TEST REPORT

Report No.	CISRR25120925302
Project No.	CISR251209253
FCC ID	2AM74-T91
Applicant	Shenzhen Newwear Technology Co.,Ltd
Address	Room 1603, Jinhua Building, Dalang Street, Longhua District, Shenzhen City, Guangdong Province, P.R.C. China
Manufacturer	Shenzhen Newwear Technology Co.,Ltd
Address	Room 1603, Jinhua Building, Dalang Street, Longhua District, Shenzhen City, Guangdong Province, P.R.C. China
Product Name	SMART WATCH
Trade mark	-
Model/Type reference	T91
Listed Model(s)	T9,T92
Standard	47 CFR Part 15.247
Date of sample receipt	December 12, 2025
Test date	December 12, 2025 to December 15, 2025
Issue date	December 17, 2025
Test result	**Complied**

Morgan Tan

Reviewed by: Morgan Tan

Approved by: Hans Hu

The test results relate only to the tested samples.
The test report should not be reproduced except in full without the written approval of Shenzhen Bangce Testing Technology Co., Ltd.

Contents

1. STANDARD AND APPLICABLE TEST METHODS 3

2. REPORT VERSION 3

3. TEST DESCRIPTION 4

4. SUMMARY 5

4.1. Product Description * 5
4.2. Radio Specification Description * 5
4.3. Modification of EUT 6
4.4. Deviation from standards 6
4.5. Testing Site 6

5. TEST CONFIGURATION 7

5.1. Test frequency list 7
5.2. Descriptions of test mode 7
5.3. Support unit used in test configuration 7
5.4. Test sample information 7
5.5. Environmental conditions 7
5.6. Statement of the measurement uncertainty 7
5.7. Equipment Used during the Test 8

6. TEST RESULTS 10

6.1. Evaluation Results (Evaluation) 10
6.1.1. Antenna Requirement 10
6.2. Radio Spectrum Matter Test Results (RF) 11
6.2.1. Conducted Emission at AC power line 11
6.2.2. 6dB Bandwidth 15
6.2.3. Maximum Conducted Output Power 16
6.2.4. Power Spectral Density 17
6.2.5. Conducted band edge and spurious emission 18
6.2.6. Radiated band edge emission 19
6.2.7. Radiated Spurious Emission (below 1GHz) 25
6.2.8. Radiated Spurious Emission (Above 1GHz) 29

7. APPENDIX REPORT 37

7.1. Conducted Output Power 37
7.2. 99% Bandwidth 39
7.3. 6dB Bandwidth 41
7.4. Power Spectral Density 42
7.5. Duty Cycle 43
7.6. Conducted Spurious & Band Edge Emission 45

1. STANDARD AND APPLICABLE TEST METHODS

The tests were performed according to following standards:

47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

ANSI C63.10-2020: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

2. REPORT VERSION

Version No.	Issue date	Description
00	December 17, 2025	Original

3. TEST DESCRIPTION

No.	Test Item	Standard Requirement	Result
1	Antenna Requirement	47 CFR 15.203	Pass
2	Conducted Emission at AC power line	47 CFR 15.207(a)	Pass
3	6dB Bandwidth	47 CFR 15.247(a)(2)	Pass
4	Maximum Conducted Output Power	47 CFR 15.247(b)(3)	Pass
5	Power Spectral Density	47 CFR 15.247(e)	Pass
6	Conducted band edge and spurious emission	47 CFR 15.247(d)	Pass
7	Radiated band edge emission	47 CFR 15.247(d), 15.209, 15.205	Pass
8	Radiated Spurious Emission (below 1GHz)	47 CFR 15.247(d), 15.209, 15.205	Pass
9	Radiated Spurious Emission (Above 1GHz)	47 CFR 15.247(d), 15.209, 15.205	Pass

Note:

– The measurement uncertainty is not included in the test result.

4. SUMMARY

4.1. Product Description *

Main unit information:	
Product Name:	SMART WATCH
Trade mark:	-
Model No.:	T91
Listed Model(s):	T9,T92
Model difference:	All models are same as the samples except model name and colour, they have the same structure/circuit.
Power supply:	DC 5V
Hardware version:	-
Software version:	-
Accessory unit (AU) information:	
AU-1	DC 3.8V for Battery

4.2. Radio Specification Description *

Modulation type:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	Wire Antenna
Antenna gain:	0.1dBi

Note:

1) *: As the above information is provided by the applicant, all relevant results and conclusions of this report are based solely on such information. Bangce lab shall not be liable for the authenticity, integrity, and resulting outcomes of the information, and/or the validity of the conclusions herein.
2) Operation frequency list as follow:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468

7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461	-	-

4.3. Modification of EUT

No modifications are made to the EUT during all test items.

4.4. Deviation from standards

None

4.5. Testing Site

Laboratory Name	Shenzhen Bangce Testing Technology Co., Ltd.
Laboratory Location	101, building 10, Yunli Intelligent Park, Shutianpu community, Matian Street, Guangming District, Shenzhen，Guangdong, China
Contact information	Tel: 86-755-2319 6848, email: service@cis-cn.net Website: http://www.cis-cn.net/
FCC registration number	736346
FCC designation number	CN1372

5. TEST CONFIGURATION

5.1. Test frequency list

Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
2402	2440	2480

5.2. Descriptions of test mode

No	Test mode	Description
TM1	TX mode	Keep the EUT in continuously transmitting mode with GFSK modulation at lowest, middle and highest channel.
TM2	Link mode	Keep the EUT in Bluetooth linking mode with AE.

5.3. Support unit used in test configuration

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

Item	Equipment name	Trade Name	Model No.
1	Adapter	Guangdong Sangu Technology Co. ltd	SG-0501000AU

5.4. Test sample information

Type	Sample No.
Engineer sample	CISR251209253-S01
Normal sample	CISR251209253-S02

5.5. Environmental conditions

Type	Requirement
Temperature:	15~35°C
Relative Humidity:	25~75%
Air Pressure:	860~1060mbar

5.6. Statement of the measurement uncertainty

No.	Test Items	Measurement Uncertainty
1	Conducted Emission at AC power line (150kHz ~ 30MHz)	3.52dB
2	Bandwidth	0.19%
3	Conducted output power	1.38dB
4	Power spectral density	1.39dB
5	Conducted spurious emission	1.40dB

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

5.7. Equipment Used during the Test

Conducted Emission at AC power line

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	8*4*3 Shielding room	SKET	8m*4m*3 m	CIS-EE012	2024-09-02	2027-09-01
2	EMI Test Receiver	ROHDE&SCHWARZ	ESPI7	CIS-EE043	2025-01-08	2026-01-07
3	LISN	SCHWARZBECK	NSLK 8127	CIS-EE044	2025-01-08	2026-01-07
4	LISN-AE	ETS	3810/2NM	CIS-EE075	2025-01-08	2026-01-07
5	RF Cable	SKET	-	CIS-EE071	2025-01-08	2026-01-07
6	Power Strip	BULL	GNIN-413	CIS-EE087	2025-01-08	2026-01-07
7	Test software	FARAD	EZ-CON	CIS-EE095	/	/
8	Thermohygrometer	DeLi	8866	CIS-EE069	2025-01-11	2026-01-10

Emissions in non-restricted frequency bands
6dB Bandwidth
Maximum Conducted Output Power
Power Spectral Density

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Spectrum analyzer	ROHDE&SCHWARZ	FSV-40N	CIS-EE076	2025-01-08	2026-01-07
2	Notch Filter Assembly	WCS	SMU-1003	CIS-EE093	2025-01-08	2026-01-07
3	Vector Signal Generator	Agilent	N5182A	CIS-RE012	2025-01-08	2026-01-07
4	Analog Signal Generator	Agilent	N5181A	CIS-RE013	2025-01-08	2026-01-07
5	Test software	WCS	WCN-Regulatory	CIS-EE103	/	/

Band edge emissions (Radiated)
Emissions in frequency bands (below 1GHz)
Emissions in frequency bands (above 1GHz)

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	9*6*6 anechoic chamber	SKET	9.3*6.3*6	N/A	2024-09-02	2027-09-01
2	Spectrum analyzer	Agilent	N9020A	MY50530263	2025-01-08	2026-01-07
3	Spectrum analyzer	R&S	FSV-40N	102130	2025-01-08	2026-01-07
4	Bilog Antenna	Schwarzbeck	VULB 9163	1463	2023-01-09	2026-01-08

5	Horn Antenna	SCHWARZBECK	BBHA 9120 D	2487	2023-01-09	2026-01-08
6	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	/	2023-01-09	2026-01-08
7	RF Cable	Tonscend	Cable 1	/	2025-01-08	2026-01-07
8	RF Cable	Tonscend	Cable 2	/	2025-01-08	2026-01-07
9	RF Cable	SKET	Cable 3	/	2025-01-08	2026-01-07
10	L.I.S.N.#1	Schwarzbeck	NSLK8127	/	2025-01-08	2026-01-07
11	L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	/	2025-01-08	2026-01-07
12	Horn Antenna	SCHWARZBECK	BBHA9170	1130	2023-01-09	2026-01-08
13	Preamplifier	Tonscend	TAP18040048	AP21C806126	2025-01-08	2026-01-07
14	Variable-frequency power source	Pinhong	PH1110	/	2025-01-08	2026-01-07
15	6dB Attenuator	SKET	DC-6G	/	2025-01-08	2026-01-07
16	Antenna tower	SKT	Bk-4AT-BS	AT2021040101-V1	2025-01-08	2026-01-07

6. TEST RESULTS

6.1. Evaluation Results (Evaluation)

6.1.1. Antenna Requirement

Test Requirement:	Refer to 47 CFR Part 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

6.1.1.1. Test Result

Pass

6.1.1.2. Conclusion:

The EUT antenna is Wire Antenna. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used.Antenna structure please refer to the EUT internal photographs antenna photo.

6.2. Radio Spectrum Matter Test Results (RF)

6.2.1. Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).
Test Limit:	

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

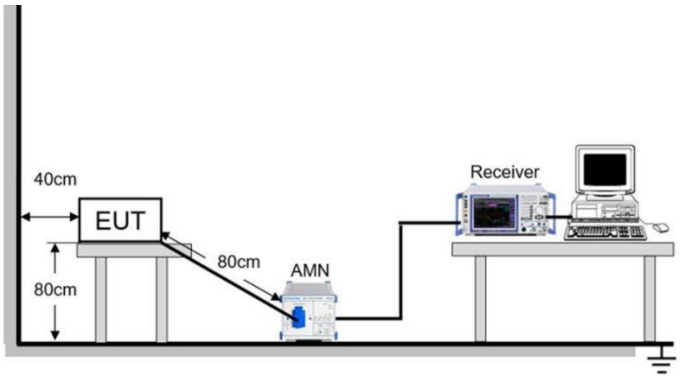
*Decreases with the logarithm of the frequency.

Test Method:	ANSI C63.10-2020 section 6.2
Procedure:	1>. The EUT was setup according to ANSI C63.10 requirements. 2>. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. 3>. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. 4>. The peripheral devices are also connected to the main power through a LISN. (Refer to the block diagram of the test setup and photographs) 5>. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source. 6>. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. 7>. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz. 8>. During the above scans, the emissions were maximized by cable manipulation.

6.2.1.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.4 °C	Humidity:	55.5 %	Atmospheric Pressure:	102.5 kPa
Pre test mode:	TM2				
Final test mode:	TM2				

6.2.1.2. Test Setup Diagram

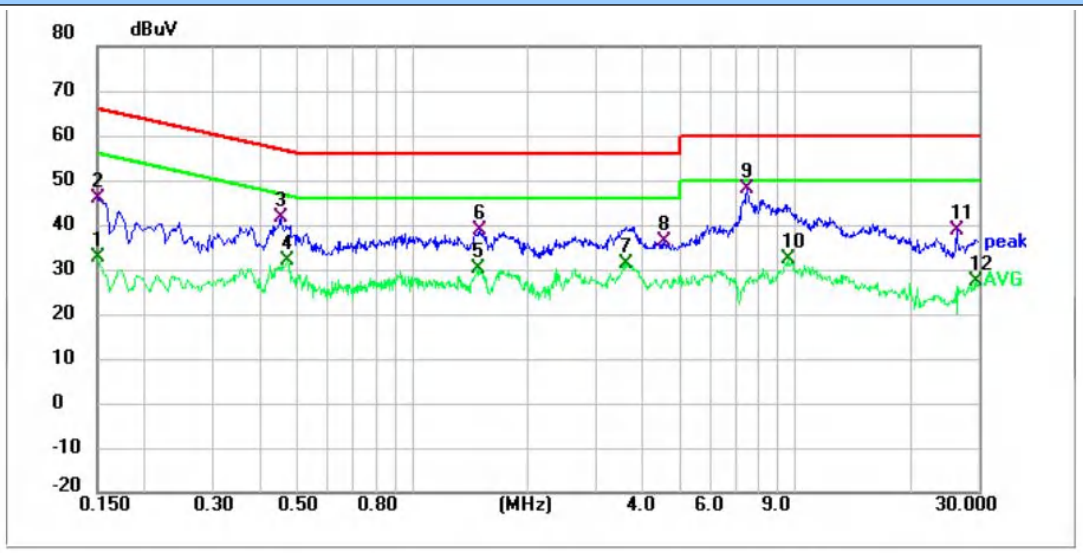


6.2.1.3. Test Result

Pass

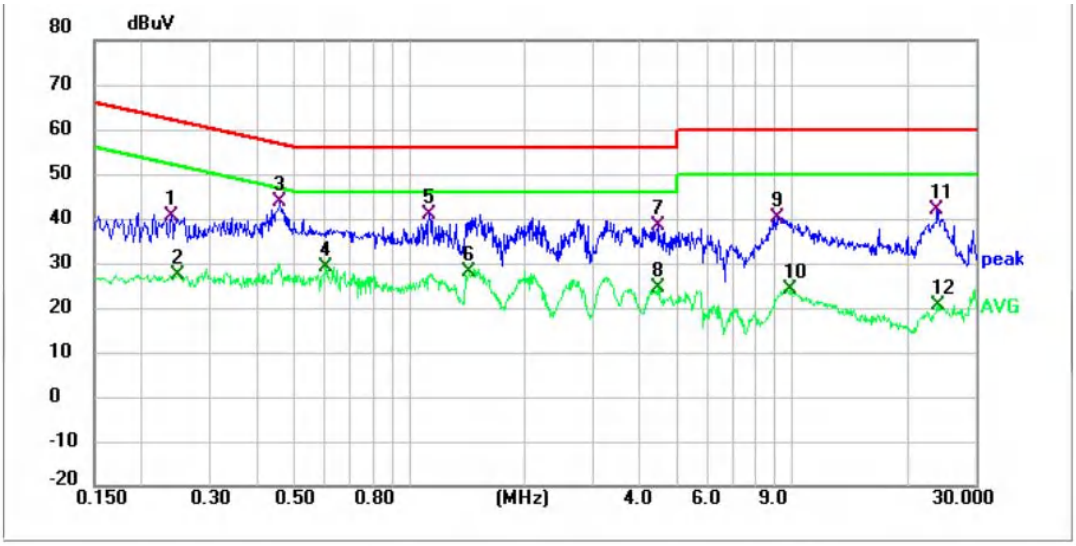
6.2.1.4. Test Data

Mode2 / Line: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	22.46	10.20	32.66	56.00	23.34	AVG
2	0.1514	35.62	10.20	45.82	65.92	20.10	QP
3	0.4500	31.39	10.15	41.54	56.88	15.34	QP
4	0.4700	21.78	10.15	31.93	46.51	14.58	AVG
5	1.4900	19.98	10.22	30.20	46.00	15.80	AVG
6	1.5100	28.41	10.22	38.63	56.00	17.37	QP
7	3.6340	20.75	10.33	31.08	46.00	14.92	AVG
8	4.5700	25.86	10.36	36.22	56.00	19.78	QP
9 *	7.5180	37.55	10.35	47.90	60.00	12.10	QP
10	9.5900	21.81	10.38	32.19	50.00	17.81	AVG
11	26.3860	27.87	10.93	38.80	60.00	21.20	QP
12	29.5620	16.58	10.87	27.45	50.00	22.55	AVG

Mode2 / Line: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2380	30.38	10.14	40.52	62.17	21.65	QP
2	0.2480	17.31	10.14	27.45	51.82	24.37	AVG
3 *	0.4580	33.48	10.12	43.60	56.73	13.13	QP
4	0.6060	18.83	10.13	28.96	46.00	17.04	AVG
5	1.1260	30.61	10.17	40.78	56.00	15.22	QP
6	1.4260	17.93	10.19	28.12	46.00	17.88	AVG
7	4.4540	27.95	10.35	38.30	56.00	17.70	QP
8	4.4540	14.28	10.35	24.63	46.00	21.37	AVG
9	9.1340	29.94	10.37	40.31	60.00	19.69	QP
10	9.8139	13.90	10.37	24.27	50.00	25.73	CAV
11	23.8180	30.85	10.98	41.83	60.00	18.17	QP
12	23.9700	9.58	10.97	20.55	50.00	29.45	AVG

Note:
1>. Level = Reading +Factor (Voltage Division Coefficient + Cable Loss + Attenuator Factor)
2>. Margin = Limit - Level

6.2.2. 6dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2020, section 11.8
Procedure:	**11.8.1 Option 1** The steps for the first option are as follows: a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz. b) Set the VBW ≥ [3 × RBW]. c) Detector = peak. d) Trace mode = max-hold. e) Sweep = No faster than coupled (auto) time. f) Allow the trace to stabilize. g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "−6 dB down amplitude". If a marker is below this "−6 dB down amplitude" value, then it shall be as close as possible to this value. **11.8.2 Option 2** The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW ≥ 3 × RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

6.2.2.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.6 °C	Humidity:	56.1 %	Atmospheric Pressure:	102.5 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.2.2. Test Setup Diagram

6.2.2.3. Test Result

Pass

6.2.2.4. Test Data

Please Refer to Appendix for Details.

6.2.3. Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Test Method:	ANSI C63.10-2020 section 11.9.1
Procedure:	ANSI C63.10-2020, section 11.9.1 Maximum peak conducted output power

6.2.3.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.3 °C	Humidity:	55.9 %	Atmospheric Pressure:	102.5 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.3.2. Test Setup Diagram

6.2.3.3. Test Result

Pass

6.2.3.4. Test Data

Please Refer to Appendix for Details.

6.2.4. Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Test Method:	ANSI C63.10-2020, section 11.10
Procedure:	ANSI C63.10-2020, section 11.10, Maximum power spectral density level in the fundamental emission

6.2.4.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.6 °C	Humidity:	55.5 %	Atmospheric Pressure:	102.5 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.4.2. Test Setup Diagram

6.2.4.3. Test Result

Pass

6.2.4.4. Test Data

Please Refer to Appendix for Details.

6.2.5. Conducted band edge and spurious emission

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2020 section 11.11
Procedure:	ANSI C63.10-2020 Section 11.11.1, Section 11.11.2, Section 11.11.3

6.2.5.1. E.U.T. Operation

Operating Environment:					
Temperature:	22 °C	Humidity:	55.7 %	Atmospheric Pressure:	102.5 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.5.2. Test Setup Diagram

6.2.5.3. Test Result

Pass

6.2.5.4. Test Data

Please Refer to Appendix for Details.

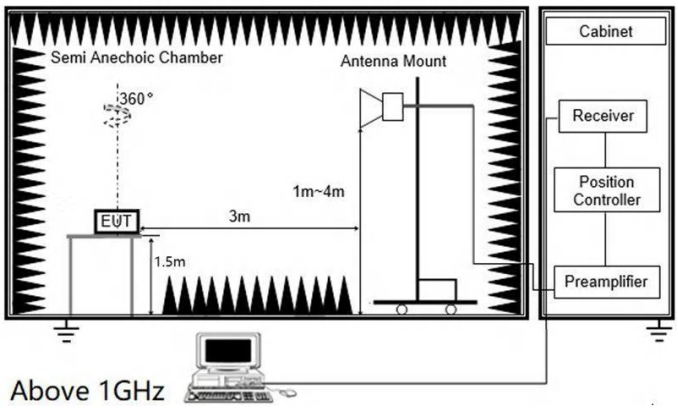
6.2.6. Radiated band edge emission

<table>
<tr><td>Test Requirement:</td><td>Refer to 47 CFR 15.247(d), 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)).</td></tr>
<tr><td>Test Limit:</td><td>
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2020 section 6.10</td></tr>
<tr><td>Procedure:</td><td>1>. EUT was setup and tested according to ANSI C63.10 .
2>. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3>. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4>. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.
5>. Use the following spectrum analyzer settings:
a) Span shall wide enough to fully capture the emission being measured
b) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement
For average measurement: use duty cycle correction factor method (DCCF), Average level = Peak level + DCCF</td></tr>
</table>

6.2.6.1. E.U.T. Operation

Operating Environment:					
Temperature:	23.2 °C	Humidity:	56.7 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.6.2. Test Setup Diagram

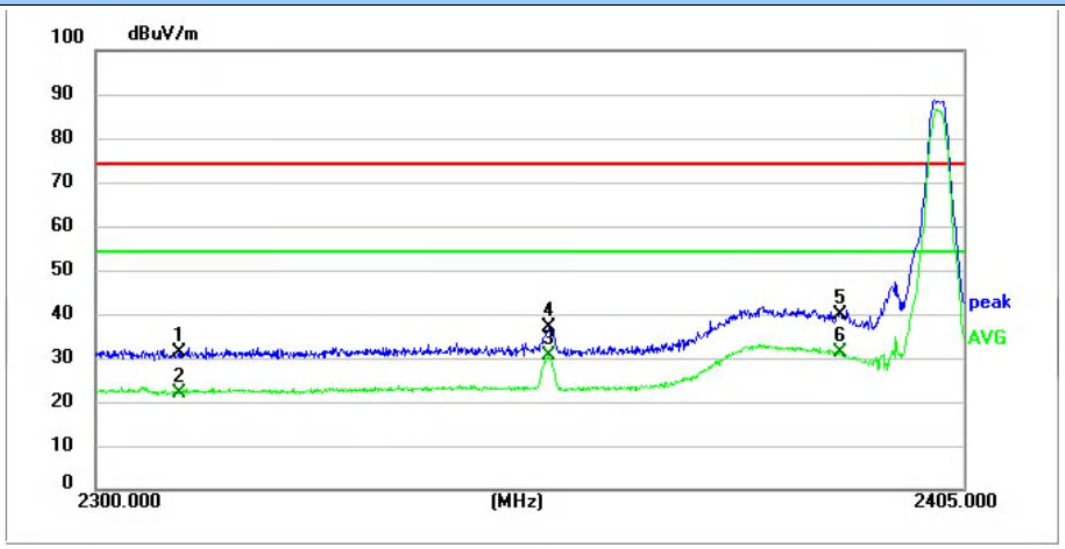


6.2.6.3. Test Result

Pass

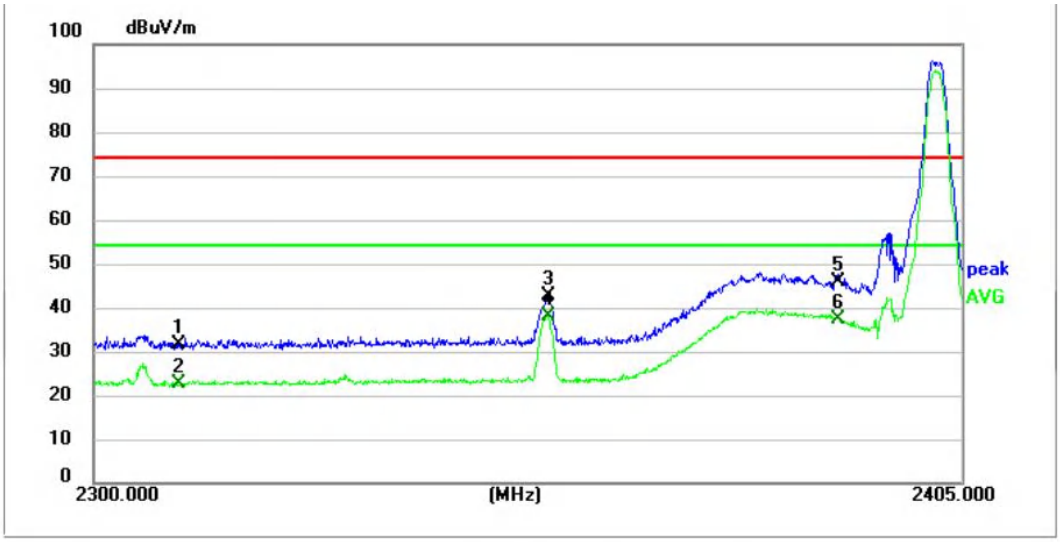
6.2.6.4. Test Data

Mode1 / Polarization: Horizontal / CH: L



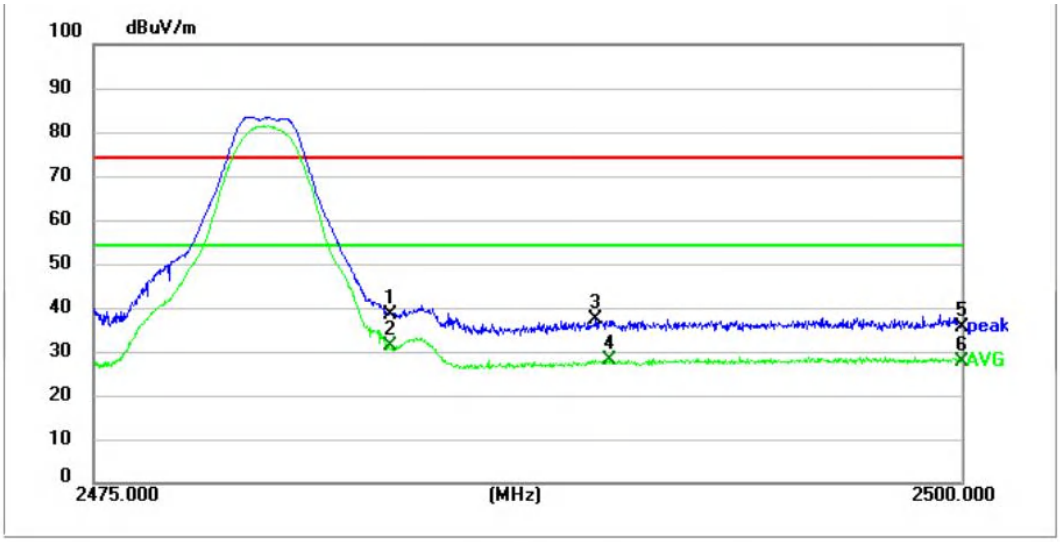
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.0000	48.70	-17.52	31.18	74.00	42.82	peak
2	2310.0000	39.63	-17.52	22.11	54.00	31.89	AVG
3	2354.2955	47.86	-17.44	30.42	54.00	23.58	AVG
4	2354.3584	54.41	-17.44	36.97	74.00	37.03	peak
5	2390.0000	57.18	-17.32	39.86	74.00	34.14	peak
6 *	2390.0000	48.50	-17.32	31.18	54.00	22.82	AVG

Mode1 / Polarization: Vertical / CH: L



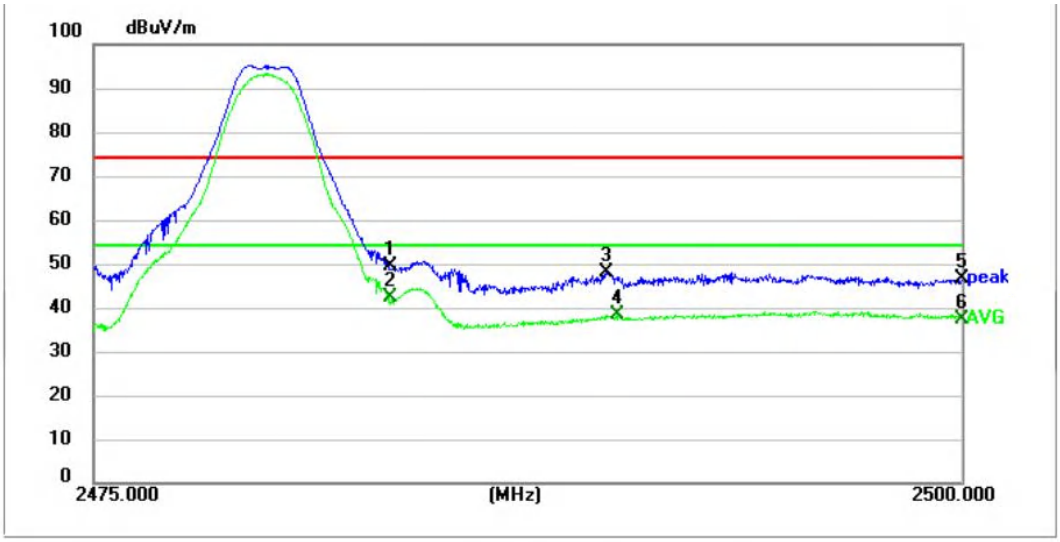
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.0000	49.02	-17.52	31.50	74.00	42.50	peak
2	2310.0000	40.07	-17.52	22.55	54.00	31.45	AVG
3	2354.4424	60.27	-17.44	42.83	74.00	31.17	peak
4 *	2354.4424	55.40	-17.44	37.96	54.00	16.04	AVG
5	2390.0000	63.15	-17.32	45.83	74.00	28.17	peak
6	2390.0000	54.70	-17.32	37.38	54.00	16.62	AVG

Mode1 / Polarization: Horizontal / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5000	55.50	-17.03	38.47	74.00	35.53	peak
2 *	2483.5000	48.16	-17.03	31.13	54.00	22.87	AVG
3	2489.4573	54.34	-16.99	37.35	74.00	36.65	peak
4	2489.8274	45.06	-16.99	28.07	54.00	25.93	AVG
5	2500.0000	52.48	-16.94	35.54	74.00	38.46	peak
6	2500.0000	44.67	-16.94	27.73	54.00	26.27	AVG

Mode1 / Polarization: Vertical / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5000	66.52	-17.03	49.49	74.00	24.51	peak
2 *	2483.5000	59.20	-17.03	42.17	54.00	11.83	AVG
3	2489.7649	65.00	-16.99	48.01	74.00	25.99	peak
4	2490.0774	55.38	-16.99	38.39	54.00	15.61	AVG
5	2500.0000	63.43	-16.94	46.49	74.00	27.51	peak
6	2500.0000	54.42	-16.94	37.48	54.00	16.52	AVG

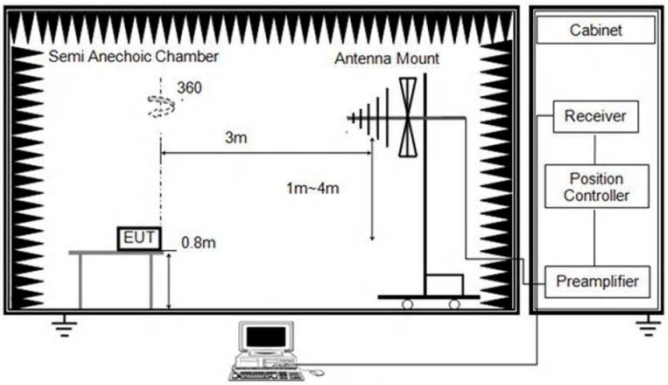
6.2.7. Radiated Spurious Emission (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).
Test Limit:	<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
Test Method:	ANSI C63.10-2020 section 6.6.4
Procedure:	1>. The EUT was setup and tested according to ANSI C63.10. 2>. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level. 3>. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower. 4>. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines. 5>. Set to the maximum power setting and enable the EUT transmit continuously. 6>. Use the following spectrum analyzer settings a) Span shall wide enough to fully capture the emission being measured; b) RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

6.2.7.1. E.U.T. Operation

Operating Environment:					
Temperature:	23.5 °C	Humidity:	55.7 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.7.2. Test Setup Diagram



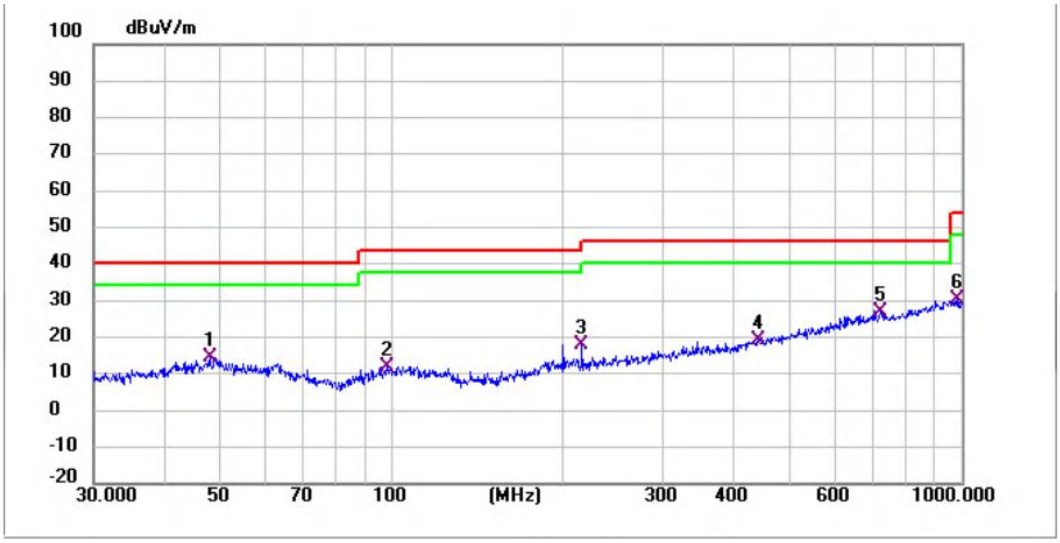
Below 1 GHz and above 30 MHz

6.2.7.3. Test Result

Pass

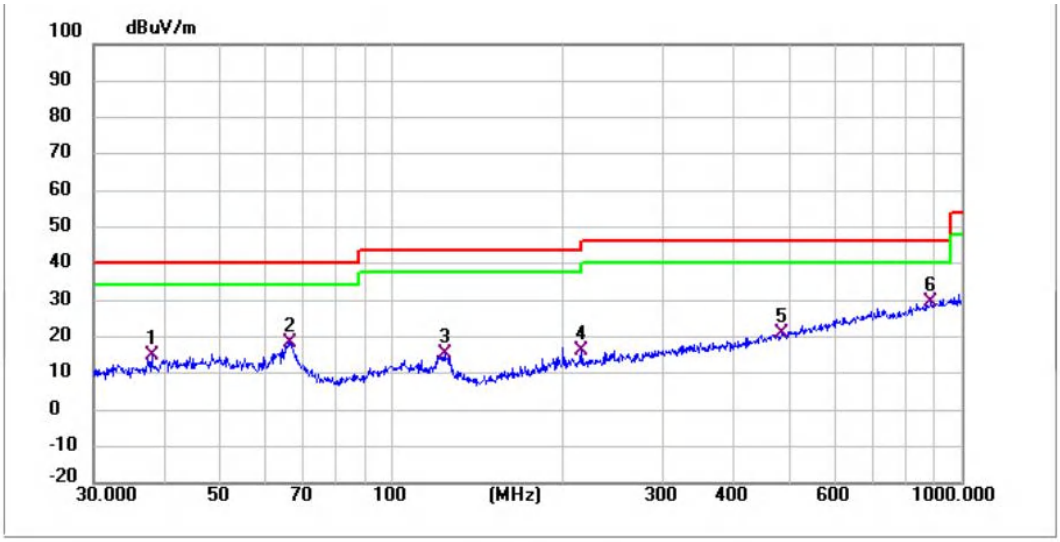
6.2.7.4. Test Data

Mode1 / Polarization: Horizontal / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	43.67	-29.21	14.46	40.00	25.54	QP
2	98.4866	43.29	-31.27	12.02	43.50	31.48	QP
3	216.0240	47.42	-29.61	17.81	46.00	28.19	QP
4	440.1962	43.04	-23.80	19.24	46.00	26.76	QP
5 *	721.7258	43.30	-16.57	26.73	46.00	19.27	QP
6	982.6200	43.90	-13.57	30.33	54.00	23.67	QP

Mode1 / Polarization: Vertical / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	37.9450	46.14	-31.33	14.81	40.00	25.19	QP
2	66.4989	50.50	-32.11	18.39	40.00	21.61	QP
3	124.1330	48.13	-32.64	15.49	43.50	28.01	QP
4	216.0240	45.96	-29.61	16.35	46.00	29.65	QP
5	485.6093	43.10	-22.36	20.74	46.00	25.26	QP
6 *	884.5029	44.43	-15.06	29.37	46.00	16.63	QP

Note:
1>. For 9 kHz ~ 30 MHz Measurement
The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.
2>. Level= Reading + Factor (Antenna Factor+ Cable Loss- Preamp Factor)
3>. Margin = Limit – Level

6.2.8. Radiated Spurious Emission (Above 1GHz)

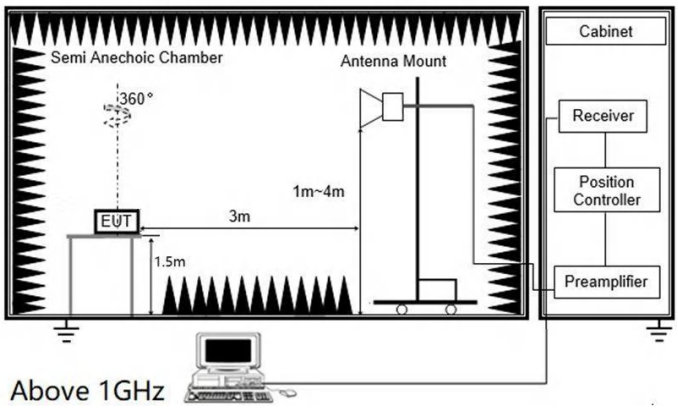
<table>
<tr><td>Test Requirement:</td><td>Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).</td></tr>
<tr><td>Test Limit:</td><td>
<table>
<tr><td>Frequency (MHz)</td><td>Field strength (microvolts/meter)</td><td>Measurement distance (meters)</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2020 section 6.6.4</td></tr>
<tr><td>Procedure:</td><td>1>. The EUT was setup and tested according to ANSI C63.10.
2>. The EUT is placed on a turn table which is 0.8 meter above ground for 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3>. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4>. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5>. Set to the maximum power setting and enable the EUT transmit continuously.
6>. Use the following spectrum analyzer settings
a) Span shall wide enough to fully capture the emission being measured;
b) Set RBW=1MHz, VBW=3MHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement: use duty cycle correction factor method (DCCF)
Average level = Peak level + DCCF</td></tr>
</table>

6.2.8.1. E.U.T. Operation

<table>
<tr><td colspan="6">Operating Environment:</td></tr>
<tr><td>Temperature:</td><td>22.1 °C</td><td>Humidity:</td><td>55.3 %</td><td>Atmospheric Pressure:</td><td>102.1 kPa</td></tr>
<tr><td colspan="2">Pre test mode:</td><td colspan="4">TM1, TM2</td></tr>
<tr><td colspan="2">Final test mode:</td><td colspan="4">All of the listed pre-test mode were tested, only the data of the worst mode (TM1) is recorded in the report</td></tr>
</table>

6.2.8.2. Test Setup Diagram

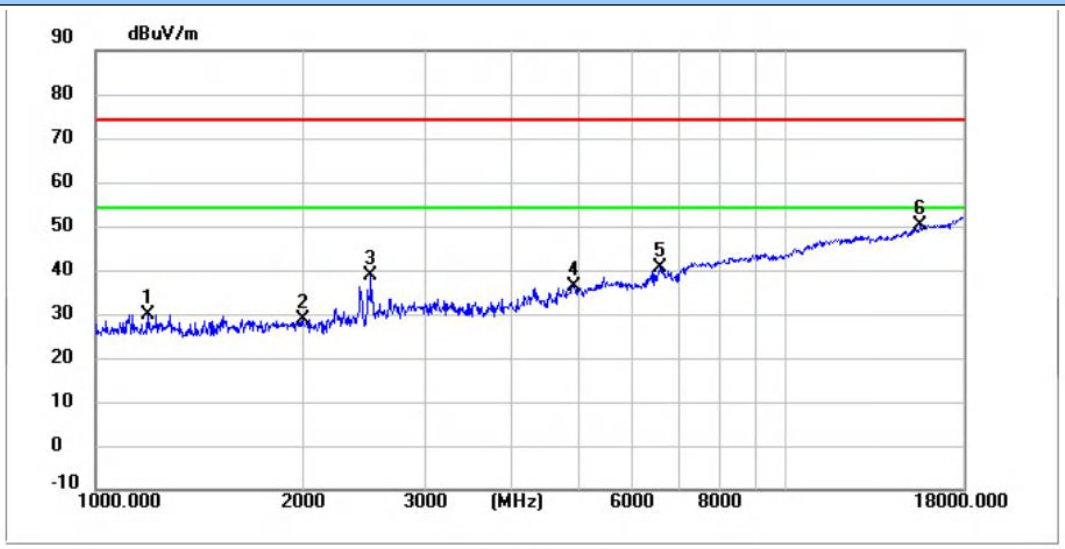


6.2.8.3. Test Result

Pass

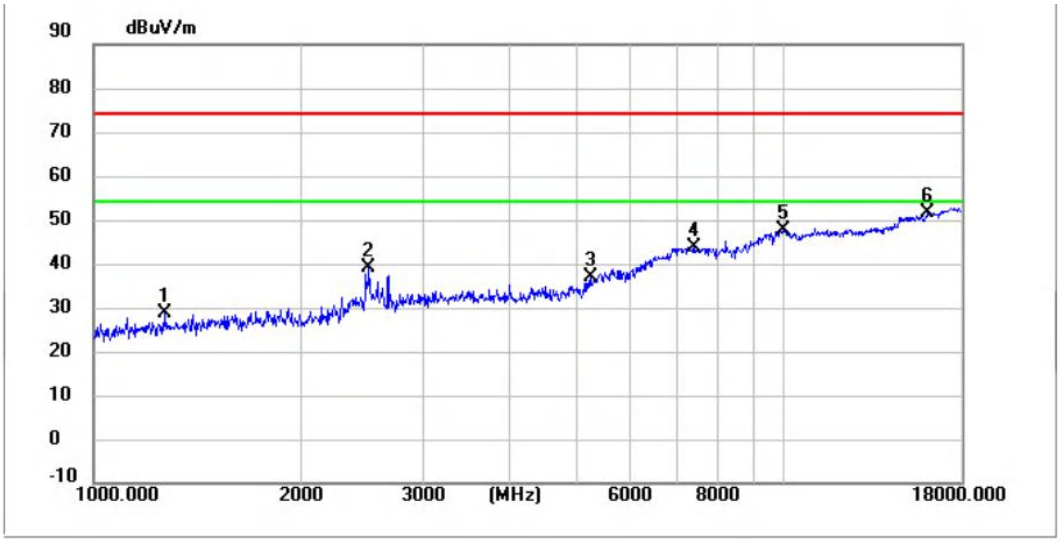
6.2.8.4. Test Data

Mode1 / Polarization: Horizontal / CH: L



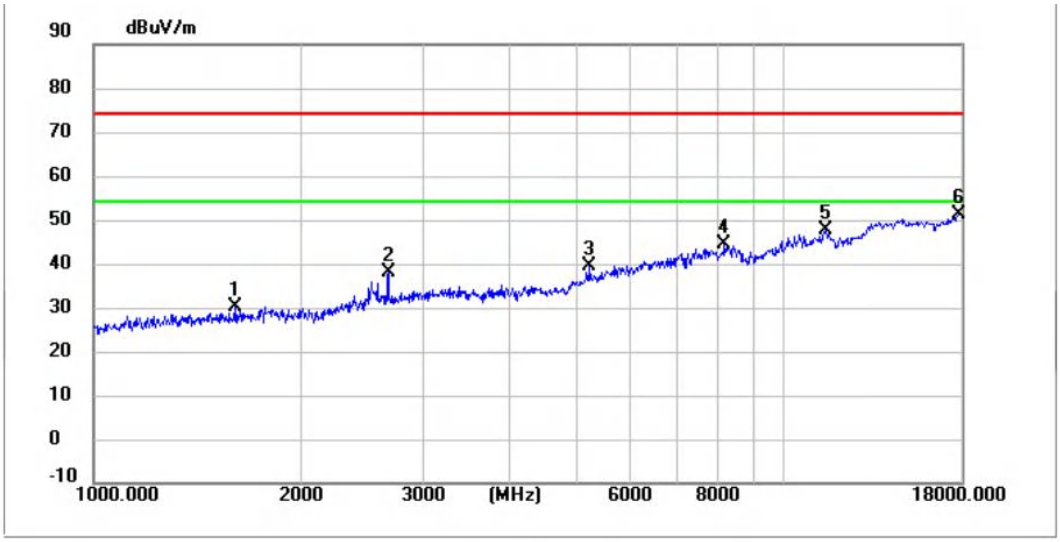
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1190.4000	51.39	-21.49	29.90	74.00	44.10	peak
2	1999.6000	47.25	-18.46	28.79	74.00	45.21	peak
3	2504.5000	55.65	-16.90	38.75	74.00	35.25	peak
4	4920.2000	45.66	-9.25	36.41	74.00	37.59	peak
5	6560.7000	40.92	-0.30	40.62	74.00	33.38	peak
6 *	15640.4000	33.15	16.90	50.05	74.00	23.95	peak

Mode1 / Polarization: Vertical / CH: L



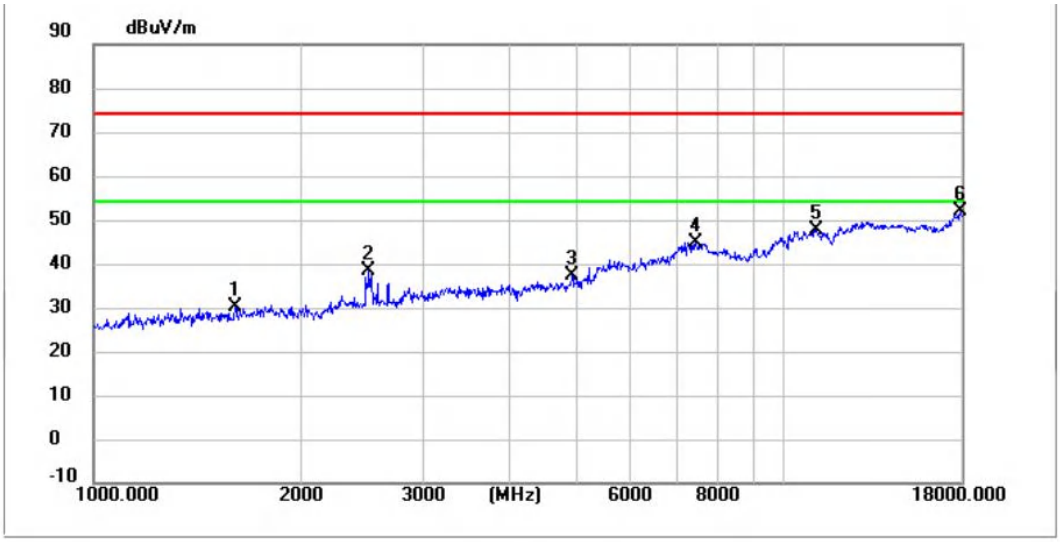
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1272.0000	50.06	-21.33	28.73	74.00	45.27	peak
2	2504.5000	56.06	-16.90	39.16	74.00	34.84	peak
3	5251.7000	44.73	-7.87	36.86	74.00	37.14	peak
4	7395.4000	38.70	4.90	43.60	74.00	30.40	peak
5	9972.6000	36.81	10.92	47.73	74.00	26.27	peak
6 *	16116.4000	35.31	16.27	51.58	74.00	22.42	peak

Mode1 / Polarization: Horizontal / CH: M



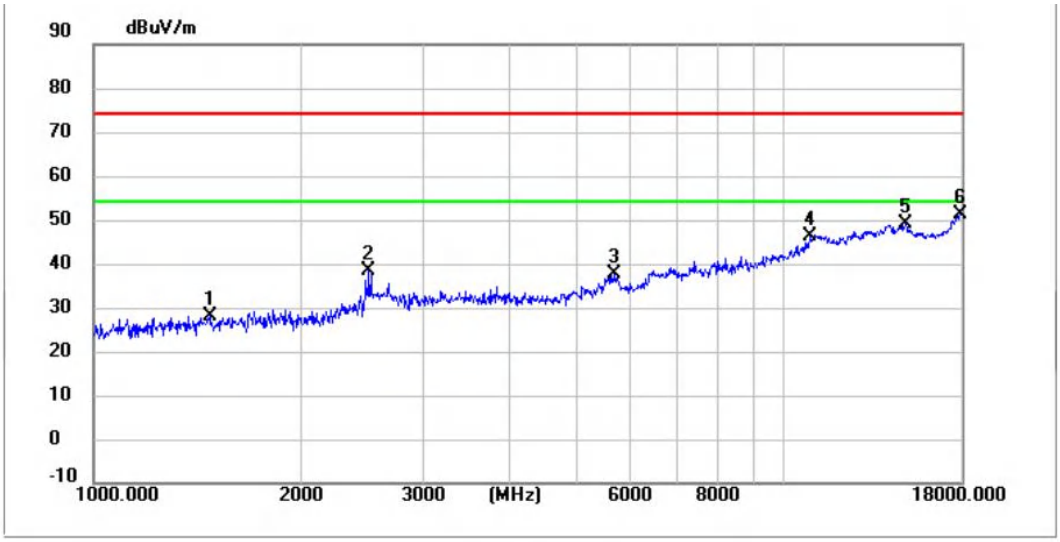
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1605.2000	50.66	-20.45	30.21	74.00	43.79	peak
2	2672.8000	54.05	-15.85	38.20	74.00	35.80	peak
3	5233.0000	47.54	-7.91	39.63	74.00	34.37	peak
4	8194.4000	37.85	6.70	44.55	74.00	29.45	peak
5	11460.1000	33.82	13.99	47.81	74.00	26.19	peak
6 *	17887.8000	28.10	23.29	51.39	74.00	22.61	peak

Mode1 / Polarization: Vertical / CH: M



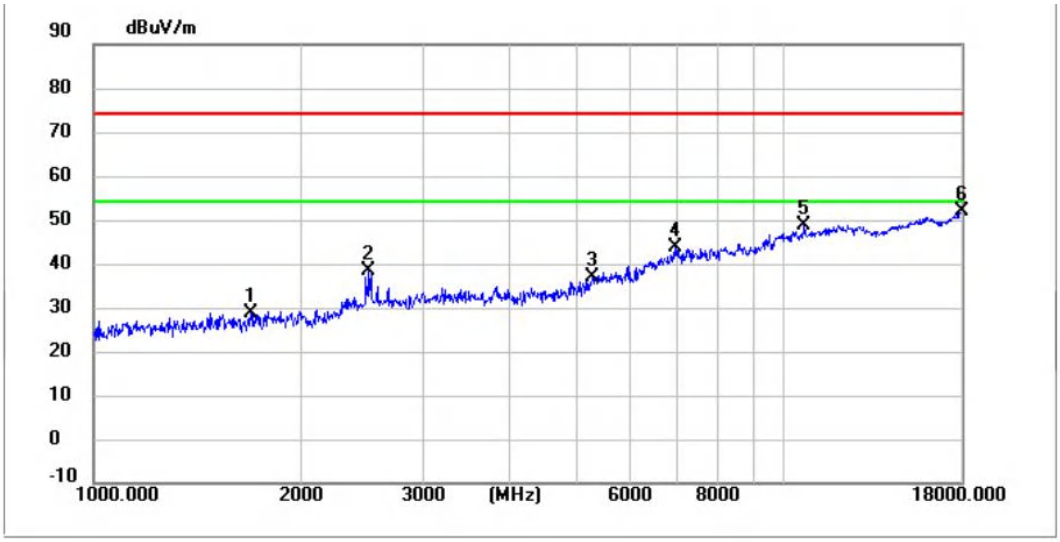
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1605.2000	50.66	-20.45	30.21	74.00	43.79	peak
2	2504.5000	55.31	-16.90	38.41	74.00	35.59	peak
3	4940.6000	46.56	-9.15	37.41	74.00	36.59	peak
4	7439.6000	39.91	5.06	44.97	74.00	29.03	peak
5	11135.4000	34.15	13.54	47.69	74.00	26.31	peak
6 *	17974.5000	28.20	23.94	52.14	74.00	21.86	peak

Mode1 / Polarization: Horizontal / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1474.3000	48.92	-20.78	28.14	74.00	45.86	peak
2	2504.5000	55.28	-16.90	38.38	74.00	35.62	peak
3	5673.3000	44.10	-6.37	37.73	74.00	36.27	peak
4	10880.4000	33.45	12.88	46.33	74.00	27.67	peak
5	14974.0000	31.35	17.73	49.08	74.00	24.92	peak
6 *	17991.5000	27.31	24.07	51.38	74.00	22.62	peak

Mode1 / Polarization: Vertical / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1693.6000	48.83	-20.13	28.70	74.00	45.30	peak
2	2504.5000	55.45	-16.90	38.55	74.00	35.45	peak
3	5280.6000	44.58	-7.71	36.87	74.00	37.13	peak
4	6953.4000	40.55	3.26	43.81	74.00	30.19	peak
5	10678.1000	36.45	12.39	48.84	74.00	25.16	peak
6 *	18000.0000	27.93	24.13	52.06	74.00	21.94	peak

Note:
1>. Level= Reading + Factor (Antenna Factor+ Cable Loss- Preamp Factor)
2>. Margin = Limit – Level
3>. Average measurement was not performed if peak level is lower than average limit (54dBuV/m) above 1GHz.

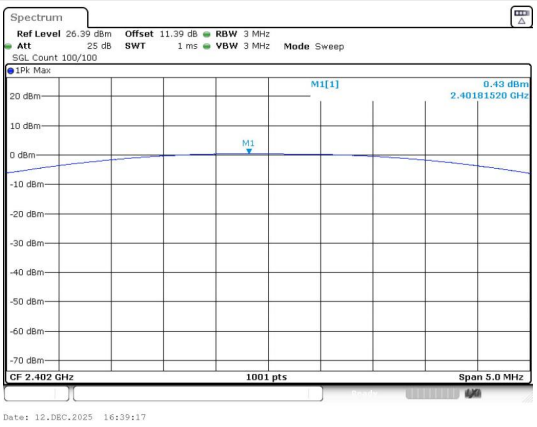
7. APPENDIX REPORT

7.1. Conducted Output Power

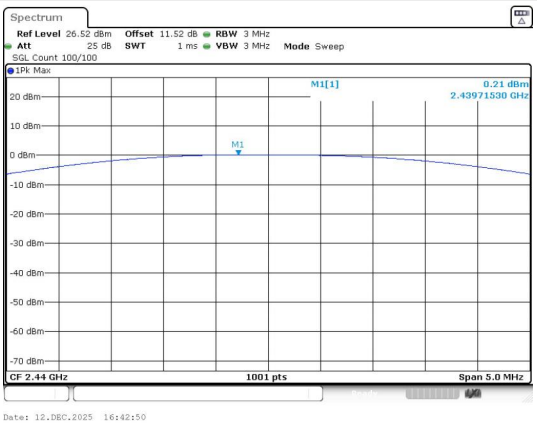
Test Result

Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
BLE 1M	0	0.43	1.1	≤30	PASS
	19	0.21	1.05	≤30	PASS
	39	0.43	1.1	≤30	PASS
BLE 2M	0	0.54	1.13	≤30	PASS
	19	0.30	1.07	≤30	PASS
	39	0.55	1.14	≤30	PASS

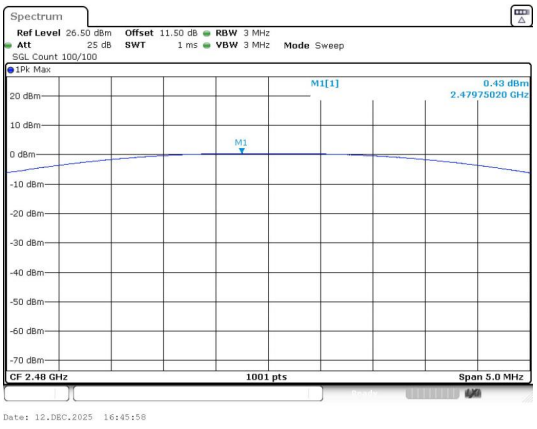
Test Graphs



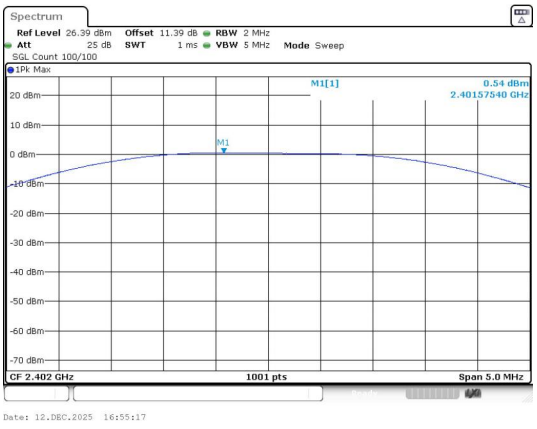
Peak Output Power
BLE 1M_Channel 0



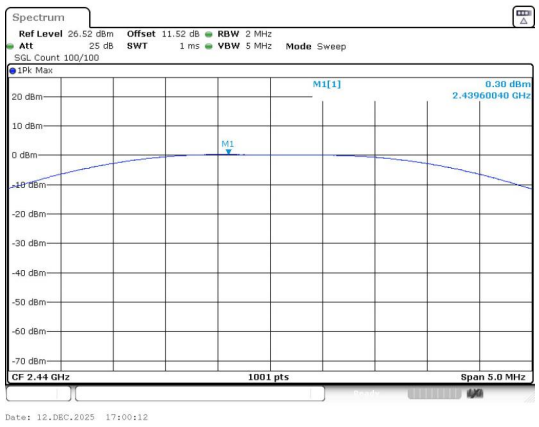
Peak Output Power
BLE 1M_Channel 19



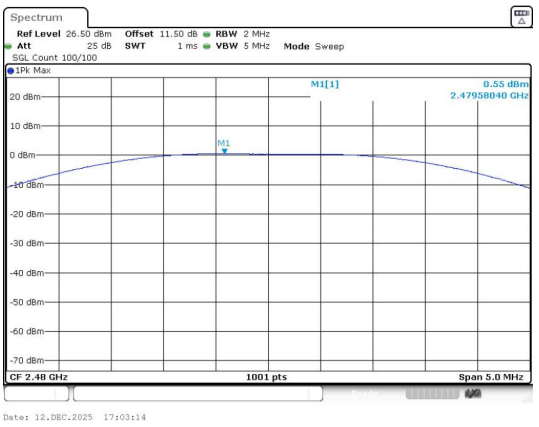
Peak Output Power
BLE 1M_Channel 39



Peak Output Power
BLE 2M_Channel 0



Peak Output Power
BLE 2M_Channel 19



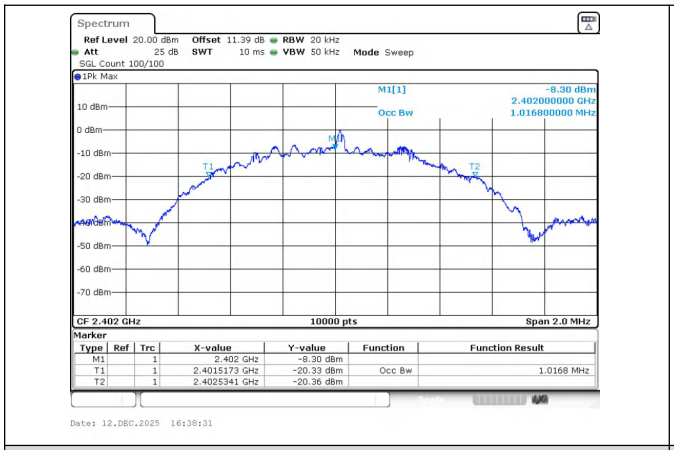
Peak Output Power
BLE 2M_Channel 39

7.2. 99% Bandwidth

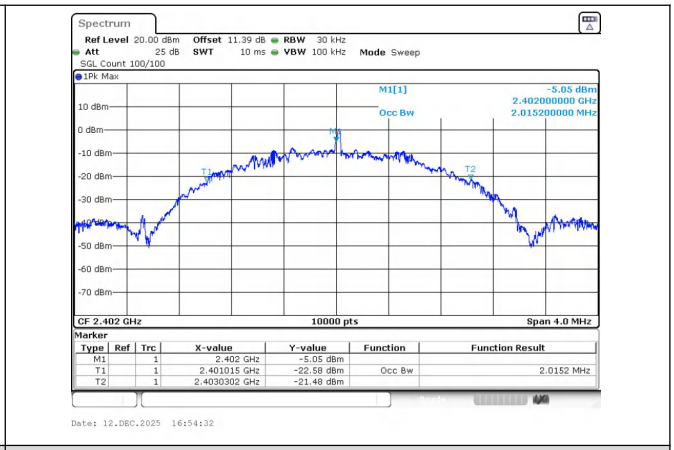
Test Result

Mode	Channel	Center Frequency (MHz)	99% BW (MHz)
BLE 1M	0	2402	1.0168
BLE 1M	19	2440	1.0166
BLE 1M	39	2480	1.0124
BLE 2M	0	2402	2.0152
BLE 2M	19	2440	2.0356
BLE 2M	39	2480	2.0168

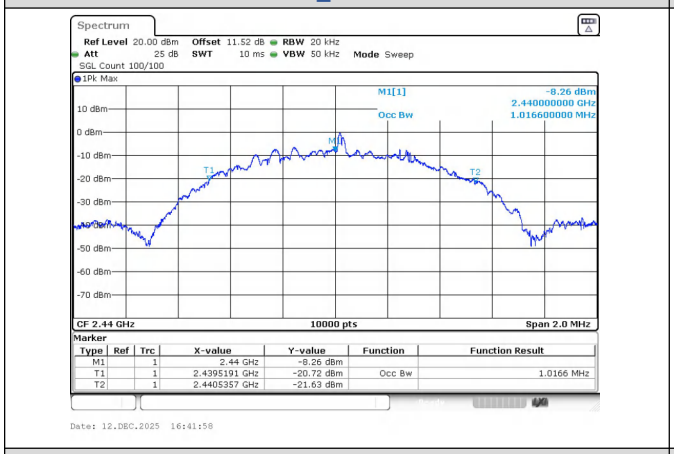
Test Graphs



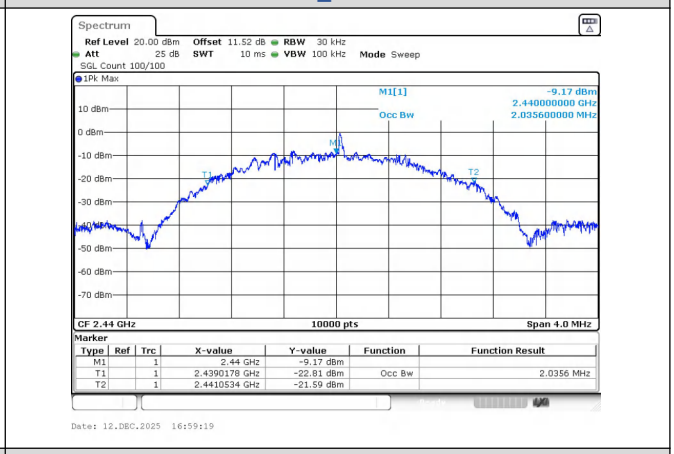
BLE 1M_Channel 0



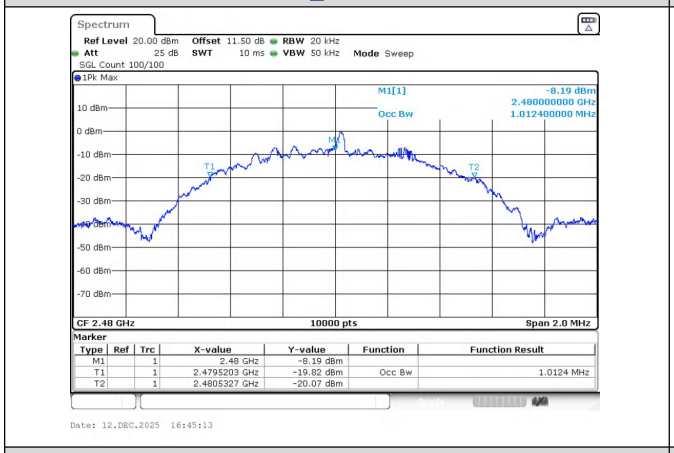
BLE 2M_Channel 0



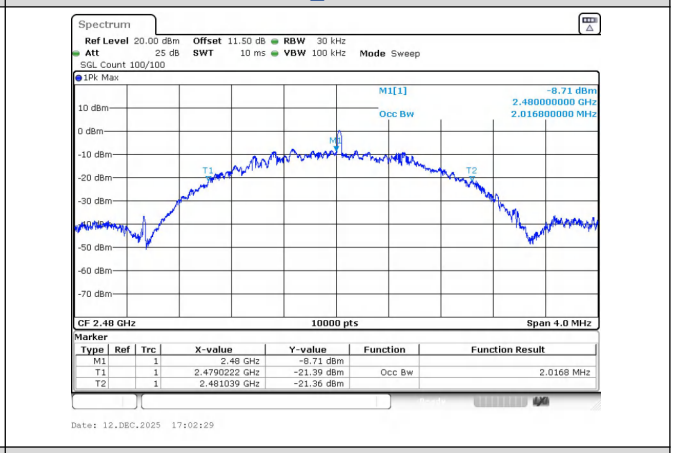
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



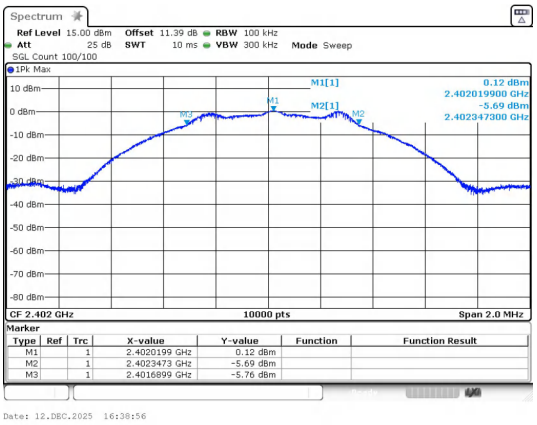
BLE 2M_Channel 39

7.3. 6dB Bandwidth

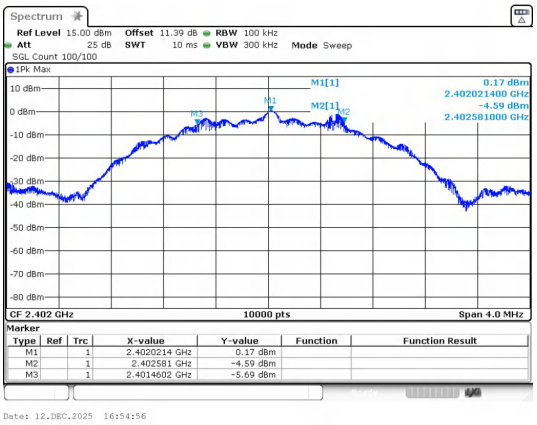
Test Result

Mode	Channel	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
BLE 1M	0	2402	0.6600	≥0.5	PASS
	19	2440	0.6600		PASS
	39	2480	0.6600		PASS
BLE 2M	0	2402	1.120		PASS
	19	2440	1.120		PASS
	39	2480	1.110		PASS

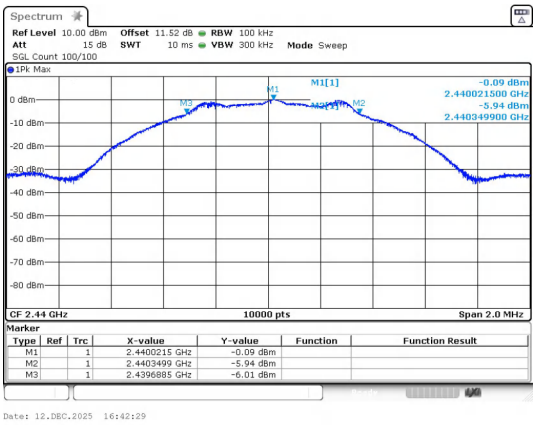
Test Graphs



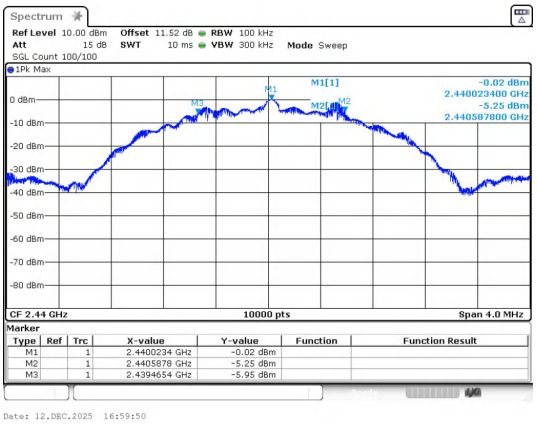
BLE 1M_Channel 0



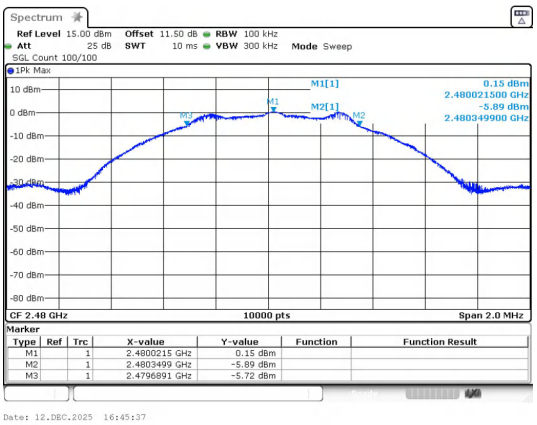
BLE 2M_Channel 0



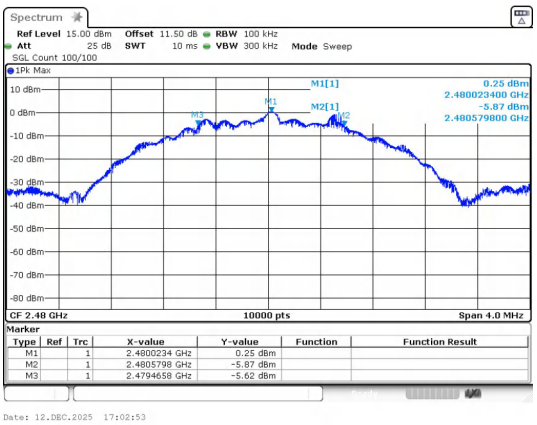
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



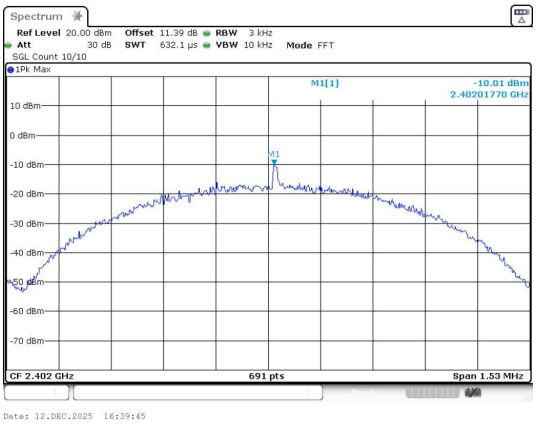
BLE 2M_Channel 39

7.4. Power Spectral Density

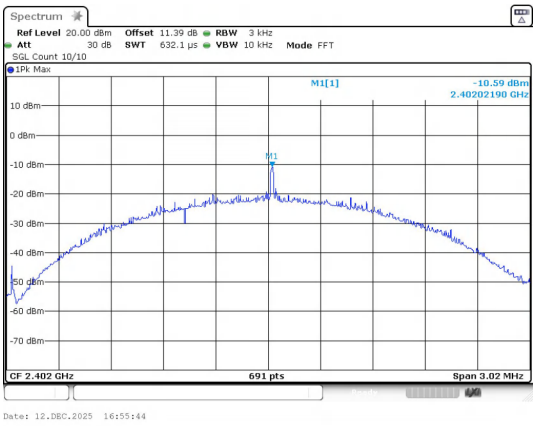
Test Result

Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-10.010	≤8	PASS
BLE 1M	19	-10.320	≤8	PASS
BLE 1M	39	-10.140	≤8	PASS
BLE 2M	0	-10.590	≤8	PASS
BLE 2M	19	-10.830	≤8	PASS
BLE 2M	39	-10.630	≤8	PASS

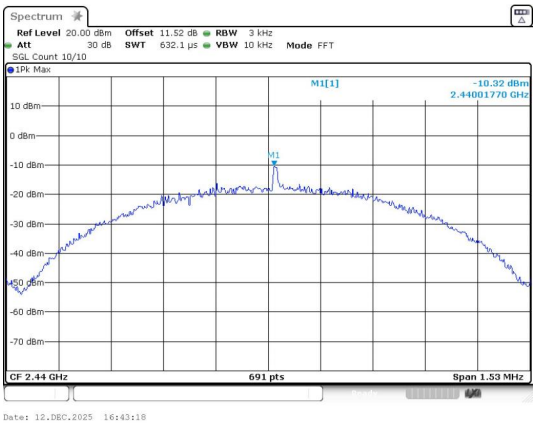
Test Graphs



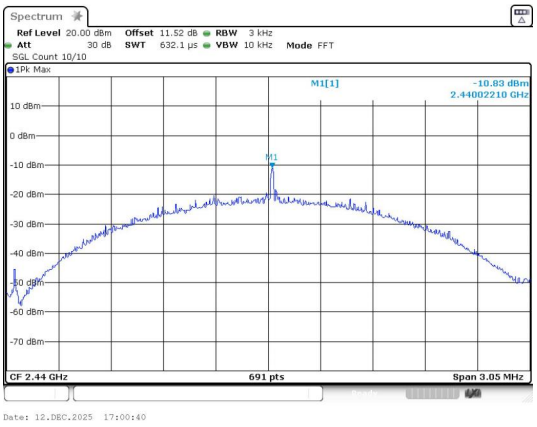
BLE 1M_Channel 0



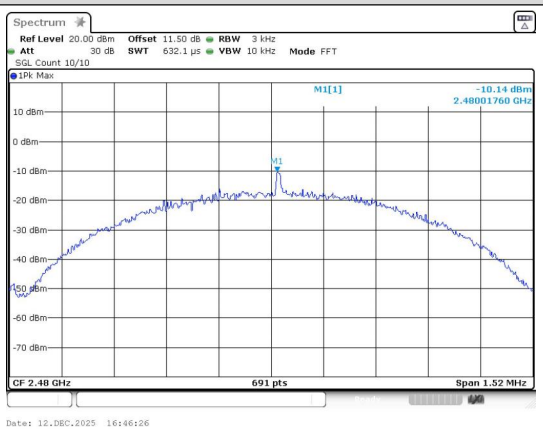
BLE 2M_Channel 0



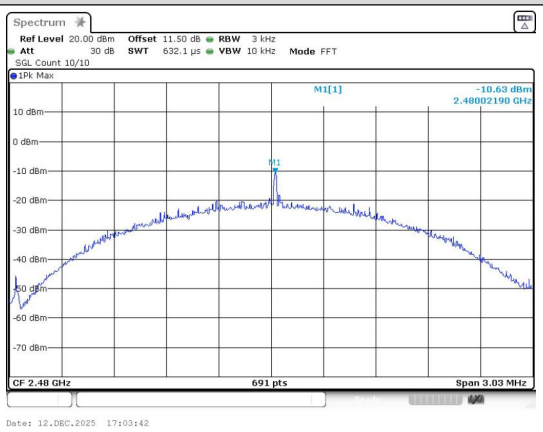
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



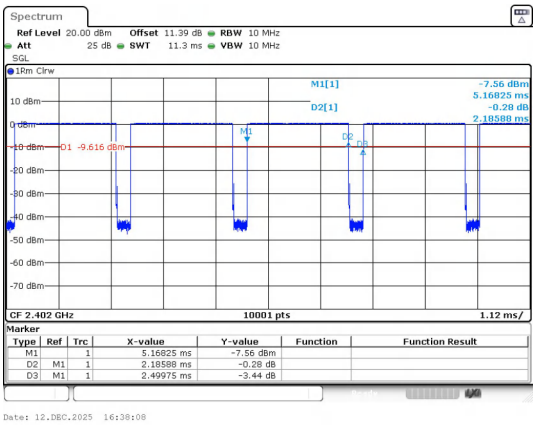
BLE 2M_Channel 39

7.5. Duty Cycle

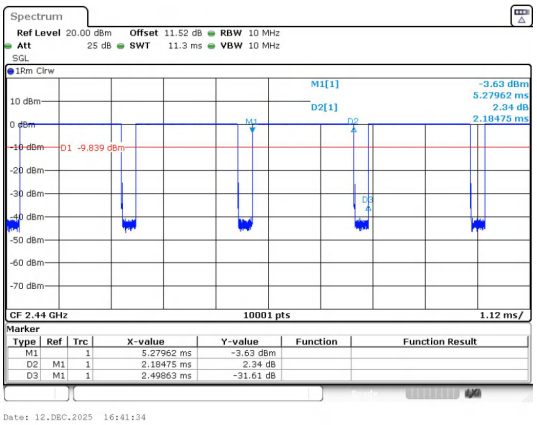
Test Result

Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
BLE 1M	0	2.186	2.500	87.44	0.8744	0.5829	0.4575
	19	2.185	2.499	87.44	0.8744	0.5829	0.4577
	39	2.185	2.499	87.44	0.8744	0.5829	0.4577
BLE 2M	0	1.128	2.499	45.16	0.4516	3.4525	0.8865
	19	1.128	2.499	45.16	0.4516	3.4525	0.8865
	39	1.130	2.499	45.20	0.4520	3.4486	0.8850

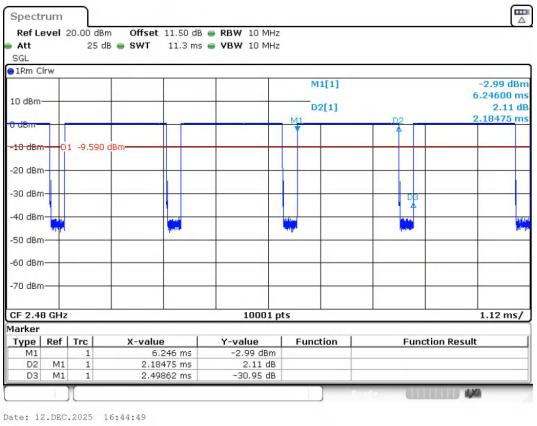
Test Graphs



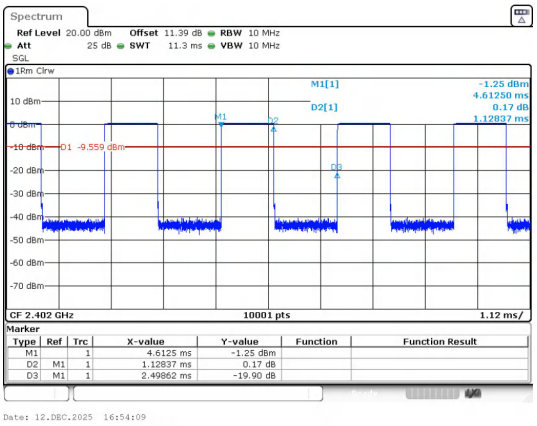
BLE 1M_Channel 0



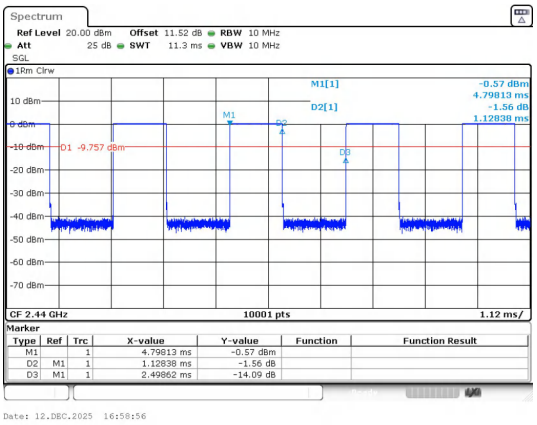
BLE 1M_Channel 19



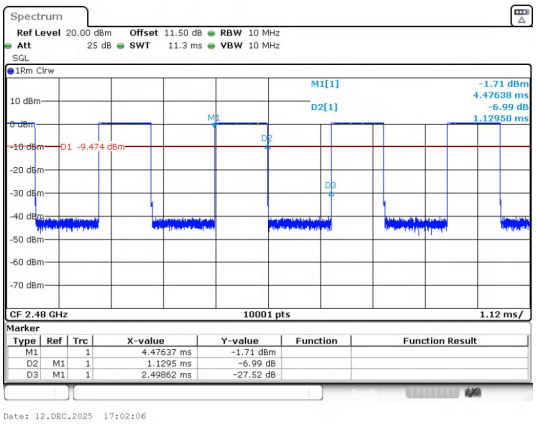
BLE 1M_Channel 39



BLE 2M_Channel 0



BLE 2M_Channel 19



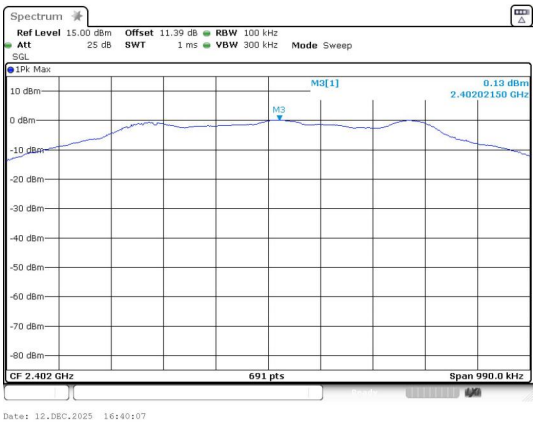
BLE 2M_Channel 39

7.6. Conducted Spurious & Band Edge Emission

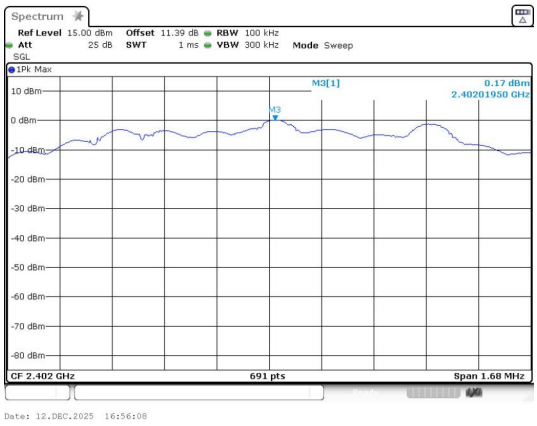
Test Result

Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
BLE 1M	0	2399.00	-39.720	-19.87	-19.850	PASS
		2400.00	-46.220	-19.87	-26.350	PASS
		2594.00	-46.992	-19.87	-27.122	PASS
	19	4879.59	-44.954	-20.1	-24.854	PASS
	39	2483.50	-43.580	-19.85	-23.730	PASS
		4960.33	-43.274	-19.85	-23.424	PASS
BLE 2M	0	2400.00	-31.310	-19.83	-11.480	PASS
		4804.68	-44.503	-19.83	-24.673	PASS
	19	4878.76	-47.312	-20.01	-27.302	PASS
	39	2483.50	-44.220	-19.76	-24.460	PASS
		4961.16	-46.643	-19.76	-26.883	PASS
Note: input compensation coeffcient (dB)= Cable Loss (dB)						

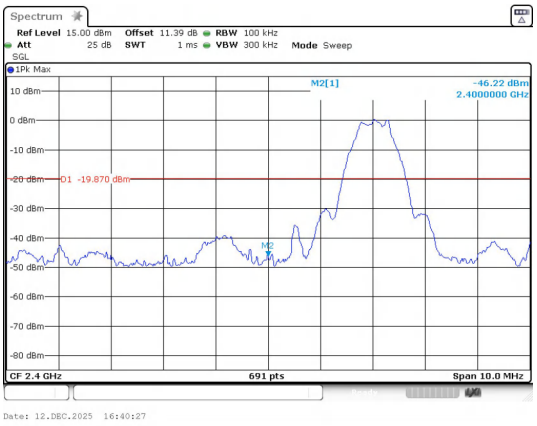
Test Graphs



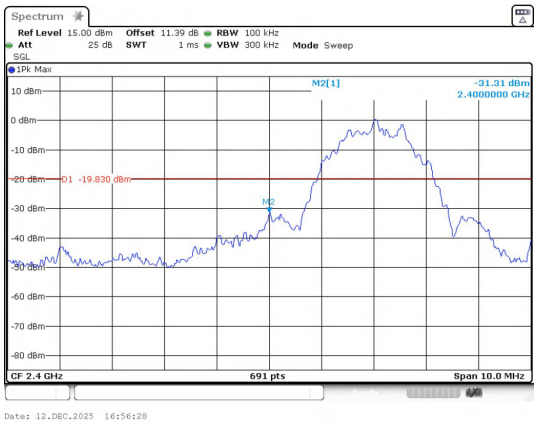
In-Band Reference Level
BLE 1M_Channel 0



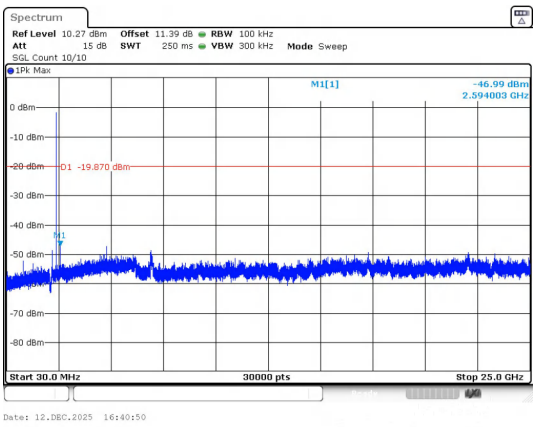
In-Band Reference Level
BLE 2M_Channel 0



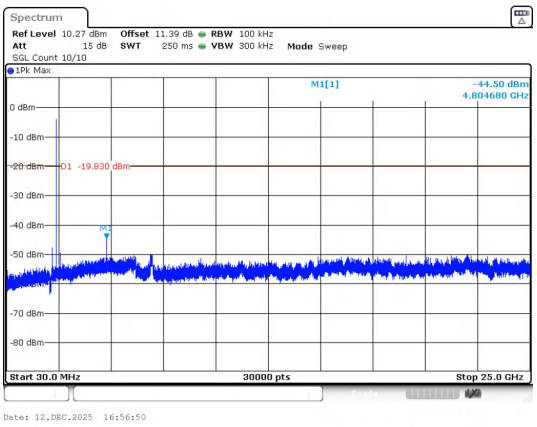
Out Of Band Emission
BLE 1M_Channel 0



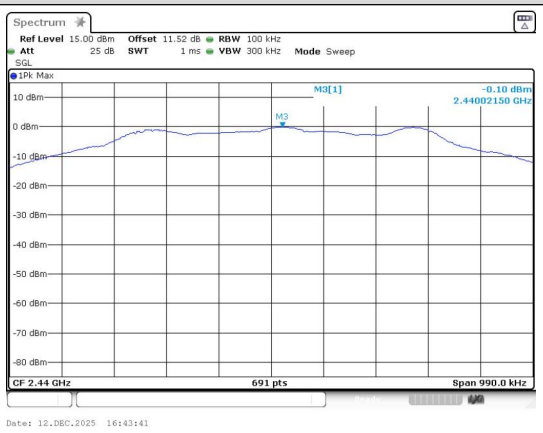
Out Of Band Emission
BLE 2M_Channel 0



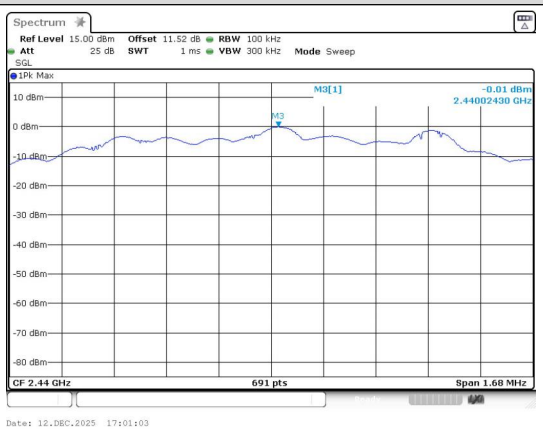
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 0



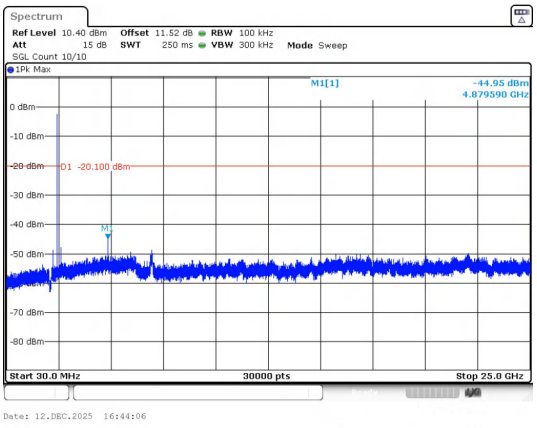
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 0



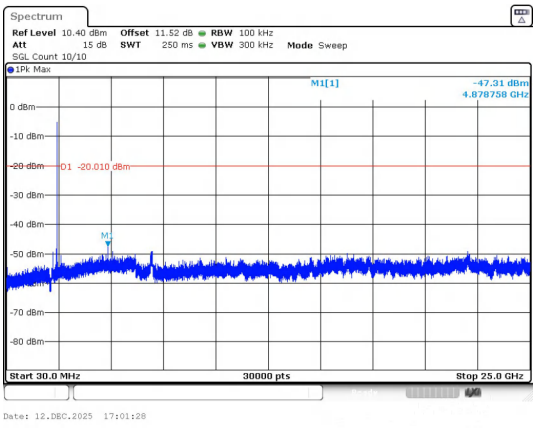
In-Band Reference Level
BLE 1M_Channel 19



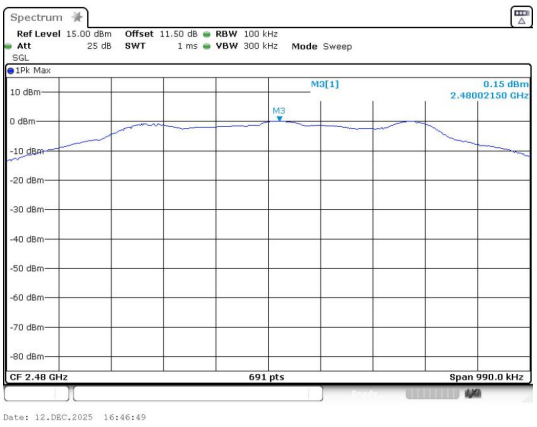
In-Band Reference Level
BLE 2M_Channel 19



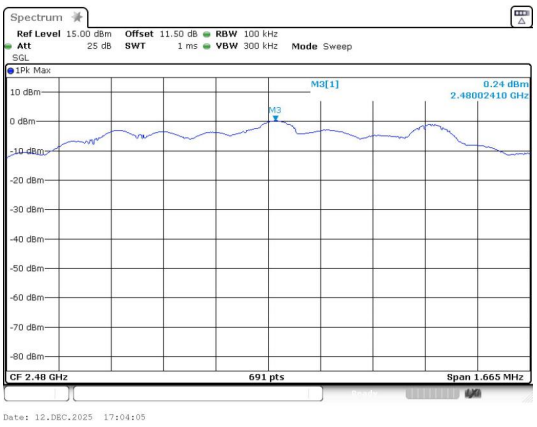
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 19



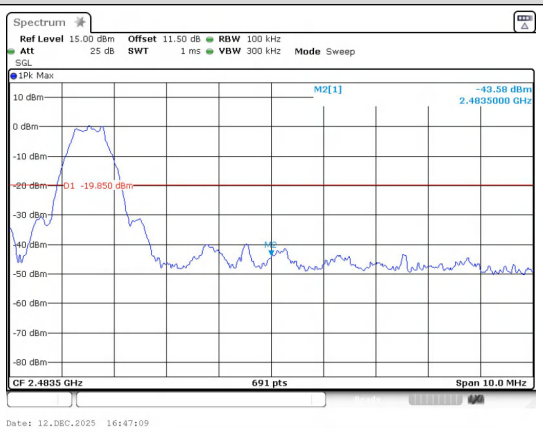
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 19



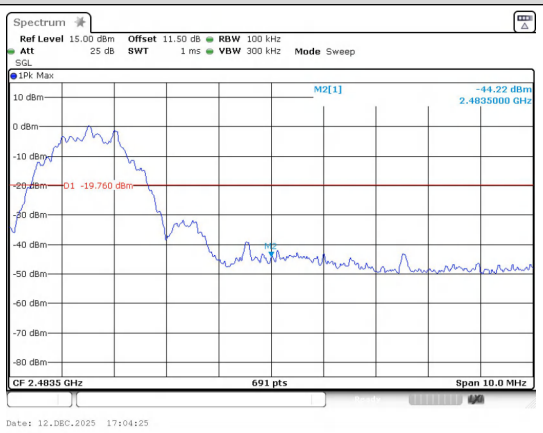
In-Band Reference Level
BLE 1M_Channel 39



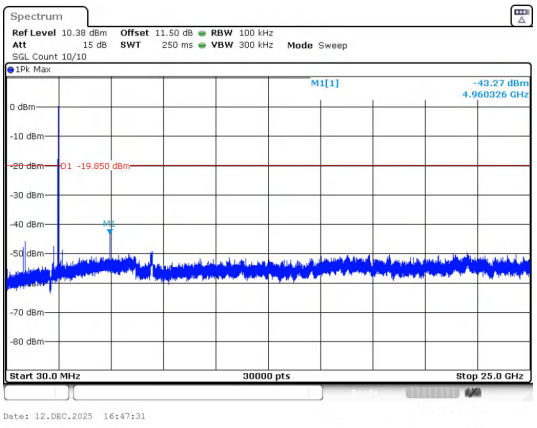
In-Band Reference Level
BLE 2M_Channel 39



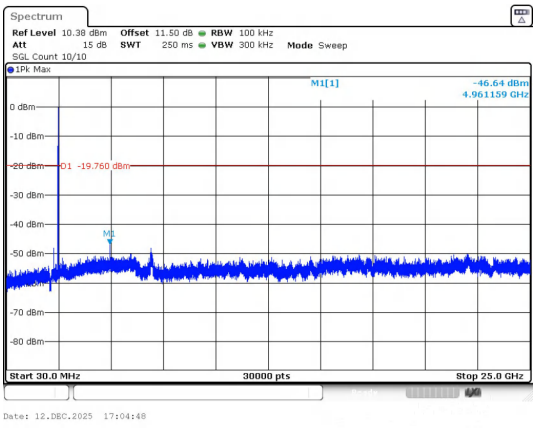
Out Of Band Emission
BLE 1M_Channel 39



Out Of Band Emission
BLE 2M_Channel 39



30.0 MHz - 25000.0 MHz
BLE 1M_Channel 39



30.0 MHz - 25000.0 MHz
BLE 2M_Channel 39

------End of the report-----