TEST REPORT

Reference No.	:	WTS16S0243054-2E
FCC ID	:	2AC88-E1
Applicant	:	HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED
Address	:	Unit D.16F.chenknang plaza 250 Hennessy Road,Wanchai Hongkong
Manufacturer	:	Shenzhen Ukelink New Technology Co.,Ltd
Address	:	3 Floor, Building A, Unit 1, the Software industry base, Xuefuroad, Nanshan district, Shenzhen, Guangdong, China
Product Name	:	4G Free Roaming Hotspot
Model No.	:	E1
Brand	:	GlocalMe
Standards	:	FCC CFR47 Part 15C Section 15.247:2015
Date of Receipt sample	:	Feb. 17, 2016
Date of Test	:	Feb. 18 – Apr. 07, 2016
Date of Issue	:	Apr. 08, 2016
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
Waltek Services (Shenzhen) Co., Ltd.
Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China
Tel :+86-755-83551033
Fax:+86-755-83552400

Compiled by:

Zero Zhou / Test Engineer

Approved by:

Philo Zhong / Manager

2 Test Summary

Test Items	Test Requirement	Result
Radiated Spurious Emissions	15.247(d) 15.205(a) 15.209(a)	PASS
Conducted Spurious Emissions	15.247(d)	PASS
Conducted Emissions	15.207(a)	PASS
6dB Bandwidth	15.247(a)(2)	PASS
Maximum Peak Output Power	15.247(b)(3),(4)	PASS
Power Spectral Density	15.247(e)	PASS
Band Edge	15.247(d)	PASS
Antenna Requirement	15.203	PASS
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

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4 General Information

4.1 General Description of E.U.T.

Product Name	: 4G Free Roaming Hotspot
Model No.	: E1
Model Description	: N/A
GSM Band(s)	: GSM 850/900/1800/1900MHz
GPRS/EDGE Class	: 12
CDMA	: 800/1900MHz
WCDMA Band(s)	: FDD Band I/II/IV/V/VIII
LTE Bnad(s)	: LTE Band 2/4/5/17/41
Wi-Fi Specification	: 2.4G: 802.11b/g/n HT20/n
Bluetooth Version	: Bluetooth v4.0 with BLE
GPS	: Support
NFC	: N/A
Hardware Version	LA0908 Ver.B
Software Version	E1_CTA_V01
storage location	: Internal Storage
Test Exercise	: The EUT was operated in a normal mode.
Note:	Main board(Modem1): The EUT Main board support GSM850/900/DCS1800/PCS1900, CDMA 800/1900MHz,WCDMA Band 1/2/4/5/8, LTE Band 2/4/5/17/41 function. It is intended for speech, Multimedia Message Service (MMS) transmission and 4G free roaming hotspot. It is equipped with GPRS/EDGE class 12 for GSM850/900/DCS1800/PCS1900, GPS,Bluetooth and Wi-Fi functions. For more information see the following datasheet. Vice board(Modem2): The EUT Vice board support GSM850/900/DCS1800/PCS1900, CDMA 800/1900MHz, WCDMA Band 1/2/4/5/8. It is intended for system localization. It is equipped with GPRS/EDGE class 12 for GSM850/900/DCS1800/PCS1900

4.2 Details of E.U.T.

Operation Frequency	: GSM/GPRS/EDGE 850: 824~849MHz PCS/GPRS/EDGE 1900: 1850~1910MHz CDMA800: 824.70~848.31MHz CDMA1900: 1851.25~1908.75MHz WCDMA Band II: 1850~1910MHz WCDMA Band IV: 1710~1755MHz WCDMA Band V: 824~849MHz

	LTE Band 2: 1850~1910MHz LTE Band 4: 1710~1755MHz LTE Band 5: 824~849MHz LTE Band 17: 706~714MHz LTE Band 41: 2498~2688MHz WiFi: 802.11b/g/n HT20: 2412~2462MHz Bluetooth: 2402~2480MHz
Max. RF output power	: Main Board: GSM 850: 32.62dBm PCS1900:29.68dBm CDMA800:24.64dBm CDMA1900:24.47dBm WCDMA Band II: 22.30dBm WCDMA Band V: 22.25dBm WCDMA Band IV: 22.59dBm LTE Band 2: 23.49dBm LTE Band 4: 23.5dBm LTE Band 5: 23.63dBm LTE Band 17: 23.79dBm LTE Band 41: 23.85dBm Vice Board: GSM 850: 32.75dBm PCS1900:29.75dBm CDMA800:24.81dBm CDMA1900:24.44dBm WCDMA Band II: 22.46dBm WCDMA Band V: 22.55dBm WCDMA Band IV: 22.68dBm WiFi(2.4G): 9.28dBm Bluetooth: -0.37dBm
Type of Modulation	: GSM,GPRS: GMSK CDMA2000:QPSK CDMA2000 1xEV-DO:QPSK,8PSK WCDMA: BPSK LTE: QPSK, 16QAM WiFi: CCK, OFDM Bluetooth: GFSK, Pi/4 DQPSK,8DPSK
Antenna installation	: GSM/CDMA/WCDMA/LTE: internal permanent antenna WiFi/Bluetooth: internal permanent antenna
Antenna Gain	Main Board: GSM 850: -0.95dBi PCS1900: -1.9dBi CDMA800: -0.95dBi CDMA1900: -1.9dBi WCDMA Band II: -1.9dBi

WCDMA Band IV: -2.6dBi
WCDMA Band V: -0.95dBi
LTE Band 2: -1.8dBi
LTE Band 4: 0.05dBi
LTE Band 5: -0.95dBi
LTE Band 7: 0.9dBi
LTE Band 17: -4.5dBi
LTE Band 41: 1.5dBi
Vice Board:
GSM 850: -0.95dBi
PCS1900: -1.9dBi
CDMA800: -0.95dBi
CDMA1900: -1.9dBi
WCDMA Band II: -1.9dBi
WCDMA Band IV: -2.6dBi
WCDMA Band V: -0.95dBi
WiFi(2.4G): 0dBi
Bluetooth: 0dBi

Technical Data: Battery DC 3.8V, 13.3Wh
DC 5V, 1.0A, charging from mini USB port

4.3 Channel List

WIFI

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2452	10	2457	11	2462	12	-

BT BLE

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	1	2404	2	2406	3	2408
4	2410	5	2412	6	2414	7	2416
8	2418	9	2420	10	2422	11	2424
12	2426	13	2428	14	2430	15	2432
16	2434	17	2436	18	2438	19	2440
20	2442	21	2444	22	2446	23	2448
24	2450	25	2452	26	2454	27	2456
28	2458	29	2460	30	2462	31	2464
32	2466	33	2468	34	2470	35	2472
36	2474	37	2476	38	2478	39	2480

4.4 Test Mode

Table 1 Tests Carried Out Under FCC part 15.247

Test Items	Mode	Data Rate	Channel	TX/RX
Maximum Peak Output Power	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
Power Spectral Density	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
6dB Bandwidth	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
Band Edge	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
Transmitter Spurious Emissions	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX

Table 2 Tests Carried Out Under FCC part 15.247

Test Items	Mode	Data Rate	Channel	TX/RX
Maximum Peak Output Power	BT BLE	1 Mbps	0/19/39	TX
Power Spectral Density	BT BLE	1 Mbps	0/19/39	TX
6dB Bandwidth	BT BLE	1 Mbps	0/19/39	TX
Band Edge	BT BLE	1 Mbps	0/19/39	TX
Transmitter Spurious Emissions	BT BLE	1 Mbps	0/19/39	TX

Note :Parameters set by test software during channel & power tests, the software provided by the customer was used to set the operating channels as well as the output power level. The RF output power set is the power expected by the manufacturer and is going to be fixed on the firmware of the final product .

4.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

  Waltek Services(Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2015.

- **FCC Test Site 1#– Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 328995, December 3, 2014.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions at Mains Terminals Disturbance Voltage						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.15,2015	Sep.14,2016
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.15,2015	Sep.14,2016
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.15,2015	Sep.14,2016
4.	Cable	LARGE	RF300	-	Sep.15,2015	Sep.14,2016
3m Semi-anechoic Chamber for Radiation						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	EMC Analyzer	Agilent	E7405A	MY45114943	Sep.15,2015	Sep.14,2016
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.15,2015	Sep.14,2016
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Apr.18,2015	Apr.17,2016
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.15,2015	Sep.14,2016
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.18,2015	Apr.17,2016
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	669	Apr.18,2015	Apr.17,2016
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Sep.15,2015	Sep.14,2016
8	Coaxial Cable (above 1GHz)	Top	1000MHz-25GHz	EW02014-7	Apr.10,2015	Apr.09,2016
9	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	Sep.15,2015	Sep.14,2016
10	Universal Radio Communication Tester	R&S	CMU 200	112461	Apr.10,2015	Apr.09,2016
11	Signal Generator	R&S	SMR20	100046	Sep.15,2015	Sep.14,2016
RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	Aug. 15,2015	Aug.14,2016
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Aug. 15,2015	Aug.14,2016
3.	Humidity Chamber	GF	GTH-225-40-1P	IAA061213	Aug. 15,2015	Aug.14,2016

5.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
/	/	/	/

5.3 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (30M~1000MHz)
	± 5.47 dB (1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

5.4 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

6 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.10:2009
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz
	56 dBμV between 0.5MHz & 5MHz
	60 dBμV between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

6.1 E.U.T. Operation

Operating Environment **:**

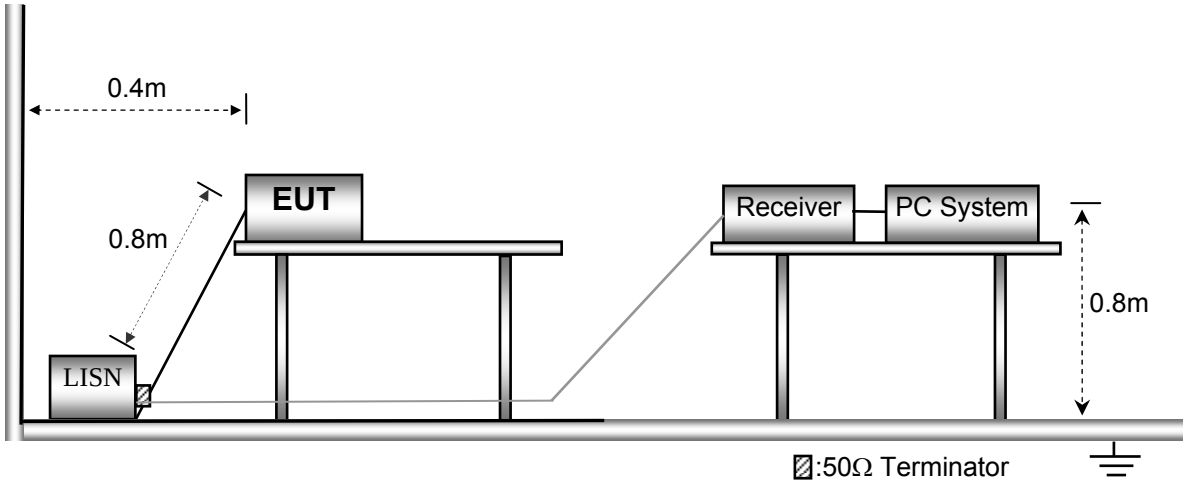
Temperature:	21.5 °C
Humidity:	51.9 % RH
Atmospheric Pressure:	101.2kPa

EUT Operation **:**

The test was performed in WIFI link mode(Wifi /BT BLE), the worst data were shown in the report.

6.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10.



6.3 Measurement Description

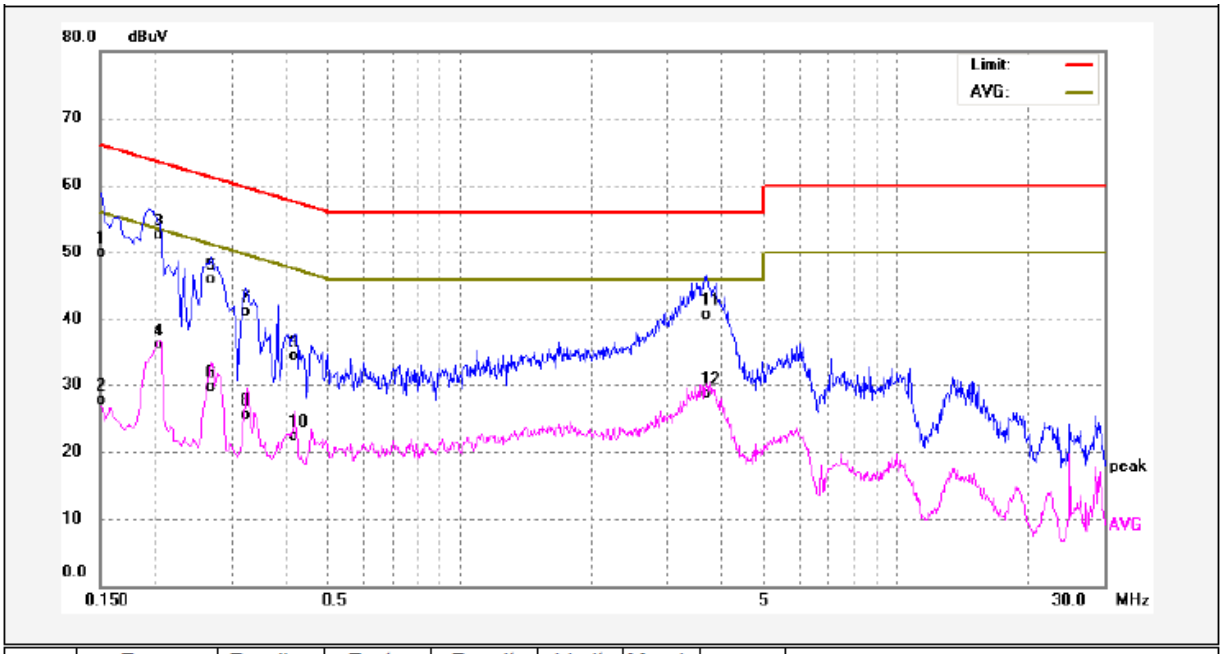
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.4 Conducted Emission Test Result

An initial pre-scan was performed on the live and neutral lines.

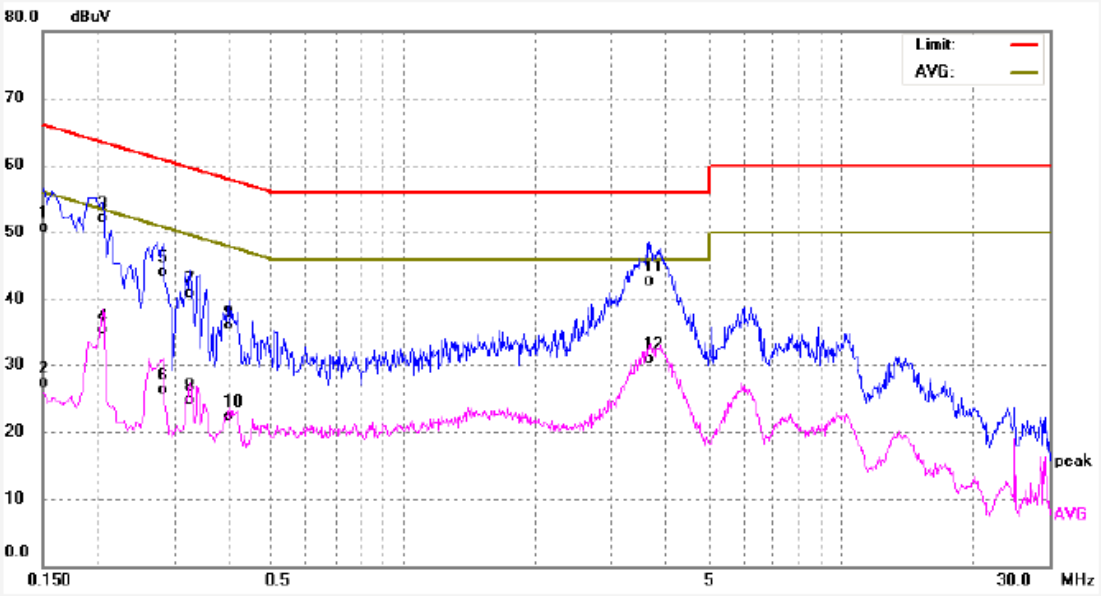
Worst Mode: WIFI mode

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	39.83	10.10	49.93	65.99	-16.06	QP	
2	0.1500	17.68	10.10	27.78	55.99	-28.21	AVG	
3	0.2060	42.41	10.10	52.51	63.36	-10.85	QP	
4	0.2060	25.97	10.10	36.07	53.36	-17.29	AVG	
5	0.2700	35.89	10.10	45.99	61.12	-15.13	QP	
6	0.2700	19.64	10.10	29.74	51.12	-21.38	AVG	
7	0.3260	30.99	10.11	41.10	59.55	-18.45	QP	
8	0.3260	15.35	10.11	25.46	49.55	-24.09	AVG	
9	0.4180	24.11	10.11	34.22	57.49	-23.27	QP	
10	0.4180	12.11	10.11	22.22	47.49	-25.27	AVG	
11	3.6700	30.41	10.22	40.63	56.00	-15.37	QP	
12	3.6700	18.56	10.22	28.78	46.00	-17.22	AVG	

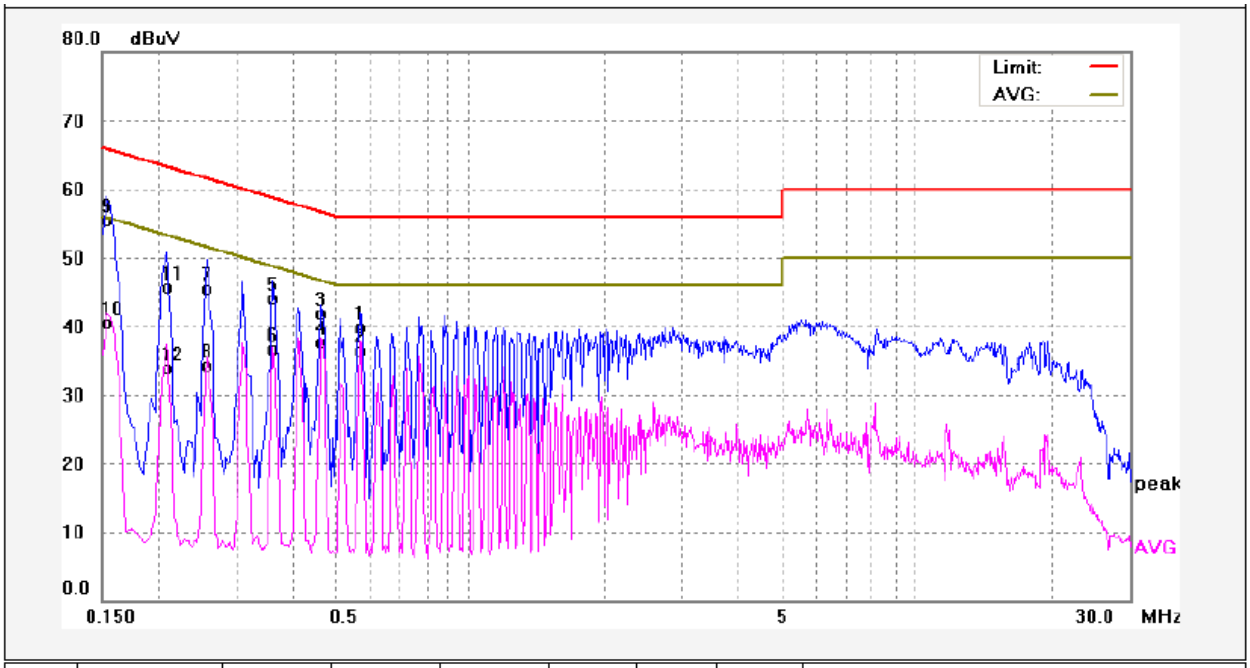
Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	40.51	10.10	50.61	65.99	-15.38	QP	
2	0.1500	17.15	10.10	27.25	55.99	-28.74	AVG	
3	0.2060	42.00	10.10	52.10	63.36	-11.26	QP	
4	0.2060	25.29	10.10	35.39	53.36	-17.97	AVG	
5	0.2819	33.98	10.11	44.09	60.76	-16.67	QP	
6	0.2819	16.13	10.11	26.24	50.76	-24.52	AVG	
7	0.3260	30.76	10.11	40.87	59.55	-18.68	QP	
8	0.3260	14.53	10.11	24.64	49.55	-24.91	AVG	
9	0.3980	25.71	10.11	35.82	57.89	-22.07	QP	
10	0.3980	12.23	10.11	22.34	47.89	-25.55	AVG	
11	3.6780	32.45	10.22	42.67	56.00	-13.33	QP	
12	3.6780	20.65	10.22	30.87	46.00	-15.13	AVG	

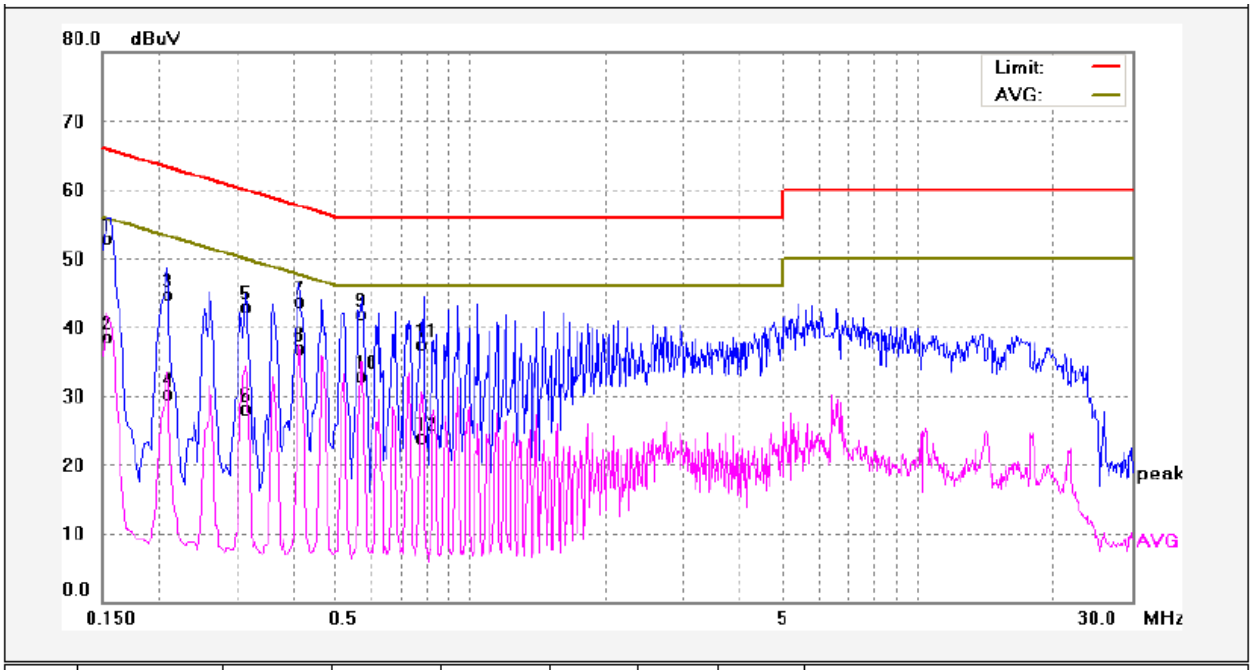
Worst Mode: BLE mode

Live Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.5700	29.61	10.20	39.81	56.00	-16.19	QP	
2	0.5700	26.21	10.20	36.41	46.00	-9.59	AVG	
3	0.4660	31.69	10.19	41.88	56.58	-14.70	QP	
4	0.4660	27.58	10.19	37.77	46.58	-8.81	AVG	
5	0.3620	34.00	10.17	44.17	58.68	-14.51	QP	
6	0.3620	26.52	10.17	36.69	48.68	-11.99	AVG	
7	0.2580	35.35	10.16	45.51	61.49	-15.98	QP	
8	0.2580	24.13	10.16	34.29	51.49	-17.20	AVG	
9	0.1539	45.40	10.13	55.53	65.78	-10.25	QP	
10	0.1539	30.41	10.13	40.54	55.78	-15.24	AVG	
11	0.2100	35.62	10.15	45.77	63.20	-17.43	QP	
12	0.2100	23.84	10.15	33.99	53.20	-19.21	AVG	

Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1539	42.87	10.13	53.00	65.78	-12.78	QP	
2	0.1539	28.37	10.13	38.50	55.78	-17.28	AVG	
3	0.2100	34.54	10.15	44.69	63.20	-18.51	QP	
4	0.2100	20.24	10.15	30.39	53.20	-22.81	AVG	
5	0.3140	32.68	10.17	42.85	59.86	-17.01	QP	
6	0.3140	17.92	10.17	28.09	49.86	-21.77	AVG	
7	0.4140	33.60	10.18	43.78	57.57	-13.79	QP	
8	0.4140	26.68	10.18	36.86	47.57	-10.71	AVG	
9	0.5740	31.73	10.20	41.93	56.00	-14.07	QP	
10	0.5740	22.79	10.20	32.99	46.00	-13.01	AVG	
11	0.7860	27.33	10.21	37.54	56.00	-18.46	QP	
12	0.7860	13.63	10.21	23.84	46.00	-22.16	AVG	

7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: ANSI C63.10:2009

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment **:**

Temperature: 23.5 °C

Humidity: 52.1 % RH

Atmospheric Pressure: 101.2kPa

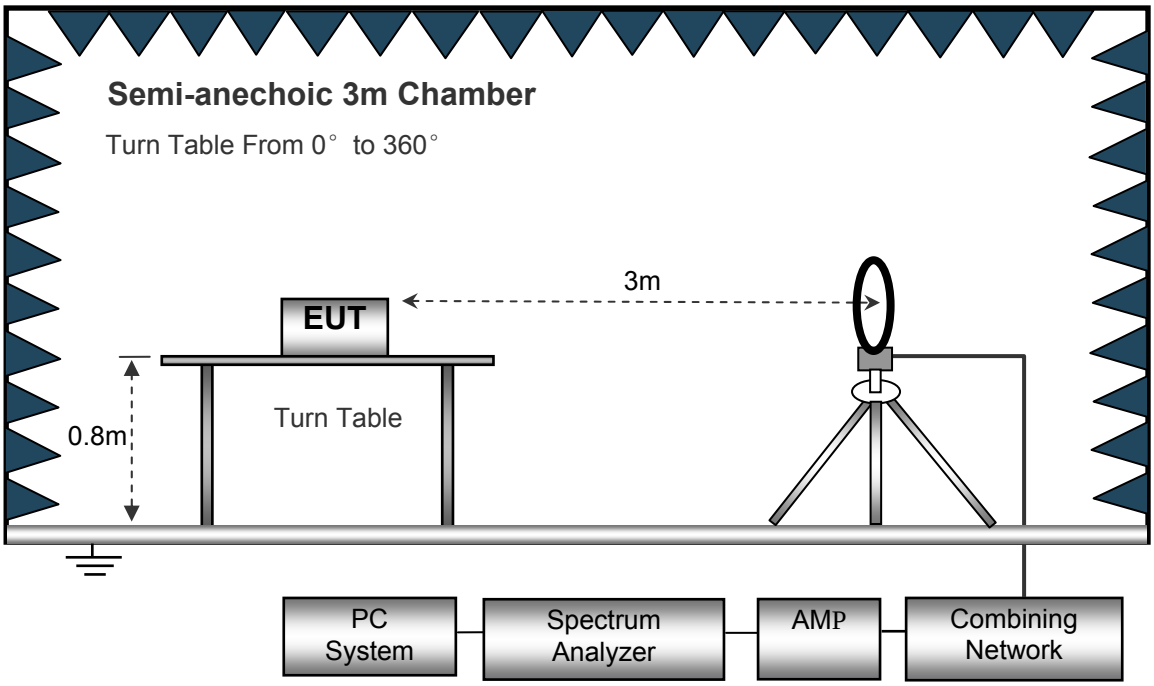
EUT Operation **:**

The test was performed in WIFI/BT BLE link mode, the test data were shown in the report.

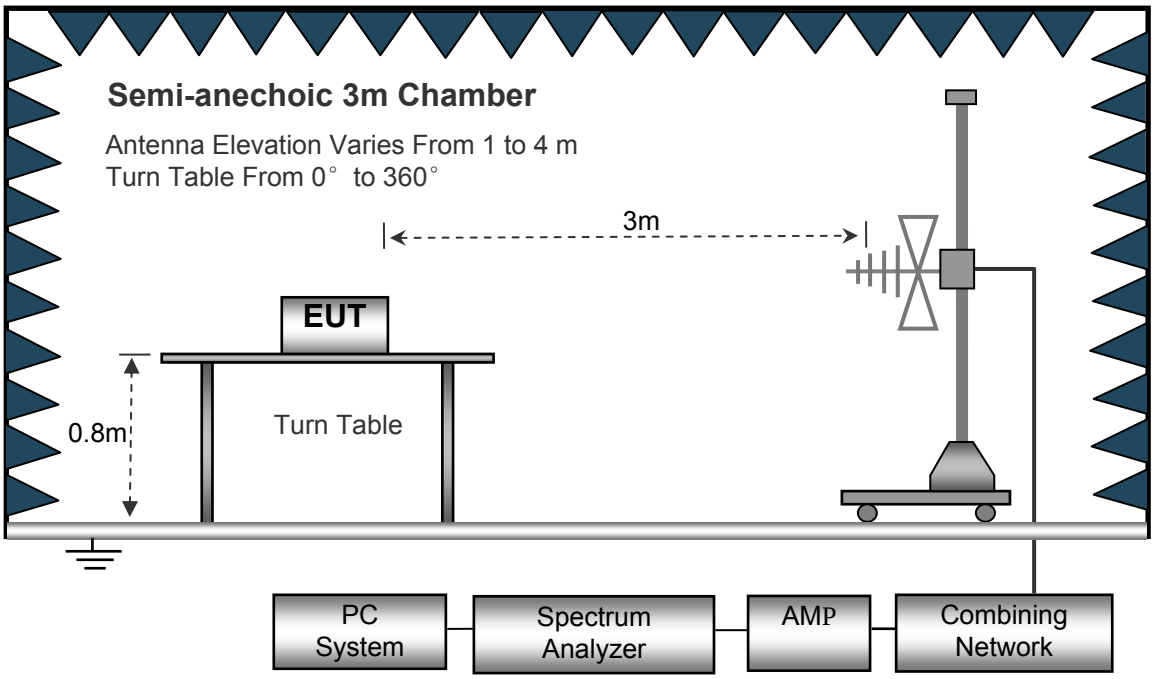
7.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.

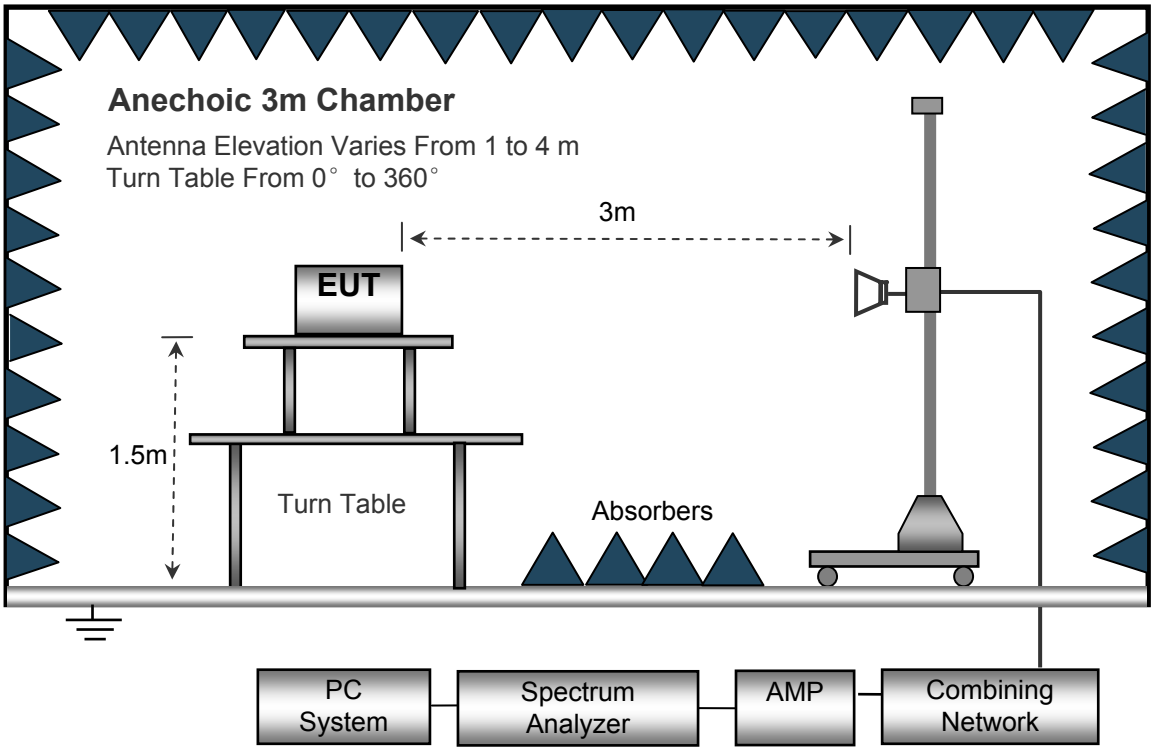
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



7.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed ..... Auto
IF Bandwidth..... 10kHz
Video Bandwidth..... 10kHz
Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 3MHz
Detector ..... Ave.
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 10Hz

7.4 Test Procedure

1. The EUT is placed on a turntable, which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in X axis,so the worst data were shown as follow.
8. A 2.4GHz high –pass filter is used druing radiated emissions above 1GHz measurement.

7.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Limit

7.6 Summary of Test Results

Wifi:

Test Frequency : 19.2 ~ 30MHzMHz

Frequency (MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
	dBμV @3m	PK/QP	dB/m	dB	dBμV/m @30m	dBμV/m @30m	dB
25.65	24.76	QP	19.90	40.00	4.66	29.54	-24.88

Test Frequency : 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11b: Low Channel 2412MHz									
223.45	41.05	QP	44	1.1	H	-11.62	29.43	46.00	-16.57
223.45	36.26	QP	324	1.1	V	-11.62	24.64	46.00	-21.36
4824.00	50.44	PK	303	1.9	V	-1.06	49.38	74.00	-24.62
4824.00	46.32	Ave	303	1.9	V	-1.06	45.26	54.00	-8.74
7236.00	41.08	PK	190	1.7	H	1.33	42.41	74.00	-31.59
7236.00	41.96	Ave	190	1.7	H	1.33	43.29	54.00	-10.71
2312.05	46.32	PK	92	1.9	V	-13.19	33.13	74.00	-40.87
2312.05	37.94	Ave	92	1.9	V	-13.19	24.75	54.00	-29.25
2379.51	42.57	PK	65	1.4	H	-13.14	29.43	74.00	-44.57
2379.51	36.72	Ave	65	1.4	H	-13.14	23.58	54.00	-30.42
2483.87	44.74	PK	120	1.6	V	-13.08	31.66	74.00	-42.34
2483.87	38.82	Ave	120	1.6	V	-13.08	25.74	54.00	-28.26

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11b: Middle Channel 2437MHz									
223.45	40.76	QP	24	1.8	H	-11.62	29.14	46.00	-16.86
223.45	37.64	QP	161	1.4	V	-11.62	26.02	46.00	-19.98
4874.00	51.65	PK	221	1.5	V	-0.62	51.03	74.00	-22.97
4874.00	46.68	Ave	221	1.5	V	-0.62	46.06	54.00	-7.94
7311.00	41.35	PK	18	1.4	H	2.21	43.56	74.00	-30.44
7311.00	41.93	Ave	18	1.4	H	2.21	44.14	54.00	-9.86
2343.57	45.88	PK	110	1.1	V	-13.19	32.69	74.00	-41.31
2343.57	39.24	Ave	110	1.1	V	-13.19	26.05	54.00	-27.95
2380.70	42.55	PK	18	1.7	H	-13.14	29.41	74.00	-44.59
2380.70	36.36	Ave	18	1.7	H	-13.14	23.22	54.00	-30.78
2488.03	44.46	PK	305	1.7	V	-13.08	31.38	74.00	-42.62
2488.03	37.26	Ave	305	1.7	V	-13.08	24.18	54.00	-29.82

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11b: High Channel 2462MHz									
223.45	39.52	QP	58	1.3	H	-11.62	27.90	46.00	-18.10
223.45	38.07	QP	128	1.3	V	-11.62	26.45	46.00	-19.55
4924.00	51.76	PK	105	1.5	V	-0.24	51.52	74.00	-22.48
4924.00	46.74	Ave	105	1.5	V	-0.24	46.50	54.00	-7.50
7386.00	41.47	PK	110	1.6	H	2.84	44.31	74.00	-29.69
7386.00	40.53	Ave	110	1.6	H	2.84	43.37	54.00	-10.63
2329.65	45.44	PK	182	1.6	V	-13.19	32.25	74.00	-41.75
2329.65	37.66	Ave	182	1.6	V	-13.19	24.47	54.00	-29.53
2388.13	43.14	PK	148	1.8	H	-13.14	30.00	74.00	-44.00
2388.13	37.15	Ave	148	1.8	H	-13.14	24.01	54.00	-29.99
2494.68	43.40	PK	47	1.1	V	-13.08	30.32	74.00	-43.68
2494.68	36.06	Ave	47	1.1	V	-13.08	22.98	54.00	-31.02

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11g: Low Channel 2412MHz									
223.45	39.90	QP	97	1.7	H	-11.62	28.28	46.00	-17.72
223.45	37.16	QP	145	1.5	V	-11.62	25.54	46.00	-20.46
4824.00	51.25	PK	158	1.3	V	-1.06	50.19	74.00	-23.81
4824.00	47.25	Ave	158	1.3	V	-1.06	46.19	54.00	-7.81
7236.00	40.87	PK	177	1.7	H	1.33	42.20	74.00	-31.80
7236.00	40.15	Ave	177	1.7	H	1.33	41.48	54.00	-12.52
2318.99	46.56	PK	77	1.1	V	-13.19	33.37	74.00	-40.63
2318.99	38.16	Ave	77	1.1	V	-13.19	24.97	54.00	-29.03
2387.37	42.95	PK	157	1.2	H	-13.14	29.81	74.00	-44.19
2387.37	36.81	Ave	157	1.2	H	-13.14	23.67	54.00	-30.33
2485.32	42.29	PK	86	1.7	V	-13.08	29.21	74.00	-44.79
2485.32	38.51	Ave	86	1.7	V	-13.08	25.43	54.00	-28.57

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11g: Middle Channel 2437MHz									
223.45	40.57	QP	274	1.4	H	-11.62	28.95	46.00	-17.05
223.45	38.39	QP	254	1.5	V	-11.62	26.77	46.00	-19.23
4874.00	50.00	PK	13	1.3	V	-0.62	49.38	74.00	-24.62
4874.00	47.17	Ave	13	1.3	V	-0.62	46.55	54.00	-7.45
7311.00	42.11	PK	37	1.1	H	2.21	44.32	74.00	-29.68
7311.00	40.86	Ave	37	1.1	H	2.21	43.07	54.00	-10.93
2322.27	46.27	PK	304	1.7	V	-13.19	33.08	74.00	-40.92
2322.27	38.06	Ave	304	1.7	V	-13.19	24.87	54.00	-29.13
2362.99	42.09	PK	250	1.8	H	-13.14	28.95	74.00	-45.05
2362.99	38.91	Ave	250	1.8	H	-13.14	25.77	54.00	-28.23
2498.13	43.58	PK	297	1.6	V	-13.08	30.50	74.00	-43.50
2498.13	38.49	Ave	297	1.6	V	-13.08	25.41	54.00	-28.59

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11g: High Channel 2462MHz									
223.45	40.93	QP	343	1.7	H	-11.62	29.31	46.00	-16.69
223.45	38.55	QP	244	1.6	V	-11.62	26.93	46.00	-19.07
4924.00	51.09	PK	55	2.0	V	-0.24	50.85	74.00	-23.15
4924.00	45.91	Ave	55	2.0	V	-0.24	45.67	54.00	-8.33
7386.00	43.42	PK	221	1.2	H	2.84	46.26	74.00	-27.74
7386.00	41.62	Ave	221	1.2	H	2.84	44.46	54.00	-9.54
2331.75	45.31	PK	54	1.1	V	-13.19	32.12	74.00	-41.88
2331.75	39.75	Ave	54	1.1	V	-13.19	26.56	54.00	-27.44
2363.55	42.95	PK	67	1.5	H	-13.14	29.81	74.00	-44.19
2363.55	37.51	Ave	67	1.5	H	-13.14	24.37	54.00	-29.63
2494.72	43.92	PK	73	1.1	V	-13.08	30.84	74.00	-43.16
2494.72	37.85	Ave	73	1.1	V	-13.08	24.77	54.00	-29.23

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
n20: Low Channel 2412MHz									
223.45	40.95	QP	38	2.0	H	-11.62	29.33	46.00	-16.67
223.45	39.08	QP	248	1.4	V	-11.62	27.46	46.00	-18.54
4824.00	50.45	PK	127	1.9	V	-1.06	49.39	74.00	-24.61
4824.00	45.47	Ave	127	1.9	V	-1.06	44.41	54.00	-9.59
7236.00	44.11	PK	212	1.1	H	1.33	45.44	74.00	-28.56
7236.00	40.59	Ave	212	1.1	H	1.33	41.92	54.00	-12.08
2342.32	45.41	PK	213	1.5	V	-13.19	32.22	74.00	-41.78
2342.32	38.60	Ave	213	1.5	V	-13.19	25.41	54.00	-28.59
2368.67	43.38	PK	239	1.2	H	-13.14	30.24	74.00	-43.76
2368.67	37.03	Ave	239	1.2	H	-13.14	23.89	54.00	-30.11
2495.37	42.73	PK	215	1.6	V	-13.08	29.65	74.00	-44.35
2495.37	38.80	Ave	215	1.6	V	-13.08	25.72	54.00	-28.28

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
n20: Middle Channel 2437MHz									
223.45	40.64	QP	56	2.0	H	-11.62	29.02	46.00	-16.98
223.45	38.01	QP	37	1.3	V	-11.62	26.39	46.00	-19.61
4874.00	50.17	PK	52	1.1	V	-0.62	49.55	74.00	-24.45
4874.00	46.65	Ave	52	1.1	V	-0.62	46.03	54.00	-7.97
7311.00	45.54	PK	56	1.9	H	2.21	47.75	74.00	-26.25
7311.00	41.79	Ave	56	1.9	H	2.21	44.00	54.00	-10.00
2329.23	45.77	PK	64	2.0	V	-13.19	32.58	74.00	-41.42
2329.23	38.44	Ave	64	2.0	V	-13.19	25.25	54.00	-28.75
2387.92	43.15	PK	102	1.4	H	-13.14	30.01	74.00	-43.99
2387.92	38.64	Ave	102	1.4	H	-13.14	25.50	54.00	-28.50
2498.66	42.27	PK	222	1.6	V	-13.08	29.19	74.00	-44.81
2498.66	38.74	Ave	222	1.6	V	-13.08	25.66	54.00	-28.34

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
n20: High Channel 2462MHz									
223.45	41.74	QP	15	2.0	H	-11.62	30.12	46.00	-15.88
223.45	37.79	QP	331	1.3	V	-11.62	26.17	46.00	-19.83
4924.00	51.41	PK	325	1.9	V	-0.24	51.17	74.00	-22.83
4924.00	47.47	Ave	325	1.9	V	-0.24	47.23	54.00	-6.77
7386.00	46.31	PK	210	1.5	H	2.84	49.15	74.00	-24.85
7386.00	43.18	Ave	210	1.5	H	2.84	46.02	54.00	-7.98
2338.88	45.26	PK	38	1.1	V	-13.19	32.07	74.00	-41.93
2338.88	39.44	Ave	38	1.1	V	-13.19	26.25	54.00	-27.75
2381.49	43.58	PK	278	1.9	H	-13.14	30.44	74.00	-43.56
2381.49	36.60	Ave	278	1.9	H	-13.14	23.46	54.00	-30.54
2487.91	44.06	PK	190	1.7	V	-13.08	30.98	74.00	-43.02
2487.91	38.13	Ave	190	1.7	V	-13.08	25.05	54.00	-28.95

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported.

BT BLE:

Test Frequency : 19.2MHz ~ 30MHz

Frequency (MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
	dBμV @3m	PK/QP	dB/m	dB	dBμV/m @30m	dBμV/m @30m	dB
25.60	27.83	QP	19.90	40.00	7.73	29.54	-21.81

Test Frequency : 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel 2402MHz									
268.32	36.89	QP	337	1.7	H	-13.35	23.54	46.00	-22.46
268.32	41.33	QP	88	1.8	V	-13.35	27.98	46.00	-18.02
4804.00	46.15	PK	6	2.0	V	-1.06	45.09	74.00	-28.91
4804.00	43.52	Ave	6	2.0	V	-1.06	42.46	54.00	-11.54
7206.00	40.62	PK	302	1.8	H	1.33	41.95	74.00	-32.05
7206.00	35.37	Ave	302	1.8	H	1.33	36.70	54.00	-17.30
2313.14	46.31	PK	27	1.6	V	-13.19	33.12	74.00	-40.88
2313.14	39.17	Ave	27	1.6	V	-13.19	25.98	54.00	-28.02
2364.88	44.63	PK	330	1.0	H	-13.14	31.49	74.00	-42.51
2364.88	37.95	Ave	330	1.0	H	-13.14	24.81	54.00	-29.19
2486.19	43.53	PK	100	1.0	V	-13.08	30.45	74.00	-43.55
2486.19	38.48	Ave	100	1.0	V	-13.08	25.40	54.00	-28.60

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Middle Channel 2440MHz									
268.32	36.20	QP	121	1.4	H	-13.35	22.85	46.00	-23.15
268.32	42.26	QP	72	2.0	V	-13.35	28.91	46.00	-17.09
4880.00	46.47	PK	266	1.5	V	-0.62	45.85	74.00	-28.15
4880.00	43.57	Ave	266	1.5	V	-0.62	42.95	54.00	-11.05
7320.00	40.90	PK	151	1.4	H	2.21	43.11	74.00	-30.89
7320.00	34.87	Ave	151	1.4	H	2.21	37.08	54.00	-16.92
2342.84	45.18	PK	259	2.0	V	-13.19	31.99	74.00	-42.01
2342.84	37.61	Ave	259	2.0	V	-13.19	24.42	54.00	-29.58
2357.09	43.05	PK	69	1.3	H	-13.14	29.91	74.00	-44.09
2357.09	36.72	Ave	69	1.3	H	-13.14	23.58	54.00	-30.42
2497.65	44.19	PK	213	1.6	V	-13.08	31.11	74.00	-42.89
2497.65	37.37	Ave	213	1.6	V	-13.08	24.29	54.00	-29.71

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
High Channel 2480MHz									
268.32	35.03	QP	274	1.3	H	-13.35	21.68	46.00	-24.32
268.32	41.69	QP	355	2.0	V	-13.35	28.34	46.00	-17.66
4960.00	45.40	PK	125	1.3	V	-0.24	45.16	74.00	-28.84
4960.00	43.83	Ave	125	1.3	V	-0.24	43.59	54.00	-10.41
7440.00	40.70	PK	162	1.5	H	2.84	43.54	74.00	-30.46
7440.00	34.38	Ave	162	1.5	H	2.84	37.22	54.00	-16.78
2342.84	45.61	PK	357	1.2	V	-13.19	32.42	74.00	-41.58
2342.84	39.58	Ave	357	1.2	V	-13.19	26.39	54.00	-27.61
2372.09	44.62	PK	267	1.2	H	-13.14	31.48	74.00	-42.52
2372.09	37.28	Ave	267	1.2	H	-13.14	24.14	54.00	-29.86
2496.42	44.95	PK	215	1.5	V	-13.08	31.87	74.00	-42.13
2496.42	36.97	Ave	215	1.5	V	-13.08	23.89	54.00	-30.11

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported

8 Conducted Spurious Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016

Test Result: PASS

Limit:

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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

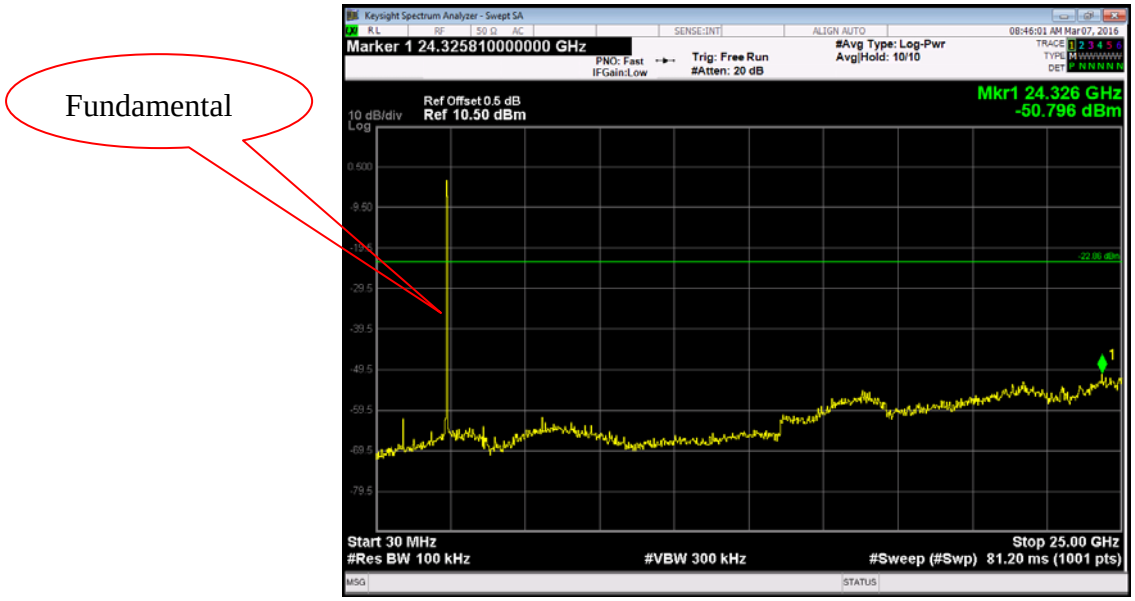
2.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
   RBW = 100kHz, VBW = 300kHz, Sweep = auto
   Detector function = peak, Trace = max hold

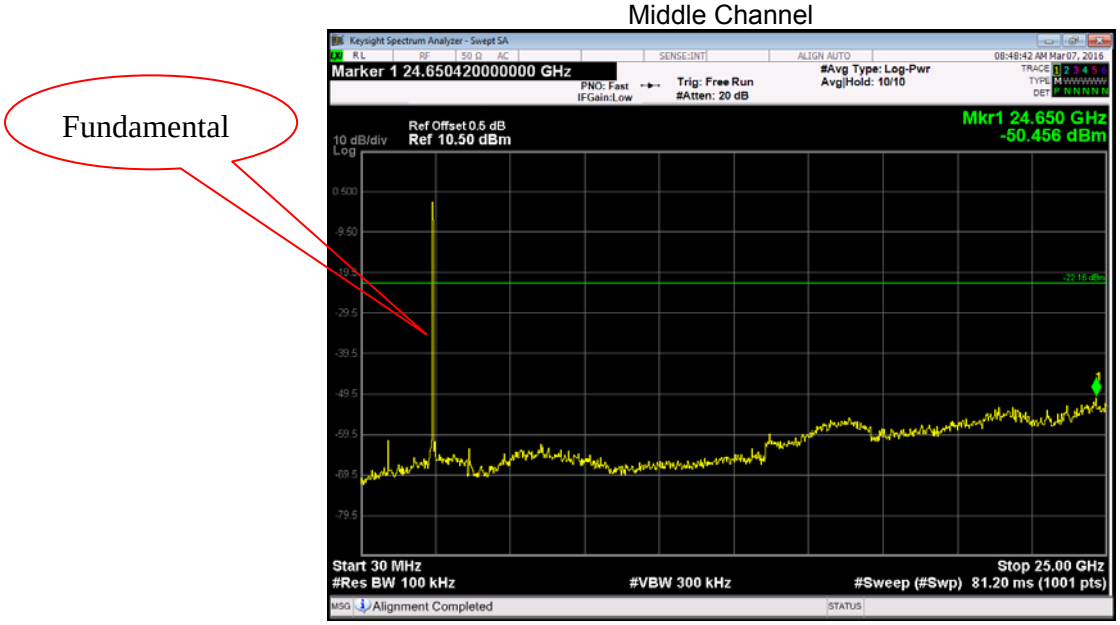
2.2 Test Result

802.11b

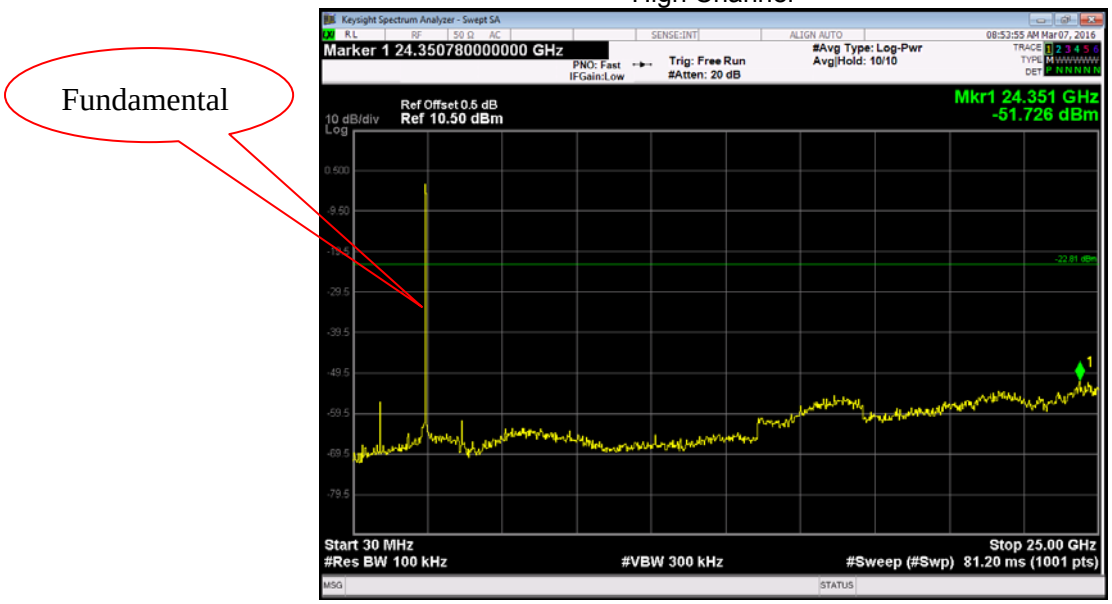
Low Channel



Middle Channel

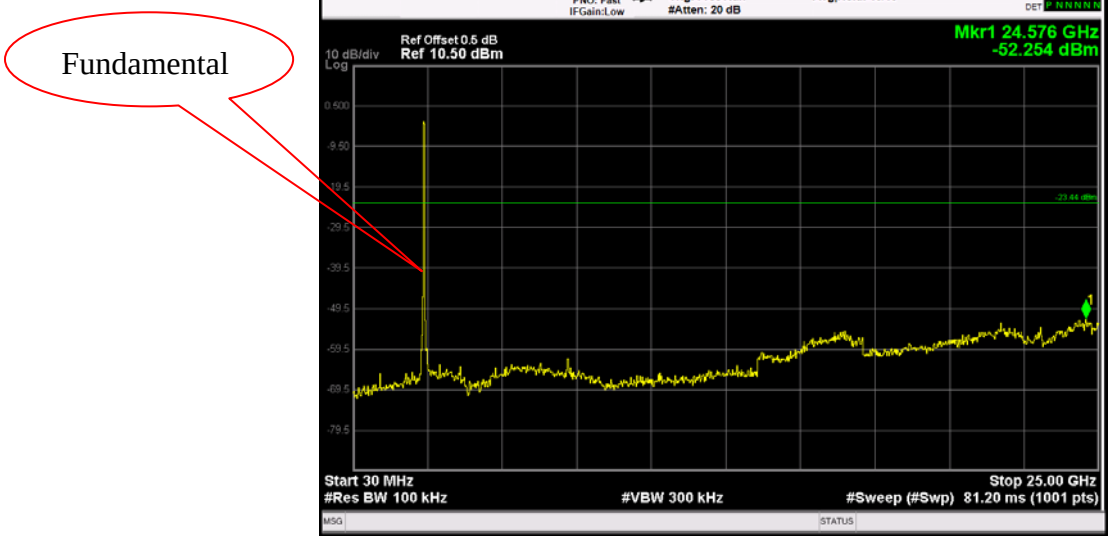


High Channel

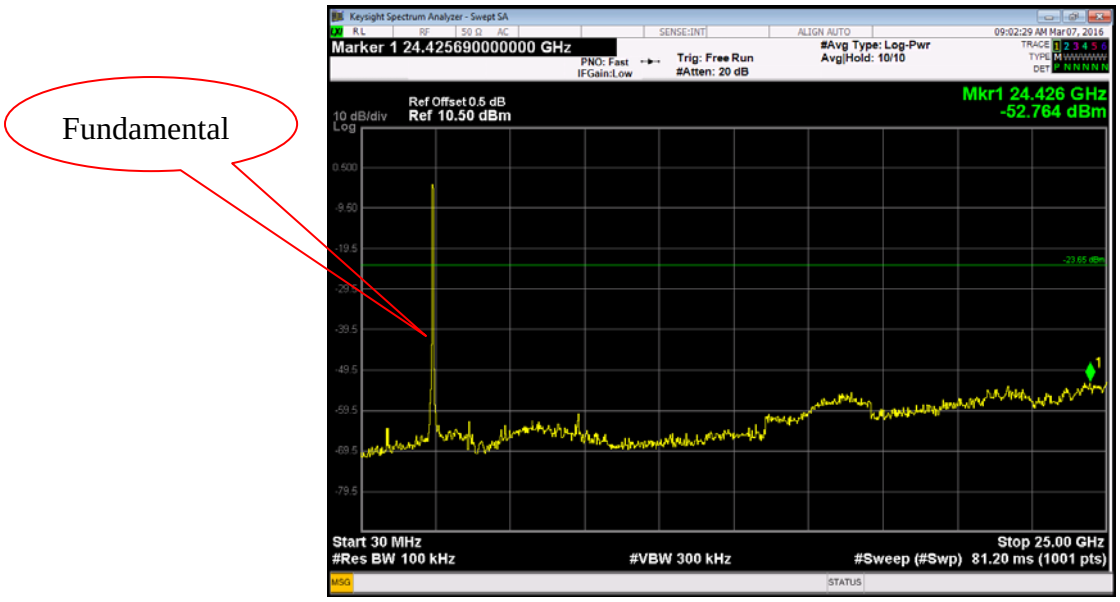


802.11g

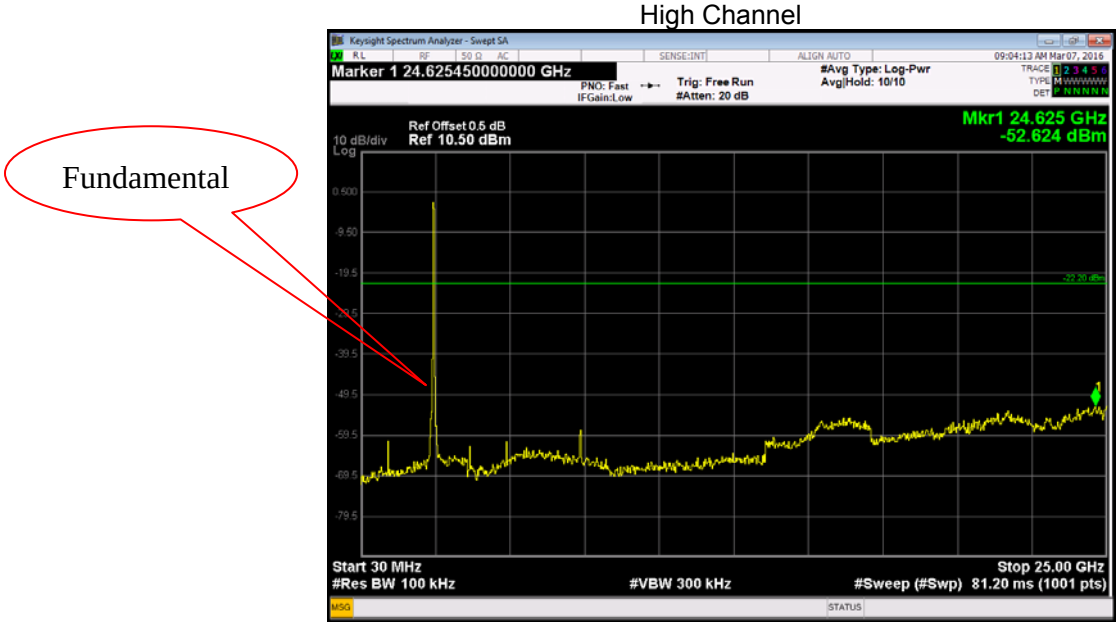
Low Channel



Middle Channel

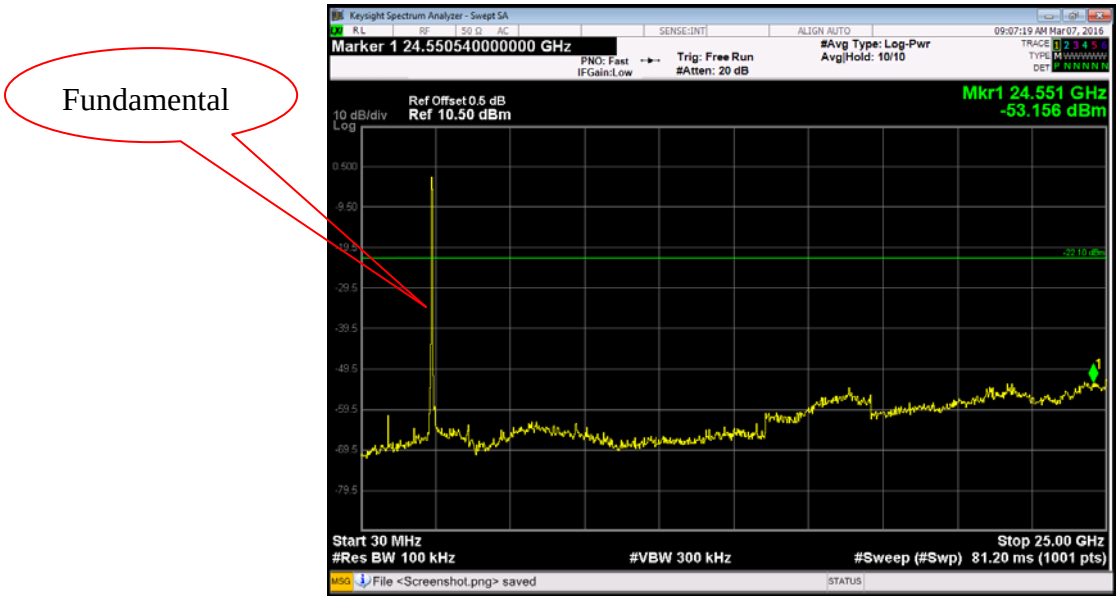


High Channel

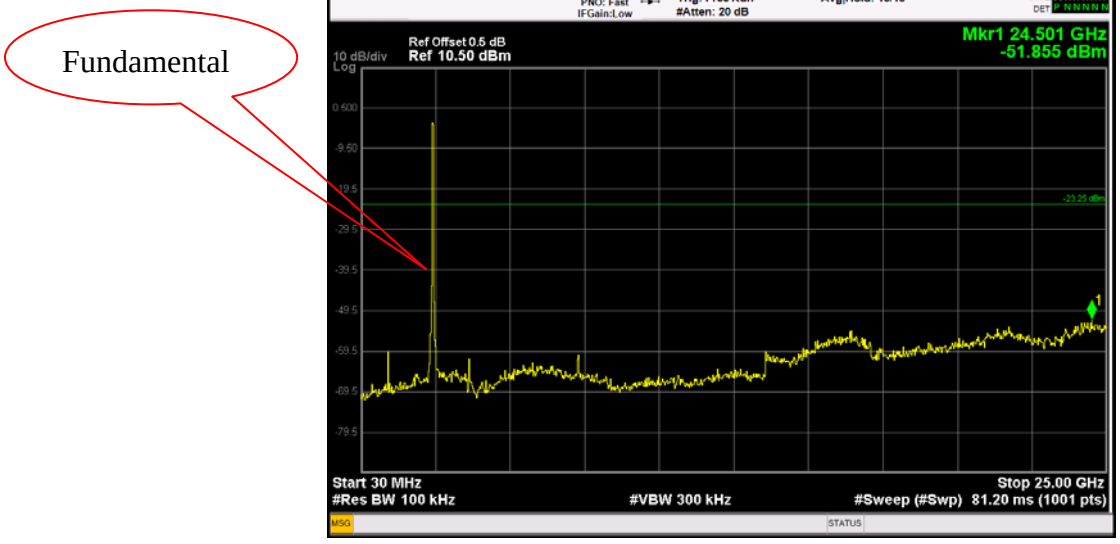


802.11n HT20

Low Channel



Middle Channel

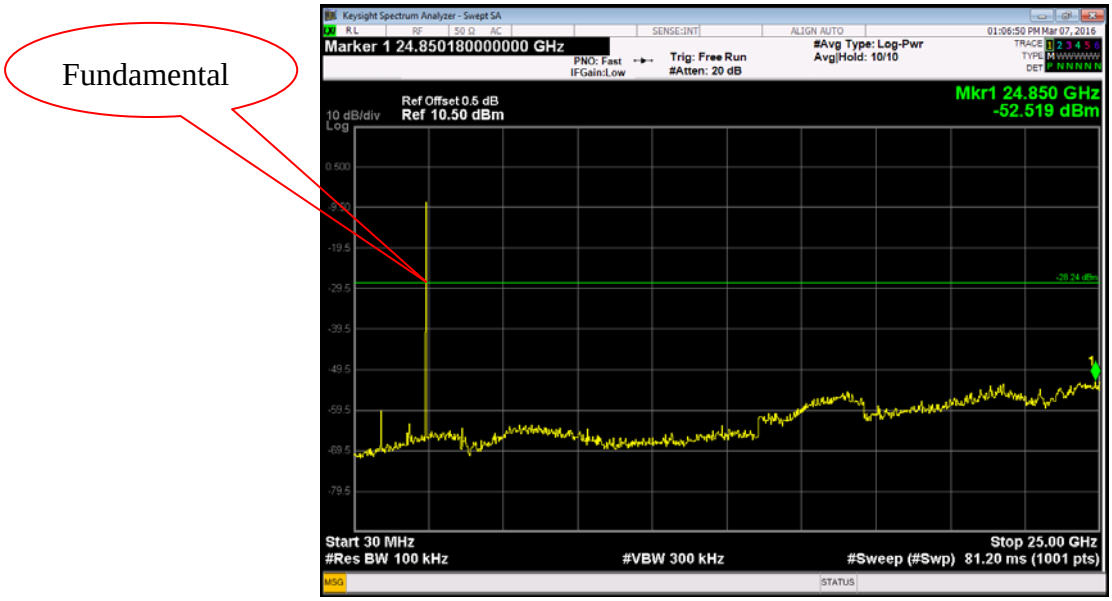


High Channel

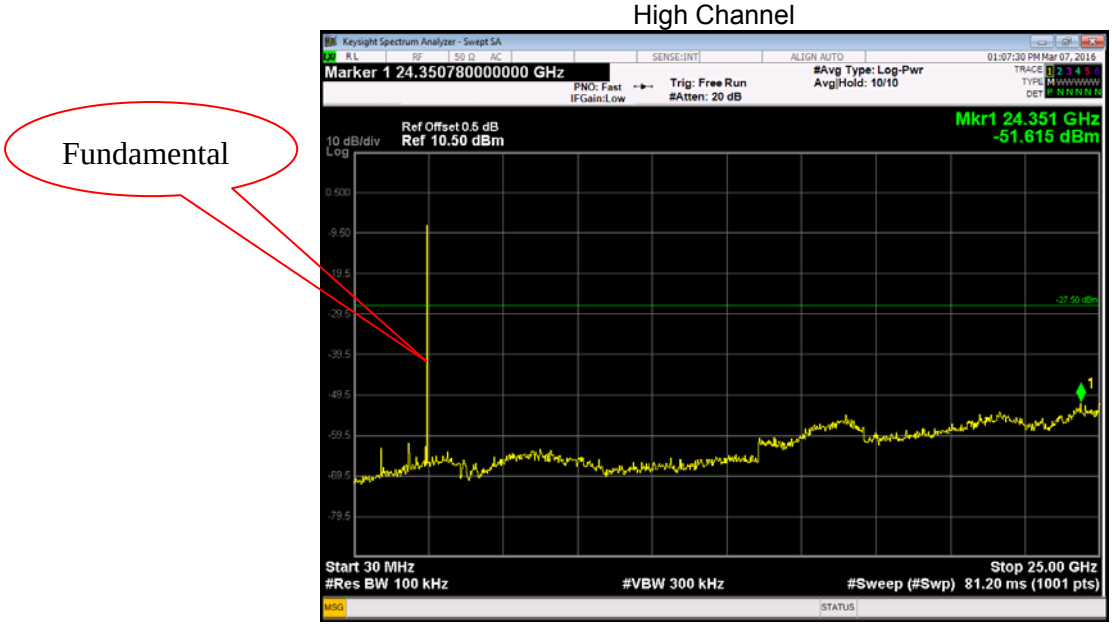
BLE GFSK

Low Channel

Middle Channel



High Channel



9 Band Edge Measurement

Test Requirement:	FCC CFR47 Part 15 Section 15.247
Test Method:	KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016
Test Limit:	Regulation 15.247 (d),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 Mode:	Transmitting

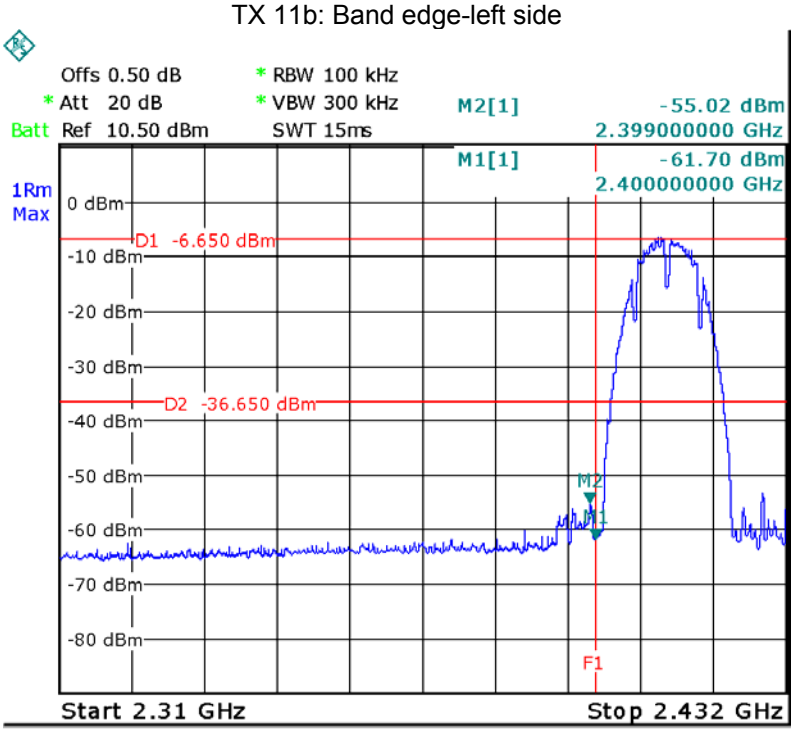
9.1 Test Produce

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. 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.
3. 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.
4. 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.
5. Repeat above procedures until all measured frequencies were complete.

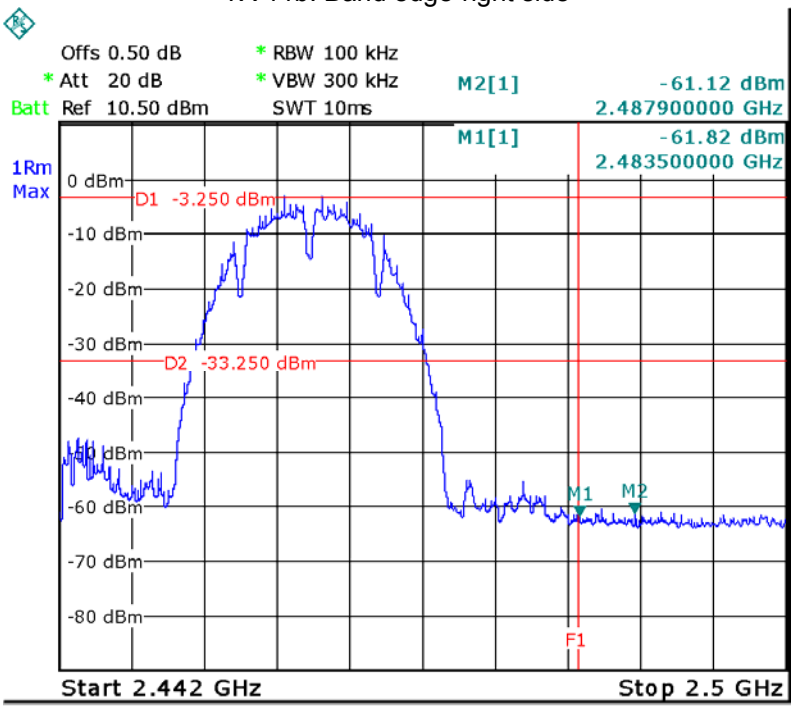
9.2 Test Result

Test result plots shown as follows:

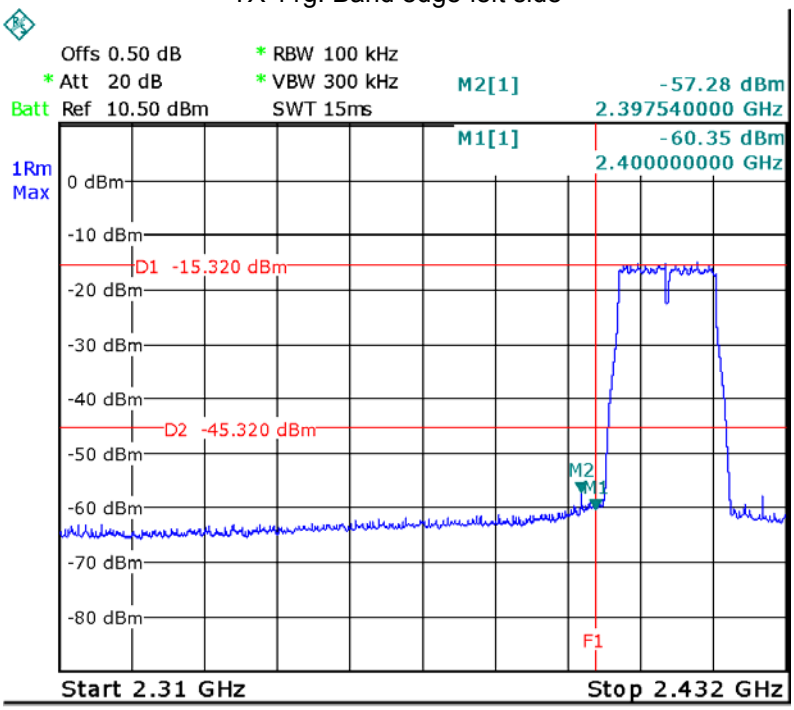
TX 11b: Band edge-left side



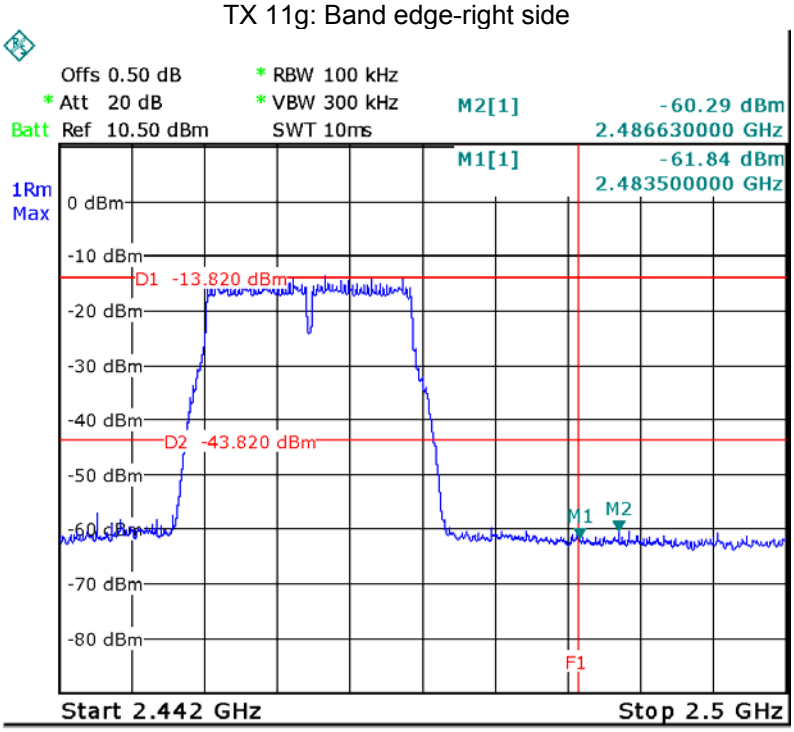
TX 11b: Band edge-right side



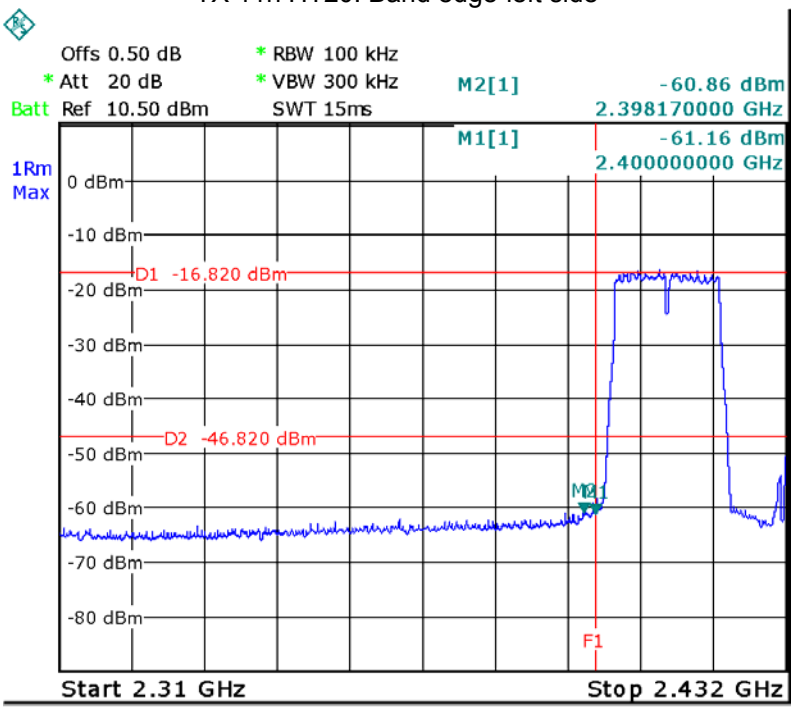
TX 11g: Band edge-left side



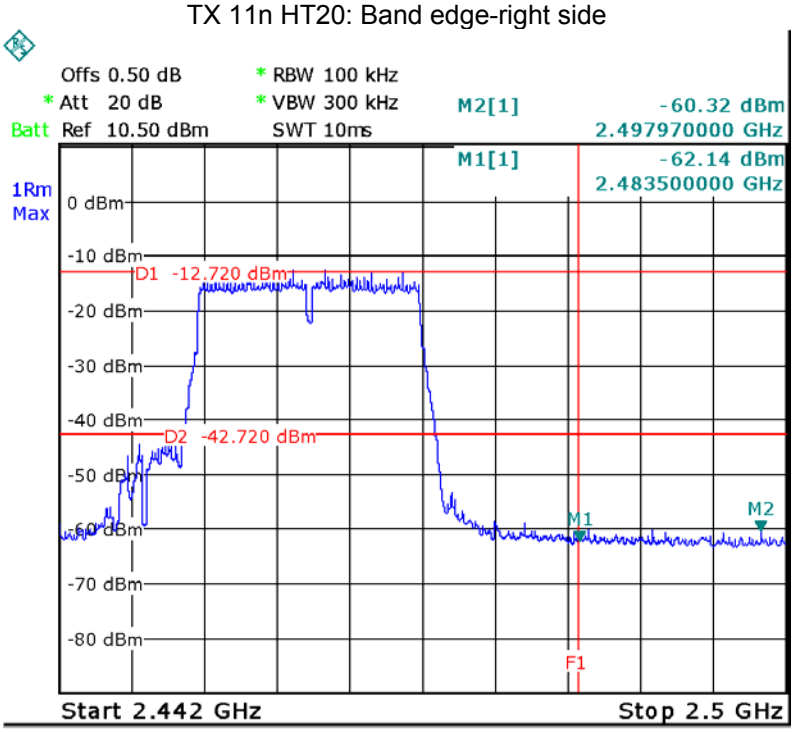
TX 11g: Band edge-right side



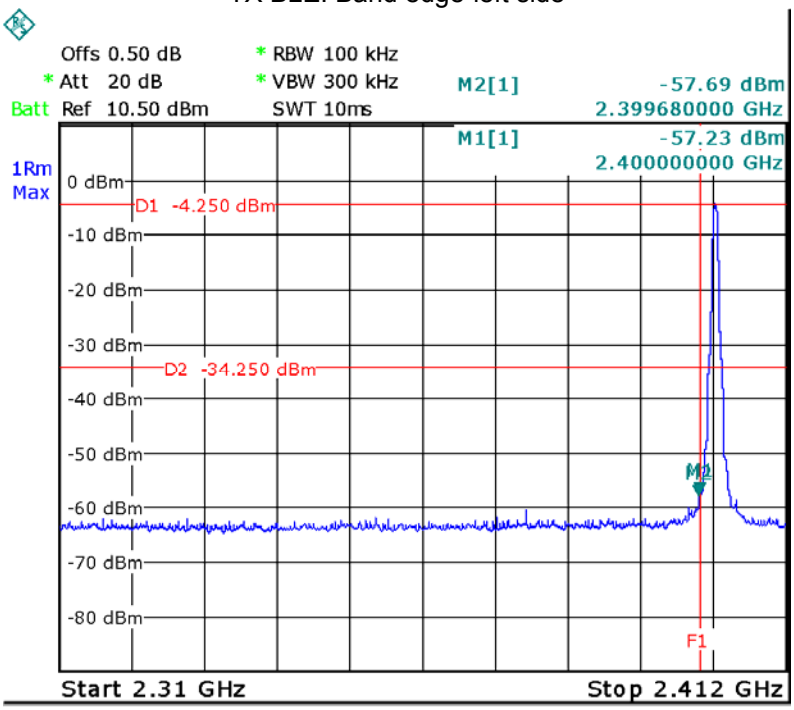
TX 11n HT20: Band edge-left side



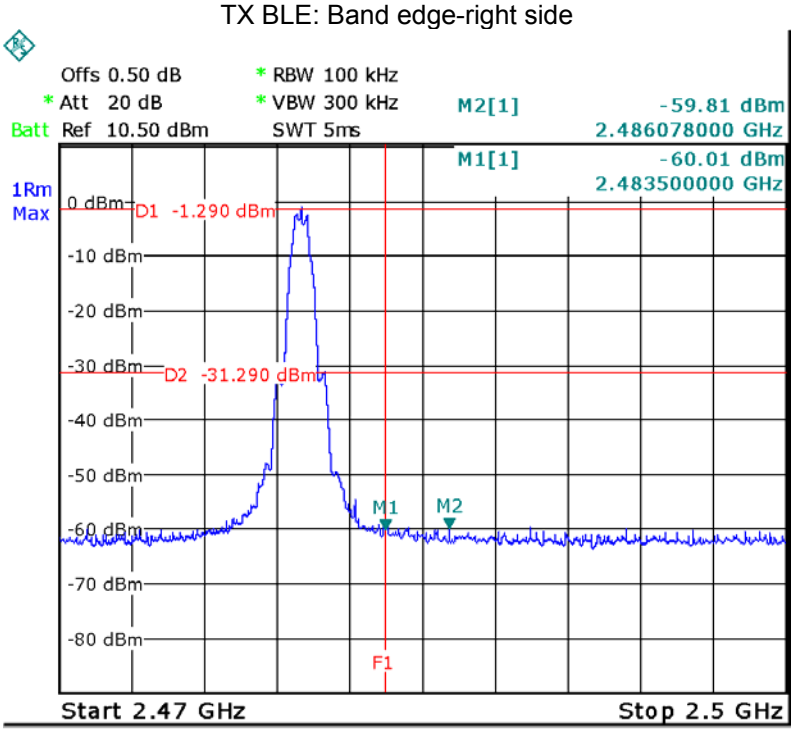
TX 11n HT20: Band edge-right side



TX BLE: Band edge-left side



TX BLE: Band edge-right side



10 6 dB Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016

10.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

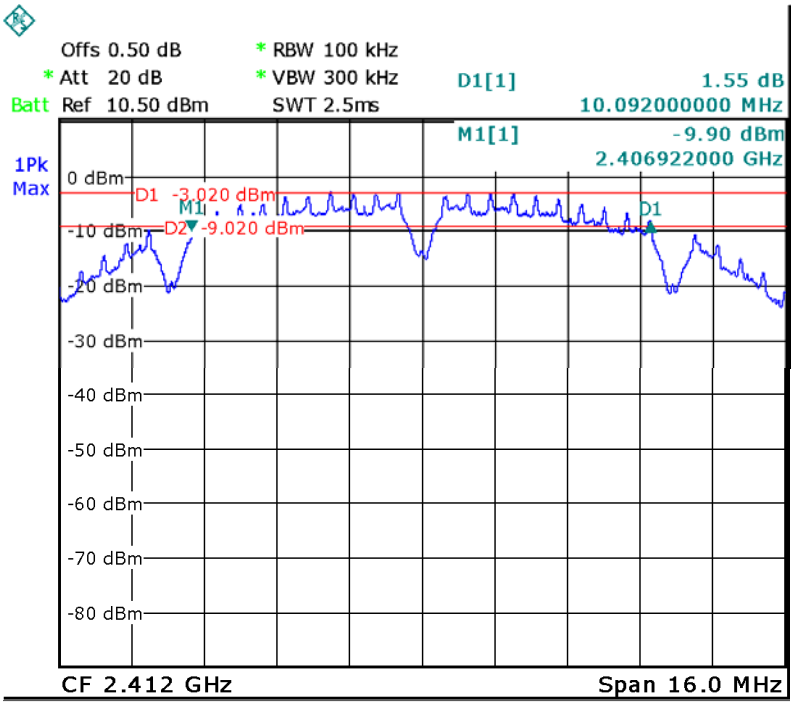
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

10.2 Test Result:

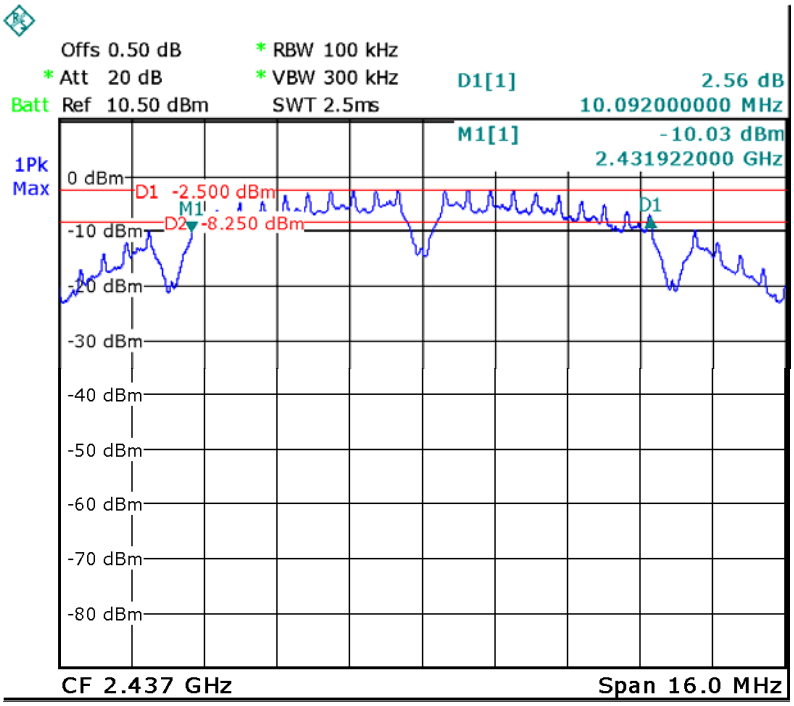
Operation mode	Bandwidth (MHz)		
TX 11b	Channel 1	Channel 6	Channel 11
	10.092	10.092	10.092
TX 11g	Channel 1	Channel 6	Channel 11
	16.467	16.467	16.467
TX 11n HT20	Channel 1	Channel 6	Channel 11
	17.677	17.677	17.677
BT BLE	Channel 0	Channel 19	Channel 39
	0.701	0.701	0.701

Test result plot as follows:

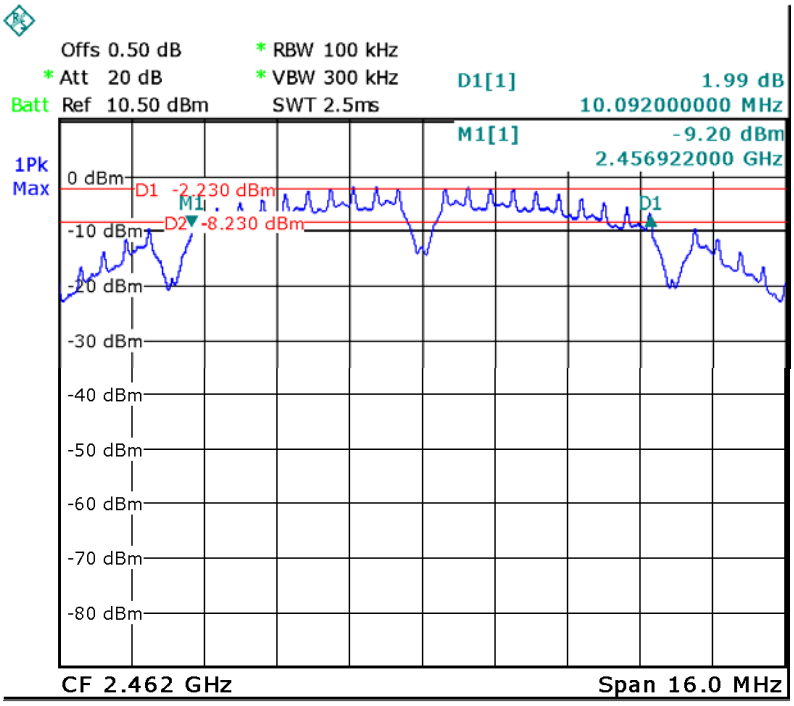
Mode: TX 11b channel 1



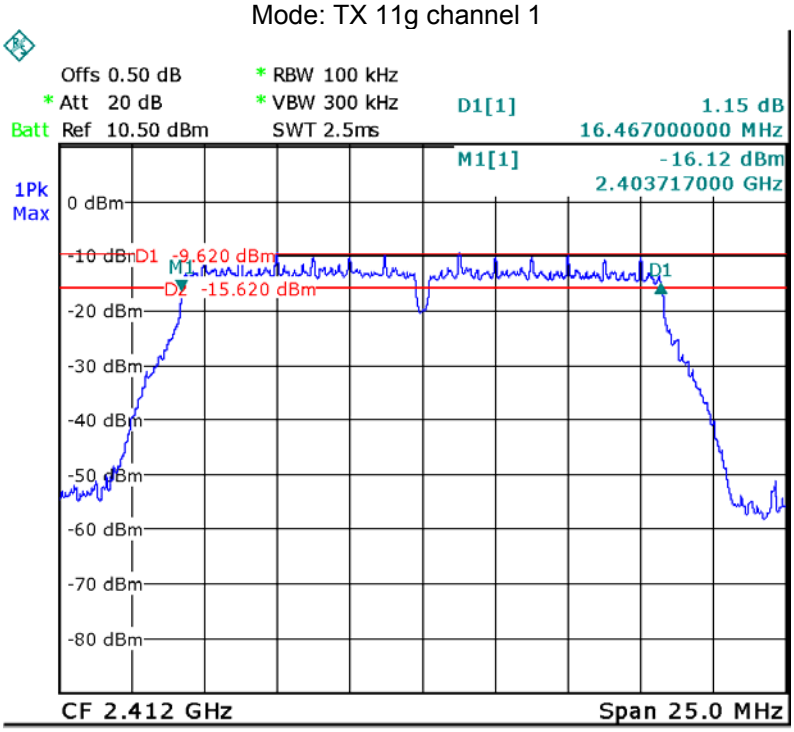
Mode: TX 11b channel 6



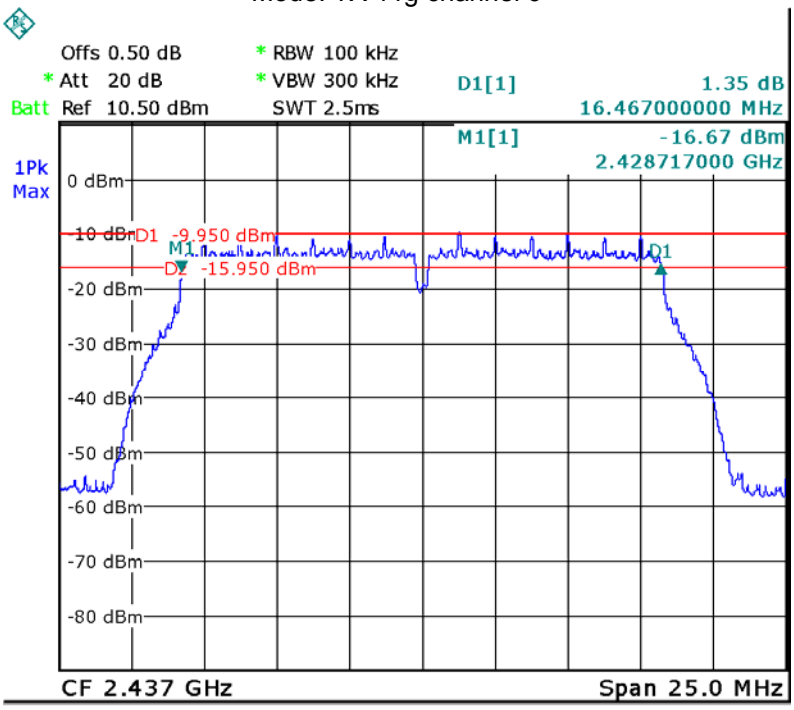
Mode: TX 11b channel 11



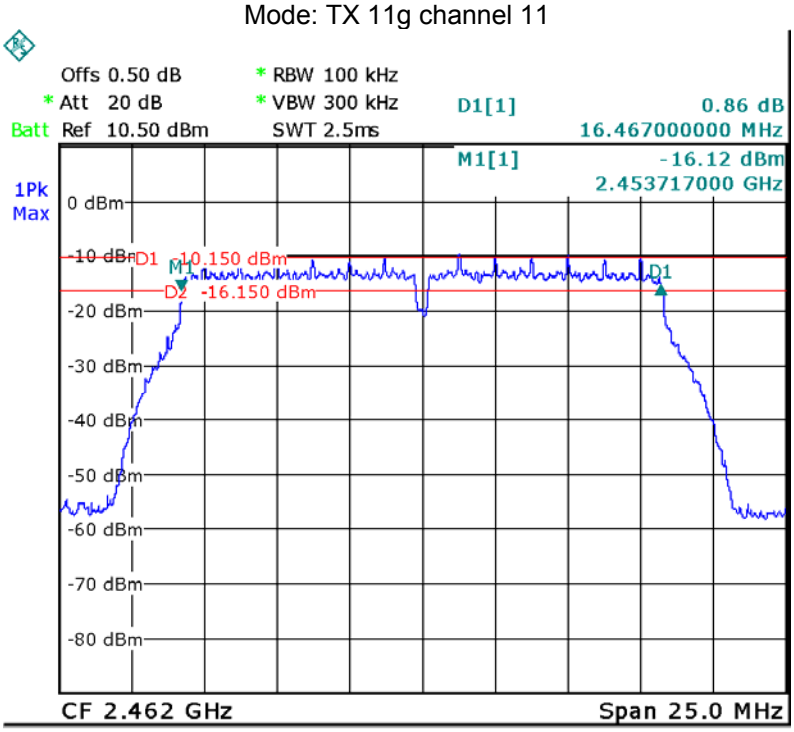
Mode: TX 11g channel 1



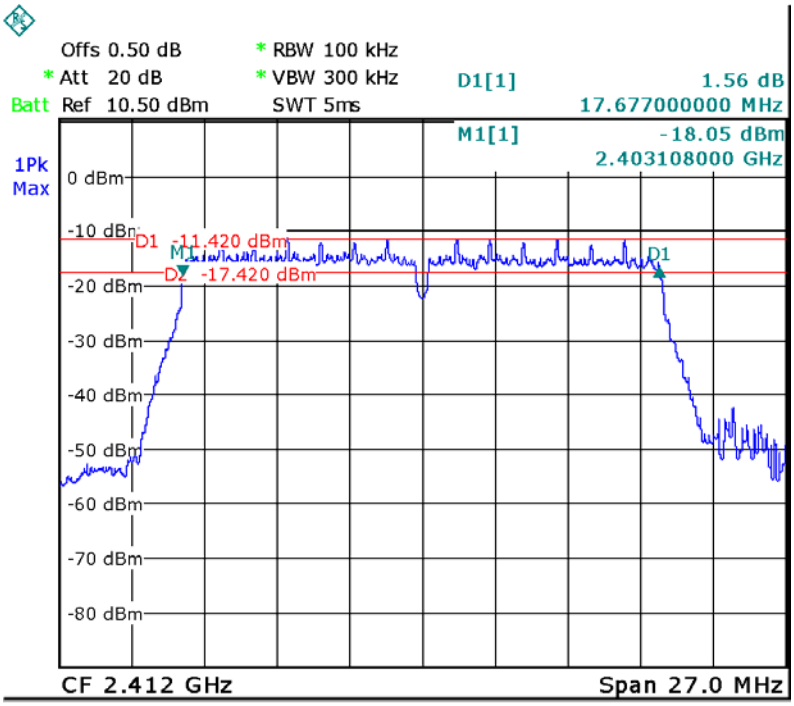
Mode: TX 11g channel 6



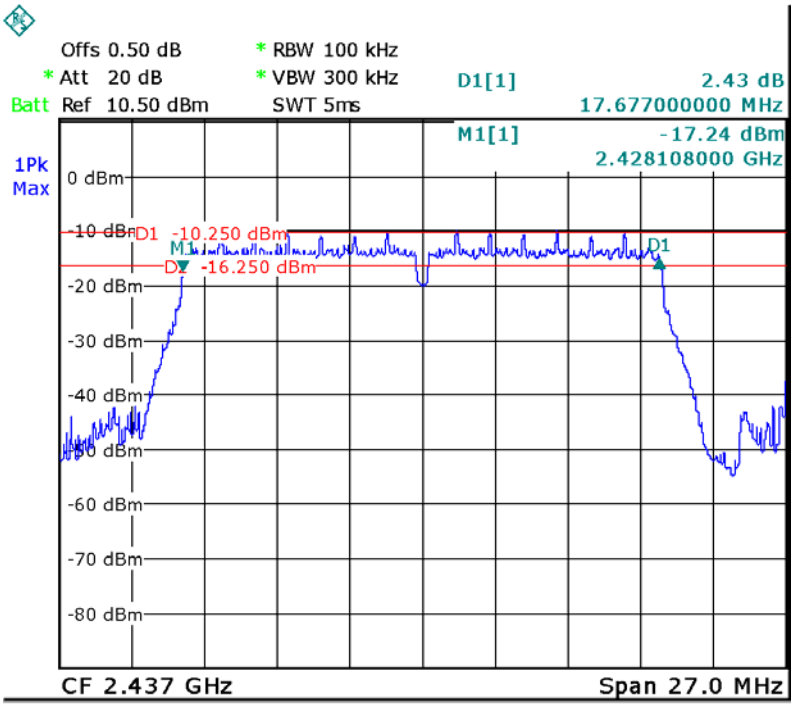
Mode: TX 11g channel 11



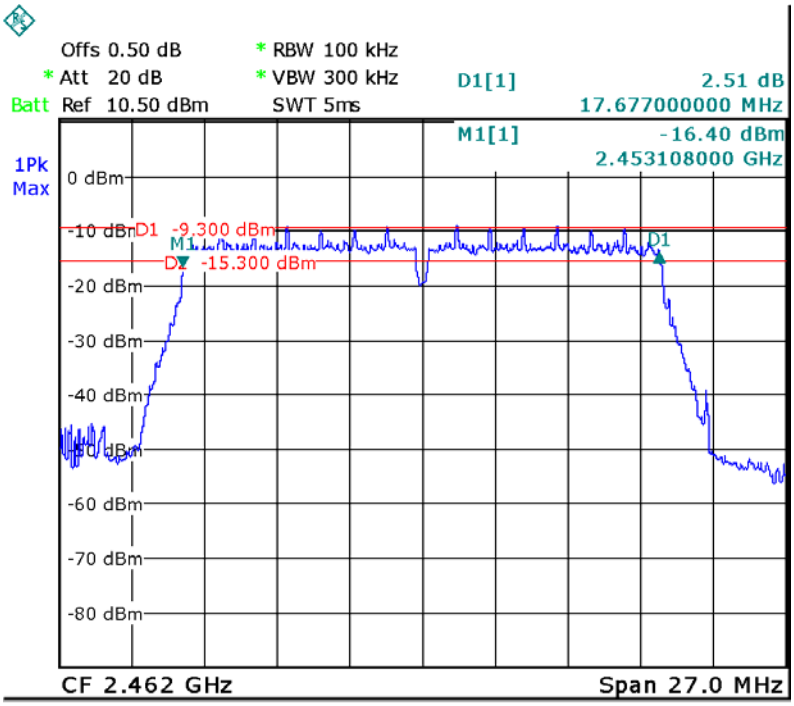
Mode: TX 11n HT20 channel 1



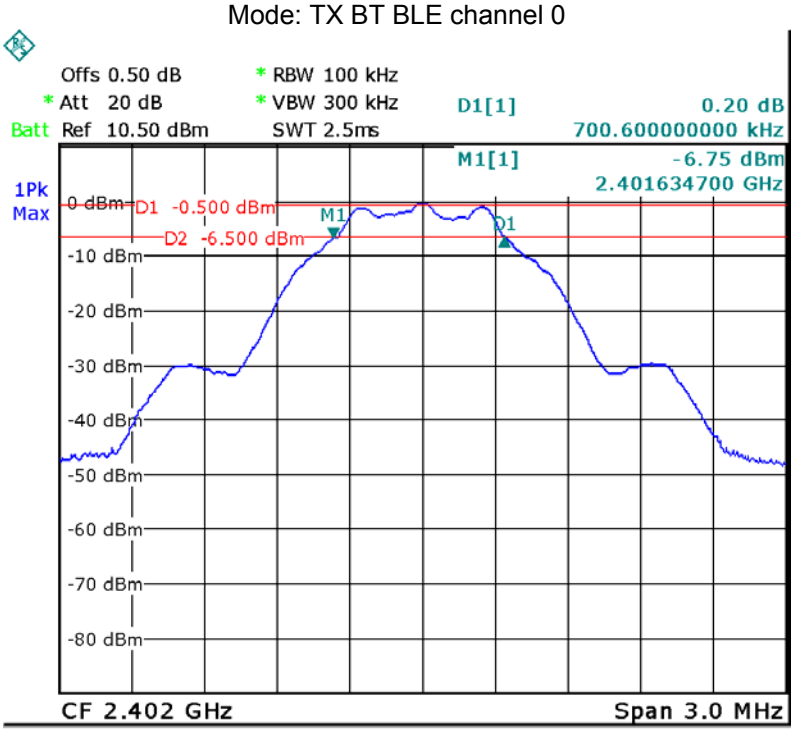
Mode: TX 11n HT20 channel 6



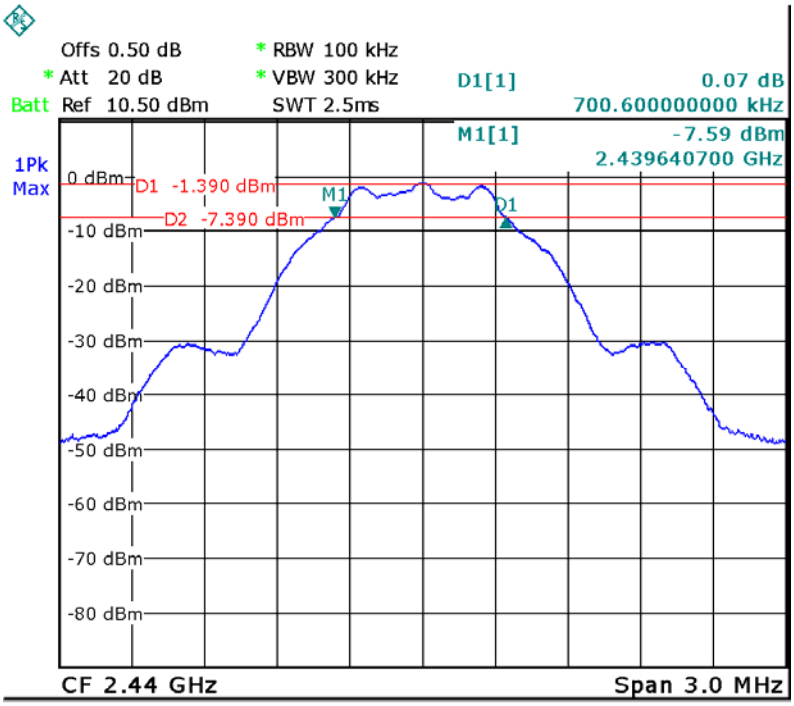
Mode: TX 11n HT20 channel 11



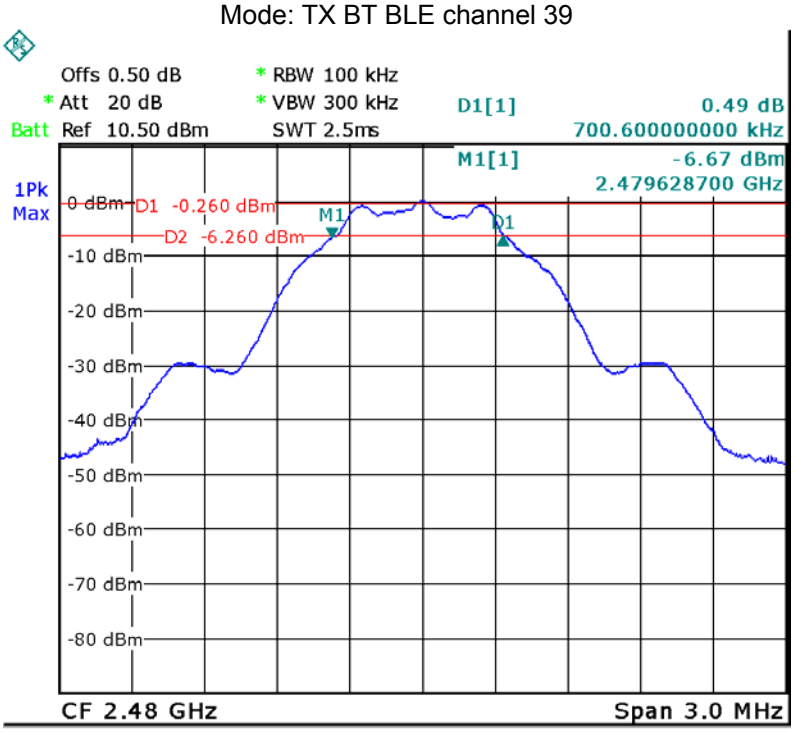
Mode: TX BT BLE channel 0



Mode: TX BT BLE channel 19



Mode: TX BT BLE channel 39



11 Maximum Peak Output Power

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016

11.1 Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016

section 9.1.1 (For BLE)

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the DTS bandwidth.

a)Set the RBW ⩾ DTS bandwidth.

b)Set VBW ⩾ 3 RBW.

c)Set span ⩾ 3 x RBW

d)Sweep time = auto couple.

e)Detector = peak.

f)Trace mode = max hold.

g)Allow trace to fully stabilize.

h)Use peak marker function to determine the peak amplitude level.

section 9.1.2 (For WIFI)

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

a)Set the RBW = 1 MHz.

b)Set the VBW ⩾ 3 RBW

c)Set the span ⩾ 1.5 x DTS bandwidth.

d)Detector = peak.

e)Sweep time = auto couple.

f)Trace mode = max hold.

g)Allow trace to fully stabilize.

h)Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

11.2 Test Result:

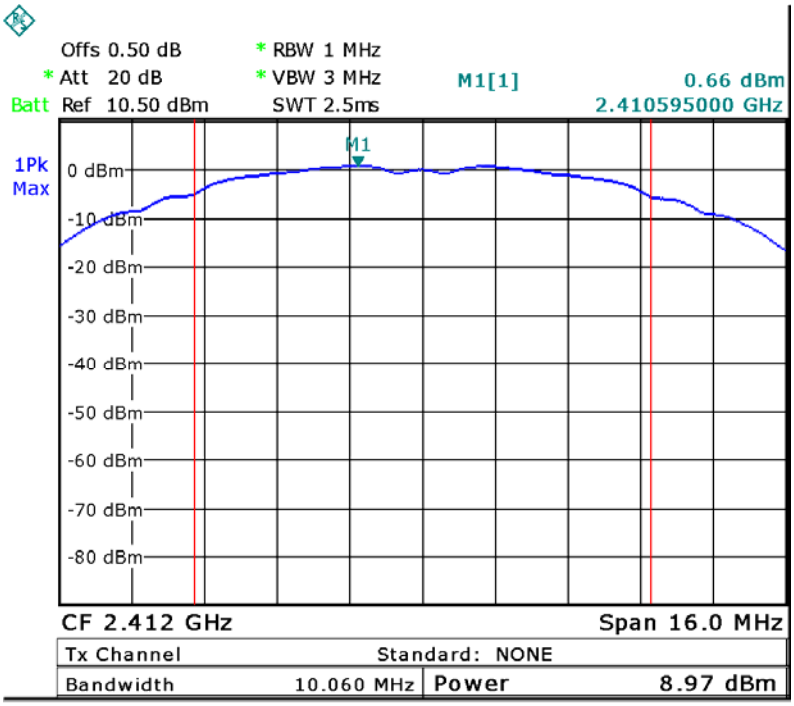
Test mode :TX 11b		
Maximum Peak Output Power (dBm)		
2412MHz	2437MHz	2462MHz
8.97	9.01	9.08
Limit: 1W/30dBm		

Test mode :TX 11g		
Maximum Peak Output Power (dBm)		
2412MHz	2437MHz	2462MHz
8.96	9.23	9.21
Limit: 1W/30dBm		

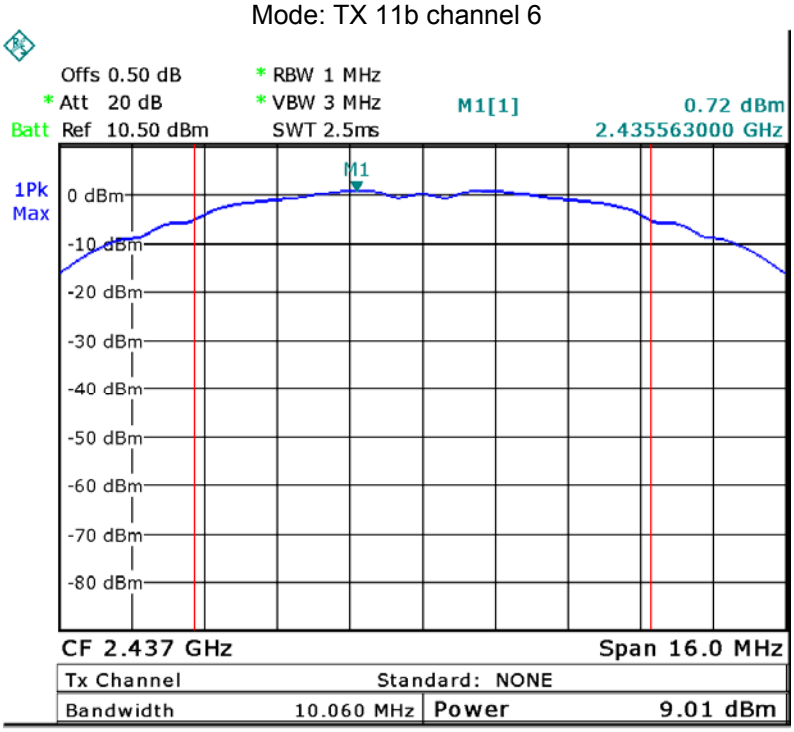
Test mode :TX 11n HT20		
Maximum Peak Output Power (dBm)		
2412MHz	2437MHz	2462MHz
9.16	9.02	9.28
Limit: 1W/30dBm		

Test mode : TX BT BLE		
Maximum Peak Output Power (dBm)		
2402MHz	2440MHz	2480MHz
-0.20	-1.19	-0.03
Limit: 1W/30dBm		

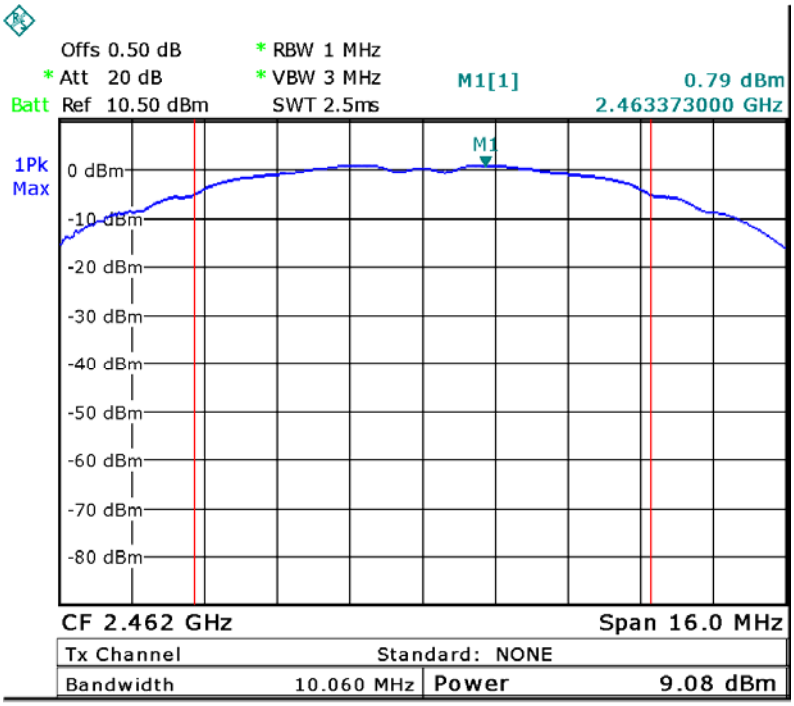
Mode: TX 11b channel 1



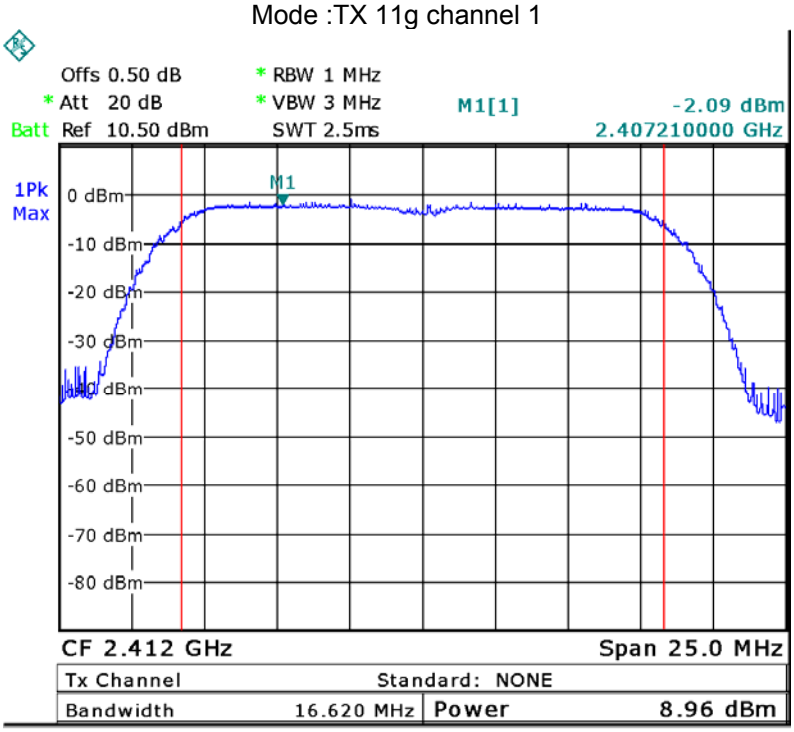
Mode: TX 11b channel 6



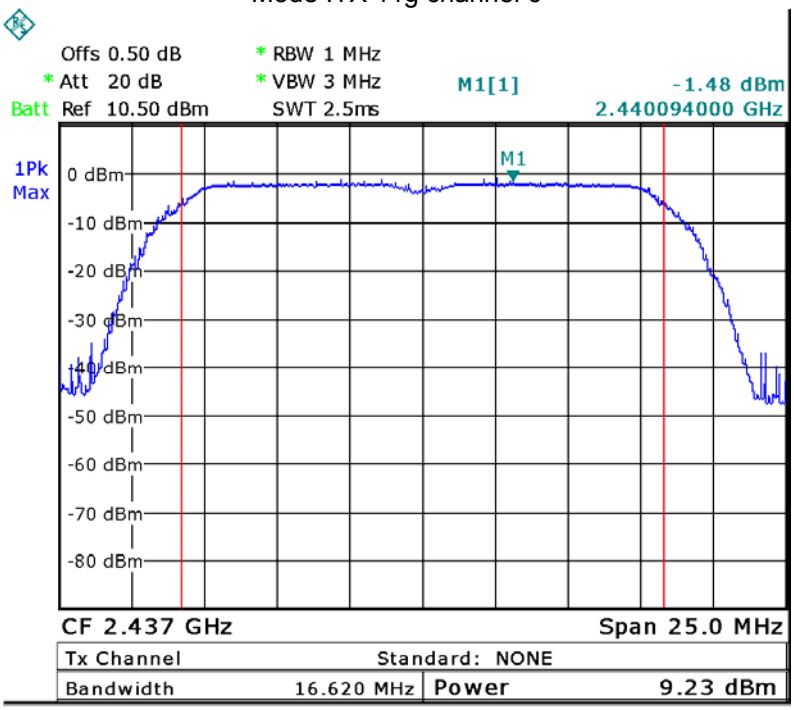
Mode: TX 11b channel 11



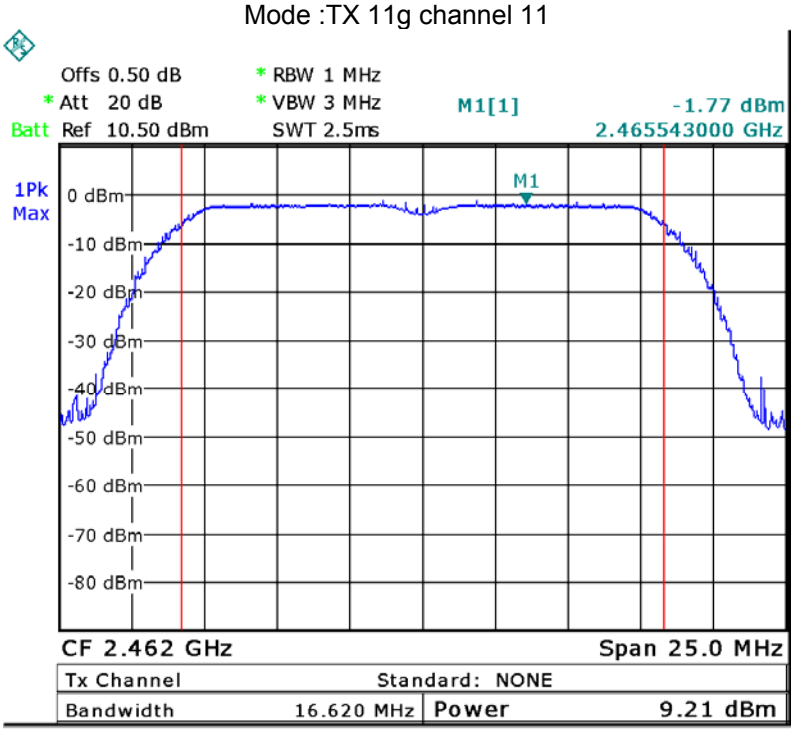
Mode :TX 11g channel 1



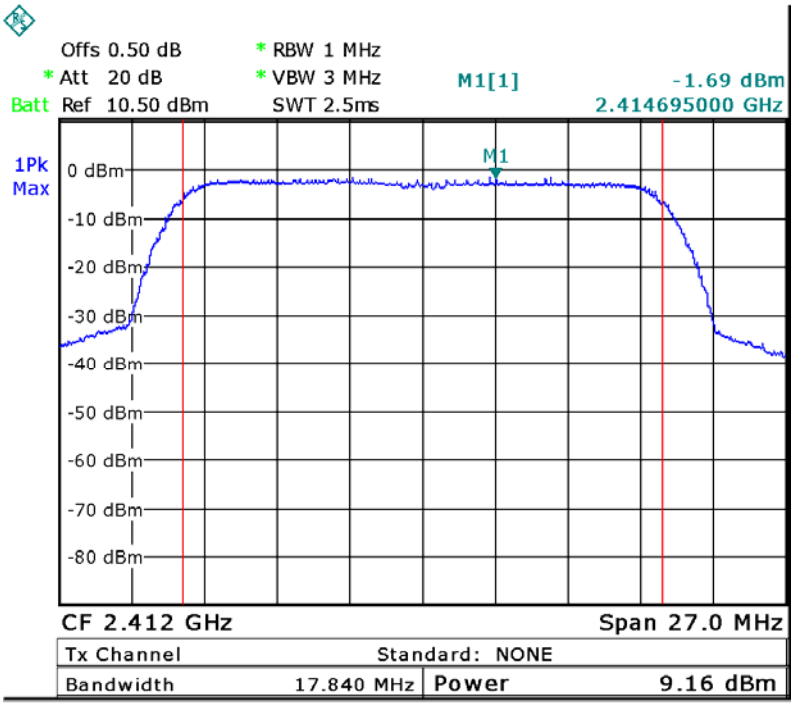
Mode :TX 11g channel 6



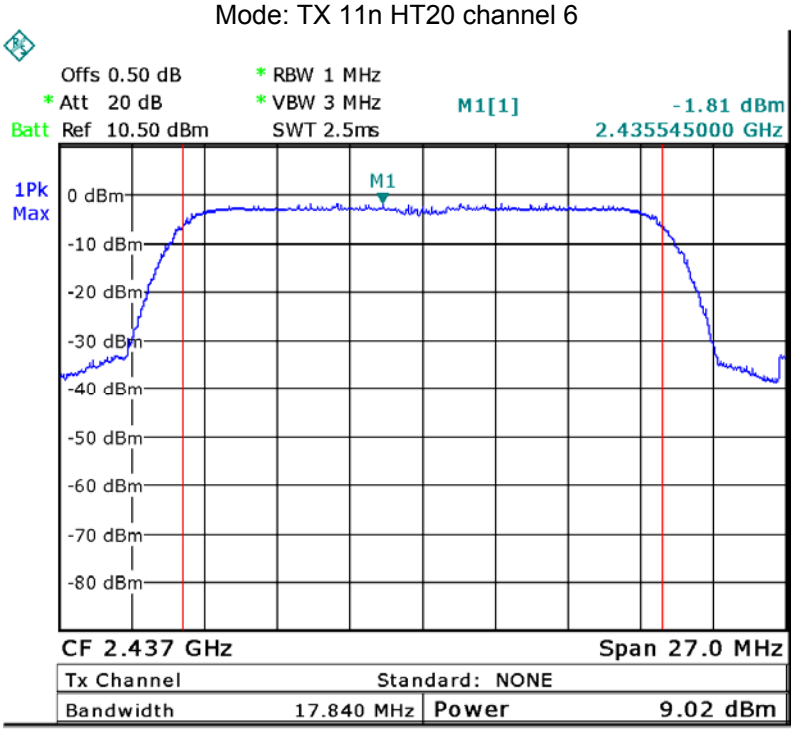
Mode :TX 11g channel 11



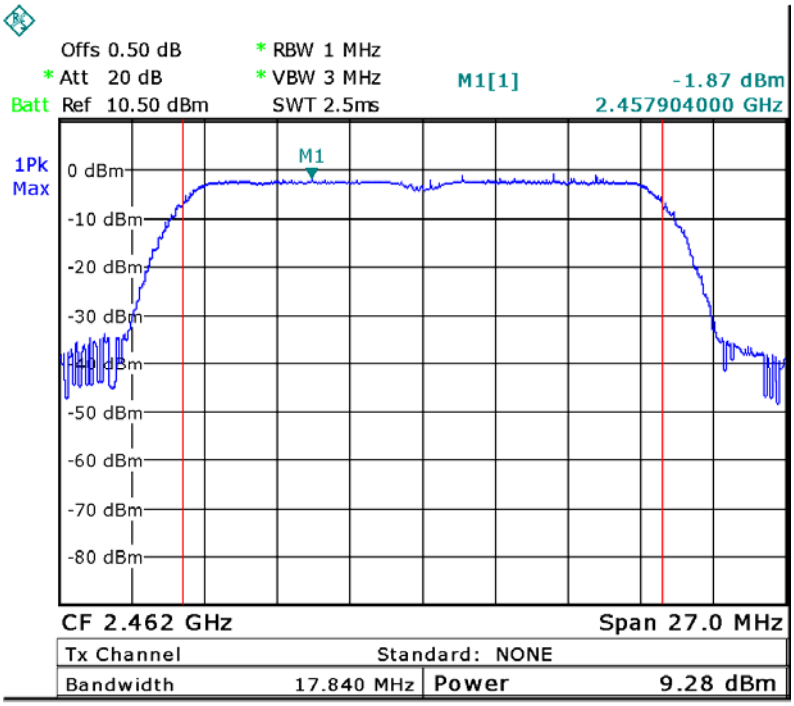
Mode: TX 11n HT20 channel 1



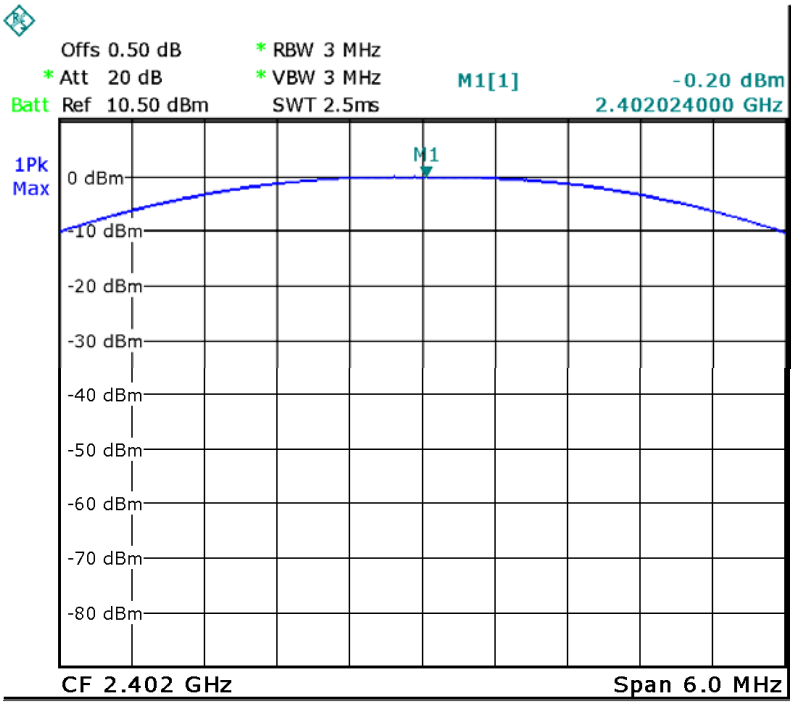
Mode: TX 11n HT20 channel 6



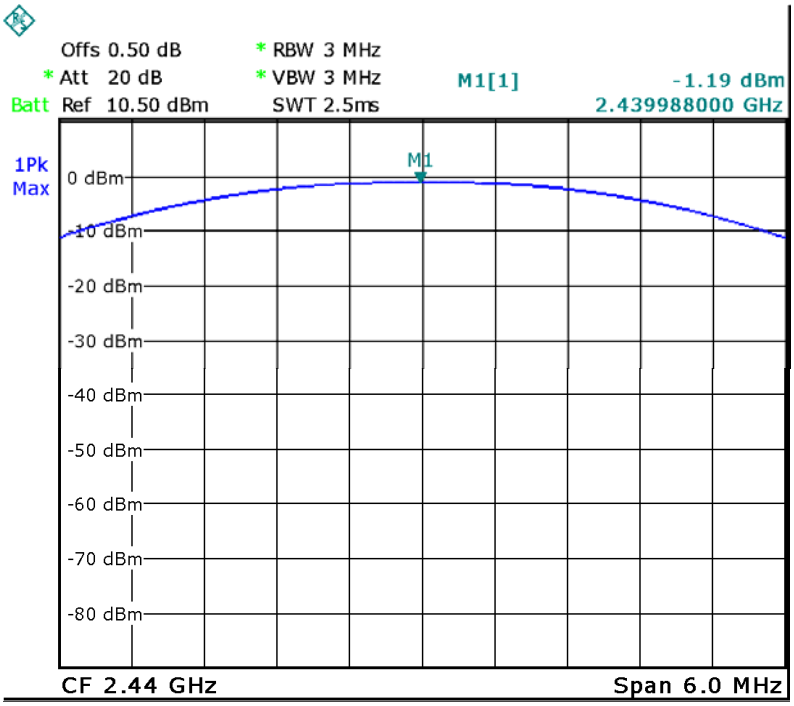
Mode: TX 11n HT20 channel 11



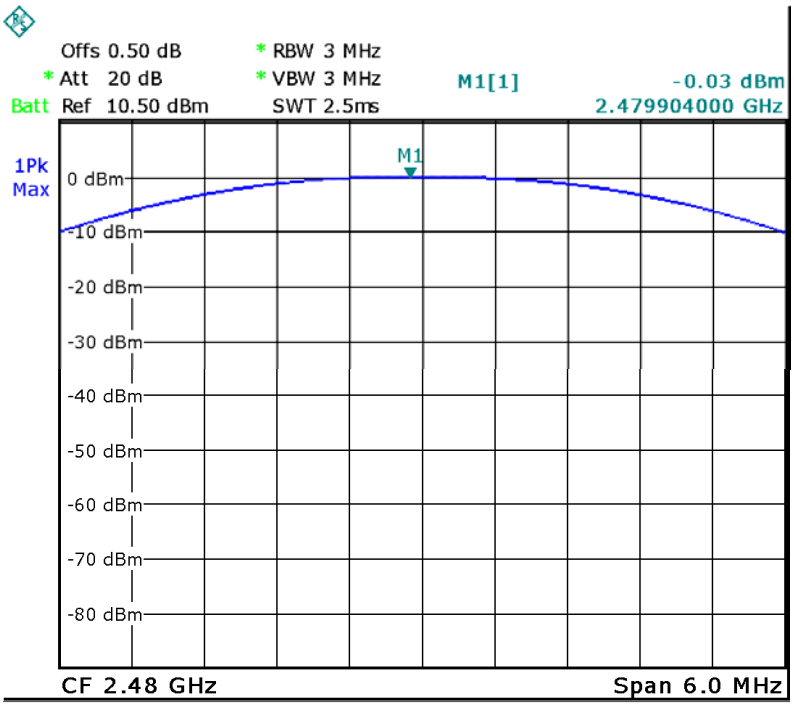
Mode: TX BT BLE channel 0



Mode: TX BT BLE channel 19



Mode: TX BT BLE channel 39



12 Power Spectral density

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016

12.1 Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r05 04/08/2016 section 10.2

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

12.2 Test Result:

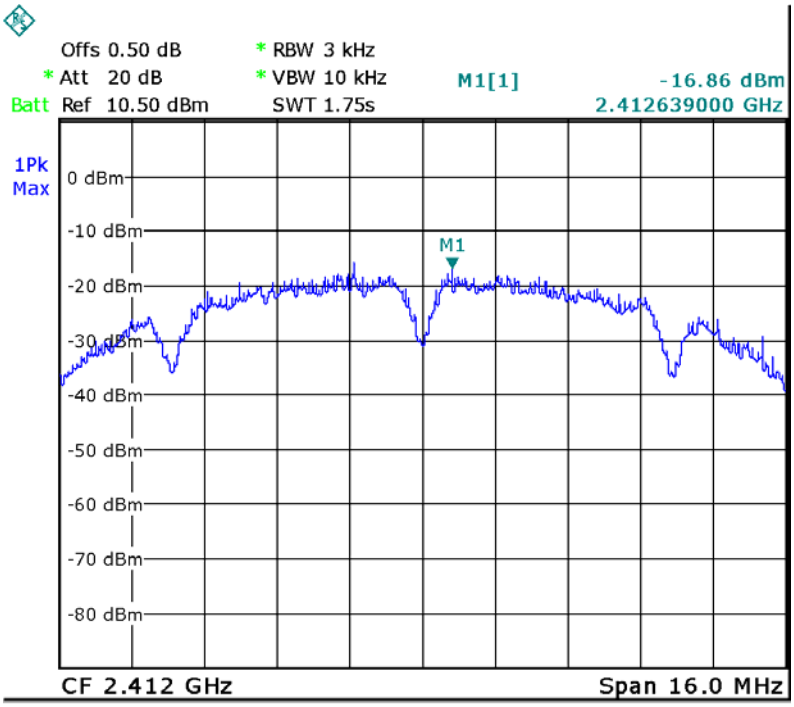
Test mode :TX 11b		
Power Spectral (dBm per 3kHz)		
2412MHz	2437MHz	2462MHz
-16.86	-16.99	-15.77
Limit: 8dBm per 3kHz		

Test mode :TX 11g		
Power Spectral (dBm per 3kHz)		
2412MHz	2437MHz	2462MHz
-29.99	-25.77	-23.70
Limit: 8dBm per 3kHz		

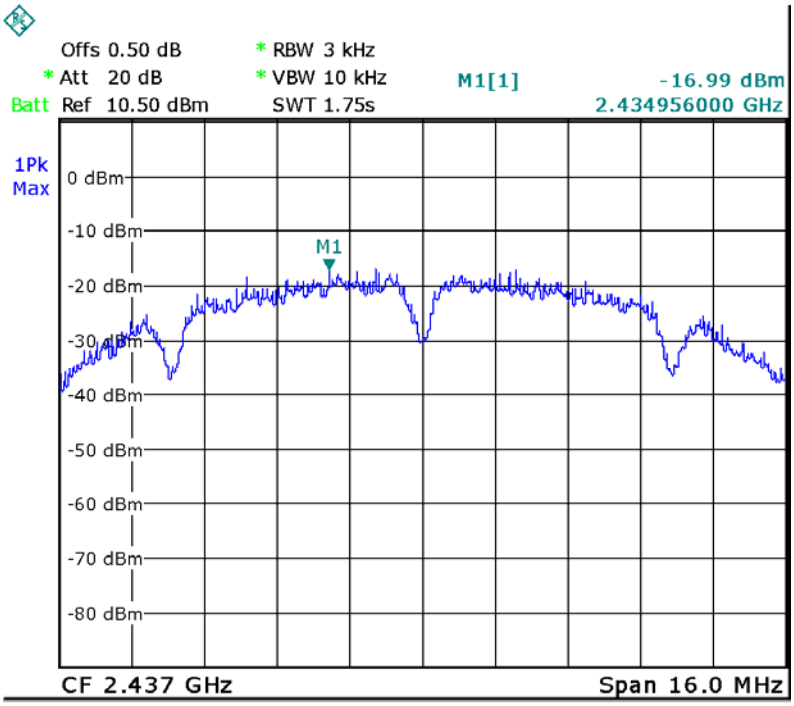
Test mode :TX 11n HT20		
Power Spectral (dBm per 3kHz)		
2412MHz	2437MHz	2462MHz
-26.74	-26.02	-24.38
Limit: 8dBm per 3kHz		

Test mode : TX BT BLE		
Power Spectral (dBm per 3kHz)		
2402MHz	2440MHz	2480MHz
-20.50	-21.14	-19.56
Limit: 8dBm per 3kHz		

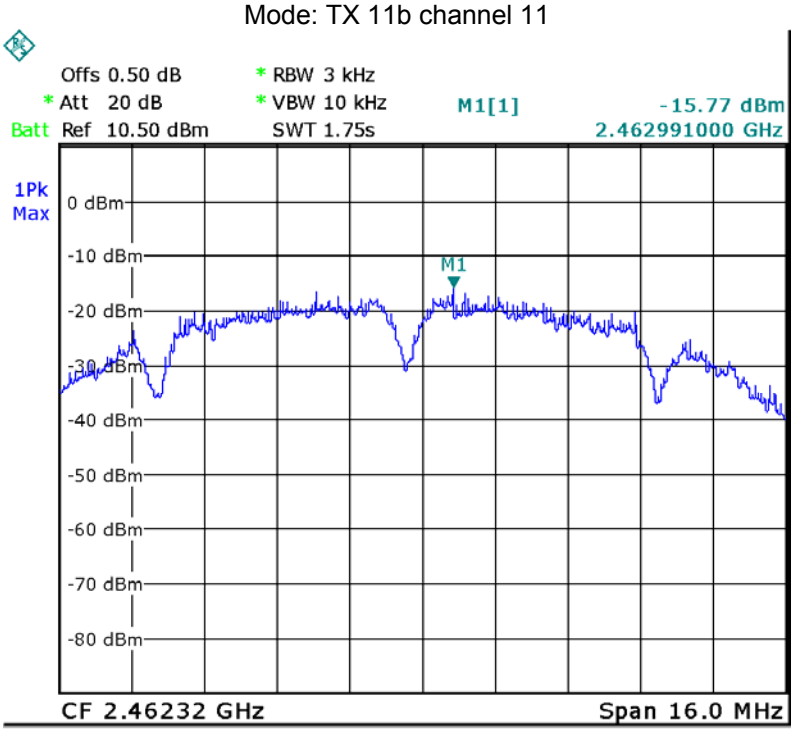
Mode: TX 11b channel 1



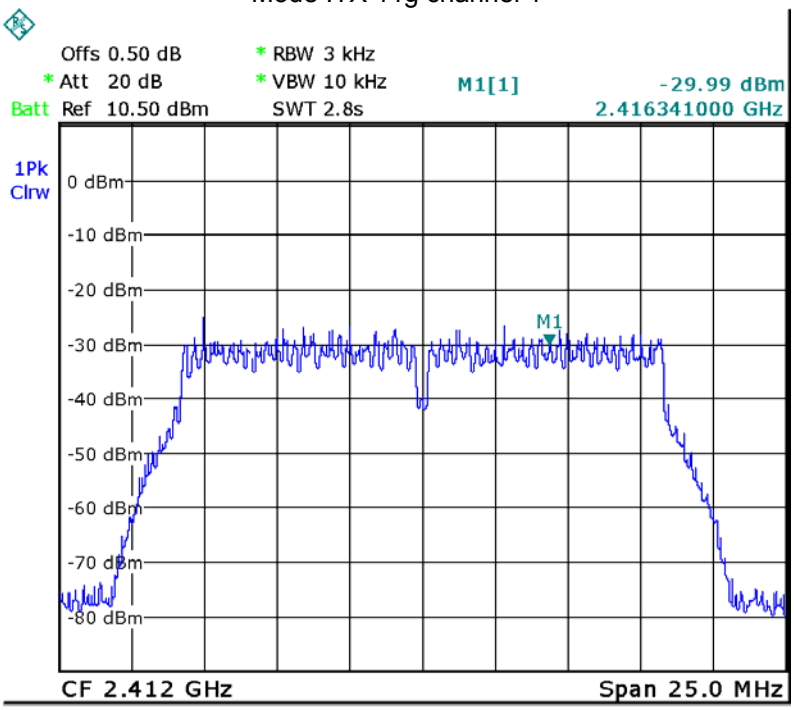
Mode: TX 11b channel 6



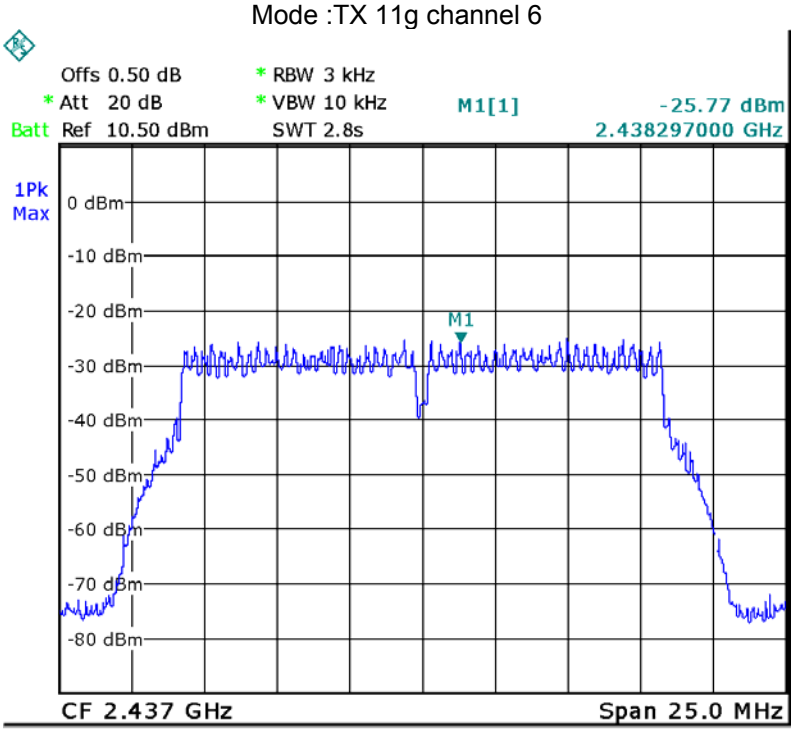
Mode: TX 11b channel 11



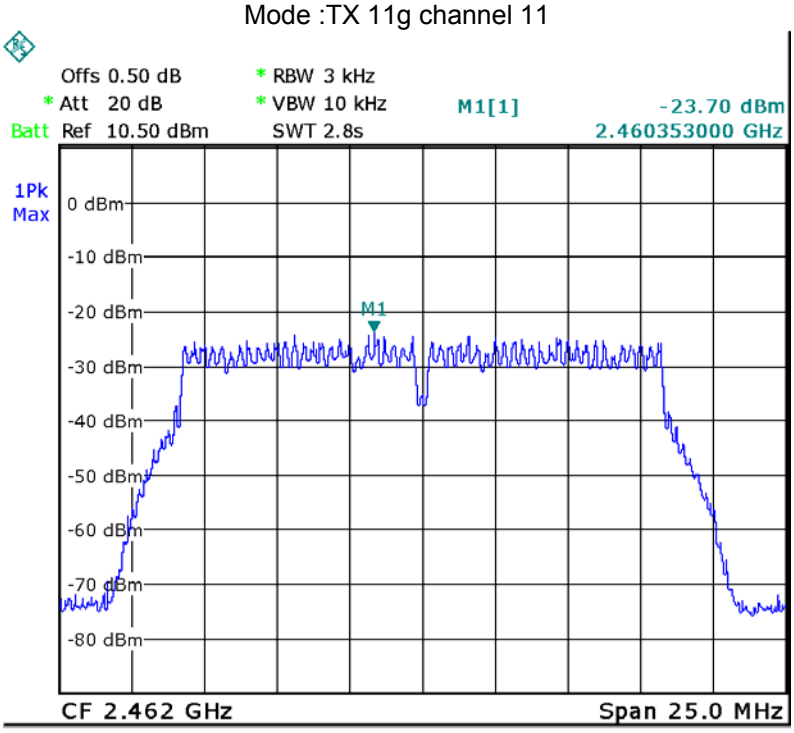
Mode :TX 11g channel 1



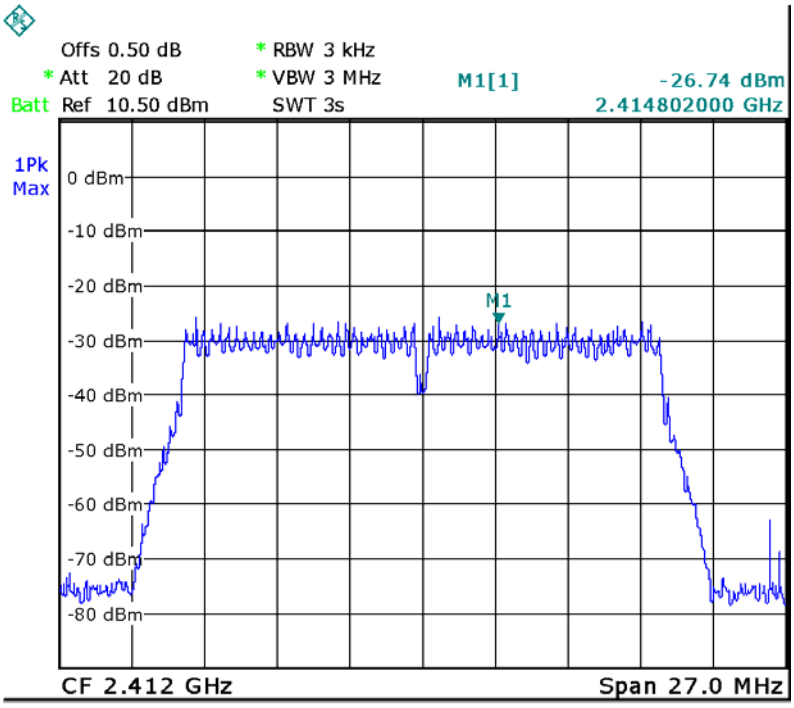
Mode :TX 11g channel 6



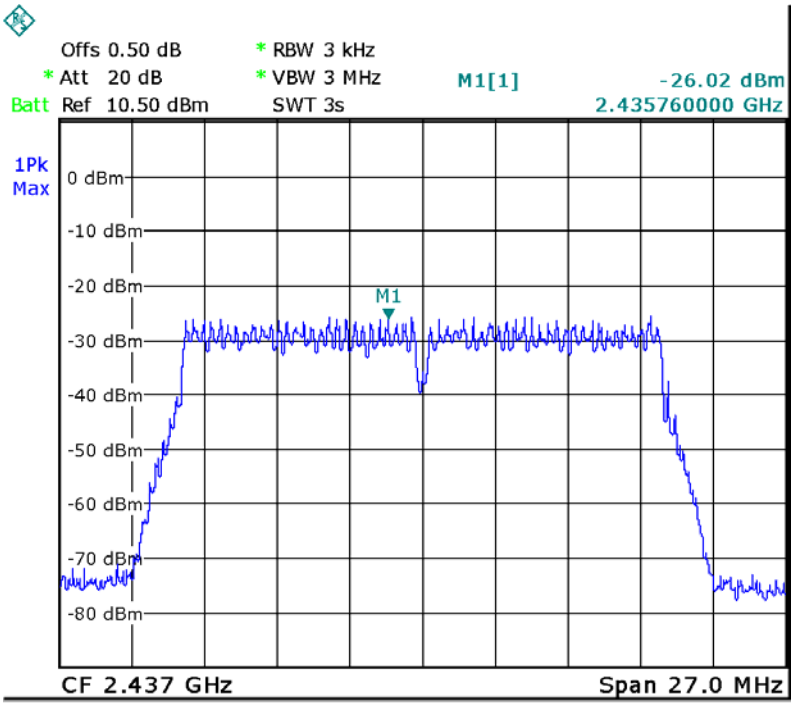
Mode :TX 11g channel 11



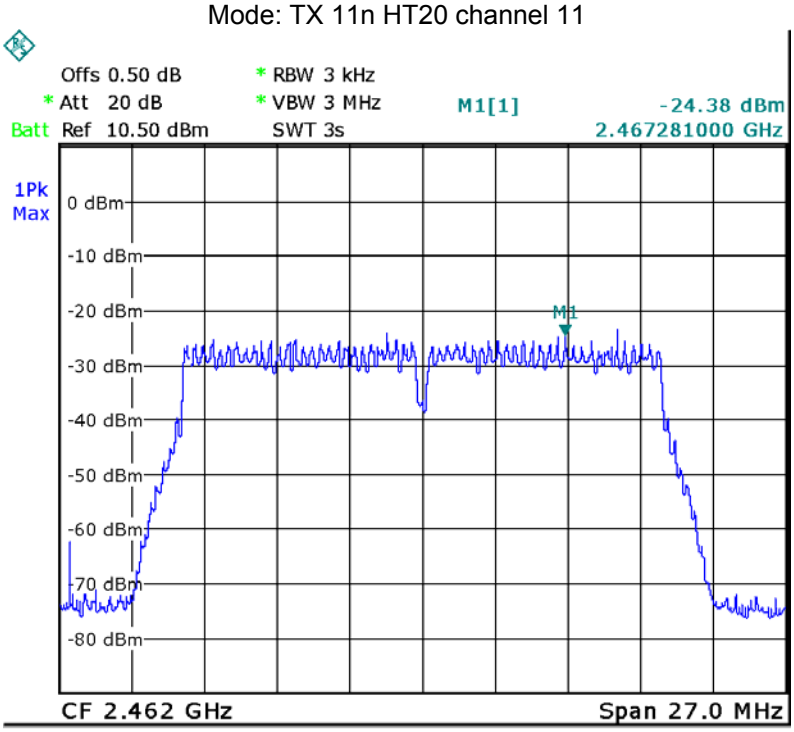
Mode: TX 11n HT20 channel 1



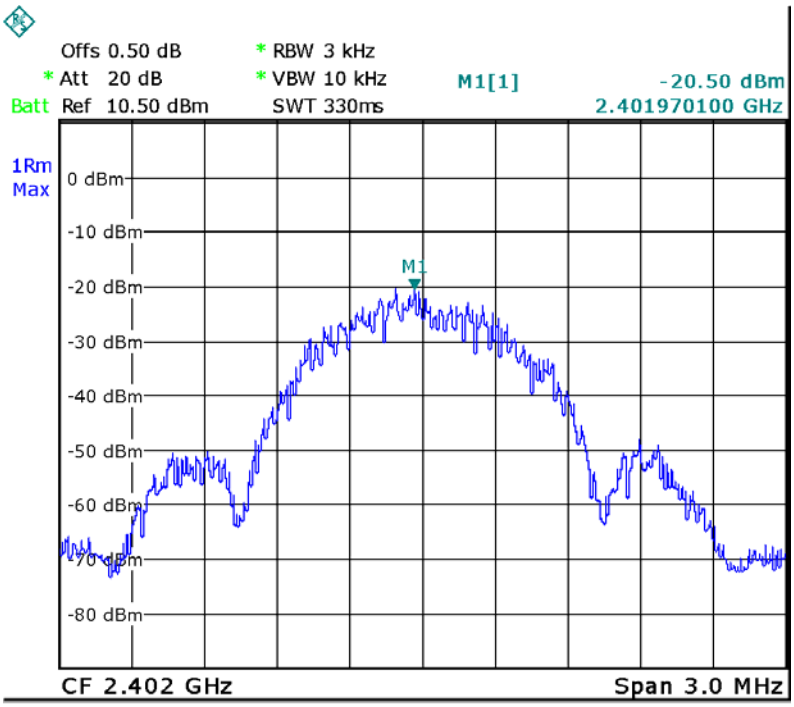
Mode: TX 11n HT20 channel 6



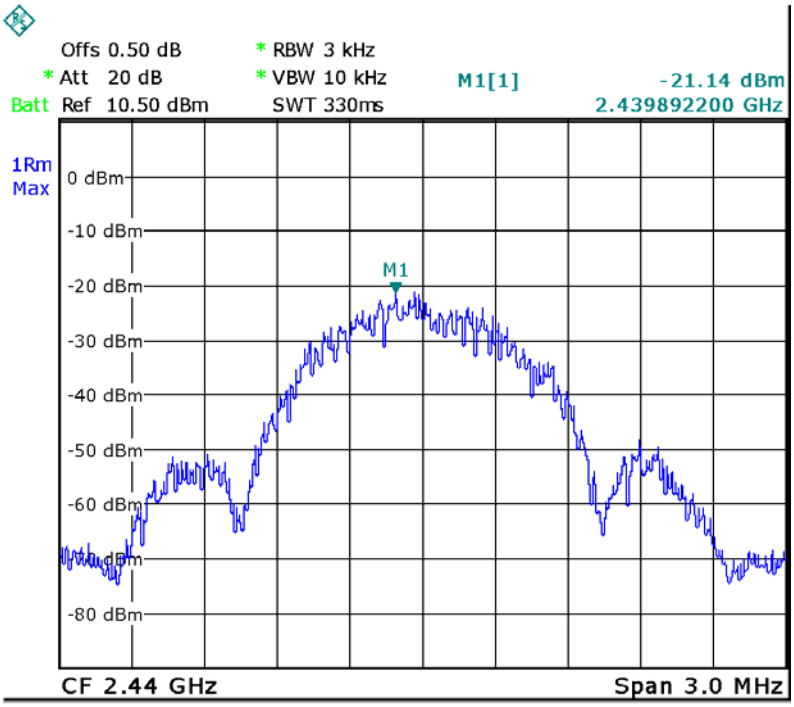
Mode: TX 11n HT20 channel 11



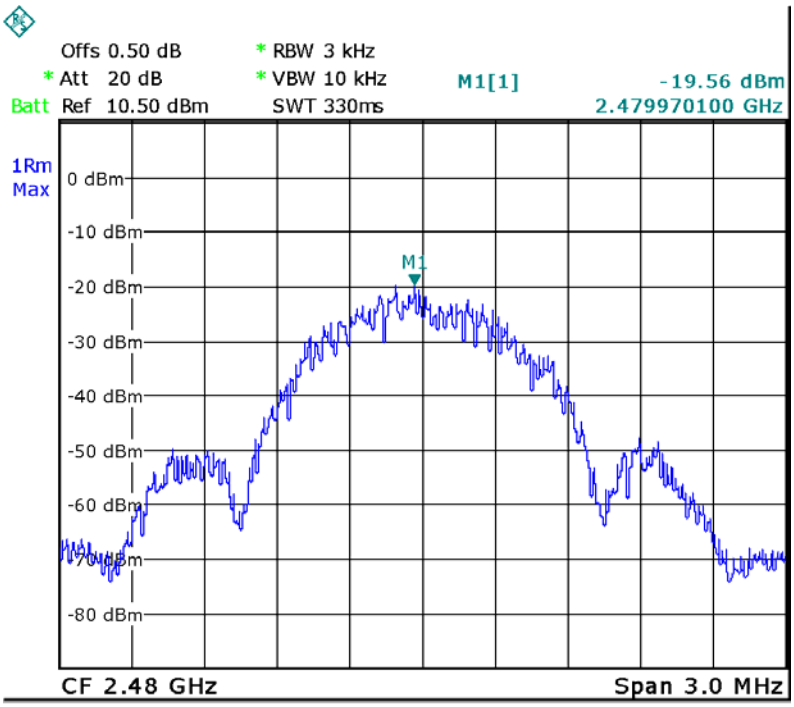
Mode: TX BT BLE channel 0



Mode: TX BT BLE channel 19



Mode: TX BT BLE channel 39



13 Antenna Requirement

According to the FCC Part 15 Paragraph 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. This product has an integrated antenna fulfill the requirement of this section.

14 RF Exposure

Remark: refer to SAR test report: WTS16S0243054E

======End of Report======