FCC Part 15.247
RSS-247, ISSUE 3, August 2023
RSS-GEN, ISSUE 5, February 2021 Amendment 2
TEST REPORT

For

Evoluent

925 Linden Ave., Unit C, South San Francisco, CA 94080 USA

FCC ID: R6Y-VMC
IC: 10500A-VMC

Report Type:	**Product Type:**
Original Report	Evoluent VerticalMouse Classic

Report Producer : Jojo Lu

Report Number : RLK250724098RF01

Report Date : 2025-09-05

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Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RLK250724098	RLK250724098RF01	2025-09-05	Original Report	Jojo Lu

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	Evoluent
	925 Linden Ave., Unit C, South San Francisco, CA 94080 USA
Brand(Trade) Name	Evoluent
Product (Equipment)	Evoluent VerticalMouse Classic
PMN	Evoluent VerticalMouse Classic
Main Model Name	VMC
HVIN	VMC
Series Model Name	N/A
Frequency Range	BLE(1M)/ BLE(2M): 2402 ~ 2480 MHz SRD: 2402 ~ 2480 MHz
Maximum Conducted Peak Output Power	BLE(1M) Mode : 0.37 dBm BLE(2M) Mode : 0.39 dBm SRD Mode: 3.64 dBm
Modulation Technique	BLE(1M)/ BLE(2M) Mode : GFSK SRD Mode: : GFSK
Transmit Data Rate	BLE(1M) Mode: 1 Mbps BLE(2M) Mode: 2 Mbps SRD Mode: 1 Mbps
Power Operation (Voltage Range)	1.5Vdc from Battery
Received Date	2025/07/28

*All measurement and test data in this report was gathered from production sample serial number: RLK250724098-1、RLK250724098-2、RLK250724098-3 (Assigned by BACL, Linkou Laboratory).

1.2 Objective

This report is prepared on behalf of ***Evoluent*** in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communication Commission's rules and RSS-247, Issue 3, August 2023, RSS-Gen, Issue 5, February 2021 Amendment 2 of the Innovation, Science and Economic Development Canada.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020+Cor.1-2023, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and KDB 558074 D01 15.247 Meas Guidance v05r02. And RSS-247, Issue 3, August 2023, RSS-Gen, Issue 5, February 2021 Amendment 2 of the Innovation, Science and Economic Development Canada.

1.4 Statement

Decision Rule: No, (The test results do not include MU judgment)

1. The measurement results in this report were performed at Bay Area Compliance Laboratories Corp. (Linkou Laboratory)

2. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.
5. Bay Area Compliance Laboratories Corp. (Linkou Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

1.5 Measurement Uncertainty

Parameter		Uncertainty
AC Mains		±2.98 (dB)
RF output power, conducted		±3.73 (dB)
Power Spectral Density, conducted		±0.45 (dBm)
Occupied Bandwidth		±0.09 (%)
Unwanted Emissions, conducted		±1.03 (dB)
Emissions, radiated	9 kHz~30 MHz	±3.20 (dB)
	30 MHz~1 GHz	±3.3 (dB)
	1 GHz~18 GHz	±4.99 (dB)
	18 GHz~40 GHz	±4.52 (dB)
Temperature		±0.04 (%)
Humidity		±0.78 (℃)

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

1.6 Environmental Conditions

Test Site	Test Date	Temperature (℃)	Relative Humidity (%)	Test Engineer
Radiation Spurious Emissions	2025/7/28~2025/8/5	22.1~24.5	39~46	Derek Chen
Duty Cycle	2025/8/5	23.1	46	Vin Wang
Conducted Spurious Emissions	2025/8/5	23.1	46	Vin Wang
Emission Bandwidth	2025/8/5	23.1	46	Vin Wang
Maximum Output Power	2025/8/5	23.1	46	Vin Wang
100 kHz Bandwidth of Frequency Band Edge	2025/8/5	23.1	46	Vin Wang
Power Spectral Density	2025/8/5	23.1	46	Vin Wang

1.7 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Linkou Laboratory) to collect test data is located on

☒ No.6, Wende 2Rd., Guishan Dist., Taoyuan City 33382, Taiwan (R.O.C.).

Bay Area Compliance Laboratories Corp. (Linkou Laboratory) is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3546) and the FCC designation No.TW3546 under the Mutual Recognition Agreement (MRA) in FCC Test.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: TW3546.

2 System Test Configuration

2.1 Description of Test Configuration

For BLE mode, there are totally 40 channels.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	--	--
2	2406	--	--
3	2408	37	2476
--	--	38	2478
19	2440	39	2480

For BLE Modes were tested with channel 0, 19 and 39.

For SRD mode, there are totally 79 channels.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2402	40	2441
2	2403	--	--
3	2404	--	--
4	2405	77	2478
--	--	78	2479
39	2440	79	2480

For SRD Modes were tested with channel 0, 19 and 39.

2.2 Equipment Modifications

No modification was made to the EUT.

2.3 EUT Exercise Software

The BLE test software was used “PXI_LINK_Tool_v1.3.5_20230524”; SRD test software was used “N/A”。

The system was configured for testing in engineering mode, which was provided by Applicant.

Test Frequency		Low	Middle	High
Power Level Setting	BLE 1M	0	0	0
	BLE 2M	0	0	0
	SRD	default	default	default

2.4 Support Equipment List and Details

No.	Description	Manufacturer	Model Number
1	Laptop	DELL	E6410
2	AAA Battery	TOSHIBA	R03
3	Jig	Waveshare	FT232

2.5 External Cable List and Details

N/A

2.6 Test Mode

Full System (model: VMC) for all test item.

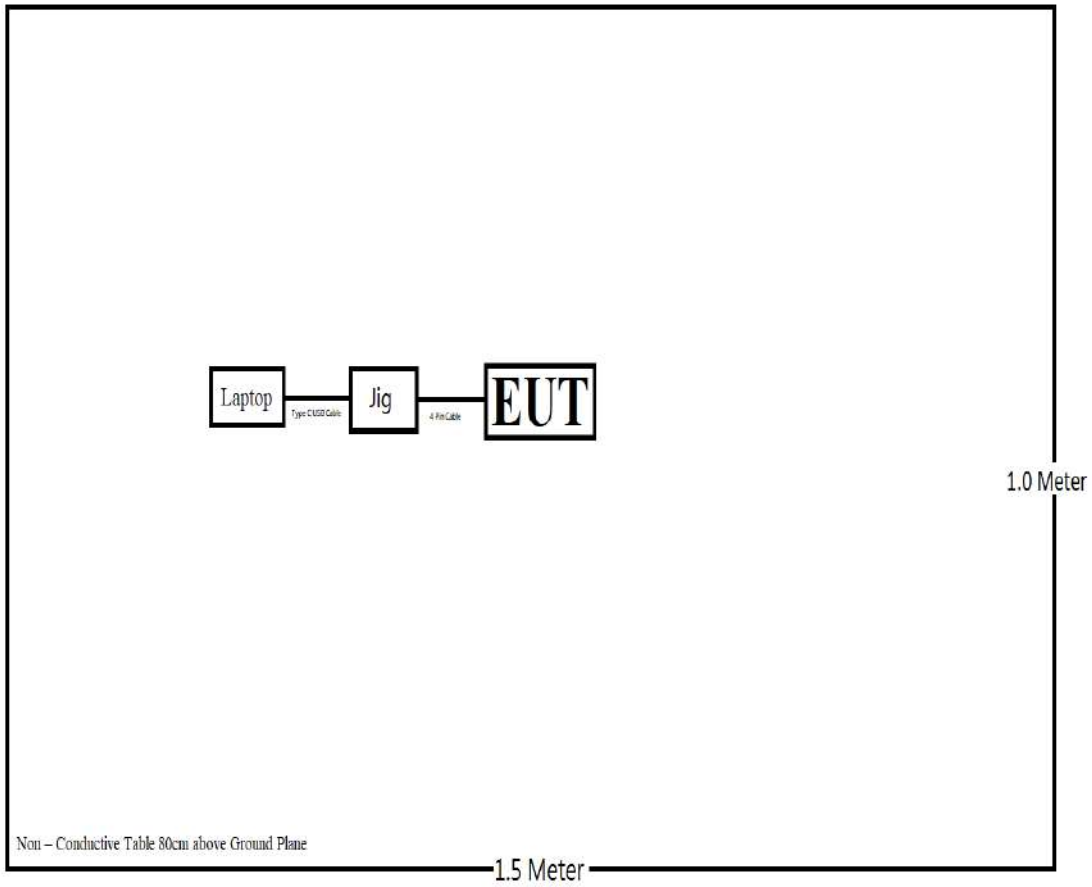
2.7 Block Diagram of Test Setup

See test photographs attached in setup photos for the actual connections between EUT and support equipment.

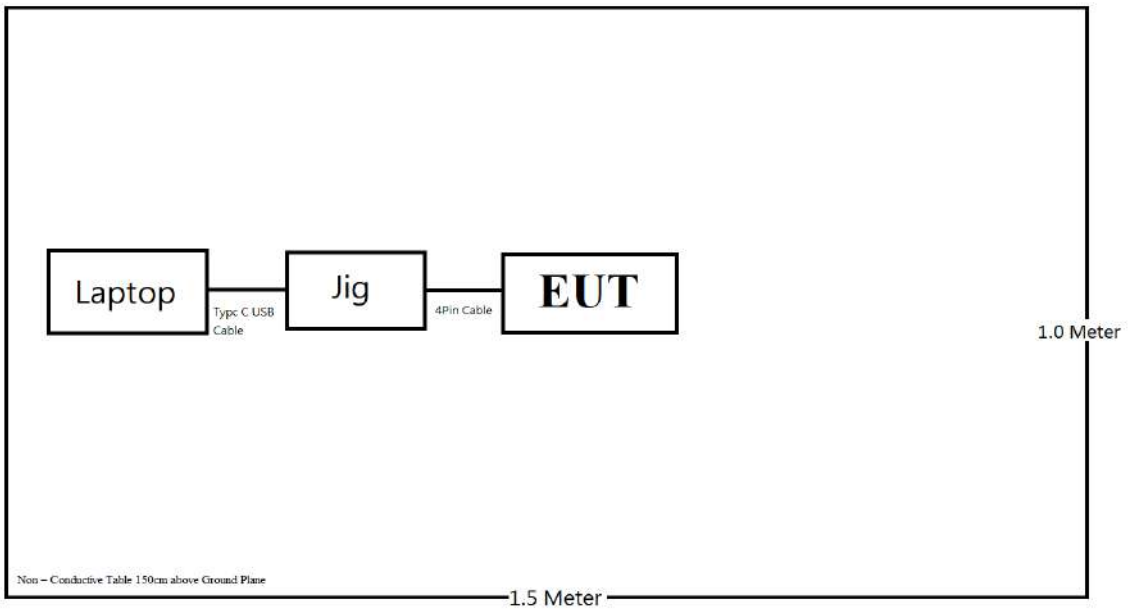
Radiation:

BLE

Below 1GHz

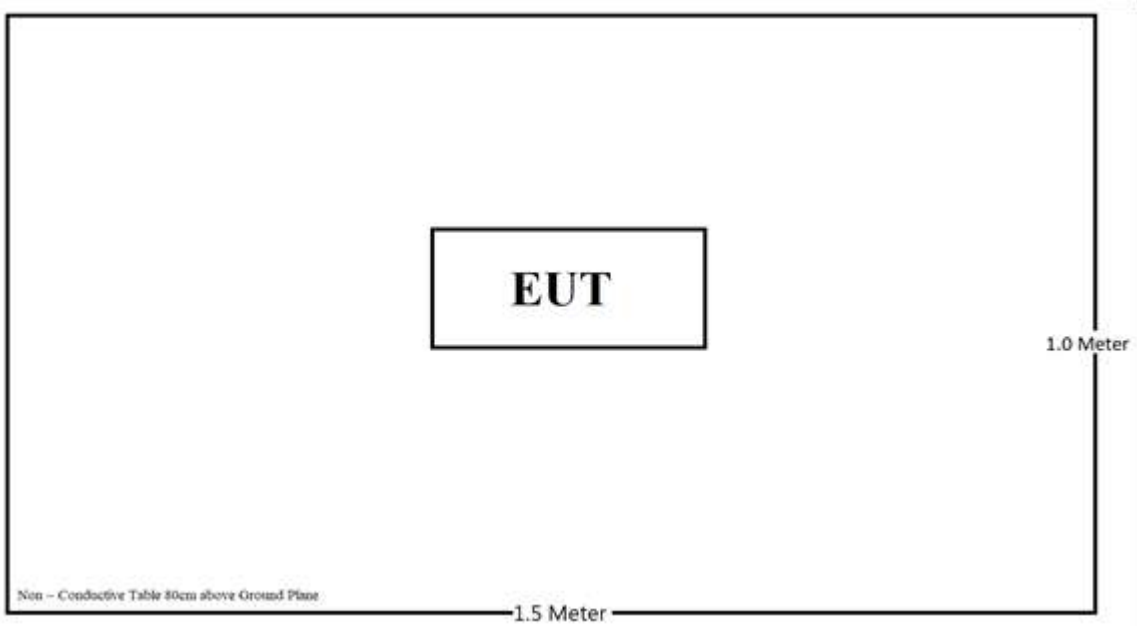


Above 1GHz:

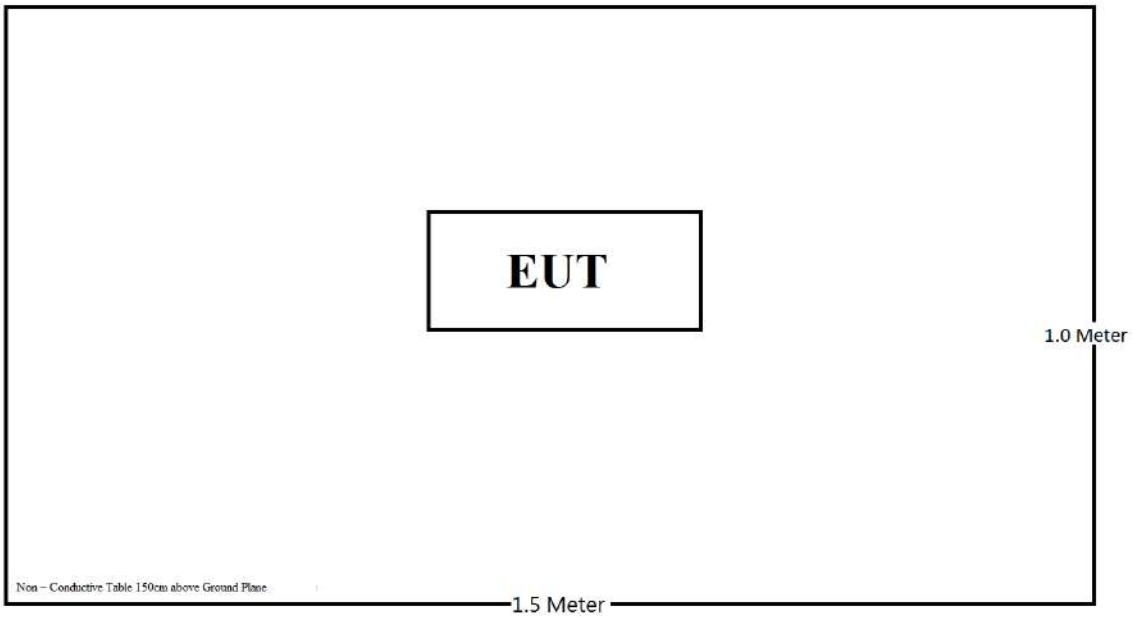


SRD

Below 1GHz

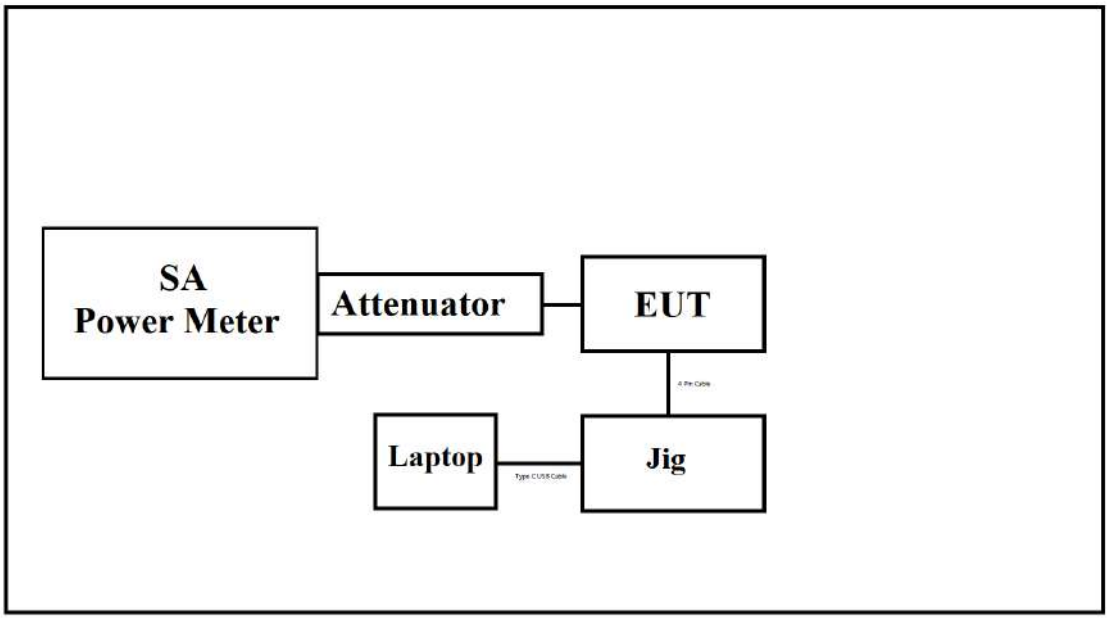


Above 1GHz:

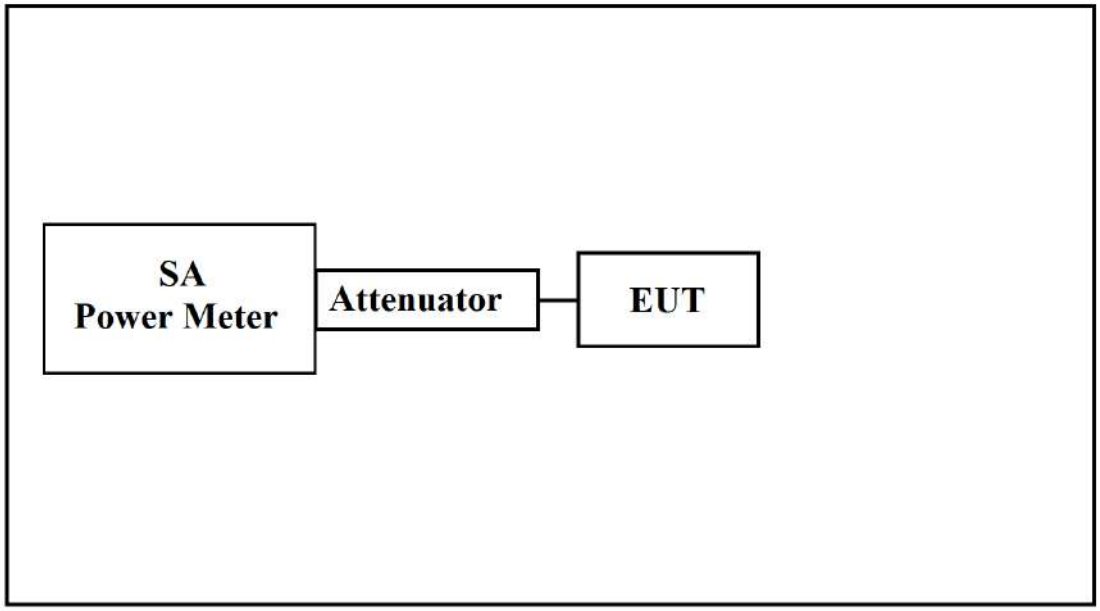


Conducted

BLE



SRD



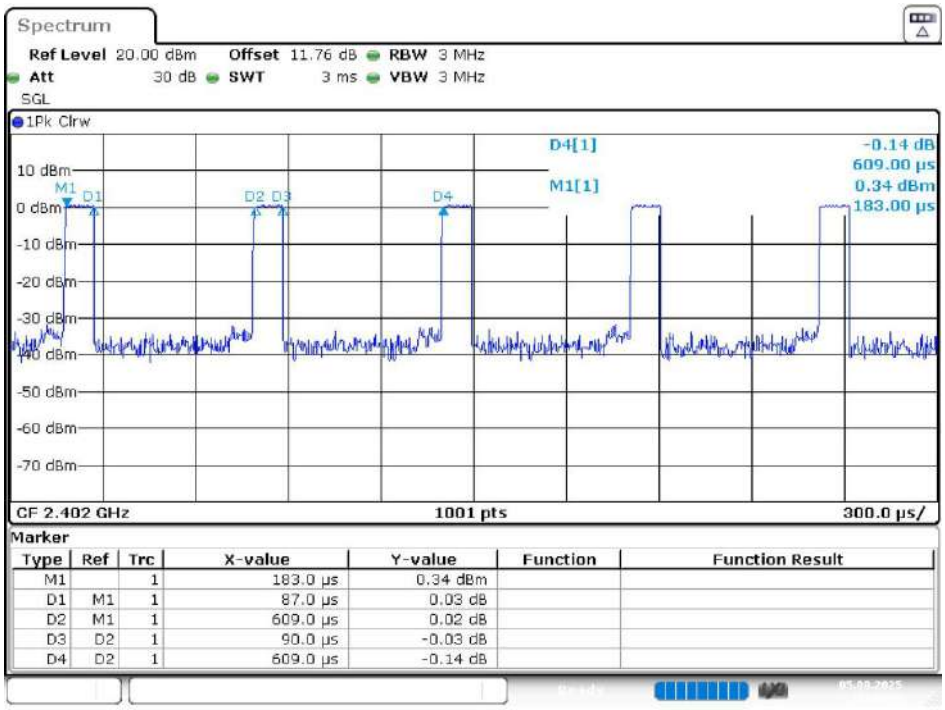
2.8 Duty Cycle

The duty cycle as below:

Radio Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	1/T VBW Seting (kHz)	1/T (kHz)
BLE(1M)	0.087	0.609	14	20	11.49
BLE(2M)	0.054	0.615	9	20	18.52
SRD	0.375	0.609	62	3	2.67

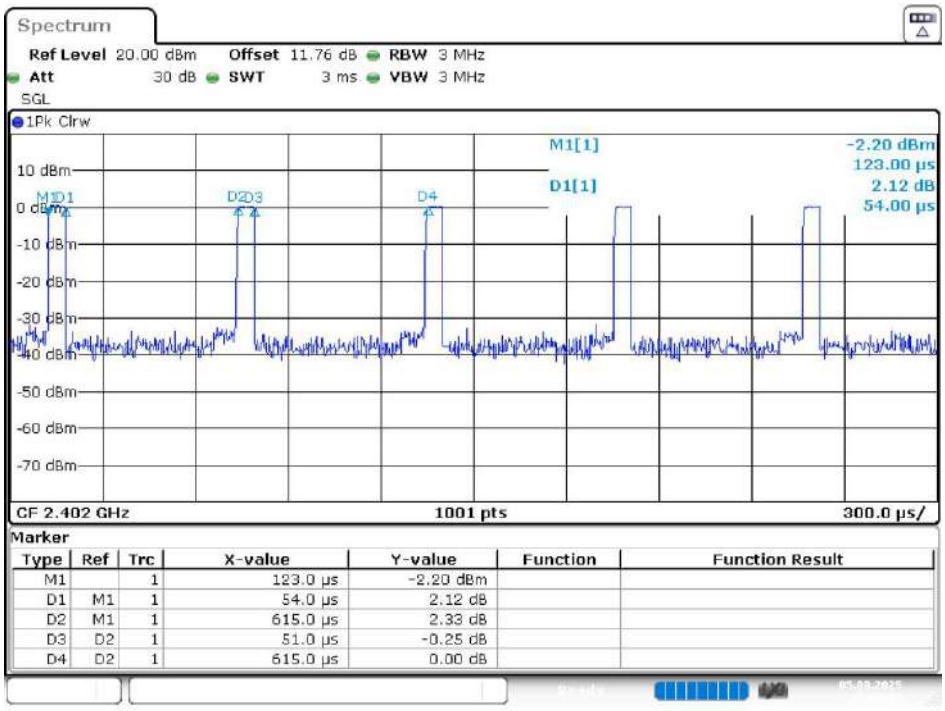
Please refer to the following plots.

BLE(1M) Mode



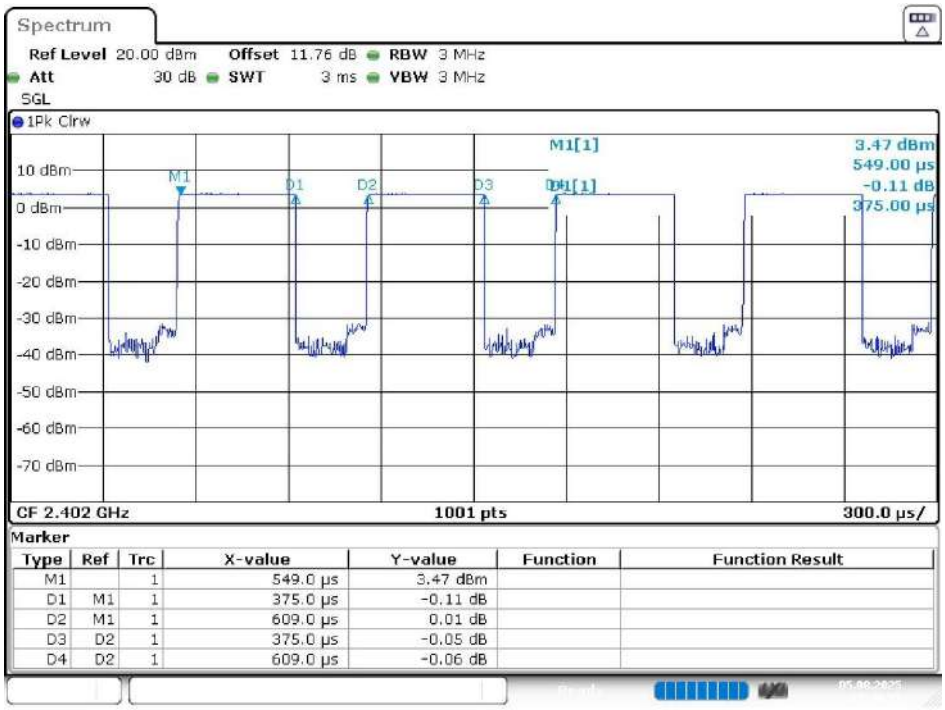
Date: 5.AUG.2025 15:38:33

BLE(2M) Mode



Date: 5.AUG.2025 15:40:05

SRD Mode


Spectrum
Ref Level 20.00 dBm Offset 11.76 dB RBW 3 MHz
Att 30 dB SWT 3 ms VBW 3 MHz
SGL
1Pk Clrw
M1[1] 3.47 dBm
549.00 µs
D1[1] -0.11 dB
375.00 µs
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D1
D2
D3
D4
CF 2.402 GHz
1001 pts
300.0 µs/
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 549.0 µs 3.47 dBm
D1 M1 1 375.0 µs -0.11 dB
D2 M1 1 609.0 µs 0.01 dB
D3 D2 1 375.0 µs -0.05 dB
D4 D2 1 609.0 µs -0.06 dB
Date: 5.AUG.2025 15:44:06

3 Summary of Test Results

Rules	Description of Test	Results
FCC §15.203 RSS-Gen §6.8	Antenna Requirement	Compliance
FCC §15.207(a) RSS-Gen §8.8	AC Line Conducted Emissions	Note
FCC §15.205, §15.209, §15.247(d) RSS-247 §5.5 RSS-Gen §8.9 RSS-Gen §8.10	Spurious Emissions	Compliance
FCC §15.247(a)(2) RSS-247 §5.2(a) RSS-Gen §6.7	Emission Bandwidth	Compliance
FCC §15.247(b)(3) RSS-247 §5.4(d)	Maximum Peak Output Power	Compliance
FCC §15.247(d) RSS-247 §5.5	100 kHz Bandwidth of Frequency Band Edge	Compliance
FCC §15.247(e) RSS-247 §5.2(b)	Power Spectral Density	Compliance

Note: The subject sample is only employing battery power for operation. Therefore, this test is not applicable.

4 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation 3M Room (966-B)					
Bilog Antenna & 6 dB Attenuator	SUNOL SCIENCES & EMCI	JB3 & N-6-06	A071318 & AT-N0670	2024/8/20	2025/8/20
Active Loop Antenna	ETS-Lindgren	6502	0001-3322	2025/3/27	2026/3/27
Horn Antenna	ETS-Lindgren	3115	85775	2024/9/25	2025/9/25
Horn Antenna	ETS-Lindgren	Sep-60	123853	2024/8/23	2025/8/23
Horn Antenna	ETS-Lindgren	Oct-60	123856	2024/8/23	2025/8/23
18-40GHz Preamplifier	GLOBAL	1313-A1840	5031371	2025/4/28	2026/4/28
30M-18GHz Preamplifier	A.H. Systems	PAM-0118P	479	2024/9/5	2025/9/5
ESR EMI Test Receiver	Rohde & Schwarz	ESR3	102447	2024/12/5	2025/12/5
Spectrum Analyzer	Rohde & Schwarz	FSV40	101456	2025/6/5	2026/6/5
Microflex Cable (1m)	EMCI	EMCI02-KM-KM-1000	180524	2024/8/1	2025/8/1
Microflex Cable (2m)	EMCI	EMCI06-SM-SM-2000	180516	2024/8/1	2025/8/1
Microflex Cable (8m)	UTIFLEX	UFA210A-1-3149-300300	MFR 64639 232490-002	2024/8/1	2025/8/1
Microflex Cable (1m)	EMCI	EMCI02-KM-KM-1000	180524	2025/8/1	2026/8/1
Microflex Cable (2m)	EMCI	EMCI06-SM-SM-2000	180516	2025/8/1	2026/8/1
Microflex Cable (8m)	UTIFLEX	UFA210A-1-3149-300300	MFR 64639 232490-002	2025/8/1	2026/8/1
Software	AUDIX	E3 V9	E3LK-02	N.C.R	N.C.R
Conducted Room					
Cable	MTJ	MT40S	620620-MT40S-100	2024/12/21	2025/12/21
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	101457	2024/12/04	2025/12/4
USB Wideband Power Sensor	AGILENT	U2021XA	MY54080011	2024/08/28	2025/8/28
10dB Attenuator	MCL	BW-S10W5+	605	2025/04/14	2026/4/14

***Statement of Traceability:** BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to the SI System of Units via the R.O.C. Center for Measurement Standards of the Electronics Testing Center, Taiwan (ETC) or to another internationally recognized National Metrology Institute (NMI), and were compliant with the current Taiwan Accreditation Foundation (TAF) requirements.

5 FCC §15.203 & RSS-GEN §6.8 – Antenna Requirements

5.1 Applicable Standard

According to § 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited.

According to RSS-Gen 6.8:

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

5.2 Antenna Information

Manufacturer	Model	Type	Antenna Gain	Impedance
YoFree Technology Co.LTD.	Evoluent VMC Antenna	PCB	-0.07 dBi	50Ω

Unit uses a unique coupling to the intentional radiator.

Result: Compliance

6 FCC §15.207(a) & RSS-GEN §8.8 – AC Line Conducted Emissions

6.1 Applicable Standard

According to §15.207

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). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

According to RSS-GEN §8.8

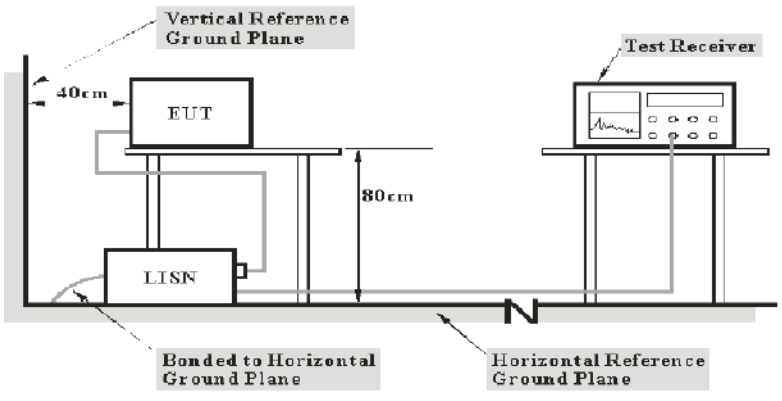
Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μH / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 1
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency.

6.2 EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2020+Cor.1-2023 measurement procedure. The specification used was with the FCC Part 15.207 and RSS-GEN limits.

6.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150kHz to 30MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations

Frequency Range	IF B/W
150kHz – 30MHz	9kHz

6.4 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

6.5 Corrected Factor & Over Limit Calculation

The factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

The “Over Limit” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of -7 dB means the emission is 7 dB below the limit. The equation for Over Limit calculation is as follows:

Over Limit = Result – Limit Line

6.6 Test Results

The subject sample is only employing battery power for operation. Therefore, this test is not applicable.

7 FCC §15.209, §15.205, §15.247(d) & RSS-247 §5.5, RSS-GEN §8.9, §8.10 – Spurious Emissions

7.1 Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz.

As per RSS-Gen 8.10,

Restricted frequency bands, identified in table 7, are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following conditions related to the restricted frequency bands apply:

(a)The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands listed in table 7 except for apparatus compliant with RSS-287, Emergency Position Indicating Radio Beacons (EPIRB), Emergency Locator Transmitters (ELT), Personal Locator Beacons (PLB), and Maritime Survivor Locator Devices (MSLD).

(b)Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.

(c)Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	608 – 614	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	960 – 1240	5. 35 – 5. 46
2.1735 – 2.1905	16.80425 – 16.80475	1300 – 1427	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1435 – 1626.5	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1645.5 – 1646.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1660 – 1710	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1718.8 – 1722.2	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	2200 – 2300	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2310 – 2390	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2483.5 – 2500	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2690 – 2900	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	3260 – 3267	22.01 – 23.12
8.41425 – 8.41475	162.0125 –167.17	3.332 – 3.339	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3 3458 – 3 358	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3.600 – 4.400	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4		Above 38.6
13.36 – 13.41	399.9 – 410		

As per FCC §15.209(a) and RSS-GEN §8.9: Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (micro volts/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

** 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., Sections 15.231 and 15.241.

As per RSS-GEN §8.9: Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

Table 5 – General field strength limits at frequencies above 30 MHz	
Frequency (MHz)	**Field Strength (µV/m at 3 m)**
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Table 6 – General field strength limits at frequencies below 30 MHz		
Frequency (MHz)	**Field Strength (H-Field) (µA/m)**	**Measurement distance (m)**
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

Note 2: The limit was added 51.5dB to convert the limit from dBuA/m to dBuV/m.

According to ANSI C63.10-2020+Cor.1-2023, section 5.3.3

Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field, and the emissions to be measured can be detected by the measurement equipment (see 4.3.4). Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. Measurements from

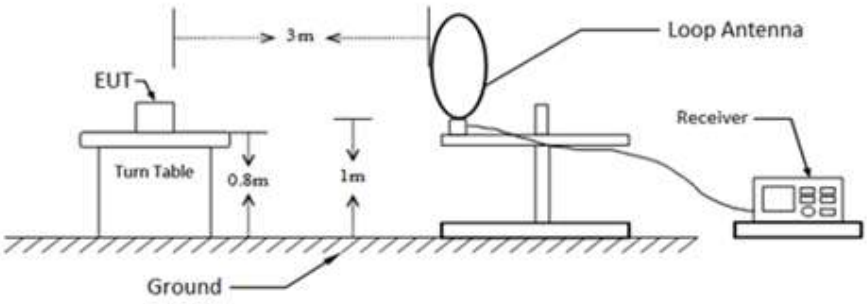
18 GHz to 40 GHz are typically made at distances significantly less than 3 m from the EUT. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade of distance (inverse of linear distance for field-strength measurements or inverse of linear distance-squared for power-density measurements).

As per FCC §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. 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).

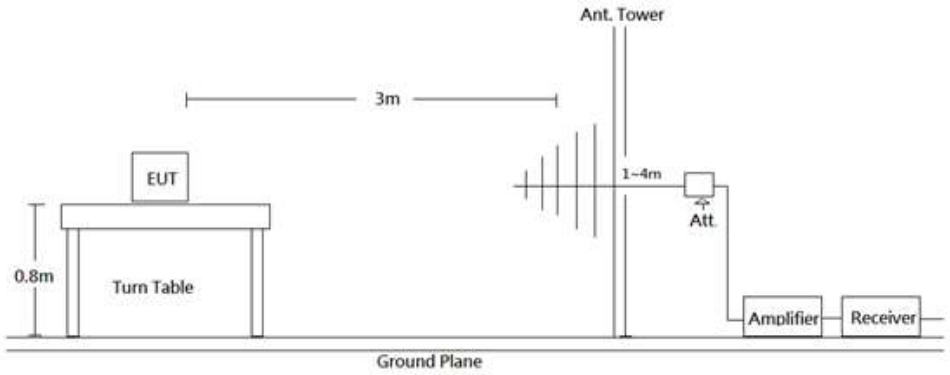
As per RSS-247 5.5,
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

7.2 EUT Setup

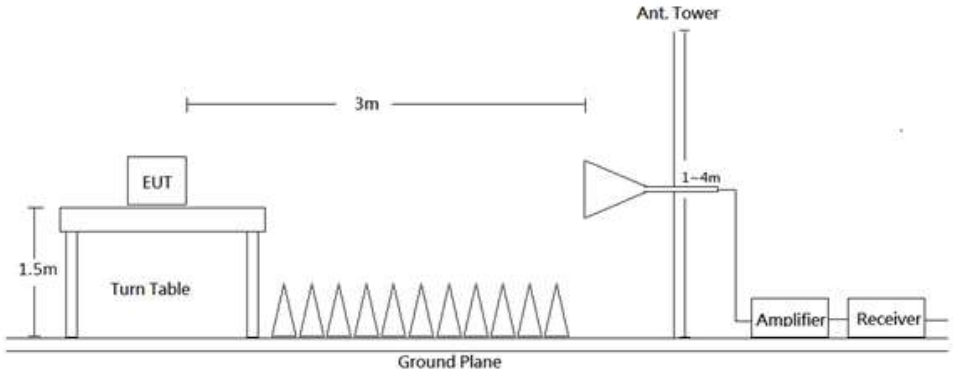
9kHz-30MHz:



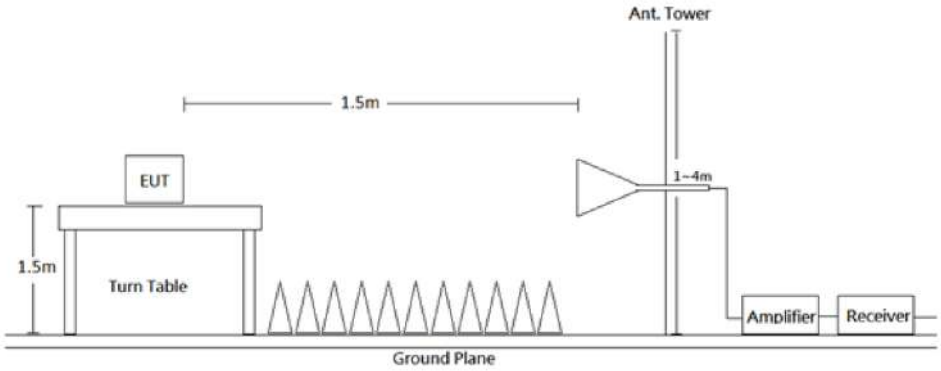
30MHz-1GHz:



1-18 GHz:



18-26.5 GHz:



Radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2020+Cor.1-2023. The specification used was the FCC Part 15.209, FCC 15.247 and RSS-Gen, RSS-247 Limits.

7.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 26.5 GHz. During the radiated emission test, the EMI test receiver was set with the following configurations measurement method 6.3 in ANSI C63.10.

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
9 kHz - 150 kHz	200 Hz/300 Hz	1 kHz	/	QP/AV	QP/AV
150 kHz - 30 MHz	9 kHz/10 kHz	30 kHz	/	QP/AV	QP/AV
30-1000 MHz	100 kHz	300 kHz	/	QP	QP
Above 1 GHz	Pre-scan :				
	1 MHz	3 MHz	/	PK	PK
	1 MHz	1 kHz	>98%	Ave	PK
	1 MHz	≥ 1/Ton, not less than 1 Hz	<98%	Ave	PK
	Final measurement for emission identified during pre-scan :				
	1 MHz	3 MHz	/	PK	PK
	1 MHz	10 Hz	>98%	Ave	PK
	1 MHz	≥ 1/Ton	<98%	Ave	PK

Note: T is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

7.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in Quasi-peak and average detector mode from 9 kHz to 30 MHz, Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

7.5 Corrected Factor & Margin Calculation

The Correct Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

The “Over Limit” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Over Limit = Level – Limit Line

7.6 Test Results

Test Mode: Transmitting

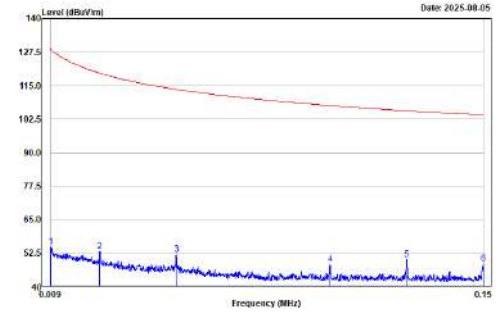
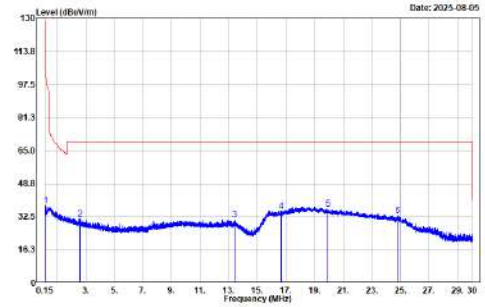
(Pre-scan with three orthogonal axis, and worse case as Y axis.)

BLE Mode :

9kHz-30MHz:

(Worst case is BLE 2M mode, low channel)

(Pre-scan using three directional polarities, worst case as parallel.)

9kHz-150kHz	150kHz-30MHz
	

Site : 966B Chamber
Condition: 3m
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 24.5℃/ 39%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	0.009	40.13	14.70	54.83	128.52	-73.69	QP
2	0.025	39.96	13.35	53.31	119.65	-66.34	QP
3	0.050	38.97	13.30	52.27	113.63	-61.36	QP
4	0.100	36.71	11.60	48.31	107.60	-59.29	QP
5	0.125	38.53	11.72	50.25	105.67	-55.42	QP
6	0.150	36.92	11.85	48.77	104.08	-55.31	QP

Site : 966B Chamber
Condition: 3m
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 24.5℃/ 39%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	0.206	26.03	12.08	38.11	101.34	-63.23	QP
2	2.631	20.37	10.90	31.27	69.54	-38.27	QP
3	13.386	19.41	11.70	31.11	69.54	-38.43	QP
4	16.642	23.41	11.86	35.27	69.54	-34.27	QP
5	19.934	24.34	11.89	36.23	69.54	-33.31	QP
6	24.765	21.41	11.70	33.11	69.54	-36.43	QP

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

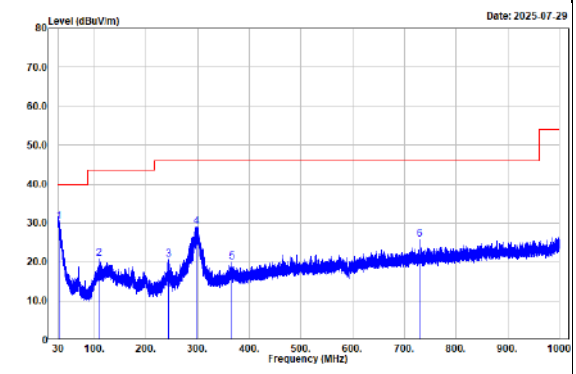
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW
9 kHz - 150 kHz	300 Hz	1 kHz
150 kHz - 30 MHz	10 kHz	30 kHz

30MHz-1GHz:

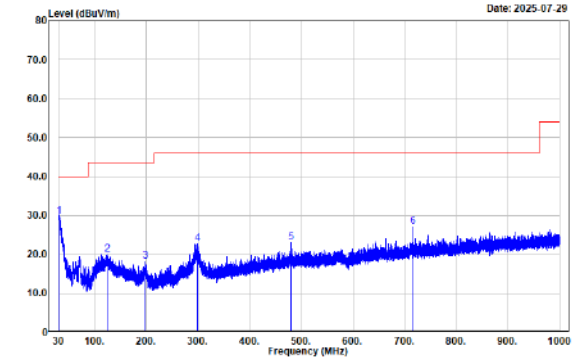
(Worst case is BLE 2M mode, low channel)

Horizontal	Vertical



Site : 966B Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.6℃/ 46%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	32.587	39.15	-8.88	30.27	40.00	-9.73	QP
2	107.794	38.29	-17.44	20.85	43.50	-22.65	QP
3	243.885	38.80	-18.31	20.49	46.00	-25.51	QP
4	297.882	45.48	-16.38	29.10	46.00	-16.90	QP
5	365.297	34.80	-14.96	19.84	46.00	-26.16	QP
6	729.887	34.45	-8.63	25.82	46.00	-20.18	QP



Site : 966B Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.6℃/ 46%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	31.584	37.76	-7.99	29.77	40.00	-10.23	QP
2	125.286	35.61	-15.60	20.01	43.50	-23.49	QP
3	197.390	35.19	-17.00	18.19	43.50	-25.31	QP
4	299.692	39.12	-16.37	22.75	46.00	-23.25	QP
5	479.239	35.01	-11.98	23.03	46.00	-22.97	QP
6	716.437	35.68	-8.67	27.01	46.00	-18.99	QP

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

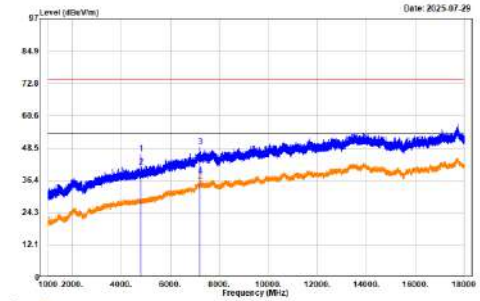
Frequency Range	RBW	VBW
30-1000 MHz	100 kHz	300 kHz

1GHz-18GHz:

BLE 1M

Low channel

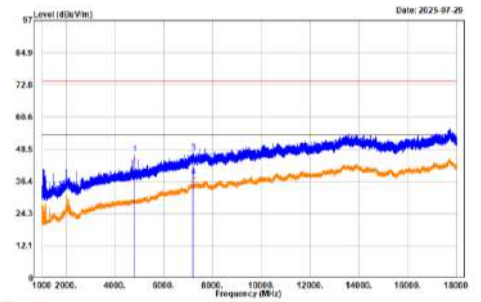
Horizontal



Trace: 1
Site : 9668 Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 1M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.000	43.27	2.98	46.25	74.00	-27.75	Peak
2	4804.000	38.21	2.98	41.19	54.00	-12.81	Average
3	7206.000	39.73	9.06	48.79	74.00	-25.21	Peak
4	7206.000	29.17	9.06	38.23	54.00	-15.77	Average

Vertical

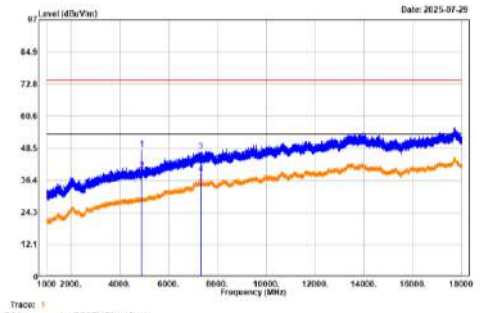


Trace: 1
Site : 9668 Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 1M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.000	43.71	2.98	46.69	74.00	-27.31	Peak
2	4804.000	34.18	2.98	37.16	54.00	-16.84	Average
3	7206.000	38.32	9.06	47.38	74.00	-26.62	Peak
4	7206.000	29.10	9.06	38.16	54.00	-15.84	Average

Middle channel

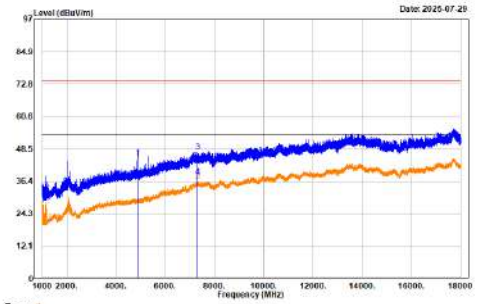
Horizontal



Trace: 1
Site : 9668 Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 1M TX 2440

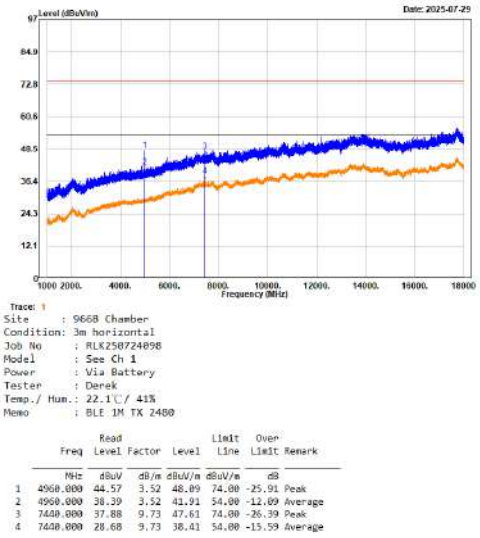
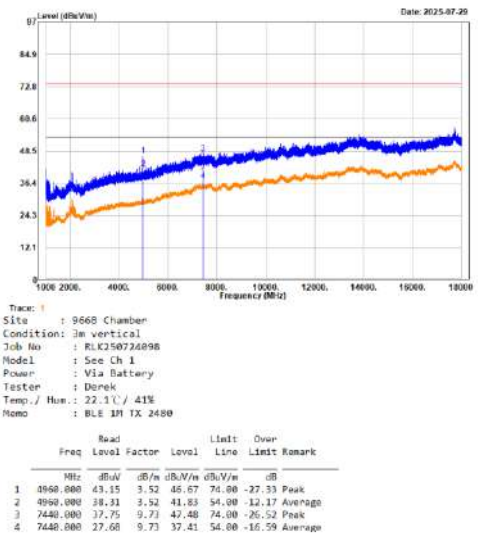
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4880.000	44.77	3.34	48.11	74.00	-25.89	Peak
2	4880.000	36.87	3.34	40.21	54.00	-13.79	Average
3	7320.000	37.74	9.49	47.23	74.00	-26.77	Peak
4	7320.000	29.37	9.49	38.86	54.00	-15.14	Average

Vertical



Trace: 1
Site : 9668 Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 1M TX 2440

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4880.000	41.94	3.34	45.28	74.00	-28.72	Peak
2	4880.000	32.84	3.34	36.18	54.00	-17.82	Average
3	7320.000	37.79	9.49	47.28	74.00	-26.72	Peak
4	7320.000	28.65	9.49	38.14	54.00	-15.86	Average

High channel	
Horizontal	**Vertical**
	

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

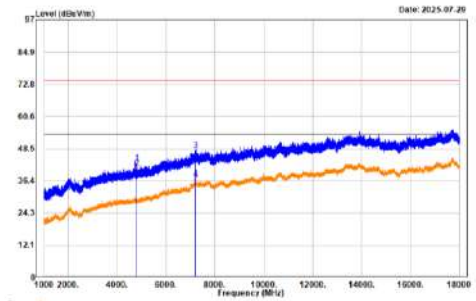
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

BLE 2M

Low channel

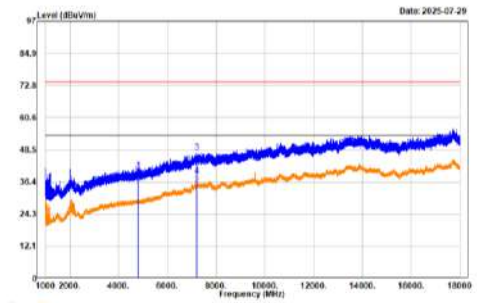
Horizontal



Trace: 1
Site : 9668 Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.000	40.08	2.98	43.06	74.00	-30.94	Peak
2	4804.000	38.37	2.98	41.35	54.00	-12.65	Average
3	7206.000	38.91	9.06	47.97	74.00	-26.03	Peak
4	7206.000	28.12	9.06	37.18	54.00	-16.82	Average

Vertical

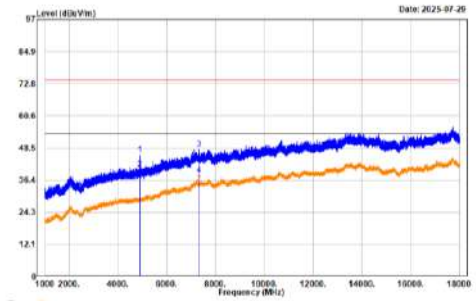


Trace: 1
Site : 9668 Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.000	37.74	2.98	40.72	74.00	-33.28	Peak
2	4804.000	35.45	2.98	38.43	54.00	-15.57	Average
3	7206.000	38.39	9.06	47.45	74.00	-26.55	Peak
4	7206.000	29.56	9.06	38.62	54.00	-15.38	Average

Middle channel

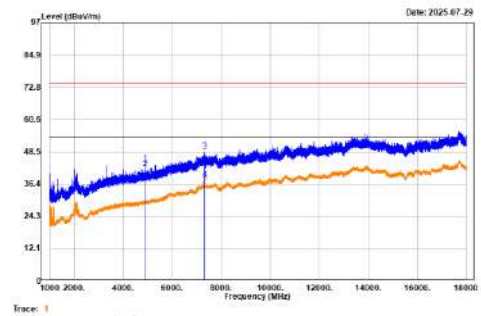
Horizontal



Trace: 1
Site : 9668 Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 2M TX 2440

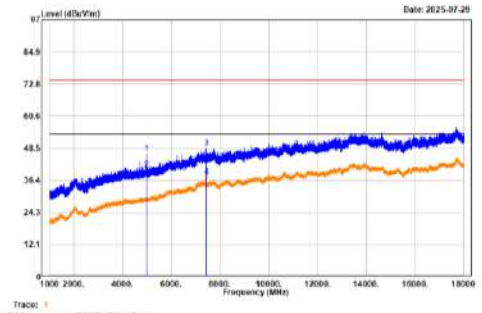
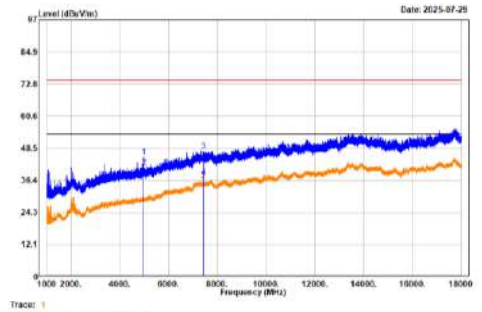
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4880.000	42.66	3.34	46.00	74.00	-28.00	Peak
2	4880.000	37.02	3.34	40.36	54.00	-13.64	Average
3	7320.000	38.68	9.49	48.17	74.00	-25.83	Peak
4	7320.000	28.79	9.49	38.28	54.00	-15.72	Average

Vertical



Trace: 1
Site : 9668 Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : BLE 2M TX 2440

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4880.000	40.72	3.34	44.06	74.00	-29.94	Peak
2	4880.000	38.62	3.34	41.96	54.00	-12.04	Average
3	7320.000	39.27	9.49	48.76	74.00	-25.24	Peak
4	7320.000	28.58	9.49	38.07	54.00	-15.93	Average

High channel	
Horizontal	**Vertical**
	

Note:

Level = Reading + Factor.

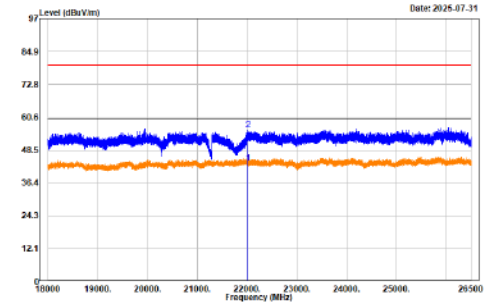
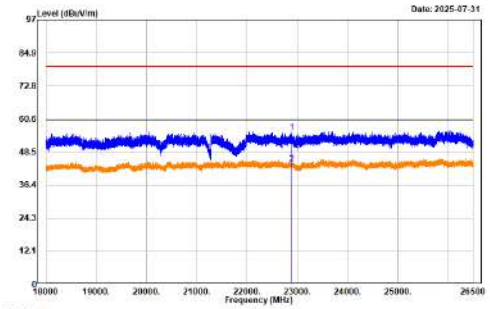
Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

18GHz-26.5GHz:

(Worst case is BLE 2M mode, low channel)

Horizontal	Vertical
	

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

For 18-26.5GHz Convert the test distance limit of 3 meters to a limit of 1.5 meter:

Conversion factor = 20 log (1.5m/3m) = 6 dB,

Average Limit = 54+6 = 60 dBuV/m@1.5m , Peak Limit = 60+20 = 80 dBuV/m@1.5m

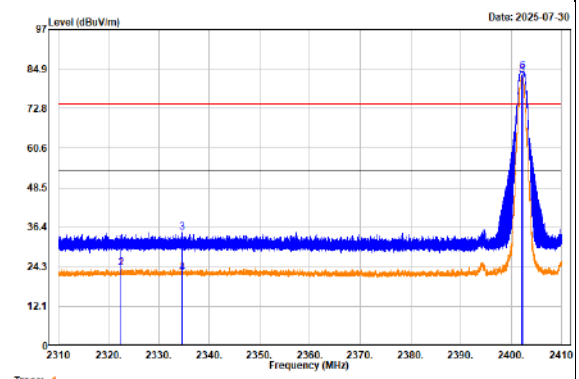
Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

Band-Edge:

BLE 1M

Low channel

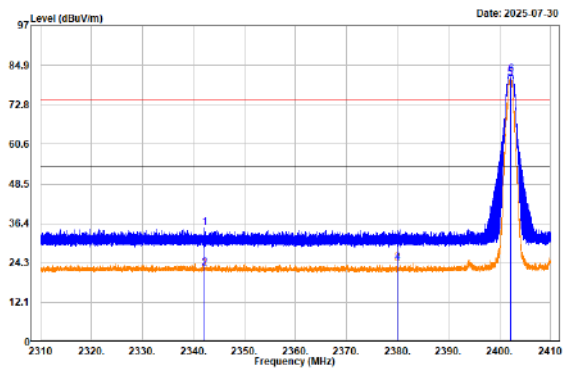
Horizontal



Trace: 1
Site : 966B Chamber
Condition: 3m Horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 1M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2322.530	35.28	-4.36	30.92	74.00	-43.08	Peak
2	2322.530	28.28	-4.36	23.92	54.00	-30.08	Average
3	2334.537	39.06	-4.28	34.78	74.00	-39.22	Peak
4	2334.537	26.66	-4.28	22.38	54.00	-31.62	Average
5	2402.157	87.41	-4.41	83.00	------	------	Average
6	2402.323	88.49	-4.41	84.08	------	------	Peak

Vertical

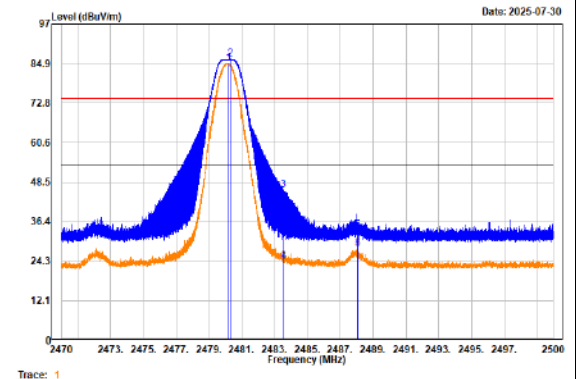


Trace: 1
Site : 966B Chamber
Condition: 3m Vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 1M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2342.077	39.17	-4.23	34.94	74.00	-39.06	Peak
2	2342.077	26.83	-4.23	22.60	54.00	-31.40	Average
3	2379.857	34.16	-4.32	29.84	74.00	-44.16	Peak
4	2379.857	28.57	-4.32	24.25	54.00	-29.75	Average
5	2402.170	85.35	-4.41	80.94	------	------	Average
6	2402.267	86.40	-4.41	81.99	------	------	Peak

High channel

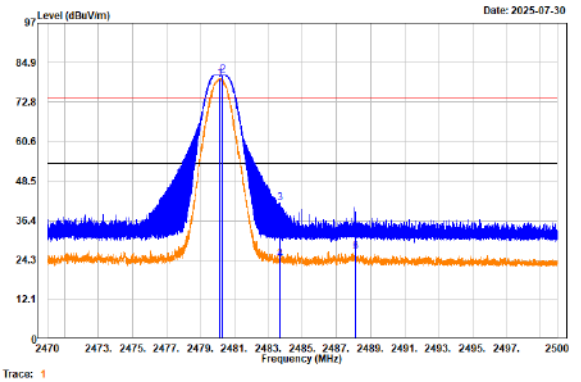
Horizontal



Trace: 1
Site : 966B Chamber
Condition: 3m Horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 1M TX 2480

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2480.166	88.95	-3.97	84.98	------	------	Average
2	2480.294	90.08	-3.97	86.11	------	------	Peak
3	2483.536	49.93	-3.96	45.97	74.00	-28.03	Peak
4	2483.536	28.20	-3.96	24.24	54.00	-29.76	Average
5	2488.043	37.67	-3.94	33.73	74.00	-40.27	Peak
6	2488.043	31.94	-3.94	28.00	54.00	-26.00	Average

Vertical



Trace: 1
Site : 966B Chamber
Condition: 3m Vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 1M TX 2480

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2480.134	83.87	-3.97	79.90	------	------	Average
2	2480.297	85.03	-3.97	81.06	------	------	Peak
3	2483.655	45.89	-3.96	41.93	74.00	-32.07	Peak
4	2483.655	28.46	-3.96	24.50	54.00	-29.50	Average
5	2488.103	36.66	-3.94	32.72	74.00	-41.28	Peak
6	2488.103	30.82	-3.94	26.88	54.00	-27.12	Average

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

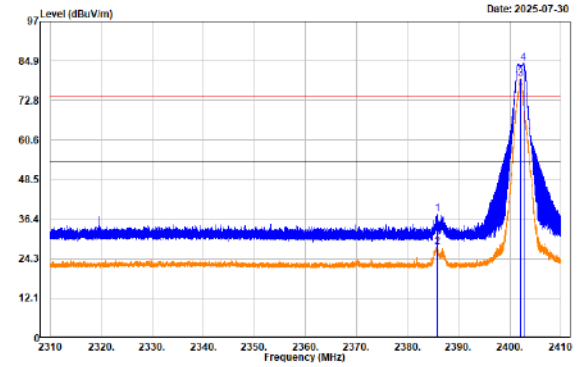
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

BLE 2M

Low channel

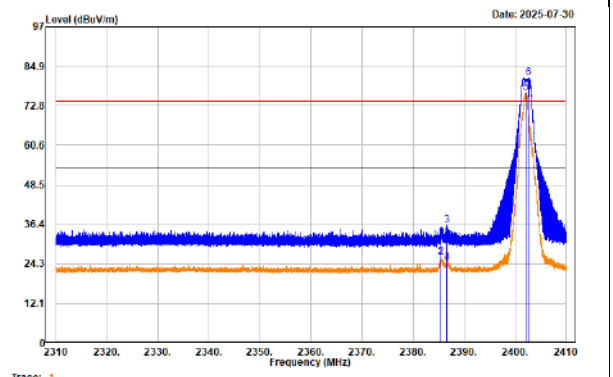
Horizontal



Trace: 1
Site : 966B Chamber
Condition: 3m Horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2385.847	42.10	-4.36	37.74	74.00	-36.26	Peak
2	2385.847	32.16	-4.36	27.80	54.00	-26.20	Average
3	2402.143	83.83	-4.41	79.42	------	------	Average
4	2402.677	88.42	-4.40	84.02	------	------	Peak

Vertical

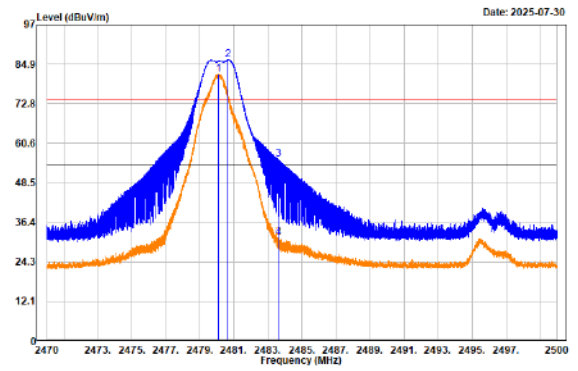


Trace: 1
Site : 966B Chamber
Condition: 3m Vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 2M TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2385.503	36.70	-4.35	32.35	74.00	-41.65	Peak
2	2385.503	30.59	-4.35	26.24	54.00	-27.76	Average
3	2386.640	40.29	-4.36	35.93	74.00	-38.07	Peak
4	2386.640	28.73	-4.36	24.37	54.00	-29.63	Average
5	2402.073	81.25	-4.41	76.84	------	------	Average
6	2402.653	85.72	-4.40	81.32	------	------	Peak

High channel

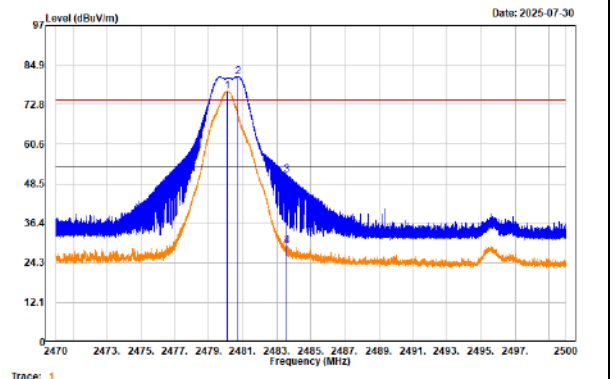
Horizontal



Trace: 1
Site : 966B Chamber
Condition: 3m Horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 2M TX 2480

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2480.070	85.70	-3.97	81.73	------	------	Average
2	2480.665	90.16	-3.97	86.19	------	------	Peak
3	2483.597	59.80	-3.96	55.84	74.00	-18.16	Peak
4	2483.597	35.88	-3.96	31.92	54.00	-22.08	Average

Vertical



Trace: 1
Site : 966B Chamber
Condition: 3m Vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.2℃/ 45%
Memo : BLE 2M TX 2480

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2480.090	80.85	-3.97	76.88	------	------	Average
2	2480.675	85.26	-3.97	81.29	------	------	Peak
3	2483.561	55.28	-3.96	51.32	74.00	-22.68	Peak
4	2483.561	33.51	-3.96	29.55	54.00	-24.45	Average

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

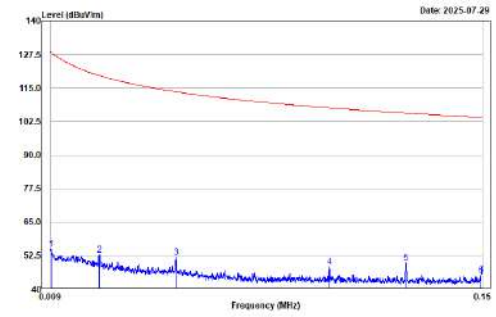
SRD Mode :

9kHz-30MHz:

(Worst case is low channel)

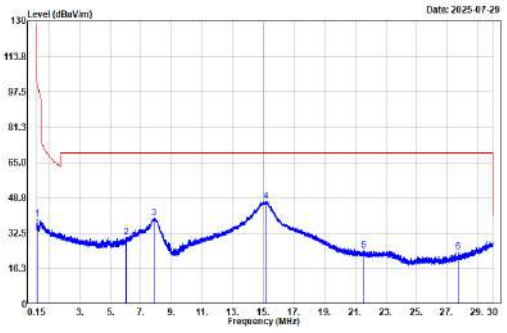
(Pre-scan using three directional polarities, worst case as parallel.)

9kHz-150kHz	150kHz-30MHz



Site : 966B Chamber
Condition: 3m
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.6℃/ 46%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	0.009	40.58	14.44	55.02	128.34	-73.32	QP
2	0.025	39.52	13.35	52.87	119.64	-66.77	QP
3	0.050	38.54	13.30	51.84	113.63	-61.79	QP
4	0.100	36.92	11.60	48.52	107.60	-59.08	QP
5	0.125	37.98	11.72	49.70	105.67	-55.97	QP
6	0.150	33.20	11.85	45.05	104.11	-59.06	QP



Site : 966B Chamber
Condition: 3m
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.6℃/ 46%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	0.220	27.08	12.04	39.12	100.77	-61.65	Peak
2	6.026	18.67	12.09	30.76	69.54	-38.78	Peak
3	7.807	27.55	11.87	39.42	69.54	-30.12	Peak
4	15.165	35.61	11.67	47.28	69.54	-22.26	Peak
5	21.572	13.36	11.37	24.73	69.54	-44.81	Peak
6	27.734	13.19	10.89	24.08	69.54	-45.46	Peak

Note:

Level = Reading + Factor.

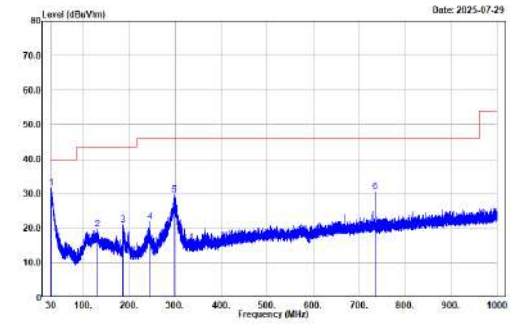
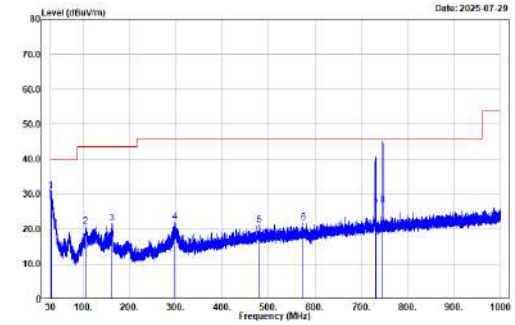
Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW
9 kHz - 150 kHz	300 Hz	1 kHz
150 kHz - 30 MHz	10 kHz	30 kHz

30MHz-1GHz:

(Worst case is low channel)

Horizontal	Vertical
	

Site : 966B Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.6℃/ 46%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	30.938	38.94	-7.38	31.56	40.00	-8.44	QP
2	131.171	35.53	-15.70	19.83	43.50	-23.67	QP
3	187.302	39.34	-18.37	20.97	43.50	-22.53	QP
4	244.758	40.12	-18.31	21.81	46.00	-24.19	QP
5	298.173	46.05	-16.38	29.67	46.00	-16.33	QP
6	733.929	38.98	-8.46	30.52	46.00	-15.48	QP

Site : 966B Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 23.6℃/ 46%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	31.035	38.53	-7.47	31.06	40.00	-8.94	QP
2	105.660	38.56	-17.67	20.89	43.50	-22.61	QP
3	162.373	39.10	-17.49	21.61	43.50	-21.89	QP
4	297.720	38.43	-16.38	22.05	46.00	-23.95	QP
5	479.239	33.16	-11.98	21.18	46.00	-24.82	QP
6	575.205	32.48	-10.58	21.90	46.00	-24.10	QP
7	730.890	34.48	-8.59	25.89	46.00	-20.11	QP
8	746.410	35.07	-8.18	26.89	46.00	-19.11	QP

Note:

Level = Reading + Factor.

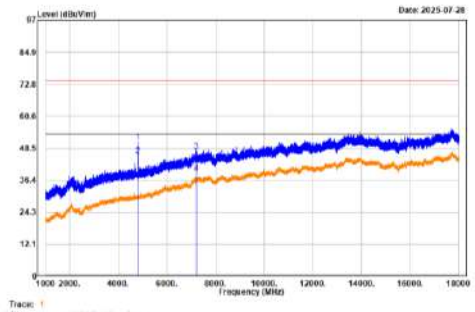
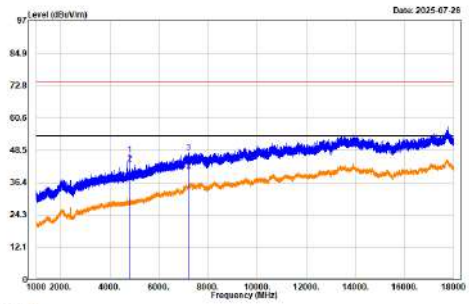
Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW
30-1000 MHz	100 kHz	300 kHz

1GHz-18GHz:

Low channel

Horizontal	Vertical
	

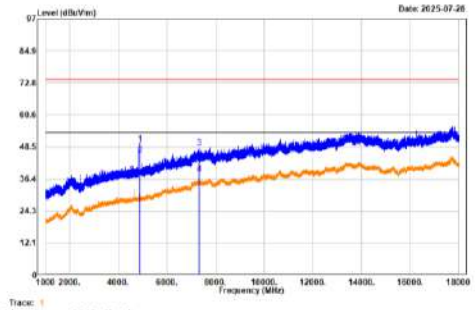
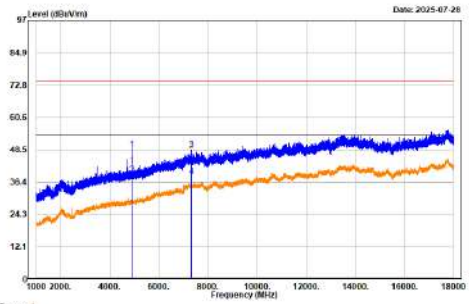
Trace: 1
Site : 9668 Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.000	47.90	2.98	50.88	74.00	-23.12	Peak
2	4804.000	41.57	4.21	45.78	54.00	-8.22	Average
3	7206.000	38.26	9.06	47.32	74.00	-26.68	Peak
4	7206.000	28.49	10.62	39.11	54.00	-14.89	Average

Trace: 1
Site : 9668 Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.000	43.92	2.98	46.90	74.00	-27.10	Peak
2	4804.000	40.35	2.98	43.33	54.00	-10.67	Average
3	7206.000	38.53	9.06	47.59	74.00	-26.41	Peak
4	7206.000	31.30	9.06	40.36	54.00	-13.64	Average

Middle channel

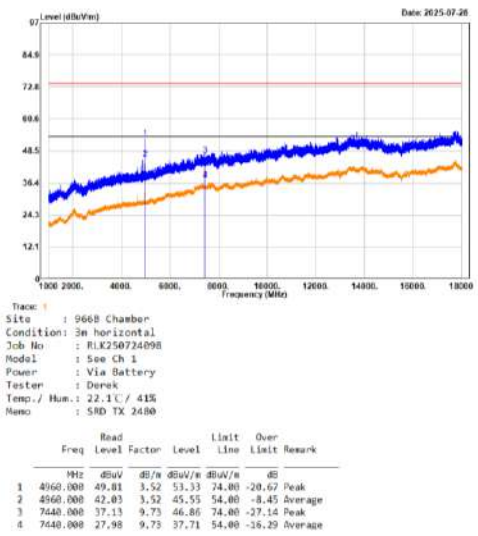
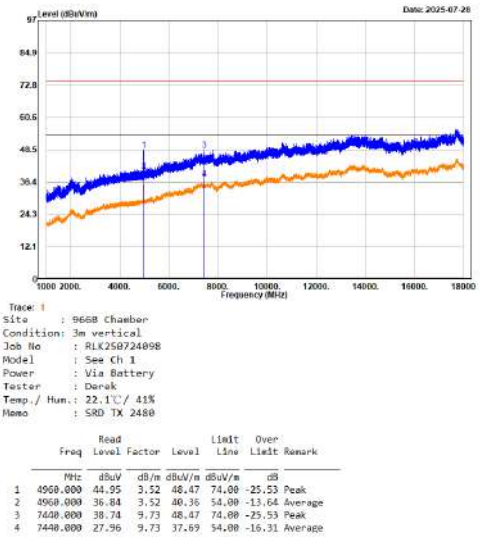
Horizontal	Vertical
	

Trace: 1
Site : 9668 Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2440

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4880.000	46.37	3.34	49.71	74.00	-24.29	Peak
2	4880.000	42.12	3.34	45.46	54.00	-8.54	Average
3	7320.000	38.61	9.49	48.10	74.00	-25.90	Peak
4	7320.000	28.92	9.49	38.41	54.00	-15.59	Average

Trace: 1
Site : 9668 Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2440

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4880.000	45.34	3.34	48.68	74.00	-25.32	Peak
2	4880.000	35.88	3.34	39.22	54.00	-14.78	Average
3	7320.000	39.27	9.49	48.76	74.00	-25.24	Peak
4	7320.000	29.02	9.49	38.51	54.00	-15.49	Average

High channel	
Horizontal	**Vertical**
	

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

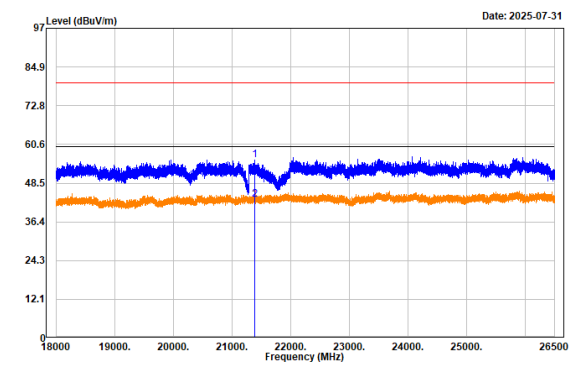
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

18GHz-26.5GHz:

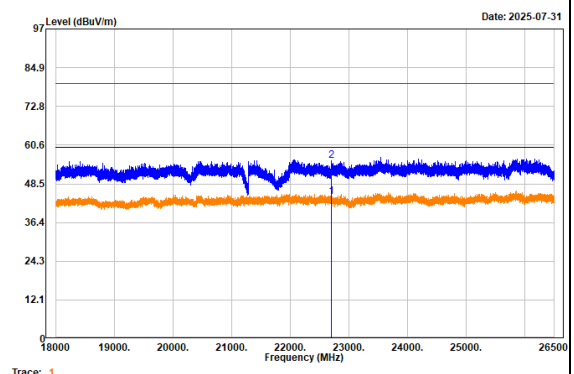
(Worst case is low channel)

Horizontal	Vertical



Trace: 1
Site : 966B Chamber
Condition: 1.5m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 24.2℃/ 40%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	21384.420	49.71	6.12	55.83	80.00	-24.17	Peak
2	21384.420	37.16	6.12	43.28	60.00	-16.72	Average



Trace: 1
Site : 966B Chamber
Condition: 1.5m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 24.2℃/ 40%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	22705.880	36.77	7.62	44.39	60.00	-15.61	Average
2	22705.880	48.09	7.62	55.71	80.00	-24.29	Peak

Level = Reading + Factor.

Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

For 18-26.5GHz Convert the test distance limit of 3 meters to a limit of 1.5 meter:

Conversion factor = 20 log (1.5m/3m) = 6 dB,

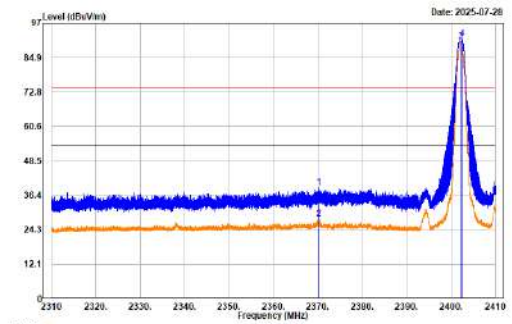
Average Limit = 54+6 = 60 dBuV/m@1.5m , Peak Limit = 60+20 = 80 dBuV/m@1.5m

Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

Band-Edge:

Low channel

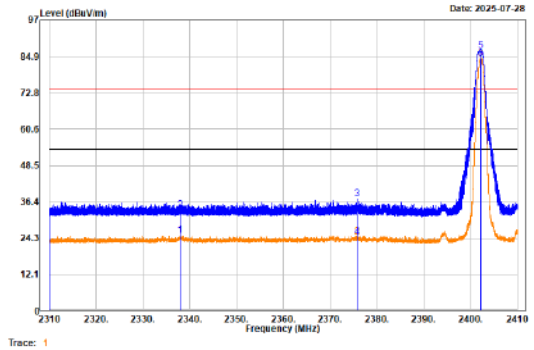
Horizontal



Trace: 1
Site : 966B Chamber
Condition: 3m Horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2370.117	43.37	-4.28	39.09	74.00	-34.91	Peak
2	2370.117	32.54	-4.28	28.26	54.00	-25.74	Average
3	2402.170	95.87	-4.41	90.66	------	------	Average
4	2402.403	95.78	-4.41	91.37	------	------	Peak

Vertical

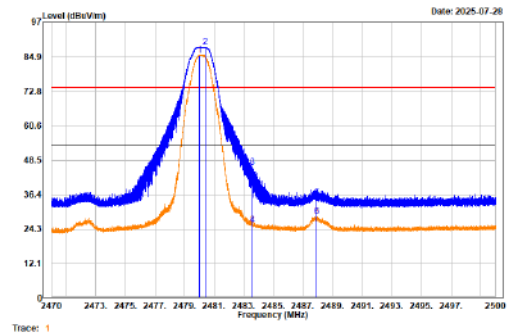


Trace: 1
Site : 966B Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2402

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2337.926	29.44	-4.26	25.18	54.00	-28.82	Average
2	2337.927	37.91	-4.26	33.65	74.00	-40.35	Peak
3	2375.713	41.68	-4.30	37.38	74.00	-36.62	Peak
4	2375.714	28.97	-4.30	24.67	54.00	-29.33	Average
5	2402.053	91.11	-4.41	86.70	------	------	Peak
6	2402.172	88.61	-4.41	84.20	------	------	Average

High channel

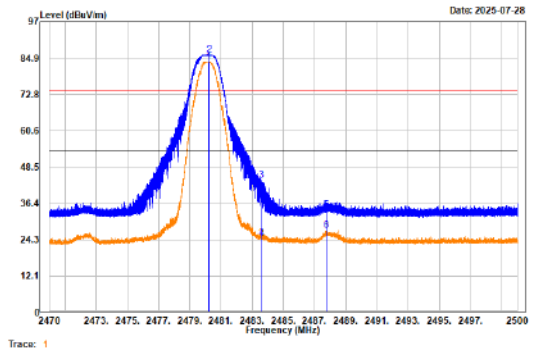
Horizontal



Trace: 1
Site : 966B Chamber
Condition: 3m horizontal
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2480

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2479.963	89.51	-3.97	85.54	------	------	Average
2	2480.369	92.35	-3.97	88.38	------	------	Peak
3	2483.569	50.02	-3.96	46.06	74.00	-27.94	Peak
4	2483.569	29.84	-3.96	25.88	54.00	-28.12	Average
5	2487.889	39.23	-3.94	35.29	74.00	-38.71	Peak
6	2487.889	32.62	-3.94	28.68	54.00	-25.32	Average

Vertical



Trace: 1
Site : 966B Chamber
Condition: 3m vertical
Job No : RLK250724098
Model : See Ch 1
Power : Via Battery
Tester : Derek
Temp./ Hum.: 22.1℃/ 41%
Memo : SRD TX 2480

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	2480.183	87.67	-3.97	83.70	------	------	Average
2	2480.238	89.91	-3.97	85.94	------	------	Peak
3	2483.550	48.02	-3.96	44.06	74.00	-29.94	Peak
4	2483.550	28.70	-3.96	24.74	54.00	-29.26	Average
5	2487.726	38.05	-3.94	34.11	74.00	-39.89	Peak
6	2487.726	31.34	-3.94	27.40	54.00	-26.60	Average

Note:

Level = Reading + Factor.

Over Limit = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

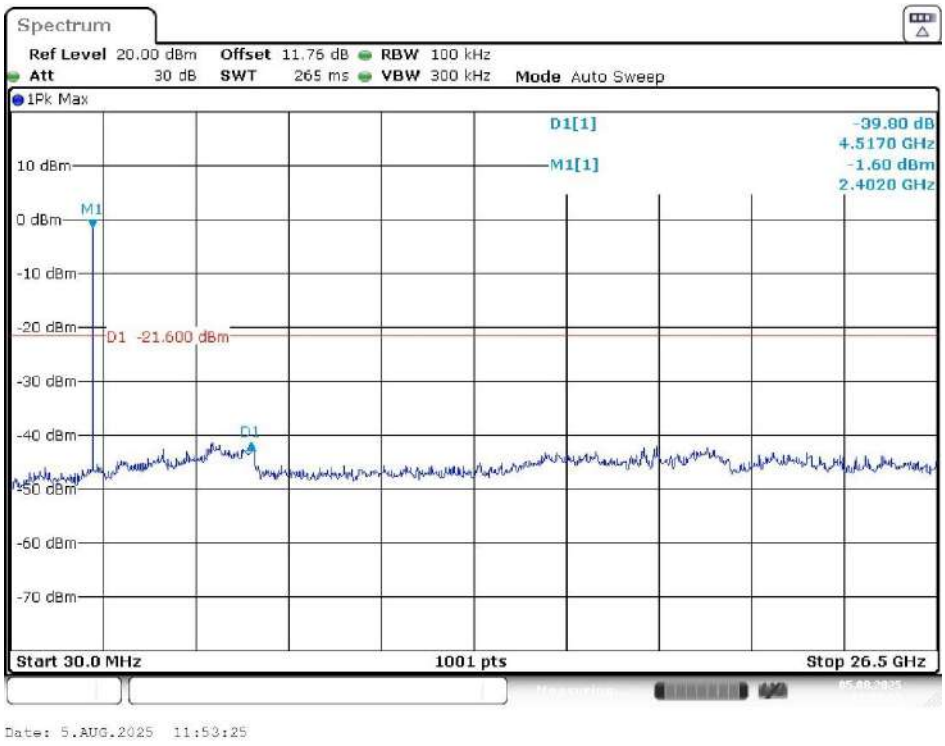
Frequency Range	RBW	VBW	Duty cycle	Measurement method	Detector
Above 1 GHz	1 MHz	3 MHz		PK	PK
	1 MHz	3 kHz	<98%	Ave	PK

Conducted Spurious Emissions:

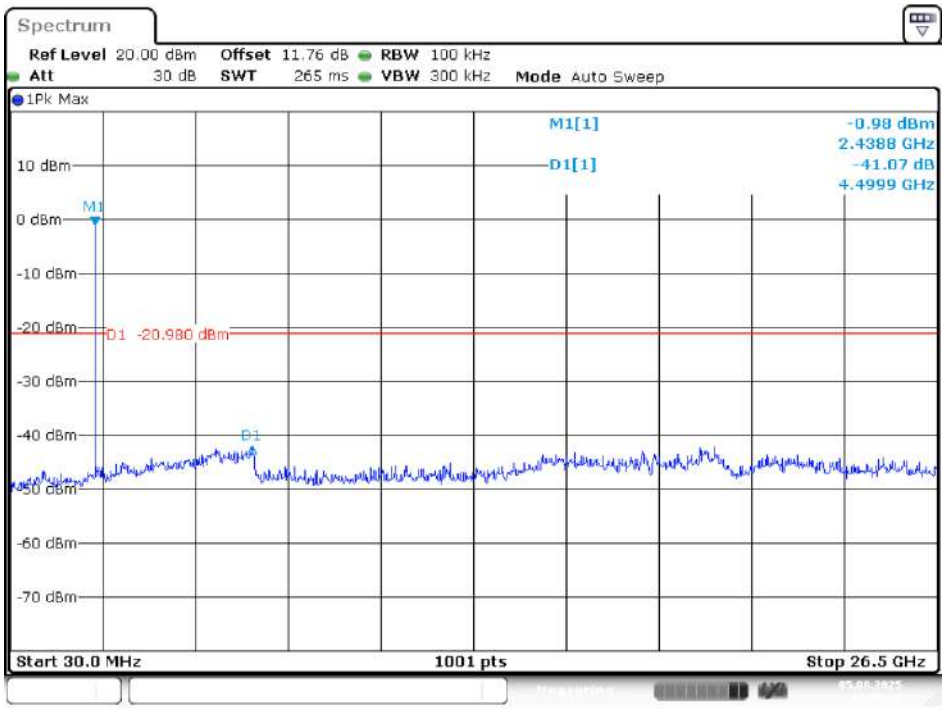
Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
BLE(1M) Mode				
Low	2402	39.8	≥ 20	PASS
Mid	2440	41.07	≥ 20	PASS
High	2480	40.46	≥ 20	PASS
BLE(2M) Mode				
Low	2402	49.38	≥ 20	PASS
Mid	2440	49.20	≥ 20	PASS
High	2480	49.42	≥ 20	PASS
SRD Mode				
Low	2402	42.89	≥ 20	PASS
Mid	2440	42.20	≥ 20	PASS
High	2480	43.77	≥ 20	PASS

BLE(1M) Mode

Low Channel

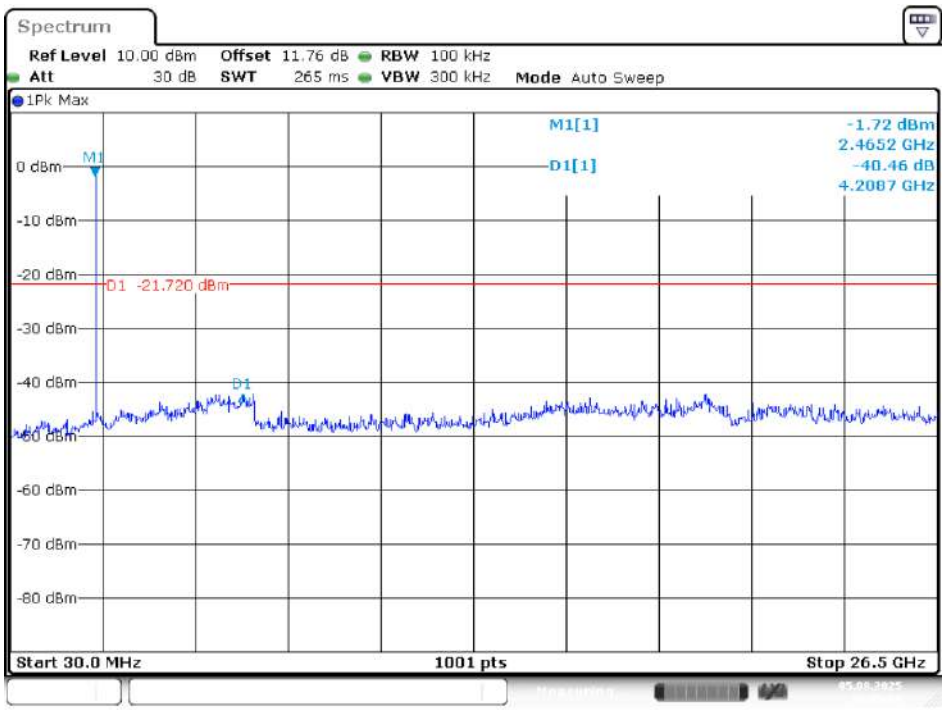


Middle Channel



Date: 5.AUG.2025 15:56:10

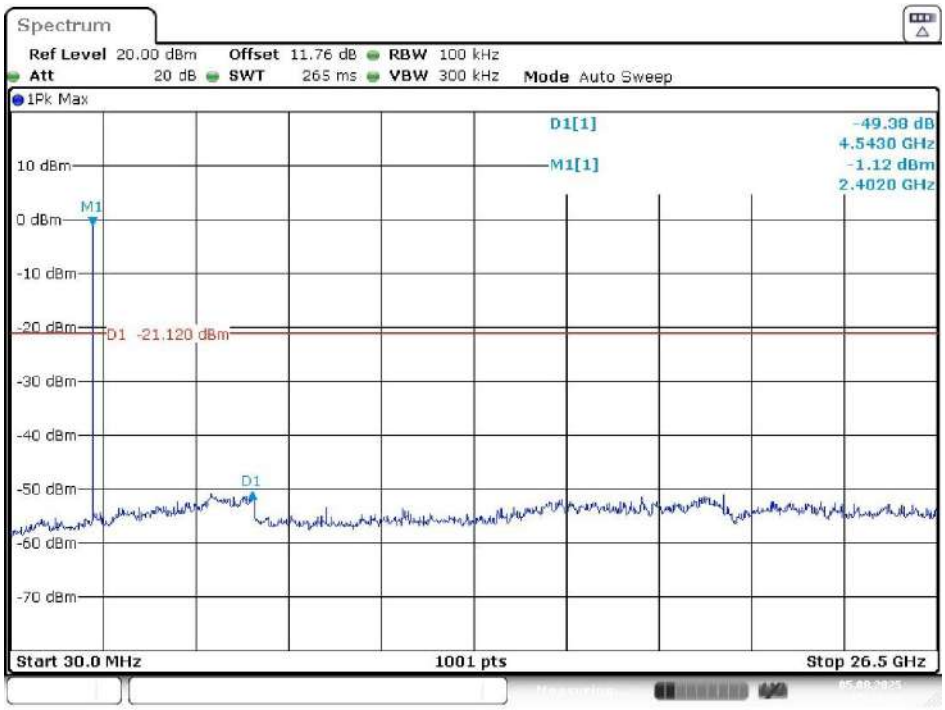
High Channel



Date: 5.AUG.2025 15:55:10

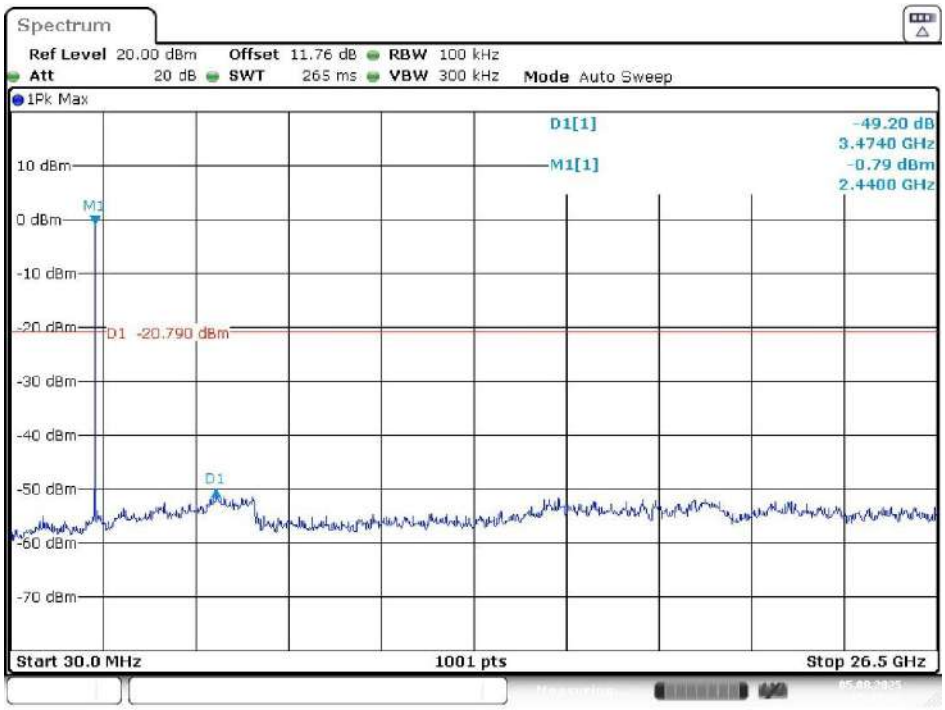
BLE(2M) Mode

Low Channel



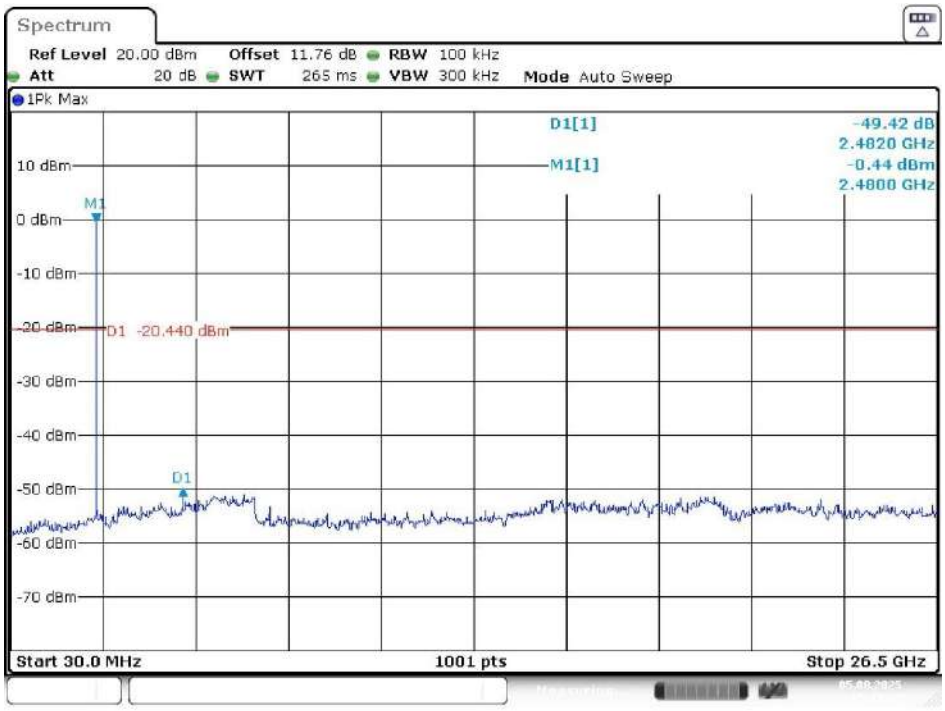
Date: 5.AUG.2025 15:10:42

Middle Channel



Date: 5.AUG.2025 15:07:34

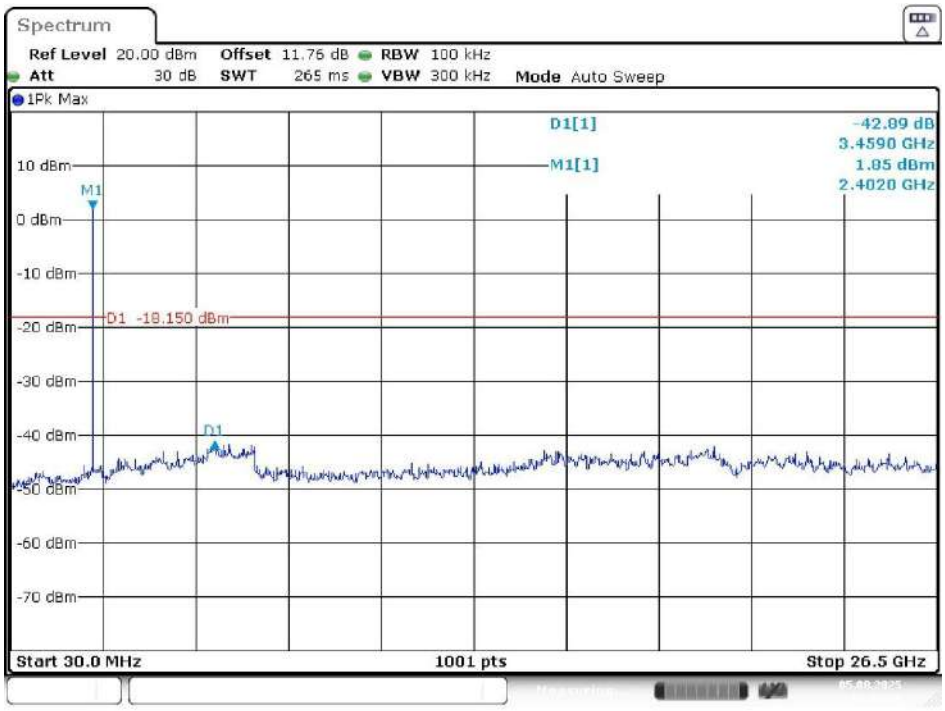
High Channel



Date: 5.AUG.2025 15:13:29

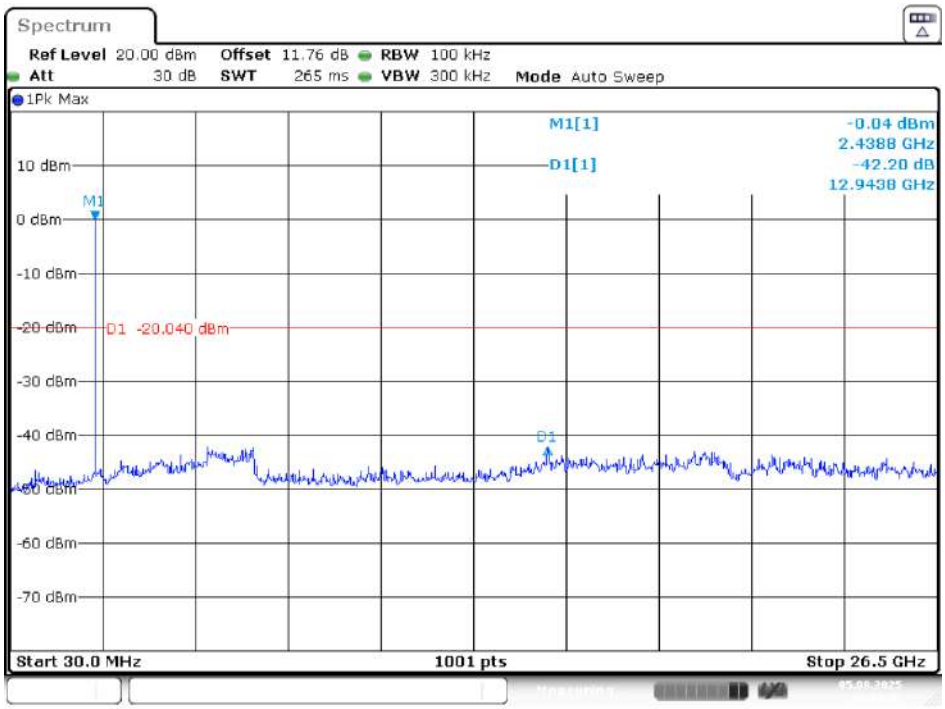
SRD Mode

Low Channel



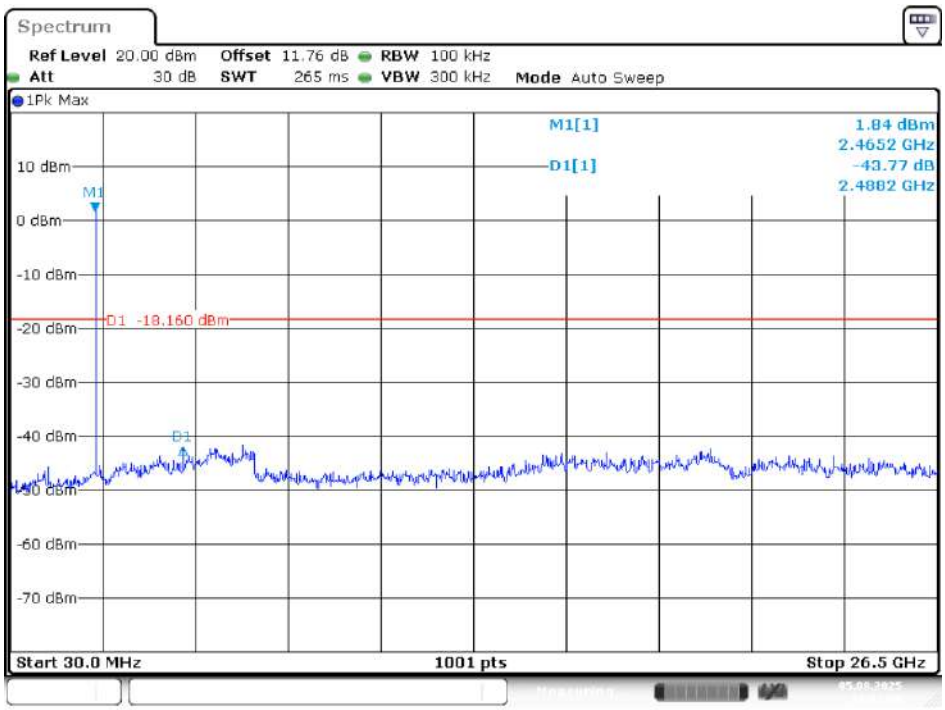
Date: 5.AUG.2025 12:01:00

Middle Channel



Date: 5.AUG.2025 12:03:48

High Channel



Date: 5.AUG.2025 14:51:58

8 FCC §15.247(a)(2) & RSS-247 §5.2(a), RSS-GEN §6.7 – 6 dB Emission Bandwidth & Occupied Bandwidth

8.1 Applicable Standard

According to FCC §15.247(a)(2).

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

According to RSS-247 §5.2 (a)

The minimum 6 dB bandwidth shall be 500 kHz.

According to RSS-GEN §6.7

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

8.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023, section 11.8

11.8 DTS bandwidth

One of the following procedures may be used to determine the modulated DTS bandwidth.

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.

According to ANSI C63.10-2020+Cor.1-2023 Section 6.9.3

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

8.3 Test Results

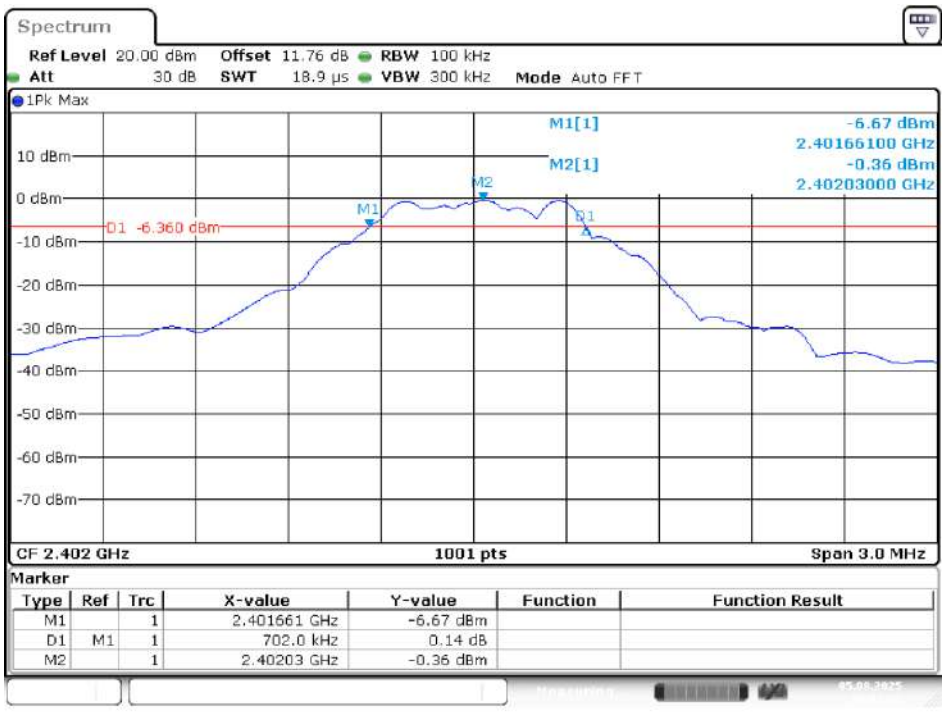
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (kHz)	Result
BLE(1M) Mode					
Low	2402	0.70	1.03	> 500	PASS
Middle	2440	0.71	1.03	> 500	PASS
High	2480	0.71	1.03	> 500	PASS
BLE(2M) Mode					
Low	2402	1.25	2.05	> 500	PASS
Middle	2440	1.25	2.05	> 500	PASS
High	2480	1.25	2.06	> 500	PASS
SRD Mode					
Low	2402	0.73	1.05	> 500	PASS
Middle	2440	0.74	1.05	> 500	PASS
High	2480	0.75	1.05	> 500	PASS

Please refer to the following plots

6 dB Emission Bandwidth

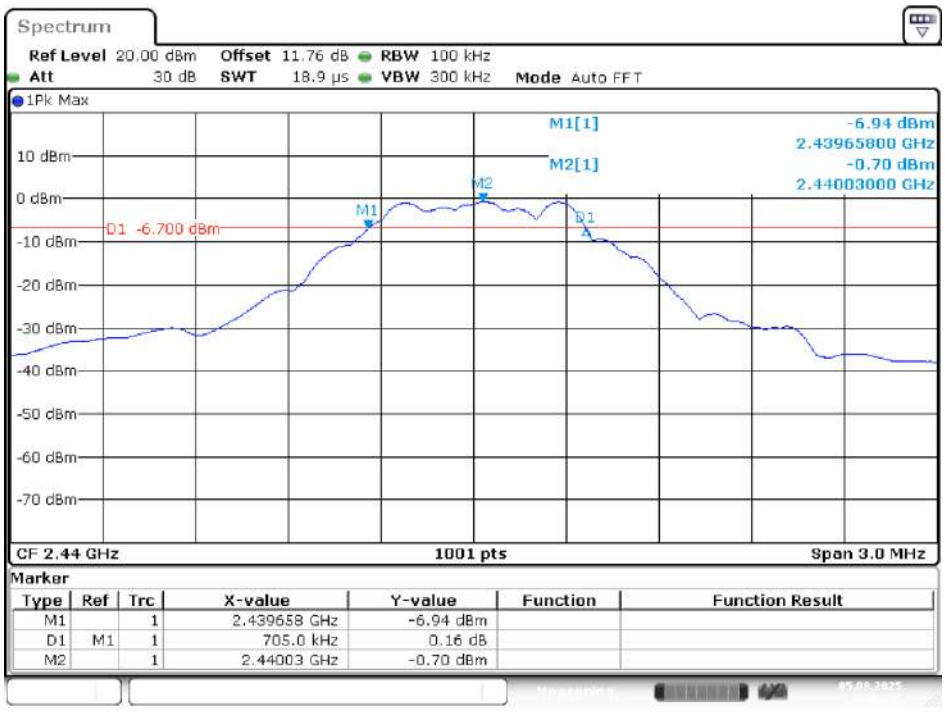
BLE(1M) Mode

Low Channel



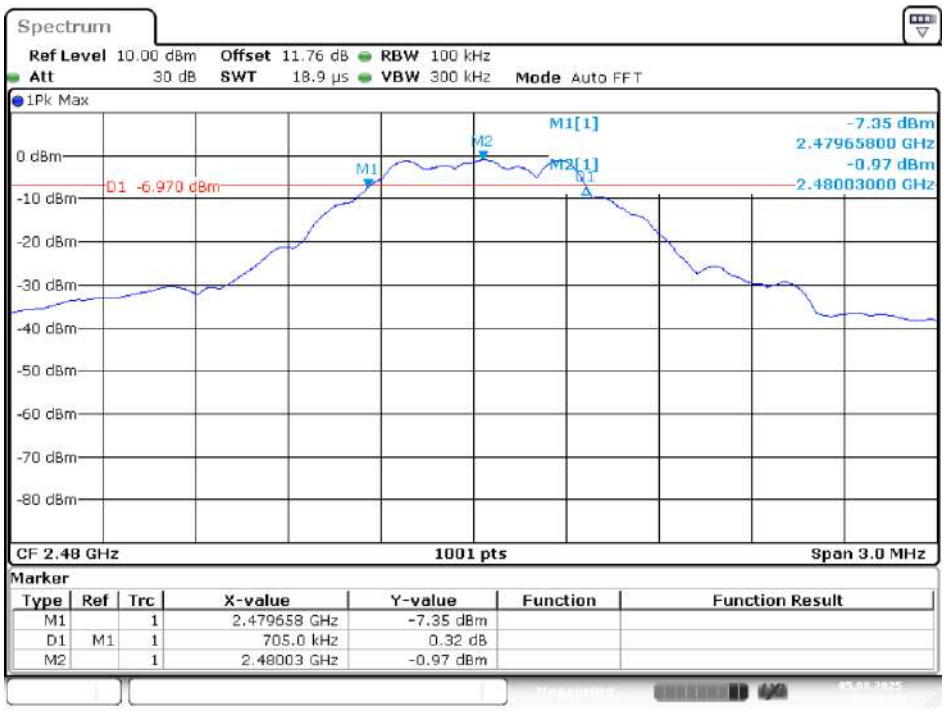
Date: 5.AUG.2025 15:51:12

Middle Channel



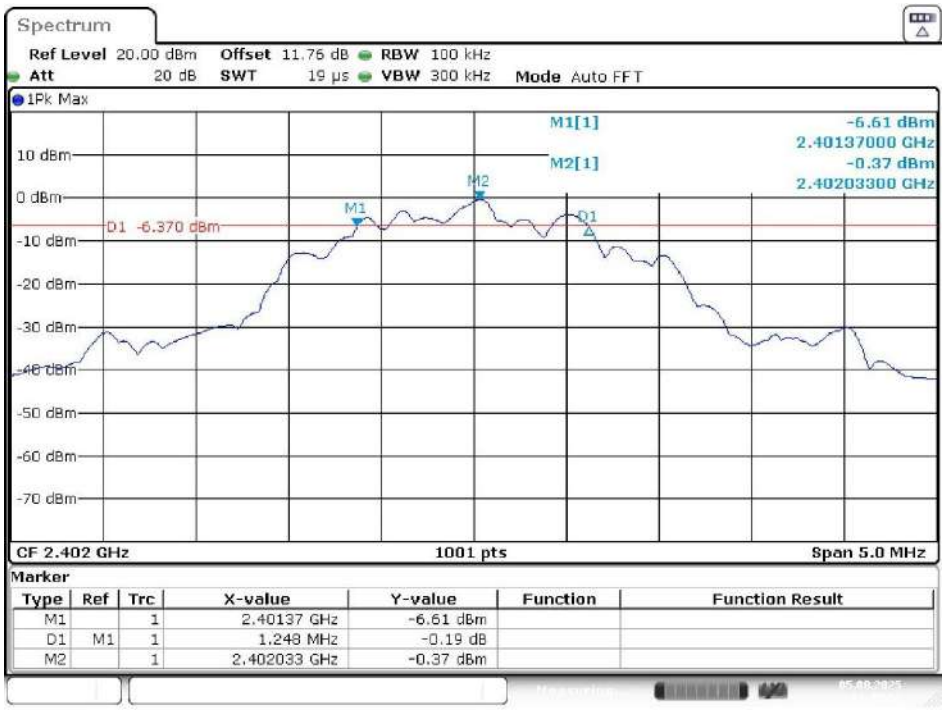
Date: 5.AUG.2025 15:52:45

High Channel


Spectrum
Ref Level 10.00 dBm Offset 11.76 dB RBW 100 kHz
Att 30 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT
1Pk Max
M1[1] -7.35 dBm
2.47965800 GHz
M2[1] -0.97 dBm
2.48003000 GHz
D1 -6.970 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.48 GHz
1001 pts
Span 3.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.479658 GHz -7.35 dBm
D1 M1 1 705.0 kHz 0.32 dB
M2 1 2.48003 GHz -0.97 dBm
Date: 5.AUG.2025 15:54:14

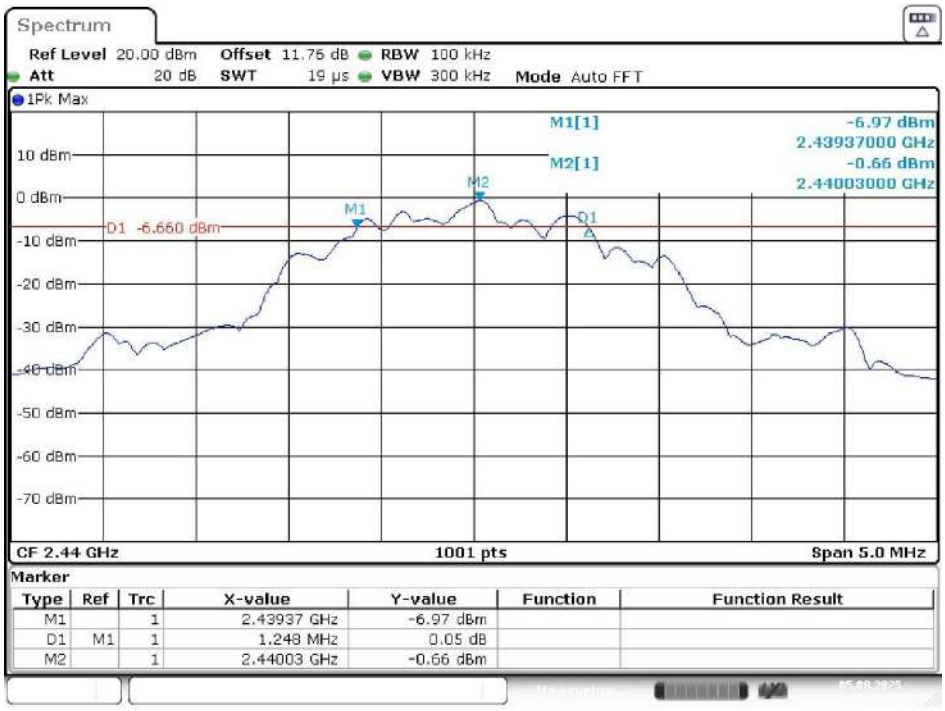
BLE(2M) Mode

Low Channel



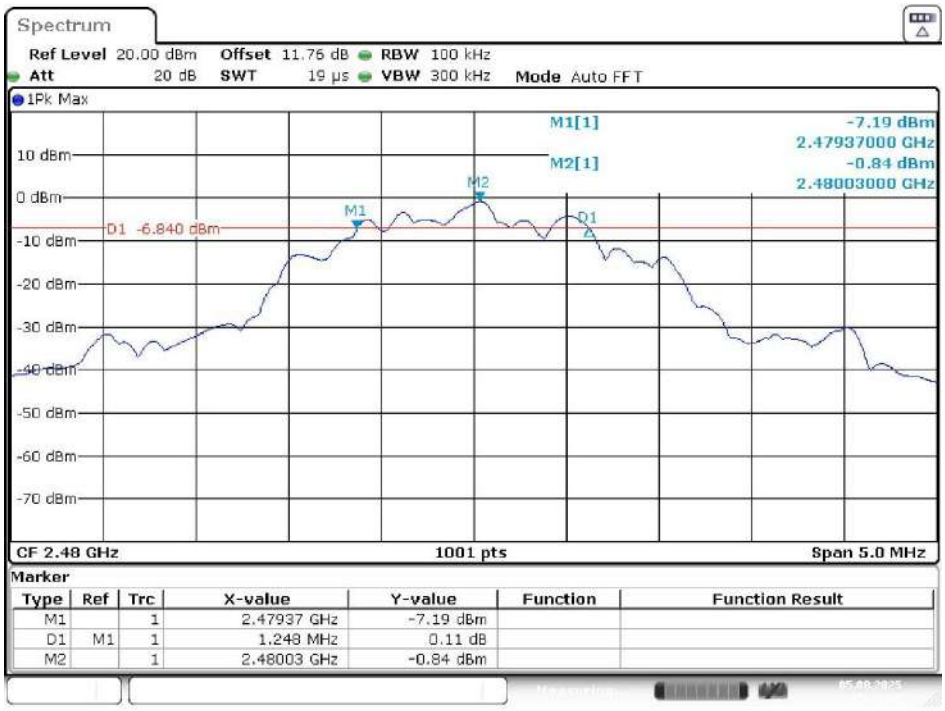
Date: 5.AUG.2025 14:49:57

Middle Channel



Date: 5.AUG.2025 15:01:29

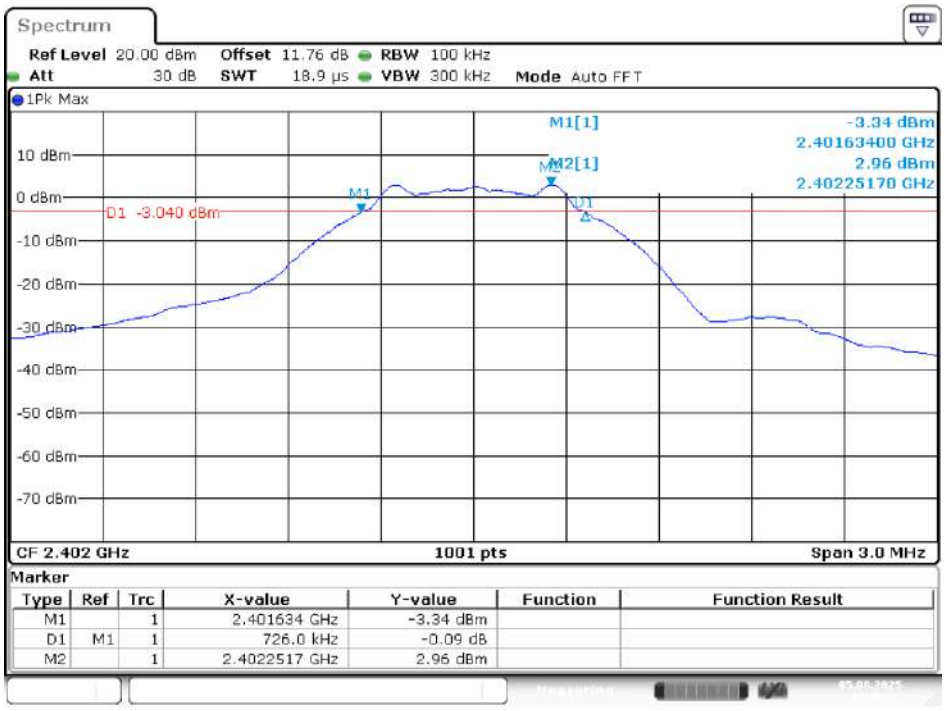
High Channel



Date: 5.AUG.2025 15:16:39

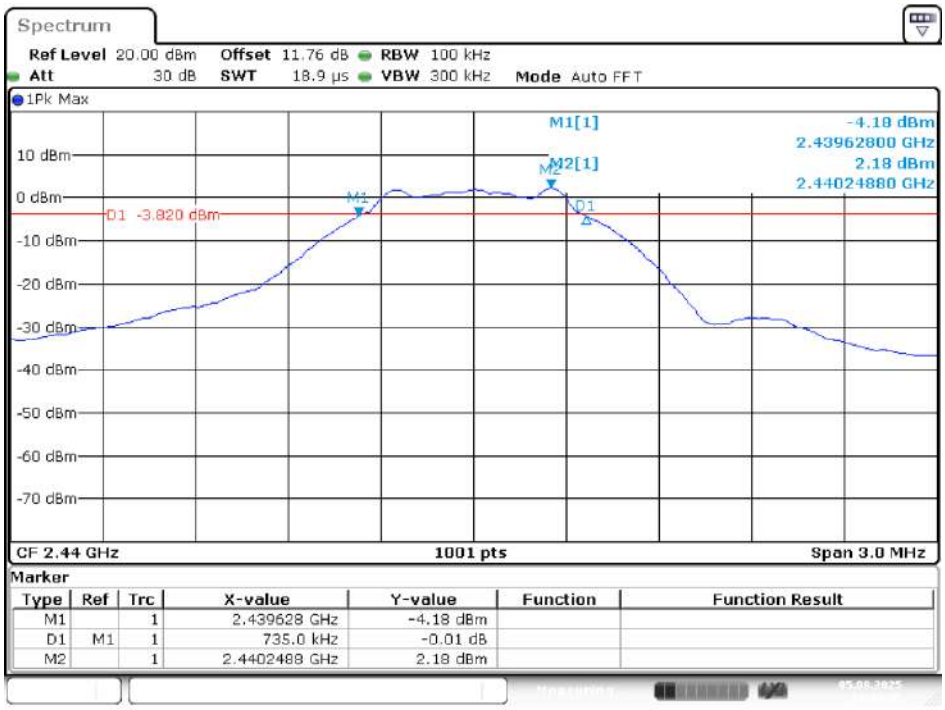
SRD Mode

Low Channel



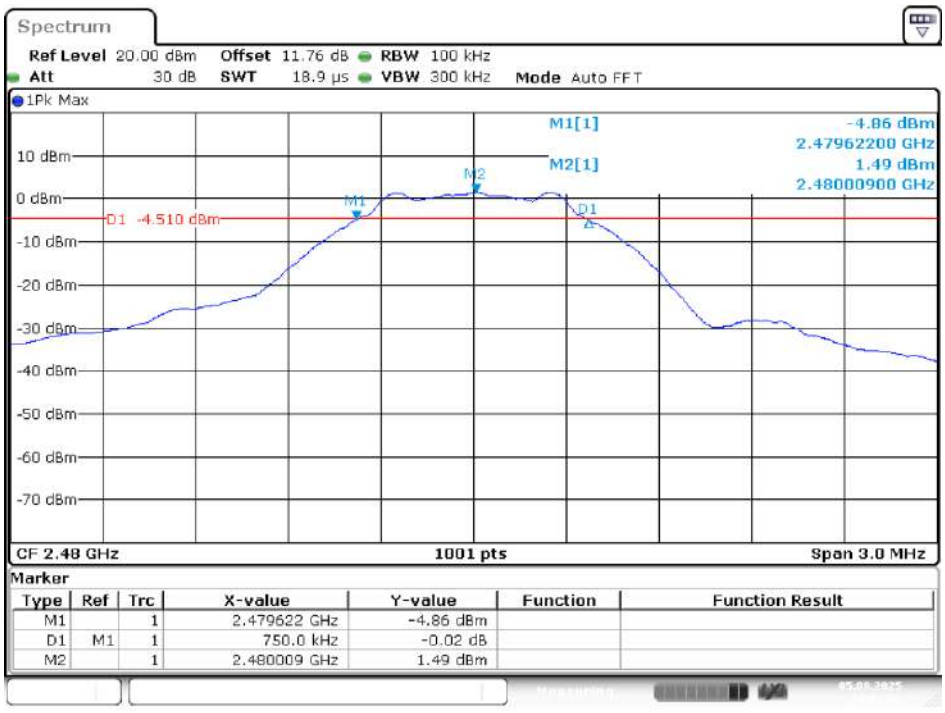
Date: 5.AUG.2025 14:46:37

Middle Channel



Date: 5.AUG.2025 14:49:45

High Channel

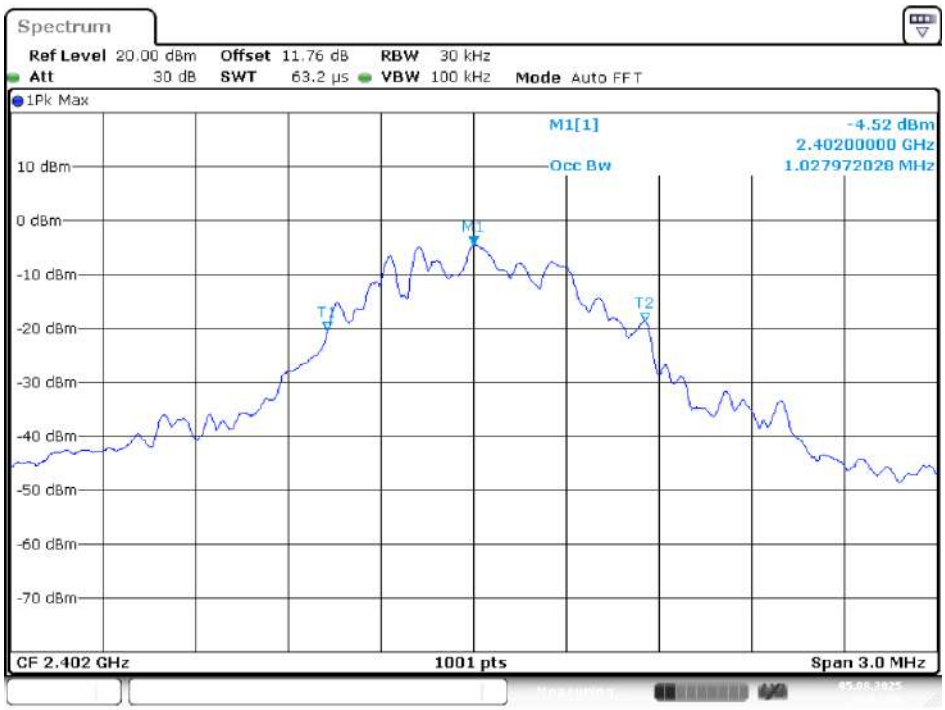


Date: 5.AUG.2025 14:51:03

99% Bandwidth

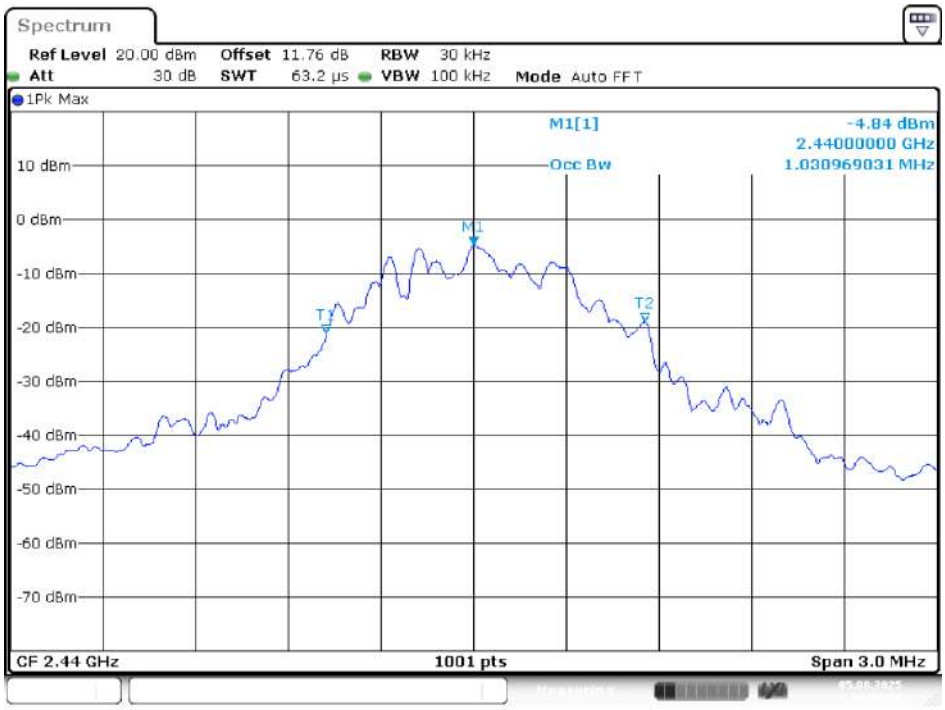
BLE(1M) Mode

Low Channel



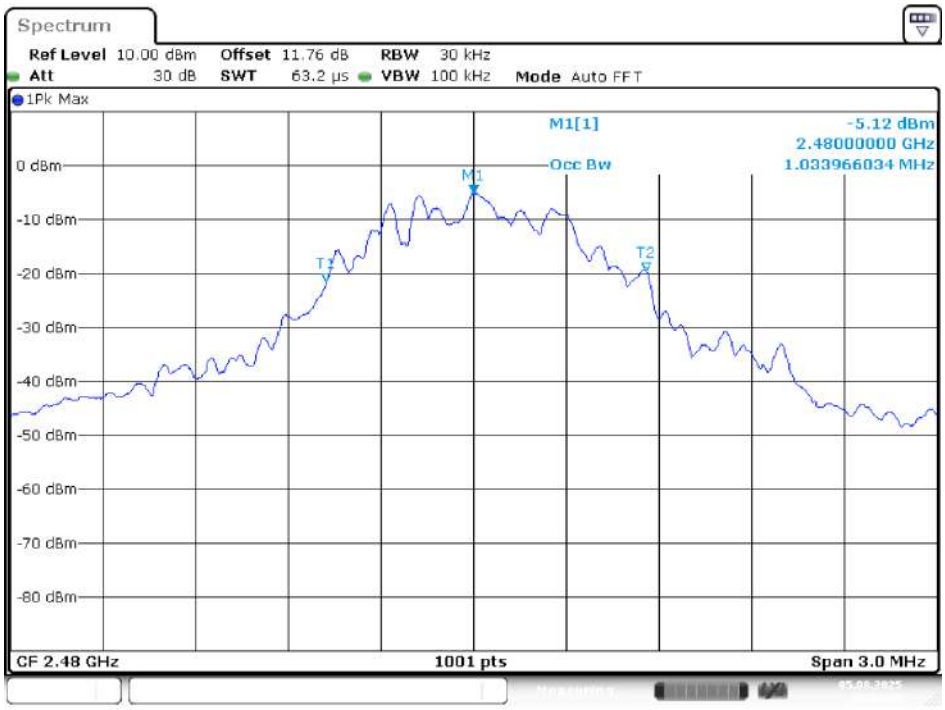
Date: 5.AUG.2025 15:51:36

Middle Channel



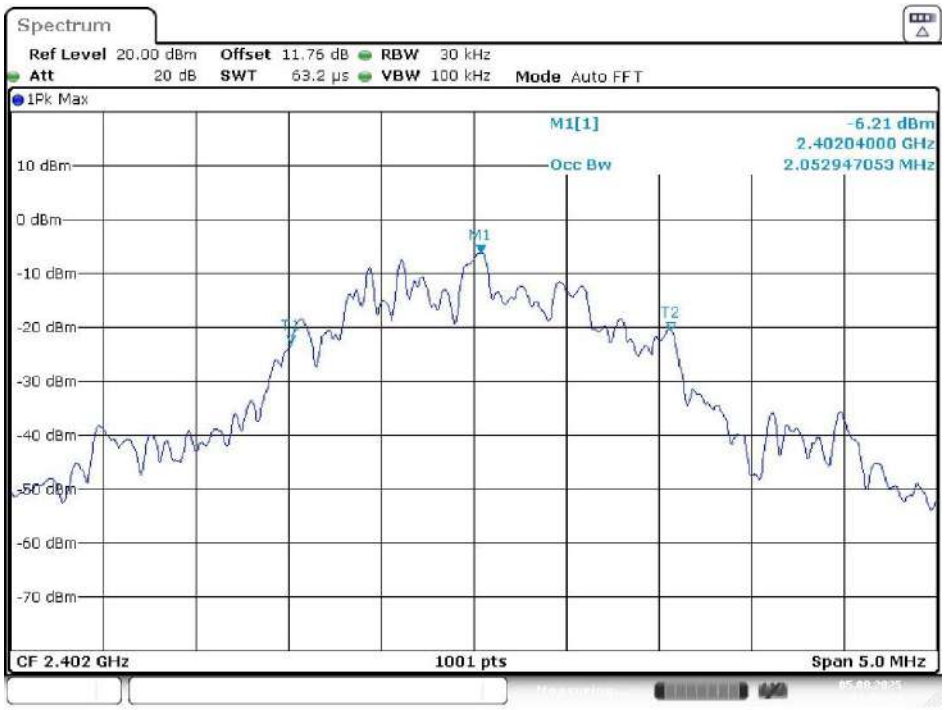
Date: 5.AUG.2025 15:53:09

High Channel

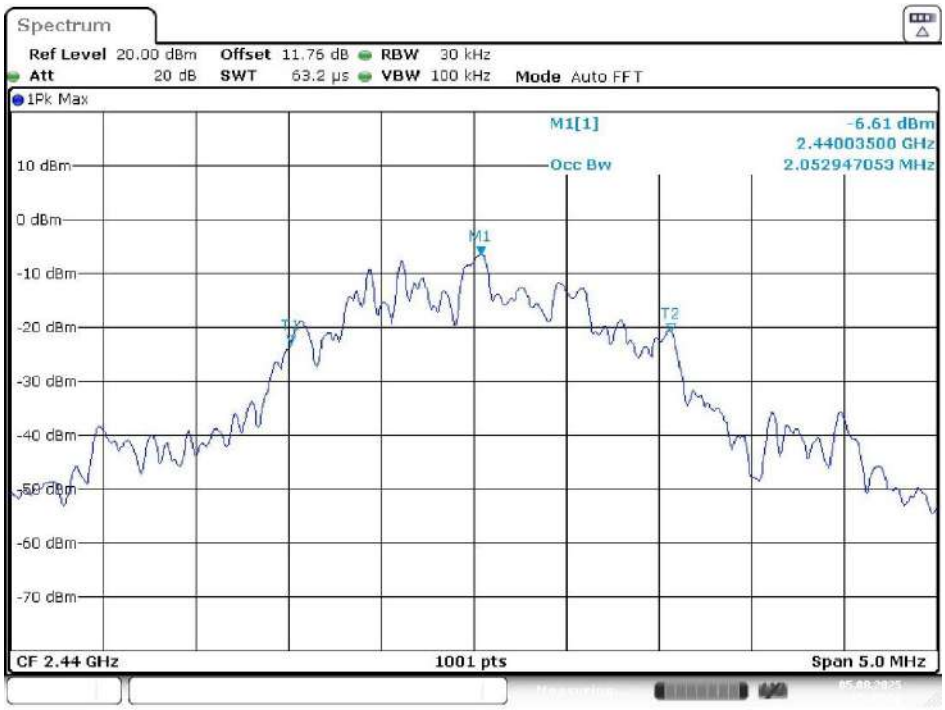


BLE(2M) Mode

Low Channel

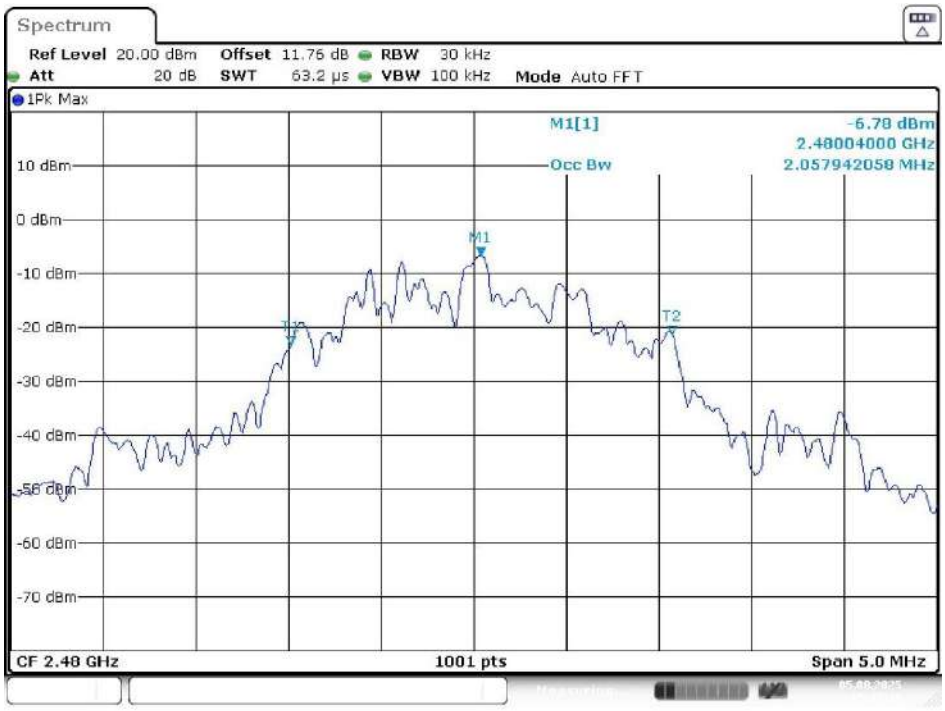


Middle Channel



Date: 5.AUG.2025 15:02:51

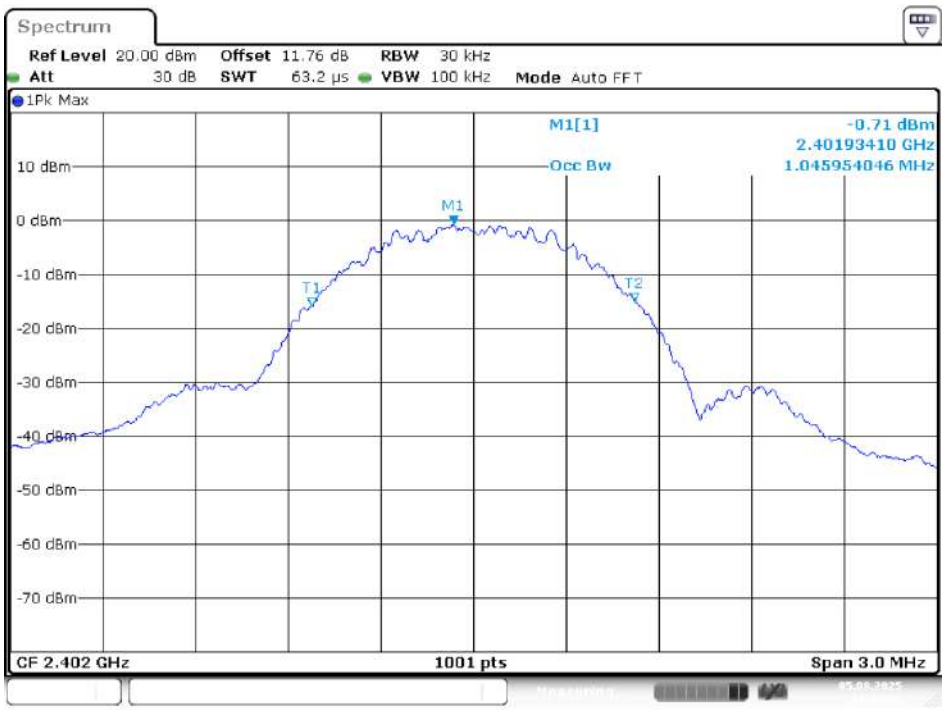
High Channel



Date: 5.AUG.2025 15:17:18

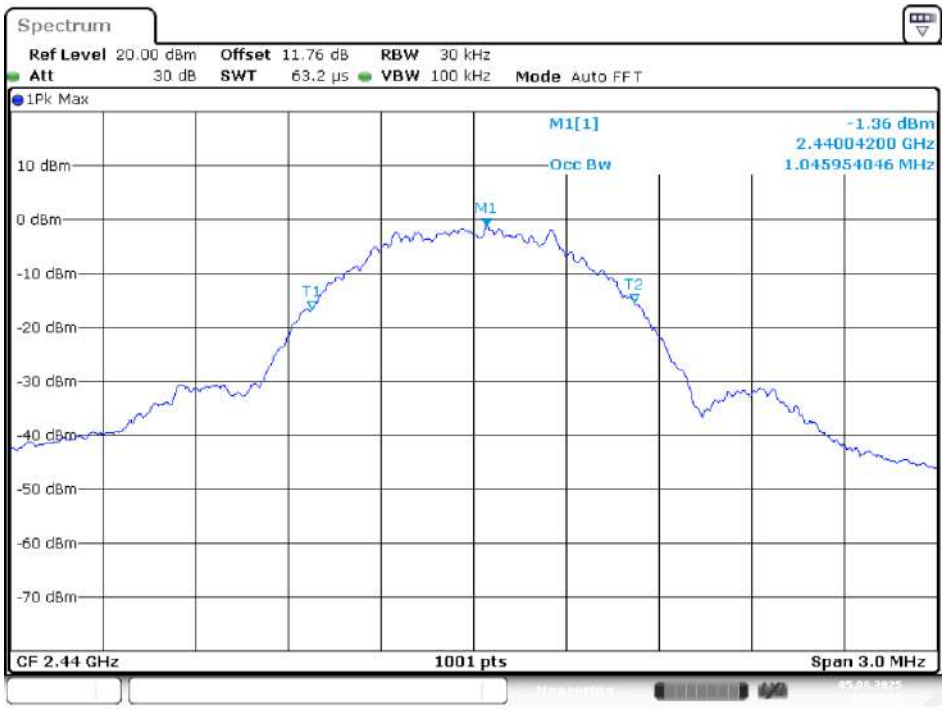
SRD Mode

Low Channel



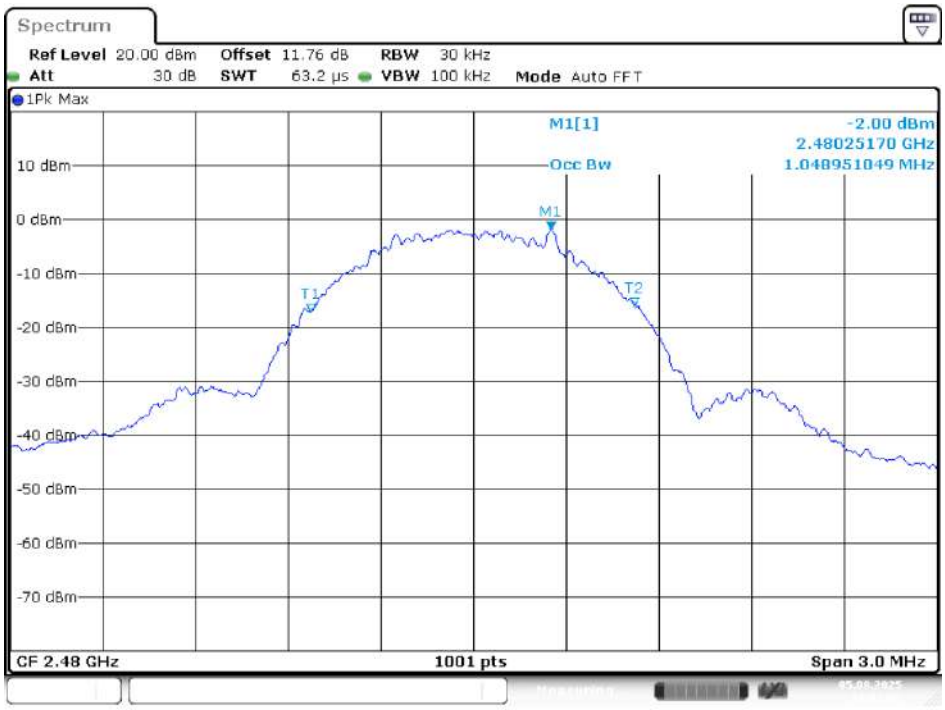
Date: 5.AUG.2025 14:47:01

Middle Channel



Date: 5.AUG.2025 14:50:10

High Channel



9 FCC §15.247(b)(3) & RSS-247 §5.4(d) – Maximum Output Power

9.1 Applicable Standard

According to FCC §15.247(b) (3).

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.

According to RSS-247 §6.3.2.

For DTS operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W. For DTS operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W, except as provided in section 6.5 a) and b).

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power.

9.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023, section 11.9.1.2

1. Place the EUT on a bench and set it in transmitting mode.

2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to measuring equipment.

9.3 Test Results

Conducted Peak Output Power

Channel	Frequency (MHz)	Conducted Peak Output Power (dBm)	Limit (dBm)	Antenna Gain (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm) (For IC)
BLE(1M) Mode						
Low	2402	0.37	30	-0.07	0.300	36
Middle	2440	0.28	30	-0.07	0.210	36
High	2480	0.06	30	-0.07	-0.010	36
BLE(2M) Mode						
Low	2402	0.39	30	-0.07	0.320	36
Middle	2440	0.28	30	-0.07	0.210	36
High	2480	0.12	30	-0.07	0.050	36
SRD Mode						
Low	2402	3.64	30	-0.07	3.570	36
Middle	2440	3.19	30	-0.07	3.120	36
High	2480	2.78	30	-0.07	2.710	36

10 FCC §15.247(d) & RSS-247 §5.5 – 100 kHz Bandwidth of Frequency Band Edge

10.1 Applicable Standard

According to FCC §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. 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)).

According to RSS-247 §5.5.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

10.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023 Section 11.11

1. Set the center frequency and span to encompass frequency range to be measured.
2. Set the RBW = 100 kHz.
3. Set the VBW ≥ [3 × RBW].
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

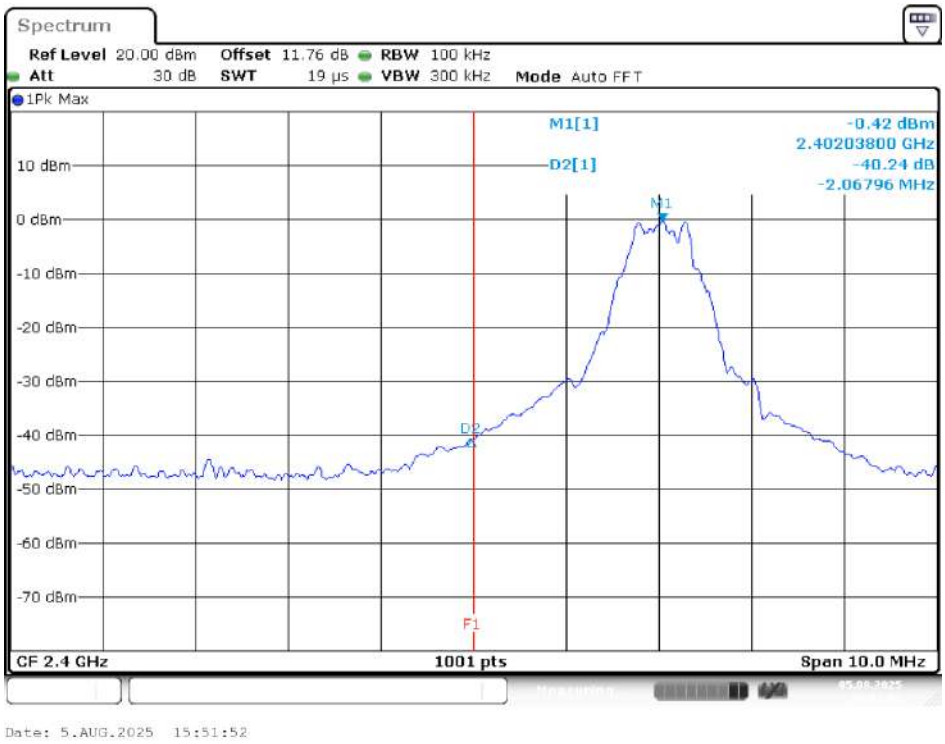
10.3 Test Results

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
BLE(1M) Mode				
Low	2402	40.24	≥ 20	PASS
High	2480	45.27	≥ 20	PASS
BLE(2M) Mode				
Low	2402	31.04	≥ 20	PASS
High	2480	43.58	≥ 20	PASS
SRD Mode				
Low	2402	40.95	≥ 20	PASS
High	2480	47.91	≥ 20	PASS

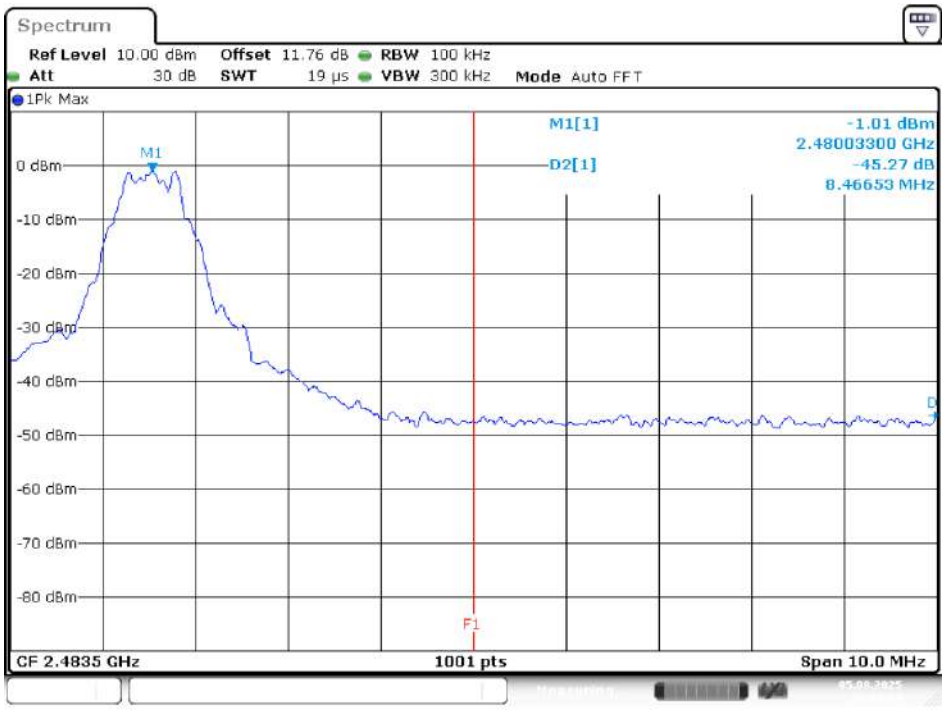
Please refer to the following plots

BLE(1M) Mode

Band Edge, Low Channel



Band Edge, High Channel



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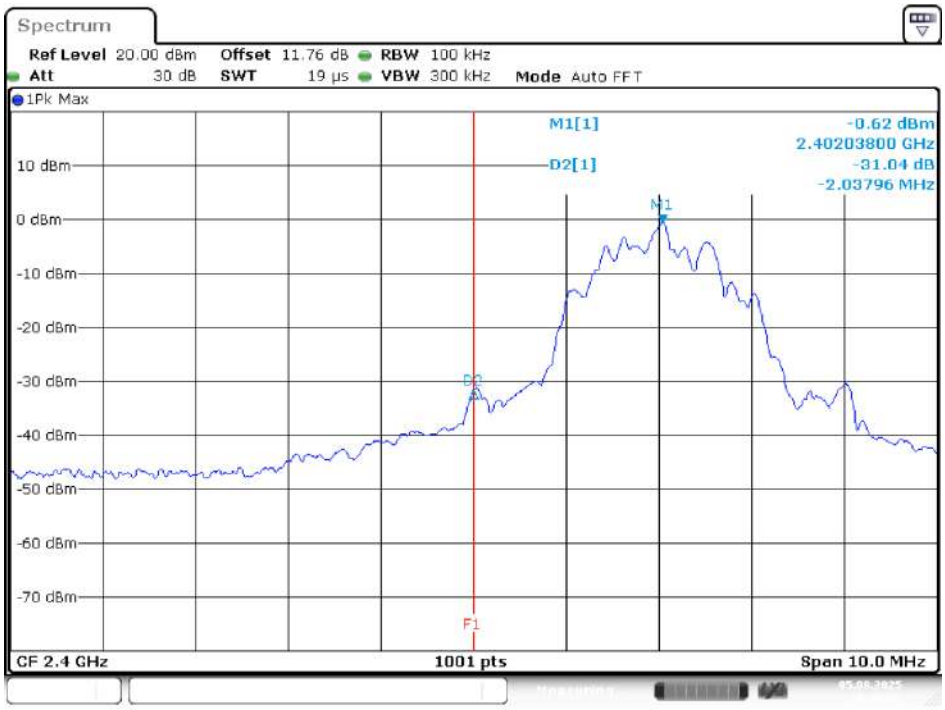
BLE(2M) Mode

Band Edge, Low Channel



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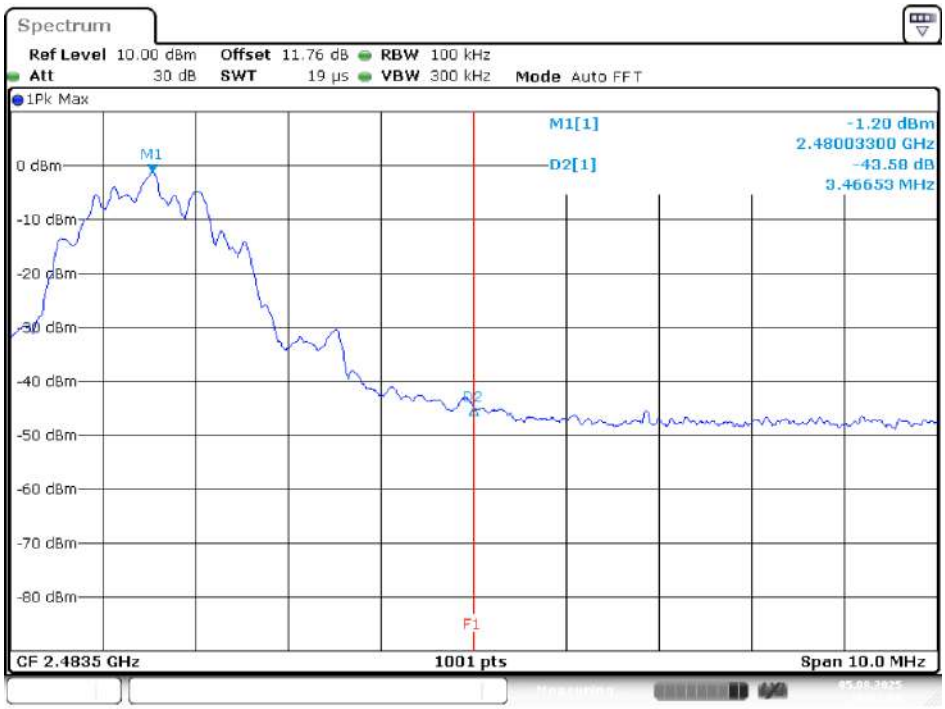
Band Edge, High Channel



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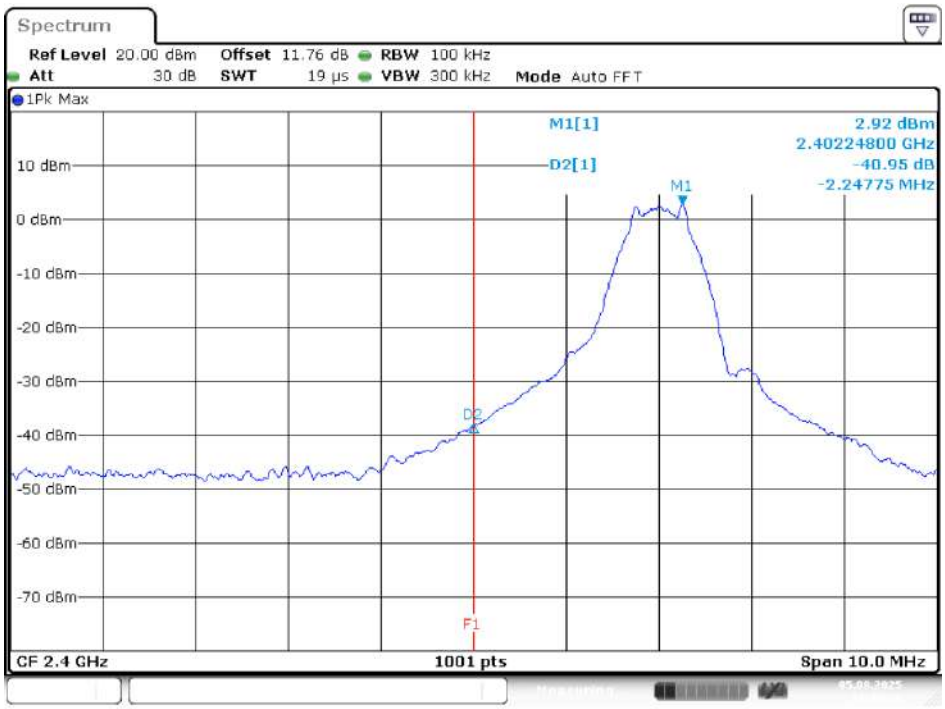
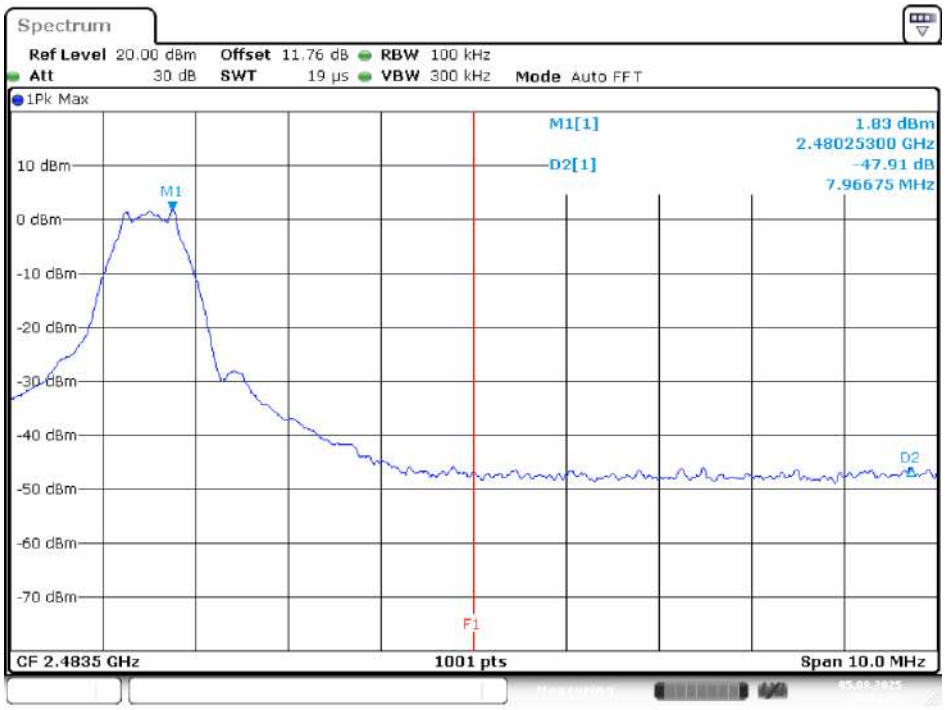
SRD Mode

Band Edge, Low Channel



Date: 5.AUG.2025 14:47:16

Band Edge, High Channel



11 FCC §15.247(e) & RSS-247 §5.2(b) – Power Spectral Density

11.1 Applicable Standard

According to FCC §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.

According to RSS-247 §5.2(b).

The transmitter power spectral density conducted from the transmitter 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 section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

11.2 Test Procedure

According to ANSI C63.10-2020+Cor.1-2023, section 11.10.2

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ [3 × RBW].
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat

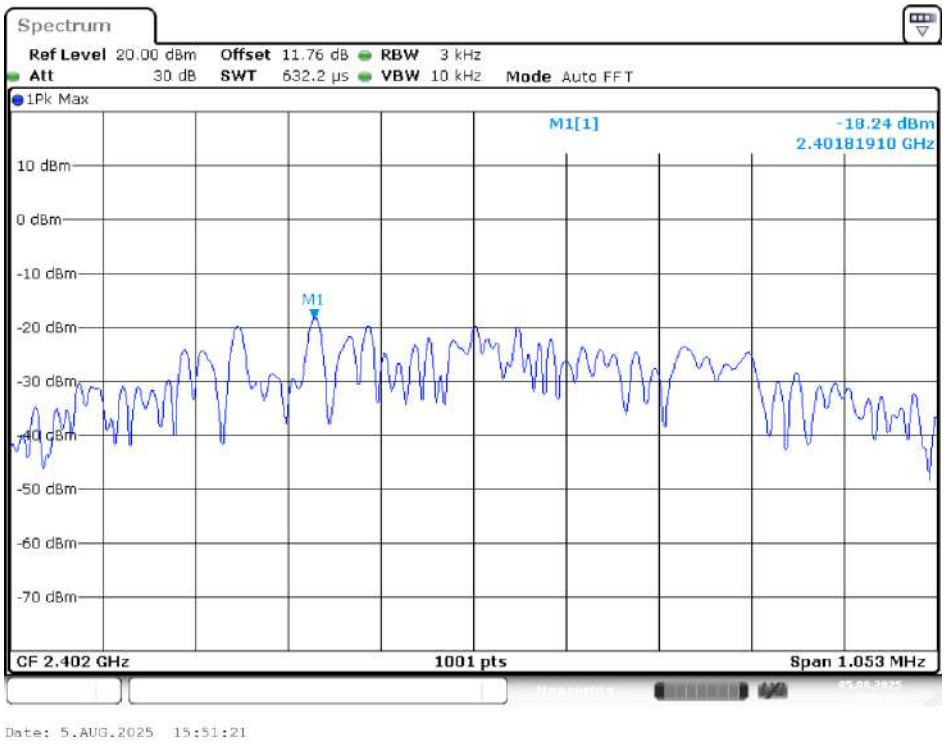
11.3 Test Results

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Limit (dBm/3 kHz)	Result
BLE(1M) Mode				
Low	2402	-18.24	8	PASS
Middle	2440	-18.48	8	PASS
High	2480	-18.83	8	PASS
BLE(2M) Mode				
Low	2402	-23.54	8	PASS
Middle	2440	-23.74	8	PASS
High	2480	-23.9	8	PASS
SRD Mode				
Low	2402	-10.91	8	PASS
Middle	2440	-10.96	8	PASS
High	2480	-11.40	8	PASS

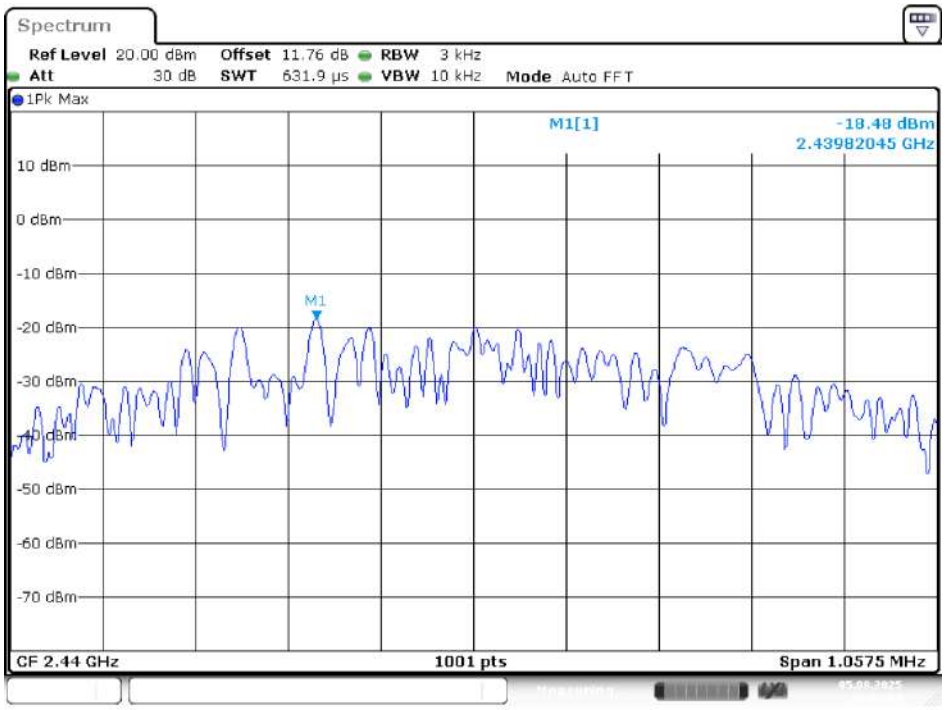
Please refer to the following plots

BLE(1M) Mode

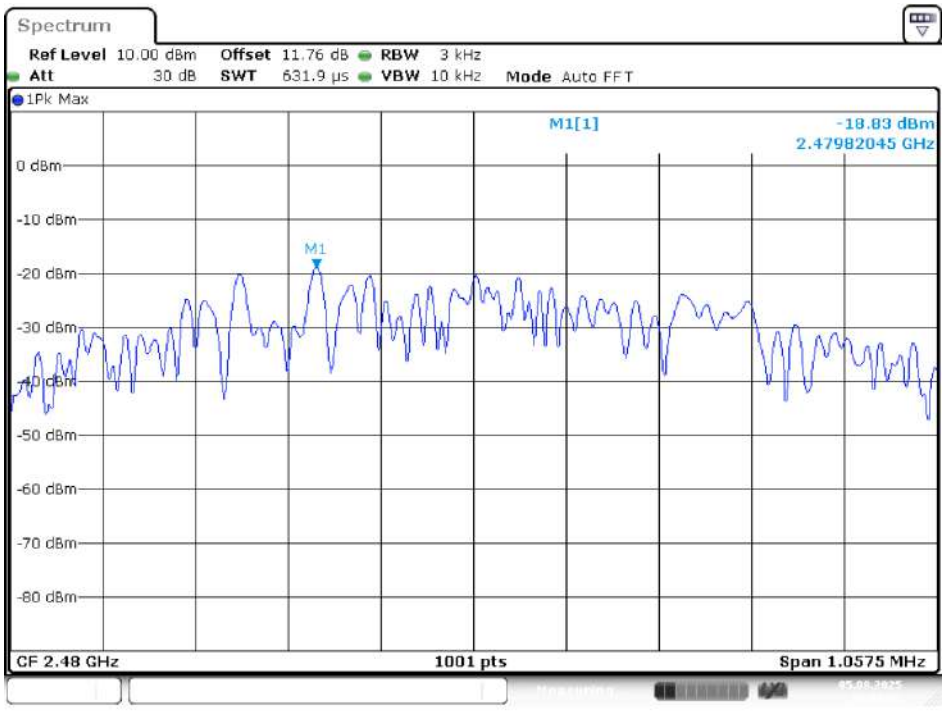
Low Channel



Middle Channel

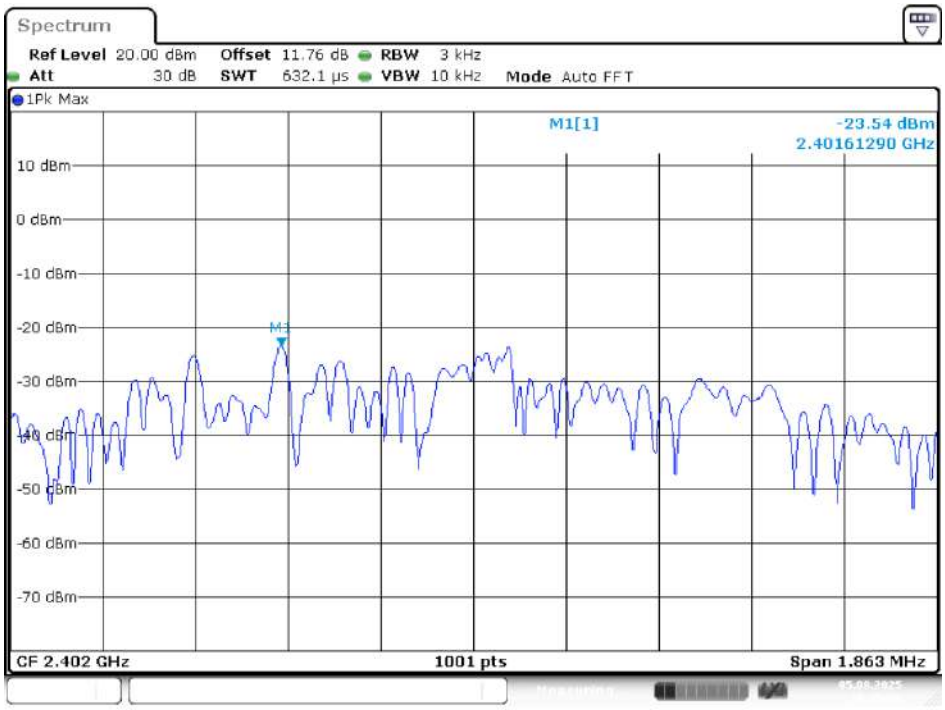


High Channel



BLE(2M) Mode

Low Channel



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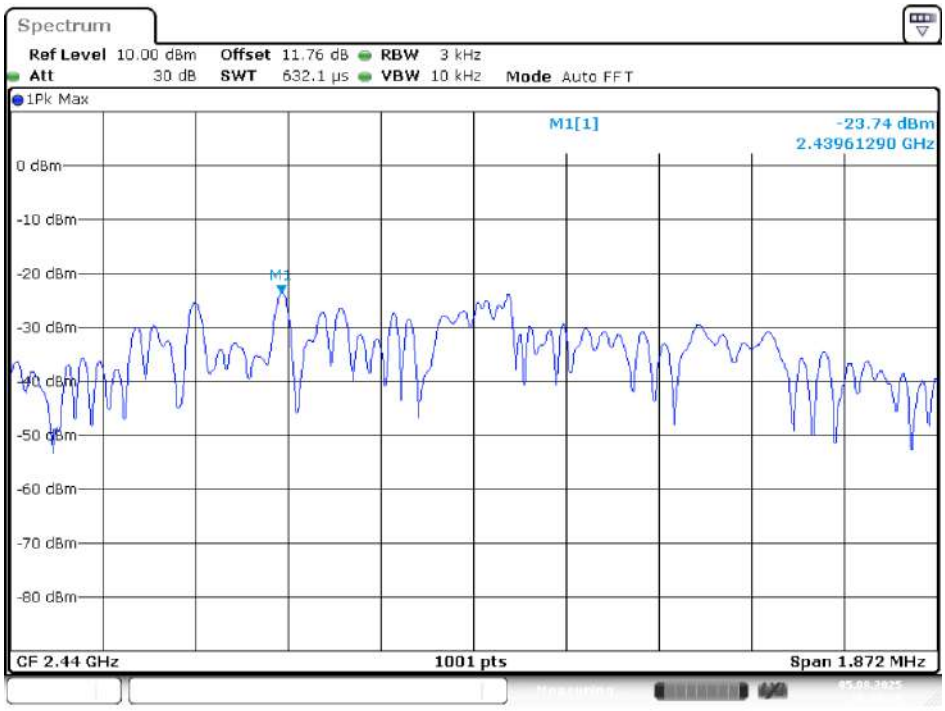
Middle Channel



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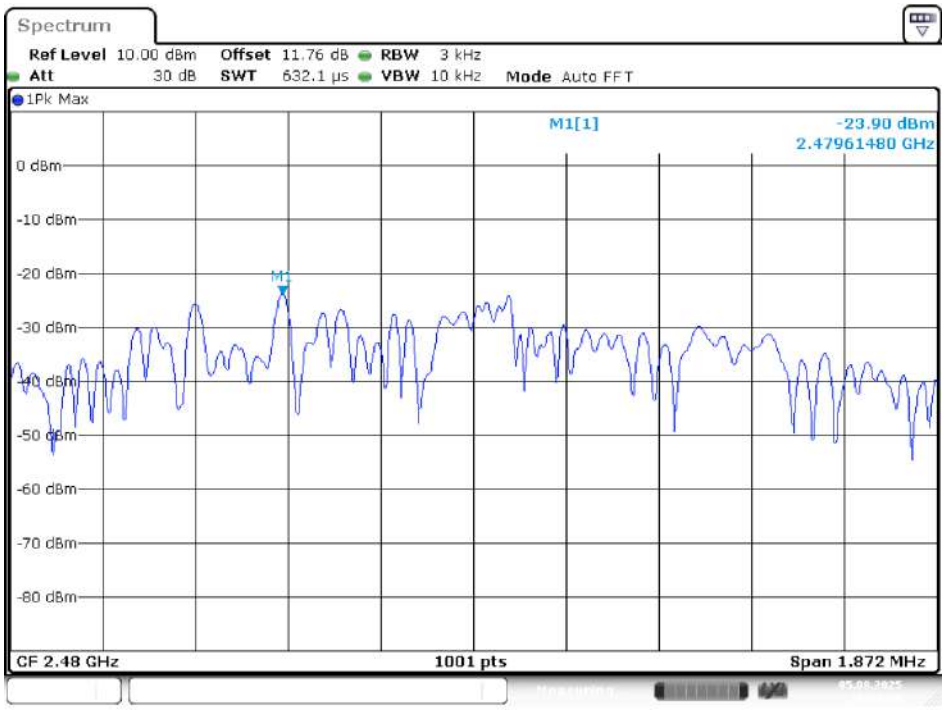
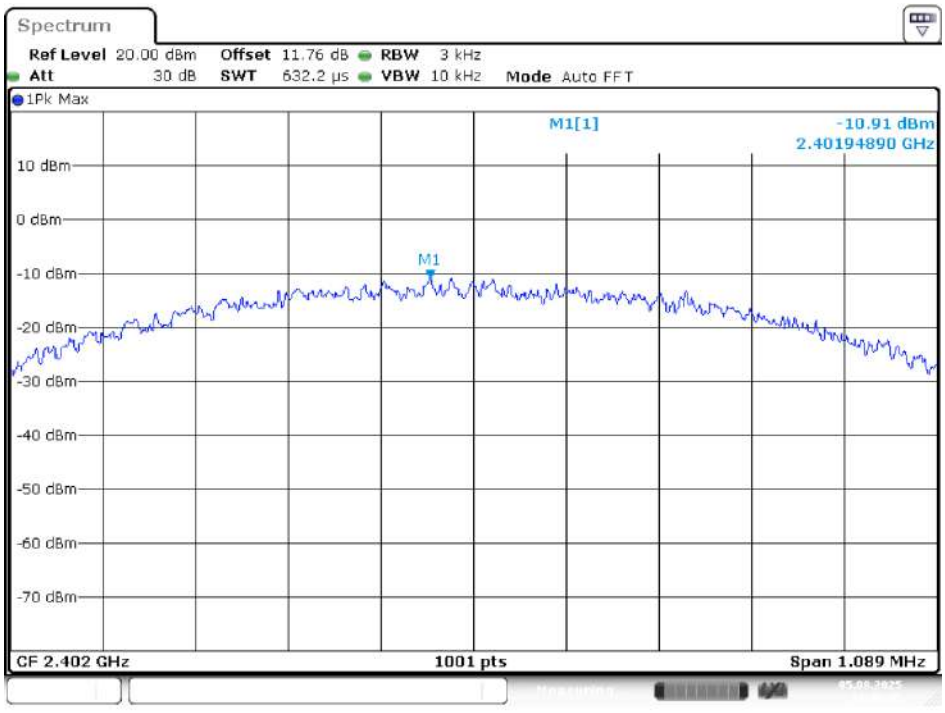
High Channel

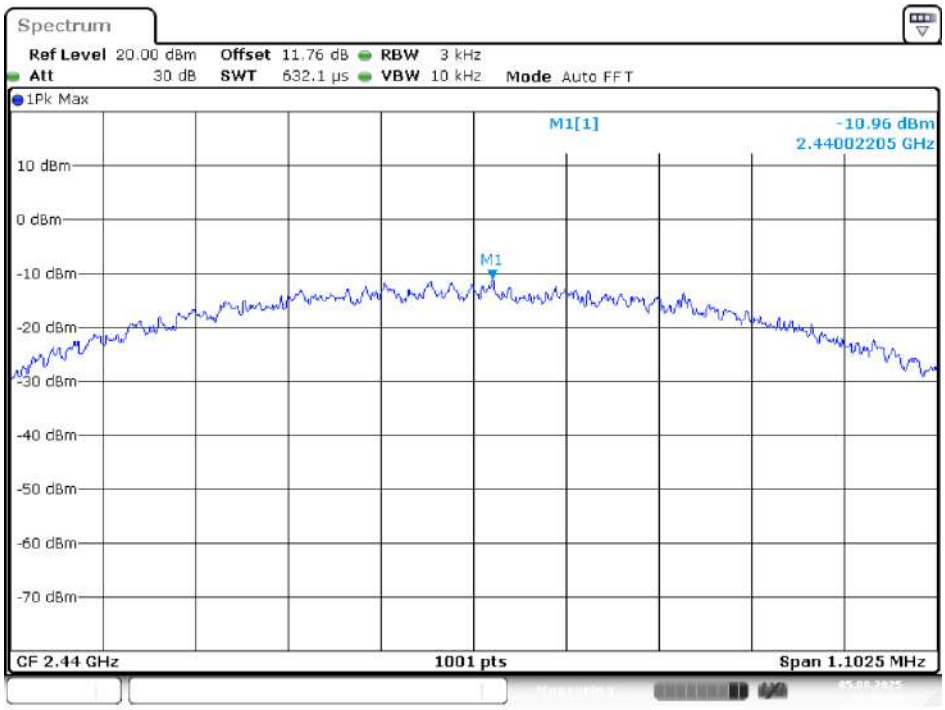


SRD Mode

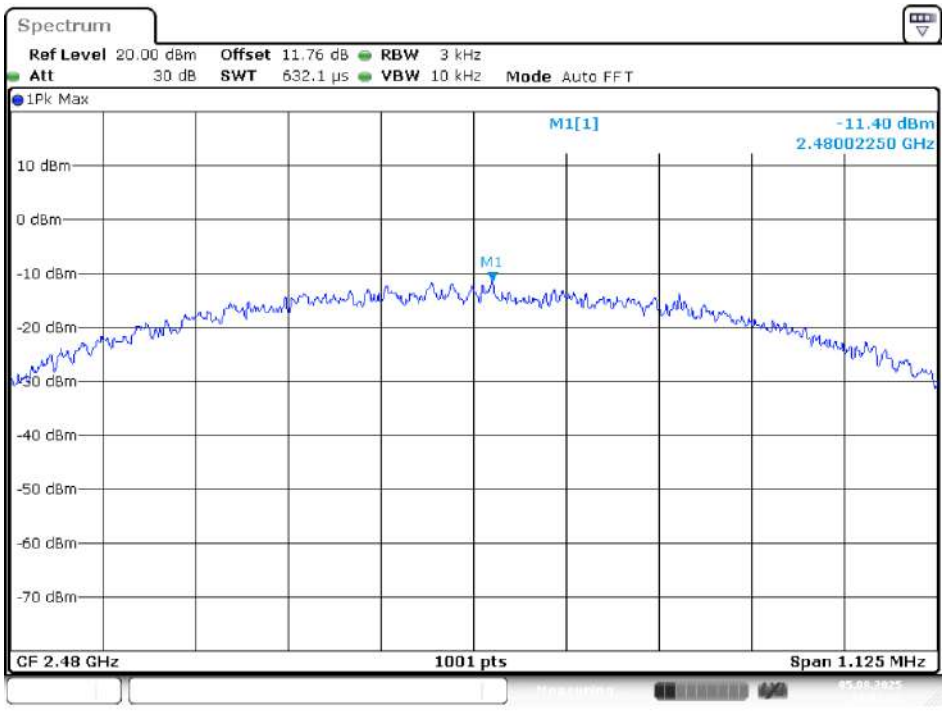
Low Channel



Middle Channel



High Channel



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