FCC TEST REPORT
FCC ID:FSUGKZHX

Applicant:	**KYE SYSTEMS CORP.**
Address:	No.492, Sec.5, Chongxin Rd., Sanchong Dist., New Taipei City, 24160, Taiwan.
Manufacturer:	**Dongguan Kunying Computer Products Co., Ltd.**
Address:	Building 5, No. 2 Dongye Road, Houjie Town, Dongguan City, Guangdong Province of China.523950.
EUT:	Copilot Wireless Bluetooth Business Keyboard
Trade Mark:	Genius
Model Number:	SlimStar 7250BT, SlimStar XXXXXX, XXXXXXXX XXXXXX, XXXXXXXXXXXXXXXXXXXXXXXXXXXX (X can be 0-9 & A-Z & a-z & Blank & "-" & "/")
Date of Receipt:	Jun. 06, 2025
Test Date:	Jun. 06, 2025 - Aug. 21, 2025
Date of Report:	Aug. 21, 2025
Prepared By:	Shenzhen DL Testing Technology Co., Ltd.
Address:	101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249 ANSI C63.10-2020
Test Result:	Pass
Report Number:	DLE-250807019R

Prepared (Test Engineer):	Dimon Tan	Dimon Tan
Reviewer (Supervisor):	Jack Bu	Jack Bu
Approved (Manager):	Jade Yang	Jade Yang

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

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1.VERSION

Report No.	Version	Description	Approved
DLE-250807019E	Rev.01	Initial issue of report	Aug. 21, 2025

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
FCC part 15.203	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emission	N/A	
FCC part15.249(a)	Field Strength of Fundamental	PASS	
FCC part 15.249	Fundamental &Radiated Spurious Emission Measurement	PASS	
FCC part 15.215 (c)	20dB Channel Bandwidth	PASS	
FCC part 15.205	Band Edge	PASS	

NOTE:

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

2.1 TEST FACILITY

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

FCC Test Firm Registration Number: 854456
Designation Number: CN1307

IC Registered No.: 27485
CAB ID.: CN0118

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U · where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2 · providing a level of confidence of approximately 95 % 。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power conducted	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All emissions radiated(<1G)	±4.68dB
5	All emissions radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%
8	RF Occupied Bandwidth	±1.8dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Copilot Wireless Bluetooth Business Keyboard
Model No.:	SlimStar 7250BT, SlimStar XXXXXX, XXXXXXXX XXXXXX, XXXXXXXXXXXXXXXXXXXXXXXXXXXX (X can be 0-9 & A-Z & a-z & Blank & "-" & "/")
Model Different.:	All the model are the same circuit and RF module, except for model name.
Serial No.:	N/A
Hardware Version:	H1.0
Software Version:	S1.0
Sample(s) Status:	Engineer sample
Operation Frequency:	2405MHz-2470MHz
Channel Numbers:	8
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna gain:	1.60 dBi
Power supply:	Battery: DC 3V(AAA*2)

Channel	Frequency (MHz)
CH1	2405
CH2	2411
CH3	2417
CH4	2451
CH5	2457
CH6	2463
CH7	2469
CH8	2470

Channel	**Frequency**
The lowest channel	2405MHz
The middle channel	2451MHz
The Highest channel	2470MHz

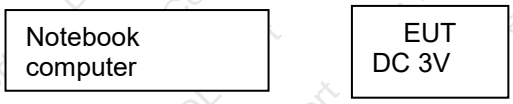
3.2 DESCRIPTION OF TEST MODES

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

Test Software	RF Test Tool
Power level setup	<0dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Emission



Conducted Spurious

3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Copilot Wireless Bluetooth Business Keyboard	Genius	SlimStar 7250BT,	/	EUT
A-9	Notebook computer	SAMSUNG	RC510	/	/

Item	Shielded Type	Ferrite Core	Length	Note
C-1	/	/	/	/

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.

3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

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

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

Conduction Test equipment

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

Other

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

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020
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
	Quas-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.

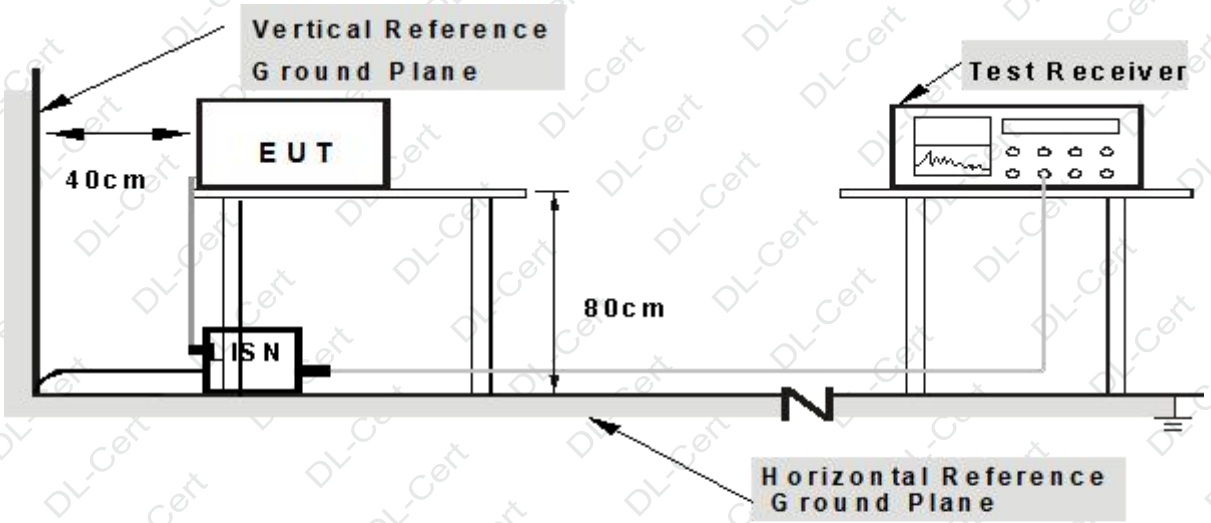
4.1.2 TEST PROCEDURE

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



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 Test Result

The EUT is powered by DC only. The test items is not applicable.

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10-2020
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

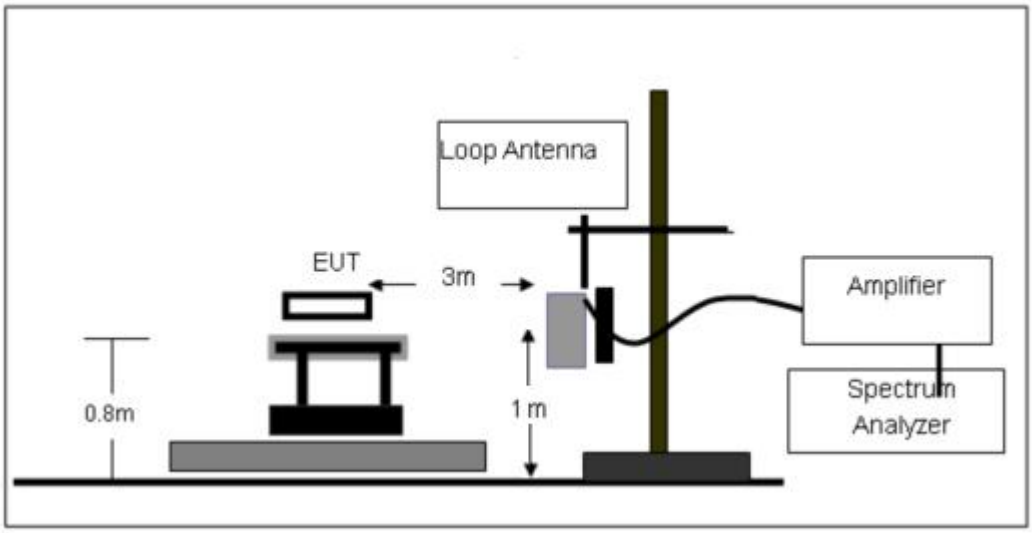
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 25GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-chamber test. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8m; above 1GHz, the height was 1.5m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
g. For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
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

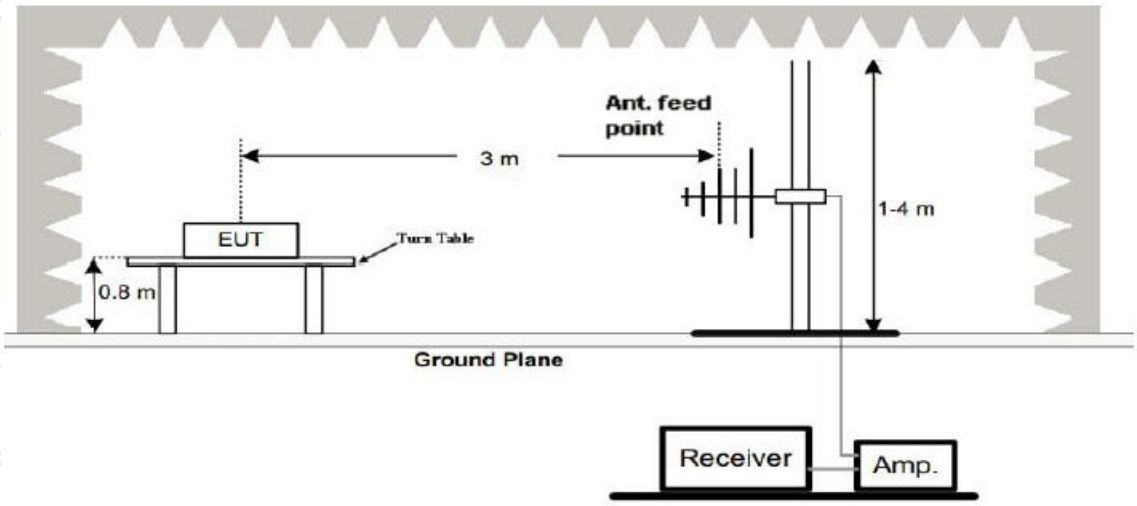
No deviation

4.2.4 TEST SETUP

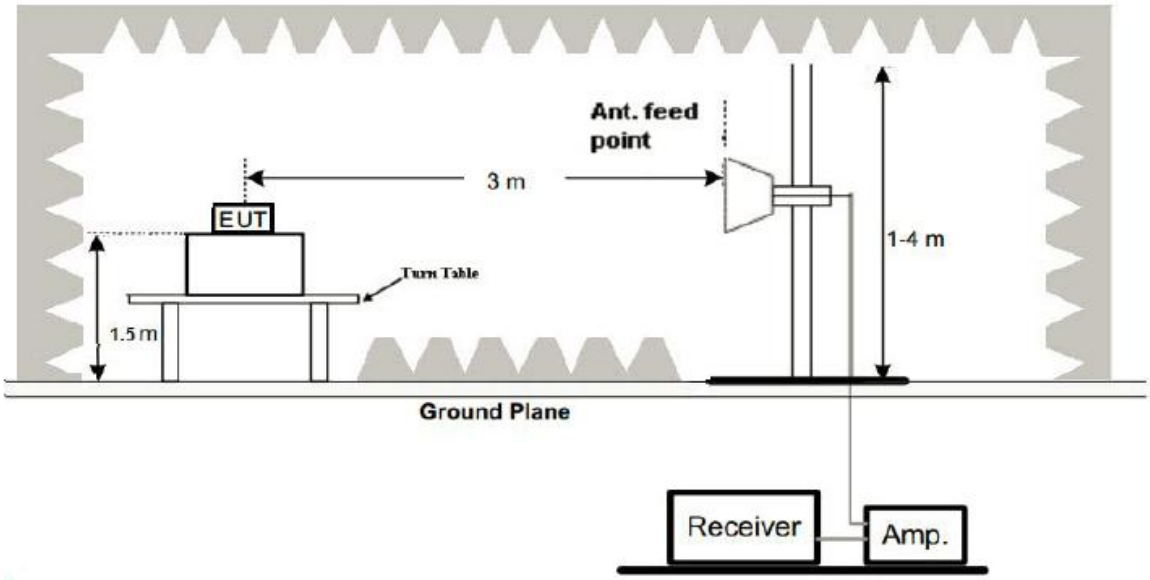
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.5 EUT OPERATING CONDITIONS

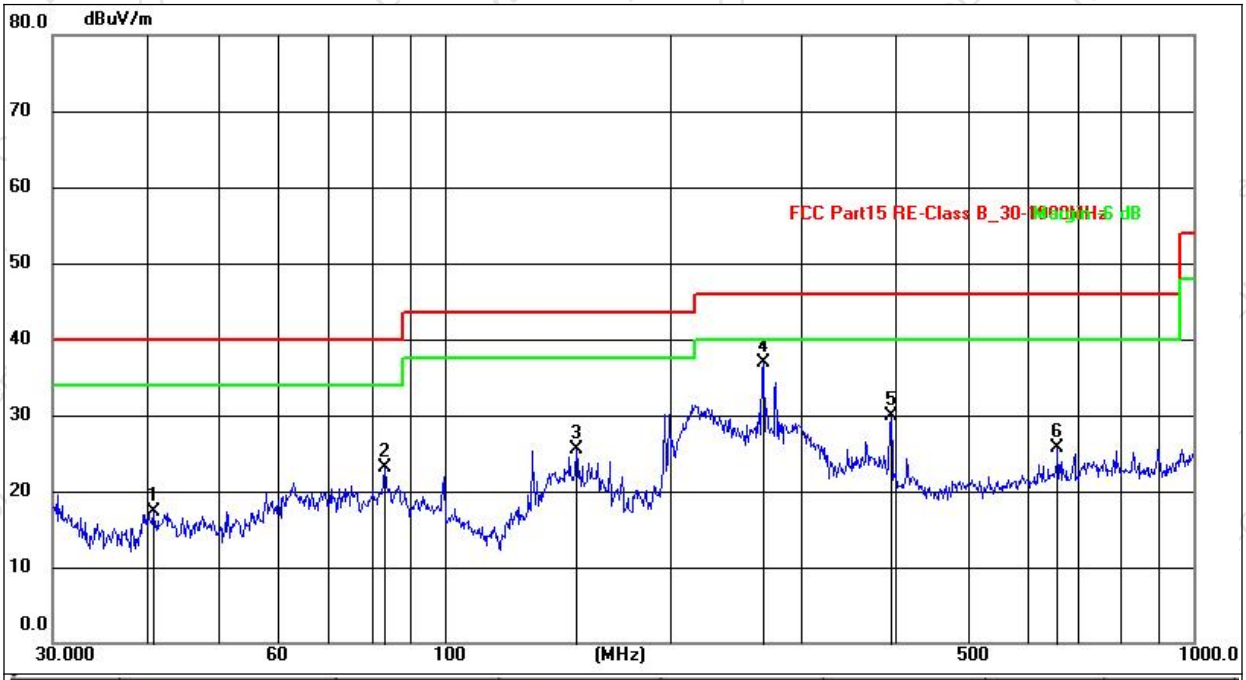
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 TEST RESULTS (Between 9KHz – 30 MHz)

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.

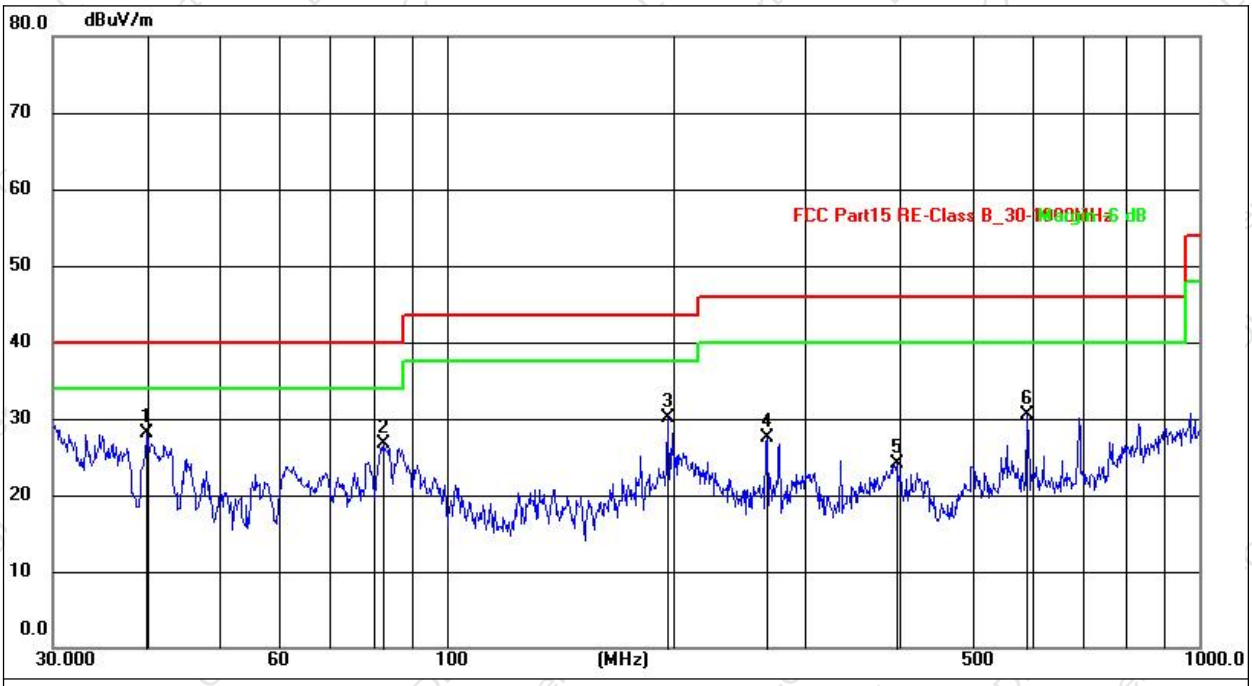
Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 3V	Model	GFSK 2405 MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	40.8444	31.49	-14.13	17.36	40.00	-22.64	QP
2	83.2296	42.77	-19.70	23.07	40.00	-16.93	QP
3	150.0107	42.03	-16.56	25.47	43.50	-18.03	QP
4	266.6089	52.09	-15.15	36.94	46.00	-9.06	QP
5	394.8543	46.57	-16.59	29.98	46.00	-16.02	QP
6	658.8360	33.28	-7.57	25.71	46.00	-20.29	QP

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 3V	Model	GFSK 2405 MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	39.9941	44.96	-16.87	28.09	40.00	-11.91	QP
2	82.3588	48.44	-21.78	26.66	40.00	-13.34	QP
3	196.5098	50.66	-20.55	30.11	43.50	-13.39	QP
4	266.6089	46.86	-19.42	27.44	46.00	-18.56	QP
5	396.2412	39.31	-15.15	24.16	46.00	-21.84	QP
6	590.9737	38.66	-8.10	30.56	46.00	-15.44	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.

GFSK 1GHz~25GHz

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:2405MHz									
V	4810.00	54.98	30.55	5.77	24.66	54.86	74.00	-19.14	Pk
V	4810.00	43.21	30.55	5.77	24.66	43.09	54.00	-10.91	AV
V	7215.00	54.10	30.33	6.32	24.55	54.64	74.00	-19.36	Pk
V	7215.00	43.71	30.33	6.32	24.55	44.25	54.00	-9.75	AV
V	9620.00	52.70	30.85	7.45	24.69	53.99	74.00	-20.01	Pk
V	9620.00	43.42	30.85	7.45	24.69	44.71	54.00	-9.29	AV
V	12025.00	52.60	31.02	8.99	25.57	56.14	74.00	-17.86	Pk
V	12025.00	43.28	31.02	8.99	25.57	46.82	54.00	-7.18	AV
H	4810.00	51.37	30.55	5.77	24.66	51.25	74.00	-22.75	Pk
H	4810.00	43.03	30.55	5.77	24.66	42.91	54.00	-11.09	AV
H	7215.00	54.51	30.33	6.32	24.55	55.05	74.00	-18.95	Pk
H	7215.00	43.14	30.33	6.32	24.55	43.68	54.00	-10.32	AV
H	9620.00	52.84	30.85	7.45	24.69	54.13	74.00	-19.87	Pk
H	9620.00	43.98	30.85	7.45	24.69	45.27	54.00	-8.73	AV
H	12025.00	54.90	31.02	8.99	25.57	58.44	74.00	-15.56	Pk
H	12025.00	43.85	31.02	8.99	25.57	47.39	54.00	-6.61	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:2451MHz									
V	4860.00	50.09	30.55	5.77	24.66	49.97	74.00	-24.03	Pk
V	4860.00	43.34	30.55	5.77	24.66	43.22	54.00	-10.78	AV
V	7290.00	50.70	30.33	6.32	24.55	51.24	74.00	-22.76	Pk
V	7290.00	43.57	30.33	6.32	24.55	44.11	54.00	-9.89	AV
V	9720.00	54.23	30.85	7.45	24.69	55.52	74.00	-18.48	Pk
V	9720.00	43.82	30.85	7.45	24.69	45.11	54.00	-8.89	AV
V	12150.00	54.42	31.02	8.99	25.57	57.96	74.00	-16.04	Pk
V	12150.00	43.12	31.02	8.99	25.57	46.66	54.00	-7.34	AV
H	4860.00	51.53	30.55	5.77	24.66	51.41	74.00	-22.59	Pk
H	4860.00	43.99	30.55	5.77	24.66	43.87	54.00	-10.13	AV
H	7290.00	50.35	30.33	6.32	24.55	50.89	74.00	-23.11	Pk
H	7290.00	43.97	30.33	6.32	24.55	44.51	54.00	-9.49	AV
H	9720.00	53.07	30.85	7.45	24.69	54.36	74.00	-19.64	Pk
H	9720.00	43.16	30.85	7.45	24.69	44.45	54.00	-9.55	AV
H	12150.00	53.38	31.02	8.99	25.57	56.92	74.00	-17.08	Pk
H	12150.00	43.78	31.02	8.99	25.57	47.32	54.00	-6.68	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:2470MHz									
V	4940.00	50.97	30.55	5.77	24.66	50.85	74.00	-23.15	Pk
V	4940.00	43.45	30.55	5.77	24.66	43.33	54.00	-10.67	AV
V	7410.00	54.81	30.33	6.32	24.55	55.35	74.00	-18.65	Pk
V	7410.00	43.51	30.33	6.32	24.55	44.05	54.00	-9.95	AV
V	9880.00	51.46	30.85	7.45	24.69	52.75	74.00	-21.25	Pk
V	9880.00	43.29	30.85	7.45	24.69	44.58	54.00	-9.42	AV
V	12350.00	53.08	31.02	8.99	25.57	56.62	74.00	-17.38	Pk
V	12350.00	43.63	31.02	8.99	25.57	47.17	54.00	-6.83	AV
H	4940.00	54.19	30.55	5.77	24.66	54.07	74.00	-19.93	Pk
H	4940.00	43.37	30.55	5.77	24.66	43.25	54.00	-10.75	AV
H	7410.00	51.33	30.33	6.32	24.55	51.87	74.00	-22.13	Pk
H	7410.00	43.56	30.33	6.32	24.55	44.10	54.00	-9.90	AV
H	9880.00	50.50	30.85	7.45	24.69	51.79	74.00	-22.21	Pk
H	9880.00	43.81	30.85	7.45	24.69	45.10	54.00	-8.90	AV
H	12350.00	52.98	31.02	8.99	25.57	56.52	74.00	-17.48	Pk
H	12350.00	43.71	31.02	8.99	25.57	47.25	54.00	-6.75	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.

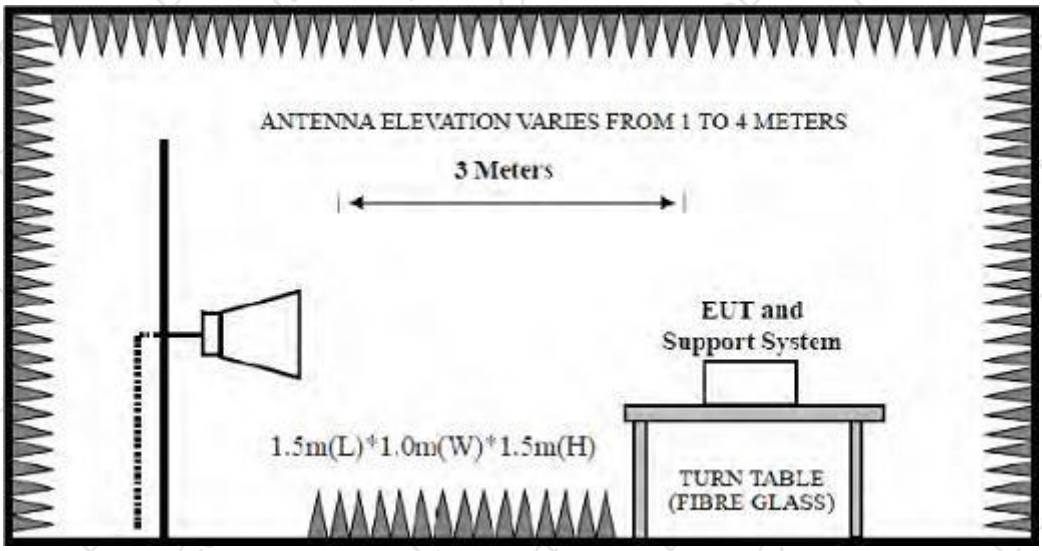
5. Field strength of fundamental

5.1 Limit

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/ meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

Note：
1. Average Limit (dBμV/m)=20×log[1000×Field Strength (mV/m)].
2. Peak Limit (dBμV/m)= Average Limit (dBμV/m)+20dB

5.2 Test Setup



5.2 Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	≥OBW
VBW	3xRBW
Start frequency	2400.0MHz
Stop frequency	2483.5MHz
Sweep Time	Auto
Detector	PEAK/AVG

5.4 Test Procedure

a. EUT was placed on a turn table, which is 1.5 meter high above the ground.

b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.

c. Spectrum analyzer setting parameters in accordance with section 3.3.

d. Set the EUT transmit continuously with maximum output power.

e. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
f. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test,record the average and peak value.

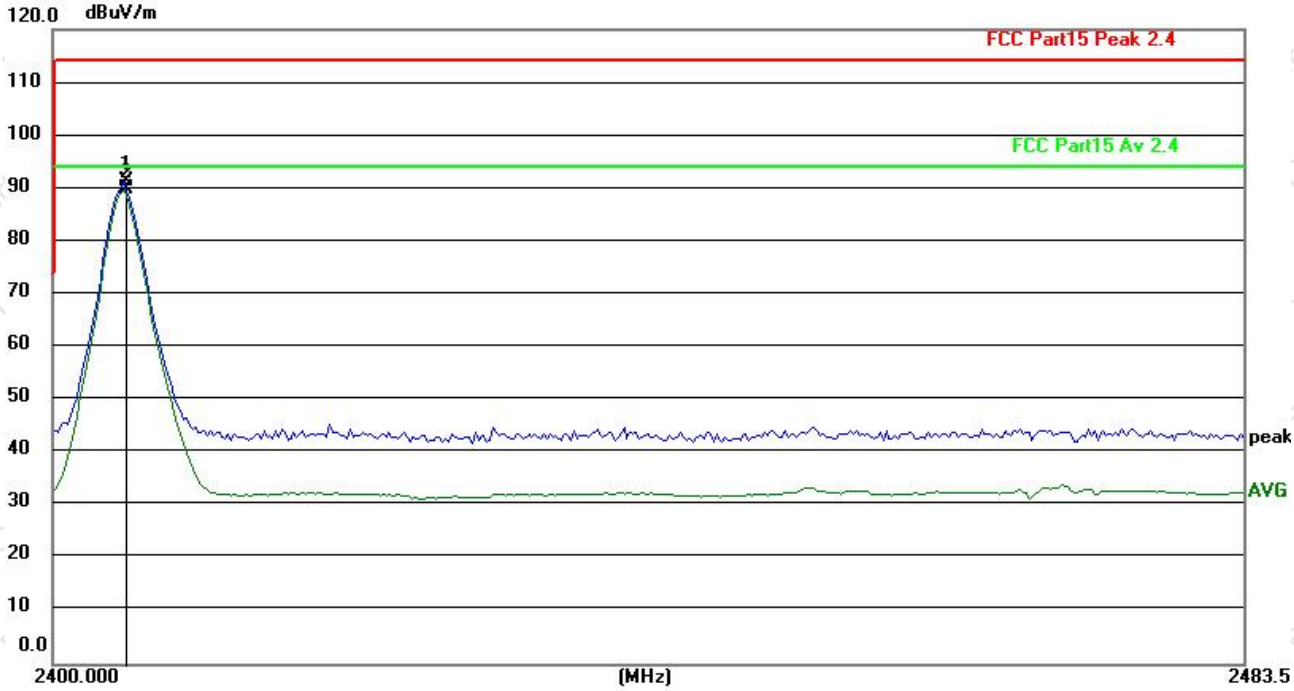
g. Repeat above procedures until all channels were measured.

h. Record the results in the test report.

5.5 Test Result

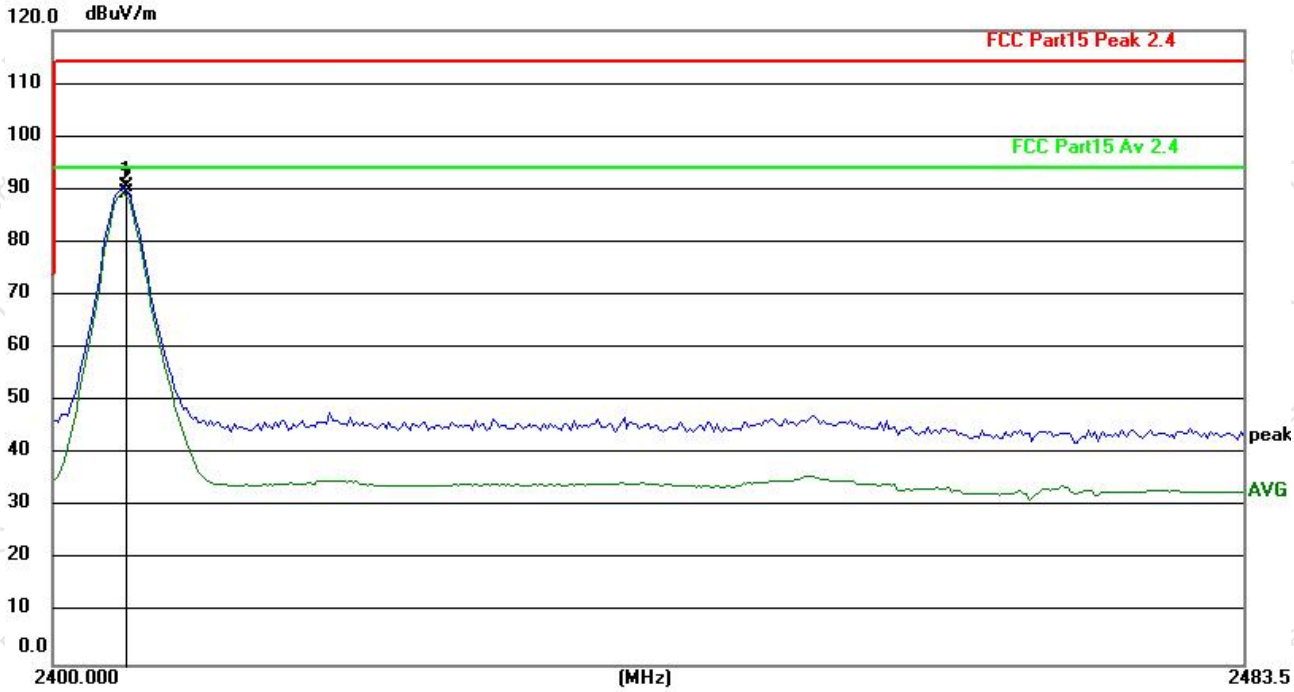
Test frequency (MHz)	Fundamental Frequency (MHz)	Field strength of fundamental level (dBμV/m)		Limit (dBuV)		Result	Antenna Pole (H/V)
		AVG	Peak	AVG	Peak		
2405	2404.930	89.86	91.35	94	114	Pass	H
	2404.930	89.36	90.35	94	114	Pass	V
2451	2451.731	93.77	94.26	94	114	Pass	H
	2451.524	92.23	92.75	94	114	Pass	V
2470	2469.736	91.88	93.24	94	114	Pass	H
	2470.159	92.15	93.52	94	114	Pass	V

Low Channel(2405MHz)
Horizontal



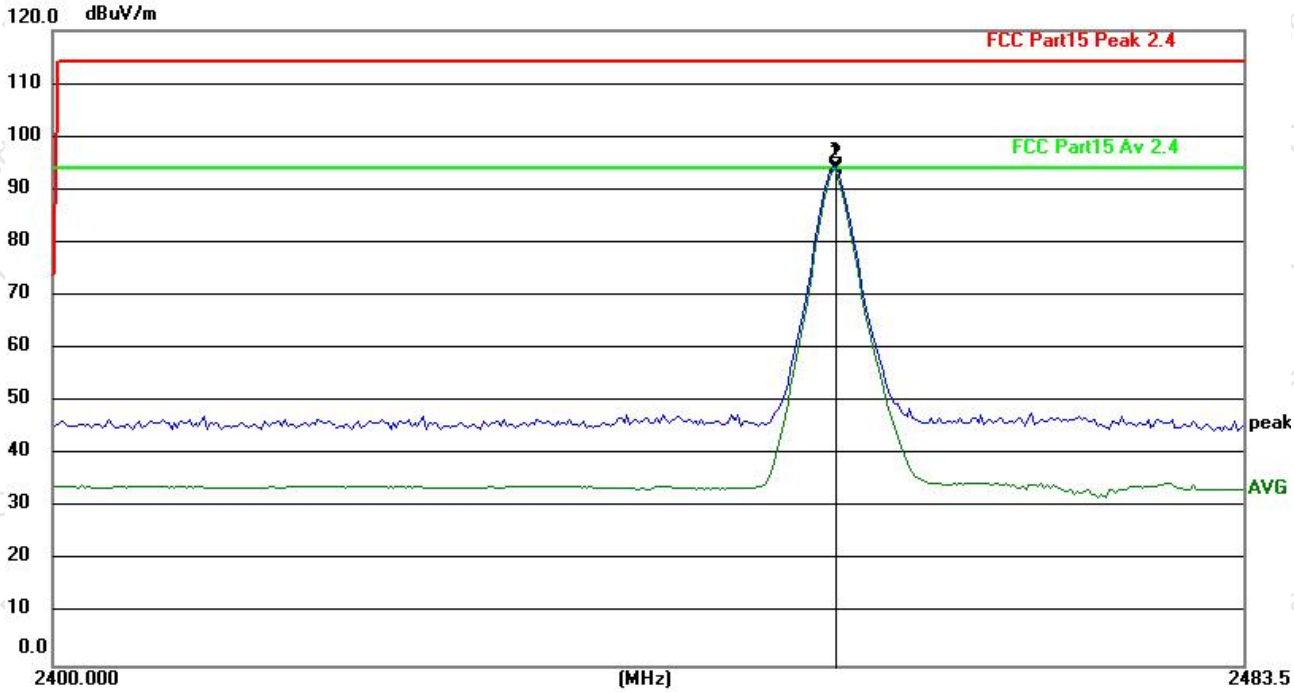
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2404.930	92.37	-1.02	91.35	114.00	-22.65	peak
2	2404.930	90.88	-1.02	89.86	94.00	-4.14	AVG

Vertical



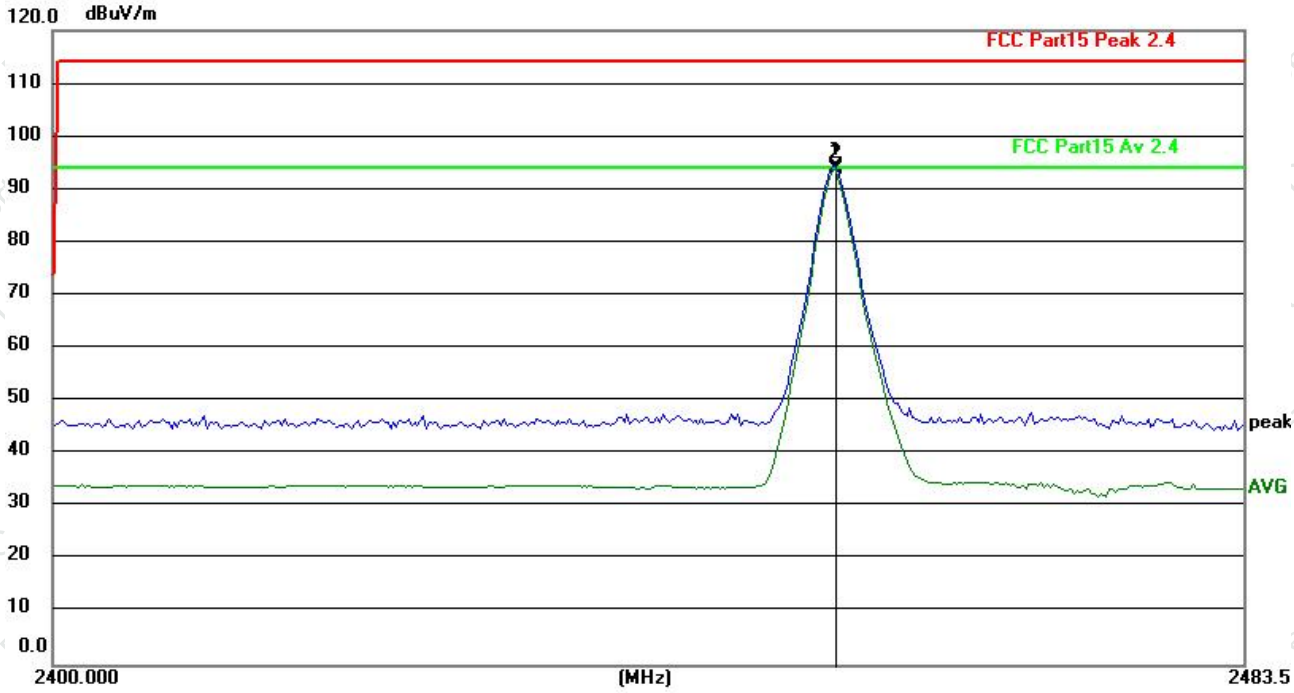
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2404.930	91.37	-1.02	90.35	114.00	-23.65	peak
2	2404.930	90.38	-1.02	89.36	94.00	-4.64	AVG

Middle Channel(2451MHz)
Horizontal



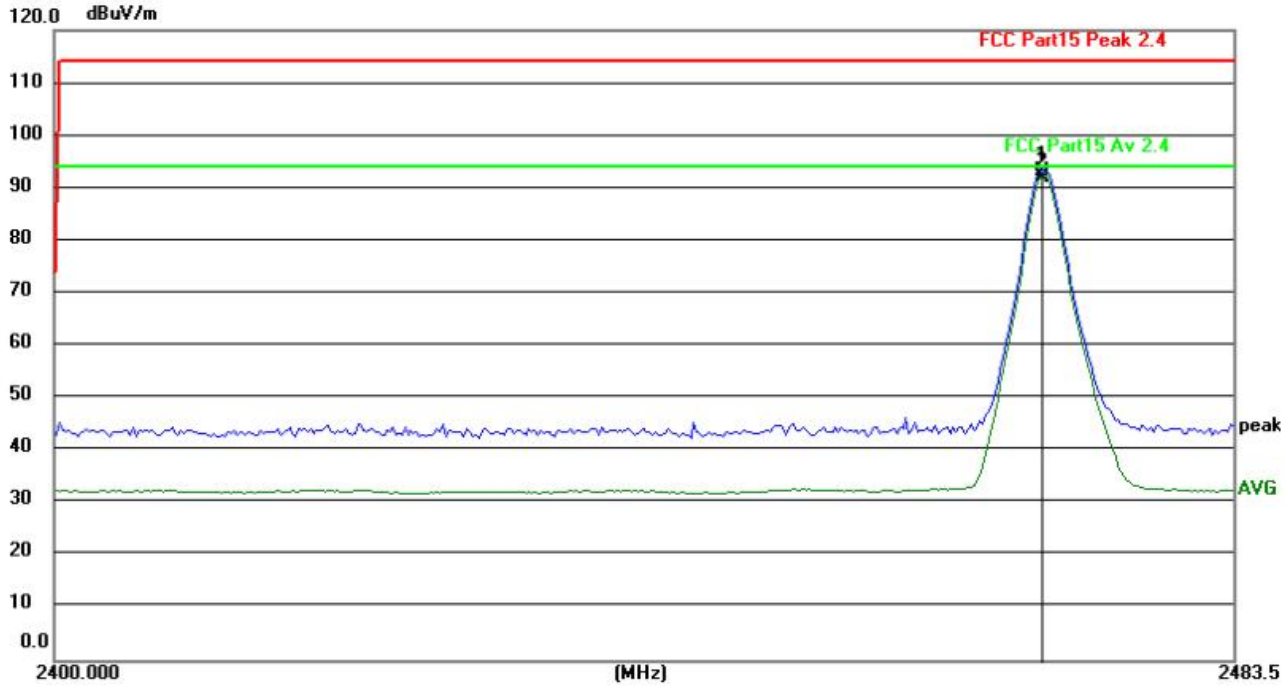
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2451.731	95.26	-1.00	94.26	114.00	-19.74	peak
2	2451.731	94.77	-1.00	93.77	94.00	-0.23	AVG

Vertical



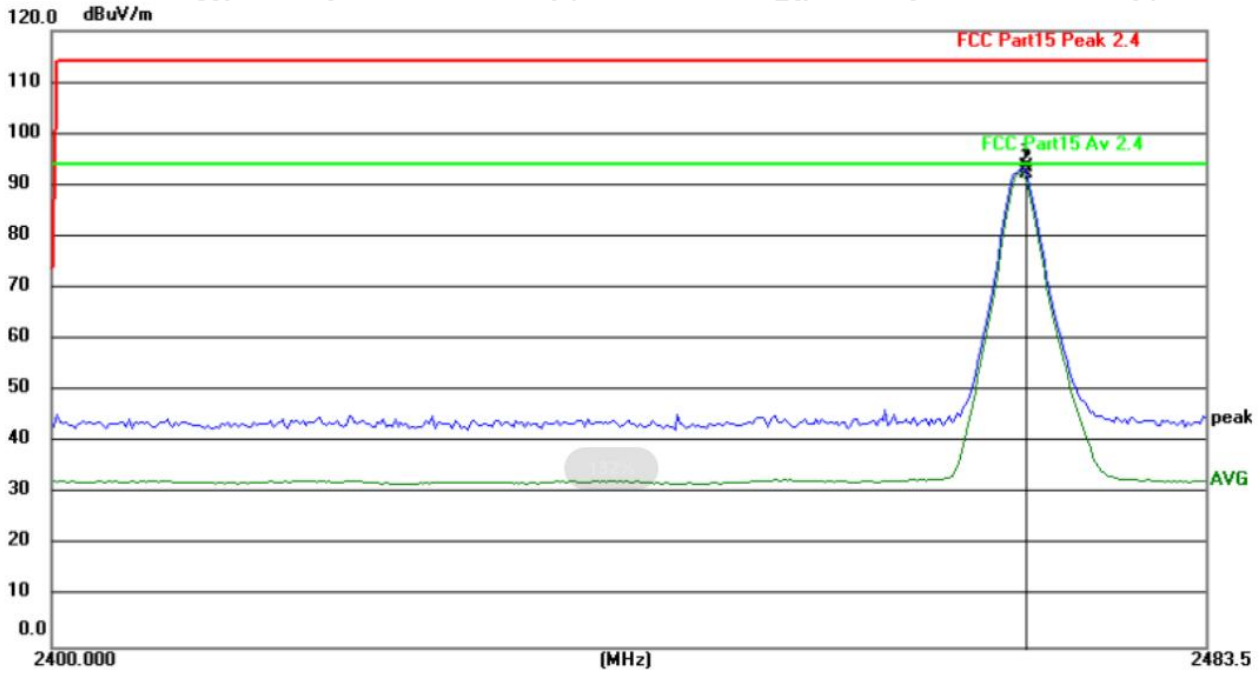
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2451.524	93.75	-1.00	92.75	114.00	-21.25	peak
2	2451.524	93.23	-1.00	92.23	94.00	-1.77	AVG

High Channel(2470MHz)
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2469.736	94.20	-0.96	93.24	114.00	-20.76	peak
2	2469.736	92.84	-0.96	91.88	94.00	-2.12	AVG

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2470.159	94.48	-0.96	93.52	114.00	-20.48	peak
2	2470.159	93.11	-0.96	92.15	94.00	-1.85	AVG

6. BANDWIDTH OF FREQUENCY BAND EDGE

6.1 TEST REQUIREMENT:

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10-2020
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 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation

6.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
g. Test the EUT in the lowest channel, the Highest channel

Note:

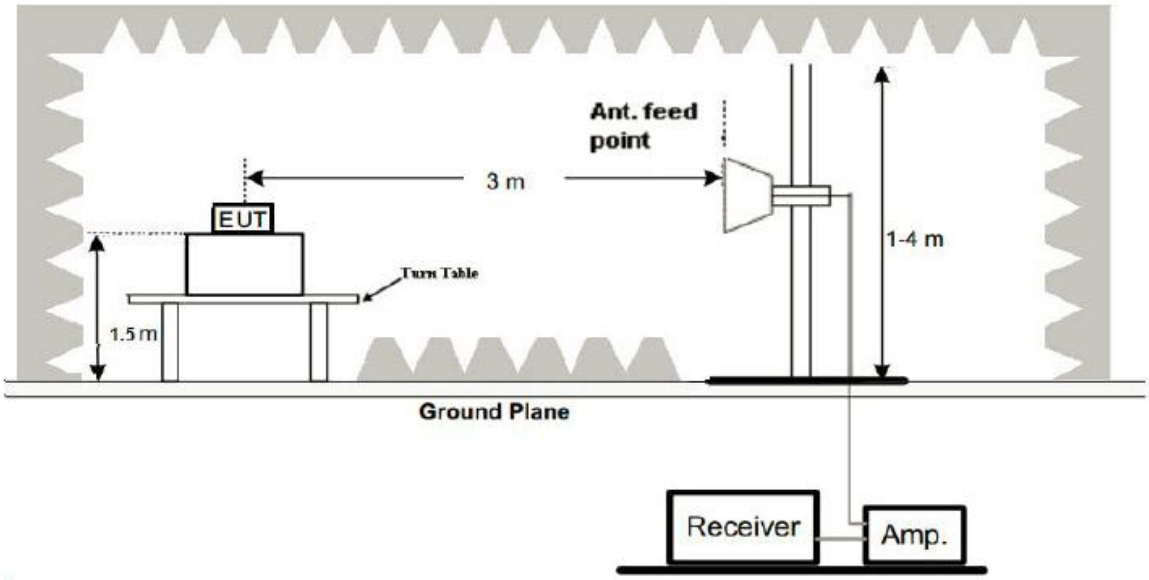
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

6.3 DEVIATION FROM TEST STANDARD

No deviation

6.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



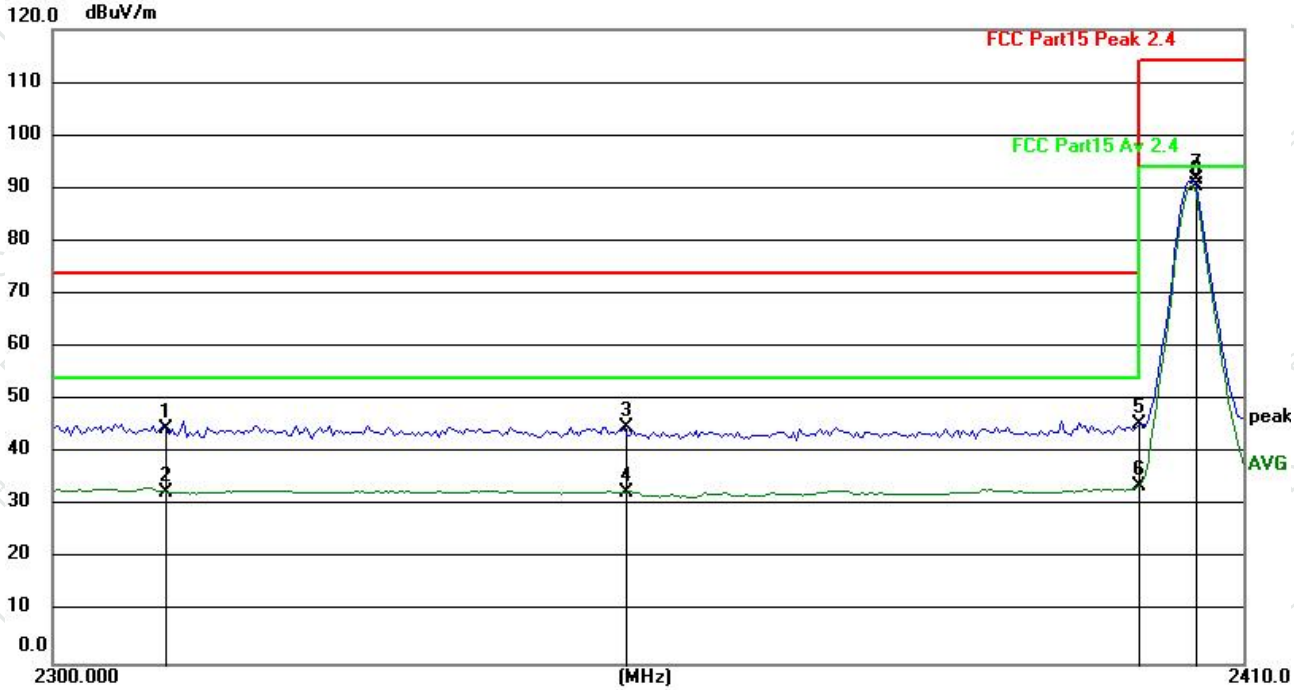
6.5 EUT OPERATING CONDITIONS

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.

6.6 TEST RESULT

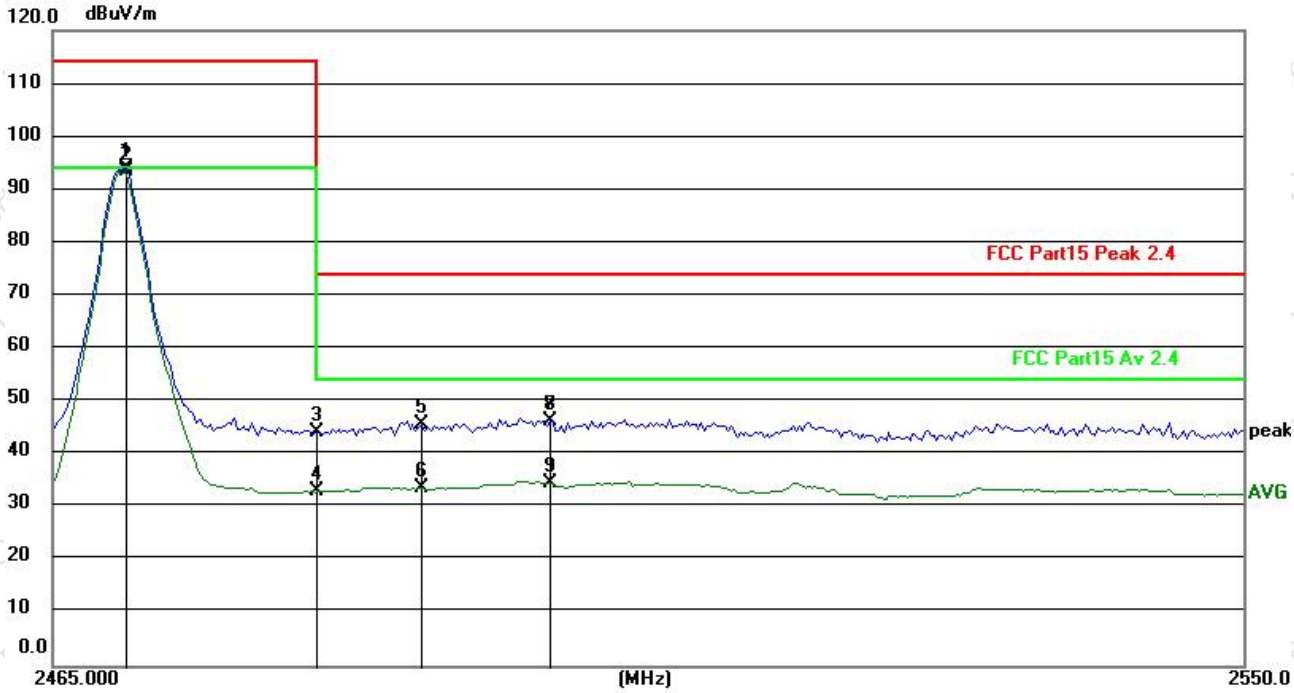
Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	101 kPa	Test Voltage :	DC 3V
Test Mode :	TX Mode		

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.000	45.57	-1.10	44.47	74.00	-29.53	peak
2	2310.230	33.73	-1.10	32.63	54.00	-21.37	AVG
3	2352.159	46.01	-1.06	44.95	74.00	-29.05	peak
4	2352.159	33.72	-1.06	32.66	54.00	-21.34	AVG
5	2400.000	46.44	-1.02	45.42	74.00	-28.58	peak
6	2400.000	34.67	-1.02	33.65	54.00	-20.35	AVG
7	2405.220	92.70	-1.02	91.68	114.00	-22.32	peak
8	2405.220	91.51	-1.02	90.49	94.00	-3.51	AVG

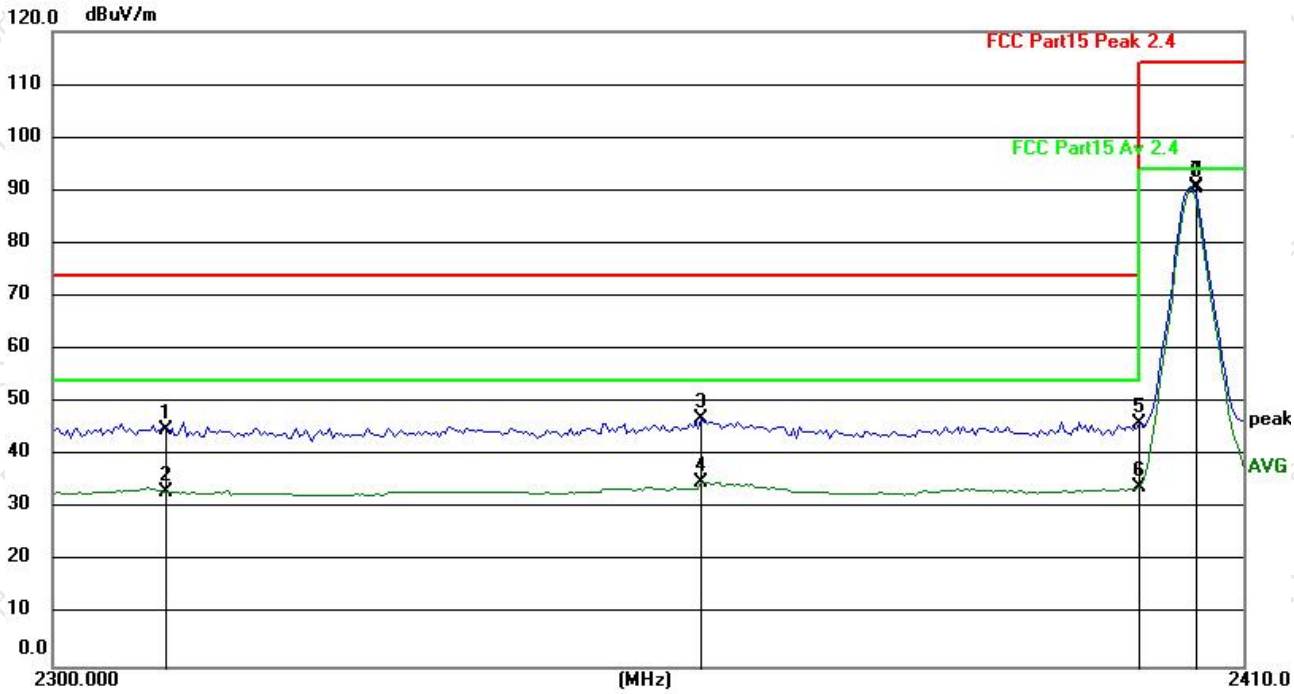
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2470.228	95.00	-0.96	94.04	114.00	-19.96	peak
2	2470.228	94.56	-0.96	93.60	94.00	-0.40	AVG
3	2483.500	45.30	-0.95	44.35	74.00	-29.65	peak
4	2483.500	34.01	-0.95	33.06	54.00	-20.94	AVG
5	2491.000	46.76	-0.95	45.81	74.00	-28.19	peak
6	2491.042	34.56	-0.95	33.61	54.00	-20.39	AVG
7	2500.000	47.39	-0.94	46.45	74.00	-27.55	peak
8	2500.000	47.39	-0.94	46.45	74.00	-27.55	peak
9	2500.137	35.53	-0.94	34.59	54.00	-19.41	AVG

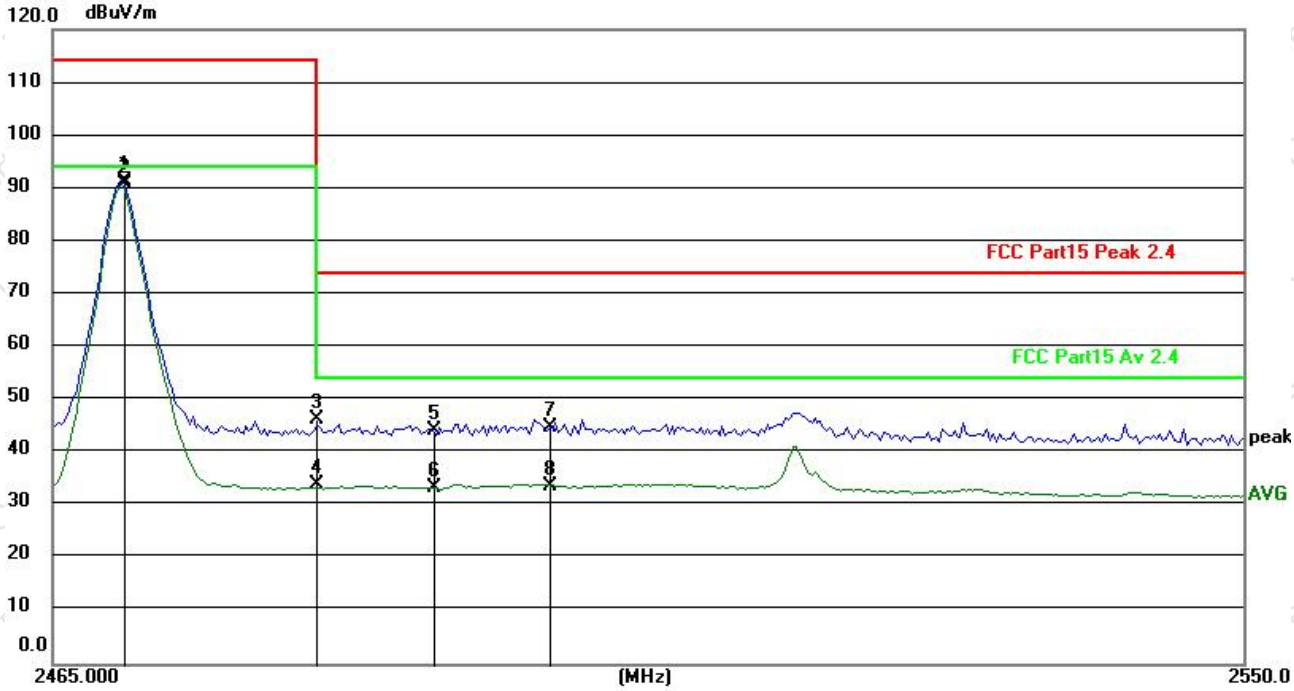
Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	101 kPa	Test Voltage :	DC 3V
Test Mode :	TX Mode		

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.000	46.07	-1.10	44.97	74.00	-29.03	peak
2	2310.230	34.23	-1.10	33.13	54.00	-20.87	AVG
3	2359.312	47.93	-1.05	46.88	74.00	-27.12	peak
4	2359.312	35.88	-1.05	34.83	54.00	-19.17	AVG
5	2400.000	46.94	-1.02	45.92	74.00	-28.08	peak
6	2400.000	35.17	-1.02	34.15	54.00	-19.85	AVG
7	2405.229	91.85	-1.02	90.83	114.00	-23.17	peak
8	2405.229	91.43	-1.02	90.41	94.00	-3.59	AVG

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2469.810	92.40	-0.96	91.44	114.00	-22.56	peak
2	2469.810	91.75	-0.96	90.79	94.00	-3.21	AVG
3	2483.500	47.33	-0.95	46.38	74.00	-27.62	peak
4	2483.500	35.04	-0.95	34.09	54.00	-19.91	AVG
5	2491.676	45.08	-0.95	44.13	74.00	-29.87	peak
6	2491.676	34.30	-0.95	33.35	54.00	-20.65	AVG
7	2500.000	45.71	-0.94	44.77	74.00	-29.23	peak
8	2500.000	34.82	-0.94	33.88	54.00	-20.12	AVG

7. CHANNEL BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10-2020

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.249) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.249(c)	Bandwidth	2400-2483.5	PASS

7.2 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 1-5% of 20 dB BW
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) 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

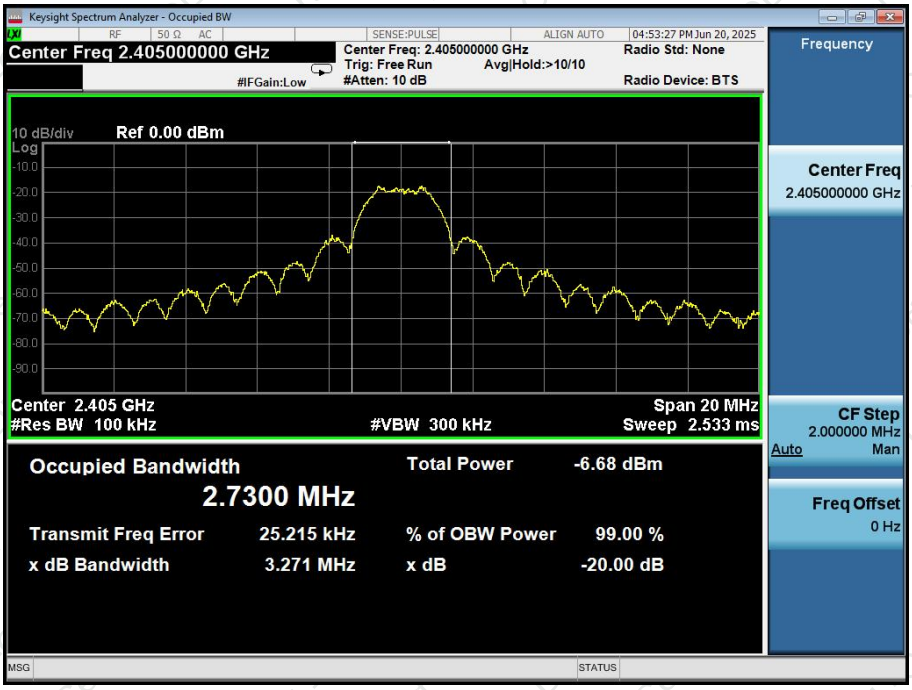
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULT

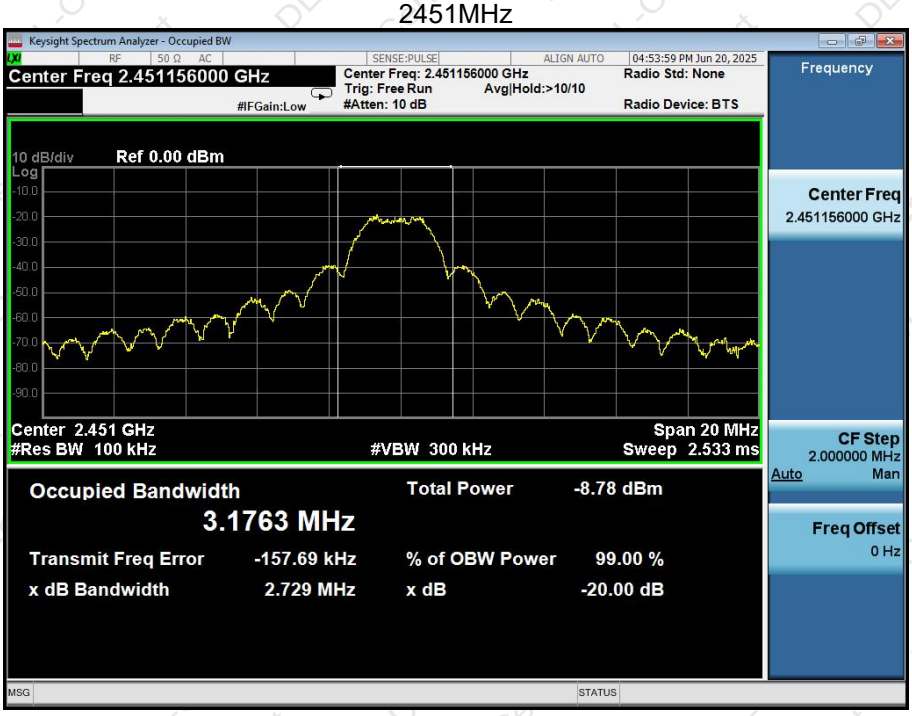
Temperature：	26℃	Relative Humidity：	54%
Test Mode ：	GFSK	Test Voltage ：	DC 3V

Mode	Test channel	20dB Emission Bandwidth (MHz)	Result
GFSK	2405MHz	3.271	Pass
GFSK	2451MHz	2.729	Pass
GFSK	2470MHz	3.515	Pass

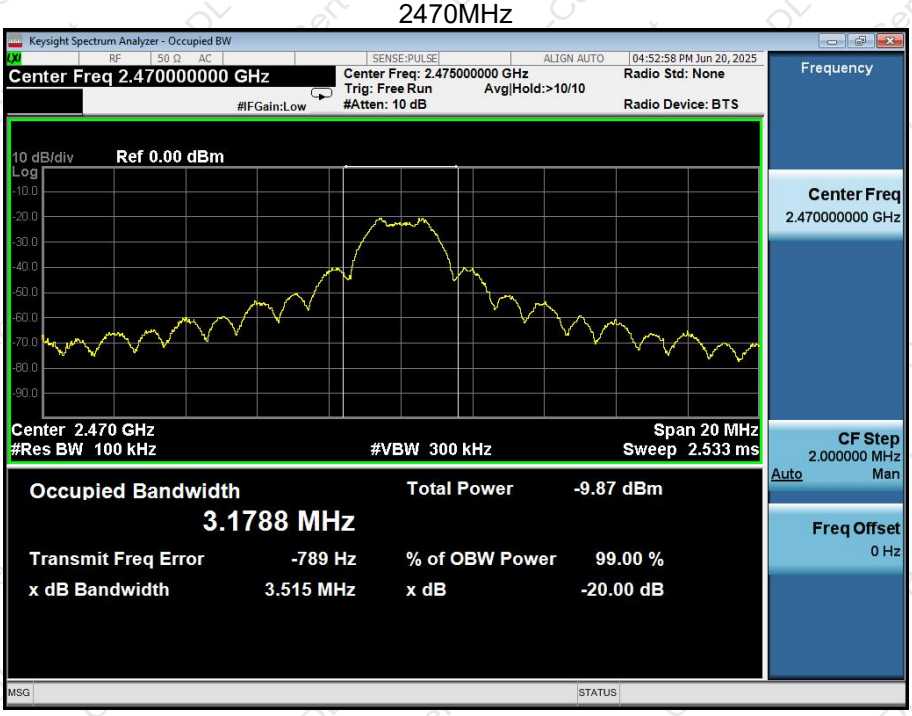
2405MHz



2451MHz



2470MHz



8.ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
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.	
EUT Antenna:	
The antennas are PCB antenna, the best case gain of the antennas are 1.60 dBi, reference to the appendix II for details.	

9. TEST SETUP PHOTO

Reference to the appendix I for details.

10. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※