FCC 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-ITUSP01V00

Issued Date ： 2016/05/16

Report Version ： V1.0

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

The following equipment:

Product Name	:	Scanner
Trade Name	:	I.R.I.S.
Model Number	:	IRIScan™ Executive x
Company Name	:	AVISION INC.

It's herewith confirmed to comply with the requirements of FCC Part 15 Rules. (Class B)
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.

The result of electromagnetic emission has been evaluated by QuieTek EMC laboratory and showed in the test report. (Report No: 1650219R-ITUSP01V00)

It is understood that each unit marketed is identical to the device as tested, and
Any changes to the device that could adversely affect the emission
Characteristics will require retest.
The following importer / manufacturer is responsible for this declaration:

Company Name _____

Company Address _____

Telephone _____ Facsimile : _____

Person is responsible for marking this declaration:

_____ _____

Name (Full name) Position / Title

_____ _____

Date Legal Signature

Test Report Certification

Issued Date : 2016/05/16
Report No. : 1650219R-ITUSP01V00

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	:	FCC CFR Title 47 Part 15 Subpart B: 2015 Class B, CISPR 22: 2008, ICES-003 Issue 6: 2016 Class B, ANSI C63.4: 2014
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

Documented By : Lyla Yang

(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**
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, R.O.C.
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

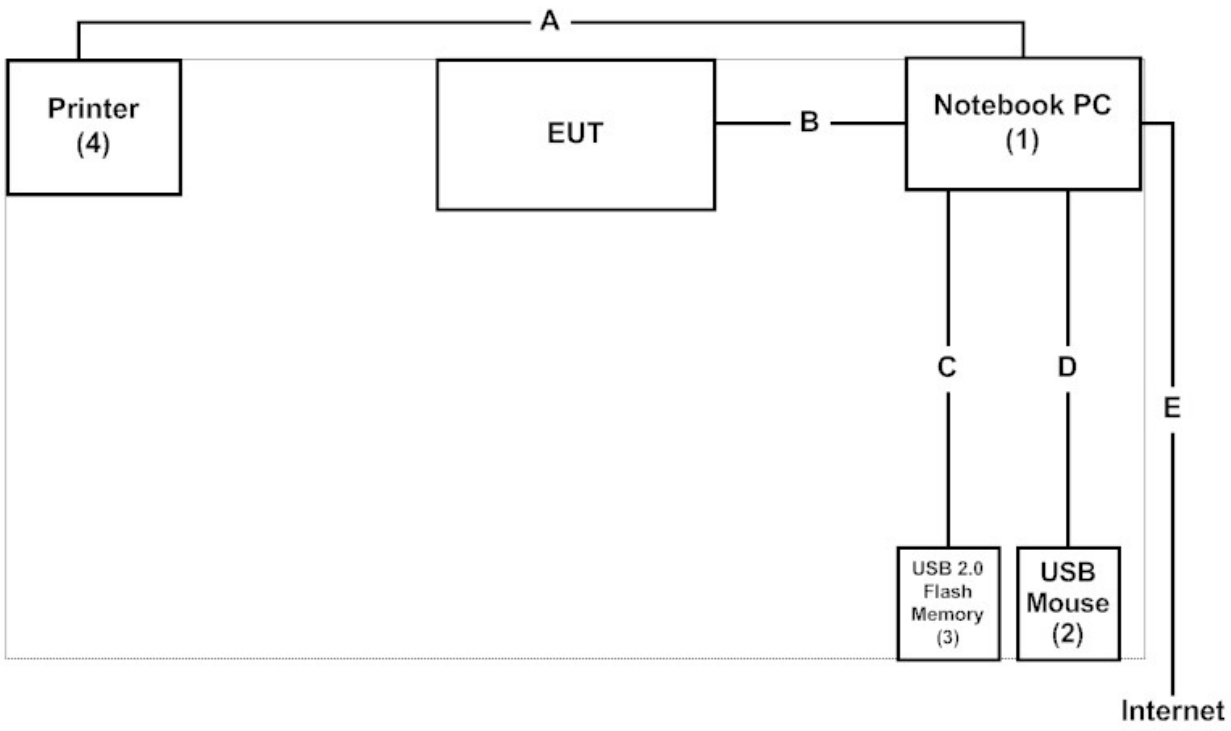
1.3. Tested System Details

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.	FCC ID	Power Cord
1	Notebook PC	Lenovo	B590	WB15330091	DoC	Non-Shielded, 1.8m, one ferrite core bonded
2	USB Mouse	Microsoft	1113	1636005	DoC	--
3	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
4	Printer	HP	deskiet 5652	MY3621M0PS	DoC	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	FCC CFR Title 47 Part 15 Subpart B: 2015 Class B ANSI C63.4: 2014	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B: 2015 Class B ANSI C63.4: 2014	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

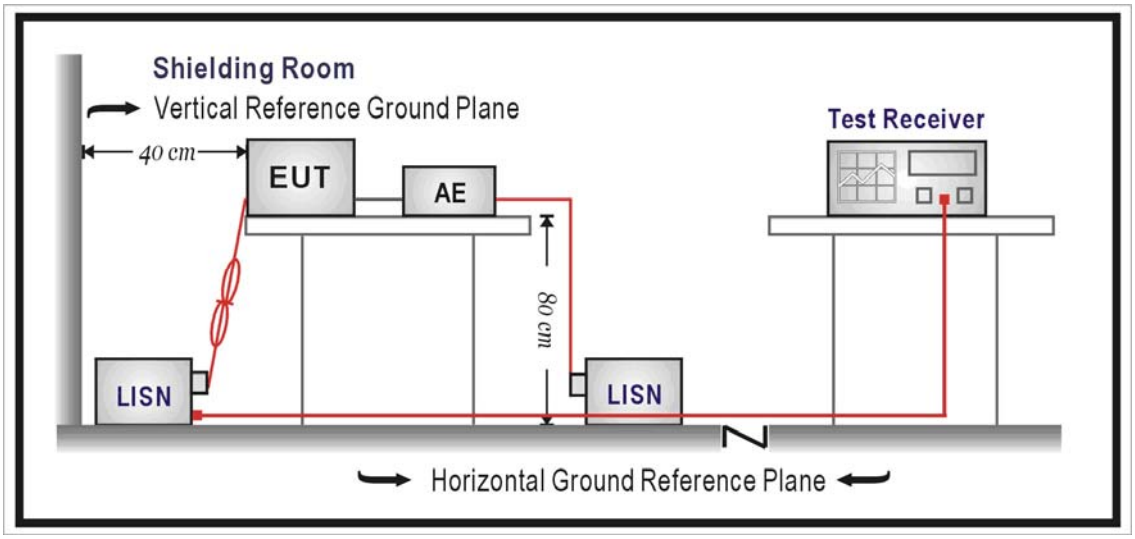
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	65
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

3.1. Test Specification

According to Standard : FCC Part 15 Subpart B, ANSI C63.4

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

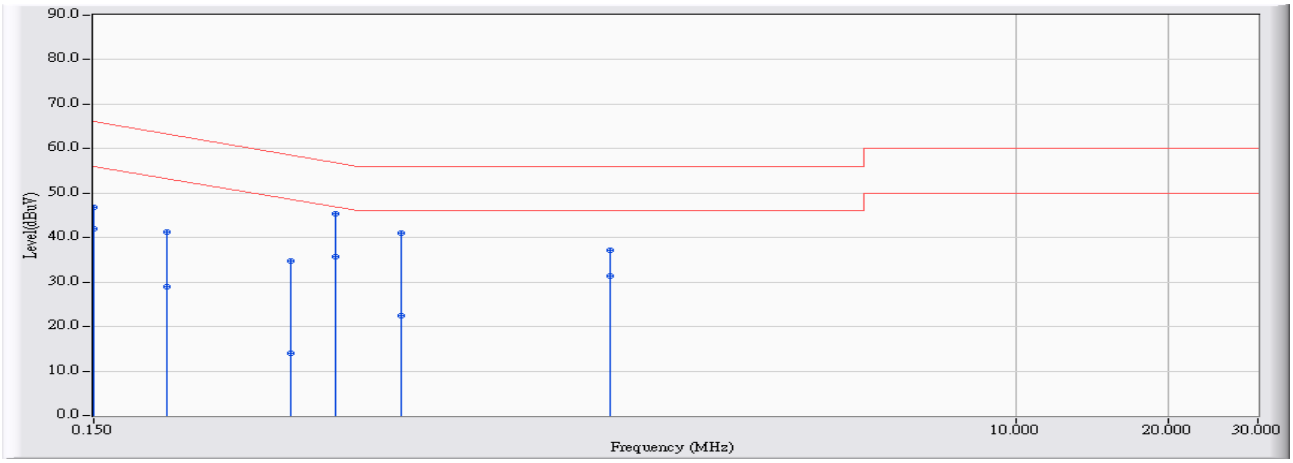
Remarks: In the above table, the tighter limit applies at the band edges.

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. Test Result

Site : SR3	**Time : 2013/06/18 - 16:41**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A)-3_0822 - Line1	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**

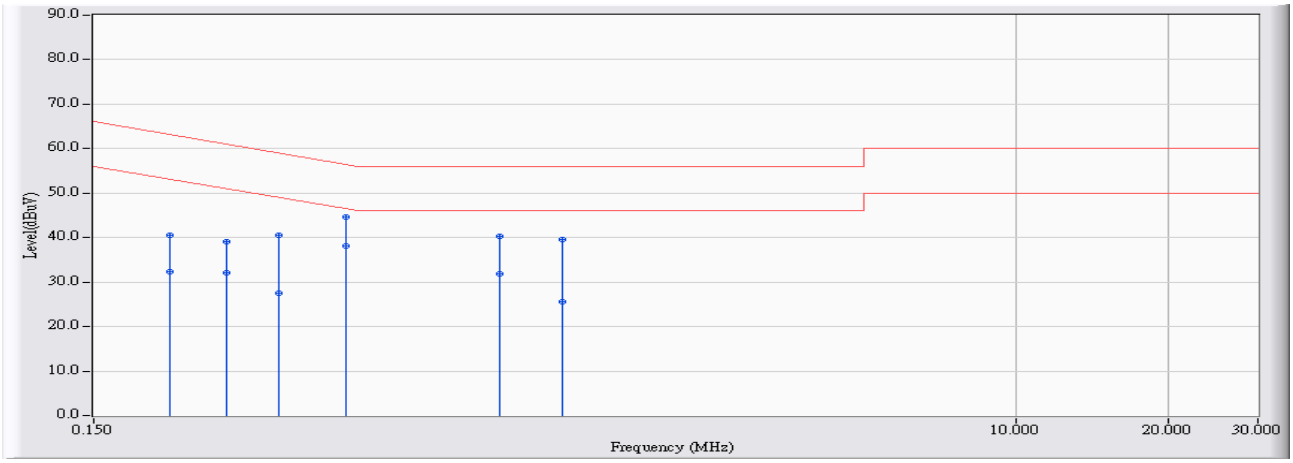


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	9.637	37.160	46.797	-19.203	66.000	QUASIPEAK
2		0.150	9.637	32.320	41.957	-14.043	56.000	AVERAGE
3		0.209	9.646	31.630	41.277	-21.984	63.261	QUASIPEAK
4		0.209	9.646	19.400	29.047	-24.214	53.261	AVERAGE
5		0.369	9.692	25.010	34.702	-23.827	58.529	QUASIPEAK
6		0.369	9.692	4.240	13.932	-34.597	48.529	AVERAGE
7		0.451	9.717	35.610	45.326	-11.534	56.861	QUASIPEAK
8	*	0.451	9.717	25.880	35.596	-11.264	46.861	AVERAGE
9		0.607	9.733	31.270	41.003	-14.997	56.000	QUASIPEAK
10		0.607	9.733	12.780	22.513	-23.487	46.000	AVERAGE
11		1.572	9.803	27.450	37.253	-18.747	56.000	QUASIPEAK
12		1.572	9.803	21.640	31.443	-14.557	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 - 16:50**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A)-3_0822 - Line2	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.212	9.637	30.820	40.457	-22.650	63.107	QUASIPEAK
2		0.212	9.637	22.630	32.267	-20.840	53.107	AVERAGE
3		0.275	9.651	29.410	39.062	-21.904	60.966	QUASIPEAK
4		0.275	9.651	22.390	32.042	-18.924	50.966	AVERAGE
5		0.349	9.670	30.930	40.599	-18.382	58.981	QUASIPEAK
6		0.349	9.670	17.880	27.549	-21.432	48.981	AVERAGE
7		0.474	9.703	34.890	44.594	-11.846	56.440	QUASIPEAK
8	*	0.474	9.703	28.330	38.034	-8.406	46.440	AVERAGE
9		0.951	9.719	30.500	40.219	-15.781	56.000	QUASIPEAK
10		0.951	9.719	22.220	31.939	-14.061	46.000	AVERAGE
11		1.263	9.749	29.770	39.519	-16.481	56.000	QUASIPEAK
12		1.263	9.749	15.780	25.529	-20.471	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.

3.6. 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

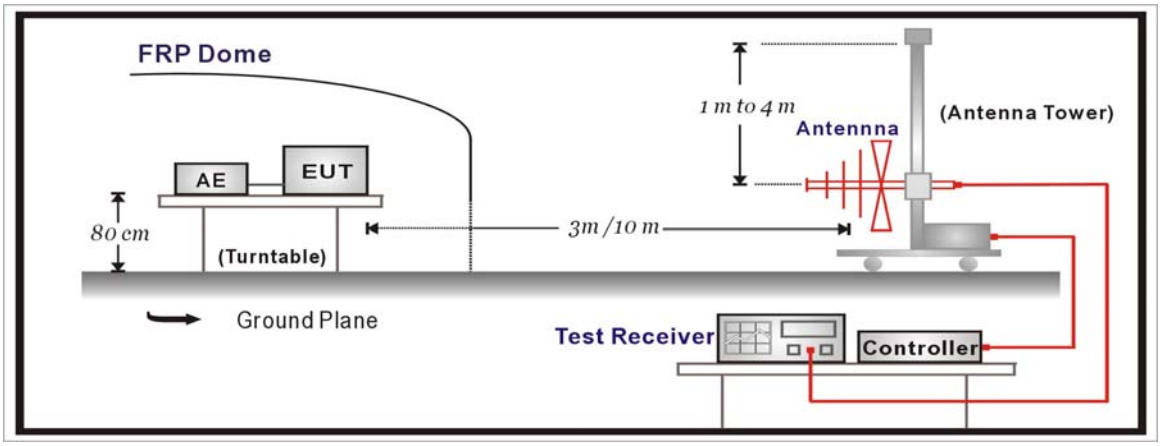
4. Radiated Emission

4.1. Test Specification

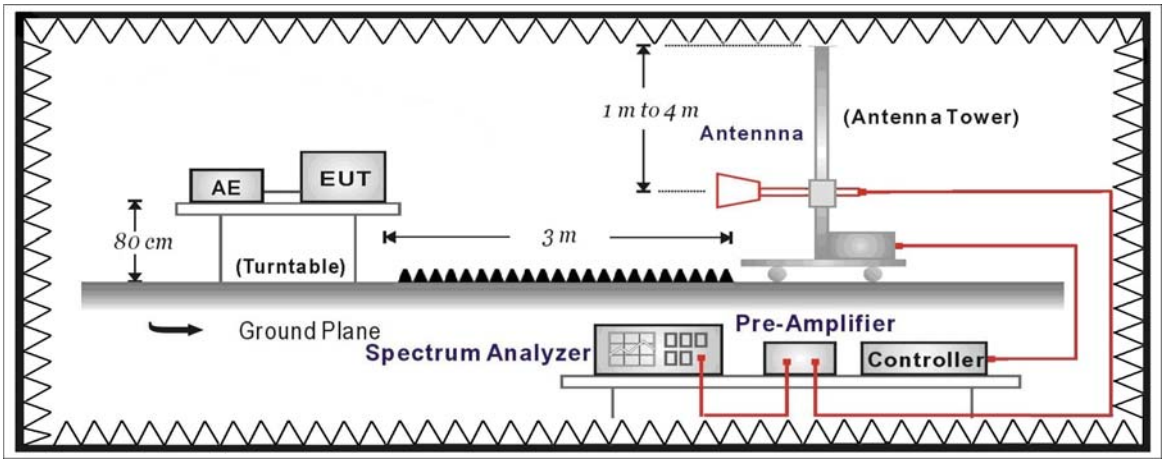
According to EMC Standard : FCC Part 15 Subpart B, ANSI C63.4

4.2. Test Setup

Under 1GHz Test Setup



Above 1GHz Test Setup



4.3. Limit

Under 1GHz test shall not exceed the following value:

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

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 88	3	40
88 – 216	3	43.5
216 – 960	3	46
Above 960	3	54

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
1. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
2. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

Above 1GHz test shall not exceed the following value:

FCC Part 15 Subpart B Paragraph 15.109 Limits (dBuV/m)			
Frequency (MHz)	Distance (m)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	3	74	54

Remark:

1. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

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 and 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.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the folowing table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5^{th} harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

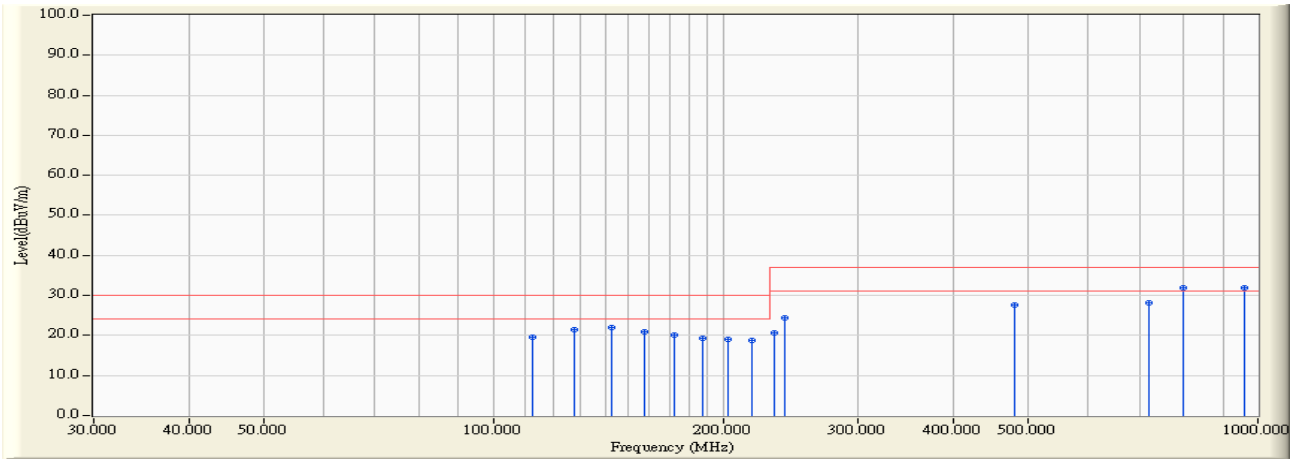
For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

For class B, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 kHz and above 1GHz is 1MHz.

4.5. Test Result

Site : Site1	**Time : 2013/06/24 - 15:11**
Limit : CISPR_B_10M_QP	**Margin : 6**
Probe : SITE1_10M-3_0815 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**

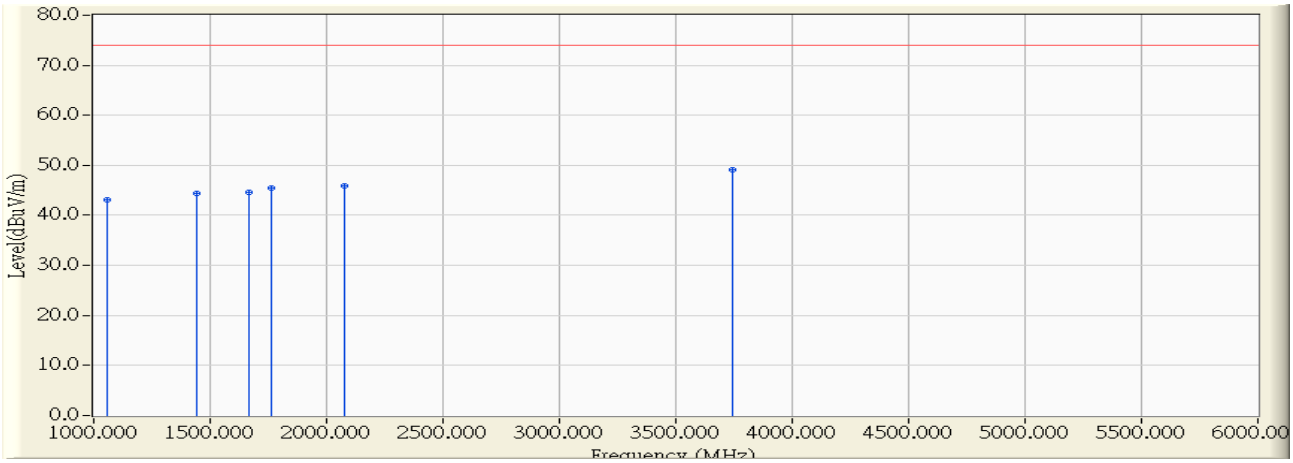


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		112.500	14.203	5.500	19.704	-10.296	30.000	QUASIPEAK
2		127.500	14.666	6.800	21.466	-8.534	30.000	QUASIPEAK
3		142.500	14.072	7.800	21.873	-8.127	30.000	QUASIPEAK
4		157.500	13.153	7.800	20.953	-9.047	30.000	QUASIPEAK
5		172.525	12.744	7.300	20.043	-9.957	30.000	QUASIPEAK
6		187.525	12.601	6.600	19.201	-10.799	30.000	QUASIPEAK
7		202.525	12.814	6.200	19.014	-10.986	30.000	QUASIPEAK
8		217.525	13.969	4.800	18.769	-11.231	30.000	QUASIPEAK
9		232.525	15.124	5.600	20.724	-16.276	37.000	QUASIPEAK
10		240.000	15.700	8.600	24.300	-12.700	37.000	QUASIPEAK
11		480.000	22.934	4.600	27.534	-9.466	37.000	QUASIPEAK
12		720.000	26.621	1.600	28.221	-8.779	37.000	QUASIPEAK
13	*	800.000	27.949	4.000	31.949	-5.051	37.000	QUASIPEAK
14		960.000	29.686	2.200	31.886	-5.114	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 - 11:14**
Limit : FCC_B_(Above_1G)_3M_PK	**Margin : 0**
Probe : CB1_CISPR_22_B(above1G)-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**

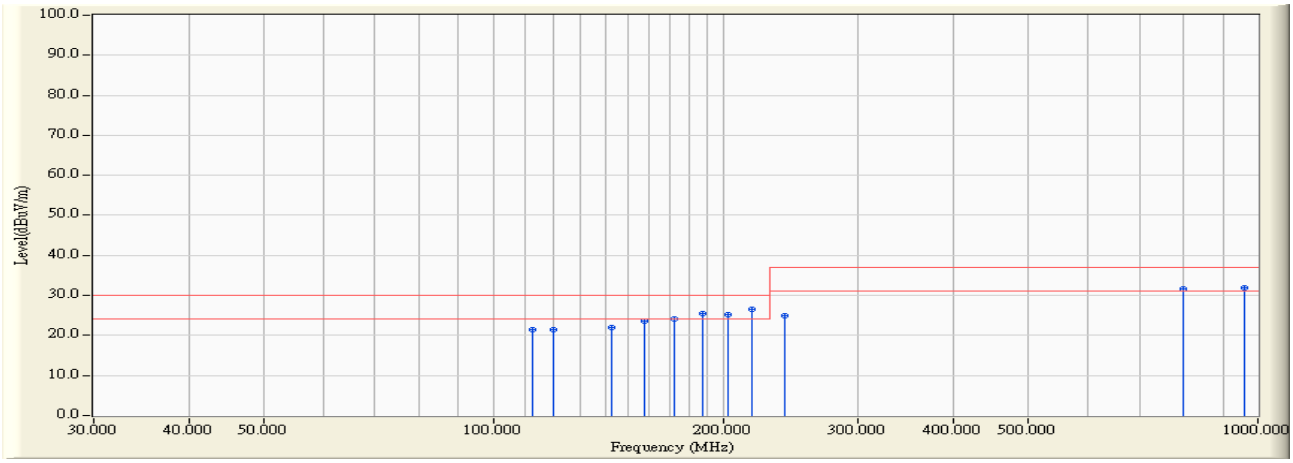


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1055.000	-8.461	51.588	43.127	-30.873	74.000	PEAK
2		1440.000	-6.611	51.054	44.443	-29.557	74.000	PEAK
3		1665.000	-5.790	50.404	44.614	-29.386	74.000	PEAK
4		1760.000	-5.484	50.903	45.419	-28.581	74.000	PEAK
5		2080.000	-4.430	50.290	45.860	-28.140	74.000	PEAK
6	*	3745.000	-0.309	49.471	49.162	-24.838	74.000	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 : Site1	**Time : 2013/06/24 - 14:34**
Limit : CISPR_B_10M_QP	**Margin : 6**
Probe : SITE1_10M-3_0815 - VERTICAL	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**

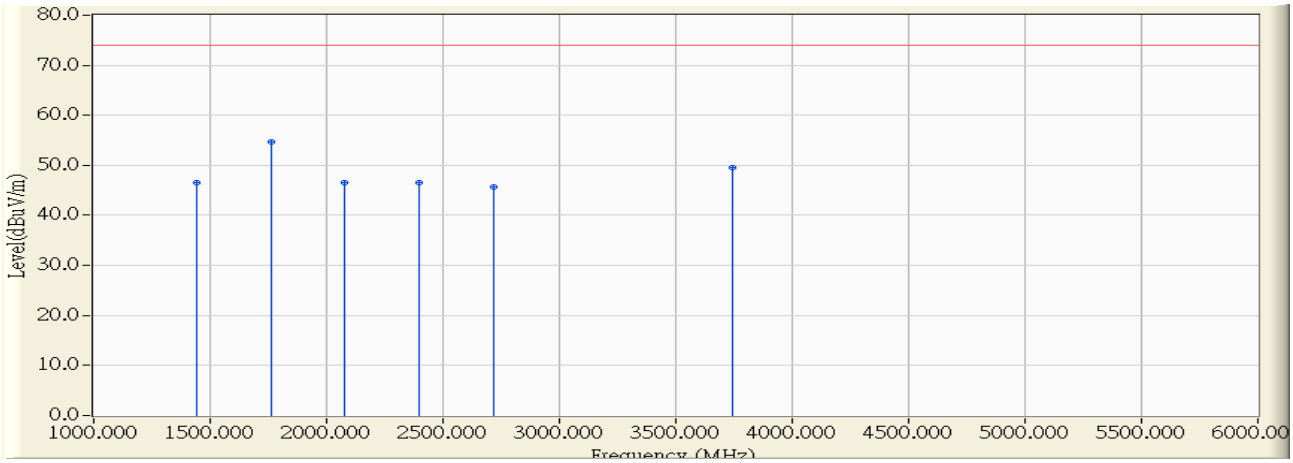


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		112.500	14.203	7.200	21.404	-8.596	30.000	QUASIPEAK
2		120.000	14.909	6.500	21.408	-8.592	30.000	QUASIPEAK
3		142.525	14.072	8.000	22.071	-7.929	30.000	QUASIPEAK
4		157.500	13.153	10.400	23.553	-6.447	30.000	QUASIPEAK
5		172.500	12.744	11.300	24.044	-5.956	30.000	QUASIPEAK
6		187.525	12.601	12.800	25.401	-4.599	30.000	QUASIPEAK
7		202.525	12.814	12.500	25.314	-4.686	30.000	QUASIPEAK
8	*	217.525	13.969	12.700	26.669	-3.331	30.000	QUASIPEAK
9		240.000	15.700	9.200	24.900	-12.100	37.000	QUASIPEAK
10		800.000	27.949	3.800	31.749	-5.251	37.000	QUASIPEAK
11		960.000	29.686	2.200	31.886	-5.114	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 - 11:20**
Limit : FCC_B_(Above_1G)_3M_PK	**Margin : 0**
Probe : CB1_CISPR_22_B(above1G)-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**

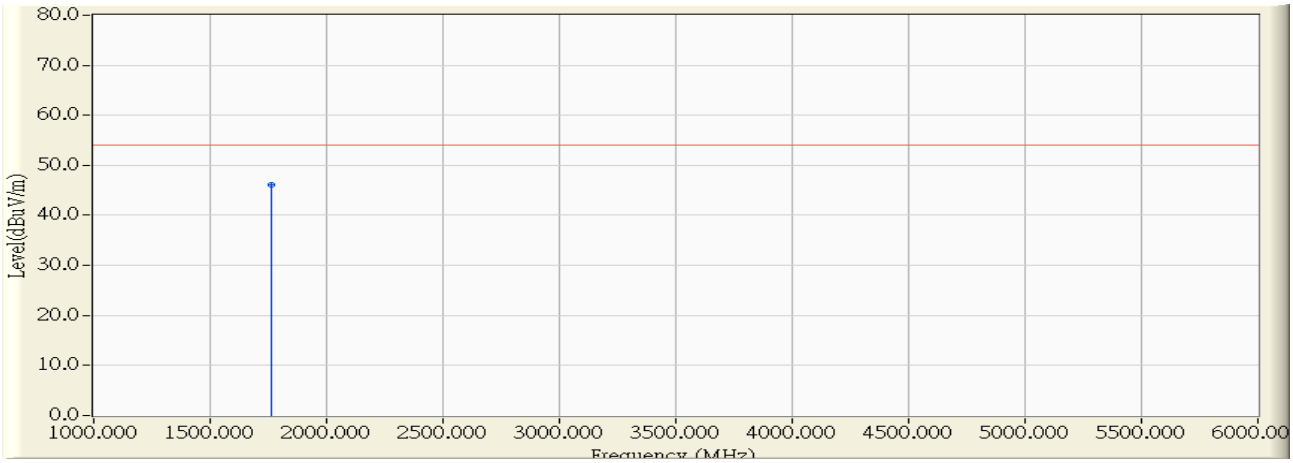


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1440.000	-6.611	53.103	46.492	-27.508	74.000	PEAK
2	*	1760.000	-5.484	60.250	54.766	-19.234	74.000	PEAK
3		2080.000	-4.430	50.996	46.566	-27.434	74.000	PEAK
4		2400.000	-3.282	49.753	46.471	-27.529	74.000	PEAK
5		2720.000	-2.181	47.769	45.588	-28.412	74.000	PEAK
6		3745.000	-0.309	49.839	49.530	-24.470	74.000	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 - 11:23**
Limit : FCC_B_(Above_1G)_3M_AV	**Margin : 0**
Probe : CB1_CISPR_22_B(above1G)-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : Scanner	**Note :**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	1760.180	-5.484	51.694	46.210	-7.790	54.000	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.

4.6. Test Photograph

Test Mode : Mode 1: Scan to PC

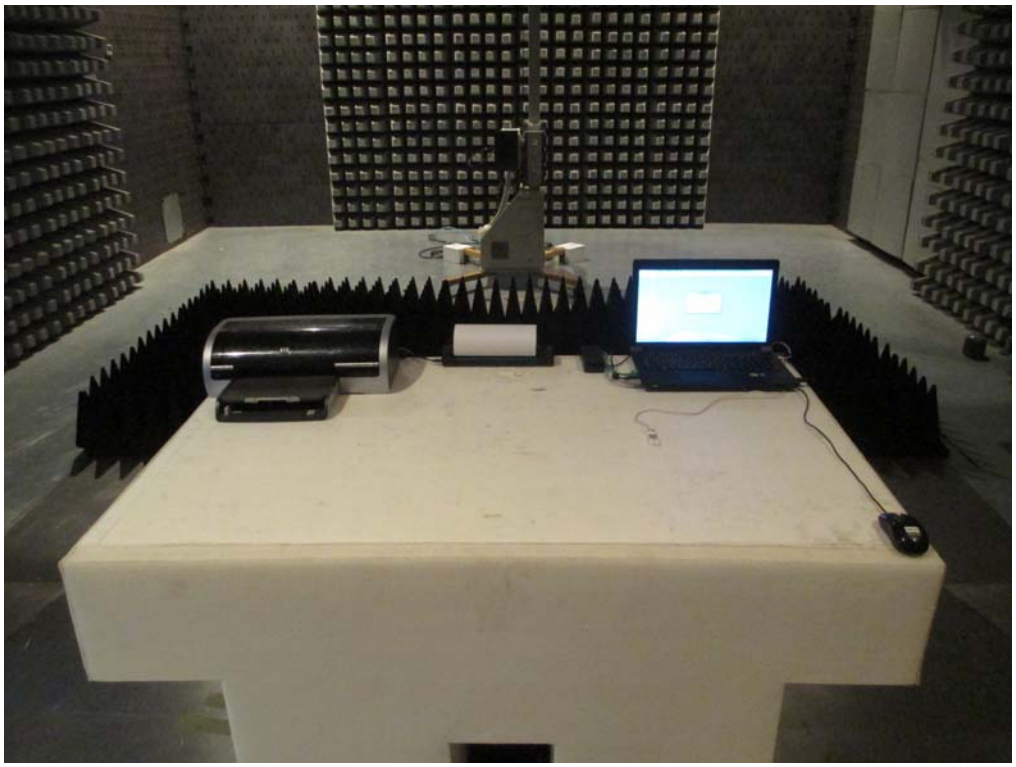
Description : Front View of Radiated Emission Test Setup

Test Mode : Mode 1: Scan to PC

Description : Back View of Radiated Emission Test Setup

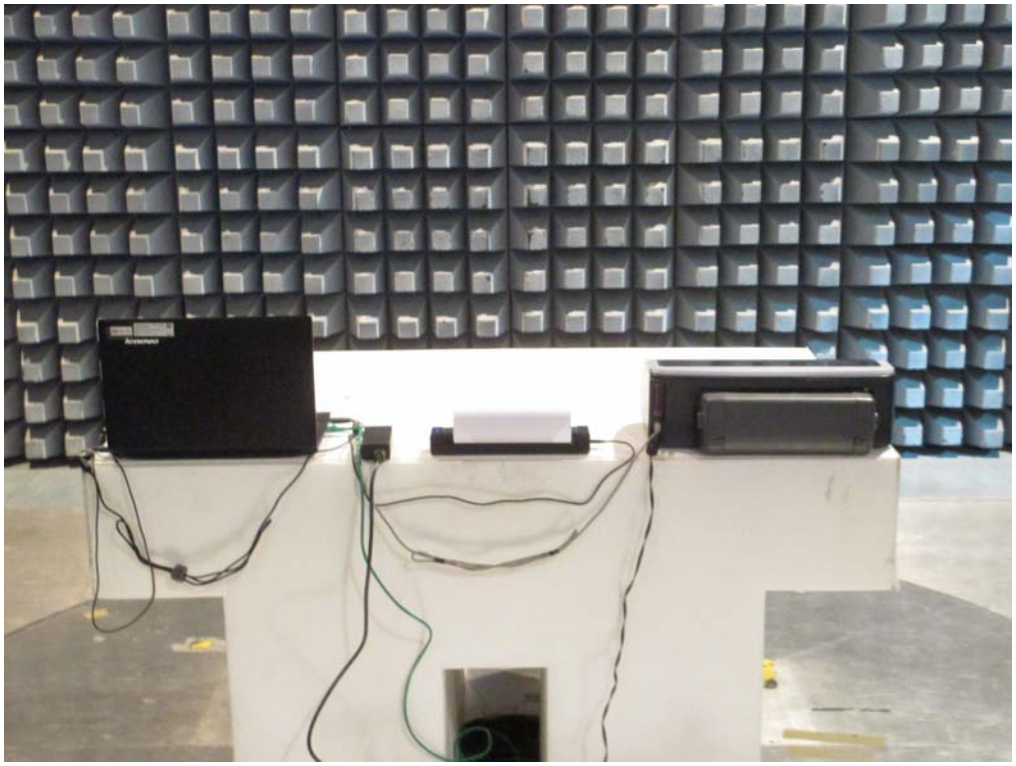
Test Mode : Mode 1: Scan to PC

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