



FCC TEST REPORT

FCC ID:2BOXN-E5

Applicant: Huizhou Dachi Electronics Co., Ltd
Address: No. 206, Shuikou Street Office, No.1 Dezheng Road, Shuikou, Huicheng District, Huizhou City, Guangdong Province, China

Manufacturer: Huizhou Dachi Electronics Co., Ltd
Address: No. 206, Shuikou Street Office, No.1 Dezheng Road, Shuikou, Huicheng District, Huizhou City, Guangdong Province, China

EUT: Motorcycle intelligence display

Trade Mark: N/A

Model Number: E5
D8Pro, G5, K6, G7, G6, E6, D98, D18, A5, A6, E18, F1, F5, F6, S5, S6, S8, T5, T6, P1, P5, P6, R5, R6, U18, U16, Q98, Q5, Z5, Z6

Date of Receipt: Apr. 02, 2025

Test Date: Apr. 02, 2025 to Apr. 09, 2025

Date of Report: Apr. 09, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China

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

Test Result: Pass

Report Number: DLE-250422009R

Prepared (Test Engineer): Dimon 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.



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1. VERSION

Report No.	Version	Description	Approved
DLE-250422009R	Rev.01	Initial issue of report	Apr. 09, 2025



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	N/A	
FCC part 15.247 (b)(3)	Conducted Peak Output Power	PASS	
FCC part 15.247 (a)(2)	6dB Occupied Bandwidth	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	
ANSI C63.10:2013	Duty cycle	PASS	

NOTE:

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



2.1 TEST FACILITY

Shenzhen DL Testing Technology Co., Ltd.

Add. : 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB identifier: CN0118

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=1.8MHz
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:	Motorcycle intelligence display
Model No.:	E5
Serial No.:	D8Pro, G5, K6, G7, G6, E6, D98, D18, A5, A6, E18, F1, F5, F6, S5, S6, S8, T5, T6, P1, P5, P6, R5, R6, U18, U16, Q98, Q5, Z5, Z6
Model Different.:	All the model are the same circuit and RF module, Only the model name different.
Hardware Version:	V1.0
Software Version:	V1.1
Sample(s) Status:	Engineer sample
Frequency Range:	2412-2462MHz for 802.11 b/g/n20 2422-2452MHz for 802.11 n40
Channel numbers:	802.11b/g/n (20M): 11 CH 802.11n (40M): 7 CH
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum(DSSS) 802.11g/n: Orthogonal Frequency Division Multiplexing(OFDM)
Data Rate:	802.11b: 1/2/5.5/11Mbit/s 802.11g: 6/9/12/24/18/36/48/54Mbit/s 802.11n: MCS0-MCS7
Antenna Type:	FPC Antenna
Antenna Gain:	2.50dBi
Power Supply:	Input: DC 12V



Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	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/g/n (20M)	802.11n (40M)
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 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. For battery operated equipment, the equipment tests shall be performed using a new battery.	

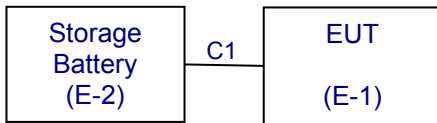
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:				
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.				
Mode	802.11b	802.11g	802.11n20	802.11n40
Data rate	1Mbps	6Mbps	MCS0(HT0)	MCS0(HT0)

Test Software	REALTEK 11n 8723FU
Power level setup	Default

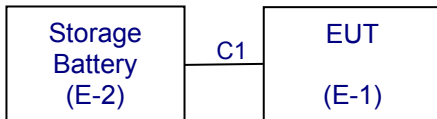


3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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	Motorcycle intelligence display	N/A	E5	N/A	EUT
E-2	Storage Battery	NANFU	ZKT-00	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.8M	DC Cable

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) EUT is tested with new battery.



3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conduction Emissions Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Sep. 30, 2024	Sep. 29, 2025
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	C-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
4	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Sep. 29, 2024	Sep. 28, 2025
5	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

Radiation Emissions & Radiation Spurious Emissions Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 29, 2024	Sep. 28, 2025
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 30, 2024	Sep. 29, 2025
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Sep. 29, 2024	Sep. 28, 2025
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Sep. 30, 2024	Sep. 29, 2025
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Sep. 30, 2024	Sep. 29, 2025
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Oct. 11, 2024	Oct. 10, 2025
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Sep. 29, 2024	Sep. 28, 2025
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Sep. 29, 2024	Sep. 28, 2025
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Sep. 30, 2024	Sep. 29, 2025
11	Test Cable	N/A	R-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
12	Test Cable	N/A	R-02	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
13	Test Cable	N/A	R-03	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
14	D.C. Power Supply	LongWei	TPR-6405D	GQ7516	N/A	Sep. 29, 2024	Sep. 28, 2025
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
16	Turntable	MF	MF-7802BS	N/A	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\



RF Conducted Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 29, 2024	Sep. 28, 2025
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	RF-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
4	Test Cable	N/A	RF-02	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Test Cable	N/A	RF-03	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
6	ESG Signal Generator	Agilent	E4421B	GB40051203	B.03.84	Sep. 29, 2024	Sep. 28, 2025
7	Signal Generator	Agilent	N5182A	MY47420215	A.01.87	Sep. 29, 2024	Sep. 28, 2025
8	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	N/A	Sep. 29, 2024	Sep. 28, 2025
9	Van der Hoofden measuring head	Schwarzbeck Mess-elektronik	VDHH 9502	9502-039	N/A	Sep. 30, 2024	Sep. 29, 2025
10	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Sep. 30, 2024	Sep. 29, 2025
11	MWRF Power Meter Test system	MW	MW100-RF CB	10371	N/A	Sep. 29, 2024	Sep. 28, 2025
12	Power Meter	KEYSIGHT	N1912AP	926431	A.05.00	Sep. 29, 2024	Sep. 28, 2025
13	D.C. Power Supply	LongWei	TPR-6405D	GQ7516	N/A	Sep. 29, 2024	Sep. 28, 2025
14	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\



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

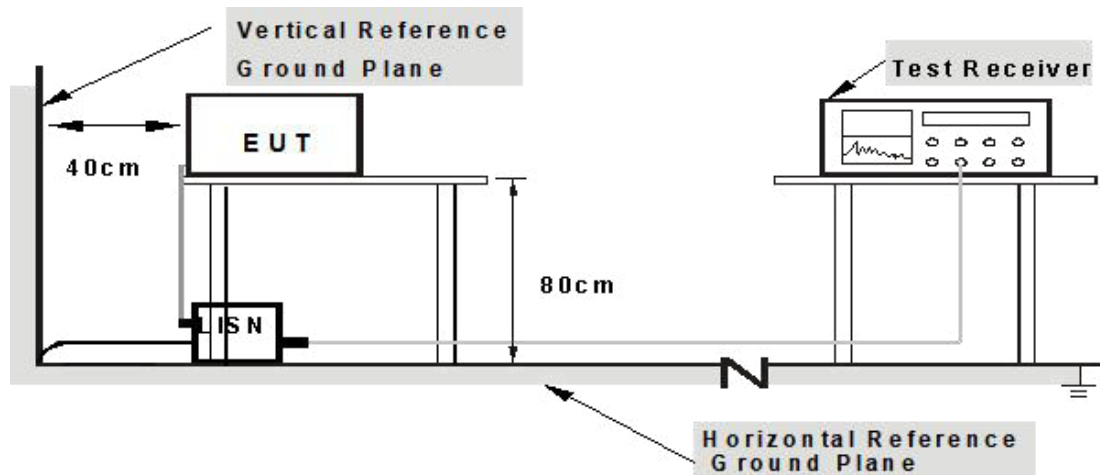
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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 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.

4.1.6 TEST RESULT

N/A

Only AC product need to test this item, DC product is not applicable.



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:

- a. 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dBmargin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

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

Note:

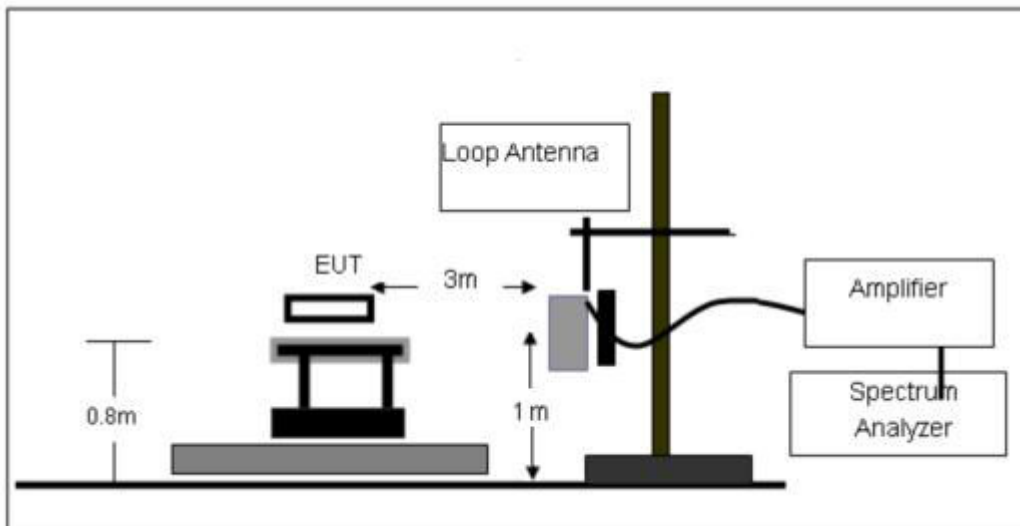
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

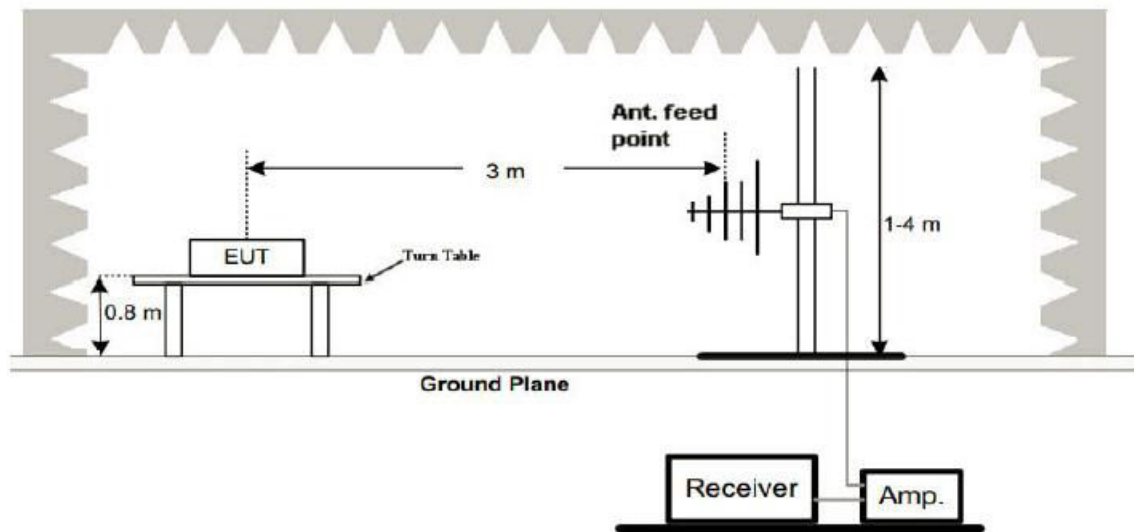
No deviation

4.2.4 TEST SETUP

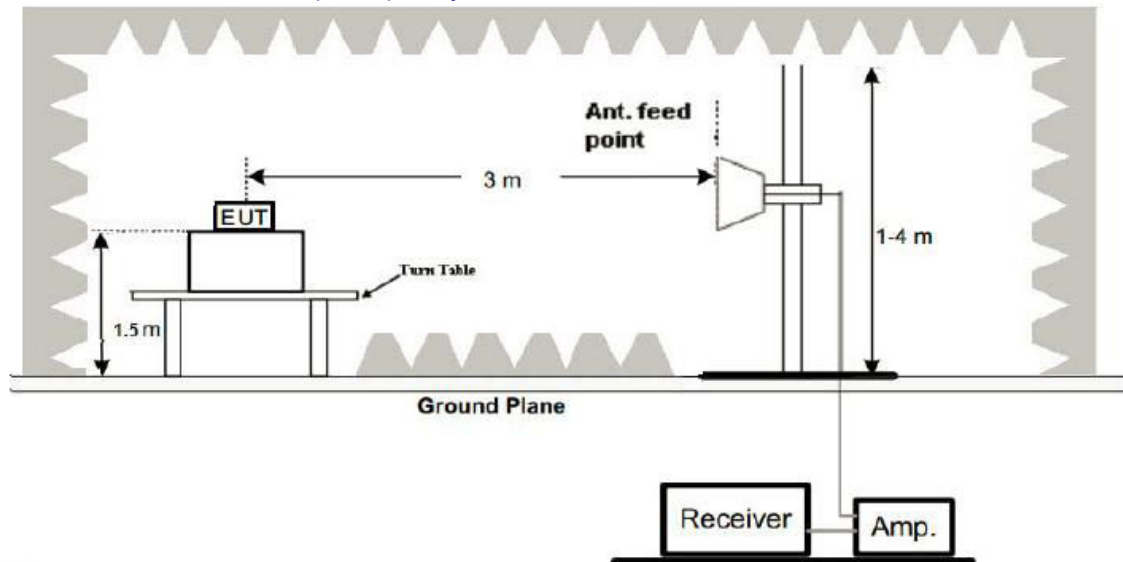
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 TEST RESULTS

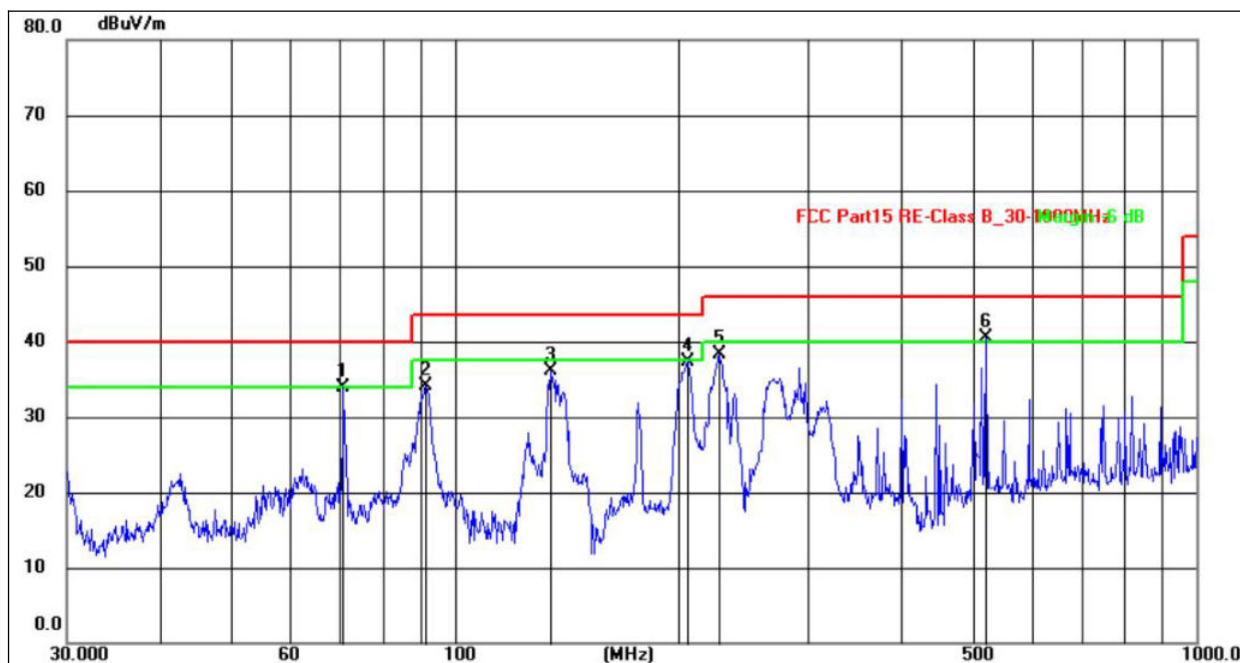
Between 9KHz – 30MHz

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 12V	Test Mode :	TX 802.11n20 - 2412MHz



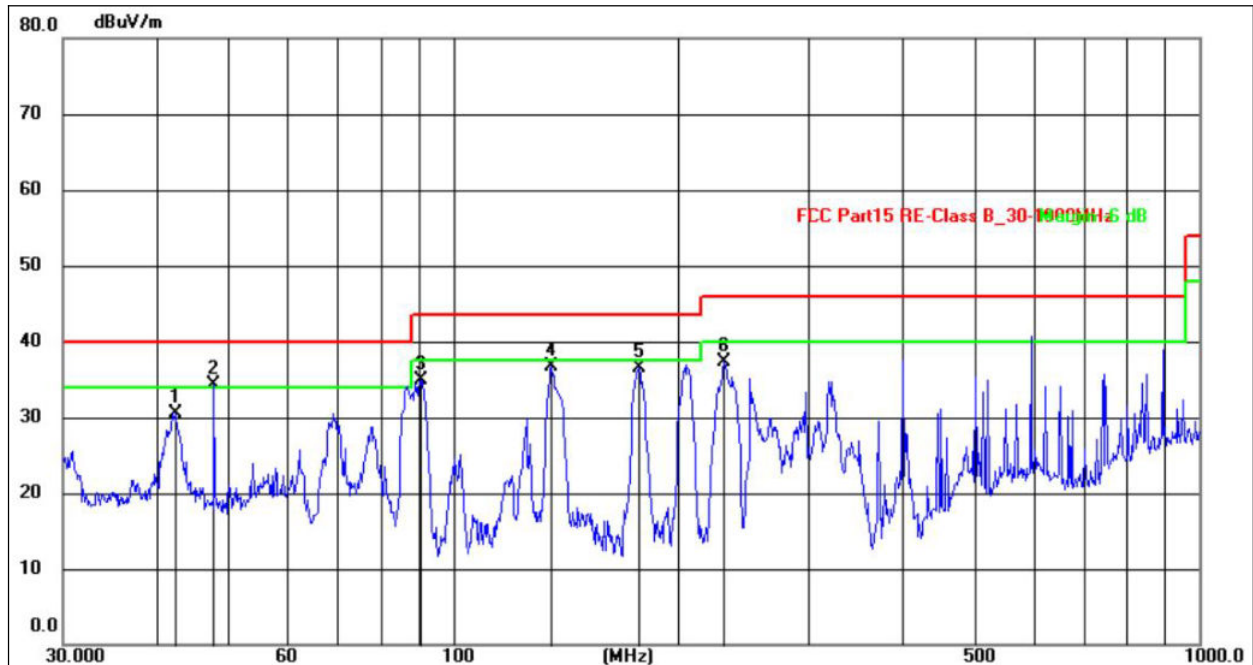
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	70.8315	50.95	-16.99	33.96	40.00	-6.04	QP
2	91.4946	54.11	-20.03	34.08	43.50	-9.42	QP
3	134.5591	53.29	-17.20	36.09	43.50	-7.41	QP
4	206.3975	55.51	-18.17	37.34	43.50	-6.16	QP
5	227.6904	55.10	-16.87	38.23	46.00	-7.77	QP
6	520.8881	51.01	-10.48	40.53	46.00	-5.47	QP

Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss factor - Amplifier factor.
6. Margin = Measurement Level - Limit.
7. The test data shows only the worst case TX 802.11n20 - 2412MHz.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 12V	Test Mode :	TX 802.11n20 - 2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	42.4508	47.34	-16.86	30.48	40.00	-9.52	QP
2	47.8260	51.36	-17.09	34.27	40.00	-5.73	QP
3	90.5374	56.33	-21.36	34.97	43.50	-8.53	QP
4	135.5061	57.57	-20.84	36.73	43.50	-6.77	QP
5	177.5089	56.21	-19.63	36.58	43.50	-6.92	QP
6	230.9067	57.21	-19.99	37.22	46.00	-8.78	QP

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
- 3.The emission levels of other frequencies are very lower than the limit and not show in test report.
- 4.Final Level = Reading level + Correct Factor.
- 5.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 6.Margin = Measurement Level-Limit.
- 7.The test data shows only the worst case TX 802.11n20 - 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	51.39	30.55	5.77	24.66	51.27	74.00	-22.73	PK
V	4824.00	43.90	30.55	5.77	24.66	43.78	54.00	-10.22	AV
V	7236.00	54.81	30.33	6.32	24.55	55.35	74.00	-18.65	PK
V	7236.00	43.80	30.33	6.32	24.55	44.34	54.00	-9.66	AV
V	9648.00	51.07	30.85	7.45	24.69	52.36	74.00	-21.64	PK
V	9648.00	43.01	30.85	7.45	24.69	44.30	54.00	-9.70	AV
V	12060.00	54.33	31.02	8.99	25.57	57.87	74.00	-16.13	PK
V	12060.00	43.18	31.02	8.99	25.57	46.72	54.00	-7.28	AV
H	4824.00	53.87	30.55	5.77	24.66	53.75	74.00	-20.25	PK
H	4824.00	43.45	30.55	5.77	24.66	43.33	54.00	-10.67	AV
H	7236.00	50.98	30.33	6.32	24.55	51.52	74.00	-22.48	PK
H	7236.00	43.24	30.33	6.32	24.55	43.78	54.00	-10.22	AV
H	9648.00	52.44	30.85	7.45	24.69	53.73	74.00	-20.27	PK
H	9648.00	43.95	30.85	7.45	24.69	45.24	54.00	-8.76	AV
H	12060.00	50.59	31.02	8.99	25.57	54.13	74.00	-19.87	PK
H	12060.00	43.52	31.02	8.99	25.57	47.06	54.00	-6.94	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	54.88	30.55	5.77	24.66	54.76	74.00	-19.24	PK
V	4874.00	43.87	30.55	5.77	24.66	43.75	54.00	-10.25	AV
V	7311.00	53.99	30.33	6.32	24.55	54.53	74.00	-19.47	PK
V	7311.00	43.96	30.33	6.32	24.55	44.50	54.00	-9.50	AV
V	9748.00	53.46	30.85	7.45	24.69	54.75	74.00	-19.25	PK
V	9748.00	43.72	30.85	7.45	24.69	45.01	54.00	-8.99	AV
V	12185.00	54.35	31.02	8.99	25.57	57.89	74.00	-16.11	PK
V	12185.00	43.38	31.02	8.99	25.57	46.92	54.00	-7.08	AV
H	4874.00	53.35	30.55	5.77	24.66	53.23	74.00	-20.77	PK
H	4874.00	43.85	30.55	5.77	24.66	43.73	54.00	-10.27	AV
H	7311.00	53.79	30.33	6.32	24.55	54.33	74.00	-19.67	PK
H	7311.00	43.76	30.33	6.32	24.55	44.30	54.00	-9.70	AV
H	9748.00	50.77	30.85	7.45	24.69	52.06	74.00	-21.94	PK
H	9748.00	43.70	30.85	7.45	24.69	44.99	54.00	-9.01	AV
H	12185.00	53.47	31.02	8.99	25.57	57.01	74.00	-16.99	PK
H	12185.00	43.05	31.02	8.99	25.57	46.59	54.00	-7.41	AV



Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924.00	50.65	30.55	5.77	24.66	50.53	74.00	-23.47	PK
V	4924.00	43.16	30.55	5.77	24.66	43.04	54.00	-10.96	AV
V	7386.00	51.63	30.33	6.32	24.55	52.17	74.00	-21.83	PK
V	7386.00	43.25	30.33	6.32	24.55	43.79	54.00	-10.21	AV
V	9848.00	54.73	30.85	7.45	24.69	56.02	74.00	-17.98	PK
V	9848.00	43.01	30.85	7.45	24.69	44.30	54.00	-9.70	AV
V	12310.00	54.47	31.02	8.99	25.57	58.01	74.00	-15.99	PK
V	12310.00	43.34	31.02	8.99	25.57	46.88	54.00	-7.12	AV
H	4924.00	53.91	30.55	5.77	24.66	53.79	74.00	-20.21	PK
H	4924.00	43.27	30.55	5.77	24.66	43.15	54.00	-10.85	AV
H	7386.00	52.49	30.33	6.32	24.55	53.03	74.00	-20.97	PK
H	7386.00	43.61	30.33	6.32	24.55	44.15	54.00	-9.85	AV
H	9848.00	51.70	30.85	7.45	24.69	52.99	74.00	-21.01	PK
H	9848.00	43.73	30.85	7.45	24.69	45.02	54.00	-8.98	AV
H	12310.00	52.55	31.02	8.99	25.57	56.09	74.00	-17.91	PK
H	12310.00	43.30	31.02	8.99	25.57	46.84	54.00	-7.16	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	51.01	30.55	5.77	24.66	50.89	74.00	-23.11	PK
V	4824.00	43.24	30.55	5.77	24.66	43.12	54.00	-10.88	AV
V	7236.00	52.61	30.33	6.32	24.55	53.15	74.00	-20.85	PK
V	7236.00	43.34	30.33	6.32	24.55	43.88	54.00	-10.12	AV
V	9648.00	51.31	30.85	7.45	24.69	52.60	74.00	-21.40	PK
V	9648.00	43.25	30.85	7.45	24.69	44.54	54.00	-9.46	AV
V	12060.00	54.95	31.02	8.99	25.57	58.49	74.00	-15.51	PK
V	12060.00	43.52	31.02	8.99	25.57	47.06	54.00	-6.94	AV
H	4824.00	54.84	30.55	5.77	24.66	54.72	74.00	-19.28	PK
H	4824.00	43.55	30.55	5.77	24.66	43.43	54.00	-10.57	AV
H	7236.00	50.72	30.33	6.32	24.55	51.26	74.00	-22.74	PK
H	7236.00	43.61	30.33	6.32	24.55	44.15	54.00	-9.85	AV
H	9648.00	53.92	30.85	7.45	24.69	55.21	74.00	-18.79	PK
H	9648.00	43.18	30.85	7.45	24.69	44.47	54.00	-9.53	AV
H	12060.00	53.53	31.02	8.99	25.57	57.07	74.00	-16.93	PK
H	12060.00	43.78	31.02	8.99	25.57	47.32	54.00	-6.68	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	50.12	30.55	5.77	24.66	50.00	74.00	-24.00	PK
V	4874.00	43.88	30.55	5.77	24.66	43.76	54.00	-10.24	AV
V	7311.00	50.52	30.33	6.32	24.55	51.06	74.00	-22.94	PK
V	7311.00	43.27	30.33	6.32	24.55	43.81	54.00	-10.19	AV
V	9748.00	51.07	30.85	7.45	24.69	52.36	74.00	-21.64	PK
V	9748.00	43.59	30.85	7.45	24.69	44.88	54.00	-9.12	AV
V	12185.00	52.79	31.02	8.99	25.57	56.33	74.00	-17.67	PK
V	12185.00	43.45	31.02	8.99	25.57	46.99	54.00	-7.01	AV
H	4874.00	53.93	30.55	5.77	24.66	53.81	74.00	-20.19	PK
H	4874.00	43.82	30.55	5.77	24.66	43.70	54.00	-10.30	AV
H	7311.00	51.07	30.33	6.32	24.55	51.61	74.00	-22.39	PK
H	7311.00	43.10	30.33	6.32	24.55	43.64	54.00	-10.36	AV
H	9748.00	50.61	30.85	7.45	24.69	51.90	74.00	-22.10	PK
H	9748.00	43.18	30.85	7.45	24.69	44.47	54.00	-9.53	AV
H	12185.00	53.36	31.02	8.99	25.57	56.90	74.00	-17.10	PK
H	12185.00	43.76	31.02	8.99	25.57	47.30	54.00	-6.70	AV



Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924.00	50.36	30.55	5.77	24.66	50.24	74.00	-23.76	PK
V	4924.00	43.86	30.55	5.77	24.66	43.74	54.00	-10.26	AV
V	7386.00	51.78	30.33	6.32	24.55	52.32	74.00	-21.68	PK
V	7386.00	43.12	30.33	6.32	24.55	43.66	54.00	-10.34	AV
V	9848.00	52.06	30.85	7.45	24.69	53.35	74.00	-20.65	PK
V	9848.00	43.93	30.85	7.45	24.69	45.22	54.00	-8.78	AV
V	12310.00	52.43	31.02	8.99	25.57	55.97	74.00	-18.03	PK
V	12310.00	43.64	31.02	8.99	25.57	47.18	54.00	-6.82	AV
H	4924.00	50.09	30.55	5.77	24.66	49.97	74.00	-24.03	PK
H	4924.00	43.10	30.55	5.77	24.66	42.98	54.00	-11.02	AV
H	7386.00	54.69	30.33	6.32	24.55	55.23	74.00	-18.77	PK
H	7386.00	43.16	30.33	6.32	24.55	43.70	54.00	-10.30	AV
H	9848.00	52.00	30.85	7.45	24.69	53.29	74.00	-20.71	PK
H	9848.00	43.04	30.85	7.45	24.69	44.33	54.00	-9.67	AV
H	12310.00	51.28	31.02	8.99	25.57	54.82	74.00	-19.18	PK
H	12310.00	43.09	31.02	8.99	25.57	46.63	54.00	-7.37	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	53.98	30.55	5.77	24.66	53.86	74.00	-20.14	PK
V	4824.00	43.60	30.55	5.77	24.66	43.48	54.00	-10.52	AV
V	7236.00	53.94	30.33	6.32	24.55	54.48	74.00	-19.52	PK
V	7236.00	43.13	30.33	6.32	24.55	43.67	54.00	-10.33	AV
V	9648.00	54.25	30.85	7.45	24.69	55.54	74.00	-18.46	PK
V	9648.00	43.39	30.85	7.45	24.69	44.68	54.00	-9.32	AV
V	12060.00	53.00	31.02	8.99	25.57	56.54	74.00	-17.46	PK
V	12060.00	43.78	31.02	8.99	25.57	47.32	54.00	-6.68	AV
H	4824.00	52.78	30.55	5.77	24.66	52.66	74.00	-21.34	PK
H	4824.00	43.65	30.55	5.77	24.66	43.53	54.00	-10.47	AV
H	7236.00	53.16	30.33	6.32	24.55	53.70	74.00	-20.30	PK
H	7236.00	43.60	30.33	6.32	24.55	44.14	54.00	-9.86	AV
H	9648.00	52.20	30.85	7.45	24.69	53.49	74.00	-20.51	PK
H	9648.00	43.89	30.85	7.45	24.69	45.18	54.00	-8.82	AV
H	12060.00	51.78	31.02	8.99	25.57	55.32	74.00	-18.68	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	54.39	30.55	5.77	24.66	54.27	74.00	-19.73	PK
V	4874.00	43.77	30.55	5.77	24.66	43.65	54.00	-10.35	AV
V	7311.00	53.88	30.33	6.32	24.55	54.42	74.00	-19.58	PK
V	7311.00	43.56	30.33	6.32	24.55	44.10	54.00	-9.90	AV
V	9748.00	51.06	30.85	7.45	24.69	52.35	74.00	-21.65	PK
V	9748.00	43.01	30.85	7.45	24.69	44.30	54.00	-9.70	AV
V	12185.00	52.34	31.02	8.99	25.57	55.88	74.00	-18.12	PK
V	12185.00	43.41	31.02	8.99	25.57	46.95	54.00	-7.05	AV
H	4874.00	51.91	30.55	5.77	24.66	51.79	74.00	-22.21	PK
H	4874.00	43.90	30.55	5.77	24.66	43.78	54.00	-10.22	AV
H	7311.00	51.27	30.33	6.32	24.55	51.81	74.00	-22.19	PK
H	7311.00	43.77	30.33	6.32	24.55	44.31	54.00	-9.69	AV
H	9748.00	54.03	30.85	7.45	24.69	55.32	74.00	-18.68	PK
H	9748.00	43.81	30.85	7.45	24.69	45.10	54.00	-8.90	AV
H	12185.00	52.65	31.02	8.99	25.57	56.19	74.00	-17.81	PK
H	12185.00	43.18	31.02	8.99	25.57	46.72	54.00	-7.28	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	54.09	30.55	5.77	24.66	53.97	74.00	-20.03	PK
V	4924.00	43.25	30.55	5.77	24.66	43.13	54.00	-10.87	AV
V	7386.00	51.73	30.33	6.32	24.55	52.27	74.00	-21.73	PK
V	7386.00	43.40	30.33	6.32	24.55	43.94	54.00	-10.06	AV
V	9848.00	51.07	30.85	7.45	24.69	52.36	74.00	-21.64	PK
V	9848.00	43.27	30.85	7.45	24.69	44.56	54.00	-9.44	AV
V	12310.00	50.43	31.02	8.99	25.57	53.97	74.00	-20.03	PK
V	12310.00	43.90	31.02	8.99	25.57	47.44	54.00	-6.56	AV
H	4924.00	53.48	30.55	5.77	24.66	53.36	74.00	-20.64	PK
H	4924.00	43.81	30.55	5.77	24.66	43.69	54.00	-10.31	AV
H	7386.00	51.45	30.33	6.32	24.55	51.99	74.00	-22.01	PK
H	7386.00	43.26	30.33	6.32	24.55	43.80	54.00	-10.20	AV
H	9848.00	54.66	30.85	7.45	24.69	55.95	74.00	-18.05	PK
H	9848.00	43.70	30.85	7.45	24.69	44.99	54.00	-9.01	AV
H	12310.00	54.82	31.02	8.99	25.57	58.36	74.00	-15.64	PK
H	12310.00	43.47	31.02	8.99	25.57	47.01	54.00	-6.99	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	51.83	30.55	5.77	24.66	51.71	74.00	-22.29	PK
V	4844.00	43.69	30.55	5.77	24.66	43.57	54.00	-10.43	AV
V	7266.00	52.24	30.33	6.32	24.55	52.78	74.00	-21.22	PK
V	7266.00	43.08	30.33	6.32	24.55	43.62	54.00	-10.38	AV
V	9688.00	52.03	30.85	7.45	24.69	53.32	74.00	-20.68	PK
V	9688.00	43.54	30.85	7.45	24.69	44.83	54.00	-9.17	AV
V	12110.00	52.11	31.02	8.99	25.57	55.65	74.00	-18.35	PK
V	12110.00	43.10	31.02	8.99	25.57	46.64	54.00	-7.36	AV
H	4844.00	53.34	30.55	5.77	24.66	53.22	74.00	-20.78	PK
H	4844.00	43.75	30.55	5.77	24.66	43.63	54.00	-10.37	AV
H	7266.00	51.67	30.33	6.32	24.55	52.21	74.00	-21.79	PK
H	7266.00	43.67	30.33	6.32	24.55	44.21	54.00	-9.79	AV
H	9688.00	50.20	30.85	7.45	24.69	51.49	74.00	-22.51	PK
H	9688.00	43.58	30.85	7.45	24.69	44.87	54.00	-9.13	AV
H	12110.00	54.56	31.02	8.99	25.57	58.10	74.00	-15.90	PK
H	12110.00	43.15	31.02	8.99	25.57	46.69	54.00	-7.31	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	53.96	30.55	5.77	24.66	53.84	74.00	-20.16	PK
V	4874.00	43.37	30.55	5.77	24.66	43.25	54.00	-10.75	AV
V	7311.00	53.71	30.33	6.32	24.55	54.25	74.00	-19.75	PK
V	7311.00	43.87	30.33	6.32	24.55	44.41	54.00	-9.59	AV
V	9748.00	50.37	30.85	7.45	24.69	51.66	74.00	-22.34	PK
V	9748.00	43.41	30.85	7.45	24.69	44.70	54.00	-9.30	AV
V	12185.00	53.96	31.02	8.99	25.57	57.50	74.00	-16.50	PK
V	12185.00	43.30	31.02	8.99	25.57	46.84	54.00	-7.16	AV
H	4874.00	52.00	30.55	5.77	24.66	51.88	74.00	-22.12	PK
H	4874.00	43.28	30.55	5.77	24.66	43.16	54.00	-10.84	AV
H	7311.00	52.42	30.33	6.32	24.55	52.96	74.00	-21.04	PK
H	7311.00	43.55	30.33	6.32	24.55	44.09	54.00	-9.91	AV
H	9748.00	54.00	30.85	7.45	24.69	55.29	74.00	-18.71	PK
H	9748.00	43.78	30.85	7.45	24.69	45.07	54.00	-8.93	AV
H	12185.00	52.16	31.02	8.99	25.57	55.70	74.00	-18.30	PK
H	12185.00	43.25	31.02	8.99	25.57	46.79	54.00	-7.21	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	52.30	30.55	5.77	24.66	52.18	74.00	-21.82	PK
V	4904.00	43.42	30.55	5.77	24.66	43.30	54.00	-10.70	AV
V	7356.00	52.81	30.33	6.32	24.55	53.35	74.00	-20.65	PK
V	7356.00	43.77	30.33	6.32	24.55	44.31	54.00	-9.69	AV
V	9808.00	52.33	30.85	7.45	24.69	53.62	74.00	-20.38	PK
V	9808.00	43.12	30.85	7.45	24.69	44.41	54.00	-9.59	AV
V	12260.00	52.42	31.02	8.99	25.57	55.96	74.00	-18.04	PK
V	12260.00	43.15	31.02	8.99	25.57	46.69	54.00	-7.31	AV
H	4904.00	52.90	30.55	5.77	24.66	52.78	74.00	-21.22	PK
H	4904.00	43.21	30.55	5.77	24.66	43.09	54.00	-10.91	AV
H	7356.00	51.44	30.33	6.32	24.55	51.98	74.00	-22.02	PK
H	7356.00	43.04	30.33	6.32	24.55	43.58	54.00	-10.42	AV
H	9808.00	51.54	30.85	7.45	24.69	52.83	74.00	-21.17	PK
H	9808.00	43.58	30.85	7.45	24.69	44.87	54.00	-9.13	AV
H	12260.00	51.03	31.02	8.99	25.57	54.57	74.00	-19.43	PK
H	12260.00	43.40	31.02	8.99	25.57	46.94	54.00	-7.06	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 Part15 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 (2390MHz 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 0.8 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 10dBmargin 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

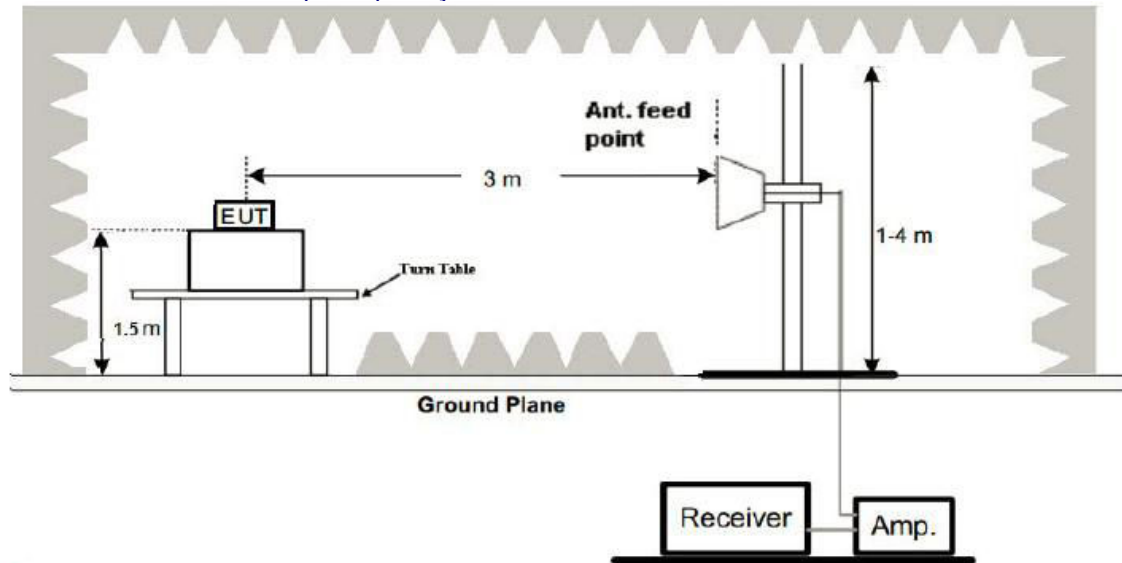
5.3 DEVIATION FROM TEST STANDARD

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 chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



5.6 TEST RESULT

Remark:

$$\text{Emission Level} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Pre-amplifier, Margin} = \text{Emission Level} - \text{Limit}$$

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBu V/m)	Margin (dB)	Dete ctor Type	Result
802.11 n20	LowChannel 2412MHz										
	H	2390.00	53.23	30.22	4.85	23.98	51.84	74.00	-22.16	PK	PASS
	H	2390.00	44.15	30.22	4.85	23.98	42.76	54.00	-11.24	AV	PASS
	H	2400.00	53.21	30.22	4.85	23.98	51.82	74.00	-22.18	PK	PASS
	H	2400.00	44.10	30.22	4.85	23.98	42.71	54.00	-11.29	AV	PASS
	V	2390.00	53.51	30.22	4.85	23.98	52.12	74.00	-21.88	PK	PASS
	V	2390.00	44.45	30.22	4.85	23.98	43.06	54.00	-10.94	AV	PASS
	V	2400.00	54.02	30.22	4.85	23.98	52.63	74.00	-21.37	PK	PASS
	V	2400.00	44.61	30.22	4.85	23.98	43.22	54.00	-10.78	AV	PASS
	HighChannel 2462MHz										
	H	2483.50	54.22	30.22	4.85	23.98	52.83	74.00	-21.17	PK	PASS
	H	2483.50	44.92	30.22	4.85	23.98	43.53	54.00	-10.47	AV	PASS
	H	2500.00	54.54	30.22	4.85	23.98	53.15	74.00	-20.85	PK	PASS
	H	2500.00	44.70	30.22	4.85	23.98	43.31	54.00	-10.69	AV	PASS
	V	2483.50	54.80	30.22	4.85	23.98	53.41	74.00	-20.59	PK	PASS
	V	2483.50	44.43	30.22	4.85	23.98	43.04	54.00	-10.96	AV	PASS
	V	2500.00	53.29	30.22	4.85	23.98	51.90	74.00	-22.10	PK	PASS
	V	2500.00	44.26	30.22	4.85	23.98	42.87	54.00	-11.13	AV	PASS
802.11 n40	LowChannel 2422MHz										
	H	2390.00	54.75	30.22	4.85	23.98	53.36	74.00	-20.64	PK	PASS
	H	2390.00	44.64	30.22	4.85	23.98	43.25	54.00	-10.75	AV	PASS
	H	2400.00	53.83	30.22	4.85	23.98	52.44	74.00	-21.56	PK	PASS
	H	2400.00	44.96	30.22	4.85	23.98	43.57	54.00	-10.43	AV	PASS
	V	2390.00	53.29	30.22	4.85	23.98	51.90	74.00	-22.10	PK	PASS
	V	2390.00	44.56	30.22	4.85	23.98	43.17	54.00	-10.83	AV	PASS
	V	2400.00	54.15	30.22	4.85	23.98	52.76	74.00	-21.24	PK	PASS
	V	2400.00	44.86	30.22	4.85	23.98	43.47	54.00	-10.53	AV	PASS
	High Channel 2452MHz										
	H	2483.50	53.49	30.22	4.85	23.98	52.10	74.00	-21.90	PK	PASS
	H	2483.50	44.88	30.22	4.85	23.98	43.49	54.00	-10.51	AV	PASS
	H	2500.00	53.89	30.22	4.85	23.98	52.50	74.00	-21.50	PK	PASS
	H	2500.00	44.18	30.22	4.85	23.98	42.79	54.00	-11.21	AV	PASS
	V	2483.50	54.55	30.22	4.85	23.98	53.16	74.00	-20.84	PK	PASS
	V	2483.50	44.31	30.22	4.85	23.98	42.92	54.00	-11.08	AV	PASS
	V	2500.00	54.91	30.22	4.85	23.98	53.52	74.00	-20.48	PK	PASS
	V	2500.00	44.37	30.22	4.85	23.98	42.98	54.00	-11.02	AV	PASS
Remark: Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit											



6. POWER SPECTRAL DENSITY TEST

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB558074 D0115.247 Meas 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 chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



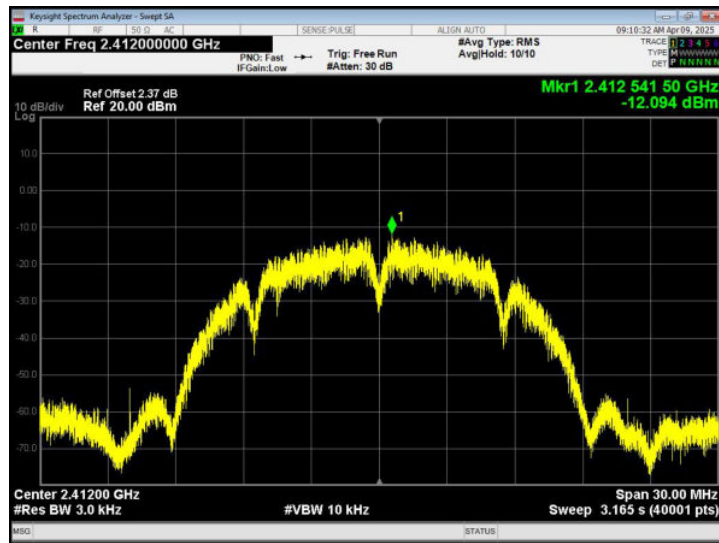
6.6 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V

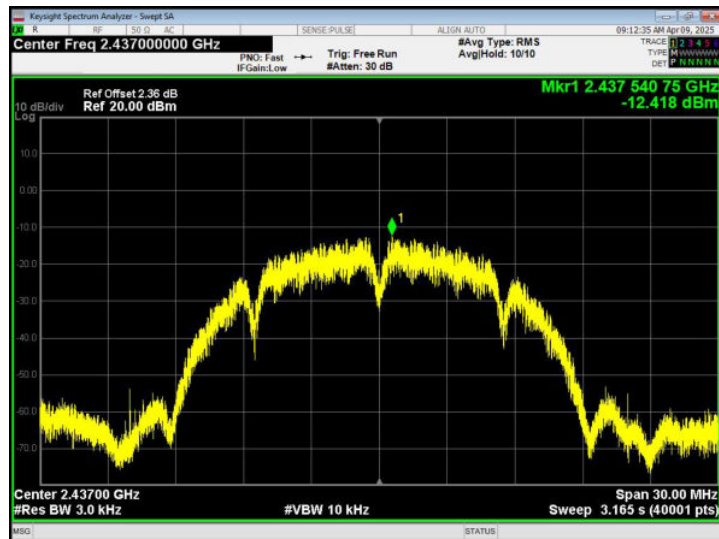
Test Mode	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
802.11b	2412	-12.094	8	PASS
	2437	-12.418	8	PASS
	2462	-13.115	8	PASS
802.11g	2412	-15.046	8	PASS
	2437	-15.207	8	PASS
	2462	-15.602	8	PASS
802.11n20	2412	-15.759	8	PASS
	2437	-15.351	8	PASS
	2462	-16.069	8	PASS
802.11n40	2422	-16.988	8	PASS
	2437	-17.188	8	PASS
	2452	-17.950	8	PASS



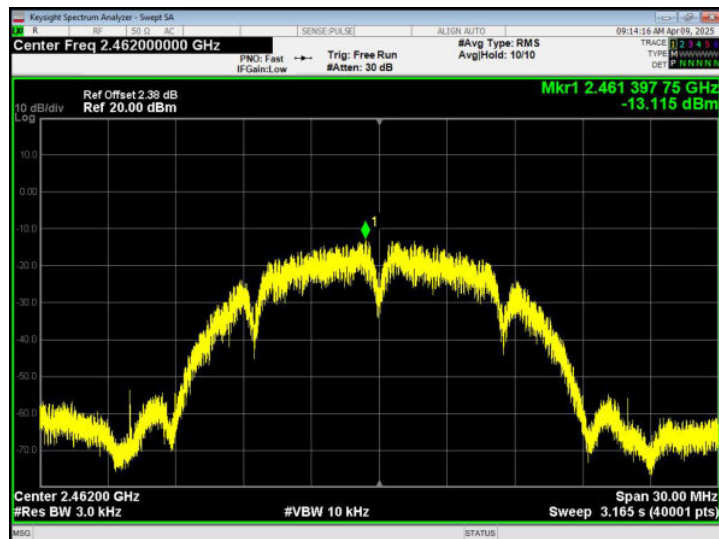
802.11b - CH01



802.11b - CH06

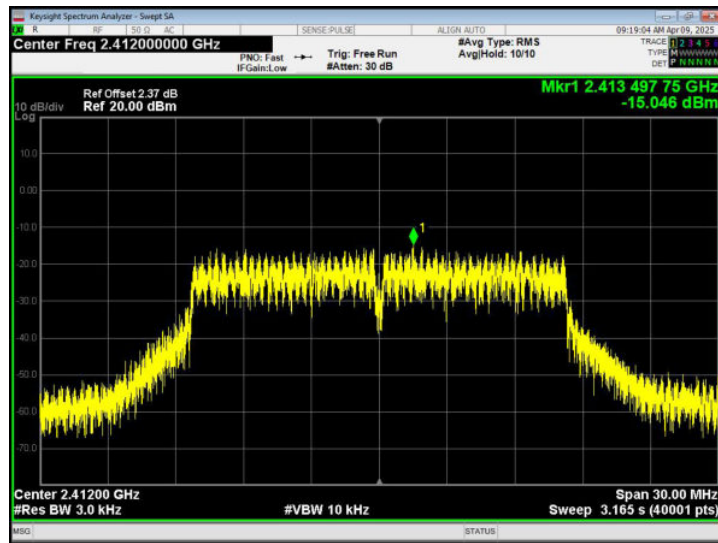


802.11b - CH11

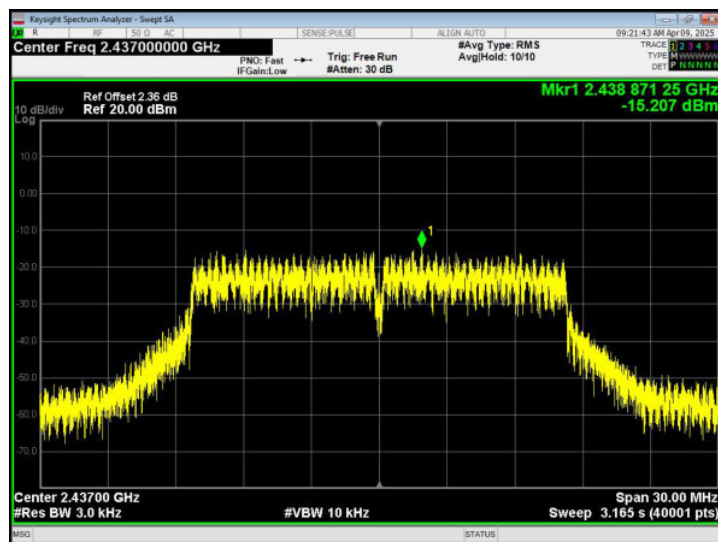




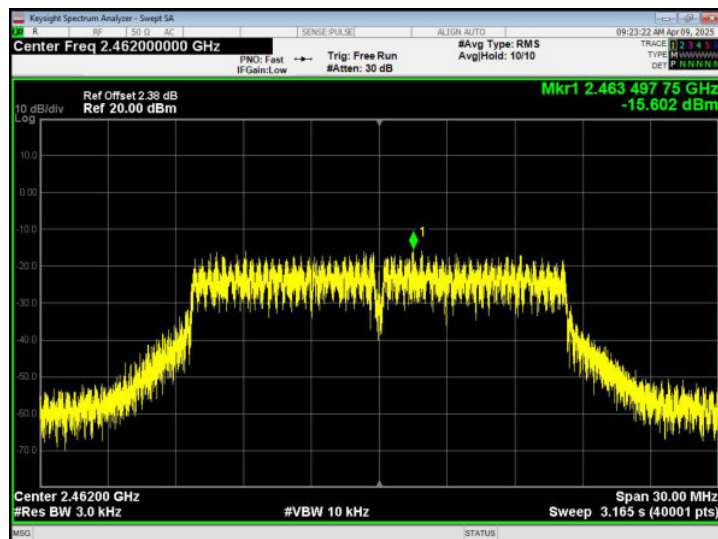
802.11g - CH01



802.11g - CH06

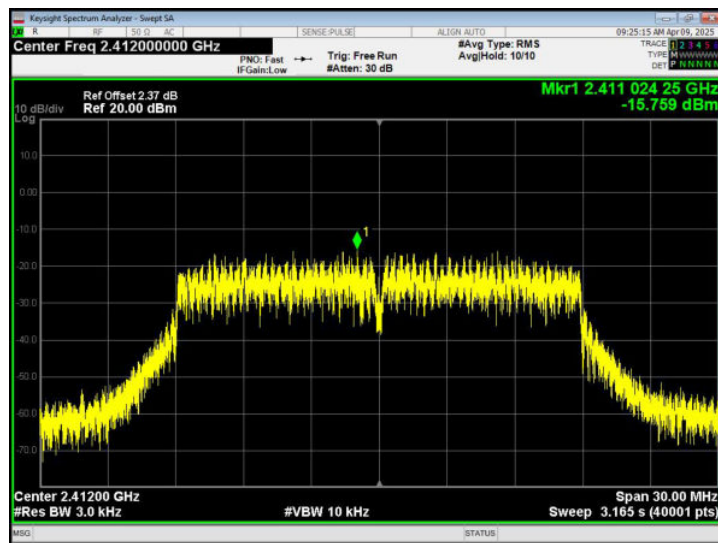


802.11g - CH11

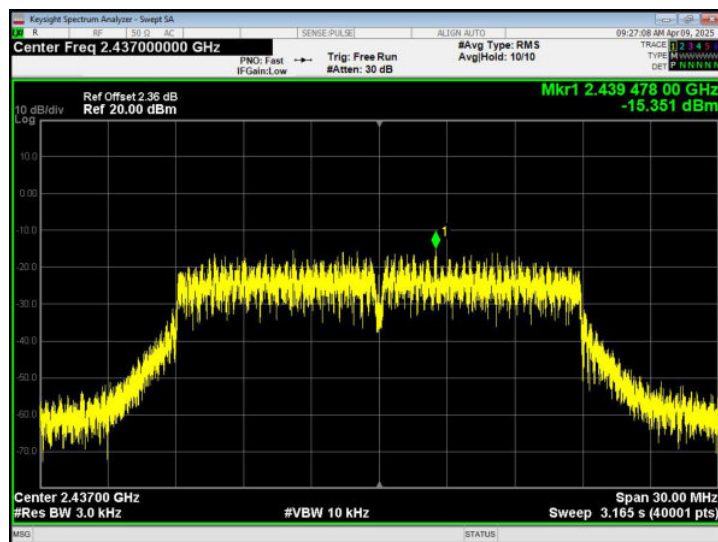




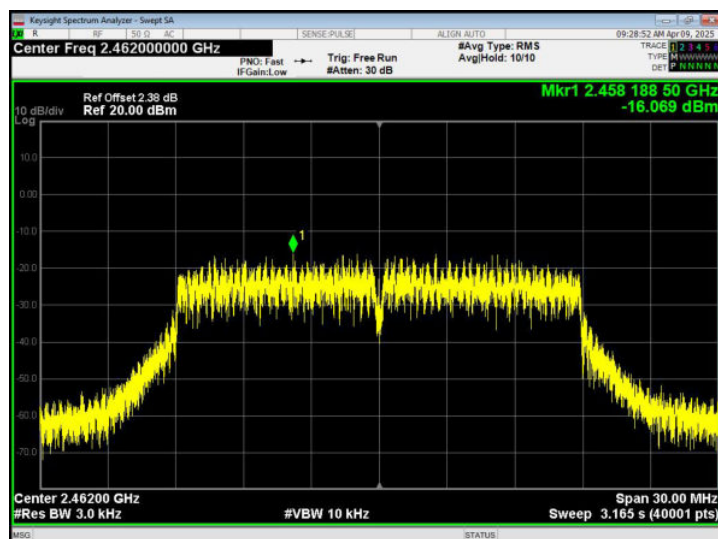
802.11n20 - CH01



802.11n20 - CH06

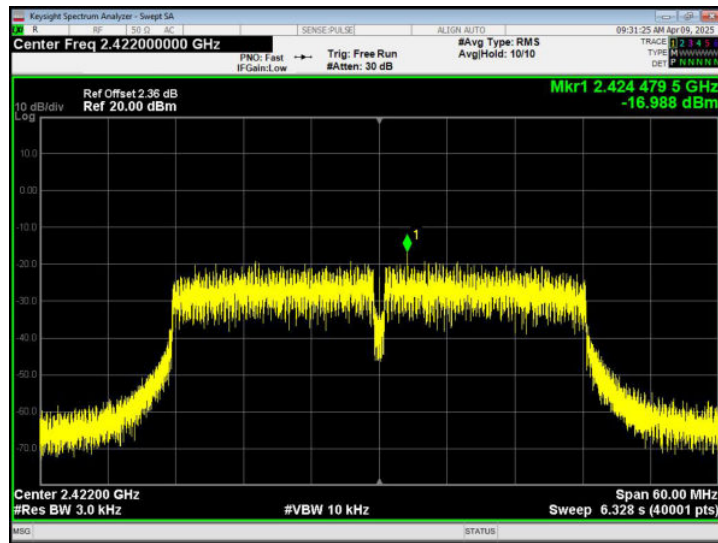


802.11n20 - CH11

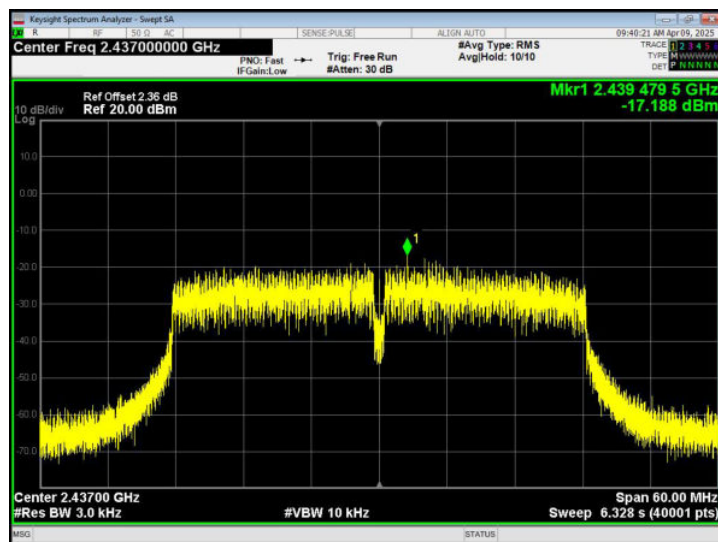




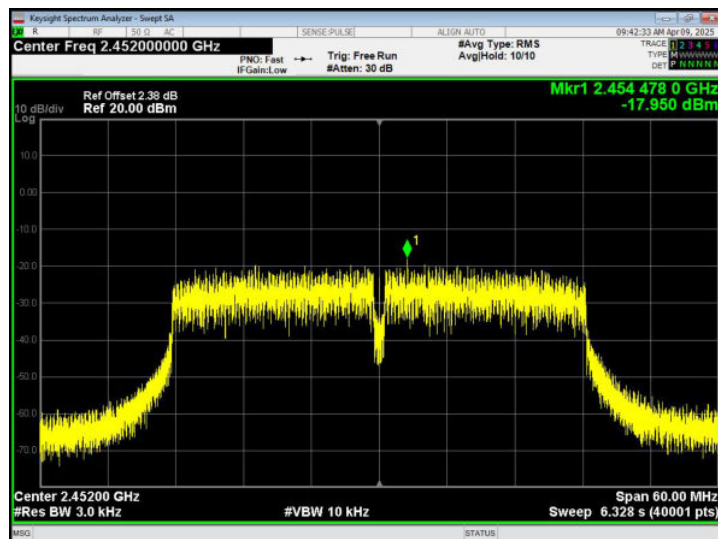
802.11n40 - CH03



802.11n40 - CH06



802.11n40 - CH09





7. 6DB OCCUPIED BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074 D0115.247 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 Occupied 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 chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



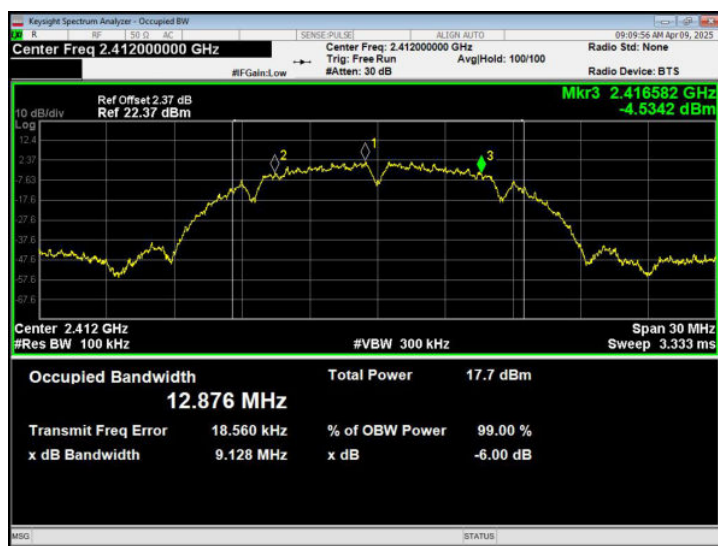
7.6 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX		

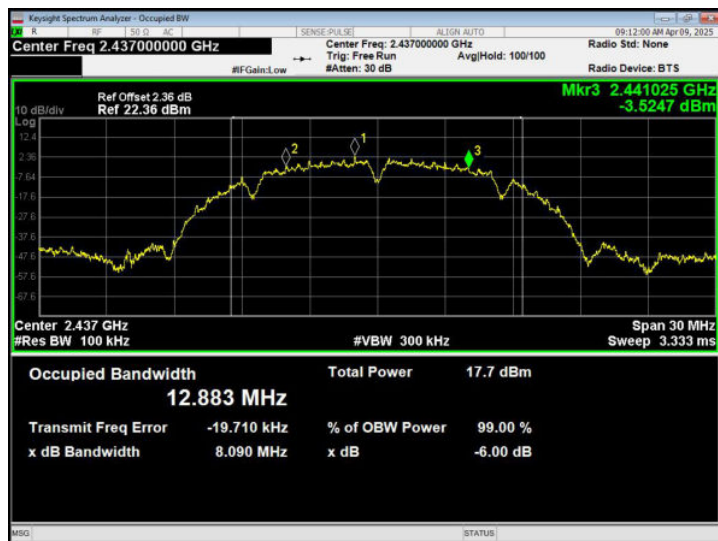
Test Mode	Test Channel (MHz)	6dB Occupied Bandwidth (MHz)	Limit (kHz)	Result
802.11b	2412	9.128	>500	Pass
	2437	8.090		
	2462	9.009		
802.11g	2412	16.04	>500	Pass
	2437	16.31		
	2462	16.31		
802.11n20	2412	17.30	>500	Pass
	2437	16.74		
	2462	17.12		
802.11n40	2422	35.13	>500	Pass
	2437	35.11		
	2452	35.12		



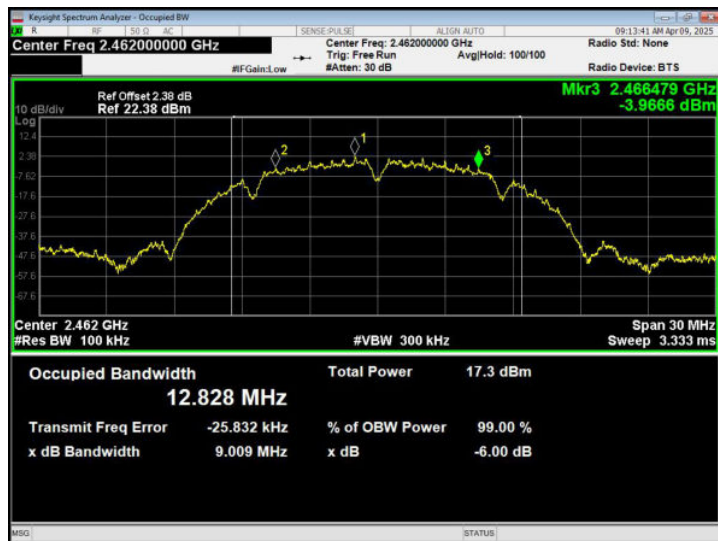
802.11b - CH01



802.11b - CH06

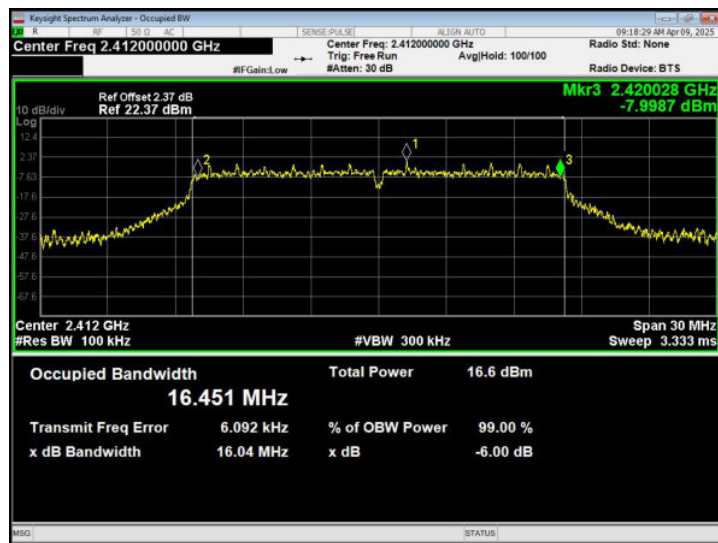


802.11b - CH11

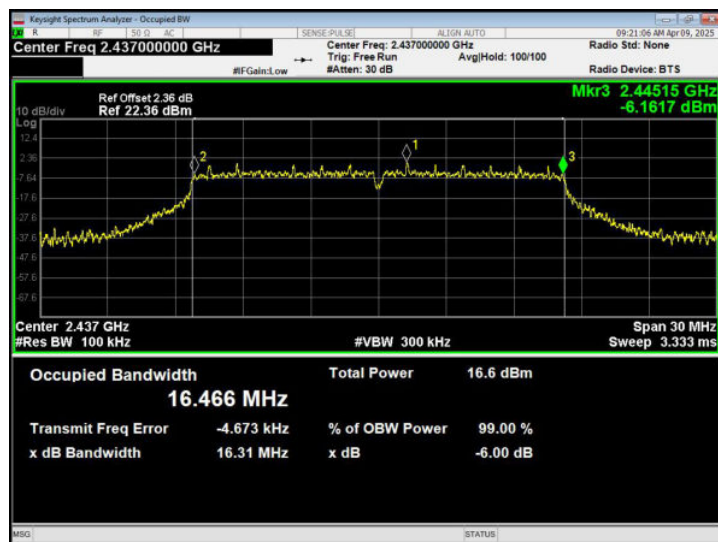




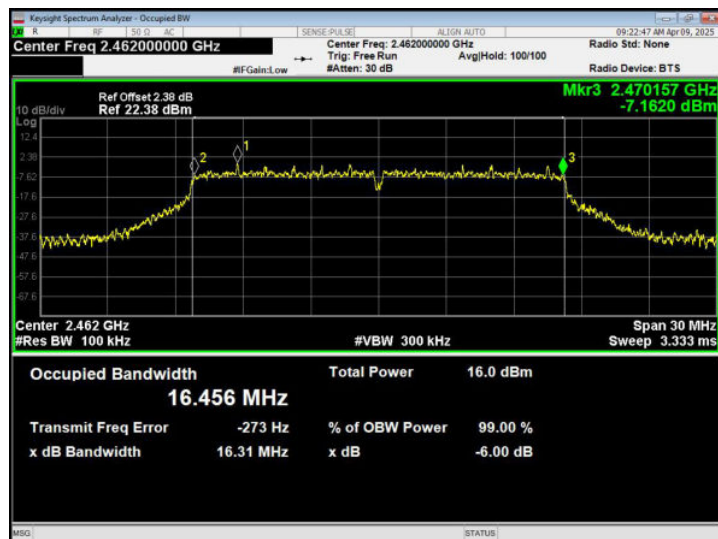
802.11g - CH01



802.11g - CH06

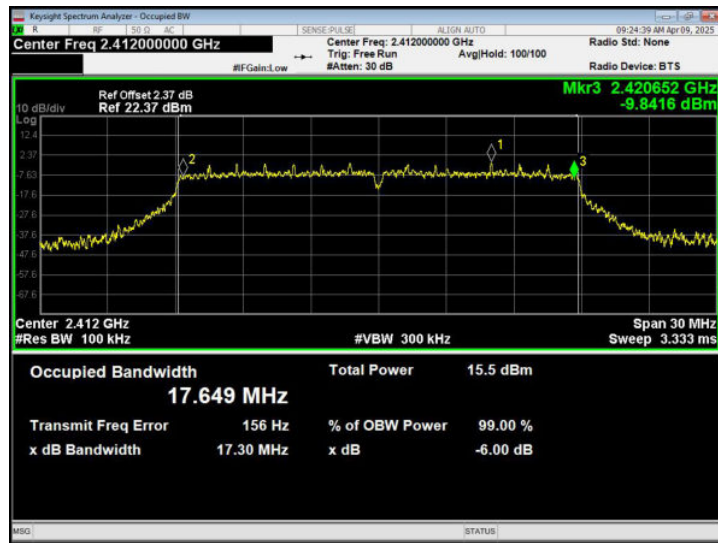


802.11g - CH11

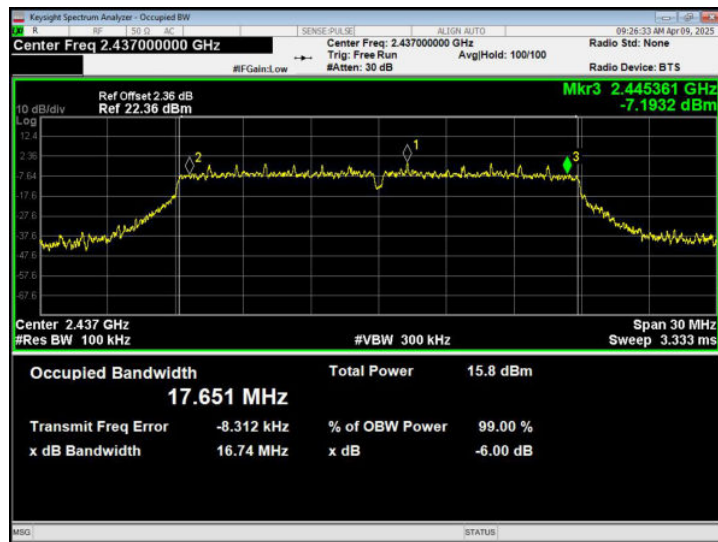




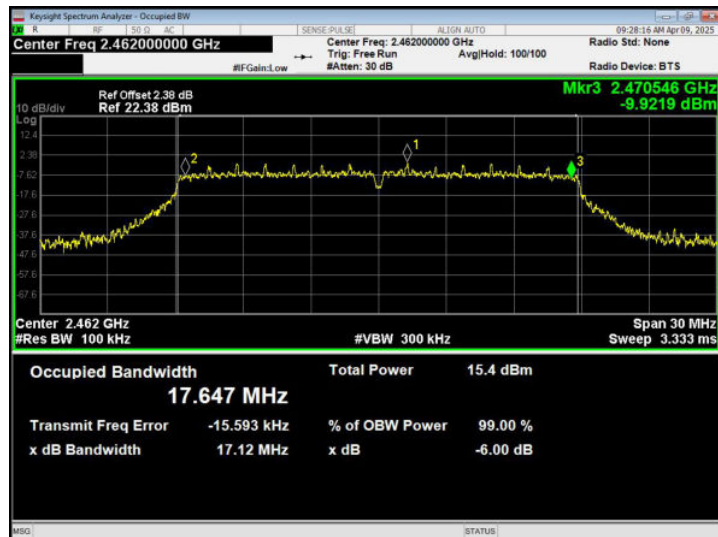
802.11n20 - CH01



802.11n20 - CH06

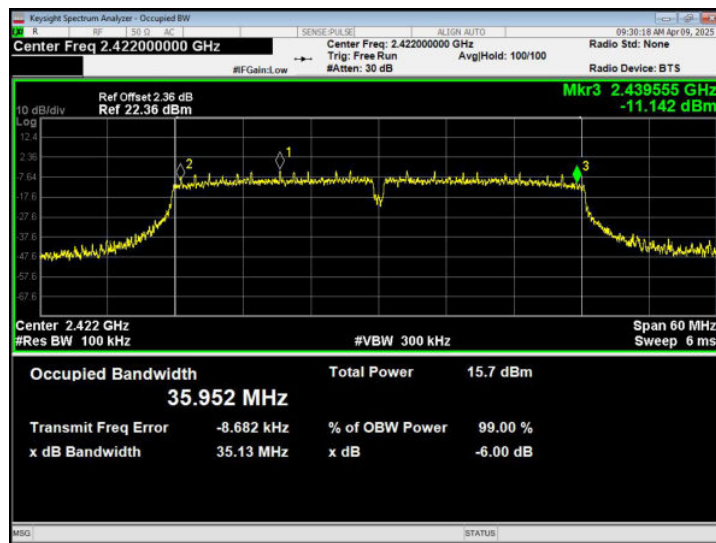


802.11n20 - CH11

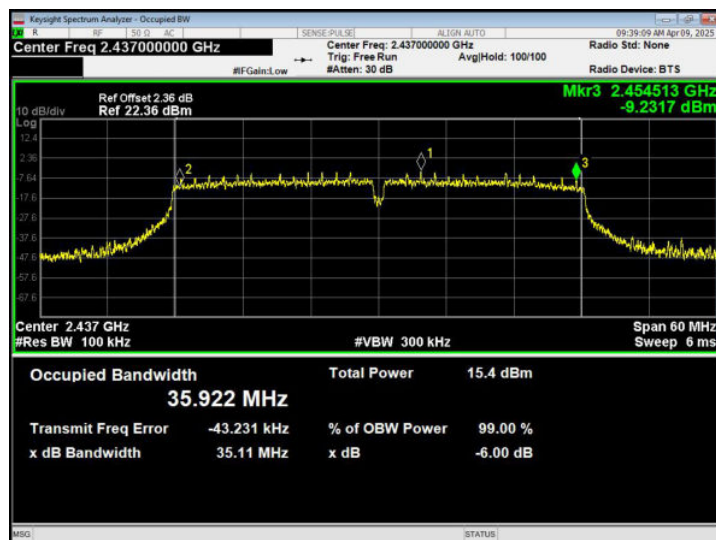




802.11n40 - CH03



802.11n40 - CH06



802.11n40 - CH09



**8. PEAK OUTPUT POWER TEST**

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 D0115.247 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 chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



8.6 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V

Test Mode	Test Channel (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b	2412	13.996	30.00	Pass
	2437	14.017		
	2462	13.489		
802.11g	2412	13.788	30.00	Pass
	2437	13.446		
	2462	13.278		
802.11n20	2412	13.160	30.00	Pass
	2437	13.322		
	2462	12.860		
802.11n40	2422	13.106	30.00	Pass
	2437	12.817		
	2452	12.752		



9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 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 chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.

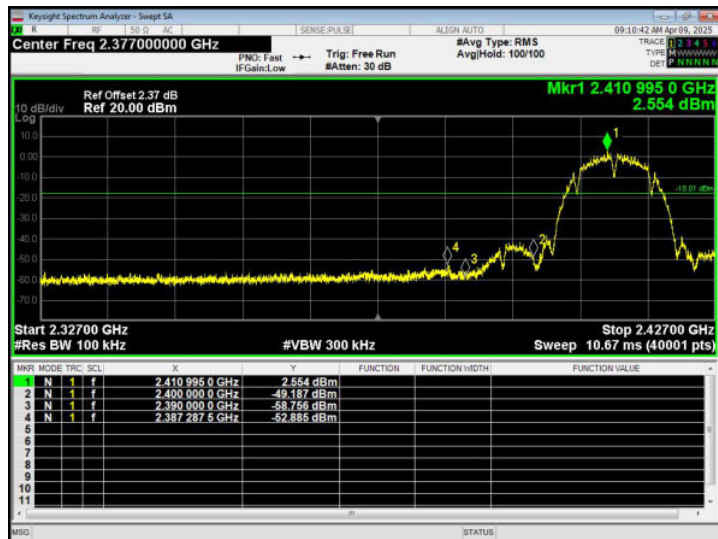
9.6 TEST RESULTS



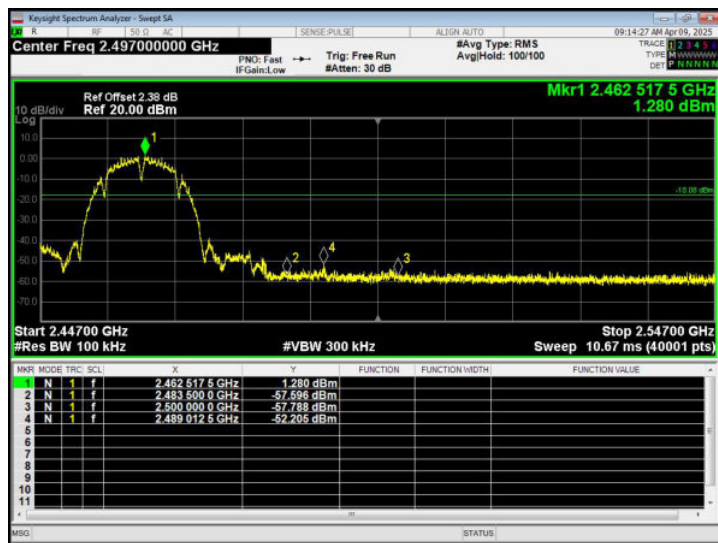
Band edge test plot as follows:

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V

802.11b - Lowest channel



802.11b - Highest channel





Keysight Spectrum Analyzer - Swept SA

09/19/10 09:05:05

Center Freq 2.412000000 GHz

SENSE: PULS

ALIGN: AUTO

#Avg Type: RMS

Avg/Hold: 100/100

PRM: Fast

IF Gain: Low

Trig: Free Run

#Atten: 30 dB

TRACE 1

TYPE: M

DEF: M

Mkr1 2.413 263.00 GHz

-0.467 dBm

10 dB/div

Ref Offset 2.37 dB

Ref 20.00 dBm

Log

Center 2.41200 GHz

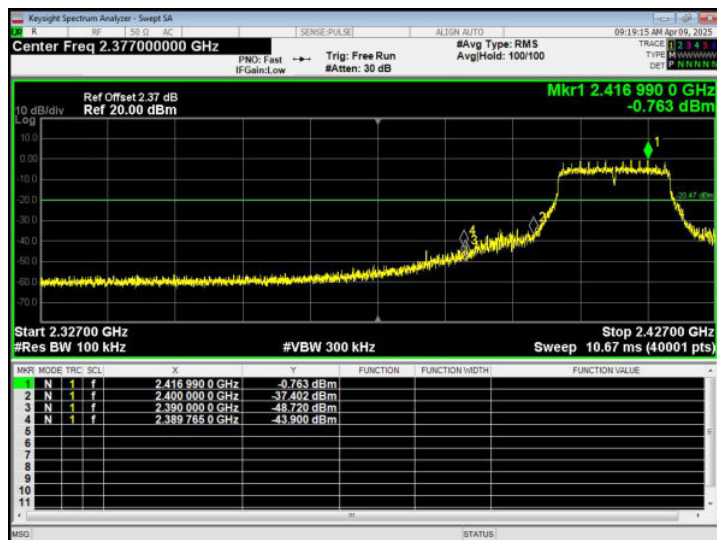
#Res BW 100 kHz

#VBW 300 kHz

Span 30.00 MHz

Sweep 5.333 ms (40001 pts)

STATUS



Keysight Spectrum Analyzer - Swept SA

09:23:27 AM Apr 05, 2025

Center Freq 2.46200000 GHz

PMW: Fast IF Gain: Low

Trig: Free Run #Atten: 30 dB

#Avg Type: RMS AvgHld: 100/100

TRACE 1 1.431 TYPE: MNRWMMN DEF: MNRWMMN

Mkr1 2.463 269.00 GHz -1.135 dBm

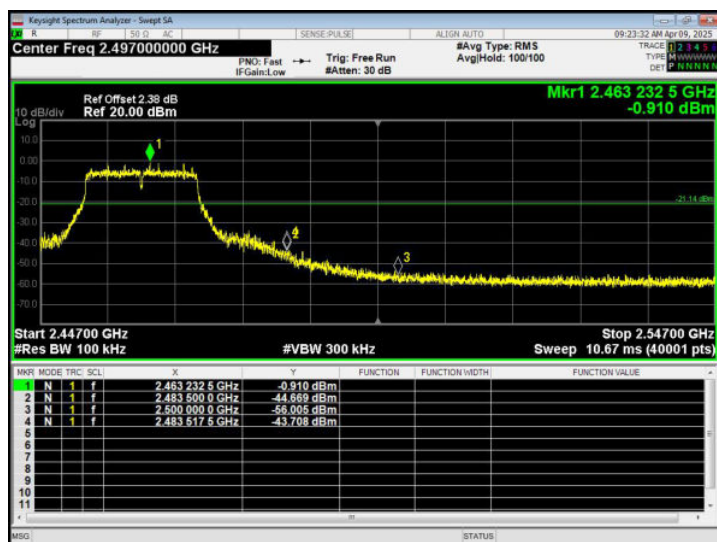
10 dB/div Ref Offset 2.38 dB Ref 20.00 dBm

Log

Center 2.46200 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 5.333 ms (40001 pts)

MSA [STATUS]

The image shows a Keysight Spectrum Analyzer display. The main plot area shows a signal trace with a peak at 2.463 GHz, marked with a green arrow and labeled '1'. The peak level is -1.135 dBm. The display includes various settings and information: Center Freq 2.46200000 GHz, Span 30.00 MHz, Res BW 100 kHz, VBW 300 kHz, Sweep 5.333 ms (40001 pts). The trace is labeled 'TRACE 1 1.431 TYPE: MNRWMMN DEF: MNRWMMN'. The peak level is also indicated as 'Mkr1 2.463 269.00 GHz -1.135 dBm'. The display also shows '10 dB/div', 'Ref Offset 2.38 dB', and 'Ref 20.00 dBm'. The status bar at the bottom shows 'MSA' and '[STATUS]'.





Keysight Spectrum Analyzer - Swept SA

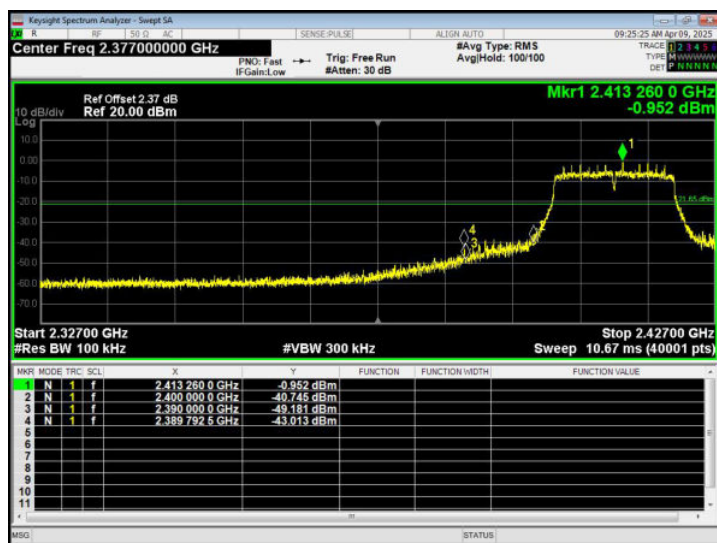
Center Freq 2.41200000 GHz

Ref Offset 2.37 dB
Ref 20.00 dBm

Span 30.00 MHz
#Res BW 100 kHz

Mkr1 2.416 985 25 GHz
-1.650 dBm

MSG (STATUS)



Keysight Spectrum Analyzer - Swept SA

Center Freq 2.46200000 GHz

PMW: Fast IF Gain: Low

SENSE: PULSE

Trig: Free Run

#Avg Type: RMS

Avg/Hold: 100/100

09:28:57 AM Apr 15, 2015

TRACE 1

TYPE: M

DEF: M

Ref Offset 2.38 dB

Ref 20.00 dBm

Mkr1 2.455 733 75 GHz

-1.926 dBm

10 dB/div

Log

Center 2.46200 GHz

#Res BW 100 kHz

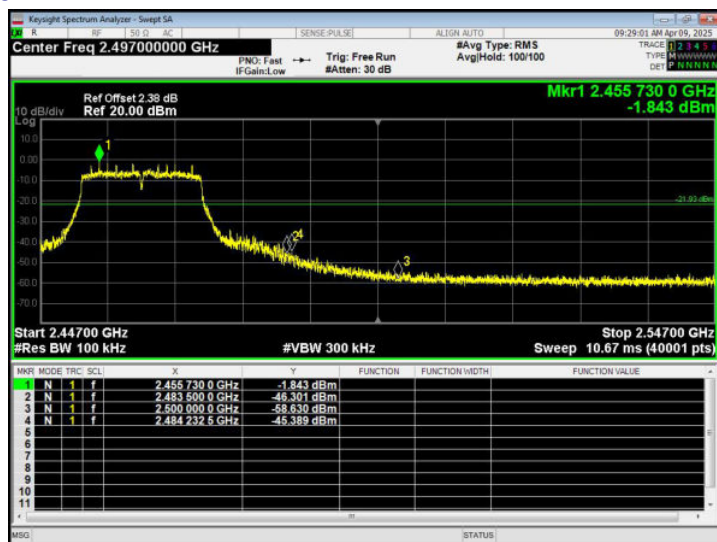
#VBW 300 kHz

Span 30.00 MHz

Sweep 5.333 ms (40001 pts)

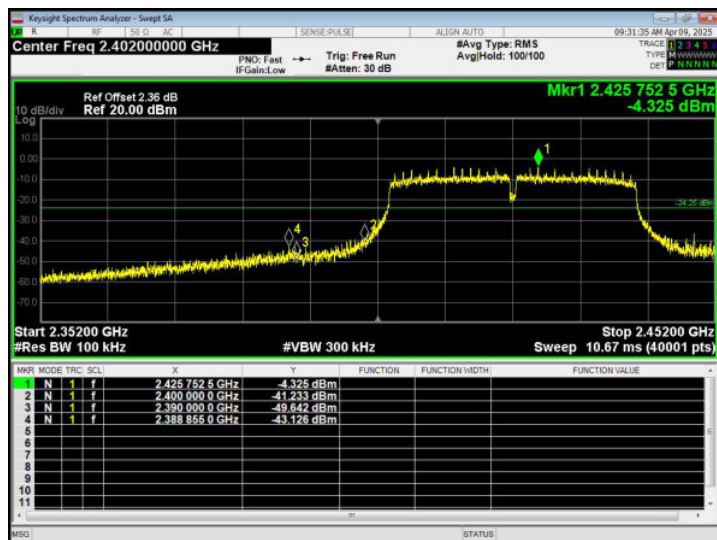
MSG

(STATUS)





Keysight Spectrum Analyzer - Sweep SA
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1



Keysight Spectrum Analyzer - Swept SA

Center Freq 2.452000000 GHz

Ref Offset 2.38 dB
Ref 20.00 dBm

Span 60.00 MHz
#Res BW 100 kHz
#VBW 300 kHz

Trig: Free Run
#Atten: 30 dB

#Avg Type: RMS
AvgHold: 100/100

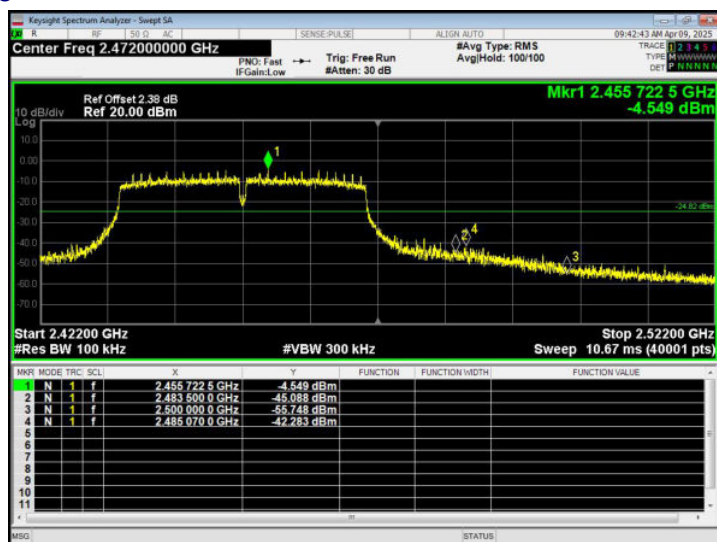
09:42:38 AM Apr 05, 2025

TRACE 1 1 1 1 1
TYPE MWWWWWW
DEF 1 NNNNN

Mkr1 2.443255 0 GHz
-4.817 dBm

10 dB/div
Log

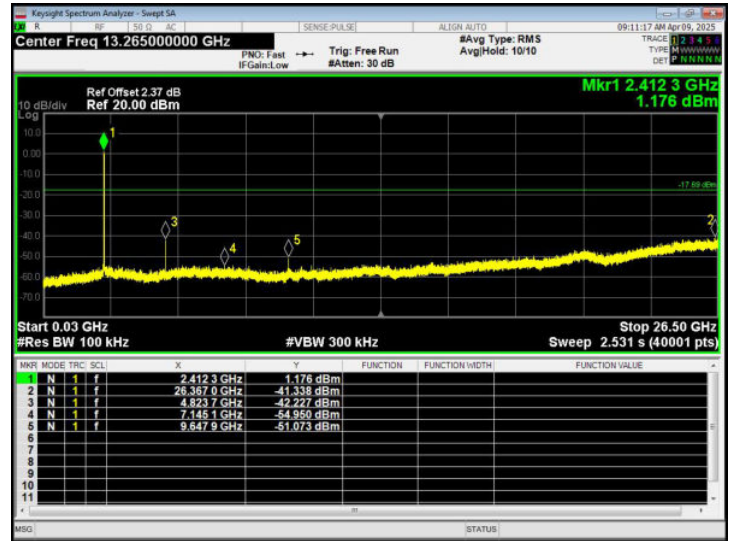
MSA [STATUS]



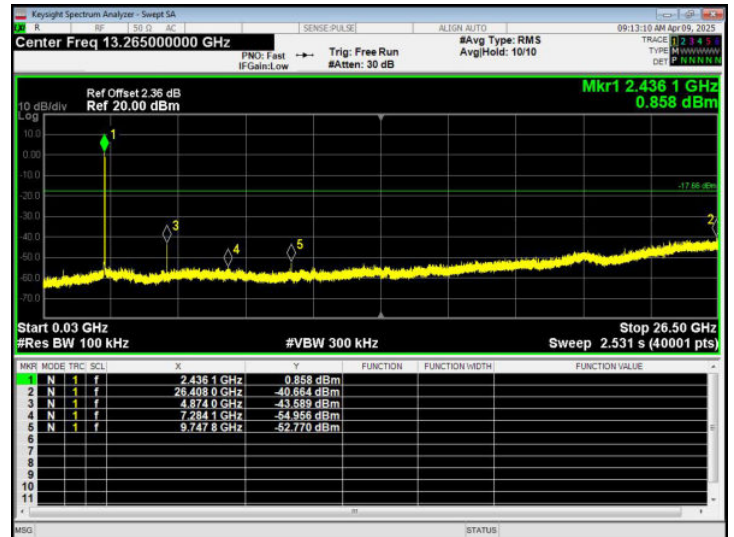


Spurious emission test plot as follows:

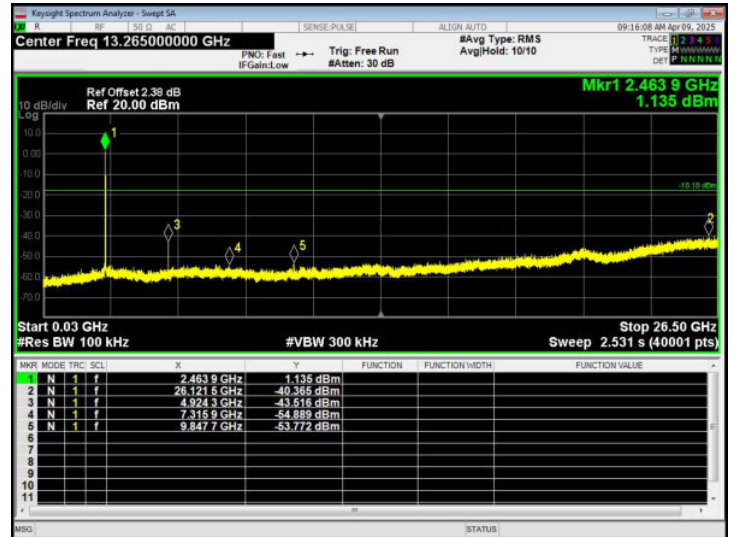
802.11b
Lowest channel



Middle channel



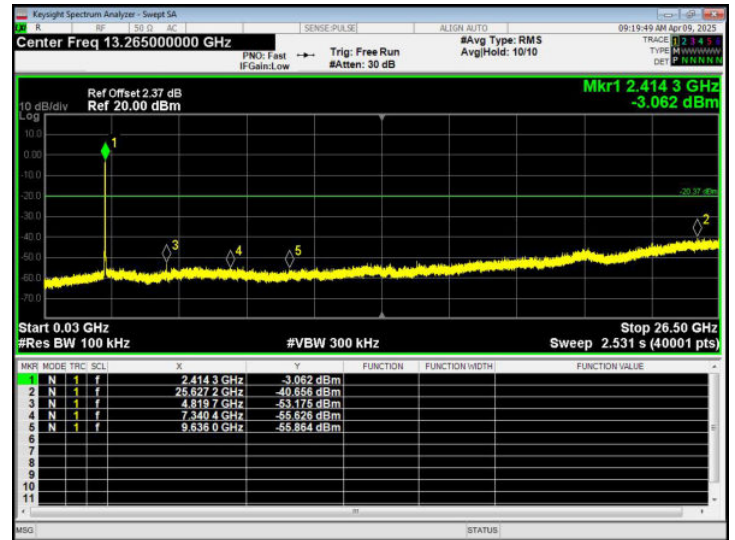
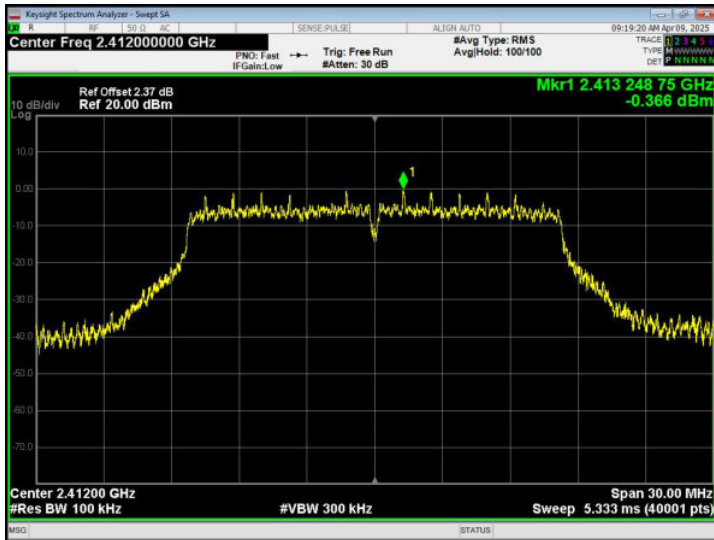
Highest channel



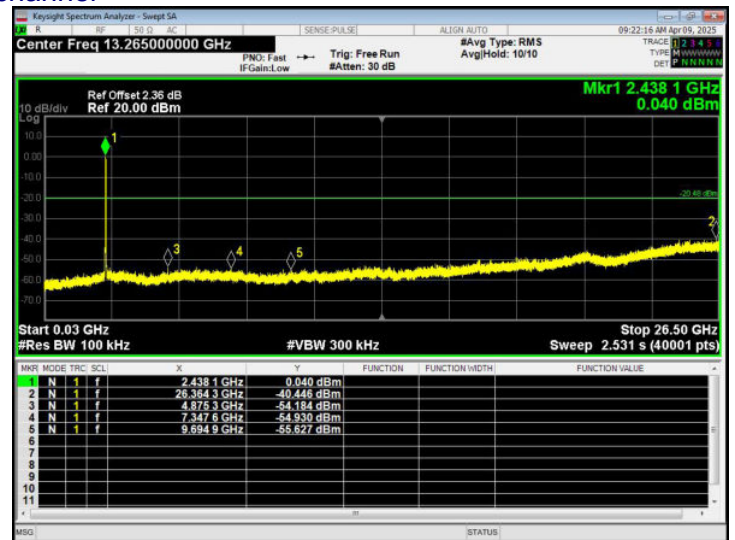
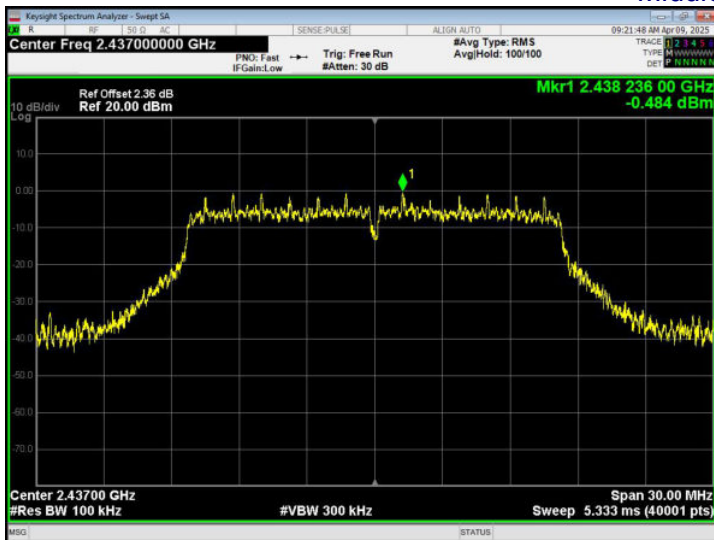
30MHz ~ 26.5GHz



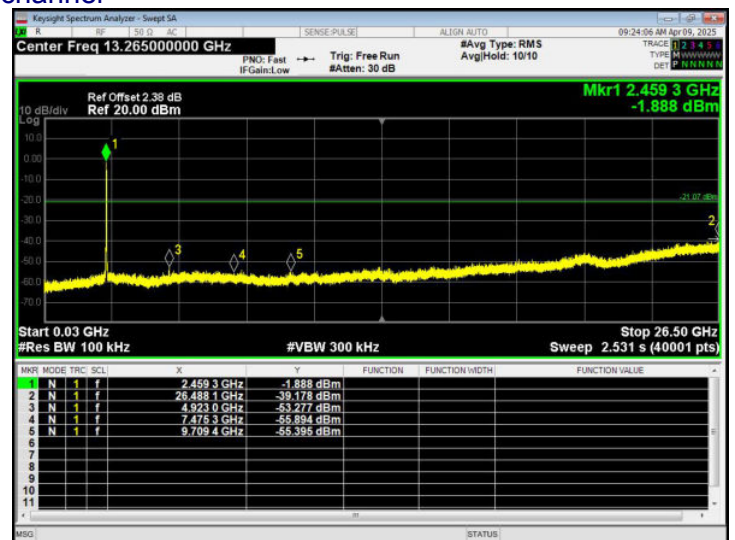
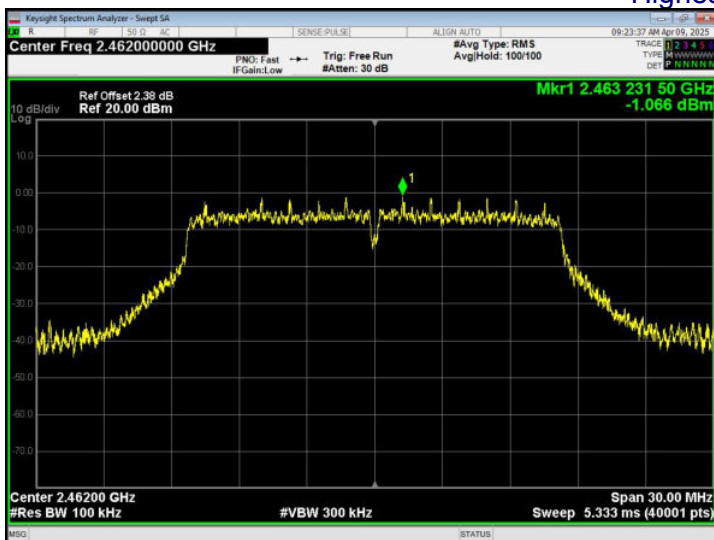
802.11g Lowest channel



Middle channel



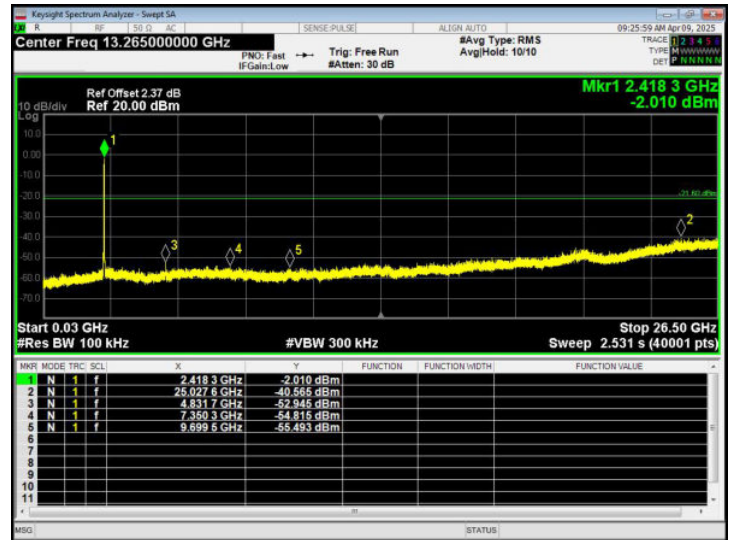
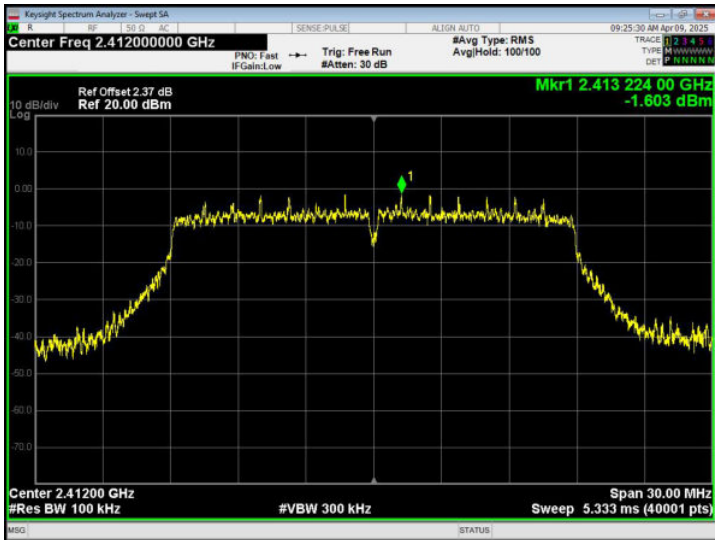
Highest channel



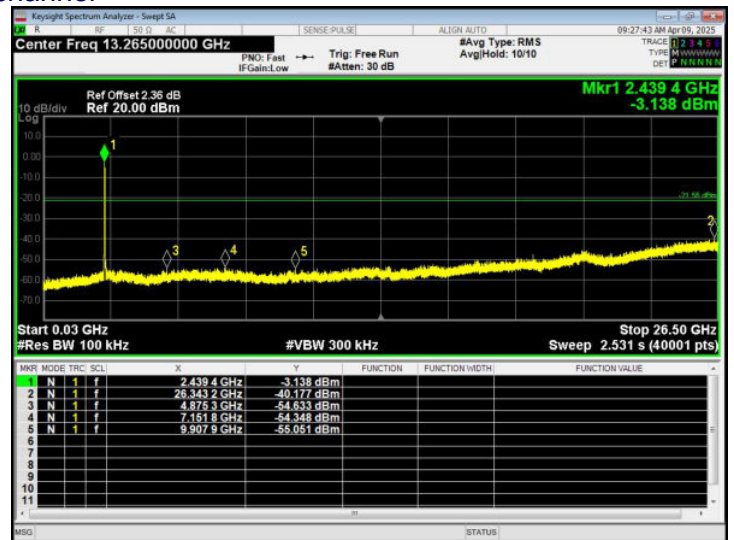
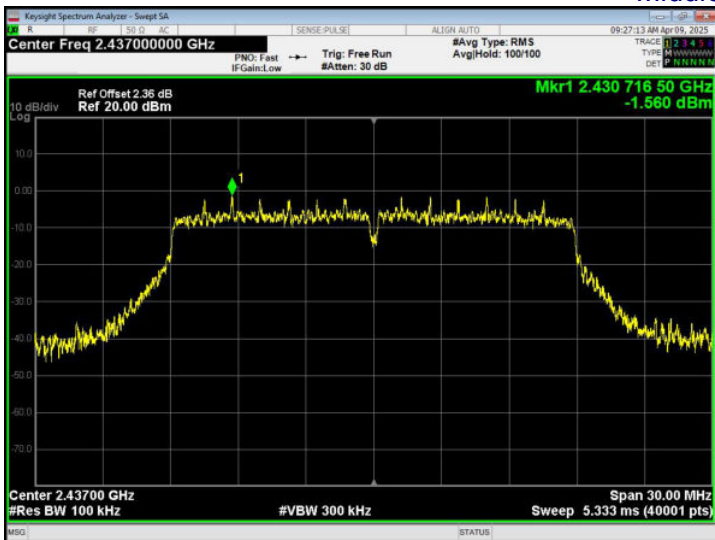
30MHz ~ 26.5GHz



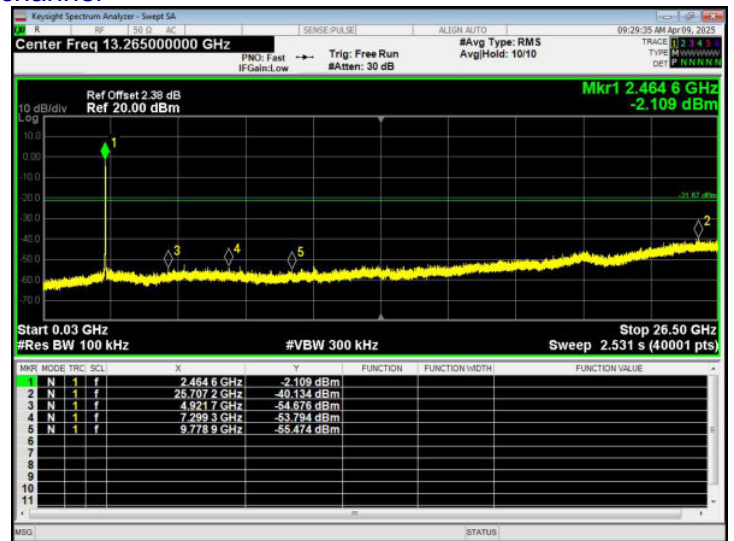
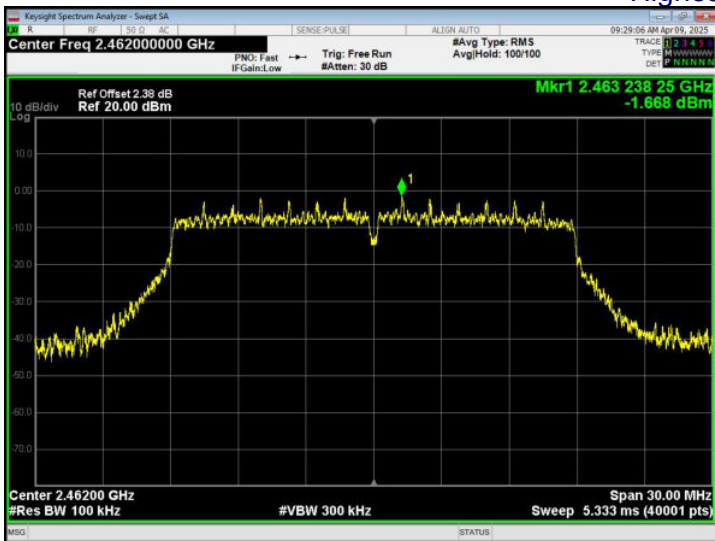
802.11n20 Lowest channel



Middle channel



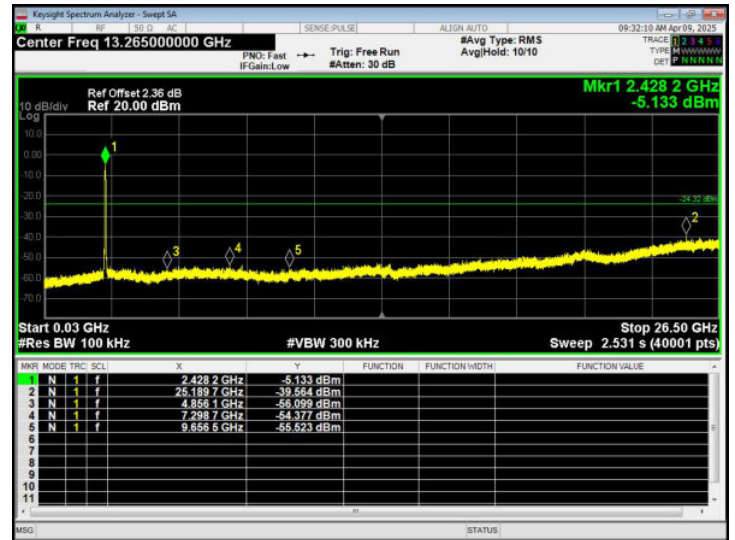
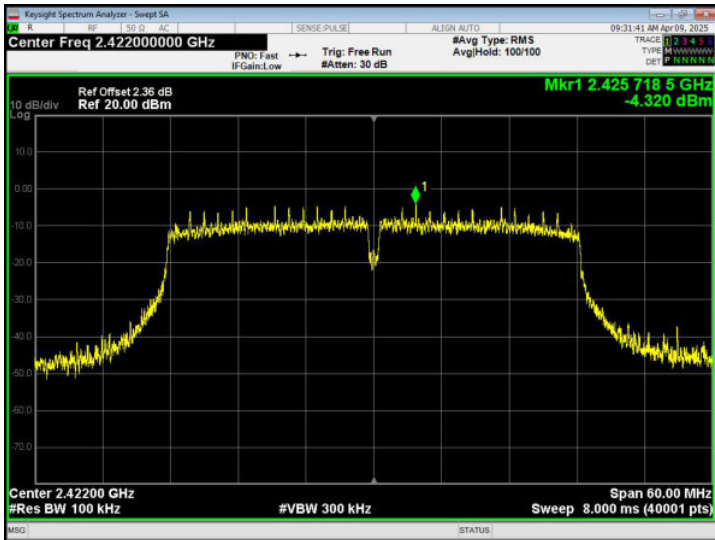
Highest channel



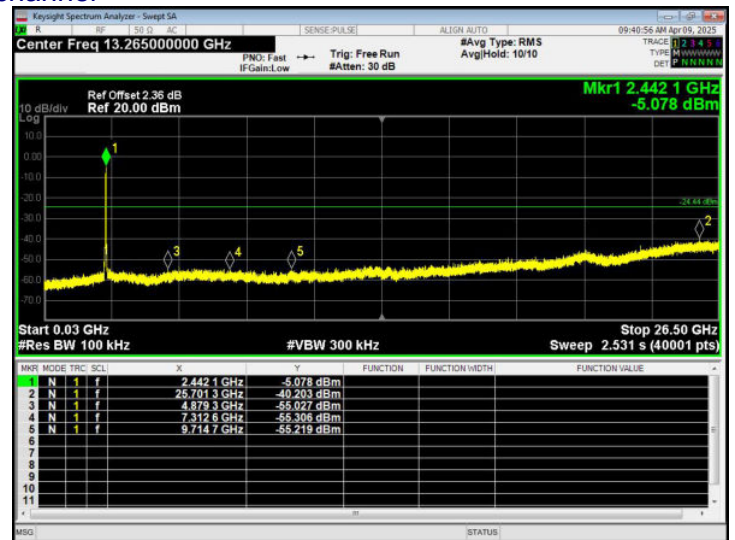
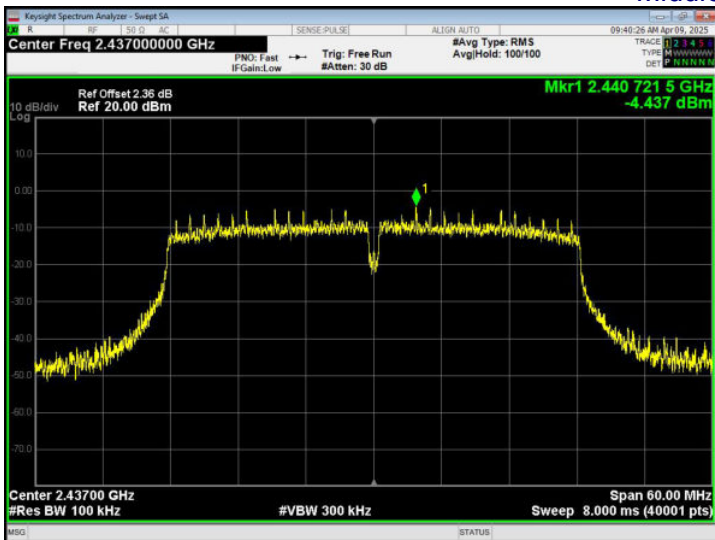
30MHz ~ 26.5GHz



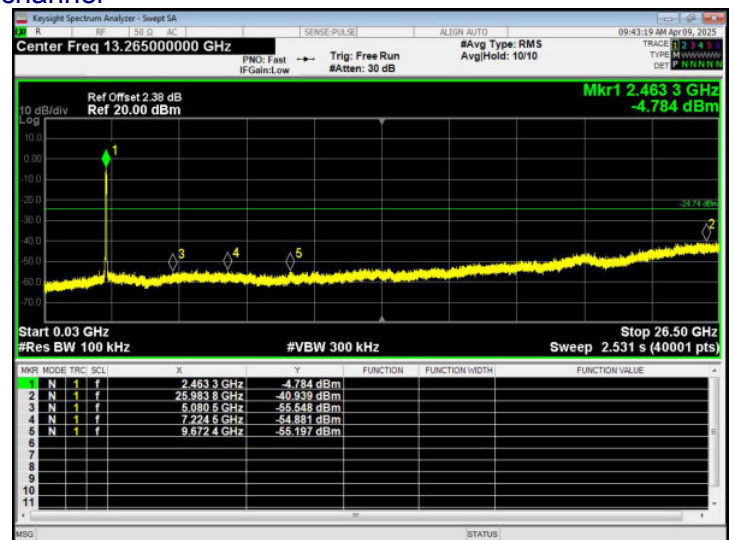
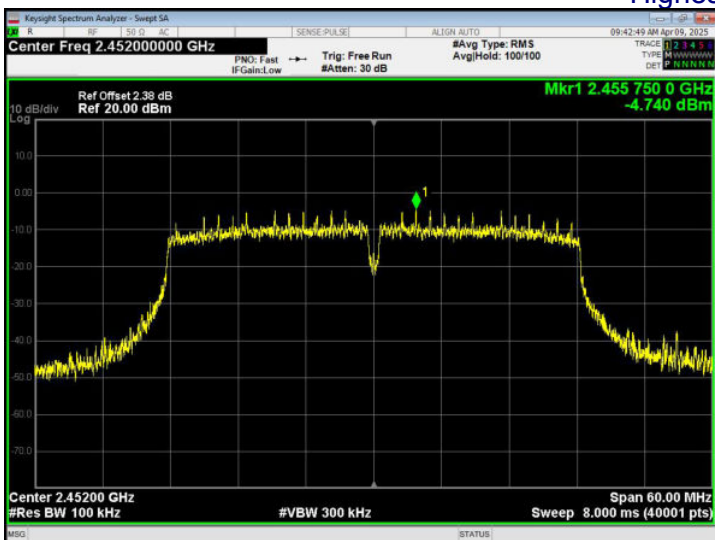
802.11n40
Lowest channel



Middle channel



Highest channel



30MHz ~ 26.5GHz



10. DUTY CYCLE

Test Method:	ANSI C63.10:2013
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10.1 APPLIED PROCEDURES / LIMIT

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
 - 1) Set the center frequency of the instrument to the center frequency of the transmission.
 - 2) Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
 - 3) Set $VBW \geq RBW$. Set detector = peak or average.
 - 4) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu s$.)

10.2 DEVIATION FROM STANDARD

No deviation.

10.3 TEST SETUP



10.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



10.5 TEST RESULTS

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V

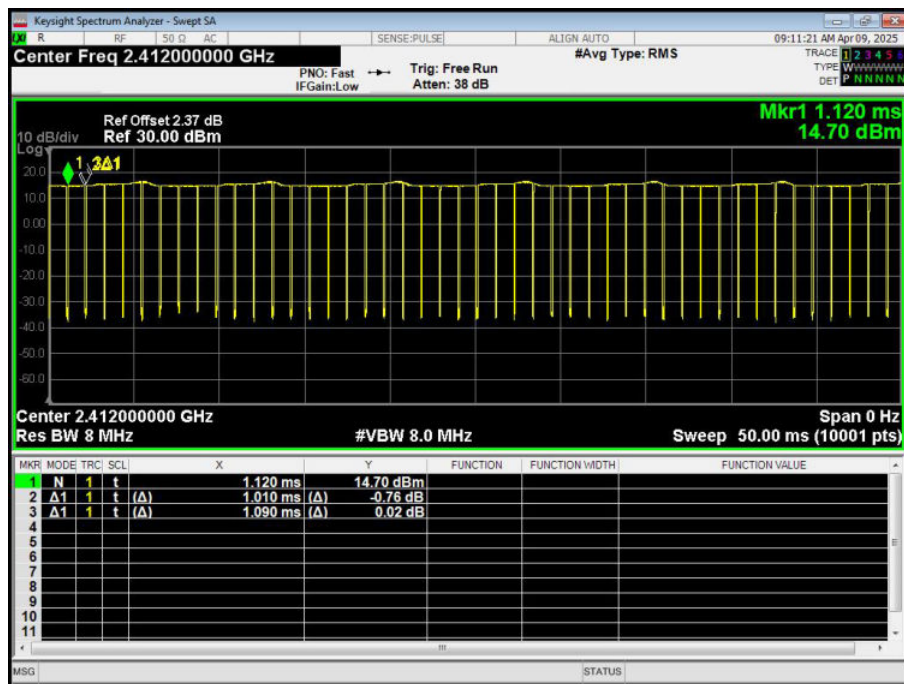
Test Mode	Test Frequency (MHz)	Duty Cycle (%)	Factor (dB)	Result
802.11b	2412	92.66	0.33	Pass
802.11g	2412	94.62	0.24	Pass
802.11n20	2412	94.62	0.24	Pass
802.11n40	2422	94.57	0.24	Pass

Note: Duty Cycle = $T_{on} / T_{total} * 100\%$;
Duty Cycle Correction Factor = $10\log (1/\text{Duty Cycle})$.



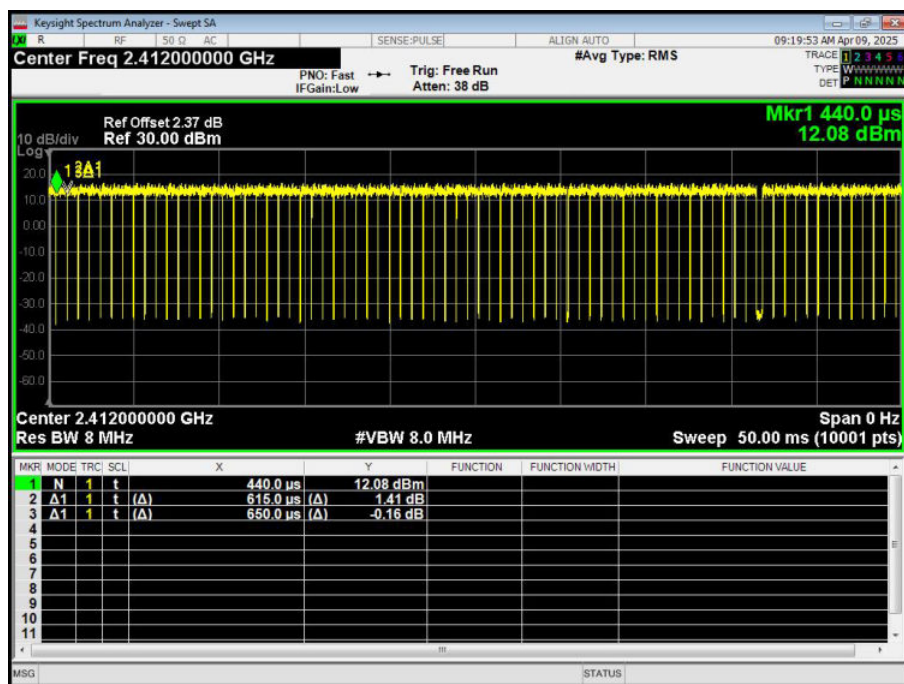
802.11b

2412MHz



802.11g

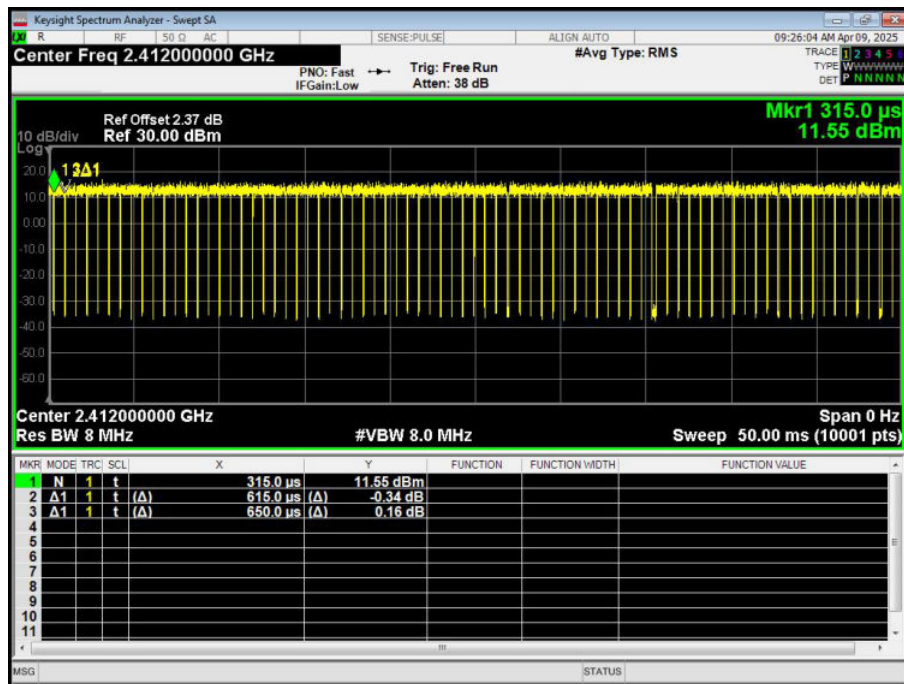
2412MHz





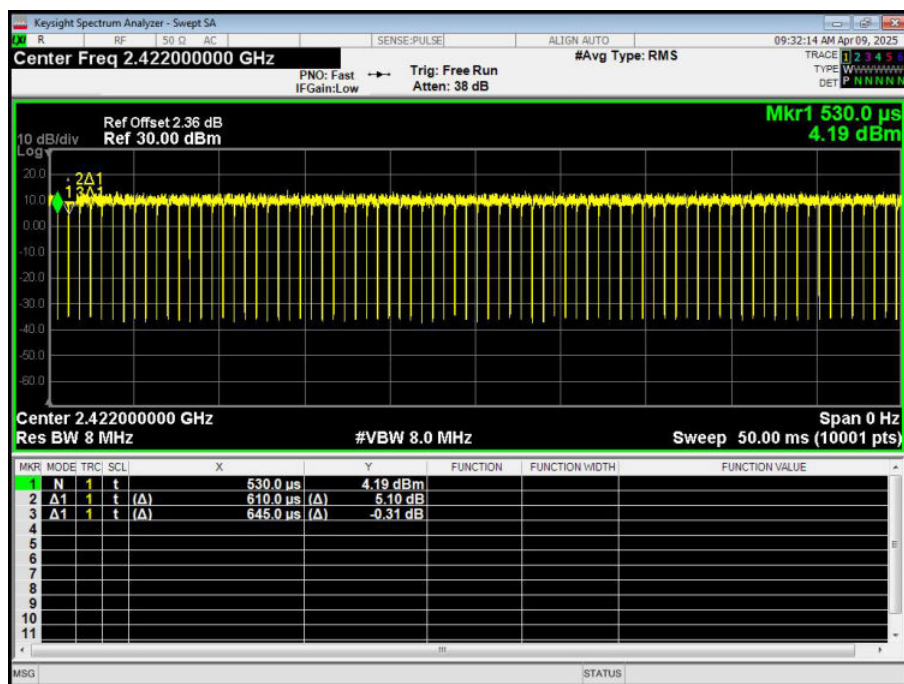
802.11n20

2412MHz



802.11n40

2422MHz



Note: All channel have been tested, and the report only reflects the worst case data.



11. 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.	
EUT Antenna:	
The antenna is FPC antenna, the best case gain of the antenna is 2.50dBi, reference to the appendix II for details.	



12. TEST SETUP PHOTO

Reference to the appendix I for details.

13. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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