AS/NZS Test Report

Product Name ： Scanner

Model No. ： IRIScan™ Executive x

Applicant ： AVISION INC.

Address ： No.20, Creation Rd.1, Science Park,
Hsinchu, Taiwan 300 R.O.C

Date of Receipt ： 2016/05/06

Report No. ： 1650219R-ITASP01V00

Issued Date ： 2016/05/18

Report Version ： V1.0

Testing Laboratory
3024

Test Report Certification

Issued Date : 2016/05/18
Report No. : 1650219R-ITASP01V00

Product Name	:	Scanner
Applicant	:	AVISION INC.
Address	:	No.20, Creation Rd.1, Science Park, Hsinchu, Taiwan 300 R.O.C
Manufacturer	:	1. AVISION INC. 2. AVISION(Suzhou) CO., LTD
Model No.	:	IRIScan™ Executive x
EUT Voltage	:	AC 100-240V, 50/60Hz
Trade Name	:	I.R.I.S.
Applicable Standard	:	AS/NZS CISPR 22: 2009+A1: 2010 Class B
Test Result	:	Complied
Performed Location	:	Hsinchu EMC Laboratory N0. 75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan TEL:+886-3-592-8858 / FAX:+886-3-592-8859

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(Lyla Yang / Engineering Adm. Assistant)

Reviewed By : Mensheo Sie

(Mensheo Sie / Engineer)

Approved By : Ben Wu

(Ben Wu / Project Manager)

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**
Germany	**:**	**TUV Rheinland**
USA	**:**	**FCC**
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/english/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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

LinKou Testing Laboratory :
No. 5, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

Product Name	Scanner
Trade Name	I.R.I.S.
Model No.	IRIScan™ Executive x

Component	
USB Cable	Shielded, 1m, one ferrite core bonded.

Note:

1. This EUT is a Scanner.

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: Scan to PC	
Final Test Mode	
Emission	Mode 1: Scan to PC

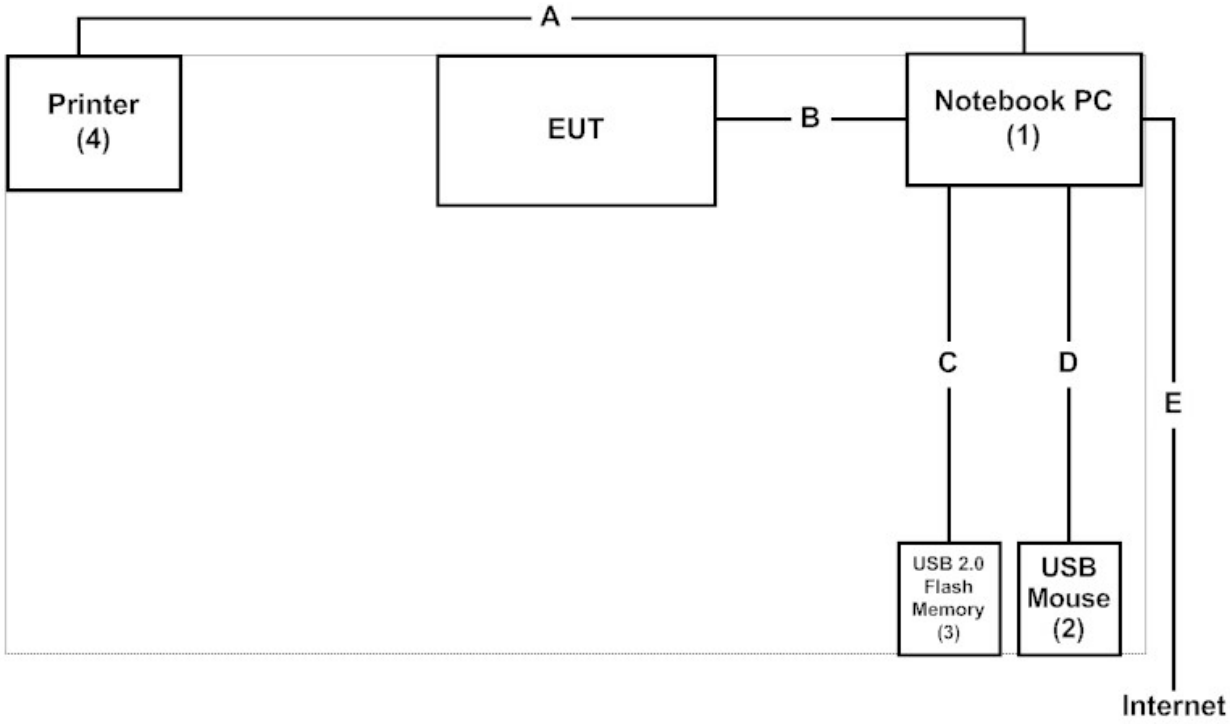
1.3. Tested System Details

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	Notebook PC	Lenovo	B590	WB15330091	Non-Shielded, 1.8m, one ferrite core bonded
2	USB Mouse	Microsoft	1113	1636005	--
3	USB 2.0 Flash Memory	Apacer	AH223	N/A	--
4	Printer	HP	deskiet 5652	MY3621M0PS	Non-Shielded, 3.7m, one ferrite core bonded

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Printer Cable	Shielded, 2m
B	USB Cable	Shielded, 1m, one ferrite core bonded.
C	USB 2.0 Flash Memory Cable	Shielded, 1m
D	USB Mouse Cable	Shielded, 1.8m
E	LAN Cable	Non-Shielded, 10m

1.5. EUT Exercise Software

1	Test system is in accord with EUT user manual (refer to 1.4 configuration of tested system)
2	Turn on the power of all equipment
3	Boot the Notebook PC from Hard Disk.
4	Notebook PC reads test software from disk and then sent to scanner.
5	The EUT will start to operate and scan the video figure into Notebook PC.
6	Notebook PC will display ” video figure” on monitor.
7	Repeat the above procedure (4) to (6).

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	AS/NZS CISPR 22: 2009+A1: 2010	Yes	No
Impedance Stabilization Network	AS/NZS CISPR 22: 2009+A1: 2010	No	No
Radiated Emission	AS/NZS CISPR 22: 2009+A1: 2010	Yes	No

2.2. List of Test Equipment

Conducted Emission/ SR3

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
LISN	R&S	ENV216	100096	2013/08/12
LISN	R&S	ESH3-Z5	836679/022	2014/01/20
Test Receiver	R&S	ESCS 30	825442/017	2014/01/01
Coaxial Cable	Harbour	RG-400	SR3	2013/08/14
Quietek EMI system	Quietek	Version 2.2	SR3	N/A

Radiated Emission/ Site1 (Under 1GHz)

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2915	2013/08/14
Spectrum Analyzer	Advantest	R3162C	91700283	2013/11/12
Test Receiver	R&S	ESCS 30	100122	2014/03/03
Coaxial Switch	Anritsu	MP59B	6200410245	2013/08/14
Coaxial Cable	Suhner	RG-214U	OATS1	2013/08/14
Quietek EMI system	Quietek	Version 2.2	Site1	N/A

Radiated Emission/ CB1 (Above 1GHz)

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Pre-Amplifier	MITEQ	JS41-00104000-58-5P	1438359	2014/04/21
PSA Series Spectrum analyzer	Agilent	E4440A	MY46187335	2014/01/27
Quietek EMI system	Quietek	Version 2.2	CB1	N/A

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission (Under 1GHz)

The measurement uncertainty is evaluated as ± 3.43 dB.

Radiated Emission (Above 1GHz)

The measurement uncertainty is evaluated as ± 3.65 dB.

2.4. Test Environment

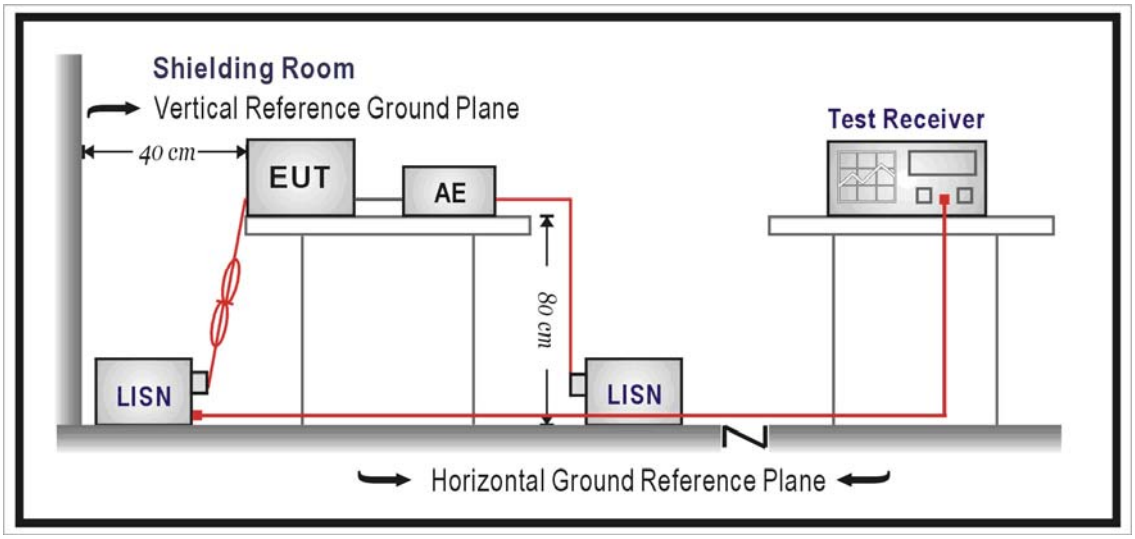
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	32
	Humidity (%RH)	25-75	65
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

3.1. Test Specification

According to EMC Standard : AS/NZS CISPR 22

3.2. Test Setup



3.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

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

3.4. Test Procedure

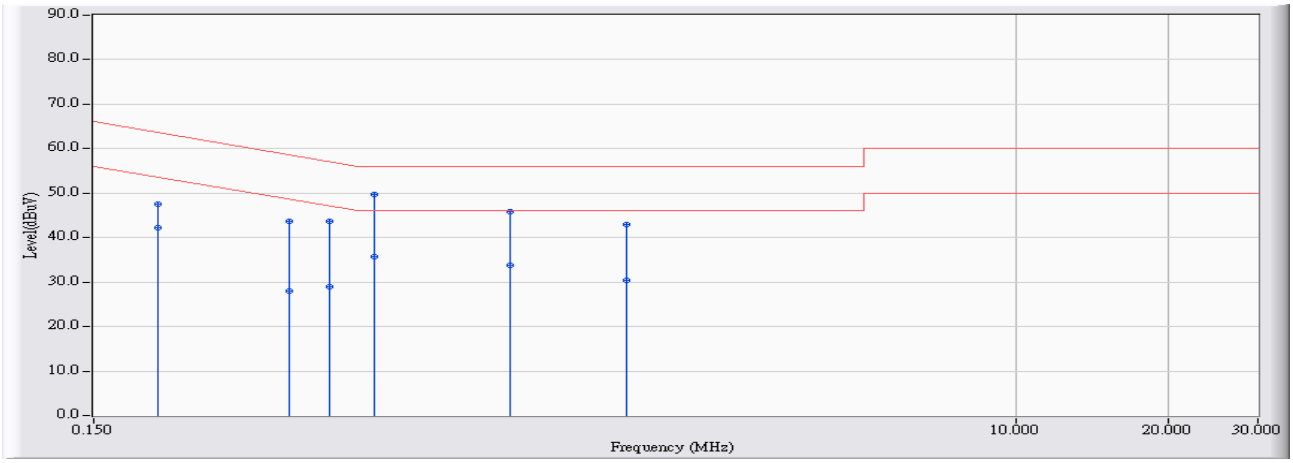
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling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

3.5. Deviation from Test Standard

No deviation.

3.6. Test Result

Site : SR3	**Time : 2013/06/18 - 16:56**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A)-3_0822 - Line1	**Power : AC 240V/50Hz**
EUT : Scanner	**Note :**

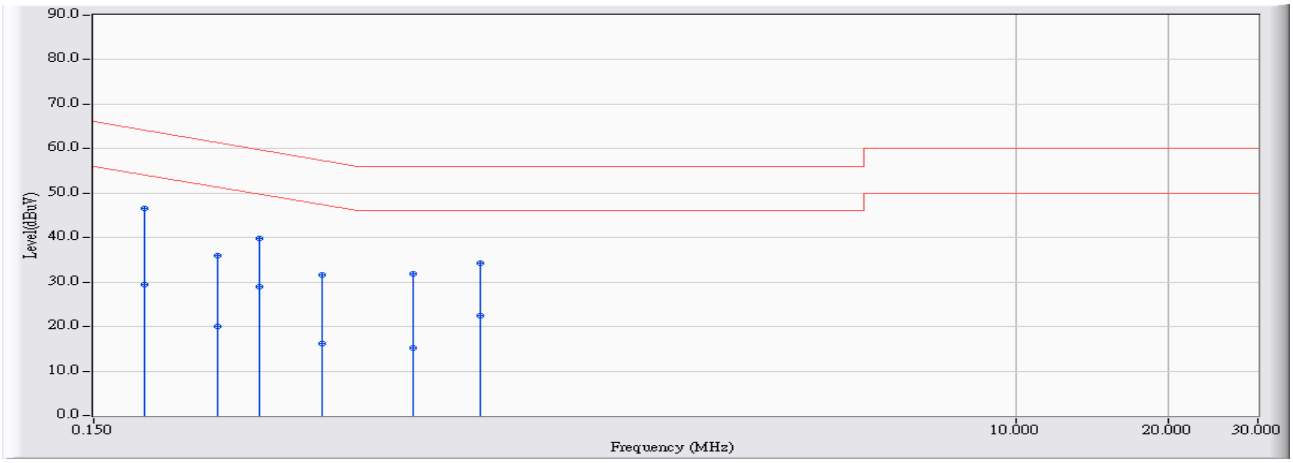


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.201	9.645	37.780	47.425	-16.153	63.578	QUASIPEAK
2		0.201	9.645	32.690	42.335	-11.243	53.578	AVERAGE
3		0.365	9.691	33.880	43.571	-15.046	58.617	QUASIPEAK
4		0.365	9.691	18.220	27.911	-20.706	48.617	AVERAGE
5		0.439	9.713	33.920	43.633	-13.447	57.079	QUASIPEAK
6		0.439	9.713	19.240	28.953	-18.127	47.079	AVERAGE
7	*	0.537	9.732	40.090	49.822	-6.178	56.000	QUASIPEAK
8		0.537	9.732	26.070	35.802	-10.198	46.000	AVERAGE
9		0.998	9.740	36.030	45.770	-10.230	56.000	QUASIPEAK
10		0.998	9.740	24.080	33.820	-12.180	46.000	AVERAGE
11		1.693	9.816	33.100	42.916	-13.084	56.000	QUASIPEAK
12		1.693	9.816	20.620	30.436	-15.564	46.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	**Time : 2013/06/18 - 17:00**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A)-3_0822 - Line2	**Power : AC 240V/50Hz**
EUT : Scanner	**Note :**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.189	9.631	36.870	46.501	-17.577	64.078	QUASIPEAK
2		0.189	9.631	19.700	29.331	-24.747	54.078	AVERAGE
3		0.263	9.649	26.270	35.919	-25.408	61.327	QUASIPEAK
4		0.263	9.649	10.310	19.959	-31.368	51.327	AVERAGE
5		0.318	9.662	30.030	39.692	-20.068	59.760	QUASIPEAK
6		0.318	9.662	19.400	29.062	-20.698	49.760	AVERAGE
7		0.423	9.688	21.990	31.678	-25.702	57.380	QUASIPEAK
8		0.423	9.688	6.540	16.228	-31.152	47.380	AVERAGE
9		0.642	9.714	22.050	31.764	-24.236	56.000	QUASIPEAK
10		0.642	9.714	5.600	15.314	-30.686	46.000	AVERAGE
11		0.869	9.718	24.480	34.198	-21.802	56.000	QUASIPEAK
12		0.869	9.718	12.700	22.418	-23.582	46.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3.7. Test Photograph

Test Mode : Mode 1: Scan to PC

Description : Front View of Conducted Emission Test Setup

Test Mode : Mode 1: Scan to PC

Description : Back View of Conducted Emission Test Setup

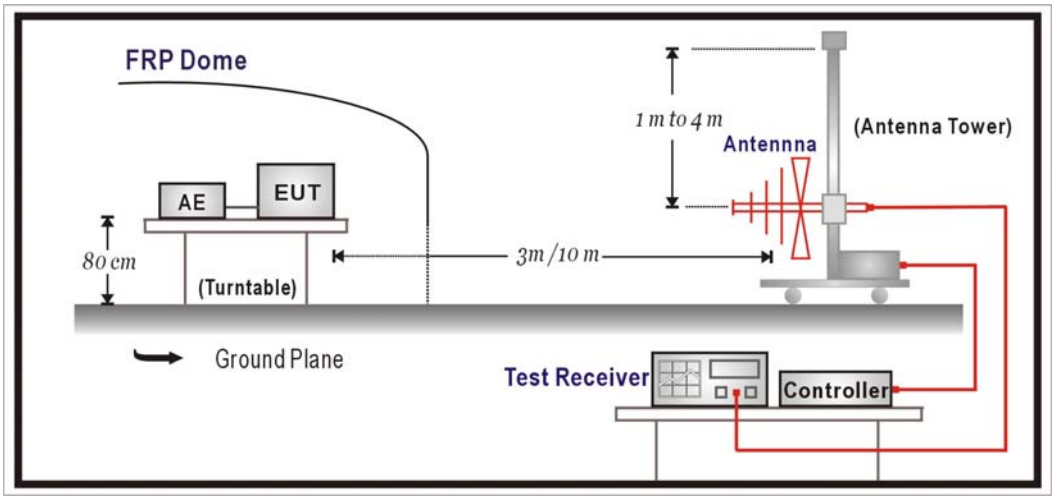
4. Radiated Emission

4.1. Test Specification

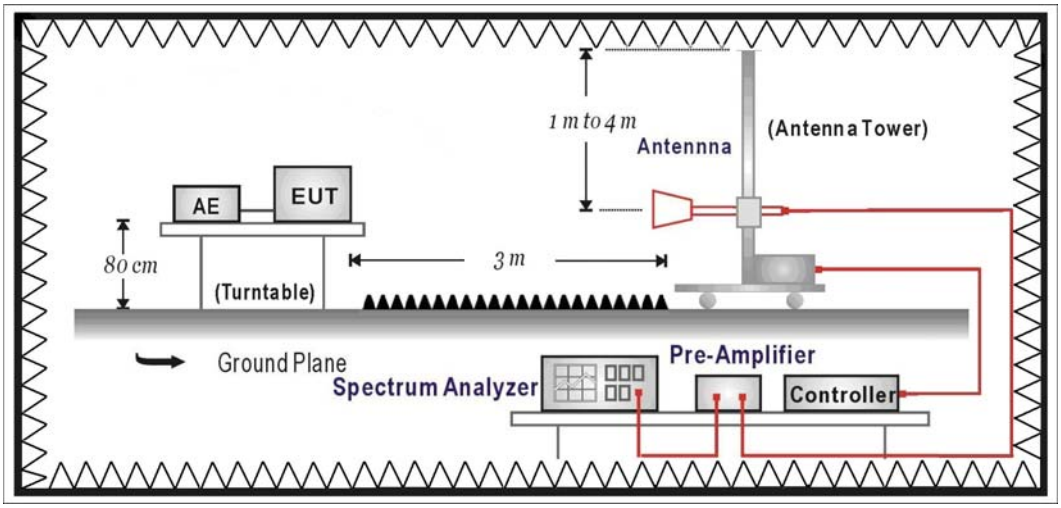
According to EMC Standard : AS/NZS CISPR 22

4.2. Test Setup

Under 1GHz Test Setup



Above 1GHz Test Setup



4.3. Limit

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Limits			
Frequency (GHz)	Distance (m)	Peak (dBuV/m)	Average (dBuV/m)
1 – 3	3	70	50
3 – 6	3	74	54

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5^{th} harmonic of the highest frequency or 6 GHz, whichever is lower

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
All cable leaving the table-top EUT for a connection outsidethe test site (for example, mains cable, telephone lines, connections to auxiliary equipment located outside the test area) shall be fitted with ferrite clamps placed on the floor at the point where the cable reached the floor.

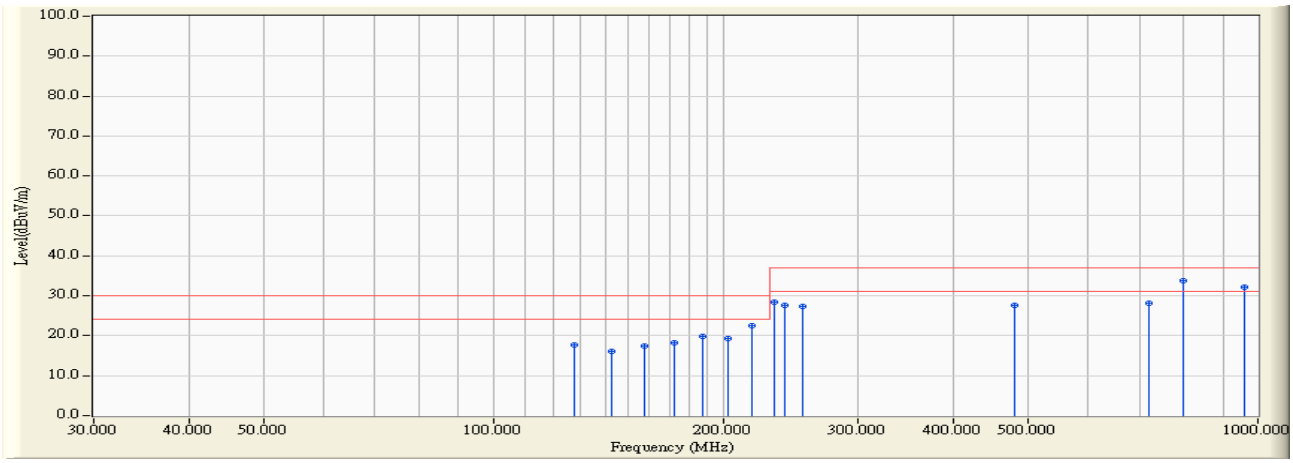
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.
Radiated emissions were invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 10 meters.
Radiated emissions were invested over the frequency range from 1GHz to 6GHz using a receiver bandwidth of 1MHz. Radiated was performed at an antenna to EUT distance of 3 meters.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Site : Site1	**Time : 2013/06/24 - 16:57**
Limit : CISPR_B_10M_QP	**Margin : 6**
Probe : SITE1_10M-3_0815 - HORIZONTAL	**Power : AC 240V/50Hz**
EUT : Scanner	**Note :**

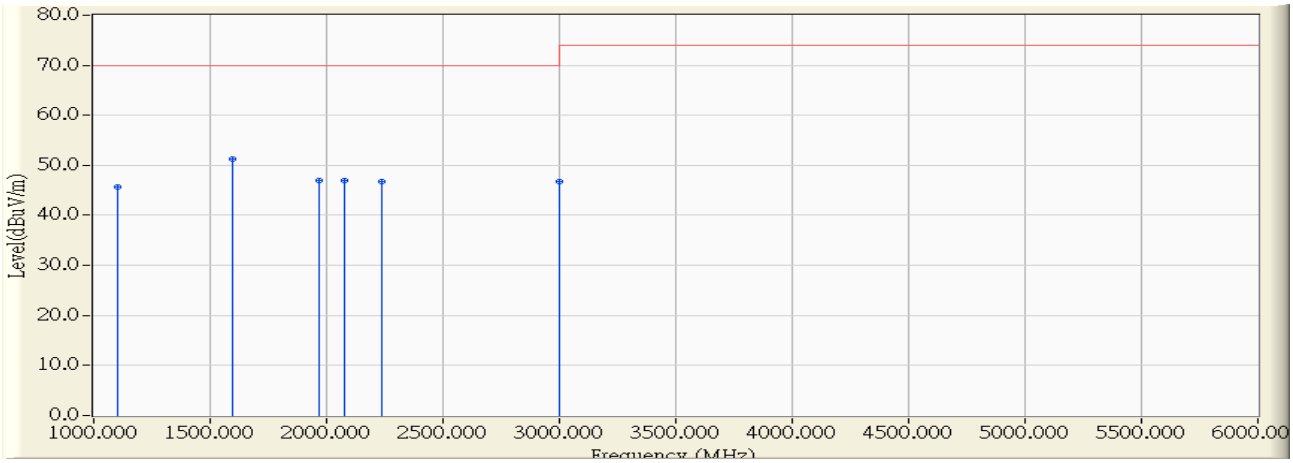


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		127.500	14.666	3.000	17.666	-12.334	30.000	QUASIPEAK
2		142.500	14.072	2.000	16.073	-13.927	30.000	QUASIPEAK
3		157.500	13.153	4.400	17.553	-12.447	30.000	QUASIPEAK
4		172.525	12.744	5.600	18.343	-11.657	30.000	QUASIPEAK
5		187.525	12.601	7.200	19.801	-10.199	30.000	QUASIPEAK
6		202.525	12.814	6.400	19.214	-10.786	30.000	QUASIPEAK
7		217.525	13.969	8.500	22.469	-7.531	30.000	QUASIPEAK
8		232.525	15.124	13.400	28.524	-8.476	37.000	QUASIPEAK
9		240.000	15.700	11.800	27.500	-9.500	37.000	QUASIPEAK
10		253.525	16.575	10.900	27.475	-9.525	37.000	QUASIPEAK
11		480.000	22.934	4.800	27.734	-9.266	37.000	QUASIPEAK
12		720.000	26.621	1.600	28.221	-8.779	37.000	QUASIPEAK
13	*	800.000	27.949	5.800	33.749	-3.251	37.000	QUASIPEAK
14		960.000	29.686	2.500	32.186	-4.814	37.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/07/10 - 10:22**
Limit : CISPR_22_B_(Above_1G)_3M_PK	**Margin : 0**
Probe : CB1_CISPR_22_B(above1G)-1_0901 - HORIZONTAL	**Power : AC 240V/50Hz**
EUT : Scanner	**Note :**

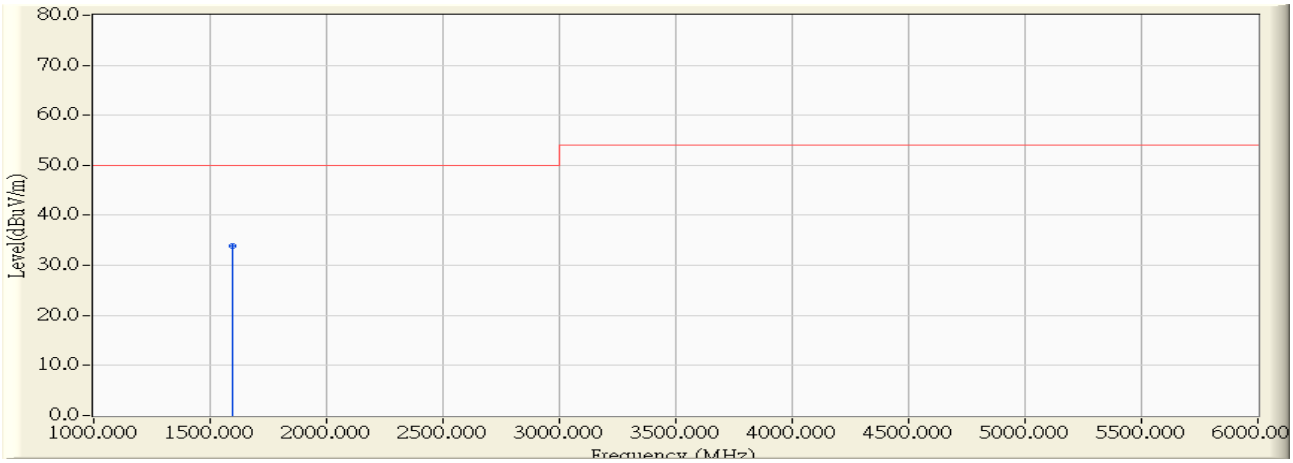


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1100.000	-8.245	54.016	45.771	-24.229	70.000	PEAK
2	*	1595.000	-6.016	57.375	51.359	-18.641	70.000	PEAK
3		1965.000	-4.824	51.805	46.981	-23.019	70.000	PEAK
4		2080.000	-4.430	51.316	46.886	-23.114	70.000	PEAK
5		2240.000	-3.856	50.555	46.699	-23.301	70.000	PEAK
6		3000.000	-1.252	47.942	46.690	-23.310	70.000	PEAK

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
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2013/07/10 - 10:26**
Limit : CISPR_22_B_(Above_1G)_3M_AV	**Margin : 0**
Probe : CB1_CISPR_22_B(above1G)-1_0901 - HORIZONTAL	**Power : AC 240V/50Hz**
EUT : Scanner	**Note :**

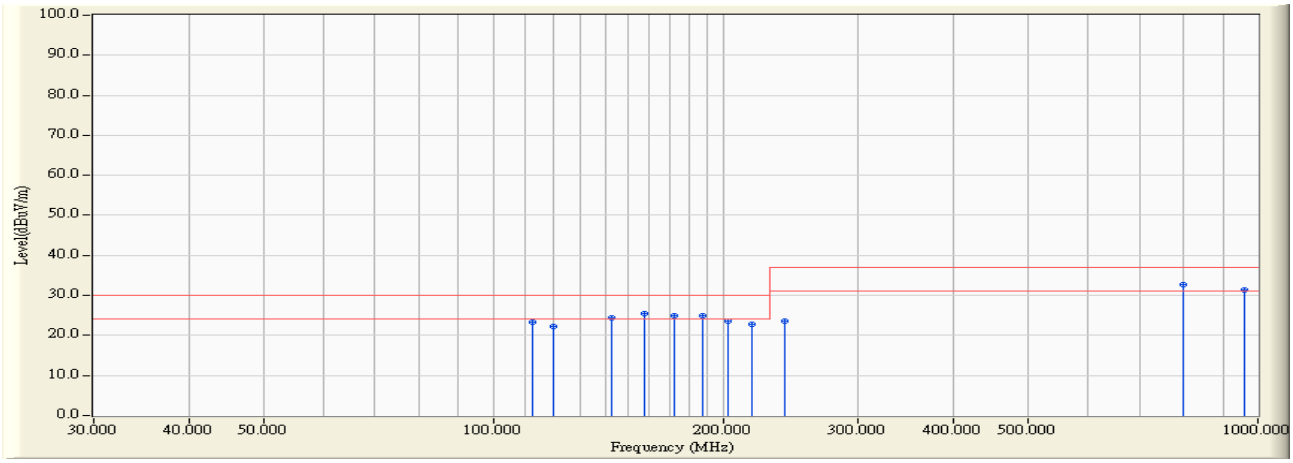


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	1594.620	-6.017	39.872	33.855	-16.145	50.000	AVERAGE

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
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site1	**Time : 2013/06/24 - 16:41**
Limit : CISPR_B_10M_QP	**Margin : 6**
Probe : SITE1_10M-3_0815 - VERTICAL	**Power : AC 240V/50Hz**
EUT : Scanner	**Note :**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		112.500	14.203	9.100	23.304	-6.696	30.000	QUASIPEAK
2		120.000	14.909	7.400	22.308	-7.692	30.000	QUASIPEAK
3		142.525	14.072	10.400	24.471	-5.529	30.000	QUASIPEAK
4		157.500	13.153	12.200	25.353	-4.647	30.000	QUASIPEAK
5		172.500	12.744	12.200	24.944	-5.056	30.000	QUASIPEAK
6		187.525	12.601	12.300	24.901	-5.099	30.000	QUASIPEAK
7		202.525	12.814	10.800	23.614	-6.386	30.000	QUASIPEAK
8		217.525	13.969	8.800	22.769	-7.231	30.000	QUASIPEAK
9		240.000	15.700	8.000	23.700	-13.300	37.000	QUASIPEAK
10	*	800.000	27.949	4.800	32.749	-4.251	37.000	QUASIPEAK
11		960.000	29.686	1.600	31.286	-5.714	37.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

4.7. Test Photograph

Test Mode : Mode 1: Scan to PC

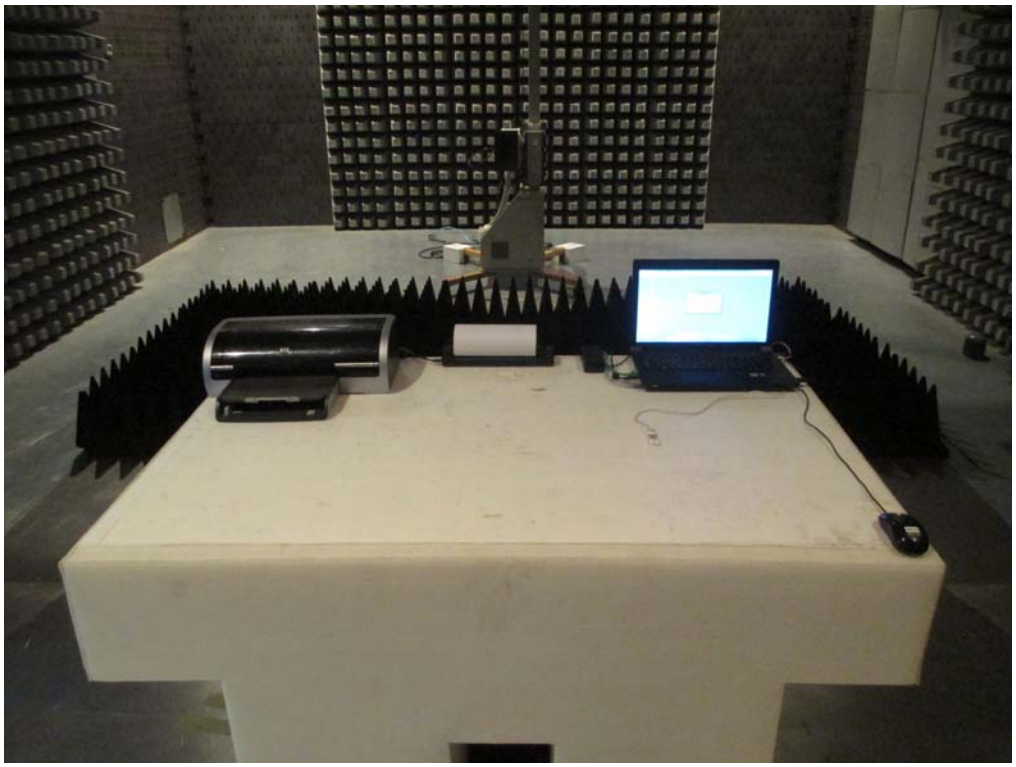
Description : Front View of Radiated Emission Test Setup

Test Mode : Mode 1: Scan to PC

Description : Back View of Radiated Emission Test Setup

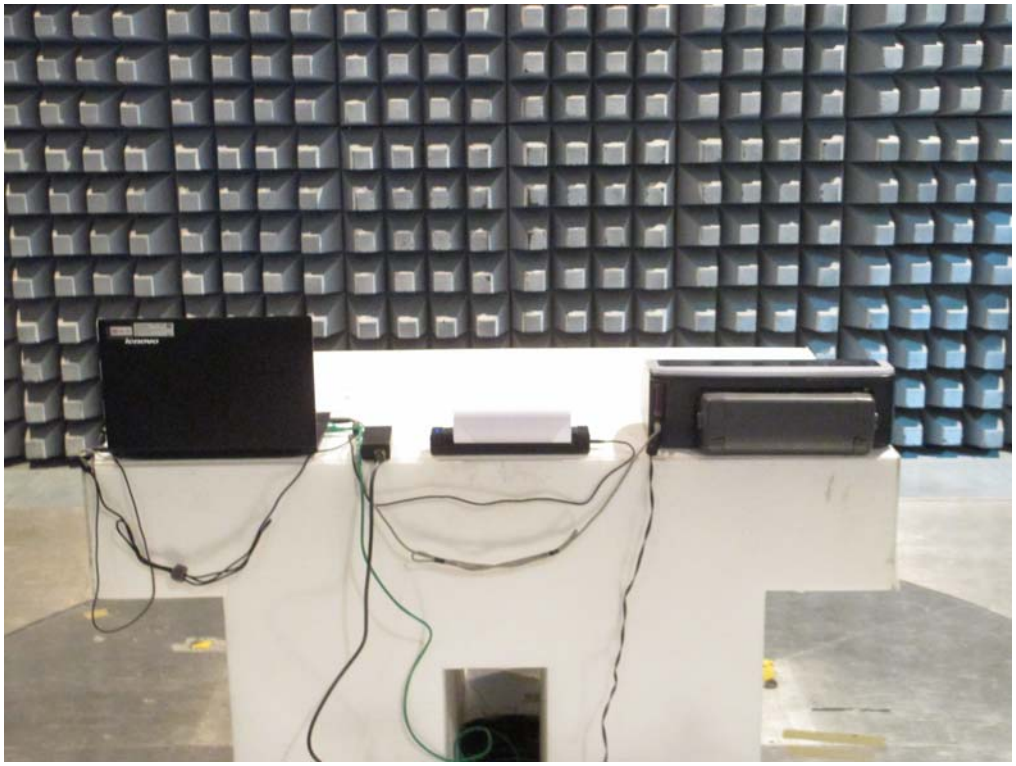
Test Mode : Mode 1: Scan to PC

Description : Front View of Radiated Emission Test Setup (Horn)



Test Mode : Mode 1: Scan to PC

Description : Back View of Radiated Emission Test Setup (Horn)



5. Attachment

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo