

Insulet Corporation

TEST REPORT

SCOPE OF WORK

EMISSIONTESTING – DASH Gen 3 Pod, Model POD-BLE-I1-520

REPORT NUMBER

105634374BOX-008

ISSUE DATE

08/21/2024

[REVISED DATE]

Original Issue

DOCUMENT CONTROL NUMBER

Non-Specific Radio Report Shell Rev. June 2024
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EMISSIONS TEST REPORT (FULL COMPLIANCE)

Report Number: 105634374BOX-008

Project Number: G105634374

Report Issue Date: 08/21/2024

Model(s) Tested: POD-BLE-I1-520

Model(s) Partially Tested: None

Model(s) Not Tested but declared equivalent by the client: None

Standards: CFR47 FCC Part 15 Subpart C, Section 15.247: 07/2024
CFR47 FCC Part 15 Subpart C, Section 15.209: 07/2024
CFR47 FCC Part 15 Subpart B, Section 15.109: 07/2024
RSS-247 Issue 3 August 2023
ISED ICES-003 Issue 7 October 2020
KDB 558074 D01 15.247 Meas Guidance v05r02: 04/2019
RSS-Gen Issue 5 April 2018 +Amendment 1 March 2019

Tested by:
Intertek
70 Codman Hill Road
Boxborough, MA 01719
USA

Client:
Insulet Corporation
100 Nagog Park
Acton, MA 01720
USA

Report prepared by Reviewer



Kouma Sinn / Sr. EMC Staff Engineer

Report reviewed by Reviewer



Vathana Ven / Sr. EMC Staff Engineer

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1 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 4.0. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
3	Client Information	--
4	Description of Equipment Under Test and Variant Models	--
5	System Setup and Method	--
6	Maximum Peak Output Power CFR47 FCC Part 15 Subpart C, Section 15.247 (b)(3): 07/2024 RSS-247 Issue 3 August 2023	Pass
7	6 dB Bandwidth (DTS Bandwidth) and Occupied Bandwidth CFR47 FCC Part 15 Subpart C, Section 15.247 (a)(2): 07/2024 RSS-247 Issue 3 August 2023	Pass
8	Maximum Peak Power Spectral Density CFR47 FCC Part 15 Subpart C, Section 15.247 (e): 06/2024 RSS-247 Issue 3 August 2023	Pass
9	Band Edge Compliance CFR47 FCC Part 15 Subpart C, Section 15.247 (d): 07/2024 RSS-247 Issue 3 August 2023	Pass
10	Transmitter spurious emissions CFR47 FCC Part 15 Subpart C, Section 15.247 (d): 07/2024 CFR47 FCC Part 15 Subpart C, Section 15.209: 06/2024 RSS-247 Issue 3 August 2023	Pass
11	Digital Device Radiated Spurious Emissions CFR47 FCC Part 15 Subpart B 15.109: 07/2024 ISED ICES-003 Issue 7 October 2020	Pass
---	AC Mains Conducted Emissions FCC 47CFR Part 15.107: 07/2024 ISED ICES-003 Issue 7 October 2020	N/A
12	Revision History	--

Notes: The EUT is battery powered.

3 Client Information

This EUT was tested at the request of:

Client: Insulet Corporation
100 Nagog Park
Acton, MA 01720
USA

Contact: Rachel Zhang
Telephone: (978) 600-7000
Email: rozhang@insulet.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Insulet Corporation
100 Nagog Park
Acton, MA 01720
USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
DASH Gen 3 Pod	Insulet Corporation	POD-BLE-I1-520	002 and 006

Receive Date:	07/10/2024
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
DASH Gen 3 Pod Automated Insulin Delivery System

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
4.5 V (3 x 1.5 V Batteries)	120 mAh per battery	DC	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	Programmed to transmitter continuous with modulation at 100% duty cycle

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	Pod: 11.6.0

Radio/Receiver Characteristics	
Frequency Band(s)	2402-2480 MHz
Modulation Type(s)	GFSK
Maximum Conducted Output Power	Low Channel (2402 MHz): -0.04 dBm or 0.000991 Watts Mid Channel (2440 MHz): -0.12 dBm or 0.000973 Watts High Channel (2480 MHz): -0.22 dBm or 0.000951 Watts
Test Channels	Low Channel (2402 MHz) Mid Channel (2440 MHz) High Channel (2480 MHz)
Occupied Bandwidth	Low Channel (2402 MHz): 1.059 MHz Mid Channel (2440 MHz): 1.063 MHz High Channel (2480 MHz): 1.067 MHz
Frequency Hopper: Number of Hopping Channels	N/A
Frequency Hopper: Channel Dwell Time	N/A
Frequency Hopper: Max interval between two instances of use of the same channel	N/A
MIMO Information (# of Transmit and Receive antenna ports)	N/A
Equipment Type	Standalone
Antenna Type and Gain	Integral, 1.7 dBi

Variant Models:

The following variant models were not tested as part of this evaluation and are not eligible for certification; but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

None

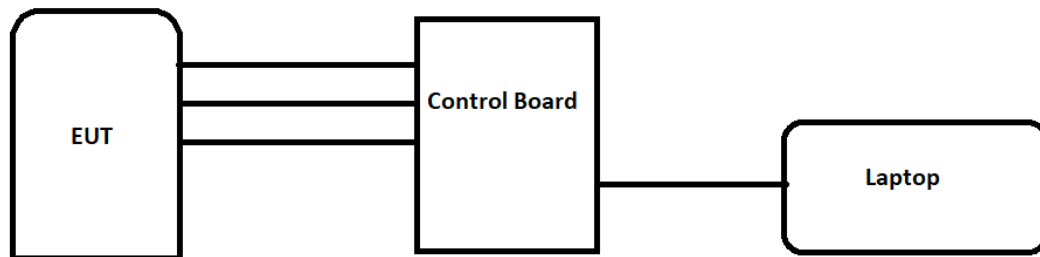
5 System Setup and Method

Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
--	None	N/A	N/A	N/A	N/A

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
Laptop	Dell	Latitude 3420	8EC18BE2-988C-446A-AC52-6832A2C1CF30
Control Board	Insulet Corporation	TL-008591 Rev 01	None

5.1 Method:

Configuration as required by ANSI C63.10-2013, RSS-Gen Issue 5 April 2018 +Amendment 1 March 2019, and RSS-Gen Issue 5 April 2018 +Amendment 1 March 2019.

5.2 EUT Block Diagram:

6 Maximum Peak Output Power

6.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, ANSI C63.10, and KDB 558074 D0115.247 Meas Guidancev05r02.

TEST SITE: EMC Lab (AMAP Lab)

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

6.2 Limits

Limits – FCC Part §15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt or 30 dBm.

Notes: The limit for RSS-247 is the same as the FCC limits above.

6.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV006'	Weather Station	Davis	6250	MS191218071	03/01/2024	03/01/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	02/28/2024	02/28/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/27/2024	02/27/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

6.4 Results:

The sample tested was found to Comply.

6.5 Setup Photographs:

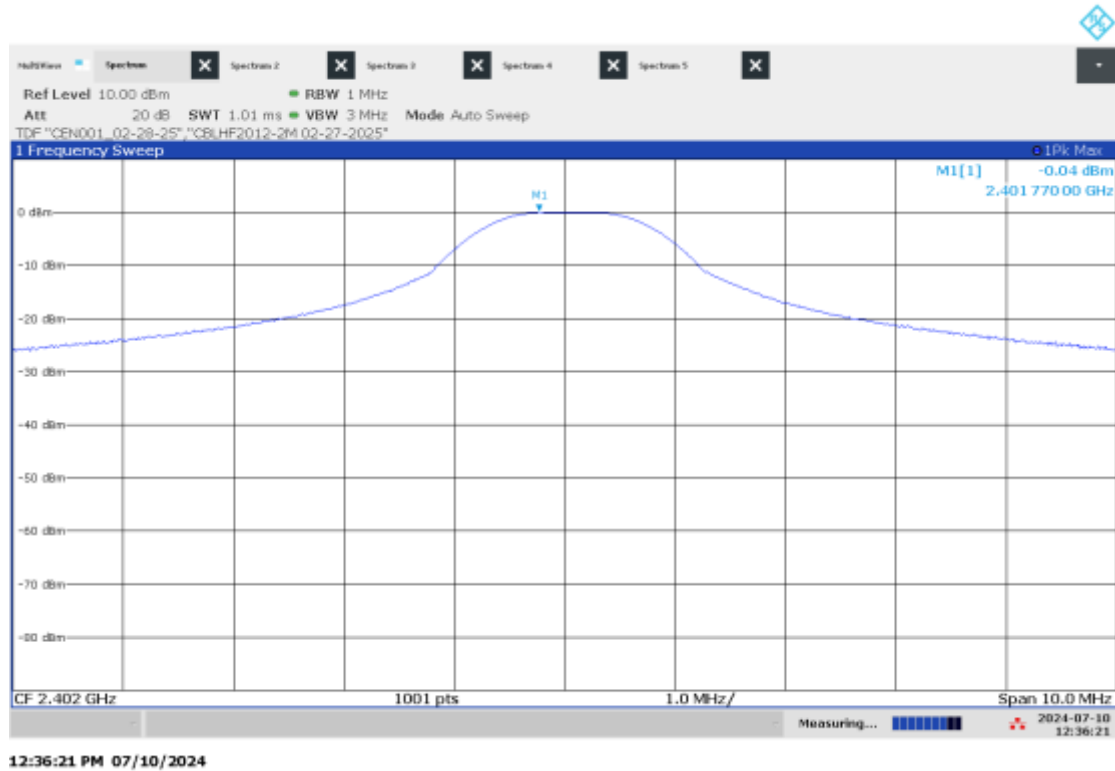


6.6 Plots/Data:

Conducted Output Power

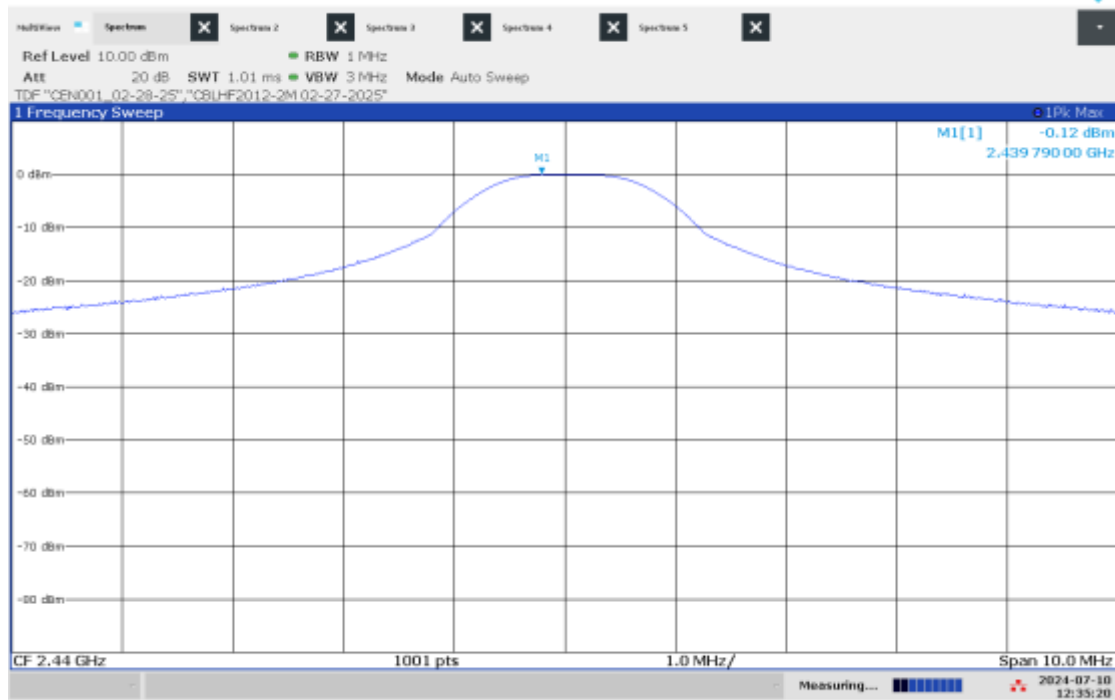
Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Results
2402	-0.04	30	Compliance
2440	-0.12	30	Compliance
2480	-0.22	30	Compliance

Low Channel Conducted Power



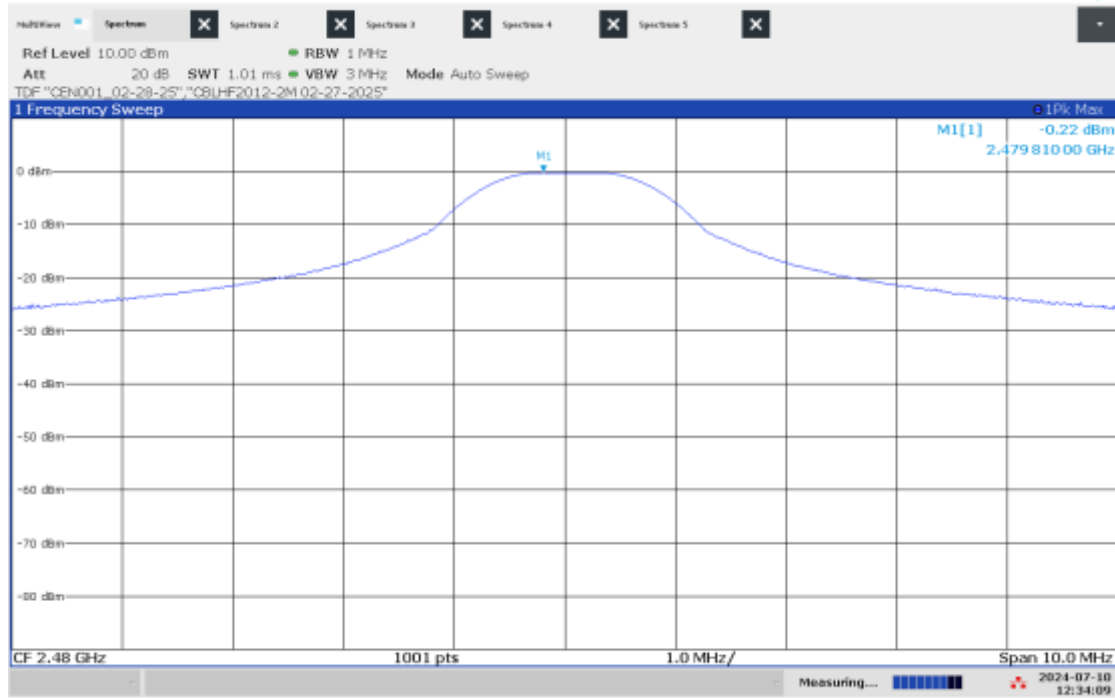
Notes: Cable loss and attenuator factors were compensated internally.

Mid Channel Conducted Power



12:35:20 PM 07/10/2024

High Channel Conducted Power



12:34:09 PM 07/10/2024

Notes: Cable loss and attenuator factors were compensated internally.

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Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 6.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/10/2024	Kouma Sinn <i>KPS</i>	N/A	Internal battery	Continuous transmitting	22	63	1002

Deviations, Additions, or Exclusions: None

7 6 dB Bandwidth (DTS Bandwidth) and Occupied Bandwidth

7.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, ANSI C63.10, and KDB 558074 D0115.247 Meas Guidancev05r02.

TEST SITE: EMC Lab (AMAP Lab)

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

7.2 Limits

DTS Bandwidth Limit:

FCC Part §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.

Occupied Bandwidth Limit:

Upper and Lower Edges of OBW within 2400-2483.5 MHz

Notes: The limits for RSS-247 are the same as the FCC limits above.

7.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV006'	Weather Station	Davis	6250	MS191218071	03/01/2024	03/01/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	02/28/2024	02/28/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/27/2024	02/27/2025

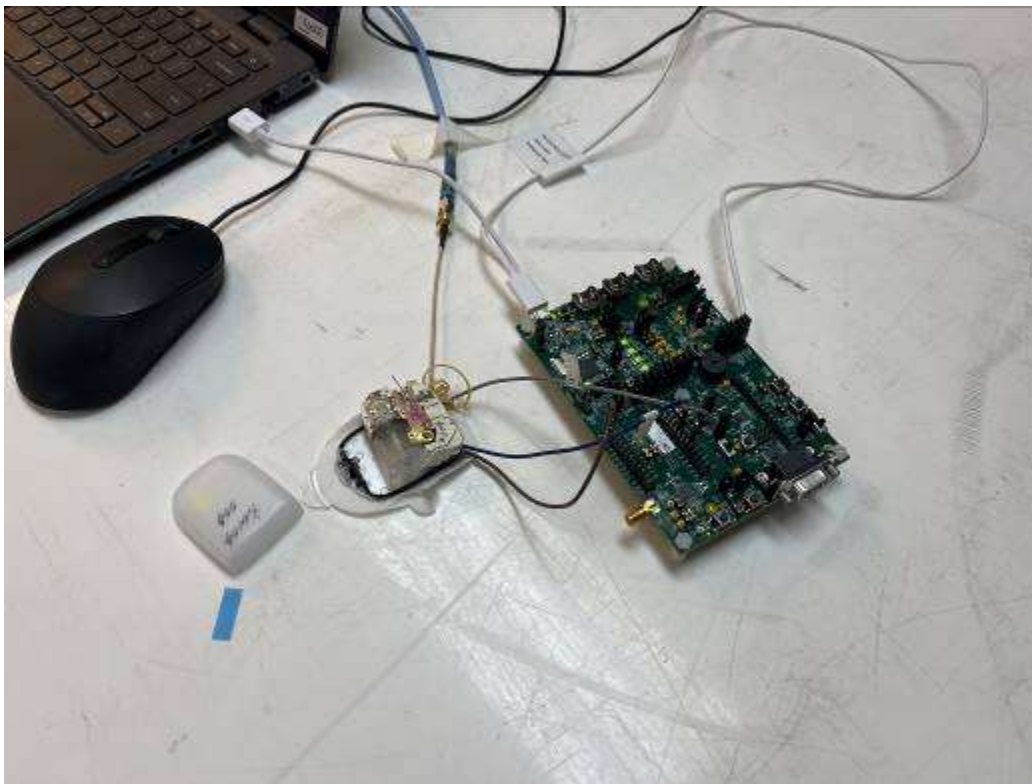
Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

7.4 Results:

The sample tested was found to Comply.

7.5 Setup Photographs:



7.6 Plots/Data:

DTS Bandwidth

Frequency (MHz)	DTS Bandwidth (6 dB Bandwidth) (kHz)	DTS Bandwidth Limit (kHz)	Results
2402	759.20	≥ 500	Compliance
2440	749.30	≥ 500	Compliance
2480	759.20	≥ 500	Compliance

Occupied Bandwidth

Frequency (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth Limit (MHz)	Results
2402	1.059	Within 2400-2483.5	Compliance
2440	1.063	Within 2400-2483.5	Compliance
2480	1.067	Within 2400-2483.5	Compliance

Low Channel DTS Bandwidth



Notes: Cable loss and attenuator factors were compensated internally.

Mid Channel DTS Bandwidth



12:27:52 PM 07/10/2024

High Channel DTS Bandwidth



12:29:49 PM 07/10/2024

Notes: Cable loss and attenuator factors were compensated internally.

Low Channel Occupied Bandwidth



01:08:59 PM 07/10/2024

Mid Channel Occupied Bandwidth



01:07:11 PM 07/10/2024

Notes: Cable loss and attenuator factors were compensated internally.

High Channel Occupied Bandwidth



Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 7.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/10/2024	Kouma Sinn <i>KPS</i>	N/A	Internal battery	Continuous transmitting	22	63	1002

Deviations, Additions, or Exclusions: None

8 Maximum Peak Power Spectral Density

8.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, ANSI C63.10, and KDB 558074 D0115.247 Meas Guidancev05r02.

TEST SITE: EMC Lab (AMAP Lab)

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

8.2 Limits

Limits – 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.

Notes: The limits for RSS-247 are the same as the FCC limits above.

8.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV006'	Weather Station	Davis	6250	MS191218071	03/01/2024	03/01/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	02/28/2024	02/28/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/27/2024	02/27/2025

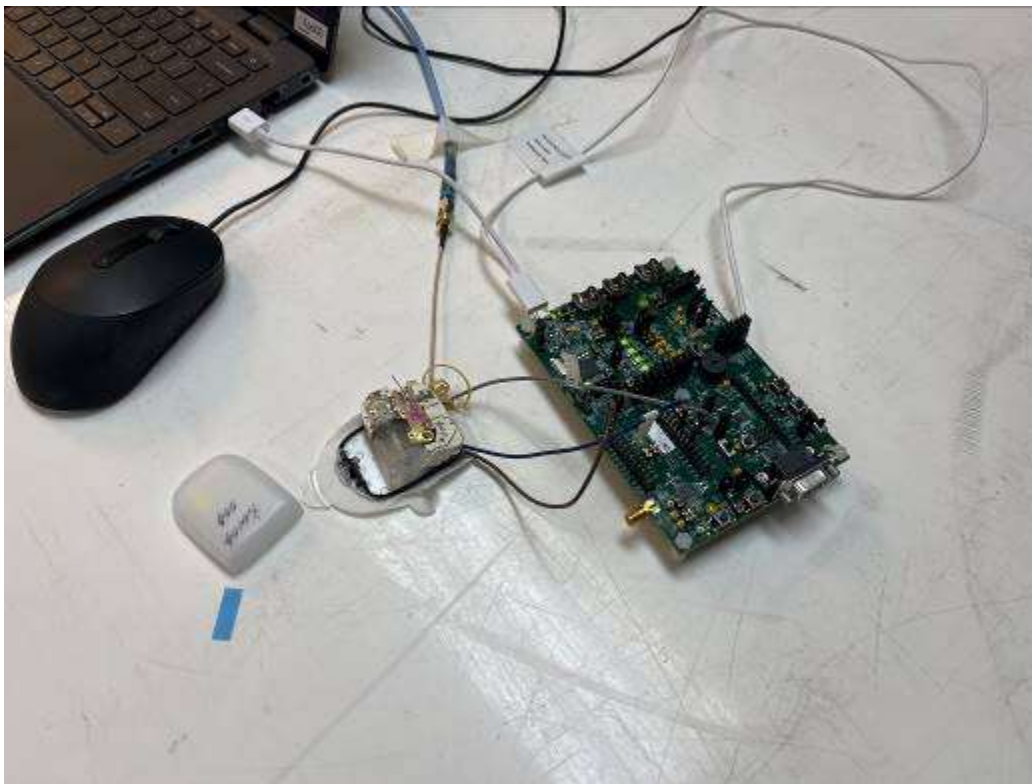
Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

8.4 Results:

The sample tested was found to Comply.

8.5 Setup Photographs:

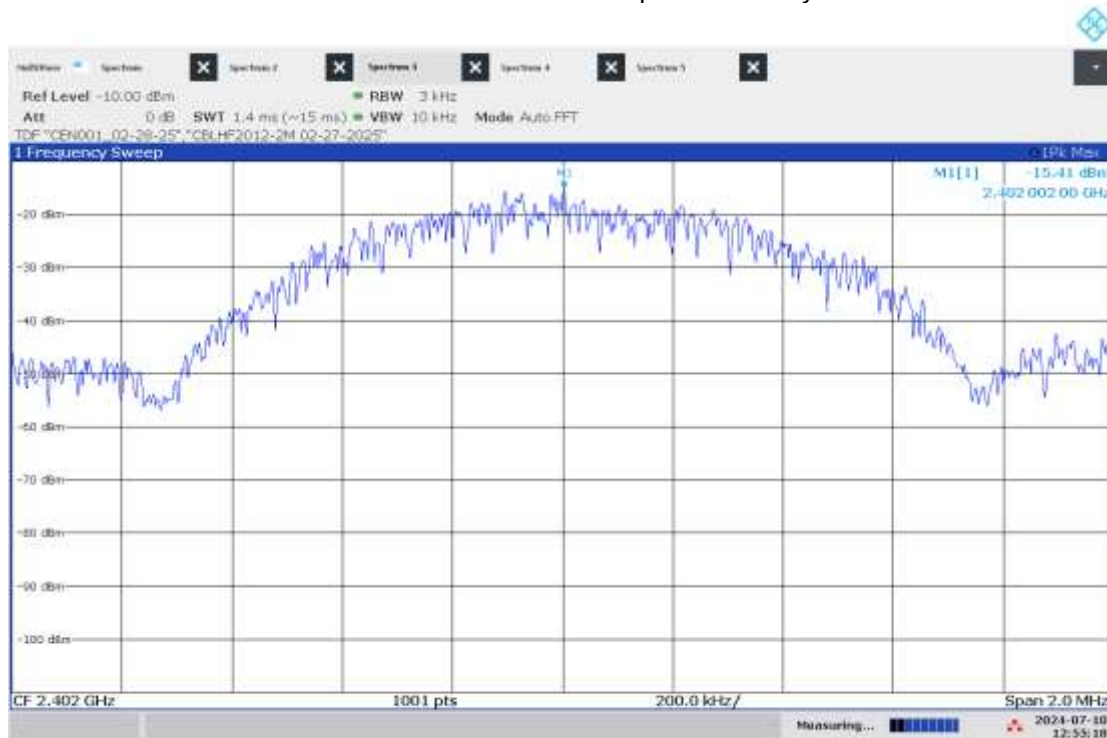


8.6 Plots/Data:

Peak Power Spectral Density

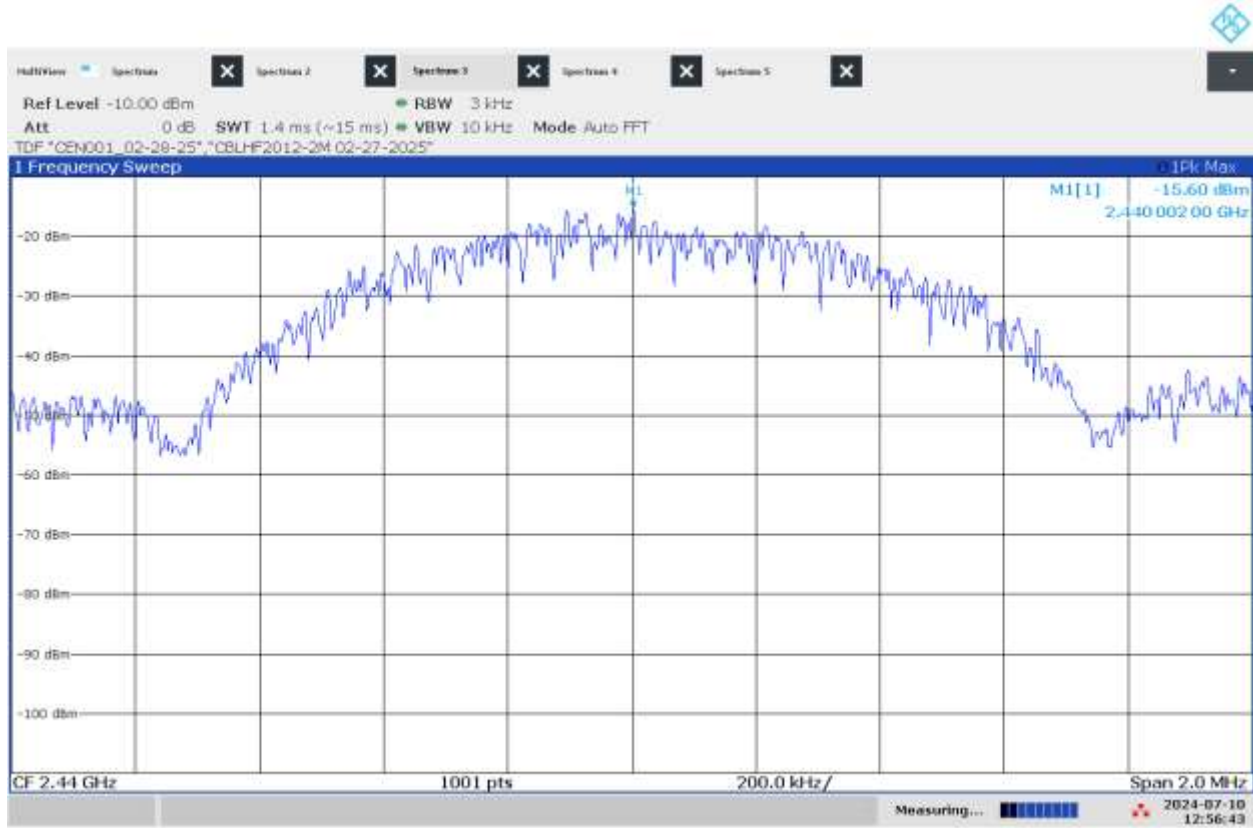
Frequency (MHz)	Peak Power Spectral Density (dBm)	Limit (dBm)	Result
2402	-15.41	8	Compliance
2440	-15.60	8	Compliance
2480	-15.78	8	Compliance

Low Channel Peak Power Spectral Density



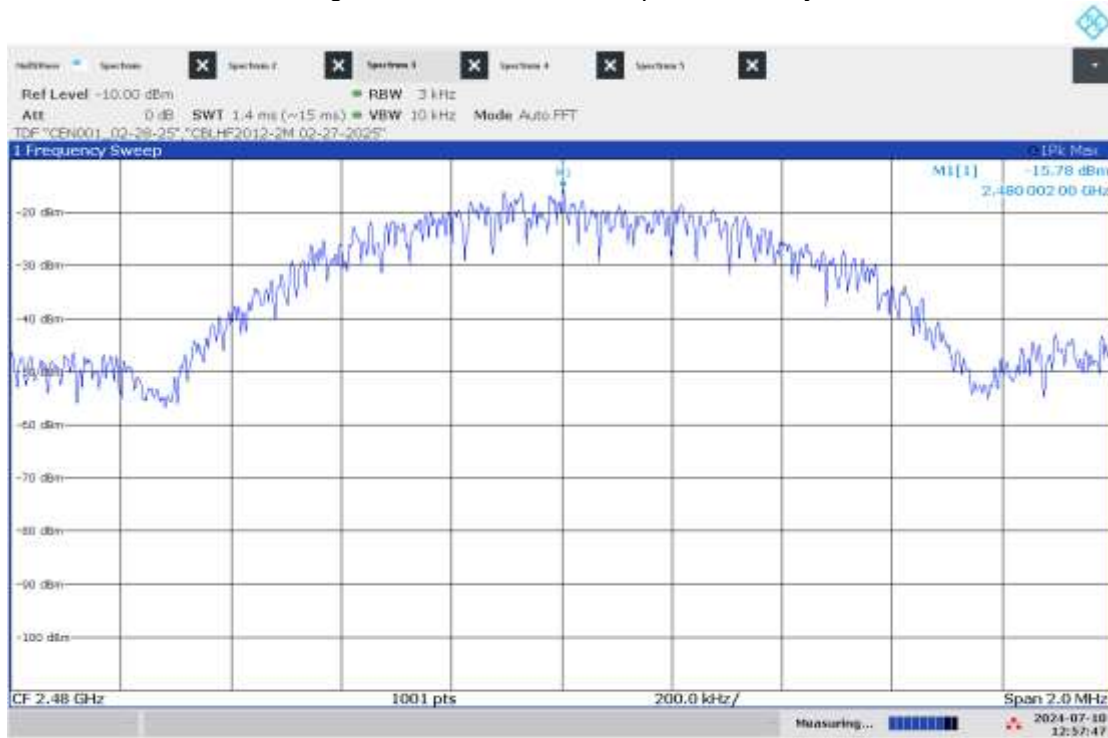
12:55:18 PM 07/10/2024

Mid Channel Peak Power Spectral Density



12:56:44 PM 07/10/2024

High Channel Peak Power Spectral Density



12:57:48 PM 07/10/2024

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Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 8.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/10/2024	Kouma Sinn <i>KPS</i>	N/A	Internal battery	Continuous transmitting	22	63	1002

Deviations, Additions, or Exclusions: None

9 Band Edge Compliance

9.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, ANSI C63.10, and KDB 558074 D0115.247 Meas Guidancev05r02.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucisprr
Radiated Emissions, 10m	30-1000 MHz	5.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.4 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.1 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	4.8 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.1 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where

FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB/m}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = 32 \text{ dB}\mu\text{V/m}$$

To convert from dB μ V to μ V or mV the following was used:

$$UF = 10^{(NF / 20)} \text{ where } UF = \text{Net Reading in } \mu\text{V}$$

$$NF = \text{Net Reading in dB}\mu\text{V}$$

Example:

$$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0$$

$$UF = 10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$$

Alternately, when BAT-EMC Emission Software is used, the "Level" includes all losses and gains and is compared directly in the "Margin" column to the "Limit". The "Correction" includes Antenna Factor, Preamp, and Cable Loss. These are already accounted for in the "Level" column.

9.2 Limits

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))

Notes: The limits for RSS-247 are the same as the FCC limits above.

9.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/19/2023	07/19/2024
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/30/2024	01/30/2025
HS002'	DC-18GHz cable 1.5M long	Huber & Suhner	SucoFlex 106A	HS002	07/19/2023	07/19/2024
145-408'	10m Chamber - 3m Track B In-floor Cable	Huber + Suhner	sucoflex 106-11000mm	001	07/19/2023	07/19/2024
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	10/16/2023	10/16/2024
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025

Software Utilized:

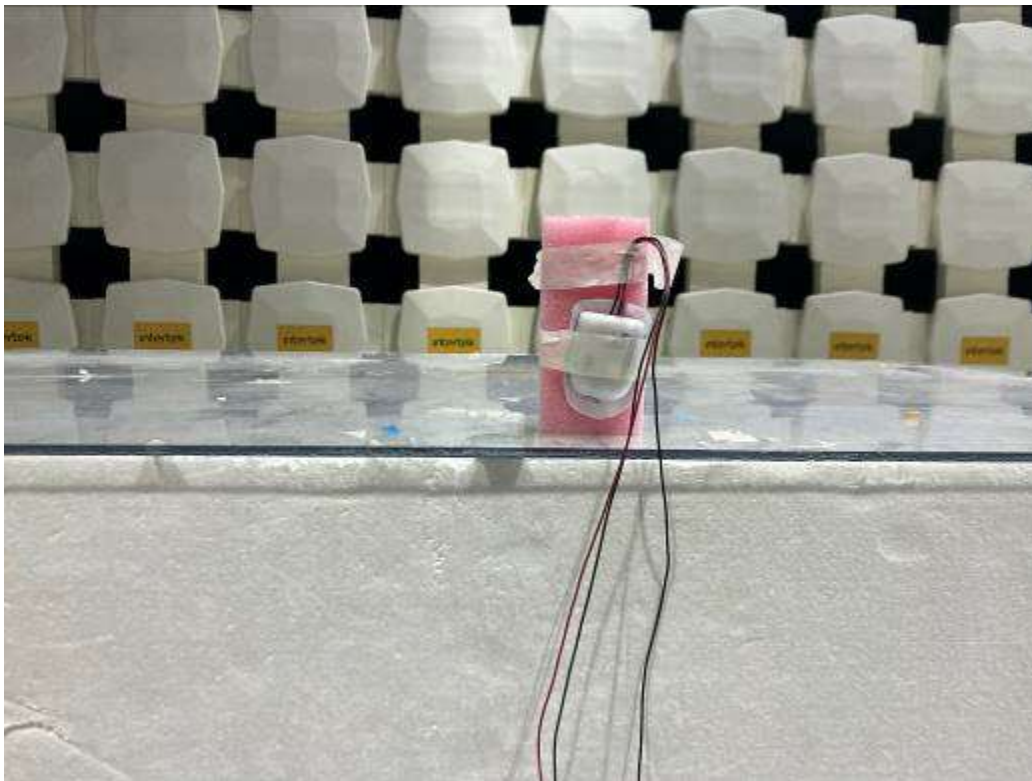
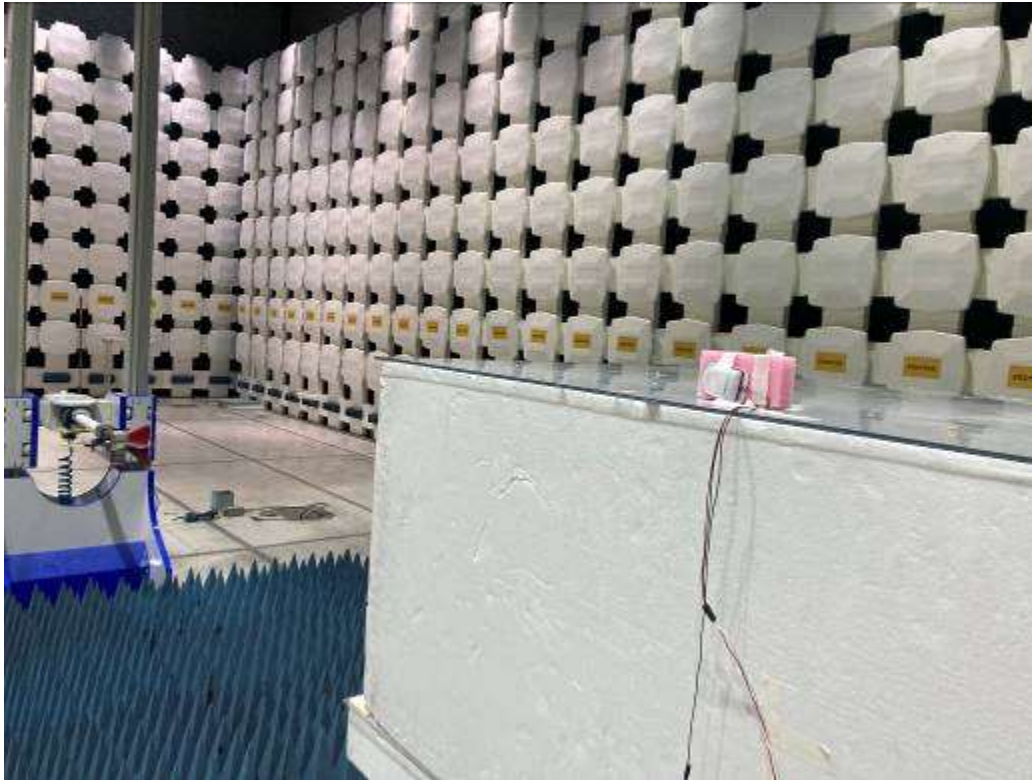
Name	Manufacturer	Version
None	N/A	N/A

9.4 Results:

The sample tested was found to Comply.

9.5 Setup Photographs:

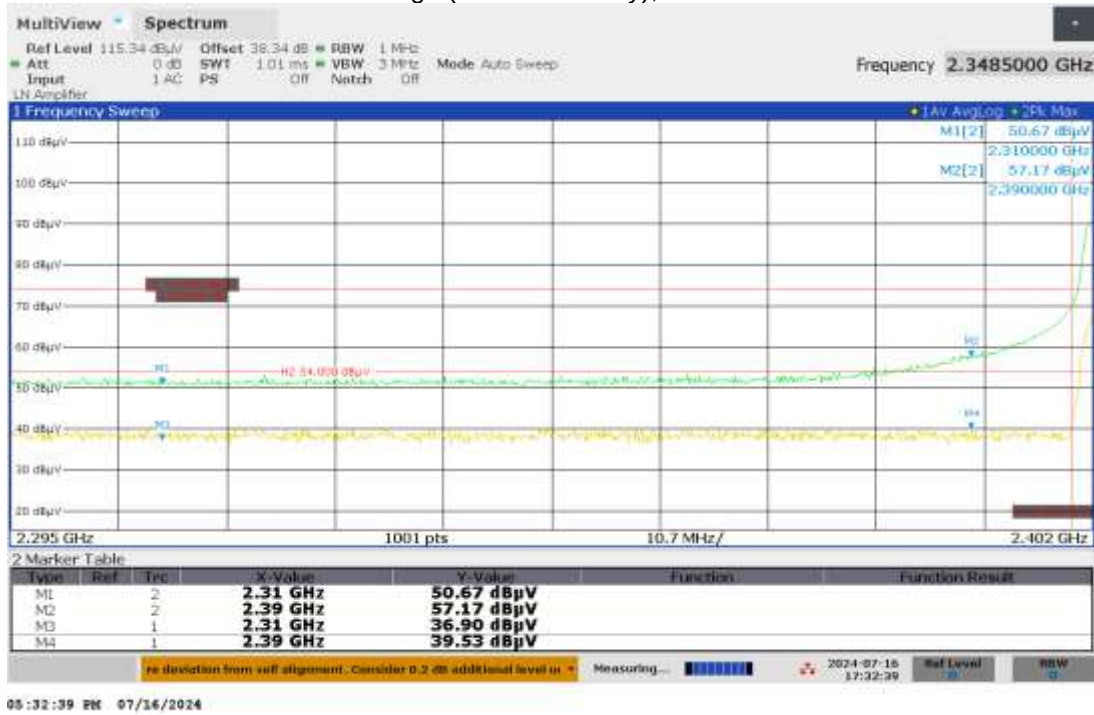




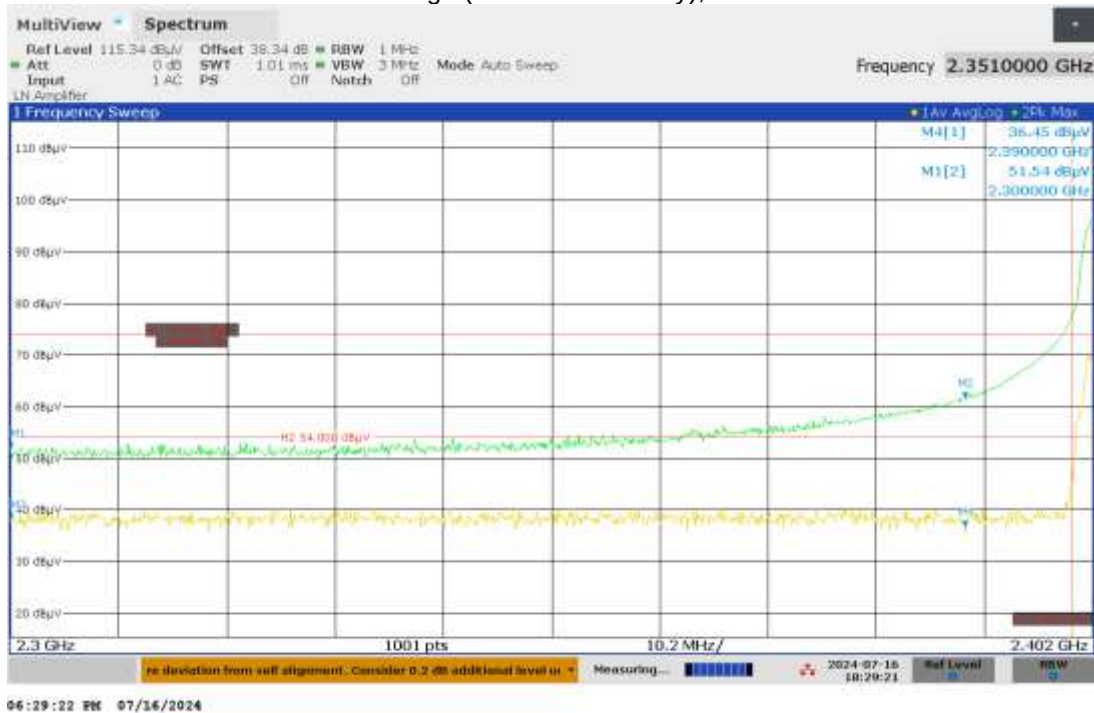


9.6 Plots/Data:

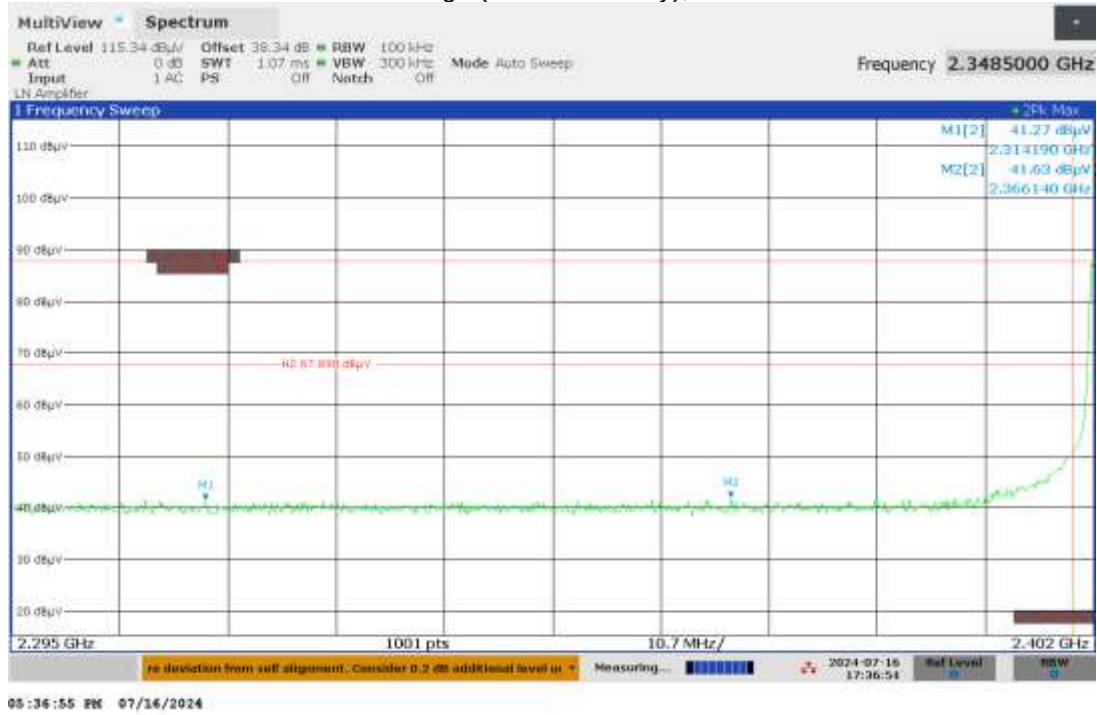
Lower Band Edge (Vertical Polarity), FCC 15.209 Limit



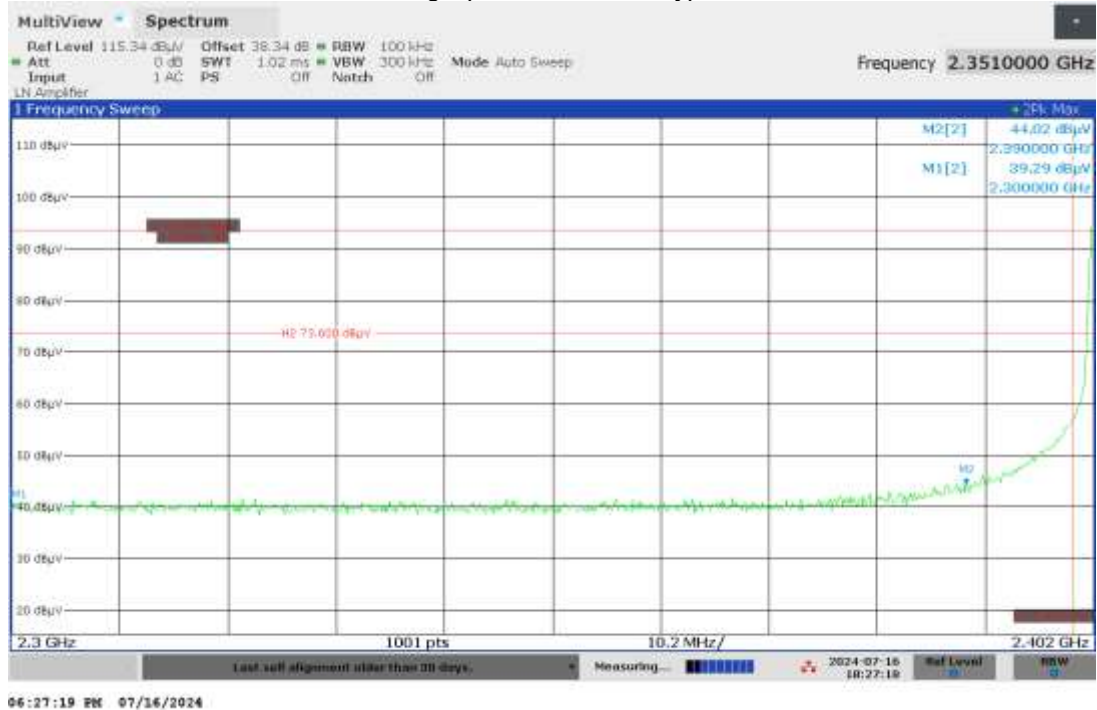
Lower Band Edge (Horizontal Polarity), FCC 15.209



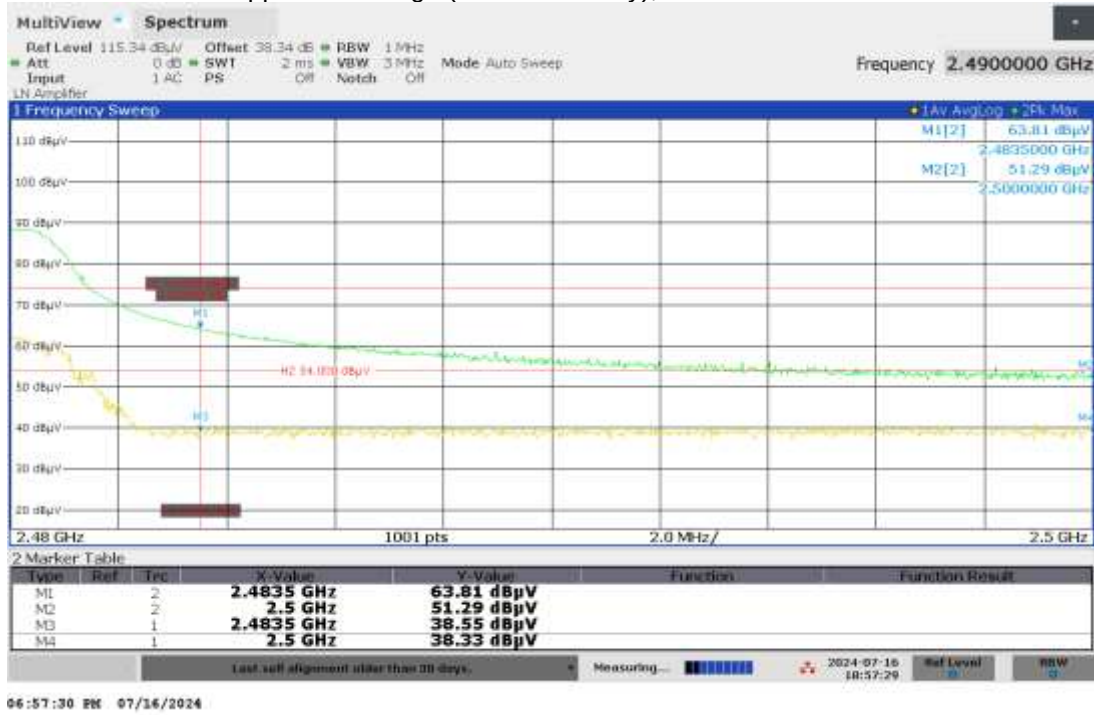
Lower Band Edge (Vertical Polarity), 20 dBc Limit



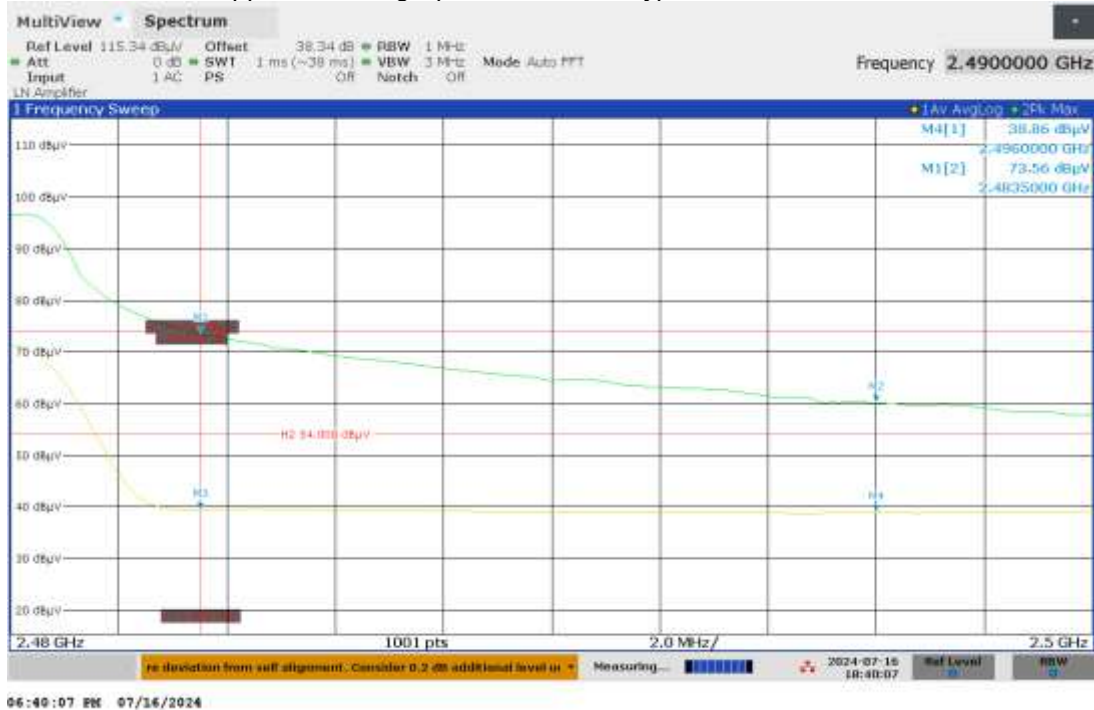
Lower Band Edge (Horizontal Polarity), 20 dBc Limit



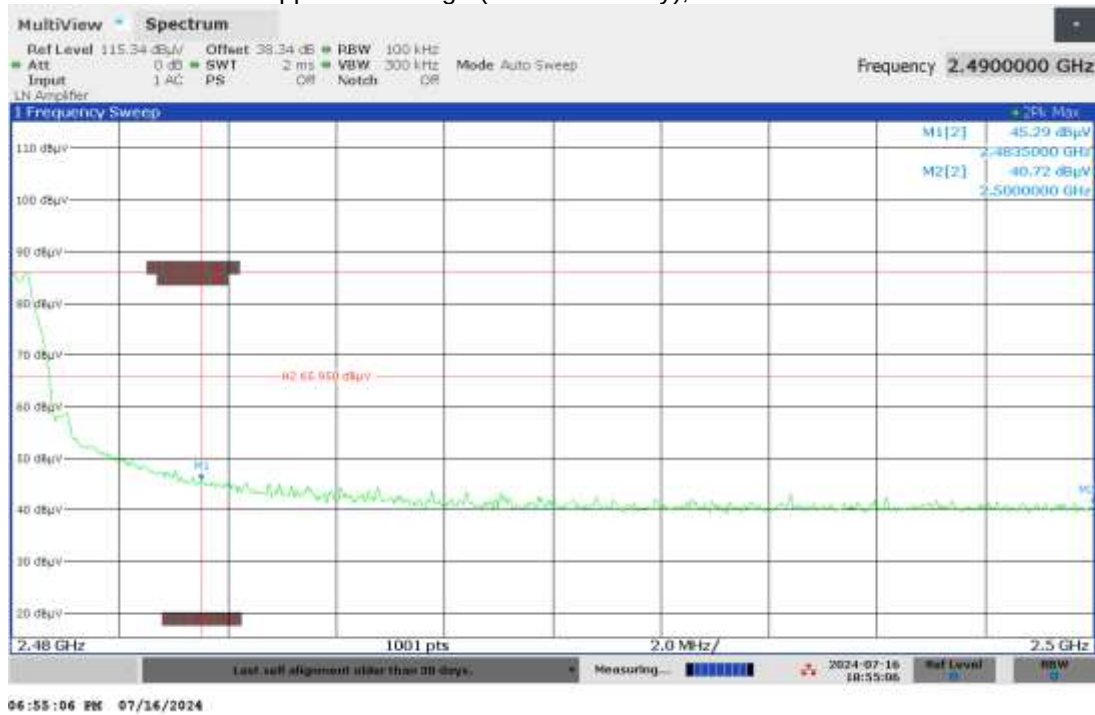
Upper Band Edge (Vertical Polarity), FCC 15.209 Limit



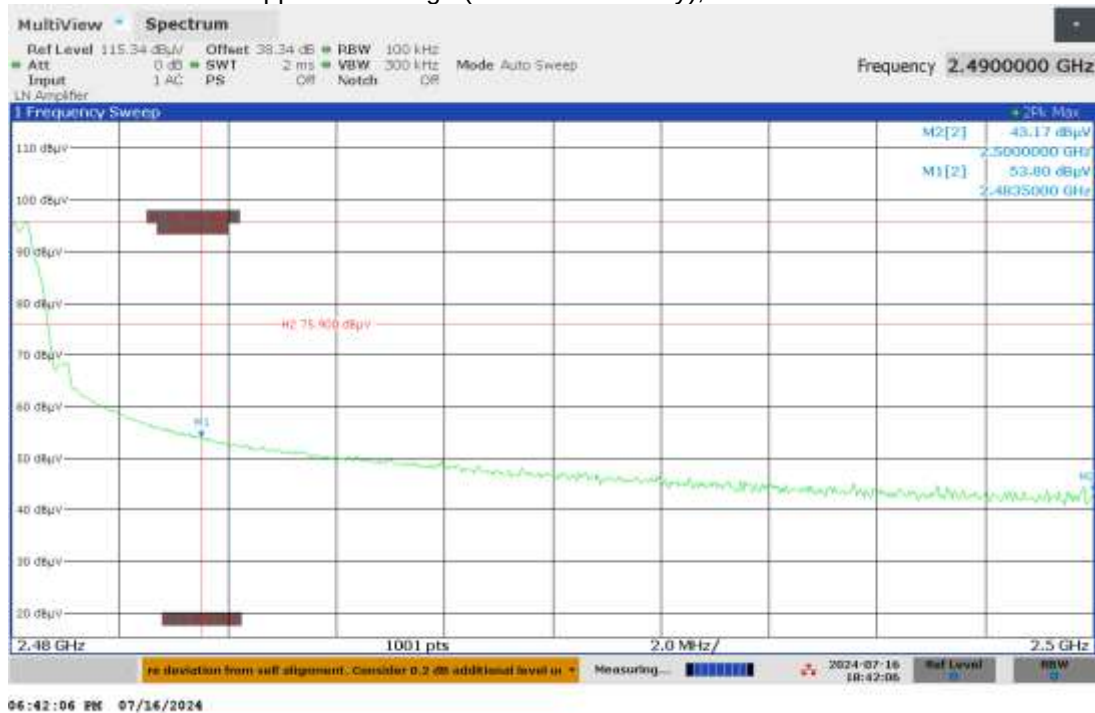
Upper Band Edge (Horizontal Polarity), FCC 15.209 Limit



Upper Band Edge (Vertical Polarity), 20 dBc Limit



Upper Band Edge (Horizontal Polarity), 20 dBc Limit



Intertek

Report Number: 105634374BOX-008	Issued: 08/21/2024
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Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 9.2 Pretest Verification w/BB source:			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/16/2024	Vathana F. Ven <i>VSV</i>	N/A	Battery Powered	Continuous Transmitting	20	54	1004

Deviations, Additions, or Exclusions: None

10 Transmitter Spurious Emissions

10.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C 15.247, FCC Part 15 Subpart B, RSS 247, ISED ICES 003, ANSI C 63.10, and ANSI C63.4.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucisp
Radiated Emissions, 10m	30-1000 MHz	5.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.4 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.1 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	4.8 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.1 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where

FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB/m}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = 32 \text{ dB}\mu\text{V/m}$$

To convert from dB μ V to μ V or mV the following was used:

$$UF = 10^{(NF / 20)} \text{ where } UF = \text{Net Reading in } \mu\text{V}$$

$$NF = \text{Net Reading in dB}\mu\text{V}$$

Example:

$$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0$$

$$UF = 10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$$

Alternately, when BAT-EMC Emission Software is used, the "Level" includes all losses and gains and is compared directly in the "Margin" column to the "Limit". The "Correction" includes Antenna Factor, Preamp, and Cable Loss. These are already accounted for in the "Level" column.

10.2 Limits

Limits – FCC Part §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))

Limits – FCC Part §15.209 (a) The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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

Notes: The limits for RSS-247 are the same as the FCC limits above.

10.3 Test Equipment Used:

Test equipment used from 9 kHz-30 MHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/19/2023	07/19/2024
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/30/2024	01/30/2025
HS002'	DC-18GHz cable 1.5M long	Huber & Suhner	SucoFlex 106A	HS002	07/19/2023	07/19/2024
145-408'	10m Chamber - 3m Track B In-floor Cable	Huber + Suhner	sucoflex 106-11000mm	001	07/19/2023	07/19/2024
ETS003'	9kHz-30MHz Active Loop Antenna	ETS Lindgren	6502	00143396	01/25/2024	01/25/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
CBLBNC2012-3'	50 Ohm Coaxial Cable	Pomona	RG58C/U	CBLBNC2012-3	04/23/2024	04/23/2025

Test equipment used from 30-1000 MHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
HS003	10m under floor cable	Huber-Schuner	10m-1	HS003	02/27/2024	02/27/2025
HS001	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/30/2024	01/30/2025
IW006	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	05/23/2024	05/23/2025
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	07/11/2024	07/11/2025
PRE11	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/15/2023	09/15/2024

Test equipment used from 1-18 GHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/19/2023	07/19/2024
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/30/2024	01/30/2025
HS002'	DC-18GHz cable 1.5M long	Huber & Suhner	SucoFlex 106A	HS002	07/19/2023	07/19/2024
145-408'	10m Chamber - 3m Track B In-floor Cable	Huber + Suhner	sucoflex 106-11000mm	001	07/19/2023	07/19/2024
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	10/16/2023	10/16/2024
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
REA008'	band reject filter 2.4GHz	Reactel, Inc	12RX7-2441.75-x140 S	17-01	10/31/2023	10/31/2024
REA004'	3GHz High Pass Filter	Reactel, Inc	7HSX-3G/18G-S11	06-1	02/27/2024	02/27/2025
BONN001'	1-18GHz low noise pre-amp	Bonn	BLMA 0118-M	1811749	07/19/2023	07/19/2024

Test equipment used from 18-25 GHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
EMC018'	100MHz-40GHz Preamp	MITEQ	NSP4000-NFG	1260417	10/03/2023	10/03/2024
EMC04'	ANTENNA, RIDGED GUIDE, 18-40 GHZ	EMCO	3116	2090	02/13/2024	02/13/2025
REA006'	18GHz High Pass Filter	Reactel, Inc	7HS-18G/40G K11	(06)1	04/23/2024	04/23/2025
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	02/27/2024	02/27/2025
CBLHF2012-2M-2'	2m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252675002	02/27/2024	02/27/2025

Software Utilized:

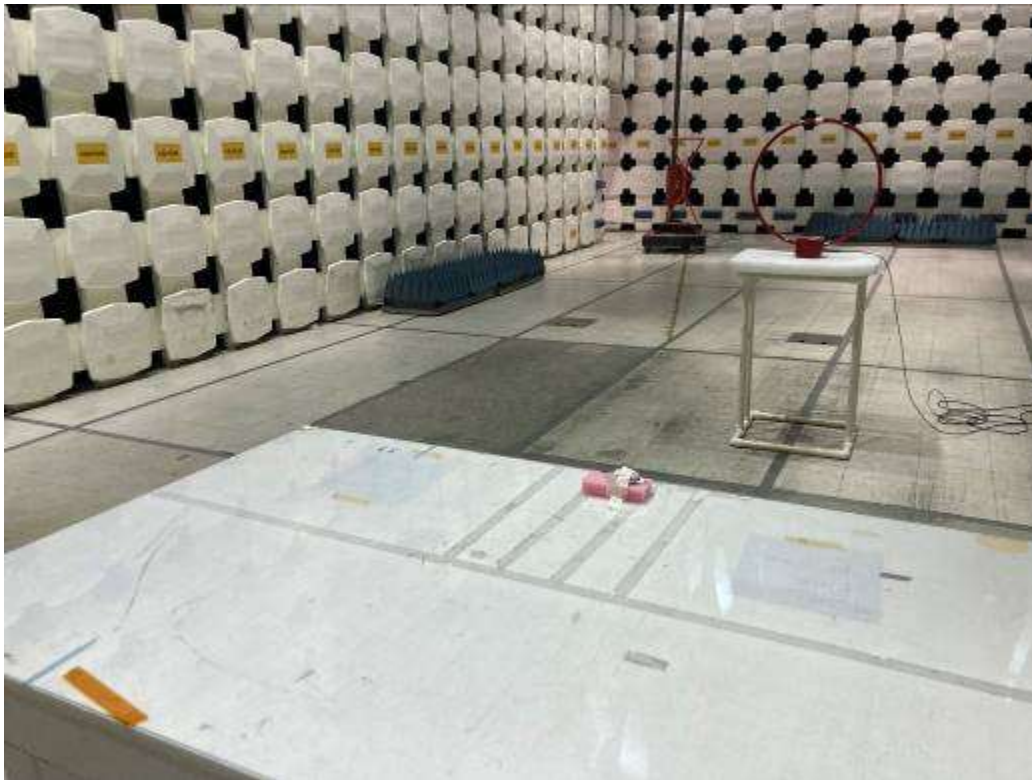
Name	Manufacturer	Version
BAT-EMC	Nexio	2023.0.9.0

10.4 Results:

The sample tested was found to Comply.

10.5 Setup Photographs:

9 kHz-30 MHz

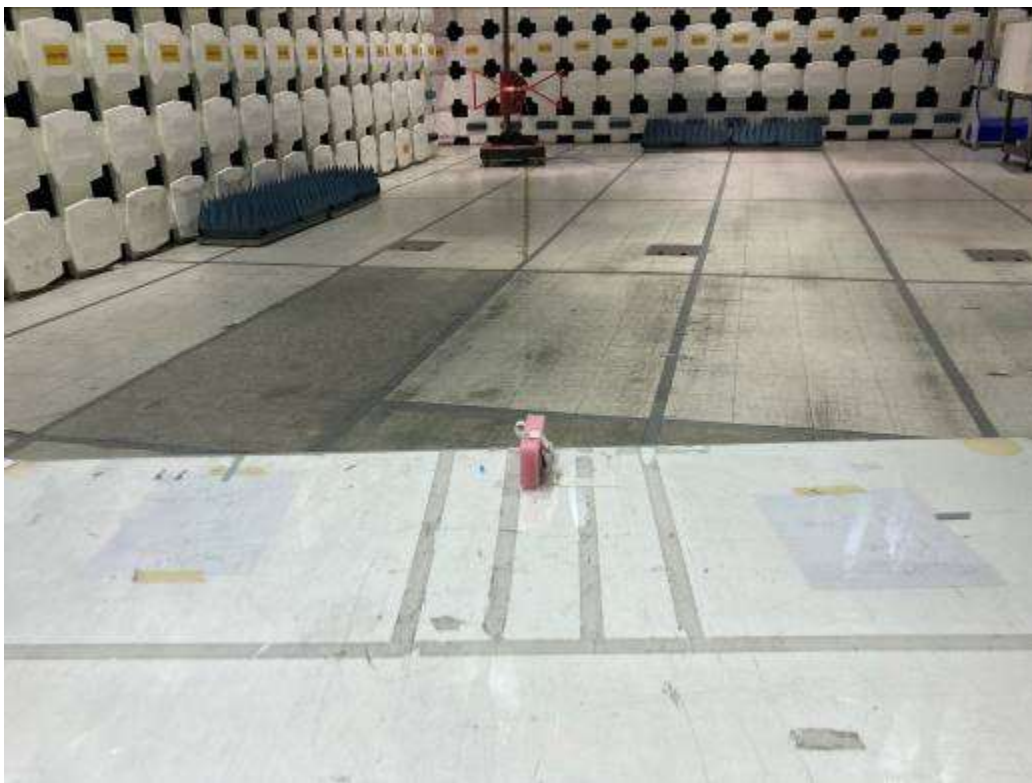


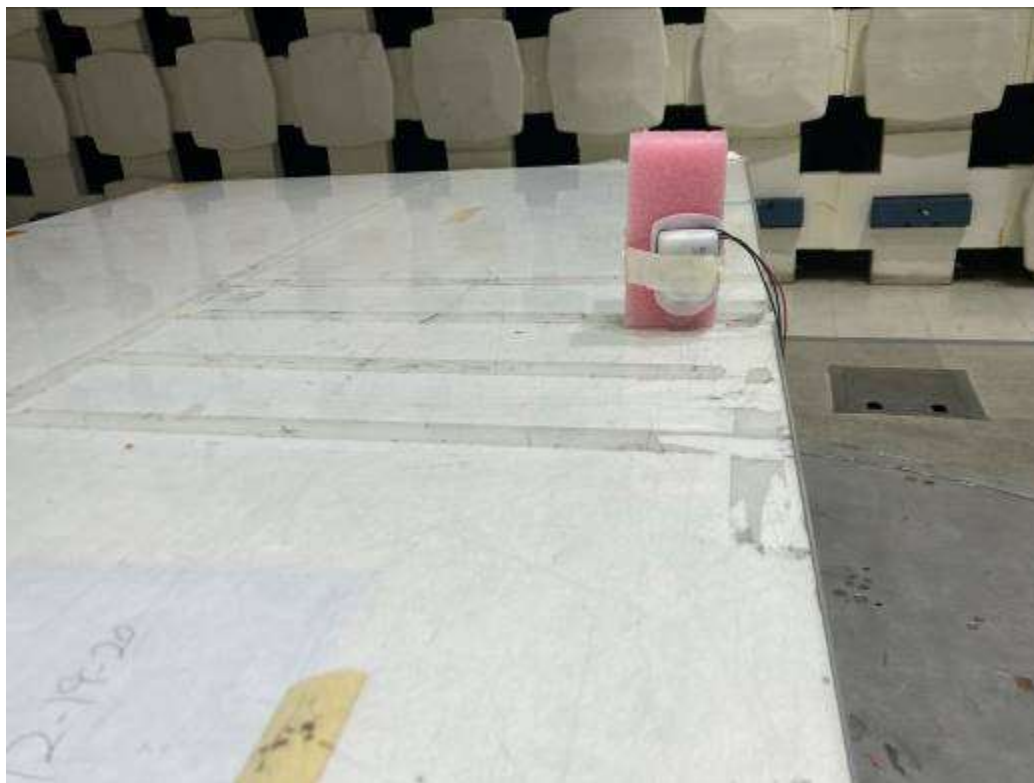




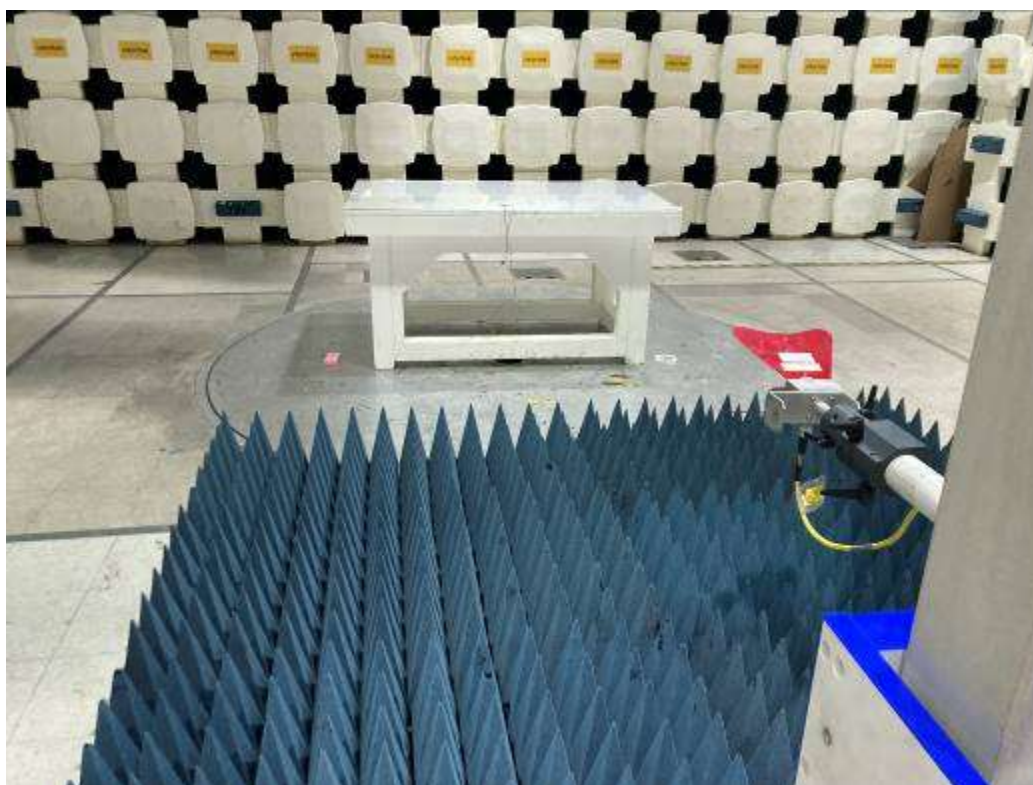
30-1000 MHz



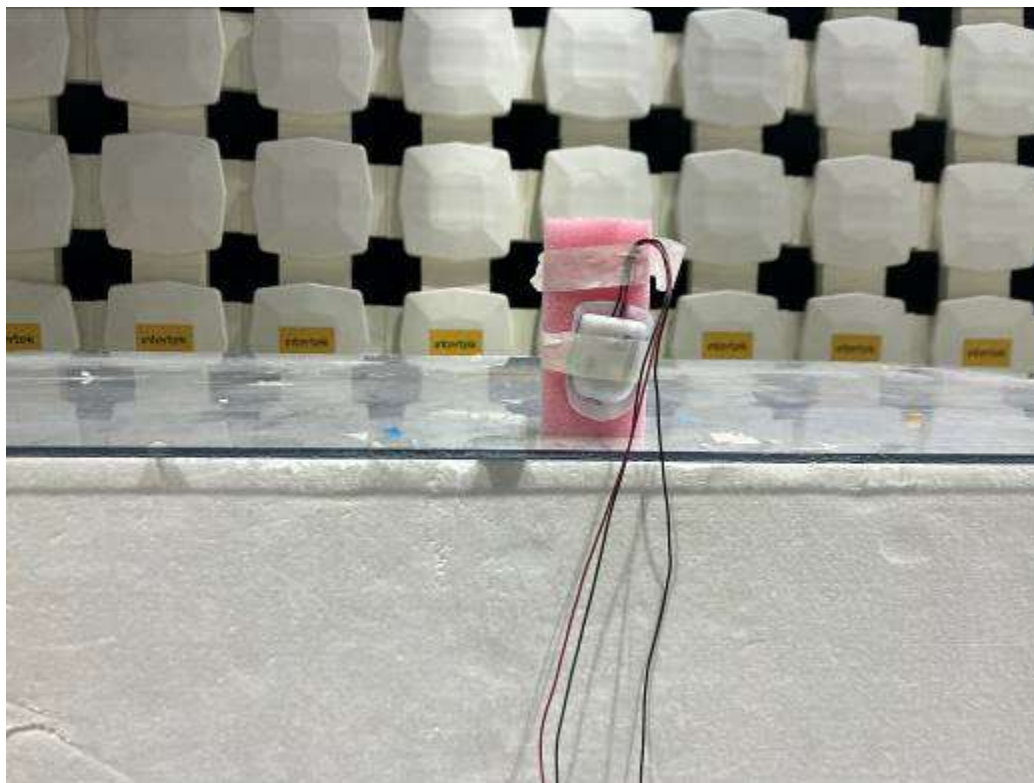
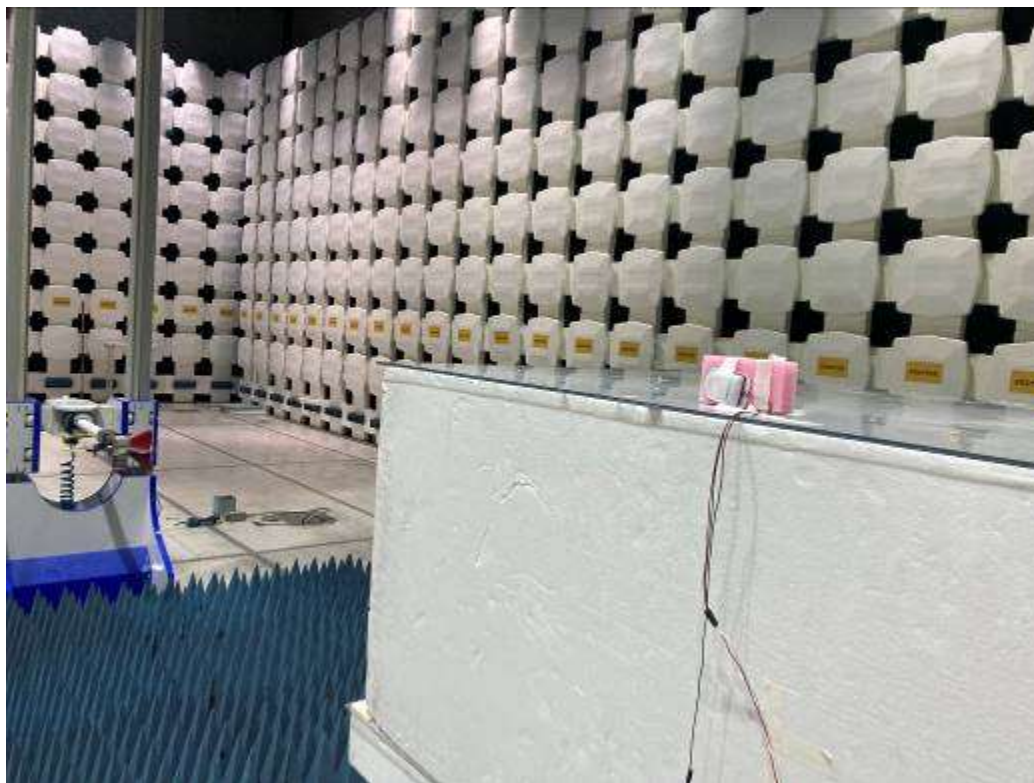




1-18 GHz

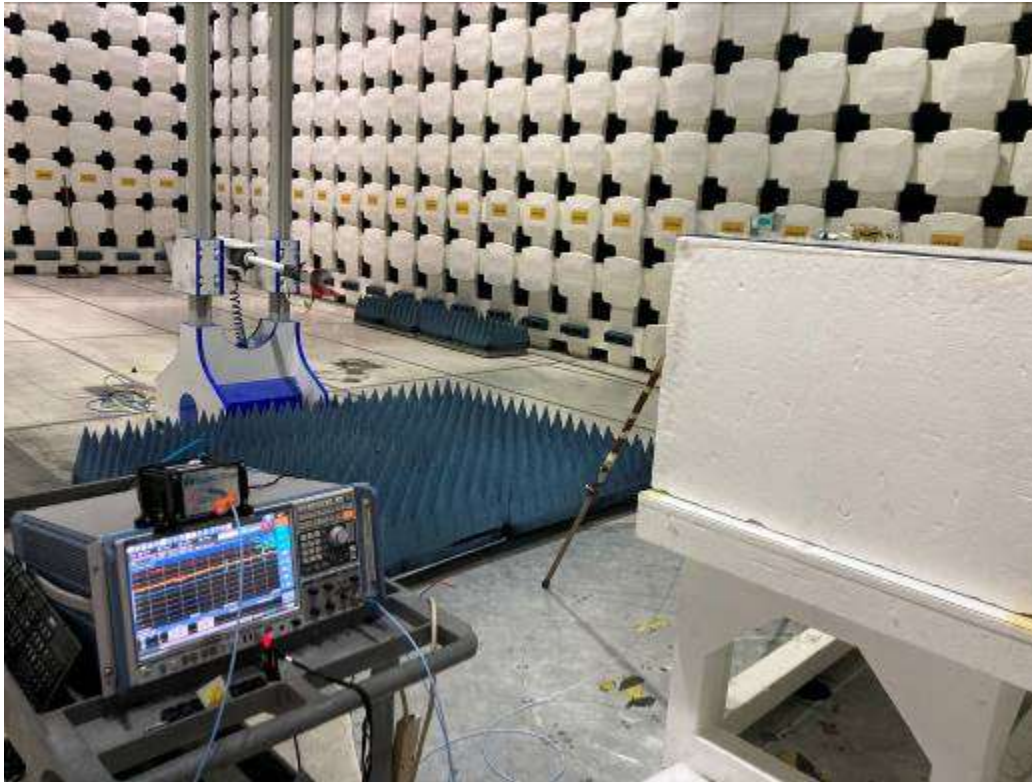








18-25 GHz



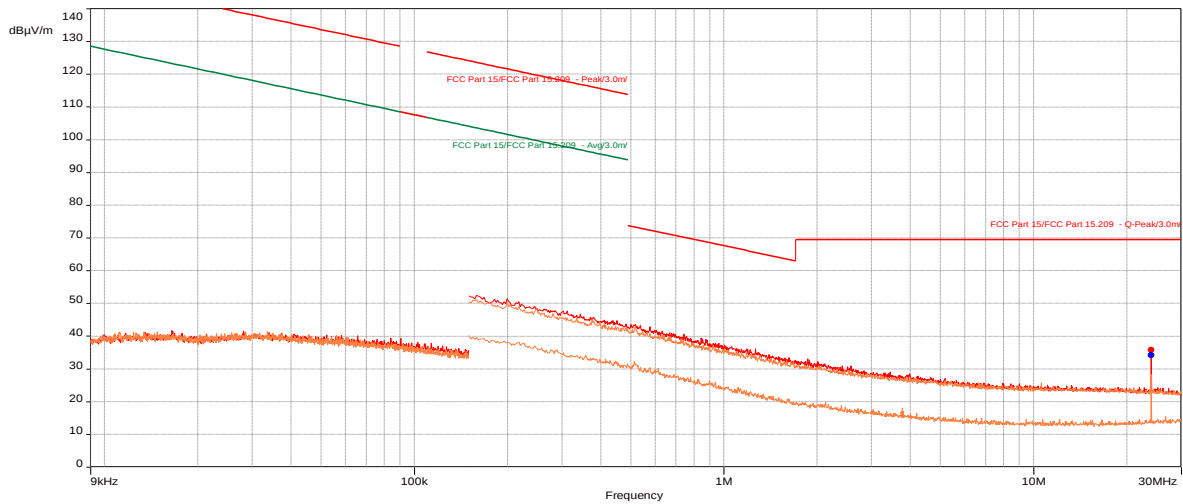
10.6 Plots/Data:

RE 9 kHz-30 MHz, Tx Low (CH 2402 MHz) – Worst-case

Test Information:

Date and Time	7/1/2024 10:16:25 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan#10_RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209) Tx Low CH 2402MHz (Worst-case)

Graph:



Results:

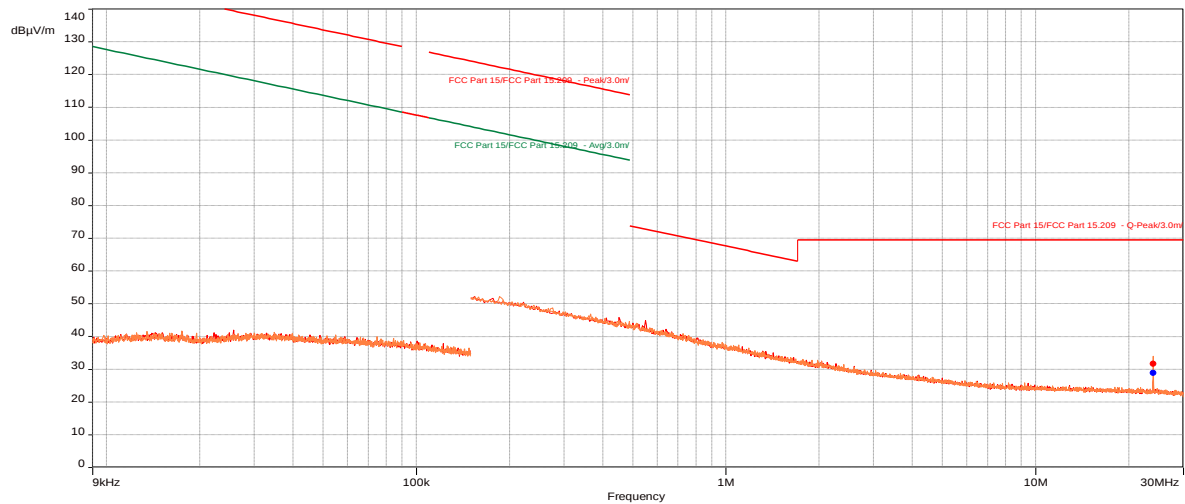
QuasiPeak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time	Correction (dB)
24.00371	34.16	69.54	-35.38	0.00	Horizontal	9k	0.10	9.71

RE 9 kHz-30 MHz, Tx Mid (CH 2440MHz) – Worst-case

Test Information:

Date and Time	7/1/2024 10:39:38 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan#11_RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209) Tx Mid CH 2440MHz (Worst-case)

Graph:**Results:**

QuasiPeak (PASS) (1)

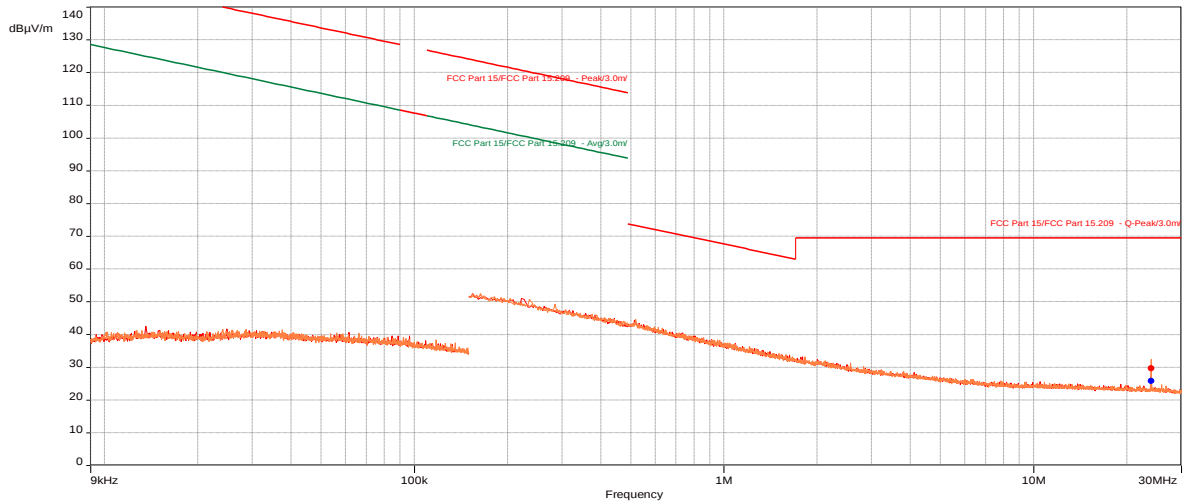
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time	Correction (dB)
24.00304	28.92	69.54	-40.62	130.80	Vertical	9k	0.10	9.71

RE 9 kHz-30 MHz, Tx High (CH 2480 MHz) – Worst-case

Test Information:

Date and Time	7/1/2024 10:54:58 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan#12_RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209) Tx High CH 2480MHz (Worst-case)

Graph:



Results:

QuasiPeak (PASS) (1)

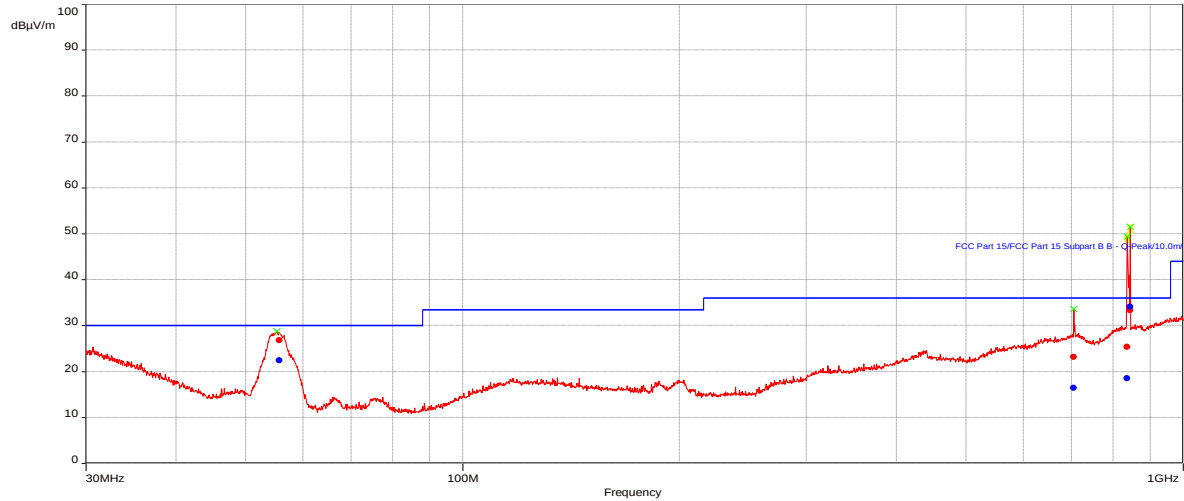
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time	Correction (dB)
24.00259	25.77	69.54	-43.77	0.00	Vertical	9k	0.10	9.71

RE 30-1000 MHz, Tx Low (CH 2402 MHz) – EUT Short Side

Test Information:

Date and Time	7/1/2024 9:39:19 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	RE 30-1000MHz Battery Pwr Tx Low CH 2402MHz EUT on its short side

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.6444	26.77	---	---	222.90	2.40	Vertical	120k	0.10	-26.33
705.1986	23.24	---	---	293.50	1.38	Vertical	120k	0.10	-9.18
836.6169	25.43	---	---	223.00	2.31	Vertical	120k	0.10	-6.45
844.3487	33.34	---	---	331.70	3.77	Vertical	120k	0.10	-6.33

QuasiPeak (PASS) (4)

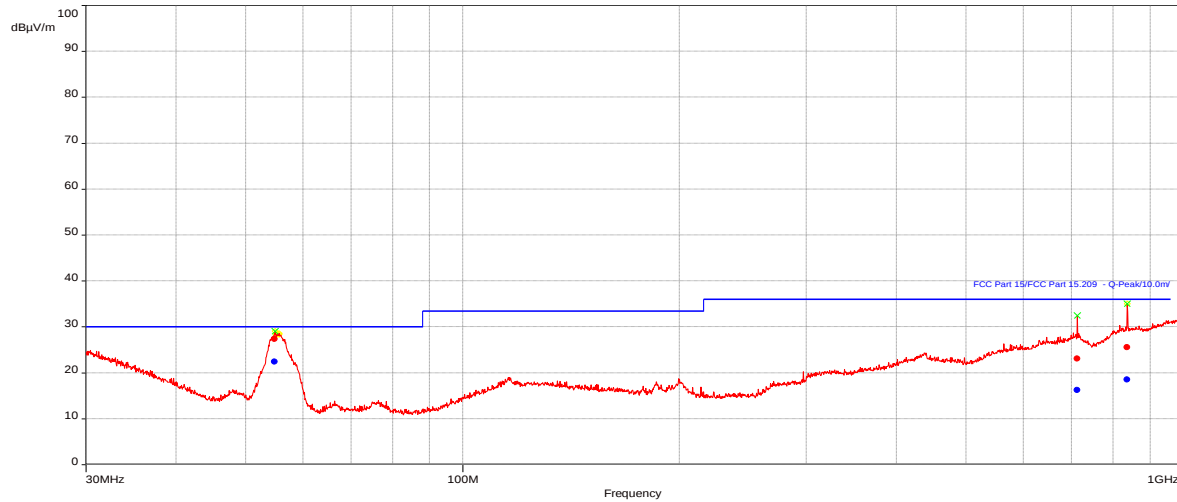
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.6444	22.41	30.00	-7.59	222.90	2.40	Vertical	120k	0.10	-26.33
705.1986	16.45	36.00	-19.55	293.50	1.38	Vertical	120k	0.10	-9.18
836.6169	18.57	36.00	-17.43	223.00	2.31	Vertical	120k	0.10	-6.45
844.3487	34.17	36.00	-1.83	331.70	3.77	Vertical	120k	0.10	-6.33

RE 30-1000 MHz, Tx Low (CH 2402 MHz) – EUT Long Side

Test Information:

Date and Time	7/1/2024 9:10:32 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #8_RE 30-1000MHz_Battery Pwr_Tx Low CH 2402MHz_EUT on its long side

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
54.8267	27.40	---	---	228.20	2.08	Vertical	120k	0.10	-26.36
713.0821	23.11	---	---	190.50	4.00	Vertical	120k	0.10	-9.35
836.2038	25.56	---	---	266.50	4.00	Horizontal	120k	0.10	-6.49

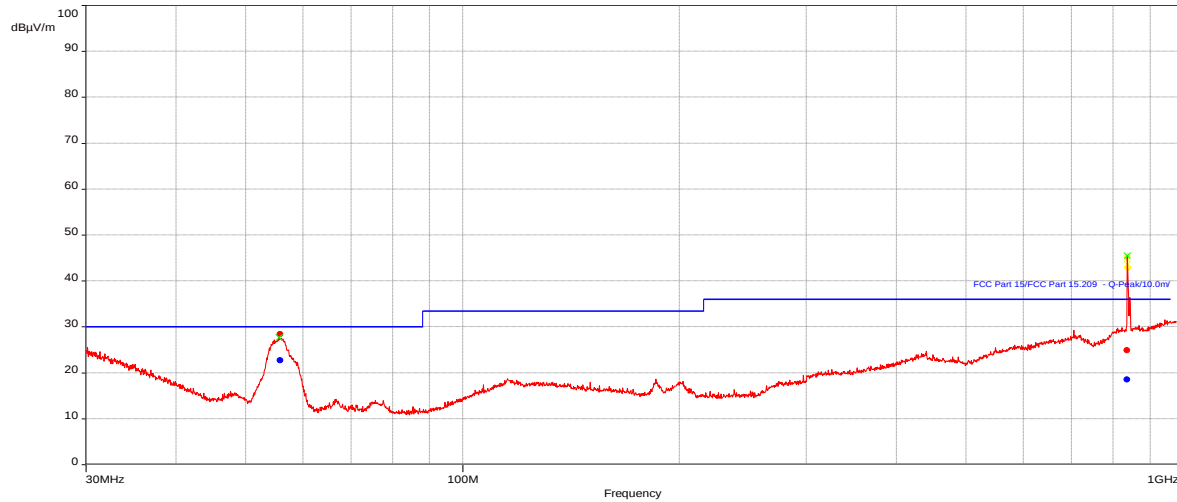
QuasiPeak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
54.8267	22.43	30.00	-7.57	228.20	2.08	Vertical	120k	0.10	-26.36
713.0821	16.30	36.00	-19.70	190.50	4.00	Vertical	120k	0.10	-9.35
836.2038	18.58	36.00	-17.42	266.50	4.00	Horizontal	120k	0.10	-6.49

RE 30-1000 MHz, Tx Low (CH 2402 MHz) – EUT Back Side

Test Information:

Date and Time	7/1/2024 8:51:50 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #7_RE 30-1000MHz_Battery Pwr_Tx Low CH 2402MHz_EUT on its back

Graph:**Results:**

Peak (PASS) (2)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.8353	28.46	---	---	288.40	1.48	Vertical	120k	0.10	-26.32
836.1047	24.90	---	---	233.90	3.67	Horizontal	120k	0.10	-6.51

QuasiPeak (PASS) (2)

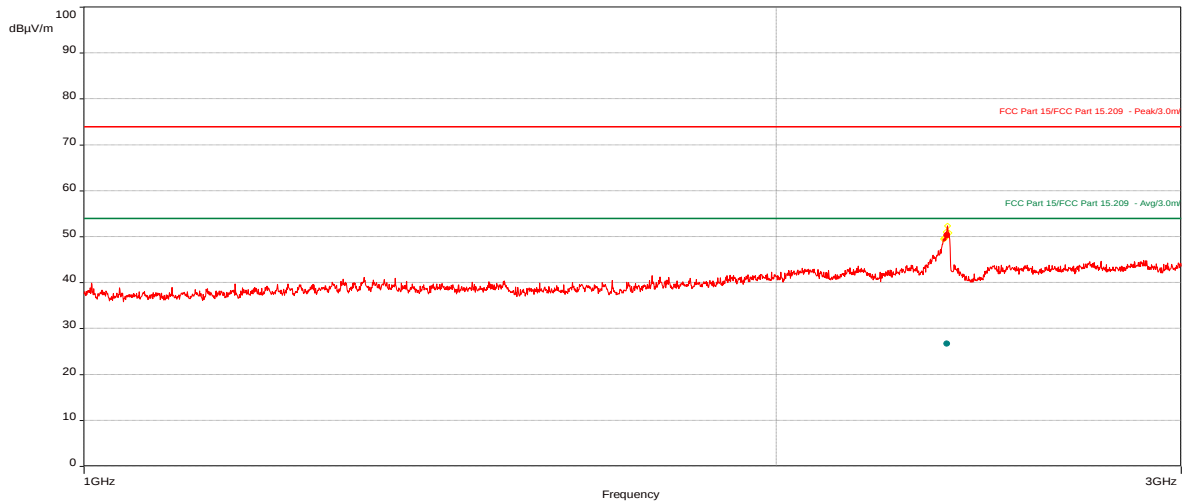
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.8353	22.70	30.00	-7.30	288.40	1.48	Vertical	120k	0.10	-26.32
836.1047	18.54	36.00	-17.46	233.90	3.67	Horizontal	120k	0.10	-6.51

RE 1-3 GHz, Tx Low (CH 2402 MHz) – EUT Short Side

Test Information:

Date and Time	7/2/2024 7:59:55 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#18_RE 1 to 3 GHz_Battery Pwr_Tx Low Ch 2402MHz_1.5m table height_EUT on its short side

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2373.226	50.31	74.00	-23.69	113.40	1.44	Horizontal	1M	0.00	-15.94

AVG (PASS) (1)

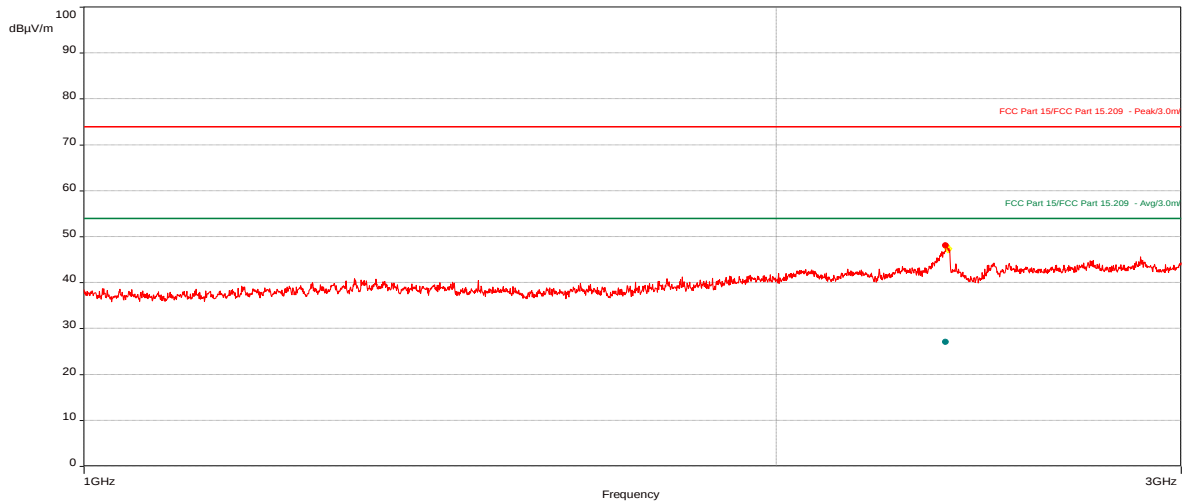
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2373.226	26.70	54.00	-27.30	113.40	1.44	Horizontal	1M	0.00	-15.94

RE 1-3 GHz, Tx Low (CH 2402 MHz) – EUT Long Side

Test Information:

Date and Time	7/2/2024 7:50:42 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#17_RE 1 to 3 GHz_Battery Pwr_Tx Low Ch 2402MHz_1.5m table height_EUT on its long side

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2370.256	48.13	74.00	-25.87	269.60	1.44	Vertical	1M	0.00	-15.97

AVG (PASS) (1)

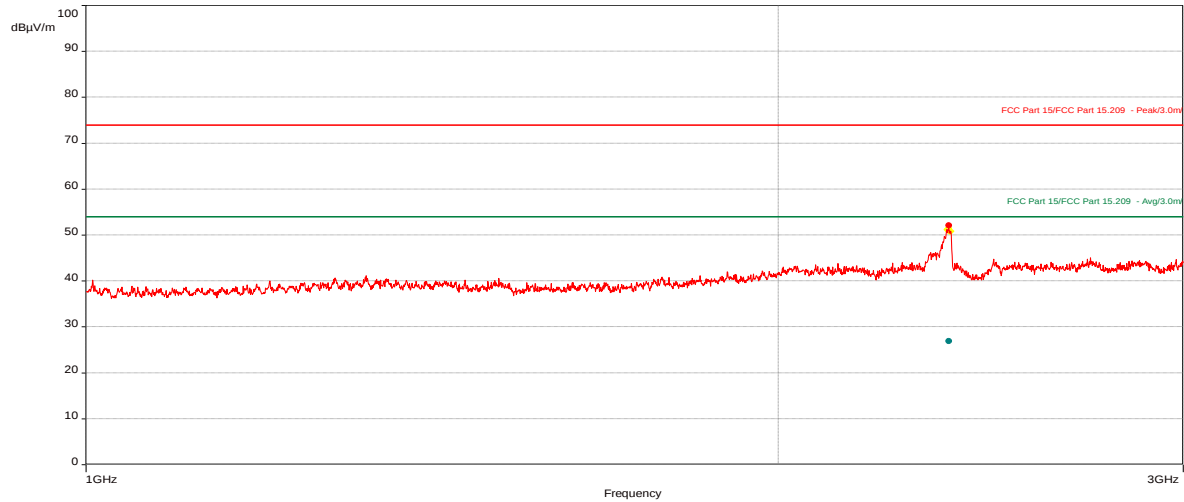
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2370.256	27.09	54.00	-26.91	269.60	1.44	Vertical	1M	0.00	-15.97

RE 1-3 GHz, Tx Low (CH 2402 MHz) – EUT Back Side

Test Information:

Date and Time	7/2/2024 7:46:57 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#16_RE 1 to 3 GHz_Battery Pwr_Tx Low Ch 2402MHz_1.5m table height

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2373.121	52.14	74.00	-21.86	270.00	1.00	Horizontal	1M	0.00	-15.94

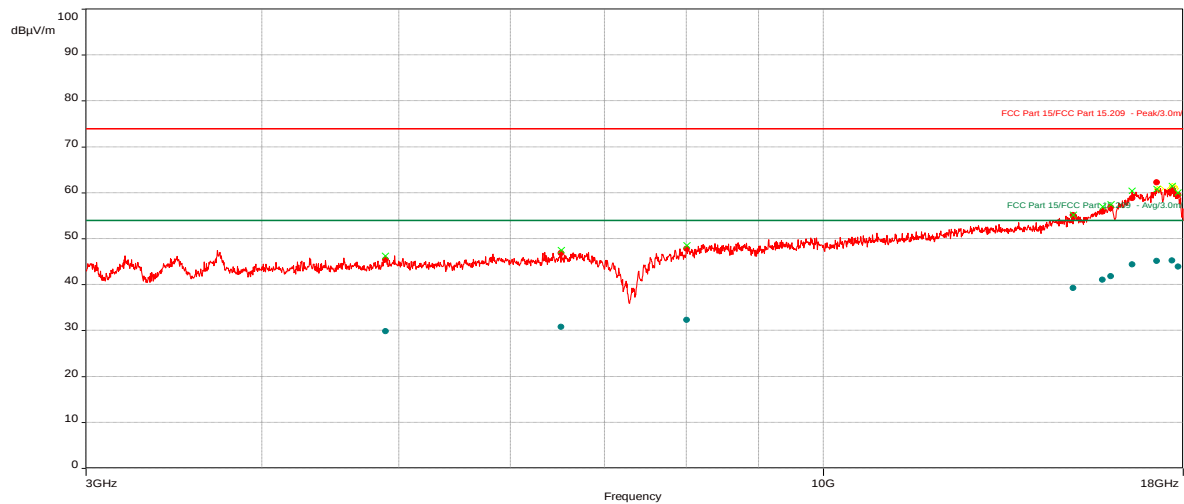
AVG (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2373.121	26.92	54.00	-27.08	270.00	1.00	Horizontal	1M	0.00	-15.94

RE 3-18 GHz, Tx Low (CH 2402 MHz) – EUT Short Side

Test Information:

Date and Time	7/2/2024 8:09:39 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#19_RE 3 to 18 GHz_Battery Pwr_Tx Low Ch 2402MHz_1.5m table height_EUT on its short side

Graph:**Results:**

Peak (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4893.891	45.44	74.00	-28.56	0.00	4.00	Horizontal	1M	0.00	-10.82
6518.166	46.83	74.00	-27.17	265.40	4.00	Vertical	1M	0.00	-7.85
8001.406	47.80	74.00	-26.20	265.70	1.00	Vertical	1M	0.00	-6.24
15042.9	55.18	74.00	-18.82	360.00	1.00	Vertical	1M	0.00	2.90
15782.348	55.86	74.00	-18.14	360.00	1.00	Vertical	1M	0.00	4.29
15996.759	56.88	74.00	-17.12	265.40	4.00	Horizontal	1M	0.00	4.73
16564.604	58.87	74.00	-15.13	360.00	1.00	Horizontal	1M	0.00	6.25
17241.25	62.24	74.00	-11.76	0.00	4.00	Vertical	1M	0.00	6.70
17683.148	60.46	74.00	-13.54	0.00	1.00	Vertical	1M	0.00	7.10
17855.864	59.53	74.00	-14.47	265.30	4.00	Vertical	1M	0.00	7.31

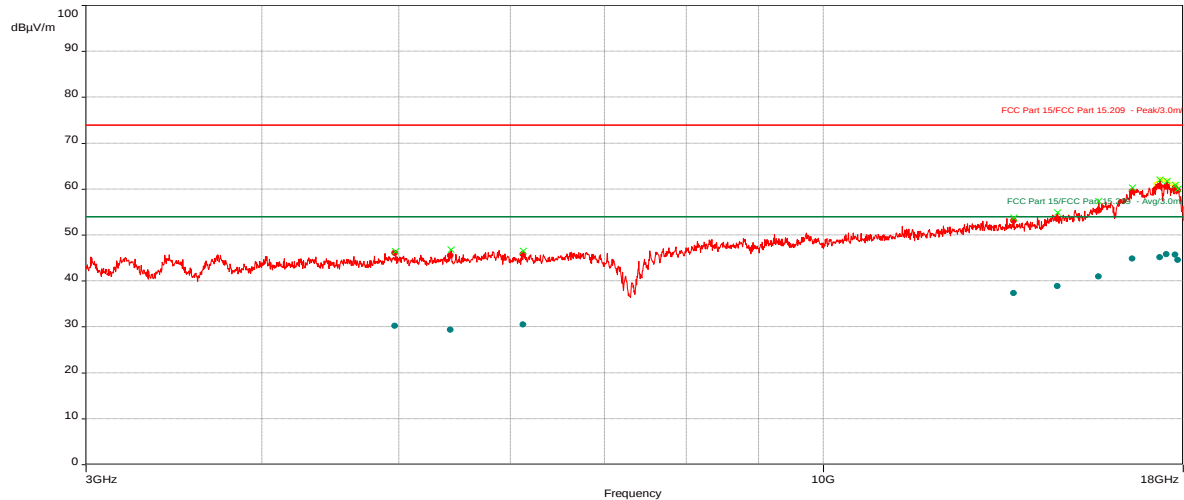
AVG (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4893.891	29.90	54.00	-24.10	0.00	4.00	Horizontal	1M	0.00	-10.82
6518.166	30.85	54.00	-23.15	265.40	4.00	Vertical	1M	0.00	-7.85
8001.406	32.28	54.00	-21.72	265.70	1.00	Vertical	1M	0.00	-6.24
15042.9	39.30	54.00	-14.70	360.00	1.00	Vertical	1M	0.00	2.90
15782.348	41.11	54.00	-12.89	360.00	1.00	Vertical	1M	0.00	4.29
15996.759	41.81	54.00	-12.19	265.40	4.00	Horizontal	1M	0.00	4.73
16564.604	44.44	54.00	-9.56	360.00	1.00	Horizontal	1M	0.00	6.25
17241.25	45.19	54.00	-8.81	0.00	4.00	Vertical	1M	0.00	6.70
17683.148	45.22	54.00	-8.78	0.00	1.00	Vertical	1M	0.00	7.10
17855.864	43.96	54.00	-10.04	265.30	4.00	Vertical	1M	0.00	7.31

RE 3-18 GHz, Tx Low (CH 2402 MHz) – EUT Long Side

Test Information:

Date and Time	7/2/2024 9:07:19 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#20_RE 3 to 18 GHz_Battery Pwr_Tx Low Ch 2402MHz_1.5m table height_EUT on its long side

Graph:**Results:****Peak (PASS) (11)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4968.657	46.08	74.00	-27.92	265.40	4.00	Vertical	1M	0.00	-10.64
5441.344	45.54	74.00	-28.46	360.00	4.00	Horizontal	1M	0.00	-9.92
6126.341	45.84	74.00	-28.16	360.00	1.00	Vertical	1M	0.00	-8.41
13649.743	53.18	74.00	-20.82	0.00	1.00	Vertical	1M	0.00	0.91
14665.785	53.54	74.00	-20.46	0.00	4.00	Vertical	1M	0.00	2.42
15684.292	55.37	74.00	-18.63	360.00	1.00	Horizontal	1M	0.00	4.06
16566.309	59.53	74.00	-14.47	0.00	1.00	Vertical	1M	0.00	6.26
17335.448	60.68	74.00	-13.32	265.20	4.00	Vertical	1M	0.00	6.72
17523.416	60.54	74.00	-13.46	0.00	1.00	Horizontal	1M	0.00	7.02
17770.98	60.30	74.00	-13.70	265.20	4.00	Horizontal	1M	0.00	7.24
17841.551	59.66	74.00	-14.34	0.00	1.00	Horizontal	1M	0.00	7.30

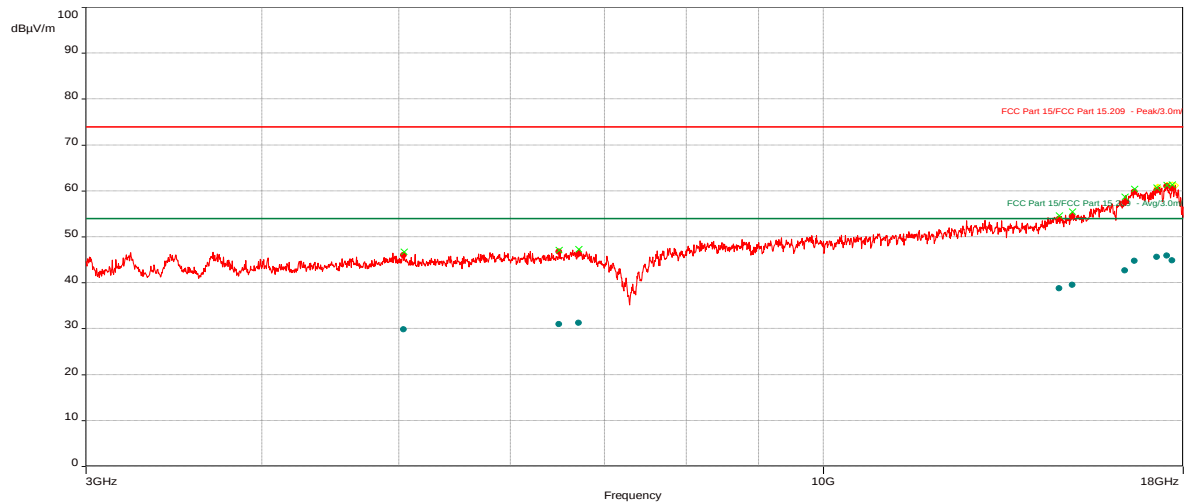
AVG (PASS) (11)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4968.657	30.26	54.00	-23.74	265.40	4.00	Vertical	1M	0.00	-10.64
5441.344	29.38	54.00	-24.62	360.00	4.00	Horizontal	1M	0.00	-9.92
6126.341	30.52	54.00	-23.48	360.00	1.00	Vertical	1M	0.00	-8.41
13649.743	37.34	54.00	-16.66	0.00	1.00	Vertical	1M	0.00	0.91
14665.785	38.86	54.00	-15.14	0.00	4.00	Vertical	1M	0.00	2.42
15684.292	40.95	54.00	-13.05	360.00	1.00	Horizontal	1M	0.00	4.06
16566.309	44.86	54.00	-9.14	0.00	1.00	Vertical	1M	0.00	6.26
17335.448	45.13	54.00	-8.87	265.20	4.00	Vertical	1M	0.00	6.72
17523.416	45.84	54.00	-8.16	0.00	1.00	Horizontal	1M	0.00	7.02
17770.98	45.72	54.00	-8.28	265.20	4.00	Horizontal	1M	0.00	7.24
17841.551	44.61	54.00	-9.39	0.00	1.00	Horizontal	1M	0.00	7.30

RE 3-18 GHz, Tx Low (CH 2402 MHz) – EUT Back Side

Test Information:

Date and Time	7/2/2024 10:13:23 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#21_RE 3 to 18 GHz_Battery Pwr_Tx Low Ch 2402MHz_1.5m table height_EUT on its back

Graph:**Results:**

Peak (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	RBW	Meas.Time	Correction (dB)
5041.42	46.02	74.00	-27.98	360.00	1.00	Horizontal	1000000.00	1M	0.00	-10.38
6497.012	46.76	74.00	-27.24	0.00	4.00	Vertical	1000000.00	1M	0.00	-7.87
6709.444	46.29	74.00	-27.71	360.00	4.00	Vertical	1000000.00	1M	0.00	-7.56
14699.454	53.87	74.00	-20.13	265.40	1.00	Horizontal	1000000.00	1M	0.00	2.47
15022.13	54.50	74.00	-19.5	360.00	4.00	Horizontal	1000000.00	1M	0.00	2.87
16365.102	57.55	74.00	-16.45	0.00	1.00	Horizontal	1000000.00	1M	0.00	5.59
16621.428	59.82	74.00	-14.18	0.00	4.00	Horizontal	1000000.00	1M	0.00	6.43
17240.916	60.10	74.00	-13.9	0.00	1.00	Vertical	1000000.00	1M	0.00	6.70
17524.702	61.04	74.00	-12.96	0.00	1.00	Vertical	1000000.00	1M	0.00	7.01
17686.374	60.52	74.00	-13.48	360.00	4.00	Vertical	1000000.00	1M	0.00	7.11

AVG (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	RBW	Meas.Time	Correction (dB)
5041.42	29.84	54.00	-24.16	360.00	1.00	Horizontal	1000000.00	1M	0.00	-10.38
6497.012	31.02	54.00	-22.98	0.00	4.00	Vertical	1000000.00	1M	0.00	-7.87
6709.444	31.27	54.00	-22.73	360.00	4.00	Vertical	1000000.00	1M	0.00	-7.56
14699.454	38.78	54.00	-15.22	265.40	1.00	Horizontal	1000000.00	1M	0.00	2.47
15022.13	39.59	54.00	-14.41	360.00	4.00	Horizontal	1000000.00	1M	0.00	2.87
16365.102	42.72	54.00	-11.28	0.00	1.00	Horizontal	1000000.00	1M	0.00	5.59
16621.428	44.75	54.00	-9.25	0.00	4.00	Horizontal	1000000.00	1M	0.00	6.43
17240.916	45.62	54.00	-8.38	0.00	1.00	Vertical	1000000.00	1M	0.00	6.70
17524.702	45.95	54.00	-8.05	0.00	1.00	Vertical	1000000.00	1M	0.00	7.01
17686.374	44.84	54.00	-9.16	360.00	4.00	Vertical	1000000.00	1M	0.00	7.11

RE 18-25 GHz, Tx Low (CH 2402 MHz) – All orientations of EUT



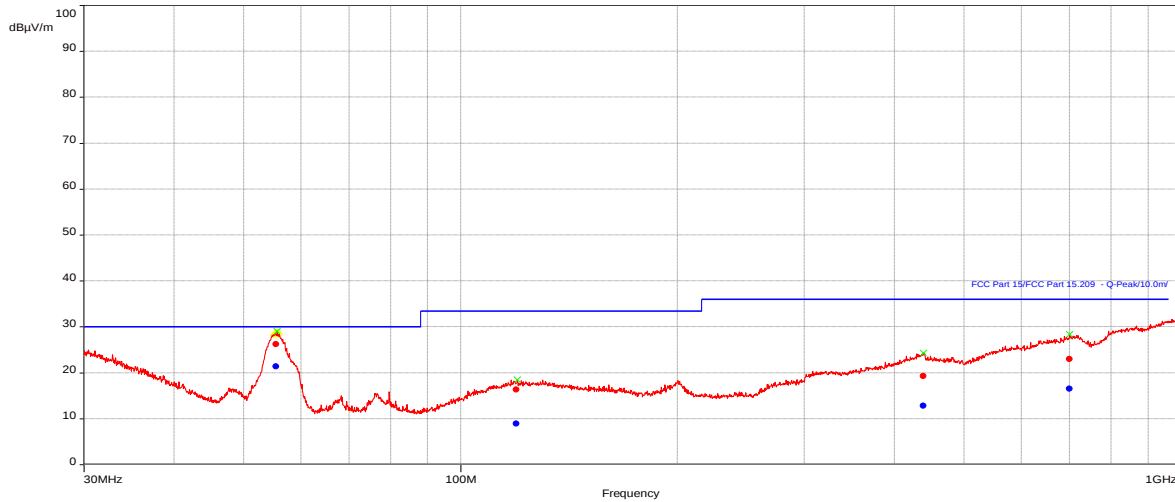
08:53:33 PM 07/16/2024

RE 30-1000 MHz, Tx Mid (CH 2440 MHz) – EUT Short Side

Test Information:

Date and Time	7/1/2024 7:08:30 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #4_RE 30-1000MHz_Battery Pwr_Tx Mid CH 2440MHz_EUT on its short side

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.4015	26.28	---	---	346.80	4.00	Vertical	120k	0.10	-26.34
119.4863	16.34	---	---	39.00	1.31	Vertical	120k	0.10	-18.96
438.7497	19.35	---	---	60.80	4.00	Horizontal	120k	0.10	-14.17
700.2134	22.99	---	---	353.20	3.73	Horizontal	120k	0.10	-9.09

QuasiPeak (PASS) (4)

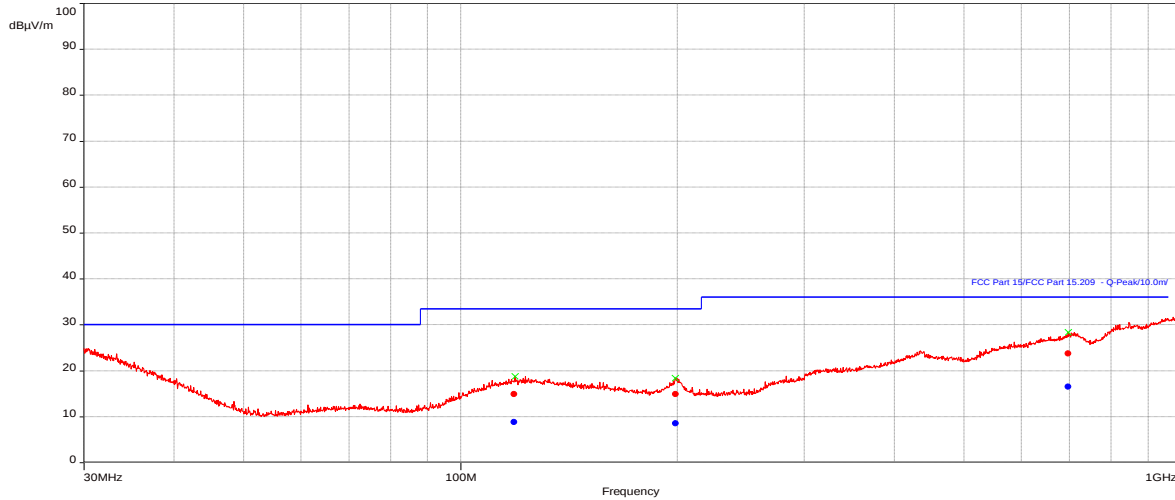
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.4015	21.35	30.00	-8.65	346.80	4.00	Vertical	120k	0.10	-26.34
119.4863	8.90	33.50	-24.60	39.00	1.31	Vertical	120k	0.10	-18.96
438.7497	12.83	36.00	-23.17	60.80	4.00	Horizontal	120k	0.10	-14.17
700.2134	16.53	36.00	-19.47	353.20	3.73	Horizontal	120k	0.10	-9.09

RE 30-1000 MHz, Tx Mid (CH 2440 MHz) – EUT Long Side

Test Information:

Date and Time	7/1/2024 7:55:12 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #5a_RE 30-1000MHz_Battery Pwr_Tx Mid CH 2440MHz_EUT on its long side

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
118.7075	14.89	---	---	281.80	2.39	Vertical	120k	0.10	-19.03
198.9382	14.92	---	---	12.20	2.53	Vertical	120k	0.10	-19.13
697.5369	23.79	---	---	185.20	3.44	Vertical	120k	0.10	-9.14

QuasiPeak (PASS) (3)

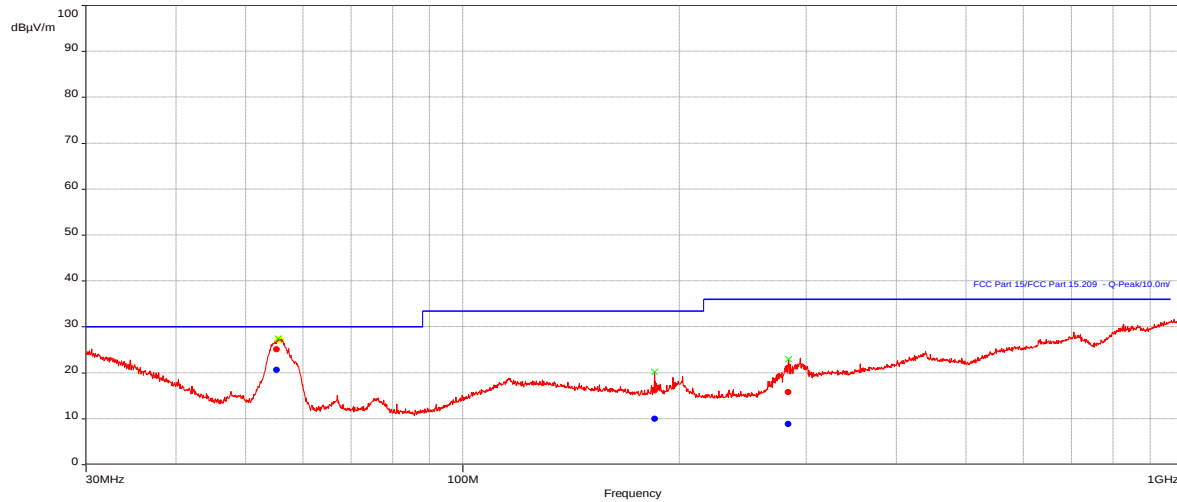
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
118.7075	8.82	33.50	-24.68	281.80	2.39	Vertical	120k	0.10	-19.03
198.9382	8.56	33.50	-24.94	12.20	2.53	Vertical	120k	0.10	-19.13
697.5369	16.54	36.00	-19.46	185.20	3.44	Vertical	120k	0.10	-9.14

RE 30-1000 MHz, Tx Mid (CH 2440 MHz) – EUT Back Side

Test Information:

Date and Time	7/1/2024 8:14:56 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #6_RE 30-1000MHz_Battery Pwr_Tx Mid CH 2440MHz_EUT on its back

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.2201	25.10	---	---	360.00	4.00	Vertical	120k	0.10	-26.34
184.8428	16.12	---	---	6.70	1.31	Vertical	120k	0.10	-21.07
283.0957	15.82	---	---	195.50	3.27	Horizontal	120k	0.10	-18.32

QuasiPeak (PASS) (3)

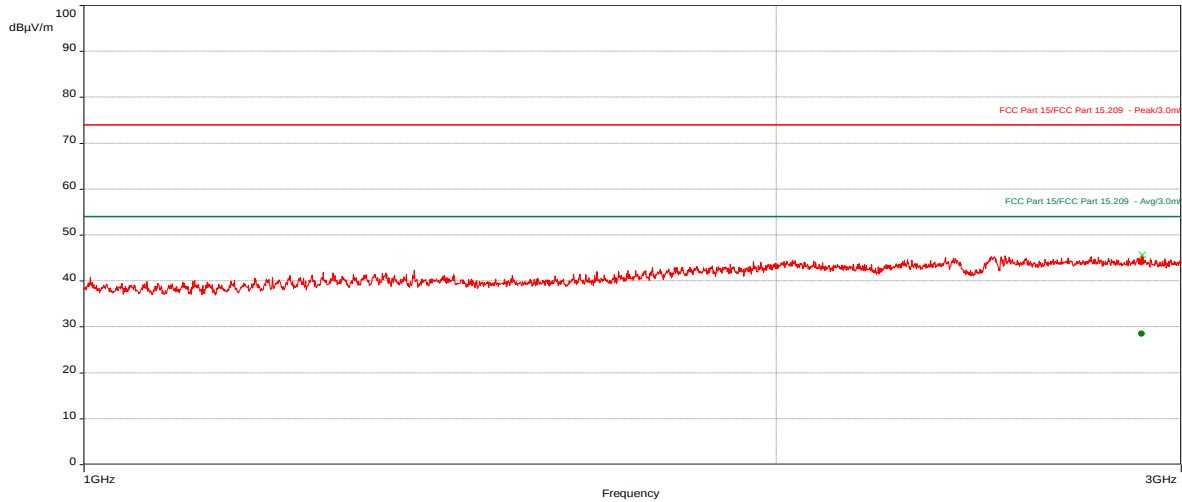
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.2201	20.61	30.00	-9.39	360.00	4.00	Vertical	120k	0.10	-26.34
184.8428	9.95	33.50	-23.55	6.70	1.31	Vertical	120k	0.10	-21.07
283.0957	8.87	36.00	-27.13	195.50	3.27	Horizontal	120k	0.10	-18.32

RE 1-3 GHz, Tx Mid (CH 2440 MHz) – EUT Short Side

Test Information:

Date and Time	7/12/2024 11:18:59 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 4: Tx Mid Ch, Short Side, RE 1 to 3 GHz Receiver mode

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2884.239	44.15	74.00	-29.85	112.90	3.05	Horizontal	1M	0.00	-14.65

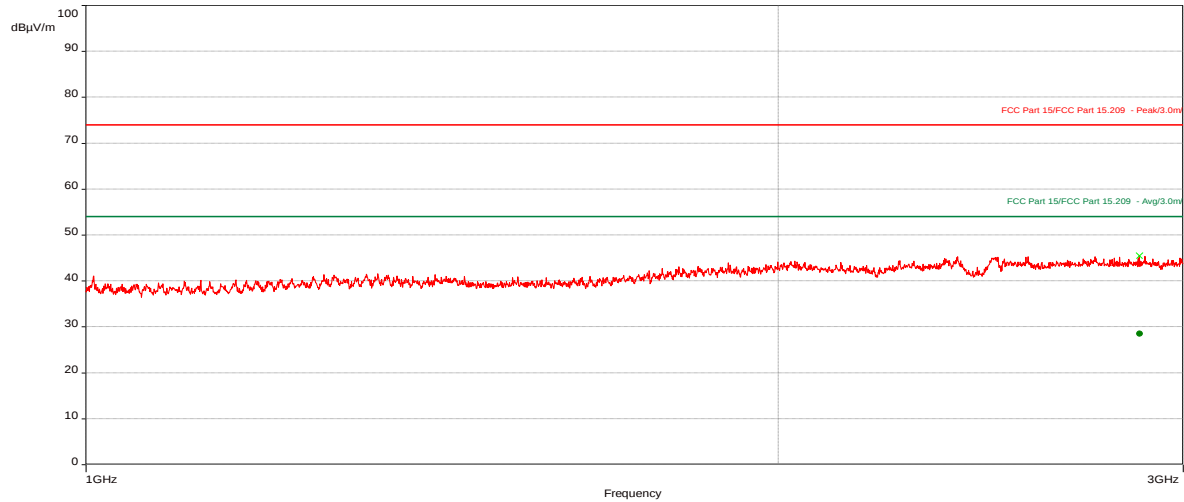
AVG (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2884.239	28.57	54.00	-25.43	112.90	3.05	Horizontal	1M	0.00	-14.65

RE 1-3 GHz, Tx Mid (CH 2440 MHz) – EUT Long Side

Test Information:

Date and Time	7/12/2024 10:44:32 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 1: Tx Mid Ch, Long Side, RE 1 to 3 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2872.684	43.76	74.00	-29.85	113.10	4.00	Vertical	1M	0.00	-14.67

AVG (PASS) (1)

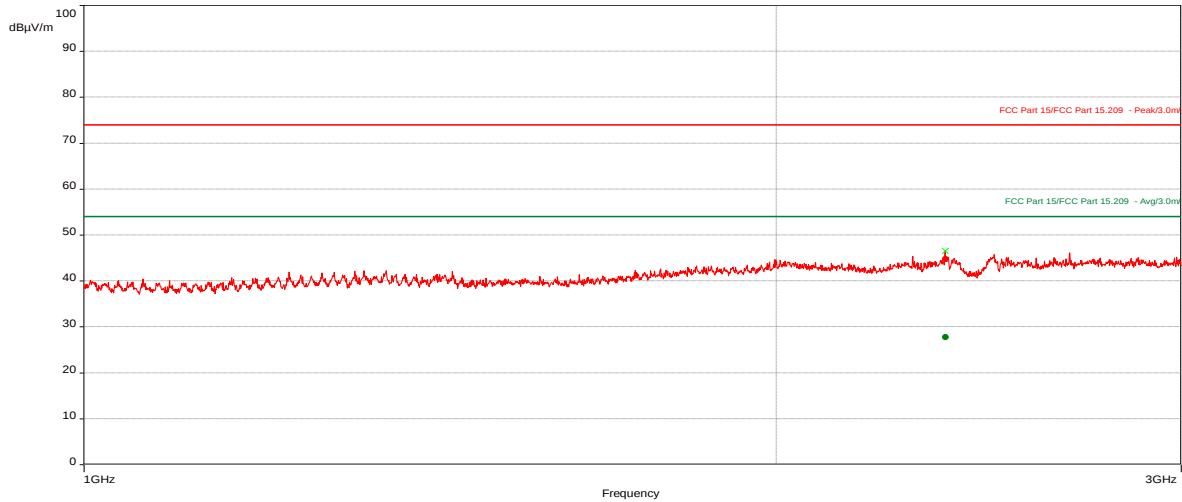
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2872.684	28.53	54.00	-25.47	113.10	4.00	Vertical	1M	0.00	-14.67

RE 1-3 GHz, Tx Mid (CH 2440 MHz) – EUT Back Side

Test Information:

Date and Time	7/12/2024 11:28:39 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 5: Tx Mid Ch, Back Side, RE 1 to 3 GHz Receiver mode

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2370.06	44.78	74.00	-29.22	113.40	1.98	Horizontal	1M	0.00	-15.98

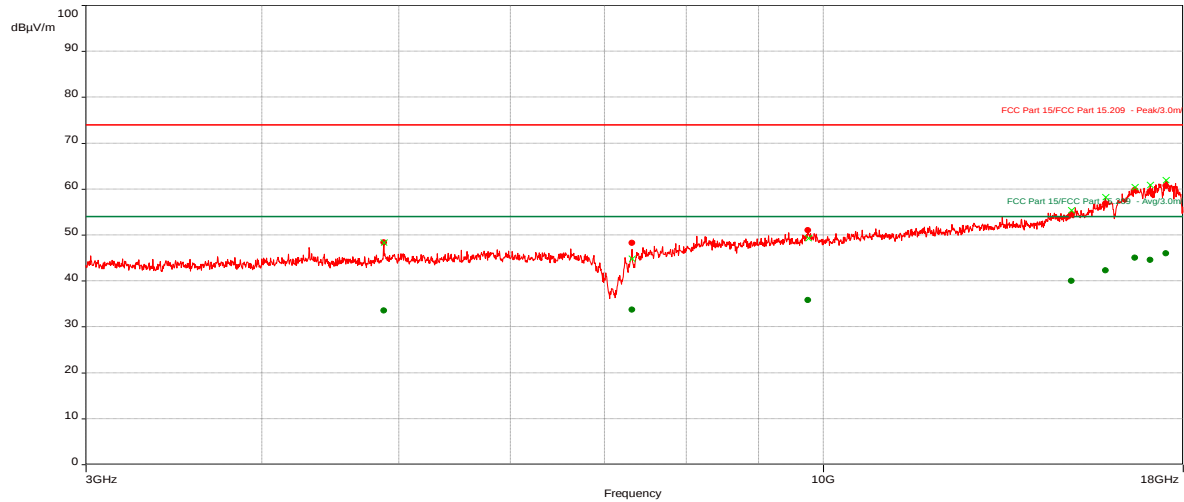
AVG (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2370.06	27.80	54.00	-26.20	113.40	1.98	Horizontal	1M	0.00	-15.98

RE 3-18 GHz, Tx Mid (CH 2440 MHz) – EUT Short Side

Test Information:

Date and Time	7/12/2024 2:02:05 PM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 9: Tx Mid Ch, Short Side, RE 3 to 18 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4879.576	48.36	74.00	-25.64	265.60	1.00	Vertical	1M	0.00	-10.81
7319.527	48.28	74.00	-25.72	360.00	1.00	Horizontal	1M	0.00	-6.94
9759.376	51.04	74.00	-22.96	360.00	4.00	Horizontal	1M	0.00	-3.99
15002.997	54.49	74.00	-19.51	265.50	4.00	Vertical	1M	0.00	2.84
15861.676	56.87	74.00	-17.13	0.00	4.00	Horizontal	1M	0.00	4.48
16644.222	59.81	74.00	-14.19	265.40	1.00	Vertical	1M	0.00	6.49
17065.973	59.48	74.00	-14.52	0.00	4.00	Horizontal	1M	0.00	6.80
17503.138	60.74	74.00	-13.26	265.40	1.00	Horizontal	1M	0.00	7.02

AVG (PASS) (8)

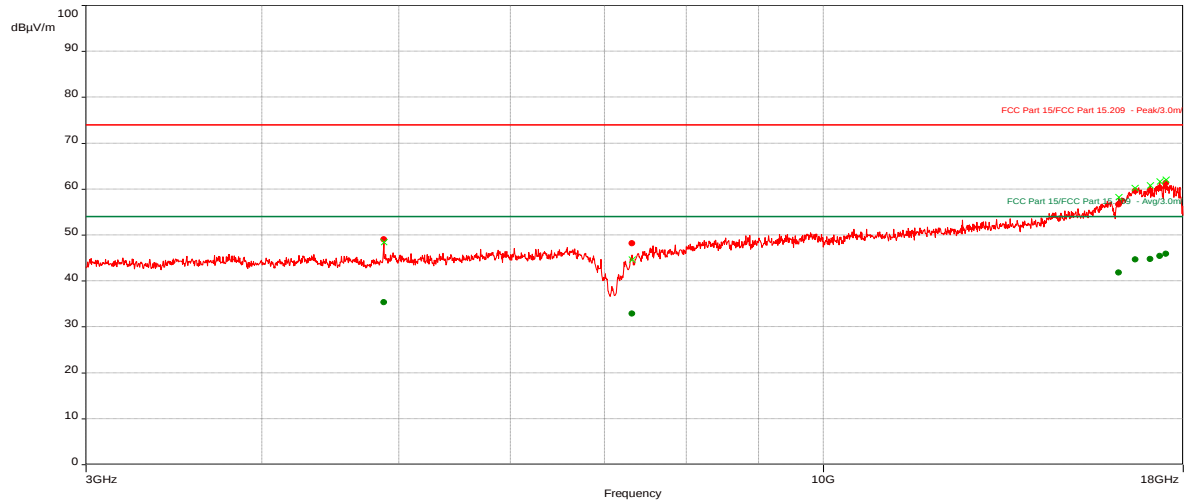
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4879.576	33.54	54.00	-20.46	265.60	1.00	Vertical	1M	0.00	-10.81
7319.527	33.79	54.00	-20.21	360.00	1.00	Horizontal	1M	0.00	-6.94
9759.376	35.83	54.00	-18.17	360.00	4.00	Horizontal	1M	0.00	-3.99
15002.997	40.06	54.00	-13.94	265.50	4.00	Vertical	1M	0.00	2.84
15861.676	42.32	54.00	-11.68	0.00	4.00	Horizontal	1M	0.00	4.48
16644.222	45.06	54.00	-8.94	265.40	1.00	Vertical	1M	0.00	6.49
17065.973	44.64	54.00	-9.36	0.00	4.00	Horizontal	1M	0.00	6.80
17503.138	46.05	54.00	-7.95	265.40	1.00	Horizontal	1M	0.00	7.02

RE 3-18 GHz, Tx Mid (CH 2440 MHz) – EUT Long Side

Test Information:

Date and Time	7/12/2024 4:04:01 PM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 12: Tx Mid Ch, Long Side, RE 3 to 18 GHz Receiver mode

Graph:



Results:

Peak (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4879.9	49.09	74.00	-24.91	360.00	1.00	Vertical	1M	0.00	-10.81
7319.402	48.20	74.00	-25.8	0.00	1.00	Vertical	1M	0.00	-6.94
16206.071	56.64	74.00	-17.36	0.00	1.00	Horizontal	1M	0.00	5.23
16645.811	59.60	74.00	-14.4	265.30	1.00	Horizontal	1M	0.00	6.50
17062.611	59.67	74.00	-14.33	265.50	1.00	Horizontal	1M	0.00	6.81
17333.99	60.29	74.00	-13.71	265.30	1.00	Vertical	1M	0.00	6.72
17502.197	61.34	74.00	-12.66	360.00	1.00	Vertical	1M	0.00	7.02

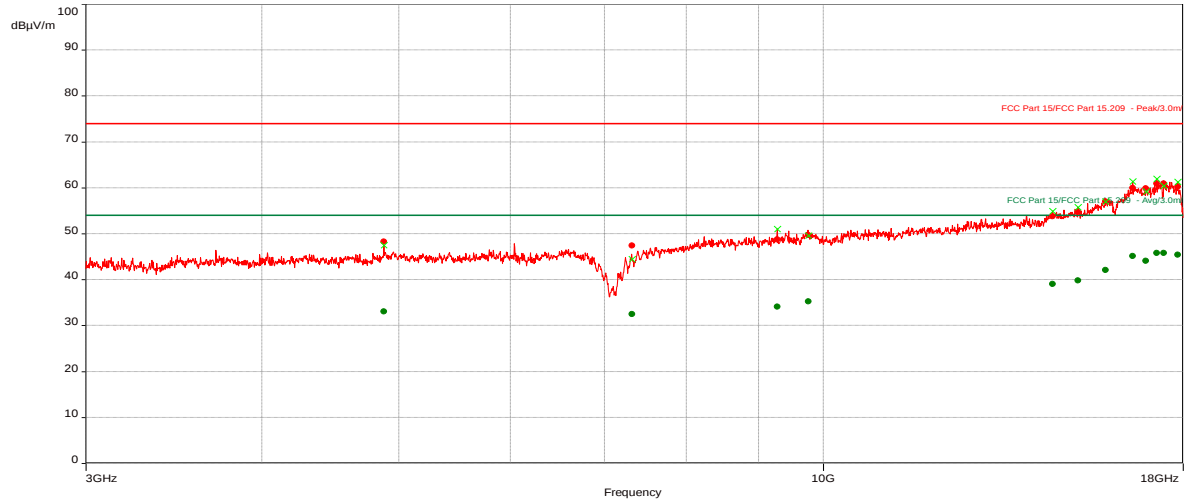
AVG (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4879.9	35.33	54.00	-18.67	360.00	1.00	Vertical	1M	0.00	-10.81
7319.402	32.92	54.00	-21.08	0.00	1.00	Vertical	1M	0.00	-6.94
16206.071	41.82	54.00	-12.18	0.00	1.00	Horizontal	1M	0.00	5.23
16645.811	44.65	54.00	-9.35	265.30	1.00	Horizontal	1M	0.00	6.50
17062.611	44.78	54.00	-9.22	265.50	1.00	Horizontal	1M	0.00	6.81
17333.99	45.46	54.00	-8.54	265.30	1.00	Vertical	1M	0.00	6.72
17502.197	45.88	54.00	-8.12	360.00	1.00	Vertical	1M	0.00	7.02

RE 3-18 GHz, Tx Mid (CH 2440 MHz) – EUT Back Side

Test Information:

Date and Time	7/12/2024 12:51:58 PM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 8: Tx Mid Ch, Back, RE 3 to 18 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (12)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4879.453	48.30	74.00	-25.7	265.50	4.00	Vertical	1M	0.00	-10.81
7319.589	47.48	74.00	-26.52	265.60	4.00	Vertical	1M	0.00	-6.94
9277.376	48.79	74.00	-25.21	360.00	4.00	Vertical	1M	0.00	-4.88
9763.379	49.71	74.00	-24.29	0.00	4.00	Horizontal	1M	0.00	-3.99
14542.811	53.84	74.00	-20.16	360.00	1.00	Vertical	1M	0.00	2.27
15162.998	54.74	74.00	-19.26	360.00	4.00	Vertical	1M	0.00	3.01
15863.848	57.01	74.00	-16.99	265.60	1.00	Horizontal	1M	0.00	4.48
16579.952	59.99	74.00	-14.01	0.00	1.00	Vertical	1M	0.00	6.31
16944.516	59.94	74.00	-14.06	0.00	1.00	Horizontal	1M	0.00	6.80
17243.675	60.91	74.00	-13.09	360.00	4.00	Horizontal	1M	0.00	6.70
17445.565	60.97	74.00	-13.03	0.00	4.00	Horizontal	1M	0.00	6.92
17849.077	60.23	74.00	-13.77	265.50	4.00	Horizontal	1M	0.00	7.31

AVG (PASS) (12)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4879.453	33.13	54.00	-20.87	265.50	4.00	Vertical	1M	0.00	-10.81
7319.589	32.53	54.00	-21.47	265.60	4.00	Vertical	1M	0.00	-6.94
9277.376	34.15	54.00	-19.85	360.00	4.00	Vertical	1M	0.00	-4.88
9763.379	35.24	54.00	-18.76	0.00	4.00	Horizontal	1M	0.00	-3.99
14542.811	39.06	54.00	-14.94	360.00	1.00	Vertical	1M	0.00	2.27
15162.998	39.84	54.00	-14.16	360.00	4.00	Vertical	1M	0.00	3.01
15863.848	42.16	54.00	-11.84	265.60	1.00	Horizontal	1M	0.00	4.48
16579.952	45.17	54.00	-8.83	0.00	1.00	Vertical	1M	0.00	6.31
16944.516	44.14	54.00	-9.86	0.00	1.00	Horizontal	1M	0.00	6.80
17243.675	45.80	54.00	-8.20	360.00	4.00	Horizontal	1M	0.00	6.70
17445.565	45.78	54.00	-8.22	0.00	4.00	Horizontal	1M	0.00	6.92
17849.077	45.48	54.00	-8.52	265.50	4.00	Horizontal	1M	0.00	7.31

RE 18-25 GHz, Tx Mid (CH 2440 MHz) – All orientations of EUT



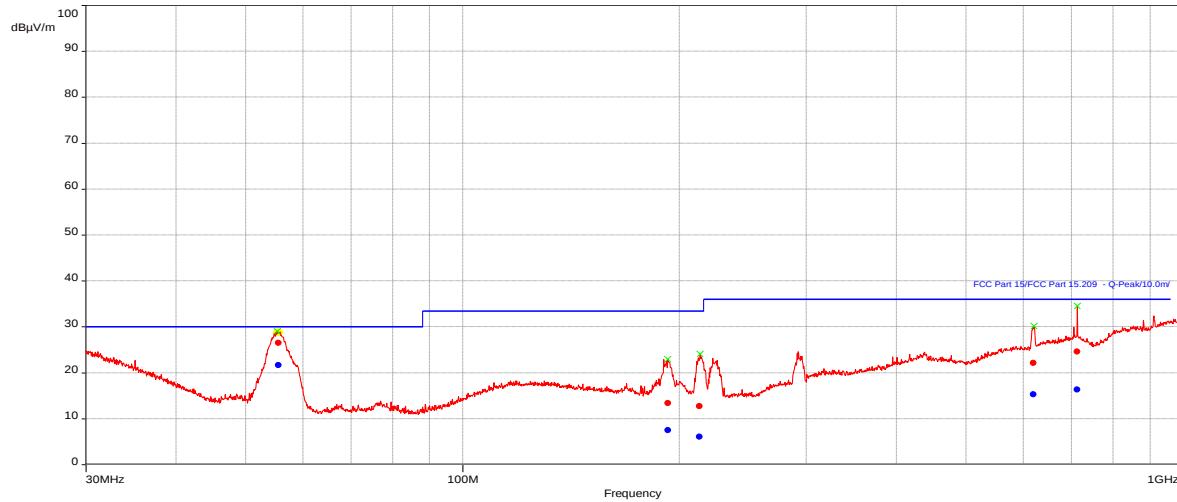
08:51:05 PM 07/16/2024

RE 30-1000 MHz, Tx High (CH 2480 MHz) – EUT Short Side

Test Information:

Date and Time	7/1/2024 6:40:40 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #3_RE 30-1000MHz_Battery Pwr_Tx High CH 2480MHz_EUT on its short side

Graph:



Results:

Peak (PASS) (5)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.5024	26.50	---	---	360.00	4.00	Vertical	120k	0.10	-26.33
192.8932	13.46	---	---	33.60	4.00	Vertical	120k	0.10	-20.29
213.2272	12.76	---	---	120.10	4.00	Vertical	120k	0.10	-21.46
619.939	22.18	---	---	136.20	4.00	Vertical	120k	0.10	-10.91
713.2156	24.67	---	---	50.20	4.00	Vertical	120k	0.10	-9.35

QuasiPeak (PASS) (5)

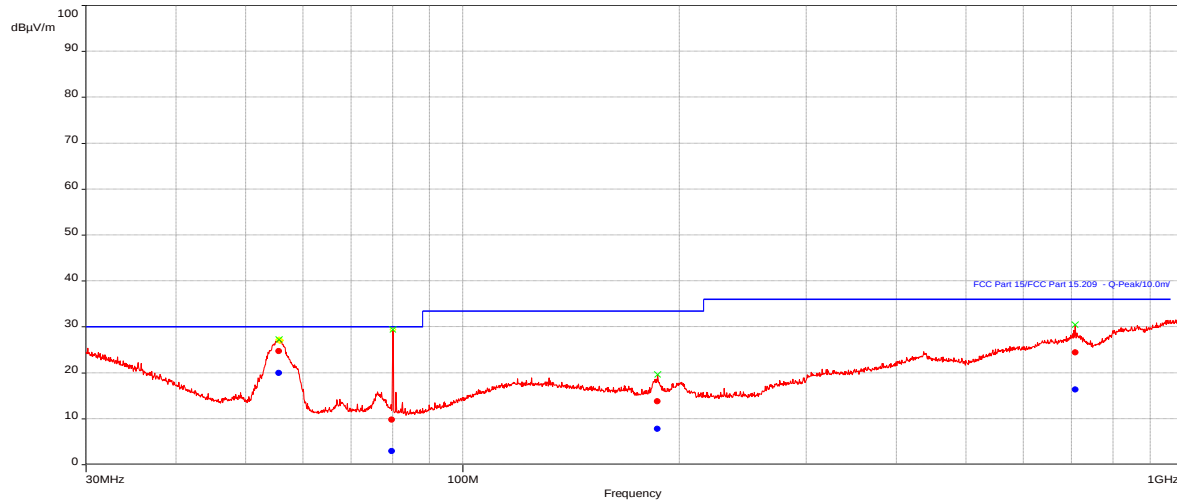
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.5024	21.64	30.00	-8.36	360.00	4.00	Vertical	120k	0.10	-26.33
192.8932	7.53	33.50	-25.97	33.60	4.00	Vertical	120k	0.10	-20.29
213.2272	6.06	33.50	-27.44	120.10	4.00	Vertical	120k	0.10	-21.46
619.939	15.31	36.00	-20.69	136.20	4.00	Vertical	120k	0.10	-10.91
713.2156	16.34	36.00	-19.66	50.20	4.00	Vertical	120k	0.10	-9.35

RE 30-1000 MHz, Tx High (CH 2480 MHz) – EUT Long Side

Test Information:

Date and Time	7/1/2024 6:16:56 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #2_RE 30-1000MHz_Battery Pwr_Tx High CH 2480MHz_EUT on its long side

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas. Time	Correction (dB)
55.5945	24.70	---	---	357.70	4.00	Vertical	120k	0.10	-26.33
79.781	9.76	---	---	104.50	4.00	Horizontal	120k	0.10	-25.28
186.4876	13.75	---	---	39.30	4.00	Vertical	120k	0.10	-20.98
708.4314	24.46	---	---	147.60	2.52	Vertical	120k	0.10	-9.25

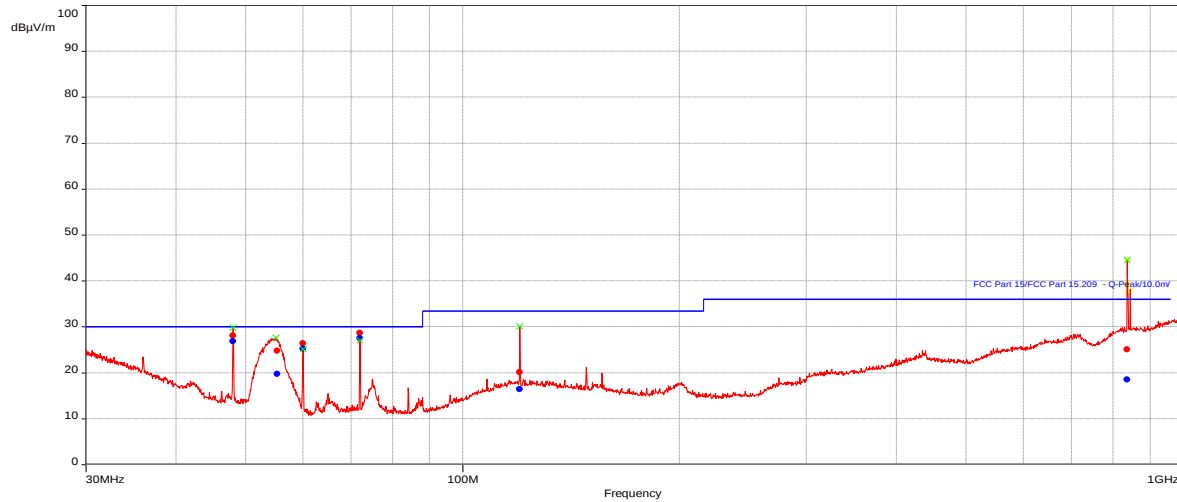
QuasiPeak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas. Time	Correction (dB)
55.5945	20.01	30.00	-9.99	357.70	4.00	Vertical	120k	0.10	-26.33
79.781	2.93	30.00	-27.07	104.50	4.00	Horizontal	120k	0.10	-25.28
186.4876	7.81	33.50	-25.69	39.30	4.00	Vertical	120k	0.10	-20.98
708.4314	16.32	36.00	-19.68	147.60	2.52	Vertical	120k	0.10	-9.25

RE 30-1000 MHz, Tx High (CH 2480 MHz) – EUT Back Side

Test Information:

Date and Time	7/1/2024 5:45:08 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43%
Atmospheric Pressure	1007 mbars
Comments	Scan#1_RE 30-1000MHz_Battery Pwr_Tx High CH 2480MHz_EUT on its back

Graph:**Results:**

Peak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
48.0105	28.14	---	---	71.60	4.00	Vertical	120k	0.10	-24.69
55.3254	24.82	---	---	342.40	1.00	Vertical	120k	0.10	-26.34
60.0105	26.45	---	---	179.80	2.21	Vertical	120k	0.10	-25.79
72.006	28.71	---	---	271.90	4.00	Vertical	120k	0.10	-24.83
120.0404	20.18	---	---	153.00	4.00	Vertical	120k	0.10	-18.92
836.0846	25.10	---	---	228.90	4.00	Horizontal	120k	0.10	-6.51

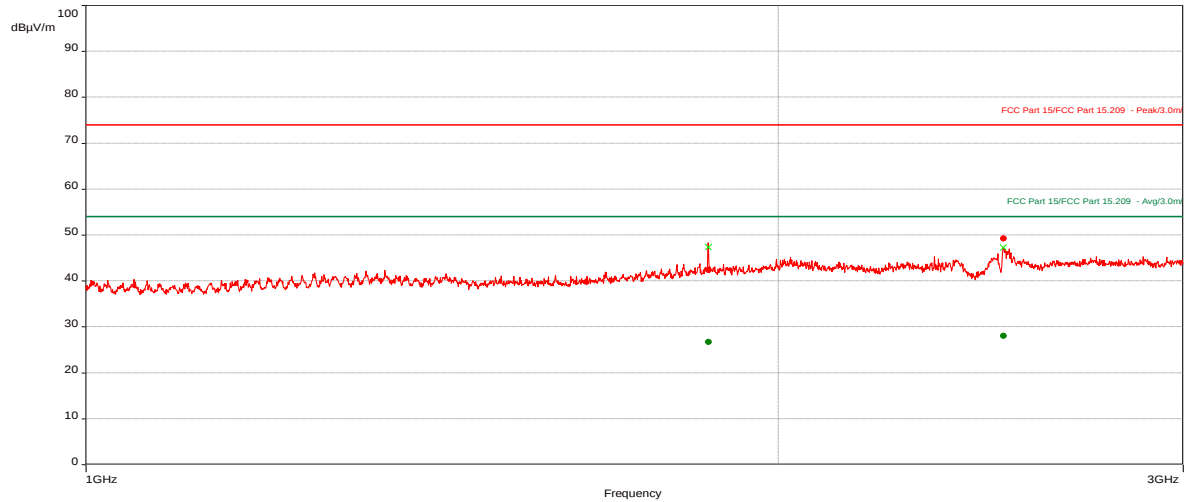
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
48.0105	26.90	30.00	-3.10	71.60	4.00	Vertical	120k	0.10	-24.69
55.3254	19.76	30.00	-10.24	342.40	1.00	Vertical	120k	0.10	-26.34
60.0105	25.29	30.00	-4.71	179.80	2.21	Vertical	120k	0.10	-25.79
72.006	27.58	30.00	-2.42	271.90	4.00	Vertical	120k	0.10	-24.83
120.0404	16.47	33.50	-17.03	153.00	4.00	Vertical	120k	0.10	-18.92
836.0846	18.51	36.00	-17.49	228.90	4.00	Horizontal	120k	0.10	-6.51

RE 1-3 GHz, Tx High (CH 2480 MHz) – EUT Short Side

Test Information:

Date and Time	7/12/2024 11:06:11 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 3: Tx High Ch, Short Side, RE 1 to 3 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
1865.574	42.43	74.00	-31.57	0.00	3.05	Vertical	1M	0.00	-17.55
2506.249	49.23	74.00	-24.77	230.50	1.44	Vertical	1M	0.00	-15.21

AVG (PASS) (2)

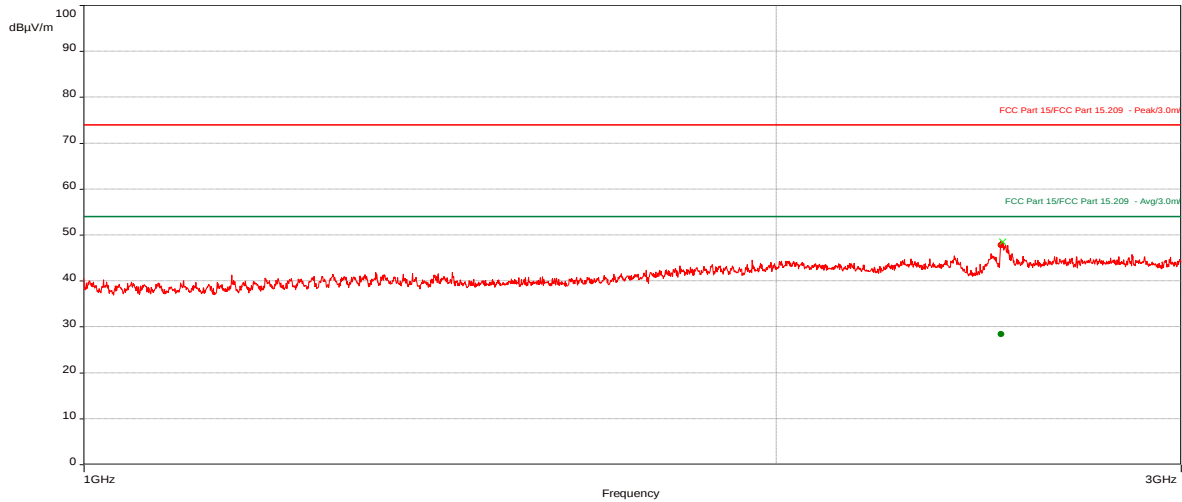
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
1865.574	26.69	54.00	-27.31	0.00	3.05	Vertical	1M	0.00	-17.55
2506.249	28.05	54.00	-25.95	230.50	1.44	Vertical	1M	0.00	-15.21

RE 1-3 GHz, Tx High (CH 2480 MHz) – EUT Long Side

Test Information:

Date and Time	7/12/2024 10:52:46 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 2: Tx High Ch, Long Side, RE 1 to 3 GHz Receiver mode

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2505.582	47.82	74.00	-26.18	360.00	1.44	Horizontal	1M	0.00	-15.21

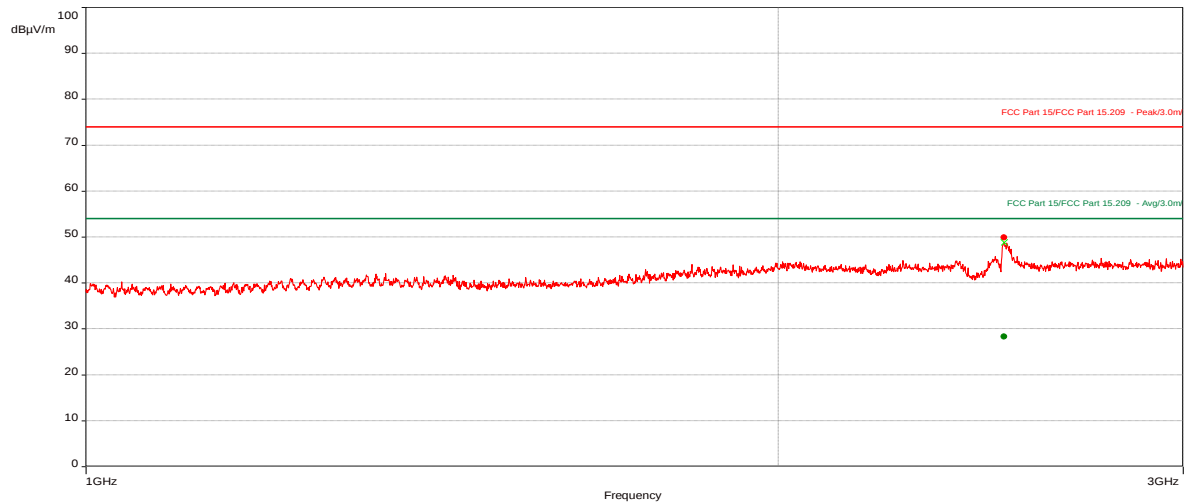
AVG (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2505.582	28.46	54.00	-25.54	360.00	1.44	Horizontal	1M	0.00	-15.21

RE 1-3 GHz, Tx High (CH 2480 MHz) – EUT Back Side

Test Information:

Date and Time	7/12/2024 11:36:40 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 6: Tx High Ch, Back, RE 1 to 3 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2508.111	49.92	74.00	-24.08	113.10	1.44	Horizontal	1M	0.00	-15.21

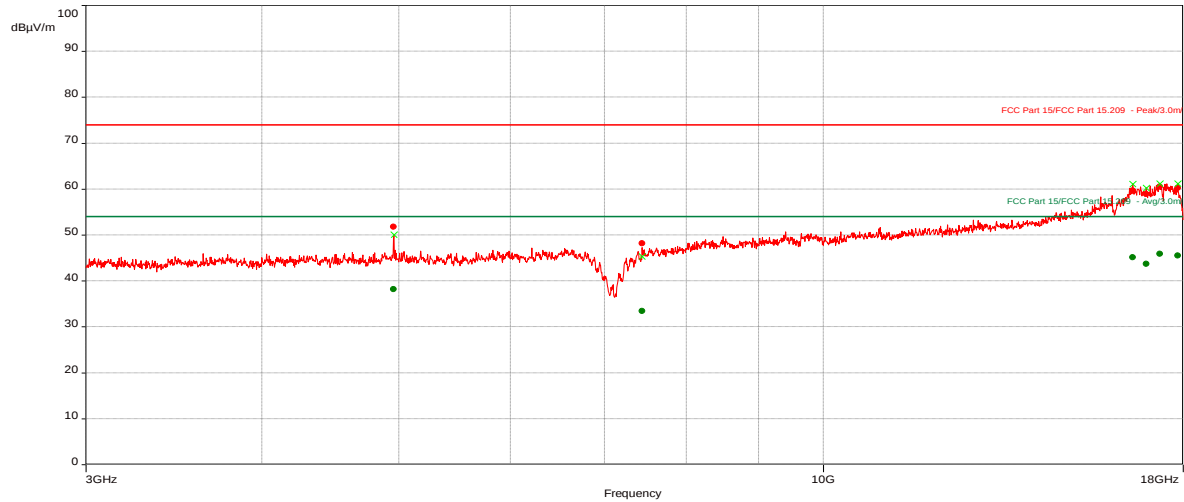
AVG (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2508.111	28.33	54.00	-25.67	113.10	1.44	Horizontal	1M	0.00	-15.21

RE 3-18 GHz, Tx High (CH 2480 MHz) – EUT Short Side

Test Information:

Date and Time	7/12/2024 2:50:54 PM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 10: Tx High Ch, Short Side, RE 3 to 18 GHz Receiver mode

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4959.702	51.82	74.00	-22.18	0.00	1.00	Horizontal	1M	0.00	-10.69
7440.598	48.18	74.00	-25.82	360.00	1.00	Horizontal	1M	0.00	-6.78
16579.542	59.66	74.00	-14.34	265.60	1.00	Horizontal	1M	0.00	6.31
16957.319	58.91	74.00	-15.09	0.00	4.00	Vertical	1M	0.00	6.80
17332.078	60.52	74.00	-13.48	265.50	1.00	Horizontal	1M	0.00	6.72
17850.708	60.31	74.00	-13.69	0.00	4.00	Vertical	1M	0.00	7.31

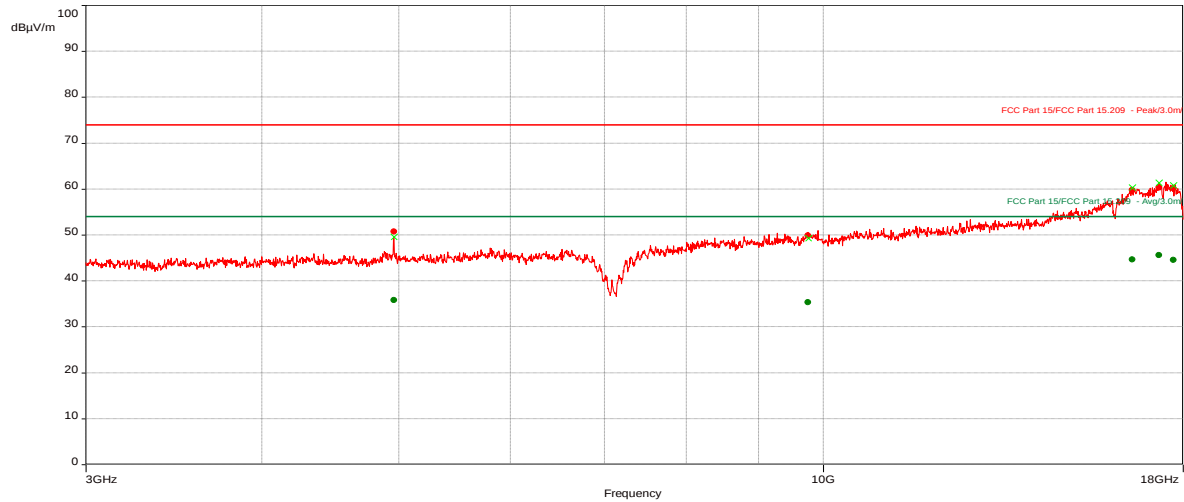
AVG (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4959.702	38.23	54.00	-15.77	0.00	1.00	Horizontal	1M	0.00	-10.69
7440.598	33.43	54.00	-20.57	360.00	1.00	Horizontal	1M	0.00	-6.78
16579.542	45.20	54.00	-8.80	265.60	1.00	Horizontal	1M	0.00	6.31
16957.319	43.69	54.00	-10.31	0.00	4.00	Vertical	1M	0.00	6.80
17332.078	45.89	54.00	-8.11	265.50	1.00	Horizontal	1M	0.00	6.72
17850.708	45.59	54.00	-8.41	0.00	4.00	Vertical	1M	0.00	7.31

RE 3-18 GHz, Tx High (CH 2480 MHz) – EUT Long Side

Test Information:

Date and Time	7/12/2024 3:29:39 PM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 11: Tx High Ch, Long Side, RE 3 to 18 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (5)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4960.563	50.78	74.00	-23.22	360.00	1.00	Vertical	1M	0.00	-10.69
9758.429	49.94	74.00	-24.06	360.00	1.00	Horizontal	1M	0.00	-4.00
16565.661	59.81	74.00	-14.19	360.00	4.00	Vertical	1M	0.00	6.26
17304.607	60.33	74.00	-13.67	360.00	4.00	Vertical	1M	0.00	6.70
17721.884	60.20	74.00	-13.8	0.00	4.00	Vertical	1M	0.00	7.18

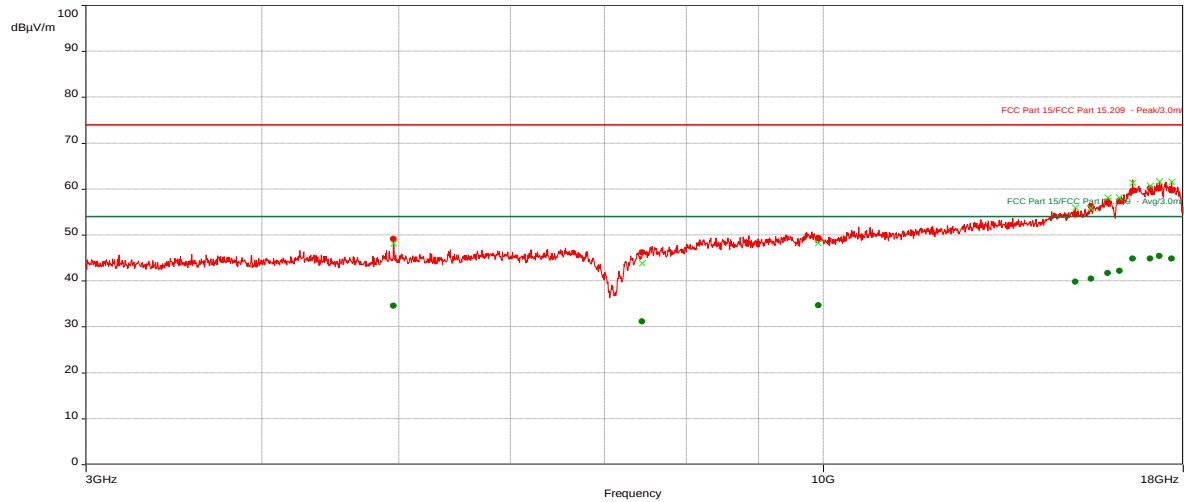
AVG (PASS) (5)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
4960.563	35.85	54.00	-18.15	360.00	1.00	Vertical	1M	0.00	-10.69
9758.429	35.37	54.00	-18.63	360.00	1.00	Horizontal	1M	0.00	-4.00
16565.661	44.71	54.00	-9.29	360.00	4.00	Vertical	1M	0.00	6.26
17304.607	45.61	54.00	-8.39	360.00	4.00	Vertical	1M	0.00	6.70
17721.884	44.57	54.00	-9.43	0.00	4.00	Vertical	1M	0.00	7.18

RE 3-18 GHz, Tx High (CH 2480 MHz) – EUT Back Side

Test Information:

Date and Time	7/12/2024 11:48:09 AM
Client and Project Number	Insulet
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	49 %
Atmospheric Pressure	1011 mbars
Comments	Scan 7: Tx High Ch, Back, RE 3 to 18 GHz Receiver mode

Graph:**Results:**

Peak (PASS) (11)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	RBW	Meas.Time	Correction (dB)
4959.788	49.15	74.00	-24.85	265.50	4.00	Vertical	1000000.00	1M	0.00	-10.69
7439.264	46.18	74.00	-27.82	0.00	1.00	Vertical	1000000.00	1M	0.00	-6.78
9922.818	49.32	74.00	-24.68	0.00	4.00	Horizontal	1000000.00	1M	0.00	-3.78
15096.531	54.46	74.00	-19.54	0.00	4.00	Vertical	1000000.00	1M	0.00	2.93
15489.29	56.29	74.00	-17.71	265.50	1.00	Horizontal	1000000.00	1M	0.00	3.64
15918.333	57.20	74.00	-16.8	360.00	1.00	Horizontal	1000000.00	1M	0.00	4.57
16222.973	57.36	74.00	-16.64	265.60	1.00	Horizontal	1000000.00	1M	0.00	5.27
16582.322	59.63	74.00	-14.37	265.40	1.00	Horizontal	1000000.00	1M	0.00	6.32
17063.347	60.22	74.00	-13.78	360.00	4.00	Horizontal	1000000.00	1M	0.00	6.81
17323.056	60.22	74.00	-13.78	265.60	1.00	Vertical	1000000.00	1M	0.00	6.71
17665.599	59.69	74.00	-14.31	0.00	4.00	Horizontal	1000000.00	1M	0.00	7.06

AVG (PASS) (11)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	RBW	Meas.Time	Correction (dB)
4959.788	34.63	54.00	-19.37	265.50	4.00	Vertical	1000000.00	1M	0.00	-10.69
7439.264	31.16	54.00	-22.84	0.00	1.00	Vertical	1000000.00	1M	0.00	-6.78
9922.818	34.67	54.00	-19.33	0.00	4.00	Horizontal	1000000.00	1M	0.00	-3.78
15096.531	39.82	54.00	-14.18	0.00	4.00	Vertical	1000000.00	1M	0.00	2.93
15489.29	40.55	54.00	-13.45	265.50	1.00	Horizontal	1000000.00	1M	0.00	3.64
15918.333	41.75	54.00	-12.25	360.00	1.00	Horizontal	1000000.00	1M	0.00	4.57
16222.973	42.17	54.00	-11.83	265.60	1.00	Horizontal	1000000.00	1M	0.00	5.27
16582.322	44.90	54.00	-9.10	265.40	1.00	Horizontal	1000000.00	1M	0.00	6.32
17063.347	44.92	54.00	-9.08	360.00	4.00	Horizontal	1000000.00	1M	0.00	6.81
17323.056	45.48	54.00	-8.52	265.60	1.00	Vertical	1000000.00	1M	0.00	6.71
17665.599	44.87	54.00	-9.13	0.00	4.00	Horizontal	1000000.00	1M	0.00	7.06

RE 18-25 GHz, Tx High (CH 2480 MHz) – All orientations of EUT



08:48:02 PM 07/16/2024

Intertek

Report Number: 105634374BOX-008	Issued: 08/21/2024
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Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 10.2 Pretest Verification w/BB source:			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/01/2024	Vathana F. Ven <i>VSV</i>	N/A	Internal Battery	Continuous Transmitting	24	43	1007
07/02/2024	Vathana F. Ven <i>VSV</i>	N/A	Internal Battery	Continuous Transmitting	27	36	1013
07/12/2024	Kouma Sinn <i>KPS</i>	N/A	Internal Battery	Continuous Transmitting	23	49	1011

Deviations, Additions, or Exclusions: None

11 Digital Device Radiated Spurious Emissions

11.1 Method

Tests are performed in accordance with FCC Part 15 Subpart B, ISED ICES-003, and ANSI C 63.4.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucisp
AC Line Conducted Emissions	150 kHz - 30 MHz	2.8 dB	3.4dB
Telco Port Emissions	150 kHz - 30 MHz	4.1 dB	5.0dB
AC Line Conducted Emissions	9 kHz - 150 MHz	2.4 dB	3.4 dB

As shown in the table above our conducted emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculations

The following is how net line-conducted readings were determined:

$$NF = RF + LF + CF + AF$$

Where NF = Net Reading in dB μ V

RF = Reading from receiver in dB μ V

LF = LISN or ISN Correction Factor in dB

CF = Cable Correction Factor in dB

AF = Attenuator Loss Factor in dB

To convert from dB μ V to μ V or mV the following was used:

$$UF = 10^{(NF / 20)} \text{ where } UF = \text{Net Reading in } \mu\text{V}$$

$$NF = \text{Net Reading in dB}\mu\text{V}$$

Example:

$$NF = RF + LF + CF + AF = 28.5 + 0.2 + 0.4 + 20.0 = 49.1 \text{ dB}\mu\text{V}$$

$$UF = 10^{(49.1 \text{ dB}\mu\text{V} / 20)} = 285.1 \mu\text{V/m}$$

When BAT-EMC Emission Software is used, the "Level" includes all losses and gains and is compared directly in the "Margin" column to the "Limit". The "Correction" includes LISN Factor, Attenuator, and Cable Loss. These are already accounted for in the "Level" column.

11.2 Test Equipment Used:

Test equipment used from 30-1000 MHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/19/2023	07/19/2024
145-406'	10m Track A In-floor Cable #1	Huber + Suhner	sucoflex 160-19220mm	001	07/19/2023	07/19/2024
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/19/2023	07/19/2024
147-326'	Immunity Cable	Huber + Suhner	Sucoflex 106	233089-005	07/19/2023	07/19/2024
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/15/2023	09/15/2024
145106'	Bilog Antenna (30MHz - 5GHz)	Sunol Sciences	JB5	A111003	09/14/2023	09/14/2024
ROS014	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025

Test equipment used from 1-13 GHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/19/2023	07/19/2024
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/30/2024	01/30/2025
HS002'	DC-18GHz cable 1.5M long	Huber & Suhner	SucoFlex 106A	HS002	07/19/2023	07/19/2024
145-408'	10m Chamber - 3m Track B In-floor Cable	Huber + Suhner	sucoflex 106-11000mm	001	07/19/2023	07/19/2024
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	10/16/2023	10/16/2024
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
BONN001'	1-18GHz low noise pre-amp	Bonn	BLMA 0118-M	1811749	07/19/2023	07/19/2024

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2022.0.27.0

11.3 Results:

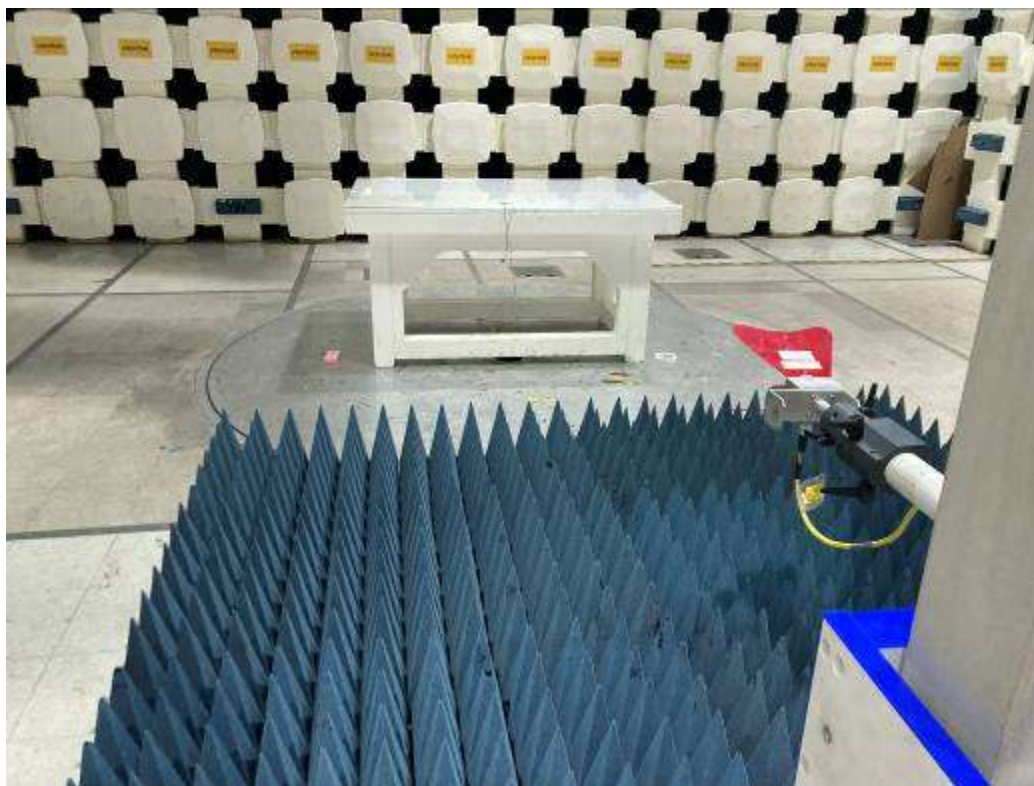
The sample tested was found to Comply.

11.4 Setup Photographs:

30-1000 MHz



1-13 GHz



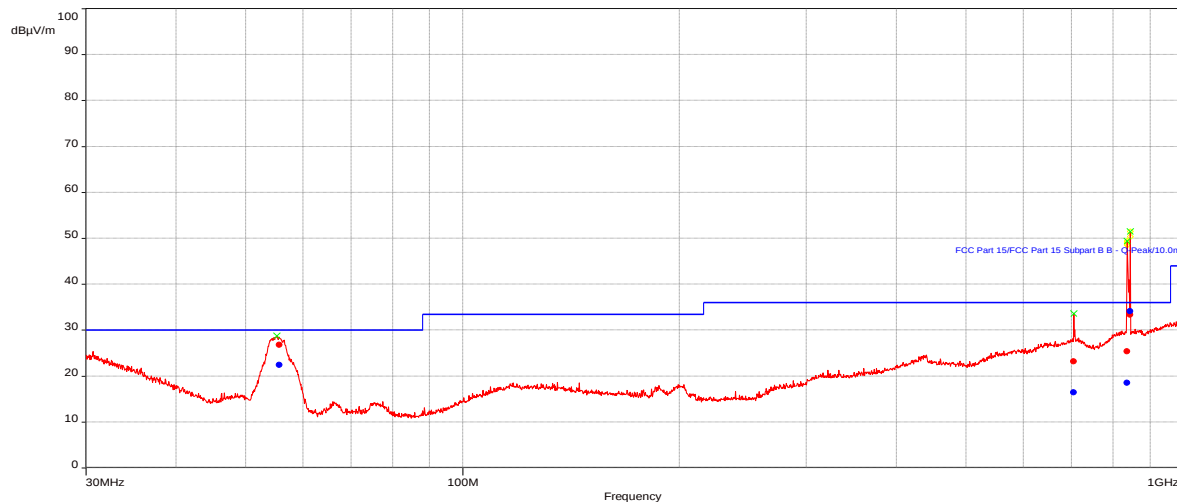
11.5 Plots/Data:

RE 30-1000 MHz, Rx Low (CH 2402 MHz)

Test Information:

Date and Time	7/1/2024 9:39:19 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	43 %
Atmospheric Pressure	1007 mbars
Comments	Scan #9_RE 30-1000MHz_Battery Pwr_Rx Low CH 2402MHz

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.6444	26.77	---	---	222.90	2.40	Vertical	120k	0.10	-26.33
705.1986	23.24	---	---	293.50	1.38	Vertical	120k	0.10	-9.18
836.6169	25.43	---	---	223.00	2.31	Vertical	120k	0.10	-6.45
844.3487	33.34	---	---	331.70	3.77	Vertical	120k	0.10	-6.33

QuasiPeak (PASS) (4)

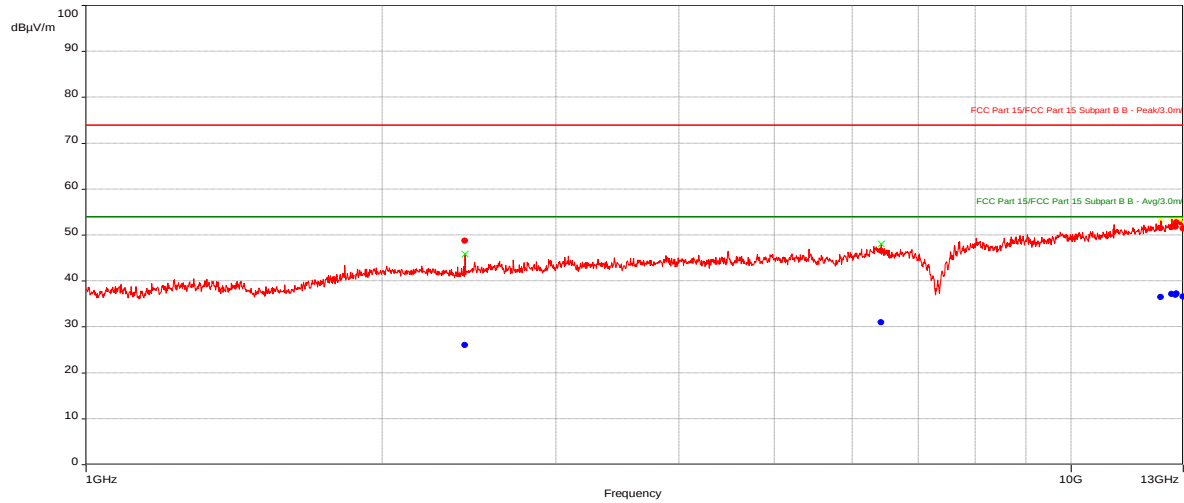
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
55.6444	22.41	30.00	-7.59	222.90	2.40	Vertical	120k	0.10	-26.33
705.1986	16.45	36.00	-19.55	293.50	1.38	Vertical	120k	0.10	-9.18
836.6169	18.57	36.00	-17.43	223.00	2.31	Vertical	120k	0.10	-6.45
844.3487	34.17	36.00	-1.83	331.70	3.77	Vertical	120k	0.10	-6.33

RE 1-13 GHz, Rx Low (CH 2402 MHz)

Test Information:

Date and Time	7/2/2024 4:25:04 PM
Client and Project Number	Insulet_G105634374
Engineer	Vathana Ven
Temperature	27 deg C
Humidity	36 %
Atmospheric Pressure	1013 mbars
Comments	Scan#13 RE 1 to 13 GHz Battery Pwr Rx mode Low CH

Graph:



Results:

Peak (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2426.15	48.80	74.00	-25.20	212.30	3.94	Vertical	1M	0.00	-15.60
6415.815	46.59	74.00	-27.41	0.00	4.00	Horizontal	1M	0.00	-7.91
12336.285	51.53	74.00	-22.47	212.50	3.94	Horizontal	1M	0.00	0.23
12656.389	51.74	74.00	-22.26	0.00	4.00	Vertical	1M	0.00	0.72
12777.902	51.80	74.00	-22.20	0.00	1.00	Horizontal	1M	0.00	0.92
12800.197	52.74	74.00	-21.26	212.40	3.94	Vertical	1M	0.00	0.96
12996.129	51.44	74.00	-22.56	0.00	3.94	Horizontal	1M	0.00	0.97

AVG (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2426.15	26.01	54.00	-27.99	212.30	3.94	Vertical	1M	0.00	-15.60
6415.815	30.97	54.00	-23.03	0.00	4.00	Horizontal	1M	0.00	-7.91
12336.285	36.55	54.00	-17.45	212.50	3.94	Horizontal	1M	0.00	0.23
12656.389	37.14	54.00	-16.86	0.00	4.00	Vertical	1M	0.00	0.72
12777.902	37.01	54.00	-16.99	0.00	1.00	Horizontal	1M	0.00	0.92
12800.197	37.26	54.00	-16.74	212.40	3.94	Vertical	1M	0.00	0.96
12996.129	36.56	54.00	-17.44	0.00	3.94	Horizontal	1M	0.00	0.97

Intertek

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Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: All Class B Pretest Verification w/ Broadband Source: Yes			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/02/2024	Vathana F. Ven 	N/A	Internal Battery	Continuous Transmitting	27	36	1013

Deviations, Additions, or Exclusions: None

12 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	08/21/2024	105634374BOX-008	KPS <i>KPS</i>	VFV <i>VFV</i>	Original Issue