

FCC TEST REPORT

FCC ID: 2A4AOLCX-ZJ1200

Report Number..... : ZKT-220110L0221-01

Date of Test..... Jan. 04, 2022 – Jan. 18, 2022

Date of issue : Jan. 18, 2022

Total number of pages : 88

Test Result : PASS

Testing Laboratory..... : **Shenzhen ZKT Technology Co., Ltd.**

Address : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name : Shenzhen Lingchuangxun Technology Co., Ltd

Address : 3th floor, building C, ideemonto Industrial Park, 7002 Songbai Road, Guangming District, ShenZhen

Manufacturer's name : Shenzhen Lingchuangxun Technology Co., Ltd

Address : 3th floor, building C, ideemonto Industrial Park, 7002 Songbai Road, Guangming District, ShenZhen

Test specification:

Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247
ANSI C63.10:2013

KDB558074 D0115.247 Meas Guidance v 05r02

Test procedure..... : /

Non-standard test method : N/A

Test Report Form No. : TRF-EL-110_V0

Test Report Form(s) Originator : ZKT Testing

Master TRF : Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Product name..... : WiFi Repeater

Trademark : /

Model/Type reference : LCX-ZJ1200-003

Ratings..... : AC 120V 50/60Hz

Testing procedure and testing location:**Testing Laboratory..... : Shenzhen ZKT Technology Co., Ltd.****Address..... : 1/F, No. 101, Building B, No. 6, Tangwei Community
Industrial Avenue, Fuhai Street, Bao'an District,
Shenzhen, China****Tested by (name + signature)****Reviewer (name + signature).....****Approved (name + signature)**

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1. VERSION

Report No.	Version	Description	Approved
ZKT-220110L0221-01	Rev.01	Initial issue of report	Jan. 18, 2022

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Result	Remark
FCC part 15.203/15.247 (c)	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emission	PASS	
FCC part 15.247 (b)(3)	Conducted Peak Output Power	PASS	
FCC part 15.247 (a)(2)	Channel Bandwidth& 99% OCB	PASS	
FCC part 15.247 (e)	Power Spectral Density	PASS	
FCC part 15.247(d)	Band Edge	PASS	
FCC part 15.205/15.209	Spurious Emission	PASS	

NOTE:

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

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.

Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225

Designation Number: CN1299

IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	WiFi Repeater
Model No.:	LCX-ZJ1200-003
Serial No.:	/
Hardware Version:	LCX-ZJ1200-003
Software Version:	V1.0.6.0
Sample(s) Status:	Engineer sample
Channel numbers:	802.11b/802.11g /802.11n(HT20):11 802.11n(HT40):7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum(DSSS) 802.11g/802.11n(H20)/802.11 n(HT40): Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	PCB antenna
Antenna gain:	WIFI ANT1: 2dBi; WIFI ANT2: 2dBi ; MIMO:5.01dBi
Power supply:	AC 120V 50/60Hz

POWER ADAPTER:	/
----------------	---

Operation Frequency each of channel							
Channel	Frequency	Chann el	Frequency	Chann el	Frequency	Chann el	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)
	802.11b/802.11g/802.11n(HT20)
Lowest channel	2412MHz
Middle channel	2437MHz
Highest channel	2462MHz

Test channel	Frequency (MHz)
	802.11n(HT40)
Lowest channel	2422MHz
Middle channel	2437MHz
Highest channel	2452MHz

Worst Case Configuration

Description	MIMO (802.11N-HT20 low channel)
Antenna	MIMO
Channel	1
Operating Frequency (MHz)	2412
Data Rate (Mbps)	6.5Mbps

3.2 DESCRIPTION OF TEST MODES

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the duty cycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:
--

Item	Shielded Type	Ferrite Core	Length	Note

Note:

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

3.5EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 21, 2021	Sep. 20, 2022
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 21, 2021	Sep. 20, 2022
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 21, 2021	Sep. 20, 2022
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 21, 2021	Sep. 20, 2022
5	Horn Antenna (1GHz-18GHz)	SCHWARZBEC K	BBHA9120D	1541	Sep. 21, 2021	Sep. 20, 2022
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 21, 2021	Sep. 20, 2022
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 21, 2021	Sep. 20, 2022
8	Amplifier (1GHz-40GHz)	QUANJUDA	DLE-161	097	Sep. 21, 2021	Sep. 20, 2022
9	Loop Antenna (9KHz-30MHz)	SCHWARZBEC K	FMZB1519B	014	Sep. 21, 2021	Sep. 20, 2022
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 21, 2021	Sep. 20, 2022
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 21, 2021	Sep. 20, 2022
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 21, 2021	Sep. 20, 2022
13	CMW500 Test	R&S	CMW500	106504	Sep. 21, 2021	Sep. 20, 2022
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 21, 2021	Sep. 20, 2022
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 21, 2021	Sep. 20, 2022
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 21, 2021	Sep. 20, 2022
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 21, 2021	Sep. 20, 2022
3	Test Cable	N/A	C01	N/A	Sep. 21, 2021	Sep. 20, 2022
4	Test Cable	N/A	C02	N/A	Sep. 21, 2021	Sep. 20, 2022
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 21, 2021	Sep. 20, 2022
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 21, 2021	Sep. 20, 2022

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

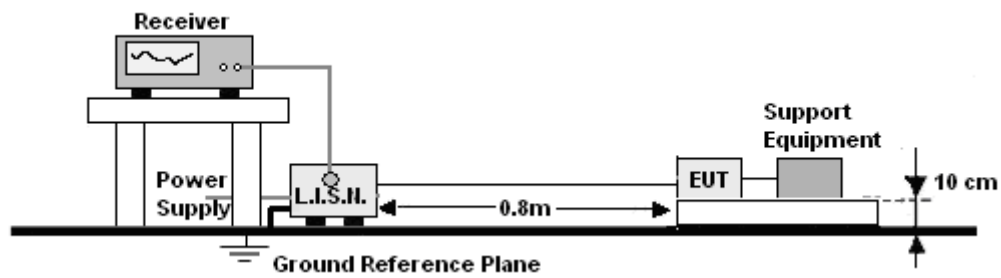
4.1.2 TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.e.
8. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



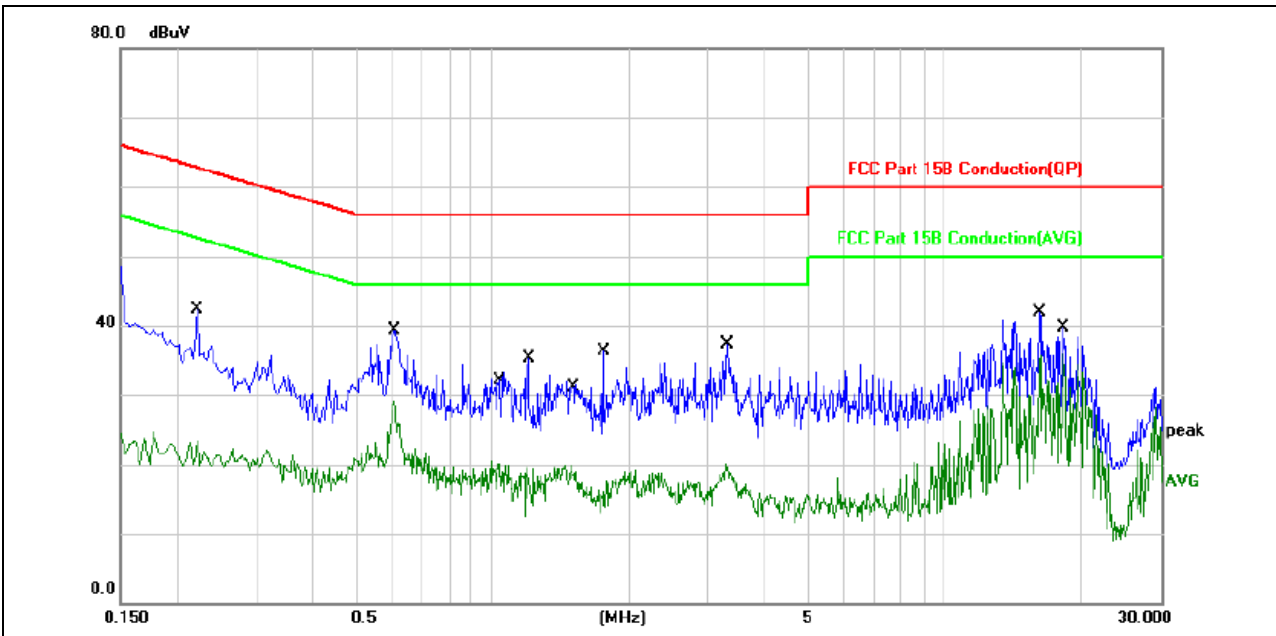
4.1.5 EUT OPERATING CONDITIONS

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

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

4.1.6 TEST RESULT

Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase	L
Test Voltage :	AC 120V/60Hz		

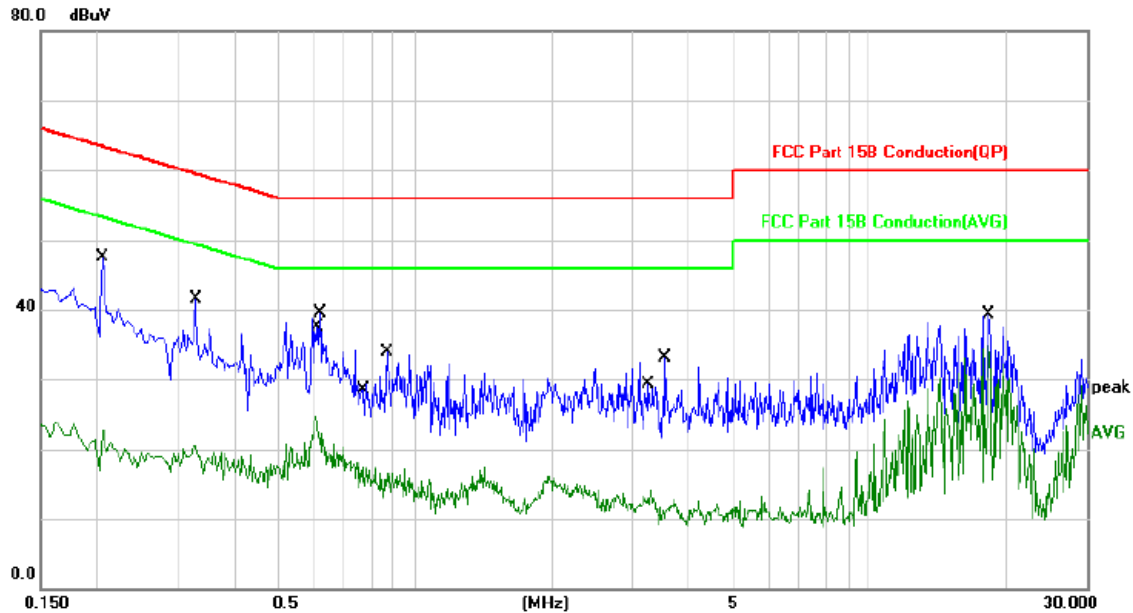


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2220	32.60	9.76	42.36	62.74	-20.38	QP	
2		0.2220	13.56	9.76	23.32	52.74	-29.42	AVG	
3		0.6060	29.48	9.84	39.32	56.00	-16.68	QP	
4		0.6060	19.27	9.84	29.11	46.00	-16.89	AVG	
5		1.0300	10.44	9.76	20.20	46.00	-25.80	AVG	
6		1.2020	25.58	9.73	35.31	56.00	-20.69	QP	
7		1.4900	10.15	9.69	19.84	46.00	-26.16	AVG	
8		1.7620	26.60	9.67	36.27	56.00	-19.73	QP	
9		3.2900	10.40	9.69	20.09	46.00	-25.91	AVG	
10		3.3060	27.53	9.69	37.22	56.00	-18.78	QP	
11		16.1660	32.31	9.63	41.94	60.00	-18.06	QP	
12	*	18.2460	26.35	9.58	35.93	50.00	-14.07	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.2060	37.78	9.75	47.53	63.36	-15.83	QP	
2	0.2060	12.93	9.75	22.68	53.36	-30.68	AVG	
3	0.3260	10.71	9.86	20.57	49.55	-28.98	AVG	
4	0.3300	31.61	9.86	41.47	59.45	-17.98	QP	
5	0.6060	14.89	9.84	24.73	46.00	-21.27	AVG	
6	0.6180	29.65	9.84	39.49	56.00	-16.51	QP	
7	0.7700	7.64	9.81	17.45	46.00	-28.55	AVG	
8	0.8700	24.18	9.79	33.97	56.00	-22.03	QP	
9	3.2940	4.47	9.69	14.16	46.00	-31.84	AVG	
10	3.5620	23.45	9.69	33.14	56.00	-22.86	QP	
11	18.2420	29.73	9.58	39.31	60.00	-20.69	QP	
12 *	18.2420	25.23	9.58	34.81	50.00	-15.19	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average

4.2.1 RADIATED EMISSION LIMITS

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

LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of variable-height antenna tower.

- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- g. Different from above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change from table 0.8 metre to 1.5 metre (Above 18GHz the distance is 1 meter and table is 1.5 metre).
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

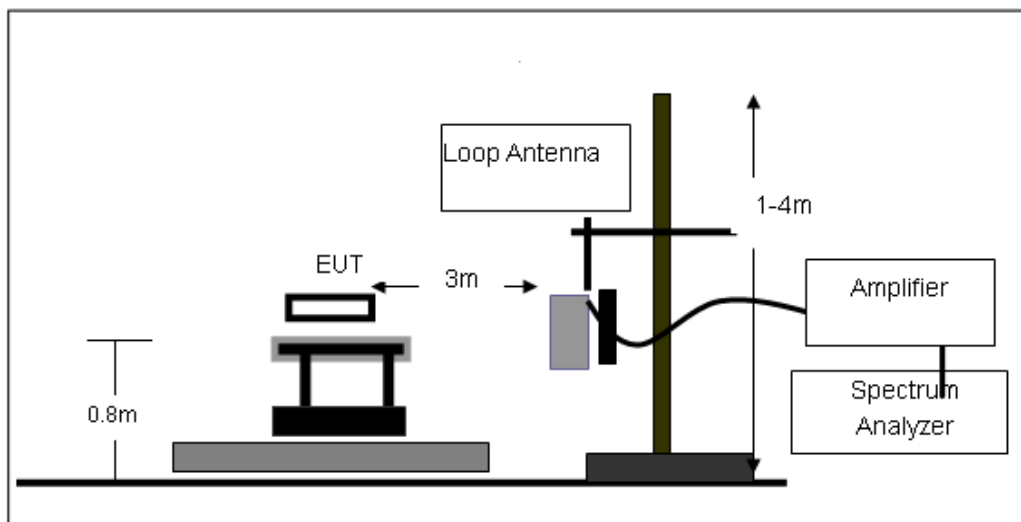
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

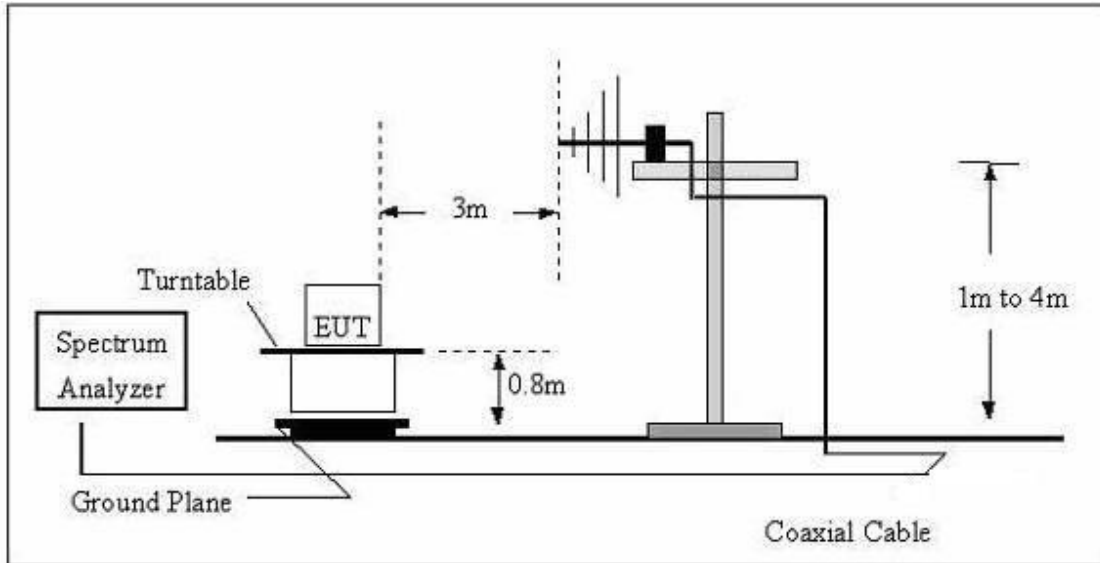
No deviation

4.2.4 TEST SETUP

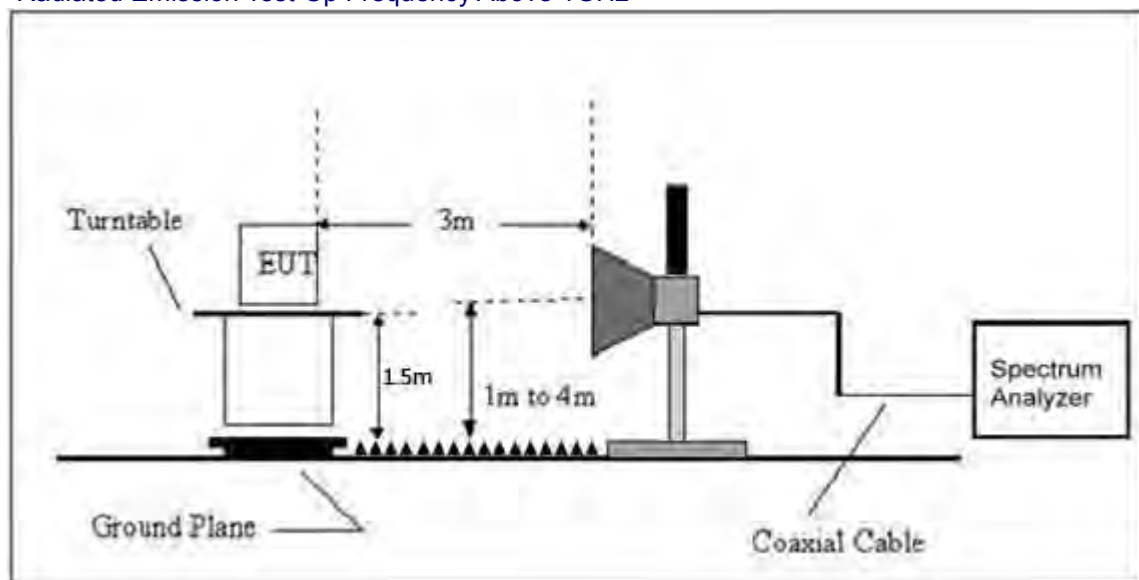
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.5 EUT OPERATING CONDITIONS

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

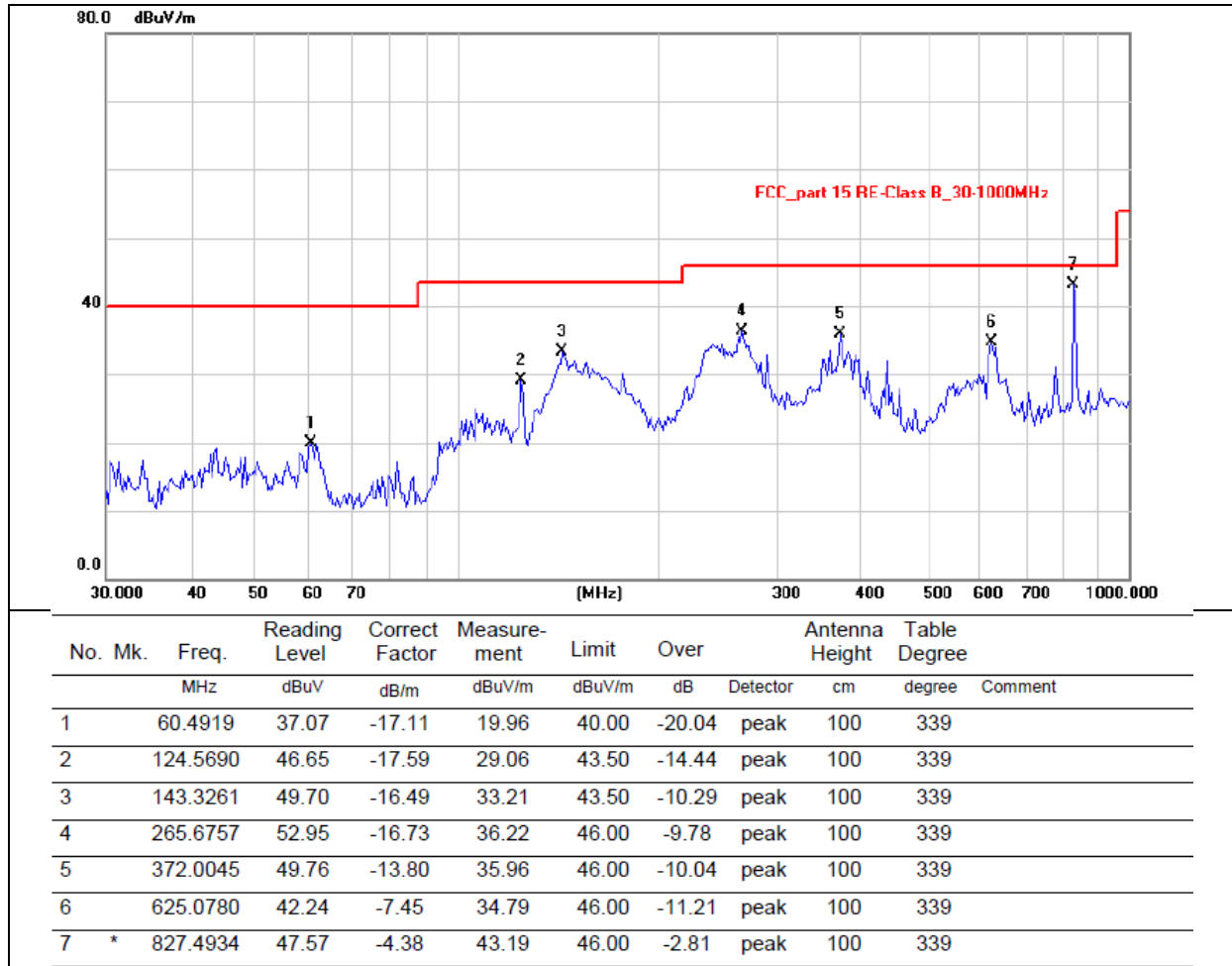
4.2.6 TEST RESULTS

Between 9KHz – 30MHz

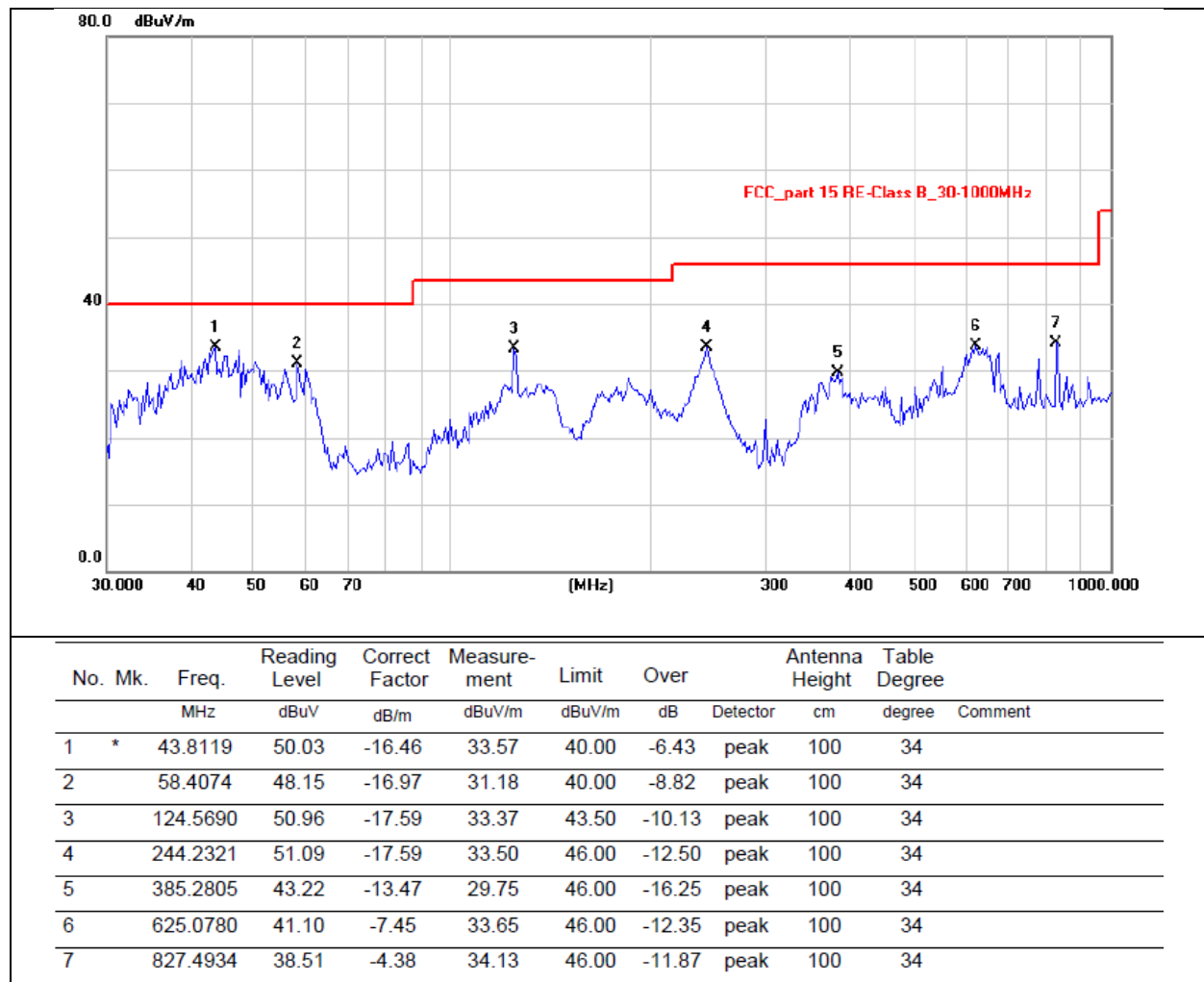
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Between 30MHz – 1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The test data shows only the worst case- MIMO (802.11N-HT20 middle channel)

1GHz~25GHz

802.11b-ANT1

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	54.80	30.55	5.77	24.66	54.68	74	-19.32	PK
V	4824	40.36	30.55	5.77	24.66	40.24	54	-13.76	AV
V	7236	54.76	30.33	6.32	24.55	55.30	74	-18.70	PK
V	7236	43.27	30.33	6.32	24.55	43.81	54	-10.19	AV
V	9648	54.34	30.85	7.45	24.69	55.63	74	-18.37	PK
V	9648	41.45	30.85	7.45	24.69	42.74	54	-11.26	AV
H	4824	56.39	30.55	5.77	24.66	56.27	74	-17.73	PK
H	4824	39.00	30.55	5.77	24.66	38.88	54	-15.12	AV
H	7236	54.12	30.33	6.32	24.55	54.66	74	-19.34	PK
H	7236	43.98	30.33	6.32	24.55	44.52	54	-9.48	AV
H	9648	53.98	30.85	7.45	24.69	55.27	74	-18.73	PK
H	9648	41.70	30.85	7.45	24.69	42.99	54	-11.01	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	56.25	30.55	5.77	24.66	56.13	74	-17.87	PK
V	4874	38.85	30.55	5.77	24.66	38.73	54	-15.27	AV
V	7311	54.57	30.33	6.32	24.55	55.11	74	-18.89	PK
V	7311	42.68	30.33	6.32	24.55	43.22	54	-10.78	AV
V	9748	54.85	30.85	7.45	24.69	56.14	74	-17.86	PK
V	9748	42.16	30.85	7.45	24.69	43.45	54	-10.55	AV
H	4874	55.45	30.55	5.77	24.66	55.33	74	-18.67	PK
H	4874	39.27	30.55	5.77	24.66	39.15	54	-14.85	AV
H	7311	55.75	30.33	6.32	24.55	56.29	74	-17.71	PK
H	7311	43.16	30.33	6.32	24.55	43.70	54	-10.30	AV
H	9748	55.64	30.85	7.45	24.69	56.93	74	-17.07	PK
H	9748	43.80	30.85	7.45	24.69	45.09	54	-8.91	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924	55.19	30.55	5.77	24.66	55.07	74	-18.93	PK
V	4924	38.63	30.55	5.77	24.66	38.51	54	-15.49	AV
V	7386	54.09	30.33	6.32	24.55	54.63	74	-19.37	PK
V	7386	44.57	30.33	6.32	24.55	45.11	54	-8.89	AV
V	9848	54.69	30.85	7.45	24.69	55.98	74	-18.02	PK
V	9848	43.84	30.85	7.45	24.69	45.13	54	-8.87	AV
H	4924	54.40	30.55	5.77	24.66	54.28	74	-19.72	PK
H	4924	38.75	30.55	5.77	24.66	38.63	54	-15.37	AV
H	7386	55.24	30.33	6.32	24.55	55.78	74	-18.22	PK
H	7386	44.37	30.33	6.32	24.55	44.91	54	-9.09	AV
H	9848	54.01	30.85	7.45	24.69	55.30	74	-18.70	PK
H	9848	41.30	30.85	7.45	24.69	42.59	54	-11.41	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	54.28	30.55	5.77	24.66	54.16	74	-19.84	PK
V	4824	41.15	30.55	5.77	24.66	41.03	54	-12.97	AV
V	7236	53.84	30.33	6.32	24.55	54.38	74	-19.62	PK
V	7236	42.77	30.33	6.32	24.55	43.31	54	-10.69	AV
V	9648	55.83	30.85	7.45	24.69	57.12	74	-16.88	PK
V	9648	43.37	30.85	7.45	24.69	44.66	54	-9.34	AV
H	4824	55.86	30.55	5.77	24.66	55.74	74	-18.26	PK
H	4824	39.60	30.55	5.77	24.66	39.48	54	-14.52	AV
H	7236	55.48	30.33	6.32	24.55	56.02	74	-17.98	PK
H	7236	41.89	30.33	6.32	24.55	42.43	54	-11.57	AV
H	9648	56.67	30.85	7.45	24.69	57.96	74	-16.04	PK
H	9648	41.92	30.85	7.45	24.69	43.21	54	-10.79	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amp lifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	56.50	30.55	5.77	24.66	56.38	74	-17.62	PK
V	4874	38.86	30.55	5.77	24.66	38.74	54	-15.26	AV
V	7311	54.32	30.33	6.32	24.55	54.86	74	-19.14	PK
V	7311	44.20	30.33	6.32	24.55	44.74	54	-9.26	AV
V	9748	54.54	30.85	7.45	24.69	55.83	74	-18.17	PK
V	9748	41.79	30.85	7.45	24.69	43.08	54	-10.92	AV
H	4874	55.04	30.55	5.77	24.66	54.92	74	-19.08	PK
H	4874	39.24	30.55	5.77	24.66	39.12	54	-14.88	AV
H	7311	54.57	30.33	6.32	24.55	55.11	74	-18.89	PK
H	7311	42.94	30.33	6.32	24.55	43.48	54	-10.52	AV
H	9748	54.80	30.85	7.45	24.69	56.09	74	-17.91	PK
H	9748	42.15	30.85	7.45	24.69	43.44	54	-10.56	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:2462MHz									
V	4924	54.10	30.55	5.77	24.66	53.98	74	-20.02	PK
V	4924	41.09	30.55	5.77	24.66	40.97	54	-13.03	AV
V	7386	54.52	30.33	6.32	24.55	55.06	74	-18.94	PK
V	7386	42.49	30.33	6.32	24.55	43.03	54	-10.97	AV
V	9848	56.64	30.85	7.45	24.69	57.93	74	-16.07	PK
V	9848	43.04	30.85	7.45	24.69	44.33	54	-9.67	AV
H	4924	54.27	30.55	5.77	24.66	54.15	74	-19.85	PK
H	4924	40.77	30.55	5.77	24.66	40.65	54	-13.35	AV
H	7386	53.98	30.33	6.32	24.55	54.52	74	-19.48	PK
H	7386	44.34	30.33	6.32	24.55	44.88	54	-9.12	AV
H	9848	53.92	30.85	7.45	24.69	55.21	74	-18.79	PK
H	9848	41.53	30.85	7.45	24.69	42.82	54	-11.18	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	56.74	30.55	5.77	24.66	56.62	74	-17.38	PK
V	4824	39.98	30.55	5.77	24.66	39.86	54	-14.14	AV
V	7236	54.08	30.33	6.32	24.55	54.62	74	-19.38	PK
V	7236	42.93	30.33	6.32	24.55	43.47	54	-10.53	AV
V	9648	54.98	30.85	7.45	24.69	56.27	74	-17.73	PK
V	9648	42.92	30.85	7.45	24.69	44.21	54	-9.79	AV
H	4824	54.64	30.55	5.77	24.66	54.52	74	-19.48	PK
H	4824	38.52	30.55	5.77	24.66	38.40	54	-15.60	AV
H	7236	55.51	30.33	6.32	24.55	56.05	74	-17.95	PK
H	7236	42.83	30.33	6.32	24.55	43.37	54	-10.63	AV
H	9648	56.28	30.85	7.45	24.69	57.57	74	-16.43	PK
H	9648	43.28	30.85	7.45	24.69	44.57	54	-9.43	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	54.32	30.55	5.77	24.66	54.20	74	-19.80	PK
V	4874	40.83	30.55	5.77	24.66	40.71	54	-13.29	AV
V	7311	54.16	30.33	6.32	24.55	54.70	74	-19.30	PK
V	7311	42.37	30.33	6.32	24.55	42.91	54	-11.09	AV
V	9748	55.61	30.85	7.45	24.69	56.90	74	-17.10	PK
V	9748	43.74	30.85	7.45	24.69	45.03	54	-8.97	AV
H	4874	56.10	30.55	5.77	24.66	55.98	74	-18.02	PK
H	4874	40.49	30.55	5.77	24.66	40.37	54	-13.63	AV
H	7311	54.48	30.33	6.32	24.55	55.02	74	-18.98	PK
H	7311	43.84	30.33	6.32	24.55	44.38	54	-9.62	AV
H	9748	54.44	30.85	7.45	24.69	55.73	74	-18.27	PK
H	9748	43.74	30.85	7.45	24.69	45.03	54	-8.97	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924	55.75	30.55	5.77	24.66	55.63	74	-18.37	PK
V	4924	41.03	30.55	5.77	24.66	40.91	54	-13.09	AV
V	7386	55.68	30.33	6.32	24.55	56.22	74	-17.78	PK
V	7386	42.63	30.33	6.32	24.55	43.17	54	-10.83	AV
V	9848	54.03	30.85	7.45	24.69	55.32	74	-18.68	PK
V	9848	42.79	30.85	7.45	24.69	44.08	54	-9.92	AV
H	4924	56.29	30.55	5.77	24.66	56.17	74	-17.83	PK
H	4924	38.24	30.55	5.77	24.66	38.12	54	-15.88	AV
H	7386	54.12	30.33	6.32	24.55	54.66	74	-19.34	PK
H	7386	42.50	30.33	6.32	24.55	43.04	54	-10.96	AV
H	9848	54.33	30.85	7.45	24.69	55.62	74	-18.38	PK
H	9848	43.55	30.85	7.45	24.69	44.84	54	-9.16	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2422MHz									
V	4844	54.90	30.55	5.77	24.66	54.78	74	-19.22	PK
V	4844	40.75	30.55	5.77	24.66	40.63	54	-13.37	AV
V	7266	54.90	30.33	6.32	24.55	55.44	74	-18.56	PK
V	7266	41.99	30.33	6.32	24.55	42.53	54	-11.47	AV
V	9688	55.20	30.85	7.45	24.69	56.49	74	-17.51	PK
V	9688	42.67	30.85	7.45	24.69	43.96	54	-10.04	AV
H	4844	56.65	30.55	5.77	24.66	56.53	74	-17.47	PK
H	4844	41.16	30.55	5.77	24.66	41.04	54	-12.96	AV
H	7266	54.07	30.33	6.32	24.55	54.61	74	-19.39	PK
H	7266	43.07	30.33	6.32	24.55	43.61	54	-10.39	AV
H	9688	55.85	30.85	7.45	24.69	57.14	74	-16.86	PK
H	9688	43.21	30.85	7.45	24.69	44.50	54	-9.50	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	54.37	30.55	5.77	24.66	54.25	74	-19.75	PK
V	4874	39.01	30.55	5.77	24.66	38.89	54	-15.11	AV
V	7311	54.63	30.33	6.32	24.55	55.17	74	-18.83	PK
V	7311	44.19	30.33	6.32	24.55	44.73	54	-9.27	AV
V	9748	55.88	30.85	7.45	24.69	57.17	74	-16.83	PK
V	9748	42.80	30.85	7.45	24.69	44.09	54	-9.91	AV
H	4874	56.13	30.55	5.77	24.66	56.01	74	-17.99	PK
H	4874	38.96	30.55	5.77	24.66	38.84	54	-15.16	AV
H	7311	54.51	30.33	6.32	24.55	55.05	74	-18.95	PK
H	7311	43.03	30.33	6.32	24.55	43.57	54	-10.43	AV
H	9748	56.72	30.85	7.45	24.69	58.01	74	-15.99	PK
H	9748	43.13	30.85	7.45	24.69	44.42	54	-9.58	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2452MHz									
V	4904	56.33	30.55	5.77	24.66	56.21	74	-17.79	PK
V	4904	38.96	30.55	5.77	24.66	38.84	54	-15.16	AV
V	7356	54.06	30.33	6.32	24.55	54.60	74	-19.40	PK
V	7356	43.72	30.33	6.32	24.55	44.26	54	-9.74	AV
V	9808	55.89	30.85	7.45	24.69	57.18	74	-16.82	PK
V	9808	43.77	30.85	7.45	24.69	45.06	54	-8.94	AV
H	4904	55.46	30.55	5.77	24.66	55.34	74	-18.66	PK
H	4904	39.62	30.55	5.77	24.66	39.50	54	-14.50	AV
H	7356	55.70	30.33	6.32	24.55	56.24	74	-17.76	PK
H	7356	42.36	30.33	6.32	24.55	42.90	54	-11.10	AV
H	9808	54.06	30.85	7.45	24.69	55.35	74	-18.65	PK
H	9808	44.02	30.85	7.45	24.69	45.31	54	-8.69	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	54.95	30.55	5.77	24.66	54.83	74	-19.17	PK
V	4824	39.04	30.55	5.77	24.66	38.92	54	-15.08	AV
V	7236	54.93	30.33	6.32	24.55	55.47	74	-18.53	PK
V	7236	42.97	30.33	6.32	24.55	43.51	54	-10.49	AV
V	9648	56.21	30.85	7.45	24.69	57.50	74	-16.50	PK
V	9648	43.59	30.85	7.45	24.69	44.88	54	-9.12	AV
H	4824	54.05	30.55	5.77	24.66	53.93	74	-20.07	PK
H	4824	39.13	30.55	5.77	24.66	39.01	54	-14.99	AV
H	7236	55.05	30.33	6.32	24.55	55.59	74	-18.41	PK
H	7236	43.52	30.33	6.32	24.55	44.06	54	-9.94	AV
H	9648	54.99	30.85	7.45	24.69	56.28	74	-17.72	PK
H	9648	44.01	30.85	7.45	24.69	45.30	54	-8.70	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	54.17	30.55	5.77	24.66	54.05	74	-19.95	PK
V	4874	39.08	30.55	5.77	24.66	38.96	54	-15.04	AV
V	7311	55.39	30.33	6.32	24.55	55.93	74	-18.07	PK
V	7311	43.85	30.33	6.32	24.55	44.39	54	-9.61	AV
V	9748	54.73	30.85	7.45	24.69	56.02	74	-17.98	PK
V	9748	43.36	30.85	7.45	24.69	44.65	54	-9.35	AV
H	4874	56.02	30.55	5.77	24.66	55.90	74	-18.10	PK
H	4874	40.68	30.55	5.77	24.66	40.56	54	-13.44	AV
H	7311	55.26	30.33	6.32	24.55	55.80	74	-18.20	PK
H	7311	41.82	30.33	6.32	24.55	42.36	54	-11.64	AV
H	9748	54.33	30.85	7.45	24.69	55.62	74	-18.38	PK
H	9748	43.99	30.85	7.45	24.69	45.28	54	-8.72	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924	53.85	30.55	5.77	24.66	53.73	74	-20.27	PK
V	4924	40.62	30.55	5.77	24.66	40.50	54	-13.50	AV
V	7386	54.62	30.33	6.32	24.55	55.16	74	-18.84	PK
V	7386	44.76	30.33	6.32	24.55	45.30	54	-8.70	AV
V	9848	56.70	30.85	7.45	24.69	57.99	74	-16.01	PK
V	9848	41.55	30.85	7.45	24.69	42.84	54	-11.16	AV
H	4924	54.43	30.55	5.77	24.66	54.31	74	-19.69	PK
H	4924	40.59	30.55	5.77	24.66	40.47	54	-13.53	AV
H	7386	54.84	30.33	6.32	24.55	55.38	74	-18.62	PK
H	7386	42.02	30.33	6.32	24.55	42.56	54	-11.44	AV
H	9848	56.40	30.85	7.45	24.69	57.69	74	-16.31	PK
H	9848	43.66	30.85	7.45	24.69	44.95	54	-9.05	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	55.41	30.55	5.77	24.66	55.29	74	-18.71	PK
V	4824	40.02	30.55	5.77	24.66	39.90	54	-14.10	AV
V	7236	55.05	30.33	6.32	24.55	55.59	74	-18.41	PK
V	7236	44.29	30.33	6.32	24.55	44.83	54	-9.17	AV
V	9648	54.48	30.85	7.45	24.69	55.77	74	-18.23	PK
V	9648	41.38	30.85	7.45	24.69	42.67	54	-11.33	AV
H	4824	56.17	30.55	5.77	24.66	56.05	74	-17.95	PK
H	4824	38.94	30.55	5.77	24.66	38.82	54	-15.18	AV
H	7236	55.72	30.33	6.32	24.55	56.26	74	-17.74	PK
H	7236	44.59	30.33	6.32	24.55	45.13	54	-8.87	AV
H	9648	55.69	30.85	7.45	24.69	56.98	74	-17.02	PK
H	9648	43.44	30.85	7.45	24.69	44.73	54	-9.27	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	54.22	30.55	5.77	24.66	54.10	74	-19.90	PK
V	4874	40.44	30.55	5.77	24.66	40.32	54	-13.68	AV
V	7311	54.44	30.33	6.32	24.55	54.98	74	-19.02	PK
V	7311	44.54	30.33	6.32	24.55	45.08	54	-8.92	AV
V	9748	56.45	30.85	7.45	24.69	57.74	74	-16.26	PK
V	9748	43.53	30.85	7.45	24.69	44.82	54	-9.18	AV
H	4874	56.49	30.55	5.77	24.66	56.37	74	-17.63	PK
H	4874	38.68	30.55	5.77	24.66	38.56	54	-15.44	AV
H	7311	55.40	30.33	6.32	24.55	55.94	74	-18.06	PK
H	7311	43.16	30.33	6.32	24.55	43.70	54	-10.30	AV
H	9748	55.72	30.85	7.45	24.69	57.01	74	-16.99	PK
H	9748	42.30	30.85	7.45	24.69	43.59	54	-10.41	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924	54.06	30.55	5.77	24.66	53.94	74	-20.06	PK
V	4924	38.97	30.55	5.77	24.66	38.85	54	-15.15	AV
V	7386	54.82	30.33	6.32	24.55	55.36	74	-18.64	PK
V	7386	42.30	30.33	6.32	24.55	42.84	54	-11.16	AV
V	9848	54.63	30.85	7.45	24.69	55.92	74	-18.08	PK
V	9848	43.67	30.85	7.45	24.69	44.96	54	-9.04	AV
H	4924	55.69	30.55	5.77	24.66	55.57	74	-18.43	PK
H	4924	39.68	30.55	5.77	24.66	39.56	54	-14.44	AV
H	7386	55.14	30.33	6.32	24.55	55.68	74	-18.32	PK
H	7386	41.93	30.33	6.32	24.55	42.47	54	-11.53	AV
H	9848	54.01	30.85	7.45	24.69	55.30	74	-18.70	PK
H	9848	43.10	30.85	7.45	24.69	44.39	54	-9.61	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	56.39	30.55	5.77	24.66	56.27	74	-17.73	PK
V	4824	38.49	30.55	5.77	24.66	38.37	54	-15.63	AV
V	7236	54.01	30.33	6.32	24.55	54.55	74	-19.45	PK
V	7236	42.64	30.33	6.32	24.55	43.18	54	-10.82	AV
V	9648	54.44	30.85	7.45	24.69	55.73	74	-18.27	PK
V	9648	41.77	30.85	7.45	24.69	43.06	54	-10.94	AV
H	4824	53.95	30.55	5.77	24.66	53.83	74	-20.17	PK
H	4824	40.78	30.55	5.77	24.66	40.66	54	-13.34	AV
H	7236	54.38	30.33	6.32	24.55	54.92	74	-19.08	PK
H	7236	44.63	30.33	6.32	24.55	45.17	54	-8.83	AV
H	9648	54.70	30.85	7.45	24.69	55.99	74	-18.01	PK
H	9648	43.83	30.85	7.45	24.69	45.12	54	-8.88	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	54.80	30.55	5.77	24.66	54.68	74	-19.32	PK
V	4874	41.13	30.55	5.77	24.66	41.01	54	-12.99	AV
V	7311	53.92	30.33	6.32	24.55	54.46	74	-19.54	PK
V	7311	44.66	30.33	6.32	24.55	45.20	54	-8.80	AV
V	9748	55.38	30.85	7.45	24.69	56.67	74	-17.33	PK
V	9748	42.67	30.85	7.45	24.69	43.96	54	-10.04	AV
H	4874	54.93	30.55	5.77	24.66	54.81	74	-19.19	PK
H	4874	38.99	30.55	5.77	24.66	38.87	54	-15.13	AV
H	7311	54.95	30.33	6.32	24.55	55.49	74	-18.51	PK
H	7311	44.47	30.33	6.32	24.55	45.01	54	-8.99	AV
H	9748	56.48	30.85	7.45	24.69	57.77	74	-16.23	PK
H	9748	41.65	30.85	7.45	24.69	42.94	54	-11.06	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924	54.58	30.55	5.77	24.66	54.46	74	-19.54	PK
V	4924	40.93	30.55	5.77	24.66	40.81	54	-13.19	AV
V	7386	54.26	30.33	6.32	24.55	54.80	74	-19.20	PK
V	7386	43.17	30.33	6.32	24.55	43.71	54	-10.29	AV
V	9848	55.22	30.85	7.45	24.69	56.51	74	-17.49	PK
V	9848	42.85	30.85	7.45	24.69	44.14	54	-9.86	AV
H	4924	56.57	30.55	5.77	24.66	56.45	74	-17.55	PK
H	4924	38.40	30.55	5.77	24.66	38.28	54	-15.72	AV
H	7386	55.58	30.33	6.32	24.55	56.12	74	-17.88	PK
H	7386	44.31	30.33	6.32	24.55	44.85	54	-9.15	AV
H	9848	55.83	30.85	7.45	24.69	57.12	74	-16.88	PK
H	9848	42.37	30.85	7.45	24.69	43.66	54	-10.34	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2422MHz									
V	4844	55.59	30.55	5.77	24.66	55.47	74	-18.53	PK
V	4844	40.61	30.55	5.77	24.66	40.49	54	-13.51	AV
V	7266	54.10	30.33	6.32	24.55	54.64	74	-19.36	PK
V	7266	43.73	30.33	6.32	24.55	44.27	54	-9.73	AV
V	9688	55.13	30.85	7.45	24.69	56.42	74	-17.58	PK
V	9688	43.22	30.85	7.45	24.69	44.51	54	-9.49	AV
H	4844	56.37	30.55	5.77	24.66	56.25	74	-17.75	PK
H	4844	38.64	30.55	5.77	24.66	38.52	54	-15.48	AV
H	7266	55.32	30.33	6.32	24.55	55.86	74	-18.14	PK
H	7266	44.24	30.33	6.32	24.55	44.78	54	-9.22	AV
H	9688	54.19	30.85	7.45	24.69	55.48	74	-18.52	PK
H	9688	43.06	30.85	7.45	24.69	44.35	54	-9.65	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	55.98	30.55	5.77	24.66	55.86	74	-18.14	PK
V	4874	38.47	30.55	5.77	24.66	38.35	54	-15.65	AV
V	7311	55.06	30.33	6.32	24.55	55.60	74	-18.40	PK
V	7311	42.46	30.33	6.32	24.55	43.00	54	-11.00	AV
V	9748	56.63	30.85	7.45	24.69	57.92	74	-16.08	PK
V	9748	42.05	30.85	7.45	24.69	43.34	54	-10.66	AV
H	4874	55.23	30.55	5.77	24.66	55.11	74	-18.89	PK
H	4874	39.22	30.55	5.77	24.66	39.10	54	-14.90	AV
H	7311	54.63	30.33	6.32	24.55	55.17	74	-18.83	PK
H	7311	43.40	30.33	6.32	24.55	43.94	54	-10.06	AV
H	9748	56.49	30.85	7.45	24.69	57.78	74	-16.22	PK
H	9748	43.76	30.85	7.45	24.69	45.05	54	-8.95	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2452MHz									
V	4904	55.02	30.55	5.77	24.66	54.90	74	-19.10	PK
V	4904	38.90	30.55	5.77	24.66	38.78	54	-15.22	AV
V	7356	55.53	30.33	6.32	24.55	56.07	74	-17.93	PK
V	7356	44.57	30.33	6.32	24.55	45.11	54	-8.89	AV
V	9808	54.61	30.85	7.45	24.69	55.90	74	-18.10	PK
V	9808	43.27	30.85	7.45	24.69	44.56	54	-9.44	AV
H	4904	55.05	30.55	5.77	24.66	54.93	74	-19.07	PK
H	4904	39.80	30.55	5.77	24.66	39.68	54	-14.32	AV
H	7356	54.03	30.33	6.32	24.55	54.57	74	-19.43	PK
H	7356	44.38	30.33	6.32	24.55	44.92	54	-9.08	AV
H	9808	56.26	30.85	7.45	24.69	57.55	74	-16.45	PK
H	9808	41.49	30.85	7.45	24.69	42.78	54	-11.22	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824	54.29	30.55	5.77	24.66	54.17	74	-19.83	PK
V	4824	40.67	30.55	5.77	24.66	40.55	54	-13.45	AV
V	7236	55.57	30.33	6.32	24.55	56.11	74	-17.89	PK
V	7236	42.00	30.33	6.32	24.55	42.54	54	-11.46	AV
V	9648	56.44	30.85	7.45	24.69	57.73	74	-16.27	PK
V	9648	44.14	30.85	7.45	24.69	45.43	54	-8.57	AV
H	4824	54.05	30.55	5.77	24.66	53.93	74	-20.07	PK
H	4824	39.50	30.55	5.77	24.66	39.38	54	-14.62	AV
H	7236	54.68	30.33	6.32	24.55	55.22	74	-18.78	PK
H	7236	42.71	30.33	6.32	24.55	43.25	54	-10.75	AV
H	9648	54.34	30.85	7.45	24.69	55.63	74	-18.37	PK
H	9648	43.67	30.85	7.45	24.69	44.96	54	-9.04	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	54.04	30.55	5.77	24.66	53.92	74	-20.08	PK
V	4874	38.44	30.55	5.77	24.66	38.32	54	-15.68	AV
V	7311	54.09	30.33	6.32	24.55	54.63	74	-19.37	PK
V	7311	43.07	30.33	6.32	24.55	43.61	54	-10.39	AV
V	9748	55.97	30.85	7.45	24.69	57.26	74	-16.74	PK
V	9748	43.97	30.85	7.45	24.69	45.26	54	-8.74	AV
H	4874	56.50	30.55	5.77	24.66	56.38	74	-17.62	PK
H	4874	40.48	30.55	5.77	24.66	40.36	54	-13.64	AV
H	7311	53.90	30.33	6.32	24.55	54.44	74	-19.56	PK
H	7311	43.85	30.33	6.32	24.55	44.39	54	-9.61	AV
H	9748	55.46	30.85	7.45	24.69	56.75	74	-17.25	PK
H	9748	42.48	30.85	7.45	24.69	43.77	54	-10.23	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924	54.50	30.55	5.77	24.66	54.38	74	-19.62	PK
V	4924	40.68	30.55	5.77	24.66	40.56	54	-13.44	AV
V	7386	55.51	30.33	6.32	24.55	56.05	74	-17.95	PK
V	7386	44.11	30.33	6.32	24.55	44.65	54	-9.35	AV
V	9848	54.82	30.85	7.45	24.69	56.11	74	-17.89	PK
V	9848	42.51	30.85	7.45	24.69	43.80	54	-10.20	AV
H	4924	53.94	30.55	5.77	24.66	53.82	74	-20.18	PK
H	4924	41.05	30.55	5.77	24.66	40.93	54	-13.07	AV
H	7386	54.05	30.33	6.32	24.55	54.59	74	-19.41	PK
H	7386	42.27	30.33	6.32	24.55	42.81	54	-11.19	AV
H	9848	54.76	30.85	7.45	24.69	56.05	74	-17.95	PK
H	9848	44.15	30.85	7.45	24.69	45.44	54	-8.56	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2422MHz									
V	4844	55.93	30.55	5.77	24.66	55.81	74	-18.19	PK
V	4844	39.90	30.55	5.77	24.66	39.78	54	-14.22	AV
V	7266	54.34	30.33	6.32	24.55	54.88	74	-19.12	PK
V	7266	44.33	30.33	6.32	24.55	44.87	54	-9.13	AV
V	9688	54.17	30.85	7.45	24.69	55.46	74	-18.54	PK
V	9688	44.15	30.85	7.45	24.69	45.44	54	-8.56	AV
H	4844	54.05	30.55	5.77	24.66	53.93	74	-20.07	PK
H	4844	38.57	30.55	5.77	24.66	38.45	54	-15.55	AV
H	7266	55.20	30.33	6.32	24.55	55.74	74	-18.26	PK
H	7266	43.99	30.33	6.32	24.55	44.53	54	-9.47	AV
H	9688	55.80	30.85	7.45	24.69	57.09	74	-16.91	PK
H	9688	43.83	30.85	7.45	24.69	45.12	54	-8.88	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874	55.84	30.55	5.77	24.66	55.72	74	-18.28	PK
V	4874	40.24	30.55	5.77	24.66	40.12	54	-13.88	AV
V	7311	53.84	30.33	6.32	24.55	54.38	74	-19.62	PK
V	7311	43.56	30.33	6.32	24.55	44.10	54	-9.90	AV
V	9748	56.59	30.85	7.45	24.69	57.88	74	-16.12	PK
V	9748	43.45	30.85	7.45	24.69	44.74	54	-9.26	AV
H	4874	56.27	30.55	5.77	24.66	56.15	74	-17.85	PK
H	4874	38.41	30.55	5.77	24.66	38.29	54	-15.71	AV
H	7311	53.89	30.33	6.32	24.55	54.43	74	-19.57	PK
H	7311	42.97	30.33	6.32	24.55	43.51	54	-10.49	AV
H	9748	54.47	30.85	7.45	24.69	55.76	74	-18.24	PK
H	9748	43.30	30.85	7.45	24.69	44.59	54	-9.41	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2452MHz									
V	4904	55.10	30.55	5.77	24.66	54.98	74	-19.02	PK
V	4904	39.71	30.55	5.77	24.66	39.59	54	-14.41	AV
V	7356	55.58	30.33	6.32	24.55	56.12	74	-17.88	PK
V	7356	43.78	30.33	6.32	24.55	44.32	54	-9.68	AV
V	9808	55.23	30.85	7.45	24.69	56.52	74	-17.48	PK
V	9808	43.43	30.85	7.45	24.69	44.72	54	-9.28	AV
H	4904	55.72	30.55	5.77	24.66	55.60	74	-18.40	PK
H	4904	38.76	30.55	5.77	24.66	38.64	54	-15.36	AV
H	7356	55.38	30.33	6.32	24.55	55.92	74	-18.08	PK
H	7356	44.38	30.33	6.32	24.55	44.92	54	-9.08	AV
H	9808	54.00	30.85	7.45	24.69	55.29	74	-18.71	PK
H	9808	43.43	30.85	7.45	24.69	44.72	54	-9.28	AV

5. RADIATED BAND EMISSION MEASUREMENT**5.1 TEST REQUIREMENT:**

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above	Peak	1MHz	3MHz	Peak
	1GHz	Average	1MHz	3MHz	Average

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m).

5.2 TEST PROCEDURE

Above 1GHz test procedure as below:

- a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the Highest channel

Note:

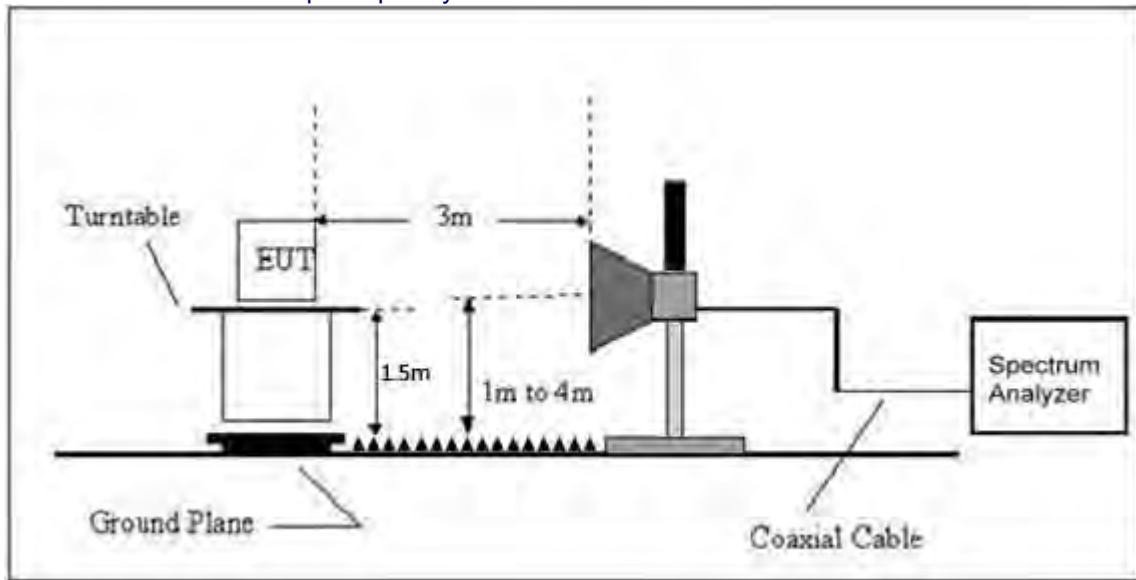
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

5.3 DEVIATION FROM TEST STANDARD

No deviation

5.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



5.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULT

ANT1

	Polar (H/V)	Frequenc y (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV /m)	Detec tor Type	Result
802.11b	Low Channel 2412MHz									
	H	2390.00	59.92	30.22	4.85	23.98	58.53	74	PK	PASS
	H	2390.00	43.35	30.22	4.85	23.98	41.96	54	AV	PASS
	H	2400.00	60.99	30.22	4.85	23.98	59.60	74	PK	PASS
	H	2400.00	45.03	30.22	4.85	23.98	43.64	54	AV	PASS
	V	2390.00	61.79	30.22	4.85	23.98	60.40	74	PK	PASS
	V	2390.00	43.10	30.22	4.85	23.98	41.71	54	AV	PASS
	V	2400.00	57.61	30.22	4.85	23.98	56.22	74	PK	PASS
	V	2400.00	43.80	30.22	4.85	23.98	42.41	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	60.00	30.22	4.85	23.98	58.61	74	PK	PASS
	H	2485.50	49.41	30.22	4.85	23.98	48.02	54	AV	PASS
	H	2483.50	66.18	30.22	4.85	23.98	64.79	74	PK	PASS
	H	2485.50	44.12	30.22	4.85	23.98	42.73	54	AV	PASS
	V	2483.50	59.96	30.22	4.85	23.98	58.57	74	PK	PASS
	V	2485.50	46.26	30.22	4.85	23.98	44.87	54	AV	PASS
	V	2483.50	64.48	30.22	4.85	23.98	63.09	74	PK	PASS
	V	2485.50	44.36	30.22	4.85	23.98	42.97	54	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2390.00	59.52	30.22	4.85	23.98	58.13	74	PK	PASS
	H	2390.00	43.44	30.22	4.85	23.98	42.05	54	AV	PASS
	H	2400.00	61.95	30.22	4.85	23.98	60.56	74	PK	PASS
	H	2400.00	44.07	30.22	4.85	23.98	42.68	54	AV	PASS
	V	2390.00	60.41	30.22	4.85	23.98	59.02	74	PK	PASS
	V	2390.00	43.94	30.22	4.85	23.98	42.55	54	AV	PASS
	V	2400.00	54.82	30.22	4.85	23.98	53.43	74	PK	PASS
	V	2400.00	42.91	30.22	4.85	23.98	41.52	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	59.34	30.22	4.85	23.98	57.95	74	PK	PASS
	H	2485.50	49.52	30.22	4.85	23.98	48.13	54	AV	PASS
	H	2483.50	61.46	30.22	4.85	23.98	60.07	74	PK	PASS
	H	2485.50	43.06	30.22	4.85	23.98	41.67	54	AV	PASS
	V	2483.50	63.16	30.22	4.85	23.98	61.77	74	PK	PASS
	V	2485.50	43.64	30.22	4.85	23.98	42.25	54	AV	PASS
	V	2483.50	65.70	30.22	4.85	23.98	64.31	74	PK	PASS
	V	2485.50	46.12	30.22	4.85	23.98	44.73	54	AV	PASS
802.11n20	Low Channel 2412MHz									
	H	2390.00	58.65	30.22	4.85	23.98	57.26	74	PK	PASS
	H	2390.00	42.77	30.22	4.85	23.98	41.38	54	AV	PASS
	H	2400.00	61.61	30.22	4.85	23.98	60.22	74	PK	PASS
	H	2400.00	44.82	30.22	4.85	23.98	43.43	54	AV	PASS
	V	2390.00	63.21	30.22	4.85	23.98	61.82	74	PK	PASS
	V	2390.00	45.28	30.22	4.85	23.98	43.89	54	AV	PASS
	V	2400.00	54.91	30.22	4.85	23.98	53.52	74	PK	PASS
	V	2400.00	43.28	30.22	4.85	23.98	41.89	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	62.30	30.22	4.85	23.98	60.91	74	PK	PASS
	H	2485.50	45.50	30.22	4.85	23.98	44.11	54	AV	PASS
	H	2483.50	63.03	30.22	4.85	23.98	61.64	74	PK	PASS
	H	2485.50	48.72	30.22	4.85	23.98	47.33	54	AV	PASS

	V	2483.50	60.20	30.22	4.85	23.98	58.81	74	PK	PASS
	V	2485.50	43.61	30.22	4.85	23.98	42.22	54	AV	PASS
	V	2483.50	66.35	30.22	4.85	23.98	64.96	74	PK	PASS
	V	2485.50	49.38	30.22	4.85	23.98	47.99	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

802.11n40	Low Channel 2422MHz									
	H	2390.00	59.56	30.22	4.85	23.98	58.17	74	PK	PASS
	H	2390.00	43.94	30.22	4.85	23.98	42.55	54	AV	PASS
	H	2400.00	59.84	30.22	4.85	23.98	58.45	74	PK	PASS
	H	2400.00	44.25	30.22	4.85	23.98	42.86	54	AV	PASS
	V	2390.00	61.27	30.22	4.85	23.98	59.88	74	PK	PASS
	V	2390.00	45.22	30.22	4.85	23.98	43.83	54	AV	PASS
	V	2400.00	57.02	30.22	4.85	23.98	55.63	74	PK	PASS
	V	2400.00	45.76	30.22	4.85	23.98	44.37	54	AV	PASS
	High Channel 2452MHz									
	H	2483.50	61.17	30.22	4.85	23.98	59.78	74	PK	PASS
	H	2485.50	45.71	30.22	4.85	23.98	44.32	54	AV	PASS
	H	2483.50	62.47	30.22	4.85	23.98	61.08	74	PK	PASS
	H	2485.50	44.44	30.22	4.85	23.98	43.05	54	AV	PASS
	V	2483.50	59.29	30.22	4.85	23.98	57.90	74	PK	PASS
	V	2485.50	45.83	30.22	4.85	23.98	44.44	54	AV	PASS
	V	2483.50	60.10	30.22	4.85	23.98	58.71	74	PK	PASS
	V	2485.50	43.99	30.22	4.85	23.98	42.60	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

ANT2

	Polar (H/V)	Frequenc y (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV /m)	Detec tor Type	Result
802.11b	Low Channel 2412MHz									
	H	2390.00	60.96	30.22	4.85	23.98	59.57	74	PK	PASS
	H	2390.00	45.72	30.22	4.85	23.98	44.33	54	AV	PASS
	H	2400.00	62.64	30.22	4.85	23.98	61.25	74	PK	PASS
	H	2400.00	45.65	30.22	4.85	23.98	44.26	54	AV	PASS
	V	2390.00	62.00	30.22	4.85	23.98	60.61	74	PK	PASS
	V	2390.00	44.45	30.22	4.85	23.98	43.06	54	AV	PASS
	V	2400.00	55.33	30.22	4.85	23.98	53.94	74	PK	PASS
	V	2400.00	42.76	30.22	4.85	23.98	41.37	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	61.55	30.22	4.85	23.98	60.16	74	PK	PASS
	H	2485.50	45.57	30.22	4.85	23.98	44.18	54	AV	PASS
	H	2483.50	61.87	30.22	4.85	23.98	60.48	74	PK	PASS
	H	2485.50	45.87	30.22	4.85	23.98	44.48	54	AV	PASS
	V	2483.50	66.58	30.22	4.85	23.98	65.19	74	PK	PASS
	V	2485.50	45.36	30.22	4.85	23.98	43.97	54	AV	PASS
	V	2483.50	62.77	30.22	4.85	23.98	61.38	74	PK	PASS
	V	2485.50	46.06	30.22	4.85	23.98	44.67	54	AV	PASS

802.11g	Low Channel 2412MHz									
	H	2390.00	59.86	30.22	4.85	23.98	58.47	74	PK	PASS
	H	2390.00	43.94	30.22	4.85	23.98	42.55	54	AV	PASS
	H	2400.00	60.49	30.22	4.85	23.98	59.10	74	PK	PASS
	H	2400.00	43.55	30.22	4.85	23.98	42.16	54	AV	PASS
	V	2390.00	61.92	30.22	4.85	23.98	60.53	74	PK	PASS
	V	2390.00	44.35	30.22	4.85	23.98	42.96	54	AV	PASS
	V	2400.00	57.59	30.22	4.85	23.98	56.20	74	PK	PASS
	V	2400.00	44.71	30.22	4.85	23.98	43.32	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	61.94	30.22	4.85	23.98	60.55	74	PK	PASS
	H	2485.50	47.20	30.22	4.85	23.98	45.81	54	AV	PASS
	H	2483.50	59.90	30.22	4.85	23.98	58.51	74	PK	PASS
	H	2485.50	44.35	30.22	4.85	23.98	42.96	54	AV	PASS
	V	2483.50	64.71	30.22	4.85	23.98	63.32	74	PK	PASS
	V	2485.50	49.43	30.22	4.85	23.98	48.04	54	AV	PASS
	V	2483.50	59.93	30.22	4.85	23.98	58.54	74	PK	PASS
	V	2485.50	43.21	30.22	4.85	23.98	41.82	54	AV	PASS

802.11n20	Low Channel 2412MHz									
	H	2390.00	59.20	30.22	4.85	23.98	57.81	74	PK	PASS
	H	2390.00	44.52	30.22	4.85	23.98	43.13	54	AV	PASS
	H	2400.00	60.08	30.22	4.85	23.98	58.69	74	PK	PASS
	H	2400.00	42.77	30.22	4.85	23.98	41.38	54	AV	PASS
	V	2390.00	61.46	30.22	4.85	23.98	60.07	74	PK	PASS
	V	2390.00	41.95	30.22	4.85	23.98	40.56	54	AV	PASS
	V	2400.00	58.56	30.22	4.85	23.98	57.17	74	PK	PASS
	V	2400.00	44.87	30.22	4.85	23.98	43.48	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	59.29	30.22	4.85	23.98	57.90	74	PK	PASS
	H	2485.50	46.01	30.22	4.85	23.98	44.62	54	AV	PASS
	H	2483.50	60.46	30.22	4.85	23.98	59.07	74	PK	PASS
	H	2485.50	46.57	30.22	4.85	23.98	45.18	54	AV	PASS
	V	2483.50	58.91	30.22	4.85	23.98	57.52	74	PK	PASS
	V	2485.50	43.61	30.22	4.85	23.98	42.22	54	AV	PASS
	V	2483.50	64.85	30.22	4.85	23.98	63.46	74	PK	PASS
	V	2485.50	45.57	30.22	4.85	23.98	44.18	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

802.11n40	Low Channel 2422MHz									
	H	2390.00	61.43	30.22	4.85	23.98	60.04	74	PK	PASS
	H	2390.00	44.99	30.22	4.85	23.98	43.60	54	AV	PASS
	H	2400.00	60.71	30.22	4.85	23.98	59.32	74	PK	PASS
	H	2400.00	44.83	30.22	4.85	23.98	43.44	54	AV	PASS
	V	2390.00	61.37	30.22	4.85	23.98	59.98	74	PK	PASS
	V	2390.00	45.25	30.22	4.85	23.98	43.86	54	AV	PASS
	V	2400.00	56.54	30.22	4.85	23.98	55.15	74	PK	PASS
	V	2400.00	42.82	30.22	4.85	23.98	41.43	54	AV	PASS
	High Channel 2452MHz									
	H	2483.50	62.12	30.22	4.85	23.98	60.73	74	PK	PASS
	H	2485.50	44.74	30.22	4.85	23.98	43.35	54	AV	PASS
	H	2483.50	64.78	30.22	4.85	23.98	63.39	74	PK	PASS
	H	2485.50	48.01	30.22	4.85	23.98	46.62	54	AV	PASS

	V	2483.50	59.19	30.22	4.85	23.98	57.80	74	PK	PASS
	V	2485.50	46.47	30.22	4.85	23.98	45.08	54	AV	PASS
	V	2483.50	65.50	30.22	4.85	23.98	64.11	74	PK	PASS
	V	2485.50	44.54	30.22	4.85	23.98	43.15	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

MIMO

802.11n20	Low Channel 2412MHz									
	H	2390.00	59.94	30.22	4.85	23.98	58.55	74	PK	PASS
	H	2390.00	42.77	30.22	4.85	23.98	41.38	54	AV	PASS
	H	2400.00	61.43	30.22	4.85	23.98	60.04	74	PK	PASS
	H	2400.00	45.62	30.22	4.85	23.98	44.23	54	AV	PASS
	V	2390.00	62.34	30.22	4.85	23.98	60.95	74	PK	PASS
	V	2390.00	43.54	30.22	4.85	23.98	42.15	54	AV	PASS
	V	2400.00	57.11	30.22	4.85	23.98	55.72	74	PK	PASS
	V	2400.00	44.85	30.22	4.85	23.98	43.46	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	59.45	30.22	4.85	23.98	58.06	74	PK	PASS
	H	2485.50	45.50	30.22	4.85	23.98	44.11	54	AV	PASS
	H	2483.50	60.33	30.22	4.85	23.98	58.94	74	PK	PASS
	H	2485.50	48.65	30.22	4.85	23.98	47.26	54	AV	PASS
	V	2483.50	61.90	30.22	4.85	23.98	60.51	74	PK	PASS
	V	2485.50	47.70	30.22	4.85	23.98	46.31	54	AV	PASS
	V	2483.50	60.41	30.22	4.85	23.98	59.02	74	PK	PASS
	V	2485.50	46.82	30.22	4.85	23.98	45.43	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

802.11n40	Low Channel 2422MHz									
	H	2390.00	58.73	30.22	4.85	23.98	57.34	74	PK	PASS
	H	2390.00	44.50	30.22	4.85	23.98	43.11	54	AV	PASS
	H	2400.00	60.52	30.22	4.85	23.98	59.13	74	PK	PASS
	H	2400.00	45.08	30.22	4.85	23.98	43.69	54	AV	PASS
	V	2390.00	62.97	30.22	4.85	23.98	61.58	74	PK	PASS
	V	2390.00	44.97	30.22	4.85	23.98	43.58	54	AV	PASS
	V	2400.00	56.00	30.22	4.85	23.98	54.61	74	PK	PASS
	V	2400.00	44.07	30.22	4.85	23.98	42.68	54	AV	PASS
	High Channel 2452MHz									
	H	2483.50	60.98	30.22	4.85	23.98	59.59	74	PK	PASS
	H	2485.50	48.42	30.22	4.85	23.98	47.03	54	AV	PASS
	H	2483.50	65.01	30.22	4.85	23.98	63.62	74	PK	PASS
	H	2485.50	44.21	30.22	4.85	23.98	42.82	54	AV	PASS
	V	2483.50	64.96	30.22	4.85	23.98	63.57	74	PK	PASS
	V	2485.50	46.60	30.22	4.85	23.98	45.21	54	AV	PASS
	V	2483.50	61.00	30.22	4.85	23.98	59.61	74	PK	PASS
	V	2485.50	43.54	30.22	4.85	23.98	42.15	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

6.POWER SPECTRAL DENSITY TEST

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB558074 D0115.247 Meas Guidance v 05r02

6.1 APPLIED PROCEDURES / LIMIT

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

6.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP**6.5 EUT OPERATION CONDITIONS**

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

6.6 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V

Test mode	Test channel	Power Spectral Density (dBm/3kHz)			Limit:	Result
		ANT1	ANT2	SUM		
802.11b	Lowest	-10.975	-10.518	/	8dBm/3kHz	PASS
	Middle	-11.53	-10.473	/		
	Highest	-11.942	-10.149	/		
802.11g	Lowest	-12.894	-11.359	/	8dBm/3kHz	PASS
	Middle	-11.721	-10.159	/		
	Highest	-12.566	-10.194	/		
802.11n(HT20)	Lowest	-13.2	-9.255	-7.78	8dBm/3kHz	PASS
	Middle	-11.542	-10.851	-8.17		
	Highest	-12.751	-9.392	-7.74		
802.11n(HT40)	Lowest	-12.47	-13.077	-9.75	8dBm/3kHz	PASS
	Middle	-14.245	-11.995	-9.97		
	Highest	-13.772	-11.912	-9.73		

Remark:

1. Measured peak power spectrum density at difference data rate for each mode and recorded worst case for each mode.
2. Test results including cable loss;
3. Please refer to following plots;
4. The PSD limits of IEEE 802.11n HT20 and IEEE 802.11 n HT40 for MIMO with CDD technology should be reduce $10 \cdot \log(2) = 3.010 \text{ dB}$ according to KDB662911D01;
5. For MIMO with CCD technology device, The Directional Gain= Gain of individual transmit antennas (dBi) + Array gain;
Array gain = $10 \log (N_{\text{ant}})$, where N_{ant} is the number of transmit antennas.



Middle channel



Middle channel



Highest channel



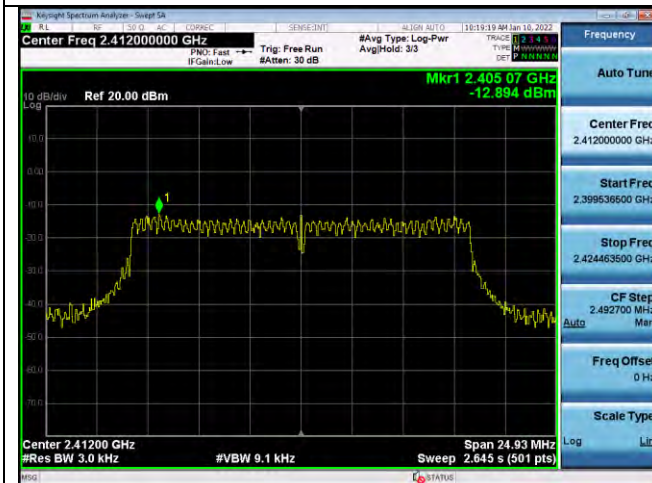
Highest channel



ANT1

802.11g

Lowest channel



ANT2

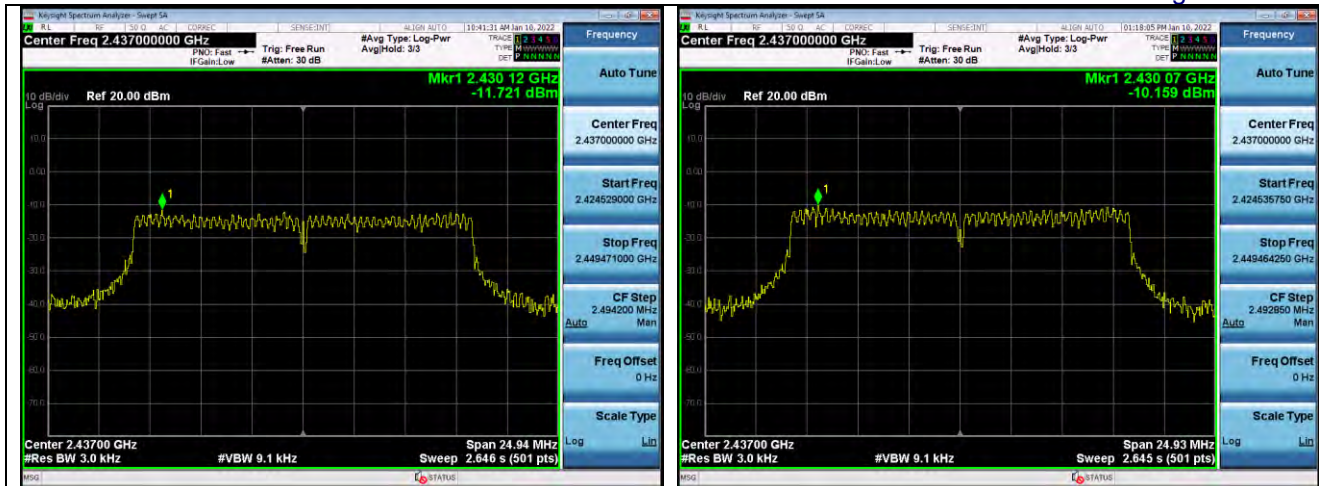
802.11g

Lowest channel



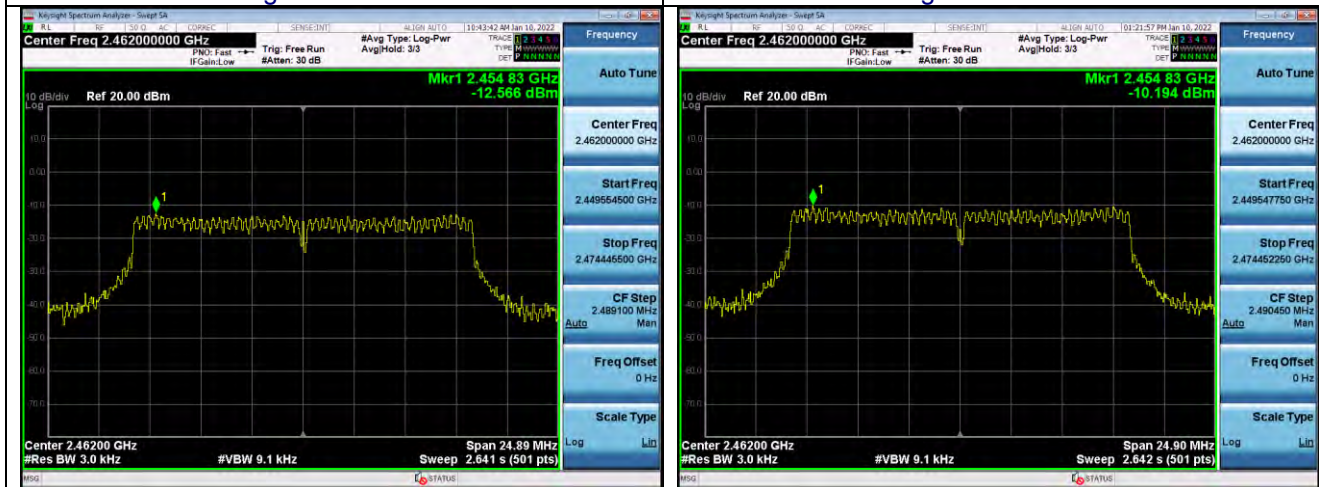
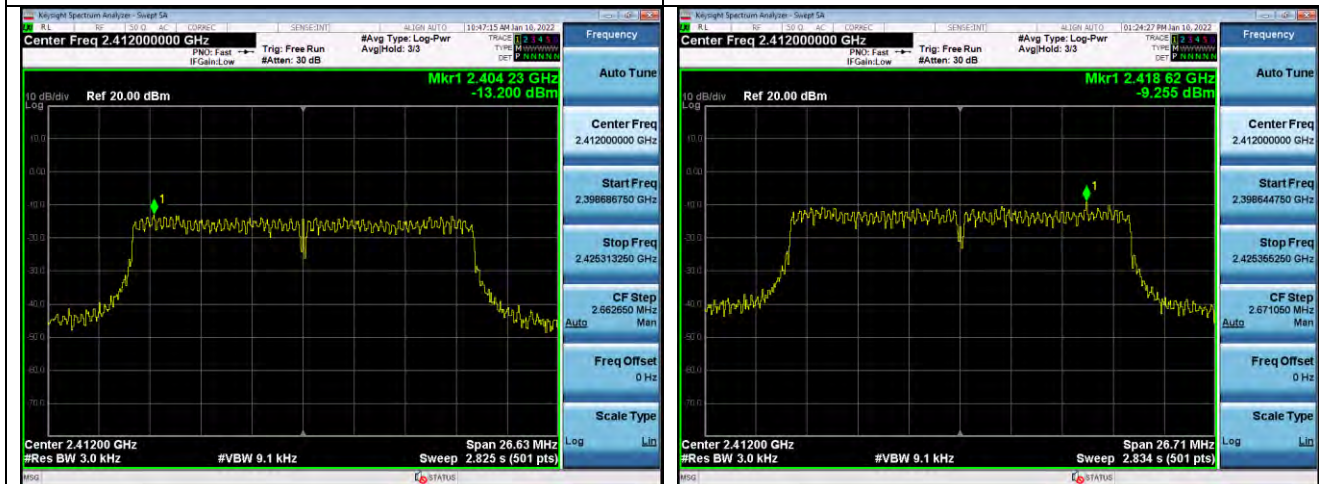
Middle channel

Middle channel



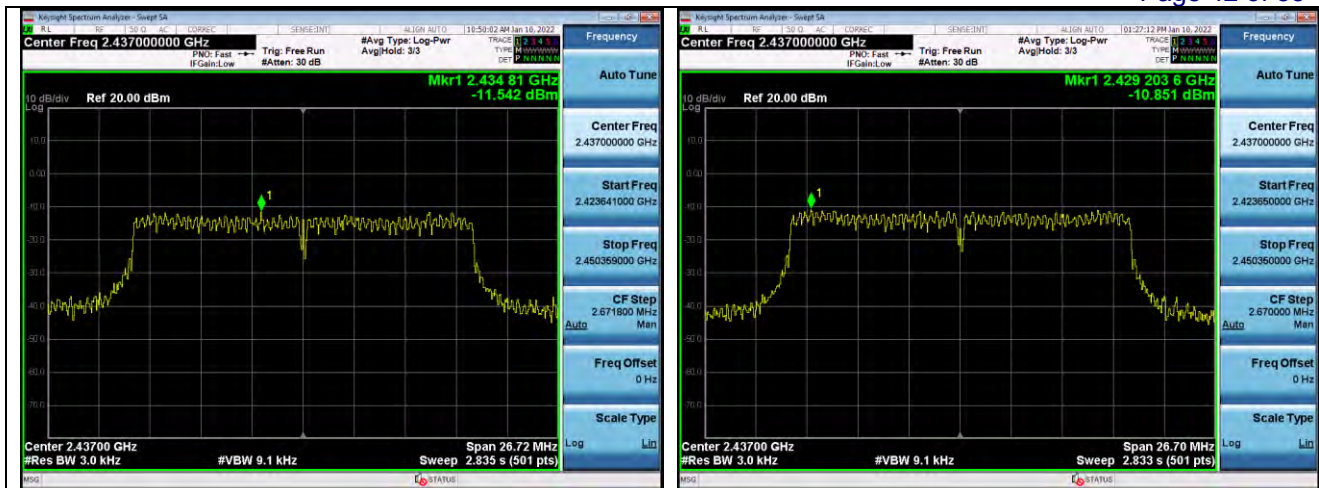
Highest channel

Highest channel

ANT1
802.11n(HT20)
Lowest channelANT2
802.11n(HT20)
Lowest channel

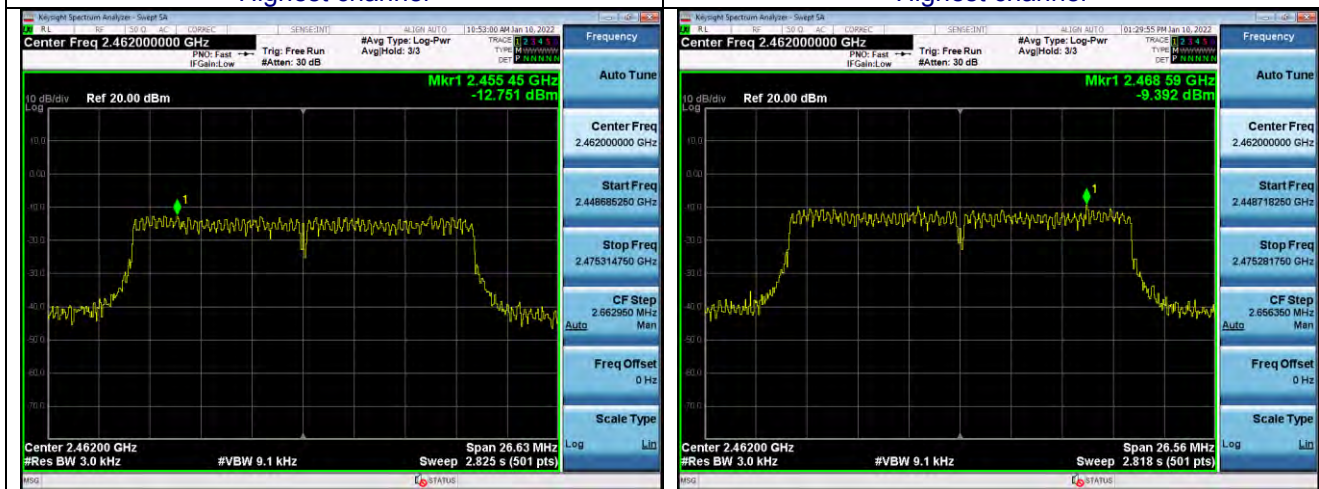
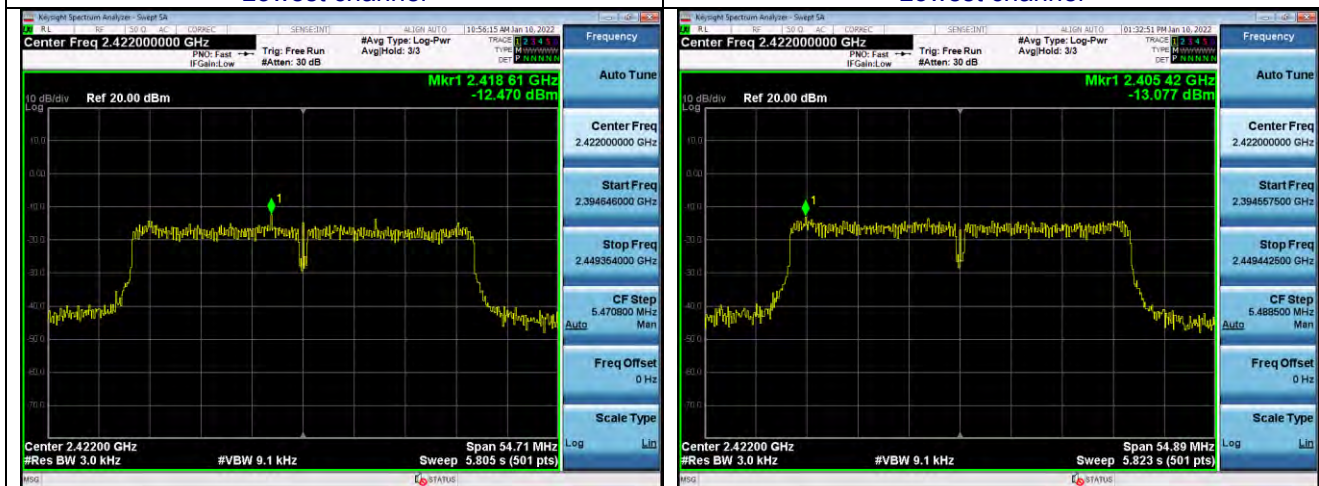
Middle channel

Middle channel



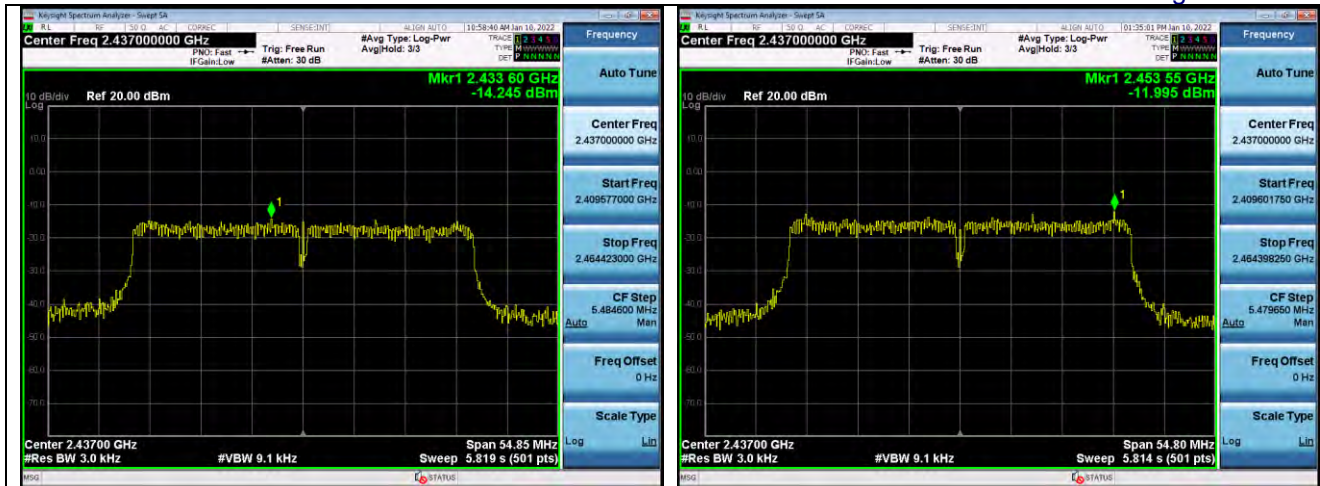
Highest channel

Highest channel

ANT1
802.11n(HT40)
Lowest channelANT2
802.11n(HT40)
Lowest channel

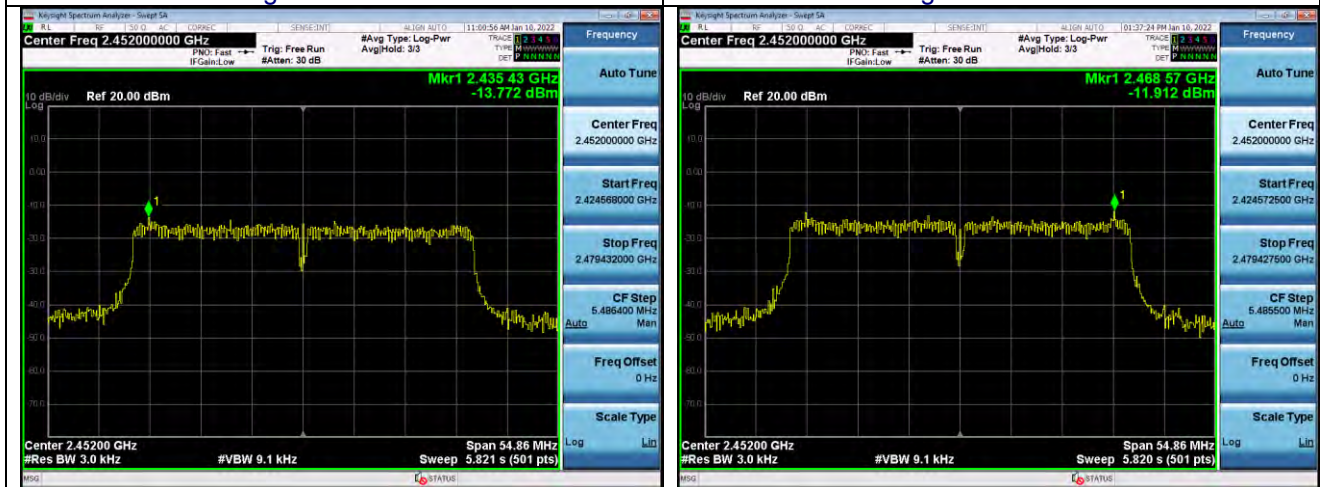
Middle channel

Middle channel



Highest channel

Highest channel



7. CHANNEL BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

7.1 APPLIED PROCEDURES / LIMIT

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

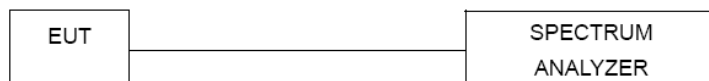
7.2 TEST PROCEDURE

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

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

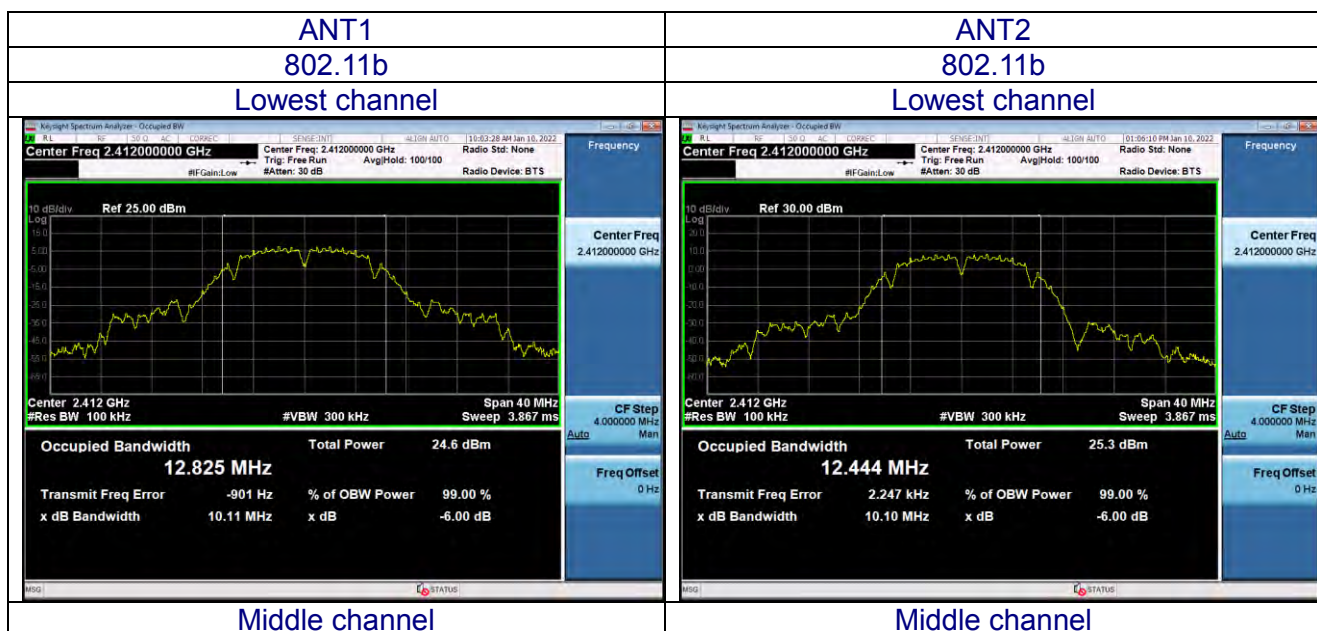
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

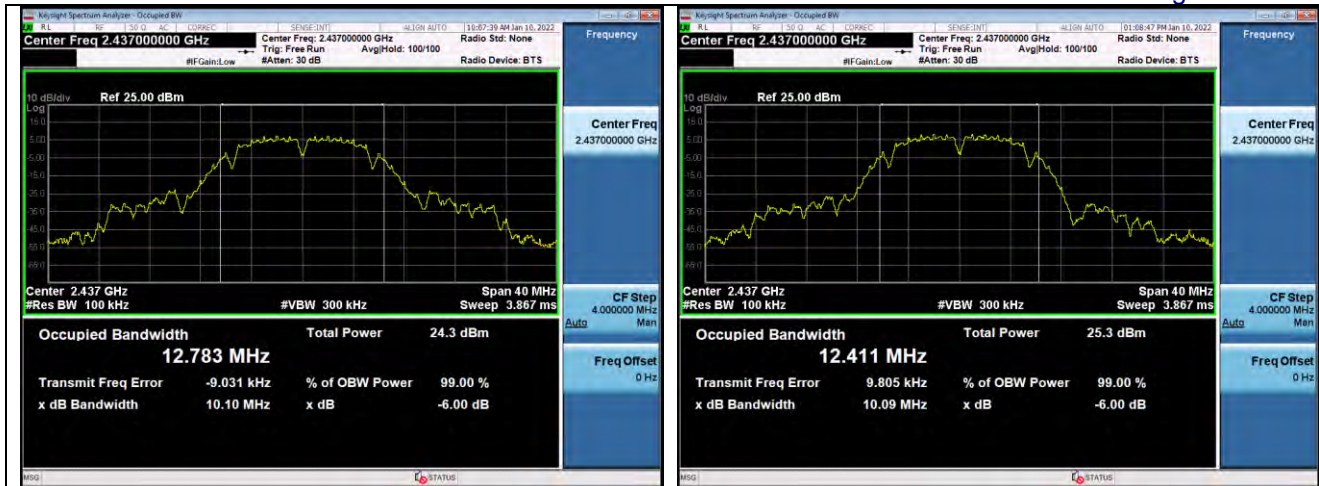
7.6 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120
Test Mode :	TX Mode		

Test mode	Test channel	6dB Emission Bandwidth (MHz)		Limit:	Test Result:
		ANT1	ANT2		
802.11b	Lowest	10.11	10.10	>500kHz	PASS
	Middle	10.10	10.09		
	Highest	10.11	10.09		
802.11g	Lowest	16.62	16.57	>500kHz	PASS
	Middle	16.63	16.62		
	Highest	16.59	16.60		
802.11n(HT20)	Lowest	17.75	17.81	>500kHz	PASS
	Middle	17.81	17.80		
	Highest	17.75	17.71		
802.11n(HT40)	Lowest	36.47	36.59	>500kHz	PASS
	Middle	36.56	36.53		
	Highest	36.58	36.57		

Test plot as follows:





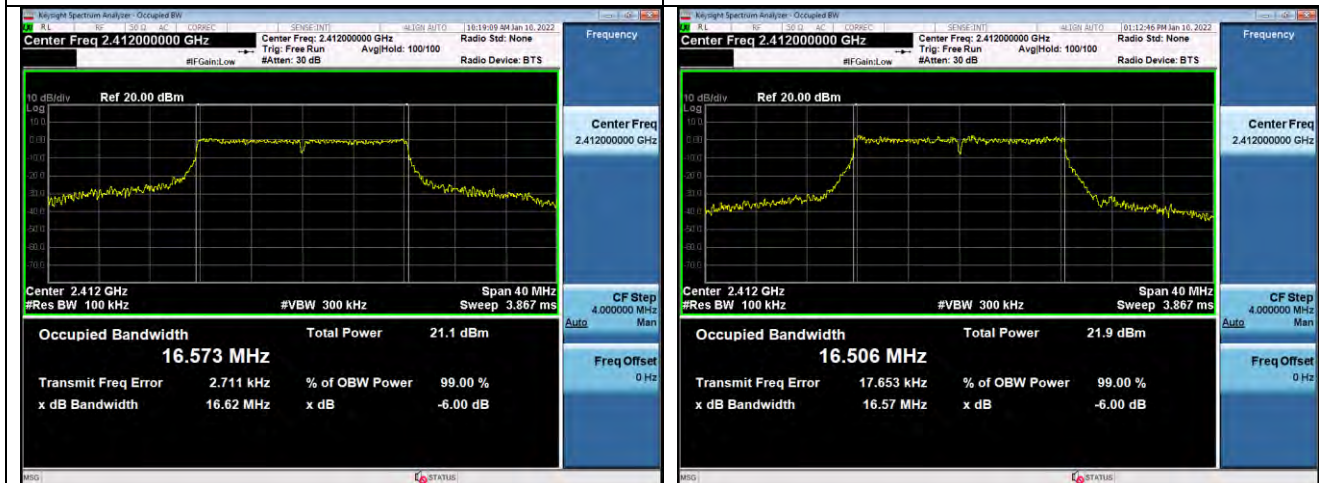
Highest channel

Highest channel

ANT1
802.11gANT2
802.11g

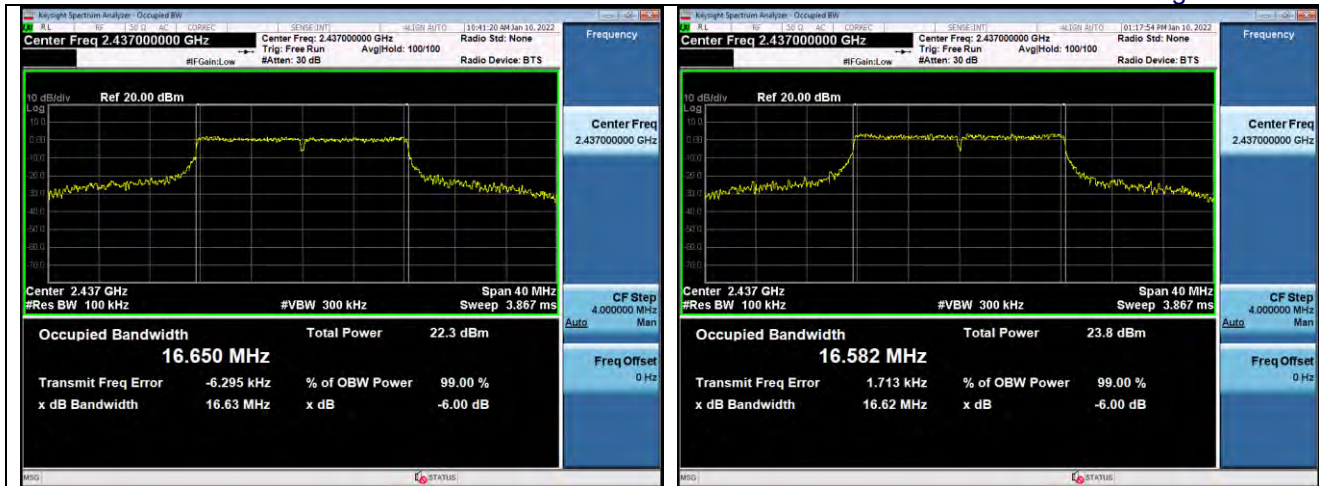
Lowest channel

Lowest channel



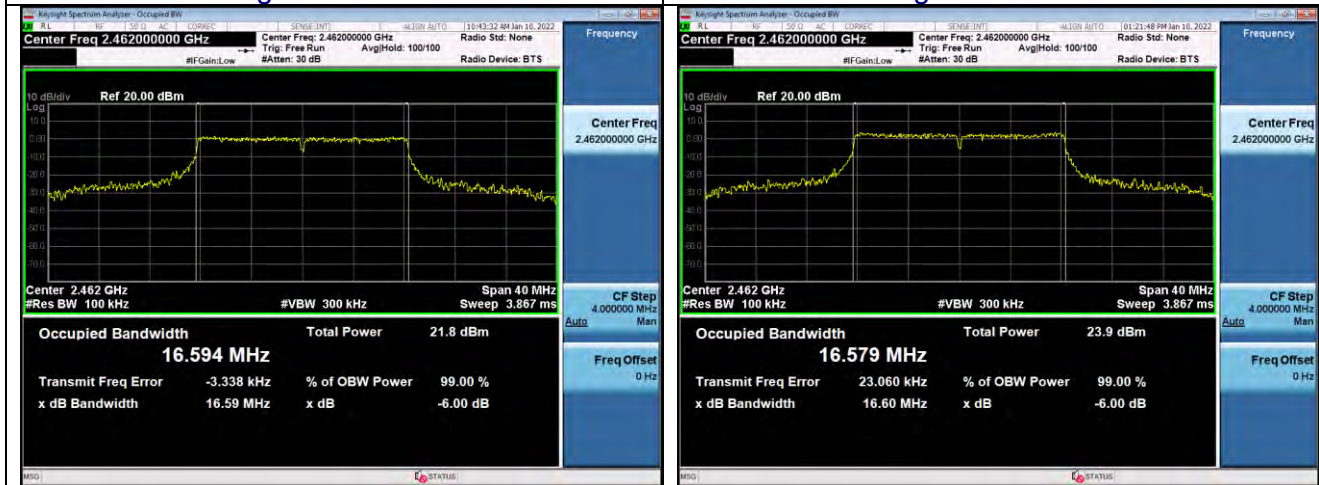
Middle channel

Middle channel



Highest channel

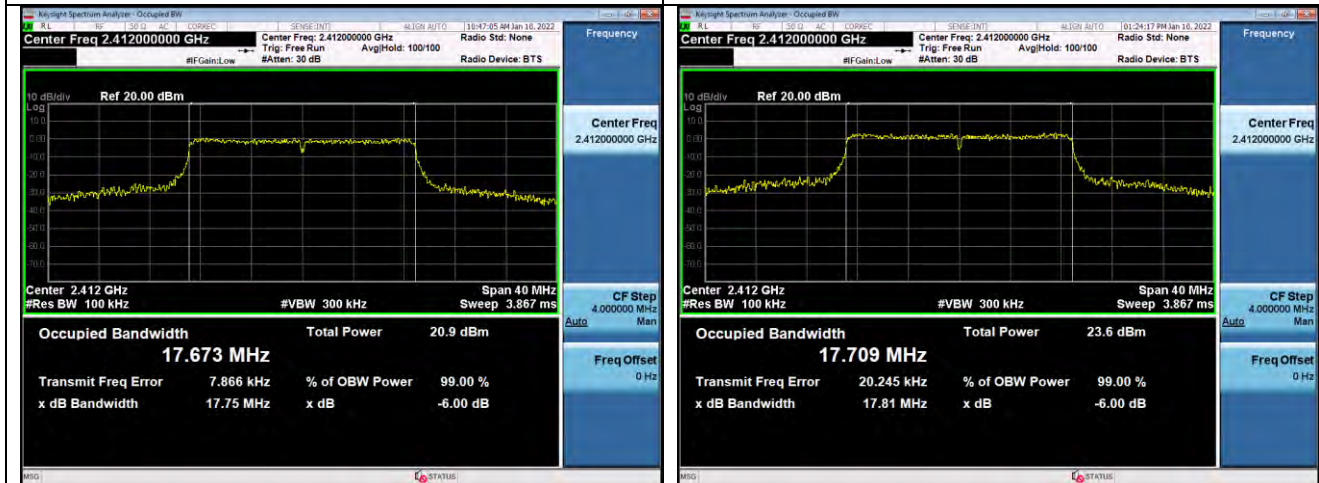
Highest channel



ANT1

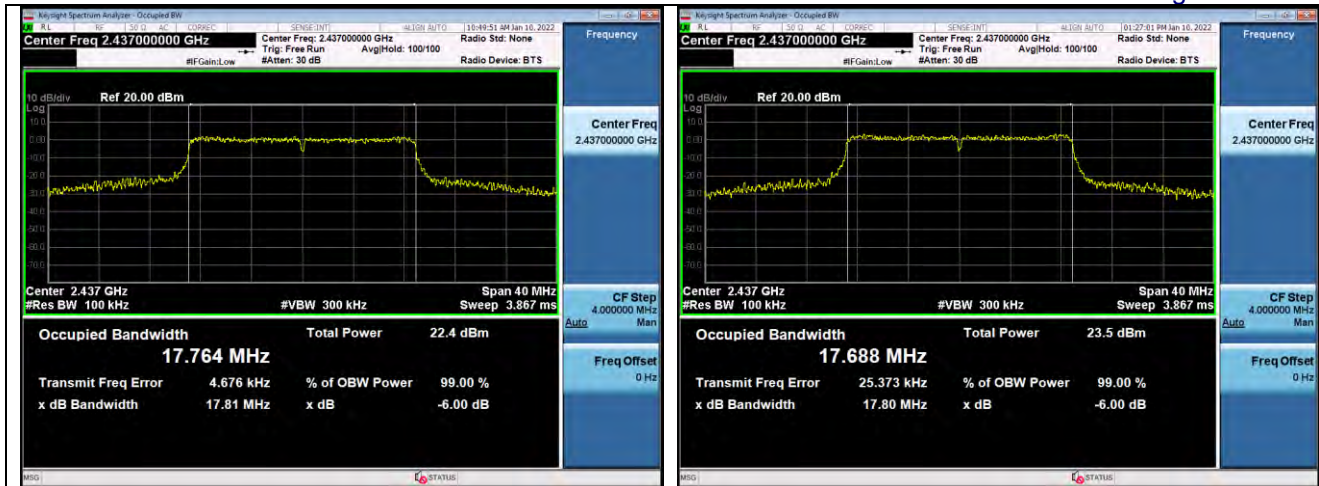
802.11n(HT20)
Lowest channel

ANT2

802.11n(HT20)
Lowest channel

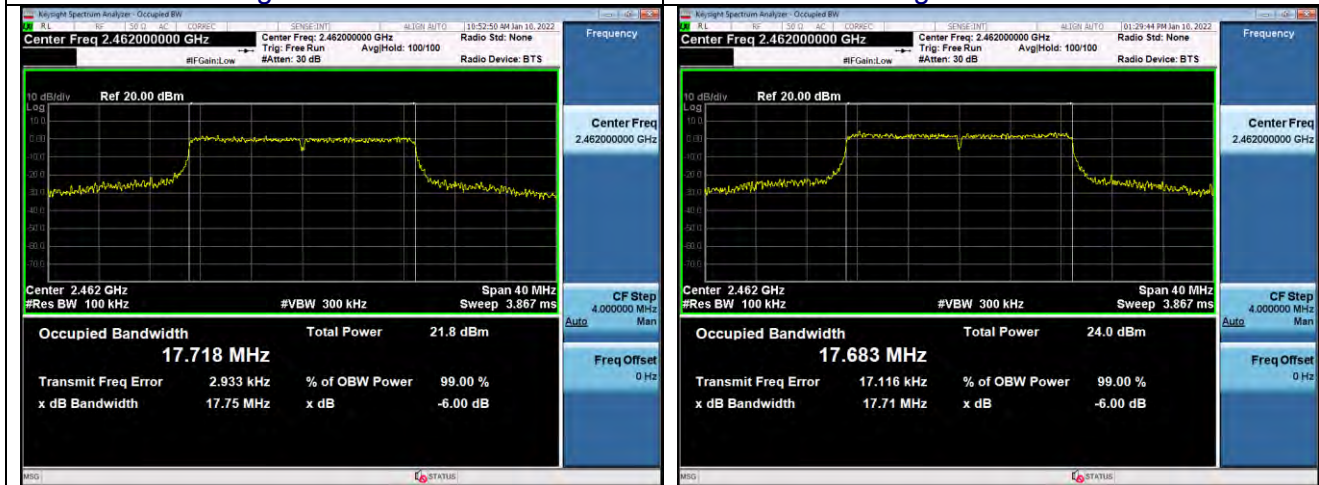
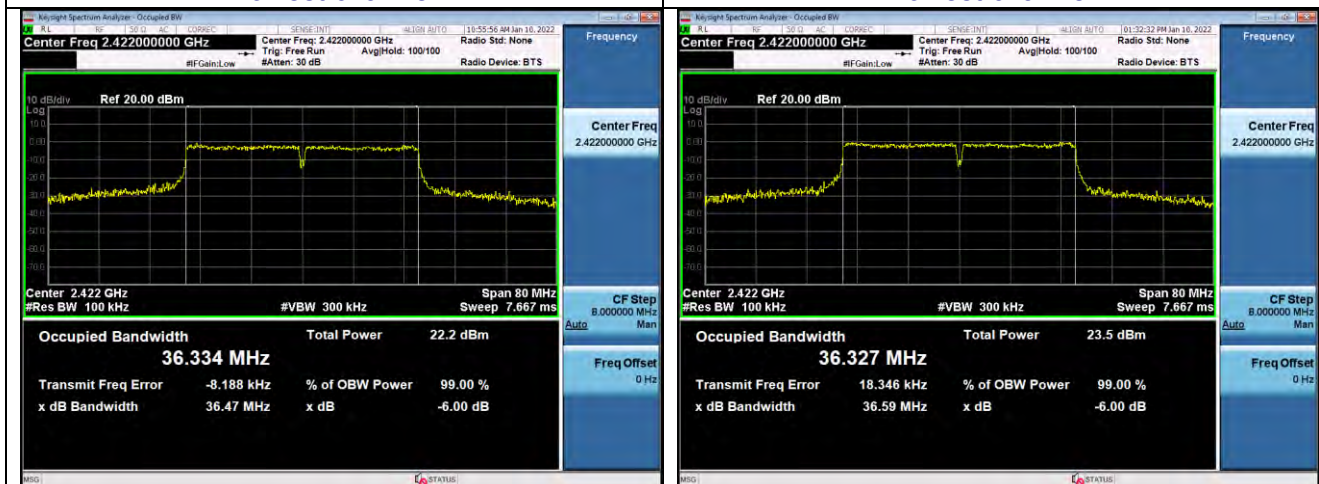
Middle channel

Middle channel



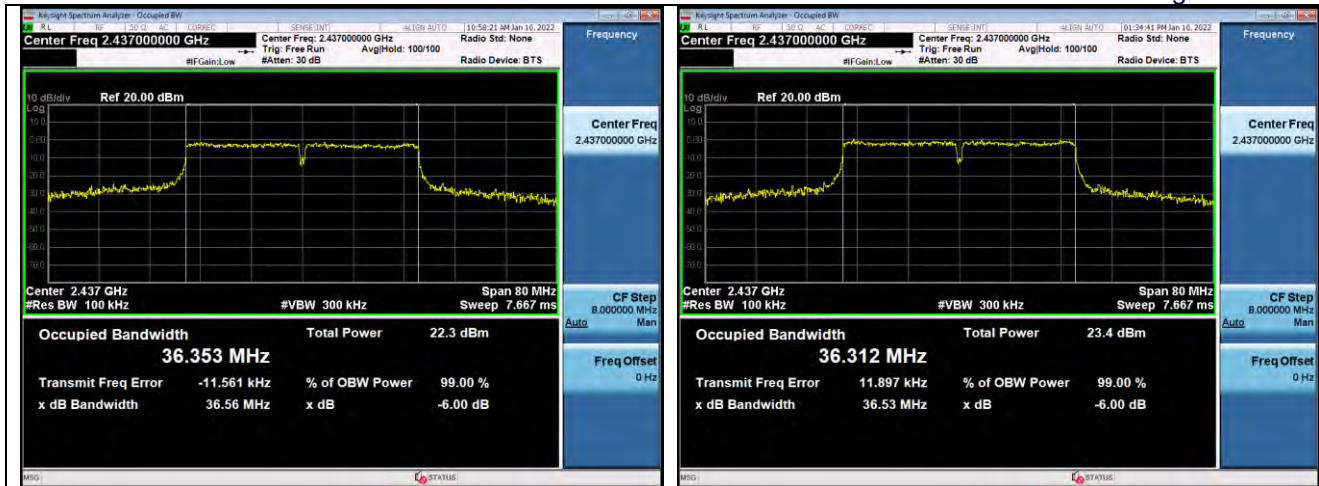
Highest channel

Highest channel

ANT1
802.11n(HT40)
Lowest channelANT2
802.11n(HT40)
Lowest channel

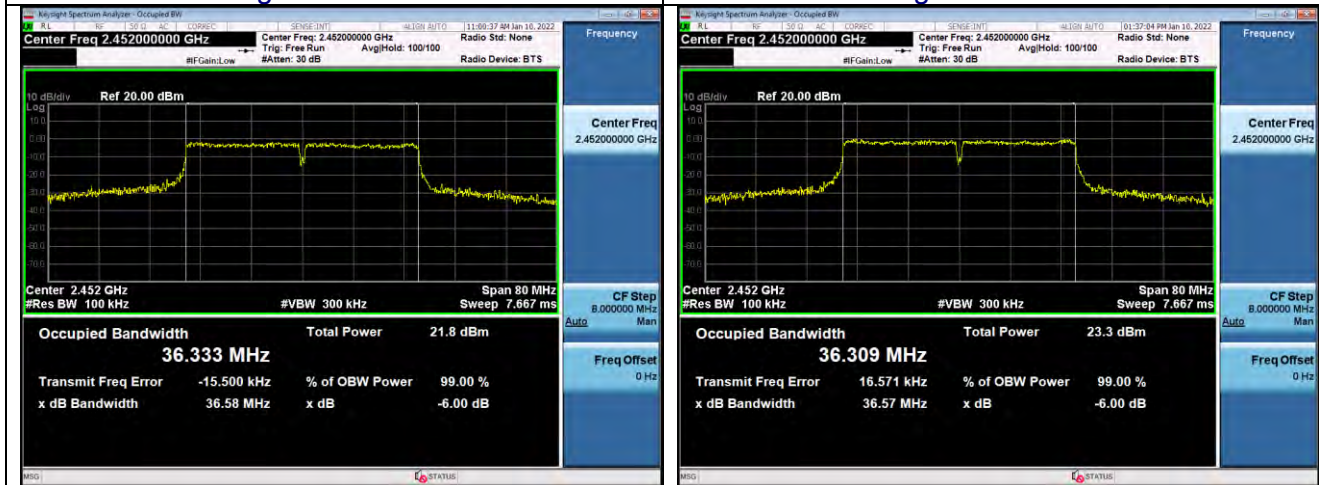
Middle channel

Middle channel



Highest channel

Highest channel



8. OUTPUT POWER TEST

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

8.1 APPLIED PROCEDURES/LIMIT

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

8.2 TEST PROCEDURE

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

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

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

8.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC110V

Test Channel	Frequency	Maximum Peak Conducted Output Power (dBm)			LIMIT
	(MHz)	Antenna 1	Antenna 2	MIMO	dBm
TX 802.11b Mode					
CH01	2412	17.196	17.862	/	30
CH06	2437	16.809	17.872	/	30
CH11	2462	16.373	17.271	/	30
TX 802.11g Mode					
CH01	2412	15.195	15.04	/	30
CH06	2437	16.286	16.798	/	30
CH11	2462	15.787	16.979	/	30
TX 802.11n20 Mode					
CH01	2412	15.037	15.683	18.38	30
CH06	2437	16.406	16.574	19.50	30
CH11	2462	15.826	16.055	18.95	30
TX 802.11n40 Mode					
CH03	2422	13.894	14.319	17.12	30
CH06	2437	14.002	14.213	17.12	30
CH09	2452	13.628	14.198	16.93	30
Note: This product supports antenna 1 and antenna 2 launch, but only support 802.11 n for MIMO mode, not support 802.11 b and 802.11 g for MIMO mode.					

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

9.1 APPLICABLE STANDARD

in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, 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 in15.209(a).

9.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

- A) Set the RBW = 100KHz.
- B) Set the VBW = 300KHz.
- C) Sweep time = auto couple.
- D) Detector function = peak.
- E) Trace mode = max hold.
- F) Allow trace to fully stabilize.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

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

9.6 TEST RESULTS

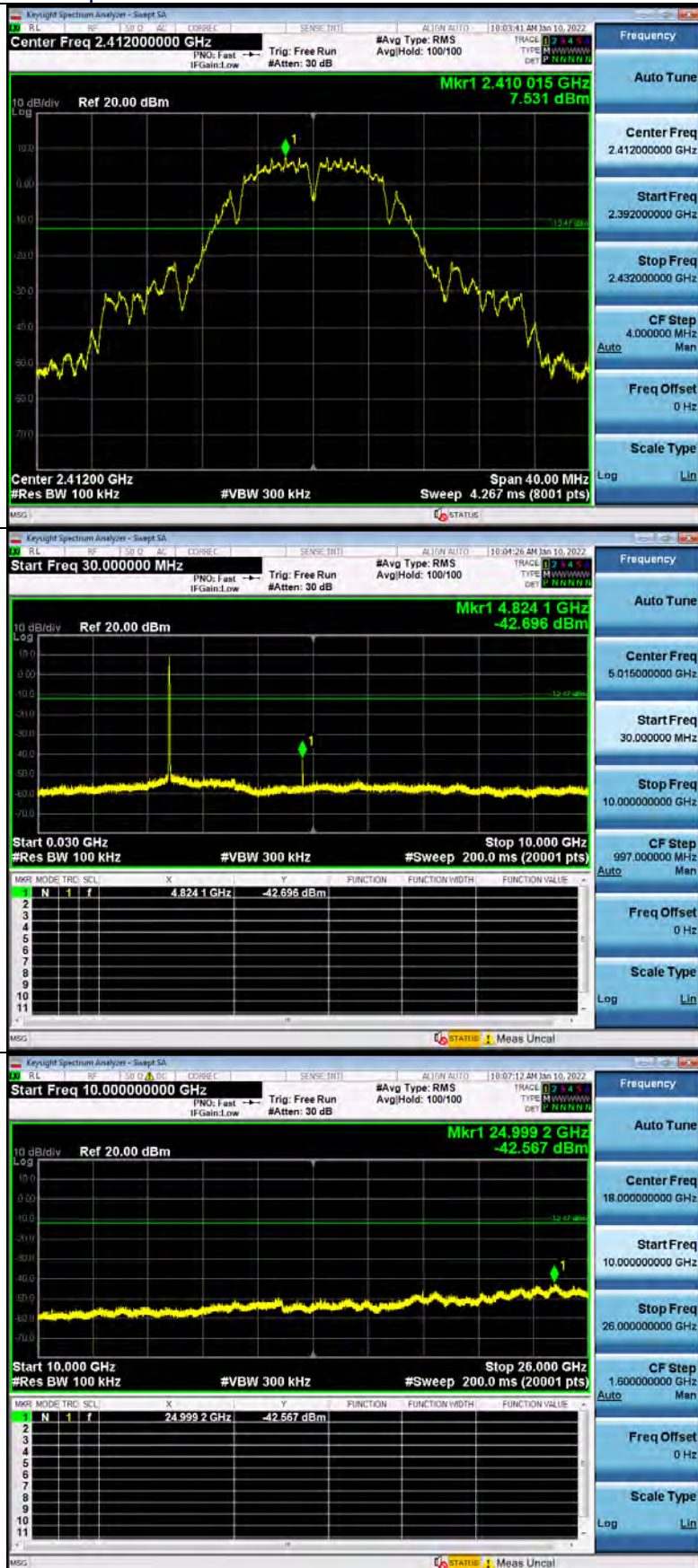
Test plot as follows:

ANT1

802.11b Modulation

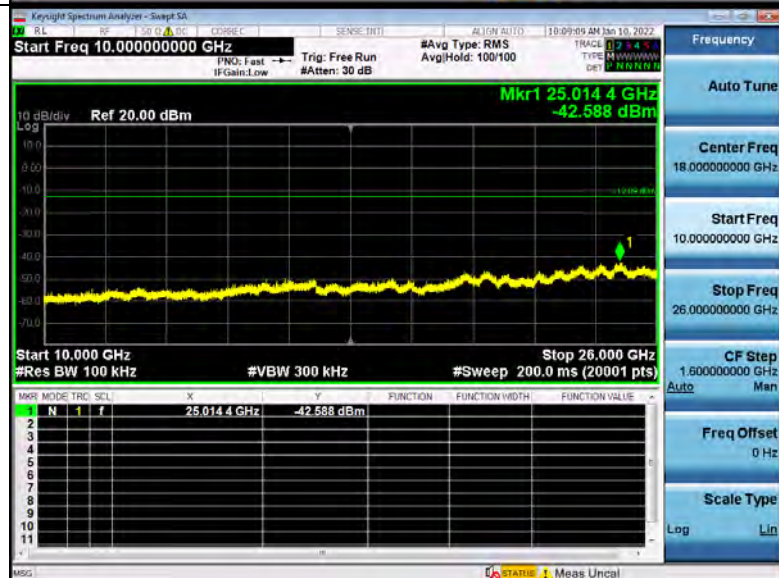
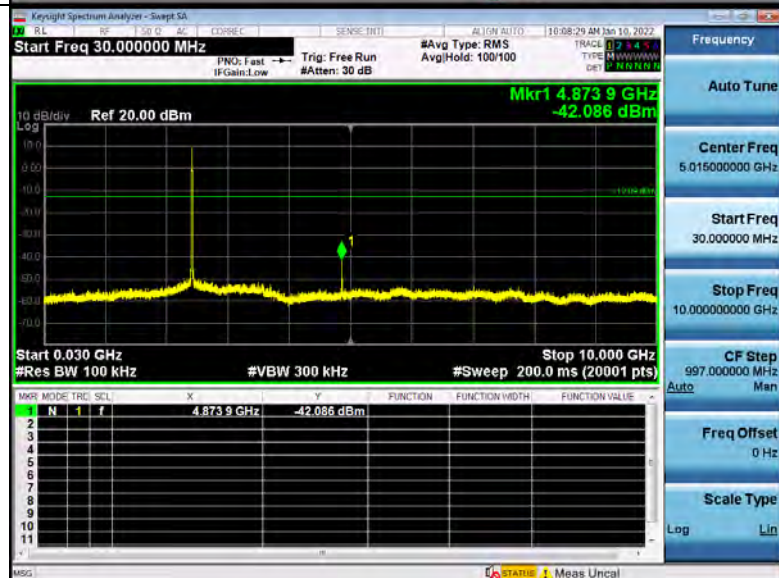
Spurious emission

Low Channel

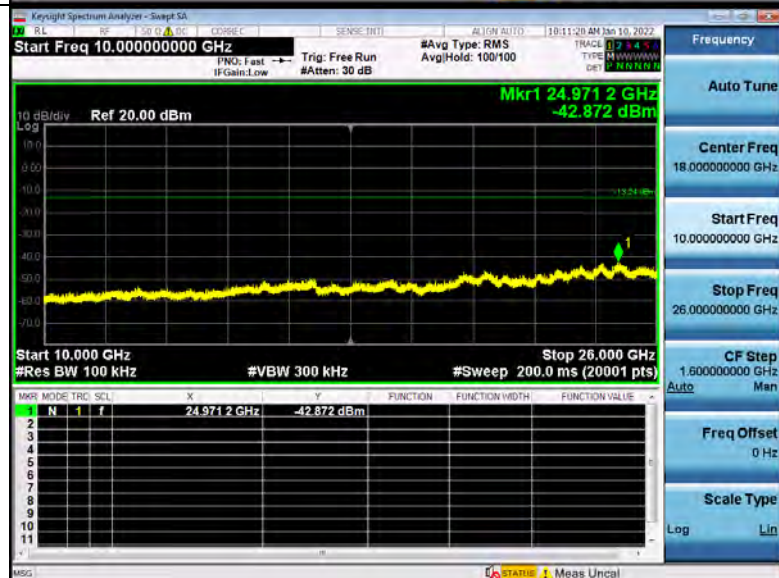
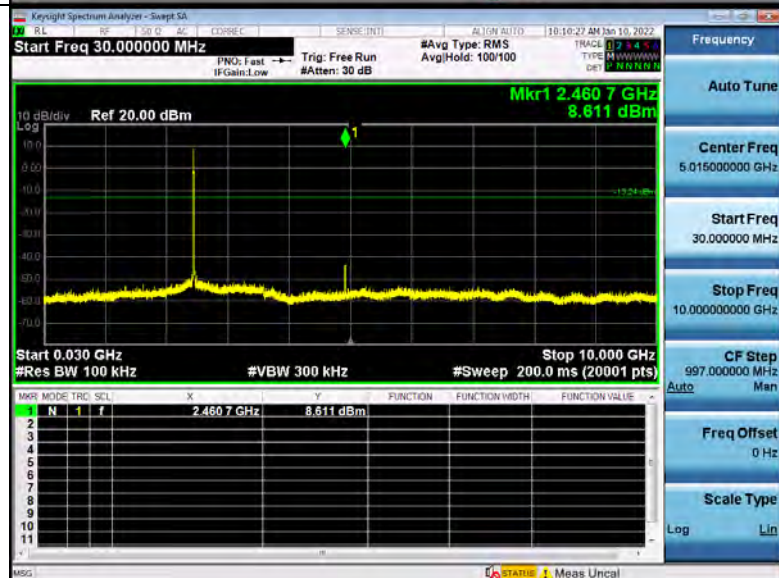




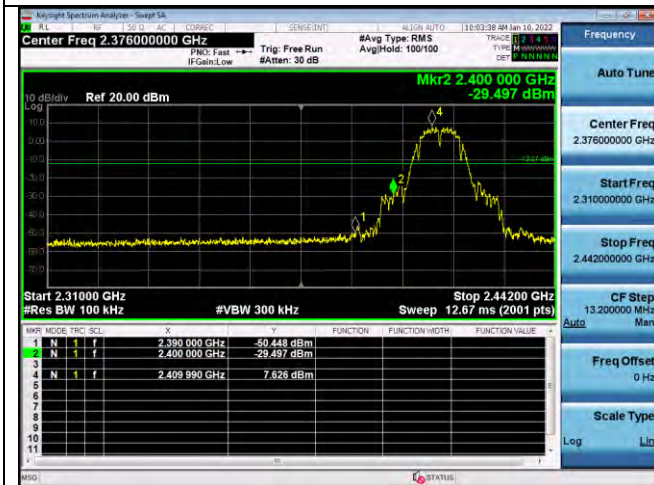
Middle Channel



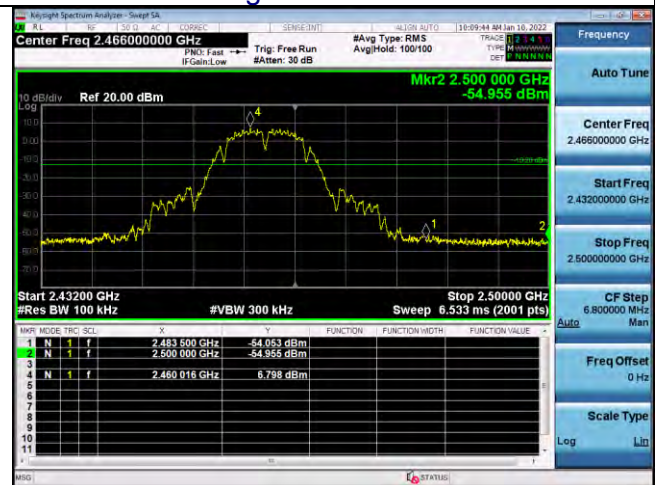
High Channel



Lowest Channel



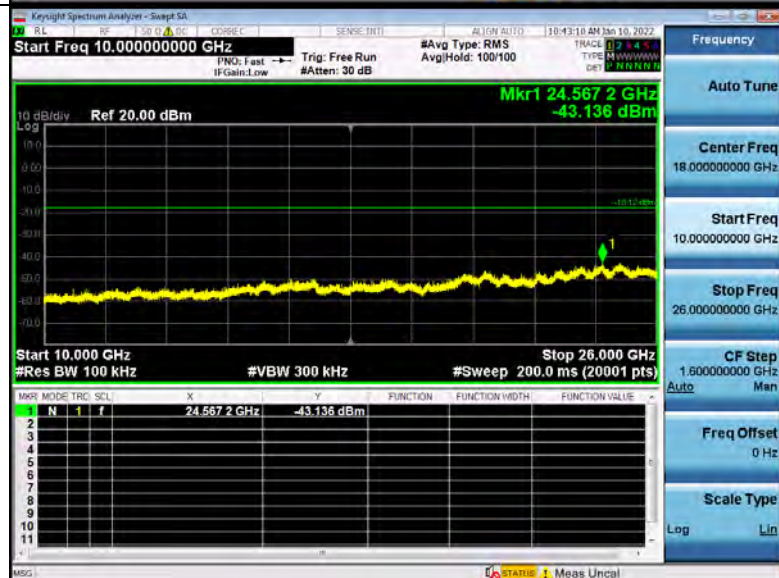
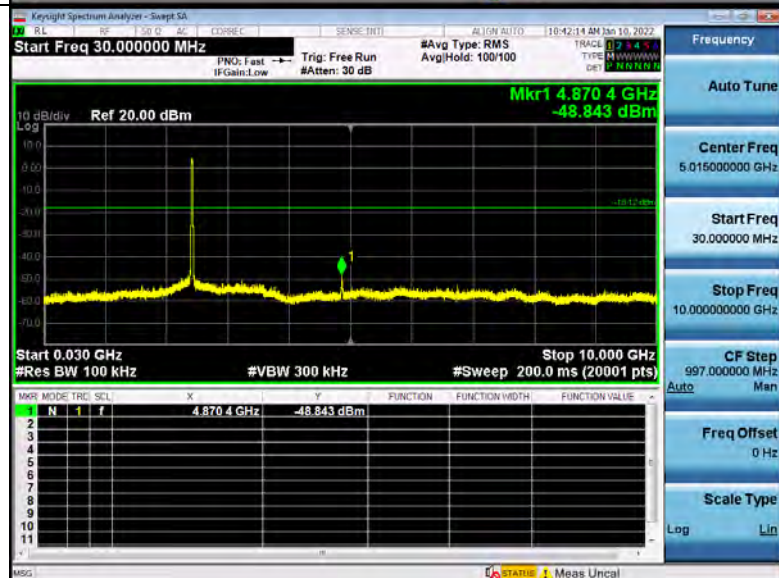
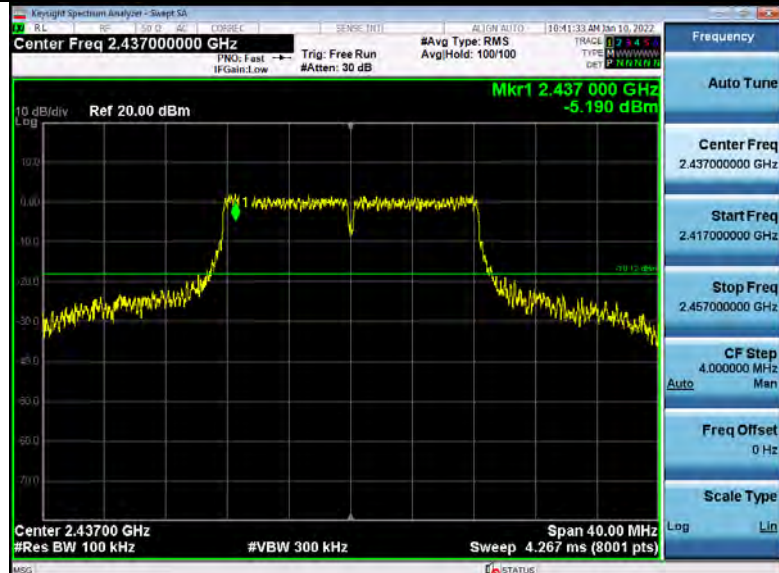
Highest Channel



Left Band Edge

Right Band Edge

Middle Channel



Keysight Spectrum Analyzer - Setup SA

10.43:49 AM 3/30/2022

Center Freq 2.46200000 GHz

#Avg Type: RMS

Avg/Hold: 100/100

Trig: Free Run

#Atten: 30 dB

PNO: Fast

IF Gain: Low

TRACE 1 2.455 385 GHz

TYPE M WWWW

DET P Avg

Frequency

Auto Tune

Center Freq

2.46200000 GHz

Start Freq

2.44200000 GHz

Stop Freq

2.48200000 GHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Scale Type

Log

Lin

10 dB/div

Ref 20.00 dBm

Log

Mkr1 2.455 385 GHz

1.818 dBm

Center 2.46200 GHz

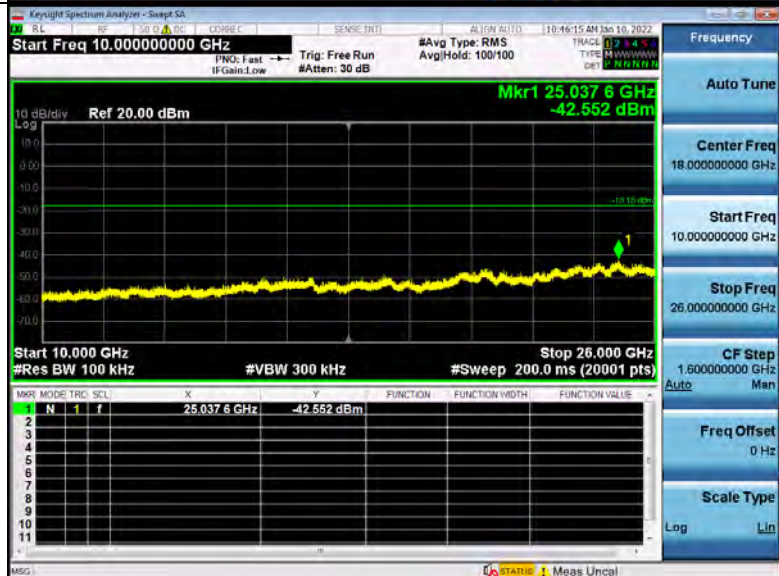
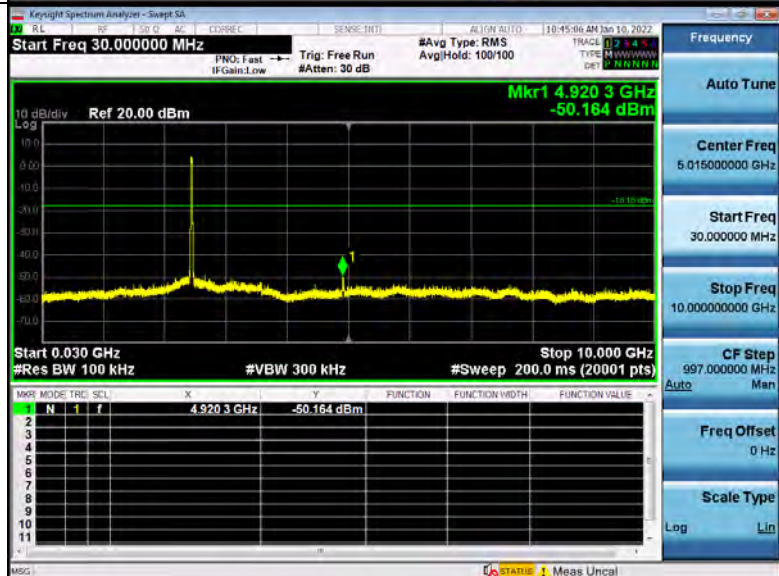
#Res BW 100 kHz

#VBW 300 kHz

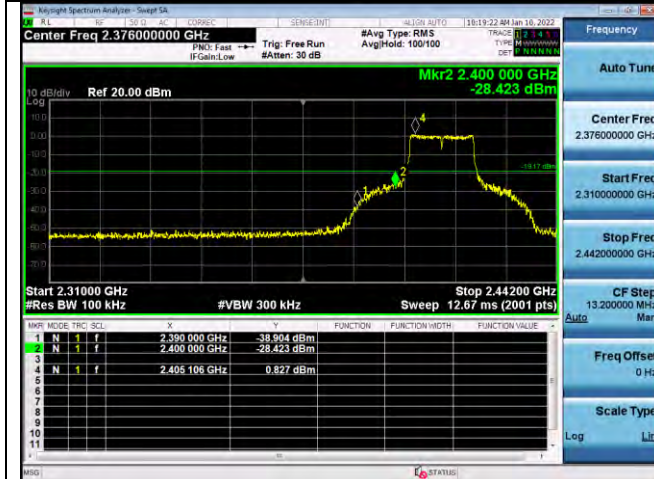
Span 40.00 MHz

Sweep 4.267 ms (8001 pts)

STATUS

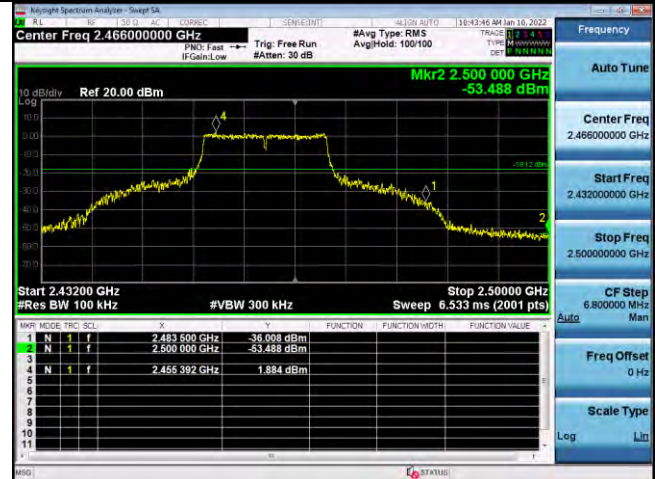


Lowest Channel



Left Band Edge

Highest Channel

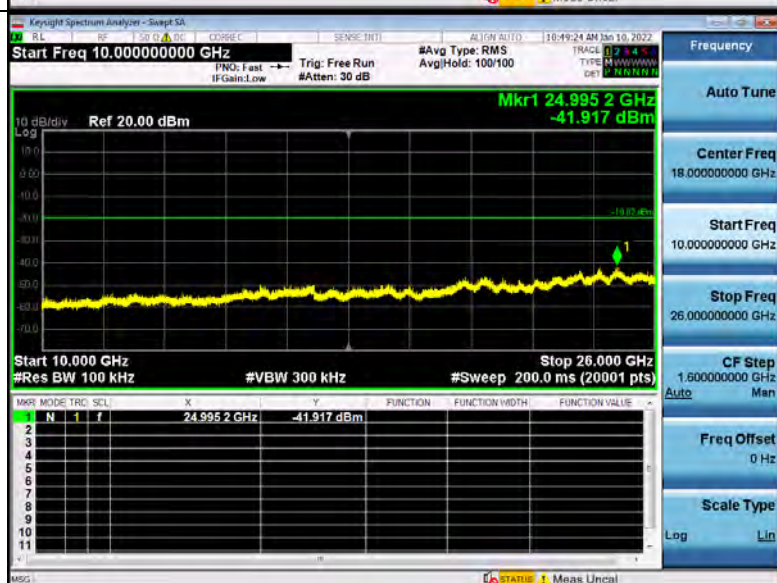
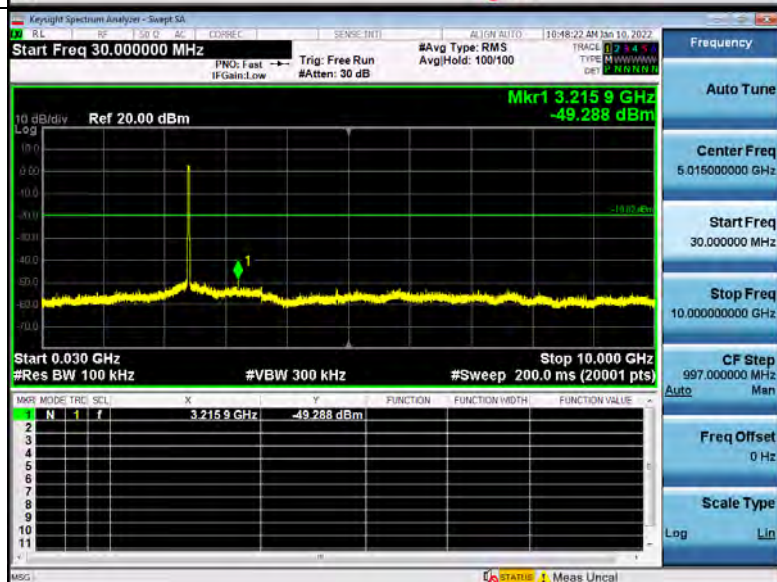
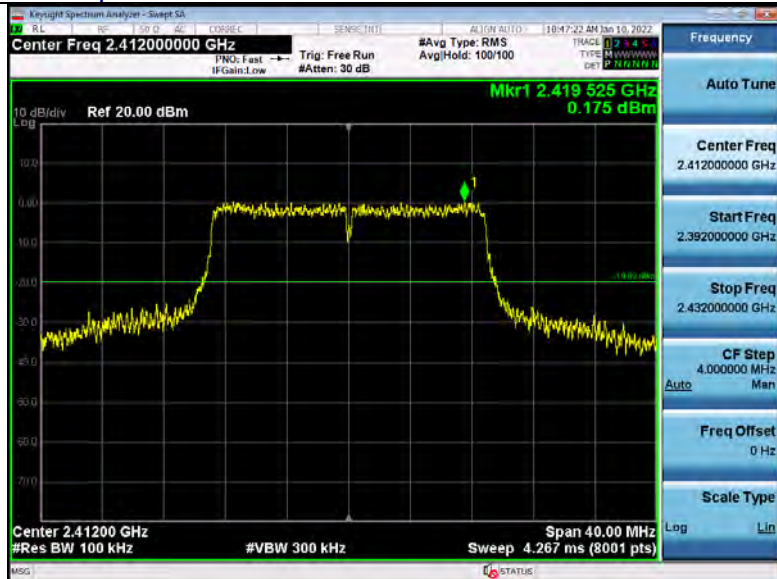


Right Band Edge

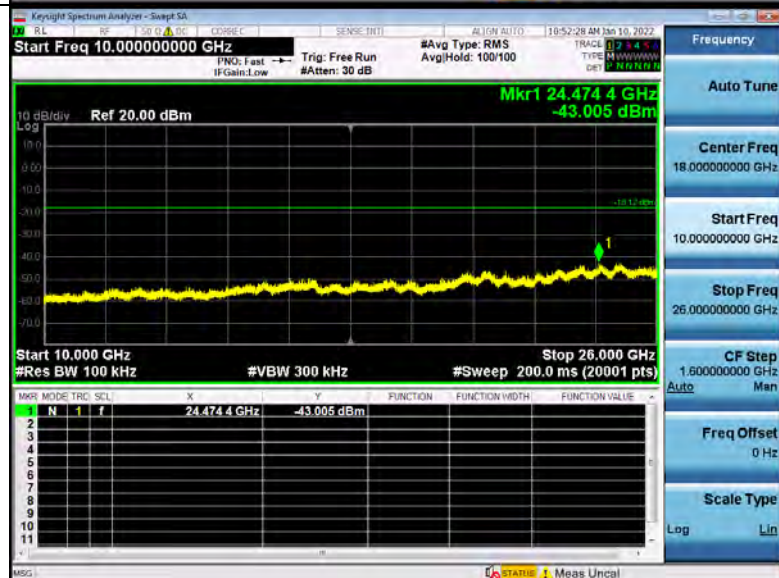
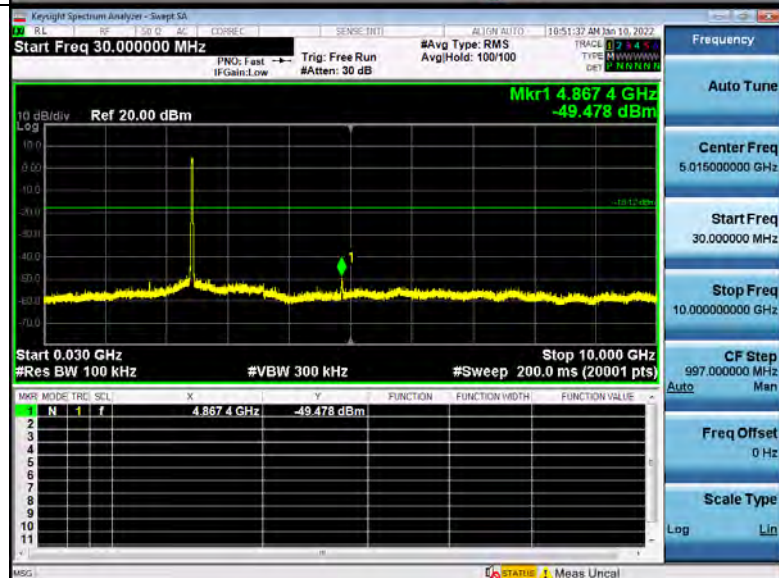
802.11n20 Modulation

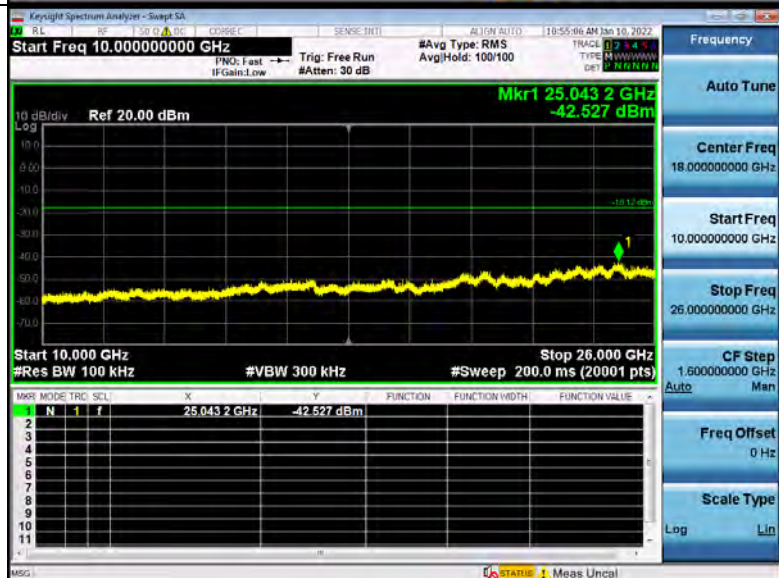
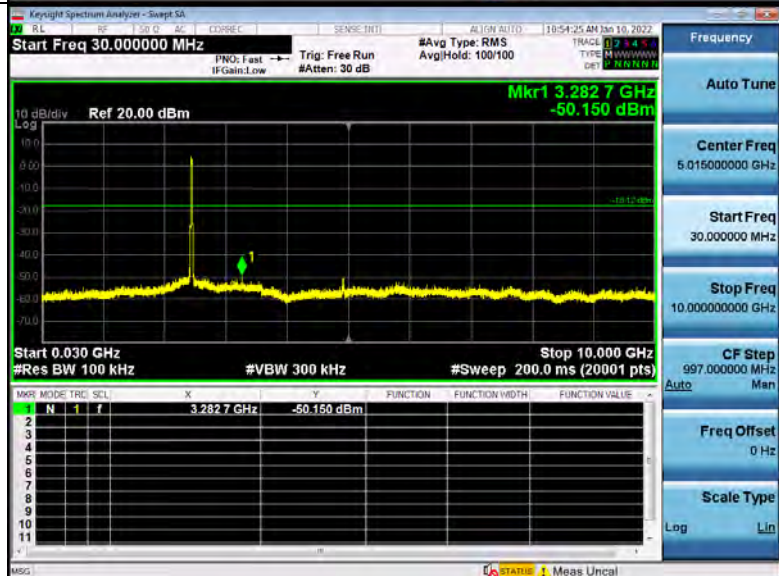
Spurious emission

Low Channel

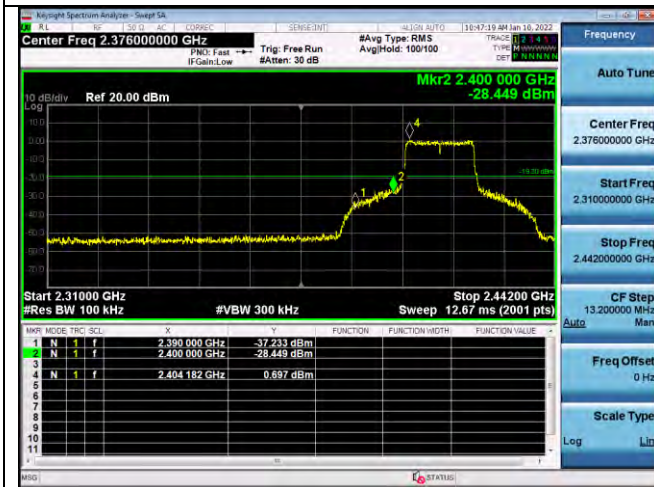


Middle Channel



[illegible]

Lowest Channel



Highest Channel



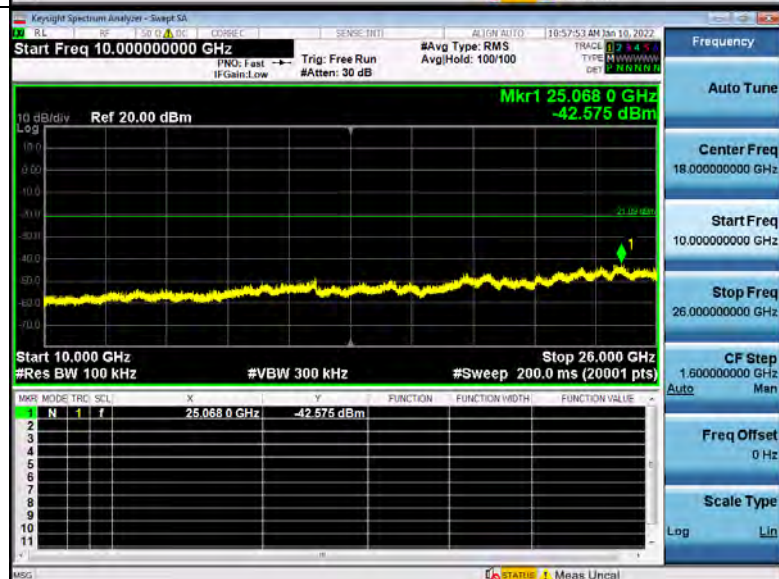
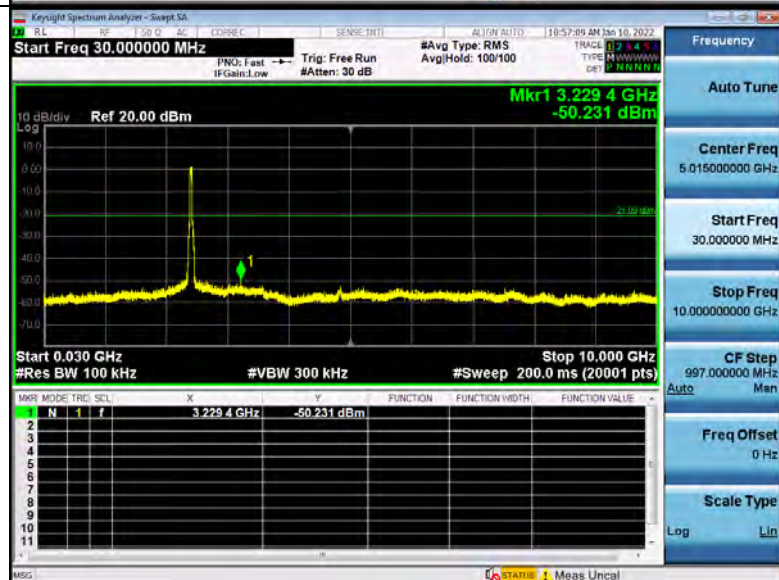
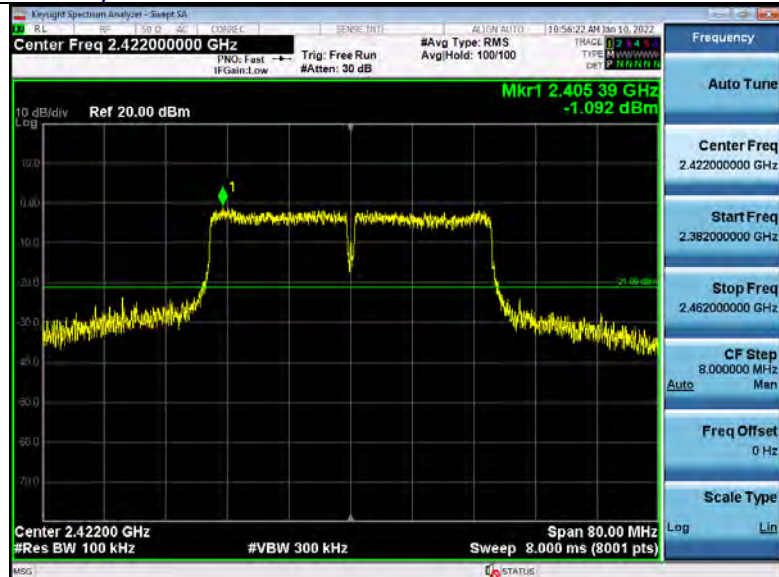
Left Band Edge

Right Band Edge

802.11n40 Modulation

Spurious emission

Low Channel



Keysight Spectrum Analyzer - Sweep SA

RL RE T 50.0 50.0 CORR C SENS: INT1 ALT/N ALT/D 10:58:41 AM Jan 10, 2022

Center Freq 2.43700000 GHz #Avg Type: RMS Avg/Hold: 100/100 TRACE 1 2 3 4 5 TYPE M W W W W W W W DET P A P A P A P A

PRO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB

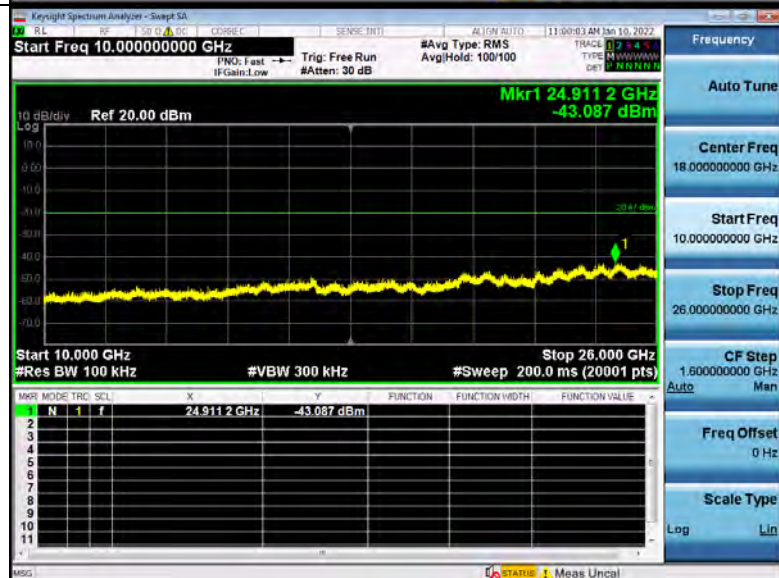
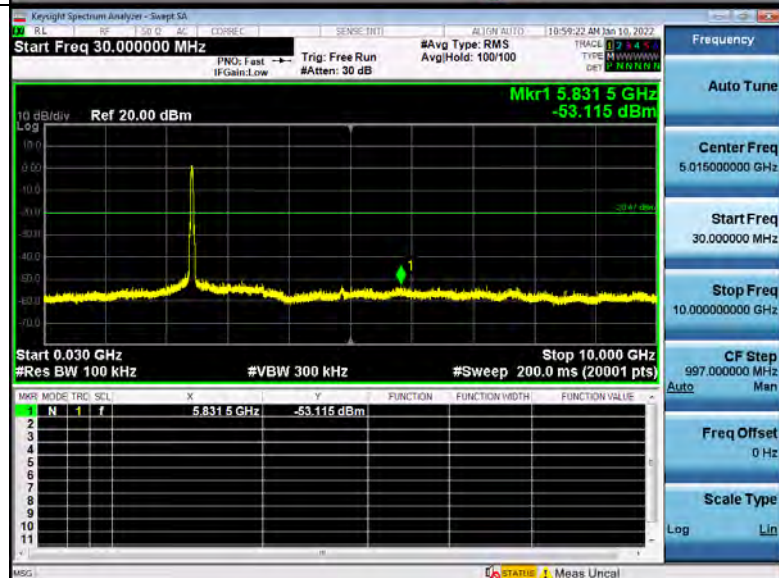
Mkr1 2.420 40 GHz -0.466 dBm

10 dB/div Ref 20.00 dBm

Log

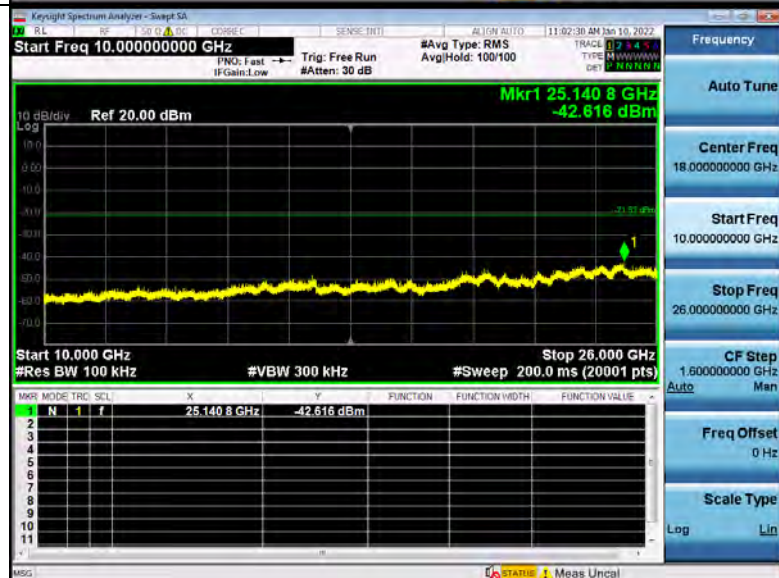
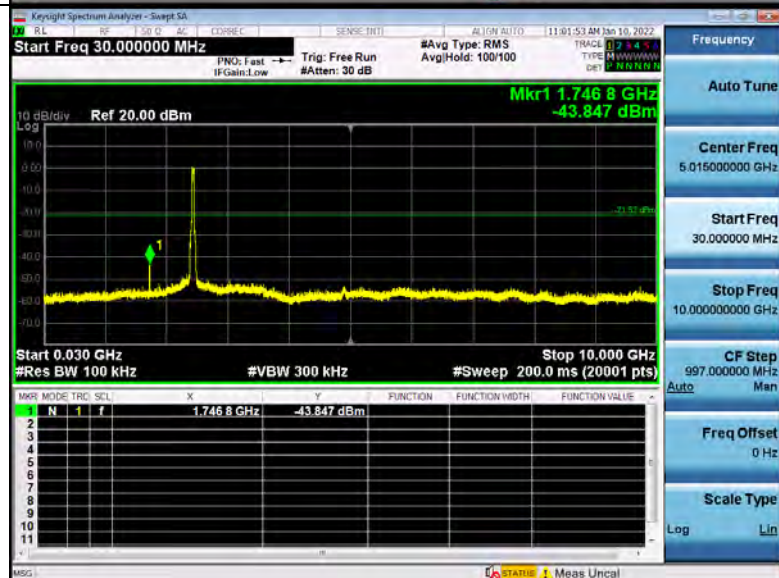
Center 2.43700 GHz Span 80.00 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)

Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq 2.39700000 GHz Stop Freq 2.47700000 GHz CF Step 8.000000 MHz Auto Man Freq Offset 0 Hz Scale Type Log Lin





High Channel

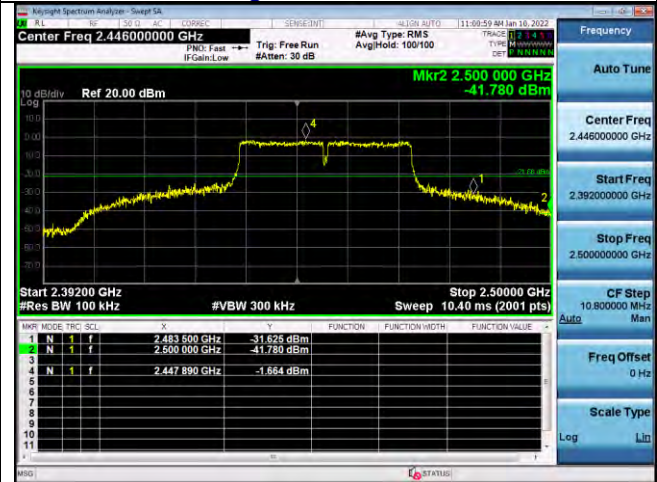


Lowest Channel



Left Band Edge

Highest Channel



Right Band Edge

ANT2

802.11b Modulation

Spurious emission

Low Channel



Keysight Spectrum Analyzer - Sweep 5A

Center Freq 2.437000000 GHz

Ref 20.00 dBm

Mkr1 2.437 000 GHz -2.128 dBm

Center Freq 2.43700000 GHz

Start Freq 2.417000000 GHz

Stop Freq 2.457000000 GHz

CF Step 4.000000 MHz

Auto Man

Freq Offset 0 Hz

Scale Type

Log Lin

Center 2.43700 GHz

#Res BW 100 kHz

#VBW 300 kHz

Span 40.00 MHz

Sweep 4.267 ms (8001 pts)

Frequency

Auto Tune

Center Freq

2.437000000 GHz

Start Freq

2.417000000 GHz

Stop Freq

2.457000000 GHz

CF Step

4.000000 MHz

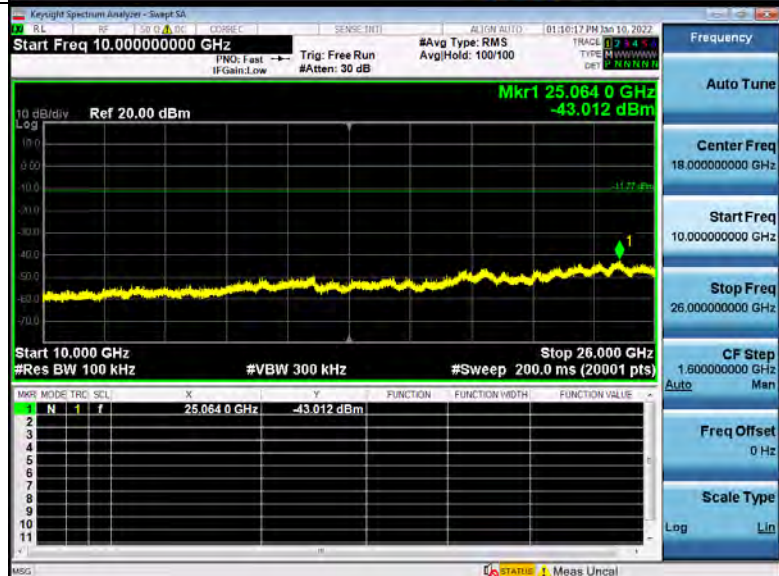
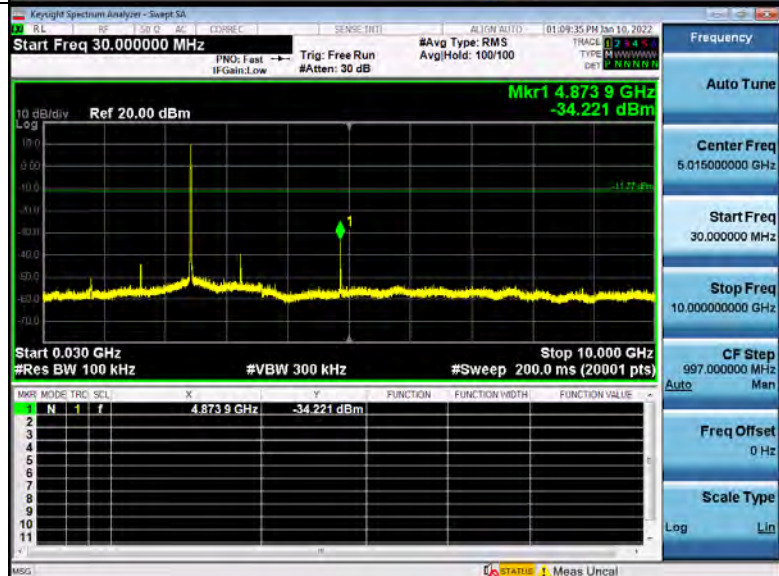
Auto Man

Freq Offset

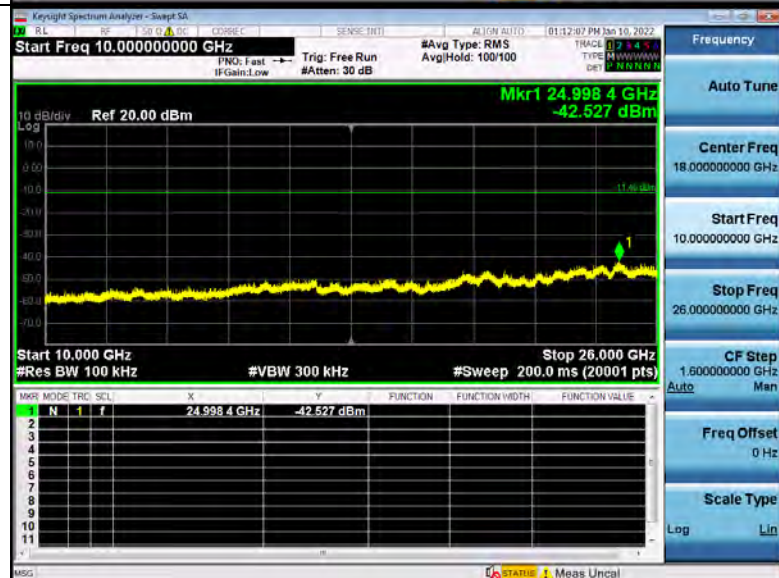
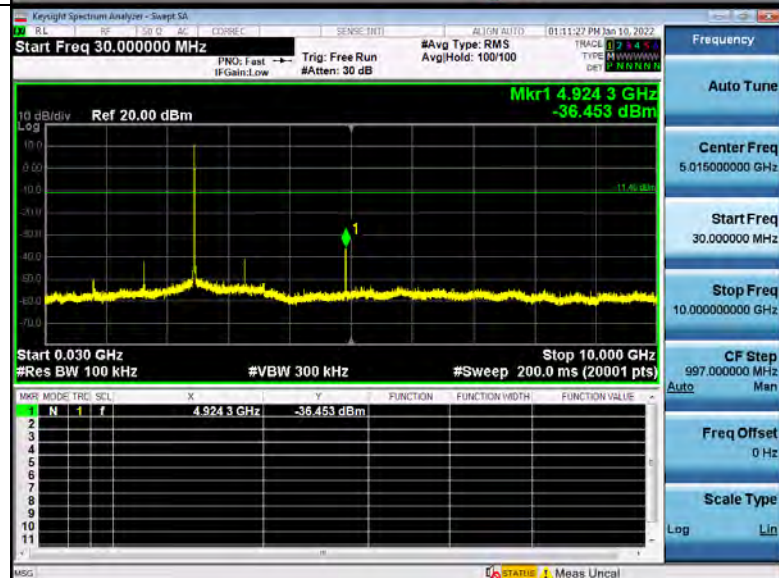
0 Hz

Scale Type

Log Lin



High Channel



Lowest Channel



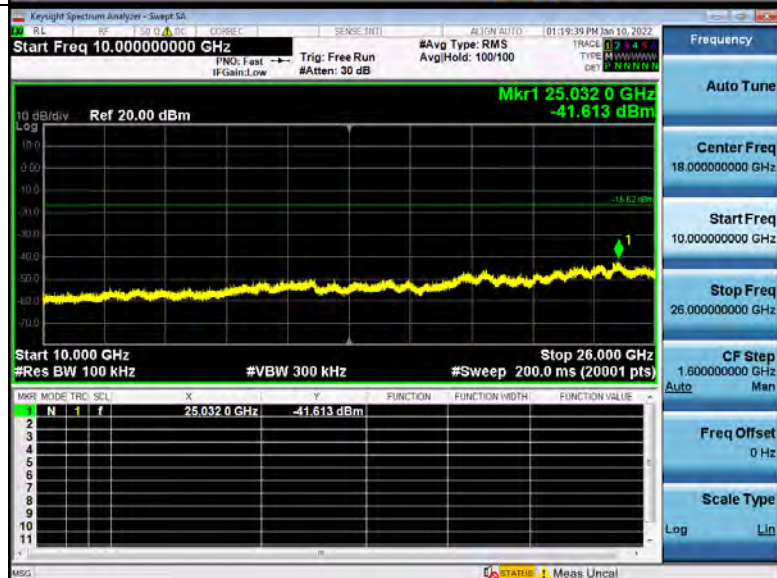
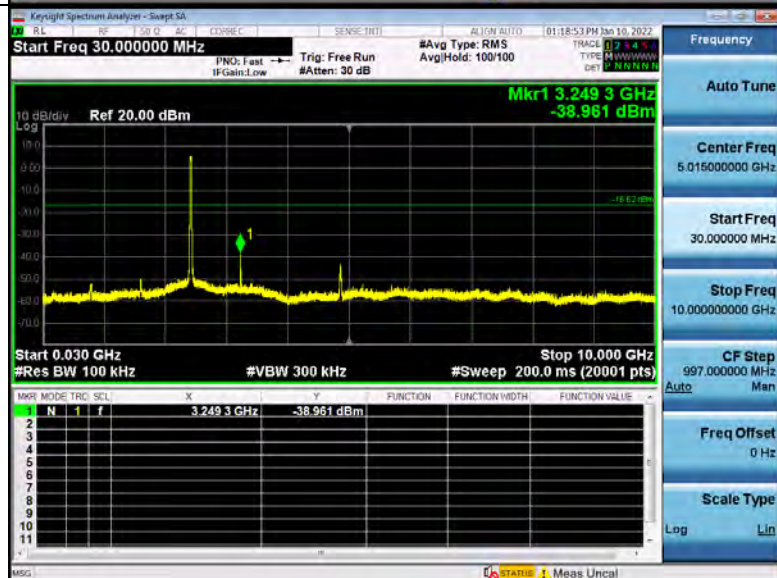
Highest Channel



Left Band Edge

Right Band Edge

Middle Channel



Keysight Spectrum Analyzer - Sweep SA

RL RE 1.50 0 50 CORRE C SENSE INT ALN AUTO 01:22:03 PM Jan 10, 2022

Center Freq 2.46200000 GHz #Avg Type: RMS Avg/Hold: 100/100

PHO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB TRACE 1/2 1/4 1/8 TYPE M W W W W W W W DET P A P A P A P A

10 dB/div Ref 20.00 dBm

Mkr1 2.454 300 GHz 3.631 dBm

Center Freq 2.46200000 GHz

Start Freq 2.442000000 GHz

Stop Freq 2.482000000 GHz

CF Step 4.000000 MHz

Auto Man

Freq Offset 0 Hz

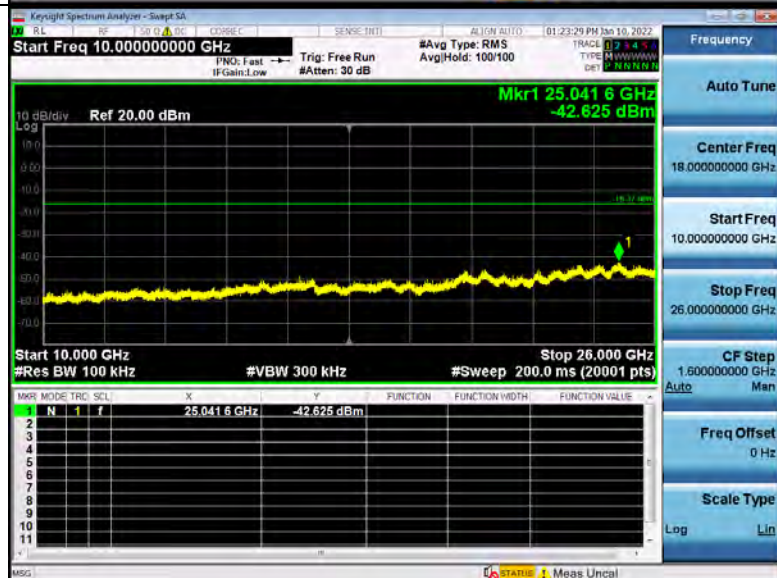
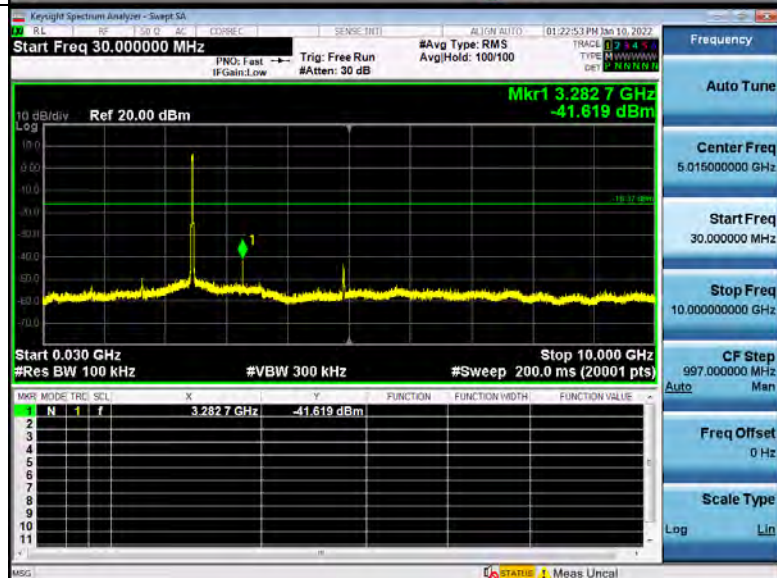
Scale Type

Log Lin

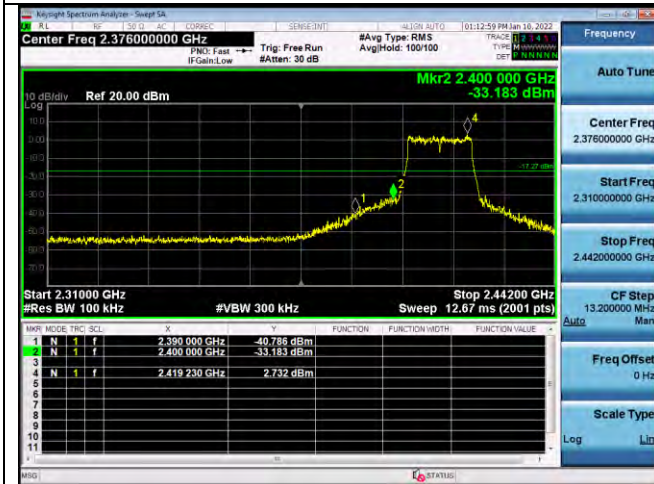
Center 2.46200 GHz Span 40.00 MHz

#Res BW 100 kHz #VBW 300 kHz Sweep 4.267 ms (8001 pts)

MSG STATUS

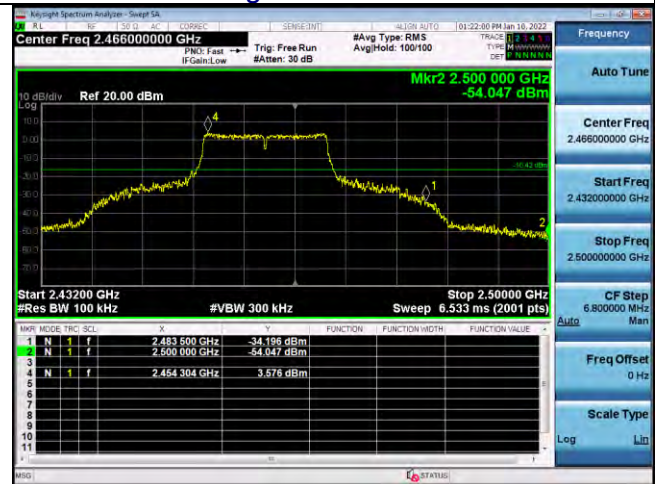


Lowest Channel



Left Band Edge

Highest Channel



Right Band Edge

Keysight Spectrum Analyzer - Sweep SA

RL 1.50 dB LOSS [INT] SENSE [INT] ALN/AUTO [01:27:14 PM 30 10 2022]

Center Freq 2.437000000 GHz

#Avg Type: RMS Avg/Hold: 100/100

TRAC1 1 7 1 4 9
TYPE M WWWW
DET P 2 2 1 0 0

PNO: Fast → IF Gain: Low Trig: Free Run #Atten: 30 dB

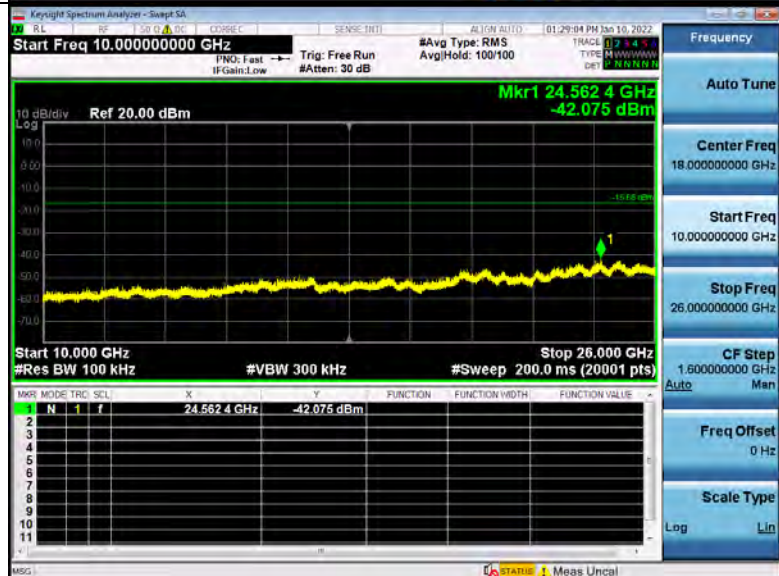
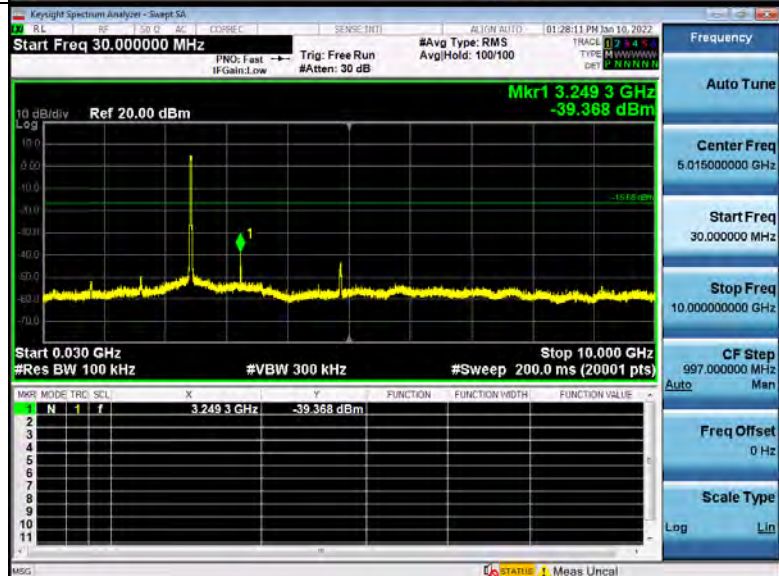
Mkr1 2.444 530 GHz 3.315 dBm

10 dB/Div Ref 20.00 dBm

Log

Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)

Frequency	
Auto Tune	
Center Freq	2.437000000 GHz
Start Freq	2.417000000 GHz
Stop Freq	2.457000000 GHz
CF Step	4.000000 MHz
Auto	Man
Freq Offset	0 Hz
Scale Type	
Log	Lin



Keysight Spectrum Analyzer - Sweep SA

RL 1.50 0.00 CORRECTION SEND TO

ALIGN AUTO 01:30:01 PM 30 10, 2022

Center Freq 2.462000000 GHz

#Avg Type: RMS AvgHold: 100/10

TRACED 0.7 1.4 5.1 TYPE M WWWW WRT P 0.0 0.0 0.0

PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB

10 dB/div Ref 20.00 dBm

Mkr1 2.459 155 GHz 3.827 dBm

Center Freq 2.462000000 GHz

Start Freq 2.442000000 GHz

Stop Freq 2.482000000 GHz

CF Step 4.0000000 MHz Auto Man

Freq Offset 0 Hz

Scale Type

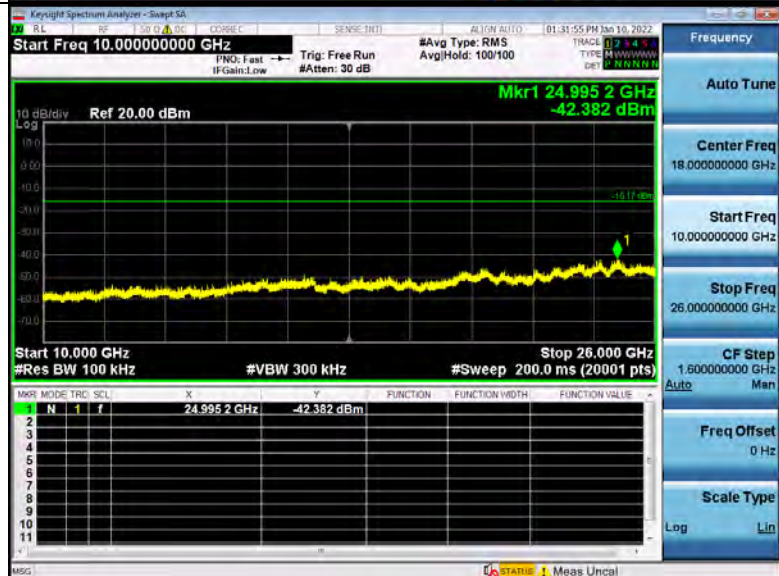
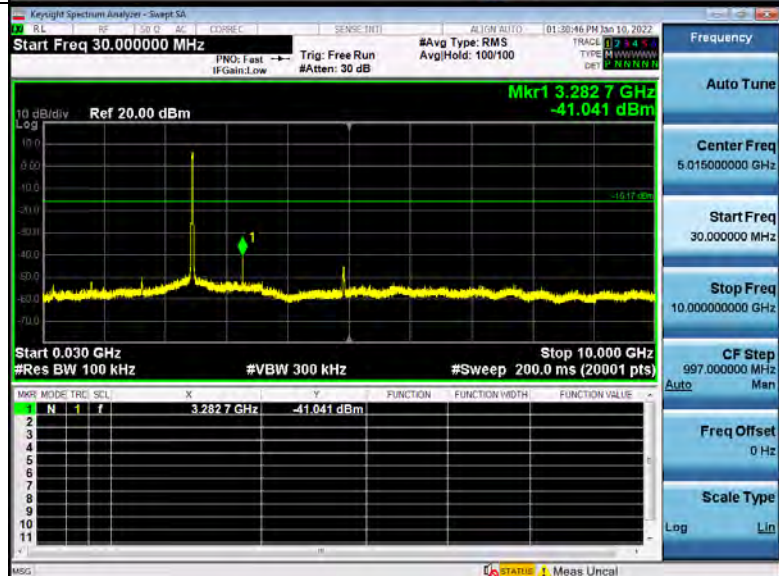
Center 2.46200 GHz Span 40.00 MHz

#Res BW 100 kHz Sweep 4.267 ms (8001 pts)

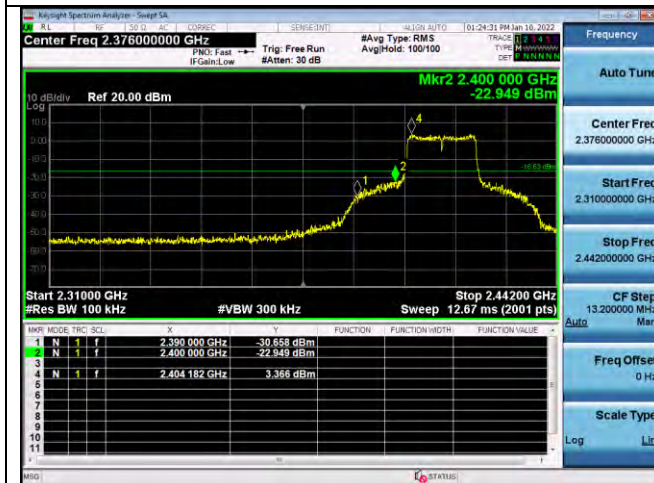
#VBW 300 kHz

Log Lin

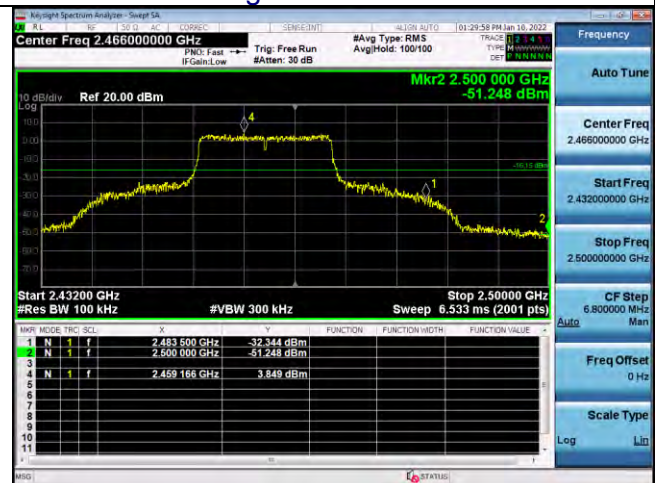
STATUS



Lowest Channel



Highest Channel



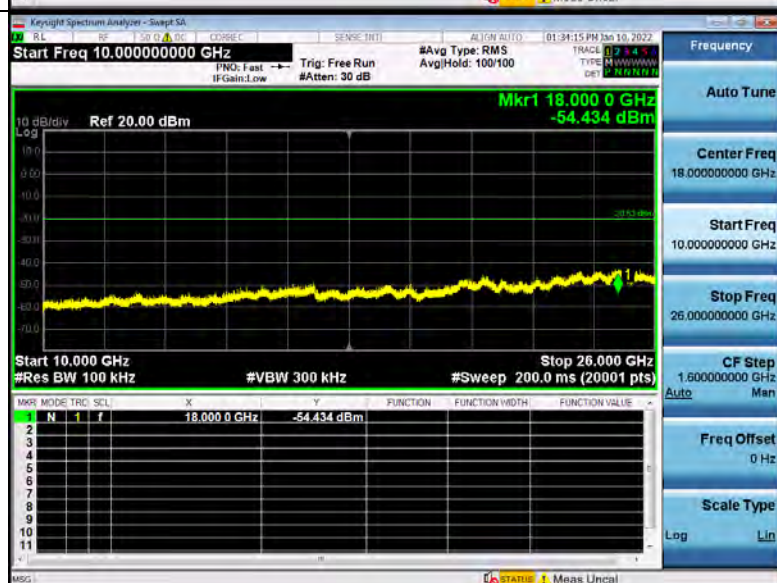
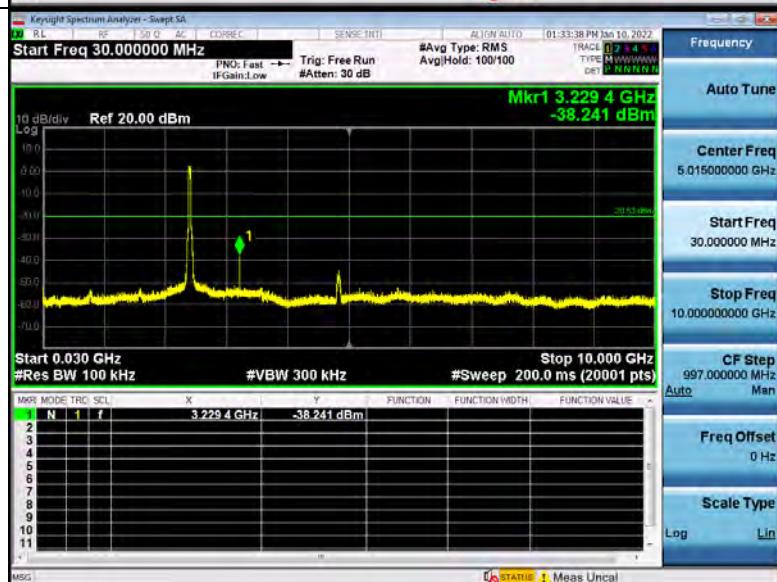
Left Band Edge

Right Band Edge

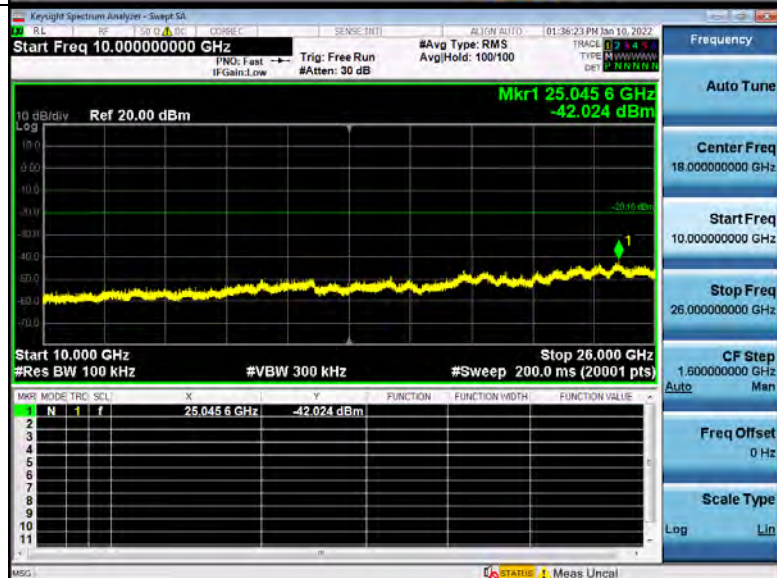
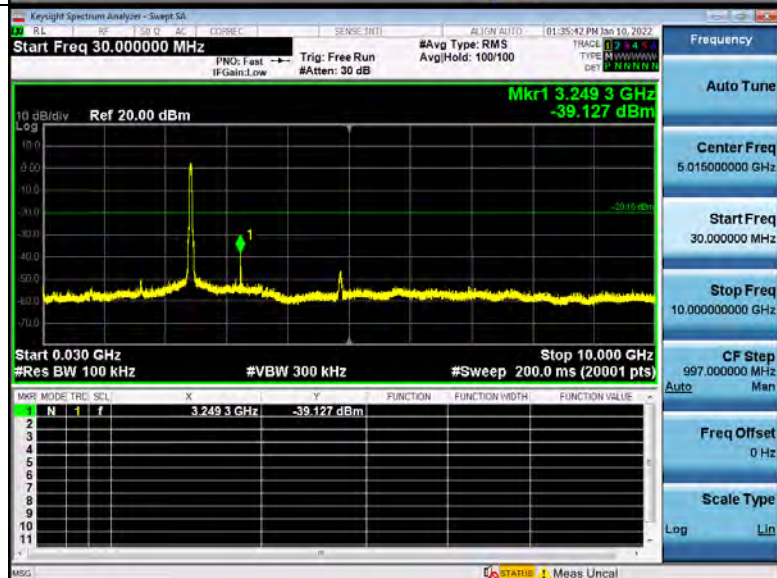
802.11n40 Modulation

Spurious emission

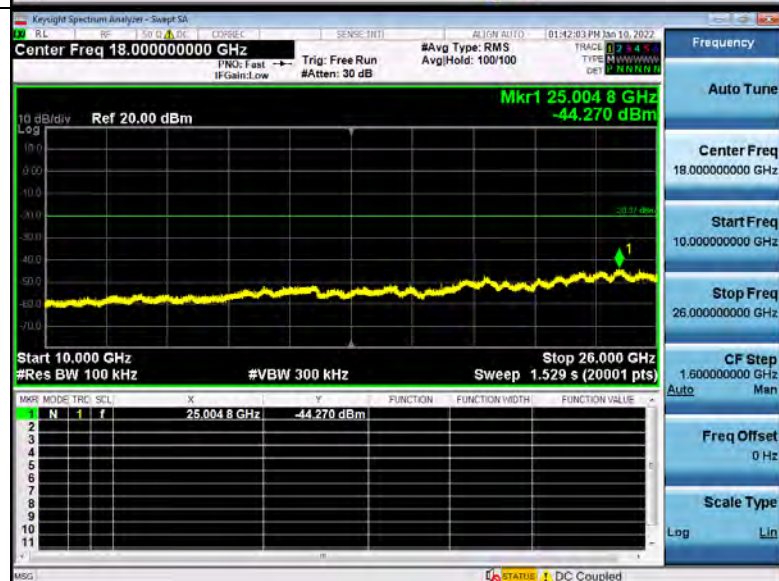
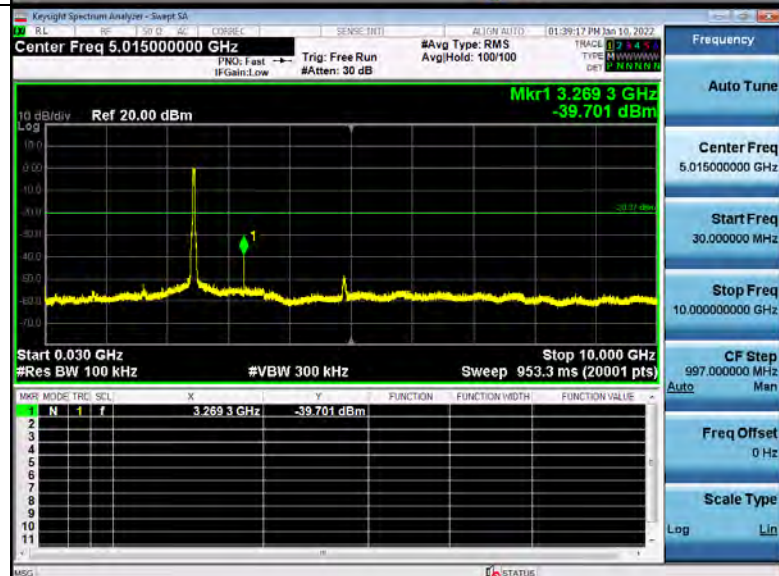
Low Channel



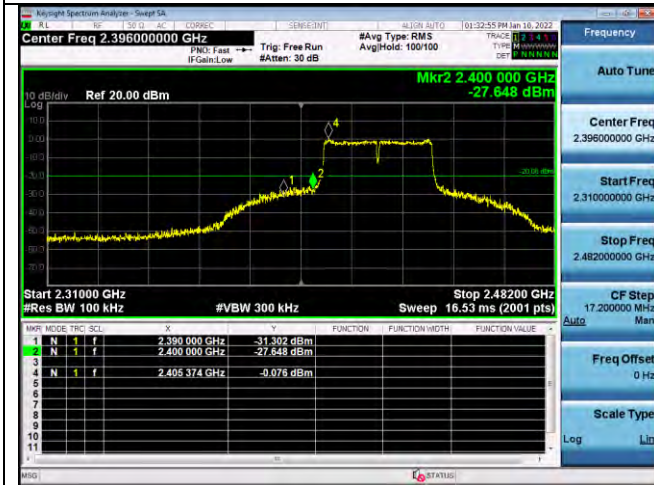
Middle Channel



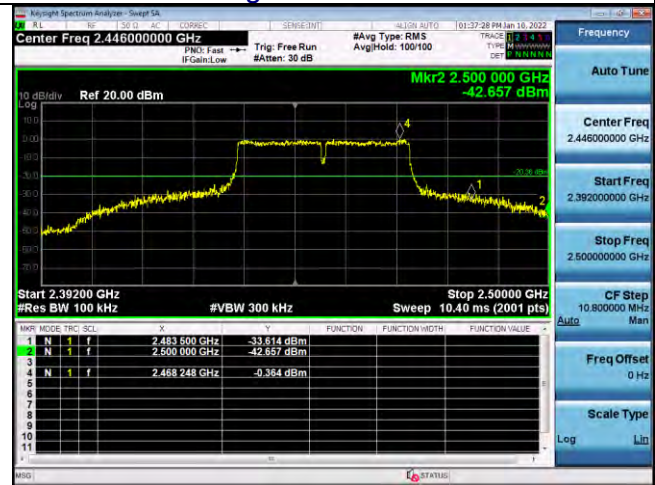
High Channel



Lowest Channel



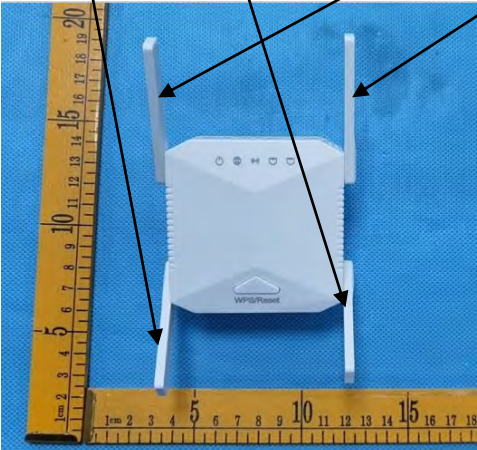
Highest Channel



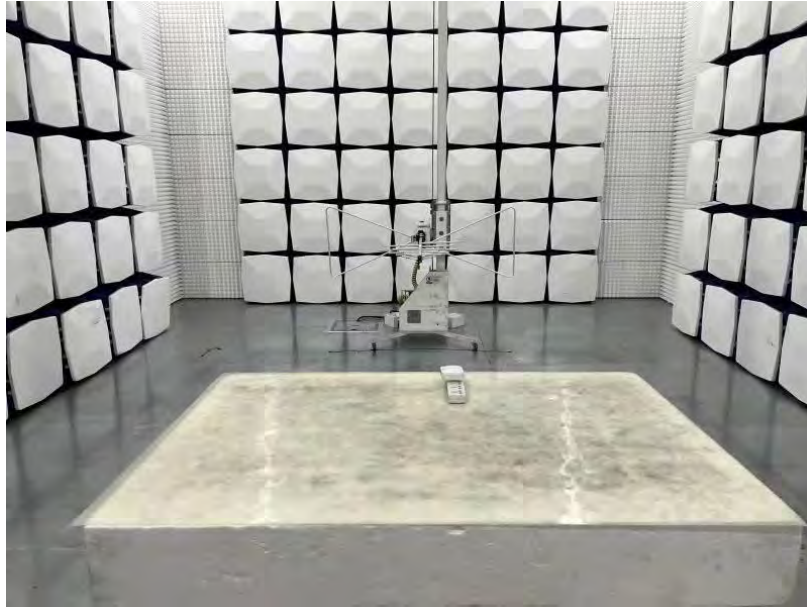
Left Band Edge

Right Band Edge

10. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. Refer to statement below for compliance. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed. Antenna Connected Construction The antenna used in this product is a Glue stick antenna, and the best case gain of the antenna is antenna port 1:2dBi and Antenna port 2:2dBi.	
EUT Antenna: 2.4G-ANT1 2.4G-ANT2 5G-ANT1 5G-ANT2 	

11. TEST SETUP PHOTO





12. EUT CONSTRUCTIONAL DETAILS

Reference to the external photos file and internal photos file for details.

***** END OF REPORT *****