RF Test Report

Project Number:	**5251870**	**Offer Number:**	**SUW-202411007378**
Report Number:	**5251870EMC03**	**Revision Level:**	**1**
Client:	**Orpyx Medical Technologies Inc.**		

Equipment Under Test:	**Orpyx® Sensory Insoles**
Model Number:	**SI000010**
HVIN:	**SI000011 and SI000012**
FCC ID:	**2AAH8-SI000011 and 2AAH8-SI000012**
IC:	**10789A-SI000011 and 10789A-SI000012**

Applicable Standards:	**FCC Part 15 Subpart C, § 15.247**
	RSS-247, Issue 3, August 2023
	RSS-GEN, Issue 5, February 2021, Amendment 2
	ANSI C63.10:2013

Report issued on:	**11 June 2025**
Test Result:	**Compliant**

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01
This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

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1 Summary of Test Results

Test Description	Test Specification		Test Result
Bandwidth	15.247(a)(2)	RSS-247 S5.2 (a) RSS-GEN S6.7	Compliant
Output Power	15.247(b)(3)	RSS-247 S5.4 (d)	Compliant
Power Spectral Density	15.247(e)	RSS-247 S5.2 (b)	Compliant
Conducted Spurious Emissions / Band Edge	15.247(d)	RSS-247 S5.5	Compliant
Emissions in Restricted Frequency Bands	15.247(d) 15.205, 15.209	RSS-247 S5.5 RSS-GEN S8.9, S8.10	Compliant
Band Edge Emissions in Restricted Frequency Bands	15.205, 15.209	RSS-GEN S8.9, S8.10	Compliant
AC Powerline Conducted Emissions	15.207	RSS-GEN S8.8	N/A (1)
Antenna Requirement	15.203	RSS-GEN S6.8	Compliant (2)

(1) The device does not connect to the AC Mains.
(2) The device uses a chip antenna which cannot be replaced by the end user.

1.1 *Modifications Required for Compliance*

None.

2 General Information

2.1 *Client Information*

Company Name:	Orpyx Medical Technologies Inc.
Address:	Suite 205, 1240 20th Avenue SE
City, State, Zip, Country:	Calgary, Alberta T2G 1M8 Canada

2.2 *Test Laboratory*

Name:	SGS North America, Inc.
Address:	620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country:	Suwanee, GA 30024, USA
Accrediting Body:	A2LA
Type of lab:	Testing Laboratory
Certificate Number:	3212.01
CAB ID:	US0186

2.3 *General Information of EUT*

Equipment Under Test:	Orpyx® Sensory Insoles
Model Number:	SI000010 (both left and right insoles)
HVIN:	SI000011 (right insole) SI000012 (left insole)
Serial Numbers:	2222-5017 & 2222-4021 (left & right Conducted Samples) 2222-5012 & 2222-5003 (left & right Radiated Samples)
FCC ID:	2AAH8-SI000011 (right insole) 2AAH8-SI000012 (left insole)
IC:	10789A-SI000011 (right insole) 10789A-SI000012 (left insole)
Frequency Range:	2402 – 2480 MHz
Data Modes:	Bluetooth Low Energy (BLE) – GFSK – 1Mbps & 2Mbps
Antenna Type/Gain*:	Chip Antenna (4.5dBi gain)
Rated Voltage:	3.7Vdc Internal Battery
Test Voltage:	3.7Vdc Internal Battery
Sample Received Date:	17 December 2024
Dates of testing:	24 - 26 December 2024 and 5 - 10 June 2025

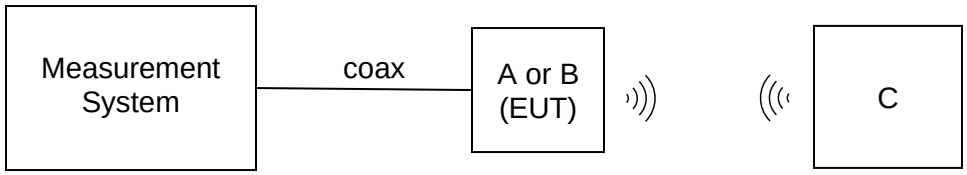
*Data was not measured by SGS laboratory and therefore SGS is not responsible for accuracy. Data obtained via customer, specification sheet, previous filing or other.

2.4 *Operating Modes and Conditions*

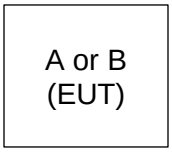
The Orpyx® Sensory Insoles were powered by internal non-rechargeable batteries. The client provided a laptop with a software application called BLE Manager. First a normal BLE connection was established between the EUT and the laptop, and then the BLE Manager application was used to initiate transmitter test modes, which allowed the BLE radio to be configured as follows:

1) selecting low, middle and high BLE channels;
2) selecting the data rates as used in normal operation, but with high duty cycle;
3) setting the power level. [The maximum power setting of +8dBm was used for all tests.]

2.5 *EUT Connection Block Diagram – Conducted Measurements*



2.6 *EUT Connection Block Diagram – Radiated Measurements*



2.7 *System Configurations*

Device Reference	Manufacturer	Description	Model Number	Serial Number
A & B	Orpyx Medical Technologies Inc.	Orpyx® Sensory Insoles (EUT) (left & right)	SI000010	2222-5017 & 2222-4021 2222-5012 & 2222-5003
C	Lenovo	Laptop PC	E15	PF-2T7FZG

3 Bandwidth

3.1 *Test Result*

Test Description	Test Specification		Test Result
DTS Bandwidth (6dB)	15.247(a)(2)	RSS-247 S5.2 (a)	Compliant
Occupied Bandwidth (99%)	2.1049	RSS-GEN S6.7	Reported

3.2 *Test Methods*

The DTS 6dB bandwidth measurements were performed using the procedure from ANSI C63.10 clause 11.8.1, and the 99% occupied bandwidth measurements were performed using the procedure from ANSI C63.10 clause 6.9.3. These procedures are referenced in KDB 558074 D01 15.247 Meas Guidance v05r02.

Limit
The minimum 6dB bandwidth shall be at least 500 kHz.

3.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Left Insole

Environmental Conditions

Temperature:	24.13 °C
Relative Humidity:	49.5 %
Atmospheric Pressure:	98.34 kPa

Right Insole

Environmental Conditions

Temperature:	23.39 °C
Relative Humidity:	19.8 %
Atmospheric Pressure:	99.35 kPa

3.4 *Test Equipment*

Left Insole

Test End Date: 6-Jun-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

Right Insole

Test End Date: 24-Dec-2024 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	20-Mar-2024	20-Mar-2025
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	3-Jan-2024	3-Jan-2025

Software Profile:
TSTPASS Version: 2.0 (2024.12.23_11.05.24)

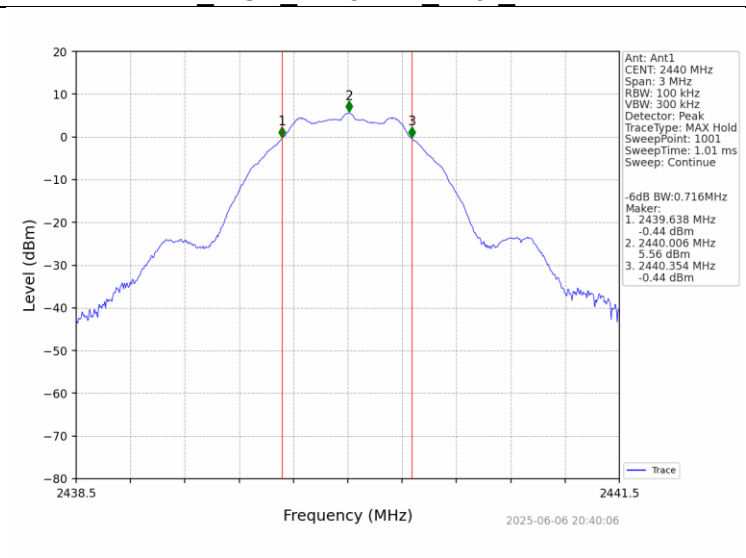
3.5 *Test Data - Left Insole*

3.5.1 Test Data – DTS Bandwidth (6dB)

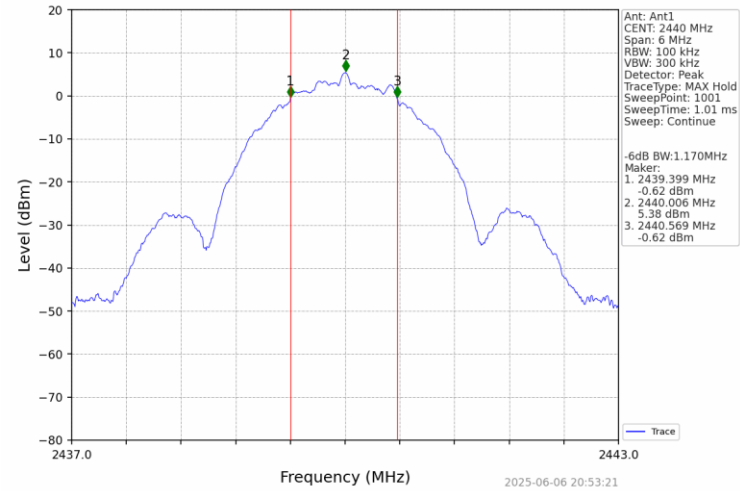
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.699	>=0.5	Pass
		2440	1	0.716	>=0.5	Pass
		2480	1	0.710	>=0.5	Pass
2M	SISO	2402	1	1.176	>=0.5	Pass
		2440	1	1.170	>=0.5	Pass
		2480	1	1.169	>=0.5	Pass

Representative Plot(s)

1M_MCH_2440MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV

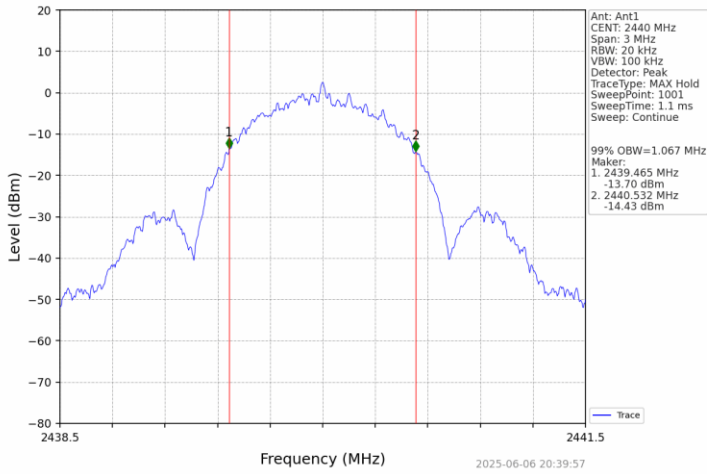


3.5.2 Test Data – 99% Occupied Bandwidth

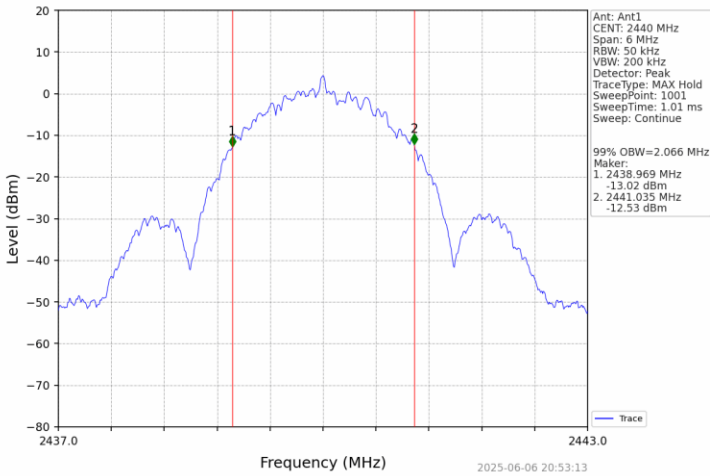
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.055	/	Pass
		2440	1	1.067	/	Pass
		2480	1	1.064	/	Pass
2M	SISO	2402	1	2.025	/	Pass
		2440	1	2.066	/	Pass
		2480	1	2.062	/	Pass

Representative Plot(s)

1M_MCH_2440MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



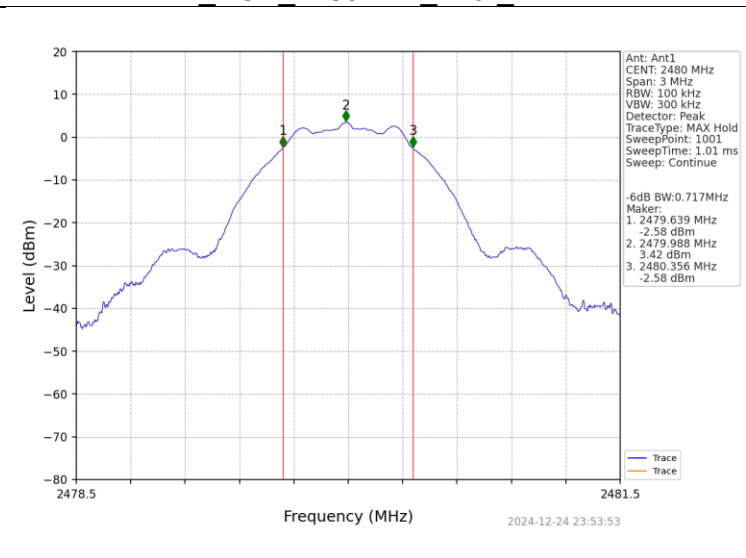
3.6 *Test Data - Right Insole*

3.6.1 Test Data – DTS Bandwidth (6dB)

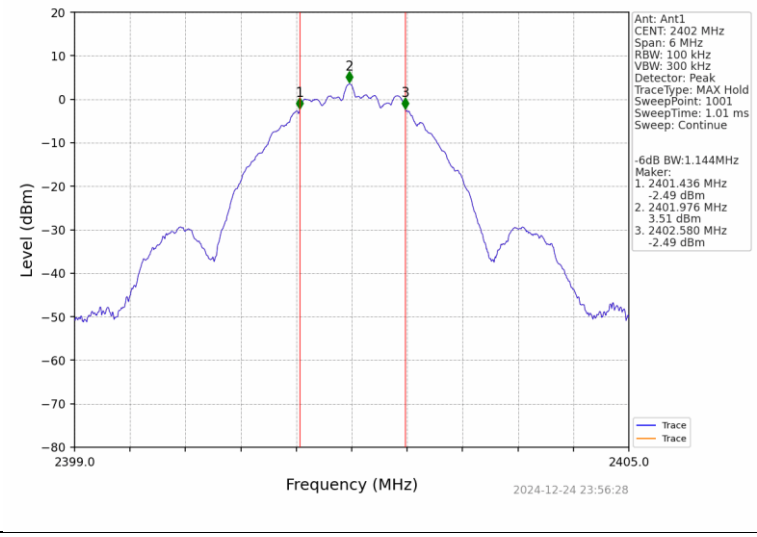
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.708	>=0.5	Pass
		2440	1	0.712	>=0.5	Pass
		2480	1	0.717	>=0.5	Pass
2M	SISO	2402	1	1.144	>=0.5	Pass
		2440	1	1.155	>=0.5	Pass
		2480	1	1.163	>=0.5	Pass

Representative Plot(s)

1M_HCH_2480MHz_Ant1_NTNV



2M_LCH_2402MHz_Ant1_NTNV

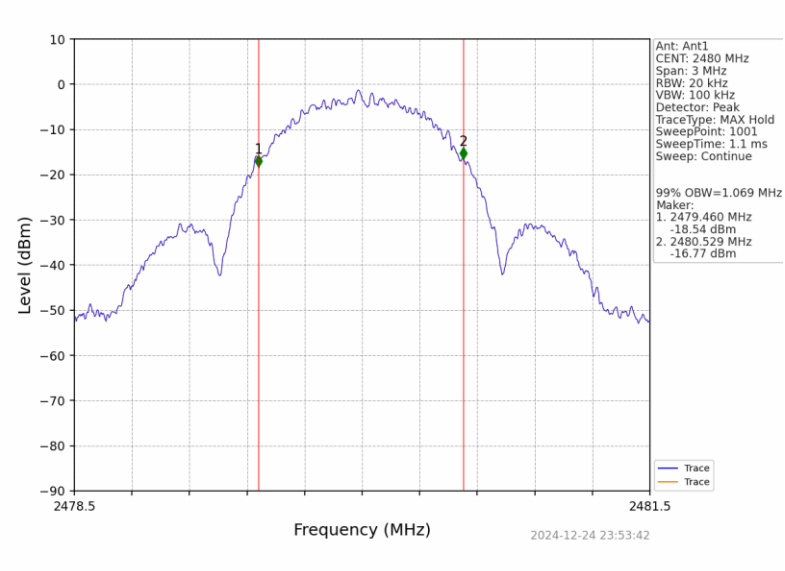


3.6.2 Test Data – 99% Occupied Bandwidth

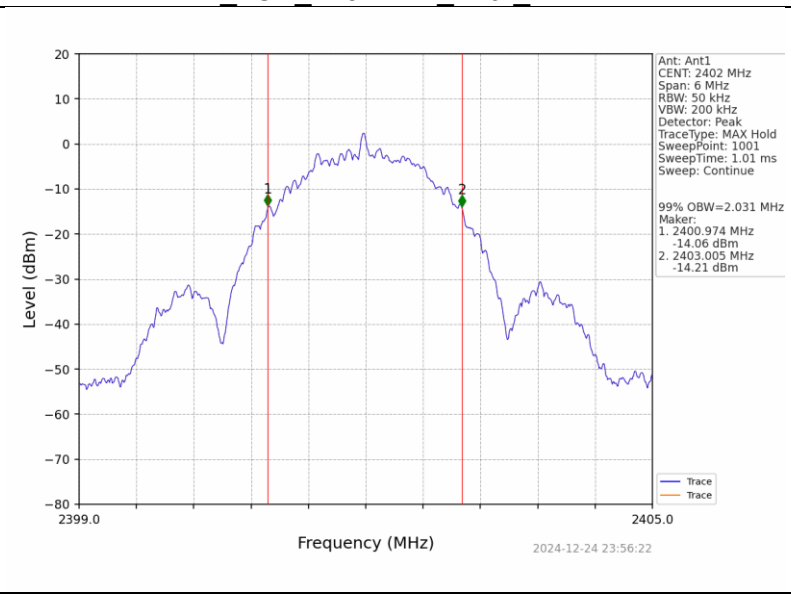
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.052	/	Pass
		2440	1	1.061	/	Pass
		2480	1	1.069	/	Pass
2M	SISO	2402	1	2.031	/	Pass
		2440	1	2.070	/	Pass
		2480	1	2.054	/	Pass

Representative Plot(s)

1M_HCH_2480MHz_Ant1_NTNV



2M_LCH_2402MHz_Ant1_NTNV



4 Output Power

4.1 *Test Result*

Test Description	Test Specification		Test Result
Fundamental Emission Output Power	15.247(b)(3)	RSS-247 S5.4 (d)	Compliant

4.2 *Test Method*

Fundamental maximum peak conducted output power measurements were performed using the method described in ANSI C63.10:2013 clause 11.9.1.1. This procedure is referenced in KDB 558074 D01 15.247 Meas Guidance v05r02.

Limit
For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. For using antennas with greater than 6dBi of gain, the limit is reduced in dB by the amount the gain exceeds 6dBi (e.g. for a 7.4dBi antenna, the limit is reduced from 30dBm to 28.6dBm). Also, the e.i.r.p. shall not exceed 4 Watts (36 dBm) based on RSS-247 S5.4 (d).

4.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Left Insole

Environmental Conditions

Temperature:	24.13 °C
Relative Humidity:	49.5 %
Atmospheric Pressure:	98.34 kPa

Right Insole

Environmental Conditions

Temperature:	23.39 °C
Relative Humidity:	19.8 %
Atmospheric Pressure:	99.35 kPa

4.4 *Test Equipment*

Left Insole

Test End Date: 6-Jun-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

Right Insole

Test End Date: 24-Dec-2024 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	20-Mar-2024	20-Mar-2025
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	3-Jan-2024	3-Jan-2025

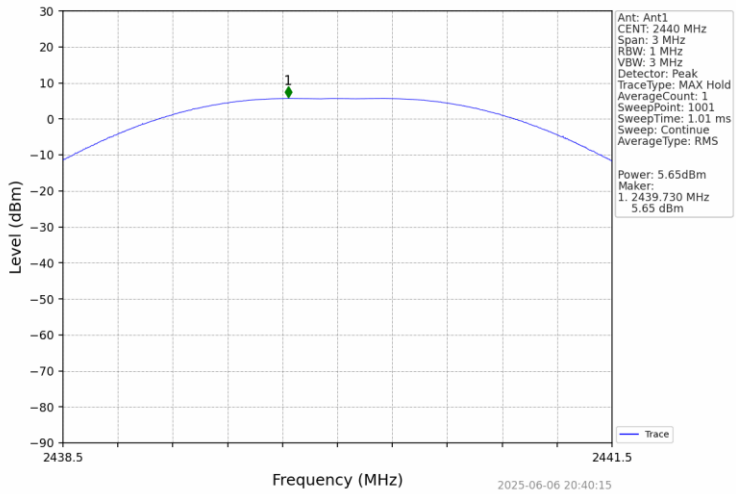
Software Profile:
TSTPASS Version: 2.0 (2024.12.23_11.05.24)

4.5 *Test Data – Left Insole*

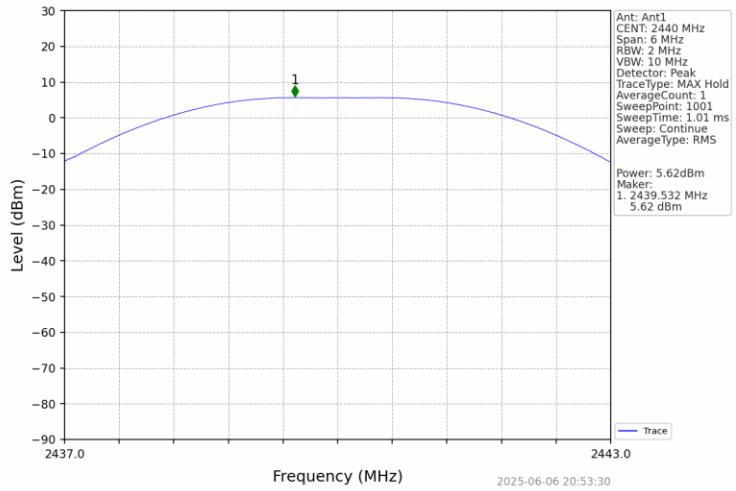
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	5.83	<=30	Pass
		2440	5.65	<=30	Pass
		2480	5.71	<=30	Pass
2M	SISO	2402	5.87	<=30	Pass
		2440	5.62	<=30	Pass
		2480	5.69	<=30	Pass
Note1: Antenna Gain: Ant1: 4.50dBi;					

Representative Plot(s)

1M_MCH_2440MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV

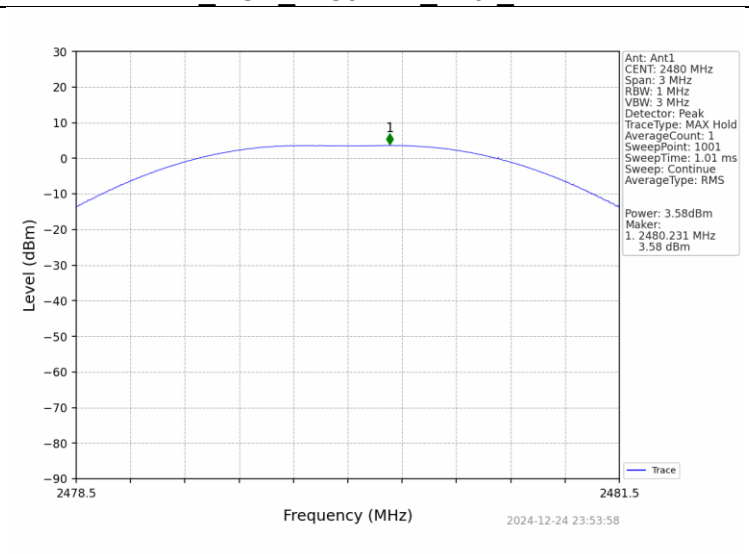


4.6 *Test Data – Right Insole*

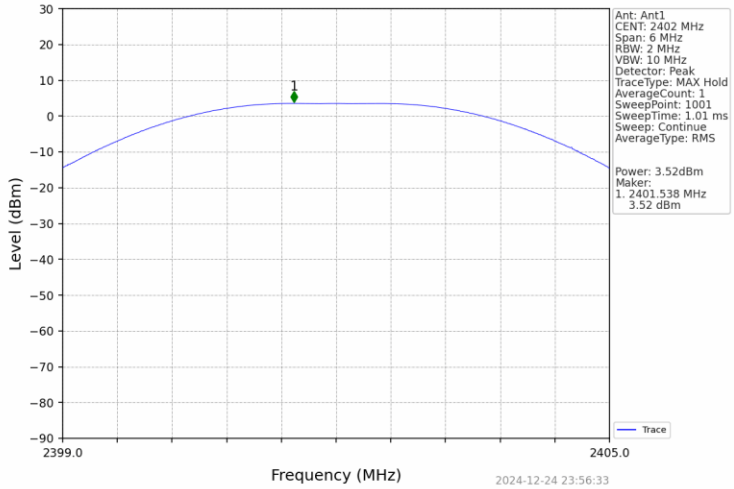
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	3.53	<=30	Pass
		2440	3.34	<=30	Pass
		2480	3.58	<=30	Pass
2M	SISO	2402	3.52	<=30	Pass
		2440	3.33	<=30	Pass
		2480	3.61	<=30	Pass
Note1: Antenna Gain: Ant1: 4.50dBi;					

Representative Plot(s)

1M_HCH_2480MHz_Ant1_NTNV



2M_LCH_2402MHz_Ant1_NTNV



5 Power Spectral Density

5.1 *Test Result*

Test Description	Test Specification		Test Result
Power Spectral Density	15.247(e)	RSS-247 S5.2 (b)	Compliant

5.2 *Test Method*

Peak power spectral density measurements were performed using the procedures from ANSI C63.10: 2013 clause 11.10.2. These procedures are referenced in KDB 558074 D01 15.247 Meas Guidance v05r02.

Limit
The maximum limit is 8 dBm / 3 kHz.

5.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Left Insole

Environmental Conditions

Temperature:	24.13 °C
Relative Humidity:	49.5 %
Atmospheric Pressure:	98.34 kPa

Right Insole

Environmental Conditions

Temperature:	23.39 °C
Relative Humidity:	19.8 %
Atmospheric Pressure:	99.35 kPa

5.4 *Test Equipment*

Left Insole

Test End Date: 6-Jun-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

Right Insole

Test End Date: 24-Dec-2024 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	20-Mar-2024	20-Mar-2025
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	3-Jan-2024	3-Jan-2025

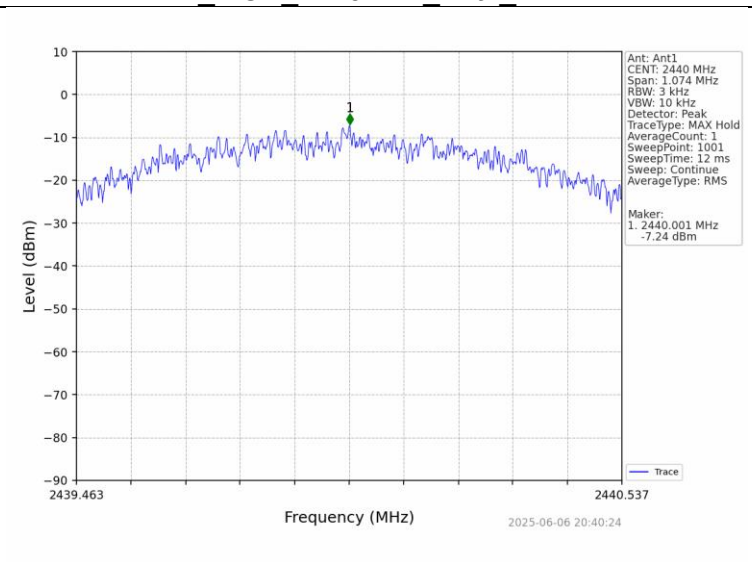
Software Profile:
TSTPASS Version: 2.0 (2024.12.23_11.05.24)

5.5 *Test Data – Left Insole*

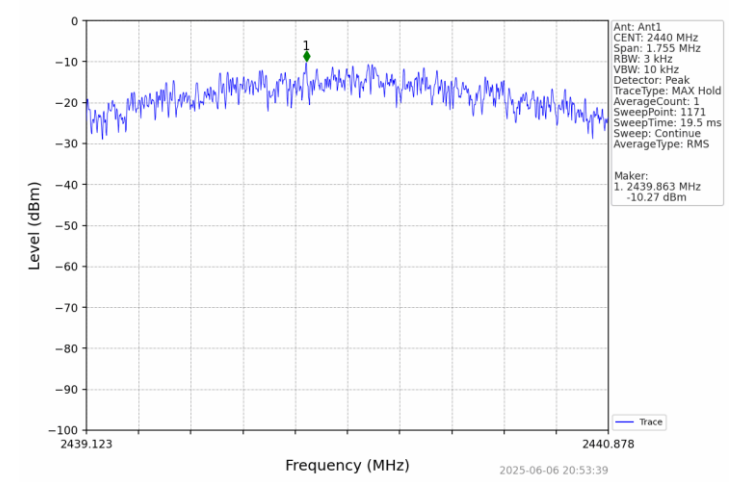
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-8.55	<=8	Pass
		2440	-7.24	<=8	Pass
		2480	-7.32	<=8	Pass
2M	SISO	2402	-11.02	<=8	Pass
		2440	-10.27	<=8	Pass
		2480	-10.05	<=8	Pass
Note1: Antenna Gain: Ant1: 4.50dBi;					

Representative Plot(s)

1M_MCH_2440MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV

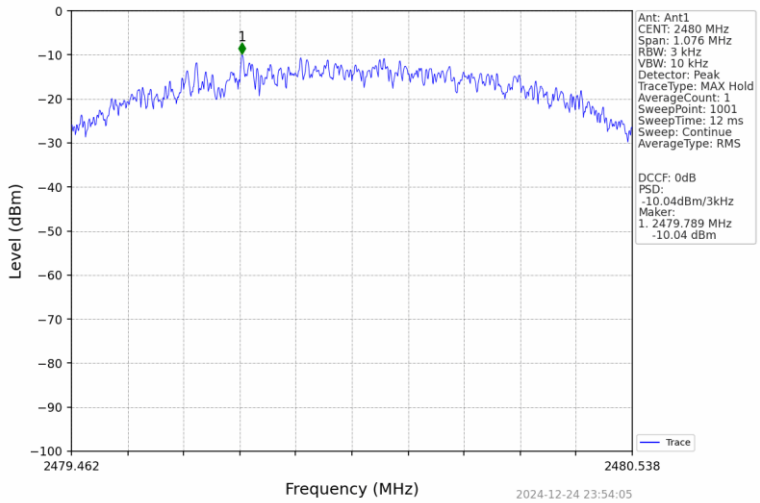


5.6 *Test Data – Right Insole*

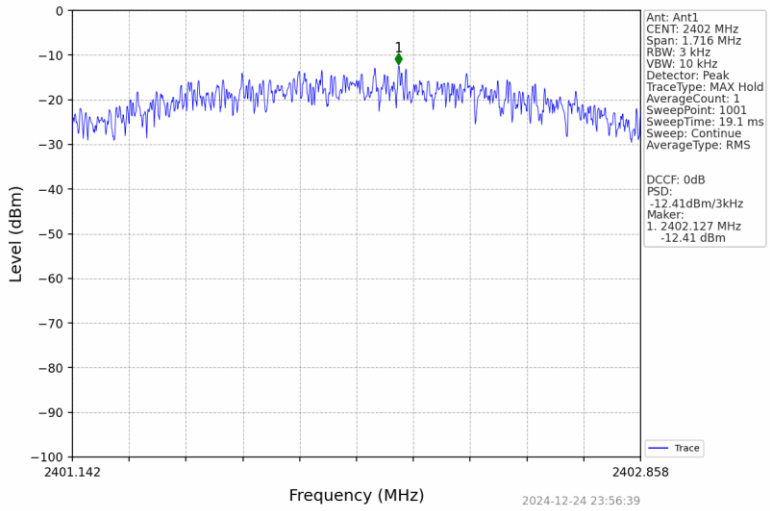
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-9.09	<=8	Pass
		2440	-10.23	<=8	Pass
		2480	-10.04	<=8	Pass
2M	SISO	2402	-12.41	<=8	Pass
		2440	-12.72	<=8	Pass
		2480	-12.38	<=8	Pass
Note1: Antenna Gain: Ant1: 4.50dBi;					

Representative Plot(s)

1M_HCH_2480MHz_Ant1_NTNV



2M_LCH_2402MHz_Ant1_NTNV



6 Conducted Spurious Emissions / Band Edge

6.1 *Test Result*

Test Description	Test Specification		Test Result
Conducted Spurious and Band Edge Emissions	15.247(d)	RSS-247 S5.5	Compliant

6.2 *Test Method*

Conducted band edge and spurious band emissions in non-restricted frequency bands were measured using the method defined in ANSI C63.10 clause 11.11. This procedure is referenced in KDB 558074 D01 15.247 Meas Guidance v05r02.

Limit

Because the maximum peak conducted output power was used to determine compliance with the output power limits, the limit in any 100 kHz band outside of the authorized band is 20 dB below the maximum in-band peak level.

6.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Left Insole

Environmental Conditions

Temperature:	24.13 °C
Relative Humidity:	49.5 %
Atmospheric Pressure:	98.34 kPa

Right Insole

Environmental Conditions

Temperature:	23.39 °C
Relative Humidity:	19.8 %
Atmospheric Pressure:	99.35 kPa

6.4 *Test Equipment*

Left Insole

Test End Date: 6-Jun-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

Right Insole

Test End Date: 24-Dec-2024 Tester: SGM

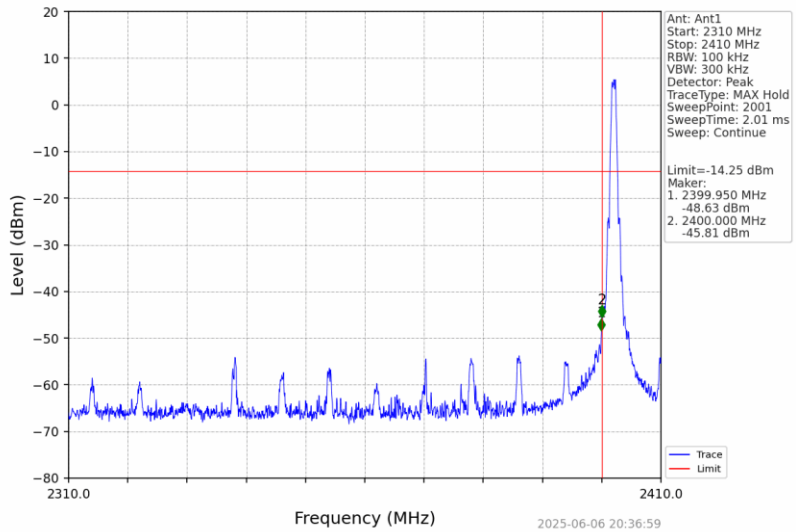
Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	20-Mar-2024	20-Mar-2025
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	8-Apr-2024	8-Apr-2025
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	3-Jan-2024	3-Jan-2025

Software Profile:
TSTPASS Version: 2.0 (2024.12.23_11.05.24)

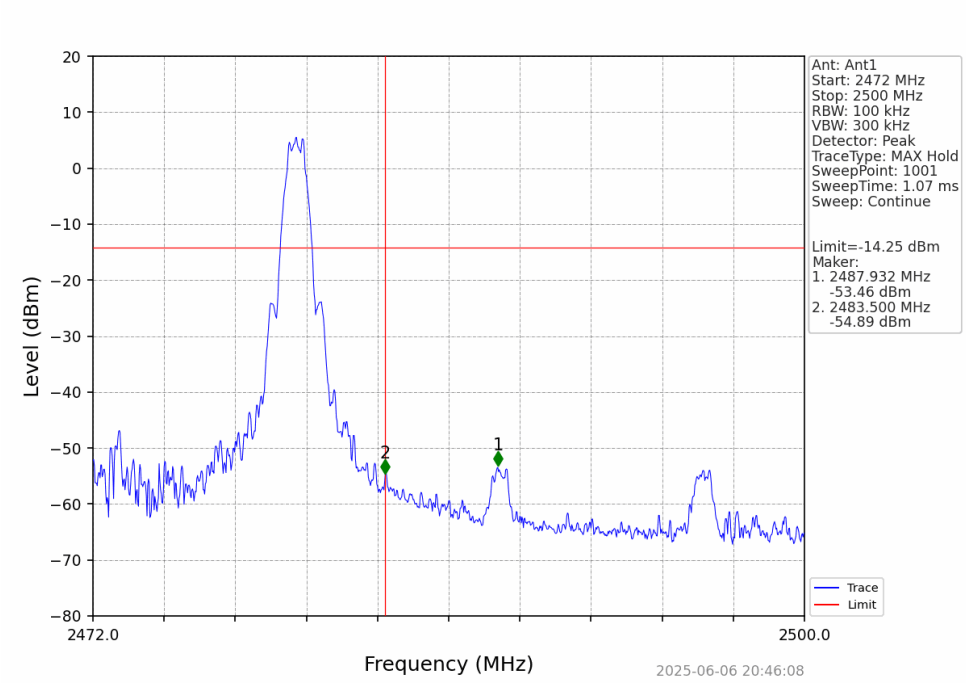
6.5 *Test Data – Left Insole*

6.5.1 DTS Band Edge

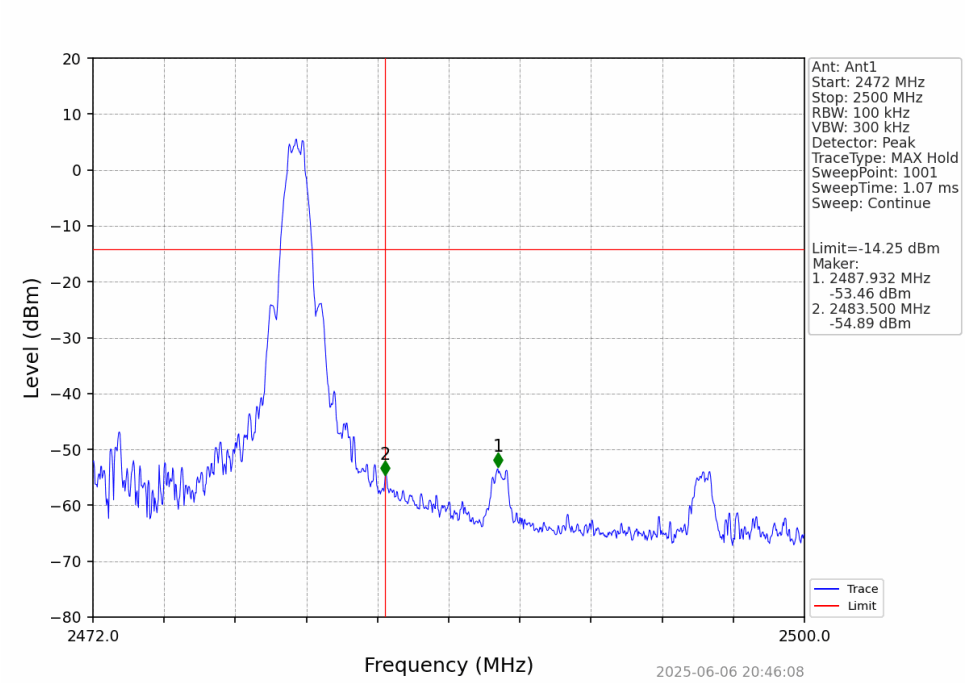
BLE 1M - Lower band edge



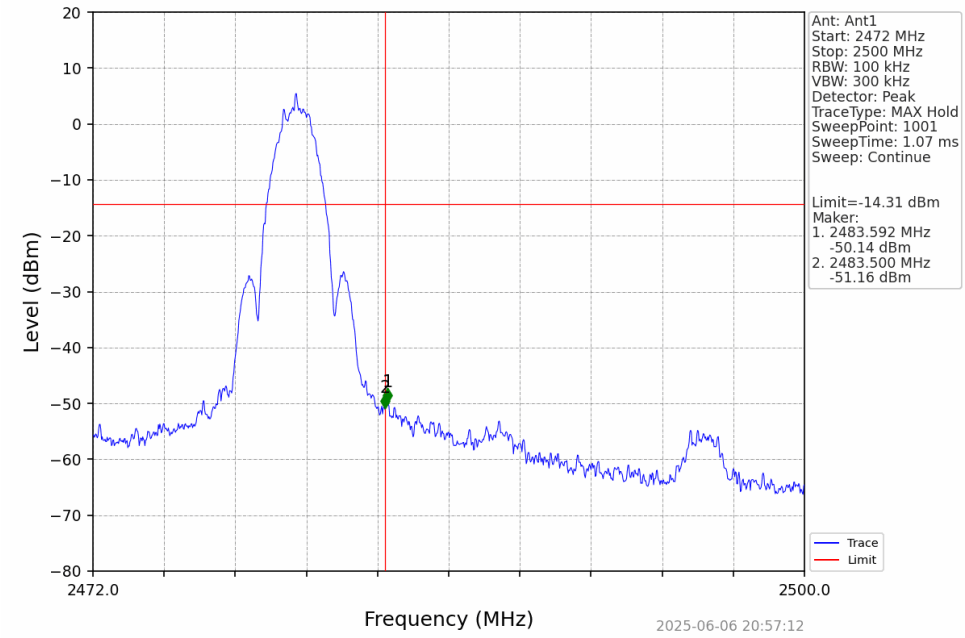
BLE 1M - Upper band edge



BLE 2M - Lower band edge



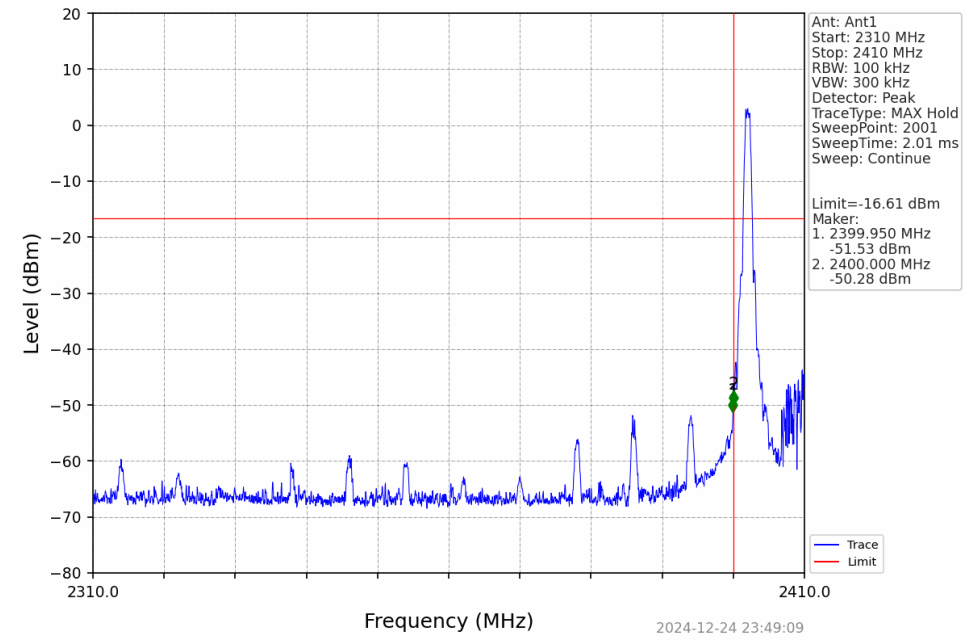
BLE 2M - Upper band edge



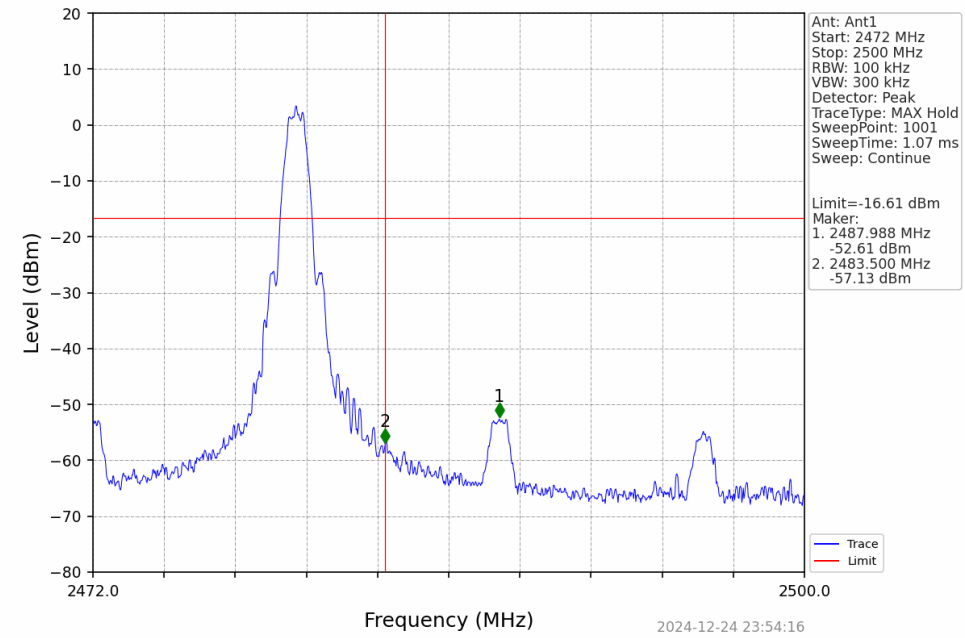
6.6 *Test Data – Right Insole*

6.6.1 DTS Band Edge

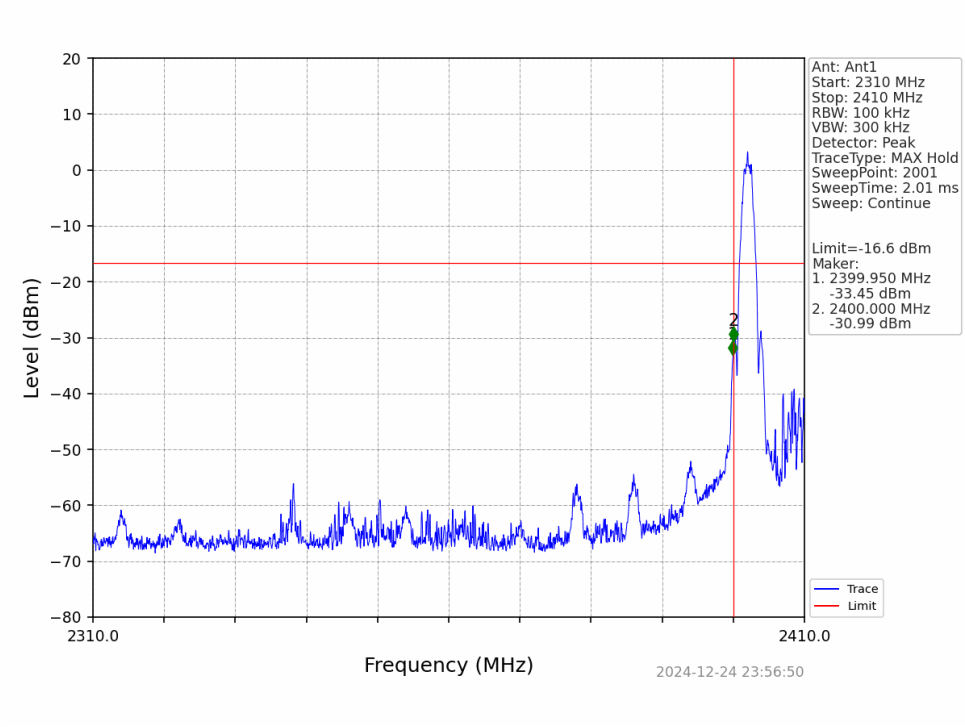
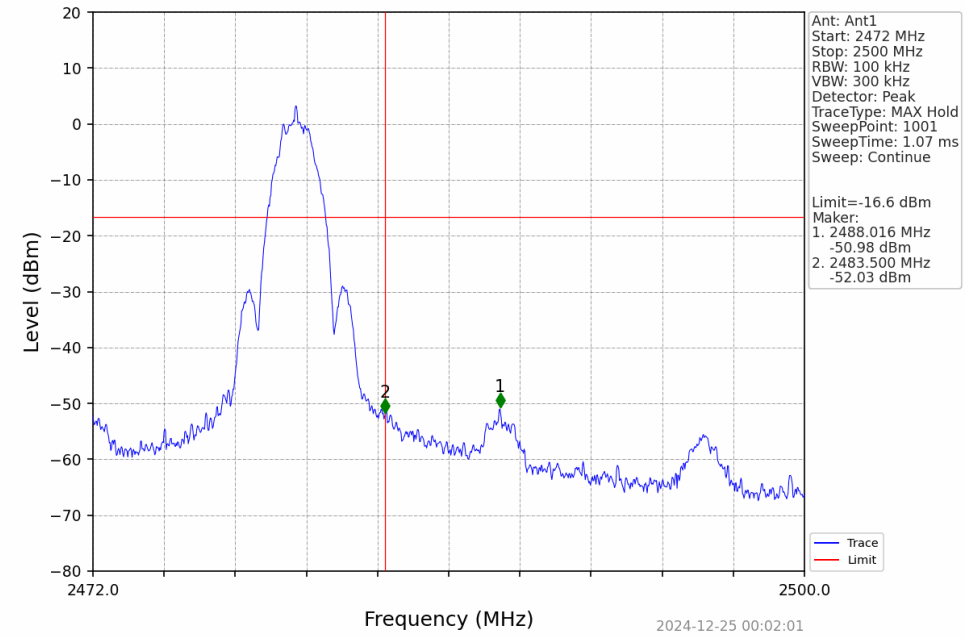
BLE 1M - Lower band edge



BLE 1M - Upper band edge



BLE 2M - Lower band edge



BLE 2M - Upper band edge