



FCC 47 CFR PART 15 SUBPART B

TEST REPORT

For

Applicant : Dongguan Yuanfeng Technology Co., Ltd.

Address : No.62, South Fumin Road, Fumin Industrial Park, Dalang Town,
Dongguan City, Guangdong, P.R. China

Product Name : GPS Portable Navigation Device

Model Name : PF86-5001

Brand Name : N/A

FCC ID : YNG-GPF8600D

Report No. : MOST101013F1

Date of Issue : October. 22, 2010

Issued by : Most Technology Service Co., Ltd.

Address : No.5, 2nd Langshan Road, North District, Hi-tech Industrial
Park, Nanshan, Shenzhen, Guangdong, China

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1. VERIFICATION OF CONFORMITY

Equipment Under Test: GPS Portable Navigation Device

Brand Name: N/A

Model Number: PF86-5001

Series Number: PF86-5001HD, PF86-5002, PF86-5002HD, PF86-5003, PF86-5003HD, PF86-5004, PF86-5004HD, PF86-5005, PF86-5005HD, PF86-5006, PF86-5006HD, PF86-5007 PF86-5007HD, PF86-5008, PF86-5008HD, PF86-5009, PF86-5009HD.

Model Difference description: The series models are different in appearance and color with the same functions.

FCC ID: YNG-GPF8600D

Applicant: Dongguan Yuanfeng Technology Co., Ltd.
No.62, South Fumin Road, Fumin Industrial Park, Dalang Town, Dongguan City, Guangdong, P.R. China

Manufacturer: Dongguan Yuanfeng Technology Co., Ltd.
No.62, South Fumin Road, Fumin Industrial Park, Dalang Town, Dongguan City, Guangdong, P.R. China

Technical Standards: FCC Part 15 B

File Number: MOST101013F1

Date of test: October. 16, 2010 – October. 22, 2010

Deviation: None

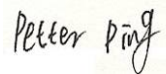
Condition of Test Sample: Normal

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):



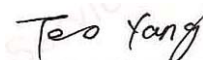
Petter Ping October. 22, 2010

Review by (+ signature):



July Wen October. 22, 2010

Approved by (+ signature):



Terry Yang October. 22, 2010

2. GENERAL INFORMATION

2.1 PRODUCT INFORMATION

Housing Type:	Plastic
EUT Rating Voltage:	DC 5V by car adapter DC 12/24V; DC 5V by AC/DC adapter 100~240V 50/60Hz DC 3.7V by battery;
Voltage During Test:	AC 120V/60Hz
I/O Type of EUT:	USB Port/ SD Scocket/ Earphone Port
I/O Q'TY:	1/ 1/ 1
Model Number:	PF86-5001
Series Number:	84F-1, 84F-2, 84F-4, 84F-5, 84F-6, 84F-7, 84F-8, 84F-9, 84F-51, 84F-52, 84F-53, 84F-54, 84F-55, 84F-56, 84F-57, 84F-58, 84F-59, PF08-4301, PF08-4302, PF08-4303, PF08-4304, PF08-4305, PF08-4306, PF08-4307, PF08-4308, PF08-4309, PF08-5001, PF08-5002, PF08-5003, PF08-5004, PF08-5005, PF08-5006, PF08-5007, PF08-5008, PF08-5009, PF08-5004HD, 84F-53HD, 84F-54HD, 83F-56HD, 84F-59HD.
Description of Differences:	The series models are different in appearance and color with the same functions.

NOTE:

- 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:
- The test result judgment is decided by the limit of measurement standard
 - 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: 15-35°C
- 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, $U_c = \pm 1.8\text{dB}$
- Uncertainty of Radiated Emission, $U_c = \pm 3.2\text{dB}$

3. TEST METHODOLOGY

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:	<p>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.</p> <p>The CNAS Registration Number is CNAS L3573.</p>
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. 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

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.

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 quasi-peak 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 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	Series No.	Data Cable	Power Cable
Notebook	Samsung	NP-R428-DS0Z	ZVC093FZ800422X	N/A	1.8M Un-Shielded
SD Card	Transcend	1.0G	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	Calibrator 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 Impedence Network	Kikusui	LIN40MA-PCR-L	LM002352	2011/03/14
22	ESD Tester	Kikusui	KES4021	LM003537	2011/03/14
23	EMC PRO 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: 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.**

Mode 2: 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 3 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 4: 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 5: 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 6: 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.**

NOTE: There are several configurations which reflect the "digital device" portion subject to verification.

6. LINE CONDUCTED EMISSION TEST

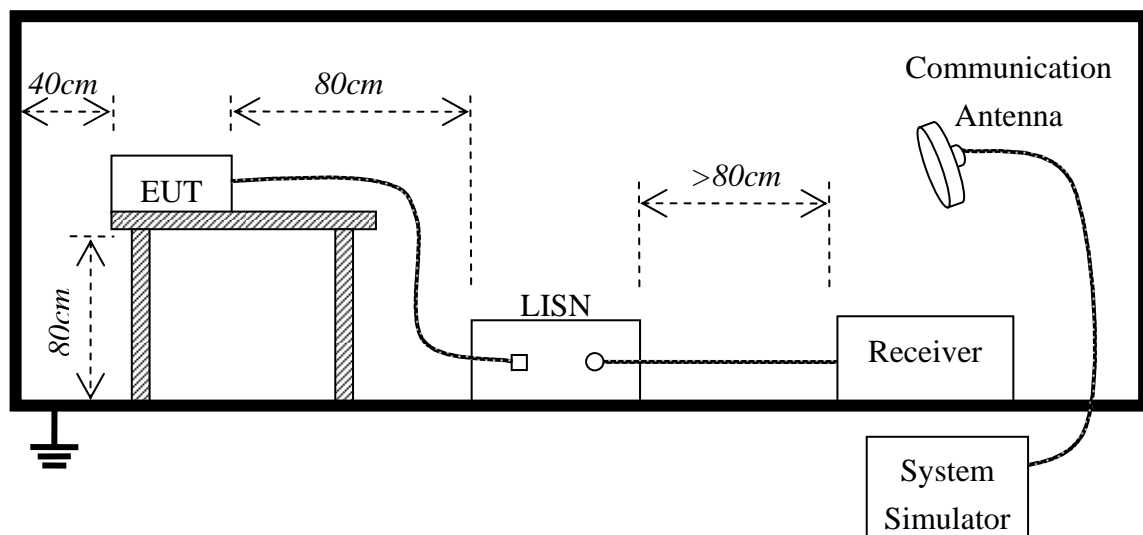
6.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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 DC 5V power by AC/DC adapter or Notebook which 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
Idle Mode	2010-10-21	MOST101013F1	PF86-5001_0_(L, N)	<input type="checkbox"/>
GPS Mode	2010-10-21	MOST101013F1	PF86-5001_1_(L, N)	<input type="checkbox"/>
MP3/MP4 Mode	2010-10-21	MOST101013F1	PF86-5001_2_(L, N)	<input type="checkbox"/>
FM transmitting	2010-10-21	MOST101013F1	PF86-5001_3_(L, N)	<input type="checkbox"/>
Bluetooth Mode	2010-10-21	MOST101013F1	PF86-5001_4_(L, N)	<input checked="" type="checkbox"/>
USB Mode	2010-10-21	MOST101013F1	PF86-5001_5_(L, N)	<input type="checkbox"/>

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.

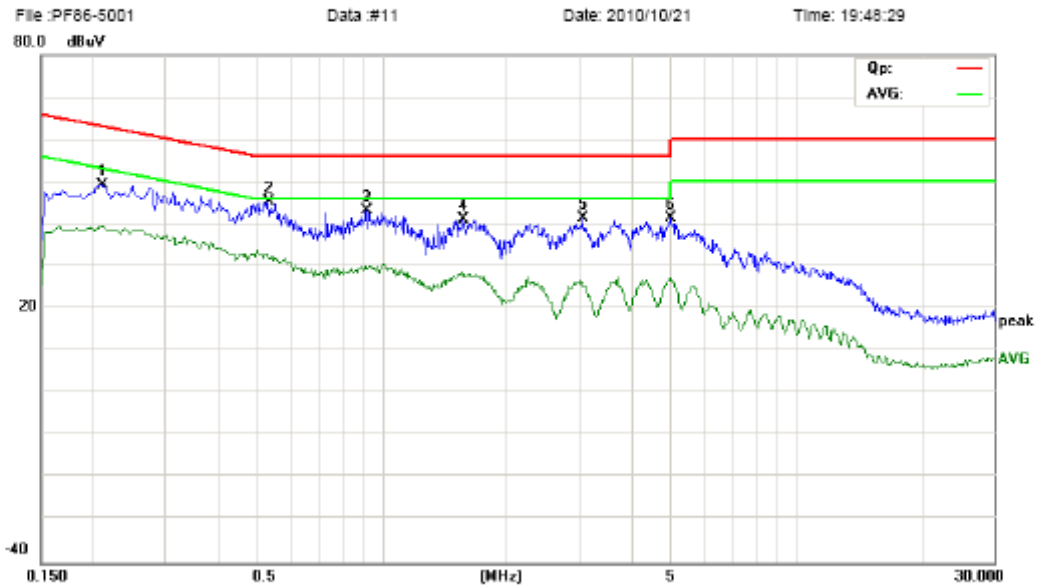
The test data of the worst case condition(s) was reported on the Summary Data page.

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



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

MN: PF86-5001

Mode: Idle

Note:

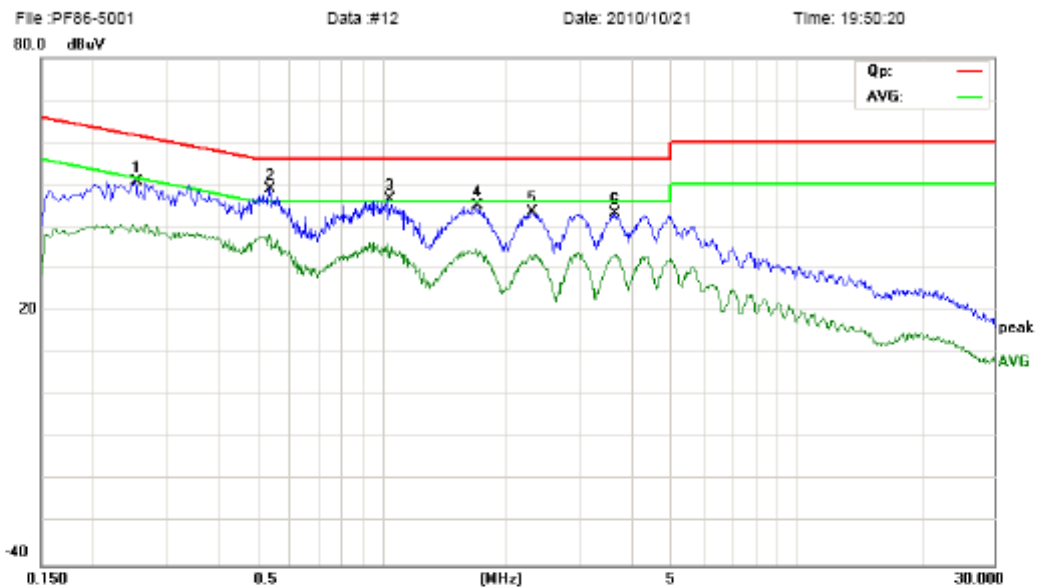
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2100	37.28	11.93	49.21	63.21	-14.00	peak	
2	*	0.5300	35.32	10.00	45.32	56.00	-10.68	peak	
3		0.9140	33.24	10.00	43.24	56.00	-12.76	peak	
4		1.5620	31.75	9.44	41.19	56.00	-14.81	peak	
5		3.0460	31.41	10.05	41.46	56.00	-14.54	peak	
6		4.9620	29.38	11.96	41.34	56.00	-14.66	peak	

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



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Conducted Emission Measurement



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: PF86-5001

Mode: Idle

Note:

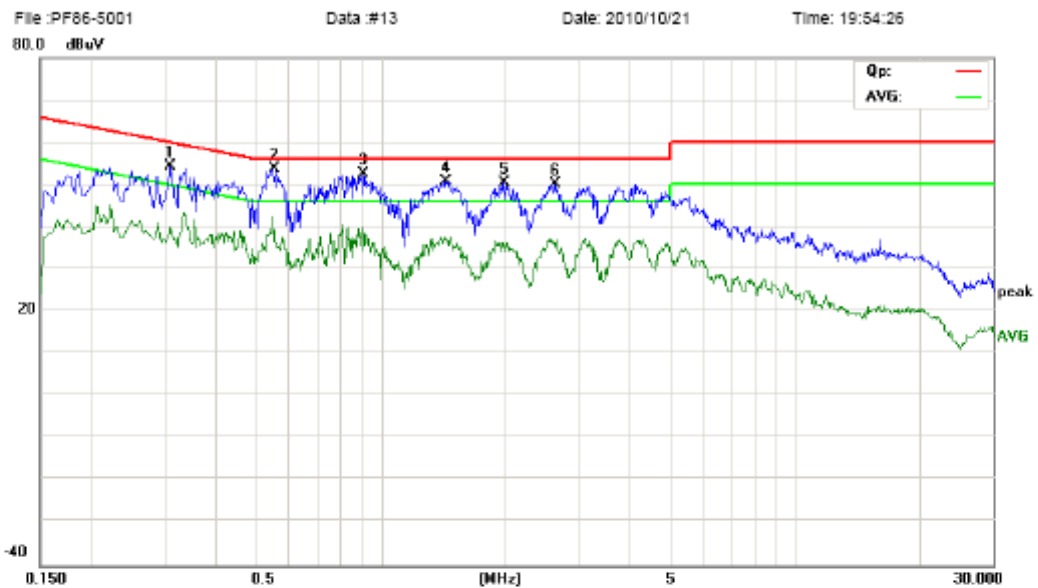
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2540	39.06	11.64	50.70	61.63	-10.93	peak	
2	*	0.5340	38.91	10.00	48.91	56.00	-7.09	peak	
3		1.0420	36.46	9.96	46.42	56.00	-9.58	peak	
4		1.6900	35.63	9.31	44.94	56.00	-11.06	peak	
5		2.2860	34.15	9.29	43.44	56.00	-12.56	peak	
6		3.6340	32.48	10.63	43.11	56.00	-12.89	peak	

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



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Conducted Emission Measurement



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: PF86-5001

Mode: Mp3

Note:

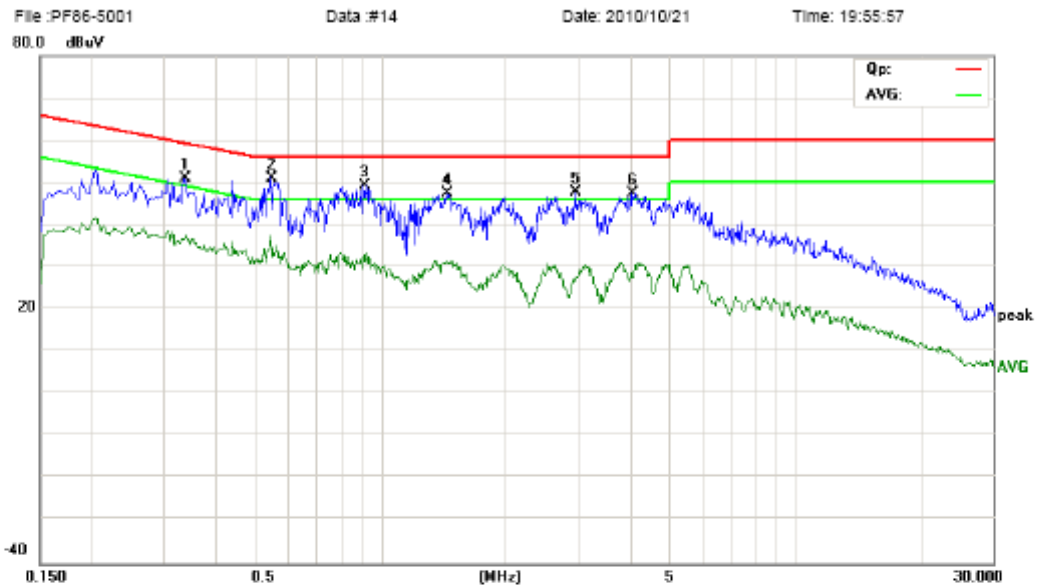
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3100	43.04	11.27	54.31	59.97	-5.66	peak	
2	*	0.5500	43.80	10.00	53.80	56.00	-2.20	peak	
3		0.9020	42.65	10.00	52.65	56.00	-3.35	peak	
4		1.4260	41.04	9.57	50.61	56.00	-5.39	peak	
5		1.9700	41.54	9.03	50.57	56.00	-5.43	peak	
6		2.6260	40.43	9.63	50.06	56.00	-5.94	peak	

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



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Conducted Emission Measurement



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: PF86-5001

Mode: Mp3

Note:

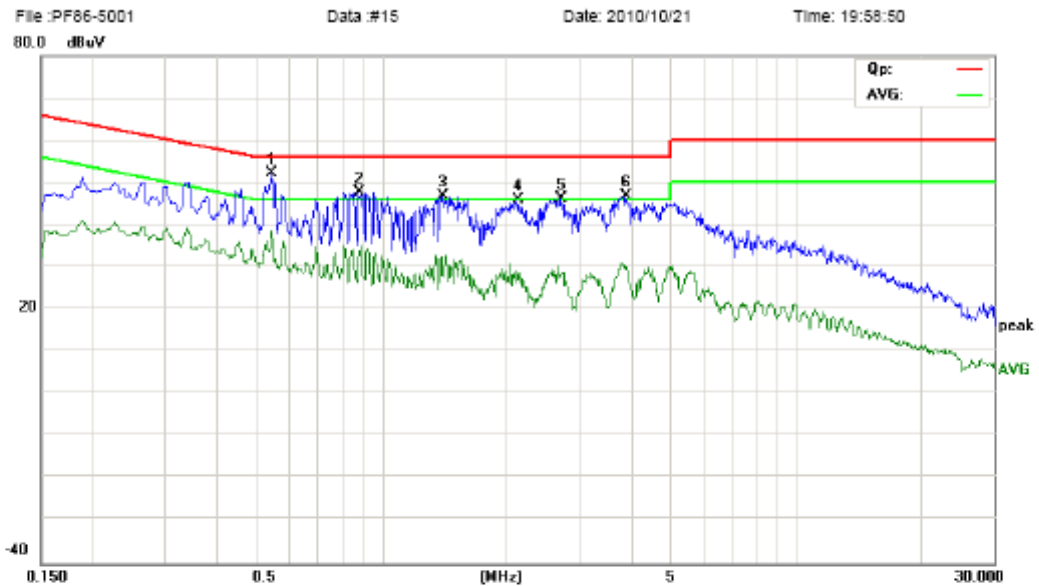
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3340	39.97	11.11	51.08	59.35	-8.27	peak	
2	*	0.5420	41.20	10.00	51.20	56.00	-4.80	peak	
3		0.9060	39.30	10.00	49.30	56.00	-6.70	peak	
4		1.4380	37.80	9.56	47.36	56.00	-8.64	peak	
5		2.9380	37.85	9.94	47.79	56.00	-8.21	peak	
6		4.0460	36.47	11.05	47.52	56.00	-8.48	peak	

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



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Conducted Emission Measurement



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: PF86-5001

Mode: Bluetooth

Note:

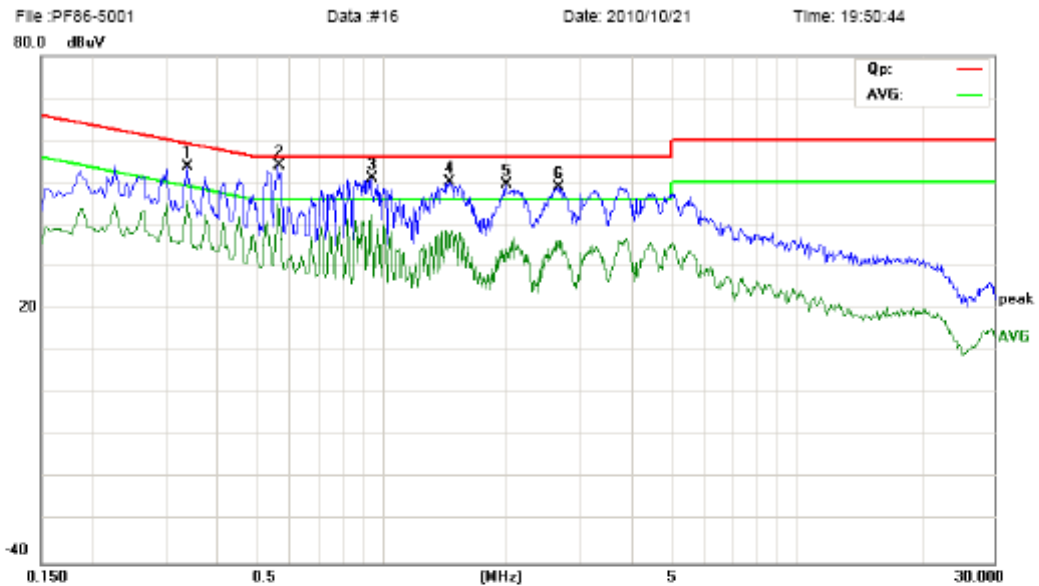
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.5380	42.28	10.00	52.28	56.00	-3.72	peak	
2		0.8780	37.80	10.00	47.80	56.00	-8.20	peak	
3		1.4020	37.29	9.60	46.89	56.00	-9.11	peak	
4		2.1180	36.97	9.12	46.09	56.00	-9.91	peak	
5		2.7060	36.60	9.71	46.31	56.00	-9.69	peak	
6		3.8740	35.86	10.87	46.73	56.00	-9.27	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: **L1**

Temperature: 26

Limit: FCC Part15 B Class B QP

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

M/N: PF86-5001

Mode: Bluetooth

Note:

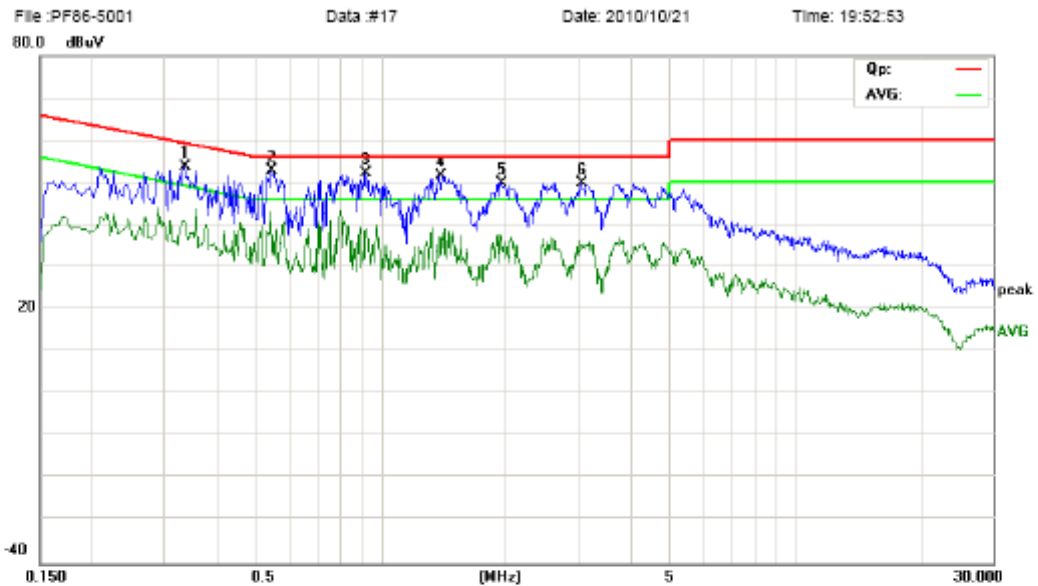
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3380	42.55	11.08	53.63	59.25	-5.62	peak	
2	*	0.5620	44.04	10.00	54.04	56.00	-1.96	peak	
3		0.9420	41.05	10.00	51.05	56.00	-4.95	peak	
4		1.4500	40.51	9.55	50.06	56.00	-5.94	peak	
5		1.9820	40.60	9.02	49.62	56.00	-6.38	peak	
6		2.6620	39.29	9.66	48.95	56.00	-7.05	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: **L1**

Temperature: 26

Limit: FCC Part15 B Class B QP

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

M/N: PF86-5001

Mode: FM Transmitting

Note:

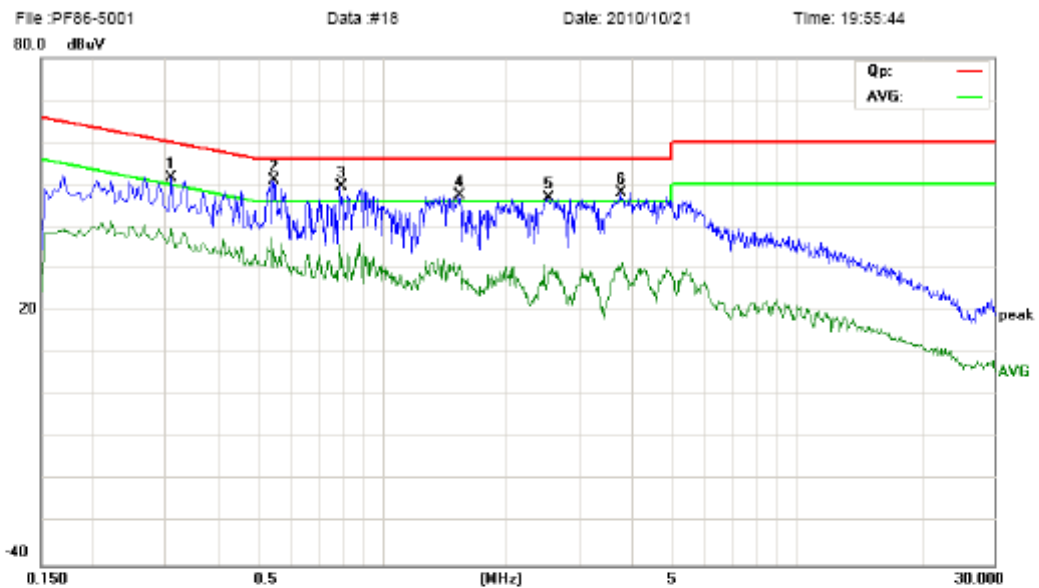
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3340	42.75	11.11	53.86	59.35	-5.49	peak	
2	*	0.5420	42.79	10.00	52.79	56.00	-3.21	peak	
3		0.9180	42.18	10.00	52.18	56.00	-3.82	peak	
4		1.3860	42.09	9.61	51.70	56.00	-4.30	peak	
5		1.9540	40.95	9.05	50.00	56.00	-6.00	peak	
6		3.0340	39.82	10.03	49.85	56.00	-6.15	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: GPS Portable Navigation Device

M/N: PF86-5001

Mode: FM Transmitting

Note:

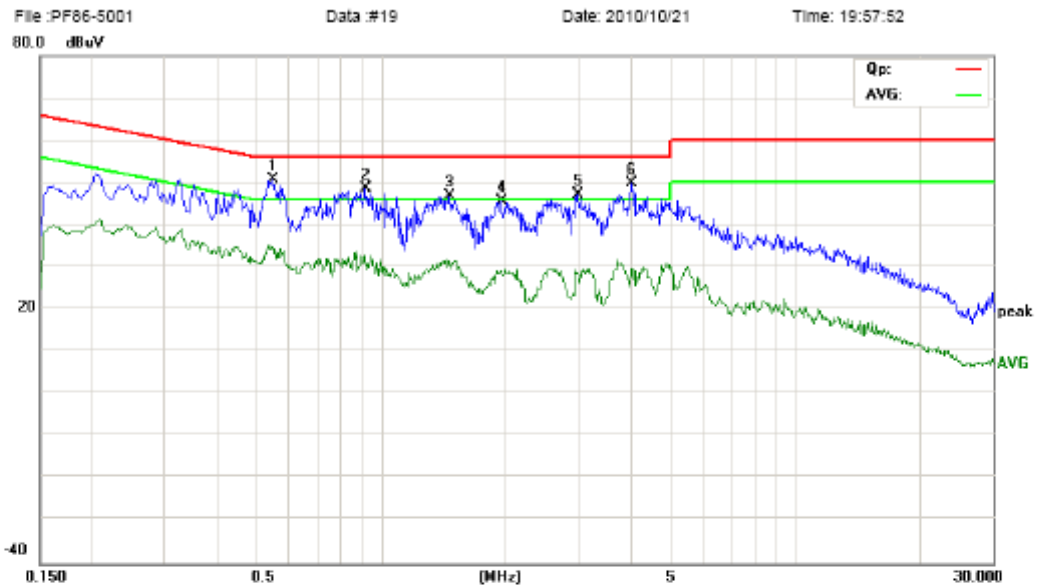
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3100	40.27	11.27	51.54	59.97	-8.43	peak	
2	*	0.5460	41.06	10.00	51.06	56.00	-4.94	peak	
3		0.7940	39.48	10.00	49.48	56.00	-6.52	peak	
4		1.5300	38.09	9.47	47.56	56.00	-8.44	peak	
5		2.5060	37.22	9.51	46.73	56.00	-9.27	peak	
6		3.7660	37.27	10.77	48.04	56.00	-7.96	peak	

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



Address: No. 5, Langshan 2nd Rd., North Hi-Tech Industrial park
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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: GPS Portable Navigation Device

M/N: PF86-5001

Mode: GPS

Note:

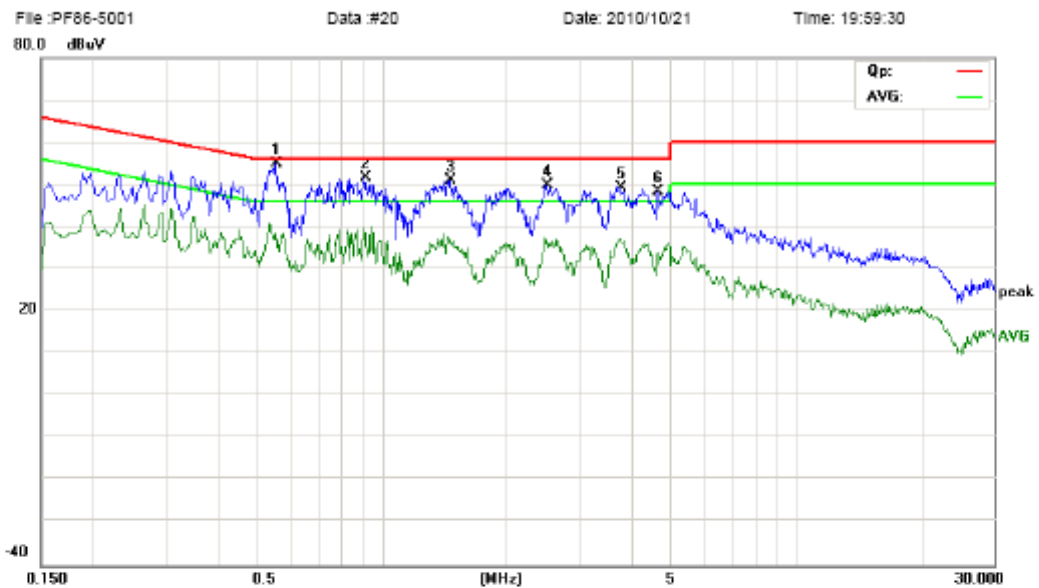
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.5460	40.78	10.00	50.78	56.00	-5.22	peak	
2		0.9180	38.62	10.00	48.62	56.00	-7.38	peak	
3		1.4580	37.37	9.54	46.91	56.00	-9.09	peak	
4		1.9420	36.55	9.06	45.61	56.00	-10.39	peak	
5		2.9700	37.14	9.97	47.11	56.00	-8.89	peak	
6		4.0180	38.81	11.02	49.83	56.00	-6.17	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: **L1**

Temperature: 26

Limit: FCC Part15 B Class B QP

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

M/N: PF86-5001

Mode: GPS

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.5540	45.05	10.00	55.05	56.00	-0.95	peak	
2		0.9060	41.68	10.00	51.68	56.00	-4.32	peak	
3		1.4580	41.37	9.54	50.91	56.00	-5.09	peak	
4		2.4980	40.35	9.50	49.85	56.00	-6.15	peak	
5		3.7460	38.53	10.75	49.28	56.00	-6.72	peak	
6		4.6220	36.77	11.62	48.39	56.00	-7.61	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 15.247, radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

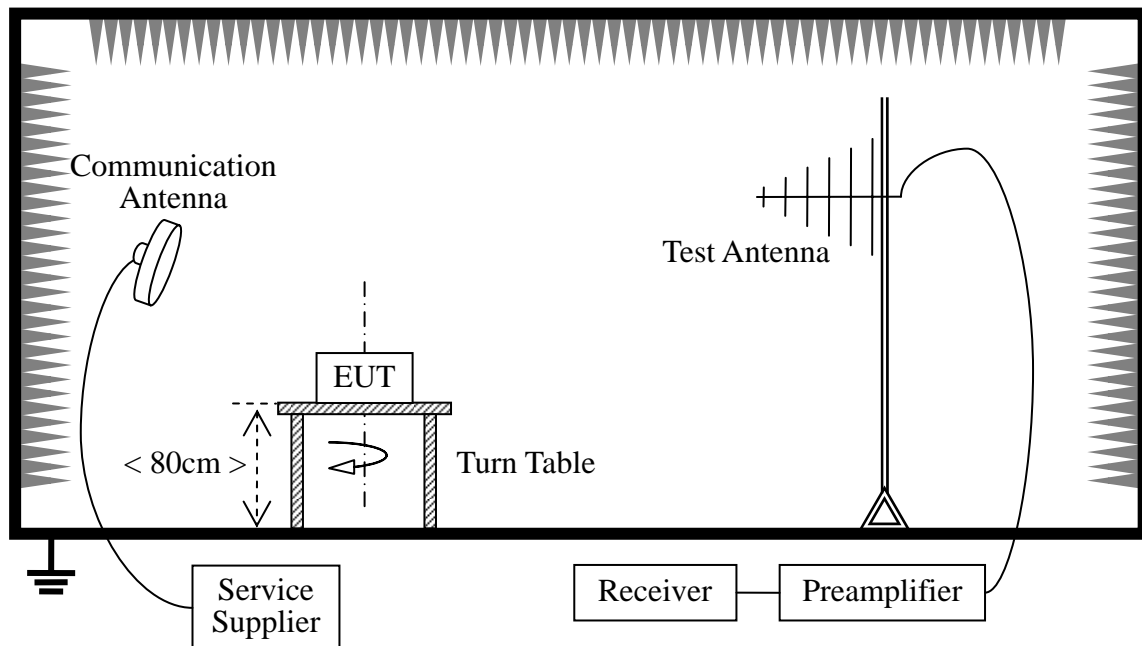
According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	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.

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
Idle Mode	2010-10-22	MOST101013F1	PF86-5001_0_(H, V)	<input type="checkbox"/>
GPS Mode	2010-10-22	MOST101013F1	PF86-5001_1_(H, V)	<input type="checkbox"/>
MP3/MP4 Mode	2010-10-22	MOST101013F1	PF86-5001_2_(H, V)	<input type="checkbox"/>
FM transmitting	2010-10-22	MOST101013F1	PF86-5001_3_(H, V)	<input type="checkbox"/>
Bluetooth Mode	2010-10-22	MOST101013F1	PF86-5001_4_(H, V)	<input checked="" type="checkbox"/>
USB Mode	2010-10-22	MOST101013F1	PF86-5001_5_(H, V)	<input type="checkbox"/>

7.3 TEST RESULT



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

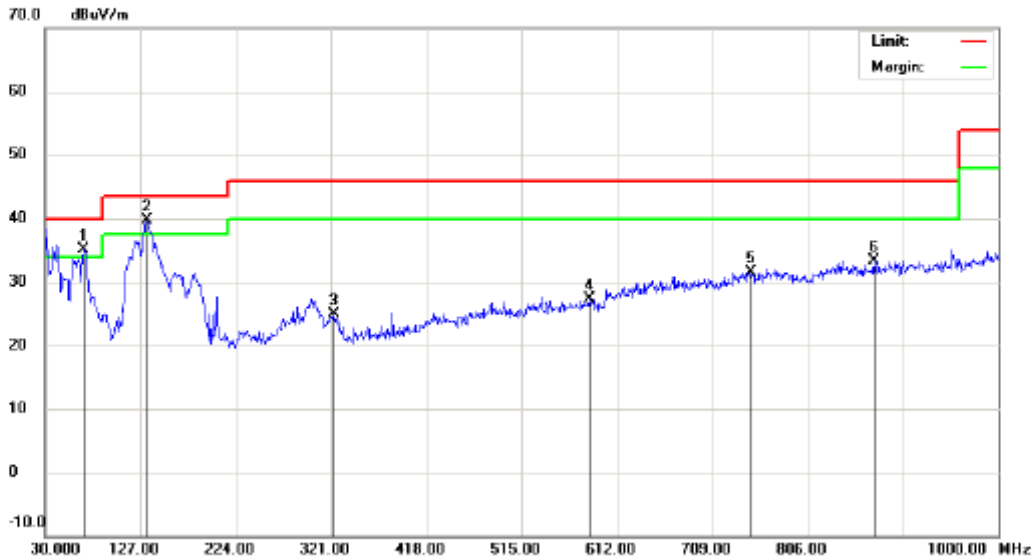
Radiated Emission Measurement

File: PF86-5001

Data: #15

Date: 2010-10-22

Time: 20:38:23



Site site MOST 3M

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: Idle

Note:

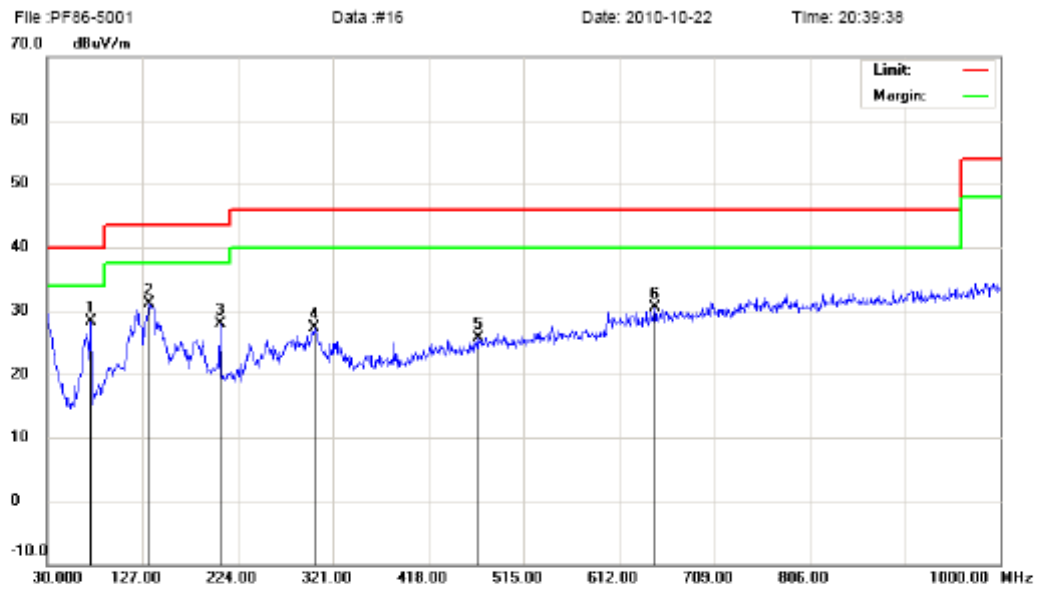
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	!	69.7700	23.47	11.69	35.16	40.00	-4.84	peak			
2	*	133.7900	22.15	17.51	39.66	43.50	-3.84	peak			
3		323.9100	7.94	17.00	24.94	46.00	-21.06	peak			
4		583.8700	4.34	22.94	27.28	46.00	-18.72	peak			
5		748.7700	5.63	25.80	31.43	46.00	-14.57	peak			
6		873.9000	6.32	27.00	33.32	46.00	-12.68	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

Radiated Emission Measurement



Site site MOST 3M

Polarization: *Horizontal*

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: Idle

Note:

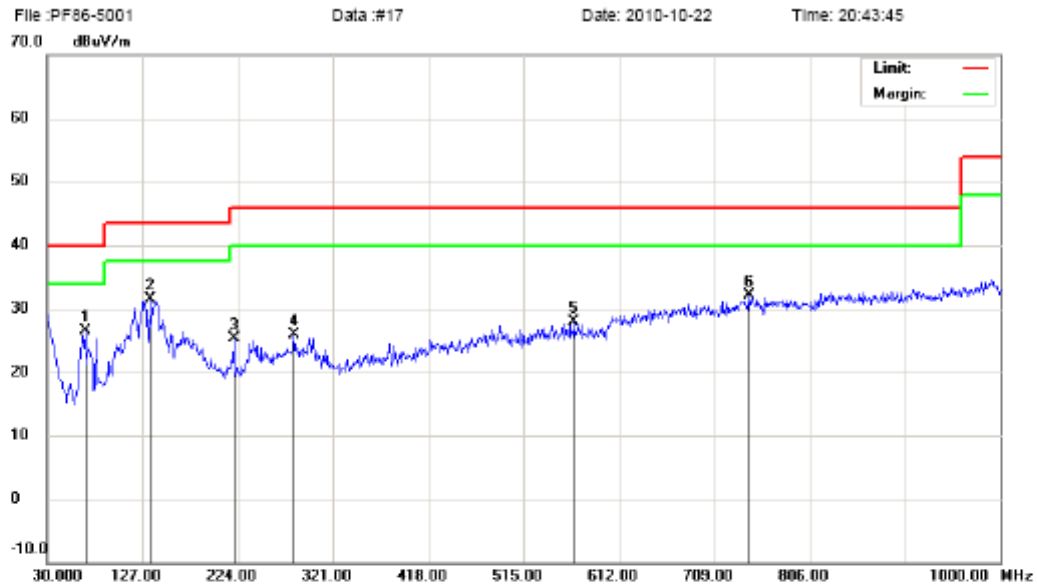
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	74.6200	16.74	11.65	28.39	40.00	-11.61	peak		
2		133.7900	13.54	17.51	31.05	43.50	-12.45	peak		
3		206.5400	11.16	16.77	27.93	43.50	-15.57	peak		
4		301.6000	8.46	18.87	27.33	46.00	-18.67	peak		
5		468.4400	4.63	21.12	25.75	46.00	-20.25	peak		
6		648.8600	6.35	24.09	30.44	46.00	-15.56	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

Radiated Emission Measurement



Site site MOST 3M

Polarization: *Horizontal*

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: MP3

Note:

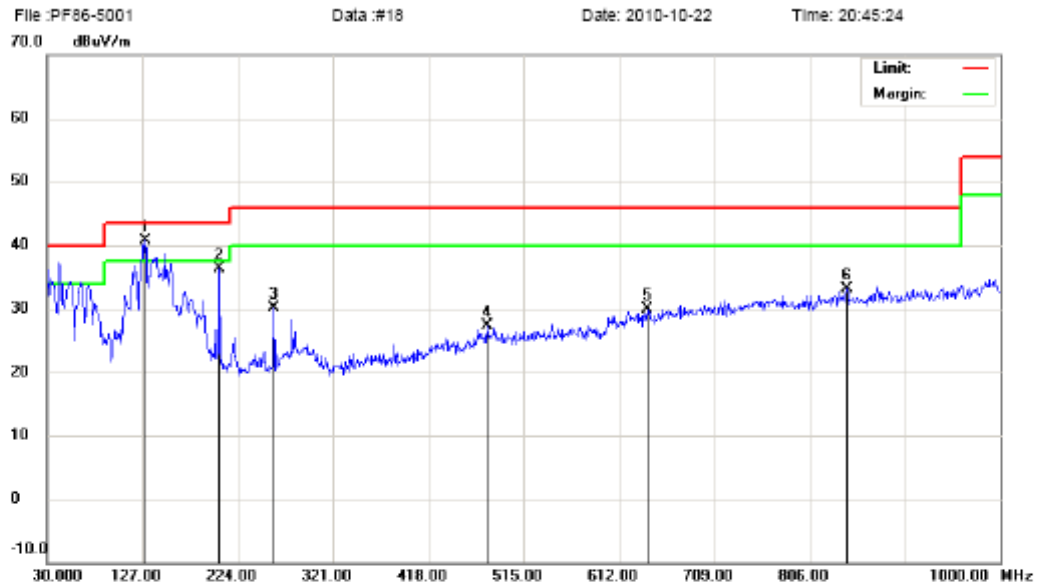
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		68.8000	14.90	11.61	26.51	40.00	-13.49	peak		
2	*	134.7600	14.00	17.46	31.46	43.50	-12.04	peak		
3		220.1200	8.97	16.30	25.27	46.00	-20.73	peak		
4		281.2300	6.45	19.41	25.86	46.00	-20.14	peak		
5		566.4100	5.17	22.79	27.96	46.00	-18.04	peak		
6		743.9200	6.43	25.74	32.17	46.00	-13.83	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

Radiated Emission Measurement



Site site MOST 3M

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: MP3

Note:

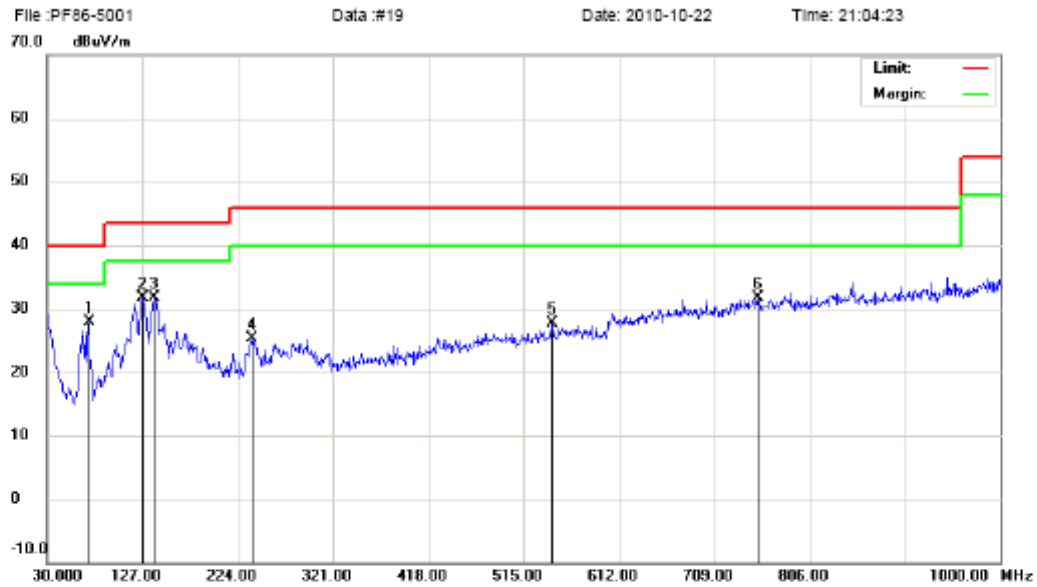
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	129.9100	23.10	17.70	40.80	43.50	-2.70	peak		
2		205.5700	19.33	17.01	36.34	43.50	-7.16	peak		
3		260.8600	12.38	17.71	30.09	46.00	-15.91	peak		
4		478.1400	5.80	21.59	27.39	46.00	-18.61	peak		
5		641.1000	5.88	24.01	29.89	46.00	-16.11	peak		
6		843.8300	5.92	27.14	33.06	46.00	-12.94	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

Radiated Emission Measurement



Site site MOST 3M

Polarization: *Horizontal*

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: Bluetooth

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		71.7100	16.18	11.68	27.86	40.00	-12.14	peak		
2		127.0000	13.93	17.70	31.63	43.50	-11.87	peak		
3	*	139.6100	14.42	17.22	31.64	43.50	-11.86	peak		
4		238.5500	8.22	17.10	25.32	46.00	-20.68	peak		
5		544.1000	5.47	22.28	27.75	46.00	-18.25	peak		
6		753.6200	6.06	25.73	31.79	46.00	-14.21	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

Radiated Emission Measurement



Site site MOST 3M

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: Bluetooth

Note:

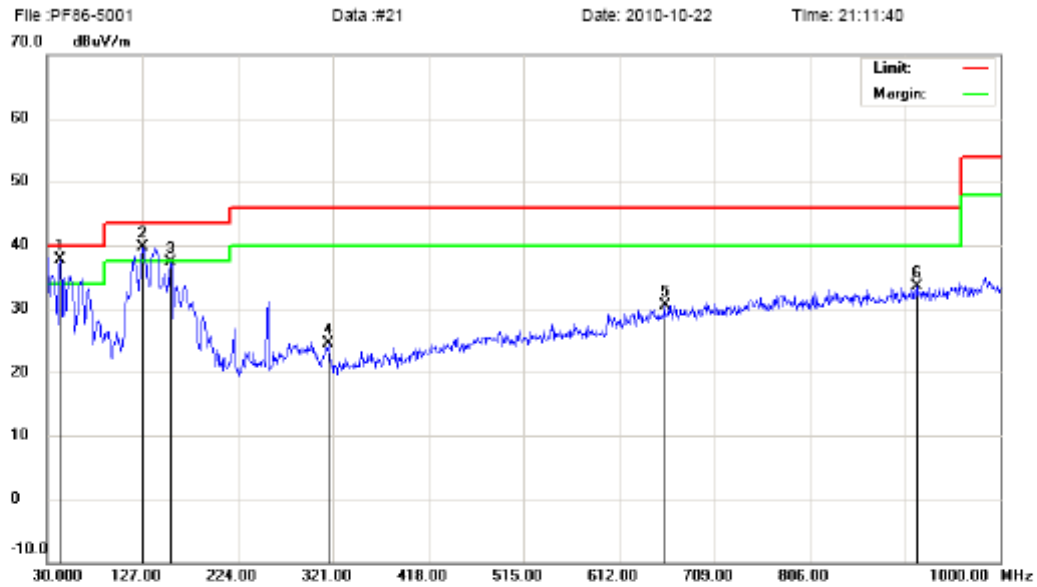
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	43.5800	23.26	14.51	37.77	40.00	-2.23	peak		
2	!	140.5800	22.36	17.17	39.53	43.50	-3.97	peak		
3		371.4400	5.76	18.21	23.97	46.00	-22.03	peak		
4		565.4400	4.08	22.76	26.84	46.00	-19.16	peak		
5		745.8600	5.46	25.80	31.26	46.00	-14.74	peak		
6		850.6200	6.59	27.10	33.69	46.00	-12.31	peak		

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



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Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement



Site site MOST 3M

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: GPS

Note:

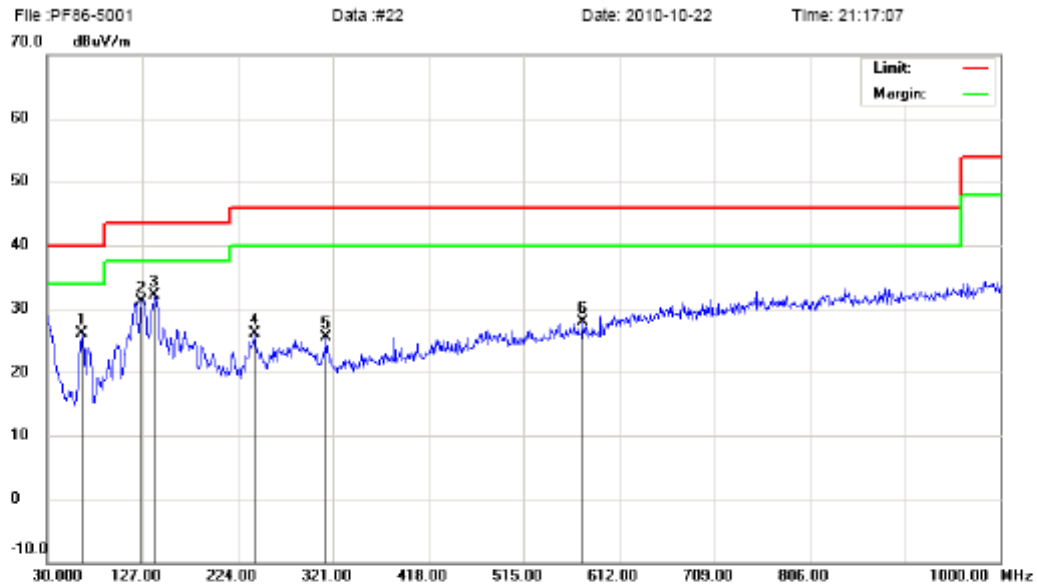
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	43.5800	23.21	14.51	37.72	40.00	-2.28	peak		
2	!	127.9700	21.94	17.70	39.64	43.50	-3.86	peak		
3		156.1000	20.38	16.91	37.29	43.50	-6.21	peak		
4		316.1500	7.69	16.85	24.54	46.00	-21.46	peak		
5		658.5600	6.22	24.20	30.42	46.00	-15.58	peak		
6		915.6100	5.81	27.70	33.51	46.00	-12.49	peak		

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



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Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement



Site site MOST 3M

Polarization: *Horizontal*

Temperature: 26

Limit: FCC Part15 B 3M Radiation

Power: AC 120V/60Hz

Humidity: 60 %

EUT: GPS Portable Navigation Device

Distance:

MN: PF86-5001

Mode: GPS

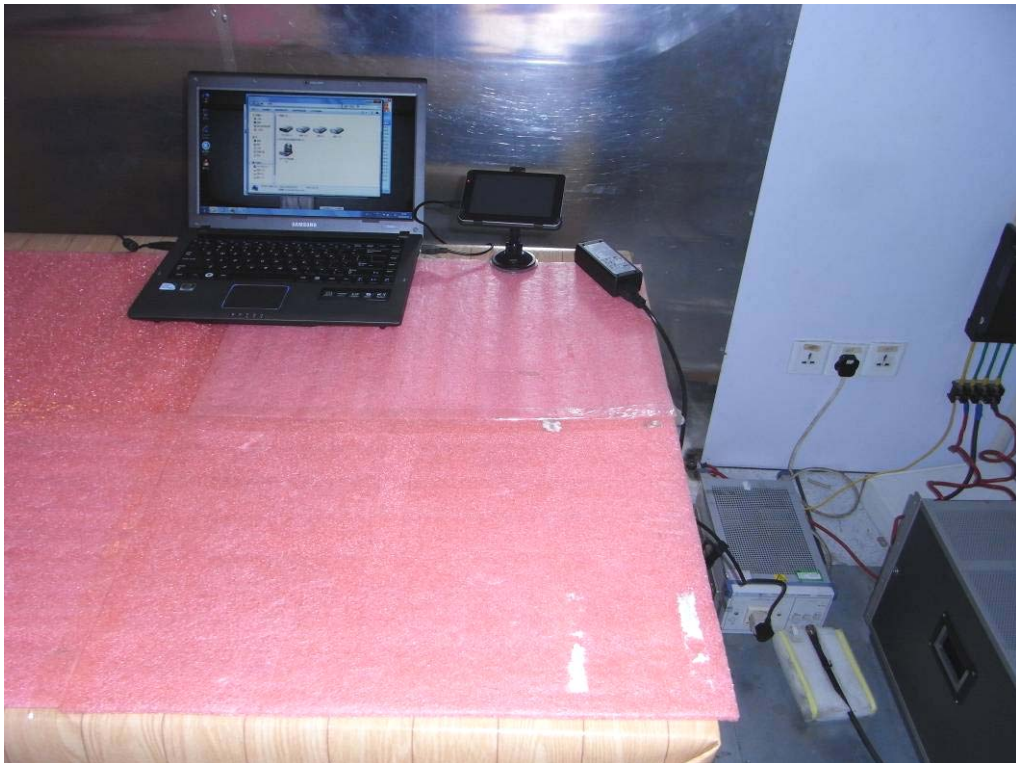
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		65.8900	14.68	11.37	26.05	40.00	-13.95	peak		
2		126.0300	13.38	17.70	31.08	43.50	-12.42	peak		
3	*	139.6100	14.92	17.22	32.14	43.50	-11.36	peak		
4		241.4600	8.94	17.26	26.20	46.00	-19.80	peak		
5		314.2100	8.79	16.77	25.56	46.00	-20.44	peak		
6		575.1400	5.05	22.80	27.85	46.00	-18.15	peak		

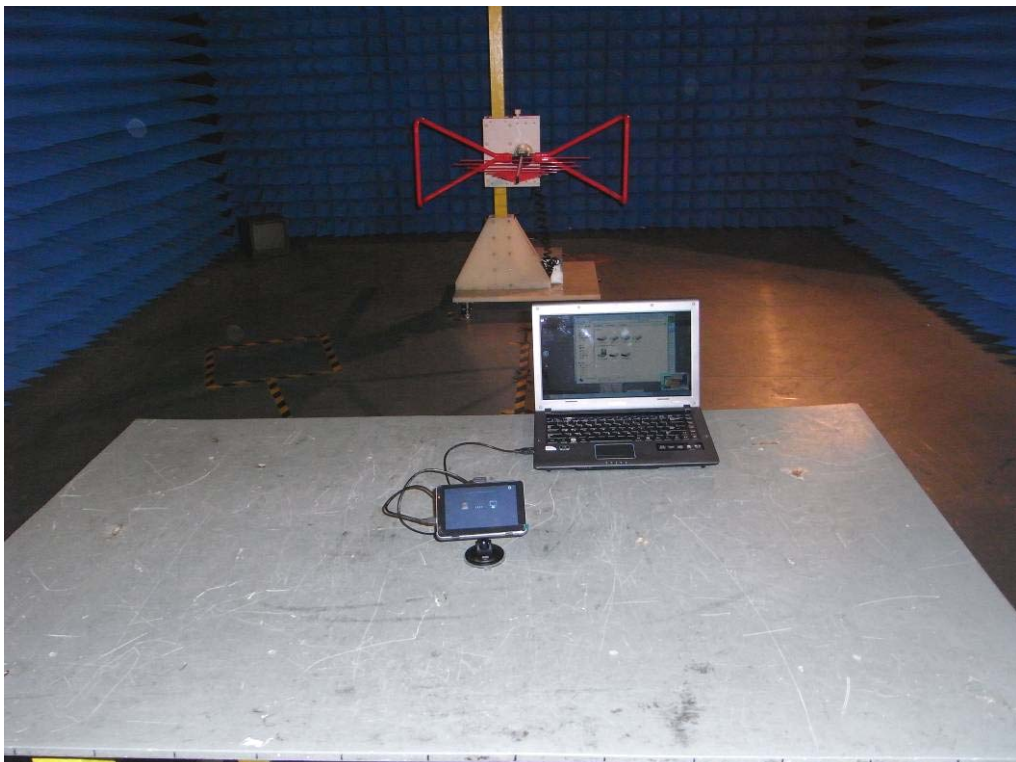
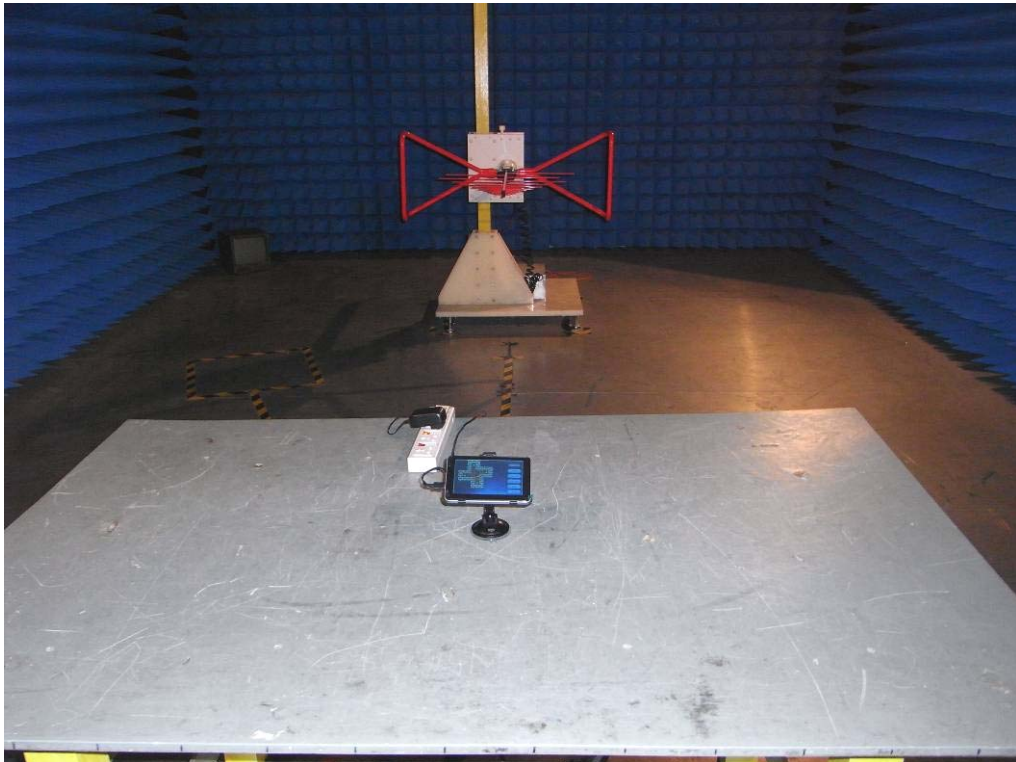
*:Maximum data x:Over limit !:over margin

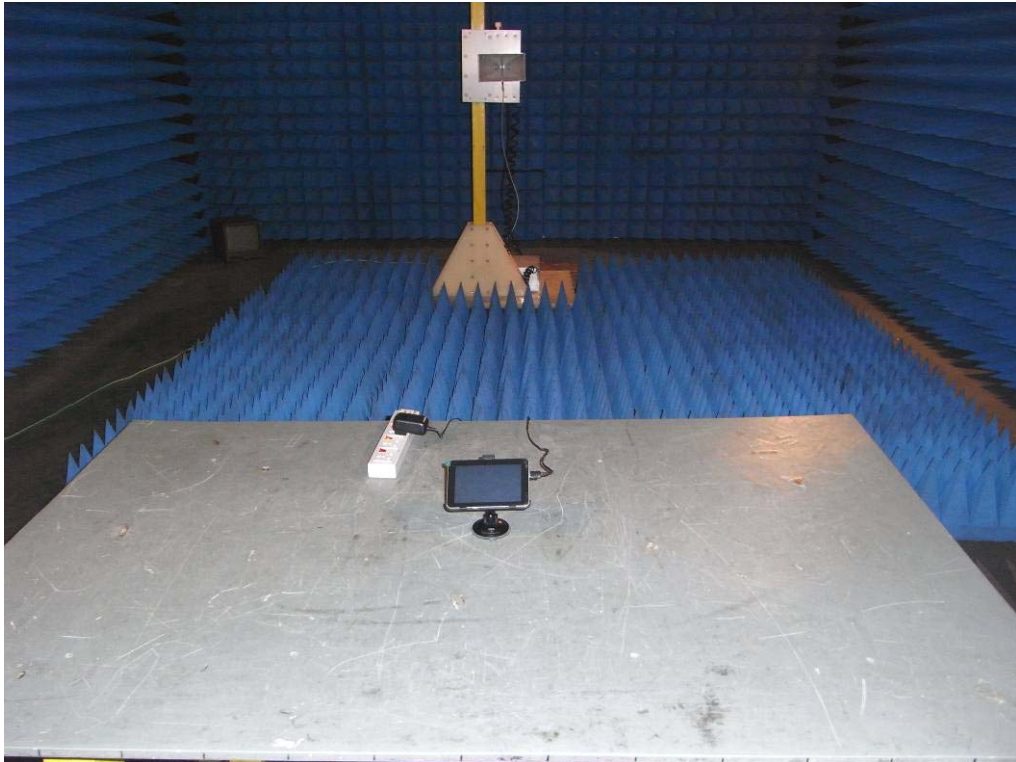
APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

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 TRESTLE TABLE



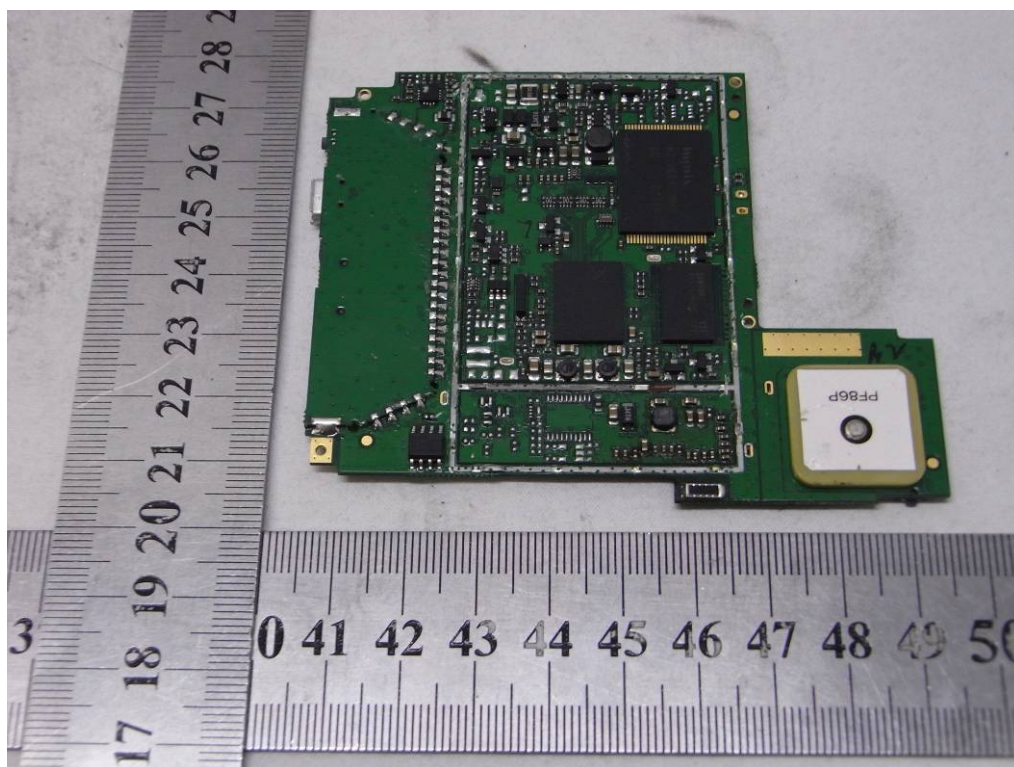
PHOTO OF THE ENTIRE SAMPLE



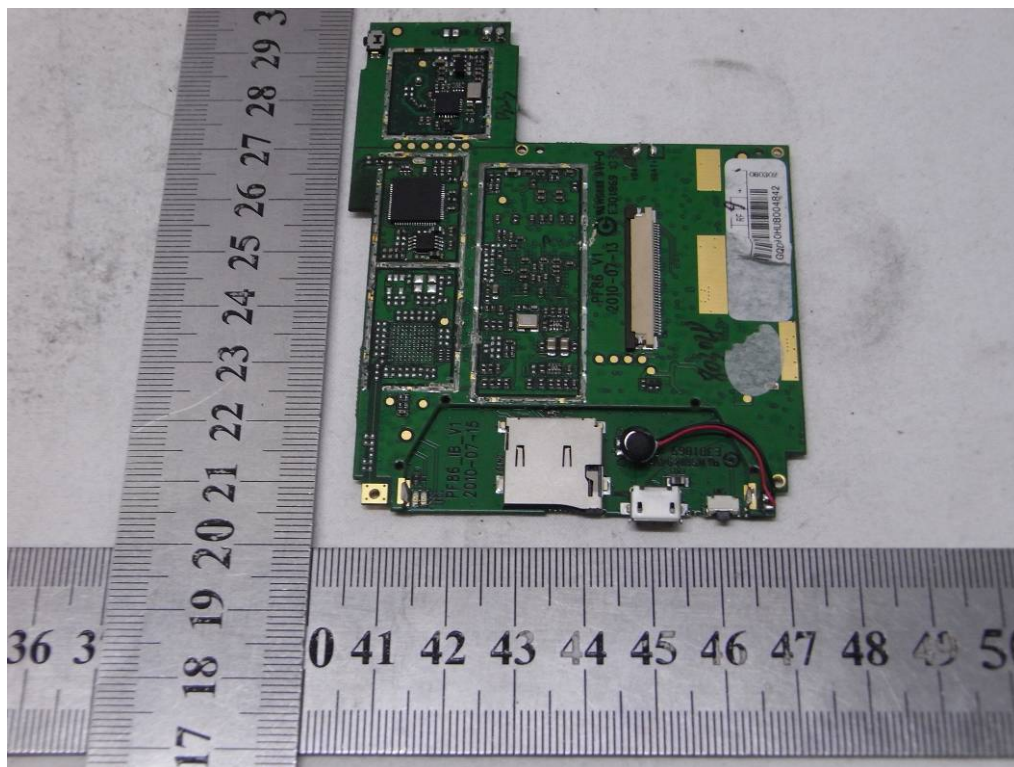
PHOTO OF THE BATTERY



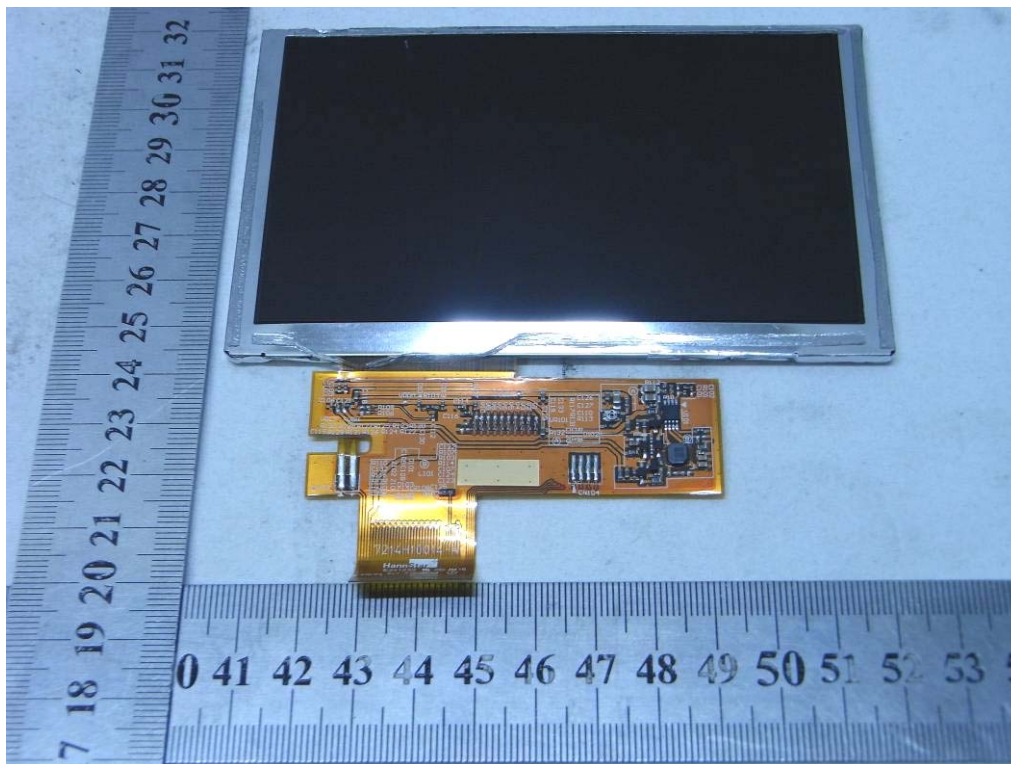
INTERNAL PHOTO OF SAMPLE - 1



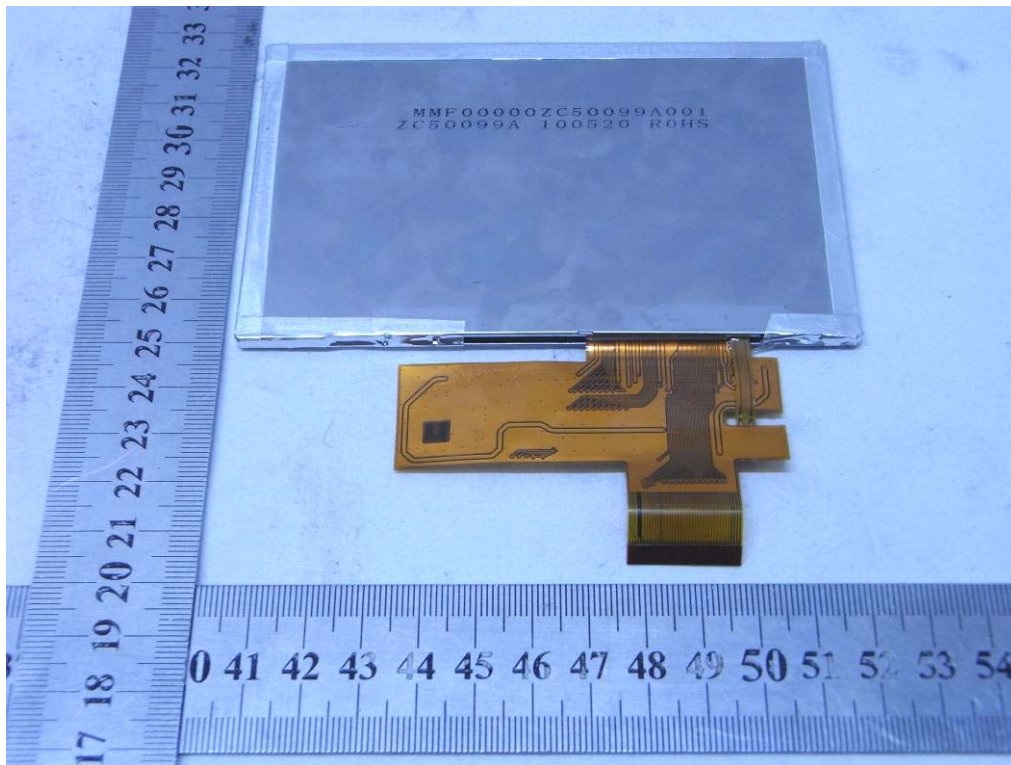
INTERNAL PHOTO OF SAMPLE - 2



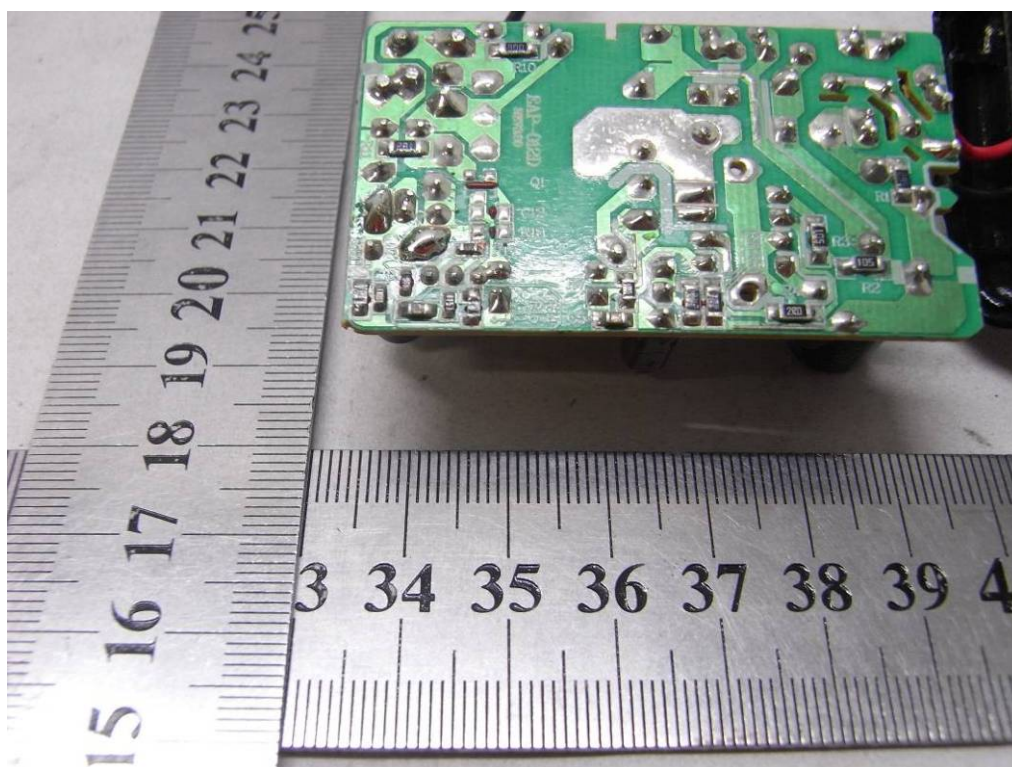
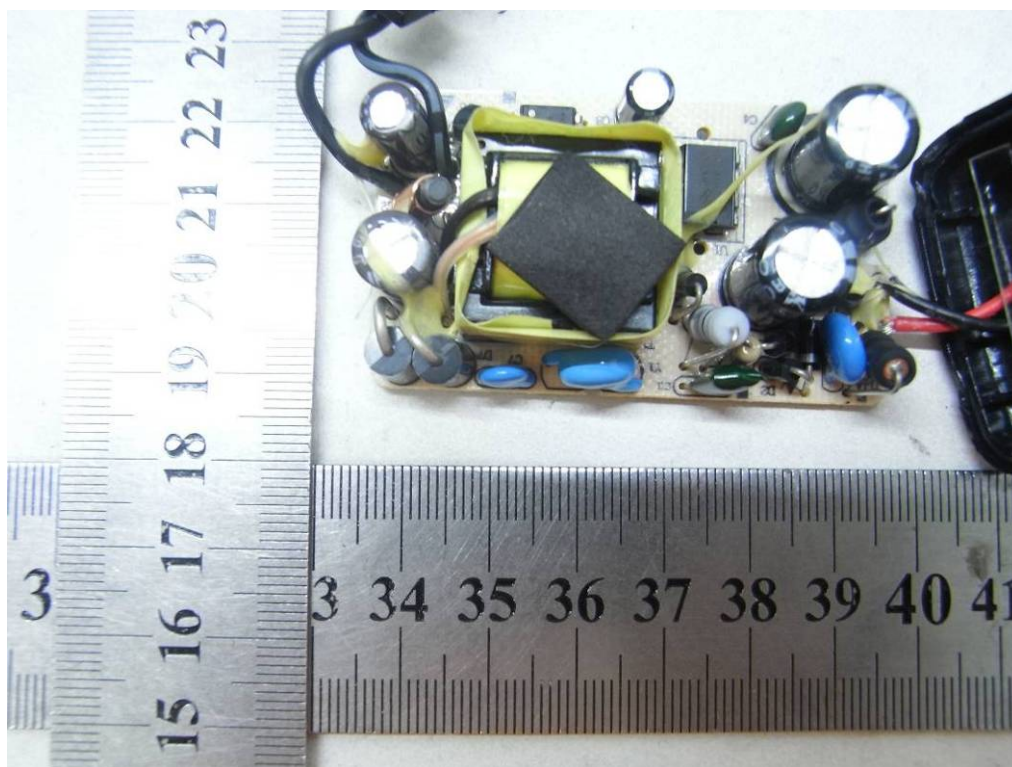
INTERNAL PHOTO OF SAMPLE - 3



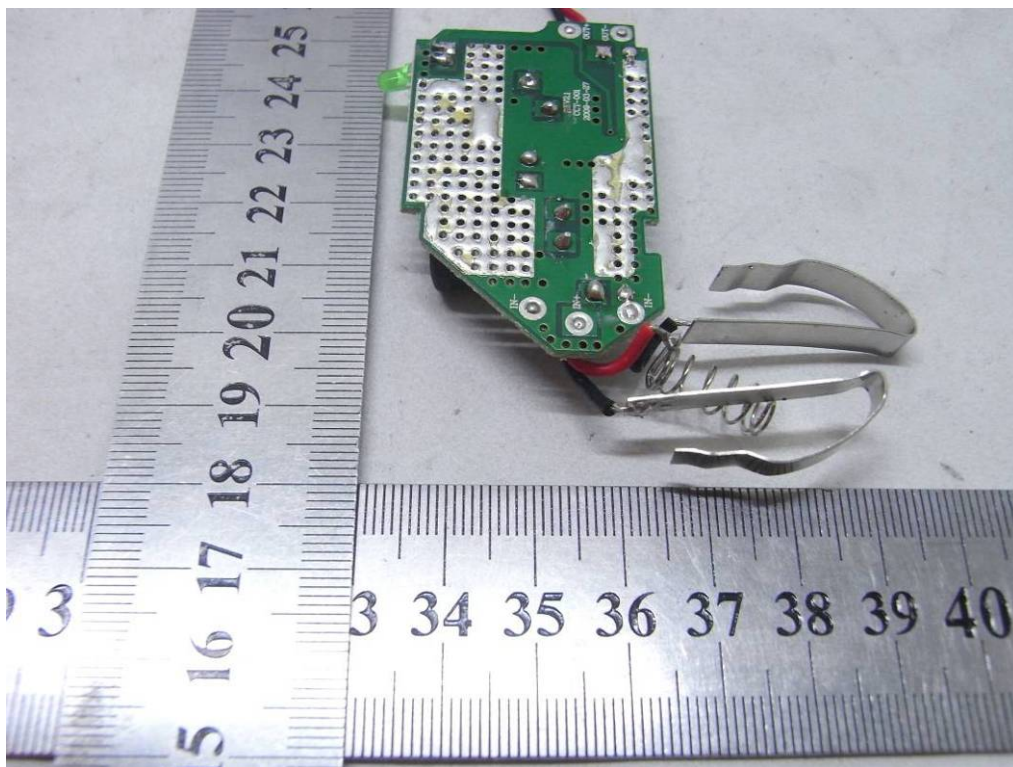
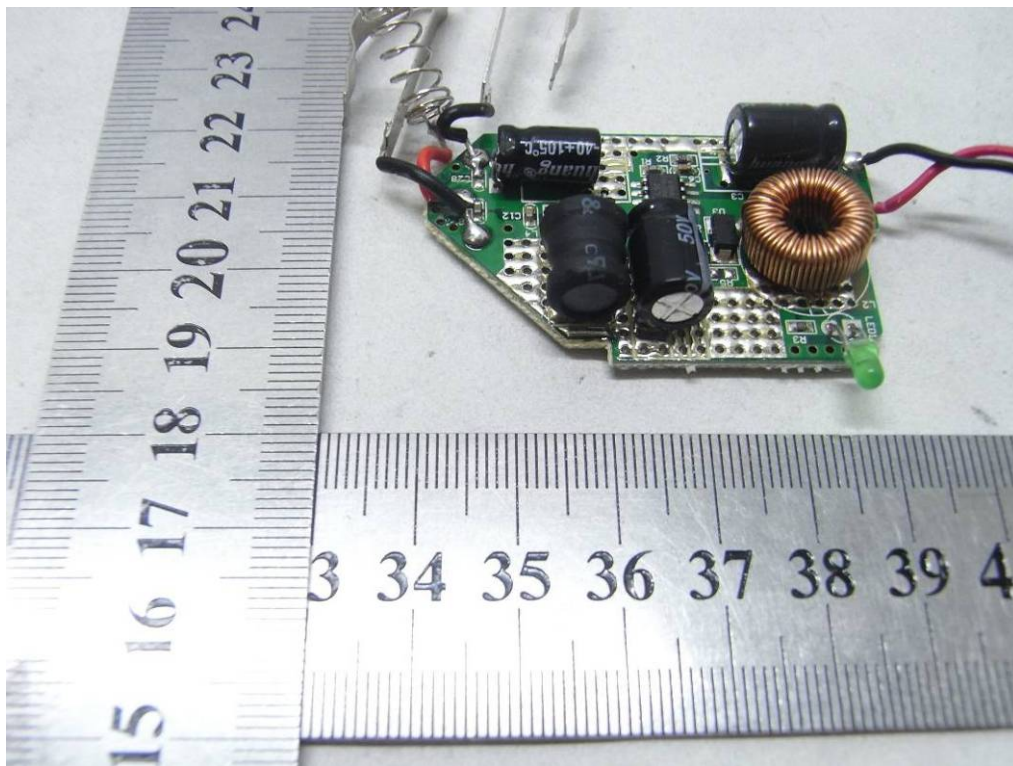
INTERNAL PHOTO OF SAMPLE - 4



INTERNAL PHOTO OF POWER SUPPLY



INTERNAL PHOTO OF CAR SUPPLY



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