

FCC Part 15C

Measurement And Test Report For

weeCONOMY ASIA LIMITED.

Unit B,11 Floor, Silvercorp International Tower,707-713 Nathan Road, Kowloon
HongKong

FCC ID: 2AFSQWP11

May 18, 2015

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: weePHONE
Report Number:	MTI150410001RF-4
Test Engineer:	Bill Chen <i>Bill Chen</i>
Reviewed By:	Jason Zheng <i>Jason Zheng</i>
Approved & Authorized By:	Hebe Lee <i>Hebe Lee</i>
Test Date:	May 05, 2015 – May 18, 2015
Prepared By:	Shenzhen Microtest Technology Co.,Ltd 6F, Zhongbao Building, Gushu, Bao'an District, Shenzhen, P.R.China Tel: +86-755-8885 0135 Fax: +86-755-8885 0136

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of Shenzhen Microtest Technology Co.,Ltd.

TEST RESULT CERTIFICATION	
Applicant's name	weeCONOMY ASIA LIMITED.
Address	Unit B, 11 Floor, Silvercorp International Tower, 707-713 Nathan Road, KowLoon HongKong
Manufacture's Name	weeCONOMY ASIA LIMITED.
Address	Unit B, 11 Floor, Silvercorp International Tower, 707-713 Nathan Road, KowLoon HongKong
Product description	
Product name	weePHONE
Model and/or type reference :	WP11
Serial Model	N/A
Standards	FCC Part15.247
Test procedure	ANSI C63.4-2009

Table of Contents

	Page
1 . SUMMARY OF TEST RESULTS	5
1.1 TEST FACILITY	5
1.2 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	9
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	10
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	11
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	12
3 . EMC EMISSION TEST	13
3.1 CONDUCTED EMISSION MEASUREMENT	13
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	13
3.1.2 TEST PROCEDURE	14
3.1.3 DEVIATION FROM TEST STANDARD	14
3.1.4 TEST SETUP	14
3.1.5 EUT OPERATING CONDITIONS	14
3.1.6 TEST RESULTS	15
3.2 RADIATED EMISSION MEASUREMENT	17
3.2.1 RADIATED EMISSION LIMITS	17
3.2.2 TEST PROCEDURE	17
3.2.3 DEVIATION FROM TEST STANDARD	18
3.2.4 TEST SETUP	19
3.2.5 EUT OPERATING CONDITIONS	20
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	21
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	22
3.2.8 TEST RESULTS (1G-25GHZ)	23
4 . POWER SPECTRAL DENSITY TEST	40
4.1 APPLIED PROCEDURES / LIMIT	40
4.1.1 TEST PROCEDURE	40
4.1.2 DEVIATION FROM STANDARD	40
4.1.3 TEST SETUP	40
4.1.4 EUT OPERATION CONDITIONS	40
4.1.5 TEST RESULTS	41
5 . BANDWIDTH TEST	49
5.1 APPLIED PROCEDURES / LIMIT	49
5.1.1 TEST PROCEDURE	49
5.1.2 DEVIATION FROM STANDARD	49

Table of Contents

	Page
5.1.3 TEST SETUP	49
5.1.4 EUT OPERATION CONDITIONS	49
5.1.5 TEST RESULTS	50
6 . PEAK OUTPUT POWER TEST	58
6.1 APPLIED PROCEDURES / LIMIT	58
6.1.1 TEST PROCEDURE	58
6.1.2 DEVIATION FROM STANDARD	58
6.1.3 TEST SETUP	58
6.1.4 EUT OPERATION CONDITIONS	58
6.1.5 TEST RESULTS	59
7 . 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE	60
7.1 DEVIATION FROM STANDARD	60
7.2 TEST SETUP	60
7.3 EUT OPERATION CONDITIONS	60
7.4 TEST RESULTS	61
8 . ANTENNA REQUIREMENT	66
8.1 STANDARD REQUIREMENT	66
8.2 EUT ANTENNA	66

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

1.1 TEST FACILITY

Shenzhen Toby Technology Co., Ltd.

Add.: 10/F.,A Block, Jiada R&D Bldg., No.5 Songpingshan, Road, Science&Technology Park, Shenzhen, 518057

FCC Registration No.:811562

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	weePHONE	
Trade Name	weeCONOMY	
Model Name	WP11	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a weePHONE	
	Operation Frequency:	802.11b/g/n20:2412~2462 MHz 802.11n40:2422~2452 MHz
	Modulation Type:	11n: BPSK, QPSK, 16QAM, 64QAM with OFDM 11g: BPSK, QPSK, 16QAM, 64QAM, OFDM 11b: DQPSK, DBPSK, DSSS, CCK
	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n:65/52/6.5Mbps
	Number Of Channel	802.11b/g/n20:11CH 802.11n40:7 CH
	Antenna Designation:	Please see Note 3.
	Output Power(Conducted):	802.11b: 18.73 dBm (Max.) 802.11g: 18.71 dBm (Max.) 802.11n20: 18.37 dBm (Max.) 802.11n40: 18.26 dBm (Max.)
	Antenna Gain (dBi)	0dbi
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
	Channel List	Please refer to the Note 2.
Adapter	Model: GE0061U-05100 AC Power Input: 100-240V~50/60Hz 0.2A Output: 5.0V - -1V	
Battery	DC 3.8V, 2000mAh (7.6Wh)	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List for 802.11b/g/n(20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n(40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
/	/	04	2427	07	2442	/	/
/	/	05	2432	08	2447	/	/
03	2422	06	2437	09	2452		

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	internal antenna	Pifa-type	0	Wifi Antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n CH1/ CH6/ CH11
Mode 4	802.11n CH3/ CH6/ CH9
Mode 5	Link Mode

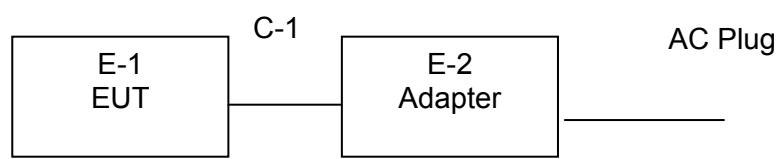
For Conducted Emission	
Final Test Mode	Description
Mode 4	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n CH1/ CH6/ CH11
Mode 4	802.11n CH3/ CH6/ CH9

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	weePHONE	weeCONOMY	WP11	N/A	EUT
E-2	Adapter	N/A	GE0061U-05100	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.0m	
C-2	NO	NO	0.8m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Cal.Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2015	Mar. 19, 2016
Spectrum Analyzer	ROHDE&SCHWARZ	FSP30	DE25181	Aug. 10, 2014	Aug. 09, 2015
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101165	Aug. 10, 2014	Aug. 09, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 07, 2015	Mar. 06, 2016
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 07, 2015	Mar. 06, 2016
Hom Antenna	ETS-LINDGREN	3117	00143207	Mar. 07, 2015	Mar. 06, 2016
Hom Antenna	ETS-LINDGREN	3117	00143209	Mar. 07, 2015	Mar. 06, 2016
Pre-amplifier	HP	11909A	185903	Mar. 07, 2015	Mar. 06, 2016
Pre-amplifier	HP	8447B	3008A00849	Mar. 07, 2015	Mar. 06, 2016
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 07, 2015	Mar. 06, 2016
Signal Generator	ROHDE&SCHWARZ	SML03	IKW682-054	Feb. 11, 2015	Feb. 10, 2016
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

Conduction Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Cal.Due Date
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	1000321	2014-08-10	2015-08-09
50Ω Coaxial Switch	Anntsu	MP59B	X10321	2014-08-10	2015-08-09
LISN	ROHDE&SCHWARZ	ENV216	101131	2014-08-10	2015-08-09
LISN	SCHWARZBECK	NNBL 8226-2	8226-2/164	2014-08-10	2015-08-09

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

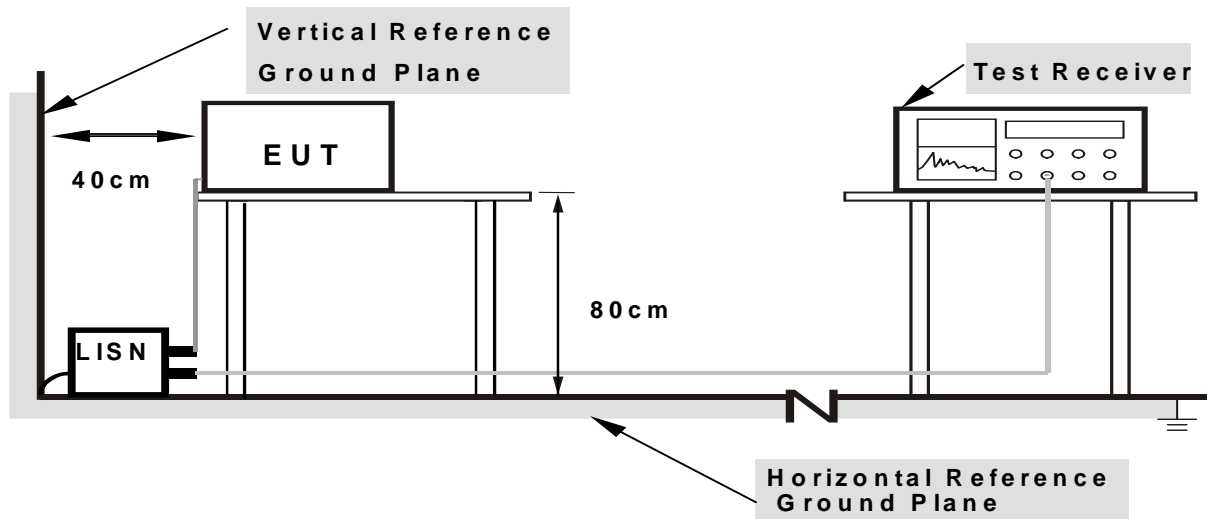
3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

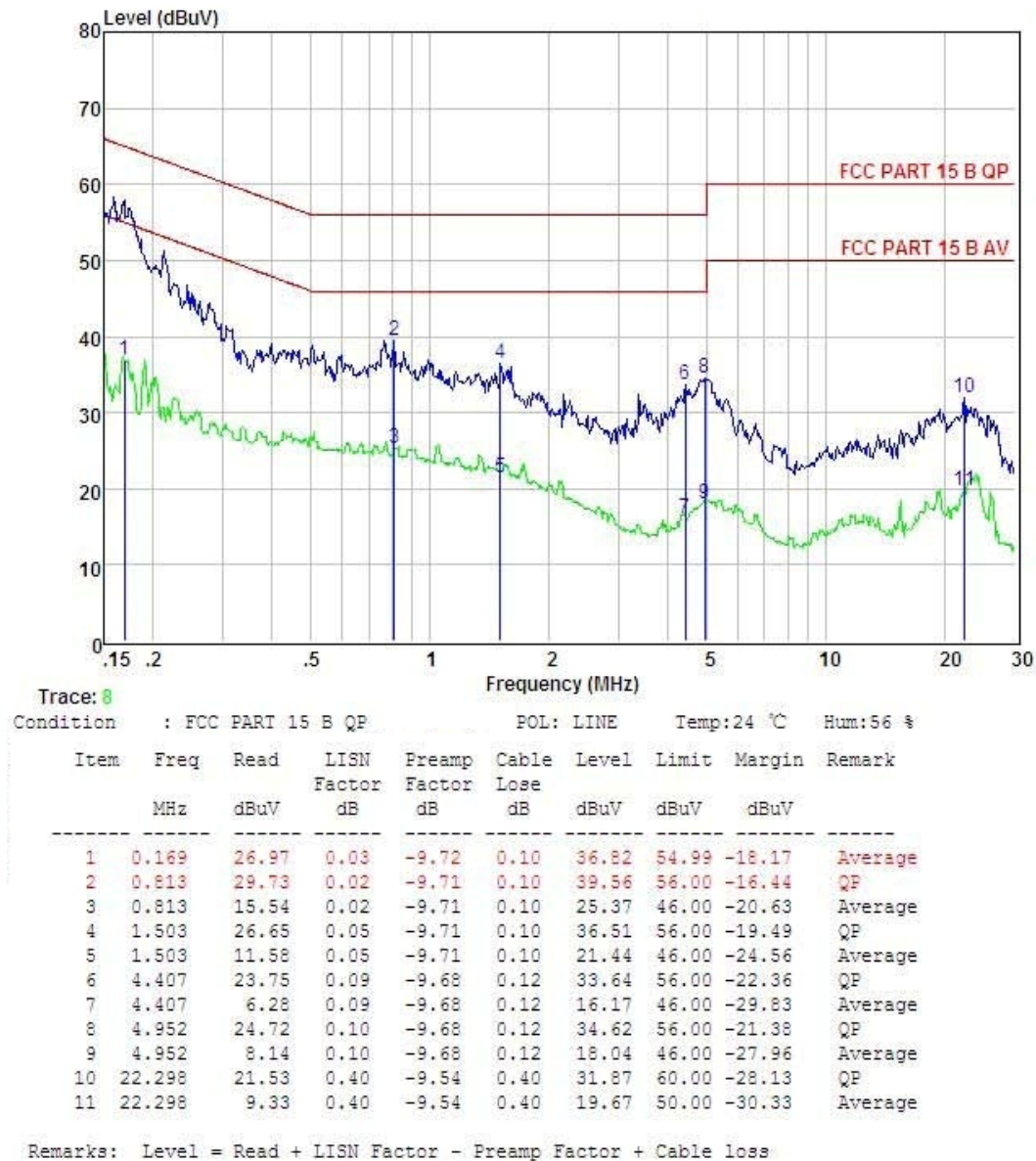
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

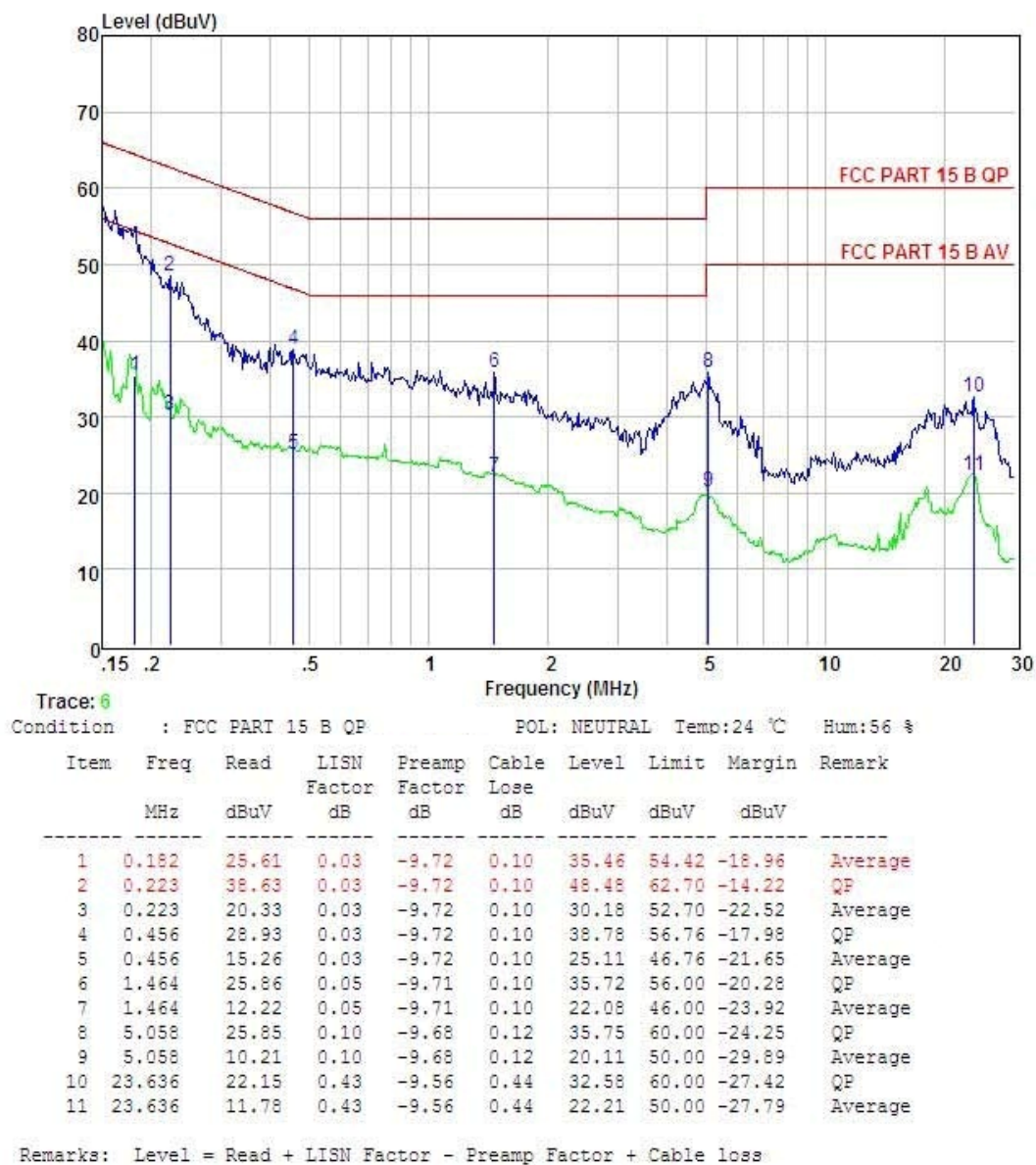
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

EUT :	weePHONE	Model Name. :	WP11
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5Vfrom adapter AC 120V/60Hz	Test Mode :	Mode 5



EUT :	weePHONE	Model Name. :	WP11
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5Vfrom adapter AC 120V/60Hz	Test Mode :	Mode 5



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

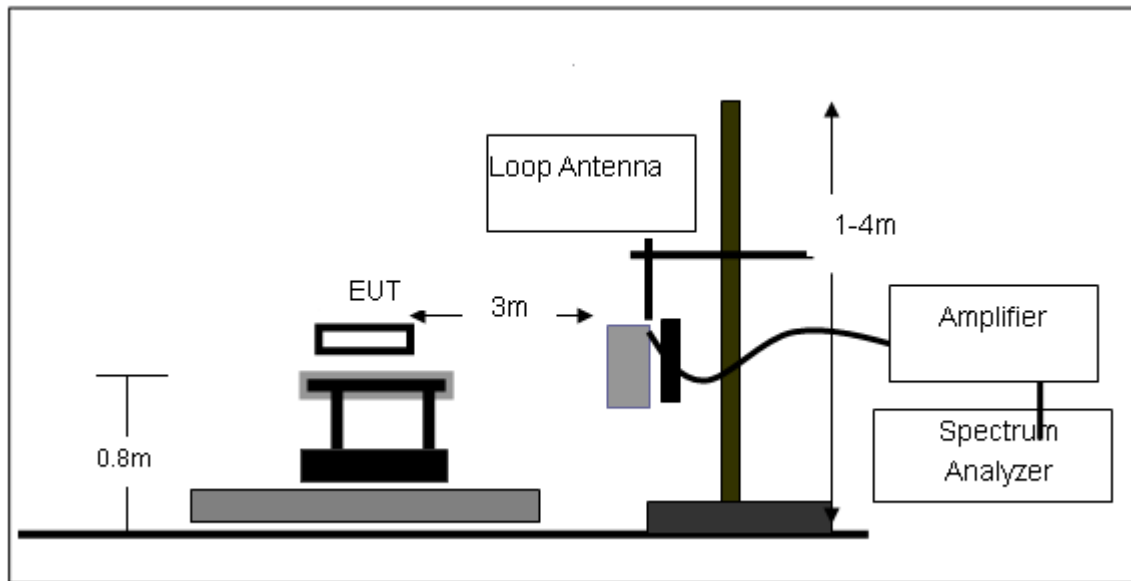
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

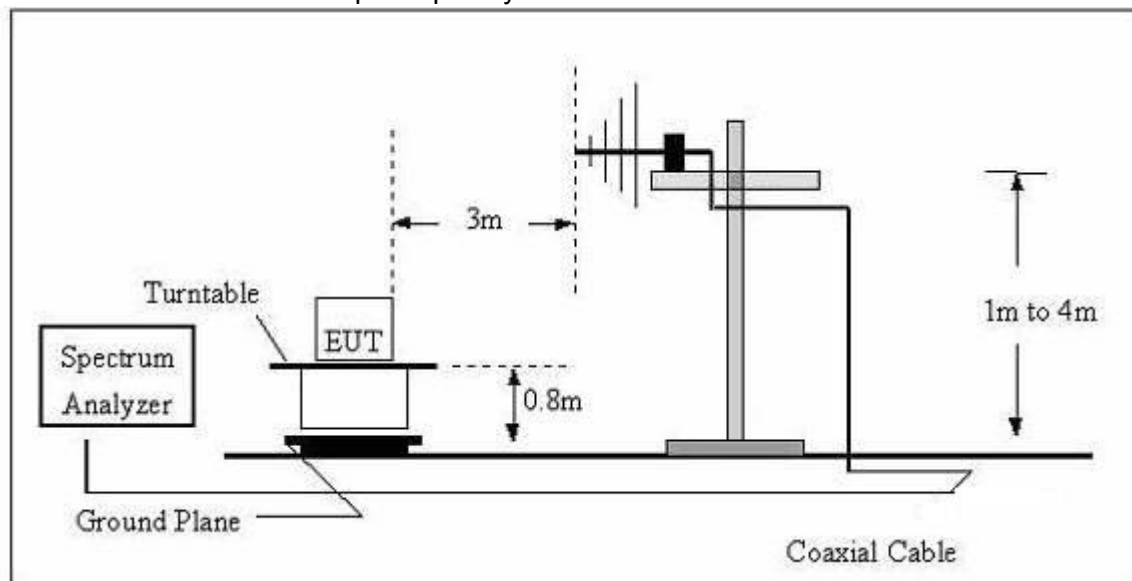
No deviation

3.2.4 TEST SETUP

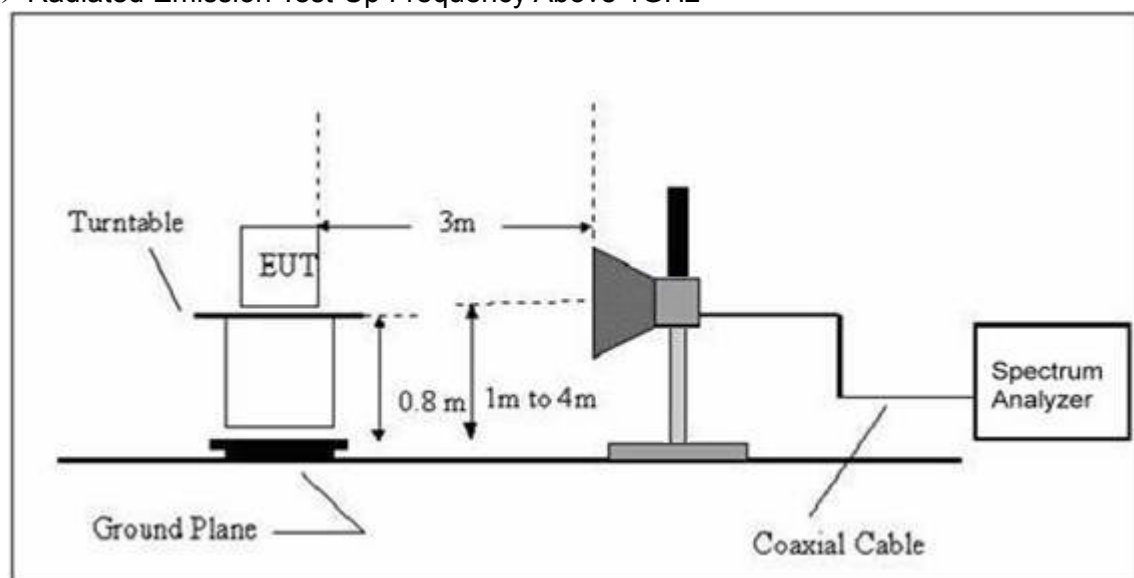
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

EUT:	weePHONE	Model Name. :	WP11
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 5Vfrom adapter AC 120V/60Hz
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT :	weePHONE	Model Name :	WP11
Temperature :	20 °C	Relative Humidity :	48%
Pressure:	1010 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	119.4360	16.25	12.08	28.33	43.5	15.17	QP
V	128.1129	16.21	12.2	28.41	43.5	15.09	QP
V	170.7926	20.61	10.35	30.96	43.5	12.54	QP
V	341.9786	12.39	16.19	28.58	46	17.42	QP
V	468.8761	17.51	19.69	37.2	46	8.8	QP
V	935.5462	9.39	29.42	38.81	46	7.19	QP
H	170.7923	27.63	10.35	37.98	43.5	5.52	QP
H	341.9786	25.19	16.19	41.38	46	4.62	QP
H	468.8761	21.14	19.69	40.83	46	5.17	QP
H	726.8052	14.82	26	40.82	46	5.18	QP
H	813.1114	16.36	26.35	42.71	46	3.29	QP
H	854.0247	12.53	27.51	40.04	46	5.96	QP
Remark: Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level- Limit Factor = Antenna Factor + Cable Loss – Pre-amplifier. Factor added by measurement software automatically							

3.2.8 TEST RESULTS (1G-25GHZ)

802.11b

Normal Voltage

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (2412 MHz)							
Vertical	2491.777	59.14	-11.65	47.49	74	26.51	Pk
Horizontal	2498.247	56.04	-12.73	43.31	74	30.69	Pk
Vertical	4824.184	56.14	-3.6	52.54	74	21.46	Pk
Horizontal	4824.184	56.14	-9.23	46.91	74	27.09	Pk
Vertical	1485.838	59.84	-17.1	42.74	74	31.26	Pk
Vertical	1636.784	59.53	-16.06	43.47	74	30.53	Pk
Vertical	2095.928	58.34	-11.88	46.46	74	27.54	Pk
Horizontal	1074.301	60.07	-19.69	40.38	74	33.62	Pk
Horizontal	1483.178	59.06	-17.09	41.97	74	32.03	Pk
Horizontal	1895.832	56.08	-14.25	41.83	74	32.17	Pk
Mid Channel (2437 MHz)							
Vertical	2474.777	55.76	-11.65	44.11	74	29.89	Pk
Horizontal	2474.144	56.45	-9.37	47.08	74	26.92	Pk
Vertical	4874.425	55.83	-6.15	49.68	74	24.32	Pk
Horizontal	4874.979	55.83	-6.83	49	74	25	Pk
Vertical	1433.535	62.82	-17.12	45.7	74	28.3	Pk
Vertical	1636.784	60.15	-16.06	44.09	74	29.91	Pk
Vertical	2284.166	53.89	-12.83	41.06	74	32.94	Pk
Horizontal	1280.515	59.55	-17.82	41.73	74	32.27	Pk
Horizontal	1636.784	58.38	-16.06	42.32	74	31.68	Pk
Horizontal	1892.438	58.5	-14.28	44.22	74	29.78	Pk
High Channel (2462 MHz)							
Vertical	2453.883	56.42	-12.91	43.51	74	30.49	Pk
Horizontal	2453.839	56.42	-11.59	44.83	74	29.17	Pk
Vertical	4926.325	52.93	-9.22	43.71	74	30.29	Pk
Horizontal	4926.683	52.93	-3.64	49.29	74	24.71	Pk
Vertical	1187.688	57.45	-18.27	39.18	74	34.82	Pk
Vertical	1636.784	56.26	-16.06	40.2	74	33.8	Pk
Vertical	2084.693	53.85	-11.99	41.86	74	32.14	Pk
Horizontal	1534.540	56.51	-16.94	39.57	74	34.43	Pk
Horizontal	1786.985	56.22	-15.04	41.18	74	32.82	Pk
Horizontal	1892.438	56.1	-14.28	41.82	74	32.18	Pk

802.11g

Normal Voltage

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412							
V	4824.428	51.78	-3.53	48.25	74	25.75	Pk
V	4824.428	31.87	-3.53	28.34	54	25.66	AV
H	4824.529	53.69	-3.54	50.15	74	23.85	Pk
H	4824.529	31.96	-3.54	28.42	54	25.58	AV
operation frequency:2437							
V	4873.548	51.97	-3.64	48.33	74	25.67	Pk
V	4873.548	33.7	-3.64	30.06	54	23.94	AV
H	4875.279	53.17	-3.64	49.53	74	24.47	Pk
H	4875.279	32.72	-3.64	29.08	54	24.92	AV
operation frequency:2462							
V	4924.358	54.19	-3.75	50.44	74	23.56	pk
V	4924.358	33.86	-3.75	30.11	54	23.89	AV
H	4924.591	50.37	-3.74	46.63	74	27.37	pk
H	4924.591	34.01	-3.74	30.27	54	23.73	pk
Remark:							
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit							

802.11n(20)

Normal Voltage

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412							
V	4824.428	50.38	-3.53	46.85	74	27.15	Pk
H	4824.529	53.43	-3.54	49.89	74	24.11	Pk
operation frequency:2437							
V	4873.548	50.78	-3.64	47.14	74	26.86	Pk
H	4875.279	53.07	-3.64	49.43	74	24.57	Pk
operation frequency:2462							
V	4924.358	51.84	-3.75	48.09	74	25.91	pk
H	4924.591	50.7	-3.74	46.96	74	27.04	pk
Remark:							
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit							

Note: The PK value is less than the AV value, AV value is not required
Factor added by measurement software automatically.

802.11n(40)

Normal Voltage

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2422							
V	4844.537	49.98	-3.56	46.42	74	27.58	Pk
H	4824.614	51.32	-3.56	47.76	74	26.24	Pk
operation frequency:2437							
V	4873.548	50.11	-3.64	46.47	74	27.53	Pk
H	4875.279	52.89	-3.64	49.25	74	24.75	Pk
operation frequency:2452							
V	4904.158	51.18	-3.71	47.47	74	26.53	pk
H	4904.476	50.32	-3.71	46.61	74	27.39	pk
Remark:							
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit							

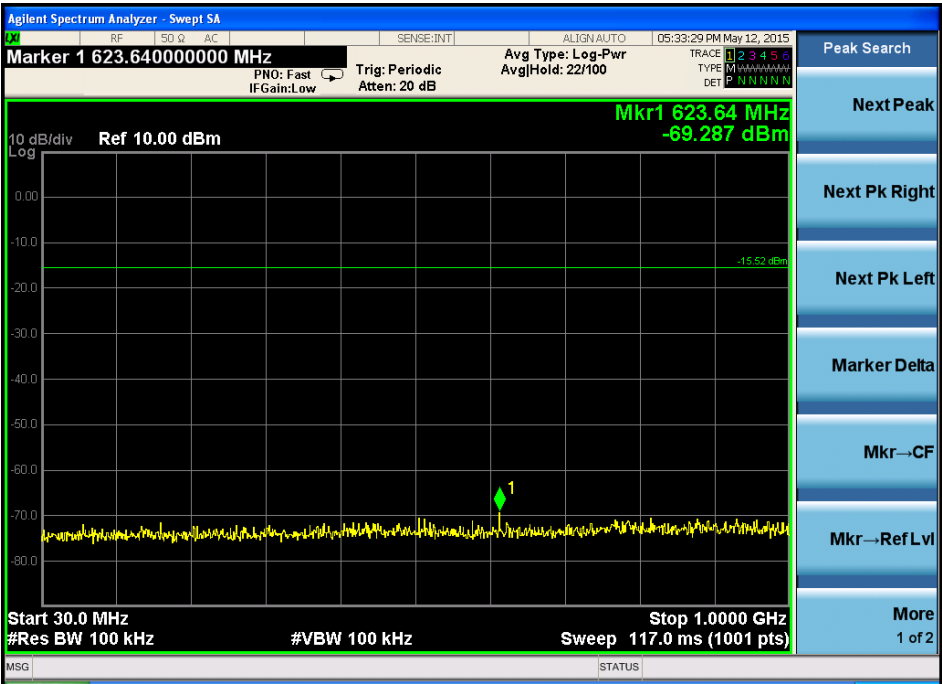
Note: The PK value is less than the AV value, AV value is not required
Factor added by measurement software automatically.

BAND EDGE(Radiated)

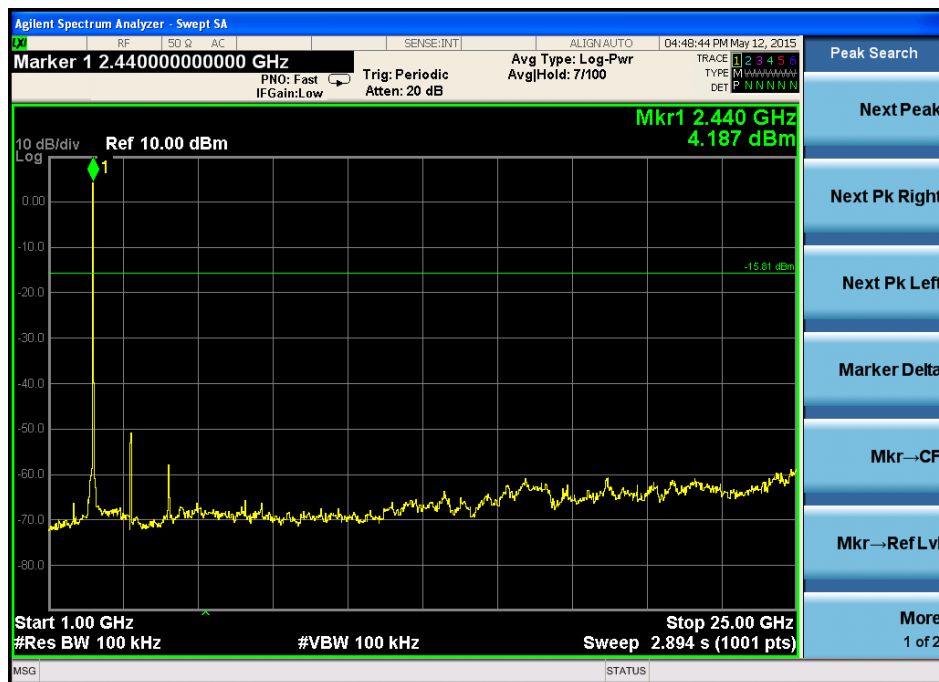
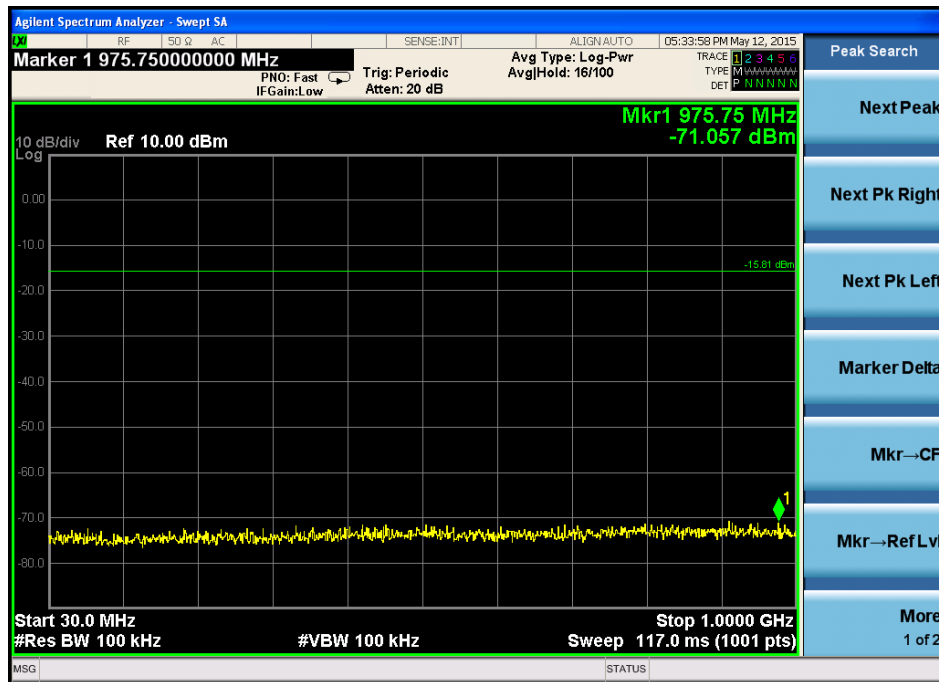
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11b							
2390	56.72	-13.06	43.66	74	30.34	peak	Vertical
2390	57.82	-13.06	44.76	74	29.24	peak	Horizontal
2483.5	57.15	-12.78	44.37	74	29.63	peak	Vertical
2483.5	54.28	-12.78	41.5	74	32.5	peak	Horizontal
802.11g							
2390	56.89	-13.06	43.83	74	30.17	peak	Vertical
2390	57.34	-13.06	44.28	74	29.72	peak	Horizontal
2483.5	57.98	-12.78	45.2	74	28.8	peak	Vertical
2483.5	58.24	-12.78	45.46	74	28.54	peak	Horizontal
802.11n20							
2390	57.83	-13.06	44.77	74	29.23	peak	Vertical
2390	58.14	-13.06	45.08	74	28.92	peak	Horizontal
2483.5	57.86	-12.78	45.08	74	28.92	peak	Vertical
2483.5	56.29	-12.78	43.51	74	30.49	peak	Horizontal
802.11n40							
2390	58.15	-13.06	45.09	74	28.91	peak	Vertical
2390	58.61	-13.06	45.55	74	28.45	peak	Horizontal
2483.5	57.83	-12.78	45.05	74	28.95	peak	Vertical
2483.5	56.19	-12.78	43.41	74	30.59	peak	Horizontal

NOTE: The PK value is less than the AV value, AV value is not required.

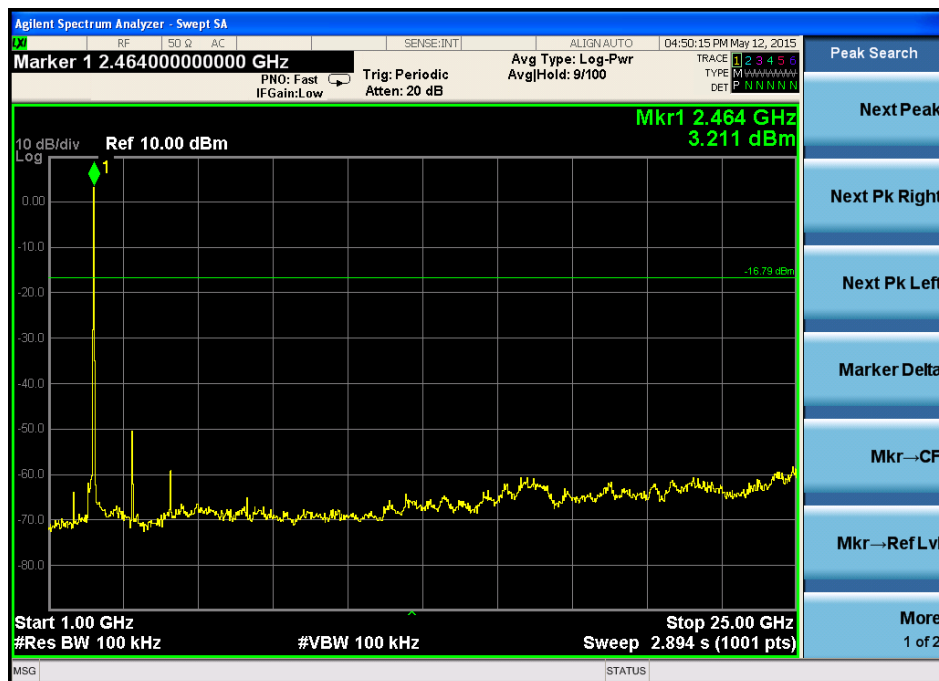
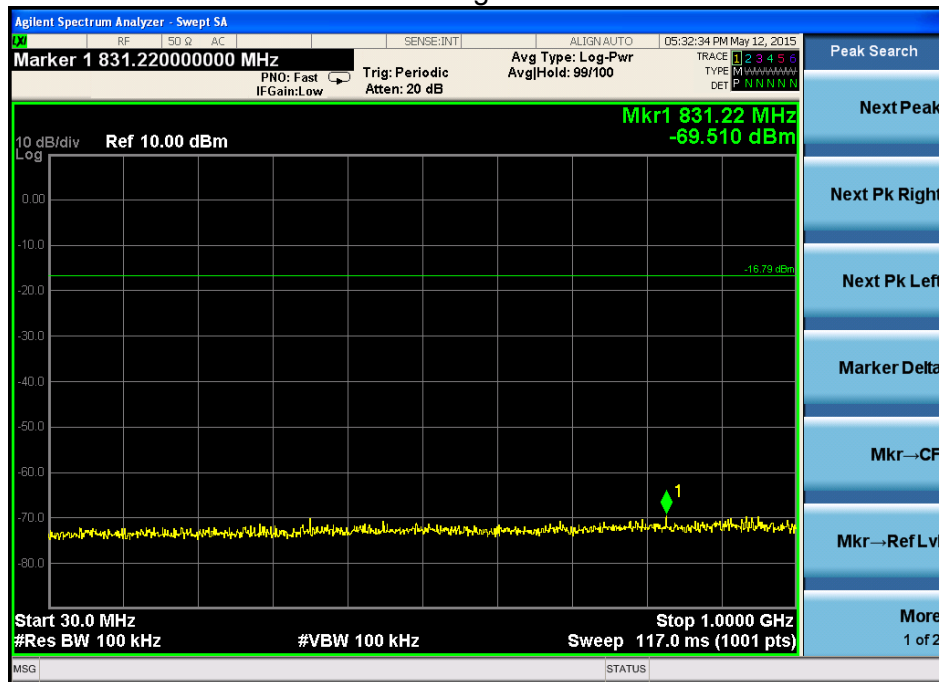
Conducted Spurious Emissions at Antenna Port:
802.11b Low Channel



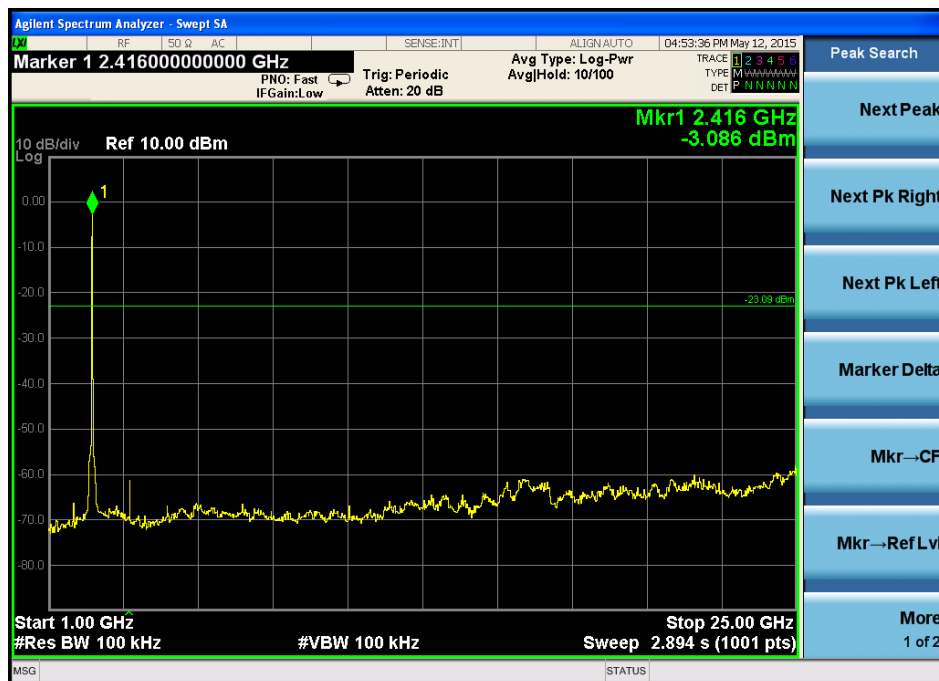
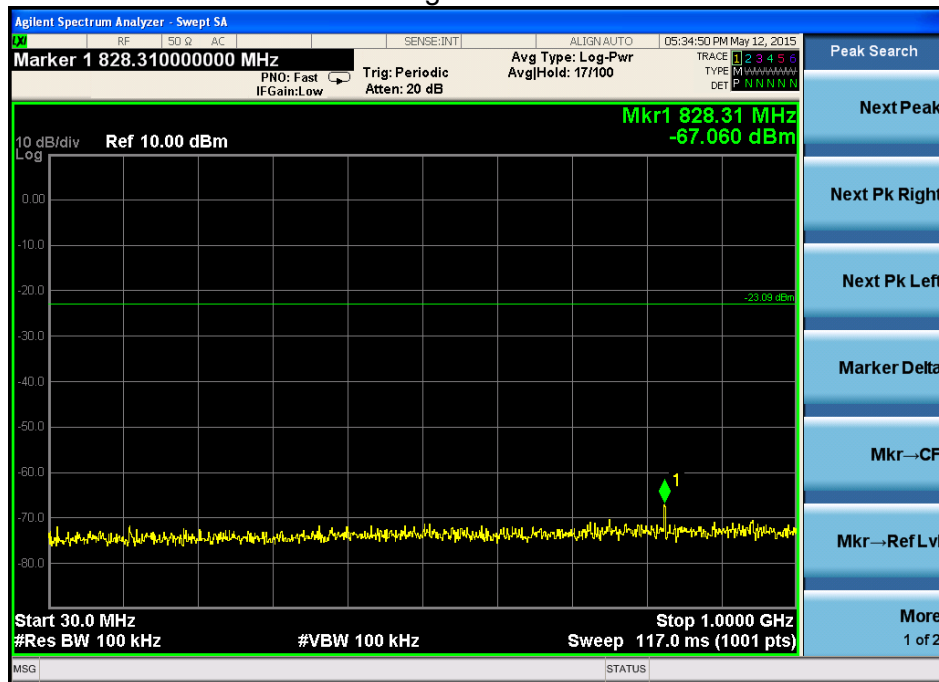
802.11b Middle Channel



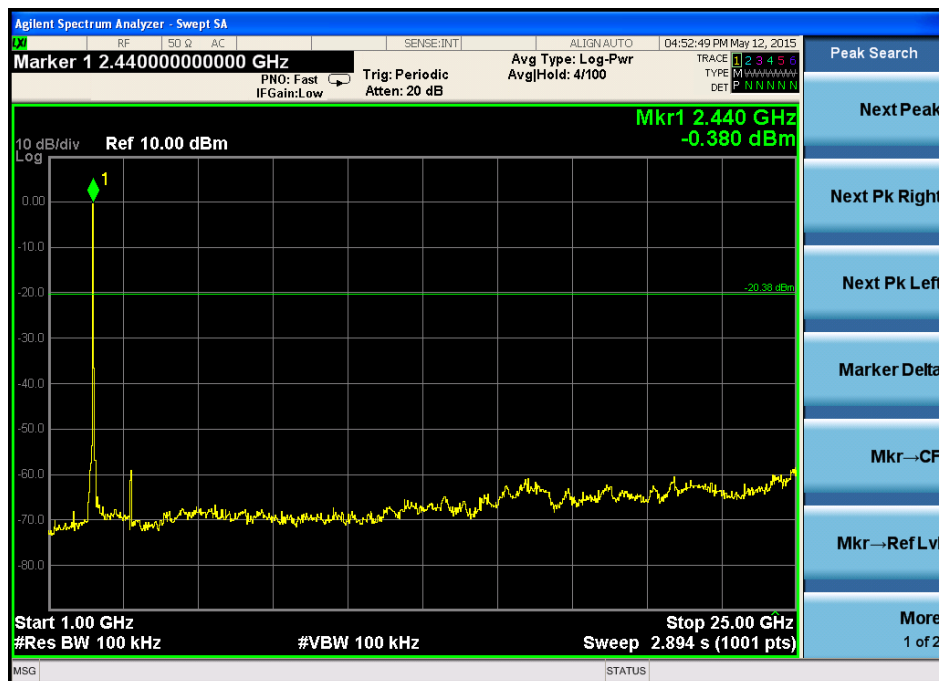
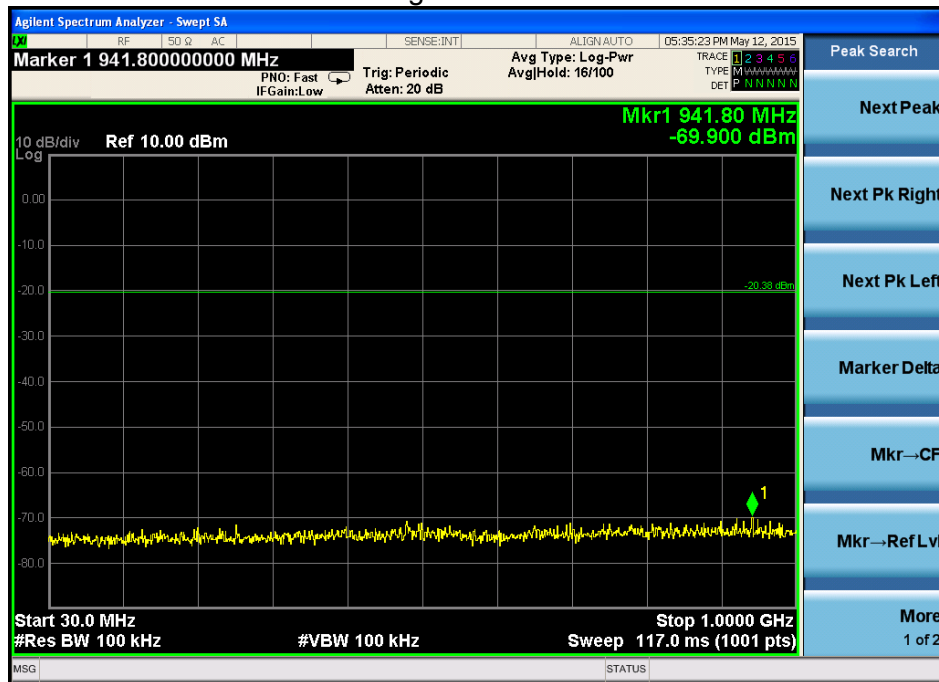
802.11b High Channel



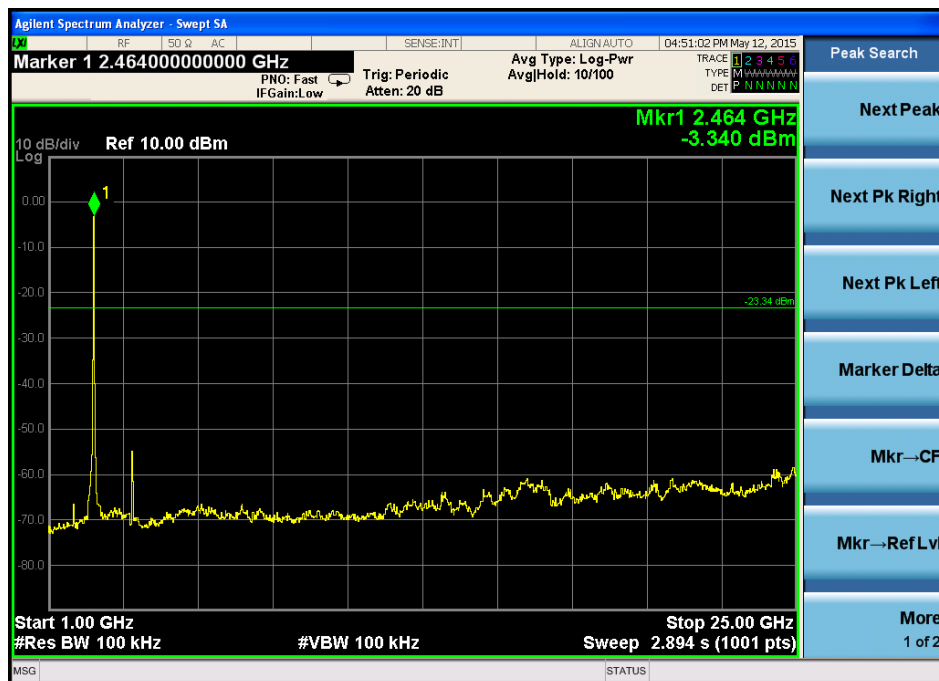
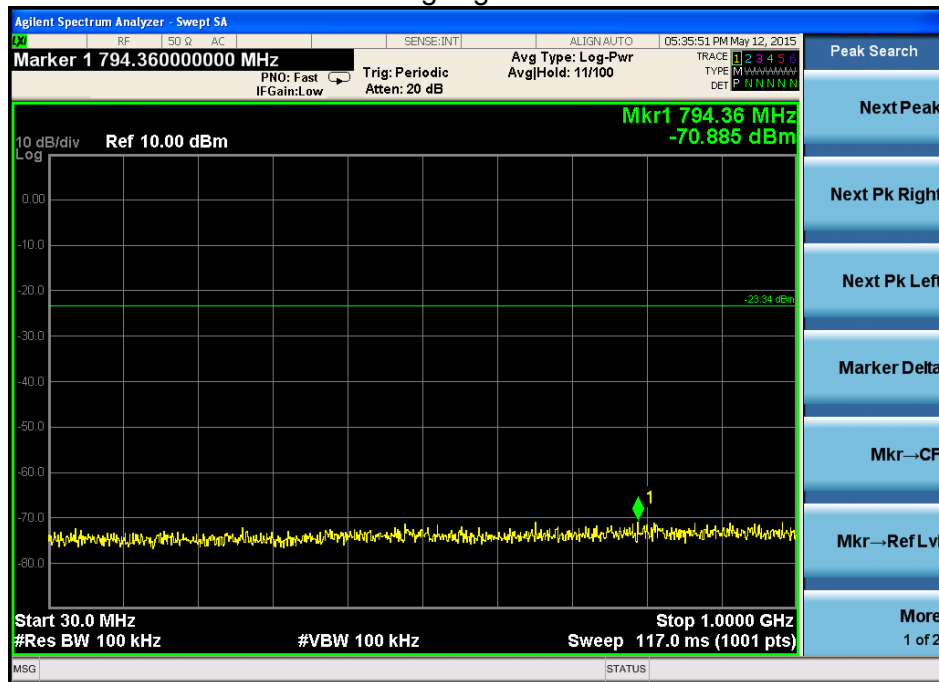
802.11g Low Channel



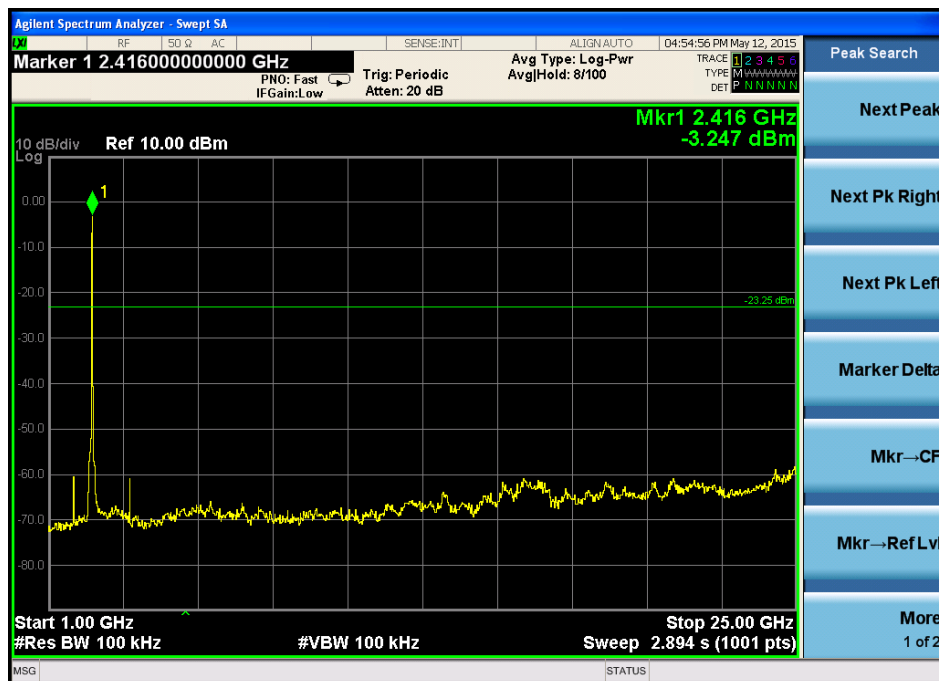
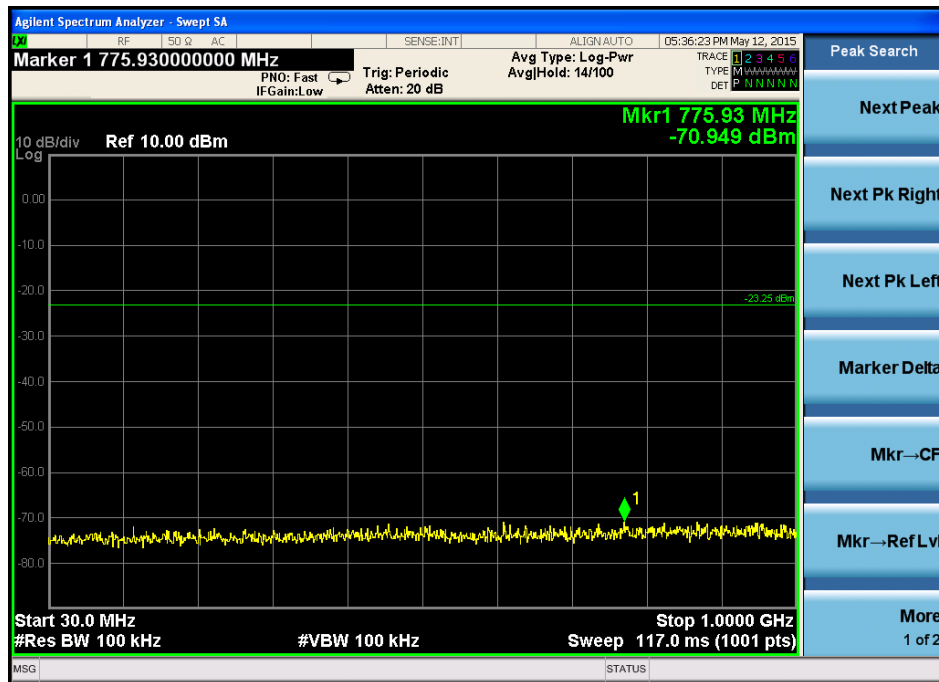
802.11g Middle Channel



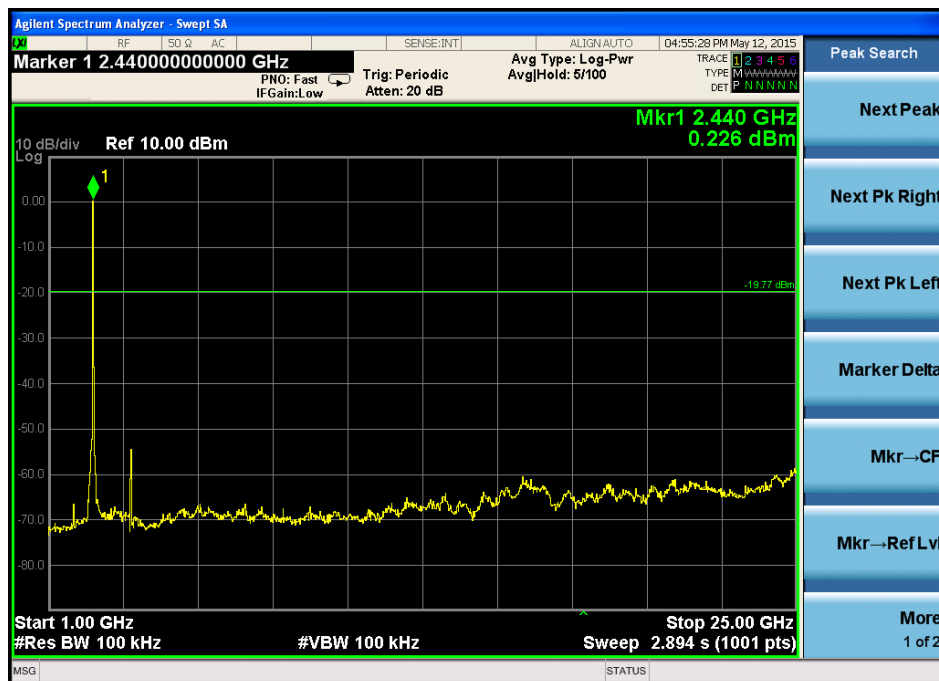
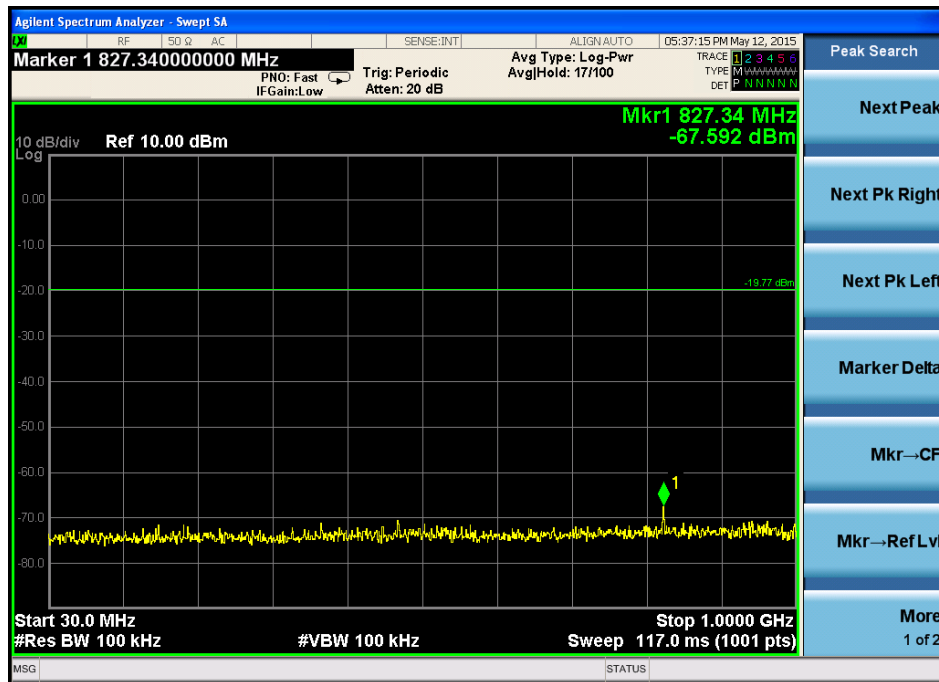
802.11g High Channel



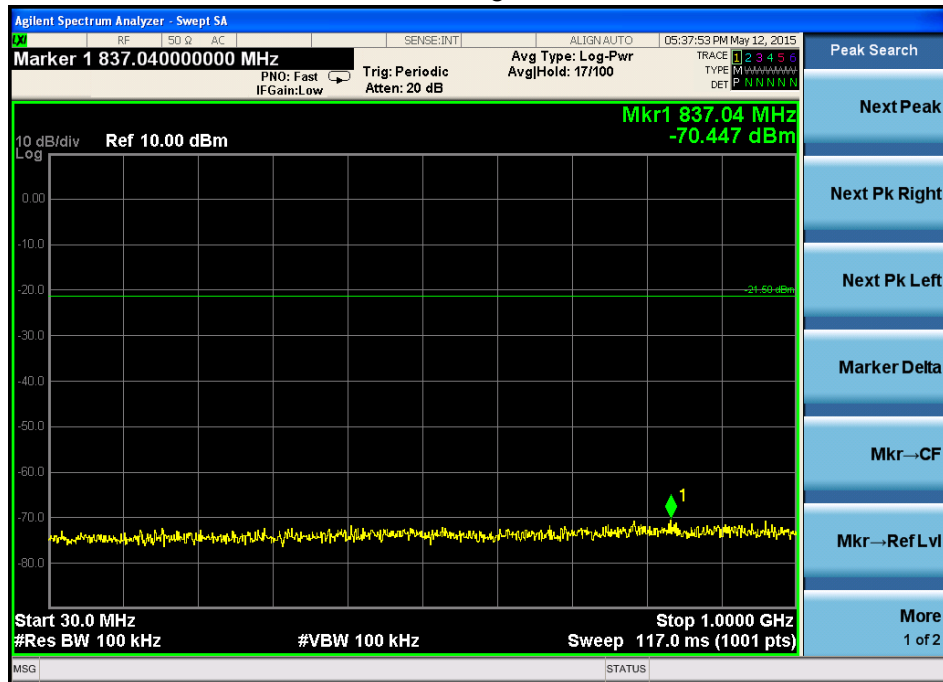
802.11n20 Low Channel



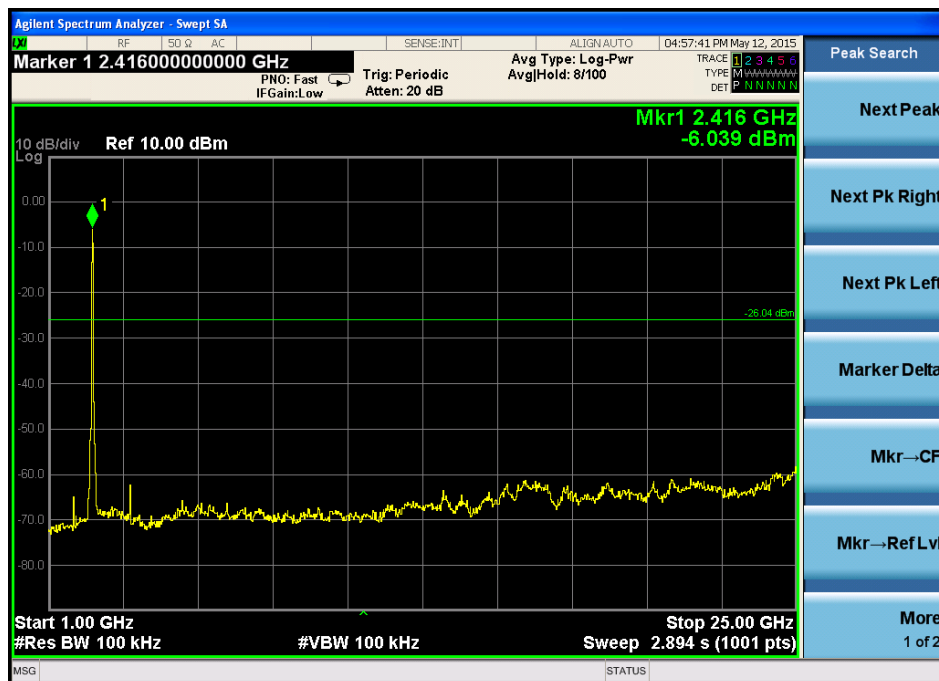
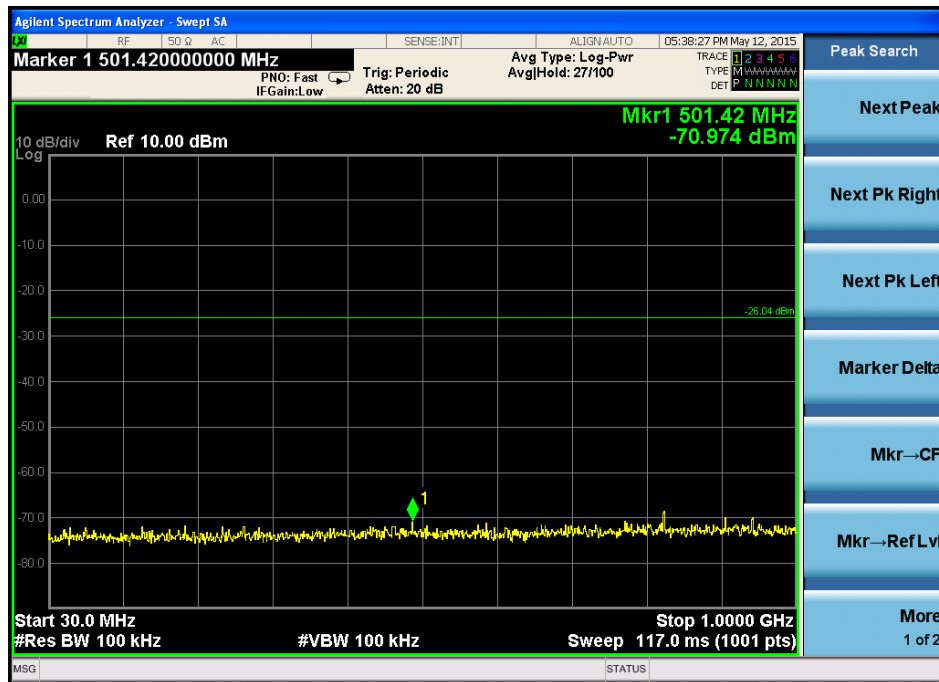
802.11n20 Middle Channel



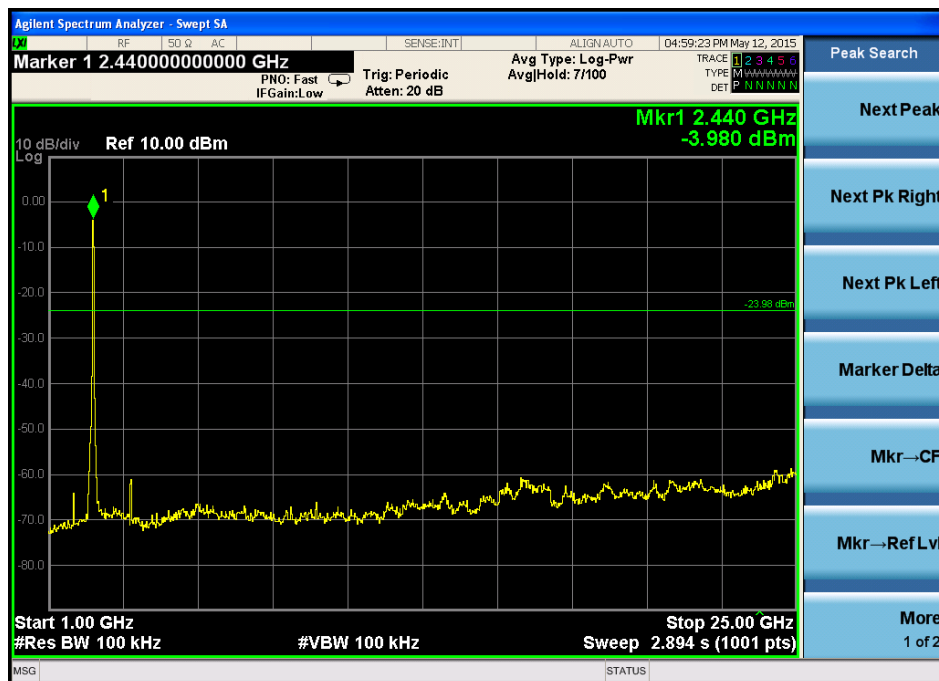
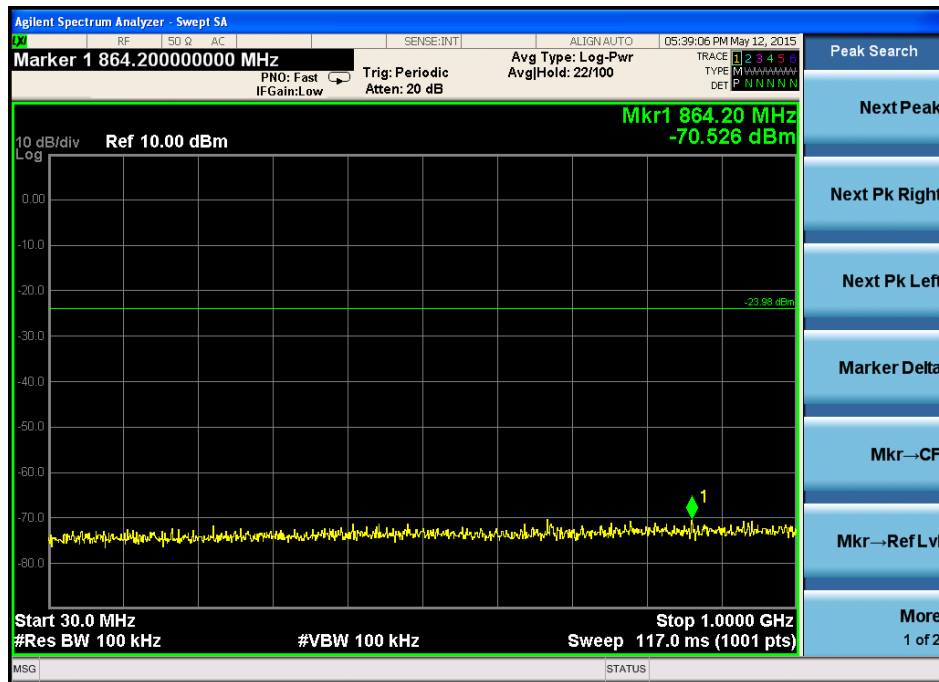
802.11n20 High Channel



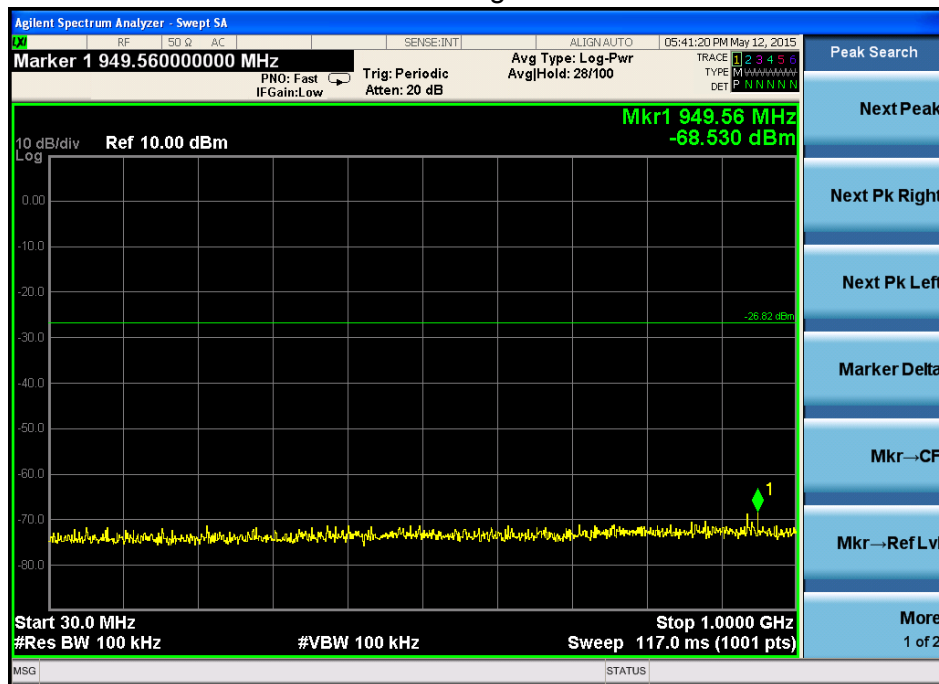
802.11n40 Low Channel



802.11n40 Middle Channel



802.11n40 High Channel



4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

4.1.1 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW $\geq 3 \times$ RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



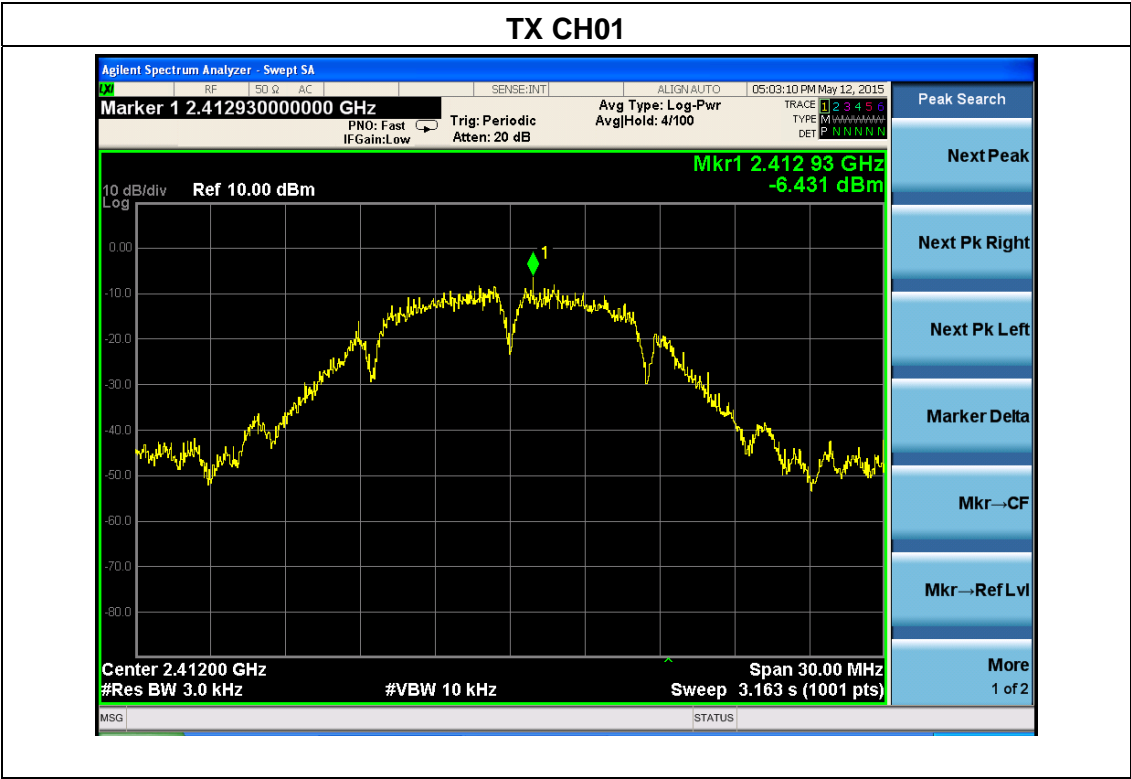
4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-6.431	8	PASS
2437 MHz	-8.864	8	PASS
2462 MHz	-8.748	8	PASS



TX CH06

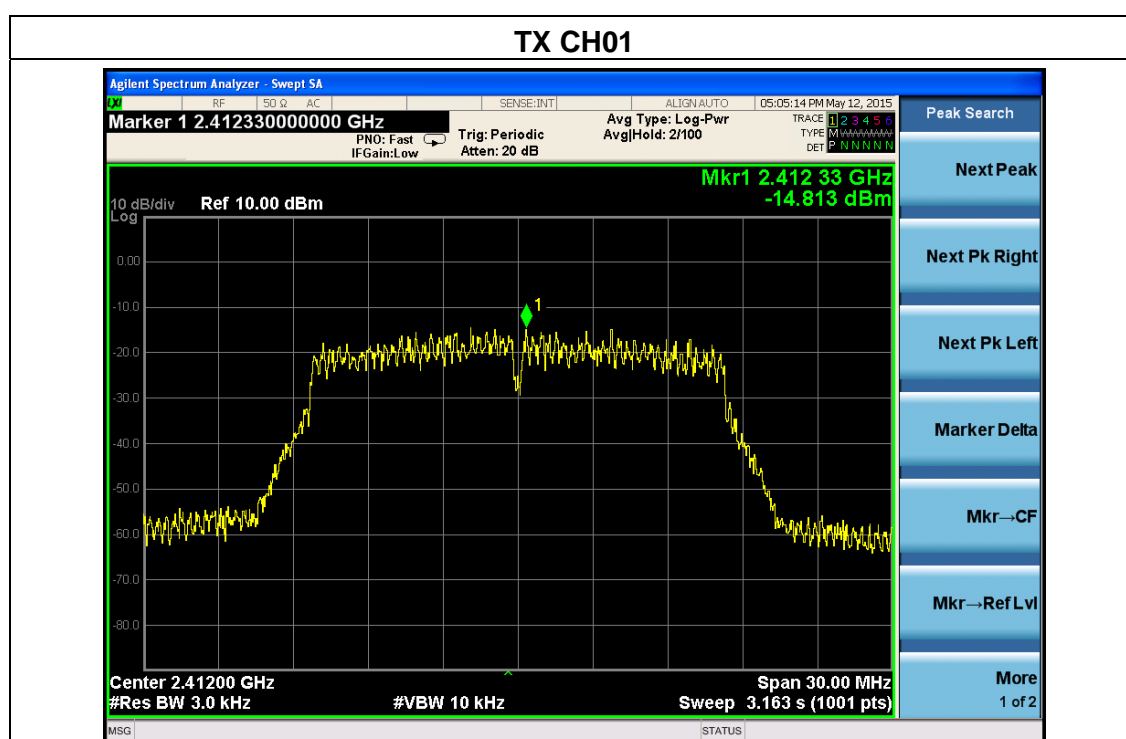


TX CH11

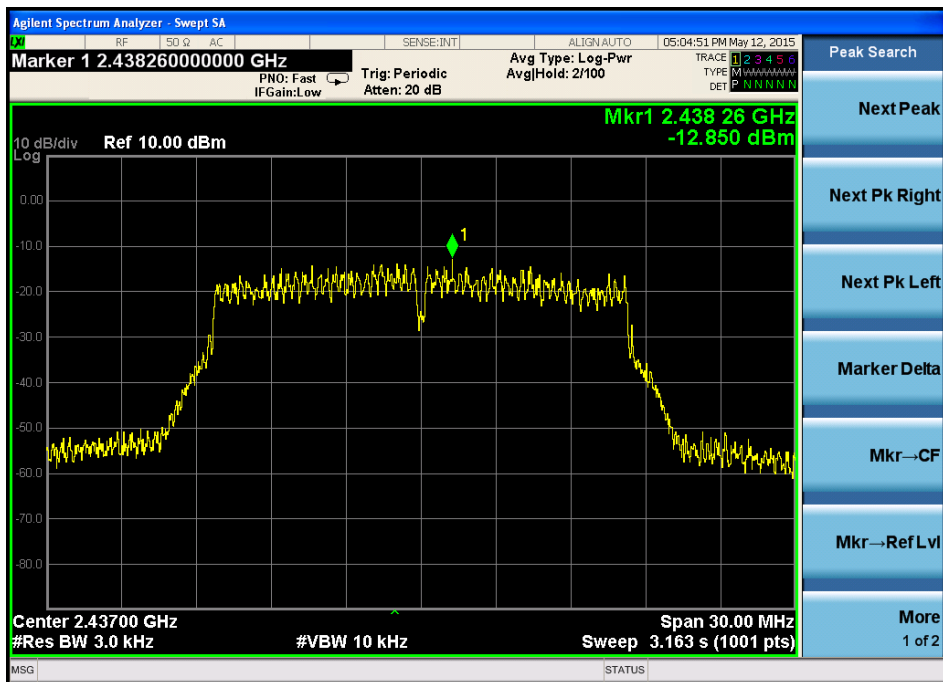


EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX g Mode /CH01, CH06, CH11		

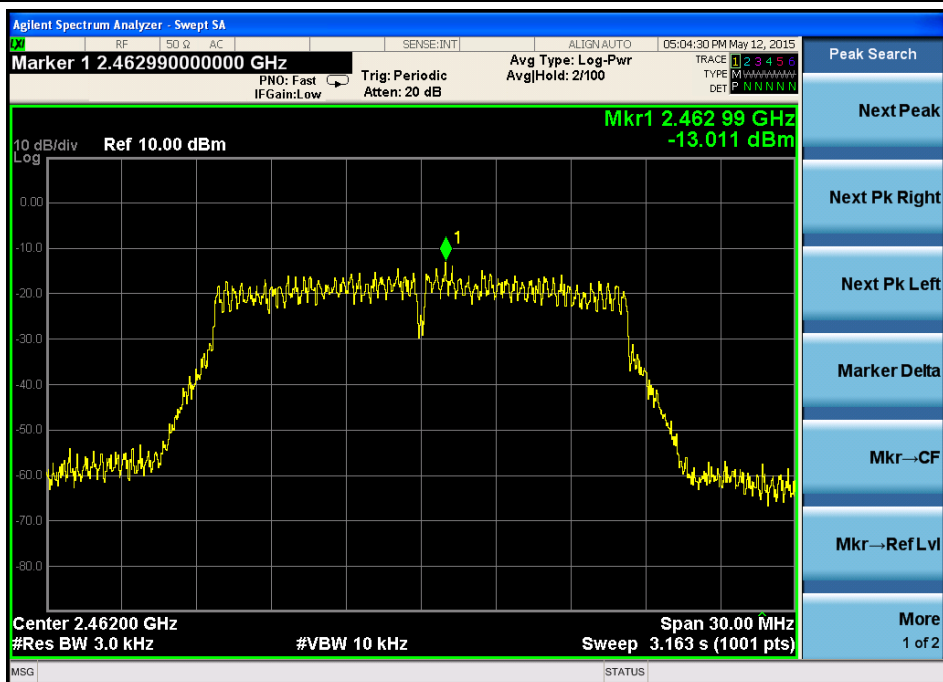
Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-14.813	8	PASS
2437 MHz	-12.850	8	PASS
2462 MHz	-13.011	8	PASS



TX CH06

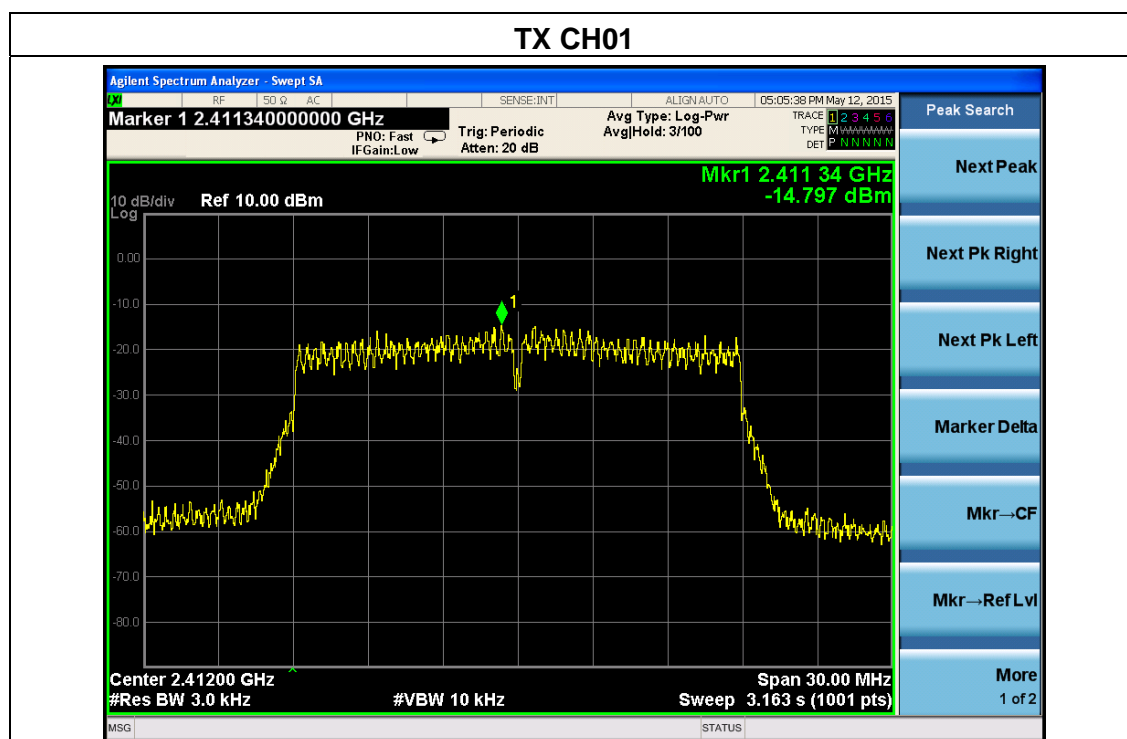


TX CH11

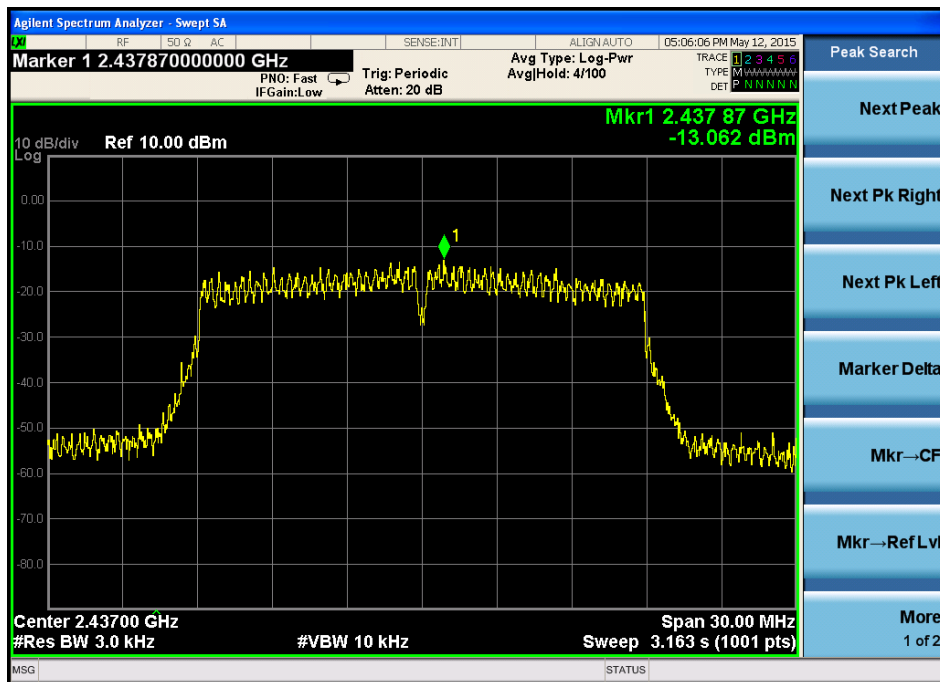


EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX n20 Mode /CH01, CH06, CH11		

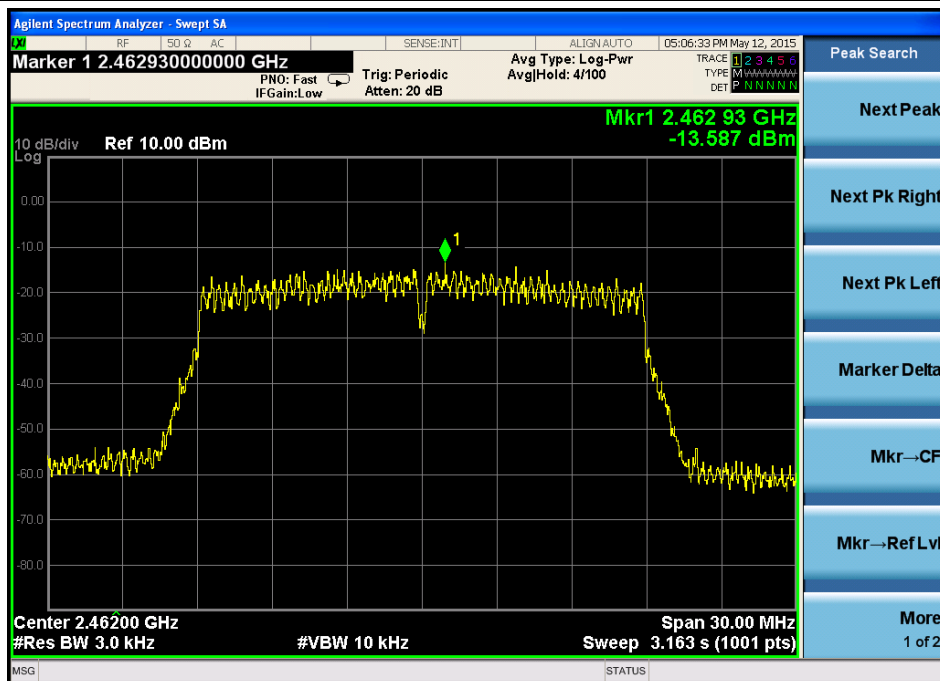
Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-14.797	8	PASS
2437 MHz	-13.062	8	PASS
2462 MHz	-13.587	8	PASS



TX CH06

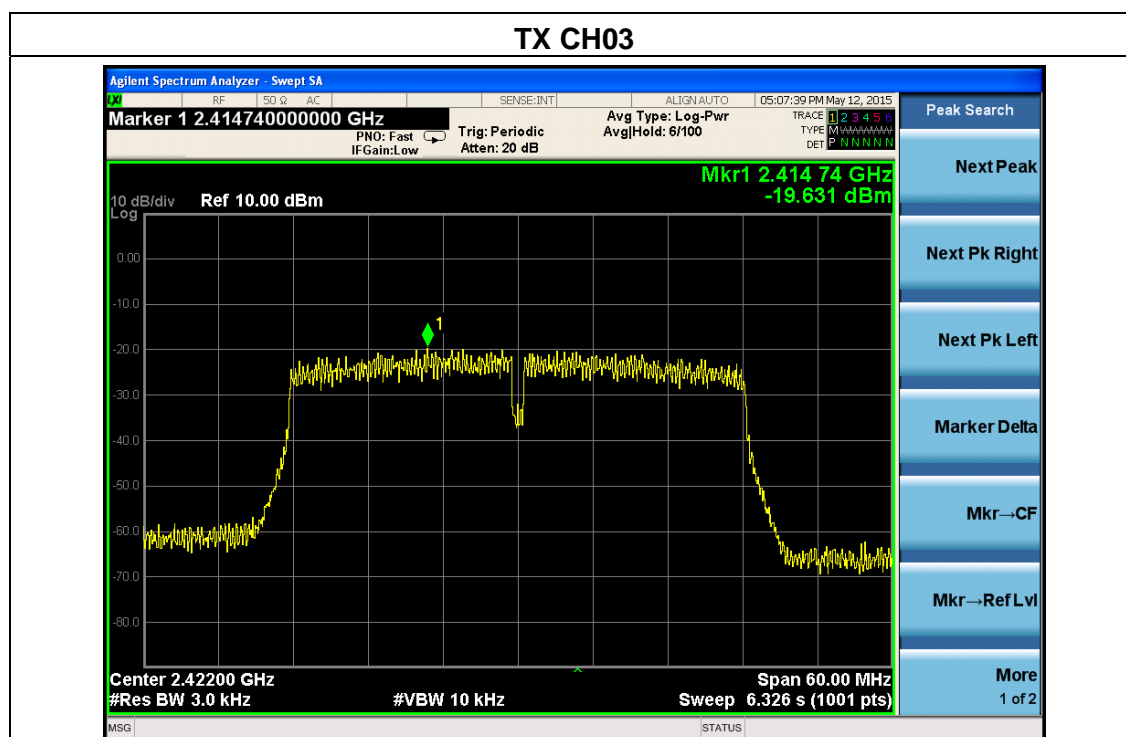


TX CH11

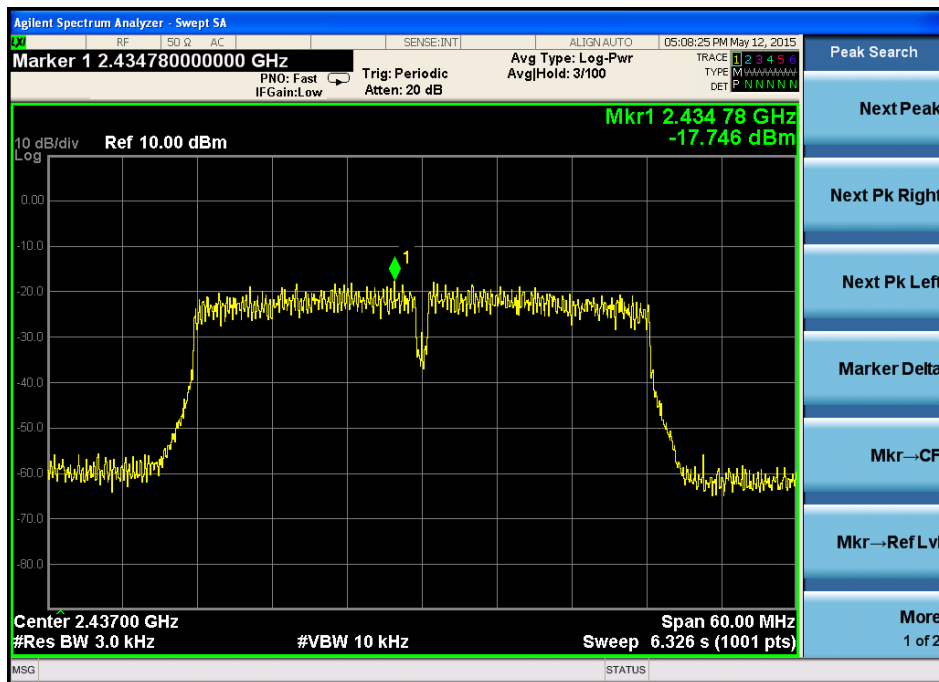


EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX n40 Mode /CH03, CH06, CH09		

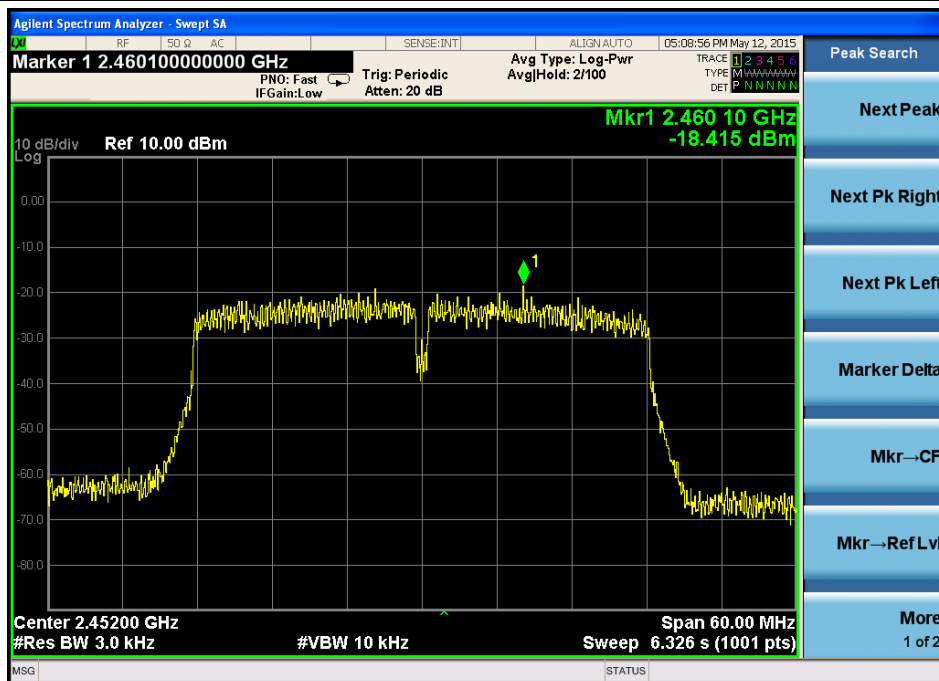
Frequency	Power Density (dBm)	Limit (dBm)	Result
2422 MHz	-19.631	8	PASS
2437 MHz	-17.746	8	PASS
2452 MHz	-18.415	8	PASS



TX CH06



TX CH09



5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

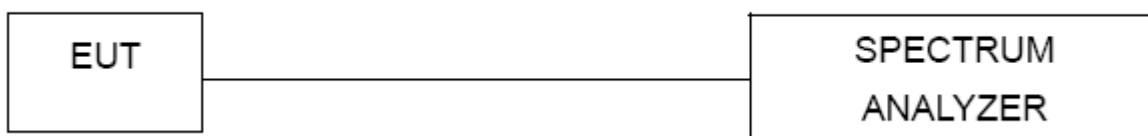
5.1.1 TEST PROCEDURE

1. Set RBW= 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



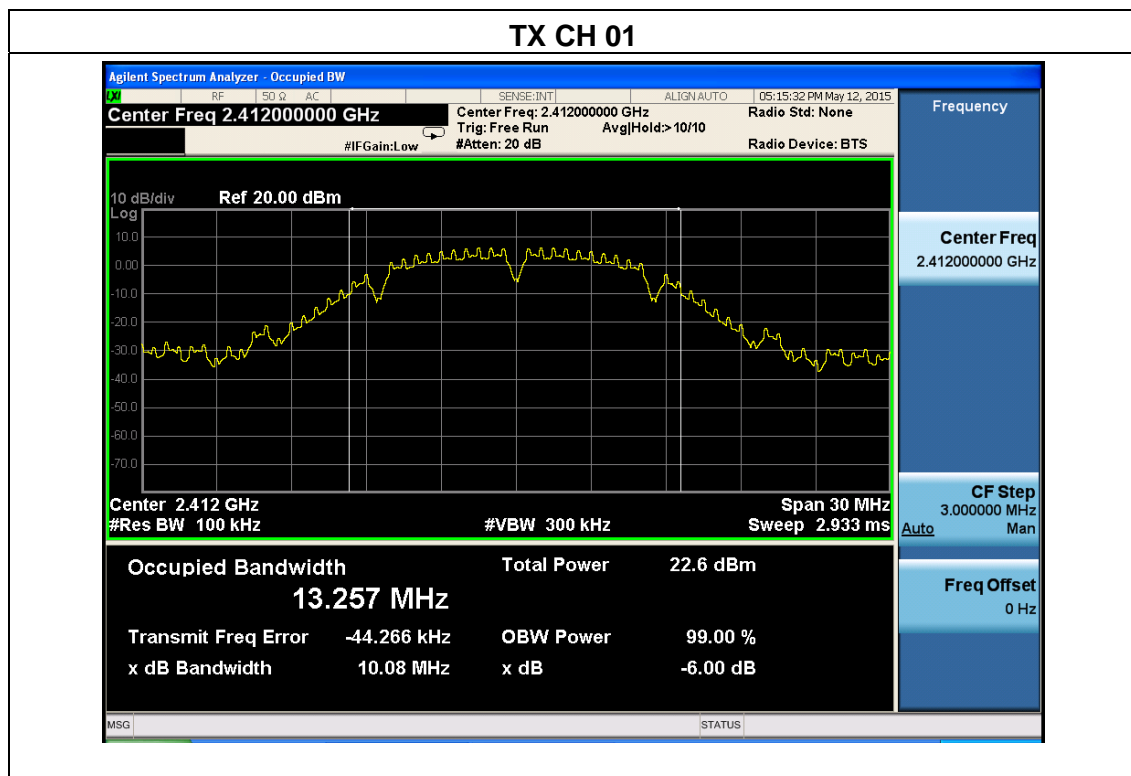
5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

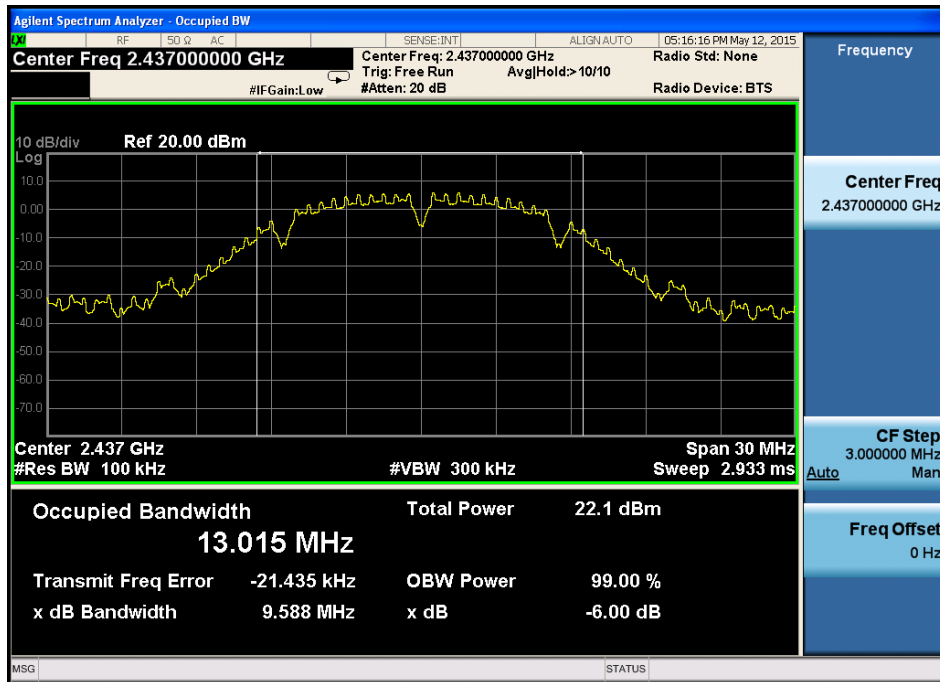
5.1.5 TEST RESULTS

EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX b Mode /CH01, CH06, CH11		

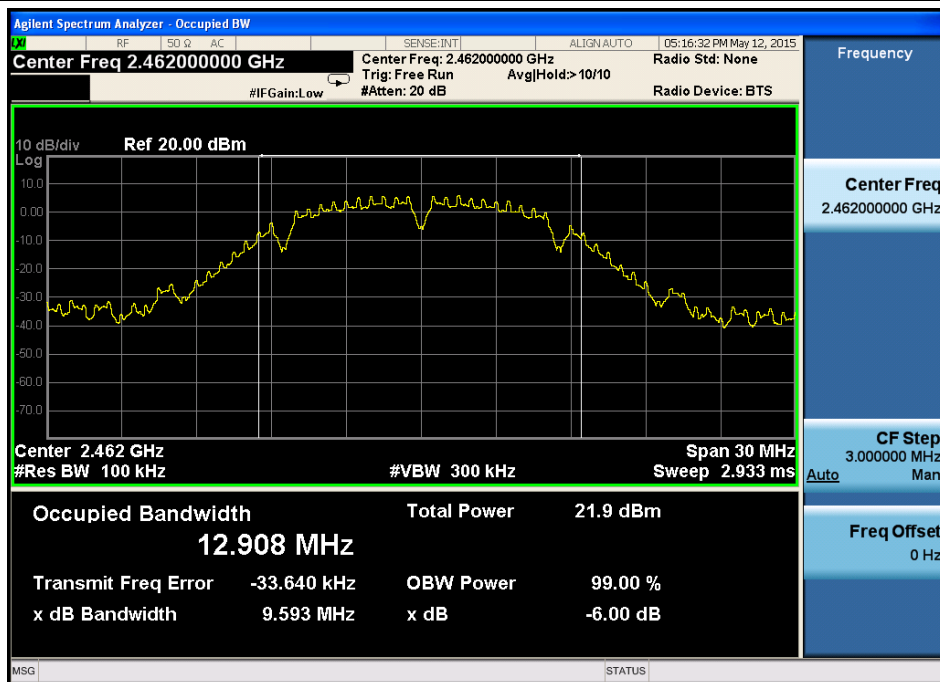
Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.08	500	Pass
Middle	2437	9.588	500	Pass
High	2462	9.593	500	Pass



TX CH 06

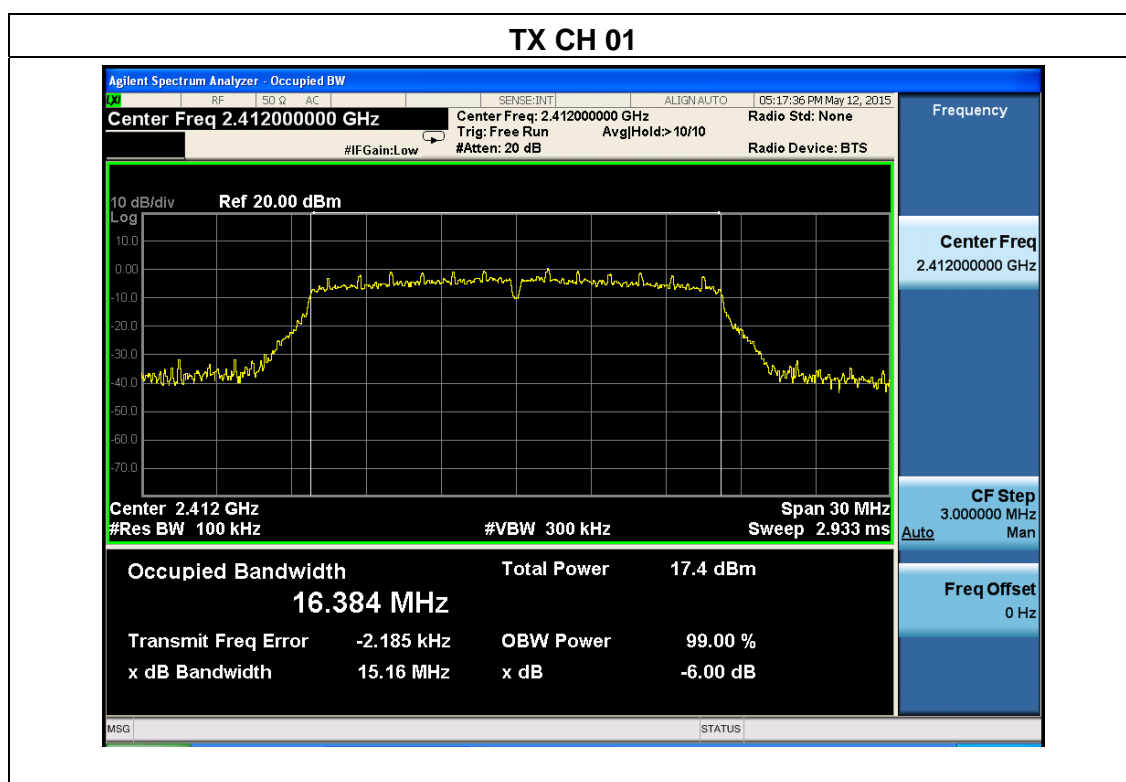


TX CH 11

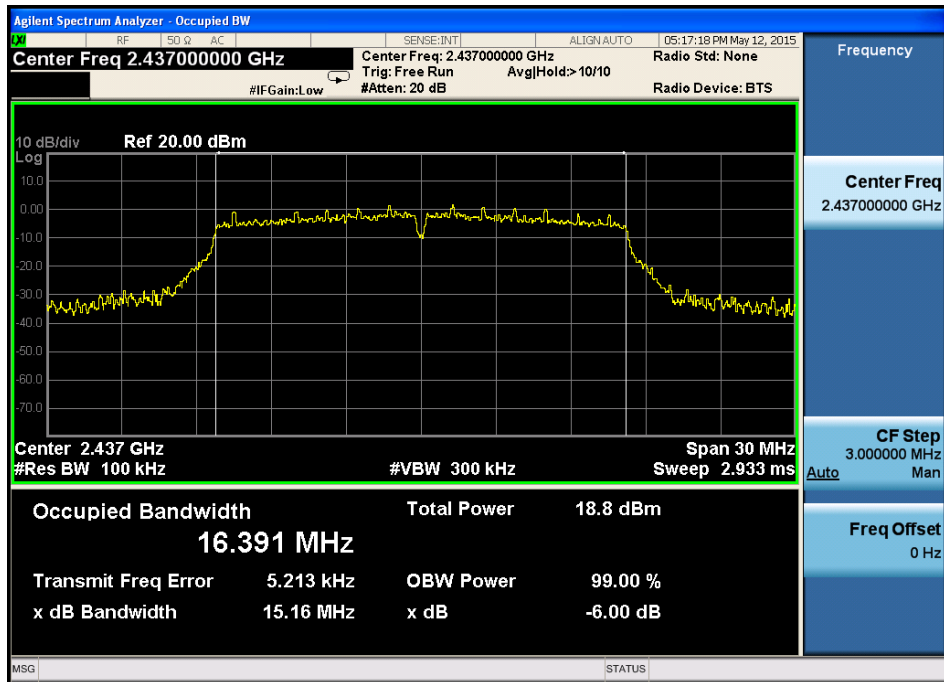


EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX g Mode /CH01, CH06, CH11		

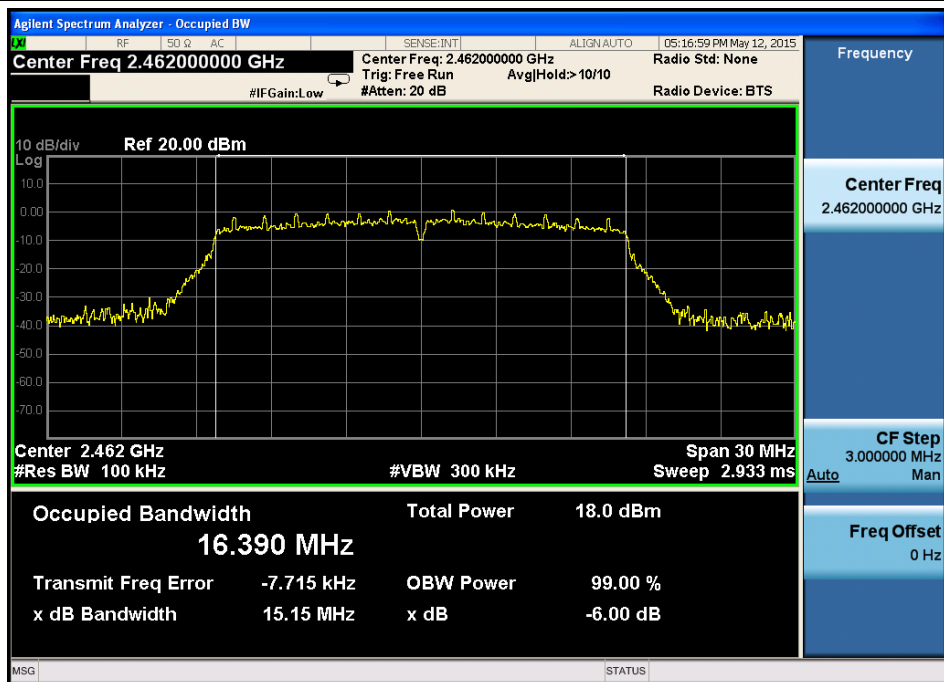
Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.16	500	Pass
Middle	2437	15.16	500	Pass
High	2462	15.15	500	Pass



TX CH 06

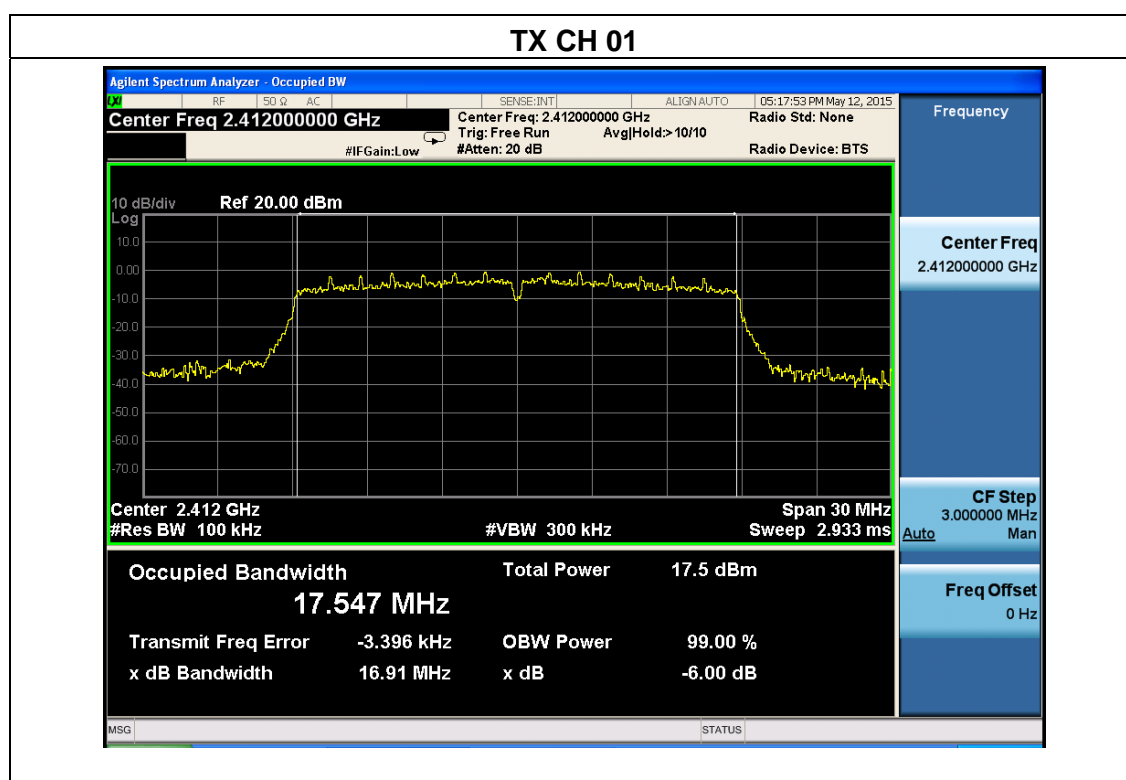


TX CH 11

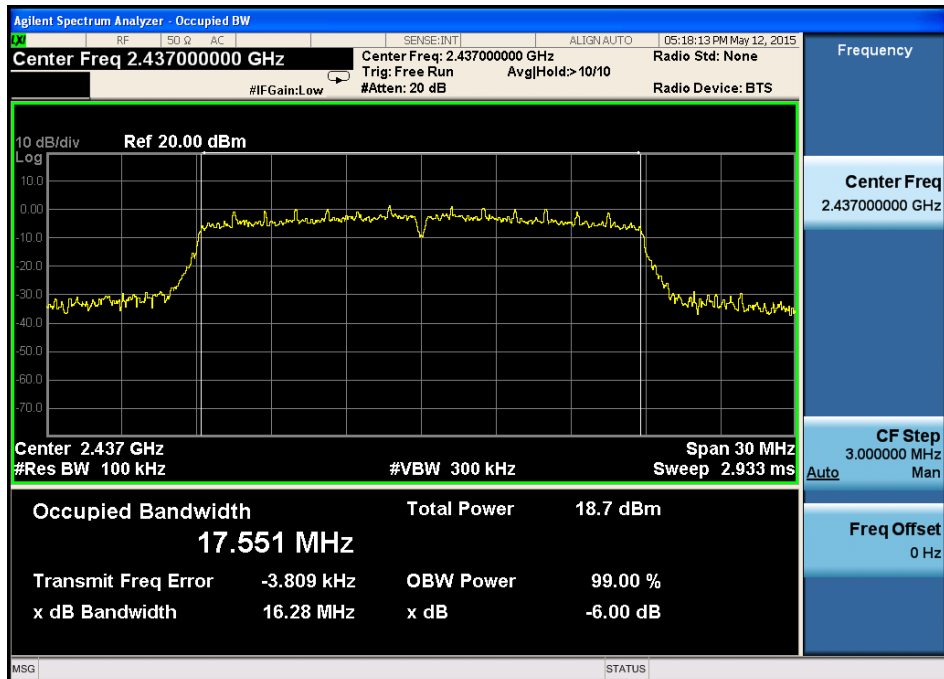


EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX n20 Mode /CH01, CH06, CH11		

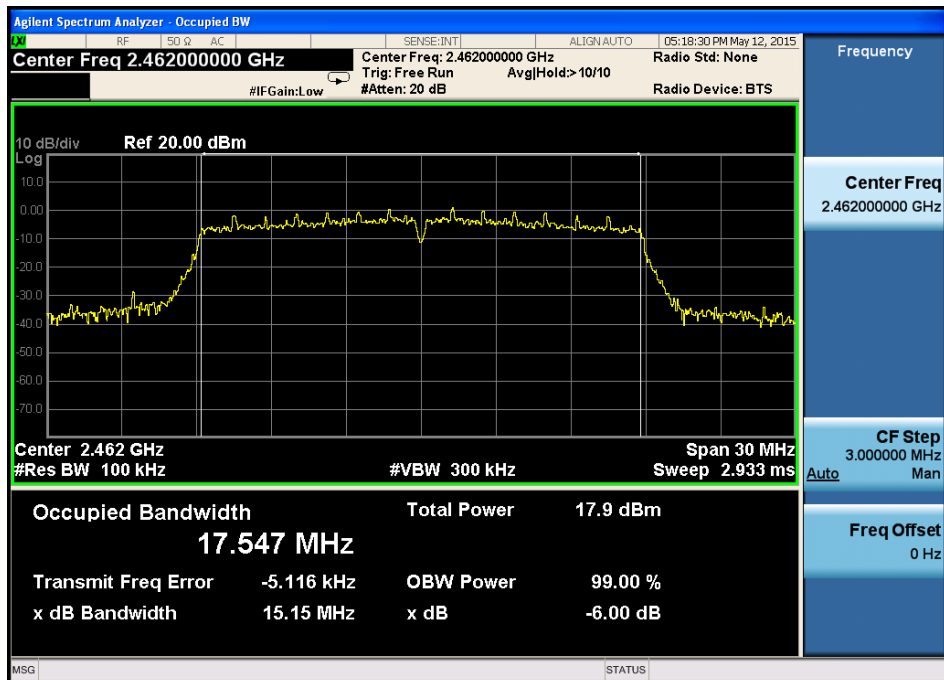
Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.91	500	Pass
Middle	2437	16.28	500	Pass
High	2462	15.15	500	Pass



TX CH 06

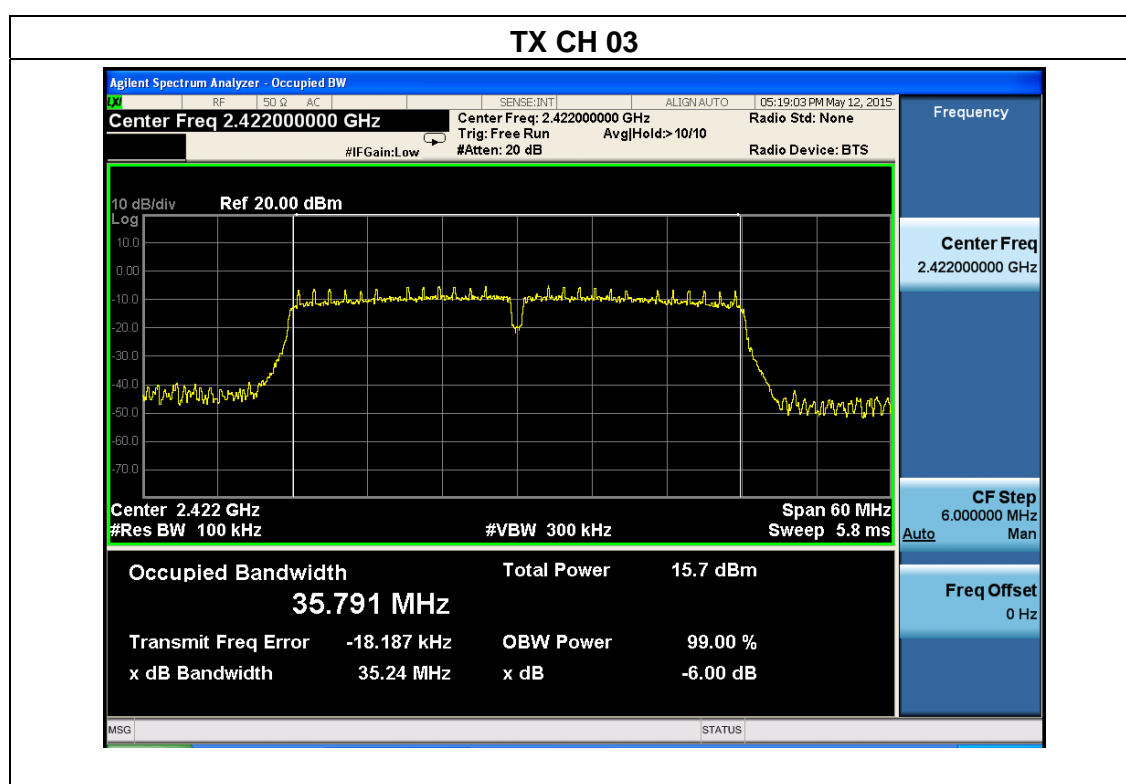


TX CH 11

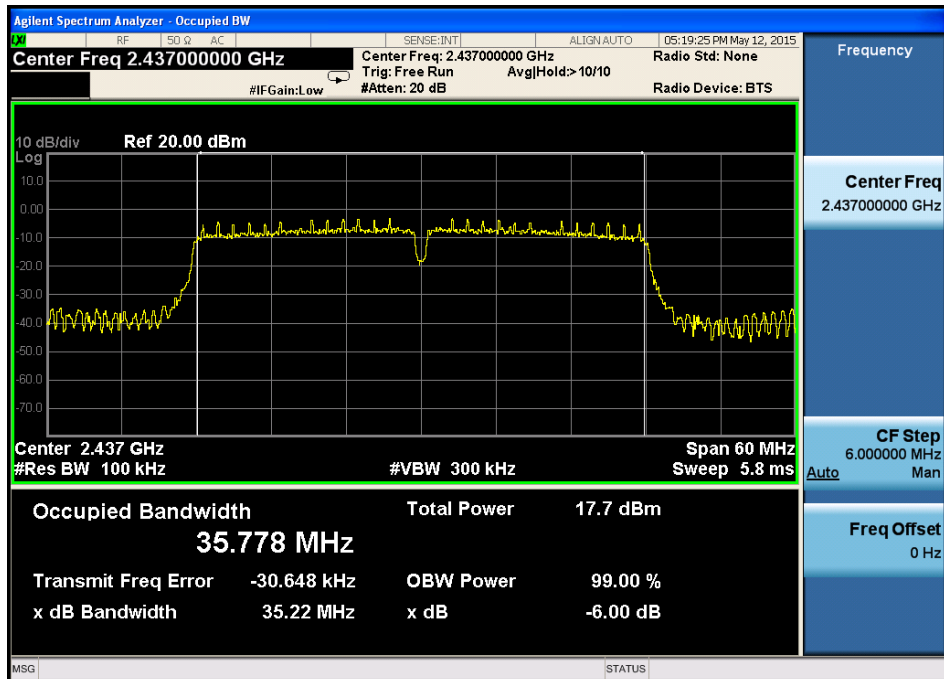


EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX n40 Mode /CH01, CH06, CH11		

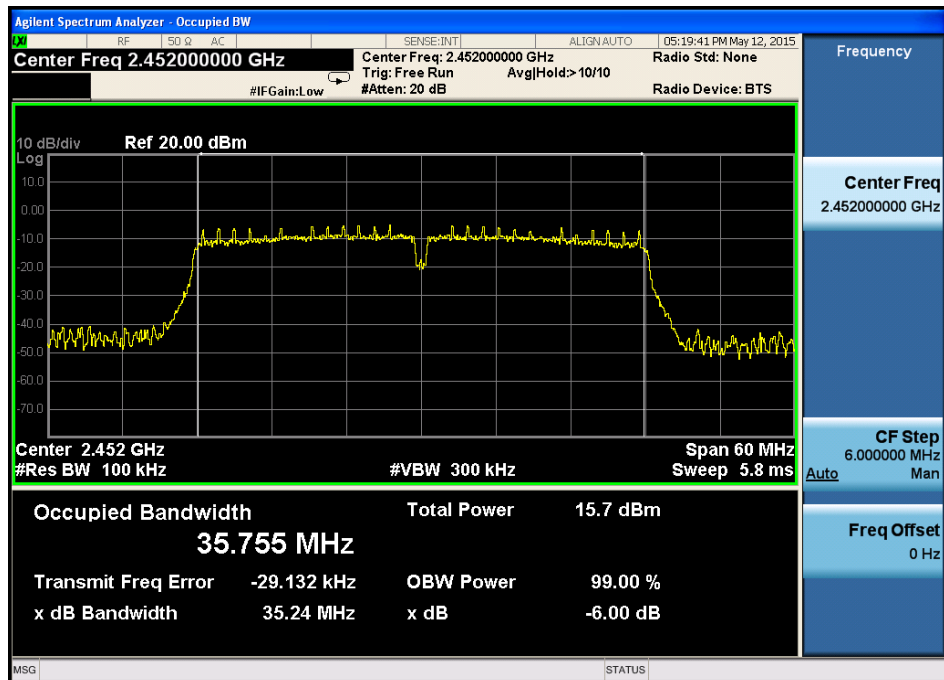
Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.24	500	Pass
Middle	2437	35.22	500	Pass
High	2452	35.24	500	Pass



TX CH 06



TX CH 09



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX b/g/n Mode /CH01, CH06, CH11		

TX 802.11b Mode			
Test Channe	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	17.62	30
CH06	2437	18.73	30
CH11	2462	17.54	30
TX 802.11g Mode			
CH01	2412	17.69	30
CH06	2437	18.71	30
CH11	2462	17.73	30
TX 802.11n20 Mode			
CH01	2412	17.53	30
CH06	2437	18.37	30
CH11	2462	17.57	30
TX 802.11n40 Mode			
CH03	2412	17.63	30
CH06	2437	18.27	30
CH09	2462	17.18	30

////

7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

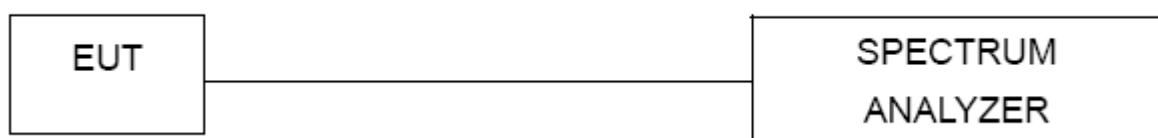
TEST PROCEDURE

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- e) Repeat above procedures until all measured frequencies were complete.

7.1 DEVIATION FROM STANDARD

No deviation.

7.2 TEST SETUP



7.3 EUT OPERATION CONDITIONS

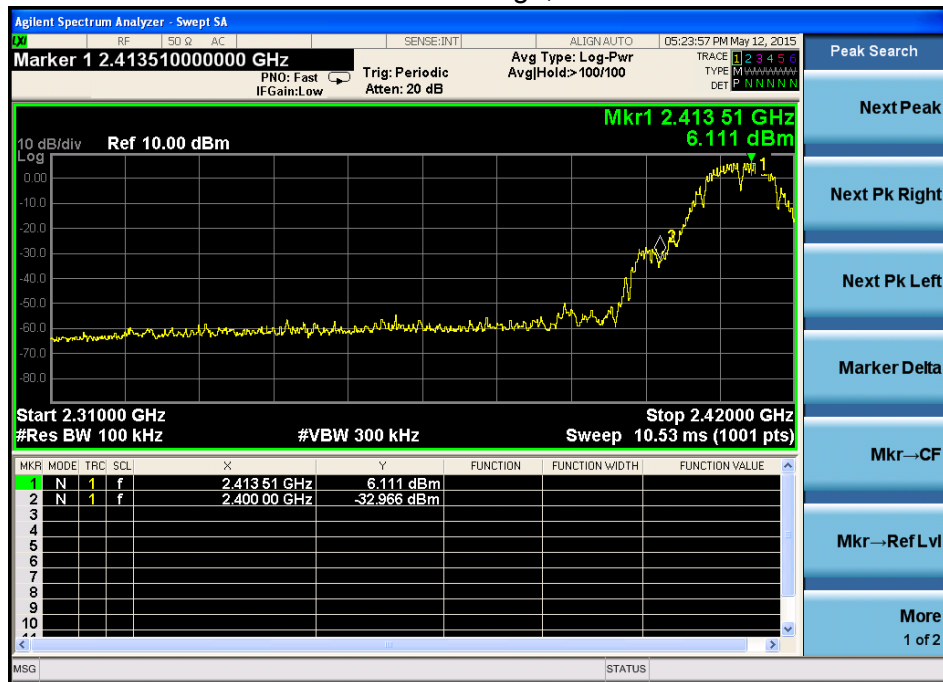
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.4 TEST RESULTS

EUT :	weePHONE	Model Name :	WP11
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11b mode			
Left-band	39.77	20	Pass
Right-band	62.99	20	Pass
802.11g mode			
Left-band	39.12	20	Pass
Right-band	43.22	20	Pass
802.11n20 mode			
Left-band	34.56	20	Pass
Right-band	41.41	20	Pass
802.11n40 mode			
Left-band	35.97	20	Pass
Right-band	43.06	20	Pass

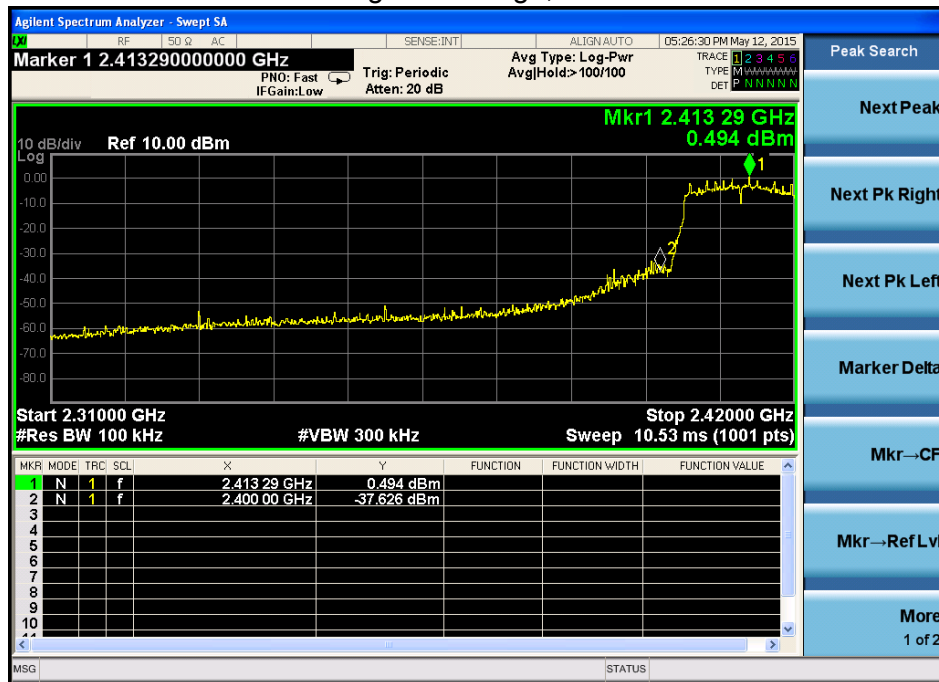
802.11b: Band Edge, Left Side



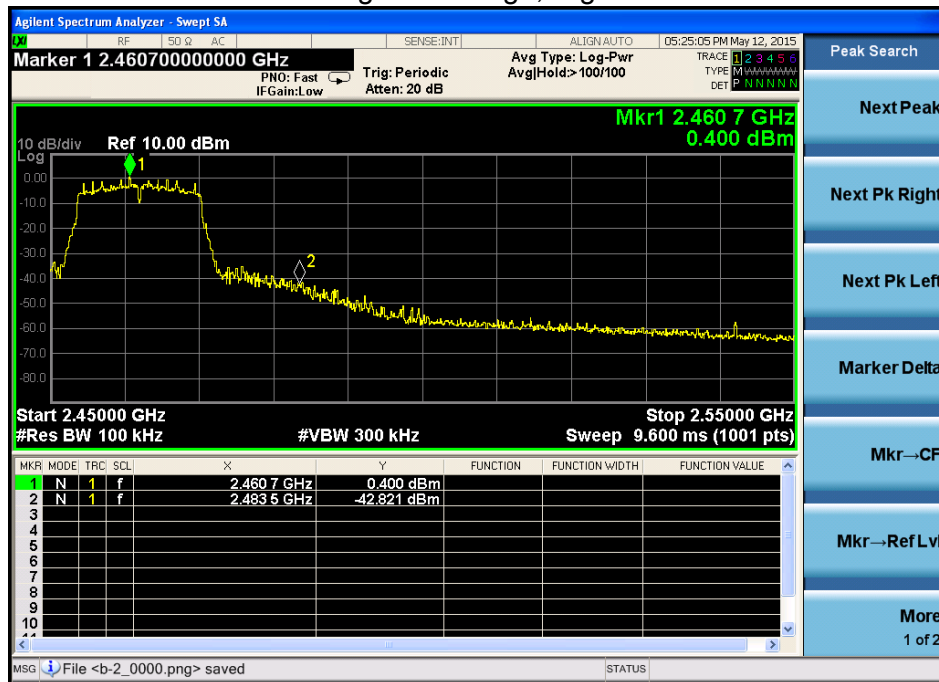
802.11b: Band Edge, Right Side



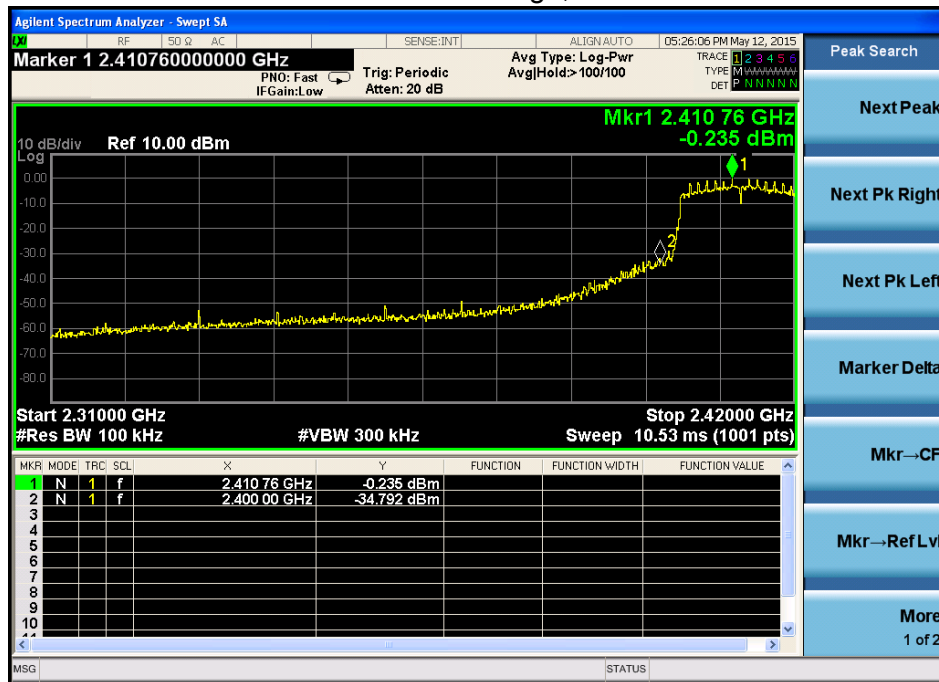
802.11g: Band Edge, Left Side



802.11g: Band Edge, Right Side



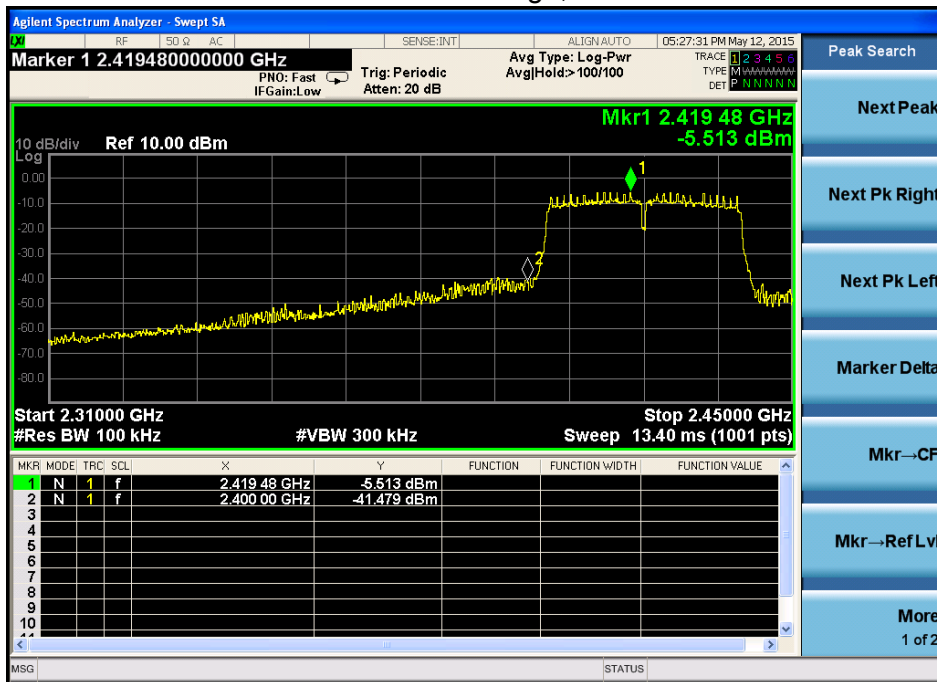
802.11n20: Band Edge, Left Side



802.11n20: Band Edge, Right Side



802.11n40: Band Edge, Left Side



802.11n40: Band Edge, Right Side



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

8.2 EUT ANTENNA

The EUT antenna is External antenna(Pifa-type,0dbi). It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used.