

TEST REPORT

Applicant : SOLAR BRIGHT INDUSTRIAL LIMITED

Address : RM 807 8/F SHING YIP IND. BLDG., 19-21 SHING YIP STREET,
KWUN TONG, KL., Hong Kong

Manufacturer : SOLAR BRIGHT INDUSTRIAL LIMITED

Address : RM 807 8/F SHING YIP IND. BLDG., 19-21 SHING YIP STREET,
KWUN TONG, KL., Hong Kong

Product Name : Backtrack CD Retro Boombox

Model Number : AI7021
Series models, refer to the model list in Chapter 1 on Page 5.

Trademark : AIWA, REGENT, MODERN

FCC ID : 2AYB7696AI7021

Test Date : Aug. 17, 2026 to Aug. 31, 2026

Date of Report : Aug. 31, 2026

Test Result : This device described above has been tested by BKC, 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.

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

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TABLE OF CONTENT

1. General Information	5
1.1. Description of Device (EUT)	5
1.2. Channel List	6
1.3. Summary of test result	7
1.4. Special Accessories and Auxiliary Equipment	7
1.5. Test mode	7
1.6. Test configuration	8
1.7. Block Diagram	8
1.8. Test Conditions	8
1.9. Measurement Uncertainty (95% confidence levels, k=2)	9
1.10. Test Facility	9
1.11. Test Equipment	9
2. Conducted emission at the mains terminals test	12
2.1. Limit	12
2.2. Test Setup	12
2.3. Test Procedure	12
2.4. Test Result	13
3. Radiated Spurious Emissions	15
3.1. Limit	15
3.2. Test Setup	16
3.3. Test Procedure	18
3.4. Test Result	19
4. Maximum Output Power	25
4.1. Limit	25
4.2. Test Setup	25
4.3. Test Procedure	25
4.4. Test Result	25
5. -20 dB Bandwidth Measurement	26
5.1. Limit	26
5.2. Test Setup	26
5.3. Test Procedure	26
5.4. Test Result	26
6. Carrier Frequency Separation Test	27
6.1. Limit	27
6.2. Test Setup	27
6.3. Test Procedure	27
6.4. Test Result	27
7. Number of Hopping Channel Test	28
7.1. Limit	28
7.2. Test Setup	28
7.3. Test Procedure	28
7.4. Test Result	28
8. Dwell Time Test	29
8.1. Limit	29
8.2. Test setup	29
8.3. Test Procedure	29
8.4. Test Result	29
9. Conducted Spurious Emissions and Band Edge Requirement	30
9.1. Limit	30
9.2. Test Setup	30

9.3. Test Procedure	30
9.4. Test Result	30
10. Antenna Requirement	31
10.1. Test Standard and Requirement	31
10.2. Antenna Connected Construction	31
11. TEST SETUP & EUT PHOTOGRAPH	32



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1. General Information

1.1. Description of Device (EUT)

EUT Name	: Backtrack CD Retro Boombox
Model No.	: AI7021 Series models, refer to the model list in Chapter 1 on Page 5.
Model Difference	: refer to the model list
Power supply	: Input: AC 100-240V, 0.8A, 50/60Hz, 30W
Operation frequency	: 2402-2480MHz
Max. RF output power:	: 1.10dBm
Modulation	: GFSK, $\pi/4$ -DQPSK, 8DPSK
Antenna Type	: Internal Antenna, Maximum Gain is -0.68dBi
Intend use environment	: Residential, commercial and light industrial environment

Model list:

Product Name	Backtrack CD Retro Boombox
Mode No.	AI7021, MD996, RG996, RG996XXXX (XXXX denote 0-9, A-Z or N/A to represent variances in cosmetic), AI7021-BLKGLD, AI7021-BLKGLD-T57, AI7021-BLKGLD-T57-2, AI7021-BLKGLD-T37, AI7021-BLKGLD-T37-2, AI7021-BLKGLD-T49, AI7021-BLKGLD-T49-2, AI7021-MT, AI7021-MT-T57, AI7021-MT-T57-2, AI7021-MT-T37, AI7021-MT-T37-2, AI7021-MT-T49, AI7021-MT-T49-2, AI7021-SIL, AI7021-SIL-T57, AI7021-SIL-T57-2, AI7021-SIL-T37, AI7021-SIL-T37-2, AI7021-SIL-T49, AI7021-SIL-T49-2, AI7021-YLW, AI7021-YLW-T57, AI7021-YLW-T57-2, AI7021-YLW-T37, AI7021-YLW-T37-2, AI7021-YLW-T49, AI7021-YLW-T49-2, AI7021-BLK, AI7021-BLK-T57, AI7021-BLK-T57-2, AI7021-BLK-T37, AI7021-BLK-T37-2, AI7021-BLK-T49, AI7021-BLK-T49-2, AI7021-TL, AI7021-TL-T57, AI7021-TL-T57-2, AI7021-TL-T37, AI7021-TL-T37-2, AI7021-TL-T49, AI7021-TL-T49-2, AI7021-NVY, AI7021-NVY-T57, AI7021-NVY-T57-2, AI7021-NVY-T37, AI7021-NVY-T37-2, AI7021-NVY-T49, AI7021-NVY-T49-2, AI7021-RG, AI7021-RG-T57, AI7021-RG-T57-2, AI7021-RG-T37, AI7021-RG-T37-2, AI7021-RG-T49, AI7021-RG-T49-2, AI7021-GRY, AI7021-GRY-T57, AI7021-GRY-T57-2, AI7021-GRY-T37, AI7021-GRY-T37-2, AI7021-GRY-T49, AI7021-GRY-T49-2, AI7021-BUR, AI7021-BUR-T57, AI7021-BUR-T57-2, AI7021-BUR-T37, AI7021-BUR-T37-2, AI7021-BUR-T49, AI7021-BUR-T49-2, AI7021-RED, AI7021-RED-T57, AI7021-RED-T57-2, AI7021-RED-T37, AI7021-RED-T37-2, AI7021-RED-T49, AI7021-RED-T49-2, AI7021-WHT, AI7021-WHT-T57, AI7021-WHT-T57-2, AI7021-WHT-T37, AI7021-WHT-T37-2, AI7021-WHT-T49, AI7021-WHT-T49-2, AI7021-XX, AI7021-XX-XXXX, AI7021-XX-XXXX-2, XX denote 0-9, A-Z or N/A to represent variances in cosmetic), AI7021-XXX, AI7021-XXX-XXXX, AI7021-XXX-XXXX-2 (XXX denote 0-9, A-Z or N/A to represent variances in cosmetic), AI7021-XXXX, AI7021-XXXX-XXXX, AI7021-XXXX-XXXX-2 (XXXX denote 0-9, A-Z or N/A to represent variances in cosmetic), AI7021-XXXXX, AI7021-XXXXX-XXXX, AI7021-XXXXX-XXXX-2 (XXXXX denote 0-9, A-Z or N/A to represent variances in cosmetic), AI7021-XXXXXX, AI7021-XXXXXX-XXXX, AI7021-XXXXXX-XXXX-2 (XXXXXX denote 0-9, A-Z or N/A to represent variances in cosmetic)
Model Different	These models have different markings and colors, yet their schematic diagrams and internal structures are completely identical.

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
Computer	HP	14s	/	/
Serial port	DOREWIN	CH 340	/	/
Switching Power Supply	Jiedong	JDA0300503000 M3	/	/

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

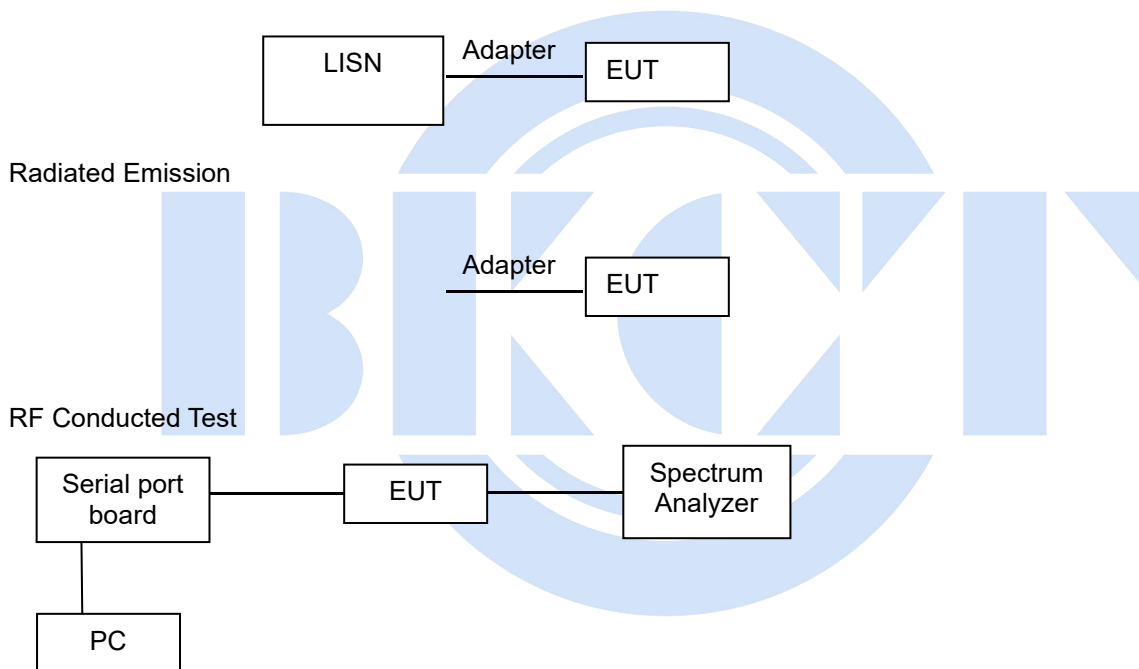
Note: Only the worst Data DH5/2DH5/3DH5 Record in the report

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_1022
Power level setup	V1022

1.7. Block Diagram

AC Power Line Conducted Emission



1.8. Test Conditions

Category	Normal Conditions	Extreme Conditions
Temperature range	15-35°C	N/A
Humidity range	20-75%	N/A
Pressure range	86-106kPa	N/A
Power supply	AC 120V/60Hz	N/A
Note: N/A is an abbreviation for Not Applicable.		

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

Item	MU	Remark
Uncertainty for radio frequency	$\pm 7 \times 10^{-8}$	
Conducted Emissions (150kHz~30MHz)	$\pm 2.54\text{dB}$	
Radiated Emission(9KHz~30MHz)	$\pm 1.6\text{ dB}$	
Radiated Emission(30MHz~1GHz)	Vertical: $\pm 4.14\text{dB}$ Horizontal: $\pm 4.25\text{dB}$	
Radiated Emission(1GHz~6GHz)	$\pm 3.9\text{dB}$	
Radiated Emission(6GHz~18GHz)	$\pm 4.3\text{dB}$	
Radiated Emission(18GHz~40GHz)	$\pm 3.38\text{dB}$	
Uncertainty for conducted RF Power	$\pm 0.20\text{dB}$	
Conducted spurious emissions	$\pm 0.24\text{dB}$	
Uncertainty for temperature	0.6°C	
Uncertainty for humidity	1%	
Bandwidth	$\pm 1.5 \times 10^{-6}$	
Time	$\pm 2\%$	
Duty Cycle	$\pm 2\%$	

Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%

1.10. Test Facility

Site Description	
Name of Firm	: Shenzhen BKC Testing Co., Ltd.
Site Location	: Room 103, 1/F, Huaya Building, Huaya Industrial Park, Longhua Community, Longhua District, Shenzhen, Guangdong, China.
ISED CAB identifier	: CN0188
ISED Company Number	: 34333
FCC Designation Number	: CN1416
FCC Test Firm Registration Number	: 701543

1.11. Test Equipment

Conducted Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	102762	Mar. 10. 2026	Mar. 09. 2027
2	EMI Test Receiver	R&S	ESCI	101424	Mar. 10. 2026	Mar. 09. 2027
3	Rf cables	HTEC	HCE 2M-CE	N/A	Mar. 10. 2026	Mar. 09. 2027
4	Coupling/ Decoupling Network	Diamond	CX210	N/A	Mar. 10. 2026	Mar. 09. 2027
5	10 db attenuator	N/A	DC-6G-10DB-N-JK	N/A	May. 18. 2026	May. 17. 2027



6	CE Testing software	EZ	EZ-EMC	/	/	/
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Radiated Test Site(Below 1G and Above 1G)

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Antenna	Schwarzbeck	VULB 9168	01321	Mar. 20. 2025	Mar. 19. 2028
2	EMI Test Receiver	R&S	ESRP	101478	Mar. 10. 2026	Mar. 09. 2027
3	Preamplifier	HP	8447D	2727A05345	Mar. 10. 2026	Mar. 09. 2027
4	Double Ridged Broadband	SCHWARZBEC K	BBHA 9120D	02621	Mar. 10. 2025	Mar. 19. 2028
5	Preamplifier	Schwarzbeck	BBV 9718D	00041	Mar. 10. 2026	Mar. 09. 2027
6	Rf cables	HUBER+SUHNE R	8M-RE	N/A	Mar. 10. 2026	Mar. 09. 2027
7	Rf cables	HUBER+SUHNE R	1.5M-RE	N/A	Mar. 10. 2026	Mar. 09. 2027
8	Rf cables	HUBER+SUHNE R	1.5M-AP-RE	N/A	Mar. 10. 2026	Mar. 09. 2027
9	Loop antenna	TESEQ	HLA6121	58357	Mar. 09. 2026	Mar. 10. 2027
10	Spectrum analyzer	R&S	FSP40	200061	Mar. 09. 2026	Mar. 10. 2027
11	Double Ridged Broadband Horn Antenna	COM-POWER	AH-1840	10100009	Mar. 10. 2026	Mar. 09. 2027
12	Spectrum	Agilent	N9020A	MY50510311	Mar. 10. 2026	Mar. 09. 2027
13	RE Testing software	EZ	EZ-EMC	/		/

RF Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum	Agilent	N9020A	MY50510311	Mar. 10. 2026	Mar. 09. 2027
2	Vector source	Agilent	N5182A	MY47420223	Mar. 10. 2026	Mar. 09. 2027
3	All instrument	Rohde & Schwarz	CMW 500	101131	Mar. 10. 2026	Mar. 09. 2027
4	RF Automatic Test System	TST	TSTRF562	MW200411BK-34	Mar. 09. 2026	Mar. 10. 2027
5	Spectrum analyzer	R&S	FSP40	200061	Mar. 10. 2026	Mar. 09. 2027

Test software

Software name	RF Testing software
Software version	2.0.0.0
Software name	RE Testing software
Software version	EMEC-03A2 RE+
Software name	CE Testing software
Software version	EMEC-3A1+

Software Configuration Version

Software name	FCC_1022
Software version	V1022

Power setting



Channel	Power Level
Lowest	Default
Middle	Default
Highest	Default



2. Conducted emission at the mains terminals test

2.1. Limit

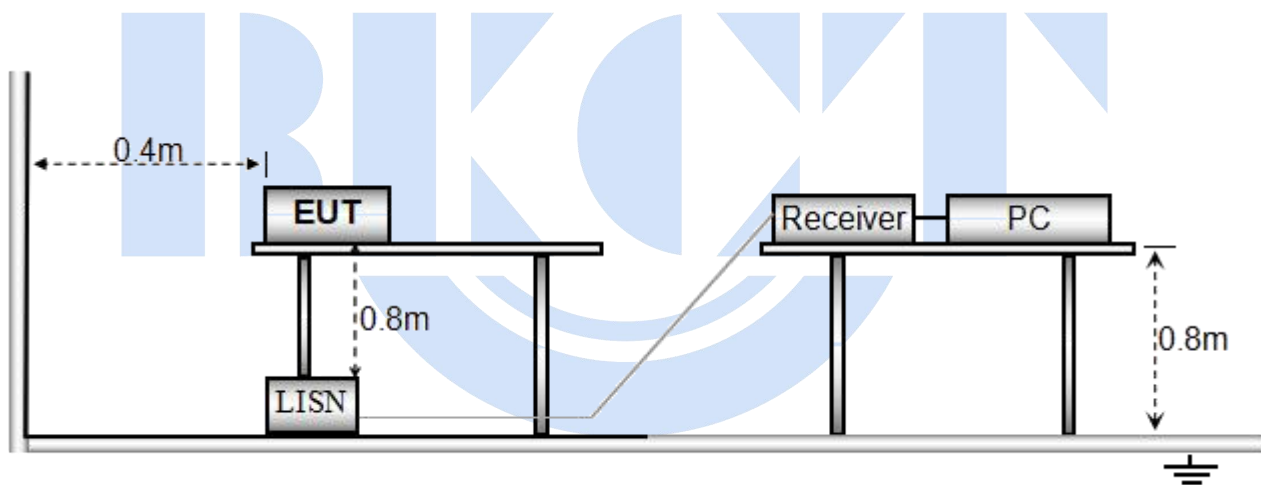
Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

Frequency MHz	Limits dB(μ V)	
	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

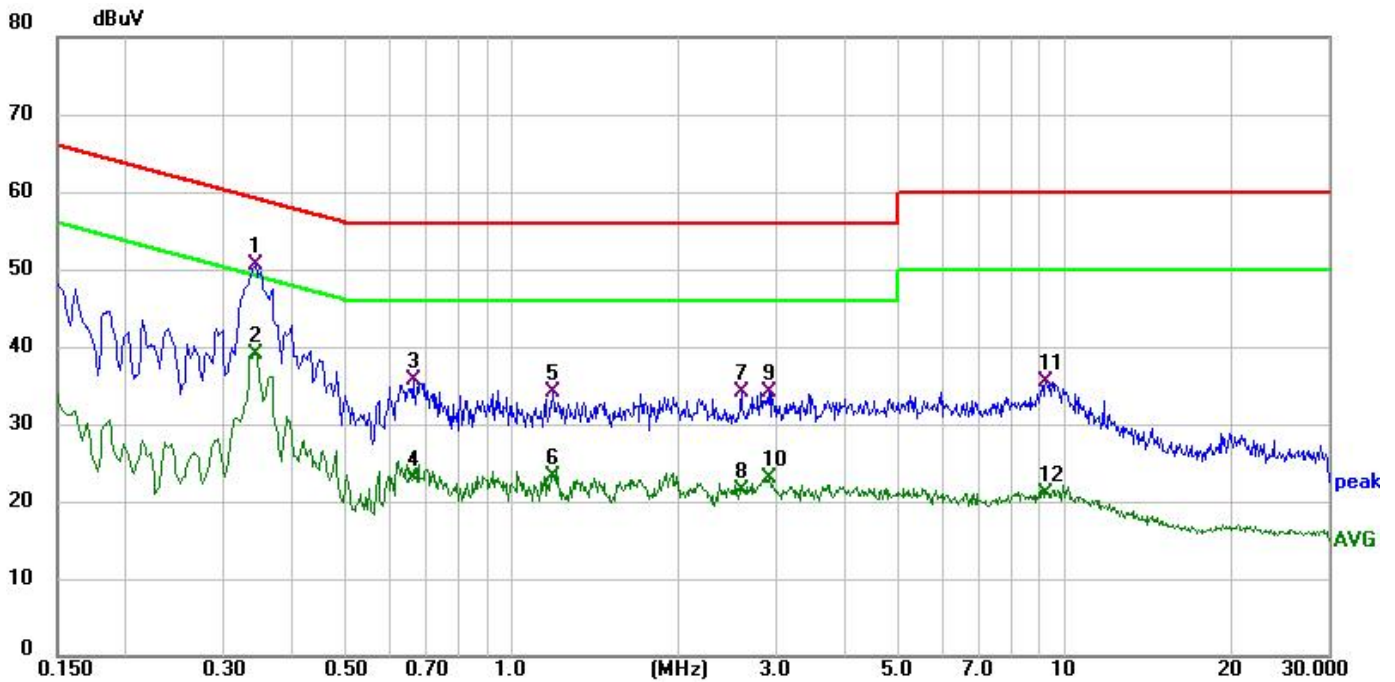


2.3. Test Procedure

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

Conducted Emission At The Mains Terminals Test Data			
Temperature:	24.2°C	Relative Humidity:	46%
Pressure:	1008hPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	Charging+GFSK



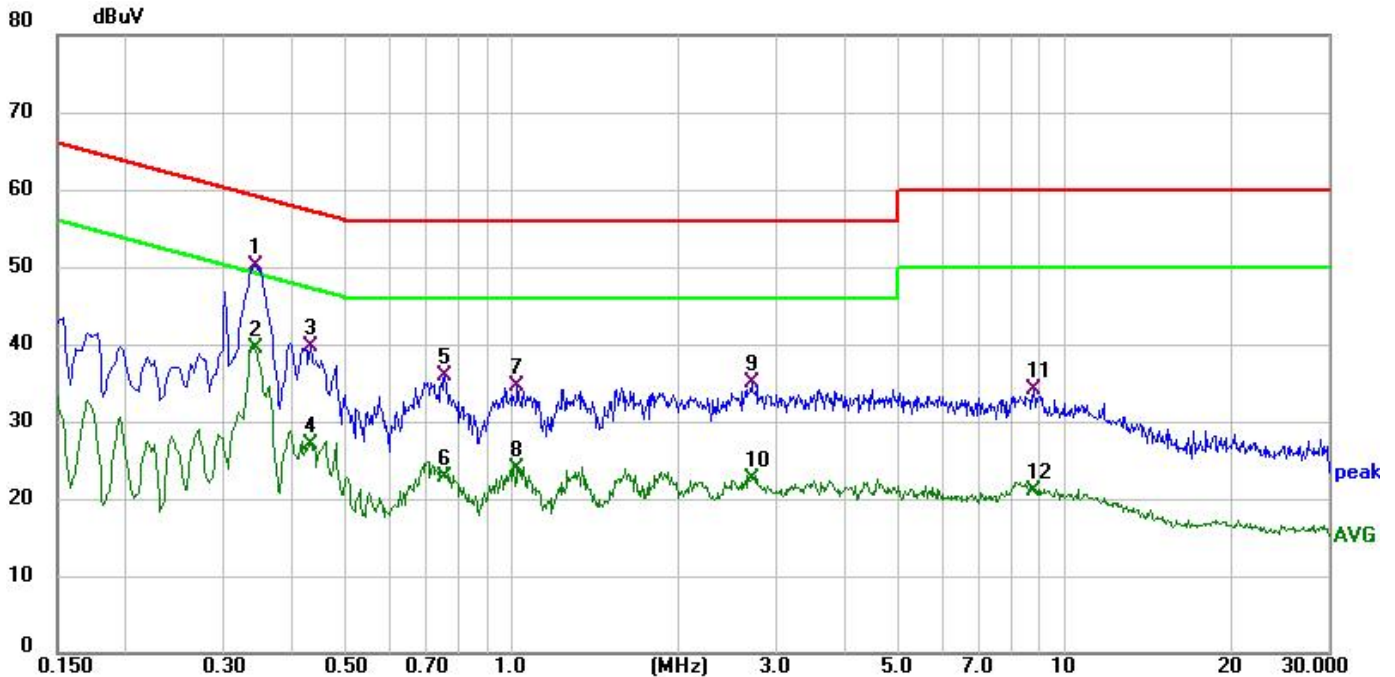
No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.3420	30.84	19.68	50.52	59.15	-8.63	QP
2	0.3420	19.40	19.68	39.08	49.15	-10.07	AVG
3	0.6620	15.73	19.84	35.57	56.00	-20.43	QP
4	0.6620	3.08	19.84	22.92	46.00	-23.08	AVG
5	1.1860	14.49	19.65	34.14	56.00	-21.86	QP
6	1.1860	3.48	19.65	23.13	46.00	-22.87	AVG
7 *	2.5980	14.36	19.73	34.09	56.00	-21.91	QP
8	2.5980	1.80	19.73	21.53	46.00	-24.47	AVG
9	2.9219	14.43	19.74	34.17	56.00	-21.83	QP
10	2.9219	3.19	19.74	22.93	46.00	-23.07	AVG
11	9.3020	15.67	19.88	35.55	60.00	-24.45	QP
12	9.3020	1.17	19.88	21.05	50.00	-28.95	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. Have pre-scan all modulation and all test channel and recorded the worst mode(GFSK) in the report

Conducted Emission At The Mains Terminals Test Data

Temperature:	25.3°C	Relative Humidity:	55%
Pressure:	1008hPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	Charging+GFSK



No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.3420	30.32	19.73	50.05	59.15	-9.10	QP
2	0.3420	19.78	19.73	39.51	49.15	-9.64	AVG
3	0.4300	19.81	19.75	39.56	57.25	-17.69	QP
4	0.4300	7.18	19.75	26.93	47.25	-20.32	AVG
5	0.7580	16.09	19.79	35.88	56.00	-20.12	QP
6	0.7580	2.93	19.79	22.72	46.00	-23.28	AVG
7	1.0220	14.65	19.83	34.48	56.00	-21.52	QP
8	1.0220	4.02	19.83	23.85	46.00	-22.15	AVG
9	2.7180	15.13	19.86	34.99	56.00	-21.01	QP
10	2.7180	2.80	19.86	22.66	46.00	-23.34	AVG
11	8.8100	14.26	19.83	34.09	60.00	-25.91	QP
12	8.8100	1.23	19.83	21.06	50.00	-28.94	AVG

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading + Factor - Limit
3. Have pre-scan all modulation and all test channel and recorded the worst mode(GFSK) in the report

3. Radiated Spurious Emissions

3.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247
Test Method: 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

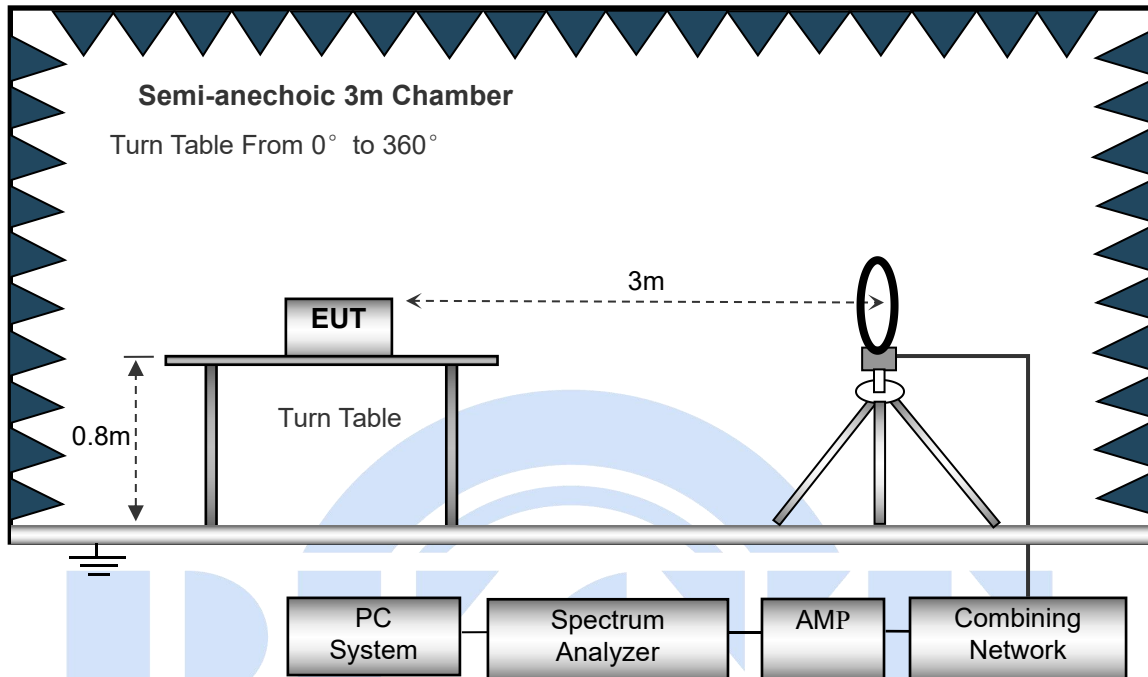
Limit:

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	$20\log(500)$

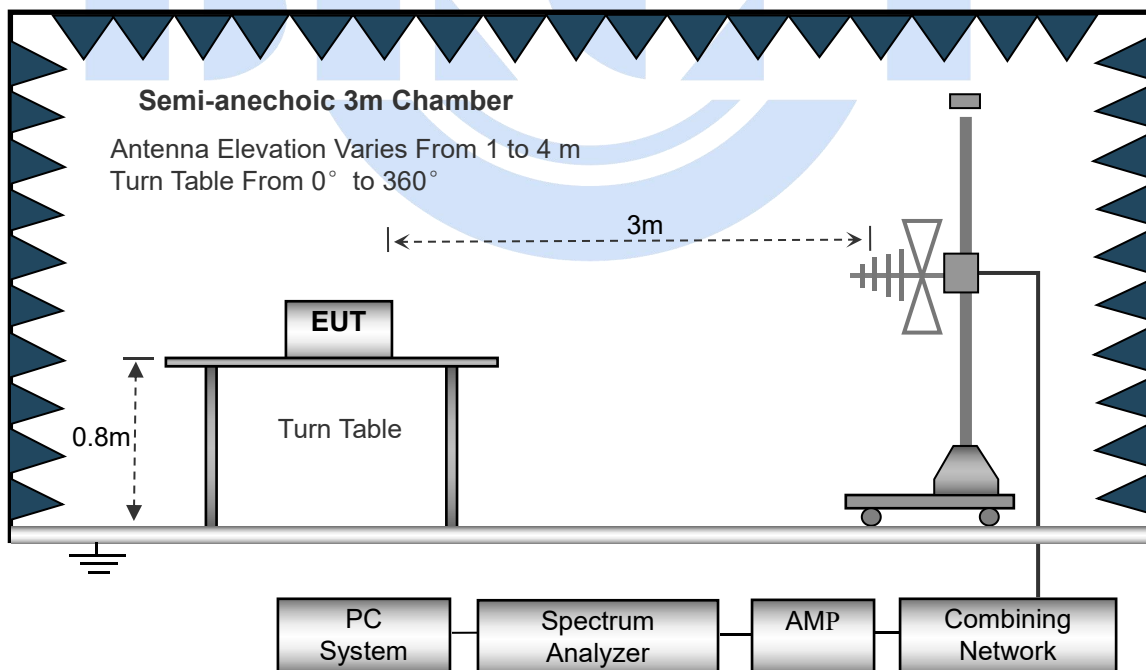
3.2. Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024.

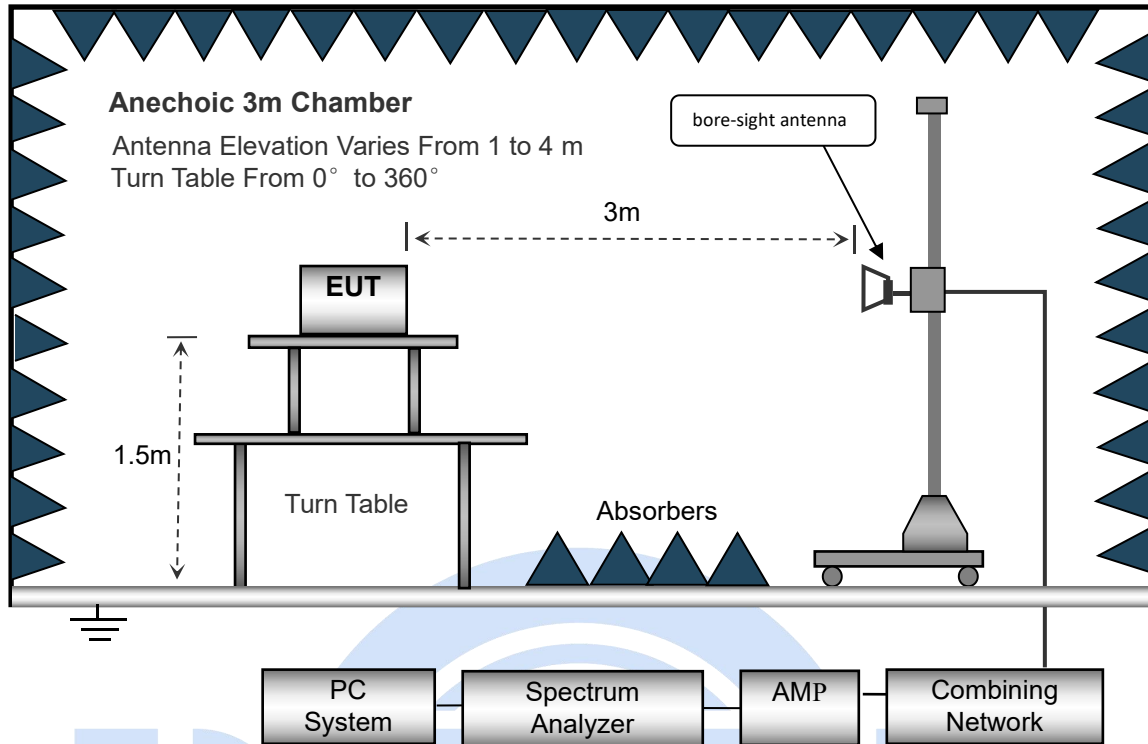
The test setup for emission measurement below 30MHz.



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.



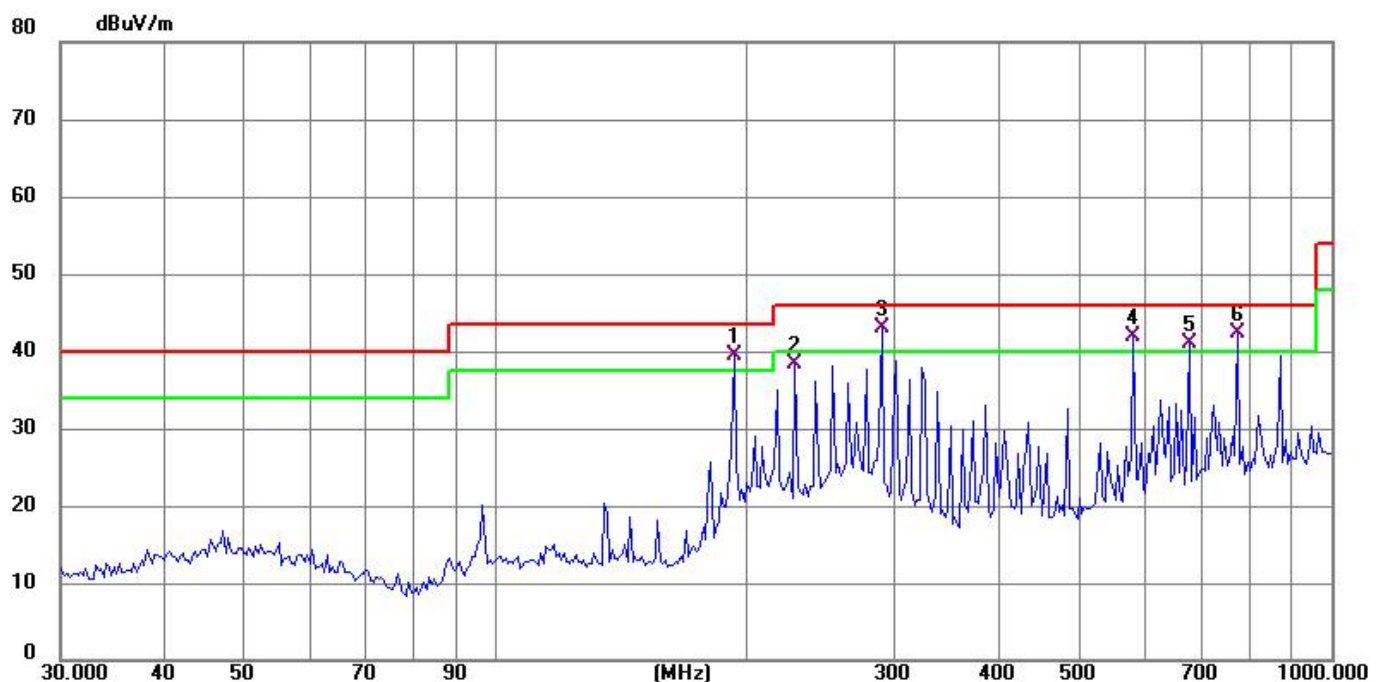
3.4. Test Result

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°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	AC 120V/60Hz	Test Mode	Working+8DPSK(CH39)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	192.4183	52.63	-13.24	39.39	43.50	-4.11	QP
2	227.6906	51.12	-12.84	38.28	46.00	-7.72	QP
3	289.0021	55.08	-12.10	42.98	46.00	-3.02	QP
4	578.6699	49.55	-7.57	41.98	46.00	-4.02	QP
5	675.2080	47.16	-6.17	40.99	46.00	-5.01	QP
6	771.4486	47.04	-4.70	42.34	46.00	-3.66	QP

Note:

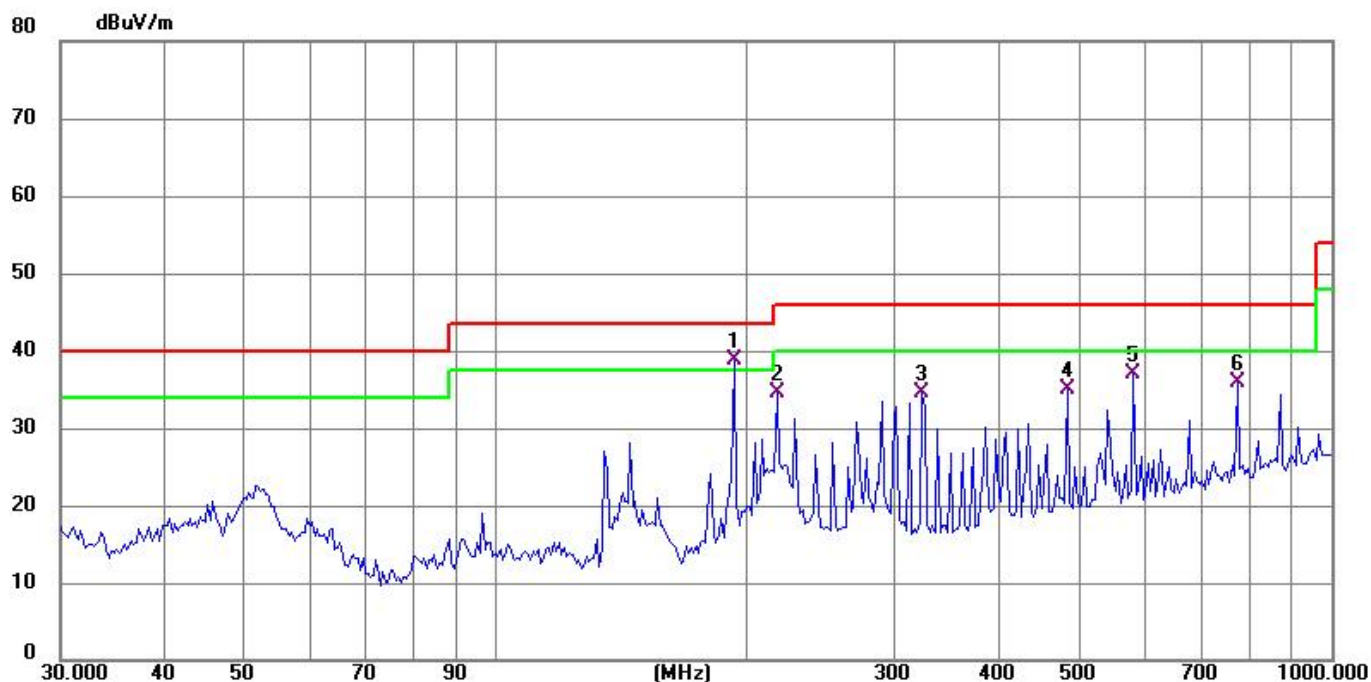
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Level = Reading + Factor

Margin= Level-Limit

2. Have pre-scan all modulation and all test channel and recorded the worst mode(8DPSK) in the report

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	AC 120V/60Hz	Test Mode	Working+8DPSK(CH39)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	192.4186	52.08	-13.24	38.84	43.50	-4.66	QP
2	216.7828	47.48	-12.96	34.52	46.00	-11.48	QP
3	323.3204	46.13	-11.62	34.51	46.00	-11.49	QP
4	482.2156	44.30	-9.41	34.89	46.00	-11.11	QP
5	578.6699	44.47	-7.57	36.90	46.00	-9.10	QP
6	771.4486	40.59	-4.70	35.89	46.00	-10.11	QP

Note:

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

Level = Reading + Factor

Margin= Level-Limit

2. Have pre-scan all modulation and all test channel and recorded the worst mode(8DPSK) in the report

GFSK

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:2402MHz									
V	4804.000	41.69	33.55	5.81	31.52	45.47	74.00	-28.53	Pk
V	4804.000	21.01	33.55	5.81	31.52	24.79	54.00	-29.21	AV
V	7206.000	42.04	32.33	6.32	36.30	52.33	74.00	-21.67	Pk
V	7206.000	22.99	32.33	6.32	36.30	33.28	54.00	-20.72	AV
V	9608.000	42.22	31.85	7.45	37.80	55.62	74.00	-18.38	Pk
V	9608.000	29.19	31.85	7.45	37.80	42.59	54.00	-11.41	AV
V	12010.000	45.80	31.02	8.99	39.50	63.27	74.00	-10.73	Pk
V	12010.000	29.98	31.02	8.99	39.50	47.45	54.00	-6.55	AV
H	4804.000	42.56	33.55	5.81	31.52	46.34	74.00	-27.66	Pk
H	4804.000	24.00	33.55	5.81	31.52	27.78	54.00	-26.22	AV
H	7206.000	44.62	32.33	6.32	36.30	54.91	74.00	-19.09	Pk
H	7206.000	23.57	32.33	6.32	36.30	33.86	54.00	-20.14	AV
H	9608.000	43.33	31.85	7.45	37.80	56.73	74.00	-17.27	Pk
H	9608.000	26.93	31.85	7.45	37.80	40.33	54.00	-13.67	AV
H	12010.000	45.80	31.02	8.99	39.50	63.27	74.00	-10.73	Pk
H	12010.000	29.18	31.02	8.99	39.50	46.65	54.00	-7.35	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:2441MHz									
V	4882.00	42.42	33.52	5.87	31.57	46.34	74.00	-27.66	Pk
V	4882.00	20.83	33.52	5.87	31.57	24.75	54.00	-29.25	AV
V	7323.00	44.66	32.29	6.37	36.35	55.09	74.00	-18.91	Pk
V	7323.00	23.27	32.29	6.37	36.35	33.70	54.00	-20.30	AV
V	9764.00	41.93	31.61	7.73	37.89	55.94	74.00	-18.06	Pk
V	9764.00	28.21	31.61	7.73	37.89	42.22	54.00	-11.78	AV
V	12205.00	42.72	30.83	9.36	39.57	60.82	74.00	-13.18	Pk
V	12205.00	30.48	30.83	9.36	39.57	48.58	54.00	-5.42	AV
H	4882.00	44.01	33.52	5.87	31.57	47.93	74.00	-26.07	Pk
H	4882.00	21.36	33.52	5.87	31.57	25.28	54.00	-28.72	AV
H	7323.00	44.66	32.29	6.37	36.35	55.09	74.00	-18.91	Pk
H	7323.00	21.55	32.29	6.37	36.35	31.98	54.00	-22.02	AV
H	9764.00	40.94	31.61	7.73	37.89	54.95	74.00	-19.05	Pk
H	9764.00	27.07	31.61	7.73	37.89	41.08	54.00	-12.92	AV
H	12205.00	43.31	30.83	9.36	39.57	61.41	74.00	-12.59	Pk
H	12205.00	27.47	30.83	9.36	39.57	45.57	54.00	-8.43	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	4960.00	43.83	33.48	5.96	31.91	48.22	74.00	-25.78	Pk
V	4960.00	22.38	33.48	5.96	31.91	26.77	54.00	-27.23	AV
V	7440.00	41.49	32.12	6.53	36.75	52.65	74.00	-21.35	Pk
V	7440.00	22.00	32.12	6.53	36.75	33.16	54.00	-20.84	AV
V	9920.00	42.42	31.34	7.93	37.03	56.04	74.00	-17.96	Pk
V	9920.00	26.95	31.34	7.93	37.03	40.57	54.00	-13.43	AV
V	12400.00	44.25	30.66	10.21	39.07	62.87	74.00	-11.13	Pk
V	12400.00	30.11	30.66	10.21	39.07	48.73	54.00	-5.27	AV
H	4960.00	44.51	33.48	5.96	31.91	48.90	74.00	-25.10	Pk
H	4960.00	23.62	33.48	5.96	31.91	28.01	54.00	-25.99	AV
H	7440.00	41.35	32.12	6.53	36.75	52.51	74.00	-21.49	Pk
H	7440.00	24.03	32.12	6.53	36.75	35.19	54.00	-18.81	AV
H	9920.00	42.71	31.34	7.93	37.03	56.33	74.00	-17.67	Pk
H	9920.00	28.42	31.34	7.93	37.03	42.04	54.00	-11.96	AV
H	12400.00	42.37	30.66	10.21	39.07	60.99	74.00	-13.01	Pk
H	12400.00	29.85	30.66	10.21	39.07	48.47	54.00	-5.53	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. Have pre-scan all modulation and all test channel and recorded the worst mode(GFSK) in the report

Radiated Band Emission Measurement:

	Polar (H/V)	Frequenc y (MHz)	Meter Reading (dBuV)	Pre-am plifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV /m)	Margi n (dB)	Detect or Type
GFSK	Low Channel: 2402MHz									
	H	2310.00	54.40	34.58	5.66	24.69	50.17	74.00	-23.83	PK
	H	2310.00	44.74	34.58	5.66	24.69	40.51	54.00	-13.49	AV
	H	2390.00	53.92	34.56	5.71	24.51	49.58	74.00	-24.42	PK
	H	2390.00	44.84	34.56	5.71	24.51	40.50	54.00	-13.50	AV
	H	2400.00	54.80	34.55	5.77	24.58	50.60	74.00	-23.40	PK
	H	2400.00	44.29	34.55	5.77	24.58	40.09	54.00	-13.91	AV
	V	2310.00	54.20	34.58	5.66	24.69	49.97	74.00	-24.03	PK
	V	2310.00	44.01	34.58	5.66	24.69	39.78	54.00	-14.22	AV
	V	2390.00	53.59	34.56	5.71	24.51	49.25	74.00	-24.75	PK
	V	2390.00	44.69	34.56	5.71	24.51	40.35	54.00	-13.65	AV
	V	2400.00	53.79	34.55	5.77	24.58	49.59	74.00	-24.41	PK
	V	2400.00	44.34	34.55	5.77	24.58	40.14	54.00	-13.86	AV
	High Channel: 2480MHz									
	H	2483.50	54.89	34.49	5.86	24.98	51.24	74.00	-22.76	PK
	H	2483.50	44.57	34.49	5.86	24.98	40.92	54.00	-13.08	AV
	H	2500.00	53.67	34.43	5.93	25.03	50.20	74.00	-23.80	PK
	H	2500.00	44.21	34.43	5.93	25.03	40.74	54.00	-13.26	AV
	V	2483.50	53.64	34.49	5.86	24.98	49.99	74.00	-24.01	PK
	V	2483.50	44.52	34.49	5.86	24.98	40.87	54.00	-13.13	AV
	V	2500.00	54.74	34.43	5.93	25.03	51.27	74.00	-22.73	PK
	V	2500.00	44.87	34.43	5.93	25.03	41.40	54.00	-12.60	AV
π /4-DQPSK	Low Channel: 2402MHz									
	H	2310.00	54.80	34.58	5.66	24.69	50.57	74.00	-23.43	PK
	H	2310.00	44.17	34.58	5.66	24.69	39.94	54.00	-14.06	AV
	H	2390.00	54.77	34.56	5.71	24.51	50.43	74.00	-23.57	PK
	H	2390.00	44.43	34.56	5.71	24.51	40.09	54.00	-13.91	AV
	H	2400.00	54.85	34.55	5.77	24.58	50.65	74.00	-23.35	PK
	H	2400.00	44.70	34.55	5.77	24.58	40.50	54.00	-13.50	AV
	V	2310.00	54.44	34.58	5.66	24.69	50.21	74.00	-23.79	PK
	V	2310.00	44.23	34.58	5.66	24.69	40.00	54.00	-14.00	AV
	V	2390.00	53.07	34.56	5.71	24.51	48.73	74.00	-25.27	PK
	V	2390.00	44.06	34.56	5.71	24.51	39.72	54.00	-14.28	AV
	V	2400.00	53.15	34.55	5.77	24.58	48.95	74.00	-25.05	PK
	V	2400.00	44.25	34.55	5.77	24.58	40.05	54.00	-13.95	AV
	High Channel: 2480MHz									
	H	2483.50	54.45	34.49	5.86	24.98	50.80	74.00	-23.20	PK
	H	2483.50	44.22	34.49	5.86	24.98	40.57	54.00	-13.43	AV
	H	2500.00	54.01	34.43	5.93	25.03	50.54	74.00	-23.46	PK
	H	2500.00	44.95	34.43	5.93	25.03	41.48	54.00	-12.52	AV
	V	2483.50	53.50	34.49	5.86	24.98	49.85	74.00	-24.15	PK
	V	2483.50	44.29	34.49	5.86	24.98	40.64	54.00	-13.36	AV
	V	2500.00	53.27	34.43	5.93	25.03	49.80	74.00	-24.20	PK
	V	2500.00	44.29	34.43	5.93	25.03	40.82	54.00	-13.18	AV
8-DPSK	Low Channel: 2402MHz									
	H	2310.00	54.52	34.58	5.66	24.69	50.29	74.00	-23.71	PK
	H	2310.00	44.43	34.58	5.66	24.69	40.20	54.00	-13.80	AV
	H	2390.00	54.91	34.56	5.71	24.51	50.57	74.00	-23.43	PK
	H	2390.00	44.15	34.56	5.71	24.51	39.81	54.00	-14.19	AV

H	2400.00	55.00	34.55	5.77	24.58	50.80	74.00	-23.20	PK
H	2400.00	44.16	34.55	5.77	24.58	39.96	54.00	-14.04	AV
V	2310.00	53.29	34.58	5.66	24.69	49.06	74.00	-24.94	PK
V	2310.00	44.04	34.58	5.66	24.69	39.81	54.00	-14.19	AV
V	2390.00	53.62	34.56	5.71	24.51	49.28	74.00	-24.72	PK
V	2390.00	44.44	34.56	5.71	24.51	40.10	54.00	-13.90	AV
V	2400.00	53.94	34.55	5.77	24.58	49.74	74.00	-24.26	PK
V	2400.00	44.69	34.55	5.77	24.58	40.49	54.00	-13.51	AV
High Channel: 2480MHz									
H	2483.50	54.44	34.49	5.86	24.98	50.79	74.00	-23.21	PK
H	2483.50	44.77	34.49	5.86	24.98	41.12	54.00	-12.88	AV
H	2500.00	54.00	34.43	5.93	25.03	50.53	74.00	-23.47	PK
H	2500.00	44.46	34.43	5.93	25.03	40.99	54.00	-13.01	AV
V	2483.50	54.92	34.49	5.86	24.98	51.27	74.00	-22.73	PK
V	2483.50	44.27	34.49	5.86	24.98	40.62	54.00	-13.38	AV
V	2500.00	54.41	34.43	5.93	25.03	50.94	74.00	-23.06	PK
V	2500.00	44.13	34.43	5.93	25.03	40.66	54.00	-13.34	AV

Remark:

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



4. Maximum Output Power

4.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 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.

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 $\geq$ RBW
 - Sweep = auto
 - Detector function = peak
 - Trace = max hold

4.4. Test Result

Please see the attachment for EDR Appendix data.

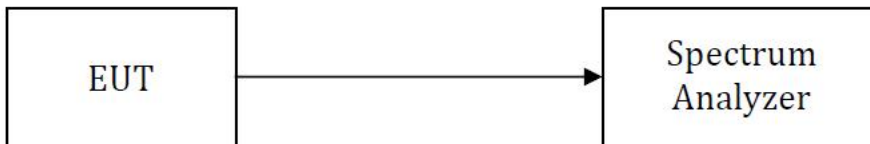
5. -20 dB Bandwidth Measurement

5.1. Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 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

5.2. Test Setup



5.3. Test Procedure

For 20dB Bandwidth Measurement

Using the following spectrum analyzer settings:

1. Span= approximately 2 to 3 times the 20dB bandwidth, centered on a hopping channel.
2. Set the RBW = 30 kHz.
3. Set the VBW $\geq$ 3RBW
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

For 99% Bandwidth Measurement

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 = 1%-5% OBW, VBW $\geq$ 3RBW

5.4. Test Result

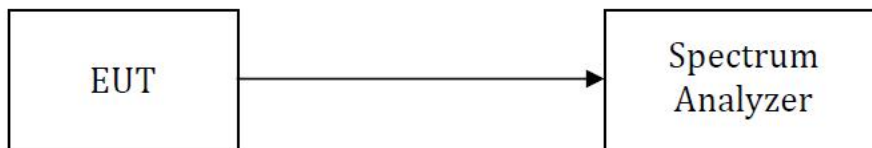
Please see the attachment for EDR Appendix data.

6. Carrier Frequency Separation Test

6.1. Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	>25KHz or >two-thirds of the 20 dB bandwidth

6.2. Test Setup



6.3. Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer settings:

1. Span= Wide enough to capture the peaks of two adjacent channels
2. Set the RBW = 300 kHz.
3. Set the VBW = 300 kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

6.4. Test Result

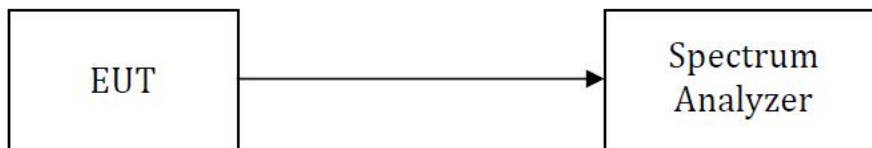
Please see the attachment for EDR Appendix data.

7. Number of Hopping Channel Test

7.1. Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	>15 channels

7.2. Test Setup



7.3. Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer settings:

1. Span= Wide enough to capture the peaks of two adjacent channels
2. Set the RBW = 300 kHz.
3. Set the VBW = 300 kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

7.4. Test Result

Please see the attachment for EDR Appendix data.

8. Dwell Time Test

8.1. Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	0.4 sec

8.2. Test setup



8.3. Test Procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span= zero span, centered on a hopping channel
2. Set the RBW = 100KHz.
3. Set the VBW = 100KHz.
4. Sweep time = as necessary to capture the entire dwell time per hopping channel.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

8.4. Test Result

Please see the attachment for EDR Appendix data.

9. Conducted Spurious Emissions and Band Edge Requirement

9.1. Limit

Test Standard	FCC Part15 C Section 15.247 (d)
Test Limit	in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

9.2. Test Setup



9.3. Test Procedure

The EUT must have its hopping/Non-hopping function enabled. Using the following spectrum analyzer setting:

1. Set the RBW = 100kHz.
2. Set the VBW = 300kHz.
3. Sweep time = auto couple.
4. Detector function = peak.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.

9.4. Test Result

Please see the attachment for EDR Appendix data.

10. Antenna Requirement

10.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203 /247(c)
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(c) (1)(i) requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

10.2. Antenna Connected Construction

The antenna is Internal Antenna which permanently attached, and the best case gain of the antenna is -0.68dBi. It complies with the standard requirement.

11. TEST SETUP & EUT PHOTOGRAPH

Please see the attachment for details.

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

