

TEST REPORT

Applicant : Guangdong Weili Intelligent Development Co., Ltd.

Address : D Zone,Xiehe Industrial Park, South of Laimei Road, Chenghai District, Shantou, 515800 China

Manufacturer : Guangdong Weili Intelligent Development Co., Ltd.

Address : D Zone,Xiehe Industrial Park, South of Laimei Road, Chenghai District, Shantou, 515800 China

Product Name : Remote control car series

Model Number : 284191, 284019-A, 284131, 284161, 284010, K969, K989, 184008, 184008-B, 144010, 124007, 124017, 124016, 124008, 124010, 104006, 104003, 104008, 104020, 104010, 104026, 054308, 064308, 066308, 064315, 064316, 064318, 064319, 074308, 08405, 244010, 30428

Trademark : WL/XKS

FCC ID : 2ASUS-284191

Test Date : Sep. 09, 2026 - Sep. 20, 2026

Date of Report : Sep. 20, 2026

Test Result : This device described above has been tested by NTT, and the test results show that the equipment under test (EUT) is in compliance with the Standard requirements. And it is applicable only to the tested sample identified in the report.

Test Procedure Used:

Standards : FCC CFR Title 47 Part 15 Subpart C Section 15.247
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024
KDB 558074 D01 15.247 Meas Guidance v05r02

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[illegible]

1. General Information

1.1. Description of Device (EUT)

EUT Name : Remote control car series

Model No. : 284191, 284019-A, 284131, 284161, 284010, K969, K989, 184008, 184008-B, 144010, 124007, 124017, 124016, 124008, 124010, 104006, 104003, 104008, 104020, 104010, 104026, 054308, 064308, 066308, 064315, 064316, 064318, 064319, 074308, 08405, 244010, 30428

Model Difference : The product is different for model name and colour .The mains test model is 284191

Power supply : DC 6V (4*1.5V Size"AAA" Battery)

Operation frequency : 2455-2475MHz

Max. RF output power: : 6.17dBm

Modulation : GFSK

Antenna Type : Internal Antenna, Maximum Gain is 0.17dBi

Sample ID : SZNTT26042640E-001#

Sample(s) Status : Engineer sample

Hardware Version : V1.0

Software Version : V1.0

Intend use environment : Residential, commercial and light industrial environment

1.2. Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2455	1	2456	2	2457	3	2458
4	2459	5	2460	6	2461	7	2462
8	2463	9	2464	10	2465	11	2466
12	2467	13	2468	14	2469	15	2470
16	2471	17	2472	18	2473	19	2474
20	2475						

1.3. Summary of test result

RF PART		
Test Items	Test Requirement	Result
Antenna requirement	FCC part 15.203/15.247 (c)	PASS
AC Power Line Conducted Emission	FCC part 15.207	N/A
Conducted Peak Output Power	FCC part 15.247 (b)(3)	PASS
Channel Bandwidth& 99% OCB	FCC part 15.247 (a)(2)	PASS
Power Spectral Density	FCC part 15.247 (e)	PASS
Band Edge	FCC part 15.205/15.209 /15.247(d)	PASS
Spurious Emission	FCC part 15.205/15.209 /15.247(d)	PASS
Remark: N/A is an abbreviation for Not Applicable. Measurement Uncertainty is not taken into account for conformity statement		

1.4. Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.	Hardware Version	Software Version
USB serial port	/	ZH340	/	/
PC	ASUS	U1	/	/

1.5. Test mode

The special RF test software was used to control EUT work in Continuous SRD 2.4G TX mode, and select test channel, wireless mode.

Test mode	Low channel	Middle channel	High channel
GFSK 1M	2455MHz	2462MHz	2475MHz

Note: N/A

1.6. Test configuration

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 Version	sscom5.13.1.exe		
Frequency (MHz)	2455	2462	2475
GFSK	default power	default power	default power

1.7. Block Diagram

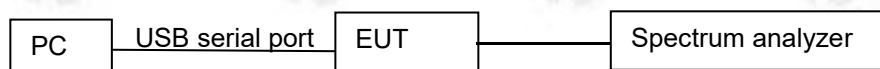
Conducted Emission

N/A

Radiated Emission

EUT

RF Conducted Test



1.8. Test Conditions

Category	Normal Conditions	Extreme Conditions
Temperature range	15-35℃	N/A
Humidity range	20-75%	N/A
Pressure range	86-106kPa	N/A
Power supply	DC 6V	N/A

Note: N/A is an abbreviation for Not Applicable.

1.9. Measurement Uncertainty (95% confidence levels, k=2)

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10 ⁻⁶
Bandwidth	± 1.5 x 10 ⁻⁶
Time	±2%
Duty Cycle	±2%
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(9KHz~30MHz)	±4.51dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB

Remark: When making a conformity declaration based on test results for regulations/standards or specifications, the default is to use Clause 4.2.1 of ILAC-G8:09/2019 and the guidelines on decision rules and conformity declaration in IEC Guide 115:2023.

1.10. Test Facility

Site Description		
Name of Firm	:	Shenzhen NTT Testing Technology Co.,Ltd.
Site Location	:	1B, Building 2, Factory Building & 103, Building 3, Factory Building, Dayang Industrial Park No.4, Industrial Avenue, Tangwei Community, Fuhai Sub-district, Bao 'an District, Shenzhen City, China
FCC Designation Number	:	CN3446
FCC Test Firm Registration Number	:	129414

1.11. Test Equipment

Conducted Test Site

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
944 Shielded Room	HSRCE944	/	HTEC	2025/4/30	2028/4/29
EMI Test Receiver	ESCI	100881/003	ROHDE&SCHWARZ	2026/09/04	2027/09/03
LISN	AMN6500	101185	ROHDE&SCHWARZ	2026/09/04	2027/09/03
LISN	NNLK 8129	00603	SCHWARZBECK	2026/09/04	2027/09/03
Pulse Limiters	VTSD 9561 F	00343	SCHWARZBECK	2026/09/04	2027/09/03
Cable	RG223-2M	/	RG	2026/09/04	2027/09/03

Radiated Test Site(Below 1G and Above 1G)&RF Test Site

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
966 Shielded Room	966 Room	/	EMToni	2025/07/24	2028/07/23
EMI Test Receiver	ESPI	101018	ROHDE&SCHWARZ	2026/09/04	2027/09/03
Amplifier (30MHz-1GHz)	BBV 9745	00431	SCHWARZBECK	2026/09/09	2027/09/08
Bilog Antenna (30MHz-1GHz)	VULB9168	1858	SCHWARZBECK	2026/09/05	2027/09/04
Horn antenna (1GHz-18GHz)	BBHA 9120 D	02622	SCHWARZBECK	2026/09/05	2027/09/04
Preamplifier (1GHz-18GHz)	BBV 9718D	0024	SCHWARZBECK	2026/09/04	2027/09/03
Spectrum Analyzer (10Hz-40GHz)	FSV 40	100952	ROHDE&SCHWARZ	2026/09/04	2027/09/03
Preamplifier (18GHz-40GHz)	BBV 9721	0056	SCHWARZBECK	2026/09/04	2027/09/03
Double Ridge Guide Horn Antenna (18GHz-40GHz)	SAS-574	588	A.H.System	2026/09/05	2027/09/04
Loop Antenna (9KHz-30MHz)	FMZB 1513-60	00115	SCHWARZBECK	2026/09/04	2027/09/03
MXG Signal Analyzer	N9020A	MY491007 30	Agilent	2026/09/04	2027/09/03
MXG Vector Signal Generator	N5182A	MY501449 20	Agilent	2026/09/04	2027/09/03
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	/	ROHDE&SCHWARZ	2026/09/07	2027/09/06

Power Sensor	MW100-RFCB-2	MW260105 NTT-64	MWRFTest	2026/09/04	2027/09/03
RF Swith	MW100-RFCB-1	MW260105 NTT-64	MWRFTest	2026/09/04	2027/09/03
Cable	RG223-3M	/	DA	2026/09/04	2027/09/03
Cable	RG223-12M	/	DA	2026/09/04	2027/09/03
Cable	SFT205-NMN MSW-2.5M	/	DA	2026/09/04	2027/09/03
Cable	SFT205-NMN M-12M	/	DA	2026/09/04	2027/09/03
Cable	UCA500-NJW SM-1.5M	017	MWRFTest	2026/09/04	2027/09/03

Test software

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ-EMC	Ver.EMC-CON 3A1.1+
2	EMC radiation test system	FALA	EZ-EMC	Ver.FA-03A2 RE+
3	RF test system	TACHOY	RFTest	V1.0.0
4	RF communication test system	TACHOY	RFTest	V1.0.0

2. Conducted emission at the mains terminals test

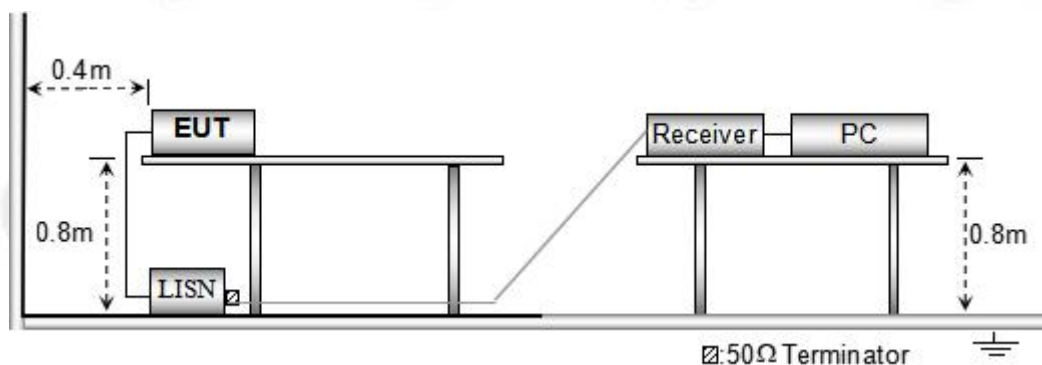
2.1. Limit

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.2. Test Setup



2.3. Test Procedure

1. 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.
2. 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.
3. 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.
4. LISN at least 80 cm from nearest part of EUT chassis.
5. For the actual test configuration, please refer to the related Item - EUT Test Photos.

2.4. Test Result

N/A

EUT power supply is provided by DC, is not applicable in this Test report.

3. Radiated Spurious Emissions

3.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247
 Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;
 ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024
 Test Result: PASS
 Measurement Distance: 3m

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
	Average	1MHz	3MHz	Average

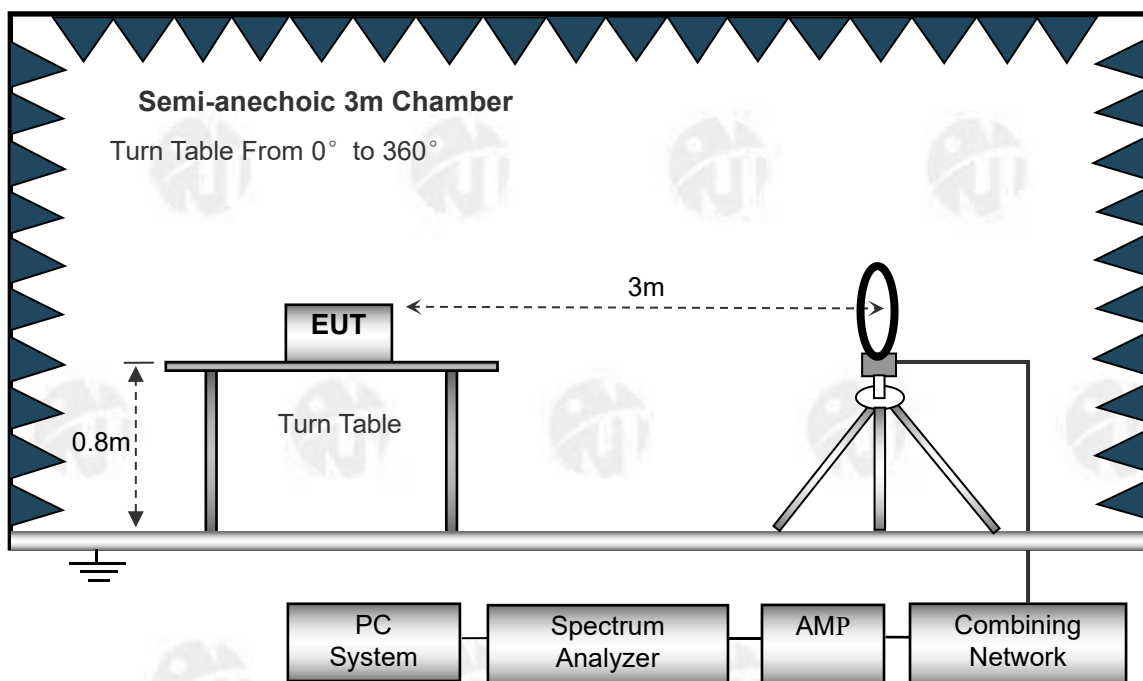
Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log(2400/F(kHz)) + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log(24000/F(kHz)) + 40
1.705 ~ 30	30	30	100 * 30	20log(30) + 40
30 ~ 88	100	3	100	20log(100)
88 ~ 216	150	3	150	20log(150)
216 ~ 960	200	3	200	20log(200)
Above 960	500	3	500	20log(500)

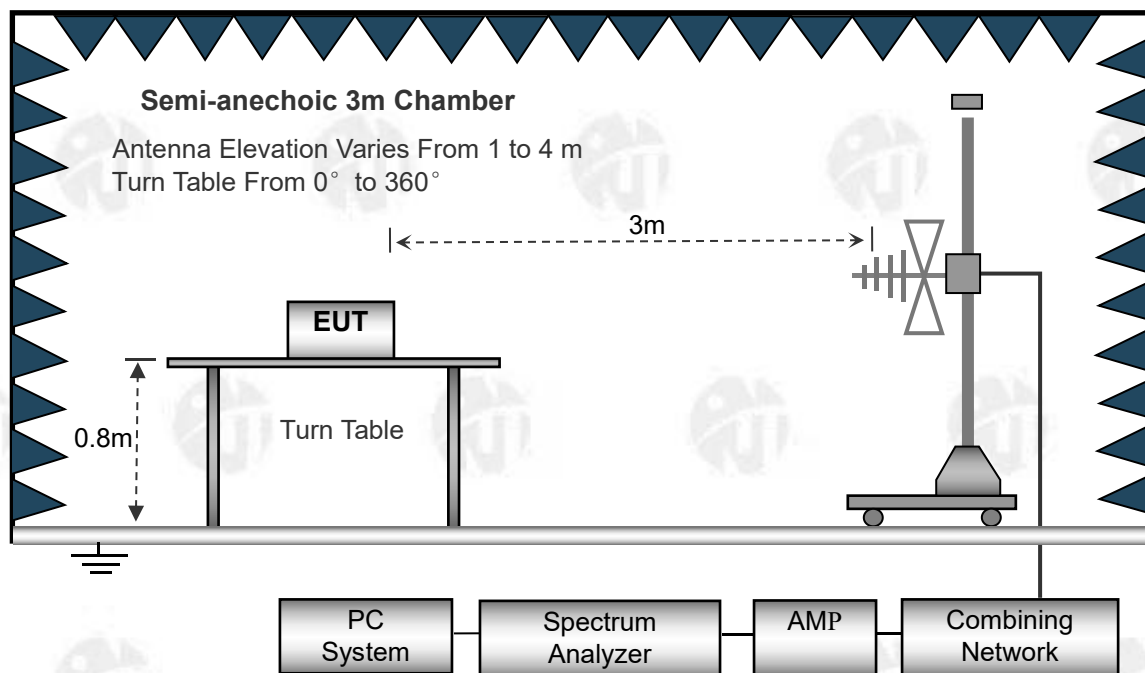
3.2. Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.

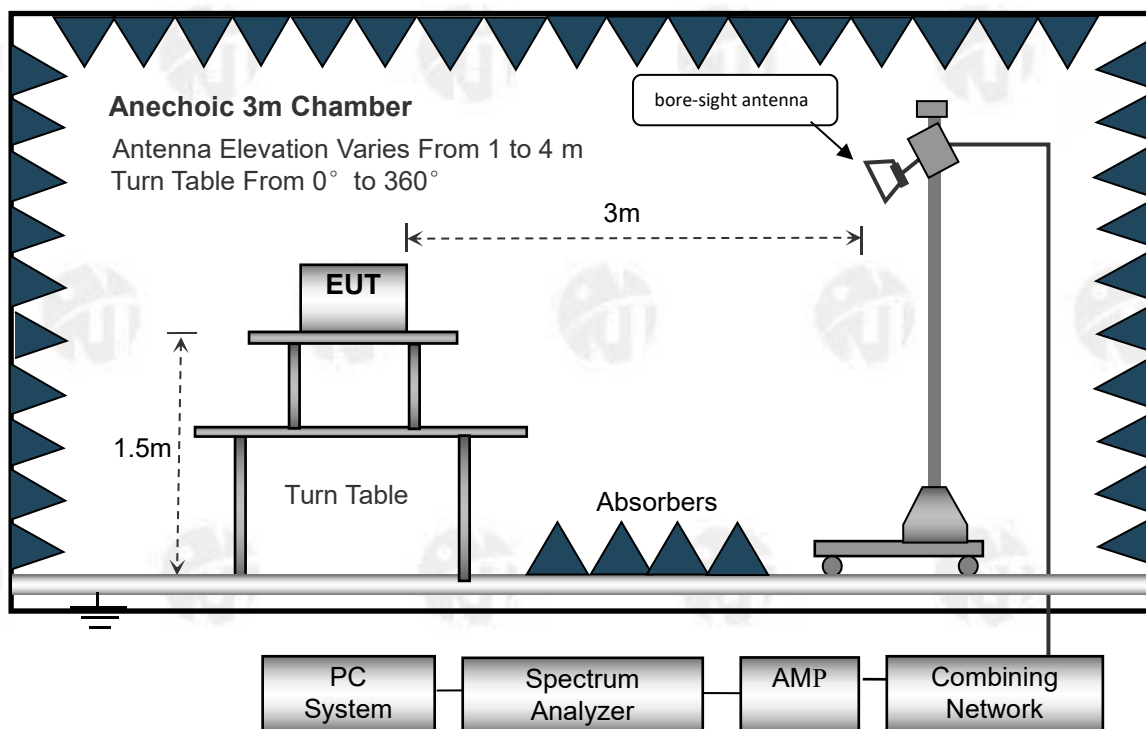
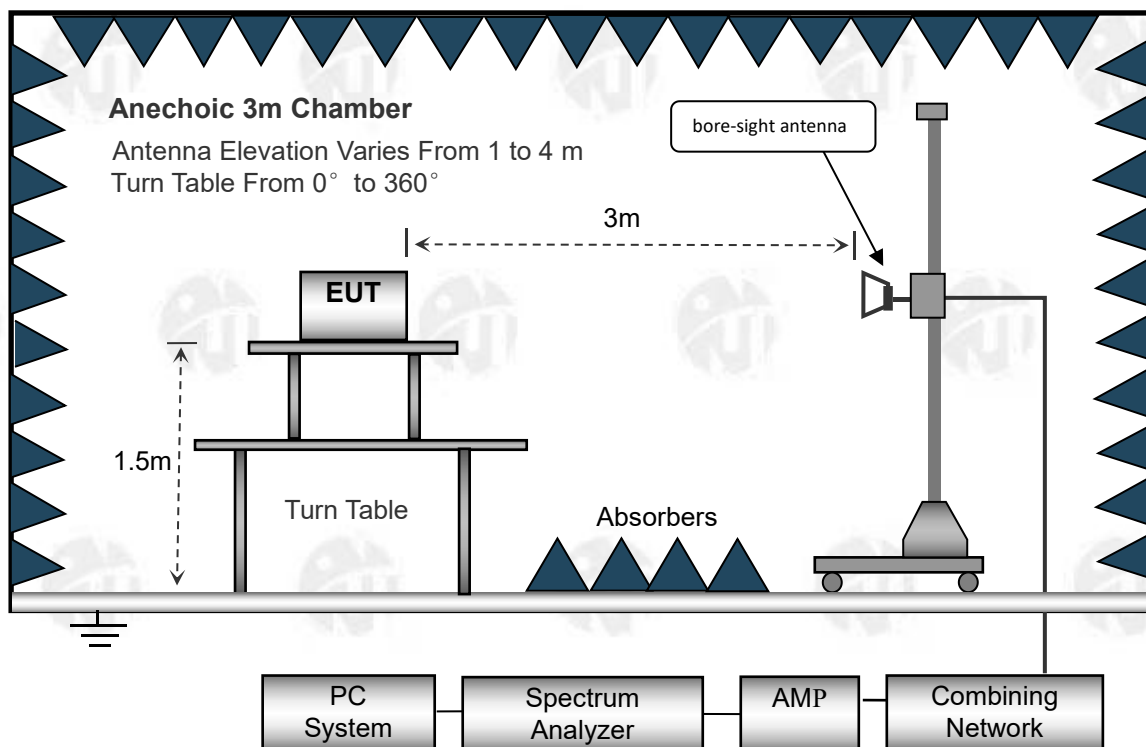
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



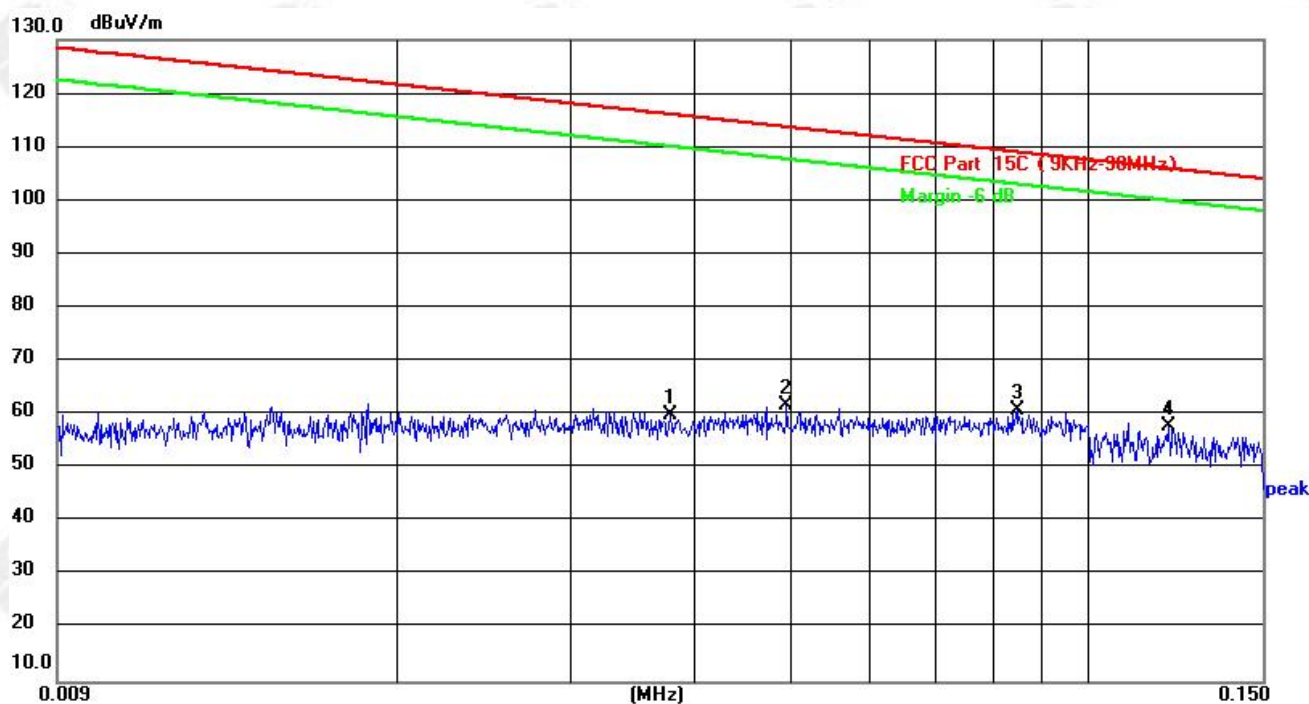
3.3. Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in Z axis,so the worst data were shown as follow.
8. A 2.4GHz high - pass filter is used during radiated emissions above 1GHz measurement.

3.4. Test Result

Test Frequency: 9KHz~30MHz

Radiation Emission Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	EUT:Z axis
Test Voltage :	DC 6V	Test Mode	SRD 2.4G transmitting



No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	0.0377	39.67	20.27	59.94	116.08	-56.14	peak
2	0.0494	41.45	20.21	61.66	113.73	-52.07	peak
3	0.0846	40.79	20.05	60.84	109.05	-48.21	peak
4 *	0.1205	37.73	20.07	57.80	105.98	-48.18	peak

Note1:

Pre-scan in the all of mode, the worst case in of was recorded.

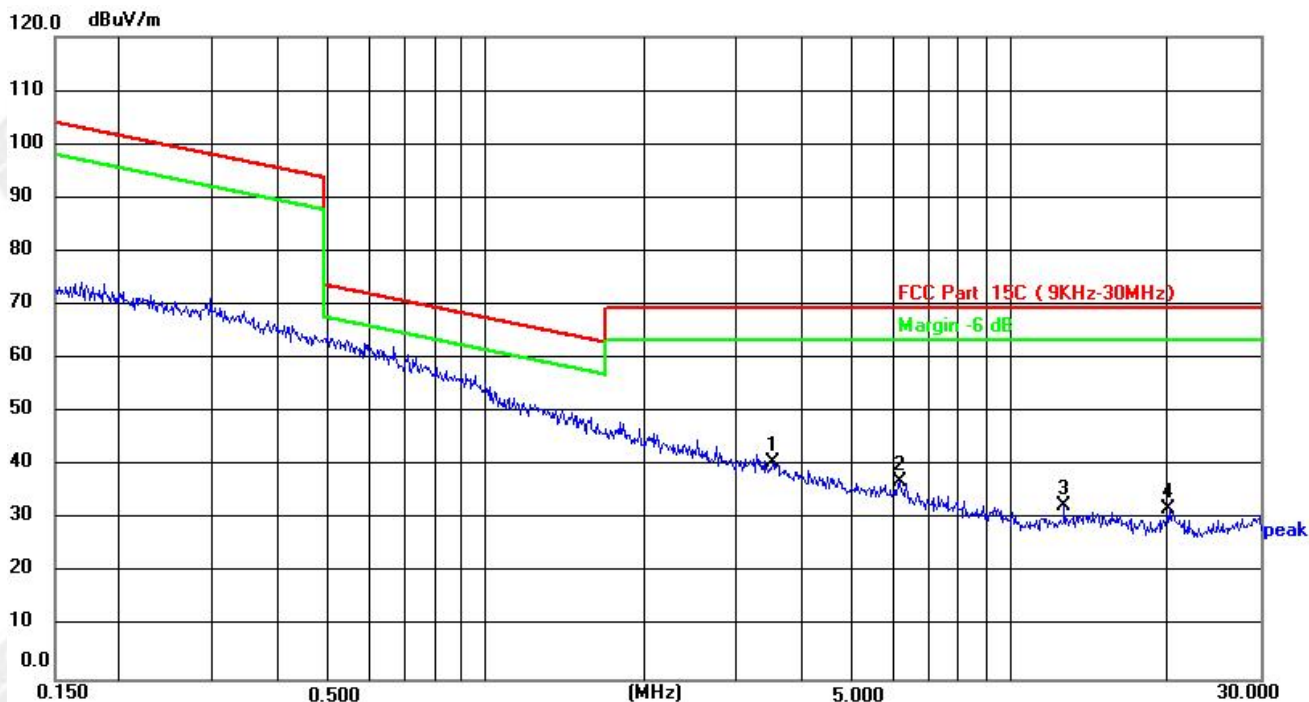
Factor = antenna factor + cable loss – pre-amplifier.

Margin = Emission Level- Limit.

Worst case:EUT:Z axis.

All the modes have tested and recorded the worst GFSK/2455MHz in the report

Radiation Emission Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	EUT:Z axis
Test Voltage :	DC 6V	Test Mode	SRD 2.4G transmitting



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	3.5409	20.51	20.13	40.64	69.54	-28.90	peak
2	6.1371	17.05	20.10	37.15	69.54	-32.39	peak
3	12.6892	12.17	20.33	32.50	69.54	-37.04	peak
4	20.1517	11.83	20.12	31.95	69.54	-37.59	peak

Note1:

Pre-scan in the all of mode, the worst case in of was recorded.

Factor = antenna factor + cable loss – pre-amplifier.

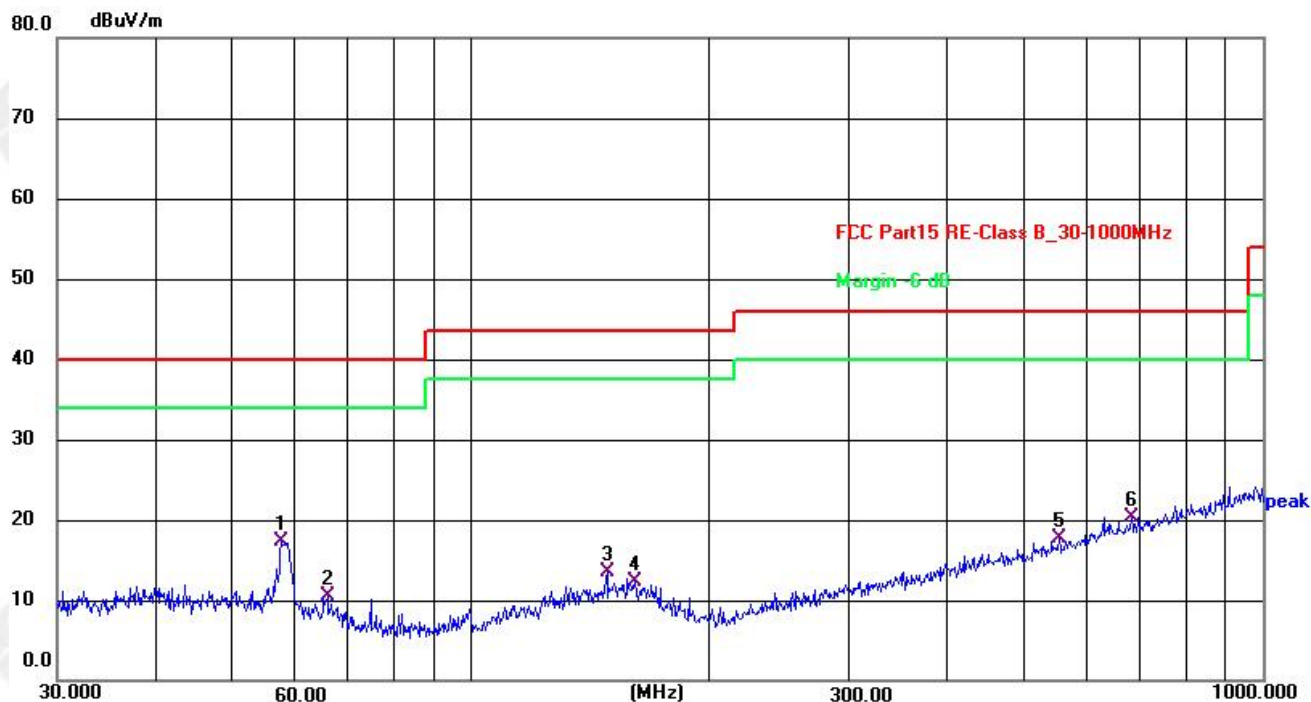
Margin = Emission Level- Limit.

Worst case:EUT:Z axis.

All the modes have tested and recorded the worst GFSK/2455MHz in the report

Test Frequency : 30MHz ~ 1GHz

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 6V	Test Mode	SRD 2.4G transmitting



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	57.5940	34.17	-16.85	17.32	40.00	-22.68	QP
2	65.8030	28.50	-17.99	10.51	40.00	-29.49	QP
3	148.4410	28.57	-15.09	13.48	43.50	-30.02	QP
4	160.9090	27.31	-15.00	12.31	43.50	-31.19	QP
5	552.8832	28.29	-10.61	17.68	46.00	-28.32	QP
6	682.3484	28.68	-8.38	20.30	46.00	-25.70	QP

Note:

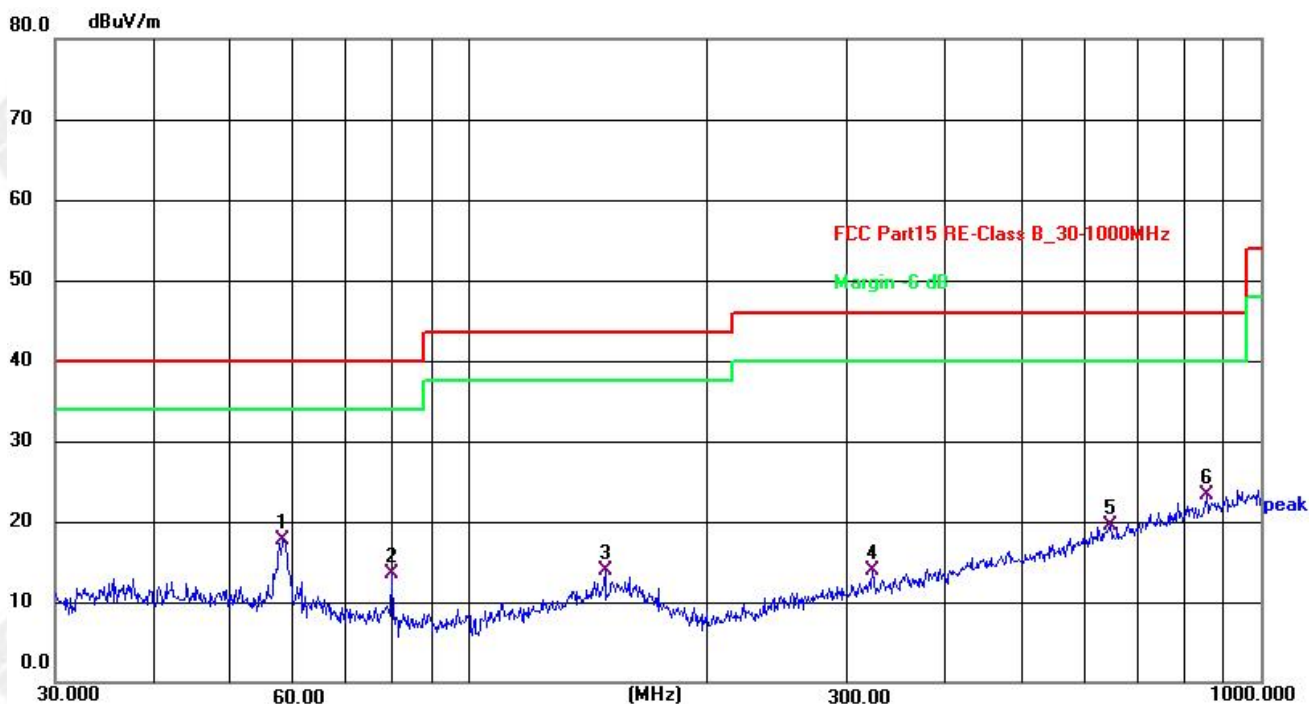
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

2. All the modes have tested and recorded the worst GFSK/2455MHz in the report

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 6V	Test Mode	SRD 2.4G transmitting



No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1 *	57.9992	34.60	-16.89	17.71	40.00	-22.29	QP
2	79.8002	33.72	-20.21	13.51	40.00	-26.49	QP
3	148.4410	29.04	-15.09	13.95	43.50	-29.55	QP
4	323.3203	28.61	-14.61	14.00	46.00	-32.00	QP
5	645.1194	28.42	-8.84	19.58	46.00	-26.42	QP
6	854.0247	29.37	-5.99	23.38	46.00	-22.62	QP

Note:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

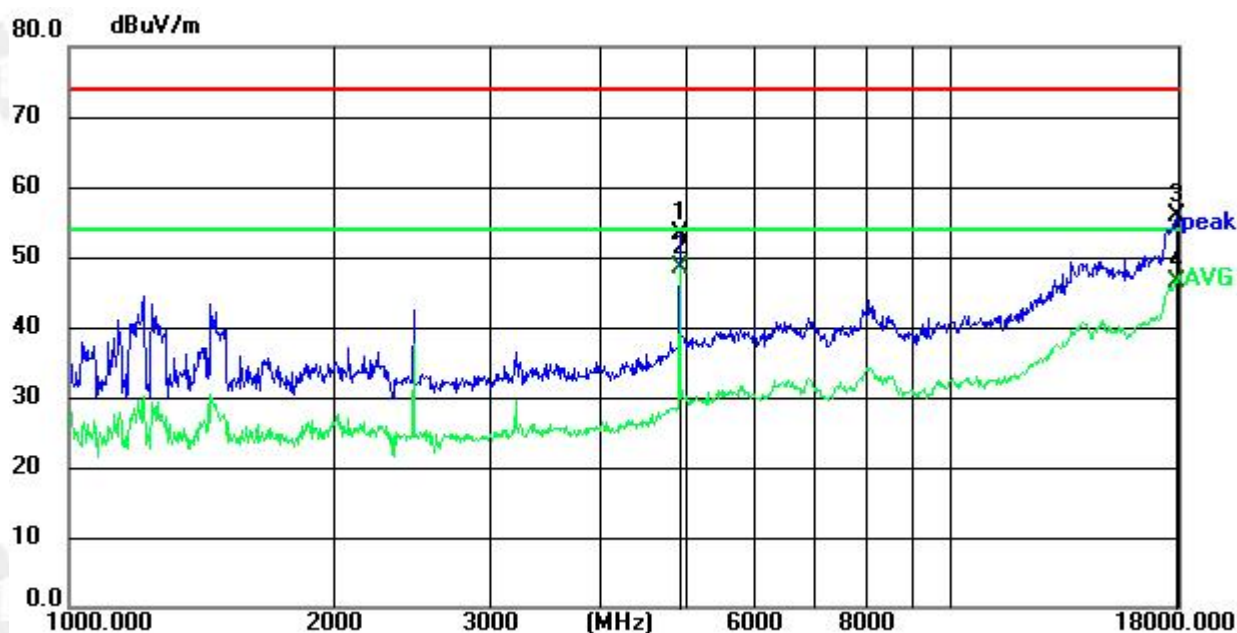
Emission Level = Reading + Factor

Margin=Emission Level-Limit

2. All the modes have tested and recorded the worst GFSK/2455MHz in the report

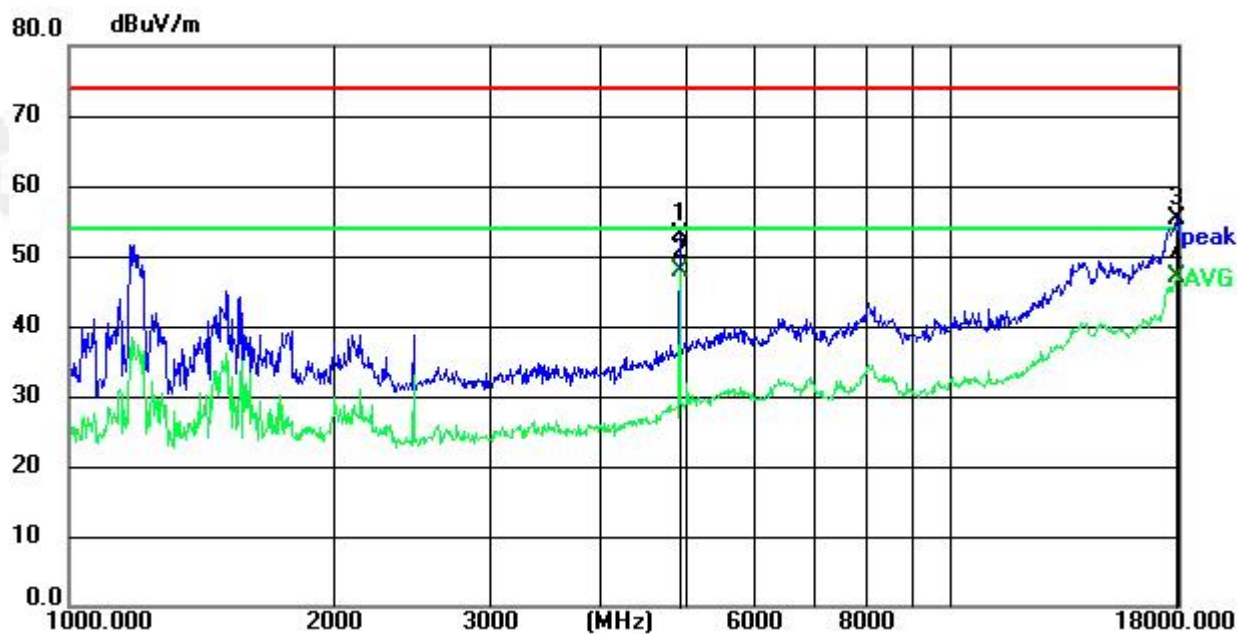
Test Frequency 1GHz-18GHz:

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 6V	Test Mode	2455MHz



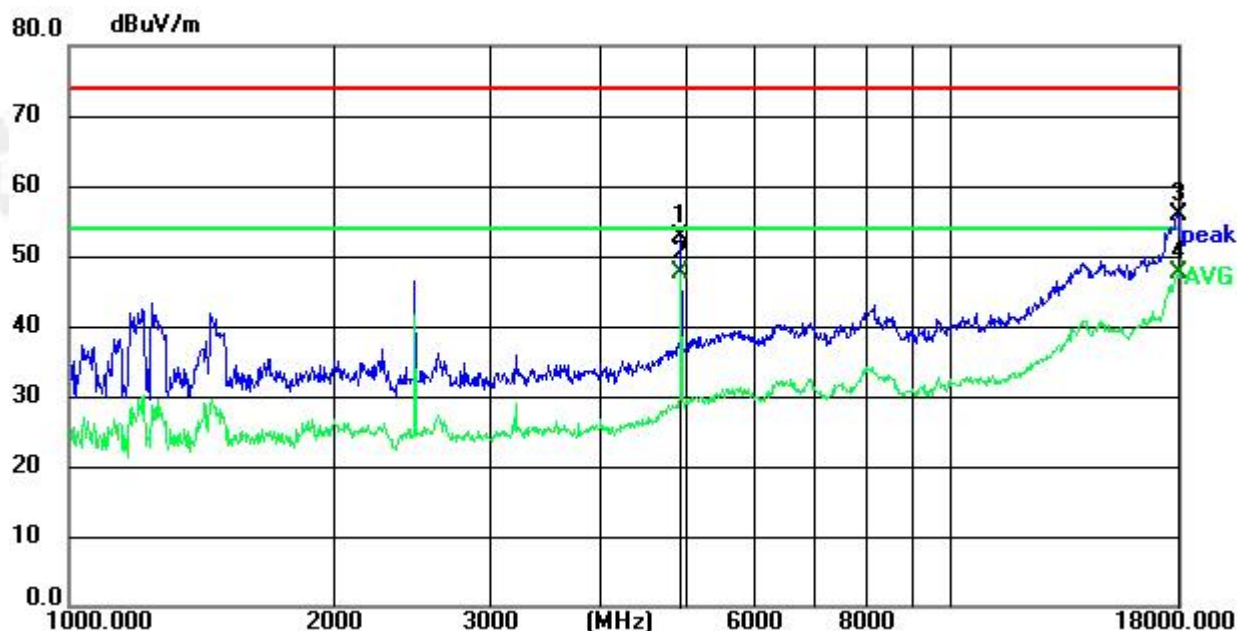
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4911.7000	52.76	0.52	53.28	74.00	-20.72	peak
2 *	4911.7000	47.80	0.52	48.32	54.00	-5.68	AVG
3	17942.2000	36.66	19.15	55.81	74.00	-18.19	peak
4	17942.2000	27.36	19.15	46.51	54.00	-7.49	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 6V	Test Mode	2455MHz



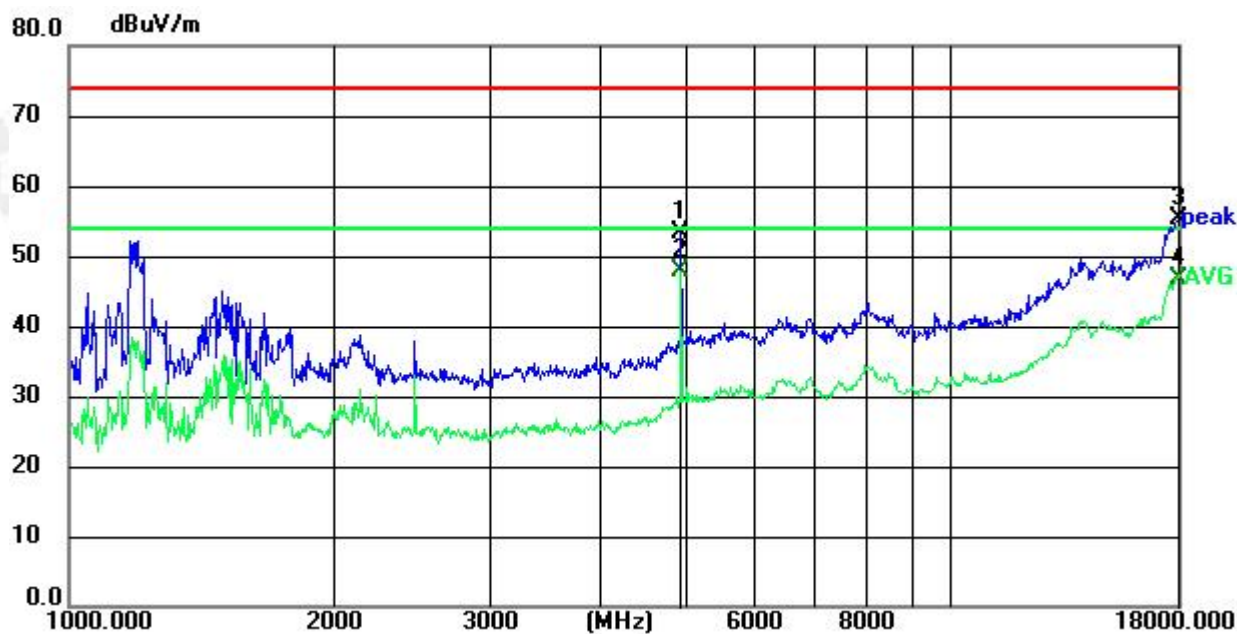
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4911.7000	52.52	0.52	53.04	74.00	-20.96	peak
2 *	4911.7000	47.33	0.52	47.85	54.00	-6.15	AVG
3	17903.1000	36.45	18.90	55.35	74.00	-18.65	peak
4	17903.1000	27.99	18.90	46.89	54.00	-7.11	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 6V	Test Mode	2462MHz



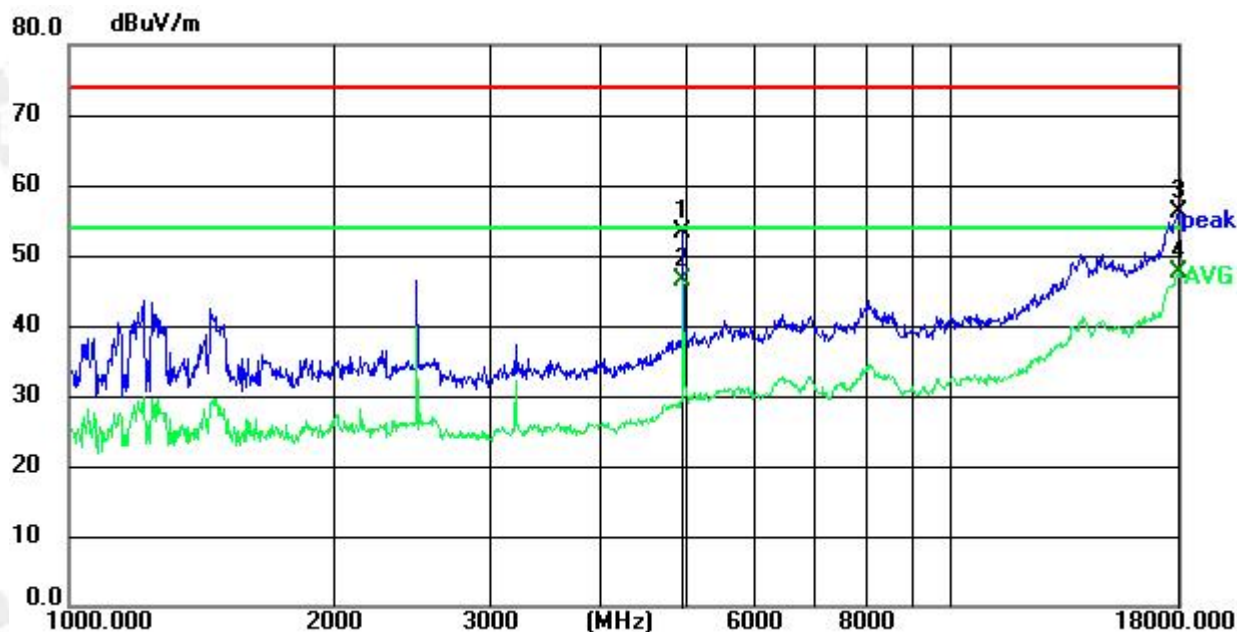
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4925.3000	52.02	0.56	52.58	74.00	-21.42	peak
2	4925.3000	47.01	0.56	47.57	54.00	-6.43	AVG
3	17986.4000	36.56	19.42	55.98	74.00	-18.02	peak
4 *	17986.4000	28.19	19.42	47.61	54.00	-6.39	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 6V	Test Mode	2462MHz



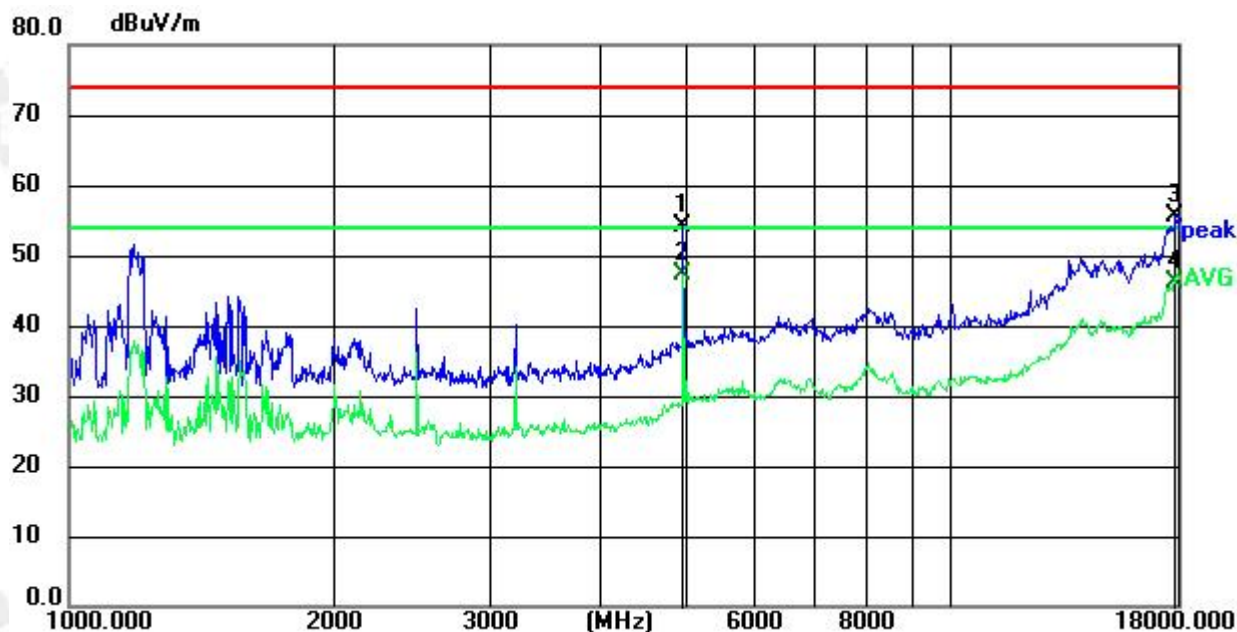
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4925.3000	52.74	0.56	53.30	74.00	-20.70	peak
2 *	4925.3000	47.36	0.56	47.92	54.00	-6.08	AVG
3	18000.0000	35.89	19.51	55.40	74.00	-18.60	peak
4	18000.0000	27.33	19.51	46.84	54.00	-7.16	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 6V	Test Mode	2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4952.5000	52.52	0.65	53.17	74.00	-20.83	peak
2	4952.5000	45.88	0.65	46.53	54.00	-7.47	AVG
3	17996.6000	36.76	19.49	56.25	74.00	-17.75	peak
4 *	17996.6000	28.07	19.49	47.56	54.00	-6.44	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 6V	Test Mode	2475MHz



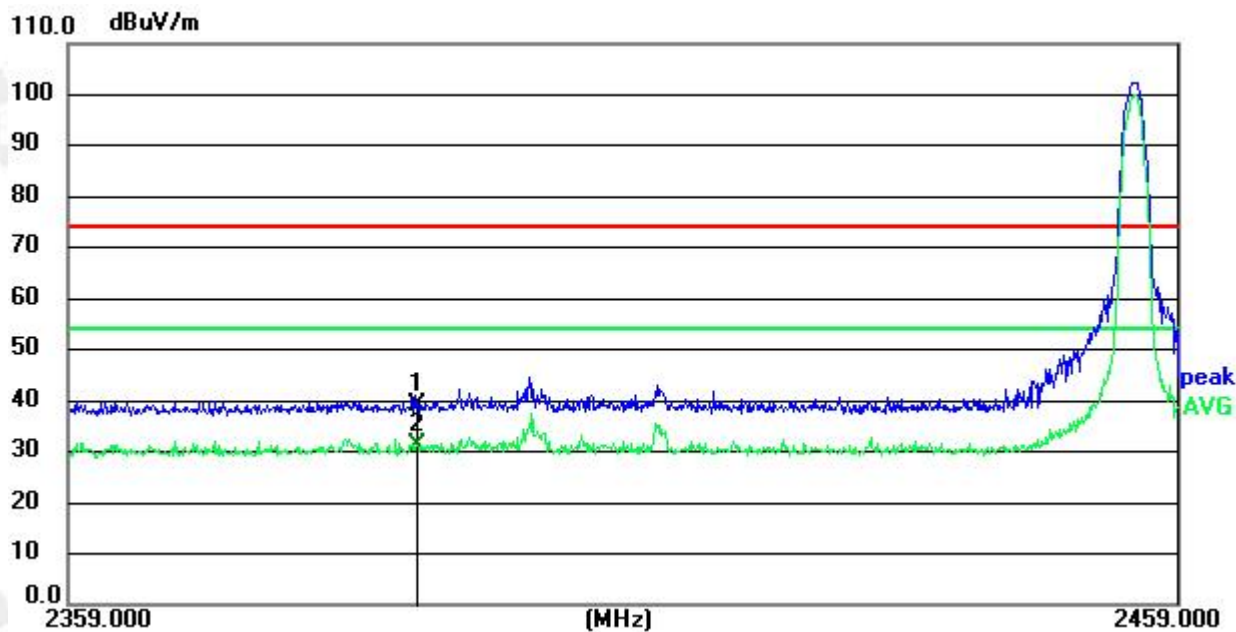
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4950.8000	53.42	0.65	54.07	74.00	-19.93	peak
2 *	4950.8000	46.58	0.65	47.23	54.00	-6.77	AVG
3	17865.7000	36.89	18.67	55.56	74.00	-18.44	peak
4	17865.7000	27.53	18.67	46.20	54.00	-7.80	AVG

Note:

1. Measurement = Reading + Factor
2. Factor = Antenna Factor + Cable loss - Pre Amplifier gain
3. Margin= Emission Level - Limit.
4. Pre-scan GFSK modulation, and found the GFSK modulation which it is worse case, so only show the test data for worse case.
5. From 18GHz to 25GHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

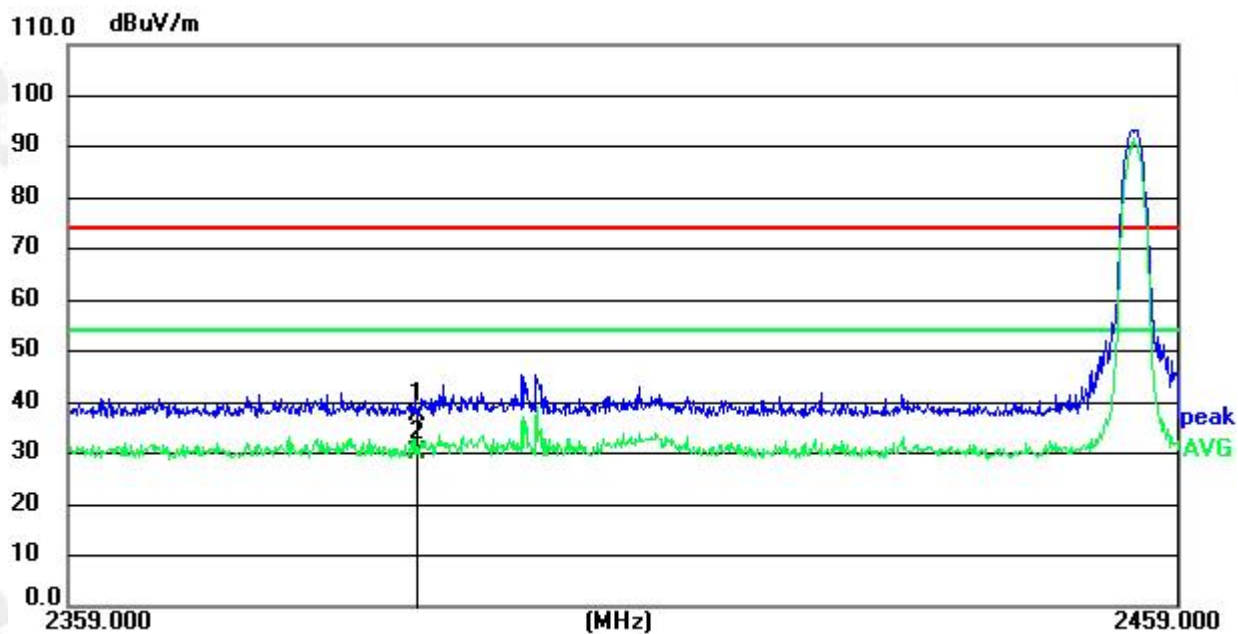
Radiated Band Emission Measurement:

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 6V	Test Mode	2455MHz



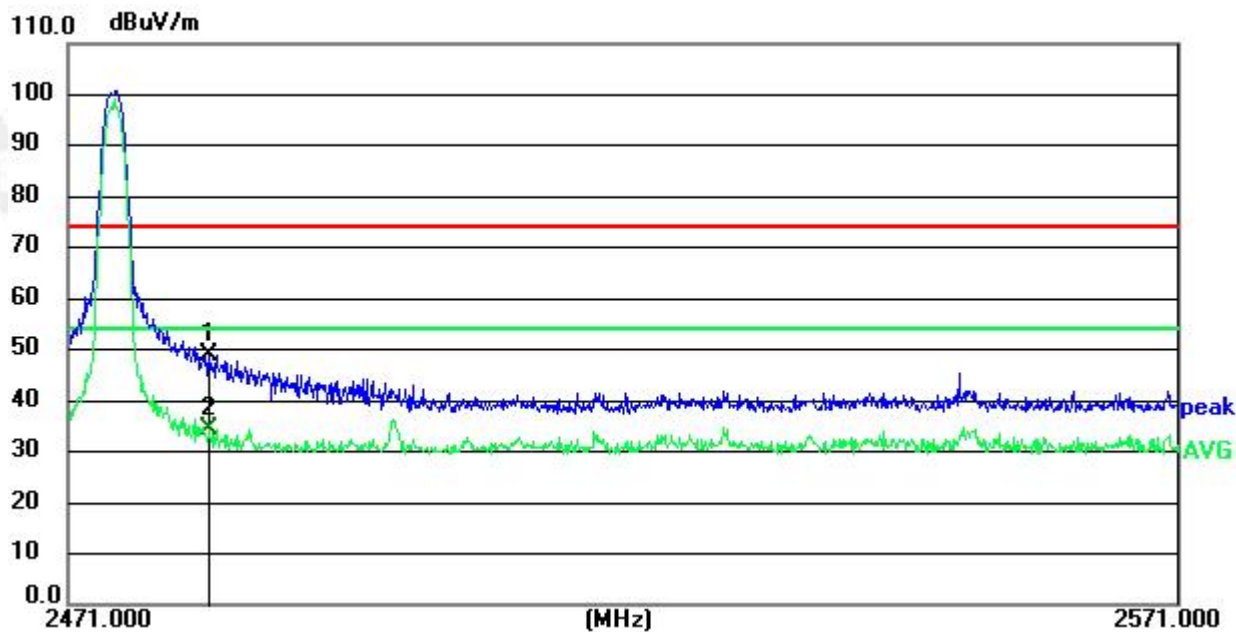
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.0000	43.99	-4.89	39.10	74.00	-34.90	peak
2 *	2390.0000	36.08	-4.89	31.19	54.00	-22.81	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 6V	Test Mode	2455MHz



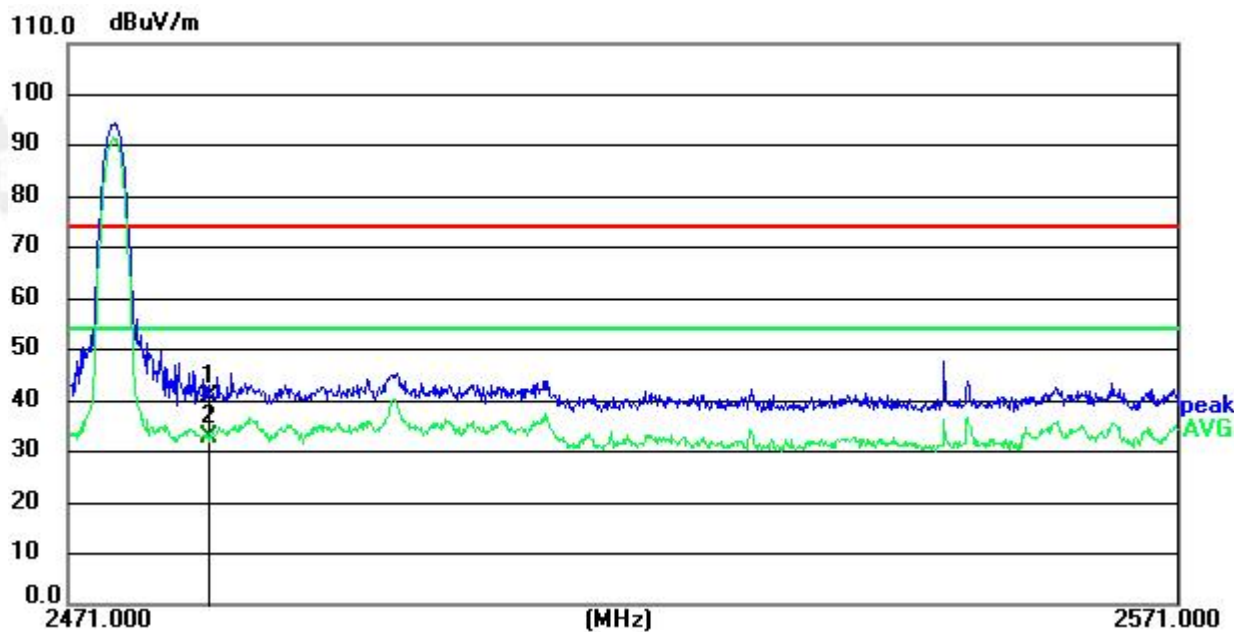
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.0000	42.60	-4.89	37.71	74.00	-36.29	peak
2 *	2390.0000	35.08	-4.89	30.19	54.00	-23.81	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 6V	Test Mode	2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5000	53.66	-4.76	48.90	74.00	-25.10	peak
2 *	2483.5000	39.14	-4.76	34.38	54.00	-19.62	AVG

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 6V	Test Mode	2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5000	45.27	-4.76	40.51	74.00	-33.49	peak
2 *	2483.5000	37.55	-4.76	32.79	54.00	-21.21	AVG

Note:

1. Measurement = Reading + Factor
2. Factor = Antenna Factor + Cable loss - Pre Amplifier gain
3. Margin= Emission Level - Limit.
4. Only the worst Data GFSK mode Record in the report

4. Conducted Spurious Emissions

4.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247
Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to
C63.10a-2024
Test Result: PASS

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

4.2. Test Setup



4.3. Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
3. Establish a reference level by using the following procedure
 - a) Set instrument center frequency to DTS channel center frequency.
 - b) Set the span to ≈ 1.5 times the DTS bandwidth.
 - c) Set the RBW = 100 kHz.
 - d) Set the VBW $\approx [3 \times \text{RBW}]$.
 - e) Detector = peak.
 - f) Sweep time = No faster than coupled (auto) time.
 - g) Trace mode = max hold.
 - h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum PSD level.Note that the channel found to contain the maximum PSD level can be used to establish the reference level.
4. Establish an emission level by using the following procedure:
 - a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.NOTE—the number of points can also be increased for large spans to retain frequency resolution
 - b) Set the RBW = 100 kHz.
 - c) Set the VBW $\geq [3 \times \text{RBW}]$.
 - d) Detector = peak.
 - e) Sweep time = No faster than coupled (auto) time.
 - f) Trace mode = max-hold.
 - g) Allow trace to fully stabilize.
 - h) Use the peak marker function to determine the maximum amplitude level.

4.4. Test Result

Please see the attachment for data.

5. Band Edge Measurement

5.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024

Test Limit: Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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 in §15.209(a) (see §15.205(c)).

Test Mode: Transmitting

5.2. Test Setup



5.3. Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
3. Establish a reference level by using the following procedure
 - a) Set instrument center frequency to DTS channel center frequency.
 - b) Set the span to ≥ 1.5 times the DTS bandwidth.
 - c) Set the RBW = 100 kHz.
 - d) Set the VBW $\geq [3 \times \text{RBW}]$.
 - e) Detector = peak.
 - f) Sweep time = No faster than coupled (auto) time.
 - g) Trace mode = max hold.
 - h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

4. Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

- b) Set the RBW = 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Sweep time = No faster than coupled (auto) time.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

5.4. Test Result

Please see the attachment for data.

6. -6 dB Bandwidth and 99% Bandwidth Measurement

6.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024

6.2. Test Setup



6.3. Test Procedure

DTS Bandwidth

- a) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- b) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Trace mode = max-hold.
- f) Sweep = No faster than coupled (auto) time.
- g) Allow the trace to stabilize.

Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-6 dB down amplitude”. If a marker is below this “-6 dB down amplitude” value, then it shall be as close as possible to this value.

99% Bandwidth

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.

Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

6.4. Test Result

Please see the attachment for data.

7. Maximum Peak Output Power

7.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024

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

7.2. Test Setup



7.3. Test Procedure

KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

section 8.3.1.1 (For SRD 2.4G)

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the DTS bandwidth.

- Set the RBW $\geq$ DTS bandwidth.
- Set VBW ≥ 3 RBW.
- Set span $\geq 3 \times$ RBW
- Sweep time = auto couple.
- Detector = peak.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use peak marker function to determine the peak amplitude level.

section 8.3.1.2 (For WIFI)

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

- Set the RBW = 1% to 5% of the OBW, not to exceed 1 MHz..
- Set the VBW $\geq 3 \times$ RBW
- Set the span $\geq 1.5 \times$ OBW.
- Detector = RMS.
- Sweep time = auto couple.
- trigger = free run..
- Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\geq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Trace average at least 100 traces in power averaging (rms) mode.
- Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

7.4. Test Result

Please see the attachment for data.

8. Power Spectral Density

8.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024

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

8.2. Test setup



8.3. Test Procedure

KDB 558074 D01 15.247 Meas Guidance v05r02;

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the peak marker function to determine the maximum amplitude level within the RBW. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

8.4. Test Result

Please see the attachment for data.

9. Antenna Requirement

9.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203 /247(b)(4)
Requirement	1) 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. 2) 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

9.2. Antenna Connected Construction

The antenna is Internal antenna which permanently attached, and the best case gain of the antenna is 0.17dBi. It complies with the standard requirement.

10. TEST SETUP & EUT PHOTOGRAPH

Please see the attachment for details.

----- End of Report -----