

TEST REPORT

Reference No. : WTS15S0730010-2E
FCC ID..... : 2ADTE-Y100X
Applicant..... : Shenzhen KVD Communication Equipment
Address : 13C, Block C, Shenzhen Electronic Technology Building, Shennan Middle Road, Futian District, Shenzhen City.
Manufacturer : Shenzhen KVD Communication Equipment
Address : The second floor in A2 building, Silicon valley power new material industrial park, Zongyi Road, Dafu industrial park, Guanlan Guanguang Road, Baoan district, Shenzhen City
Product Name : Mobile Phone
Model No. : Nova Y100X
Brand..... : DOOGEE
Standards : FCC CFR47 Part 15 Section 15.247:2014
Date of Receipt sample..... : Jan.13, 2015
Date of Test..... : Jan.15-Aug. 12, 2015
Date of Issue : Aug. 12, 2015
Test Result : **Pass**
Remark..... : N/A

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 / Project Engineer

Approved by:



Philo Zhong / Manager

2 Test Summary

Test Items	Test Requirement	Result
Radiated Emissions	15.247 15.205(a) 15.209(a)	PASS
Conducted Emissions	15.207(a)	PASS
Conducted Spurious Emissions	15.247(d)	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

3 Contents

	Page
1 COVER PAGE.....	1
2 TEST SUMMARY	2
3 CONTENTS	3
4 GENERAL INFORMATION.....	4
4.1 GENERAL DESCRIPTION OF E.U.T.	4
4.2 DETAILS OF E.U.T.	4
4.3 CHANNEL LIST	5
4.4 TEST MODE	6
4.5 TEST FACILITY	7
5 EQUIPMENT USED DURING TEST	8
5.1 EQUIPMENTS LIST	8
5.2 DESCRIPTION OF SUPPORT UNITS	9
5.3 MEASUREMENT UNCERTAINTY	9
5.4 TEST EQUIPMENT CALIBRATION	9
6 CONDUCTED EMISSION	10
6.1 E.U.T. OPERATION	10
6.2 EUT SETUP	10
6.3 MEASUREMENT DESCRIPTION	10
6.4 CONDUCTED EMISSION TEST RESULT	11
7 RADIATED EMISSIONS.....	13
7.1 EUT OPERATION.....	13
7.2 TEST SETUP	14
7.3 SPECTRUM ANALYZER SETUP	15
7.4 TEST PROCEDURE	16
7.5 CORRECTED AMPLITUDE & MARGIN CALCULATION	16
7.6 SUMMARY OF TEST RESULTS	17
8 CONDUCTED SPURIOUS EMISSIONS.....	32
8.1 TEST PROCEDURE	32
8.2 TEST RESULT	33
9 BAND EDGE MEASUREMENT	41
9.1 TEST PROCEDURE.....	41
9.2 TEST RESULT	42
10 6 DB BANDWIDTH MEASUREMENT	47
10.1 TEST PROCEDURE:.....	47
10.2 TEST RESULT:	47
11 MAXIMUM PEAK OUTPUT POWER	56
11.1 TEST PROCEDURE:.....	56
11.2 TEST RESULT:	57
12 POWER SPECTRAL DENSITY	66
12.1 TEST PROCEDURE:.....	66
12.2 TEST RESULT:	66
13 ANTENNA REQUIREMENT	75
14 RF EXPOSURE.....	76

4 General Information

4.1 General Description of E.U.T.

Product Name	: Mobile Phone
Model No.	: Nova Y100X
Model Description	: N/A
GSM Band(s)	: GSM 850/900/1800/1900MHz
GPRS Class	: 12
WCDMA Band(s)	: FDD Band I/II/V
Wi-Fi Specification	: 802.11b/g/n HT20/n HT40
Bluetooth Version	: Bluetooth v4.0 with BLE
GPS	: Support
NFC	: N/A
Hardware Version	: G156MB-A2-BOM2
Software Version	: 14-12-31 g156f-daoge-a30-fwvga-850-1900-2100-kk-64g8g-DG280-4.4-R07

Note: This product Model No.: Nova Y100X is identical in interior structure, electrical circuits and components with the product LEO DG280 tested by Waltek Services (Shenzhen) Co., Ltd., and just model name, brand name, the screen size, antenna location and connect board are different, details pls refer to attached Declaration Letter.

And based on the letter these differences only affect Conducted Emission, Radiated Emission, and Radiated Spurious Emissions, the other test data were refer to report WTS15S0122182-2E, Grant Date: 01/30/2015.

4.2 Details of E.U.T.

Operation Frequency	: GSM/GPRS 850: 824~849MHz GSM/GPRS 900: 925-960MHz DCS 1800: 1805-1880MHz PCS 1900: 1850~1910MHz WCDMA Band I: 1920-1980MHz WCDMA Band II: 1850-1910MHz WCDMA Band V: 824~849MHz WiFi: 802.11b/g/n HT20: 2412-2462MHz 802.11n HT40: 2422-2452MHz Bluetooth: 2402-2480MHz GPS: 1.57GHz
Max. RF output power	: GSM 850: 32.81dBm

	PCS1900: 29.69dBm
	WCDMA Band II: 20.95dBm
	WCDMA Band V: 22.86dBm
	WiFi: 9.24dBm
	Bluetooth: 0.86dBm
Type of Modulation	: GSM,GPRS: GMSK WCDMA: BPSK WiFi: CCK, OFDM Bluetooth: GFSK, Pi/4 DQPSK,8DPSK
Antenna installation	: GSM/WCDMA: Wire antenna WiFi/Bluetooth: Metal Dome
Antenna Gain	: GSM 850: -4.0dBi PCS1900: -4.0dBi WCDMA Band II: -4.0dBi WCDMA Band V: -4.0dBi WiFi: -1.0dBi Bluetooth: -1.0dBi
Technical Data	: Battery DC 3.8V 1800mAh DC 5V, 1.0A, charging from adapter (Adapter Input: 100-240V~50/60Hz, 0.15A)
Adapter	: Manufacture: Shenzhen KVD Communication Equipment Model No.: DG80

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

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
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
	802.11n HT40	108 Mbps	3/6/9	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
	802.11n HT40	108 Mbps	3/6/9	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
	802.11n HT40	108 Mbps	3/6/9	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
	802.11n HT40	108 Mbps	3/6/9	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
	802.11n HT40	108 Mbps	3/6/9	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	1/19/39	TX
Power Spectral Density	BT BLE	1 Mbps	1/19/39	TX
6dB Bandwidth	BT BLE	1 Mbps	1/19/39	TX
Band Edge	BT BLE	1 Mbps	1/19/39	TX
Transmitter Spurious Emissions	BT BLE	1 Mbps	1/19/39	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 .

Table 3 Tests Carried Out Under FCC part 15.207 & FCC part 15.209

Test Item	Test Mode
Conduction Emission, 0.15MHz to 30MHz	Communication(Wifi & BT BLE)

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, July 12, 2012.

- **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.15,2014	Sep.14,2015
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.15,2014	Sep.14,2015
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.15,2014	Sep.14,2015
4.	Cable	LARGE	RF300	-	Sep.15,2014	Sep.14,2015
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.15,2014	Sep.14,2015
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.15,2014	Sep.14,2015
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Apr.19,2015	Apr.18,2016
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.15,2014	Sep.14,2015
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.19,2015	Apr.18,2016
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	669	Apr.19,2015	Apr.18,2016
7	Broadband Pre-amplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Mar.17,2015	Mar.16,2016
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.15,2014	Sep.14,2015
10	Universal Radio Communication Tester	R&S	CMU 200	112461	Apr.11,2015	Apr.10,2016
11	Signal Generator	R&S	SMR20	100046	Sep.15,2014	Sep.14,2015
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. 15,2014	Aug.14,2015
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Aug. 15,2014	Aug.14,2015
3.	Humidity Chamber	GF	GTH-225-40-1P	IAA061213	Aug. 15,2014	Aug.14,2015

5.2 Description of Support Units

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

5.3 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-6}$
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 C63.4
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dB μ V between 0.15MHz & 0.5MHz 56 dB μ V between 0.5MHz & 5MHz 60 dB μ V between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

6.1 E.U.T. Operation

Operating Environment :

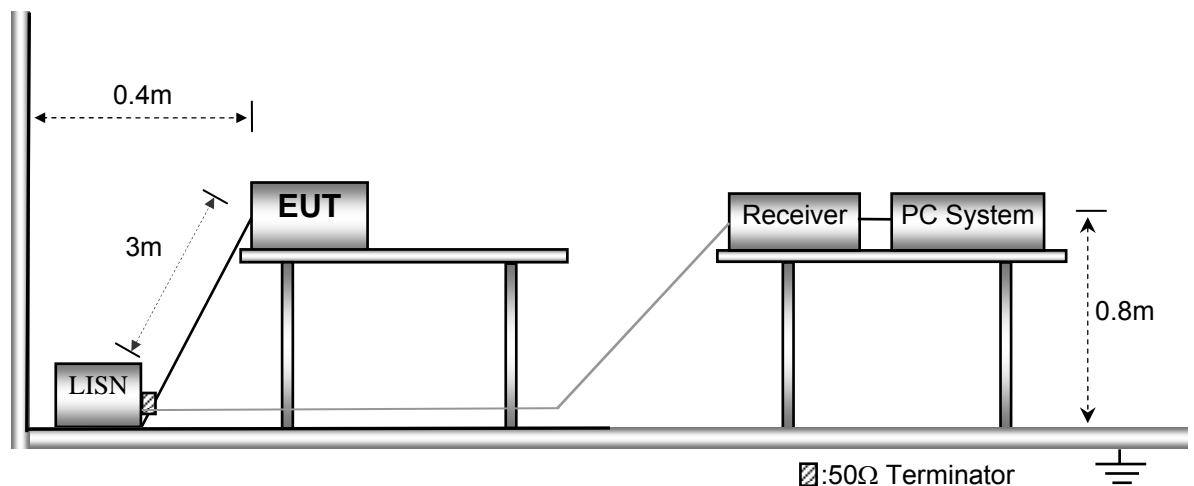
Temperature:	21.5 °C
Humidity:	51.9 % RH
Atmospheric Pressure:	101.2kPa

EUT Operation :

The test was performed in transmitting 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 C63.4.



6.3 Measurement Description

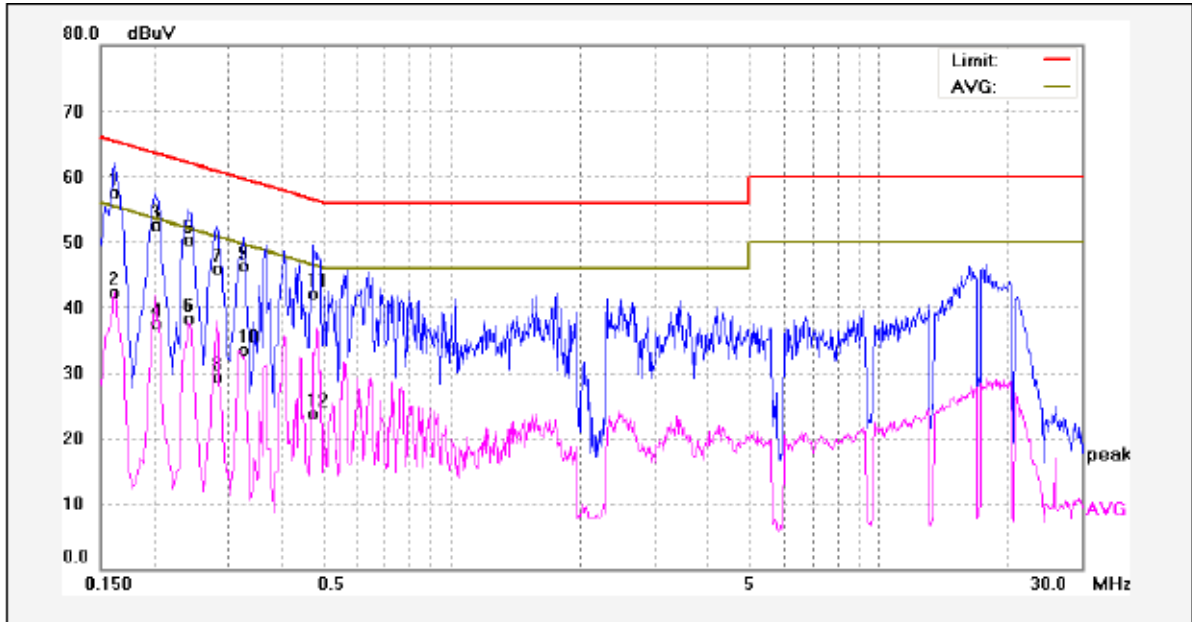
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.4 Conducted Emission Test Result

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

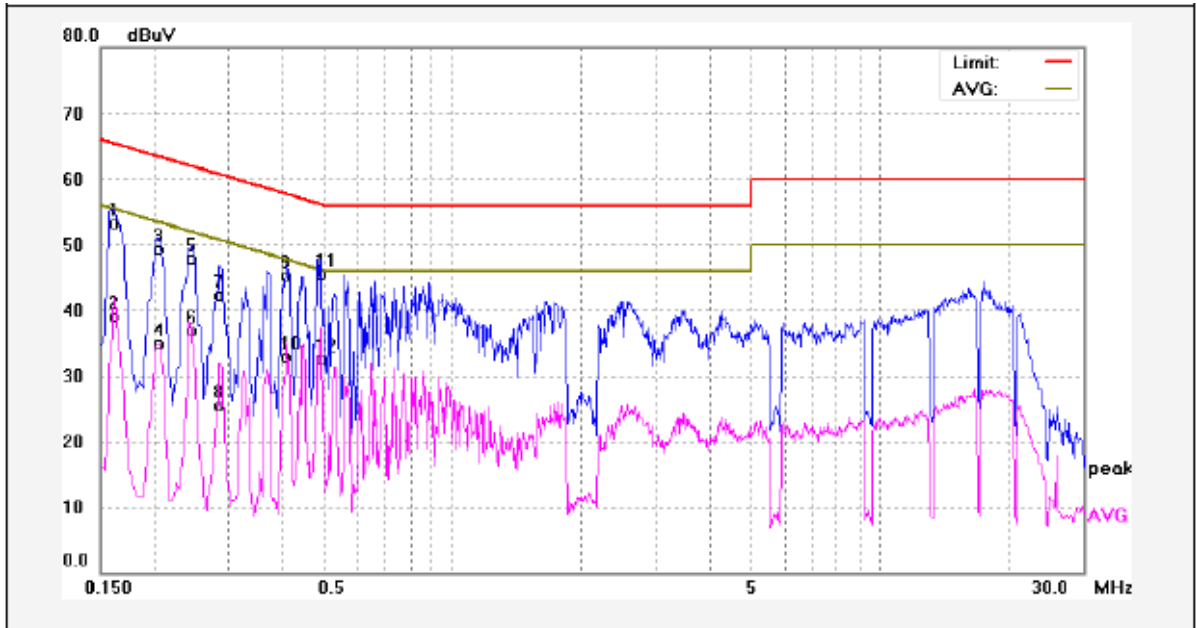
Worst Mode: transmitting mode (Wifi)

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1620	47.44	10.13	57.57	65.36	-7.79	QP	
2	0.1620	32.10	10.13	42.23	55.36	-13.13	AVG	
3	0.2020	42.34	10.15	52.49	63.52	-11.03	QP	
4	0.2020	27.30	10.15	37.45	53.52	-16.07	AVG	
5	0.2420	40.21	10.16	50.37	62.02	-11.65	QP	
6	0.2420	28.09	10.16	38.25	52.02	-13.77	AVG	
7	0.2819	35.80	10.16	45.96	60.76	-14.80	QP	
8	0.2819	19.14	10.16	29.30	50.76	-21.46	AVG	
9	0.3260	36.09	10.17	46.26	59.55	-13.29	QP	
10	0.3260	23.33	10.17	33.50	49.55	-16.05	AVG	
11	0.4740	31.97	10.19	42.16	56.44	-14.28	QP	
12	0.4740	13.54	10.19	23.73	46.44	-22.71	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1620	43.25	10.13	53.38	65.36	-11.98	QP	
2	0.1620	28.89	10.13	39.02	55.36	-16.34	AVG	
3	0.2060	39.19	10.15	49.34	63.36	-14.02	QP	
4	0.2060	24.66	10.15	34.81	53.36	-18.55	AVG	
5	0.2460	37.65	10.16	47.81	61.89	-14.08	QP	
6	0.2460	26.77	10.16	36.93	51.89	-14.96	AVG	
7	0.2860	32.06	10.16	42.22	60.64	-18.42	QP	
8	0.2860	15.42	10.16	25.58	50.64	-25.06	AVG	
9	0.4100	35.05	10.18	45.23	57.65	-12.42	QP	
10	0.4100	22.79	10.18	32.97	47.65	-14.68	AVG	
11	0.4940	35.38	10.19	45.57	56.10	-10.53	QP	
12	0.4940	22.30	10.19	32.49	46.10	-13.61	AVG	

7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: ANSI C63.4

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	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
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

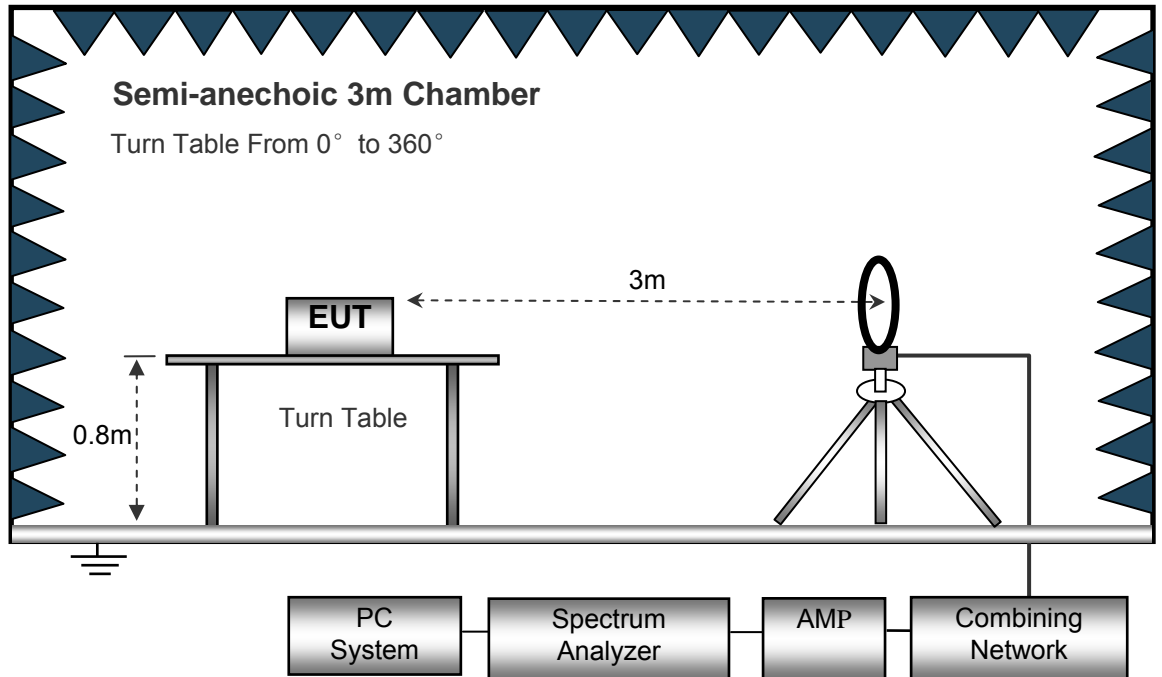
EUT Operation :

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

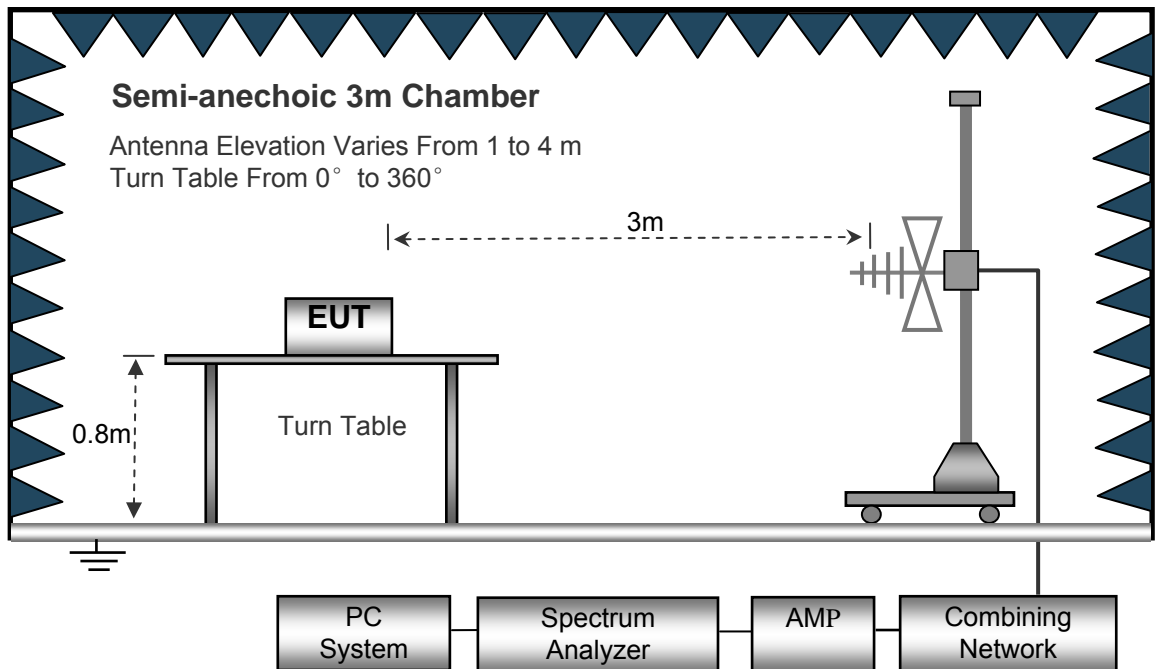
7.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.

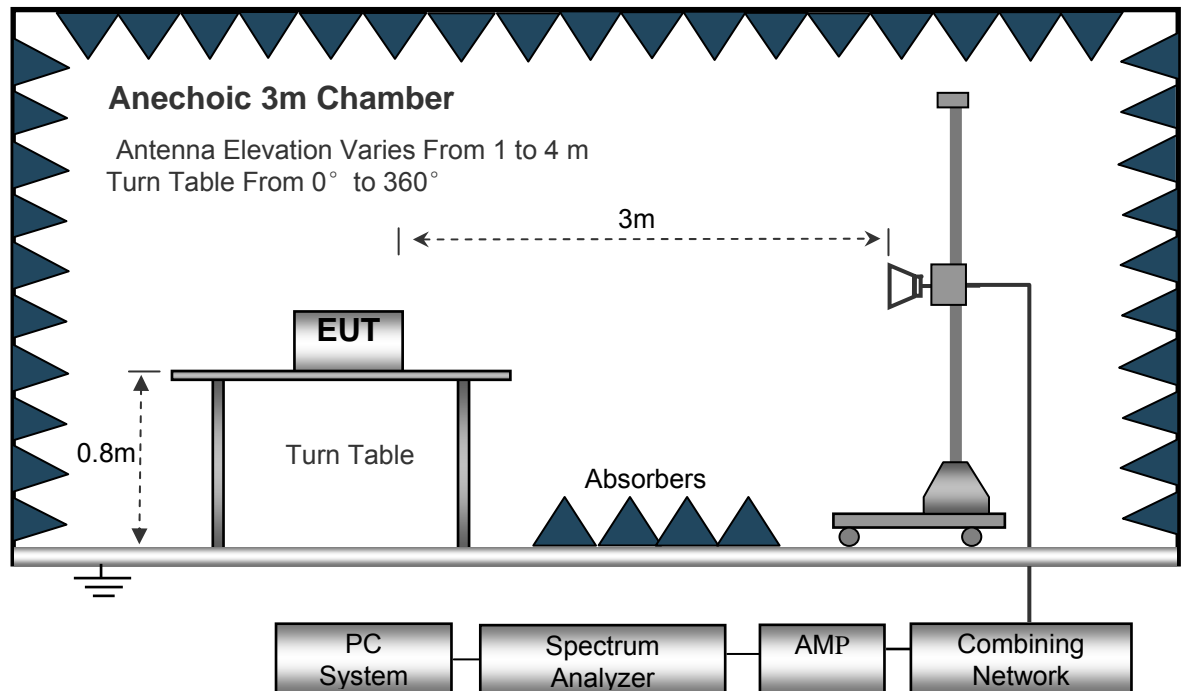
The test setup for emission measurement below 30MHz.



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 0.8m 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit}$$

7.6 Summary of Test Results

Wifi:

Test Frequency : 32.768kHz ~ 30MHz

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

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)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
11b: Low Channel 2412MHz									
485.71	12.85	QP	64	1.6	H	21.09	33.94	46.00	-12.06
485.71	12.23	QP	73	1.7	V	21.09	33.32	46.00	-12.68
4824.00	50.47	PK	267	1.8	V	-1.05	49.42	74.00	-24.58
4824.00	48.70	Ave	267	1.8	V	-1.05	47.65	54.00	-6.35
7236.00	46.14	PK	183	1.4	H	1.34	47.48	74.00	-26.52
7236.00	45.28	Ave	183	1.4	H	1.34	46.62	54.00	-7.38
2325.20	46.43	PK	36	1.7	V	-13.19	33.24	74.00	-40.76
2325.20	39.16	Ave	36	1.7	V	-13.19	25.97	54.00	-28.03
2380.25	43.90	PK	145	1.2	H	-13.15	30.75	74.00	-43.25
2380.25	38.76	Ave	145	1.2	H	-13.15	25.61	54.00	-28.39
2485.81	43.84	PK	206	1.5	V	-13.08	30.76	74.00	-43.24
2485.81	36.33	Ave	206	1.5	V	-13.08	23.25	54.00	-30.75

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									
485.71	13.68	QP	99	2.0	H	21.09	34.77	46.00	-11.23
485.71	13.38	QP	130	1.6	V	21.09	34.47	46.00	-11.53
4874.00	49.44	PK	141	1.5	V	-0.63	48.81	74.00	-25.19
4874.00	47.20	Ave	141	1.5	V	-0.63	46.57	54.00	-7.43
7311.00	45.25	PK	278	1.6	H	2.21	47.46	74.00	-26.54
7311.00	44.73	Ave	278	1.6	H	2.21	46.94	54.00	-7.06
2314.02	46.98	PK	229	1.7	V	-13.19	33.79	74.00	-40.21
2314.02	37.21	Ave	229	1.7	V	-13.19	24.02	54.00	-29.98
2379.51	44.71	PK	195	1.1	H	-13.14	31.57	74.00	-42.43
2379.51	36.33	Ave	195	1.1	H	-13.14	23.19	54.00	-30.81
2490.09	43.66	PK	241	1.7	V	-13.09	30.57	74.00	-43.43
2490.09	37.94	Ave	241	1.7	V	-13.09	24.85	54.00	-29.15

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
11b: High Channel 2462MHz									
485.71	14.63	QP	160	1.8	H	21.09	35.72	46.00	-10.28
485.71	14.21	QP	336	1.7	V	21.09	35.30	46.00	-10.70
4924.00	50.39	PK	106	1.9	V	-0.25	50.14	74.00	-23.86
4924.00	48.71	Ave	106	1.9	V	-0.25	48.46	54.00	-5.55
7386.00	48.25	PK	359	1.6	H	2.85	51.10	74.00	-22.90
7386.00	47.37	Ave	359	1.6	H	2.85	50.22	54.00	-3.78
2338.99	46.66	PK	336	1.3	V	-13.19	33.47	74.00	-40.53
2338.99	39.89	Ave	336	1.3	V	-13.19	26.70	54.00	-27.30
2376.75	43.55	PK	104	1.4	H	-13.14	30.41	74.00	-43.59
2376.75	37.24	Ave	104	1.4	H	-13.14	24.10	54.00	-29.90
2489.28	42.52	PK	125	1.1	V	-13.09	29.43	74.00	-44.57
2489.28	38.44	Ave	125	1.1	V	-13.09	25.35	54.00	-28.65

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
11g: Low Channel 2412MHz									
485.71	14.03	QP	101	1.3	H	21.09	35.12	46.00	-10.88
485.71	13.34	QP	342	1.6	V	21.09	34.43	46.00	-11.57
4824.00	51.66	PK	330	1.9	V	-1.06	50.60	74.00	-23.40
4824.00	48.31	Ave	330	1.9	V	-1.06	47.25	54.00	-6.75
7236.00	47.13	PK	183	1.3	H	1.35	48.48	74.00	-25.52
7236.00	46.49	Ave	183	1.3	H	1.35	47.84	54.00	-6.16
2349.16	45.71	PK	278	1.3	V	-13.19	32.52	74.00	-41.48
2349.16	37.44	Ave	278	1.3	V	-13.19	24.25	54.00	-29.75
2366.04	43.56	PK	263	1.8	H	-13.14	30.42	74.00	-43.58
2366.04	38.10	Ave	263	1.8	H	-13.14	24.96	54.00	-29.04
2499.68	43.98	PK	60	2.0	V	-13.08	30.90	74.00	-43.10
2499.68	36.55	Ave	60	2.0	V	-13.08	23.47	54.00	-30.53

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
11g: Middle Channel 2437MHz									
485.71	13.06	QP	305	1.0	H	21.09	34.15	46.00	-11.85
485.71	13.23	QP	51	1.5	V	21.09	34.32	46.00	-11.68
4874.00	49.04	PK	131	1.5	V	-0.62	48.42	74.00	-25.58
4874.00	48.79	Ave	131	1.5	V	-0.62	48.17	54.00	-5.83
7311.00	47.47	PK	174	1.8	H	2.20	49.67	74.00	-24.33
7311.00	46.29	Ave	174	1.8	H	2.20	48.49	54.00	-5.51
2329.00	45.34	PK	125	1.6	V	-13.19	32.15	74.00	-41.85
2329.00	38.30	Ave	125	1.6	V	-13.19	25.11	54.00	-28.89
2366.44	44.98	PK	92	1.8	H	-13.15	31.83	74.00	-42.17
2366.44	37.17	Ave	92	1.8	H	-13.15	24.02	54.00	-29.98
2486.99	44.39	PK	291	2.0	V	-13.09	31.30	74.00	-42.70
2486.99	37.38	Ave	291	2.0	V	-13.09	24.29	54.00	-29.71

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
11g: High Channel 2462MHz									
485.71	14.42	QP	26	1.4	H	21.09	35.51	46.00	-10.49
485.71	12.73	QP	7	1.9	V	21.09	33.82	46.00	-12.18
4924.00	50.78	PK	296	1.8	V	-0.25	50.53	74.00	-23.47
4924.00	49.44	Ave	296	1.8	V	-0.25	49.19	54.00	-4.81
7386.00	47.69	PK	16	1.2	H	2.86	50.55	74.00	-23.45
7386.00	46.40	Ave	16	1.2	H	2.86	49.26	54.00	-4.74
2313.47	46.80	PK	341	1.9	V	-13.19	33.61	74.00	-40.39
2313.47	39.66	Ave	341	1.9	V	-13.19	26.47	54.00	-27.53
2369.97	44.00	PK	231	1.7	H	-13.14	30.86	74.00	-43.14
2369.97	36.15	Ave	231	1.7	H	-13.14	23.01	54.00	-30.99
2497.48	44.84	PK	242	1.5	V	-13.08	31.76	74.00	-42.24
2497.48	36.82	Ave	242	1.5	V	-13.08	23.74	54.00	-30.26

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
n20: Low Channel 2412MHz									
485.71	13.86	QP	65	1.7	H	21.09	34.95	46.00	-11.05
485.71	12.98	QP	264	1.2	V	21.09	34.07	46.00	-11.93
4824.00	50.57	PK	87	1.4	V	-1.06	49.51	74.00	-24.49
4824.00	48.90	Ave	87	1.4	V	-1.06	47.84	54.00	-6.16
7236.00	47.09	PK	353	1.2	H	1.34	48.43	74.00	-25.57
7236.00	45.57	Ave	353	1.2	H	1.34	46.91	54.00	-7.09
2320.98	46.70	PK	319	1.5	V	-13.19	33.51	74.00	-40.49
2320.98	38.63	Ave	319	1.5	V	-13.19	25.44	54.00	-28.56
2360.52	43.34	PK	354	1.3	H	-13.14	30.20	74.00	-43.80
2360.52	36.70	Ave	354	1.3	H	-13.14	23.56	54.00	-30.44
2490.18	44.56	PK	121	1.4	V	-13.08	31.48	74.00	-42.52
2490.18	36.14	Ave	121	1.4	V	-13.08	23.06	54.00	-30.94

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
n20: Middle Channel 2437MHz									
485.71	13.70	QP	337	1.9	H	21.09	34.79	46.00	-11.21
485.71	13.27	QP	170	1.0	V	21.09	34.36	46.00	-11.64
4874.00	50.31	PK	210	1.5	V	-0.61	49.70	74.00	-24.30
4874.00	48.46	Ave	210	1.5	V	-0.61	47.85	54.00	-6.15
7311.00	47.70	PK	10	1.5	H	2.21	49.91	74.00	-24.10
7311.00	45.31	Ave	10	1.5	H	2.21	47.52	54.00	-6.49
2328.93	46.36	PK	33	1.9	V	-13.19	33.17	74.00	-40.83
2328.93	37.67	Ave	33	1.9	V	-13.19	24.48	54.00	-29.52
2367.24	43.45	PK	77	2.0	H	-13.14	30.31	74.00	-43.69
2367.24	38.86	Ave	77	2.0	H	-13.14	25.72	54.00	-28.28
2494.77	43.27	PK	321	1.4	V	-13.09	30.18	74.00	-43.82
2494.77	38.44	Ave	321	1.4	V	-13.09	25.35	54.00	-28.65

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
n20: High Channel 2462MHz									
485.71	13.05	QP	287	1.7	H	21.09	34.14	46.00	-10.86
485.71	12.80	QP	255	1.0	V	21.09	33.89	46.00	-11.11
4924.00	50.66	PK	92	1.6	V	-0.24	50.42	74.00	-23.59
4924.00	48.87	Ave	92	1.6	V	-0.24	48.63	54.00	-5.37
7386.00	47.38	PK	358	1.8	H	2.83	50.21	74.00	-23.79
7386.00	45.01	Ave	358	1.8	H	2.83	47.84	54.00	-6.17
2333.56	46.87	PK	284	2.0	V	-13.19	33.68	74.00	-40.32
2333.56	37.21	Ave	284	2.0	V	-13.19	24.02	54.00	-29.98
2365.31	43.46	PK	165	1.9	H	-13.14	30.32	74.00	-43.68
2365.31	36.76	Ave	165	1.9	H	-13.14	23.62	54.00	-30.38
2495.42	43.64	PK	41	2.0	V	-13.08	30.56	74.00	-43.44
2495.42	36.53	Ave	41	2.0	V	-13.08	23.45	54.00	-30.55

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
n40: Low Channel 2422MHz									
485.71	14.81	QP	245	1.5	H	21.09	35.90	46.00	-10.10
485.71	12.73	QP	119	1.7	V	21.09	33.82	46.00	-12.18
4844.00	50.70	PK	352	1.1	V	-1.06	49.64	74.00	-24.36
4844.00	48.54	Ave	352	1.1	V	-1.06	47.48	54.00	-6.52
7266.00	48.22	PK	13	1.0	H	1.34	49.56	74.00	-24.44
7266.00	47.89	Ave	13	1.0	H	1.34	49.23	54.00	-4.77
2334.47	46.47	PK	258	1.7	V	-13.19	33.28	74.00	-40.72
2334.47	37.23	Ave	258	1.7	V	-13.19	24.04	54.00	-29.96
2357.81	43.62	PK	42	1.5	H	-13.15	30.47	74.00	-43.53
2357.81	37.15	Ave	42	1.5	H	-13.15	24.00	54.00	-30.00
2487.50	43.09	PK	162	1.9	V	-13.08	30.01	74.00	-43.99
2487.50	37.20	Ave	162	1.9	V	-13.08	24.12	54.00	-29.88

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
n40: Middle Channel 2437MHz									
485.71	13.16	QP	332	2.0	H	21.09	34.25	46.00	-11.75
485.71	12.98	QP	223	1.3	V	21.09	34.07	46.00	-11.93
4874.00	49.01	PK	334	1.9	V	-0.62	48.39	74.00	-25.61
4874.00	48.47	Ave	334	1.9	V	-0.62	47.85	54.00	-6.15
7311.00	47.34	PK	74	1.7	H	2.21	49.55	74.00	-24.45
7311.00	46.89	Ave	74	1.7	H	2.21	49.10	54.00	-4.91
2324.83	46.59	PK	20	1.3	V	-13.19	33.40	74.00	-40.60
2324.83	39.25	Ave	20	1.3	V	-13.19	26.06	54.00	-27.94
2378.05	44.10	PK	335	2.0	H	-13.16	30.94	74.00	-43.06
2378.05	37.37	Ave	335	2.0	H	-13.16	24.21	54.00	-29.79
2489.78	44.50	PK	54	1.2	V	-13.08	31.42	74.00	-42.58
2489.78	38.92	Ave	54	1.2	V	-13.08	25.84	54.00	-28.16

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
n40: High Channel 2452MHz									
485.71	14.04	QP	293	1.3	H	21.09	35.13	46.00	-10.87
485.71	12.25	QP	312	1.5	V	21.09	33.34	46.00	-12.66
4904.00	50.87	PK	95	1.1	V	-0.24	50.63	74.00	-23.37
4904.00	48.37	Ave	95	1.1	V	-0.24	48.13	54.00	-5.87
7356.00	48.80	PK	41	1.4	H	2.85	51.65	74.00	-22.35
7356.00	47.88	Ave	41	1.4	H	2.85	50.73	54.00	-3.27
2336.57	45.84	PK	318	1.3	V	-13.19	32.65	74.00	-41.35
2336.57	38.35	Ave	318	1.3	V	-13.19	25.16	54.00	-28.84
2383.20	44.40	PK	40	1.8	H	-13.14	31.26	74.00	-42.74
2383.20	36.69	Ave	40	1.8	H	-13.14	23.55	54.00	-30.45
2489.08	44.91	PK	197	1.5	V	-13.08	31.83	74.00	-42.17
2489.08	38.09	Ave	197	1.5	V	-13.08	25.01	54.00	-28.99

Test Frequency: 18GHz~25GHz

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

BT BLE:**Test Frequency : 32.768kHz ~ 30MHz**

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

Test Frequency : 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
Low Channel 2402MHz									
268.62	37.09	QP	1	1.0	H	-13.35	23.74	46.00	-22.26
268.62	40.77	QP	44	1.3	V	-13.35	27.42	46.00	-18.58
4804.00	47.00	PK	311	1.9	V	-1.06	45.94	74.00	-28.06
4804.00	44.16	Ave	311	1.9	V	-1.06	43.10	54.00	-10.90
7206.00	40.38	PK	28	1.3	H	1.33	41.71	74.00	-32.29
7206.00	34.41	Ave	28	1.3	H	1.33	35.74	54.00	-18.26
2319.92	45.90	PK	254	1.8	V	-13.19	32.71	74.00	-41.29
2319.92	37.67	Ave	254	1.8	V	-13.19	24.48	54.00	-29.52
2351.80	43.05	PK	276	1.8	H	-13.14	29.91	74.00	-44.09
2351.80	38.09	Ave	276	1.8	H	-13.14	24.95	54.00	-29.05
2491.14	44.52	PK	253	1.0	V	-13.08	31.44	74.00	-42.56
2491.14	37.04	Ave	253	1.0	V	-13.08	23.96	54.00	-30.04

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
Middle Channel 2440MHz									
268.62	37.34	QP	3	1.1	H	-13.35	23.99	46.00	-22.01
268.62	40.84	QP	208	1.3	V	-13.35	27.49	46.00	-18.51
4880.00	46.67	PK	7	1.8	V	-0.62	46.05	74.00	-27.95
4880.00	42.69	Ave	7	1.8	V	-0.62	42.07	54.00	-11.93
7320.00	41.42	PK	37	1.1	H	2.21	43.63	74.00	-30.37
7320.00	35.89	Ave	37	1.1	H	2.21	38.10	54.00	-15.90
2324.91	46.48	PK	163	2.0	V	-13.19	33.29	74.00	-40.71
2324.91	37.49	Ave	163	2.0	V	-13.19	24.30	54.00	-29.70
2350.78	42.66	PK	265	2.0	H	-13.14	29.52	74.00	-44.48
2350.78	38.20	Ave	265	2.0	H	-13.14	25.06	54.00	-28.94
2497.07	44.89	PK	84	1.1	V	-13.08	31.81	74.00	-42.19
2497.07	37.39	Ave	84	1.1	V	-13.08	24.31	54.00	-29.69

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
High Channel 2480MHz									
268.62	37.01	QP	232	1.4	H	-13.35	23.66	46.00	-22.34
268.62	40.27	QP	182	1.4	V	-13.35	26.92	46.00	-19.08
4960.00	47.96	PK	34	1.4	V	-0.24	47.72	74.00	-26.28
4960.00	44.16	Ave	34	1.4	V	-0.24	43.92	54.00	-10.08
7440.00	41.62	PK	50	1.9	H	2.84	44.46	74.00	-29.54
7440.00	36.89	Ave	50	1.9	H	2.84	39.73	54.00	-14.27
2311.97	46.59	PK	205	1.2	V	-13.19	33.40	74.00	-40.60
2311.97	39.26	Ave	205	1.2	V	-13.19	26.07	54.00	-27.93
2351.63	44.54	PK	230	1.5	H	-13.14	31.40	74.00	-42.60
2351.63	36.52	Ave	230	1.5	H	-13.14	23.38	54.00	-30.62
2497.91	42.60	PK	22	1.5	V	-13.08	29.52	74.00	-44.48
2497.91	37.31	Ave	22	1.5	V	-13.08	24.23	54.00	-29.77

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: DA 00-705

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)).

8.1 Test Procedure

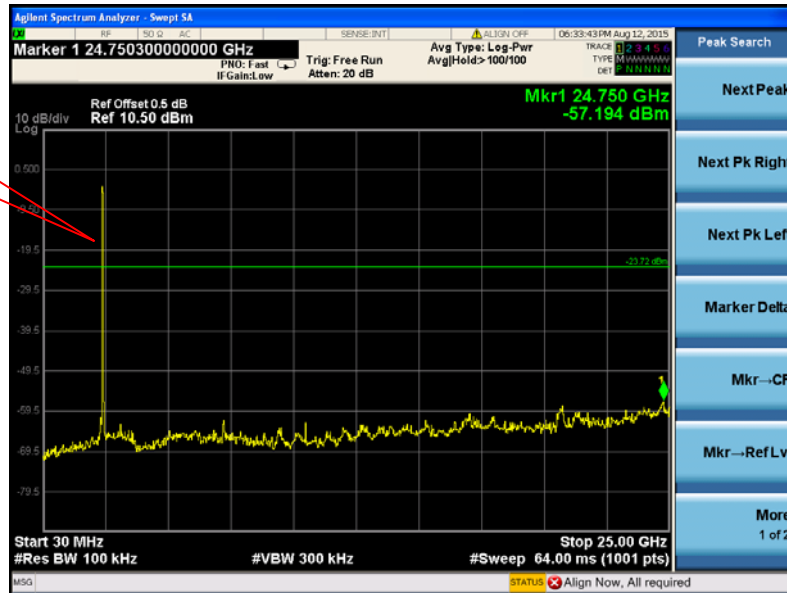
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold

8.2 Test Result

802.11b

Low Channel

Fundamental



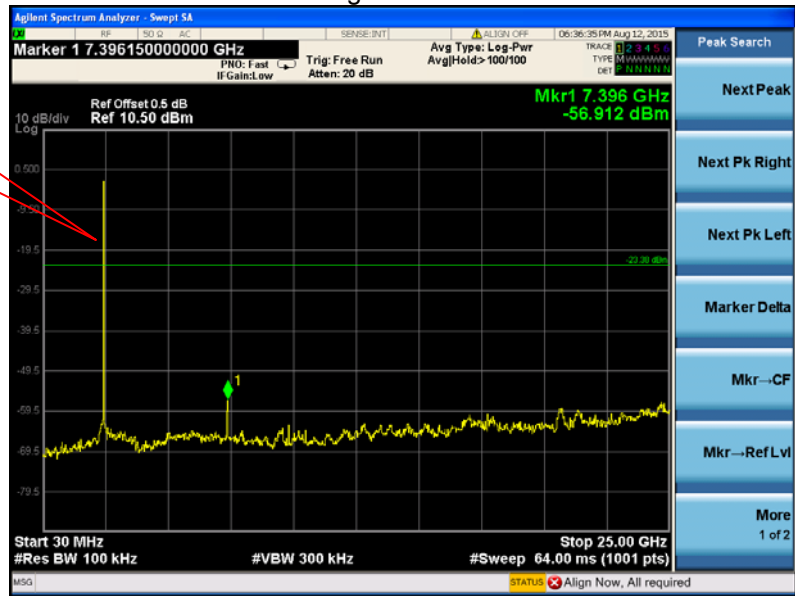
Middle Channel

Fundamental



High Channel

Fundamental



802.11g

Low Channel

Fundamental



Middle Channel

Fundamental



High Channel

Fundamental



802.11n HT20

Low Channel

Fundamental



Middle Channel

Fundamental



High Channel

Fundamental



802.11n HT40

Low Channel

Fundamental



Middle Channel

Fundamental



High Channel

Fundamental



BEL GFSK

Low Channel

Fundamental



Middle Channel

Fundamental



High Channel

Fundamental



9 Band Edge Measurement

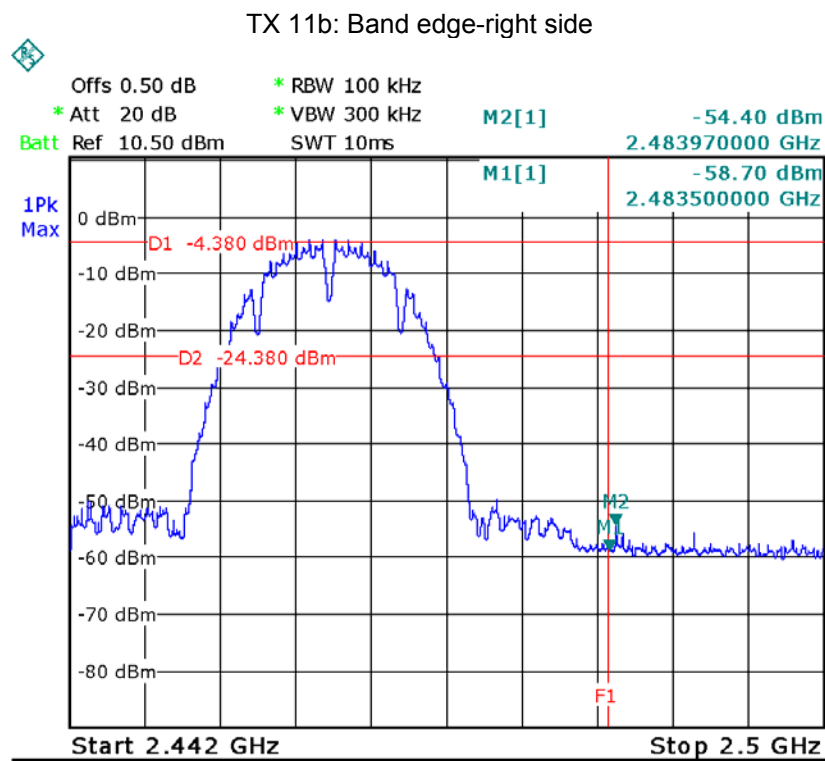
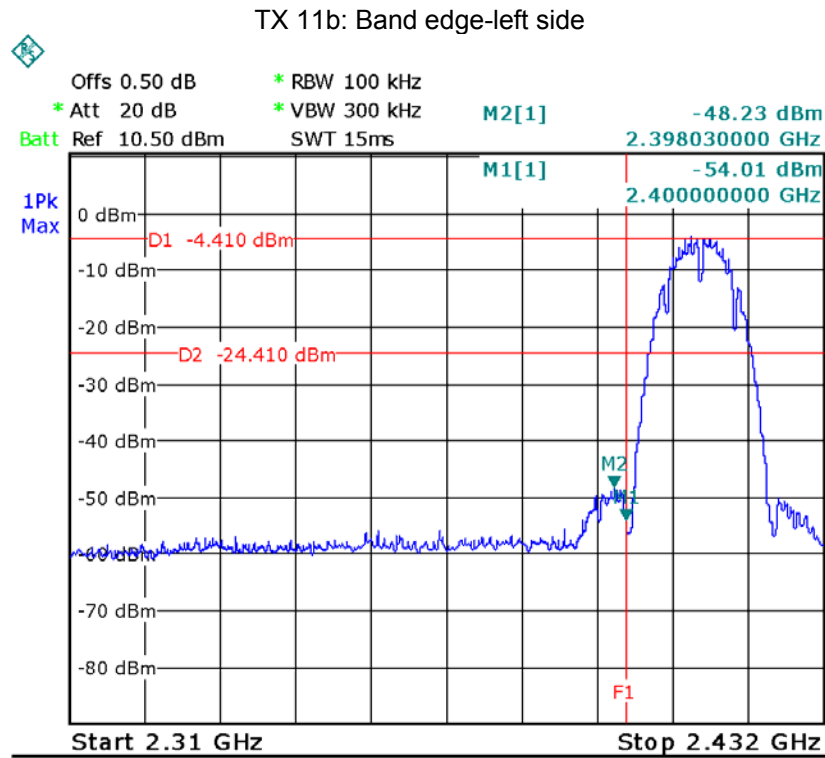
Test Requirement:	FCC CFR47 Part 15 Section 15.247
Test Method:	KDB 558074 D01 DTS Meas Guidance v03r03 06/09/2015
Test Limit:	Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency 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

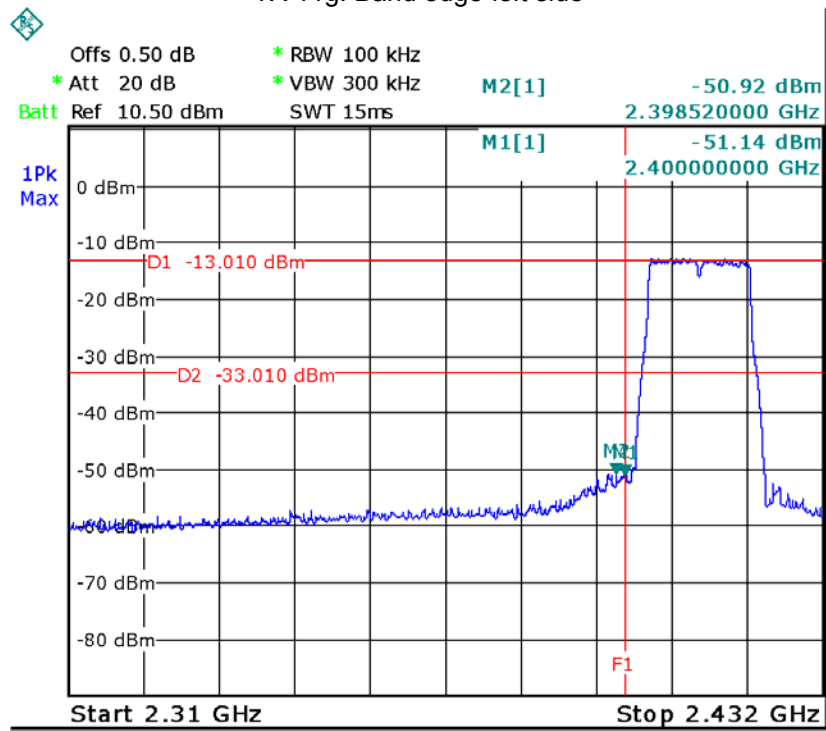
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then 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

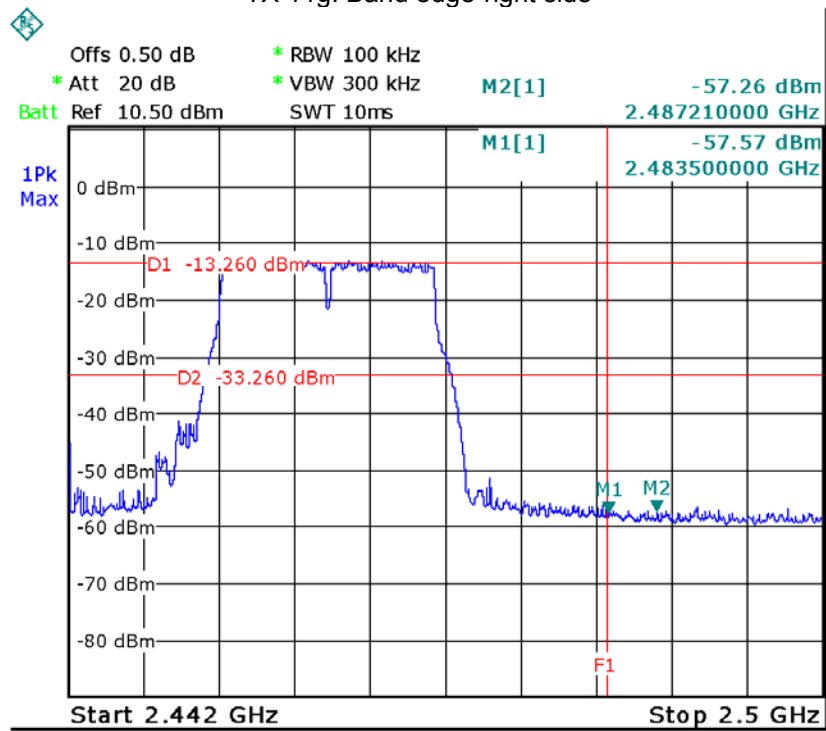
Test result plots shown as follows:



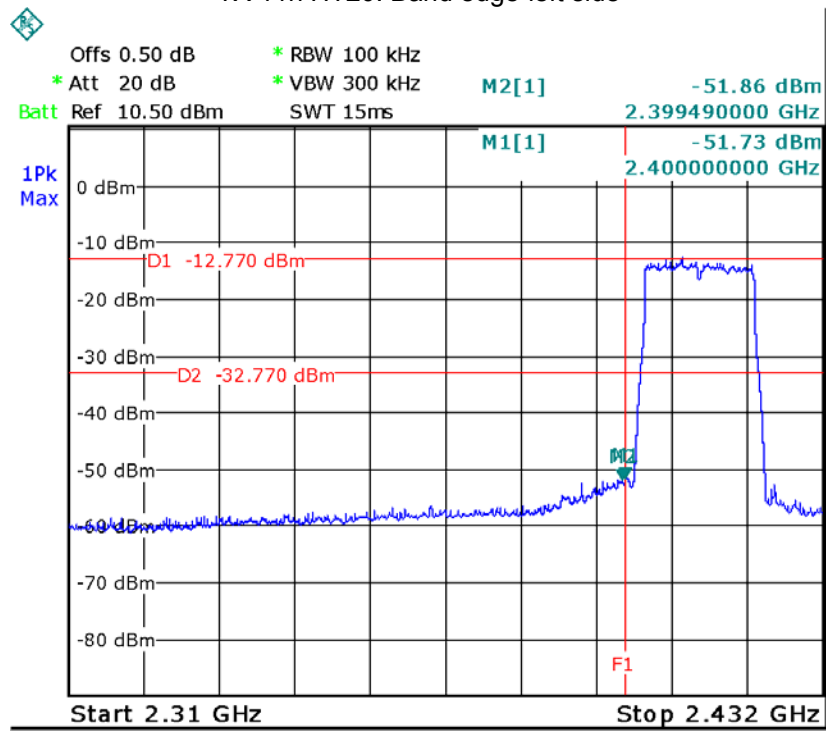
TX 11g: Band edge-left side



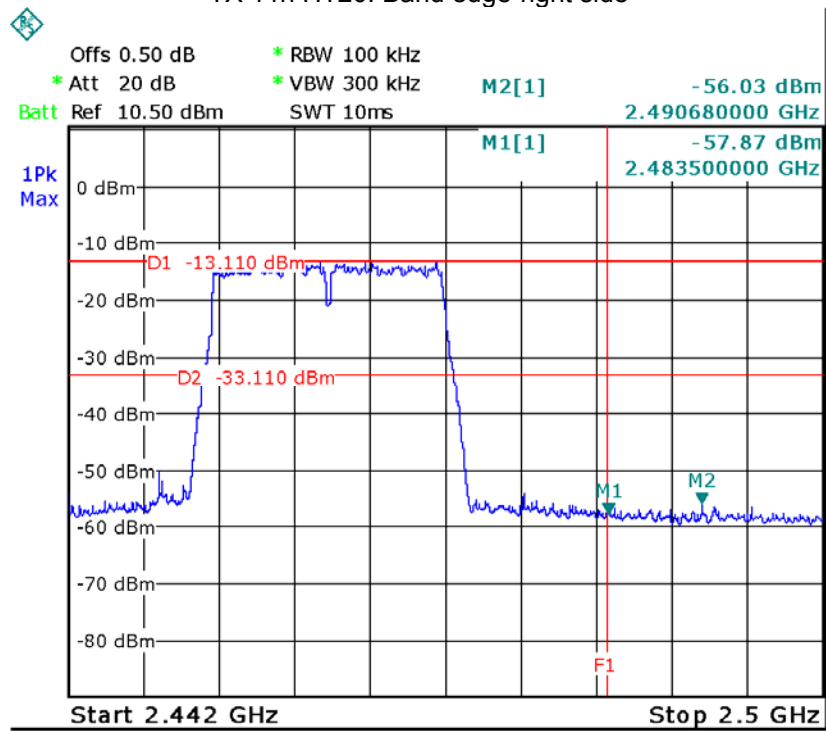
TX 11g: Band edge-right side



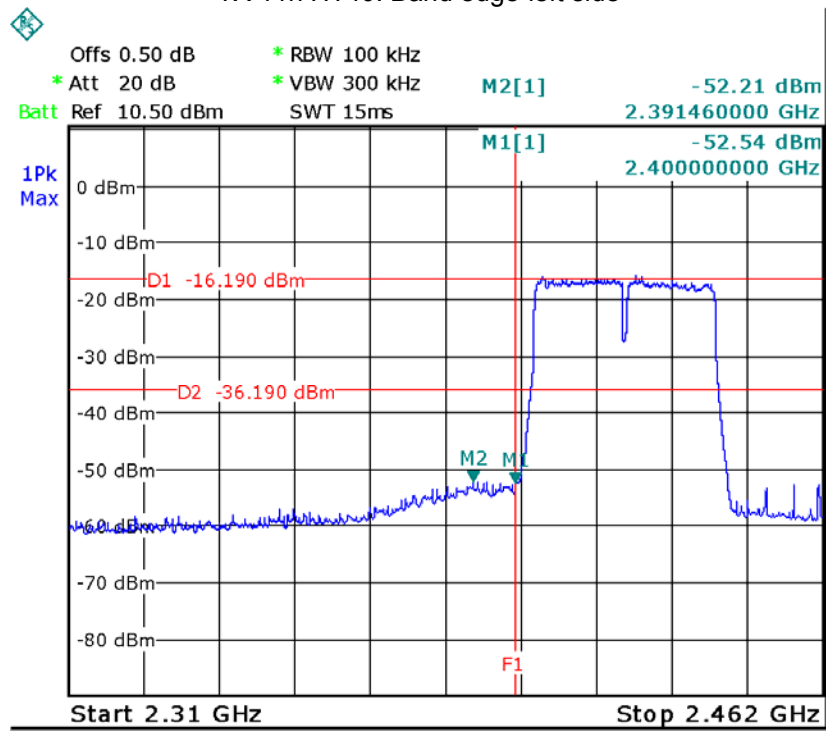
TX 11n HT20: Band edge-left side



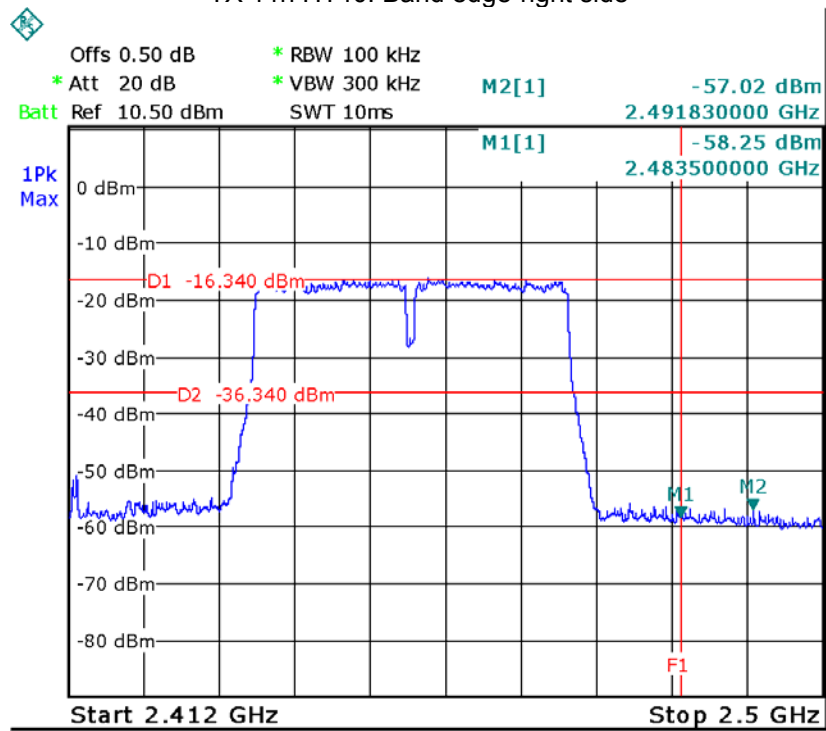
TX 11n HT20: Band edge-right side



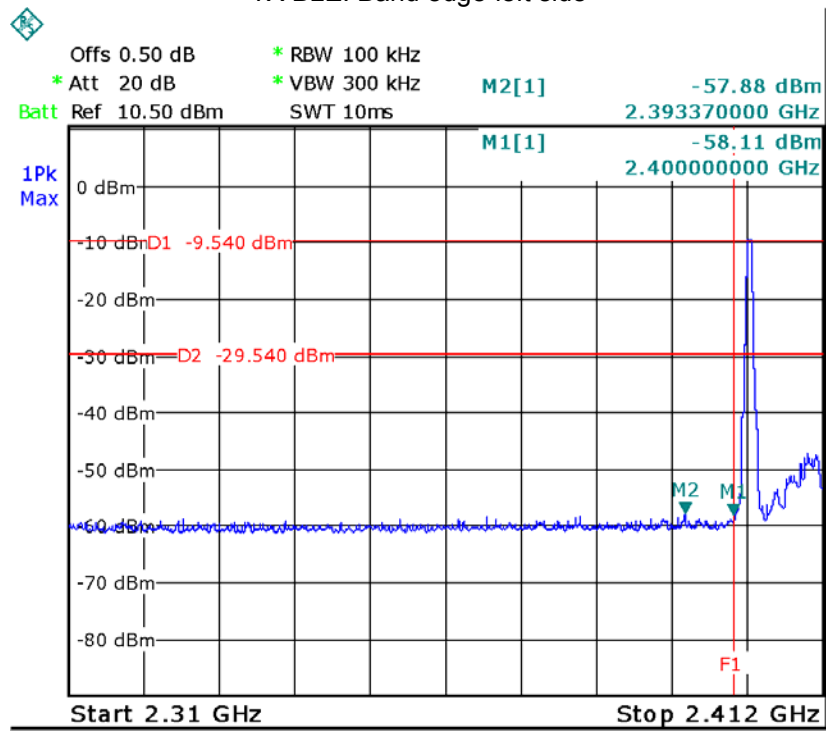
TX 11n HT40: Band edge-left side



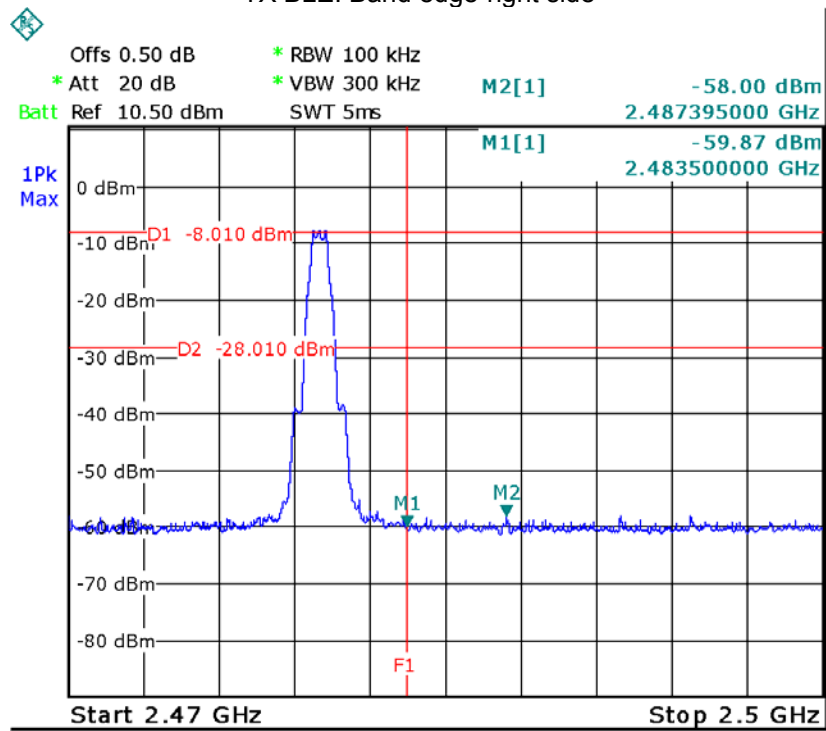
TX 11n HT40: Band edge-right side



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 v03r03 06/09/2015

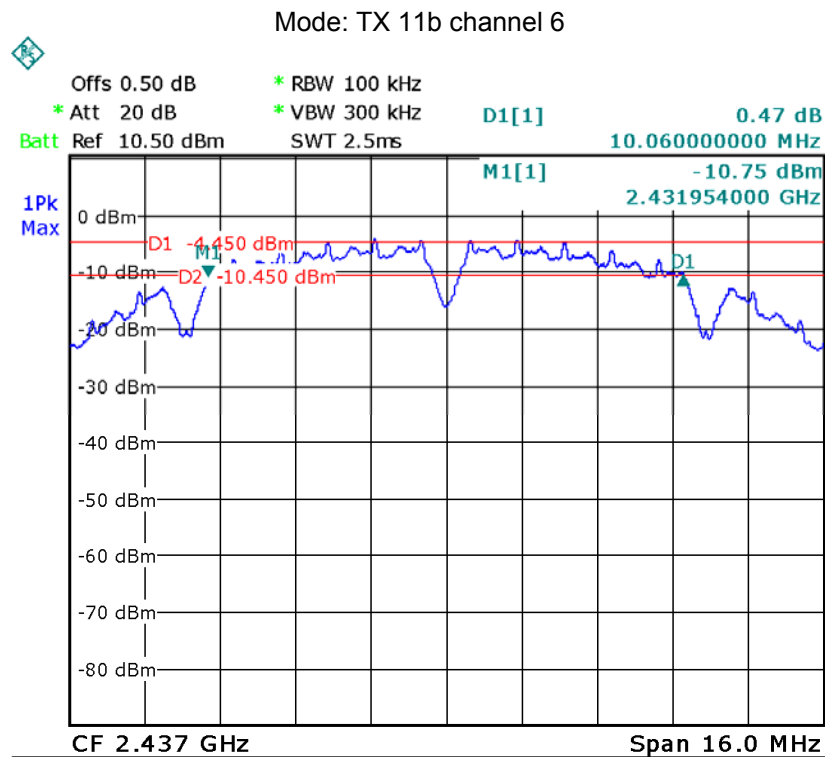
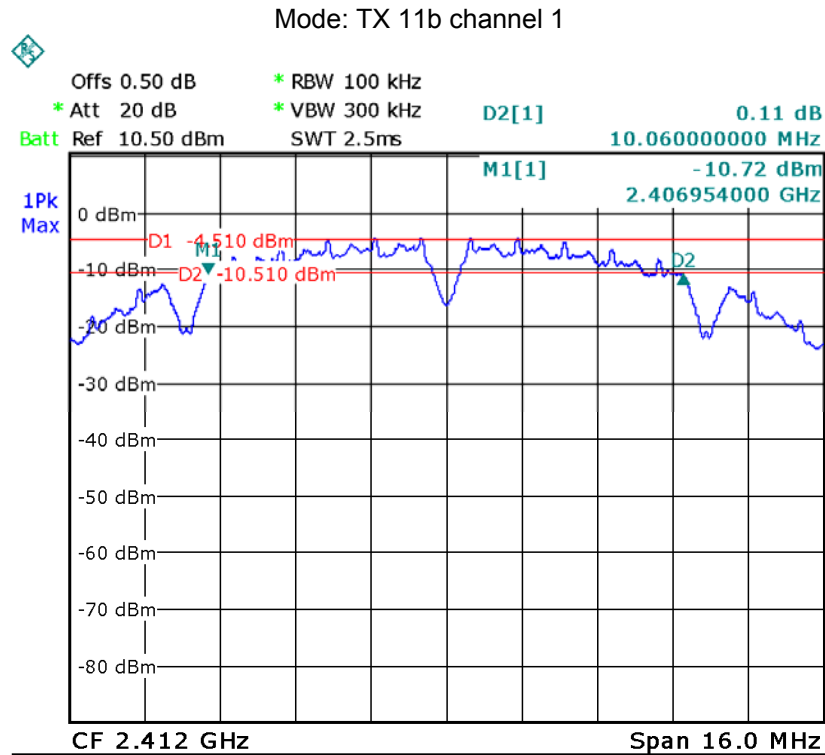
10.1 Test Procedure:

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

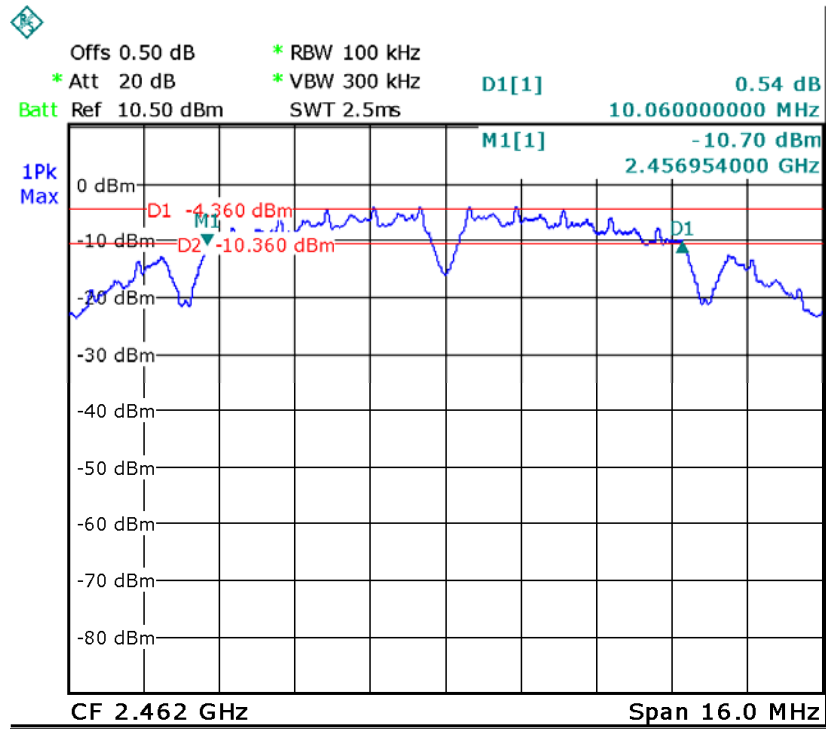
10.2 Test Result:

Operation mode	Bandwidth (MHz)		
	Channel 1	Channel 6	Channel 11
TX 11b	Channel 1	Channel 6	Channel 11
	10.060	10.060	10.060
TX 11g	Channel 1	Channel 6	Channel 11
	16.617	16.617	16.617
TX 11n HT20	Channel 1	Channel 6	Channel 11
	17.838	17.838	17.838
TX 11n HT40	Channel 3	Channel 6	Channel 9
	36.560	36.560	36.560
BT BLE	Channel 0	Channel 19	Channel 39
	0.659	0.659	0.659

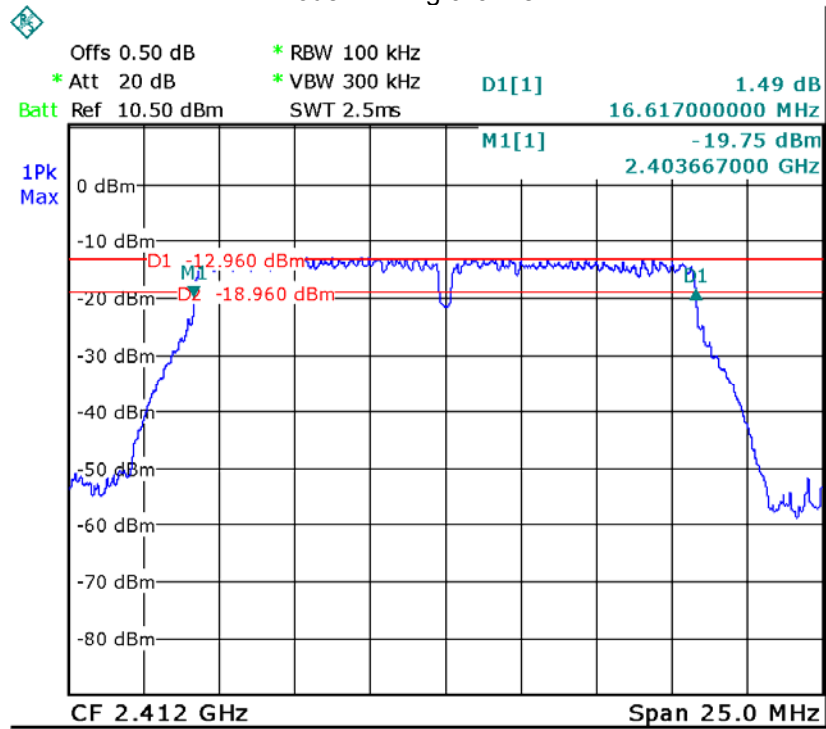
Test result plot as follows:



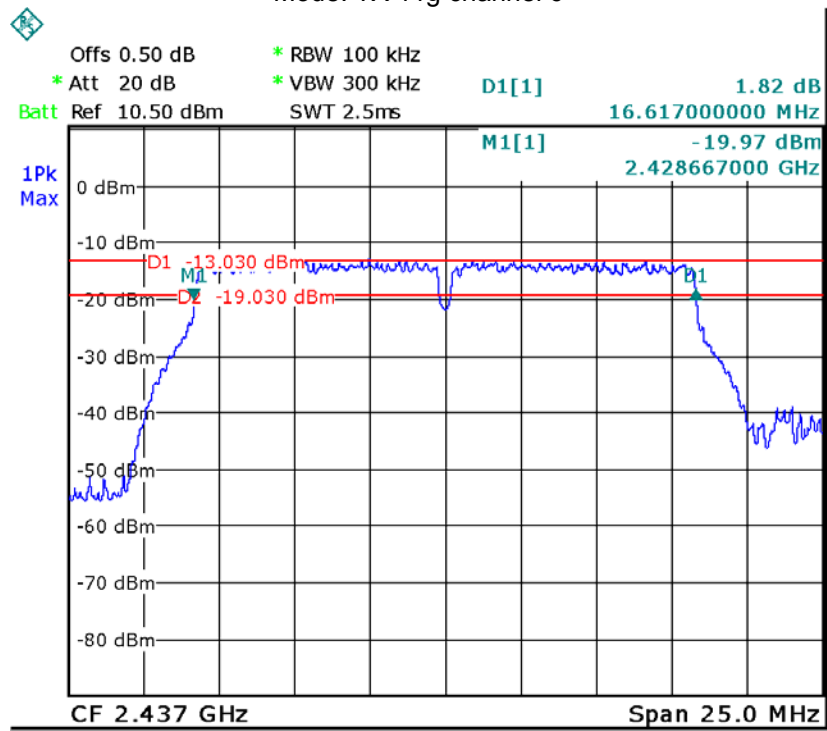
Mode: TX 11b channel 11



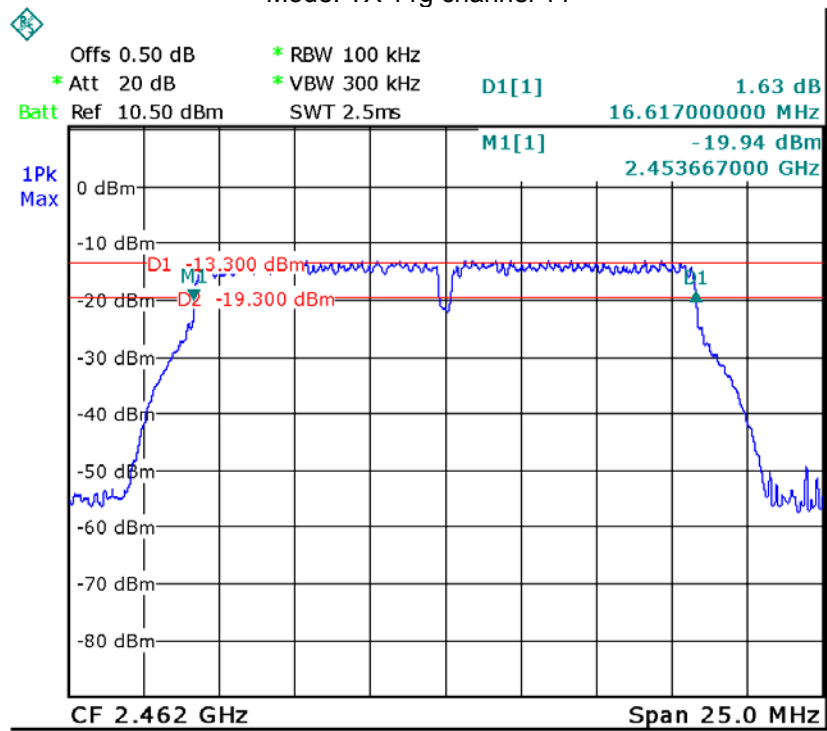
Mode: TX 11g channel 1



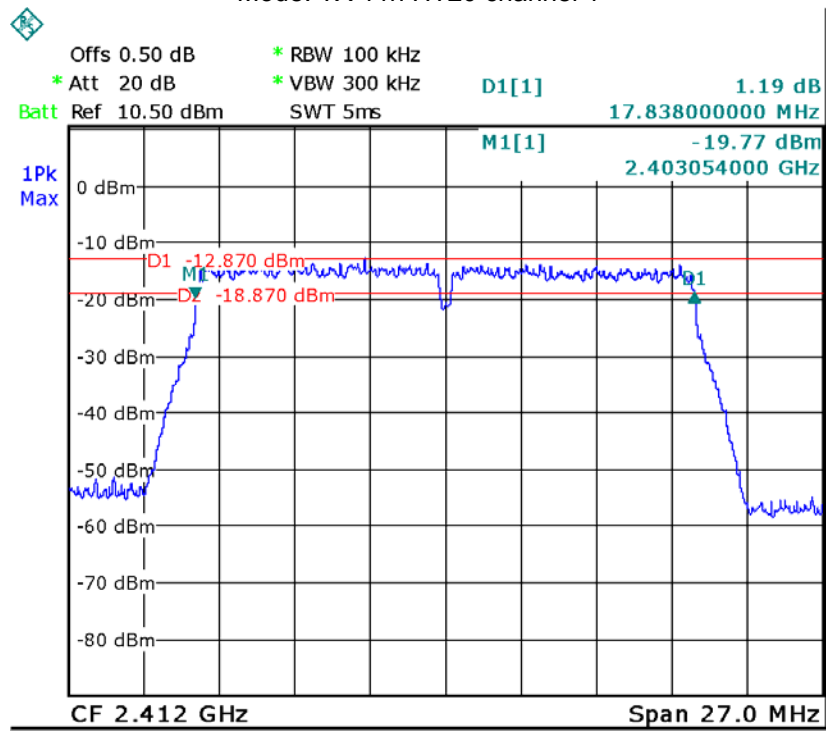
Mode: TX 11g channel 6



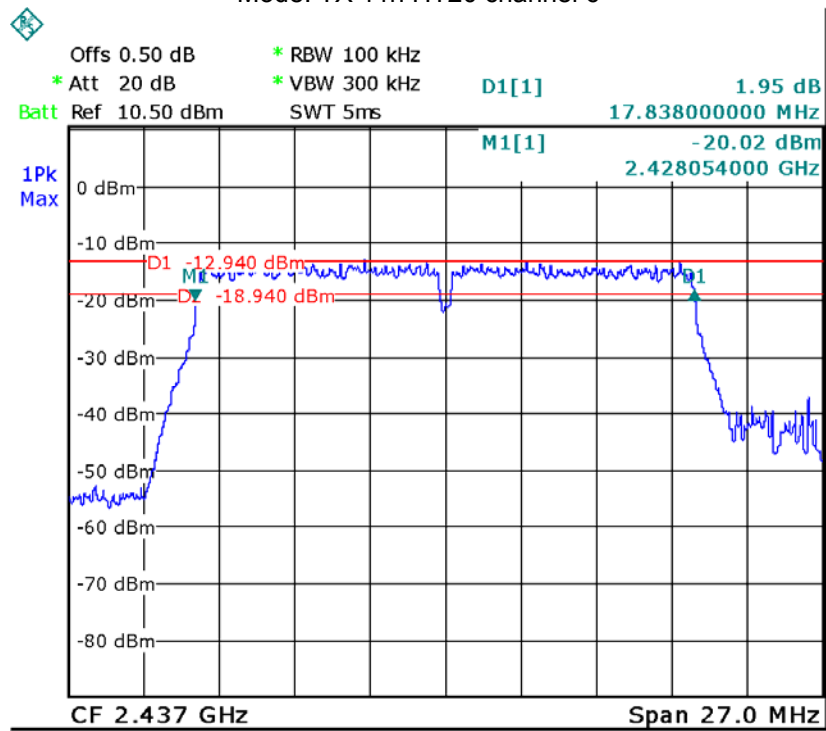
Mode: TX 11g channel 11



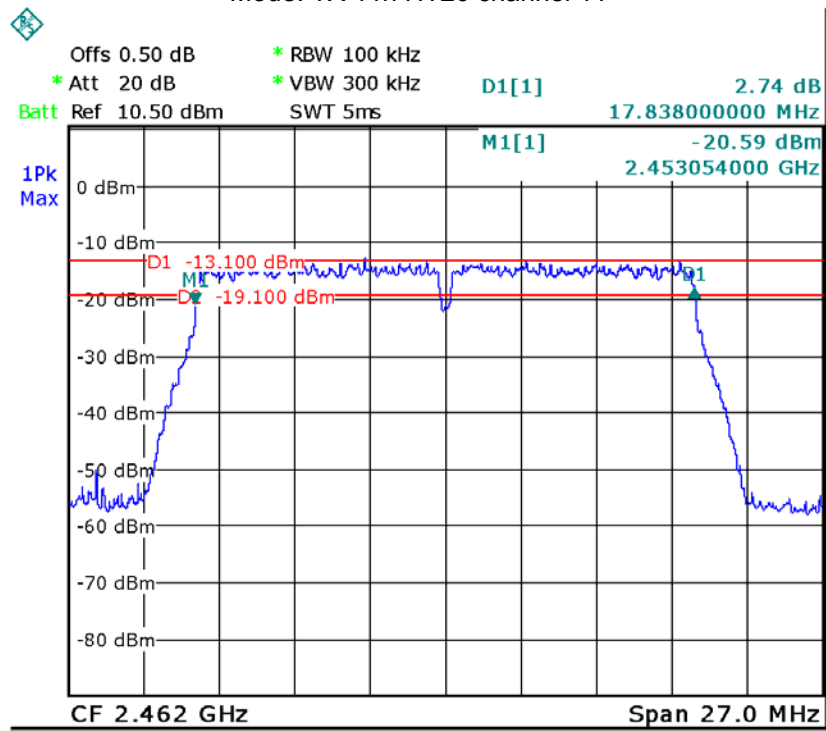
Mode: TX 11n HT20 channel 1



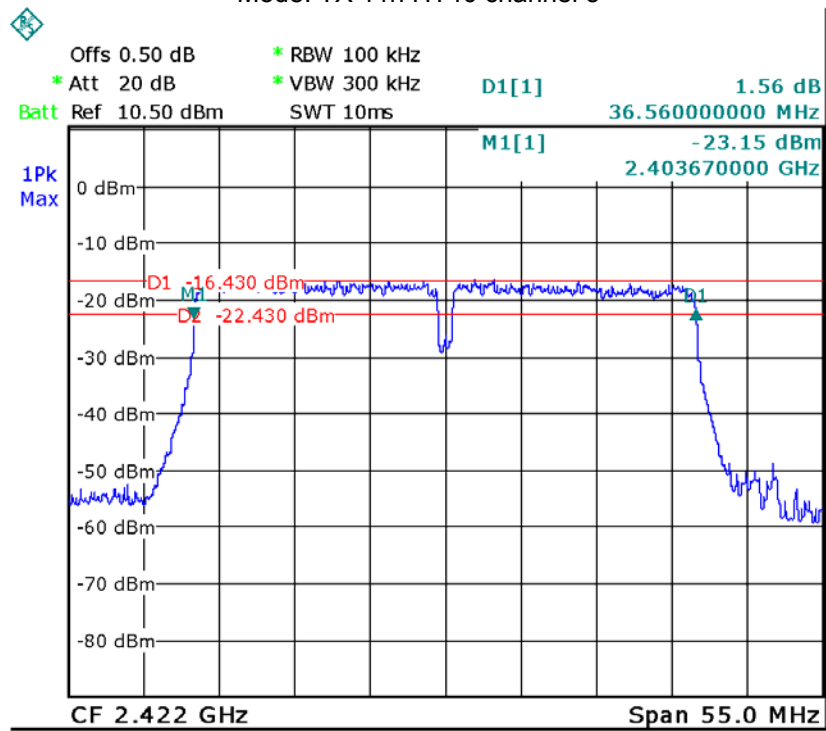
Mode: TX 11n HT20 channel 6



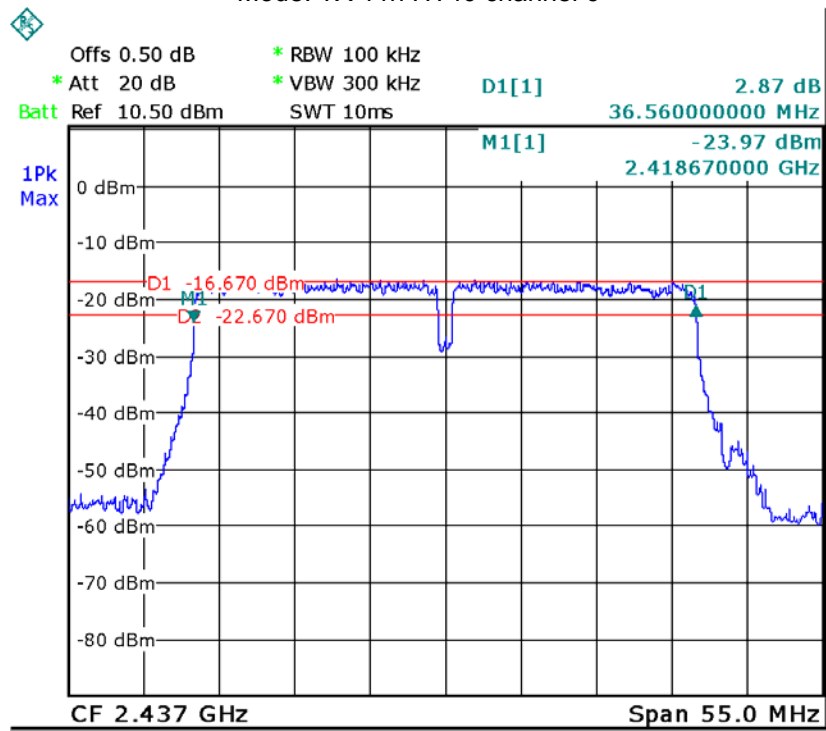
Mode: TX 11n HT20 channel 11



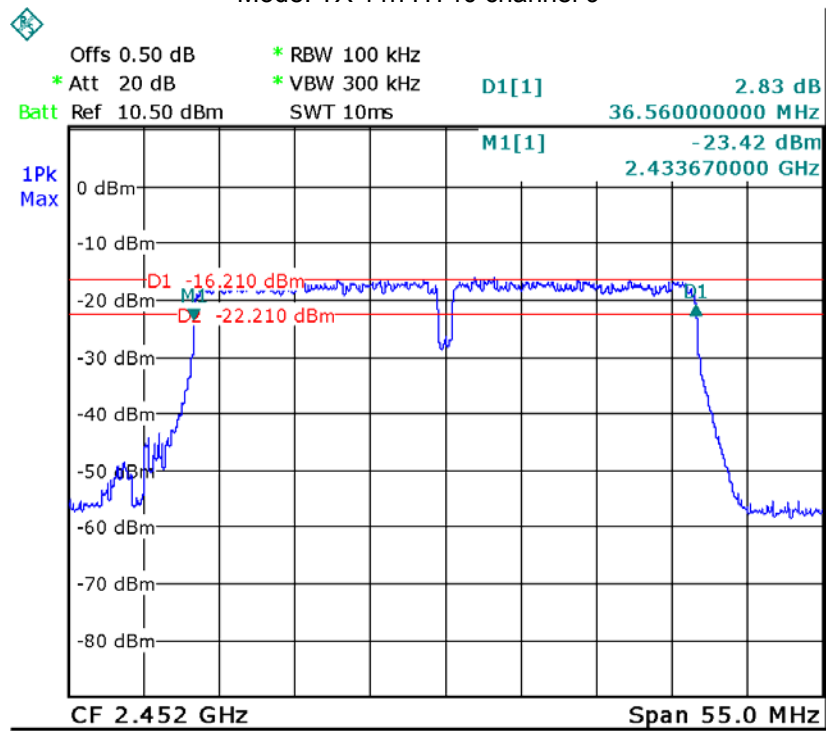
Mode: TX 11n HT40 channel 3

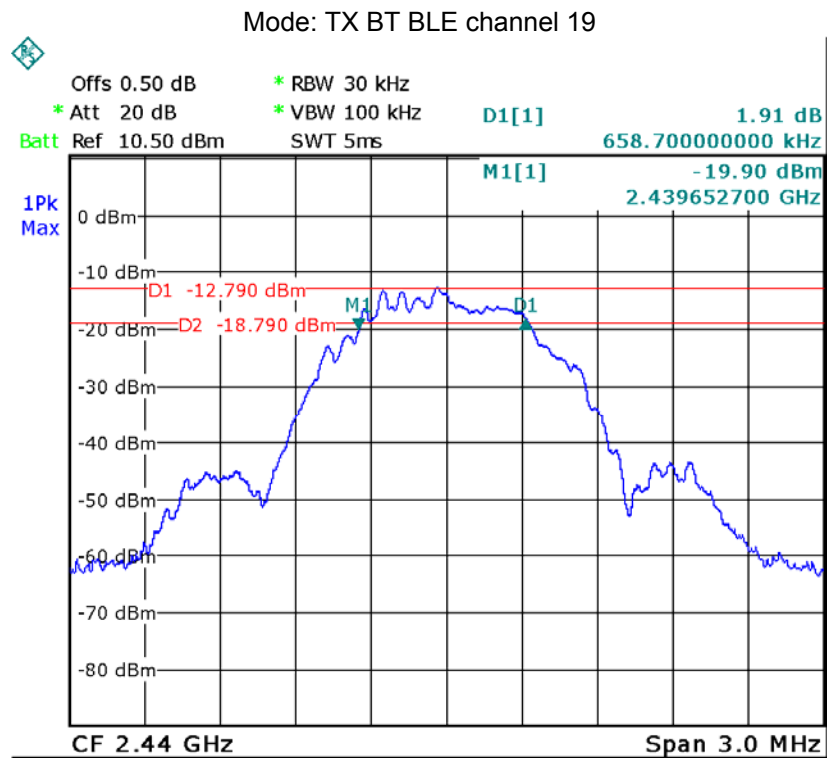
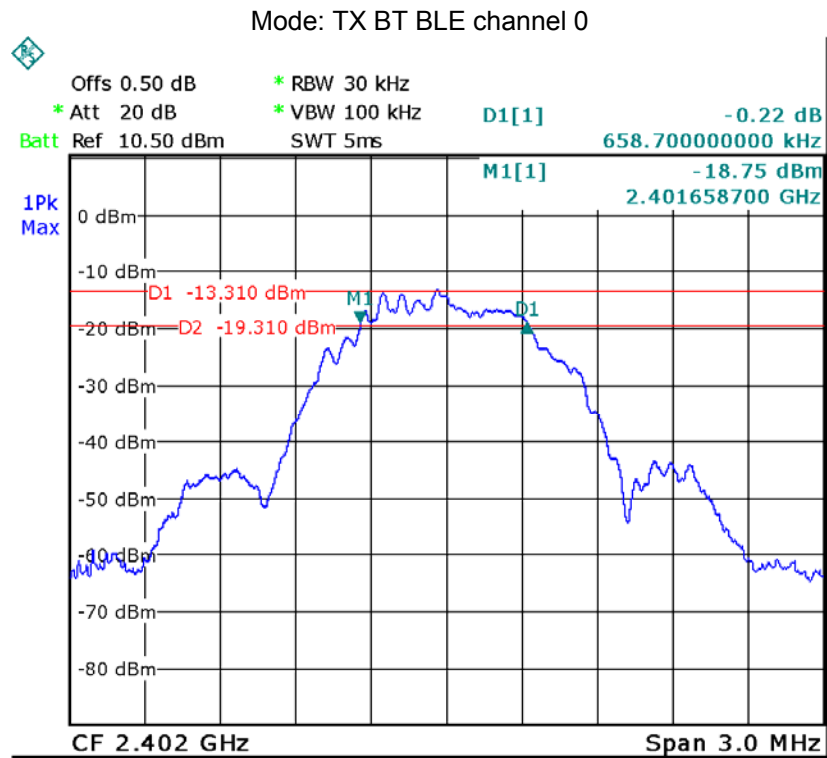


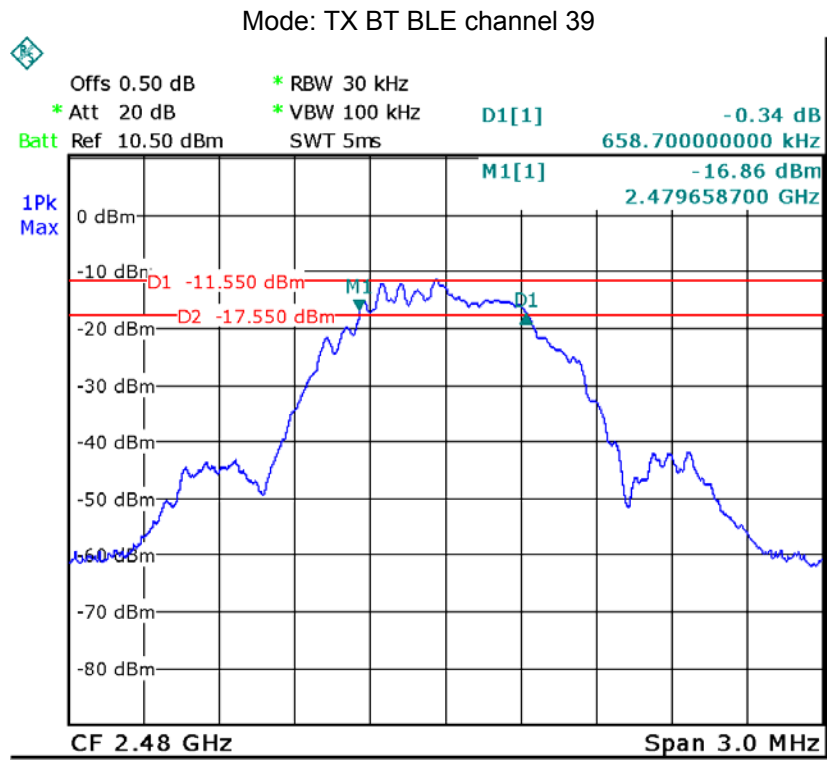
Mode: TX 11n HT40 channel 6



Mode: TX 11n HT40 channel 9







11 Maximum Peak Output Power

Test Requirement:

FCC CFR47 Part 15 Section 15.247

Test Method:

KDB 558074 D01 DTS Meas Guidance v03r03 06/09/2015

11.1 Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r03 06/09/2015

section 9.1.1

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

- a) Set the $RBW \geq$ DTS bandwidth.
- b) Set $VBW \geq 3$ RBW.
- c) Set $span \geq 3 \times RBW$
- 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

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 $VBW \geq 3$ RBW
- c) Set the $span \geq 1.5 \times$ 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:

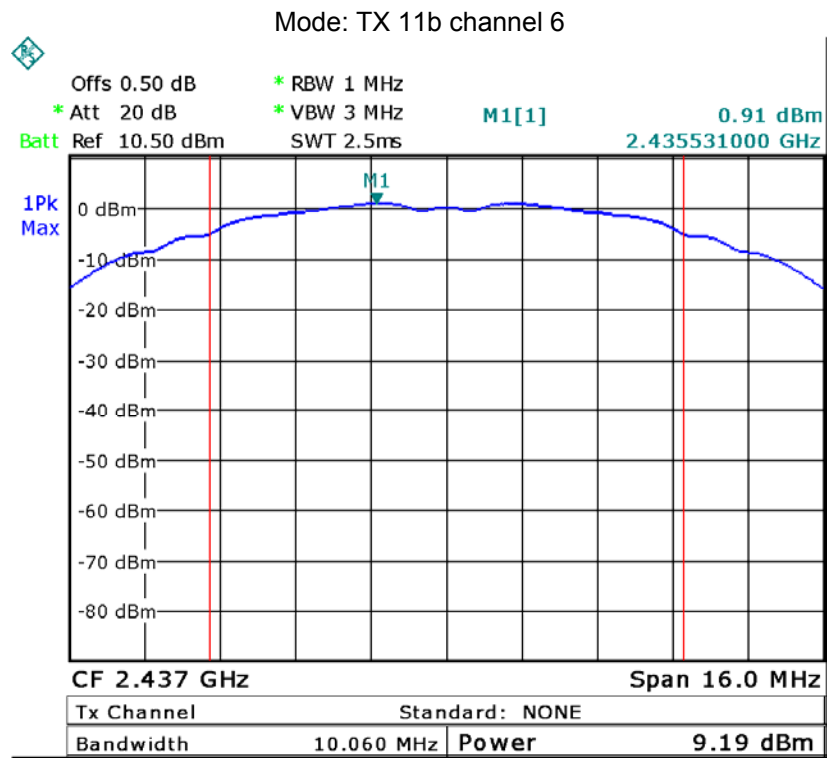
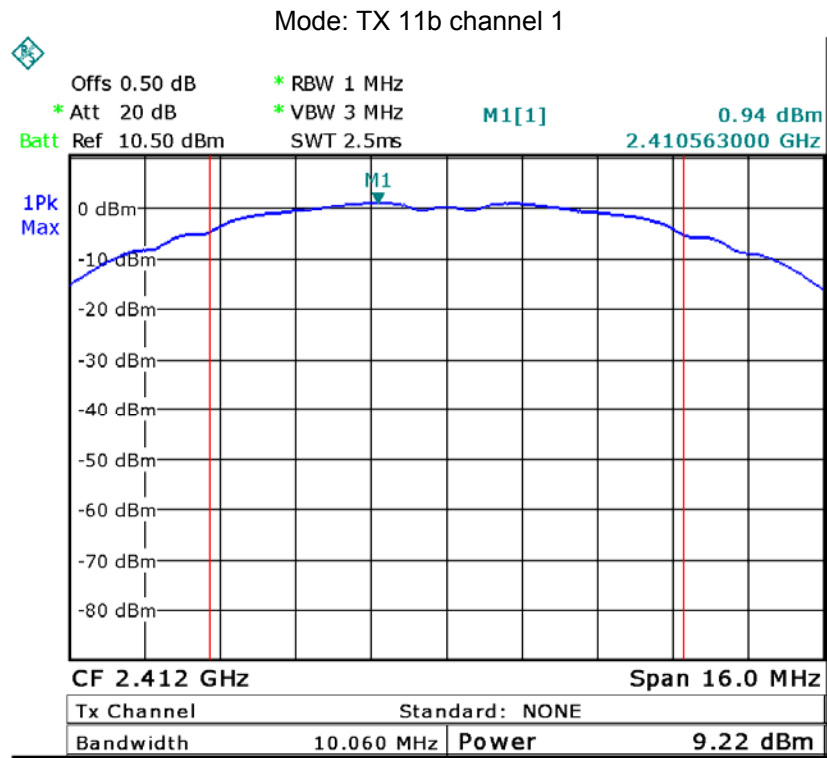
Test mode :TX 11b		
10 Maximum Peak Output Power (dBm)		
2412MHz	2437MHz	2462MHz
9.22	9.19	9.24
Limit: 1W/30dBm		
1W/30dBm		

Test mode :TX 11g		
10 Maximum Peak Output Power (dBm)		
2412MHz	2437MHz	2462MHz
9.22	9.07	9.11
Limit		
1W/30dBm		

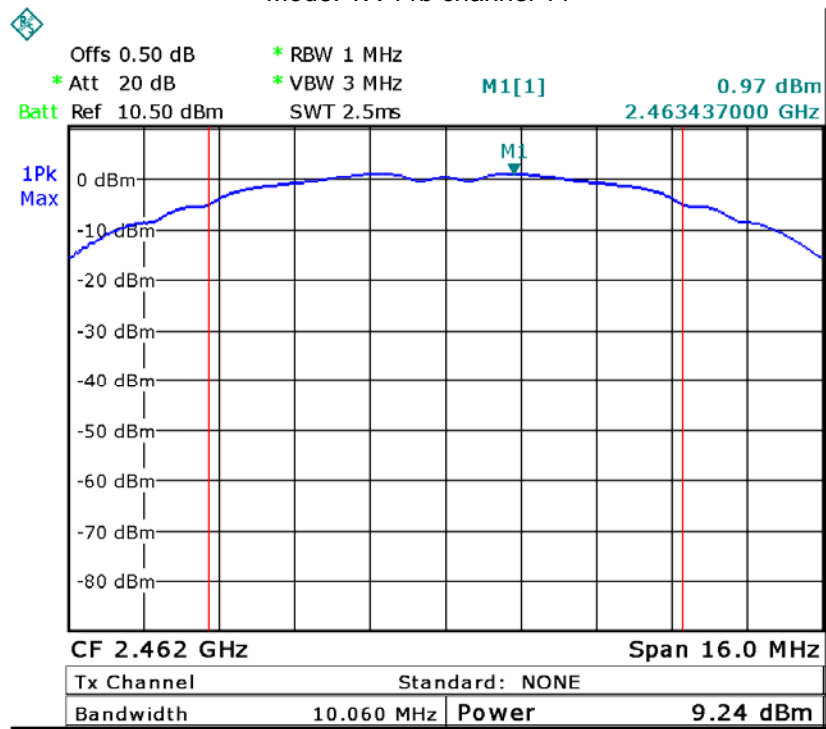
Test mode :TX 11n HT20		
10 Maximum Peak Output Power (dBm)		
2412MHz	2437MHz	2462MHz
9.10	9.21	9.18
Limit		
1W/30dBm		

Test mode : TX 11n HT40		
10 Maximum Peak Output Power (dBm)		
2422MHz	2437MHz	2452MHz
9.12	9.09	9.19
Limit		
1W/30dBm		

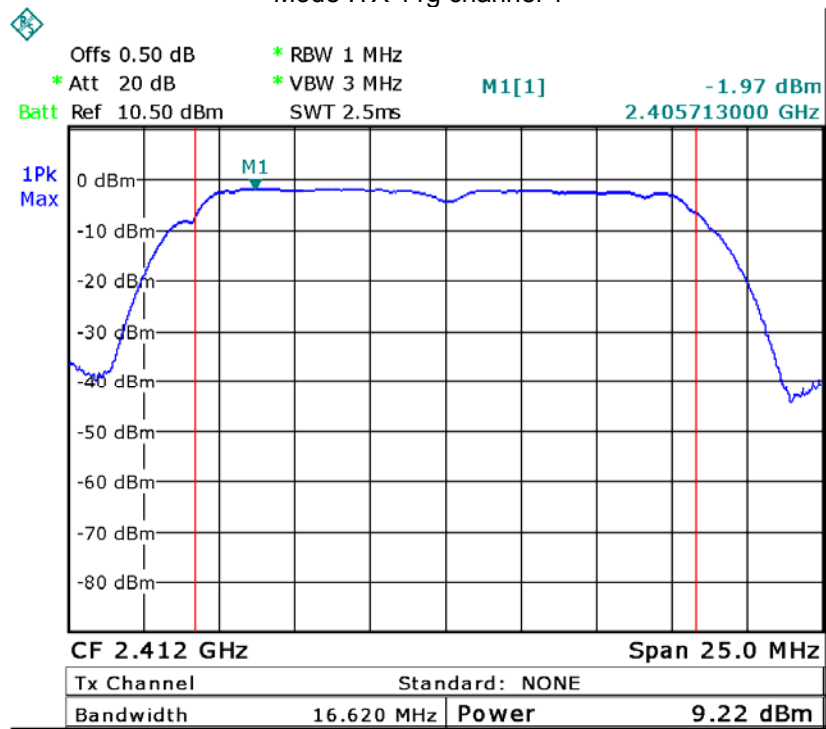
Test mode : TX BT BLE		
10 Maximum Peak Output Power (dBm)		
2402MHz	2440MHz	2480MHz
-8.57	-7.95	-6.95
Limit		
1W/30dBm		



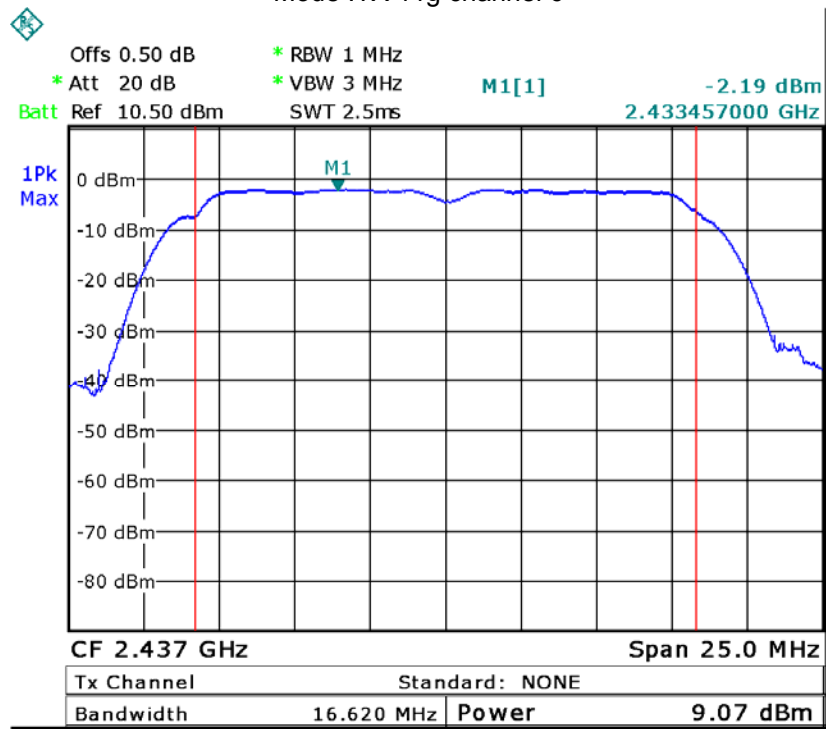
Mode: TX 11b channel 11



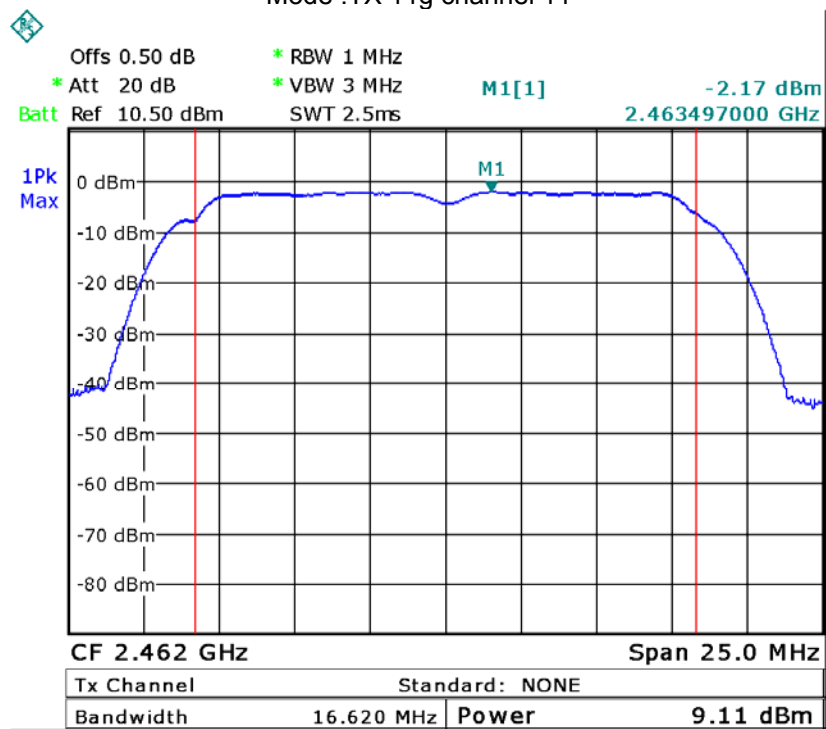
Mode :TX 11g channel 1



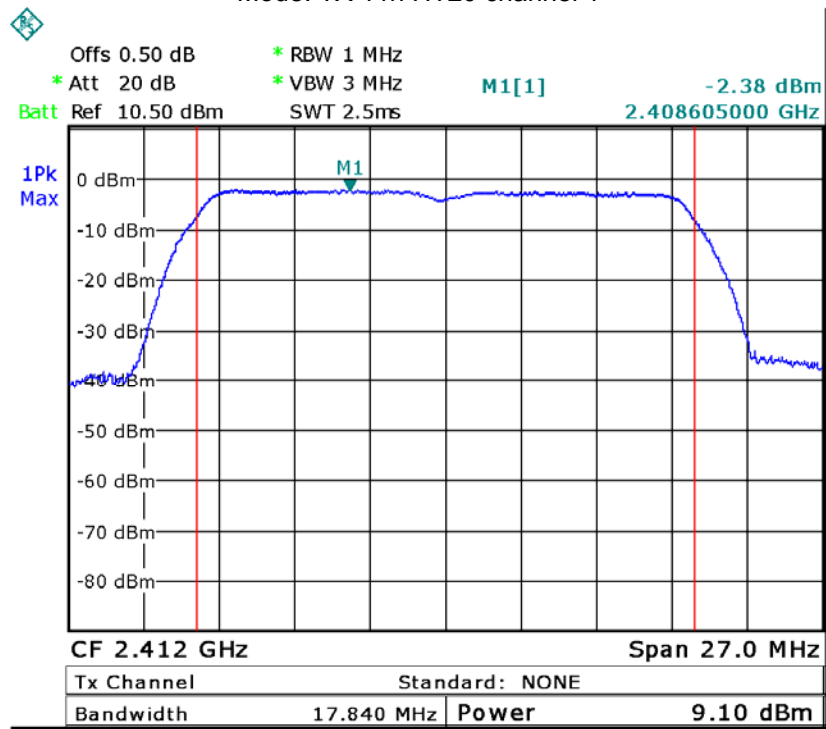
Mode :TX 11g channel 6



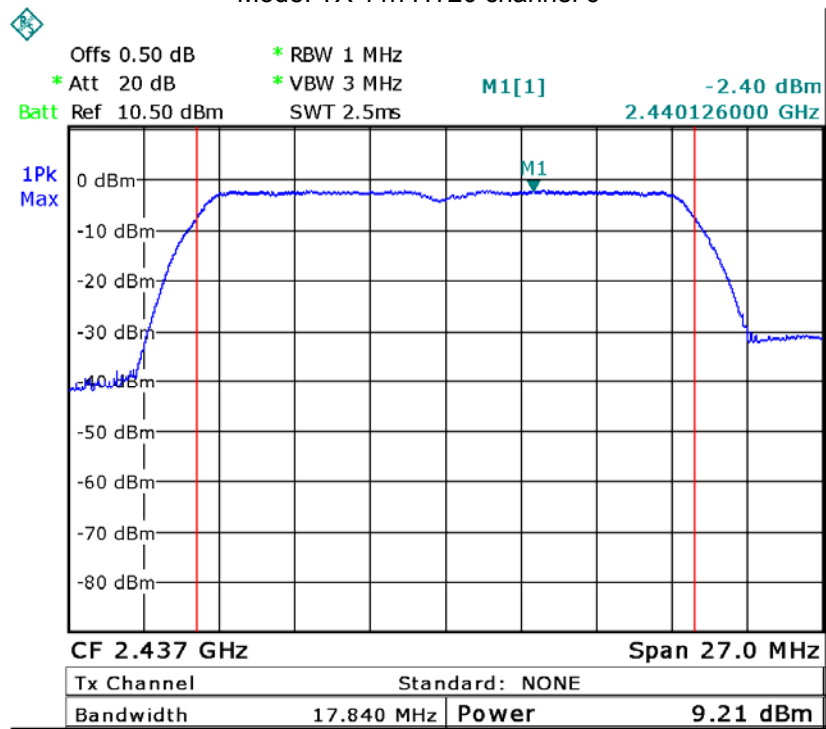
Mode :TX 11g channel 11



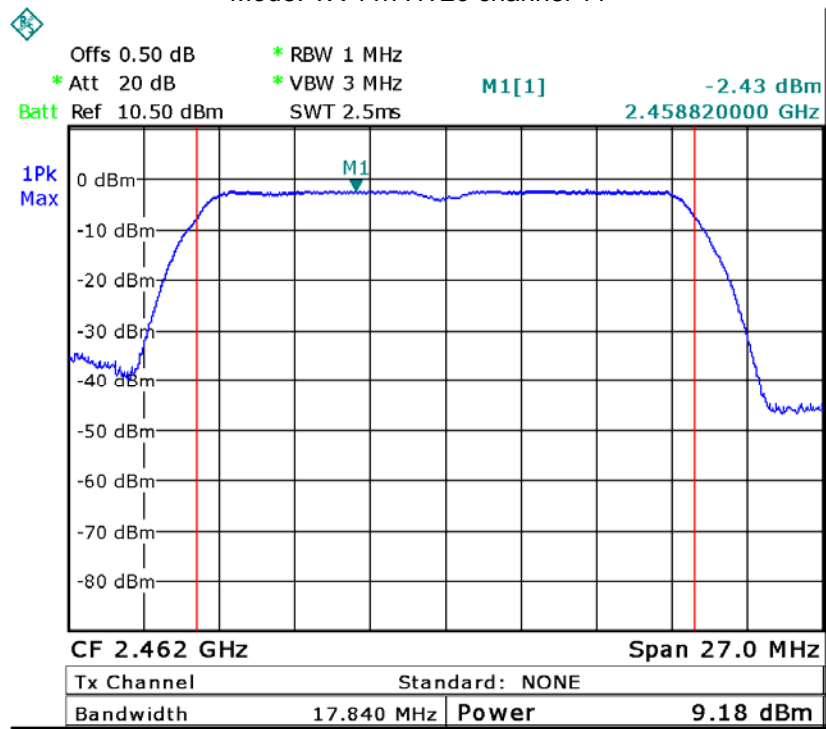
Mode: TX 11n HT20 channel 1



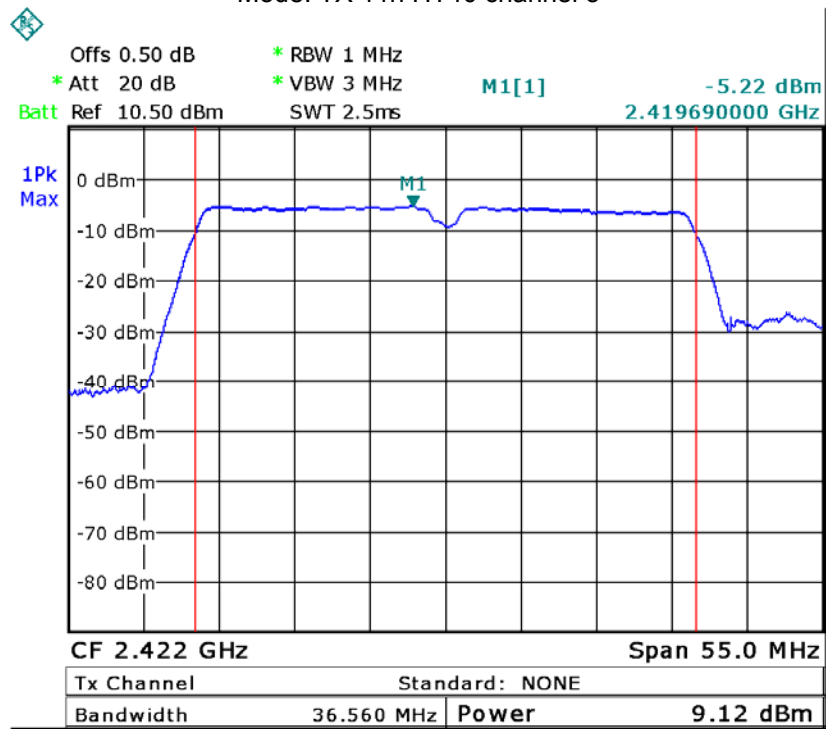
Mode: TX 11n HT20 channel 6



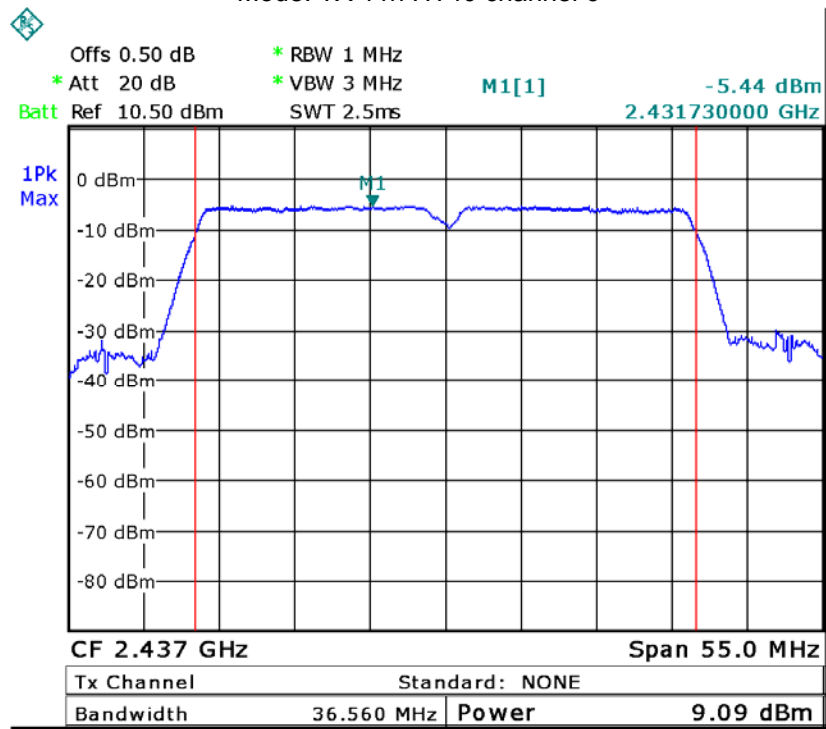
Mode: TX 11n HT20 channel 11



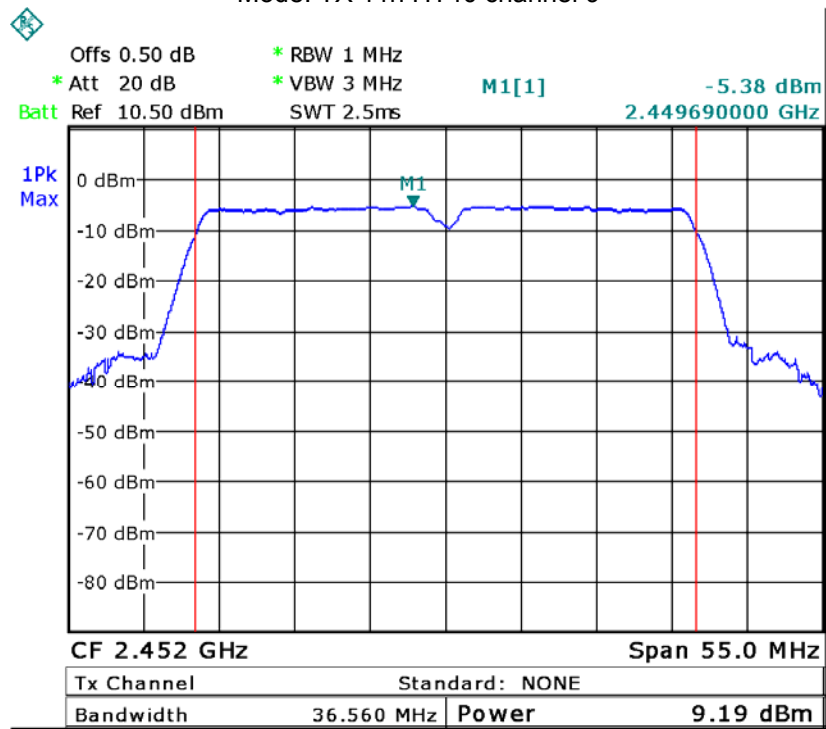
Mode: TX 11n HT40 channel 3



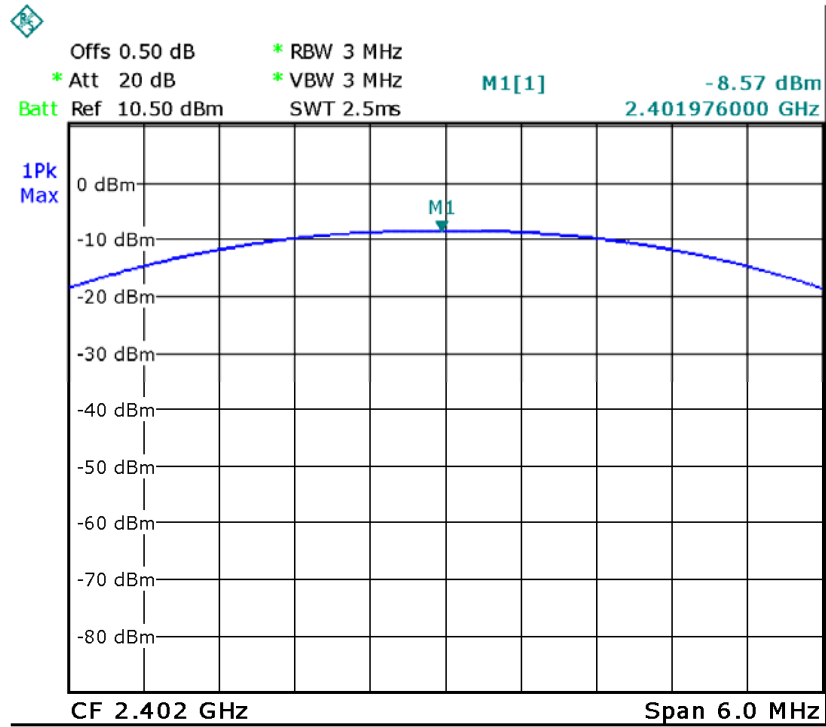
Mode: TX 11n HT40 channel 6



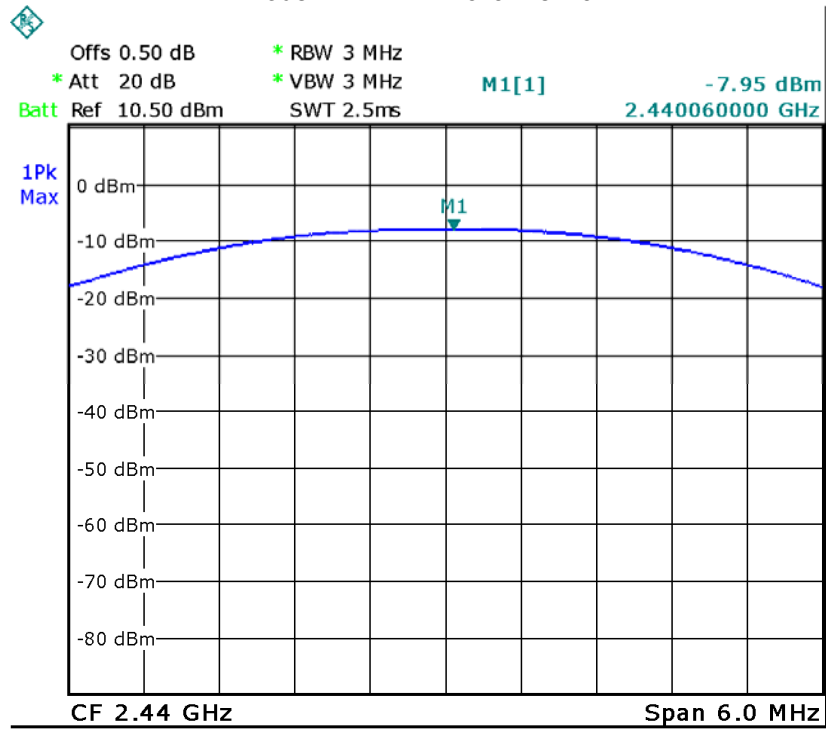
Mode: TX 11n HT40 channel 9

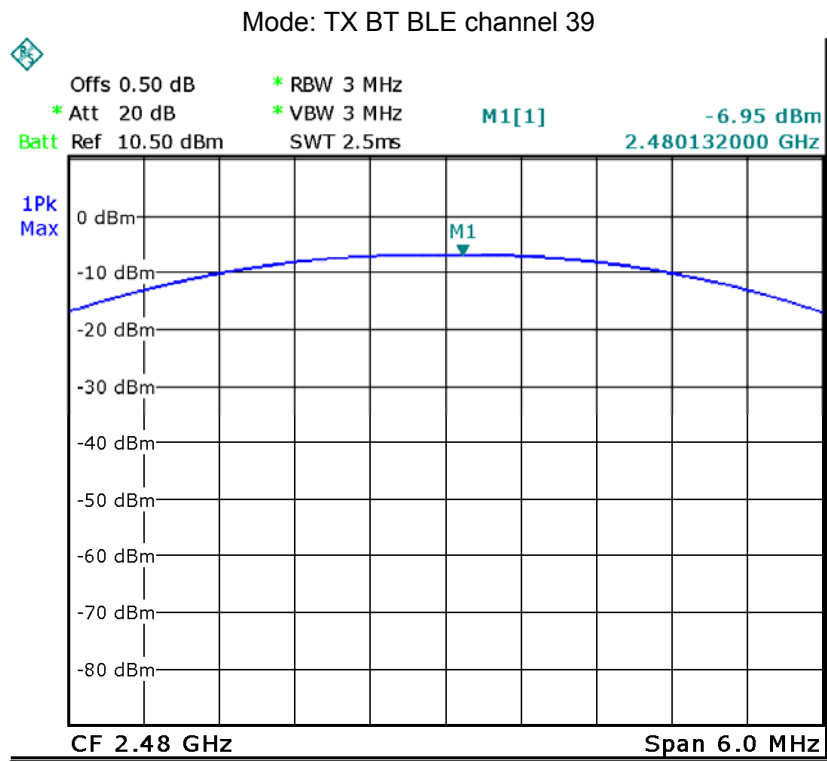


Mode: TX BT BLE channel 0



Mode: TX BT BLE channel 19





12 Power Spectral density

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 DTS Meas Guidance v03r03 06/09/2015

12.1 Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r03 06/09/2015 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:

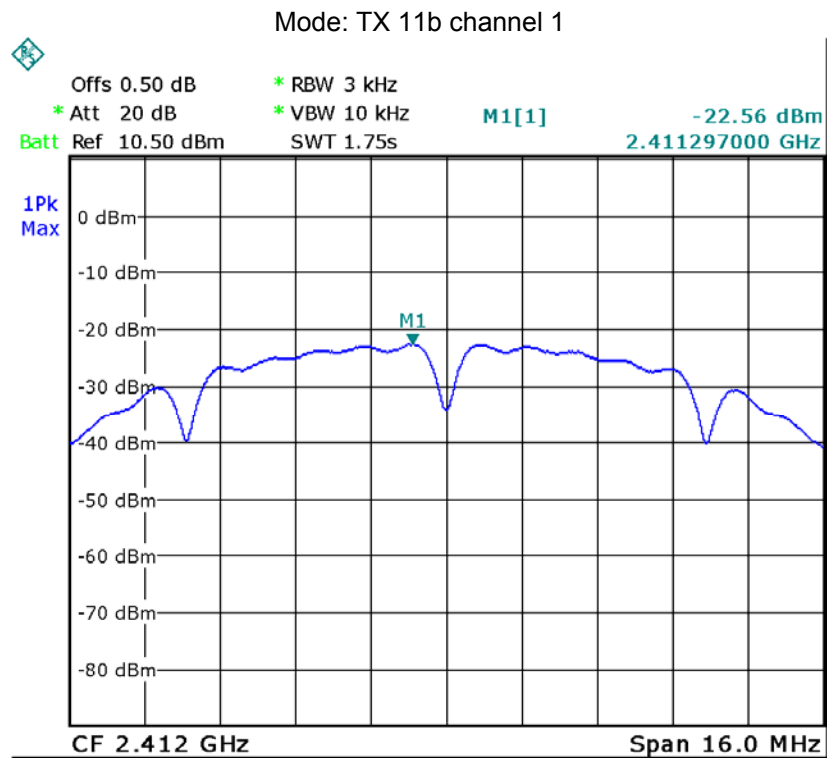
Test mode :TX 11b		
Power Spectral (dBm per 3kHz)		
2412MHz	2437MHz	2462MHz
-22.56	-22.75	-22.57
Limit: 1W/30dBm		
8dBm per 3kHz		

Test mode :TX 11g		
Power Spectral (dBm per 3kHz)		
2412MHz	2437MHz	2462MHz
-26.76	-27.29	-27.21
Limit		
8dBm per 3kHz		

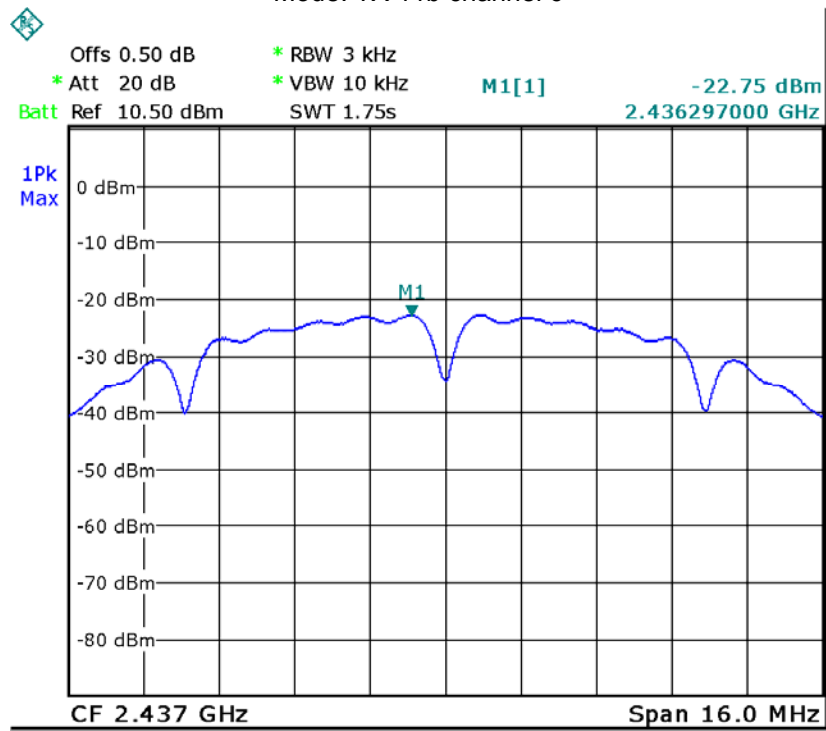
Test mode :TX 11n HT20		
Power Spectral (dBm per 3kHz)		
2412MHz	2437MHz	2462MHz
-27.56	-26.77	-26.48
Limit		
8dBm per 3kHz		

Test mode : TX 11n HT40		
Power Spectral (dBm per 3kHz)		
2422MHz	2437MHz	2452MHz
-28.73	-29.23	-28.58
Limit		
8dBm per 3kHz		

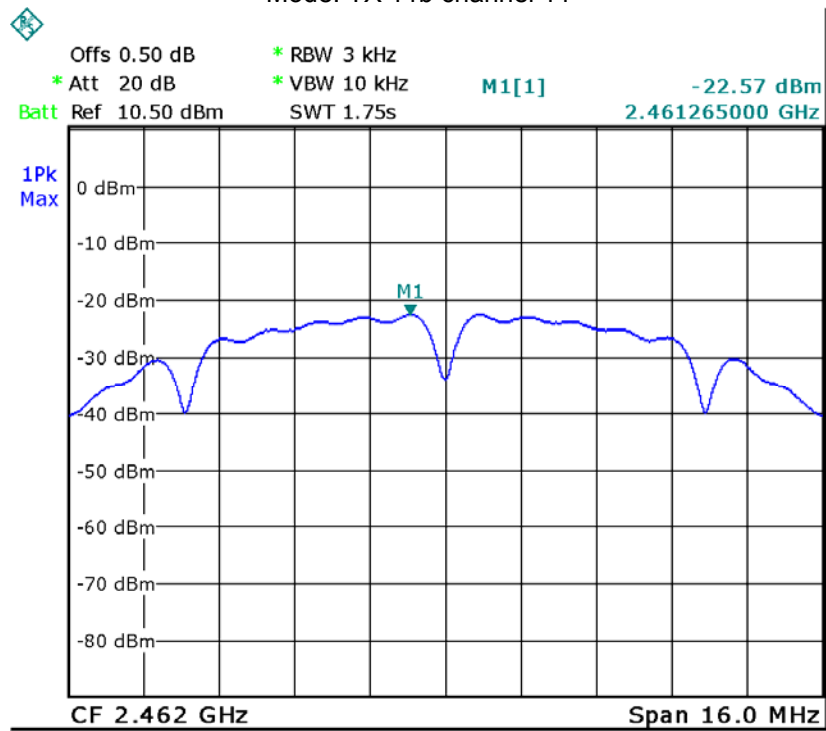
Test mode : TX BT BLE		
Power Spectral (dBm per 3kHz)		
2402MHz	2440MHz	2480MHz
-24.09	-23.72	-22.58
Limit		
8dBm per 3kHz		



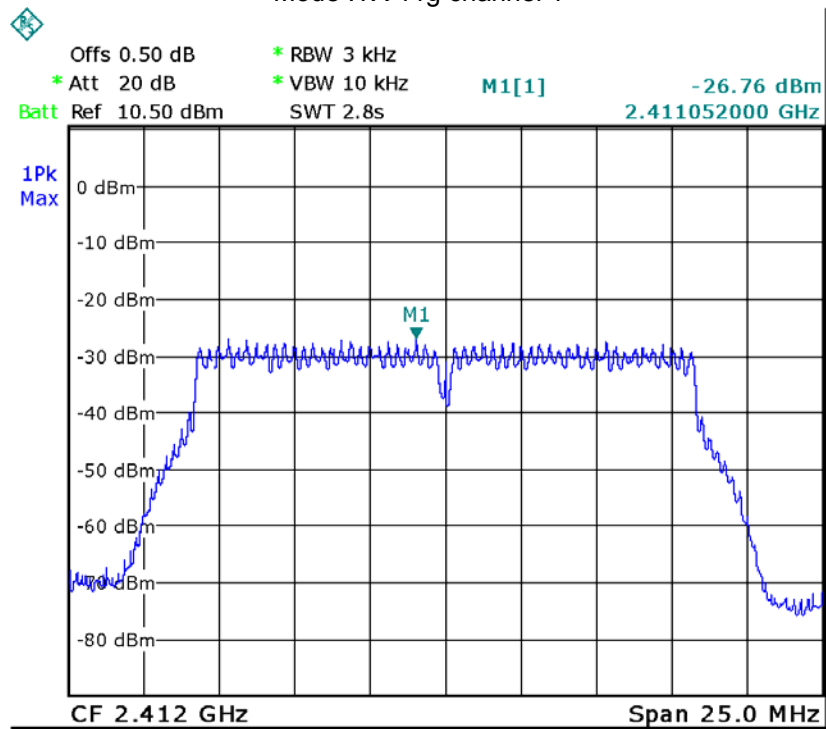
Mode: TX 11b channel 6



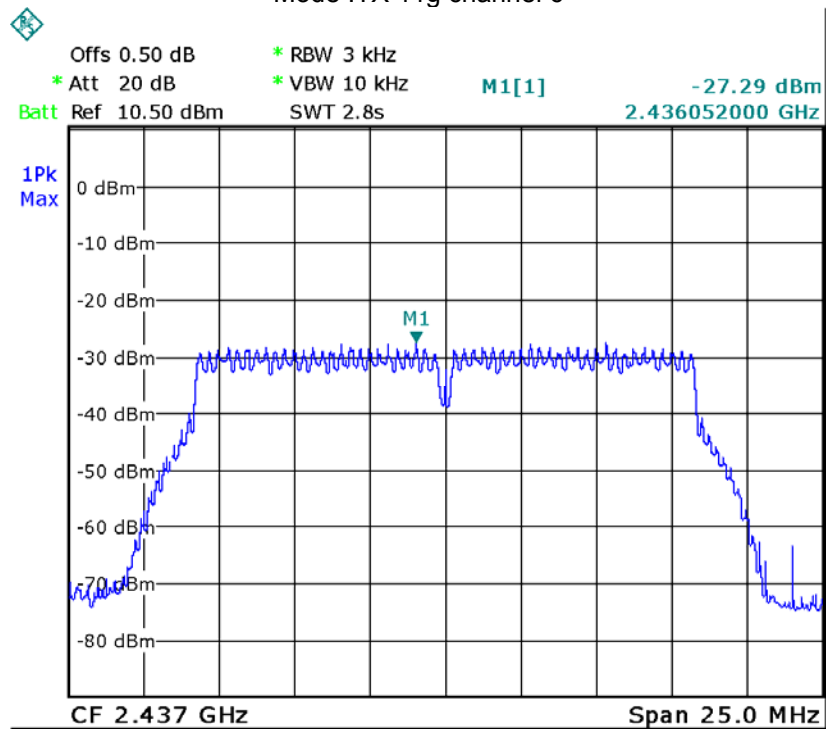
Mode: TX 11b channel 11



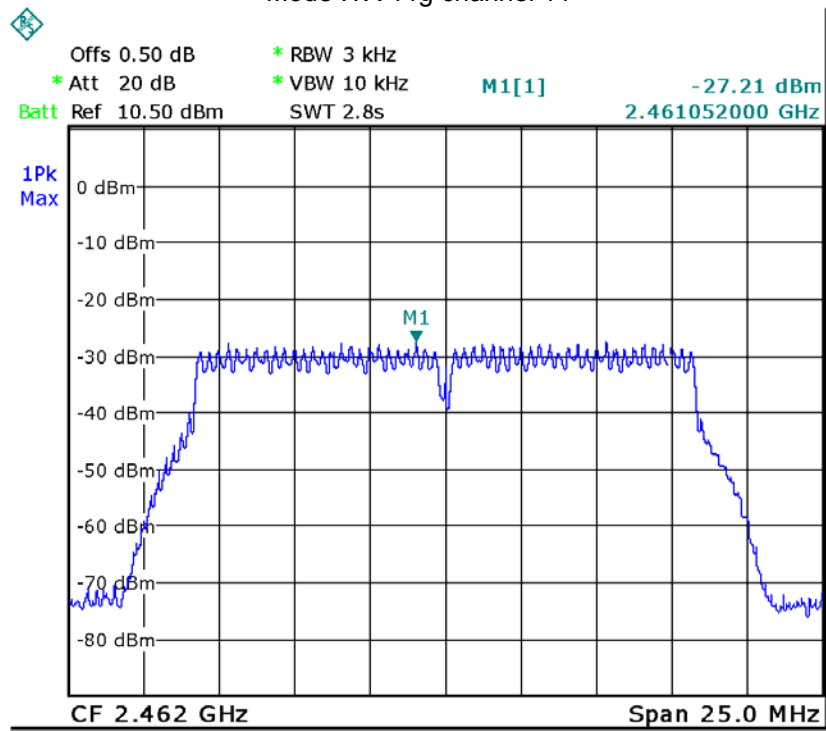
Mode :TX 11g channel 1



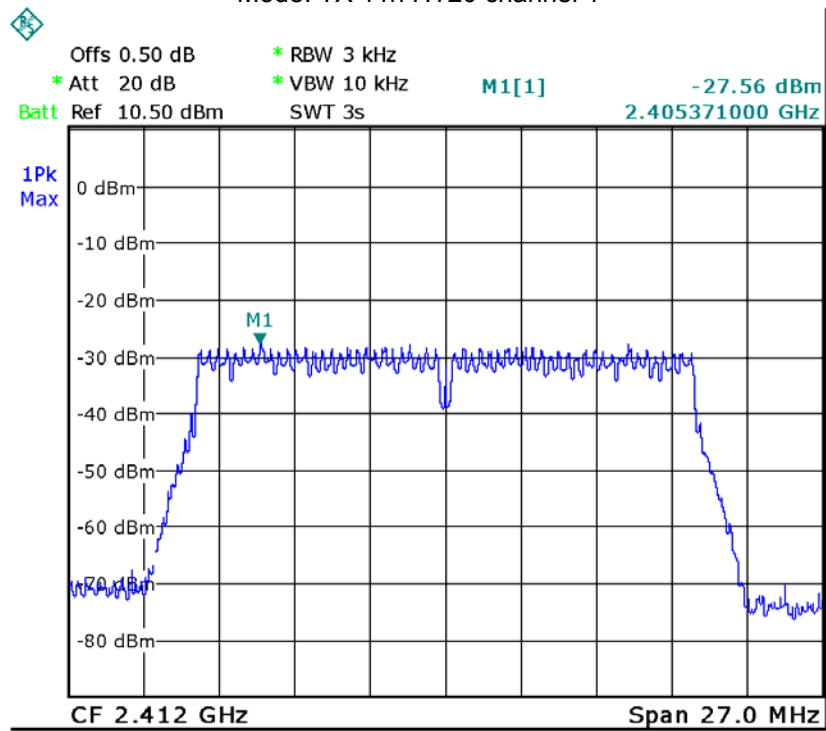
Mode :TX 11g channel 6



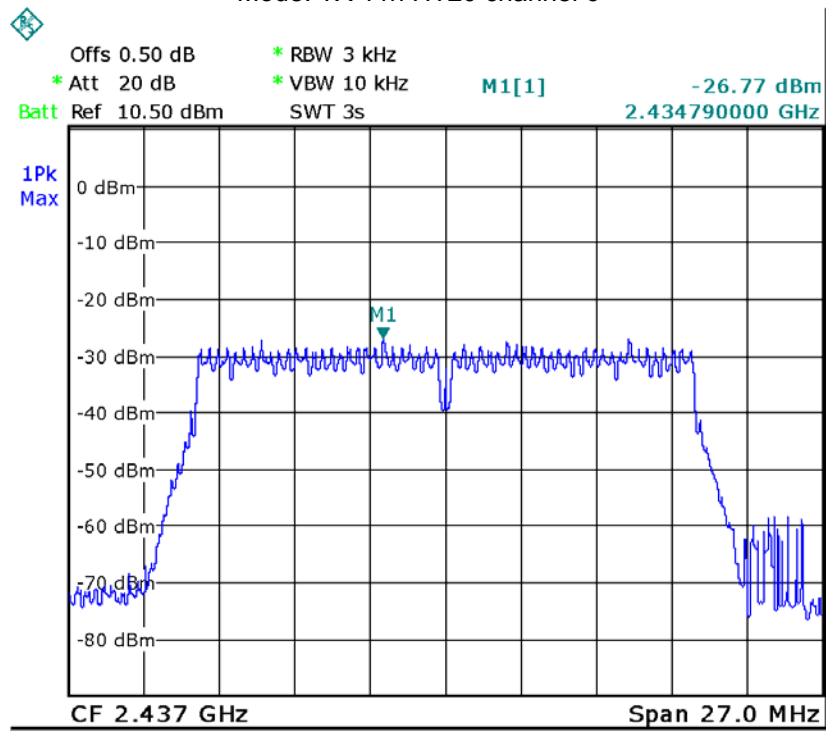
Mode :TX 11g channel 11



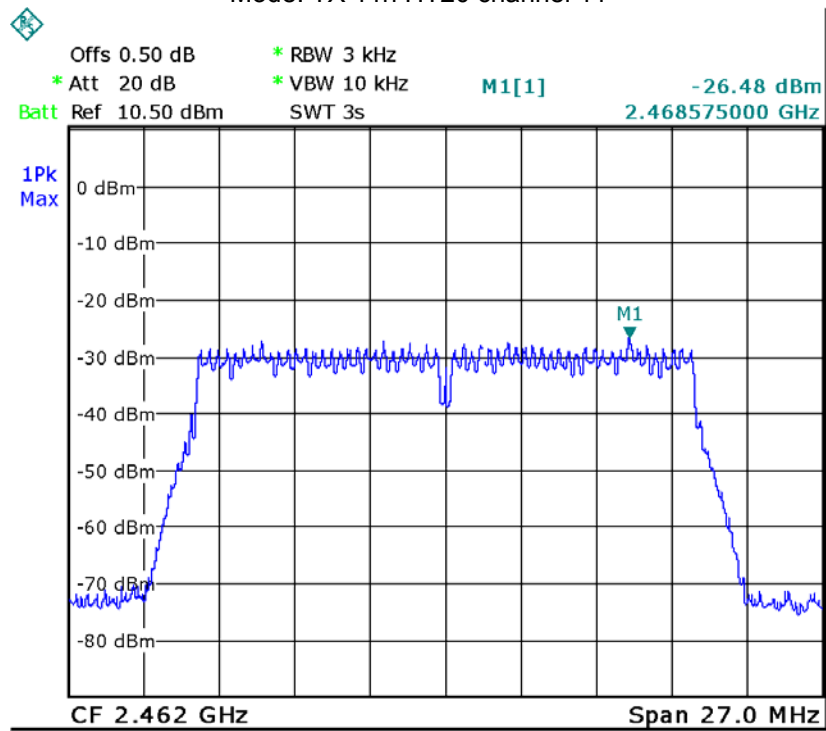
Mode: TX 11n HT20 channel 1



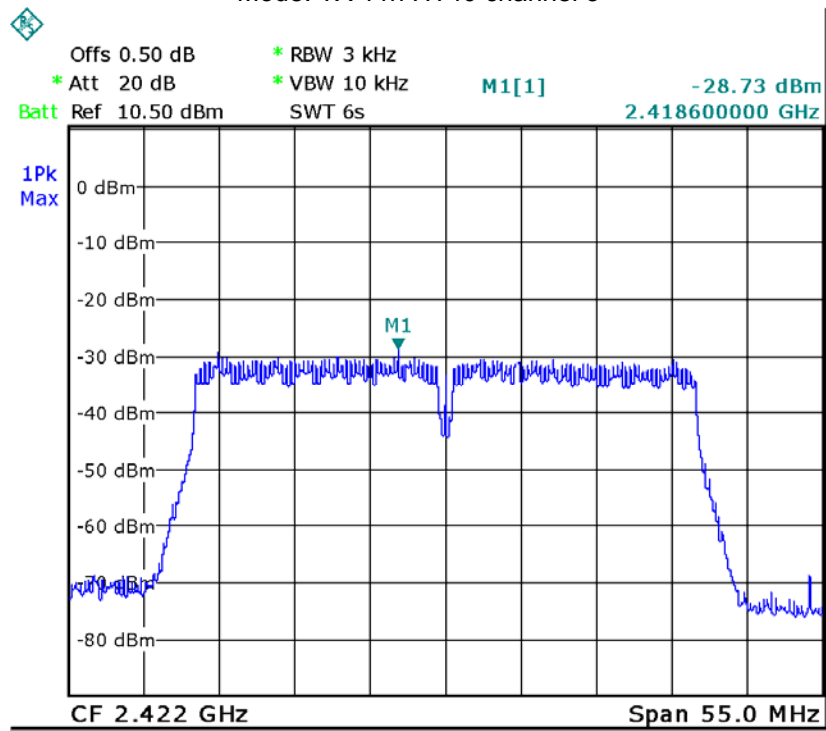
Mode: TX 11n HT20 channel 6



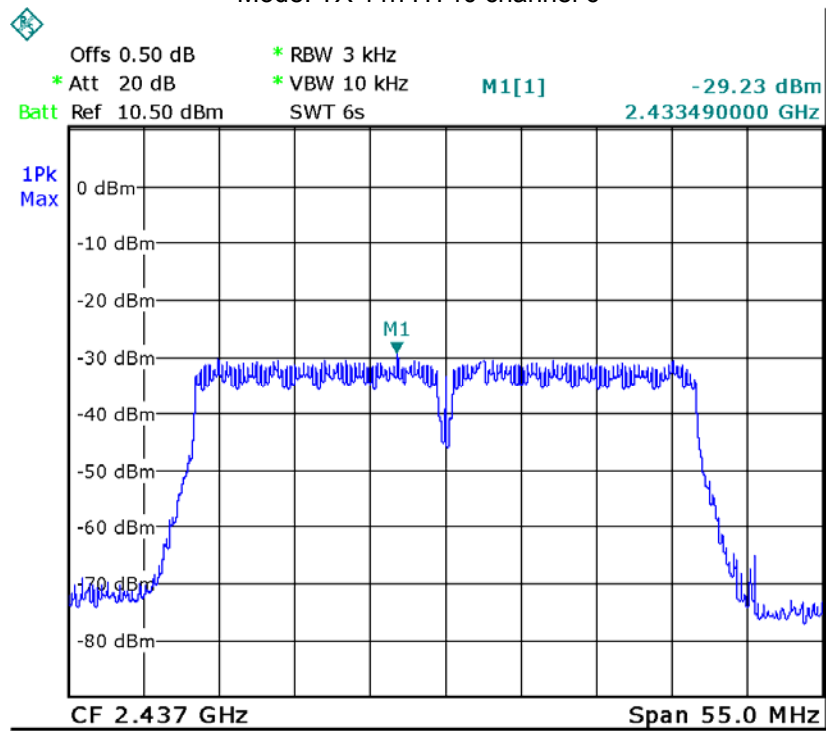
Mode: TX 11n HT20 channel 11



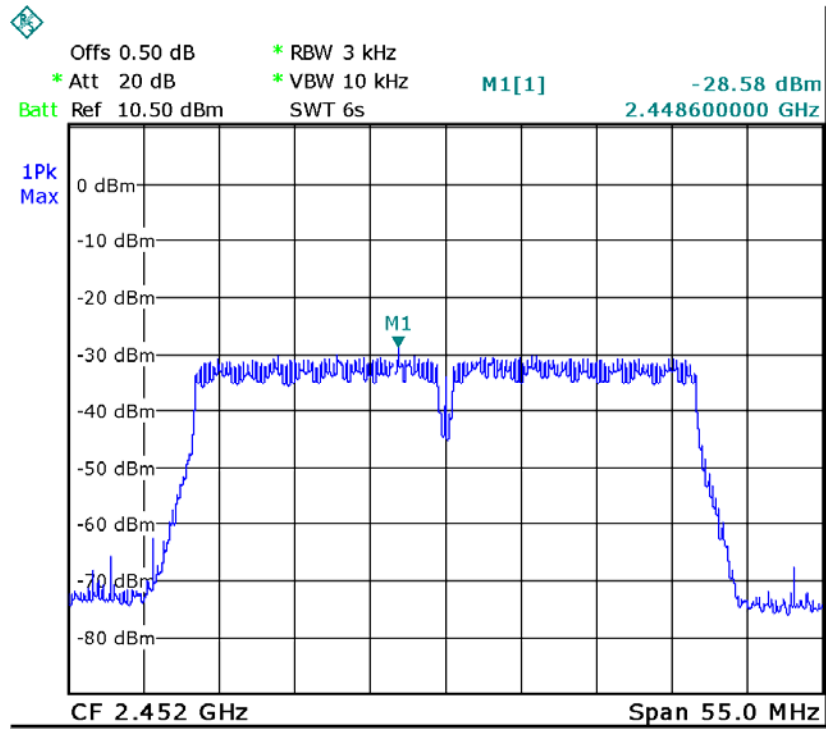
Mode: TX 11n HT40 channel 3



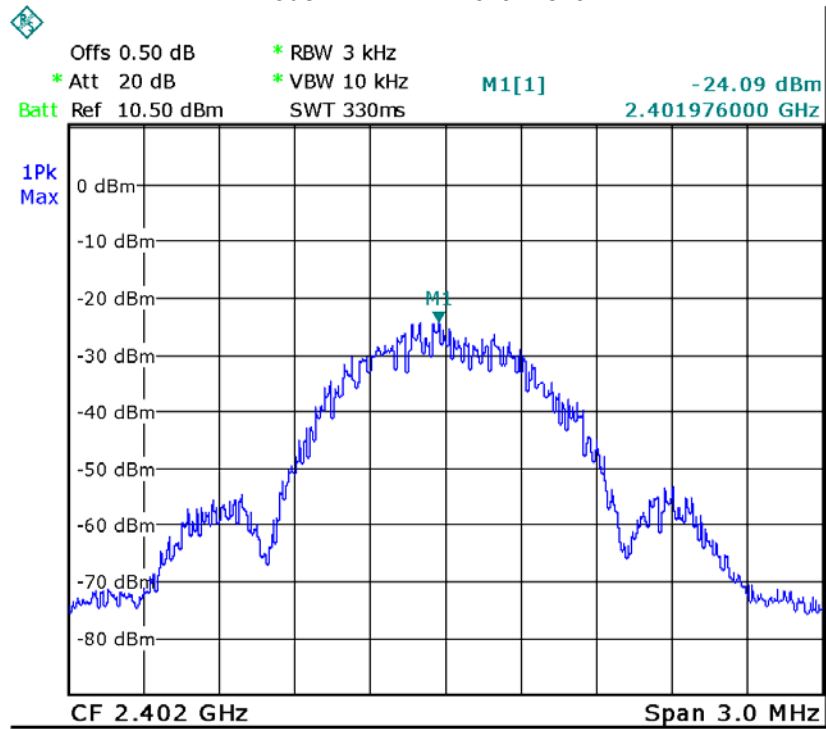
Mode: TX 11n HT40 channel 6



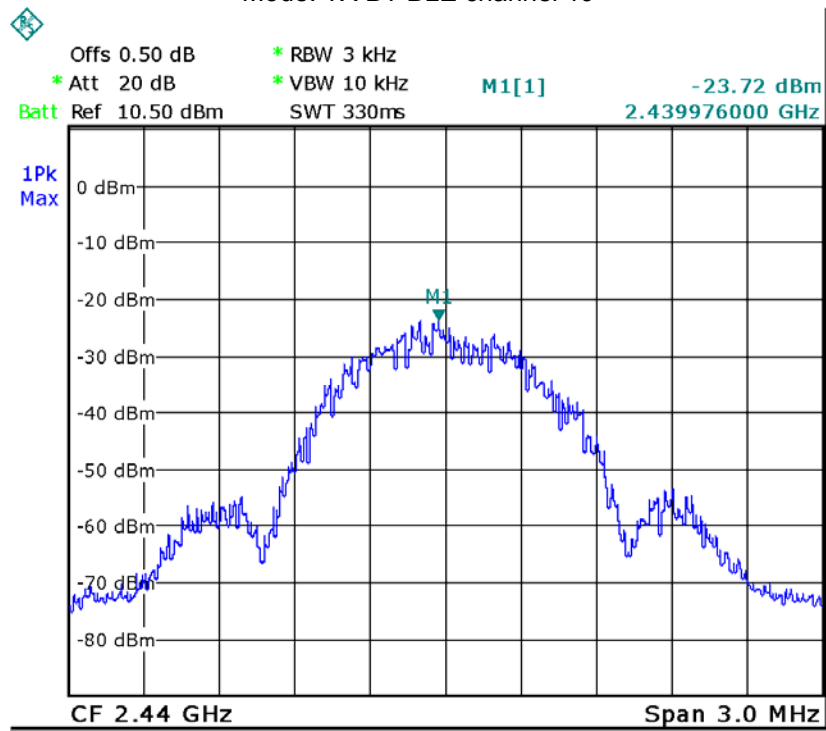
Mode: TX 11n HT40 channel 9



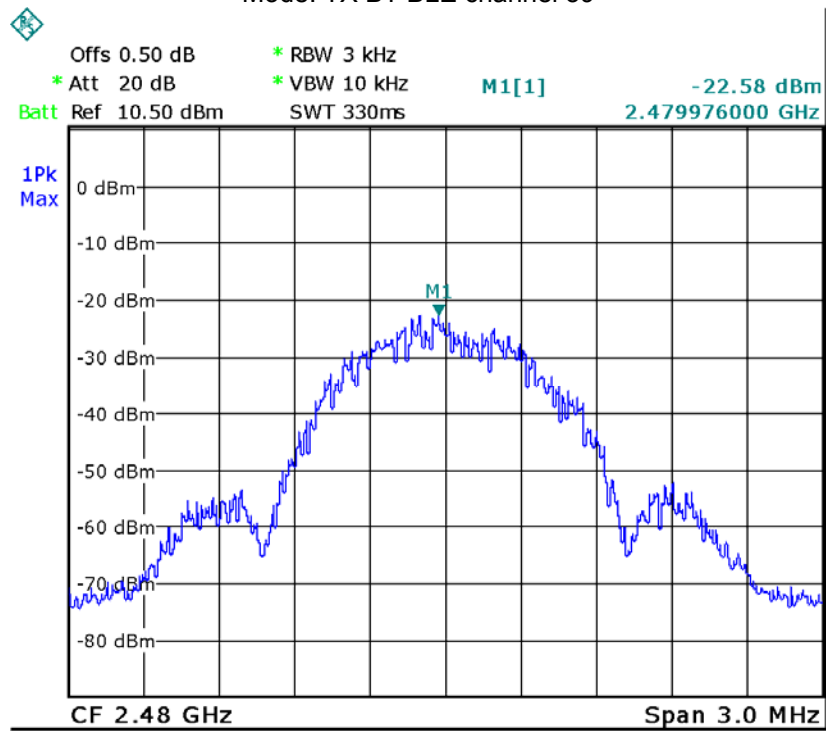
Mode: TX BT BLE channel 0



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 a integrated antenna fulfill the requirement of this section.

14 RF Exposure

Remark: refer to SAR test report: WTS15S0730009E.

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