 1: D-SUB to DVI (800*600/60Hz), 5m

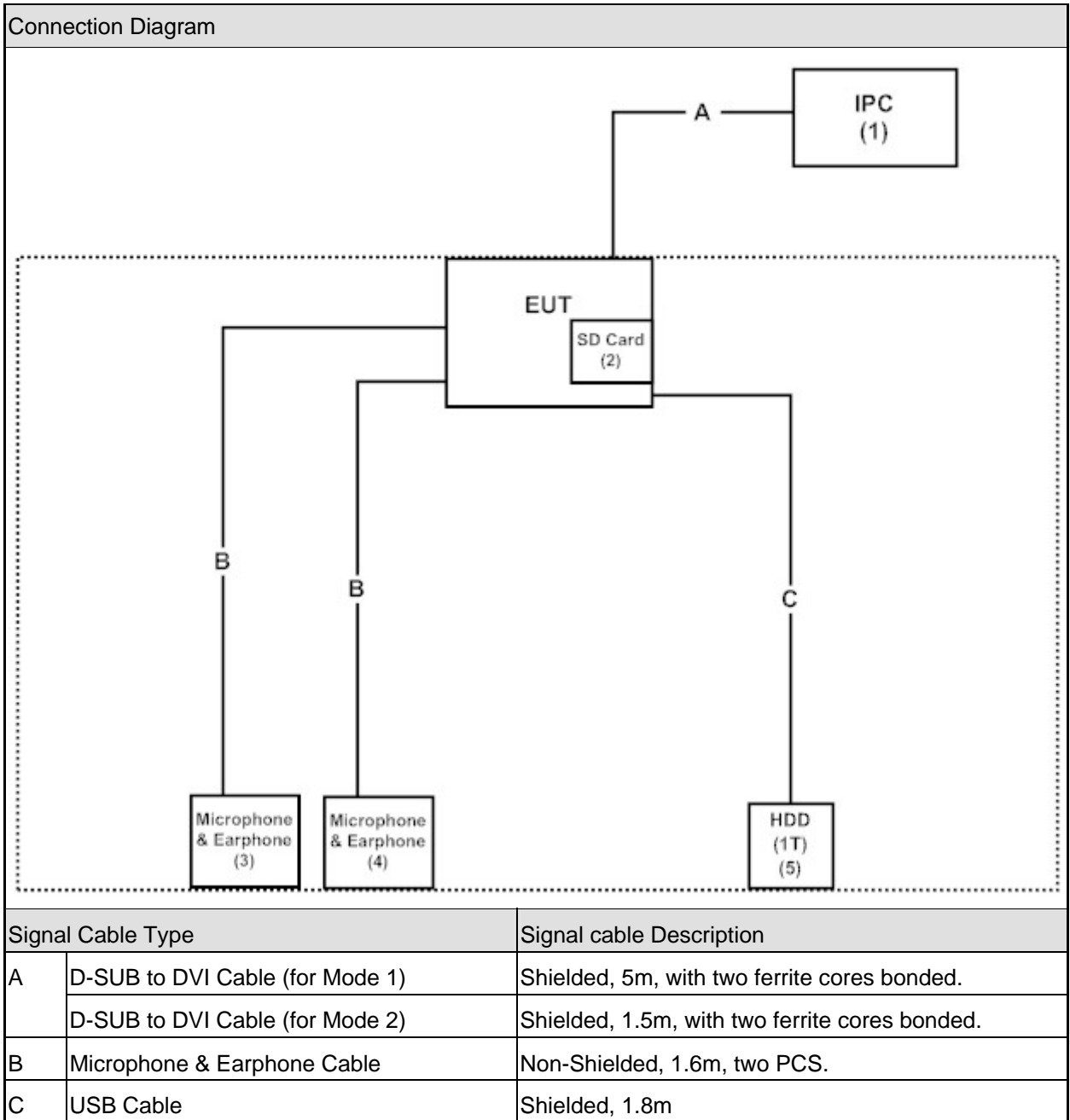
1.3. Tested System Details

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

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 IPC	NEXCOM	VTC6200	N/A	Non-Shielded, 1.8m
2 SD Card 2GB	Transcend	BE0922014359D	277228 9217	N/A
3 Microphone & Earphone	Ergotech	ET-E201	N/A	N/A
4 Microphone & Earphone	Ergotech	ET-E201	N/A	N/A
5 HDD(1T) (EMI)	ADATA	ASH02-1TU-CBK	1B3320071909	N/A
IPod nano (EMS)	Apple	A1199	5U72892MVQ5	N/A

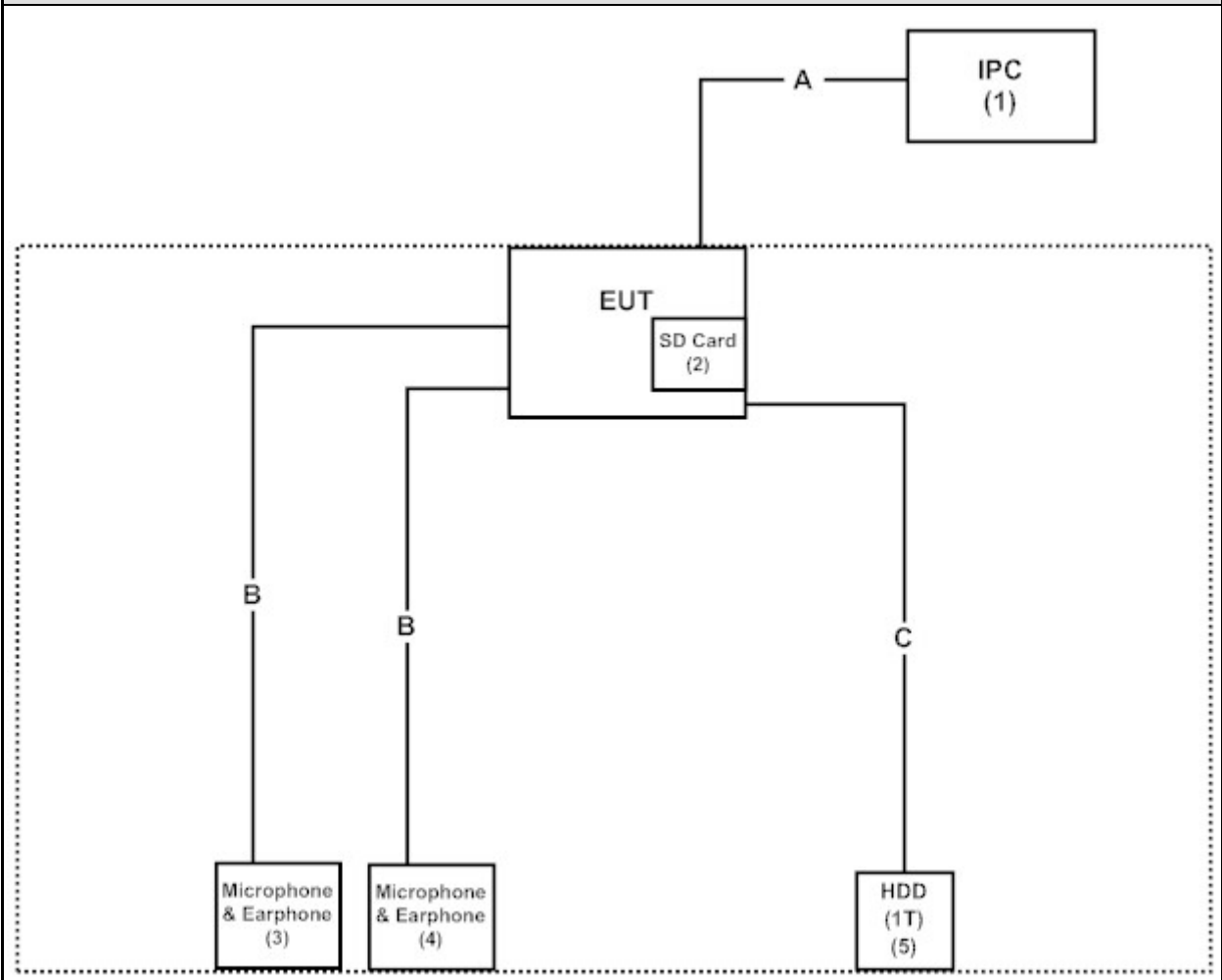
1.4. Configuration of Tested System

EMI:



EMS:

Connection Diagram



Signal Cable Type		Signal cable Description
A	D-SUB to DVI Cable (for Mode 1)	Shielded, 5m, with two ferrite cores bonded.
	D-SUB to DVI Cable (for Mode 2)	Shielded, 1.5m, with two ferrite cores bonded.
B	Microphone & Earphone Cable	Non-Shielded, 1.6m, two PCS.
C	USB Cable	Shielded, 1.2m

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	Vehicle Mount Display reads data from disk.
4	Vehicle Mount Display sends "H" pattern to monitor.
5	Repeat the above procedure (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	No	No
Impedance Stabilization Network	EN 55022: 2010	No	No
Radiated Emission	EN 55022: 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	No	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

Radiated Emission / Site6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2909	2012/07/22
EMI Test Receiver	R&S	ESCS 30	100368	2011/10/26
Pre-Amplifier	QTK	AP-025C	0506002	2012/06/29
Spectrum Analyzer	Agilent	E4411B	MY45119690	2011/12/19
Site6 NSA	QTK	N/A	N/A	2012/06/29

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

Electrical fast transient/burst / 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	2012/05/18

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

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 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 field 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%.

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 %.

2.4. Test Environment

Performed Item	Items	Required	Actual
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	40
	Barometric pressure (mbar)	860-1060	950-1000
Electrostatic Discharge	Temperature (°C)	15-35	21
	Humidity (%RH)	30-60	51
	Barometric pressure (mbar)	860-1060	950-1000
Radiated susceptibility	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Electrical fast transient/burst	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	53
	Barometric pressure (mbar)	860-1060	950-1000
Conducted susceptibility	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Power frequency magnetic field	Temperature (°C)	15-35	22
	Humidity (%RH)	25-75	52
	Barometric pressure (mbar)	860-1060	950-1000

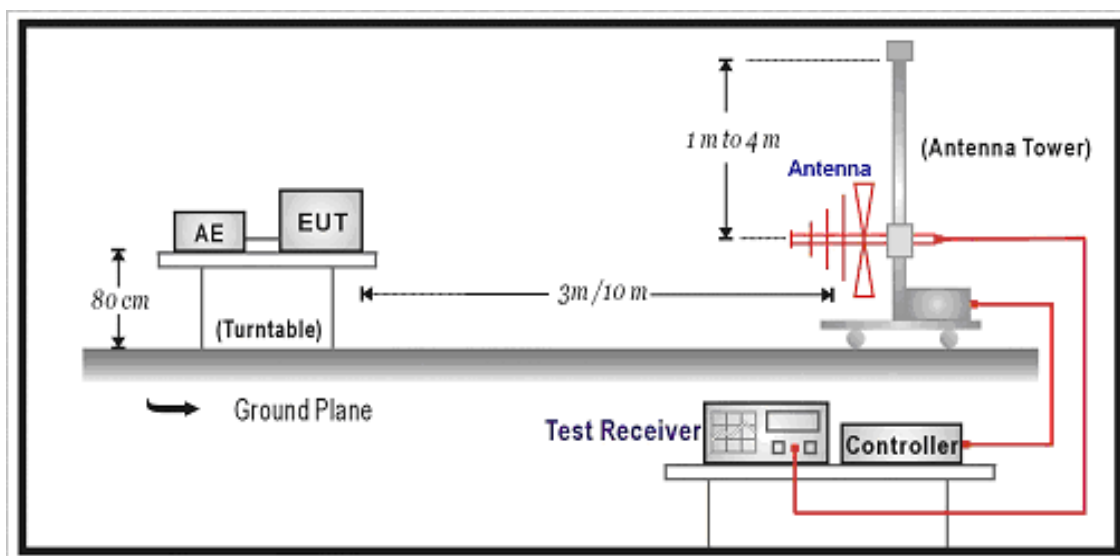
3. Radiated Emission

3.1. Test Specification

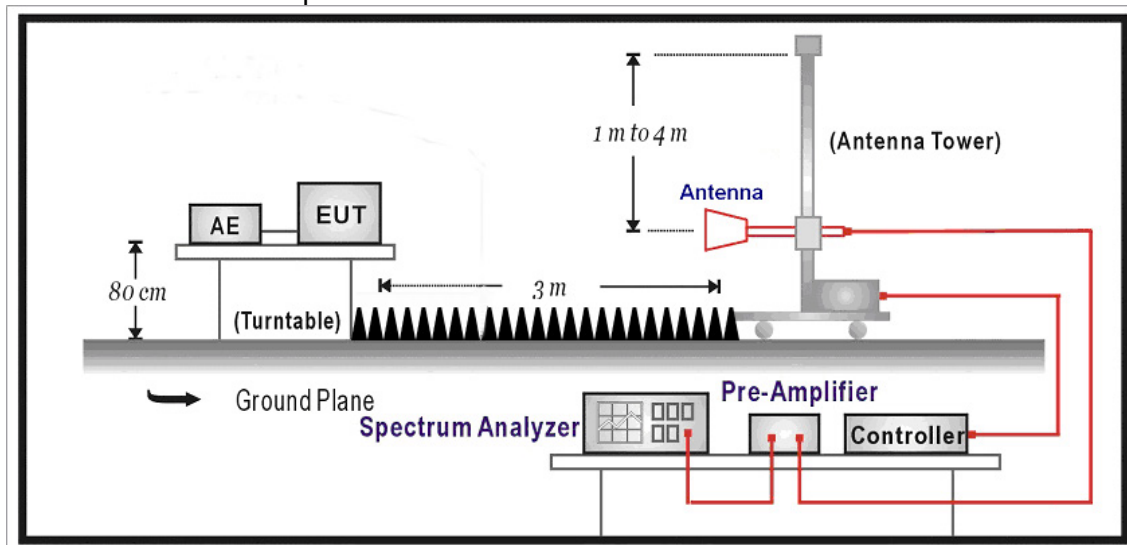
According to EMC Standard : EN 55022

3.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. 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

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

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

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

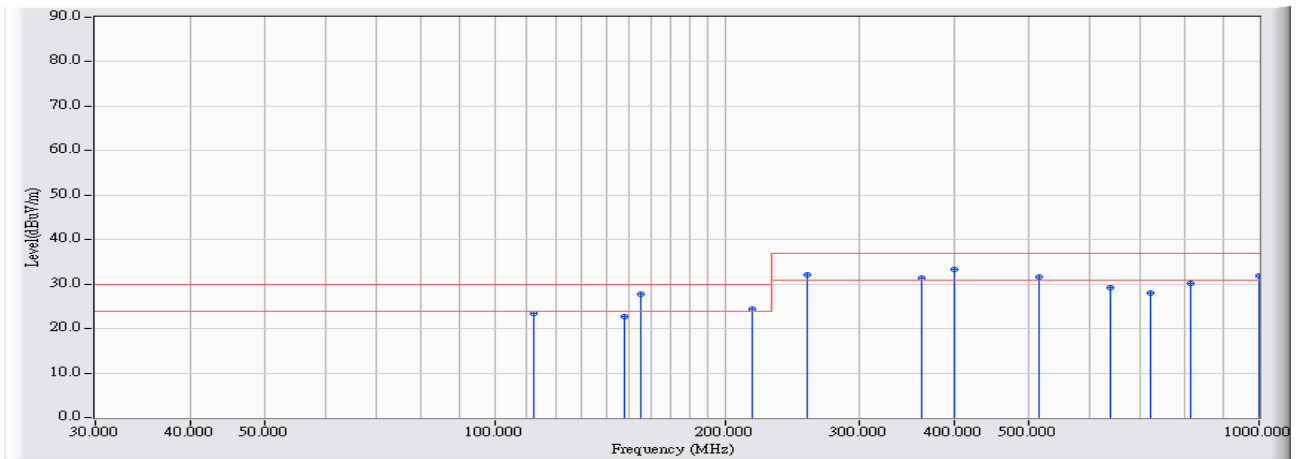
It is placed with absorber on the ground between EUT and Antenna.

3.5. Deviation from Test Standard

No deviation.

3.6. Test Result

Site : Site6	Time : 2012/08/09 - 15:51
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Vehicle Mount Display	Probe : Site6_CBL6112_10M_0726 - HORIZONTAL
Power : DC 24V	Note : Mode 1

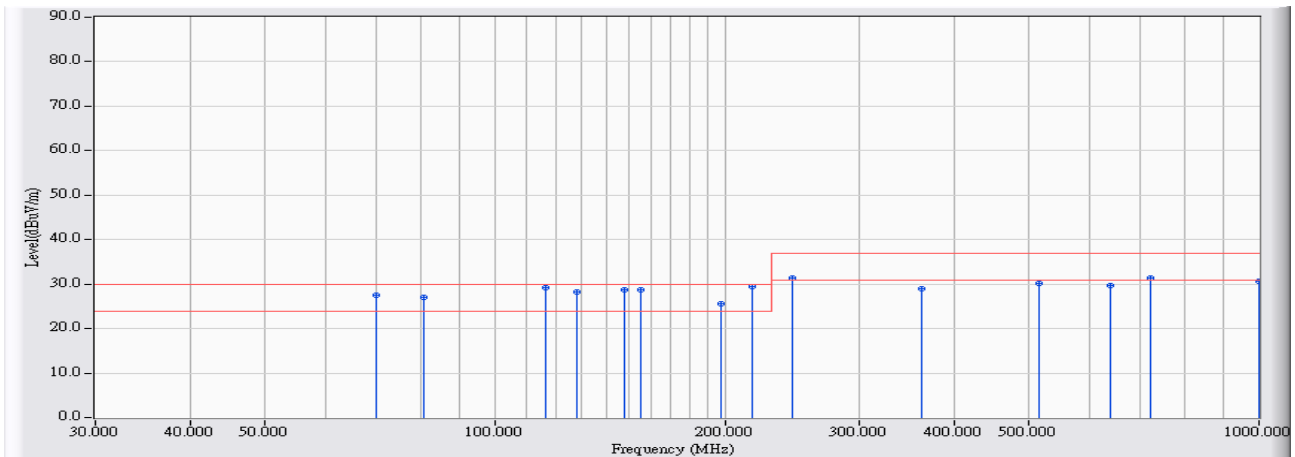


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	112.590	-19.576	42.900	23.324	-6.676	30.000	QUASPEAK
2	147.525	-20.083	42.800	22.717	-7.283	30.000	QUASPEAK
3	* 155.305	-20.590	48.300	27.710	-2.290	30.000	QUASPEAK
4	217.440	-18.740	43.200	24.460	-5.540	30.000	QUASPEAK
5	256.250	-17.646	49.800	32.155	-4.845	37.000	QUASPEAK
6	361.250	-12.175	43.500	31.325	-5.675	37.000	QUASPEAK
7	400.000	-11.245	44.500	33.255	-3.745	37.000	QUASPEAK
8	516.500	-8.425	40.100	31.675	-5.325	37.000	QUASPEAK
9	640.000	-7.484	36.600	29.115	-7.885	37.000	QUASPEAK
10	720.000	-6.313	34.200	27.887	-9.113	37.000	QUASPEAK
11	815.500	-4.650	34.900	30.250	-6.750	37.000	QUASPEAK
12	1000.000	1.080	30.700	31.780	-5.220	37.000	QUASPEAK

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 : Site6	Time : 2012/08/09 - 15:37
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Vehicle Mount Display	Probe : Site6_CBL6112_10M_0726 - VERTICAL
Power : DC 24V	Note : Mode 1

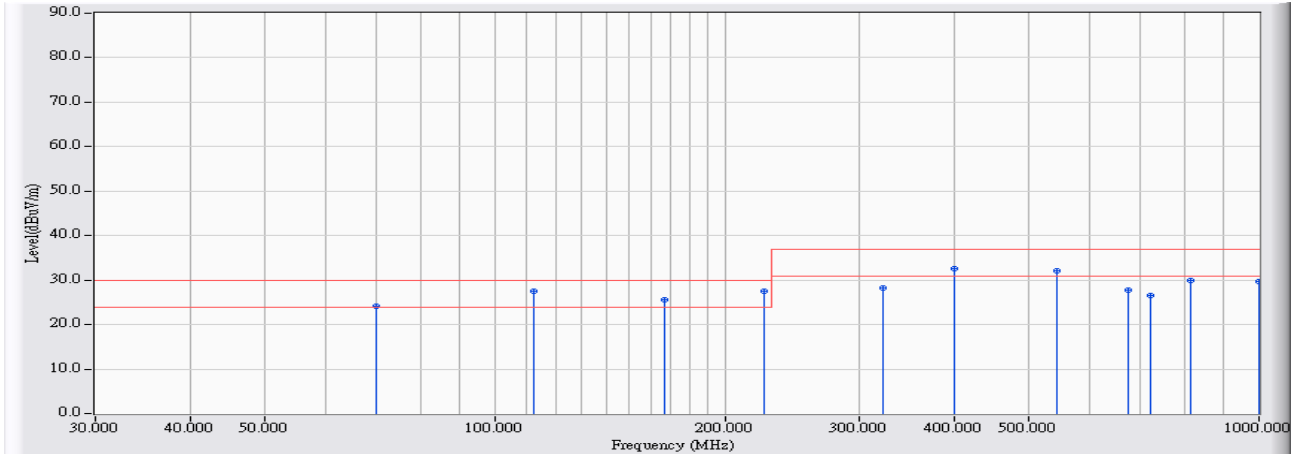


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		69.870	-22.999	50.600	27.601	-2.399	30.000	QUASPEAK
2		80.730	-22.084	49.200	27.116	-2.884	30.000	QUASPEAK
3		116.480	-16.678	45.800	29.122	-0.878	30.000	QUASPEAK
4		128.115	-18.261	46.600	28.340	-1.660	30.000	QUASPEAK
5		147.580	-17.179	45.900	28.721	-1.279	30.000	QUASPEAK
6		155.305	-17.648	46.400	28.752	-1.248	30.000	QUASPEAK
7		198.025	-20.444	45.900	25.457	-4.543	30.000	QUASPEAK
8	*	217.440	-20.229	49.600	29.372	-0.628	30.000	QUASPEAK
9		244.750	-18.046	49.400	31.354	-5.646	37.000	QUASPEAK
10		361.080	-14.348	43.200	28.852	-8.148	37.000	QUASPEAK
11		516.500	-8.121	38.200	30.079	-6.921	37.000	QUASPEAK
12		640.000	-8.420	38.100	29.679	-7.321	37.000	QUASPEAK
13		720.000	-5.230	36.700	31.470	-5.530	37.000	QUASPEAK
14		1000.000	0.380	30.200	30.580	-6.420	37.000	QUASPEAK

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 : Site6	Time : 2012/08/09 - 16:25
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Vehicle Mount Display	Probe : Site6_CBL6112_10M_0726 - HORIZONTAL
Power : DC 24V	Note : Mode 2

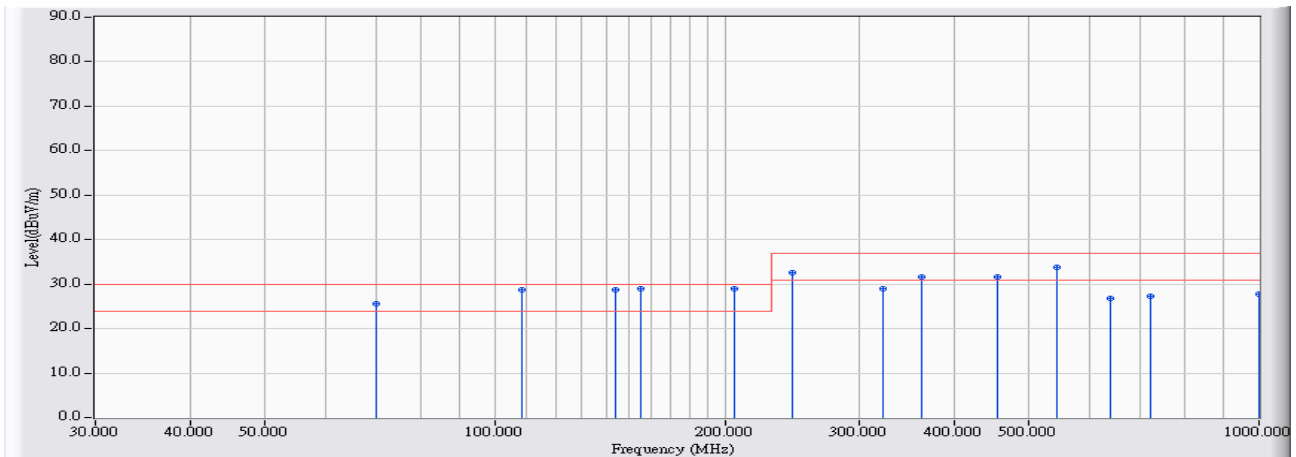


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		69.870	-24.719	48.900	24.181	-5.819	30.000	QUASPEAK
2	*	112.595	-19.576	47.200	27.624	-2.376	30.000	QUASPEAK
3		166.940	-20.643	46.300	25.656	-4.344	30.000	QUASPEAK
4		225.180	-17.876	45.300	27.424	-2.576	30.000	QUASPEAK
5		322.250	-13.560	41.900	28.340	-8.660	37.000	QUASPEAK
6		400.000	-11.245	43.700	32.455	-4.545	37.000	QUASPEAK
7		543.580	-7.818	40.000	32.182	-4.818	37.000	QUASPEAK
8		675.590	-6.415	34.200	27.785	-9.215	37.000	QUASPEAK
9		720.000	-6.313	32.800	26.487	-10.513	37.000	QUASPEAK
10		815.500	-4.650	34.500	29.850	-7.150	37.000	QUASPEAK
11		1000.000	1.080	28.700	29.780	-7.220	37.000	QUASPEAK

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 : Site6	Time : 2012/08/09 - 16:40
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Vehicle Mount Display	Probe : Site6_CBL6112_10M_0726 - VERTICAL
Power : DC 24V	Note : Mode 2



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	69.870	-22.999	48.600	25.601	-4.399	30.000	QUASPEAK
2	108.705	-17.623	46.300	28.678	-1.322	30.000	QUASPEAK
3	143.680	-17.993	46.600	28.607	-1.393	30.000	QUASPEAK
4	* 155.305	-17.648	46.600	28.952	-1.048	30.000	QUASPEAK
5	205.770	-19.860	48.700	28.840	-1.160	30.000	QUASPEAK
6	244.590	-18.086	50.700	32.614	-4.386	37.000	QUASPEAK
7	322.250	-15.466	44.300	28.834	-8.166	37.000	QUASPEAK
8	361.080	-14.348	46.000	31.652	-5.348	37.000	QUASPEAK
9	454.300	-10.608	42.200	31.593	-5.407	37.000	QUASPEAK
10	543.580	-7.216	41.100	33.884	-3.116	37.000	QUASPEAK
11	640.000	-8.420	35.200	26.779	-10.221	37.000	QUASPEAK
12	720.000	-5.230	32.500	27.270	-9.730	37.000	QUASPEAK
13	1000.000	0.380	27.400	27.780	-9.220	37.000	QUASPEAK

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

3.7. Test Photograph

Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : Front View of Radiated Test



Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : Back View of Radiated Test



Test Mode : Mode 2 D-SUB to DVI(800*600/60Hz), 1.5m

Description : Front View of Radiated Test



Test Mode : Mode 2: D-SUB to DVI (800*600/60Hz), 1.5m

Description : Back View of Radiated Test

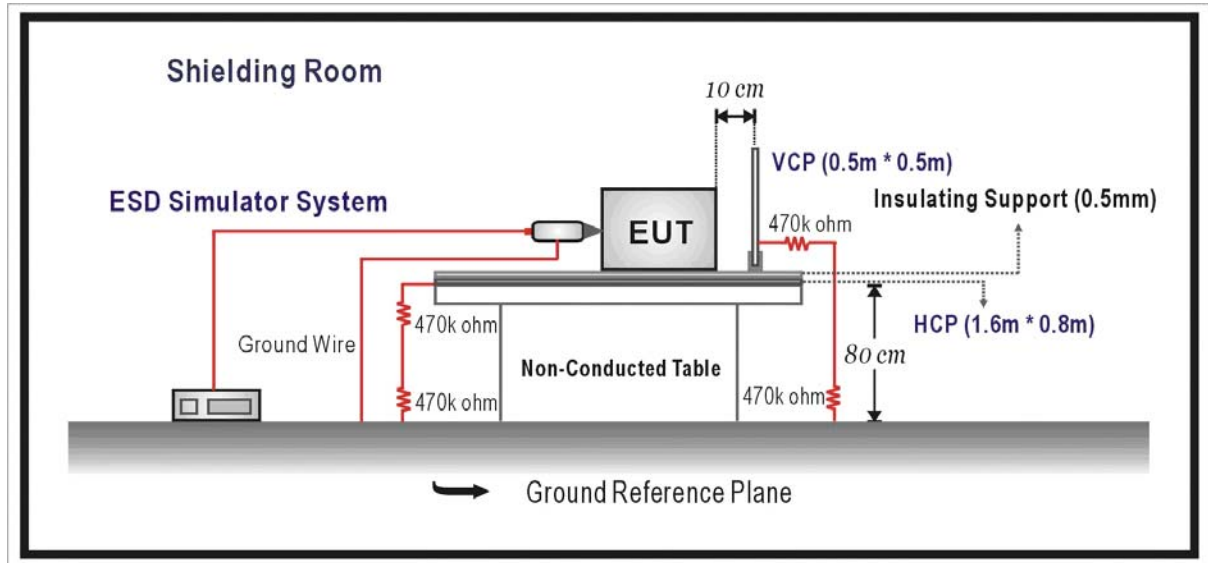


4. Electrostatic Discharge

4.1. Test Specification

According to Standard: IEC 61000-4-2

4.2. Test Setup



4.3. Limit

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

4.4. 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.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Product	Vehicle Mount Display		
Test Item	Electrostatic Discharge		
Test Mode	Mode 1: D-SUB to DVI (800*600/60Hz), 5m		
Date of Test	2012/08/17	Test Site	No.6 Shielded Room

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

Note:

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

NR: No Requirement

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

Remark:

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

4.7. Test Photograph

Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : ESD Test Setup

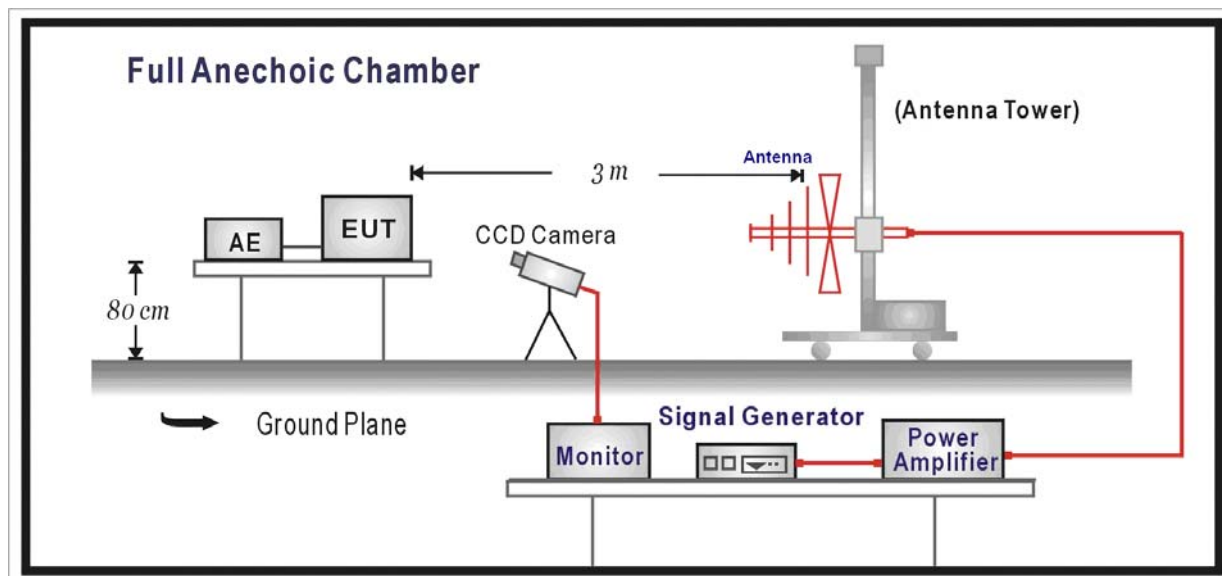


5. Radiated Susceptibility

5.1. Test Specification

According to Standard: IEC 61000-4-3

5.2. Test Setup



5.3. Limit

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

5.4. 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 Vehicle Mount Display 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	1.5×10^{-3} decades/s

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Product	Vehicle Mount Display		
Test Item	Radiated susceptibility		
Test Mode	Mode 1: D-SUB to DVI (800*600/60Hz), 5m		
Date of Test	2012/08/17	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.

5.7. Test Photograph

Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : Radiated Susceptibility Test Setup

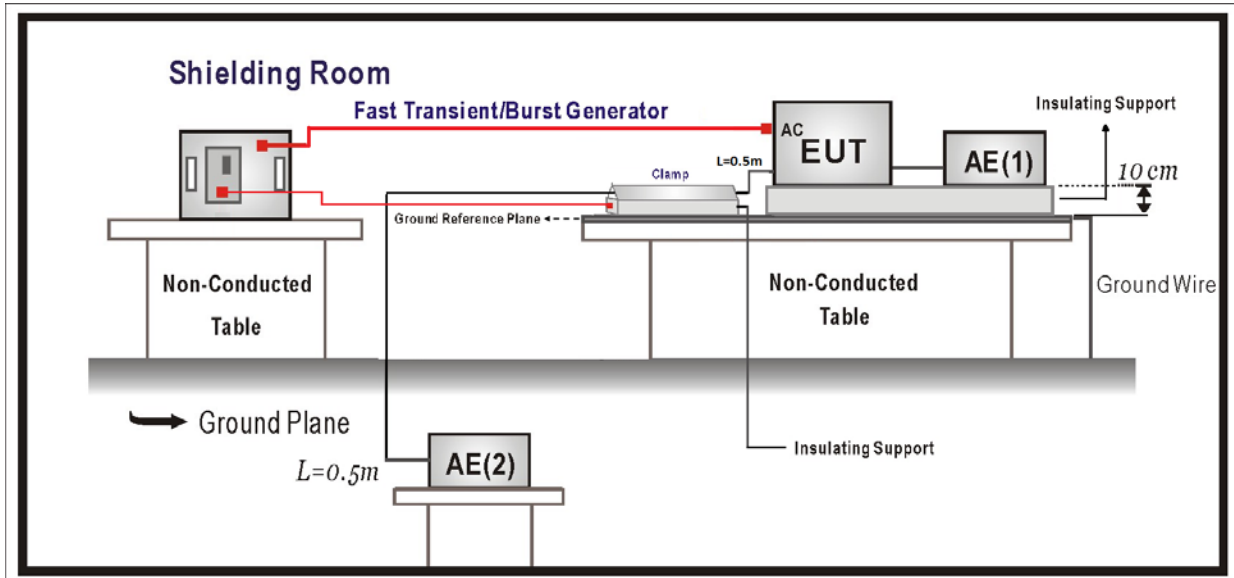


6. Electrical Fast Transient/Burst

6.1. Test Specification

According to Standard : IEC 61000-4-4

6.2. Test Setup



6.3. 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

6.4. 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 1 minute.

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.

6.5. Deviation from Test Standard

No deviation.

6.6. Test Result

Product	Vehicle Mount Display		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 1: D-SUB to DVI (800*600/60Hz), 5m		
Date of Test	2012/08/16	Test Site	No.3 Shielded Room

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

6.7. Test Photograph

Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : EFT/B Test Setup-Clamp



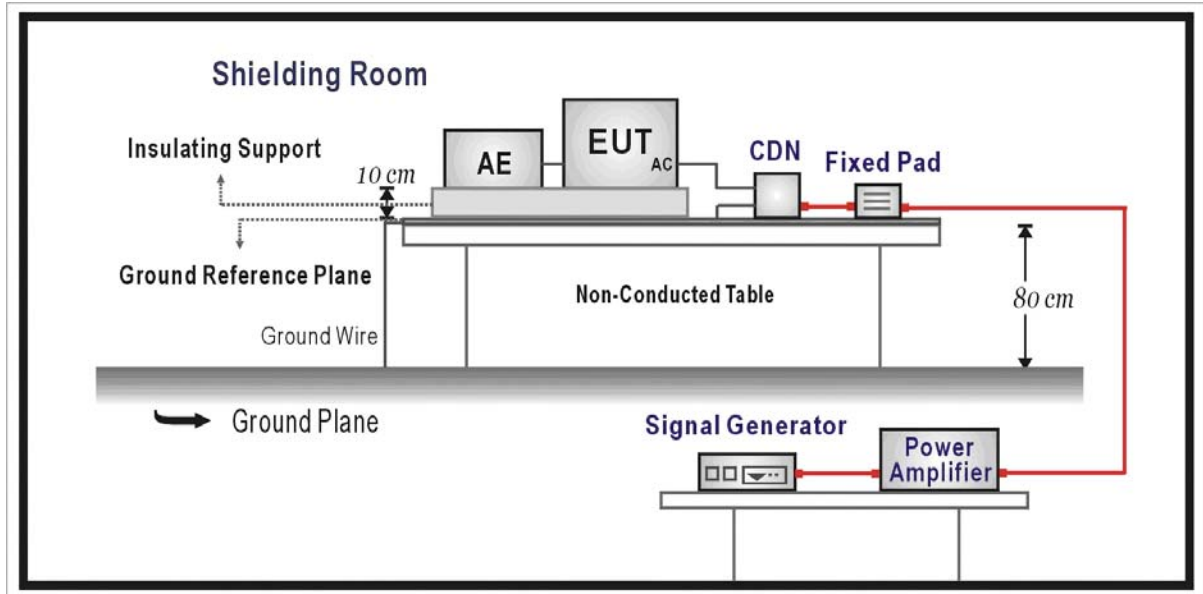
7. Conducted Susceptibility

7.1. Test Specification

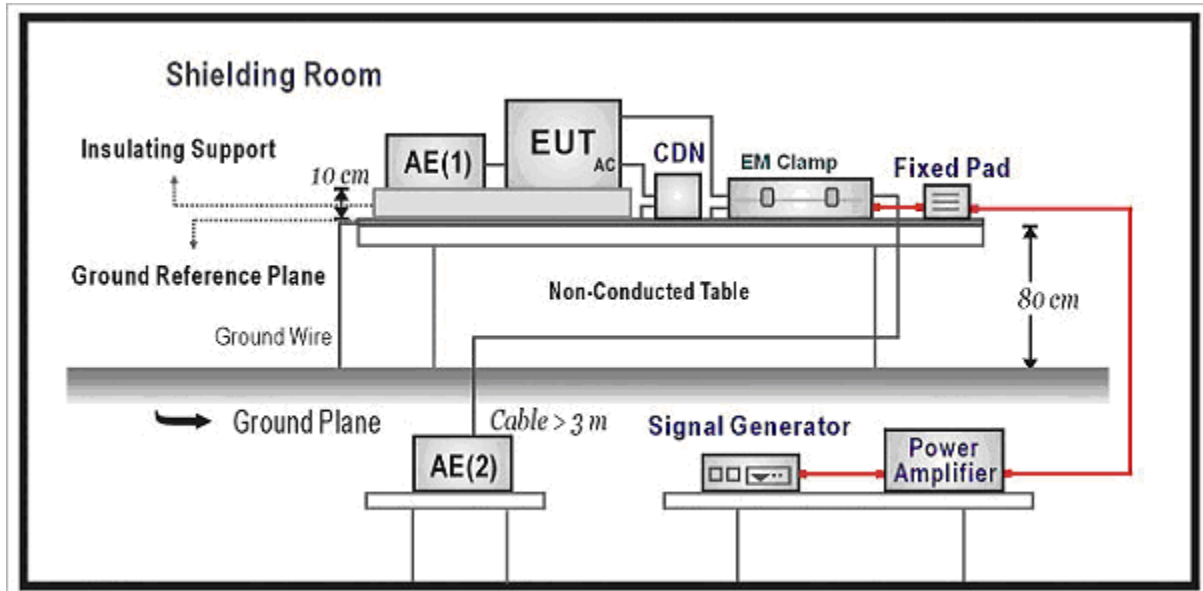
According to Standard : IEC 61000-4-6

7.2. Test Setup

CDN Inject Method



EM Clamp Inject Method



7.3. 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

7.4. 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	1.5×10^{-3} decades/s

7.5. Deviation from Test Standard

No deviation.

7.6. Test Result

Product	Vehicle Mount Display		
Test Item	Conducted susceptibility		
Test Mode	Mode 1: D-SUB to DVI (800*600/60Hz), 5m		
Date of Test	2012/08/16	Test Site	No.6 Shielded Room

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	Clamp	Signal Cable	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.

7.7. Test Photograph

Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : Conducted Susceptibility Test Setup-CDN

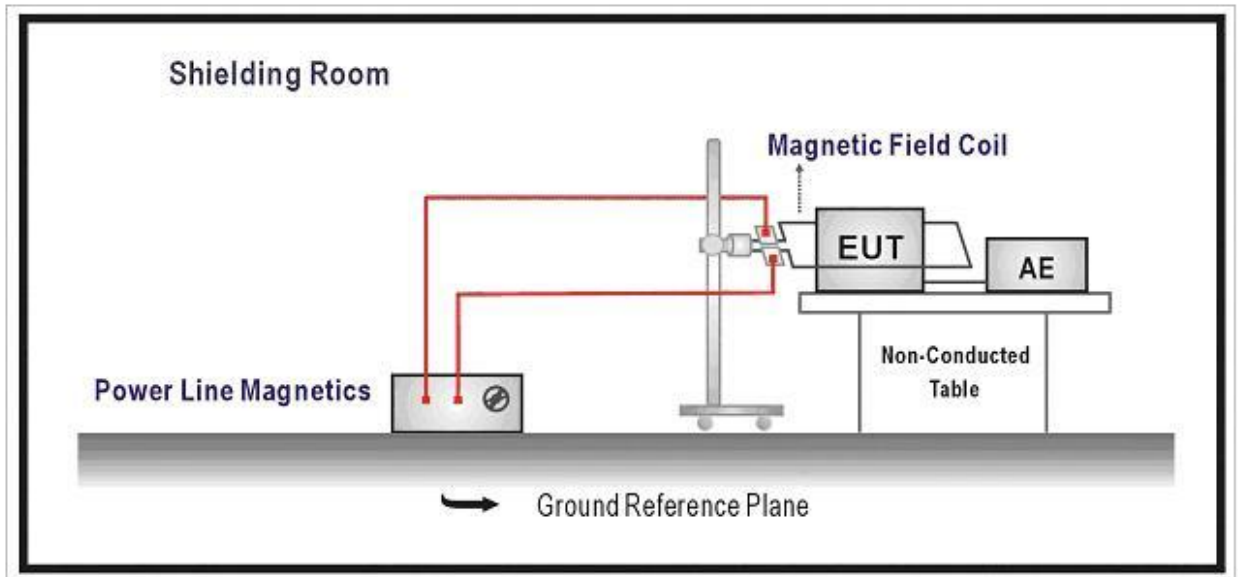


8. Power Frequency Magnetic Field

8.1. Test Specification

According to Standard: IEC 61000-4-8

8.2. Test Setup



8.3. Limit

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

8.4. 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).

8.5. Deviation from Test Standard

No deviation.

8.6. Test Result

Product	Vehicle Mount Display		
Test Item	Power frequency magnetic field		
Test Mode	Mode 1: D-SUB to DVI (800*600/60Hz), 5m		
Date of Test	2012/08/16	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.

8.7. Test Photograph

Test Mode : Mode 1: D-SUB to DVI (800*600/60Hz), 5m

Description : Power Frequency Magnetic Field Test Setup



9. Attachment

➤ EUT Photograph

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo



(5) EUT Photo



(6) EUT Photo



(7) EUT Photo

