Test Report

Applicant	:	Mr. Christmas LLC.
Address	:	5425 E Raines Rd. Ste 5 Memphis, TN 38115-6701, USA
Product Name	:	Holiday Jukebox with Bluetooth® technology
Brand Mark	:	Mr. Christmas
Model	:	12685
Series model	:	14500,14501,14502,14503,14504,14505, 14506,1450714508,14509,14510,14511, 14512,14513,14514,14515,14516,14517, 14518,14519
Report Number	:	BLA-EMC-202503-A6301R02
FCC ID	:	2BOBZ-JUKEBOX12685
Date of Receipt	:	Mar.14, 2025
Date of Test	:	Mar.17, 2025 to Mar.26, 2025
Test Standard	:	47 CFR Part 15, Subpart C 15.247
Test Result	:	Pass

Compiled by: charlie **Review by:** Xavier **Approved by:** Steve Zheng

Issued Date: Apr.30, 2025

BlueAsia of Technical Services(Shenzhen) Co., Ltd. BLA

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.

Address: Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

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Revise Record

Version No.	Date	Description
01	Mar.28,2025	Original
02	Apr.30, 2025	Based on the original report number BLA-EMC-202503-A6302, Update the appearance of the product The original report is invalid, and the nèw updated report numberBLA-EMC-202503-A6301R02R02 is effective.

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1 General information

1.1 General information

Applicant	Mr. Christmas LLC.
Address	5425 E Raines Rd. Ste 5 Memphis, TN 38115-6701, USA
Manufacturer	N/A
Address	N/A
Factory	NINGBO MAYE ELECTRIC APPLIANCE TECHNOLOGY CO., LTD.
Address	Industrial Zone, Hudi Village,Linshan Town,Yuyao, Ningbo Zhejiang Province,China.

1.2 General description of EUT

Product Name	Holiday Jukebox with Bluetooth® technology
Model No.	12685
Series model	14500,14501,14502,14503,14504,14505,14506,1450714508, 14509,14510,14511,14512,14513,14514,14515,14516,14517, 14518,14519
Differences of Series model	The above models are identical in PCB layout, internal structure andcomponents, only model No. and color is different.
Operation Frequency	2402MHz-2480MHz
Modulation Type	GFSK, π/4DQPSK, 8DPSK
Channel Spacing	1MHz
Number of Channels	79
Antenna Type	PCB antenna
Antenna Gain:	0dBi(Provided by customer)
Power supply or adapter information	DC4.5V(dry accumulator1.5V*3)
Hardware version	N/A
Software version	N/A
Engineer sample no	BLA-EMC-202503-A6301R
Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.	

2 Test summary

No.	Test item	FCC Part Section(s)	Test Method(Clause)	Result
1	Antenna Requirement	§15.203	N/A	Pass
2	Conducted Emissions at AC Power Line (150kHz-30MHz)	§15.207	ANSI C63.10-2013 Clause 6.2	Pass
3	Conducted Peak Output Power	§ 15.247 (b)(1)	ANSI C63.10-2013 Clause 7.8.5	Pass
4	20dB Bandwidth	§ 15.247 (a)(1)	ANSI C63.10-2013 Clause 6.9.2	Pass
5	Conducted Band Edges Measurement	§ 15.247 (d)	ANSI C63.10-2013 Clause 7.8.6	Pass
6	Conducted Spurious Emissions	§ 15.247 (d)	ANSI C63.10-2013 Clause 7.8.8	Pass
7	Carrier Frequencies Separation	§ 15.247 (a)(1)	ANSI C63.10-2013 Clause 7.8.2	Pass
8	Hopping Channel Number	§ 15.247 (a)(1) (iii)	ANSI C63.10-2013 Clause 7.8.3	Pass
9	Dwell Time	§ 15.247 (a)(1) (iii)	ANSI C63.10-2013 Clause 7.8.4	Pass
10	Radiated Spurious Emissions	§ 15.247 (d) § 15209	ANSI C63.10-2013 Clause 6.4,6.5,6.6	Pass
11	Radiated Emissions which fall in the restricted bands	§ 15.247 (d) § 15.205	ANSI C63.10-2013 Clause 6.10.5	Pass

N/A: Not Applicable

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3 Test Configuration

3.1 Test mode

Test Mode Note 1	Description
TX	Keep the EUT in continuously transmitting mode with modulation. (hopping and non-hopping mode all have been tested)
RX	Keep the EUT in receiving mode
TX Low channel	Keep the EUT in continuously transmitting mode in low channel
TX middle channel	Keep the EUT in continuously transmitting mode in middle channel
TX high channel	Keep the EUT in continuously transmitting mode in high channel

Note 1: The EUT was configured to measure its highest possible emission and/or immunity level. The test modes were adapted according to the operation manual for use

3.2 Operation Frequency each of channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
6	2408MHz	26	2428MHz	46	2448MHz	66	2468MHz
7	2409MHz	27	2429MHz	47	2449MHz	67	2469MHz
8	2410MHz	28	2430MHz	48	2450MHz	68	2470MHz
9	2411MHz	29	2431MHz	49	2451MHz	69	2471MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
12	2414MHz	32	2434MHz	52	2454MHz	72	2474MHz
13	2415MHz	33	2435MHz	53	2455MHz	73	2475MHz

14	2416MHz	34	2436MHz	54	2456MHz	74	2476MHz
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz	--	

3.3 Test channel

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2441MHz
The Highest channel	2480MHz

3.4 Auxiliary equipment

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	lenovo	E46OC	N/A	From lab（No.BLA-ZC-BS-2022005）
Note:"--" mean no any auxiliary device during testing.				

3.5 Test environment

Environment	Temperature	Voltage
Normal	25℃	DC 4.5V

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4 Laboratory information

4.1 Laboratory and accreditations

The test facility is recognized, certified, or accredited by the following organizations:

Company name:	BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Address:	Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
CNAS accredited No.:	L9788
A2LA Cert. No.:	5071.01
FCC Designation No.:	CN1252
ISED CAB identifier No.:	CN0028
Telephone:	+86-755-28682673
FAX:	+86-755-28682673

4.2 Measurement uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

Parameter	Expanded Uncertainty
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	±3.0 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %

5 Test equipment

Radiated Spurious Emissions (Below 1GHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-002-01	Anechoic chamber	9*6*6 chamber	SKET	N/A	2024/3/27	2027/3/26
BLA-EMC-002-02	Control room	966 control room	SKET	N/A	2024/3/27	2027/3/26
BLA-EMC-009	EMI receiver	ESR7	R&S	101199	2024/08/08	2025/08/07
BLA-EMC-043	Loop antenna	FMZB1519B	Schwarzbeck	00102	2024/06/29	2026/06/28
BLA-EMC-065	Broadband antenna	VULB9168	Schwarzbeck	01065P	2024/06/29	2026/06/27
BLA-XC-01	Coaxial Cable	N/A	BlueAsia	V01	N/A	N/A
BLA-XC-02	Coaxial Cable	N/A	BlueAsia	V02	N/A	N/A

Radiated Spurious Emissions (Above 1GHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-001-01	Anechoic chamber	9*6*6 chamber	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-001-02	Control Room	966 control room	SKET	N/A	2023/11/16	2025/11/15
BLA-EMC-008	Spectrum	FSP40	R&S	100817	2024/08/08	2025/08/07
BLA-EMC-012	Broadband antenna	VULB9168	Schwarzbeck	00836 P:00227	2022/10/12	2025/10/11
BLA-EMC-013	Horn Antenna	BBHA9120D	Schwarzbeck	01892	2024/06/29	2026/06/28
BLA-EMC-014	Amplifier	PA_000318G-45	SKET	PA2018043003	2024/08/08	2025/08/07
BLA-EMC-046	Filter bank	2.4G/5G Filter bank	SKET	N/A	2024/06/28	2025/06/27
BLA-EMC-061	Receiver	ESPI7	R&S	101477	2024/06/28	2025/06/27
BLA-EMC-066	Amplifier	LNPA_30M01G-30	SKET	SK2021060801	2024/06/28	2025/06/27
BLA-EMC-086	Amplifier	LNPA_18G40G-50dB	SKET	SK2022071301	2024/06/28	2025/06/27
BLA-EMC-087	Horn Antenna	BBHA 9170	Schwarzbeck	1106	2024/06/29	2026/06/28
BLA-XC-03	Coaxial Cable	N/A	BlueAsia	V03	N/A	N/A
BLA-XC-04	Coaxial Cable	N/A	BlueAsia	V04	N/A	N/A

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RF conducted

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-003-003	Shield room	5*3*3	SKET	N/A	2023/11/16	2025/11/15
BLA-EMC-016	Signal Generator	N5182A	Agilent	MY52420567	2024/06/28	2025/06/27
BLA-EMC-038	Spectrum	N9020A	Agilent	MY49100060	2024/08/08	2025/08/07
BLA-EMC-042	Power sensor	RPR3006W	DARE	14I00889SN042	2024/08/08	2025/08/07
BLA-EMC-044	Radio communication tester	CMW500	R&S	132429	2024/08/08	2025/08/07
BLA-EMC-064	Signal Generator	N5182B	KEYSIGHT	MY58108892	2024/06/28	2025/06/27
BLA-EMC-079	Spectrum	N9020A	Agilent	MY54420161	2024/08/08	2025/08/07
BLA-EMC-088	Audio Analyzer	ATS-1	Audio Precision	ATS141094	2024/06/28	2025/06/27

Test Software Record

Software No.	Software Name	Manufacture	Software version	Test site
BLA-EMC-S001	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S002	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S010	MTS 8310	MW	2.0.0.0	RF

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6 Test result

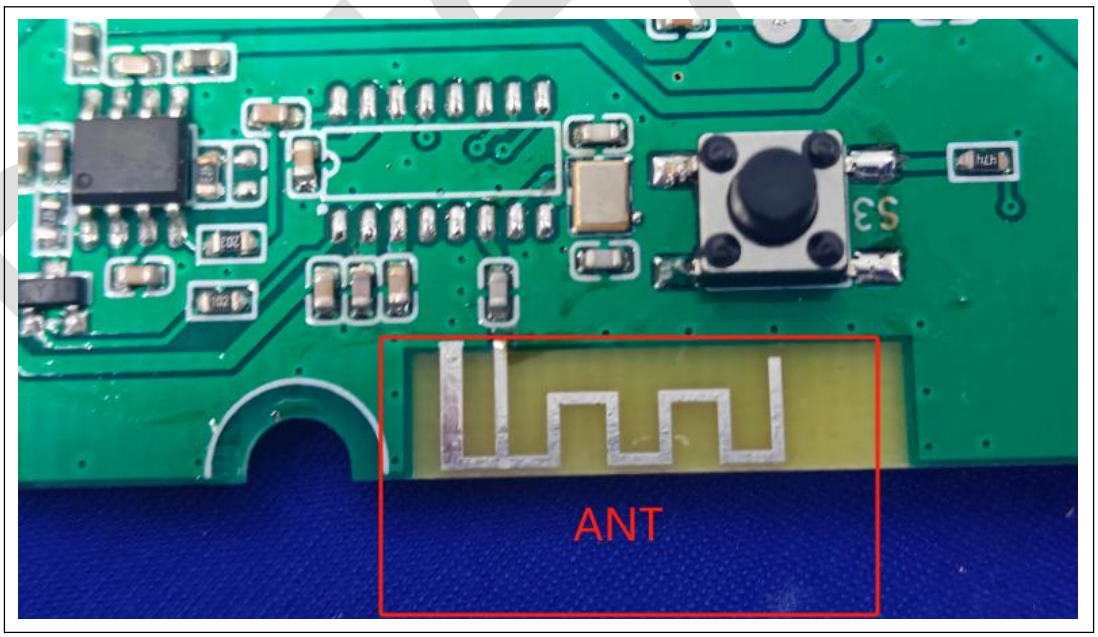
6.1 Antenna requirement

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

6.1.1 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 an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of a so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT antenna:
The antenna is internal PCB Antenna The best case gain of the antenna is 0dBi from 2402~2480MHz



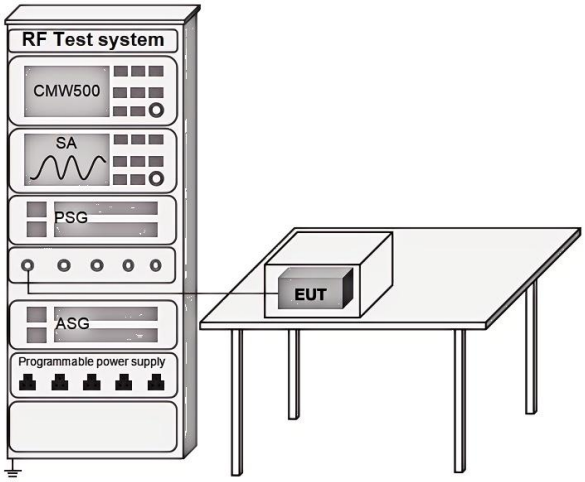
6.2 Conducted peak output Power

Test Standard	47 CFR Part 15, Subpart C 15.247(b)(3)
Test Method	ANSI C63.10 (2013) Section 11.9.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.2.1 Limit

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥50 hopping channels
	0.25 for 25≤ hopping channels <50
	1 for digital modulation
2400-2483.5	1 for ≥75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

6.2.2 Test setup



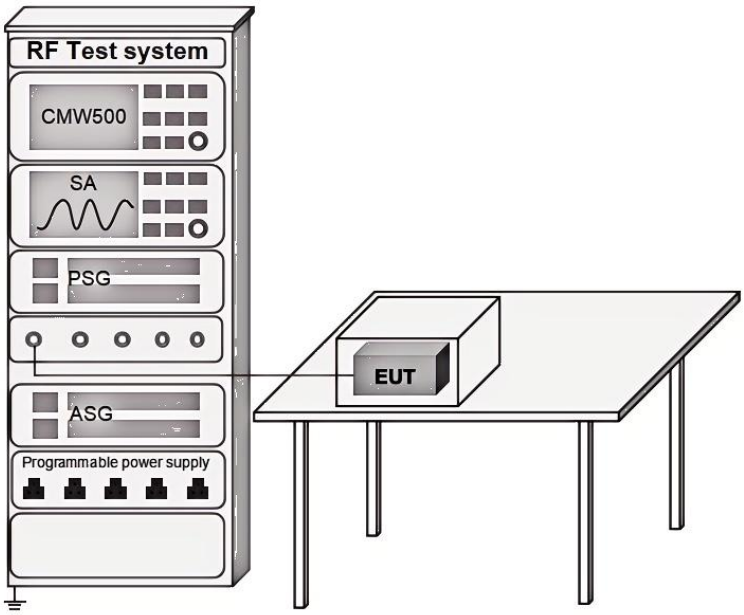
6.2.3 Test data

Note：PK power sensor is used to read PK Conducted power power directly
Pass: Please refer to appendix A for details

6.3 20dB Bandwidth

Test Standard	47 CFR Part 15, Subpart C 15.247 (a)(1)
Test Method	ANSI C63.10 (2013) Section 6.9.2& 7.8.7
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.3.1 Test setup



6.3.2 Test data

Pass: Please refer to appendix A for details

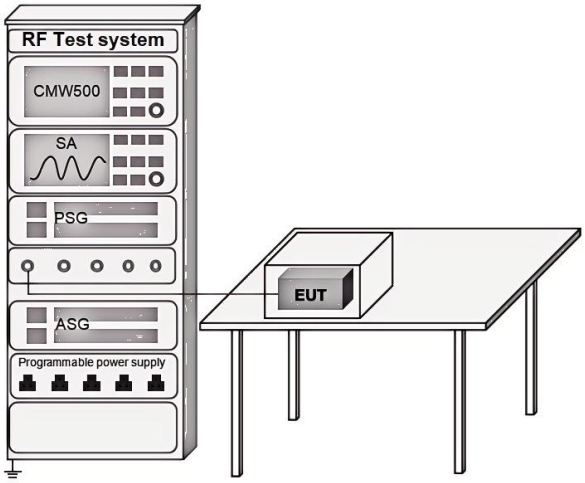
6.4 Conducted Band Edges Measurement

Test Standard	47 CFR Part 15, Subpart C 15.247 (d)
Test Method	ANSI C63.10 (2013) Section 6.10.4
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.4.1 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 20dB.
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)).

6.4.2 Test setup



6.4.3 Test data

Pass: Please refer to appendix A for details

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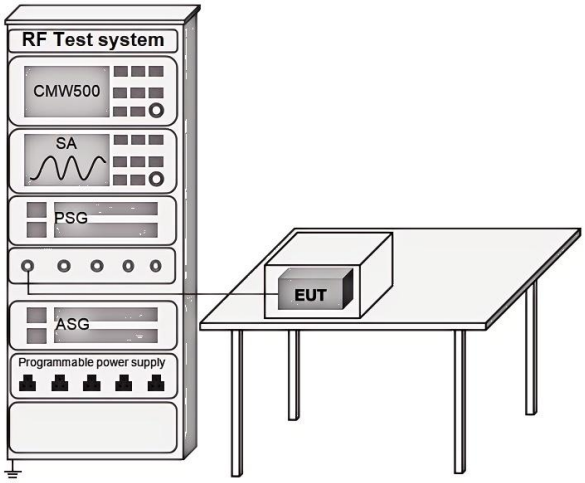
6.5 Conducted spurious emissions

Test Standard	47 CFR Part 15, Subpart C 15.247 (d)
Test Method	ANSI C63.10 (2013) Section 7.8.8
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.5.1 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 20dB.
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)).

6.5.2 Test setup



6.5.3 Test data

Pass: Please refer to appendix A for details

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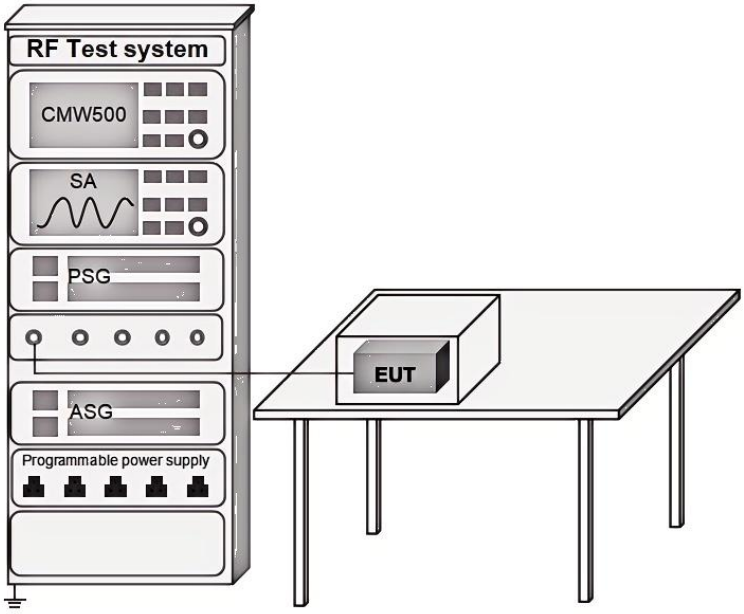
6.6 Carrier Frequencies Separation

Test Standard	47 CFR Part 15, Subpart C 15.247 (a)(1)
Test Method	ANSI C63.10 (2013) Section 7.8.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.6.1 Limit

2/3 of the 20dB bandwidth base on the transmission power is less than 0.125W

6.6.2 Test setup



6.6.3 Test data

Pass: Please refer to appendix A for details

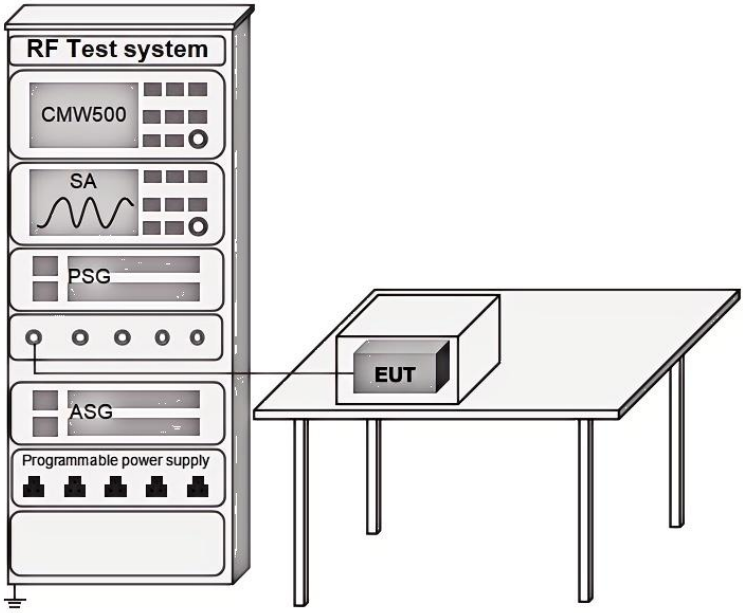
6.7 Hopping Channel Number

Test Standard	47 CFR Part 15, Subpart C 15.247 (a)(1) (iii)
Test Method	ANSI C63.10 (2013) Section 7.8.3
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.7.1 Limit

Frequency range(MHz)	Number of hopping channels (minimum)
902-928	50 for 20dB bandwidth <250kHz
	25 for 20dB bandwidth ≥250kHz
2400-2483.5	15
5725-5850	75

6.7.2 Test setup



6.7.3 Test data

Pass: Please refer to appendix A for details

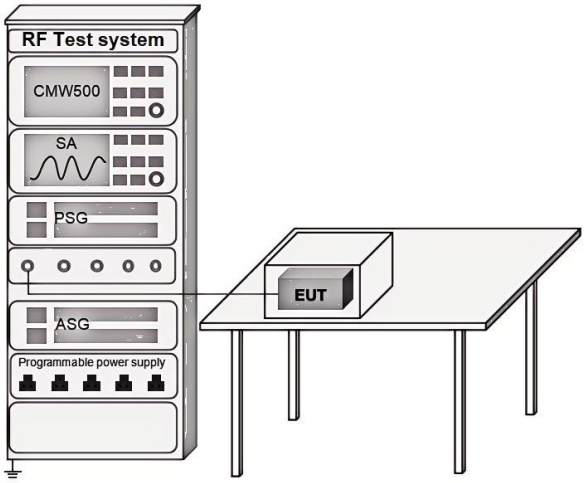
6.8 Dwell Time

Test Standard	47 CFR Part 15, Subpart C 15.247(a)(1) (iii)
Test Method	ANSI C63.10 (2013) Section 7.8.4
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.8.1 Limit

Frequency(MHz)	Limit
902-928	0.4s within a 20s period(20dB bandwidth<250kHz)
	0.4s within a 10s period(20dB bandwidth≥250kHz)
2400-2483.5	0.4s within a period of 0.4s multiplied by the number of hopping channels
5725-5850	0.4s within a 30s period

6.8.2 Test setup



6.8.3 Test data

Pass: Please refer to appendix A for details

6.9 Radiated spurious emissions

Test Standard	47 CFR Part 15, Subpart C 15.247(d) 47 CFR Part 15, Subpart C 15.209
Test Method	ANSI C63.10 (2013) Section 6.3,6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

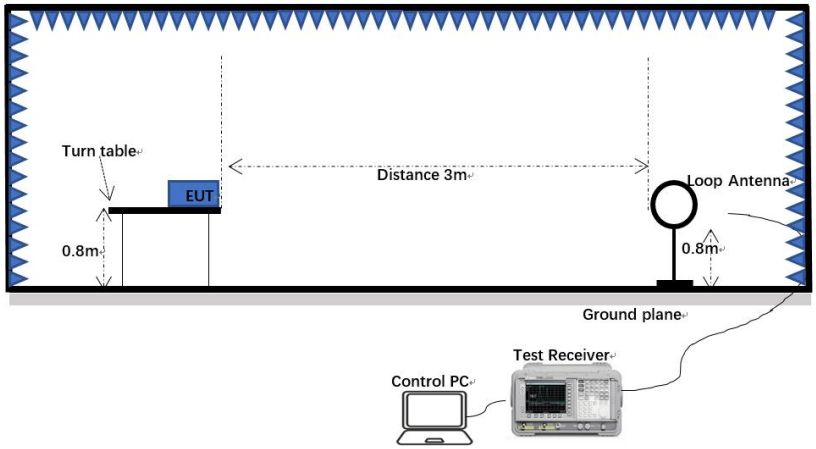
6.9.1 Limit

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

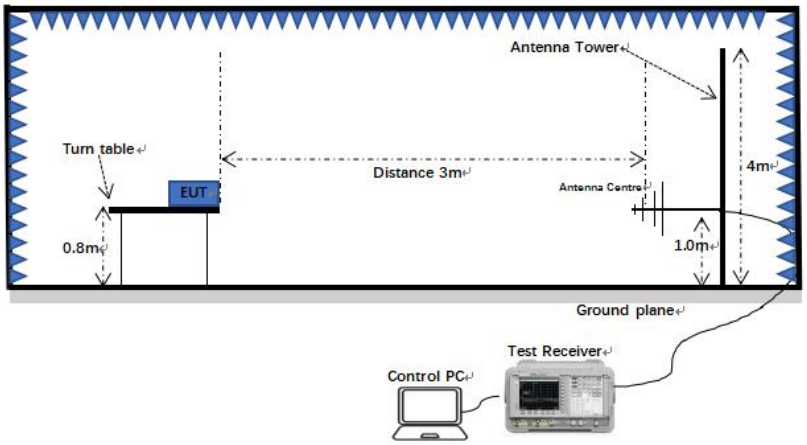
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.9.2 Test setup

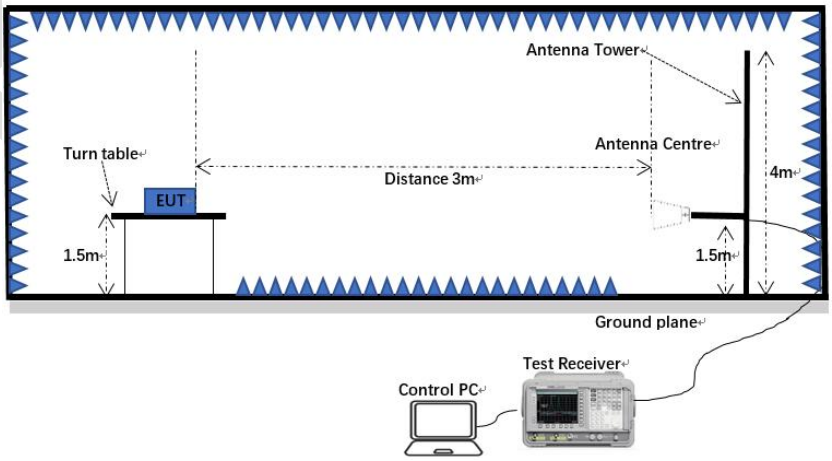
Below 1GHz：



30MHz-1GHz：



Above 1GHz：



6.9.3 Procedure

a) For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b) For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c) The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h) Test the EUT in the lowest channel, the middle channel, the highest channel.

i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j) Repeat above procedures until all frequencies measured was complete.

Note 1: Scan from 9 kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

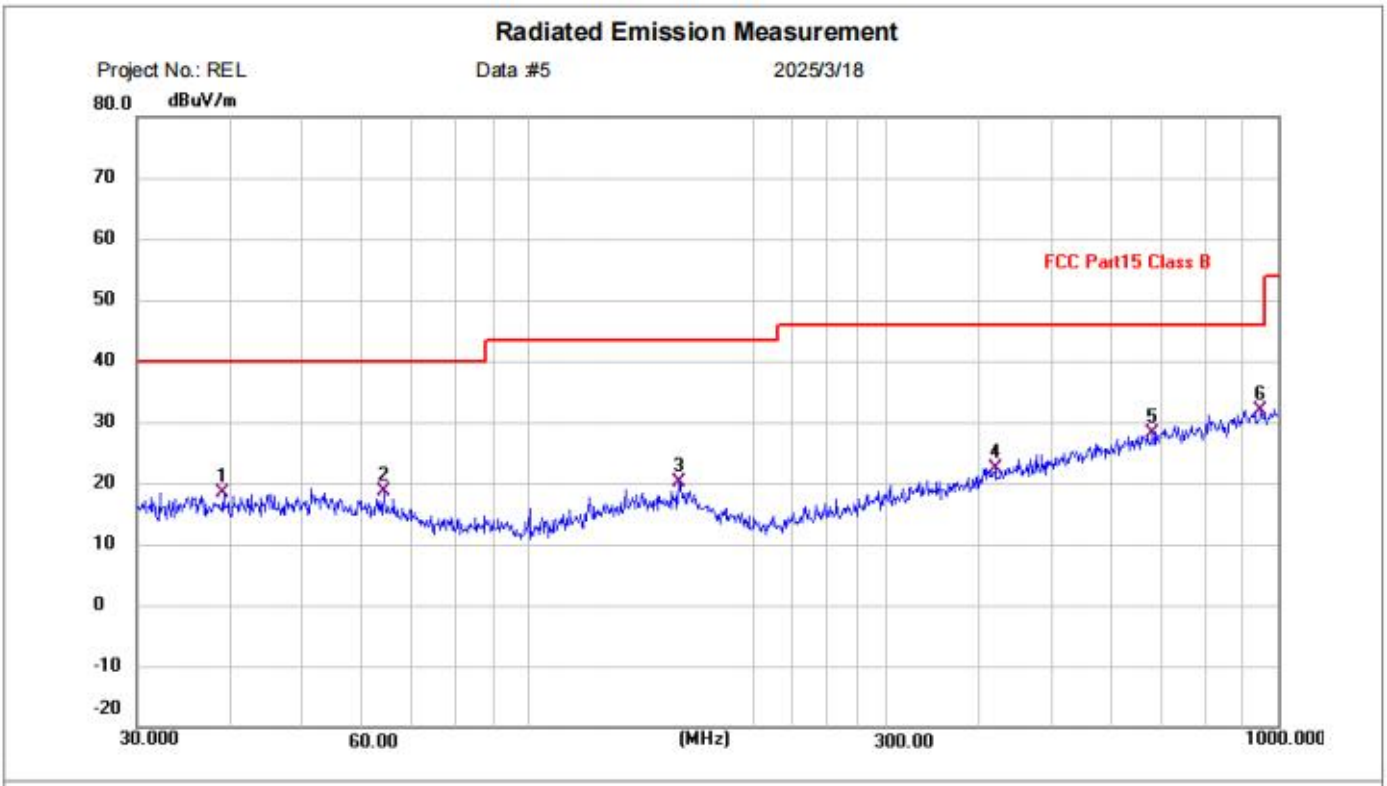
Note 3: The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Level (dBuV) = Reading (dBuV) + Factor (dB/m)

6.9.4 Test data

Below 1GHz

[Test mode: TX]; [Polarity: Horizontal]



Site
Limit: FCC Part15 Class B
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX
Note:

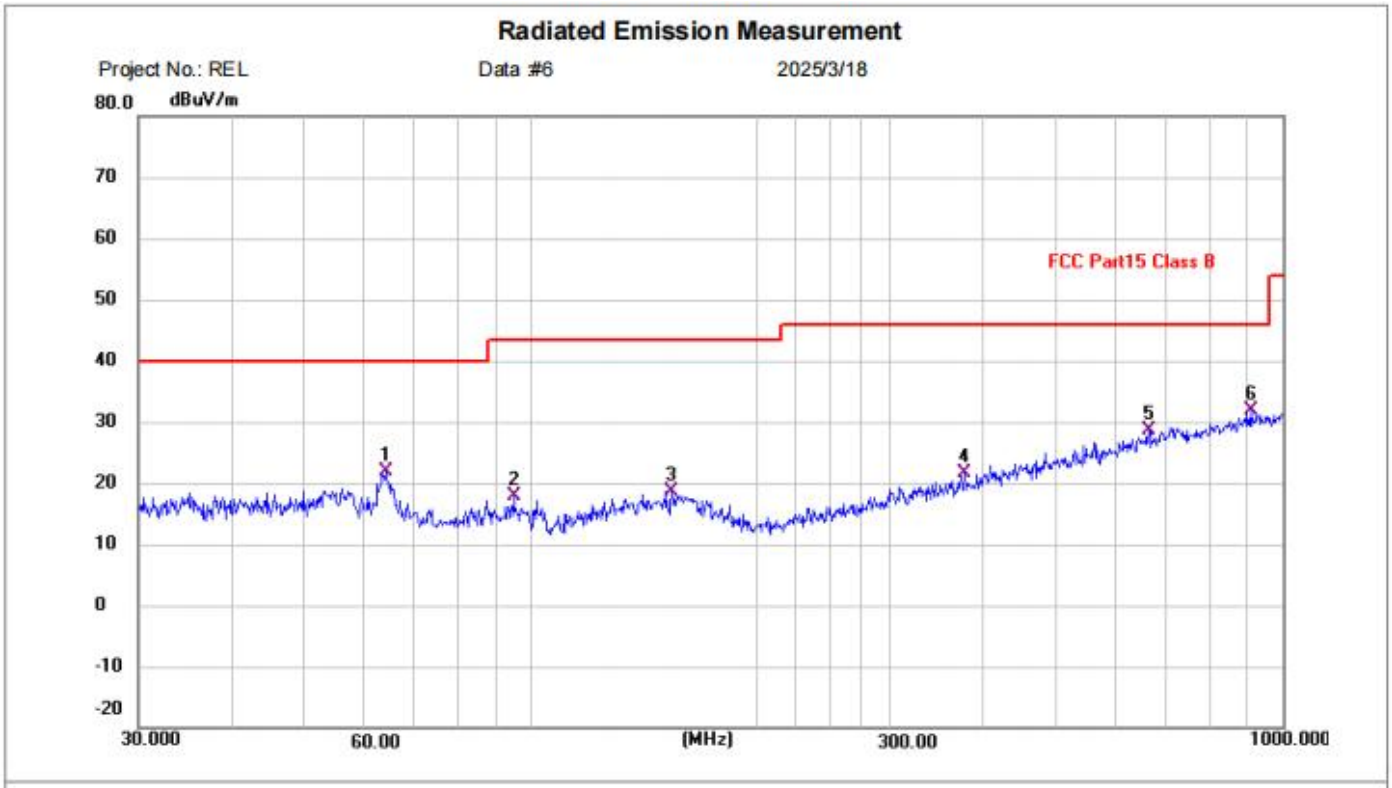
Polarization: ***Horizontal***
Power:

Temperature: (C)
Humidity: %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	39.1613	-0.77	19.26	18.49	40.00	-21.51	QP	P	
2	63.9827	0.76	17.97	18.73	40.00	-21.27	QP	P	
3	158.6673	-0.44	20.51	20.07	43.50	-23.43	QP	P	
4	419.1080	-0.66	23.12	22.46	46.00	-23.54	QP	P	
5	679.9600	0.10	27.98	28.08	46.00	-17.92	QP	P	
6 *	948.7608	0.49	31.46	31.95	46.00	-14.05	QP	P	

Test Result: Pass

[Test mode: TX]; [Polarity: Vertical]



Site
Limit: FCC Part15 Class B
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX
Note:

Polarization: ***Vertical***
Power:

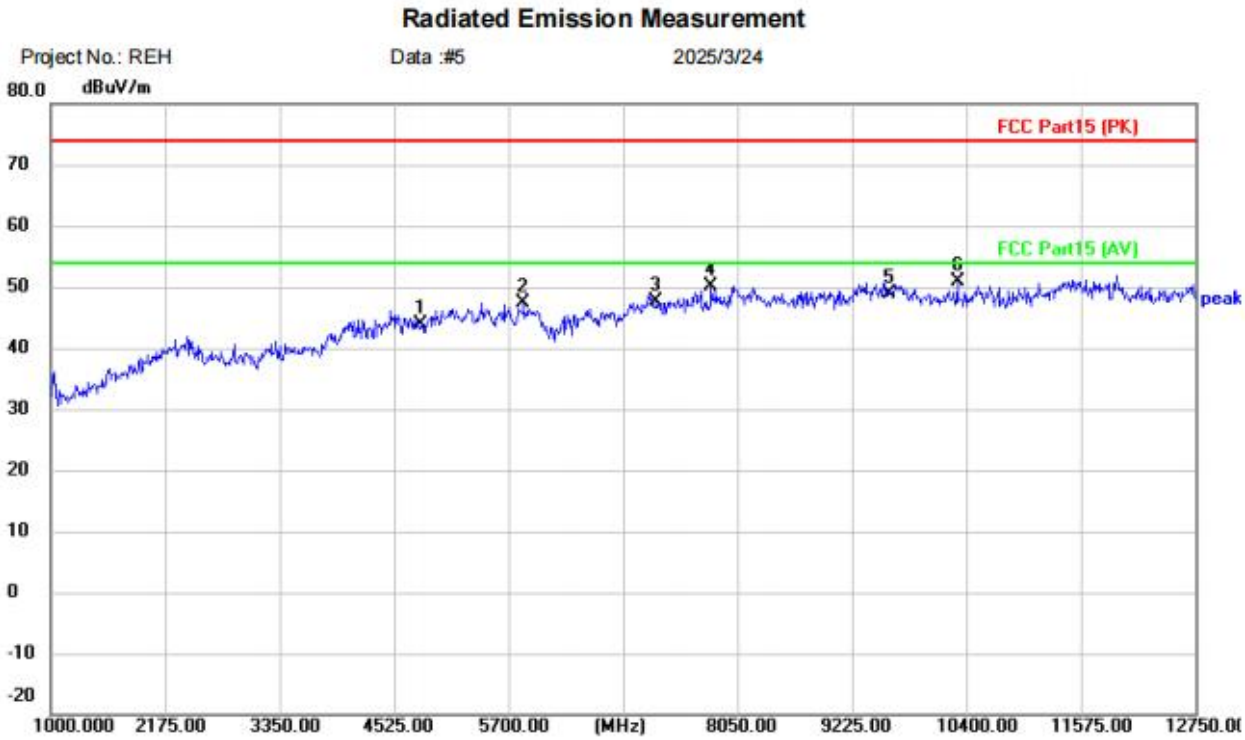
Temperature: (C)
Humidity: %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	63.9827	3.96	17.97	21.93	40.00	-18.07	QP	P	
2	94.7600	2.48	15.35	17.83	43.50	-25.67	QP	P	
3	153.7384	-2.07	20.66	18.59	43.50	-24.91	QP	P	
4	377.2590	-0.71	22.38	21.67	46.00	-24.33	QP	P	
5	663.4728	0.93	27.75	28.68	46.00	-17.32	QP	P	
6 *	906.4823	1.11	30.87	31.98	46.00	-14.02	QP	P	

Test Result: Pass

Above 1GHz:

[Test mode: TX low channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX-2402
Note:

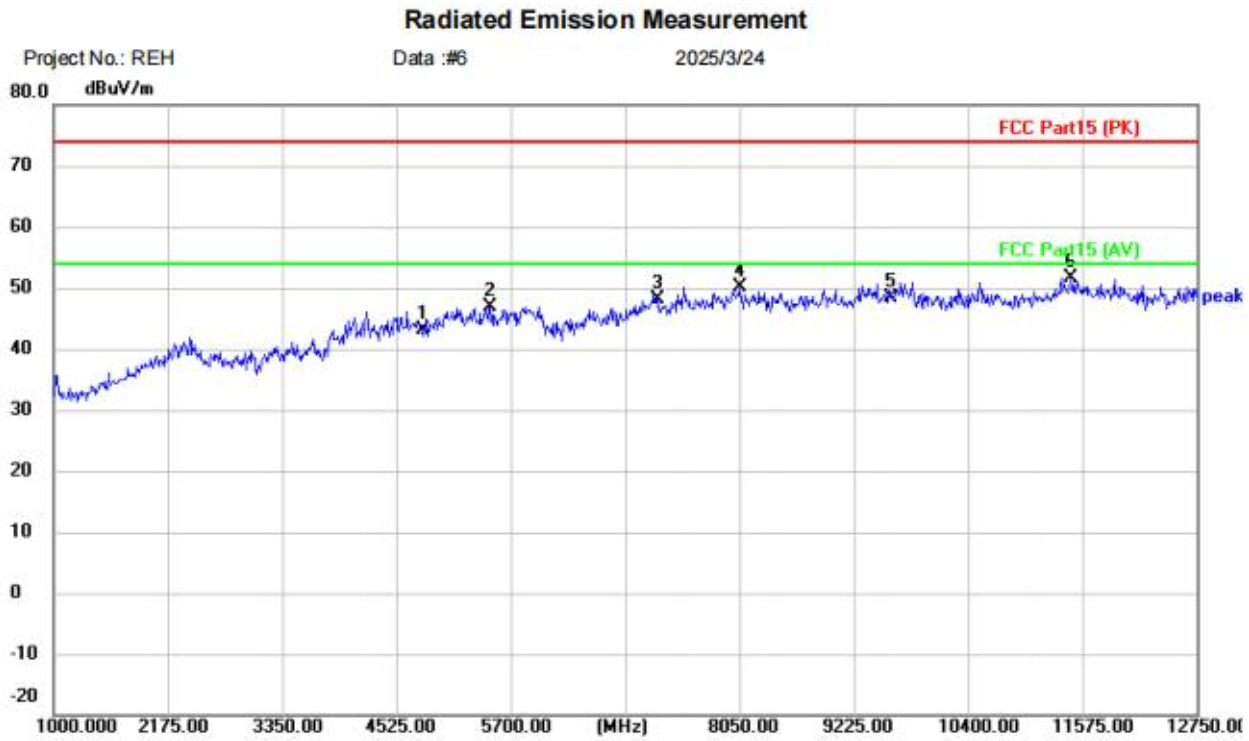
Polarization: ***Horizontal***
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	37.61	6.31	43.92	74.00	-30.08	peak	
2		5852.750	38.54	8.88	47.42	74.00	-26.58	peak	
3		7206.000	37.34	10.39	47.73	74.00	-26.27	peak	
4		7779.750	39.61	10.52	50.13	74.00	-23.87	peak	
5		9608.000	35.89	13.01	48.90	74.00	-25.10	peak	
6	*	10306.00	37.22	13.56	50.78	74.00	-23.22	peak	

Test Result: Pass

[Test mode: TX low channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX-2402
Note:

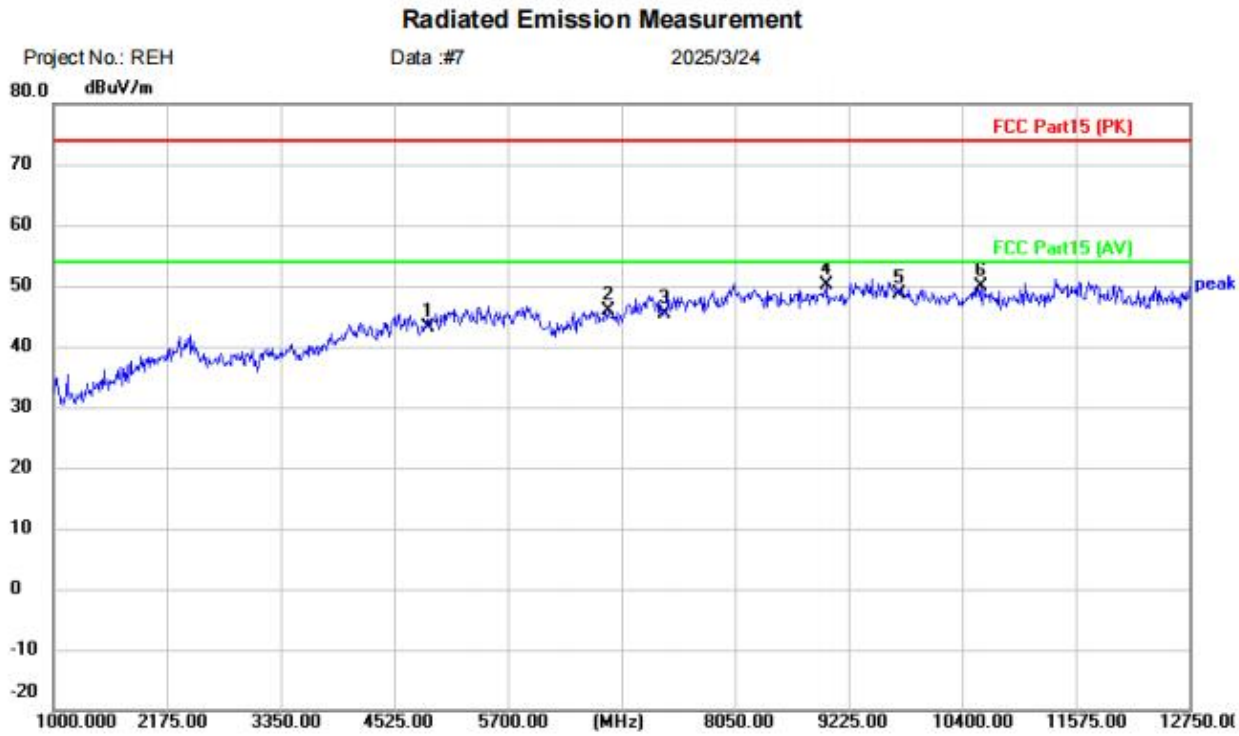
Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	36.91	6.31	43.22	74.00	-30.78	peak	
2		5488.500	38.58	8.42	47.00	74.00	-27.00	peak	
3		7206.000	37.85	10.39	48.24	74.00	-25.76	peak	
4		8050.000	38.54	11.70	50.24	74.00	-23.76	peak	
5		9608.000	35.39	13.01	48.40	74.00	-25.60	peak	
6	*	11457.50	37.03	14.62	51.65	74.00	-22.35	peak	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX-2441
Note:

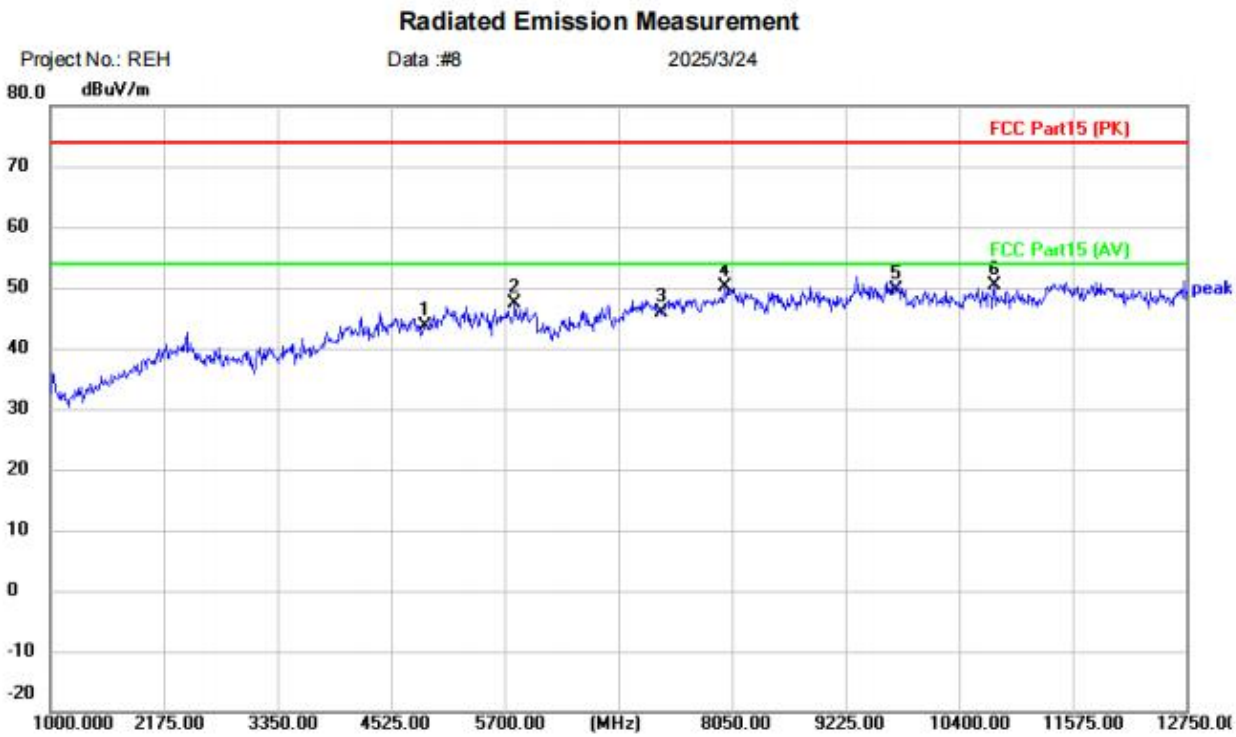
Polarization: ***Horizontal***
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.000	36.73	6.43	43.16	74.00	-30.84	peak	
2		6734.000	37.00	8.97	45.97	74.00	-28.03	peak	
3		7323.000	35.22	10.17	45.39	74.00	-28.61	peak	
4	*	9001.750	37.84	12.27	50.11	74.00	-23.89	peak	
5		9764.000	34.95	13.76	48.71	74.00	-25.29	peak	
6		10588.00	36.23	13.61	49.84	74.00	-24.16	peak	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Vertical]

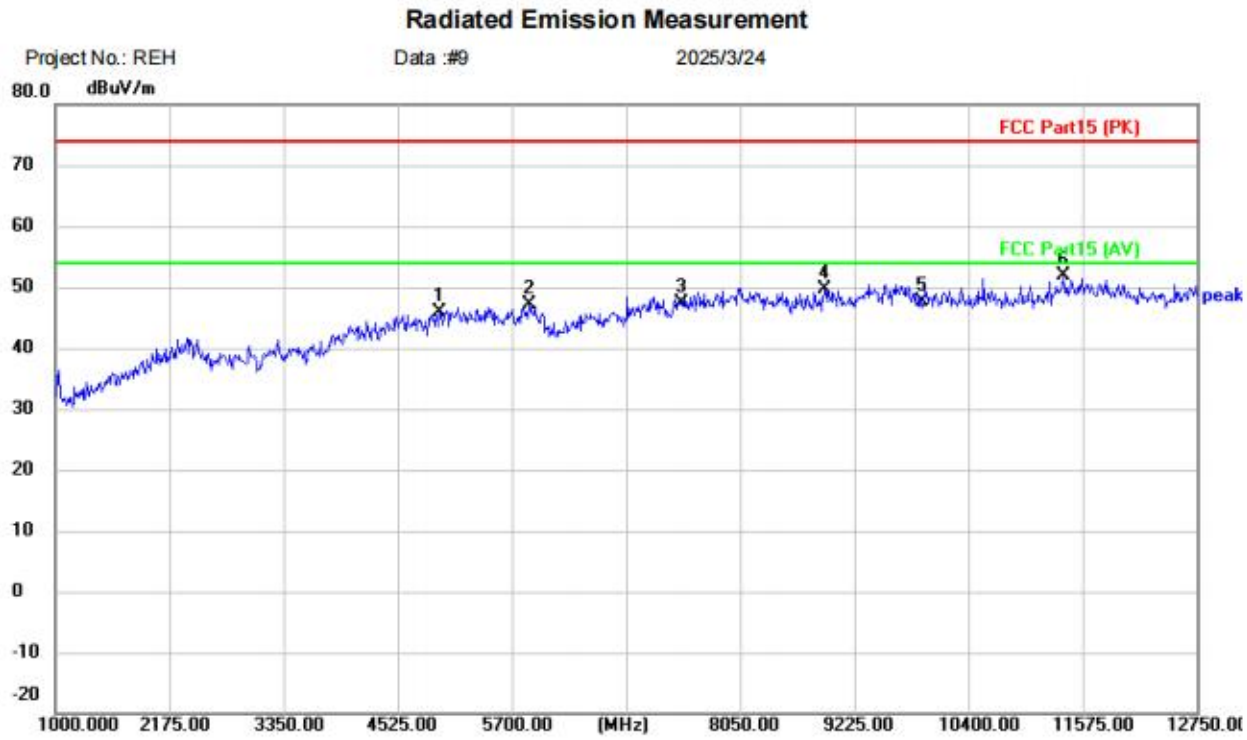


Site
Polarization: *Vertical*
Temperature: (C)
Limit: FCC Part15 (PK)
Power:
Humidity: %RH
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX-2441
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.000	37.15	6.43	43.58	74.00	-30.42	peak	
2		5805.750	38.26	9.00	47.26	74.00	-26.74	peak	
3		7323.000	35.80	10.17	45.97	74.00	-28.03	peak	
4		7979.500	38.59	11.47	50.06	74.00	-23.94	peak	
5		9764.000	35.75	13.76	49.51	74.00	-24.49	peak	
6	*	10764.25	37.34	12.93	50.27	74.00	-23.73	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX-2480
Note:

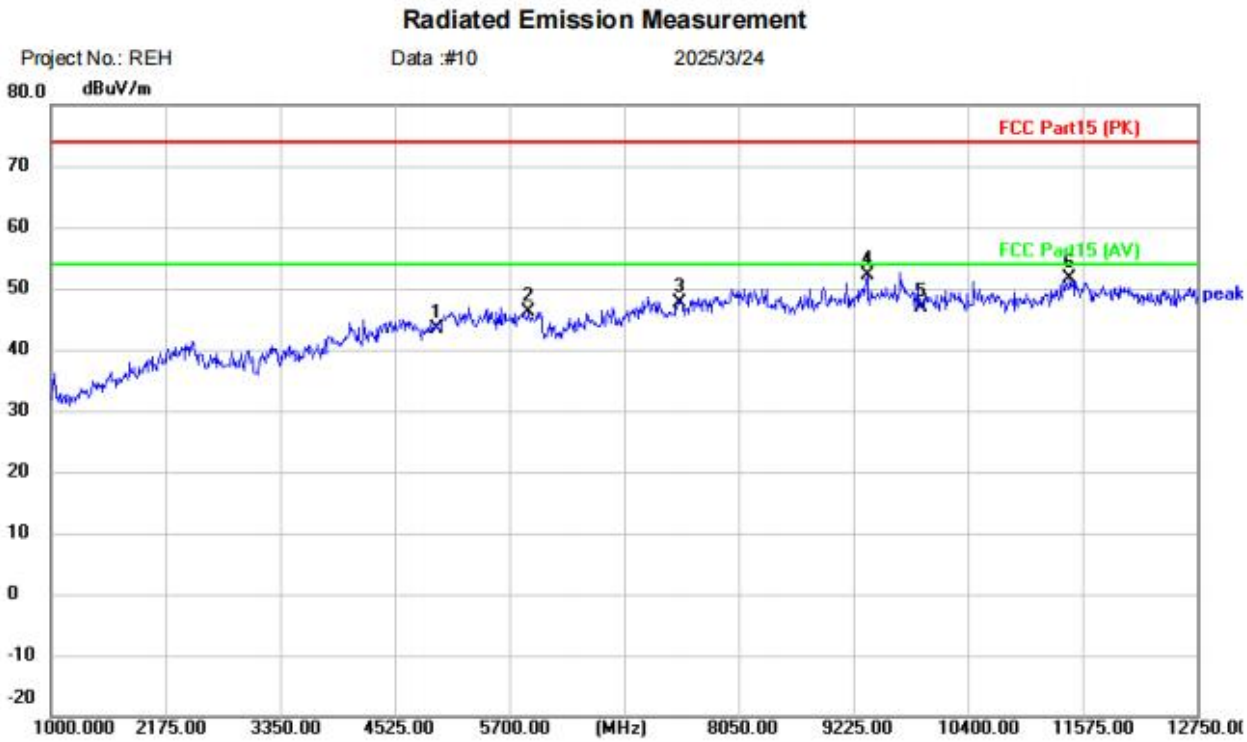
Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	38.41	7.41	45.82	74.00	-28.18	peak	
2		5876.250	38.11	8.99	47.10	74.00	-26.90	peak	
3		7440.000	36.36	11.03	47.39	74.00	-26.61	peak	
4		8919.500	37.17	12.38	49.55	74.00	-24.45	peak	
5		9920.000	34.38	13.16	47.54	74.00	-26.46	peak	
6	*	11375.25	37.90	13.99	51.89	74.00	-22.11	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Vertical]



Site
Polarization: *Vertical*
Temperature: (C)
Limit: FCC Part15 (PK)
Power:
Humidity: %RH
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-TX-2480
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	35.91	7.41	43.32	74.00	-30.68	peak	
2		5888.000	37.18	9.05	46.23	74.00	-27.77	peak	
3		7440.000	36.68	11.03	47.71	74.00	-26.29	peak	
4	*	9366.000	39.02	13.19	52.21	74.00	-21.79	peak	
5		9920.000	33.70	13.16	46.86	74.00	-27.14	peak	
6		11445.75	36.97	14.55	51.52	74.00	-22.48	peak	

Test Result: Pass

DH1,DH3, DH5 all have been tested, during the test, GFSK, pi/4DQPSK, 8DPSK,modulation were all pre-scanned Only the (DH1/GFSK) of the worst mode would be recorded in this report.

6.10 Radiated emissions which fall in the restricted bands

Test Standard	47 CFR Part 15, Subpart C 15.247(d) 47 CFR Part 15, Subpart C 15.205
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.10.1 Limit

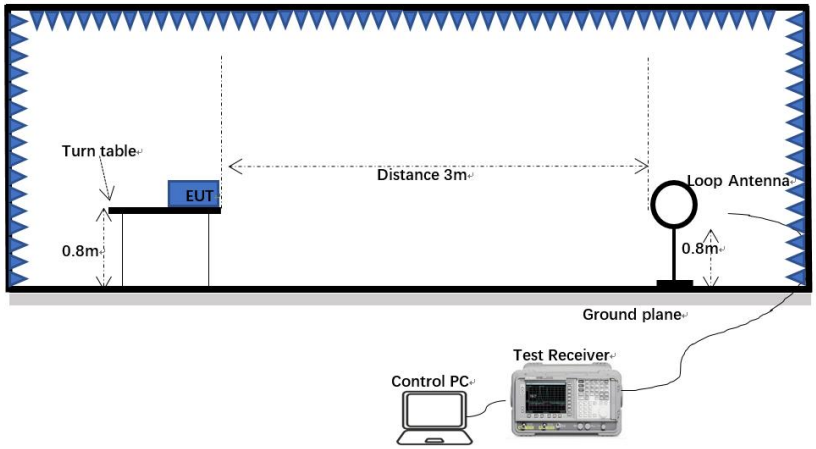
Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

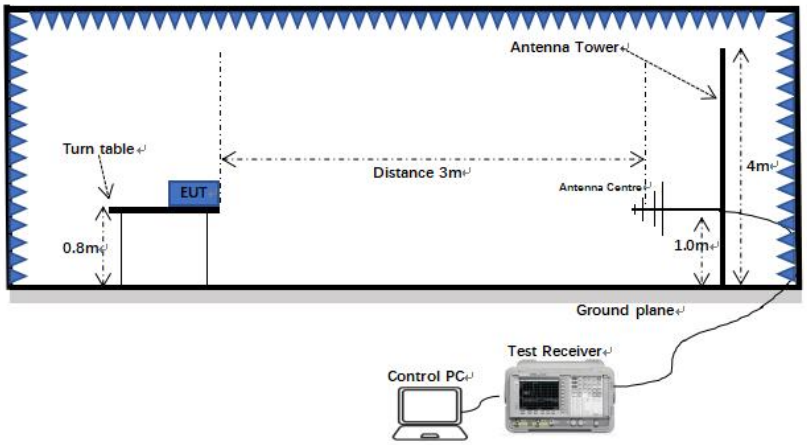
BlueAsia

6.10.2 Test setup

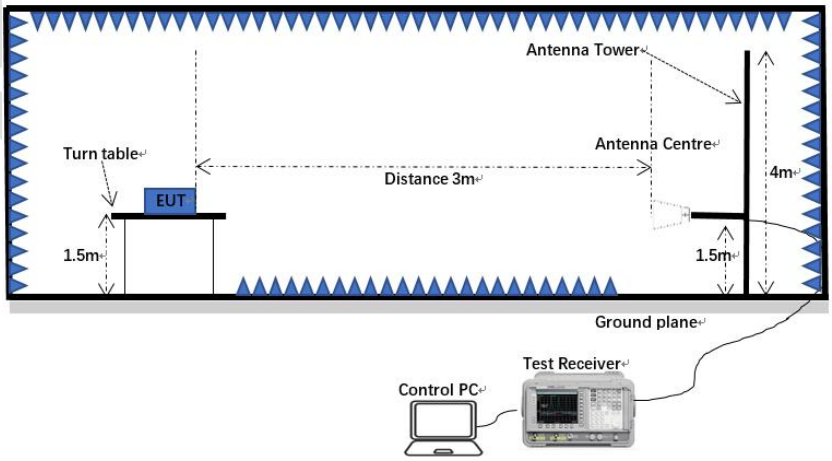
Below 1GHz：



30MHz-1GHz：



Above 1GHz：



6.10.3 Procedure

a) For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b) For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c) The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h) Test the EUT in the lowest channel, the middle channel, the highest channel.

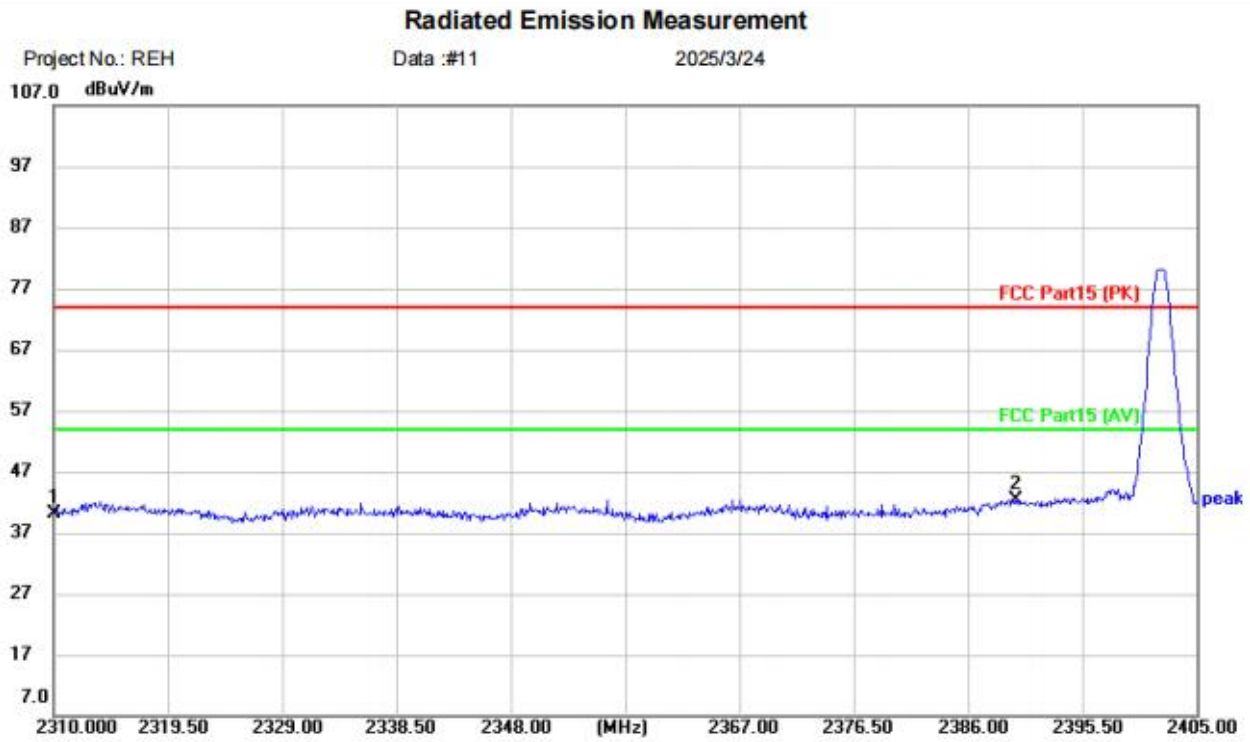
i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j) Repeat above procedures until all frequencies measured was complete.

Note 1: Level (dBuV) = Reading (dBuV) + Factor (dB/m)
Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

6.10.4 Test data

[Test mode: TX low channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-2402
Note:

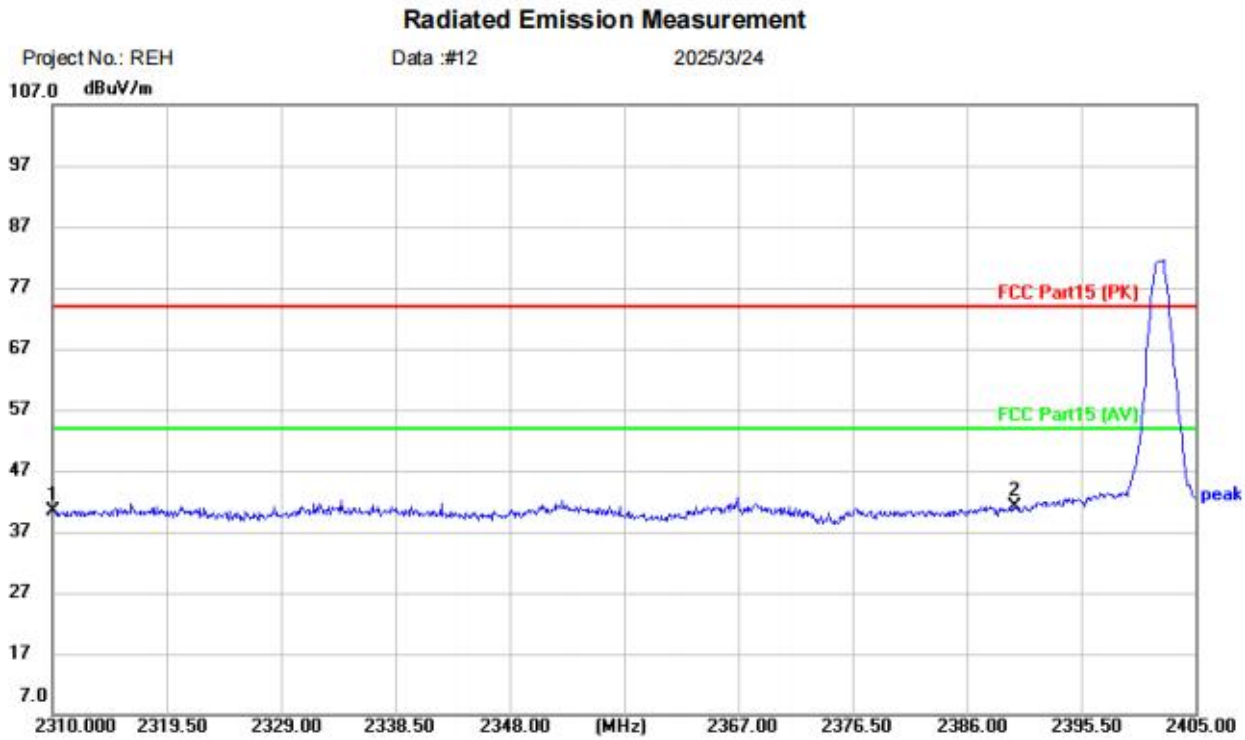
Polarization: ***Horizontal***
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	42.96	-2.87	40.09	74.00	-33.91	peak	
2	*	2390.000	44.71	-2.44	42.27	74.00	-31.73	peak	

Test Result: Pass

[Test mode:TX low channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-2402
Note:

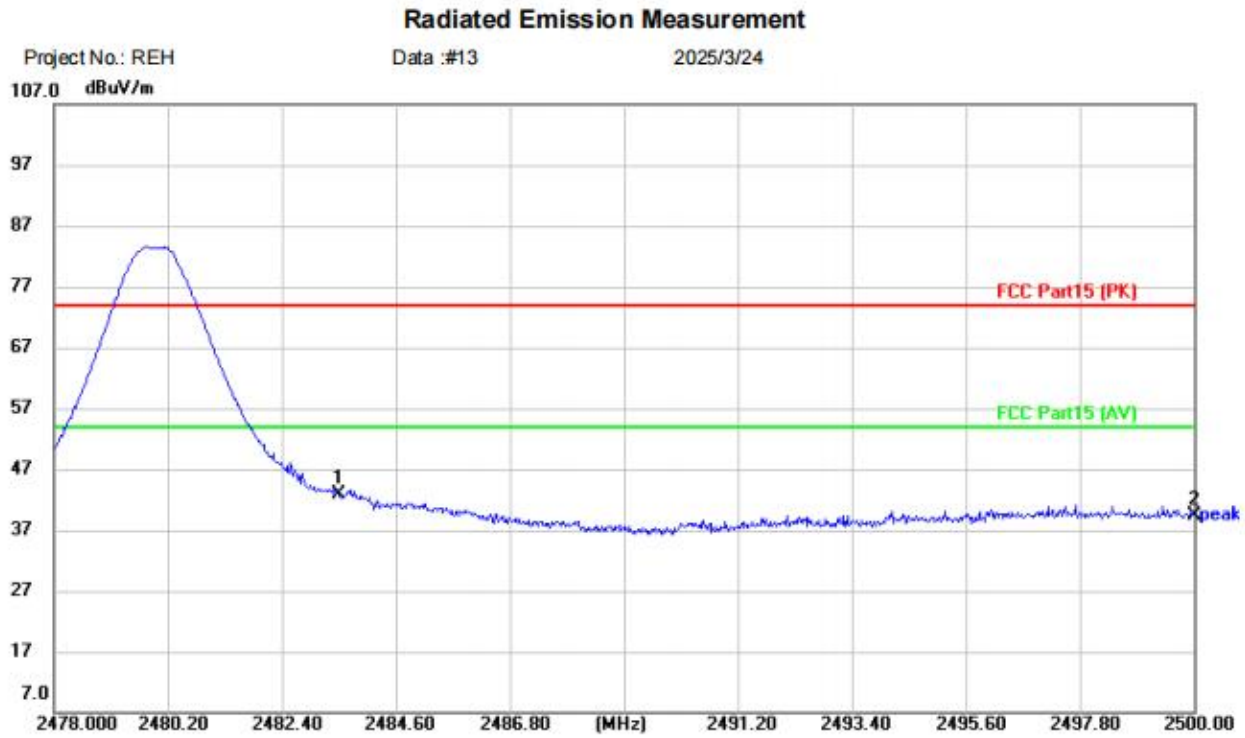
Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	43.31	-2.87	40.44	74.00	-33.56	peak	
2	*	2390.000	43.57	-2.44	41.13	74.00	-32.87	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal]

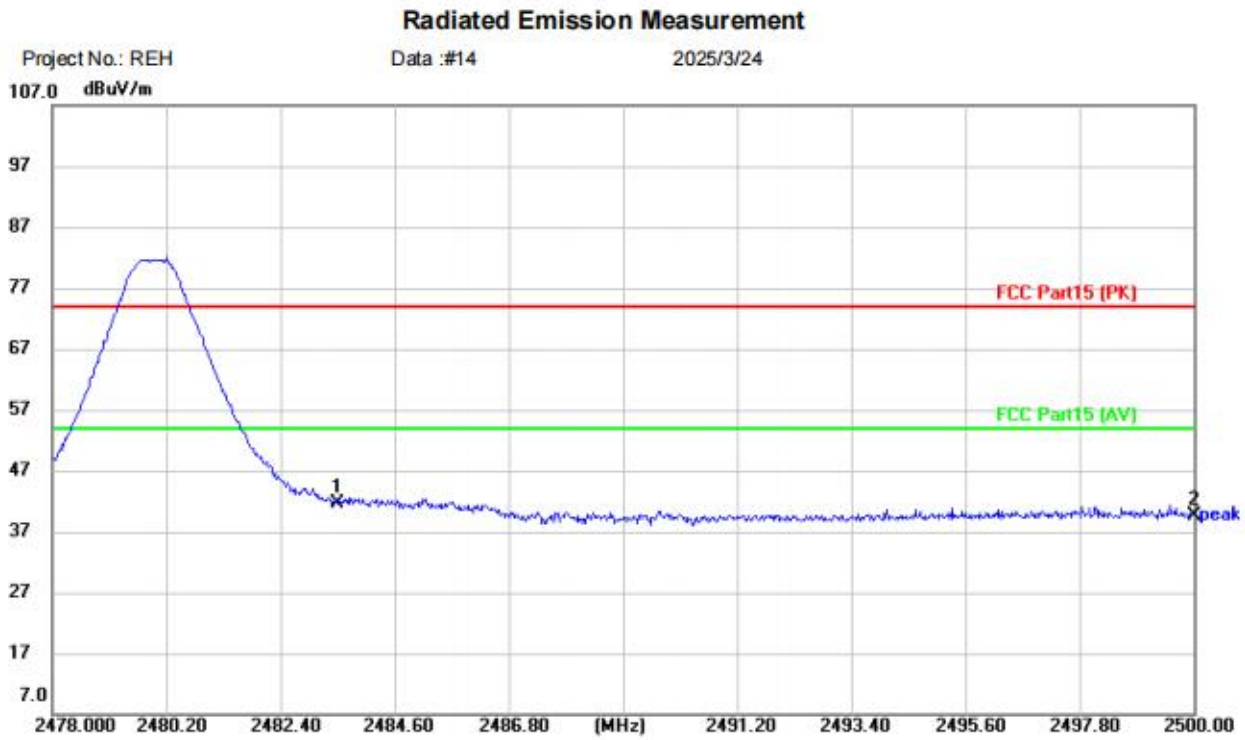


Site
Polarization: *Horizontal*
Temperature: (C)
Limit: FCC Part15 (PK)
Power:
Humidity: %RH
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-2480
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2483.500	45.77	-2.91	42.86	74.00	-31.14	peak	
2		2500.000	42.39	-3.00	39.39	74.00	-34.61	peak	

Test Result: Pass

[Test mode:TX High channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: 14inch jukebox Red bluetooth
M/N: 12685
Mode: BT-2480
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2483.500	44.63	-2.91	41.72	74.00	-32.28	peak	
2		2500.000	42.51	-3.00	39.51	74.00	-34.49	peak	

Test Result: Pass

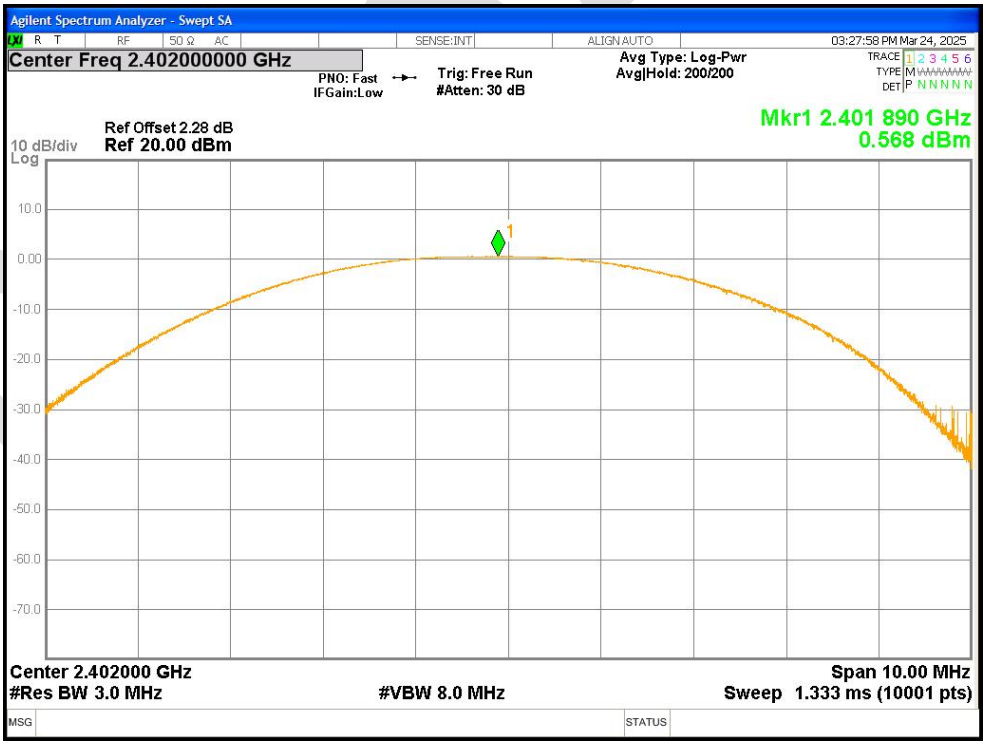
DH1,DH3, DH5 all have been tested, during the test, GFSK, pi/4DQPSK, 8DPSK,modulation were all pre-scanned Only the (DH1/GFSK) of the worst mode would be recorded in this report.

7 Appendix A

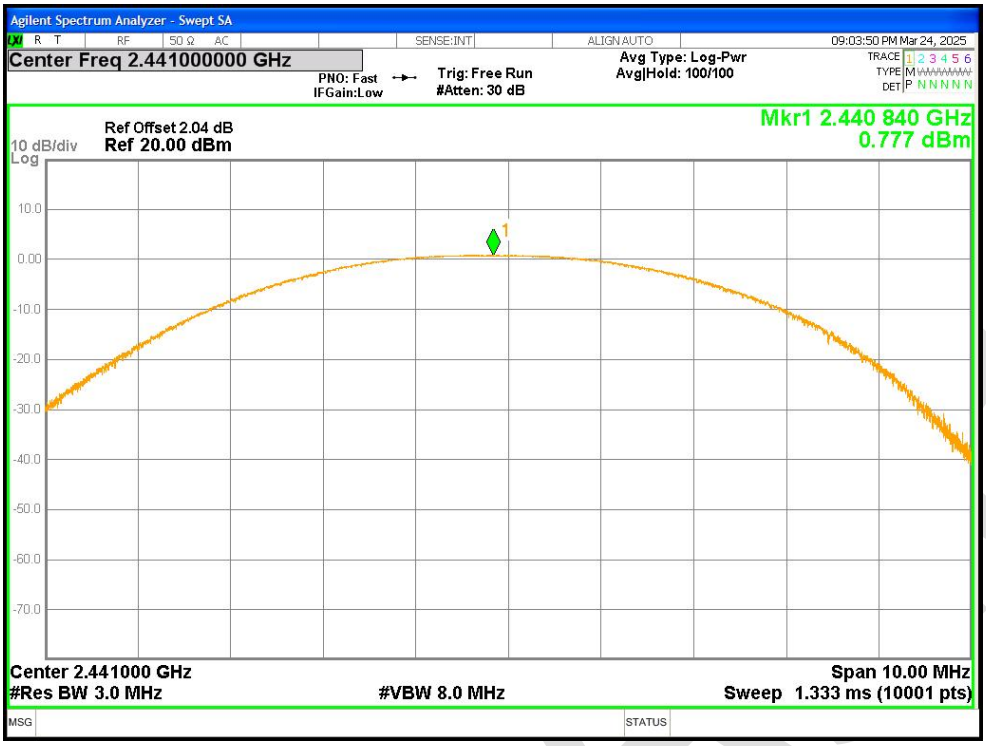
7.1 Maximum PK Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	0.568	21	Pass
NVNT	1-DH1	2441	Ant1	0.777	21	Pass
NVNT	1-DH1	2480	Ant1	1.041	21	Pass
NVNT	2-DH1	2402	Ant1	1.456	21	Pass
NVNT	2-DH1	2441	Ant1	1.642	21	Pass
NVNT	2-DH1	2480	Ant1	1.902	21	Pass
NVNT	3-DH1	2402	Ant1	1.893	21	Pass
NVNT	3-DH1	2441	Ant1	2.222	21	Pass
NVNT	3-DH1	2480	Ant1	2.488	21	Pass

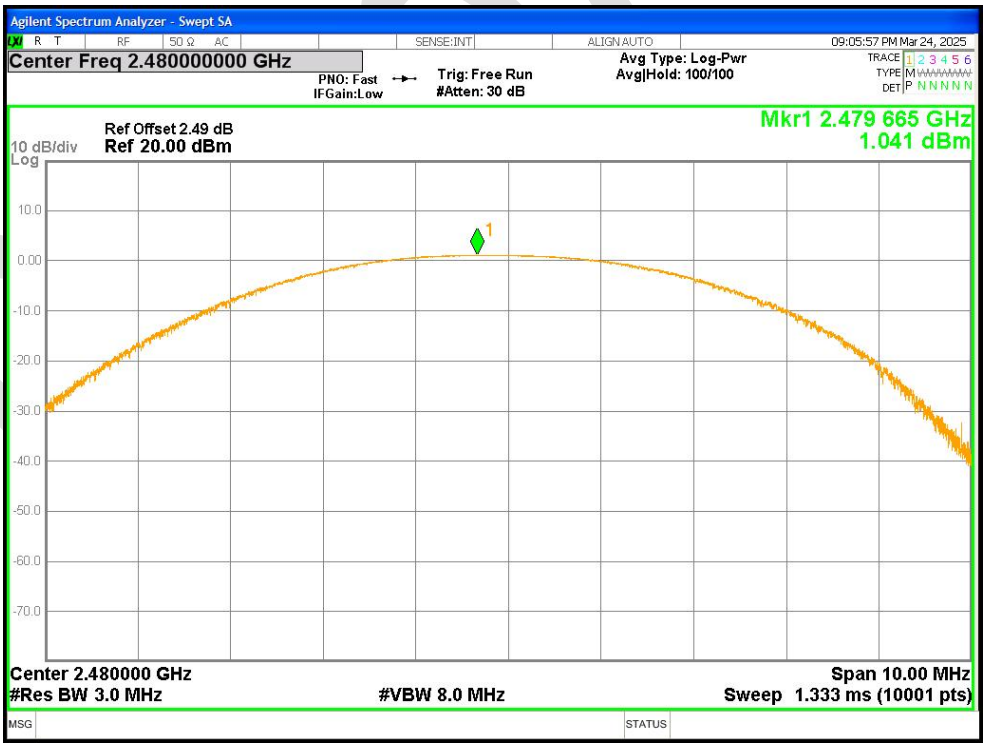
Power NVNT 1-DH1 2402MHz Ant1



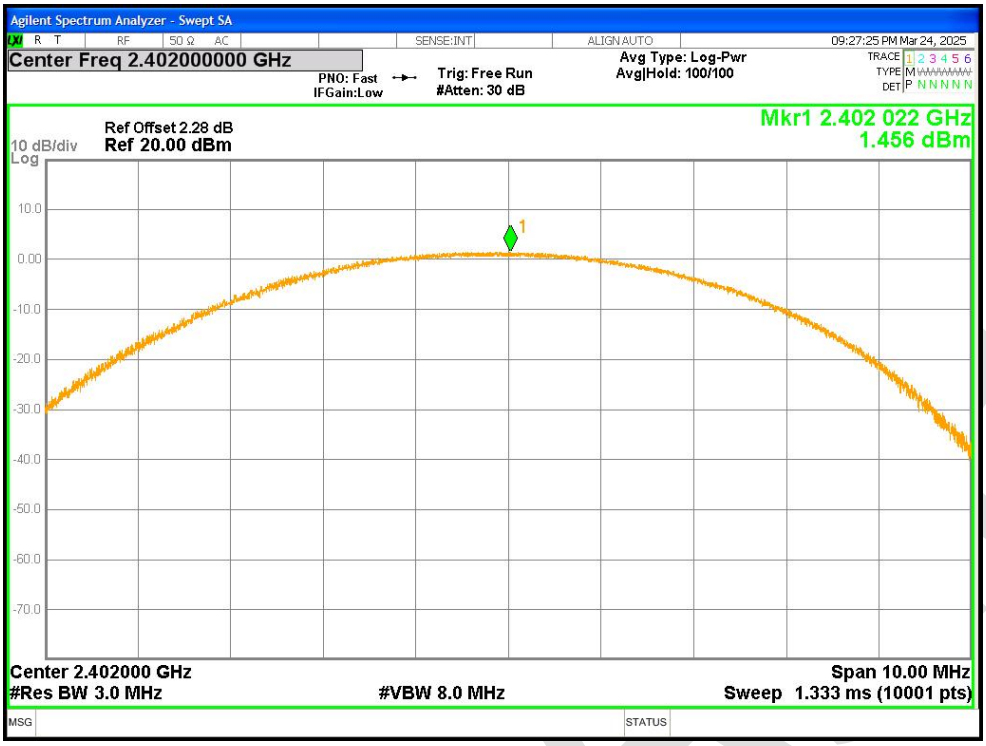
Power NVNT 1-DH1 2441MHz Ant1



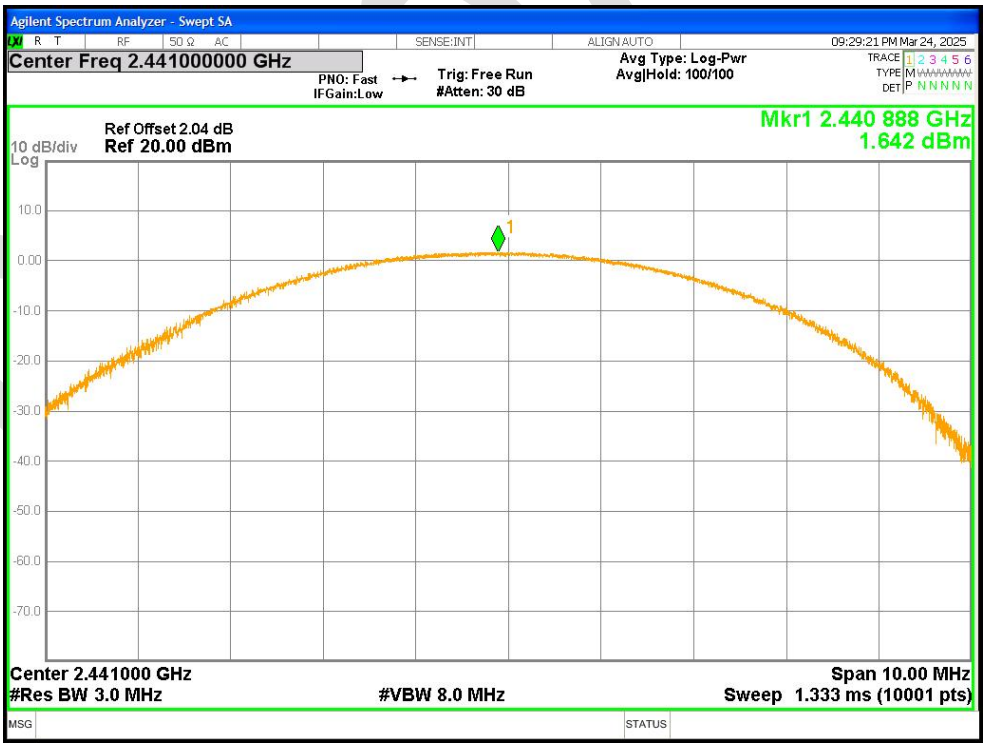
Power NVNT 1-DH1 2480MHz Ant1



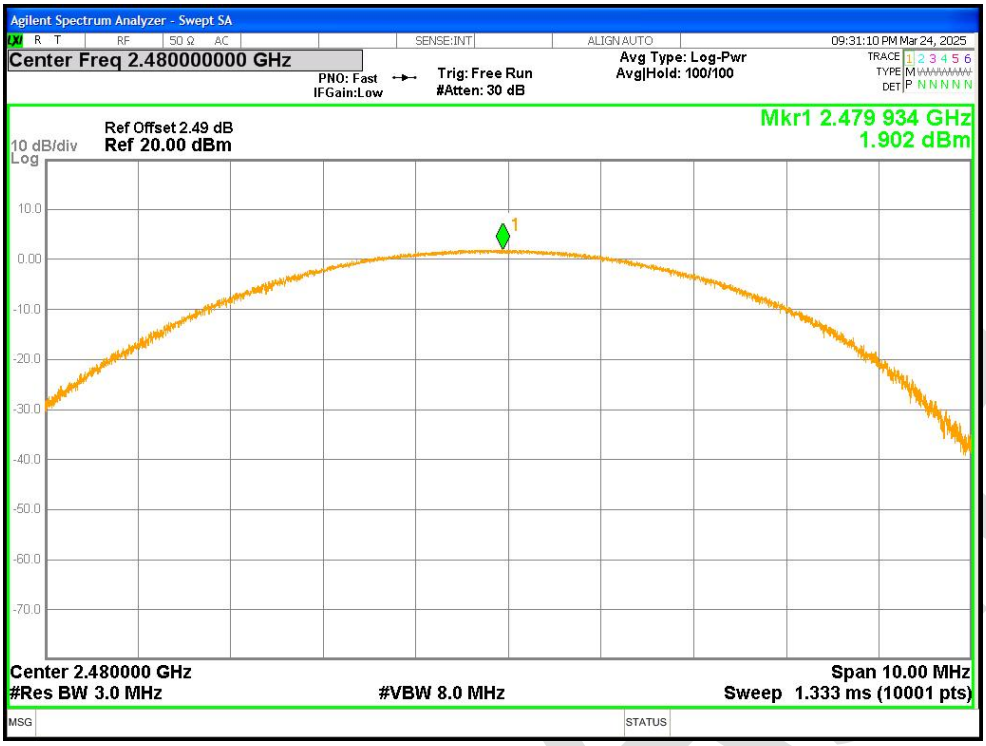
Power NVNT 2-DH1 2402MHz Ant1



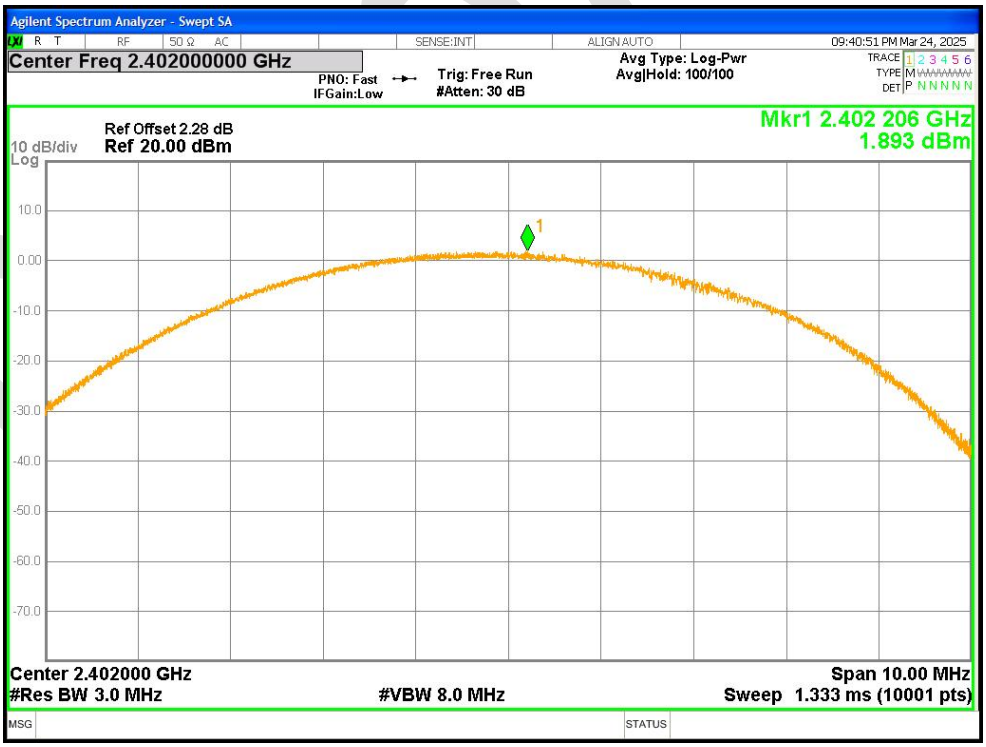
Power NVNT 2-DH1 2441MHz Ant1



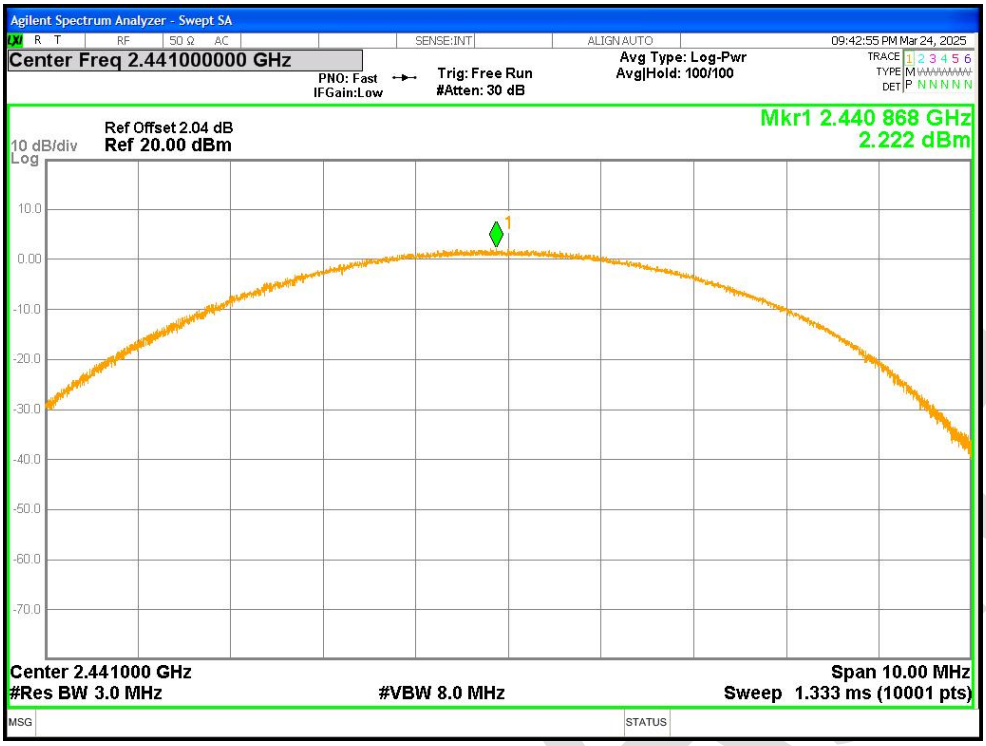
Power NVNT 2-DH1 2480MHz Ant1



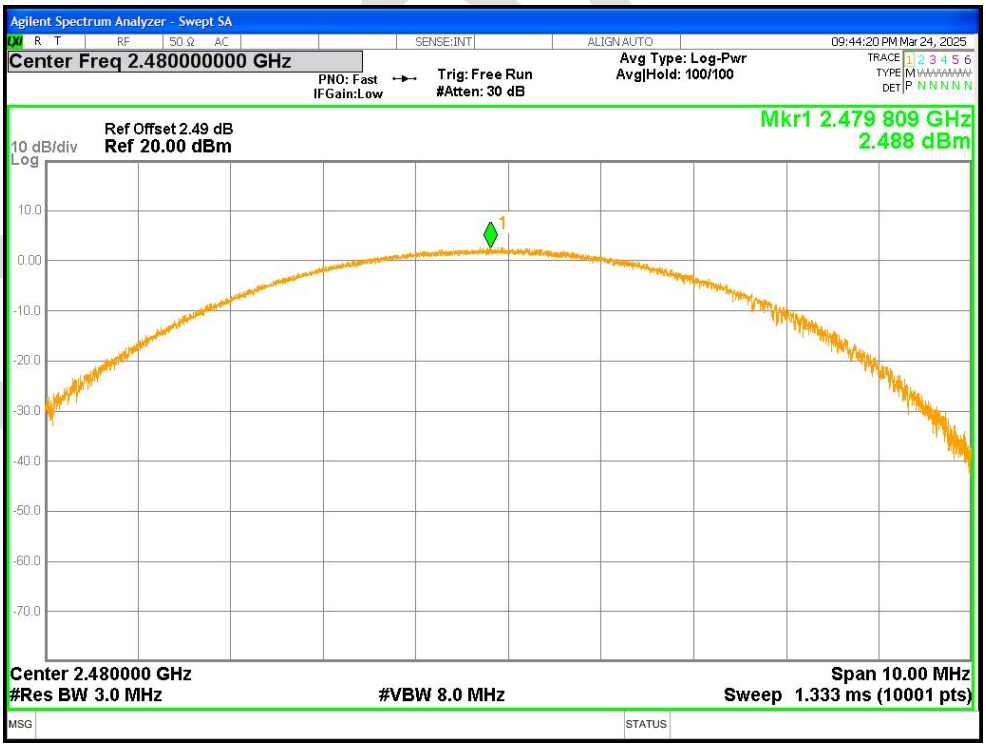
Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



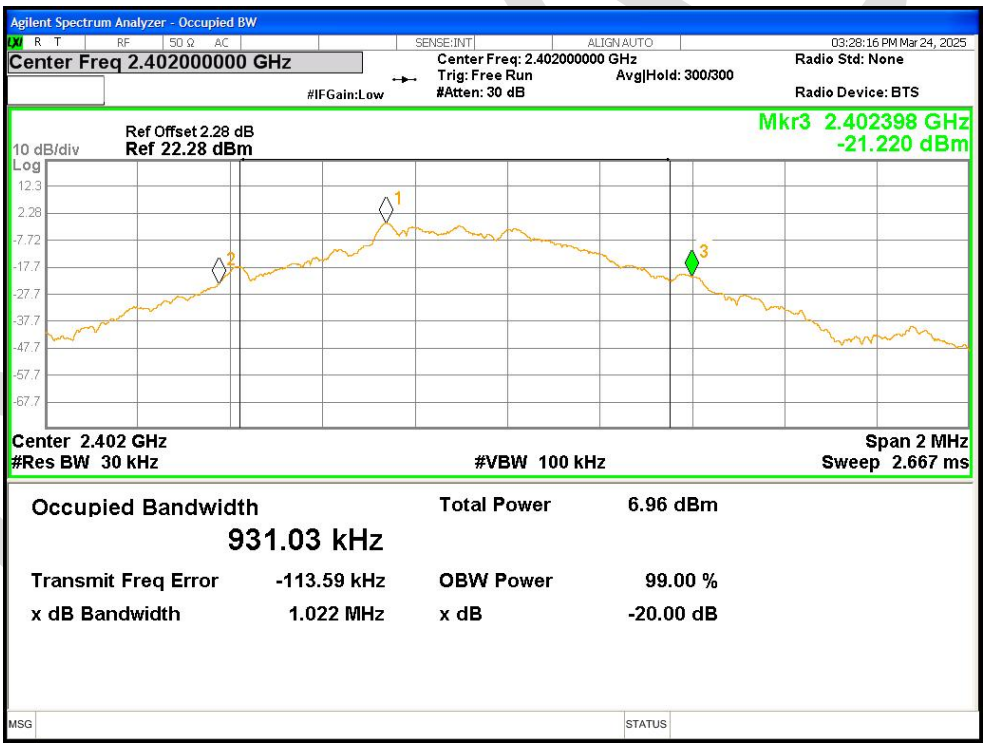
Power NVNT 3-DH1 2480MHz Ant1



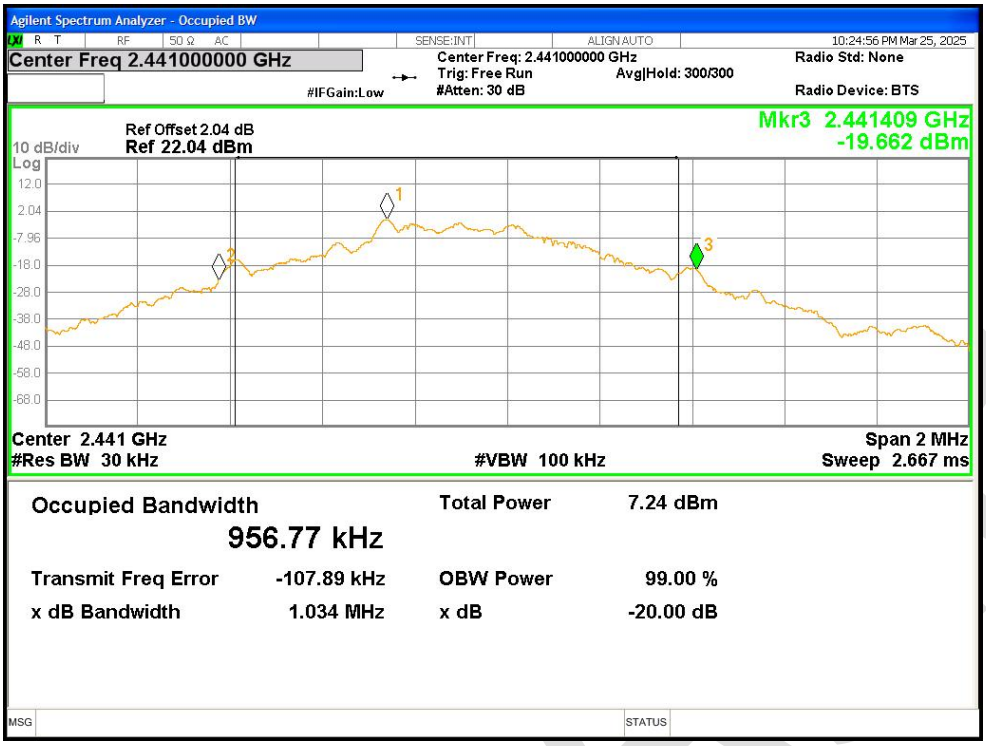
7.2 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	1.022	N/A	Pass
NVNT	1-DH1	2441	Ant1	1.034	N/A	Pass
NVNT	1-DH1	2480	Ant1	1.038	N/A	Pass
NVNT	2-DH1	2402	Ant1	1.294	N/A	Pass
NVNT	2-DH1	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH1	2480	Ant1	1.288	N/A	Pass
NVNT	3-DH1	2402	Ant1	1.26	N/A	Pass
NVNT	3-DH1	2441	Ant1	1.253	N/A	Pass
NVNT	3-DH1	2480	Ant1	1.268	N/A	Pass

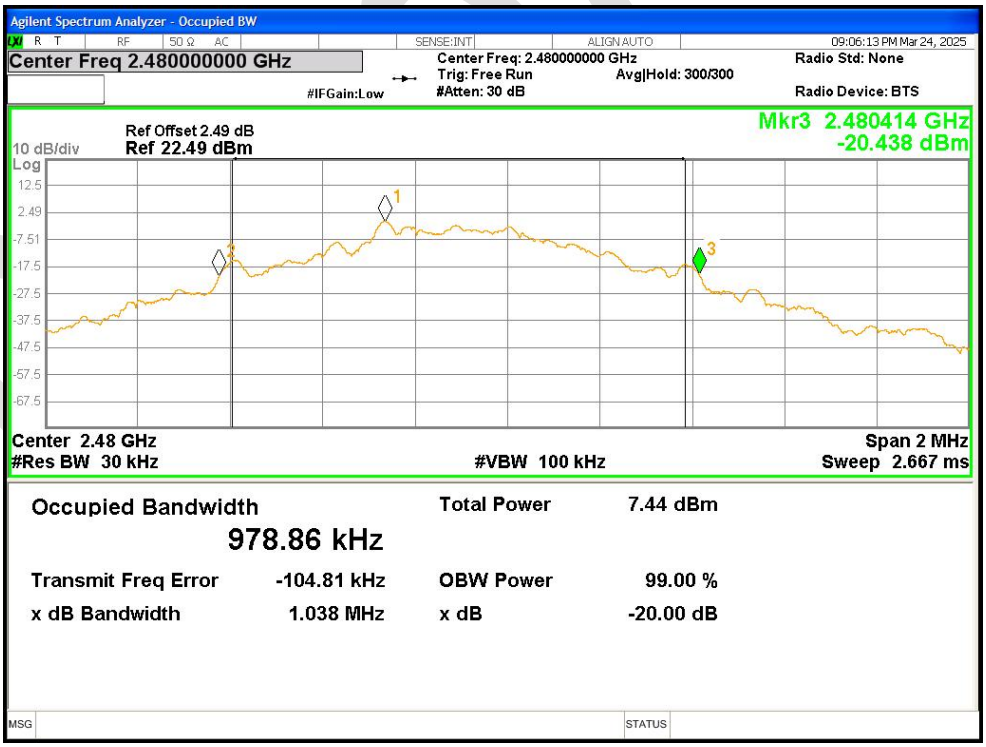
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



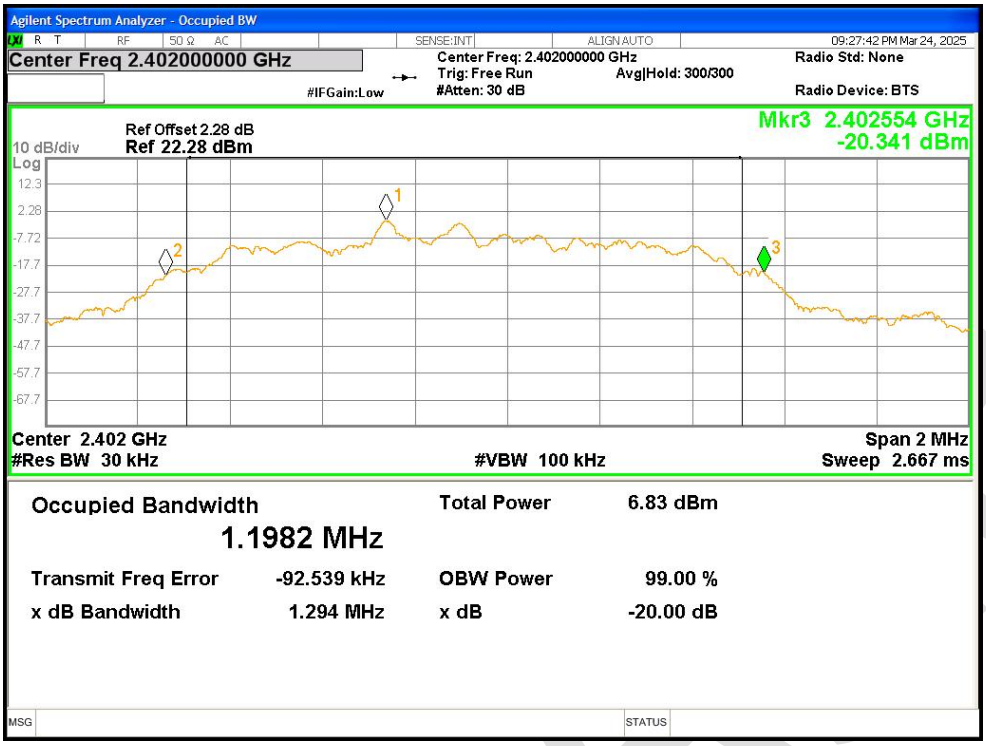
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



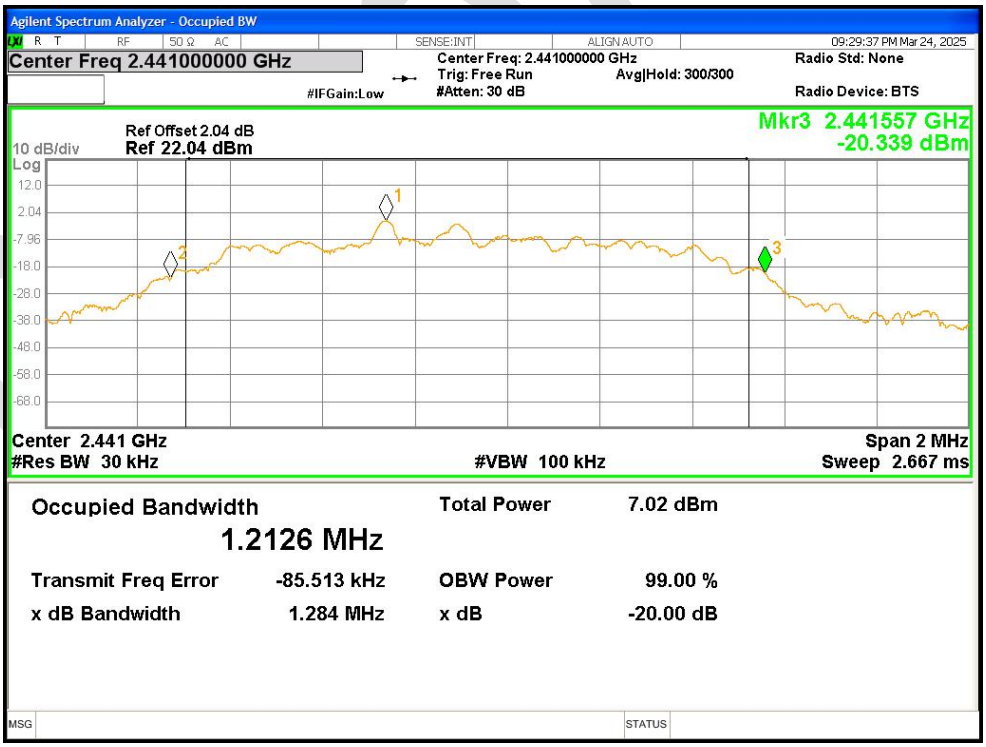
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



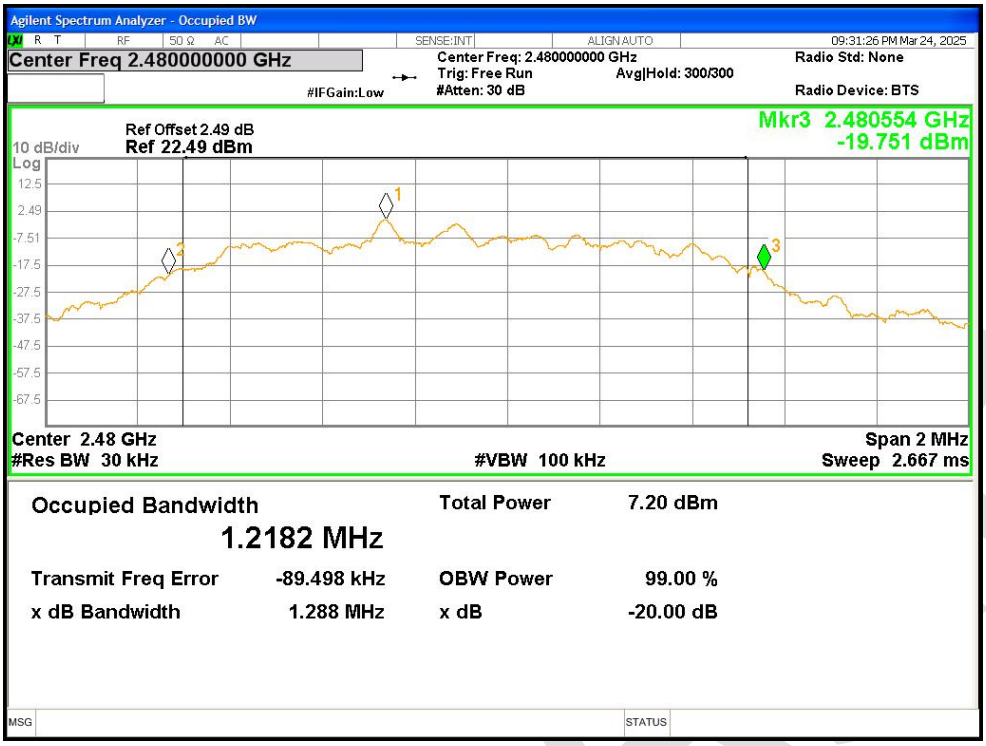
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



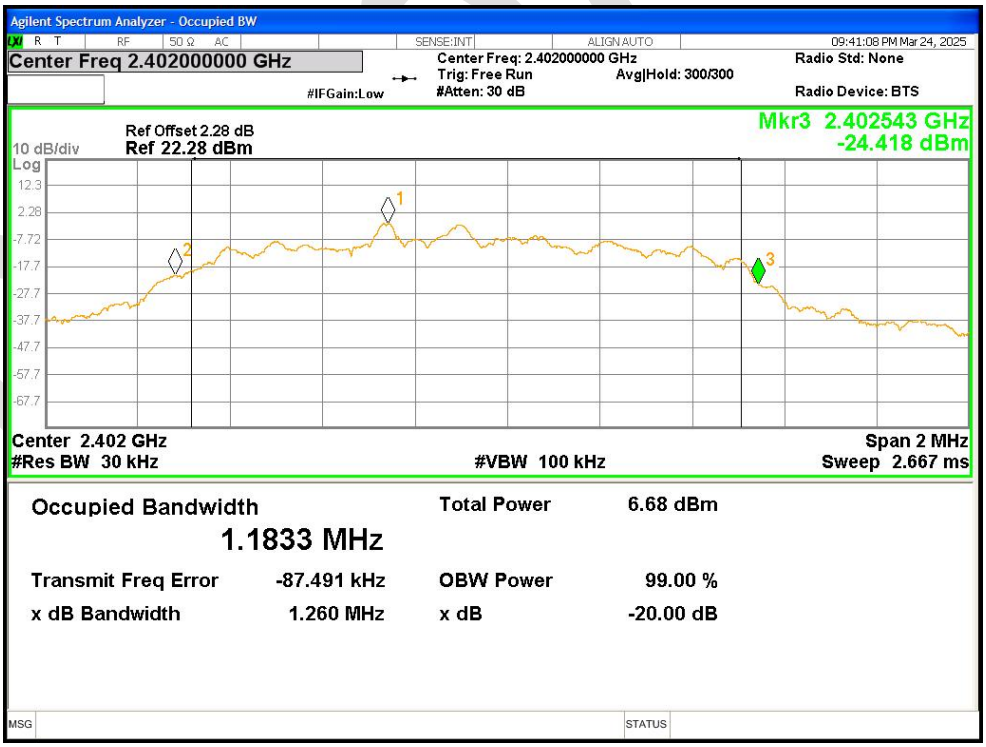
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



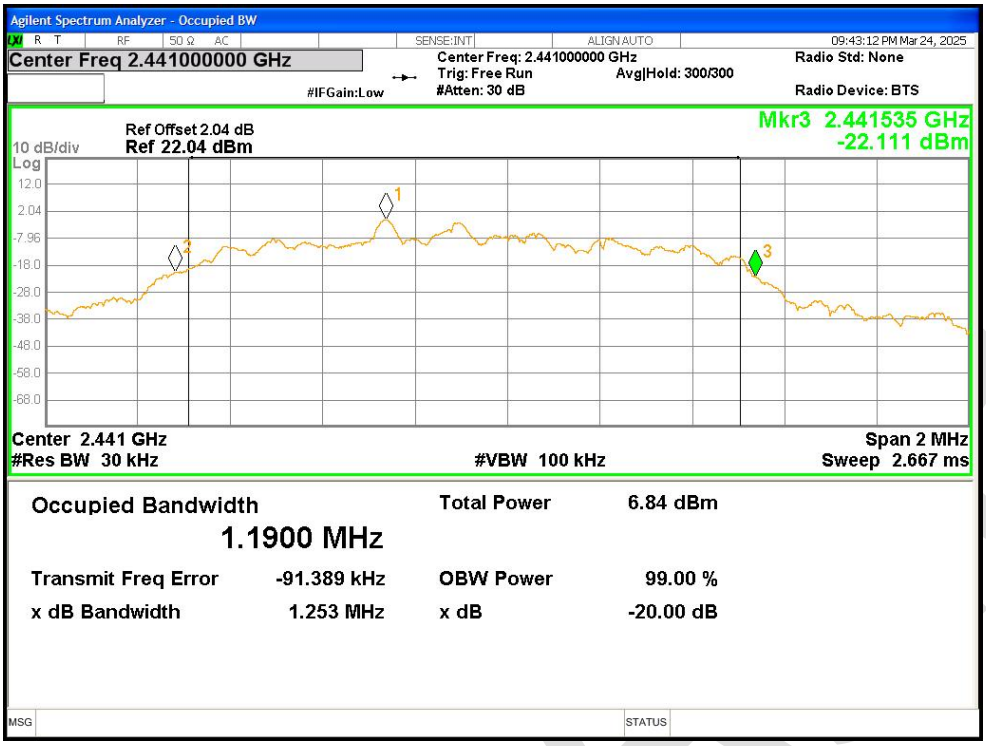
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



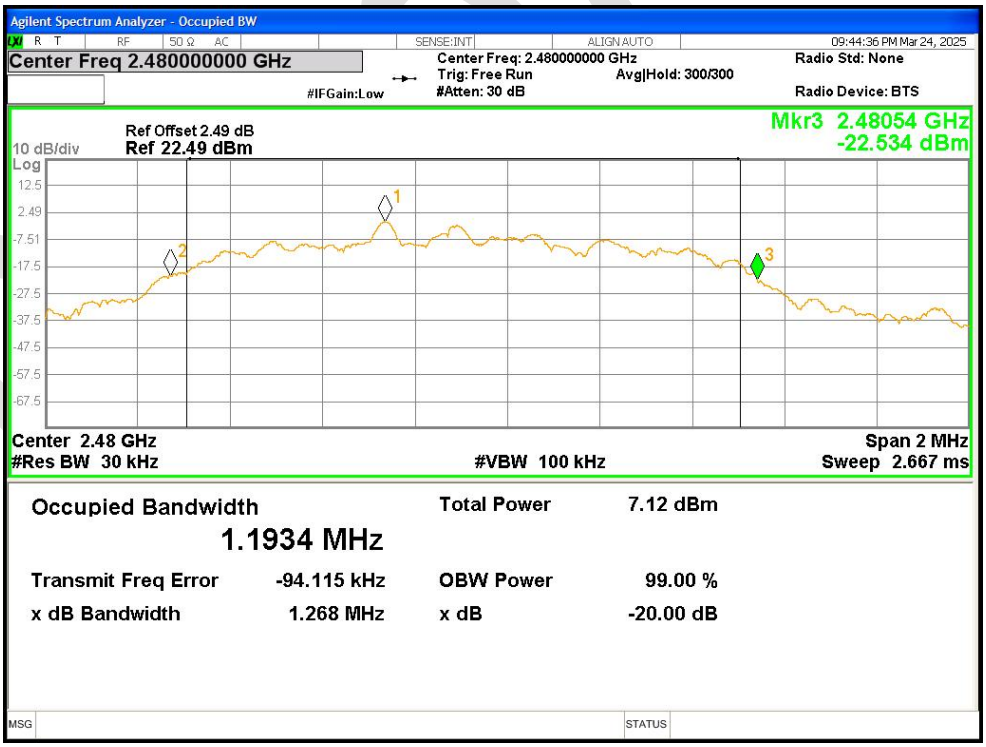
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



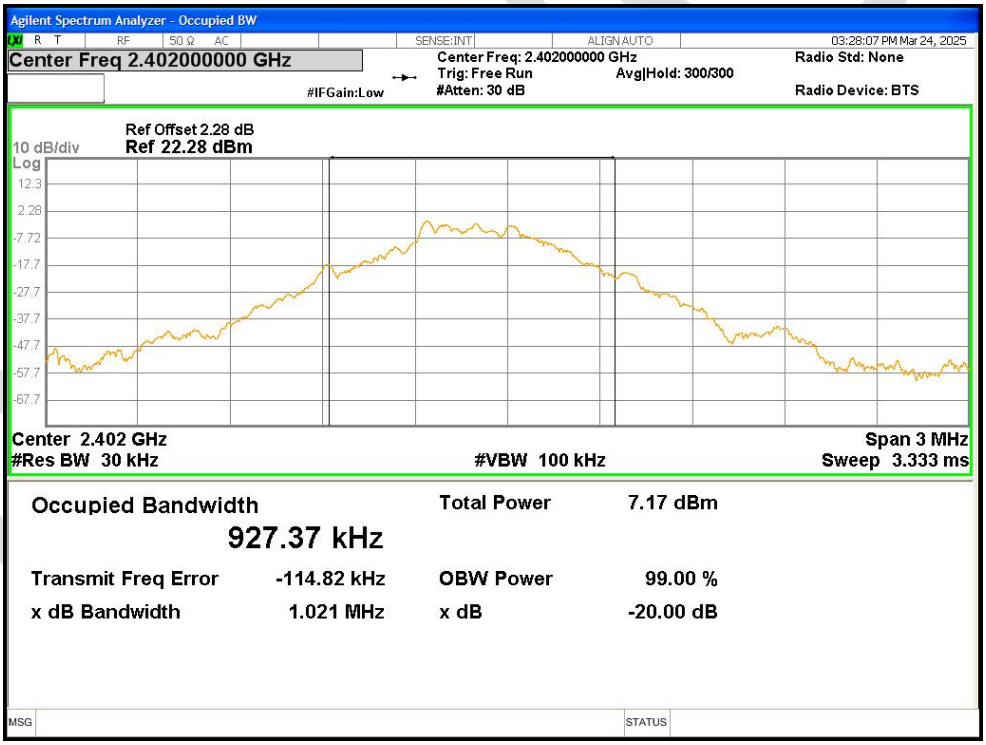
-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1



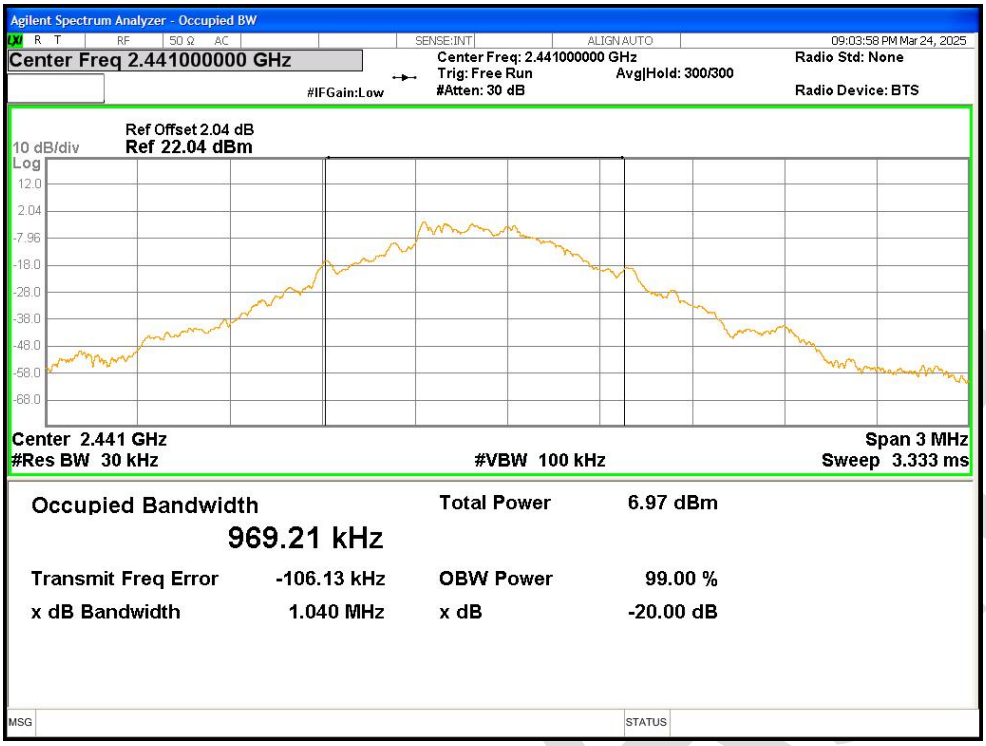
7.3 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.92737
NVNT	1-DH1	2441	Ant1	0.96921
NVNT	1-DH1	2480	Ant1	0.97751
NVNT	2-DH1	2402	Ant1	1.2084
NVNT	2-DH1	2441	Ant1	1.2189
NVNT	2-DH1	2480	Ant1	1.2256
NVNT	3-DH1	2402	Ant1	1.1846
NVNT	3-DH1	2441	Ant1	1.1938
NVNT	3-DH1	2480	Ant1	1.2047

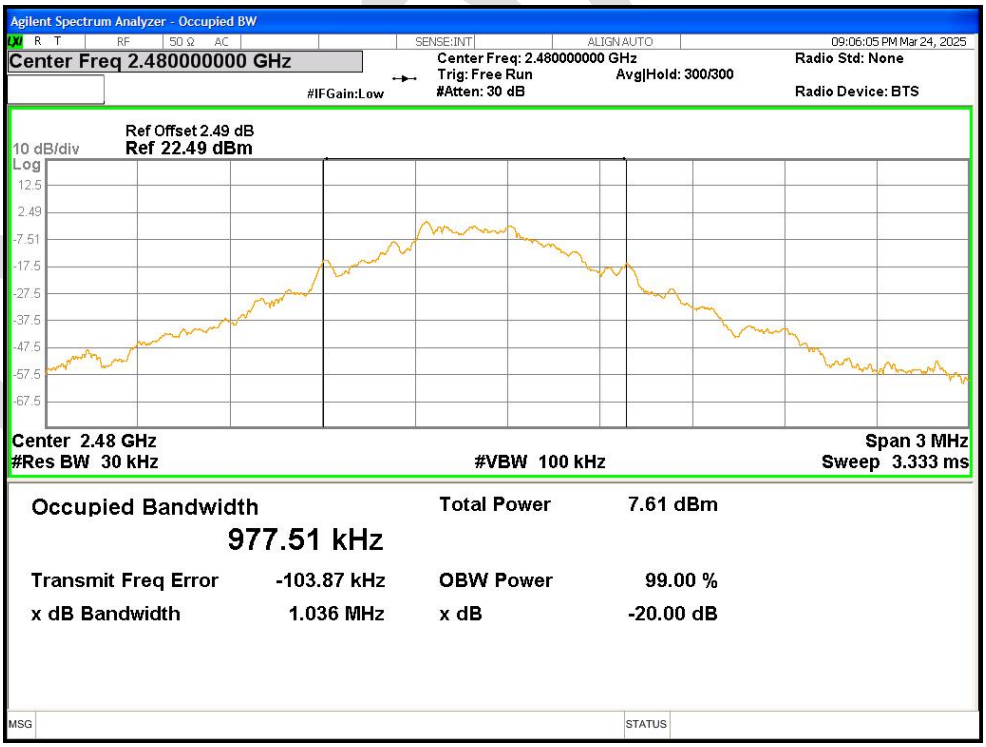
OBW NVNT 1-DH1 2402MHz Ant1



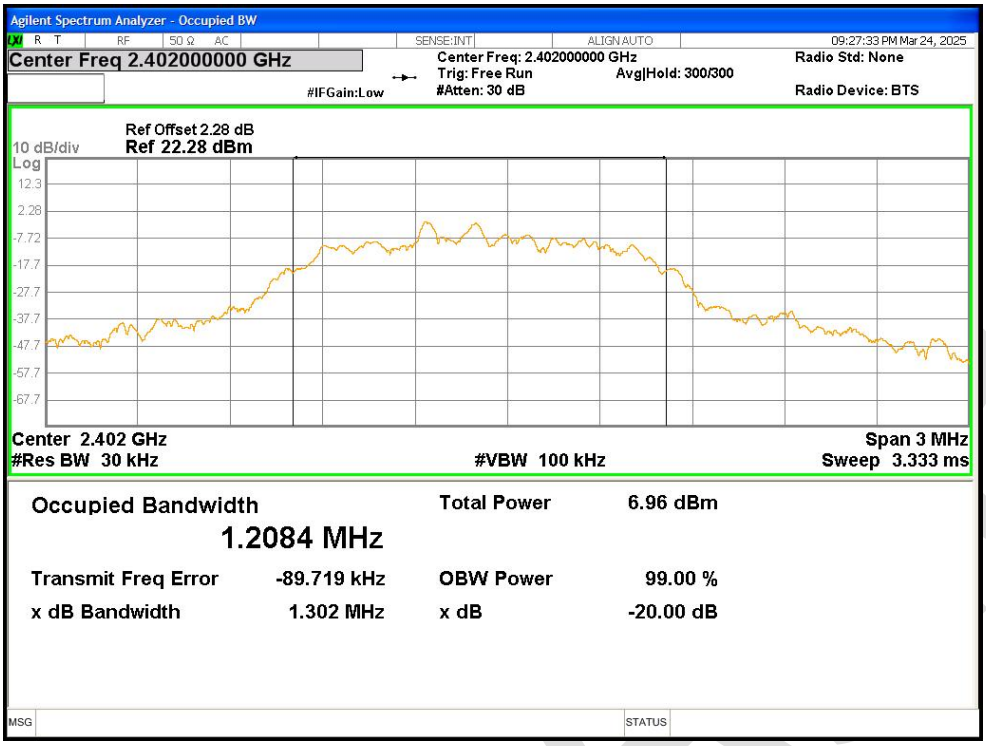
OBW NVNT 1-DH1 2441MHz Ant1



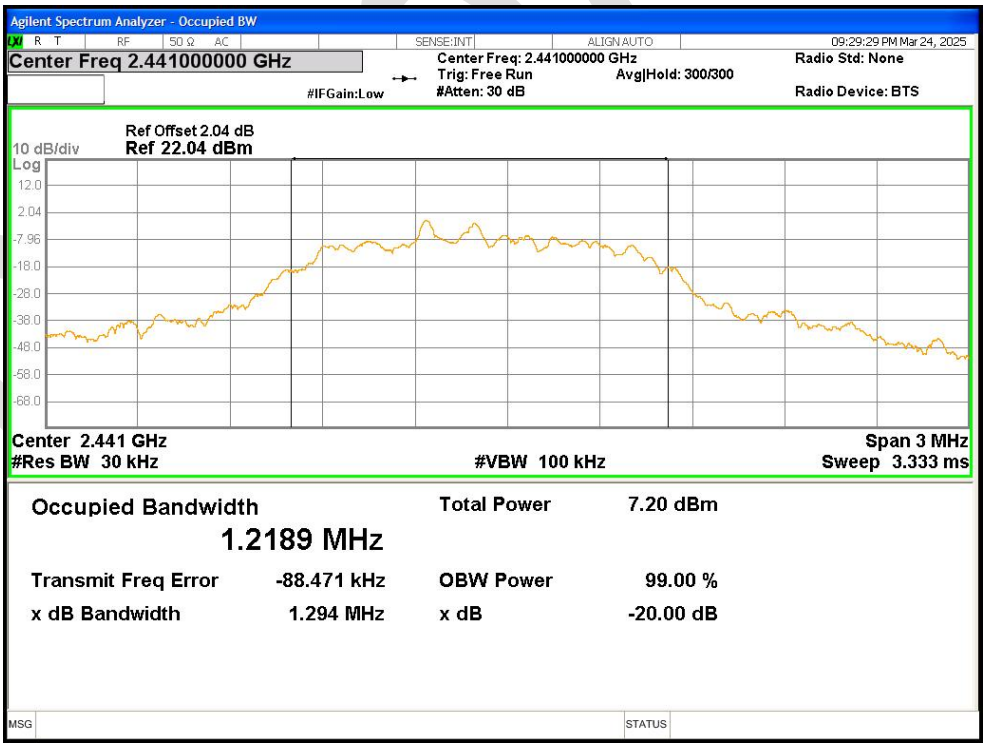
OBW NVNT 1-DH1 2480MHz Ant1



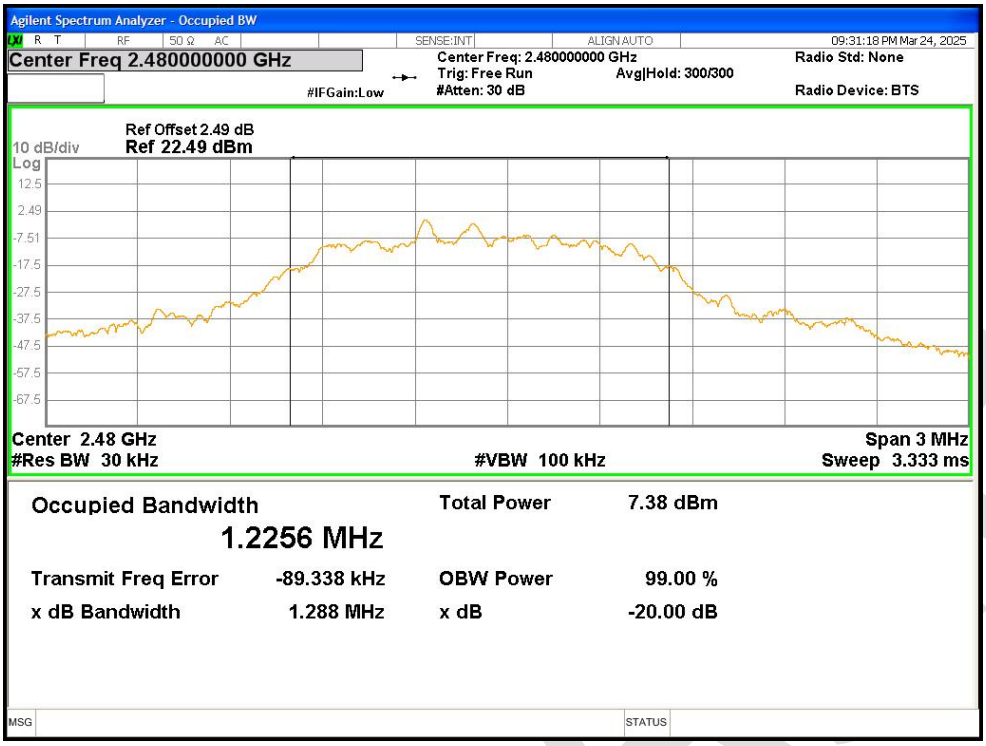
OBW NVNT 2-DH1 2402MHz Ant1



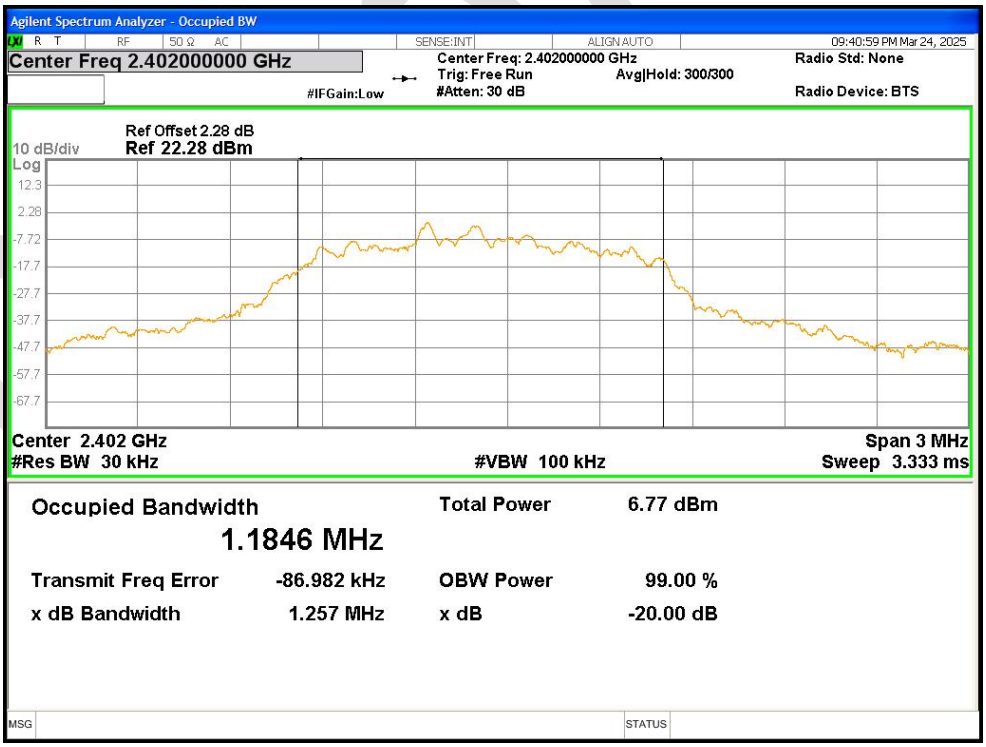
OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1



OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1