



Test Report

FCC ID: 2A8YE-MINI

Applicant: SZ ReachingTech Limited

Address: 401-08, Building A, No.5 Yanhe Road, Xiangjiaotang 3Rd Industrial Zone, Bantian Street, Longgang District, Shenzhen, China

Manufacturer: SZ ReachingTech Limited

Address: 401-08, Building A, No.5 Yanhe Road, Xiangjiaotang 3Rd Industrial Zone, Bantian Street, Longgang District, Shenzhen, China

Product: Computer Stick

Trade Mark: N/A

Model No.: DreamQuest Mini
DreamQuest Mini Plus

Date of Receipt: Jul. 04, 2025

Test Date: Jul. 04, 2025 - Sep. 17, 2025

Date of Report: Sep. 17, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

Applicable Standards: FCC PART 15 C 15.247
ANSI C63.10-2020
RSS-247 issue 3 August 2023
RSS-Gen Issue 5, Amendment 2, February, 2021

Test Result: Pass

Report Number: DLE-250702008R

Prepared (Test Engineer): Ken Tan

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



Table of Contents	Page
1 . SUMMARY OF TEST RESULTS	4
1.1 MEASUREMENT UNCERTAINTY	4
2 . GENERAL INFORMATION	5
2.1 GENERAL DESCRIPTION OF EUT	5
2.2 DESCRIPTION OF TEST MODES	6
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	6
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	7
2.5 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING	7
2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS	8
3 . EMC EMISSION TEST	9
3.1 CONDUCTED EMISSION MEASUREMENT	9
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	9
3.1.2 TEST PROCEDURE	9
3.1.3 DEVIATION FROM TEST STANDARD	9
3.1.4 TEST SETUP	10
3.1.5 EUT OPERATING CONDITIONS	10
3.1.6 TEST RESULTS	10
3.2 RADIATED EMISSION MEASUREMENT	13
3.2.1 RADIATED EMISSION LIMITS	13
3.2.2 TEST PROCEDURE	14
3.2.3 DEVIATION FROM TEST STANDARD	14
3.2.4 TEST SETUP	14
3.2.5 EUT OPERATING CONDITIONS	15
3.2.6 TEST RESULTS (BETWEEN 9KHZ - 30 MHZ)	16
3.2.7 TEST RESULTS (BETWEEN 30MHZ - 1GHZ)	17
3.2.8 TEST RESULTS (1GHZ~25GHZ)	19
3.3 RADIATED BAND EMISSION MEASUREMENT	23
3.3.1 TEST REQUIREMENT:	23
3.3.2 TEST PROCEDURE	23
3.3.3 DEVIATION FROM TEST STANDARD	23
3.3.4 TEST SETUP	24
3.3.5 EUT OPERATING CONDITIONS	24
3.4 CONDUCTED BAND EDGE EMISSION&CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	29
3.4.1 APPLICABLE STANDARD	29
3.4.2 TEST PROCEDURE	29
3.4.3 DEVIATION FROM STANDARD	29



Table of Contents	Page
3.4.4 TEST SETUP	29
3.4.5 EUT OPERATION CONDITIONS	29
3.4.6 TEST RESULTS	29
4 . MAXIMUM PEAK CONDUCTED OUTPUT POWER MEASUREMENT	34
4.1 APPLIED PROCEDURES / LIMIT	34
4.1.1 TEST PROCEDURE	34
4.1.2 DEVIATION FROM STANDARD	34
4.1.3 TEST SETUP	34
4.1.4 EUT OPERATION CONDITIONS	34
4.1.5 TEST RESULTS	35
5 . POWER SPECTRAL DENSITY TEST	36
5.1 APPLIED PROCEDURES / LIMIT	36
5.1.1 TEST PROCEDURE	36
5.1.2 DEVIATION FROM STANDARD	36
5.1.3 TEST SETUP	36
5.1.4 EUT OPERATION CONDITIONS	36
5.1.5 TEST RESULTS	37
6 . 6DB BANDWIDTH TEST	40
6.1 APPLIED PROCEDURES / LIMIT	40
6.1.1 TEST PROCEDURE	40
6.1.2 DEVIATION FROM STANDARD	41
6.1.3 TEST SETUP	41
6.1.4 EUT OPERATION CONDITIONS	41
6.1.5 TEST RESULTS	42
7 . DUTY CYCLE TEST SIGNAL	47
7.1 APPLIED PROCEDURES / LIMIT	47
7.1.1 TEST PROCEDURE	47
7.1.2 DEVIATION FROM STANDARD	47
7.1.3 TEST SETUP	47
7.1.4 EUT OPERATION CONDITIONS	47
7.1.5 TEST RESULTS	48
8 . ANTENNA REQUIREMENT	51
8.1 STANDARD REQUIREMENT	51
8.2 EUT ANTENNA	51
9 . TEST SEUUP PHOTO	51
10 . EUT PHOTO	51



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C RSS-247 issue 3 August 2023			
Standard Section	Test Item	Judgment	Remark
15.207 RSS-Gen Section 8.8	Conducted Emission	PASS	
15.205, 15.209, 15.247(d) RSS-247 Section 5.5&RSS-Gen Section 8.9&RSS-Gen Section 8.10	Radiated Spurious Emission	PASS	
15.209, 15.205 RSS-247 Section 5.5	Band Edge Emission	PASS	
15.247(d) RSS-247 Section 5.5	Conducted Spurious Emissions	PASS	
15.247(b) RSS-247 Section 5.4(d)	Maximum Peak Conducted Output Power Measurement	PASS	
15.247(a)(2) RSS-GEN 6.7	6dB Bandwidth& 99% OCB	PASS	
15.247(e) RSS-247 Section 5.2(b)	Power Spectral Density	PASS	
15.203 RSS-Gen Section 6.8	Antenna Requirement	PASS	

NOTE:

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

Test lab: Shenzhen DL Testing Technology Co., Ltd.

101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1

Address: Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118

1.1 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	Conducted Emission Test	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	6dB Bandwidth	$\pm 0.2\%$
9	Power Spectral Density	$\pm 2.45\text{dBm}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Computer Stick
Trademark	N/A
Model No.:	DreamQuest Mini DreamQuest Mini Plus
Model Difference	All models are same as the samples except model name, they have the same structure and circuit.
Operation Frequency:	2412~2462 MHz for 802.11b/g/nHT20 2422~2452 MHz for 802.11nHT40
Channel numbers:	11 Channels for 802.11b/g/n(HT20) 7 channels for 802.11nHT40
S/N:	20250704001
Sample number:	20250704-01
HVIN:	DreamQuest Mini, DreamQuest Mini Plus
FVIN:	V1.0
Channel separation:	5MHz
Modulation technology:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n(20/40): OFDM(QPSK, BPSK, 16-QAM, 64-QAM)
Rate of Transmitter	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps
Antenna Type:	Internal Antenna
Antenna gain:	-0.1dBi
Power Supply:	DC 12V from adapter
Adapter:	MODEL:M120300-A078 INPUT:100-240V~ 50/60Hz 0.8A OUTPUT:12.0V===3.0A 36.0W

Note:

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

2.The EUT's all information provided by client.

2. Channel List(802.11b/g/nHT20)

Channel	Frequency (GHz)	Channel	Frequency (GHz)
01	2.412	07	2.442
02	2.417	08	2.447
03	2.422	09	2.452
04	2.427	10	2.457
05	2.432	11	2.462
06	2.437		

Channel List(802.11nHT40)

Channel	Frequency (GHz)	Channel	Frequency (GHz)
03	2.422	07	2.442
04	2.427	08	2.447
05	2.432	09	2.452
06	2.437		



2.2 DESCRIPTION OF TEST MODES

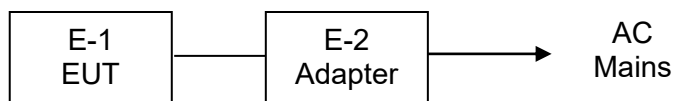
To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration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

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11nHT20 CH1/ CH6/ CH11
Mode 4	802.11nHT40 CH3/ CH6/ CH09
Mode 5	Link Mode
For Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode
For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11nHT20 CH1/ CH6/ CH11
Mode 4	802.11nHT40 CH3/ CH6/ CH09
Mode 5	Link Mode

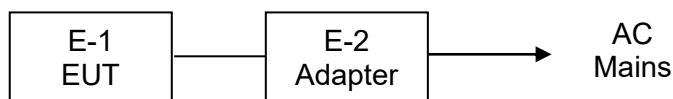
Note: 1. The measurements are performed at the highest, middle, lowest available channels.
2. The test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Power Line Conducted Emission Test





2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Model/Type No.	Series No.	Manufacturer
E-1	Computer Stick	DreamQuest Mini	N/A	SZ ReachingTech Limited
E-2	Adapter	M120300-A078	N/A	Zhongshan MLS Electrical Appliance Co.,Ltd.

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the end product.

Max output power Setting				
Test software Version	Test program: RF TEST Setup			
Mode	802.11b	802.11g	802.11n HT20	802.11n HT40
Data Rate	1Mbps	6Mbps	MSC0	MSC0
Power Setting of Softwave	60	60	60	66



2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 6db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 01, 2024	Oct. 31, 2025
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 01, 2024	Oct. 31, 2025
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 01, 2024	Oct. 31, 2025
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 01, 2024	Oct. 31, 2025
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 01, 2024	Oct. 31, 2025
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 01, 2024	Oct. 31, 2025
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 01, 2024	Oct. 31, 2025
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 01, 2024	Oct. 31, 2025
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 01, 2024	Oct. 31, 2025
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 01, 2024	Oct. 31, 2025
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 01, 2024	Oct. 31, 2025
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 01, 2024	Oct. 31, 2025
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 01, 2024	Oct. 31, 2025
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 01, 2024	Oct. 31, 2025
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 01, 2024	Oct. 31, 2025
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 01, 2024	Oct. 31, 2025
17	Power Meter	Ceyear	2438PA/PB	/	Nov. 01, 2024	Oct. 31, 2025
18	Peak/continuous wave power probe	Ceyear	81702F	/	Nov. 01, 2024	Oct. 31, 2025

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	EMI Receiver	R&S	ESR	101421	Nov. 01, 2024	Oct. 31, 2025
3	LISN	R&S	ENV216	102417	Nov. 01, 2024	Oct. 31, 2025
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 01, 2024	Oct. 31, 2025

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

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

Note:

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

The following table is the setting of the receiver

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

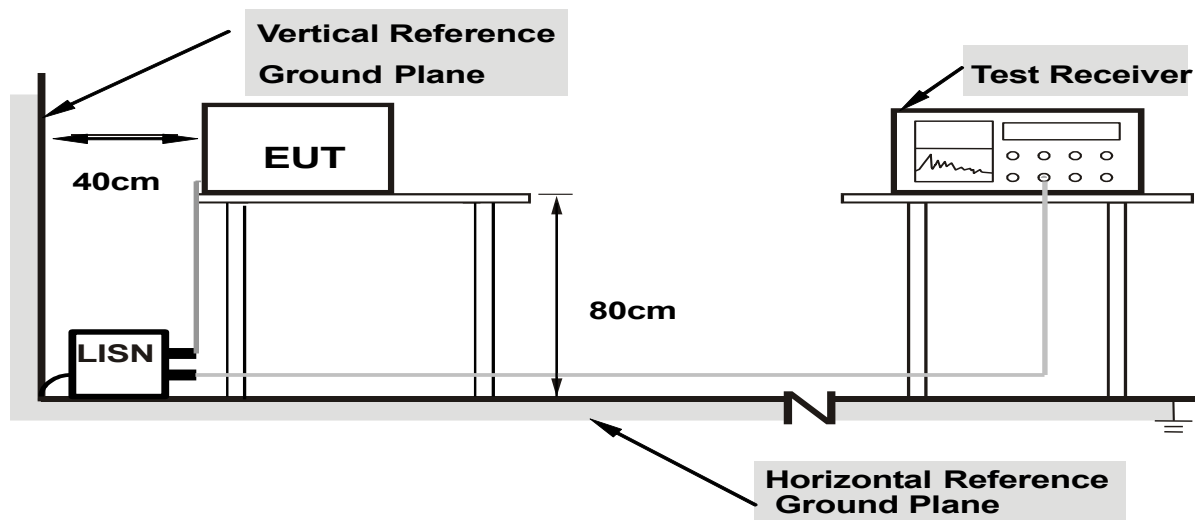
3.1.2 TEST PROCEDURE

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

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



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

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

3.1.5 EUT OPERATING CONDITIONS

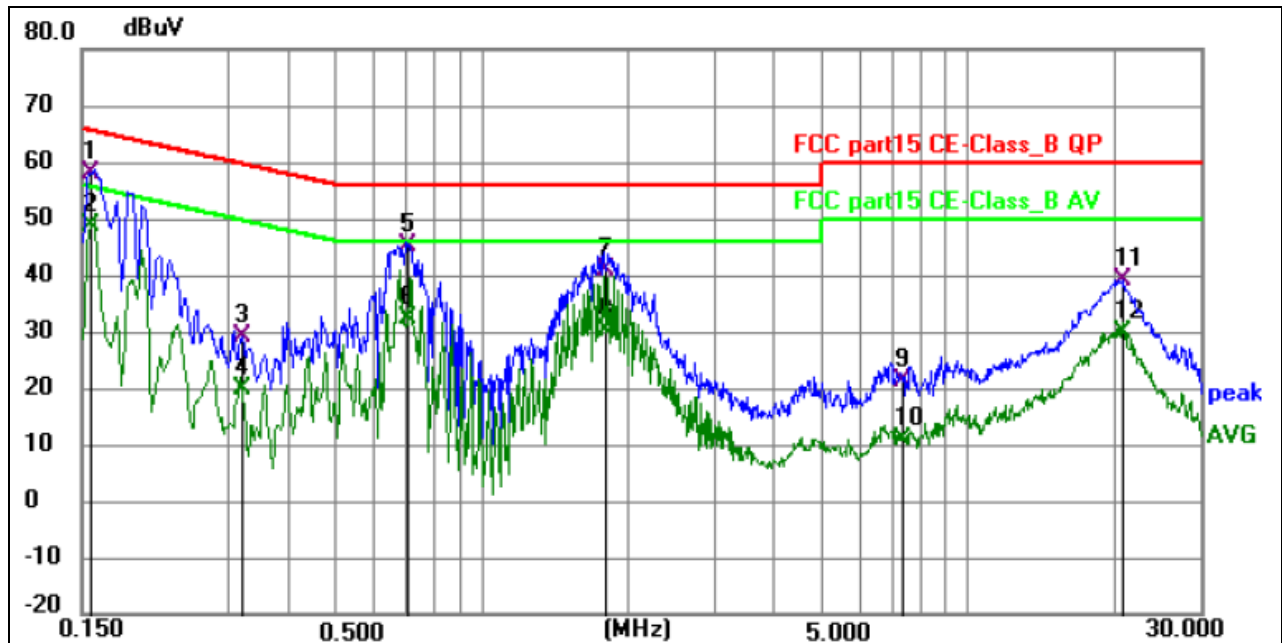
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

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

3.1.6 TEST RESULTS



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 4



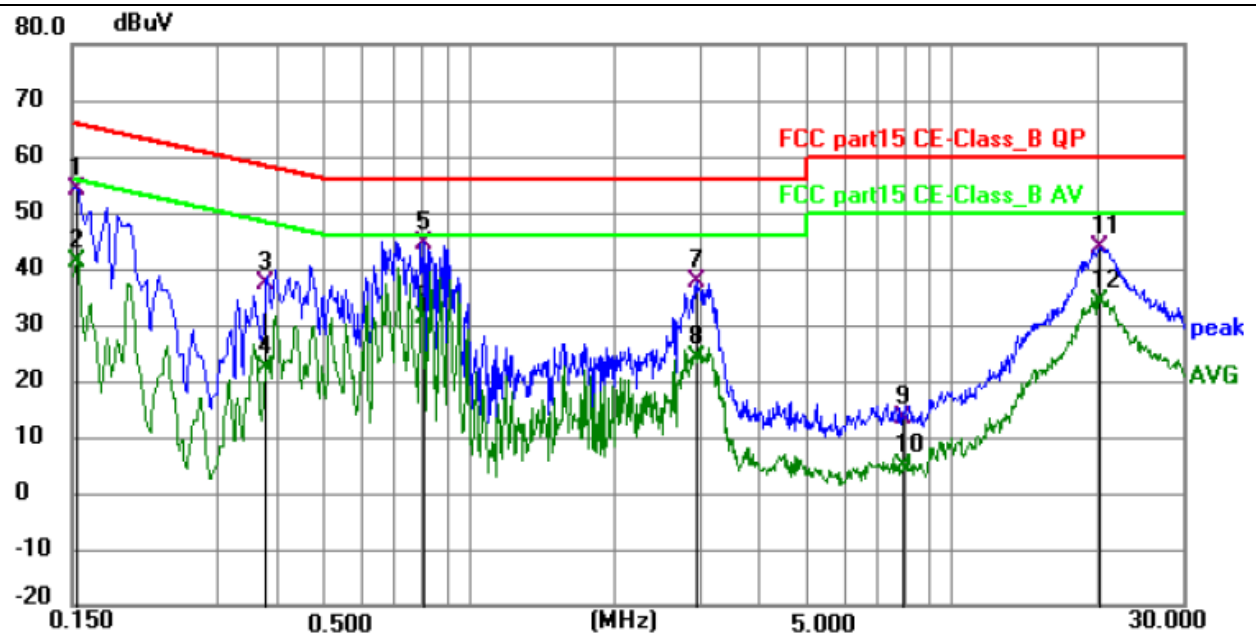
Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1580	48.03	10.05	58.08	65.57	-7.49	QP	P	
2 *	0.1580	38.55	10.05	48.60	55.57	-6.97	AVG	P	
3	0.3200	19.05	10.22	29.27	59.71	-30.44	QP	P	
4	0.3200	9.49	10.22	19.71	49.71	-30.00	AVG	P	
5	0.7080	35.13	10.09	45.22	56.00	-10.78	QP	P	
6	0.7080	22.09	10.09	32.18	46.00	-13.82	AVG	P	
7	1.8015	30.86	10.06	40.92	56.00	-15.08	QP	P	
8	1.8015	20.03	10.06	30.09	46.00	-15.91	AVG	P	
9	7.3590	10.46	10.84	21.30	60.00	-38.70	QP	P	
10	7.3590	0.16	10.84	11.00	50.00	-39.00	AVG	P	
11	20.7912	26.97	12.17	39.14	60.00	-20.86	QP	P	
12	20.7912	17.55	12.17	29.72	50.00	-20.28	AVG	P	



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 4



Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1539	44.13	10.13	54.26	65.79	-11.53	QP	P	
2	0.1539	31.00	10.13	41.13	55.79	-14.66	AVG	P	
3	0.3795	26.92	10.23	37.15	58.29	-21.14	QP	P	
4	0.3795	11.95	10.23	22.18	48.29	-26.11	AVG	P	
5 *	0.8024	34.46	10.05	44.51	56.00	-11.49	QP	P	
6	0.8024	21.27	10.05	31.32	46.00	-14.68	AVG	P	
7	2.9534	27.66	10.08	37.74	56.00	-18.26	QP	P	
8	2.9534	13.90	10.08	23.98	46.00	-22.02	AVG	P	
9	7.9755	2.65	10.88	13.53	60.00	-46.47	QP	P	
10	7.9755	-6.17	10.88	4.71	50.00	-45.29	AVG	P	
11	20.2063	31.88	11.95	43.83	60.00	-16.17	QP	P	
12	20.2063	22.11	11.95	34.06	50.00	-15.94	AVG	P	



3.2 RADIATED EMISSION MEASUREMENT

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

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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&RSS-247 issue 3.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	25GHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

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



3.2.2 TEST PROCEDURE

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 form table 0.8 metre to 1.5 metre.
- Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

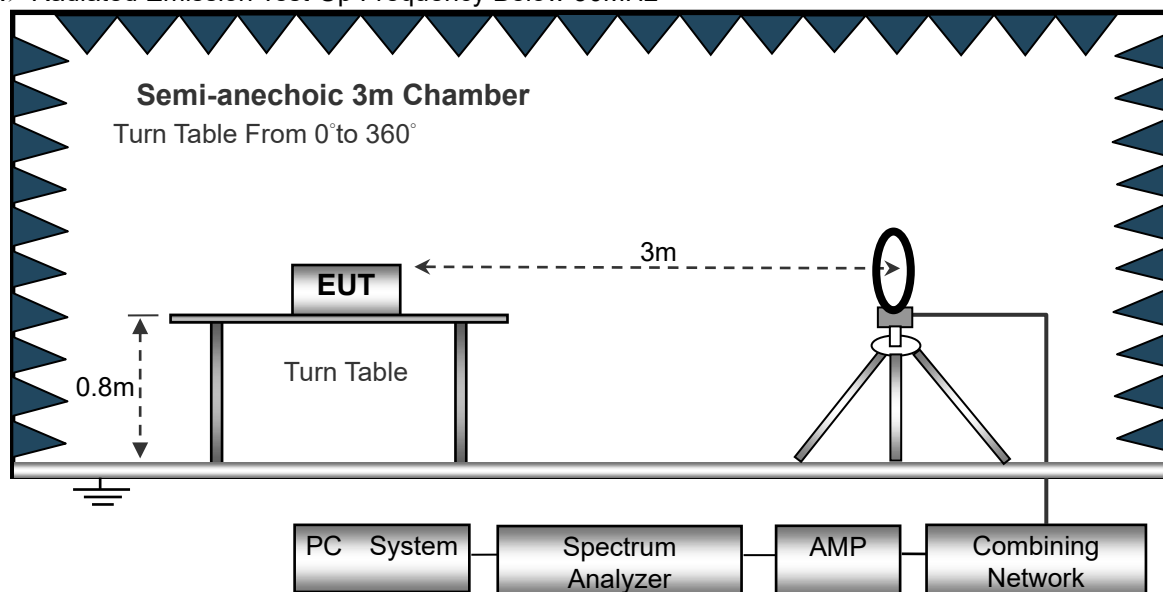
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

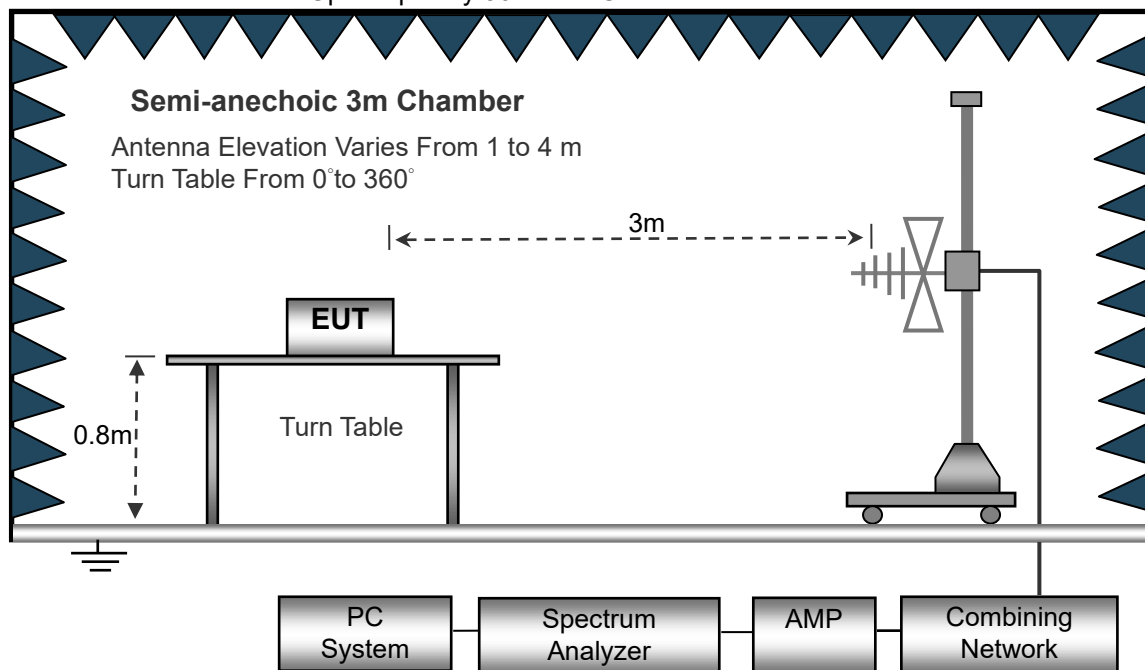
No deviation

3.2.4 TEST SETUP

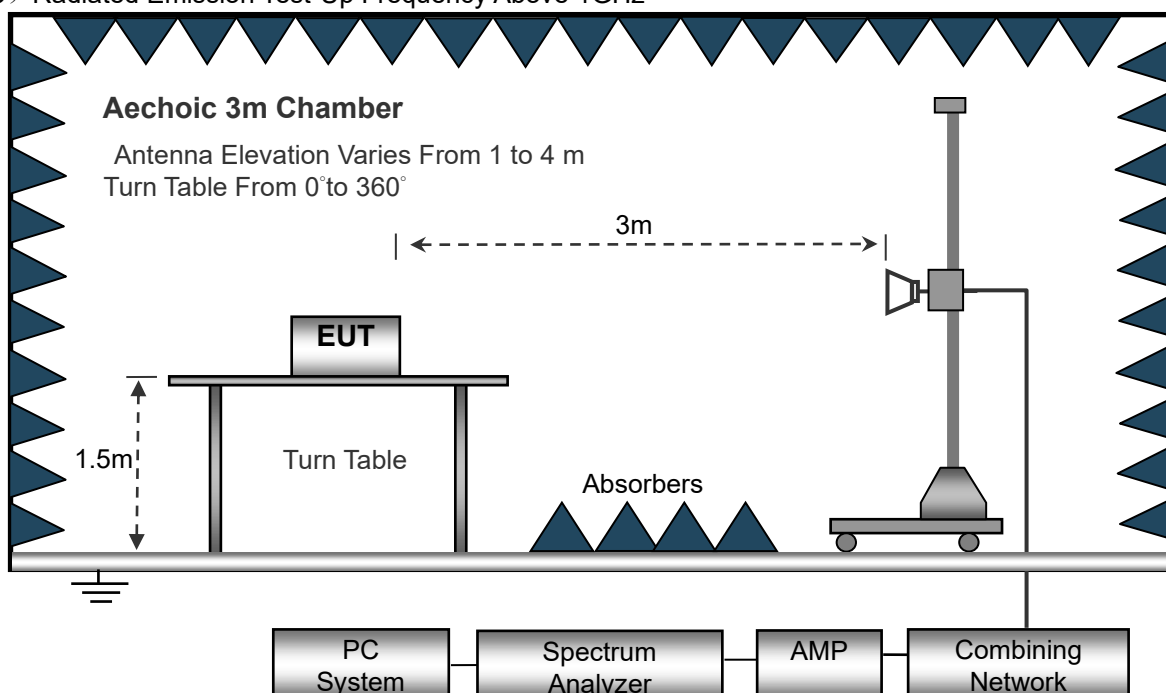
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS

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

**3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)**

Temperature:	20°C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 5	Polarization :	--

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

NOTE:

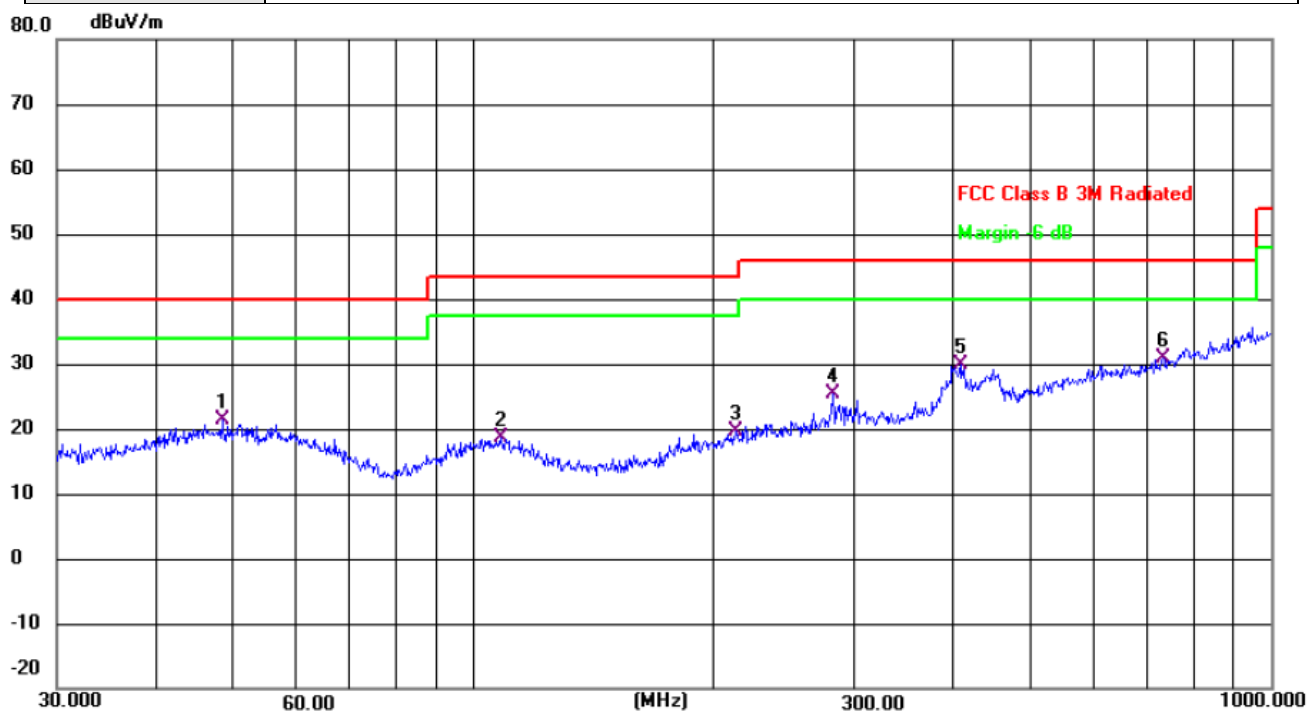
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

**3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)**

Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 5		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector
		MHz	dBuV	dB	dBuV/m	dB/m	dB	
1		48.3318	28.40	-7.04	21.36	40.00	-18.64	QP
2		108.2667	27.50	-8.92	18.58	43.50	-24.92	QP
3		213.0151	27.94	-8.33	19.61	43.50	-23.89	QP
4		281.9946	31.61	-6.35	25.26	46.00	-20.74	QP
5		407.5145	33.72	-3.77	29.95	46.00	-16.05	QP
6	*	731.9203	28.10	2.72	30.82	46.00	-15.18	QP

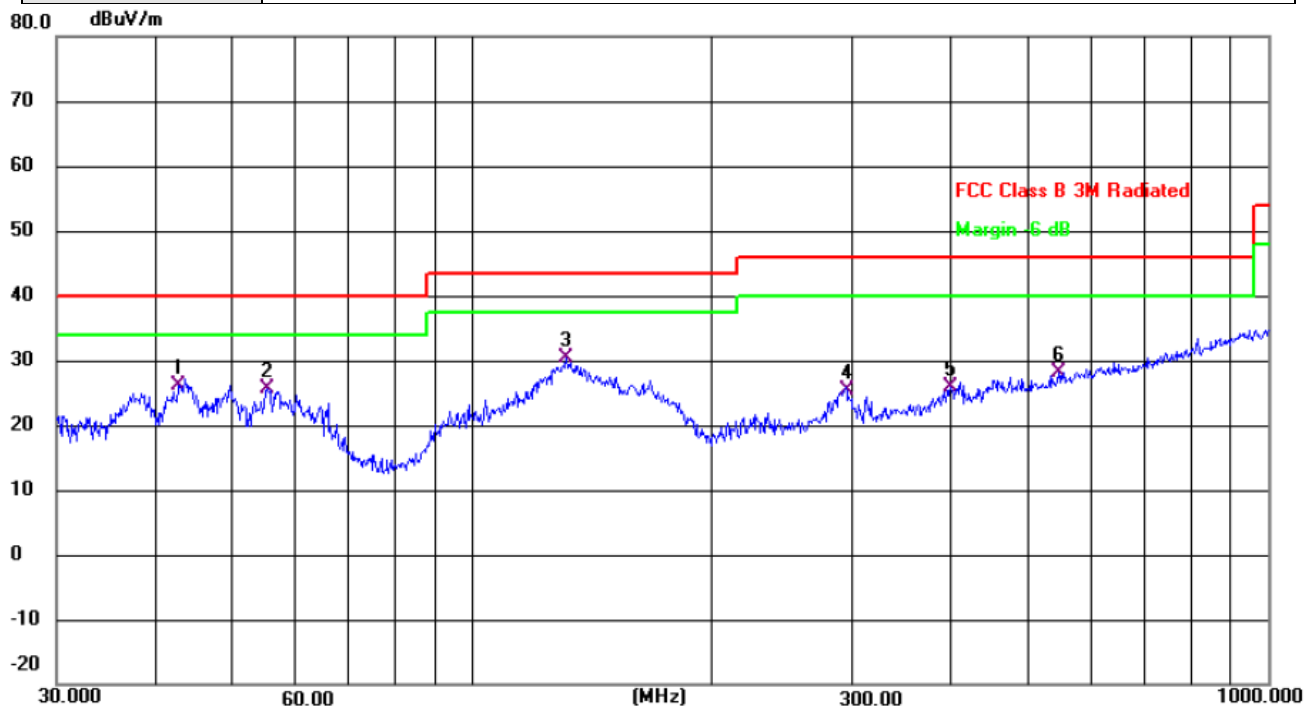
Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;



Temperature:	26°C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 5		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		42.7496	33.65	-7.49	26.16	40.00	-13.84	QP
2		55.2207	32.93	-7.32	25.61	40.00	-14.39	QP
3	*	130.8369	42.48	-11.98	30.50	43.50	-13.00	QP
4		295.1469	31.44	-5.96	25.48	46.00	-20.52	QP
5		399.0302	29.93	-3.99	25.94	46.00	-20.06	QP
6		545.1826	28.58	-0.35	28.23	46.00	-17.77	QP

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

**3.2.8 TEST RESULTS (1GHZ~25GHZ)**

802.11b

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412									
V	4824	67.24	50.65	6.88	31.29	54.76	74	-19.24	PK
V	4824	55.73	50.65	6.88	31.29	43.25	54	-10.75	AV
V	7236	66.74	49.98	7.16	36.63	60.55	74	-13.45	PK
V	7236	46.15	49.98	7.16	36.63	39.96	54	-14.04	AV
V	16087	48.03	51.53	11.34	41.52	49.36	74	-24.64	PK
H	4824	66.18	50.65	6.88	31.29	53.7	74	-20.3	PK
H	4824	55.44	50.65	6.88	31.29	42.96	54	-11.04	AV
H	7236	69.10	49.98	7.16	36.63	62.91	74	-11.09	PK
H	7236	45.47	49.98	7.16	36.63	39.28	54	-14.72	AV
H	16087	48.55	51.53	11.34	41.52	49.88	74	-24.12	PK
operation frequency:2437									
V	4874	67.14	50.67	6.89	31.38	54.74	74	-19.26	PK
V	4874	55.23	50.67	6.89	31.38	42.83	54	-11.17	AV
V	7311	69.85	50.02	7.24	36.63	63.7	74	-10.3	PK
V	7311	46.54	50.02	7.24	36.63	40.39	54	-13.61	AV
V	16087	48.10	51.53	11.34	41.52	49.43	74	-24.57	PK
H	4874	66.37	50.67	6.89	31.38	53.97	74	-20.03	PK
H	4874	55.58	50.67	6.89	31.38	43.18	54	-10.82	AV
H	7311	69.41	50.02	7.24	36.63	63.26	74	-10.74	PK
H	7311	47.42	50.02	7.24	36.63	41.27	54	-12.73	AV
H	16087	48.77	51.53	11.34	41.52	50.1	74	-23.9	PK
operation frequency:2462									
V	4924	67.52	50.79	6.83	31.36	54.92	74	-19.08	PK
V	4924	55.27	50.79	6.83	31.36	42.67	54	-11.33	AV
V	7386	69.73	50.11	7.25	36.58	63.45	74	-10.55	PK
V	7386	46.25	50.11	7.25	36.58	39.97	54	-14.03	AV
V	16087	48.16	51.53	11.34	41.52	49.49	74	-24.51	PK
H	4924	66.35	50.79	6.83	31.36	53.75	74	-20.25	PK
H	4924	55.78	50.79	6.83	31.36	43.18	54	-10.82	AV
H	7386	69.54	50.11	7.25	36.58	63.26	74	-10.74	PK
H	7386	47.11	50.11	7.25	36.58	40.83	54	-13.17	AV
H	16087	48.72	51.53	11.34	41.52	50.05	74	-23.95	PK

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- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412									
V	4824	67.47	50.65	6.88	31.29	54.99	74	-19.01	PK
V	4824	55.52	50.65	6.88	31.29	43.04	54	-10.96	AV
V	7236	66.43	49.98	7.16	36.63	60.24	74	-13.76	PK
V	7236	46.36	49.98	7.16	36.63	40.17	54	-13.83	AV
V	16087	49.45	51.53	11.34	41.52	50.78	74	-23.22	PK
H	4824	69.44	50.65	6.88	31.29	56.96	74	-17.04	PK
H	4824	52.57	50.65	6.88	31.29	40.09	54	-13.91	AV
H	7236	66.55	49.98	7.16	36.63	60.36	74	-13.64	PK
H	7236	47.43	49.98	7.16	36.63	41.24	54	-12.76	AV
H	16087	47.76	51.53	11.34	41.52	49.09	74	-24.91	PK
operation frequency:2437									
V	4874	67.10	50.67	6.89	31.38	54.7	74	-19.3	PK
V	4874	55.72	50.67	6.89	31.38	43.32	54	-10.68	AV
V	7311	66.56	50.02	7.24	36.63	60.41	74	-13.59	PK
V	7311	46.42	50.02	7.24	36.63	40.27	54	-13.73	AV
V	16087	48.24	51.53	11.34	41.52	49.57	74	-24.43	PK
H	4874	66.52	50.67	6.89	31.38	54.12	74	-19.88	PK
H	4874	55.73	50.67	6.89	31.38	43.33	54	-10.67	AV
H	7311	65.77	50.02	7.24	36.63	59.62	74	-14.38	PK
H	7311	47.03	50.02	7.24	36.63	40.88	54	-13.12	AV
H	16087	48.52	51.53	11.34	41.52	49.85	74	-24.15	PK
operation frequency:2462									
V	4924	67.10	50.79	6.83	31.36	54.5	74	-19.5	PK
V	4924	55.86	50.79	6.83	31.36	43.26	54	-10.74	AV
V	7386	66.52	50.11	7.25	36.58	60.24	74	-13.76	PK
V	7386	47.17	50.11	7.25	36.58	40.89	54	-13.11	AV
V	16087	46.53	51.53	11.34	41.52	47.86	74	-26.14	PK
H	4924	66.44	50.79	6.83	31.36	53.84	74	-20.16	PK
H	4924	54.35	50.79	6.83	31.36	41.75	54	-12.25	AV
H	7386	65.06	50.11	7.25	36.58	58.78	74	-15.22	PK
H	7386	45.13	50.11	7.25	36.58	38.85	54	-15.15	AV
H	16087	47.72	51.53	11.34	41.52	49.05	74	-24.95	PK
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.									



802.11n HT20

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412									
V	4824	66.41	50.65	6.88	31.29	53.93	74	-20.07	PK
V	4824	55.22	50.65	6.88	31.29	42.74	54	-11.26	AV
V	7236	66.77	49.98	7.16	36.63	60.58	74	-13.42	PK
V	7236	46.53	49.98	7.16	36.63	40.34	54	-13.66	AV
V	16087	46.65	51.53	11.34	41.52	47.98	74	-26.02	PK
H	4824	66.41	50.65	6.88	31.29	53.93	74	-20.07	PK
H	4824	55.73	50.65	6.88	31.29	43.25	54	-10.75	AV
H	7236	64.74	49.98	7.16	36.63	58.55	74	-15.45	PK
H	7236	47.35	49.98	7.16	36.63	41.16	54	-12.84	AV
H	16087	47.78	51.53	11.34	41.52	49.11	74	-24.89	PK
operation frequency:2437									
V	4874	66.30	50.67	6.89	31.38	53.9	74	-20.1	PK
V	4874	54.22	50.67	6.89	31.38	41.82	54	-12.18	AV
V	7311	65.74	50.02	7.24	36.63	59.59	74	-14.41	PK
V	7311	47.65	50.02	7.24	36.63	41.5	54	-12.5	AV
V	16087	47.53	51.53	11.34	41.52	48.86	74	-25.14	PK
H	4874	65.74	50.67	6.89	31.38	53.34	74	-20.66	PK
H	4874	53.72	50.67	6.89	31.38	41.32	54	-12.68	AV
H	7311	65.43	50.02	7.24	36.63	59.28	74	-14.72	PK
H	7311	46.37	50.02	7.24	36.63	40.22	54	-13.78	AV
H	16087	46.35	51.53	11.34	41.52	47.68	74	-26.32	PK
operation frequency:2462									
V	4924	67.14	50.79	6.83	31.36	54.54	74	-19.46	PK
V	4924	54.10	50.79	6.83	31.36	41.5	54	-12.5	AV
V	7386	64.42	50.11	7.25	36.58	58.14	74	-15.86	PK
V	7386	46.27	50.11	7.25	36.58	39.99	54	-14.01	AV
V	16087	48.43	51.53	11.34	41.52	49.76	74	-24.24	PK
H	4924	67.55	50.79	6.83	31.36	54.95	74	-19.05	PK
H	4924	54.46	50.79	6.83	31.36	41.86	54	-12.14	AV
H	7386	65.52	50.11	7.25	36.58	59.24	74	-14.76	PK
H	7386	47.73	50.11	7.25	36.58	41.45	54	-12.55	AV
H	16087	47.63	51.53	11.34	41.52	48.96	74	-25.04	PK

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.



802.11n HT40

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2422									
V	4844	66.15	50.67	6.89	31.32	53.69	74	-20.31	PK
V	4844	55.17	50.67	6.89	31.32	42.71	54	-11.29	AV
V	7266	66.74	50.01	7.15	36.62	60.5	74	-13.5	PK
V	7266	46.55	50.01	7.15	36.62	40.31	54	-13.69	AV
V	16087	46.41	51.53	11.34	41.52	47.74	74	-26.26	PK
H	4844	66.13	50.67	6.89	31.32	53.67	74	-20.33	PK
H	4844	55.76	50.67	6.89	31.32	43.3	54	-10.7	AV
H	7266	64.52	50.01	7.15	36.62	58.28	74	-15.72	PK
H	7266	47.11	50.01	7.15	36.62	40.87	54	-13.13	AV
H	16087	47.77	51.53	11.34	41.52	49.1	74	-24.9	PK
operation frequency:2437									
V	4874	66.10	50.67	6.89	31.38	53.7	74	-20.3	PK
V	4874	54.45	50.67	6.89	31.38	42.05	54	-11.95	AV
V	7311	65.56	50.02	7.24	36.63	59.41	74	-14.59	PK
V	7311	46.73	50.02	7.24	36.63	40.58	54	-13.42	AV
V	16087	47.55	51.53	11.34	41.52	48.88	74	-25.12	PK
H	4874	65.17	50.67	6.89	31.38	52.77	74	-21.23	PK
H	4874	53.10	50.67	6.89	31.38	40.7	54	-13.3	AV
H	7311	65.22	50.02	7.24	36.63	59.07	74	-14.93	PK
H	7311	47.27	50.02	7.24	36.63	41.12	54	-12.88	AV
H	16087	46.30	51.53	11.34	41.52	47.63	74	-26.37	PK
operation frequency:2452									
V	4904	67.52	50.76	6.81	31.31	54.88	74	-19.12	PK
V	4904	54.73	50.76	6.81	31.31	42.09	54	-11.91	AV
V	7356	64.70	50.08	7.21	36.52	58.35	74	-15.65	PK
V	7356	47.47	50.08	7.21	36.52	41.12	54	-12.88	AV
V	16087	48.25	51.53	11.34	41.52	49.58	74	-24.42	PK
H	4904	67.73	50.76	6.81	31.31	55.09	74	-18.91	PK
H	4904	54.17	50.76	6.81	31.31	41.53	54	-12.47	AV
H	7356	65.23	50.08	7.21	36.52	58.88	74	-15.12	PK
H	7356	46.15	50.08	7.21	36.52	39.8	54	-14.2	AV
H	16087	47.10	51.53	11.34	41.52	48.43	74	-25.57	PK

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.



3.3 RADIATED BAND EMISSION MEASUREMENT

3.3.1 TEST REQUIREMENT:

FCC Part15 C Section 15.209 and 15.205& RSS-247 Section 5.5

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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& RSS-247 issue 3.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

3.3.2 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:

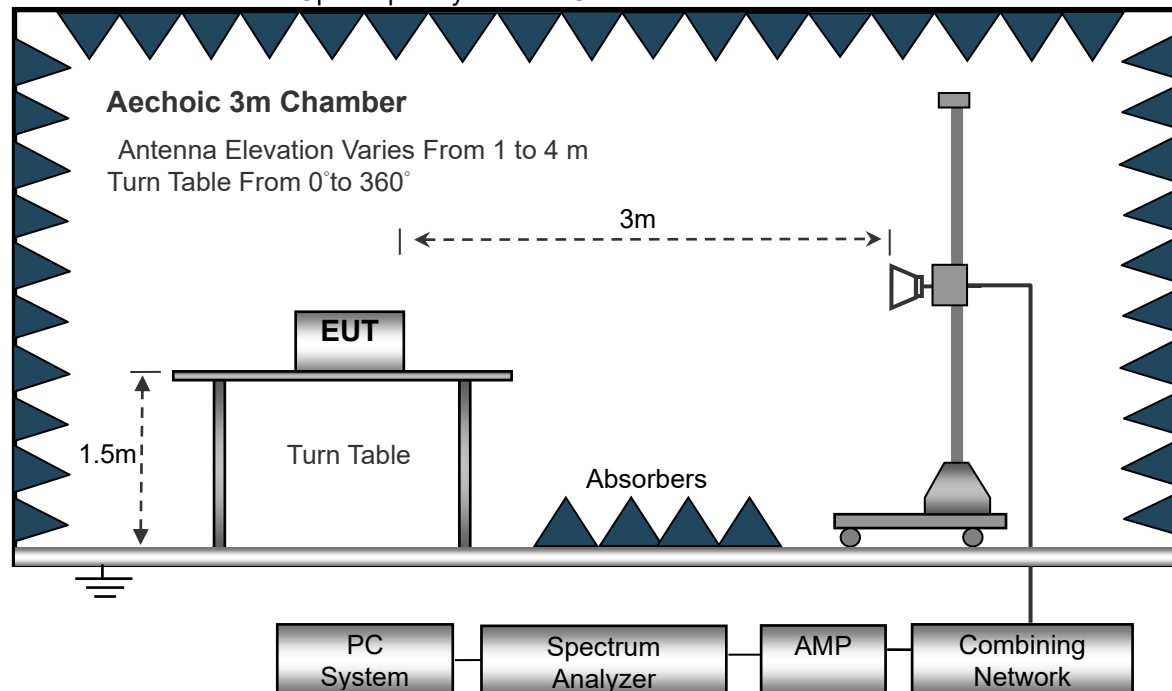
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 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.



3.3.6 TEST RESULT

802.11b

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412									
V	2310	77.10	52.12	2.73	27.38	55.09	74	-18.91	PK
V	2310	65.45	52.12	2.73	27.38	43.44	54	-10.56	AV
V	2390	76.17	52.16	2.78	27.41	54.2	74	-19.8	PK
V	2390	64.41	52.16	2.78	27.41	42.44	54	-11.56	AV
H	2310	76.55	52.12	2.73	27.38	54.54	74	-19.46	PK
H	2310	65.03	52.12	2.73	27.38	43.02	54	-10.98	AV
H	2390	76.35	52.16	2.78	27.41	54.38	74	-19.62	PK
H	2390	65.17	52.16	2.78	27.41	43.2	54	-10.8	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2462									
V	2483.5	77.24	52.23	2.86	27.44	55.31	74	-18.69	PK
V	2483.5	65.22	52.23	2.86	27.44	43.29	54	-10.71	AV
V	2500	76.43	52.26	2.88	27.49	54.54	74	-19.46	PK
V	2500	65.15	52.26	2.88	27.49	43.26	54	-10.74	AV
H	2483.5	76.47	52.23	2.86	27.44	54.54	74	-19.46	PK
H	2483.5	66.33	52.23	2.86	27.44	44.4	54	-9.6	AV
H	2500	78.55	52.26	2.88	27.49	56.66	74	-17.34	PK
H	2500	67.47	52.26	2.88	27.49	45.58	54	-8.42	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- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412									
V	2310	76.54	52.12	2.73	27.38	54.53	74	-19.47	PK
V	2310	65.75	52.12	2.73	27.38	43.74	54	-10.26	AV
V	2390	76.56	52.16	2.78	27.41	54.59	74	-19.41	PK
V	2390	64.54	52.16	2.78	27.41	42.57	54	-11.43	AV
H	2310	76.33	52.12	2.73	27.38	54.32	74	-19.68	PK
H	2310	65.10	52.12	2.73	27.38	43.09	54	-10.91	AV
H	2390	76.05	52.16	2.78	27.41	54.08	74	-19.92	PK
H	2390	65.76	52.16	2.78	27.41	43.79	54	-10.21	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2462									
V	2483.5	76.41	52.23	2.86	27.44	54.48	74	-19.52	PK
V	2483.5	65.12	52.23	2.86	27.44	43.19	54	-10.81	AV
V	2500	76.23	52.26	2.88	27.49	54.34	74	-19.66	PK
V	2500	65.10	52.26	2.88	27.49	43.21	54	-10.79	AV
H	2483.5	76.52	52.23	2.86	27.44	54.59	74	-19.41	PK
H	2483.5	65.53	52.23	2.86	27.44	43.6	54	-10.4	AV
H	2500	76.16	52.26	2.88	27.49	54.27	74	-19.73	PK
H	2500	65.75	52.26	2.88	27.49	43.86	54	-10.14	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.



802.11n HT20

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412									
V	2310	76.10	52.12	2.73	27.38	54.09	74	-19.91	PK
V	2310	65.55	52.12	2.73	27.38	43.54	54	-10.46	AV
V	2390	77.46	52.16	2.78	27.41	55.49	74	-18.51	PK
V	2390	65.25	52.16	2.78	27.41	43.28	54	-10.72	AV
H	2310	77.54	52.12	2.73	27.38	55.53	74	-18.47	PK
H	2310	65.10	52.12	2.73	27.38	43.09	54	-10.91	AV
H	2390	76.58	52.16	2.78	27.41	54.61	74	-19.39	PK
H	2390	65.41	52.16	2.78	27.41	43.44	54	-10.56	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2462									
V	2483.5	77.12	52.23	2.86	27.44	55.19	74	-18.81	PK
V	2483.5	65.73	52.23	2.86	27.44	43.8	54	-10.2	AV
V	2500	76.50	52.26	2.88	27.49	54.61	74	-19.39	PK
V	2500	65.25	52.26	2.88	27.49	43.36	54	-10.64	AV
H	2483.5	77.74	52.23	2.86	27.44	55.81	74	-18.19	PK
H	2483.5	65.10	52.23	2.86	27.44	43.17	54	-10.83	AV
H	2500	76.13	52.26	2.88	27.49	54.24	74	-19.76	PK
H	2500	66.74	52.26	2.88	27.49	44.85	54	-9.15	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.



802.11n HT40

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2422									
V	2310	76.10	52.12	2.73	27.38	54.09	74	-19.91	PK
V	2310	65.52	52.12	2.73	27.38	43.51	54	-10.49	AV
V	2390	77.16	52.16	2.78	27.41	55.19	74	-18.81	PK
V	2390	65.34	52.16	2.78	27.41	43.37	54	-10.63	AV
H	2310	77.52	52.12	2.73	27.38	55.51	74	-18.49	PK
H	2310	65.73	52.12	2.73	27.38	43.72	54	-10.28	AV
H	2390	76.26	52.16	2.78	27.41	54.29	74	-19.71	PK
H	2390	65.45	52.16	2.78	27.41	43.48	54	-10.52	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2452									
V	2483.5	77.10	52.23	2.86	27.44	55.17	74	-18.83	PK
V	2483.5	65.72	52.23	2.86	27.44	43.79	54	-10.21	AV
V	2500	76.37	52.26	2.88	27.49	54.48	74	-19.52	PK
V	2500	65.74	52.26	2.88	27.49	43.85	54	-10.15	AV
H	2483.5	77.65	52.23	2.86	27.44	55.72	74	-18.28	PK
H	2483.5	65.73	52.23	2.86	27.44	43.8	54	-10.2	AV
H	2500	76.74	52.26	2.88	27.49	54.85	74	-19.15	PK
H	2500	66.10	52.26	2.88	27.49	44.21	54	-9.79	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.



3.4 CONDUCTED BAND EDGE EMISSION&CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.247 (d)& RSS-247 Section 5.5
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02& RSS-247 Section 5.5

3.4.1 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).

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§RSS-Gen 8.10, must also comply with the radiated emission limits specified in RSS-Gen 8.9.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

3.4.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

Set the RBW = 100KHz.

Set the VBW = 300KHz.

Sweep time = auto couple.

Detector function = Peak.

Trace mode = max hold.

Allow trace to fully stabilize.

3.4.3 DEVIATION FROM STANDARD

No deviation.

3.4.4 TEST SETUP



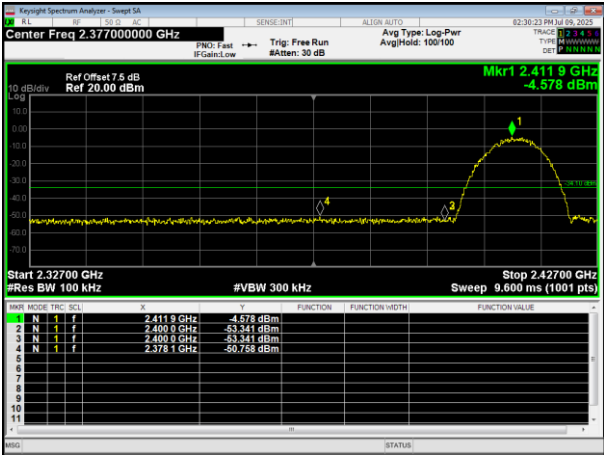
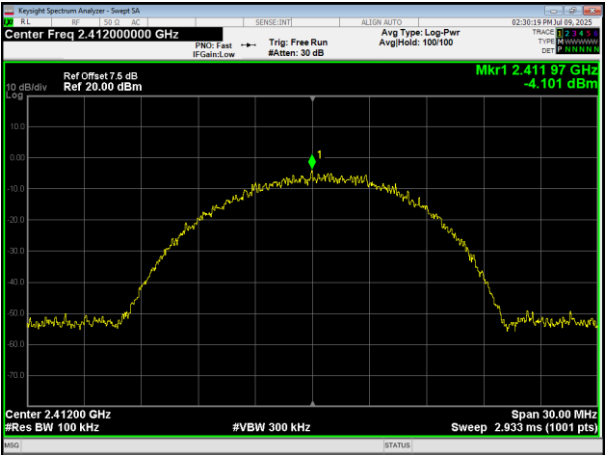
3.4.5 EUT OPERATION CONDITIONS

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.

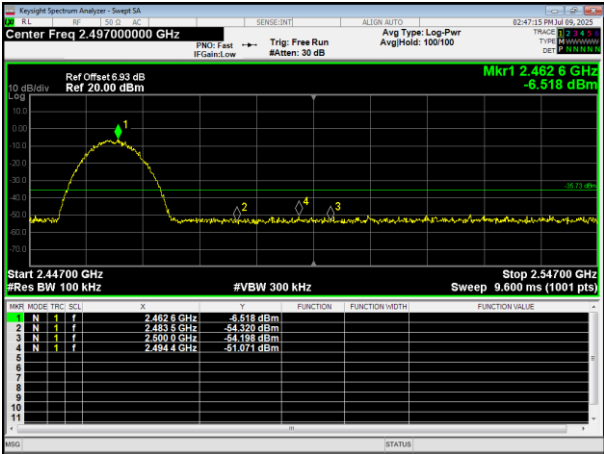
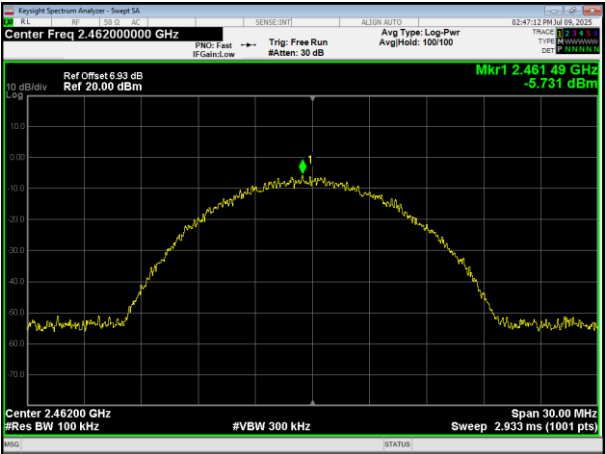
3.4.6 TEST RESULTS



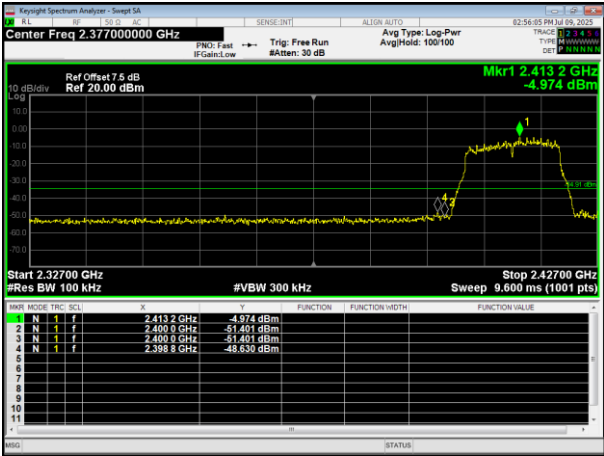
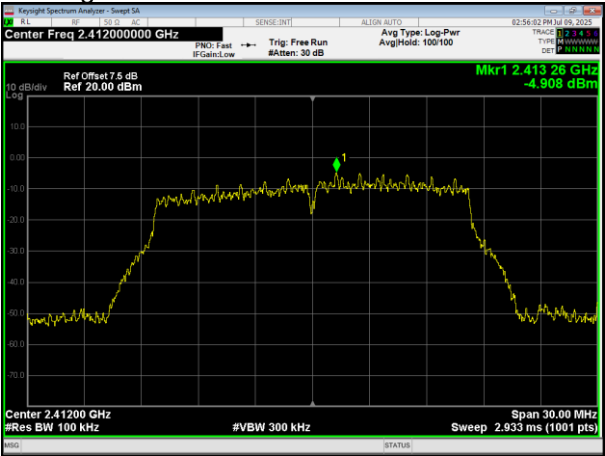
For Conducted
802.11b 2412MHz



802.11b 2462MHz

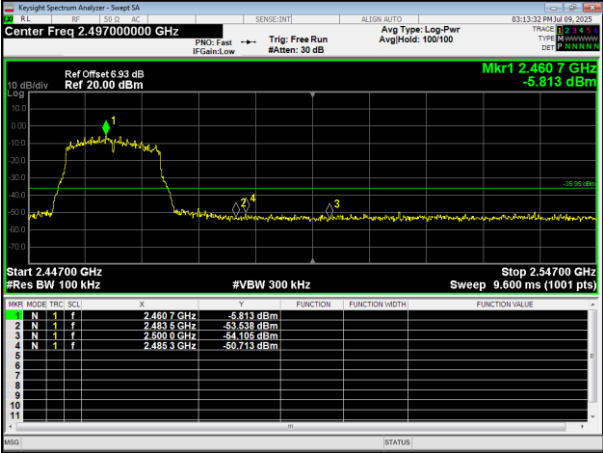
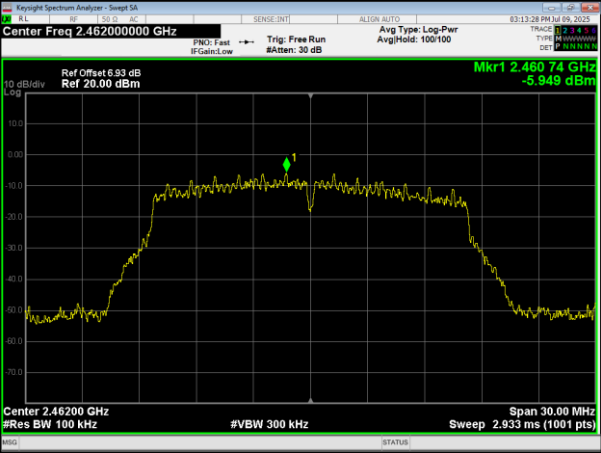


802.11g 2412MHz

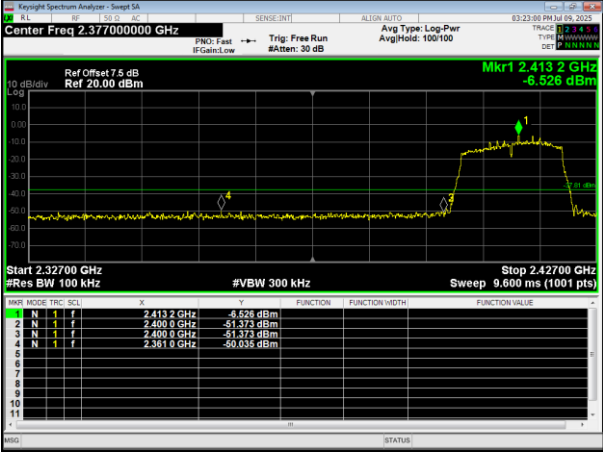
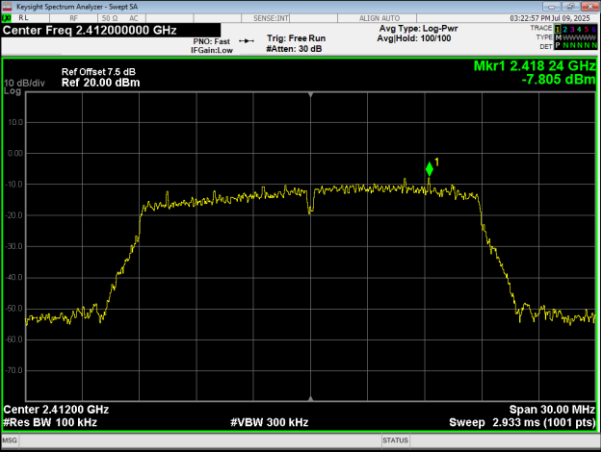




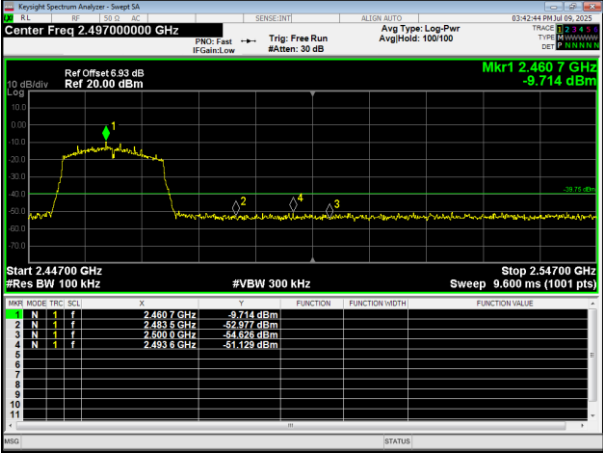
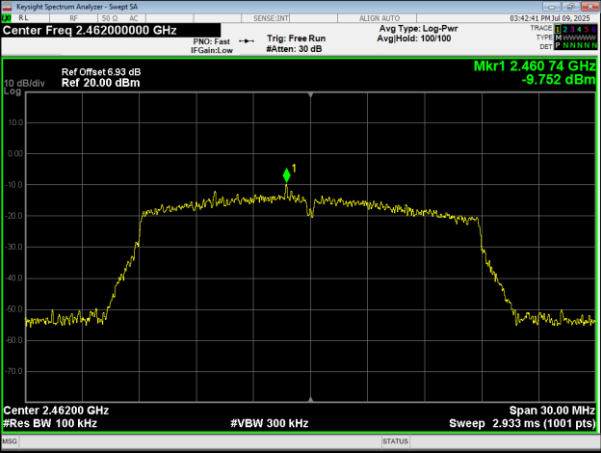
802.11g 2462MHz



802.11n 20 2412MHz

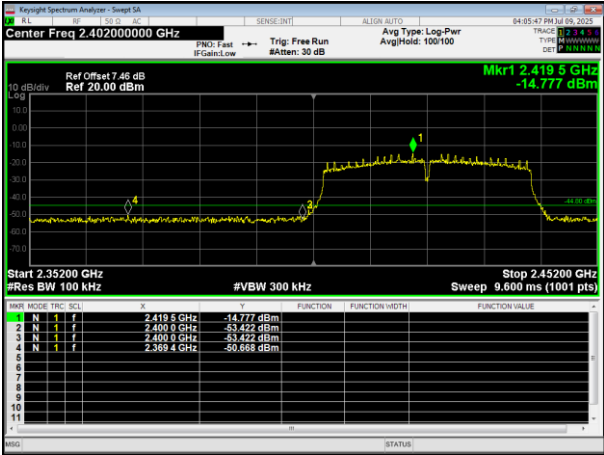
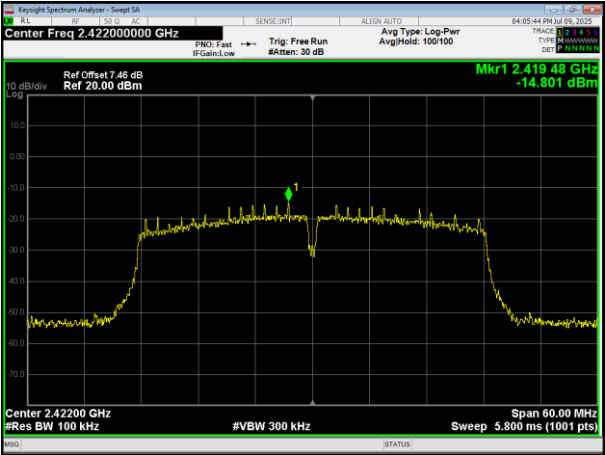


802.11n20 2462MHz

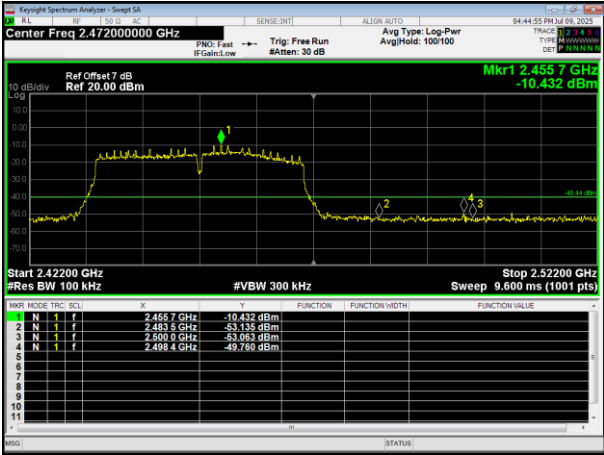
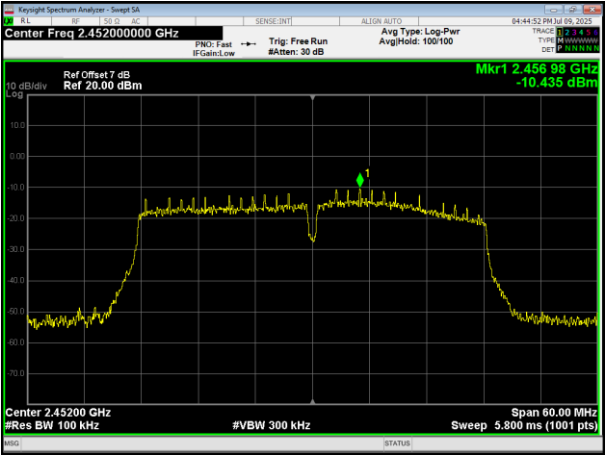




802.11n 40 2422MHz



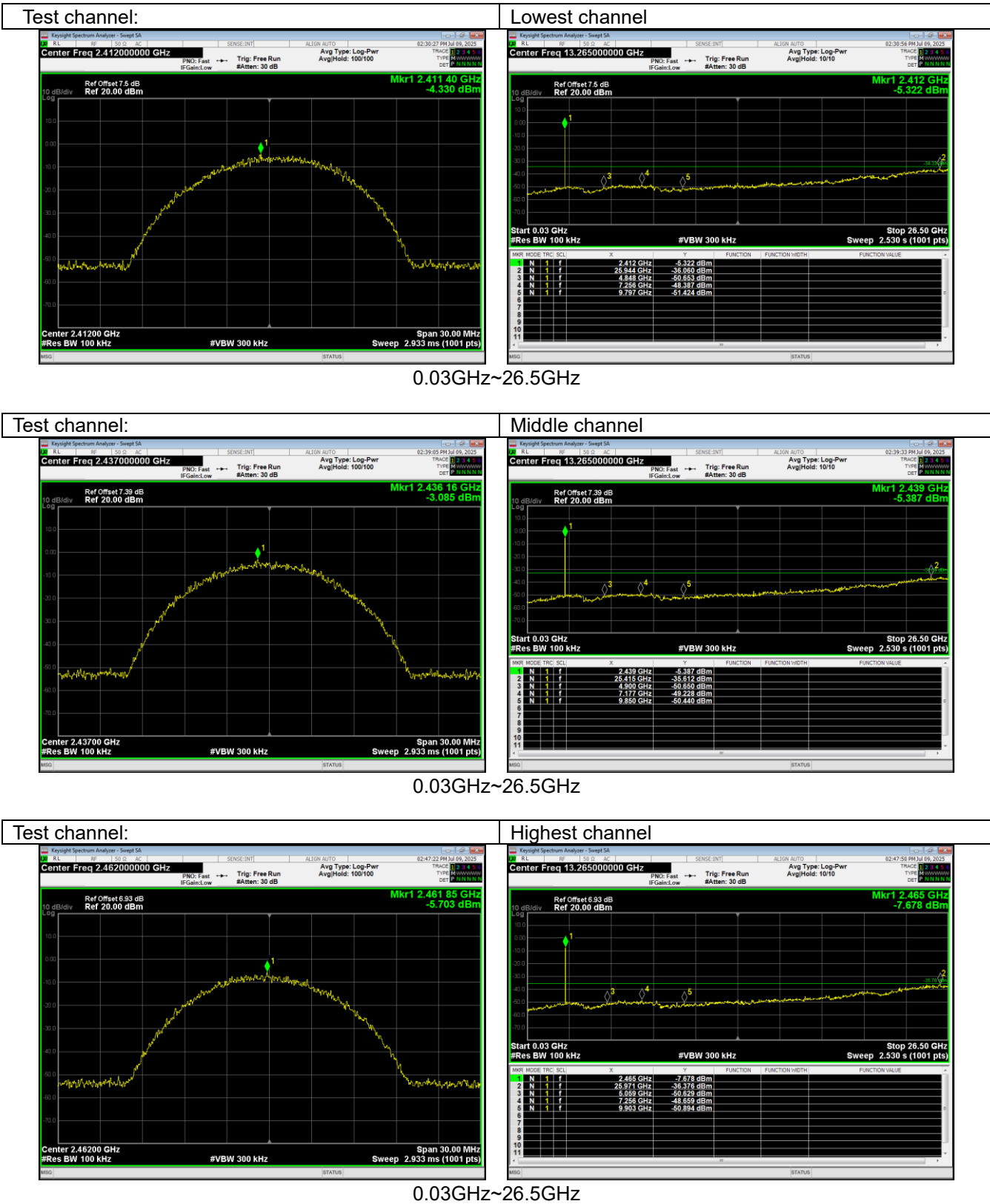
802.11n40 2452MHz





For Conducted

During the test, pre-scan the all modulation, and found the 802.11b mode which it is worse case.





4. MAXIMUM PEAK CONDUCTED OUTPUT POWER MEASUREMENT

4.1 APPLIED PROCEDURES / LIMIT

According to §15.247(b) & RSS-247 Section 5.4(d): For systems using digital modulation in the 2400-2483.5 MHz and 5725-5850 MHz

band, the limit for maximum peak conducted output power is 30dBm. The limit has to be reduced by the amount in dB that the gain of the antenna exceeds 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi without any corresponding reduction in transmitter peak output power.

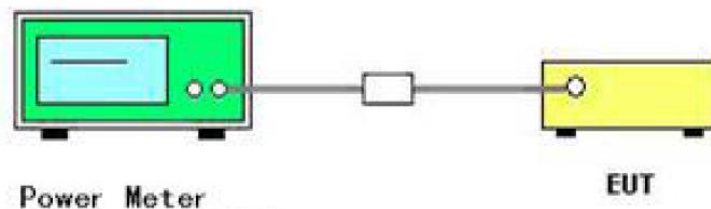
4.1.1 TEST PROCEDURE

According to C63.10 clause 11.9.2.3. Method AVGPM is a measurement using an RF average power meter.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

- 1) The EUT is configured to transmit continuously.
- 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

**4.1.5 TEST RESULTS**

Temperature:	25 °C	Relative Humidity:	60%
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz

Mode	Test Channel	Conducted Output Power (dBm)	Duty Factor (dB)	Total Power (dBm)	LIMIT (dBm)
802.11b	Low	3.568	0.16	3.728	30.00
	Middle	4.35	0.16	4.51	30.00
	High	2.96	0.16	3.12	30.00
802.11g	Low	3.098	0.96	4.058	30.00
	Middle	2.833	0.92	3.753	30.00
	High	2.325	0.97	3.295	30.00
802.11n HT20	Low	3.451	0.14	3.591	30.00
	Middle	3.684	0.14	3.824	30.00
	High	2.172	0.14	2.312	30.00
802.11n HT40	Low	2.11	0.27	2.38	30.00
	Middle	3.184	0.27	3.454	30.00
	High	2.901	0.27	3.171	30.00

Mode	Test Channel	Total Power (dBm)	Antenna gain (dBi)	EIRP (dBm)	LIMIT (dBm)
802.11b	Low	3.728	-0.1	3.628	36.00
	Middle	4.51	-0.1	4.41	36.00
	High	3.12	-0.1	3.02	36.00
802.11g	Low	4.058	-0.1	3.958	36.00
	Middle	3.753	-0.1	3.653	36.00
	High	3.295	-0.1	3.195	36.00
802.11n HT20	Low	3.591	-0.1	3.491	36.00
	Middle	3.824	-0.1	3.724	36.00
	High	2.312	-0.1	2.212	36.00
802.11n HT40	Low	2.38	-0.1	2.28	36.00
	Middle	3.454	-0.1	3.354	36.00
	High	3.171	-0.1	3.071	36.00



5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C RSS-247 issue 3 August 2023				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 RSS-247 Section 5.2(b)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	= the frequency band of operation
RB	$RBW \geq 3kHz$
VB	$VBW \geq 3RBW$
Detector	power averaging (rms) or sample detector (when rms not available).
Trace	rms/average
Sweep Time	Auto

5.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

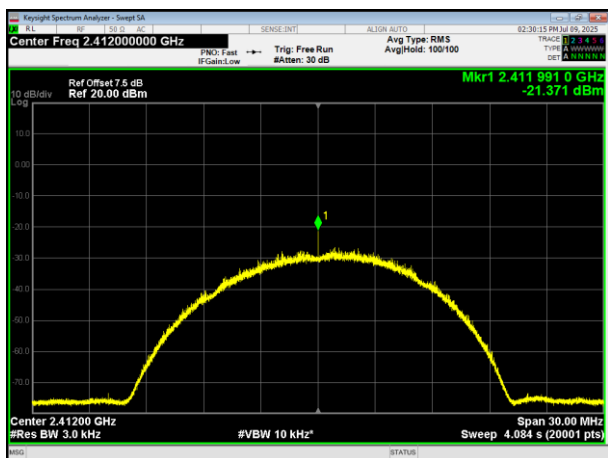
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

**5.1.5 TEST RESULTS**

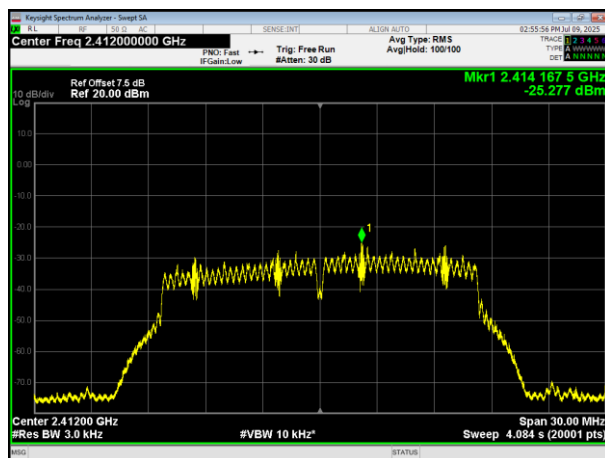
Mode	Test Channel	PSD (dBm/3kHz)	Duty Factor (dB)	Test Result (dBm/3kHz)	Limit (dBm/3kHz)	Result
802.11b	Low	-21.371	0.16	-21.211	8	PASS
	Middle	-19.787	0.16	-19.627	8	PASS
	High	-24.45	0.16	-24.29	8	PASS
802.11g	Low	-25.277	0.96	-24.317	8	PASS
	Middle	-25.74	0.92	-24.82	8	PASS
	High	-25.973	0.97	-25.003	8	PASS
802.11n20	Low	-29.289	0.14	-29.149	8	PASS
	Middle	-29.025	0.14	-28.885	8	PASS
	High	-24.413	0.14	-24.273	8	PASS
802.11n40	Low	-30.732	0.27	-30.462	8	PASS
	Middle	-31.294	0.27	-31.024	8	PASS
	High	-31.521	0.27	-31.251	8	PASS



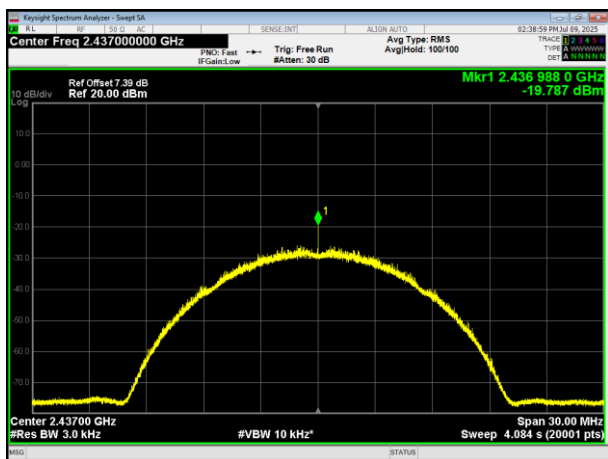
802.11b



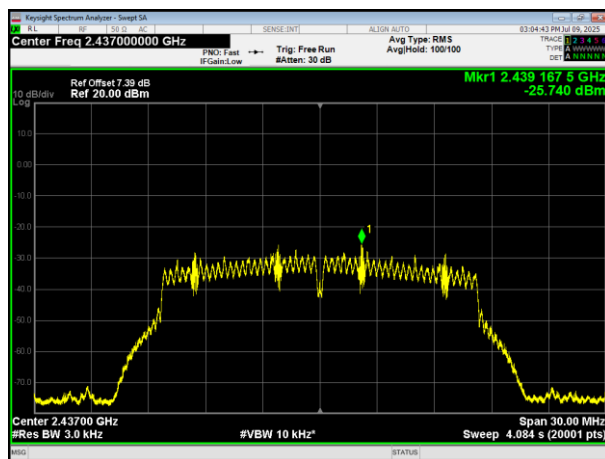
802.11g



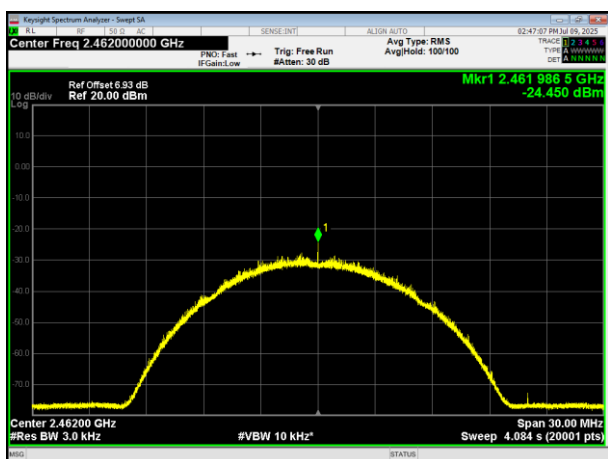
2412MHz



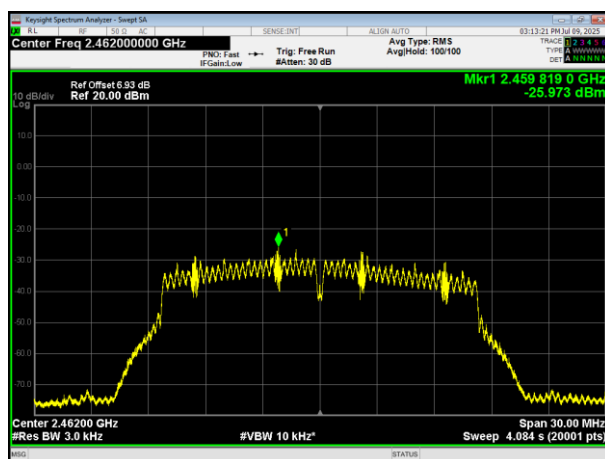
2412MHz



2437MHz



2437MHz

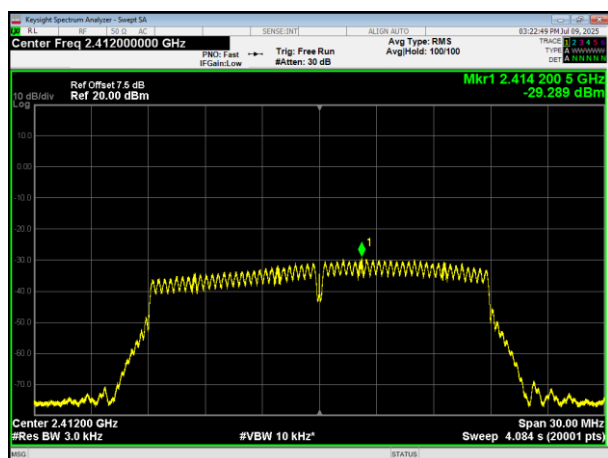


2462MHz

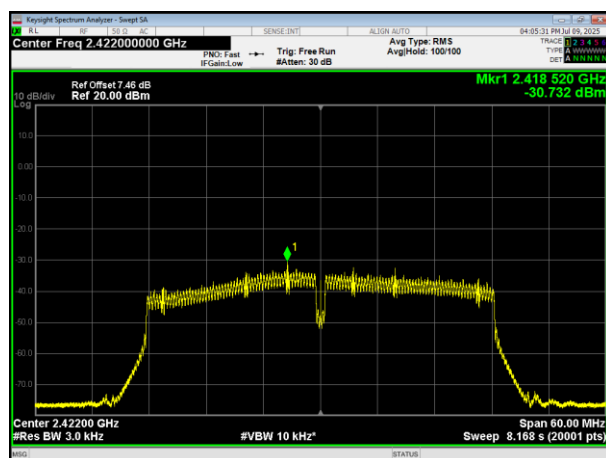
2462MHz



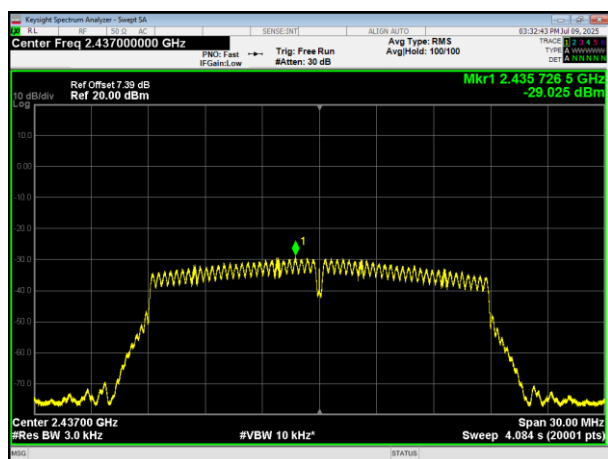
802.11n HT20



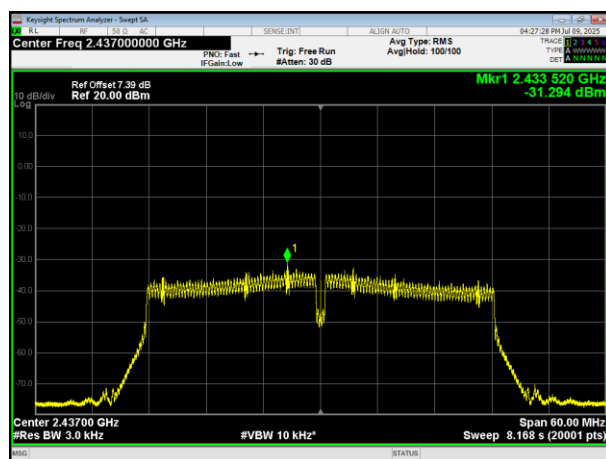
802.11n HT40



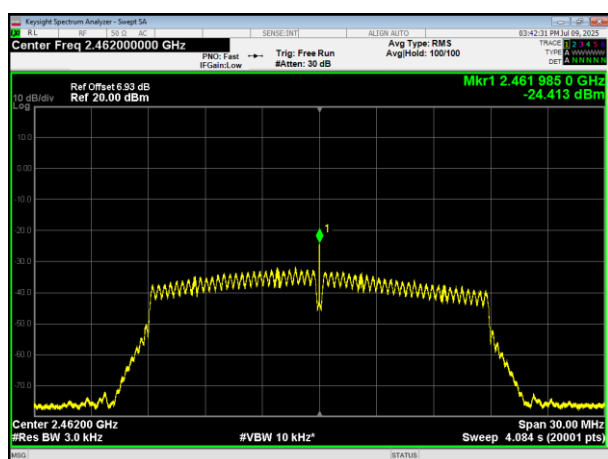
2412MHz



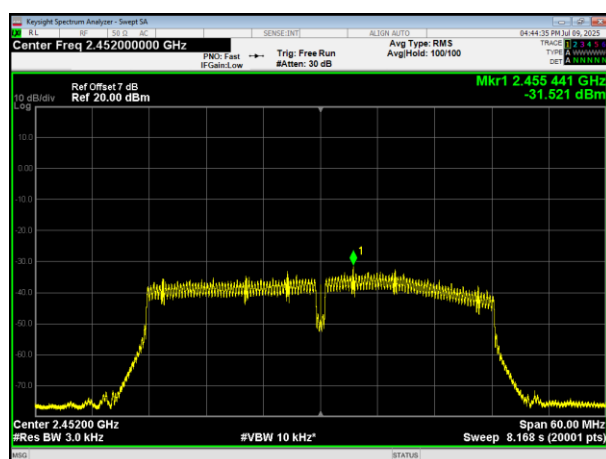
2422MHz



2437MHz



2437MHz



2462MHz

2452MHz



6. 6DB BANDWIDTH TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C RSS-247 issue 3 August 2023				
Section	Test Item	Limit	Frequency Range(MHz)	Result
15.247(a)(2)	6dB Bandwidth	$\geq 500\text{KHz}$	2400-2483.5	PASS
RSS-247 Section 5.2(a) & 6.7	99% bandwidth	/		

6.1.1 TEST PROCEDURE

1. Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
2. Set the video bandwidth $\text{VBW} \geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between twopoints, one at the lowest frequency below and one at the highest frequency above the carrier frequency, atwhich the maximum power level of the transmitted emission is attenuated x dB below the maximum inband power level of the modulated signal, where the two points are on the outskirts of the in-band emission.
8. The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:
 - The transmitter shall be operated at its maximum carrier power measured under normal testconditions.
 - The span of the spectrum analyzer shall be set large enough to capture all products of themodulation process, including the emission skirts, around the carrier frequency, but small enough toavoid having other emissions (e.g. on adjacent channels) within the span.
 - The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, maybe used in place of the sampling detector since this usually produces a wider bandwidth than theactual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessaryto determine the occupied / x dB bandwidth if the device is not transmitting continuously.
 - The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dBbandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value.Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.



1. Set RBW = 1% to 5% of the OBW.
2. Set the video bandwidth (VBW) Approximately three times the RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.
8. For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

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

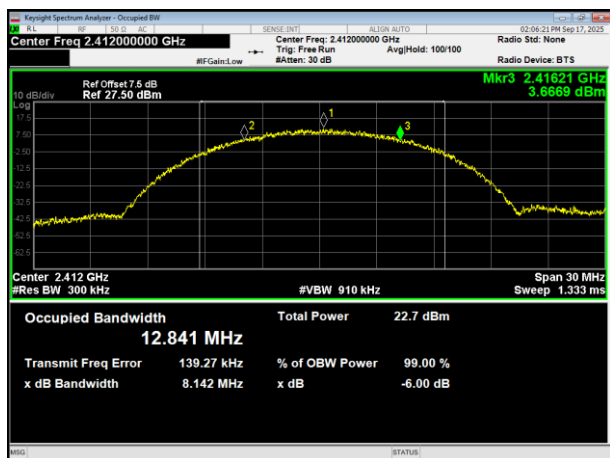
**6.1.5 TEST RESULTS**

	Test Channel	6dB Bandwidth (MHz)	99%Bandwidth (MHz)	Limit (MHz)	Result
802.11b	Low	8.142	12.589	0.5	Pass
	Middle	8.258	12.153	0.5	Pass
	High	7.64	12.079	0.5	Pass
802.11g	Low	16.01	16.312	0.5	Pass
	Middle	16.28	16.302	0.5	Pass
	High	15.01	16.252	0.5	Pass
802.11n HT20	Low	17.37	17.520	0.5	Pass
	Middle	17.18	17.470	0.5	Pass
	High	15.93	17.368	0.5	Pass
802.11n HT40	Low	31.8	35.748	0.5	Pass
	Middle	35.52	36.114	0.5	Pass
	High	35.12	35.909	0.5	Pass

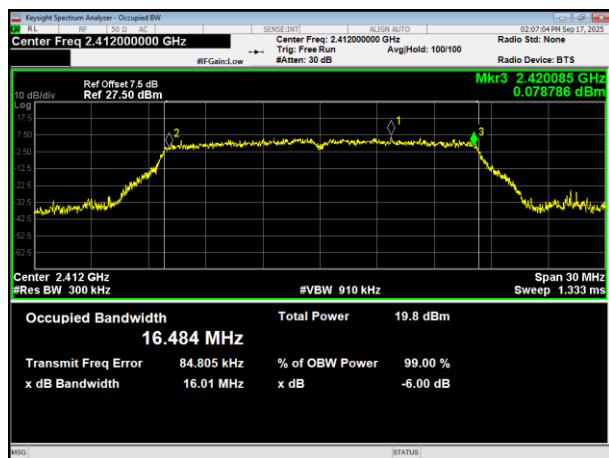


6dB Bandwidth

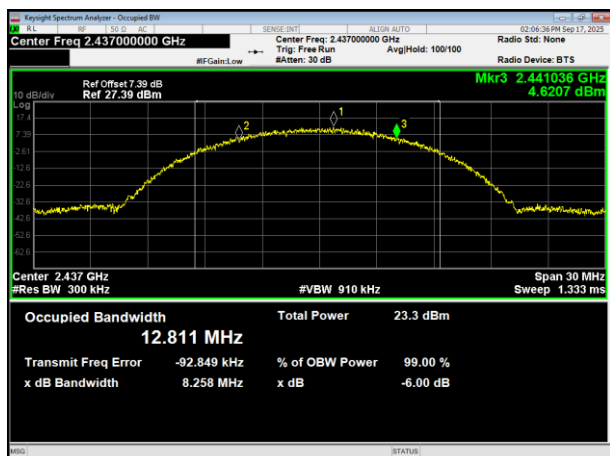
802.11b



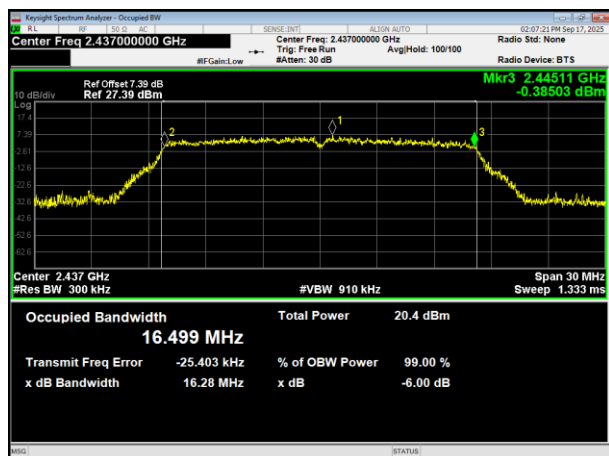
802.11g



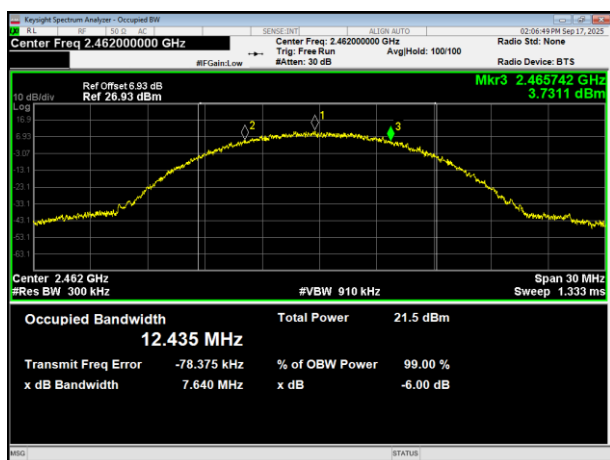
2412MHz



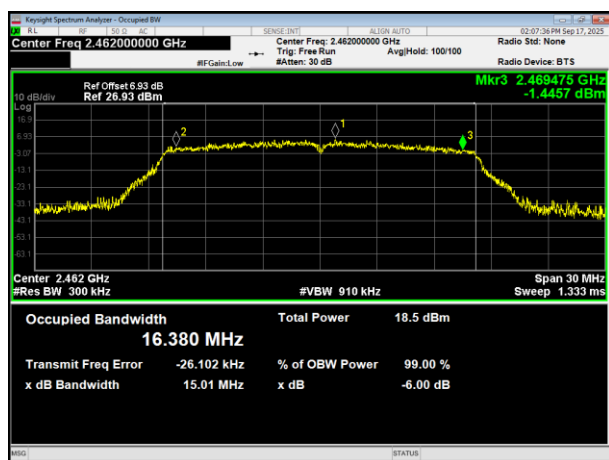
2412MHz



2437MHz



2437MHz

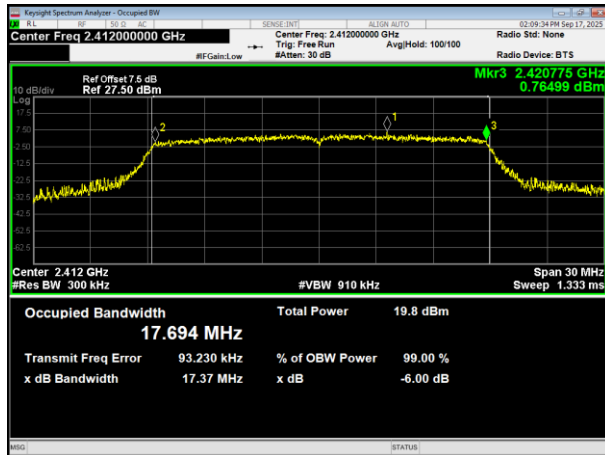


2462MHz

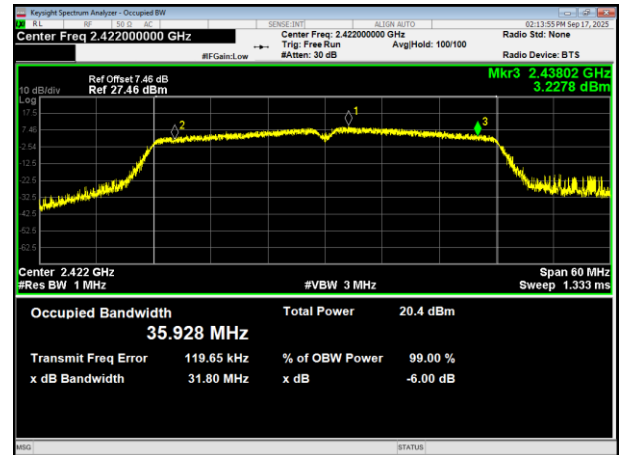
2462MHz



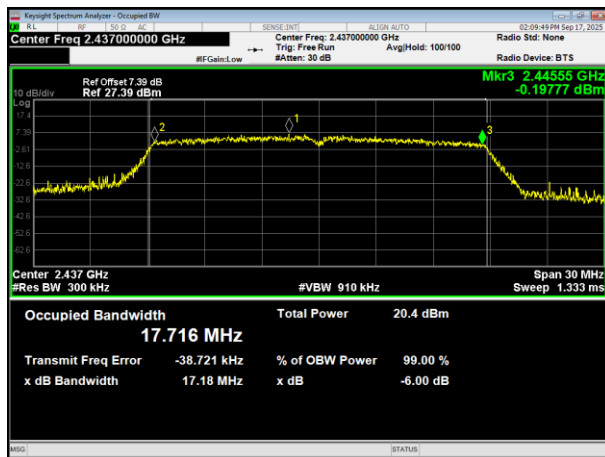
802.11n HT20



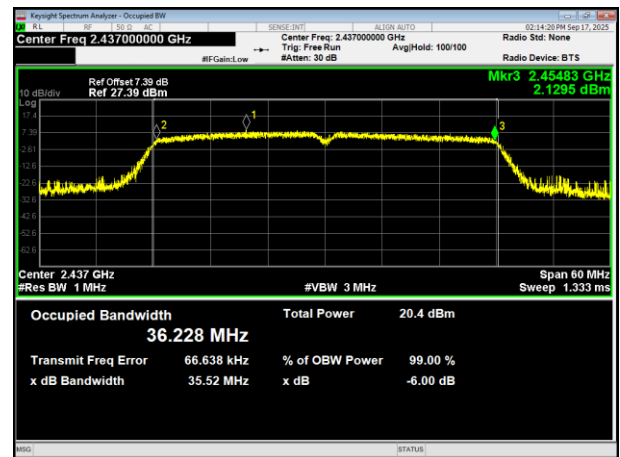
802.11n HT40



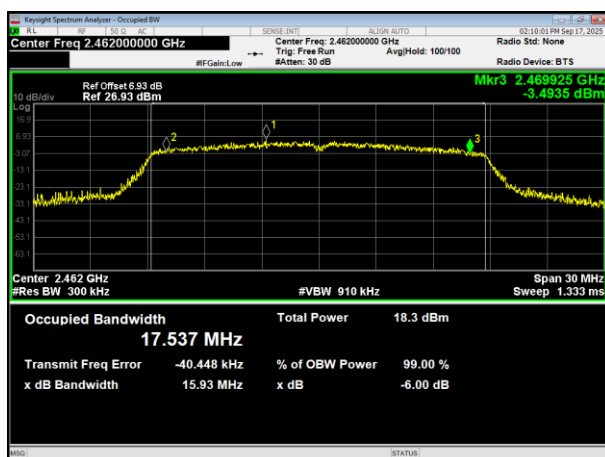
2412MHz



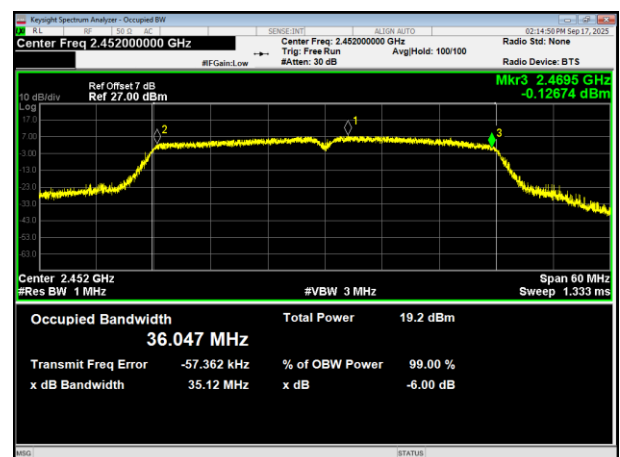
2422MHz



2437MHz



2437MHz



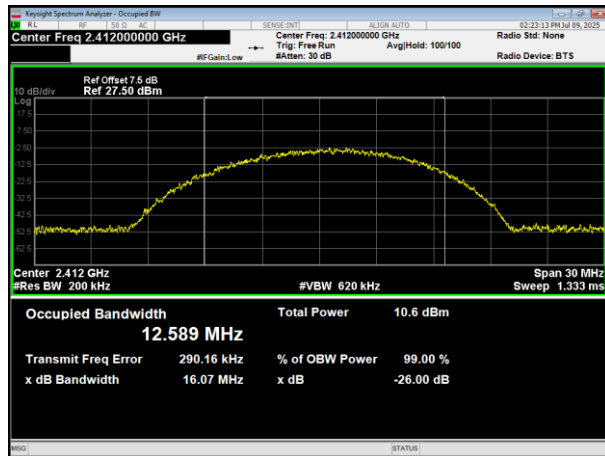
2462MHz

2452MHz

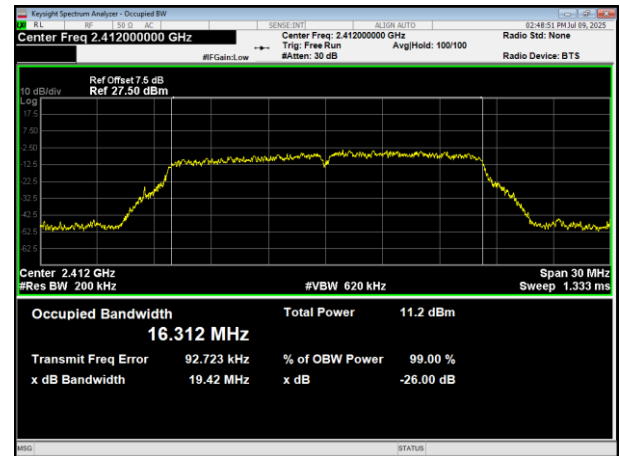


99%Bandwidth

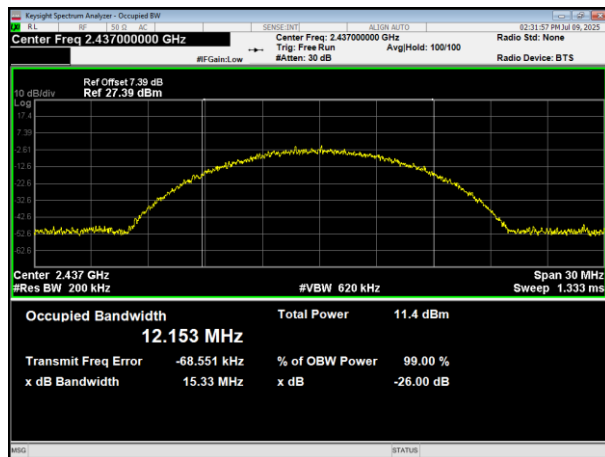
802.11b



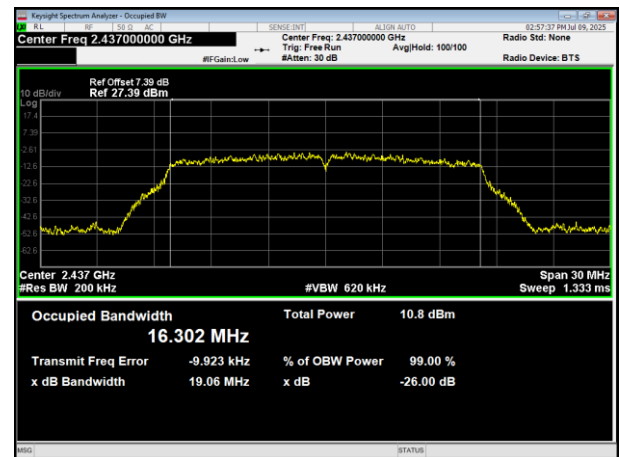
802.11g



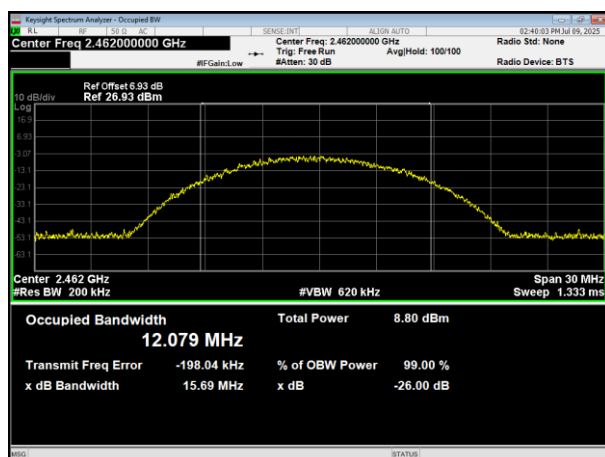
2412MHz



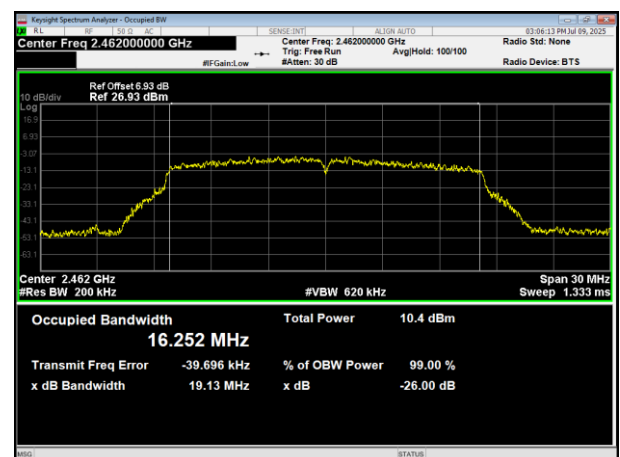
2412MHz



2437MHz



2437MHz

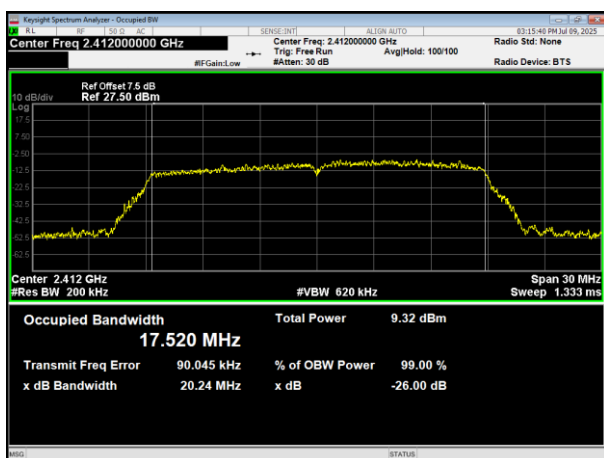


2462MHz

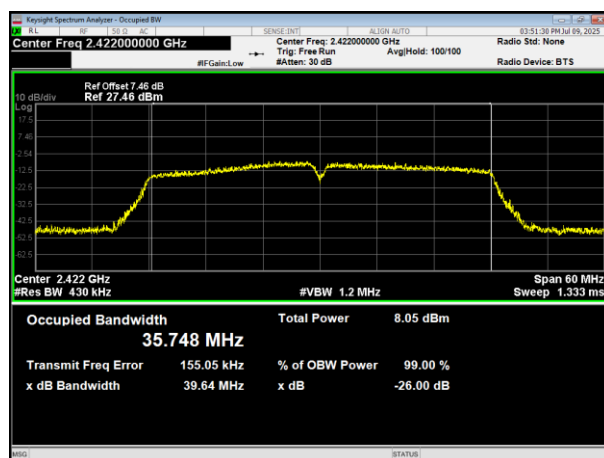
2462MHz



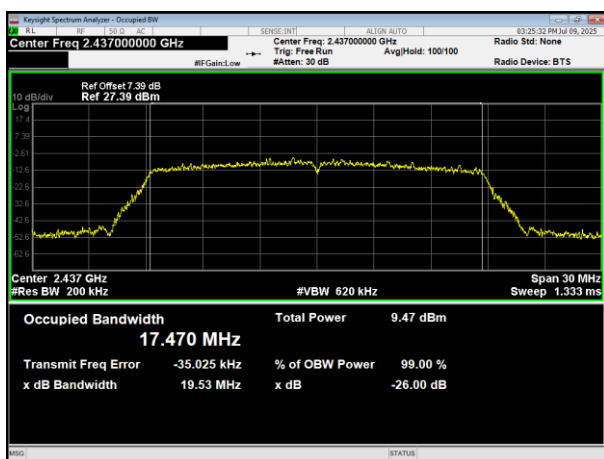
802.11n HT20



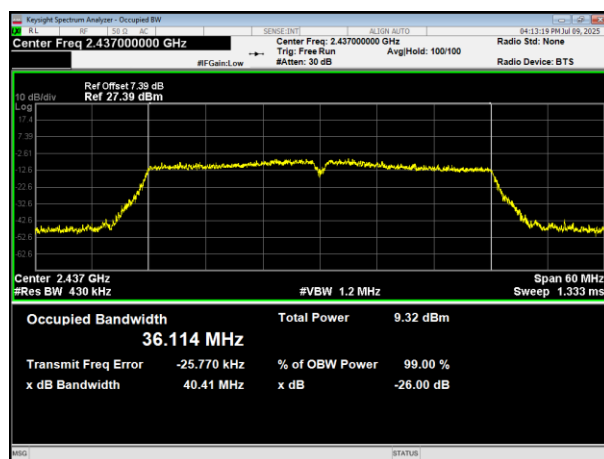
802.11n HT40



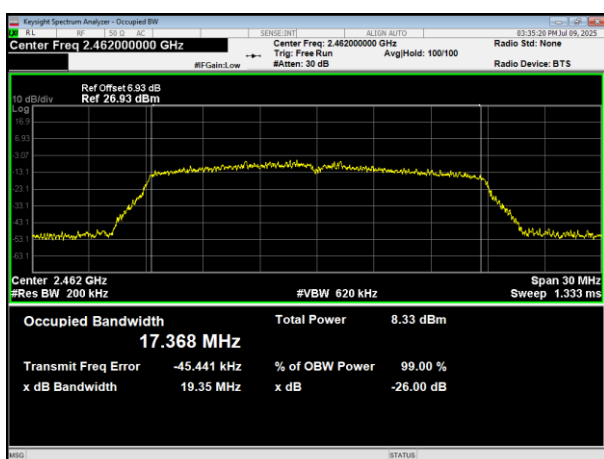
2412MHz



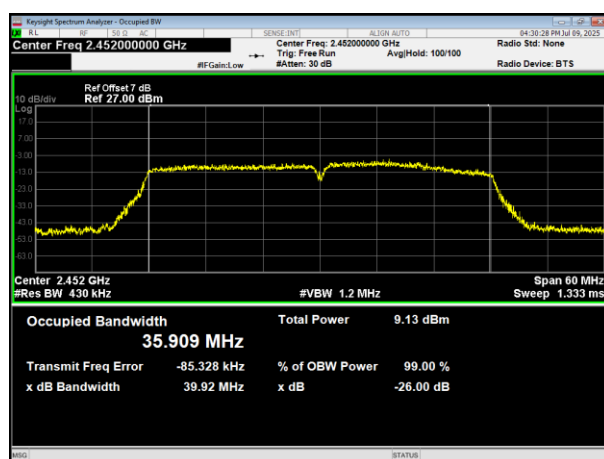
2422MHz



2437MHz



2437MHz



2462MHz

2452MHz



7. DUTY CYCLE TEST SIGNAL

7.1 APPLIED PROCEDURES / LIMIT

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

7.1.1 TEST PROCEDURE

1. Set RBW = 10 MHz.
2. Set the video bandwidth (VBW) $\geq$ RBW.
3. Detector = Peak.
4. Sweep = auto couple.
5. Allow the trace to stabilize.
6. Span=0

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

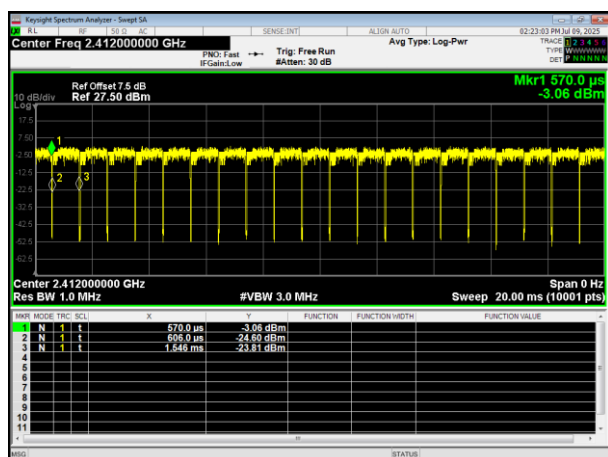
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

**7.1.5 TEST RESULTS**

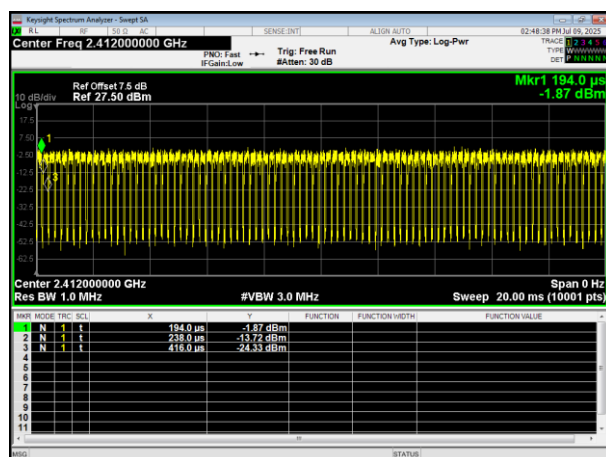
Mode	Test Channel	Duty Cycle(%)	Duty Fator (dB) $10 * \log (1/ \text{Duty cycle})$
802.11b	Low	96.31	0.16
	Middle	96.3	0.16
	High	96.3	0.16
802.11g	Low	80.18	0.96
	Middle	80.91	0.92
	High	80	0.97
802.11n HT20	Low	96.73	0.14
	Middle	96.88	0.14
	High	96.88	0.14
802.11n HT40	Low	93.93	0.27
	Middle	93.93	0.27
	High	93.93	0.27



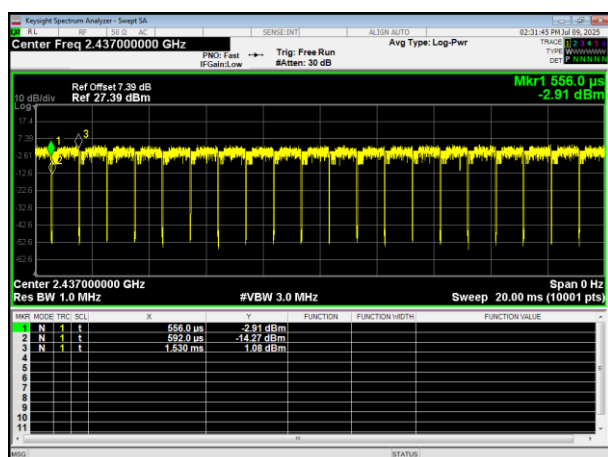
802.11b



802.11g



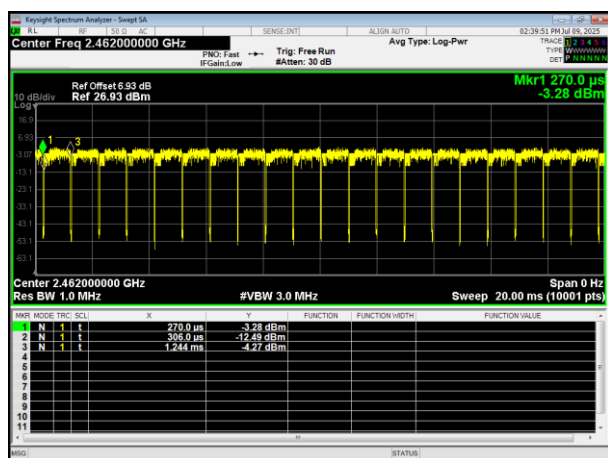
2412MHz



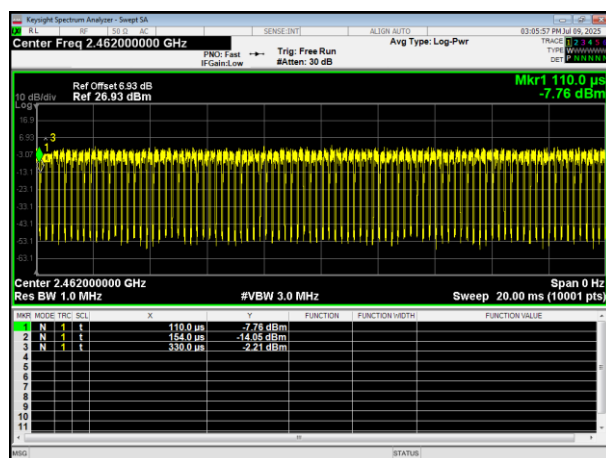
2412MHz



2437MHz



2437MHz

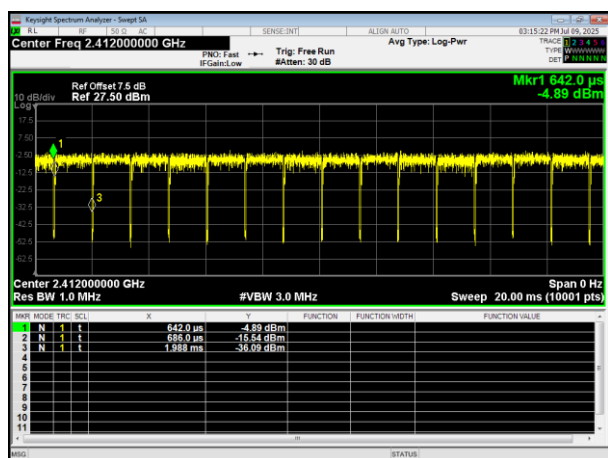


2462MHz

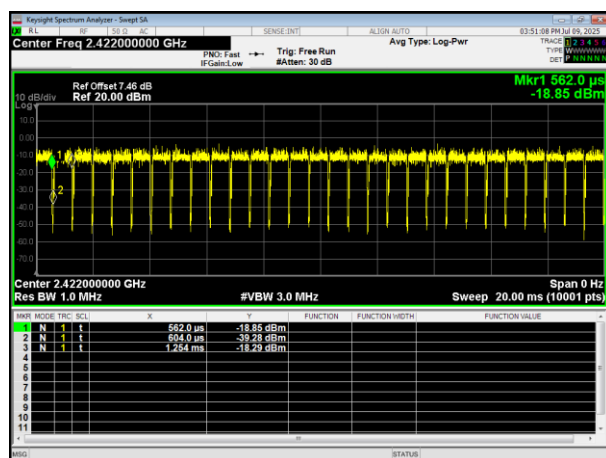
2462MHz



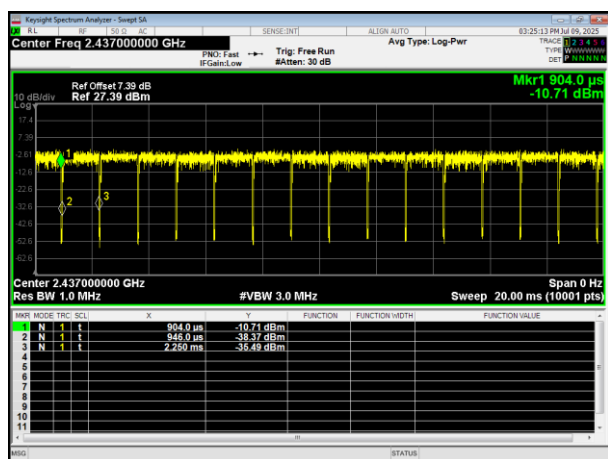
802.11n HT20



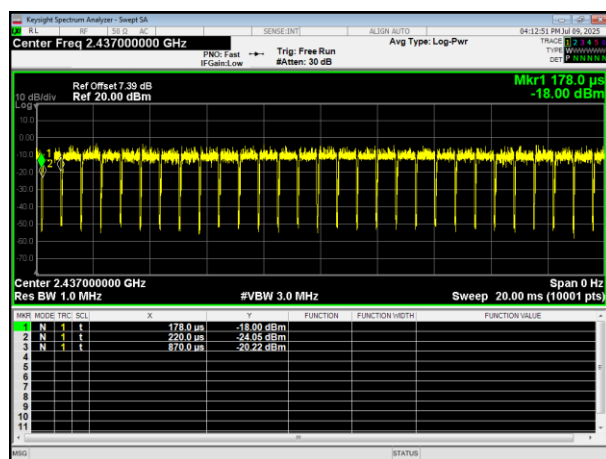
802.11n HT40



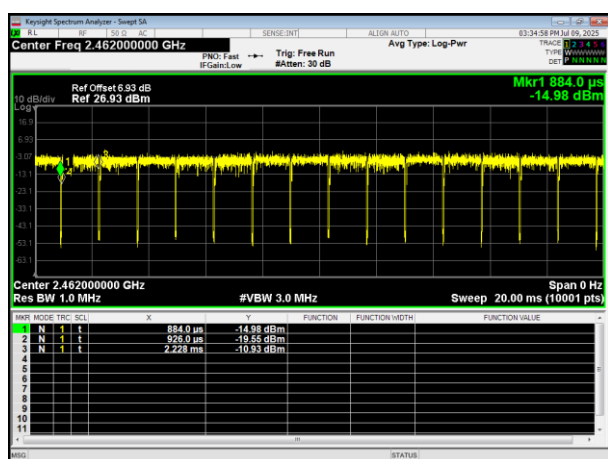
2412MHz



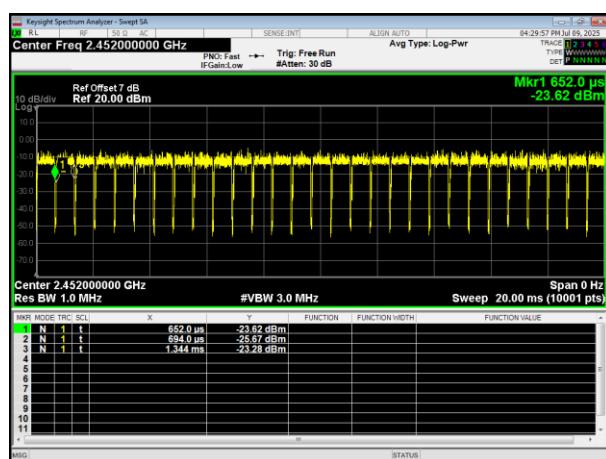
2422MHz



2437MHz



2437MHz



2462MHz

2452MHz



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

RSS-Gen requirement: The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

8.2 EUT ANTENNA

The EUT antenna is Internal Antenna, It comply with the standard requirement.

9. TEST SEUUP PHOTO

Reference to the appendix I for details.

10. EUT PHOTO

Reference to the appendix II for details.

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