Compliance Laboratory

FCC 47 CFR PART 15 SUBPART B

TEST REPORT

For

Applicant :	**YF INTERNATIONAL LIMITED**
Address :	**17F, ZHONGKE BUILDING, CHINA ACADEMY OF SCIENCE& TECH DEVELOPMENT, HIGH TECH SOUTH STREET 1, SHENZHEN, CHINA**
Product Name :	**CONNECTED PND**
Model Name :	**PA02-5002, PA02-5003, PA02-5004, PA02-5005, PA02-5006, PA02-5007,PA02-5008, PA02-5009, PA02-5010, PA02-5011, PA02-5012**
Brand Name :	**N/A**
FCC ID :	**VUP-A0201P**
Report No. :	**MOST100403F1**
Date of Issue :	**April. 27, 2010**

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**
Fax :	**86-755-8617 0310**

TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY

Equipment Under Test:	Connected PND
Brand Name:	N/A
Model Number:	PA02-5002
Series Number:	PA02-5001, PA02-5003, PA02-5004, PA02-5005, PA02-5006, PA02-5007, PA02-5008, PA02-5009, PA02-5010, PA02-5011, PA02-5012
Model Difference description:	The series models are different in appearance and color with the same functions.
FCC ID:	VUP-A0201P
Applicant:	YF International Limited 17F, Zhongke Building, China Academy of Science& Tech Development, High Tech South Street 1, Shenzhen, China
Manufacturer:	YF International Limited 17F, Zhongke Building, China Academy of Science& Tech Development, High Tech South Street 1, Shenzhen, China
Technical Standards:	FCC Part 15 B
File Number:	MOST100403F1
Date of test:	April. 10, 2010 –April. 27, 2010
Deviation:	None
Condition of Test Sample:	Normal
Test Result:	PASS

The above equipment was tested by MOST for compliance with the requirements set forth in FCC Part 15 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): Candy

Candy Zhang April. 27, 2010

Review by (+ signature):

Sam Zhong April. 27, 2010

Approved by (+ signature):

Yvette Zhou April. 27, 2010

2. GENERAL INFORMATION

2.1 PRODUCT INFORMATION

Housing Type:	Plastic
EUT Rating Voltage:	AC 120V/60Hz/ DC 12/24V/ DC 3.7V by Lithium-ion Battery
Voltage During Test:	AC 120V/60Hz
I/O Type of EUT:	USB Port/Audio Port
I/O Q'TY:	1/1
Model Number:	PA02-5002
Series Number:	PA02-5001, PA02-5003, PA02-5004, PA02-5005, PA02-5006, PA02-5007, PA02-5008, PA02-5009, PA02-5010, PA02-5011, PA02-5012
Description of Differences:	The series models are different in appearance and color with the same functions.

NOTE:

1. Please refer to Appendix 2 for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 OBJECTIVE

Perform FCC Part 15 Subpart B tests for FCC Marking.

2.3 TEST STANDARDS AND RESULTS

Test items and the results are as bellow:

EMISSION			
Standard	**Item**	**Result**	**Remarks**
FCC 47 CFR Part 15 Subpart B	Conducted	PASS	Meet Class B limit
	Radiated	PASS	Meet Class B limit

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

2.5 MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

- Uncertainty of Conducted Emission, Uc = ±1.8dB
- Uncertainty of Radiated Emission, Uc = ±3.2dB

3. TEST METHODOLOGY

3. 1TEST 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 C63.4:2003 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 C63.4:2003 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.

3.2 GENERAL TEST PROCEDURES

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 C63.4:2003,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 C63.4:2003.

4 SETUP OF EQUIPMENT UNDER TEST

4.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 SUPPORT EQUIPMENT

Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
Notebook	Thinkpad	X200	N/A	R90GK93	N/A	N/A
Adapter	Thinkpad	92P1158	N/A	N/A	N/A	1.8M Un-Shielded
SD Card	Transcend	2.0G	N/A	N/A	N/A	N/A

Remark:
All the equipment/cables were placed in the worst-case [-configuration to maximize the emission during the test.
Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4. 3 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	Calculator due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2011/03/14
2	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2011/03/14
3	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2011/03/14
4	Terminator	Hubersuhner	50Ω	No.1	2011/03/14
5	RF Cable	SchwarzBeck	N/A	No.1	2011/03/14
6	Test Receiver	Rohde & Schwarz	ESPI	101202	2011/03/14
7	Bilog Antenna	Sunol	JB3	A121206	2011/03/14
8	Test Antenna - Horn	Schwarzbeck	BBHA 9120C	--	2011/03/14
9	Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	--	2011/03/14
10	Cable	Resenberger	N/A	NO.1	2011/03/14
11	Cable	SchwarzBeck	N/A	NO.2	2011/03/14
12	Cable	SchwarzBeck	N/A	NO.3	2011/03/14
13	DC Power Filter	DuoJi	DL2×30B	N/A	2011/03/14
14	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2011/03/14
15	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2011/03/14
16	Test Receiver	Rohde & Schwarz	ESCI	100492	2011/03/14
17	Absorbing Clamp	Luthi	MDS21	3635	2011/03/14
18	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2011/03/14
19	AC Power Source	Kikusui	AC40MA	LM003232	2011/03/14
20	Test Analyzer	Kikusui	KHA1000	LM003720	2011/03/14
21	Line Impendence Network	Kikusui	LIN40MA-PCR-L	LM002352	2011/03/14
22	ESD Tester	Kikusui	KES4021	LM003537	2011/03/14
23	EMCPRO System	EM Test	UCS-500-M4	V0648102026	2011/03/14
24	Signal Generator	IFR	2032	203002/100	2011/03/14
25	Amplifier	A&R	150W1000	301584	2011/03/14
26	CDN	FCC	FCC-801-M2-25	47	2011/03/14
27	CDN	FCC	FCC-801-M3-25	107	2011/03/14
28	EM Injection Clamp	FCC	F-203I-23mm	403	2011/03/14
29	RF Cable	MIYAZAKI	N/A	No.1/No.2	2011/03/14
30	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2011/03/14
31	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2011/03/14

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

5. 47 CFR PART 15B REQUIREMENTS

5.1 GENERAL INFORMATION

EUT Function and Test Mode

Mode 1: FM Transmitting Mode

During the test, the EUT was playing the FM transmitting function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 2: Bluetooth Mode

During the test, the EUT was playing the Bluetooth function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 3: WIFI Mode

During the test, the EUT was playing the WIFI function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 4: GPS Mode

During the test, the EUT was playing the GPS function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 5: GPRS Mode

During the test, the EUT was playing the GPRS function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 6: Call Mode

During the test, the EUT was playing the phone function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 7 MP3/MP4 Mode

During the test, the EUT was playing the MP3/MP4 function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger+ Earphone.**

Mode 8: TV Mode

During the test, the EUT was playing the TV function continuously.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

Mode 9: USB Mode

During the test, the EUT was connected with the notebook and made the data transmission function continuously.

The EUT configuration of the emission test was **EUT + Battery+ USB Cable+ Notebook** (Thinkpad X200, SN: R90GK93).

Mode 10: Idle Mode

During the test, the EUT was on the idle and charging mode.

The EUT configuration of the emission test was **EUT + Battery+ Charger.**

6. LINE CONDUCTED EMISSION TEST

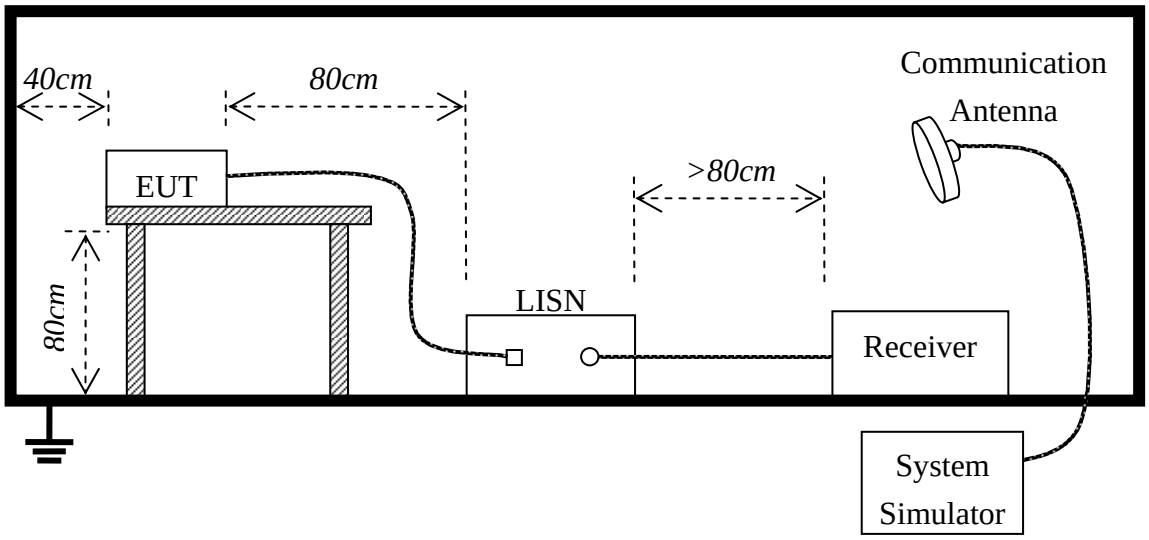
6.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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

6.2. BLOCK DIAGRAM OF TEST SETUP



6.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per FCC Part 15.
3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15.
4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7) Analyzer / Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.
8) During the above scans, the emissions were maximized by cable manipulation.
9) The following test mode(s) were scanned during the preliminary test:

Preliminary Conducted Emission Test				
Frequency Range Investigated		150KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
FM transmitting	2010-04-10	MOST100403F1	PA02-5002_0_(L, N)	☐
Bluetooth Mode	2010-04-10	MOST100403F1	PA02-5002_1_(L, N)	☐
WIFI Mode	2010-04-10	MOST100403F1	PA02-5002_2_(L, N)	☐
GPS Mode	2010-04-10	MOST100403F1	PA02-5002_3_(L, N)	☐
GPRS Mode	2010-04-10	MOST100403F1	PA02-5002_4_(L, N)	☐
Call Mode	2010-04-10	MOST100403F1	PA02-5002_5_(L, N)	☒
MP3/MP4 Mode	2010-04-10	MOST100403F1	PA02-5002_6_(L, N)	☐
TV Mode	2010-04-10	MOST100403F1	PA02-5002_7_(L, N)	☐
USB Mode	2010-04-10	MOST100403F1	PA02-5002_8_(L, N)	☐
Idle Mode	2010-04-10	MOST100403F1	PA02-5002_9_(L, N)	☐

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

6.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

EUT and support equipment was set up on the test bench as per step 9 of the preliminary test.

A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

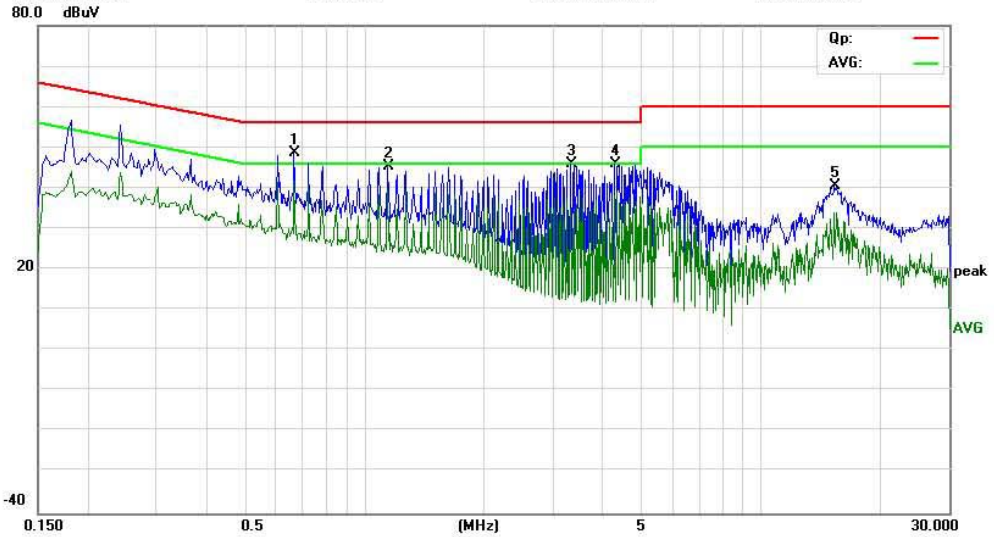
The test data of the worst case condition(s) was reported on the Summary Data page.

6.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

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

Conducted Emission Measurement

File :PA02-5002 Data :#21 Date: 2010/04/10 Time: 1:19:13



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: Call Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.6660	38.57	10.00	48.57	56.00	-7.43	peak	
2		1.1460	35.39	9.85	45.24	56.00	-10.76	peak	
3		3.3300	35.63	10.33	45.96	56.00	-10.04	peak	
4		4.2940	34.71	11.29	46.00	56.00	-10.00	peak	
5		15.3580	31.42	9.00	40.42	60.00	-19.58	peak	

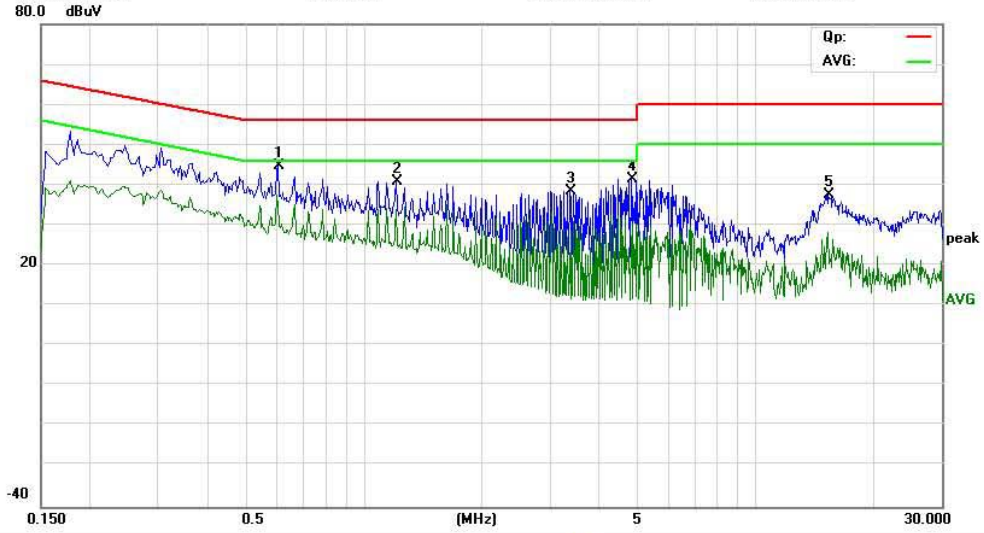
*:Maximum data x:Over limit l:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#22 Date: 2010/04/10 Time: 1:20:24



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: Call Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.6060	34.77	10.00	44.77	56.00	-11.23	peak	
2		1.2100	31.03	9.79	40.82	56.00	-15.18	peak	
3		3.3780	28.14	10.38	38.52	56.00	-17.48	peak	
4		4.8340	29.54	11.83	41.37	56.00	-14.63	peak	
5		15.3140	28.62	9.00	37.62	60.00	-22.38	peak	

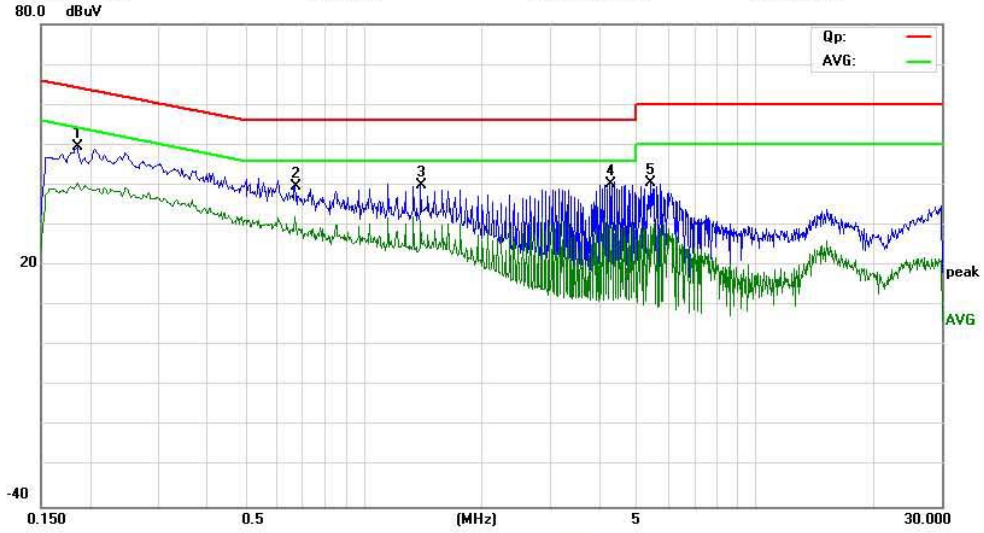
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#19 Date: 2010/04/10 Time: 1:48:39



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: Idle Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1860	38.51	11.16	49.67	64.21	-14.54	peak	
2		0.6700	29.59	10.00	39.59	56.00	-16.41	peak	
3		1.4020	30.25	9.60	39.85	56.00	-16.15	peak	
4		4.2620	29.06	11.26	40.32	56.00	-15.68	peak	
5		5.4180	28.86	11.75	40.61	60.00	-19.39	peak	

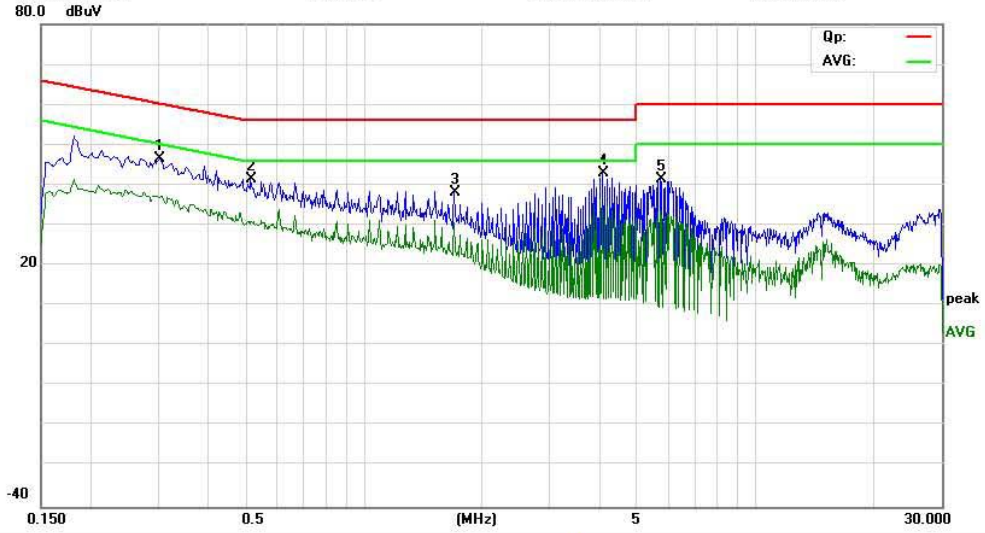
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#20 Date: 2010/04/10 Time: 1:49:41



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: Idle mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3020	35.27	11.32	46.59	60.19	-13.60	peak	
2		0.5180	31.46	10.00	41.46	56.00	-14.54	peak	
3		1.7060	28.88	9.29	38.17	56.00	-17.83	peak	
4	*	4.0820	31.86	11.08	42.94	56.00	-13.06	peak	
5		5.7260	29.91	11.56	41.47	60.00	-18.53	peak	

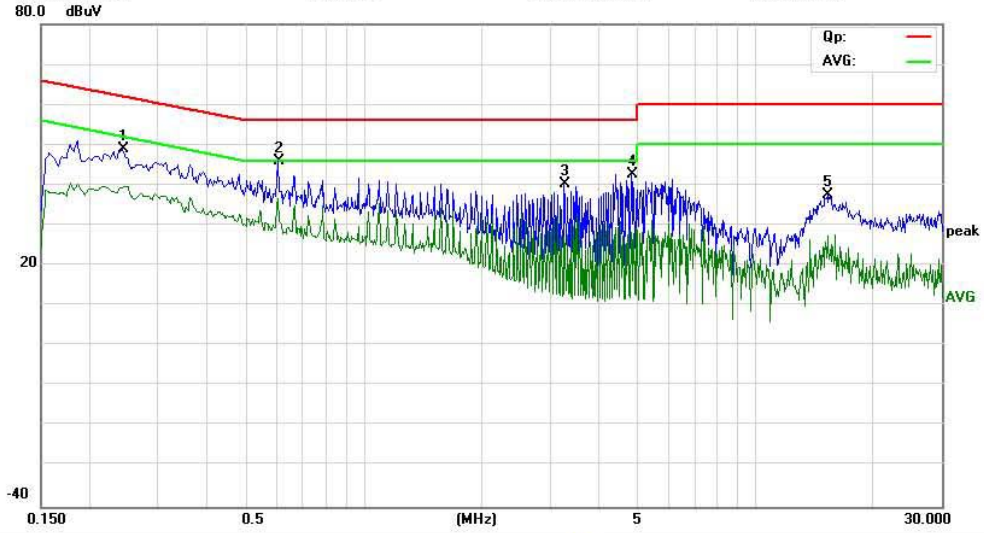
*:Maximum data x:Over limit l:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#23 Date: 2010/04/10 Time: 1:22:19



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: TV Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2420	37.30	11.72	49.02	62.03	-13.01	peak	
2	*	0.6060	35.83	10.00	45.83	56.00	-10.17	peak	
3		3.2700	30.01	10.27	40.28	56.00	-15.72	peak	
4		4.8380	30.92	11.84	42.76	56.00	-13.24	peak	
5		15.2740	28.66	9.00	37.66	60.00	-22.34	peak	

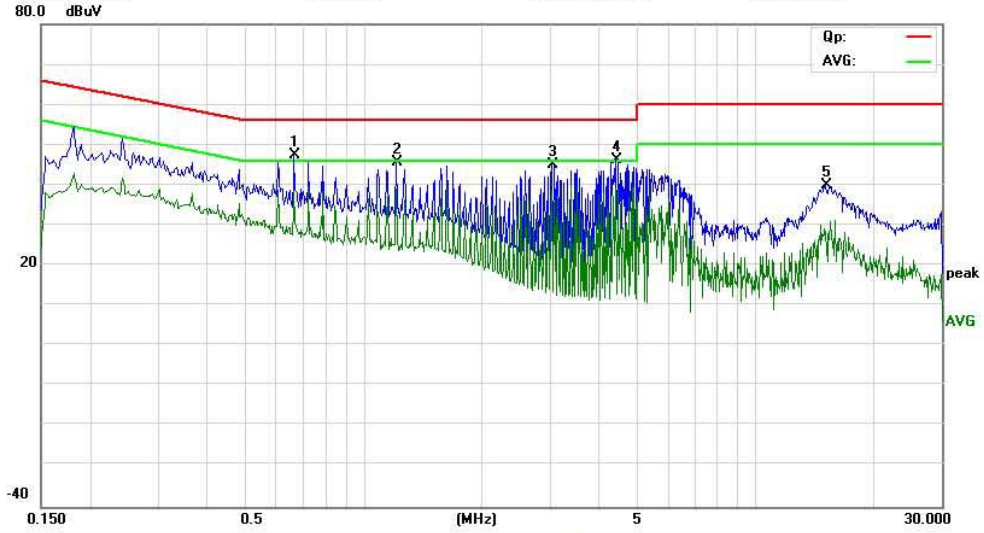
*:Maximum data x:Over limit l:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#24 Date: 2010/04/10 Time: 1:23:19



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: TV Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.6660	37.55	10.00	47.55	56.00	-8.45	peak	
2		1.2100	35.89	9.79	45.68	56.00	-10.32	peak	
3		3.0260	34.89	10.03	44.92	56.00	-11.08	peak	
4		4.4180	34.84	11.42	46.26	56.00	-9.74	peak	
5		15.1340	30.93	9.00	39.93	60.00	-20.07	peak	

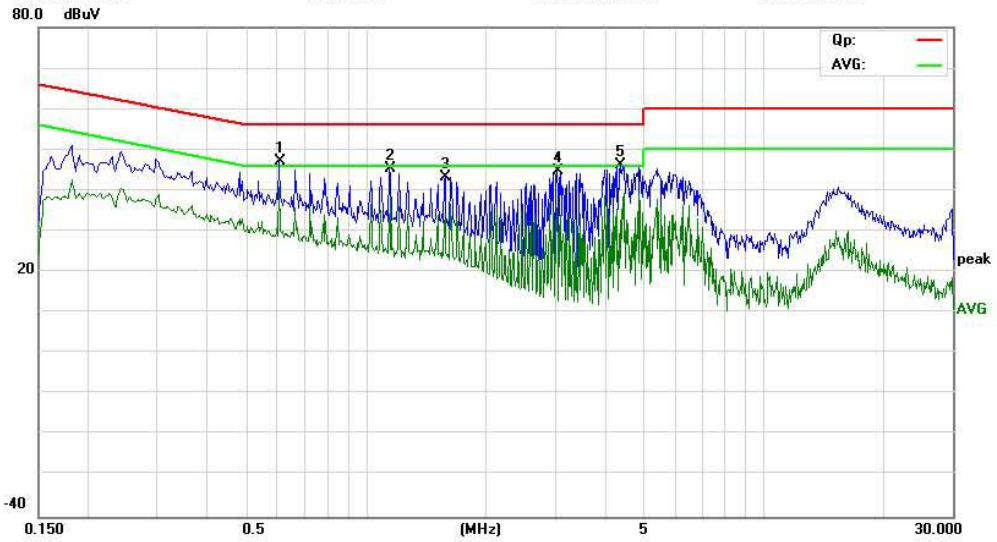
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#29 Date: 2010/04/10 Time: 1:29:50



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: WIFI Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.6060	37.20	10.00	47.20	56.00	-8.80	peak	
2		1.1460	35.57	9.85	45.42	56.00	-10.58	peak	
3		1.5780	33.82	9.42	43.24	56.00	-12.76	peak	
4		3.0340	34.59	10.03	44.62	56.00	-11.38	peak	
5		4.3620	34.78	11.36	46.14	56.00	-9.86	peak	

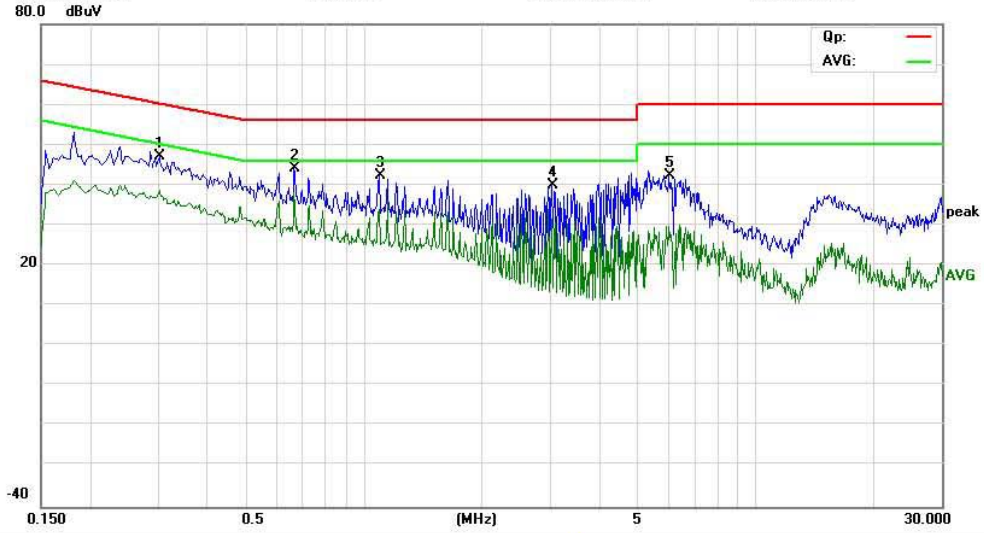
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#30 Date: 2010/04/10 Time: 1:31:08



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: WIFI Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3020	35.73	11.32	47.05	60.19	-13.14	peak	
2	*	0.6660	34.20	10.00	44.20	56.00	-11.80	peak	
3		1.0940	32.34	9.91	42.25	56.00	-13.75	peak	
4		3.0340	30.02	10.03	40.05	56.00	-15.95	peak	
5		6.0460	30.90	11.37	42.27	60.00	-17.73	peak	

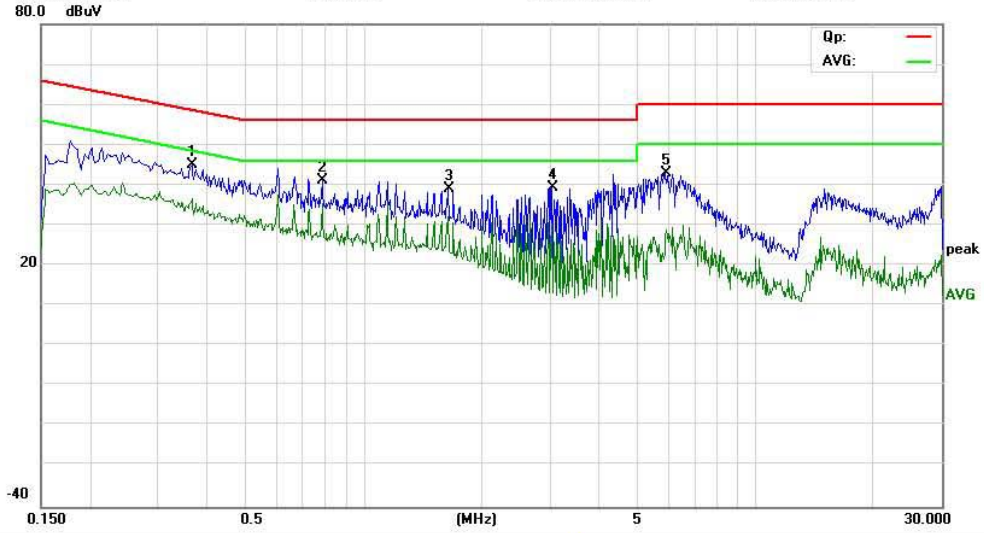
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#31 Date: 2010/04/10 Time: 1:33:08



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: FM transmitting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.3660	34.28	10.89	45.17	58.59	-13.42	peak	
2		0.7860	31.22	10.00	41.22	56.00	-14.78	peak	
3		1.6380	29.71	9.36	39.07	56.00	-16.93	peak	
4		3.0300	29.44	10.03	39.47	56.00	-16.53	peak	
5		5.9220	31.51	11.45	42.96	60.00	-17.04	peak	

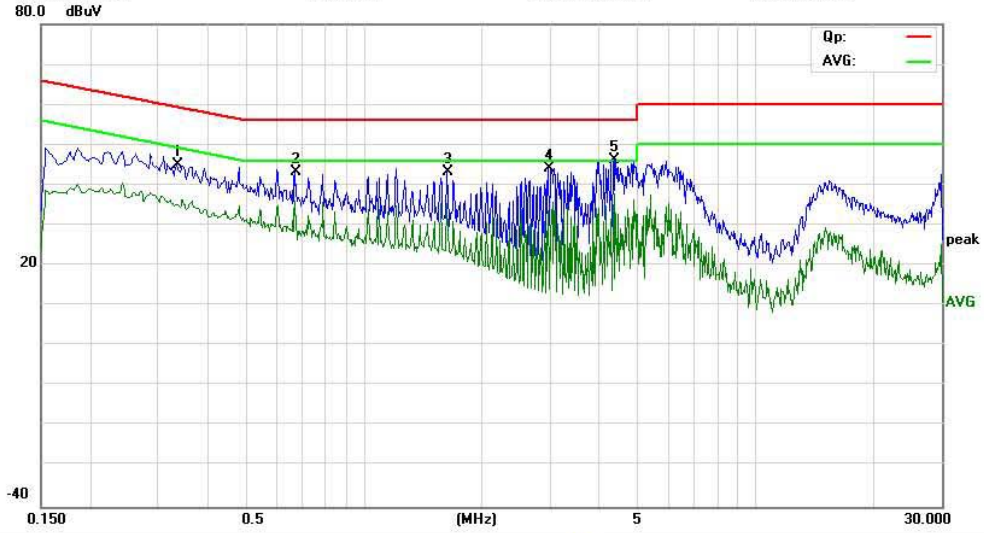
*:Maximum data x:Over limit l:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#32 Date: 2010/04/10 Time: 1:34:26



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: FM transmitting
Note:

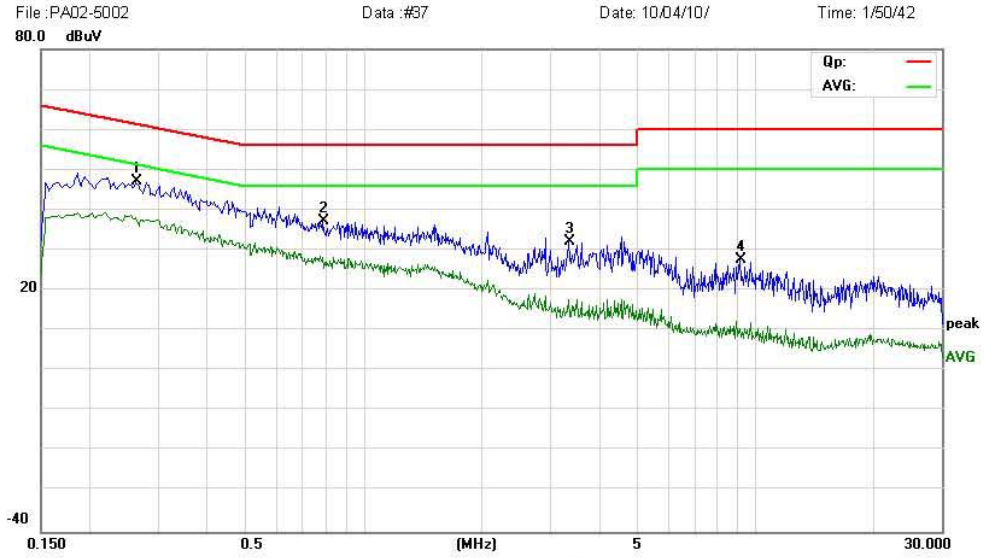
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3340	33.93	11.11	45.04	59.35	-14.31	peak	
2		0.6700	33.38	10.00	43.38	56.00	-12.62	peak	
3		1.6340	33.83	9.37	43.20	56.00	-12.80	peak	
4		2.9700	34.29	9.97	44.26	56.00	-11.74	peak	
5	*	4.3620	34.92	11.36	46.28	56.00	-9.72	peak	

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

Engineer Signature:

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
Limit: FCC Part15 B Class B QP
EUT: Connected PND
M/N: PA02-5002
Mode: USB Mode
Note:

Phase: N
Power: DC 5V by Notebook from AC 120V/60Hz

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2620	35.51	11.59	47.10	61.37	-14.27	peak	
2		0.7900	27.25	10.00	37.25	56.00	-18.75	peak	
3		3.3580	21.89	10.36	32.25	56.00	-23.75	peak	
4		9.1100	18.11	9.53	27.64	60.00	-32.36	peak	

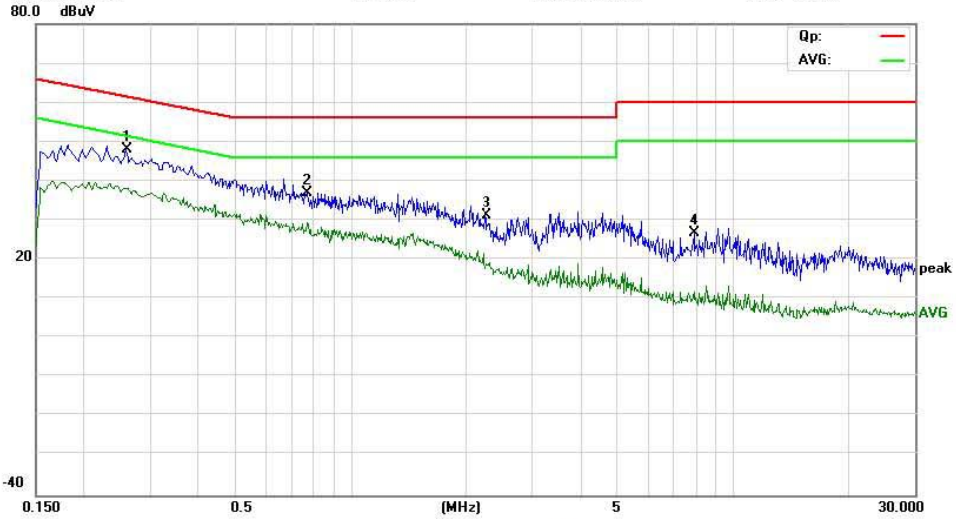
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#38 Date: 10/04/10/ Time: 1/53/41



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: DC 5V by Notebook from AC 120V/60Hz Humidity: 60 %
EUT: Connected PND
M/N: PA02-5002
Mode: USB Mode
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2580	36.51	11.61	48.12	61.50	-13.38	peak	
2		0.7700	27.07	10.00	37.07	56.00	-18.93	peak	
3		2.2540	21.95	9.25	31.20	56.00	-24.80	peak	
4		7.8940	16.38	10.26	26.64	60.00	-33.36	peak	

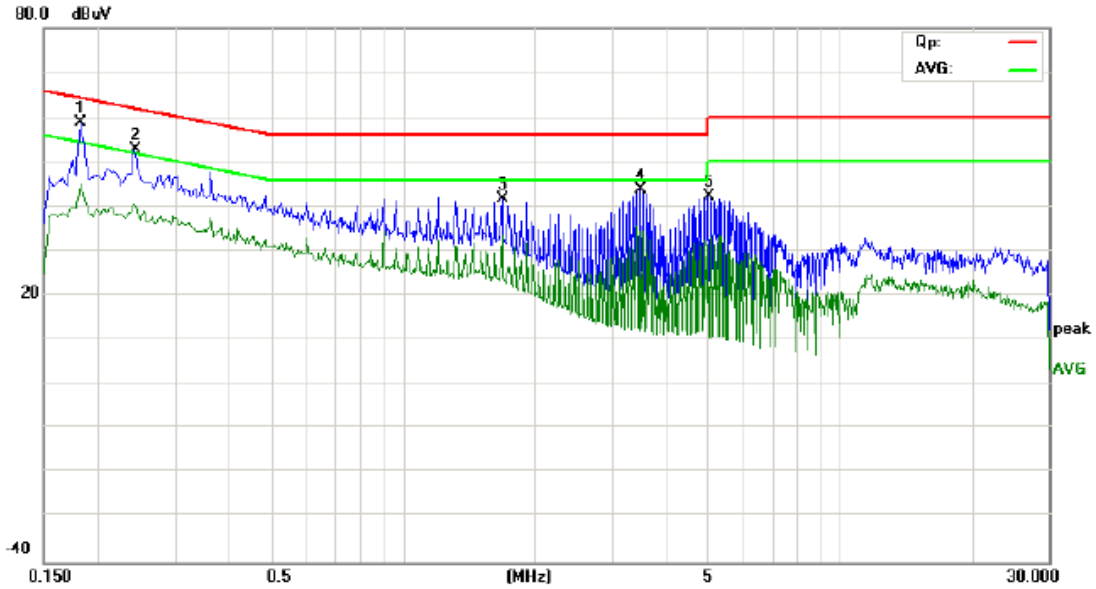
*:Maximum data x:Over limit l:over margin

Engineer Signature:

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

Conducted Emission Measurement

File :PA02-5002 Data :#37 Date: 10/04/10/ Time: 15/32/49



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: GPS Portable Navigation Device
M/N: PA02-5002
Mode: Bluetooth
Note:

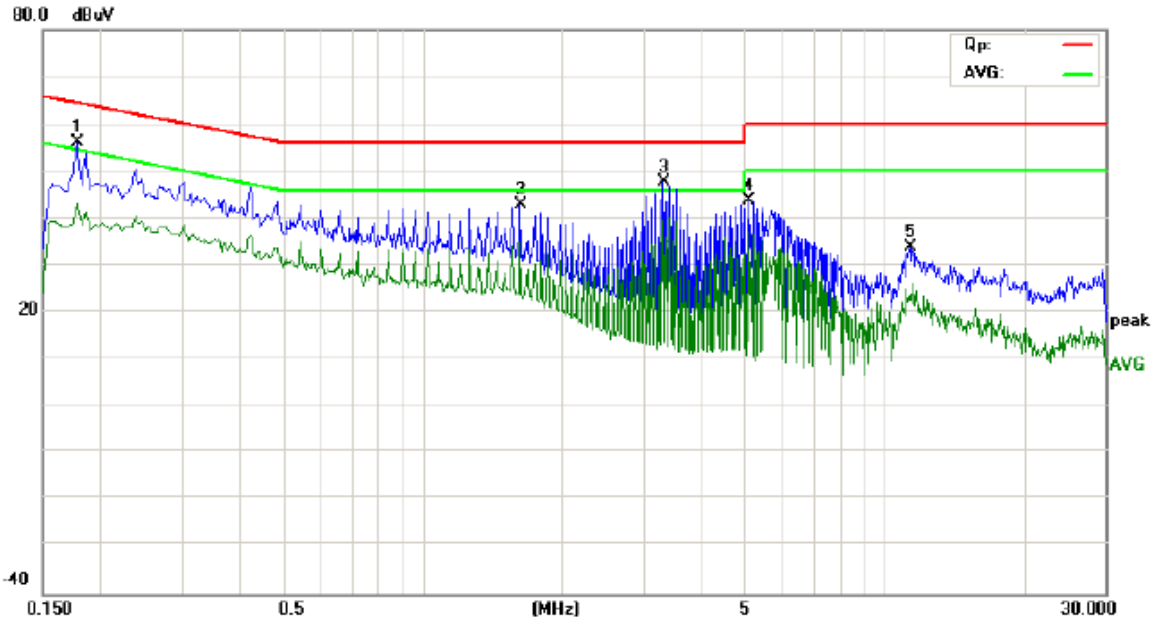
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1820	47.93	10.92	58.85	64.39	-5.54	peak	
2		0.2420	41.15	11.72	52.87	62.03	-9.16	peak	
3		1.6820	32.32	9.32	41.64	56.00	-14.36	peak	
4		3.4820	33.43	10.48	43.91	56.00	-12.09	peak	
5		4.9860	30.33	11.99	42.32	56.00	-13.68	peak	

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

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

Conducted Emission Measurement

File :PA02-5002 Data :#38 Date: 10/04/10/ Time: 15/34/04



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: GPS Portable Navigation Device
M/N: PA02-5002
Mode: Bluetooth
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1780	45.35	10.68	56.03	64.58	-8.55	peak	
2		1.6220	33.60	9.38	42.98	56.00	-13.02	peak	
3	*	3.3060	37.46	10.31	47.77	56.00	-8.23	peak	
4		5.0500	32.02	11.97	43.99	60.00	-16.01	peak	
5		11.3620	25.08	9.00	34.08	60.00	-25.92	peak	

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

7. RADIATED EMISSION TEST

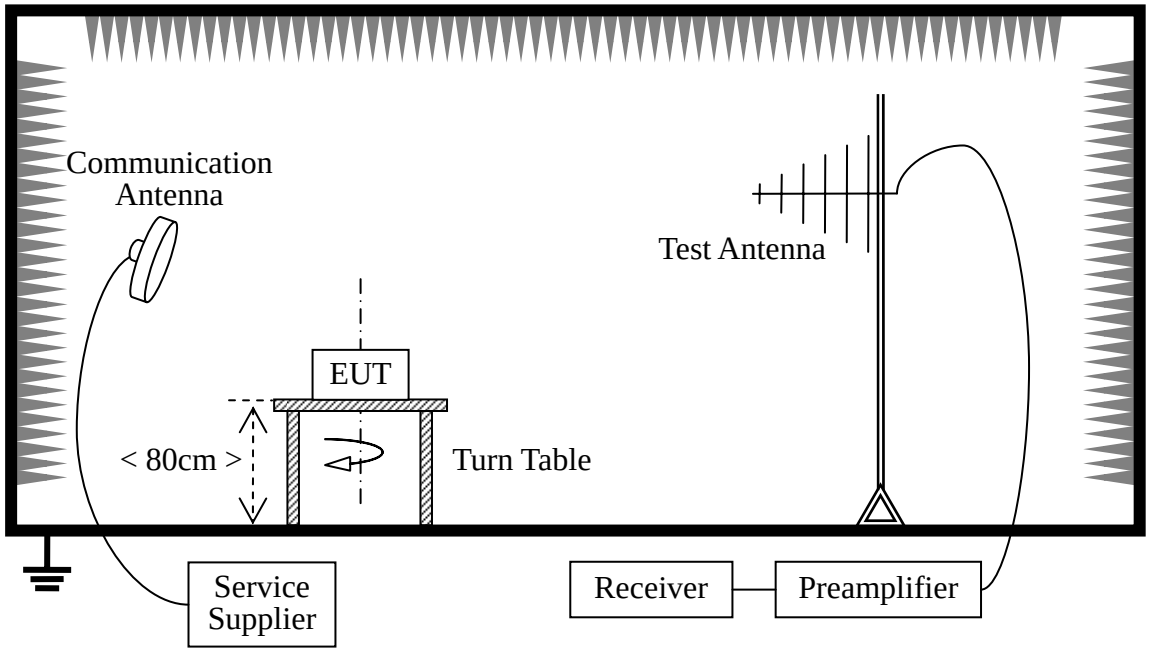
7.1. LIMITS OF RADIATED DISTURBANCES AT 3M DISTANCES FOR CLASS B

According to FCC section 15.109, 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)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.2 TEST DESCRIPTION

Test Setup:



The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the EUT is activated and transmitting with the other Bluetooth device (Supply by the Applicant) during the test.

For the Test Antenna:

(a) In the frequency range of 9 kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

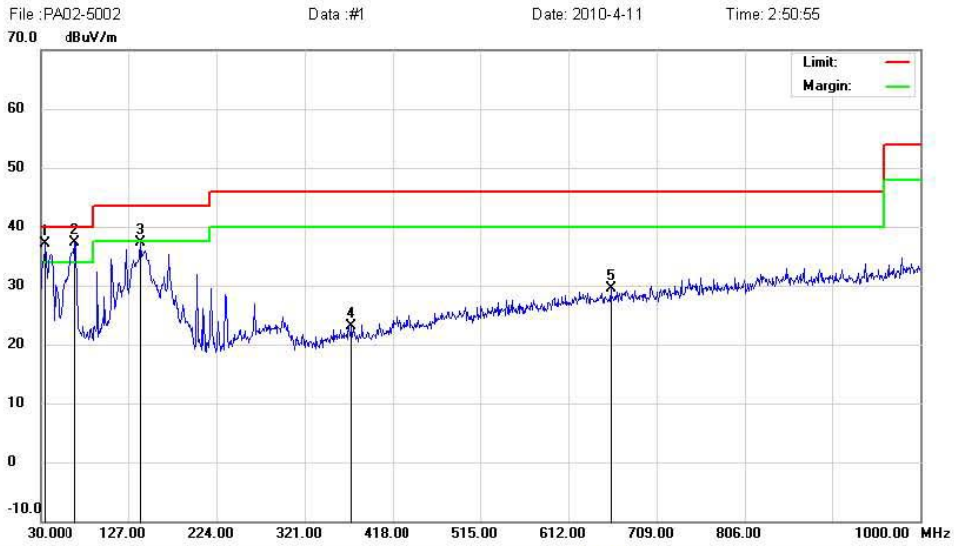
(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

Preliminary Radiated Emission Test				
Frequency Range Investigated			**30 MHz TO 1000 MHz**	
Mode of operation	**Date**	**Report No.**	**Data#**	**Worst Mode**
FM transmitting	2010-04-11	MOST100403F1	PA02-5002_0_(H, V)	☐
Bluetooth Mode	2010-04-11	MOST100403F1	PA02-5002_1_(H, V)	☐
WIFI Mode	2010-04-11	MOST100403F1	PA02-5002_2_(H, V)	☐
GPS Mode	2010-04-11	MOST100403F1	PA02-5002_3_(H, V)	☐
GPRS Mode	2010-04-11	MOST100403F1	PA02-5002_4_(H, V)	☐
Call Mode	2010-04-11	MOST100403F1	PA02-5002_5_(H, V)	☐
MP3/MP4 Mode	2010-04-11	MOST100403F1	PA02-5002_6_(H, V)	☐
TV Mode	2010-04-11	MOST100403F1	PA02-5002_7_(H, V)	☐
USB Mode	2010-04-11	MOST100403F1	PA02-5002_8_(H, V)	☐
Idle Mode	2010-04-11	MOST100403F1	PA02-5002_9_(H, V)	☒

7.3 TEST RESULT

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

Radiated Emission Measurement



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: Idle Mode
Note:

Polarization: *Vertical*
Power: 120V/60Hz

Temperature: 26
Humidity: 60 %
Distance: 3m

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	34.8500	15.97	21.06	37.03	40.00	-2.97	peak			
2	*	67.8299	25.76	11.53	37.29	40.00	-2.71	peak			
3		140.5800	20.14	17.17	37.31	43.50	-6.19	peak			
4		372.4100	4.96	18.22	23.18	46.00	-22.82	peak			
5		658.5599	5.25	24.20	29.45	46.00	-16.55	peak			

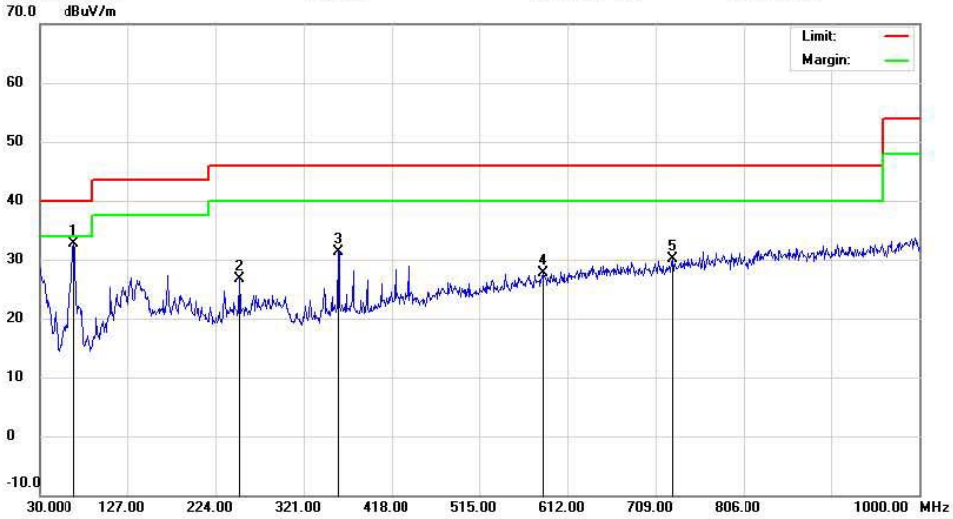
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Radiated Emission Measurement

File :PA02-5002 Data :#2 Date: 2010-4-11 Time: 2:53:17



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: Idle Mode
Note:

Polarization: *Horizontal*
Power: 120V/60Hz

Temperature: 26
Humidity: 60 %

Distance: 3m

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	67.8299	21.26	11.53	32.79	40.00	-7.21	peak			
2		250.1899	9.40	17.40	26.80	46.00	-19.20	peak			
3		358.8299	13.08	18.28	31.36	46.00	-14.64	peak			
4		584.8400	4.70	22.95	27.65	46.00	-18.35	peak			
5		727.4299	5.28	24.82	30.10	46.00	-15.90	peak			

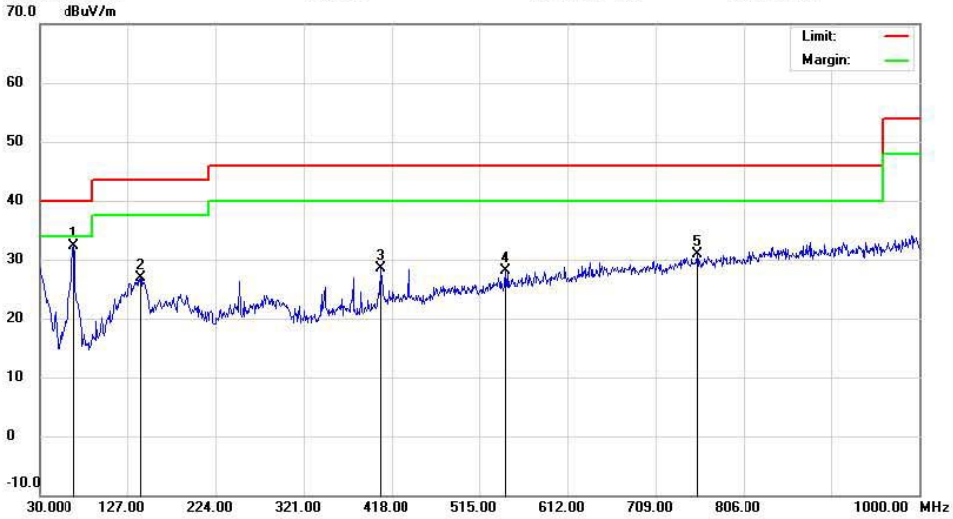
*:Maximum data x:Over limit l:over margin

Engineer Signature:

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

Radiated Emission Measurement

File :PA02-5002 Data :#3 Date: 2010-4-11 Time: 2:56:18



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: TV Mode
Note:

Polarization: *Horizontal*
Power: 120V/60Hz

Temperature: 26
Humidity: 60 %

Distance: 3m

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	67.8299	20.84	11.53	32.37	40.00	-7.63	peak			
2		141.5500	9.78	17.11	26.89	43.50	-16.61	peak			
3		405.3899	9.65	18.82	28.47	46.00	-17.53	peak			
4		544.1000	5.91	22.28	28.19	46.00	-17.81	peak			
5		754.5900	5.23	25.71	30.94	46.00	-15.06	peak			

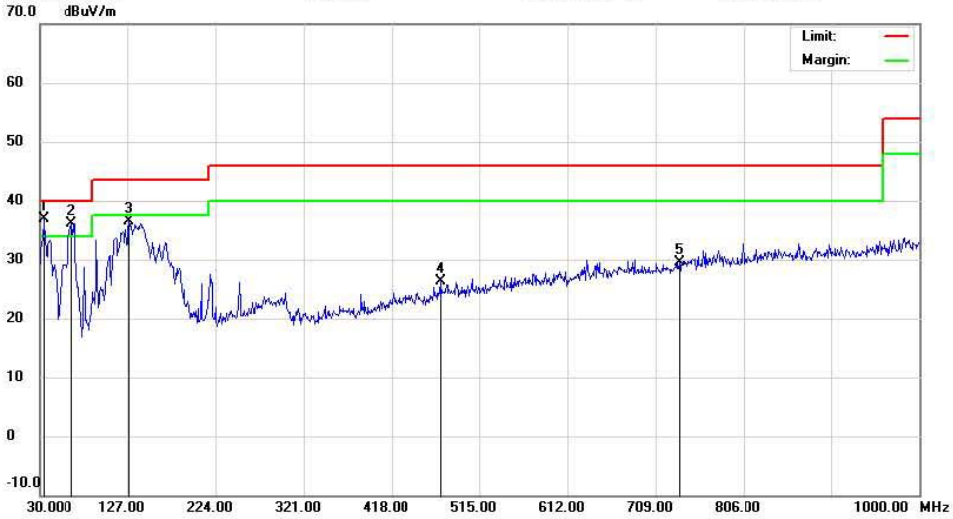
*:Maximum data x:Over limit !:over margin

Engineer Signature:

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

Radiated Emission Measurement

File :PA02-5002 Data :#4 Date: 2010-4-11 Time: 2:57:18



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: TV Mode
Note:

Polarization: *Vertical*
Power: 120V/60Hz

Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	33.8800	15.02	21.81	36.83	40.00	-3.17	peak			
2	I	64.9200	24.89	11.29	36.18	40.00	-3.82	peak			
3		128.9398	18.83	17.70	36.53	43.50	-6.97	peak			
4		472.3199	5.04	21.29	26.33	46.00	-19.67	peak			
5		735.1900	4.29	25.16	29.45	46.00	-16.55	peak			

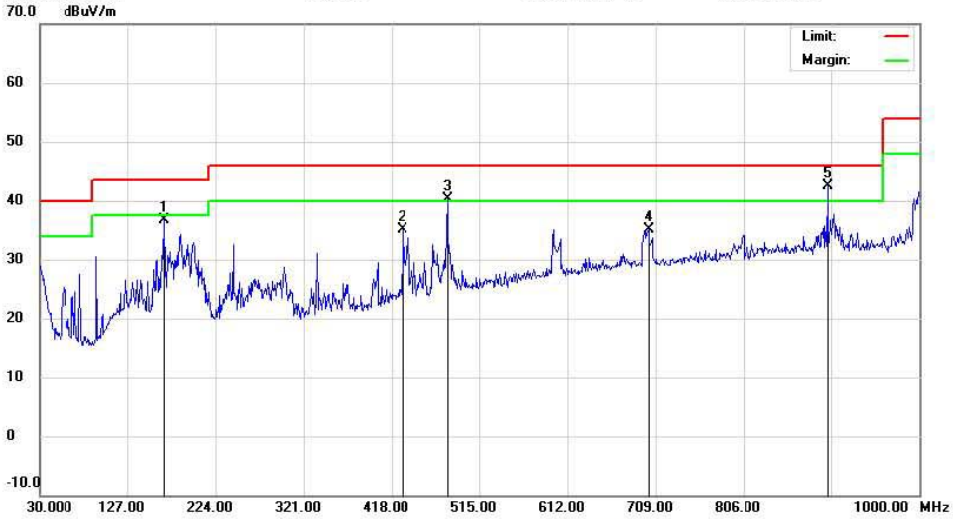
*:Maximum data x:Over limit I:over margin

Engineer Signature:

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

Radiated Emission Measurement

File :PA02-5002 Data :#5 Date: 2010-4-11 Time: 3:02:18



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: USB Mode
Note:

Polarization: *Horizontal*
Power: DC 5V by Notebook from AC 120V/60Hz
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		167.7400	19.45	17.20	36.65	43.50	-6.85	peak			
2		430.6100	14.81	20.31	35.12	46.00	-10.88	peak			
3	!	480.0799	18.59	21.70	40.29	46.00	-5.71	peak			
4		701.2400	10.45	24.69	35.14	46.00	-10.86	peak			
5	*	899.1200	15.18	27.39	42.57	46.00	-3.43	peak			

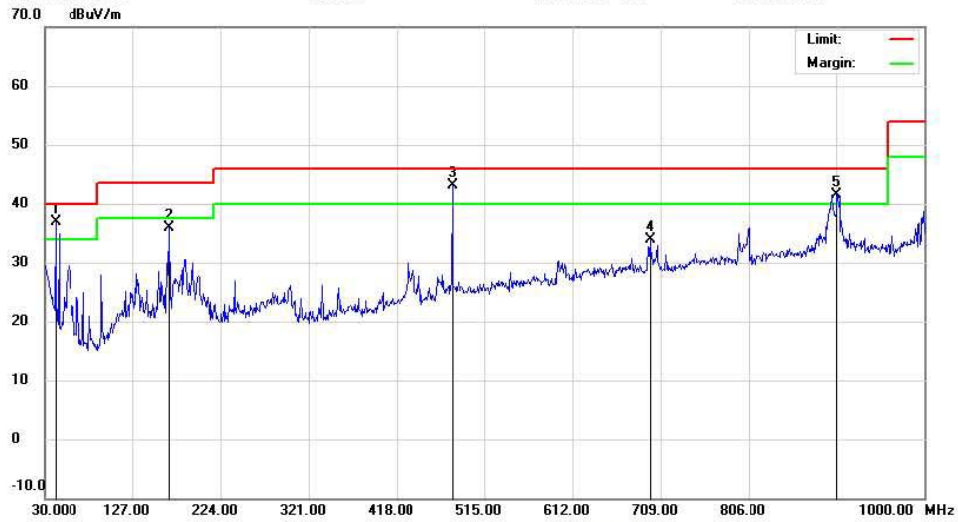
*:Maximum data x:Over limit !:over margin

Engineer Signature: KEY

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

Radiated Emission Measurement

File :PA02-5002 Data :#6 Date: 2010-4-11 Time: 3:08:34



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: USB Mode
Note:

Polarization: *Vertical*
Power: DC 5V by Notebook from AC 120V/60Hz
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	41.6400	21.10	15.75	36.85	40.00	-3.15	peak			
2		167.7400	18.70	17.20	35.90	43.50	-7.60	peak			
3	*	480.0800	21.39	21.70	43.09	46.00	-2.91	peak			
4		697.3600	9.31	24.62	33.93	46.00	-12.07	peak			
5	!	903.9700	13.93	27.48	41.41	46.00	-4.59	peak			

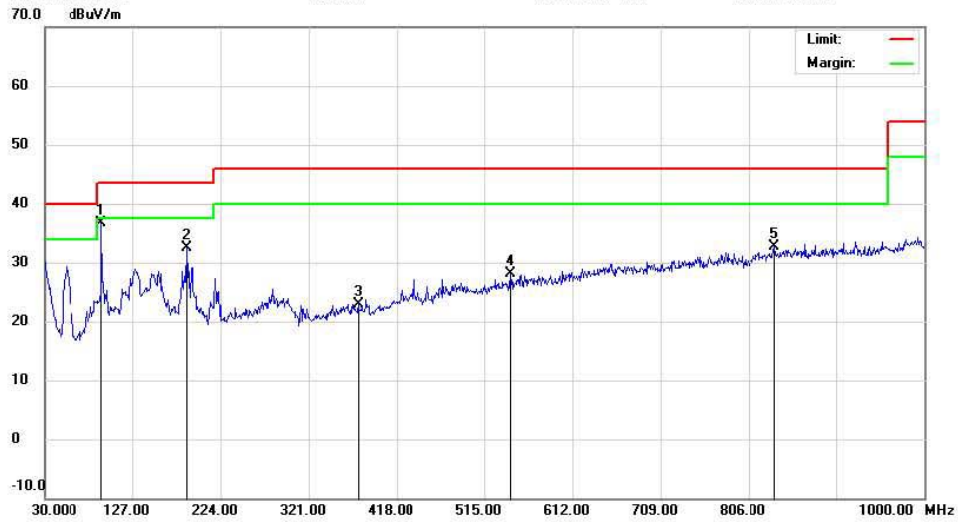
*:Maximum data x:Over limit !:over margin

Engineer Signature: KEY

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

Radiated Emission Measurement

File :PA02-5002 Data :#7 Date: 2010-4-11 Time: 12:00:17



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: GPS Mode
Note:

Polarization: *Horizontal*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 60 %

Distance: 3m

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	93.0500	24.87	11.80	36.67	43.50	-6.83	peak			
2		187.1399	16.00	16.60	32.60	43.50	-10.90	peak			
3		375.3199	4.76	18.24	23.00	46.00	-23.00	peak			
4		544.1000	5.73	22.28	28.01	46.00	-17.99	peak			
5		835.1000	5.65	27.10	32.75	46.00	-13.25	peak			

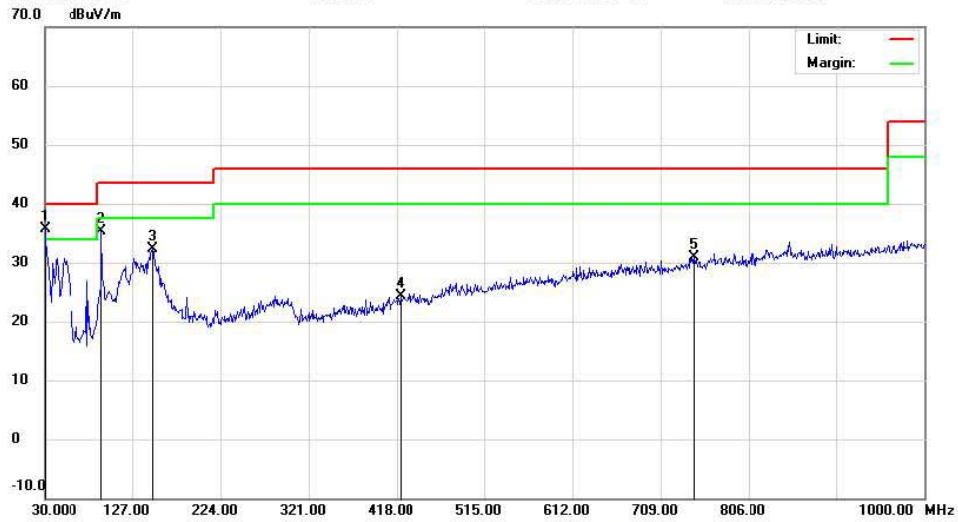
*:Maximum data x:Over limit l:over margin

Engineer Signature: KEY

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

Radiated Emission Measurement

File :PA02-5002 Data :#8 Date: 2010-4-11 Time: 12:04:36



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: GPS Mode
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 60 %

Distance: 3m

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.0000	10.86	24.80	35.66	40.00	-4.34	peak			
2		93.0500	23.49	11.80	35.29	43.50	-8.21	peak			
3		149.3100	15.79	16.56	32.35	43.50	-11.15	peak			
4		421.8799	4.16	20.11	24.27	46.00	-21.73	peak			
5		745.8600	5.12	25.80	30.92	46.00	-15.08	peak			

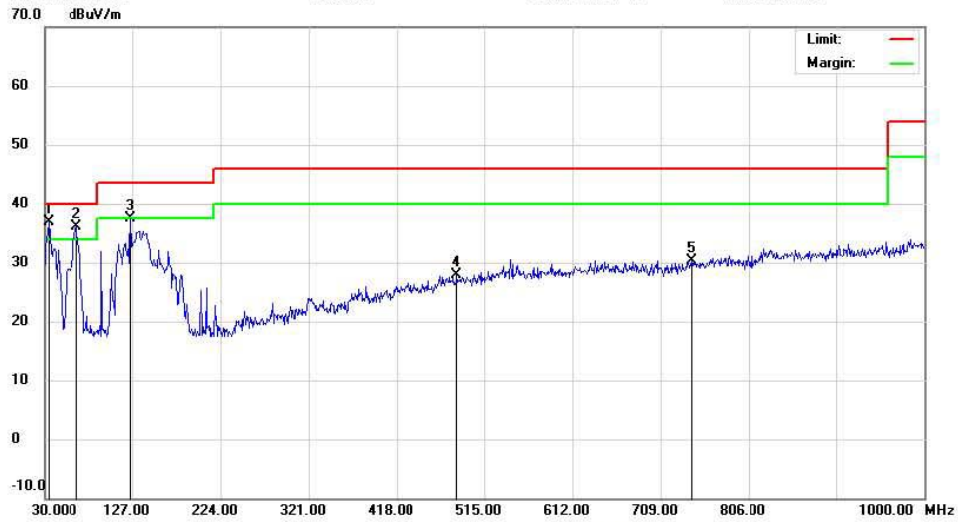
*:Maximum data x:Over limit !:over margin

Engineer Signature: KEY

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

Radiated Emission Measurement

File :PA02-5002 Data :#9 Date: 2010-4-11 Time: 3:02:43



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: Bluetooth Mode
Note:

Polarization: *Vertical*
Power: 120V/60Hz

Temperature: 26
Humidity: 60 %
Distance: 3m

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	34.8500	15.81	21.06	36.87	40.00	-3.13	peak			
2	I	64.9200	24.75	11.29	36.04	40.00	-3.96	peak			
3		125.0600	19.75	17.70	37.45	43.50	-6.05	peak			
4		484.9300	6.04	21.80	27.84	46.00	-18.16	peak			
5		742.9500	4.70	25.68	30.38	46.00	-15.62	peak			

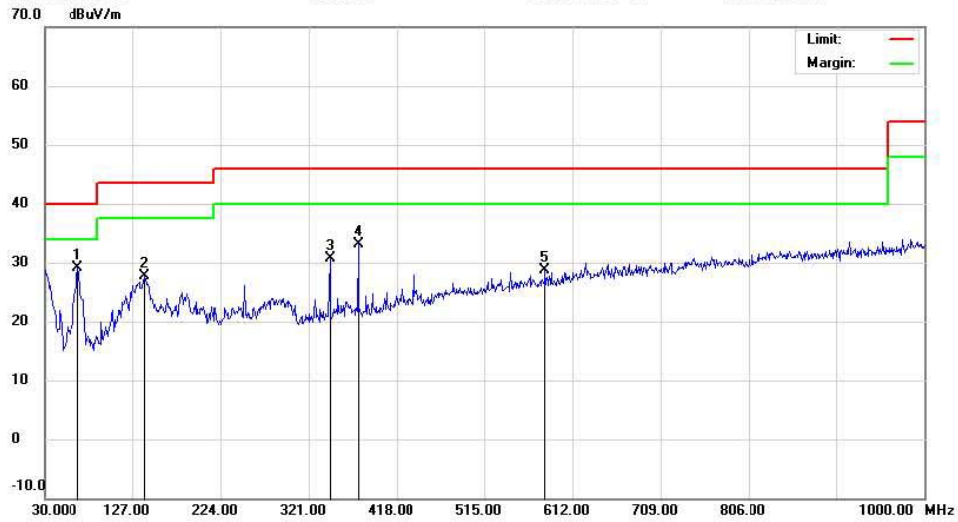
*:Maximum data x:Over limit I:over margin

Engineer Signature:

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

Radiated Emission Measurement

File :PA02-5002 Data :#10 Date: 2010-4-11 Time: 3:05:44



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: Connected PND
M/N: PA02-5002
Mode: Bluetooth Mode
Note:

Polarization: *Horizontal*
Power: 120V/60Hz

Temperature: 26
Humidity: 60 %
Distance: 3m

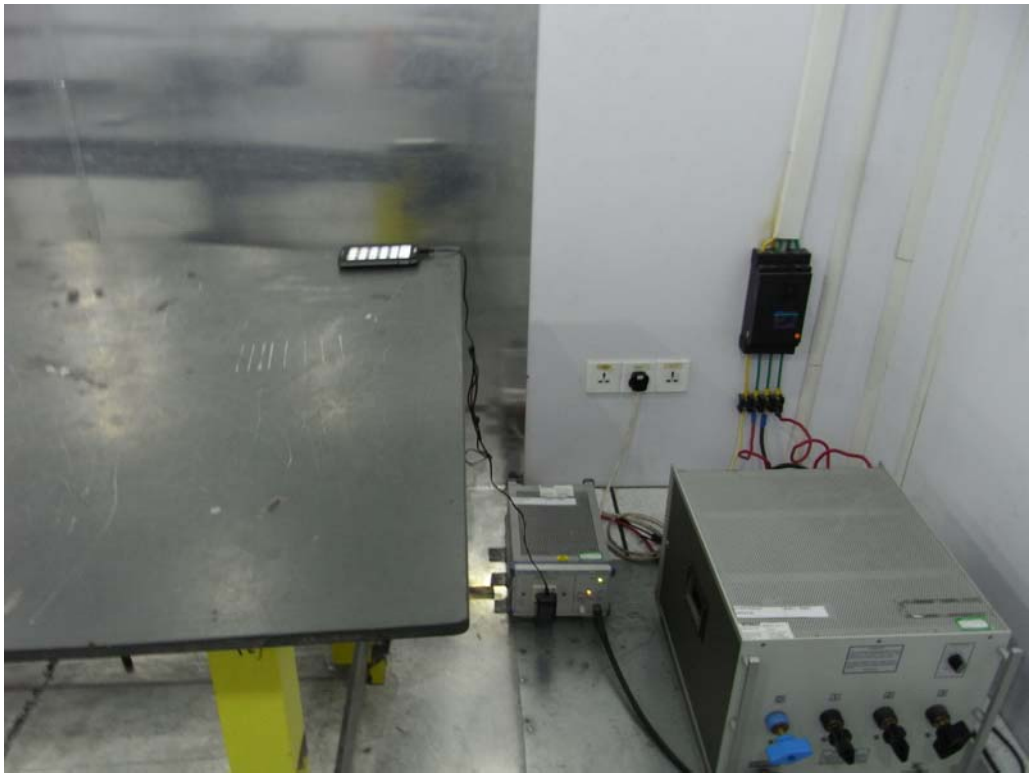
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	66.8598	17.62	11.45	29.07	40.00	-10.93	peak			
2		140.5800	10.45	17.17	27.62	43.50	-15.88	peak			
3		344.2798	13.38	17.36	30.74	46.00	-15.26	peak			
4		375.3199	14.87	18.24	33.11	46.00	-12.89	peak			
5		581.9298	5.87	22.92	28.79	46.00	-17.21	peak			

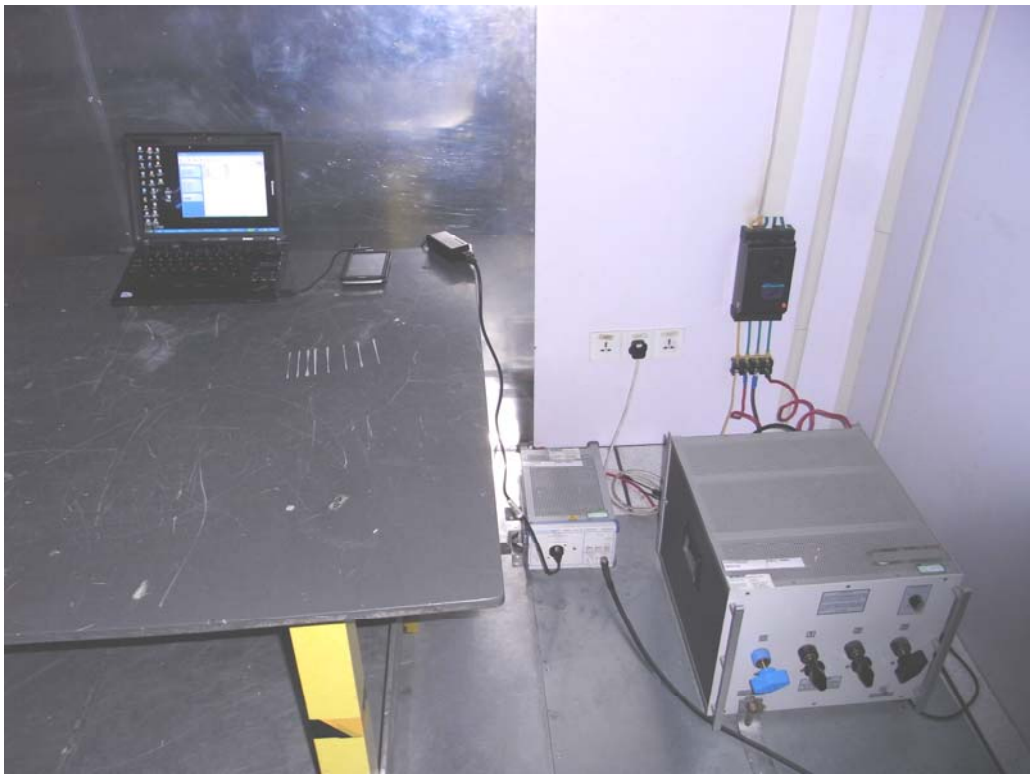
*:Maximum data x:Over limit l:over margin

Engineer Signature:

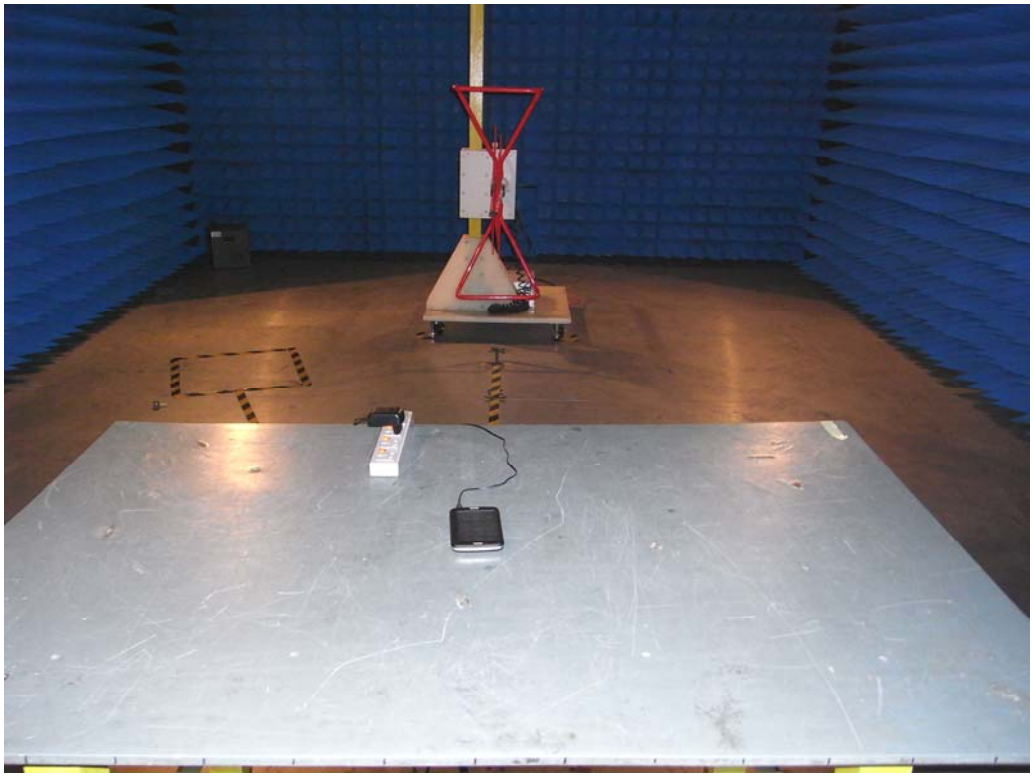
APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

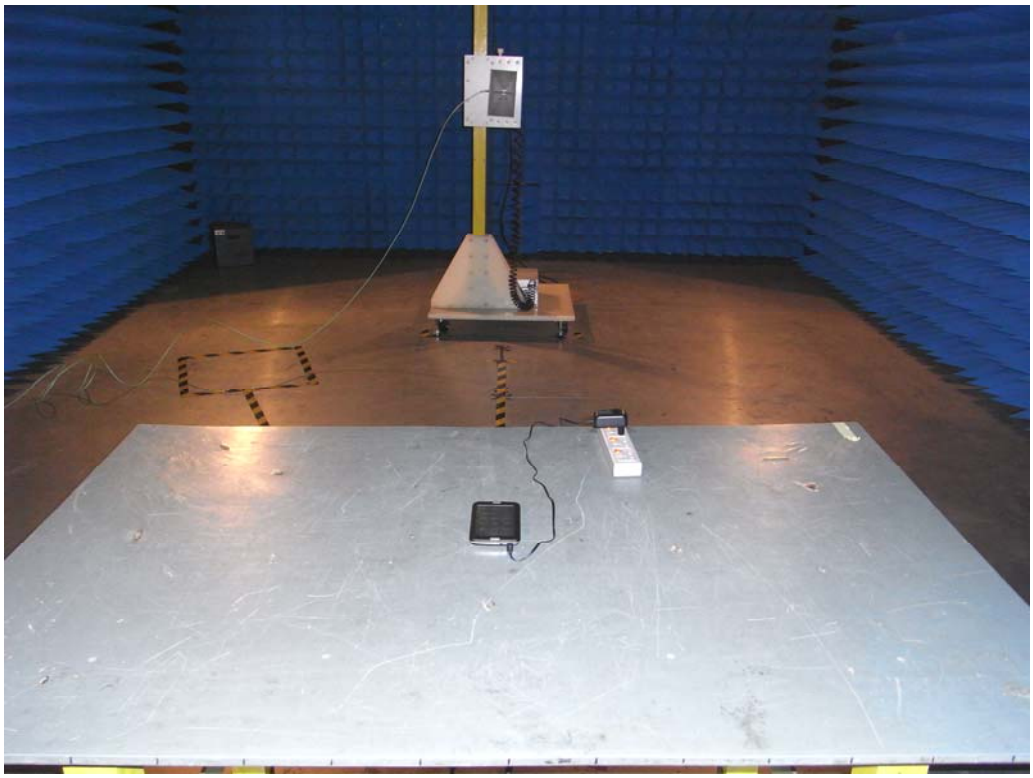
CE TEST SETUP





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

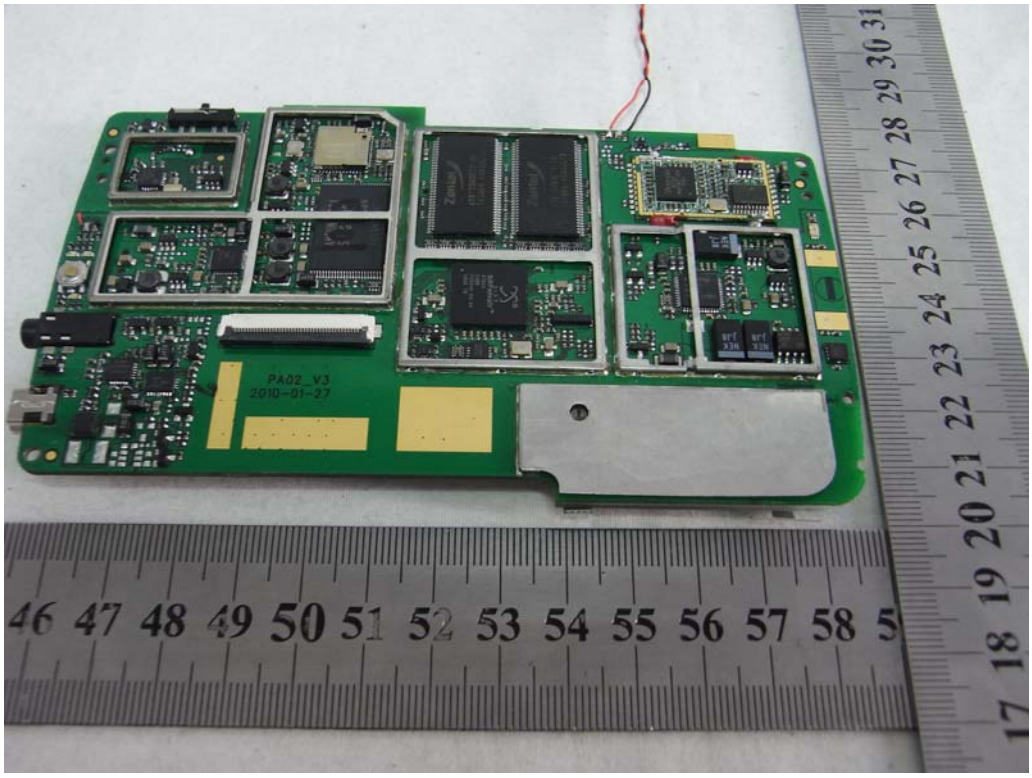
PHOTO OF POWER SUPPLY

PHOTO OF USB LINE

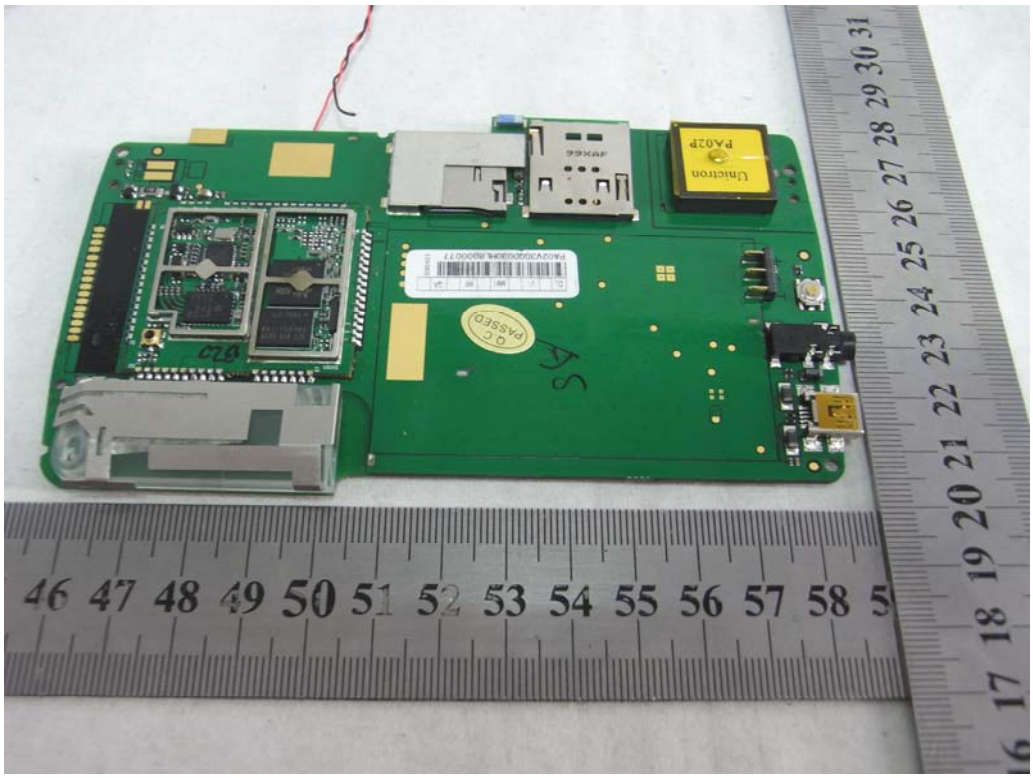
PHOTO OF CAR ADAPTOR

PHOTO OF THE ENTIRE SAMPLE

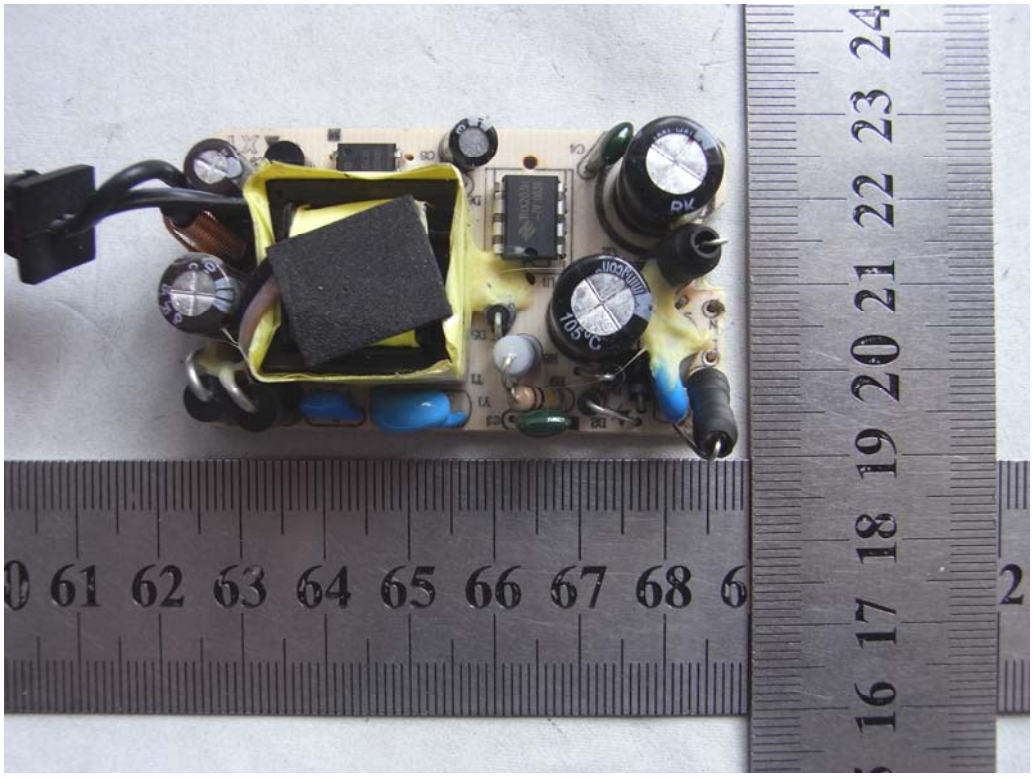
INTERNAL PHOTO OF SAMPLE - 1



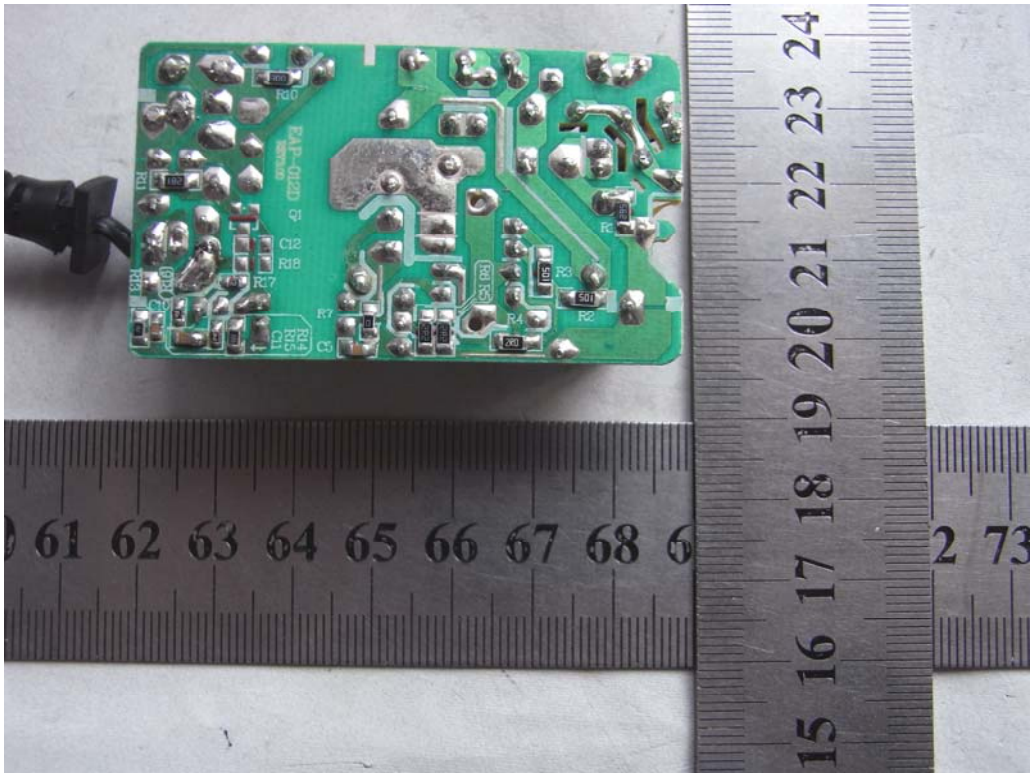
INTERNAL PHOTO OF SAMPLE - 2



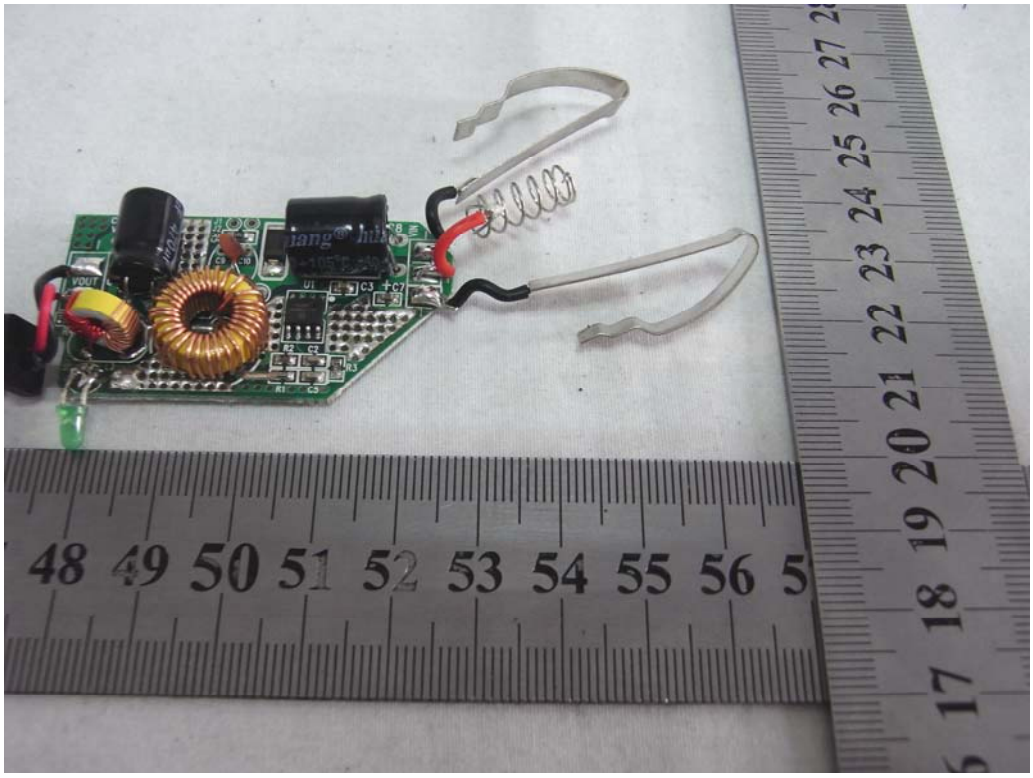
INTERNAL PHOTO OF POWER SUPPLY-1



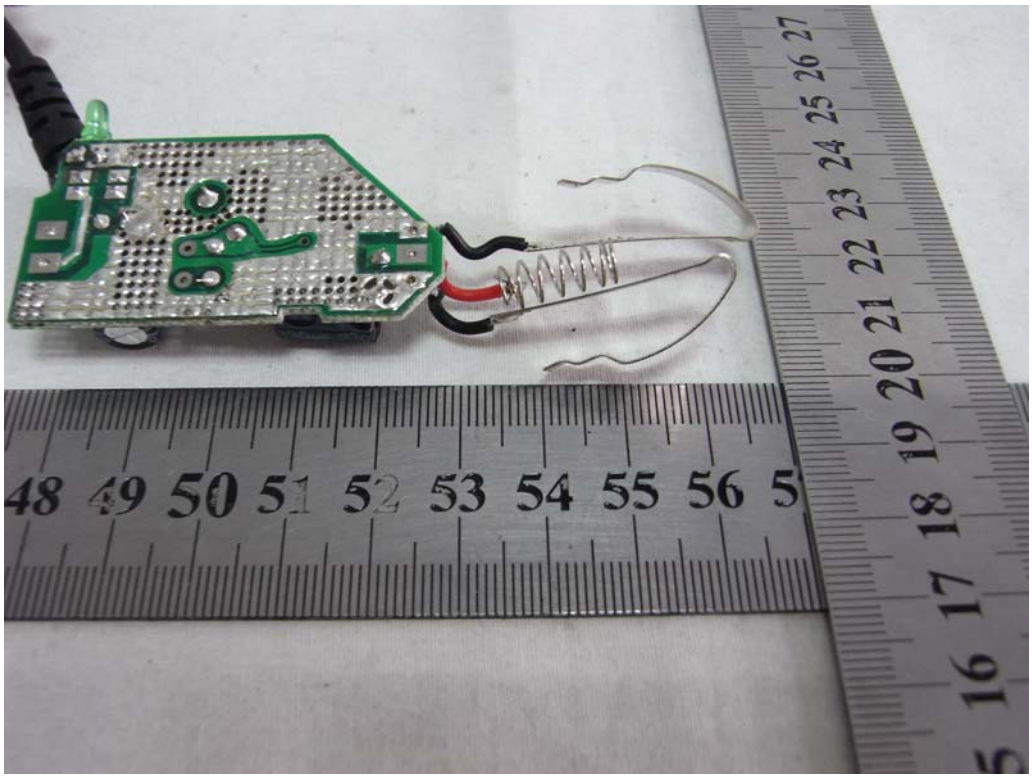
INTERNAL PHOTO OF POWER SUPPLY-2



INTERNAL PHOTO OF CAR SUPPLY-1



INTERNAL PHOTO OF CAR SUPPLY-1



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