FCC TEST REPORT
FCC ID:2BMSORTKS100

Report Number	ZKT-241210L18085E-3
Date of Test	Dec.25, 2024
Date of issue	Dec.26, 2024
Total number of pages	68
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 Yuanjing intelligent Technology Co., LTD**
Address	Rm.1805,ShuimuYifang Building,No.286 Nanguang Rd. ,Shenzhen City, China.
Manufacturer's name	**Shenzhen Yuanjing intelligent Technology Co., LTD**
Address	Rm.1805,ShuimuYifang Building,No.286 Nanguang Rd. ,Shenzhen City, China.
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: 2020-01-06

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	**RTK Base Station**
Trademark	N/A
Model/Type reference	S100
Ratings	Iutput:120V,60Hz for Adapter DC 5V,1A via Adapter

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) ..... :	Jim.Liu
Reviewer (name + signature)..... :	Jackson.Fang
Approved (name + signature) ..... :	Lake Xie

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1. VERSION

Report No.	Version	Description	Approved
ZKT-241210L18085E-3	Rev.01	Initial issue of report	Dec. 26, 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 15.203/15.247 (c)	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emission	PASS	
FCC part 15.247 (b)(3)	Conducted Peak Output Power	PASS	
FCC part 15.247 (a)(2)	Channel Bandwidth& 99% OCB	PASS	
FCC part 15.247 (e)	Power Spectral Density	PASS	
FCC part 15.247(d)	Band Edge	PASS	
FCC part 15.205/15.209	Spurious Emission	PASS	

NOTE:

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

2.1 TEST FACILITY

Shenzhen 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
CAB identifier: CN0110

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	RTK Base Station
Model No.:	S100
Model Different.:	N/A
Serial No.:	N/A
Sample ID	ZKT-241210L18085
Sample(s) Status:	Engineer sample
Channel numbers:	802.11b/802.11g /802.11n(HT20):
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum(DSSS) 802.11g/802.11n(HT20): Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type and Antenna gain:	802.11b/g/n: SMD Antenna Antenna gain: 4.3dBi
Worst Case:	2.4G WIFI 802.11n20
Power supply:	Input: AC 120V,60Hz
SWITCHING POWER ADAPTER:	Iutput:120V,60Hz for Adapter DC 5V,1A via Adapter

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)	/
Lowest channel	2412MHz	/
Middle channel	2437MHz	/
Highest channel	2462MHz	/

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:

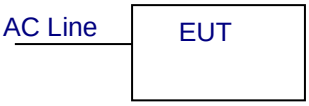
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

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

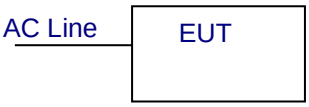
Test Software	MobaXterm.exe
Power level setup	N/A

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
/	/	/	/	/	/

Item	Shielded Type	Ferrite Core	Length	Note
/	/	/	/	/

Note:

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

3.5EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	Sep. 29, 2024	Sep. 28, 2025
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSQ	100363	Sep. 30, 2024	Sep. 29, 2025
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 29, 2024	Sep. 28, 2025
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	Sep. 30, 2024	Sep. 29, 2025
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	Sep. 30, 2024	Sep. 29, 2025
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	Sep. 30, 2024	Sep. 29, 2025
7	Loop Antenna	TESEQ	HLA6121	58357	Oct. 11, 2024	Oct. 10, 2025
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	060747	Sep. 29, 2024	Sep. 28, 2025
9	Amplifier (1GHz-26.5GHz)	Agilent	8449B	3008A00315	Sep. 29, 2024	Sep. 28, 2025
10	Amplifier (18GHz -40GHz)	Tonscend	DLE-161	097	Sep. 30, 2024	Sep. 29, 2025
11	Test Cable	N/A	R-01	N/A	Sep. 30, 2024	Sep. 29, 2025
12	Test Cable	N/A	R-02	N/A	Sep. 30, 2024	Sep. 29, 2025
13	Test Cable	N/A	R-03	N/A	Sep. 30, 2024	Sep. 29, 2025
14	D.C. Power Supply	LongWei	TPR-6405D	N/A	\	\
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\
16	Turntable	MF	MF-7802BS	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	\	\

Conducted emissions Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 30, 2024	Sep. 29, 2025
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	C-01	N/A	Sep. 30, 2024	Sep. 29, 2025
4	Test Cable	N/A	C-02	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Test Cable	N/A	C-03	N/A	Sep. 30, 2024	Sep. 29, 2025
6	EMI Test Receiver	R&S	ESCI3	101393	Sep. 29, 2024	Sep. 28, 2025
7	Triple-Loop Antenna	N/A	RF300	9194	Sep. 29, 2024	Sep. 28, 2025
8	Absorbing Clamp	DZ	ZN23201	15034	Oct. 10, 2024	Oct. 09, 2025
9	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\

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.

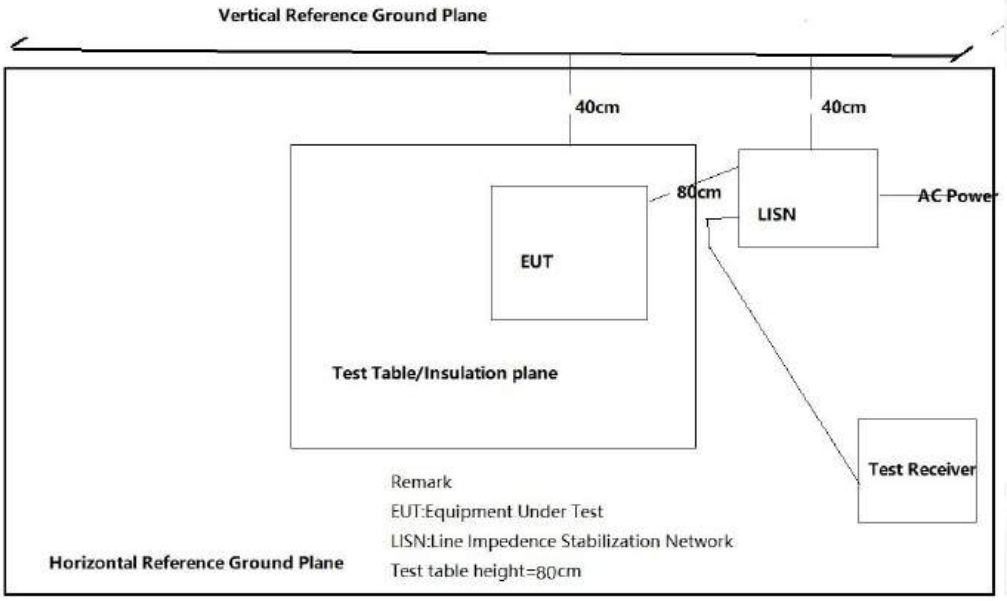
4.1.2 TEST PROCEDURE

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

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



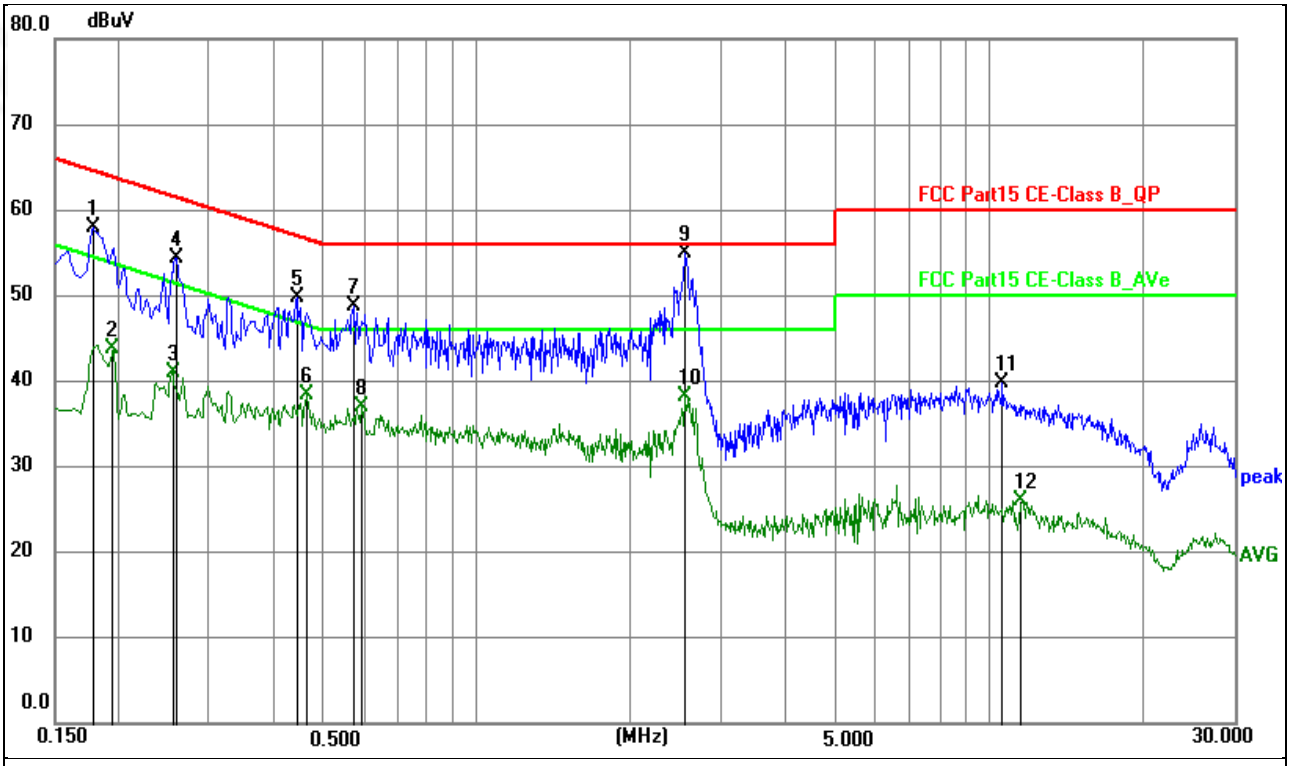
4.1.5 EUT OPERATING CONDITIONS

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

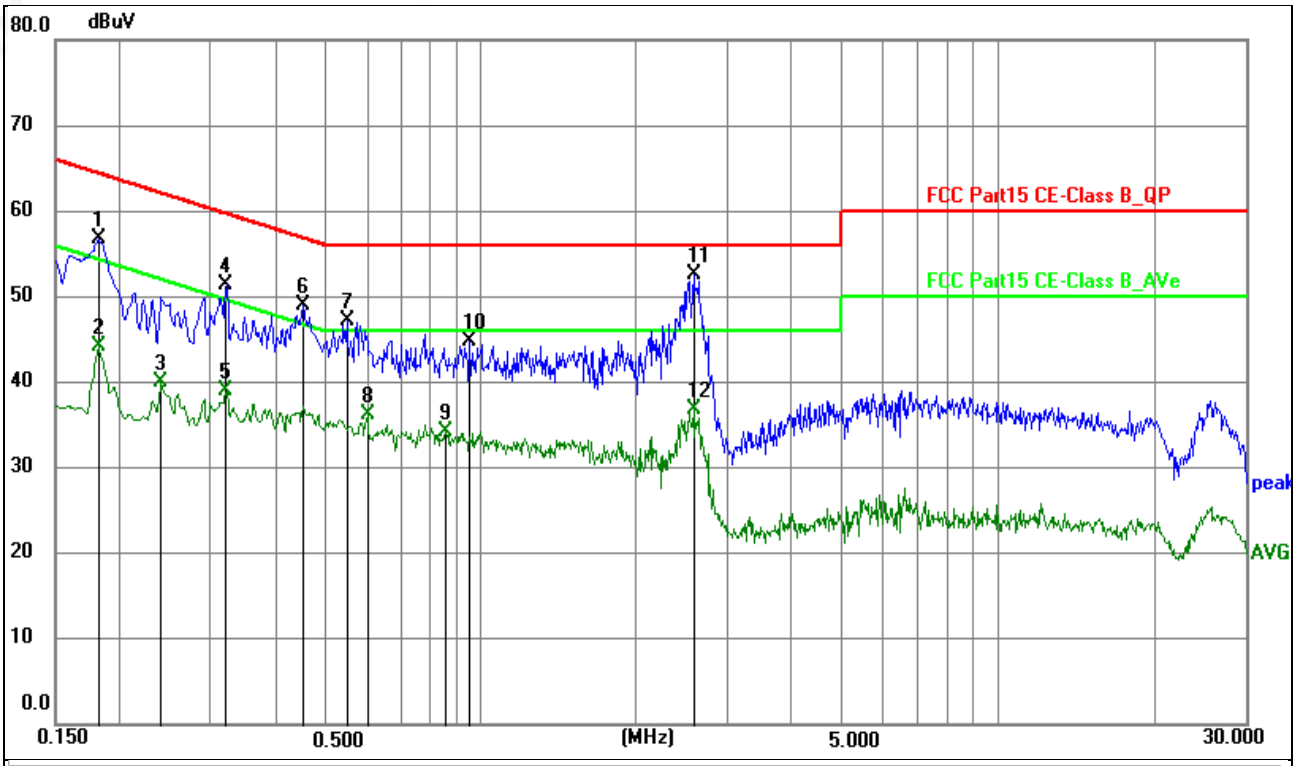
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	L
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1770	37.88	20.01	57.89	64.63	-6.74	QP
2	0.1949	23.88	19.92	43.80	53.83	-10.03	AVG
3	0.2535	20.90	20.16	41.06	51.64	-10.58	AVG
4	0.2580	34.27	20.18	54.45	61.50	-7.05	QP
5	0.4425	29.63	20.12	49.75	57.01	-7.26	QP
6	0.4650	18.26	20.10	38.36	46.60	-8.24	AVG
7	0.5730	28.65	20.09	48.74	56.00	-7.26	QP
8	0.5955	16.83	20.09	36.92	46.00	-9.08	AVG
9	2.5440	35.01	20.04	55.05	56.00	-0.95	QP
10	2.5440	18.14	20.04	38.18	46.00	-7.82	AVG
11	10.5810	19.81	19.95	39.76	60.00	-20.24	QP
12	11.5844	6.13	19.95	26.08	50.00	-23.92	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:	101 kPa	Polarization:	N
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1815	36.67	20.00	56.67	64.42	-7.75	QP
2	0.1815	24.16	20.00	44.16	54.42	-10.26	AVG
3	0.2400	19.86	20.08	39.94	52.10	-12.16	AVG
4	0.3209	31.05	20.25	51.30	59.68	-8.38	QP
5	0.3209	18.79	20.25	39.04	49.68	-10.64	AVG
6	0.4515	29.03	20.04	49.07	56.85	-7.78	QP
7	0.5505	27.12	20.03	47.15	56.00	-8.85	QP
8	0.6000	16.07	20.04	36.11	46.00	-9.89	AVG
9	0.8565	14.18	20.03	34.21	46.00	-11.79	AVG
10	0.9510	24.79	20.00	44.79	56.00	-11.21	QP
11	2.5710	32.61	19.98	52.59	56.00	-3.41	QP
12	2.5710	16.89	19.98	36.87	46.00	-9.13	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

4.2 RADIATED EMISSION MEASUREMENT

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

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

4.2.1 RADIATED EMISSION LIMITS

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

LIMITS OF RADIATED EMISSION MEASUREMENT

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

Notes:

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

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

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

4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-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 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

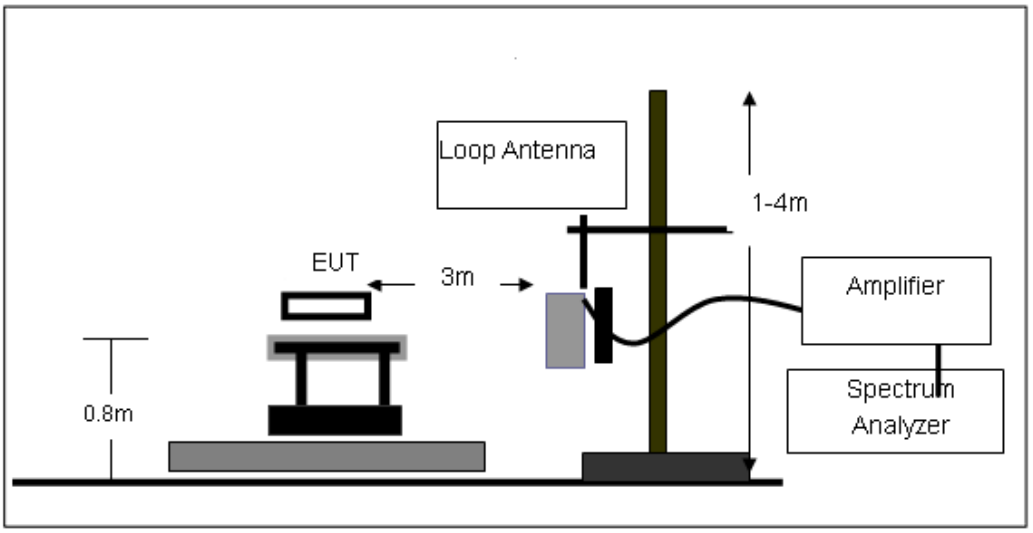
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

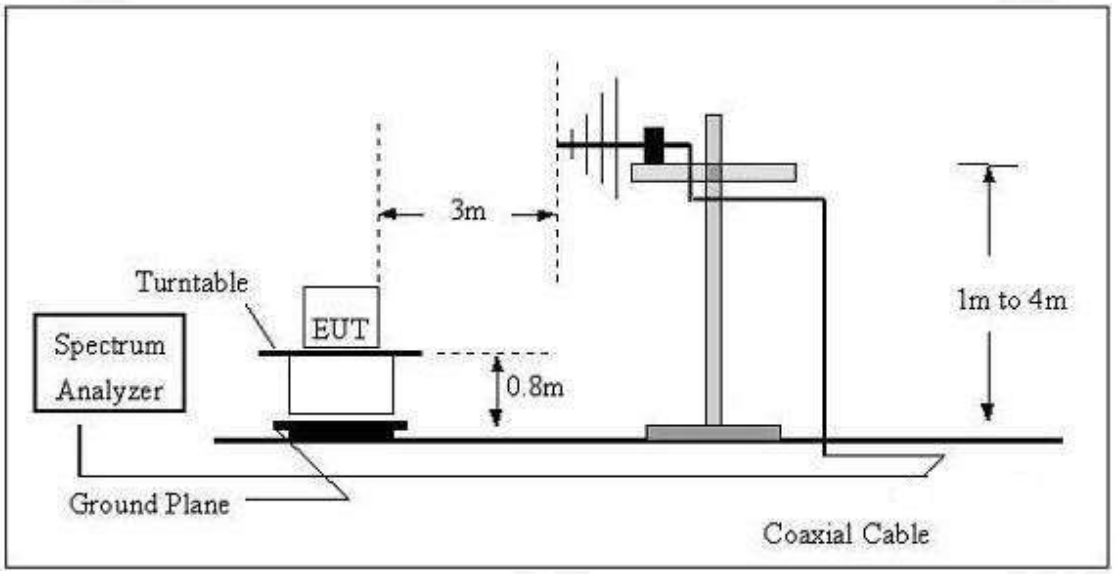
No deviation

4.2.4 TEST SETUP

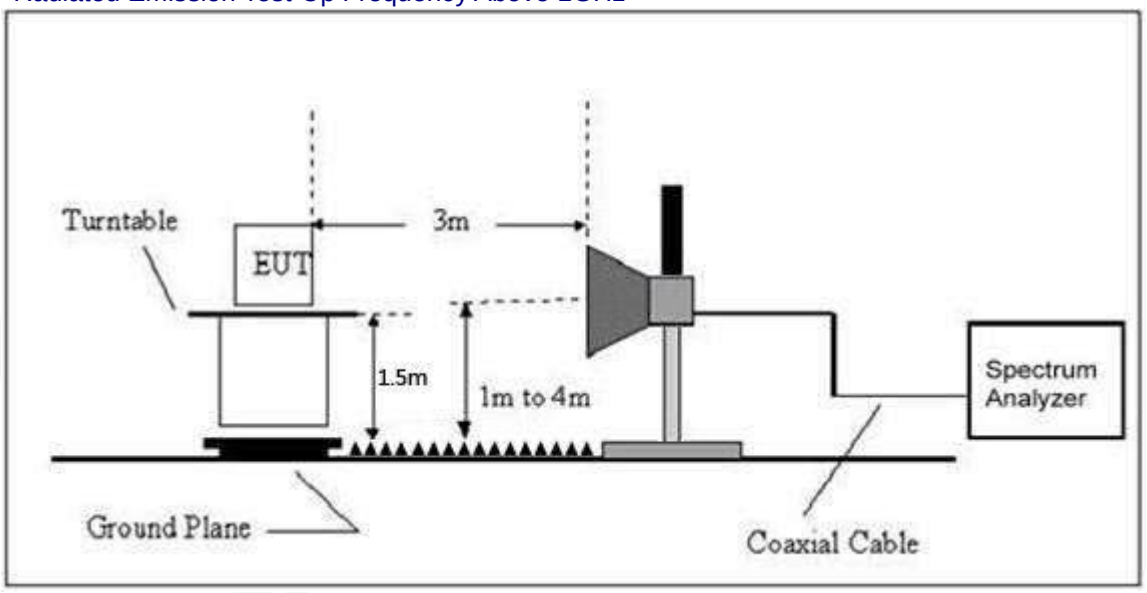
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.5 EUT OPERATING CONDITIONS

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

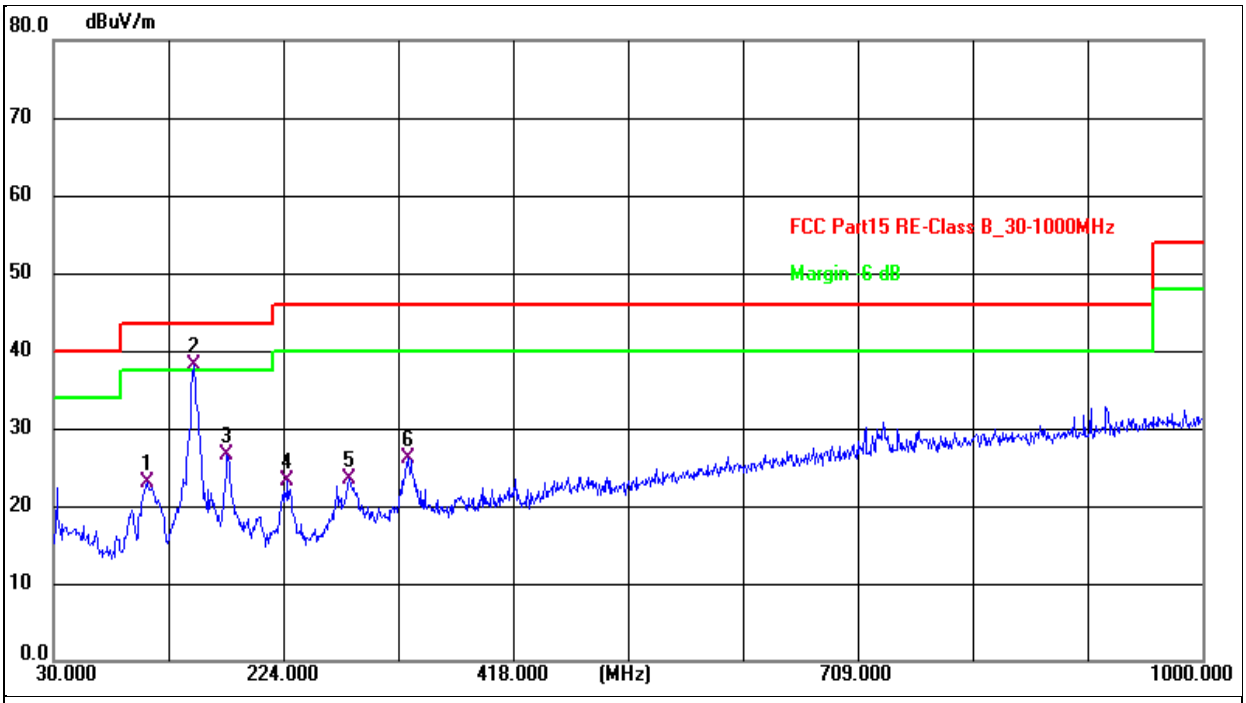
4.2.6 TEST RESULTS

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.

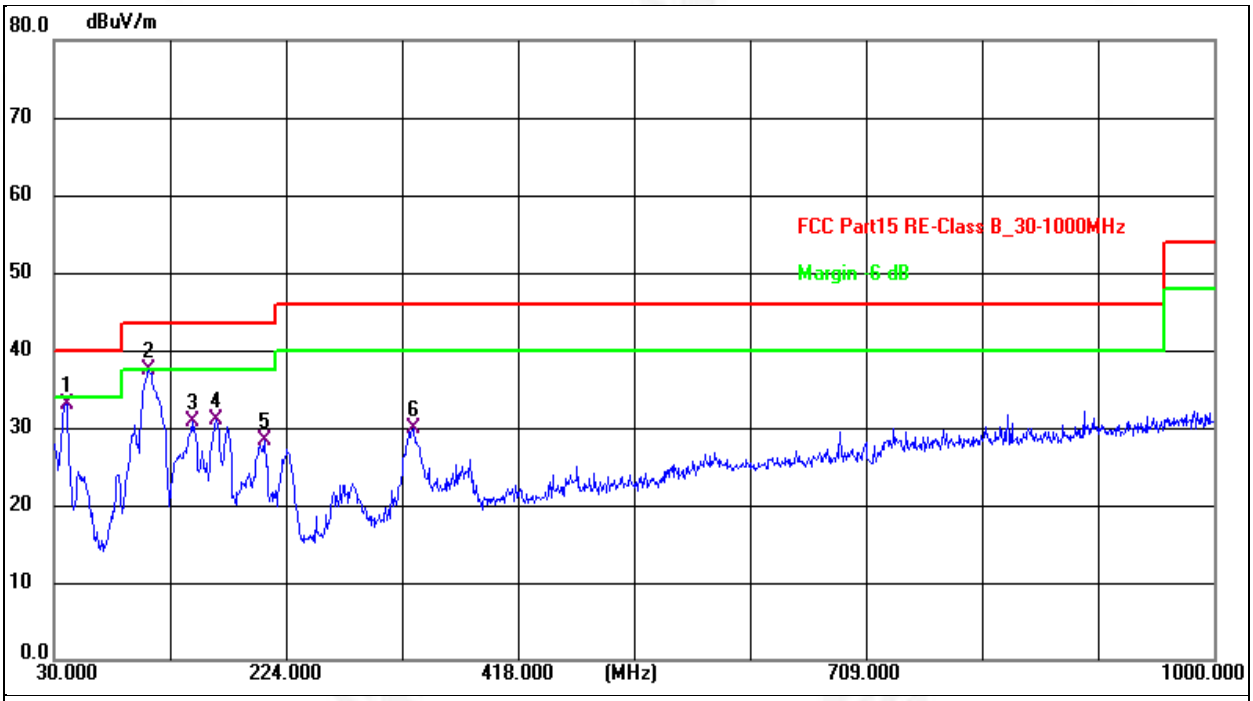
Between 30MHz – 1GHz

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



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	109.540	40.07	-16.99	23.08	43.50	-20.42	QP	200	285	
2 *	148.340	52.72	-14.56	38.16	43.50	-5.34	QP	200	257	
3	176.470	42.36	-15.79	26.57	43.50	-16.93	QP	100	227	
4	227.880	40.51	-17.21	23.30	46.00	-22.70	QP	100	338	
5	280.260	39.14	-15.64	23.50	46.00	-22.50	QP	200	347	
6	329.730	40.24	-14.22	26.02	46.00	-19.98	QP	199	221	

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



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	40.670	48.97	-15.89	33.08	40.00	-6.92	QP	100	321	
2 *	109.540	54.52	-16.99	37.53	43.50	-5.97	QP	100	188	
3	145.430	45.41	-14.73	30.68	43.50	-12.82	QP	200	156	
4	165.800	45.71	-14.67	31.04	43.50	-12.46	QP	100	229	
5	206.540	46.11	-17.84	28.27	43.50	-15.23	QP	200	337	
6	330.700	44.12	-14.18	29.94	46.00	-16.06	QP	200	239	

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 802.11n20.

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	47.67	30.55	5.77	24.66	47.55	74	-26.45	PK
V	4824.00	37.89	30.55	5.77	24.66	37.77	54	-16.23	AV
V	7236.00	48.56	30.33	6.32	24.55	49.1	74	-24.9	PK
V	7236.00	38.33	30.33	6.32	24.55	38.87	54	-15.13	AV
V	9648.00	44.67	30.85	7.45	24.69	45.96	74	-28.04	PK
V	9648.00	38.41	30.85	7.45	24.69	39.7	54	-14.3	AV
V	12060.00	47.76	31.02	8.99	25.57	51.3	74	-22.7	PK
V	12060.00	37.67	31.02	8.99	25.57	41.21	54	-12.79	AV
H	4824.00	47.98	30.55	5.77	24.66	47.86	74	-26.14	PK
H	4824.00	40.32	30.55	5.77	24.66	40.2	54	-13.8	AV
H	7236.00	46.77	30.33	6.32	24.55	47.31	74	-26.69	PK
H	7236.00	37.59	30.33	6.32	24.55	38.13	54	-15.87	AV
H	9648.00	48.22	30.85	7.45	24.69	49.51	74	-24.49	PK
H	9648.00	38.45	30.85	7.45	24.69	39.74	54	-14.26	AV
H	12060.00	46.89	31.02	8.99	25.57	50.43	74	-23.57	PK
H	12060.00	37.68	31.02	8.99	25.57	41.22	54	-12.78	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	49.55	30.55	5.77	24.66	49.43	74	-24.57	PK
V	4874.00	39.54	30.55	5.77	24.66	39.42	54	-14.58	AV
V	7311.00	48.75	30.33	6.32	24.55	49.29	74	-24.71	PK
V	7311.00	38.56	30.33	6.32	24.55	39.1	54	-14.9	AV
V	9748.00	47.66	30.85	7.45	24.69	48.95	74	-25.05	PK
V	9748.00	39.02	30.85	7.45	24.69	40.31	54	-13.69	AV
V	12185.00	48.55	31.02	8.99	25.57	52.09	74	-21.91	PK
V	12185.00	37.67	31.02	8.99	25.57	41.21	54	-12.79	AV
H	4874.00	48.51	30.55	5.77	24.66	48.39	74	-25.61	PK
H	4874.00	38.04	30.55	5.77	24.66	37.92	54	-16.08	AV
H	7311.00	47.65	30.33	6.32	24.55	48.19	74	-25.81	PK
H	7311.00	38.23	30.33	6.32	24.55	38.77	54	-15.23	AV
H	9748.00	47.65	30.85	7.45	24.69	48.94	74	-25.06	PK
H	9748.00	38.34	30.85	7.45	24.69	39.63	54	-14.37	AV
H	12185.00	47.65	31.02	8.99	25.57	51.19	74	-22.81	PK
H	12185.00	37.55	31.02	8.99	25.57	41.09	54	-12.91	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	49.44	30.55	5.77	24.66	49.32	74	-24.68	PK
V	4924.00	40.31	30.55	5.77	24.66	40.19	54	-13.81	AV
V	7386.00	48.73	30.33	6.32	24.55	49.27	74	-24.73	PK
V	7386.00	39.23	30.33	6.32	24.55	39.77	54	-14.23	AV
V	9848.00	47.81	30.85	7.45	24.69	49.1	74	-24.9	PK
V	9848.00	40.22	30.85	7.45	24.69	41.51	54	-12.49	AV
V	12310.00	48.21	31.02	8.99	25.57	51.75	74	-22.25	PK
V	12310.00	39.24	31.02	8.99	25.57	42.78	54	-11.22	AV
H	4924.00	48.22	30.55	5.77	24.66	48.1	74	-25.9	PK
H	4924.00	39.54	30.55	5.77	24.66	39.42	54	-14.58	AV
H	7386.00	47.89	30.33	6.32	24.55	48.43	74	-25.57	PK
H	7386.00	39.12	30.33	6.32	24.55	39.66	54	-14.34	AV
H	9848.00	43.66	30.85	7.45	24.69	44.95	74	-29.05	PK
H	9848.00	38.45	30.85	7.45	24.69	39.74	54	-14.26	AV
H	12310.00	47.87	31.02	8.99	25.57	51.41	74	-22.59	PK
H	12310.00	38.76	31.02	8.99	25.57	42.3	54	-11.7	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.
4. The test data shows only the worst case.

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	47.23	30.55	5.77	24.66	47.11	74	-26.89	PK
V	4824.00	37.11	30.55	5.77	24.66	36.99	54	-17.01	AV
V	7236.00	48.21	30.33	6.32	24.55	48.75	74	-25.25	PK
V	7236.00	38.56	30.33	6.32	24.55	39.1	54	-14.9	AV
V	9648.00	44.32	30.85	7.45	24.69	45.61	74	-28.39	PK
V	9648.00	38.11	30.85	7.45	24.69	39.4	54	-14.6	AV
V	12060.00	47.34	31.02	8.99	25.57	50.88	74	-23.12	PK
V	12060.00	37.27	31.02	8.99	25.57	40.81	54	-13.19	AV
H	4824.00	47.45	30.55	5.77	24.66	47.33	74	-26.67	PK
H	4824.00	40.89	30.55	5.77	24.66	40.77	54	-13.23	AV
H	7236.00	46.32	30.33	6.32	24.55	46.86	74	-27.14	PK
H	7236.00	37.21	30.33	6.32	24.55	37.75	54	-16.25	AV
H	9648.00	48.43	30.85	7.45	24.69	49.72	74	-24.28	PK
H	9648.00	38.12	30.85	7.45	24.69	39.41	54	-14.59	AV
H	12060.00	46.44	31.02	8.99	25.57	49.98	74	-24.02	PK
H	12060.00	37.21	31.02	8.99	25.57	40.75	54	-13.25	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	49.32	30.55	5.77	24.66	49.2	74	-24.8	PK
V	4874.00	39.12	30.55	5.77	24.66	39	54	-15	AV
V	7311.00	48.34	30.33	6.32	24.55	48.88	74	-25.12	PK
V	7311.00	38.98	30.33	6.32	24.55	39.52	54	-14.48	AV
V	9748.00	47.66	30.85	7.45	24.69	48.95	74	-25.05	PK
V	9748.00	39.32	30.85	7.45	24.69	40.61	54	-13.39	AV
V	12185.00	48.78	31.02	8.99	25.57	52.32	74	-21.68	PK
V	12185.00	37.33	31.02	8.99	25.57	40.87	54	-13.13	AV
H	4874.00	48.21	30.55	5.77	24.66	48.09	74	-25.91	PK
H	4874.00	38.33	30.55	5.77	24.66	38.21	54	-15.79	AV
H	7311.00	47.21	30.33	6.32	24.55	47.75	74	-26.25	PK
H	7311.00	38.12	30.33	6.32	24.55	38.66	54	-15.34	AV
H	9748.00	47.32	30.85	7.45	24.69	48.61	74	-25.39	PK
H	9748.00	38.21	30.85	7.45	24.69	39.5	54	-14.5	AV
H	12185.00	47.12	31.02	8.99	25.57	50.66	74	-23.34	PK
H	12185.00	37.12	31.02	8.99	25.57	40.66	54	-13.34	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	49.67	30.55	5.77	24.66	49.55	74	-24.45	PK
V	4924.00	40.21	30.55	5.77	24.66	40.09	54	-13.91	AV
V	7386.00	48.23	30.33	6.32	24.55	48.77	74	-25.23	PK
V	7386.00	39.22	30.33	6.32	24.55	39.76	54	-14.24	AV
V	9848.00	47.45	30.85	7.45	24.69	48.74	74	-25.26	PK
V	9848.00	40.76	30.85	7.45	24.69	42.05	54	-11.95	AV
V	12310.00	48.32	31.02	8.99	25.57	51.86	74	-22.14	PK
V	12310.00	39.24	31.02	8.99	25.57	42.78	54	-11.22	AV
H	4924.00	48.24	30.55	5.77	24.66	48.12	74	-25.88	PK
H	4924.00	39.33	30.55	5.77	24.66	39.21	54	-14.79	AV
H	7386.00	47.23	30.33	6.32	24.55	47.77	74	-26.23	PK
H	7386.00	39.65	30.33	6.32	24.55	40.19	54	-13.81	AV
H	9848.00	43.33	30.85	7.45	24.69	44.62	74	-29.38	PK
H	9848.00	38.21	30.85	7.45	24.69	39.5	54	-14.5	AV
H	12310.00	47.43	31.02	8.99	25.57	50.97	74	-23.03	PK
H	12310.00	38.34	31.02	8.99	25.57	41.88	54	-12.12	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.
4. The test data shows only the worst case.

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	47.43	30.55	5.77	24.66	47.31	74	-26.69	PK
V	4824.00	37.27	30.55	5.77	24.66	37.15	54	-16.85	AV
V	7236.00	48.12	30.33	6.32	24.55	48.66	74	-25.34	PK
V	7236.00	38.32	30.33	6.32	24.55	38.86	54	-15.14	AV
V	9648.00	44.78	30.85	7.45	24.69	46.07	74	-27.93	PK
V	9648.00	38.44	30.85	7.45	24.69	39.73	54	-14.27	AV
V	12060.00	47.67	31.02	8.99	25.57	51.21	74	-22.79	PK
V	12060.00	37.43	31.02	8.99	25.57	40.97	54	-13.03	AV
H	4824.00	47.28	30.55	5.77	24.66	47.16	74	-26.84	PK
H	4824.00	40.47	30.55	5.77	24.66	40.35	54	-13.65	AV
H	7236.00	46.56	30.33	6.32	24.55	47.1	74	-26.9	PK
H	7236.00	37.43	30.33	6.32	24.55	37.97	54	-16.03	AV
H	9648.00	48.21	30.85	7.45	24.69	49.5	74	-24.5	PK
H	9648.00	38.67	30.85	7.45	24.69	39.96	54	-14.04	AV
H	12060.00	46.59	31.02	8.99	25.57	50.13	74	-23.87	PK
H	12060.00	37.46	31.02	8.99	25.57	41	54	-13	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	49.56	30.55	5.77	24.66	49.44	74	-24.56	PK
V	4874.00	39.32	30.55	5.77	24.66	39.2	54	-14.8	AV
V	7311.00	48.21	30.33	6.32	24.55	48.75	74	-25.25	PK
V	7311.00	38.12	30.33	6.32	24.55	38.66	54	-15.34	AV
V	9748.00	47.36	30.85	7.45	24.69	48.65	74	-25.35	PK
V	9748.00	39.45	30.85	7.45	24.69	40.74	54	-13.26	AV
V	12185.00	48.66	31.02	8.99	25.57	52.2	74	-21.8	PK
V	12185.00	37.38	31.02	8.99	25.57	40.92	54	-13.08	AV
H	4874.00	48.31	30.55	5.77	24.66	48.19	74	-25.81	PK
H	4874.00	38.49	30.55	5.77	24.66	38.37	54	-15.63	AV
H	7311.00	47.33	30.33	6.32	24.55	47.87	74	-26.13	PK
H	7311.00	38.12	30.33	6.32	24.55	38.66	54	-15.34	AV
H	9748.00	47.31	30.85	7.45	24.69	48.6	74	-25.4	PK
H	9748.00	38.48	30.85	7.45	24.69	39.77	54	-14.23	AV
H	12185.00	47.32	31.02	8.99	25.57	50.86	74	-23.14	PK
H	12185.00	37.27	31.02	8.99	25.57	40.81	54	-13.19	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	49.45	30.55	5.77	24.66	49.33	74	-24.67	PK
V	4924.00	40.43	30.55	5.77	24.66	40.31	54	-13.69	AV
V	7386.00	48.56	30.33	6.32	24.55	49.1	74	-24.9	PK
V	7386.00	39.22	30.33	6.32	24.55	39.76	54	-14.24	AV
V	9848.00	47.12	30.85	7.45	24.69	48.41	74	-25.59	PK
V	9848.00	40.48	30.85	7.45	24.69	41.77	54	-12.23	AV
V	12310.00	48.21	31.02	8.99	25.57	51.75	74	-22.25	PK
V	12310.00	39.24	31.02	8.99	25.57	42.78	54	-11.22	AV
H	4924.00	48.59	30.55	5.77	24.66	48.47	74	-25.53	PK
H	4924.00	39.87	30.55	5.77	24.66	39.75	54	-14.25	AV
H	7386.00	47.51	30.33	6.32	24.55	48.05	74	-25.95	PK
H	7386.00	39.65	30.33	6.32	24.55	40.19	54	-13.81	AV
H	9848.00	43.44	30.85	7.45	24.69	44.73	74	-29.27	PK
H	9848.00	38.58	30.85	7.45	24.69	39.87	54	-14.13	AV
H	12310.00	47.43	31.02	8.99	25.57	50.97	74	-23.03	PK
H	12310.00	38.76	31.02	8.99	25.57	42.3	54	-11.7	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.
4. The test data shows only the worst case.

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:

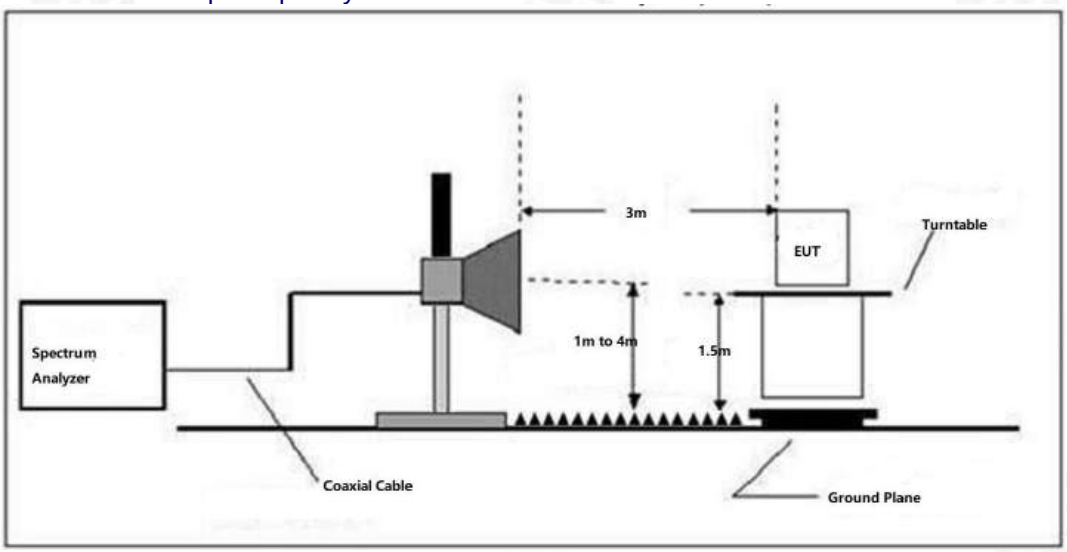
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

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	52.34	30.22	4.85	23.98	50.95	74	PK	PASS
	H	2390.00	42.56	30.22	4.85	23.98	41.17	54	AV	PASS
	H	2400.00	51.98	30.22	4.85	23.98	50.59	74	PK	PASS
	H	2400.00	43.32	30.22	4.85	23.98	41.93	54	AV	PASS
	V	2390.00	53.78	30.22	4.85	23.98	52.39	74	PK	PASS
	V	2390.00	41.54	30.22	4.85	23.98	40.15	54	AV	PASS
	V	2400.00	52.56	30.22	4.85	23.98	51.17	74	PK	PASS
	V	2400.00	41.26	30.22	4.85	23.98	39.87	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	51.39	30.22	4.85	23.98	50	74	PK	PASS
	H	2483.50	40.32	30.22	4.85	23.98	38.93	54	AV	PASS
	H	2500.00	50.28	30.22	4.85	23.98	48.89	74	PK	PASS
	H	2500.00	40.32	30.22	4.85	23.98	38.93	54	AV	PASS
	V	2483.50	50.12	30.22	4.85	23.98	48.73	74	PK	PASS
	V	2483.50	41.34	30.22	4.85	23.98	39.95	54	AV	PASS
	V	2500.00	51.49	30.22	4.85	23.98	50.1	74	PK	PASS
	V	2500.00	42.32	30.22	4.85	23.98	40.93	54	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2390.00	52.78	30.22	4.85	23.98	51.39	74	PK	PASS
	H	2390.00	42.21	30.22	4.85	23.98	40.82	54	AV	PASS
	H	2400.00	51.68	30.22	4.85	23.98	50.29	74	PK	PASS
	H	2400.00	43.55	30.22	4.85	23.98	42.16	54	AV	PASS
	V	2390.00	53.21	30.22	4.85	23.98	51.82	74	PK	PASS
	V	2390.00	41.28	30.22	4.85	23.98	39.89	54	AV	PASS
	V	2400.00	52.35	30.22	4.85	23.98	50.96	74	PK	PASS
	V	2400.00	41.67	30.22	4.85	23.98	40.28	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	51.23	30.22	4.85	23.98	49.84	74	PK	PASS
	H	2483.50	40.54	30.22	4.85	23.98	39.15	54	AV	PASS
	H	2500.00	50.44	30.22	4.85	23.98	49.05	74	PK	PASS
	H	2500.00	40.58	30.22	4.85	23.98	39.19	54	AV	PASS
	V	2483.50	50.21	30.22	4.85	23.98	48.82	74	PK	PASS
	V	2483.50	41.11	30.22	4.85	23.98	39.72	54	AV	PASS
	V	2500.00	51.48	30.22	4.85	23.98	50.09	74	PK	PASS
	V	2500.00	42.63	30.22	4.85	23.98	41.24	54	AV	PASS

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

802.11n20 SISO

802.11n20	Low Channel 2412MHz									
	H	2390.00	52.47	30.22	4.85	23.98	51.08	74	PK	PASS
	H	2390.00	42.33	30.22	4.85	23.98	40.94	54	AV	PASS
	H	2400.00	51.12	30.22	4.85	23.98	49.73	74	PK	PASS
	H	2400.00	43.38	30.22	4.85	23.98	41.99	54	AV	PASS
	V	2390.00	53.49	30.22	4.85	23.98	52.1	74	PK	PASS
	V	2390.00	41.45	30.22	4.85	23.98	40.06	54	AV	PASS
	V	2400.00	52.59	30.22	4.85	23.98	51.2	74	PK	PASS
	V	2400.00	41.77	30.22	4.85	23.98	40.38	54	AV	PASS
	High Channel 2462MHz									
	H	2483.50	51.46	30.22	4.85	23.98	50.07	74	PK	PASS
	H	2483.50	40.33	30.22	4.85	23.98	38.94	54	AV	PASS
	H	2500.00	50.45	30.22	4.85	23.98	49.06	74	PK	PASS
	H	2500.00	40.32	30.22	4.85	23.98	38.93	54	AV	PASS
	V	2483.50	50.45	30.22	4.85	23.98	49.06	74	PK	PASS
	V	2483.50	41.42	30.22	4.85	23.98	40.03	54	AV	PASS
	V	2500.00	51.57	30.22	4.85	23.98	50.18	74	PK	PASS
	V	2500.00	42.48	30.22	4.85	23.98	41.09	54	AV	PASS

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

6.POWER SPECTRAL DENSITY TEST

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

6.1 APPLIED PROCEDURES / LIMIT

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

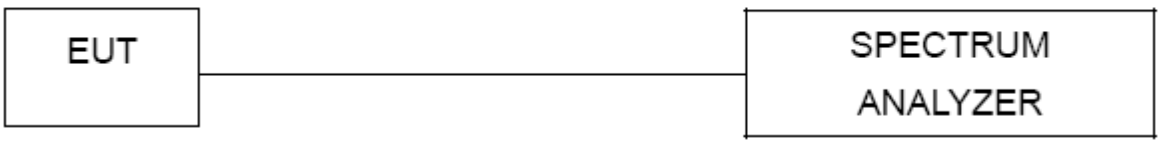
6.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: 3 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 Mode		

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-14.34	≤8.00	PASS
		2437	-12.95	≤8.00	PASS
		2462	-12.81	≤8.00	PASS
11G	Ant1	2412	-19.28	≤8.00	PASS
		2437	-19.53	≤8.00	PASS
		2462	-20.08	≤8.00	PASS
11N20SISO	Ant1	2412	-20.10	≤8.00	PASS
		2437	-20.10	≤8.00	PASS
		2462	-20.27	≤8.00	PASS

Remark：

Directional gain = 4.3 dBi；

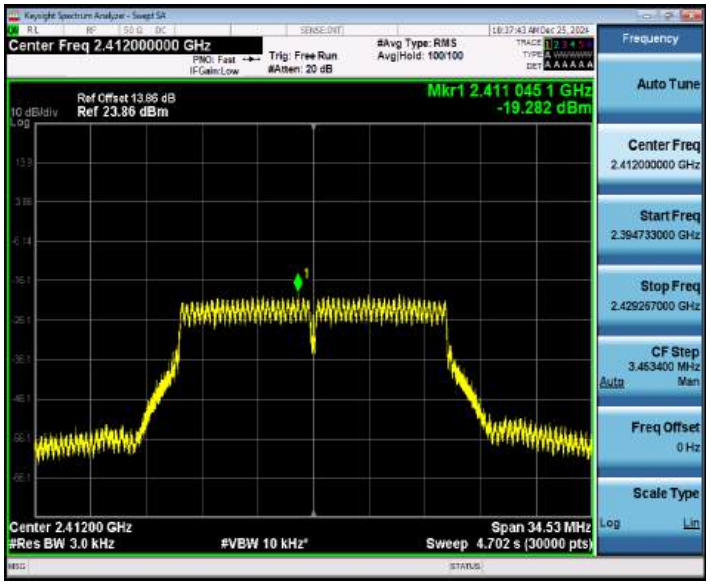
Limit[dBm/3kHz]=8.00-（Directional gain -6dB）when Directional gain ≥6dB

11B_Ant1_2412

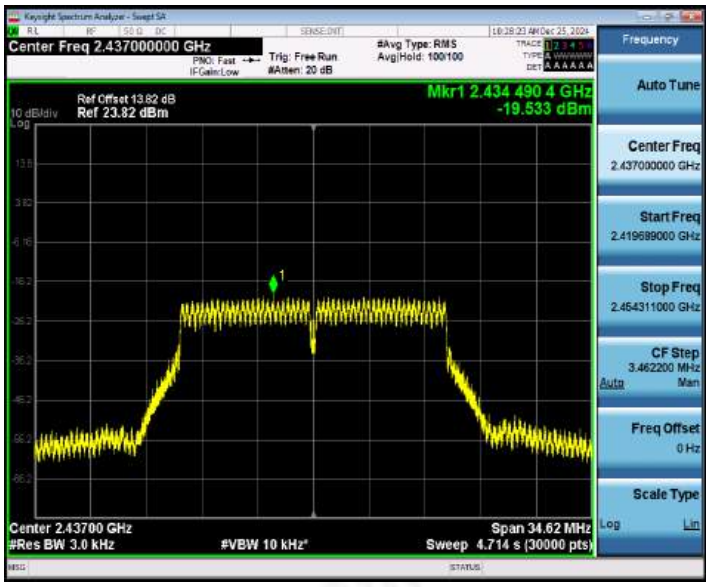
11B_Ant1_2437

11B_Ant1_2462

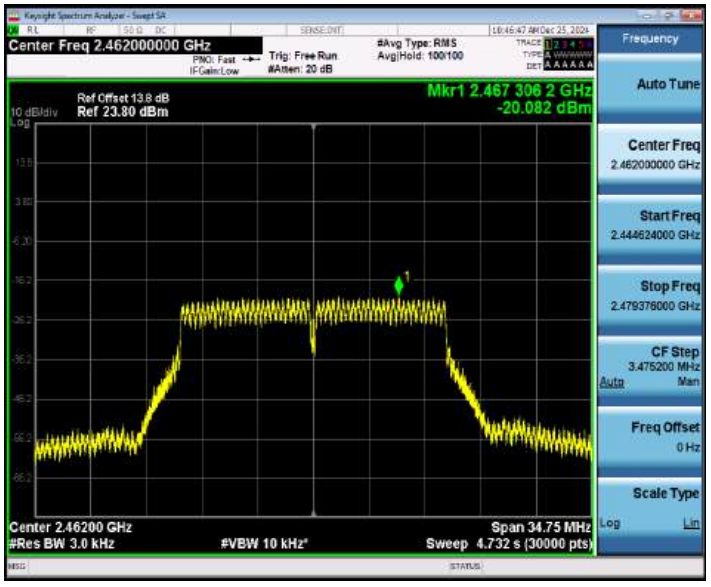
11G_Ant1_2412



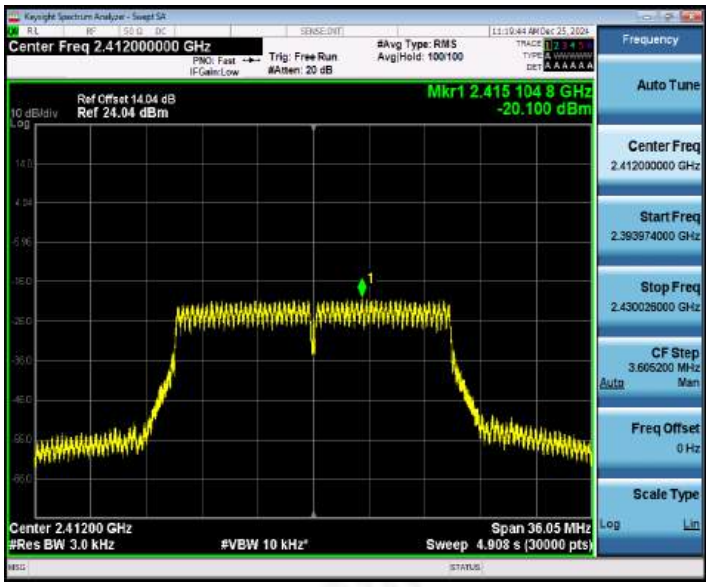
11G_Ant1_2437



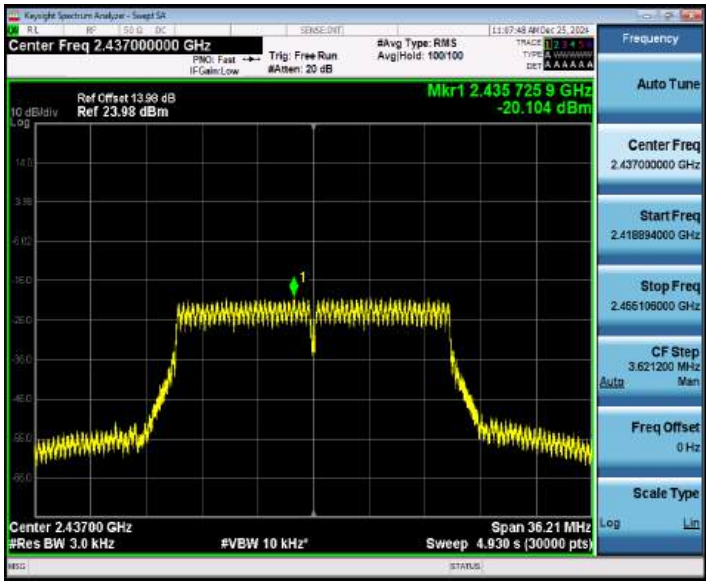
11G_Ant1_2462



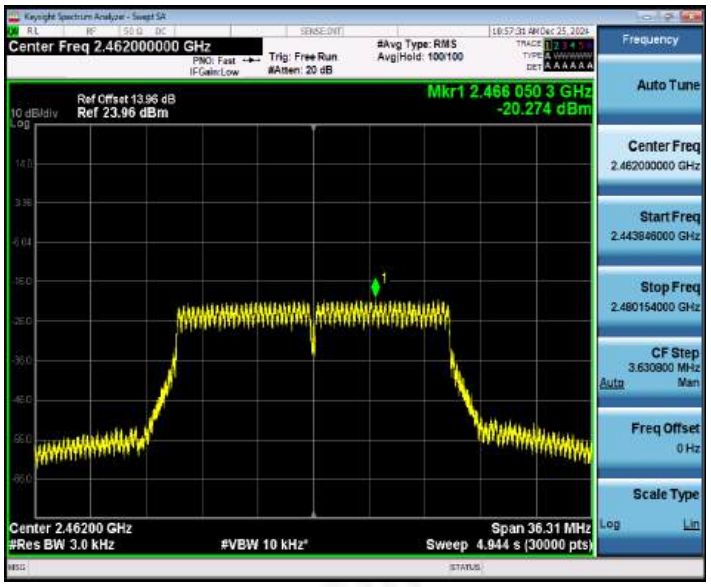
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462


Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 100/100
Frequency
Auto Tune
Ref Offset 13.96 dB
10 dB/div
Ref 23.96 dBm
Mkr1 2.466 050 3 GHz
-20.274 dBm
Center Freq
2.462000000 GHz
Start Freq
2.443846000 GHz
Stop Freq
2.480154000 GHz
CF Step
3.630800 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz*
Span 36.31 MHz
Sweep 4.944 s (30000 pts)

7. CHANNEL BANDWIDTH& 99% OCCUPY BANDWIDTH

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

7.1 APPLIED PROCEDURES / LIMIT

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

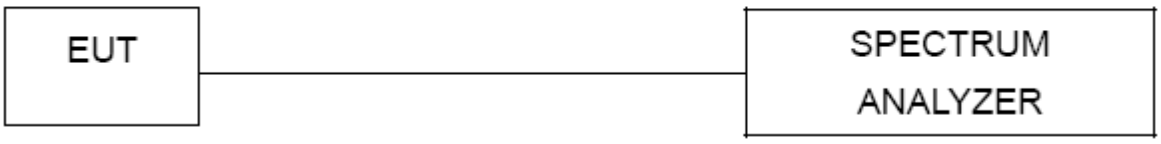
7.2 TEST PROCEDURE

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 b Mode		

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.040	2405.960	2418.000	0.5	PASS
		2437	10.080	2431.960	2442.040	0.5	PASS
		2462	11.040	2455.960	2467.000	0.5	PASS
11G	Ant1	2412	16.520	2403.720	2420.240	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.400	2453.800	2470.200	0.5	PASS
11N20SISO	Ant1	2412	17.560	2403.200	2420.760	0.5	PASS
		2437	17.520	2428.240	2445.760	0.5	PASS
		2462	17.720	2453.120	2470.840	0.5	PASS

11B_Ant1_2412
11B_Ant1_2437
11B_Ant1_2462

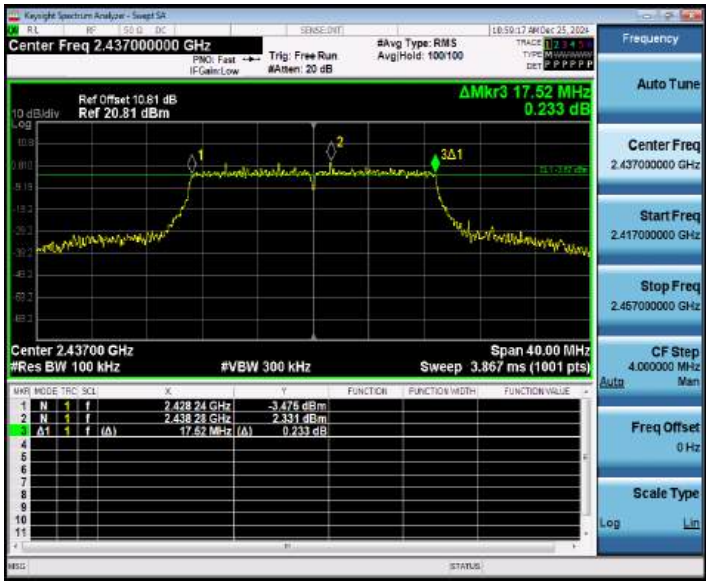
11G_Ant1_2412

11G_Ant1_2437

11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 100/100
Frequency
Auto Tune
Ref Offset 10.61 dB
10 dB/div
Ref 20.81 dBm
ΔMkr3 17.72 MHz
0.351 dB
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.867 ms (1001 pts)
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
1 N 1 f 2.453 12 GHz -6.010 dBm
2 N 1 f 2.456 96 GHz -0.083 dBm
3 Δ1 1 f (Δ) 17.72 MHz (Δ) 0.351 dB

8.PEAK OUTPUT POWER TEST

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

8.1 APPLIED PROCEDURES/LIMIT

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

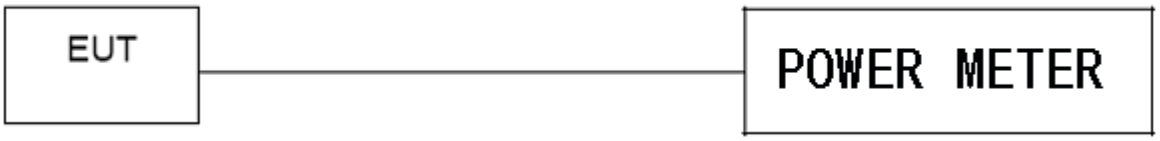
8.2 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

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

8.6 TEST RESULT

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

Test Mode	Antenna	Frequency[MHz]	Average power [dBm]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	17.61	0.66	18.27	≤30.00	4.3	22.57	≤36.00	PASS
		2437	17.40	0.00	17.40	≤30.00	4.3	21.7	≤36.00	PASS
		2462	17.63	0.00	17.63	≤30.00	4.3	21.93	≤36.00	PASS
11G	Ant1	2412	10.97	2.99	13.96	≤30.00	4.3	18.26	≤36.00	PASS
		2437	10.79	3.01	13.80	≤30.00	4.3	18.1	≤36.00	PASS
		2462	10.73	2.99	13.72	≤30.00	4.3	18.02	≤36.00	PASS
11N20 SISO	Ant1	2412	10.54	3.17	13.71	≤30.00	4.3	18.01	≤36.00	PASS
		2437	10.80	3.17	13.97	≤30.00	4.3	18.27	≤36.00	PASS
		2462	10.53	3.15	13.68	≤30.00	4.3	17.98	≤36.00	PASS

Remark：The results obtained include the antenna gain factor.
Directional gain = 4.3 dBi；

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

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

9.1 APPLICABLE STANDARD

in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in15.209(a).

9.2 TEST PROCEDURE

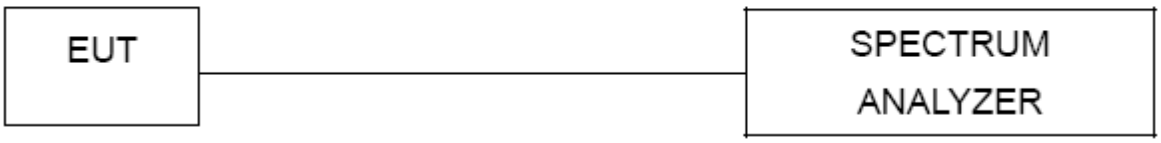
Using the following spectrum analyzer setting:

A) Set the RBW = 100KHz.
B) Set the VBW = 300KHz.
C) Sweep time = auto couple.
D) Detector function = peak.
E) Trace mode = max hold.
F) Allow trace to fully stabilize.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

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

9.6 TEST RESULTS

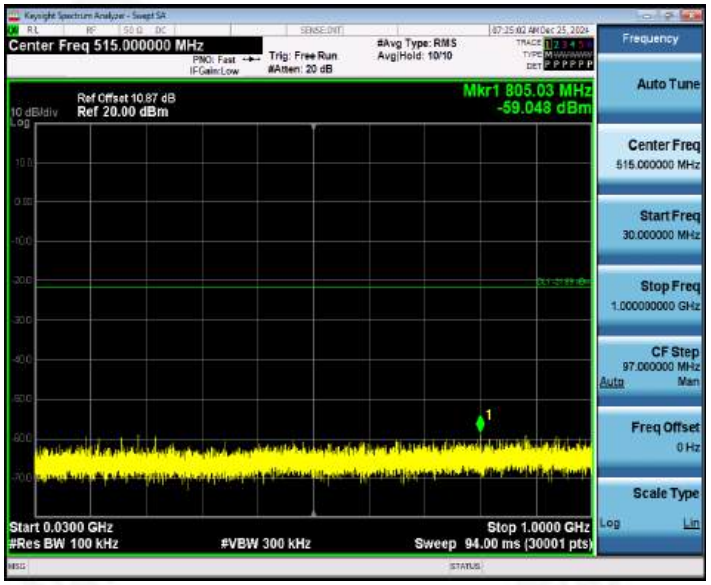
11B_Ant1_Low_2412
11B_Ant1_High_2462
11G_Ant1_Low_2412

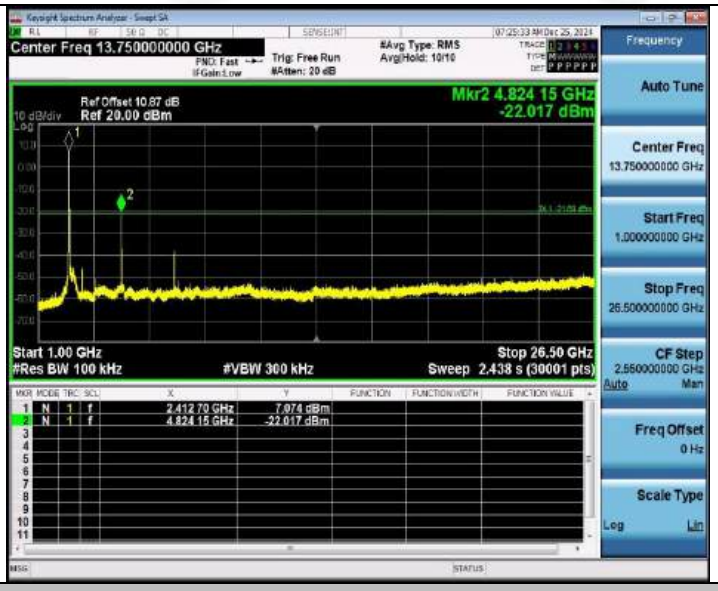
11G_Ant1_High_2462

11N20SISO_Ant1_Low_2412

11N20SISO_Ant1_High_2462

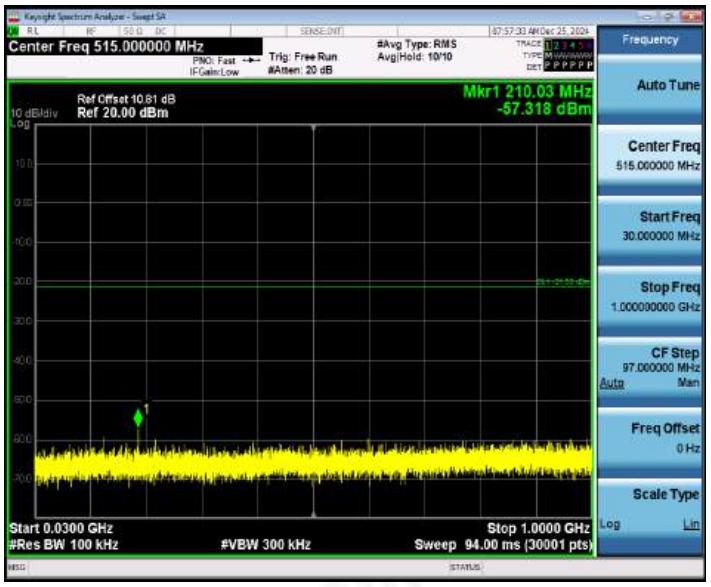
Test Graphs

11B_Ant1_2412_0~Reference
11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

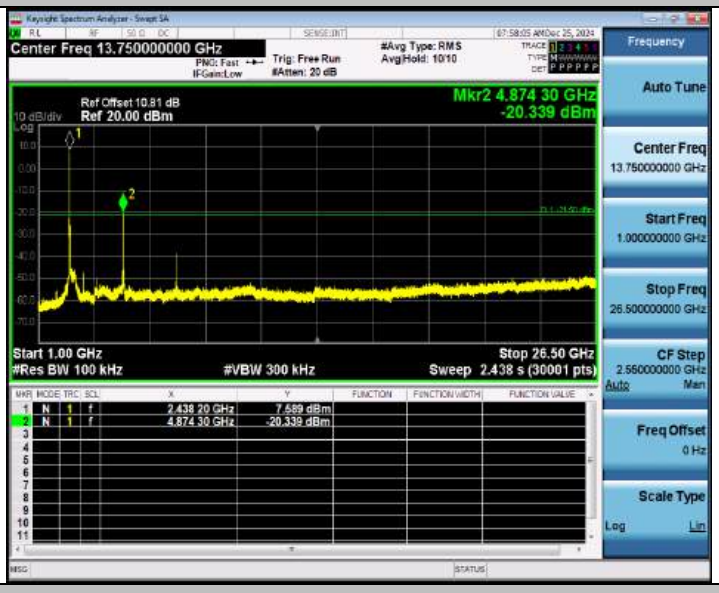


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

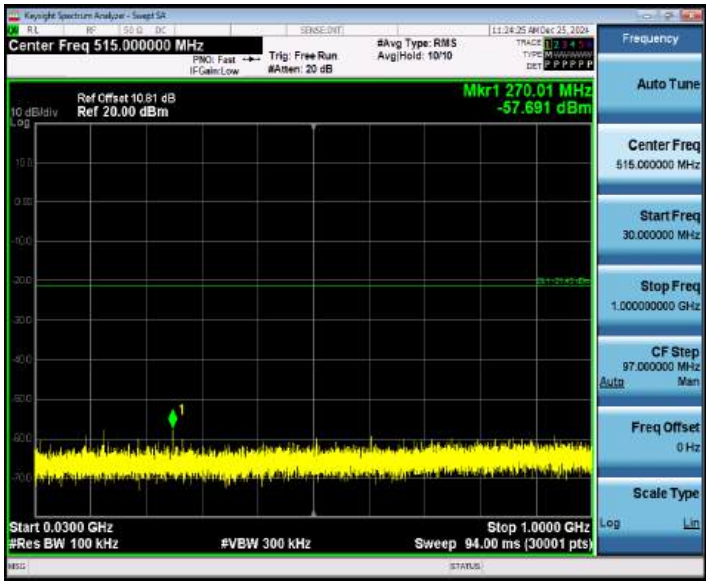


11B_Ant1_2437_1000~26500

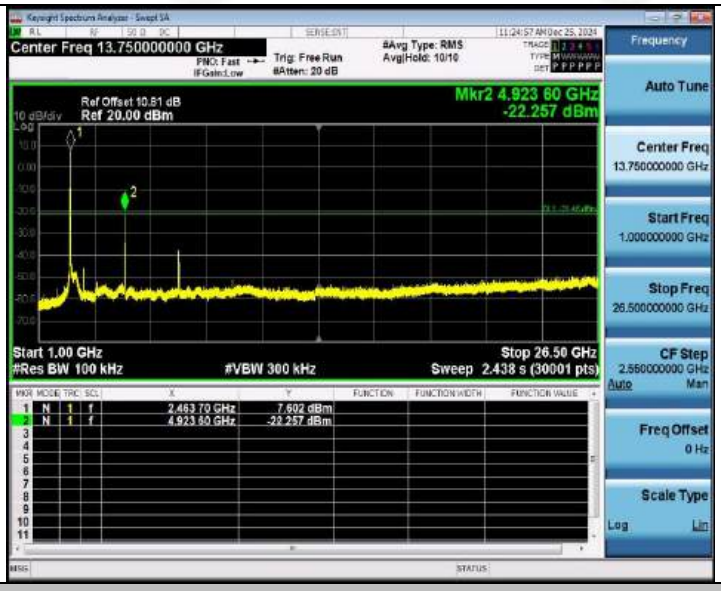


11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

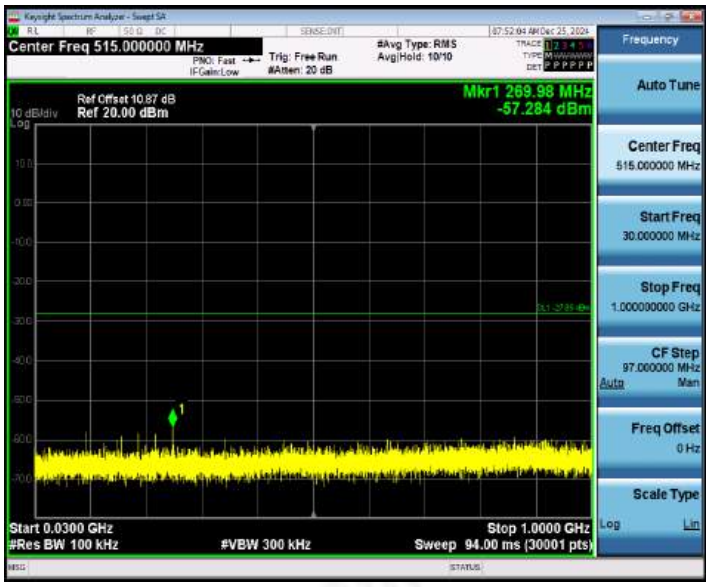


11B_Ant1_2462_1000~26500

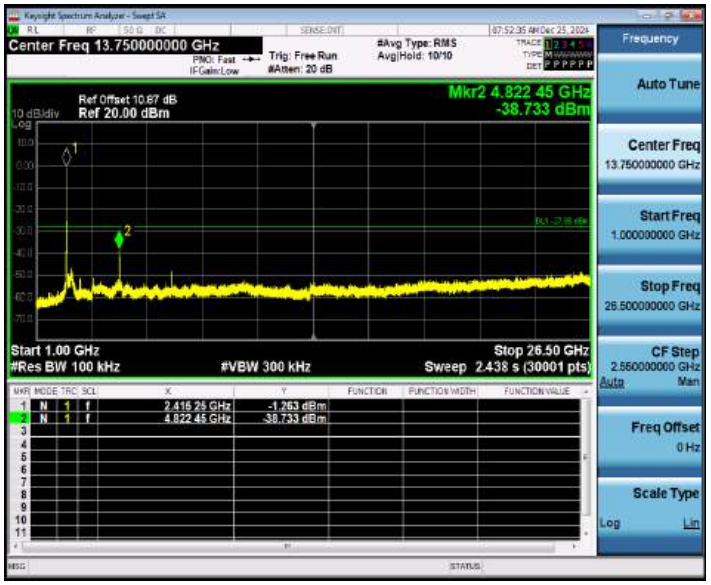


11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

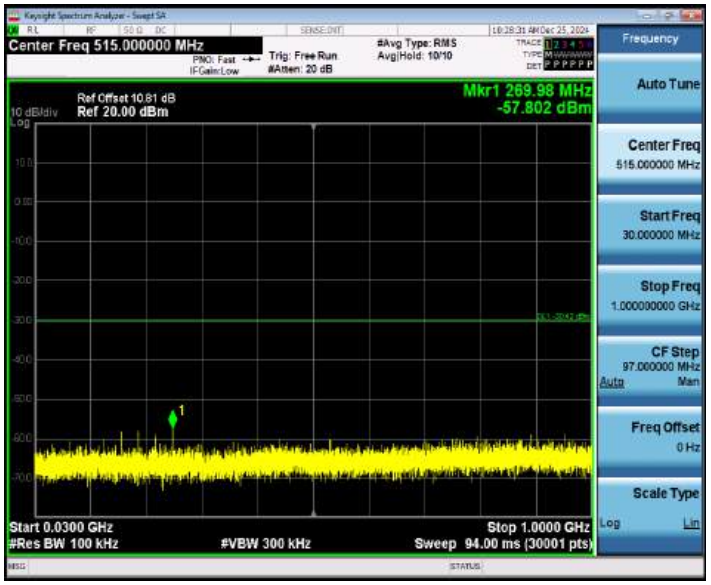


11G_Ant1_2412_1000~26500

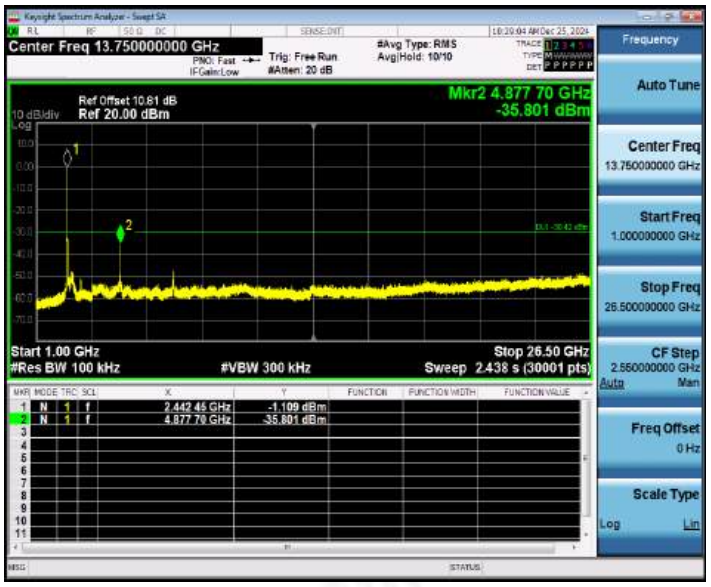


11G_Ant1_2437_0~Reference

11G_Ant1_2437_30~1000

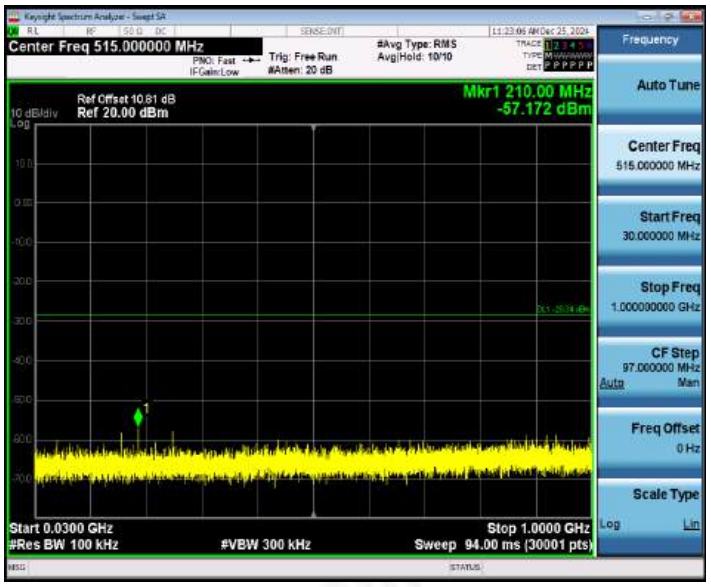


11G_Ant1_2437_1000~26500

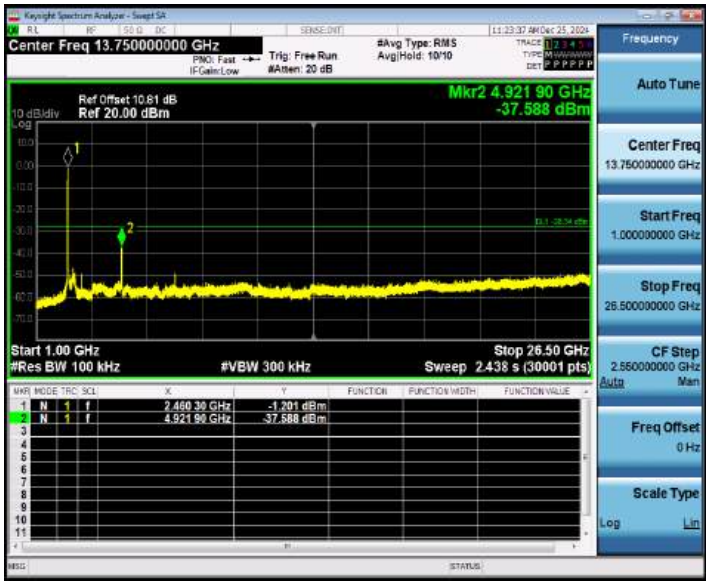


11G_Ant1_2462_0~Reference

11G_Ant1_2462_30~1000

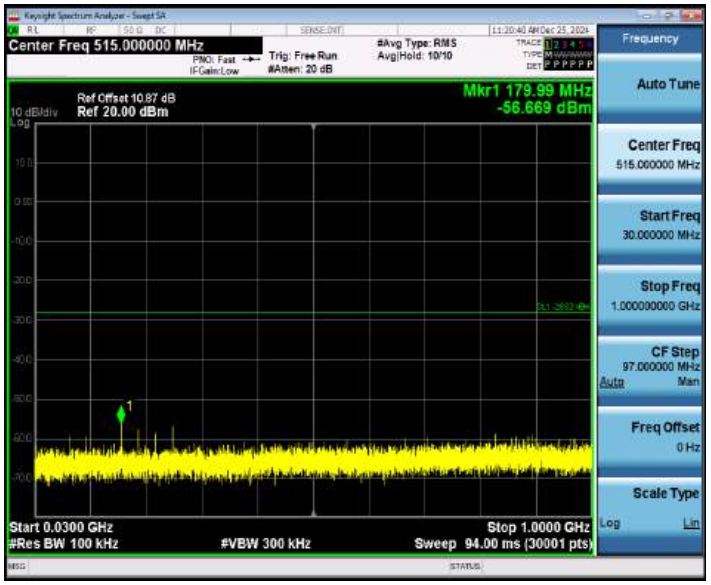


11G_Ant1_2462_1000~26500

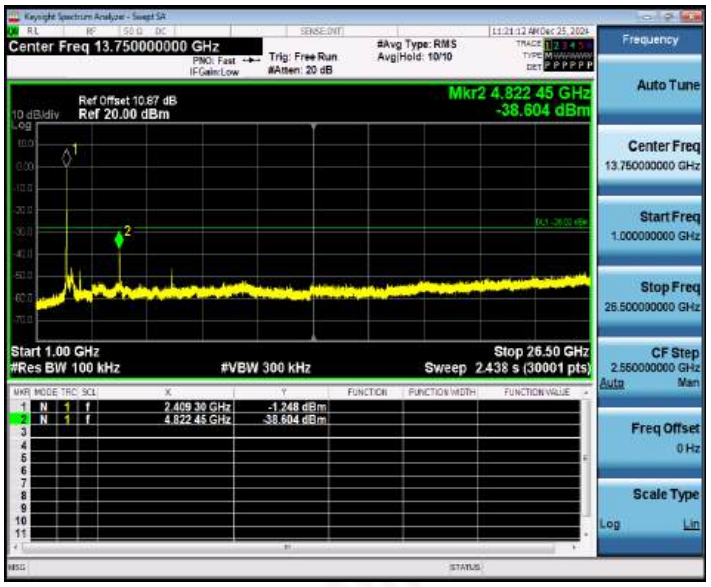


11N20SISO_Ant1_2412_0~Reference

11N20SISO_Ant1_2412_30~1000

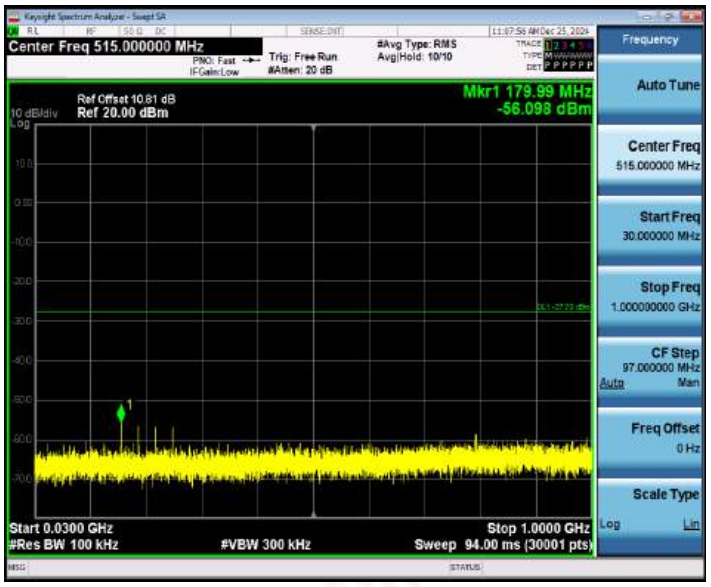


11N20SISO_Ant1_2412_1000~26500

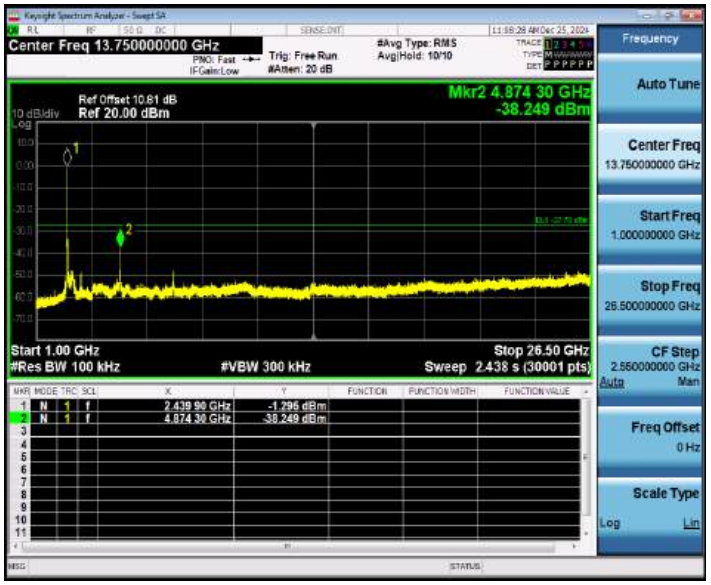


11N20SISO_Ant1_2437_0~Reference

11N20SISO_Ant1_2437_30~1000

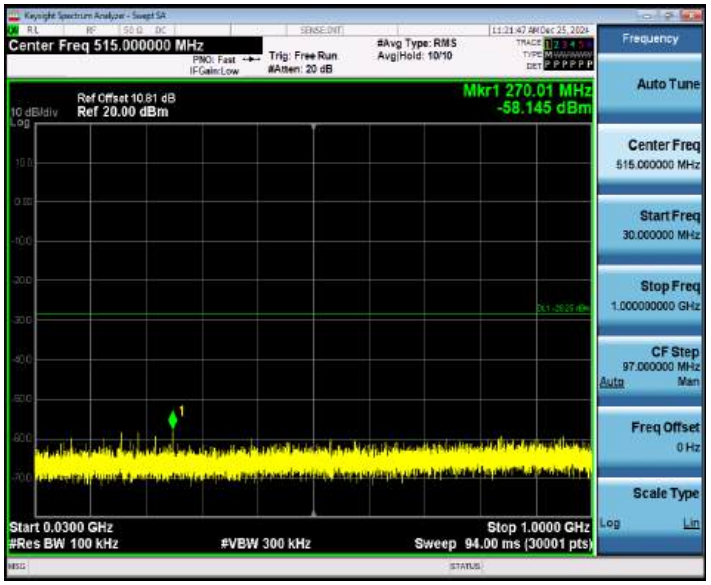


11N20SISO_Ant1_2437_1000~26500

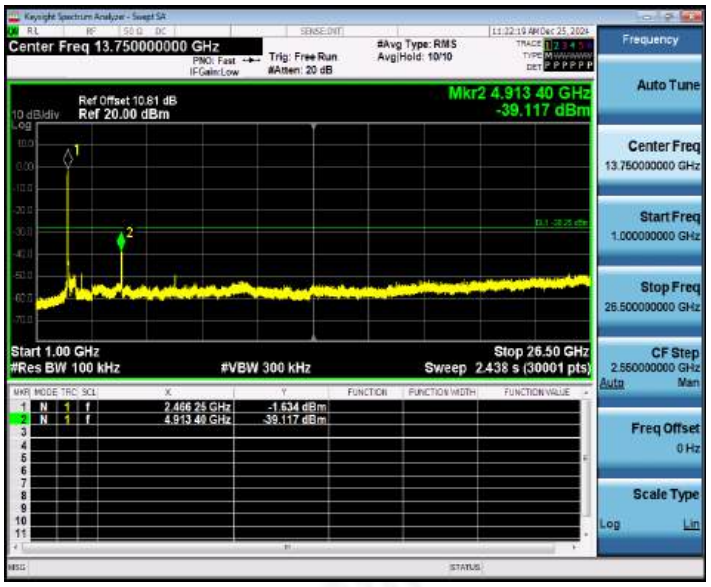


11N20SISO_Ant1_2462_0~Reference

11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500


Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 10/10
Ref Offset 10.61 dB
10 dB/div
Ref 20.00 dBm
Mkr2 4.913 40 GHz
-39.117 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
1 N 1 f 2.466 25 GHz -1.634 dBm
2 N 1 f 4.913 40 GHz -39.117 dBm
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

10. DUTY CYCLE

Test Method:	ANSI C63.10:2013

10.1 APPLIED PROCEDURES / LIMIT

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

a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.

b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

1) Set the center frequency of the instrument to the center frequency of the transmission.

2) Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.

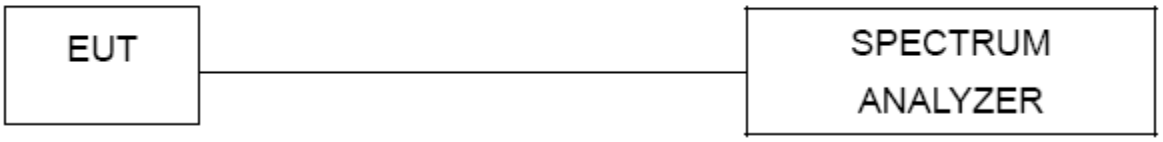
3) Set VBW ≥ RBW. Set detector = peak or average.

4) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/*T* and the number of sweep points across duration *T* exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7$ µs.)

10.2 DEVIATION FROM STANDARD

No deviation.

10.3 TEST SETUP

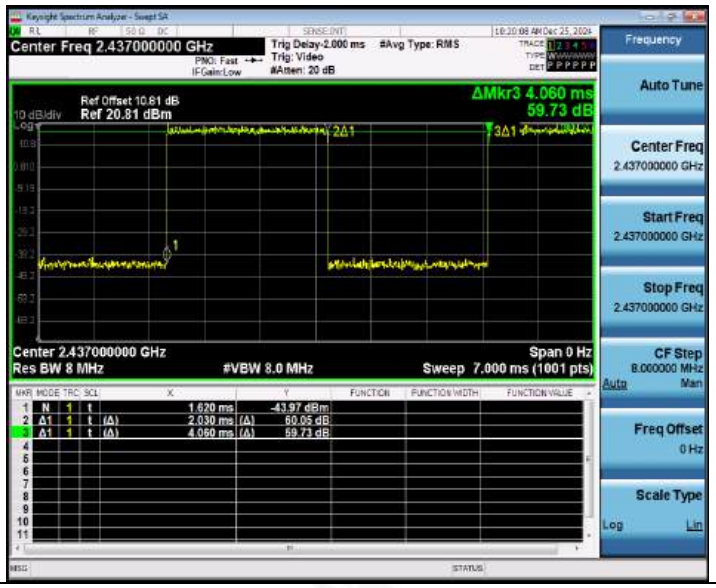


10.4 TEST RESULTS

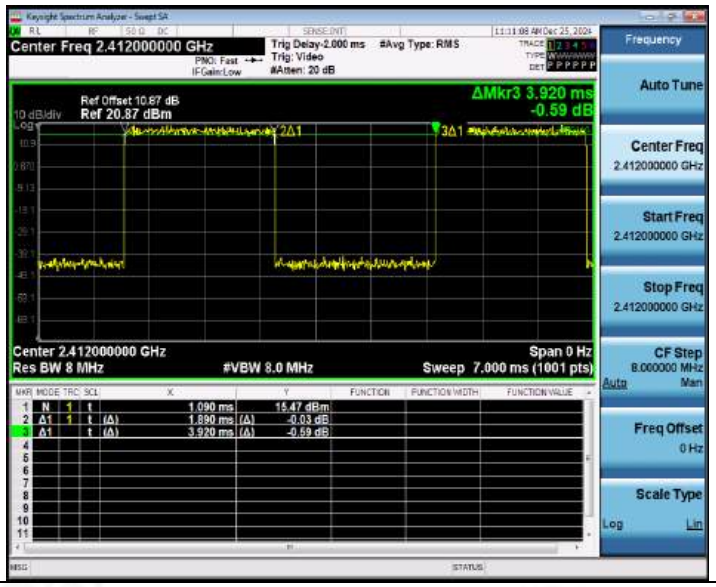
Mode	Frequency (MHz)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Result
802.11b	2412	85.81	0.66	Pass
802.11g	2437	50	3.01	Pass
802.11n20	2412	48.21	3.16	Pass

802.11b 2412MHz

802.11g 2437MHz



802.11n20 2412MHz



Note: All channel and ant have been tested, all channel have duty cycle is 100%,and the report only reflects typical data serves as a representative.

Duty Cycle= Ton /Total*100%

Duty Cycle Correction Factor = 10log (1/Duty Cycle)

11. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi. A transmitter can only be sold or operated with antennas with which it was approved.	
EUT Antenna:	
The antenna is SMD Antenna, the best case gain of the antenna is 4.3dBi, reference to the appendix II for details	

12. TEST SETUP PHOTO

Reference to the appendix I for details.

13. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※