

FCC TEST REPORT

FCC ID:2AU7O-LK-A64

Report Number..... : BTF230717R01101

Date of Test..... Mar. 20, 2023 to Jul. 26 2023

Date of issue..... : Jul. 26 2023

Total number of pages..... 59

Test Result..... : PASS

Testing Laboratory..... : **BTF Testing Lab (Shenzhen) Co., Ltd.**

Address : F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park,
Tantou Community, Songgang Street, Bao'an District, Shenzhen,
China

Applicant's name : **Shenzhen Phaten Technology Co.,Ltd.**

Address : 602,Building 1,Edmonto Industrial Park, No.4 Industrial
Zone,Shutianpu Community, Matian Street, Guangming District,
Shenzhen China

Manufacturer's name : **Shenzhen Phaten Technology Co.,Ltd.**

Address : 602,Building 1,Edmonto Industrial Park, No.4 Industrial
Zone,Shutianpu Community, Matian Street, Guangming District,
Shenzhen China

Test specification:

Standard..... : 20

Test procedure..... : /

Non-standard test method : N/A

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

Test Report Form(s) Originator..... : BTF Testing

Master TRF : Dated: 2020-01-06

This device described above has been tested by BTF, 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 wireless network card**

Trademark : N/A

Model/Type reference..... : LK-A64
LK64-101, LK64-102, LK64-103

Ratings..... : Input: DC 5V

Testing procedure and testing location:

Testing Laboratory.....: **BTF Testing Lab (Shenzhen) Co., Ltd.**
Address.....: F101, 201 and 301, Building 1, Block 2, Tantou Industrial
Park, Tantou Community, Songgang Street, Bao'an
District, Shenzhen, China

Tested by (name + signature).....: elma.yang

Elma. Yang

Reviewer (name + signature).....: elma.yang

Elma. Yang

Approved (name + signature).....: Ryan.CJ



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1. VERSION

ReportNo.	Version	Description	Approved
BTF230717R01101	Rev.01	Initial issue of report	Jul. 26 2023

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 BTF Technology Co., Ltd.

Add. : F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 518915

Designation Number: CN1330

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$ · where expended 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	3m camber Radiated spurious emission(9KHz-30MHz)	U=4.5dB
2	3m camber Radiated spurious emission(30MHz-1GHz)	U=4.8dB
3	3m chamber Radiated spurious emission(1GHz-6GHz)	U=4.9dB
4	3m chamber Radiated spurious emission(6GHz-40GHz)	U=5.0dB
5	Conducted disturbance	U=3.2dB
6	RF Band Edge	U=1.68dB
7	RF power conducted	U=1.86dB
8	RF conducted Spurious Emission	U=2.2dB
9	RF Occupied Bandwidth	U=1.8dB
10	RF Power Spectral Density	U=1.75dB
11	humidity uncertainty	U=5.3%
12	Temperature uncertainty	U=0.59°C

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Wifi wireless network card
Model No.:	LK-A64 LK64-101, LK64-102, LK64-103
Model Different.:	Only the model name is different.
Sample ID	BTF230717R01101
Sample(s) Status:	Engineer sample
Channel numbers:	802.11b/802.11g /802.11n(HT20):11 802.11n(HT40):9
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum(DSSS) 802.11g/802.11n(H20/H40): Orthogonal Frequency Division Multiplexing(OFDM)
Frequency range:	20M: 2412MHz-2462MHz 40M: 2422MHz-2452MHz
Antenna Type and Antenna gain:	802.11b/g/n20/n40: PCB Antenna Antenna gain: 3.56 dBi
Worst Case:	2.4G WIFI 802.11n20
Power supply:	Input: DC 5V

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)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2437MHz	2437MHz
Highest channel	2462MHz	2452MHz

3.2 DESCRIPTION OF TEST MODES

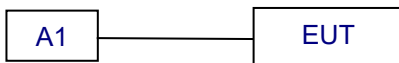
Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the duty cycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's 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:				
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.				
Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Data rate	1Mbps	6Mbps	6.5Mbps	13Mbps

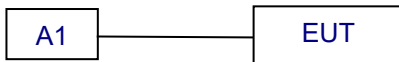
Test Software	UI_mptool Test Tool
Powerlevelsetup	<15dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

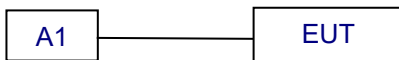
Conducted Emission



Radiated Emission



Conducted Spurious



3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Wifi wireless network card	N/A	LK-A64	See page 8	EUT
A1	AC/DC Adapter	GVE	GM53-240200-F	N/A	Auxiliary

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

Equipment List:

Conducted Emission at AC power line					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022-11-24	2023-11-23
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022-11-24	2023-11-23
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022-11-24	2023-11-23
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2022-11-24	2023-11-23

Occupied Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Maximum Conducted Output Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23

Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23
RF Power Meter	KEYSIGHT	N1912A P	N/A	2022-11-24	2023-11-23

Power Spectral Density

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Emissions in non-restricted frequency bands

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic	etm-6050c	20211026123	2022-11-24	2023-11-23

	Technology Co., LTD				
WIDEBAND RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Band edge emissions (Radiated)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1 0m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1 m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESC17	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Emissions in restricted frequency bands (below 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23

141					
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Emissions in restricted frequency bands (above 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL	SKET	PCI-GPIB	/	/	/

CONTROLLER					
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESCi7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EM C	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

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.

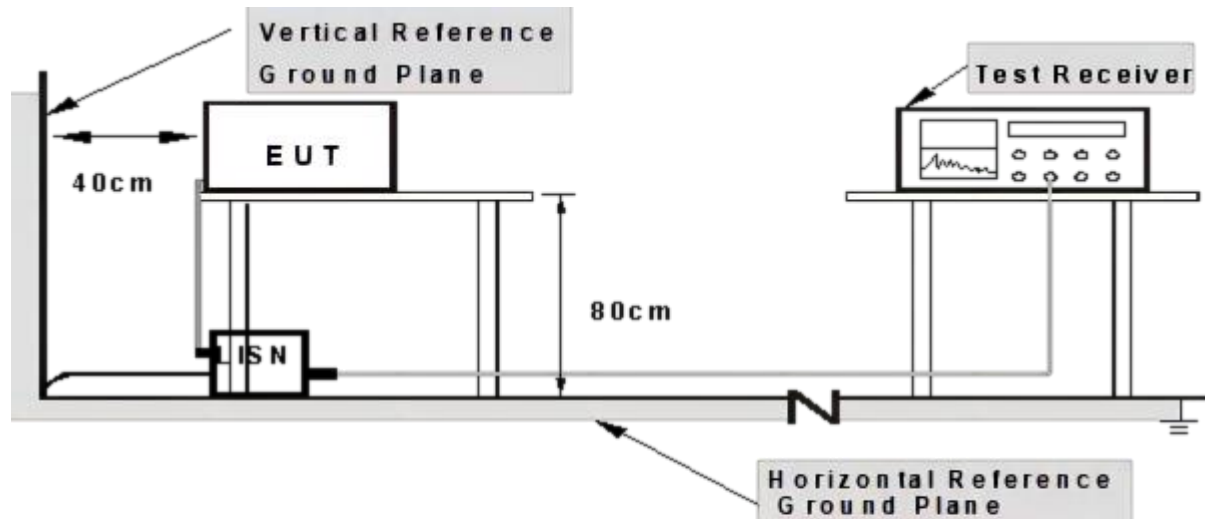
4.1.2 TEST PROCEDURE

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



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

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

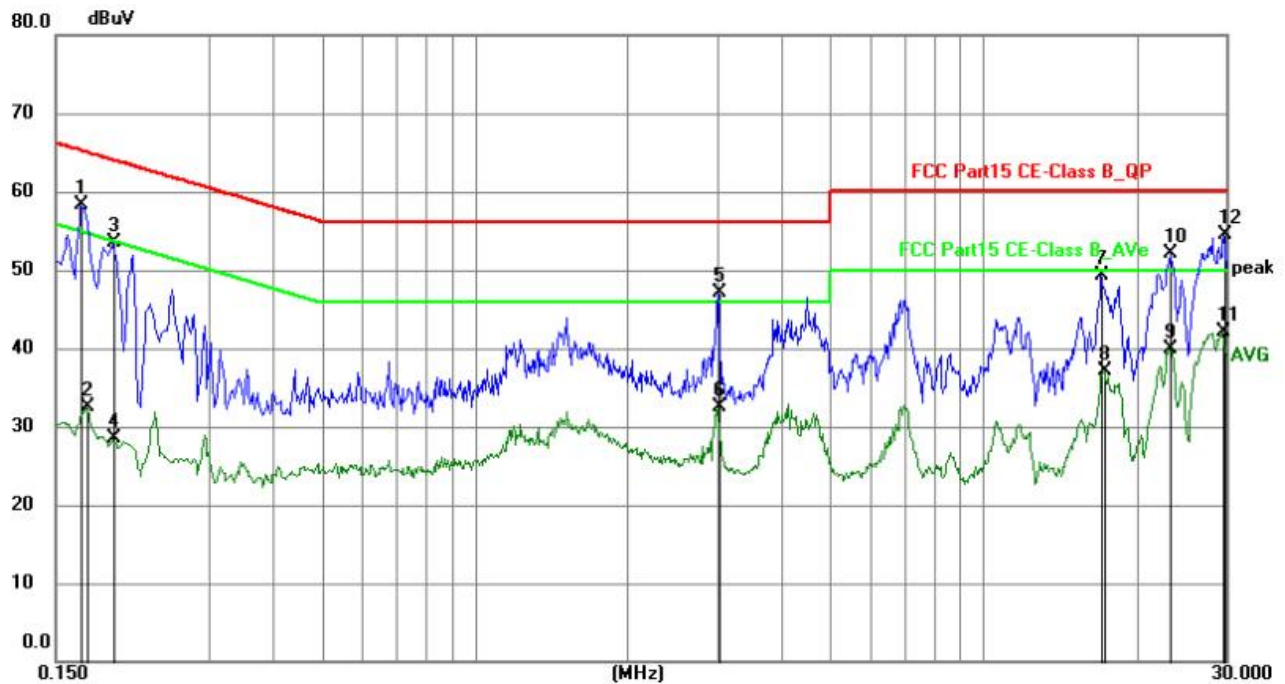
4.1.5 EUT OPERATING CONDITIONS

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 230V, the worst voltage was AC 120V and the data recording in the report.

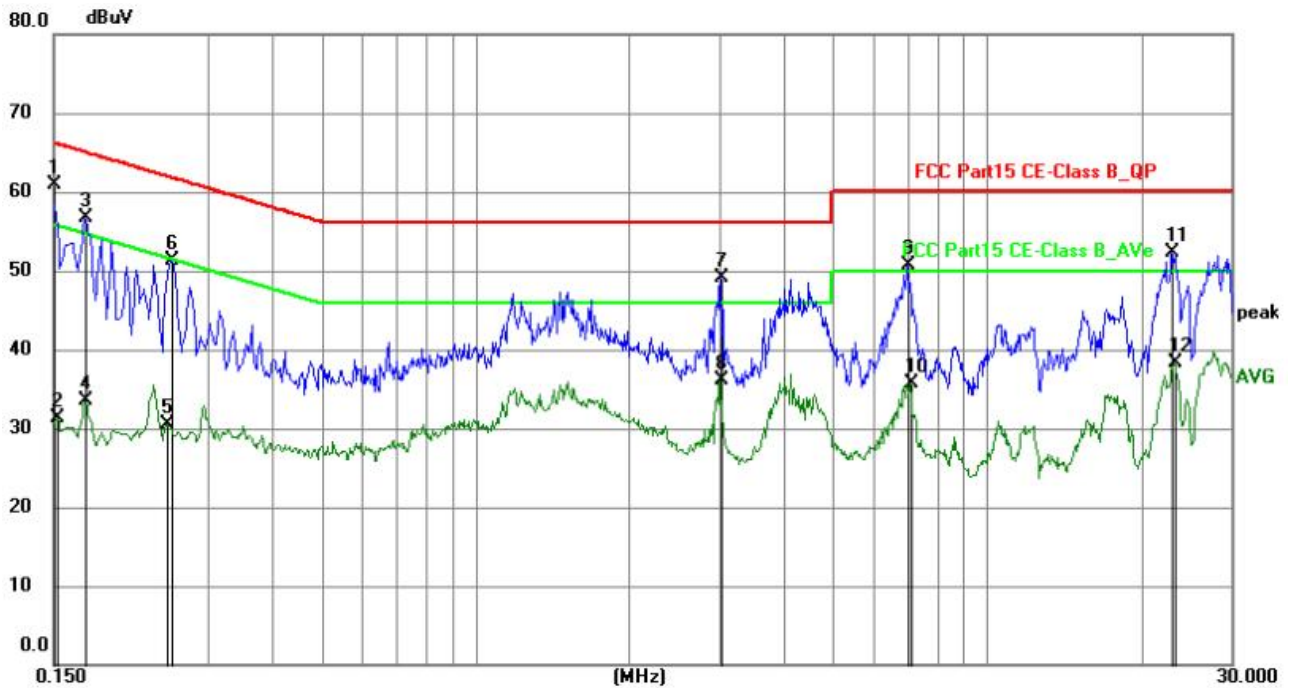
4.1.6 Test Result

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	L
Test Voltage:	DC 5V	Test Mode	802.11b 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1680	35.75	22.61	58.36	65.06	-6.70	QP	P	
2	0.1723	9.95	22.52	32.47	54.85	-22.38	AVG	P	
3	0.1949	31.57	22.03	53.60	63.83	-10.23	QP	P	
4	0.1949	6.52	22.03	28.55	53.83	-25.28	AVG	P	
5	3.0120	27.16	19.93	47.09	56.00	-8.91	QP	P	
6	3.0120	12.62	19.93	32.55	46.00	-13.45	AVG	P	
7	17.0880	29.86	19.45	49.31	60.00	-10.69	QP	P	
8	17.2950	17.60	19.48	37.08	50.00	-12.92	AVG	P	
9	23.1630	19.98	19.89	39.87	50.00	-10.13	AVG	P	
10	23.2935	32.26	19.89	52.15	60.00	-7.85	QP	P	
11	29.6610	22.17	19.96	42.13	50.00	-7.87	AVG	P	
12	29.7821	34.63	19.96	54.59	60.00	-5.41	QP	P	

Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	DC 5V	Test Mode	802.11b 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	37.87	23.01	60.88	66.00	-5.12	QP	P	
2	0.1524	8.44	22.96	31.40	55.87	-24.47	AVG	P	
3	0.1723	34.18	22.52	56.70	64.85	-8.15	QP	P	
4	0.1723	11.00	22.52	33.52	54.85	-21.33	AVG	P	
5	0.2489	8.86	21.69	30.55	51.79	-21.24	AVG	P	
6	0.2535	29.60	21.67	51.27	61.64	-10.37	QP	P	
7	3.0120	29.16	19.93	49.09	56.00	-6.91	QP	P	
8	3.0120	16.25	19.93	36.18	46.00	-9.82	AVG	P	
9	7.0034	32.11	18.57	50.68	60.00	-9.32	QP	P	
10	7.0845	17.22	18.57	35.79	50.00	-14.21	AVG	P	
11	22.9512	32.45	19.89	52.34	60.00	-7.66	QP	P	
12	23.1493	18.44	19.89	38.33	50.00	-11.67	AVG	P	

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	100KHz	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:

- The EUT was placed on the top of a rotating table 0.8 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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:

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

Note:

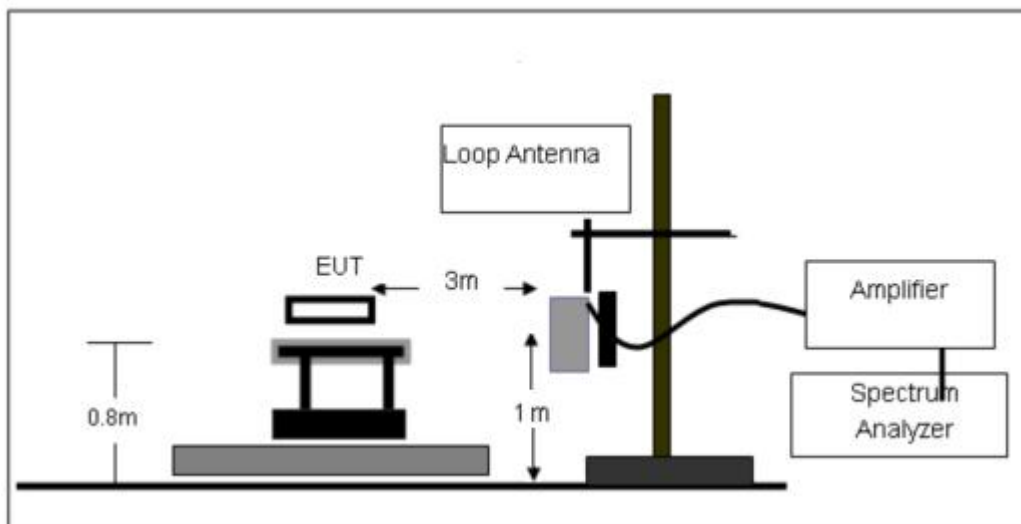
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

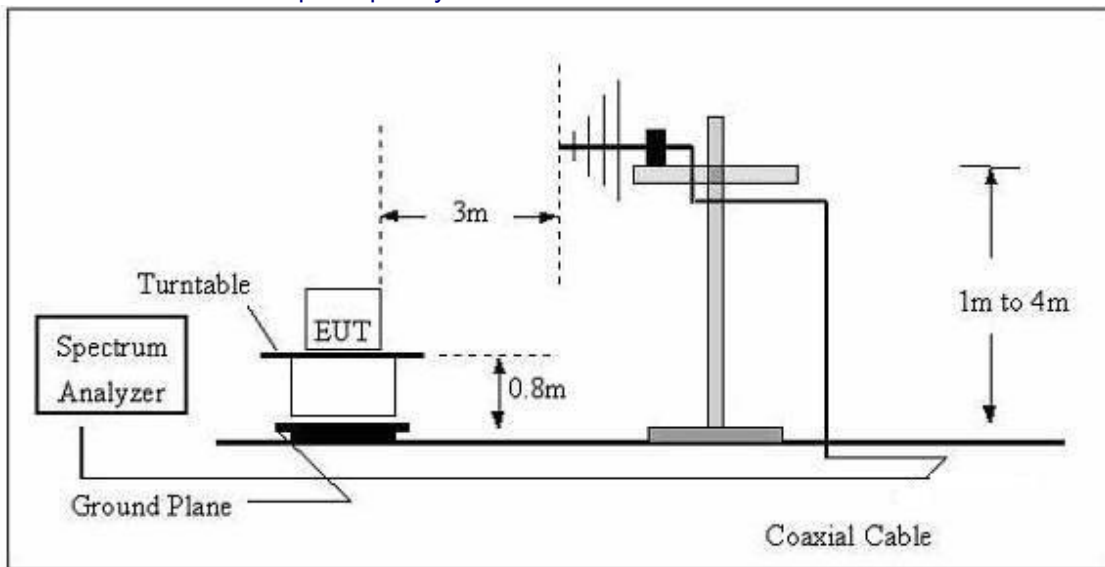
No deviation

4.2.4 TEST SETUP

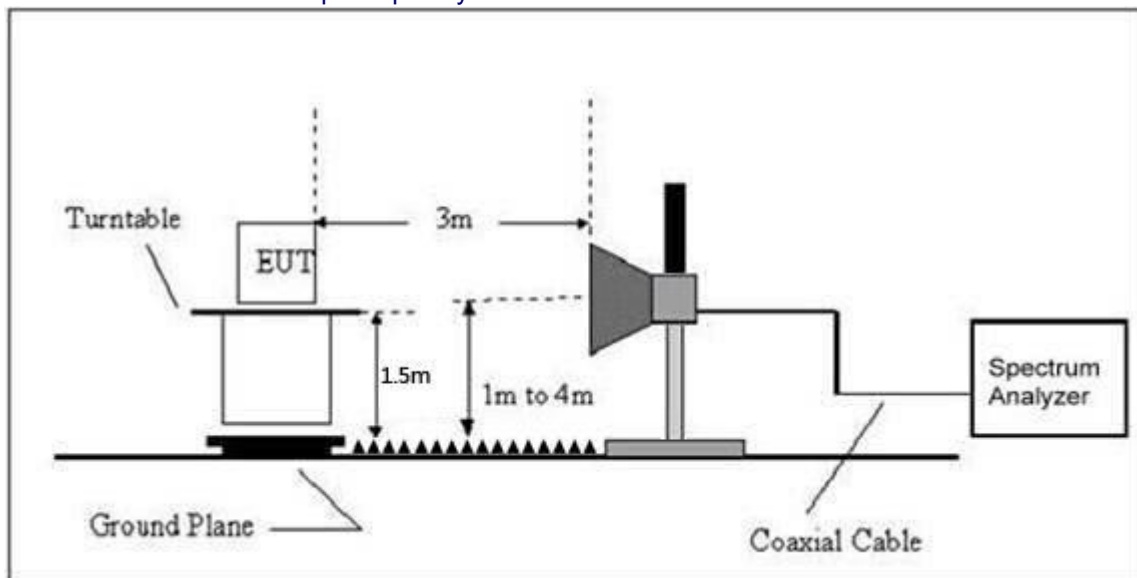
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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.

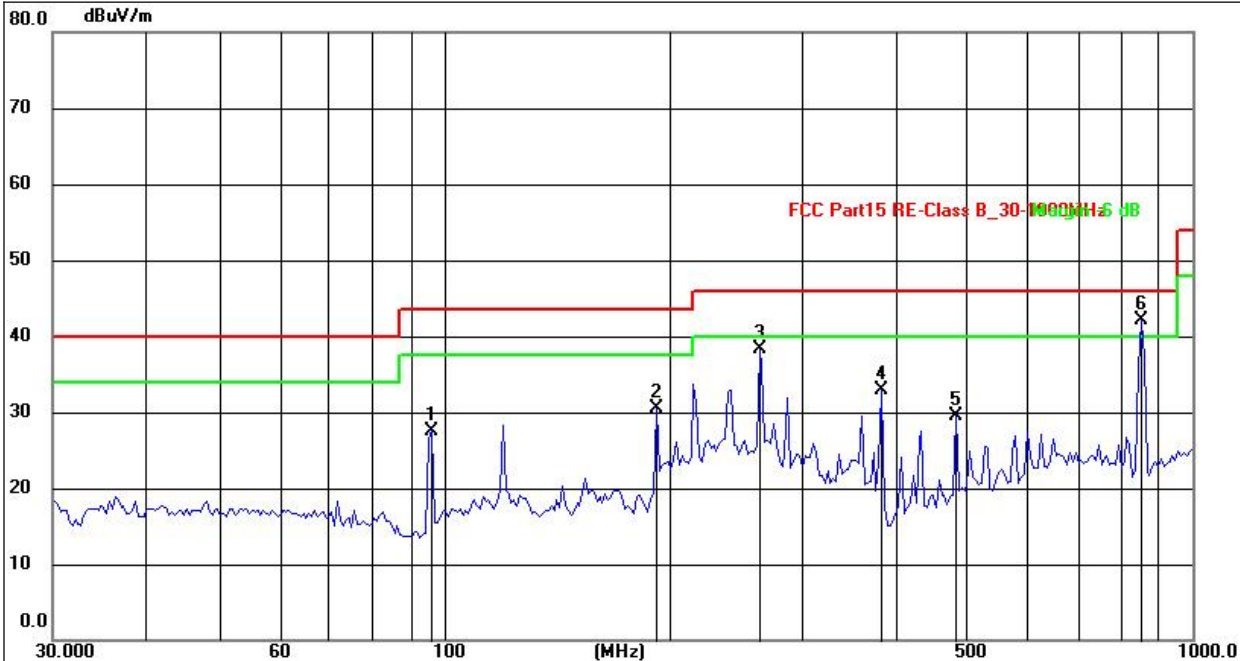
4.2.6 TEST RESULTS

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.

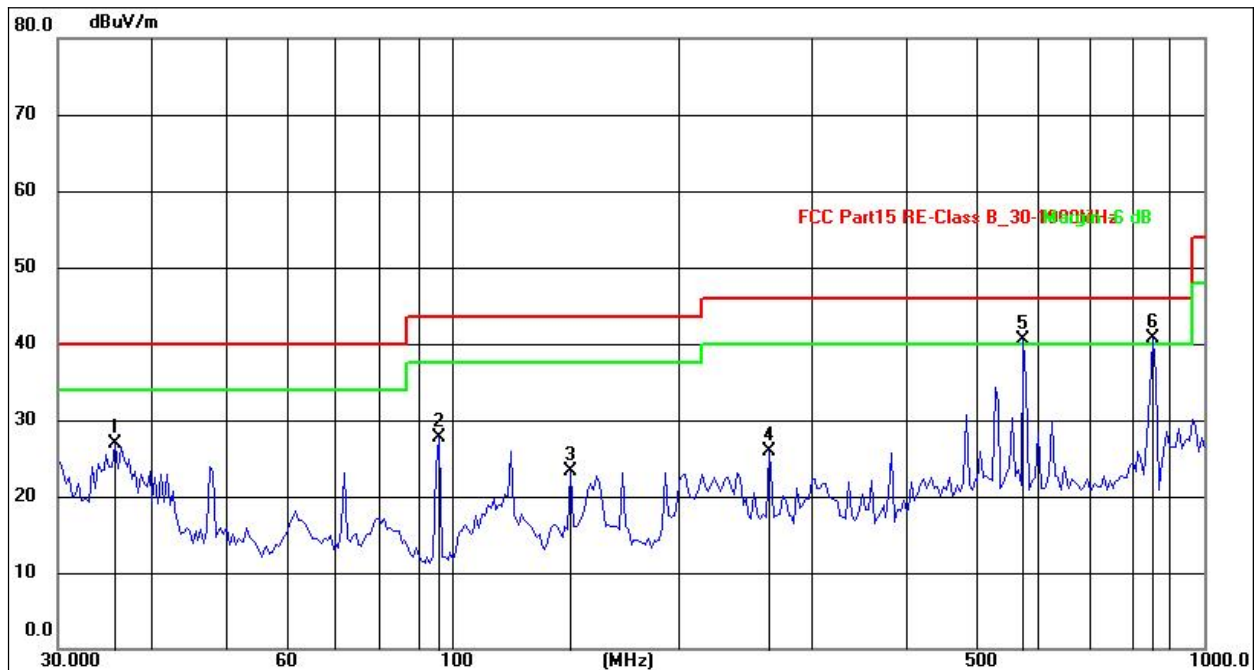
Between 30MHz – 1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 5V	Test Mode	802.11b 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	96.2672	47.56	-19.96	27.60	43.50	-15.90	QP
2	192.4183	48.98	-18.44	30.54	43.50	-12.96	QP
3	263.8190	53.59	-15.33	38.26	46.00	-7.74	QP
4	384.6055	49.46	-16.63	32.83	46.00	-13.17	QP
5	483.0615	42.06	-12.46	29.60	46.00	-16.40	QP
6	854.0247	48.99	-6.97	42.02	46.00	-3.98	QP

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 5V	Test Mode	802.11b 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	35.7490	44.43	-17.49	26.94	40.00	-13.06	QP
2	96.2672	48.95	-21.32	27.63	43.50	-15.87	QP
3	144.0817	44.08	-20.78	23.30	43.50	-20.20	QP
4	263.8190	45.43	-19.52	25.91	46.00	-20.09	QP
5	575.6340	49.12	-8.70	40.42	46.00	-5.58	QP
6	854.0247	42.79	-2.04	40.75	46.00	-5.25	QP

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 802.11b 2412MHz.

1GHz~25GHz

802.11b

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	4824.00	52.00	30.55	5.77	24.66	51.88	74.00	52.00	PK
V	4824.00	43.23	30.55	5.77	24.66	43.11	54.00	43.23	AV
V	7236.00	54.42	30.33	6.32	24.55	54.96	74.00	54.42	PK
V	7236.00	43.94	30.33	6.32	24.55	44.48	54.00	43.94	AV
V	9648.00	53.89	30.85	7.45	24.69	55.18	74.00	53.89	PK
V	9648.00	43.61	30.85	7.45	24.69	44.90	54.00	43.61	AV
V	12060.00	51.81	31.02	8.99	25.57	55.35	74.00	51.81	PK
V	12060.00	43.42	31.02	8.99	25.57	46.96	54.00	43.42	AV
H	4824.00	50.05	30.55	5.77	24.66	49.93	74.00	50.05	PK
H	4824.00	43.88	30.55	5.77	24.66	43.76	54.00	43.88	AV
H	7236.00	51.86	30.33	6.32	24.55	52.40	74.00	51.86	PK
H	7236.00	43.56	30.33	6.32	24.55	44.10	54.00	43.56	AV
H	9648.00	53.99	30.85	7.45	24.69	55.28	74.00	53.99	PK
H	9648.00	43.94	30.85	7.45	24.69	45.23	54.00	43.94	AV
H	12060.00	53.63	31.02	8.99	25.57	57.17	74.00	53.63	PK
H	12060.00	43.01	31.02	8.99	25.57	46.55	54.00	43.01	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	4874.00	51.86	30.55	5.77	24.66	51.74	74.00	-22.26	PK
V	4874.00	43.64	30.55	5.77	24.66	43.52	54.00	-10.48	AV
V	7311.00	52.67	30.33	6.32	24.55	53.21	74.00	-20.79	PK
V	7311.00	43.60	30.33	6.32	24.55	44.14	54.00	-9.86	AV
V	9748.00	52.98	30.85	7.45	24.69	54.27	74.00	-19.73	PK
V	9748.00	43.74	30.85	7.45	24.69	45.03	54.00	-8.97	AV
V	12185.00	53.81	31.02	8.99	25.57	57.35	74.00	-16.65	PK
V	12185.00	43.22	31.02	8.99	25.57	46.76	54.00	-7.24	AV
H	4874.00	52.85	30.55	5.77	24.66	52.73	74.00	-21.27	PK
H	4874.00	43.29	30.55	5.77	24.66	43.17	54.00	-10.83	AV
H	7311.00	51.09	30.33	6.32	24.55	51.63	74.00	-22.37	PK
H	7311.00	43.81	30.33	6.32	24.55	44.35	54.00	-9.65	AV
H	9748.00	52.10	30.85	7.45	24.69	53.39	74.00	-20.61	PK
H	9748.00	43.48	30.85	7.45	24.69	44.77	54.00	-9.23	AV
H	12185.00	53.29	31.02	8.99	25.57	56.83	74.00	-17.17	PK
H	12185.00	43.51	31.02	8.99	25.57	47.05	54.00	-6.95	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	4924.00	51.95	30.55	5.77	24.66	51.83	74.00	-22.17	PK
V	4924.00	43.27	30.55	5.77	24.66	43.15	54.00	-10.85	AV
V	7386.00	53.97	30.33	6.32	24.55	54.51	74.00	-19.49	PK
V	7386.00	43.47	30.33	6.32	24.55	44.01	54.00	-9.99	AV
V	9848.00	54.29	30.85	7.45	24.69	55.58	74.00	-18.42	PK
V	9848.00	43.91	30.85	7.45	24.69	45.20	54.00	-8.80	AV
V	12310.00	54.60	31.02	8.99	25.57	58.14	74.00	-15.86	PK
V	12310.00	43.45	31.02	8.99	25.57	46.99	54.00	-7.01	AV
H	4924.00	54.74	30.55	5.77	24.66	54.62	74.00	-19.38	PK
H	4924.00	43.30	30.55	5.77	24.66	43.18	54.00	-10.82	AV
H	7386.00	51.67	30.33	6.32	24.55	52.21	74.00	-21.79	PK
H	7386.00	43.23	30.33	6.32	24.55	43.77	54.00	-10.23	AV
H	9848.00	51.90	30.85	7.45	24.69	53.19	74.00	-20.81	PK
H	9848.00	43.32	30.85	7.45	24.69	44.61	54.00	-9.39	AV
H	12310.00	50.79	31.02	8.99	25.57	54.33	74.00	-19.67	PK
H	12310.00	43.29	31.02	8.99	25.57	46.83	54.00	-7.17	AV

Remark:

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

Margin= Emission Level - Limit

2. If peak below the average limit, the average emission was no test.

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

802.11g

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	4824.00	53.52	30.55	5.77	24.66	53.40	74.00	-20.60	PK
V	4824.00	43.79	30.55	5.77	24.66	43.67	54.00	-10.33	AV
V	7236.00	50.85	30.33	6.32	24.55	51.39	74.00	-22.61	PK
V	7236.00	43.15	30.33	6.32	24.55	43.69	54.00	-10.31	AV
V	9648.00	51.35	30.85	7.45	24.69	52.64	74.00	-21.36	PK
V	9648.00	43.20	30.85	7.45	24.69	44.49	54.00	-9.51	AV
V	12060.00	53.79	31.02	8.99	25.57	57.33	74.00	-16.67	PK
V	12060.00	43.81	31.02	8.99	25.57	47.35	54.00	-6.65	AV
H	4824.00	54.93	30.55	5.77	24.66	54.81	74.00	-19.19	PK
H	4824.00	43.91	30.55	5.77	24.66	43.79	54.00	-10.21	AV
H	7236.00	53.84	30.33	6.32	24.55	54.38	74.00	-19.62	PK
H	7236.00	43.22	30.33	6.32	24.55	43.76	54.00	-10.24	AV
H	9648.00	53.71	30.85	7.45	24.69	55.00	74.00	-19.00	PK
H	9648.00	43.88	30.85	7.45	24.69	45.17	54.00	-8.83	AV
H	12060.00	50.96	31.02	8.99	25.57	54.50	74.00	-19.50	PK
H	12060.00	43.20	31.02	8.99	25.57	46.74	54.00	-7.26	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	4874.00	52.47	30.55	5.77	24.66	52.35	74.00	-21.65	PK
V	4874.00	43.03	30.55	5.77	24.66	42.91	54.00	-11.09	AV
V	7311.00	51.23	30.33	6.32	24.55	51.77	74.00	-22.23	PK
V	7311.00	43.06	30.33	6.32	24.55	43.60	54.00	-10.40	AV
V	9748.00	51.30	30.85	7.45	24.69	52.59	74.00	-21.41	PK
V	9748.00	43.56	30.85	7.45	24.69	44.85	54.00	-9.15	AV
V	12185.00	52.02	31.02	8.99	25.57	55.56	74.00	-18.44	PK
V	12185.00	43.28	31.02	8.99	25.57	46.82	54.00	-7.18	AV
H	4874.00	53.17	30.55	5.77	24.66	53.05	74.00	-20.95	PK
H	4874.00	43.62	30.55	5.77	24.66	43.50	54.00	-10.50	AV
H	7311.00	50.96	30.33	6.32	24.55	51.50	74.00	-22.50	PK
H	7311.00	43.86	30.33	6.32	24.55	44.40	54.00	-9.60	AV
H	9748.00	53.24	30.85	7.45	24.69	54.53	74.00	-19.47	PK
H	9748.00	43.89	30.85	7.45	24.69	45.18	54.00	-8.82	AV
H	12185.00	54.13	31.02	8.99	25.57	57.67	74.00	-16.33	PK
H	12185.00	43.26	31.02	8.99	25.57	46.80	54.00	-7.20	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	4924.00	52.47	30.55	5.77	24.66	52.35	74.00	-21.65	PK
V	4924.00	43.03	30.55	5.77	24.66	42.91	54.00	-11.09	AV
V	7386.00	51.23	30.33	6.32	24.55	51.77	74.00	-22.23	PK
V	7386.00	43.06	30.33	6.32	24.55	43.60	54.00	-10.40	AV
V	9848.00	51.30	30.85	7.45	24.69	52.59	74.00	-21.41	PK
V	9848.00	43.56	30.85	7.45	24.69	44.85	54.00	-9.15	AV
V	12310.00	52.02	31.02	8.99	25.57	55.56	74.00	-18.44	PK
V	12310.00	43.28	31.02	8.99	25.57	46.82	54.00	-7.18	AV
H	4924.00	53.17	30.55	5.77	24.66	53.05	74.00	-20.95	PK
H	4924.00	43.62	30.55	5.77	24.66	43.50	54.00	-10.50	AV
H	7386.00	50.96	30.33	6.32	24.55	51.50	74.00	-22.50	PK
H	7386.00	43.86	30.33	6.32	24.55	44.40	54.00	-9.60	AV
H	9848.00	53.24	30.85	7.45	24.69	54.53	74.00	-19.47	PK
H	9848.00	43.89	30.85	7.45	24.69	45.18	54.00	-8.82	AV
H	12310.00	54.13	31.02	8.99	25.57	57.67	74.00	-16.33	PK
H	12310.00	43.26	31.02	8.99	25.57	46.80	54.00	-7.20	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n20

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	4824.00	51.59	30.55	5.77	24.66	51.47	74.00	-22.53	PK
V	4824.00	43.35	30.55	5.77	24.66	43.23	54.00	-10.77	AV
V	7236.00	54.26	30.33	6.32	24.55	54.80	74.00	-19.20	PK
V	7236.00	43.52	30.33	6.32	24.55	44.06	54.00	-9.94	AV
V	9648.00	53.66	30.85	7.45	24.69	54.95	74.00	-19.05	PK
V	9648.00	43.55	30.85	7.45	24.69	44.84	54.00	-9.16	AV
V	12060.00	50.55	31.02	8.99	25.57	54.09	74.00	-19.91	PK
V	12060.00	43.34	31.02	8.99	25.57	46.88	54.00	-7.12	AV
H	4824.00	54.40	30.55	5.77	24.66	54.28	74.00	-19.72	PK
H	4824.00	43.98	30.55	5.77	24.66	43.86	54.00	-10.14	AV
H	7236.00	50.21	30.33	6.32	24.55	50.75	74.00	-23.25	PK
H	7236.00	43.73	30.33	6.32	24.55	44.27	54.00	-9.73	AV
H	9648.00	50.18	30.85	7.45	24.69	51.47	74.00	-22.53	PK
H	9648.00	43.19	30.85	7.45	24.69	44.48	54.00	-9.52	AV
H	12060.00	53.53	31.02	8.99	25.57	57.07	74.00	-16.93	PK
H	12060.00	43.94	31.02	8.99	25.57	47.48	54.00	-6.52	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	4874.00	50.14	30.55	5.77	24.66	50.02	74.00	-23.98	PK
V	4874.00	43.72	30.55	5.77	24.66	43.60	54.00	-10.40	AV
V	7311.00	50.64	30.33	6.32	24.55	51.18	74.00	-22.82	PK
V	7311.00	43.69	30.33	6.32	24.55	44.23	54.00	-9.77	AV
V	9748.00	54.48	30.85	7.45	24.69	55.77	74.00	-18.23	PK
V	9748.00	43.64	30.85	7.45	24.69	44.93	54.00	-9.07	AV
V	12185.00	52.10	31.02	8.99	25.57	55.64	74.00	-18.36	PK
V	12185.00	43.75	31.02	8.99	25.57	47.29	54.00	-6.71	AV
H	4874.00	52.16	30.55	5.77	24.66	52.04	74.00	-21.96	PK
H	4874.00	43.37	30.55	5.77	24.66	43.25	54.00	-10.75	AV
H	7311.00	51.00	30.33	6.32	24.55	51.54	74.00	-22.46	PK
H	7311.00	43.20	30.33	6.32	24.55	43.74	54.00	-10.26	AV
H	9748.00	52.72	30.85	7.45	24.69	54.01	74.00	-19.99	PK
H	9748.00	43.96	30.85	7.45	24.69	45.25	54.00	-8.75	AV
H	12185.00	51.83	31.02	8.99	25.57	55.37	74.00	-18.63	PK
H	12185.00	43.86	31.02	8.99	25.57	47.40	54.00	-6.60	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	4924.00	53.22	30.55	5.77	24.66	53.10	74.00	-20.90	PK
V	4924.00	43.58	30.55	5.77	24.66	43.46	54.00	-10.54	AV
V	7386.00	50.65	30.33	6.32	24.55	51.19	74.00	-22.81	PK
V	7386.00	43.90	30.33	6.32	24.55	44.44	54.00	-9.56	AV
V	9848.00	53.40	30.85	7.45	24.69	54.69	74.00	-19.31	PK
V	9848.00	43.92	30.85	7.45	24.69	45.21	54.00	-8.79	AV
V	12310.00	51.48	31.02	8.99	25.57	55.02	74.00	-18.98	PK
V	12310.00	43.50	31.02	8.99	25.57	47.04	54.00	-6.96	AV
H	4924.00	51.88	30.55	5.77	24.66	51.76	74.00	-22.24	PK
H	4924.00	43.10	30.55	5.77	24.66	42.98	54.00	-11.02	AV
H	7386.00	52.93	30.33	6.32	24.55	53.47	74.00	-20.53	PK
H	7386.00	43.24	30.33	6.32	24.55	43.78	54.00	-10.22	AV
H	9848.00	50.89	30.85	7.45	24.69	52.18	74.00	-21.82	PK
H	9848.00	43.01	30.85	7.45	24.69	44.30	54.00	-9.70	AV
H	12310.00	50.99	31.02	8.99	25.57	54.53	74.00	-19.47	PK
H	12310.00	43.89	31.02	8.99	25.57	47.43	54.00	-6.57	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n40

Polar (H/V)	Frequenc y	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)	
Low Channel:2422MHz									
V	4844.00	52.33	30.55	5.77	24.66	52.21	74.00	-21.79	PK
V	4844.00	43.46	30.55	5.77	24.66	43.34	54.00	-10.66	AV
V	7266.00	51.60	30.33	6.32	24.55	52.14	74.00	-21.86	PK
V	7266.00	43.54	30.33	6.32	24.55	44.08	54.00	-9.92	AV
V	9688.00	54.79	30.85	7.45	24.69	56.08	74.00	-17.92	PK
V	9688.00	43.35	30.85	7.45	24.69	44.64	54.00	-9.36	AV
V	12110.00	52.89	31.02	8.99	25.57	56.43	74.00	-17.57	PK
V	12110.00	43.03	31.02	8.99	25.57	46.57	54.00	-7.43	AV
H	4844.00	52.59	30.55	5.77	24.66	52.47	74.00	-21.53	PK
H	4844.00	43.80	30.55	5.77	24.66	43.68	54.00	-10.32	AV
H	7266.00	54.73	30.33	6.32	24.55	55.27	74.00	-18.73	PK
H	7266.00	43.96	30.33	6.32	24.55	44.50	54.00	-9.50	AV
H	9688.00	50.25	30.85	7.45	24.69	51.54	74.00	-22.46	PK
H	9688.00	43.15	30.85	7.45	24.69	44.44	54.00	-9.56	AV
H	12110.00	50.97	31.02	8.99	25.57	54.51	74.00	-19.49	PK
H	12110.00	43.27	31.02	8.99	25.57	46.81	54.00	-7.19	AV

Polar (H/V)	Frequenc y	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)	
Middle Channel:2437MHz									
V	4874.00	50.80	30.55	5.77	24.66	50.68	74.00	-23.32	PK
V	4874.00	43.80	30.55	5.77	24.66	43.68	54.00	-10.32	AV
V	7311.00	54.53	30.33	6.32	24.55	55.07	74.00	-18.93	PK
V	7311.00	43.29	30.33	6.32	24.55	43.83	54.00	-10.17	AV
V	9748.00	54.10	30.85	7.45	24.69	55.39	74.00	-18.61	PK
V	9748.00	43.93	30.85	7.45	24.69	45.22	54.00	-8.78	AV
V	12185.00	54.52	31.02	8.99	25.57	58.06	74.00	-15.94	PK
V	12185.00	43.12	31.02	8.99	25.57	46.66	54.00	-7.34	AV
H	4874.00	50.03	30.55	5.77	24.66	49.91	74.00	-24.09	PK
H	4874.00	43.99	30.55	5.77	24.66	43.87	54.00	-10.13	AV
H	7311.00	51.81	30.33	6.32	24.55	52.35	74.00	-21.65	PK
H	7311.00	43.79	30.33	6.32	24.55	44.33	54.00	-9.67	AV
H	9748.00	50.39	30.85	7.45	24.69	51.68	74.00	-22.32	PK
H	9748.00	43.78	30.85	7.45	24.69	45.07	54.00	-8.93	AV
H	12185.00	50.57	31.02	8.99	25.57	54.11	74.00	-19.89	PK
H	12185.00	43.83	31.02	8.99	25.57	47.37	54.00	-6.63	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)	
High Channel:2452MHz									
V	4904.00	52.70	30.55	5.77	24.66	52.58	74.00	-21.42	PK
V	4904.00	43.25	30.55	5.77	24.66	43.13	54.00	-10.87	AV
V	7356.00	52.84	30.33	6.32	24.55	53.38	74.00	-20.62	PK
V	7356.00	43.18	30.33	6.32	24.55	43.72	54.00	-10.28	AV
V	9808.00	54.11	30.85	7.45	24.69	55.40	74.00	-18.60	PK
V	9808.00	43.02	30.85	7.45	24.69	44.31	54.00	-9.69	AV
V	12260.00	52.18	31.02	8.99	25.57	55.72	74.00	-18.28	PK
V	12260.00	43.75	31.02	8.99	25.57	47.29	54.00	-6.71	AV
H	4904.00	54.70	30.55	5.77	24.66	54.58	74.00	-19.42	PK
H	4904.00	43.40	30.55	5.77	24.66	43.28	54.00	-10.72	AV
H	7356.00	50.13	30.33	6.32	24.55	50.67	74.00	-23.33	PK
H	7356.00	43.76	30.33	6.32	24.55	44.30	54.00	-9.70	AV
H	9808.00	50.64	30.85	7.45	24.69	51.93	74.00	-22.07	PK
H	9808.00	43.03	30.85	7.45	24.69	44.32	54.00	-9.68	AV
H	12260.00	54.00	31.02	8.99	25.57	57.54	74.00	-16.46	PK
H	12260.00	43.38	31.02	8.99	25.57	46.92	54.00	-7.08	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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:

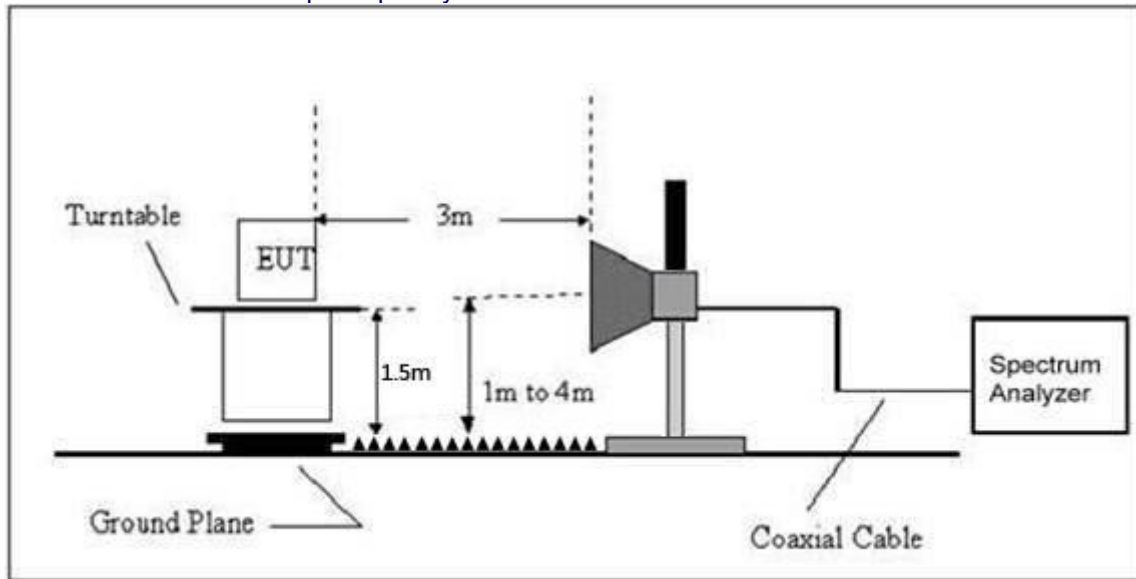
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

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

	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	LowChannel 2412MHz									
	H	2390.00	54.63	30.22	4.85	23.98	53.24	74.00	PK	PASS
	H	2390.00	44.35	30.22	4.85	23.98	42.96	54.00	AV	PASS
	H	2400.00	54.27	30.22	4.85	23.98	52.88	74.00	PK	PASS
	H	2400.00	44.42	30.22	4.85	23.98	43.03	54.00	AV	PASS
	V	2390.00	53.37	30.22	4.85	23.98	51.98	74.00	PK	PASS
	V	2390.00	44.19	30.22	4.85	23.98	42.80	54.00	AV	PASS
	V	2400.00	54.85	30.22	4.85	23.98	53.46	74.00	PK	PASS
	V	2400.00	44.31	30.22	4.85	23.98	42.92	54.00	AV	PASS
	HighChannel 2462MHz									
	H	2483.50	54.71	30.22	4.85	23.98	53.32	74.00	PK	PASS
	H	2483.50	44.10	30.22	4.85	23.98	42.71	54.00	AV	PASS
	H	2500.00	54.19	30.22	4.85	23.98	52.80	74.00	PK	PASS
	H	2500.00	44.58	30.22	4.85	23.98	43.19	54.00	AV	PASS
	V	2483.50	54.65	30.22	4.85	23.98	53.26	74.00	PK	PASS
	V	2483.50	44.56	30.22	4.85	23.98	43.17	54.00	AV	PASS
	V	2500.00	53.84	30.22	4.85	23.98	52.45	74.00	PK	PASS
	V	2500.00	44.92	30.22	4.85	23.98	43.53	54.00	AV	PASS
802.11g	LowChannel 2412MHz									
	H	2390.00	54.14	30.22	4.85	23.98	52.75	74.00	PK	PASS
	H	2390.00	44.81	30.22	4.85	23.98	43.42	54.00	AV	PASS
	H	2400.00	54.94	30.22	4.85	23.98	53.55	74.00	PK	PASS
	H	2400.00	44.15	30.22	4.85	23.98	42.76	54.00	AV	PASS
	V	2390.00	53.79	30.22	4.85	23.98	52.40	74.00	PK	PASS
	V	2390.00	44.45	30.22	4.85	23.98	43.06	54.00	AV	PASS
	V	2400.00	53.16	30.22	4.85	23.98	51.77	74.00	PK	PASS
	V	2400.00	44.79	30.22	4.85	23.98	43.40	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	53.13	30.22	4.85	23.98	51.74	74.00	PK	PASS
	H	2483.50	44.43	30.22	4.85	23.98	43.04	54.00	AV	PASS
	H	2500.00	53.05	30.22	4.85	23.98	51.66	74.00	PK	PASS
	H	2500.00	44.16	30.22	4.85	23.98	42.77	54.00	AV	PASS
	V	2483.50	54.94	30.22	4.85	23.98	53.55	74.00	PK	PASS
	V	2483.50	44.05	30.22	4.85	23.98	42.66	54.00	AV	PASS
	V	2500.00	53.88	30.22	4.85	23.98	52.49	74.00	PK	PASS
	V	2500.00	44.64	30.22	4.85	23.98	43.25	54.00	AV	PASS
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit										

802.11n20	LowChannel 2412MHz									
	H	2390.00	54.75	30.22	4.85	23.98	53.36	74.00	PK	PASS
	H	2390.00	44.62	30.22	4.85	23.98	43.23	54.00	AV	PASS
	H	2400.00	54.33	30.22	4.85	23.98	52.94	74.00	PK	PASS
	H	2400.00	44.96	30.22	4.85	23.98	43.57	54.00	AV	PASS
	V	2390.00	54.78	30.22	4.85	23.98	53.39	74.00	PK	PASS
	V	2390.00	44.53	30.22	4.85	23.98	43.14	54.00	AV	PASS
	V	2400.00	54.08	30.22	4.85	23.98	52.69	74.00	PK	PASS
	V	2400.00	44.10	30.22	4.85	23.98	42.71	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	53.09	30.22	4.85	23.98	51.70	74.00	PK	PASS
	H	2483.50	44.10	30.22	4.85	23.98	42.71	54.00	AV	PASS
	H	2500.00	54.26	30.22	4.85	23.98	52.87	74.00	PK	PASS
	H	2500.00	44.87	30.22	4.85	23.98	43.48	54.00	AV	PASS
	V	2483.50	53.48	30.22	4.85	23.98	52.09	74.00	PK	PASS
	V	2483.50	44.40	30.22	4.85	23.98	43.01	54.00	AV	PASS
V	2500.00	54.31	30.22	4.85	23.98	52.92	74.00	PK	PASS	
V	2500.00	44.66	30.22	4.85	23.98	43.27	54.00	AV	PASS	
802.11n40	LowChannel 2422MHz									
	H	2390.00	54.40	30.22	4.85	23.98	53.01	74.00	PK	PASS
	H	2390.00	44.24	30.22	4.85	23.98	42.85	54.00	AV	PASS
	H	2400.00	54.20	30.22	4.85	23.98	52.81	74.00	PK	PASS
	H	2400.00	44.51	30.22	4.85	23.98	43.12	54.00	AV	PASS
	V	2390.00	54.70	30.22	4.85	23.98	53.31	74.00	PK	PASS
	V	2390.00	44.23	30.22	4.85	23.98	42.84	54.00	AV	PASS
	V	2400.00	54.53	30.22	4.85	23.98	53.14	74.00	PK	PASS
	V	2400.00	44.32	30.22	4.85	23.98	42.93	54.00	AV	PASS
	High Channel 2452MHz									
	H	2483.50	54.97	30.22	4.85	23.98	53.58	74.00	PK	PASS
	H	2483.50	44.03	30.22	4.85	23.98	42.64	54.00	AV	PASS
	H	2500.00	53.28	30.22	4.85	23.98	51.89	74.00	PK	PASS
	H	2500.00	44.01	30.22	4.85	23.98	42.62	54.00	AV	PASS
	V	2483.50	53.12	30.22	4.85	23.98	51.73	74.00	PK	PASS
	V	2483.50	44.73	30.22	4.85	23.98	43.34	54.00	AV	PASS
V	2500.00	53.99	30.22	4.85	23.98	52.60	74.00	PK	PASS	
V	2500.00	44.64	30.22	4.85	23.98	43.25	54.00	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:	ANSI C63.10:2013 and KDB558074 D01DTS Meas Guidancev05r02

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℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX b Mode		

Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-19.088	8	PASS
2437 MHz	-18.306	8	PASS
2462 MHz	-18.613	8	PASS



TX CH06

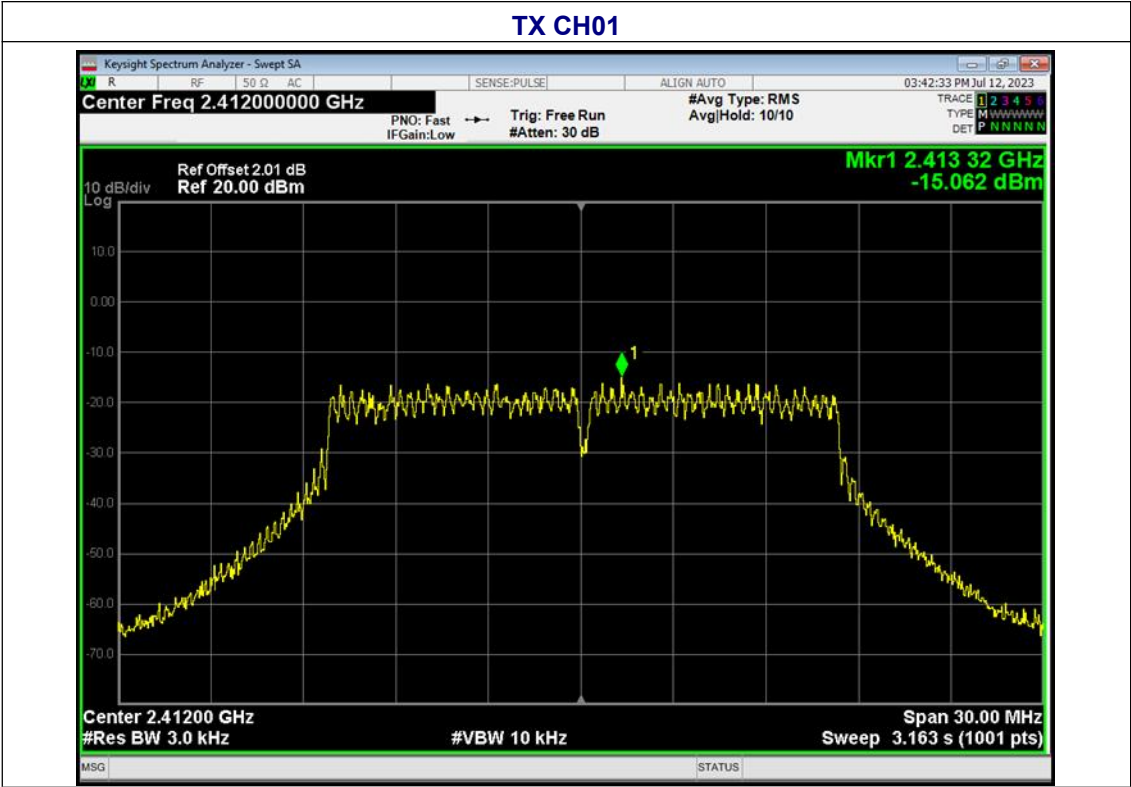


TX CH11

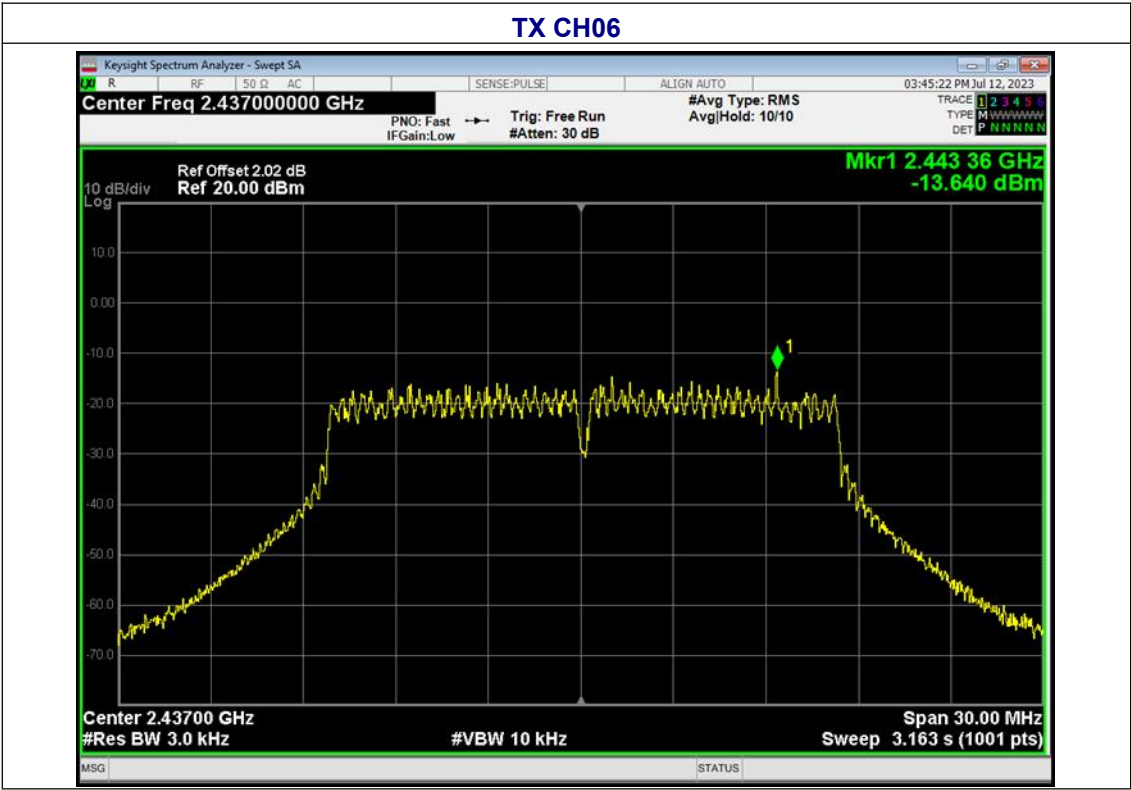


Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX g Mode		

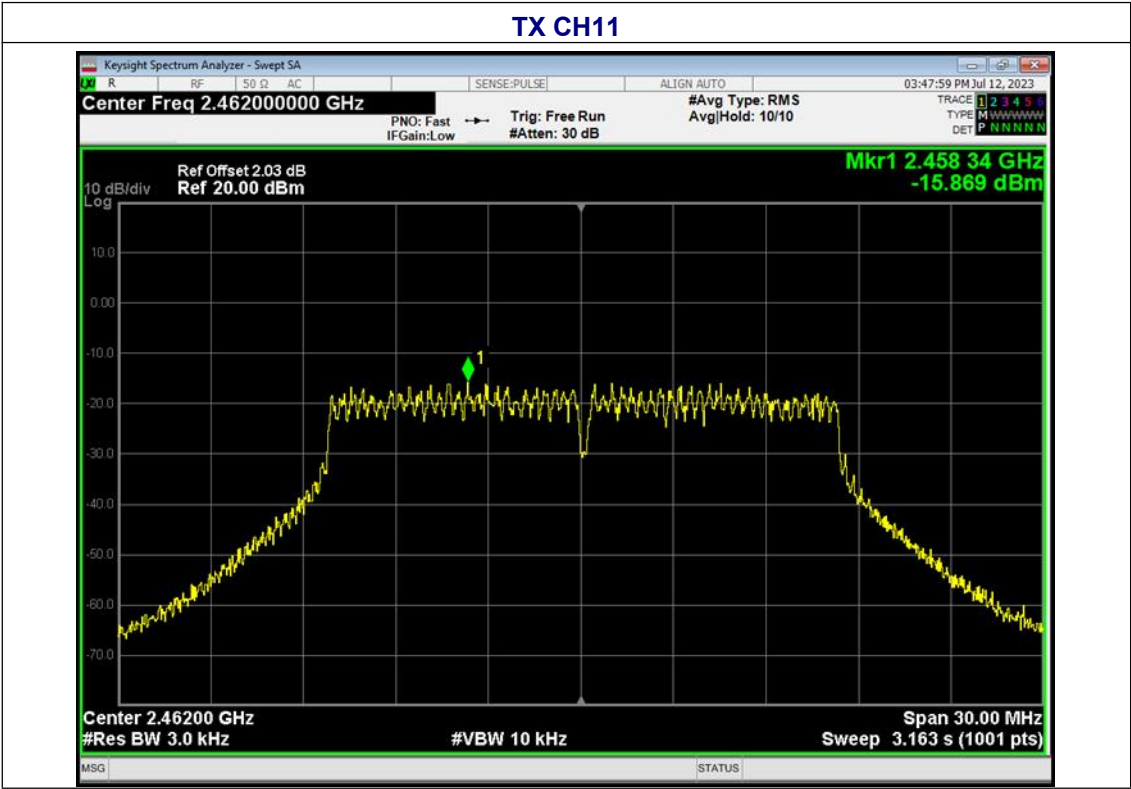
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-15.062	8	PASS
2437 MHz	-13.64	8	PASS
2462 MHz	-15.869	8	PASS



TX CH06

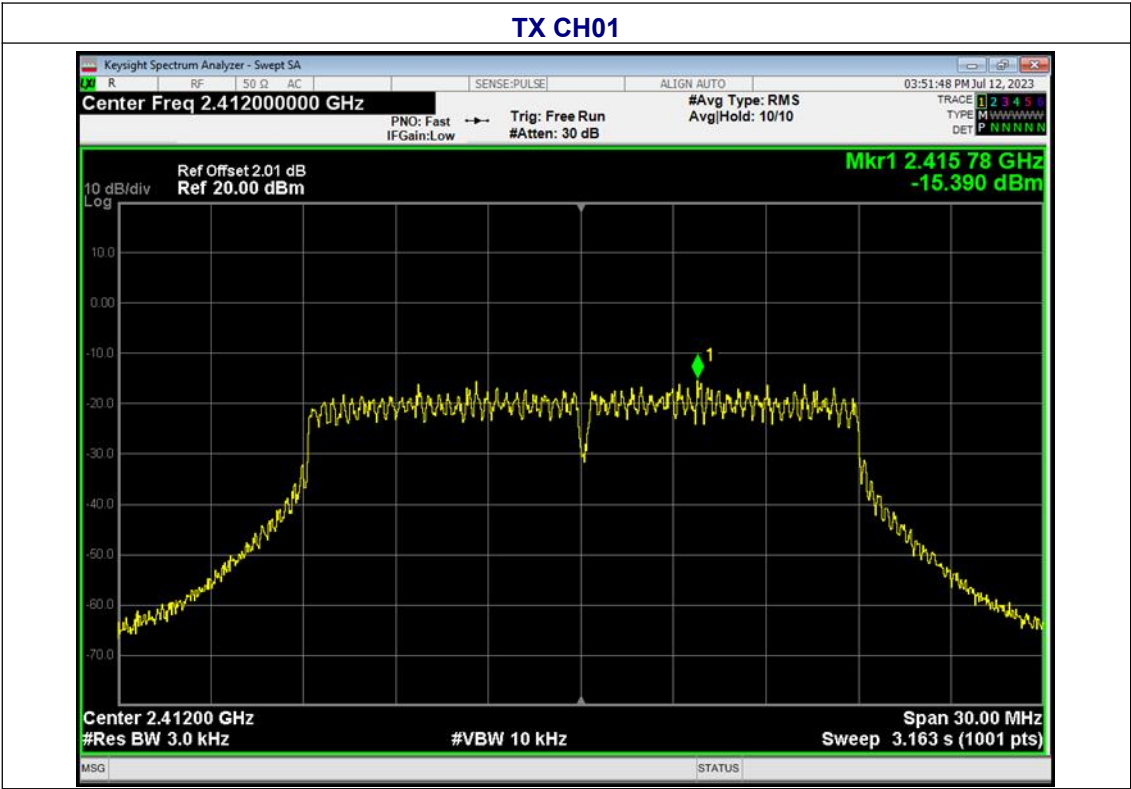


TX CH11

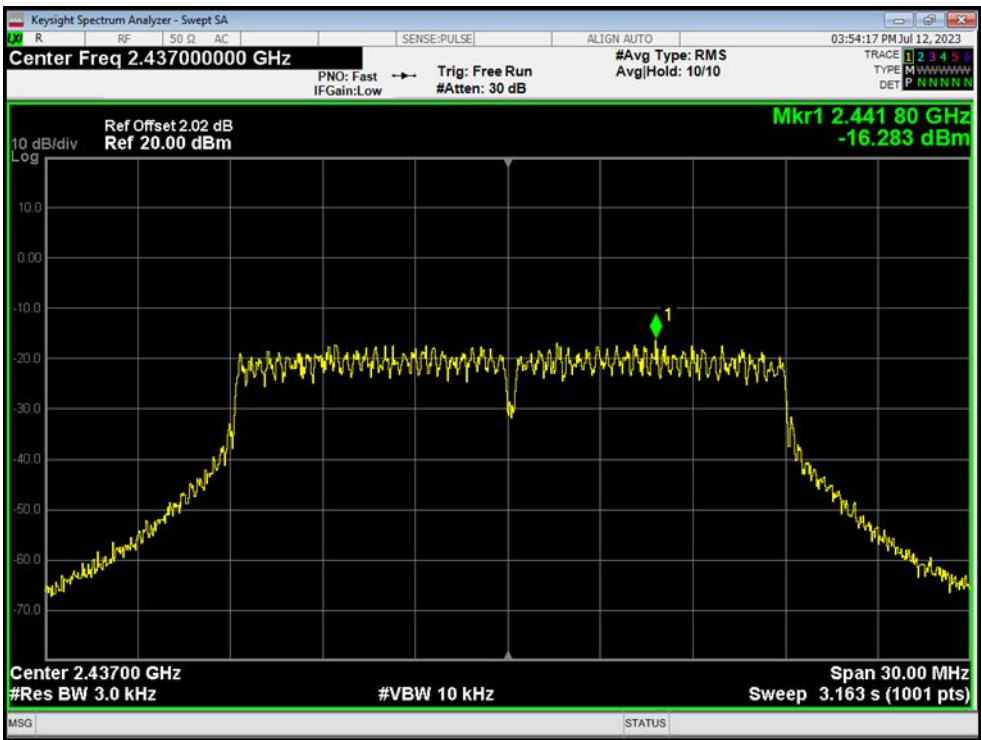


Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(20M)		

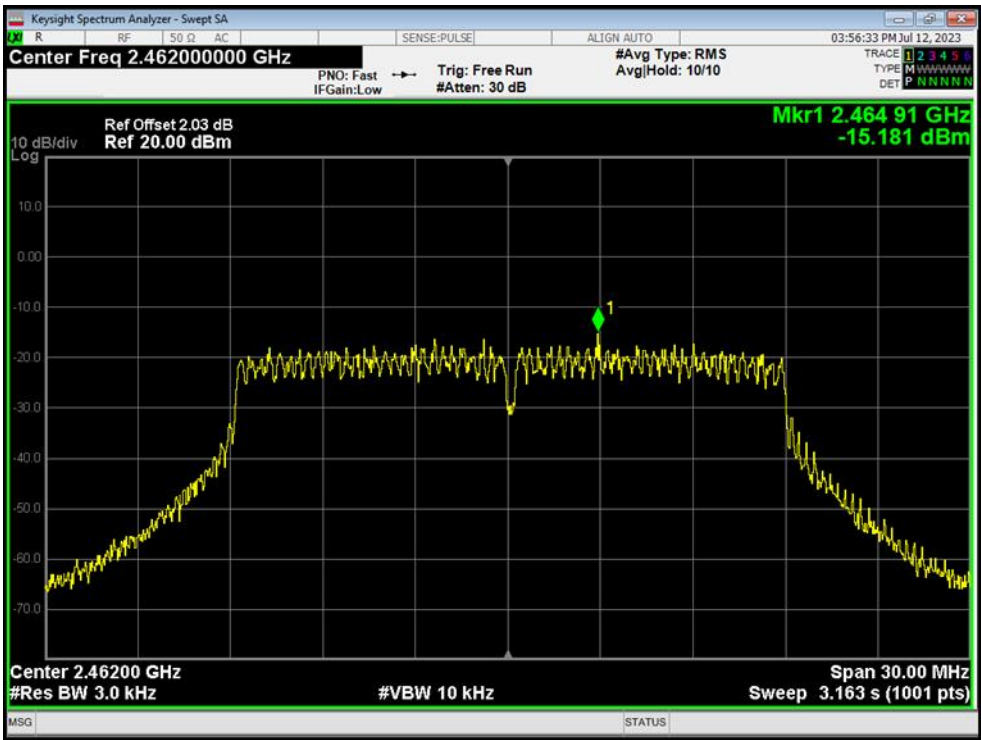
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-15.39	8	PASS
2437 MHz	-16.283	8	PASS
2462 MHz	-15.181	8	PASS



TX CH06

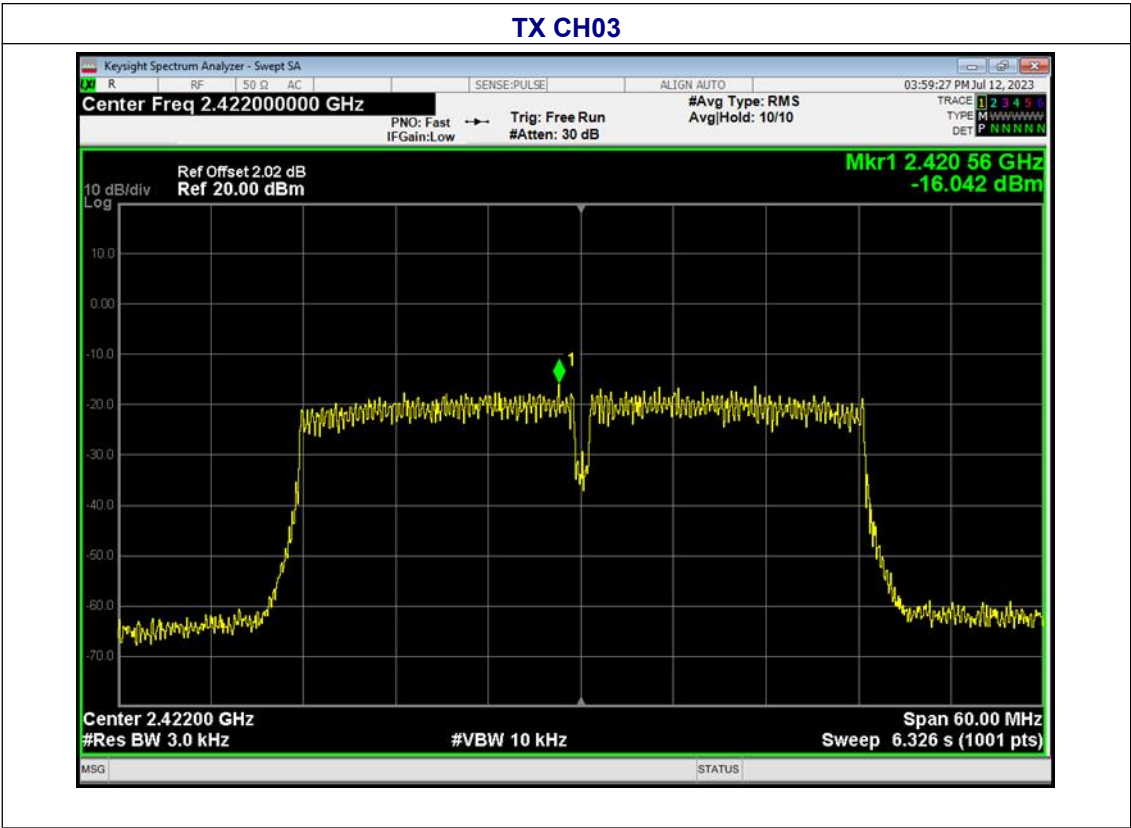


TX CH11

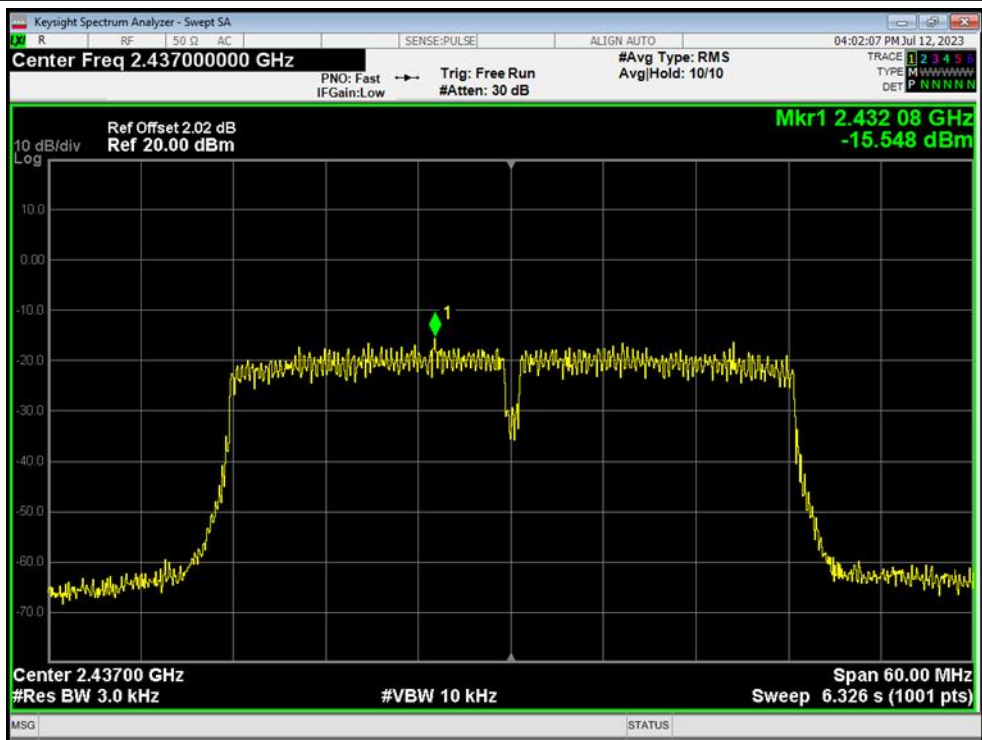


Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(40M)		

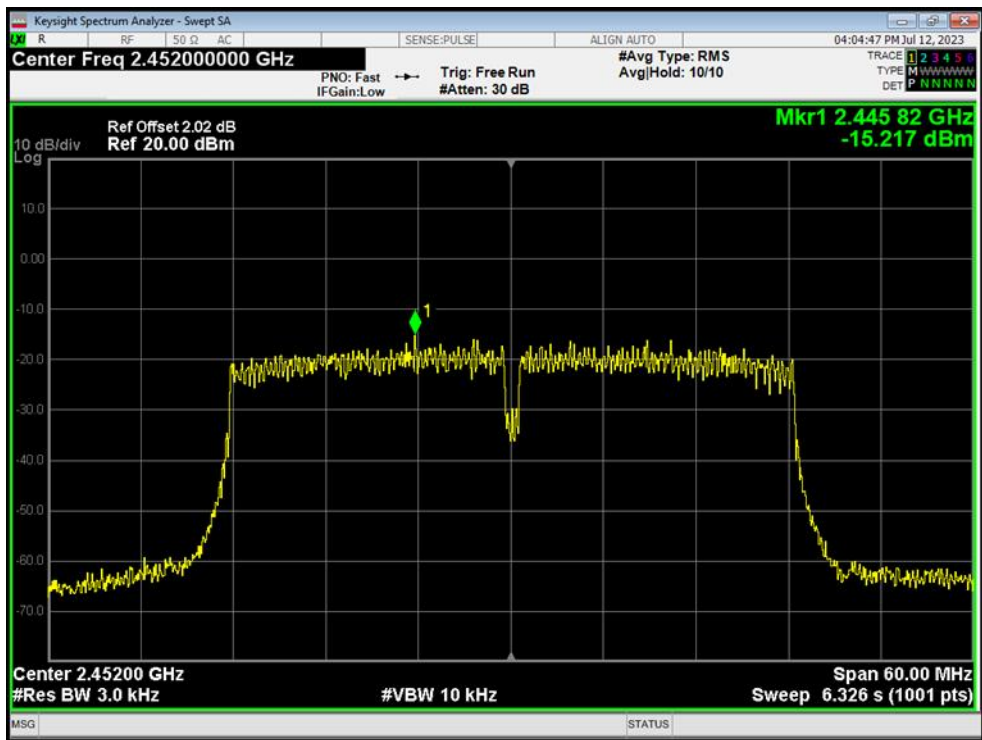
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2422 MHz	-16.042	8	PASS
2437 MHz	-15.548	8	PASS
2452 MHz	-15.217	8	PASS



TX CH06



TX CH09



7. CHANNEL BANDWIDTH& 99% OCCUPY BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2013 and KDB558074 D01DTS Meas Guidancev05r02

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℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX b Mode		

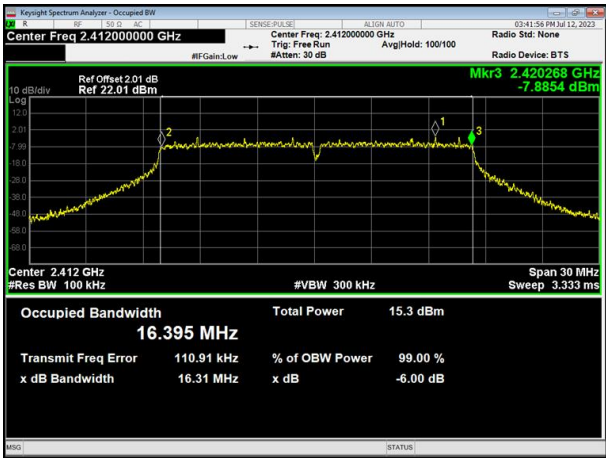
Test CH	-6dB Occupy Bandwidth (MHz)					Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)			
Lowest	9.559	16.314	17.555	35.064		>500	Pass
Middle	9.532	16.313	17.015	35.101			
Highest	9.081	16.319	16.886	34.991			

Test plot as follows:

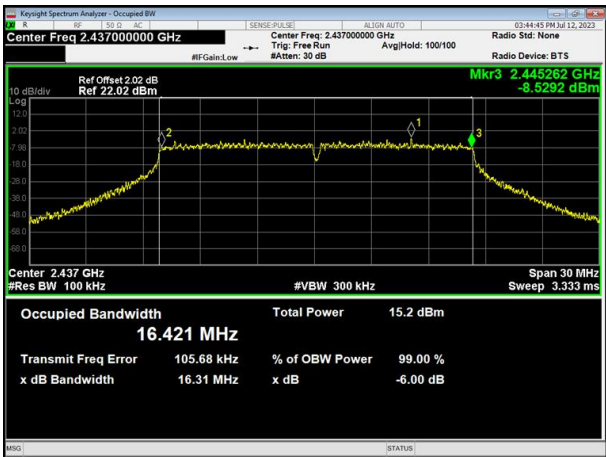
802.11b

802.11g

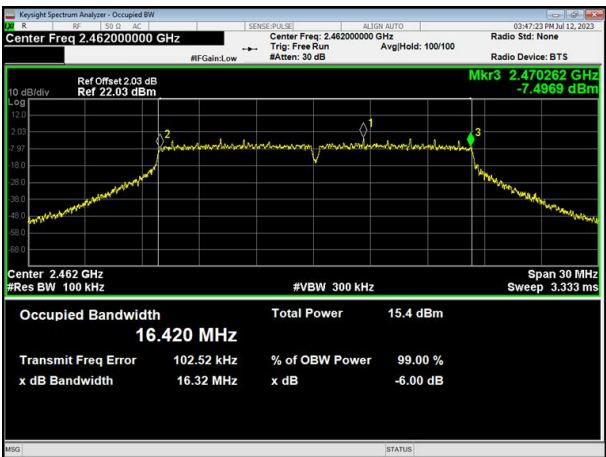
Lowest channel



Middle channel



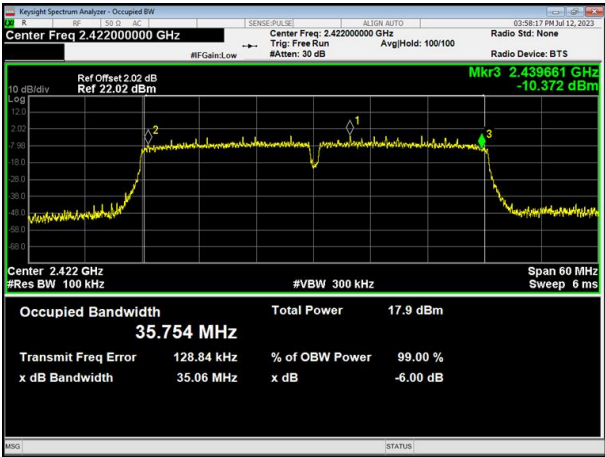
Highest channel



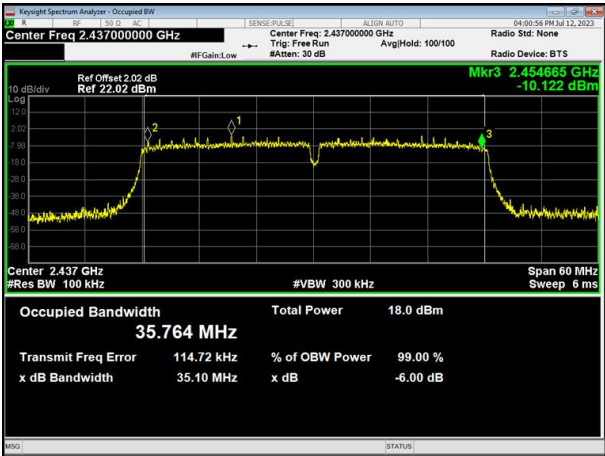
802.11n20

802.11n40

Lowest channel



Middle channel



Highest channel



8. PEAK OUTPUT POWER TEST

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2013 and KDB558074 D01DTS Meas Guidancev05r02

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 :	DC 5V

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	6.422	7.142	8.267	8.631	30.00	Pass
Middle	6.782	6.974	7.489	8.177		
Highest	6.913	6.895	6.561	6.895		

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01DTS Meas Guidancev05r02

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



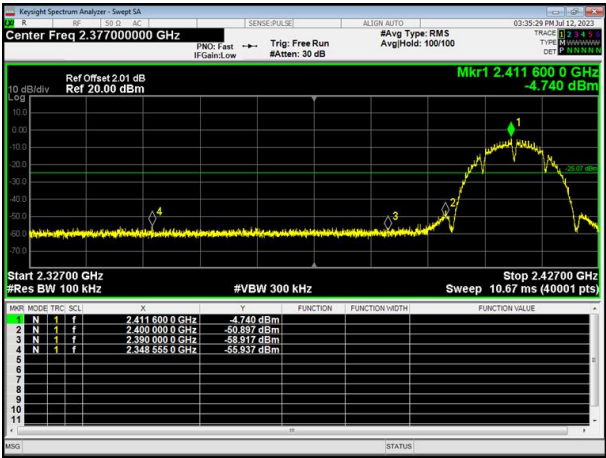
9.5 EUT OPERATION CONDITIONS

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.

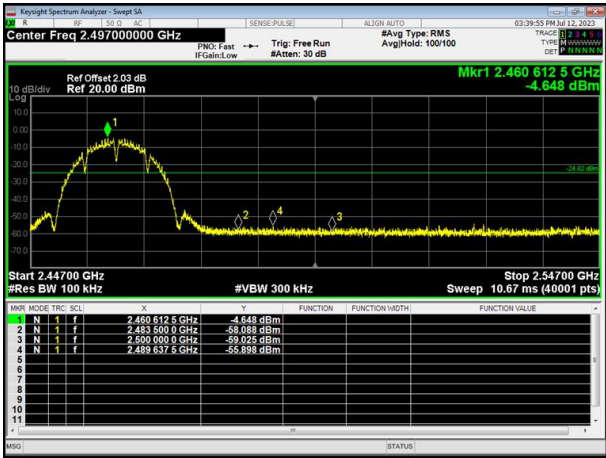
9.6 TEST RESULTS

Test plot as follows:

Test mode:	802.11b
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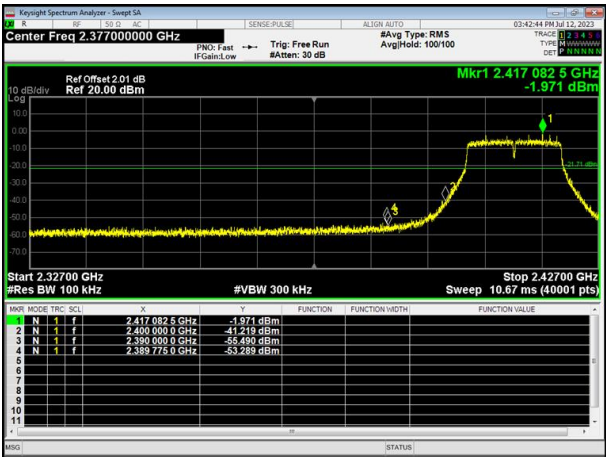


Lowest channel

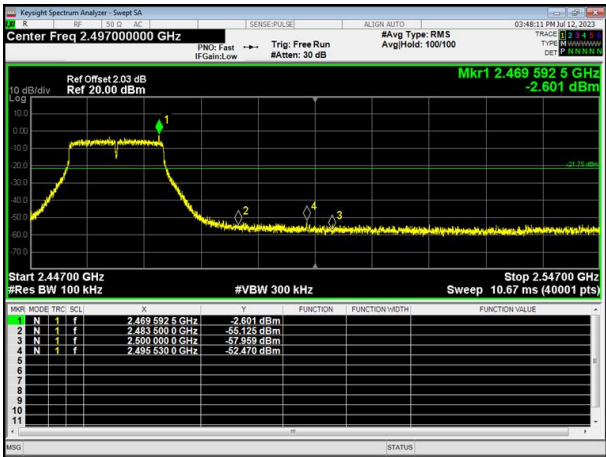


Highest channel

Test mode:	802.11g
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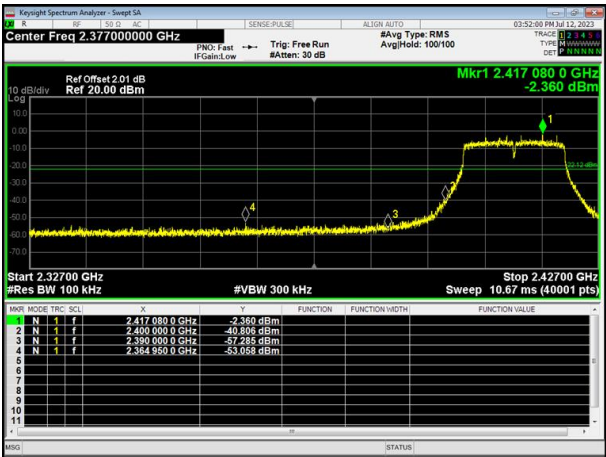


Lowest channel

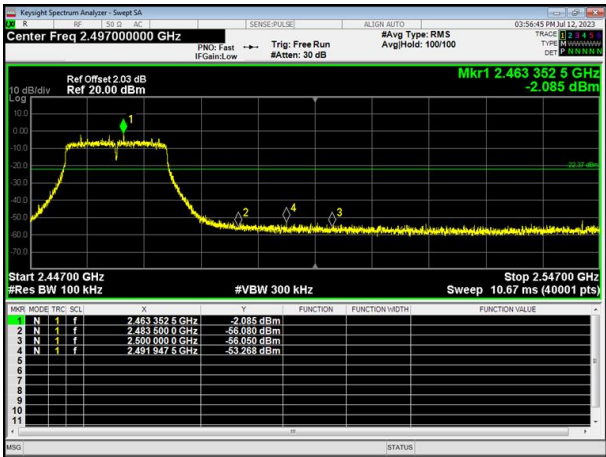


Highest channel

Test mode: 802.11n(HT20)

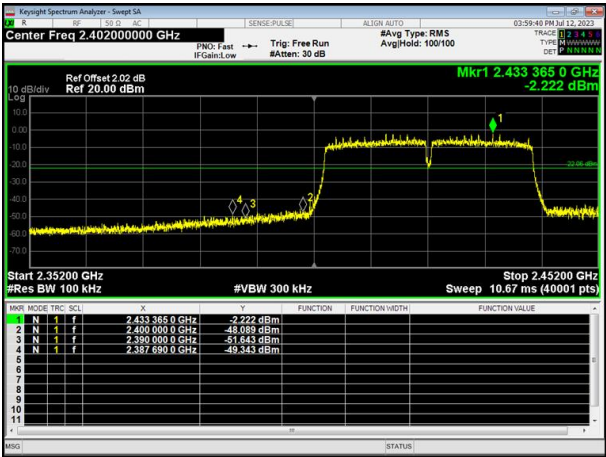


Lowest channel

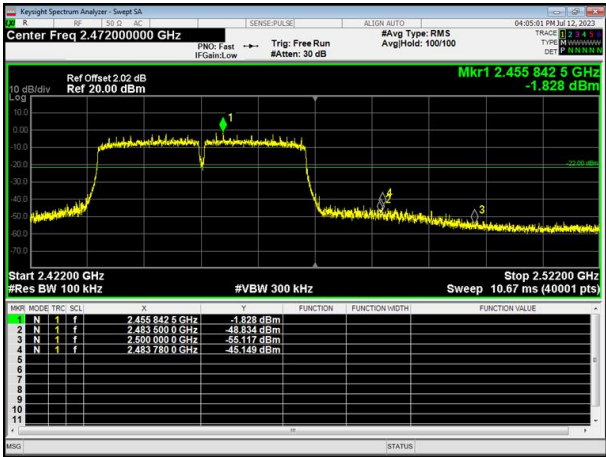


Highest channel

Test mode: 802.11n(HT40)



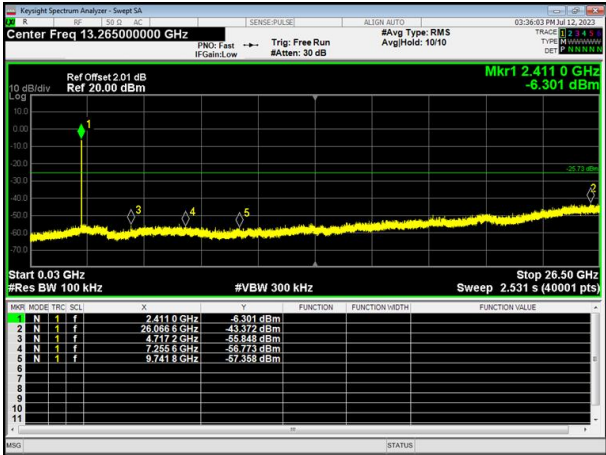
Lowest channel



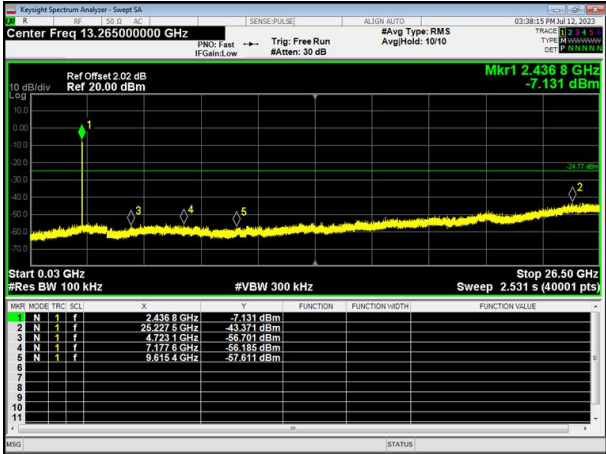
Highest channel

Test plot as follows:

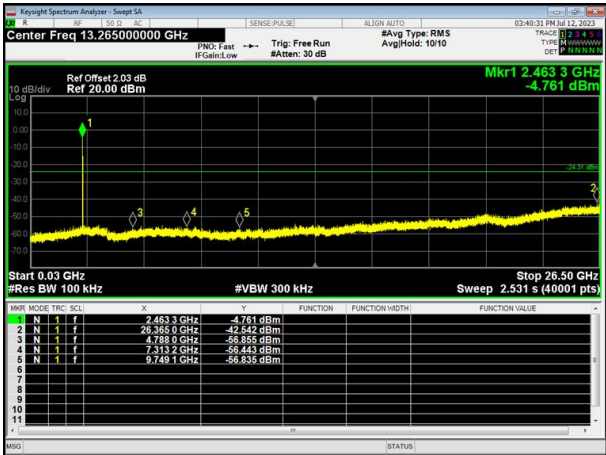
802.11b
Lowest channel



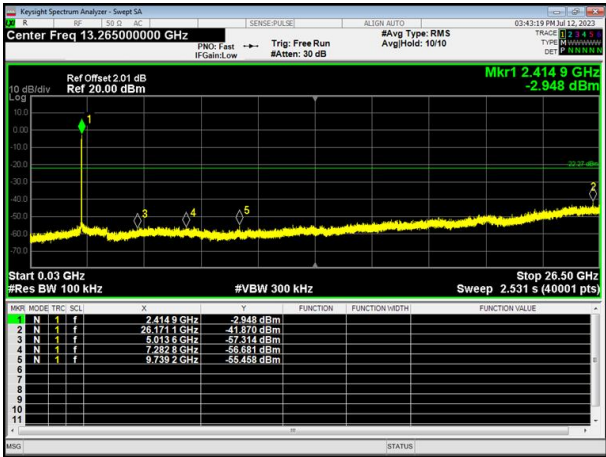
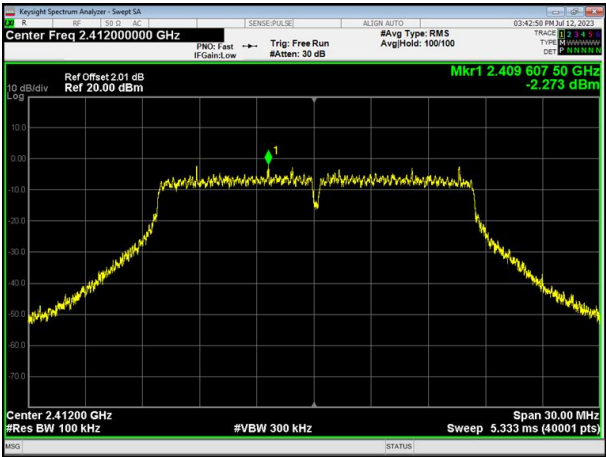
Middle channel



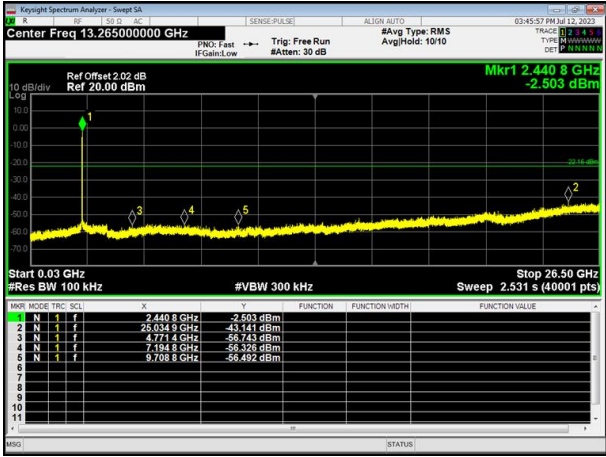
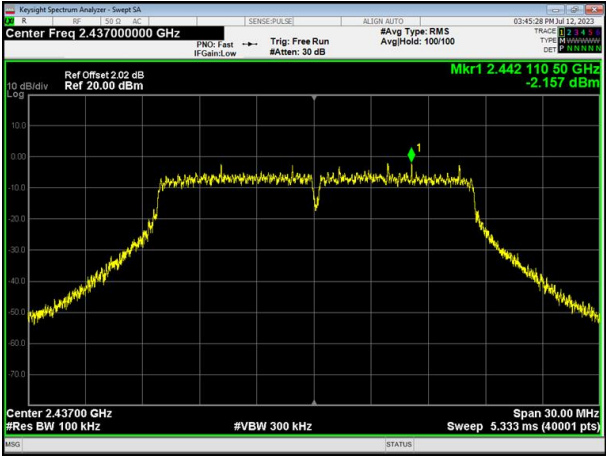
Highest channel



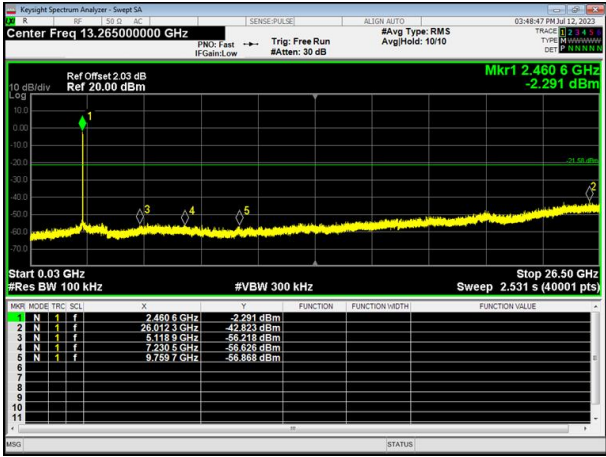
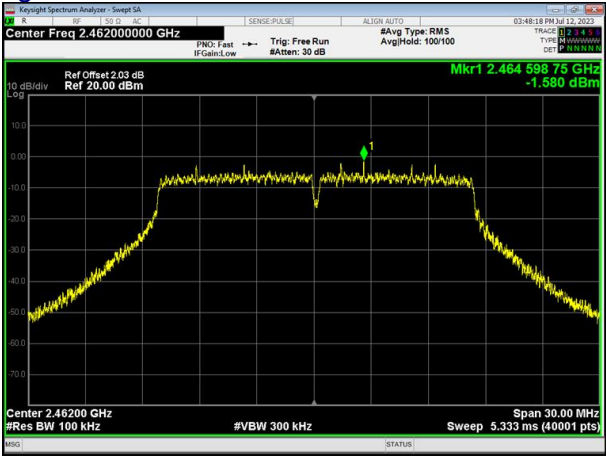
802.11g
Lowest channel



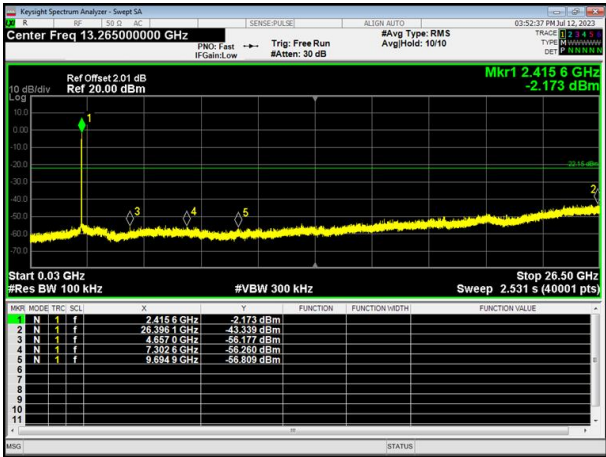
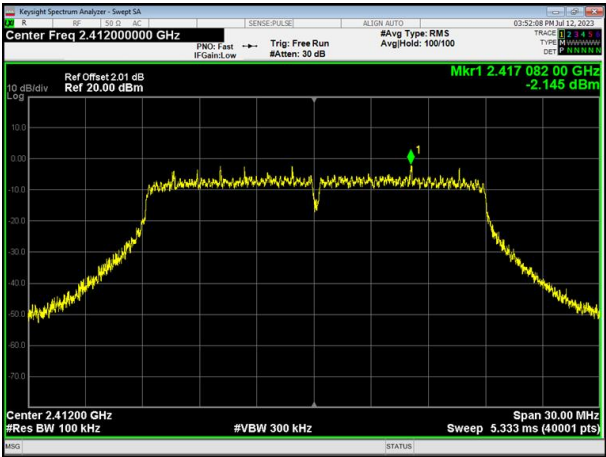
Middle channel



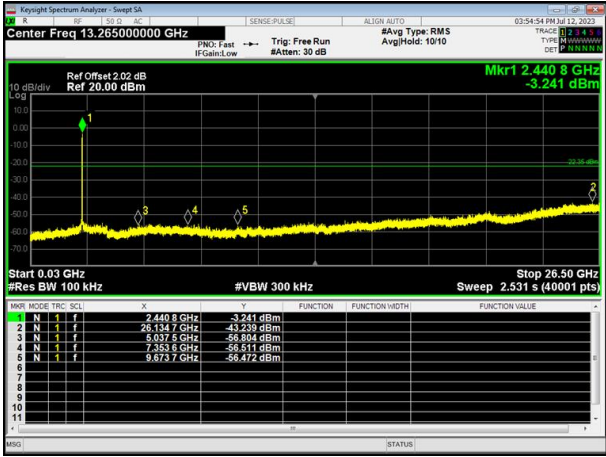
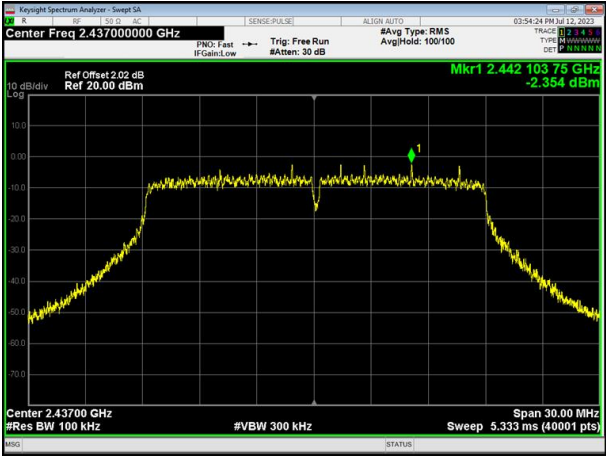
Highest channel



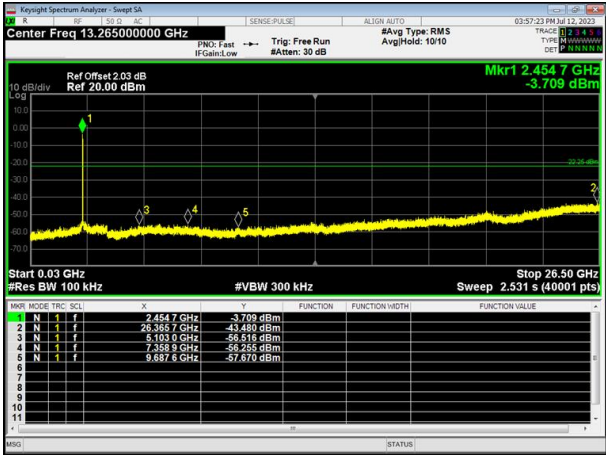
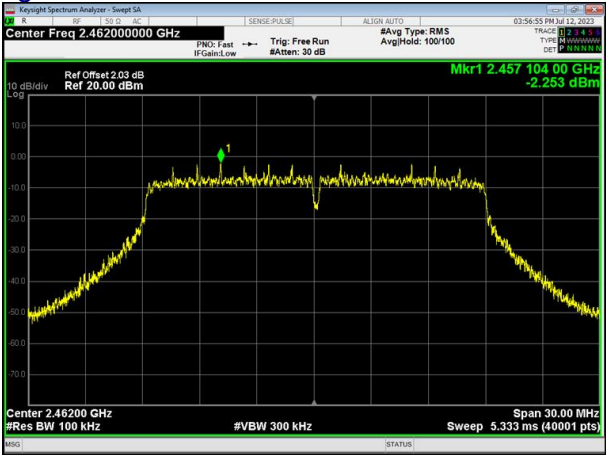
802.11n(HT20)
Lowest channel



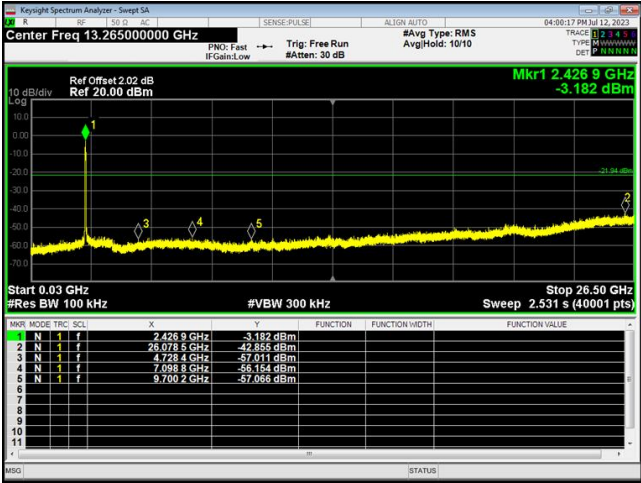
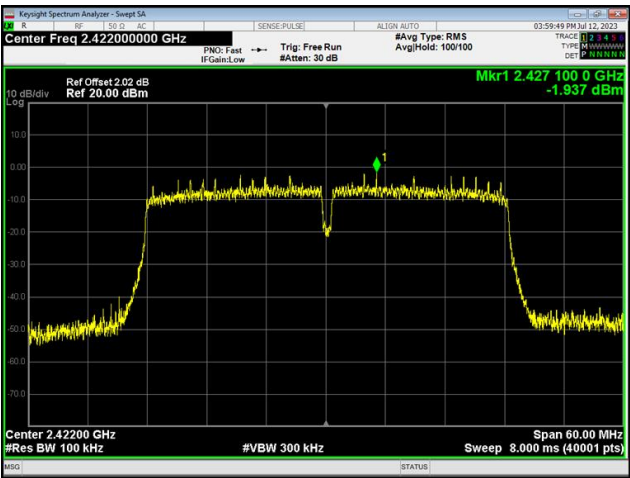
Middle channel



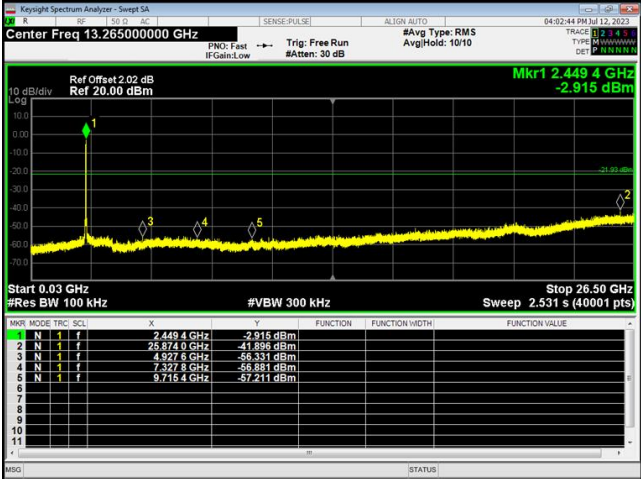
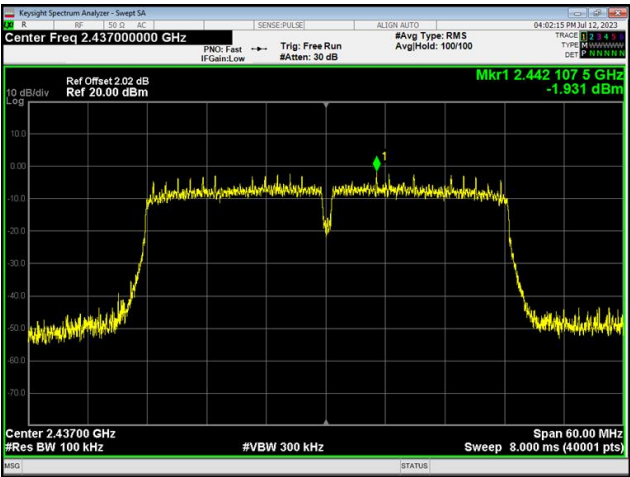
Highest channel



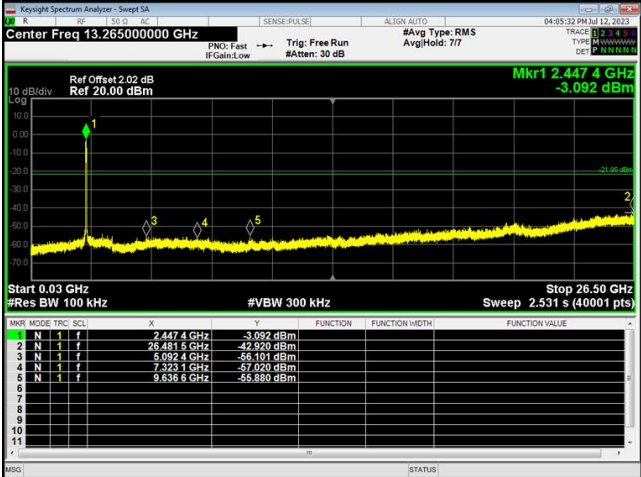
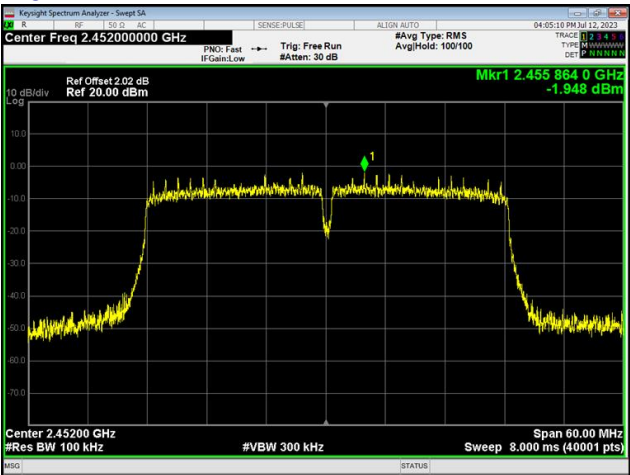
802.11n(HT40)
Lowest channel



Middle channel



Highest channel



10. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi. A transmitter can only be sold or operated with antennas with which it was approved.	
EUT Antenna:	
The antenna is PCB Antenna, the best case gain of the antenna is 3.56 dBi, reference to the appendix II for details	

11. TEST SETUP PHOTO

Reference to the appendix I for details.

12. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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