FCC REPORT

Applicant:	Thermaltake Technology Co., Ltd.
Address of Applicant:	5F., No.185, Sec. 2, Tiding Blvd., Neihu Dist., Taipei City 114, Taiwan

Equipment Under Test (EUT)

Product Name:	TX-P2 10000mAh Wireless Charging Power Bank
Model No.:	PO-WPC-PCP2BK-00
FCC ID:	2AAUCPOWPCPCP2BK
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C:2013
Date of sample receipt:	October 22, 2014
Date of Test:	October 22-27, 2014
Date of report issued:	October 29, 2014
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
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2 Version

Version No.	Date	Description
00	*October 29, 2014*	*Original*

Prepared By: Edward.Pan ***Date:*** *October 29, 2014*

Project Engineer

Check By: Hank.Yan ***Date:*** *October 29, 2014*

Reviewer

3 Contents

Page

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Radiated Emission	15.209	Pass
20dB Bandwidth	15.205	Pass

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	Thermaltake Technology Co., Ltd.
Address of Applicant:	5F., No.185, Sec. 2, Tiding Blvd., Neihu Dist., Taipei City 114, Taiwan
Manufacturer:	ShenZhen Yijieneng Technology Co., LTD.
Address of Manufacturer:	1304 Block A, Zhonghai Xin, GangLi Sixth Street, GanLi Technology Park, Buji, Longgang, Shenzhen, China

5.2 General Description of EUT

Product Name:	TX-P2 10000mAh Wireless Charging Power Bank
Model No.:	PO-WPC-PCP2BK-00
Operation Frequency:	112kHz ~ 205KHz
Modulation type:	Backscatter modulation
Antenna Type:	Inductive loop coil antenna
Antenna gain:	0dBi (declared by manufacturer)
Power supply:	DC 3.7V Li-ion Battery Charging voltage: DC 5.0V Outpurt voltage: DC 5.0V

Note:

In section 15.31(m), regards to the operating frequency range less than 1 MHz, only the middle frequency of channel was selected to perform the test, and we selected 3 channels to do the tests.

Channel	Frequency
The lowest channel	112 kHz
The middle channel	165 kHz
The Highest channel	205 kHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting and charging mode
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
LGE	Mobile Phone	LG-D820	03100E97E0771A86	FCC ID:ZNFD820

5.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China
Tel: 0755-27798480
Fax: 0755-27798960

5.7 Other Information Requested by the Customer

None.

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 29 2014	Mar. 28 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Jul. 01 2014	Jun 30 2015
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jun 30 2015
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Jul. 01 2014	Jun 30 2015
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 26 2015
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015
11	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jun. 30, 2015
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jun. 30, 2015
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015
17	Loop Antenna	ZHINAN	ZN30900A	GTS534	Feb. 23 2014	Feb. 22 2015
Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Jul. 01 2014	Jun. 30, 2015
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 01 2014	Jun. 30, 2015
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 01 2014	Jun. 30, 2015
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 01 2014	Jun. 30, 2015
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 01 2014	Jun. 30, 2015
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 01 2014	Jun. 30, 2015
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015

7 Test results and Measurement Data

7.1 Antenna requirement:

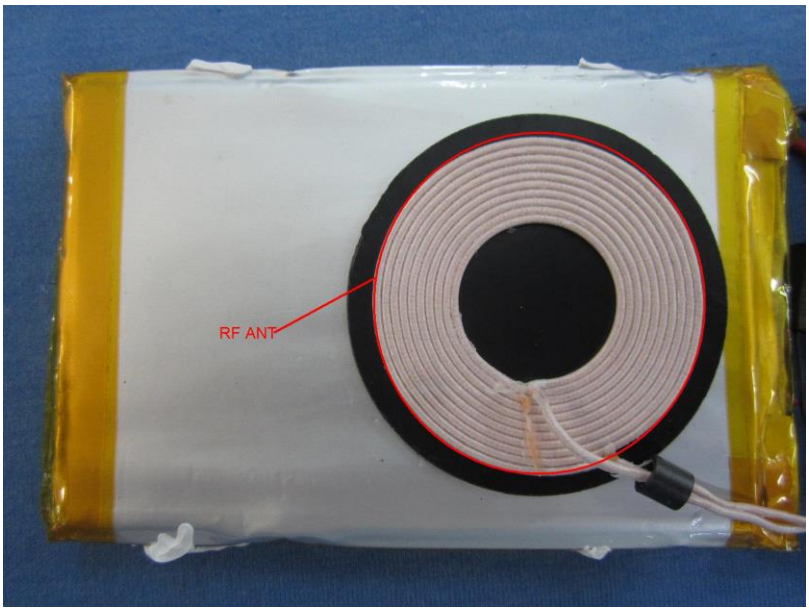
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

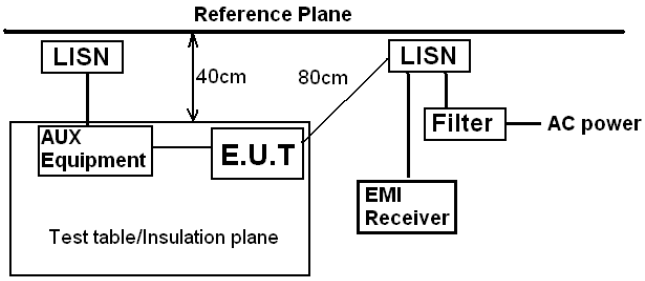
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

E.U.T Antenna:

The antenna is Integral Antenna, the best case gain of the antenna is 0dBi

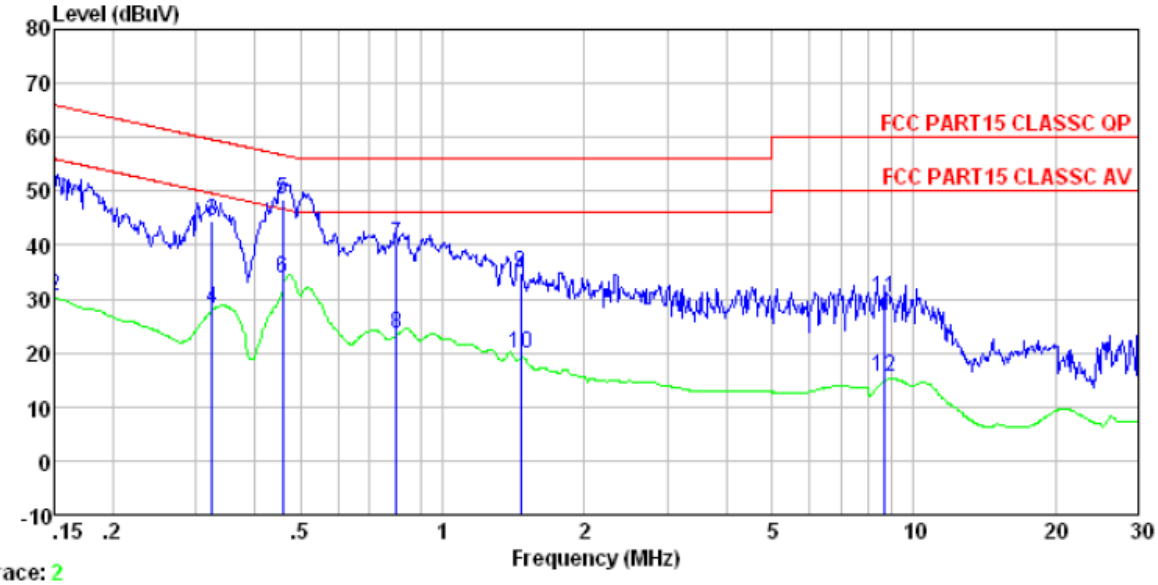


7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4:2003
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

Line:

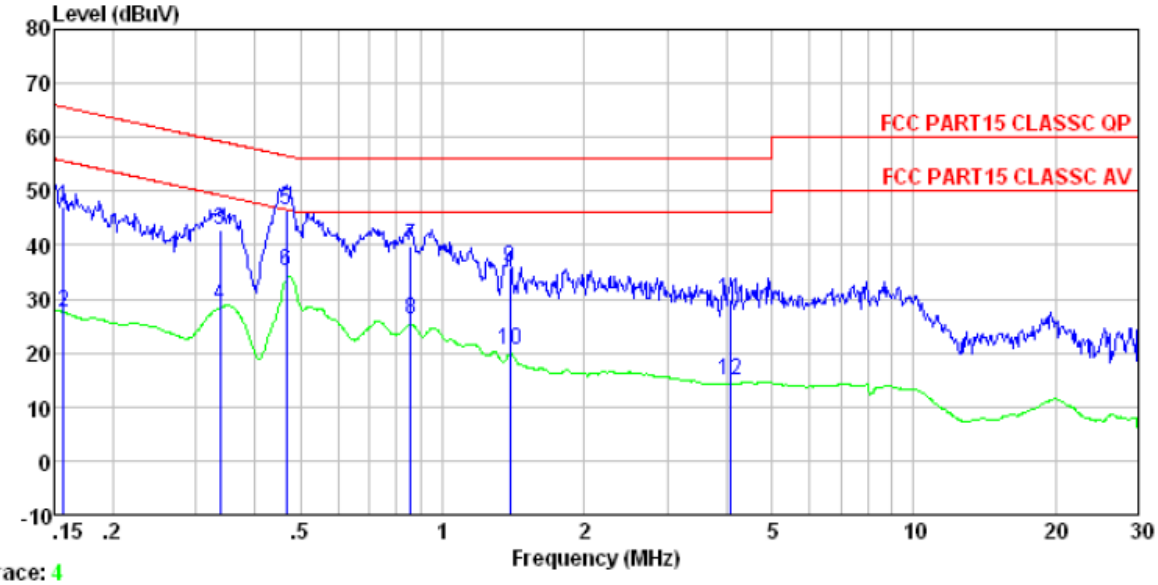


Trace: 2

Condition : FCC PART15 CLASSC QP LISN-2013 LINE
Job No. : 1816RF
Test Engineer: Mike

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	50.28	0.15	0.12	50.55	66.00	-15.45	QP
2	0.150	30.13	0.15	0.12	30.40	56.00	-25.60	Average
3	0.325	44.28	0.11	0.10	44.49	59.57	-15.08	QP
4	0.325	27.84	0.11	0.10	28.05	49.57	-21.52	Average
5	0.459	48.36	0.12	0.11	48.59	56.71	-8.12	QP
6	0.459	33.53	0.12	0.11	33.76	46.71	-12.95	Average
7	0.800	39.84	0.14	0.13	40.11	56.00	-15.89	QP
8	0.800	23.17	0.14	0.13	23.44	46.00	-22.56	Average
9	1.464	34.58	0.12	0.13	34.83	56.00	-21.17	QP
10	1.464	19.64	0.12	0.13	19.89	46.00	-26.11	Average
11	8.637	29.64	0.28	0.19	30.11	60.00	-29.89	QP
12	8.637	15.20	0.28	0.19	15.67	50.00	-34.33	Average

Neutral:



Trace: 4

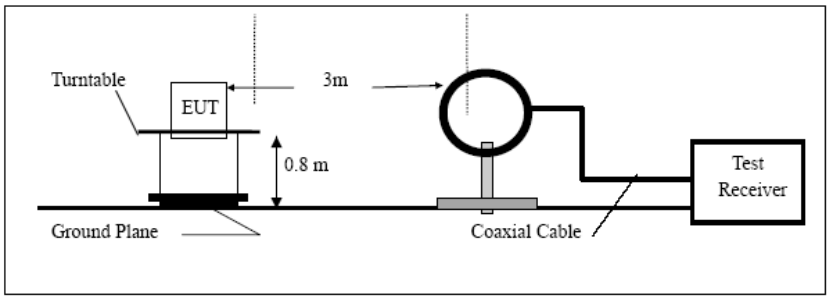
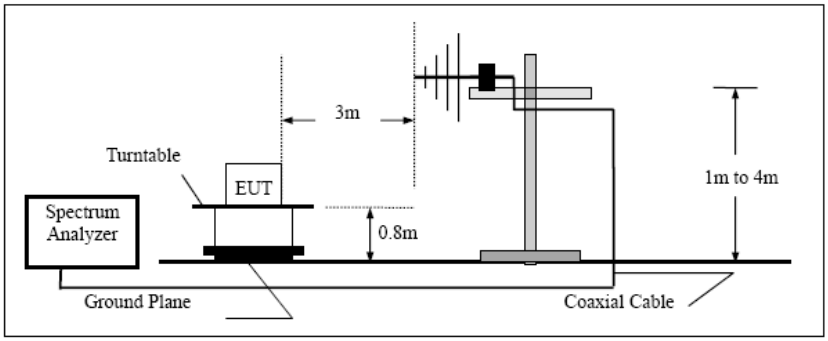
Condition : FCC PART15 CLASSC QP LISN-2013 NEUTRAL
Job No. : 1816RF
Test Engineer: Mike

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.157	47.04	0.07	0.12	47.23	65.60	-18.37	QP
2	0.157	27.35	0.07	0.12	27.54	55.60	-28.06	Average
3	0.337	42.68	0.06	0.10	42.84	59.27	-16.43	QP
4	0.337	28.77	0.06	0.10	28.93	49.27	-20.34	Average
5	0.466	46.20	0.06	0.11	46.37	56.58	-10.21	QP
6	0.466	34.85	0.06	0.11	35.02	46.58	-11.56	Average
7	0.857	39.56	0.07	0.13	39.76	56.00	-16.24	QP
8	0.857	25.88	0.07	0.13	26.08	46.00	-19.92	Average
9	1.388	35.47	0.09	0.13	35.69	56.00	-20.31	QP
10	1.388	20.49	0.09	0.13	20.71	46.00	-25.29	Average
11	4.092	29.49	0.14	0.15	29.78	56.00	-26.22	QP
12	4.092	14.54	0.14	0.15	14.83	46.00	-31.17	Average

Notes:
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 1GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>9kHz - 30MHz</td><td>Quasi-peak</td><td>10kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>AV</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
Remark: For the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission test in these three bands are based on measurements employing an average detector.
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
Limits for frequency below 30MHz
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Measurement Distance(m)</th><th>Remark</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td><td>Quasi-peak Value</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td><td>Quasi-peak Value</td></tr>
<tr><td>1.705-30</td><td>30</td><td>30</td><td>Quasi-peak Value</td></tr>
</table>
Limits for frequency Above 30MHz
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
</td></tr>
<tr><td>Test Procedure:</td><td>
1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the
</td></tr>
</table>

	limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test setup:	Below 30MHz  30MHz ~ 1000MHz 
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80

Limit dBuV/m @3m = Limit dBuV/m @30m + 40

Below 30MHz

CHL:

Average Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
110.00	54.83	24.12	0.17	0.00	79.12	106.78	-27.66	Vertical
112.00	67.73	24.05	0.17	0.00	91.95	106.62	-14.67	Vertical
110.00	50.26	24.12	0.17	0.00	74.55	106.78	-32.23	Horizontal
112.00	58.87	24.05	0.17	0.00	83.09	106.62	-23.53	Horizontal

Peak Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
110.00	58.47	24.12	0.17	0.00	82.76	126.78	-44.02	Vertical
112.00	73.54	24.05	0.17	0.00	97.76	126.62	-28.86	Vertical
110.00	55.21	24.12	0.17	0.00	79.50	126.78	-47.28	Horizontal
112.00	65.14	24.05	0.17	0.00	89.36	126.62	-37.26	Horizontal

CHM:

Average Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
165.00	69.53	22.50	0.20	0.00	92.23	103.25	-11.02	Vertical
165.00	61.47	22.50	0.20	0.00	84.17	103.25	-19.08	Horizontal

Peak Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
165.00	76.26	22.50	0.20	0.00	98.96	123.25	-24.29	Vertical
165.00	67.94	22.50	0.20	0.00	90.64	123.25	-32.61	Horizontal

CHH:

Average Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
205.00	69.86	22.12	0.22	0.00	92.20	101.37	-9.17	Vertical
205.00	62.24	22.12	0.22	0.00	84.58	101.37	-16.79	Horizontal

Peak Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
205.00	77.48	22.12	0.22	0.00	99.82	121.37	-21.55	Vertical
205.00	69.15	22.12	0.22	0.00	91.49	121.37	-29.88	Horizontal

QP Value:

Frequency (kHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit @3m (dBuV/m)	Over Limit (dB)	ANT. Polarization
495.00	33.92	20.70	0.28	0.00	54.90	73.71	-18.81	Vertical
495.00	33.75	20.70	0.28	0.00	54.73	73.71	-18.98	Horizontal

Remark:

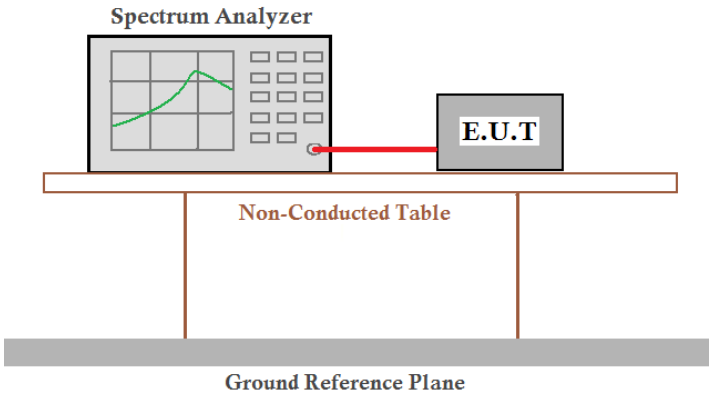
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

30MHz ~ 1000MHz

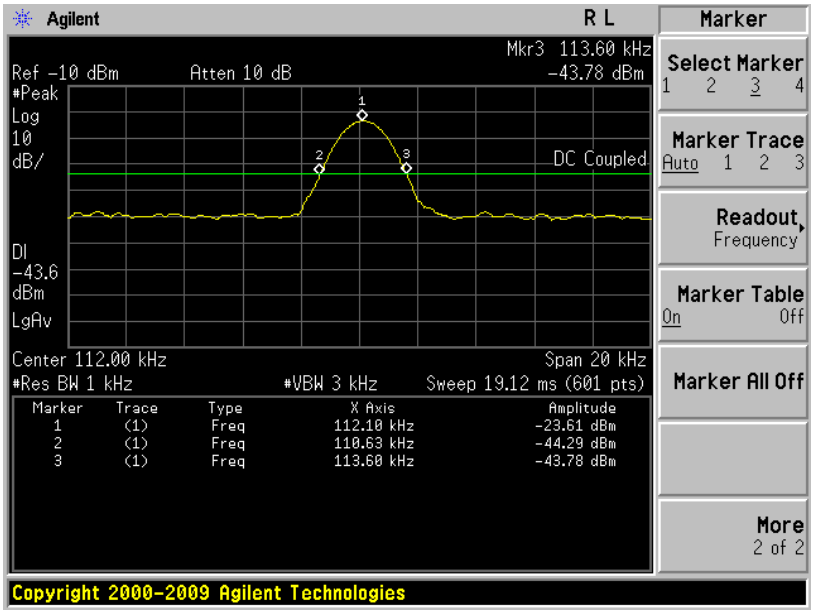
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
47.33	43.55	15.41	0.74	31.98	27.72	40.00	-12.28	Vertical
63.76	48.37	13.24	0.89	31.92	30.58	40.00	-9.42	Vertical
134.56	58.99	10.56	1.47	31.92	39.10	43.50	-4.40	Vertical
185.14	54.75	12.16	1.77	32.10	36.58	43.50	-6.92	Vertical
282.99	42.08	14.73	2.28	32.17	26.92	46.00	-19.08	Vertical
763.38	35.28	21.63	4.32	31.27	29.96	46.00	-16.04	Vertical
43.35	35.77	15.56	0.70	32.02	20.01	40.00	-19.99	Horizontal
63.98	45.48	13.11	0.89	31.92	27.56	40.00	-12.44	Horizontal
137.90	50.72	10.35	1.49	31.94	30.62	43.50	-12.88	Horizontal
182.56	50.95	11.92	1.75	32.09	32.53	43.50	-10.97	Horizontal
307.83	41.07	15.17	2.40	32.15	26.49	46.00	-19.51	Horizontal
801.79	35.24	22.06	4.46	31.31	30.45	46.00	-15.55	Horizontal

Remark: Mid channel is worst case and reported only worst frequency points.

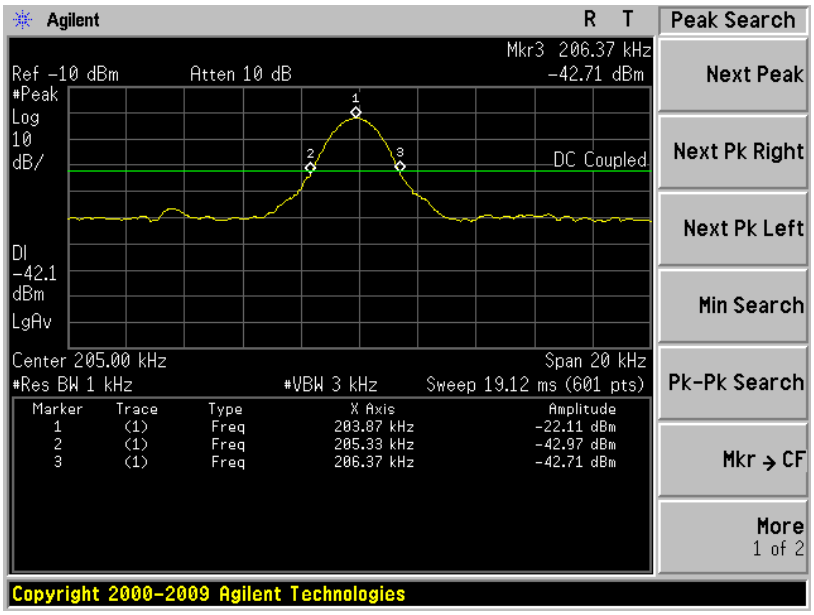
7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.215
Test Method:	ANSI C63.4:2003
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data



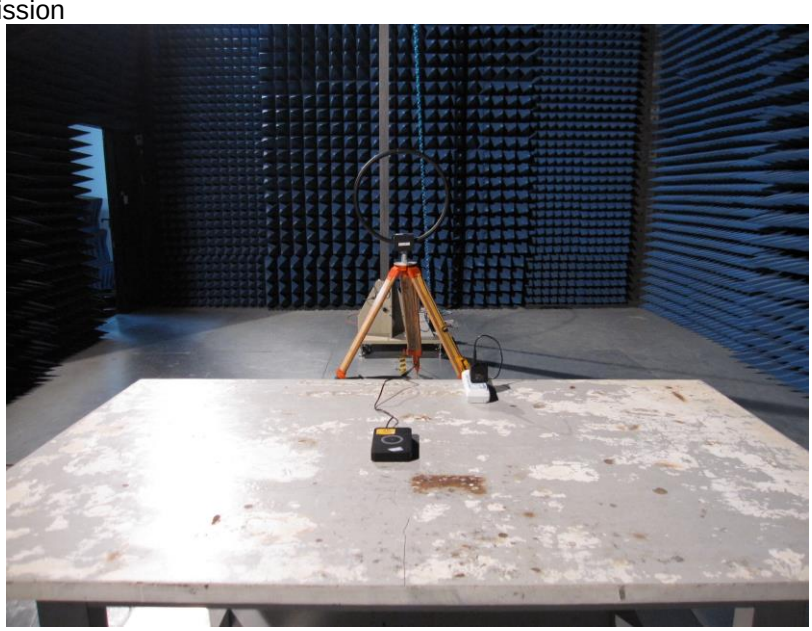
112kHz: 20dB BW=2.97kHz

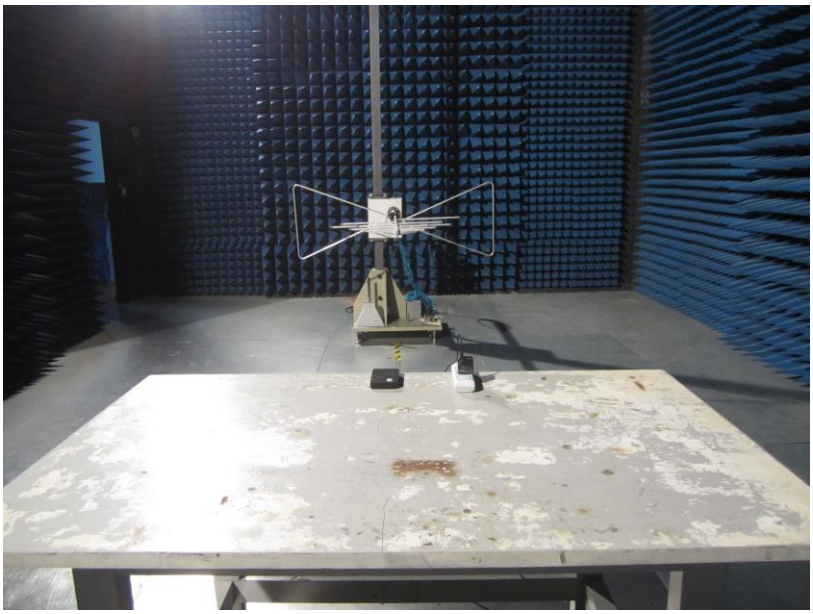


205kHz: 20dB BW=2.5kHz

8 Test Setup Photo

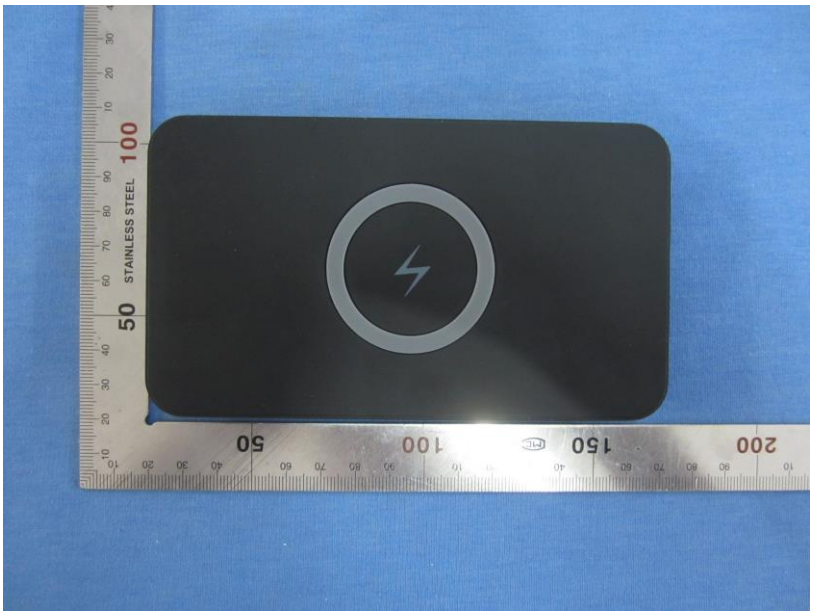
Radiated Emission





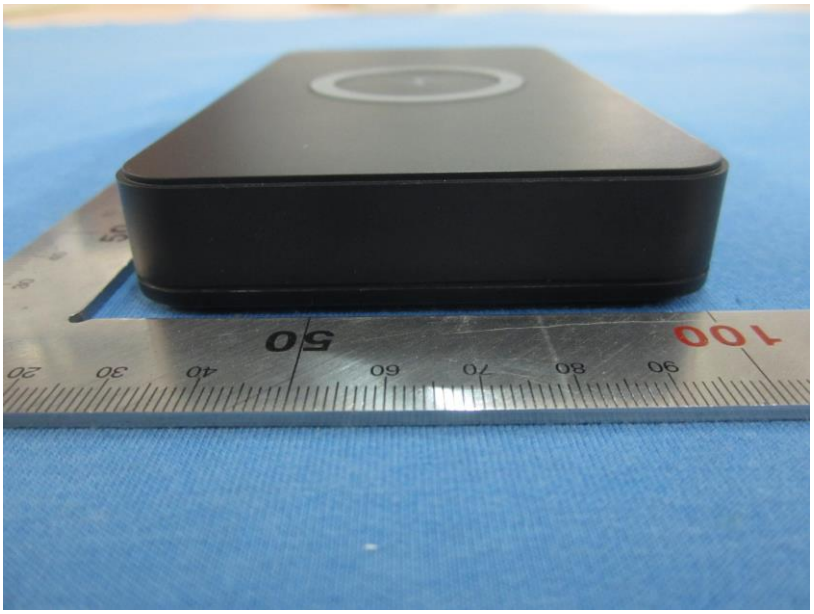
Conducted Emission

9 EUT Constructional Details

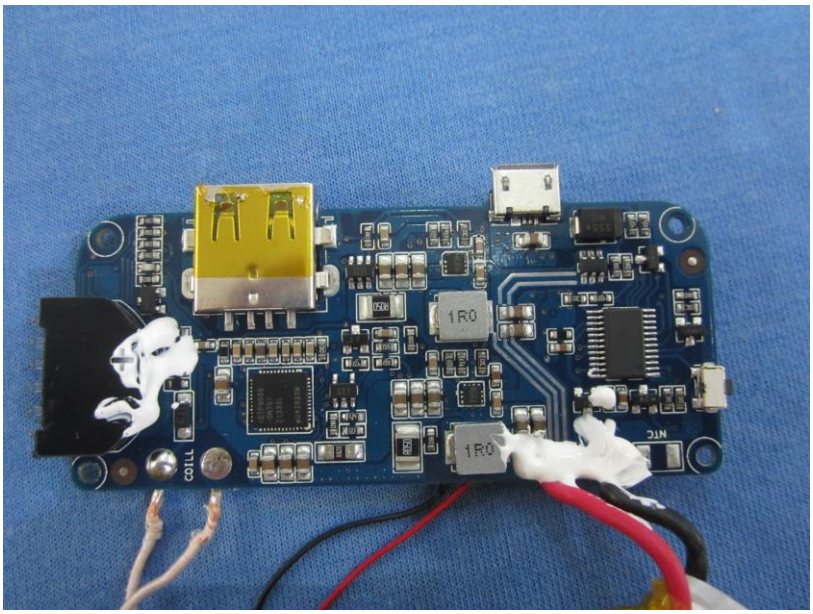


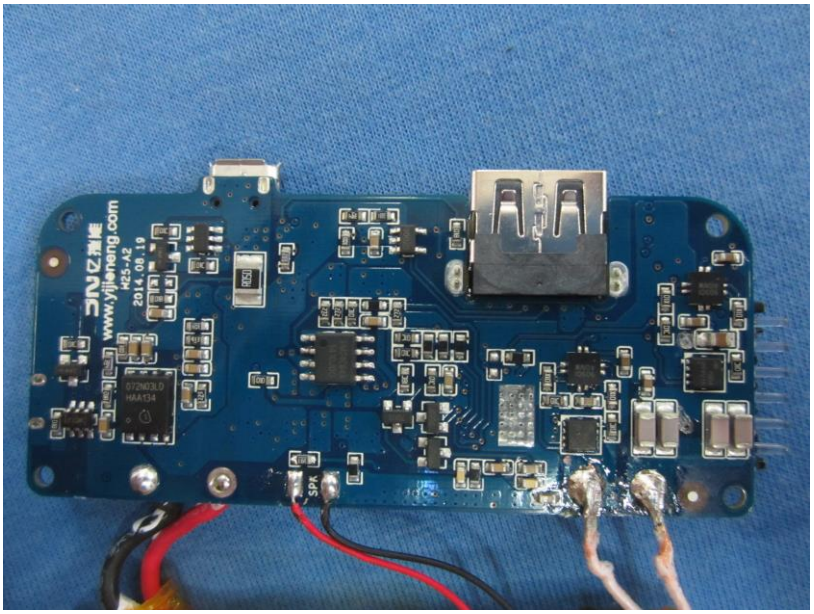

STAINLESS STEEL

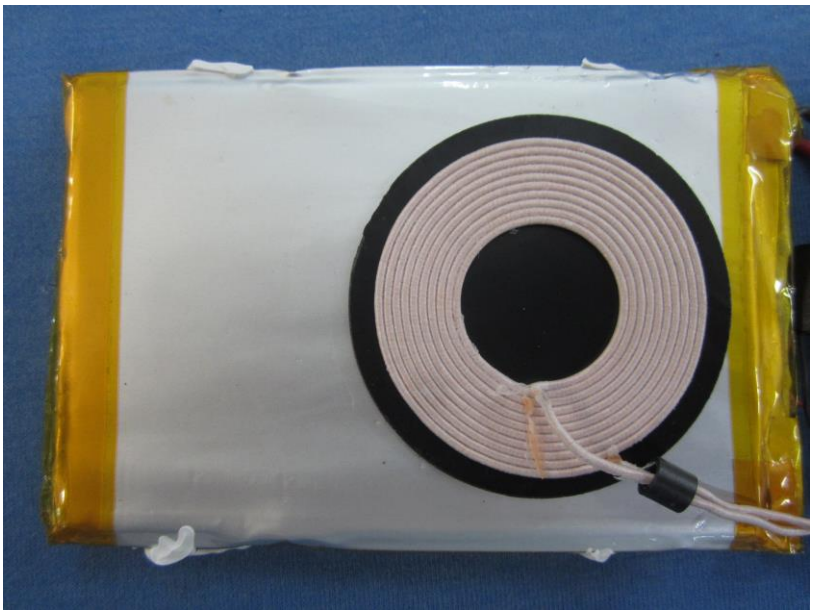

5V 2.1A
IN

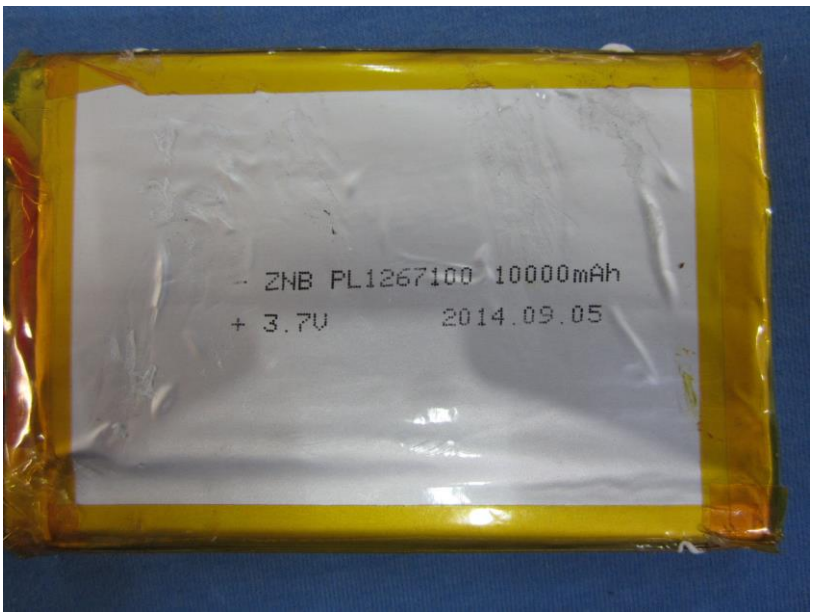



STAINLESS STEEL
PL1267100 10000mAh
3.7V
2014.09.05


1R0
1R0







------End------