FCC TEST REPORT
FCC ID:2A48T-BW11

Report Number:	**ZKT-240929L12496E-1**
Date of Test:	September 24 to October 28, 2024
Date of issue:	October 28, 2024
Total number of pages:	66
Test Result:	PASS
Testing Laboratory:	**Shenzhen ZKT Technology Co., Ltd.**
Address:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name:	**Shenzhen Bo Lian Sheng Technology Co. LTD**
Address:	403, Floor 4, Building 63, Fumin Industrial Zone, Pinghu Street, Longgang District, Shenzhen
Manufacturer's name:	**Shenzhen Bo Lian Sheng Technology Co. LTD**
Address:	403, Floor 4, Building 63, Fumin Industrial Zone, Pinghu Street, Longgang District, Shenzhen
Test specification:	
Standard:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10:2013
Test procedure:	/
Non-standard test method:	N/A
Test Report Form No:	TRF-EL-110_V0
Test Report Form(s) Originator:	ZKT Testing
Master TRF:	Dated: 2022-02-17

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name:	**USB wireless card**
Trademark:	N/A
Model/Type reference:	BW11
Ratings:	DC5V from Notebook AC120V/60Hz

Testing procedure and testing location:

Testing Laboratory..... :	Shenzhen ZKT Technology Co., Ltd.
Address..... :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature)..... :	Alen He
Reviewer (name + signature)..... :	Joe Liu
Approved (name + signature)..... :	Lake Xie

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1. VERSION

Report No.	Version	Description	Approved
ZKT-240929L12496E-1	Rev.01	Initial issue of report	October 28, 2024

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	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emission	PASS	
FCC part 15.247 (b)(3)	Conducted Peak Output Power	PASS	
FCC part 15.247 (a)(2)	Channel Bandwidth	PASS	
FCC part 15.247 (e)	Power Spectral Density	PASS	
FCC part 15.247(d)	Spurious Emission (Conducted) / Band Edge	PASS	
FCC part 15.205/15.209	Spurious Emission	PASS	

NOTE:

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

2.1 TEST FACILITY

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

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± 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	±1.38dB
2	RF power conducted	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All emissions radiated(<1G)	±4.68dB
5	All emissions radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	USB wireless card
Model No.:	BW11
Model Different.:	N/A
Serial No.:	N/A
Hardware Version:	H1.0
Software Version:	S1.0
Sample(s) Status:	Engineer sample
Channel numbers:	802.11b/802.11g /802.11n(HT20):11 802.11n(HT40):7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum(DSSS) 802.11g/802.11n(HT20)/802.11n(HT40): Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	Integral Antenna
Antenna gain:	Antenna 1: 4.52dBi Antenna 2: 4.52dBi
Power supply:	DC5V from Notebook AC120V/60Hz
SWITCHING POWER ADAPTER:	N/A
Battery:	N/A

Note1: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

For power spectral density (PSD) measurements on all devices.

Directional Gain= G_{ANT} + Array Gain=4.52dBi+10log(2)=7.53dBi

For power measurements on IEEE 802.11 devices,[1.2]

Array Gain =0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$;

Array Gain =0 dB (i.e., no array gain) for channel widths > 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{ss}) dB or 3 dB, whichever is less, for 20-MHz channel widths;

Directional Gain= G_{ANT} + Array Gain=4.52dBi+0=4.52dBi;

Note2: The EUT 802.11n (20) and 802.11n(40) is support MIMO mode.

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/802.11g/802.11n(HT20)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2437MHz	2437MHz
Highest channel	2462MHz	2452MHz

3.2 DESCRIPTION OF TEST MODES

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

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

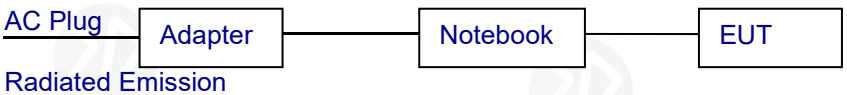
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Data rate	1Mbps	6Mbps	6.5Mbps	13Mbps

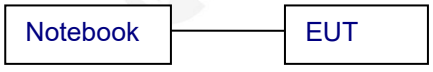
Test Software	Realtek Test Tool
Power level setup	<8dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

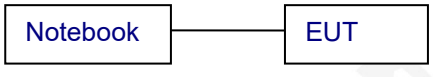
Conducted Emission



Radiated Emission



Conducted Spurious



3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	USB wireless card	N/A	BW11	N/A	EUT
E-2	Adapter	ASUS	X401A		
E-3	Notebook	ASUS	EXA0703YH		

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.8M	DC Line
C-2	NO	NO	0.8M	DC Line

Note:

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

3.5EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	A.17.05	Nov. 02, 2023	Nov. 01, 2024
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Nov. 02, 2023	Nov. 01, 2024
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Nov. 02, 2023	Nov. 01, 2024
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	N/A	Nov. 13, 2023	Nov. 12, 2024
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Nov. 13, 2023	Nov. 12, 2024
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Nov. 13, 2023	Nov. 12, 2024
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Nov. 16, 2023	Nov. 15, 2024
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Nov. 02, 2023	Nov. 01, 2024
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Nov. 02, 2023	Nov. 01, 2024
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Nov. 02, 2023	Nov. 01, 2024
11	Test Cable	N/A	R-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
12	Test Cable	N/A	R-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
13	Test Cable	N/A	R-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
14	Test Cable	N/A	RF-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
15	Test Cable	N/A	RF-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
16	Test Cable	N/A	RF-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
17	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Nov. 02, 2023	Nov. 01, 2024
18	Signal Generator	Agilent	N5182A	N/A	A.01.87	Nov. 02, 2023	Nov. 01, 2024
19	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	N/A	Nov. 16, 2023	Nov. 15, 2024
20	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Nov. 02, 2023	Nov. 01, 2024
21	MWRF Power Meter Test system	MW	MW100-RF CB	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
22	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
23	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
24	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\
25	Turntable	MF	MF-7802BS	N/A	N/A	\	\
26	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\
27	Power Meter	KEYSIGHT	N1912AP	N/A	A.05.00	Nov. 02, 2023	Nov. 01, 2024

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Nov. 14, 2023	Nov. 13, 2024
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Nov. 02, 2023	Nov. 01, 2024
3	Test Cable	N/A	C-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
4	Test Cable	N/A	C-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
5	Test Cable	N/A	C-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
6	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Nov. 02, 2023	Nov. 01, 2024
7	Triple-Loop Antenna	N/A	RF300	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
8	Absorbing Clamp	DZ	ZN23201	15034	N/A	Nov. 07, 2023	Nov. 06, 2024
9	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	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.

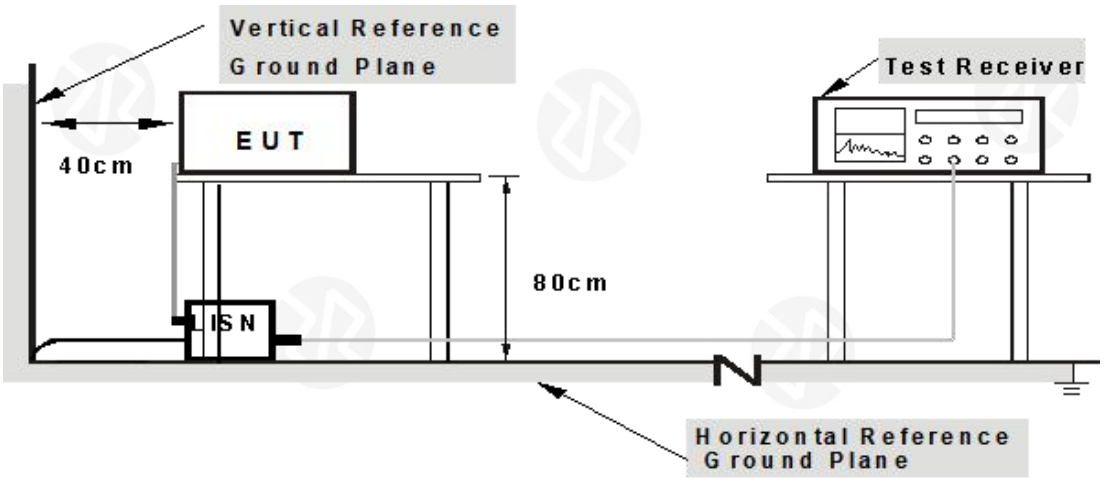
4.1.2 TEST PROCEDURE

a. The EUT was placed 0.1 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.

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

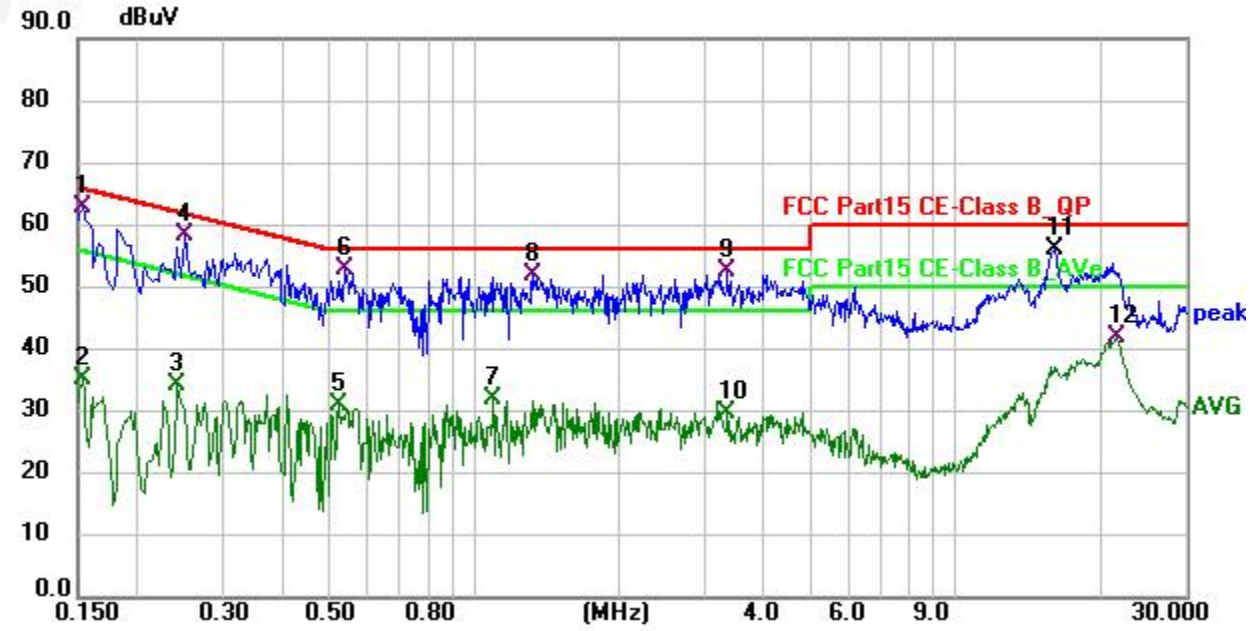
4.1.5 EUT OPERATING CONDITIONS

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.

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

4.1.6 TEST RESULT

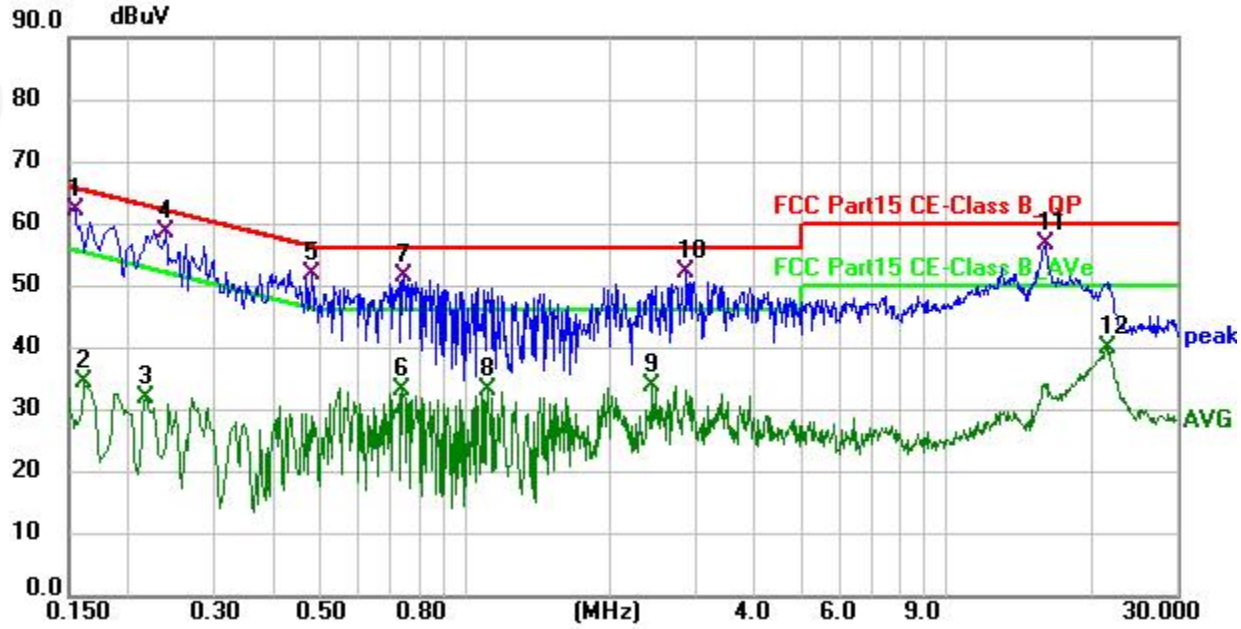
Temperature :	26℃	Relative Humidity:	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	TX 802.11b-2402MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1 *	0.154	52.63	10.15	62.78	65.79	-3.01	QP	P
2	0.154	25.15	10.15	35.30	55.79	-20.49	AVG	P
3	0.242	24.04	10.16	34.20	52.03	-17.83	AVG	P
4	0.250	48.16	10.16	58.32	61.76	-3.44	QP	P
5	0.522	20.81	10.16	30.97	46.00	-15.03	AVG	P
6	0.538	42.69	10.16	52.85	56.00	-3.15	QP	P
7	1.098	21.66	10.17	31.83	46.00	-14.17	AVG	P
8	1.322	41.87	10.17	52.04	56.00	-3.96	QP	P
9	3.358	42.50	10.21	52.71	56.00	-3.29	QP	P
10	3.358	19.68	10.21	29.89	46.00	-16.11	AVG	P
11	16.014	45.66	10.47	56.13	60.00	-3.87	peak	P
12	21.490	31.37	10.59	41.96	60.00	-18.04	QP	P

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

Temperature :	26℃	Relative Humidity:	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	TX 802.11b-2402MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.155	52.11	10.15	62.26	65.73	-3.47	QP	P
2	0.162	24.27	10.15	34.42	55.36	-20.94	AVG	P
3	0.216	21.94	10.15	32.09	52.97	-20.88	AVG	P
4	0.238	48.43	10.15	58.58	62.17	-3.59	QP	P
5	0.482	41.65	10.16	51.81	56.30	-4.49	QP	P
6	0.738	23.17	10.16	33.33	46.00	-12.67	AVG	P
7	0.750	41.28	10.16	51.44	56.00	-4.56	QP	P
8	1.118	23.25	10.17	33.42	46.00	-12.58	AVG	P
9	2.458	23.71	10.20	33.91	46.00	-12.09	AVG	P
10	2.874	41.88	10.20	52.08	56.00	-3.92	QP	P
11 *	16.034	46.22	10.48	56.70	60.00	-3.30	QP	P
12	21.594	29.43	10.61	40.04	50.00	-9.96	AVG	P

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

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	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 0.1 meters above the ground at a 3 meter semi-anechoiccamber. 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 avariable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum valueof 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 toheights 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 bestopped 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 reportedin 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 andchange form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

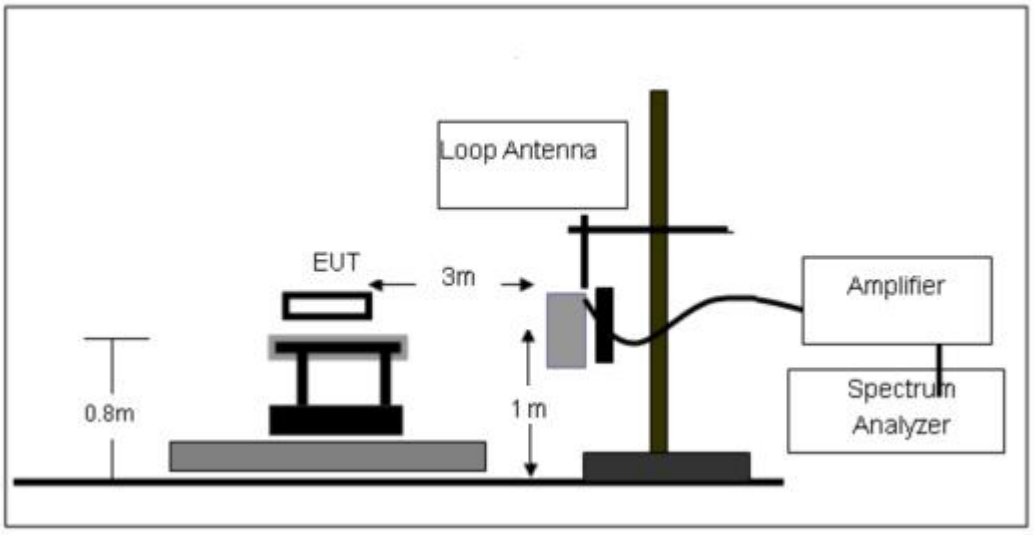
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

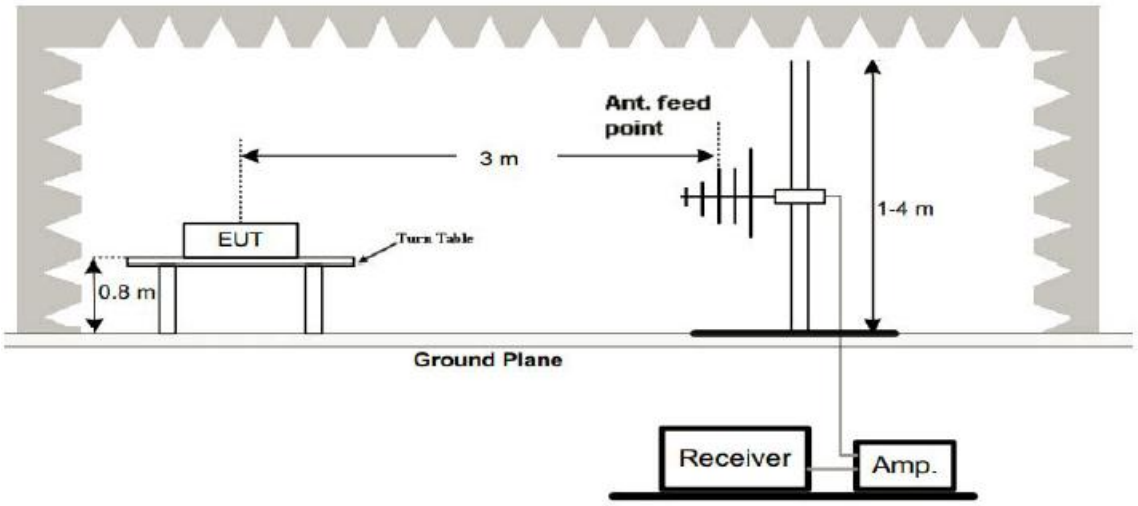
No deviation

4.2.4 TEST SETUP

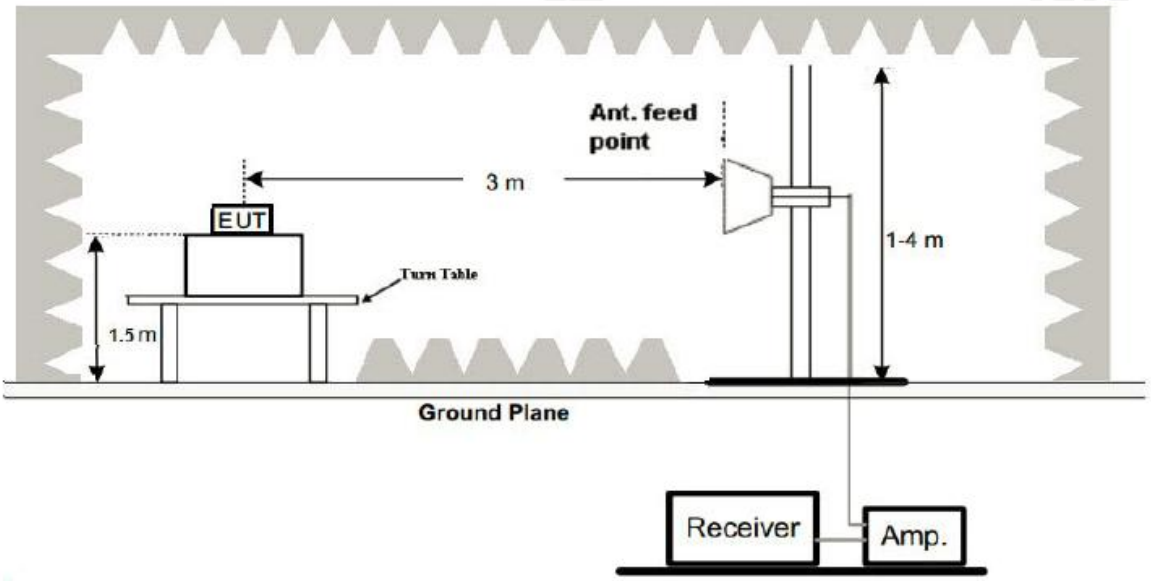
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.5 EUT OPERATING CONDITIONS

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

4.2.6 TEST RESULTS

Between 9KHz – 30MHz

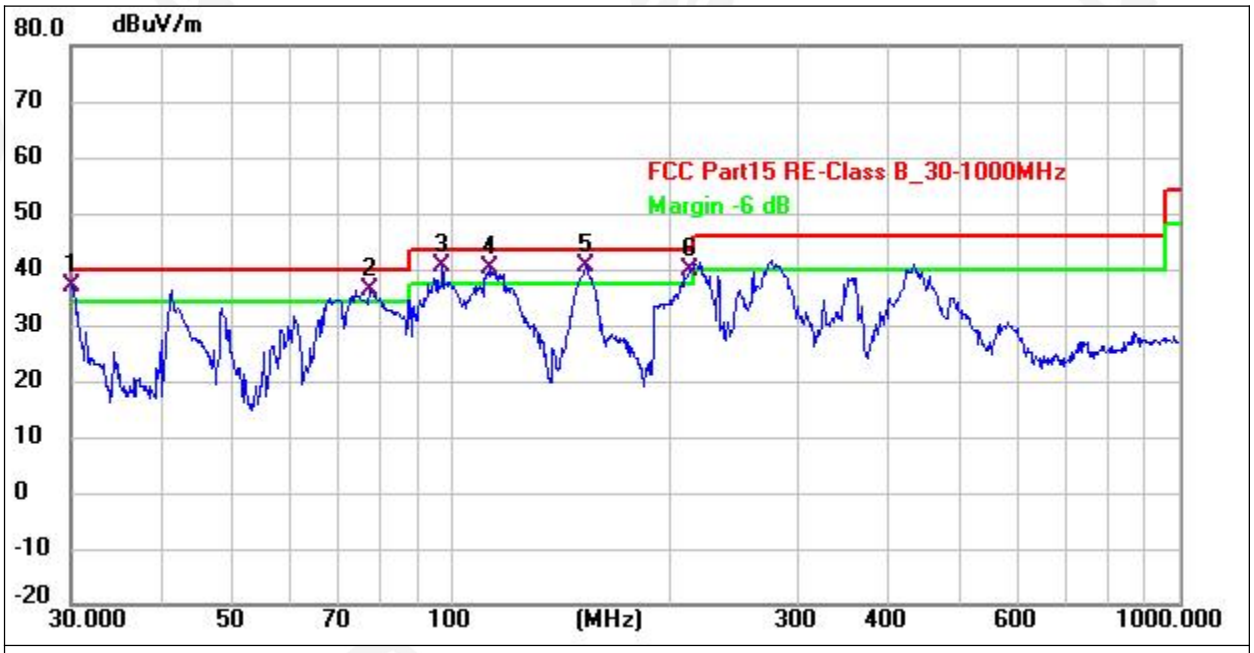
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	TX 802.11b-2412MHz

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	30.317	50.78	-13.90	36.88	40.00	-3.12	QP
2 !	32.979	49.11	-13.83	35.28	40.00	-4.72	QP
3 !	36.254	49.31	-13.61	35.70	40.00	-4.30	QP
4 !	41.132	49.87	-13.22	36.65	40.00	-3.35	QP
5 !	72.847	53.21	-16.71	36.50	40.00	-3.50	QP
6 !	191.074	56.25	-15.89	40.36	43.50	-3.14	QP

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	TX 802.11b-2412MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	30.105	50.89	-13.91	36.98	40.00	-3.02	QP
2 !	77.321	53.77	-17.36	36.41	40.00	-3.59	QP
3 !	97.115	57.45	-16.99	40.46	43.50	-3.04	QP
4 !	113.316	55.57	-15.33	40.24	43.50	-3.26	QP
5 !	152.664	52.81	-12.43	40.38	43.50	-3.12	QP
6 !	213.015	55.84	-15.91	39.93	43.50	-3.57	QP

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.
3.The test data shows only the worst case 802.11b mode

1GHz~25GHz

802.11b

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	51.39	30.55	5.77	31.12	57.73	74.00	-16.27	PK
V	4824.00	31.25	30.55	5.77	31.12	37.59	54.00	-16.41	AV
V	7236.00	49.48	30.33	6.32	36.00	61.47	74.00	-12.53	PK
V	7236.00	31.96	30.33	6.32	36.00	43.95	54.00	-10.05	AV
V	9648.00	49.98	30.85	7.45	37.14	63.72	74.00	-10.28	PK
V	9648.00	31.86	30.85	7.45	37.14	45.60	54.00	-8.40	AV
V	12060.00	45.08	31.02	8.99	39.10	62.15	74.00	-11.85	PK
V	12060.00	27.86	31.02	8.99	39.10	44.93	54.00	-9.07	AV
H	4824.00	51.73	30.55	5.77	31.12	58.07	74.00	-15.93	PK
H	4824.00	31.58	30.55	5.77	31.12	37.92	54.00	-16.08	AV
H	7236.00	50.37	30.33	6.32	36.00	62.36	74.00	-11.64	PK
H	7236.00	31.63	30.33	6.32	36.00	43.62	54.00	-10.38	AV
H	9648.00	50.37	30.85	7.45	37.14	64.11	74.00	-9.89	PK
H	9648.00	31.63	30.85	7.45	37.14	45.37	54.00	-8.63	AV
H	12060.00	45.37	31.02	8.99	39.10	62.44	74.00	-11.56	PK
H	12060.00	26.63	31.02	8.99	39.10	43.70	54.00	-10.30	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	49.50	30.55	5.77	31.45	56.17	74.00	-17.83	PK
V	4874.00	30.39	30.55	5.77	31.45	37.06	54.00	-16.94	AV
V	7311.00	48.03	30.33	6.32	36.10	60.12	74.00	-13.88	PK
V	7311.00	30.07	30.33	6.32	36.10	42.16	54.00	-11.84	AV
V	9748.00	48.10	30.85	7.45	36.50	61.20	74.00	-12.80	PK
V	9748.00	30.07	30.85	7.45	36.50	43.17	54.00	-10.83	AV
V	12185.00	43.00	31.02	8.99	39.11	60.08	74.00	-13.92	PK
V	12185.00	23.64	31.02	8.99	39.11	40.72	54.00	-13.28	AV
H	4874.00	50.86	30.55	5.77	31.45	57.53	74.00	-16.47	PK
H	4874.00	30.42	30.55	5.77	31.45	37.09	54.00	-16.91	AV
H	7311.00	51.57	30.33	6.32	36.10	63.66	74.00	-10.34	PK
H	7311.00	30.20	30.33	6.32	36.10	42.29	54.00	-11.71	AV
H	9748.00	51.57	30.85	7.45	36.50	64.67	74.00	-9.33	PK
H	9748.00	30.20	30.85	7.45	36.50	43.30	54.00	-10.70	AV
H	12185.00	45.05	31.02	8.99	39.11	62.13	74.00	-11.87	PK
H	12185.00	24.20	31.02	8.99	39.11	41.28	54.00	-12.72	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	52.77	30.55	5.77	31.79	59.78	74.00	-14.22	PK
V	4924.00	34.31	30.55	5.77	31.79	41.32	54.00	-12.68	AV
V	7386.00	55.28	30.33	6.32	36.21	67.48	74.00	-6.52	PK
V	7386.00	34.63	30.33	6.32	36.21	46.83	54.00	-7.17	AV
V	9848.00	55.28	30.85	7.45	36.50	68.38	74.00	-5.62	PK
V	9848.00	35.12	30.85	7.45	36.50	48.22	54.00	-5.78	AV
V	12310.00	47.28	31.02	8.99	39.15	64.40	74.00	-9.60	PK
V	12310.00	29.52	31.02	8.99	39.15	46.64	54.00	-7.36	AV
H	4924.00	52.83	30.55	5.77	31.79	59.84	74.00	-14.16	PK
H	4924.00	34.47	30.55	5.77	31.79	41.48	54.00	-12.52	AV
H	7386.00	54.45	30.33	6.32	36.21	66.65	74.00	-7.35	PK
H	7386.00	34.79	30.33	6.32	36.21	46.99	54.00	-7.01	AV
H	9848.00	55.05	30.85	7.45	36.50	68.15	74.00	-5.85	PK
H	9848.00	34.49	30.85	7.45	36.50	47.59	54.00	-6.41	AV
H	12310.00	48.95	31.02	8.99	39.15	66.07	74.00	-7.93	PK
H	12310.00	27.88	31.02	8.99	39.15	45.00	54.00	-9.00	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 (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	50.91	30.55	5.77	31.12	57.25	74.00	-16.75	PK
V	4824.00	30.67	30.55	5.77	31.12	37.01	54.00	-16.99	AV
V	7236.00	48.70	30.33	6.32	36.00	60.69	74.00	-13.31	PK
V	7236.00	31.62	30.33	6.32	36.00	43.61	54.00	-10.39	AV
V	9648.00	48.70	30.85	7.45	37.14	62.44	74.00	-11.56	PK
V	9648.00	31.18	30.85	7.45	37.14	44.92	54.00	-9.08	AV
V	12060.00	45.80	31.02	8.99	39.10	62.87	74.00	-11.13	PK
V	12060.00	27.08	31.02	8.99	39.10	44.15	54.00	-9.85	AV
H	4824.00	51.25	30.55	5.77	31.12	57.59	74.00	-16.41	PK
H	4824.00	31.10	30.55	5.77	31.12	37.44	54.00	-16.56	AV
H	7236.00	50.00	30.33	6.32	36.00	61.99	74.00	-12.01	PK
H	7236.00	31.31	30.33	6.32	36.00	43.30	54.00	-10.70	AV
H	9648.00	50.02	30.85	7.45	37.14	63.76	74.00	-10.24	PK
H	9648.00	31.33	30.85	7.45	37.14	45.07	54.00	-8.93	AV
H	12060.00	45.05	31.02	8.99	39.10	62.12	74.00	-11.88	PK
H	12060.00	24.34	31.02	8.99	39.10	41.41	54.00	-12.59	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	49.31	30.55	5.77	31.45	55.98	74.00	-18.02	PK
V	4874.00	30.16	30.55	5.77	31.45	36.83	54.00	-17.17	AV
V	7311.00	47.91	30.33	6.32	36.10	60.00	74.00	-14.00	PK
V	7311.00	30.02	30.33	6.32	36.10	42.11	54.00	-11.89	AV
V	9748.00	47.99	30.85	7.45	36.50	61.09	74.00	-12.91	PK
V	9748.00	29.25	30.85	7.45	36.50	42.35	54.00	-11.65	AV
V	12185.00	45.02	31.02	8.99	39.11	62.10	74.00	-11.90	PK
V	12185.00	23.36	31.02	8.99	39.11	40.44	54.00	-13.56	AV
H	4874.00	50.58	30.55	5.77	31.45	57.25	74.00	-16.75	PK
H	4874.00	30.53	30.55	5.77	31.45	37.20	54.00	-16.80	AV
H	7311.00	51.28	30.33	6.32	36.10	63.37	74.00	-10.63	PK
H	7311.00	30.10	30.33	6.32	36.10	42.19	54.00	-11.81	AV
H	9748.00	51.48	30.85	7.45	36.50	64.58	74.00	-9.42	PK
H	9748.00	29.91	30.85	7.45	36.50	43.01	54.00	-10.99	AV
H	12185.00	45.73	31.02	8.99	39.11	62.81	74.00	-11.19	PK
H	12185.00	25.04	31.02	8.99	39.11	42.12	54.00	-11.88	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	49.30	30.55	5.77	31.79	49.30	30.55	5.77	PK
V	4924.00	30.80	30.55	5.77	31.79	30.80	30.55	5.77	AV
V	7386.00	51.64	30.33	6.32	36.21	51.64	30.33	6.32	PK
V	7386.00	31.14	30.33	6.32	36.21	31.14	30.33	6.32	AV
V	9848.00	51.64	30.85	7.45	36.50	51.64	30.85	7.45	PK
V	9848.00	31.58	30.85	7.45	36.50	31.58	30.85	7.45	AV
V	12310.00	44.74	31.02	8.99	39.15	44.74	31.02	8.99	PK
V	12310.00	26.78	31.02	8.99	39.15	26.78	31.02	8.99	AV
H	4924.00	49.32	30.55	5.77	31.79	49.32	30.55	5.77	PK
H	4924.00	30.99	30.55	5.77	31.79	30.99	30.55	5.77	AV
H	7386.00	50.81	30.33	6.32	36.21	50.81	30.33	6.32	PK
H	7386.00	31.31	30.33	6.32	36.21	31.31	30.33	6.32	AV
H	9848.00	51.51	30.85	7.45	36.50	51.51	30.85	7.45	PK
H	9848.00	31.35	30.85	7.45	36.50	31.35	30.85	7.45	AV
H	12310.00	45.41	31.02	8.99	39.15	45.41	31.02	8.99	PK
H	12310.00	24.35	31.02	8.99	39.15	24.35	31.02	8.99	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.

802.11n20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	51.66	30.55	5.77	31.12	58.00	74.00	-16.00	PK
V	4824.00	31.46	30.55	5.77	31.12	37.80	54.00	-16.20	AV
V	7236.00	48.55	30.33	6.32	36.00	60.54	74.00	-13.46	PK
V	7236.00	32.46	30.33	6.32	36.00	44.45	54.00	-9.55	AV
V	9648.00	49.75	30.85	7.45	37.14	63.49	74.00	-10.51	PK
V	9648.00	31.83	30.85	7.45	37.14	45.57	54.00	-8.43	AV
V	12060.00	45.55	31.02	8.99	39.10	62.62	74.00	-11.38	PK
V	12060.00	26.90	31.02	8.99	39.10	43.97	54.00	-10.03	AV
H	4824.00	51.80	30.55	5.77	31.12	58.14	74.00	-15.86	PK
H	4824.00	31.65	30.55	5.77	31.12	37.99	54.00	-16.01	AV
H	7236.00	50.75	30.33	6.32	36.00	62.74	74.00	-11.26	PK
H	7236.00	31.96	30.33	6.32	36.00	43.95	54.00	-10.05	AV
H	9648.00	50.67	30.85	7.45	37.14	64.41	74.00	-9.59	PK
H	9648.00	31.88	30.85	7.45	37.14	45.62	54.00	-8.38	AV
H	12060.00	44.80	31.02	8.99	39.10	61.87	74.00	-12.13	PK
H	12060.00	25.99	31.02	8.99	39.10	43.06	54.00	-10.94	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	50.44	30.55	5.77	31.45	57.11	74.00	-16.89	PK
V	4874.00	31.33	30.55	5.77	31.45	38.00	54.00	-16.00	AV
V	7311.00	48.30	30.33	6.32	36.10	60.39	74.00	-13.61	PK
V	7311.00	31.16	30.33	6.32	36.10	43.25	54.00	-10.75	AV
V	9748.00	49.35	30.85	7.45	36.50	62.45	74.00	-11.55	PK
V	9748.00	31.33	30.85	7.45	36.50	44.43	54.00	-9.57	AV
V	12185.00	46.25	31.02	8.99	39.11	63.33	74.00	-10.67	PK
V	12185.00	25.26	31.02	8.99	39.11	42.34	54.00	-11.66	AV
H	4874.00	51.73	30.55	5.77	31.45	58.40	74.00	-15.60	PK
H	4874.00	31.46	30.55	5.77	31.45	38.13	54.00	-15.87	AV
H	7311.00	52.46	30.33	6.32	36.10	64.55	74.00	-9.45	PK
H	7311.00	31.24	30.33	6.32	36.10	43.33	54.00	-10.67	AV
H	9748.00	52.61	30.85	7.45	36.50	65.71	74.00	-8.29	PK
H	9748.00	31.24	30.85	7.45	36.50	44.34	54.00	-9.66	AV
H	12185.00	45.24	31.02	8.99	39.11	62.32	74.00	-11.68	PK
H	12185.00	26.32	31.02	8.99	39.11	43.40	54.00	-10.60	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	51.48	30.55	5.77	31.79	58.49	74.00	-15.51	PK
V	4924.00	32.68	30.55	5.77	31.79	39.69	54.00	-14.31	AV
V	7386.00	53.72	30.33	6.32	36.21	65.92	74.00	-8.08	PK
V	7386.00	33.40	30.33	6.32	36.21	45.60	54.00	-8.40	AV
V	9848.00	53.82	30.85	7.45	36.50	66.92	74.00	-7.08	PK
V	9848.00	33.82	30.85	7.45	36.50	46.92	54.00	-7.08	AV
V	12310.00	46.72	31.02	8.99	39.15	63.84	74.00	-10.16	PK
V	12310.00	25.96	31.02	8.99	39.15	43.08	54.00	-10.92	AV
H	4924.00	51.50	30.55	5.77	31.79	58.51	74.00	-15.49	PK
H	4924.00	33.17	30.55	5.77	31.79	40.18	54.00	-13.82	AV
H	7386.00	52.99	30.33	6.32	36.21	65.19	74.00	-8.81	PK
H	7386.00	33.63	30.33	6.32	36.21	45.83	54.00	-8.17	AV
H	9848.00	53.69	30.85	7.45	36.50	66.79	74.00	-7.21	PK
H	9848.00	33.62	30.85	7.45	36.50	46.72	54.00	-7.28	AV
H	12310.00	47.59	31.02	8.99	39.15	64.71	74.00	-9.29	PK
H	12310.00	26.53	31.02	8.99	39.15	43.65	54.00	-10.35	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)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2422MHz									
V	4844.00	50.60	30.55	5.77	31.14	56.96	74.00	-17.04	PK
V	4844.00	31.79	30.55	5.77	31.14	38.15	54.00	-15.85	AV
V	7266.00	52.84	30.33	6.32	36.09	64.92	74.00	-9.08	PK
V	7266.00	32.65	30.33	6.32	36.09	44.73	54.00	-9.27	AV
V	9688.00	52.92	30.85	7.45	37.16	66.68	74.00	-7.32	PK
V	9688.00	32.90	30.85	7.45	37.16	46.66	54.00	-7.34	AV
V	12110.00	45.47	31.02	8.99	39.15	62.59	74.00	-11.41	PK
V	12110.00	26.16	31.02	8.99	39.15	43.28	54.00	-10.72	AV
H	4844.00	50.85	30.55	5.77	31.14	57.21	74.00	-16.79	PK
H	4844.00	32.32	30.55	5.77	31.14	38.68	54.00	-15.32	AV
H	7266.00	52.12	30.33	6.32	36.09	64.20	74.00	-9.80	PK
H	7266.00	32.80	30.33	6.32	36.09	44.88	54.00	-9.12	AV
H	9688.00	52.79	30.85	7.45	37.16	66.55	74.00	-7.45	PK
H	9688.00	32.37	30.85	7.45	37.16	46.13	54.00	-7.87	AV
H	12110.00	44.84	31.02	8.99	39.15	61.96	74.00	-12.04	PK
H	12110.00	25.68	31.02	8.99	39.15	42.80	54.00	-11.20	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4874.00	49.95	30.55	5.77	31.45	56.62	74.00	-17.38	PK
V	4874.00	31.15	30.55	5.77	31.45	37.82	54.00	-16.18	AV
V	7311.00	52.19	30.33	6.32	36.10	64.28	74.00	-9.72	PK
V	7311.00	31.87	30.33	6.32	36.10	43.96	54.00	-10.04	AV
V	9748.00	52.29	30.85	7.45	36.50	65.39	74.00	-8.61	PK
V	9748.00	32.29	30.85	7.45	36.50	45.39	54.00	-8.61	AV
V	12185.00	45.19	31.02	8.99	39.11	62.27	74.00	-11.73	PK
V	12185.00	25.43	31.02	8.99	39.11	42.51	54.00	-11.49	AV
H	4874.00	49.97	30.55	5.77	31.45	56.64	74.00	-17.36	PK
H	4874.00	31.64	30.55	5.77	31.45	38.31	54.00	-15.69	AV
H	7311.00	51.46	30.33	6.32	36.10	63.55	74.00	-10.45	PK
H	7311.00	32.10	30.33	6.32	36.10	44.19	54.00	-9.81	AV
H	9748.00	52.16	30.85	7.45	36.50	65.26	74.00	-8.74	PK
H	9748.00	32.09	30.85	7.45	36.50	45.19	54.00	-8.81	AV
H	12185.00	47.06	31.02	8.99	39.11	64.14	74.00	-9.86	PK
H	12185.00	26.00	31.02	8.99	39.11	43.08	54.00	-10.92	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2452MHz									
V	4904.00	49.74	30.55	5.77	31.69	56.65	74.00	-17.35	PK
V	4904.00	30.68	30.55	5.77	31.69	37.59	54.00	-16.41	AV
V	7356.00	51.37	30.33	6.32	36.15	63.51	74.00	-10.49	PK
V	7356.00	31.31	30.33	6.32	36.15	43.45	54.00	-10.55	AV
V	9808.00	52.07	30.85	7.45	37.32	65.99	74.00	-8.01	PK
V	9808.00	31.73	30.85	7.45	37.32	45.65	54.00	-8.35	AV
V	12260.00	45.58	31.02	8.99	39.13	62.68	74.00	-11.32	PK
V	12260.00	24.66	31.02	8.99	39.13	41.76	54.00	-12.24	AV
H	4904.00	49.42	30.55	5.77	31.69	56.33	74.00	-17.67	PK
H	4904.00	31.82	30.55	5.77	31.69	38.73	54.00	-15.27	AV
H	7356.00	51.00	30.33	6.32	36.15	63.14	74.00	-10.86	PK
H	7356.00	32.08	30.33	6.32	36.15	44.22	54.00	-9.78	AV
H	9808.00	51.63	30.85	7.45	37.32	65.55	74.00	-8.45	PK
H	9808.00	31.47	30.85	7.45	37.32	45.39	54.00	-8.61	AV
H	12260.00	44.62	31.02	8.99	39.13	61.72	74.00	-12.28	PK
H	12260.00	26.48	31.02	8.99	39.13	43.58	54.00	-10.42	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.

5.RADIATED BAND EMISSIONMEASUREMENT

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 (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m
Receiver setup:	See below

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

5.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could bestopped 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 reportedin a data sheet.

g. Test the EUT in the lowest channel,the Highest channel

Note:

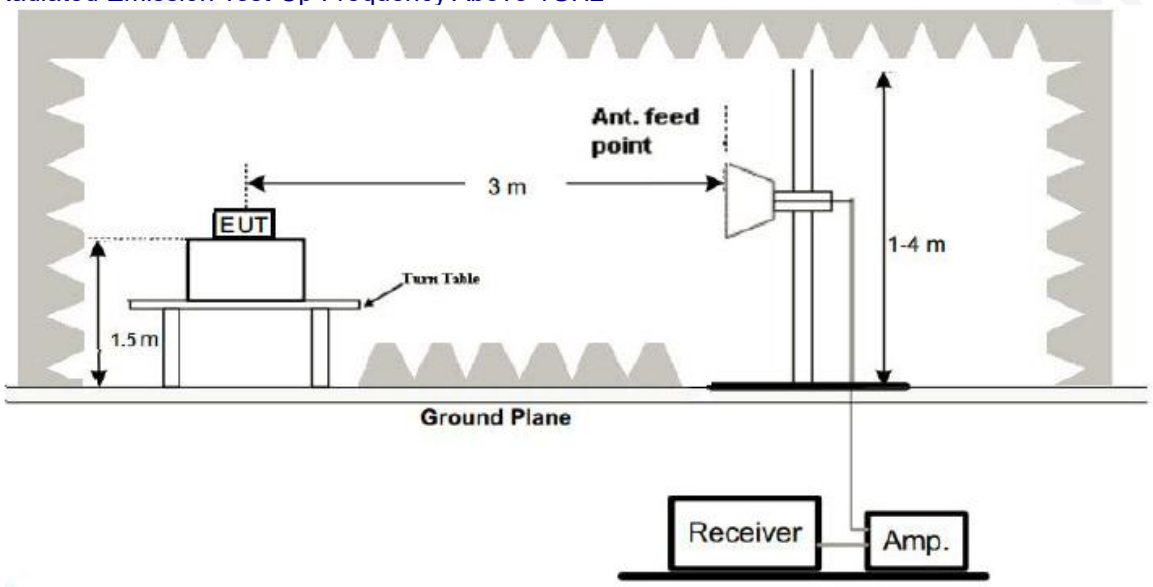
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

5.3 DEVIATION FROM TEST STANDARD

No deviation

5.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



5.5 EUT OPERATING CONDITIONS

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

5.6 TEST RESULT

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Detector Type	Result
802.11b	Low Channel 2412MHz									
	H	2390.00	60.24	30.22	4.85	27.59	62.46	74.00	PK	PASS
	H	2390.00	41.02	30.22	4.85	27.59	43.24	54.00	AV	PASS
	H	2400.00	61.97	30.22	4.85	27.58	64.18	74.00	PK	PASS
	H	2400.00	40.68	30.22	4.85	27.58	42.89	54.00	AV	PASS
	V	2390.00	60.06	30.22	4.85	27.59	62.28	74.00	PK	PASS
	V	2390.00	41.93	30.22	4.85	27.59	44.15	54.00	AV	PASS
	V	2400.00	61.82	30.22	4.85	27.58	64.03	74.00	PK	PASS
	V	2400.00	40.75	30.22	4.85	27.58	42.96	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	59.38	30.22	4.85	27.40	61.41	74.00	PK	PASS
	H	2483.50	40.42	30.22	4.85	27.40	42.45	54.00	AV	PASS
	H	2485.50	60.89	30.22	4.85	27.40	62.92	74.00	PK	PASS
	H	2485.50	41.00	30.22	4.85	27.40	43.03	54.00	AV	PASS
	V	2483.50	60.19	30.22	4.85	27.40	62.22	74.00	PK	PASS
	V	2483.50	41.81	30.22	4.85	27.40	43.84	54.00	AV	PASS
	V	2485.50	60.58	30.22	4.85	27.40	62.61	74.00	PK	PASS
	V	2485.50	41.27	30.22	4.85	27.40	43.30	54.00	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2390.00	58.29	30.22	4.85	27.59	60.51	74.00	PK	PASS
	H	2390.00	40.52	30.22	4.85	27.59	42.74	54.00	AV	PASS
	H	2400.00	60.32	30.22	4.85	27.58	62.53	74.00	PK	PASS
	H	2400.00	40.42	30.22	4.85	27.58	42.63	54.00	AV	PASS
	V	2390.00	58.54	30.22	4.85	27.59	60.76	74.00	PK	PASS
	V	2390.00	40.32	30.22	4.85	27.59	42.54	54.00	AV	PASS
	V	2400.00	57.28	30.22	4.85	27.58	59.49	74.00	PK	PASS
	V	2400.00	40.10	30.22	4.85	27.58	42.31	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	58.69	30.22	4.85	27.40	60.72	74.00	PK	PASS
	H	2483.50	40.42	30.22	4.85	27.40	42.45	54.00	AV	PASS
	H	2485.50	60.52	30.22	4.85	27.40	62.55	74.00	PK	PASS
	H	2485.50	40.62	30.22	4.85	27.40	42.65	54.00	AV	PASS
	V	2483.50	58.59	30.22	4.85	27.40	60.62	74.00	PK	PASS
	V	2483.50	40.52	30.22	4.85	27.40	42.55	54.00	AV	PASS
	V	2485.50	60.57	30.22	4.85	27.40	62.60	74.00	PK	PASS
	V	2485.50	40.69	30.22	4.85	27.40	42.72	54.00	AV	PASS
802.11n20	Low Channel 2412MHz									
	H	2390.00	58.48	30.22	4.85	27.59	60.70	74.00	PK	PASS
	H	2390.00	40.34	30.22	4.85	27.59	42.56	54.00	AV	PASS
	H	2400.00	60.88	30.22	4.85	27.58	63.09	74.00	PK	PASS
	H	2400.00	40.29	30.22	4.85	27.58	42.50	54.00	AV	PASS
	V	2390.00	58.35	30.22	4.85	27.59	60.57	74.00	PK	PASS
	V	2390.00	40.30	30.22	4.85	27.59	42.52	54.00	AV	PASS
	V	2400.00	60.72	30.22	4.85	27.58	62.93	74.00	PK	PASS
	V	2400.00	48.48	30.22	4.85	27.58	50.69	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	58.72	30.22	4.85	27.40	60.75	74.00	PK	PASS
	H	2483.50	40.65	30.22	4.85	27.40	42.68	54.00	AV	PASS
	H	2485.50	60.46	30.22	4.85	27.40	62.49	74.00	PK	PASS
	H	2485.50	40.53	30.22	4.85	27.40	42.56	54.00	AV	PASS
	V	2483.50	58.75	30.22	4.85	27.40	60.78	74.00	PK	PASS
	V	2483.50	40.50	30.22	4.85	27.40	42.53	54.00	AV	PASS
	V	2485.50	60.98	30.22	4.85	27.40	63.01	74.00	PK	PASS

	V	2485.50	40.33	30.22	4.85	27.40	42.36	54.00	AV	PASS
802.11n40	LowChannel 2422MHz									
	H	2390.00	58.22	30.22	4.85	27.59	60.44	74.00	PK	PASS
	H	2390.00	40.10	30.22	4.85	27.59	42.32	54.00	AV	PASS
	H	2400.00	60.42	30.22	4.85	27.58	62.63	74.00	PK	PASS
	H	2400.00	40.06	30.22	4.85	27.58	42.27	54.00	AV	PASS
	V	2390.00	58.03	30.22	4.85	27.59	60.25	74.00	PK	PASS
	V	2390.00	40.12	30.22	4.85	27.59	42.34	54.00	AV	PASS
	V	2400.00	60.18	30.22	4.85	27.58	62.39	74.00	PK	PASS
	V	2400.00	40.04	30.22	4.85	27.58	42.25	54.00	AV	PASS
	High Channel 2452MHz									
	H	2483.50	58.87	30.22	4.85	27.40	60.90	74.00	PK	PASS
	H	2483.50	40.80	30.22	4.85	27.40	42.83	54.00	AV	PASS
	H	2485.50	60.37	30.22	4.85	27.40	62.40	74.00	PK	PASS
	H	2485.50	40.68	30.22	4.85	27.40	42.71	54.00	AV	PASS
	V	2483.50	58.80	30.22	4.85	27.40	60.83	74.00	PK	PASS
	V	2483.50	40.58	30.22	4.85	27.40	42.61	54.00	AV	PASS
	V	2485.50	61.15	30.22	4.85	27.40	63.18	74.00	PK	PASS
	V	2485.50	48.21	30.22	4.85	27.40	50.24	74.00	AV	PASS

Remark:

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

6.POWER SPECTRAL DENSITY TEST

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

6.1 APPLIED PROCEDURES / LIMIT

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

6.2 TEST PROCEDURE

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

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP

6.5 EUT OPERATION CONDITIONS

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

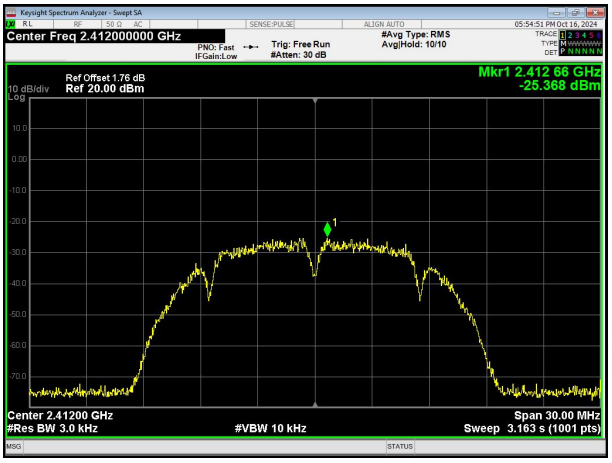
6.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX b Mode		

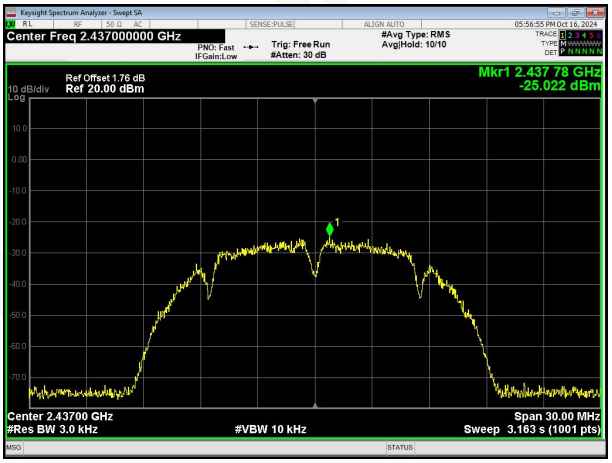
ANT1			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-25.368	8	PASS
2437 MHz	-25.022	8	PASS
2462 MHz	-24.831	8	PASS

ANT2			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-22.448	8	PASS
2437 MHz	-22.104	8	PASS
2462 MHz	-23.013	8	PASS

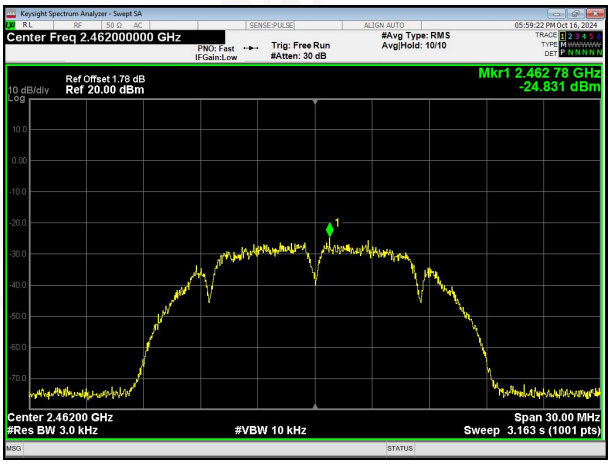
TX CH01-ANT1



TX CH06-ANT1



TX CH11-ANT1



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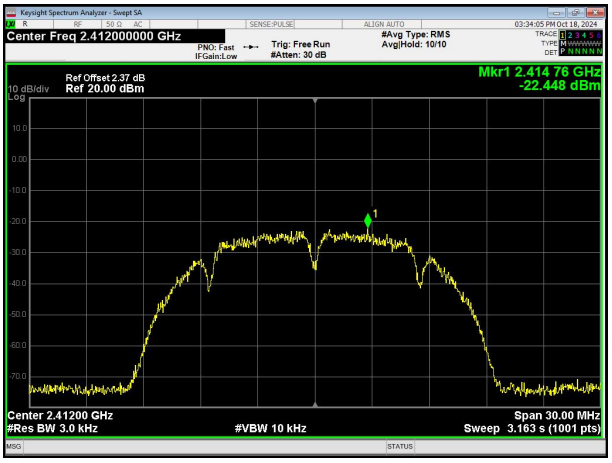

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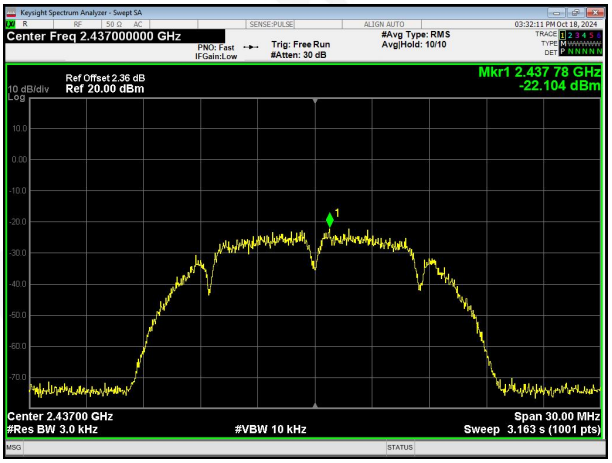

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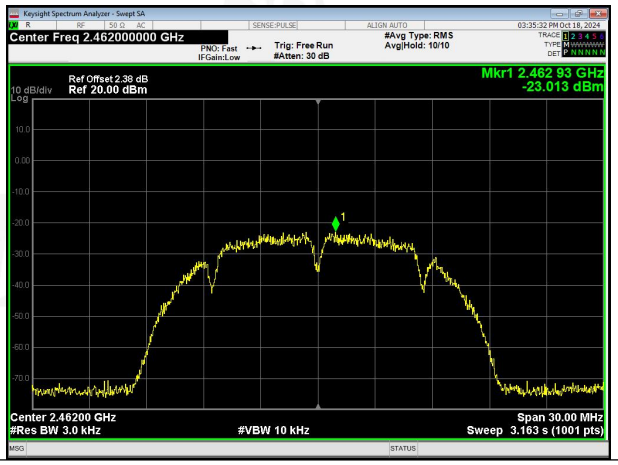
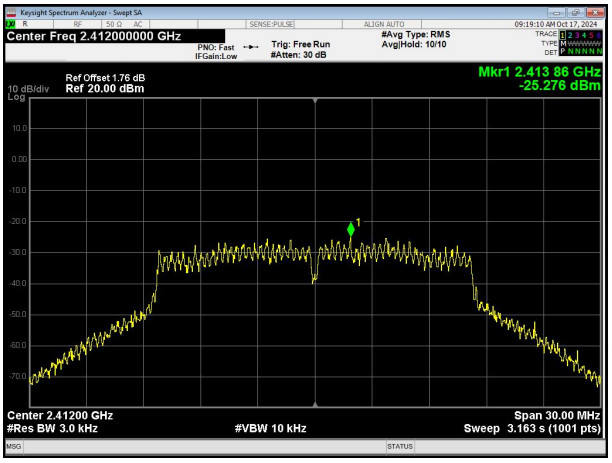


Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage：	AC 120V/60Hz
Test Mode ：	TX g Mode		

ANT1			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-25.276	8	PASS
2437 MHz	-24.910	8	PASS
2462 MHz	-25.926	8	PASS

ANT2			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-23.407	8	PASS
2437 MHz	-23.277	8	PASS
2462 MHz	-23.787	8	PASS

TX CH01-ANT1



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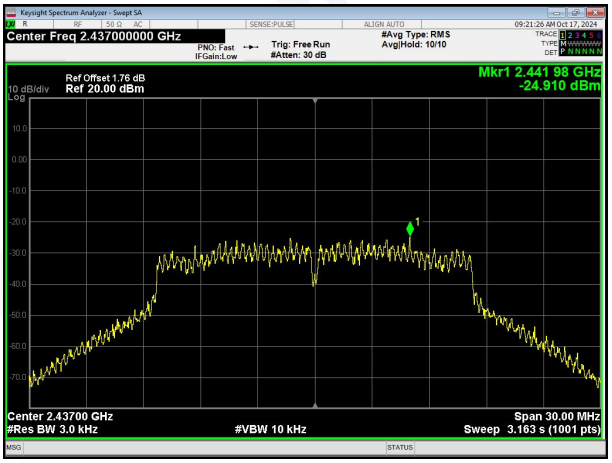

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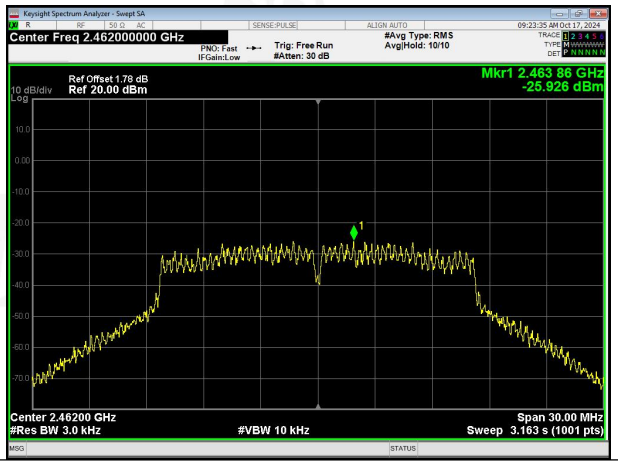

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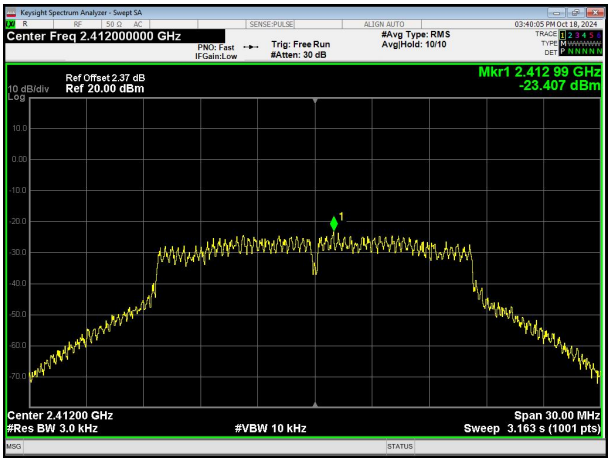

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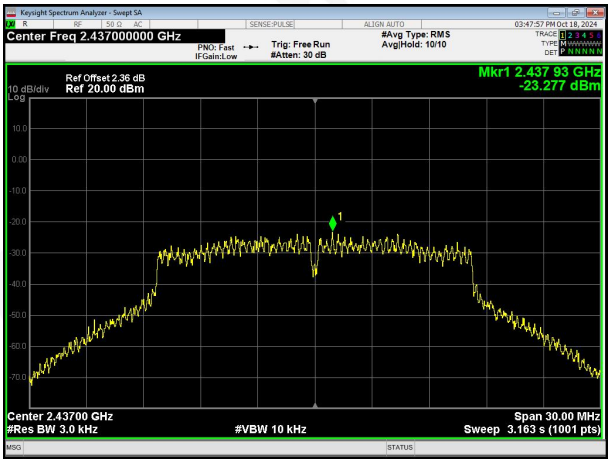

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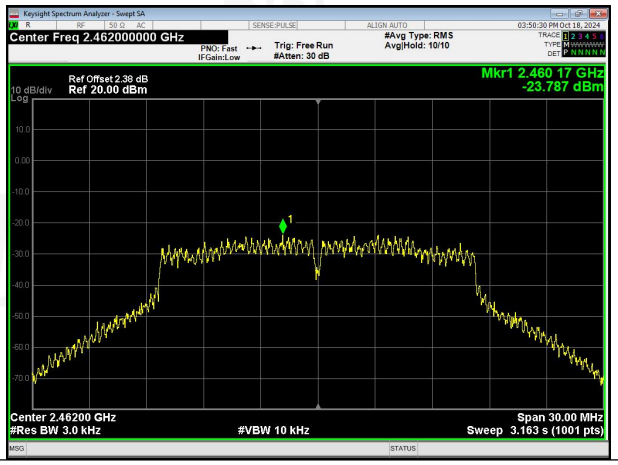
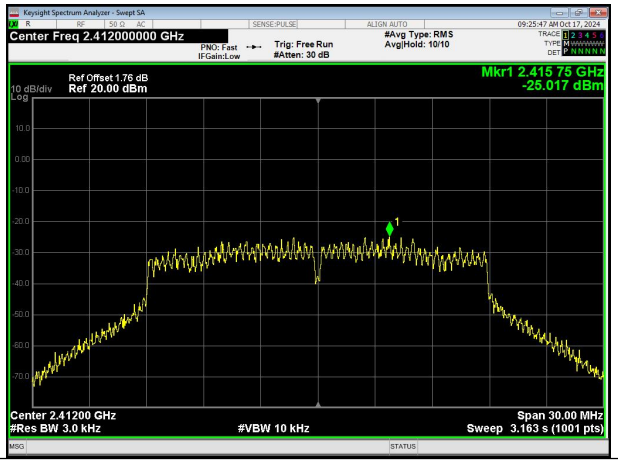


Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage：	AC 120V/60Hz
Test Mode ：	TX n Mode(20M)		

Frequency	Power Spectral Density (dBm/3kHz)		Power Spectral Density (mW)		Total Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
(MHz)	ANT1	ANT2	ANT1	ANT2	/	/	/
2412 MHz	-25.017	-23.984	0.003	0.004	-21.549	7.49	PASS
2437 MHz	-25.260	-24.510	0.003	0.004	-21.549	7.49	PASS
2462 MHz	-24.512	-24.026	0.004	0.004	-20.969	7.49	PASS

TX CH01-ANT1



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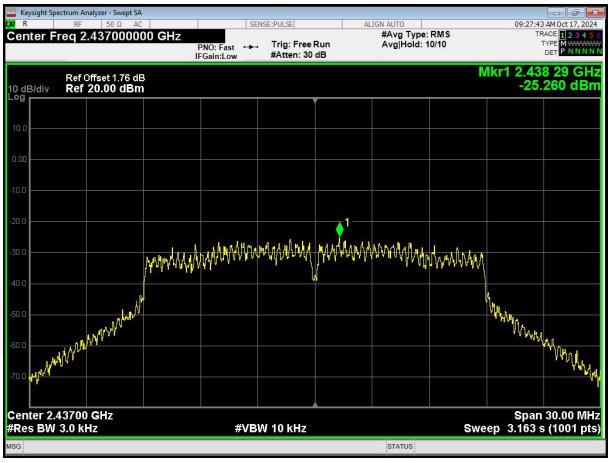

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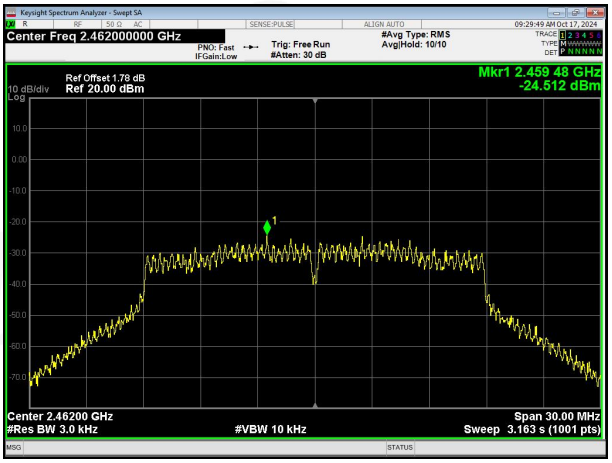

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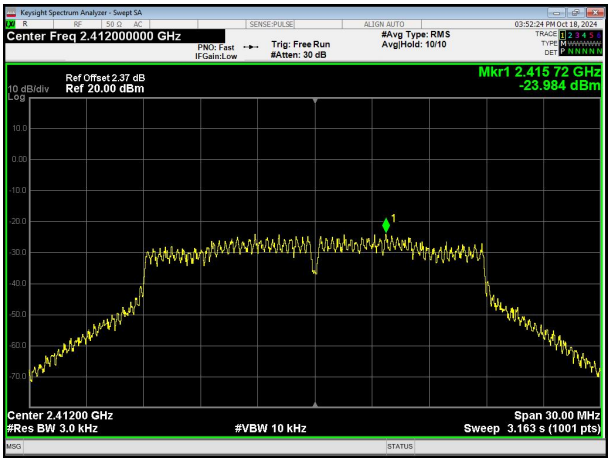
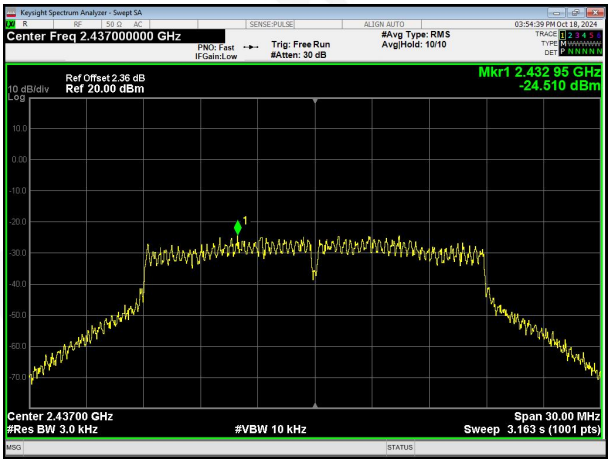
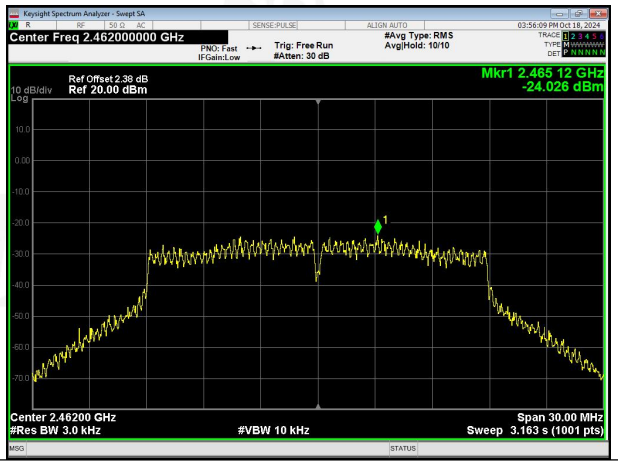


TX CH06-ANT2



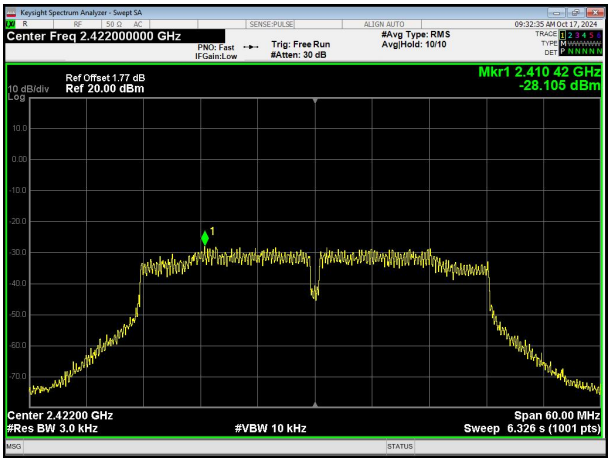
TX CH11-ANT2



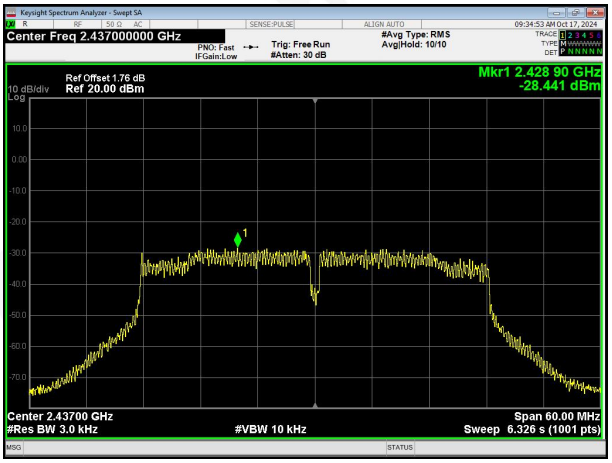
Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage：	AC 120V/60Hz
Test Mode ：	TX n Mode(40M)		

Frequency	Power Spectral Density (dBm/3kHz)		Power Spectral Density (mW)		Total Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
(MHz)	ANT1	ANT2	ANT1	ANT2	/	/	/
2412 MHz	-28.105	-26.000	0.002	0.003	-23.010	7.49	PASS
2437 MHz	-28.441	-26.955	0.001	0.002	-25.228	7.49	PASS
2462 MHz	-27.875	-27.017	0.002	0.002	-23.979	7.49	PASS

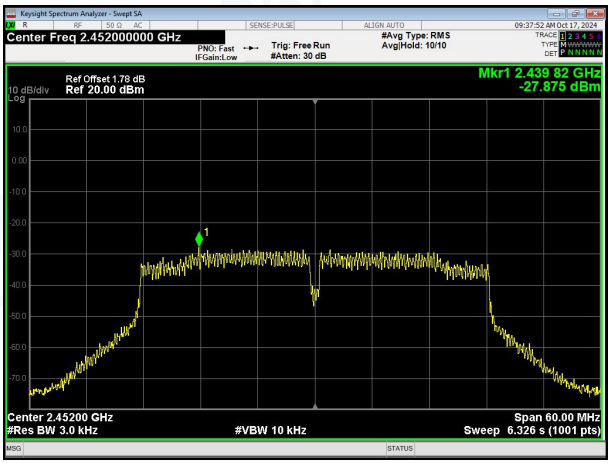
TX CH03-ANT1



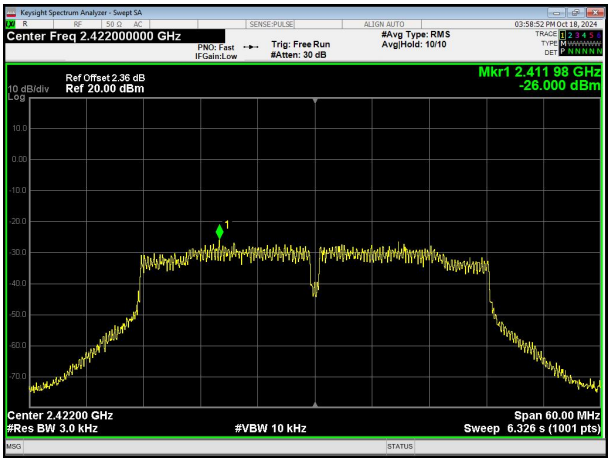
TX CH06-ANT1



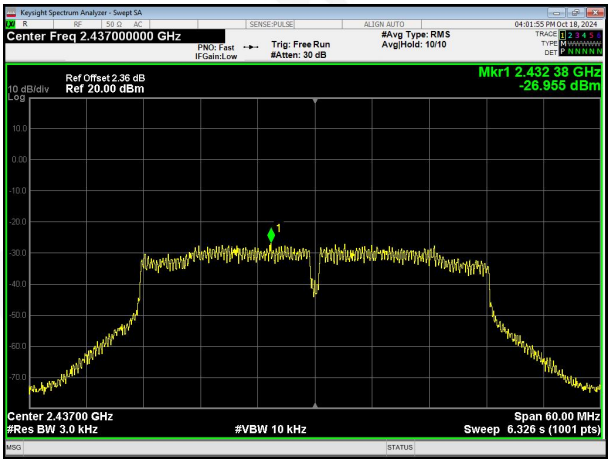
TX CH09-ANT1



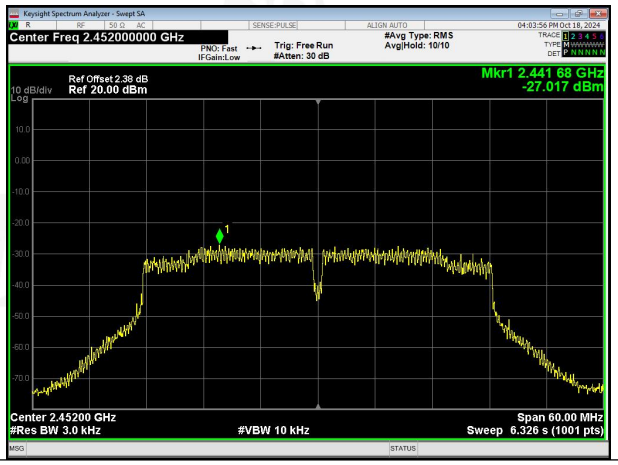
TX CH03-ANT2



TX CH06-ANT2



TX CH09-ANT2



7. CHANNEL BANDWIDTH

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

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

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

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

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

7.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode-ANT1-Worst mode		

	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
802.11b	2412	10.094	>500	Pass
	2437	10.101	>500	Pass
	2462	9.906	>500	Pass
802.11g	2412	15.107	>500	Pass
	2437	15.118	>500	Pass
	2462	15.120	>500	Pass
802.11n20	2412	15.111	>500	Pass
	2437	15.112	>500	Pass
	2462	15.131	>500	Pass
802.11n40	2422	33.777	>500	Pass
	2437	33.822	>500	Pass
	2452	35.079	>500	Pass

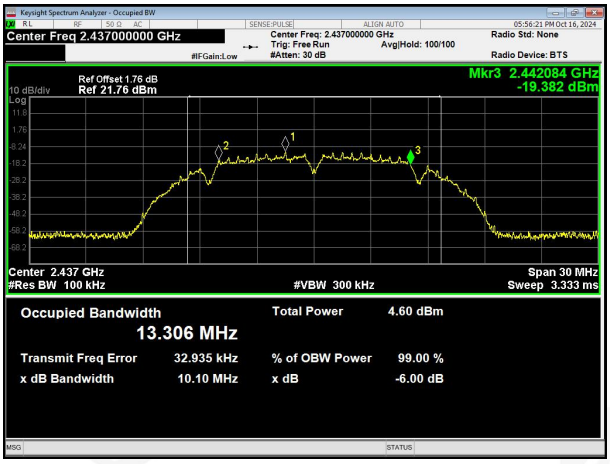
Test plot as follows:

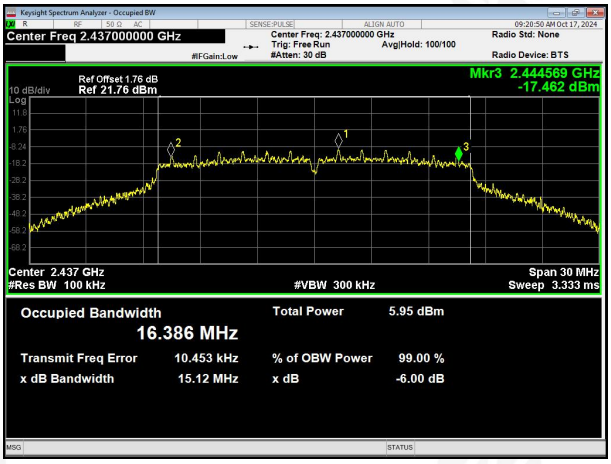
802.11b

802.11g

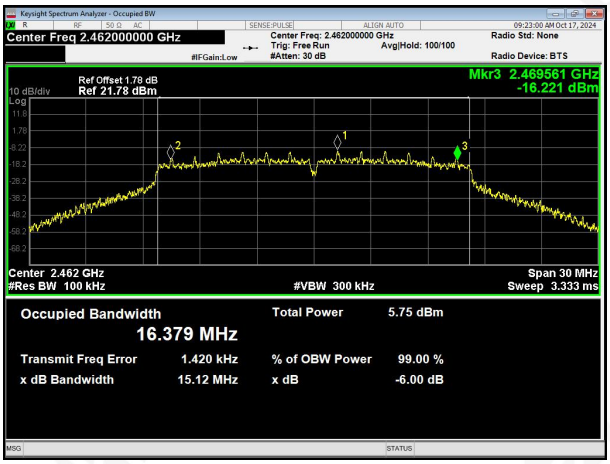
Lowest channel

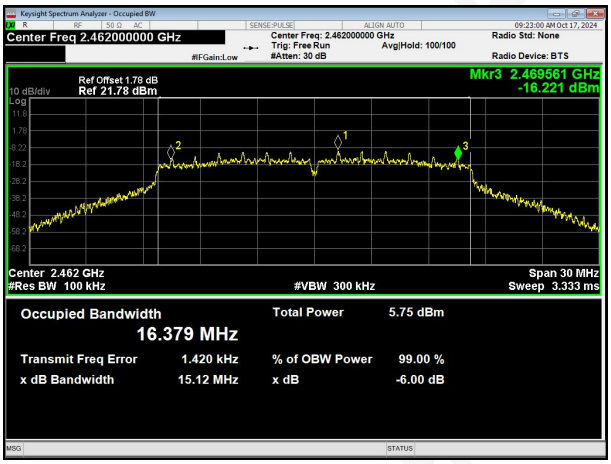
Middle channel





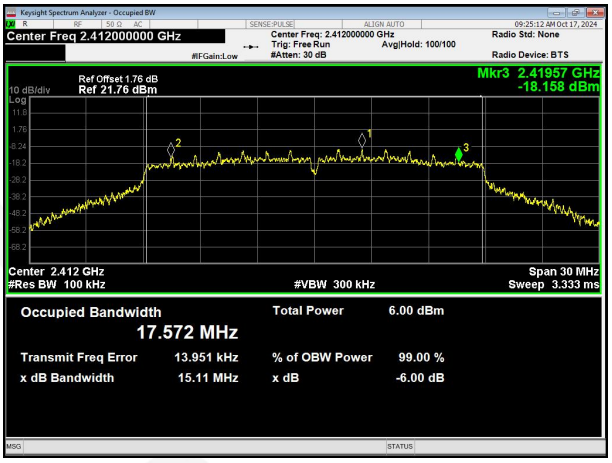
Highest channel



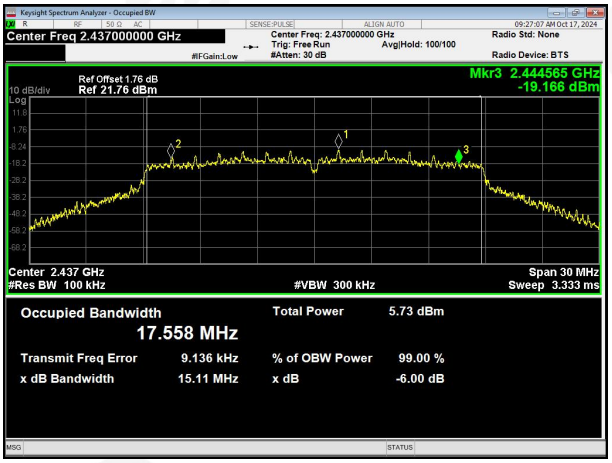


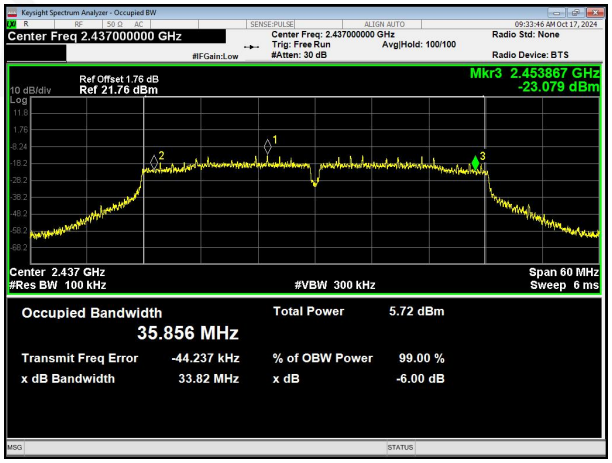
802.11n20 801.11n40

Lowest channel



Middle channel





Highest channel

8.PEAK OUTPUT POWER TEST

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

8.1 APPLIED PROCEDURES/LIMIT

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

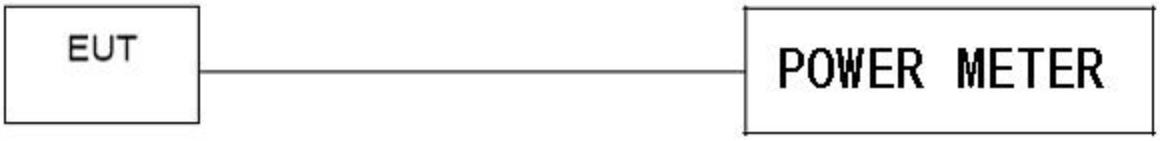
8.2 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

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

8.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b		802.11g			
	ANT1	ANT2	ANT1	ANT2		
Lowest	8.371	7.382	8.631	7.468	30.00	Pass
Middle	8.296	7.303	8.605	7.374		
Highest	8.554	7.275	8.664	7.392		

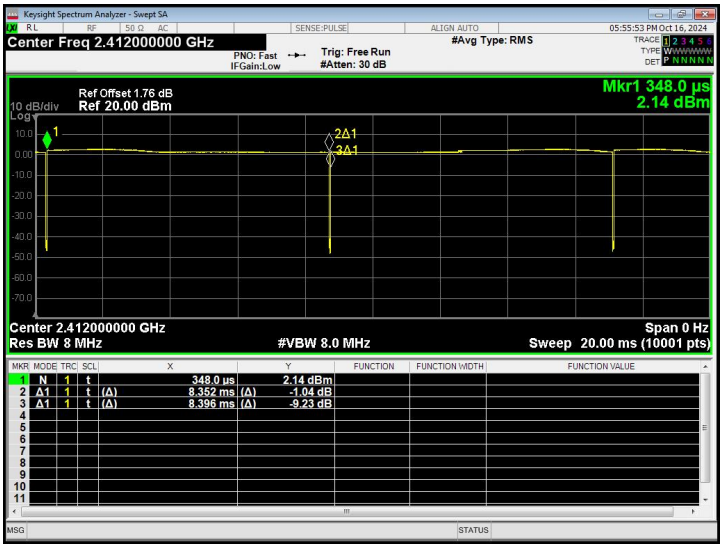
Test CH	Peak Output Power (dBm)								Total power(dBm)	
	802.11n(HT20) (dBm)		802.11n(HT40) (dBm)		802.11n(HT20) (mW)		802.11n(HT40) (mW)		802.11n (HT20) (dBm)	802.11n (HT40) (dBm)
/	ANT1	ANT2	ANT1	ANT2	ANT1	ANT2	ANT1	ANT2	/	/
Lowest	6.548	5.014	6.279	5.305	4.516	3.172	4.245	3.392	8.858	8.829
Middle	6.326	5.135	6.336	5.266	4.291	3.262	4.301	3.362	8.781	8.843
Highest	6.478	5.061	6.264	5.198	4.444	3.207	4.231	3.310	8.837	8.773

	Frequency	Output Power	Antenna gain	EIRP
	(MHz)	(dBm)	(dBi)	(dBm)
802.11b	Lowest	8.371	4.52	12.891
	Middle	8.296	4.52	12.816
	Highest	8.554	4.52	13.074
802.11g	Lowest	8.631	4.52	13.151
	Middle	8.605	4.52	13.125
	Highest	8.664	4.52	13.184
802.11n20	Lowest	8.858	4.52	13.378
	Middle	8.781	4.52	13.301
	Highest	8.837	4.52	13.357
802.11n40	Lowest	8.829	4.52	13.349
	Middle	8.843	4.52	13.363
	Highest	8.773	4.52	13.293

Duty Cycly:

Condition	Mode	Frequency (MHz)	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)	Final settingFor VBW (kHz)
NVNT	b	2412	Ant1	8.35	8.4	99.4	0	0.12	1
NVNT	g	2412	Ant1	0.15	0.2	75	1.25	6.74	1
NVNT	n20	2412	Ant1	0.23	0.28	82.14	0.85	4.31	1
NVNT	n40	2422	Ant1	0.78	0.82	95.12	0.22	1.29	1

802.11b



802.11g