Certificate

Issue Date: February 29, 2012
Ref. Report No. ISL-12HE051FA

Product Name : Nuvo-1300af Series
Model(s) : **Nuvo-1300af; Nuvo-1300af-620M; Nuvo-1300af-520M**
Applicant : **Neousys Technology Inc.**
Address : 13F.-1, NO.1, BAOSHENG RD., YONGHE DIST., NEW TAIPEI CITY 23444, TAIWAN, R.O.C

We, **International Standards Laboratory**, hereby certify that:

The device bearing the trade name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified. (refer to Test Report if any modifications were made for compliance).

Standards:

FCC CFR Title 47 Part 15 Subpart B: 2010- Section 15.107 and 15.109
ANSI C63.4-2009
Industry Canada Interference-Causing Equipment Standard ICES-003 Issue 4: 2004
Class A

I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

International Standards Laboratory

Jim Chu / Director

☒ **Hsi-Chih LAB**:
No. 65, Gu Dai Keng St., Hsichih District,
New Taipei City 22117, Taiwan
Tel: 886-2-2646-2550; Fax: 886-2-2646-4641

FCC TEST REPORT

of

CFR 47 Part 15 Subpart B Class A

Product : **Nuvo-1300af Series**

Model(s): **Nuvo-1300af; Nuvo-1300af-620M; Nuvo-1300af-520M**

Applicant: **Neousys Technology Inc.**

Address: **13F.-1, NO.1, BAOSHENG RD., YONGHE DIST., NEW TAIPEI CITY 23444, TAIWAN, R.O.C**

Test Performed by:

International Standards Laboratory
<Hsi-Chih LAB>
*Site Registration No.
BSMI:SL2-IN-E-0037; SL2-R1/R2-E-0037; TAF: 1178;
IC: IC4067A-1; VCCI: R-341,C-354, T-1749, G-433; NEMKO: ELA 113A
*Address:
No. 65, Gu Dai Keng St.
Hsichih District, New Taipei City 22117, Taiwan
*Tel: 886-2-2646-2550; Fax: 886-2-2646-4641

Report No.: **ISL-12HE051FA**
Issue Date : **February 29, 2012**

This report totally contains 26 pages including this cover page and contents page.

Contents of Report

1. General

1.1 Certification of Accuracy of Test Data

Standards:	FCC CFR Title 47 Part 15 Subpart B: 2010- Section 15.107 and 15.109 ANSI C63.4-2009 Industry Canada Interference-Causing Equipment Standard ICES-003 Issue 4: 2004
Equipment Tested:	Nuvo-1300af Series
Model:	Nuvo-1300af; Nuvo-1300af-620M; Nuvo-1300af-520M
Applicant:	Neousys Technology Inc.
Sample received Date:	February 13, 2012
Final test Date:	refer to the date of test data
Test Site:	International Standards Laboratory OATS 01; Chamber 01; Conduction 01
Test Distance:	10M; 3M (above1GHz)
Temperature:	refer to each site test data
Humidity:	refer to each site test data
Input power:	Conduction input power: AC 120 V / 60 Hz Radiation input power: AC 120 V / 60 Hz
Test Result:	**PASS**
Report Engineer:	Midori Su
Test Engineer:	EDDIE CHUNG Eddie Chung
Approved By:	Eddy Hsiung Eddy Hsiung

1.2 Description of EUT

EUT

Description:	Nuvo-1300af Series
Condition:	Pre-Production
Model:	**Nuvo-1300af; Nuvo-1300af-620M; Nuvo-1300af-520M**
Serial Number:	N/A
Power Supply Type:	Meanwell (Model: GS160A20) AC Input: 100-240V, 2.0A, 50/60Hz DC Output: +20V/8A (with core), 160W MAX.
CPU:	Intel® Core™ i7-620M Processor 2.6GHz
DIMM Memory:	DSL 4GB DDR3-1333MHz *2
Solid State Disk:	InnoDisk (Model: FiD 2.5” SATA 10000 16GB WT.) 16GB Seagate(Model: ST980817SM) 80GB
Power Switch Button:	one
CFast Socket:	one
Hard Disk Socket:	two
VGA Port (Onboard VGA):	one (15-pins)
DVI Port (Onboard DVI):	one
RJ45 Connector:	one (8-pins) (10/100/1000Mbps)
RJ45 Connector(PoE):	four (8-pins) (100Mbps)
PS/2 Mouse Port:	one (6-pins)
PS/2 Keyboard Port:	one (6-pins)
USB 2.0 Port:	eight (4-pins)
Line-out Port:	one
Microphone Port:	one
Isolated DIO Connector:	one (25-pins)
COM Port:	four (9-pins)
E-Serial ATA Port:	one (7-pins)
DC power Port:	two

Highest frequency of the internal sources of the EUT is 2.6GHz

Test Configuration:

Model:	Nuvo-1300af
CPU2:	Intel® Core™ i7-620M Processor 2.6GHz
Memory:	DSL 4GB DDR3-1333MHz *2
Display Type:	D-SUB + DVI
SPS:	Meanwell (Model: GS160A20)
Solid State Disk:	InnoDisk (Model: FiD 2.5” SATA 10000 16GB WT.)16GB Seagate (Model: ST980817SM)80GB
PoE-LAN Speed:	100Mbps*4
LAN Speed:	1000Mbps*1

Model Difference List:

Only CPU Different.

EMI Noise Source

Crystal: 25MHz (X1), 25MHz (X2), 32.768MHz (X3), 25MHz (X4), 25MHz (X5), 25MHz (X6), 25MHz (X7), 25MHz (X8), 25MHz (X9)

EMI Solution:

1. Added one Core on Power Supply Type cable。(Reference EUT photo 6)

1.3 Description of Support Equipment

Unit	Model Serial No.	Brand	Power Cord	FCC ID
Notebook Personal Computer	Latitude D400 S/N: N/A	DELL	Non-shielded, Detachable	FCC DOC
24" LCD Monitor	2408WFP S/N: N/A	DELL	Non-Shielded, Detachable	FCC DOC
24" LCD Monitor	U2410 S/N: N/A	DELL	Non-Shielded, Detachable	FCC DOC
External HDD Enclosure*8	OT-201 S/N: N/A	A-TEC	N/A	FCC DOC
E-SATA External Hard Disk	NST-200SU-BK	NexStar	Non-shielded, Detachable	FCC DOC
Keyboard	SK-8115, S/N: MY-05N456-38843-2BK-3315	DELL	N/A	FCC DOC
Mouse	MO71KC S/N: 511092011	DELL	N/A	FCC DOC
Modem*4	DM1414 S/N: 0301000557 0301000558 0301000559 0301000560	Aceex	Non-shielded, Without Grounding Pin	IFAXDM1414
Headphone & Microphone	CD-85	JS	Non-shielded, Detachable	FCC DOC
Rack mountable Switch	DGS-1008D	D-Link	D-Link (Model:AF-1205-B)	FCC DOC
Camera1	PoE IP Network Camera	LEVEL ONE	N/A	FCC DOC
Camera2	a12105L81009V0	IP CAMERA	N/A	FCC DOC
Camera3	acA640-100gc ID:0000104844-03F S/N:21011292	BASLER	N/A	N/A
PoE AP & Switch Hub	VigorAP800 S/N:118001921255	DrayTek	N/A	VGYVFLY200

1.4 Software for Controlling Support Unit

Test programs exercising various part of EUT were used. The programs were executed as follows:

A. Read and write to the disk drives.
B. Read and write External HDD Enclosure from USB port.
C. Read and write E-SATA Hard from E-SATA port.
D. Read and write to the CF card.
E. Read and write print port through DIO_test tool.
F. Send video signal to POE1 port of EUT through Camera1.
G. Send video signal to POE3 port of EUT through Camera2.
H. Send video signal to POE4 port of EUT through Camera3.
I. Send signal to PoE AP & Switch Hub through POE2 port of EUT.
J. Send audio signal to the Headset through line out port.
K. Send H pattern to the serial port device (Modem).
L. Send H pattern to the video port device (Monitor).
M. Receive and transmit package of EUT to the Rack mountable Switch HUB through LAN port.
N. Used Tfgen.exe to Send signal to EUT RJ45 port through PC RJ45 Port.
O. Repeat the above steps.

	Filename	Issued Date
External Hard Disk	BurnIn Test.exe	11/20/2000
E-SATA	BurnIn Test.exe	11/20/2000
Modem	BurnIn Test.exe	11/20/2000
Monitor	BurnIn Test.exe	11/20/2000
EUT Hard Disk	BurnIn Test.exe	11/20/2000
CF Card	BurnIn Test.exe	11/20/2000
ATA Microphone and HeadSet	Windows Media player.exe	02/18/2006
Rack mountable Switch	ping.exe	05/05/1999
RJ45	Tfgen.exe	05/22/2001

1.5 I/O Cable Condition of EUT and Support Units

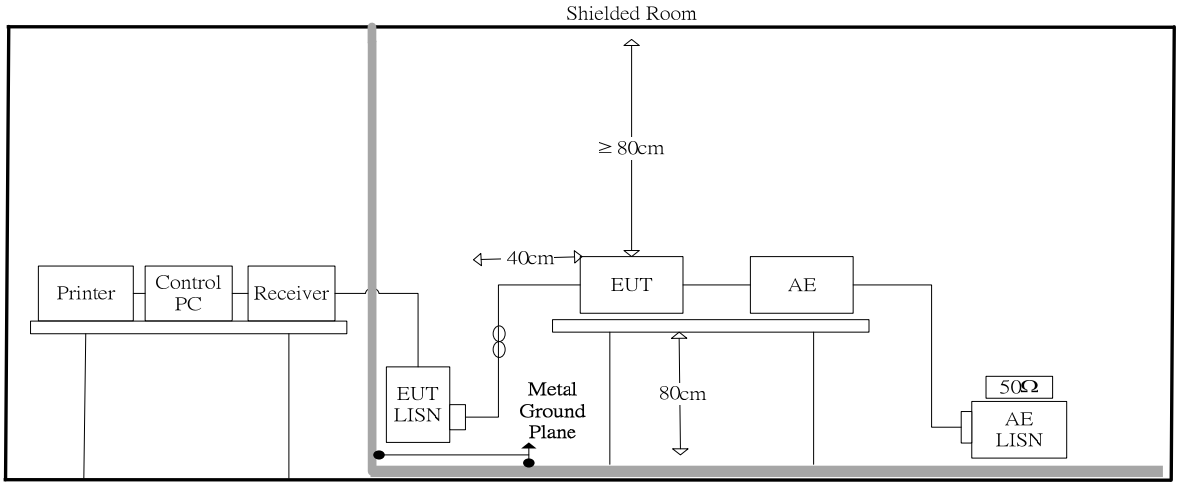
Description	Path	Cable Length	Cable Type	Connector Type
AC Power Cord	110V (~240V) to EUT SPS	1.8M	Non-shielded, Detachable	Plastic Head
USB Data Cable*8	External HDD Enclosure USB Port to EUT USB Port	0.98M	Non-shielded, Detachable (With Core)	Metal Head
E-SATA Data Cable	External Hard disk E-SATA Port to EUT E-SATA Port	1.0M	Shielded, Detachable	Metal Head
LAN Data Cable	Notebook LAN Port to Switch HUB LAN Port	2.0M	Non-shielded, Detachable	RJ-45, with Plastic Head
PoE Data Cable	EUT PoE Port to Camera1 PoE Port	10M	Non-shielded, Detachable	RJ-45, with Plastic Head
PoE Data Cable	EUT PoE Port to PoE AP & Switch Hub PoE Port	10M	Non-shielded, Detachable	RJ-45, with Plastic Head
PoE Data Cable	EUT PoE Port to Camera2 PoE Port	10M	Non-shielded, Detachable	RJ-45, with Plastic Head
PoE Data Cable	EUT PoE Port to Camera3 PoE Port	10M	Non-shielded, Detachable	RJ-45, with Plastic Head
LCD Monitor Data Cable	LCD Monitor DVI Port to EUT DVI Port	1.88M	Non-Shielded, Detachable	Metal Head
LCD Monitor Data Cable	LCD Monitor D-Sub Port to EUT D-Sub Port	1.88M	Non-Shielded, Detachable	Metal Head
Modem Data Cable*4	Modem to EUT COM port	1.5M	Shielded, Detachable	Metal Head
Keyboard Data Cable	Keyboard to PC PS2 port	1.8M	Shielded, Un-detachable	Metal Head

Description	Path	Cable Length	Cable Type	Connector Type
Mouse Data Cable	Mouse to PC PS2 port	1.8M	Shielded, Un-detachable	Metal Head
Microphone& Audio Data Cable*2	Microphone to EUT Microphone Port	1.9M	Non-shielded, Un-detachable	Plastic Head
Printer Data Cable	EUT Parallel port with Dummy	1.5M	Shielded, Detachable	Metal Head

2. Powerline Conducted Emissions

2.1 Test Setup and Procedure

2.1.1 Test Setup



2.1.2 Test Procedure

The measurements are performed in a 3.5m x 3.4m x 2.5m shielded room, which referred as Conduction 01 test site, or a 3m x 3m x 2.3m test site, which referred as Conduction 02 test site. The EUT was placed on non-conduction 1.0m x 1.5m table, which is 0.8 meters above an earth-grounded.

Power to the EUT was provided through the LISN which has the Impedance (50ohm/50uH) vs. Frequency Characteristic in accordance with the standard. Power to the LISNs were filtered to eliminate ambient signal interference and these filters were bonded to the ground plane. Peripheral equipment required to provide a functional system (support equipment) for EUT testing was powered from the second LISN through a ganged, metal power outlet box which is bonded to the ground plane at the LISN.

The interconnecting cables were arranged and moved to get the maximum measurement. Both the line of power cord, hot and neutral, were measured.

The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.

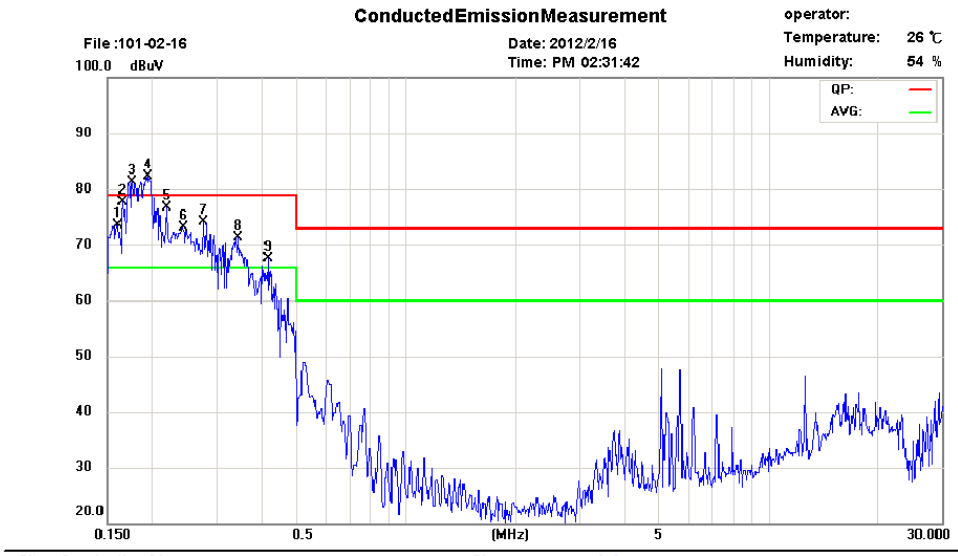
2.1.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range:	150KHz~30MHz
Detector Function:	Quasi-Peak / Average Mode
Resolution Bandwidth:	9KHz

2.2 Conduction Test Data: Configuration 1

Table 2.2.1 Power Line Conducted Emissions (Hot)

Test LAB:International Standards Laboratory (Hsichih Site)
Tel:886-2-26462550
Fax:886-2-26464641



Site: Conduction 01
Limit: CISPR22 Class A Conduction
Company:
EUT Model:
Execute Program:
Note:

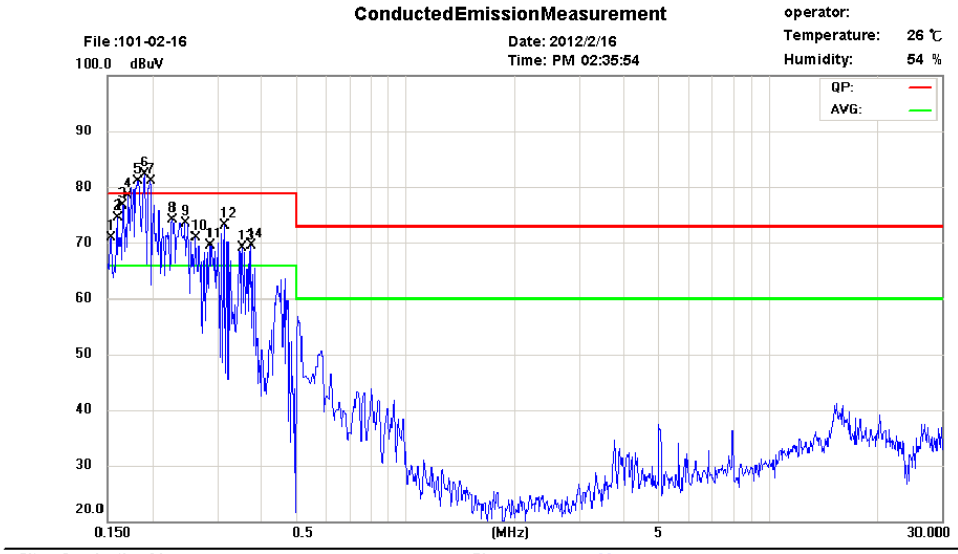
Phase: L1
Power:
Witness:

No.	Frequency MHz	LISN Loss dB	Cable Loss dB	QP Correct dBuV	QP Limit dBuV	QP Margin dB	AVG Correct dBuV	AVG Limit dBuV	AVG Margin dB	Note
1	0.1601	0.29	0.01	64.15	79.0	-14.8	53.11	66.0	-12.8	
2	0.1647	0.29	0.01	73.12	79.0	-5.88	54.90	66.0	-11.1	
3	0.1754	0.28	0.01	76.66	79.0	-2.34	62.52	66.0	-3.48	
4	0.1944	0.28	0.01	78.16	79.0	-0.84	64.61	66.0	-1.39	
5	0.2180	0.28	0.01	66.63	79.0	-12.3	52.35	66.0	-13.6	
6	0.2413	0.28	0.02	69.39	79.0	-9.61	56.84	66.0	-9.16	
7	0.2753	0.28	0.02	62.98	79.0	-16.0	46.61	66.0	-19.3	
8	0.3432	0.29	0.02	60.57	79.0	-18.4	42.61	66.0	-23.3	
9	0.4157	0.29	0.03	56.51	79.0	-22.4	37.58	66.0	-28.4	

Note:
Margin = Corrected Amplitude - Limit
Corrected Amplitude = Receiver Reading + LISN Loss + Cable Loss
A margin of -8dB means that the emission is 8dB below the limit
The frequency spectrum graph is for final peak graph, and the attached table is for QP/AVG test result.
If peak data can pass, it will be shown in "QP/AVG Correct" column, if not, QP/AVG data will instead.
The CISPR 22 limits would be applied to all FCC Part 15 devices.

Table 2.2.2 Power Line Conducted Emissions (Neutral)

Test LAB:International Standards Laboratory (Hsichih Site)
Tel:886-2-26462550
Fax:886-2-26464641



Site: Conduction 01 Phase: N
Limit: CISPR22 Class A Conduction Power:
Company: Witness:
EUT Model:
Execute Program:
Note:

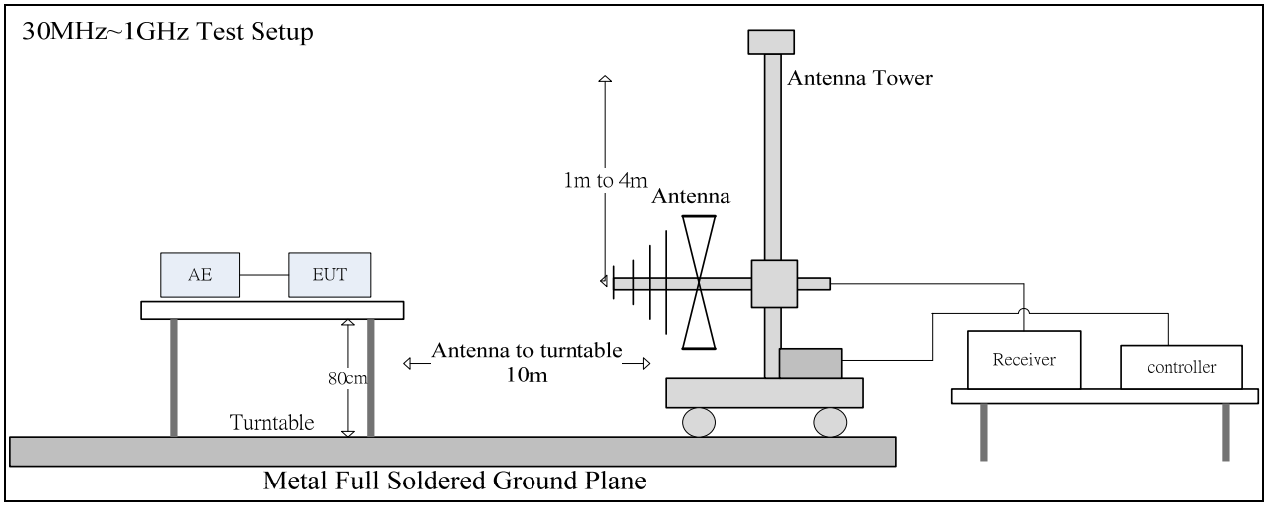
No.	Frequency MHz	LISN Loss dB	Cable Loss dB	QP Correct dBuV	QP Limit dBuV	QP Margin dB	AVG Correct dBuV	AVG Limit dBuV	AVG Margin dB	Note
1	0.1528	0.13	0.01	66.49	79.0	-12.5	53.17	66.0	-12.8	
2	0.1594	0.13	0.01	67.37	79.0	-11.6	54.17	66.0	-11.8	
3	0.1650	0.13	0.01	71.60	79.0	-7.40	54.17	66.0	-11.8	
4	0.1710	0.13	0.01	73.04	79.0	-5.96	58.87	66.0	-7.13	
5	0.1833	0.13	0.01	75.88	79.0	-3.12	64.41	66.0	-1.59	
6	0.1888	0.13	0.01	77.52	79.0	-1.48	64.58	66.0	-1.42	
7	0.1962	0.13	0.01	78.20	79.0	-0.80	62.79	66.0	-3.21	
8	0.2263	0.13	0.02	67.71	79.0	-11.2	54.04	66.0	-11.9	
9	0.2448	0.13	0.02	69.74	79.0	-9.26	56.84	66.0	-9.16	
10	0.2610	0.13	0.02	66.22	79.0	-12.7	50.79	66.0	-15.2	
11	0.2903	0.13	0.02	67.82	79.0	-11.1	52.92	66.0	-13.0	
12	0.3141	0.14	0.02	67.19	79.0	-11.8	50.81	66.0	-15.1	
13	0.3527	0.14	0.03	63.17	79.0	-15.8	45.52	66.0	-20.4	
14	0.3698	0.14	0.03	60.30	79.0	-18.7	41.72	66.0	-24.2	

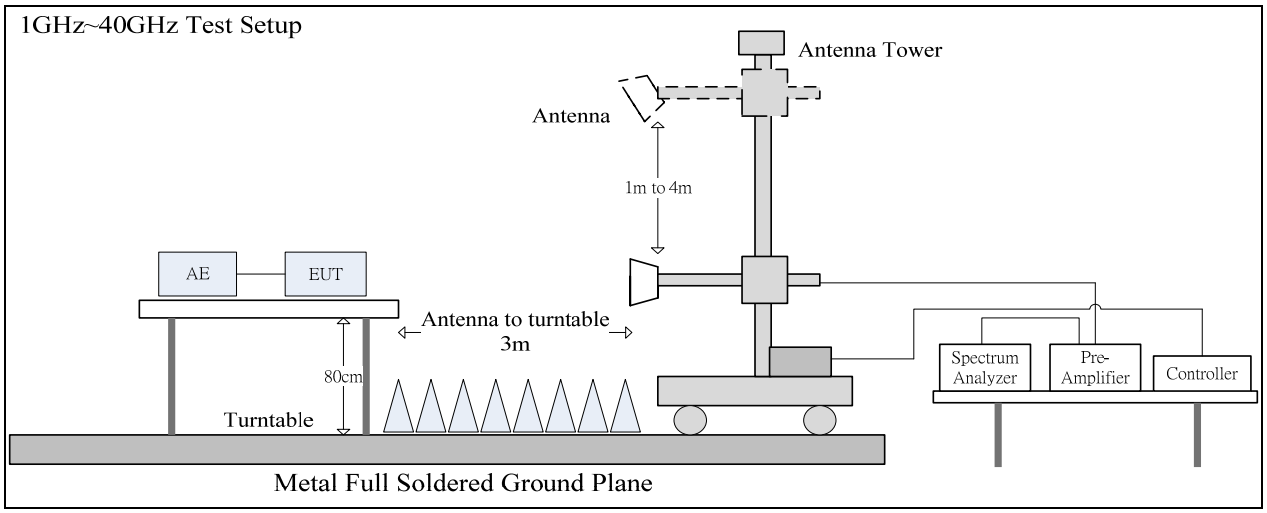
Note:
Margin = Corrected Amplitude - Limit
Corrected Amplitude = Receiver Reading + LISN Loss + Cable Loss
A margin of -8dB means that the emission is 8dB below the limit
The frequency spectrum graph is for final peak graph, and the attached table is for QP/AVG test result. If peak data can pass, it will be shown in "QP/AVG Correct" column, if not, QP/AVG data will instead. The CISPR 22 limits would be applied to all FCC Part 15 devices.

3. Radiated Emissions

3.1 Test Setup and Procedure

3.1.1 Test Setup





3.1.2 Test Procedure

The radiated emissions test will then be repeated on the open site or chamber to measure the amplitudes accurately and without the multiple reflections existing in the shielded room. The EUT and support equipment are set up on the turntable of one of 10 meter open field sites or 10 meter chamber. Desktop EUT are set up on a wooden stand 0.8 meter above the ground or floor-standing arrangement shall be placed on the horizontal ground reference plane. The test volume for a height of up to 30 cm may be obstructed by absorber placed on the ground plane.

For the initial measurements, the receiving antenna is varied from 1-4 meter height and is changed in the vertical plane from vertical to horizontal polarization at each frequency. The highest emissions between 30 MHz to 1000 MHz were analyzed in details by operating the spectrum analyzer and/or EMI receiver in quasi-peak mode to determine the precise amplitude

of the emissions. The highest emissions between 1 GHz to 40 GHz were analyzed in details by operating the spectrum analyzer in peak and average mode to determine the precise amplitude of the emissions.

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the antenna in the cone of radiation from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response. At the highest amplitudes observed, the EUT is rotated in the horizontal plane while changing the antenna polarization in the vertical plane to maximize the reading. The interconnecting cables were arranged and moved to get the maximum measurement. Once the maximum reading is obtained, the antenna elevation and polarization will be varied between specified limits to maximize the readings.

The highest internal source of an EUT is defined as the highest frequency generated or used within the EUT or on which the EUT operates or tunes. If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 6 times the highest frequency or 40 GHz, whichever is less. Spectrum Analyzer Configuration (for the frequencies tested).

3.1.3 Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range:	30MHz--1000MHz
Detector Function:	Quasi-Peak Mode
Resolution Bandwidth:	120KHz

Frequency Range:	Above 1000MHz
Detector Function:	Peak/Average Mode
Resolution Bandwidth:	1MHz

3.2 Radiation Test Data: Configuration 1

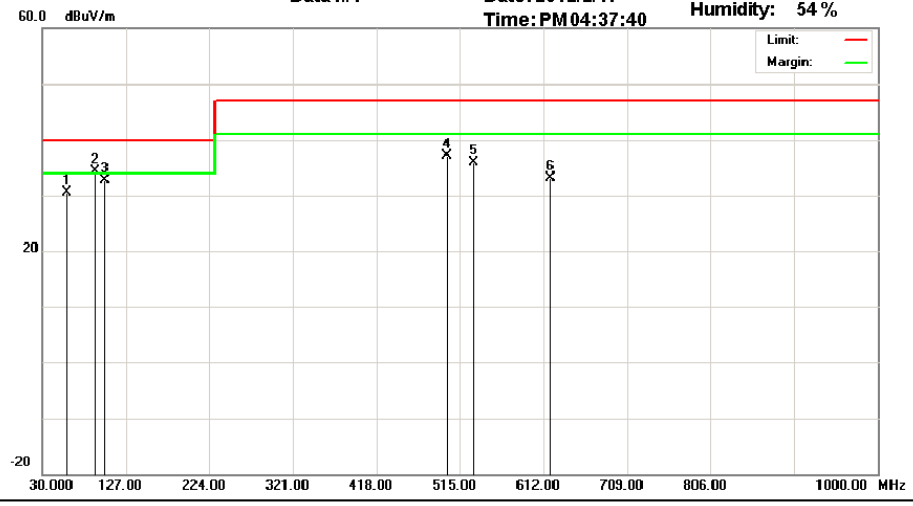
Table 3.2.1 Radiated Emissions (Horizontal)

Test LAB:International Standards Laboratory (Hsichih Site)
Tel:886-2-26462550
Fax:886-2-26464641

RadiatedEmissionMeasurement

Operator:
Temperature: 26 ℃
Humidity: 54 %

File:101-02-17
Data:#1
Date: 2012/2/17
Time: PM 04:37:40



Site : OATS 01
Condition : CISPR22 ClassA 10M Radiation
Company:
EUT Model:
Execute Program:
Note :

Polarization: *Horizontal*
Power:
Witness:

No.	Frequency (MHz)	RX_R (dBuV/m)	Ant_F (dB)	Cab_L (dB)	PreAmp (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	58.6400	21.73	7.89	0.84	0	30.46	40.00	-9.54	140	356	QP
2	90.9300	25.15	8.15	1	0	34.30	40.00	-5.70	139	333	QP
3	102.6600	20.31	11.26	1.05	0	32.62	40.00	-7.38	126	312	QP
4	499.1800	17.10	17.88	2.22	0	37.20	47.00	-9.80	226	205	QP
5	530.2800	15.44	18.14	2.3	0	35.88	47.00	-11.12	279	108	QP
6	618.9500	11.53	19.02	2.51	0	33.06	47.00	-13.94	375	162	QP

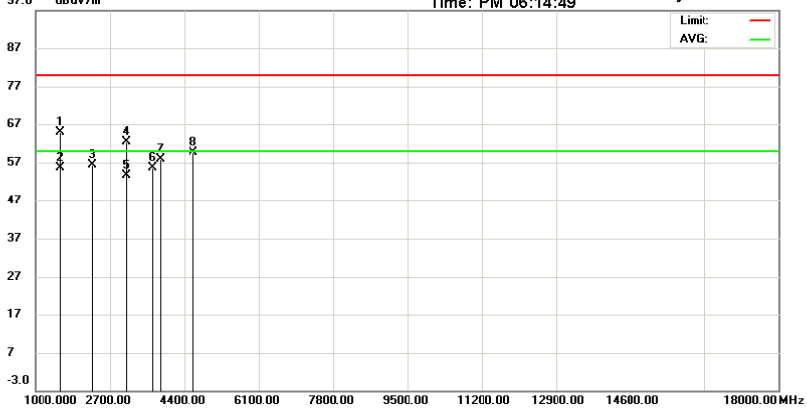
* Note:
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
BILOG Antenna Distance: 10 meters
The CISPR 22 limits would be applied to all FCC Part 15 devices.
Below 1GHz test, if the peak measured value meets the QP limit, it is unnecessary to perform the QP measurement. measurement.

Test LAB:International Standards Laboratory (Hsichih Site)
Tel:886-2-26462550
Fax:886-2-26464641

Radiated Emission Measurement

Operator:
Temperature: 25 ℃
Humidity: 55 %

File :101-02-16
Data :#7
Date: 2012/2/16
Time: PM 06:14:49



Site : Chamber 01
Condition : FCC Class A Radiation
Company :
EUT Model:
Execute Program :
Note :

Polarization: Horizontal
Power :
Witness:

Mk.	Frequency (MHz)	RX_R (dBuV/m)	Ant_F (dB)	Cab_L (dB)	PreAmp (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	1545.000	87.87	25.49	3.67	52.06	64.97	80.00	-15.03	102	9	peak
2	1545.000	78.43	25.49	3.67	52.06	55.53	60.00	-4.47	102	9	AVG
3	2307.692	75.87	28.08	4.54	52.1	56.39	80.00	-23.61	112	259	peak
4	3090.096	78.75	30.4	5.31	52.17	62.29	80.00	-17.71	105	186	peak
5	3090.096	70.20	30.4	5.31	52.17	53.74	60.00	-6.26	105	186	AVG
6	3697.115	70.33	31.85	5.86	52.32	55.72	80.00	-24.28	129	348	peak
7	3860.577	71.91	32.31	6	52.39	57.83	80.00	-22.17	111	94	peak
8	4623.397	72.75	32.72	6.6	52.56	59.51	80.00	-20.49	131	97	peak

*:Maximum data x:Over limit !:over margin

* Note:
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
Horn Antenna Distance: 3 meters
The CISPR 22 limits would be applied to all FCC Part 15 devices.
Above 1GHz test, if the peak measured value meets the average limit, it is unnecessary to perform the average measurement.

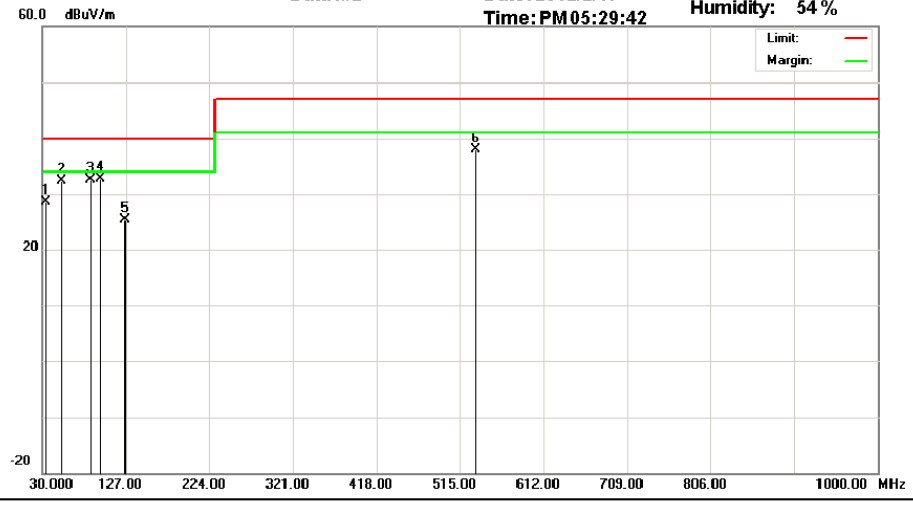
Table 3.2.2 Radiated Emissions (Vertical)

Test LAB:International Standards Laboratory (Hsichih Site)
Tel:886-2-26462550
Fax:886-2-26464641

RadiatedEmissionMeasurement

Operator:
Temperature: 26 ℃
Humidity: 54 %

File :101-02-17
Data :#2
Date: 2012/2/17
Time: PM 05:29:42



Site : OATS 01
Condition : CISPR22 ClassA 10M Radiation
Company:
EUT Model:
Execute Program:
Note :

Polarization: Vertical
Power:
Witness:

No.	Frequency (MHz)	RX_R (dBuV/m)	Ant_F (dB)	Cab_L (dB)	PreAmp (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	33.4600	9.28	18.61	0.67	0	28.56	40.00	-11.44	190	337	QP
2	52.1900	23.62	7.82	0.8	0	32.24	40.00	-7.76	178	137	QP
3	85.9500	23.76	7.78	0.98	0	32.52	40.00	-7.48	179	180	QP
4	97.1100	21.85	9.82	1.03	0	32.70	40.00	-7.30	130	292	QP
5	125.9000	10.14	13.98	1.16	0	25.28	40.00	-14.72	115	160	QP
6	532.6100	17.46	18.16	2.3	0	37.92	47.00	-9.08	107	343	QP

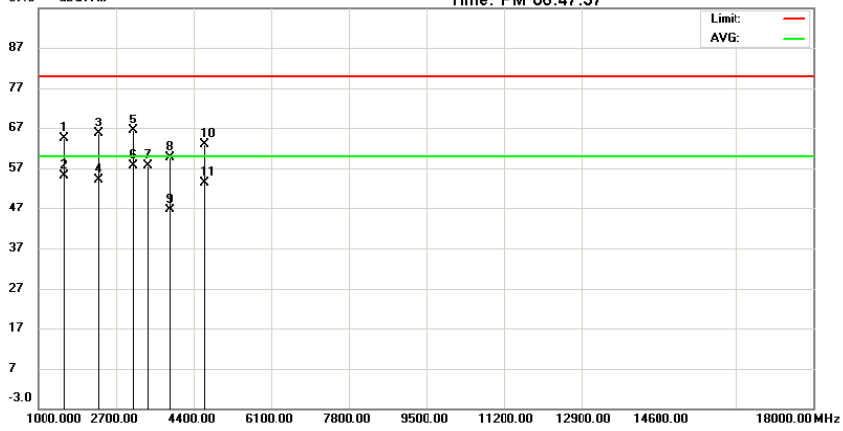
* Note:
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
BILOG Antenna Distance: 10 meters
The CISPR 22 limits would be applied to all FCC Part 15 devices.
Below 1GHz test, if the peak measured value meets the QP limit, it is unnecessary to perform the QP measurement. measurement.

Test LAB:International Standards Laboratory (Hsichih Site)
Tel:886-2-26462550
Fax:886-2-26464641

Radiated Emission Measurement

Operator:
Temperature: 25 ℃
Humidity: 55 %

File :101-02-16
Data :#8
Date: 2012/2/16
Time: PM 06:47:37



Site : Chamber 01
Condition : FCC Class A Radiation
Company :
EUT Model:
Execute Program :
Note :

Polarization: Vertical
Power :
Witness:

Mk.	Frequency (MHz)	RX_R (dBuV/m)	Ant_F (dB)	Cab_L (dB)	PreAmp (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	1545.032	87.20	25.49	3.67	52.06	64.30	80.00	-15.70	100	12	peak
2	1545.032	78.12	25.49	3.67	52.06	55.22	60.00	-4.78	100	12	AVG
3	2317.468	85.02	28.1	4.55	52.1	65.57	80.00	-14.43	100	360	peak
4	2317.468	73.53	28.1	4.55	52.1	54.08	60.00	-5.92	100	360	AVG
5	3090.225	82.93	30.4	5.31	52.17	66.47	80.00	-13.53	100	0	peak
6	3090.225	73.99	30.4	5.31	52.17	57.53	60.00	-2.47	100	0	AVG
7	3397.436	73.29	31.07	5.6	52.22	57.74	80.00	-22.26	113	35	peak
8	3862.660	73.67	32.32	6	52.39	59.60	80.00	-20.40	100	23	peak
9	3862.660	60.74	32.32	6	52.39	46.67	60.00	-13.33	100	23	AVG
10	4635.096	75.97	32.74	6.61	52.56	62.76	80.00	-17.24	100	199	peak
11	4635.096	66.54	32.74	6.61	52.56	53.33	60.00	-6.67	100	199	AVG

*:Maximum data x:Over limit !:over margin

* Note:
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
Horn Antenna Distance: 3 meters
The CISPR 22 limits would be applied to all FCC Part 15 devices.
Above 1GHz test, if the peak measured value meets the average limit, it is unnecessary to perform the average measurement.

4. Appendix

4.1 Appendix A: Warning Labels

Label Requirements

A Class A digital device subject to certification by the FCC shall carry a warning label which includes the following statement:

*** * * W A R N I N G * * ***

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

4.2 Appendix B: Warning Statement

Statement Requirements

The operators' manual for a Class A digital device shall contain the following statements or their equivalent:

*** * * W A R N I N G * * ***

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment This equipment generates, uses, and can radiate radio frequency energy and, if not installed and uses in accordance with the instruction manual, may cause harmful interference to radio communications Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equivalent.

* * * * * * * * *

If the EUT was tested with special shielded cables the operators manual for such product shall also contain the following statements or their equivalent:

Shielded interface cables and/or AC power cord, if any, must be used in order to comply with the emission limits.

4.3 Appendix C: Test Equipment

4.3.1 Test Equipment List

Location CON01	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conduction	Coaxial Cable 1F-C1	EMEC	5D Cable	1F-C1	10/25/2011	10/25/2012
Conduction	LISN 02	EMCO	3825/2	1407	07/28/2011	07/28/2012
Conduction	LISN 03	R&S	ESH3-Z5 831.5518.52	828874/010	07/28/2011	07/28/2012
Conduction	ISN T2 03	FCC	FCC-TLISN-T2-02	20618	07/28/2011	07/28/2012
Conduction	ISN T4 05	FCC	FCC-TLISN-T4-02	20619	07/28/2011	07/28/2012
Conduction	ISN T8 03	FCC	FCC-TLINS-T8-02	20620	07/28/2011	07/28/2012
Conduction	EMI Receiver 15	ROHDE & SCHWARZ	ESCI	101166	04/19/2011	04/19/2012

Location OATS01	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Radiation	BILOG Antenna 10	Sumol Sciences	JB1	A013004-1	07/18/2011	07/18/2012
Radiation	Coaxial Cable 3F-10M	EMCI	CFD400-NL	ISL-R001	03/15/2011	03/15/2012
Radiation	EMI Receiver 13	ROHDE & SCHWARZ	ESCI	101015	02/22/2012	02/22/2013

Location Chamber 01	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Rad. above 1Ghz	Horn Antenna 01	EMCO	3115	9504-4462	11/23/2011	11/23/2012
Rad. above 1Ghz	Horn Antenna 03	COM-Power	AH-826	100A	03/15/2011	03/15/2013
Rad. above 1Ghz	Microwave Cable-06	HUBER SUHNER	SUCFLEX 106	60404/6	07/13/2011	07/13/2012
Rad. above 1Ghz	Preamplifier 17	EMCI	EMC 01630	980009	08/03/2011	08/03/2012
Rad. above 1Ghz	Preamplifier 20	EMCI	EMC051845	980084	10/26/2011	10/26/2012
Rad. above 1Ghz	Spectrum Analyzer 23	ROHDE & SCHWARZ	FSU43	101255	10/06/2011	10/06/2012

4.3.2 Software for Controlling Spectrum/Receiver and Calculating Test Data

Radiation/Conduction	Filename	Version	Issued Date
Hsichih Conduction	EZ EMC	1.1.4.2	2/10/2007
Hsichih Radiation	EZ EMC	1.1.4.2	1/24/2007

4.4 Appendix D: Uncertainty of Measurement

The measurement uncertainty refers to CISPR 16-4-2:2003. The coverage factor k = 2 yields approximately a 95 % level of confidence.

<Conduction 01> ± 3.262dB

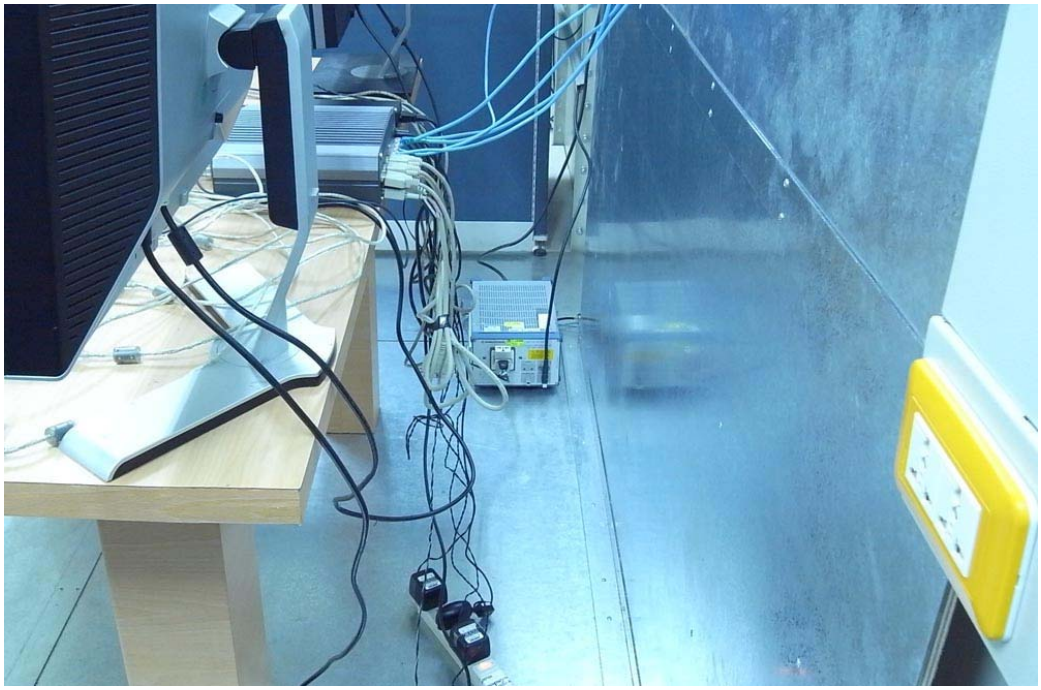
<OATS 01 (10M)>
Horizontal
30MHz~200MHz: ±4.216 dB
200MHz~1GHz: ±4.438 dB
Vertical
30MHz~200MHz: ±4.342 dB
200MHz~1GHz: ±4.426 dB

<Chamber 01 (3M)>
1GHz~18GHz: ± 3.515dB
18GHz~26.5GHz: ± 3.424dB

4.5 Appendix E: Photographs of EUT Configuration Test Set Up

The Front View of Highest Conducted Set-up For EUT

The Back View of Highest Conducted Set-up For EUT



The Front View of Highest Radiated Set-up For EUT

The Back View of Highest Radiated Set-up For EUT