Certificate

Issue Date: June 30, 2014
Ref. Report No. ISL-14HE185FA

Product Name	:	EPIC Board
Model	:	xEPIC-KB07x (x - Where x may be any combination of alphanumeric characters or "-"or blank.)
Applicant	:	AAEON Technology Inc.
Address	:	5F,NO.135,Lane 235,Pao Chiao Rd. Hsin-Tien Dist,New Tapei City,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: 2012- Section 15.107 and 15.109
ANSI C63.4-2009
Industry Canada Interference-Causing Equipment Standard ICES-003 Issue 5: 2012

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 Street, Hsi-Chih Dist.,
New Taipei City 221, Taiwan
Tel: 886-2-2646-2550; Fax: 886-2-2646-4641

FCC TEST REPORT

of

CFR 47 Part 15 Subpart B Class A

Product : **EPIC Board**

Model: **xEPIC-KB07x (x - Where x may be any combination of alphanumeric characters or "-"or blank.)**

Applicant: **AAEON Technology Inc.**

Address: **5F,NO.135,Lane 235,Pao Chiao Rd. Hsin-Tien Dist,New Tapei City,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
FCC: TW1067; IC: IC4067A-1; NEMKO: ELA 113A
VCCI: <Conduction01>C-354, T-1749, <OATS01>R-341, <Chamber01>G-443
*Address:
No. 65, Gu Dai Keng Street,
Hsi-Chih Dist., New Taipei City 221, Taiwan
*Tel: 886-2-2646-2550; Fax: 886-2-2646-4641

Report No.: **ISL-14HE185FA**
Issue Date : **June 30, 2014**

This report totally contains 32 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: 2012- Section 15.107 and 15.109 ANSI C63.4-2009 Industry Canada Interference-Causing Equipment Standard ICES-003 Issue 5: 2012
Equipment Tested:	EPIC Board
Model:	xEPIC-KB07x (x - Where x may be any combination of alphanumeric characters or "-"or blank.)
Applicant:	AAEON Technology Inc.
Sample received Date:	June 16, 2014
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:	Winnie Huang
Test Engineer:	Stanley Tsai
Approved By:	Eddy Hsiung

1.2 Description of EUT

EUT

Product Name	EPIC Board
Condition	Pre-Production
Model Number	xEPIC-KB07x (x - Where x may be any combination of alphanumeric characters or "-"or blank.)
Serial Number	N/A
CPU	AMD G-Series GX-420CA@ 2GHz
VGA Port	One 15-pins
Display Port	One 20-pins
COM Port	Six 9-pins
USB 2.0 Port	Five 4-pins
USB 3.0 Port	Two 9-pins
RJ45 Port	Two 8-pins (10/100/1000M bps)
PS/2 Keyboard Port	One 6-pins
PS/2 Mouse Port	One 6-pins
DC Jack	One
Maximum Resolution	1920*1200
Maximum Operating Frequency	2GHz

All the devices listed below are chosen by the applicant to be the representative configuration for testing in this report. The test worst configuration is listed below:

Radiation & above 1G UP Test configuration:

Configuration	Test Mode
1	Close case
2	Open case

EMI Noise Source

Motherboard Crystal	32.768KHz(Y1)	The same as Photo EUT-3
	48MHz(Y2)	The same as Photo EUT-4
	25MHz (Y3)	The same as Photo EUT-5
	25MHz (Y4)	The same as Photo EUT-6
	27MHz (Y5)	The same as Photo EUT-7

EMI Solution

N/A

Support Unit

Description	AAEON Housing
Power Supply	FSP(Model: FSP060-DBAE1) AC Input: 100-240V~ 1.5A,50-60Hz DC Output: 12V---5A MAX
Power Switch Button	One
SATA Hard Disk	Memo (Model MRSAD4B240GC325S00) 240GB
Memory	DSL DDR3-1066MHz 2GB

1.3 Description of Support Equipment

Unit	Model Serial No.	Brand	Power Cord	FCC ID
24” LED Monitor	ST2420L S/N: CN-0X0K27-74261-27E-131U	DELL	Non-shielded, Detachable	FCC DOC
24” LCD Monitor	U2413f S/N: N/A	DELL	Non-shielded, Detachable	FCC DOC
Modem*6	DM1414 S/N: 0301000557	Aceex	Non-shielded, Without Grounding Pin	IFAXDM1414
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
USB2.0 External HDD Enclosure*5	Ipod nano S/N: N/A	Apple	N/A	FCC DOC
USB3.0 External HDD Enclosure*2	WDBACY5000ABK-PESN S/N: XH1E31FSV80	WD	N/A	FCC DOC
Notebook Personal Computer	U36J S/N: N/A	ASUS	Non-shielded, Detachable	FCC DOC
Rack mountable Switch	DGS-1008D	D-Link	Non-shielded, Detachable	FCC DOC

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 SATA Hard Disk.
B. Send H pattern to the VGA & Display port device (Monitor).
C. Send H pattern to the COM port device (Modem).
D. Read and write data in the USB2.0 Hard Disk through EUT USB2.0 port.
E. Read and write data in the USB3.0 Hard Disk through EUT USB3.0 port.
F. Send package to the Router LAN port (Router).
G. Receive and transmit package of EUT to the Rack mountable Switch HUB through LAN port.
H. Repeat the above steps.

	Filename	Issued Date
SATA Hard Disk	InterEMC.exe	9/04/2000
Monitor	InterEMC.exe	9/04/2000
Modem	InterEMC.exe	9/04/2000
External HDD Enclosure USB2.0	InterEMC.exe	9/04/2000
External HDD Enclosure USB3.0	InterEMC.exe	9/04/2000
RJ45	ping.exe	05/05/1999
RJ45	Tfgen.exe	06/23/1999

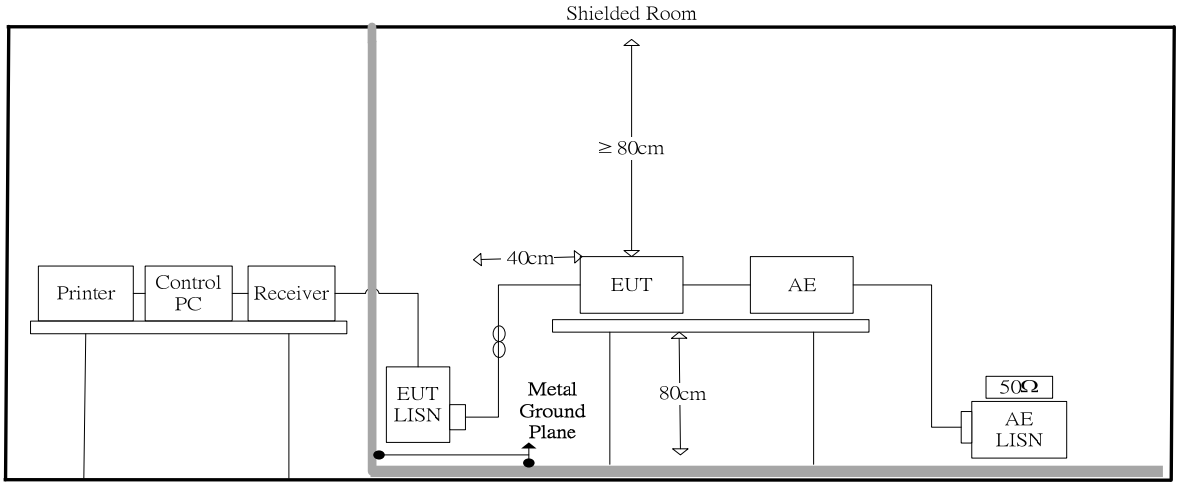
1.5 I/O Cable Condition of EUT and Support Units

Description	Path	Cable Length	Cable Type	Connector Type
AC Power Cord	110V (~240V) to ADAPTER	1.5M	Non-shielded, Detachable	Plastic Head
LCD Monitor Data Cable	LCD Monitor VGA Port to EUT VGA Port	1.88M	Shielded, Detachable	Metal Head
LCD Monitor Data Cable	LCD Monitor Display Port to EUT Display Port	1.65M	Shielded, Detachable	Metal Head
Modem Data Cable*6	Modem to EUT COM port	1.5M	Shielded, Detachable	Metal Head
Keyboard Data Cable	Keyboard to EUT PS/2 Port	2.0M	Non-Shielded, Un-detachable	Metal Head
Mouse Data Cable	Mouse to EUT PS/2 Port	1.8M	Non-Shielded, Un-detachable	Metal Head
USB2.0 Data Cable*5	USB2.0 External HDD Enclosure USB2.0 Port to EUT USB2.0 Port	1M	Shielded, Detachable	Metal Head
USB3.0 Data Cable*2	USB3.0 External HDD Enclosure USB3.0 Port to EUT USB3.0 Port	1M	Shielded, Detachable	Metal Head
RJ45 Data Cable*2	EUT RJ45 Port to Switch HUB RJ45 Port	1.5M	Non-shielded, Detachable	RJ-45, with Plastic Head
RJ45 Data Cable	Switch HUB RJ45 Port to Notebook RJ45 Port	10M	Non-shielded, Detachable	RJ-45, with Plastic 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. All of the interface cables were manipulated according to ANSI C63.4 requirements.

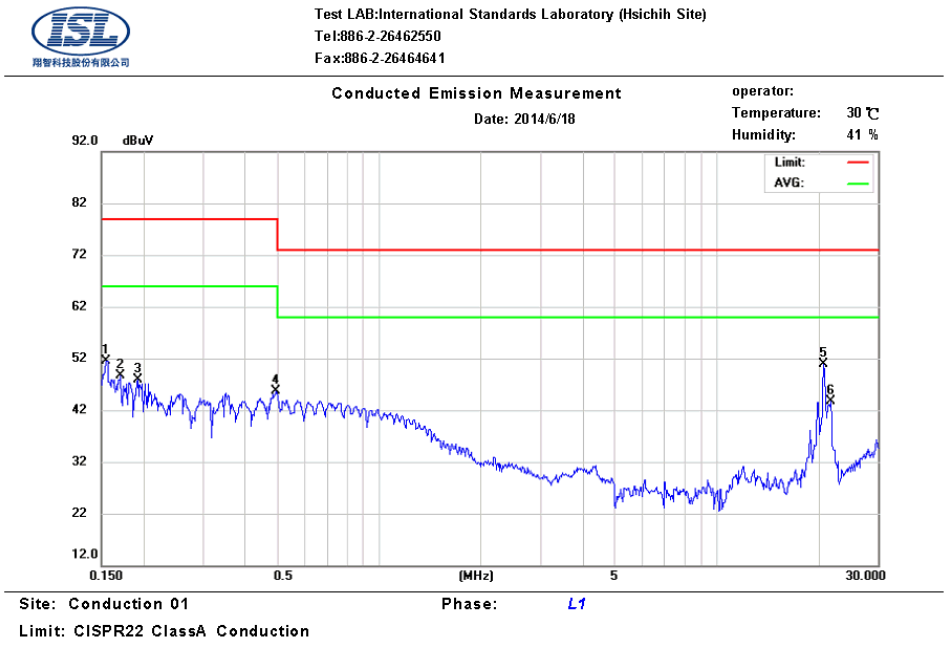
The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.

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

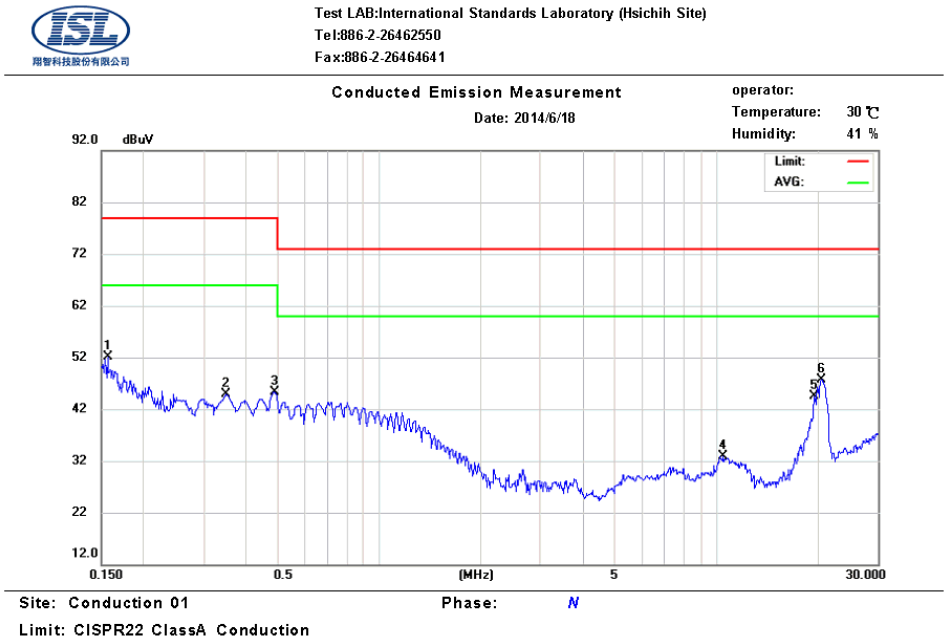
Table 2.2.1 Power Line Conducted Emissions (Line)



No.	Frequency (MHz)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)	Note
1	0.16	9.63	51.55	79.00	-27.45	51.55	66.00	-14.45	
2	0.17	9.63	48.61	79.00	-30.39	48.61	66.00	-17.39	
3	0.19	9.63	47.92	79.00	-31.08	47.92	66.00	-18.08	
4	0.49	9.64	45.63	79.00	-33.37	45.63	66.00	-20.37	
5	20.65	9.84	50.99	73.00	-22.01	50.99	60.00	-9.01	
6	21.65	9.85	43.80	73.00	-29.20	43.80	60.00	-16.20	

Note:
Margin = QP/AVG Emission - Limit
QP/AVG Emission = Receiver Reading + Correct Factor
Correct Factor = 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)



No.	Frequency (MHz)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)	Note
1	0.16	9.64	52.06	79.00	-26.94	52.06	66.00	-13.94	
2	0.35	9.65	44.90	79.00	-34.10	44.90	66.00	-21.10	
3	0.49	9.65	45.28	79.00	-33.72	45.28	66.00	-20.72	
4	10.45	9.82	32.88	73.00	-40.12	32.88	60.00	-27.12	
5	19.38	10.02	44.43	73.00	-28.57	44.43	60.00	-15.57	
6	20.40	10.03	47.72	73.00	-25.28	47.72	60.00	-12.28	

Note:
Margin = QP/AVG Emission - Limit
QP/AVG Emission = Receiver Reading + Correct Factor
Correct Factor = 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.

2.3 Test Setup Photo

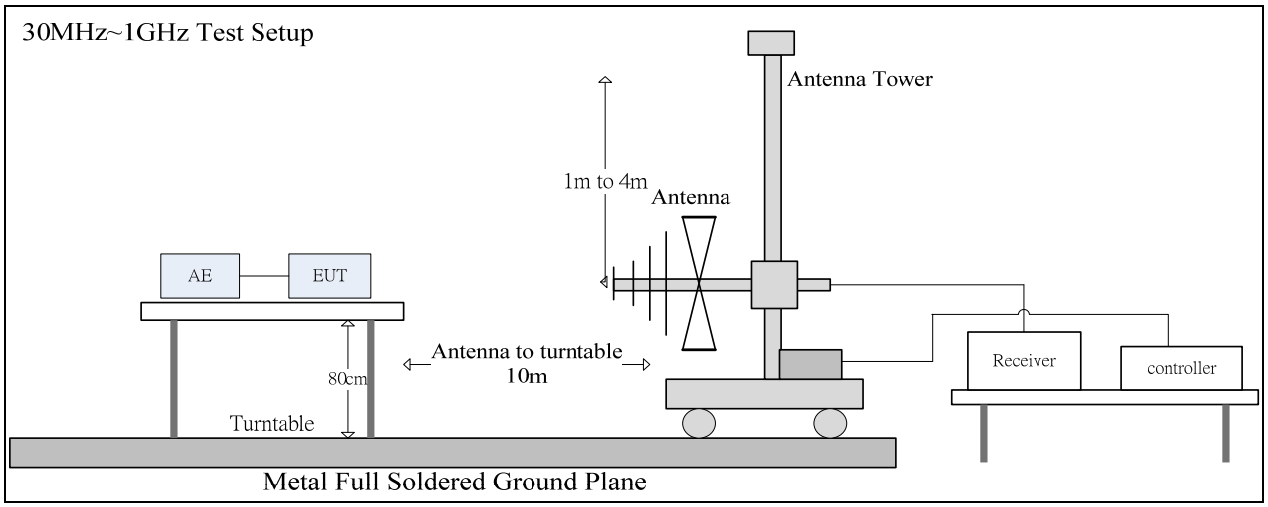
Front View

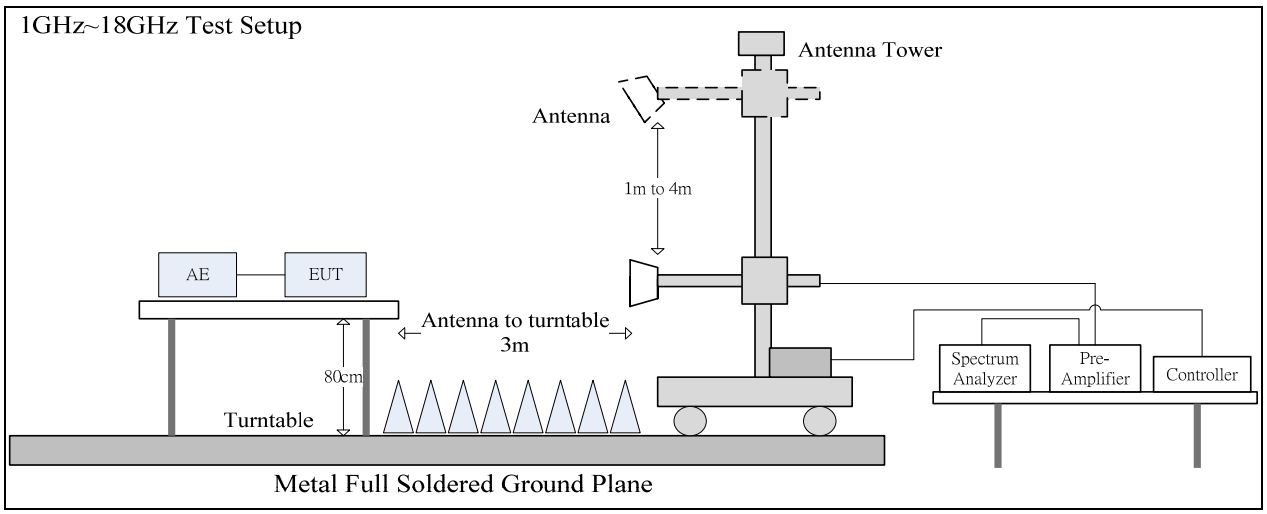
Back View

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. All of the interface cables were manipulated according to ANSI C63.4 requirements.

The highest internal source of the 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 5 times the highest frequency or 40 GHz, whichever is less. Spectrum Analyzer Configuration (for the frequencies tested).

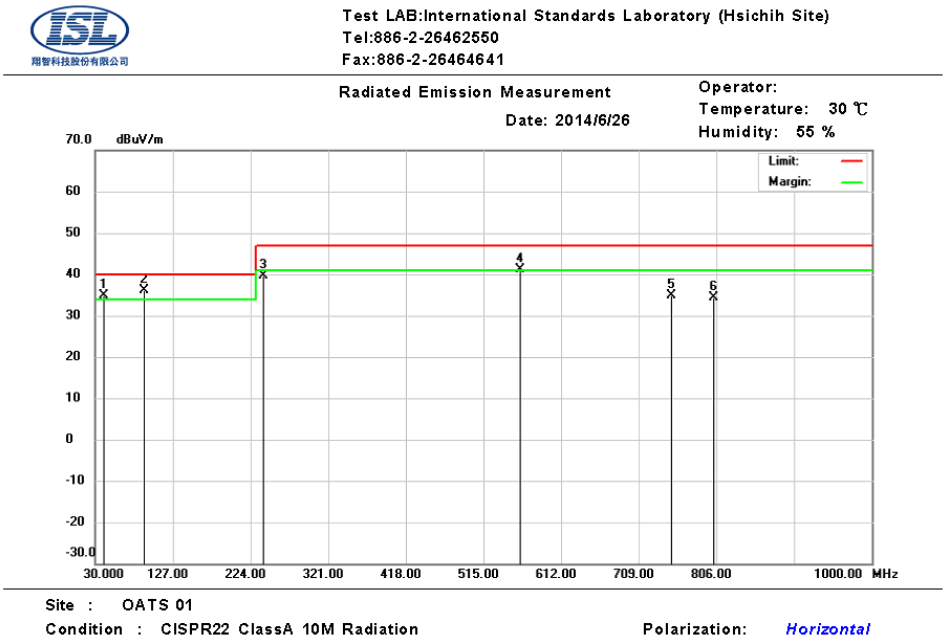
3.1.3 Spectrum Analyzer Configuration (for the frequencies tested)

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)

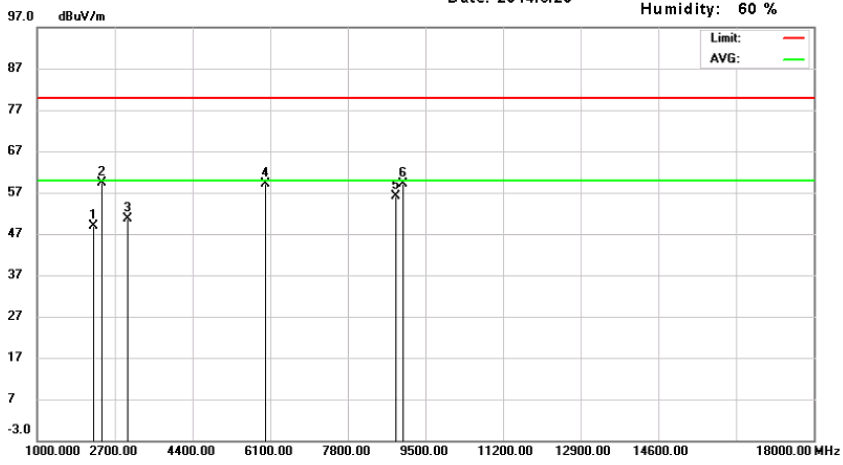


Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	40.6700	20.57	14.39	34.96	40.00	-5.04	100	26	QP
2	91.1100	26.96	9.20	36.16	40.00	-3.84	221	265	QP
3	239.5200	26.38	13.19	39.57	47.00	-7.43	103	23	QP
4	560.5900	19.63	21.43	41.06	47.00	-5.94	105	338	QP
5	749.7400	10.89	23.96	34.85	47.00	-12.15	184	147	QP
6	803.0900	9.57	24.88	34.45	47.00	-12.55	225	188	QP

* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = Antenna Correction Factor + Cable Loss
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
Date: 2014/6/20
Operator:
Temperature: 26 ℃
Humidity: 60 %

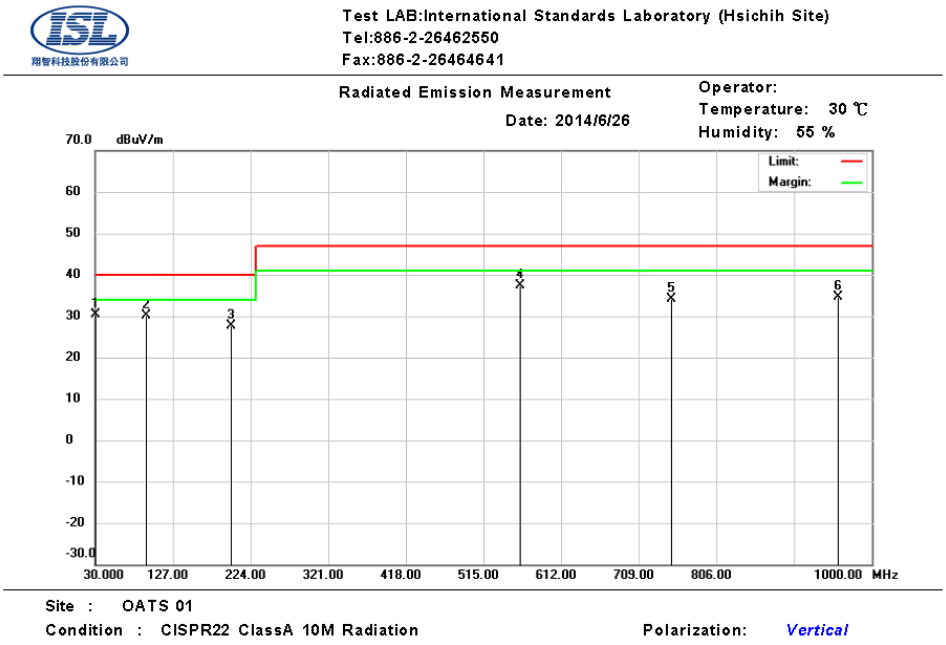


Site : Chamber 01
Condition : FCC ClassA 3M above1GHz Radiation
Polarization: *Horizontal*

Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	2241.000	64.18	-15.26	48.92	80.00	-31.08	100	110	peak
2	2411.000	74.39	-14.91	59.48	80.00	-20.52	164	227	peak
3	2989.000	64.60	-13.86	50.74	80.00	-29.26	170	351	peak
4	5998.000	68.40	-9.36	59.04	80.00	-20.96	117	346	peak
5	8854.000	62.69	-6.63	56.06	80.00	-23.94	100	297	peak
6	9007.000	65.69	-6.47	59.22	80.00	-20.78	182	279	peak

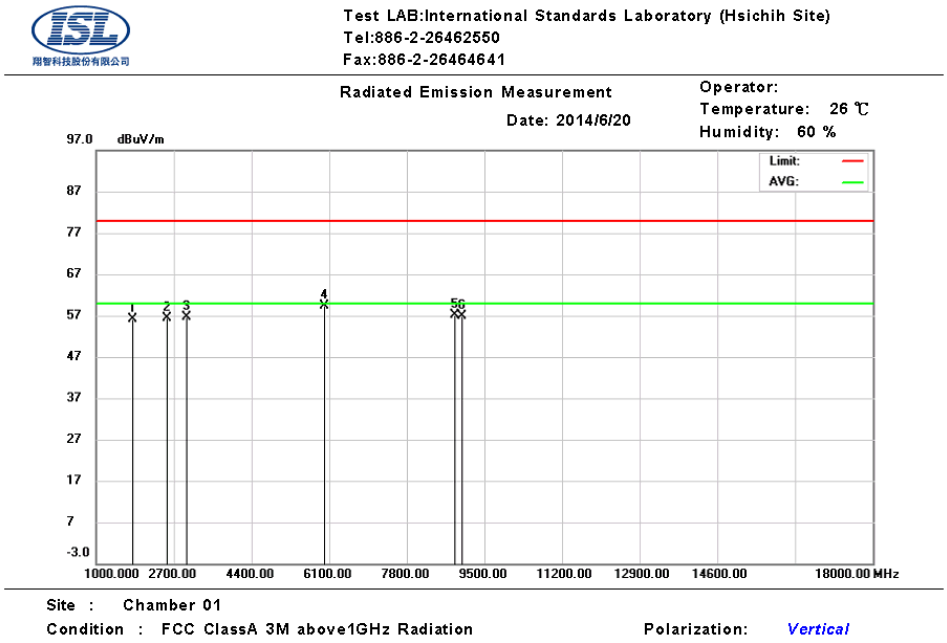
* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
Horn Antenna Distance: 3 meters
The CISPR 22 limits would be applied to all FCC 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)



Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	30.0000	8.63	21.65	30.28	40.00	-9.72	198	190	QP
2	94.0200	20.23	10.00	30.23	40.00	-9.77	122	255	QP
3	199.7500	12.96	14.58	27.54	40.00	-12.46	243	1	QP
4	560.5900	15.84	21.43	37.27	47.00	-9.73	141	200	QP
5	749.7400	10.13	23.96	34.09	47.00	-12.91	100	293	QP
6	957.3200	7.52	27.08	34.60	47.00	-12.40	100	221	QP

* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = Antenna Correction Factor + Cable Loss
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.

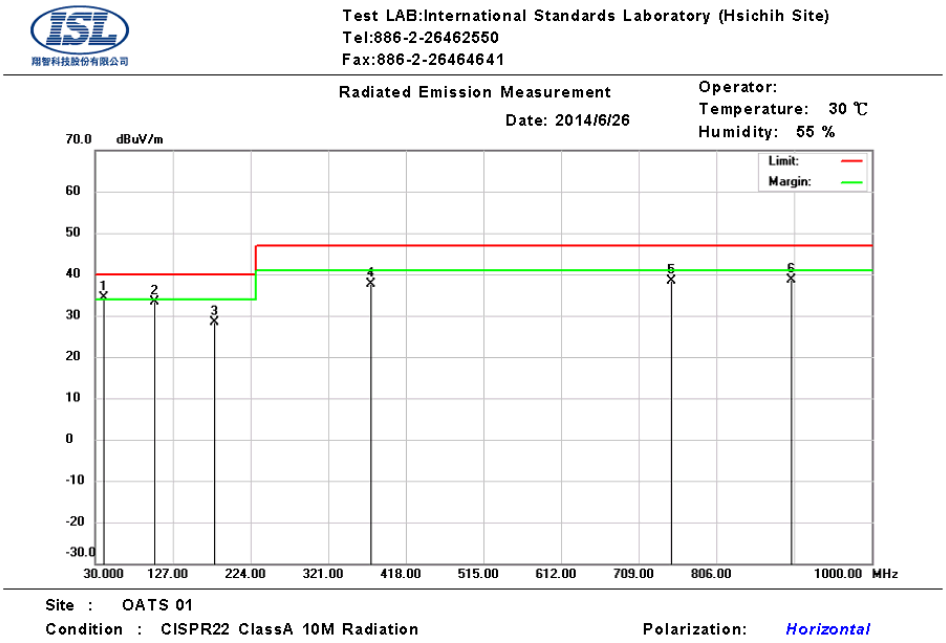


Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	1799.000	73.85	-17.69	56.16	80.00	-23.84	183	98	peak
2	2547.000	70.98	-14.65	56.33	80.00	-23.67	122	328	peak
3	2989.000	70.57	-13.86	56.71	80.00	-23.29	107	255	peak
4	5998.000	68.77	-9.36	59.41	80.00	-20.59	173	300	peak
5	8854.000	63.68	-6.63	57.05	80.00	-22.95	146	315	peak
6	9007.000	63.38	-6.47	56.91	80.00	-23.09	124	78	peak

* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = 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.

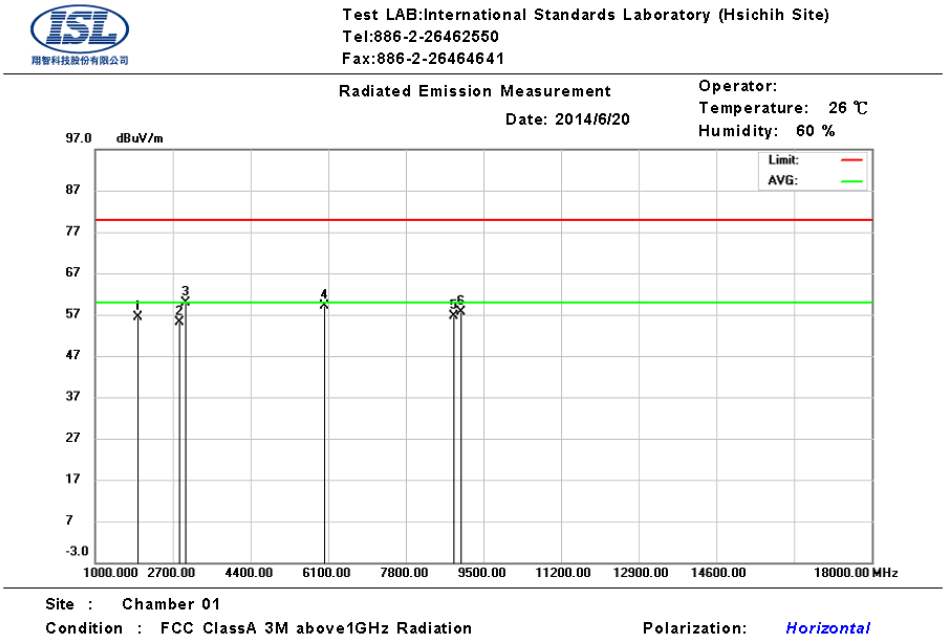
3.3 Radiation Test Data: Configuration 2

Table 3.3.1 Radiated Emissions (Horizontal)



Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	40.6700	19.87	14.39	34.26	40.00	-5.74	281	272	QP
2	104.6900	20.60	12.89	33.49	40.00	-6.51	292	86	QP
3	179.3800	15.32	13.06	28.38	40.00	-11.62	277	170	QP
4	374.3500	20.54	17.17	37.71	47.00	-9.29	350	164	QP
5	749.7400	14.38	23.96	38.34	47.00	-8.66	203	238	QP
6	899.1200	12.13	26.38	38.51	47.00	-8.49	397	357	QP

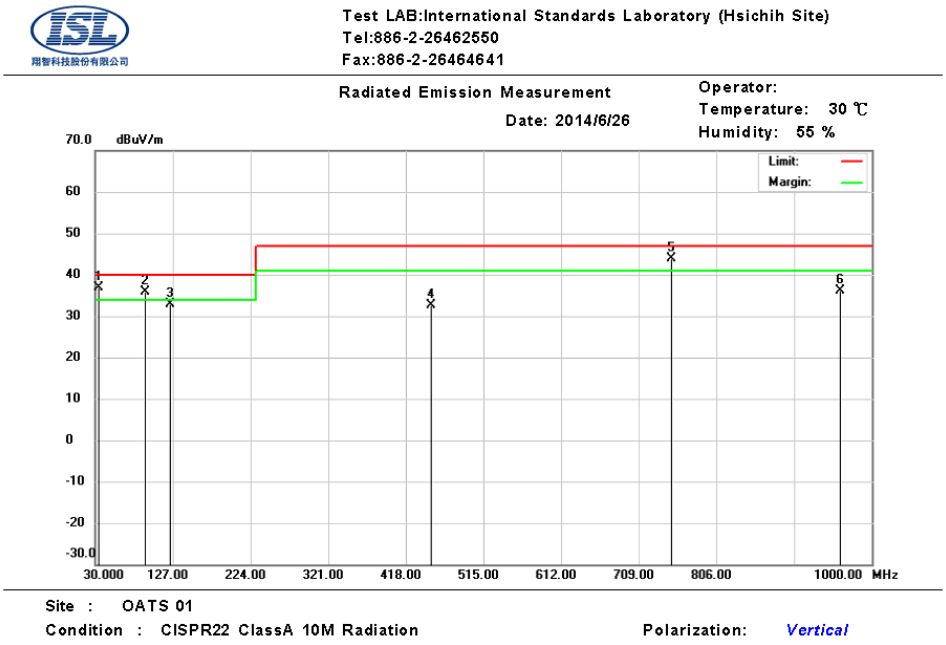
* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = Antenna Correction Factor + Cable Loss
A margin of -8dB means that the emission is 8dB below the limit
BILOG Antenna Distance: 10 meters
The CISPR 22 limits would be applied to all FCC Part 15 devices.
Below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



Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	1935.000	72.69	-16.37	56.32	80.00	-23.68	124	85	peak
2	2853.000	69.30	-14.11	55.19	80.00	-24.81	128	302	peak
3	2989.000	73.70	-13.86	59.84	80.00	-20.16	192	286	peak
4	6000.100	68.59	-9.36	59.23	80.00	-20.77	153	151	peak
5	8854.000	63.25	-6.63	56.62	80.00	-23.38	129	22	peak
6	9007.000	64.09	-6.47	57.62	80.00	-22.38	158	205	peak

* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = 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 3.3.2 Radiated Emissions (Vertical)



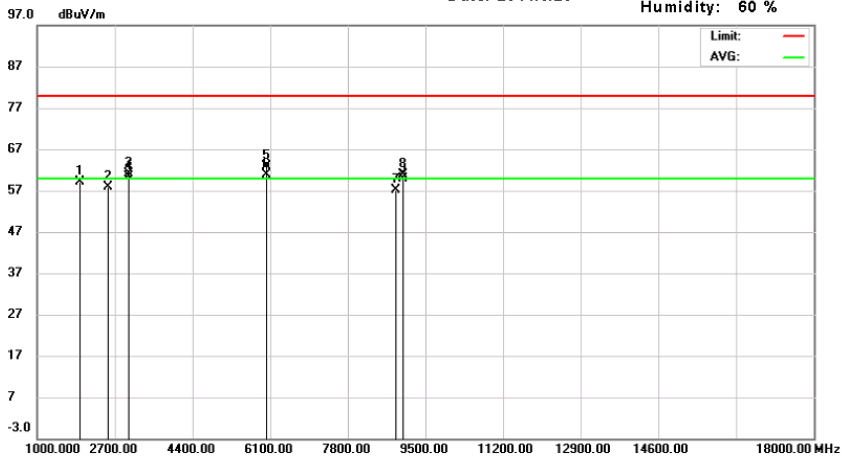
Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	34.8500	18.06	18.75	36.81	40.00	-3.19	269	34	QP
2	93.0500	26.08	9.73	35.81	40.00	-4.19	378	170	QP
3	123.1200	17.68	15.31	32.99	40.00	-7.01	100	186	QP
4	450.0100	12.99	19.53	32.52	47.00	-14.48	366	69	QP
5	749.7400	19.98	23.96	43.94	47.00	-3.06	324	129	QP
6	960.0300	8.96	27.11	36.07	47.00	-10.93	145	174	QP

* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = Antenna Correction Factor + Cable Loss
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
Date: 2014/6/20

Operator:
Temperature: 26 ℃
Humidity: 60 %



Site : Chamber 01
Condition : FCC ClassA 3M above1GHz Radiation Polarization: *Vertical*

Mk.	Frequency (MHz)	RX_R (dBuV)	Correct Factor(dB/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.Pos (cm)	Tab.Pos (deg.)	Detector
1	1935.000	75.38	-16.37	59.01	80.00	-20.99	165	73	peak
2	2547.000	72.53	-14.65	57.88	80.00	-22.12	186	44	peak
3	2999.800	74.98	-13.84	61.14	80.00	-18.86	160	218	peak
4	2999.800	74.13	-13.84	60.29	60.00	0.29	160	218	AVG
5	6000.000	72.21	-9.36	62.85	80.00	-17.15	167	316	peak
6	6000.000	70.32	-9.36	60.96	60.00	0.96	167	316	AVG
7	8854.000	63.73	-6.63	57.10	80.00	-22.90	330	189	peak
8	9000.000	67.48	-6.48	61.00	80.00	-19.00	196	310	peak
9	9000.000	66.26	-6.48	59.78	60.00	-0.22	196	310	AVG

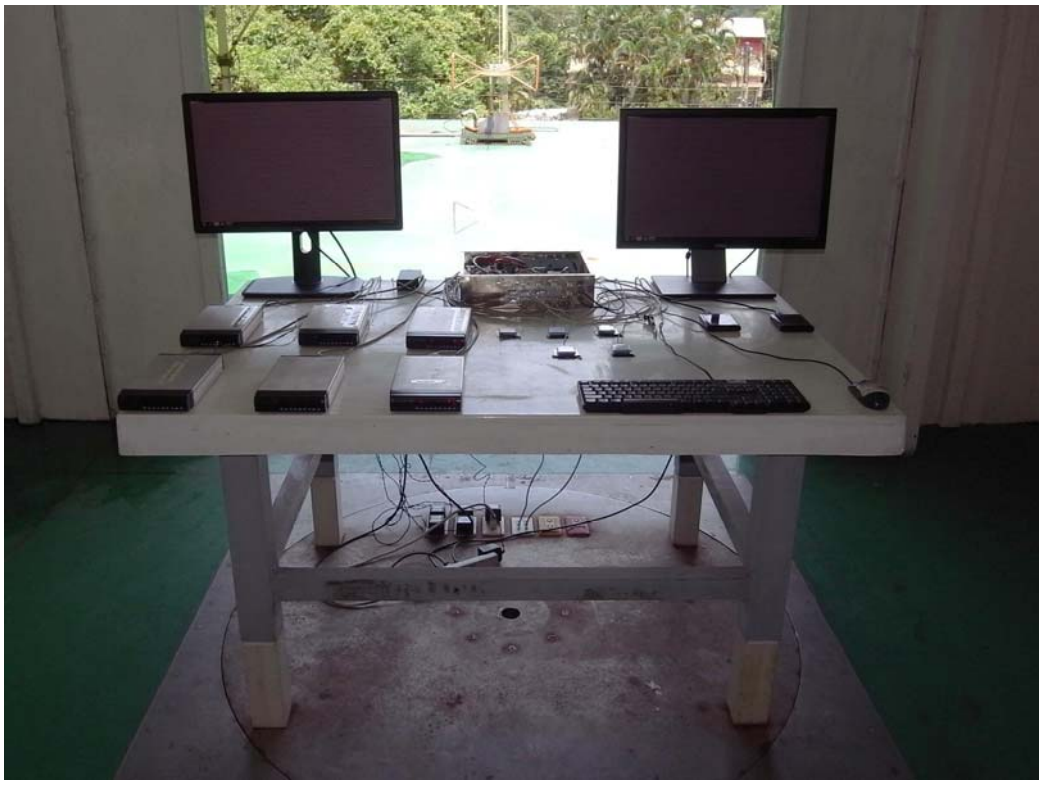
* Note:
Margin = Emission – Limit
Emission = Radiated Amplitude + Correct Factor
Correct Factor = Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
Horn Antenna Distance: 3 meters
The CISPR 22 limits would be applied to all FCC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

3.4 Test Setup Photo

(Configuration 1)
Front View

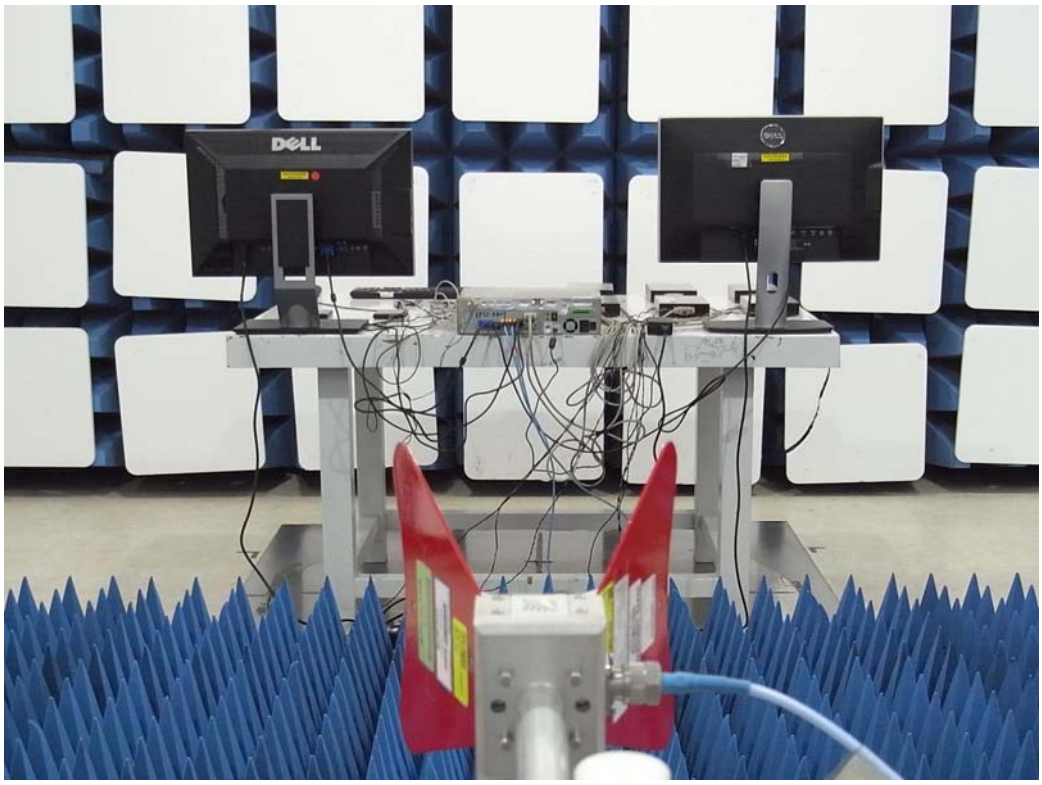
Back View

(Configuration 2)
Front View

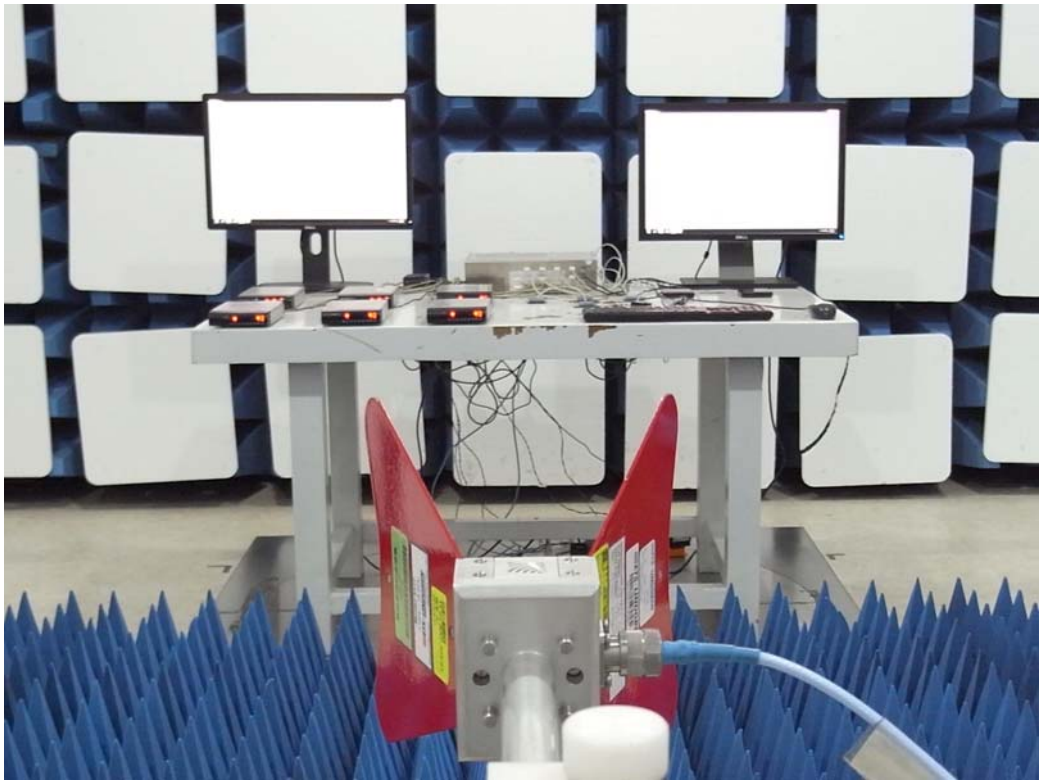


Back View

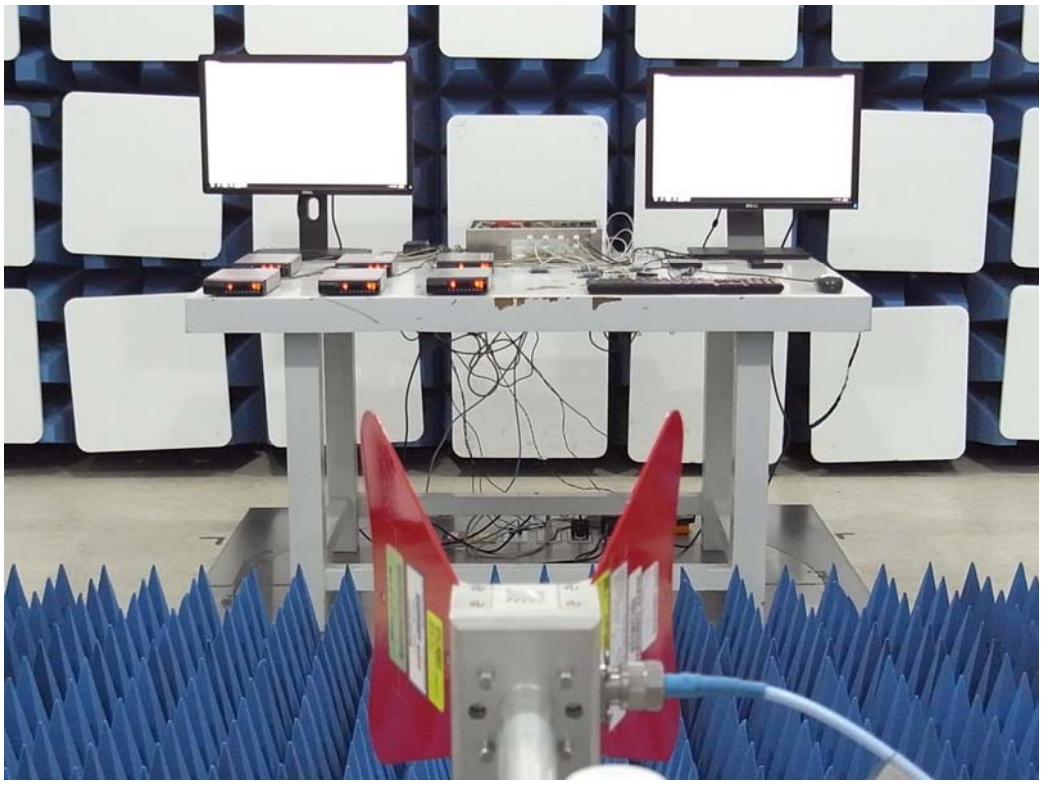
(Configuration 1)
Front View (above 1GHz)



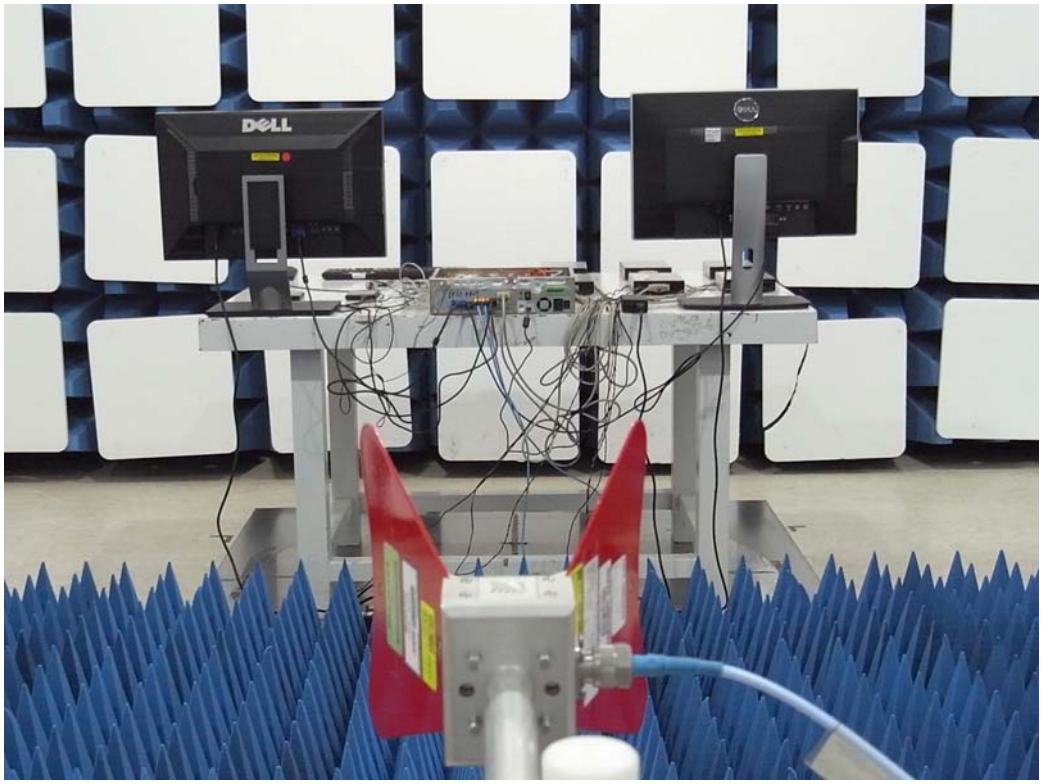
Back View (above 1GHz)



(Configuration 2)
Front View (above 1GHz)



Back View (above 1GHz)



4. Appendix

4.1 Appendix A: Warning Labels

Label Requirements

A Class A digital device subject to Verification of 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	HUBER SUHNER	RG214U	389942	10/25/2013	10/25/2014
Conduction	LISN 21	ROHDE & SCHWARZ	ENV216	101476	05/26/2014	05/26/2015
Conduction	LISN 22	ROHDE & SCHWARZ	ENV216	101478	05/26/2014	05/26/2015
Conduction	ISN T2 03	FCC	FCC-TLISN-T2-02	20618	08/13/2013	08/13/2014
Conduction	ISN T4 05	FCC	FCC-TLISN-T4-02	20619	08/13/2013	08/13/2014
Conduction	ISN T8 08	Teseq GmbH	ISN T800	36155	01/28/2014	01/28/2015
Conduction	ISN T8 06 (Shielding)	Teseq GmbH	ISN ST08	33999	08/10/2013	08/10/2014
Conduction	EMI Receiver 15	ROHDE & SCHWARZ	ESCI	101166	05/06/2014	05/06/2015

Location OATS01	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Radiation	BILOG Antenna 10	Sumol Sciences	JB1	A013004-1	07/10/2013	07/10/2014
Radiation	Coaxial Cable 3F-10M	EMCI	CFD400-NL	ISL-R001	03/14/2014	03/14/2015
Radiation	EMI Receiver 13	ROHDE & SCHWARZ	ESCI	101015	04/11/2014	04/11/2015

Location Chamber 01	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Rad. above 1Ghz	Horn Antenna 11	ETS-LINDGREN	3117	00114397	03/21/2014	03/21/2015
Rad. above 1Ghz	Horn Antenna 03	COM-Power	AH-826	08010	04/01/2013	04/01/2015
Rad. above 1Ghz	Horn Antenna 05	Com-Power	AH-640	100A	01/09/2013	01/09/2015
Rad. above 1Ghz	Microwave Cable-16	HUBER SUHNER	SUCFLEX 104	345761/4	01/06/2014	01/06/2015
Rad. above 1Ghz	Preamplifier 20	EMCI	EMC051845	980084	11/06/2013	11/06/2014
Rad. above 1Ghz	Microwave Cable-19	HUBER SUHNER	SUCFLEX 102	MY 2151/2	05/22/2014	05/22/2015
Rad. above 1Ghz	Preamplifier 22	EMCI	EMC184045	980124	04/09/2014	04/09/2015
Rad. above 1Ghz	Spectrum Analyzer 23	ROHDE & SCHWARZ	FSU43	101255	11/07/2013	11/07/2014

4.3.2 Software for Controlling Spectrum/Receiver and Calculating Test Data

Site	Filename	Version	Issue Date
Conduction/Radiation	EZ EMC	ISL-03A2	3/6/2013

4.4 Appendix D: Uncertainty of Measurement

The measurement uncertainty refers to CISPR 16-4-2:2011. The coverage factor k = 2 yields approximately a 95 % level of confidence.

<Conduction 01>
AMN: ±3.28dB
ISN T2: ±3.86dB
ISN T4: ±4.27dB
ISN T8: ±3.86dB

<OATS 01 (10M)>
Horizontal
30MHz~200MHz: ±3.36dB
200MHz~1000MHz: ±4.08dB
Vertical
30MHz~200MHz: ±3.99dB
200MHz~1000MHz: ±4.16dB

<Chamber 01 (3M)>
1GHz~6GHz: ±4.70dB
6GHz~18GHz: ±4.91dB
18GHz~26.5GHz: ±4.34dB
18GHz~26.5GHz: ±4.38dB