

TEST REPORT

Applicant : Shenzhen Aotuolang Technology Co.,Ltd.
Address : 401, No. 88 Hekan Village, Wuhe Community, Bantian
Street,Longgang District, Shenzhen, China
Manufacturer : DONGGUAN TANGXI ELECTRONICS TECHNOLOGY CO.,LTD
Address : NO.1 HENGSHAN ROAD, SHIPAI TOWN ,DONGGUAN,
GUANGDONG PROVINCE,CHINA
Product Name : Vintage Retro Portable Radio
Model Number : JX1107, JX1107-1, JX1107-2, JX1107-3
Trademark : N/A
FCC ID : 2BXOZ-JX1107
Test Date : Jul. 17, 2026 to Jul. 31, 2026
Date of Report : Jul. 31, 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.

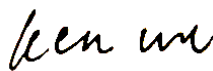
Test Procedure Used:

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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Abel Yu



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Revision History of This Test Report

Report Number	Description	Issued Date
SZNTT26035977E1-2	Initial Issue	2026-7-31

1. General Information

1.1. Description of Device (EUT)

EUT Name	:	Vintage Retro Portable Radio
Model No.	:	JX1107, JX1107-1, JX1107-2, JX1107-3
Model Difference	:	All the model are the same circuit and RF module, only the names are different.
	:	Test sample model: JX1107
Power supply	:	DC 5V charging from adapter
	:	DC 3.7V by battery
Operation frequency	:	2402-2480MHz
Modulation	:	GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type	:	Internal antenna, Maximum Gain is 1.0dBi
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	2402	1	2403	2	2404	3	2405
4	2406	5	2407	6	2408	7	2409
8	2410	9	2411	10	2412	11	2413
12	2414	13	2415	14	2416	15	2417
16	2418	17	2419	18	2420	19	2421
20	2422	21	2423	22	2424	23	2425
24	2426	25	2427	26	2428	27	2429
28	2430	29	2431	30	2432	31	2433
32	2434	33	2435	34	2436	35	2437
36	2438	37	2439	38	2440	39	2441
40	2442	41	2443	42	2444	43	2445
44	2446	45	2447	46	2448	47	2449
48	2450	49	2451	50	2452	51	2453
52	2454	53	2455	54	2456	55	2457
56	2458	57	2459	58	2460	59	2461
60	2462	61	2463	62	2464	63	2465
64	2466	65	2467	66	2468	67	2469
68	2470	69	2471	70	2472	71	2473
72	2474	73	2475	74	2476	75	2477
76	2478	77	2479	78	2480	-	-

1.3. Summary of test result

RF PART		
Test Items	Test Requirement	Result
Radiated Spurious Emissions	15.205(a) 15.209 15.247(d)	PASS
Band edge	15.247(d) 15.205(a)	PASS
Conduct Emission	15.207	PASS
20dB Bandwidth 99% Occupied Bandwidth	15.247(a)(1)	PASS
Maximum Peak Output Power	15.247(b)(1)	PASS
Frequency Separation	15.247(a)(1)	PASS
Number of Hopping Frequency	15.247(a)(1)(iii)	PASS
Dwell time	15.247(a)(1)(iii)	PASS
Antenna Requirement	15.203	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
Adapter	/	/	/	/
PC	DELL	Inspiron 3670	/	/

1.5. Test mode

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

Test mode	Low channel	Middle channel	High channel
GFSK	2402MHz	2441MHz	2480MHz
Π/4-DQPSK	2402MHz	2441MHz	2480MHz
8DPSK	2402MHz	2441MHz	2480MHz
Note: Only the worst Data DH1/2DH1/3DH1 Record in the report			

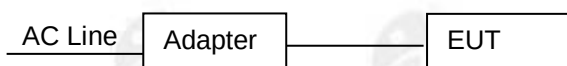
1.6. Test configuration

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.	

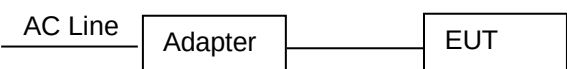
Test Software	FCC_assist_1.0.4
Power level setup	0 dBm

1.7. Block Diagram

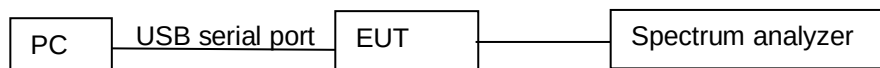
Conducted Emission



Radiated Emission



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 5V from Adapter Input AC 120V/60Hz	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°C
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 4.2.1of 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, Guangdong, 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	ESPI	/	RS	2025/9/8	2026/9/7
LISN	NNLK 8129	00603	Schwarzbeck	2025/9/8	2026/9/7
LISN	NNHV 8123-400	00694	Schwarzbeck	2025/9/8	2026/9/7
LISN	NNHV 8123-400	00680	Schwarzbeck	2025/9/8	2026/9/7
Cable	RG223-1500MM	NA	RG	2025/9/8	2026/9/7

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	2025/7/24	2028/7/23
EMI Test Receiver	ESCI	101018	RS	2025/9/8	2026/9/7
Amplifi (30MHz-1GHz)	BBV 9718D	00042	SCHWARZBECK	2025/9/8	2026/9/7
Bilog Antenna (30MHz-1GHz)	VULB9168	1858	SCHWARZBECK	2025/9/9	2026/9/8
Horn antenna (1GHz-18GHz)	BBHA 9120 D	02622	SCHWARZBECK	2025/9/9	2026/9/8
Pream plifier (1GHz-18GHz)	BBV 9718D	0024	SCHWARZBECK	2025/9/8	2026/9/7
Spectrum Analyze (10Hz-40GHz)	FSV 40	100952	Rohde & Schwarz	2025/9/8	2026/9/7
Pream plifier (18GHz-40GHz)	BBV 9721	0056	SCHWARZBECK	2025/9/8	2026/9/7
Double Ridge Guide Horn Antenna (18GHz-40GHz)	SAS-574	588	A.H.System	2025/9/8	2026/9/7
Loop Antenna (9KHz-30MHz)	FMZB1519B	014	SCHWARZBECK	2025/9/8	2026/9/7
Amplifier (9KHz-30MHz)	CVP 9222 C	00109	SCHWARZBECK	2025/9/8	2026/9/7
MXG Signal Analyzer	N9020A	MY50510202	Agilent	2025/9/8	2026/9/7

MXG Vector Signal Generator	N5182A	MY50140020	Agilent	2025/9/8	2026/9/7
MXG Analog Signal Generator	N5181A	MY47420919	Agilent	2025/9/8	2026/9/7
Power Sensor	TR1029-2	512364	Techoy	2025/9/8	2026/9/7
RF Swith	TR1029-1	512364	Techoy	2025/9/8	2026/9/7
Cable	DA800-4000MM	NA	DA	2025/9/8	2026/9/7
Cable	DA800-11000MM	NA	DA	2025/9/8	2026/9/7

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

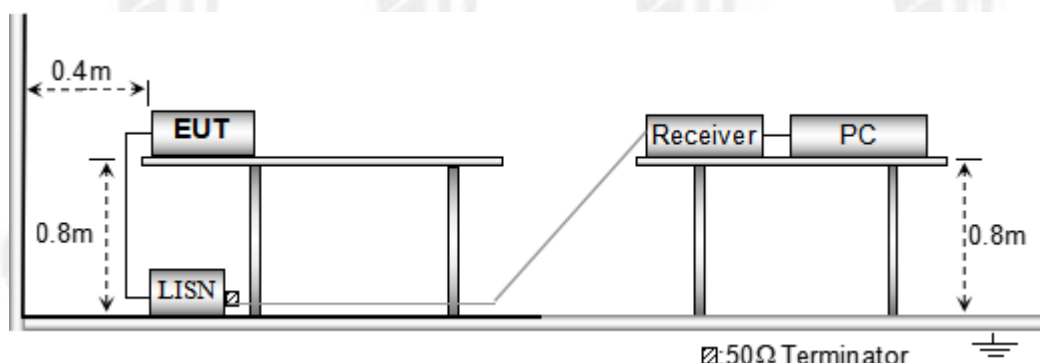
Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

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

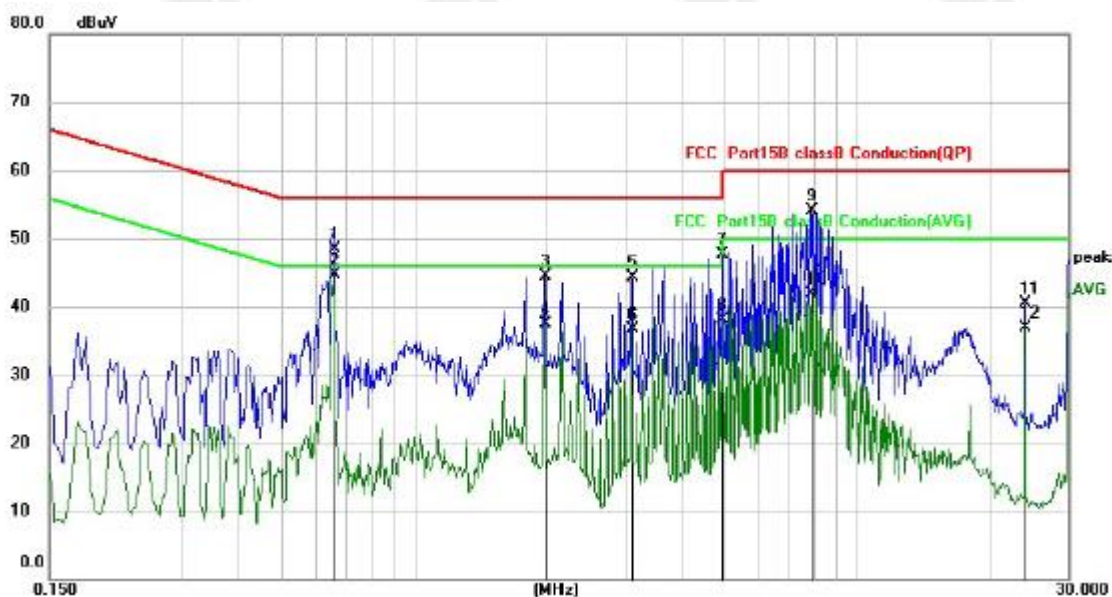


2.3. Test Procedure

1. The EUT was placed 0.1 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
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

Conducted Emission At The Mains Terminals Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Line
Test Voltage :	DC 5V from Adapter Input AC 120V/60Hz	Test Mode:	GFSK(CH00)



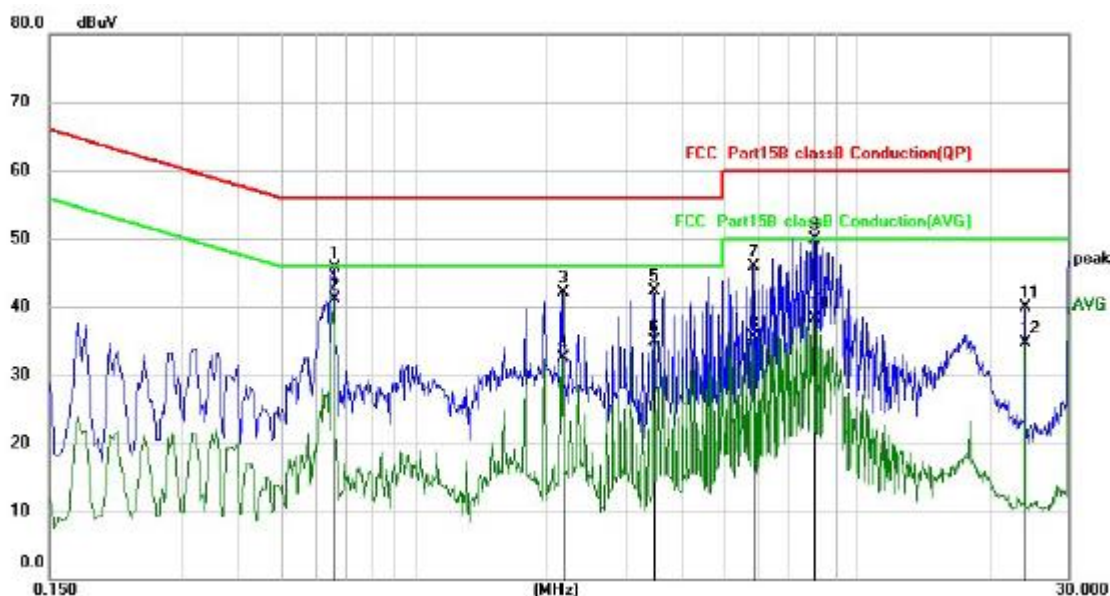
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.6580	37.97	10.46	48.43	56.00	-7.57	QP
2	*	0.6580	34.33	10.46	44.79	46.00	-1.21	AVG
3		1.9740	34.12	10.47	44.59	56.00	-11.41	QP
4		1.9740	27.02	10.47	37.49	46.00	-8.51	AVG
5		3.1020	33.74	10.48	44.22	56.00	-11.78	QP
6		3.1020	26.20	10.48	36.68	46.00	-9.32	AVG
7		4.9779	37.10	10.51	47.61	56.00	-8.39	QP
8		4.9779	27.65	10.51	38.16	46.00	-7.84	AVG
9		7.8900	43.60	10.54	54.14	60.00	-5.86	QP
10		7.8900	31.44	10.54	41.98	50.00	-8.02	AVG
11		24.0020	29.25	11.22	40.47	60.00	-19.53	QP
12		24.0020	25.78	11.22	37.00	50.00	-13.00	AVG

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(GFSK-1M) in the report

Conducted Emission At The Mains Terminals Test Data

Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Neutral
Test Voltage :	DC 5V from Adapter Input AC 120V/60Hz	Test Mode:	GFSK(CH00)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.6580	35.27	10.46	45.73	56.00	-10.27	QP
2	*	0.6580	30.55	10.46	41.01	46.00	-4.99	AVG
3		2.1580	31.63	10.47	42.10	56.00	-13.90	QP
4		2.1580	22.01	10.47	32.48	46.00	-13.52	AVG
5		3.4740	31.83	10.49	42.32	56.00	-13.68	QP
6		3.4740	24.42	10.49	34.91	46.00	-11.09	AVG
7		5.8220	35.35	10.53	45.88	60.00	-14.12	QP
8		5.8220	24.89	10.53	35.42	50.00	-14.58	AVG
9		7.9820	39.42	10.54	49.96	60.00	-10.04	QP
10		7.9820	27.86	10.54	38.40	50.00	-11.60	AVG
11		24.0020	28.59	11.22	39.81	60.00	-20.19	QP
12		24.0020	23.44	11.22	34.66	50.00	-15.34	AVG

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(GFSK-1M) in the 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
	Peak	1MHz	10Hz	Average

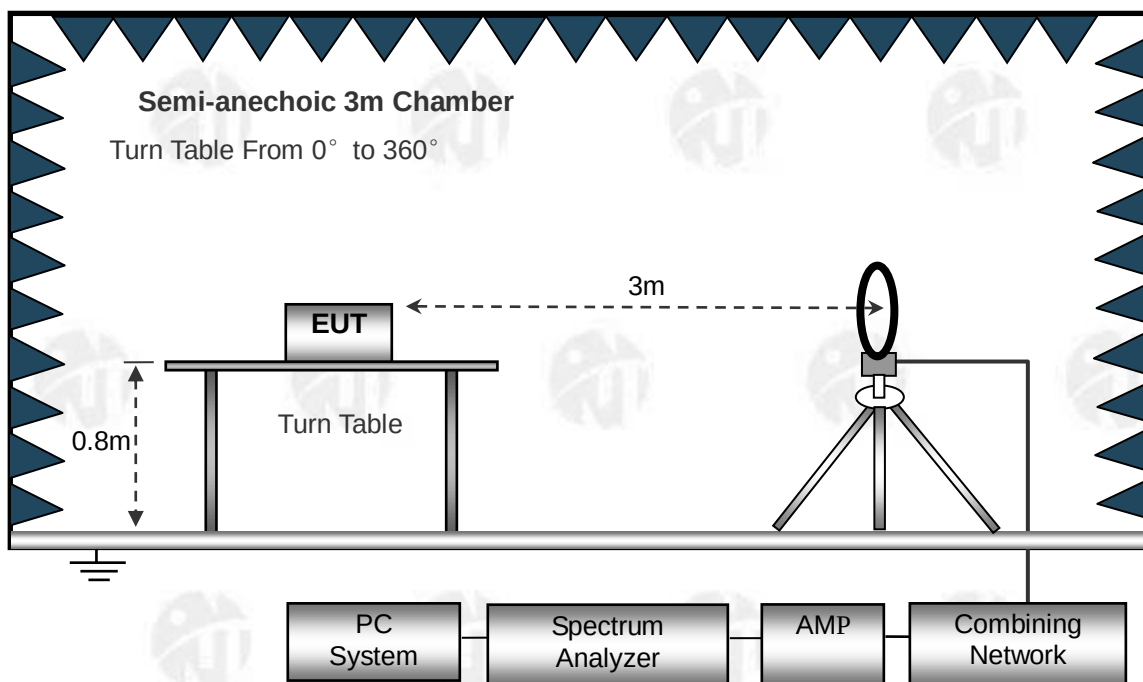
Limit:

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

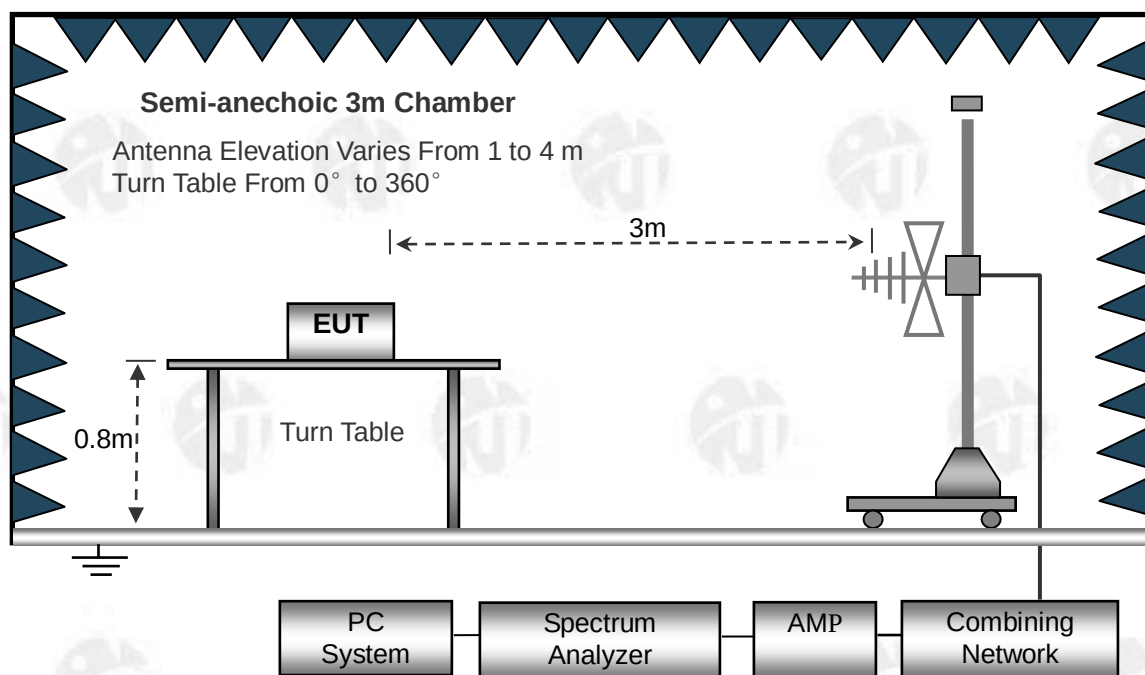
3.2. Test Setup

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

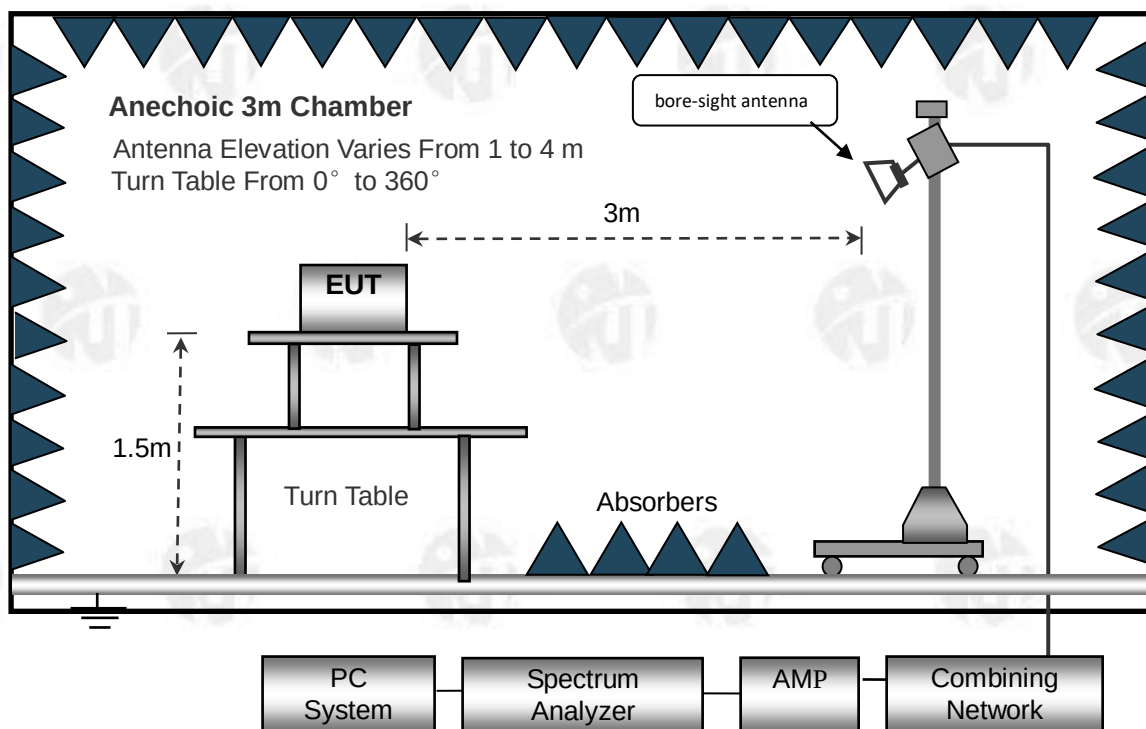
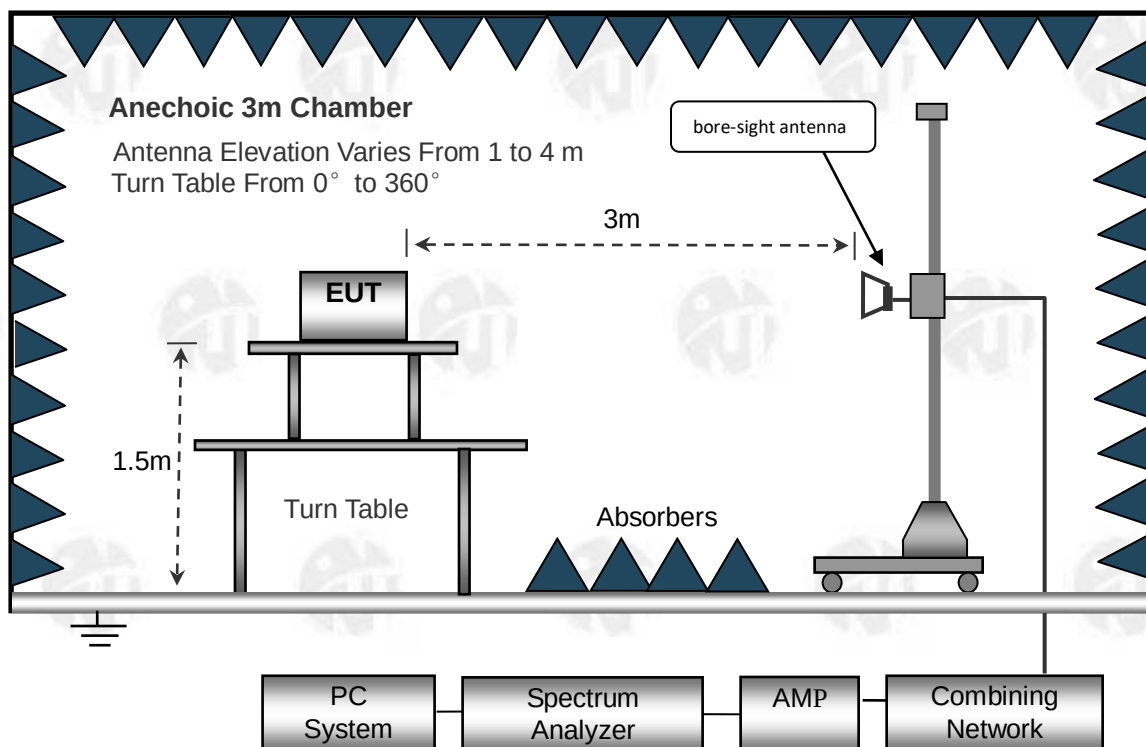
The test setup for emission measurement below 30MHz.



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.

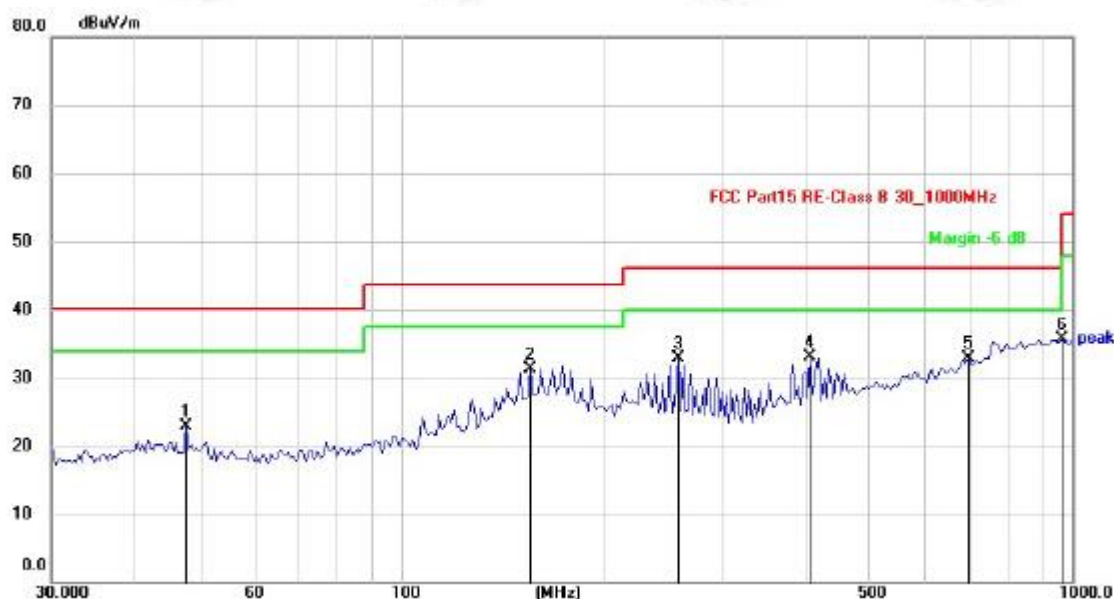
3.4. Test Result

Test Frequency: 9KHz~30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency : 30MHz ~ 1GHz

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 5V from Adapter Input AC 120V/60Hz	Test Mode	GFSK(CH00)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		47.7421	29.19	-6.32	22.87	40.00	-17.13	QP
2	*	155.9100	35.19	-3.83	31.36	43.50	-12.14	QP
3		259.2336	37.26	-4.34	32.92	46.00	-13.08	QP
4		408.9458	33.86	-0.74	33.12	46.00	-12.88	QP
5		698.0795	26.51	6.33	32.84	46.00	-13.16	QP
6		965.5420	26.43	9.22	35.65	54.00	-18.35	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 mode(GFSK-1M) in the report

Radiation Emission Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 5V from Adapter Input AC 120V/60Hz	Test Mode	GFSK(CH00)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		35.7490	39.00	-6.42	32.58	40.00	-7.42	QP
2		41.8594	38.15	-5.97	32.18	40.00	-7.82	QP
3		83.6687	36.91	-8.57	28.34	40.00	-11.66	QP
4	*	168.7093	44.28	-3.37	40.91	43.50	-2.59	QP
5		355.4272	30.11	-1.62	28.49	46.00	-17.51	QP
6		570.6100	30.04	3.09	33.13	46.00	-12.87	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 mode(GFSK-1M) in the report

GFSK

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:2402MHz									
V	4804	52.35	34.12	5.03	32.39	55.65	74	-18.35	Pk
V	4804	40.46	34.12	5.03	32.39	43.76	54	-10.24	AV
V	7206	49.48	32.54	6.29	35.86	59.09	74	-14.91	Pk
V	7206	35.46	32.54	6.29	35.86	45.07	54	-8.93	AV
V	9608	48.57	32.98	7.55	38.4	61.54	74	-12.46	Pk
V	9608	34.11	32.98	7.55	38.4	47.08	54	-6.92	AV
V	12010	45.12	32.09	8.93	39	60.96	74	-13.04	Pk
V	12010	27.41	32.09	8.93	39	43.25	54	-10.75	AV
H	4804	49.51	34.12	5.03	32.39	52.81	74	-21.19	Pk
H	4804	41.20	34.12	5.03	32.39	44.50	54	-9.50	AV
H	7206	48.20	32.54	6.29	35.86	57.81	74	-16.19	Pk
H	7206	33.65	32.54	6.29	35.86	43.26	54	-10.74	AV
H	9608	48.36	32.98	7.55	38.4	61.33	74	-12.67	Pk
H	9608	29.72	32.98	7.55	38.4	42.69	54	-11.31	AV
H	12010	39.04	32.09	8.93	39	54.88	74	-19.12	Pk
H	12010	26.47	32.09	8.93	39	42.31	54	-11.69	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:2441MHz									
V	4882.00	48.97	34.07	5.09	32.59	52.58	74	-21.42	Pk
V	4882.00	39.05	34.07	5.09	32.59	42.66	54	-11.34	AV
V	7323.00	44.85	32.63	6.34	35.96	54.52	74	-19.48	Pk
V	7323.00	36.83	32.63	6.34	35.96	46.50	54	-7.50	AV
V	9764.00	44.07	32.92	7.59	38.4	57.14	74	-16.86	Pk
V	9764.00	31.71	32.92	7.59	38.4	44.78	54	-9.22	AV
V	12205.00	41.78	31.96	8.88	39.04	57.74	74	-16.26	Pk
V	12205.00	29.57	31.96	8.88	39.04	45.53	54	-8.47	AV
H	4882.00	49.18	34.07	5.09	32.59	52.79	74	-21.21	Pk
H	4882.00	39.34	34.07	5.09	32.59	42.95	54	-11.05	AV
H	7323.00	46.91	32.63	6.34	35.96	56.58	74	-17.42	Pk
H	7323.00	35.24	32.63	6.34	35.96	44.91	54	-9.09	AV
H	9764.00	42.87	32.92	7.59	38.4	55.94	74	-18.06	Pk
H	9764.00	30.58	32.92	7.59	38.4	43.65	54	-10.35	AV
H	12205.00	40.32	31.96	8.88	39.04	56.28	74	-17.72	Pk
H	12205.00	30.44	31.96	8.88	39.04	46.40	54	-7.60	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2480MHz									
V	4960	49.80	34.02	5.15	32.8	53.73	74	-20.27	Pk
V	4960	36.69	34.02	5.15	32.8	40.62	54	-13.38	AV
V	7440	45.51	32.71	6.4	36.05	55.25	74	-18.75	Pk
V	7440	35.62	32.71	6.4	36.05	45.36	54	-8.64	AV
V	9920	42.07	32.86	7.62	38.4	55.23	74	-18.77	Pk
V	9920	30.74	32.86	7.62	38.4	43.90	54	-10.10	AV
V	12400	38.73	31.82	8.84	39.08	54.83	74	-19.17	Pk
V	12400	27.49	31.82	8.84	39.08	43.59	54	-10.41	AV
H	4960	47.28	34.02	5.15	32.8	51.21	74	-22.79	Pk
H	4960	38.84	34.02	5.15	32.8	42.77	54	-11.23	AV
H	7440	45.18	32.71	6.4	36.05	54.92	74	-19.08	Pk
H	7440	31.45	32.71	6.4	36.05	41.19	54	-12.81	AV
H	9920	40.84	32.86	7.62	38.4	54.00	74	-20.00	Pk
H	9920	27.63	32.86	7.62	38.4	40.79	54	-13.21	AV
H	12400	40.46	31.82	8.84	39.08	56.56	74	-17.44	Pk
H	12400	28.94	31.82	8.84	39.08	45.04	54	-8.96	AV

Note: 1. The testing has been conformed to 10*2480MHz=24800MHz.

2. All other emissions more than 30dB below the limit.

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

Emission Level = Reading + Factor

Margin=Emission Level-Limit

4. All the modes have tested and recorded the worst mode(GFSK) in the report

Radiated Band Emission Measurement:

	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)	Margin (dB)	Detector or Type
GFSK	Low Channel: 2402MHz									
	H	2390	59.25	35.17	3.48	27.49	55.05	74	-18.95	PK
	H	2390	49.97	35.17	3.48	27.49	45.77	54	-8.23	AV
	H	2400	60.74	35.16	3.49	27.52	56.59	74	-17.41	PK
	H	2400	51.25	35.16	3.49	27.52	47.10	54	-6.90	AV
	V	2390	60.20	35.17	3.48	27.49	56.00	74	-18.00	PK
	V	2390	51.10	35.17	3.48	27.49	46.90	54	-7.10	AV
	V	2400	60.82	35.16	3.49	27.52	56.67	74	-17.33	PK
	V	2400	50.57	35.16	3.49	27.52	46.42	54	-7.58	AV
	High Channel: 2480MHz									
	H	2483.5	59.37	35.11	3.56	27.75	55.57	74	-18.43	PK
	H	2483.5	51.05	35.11	3.56	27.75	47.25	54	-6.75	AV
	H	2500	60.05	35.1	3.57	27.8	56.32	74	-17.68	PK
	H	2500	51.67	35.1	3.57	27.8	47.94	54	-6.06	AV
	V	2483.5	60.15	35.11	3.56	27.75	56.35	74	-17.65	PK
	V	2483.5	51.18	35.11	3.56	27.75	47.38	54	-6.62	AV
	V	2500	60.36	35.1	3.57	27.8	56.63	74	-17.37	PK
	V	2500	51.25	35.1	3.57	27.8	47.52	54	-6.48	AV

π/4-DQP SK	Low Channel: 2402MHz									
	H	2390	58.00	35.17	3.48	27.49	53.80	74	-20.20	PK
	H	2390	50.97	35.17	3.48	27.49	46.77	54	-7.23	AV
	H	2400	61.80	35.16	3.49	27.52	57.65	74	-16.35	PK
	H	2400	50.47	35.16	3.49	27.52	46.32	54	-7.68	AV
	V	2390	59.81	35.17	3.48	27.49	55.61	74	-18.39	PK
	V	2390	51.24	35.17	3.48	27.49	47.04	54	-6.96	AV
	V	2400	60.26	35.16	3.49	27.52	56.11	74	-17.89	PK
	V	2400	48.72	35.16	3.49	27.52	44.57	54	-9.43	AV
	High Channel: 2480MHz									
	H	2483.5	57.89	35.11	3.56	27.75	54.09	74	-19.91	PK
	H	2483.5	48.35	35.11	3.56	27.75	44.55	54	-9.45	AV
	H	2500	59.64	35.1	3.57	27.8	55.91	74	-18.09	PK
	H	2500	51.13	35.1	3.57	27.8	47.40	54	-6.60	AV
	V	2483.5	60.18	35.11	3.56	27.75	56.38	74	-17.62	PK
	V	2483.5	51.90	35.11	3.56	27.75	48.10	54	-5.90	AV
	V	2500	59.85	35.1	3.57	27.8	56.12	74	-17.88	PK
	V	2500	52.05	35.1	3.57	27.8	48.32	54	-5.68	AV
8DPSK	Low Channel: 2402MHz									
	H	2390	57.89	35.17	3.48	27.49	53.69	74	-20.31	PK
	H	2390	49.25	35.17	3.48	27.49	45.05	54	-8.95	AV
	H	2400	60.15	35.16	3.49	27.52	56.00	74	-18.00	PK
	H	2400	50.17	35.16	3.49	27.52	46.02	54	-7.98	AV
	V	2390	58.96	35.17	3.48	27.49	54.76	74	-19.24	PK
	V	2390	49.94	35.17	3.48	27.49	45.74	54	-8.26	AV
	V	2400	59.31	35.16	3.49	27.52	55.16	74	-18.84	PK
	V	2400	51.04	35.16	3.49	27.52	46.89	54	-7.11	AV
	High Channel: 2480MHz									
	H	2483.5	58.90	35.11	3.56	27.75	55.10	74	-18.90	PK
	H	2483.5	49.00	35.11	3.56	27.75	45.20	54	-8.80	AV
	H	2500	60.82	35.1	3.57	27.8	57.09	74	-16.91	PK
	H	2500	50.32	35.1	3.57	27.8	46.59	54	-7.41	AV
	V	2483.5	59.99	35.11	3.56	27.75	56.19	74	-17.81	PK
	V	2483.5	52.59	35.11	3.56	27.75	48.79	54	-5.21	AV
	V	2500	59.72	35.1	3.57	27.8	55.99	74	-18.01	PK
	V	2500	50.50	35.1	3.57	27.8	46.77	54	-7.23	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit										

4. Maximum Peak Output Power

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

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 21dBm	2400-2483.5	PASS

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

RSS-247 § 5.4

For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p. shall not exceed 4 W.

4.2. Test Setup



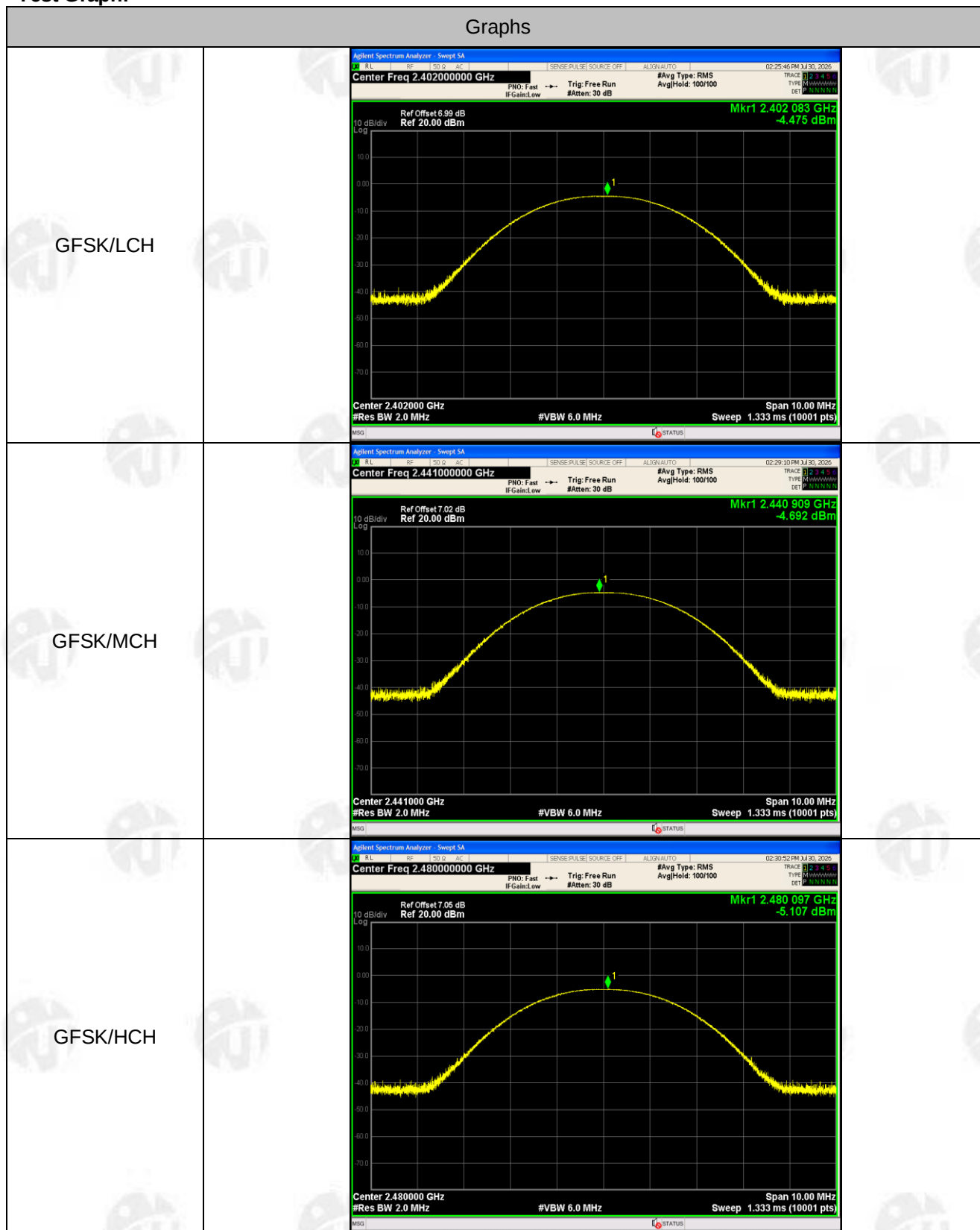
4.3. Test Procedure

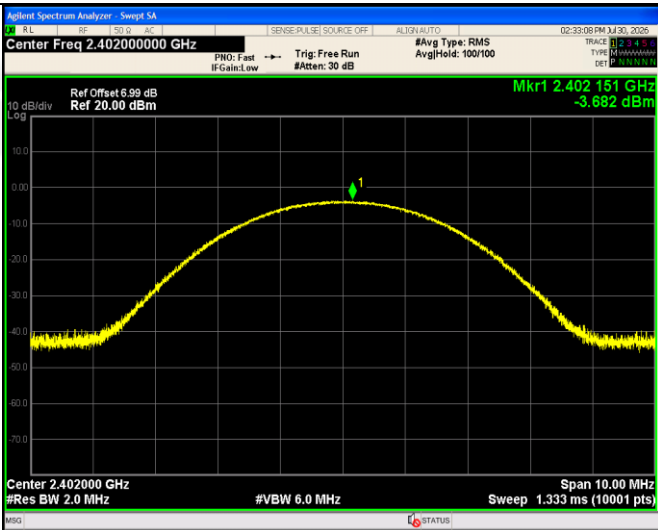
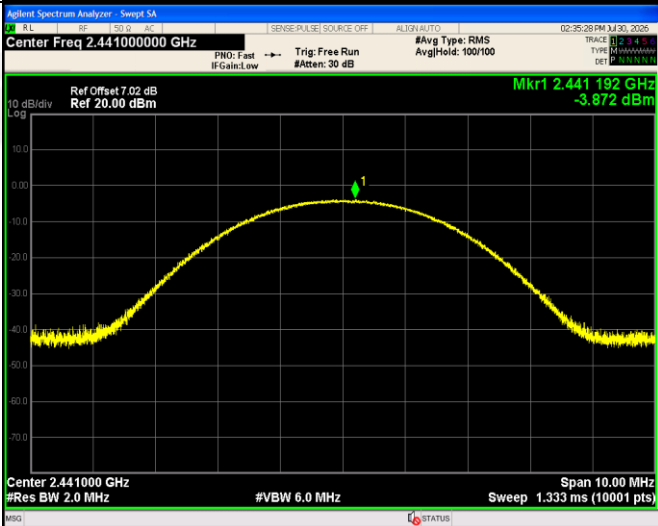
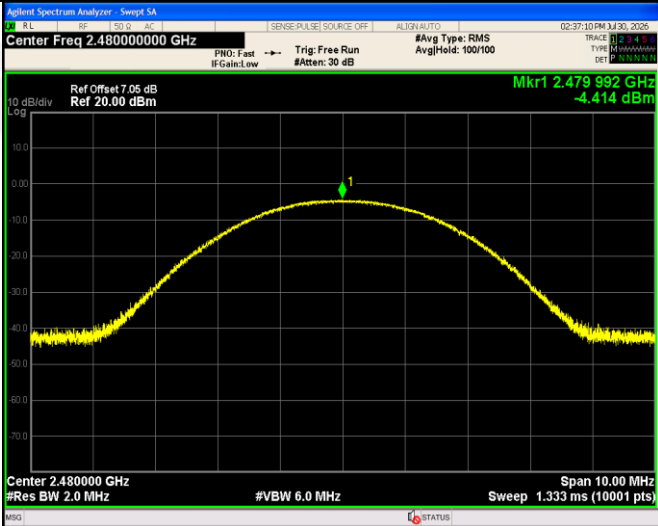
1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above,
2. Spectrum Setting:
 - RBW > the 20 dB bandwidth of the emission being measured
 - Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
 - VBW ≥ RBW
 - Sweep = auto
 - Detector function = peak
 - Trace = max hold

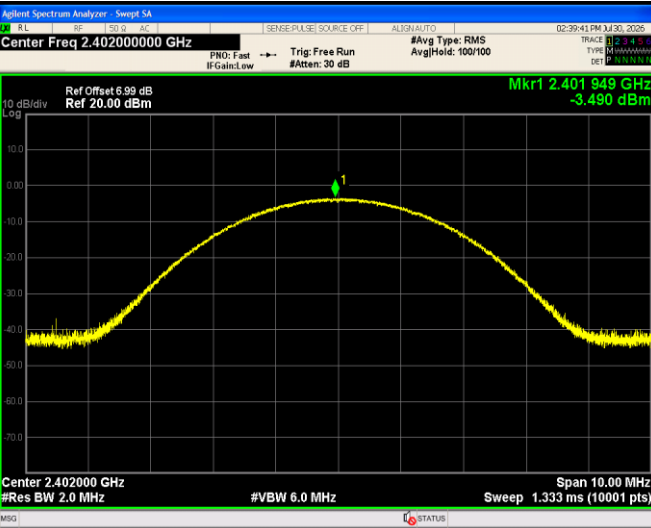
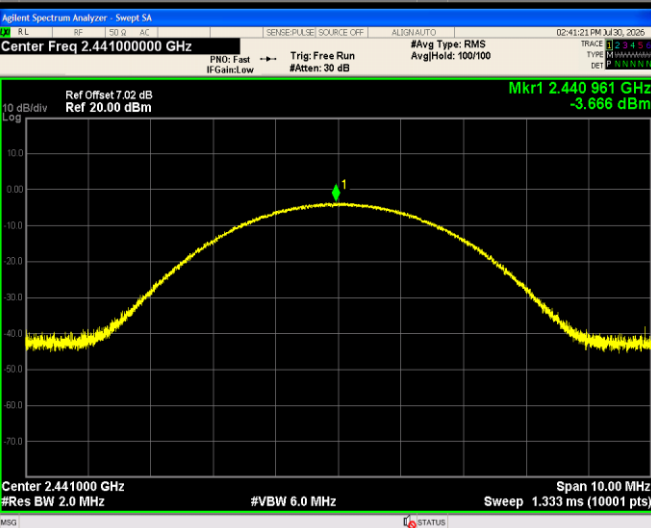
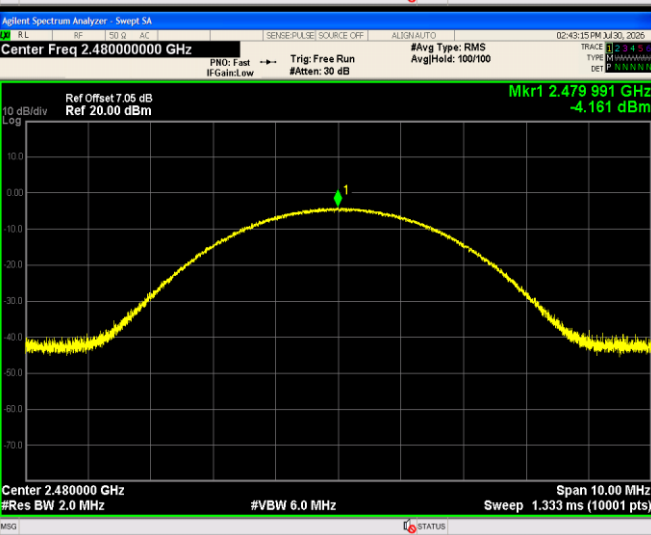
4.4. Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-4.47	20.97	PASS
	MCH	-4.69	20.97	PASS
	HCH	-5.11	20.97	PASS
$\pi/4$ DQPSK	LCH	-3.68	20.97	PASS
	MCH	-3.87	20.97	PASS
	HCH	-4.41	20.97	PASS
8DPSK	LCH	-3.49	20.97	PASS
	MCH	-3.67	20.97	PASS
	HCH	-4.16	20.97	PASS

Test Graph:



$\pi/4$DQPSK/LCH	
$\pi/4$DQPSK/MCH	
$\pi/4$DQPSK/HCH	

8DPSK/LCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.40200000 GHz Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 2.401949 GHz -3.490 dBm Center 2.402000 GHz #Res BW 2.0 MHz #VBW 6.0 MHz Span 10.00 MHz Sweep 1.333 ms (10001 pts)	
8DPSK /MCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.44100000 GHz Ref Offset 7.02 dB Ref 20.00 dBm Mkr1 2.440961 GHz -3.666 dBm Center 2.441000 GHz #Res BW 2.0 MHz #VBW 6.0 MHz Span 10.00 MHz Sweep 1.333 ms (10001 pts)	
8DPSK /HCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.48000000 GHz Ref Offset 7.05 dB Ref 20.00 dBm Mkr1 2.479991 GHz -4.161 dBm Center 2.480000 GHz #Res BW 2.0 MHz #VBW 6.0 MHz Span 10.00 MHz Sweep 1.333 ms (10001 pts)	