

FCC TEST REPORT

FCC ID:2BDS2-RPL819

Report Number..... : ZKT-240528L5893E-1

Date of Test..... May 28 to July 01, 2024

Date of issue..... : July 01, 2024

Total number of pages..... 65

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 : Hypertechnologie Ciara Inc. Ciara Technologies Inc

Address : 5555, Rue Cypihot, Saint-Laurent, QC, H4S 1R3

Manufacturer's name : Hypertechnologie Ciara Inc. Ciara Technologies Inc

Address : 5555, Rue Cypihot, Saint-Laurent, QC, H4S 1R3

Factory's name : Dongguan Mingzhi Precision Manufacturing Co., LTD

Address : Room 301, Building 1, No.4 Jizhi North Road, Humen Town, Dongguan City, Guangdong Province

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.

This report shall not be reproduced except in full, without the written approval of ZKT, this document may be altered or revised by ZKT, personal only, and shall be noted in the revision of the document.

Product name..... : Notebook

Trademark : CIARA

Model/Type reference..... : RPL819(Please refer to page8)

Ratings..... : DC20V from adapter AC120V/60Hz or DC11.4V from battery

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



Table of Contents

	Page
1. VERSION	5
2. SUMMARY OF TEST RESULTS	6
2.1 TEST FACILITY	7
2.2 MEASUREMENT UNCERTAINTY	7
3. GENERAL INFORMATION	8
3.1 GENERAL DESCRIPTION OF EUT	8
3.2 DESCRIPTION OF TEST MODES	9
3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	10
3.5EQUIPMENTS LIST FOR ALL TEST ITEMS	12
4. EMC EMISSION TEST	14
4.1 CONDUCTED EMISSION MEASUREMENT	14
4.1.1 POWER LINE CONDUCTED EMISSION Limits	14
4.1.2 TEST PROCEDURE	14
4.1.3 DEVIATION FROM TEST STANDARD	14
4.1.4 TEST SETUP	15
4.1.5 EUT OPERATING CONDITIONS	15
4.1.6 TEST RESULT	16
4.2 RADIATED EMISSION MEASUREMENT	18
4.2.1 RADIATED EMISSION LIMITS	18
4.2.2 TEST PROCEDURE	18
4.2.3 DEVIATION FROM TEST STANDARD	19
4.2.4 TEST SETUP	19
4.2.5 EUT OPERATING CONDITIONS	20
4.2.6 TEST RESULTS	21
5.RADIATED BAND EMISSIONMEASUREMENT	32
5.1 TEST REQUIREMENT:	32
5.2 TEST PROCEDURE	32
5.3 DEVIATION FROM TEST STANDARD	32
5.4 TEST SETUP	33
5.5 EUT OPERATING CONDITIONS	33
5.6 TEST RESULT	34
6.POWER SPECTRAL DENSITY TEST	36
6.1 APPLIED PROCEDURES / LIMIT	36
6.2 TEST PROCEDURE	36
6.3 DEVIATION FROM STANDARD	36
6.4 TEST SETUP	36
6.5 EUT OPERATION CONDITIONS	36

6.6 TEST RESULT	37
7. CHANNEL BANDWIDTH	49
7.1 APPLIED PROCEDURES / LIMIT	49
7.2 TEST PROCEDURE	49
7.3 DEVIATION FROM STANDARD	49
7.4 TEST SETUP	49
7.5 EUT OPERATION CONDITIONS	49
7.6 TEST RESULT	50
8. PEAK OUTPUT POWER TEST	53
8.1 APPLIED PROCEDURES/LIMIT	53
8.2 TEST PROCEDURE	53
8.3 DEVIATION FROM STANDARD	53
8.4 TEST SETUP	53
8.5 EUT OPERATION CONDITIONS	53
8.6 TEST RESULT	54
9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION	57
9.1 APPLICABLE STANDARD	57
9.2 TEST PROCEDURE	57
9.3 DEVIATION FROM STANDARD	57
9.4 TEST SETUP	57
9.5 EUT OPERATION CONDITIONS	57
9.6 TEST RESULTS	57
10. ANTENNA REQUIREMENT	64
11. TEST SETUP PHOTO	65
12. EUT CONSTRUCTIONAL DETAILS	65

1. VERSION

Report No.	Version	Description	Approved
ZKT-240528L5893E-1	Rev.01	Initial issue of report	July 01, 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 $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Notebook
Model No.:	RPL819,CRIUS CO100-G1,CRIUS CO100-GY,CRIUS CO105-G1, CRIUS CO110-G1,CRIUS CO115-G1,CRIUS CO120-G1, CRIUS CO125-G1,CRIUS CO200-G1,CRIUS CO205-G1, CRIUS CO210-G1,CRIUS CO215-G1,CRIUS CO220-G1, CRIUS CO225-G1,CRIUS CO300-G1,CRIUS CO305-G1, CRIUS CO310-G1,CRIUS CO315-G1,CRIUS CO320-G1, CRIUS CO325-G1
Model Different.:	All models covered in this report are the same with each other, except for different model No. and appearance (for color, silk-screen only) for trading purpose.
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:	FPCB Antenna
Antenna gain:	Antenna 1: 2.5dBi Antenna 2: 2.5dBi
Power supply:	DC20V from adapter AC120V/60Hz or DC11.4V from battery
SWITCHING POWER ADAPTER:	Model: JHD-AP065U-BA-PD05 Input: 100-240V~ 50/60Hz 1.5A Output: 5V---3A; 9V---3A; 12V---3A; 15V---3A; 20V---2.25A
Battery:	DC11.4V 4825mAh
Note1: Directional Gain=2.5dBi+10log(2)=5.51dBi 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

Shenzhen ZKT Technology Co., Ltd.

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

EUT

Conducted Spurious

EUT

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	Notebook	CIARA	RPL819	N/A	EUT
E-2	Adapter	N/A	JHD-AP065U-BA-PD05		

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2M	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.

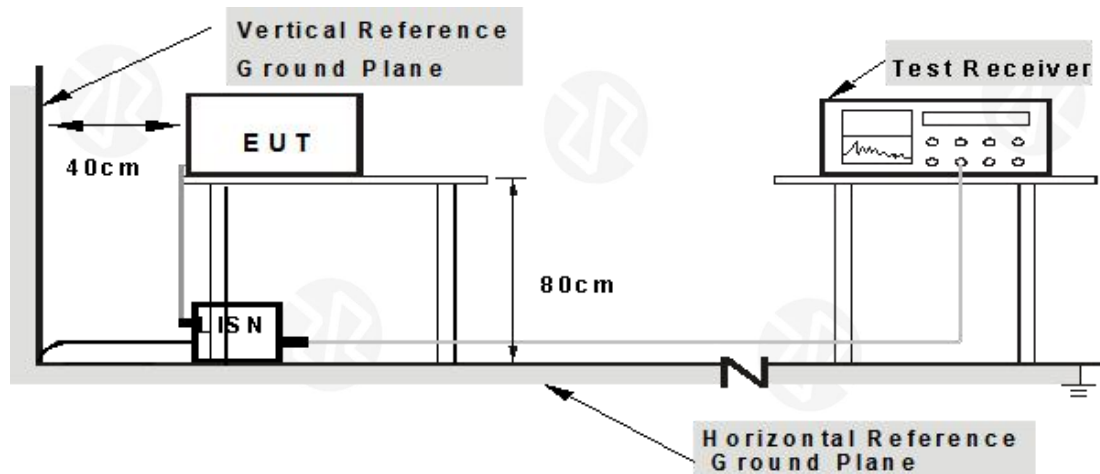
4.1.2 TEST PROCEDURE

- 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.
- 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

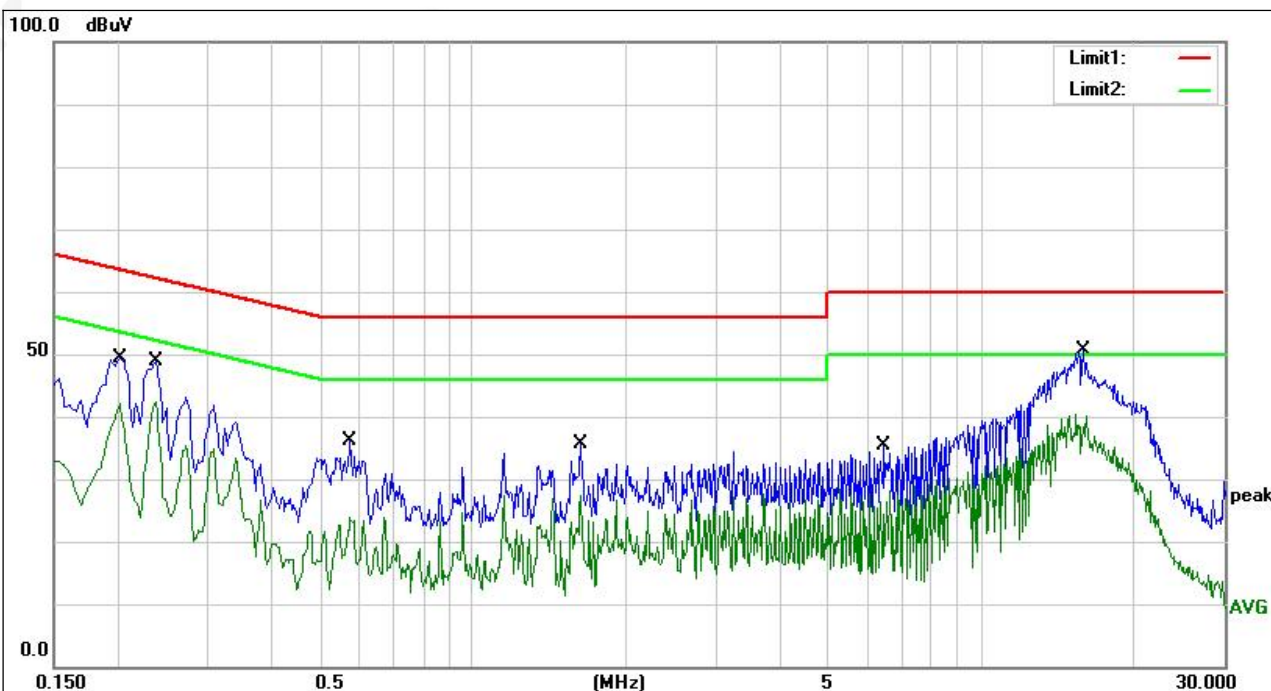
4.1.5 EUT OPERATING CONDITIONS

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.

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

4.1.6 TEST RESULT

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

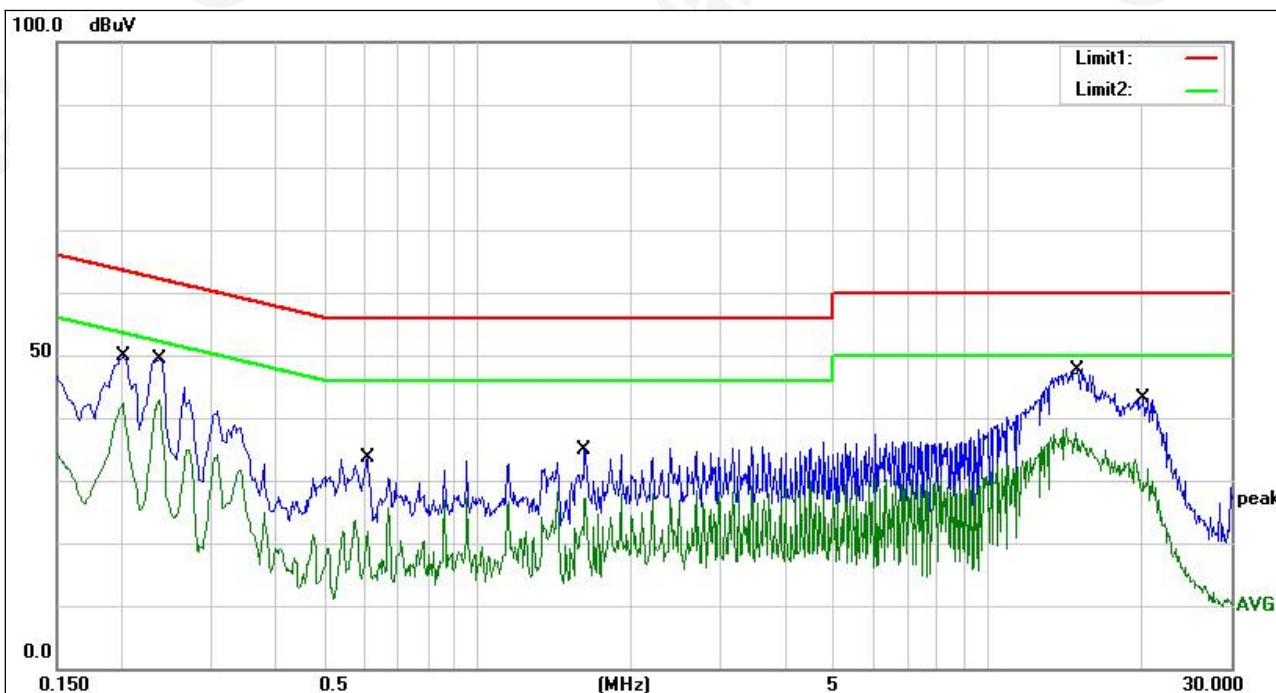


No.	Frequency (MHz)	Reading (dBuV)	Correction (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2020	39.12	10.32	49.44	63.53	-14.09	QP
2	0.2020	31.92	10.32	42.24	53.53	-11.29	AVG
3	0.2380	38.34	10.48	48.82	62.17	-13.35	QP
4	0.2380	31.97	10.48	42.45	52.17	-9.72	AVG
5	0.5740	25.68	10.47	36.15	56.00	-19.85	QP
6	0.5740	13.42	10.47	23.89	46.00	-22.11	AVG
7	1.6300	25.43	10.30	35.73	56.00	-20.27	QP
8	1.6300	17.14	10.30	27.44	46.00	-18.56	AVG
9	6.4300	24.73	10.54	35.27	60.00	-24.73	QP
10	6.4300	17.84	10.54	28.38	50.00	-21.62	AVG
11	15.8260	38.60	11.92	50.52	60.00	-9.48	QP
12	15.8260	28.55	11.92	40.47	50.00	-9.53	AVG

Notes:

- 1.An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3.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)	Correction (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2020	39.58	10.32	49.90	63.53	-13.63	QP
2	0.2020	32.13	10.32	42.45	53.53	-11.08	AVG
3	0.2380	38.83	10.48	49.31	62.17	-12.86	QP
4	0.2380	32.48	10.48	42.96	52.17	-9.21	AVG
5	0.6100	23.28	10.44	33.72	56.00	-22.28	QP
6	0.6100	13.24	10.44	23.68	46.00	-22.32	AVG
7	1.6260	24.47	10.30	34.77	56.00	-21.23	QP
8	1.6260	16.95	10.30	27.25	46.00	-18.75	AVG
9	15.0380	35.79	11.74	47.53	60.00	-12.47	QP
10	15.0380	26.74	11.74	38.48	50.00	-11.52	AVG
11	20.2100	30.29	12.89	43.18	60.00	-16.82	QP
12	20.2100	20.52	12.89	33.41	50.00	-16.59	AVG

Notes:

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

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	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-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of variable-height antenna tower.

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

Above 1GHz test procedure as below:

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

Note:

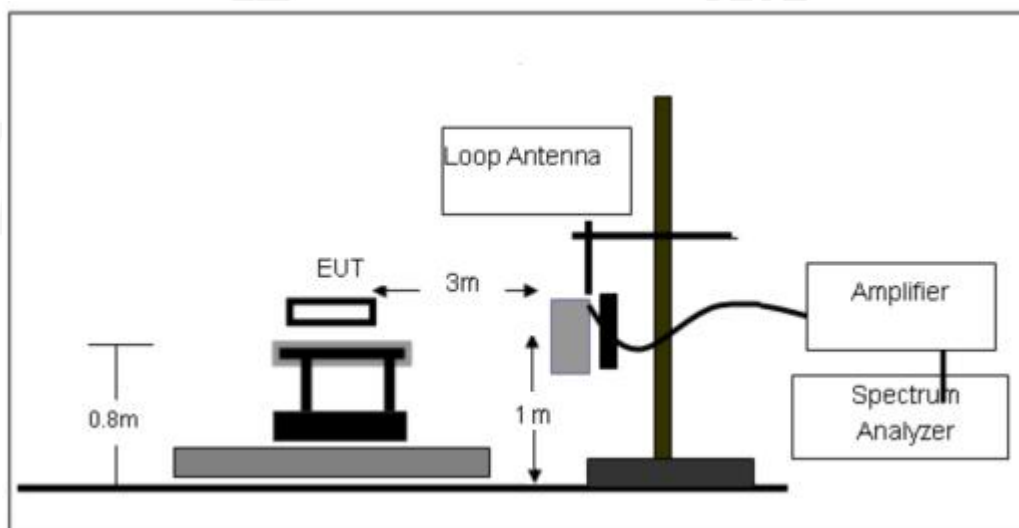
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

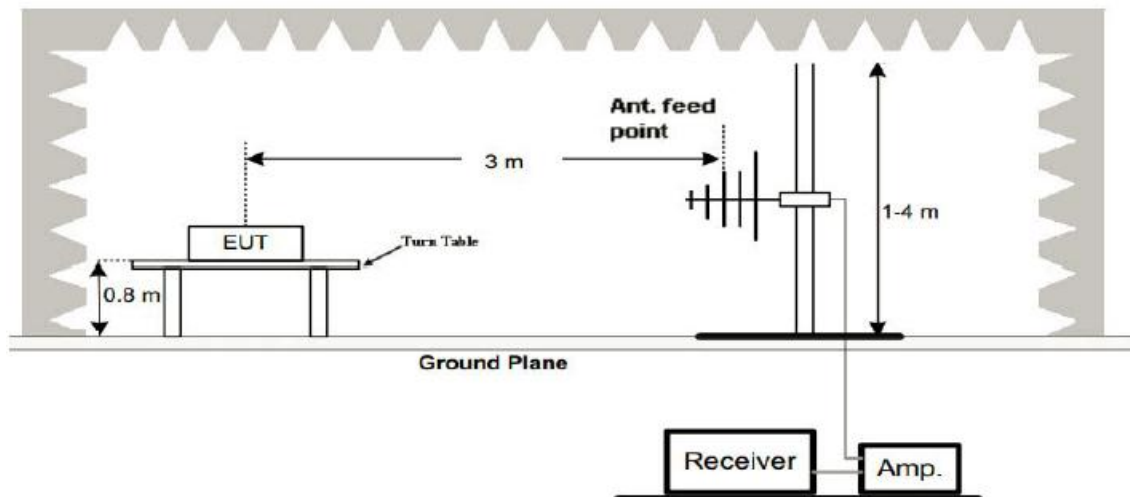
No deviation

4.2.4 TEST SETUP

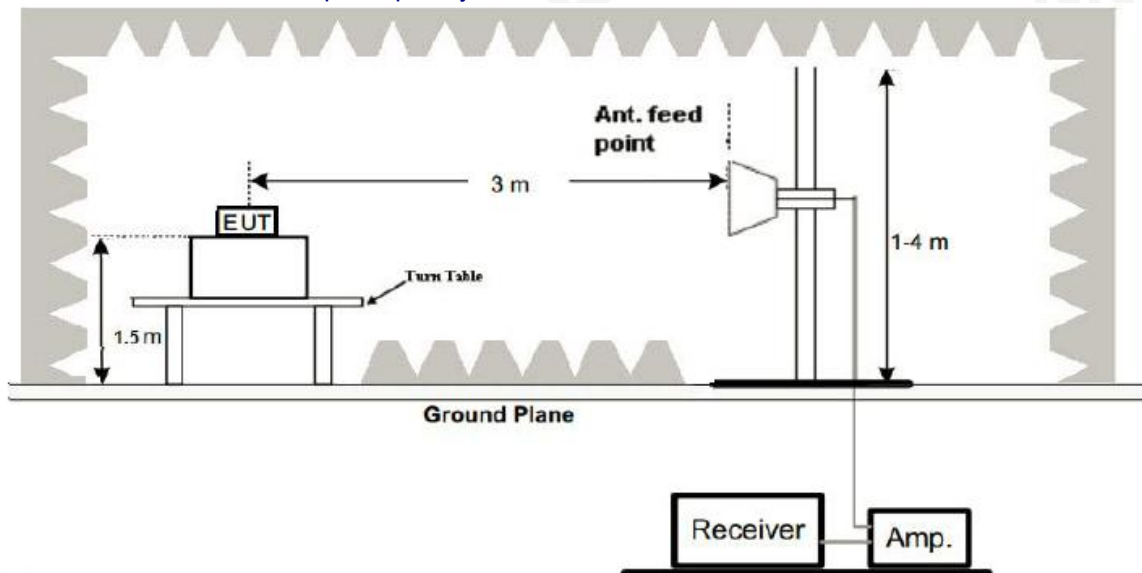
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.5 EUT OPERATING CONDITIONS

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

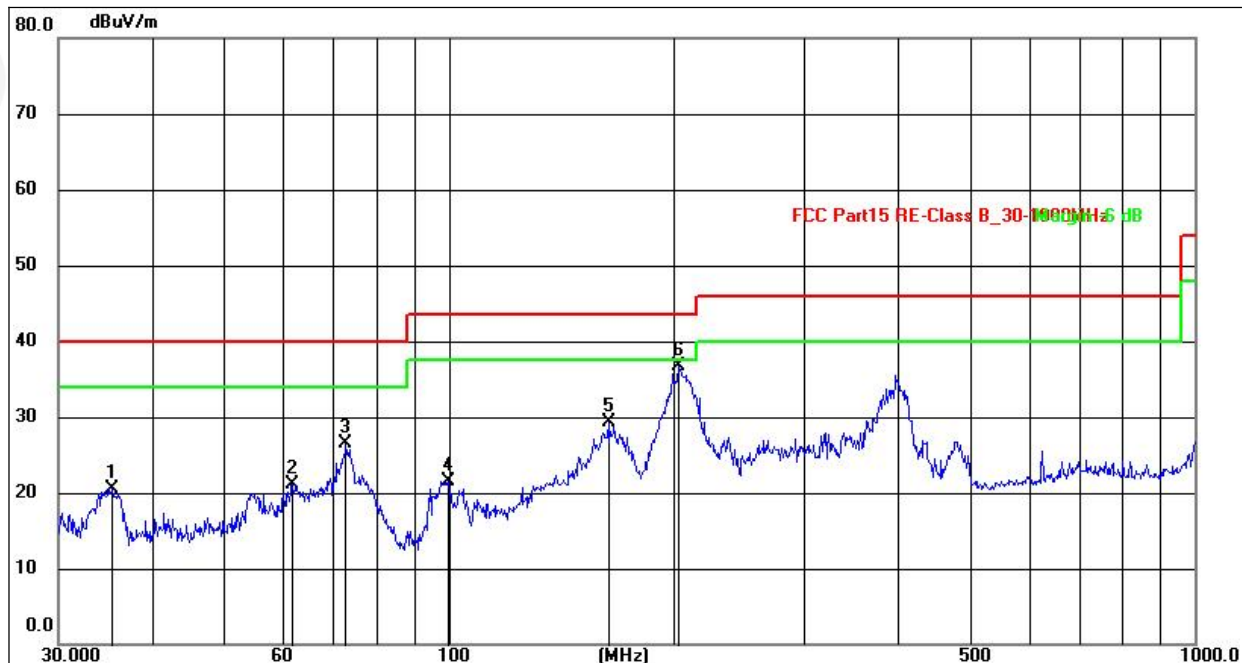
4.2.6 TEST RESULTS

Between 9KHz – 30MHz

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

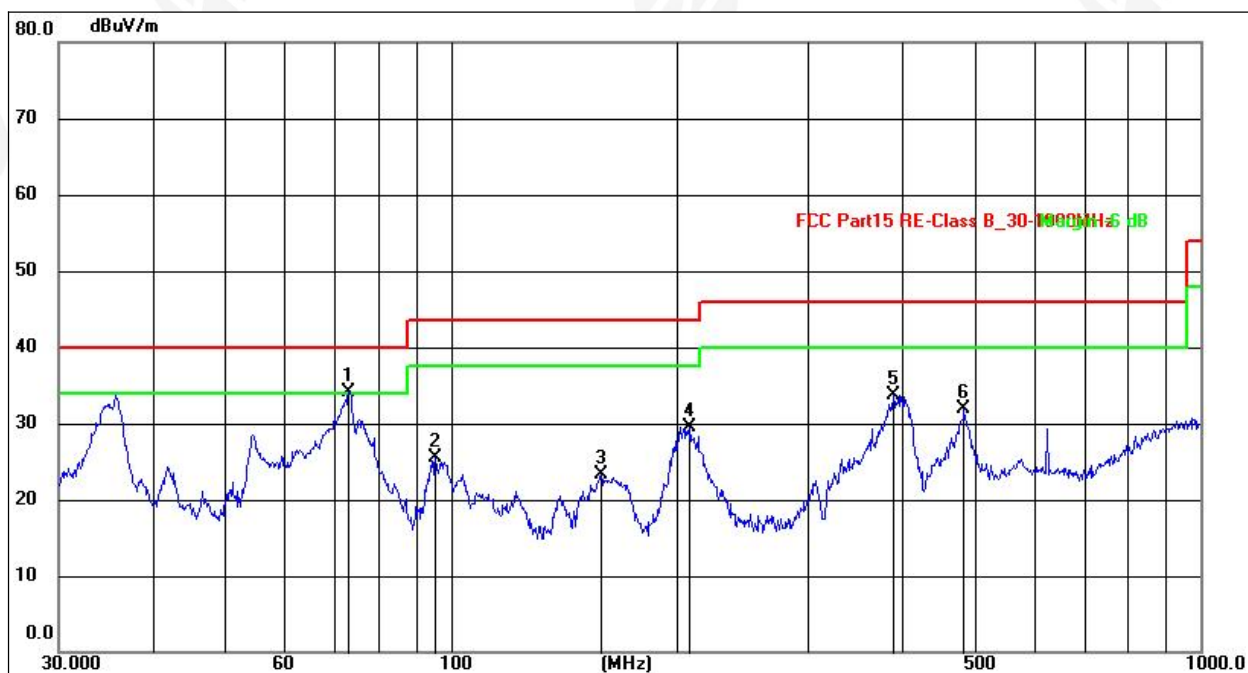
Between 30MHz – 1GHz

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



No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	35.3750	35.52	-14.98	20.54	40.00	-19.46	QP
2	61.7779	35.89	-14.72	21.17	40.00	-18.83	QP
3	72.8465	44.07	-17.62	26.45	40.00	-13.55	QP
4	99.8777	41.29	-19.82	21.47	43.50	-22.03	QP
5	163.7547	45.79	-16.50	29.29	43.50	-14.21	QP
6	203.5226	55.24	-18.62	36.62	43.50	-6.88	QP

Temperature:	26°C	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	73.1025	54.18	-20.13	34.05	40.00	-5.95	QP
2	95.4269	46.82	-21.34	25.48	43.50	-18.02	QP
3	158.6673	43.64	-20.24	23.40	43.50	-20.10	QP
4	208.5800	50.09	-20.56	29.53	43.50	-13.97	QP
5	389.3548	49.11	-15.38	33.73	46.00	-12.27	QP
6	483.9094	44.01	-12.12	31.89	46.00	-14.11	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	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	51.23	30.55	5.77	31.12	57.57	74.00	-16.43	PK
V	4824.00	31.09	30.55	5.77	31.12	37.43	54.00	-16.57	AV
V	7236.00	49.32	30.33	6.32	36.00	61.31	74.00	-12.69	PK
V	7236.00	31.80	30.33	6.32	36.00	43.79	54.00	-10.21	AV
V	9648.00	49.82	30.85	7.45	37.14	63.56	74.00	-10.44	PK
V	9648.00	31.70	30.85	7.45	37.14	45.44	54.00	-8.56	AV
V	12060.00	44.92	31.02	8.99	39.10	61.99	74.00	-12.01	PK
V	12060.00	27.70	31.02	8.99	39.10	44.77	54.00	-9.23	AV
H	4824.00	51.57	30.55	5.77	31.12	57.91	74.00	-16.09	PK
H	4824.00	31.42	30.55	5.77	31.12	37.76	54.00	-16.24	AV
H	7236.00	50.21	30.33	6.32	36.00	62.20	74.00	-11.80	PK
H	7236.00	31.47	30.33	6.32	36.00	43.46	54.00	-10.54	AV
H	9648.00	50.21	30.85	7.45	37.14	63.95	74.00	-10.05	PK
H	9648.00	31.47	30.85	7.45	37.14	45.21	54.00	-8.79	AV
H	12060.00	45.21	31.02	8.99	39.10	62.28	74.00	-11.72	PK
H	12060.00	26.47	31.02	8.99	39.10	43.54	54.00	-10.46	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	49.63	30.55	5.77	31.45	56.30	74.00	-17.70	PK
V	4874.00	30.52	30.55	5.77	31.45	37.19	54.00	-16.81	AV
V	7311.00	48.16	30.33	6.32	36.10	60.25	74.00	-13.75	PK
V	7311.00	30.20	30.33	6.32	36.10	42.29	54.00	-11.71	AV
V	9748.00	48.23	30.85	7.45	36.50	61.33	74.00	-12.67	PK
V	9748.00	30.20	30.85	7.45	36.50	43.30	54.00	-10.70	AV
V	12185.00	43.13	31.02	8.99	39.11	60.21	74.00	-13.79	PK
V	12185.00	23.77	31.02	8.99	39.11	40.85	54.00	-13.15	AV
H	4874.00	50.99	30.55	5.77	31.45	57.66	74.00	-16.34	PK
H	4874.00	30.55	30.55	5.77	31.45	37.22	54.00	-16.78	AV
H	7311.00	51.70	30.33	6.32	36.10	63.79	74.00	-10.21	PK
H	7311.00	30.33	30.33	6.32	36.10	42.42	54.00	-11.58	AV
H	9748.00	51.70	30.85	7.45	36.50	64.80	74.00	-9.20	PK
H	9748.00	30.33	30.85	7.45	36.50	43.43	54.00	-10.57	AV
H	12185.00	45.18	31.02	8.99	39.11	62.26	74.00	-11.74	PK
H	12185.00	24.33	31.02	8.99	39.11	41.41	54.00	-12.59	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	52.39	30.55	5.77	31.79	59.40	74.00	-14.60	PK
V	4924.00	33.93	30.55	5.77	31.79	40.94	54.00	-13.06	AV
V	7386.00	54.90	30.33	6.32	36.21	67.10	74.00	-6.90	PK
V	7386.00	34.25	30.33	6.32	36.21	46.45	54.00	-7.55	AV
V	9848.00	54.90	30.85	7.45	36.50	68.00	74.00	-6.00	PK
V	9848.00	34.74	30.85	7.45	36.50	47.84	54.00	-6.16	AV
V	12310.00	46.90	31.02	8.99	39.15	64.02	74.00	-9.98	PK
V	12310.00	29.14	31.02	8.99	39.15	46.26	54.00	-7.74	AV
H	4924.00	52.45	30.55	5.77	31.79	59.46	74.00	-14.54	PK
H	4924.00	34.09	30.55	5.77	31.79	41.10	54.00	-12.90	AV
H	7386.00	54.07	30.33	6.32	36.21	66.27	74.00	-7.73	PK
H	7386.00	34.41	30.33	6.32	36.21	46.61	54.00	-7.39	AV
H	9848.00	54.67	30.85	7.45	36.50	67.77	74.00	-6.23	PK
H	9848.00	34.11	30.85	7.45	36.50	47.21	54.00	-6.79	AV
H	12310.00	48.57	31.02	8.99	39.15	65.69	74.00	-8.31	PK
H	12310.00	27.50	31.02	8.99	39.15	44.62	54.00	-9.38	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	51.18	30.55	5.77	31.12	57.52	74.00	-16.48	PK
V	4824.00	30.94	30.55	5.77	31.12	37.28	54.00	-16.72	AV
V	7236.00	48.97	30.33	6.32	36.00	60.96	74.00	-13.04	PK
V	7236.00	31.89	30.33	6.32	36.00	43.88	54.00	-10.12	AV
V	9648.00	48.97	30.85	7.45	37.14	62.71	74.00	-11.29	PK
V	9648.00	31.45	30.85	7.45	37.14	45.19	54.00	-8.81	AV
V	12060.00	46.07	31.02	8.99	39.10	63.14	74.00	-10.86	PK
V	12060.00	27.35	31.02	8.99	39.10	44.42	54.00	-9.58	AV
H	4824.00	51.52	30.55	5.77	31.12	57.86	74.00	-16.14	PK
H	4824.00	31.37	30.55	5.77	31.12	37.71	54.00	-16.29	AV
H	7236.00	50.27	30.33	6.32	36.00	62.26	74.00	-11.74	PK
H	7236.00	31.58	30.33	6.32	36.00	43.57	54.00	-10.43	AV
H	9648.00	50.29	30.85	7.45	37.14	64.03	74.00	-9.97	PK
H	9648.00	31.60	30.85	7.45	37.14	45.34	54.00	-8.66	AV
H	12060.00	45.32	31.02	8.99	39.10	62.39	74.00	-11.61	PK
H	12060.00	24.61	31.02	8.99	39.10	41.68	54.00	-12.32	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	49.15	30.55	5.77	31.45	55.82	74.00	-18.18	PK
V	4874.00	30.00	30.55	5.77	31.45	36.67	54.00	-17.33	AV
V	7311.00	47.75	30.33	6.32	36.10	59.84	74.00	-14.16	PK
V	7311.00	29.86	30.33	6.32	36.10	41.95	54.00	-12.05	AV
V	9748.00	47.83	30.85	7.45	36.50	60.93	74.00	-13.07	PK
V	9748.00	29.09	30.85	7.45	36.50	42.19	54.00	-11.81	AV
V	12185.00	44.86	31.02	8.99	39.11	61.94	74.00	-12.06	PK
V	12185.00	23.20	31.02	8.99	39.11	40.28	54.00	-13.72	AV
H	4874.00	50.42	30.55	5.77	31.45	57.09	74.00	-16.91	PK
H	4874.00	30.37	30.55	5.77	31.45	37.04	54.00	-16.96	AV
H	7311.00	51.12	30.33	6.32	36.10	63.21	74.00	-10.79	PK
H	7311.00	29.94	30.33	6.32	36.10	42.03	54.00	-11.97	AV
H	9748.00	51.32	30.85	7.45	36.50	64.42	74.00	-9.58	PK
H	9748.00	29.75	30.85	7.45	36.50	42.85	54.00	-11.15	AV
H	12185.00	45.57	31.02	8.99	39.11	62.65	74.00	-11.35	PK
H	12185.00	24.88	31.02	8.99	39.11	41.96	54.00	-12.04	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:2462MHz									
V	4924.00	49.14	30.55	5.77	31.79	56.15	74.00	-17.85	PK
V	4924.00	30.64	30.55	5.77	31.79	37.65	54.00	-16.35	AV
V	7386.00	51.48	30.33	6.32	36.21	63.68	74.00	-10.32	PK
V	7386.00	30.98	30.33	6.32	36.21	43.18	54.00	-10.82	AV
V	9848.00	51.48	30.85	7.45	36.50	64.58	74.00	-9.42	PK
V	9848.00	31.42	30.85	7.45	36.50	44.52	54.00	-9.48	AV
V	12310.00	44.58	31.02	8.99	39.15	61.70	74.00	-12.30	PK
V	12310.00	26.62	31.02	8.99	39.15	43.74	54.00	-10.26	AV
H	4924.00	49.16	30.55	5.77	31.79	56.17	74.00	-17.83	PK
H	4924.00	30.83	30.55	5.77	31.79	37.84	54.00	-16.16	AV
H	7386.00	50.65	30.33	6.32	36.21	62.85	74.00	-11.15	PK
H	7386.00	31.15	30.33	6.32	36.21	43.35	54.00	-10.65	AV
H	9848.00	51.35	30.85	7.45	36.50	64.45	74.00	-9.55	PK
H	9848.00	31.19	30.85	7.45	36.50	44.29	54.00	-9.71	AV
H	12310.00	45.25	31.02	8.99	39.15	62.37	74.00	-11.63	PK
H	12310.00	24.19	31.02	8.99	39.15	41.31	54.00	-12.69	AV

Remark:

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

Margin= Emission Level - Limit

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

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

802.11n20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:2412MHz									
V	4824.00	51.50	30.55	5.77	31.12	57.84	74.00	-16.16	PK
V	4824.00	31.30	30.55	5.77	31.12	37.64	54.00	-16.36	AV
V	7236.00	48.39	30.33	6.32	36.00	60.38	74.00	-13.62	PK
V	7236.00	32.30	30.33	6.32	36.00	44.29	54.00	-9.71	AV
V	9648.00	49.59	30.85	7.45	37.14	63.33	74.00	-10.67	PK
V	9648.00	31.67	30.85	7.45	37.14	45.41	54.00	-8.59	AV
V	12060.00	45.39	31.02	8.99	39.10	62.46	74.00	-11.54	PK
V	12060.00	26.74	31.02	8.99	39.10	43.81	54.00	-10.19	AV
H	4824.00	51.64	30.55	5.77	31.12	57.98	74.00	-16.02	PK
H	4824.00	31.49	30.55	5.77	31.12	37.83	54.00	-16.17	AV
H	7236.00	50.59	30.33	6.32	36.00	62.58	74.00	-11.42	PK
H	7236.00	31.80	30.33	6.32	36.00	43.79	54.00	-10.21	AV
H	9648.00	50.51	30.85	7.45	37.14	64.25	74.00	-9.75	PK
H	9648.00	31.72	30.85	7.45	37.14	45.46	54.00	-8.54	AV
H	12060.00	44.64	31.02	8.99	39.10	61.71	74.00	-12.29	PK
H	12060.00	25.83	31.02	8.99	39.10	42.90	54.00	-11.10	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874.00	50.28	30.55	5.77	31.45	56.95	74.00	-17.05	PK
V	4874.00	31.17	30.55	5.77	31.45	37.84	54.00	-16.16	AV
V	7311.00	48.14	30.33	6.32	36.10	60.23	74.00	-13.77	PK
V	7311.00	31.00	30.33	6.32	36.10	43.09	54.00	-10.91	AV
V	9748.00	49.19	30.85	7.45	36.50	62.29	74.00	-11.71	PK
V	9748.00	31.17	30.85	7.45	36.50	44.27	54.00	-9.73	AV
V	12185.00	46.09	31.02	8.99	39.11	63.17	74.00	-10.83	PK
V	12185.00	25.10	31.02	8.99	39.11	42.18	54.00	-11.82	AV
H	4874.00	51.57	30.55	5.77	31.45	58.24	74.00	-15.76	PK
H	4874.00	31.30	30.55	5.77	31.45	37.97	54.00	-16.03	AV
H	7311.00	52.30	30.33	6.32	36.10	64.39	74.00	-9.61	PK
H	7311.00	31.08	30.33	6.32	36.10	43.17	54.00	-10.83	AV
H	9748.00	52.45	30.85	7.45	36.50	65.55	74.00	-8.45	PK
H	9748.00	31.08	30.85	7.45	36.50	44.18	54.00	-9.82	AV
H	12185.00	45.08	31.02	8.99	39.11	62.16	74.00	-11.84	PK
H	12185.00	26.16	31.02	8.99	39.11	43.24	54.00	-10.76	AV

Page 25 of 60

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	51.66	30.55	5.77	31.79	58.67	74.00	-15.33	PK
V	4924.00	32.86	30.55	5.77	31.79	39.87	54.00	-14.13	AV
V	7386.00	53.90	30.33	6.32	36.21	66.10	74.00	-7.90	PK
V	7386.00	33.58	30.33	6.32	36.21	45.78	54.00	-8.22	AV
V	9848.00	54.00	30.85	7.45	36.50	67.10	74.00	-6.90	PK
V	9848.00	34.00	30.85	7.45	36.50	47.10	54.00	-6.90	AV
V	12310.00	46.90	31.02	8.99	39.15	64.02	74.00	-9.98	PK
V	12310.00	26.14	31.02	8.99	39.15	43.26	54.00	-10.74	AV
H	4924.00	51.68	30.55	5.77	31.79	58.69	74.00	-15.31	PK
H	4924.00	33.35	30.55	5.77	31.79	40.36	54.00	-13.64	AV
H	7386.00	53.17	30.33	6.32	36.21	65.37	74.00	-8.63	PK
H	7386.00	33.81	30.33	6.32	36.21	46.01	54.00	-7.99	AV
H	9848.00	53.87	30.85	7.45	36.50	66.97	74.00	-7.03	PK
H	9848.00	33.80	30.85	7.45	36.50	46.90	54.00	-7.10	AV
H	12310.00	47.77	31.02	8.99	39.15	64.89	74.00	-9.11	PK
H	12310.00	26.71	31.02	8.99	39.15	43.83	54.00	-10.17	AV

Remark:

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

802.11n40

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	50.73	30.55	5.77	31.14	57.09	74.00	-16.91	PK
V	4844.00	31.92	30.55	5.77	31.14	38.28	54.00	-15.72	AV
V	7266.00	52.97	30.33	6.32	36.09	65.05	74.00	-8.95	PK
V	7266.00	32.78	30.33	6.32	36.09	44.86	54.00	-9.14	AV
V	9688.00	53.05	30.85	7.45	37.16	66.81	74.00	-7.19	PK
V	9688.00	33.03	30.85	7.45	37.16	46.79	54.00	-7.21	AV
V	12110.00	45.60	31.02	8.99	39.15	62.72	74.00	-11.28	PK
V	12110.00	26.29	31.02	8.99	39.15	43.41	54.00	-10.59	AV
H	4844.00	50.98	30.55	5.77	31.14	57.34	74.00	-16.66	PK
H	4844.00	32.45	30.55	5.77	31.14	38.81	54.00	-15.19	AV
H	7266.00	52.25	30.33	6.32	36.09	64.33	74.00	-9.67	PK
H	7266.00	32.93	30.33	6.32	36.09	45.01	54.00	-8.99	AV
H	9688.00	52.92	30.85	7.45	37.16	66.68	74.00	-7.32	PK
H	9688.00	32.50	30.85	7.45	37.16	46.26	54.00	-7.74	AV
H	12110.00	44.97	31.02	8.99	39.15	62.09	74.00	-11.91	PK
H	12110.00	25.81	31.02	8.99	39.15	42.93	54.00	-11.07	AV

Polar (H/V)	Frequenc y	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:2437MHz									
V	4874.00	50.22	30.55	5.77	31.45	56.89	74.00	-17.11	PK
V	4874.00	31.42	30.55	5.77	31.45	38.09	54.00	-15.91	AV
V	7311.00	52.46	30.33	6.32	36.10	64.55	74.00	-9.45	PK
V	7311.00	32.14	30.33	6.32	36.10	44.23	54.00	-9.77	AV
V	9748.00	52.56	30.85	7.45	36.50	65.66	74.00	-8.34	PK
V	9748.00	32.56	30.85	7.45	36.50	45.66	54.00	-8.34	AV
V	12185.00	45.46	31.02	8.99	39.11	62.54	74.00	-11.46	PK
V	12185.00	25.70	31.02	8.99	39.11	42.78	54.00	-11.22	AV
H	4874.00	50.24	30.55	5.77	31.45	56.91	74.00	-17.09	PK
H	4874.00	31.91	30.55	5.77	31.45	38.58	54.00	-15.42	AV
H	7311.00	51.73	30.33	6.32	36.10	63.82	74.00	-10.18	PK
H	7311.00	32.37	30.33	6.32	36.10	44.46	54.00	-9.54	AV
H	9748.00	52.43	30.85	7.45	36.50	65.53	74.00	-8.47	PK
H	9748.00	32.36	30.85	7.45	36.50	45.46	54.00	-8.54	AV
H	12185.00	47.33	31.02	8.99	39.11	64.41	74.00	-9.59	PK
H	12185.00	26.27	31.02	8.99	39.11	43.35	54.00	-10.65	AV

Page 1 of 1

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	49.90	30.55	5.77	31.69	56.81	74.00	-17.19	PK
V	4904.00	30.84	30.55	5.77	31.69	37.75	54.00	-16.25	AV
V	7356.00	51.53	30.33	6.32	36.15	63.67	74.00	-10.33	PK
V	7356.00	31.47	30.33	6.32	36.15	43.61	54.00	-10.39	AV
V	9808.00	52.23	30.85	7.45	37.32	66.15	74.00	-7.85	PK
V	9808.00	31.89	30.85	7.45	37.32	45.81	54.00	-8.19	AV
V	12260.00	45.74	31.02	8.99	39.13	62.84	74.00	-11.16	PK
V	12260.00	24.82	31.02	8.99	39.13	41.92	54.00	-12.08	AV
H	4904.00	49.58	30.55	5.77	31.69	56.49	74.00	-17.51	PK
H	4904.00	31.98	30.55	5.77	31.69	38.89	54.00	-15.11	AV
H	7356.00	51.16	30.33	6.32	36.15	63.30	74.00	-10.70	PK
H	7356.00	32.24	30.33	6.32	36.15	44.38	54.00	-9.62	AV
H	9808.00	51.79	30.85	7.45	37.32	65.71	74.00	-8.29	PK
H	9808.00	31.63	30.85	7.45	37.32	45.55	54.00	-8.45	AV
H	12260.00	44.78	31.02	8.99	39.13	61.88	74.00	-12.12	PK
H	12260.00	26.64	31.02	8.99	39.13	43.74	54.00	-10.26	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 (2310MHz to 2500MHz) data was showed.				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above	Peak	1MHz	3MHz	Peak
	1GHz	Average	1MHz	3MHz	Average

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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

Notes:

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

5.2 TEST PROCEDURE

Above 1GHz test procedure as below:

- a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could 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:

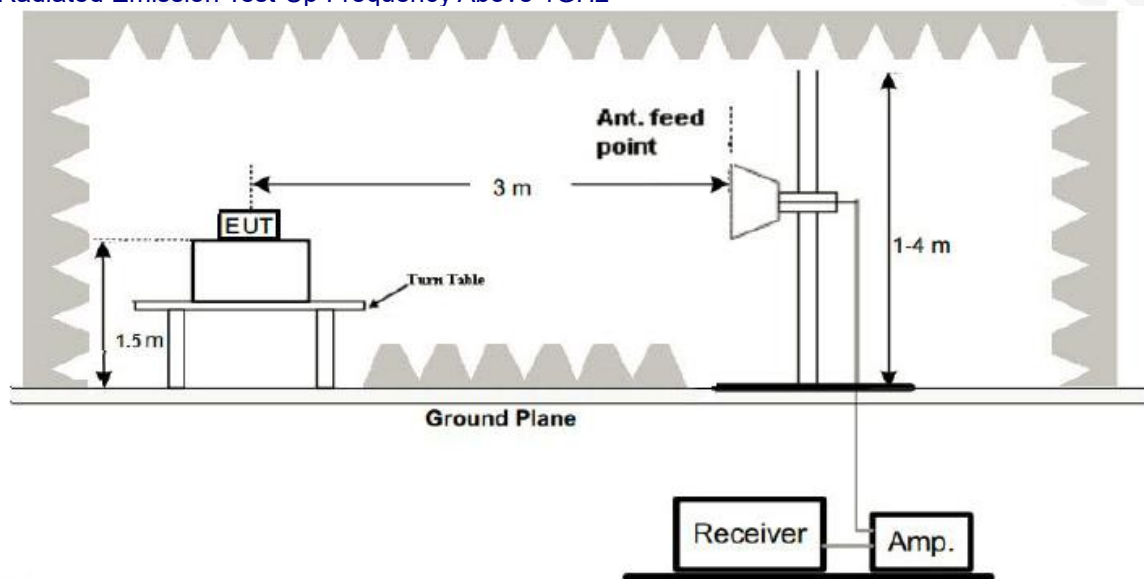
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

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)	Frequenc y (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV /m)	Detec tor Type	Result
802.11b	Low Channel 2412MHz									
	H	2390.00	60.51	30.22	4.85	27.59	62.73	74.00	PK	PASS
	H	2390.00	41.29	30.22	4.85	27.59	43.51	54.00	AV	PASS
	H	2400.00	62.24	30.22	4.85	27.58	64.45	74.00	PK	PASS
	H	2400.00	40.95	30.22	4.85	27.58	43.16	54.00	AV	PASS
	V	2390.00	60.33	30.22	4.85	27.59	62.55	74.00	PK	PASS
	V	2390.00	42.20	30.22	4.85	27.59	44.42	54.00	AV	PASS
	V	2400.00	62.09	30.22	4.85	27.58	64.30	74.00	PK	PASS
	V	2400.00	41.02	30.22	4.85	27.58	43.23	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	59.00	30.22	4.85	27.40	61.03	74.00	PK	PASS
	H	2483.50	40.04	30.22	4.85	27.40	42.07	54.00	AV	PASS
	H	2485.50	60.51	30.22	4.85	27.40	62.54	74.00	PK	PASS
	H	2485.50	40.62	30.22	4.85	27.40	42.65	54.00	AV	PASS
	V	2483.50	59.81	30.22	4.85	27.40	61.84	74.00	PK	PASS
	V	2483.50	41.43	30.22	4.85	27.40	43.46	54.00	AV	PASS
	V	2485.50	60.20	30.22	4.85	27.40	62.23	74.00	PK	PASS
	V	2485.50	40.89	30.22	4.85	27.40	42.92	54.00	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2390.00	58.42	30.22	4.85	27.59	60.64	74.00	PK	PASS
	H	2390.00	40.65	30.22	4.85	27.59	42.87	54.00	AV	PASS
	H	2400.00	60.45	30.22	4.85	27.58	62.66	74.00	PK	PASS
	H	2400.00	40.55	30.22	4.85	27.58	42.76	54.00	AV	PASS
	V	2390.00	58.67	30.22	4.85	27.59	60.89	74.00	PK	PASS
	V	2390.00	40.45	30.22	4.85	27.59	42.67	54.00	AV	PASS
	V	2400.00	57.41	30.22	4.85	27.58	59.62	74.00	PK	PASS
	V	2400.00	40.23	30.22	4.85	27.58	42.44	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	58.82	30.22	4.85	27.40	60.85	74.00	PK	PASS
	H	2483.50	40.55	30.22	4.85	27.40	42.58	54.00	AV	PASS
	H	2485.50	60.65	30.22	4.85	27.40	62.68	74.00	PK	PASS
	H	2485.50	40.75	30.22	4.85	27.40	42.78	54.00	AV	PASS
	V	2483.50	58.72	30.22	4.85	27.40	60.75	74.00	PK	PASS
	V	2483.50	40.65	30.22	4.85	27.40	42.68	54.00	AV	PASS
	V	2485.50	60.70	30.22	4.85	27.40	62.73	74.00	PK	PASS
	V	2485.50	40.82	30.22	4.85	27.40	42.85	54.00	AV	PASS
802.11n20	Low Channel 2412MHz									
	H	2390.00	58.66	30.22	4.85	27.59	60.88	74.00	PK	PASS
	H	2390.00	40.52	30.22	4.85	27.59	42.74	54.00	AV	PASS
	H	2400.00	61.06	30.22	4.85	27.58	63.27	74.00	PK	PASS
	H	2400.00	40.47	30.22	4.85	27.58	42.68	54.00	AV	PASS
	V	2390.00	58.53	30.22	4.85	27.59	60.75	74.00	PK	PASS
	V	2390.00	40.48	30.22	4.85	27.59	42.70	54.00	AV	PASS
	V	2400.00	60.90	30.22	4.85	27.58	63.11	74.00	PK	PASS
	V	2400.00	48.66	30.22	4.85	27.58	50.87	54.00	AV	PASS
	High Channel 2462MHz									
	H	2483.50	58.56	30.22	4.85	27.40	60.59	74.00	PK	PASS
	H	2483.50	40.49	30.22	4.85	27.40	42.52	54.00	AV	PASS
	H	2485.50	60.30	30.22	4.85	27.40	62.33	74.00	PK	PASS
	H	2485.50	40.37	30.22	4.85	27.40	42.40	54.00	AV	PASS
	V	2483.50	58.59	30.22	4.85	27.40	60.62	74.00	PK	PASS
	V	2483.50	40.34	30.22	4.85	27.40	42.37	54.00	AV	PASS
	V	2485.50	60.82	30.22	4.85	27.40	62.85	74.00	PK	PASS

802.11n40	V	2485.50	40.17	30.22	4.85	27.40	42.20	54.00	AV	PASS
	LowChannel 2422MHz									
	H	2390.00	58.38	30.22	4.85	27.59	60.60	74.00	PK	PASS
	H	2390.00	40.26	30.22	4.85	27.59	42.48	54.00	AV	PASS
	H	2400.00	60.58	30.22	4.85	27.58	62.79	74.00	PK	PASS
	H	2400.00	40.22	30.22	4.85	27.58	42.43	54.00	AV	PASS
	V	2390.00	58.19	30.22	4.85	27.59	60.41	74.00	PK	PASS
	V	2390.00	40.28	30.22	4.85	27.59	42.50	54.00	AV	PASS
	V	2400.00	60.34	30.22	4.85	27.58	62.55	74.00	PK	PASS
	V	2400.00	40.20	30.22	4.85	27.58	42.41	54.00	AV	PASS
	High Channel 2452MHz									
	H	2483.50	58.71	30.22	4.85	27.40	60.74	74.00	PK	PASS
	H	2483.50	40.64	30.22	4.85	27.40	42.67	54.00	AV	PASS
	H	2485.50	60.21	30.22	4.85	27.40	62.24	74.00	PK	PASS
	H	2485.50	40.52	30.22	4.85	27.40	42.55	54.00	AV	PASS
	V	2483.50	58.64	30.22	4.85	27.40	60.67	74.00	PK	PASS
	V	2483.50	40.42	30.22	4.85	27.40	42.45	54.00	AV	PASS
	V	2485.50	60.99	30.22	4.85	27.40	63.02	74.00	PK	PASS
	V	2485.50	48.05	30.22	4.85	27.40	50.08	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: $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

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

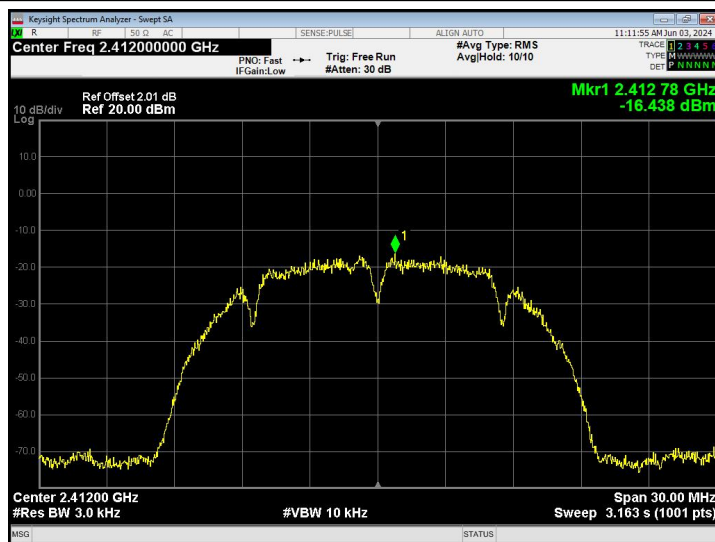
6.6 TEST RESULT

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

ANT1			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-16.438	8	PASS
2437 MHz	-16.417	8	PASS
2462 MHz	-17.041	8	PASS

ANT2			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-16.988	8	PASS
2437 MHz	-16.617	8	PASS
2462 MHz	-17.192	8	PASS

TX CH01-ANT1



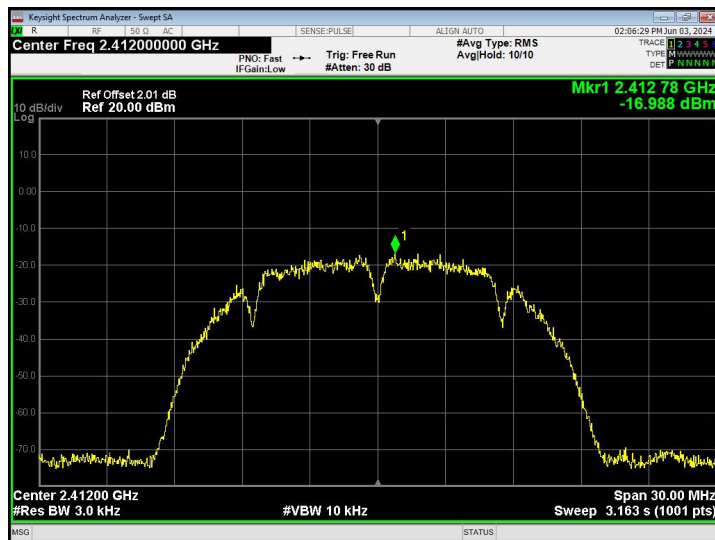
TX CH06-ANT1



TX CH11-ANT1



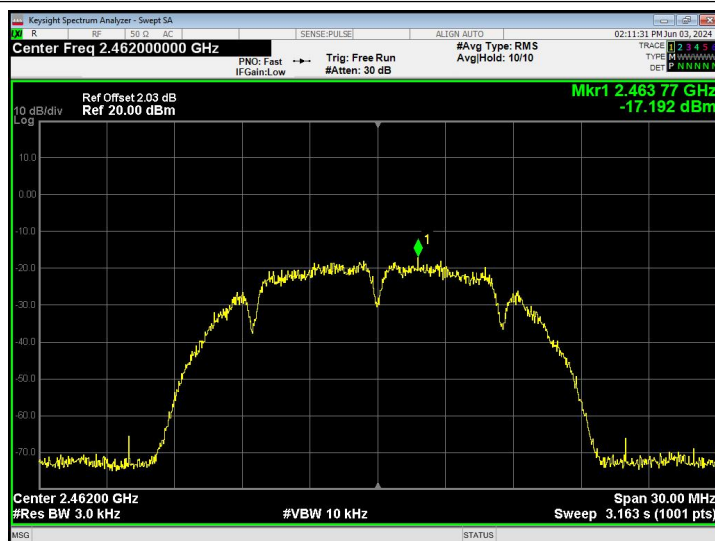
TX CH01-ANT2



TX CH06-ANT2



TX CH11-ANT2

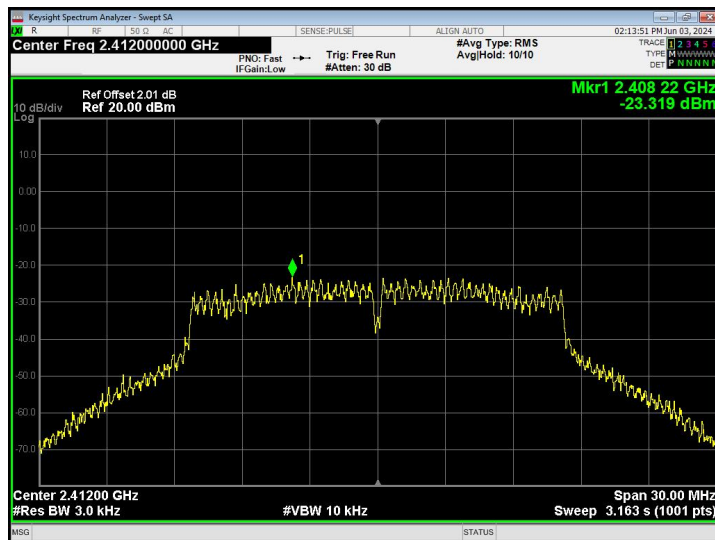


Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX g Mode		

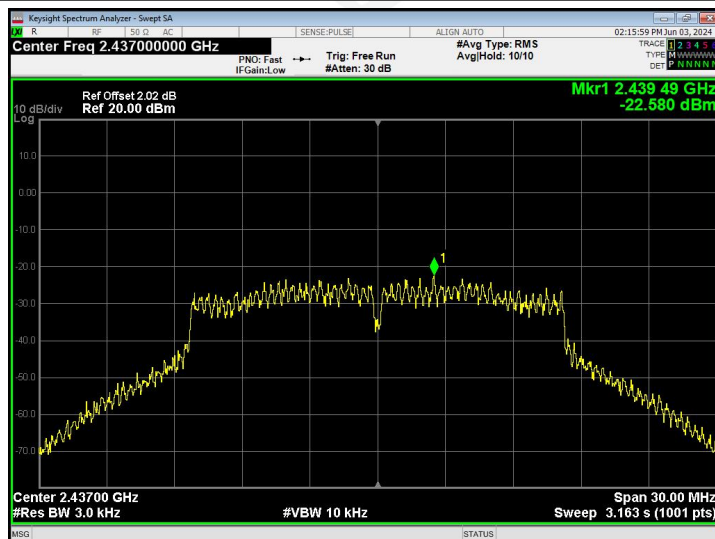
ANT1			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-21.543	8	PASS
2437 MHz	-22.649	8	PASS
2462 MHz	-21.714	8	PASS

ANT2			
Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412 MHz	-23.319	8	PASS
2437 MHz	-22.58	8	PASS
2462 MHz	-23.115	8	PASS

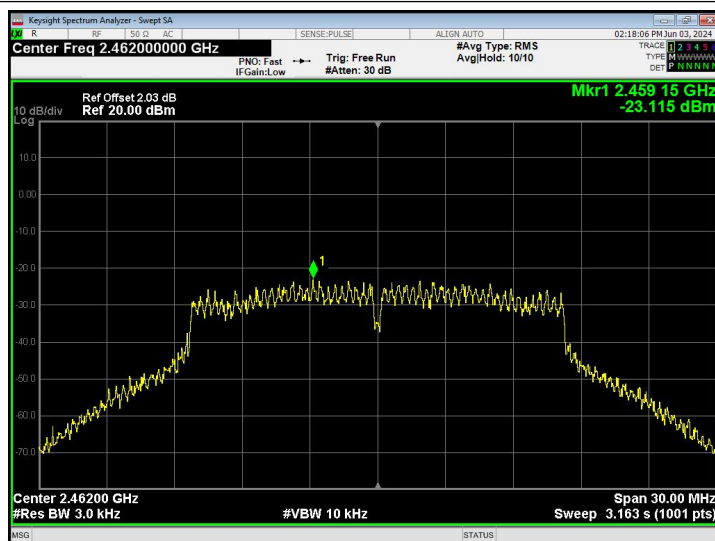
TX CH01-ANT1



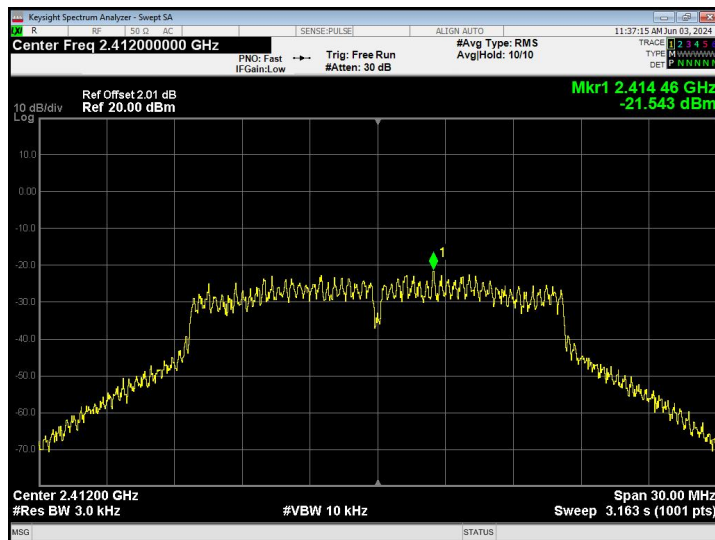
TX CH06-ANT1



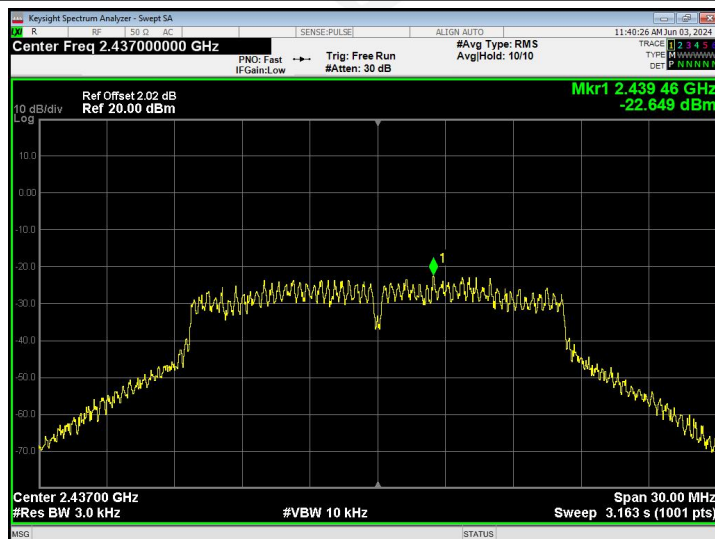
TX CH11-ANT1



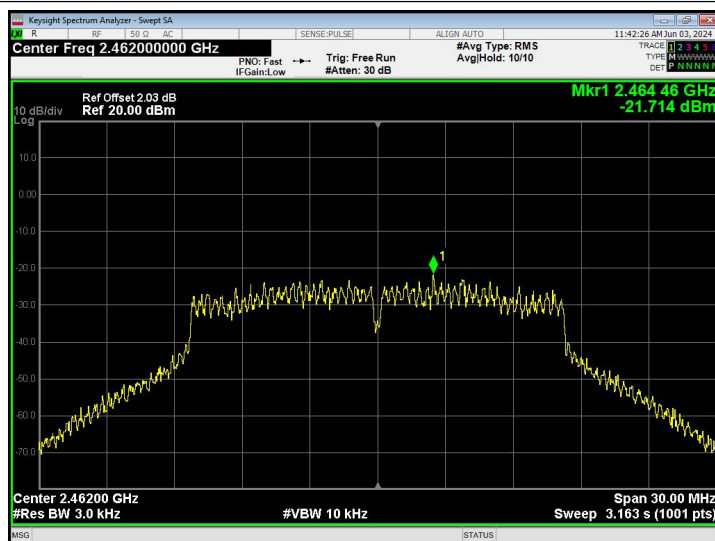
TX CH01-ANT2



TX CH06-ANT2



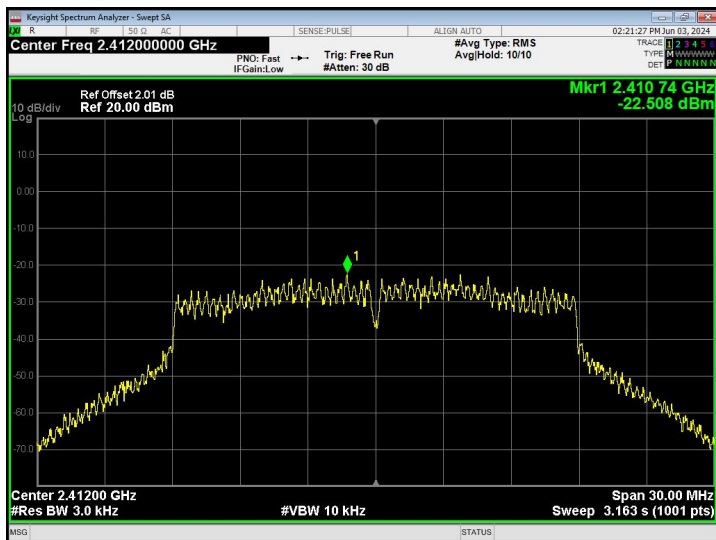
TX CH11-ANT2



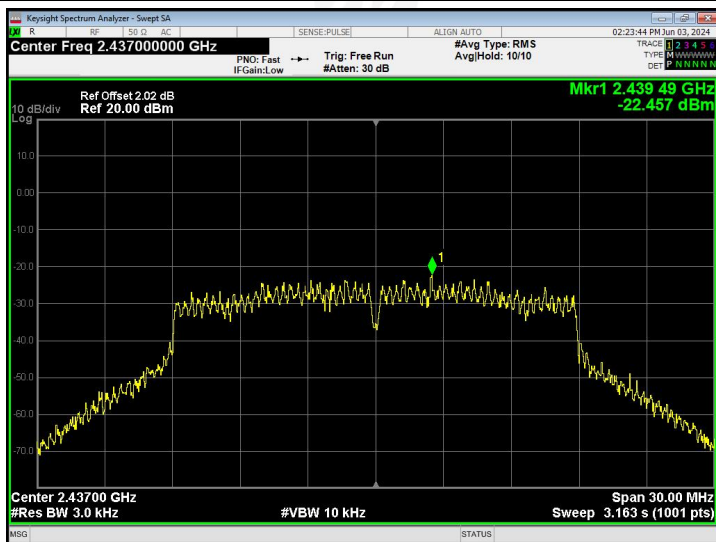
Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX n Mode(20M)		

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	-22.508	-22.342	0.006	0.006	-19.208	8	PASS
2437 MHz	-22.457	-22.622	0.006	0.005	-19.586	8	PASS
2462 MHz	-22.006	-22.295	0.006	0.006	-19.208	8	PASS

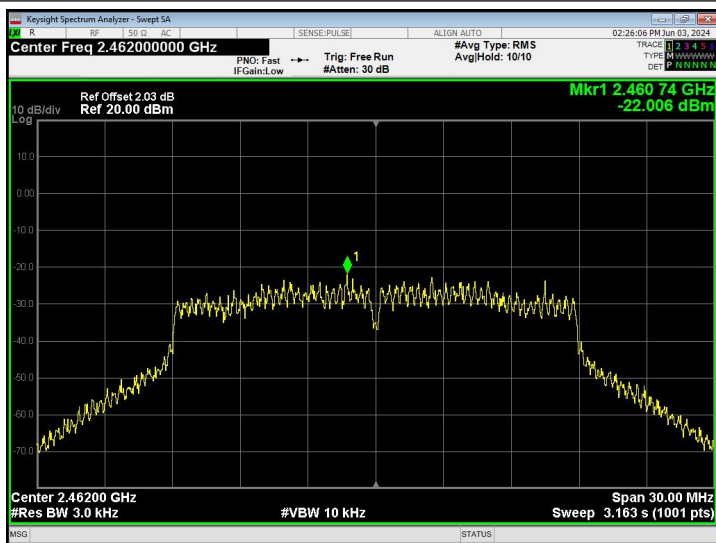
TX CH01-ANT1



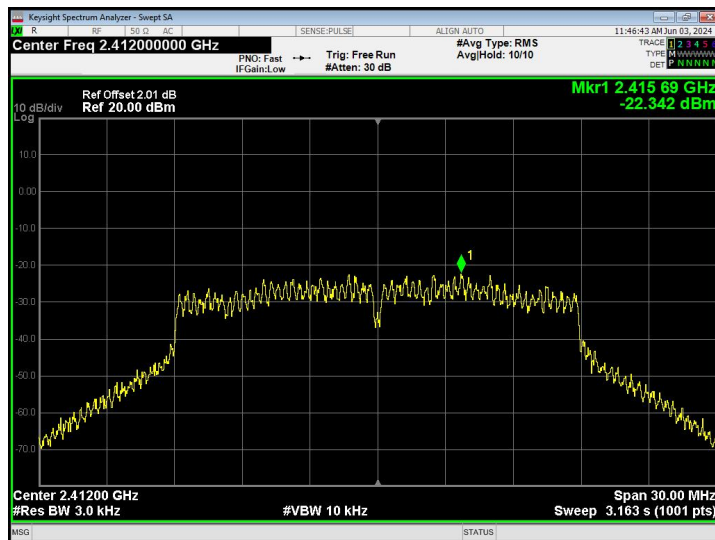
TX CH06-ANT1



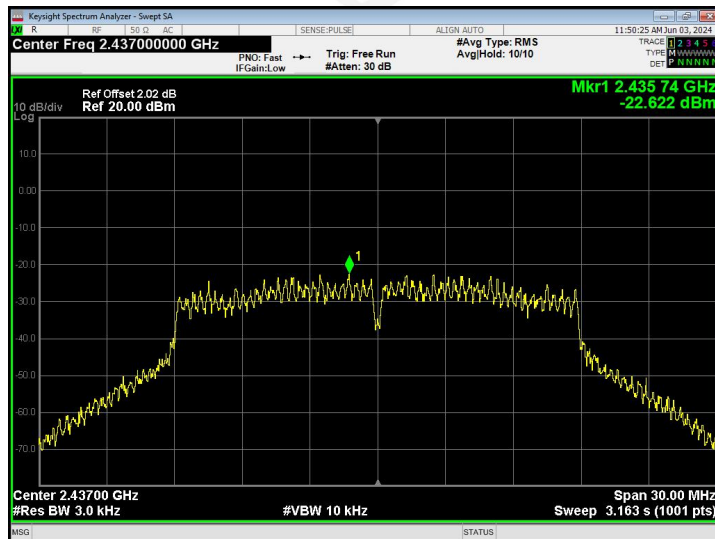
TX CH11-ANT1



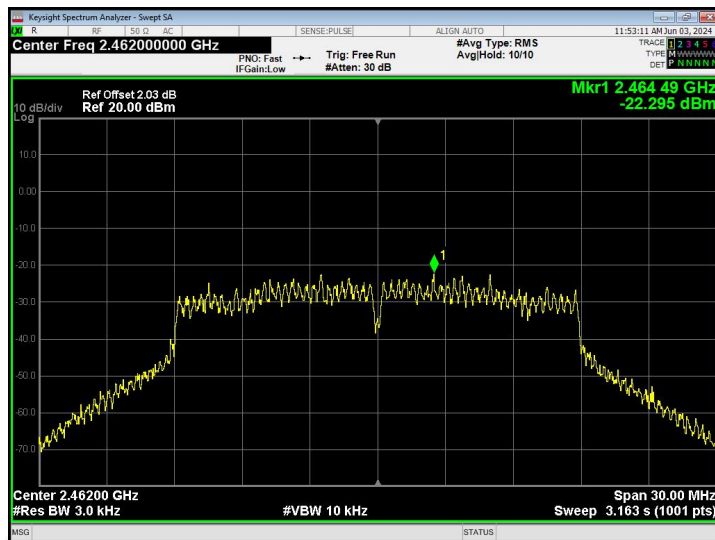
TX CH01-ANT2



TX CH06-ANT2



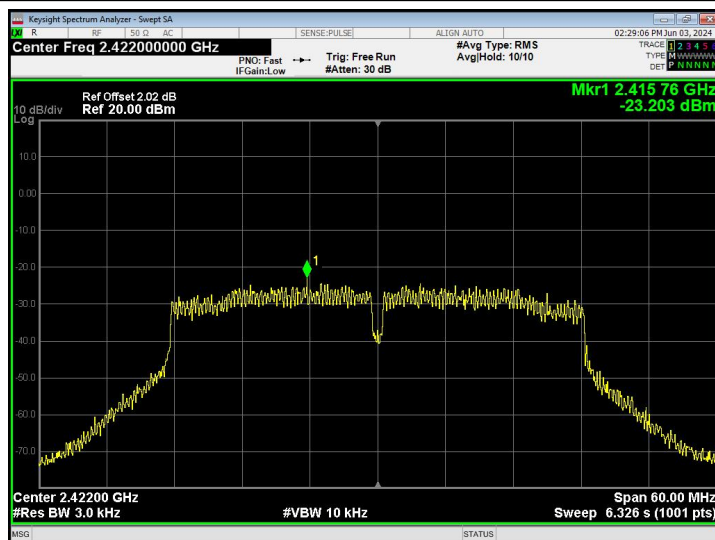
TX CH11-ANT2



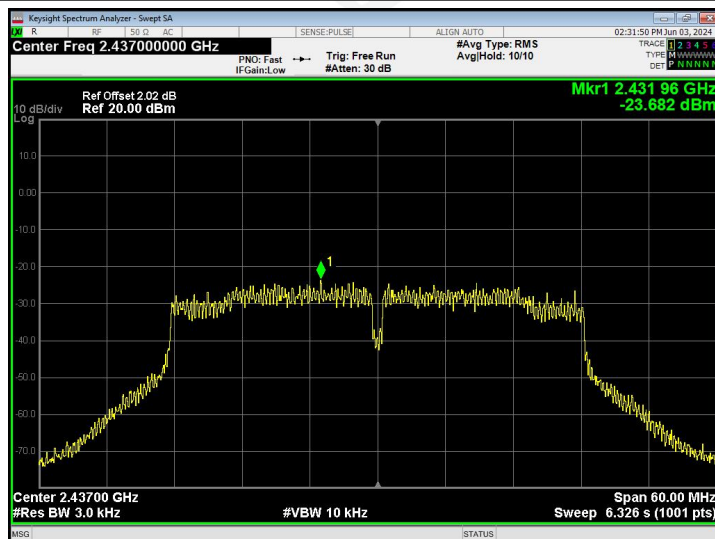
Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX n Mode(40M)		

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	-23.203	-24.299	0.005	0.004	-20.457	8	PASS
2437 MHz	-23.682	-23.514	0.004	0.004	-20.969	8	PASS
2462 MHz	-22.947	-24.551	0.005	0.004	-20.457	8	PASS

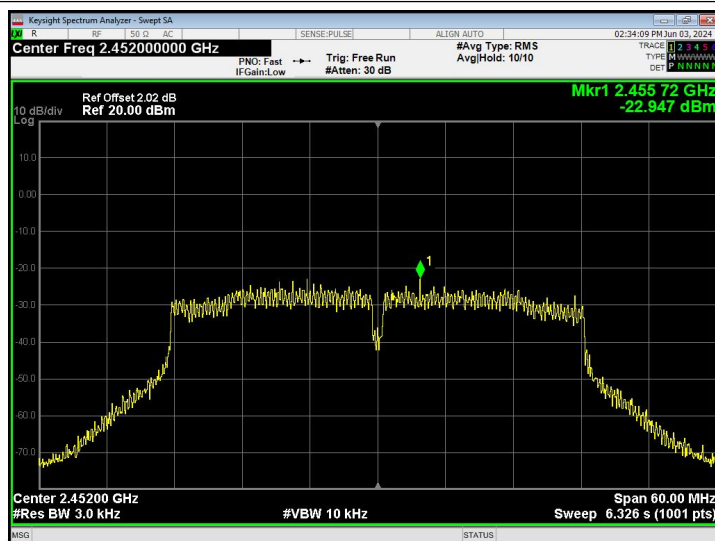
TX CH03-ANT1



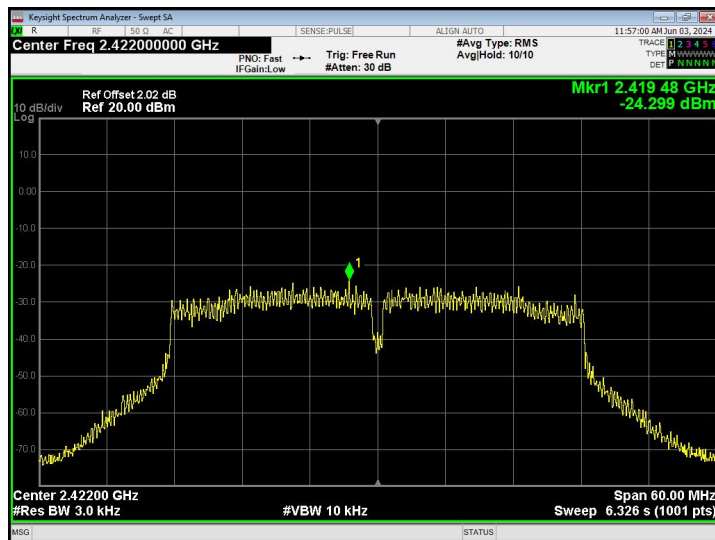
TX CH06-ANT1



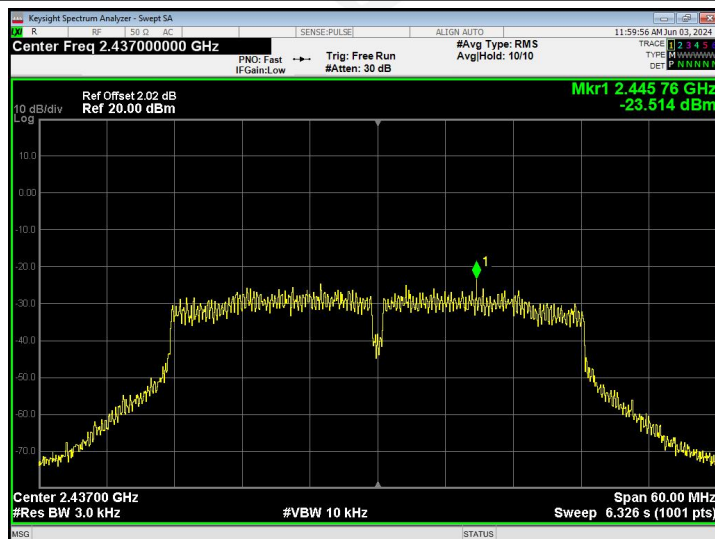
TX CH09-ANT1



TX CH03-ANT2



TX CH06-ANT2



TX CH09-ANT2

