

TEST REPORT

Applicant : Shenzhen Honglida Audio-Visual Electronics Co., Ltd
Address : 2nd Floor, Building B1, Dongzhijia Industrial Park, Lezhujiao,
Hangcheng Sub-district, Bao'an District, Shenzhen City
Manufacturer : Shenzhen Honglida Audio-Visual Electronics Co., Ltd
Address : 2nd Floor, Building B1, Dongzhijia Industrial Park, Lezhujiao,
Hangcheng Sub-district, Bao'an District, Shenzhen City
Product Name : Helmet headphones
Model Number : AY30, A20
Trademark : N/A
FCC ID : 2BR8Q-AY30
Test Date : Sep. 01, 2025 to Sep. 08, 2025
Date of Report : Sep. 16, 2025
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.
Test Procedure Used:
Standards : FCC CFR Title 47 Part 15 Subpart C Section 15.249
ANSI C63.10:2020

Prepared by(Test Engineer):
Carey Zheng



Reviewer(Supervisor):
Casey Wang



Approved(Manager):
Jerry Liao



TABLE OF CONTENT

1. General Information	4
1.1. Description of Device (EUT)	4
1.2. Channel List	4
1.3. Summary of test result	5
1.4. Special Accessories and Auxiliary Equipment	5
1.5. Block Diagram	5
1.6. Test mode	5
1.7. Test Conditions	6
1.8. Measurement Uncertainty (95% confidence levels, k=2)	6
1.9. Test Facility	6
1.10. Test Equipment	7
2. Conducted emission at the mains terminals test	9
2.1. Limit	9
2.2. Test Setup	9
2.3. Test Procedure	9
2.4. Test Result	10
3. Radiated Spurious Emissions	12
3.1. Limit	12
3.2. Test Setup	13
3.3. Test Procedure	15
3.4. Test Result	16
4. -20 dB Bandwidth Measurement	24
4.1. Limit	24
4.2. Test Setup	24
4.3. Test Procedure	24
4.4. Test Result	24
5. Antenna Requirement	26
6. Test Photographs	27
7. Appendix I: Photos of the EUT	27

Revision History of This Test Report

[illegible]

1. General Information

1.1. Description of Device (EUT)

EUT Name : Helmet headphones
Model No. : AY30, A20
Model Difference : The product is different for model name and outlook color. The mains test model is AY30.
Power supply : Input:DC 5V or Battery DC 3.7V
Operation frequency : 2402-2480MHz
Max. Field Strength : 102.99dBuV/m
Modulation : GFSK, Pi/4 DQPSK, 8DPSK
Antenna Type : PCB antenna, Maximum Gain is -0.85dBi
Hardware Version : 1.0
Software Version : 1.0.2.2
Intend use environment : Residential, commercial and light industrial environment

1.2. Channel List

No. of Channel	Frequency (MHz)	No. of Channel	Frequency (MHz)	No. of Channel	Frequency (MHz)	No. of Channel	Frequency (MHz)
01	2402	21	2422	41	2442	61	2462
02	2403	22	2423	42	2443	62	2463
03	2404	23	2424	43	2444	63	2464
04	2405	24	2425	44	2445	64	2465
05	2406	25	2426	45	2446	65	2466
~	~	~	~	~	~	~	~
16	2417	36	2437	56	2457	76	2477
17	2418	37	2438	57	2458	77	2478
18	2419	38	2439	58	2459	78	2479
19	2420	39	2440	59	2460	79	2480
20	2421	40	2441	60	2461		

1.3.Summary of test result

RF PART		
Test Items	Test Requirement	Result
Antenna requirement	FCC part 15.203/15.249 (c)	PASS
AC Power Line Conducted Emission	FCC part 15.207	PASS
Field strength of the fundamental signal	FCC part 15.15.249 (a)	PASS
Spurious emissions	FCC part 15.15.249 (a) (d)/15.209	PASS
Band edge	FCC part 15.249 (d)/15.205	PASS
20dB Occupied Bandwidth	FCC part 15.215 (c)	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

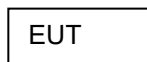
Description	Manufacturer	Model No.	Hardware Version	Software Version
Adapter	Shenzhen Intelligent Technology Co., LTD	H302	-	-

1.5.Block Diagram

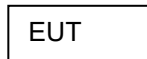
Conducted Emission



Radiated Emission



Conducted Spurious



1.6.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
Pi/4 DQPSK	2402MHz	2441MHz	2480MHz
8DPSK	2402MHz	2441MHz	2480MHz

Note: Only the worst Data DH5 Record in the report

1.7. 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	DC 5V or Battery DC 3.7V	N/A
Note: N/A is an abbreviation for Not Applicable.		

1.8. 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%		

1.9. 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

1.10. 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. 2025	Mar. 09. 2026
2	EMI Test Receiver	R&S	ESCI	101424	Mar. 10. 2025	Mar. 09. 2026
3	Rf cables	HTEC	HCE 2M-CE	N/A	Mar. 10. 2025	Mar. 09. 2026
4	Coupling/ Decoupling Network	Diamond	CX210	N/A	Mar. 10. 2025	Mar. 09. 2026
5	CE Testing software	EZ	EZ-EMC	/	/	/

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. 2025	Mar. 09. 2026
3	Preamplifier	HP	8447D	2727A05345	Mar. 10. 2025	Mar. 09. 2026
4	Double Ridged Broadband	SCHWARZBECK	BBHA 9120D	02621	Mar. 10. 2025	Mar. 19. 2028
5	Preamplifier	Schwarzbeck	BBV 9718D	00041	Mar. 10. 2025	Mar. 09. 2026
6	Rf cables	HUBER+SUHNER	8M-RE	N/A	Mar. 10. 2025	Mar. 09. 2026
7	Rf cables	HUBER+SUHNER	1.5M-RE	N/A	Mar. 10. 2025	Mar. 09. 2026
8	Rf cables	HUBER+SUHNER	1.5M-AP-RE	N/A	Mar. 10. 2025	Mar. 09. 2026
9	Loop antenna	TESEQ	HLA6121	58357	Mar. 09. 2025	Mar. 10. 2026
10	Spectrum analyzer	R&S	FSP40	200061	Feb. 13. 2025	Feb. 12. 2026
11	Double Ridged Broadband Horn Antenna	COM-POWER	AH-1840	10100009	Mar. 10. 2025	Mar. 09. 2026
12	Spectrum	Agilent	N9020A	MY50510311	Mar. 09. 2025	Mar. 10. 2026
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. 09. 2025	Mar. 10. 2026
2	Vector source	Agilent	N5182A	MY47420223	Mar. 09. 2025	Mar. 10. 2026
3	All instrument	Rohde & Schwarz	CMW 500	101131	Mar. 09. 2025	Mar. 10. 2026
4	control unit	MW	MW100-RFCB	MW200411BK-34	Mar. 09. 2025	Mar. 10. 2026
5	RF Testing software	MW	MTS 8310	/	Mar. 09. 2025	/
6	Spectrum analyzer	R&S	FSP40	200061	Feb. 13. 2025	Feb. 12. 2026

DUT Test Software	Manufacturer	Model	version	Test power levels
	Zhuhai Jieli Technology Co.,Ltd	FCC_assist_1.0.2.2	1.0.2.2	Maximum

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+



2. Conducted emission at the mains terminals test

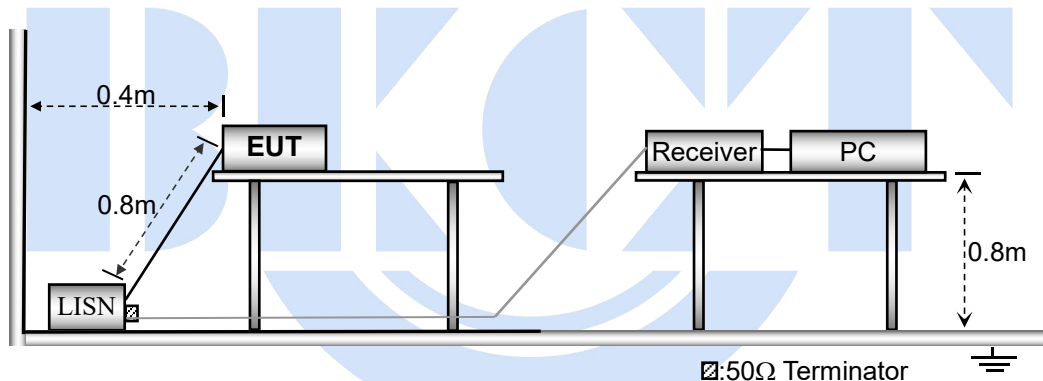
2.1.Limit

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

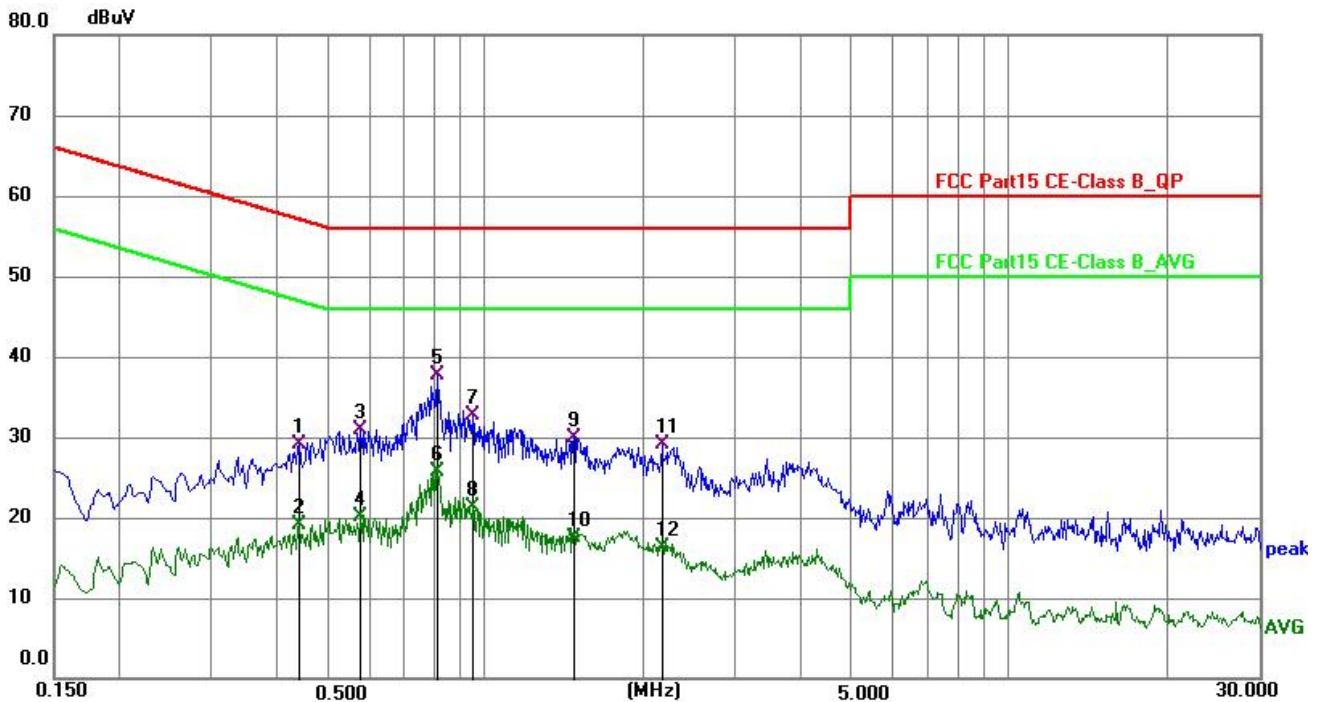


2.3.Test Procedure

1. The EUT was placed 0.1 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

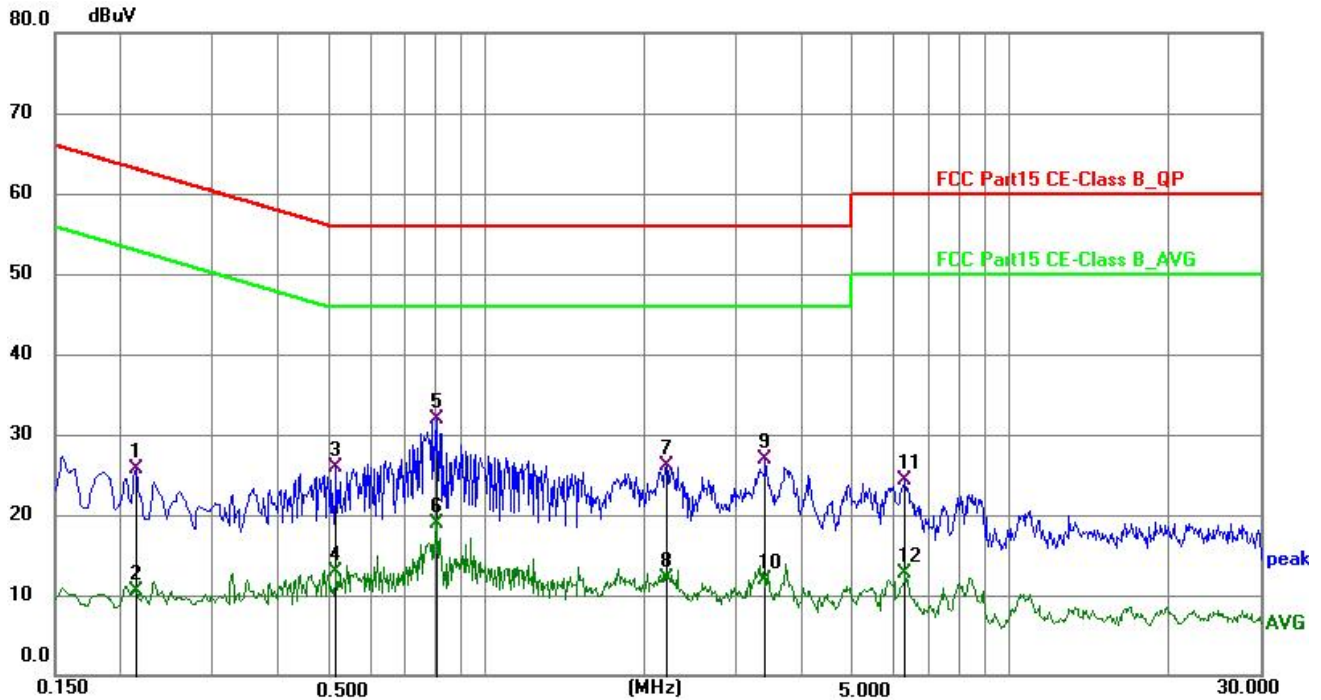
Conducted Emission At The Mains Terminals Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	Transmitting



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.4380	19.45	9.65	29.10	57.10	-28.00	QP	P
2	0.4380	9.49	9.65	19.14	47.10	-27.96	AVG	P
3	0.5775	21.28	9.66	30.94	56.00	-25.06	QP	P
4	0.5775	10.52	9.66	20.18	46.00	-25.82	AVG	P
5 *	0.8115	27.99	9.66	37.65	56.00	-18.35	QP	P
6	0.8115	16.14	9.66	25.80	46.00	-20.20	AVG	P
7	0.9465	22.97	9.65	32.62	56.00	-23.38	QP	P
8	0.9465	11.64	9.65	21.29	46.00	-24.71	AVG	P
9	1.4730	20.26	9.66	29.92	56.00	-26.08	QP	P
10	1.4730	7.84	9.66	17.50	46.00	-28.50	AVG	P
11	2.1705	19.38	9.67	29.05	56.00	-26.95	QP	P
12	2.1705	6.61	9.67	16.28	46.00	-29.72	AVG	P

Conducted Emission At The Mains Terminals Test Data

Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	Transmitting



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2130	16.12	9.58	25.70	63.09	-37.39	QP	P
2	0.2130	0.96	9.58	10.54	53.09	-42.55	AVG	P
3	0.5144	16.41	9.59	26.00	56.00	-30.00	QP	P
4	0.5144	3.39	9.59	12.98	46.00	-33.02	AVG	P
5 *	0.8070	22.41	9.59	32.00	56.00	-24.00	QP	P
6	0.8070	9.31	9.59	18.90	46.00	-27.10	AVG	P
7	2.2110	16.44	9.60	26.04	56.00	-29.96	QP	P
8	2.2110	2.55	9.60	12.15	46.00	-33.85	AVG	P
9	3.4035	17.23	9.62	26.85	56.00	-29.15	QP	P
10	3.4035	2.29	9.62	11.91	46.00	-34.09	AVG	P
11	6.3060	14.74	9.65	24.39	60.00	-35.61	QP	P
12	6.3060	3.04	9.65	12.69	50.00	-37.31	AVG	P

3. Radiated Spurious Emissions

3.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.249
Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;
ANSI C63.10:2020
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

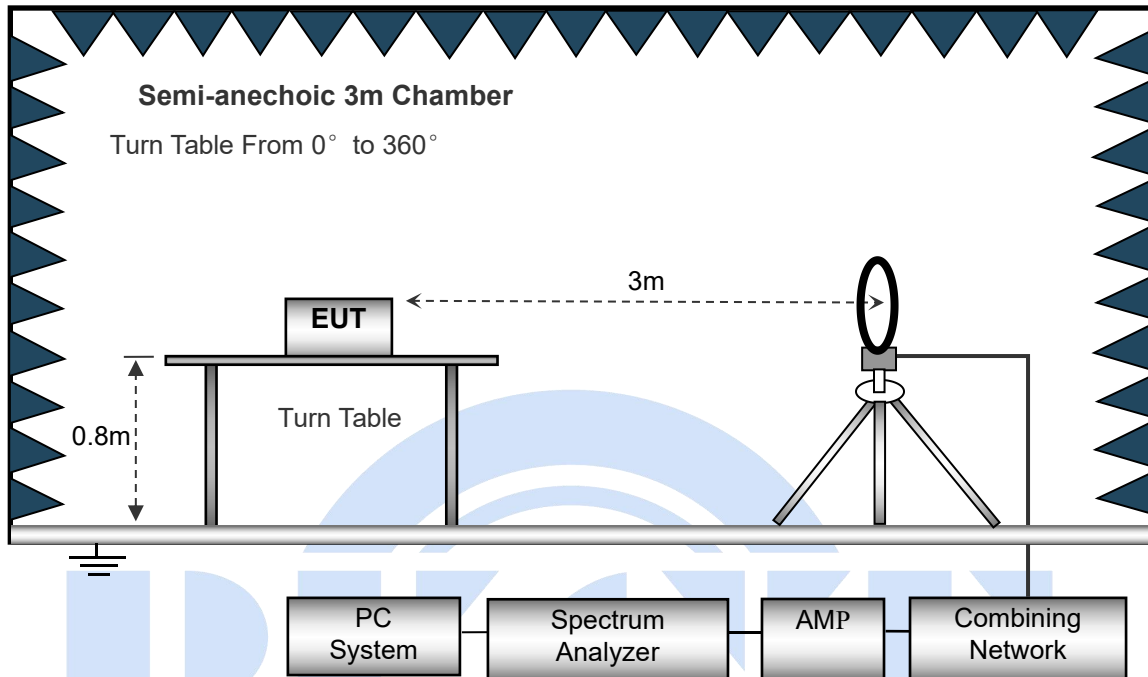
Limit:

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	$20\log(500)$

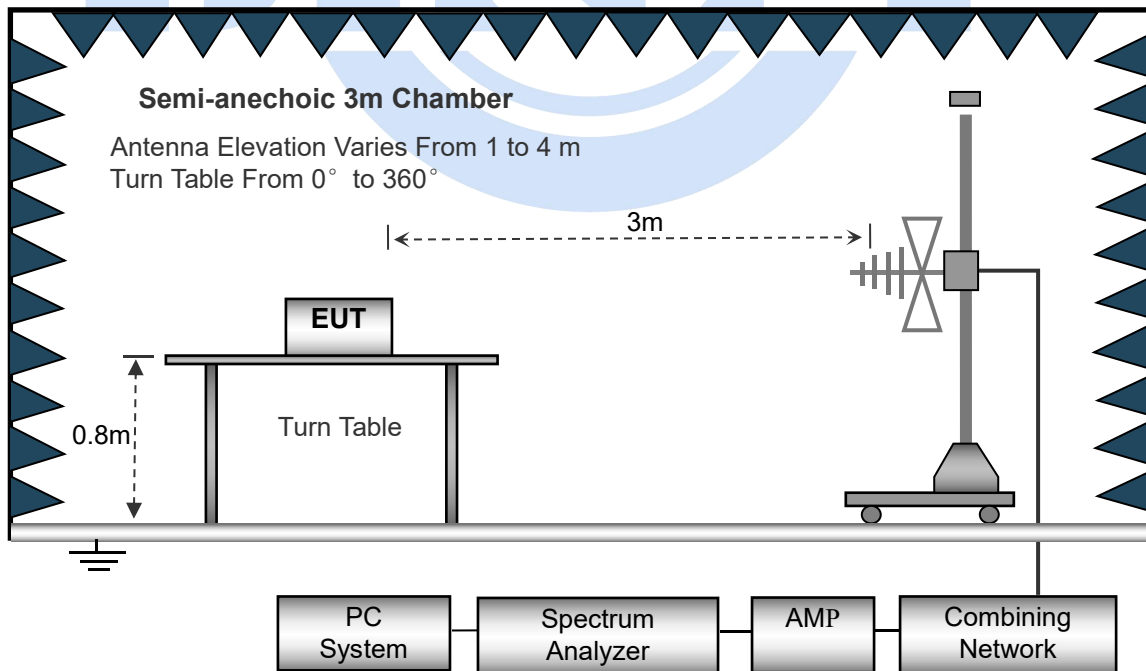
3.2. Test Setup

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

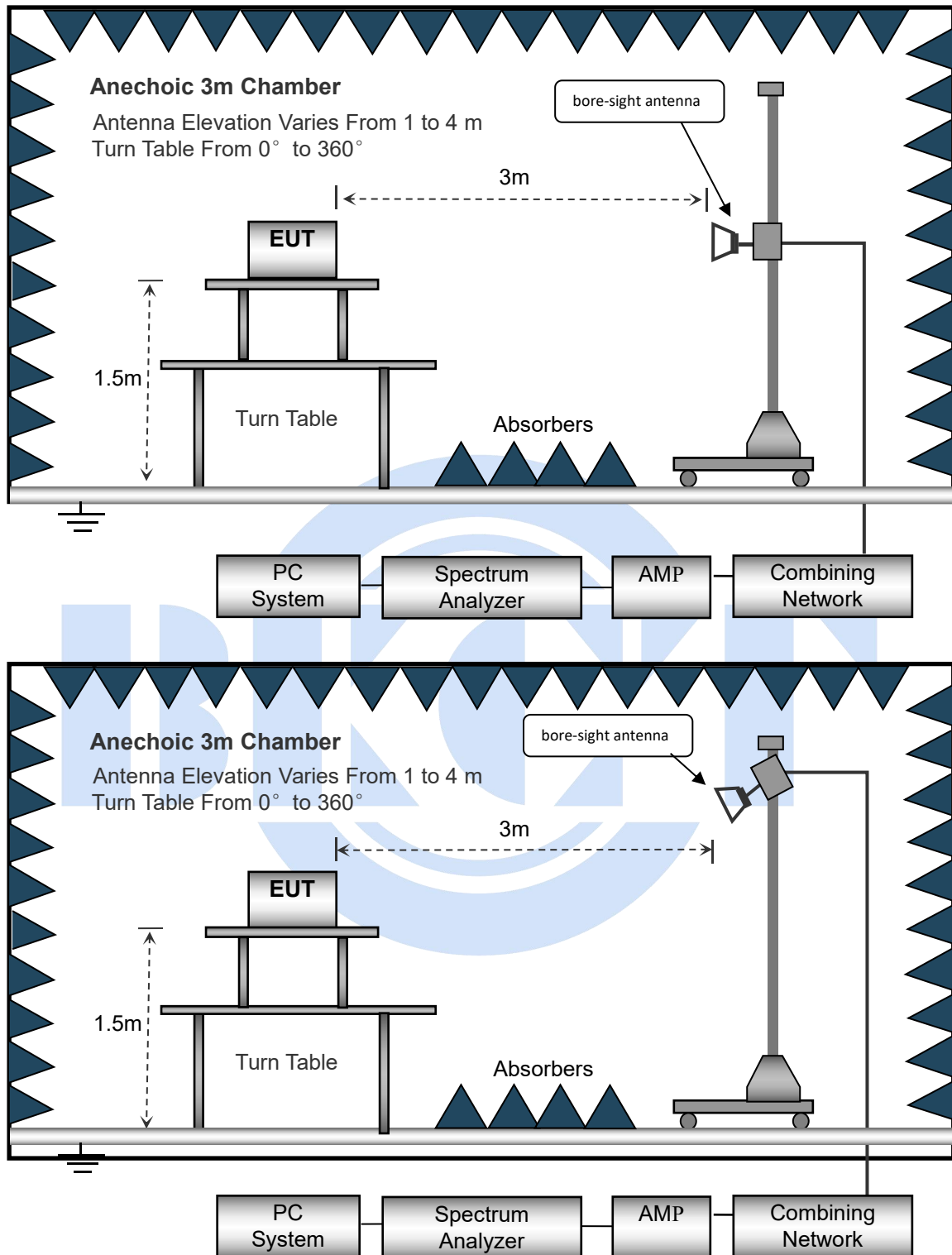
The test setup for emission measurement below 30MHz.



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.



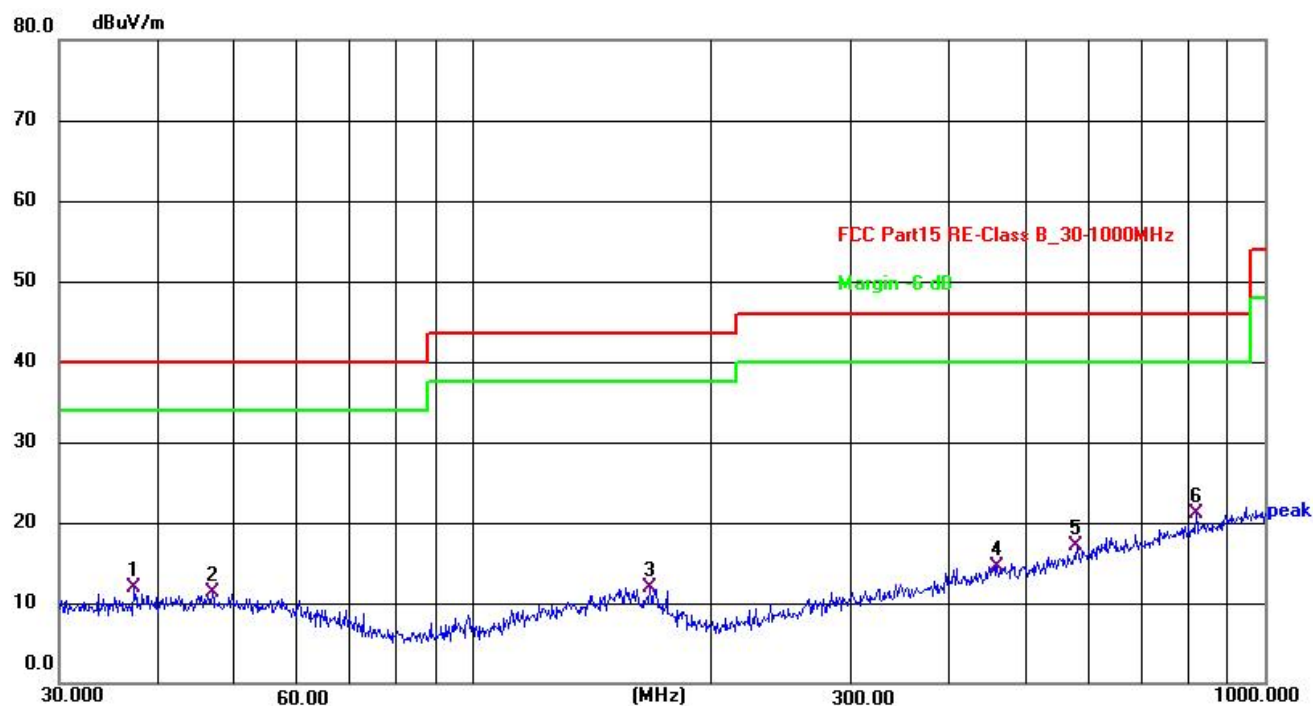
3.4. Test Result

Test Frequency: 9KHz~30MHz

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

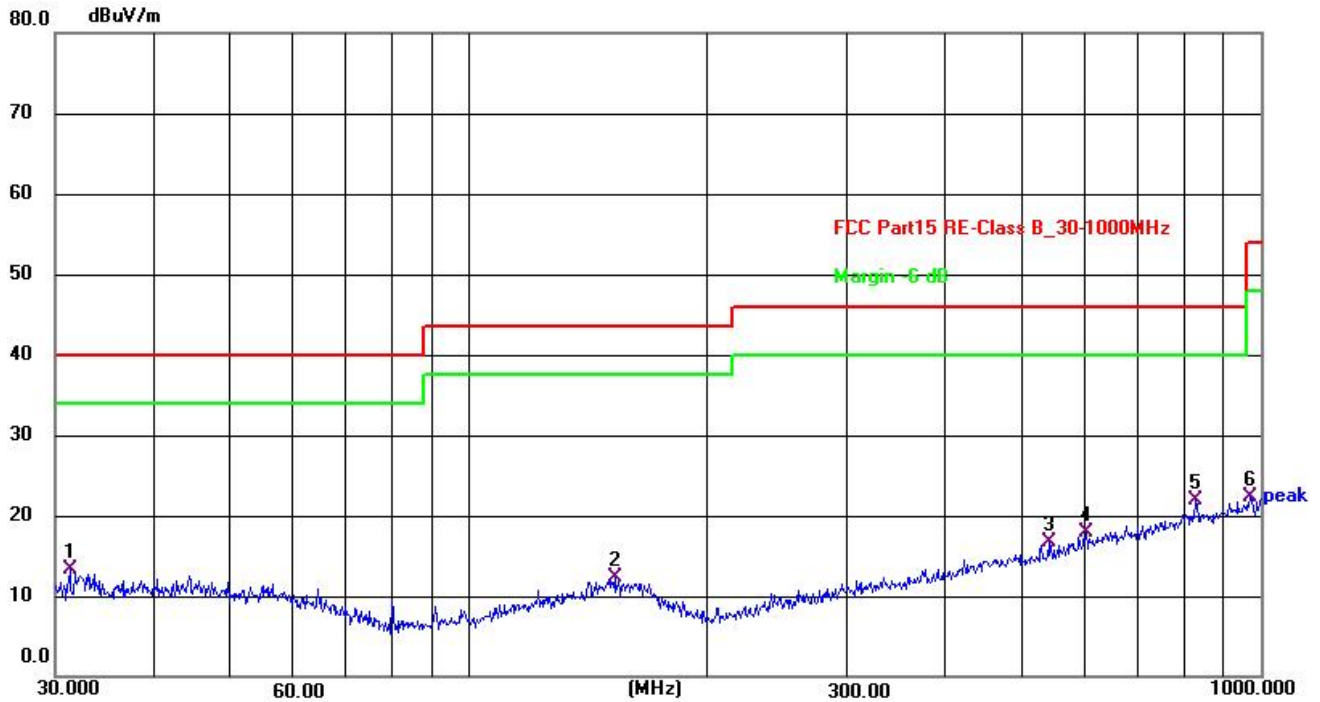
Test Frequency : 30MHz ~ 1GHz

Radiation Emission Test Data			
Temperature:	25.1 °C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	DC 3.7V	Test Mode	Transmitting



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	37.2855	28.53	-16.56	11.97	40.00	-28.03	QP
2	46.8303	27.91	-16.58	11.33	40.00	-28.67	QP
3	167.2368	28.36	-16.47	11.89	43.50	-31.61	QP
4	459.1144	28.19	-13.60	14.59	46.00	-31.41	QP
5	578.6699	29.11	-11.97	17.14	46.00	-28.86	QP
6 *	818.8341	29.64	-8.62	21.02	46.00	-24.98	QP

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 3.7V	Test Mode	Transmitting



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.2893	30.25	-16.98	13.27	40.00	-26.73	QP
2	152.6641	28.17	-15.85	12.32	43.50	-31.18	QP
3	539.4775	29.38	-12.67	16.71	46.00	-29.29	QP
4	601.4265	29.54	-11.56	17.98	46.00	-28.02	QP
5 *	827.4934	30.51	-8.53	21.98	46.00	-24.02	QP
6	968.9338	29.21	-6.90	22.31	54.00	-31.69	QP



Test Frequency 1GHz-25GHz:

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	4804.00	54.39	30.55	5.77	24.66	54.27	74.00	-19.73	Pk
V	4804.00	43.59	30.55	5.77	24.66	43.47	54.00	-10.53	AV
V	7206.00	50.82	30.33	6.32	24.55	51.36	74.00	-22.64	Pk
V	7206.00	43.39	30.33	6.32	24.55	43.93	54.00	-10.07	AV
V	9608.00	51.80	30.85	7.45	24.69	53.09	74.00	-20.91	Pk
V	9608.00	43.25	30.85	7.45	24.69	44.54	54.00	-9.46	AV
V	12010.00	51.82	31.02	8.99	25.57	55.36	74.00	-18.64	Pk
V	12010.00	43.61	31.02	8.99	25.57	47.15	54.00	-6.85	AV
H	4804.00	50.97	30.55	5.77	24.66	50.85	74.00	-23.15	Pk
H	4804.00	43.38	30.55	5.77	24.66	43.26	54.00	-10.74	AV
H	7206.00	53.71	30.33	6.32	24.55	54.25	74.00	-19.75	Pk
H	7206.00	43.44	30.33	6.32	24.55	43.98	54.00	-10.02	AV
H	9608.00	52.49	30.85	7.45	24.69	53.78	74.00	-20.22	Pk
H	9608.00	43.44	30.85	7.45	24.69	44.73	54.00	-9.27	AV
H	12010.00	53.59	31.02	8.99	25.57	57.13	74.00	-16.87	Pk
H	12010.00	43.85	31.02	8.99	25.57	47.39	54.00	-6.61	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	4880.00	54.03	30.55	5.77	24.66	53.91	74.00	-20.09	Pk
V	4880.00	43.35	30.55	5.77	24.66	43.23	54.00	-10.77	AV
V	7320.00	50.47	30.33	6.32	24.55	51.01	74.00	-22.99	Pk
V	7320.00	43.58	30.33	6.32	24.55	44.12	54.00	-9.88	AV
V	9760.00	50.67	30.85	7.45	24.69	51.96	74.00	-22.04	Pk
V	9760.00	43.60	30.85	7.45	24.69	44.89	54.00	-9.11	AV
V	12200.00	51.15	31.02	8.99	25.57	54.69	74.00	-19.31	Pk
V	12200.00	43.03	31.02	8.99	25.57	46.57	54.00	-7.43	AV
H	4880.00	50.45	30.55	5.77	24.66	50.33	74.00	-23.67	Pk
H	4880.00	43.84	30.55	5.77	24.66	43.72	54.00	-10.28	AV
H	7320.00	50.14	30.33	6.32	24.55	50.68	74.00	-23.32	Pk
H	7320.00	43.49	30.33	6.32	24.55	44.03	54.00	-9.97	AV
H	9760.00	51.67	30.85	7.45	24.69	52.96	74.00	-21.04	Pk
H	9760.00	43.31	30.85	7.45	24.69	44.60	54.00	-9.40	AV
H	12200.00	50.26	31.02	8.99	25.57	53.80	74.00	-20.20	Pk
H	12200.00	43.81	31.02	8.99	25.57	47.35	54.00	-6.65	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)	
High Channel:2480MHz									
V	4960.00	54.24	30.55	5.77	24.66	54.12	74.00	-19.88	Pk
V	4960.00	43.93	30.55	5.77	24.66	43.81	54.00	-10.19	AV
V	7440.00	52.85	30.33	6.32	24.55	53.39	74.00	-20.61	Pk
V	7440.00	43.40	30.33	6.32	24.55	43.94	54.00	-10.06	AV
V	9920.00	53.15	30.85	7.45	24.69	54.44	74.00	-19.56	Pk
V	9920.00	43.63	30.85	7.45	24.69	44.92	54.00	-9.08	AV
V	12400.00	50.77	31.02	8.99	25.57	54.31	74.00	-19.69	Pk
V	12400.00	43.40	31.02	8.99	25.57	46.94	54.00	-7.06	AV
H	4960.00	54.95	30.55	5.77	24.66	54.83	74.00	-19.17	Pk
H	4960.00	43.42	30.55	5.77	24.66	43.30	54.00	-10.70	AV
H	7440.00	53.15	30.33	6.32	24.55	53.69	74.00	-20.31	Pk
H	7440.00	43.66	30.33	6.32	24.55	44.20	54.00	-9.80	AV
H	9920.00	54.98	30.85	7.45	24.69	56.27	74.00	-17.73	Pk
H	9920.00	43.77	30.85	7.45	24.69	45.06	54.00	-8.94	AV
H	12400.00	50.87	31.02	8.99	25.57	54.41	74.00	-19.59	Pk
H	12400.00	43.49	31.02	8.99	25.57	47.03	54.00	-6.97	AV

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

2. If peak below the average limit, the average emission was no test.

3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



Spurious Emission in Restricted Band

	Polar (H/V)	Frequenc y (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV /m)	Detec tor Type	Result
GFSK	Low Channel: 2402MHz									
	H	2310.00	55.74	30.22	4.85	23.98	54.35	74.00	Pk	PASS
	H	2310.00	44.65	30.22	4.85	23.98	43.26	54.00	AV	PASS
	H	2390.00	54.45	30.22	4.85	23.98	53.06	74.00	Pk	PASS
	H	2390.00	44.08	30.22	4.85	23.98	42.69	54.00	AV	PASS
	H	2400.00	44.37	30.22	4.85	23.98	42.98	44.37	PK	PASS
	H	2400.00	53.39	30.22	4.85	23.98	52.00	53.39	AV	PASS
	V	2310.00	53.58	30.22	4.85	23.98	52.19	53.58	PK	PASS
	V	2310.00	44.85	30.22	4.85	23.98	43.46	44.85	AV	PASS
	V	2390.00	53.07	30.22	4.85	23.98	51.68	53.07	PK	PASS
	V	2390.00	44.61	30.22	4.85	23.98	43.22	44.61	AV	PASS
	V	2400.00	53.20	30.22	4.85	23.98	51.81	53.20	PK	PASS
	V	2400.00	44.09	30.22	4.85	23.98	42.70	44.09	AV	PASS
	High Channel: 2480MHz									
	H	2483.50	53.88	30.22	4.85	23.98	52.49	74.00	PK	PASS
	H	2483.50	44.47	30.22	4.85	23.98	43.08	54.00	AV	PASS
	H	2500.00	53.40	30.22	4.85	23.98	52.01	74.00	PK	PASS
	H	2500.00	44.26	30.22	4.85	23.98	42.87	54.00	AV	PASS
	V	2483.50	53.50	30.22	4.85	23.98	52.11	74.00	PK	PASS
	V	2483.50	44.03	30.22	4.85	23.98	42.64	54.00	AV	PASS
	V	2500.00	54.40	30.22	4.85	23.98	53.01	74.00	PK	PASS
	V	2500.00	44.07	30.22	4.85	23.98	42.68	54.00	AV	PASS
Remark:										
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit										



Field Strength of The Fundamental Signal Data

GFSK

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel: 2402MHz									
2402	104.05	PK	230	1.8	V	-1.06	102.99	114.00	-11.01
2402	88.74	Ave	289	1.9	V	-1.06	87.68	94.00	-6.32
2402	103.88	PK	130	1.4	H	-1.06	102.82	114.00	-11.18
2402	87.81	Ave	130	1.4	H	-1.06	86.75	94.00	-7.25

Mid CH

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Middle Channel: 2441MHz									
2441	104.01	PK	229	1.3	V	-1.32	102.69	114.00	-11.31
2441	88.75	Ave	229	1.3	V	-1.32	87.43	94.00	-6.57
2441	102.74	PK	156	1.6	H	-1.32	101.42	114.00	-12.58
2441	87.63	Ave	156	1.6	H	-1.32	86.31	94.00	-7.69

High CH

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
High Channel: 2480MHz									
2480	103.51	PK	164	1.7	V	-1.78	101.73	114.00	-12.27
2480	89.08	Ave	164	1.7	V	-1.78	87.3	94.00	-6.7
2480	103.11	PK	264	1.9	H	-1.78	101.33	114.00	-12.67
2480	88.36	Ave	264	1.9	H	-1.78	86.58	94.00	-7.42



PI/4 DQPSK

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel: 2402MHz									
2402	103.74	PK	230	1.8	V	-1.06	102.68	114.00	-11.32
2402	88.52	Ave	289	1.9	V	-1.06	87.46	94.00	-6.54
2402	103.93	PK	130	1.4	H	-1.06	102.87	114.00	-11.13
2402	87.51	Ave	130	1.4	H	-1.06	86.45	94.00	-7.55

Mid CH

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Middle Channel:2441MHz									
2441	103.14	PK	229	1.3	V	-1.32	101.82	114.00	-12.18
2441	87.63	Ave	229	1.3	V	-1.32	86.31	94.00	-7.69
2441	102.45	PK	156	1.6	H	-1.32	101.13	114.00	-12.87
2441	87.05	Ave	156	1.6	H	-1.32	85.73	94.00	-8.27

High CH

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
High Channel: 2480MHz									
2480	103.63	PK	164	1.7	V	-1.78	101.85	114.00	-12.15
2480	86.95	Ave	164	1.7	V	-1.78	85.17	94.00	-8.83
2480	101.44	PK	264	1.9	H	-1.78	99.66	114.00	-14.34
2480	86.32	Ave	264	1.9	H	-1.78	84.54	94.00	-9.46



8DPSK

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel: 2402MHz									
2402	102.95	PK	230	1.8	V	-1.06	101.89	114.00	-12.11
2402	88.14	Ave	289	1.9	V	-1.06	87.08	94.00	-6.92
2402	102.74	PK	130	1.4	H	-1.06	101.68	114.00	-12.32
2402	88.53	Ave	130	1.4	H	-1.06	87.47	94.00	-6.53

Mid CH

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Middle Channel:2441MHz									
2441	102.86	PK	229	1.3	V	-1.32	101.54	114.00	-12.46
2441	87.74	Ave	229	1.3	V	-1.32	86.42	94.00	-7.58
2441	102.96	PK	156	1.6	H	-1.32	101.64	114.00	-12.36
2441	87.06	Ave	156	1.6	H	-1.32	85.74	94.00	-8.26

High CH

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
High Channel: 2480MHz									
2480	103.22	PK	164	1.7	V	-1.78	101.44	114.00	-12.56
2480	88.32	Ave	164	1.7	V	-1.78	86.54	94.00	-7.46
2480	102.74	PK	264	1.9	H	-1.78	100.96	114.00	-13.04
2480	87.53	Ave	264	1.9	H	-1.78	85.75	94.00	-8.25

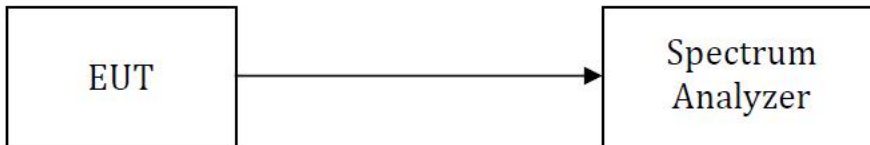
4. -20 dB Bandwidth Measurement

4.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.215

Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018; ANSI C63.10:2020

4.2.Test Setup

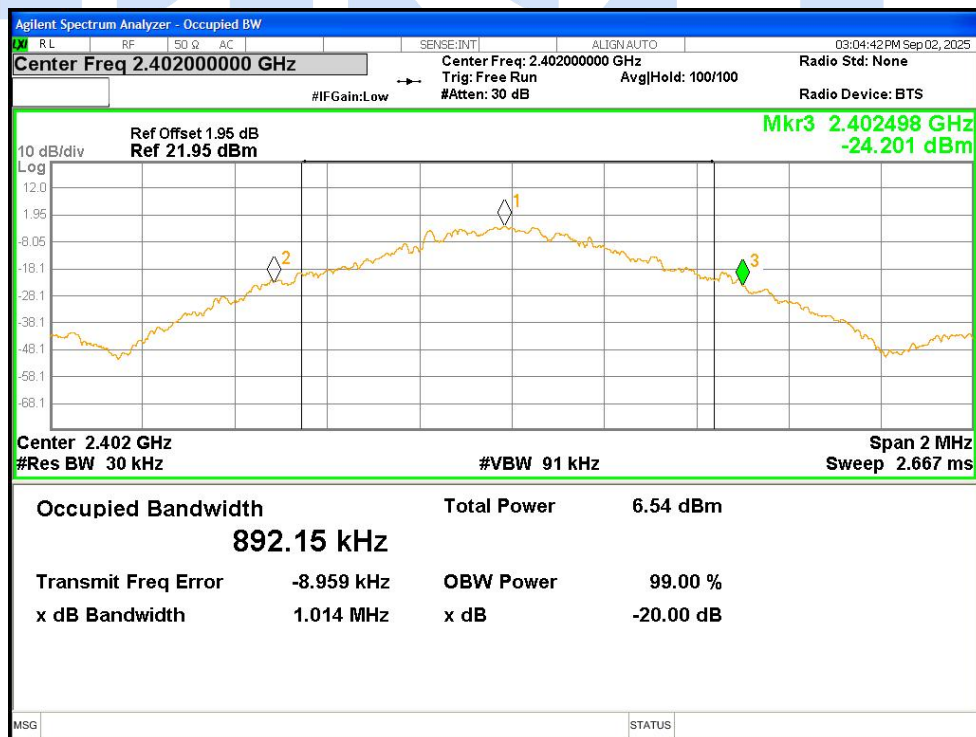


4.3.Test Procedure

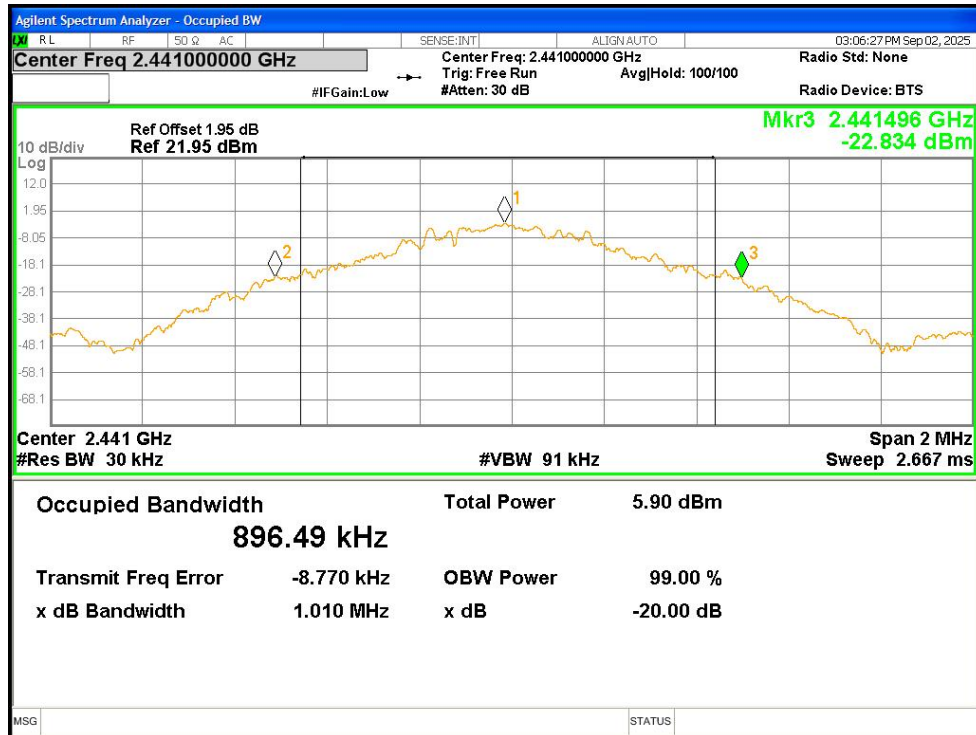
1. Set the spectrum analyzer: RBW = 1%-5% OBW
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by -20 dB relative to the maximum level measured in the fundamental emission

4.4.Test Result

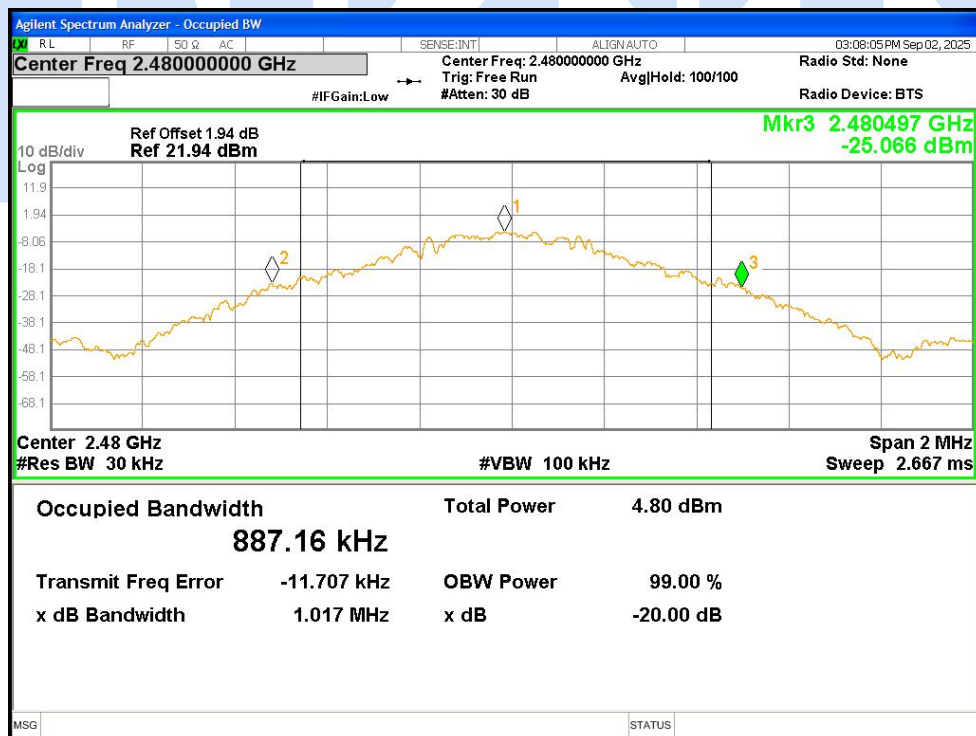
Frequency (MHz)	Antenna	99% OBW (MHz)	-20dB OBW (MHz)
2402	Ant1	0.892	1.014
2441	Ant1	0.896	1.010
2480	Ant1	0.887	1.017



OBW NVNT 2402MHz Ant1



OBW NVNT 2441MHz Ant1



OBW NVNT 2480MHz Ant1

5. Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, 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. This product has an PCB antenna fulfill the requirement of this section.



6. Test Photographs

Please see Attachment BKC25093715JE-3.

7. Appendix I: Photos of the EUT

Please see Attachment BKC25093715JE-4 and BKC25093715JE-5.

