

FCC RF Test Report

APPLICANT : LG ELECTRONICS MOBILECOMM U.S.A., INC.
EQUIPMENT : GSM/WCDMA TRI-BAND PHONE WITH BT,
WLAN, AND NFC
BRAND NAME : LG
MODEL NAME : LG-E960, E960, LGE960
MARKETING NAME : LG-E960
FCC ID : ZNFE960
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

This is a variant report for FCC permissions change, and the product was received on Sep. 10, 2012 and completely tested on Sep. 14, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



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FCC ID : ZNFE960

Page Number : 1 of 63

Report Issued Date : Sep. 26, 2012

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR291007C	Rev. 01	Please refer to FCC ID : ZNFE960 report.	Sep. 26, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	-
			Radiated Spurious Emission		Pass	Under limit 1.39 dB at 2487.240 MHz
3.2	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

LG ELECTRONICS MOBILECOMM U.S.A., INC.

1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NEW JERSEY 07632

1.2 Manufacturer

LG ELECTRONICS MOBILECOMM U.S.A., INC.

1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NEW JERSEY 07632

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	GSM/WCDMA TRI-BAND PHONE WITH BT, WLAN, AND NFC
Brand Name	LG
Model Name	LG-E960, E960, LGE960
Marketing Name	LG-E960
FCC ID	ZNFE960
EUT supports Radios application	GSM/WCDMA WLAN 11abgn / Bluetooth / NFC
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz 802.11a/n: 5745~5825MHz.
Maximum Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 15.77 dBm (0.0378 W) 802.11g : 12.09 dBm (0.0159 W) 802.11n HT20 : 11.08 dBm (0.0128 W) <5745 MHz ~ 5825 MHz> 802.11a : 12.78 dBm (0.0190 W) 802.11n HT20 : 11.61 dBm (0.0145 W)
Antenna Type	802.11b/g/n : FPCB Antenna with gain -5.3 dBi 802.11a/n : FPCB Antenna with gain -3.20 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978	
Test Site No.	Sporton Site No.	FCC/IC Registration No.
	03CH06-HY	722060/4086B-1

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01
- FCC TCB Workshop 2012, April
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issue 8
- IC RSS-Gen Issue 3

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	AC Adapter 1	SUNLIN	MCS-01WR	N/A	N/A	N/A
2.	AC Adapter 2	TENPAO	MCS-01WT	N/A	N/A	N/A
3.	AC Adapter 3	DONG DO	MCS-01WD	N/A	N/A	N/A
4.	Battery	LG Chem	BL-T5	N/A	N/A	N/A
5.	USB Cable 1	INTERFACESAMIL	EAD62330101	N/A	N/A	Shielded, 1.1 m
6.	USB Cable 2	NINGBO	EAD62330102	N/A	N/A	Shielded, 1.1 m
7.	Wireless charging pad adapter	LG	PSTA-D0WT	N/A	N/A	Shielded, 1.5 m
8.	Wireless charging pad	LG	N/A	N/A	N/A	N/A
9.	Earphone	LG	N/A	N/A	N/A	Shielded, 1.1 m

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane and wireless charging mode for Z plane) were recorded in this report.

The final configuration from all the combinations were investigated by measuring the minimum data rates and modulation modes under section 2.2

Based on the configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	159	5795
	151	5755	161	5805
	157	5785	165	5825

2.2 RF Power

2.4GHz 802.11b RF Power (dBm)						
Data Rate (MHz)			1M bps	2M bps	5.5M bps	11M bps
Avg. Power	2412	1	15.75	15.70	15.77	15.57
	2437	6	15.68	15.68	15.65	15.62
	2462	11	15.64	15.47	15.54	15.33

2.4GHz 802.11g RF Power (dBm)										
Data Rate (MHz)			6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Avg. Power	2412	1	11.72	12.09	12.01	11.37	11.61	10.84	10.51	10.37
	2437	6	12.00	11.82	11.77	11.86	11.36	11.03	10.67	10.87
	2462	11	11.70	11.89	11.36	11.19	10.97	10.65	10.35	10.22

2.4GHz 802.11n HT20 RF Power (dBm)										
Data Rate (MHz)			6.5M bps	13M bps	20M bps	26M bps	39M bps	52M bps	58M bps	65M bps
Avg. Power	2412	1	10.83	10.36	10.49	9.91	9.67	9.70	9.19	9.12
	2437	6	10.95	10.74	10.59	10.37	10.35	9.75	9.62	9.47
	2462	11	11.08	10.79	10.91	10.42	9.09	9.81	9.62	9.60

5GHz 802.11a RF Power (dBm)										
Data Rate (MHz)			6.5M bps	13M bps	20M bps	26M bps	39M bps	52M bps	58M bps	65M bps
Avg. Power	5745	149	12.65	12.39	12.30	12.16	12.00	11.69	11.42	11.34
	5765	153	12.50	12.29	12.40	12.07	11.97	11.43	11.36	11.17
	5785	157	12.49	12.42	12.32	12.17	11.99	11.73	11.43	11.37
	5805	161	12.50	12.39	12.30	12.39	11.34	11.16	11.43	11.13
	5825	165	12.78	12.40	12.30	12.16	11.98	11.71	11.45	11.34



5GHz 802.11 n HT20 RF Power (dBm)										
Data Rate (MHz)			6.5M bps	13M bps	20M bps	26M bps	39M bps	52M bps	58M bps	65M bps
Avg. Power	5745	149	11.61	11.31	11.14	10.95	10.68	10.41	10.32	10.21
	5765	153	11.28	10.88	11.32	10.55	10.53	10.21	10.20	9.96
	5785	157	11.38	11.23	11.08	10.90	10.66	10.39	10.30	10.18
	5805	161	11.01	11.26	10.50	10.55	10.24	10.55	9.96	10.13
	5825	165	11.45	11.36	11.15	10.96	10.65	10.37	10.27	10.22

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

<2.4GHz>

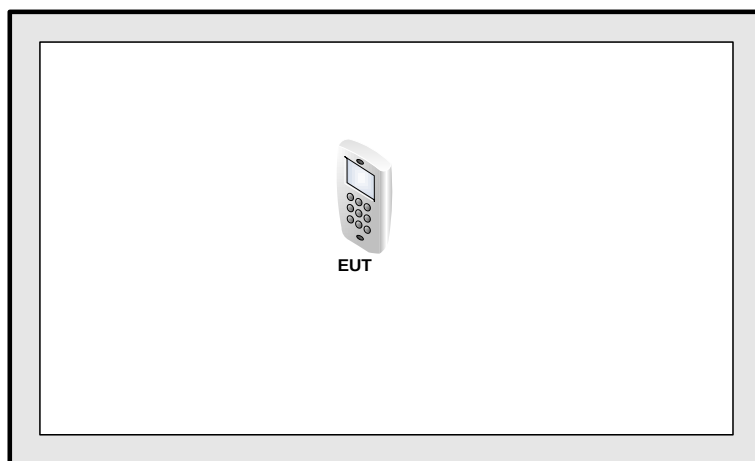
Test Cases				
Radiated TCs	Radiated Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	6.5 Mbps	1/11
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11

<5GHz>

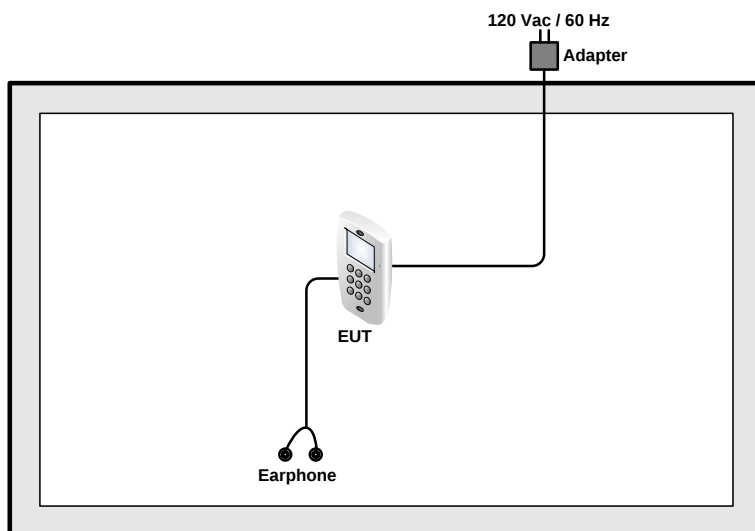
Test Cases				
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	6.5 Mbps	149/165
	Radiated Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165

2.4 Connection Diagram of Test System

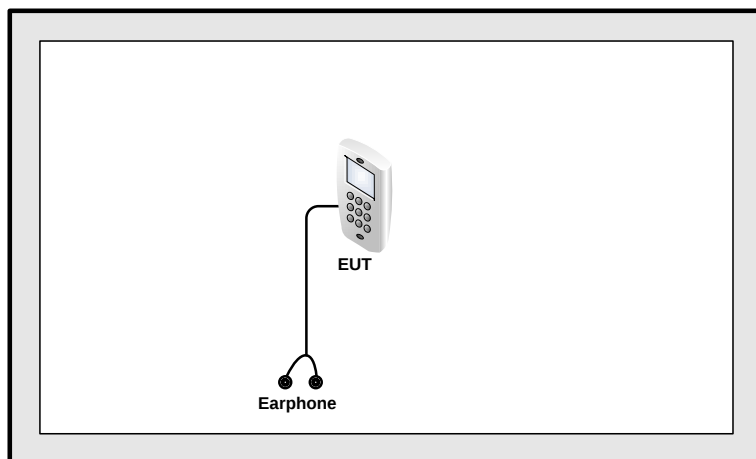
<WLAN Tx Mode>



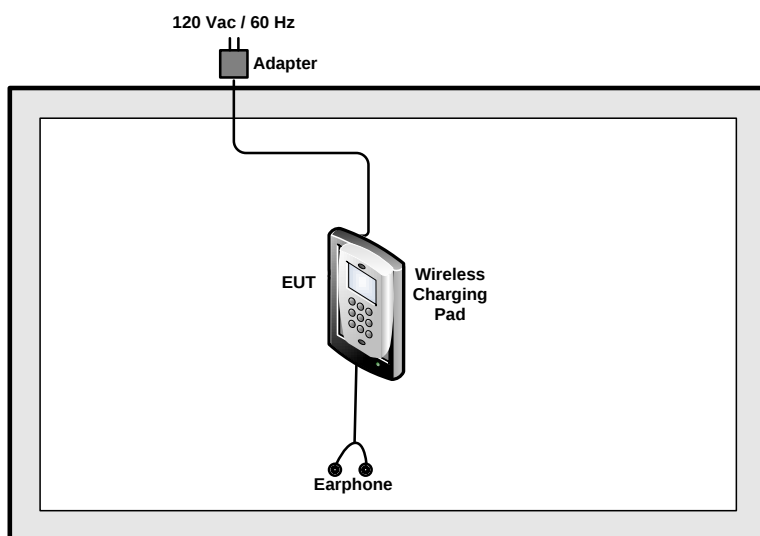
<WLAN with Adapter Tx Mode>



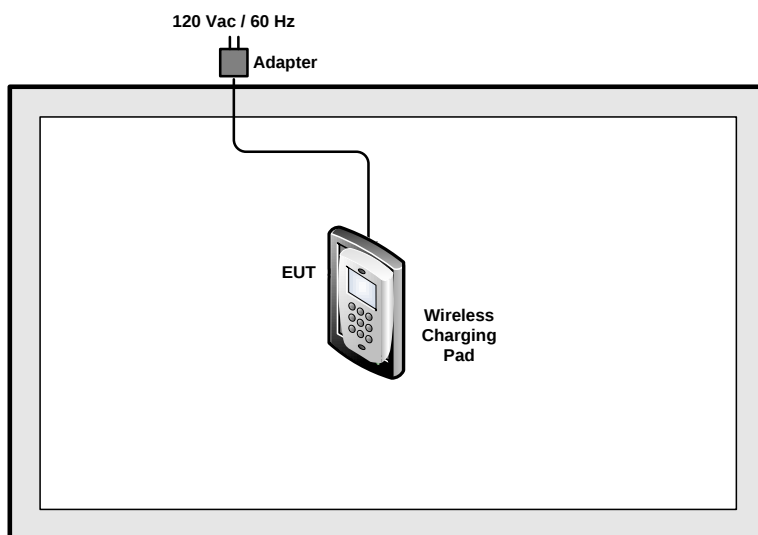
<WLAN with Earphone Tx Mode>



<WLAN for Wireless Charging Pad with Earphone Tx Mode>



<WLAN for Wireless Charging Pad Tx Mode>



2.5 RF Utility

For WLAN function, key in "3845 # * 960 #" on the EUT directly. Then, the EUT will get into the engineering modes to contact with WLAN AP for continuous transmitting and receiving signals.

3 Test Result

3.1 Radiated Band Edges and Spurious Emission Measurement

3.1.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 KHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the guidelines in ANSI C63. 10-2009
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamplifier Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

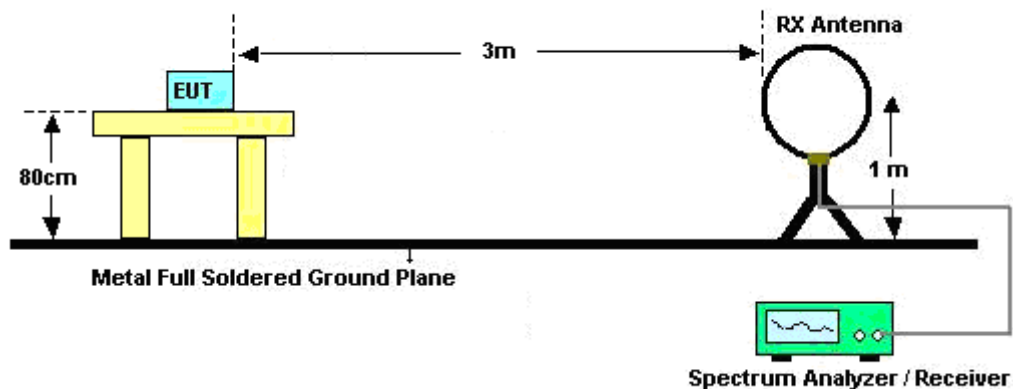
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
802.11b	99.19	-	-	10Hz
802.11g	94.42	2.03	0.493	1KHz
2.4G 802.11n HT20	94.99	1.895	0.528	1KHz
802.11a	95.32	2.035	0.491	1KHz
5G 802.11n HT20	94.99	1.895	0.528	1KHz

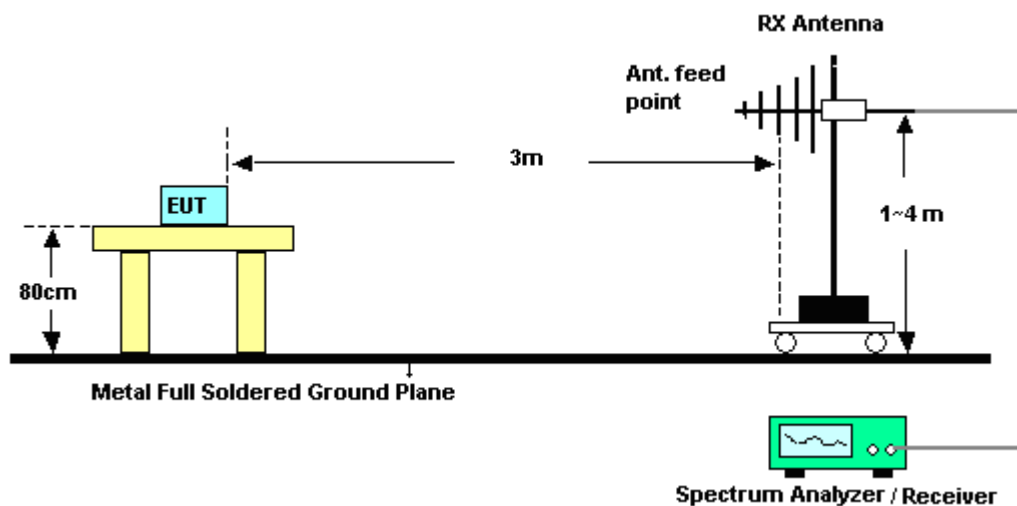
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.1.4 Test Setup

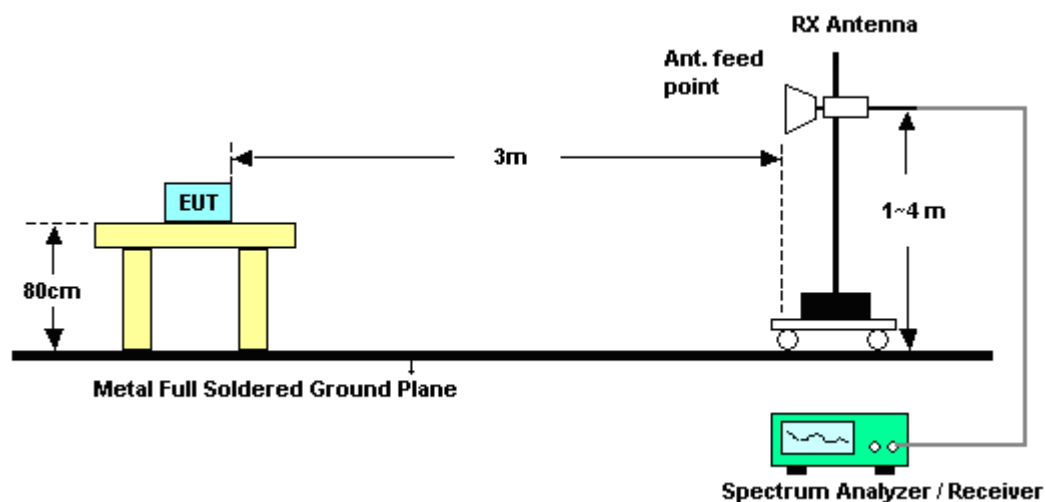
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.1.5 Test Results of Radiated Emissions (9KHz ~ 30MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.1.6 Test Result of Radiated Band Edges

Test Mode :	2.4G 802.11b Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.78	55.91	-18.09	74	51.66	32.36	6.45	34.56	100	305	Peak
2386.23	49.84	-4.16	54	45.59	32.36	6.45	34.56	100	305	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.22	54.64	-19.36	74	50.39	32.36	6.45	34.56	120	92	Peak
2386.32	47.46	-6.54	54	43.21	32.36	6.45	34.56	120	92	Average

Test Mode :	2.4G 802.11b Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.34	58.05	-15.95	74	53.53	32.48	6.59	34.55	100	307	Peak
2487.24	50.68	-3.32	54	46.16	32.48	6.59	34.55	100	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.94	54.39	-19.61	74	49.87	32.48	6.59	34.55	159	261	Peak
2487.7	46.34	-7.66	54	41.8	32.5	6.59	34.55	159	261	Average

Test Mode :	2.4G 802.11b Earphone	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.72	59.21	-14.79	74	54.69	32.48	6.59	34.55	101	307	Peak
2487.24	52.61	-1.39	54	48.09	32.48	6.59	34.55	101	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.4	51.7	-22.3	74	47.18	32.48	6.59	34.55	100	244	Peak
2486.28	42.37	-11.63	54	37.85	32.48	6.59	34.55	100	244	Average

Test Mode :	2.4G 802.11b Stand-alone	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.96	59.16	-14.84	74	54.64	32.48	6.59	34.55	100	310	Peak
2487.24	51.84	-2.16	54	47.32	32.48	6.59	34.55	100	310	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.28	53.43	-20.57	74	48.91	32.48	6.59	34.55	162	265	Peak
2487.24	46.76	-7.24	54	42.24	32.48	6.59	34.55	162	265	Average

Test Mode :	2.4G 802.11b Wireless Charging Pad + Earphone	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.24	51.1	-22.9	74	46.58	32.48	6.59	34.55	134	46	Peak
2483.5	40.67	-13.33	54	36.15	32.48	6.59	34.55	134	46	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2487.32	50.42	-23.58	74	45.9	32.48	6.59	34.55	100	345	Peak
2487.12	41.22	-12.78	54	36.7	32.48	6.59	34.55	100	345	Average

Test Mode :	2.4G 802.11b Wireless Charging Pad	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.7	52.54	-21.46	74	48.02	32.48	6.59	34.55	200	5	Peak
2487.24	42.55	-11.45	54	38.03	32.48	6.59	34.55	200	5	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.94	50.6	-23.4	74	46.08	32.48	6.59	34.55	100	350	Peak
2487.18	39.43	-14.57	54	34.91	32.48	6.59	34.55	100	350	Average



Test Mode :	2.4G 802.11g Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.74	59.81	-14.19	74	55.56	32.36	6.45	34.56	100	303	Peak
2390	46.34	-7.66	54	42.09	32.36	6.45	34.56	100	303	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	60.48	-13.52	74	56.23	32.36	6.45	34.56	122	41	Peak
2390	45.17	-8.83	54	40.92	32.36	6.45	34.56	122	41	Average

Test Mode :	2.4G 802.11g Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	65.74	-8.26	74	61.22	32.48	6.59	34.55	100	310	Peak
2483.5	47.98	-6.02	54	43.46	32.48	6.59	34.55	100	310	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	59.72	-14.28	74	55.2	32.48	6.59	34.55	112	80	Peak
2483.5	43.7	-10.3	54	39.18	32.48	6.59	34.55	112	80	Average

Test Mode :	2.4G 802.11n HT20 Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	65.29	-8.71	74	61.04	32.36	6.45	34.56	105	299	Peak
2390	50	-4	54	45.75	32.36	6.45	34.56	105	299	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	63.23	-10.77	74	58.98	32.36	6.45	34.56	115	97	Peak
2390	46.5	-7.5	54	42.25	32.36	6.45	34.56	115	97	Average

Test Mode :	2.4G 802.11n HT20 Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.92	60.13	-13.87	74	55.61	32.48	6.59	34.55	100	302	Peak
2483.5	45.84	-8.16	54	41.32	32.48	6.59	34.55	100	302	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.54	56.59	-17.41	74	52.07	32.48	6.59	34.55	136	267	Peak
2483.5	42.13	-11.87	54	37.61	32.48	6.59	34.55	136	267	Average

Test Mode :	5G 802.11a Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	101.47	-	-	88.48	35.44	11.39	33.84	101	32	Average
5745	111.27	-	-	98.28	35.44	11.39	33.84	101	32	Peak
5725	63.71	-27.56	91.27	50.8	35.41	11.34	33.84	101	32	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	94.13	-	-	81.14	35.44	11.39	33.84	100	104	Average
5745	103.42	-	-	90.43	35.44	11.39	33.84	100	104	Peak
5725	57.22	-26.2	83.42	44.31	35.41	11.34	33.84	100	104	Peak



Test Mode :	5G 802.11a Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	165	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	101.71	-	-	88.48	35.56	11.51	33.84	100	58	Average
5825	111.89	-	-	98.66	35.56	11.51	33.84	100	58	Peak
5850	57.05	-34.84	91.89	43.75	35.58	11.56	33.84	100	58	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	94.26	-	-	81.03	35.56	11.51	33.84	100	89	Average
5825	103.6	-	-	90.37	35.56	11.51	33.84	100	89	Peak
5850	50.2	-33.4	83.6	36.9	35.58	11.56	33.84	100	89	Peak



Test Mode :	5G 802.11n HT20 Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	98.82	-	-	85.83	35.44	11.39	33.84	100	25	Average
5745	108.63	-	-	95.64	35.44	11.39	33.84	100	25	Peak
5725	62.59	-26.04	88.63	49.68	35.41	11.34	33.84	100	25	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	89.38	-	-	76.39	35.44	11.39	33.84	100	87	Average
5745	99.89	-	-	86.9	35.44	11.39	33.84	100	87	Peak
5725	56.24	-23.65	79.89	43.33	35.41	11.34	33.84	100	87	Peak



Test Mode :	5G 802.11n HT20 Earphone	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	98.67	-	-	85.68	35.44	11.39	33.84	100	31	Average
5745	108.52	-	-	95.53	35.44	11.39	33.84	100	31	Peak
5725	62.14	-26.38	88.52	49.23	35.41	11.34	33.84	100	31	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	89.24	-	-	76.25	35.44	11.39	33.84	100	90	Average
5745	99.65	-	-	86.66	35.44	11.39	33.84	100	90	Peak
5725	55.65	-24	79.65	42.74	35.41	11.34	33.84	100	90	Peak



Test Mode :	5G 802.11n HT20 Stand-alone	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	97.47	-	-	84.48	35.44	11.39	33.84	100	43	Average
5745	107.13	-	-	94.14	35.44	11.39	33.84	100	43	Peak
5725	62.16	-24.97	87.13	49.25	35.41	11.34	33.84	100	43	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	91.08	-	-	78.09	35.44	11.39	33.84	102	260	Average
5745	100.92	-	-	87.93	35.44	11.39	33.84	102	260	Peak
5725	54.9	-26.02	80.92	41.99	35.41	11.34	33.84	102	260	Peak



Test Mode :	5G 802.11n HT20 Wireless Charging Pad + Earphone	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	95.88	-	-	82.89	35.44	11.39	33.84	100	336	Average
5745	105.36	-	-	92.37	35.44	11.39	33.84	100	336	Peak
5725	64.26	-21.1	85.36	51.35	35.41	11.34	33.84	100	336	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	93.87	-	-	80.88	35.44	11.39	33.84	102	315	Average
5745	103.22	-	-	90.23	35.44	11.39	33.84	102	315	Peak
5725	57.81	-25.41	83.22	44.9	35.41	11.34	33.84	102	315	Peak



Test Mode :	5G 802.11n HT20 Wireless Charging Pad	Temperature :	30~31°C
Test Band :	Low	Relative Humidity :	42~43%
Test Channel :	149	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	96.12	-	-	83.13	35.44	11.39	33.84	100	336	Average
5745	105.28	-	-	92.29	35.44	11.39	33.84	100	336	Peak
5725	60.7	-24.58	85.28	47.79	35.41	11.34	33.84	100	336	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	94.84	-	-	81.85	35.44	11.39	33.84	101	313	Average
5745	104.22	-	-	91.23	35.44	11.39	33.84	101	313	Peak
5725	57.37	-26.85	84.22	44.46	35.41	11.34	33.84	101	313	Peak

Test Mode :	5G 802.11n HT20 Earphone + USB Cable 1(Charging from Adapter 2)	Temperature :	30~31°C
Test Band :	High	Relative Humidity :	42~43%
Test Channel :	165	Test Engineer :	Kai Wang, Timberland and Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	99.6	-	-	86.37	35.56	11.51	33.84	100	48	Average
5825	109.05	-	-	95.82	35.56	11.51	33.84	100	48	Peak
5725	56.24	-33.65	89.89	43.33	35.41	11.34	33.84	100	87	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	91.68	-	-	78.45	35.56	11.51	33.84	100	90	Average
5825	101.58	-	-	88.35	35.56	11.51	33.84	100	90	Peak
5850	50.17	-31.41	81.58	36.87	35.58	11.56	33.84	100	90	Peak

3.1.7 Test Result of Radiated Emission (30MHz ~ 10th Harmonic)

Test Mode :	2.4G 802.11b Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 9648 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.44 dBuV/m - 20dB = 86.44 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	101.88	-	-	97.57	32.38	6.49	34.56	100	305	Average
2412	106.44	-	-	102.13	32.38	6.49	34.56	100	305	Peak
9648	53.6	-32.84	86.44	62.13	36.92	10.56	56.01	100	0	Peak

Test Mode :	2.4G 802.11b Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 9648 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	98.54	-	-	94.23	32.38	6.49	34.56	120	92	Average
2412	103.21	-	-	98.9	32.38	6.49	34.56	120	92	Peak
9648	53.36	-29.85	83.21	61.89	36.92	10.56	56.01	100	0	Peak

Test Mode :	2.4G 802.11b Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	101.81	-	-	97.42	32.43	6.52	34.56	100	306	Average
2437	106.34	-	-	101.95	32.43	6.52	34.56	100	306	Peak

Test Mode :	2.4G 802.11b Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	99.32	-	-	94.93	32.43	6.52	34.56	196	282	Average
2437	103.62	-	-	99.23	32.43	6.52	34.56	196	282	Peak

Test Mode :	2.4G 802.11b Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9848 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
144.75	26.12	-17.38	43.5	45.6	10.77	1.45	31.7	-	-	Peak
173.64	32.27	-11.23	43.5	52.58	9.46	1.91	31.68	-	-	Peak
267.06	29.67	-16.33	46	46.02	13.14	2.2	31.69	-	-	Peak
403.6	37.26	-8.74	46	50.63	16.05	2.38	31.8	100	211	Peak
630.4	31.02	-14.98	46	40.59	19.2	3.26	32.03	-	-	Peak
849.5	32.24	-13.76	46	39.84	20.4	3.91	31.91	-	-	Peak
2462	102.16	-	-	97.71	32.45	6.56	34.56	100	307	Average
2462	106.71	-	-	102.26	32.45	6.56	34.56	100	307	Peak
9848	52.33	-34.38	86.71	60.47	37.18	10.57	55.89	100	0	Peak

Test Mode :	2.4G 802.11b Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per 15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
52.95	34.65	-5.35	40	58.18	7.5	0.66	31.69	100	288	Peak
189.3	24.56	-18.94	43.5	45.41	8.9	1.91	31.66	-	-	Peak
267.06	27.75	-18.25	46	44.1	13.14	2.2	31.69	-	-	Peak
403.6	35.86	-10.14	46	49.23	16.05	2.38	31.8	-	-	Peak
650	32.92	-13.08	46	42.28	19.2	3.41	31.97	-	-	Peak
849.5	28.31	-17.69	46	35.91	20.4	3.91	31.91	-	-	Peak
2462	99.29	-	-	94.84	32.45	6.56	34.56	159	261	Average
2462	104.18	-	-	99.73	32.45	6.56	34.56	159	261	Peak

Test Mode :	2.4G 802.11b Earphone	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9846 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
53.76	19.92	-20.08	40	544.11	7.5	-500	31.69	-	-	Peak
106.95	21.37	-22.13	43.5	541.39	11.68	-500	31.7	-	-	Peak
173.64	32.27	-11.23	43.5	554.49	9.46	-500	31.68	-	-	Peak
403.6	37.26	-8.74	46	553.01	16.05	-500	31.8	100	222	Peak
630.4	31.02	-14.98	46	543.85	19.2	-500	32.03	-	-	Peak
849.5	32.24	-13.76	46	543.75	20.4	-500	31.91	-	-	Peak
2462	103.93	-	-	99.48	32.45	6.56	34.56	101	307	Average
2462	108.66	-	-	104.21	32.45	6.56	34.56	101	307	Peak
9846	52.42	-36.24	88.66	60.56	37.18	10.57	55.89	100	360	Peak

Test Mode :	2.4G 802.11b Earphone	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
177.96	22.11	-21.39	43.5	42.58	9.2	2.02	31.69	-	-	Peak
189.3	24.56	-18.94	43.5	45.41	8.9	1.91	31.66	-	-	Peak
267.06	27.75	-18.25	46	546.3	13.14	-500	31.69	-	-	Peak
403.6	35.86	-10.14	46	551.61	16.05	-500	31.8	100	22	Peak
650	32.92	-13.08	46	42.28	19.2	3.41	31.97	-	-	Peak
849.5	28.31	-17.69	46	35.91	20.4	3.91	31.91	-	-	Peak
2462	97.73	-	-	93.28	32.45	6.56	34.56	100	244	Average
2462	102	-	-	97.55	32.45	6.56	34.56	100	244	Peak
9849	52.52	-29.48	82	60.62	37.21	10.57	55.88	100	0	Peak

Test Mode :	2.4G 802.11b Stand-alone	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9849 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
173.64	32.27	-11.23	43.5	554.49	9.46	-500	31.68	100	16	Peak
208.2	24.21	-19.29	43.5	546.87	8.97	-500	31.63	-	-	Peak
267.06	29.67	-16.33	46	548.22	13.14	-500	31.69	-	-	Peak
340.6	28.25	-17.75	46	545.92	13.9	-500	31.57	-	-	Peak
630.4	31.02	-14.98	46	543.85	19.2	-500	32.03	-	-	Peak
849.5	32.24	-13.76	46	543.75	20.4	-500	31.91	-	-	Peak
2462	103.99	-	-	99.54	32.45	6.56	34.56	100	310	Average
2462	108.72	-	-	104.27	32.45	6.56	34.56	100	310	Peak
9849	52.34	-36.38	88.72	60.44	37.21	10.57	55.88	100	360	Peak

Test Mode :	2.4G 802.11b Stand-alone	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9846 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
92.1	21.53	-21.97	43.5	543.9	9.34	-500	31.71	-	-	Peak
177.96	22.11	-21.39	43.5	544.6	9.2	-500	31.69	-	-	Peak
189.3	24.56	-18.94	43.5	547.32	8.9	-500	31.66	-	-	Peak
336.4	25.37	-20.63	46	543.12	13.83	-500	31.58	-	-	Peak
650	32.92	-13.08	46	545.69	19.2	-500	31.97	100	96	Peak
849.5	28.31	-17.69	46	539.82	20.4	-500	31.91	-	-	Peak
2462	101.59	-	-	97.14	32.45	6.56	34.56	162	265	Average
2462	106.09	-	-	101.64	32.45	6.56	34.56	162	265	Peak
9846	51.73	-34.36	86.09	59.87	37.18	10.57	55.89	100	0	Peak

Test Mode :	2.4G 802.11b Wireless Charging Pad + Earphone	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per 15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
39.72	36.69	-3.31	40	54.75	12.7	0.74	31.5	100	248	Peak
152.31	37.54	-5.96	43.5	57.37	10.06	1.37	31.26	-	-	Peak
183.9	36.31	-7.19	43.5	57.13	8.94	1.46	31.22	-	-	Peak
300	24.23	-21.77	46	40.86	13.2	1.91	31.74	-	-	Peak
461	27.89	-18.11	46	39.49	17.11	2.33	31.04	-	-	Peak
947.5	26	-20	46	31.86	20.88	3.35	30.09	-	-	Peak
2462	101.4	-	-	96.95	32.45	6.56	34.56	134	46	Average
2462	106.05	-	-	101.6	32.45	6.56	34.56	134	46	Peak

Test Mode :	2.4G 802.11b Wireless Charging Pad + Earphone	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.04	40.5	0.5	40	60.86	10.38	0.76	31.5	100	90	Peak
44.04	36.94	-3.06	40	57.3	10.38	0.76	31.5	100	90	QP
69.96	31.04	-8.96	40	55.11	6.4	0.94	31.41	-	-	Peak
130.17	29.45	-14.05	43.5	47.67	11.8	1.27	31.29	-	-	Peak
456.1	23.68	-22.32	46	35.44	16.98	2.32	31.06	-	-	Peak
578.6	23.15	-22.85	46	33.22	18.89	2.67	31.63	-	-	Peak
930.7	23.34	-22.66	46	29.85	20.71	3.36	30.58	-	-	Peak
2462	100.08	-	-	95.63	32.45	6.56	34.56	100	345	Average
2462	104.48	-	-	100.03	32.45	6.56	34.56	100	345	Peak

Test Mode :	2.4G 802.11b Wireless Charging Pad	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per 15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
39.45	36.16	-3.84	40	54.22	12.7	0.74	31.5	100	158	Peak
147.18	38.51	-4.99	43.5	57.98	10.46	1.33	31.26	-	-	Peak
182.82	37.17	-6.33	43.5	57.95	8.98	1.46	31.22	-	-	Peak
332.9	25.38	-20.62	46	40.59	13.75	1.99	30.95	-	-	Peak
458.9	26.57	-19.43	46	38.22	17.07	2.33	31.05	-	-	Peak
757.8	23.96	-22.04	46	32.04	19.87	3.05	31	-	-	Peak
2462	102.93	-	-	98.48	32.45	6.56	34.56	200	5	Average
2462	107.85	-	-	103.4	32.45	6.56	34.56	200	5	Peak

Test Mode :	2.4G 802.11b Wireless Charging Pad	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	31.49	-8.51	40	43.6	18.8	0.64	31.55	-	-	Peak
45.66	39.86	-0.14	40	61.02	9.57	0.77	31.5	100	295	Peak
45.66	36.73	-3.27	40	57.89	9.57	0.77	31.5	100	295	QP
145.83	35.04	-8.46	43.5	54.28	10.7	1.33	31.27	-	-	Peak
325.9	25.41	-20.59	46	40.71	13.66	1.97	30.93	-	-	Peak
423.2	23.76	-22.24	46	36.17	16.5	2.25	31.16	-	-	Peak
860.7	23.74	-22.26	46	30.9	20.4	3.26	30.82	-	-	Peak
2462	100.11	-	-	95.66	32.45	6.56	34.56	100	350	Average
2462	104.73	-	-	100.28	32.45	6.56	34.56	100	350	Peak

Test Mode :	2.4G 802.11g Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	92	-	-	87.69	32.38	6.49	34.56	100	303	Average
2412	101.56	-	-	97.25	32.38	6.49	34.56	100	303	Peak

Test Mode :	2.4G 802.11g Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	90.01	-	-	85.7	32.38	6.49	34.56	122	41	Average
2412	99.58	-	-	95.27	32.38	6.49	34.56	122	41	Peak

Test Mode :	2.4G 802.11g Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	92.6	-	-	88.21	32.43	6.52	34.56	100	308	Average
2437	102.23	-	-	97.84	32.43	6.52	34.56	100	308	Peak

Test Mode :	2.4G 802.11g Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored.. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	89.92	-	-	85.53	32.43	6.52	34.56	140	38	Average
2437	99.55	-	-	95.16	32.43	6.52	34.56	140	38	Peak

Test Mode :	2.4G 802.11g Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	93.84	-	-	89.39	32.45	6.56	34.56	100	310	Average
2462	103.3	-	-	98.85	32.45	6.56	34.56	100	310	Peak

Test Mode :	2.4G 802.11g Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	89.54	-	-	85.09	32.45	6.56	34.56	112	80	Average
2462	99.08	-	-	94.63	32.45	6.56	34.56	112	80	Peak

Test Mode :	2.4G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	93.74	-	-	89.43	32.38	6.49	34.56	105	299	Average
2412	104.12	-	-	99.81	32.38	6.49	34.56	105	299	Peak
4824	49.33	-24.67	74	59.88	34.87	10.17	55.59	100	360	Peak

Test Mode :	2.4G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	90.51	-	-	86.2	32.38	6.49	34.56	115	97	Average
2412	99.4	-	-	95.09	32.38	6.49	34.56	115	97	Peak

Test Mode :	2.4G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	91.76	-	-	87.37	32.43	6.52	34.56	100	310	Average
2437	101.72	-	-	97.33	32.43	6.52	34.56	100	310	Peak

Test Mode :	2.4G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	89.62	-	-	85.23	32.43	6.52	34.56	116	38	Average
2437	99.5	-	-	95.11	32.43	6.52	34.56	116	38	Peak

Test Mode :	2.4G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	92.14	-	-	87.69	32.45	6.56	34.56	100	302	Average
2462	102.3	-	-	97.85	32.45	6.56	34.56	100	302	Peak

Test Mode :	2.4G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	89.46	-	-	85.01	32.45	6.56	34.56	136	267	Average
2462	99.93	-	-	95.48	32.45	6.56	34.56	136	267	Peak

Test Mode :	5G 802.11a Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	101.47	-	-	88.48	35.44	11.39	33.84	101	32	Average
5745	111.27	-	-	98.28	35.44	11.39	33.84	101	32	Peak

Test Mode :	5G 802.11a Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	94.13	-	-	81.14	35.44	11.39	33.84	100	104	Average
5745	103.42	-	-	90.43	35.44	11.39	33.84	100	104	Peak

Test Mode :	5G 802.11a Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	101.28	-	-	88.2	35.49	11.43	33.84	100	55	Average
5785	111.21	-	-	98.07	35.51	11.47	33.84	100	55	Peak

Test Mode :	5G 802.11a Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	92.92	-	-	79.84	35.49	11.43	33.84	100	102	Average
5785	102.58	-	-	89.5	35.49	11.43	33.84	100	102	Peak

Test Mode :	5G 802.11a Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	101.71	-	-	88.48	35.56	11.51	33.84	100	58	Average
5825	111.89	-	-	98.66	35.56	11.51	33.84	100	58	Peak

Test Mode :	5G 802.11a Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	94.26	-	-	81.03	35.56	11.51	33.84	100	89	Average
5825	103.6	-	-	90.37	35.56	11.51	33.84	100	89	Peak

Test Mode :	5G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
144.75	26.12	-17.38	43.5	45.6	10.77	1.45	31.7	-	-	Peak
173.64	32.27	-11.23	43.5	52.58	9.46	1.91	31.68	-	-	Peak
267.06	29.67	-16.33	46	46.02	13.14	2.2	31.69	-	-	Peak
403.6	37.26	-8.74	46	50.63	16.05	2.38	31.8	100	211	Peak
630.4	31.02	-14.98	46	40.59	19.2	3.26	32.03	-	-	Peak
849.5	32.24	-13.76	46	39.84	20.4	3.91	31.91	-	-	Peak
5745	98.82	-	-	85.83	35.44	11.39	33.84	100	25	Average
5745	108.63	-	-	95.64	35.44	11.39	33.84	100	25	Peak

Test Mode :	5G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
52.95	34.65	-5.35	40	58.18	7.5	0.66	31.69	100	288	Peak
189.3	24.56	-18.94	43.5	45.41	8.9	1.91	31.66	-	-	Peak
267.06	27.75	-18.25	46	44.1	13.14	2.2	31.69	-	-	Peak
403.6	35.86	-10.14	46	49.23	16.05	2.38	31.8	-	-	Peak
650	32.92	-13.08	46	42.28	19.2	3.41	31.97	-	-	Peak
849.5	28.31	-17.69	46	35.91	20.4	3.91	31.91	-	-	Peak
5745	89.38	-	-	76.39	35.44	11.39	33.84	100	87	Average
5745	99.89	-	-	86.9	35.44	11.39	33.84	100	87	Peak

Test Mode :	5G 802.11n-HT20 Earphone	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	98.67	-	-	85.68	35.44	11.39	33.84	100	31	Average
5745	108.52	-	-	95.53	35.44	11.39	33.84	100	31	Peak

Test Mode :	5G 802.11n-HT20 Earphone	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	89.24	-	-	76.25	35.44	11.39	33.84	100	90	Average
5745	99.65	-	-	86.66	35.44	11.39	33.84	100	90	Peak

Test Mode :	5G 802.11n-HT20 Stand-alone	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	97.47	-	-	84.48	35.44	11.39	33.84	100	43	Average
5745	107.13	-	-	94.14	35.44	11.39	33.84	100	43	Peak

Test Mode :	5G 802.11n-HT20 Stand-alone	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	91.08	-	-	78.09	35.44	11.39	33.84	102	260	Average
5745	100.92	-	-	87.93	35.44	11.39	33.84	102	260	Peak

Test Mode :	5G 802.11n-HT20 Wireless Charging Pad + Earphone	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	95.88	-	-	82.89	35.44	11.39	33.84	100	336	Average
5745	105.36	-	-	92.37	35.44	11.39	33.84	100	336	Peak

Test Mode :	5G 802.11n-HT20 Wireless Charging Pad + Earphone	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	93.87	-	-	80.88	35.44	11.39	33.84	102	315	Average
5745	103.22	-	-	90.23	35.44	11.39	33.84	102	315	Peak

Test Mode :	5G 802.11n-HT20 Wireless Charging Pad	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	96.12	-	-	83.13	35.44	11.39	33.84	100	336	Average
5745	105.28	-	-	92.29	35.44	11.39	33.84	100	336	Peak

Test Mode :	5G 802.11n-HT20 Wireless Charging Pad	Temperature :	30~31°C
Test Channel :	149	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5745	94.84	-	-	81.85	35.44	11.39	33.84	101	313	Average
5745	104.22	-	-	91.23	35.44	11.39	33.84	101	313	Peak

Test Mode :	5G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	99.15	-	-	86.07	35.49	11.43	33.84	100	46	Average
5785	108.83	-	-	95.69	35.51	11.47	33.84	100	46	Peak

Test Mode :	5G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	157	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5785	91.09	-	-	78.01	35.49	11.43	33.84	100	91	Average
5785	100.96	-	-	87.82	35.51	11.47	33.84	100	91	Peak

Test Mode :	5G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	99.6	-	-	86.37	35.56	11.51	33.84	100	48	Average
5825	109.05	-	-	95.82	35.56	11.51	33.84	100	48	Peak

Test Mode :	5G 802.11n-HT20 Earphone + USB Cable 1 (Charging from Adapter 2)	Temperature :	30~31°C
Test Channel :	165	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Timberland and Ivan Chiang	Polarization :	Vertical
Remark :	1. 5825 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5825	91.68	-	-	78.45	35.56	11.51	33.84	100	90	Average
5825	101.58	-	-	88.35	35.56	11.51	33.84	100	90	Peak



3.2 Antenna Requirements

3.2.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.2.2 Antenna Connected Construction

Non-standard connector used.

3.2.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY442110 30	9KHz ~ 26.5GHz	Nov. 23, 2011	Sep. 12, 2012~ Sep. 14, 2012	Nov. 22, 2012	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-30GHz	Nov. 03, 2011	Sep. 12, 2012~ Sep. 14, 2012	Nov. 02, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/00 3	20MHz ~ 1000MHz	May 04, 2012	Sep. 12, 2012~ Sep. 14, 2012	May. 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 22, 2011	Sep. 12, 2012~ Sep. 14, 2012	Oct. 21, 2012	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Sep. 12, 2012~ Sep. 14, 2012	Jul. 31, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 251	15GHz ~ 40GHz	Oct. 20, 2011	Sep. 12, 2012~ Sep. 14, 2012	Oct. 19, 2012	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A019 17	1GHz ~ 26.5GHz	Apr. 13, 2012	Sep. 12, 2012~ Sep. 14, 2012	Apr. 12, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Sep. 12, 2012~ Sep. 14, 2012	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Sep. 12, 2012~ Sep. 14, 2012	Jul. 20, 2013	Radiation (03CH06-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159087	1GHz~18GHz	Feb. 27, 2012	Sep. 12, 2012~ Sep. 14, 2012	Feb. 26, 2013	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	100315	9KHz ~ 30MHz	May 14, 2012	Sep. 12, 2012~ Sep. 14, 2012	May 13, 2013	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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