

RF Test Report

Test Report Number BBN-26061721-LC-FCC-RF-BLE

Applicant Beta Bionics
Applicant Address 11 Hughes, Irvine, CA 92618, USA
Product Name Mint
Model (s) TA000039
FCC ID 2BW2P-TA39
Date of Receipt 06/04/2026
Date of Test 06/04/2026- 06/12/2026
Report Issue Date 06/17/2026
Test Standards 47 CFR Part 15.247
Test Result PASS



Issued by:

Vista Compliance Laboratories
 1261 Puerta Del Sol, San Clemente, CA 92673 USA
www.vista-compliance.com



Minoush Niknam (Test Engineer)



Jerry Bai (Technical Manager)

This report is for the exclusive use of the applicant. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. Note that the results contained in this report pertain only to the test samples identified herein, and the results relate only to the items tested and the results that were obtained in the period between the date of initial receipt of samples and the date of issue of the report. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested and the results thereof based upon the information provided to us. The applicant has 60 days from date of issuance of this report to notify us of any material error or omission. Failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by any government agencies. This report is not to be reproduced by any means except in full and in any case not without the written approval of Vista Laboratories.

REVISION HISTORY

Report Number	Version	Description	Issued Date
BBN-26061721-LC-FCC-RF-BLE	01	Initial report	06/17/2026

TABLE OF CONTENTS

1	TEST SUMMARY	4
2	GENERAL INFORMATION.....	5
2.1	Applicant.....	5
2.2	Product information.....	5
2.3	Test standard and method	5
3	TEST SITE INFORMATION.....	5
4	MODIFICATION OF EUT / DEVIATIONS FROM STANDARDS.....	6
5	TEST CONFIGURATION AND OPERATION	6
5.1	EUT Test Configuration.....	6
5.2	Supporting Equipment	7
6	UNCERTAINTY OF MEASUREMENT	7
7	TEST RESULTS.....	8
7.1	Antenna Requirement	8
7.2	DTS (6 dB) Bandwidth	9
7.3	Maximum Output Power.....	12
7.4	Power Spectral Density.....	15
7.5	Conducted Band-Edge	18
7.6	Radiated Spurious Emissions into Restricted Frequency Bands	22
8	EUT AND TEST SETUP PHOTOS.....	34
9	TEST INSTRUMENT LIST	35

1 Test Summary

Test Item	Test Requirement	Test Method	Result
Antenna Requirement	47 CFR Part 15.247	ANSI C63.10 (2020)	Pass
DTS (6 dB) Channel Bandwidth	47 CFR Part 15.247	ANSI C63.10 (2020)	Pass
Conducted Maximum Output Power	47 CFR Part 15.247	ANSI C63.10 (2020)	Pass
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10 (2020)	Pass
Conducted Band-Edge & Unwanted Emissions	47 CFR Part 15.247	ANSI C63.10 (2020)	Pass
Radiated Emissions & Unwanted Emissions into Restricted Frequency Bands	47 CFR Part 15.247	ANSI C63.10 (2020)	Pass
AC Power Line Conducted Emissions	47 CFR Part 15.247	ANSI C63.10 (2020)	N/A

Note:

The EUT is not directly or indirectly connected to the public AC power supply, therefore, AC Power Line Conducted Emissions testing is not applicable.

2 General Information

2.1 Applicant

Applicant	Beta Bionics
Applicant address	11 Hughes, Irvine, CA 92618, CA USA
Manufacturer	Beta Bionics
Manufacturer Address	11 Hughes, Irvine, CA 92618, CA USA

2.2 Product information

Product Name	Mint
Product Description	The EUT is the Mint Mini Insulin Therapy system, a wearable medical device with Bluetooth Low Energy (BLE) communication
Model Number	TA000039
Family Models	N/A
Serial Number	2999008
Frequency Band	BLE: 2402-2480MHz
Type of modulation	BLE: GFSK
Equipment Class	DTS
Antenna Information	ceramic chip antenna, P/N ANT1608LL14R2400A, 2.03 dBi Max gain.
Clock Frequencies	32 MHz HF crystal, the BLE CPU speed is 64mhz
Input Power	3.0 VDC regulated supply from host system board
Power Adapter Manufacturer/Model	N/A
Power Adapter SN	N/A
Additional Info	N/A

2.3 Test standard and method

Test standard	47 CFR Part 15.247
Test method	ANSI C63.10-2020

3 Test Site Information

Lab performing tests	Vista Laboratories, Inc.
Lab Address	1261 Puerta Del Sol, San Clemente, CA 92673 USA
Phone Number	+1 (949) 393-1123
Website	www.vista-compliance.com

Test Condition	Temperature	Humidity	Atmospheric Pressure
RF Testing	23.2°C	37.8%	1001.8 mbar
Radiated Emission Testing	23.2°C	37.8%	1001.8 mbar

4 Modification of EUT / Deviations from Standards

The nRF52 DK was used to power and communicate with the EUT via Bluetooth Low Energy (BLE) for compliance evaluation purposes. The test software is used to set the EUT to different transmission modes in terms of test channel, data rate, etc.

5 Test Configuration and Operation

5.1 EUT Test Configuration

The EUT is an engineering test sample loaded with RF testing firmware specifically designed to support the RF TX/RX measurements in different aspects.

The following software was used for testing and to monitor EUT performance

Software	Description
EMISoft Vasona	EMC/RF Spurious emission test software used during testing
nRF connect	Used to input commands to control the BLE transmission of the EUT

Power Setting as Below:

BLE_1Mbps		BLE_2Mbps	
Channel	Power Setting	Channel	Power Setting
37	8	37	8
19	8	19	8
39	8	39	8

5.2 Supporting Equipment

Description	Manufacturer	Model #	Serial #	Remark
Laptop	MacBook Pro	A2442	PCJ7V2J7WM	Used to run test software during testing
BLE Development Kit	Nordic Semiconductor	nRF52DK	N/A	Used to power and control the EUT via BLE during testing

6 Uncertainty of Measurement

Test item	Measurement Uncertainty (dB)
RF Output Power (Conducted)	±1.2 dB
Power Spectral Density	±0.9 dB
Unwanted Emission (conducted)	±2.6 dB
Occupied Channel Bandwidth	±5 %
Radiated Emission (9KHz-30MHz)	±3.5 dB
Radiated Emission (30MHz-1GHz)	±4.6 dB
Radiated Emission (1-18GHz)	±4.9 dB
Radiated Emission (18-40GHz)	±3.5 dB

7 Test Results

7.1 Antenna Requirement

7.1.1 Requirement

Per § 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 use of a standard antenna jack or electrical connector is prohibited.

7.1.2 Result

Analysis:

- The antenna is a permanently mounted ceramic chip antenna installed on the PCB and is not accessible or replaceable by the end user. The antenna gain is ,2.03 dBi Max gain.

Conclusion:

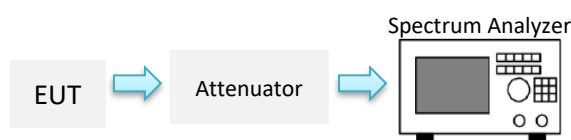
- The EUT complies with the antenna requirement specified in 47 CFR §15.203.

7.2 DTS (6 dB) Bandwidth

7.2.1 Requirement

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

7.2.2 Test Setup



7.2.3 Test Procedure

According to section 8.2, option 2, in subclause 11.8 of ANSI C63.10-2020:

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 above (i.e., RBW = 100 kHz, VBW $\geq 3 \times$ RBW, 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.

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Use automatic bandwidth measurement capability on instrument to obtain BW result.

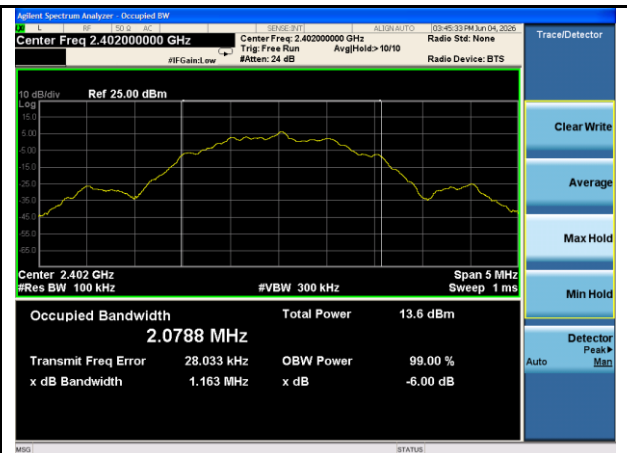
7.2.4 Test Result

Mode	Data rate	Frequency (MHz)	Measured Bandwidth (KHz)	Minimum Bandwidth (KHz)	Result
BLE	1Mbps	2402	718.0	500	Pass
		2440	712.1	500	Pass
		2480	709.2	500	Pass
BLE	2Mbps	2402	1163	500	Pass
		2440	1163	500	Pass
		2480	1162	500	Pass

7.2.5 Test Plots



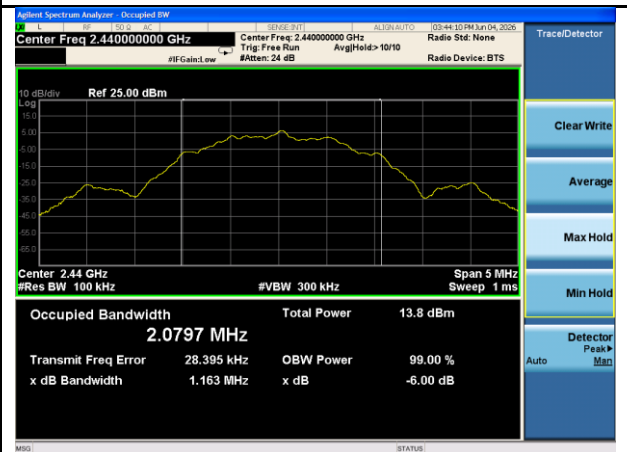
BLE-DTS BW-Low-1Mbps



BLE-DTS BW-Low-2Mbps



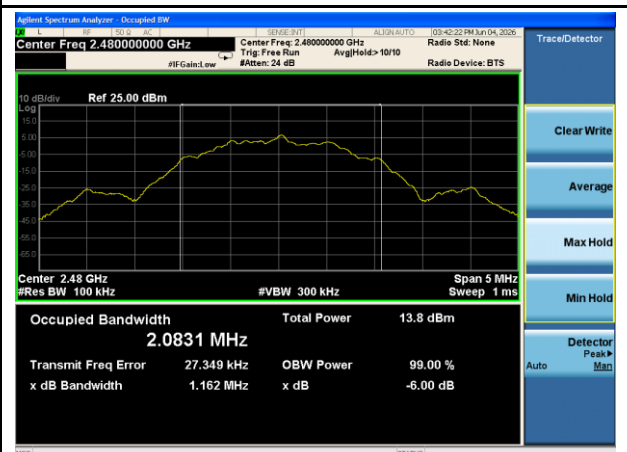
BLE-DTS BW-Mid-1Mbps



BLE-DTS BW-Mid-2Mbps



BLE-DTS BW-HIGH-1Mbps



BLE-DTS BW-High-2Mbps

7.3 Maximum Output Power

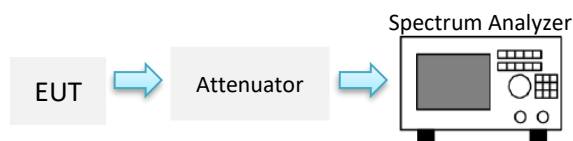
7.3.1 Requirement

§ 15.247 (b)(3)

or systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: the maximum output power is 1 Watt.

If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.3.2 Test Setup



7.3.3 Test Procedure

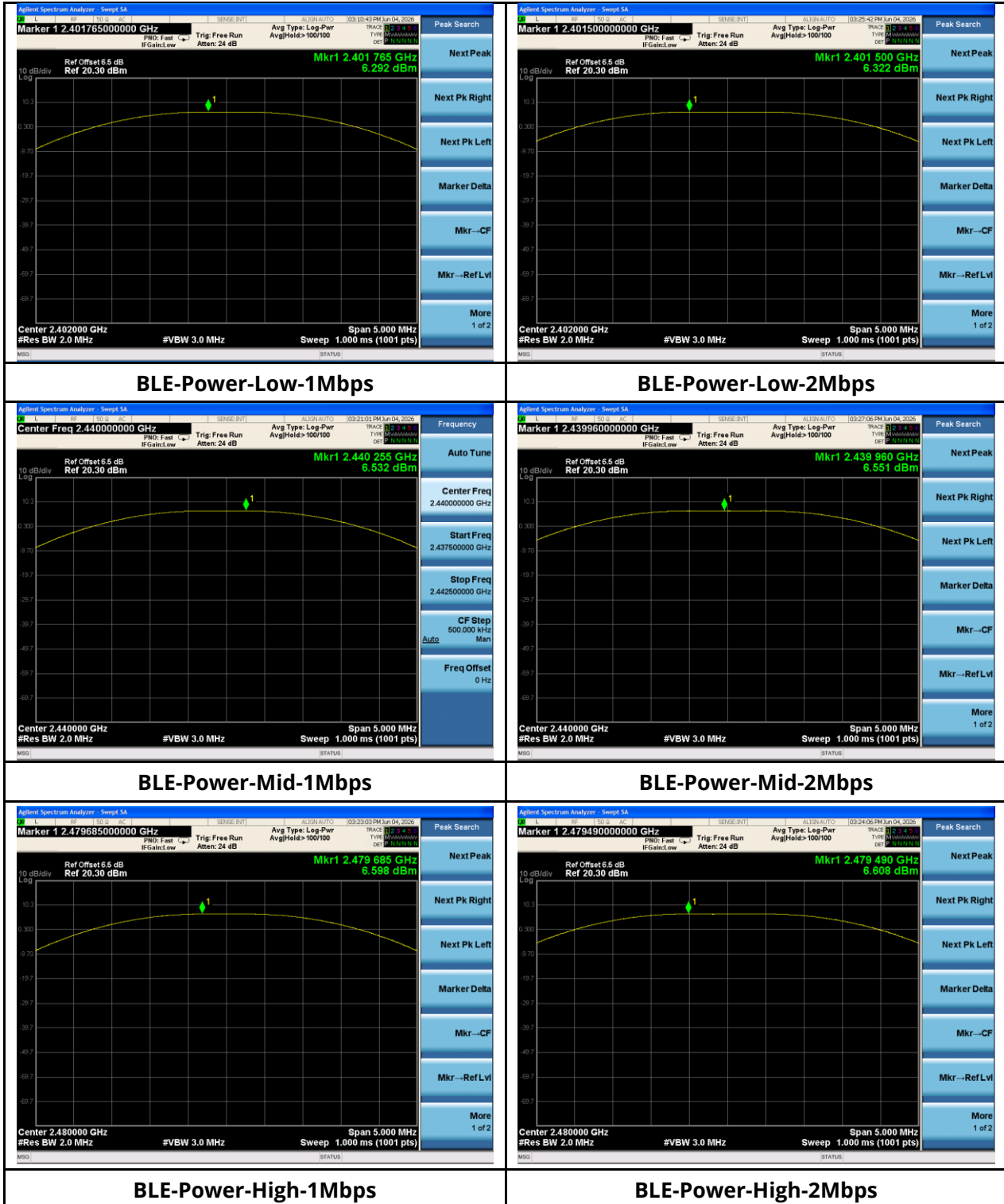
Power measurement is according to clause 11.9.1.1 of ANSI C63.10-2020 Maximum peak output power measurement method.

1. Set the RBW $\geq$ DTS bandwidth.
2. Set VBW $\geq$ $[3 \times \text{RBW}]$.
3. Set span $\geq$ $[3 \times \text{RBW}]$.
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.

7.3.4 Test Result

Mode	Data rate	Frequency (MHz)	Measured Output Power (dBm)	Max Output Power (dBm)	Result
BLE	1Mbps	2402	6.292	30	Pass
		2440	6.532	30	Pass
		2480	6.598	30	Pass
BLE	2Mbps	2402	6.322	30	Pass
		2440	6.551	30	Pass
		2480	6.608	30	Pass

7.3.5 Test Plots



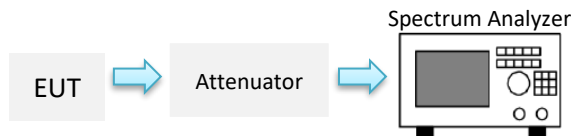
7.4 Power Spectral Density

7.4.1 Requirement

§ 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 is used to determine the power spectral density.

7.4.2 Test Setup



7.4.3 Test Procedure

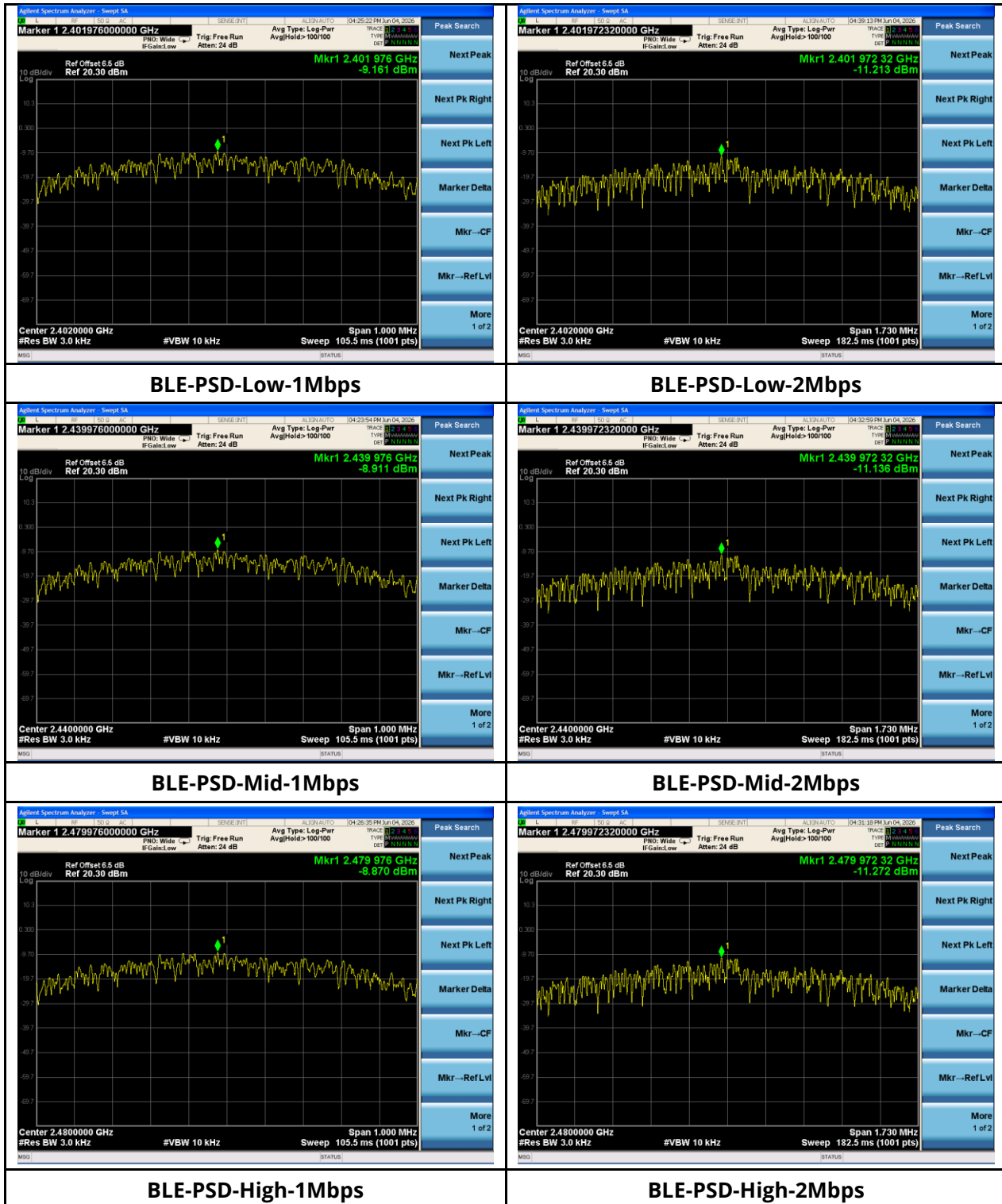
According to subclause 11.10.2 PKPSD of ANSI C63.10-2020:

1. Set analyser centre frequency to DTS channel centre frequency.
2. Set the span to 1.5 X DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
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 limit, reduce RBW (no less than 3 kHz) and repeat.

7.4.4 Test Result

Mode	Data rate	Frequency (MHz)	Measured PSD (dBm/3KHz)	Max PSD (dBm/3KHz)	Result
BLE	1Mbps	2402	-9.161	8	Pass
		2440	-8.911	8	Pass
		2480	-8.870	8	Pass
BLE	2Mbps	2402	-11.213	8	Pass
		2440	-11.136	8	Pass
		2480	-11.272	8	Pass

7.4.5 Test Plots



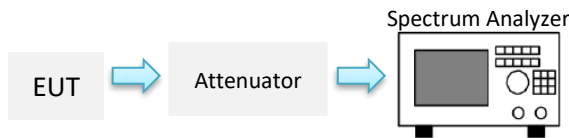
7.5 Conducted Band-Edge

7.5.1 Requirement

§ 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.

7.5.2 Test Setup



7.5.3 Test Procedure

According to ANSI C63.10-2020 clause 11.11

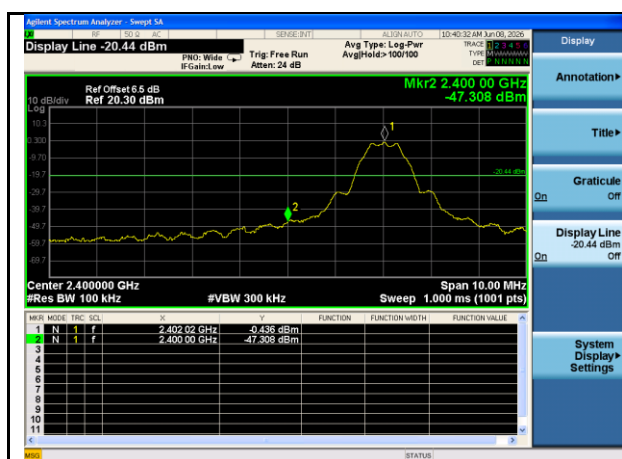
1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW=100 KHZ, VBW=300 KHZ, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 KHZ when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete and record the results in the test report.

7.5.4 Test Result

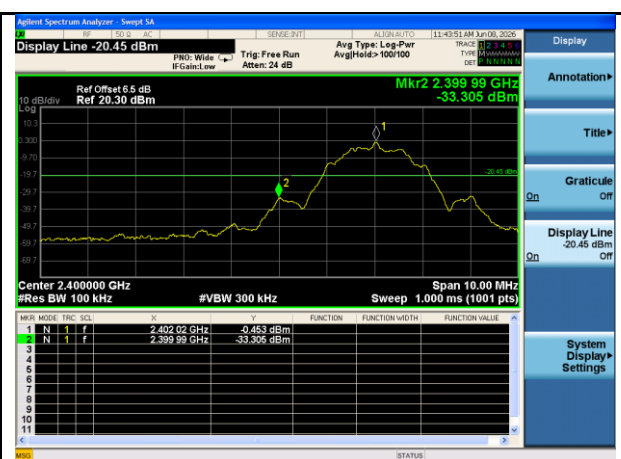
Conducted Band edge

Test Data

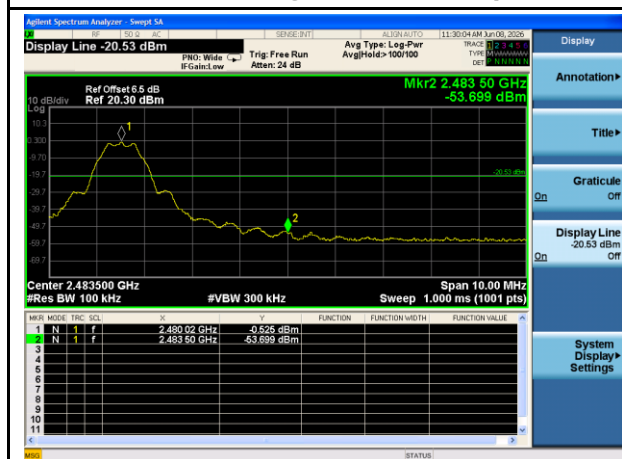
Mode	Data rate	Frequency (MHz)	Ref level (dBm)	Emission Level (dBm)	Limit (dBm)	Result
BLE	1Mbps	2402	-0.436	-47.308	-20.44	Pass
		2480	-0.525	-53.699	-20.53	Pass
BLE	2Mbps	2402	-0.453	-33.305	-20.45	Pass
		2480	-0.490	-32.807	-20.49	Pass



BLE-Band Edge-Low CH-1Mbps



BLE-Band Edge-Low CH-2Mbps



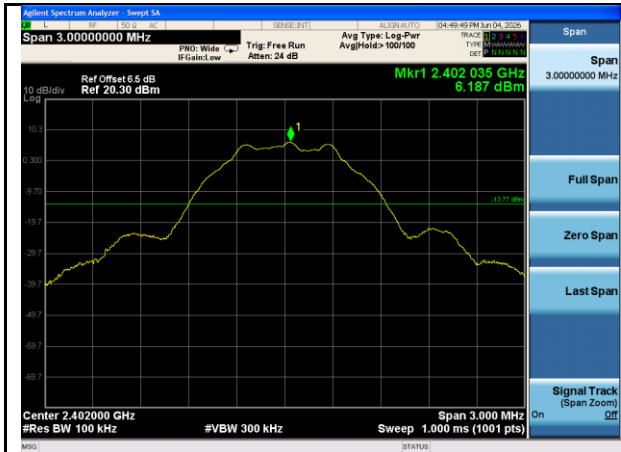
BLE-Band Edge -High CH-1Mbps



BLE-Band Edge -High CH-2Mbps

Conducted Spurious Emission (1Mbps):

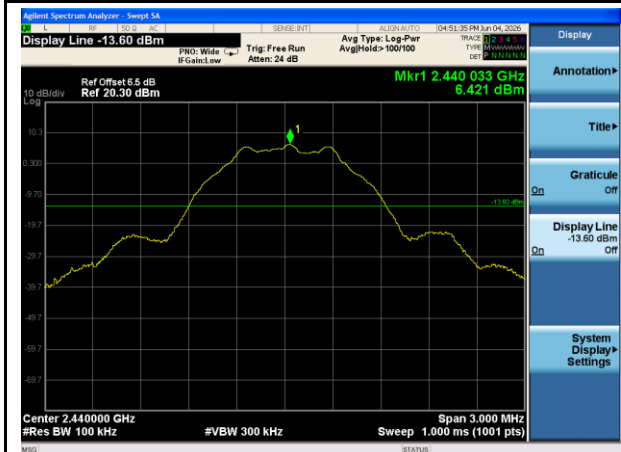
Mode	Data rate	Frequency (MHz)	Ref level (dBm)	Emission Level (dBm)	Limit (dBm)	Result
BLE	1Mbps	2402	6.187	-47.035	-13.77	Pass
		2440	6.421	-45.363	-13.60	Pass
		2480	6.540	-44.550	-13.46	Pass



BLE-CSE-Low-REF-1Mbps



BLE-CSE-Low-1Mbps



BLE-CSE-Mid-REF-1Mbps



BLE-CSE-Mid-1Mbps



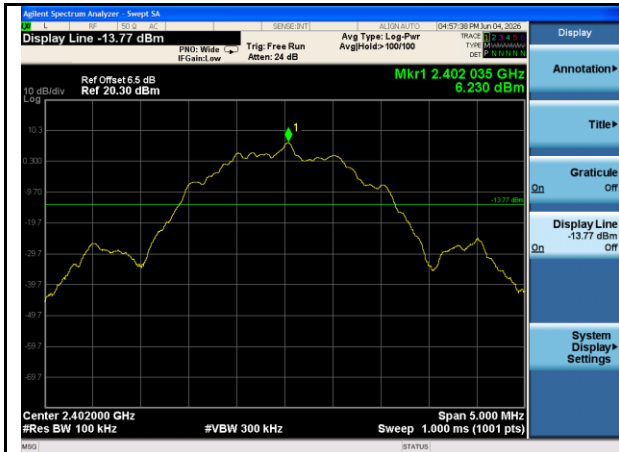
BLE-CSE-High-REF-1Mbps



BLE-CSE-High-1Mbps

Conducted Spurious Emission (2Mbps):

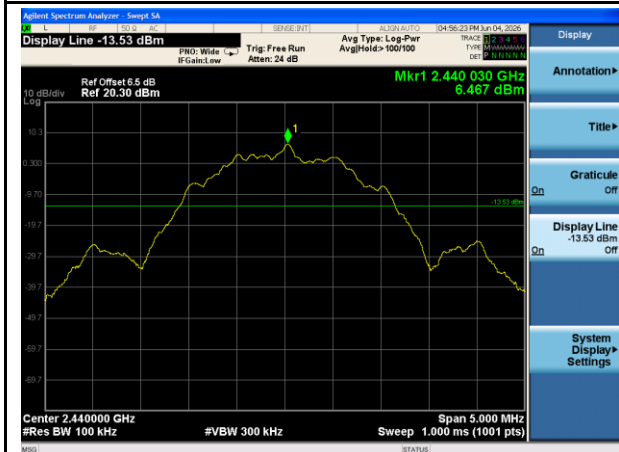
Mode	Data rate	Frequency (MHz)	Ref level (dBm)	Emission Level (dBm)	Limit (dBm)	Result
BLE	2Mbps	2402	6.230	-46.313	-13.77	Pass
		2440	6.467	-47.530	-13.60	Pass
		2480	6.568	-47.202	-13.46	Pass



BLE-CSE-Low-REF-2Mbps



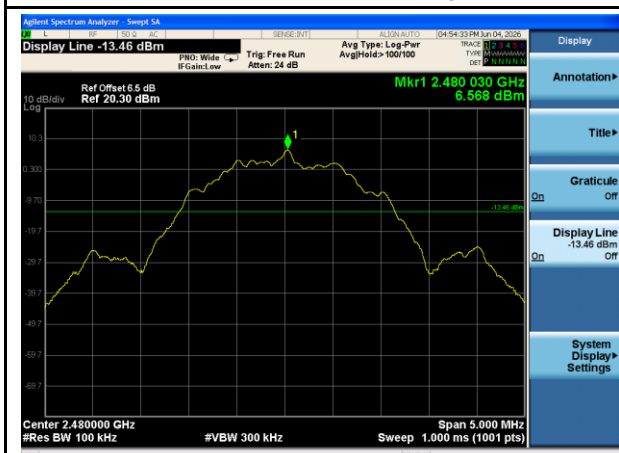
BLE-CSE-Low-2Mbps



BLE-CSE-Mid-REF-2Mbps



BLE-CSE-Mid-2Mbps



BLE-CSE-High-REF-2Mbps



BLE-CSE-High-2Mbps

7.6 Radiated Spurious Emissions into Restricted Frequency Bands

7.6.1 Requirement

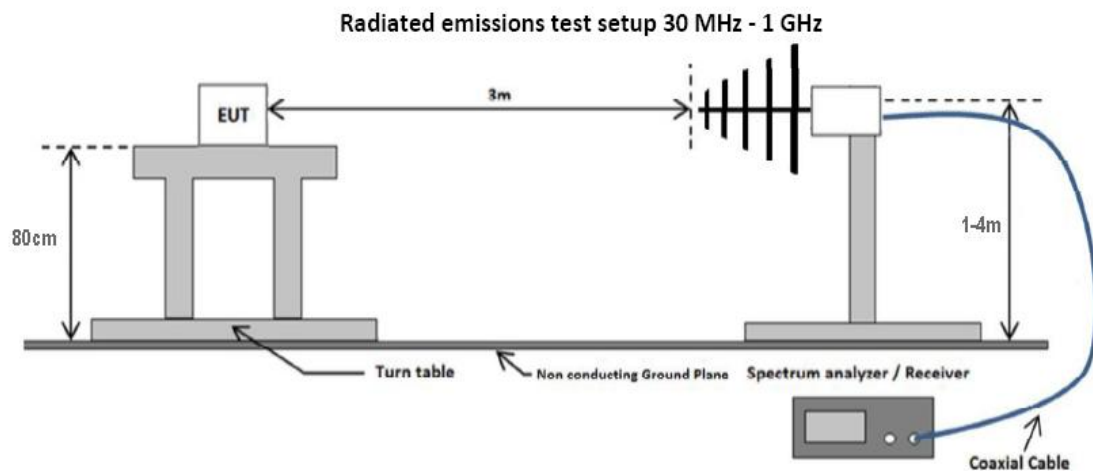
§ 15.247 (d),

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, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

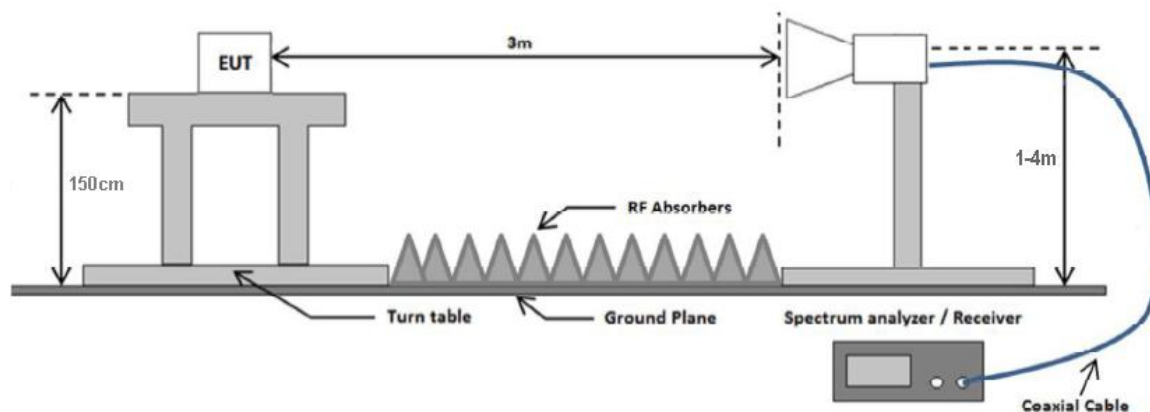
Attenuation below the general limits specified in §15.209(a) and RSS-Gen is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Frequency Range (MHZ)	Field Strength ($\mu\text{V/m}$)
0.009~0.490	2400/F(KHz)
0.490~1.705	24000/F(KHz)
1.705~30.0	30
30 – 88	100
88 – 216	150
216 960	200
Above 960	500

7.6.2 Test Setup



Radiated emissions test setup above 1 GHz



7.6.3 Test Procedure

According to subclause 11.12.2.7 Radiated spurious emission measurements in ANSI C63.10-2020 as well as the procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 was followed. Boresight antenna mast was used during the scanning to point to EUT to maximize the emission. The process will be repeated in 3 EUT orientations.

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
 - a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
 - b. The EUT was then rotated to the direction that gave the maximum emission.
 - c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 300 Hz for frequency below 150KHz.
4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 10 kHz for frequency between 150KHz – 30MHz.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-Peak detection at frequency between 30MHz - 1GHz.
6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak and average measurement at frequency above 1GHz.
7. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.

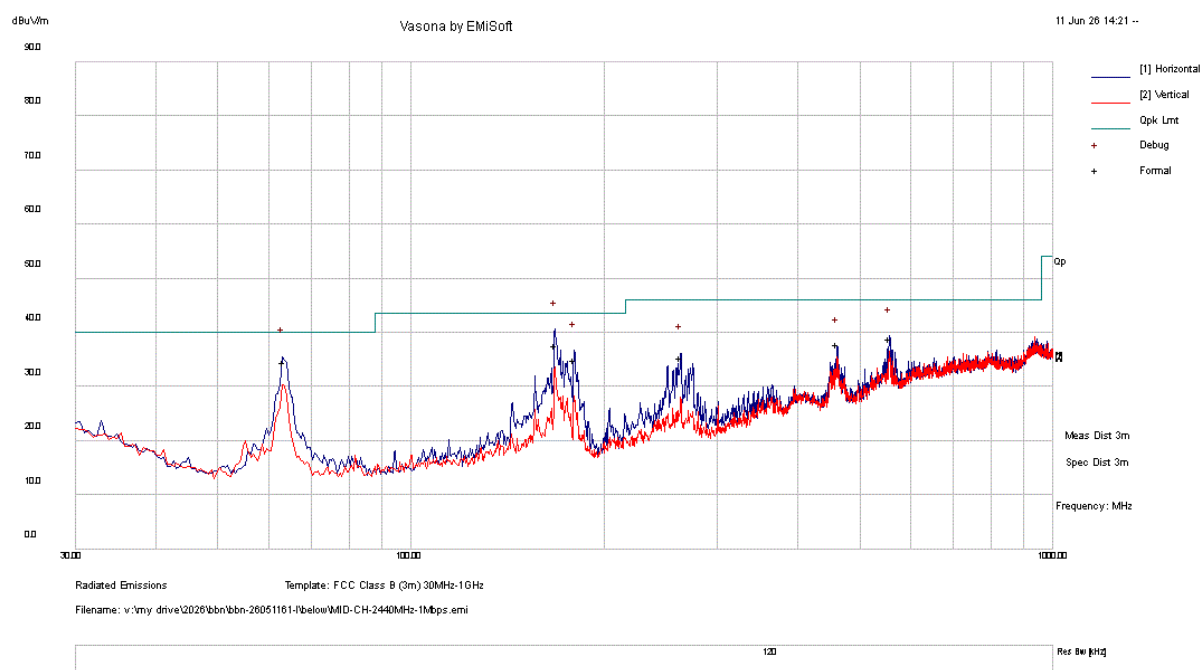
7.6.4 Test Result

Radiated Emission between 9KHz – 30MHz test result

Note: between 9KHz - 30MHz, no substantial emission close to limits. Different modes have been verified.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	30 MHz - 1 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	Mid channel, 1Mbps	Test Result:	Pass



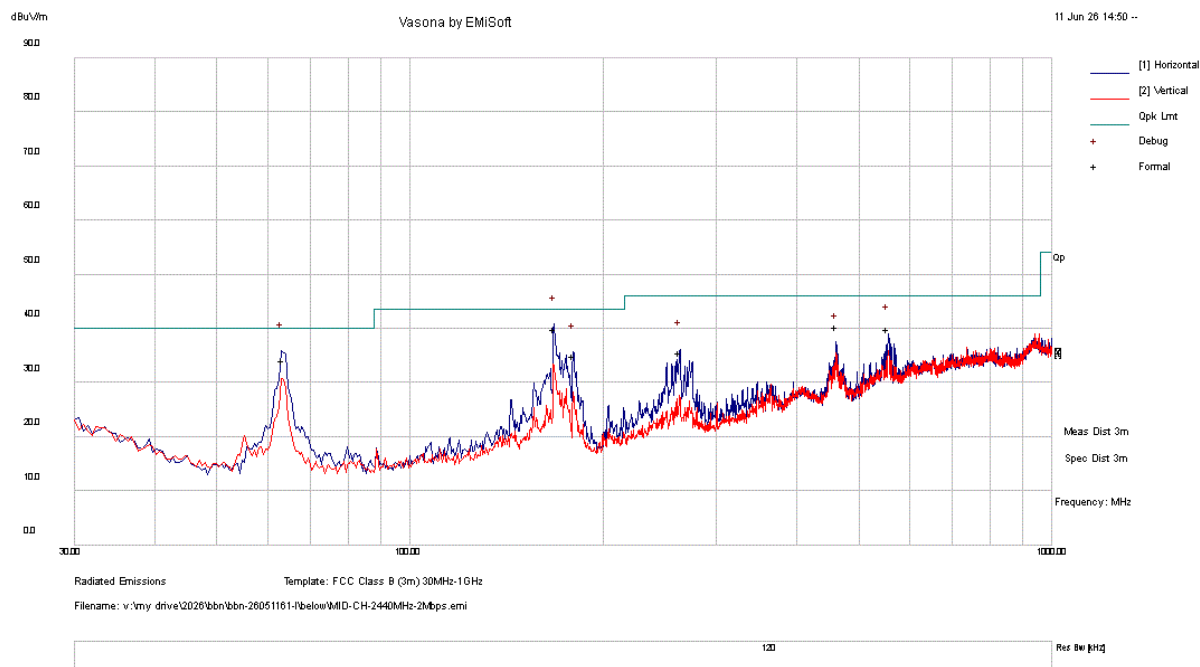
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	167.719	43.5	4.4	-10.2	37.7	Quasi Max	H	174	360	43.5	-5.8	Pass
2	63.218	44.2	3.1	-12.6	34.7	Quasi Max	H	284	96	40.0	-5.3	Pass
3	556.543	31.1	6.7	1.1	39.0	Quasi Max	H	102	54	46.0	-7.0	Pass
4	179.606	40.0	4.5	-9.6	35.0	Quasi Max	H	137	101	43.5	-8.5	Pass
5	460.651	33.3	6.2	-1.6	37.9	Quasi Max	H	120	79	46.0	-8.1	Pass
6	263.228	36.1	5.4	-6.1	35.4	Quasi Max	H	116	95	46.0	-10.6	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	30 MHz - 1 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	Mid channel, 2Mbps	Test Result:	Pass



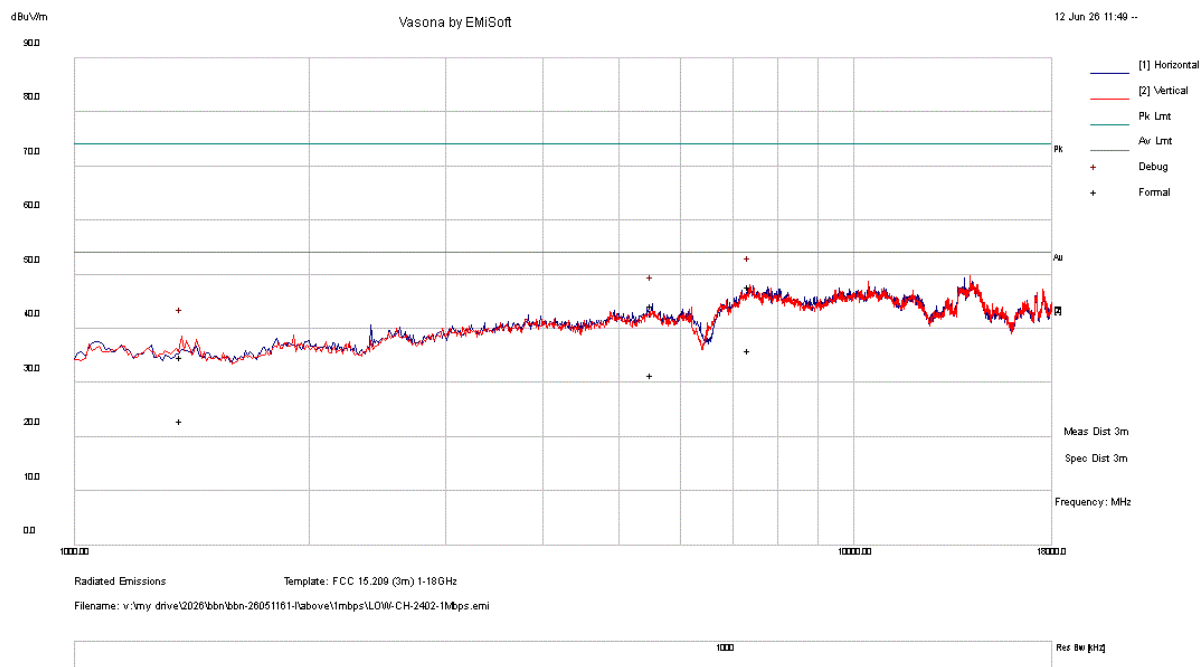
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	167.893	45.8	4.4	-10.2	40.0	Quasi Max	H	100	115	43.5	-3.5	Pass
2	63.226	43.7	3.1	-12.6	34.1	Quasi Max	H	246	108	40.0	-5.9	Pass
3	555.219	31.9	6.7	1.4	39.9	Quasi Max	H	110	60	46.0	-6.1	Pass
4	179.578	40.2	4.5	-9.6	35.1	Quasi Max	H	116	122	43.5	-8.4	Pass
5	461.412	35.8	6.2	-1.6	40.4	Quasi Max	H	131	82	46.0	-5.6	Pass
6	263.250	36.4	5.4	-6.1	35.6	Quasi Max	H	103	84	46.0	-10.4	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 18 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	1 GHz - 18 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Horn/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	Low channel 1Mbps	Test Result:	Pass



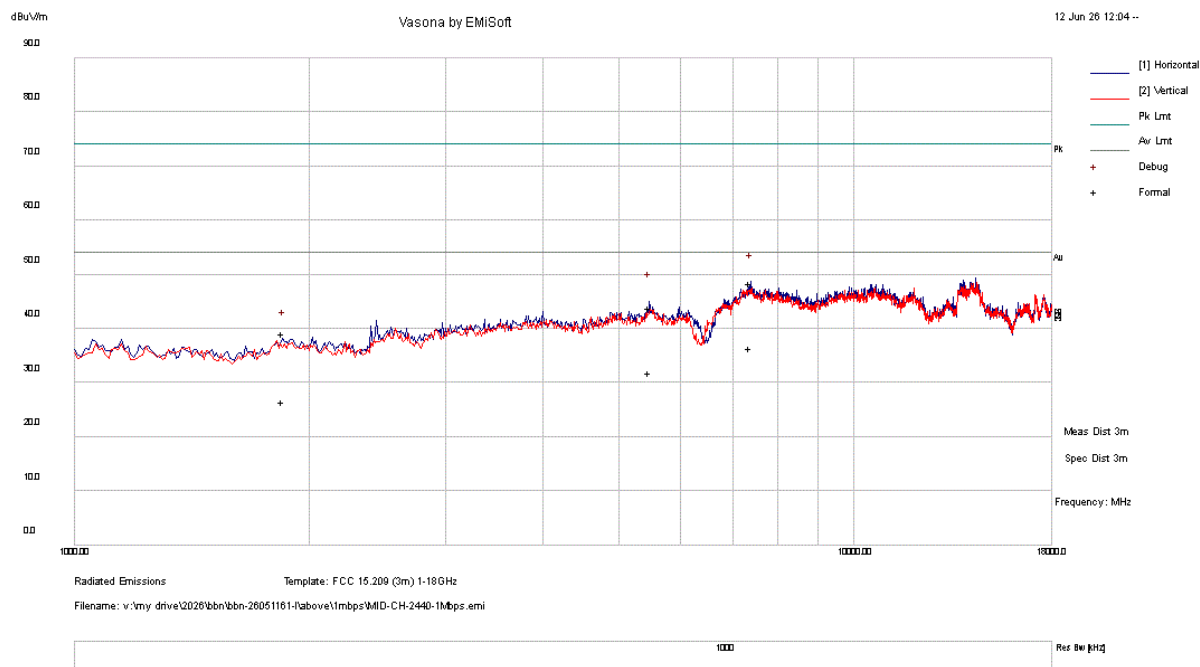
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	7353.794	27.0	5.4	15.5	47.8	Peak Max	V	204	132	74	-26.2	Pass
2	5514.480	27.5	4.5	12.2	44.2	Peak Max	H	142	64	74	-29.8	Pass
3	1369.600	29.0	1.9	3.9	34.8	Peak Max	V	184	0	74	-39.2	Pass
4	7353.794	15.2	5.4	15.5	36.1	Average Max	V	204	132	54	-17.9	Pass
5	5514.480	14.8	4.5	12.2	31.6	Average Max	H	142	64	54	-22.4	Pass
6	1369.600	17.2	1.9	3.9	23.0	Average Max	V	184	0	54	-31.0	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 18 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	1 GHz - 18 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Horn/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	Mid channel 1Mbps	Test Result:	Pass



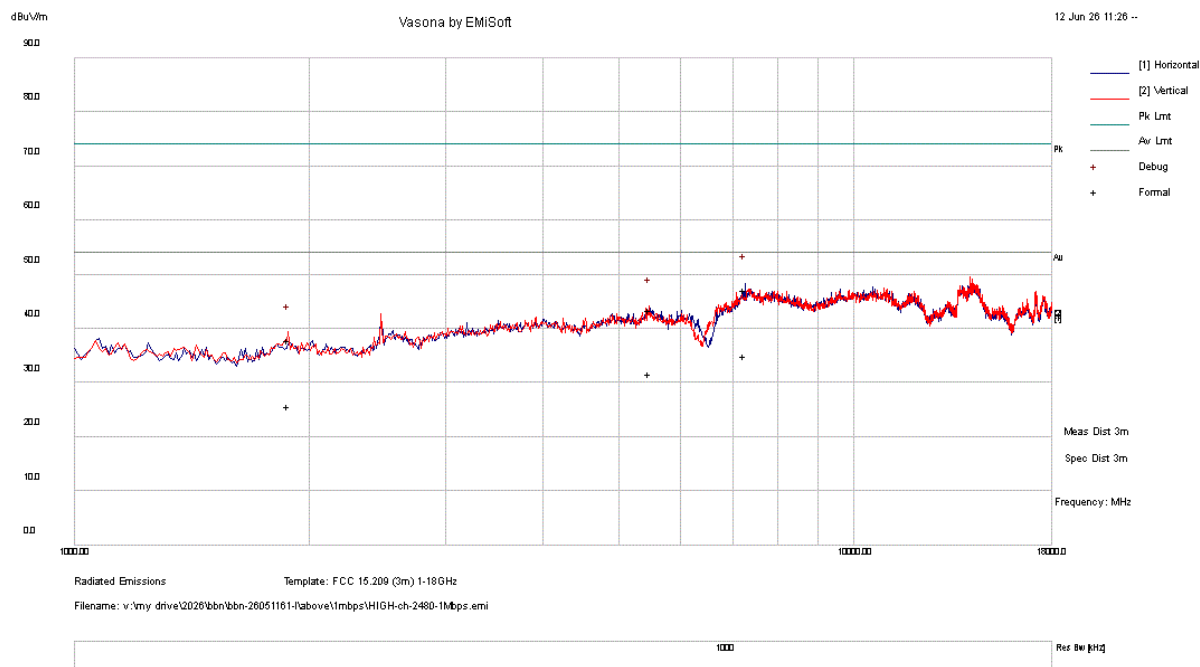
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	7384.595	27.5	5.4	15.5	48.5	Peak Max	H	112	0	74	-25.5	Pass
2	5474.790	27.2	4.5	12.3	43.9	Peak Max	H	107	0	74	-30.1	Pass
3	1854.155	30.5	2.2	6.3	39.1	Peak Max	H	167	28	74	-34.9	Pass
4	7384.595	15.6	5.4	15.5	36.5	Average Max	H	112	0	54	-17.5	Pass
5	5474.790	15.1	4.5	12.3	31.9	Average Max	H	107	0	54	-22.1	Pass
6	1854.155	18.0	2.2	6.3	26.5	Average Max	H	167	28	54	-27.5	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 18 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	1 GHz - 18 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Horn/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	High channel 1Mbps	Test Result:	Pass



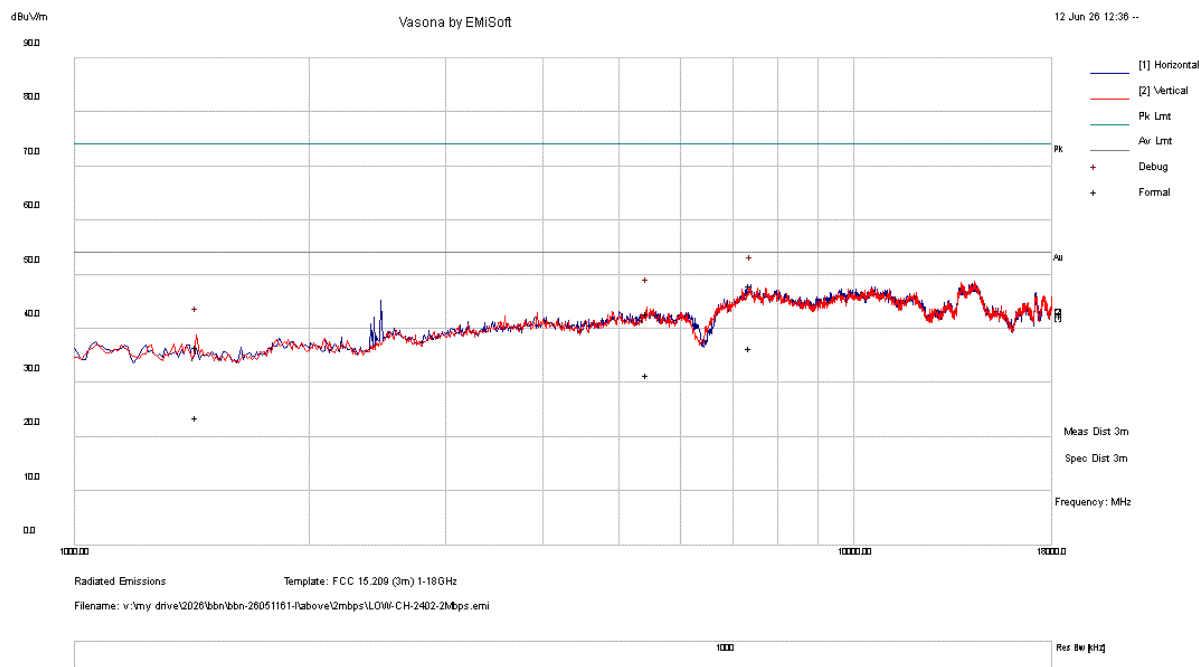
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	7256.315	26.6	5.2	15.4	47.2	Peak Max	H	156	176	74	-26.8	Pass
2	5472.808	26.8	4.5	12.3	43.5	Peak Max	V	207	163	74	-30.5	Pass
3	1881.479	29.7	2.2	5.9	37.9	Peak Max	V	130	118	74	-36.1	Pass
4	7256.315	14.4	5.2	15.4	35.0	Average Max	H	156	176	54	-19.0	Pass
5	5472.808	14.9	4.5	12.3	31.6	Average Max	V	207	163	54	-22.4	Pass
6	1881.479	17.7	2.2	5.9	25.8	Average Max	V	130	118	54	-28.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 18 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	1 GHz - 18 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Horn/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	Low channel 2 Mbps	Test Result:	Pass



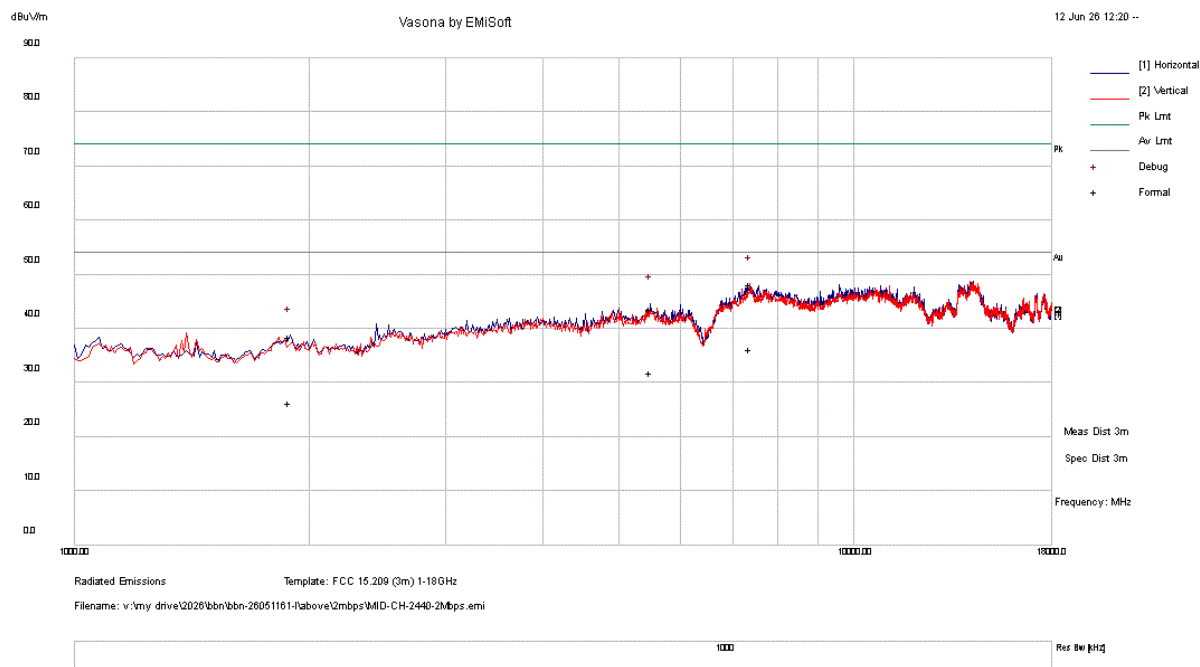
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	7384.283	27.1	5.4	15.5	48.1	Peak Max	H	195	78	74	-25.9	Pass
2	5432.215	26.1	4.5	12.3	42.8	Peak Max	V	141	75	74	-31.2	Pass
3	1435.061	31	2	3.7	36.7	Peak Max	V	156	0	74	-37.3	Pass
4	7384.283	15.6	5.4	15.5	36.5	Average Max	H	195	78	54	-17.5	Pass
5	5432.215	14.7	4.5	12.3	31.5	Average Max	V	141	75	54	-22.5	Pass
6	1435.061	18.0	2	3.7	23.7	Average Max	V	156	0	54	-30.3	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 18 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	1 GHz - 18 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Horn/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	Mid channel 2Mbps	Test Result:	Pass



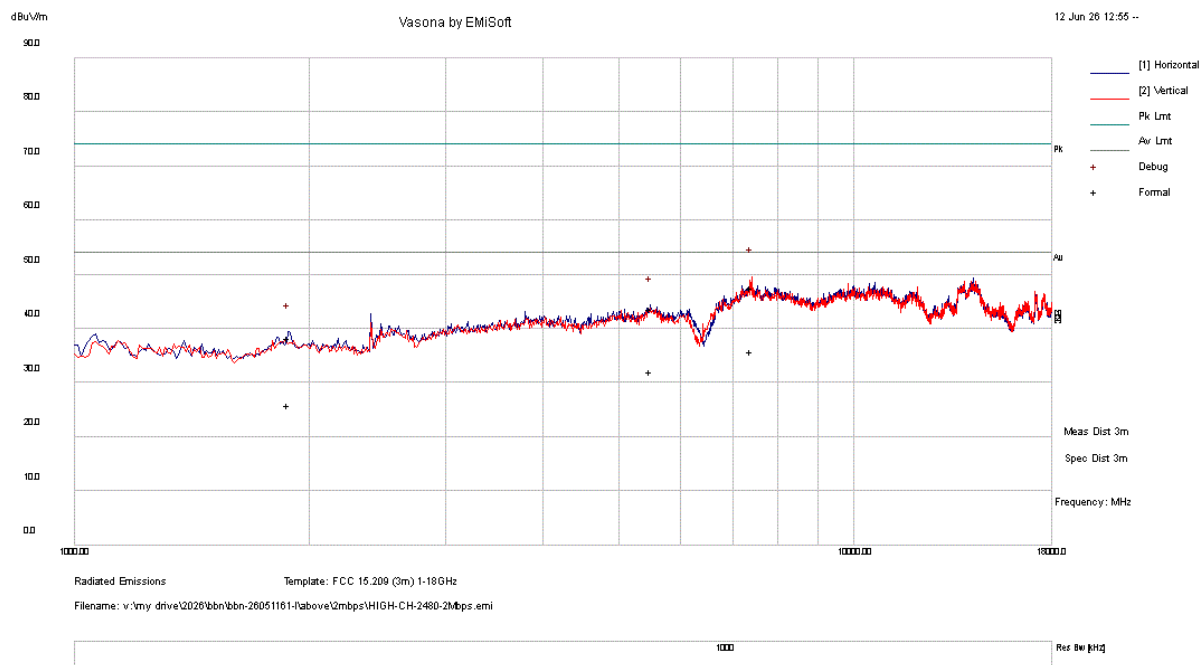
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	7376.068	27.4	5.4	15.5	48.3	Peak Max	V	186	181	74	-25.7	Pass
2	5495.290	27.0	4.5	12.2	43.8	Peak Max	H	117	166	74	-30.2	Pass
3	1889.672	30.6	2.2	5.7	38.6	Peak Max	H	119	0	74	-35.4	Pass
4	7376.068	15.4	5.4	15.5	36.3	Average Max	V	186	181	54	-17.7	Pass
5	5495.290	15.2	4.5	12.2	31.9	Average Max	H	117	166	54	-22.1	Pass
6	1889.672	18.3	2.2	5.7	26.3	Average Max	H	119	0	54	-27.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 18 GHZ

Test Standard:	15.209, 15.247, RSS-247	Mode:	BLE Mode
Frequency Range:	1 GHz - 18 GHz	Test Date:	06/12/2026
Antenna Type/Polarity:	Horn/Hor & Ver	Test Personnel:	Minoush Niknam
Remark:	High channel 2Mbps	Test Result:	Pass



No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	7406.383	26.6	5.5	15.5	47.6	Peak Max	V	109	5	74	-26.4	Pass
2	5494.558	26.9	4.5	12.2	43.7	Peak Max	H	150	46	74	-30.3	Pass
3	1880.317	30.1	2.2	6	38.3	Peak Max	H	103	18	74	-35.7	Pass
4	7406.383	14.8	5.5	15.5	35.8	Average Max	V	109	5	54	-18.2	Pass
5	5494.558	15.4	4.5	12.2	32.1	Average Max	H	150	46	54	-21.9	Pass
6	1880.317	17.7	2.2	6	25.8	Average Max	H	103	18	54	-28.2	Pass

Remarks:

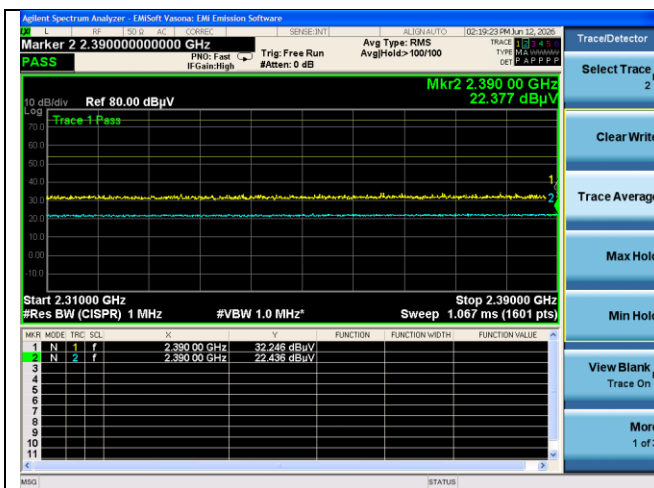
1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF(dB) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

Radiated Emission between 18GHz – 40GHz test result

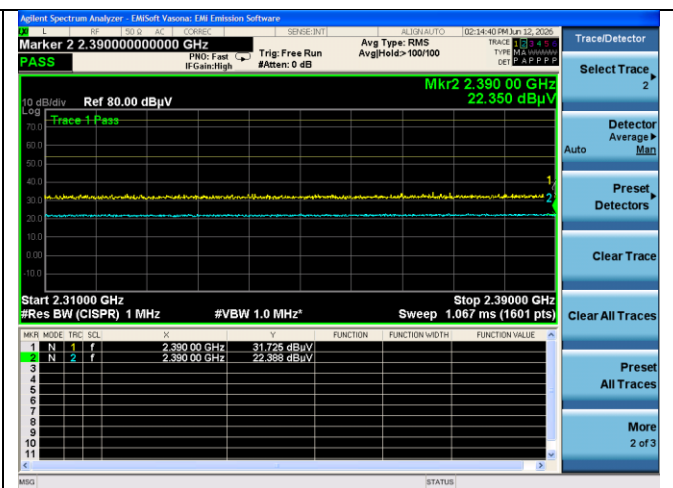
Note: no substantial emission close to limits. Different modes have been verified.

Restricted Band Measurement Result

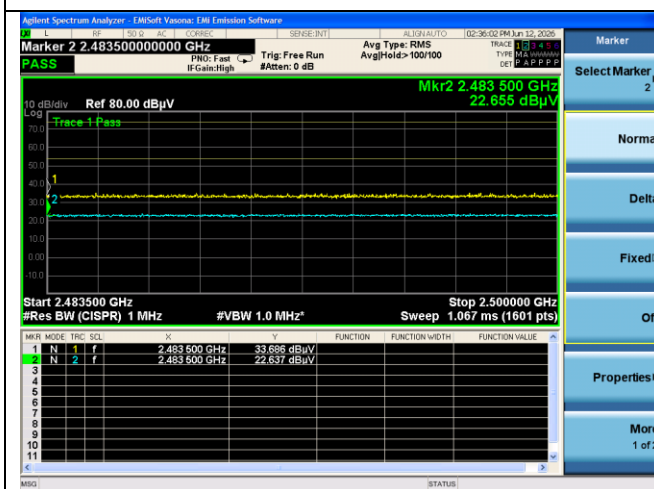
Data Rate	TX CH (MHz)	Frequency (MHz)	Level (dBuV/m)	Measurement Type	Limit (dBuV/m)	Margin (dB)	Pass/Fail
BLE-1Mbps	2402	2390.000	32.246	Peak Max	74	41.754	Pass
		2390.000	22.436	Average Max	54	31.564	Pass
	2480	2483.500	33.686	Peak Max	74	40.314	Pass
		2483.500	22.637	Average Max	54	31.363	Pass
BLE-2Mbps	2402	2390.000	31.725	Peak Max	74	42.275	Pass
		2390.000	22.388	Average Max	54	31.612	Pass
	2480	2483.500	31.624	Peak Max	74	42.376	Pass
		2483.500	22.219	Average Max	54	31.781	Pass



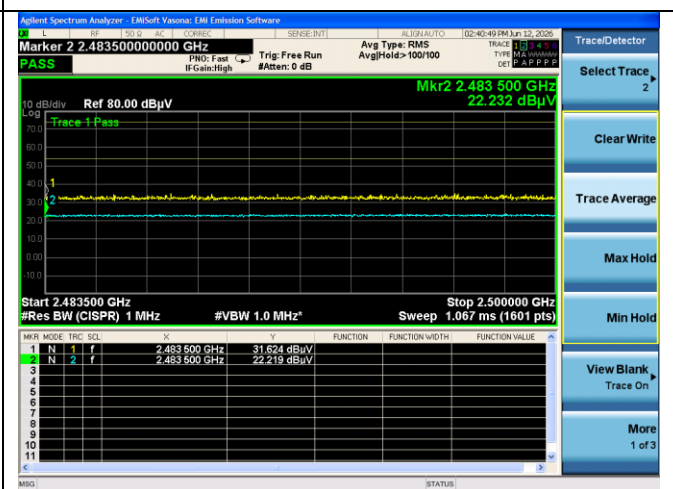
BLE - Low CH-1Mbps



BLE - Low CH-2Mbps



BLE - High CH-1Mbps



BLE - Low CH-2 Mbps

8 EUT and Test Setup Photos

See FCC exhibits

9 Test Instrument List

Equipment	Manufacturer	Model	Instrument Number	Cal. Date	Cal. Due
Semi-Anechoic Chamber	ETS-Lindgren	10M	VL001	05/28/2026	05/28/2028
Shielding Control Room	ETS-Lindgren	Series 81	VL006	N/A 1)	N/A 1)
Spectrum Analyzer	Keysight	N9020A	MY50110074	05/28/2026	05/28/2028
EMC Test Receiver	R&S	ESL6	100230	05/28/2026	05/28/2028
LISN (9KHz – 30MHz)	EMCO	3816/2	9705-1066	05/28/2026	05/28/2028
Impedance Stabilization Network	Teseq GmbH	ISN T8-CAT 6	41576	05/28/2026	05/28/2028
Bi-Log Antenna	ETS-Lindgren	3142E	217921	05/28/2026	05/28/2028
Horn Antenna (1-18GHz)	Electro-Metrics	EM-6961	6292	05/28/2026	05/28/2028
Preamplifier	RF Bay, Inc.	LPA-10-20	11180621	05/28/2026	05/28/2028
True RMS Multi-meter	UNI-T	UT181A	C173014829	05/28/2026	05/28/2028
Temp / Humidity / Pressure Meter	PCE Instruments	PCE-THB 40	R062028	05/28/2026	05/28/2028
RF Attenuator	Pasternack	PE7005-3	VL061	N/A 2)	N/A 2)
EM Center Control	ETS-Lindgren	7006-001	160136	N/A 1)	N/A 1)
Turn Table	ETS-Lindgren	2181-3.03	VL002	N/A 1)	N/A 1)
Boresight Antenna Tower	ETS-Lindgren	2171B	VL003	N/A 1)	N/A 1)
Loop Antenna (9k-30MHz)	Com-Power	AL-130	121012	05/28/2026	05/28/2028
RE test cable (below 6GHz)	Vista	RE-6GHz-01	RE-6GHz-01	05/28/2026	05/28/2028
RE test cable (1-18GHz)	PhaseTrack	II-240	RE-18GHz-01	05/28/2026	05/28/2028
RE test cable (>18GHz)	Sucoflex	104	344903/4	05/28/2026	05/28/2028
Pulse limiter	Com-Power	LIT-930A	531727	05/28/2026	05/28/2028
CE test cable #1	FIRST RF	FRF-C-1002-001	CE-6GHz-01	05/28/2026	05/28/2028
CE test cable#2	FIRST RF	FRF-C-1002-001	CE-6GHz-02	05/28/2026	05/28/2028

Note:

- 1) This equipment is not for measurement purpose and only require functional verification. Calibration is not required.
- 2) This equipment is part of test system that to be calibrated as a system. It's verified together with the test system prior to testing.

---END---