FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Applicant :	**Shaoxing LongXin Electronics Co., Ltd.**
Address :	**Xujiadai Village, Sundun Town, Shaoxing County, Zhejiang, China**
Product Name :	**Tablet**
Model Name :	**S970-1020, PC Tab9701, PC Tab9702, PC Tab9703, PC Tab9704, PC Tab9705, Tab9701, Tab9702, Tab9703, Tab9704, Tab9705, SX-ST970WHP**
Brand Name :	**N/A**
FCC ID :	**ZGU-S970-1020**
Report No. :	**MOST110820F2**
Date of Issue :	**September. 14, 2011**

Issued by :	**Most Technology Service Co., Ltd.**
Address :	**No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China**
Tel :	**86-755-8617 0306**
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TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY

Equipment Under Test:	Tablet
Brand Name:	N/A
Model Number:	PC Tab9701, PC Tab9702, PC Tab9703, PC Tab9704,PC Tab9705, Tab9701, Tab9702, Tab9703, Tab9704, Tab9705, SX-ST970WHP
FCC ID:	ZGU-S970-1020
Applicant:	Shaoxing LongXin Electronics Co., Ltd.
	Xujiadai Village, Sundun Town, Shaoxing County, Zhejiang, China
Manufacturer:	Shaoxing LongXin Electronics Co., Ltd.
	Xujiadai Village, Sundun Town, Shaoxing County, Zhejiang, China
Technical Standards:	47 CFR Part 15 Subpart C
File Number:	MOST110820F2
Date of test:	August. 30,2011 — September. 13, 2011
Deviation:	None
Condition of Test Sample:	Normal
Test Result:	PASS

The above equipment was tested by *Most Technology Service Co., Ltd.* for compliance with the requirements set forth in FCC rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested by (+ signature): Zhang Ling

Zhang Ling September. 14, 2011

Review by (+ signature):

July Wen September. 14, 2011

Approved by (+ signature): Terry Yang

Terry Yang September. 14, 2011

2. GENERAL INFORMATION

2.1 Product Information

Product	Tablet
Trade Name	N/A
Model Number	S970-1020
Series Number:	PC Tab9701, PC Tab9702, PC Tab9703, PC Tab9704,PC Tab9705,Tab9701, Tab9702, Tab9703, Tab9704, Tab9705, SX-ST970WHP
Description of Differences:	Only the appearance, model name and color are different.
Power Supply:	DC 5V by AC Adapter(100V-240V 50/60Hz);
Frequency Range:	802.11b: 2412MHz – 2462MHz 802.11g: 2412MHz – 2462MHz 802.11n: 2412MHz – 2462MHz
Number of Channels:	IEEE 802.11b/g/n mode: 11 Channels
Modulation Technique:	IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mpbs) IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mpbs) IEEE 802.11n mode: OFDM (6.5, 13,19.5, 26, 39, 52,58.5 and 65 Mpbs)
Antenna Type:	Internal
Antenna Gain:	2.0dBi
Temperature Range:	-20°C ~ +50°C

NOTE:

1. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 Objective

The objective of the report is to perform tests according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15(10-1-05 Edition)	Radio Frequency Devices

2.3 Test Standards and Results

Test items and the results are as bellow:

No.	Section	Description	Result	Date of Test
1	15.247(a)(2)	6dB Bandwidth	PASS	2011-09-10
2	15.247(b)(3)	Peak Output Power	PASS	2011-09-10
3	15.247(d)	conducted spurious emission	PASS	2011-09-10
4	15.247(d)	Band Edge	PASS	2011-09-10
5	15.247(e)	Power Spectral Density	PASS	2011-09-10
6	15.207	Conducted Emission	PASS	2011-09-10
7	15.247(d) 15.205 15.209	Radiated Emission	PASS	2011-09-10

Note: 1. The test result judgment is decided by the limit of measurement standard
2. The information of measurement uncertainty is available upon the customer's request.

2.4 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35ºC
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

3. TEST FACILITY

3. 1 TEST FACILITY

Test Site:	Most Technology Service Co., Ltd.
Location:	No.5, Langshan 2nd Rd, North Hi-Tech Industrial park, Nanshan, Shenzhen, Guangdong, China
Description:	There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009 and CISPR 16 requirements. The FCC Registration Number is **490827.** The **CNAS** Registration Number is **CNAS L3573.**
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4:2009 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

3.2 GENERAL TEST PROCEDURES

EUT Function and Test Mode

The EUT has been tested under normal operating（TX）and standby（RX）condition.

The field strength of radiation emission was measured in the following position: EUT stand-up position (Y axis), lie-down position (X, Z axis).

The following data show only with the worst case setup.

The worst case of Y axis was reported.

Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report.

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4:2009,Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4:2009.

3.3 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasipeak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

4. TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at MOST for testing. The equipment conforms to the CISPR 16-1/ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No.	Equipment	Manufacturer	Model No.	S/N	Calibration due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2012/03/14
2	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2012/03/14
3	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2012/03/14
4	Terminator	Hubersuhner	50Ω	No.1	2012/03/14
5	RF Cable	SchwarzBeck	N/A	No.1	2012/03/14
6	Test Receiver	Rohde & Schwarz	ESPI	101202	2012/03/14
7	Bilog Antenna	SCHWARZBECK	BBHA9120D	D69250	2012/03/14
8	Cable	Resenberger	N/A	NO.1	2012/03/14
9	Cable	SchwarzBeck	N/A	NO.2	2012/03/14
10	Cable	SchwarzBeck	N/A	NO.3	2012/03/14
11	DC Power Filter	DuoJi	DL2×30B	N/A	2012/03/14
12	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2012/03/14
13	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2012/03/14
14	Test Receiver	Rohde & Schwarz	ESCI	100492	2012/03/14
15	Absorbing Clamp	Luthi	MDS21	3635	2012/03/14
16	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2012/03/14
17	AC Power Source	Kikusui	AC40MA	LM003232	2012/03/14
18	Test Analyzer	Kikusui	KHA1000	LM003720	2012/03/14
19	Line Impendence Network	Kikusui	LIN40MA-PCR-L	LM002352	2012/03/14
20	ESD Tester	Kikusui	KES4021	LM003537	2012/03/14
21	EMCPRO System	EM Test	UCS-500-M4	V0648102026	2012/03/14
22	Signal Generator	IFR	2032	203002/100	2012/03/14
23	Amplifier	A&R	150W1000	301584	2012/03/14
24	CDN	FCC	FCC-801-M2-25	47	2012/03/14
25	CDN	FCC	FCC-801-M3-25	107	2012/03/14
26	EM Injection Clamp	FCC	F-203I-23mm	403	2012/03/14
27	RF Cable	MIYAZAKI	N/A	No.1/No.2	2012/03/14
28	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2012/03/14
29	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2012/03/14
30	Telecommunication Test Equipment	R&S	CMU200	N/A	2012/03/14
31	Loop Antenna	SCHWARZBECK	BBHA9120D	D69250	2012/03/14

NOTE: *Equipments listed above have been calibrated and are in the period of validation.*

5. 47 CFR Part 15 C 15.247 Requirements

5.1 6dB Bandwidth

5.1.1 Definition

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

5.1.2 Test Description

The EUT is powered by the Battery, is coupled to the Spectrum Analyzer (SA) through the Attenuator/DC Block. The path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated and is set to operate at maximum power. The RF load attached to the EUT antenna terminal is 50Ohm.

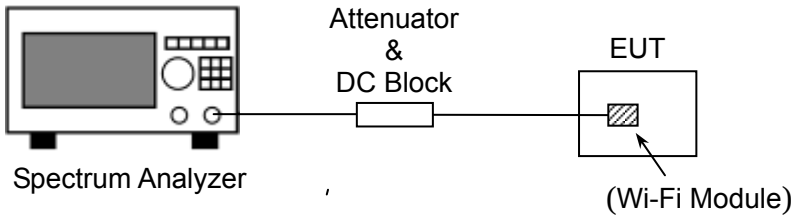


Figure 1: RF Test Setup

5.1.3 Test Result

The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the Module.

5.1.3.1 802.11b Test Mode

The minimum occupied bandwidth for the fundamental frequency 2462MHz is 10.1MHz. This occupied bandwidth complies with the FCC requirement.

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	9.9	≥500	PASS
6	2437	9.8	≥500	PASS
11	2462	10.1	≥500	PASS

5.1.3.2 802.11g Test Mode

The minimum occupied bandwidth for the fundamental frequency 2412MHz is 15.9MHz. This occupied bandwidth complies with the FCC requirement.

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	15.9	≥500	PASS
6	2437	15.6	≥500	PASS
11	2462	15.8	≥500	PASS

5.1.3.3 802.11n Test Mode

The minimum occupied bandwidth for the fundamental frequency 2437MHz is 16.4MHz. This occupied bandwidth complies with the FCC requirement.

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	16.2	≥500	PASS
6	2437	16.4	≥500	PASS
11	2462	16.3	≥500	PASS

5.2 Peak Output Power

5.2.1 Definition

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

5.2.2 Test Description

See section 5.1.2 of this report.

5.2.3 Test Result

The EUT operates at maximum output power mode. The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

5.2.3.1 802.11b Test Mode

The maximum output power for the fundamental frequency 2437MHz is 10.14dBm. This power complies with the FCC requirement.

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	10.06	0.0101	30	1	PASS
6	2437	10.14	0.0103			PASS
11	2462	10.09	0.0102			PASS

5.2.3.2 802.11g Test Mode

The maximum output power for the fundamental frequency 2462 MHz is 10.32dBm. This power complies with the FCC requirement.

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	10.25	0.0106	30	1	PASS
6	2437	10.29	0.0107			PASS
11	2462	10.32	0.0108			PASS

5.2.3.3 802.11n Test Mode

The maximum output power for the fundamental frequency 2412 MHz is 10.17dBm. This power complies with the FCC requirement.

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	10.17	0.0104	30	1	PASS
6	2437	10.05	0.0101			PASS
11	2462	10.12	0.0103			PASS

5.3 Conducted Spurious Emission

5.3.1 Definition

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

5.3.2 Test Description

See section 5.1.2 of this report.

5.3.3 Test Result

Channel	Frequency (MHz)	Fundamental Level (dBm)	Emission Level Limits (dBm)
802.11b Low	2412	10.06	-9.94
802.11b Middle	2437	10.14	-9.86
802.11b High	2462	10.09	-9.91
802.11g Low	2412	10.25	-9.75
802.11g Middle	2437	10.29	-9.71
802.11g High	2462	10.32	-9.68
802.11n Low	2412	10.17	-9.83
802.11n Middle	2437	10.05	-9.95
802.11n High	2462	10.12	-9.88

NO.	Frequency	Measurement Bandwidth	Emission Level dBm	Limit	Margin
	MHz	KHz		dBm	dB
TX:802.11b Low Channel					
1	〈1000	100	\	-9.94	>20
2	4824	100	-31.65	-9.94	-21.71
3	7206	100	\	-9.94	>20
4	9608	100	\	-9.94	>20
5	12010	100	\	-9.94	>20
6	other	100	\	-9.94	>20
TX: 802.11b Middle Channel					
1	〈1000	100	\	-9.86	>20
2	4874	100	-33.43	-9.86	-23.57
3	7326	100	\	-9.86	>20
4	9768	100	\	-9.86	>20
5	12210	100	\	-9.86	>20
6	other	100	\	-9.86	>20
TX: 802.11b High Channel					
1	〈1000	100	\	-9.91	>20
2	4924	100	-32.08	-9.91	-22.17
3	7440	100	\	-9.91	>20
4	9920	100	\	-9.91	>20
5	12400	100	\	-9.91	>20
6	other	100	\	-9.91	>20
TX:802.11g Low Channel					
1	〈1000	100	\	-9.75	>20
2	4824	100	-34.18	-9.75	-24.43
3	7206	100	\	-9.75	>20
4	9608	100	\	-9.75	>20
5	12010	100	\	-9.75	>20
6	other	100	\	-9.75	>20
TX: 802.11g Middle Channel					
1	〈1000	100	\	-9.71	>20
2	4874	100	-33.92	-9.71	-24.21
3	7326	100	\	-9.71	>20
4	9768	100	\	-9.71	>20
5	12210	100	\	-9.71	>20
6	other	100	\	-9.71	>20
TX: 802.11g High Channel					
1	〈1000	100	\	-9.68	>20
2	4924	100	-34.36	-9.68	-24.68
3	7440	100	\	-9.68	>20
4	9920	100	\	-9.68	>20

5	12400	100	\	-9.68	>20
6	other	100	\	-9.68	>20
TX:802.11n Low Channel					
1	〈1000	100	\	-9.83	>20
2	4824	100	-35.45	-9.83	-25.62
3	7206	100	\	-9.83	>20
4	9608	100	\	-9.83	>20
5	12010	100	\	-9.83	>20
6	other	100	\	-9.83	>20
TX: 802.11n Middle Channel					
1	〈1000	100	\	-9.95	>20
2	4874	100	-34.86	-9.95	-24.91
3	7326	100	\	-9.95	>20
4	9768	100	\	-9.95	>20
5	12210	100	\	-9.95	>20
6	other	100	\	-9.95	>20
TX: 802.11n High Channel					
1	〈1000	100	\	-9.88	>20
2	4924	100	-34.69	-9.88	-24.81
3	7440	100	\	-9.88	>20
4	9920	100	\	-9.88	>20
5	12400	100	\	-9.88	>20
6	other	100	\	-9.88	>20
Measurement uncertainty:±3.2dB					

Notes:

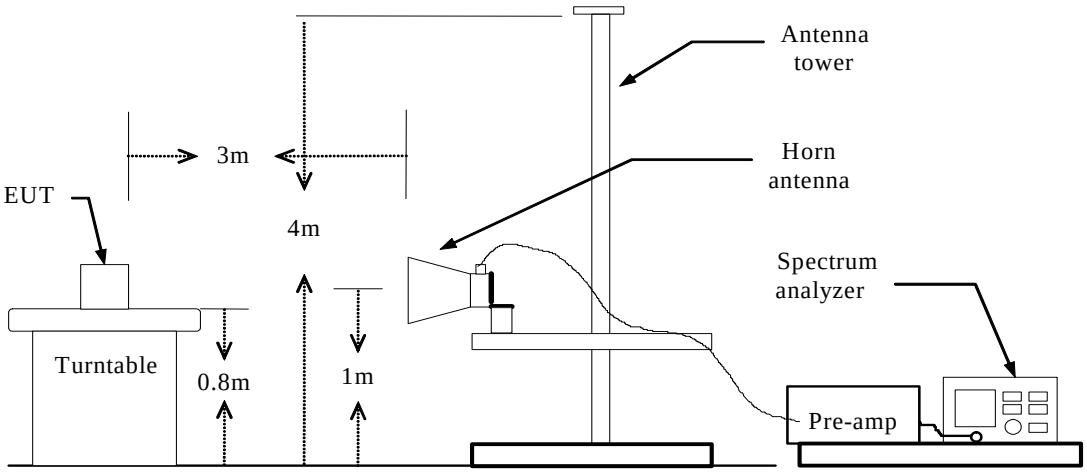
"\" in the table above means that the emissions are too small to be measured and are at least 20 dB below the limit. The measurement frequency is mainly from the environment noise.

5.4 Band Edge

5.4.1 Definition

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

5.4.2 Test Description



5.4.3 Test Result

The EUT operates at continuous transmit test mode. The peak and average test data of the lowest and highest channels are tested to verify the band edge emissions.

The radio frequency power beyond the band edge was 20dB below the peak output power, measured with 100 KHz resolution bandwidth.

Test Mode		Channel Marked Frequency	Limit (dBuv/m)	Test Result Highest Emission (dBuv/m)			
				Vertical		Horizontal	
				Peak	Average	Peak	Average
802.11 b	Low Channel	2300MHz	74(Peak) 54(Average)	31.45	20.86	31.16	20.08
		2390MHz		32.78	22.28	32.45	22.19
	High Channel	2483.5MHz		45.69	40.13	45.22	40.16
		2500MHz		36.10	24.45	36.37	24.23
802.11 g	Low Channel	2300MHz		31.04	21.59	30.04	20.01
		2390MHz		45.28	24.68	45.46	24.25
	High	2483.5MHz		46.75	40.15	46.82	40.34

Test Mode		Channel Marked Frequency	Limit (dBuv/m)	Test Result Highest Emission (dBuv/m)			
				Vertical		Horizontal	
				Peak	Average	Peak	Average
	Channel	2500MHz		35.61	23.95	35.38	23.26
802.11 n	Low Channel	2300MHz		30.36	20.51	30.24	20.12
		2390MHz		46.49	23.90	46.12	24.74
	High Channel	2483.5MHz		46.05	40.31	46.29	40.52
		2500MHz		35.98	24.64	32.07	24.11

5.5 Power Spectral Density (PSD)

5.5.1 Definition

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.5.2 Test Description

See section 5.1.2 of this report.

5.5.3 Test Result

The lowest, middle and highest channels are tested to verify the power spectral density.

5.5.3.1 802.11b Test Mode

Channel	Frequency (MHz)	PSD (dBm)	Limits(dBm)	Result
1	2412	-23.23	≤8	PASS
6	2437	-20.86	≤8	PASS
11	2462	-22.18	≤8	PASS

5.5.3.2 802.11g Test Mode

Channel	Frequency (MHz)	PSD (dBm)	Limits(dBm)	Result
1	2412	-24.69	≤8	PASS
6	2437	-26.05	≤8	PASS
11	2462	-25.41	≤8	PASS

5.5.3.3 802.11n Test Mode

Channel	Frequency (MHz)	PSD (dBm)	Limits(dBm)	Result
1	2412	-22.35	≤8	PASS
6	2437	-21.54	≤8	PASS
11	2462	-23.76	≤8	PASS

5.6 Conducted Emission

5.6.1 Definition

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

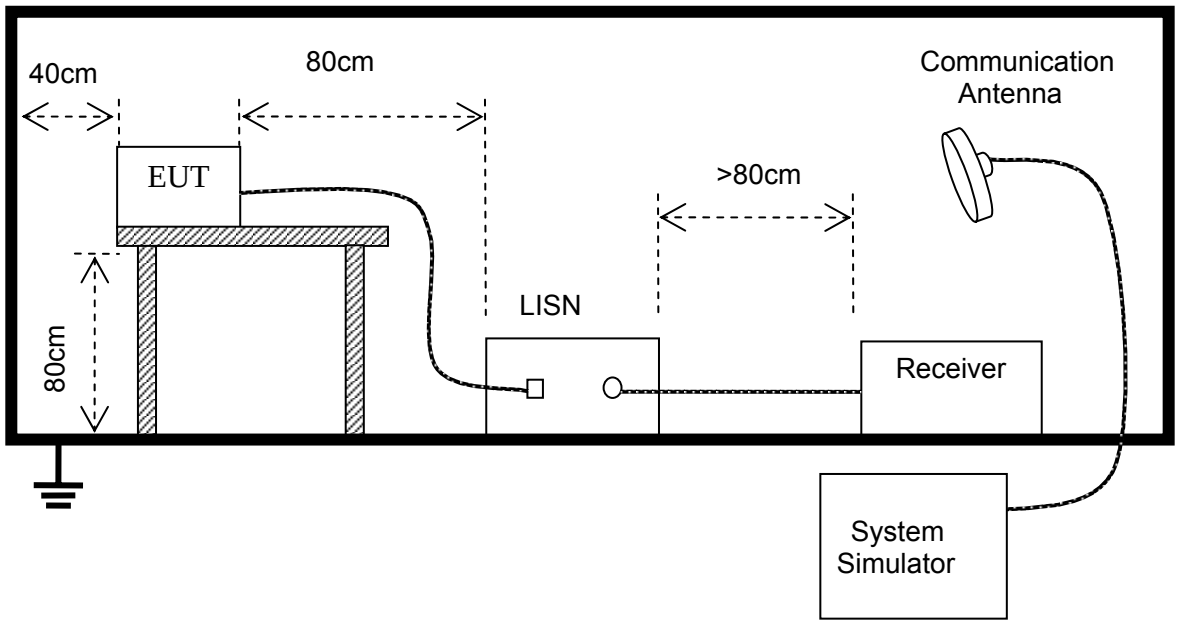
Note:

1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

5.6.2 Test Description

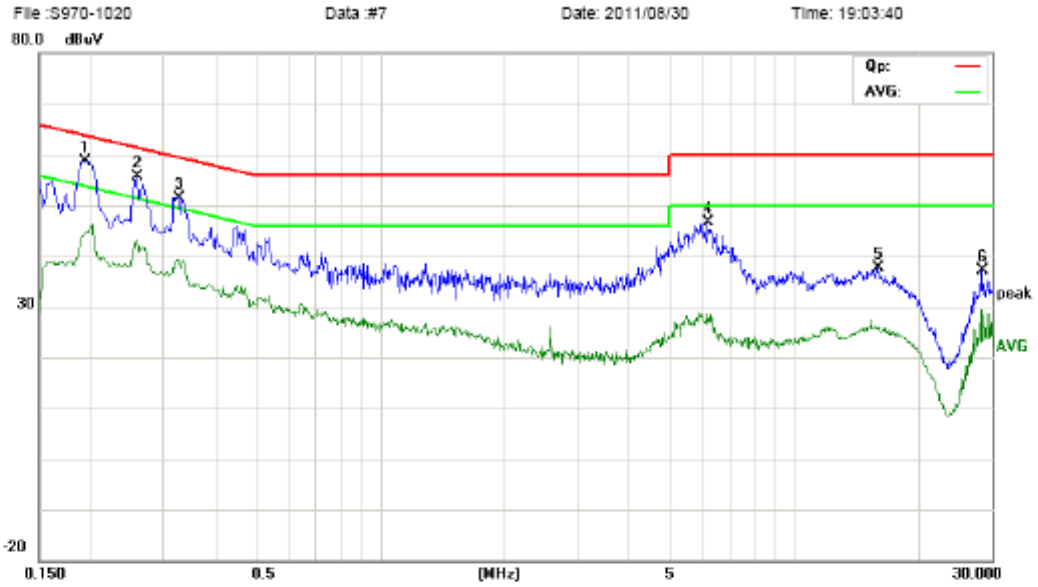
The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated and is set to operate at maximum power.



5.6.3 Test Result

Compliance Laboratory
Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement



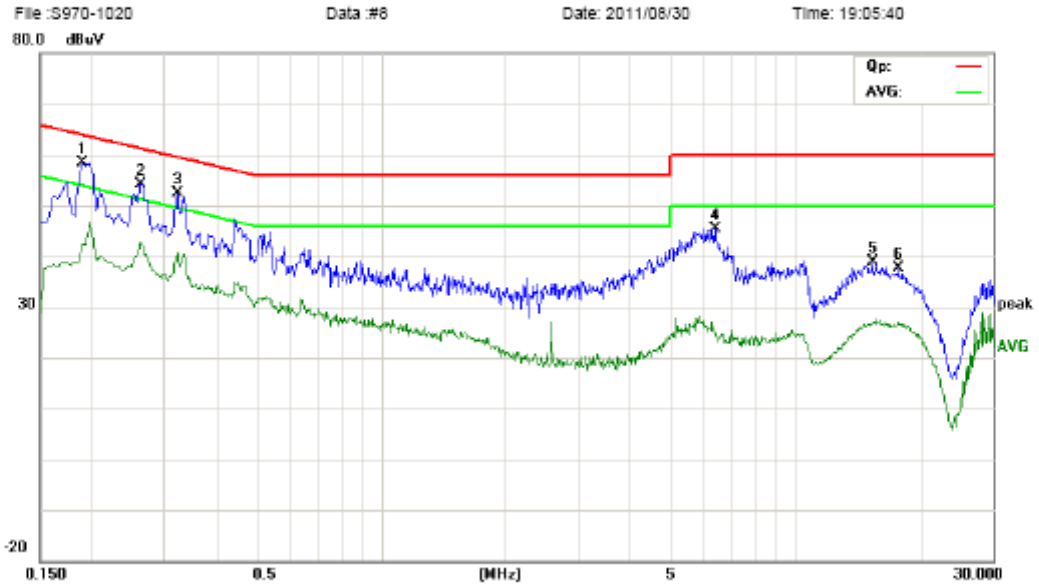
Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Table
M/N: S970-1020
Mode: FULL LOAD
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1940	47.06	11.64	58.70	63.86	-5.16	peak	
2		0.2580	44.04	11.61	55.65	61.50	-5.85	peak	
3		0.3260	40.27	11.16	51.43	59.55	-8.12	peak	
4		6.1660	35.27	11.30	46.57	60.00	-13.43	peak	
5		15.8300	28.72	9.00	37.72	60.00	-22.28	peak	
6		28.4060	28.05	9.00	37.05	60.00	-22.95	peak	

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

Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Table
M/N: S970-1020
Mode: FULL LOAD
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1900	47.03	11.40	58.43	64.04	-5.61	peak	
2		0.2620	42.55	11.59	54.14	61.37	-7.23	peak	
3		0.3220	41.26	11.19	52.45	59.66	-7.21	peak	
4		6.3860	34.27	11.17	45.44	60.00	-14.56	peak	
5		15.3700	29.98	9.00	38.98	60.00	-21.02	peak	
6		17.7540	28.52	9.00	37.52	60.00	-22.48	peak	

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

5.7 Radiated Emission

5.7.1 Definition

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

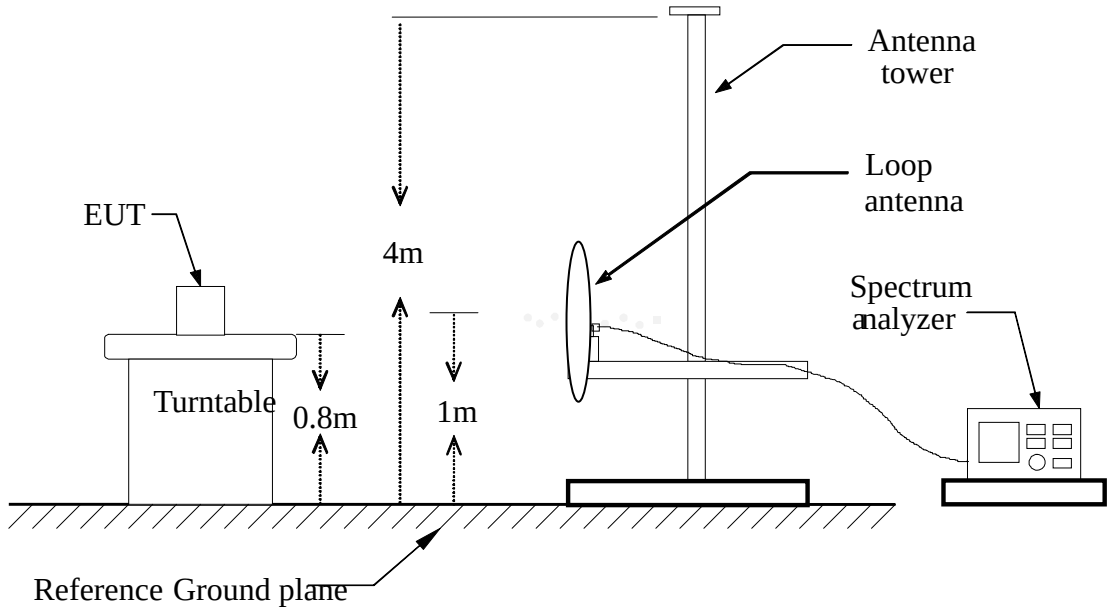
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

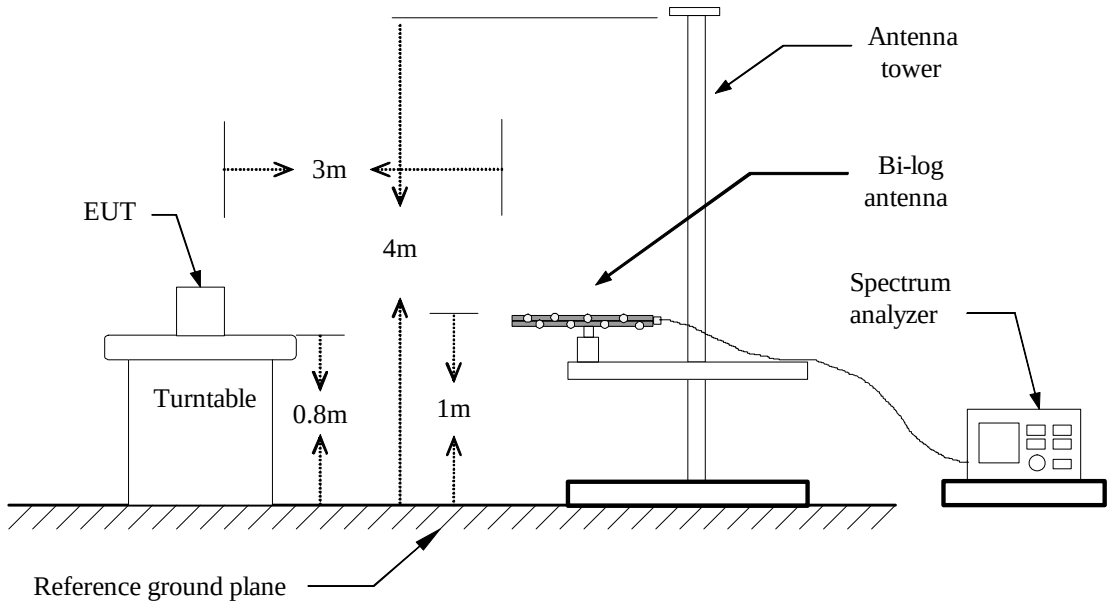
5.7.2 Test Description

A. Test Setup:

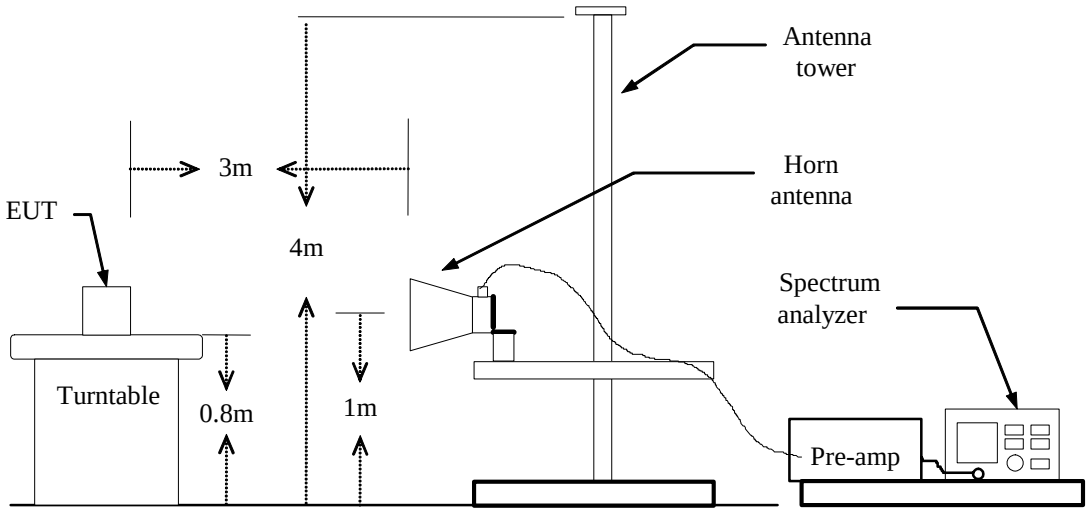
Below 30MHz:



Form 30MHz to 1000 MHz:



Above 1GHz:



B. Test procedures

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 1GHz: RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

   Above 1GHz : (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

5.7.3 Test Mode:

Preliminary Radiated Emission Test				
Frequency Range Investigated			9 KHz TO 26000 MHz	
Mode of operation	**Date**	**Report No.**	**Data#**	**Worst Mode**
802.11b Mode	2011-9-10	MOST110820F2	S970-1020 _0_(H, V)	☐
802.11g Mode	2011-9-10	MOST110820F2	S970-1020 _1_(H, V)	☒
802.11n Mode	2011-9-10	MOST110820F2	S970-1020 _2_(H, V)	☐

Note:All the test mode were tested during the testing, but only the worst test data of test mode was listed on the following.

5.7.4 Test Result

Form 9KHz to 30MHz:

Operation Mode:	802.11g TX Low channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
--	V	--	--	--	--	--	--	--	>20	Peak
N/A										
--	H	--	--	--	--	--	--	--	>20	Peak
N/A										

-No detected in below 30MHz.

Above 30 MHz and Below 1000MHz:

Operation Mode:	802.11g TX Low channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
--	V	--	--	--	--	--	--	--	>20	Peak
N/A										
--	H	--	--	--	--	--	--	--	>20	Peak
N/A										

Note:

1. The emission behaviour belongs to narrowband spurious emission.

2. Remark"---"means that the emission level is too low to be measured

3. The frequency is mainly from the environment noise.

Above 1 GHz

Operation Mode:	802.11g TX Low channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
2412.01	V	83.46	74.05	10.05	93.51	84.10	114.00	94.00	-9.90	Average
4824.02	V	32.63	--	8.16	38.69	--	74.00	54.00	-15.31	Peak
N/A									>20	
2412.01	H	80.27	71.34	10.05	90.32	81.39	114.00	94.00	-12.61	Average
4824.02	H	30.29	--	8.16	37.88	--	74.00	54.00	-16.12	Peak
N/A									>20	

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie:
   margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Form 9KHz to 30MHz:

Operation Mode:	802.11g TX Middle channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
--	V	--	--	--	--	--	--	--	>20	Peak
N/A										
--	H	--	--	--	--	--	--	--	>20	Peak
N/A										

-No detected in below 30MHz.

Above 30 MHz and Below 1000MHz:

Operation Mode:	802.11g TX Middle channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
--	V	--	--	--	--	--	--	--	>20	Peak
N/A										
--	H	--	--	--	--	--	--	--	>20	Peak
N/A										

Note:

1. The emission behaviour belongs to narrowband spurious emission.

2. Remark"---"means that the emission level is too low to be measured

3. The frequency is mainly from the environment noise.

Above 1 GHz

Operation Mode:	802.11g TX Middle channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
2437.01	V	85.16	76.24	10.18	95.34	86.42	114.00	94.00	-7.58	Peak
4872.02	V	30.45	--	8.24	38.69	--	74.00	54.00	-15.31	Peak
N/A									>20	
2437.01	H	84.79	75.68	10.18	94.94	85.86	114.00	94.00	-8.14	Peak
4872.02	H	29.64	--	8.24	37.88	--	74.00	54.00	-16.12	Peak
N/A									>20	

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie:
   margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Form 9KHz to 30MHz:

Operation Mode:	802.11g TX High channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
--	V	--	--	--	--	--	--	--	>20	Peak
N/A										
--	H	--	--	--	--	--	--	--	>20	Peak
N/A										

-No detected in below 30MHz.

Above 30 MHz and Below 1000MHz:

Operation Mode:	802.11g TX High channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
--	V	--	--	--	--	--	--	--	>20	Peak
N/A										
--	H	--	--	--	--	--	--	--	>20	Peak
N/A										

Note:

1. The emission behaviour belongs to narrowband spurious emission.

2. Remark"---"means that the emission level is too low to be measured

3. The frequency is mainly from the environment noise.

Above 1 GHz

Operation Mode:	802.11g TX High channel	**Test Date:**	September 10, 2011
Temperature:	20°C	**Tested by:**	Petter Ping
Humidity:	70 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
2462.01	V	83.90	72.56	10.22	94.12	82.78	114.00	94.00	-11.22	Peak
4924.02	V	30.45	--	8.28	38.69	--	74.00	54.00	-15.31	Peak
N/A									>20	
2462.01	H	82.71	71.95	10.22	92.93	82.17	114.00	94.00	-11.83	Peak
4924.02	H	29.64	--	8.28	37.88	--	74.00	54.00	-16.12	Peak
N/A									>20	

Notes:

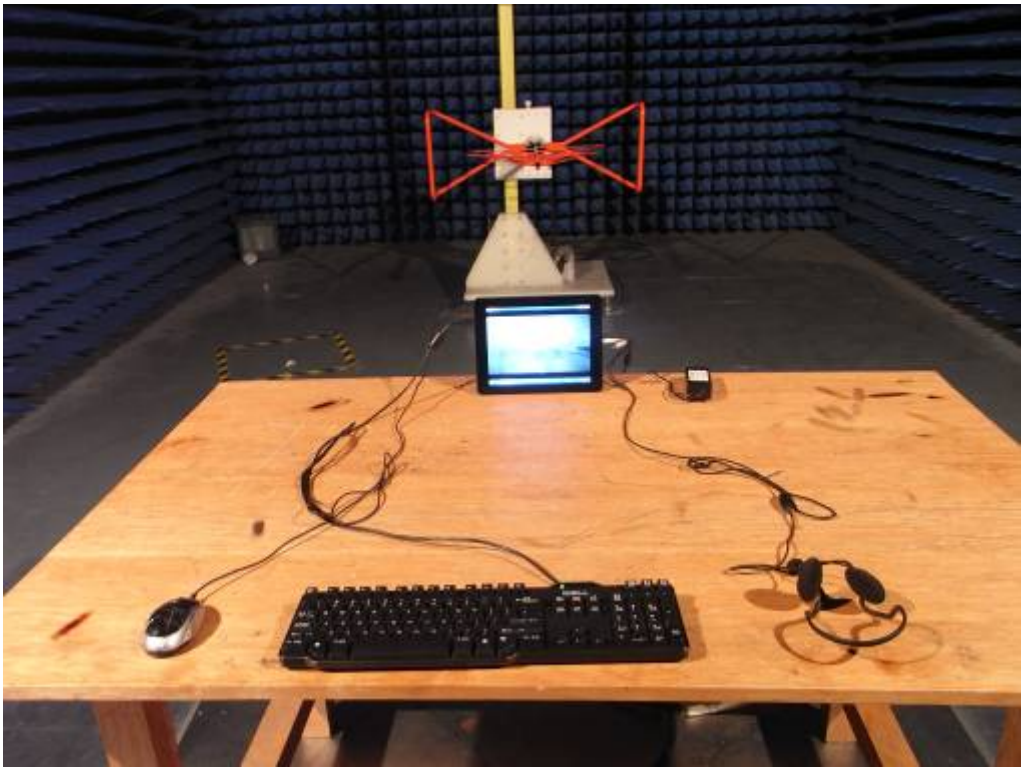
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie:
   margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

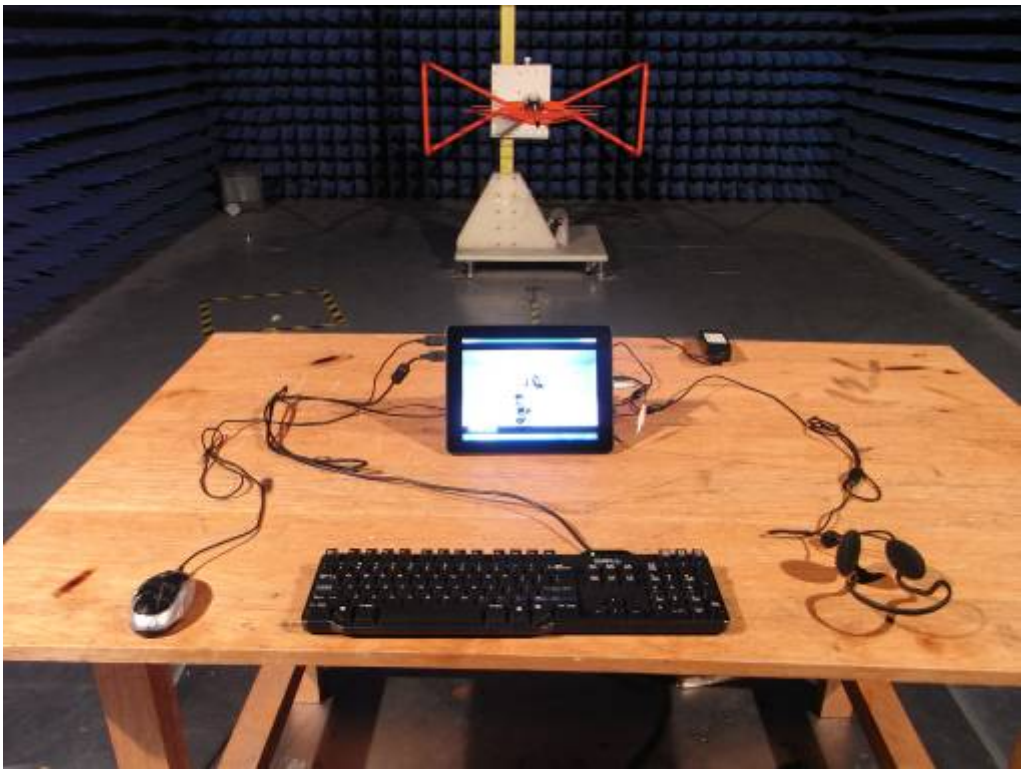
APPENDIX 1

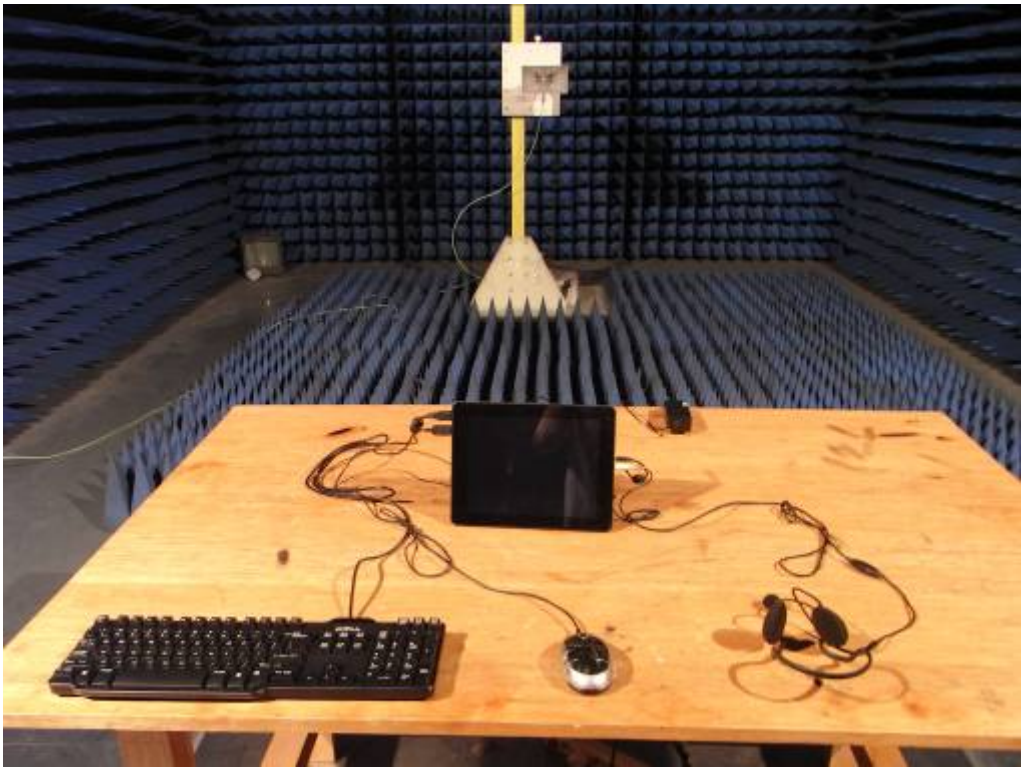
PHOTOGRAPHS OF TEST SETUP

CE TEST SETUP

RE TEST SETUP







APPENDIX 2

PHOTOGRAPHS OF EUT

FRONT VIEW OF SAMPLE

BACK VIEW OF SAMPLE

LEFT VIEW OF SAMPLE

RIGHT VIEW OF SAMPLE

TOP VIEW OF SAMPLE

BOTTOM VIEW OF SAMPLE

PHOTO OF POWER SUPPLY

PHOTO OF THE ENTIRE SAMPLE

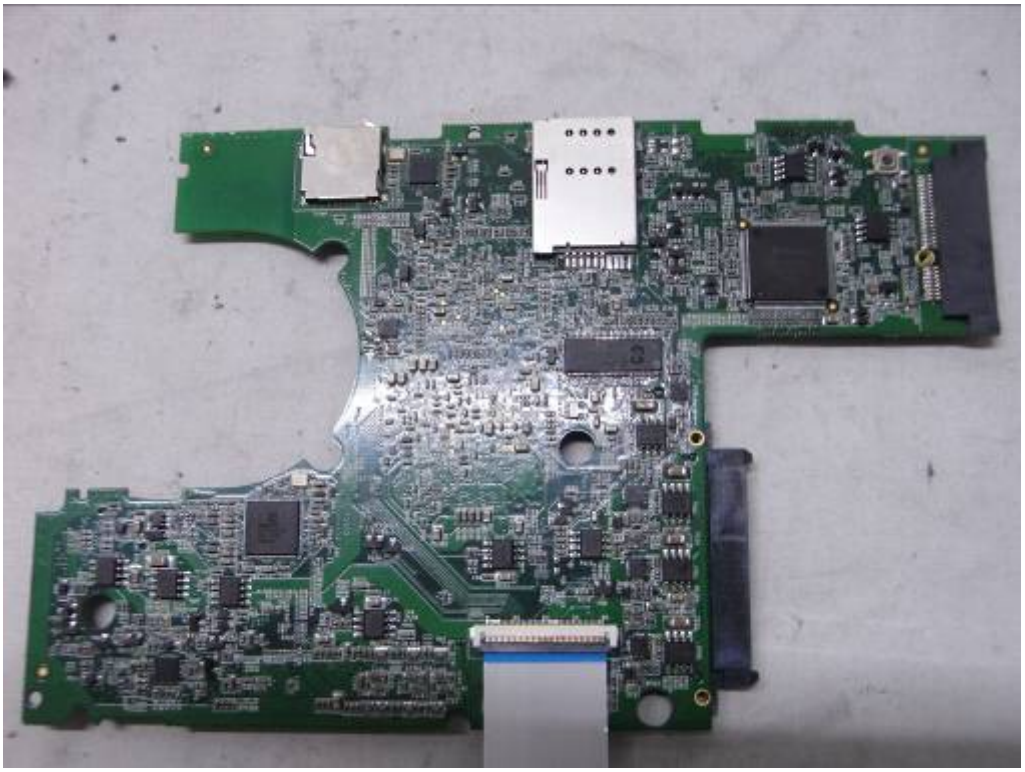
INTERNAL PHOTO OF SAMPLE – 1

INTERNAL PHOTO OF SAMPLE -2

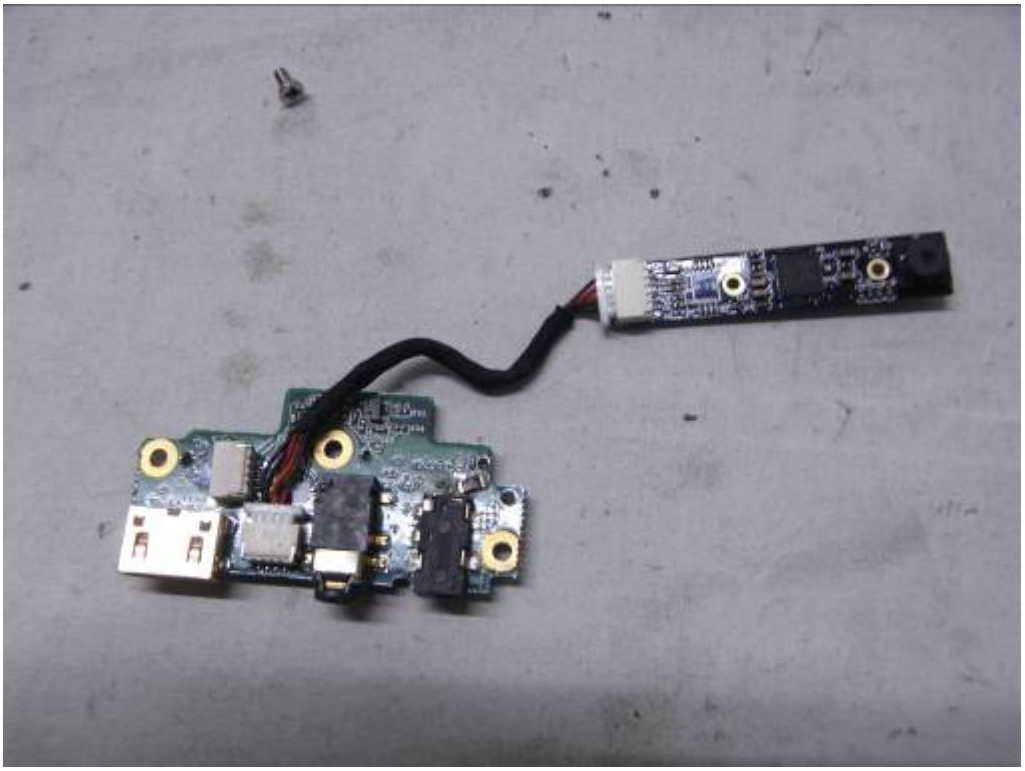
INTERNAL PHOTO OF SAMPLE -3

INTERNAL PHOTO OF SAMPLE -4

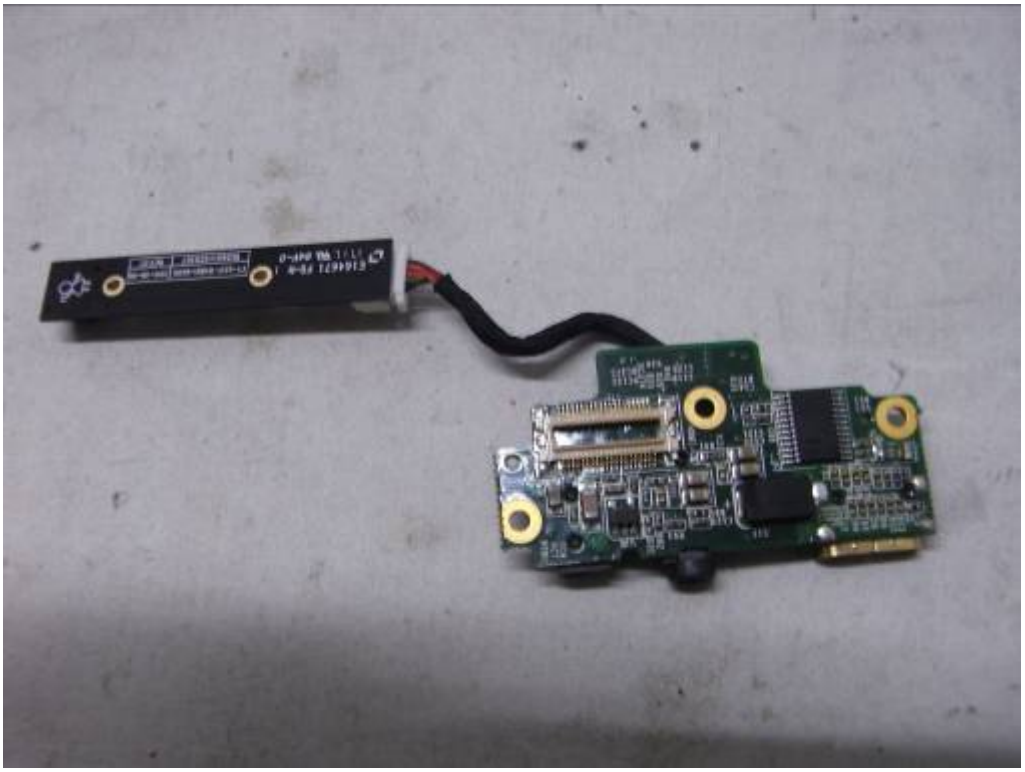
INTERNAL PHOTO OF SAMPLE -5



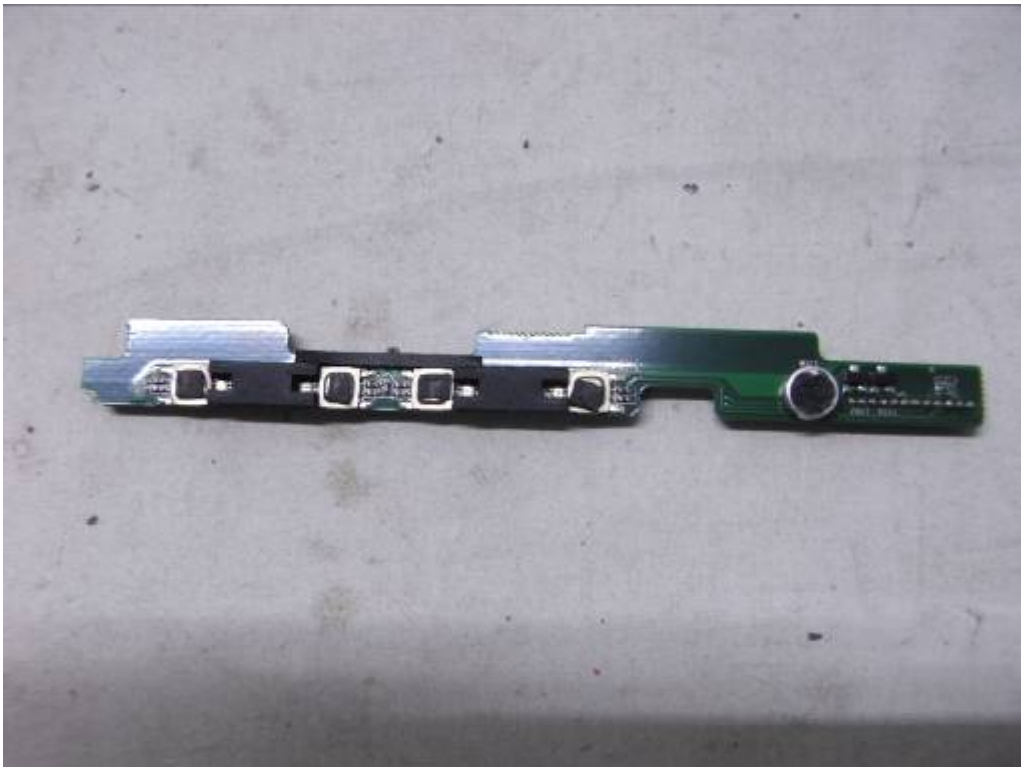
INTERNAL PHOTO OF SAMPLE -6



INTERNAL PHOTO OF SAMPLE -7

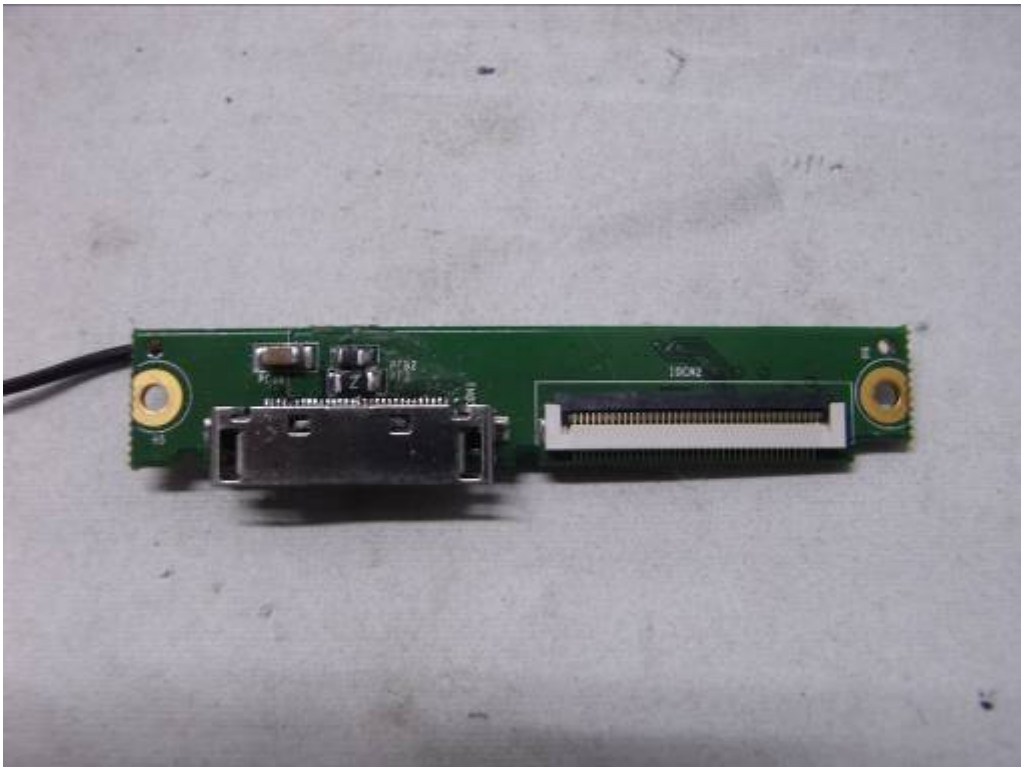


INTERNAL PHOTO OF SAMPLE -8

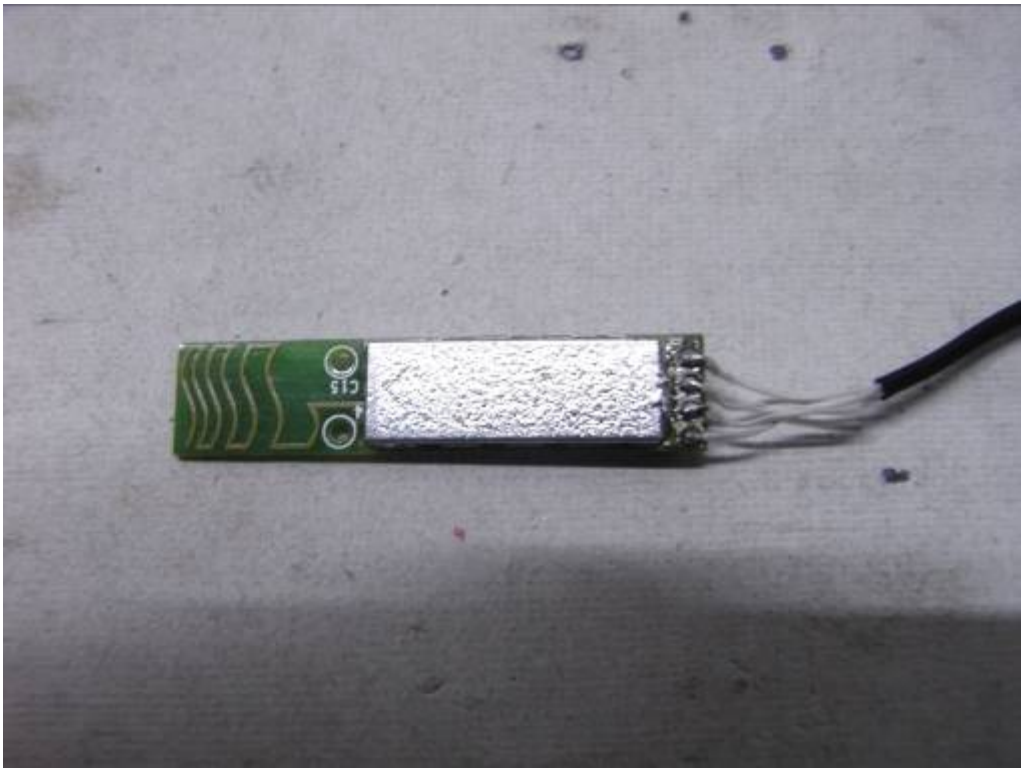


INTERNAL PHOTO OF SAMPLE -9

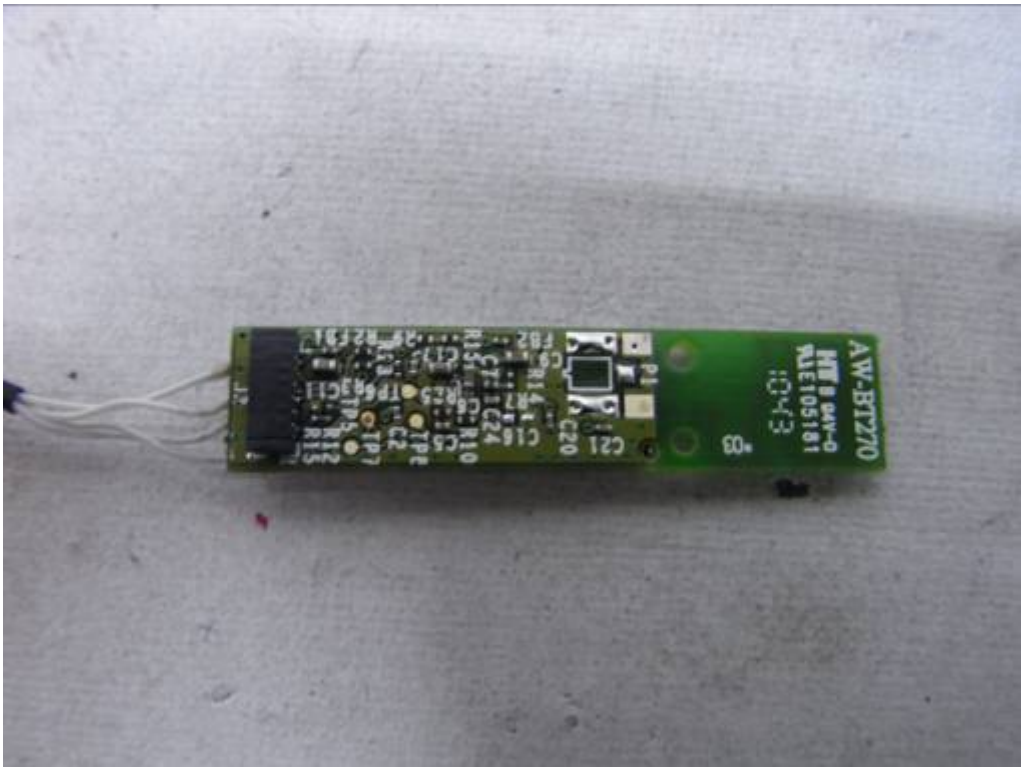
INTERNAL PHOTO OF SAMPLE -10



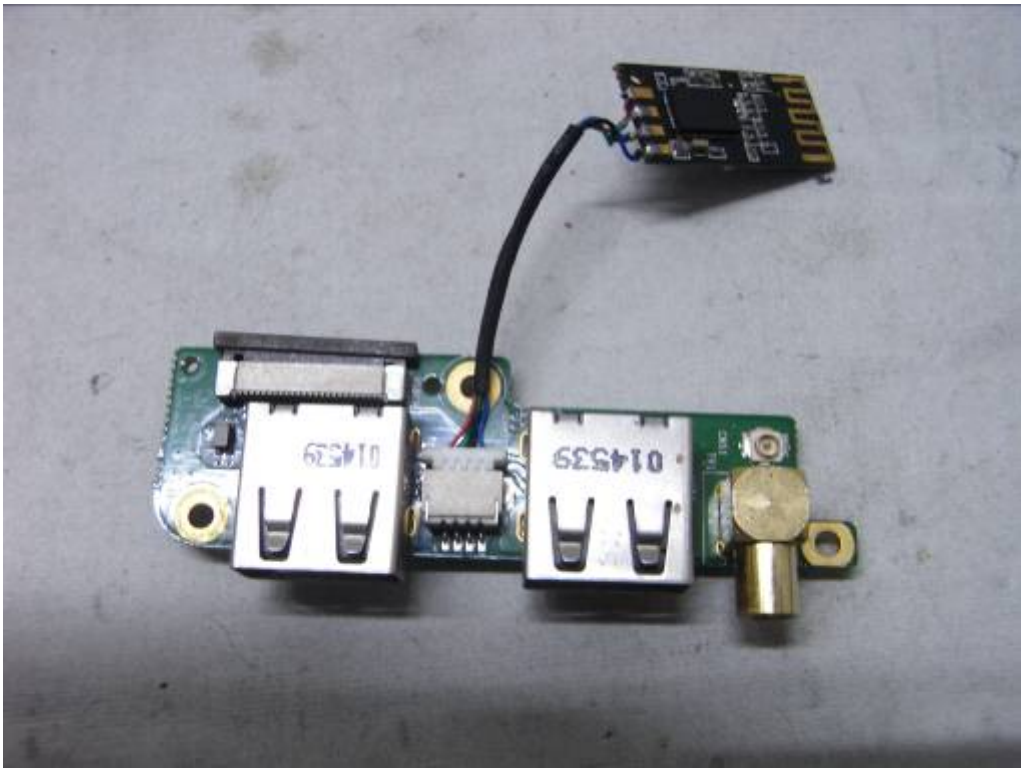
INTERNAL PHOTO OF SAMPLE -11



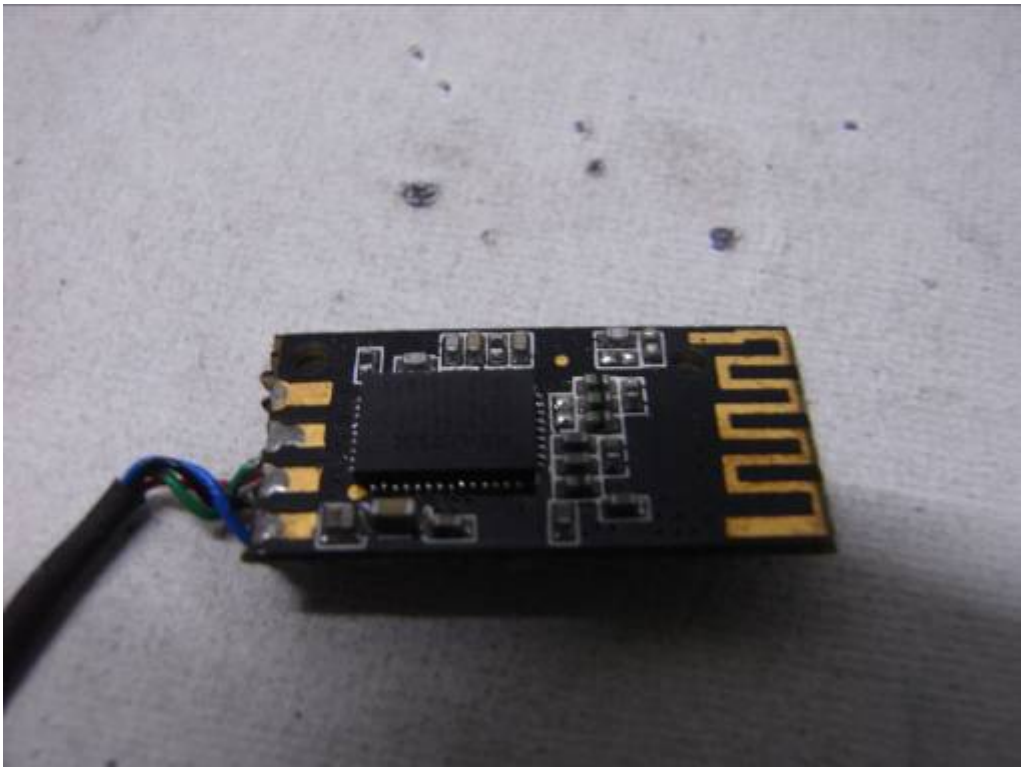
INTERNAL PHOTO OF SAMPLE -12



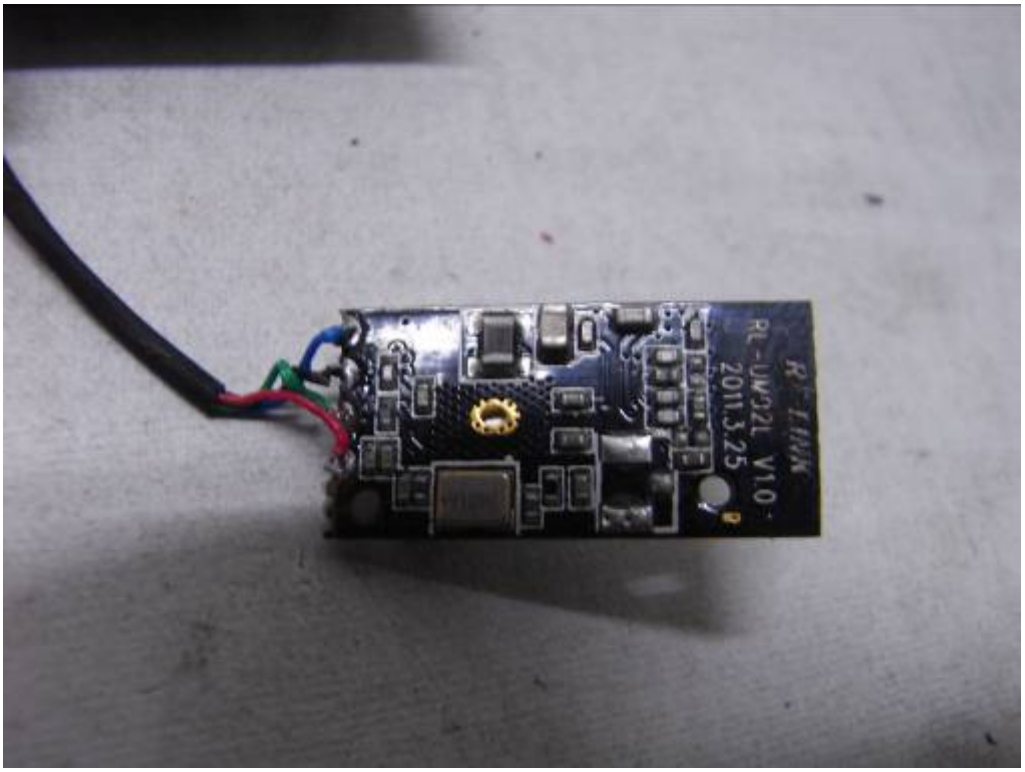
INTERNAL PHOTO OF SAMPLE -13



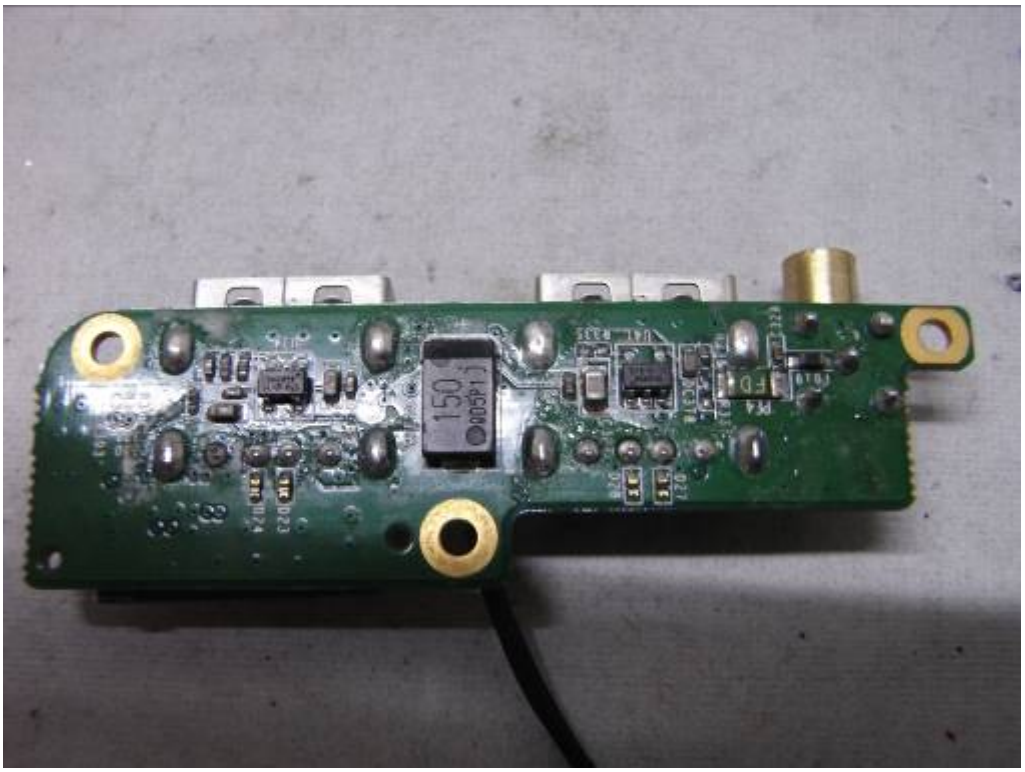
INTERNAL PHOTO OF SAMPLE -14



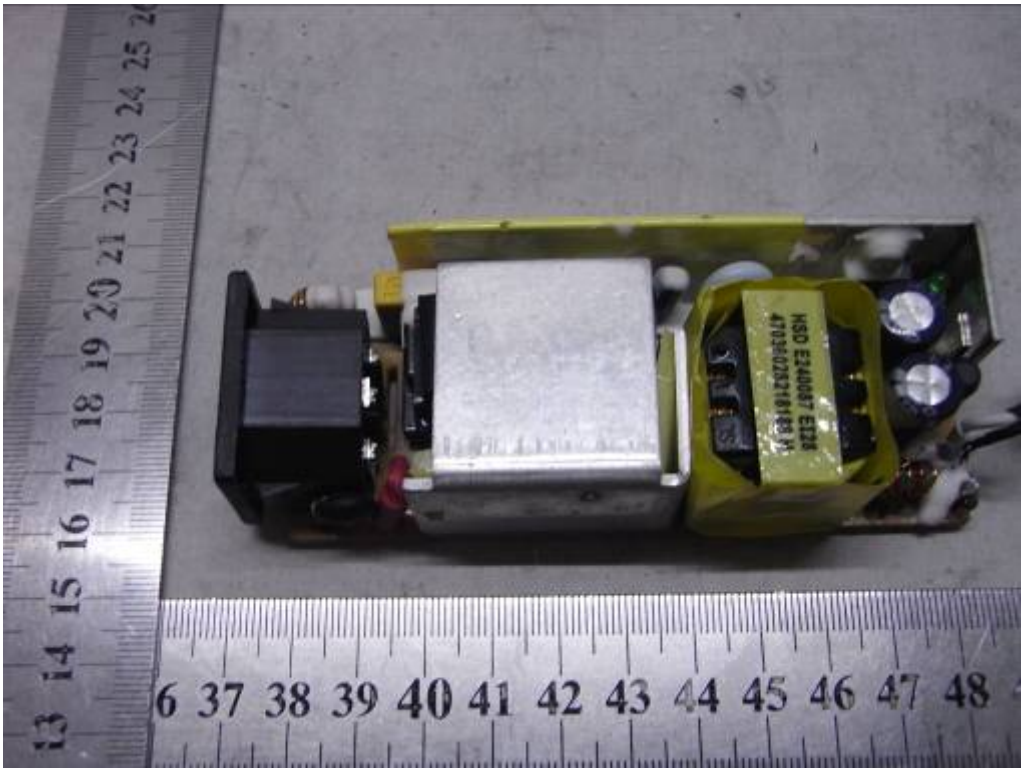
INTERNAL PHOTO OF SAMPLE -15



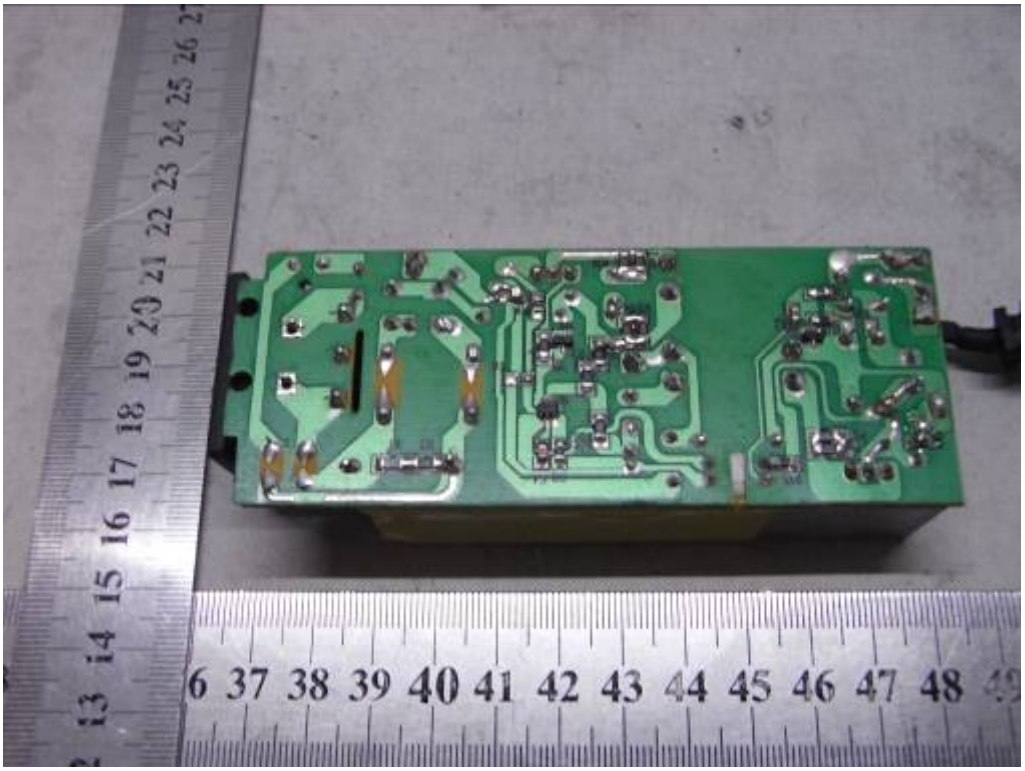
INTERNAL PHOTO OF SAMPLE -16



INTERNAL PHOTO OF POWER SUPPLY-1



INTERNAL PHOTO OF POWER SUPPLY-2



------END OF REPORT------