

INSULET CORPORATION TEST REPORT

SCOPE OF WORK

EMISSIONS TESTING – Omnipod 5 SAW Pod

REPORT NUMBER

104993662BOX-010

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EMISSIONS TEST REPORT (FULL COMPLIANCE)

Report Number: 104993662BOX-010

Project Number: G104993662

Report Issue Date: 03/29/2022

Model(s) Tested: Omnipod 5 SAW Pod

Model(s) Partially Tested: None

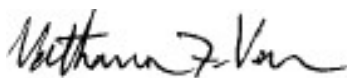
Model(s) Not Tested but declared equivalent by the client: None

Standards: CFR47 FCC Part 15.247 Subpart C: 03/2022,
CFR47 FCC Part 15 Subpart B: 03/2022,
RSS-247 Issue 2 February 2017,
ISED ICES-003 Issue 6 Published: January 2016 Updated: April 2019,
RSS-Gen Issue 5 April 2018,
RSS-102 Issue 5 March 2015,
558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Tested by:
Intertek Testing Services NA, Inc.
70 Codman Hill Road
Boxborough, MA 01719
USA

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

Report prepared by Vathana Ven



Vathana Ven / EMC Staff Engineer

Report reviewed by Kouma Sinn



Kouma Sinn / 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:03/2022, Section 15.247 (b)(3) RSS-247 Issue 2 February 2017	Pass
7	6 dB Bandwidth and Occupied Bandwidth CFR47 FCC Part 15 Subpart C: 03/2022, Section 15.247 (a)(2) RSS-247 Issue 2 February 2017	Pass
8	Maximum Power Spectral Density CFR47 FCC Part 15 Subpart C: 03/2022, Section 15.247 (e) RSS-247 Issue 2 February 2017	Pass
9	Band Edge Compliance CFR47 FCC Part 15 Subpart C: 03/2022, Section 15.247 (d) RSS-247 Issue 2: 02/2017)	Pass
10	Transmitter spurious emissions CFR47 FCC Part 15 Subpart C: 03/2022, Section 15.247 (d) RSS-247 Issue 2 February 2017	Pass
11	Digital Device and Receiver Radiated Spurious Emissions (CFR47 FCC Part 15 Subpart B 15.109: 03/2022, ISED ICES-003 Issue 6 Published: January 2016 Updated: April 2019	Pass
--	AC Mains Conducted Emissions FCC 47CFR Part 15.107: 03/2022 ISED ICES-003 Issue 6 Published: January 2016 Updated: April 2019	N/A
12	Revision History	--

Notes: The EUT powers from internal battery with no connection to AC mains.

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
Fax: None
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
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Tx 2402 MHz Radiated - 0400070
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Tx 2440 MHz Radiated - 0520089
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Tx 2480 MHz Radiated - 0380211
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Rx 2402 MHz Radiated - 0320001
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Normal operation mode - 0300236
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Tx 2402 MHz Conducted - 0480089
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Tx 2440 MHz Conducted - 0480068
Omnipod 5 SAW Pod	Insulet Corporation	POD-BLE-H1-520	Tx 2480 MHz Conducted - 0330034

Receive Date:	03/09/2022
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
Insulin management system

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
4.5 V (3x 1.5V batteries)	N/A	DC	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
-----	--------------------------------

1	constant_carrier_2402MHz_WithMod_PseudoRandTestPattern
2	constant_carrier_2440MHz_WithMod_PseudoRandTestPattern
3	constant_carrier_2480MHz_WithMod_PseudoRandTestPattern
4	Receive Only_2402MHz
5	Normal operation mode

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	PDM App: v1.0.87
2	Pod: v 6.0.0/55.0.5

Radio/Receiver Characteristics	
Frequency Band(s)	2402-2480 MHz
Modulation Type(s)	GFSK
Maximum Output Power	Low Channel (2402 MHz): 1.52 dBm (conducted) Mid Channel (2440 MHz): 1.55 dBm (conducted) High Channel (2480 MHz): 1.08 dBm (conducted)
Test Channels	Low Channel: 2402 MHz Mid Channel: 2440 MHz High Channel: 2480 MHz
Occupied Bandwidth	Low Channel (2402 MHz): 1.02 MHz Mid Channel (2440 MHz): 1.00 MHz High Channel (2480 MHz): 1.01 MHz
6 dB Bandwidth	Low Channel (2402 MHz): 629.4 kHz Mid Channel (2440 MHz): 664.3 kHz High Channel (2480 MHz): 665.3 kHz
MIMO Information (# of Transmit and Receive antenna ports)	1
Equipment Type	Standalone
Antenna Type and Gain	PCB mag loop with 1.5 dBi gain

Variant Models:

The following variant models were not tested as part of this evaluation, 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	--	--	--	--

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
None	--	--	--

5.1 Method:

Configuration as required by Configuration as required by FCC Part 15 Subpart C 15.247: 03/2022, FCC Part 15 Subpart B: 03/2022, RSS 247 Issue 2: 02/2017, ISED ICES-003 Issue 6: 01/2016 updated 06/2016, RSS-Gen Issue 5 April 2018, RSS-102 Issue 5 March 2015, ANSI C 63.10: 2013, ANSI C 63.4: 2014, and 558074 D01 15.247 Meas Guidance v05r02.

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, and ANSI C63.10.

TEST SITE: EMC 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 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/02/2021	11/02/2022
DAV005'	Weather Station	Davis	6250	MS191218083	02/11/2021	02/11/2023
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/10/2022	02/10/2023
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	11/26/2021	11/26/2022

Software Utilized:

Name	Manufacturer	Version
None	--	--

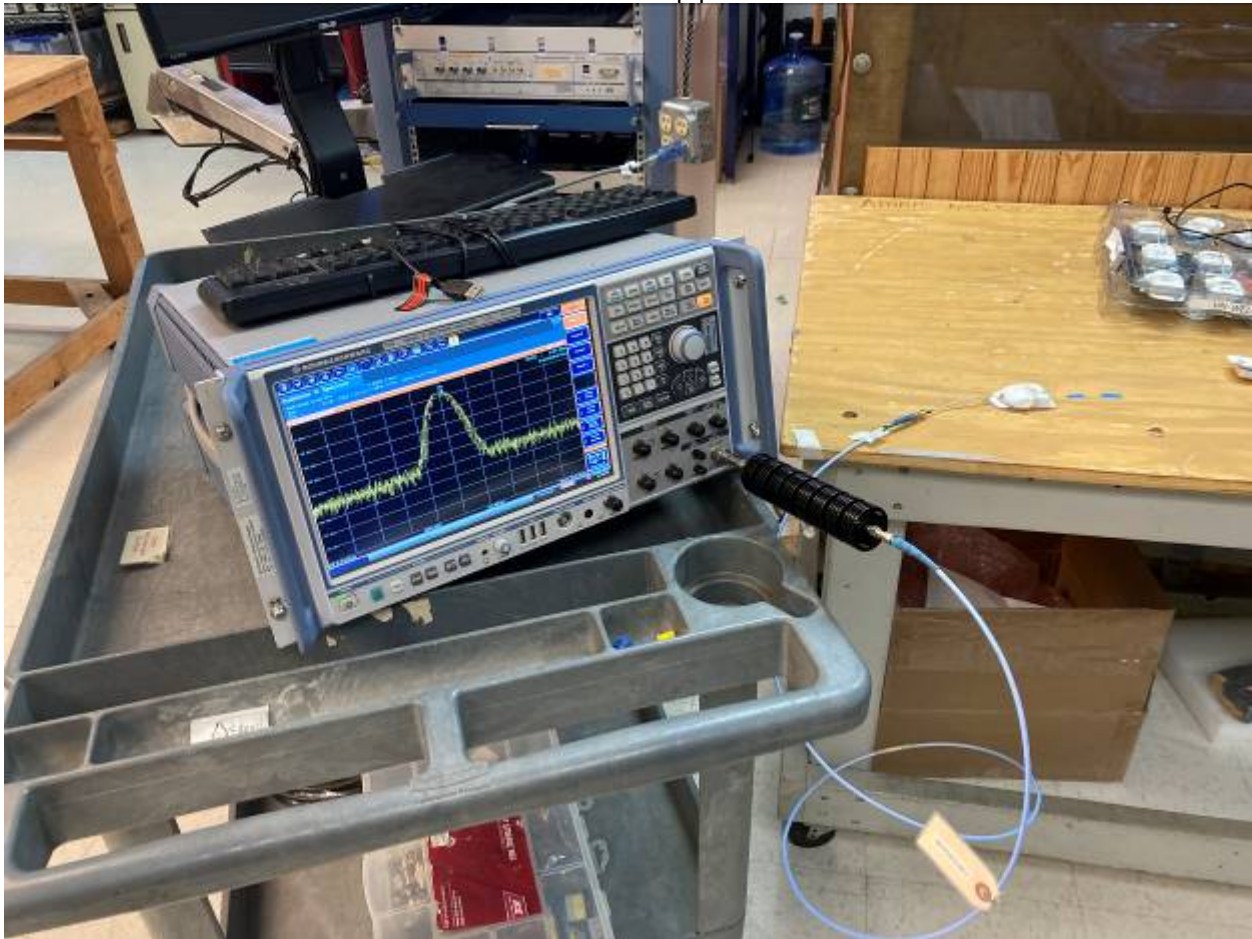
6.3 Results:

The sample tested was found to Comply.

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

6.4 Setup Photograph:

Conducted setup photo



6.5 Test Data:

Output Power, Low Channel, 1.52 dBm



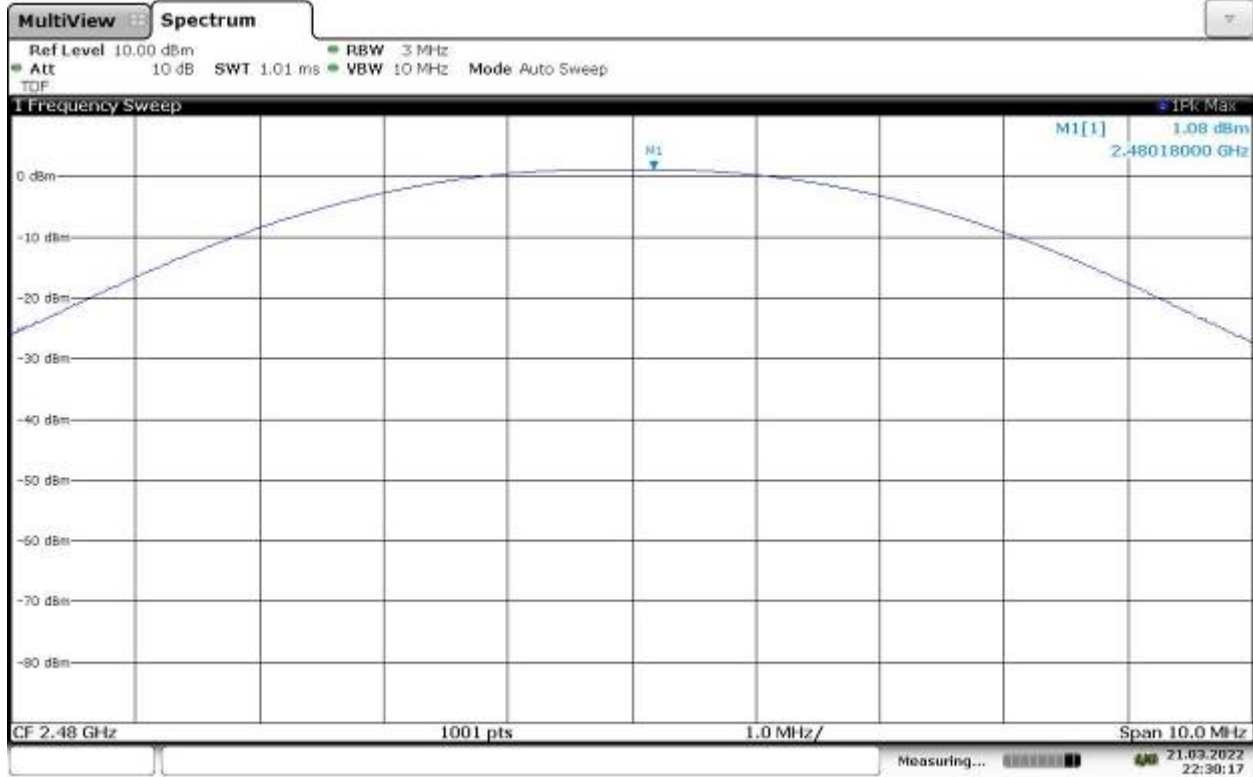
22:14:04 21.03.2022

Output Power, Mid Channel, 1.55 dBm



22:20:32 21.03.2022

Output Power, High Channel, 1.08 dBm



22:30:18 21.03.2022

Test Personnel: Vathana Ven *VSV*
 Supervising/Reviewing Engineer: Kouma Sinn *KPS*
 (Where Applicable) CFR47 FCC Part 15.247
 Product Standard: RSS-247, RSS-102
 Input Voltage: Battery Powered (3VDC)
 Pretest Verification w/ Ambient Signals or BB Source: N/A

Test Date: 03/21/2022

Limit Applied: See report section 6.3

Ambient Temperature: 20 °C

Relative Humidity: 44 %

Atmospheric Pressure: 978 mbars

Deviations, Additions, or Exclusions: None

7 6 dB Bandwidth and Occupied Bandwidth

7.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, and ANSI C63.10.

TEST SITE: EMC 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 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Schwartz	FSW43	100646	11/02/2021	11/02/2022
DAV005'	Weather Station	Davis	6250	MS191218083	02/11/2021	02/11/2023
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/10/2022	02/10/2023
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	11/26/2021	11/26/2022

Software Utilized:

Name	Manufacturer	Version
None	--	--

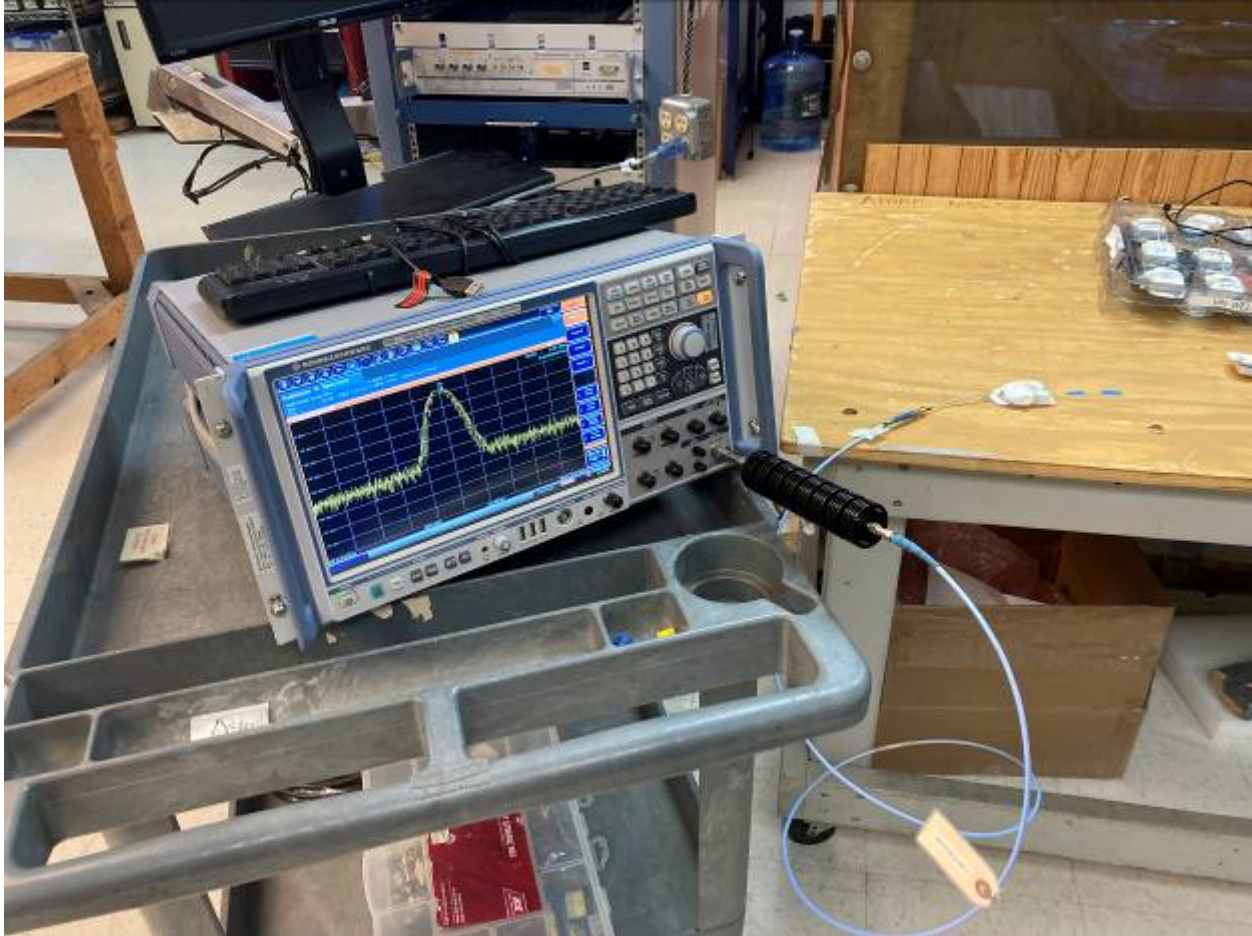
7.3 Results:

The sample tested was found to Comply.

§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.

7.4 Setup Photograph:

Conducted measurement setup photo



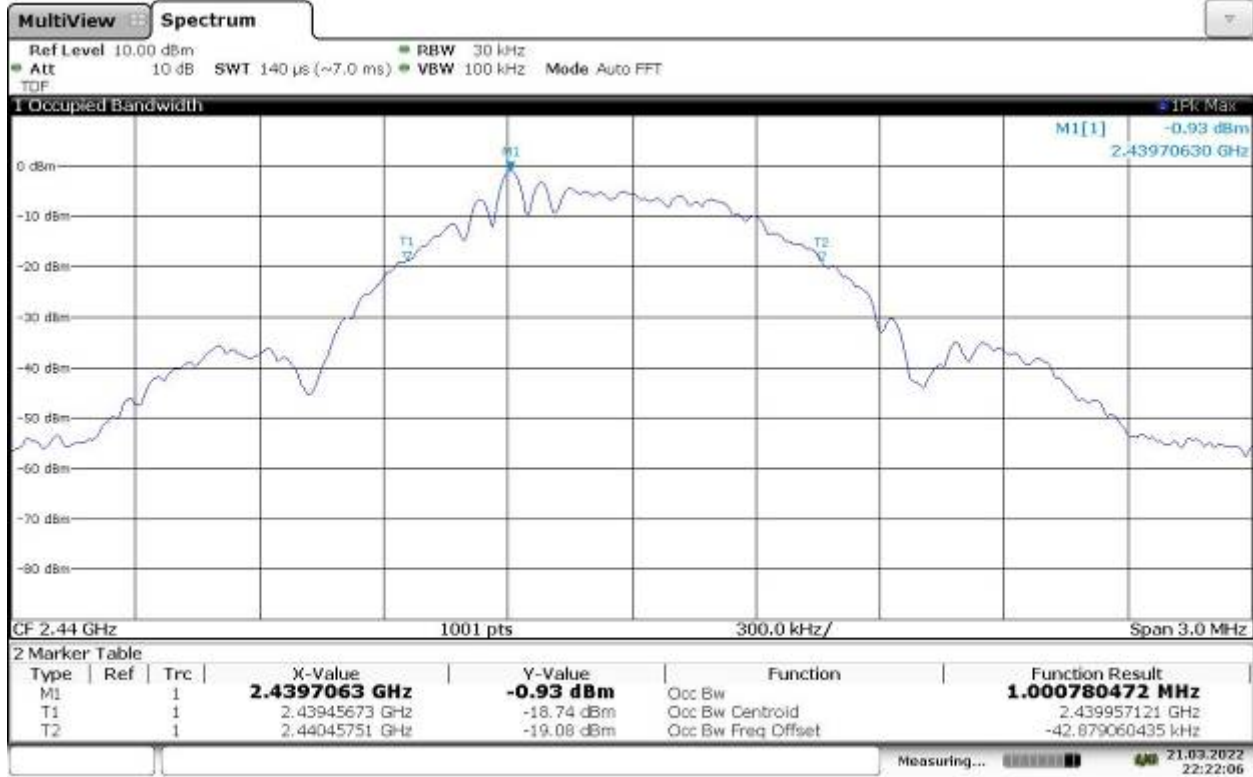
7.5 Test Data:

Low Channel Occupied Bandwidth: 1.02 MHz



22:11:27 21.03.2022

Mid Channel Occupied Bandwidth: 1.0 MHz



22:22:07 21.03.2022

High Channel Occupied Bandwidth: 1.01 MHz



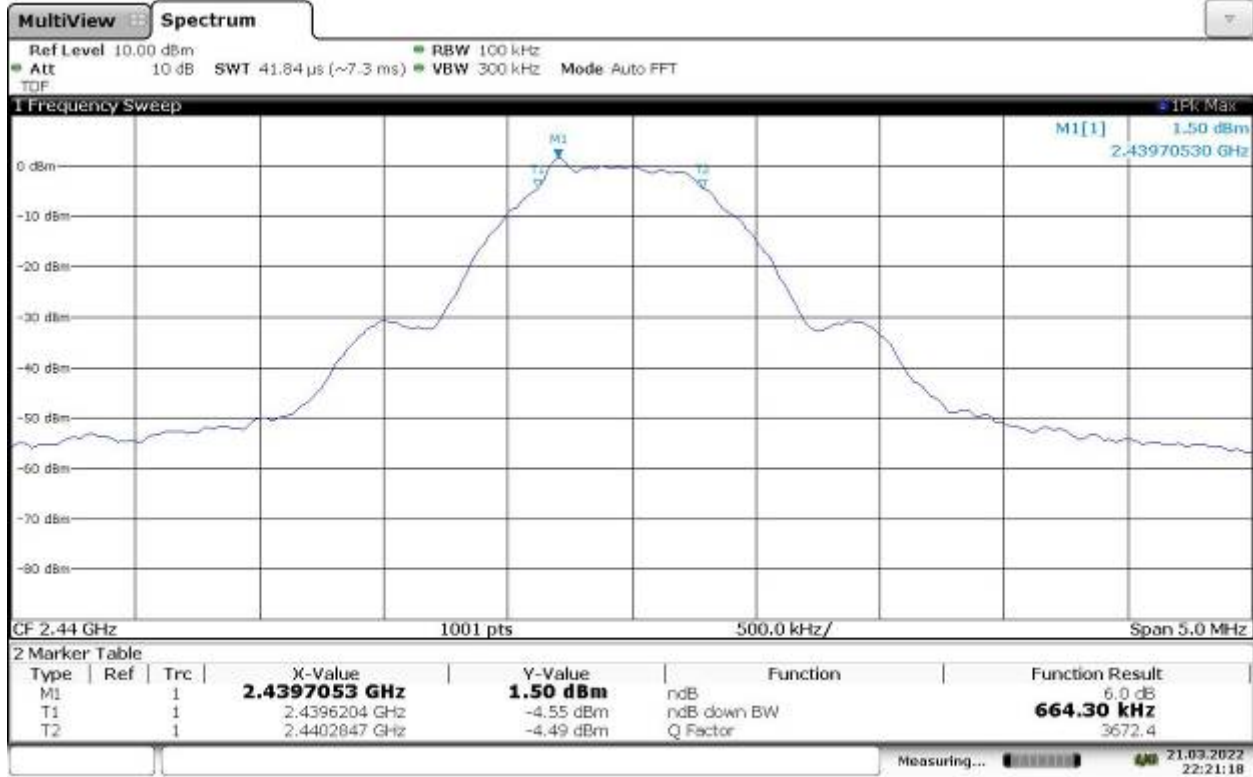
22:28:40 21.03.2022

Low Channel DTS Bandwidth (6 dB Bandwidth): 629.40 kHz



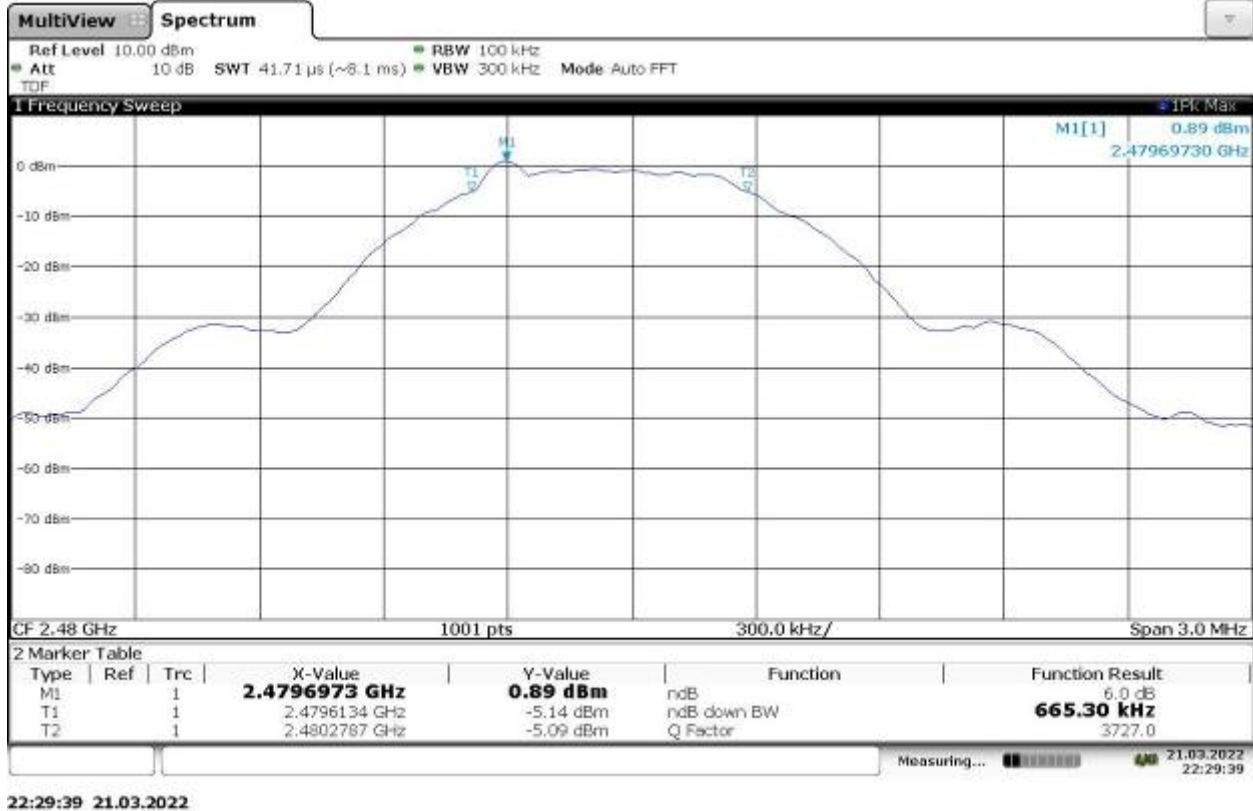
22:13:27 21.03.2022

Mid Channel DTS Bandwidth (6 dB Bandwidth): 664.30 kHz



22:21:18 21.03.2022

High Channel DTS Bandwidth (6 dB Bandwidth): 665.30 kHz



Frequency (MHz)	DTS Bandwidth (6 dB Bandwidth) (kHz)	Occupied Bandwidth (MHz)
2402	629.40	1.02
2440	664.30	1.00
2480	665.30	1.01

Test Personnel: Vathana Ven *VSV*
 Supervising/Reviewing Engineer: Kouma Sinn *KPS*
 (Where Applicable) CFR47 FCC Part 15.247
 Product Standard: RSS-247
 Input Voltage: Battery Powered (3VDC)
 Pretest Verification w/ Ambient Signals or BB Source: N/A

Test Date: 03/21/2022

Limit Applied: See report section 7.3

Ambient Temperature: 20 °C

Relative Humidity: 44 %

Atmospheric Pressure: 978 mbars

Deviations, Additions, or Exclusions: None

8 Maximum Power Spectral Density

8.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, and ANSI C63.10.

TEST SITE: EMC 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 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/02/2021	11/02/2022
DAV005'	Weather Station	Davis	6250	MS191218083	02/11/2021	02/11/2023
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/10/2022	02/10/2023
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	11/26/2021	11/26/2022

Software Utilized:

Name	Manufacturer	Version
None	--	--

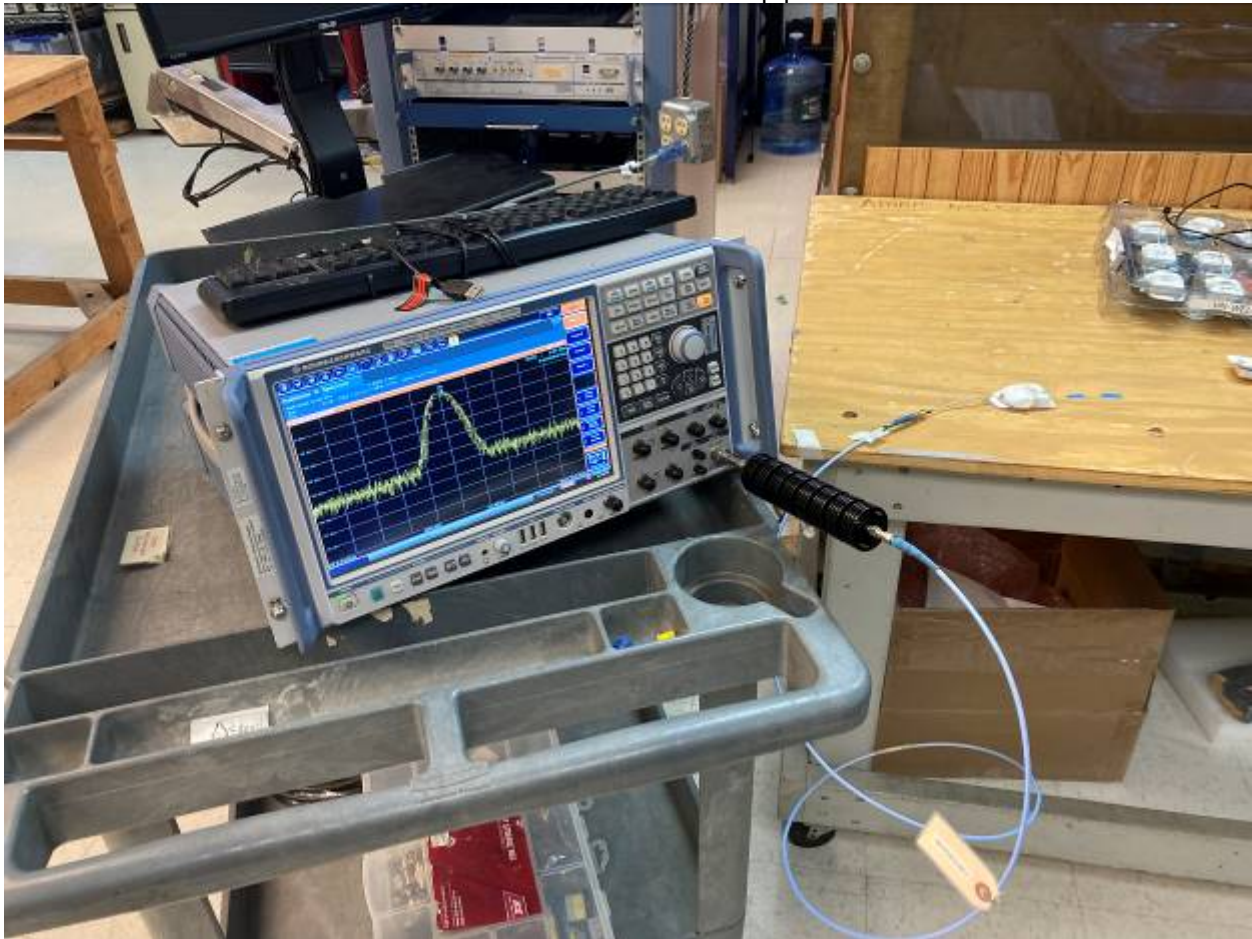
8.3 Results:

The sample tested was found to Comply.

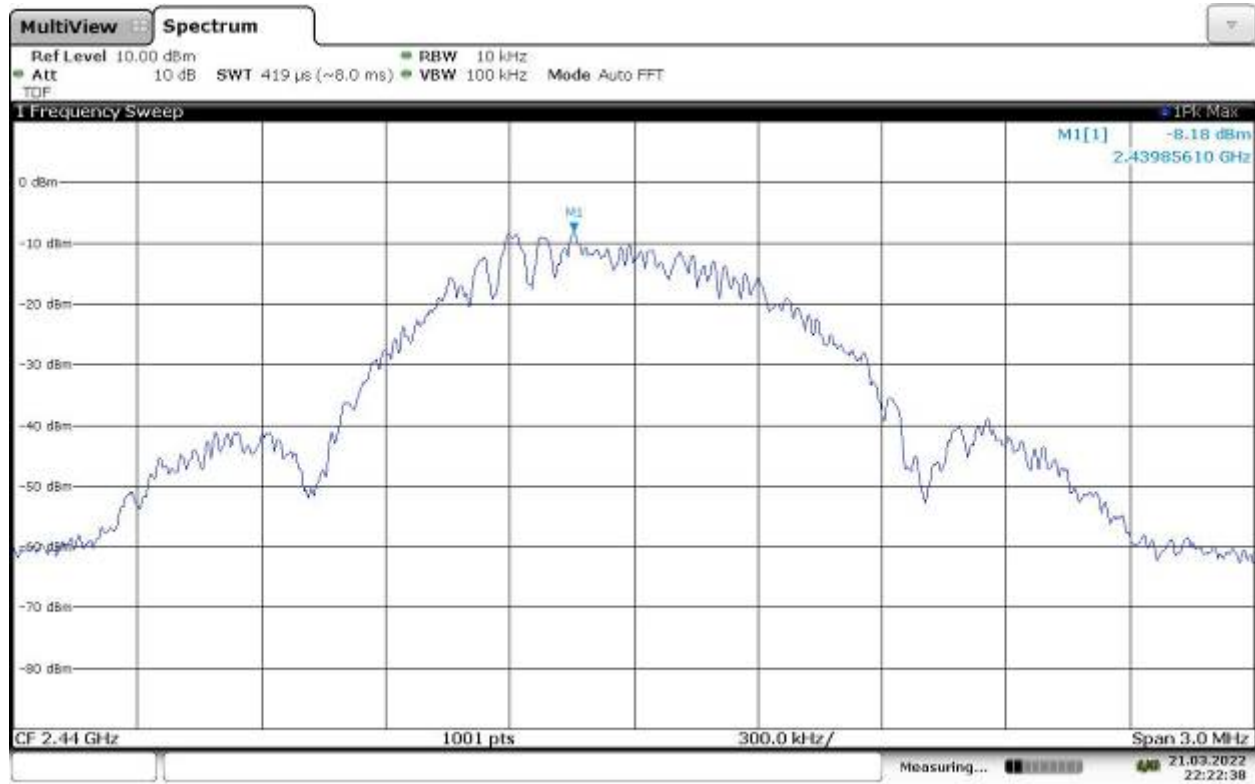
§15.247 (e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.4 Setup Photograph:

Conducted measurement setup photo

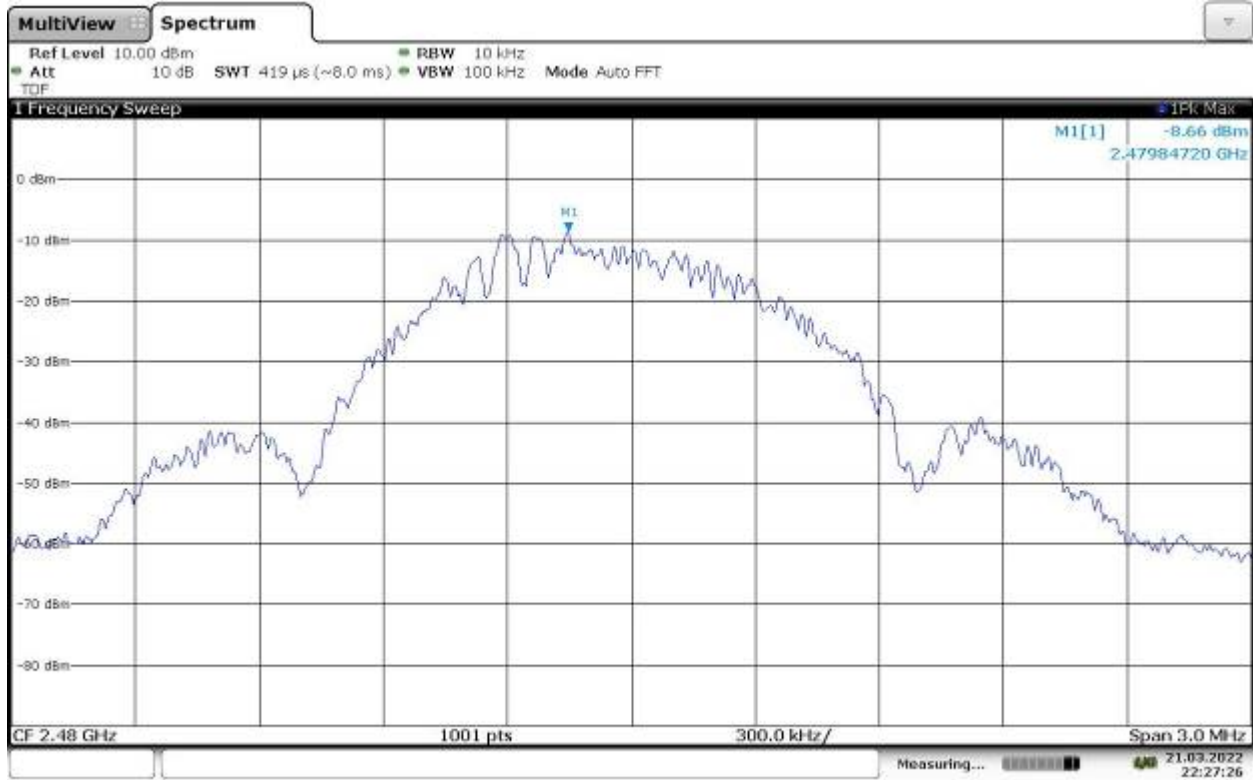


PSD, Mid Channel, -8.18 dBm



22:22:38 21.03.2022

PSD, High Channel, -8.66 dBm



22:27:26 21.03.2022

Test Personnel: Vathana Ven
 Supervising/Reviewing Engineer: Kouma Sinn
 (Where Applicable) CFR47 FCC Part 15.247
 Product Standard: RSS-247
 Input Voltage: Battery Powered (3VDC)
 Pretest Verification w/ Ambient Signals or BB Source: N/A

Test Date: 03/21/2022

Limit Applied: See report section 8.3

Ambient Temperature: 20 °C

Relative Humidity: 44 %

Atmospheric Pressure: 978 mbars

Deviations, Additions, or Exclusions: None

9 Band Edge Compliance

9.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C 15.247 RSS 247, ANSI C 63.10, and ANSI C 63.4.

TEST SITE: EMC 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.

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	4.6dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 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 dB μ V
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dB μ V/m

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

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μ V
NF = Net Reading in dB μ V

Example:

$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0$
 $UF = 10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$

9.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007	Weather Station Vantage Vue	Davis	6250	MS191212003	03/20/2021	03/20/2022
145-414	Cables 145-400 145-403 145-405 145-409	Huber + Suhner	3m Track A cables	multiple	07/09/2021	07/09/2022
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	08/24/2021	08/24/2022
145108'	EMI Test Receiver (20Hz - 40GHz)	Rohde & Schwarz	ESIB40	100209	06/22/2021	06/22/2022
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	09/23/2021	09/23/2022
IW002'	2 meter Armored cable	Insulated Wire	2800-NPS	002	09/23/2021	09/23/2022
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	09/23/2021	09/23/2022

Software Utilized:

Name	Manufacturer	Version
None	---	---

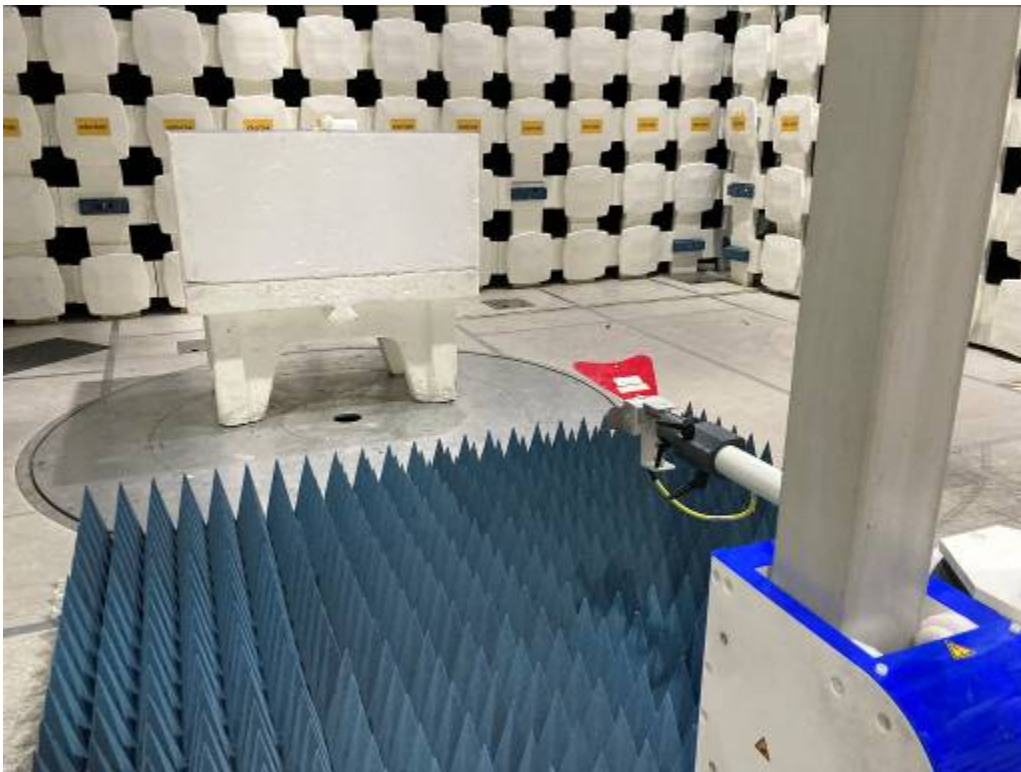
9.3 Results:

The sample tested was found to Comply.

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))

9.4 Setup Photographs:

Radiated measurement setup photo

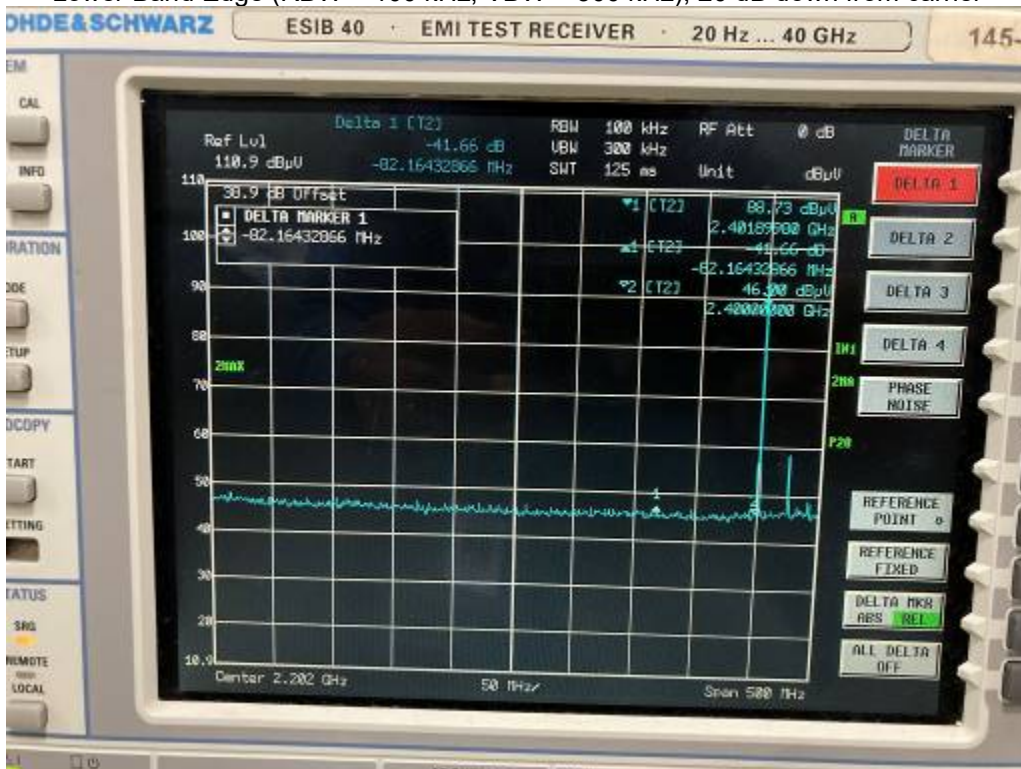


9.5 Plots/Data:

Lower Band Edge (RBW = 1 MHz, VBW = 3 MHz), Restricted Band



Lower Band Edge (RBW = 100 kHz, VBW = 300 kHz), 20 dB down from carrier



Notes: Testing was performed at 3 meters with the worst-case orientation. All factors were internally compensated.

[illegible]

ESIB 40 · EMI TEST RECEIVER · 20 Hz ... 40 GHz

145

Marker 1 [F1]

RBW 100 kHz RF Att 0 dB

VBW 300 kHz

SWT 6.5 us Unit dBuV

Ref Lvl 96.06 dBuV

111.5 dBuV 2.47970641 GHz

111

39.5 dB Offset

■ DISPLAY LINE 2

76.06 dBuV

100

90

80

70

60

50

40

30

20

11.5

2.47970641 GHz 2.5 MHz Stop 2.50000000 GHz

D LINES

DISPLAY LINE 1

DISPLAY LINE 2

THRESHOLD LINE

REFERENCE LINE

FREQUENCY LINE 1

FREQUENCY LINE 2


BASELINE CLIPPING

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Radiated Emissions

Company: Insulet Corporation
 Model #: Omnipod 5 Pod
 Serial #: Several
 Engineers: Vathana Ven
 Project #: G104993662
 Standard: FCC Part 15C, 15.247
 Receiver: R & S ESI (145-108) 06-22-2022
 PreAmp: NONE.
 Antenna & Cables: HF Bands: N, LF, HF, SHF
 Antenna: 2021-3MH 08_24_2022.txt 2021-3MH 08_24_2022.txt
 Cable(s): 145-416 3mTrkB 10-03-2014.txt NONE.
 Location: 10M Chamber Barometer: DAV007 Filter: NONE
 Date(s): 03/22/22
 Temp/Humidity/Pressure: 24 deg C 17% 1007 mB
 Limit Distance (m): 3
 Test Distance (m): 3
 PreAmp Used? (Y or N): N Voltage/Frequency: Battery power Frequency Range: See below
 Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
 Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Lower Band Edge Compliance													
PK	V	2390.000	15.92	31.80	7.10	0.00	0.00	54.82	74.00	-19.18	1/3 MHz	RB	RB
AVG	V	2390.000	2.70	31.80	7.10	0.00	0.00	41.60	54.00	-12.40	1/3 MHz	RB	RB
Upper Band Edge Compliance													
PK	V	2483.500	17.42	32.51	6.99	0.00	0.00	56.92	74.00	-17.08	1/3 MHz	RB	
AVG	V	2483.500	6.50	32.51	6.99	0.00	0.00	46.00	54.00	-8.00	1/3 MHz	RB	

Test Personnel: Vathana Ven 
 Supervising/Reviewing Engineer:
 (Where Applicable) N/A
 CFR47 FCC Part 15.247
 Product Standard: RSS-247
 Input Voltage: Battery Powered (3VDC)
 Pretest Verification w/ Ambient Signals or BB Source: N/A

Test Date: 03/22/2022
 Limit Applied: See report section 9.3
 Ambient Temperature: 24 °C
 Relative Humidity: 17 %
 Atmospheric Pressure: 1007 mbars

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 RSS 247, ANSI C 63.10.

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	4.6dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 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 dB μ V
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dB μ V/m

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

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μ V
NF = Net Reading in dB μ V

Example:

$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0$
 $UF = 10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$

10.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/08/2022	03/08/2023
145108'	EMI Test Receiver (20Hz - 40GHz)	Rohde & Schwarz	ESIB40	100209	06/22/2021	06/22/2022
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/02/2021	09/02/2022
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	06/09/2021	06/09/2022
HS003'	10m under floor cable	Huber-Schuner	10m-1	HS003	02/15/2022	02/15/2023
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	08/24/2021	08/24/2022
REA003'	1GHz High Pass Filter	Reactel, Inc	7HS-1G/10G-S11	06-1	02/09/2022	02/09/2023
PRE12'	Pre-amplifier	Com Power	PAM-118A	18040117	12/06/2021	12/06/2022
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/21/2022	02/21/2023
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	02/21/2022	02/21/2023
PRE8'	PREAMPLIFIER 1- 40 GHz	MITEQ	NSP4000-NF	507145	12/27/2021	12/27/2022
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/02/2021	11/02/2022
CBLSHF205'	Cable, SMA-SMA, 9kHz-40GHz, (Cable Kit5)	Huber + Suhner	Sucoflex 102EA	234715001	03/01/2022	03/01/2023
145-130'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber + Suhner	SF102	252676002	10/15/2021	10/15/2022
REA008'	band reject filter 2.4GHz	Reactel, Inc	12RX7-2441.75-x140 S	17-01	07/28/2021	07/28/2022
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	09/23/2021	09/23/2022
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	07/22/2021	07/22/2022
HS002'	DC-18GHz cable 1.5M long	Huber + Suhner	SucoFlex 106A	HS002	12/06/2021	12/06/2022
145-406'	10m Track A In-floor Cable #1	Huber + Suhner	sucoflex 160-19220mm	001	07/22/2021	07/22/2022

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	3.18.0.16
EMI Boxborough.xls	Intertek	08/27/2010

10.3 Results:

The sample tested was found to Comply.

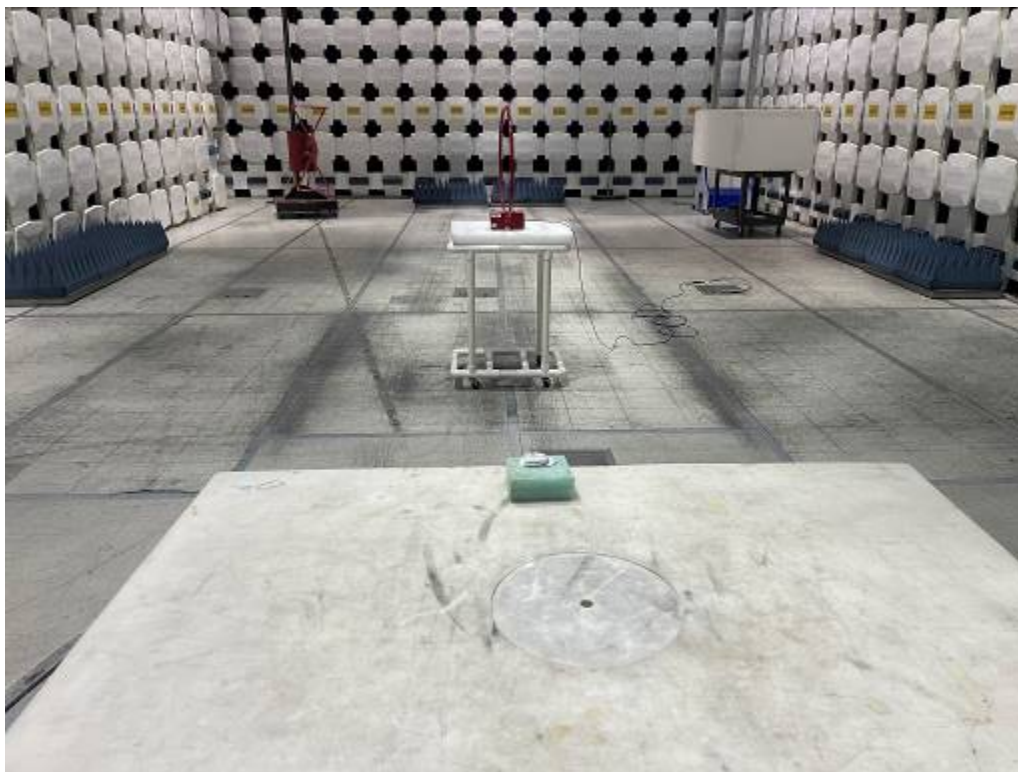
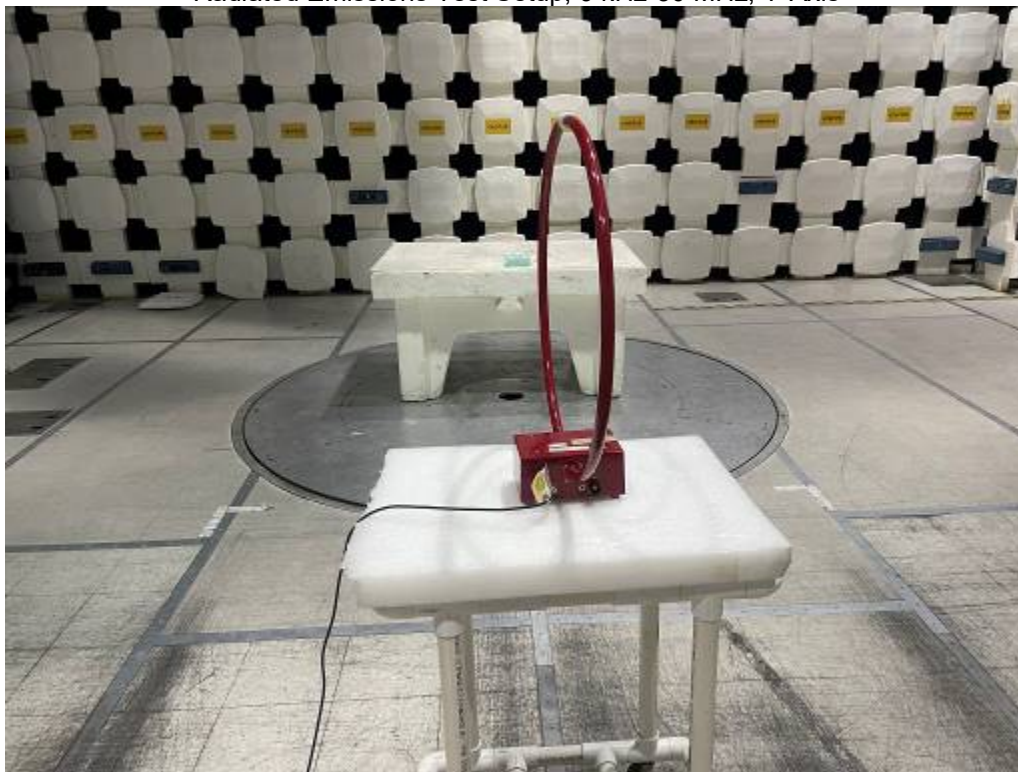
15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that 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))

10.4 Setup Photographs:

Radiated Emissions Test Setup, 9 kHz-30 MHz, X-Axis



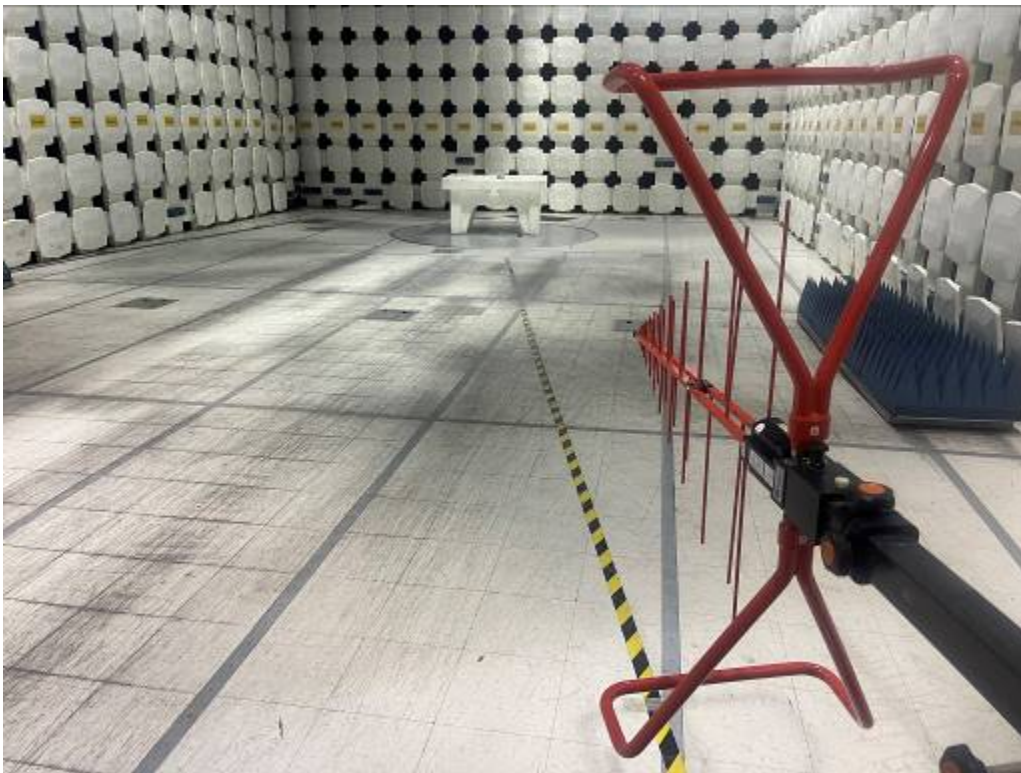
Radiated Emissions Test Setup, 9 kHz-30 MHz, Y-Axis



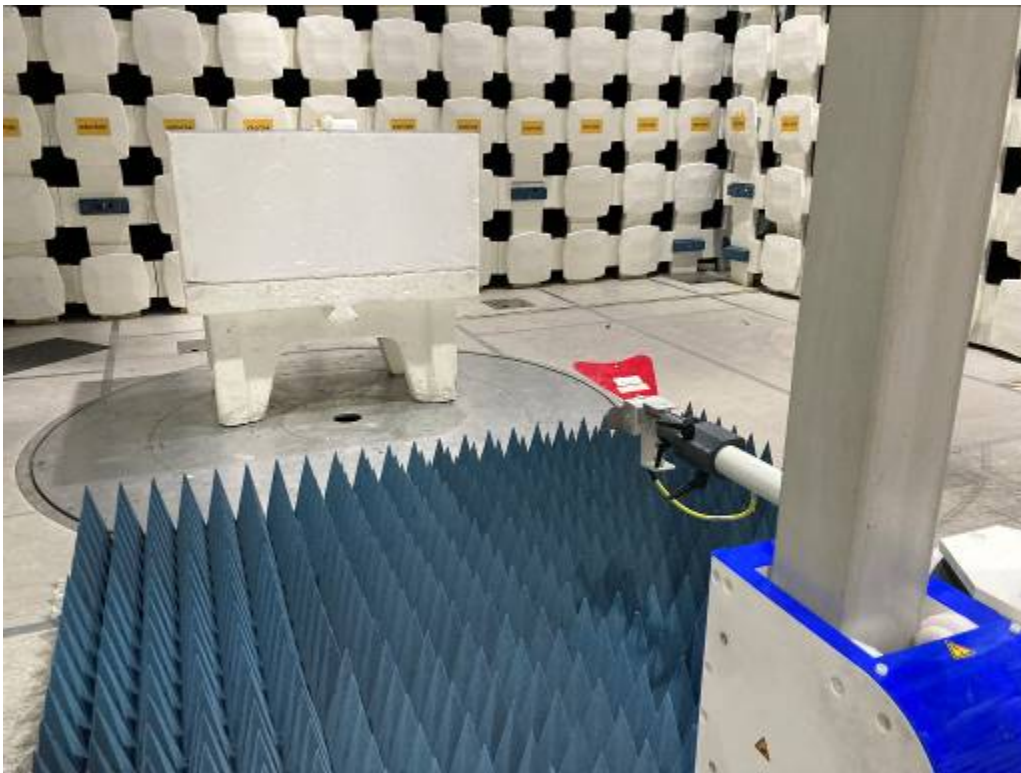
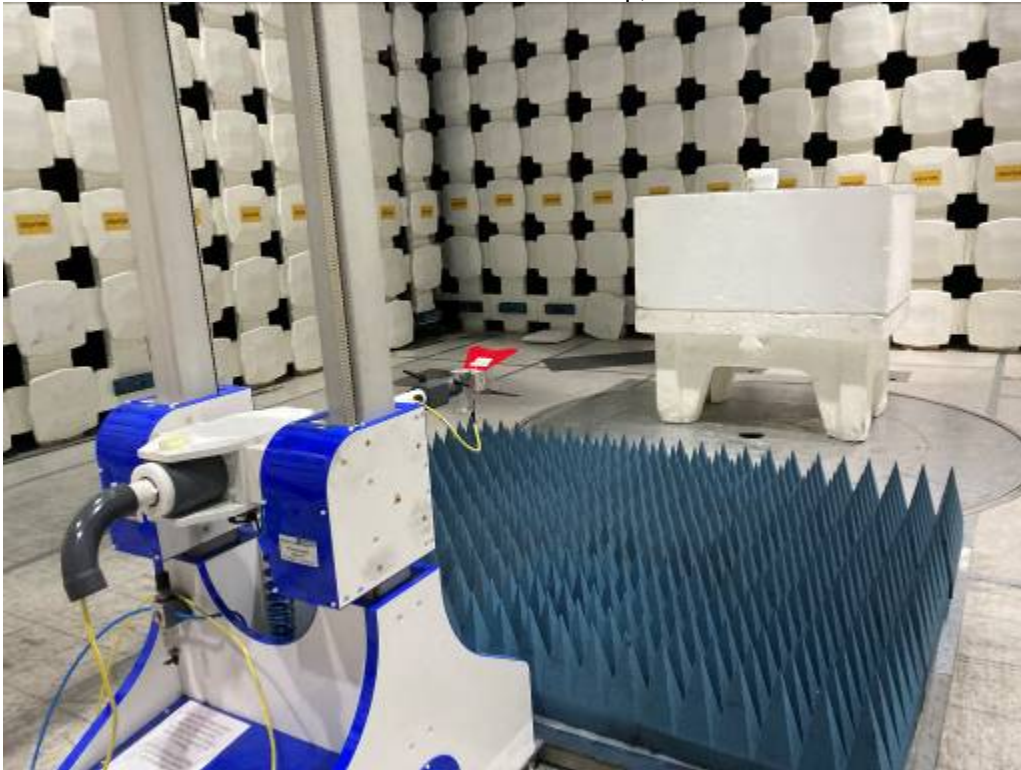
Radiated Emissions Test Setup, 9 kHz-30 MHz, Z-Axis



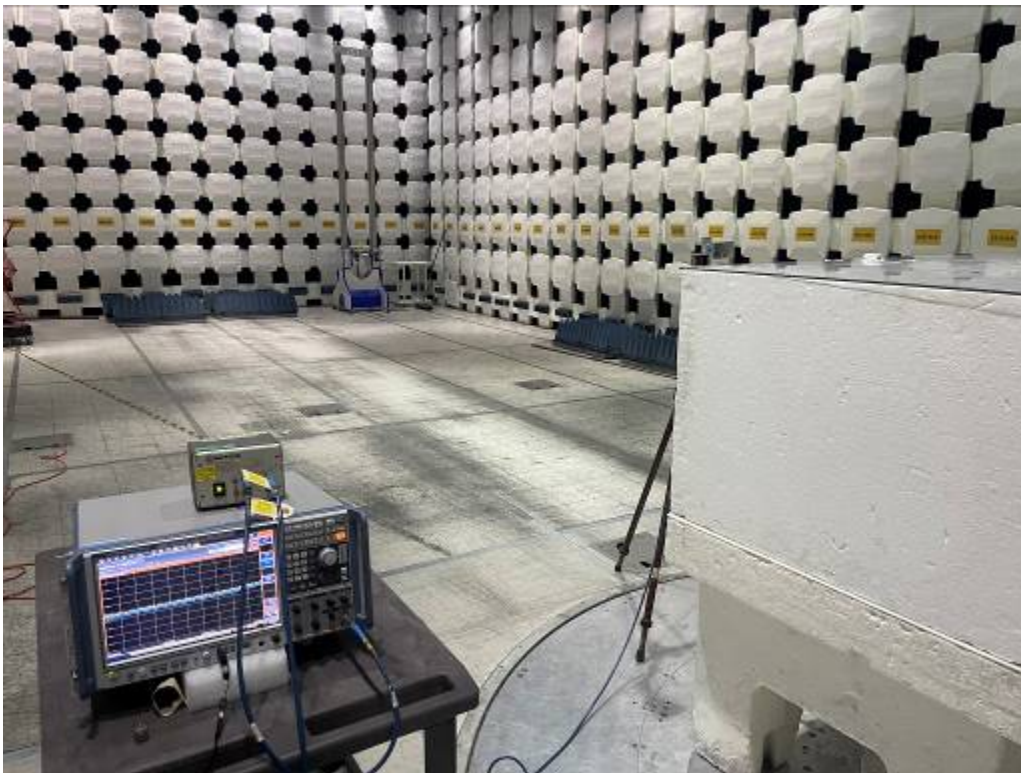
Radiated Emissions Test Setup, 30-1000 MHz



Radiated Emissions Test Setup, 1-18 GHz

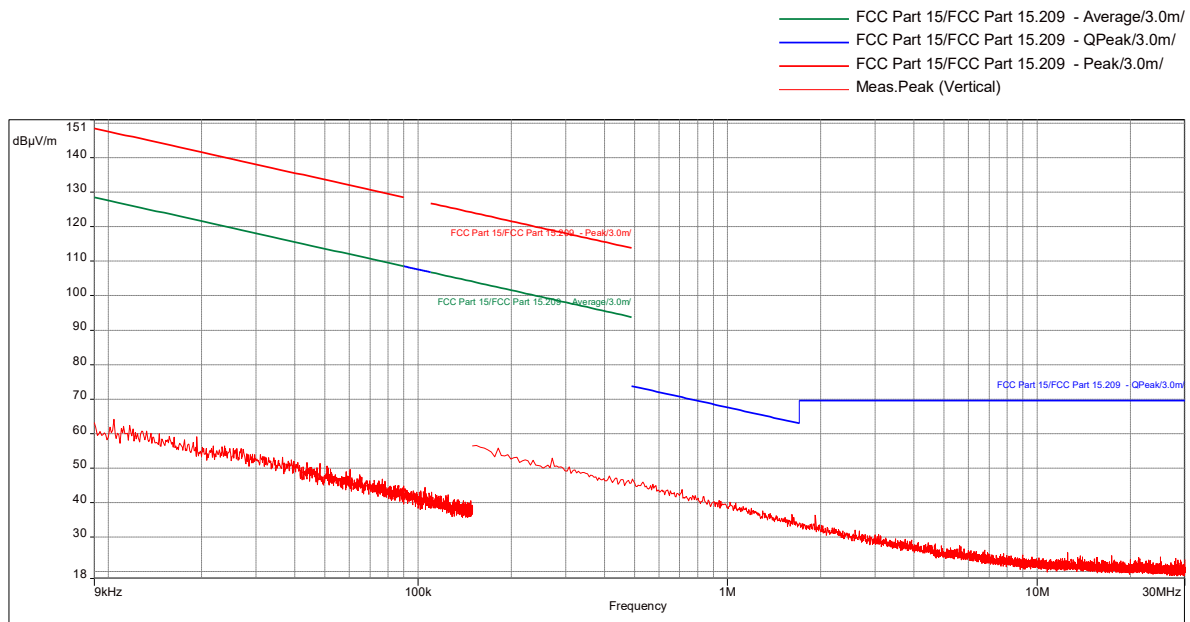


Manual Scan, 18-26 GHz



10.5 Plots/Data:**Low Channel Tx mode, X-Axis, 9kHz-30 MHz (worst case)****Test Information:**

Date and Time	3/20/2022 5:50:46 AM
Client and Project Number	Insulet_G104993662
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	996 mB
Comments	RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209)_Tx Low CH_SN 12 X-Axis

Graph:

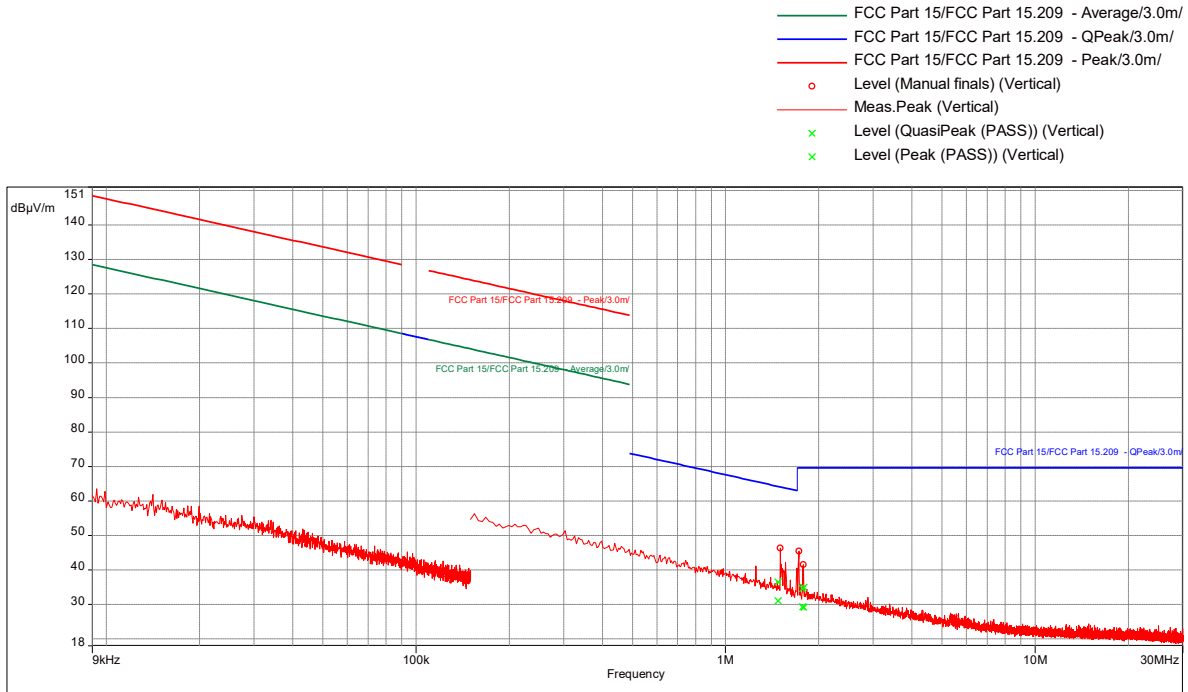
Results: No emissions were detected above the measuring equipment noise floor.

Mid Channel Tx mode, Y-Axis, 9kHz-30 MHz (worst case)

Test Information:

Date and Time	3/20/2022 6:23:59 AM
Client and Project Number	Insulet_G104993662
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	996 mB
Comments	RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209)_Tx Mid CH_SN 12_Y-Axis

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1.478447368	36.51	64.21	-27.70	0.00	1.00	Vertical	9000.00	11.57
1.77	34.52	69.54	-35.02	0.00	1.00	Vertical	9000.00	11.62
1.785868421	34.97	69.54	-34.57	0.00	1.00	Vertical	9000.00	11.62

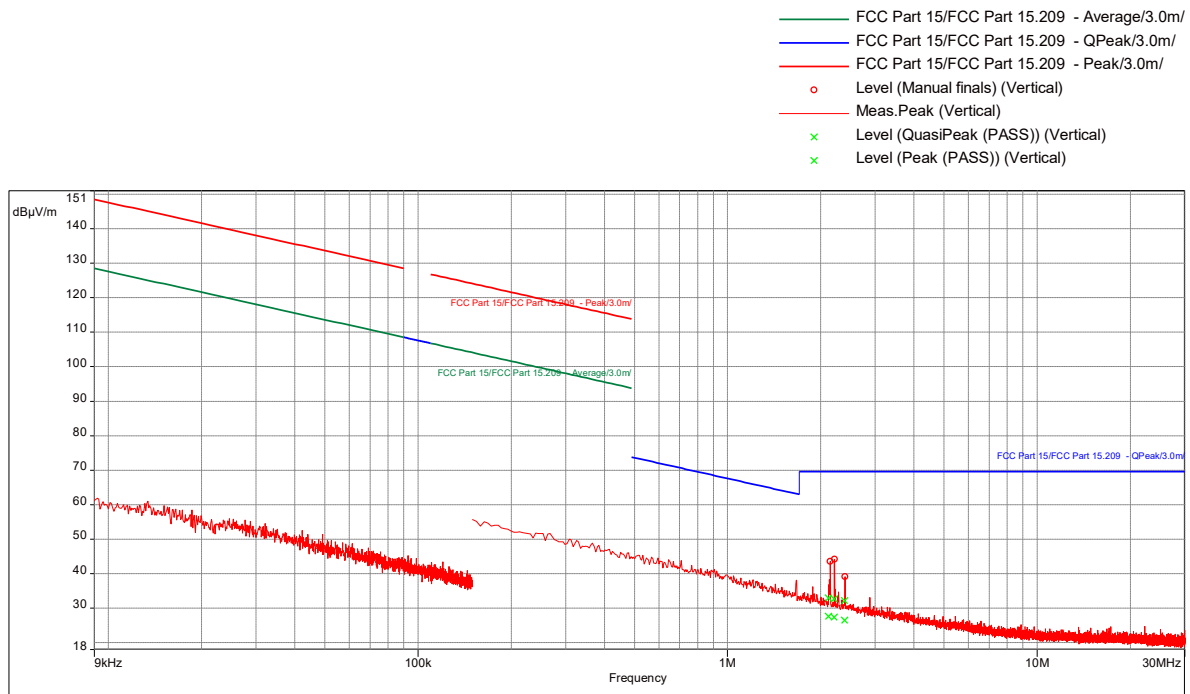
QuasiPeak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1.478447368	31.02	64.21	-33.20	0.00	1.00	Vertical	9000.00	11.57
1.77	29.22	69.54	-40.32	0.00	1.00	Vertical	9000.00	11.62
1.785868421	29.10	69.54	-40.44	0.00	1.00	Vertical	9000.00	11.62

Mid Channel Tx mode, Z-Axis, 9kHz-30 MHz (worst case)

Test Information:

Date and Time	3/20/2022 7:01:49 AM
Client and Project Number	Insulet_G104993662
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	996 mB
Comments	RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209)_Tx Mid CH_SN 12_Z-Axis

Graph:**Results:**

Peak (PASS) (3)

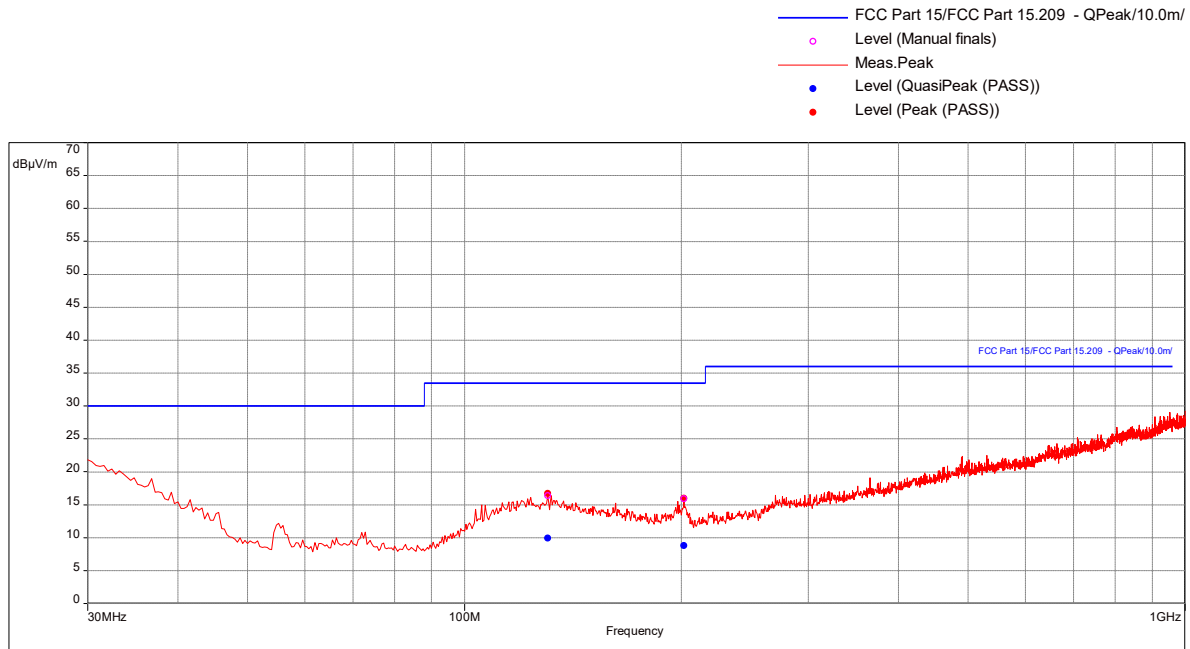
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2.117210526	32.92	69.54	-36.62	0.00	1.00	Vertical	9000.00	11.64
2.206026316	32.71	69.54	-36.83	0.00	1.00	Vertical	9000.00	11.62
2.388394737	32.22	69.54	-37.32	32.00	1.00	Vertical	9000.00	11.60

QuasiPeak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2.117210526	27.58	69.54	-41.96	0.00	1.00	Vertical	9000.00	11.64
2.206026316	27.35	69.54	-42.19	0.00	1.00	Vertical	9000.00	11.62
2.388394737	26.46	69.54	-43.08	32.00	1.00	Vertical	9000.00	11.60

Mid Channel Tx mode, X-Axis, 30-1000 MHz (worst case)**Test Information:**

Date and Time	3/24/2022 3:05:02 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 30-1000MHz_Tx Mid CH 2480 MHz SN 17_X-Axis(Back)

Graph:**Results:****QuasiPeak (PASS) (2)**

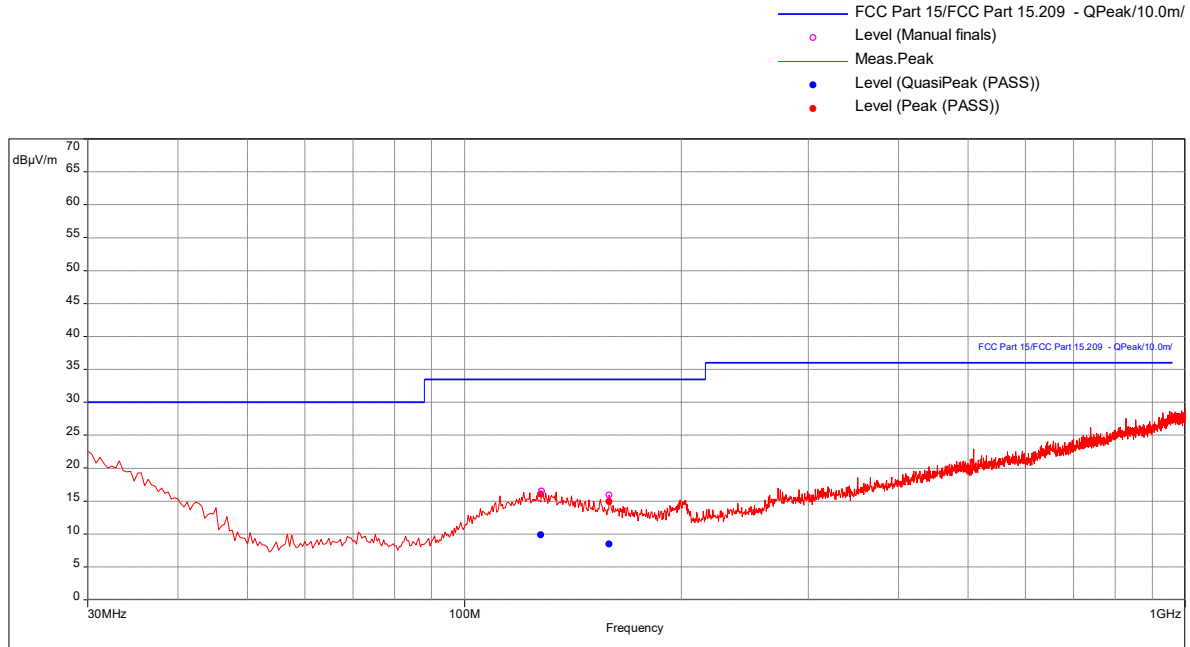
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
130.4	9.94	33.50	-23.56	141.00	3.78	Horizontal	120000.00	-18.74
201.5684211	8.79	33.50	-24.71	280.00	3.18	Vertical	120000.00	-19.61

Mid Channel Tx mode, Y-Axis, 30 - 1000 MHz (worst case)

Test Information:

Date and Time	3/24/2022 3:27:57 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 30-1000MHz Tx Mid CH 2480 MHz SN 17 Y-Axis (short side)

Graph:



Results:

QuasiPeak (PASS) (2)

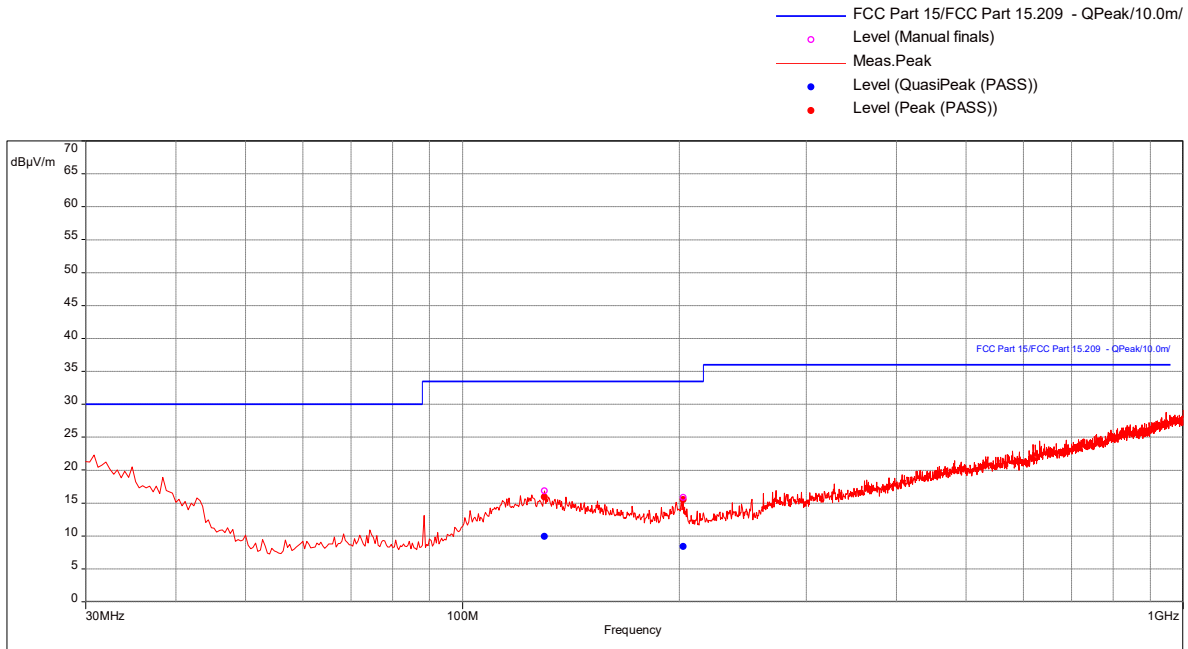
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
127.7789474	9.87	33.50	-23.63	337.00	3.96	Vertical	120000.00	-18.76
158.9894737	8.45	33.50	-25.05	191.00	2.91	Horizontal	120000.00	-20.23

Mid Channel Tx mode, Z-Axis, 30 - 1000 MHz (worst case)

Test Information:

Date and Time	3/24/2022 3:46:10 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 30-1000MHz Tx Mid CH 2480 MHz SN 17 Z-Axis (long side)

Graph:



Results:

QuasiPeak (PASS) (2)

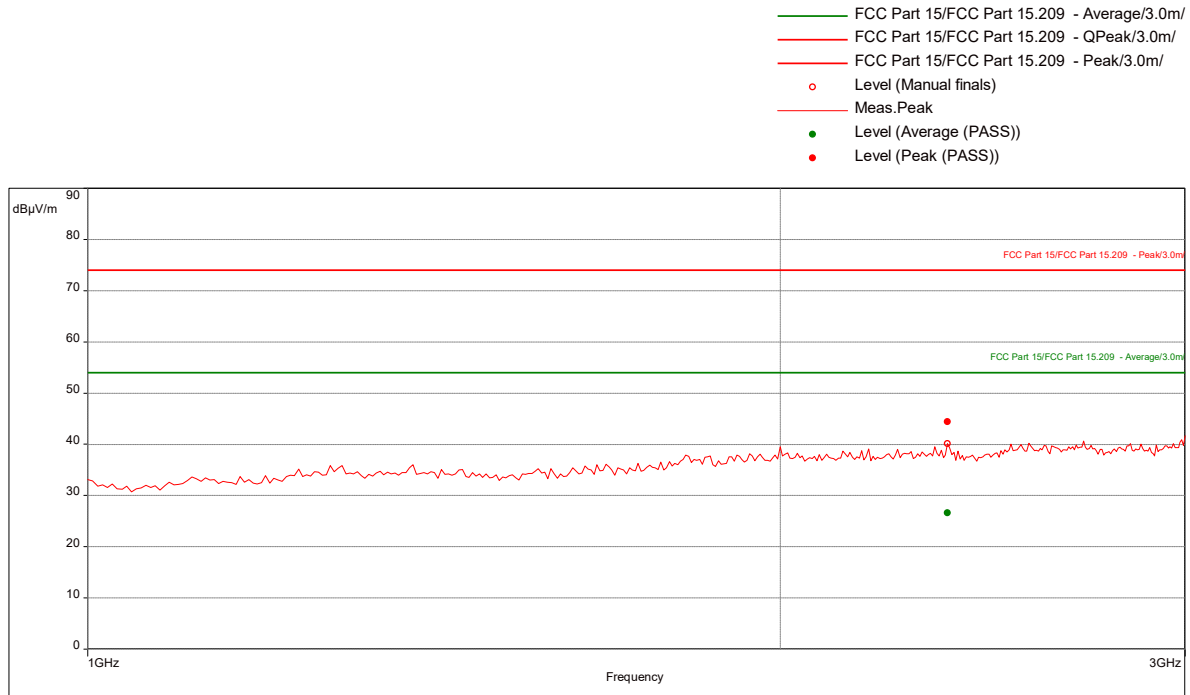
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
130.1578947	9.94	33.50	-23.56	156.00	3.46	Horizontal	120000.00	-18.74
202.4315789	8.40	33.50	-25.10	10.00	3.96	Vertical	120000.00	-19.95

Low Channel Tx mode, X-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 3:20:58 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx Low CH 2402 MHz SN 15 X-axis (back), 1.5m, REA008

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2366.578947	44.45	74.00	-29.55	344.00	3.30	Vertical	1000000.00	-3.84

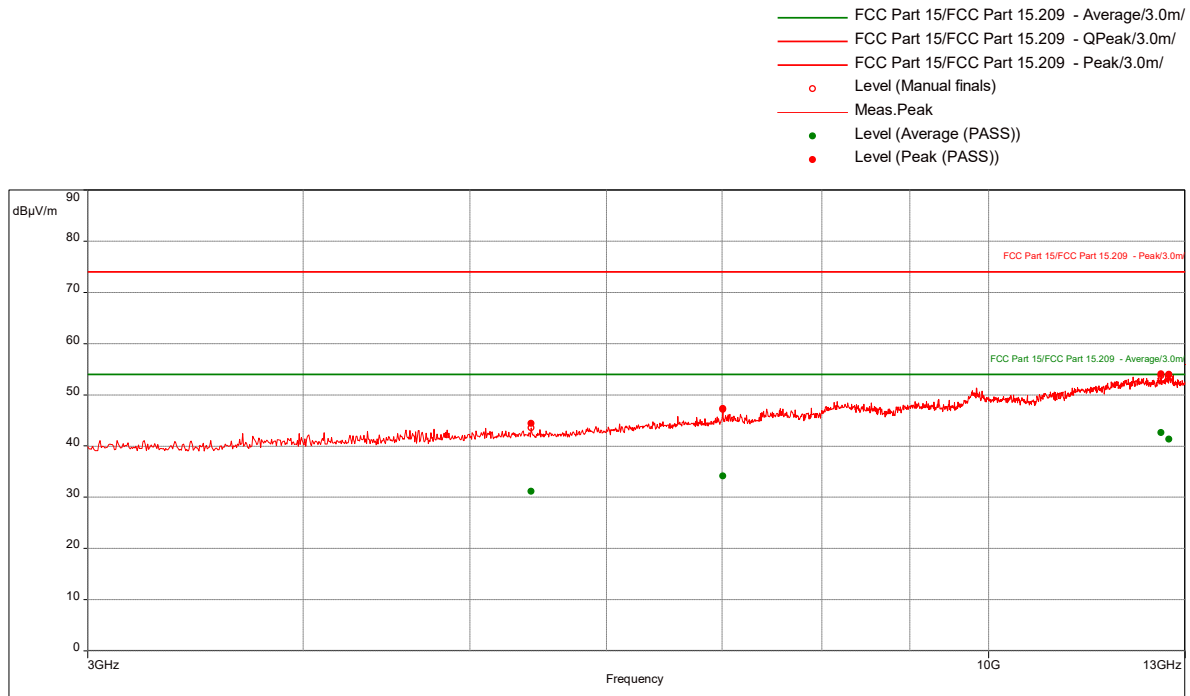
Average (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2366.578947	26.65	54.00	-27.35	344.00	3.30	Vertical	1000000.00	-3.84

Low Channel Tx mode, X-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 5:58:46 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1 -13 GHz Rx Low CH 2402 MHz SN 15 X-axis (back)

Graph:**Results:**

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
5426.315789	44.45	74.00	-29.55	177.00	1.02	Vertical	1000000.00	2.31
7010	47.36	74.00	-26.64	119.00	2.70	Horizontal	1000000.00	4.93
12587.63158	54.05	74.00	-19.95	285.00	1.00	Horizontal	1000000.00	14.06
12725.52632	53.95	74.00	-20.05	53.00	1.35	Horizontal	1000000.00	14.52

Average (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
5426.315789	31.14	54.00	-22.86	177.00	1.02	Vertical	1000000.00	2.31
7010	34.12	54.00	-19.88	119.00	2.70	Horizontal	1000000.00	4.93
12587.63158	42.57	54.00	-11.43	285.00	1.00	Horizontal	1000000.00	14.06
12725.52632	41.36	54.00	-12.64	53.00	1.35	Horizontal	1000000.00	14.52

Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

Low Channel Tx mode, Y-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 3:24:02 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx Low CH 2402 MHz SN 15_Y-axis (short side), 1.5m, REA008

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2510.789474	41.19	74.00	-32.81	125.00	2.15	Horizontal	1000000.00	-3.01

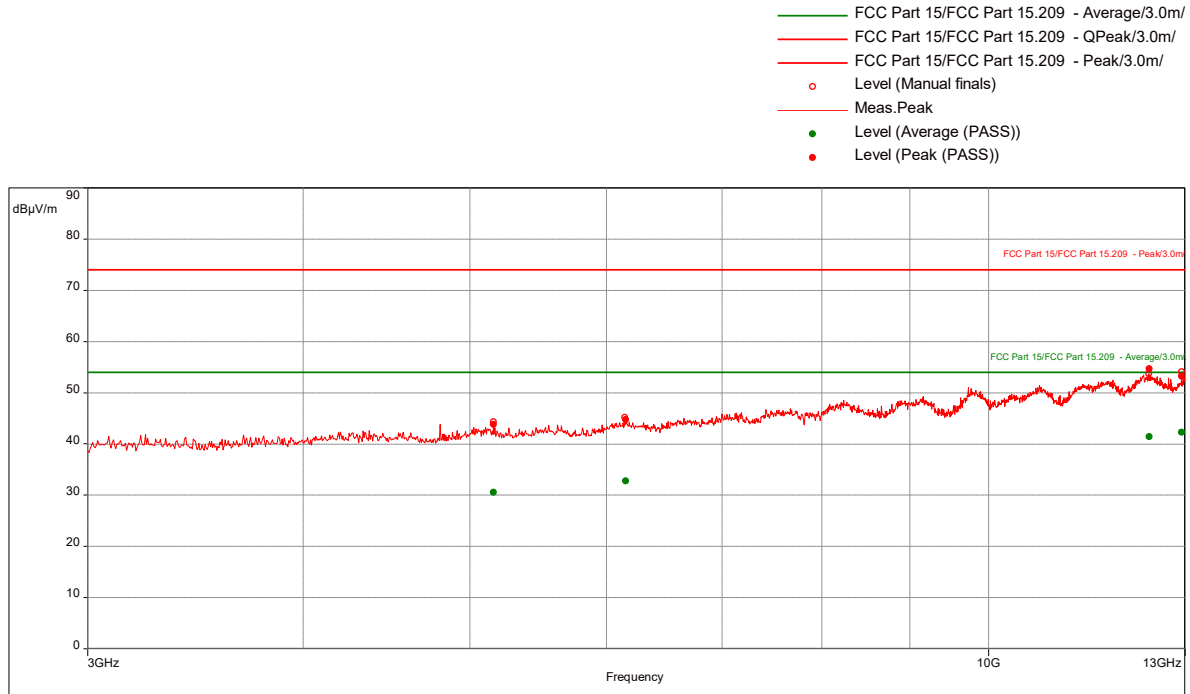
Average (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2510.789474	27.79	54.00	-26.21	125.00	2.15	Horizontal	1000000.00	-3.01

Low Channel Tx mode, Y-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 4:37:19 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3-13 GHz Tx Low CH 2402 MHz SN 15 Y-axis (short side), 1.5m, REA008

Graph:**Results:**

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
5160.526316	43.83	74.00	-30.17	3.00	3.30	Horizontal	1000000.00	1.69
6153.684211	44.74	74.00	-29.26	39.00	2.60	Horizontal	1000000.00	4.18
12387.89474	54.71	74.00	-19.29	207.00	1.20	Horizontal	1000000.00	13.38
12939.73684	53.25	74.00	-20.75	90.00	1.90	Horizontal	1000000.00	15.02

Average (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
5160.526316	30.58	54.00	-23.42	3.00	3.30	Horizontal	1000000.00	1.69
6153.684211	32.81	54.00	-21.19	39.00	2.60	Horizontal	1000000.00	4.18
12387.89474	41.39	54.00	-12.61	207.00	1.20	Horizontal	1000000.00	13.38
12939.73684	42.25	54.00	-11.75	90.00	1.90	Horizontal	1000000.00	15.02

Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

Low Channel Tx mode, Z-Axis, 1-3 GHz**Test Information:**

Date and Time	3/22/2022 3:35:07 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	E 1-3 GHz Tx Low CH 2402 MHz SN 15 Z-axis (long side), 1.5m, REA008

Graph:**Results:****Peak (PASS) (1)**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2276.842105	40.02	74.00	-33.98	329.00	1.00	Vertical	1000000.00	-4.04

Average (PASS) (1)

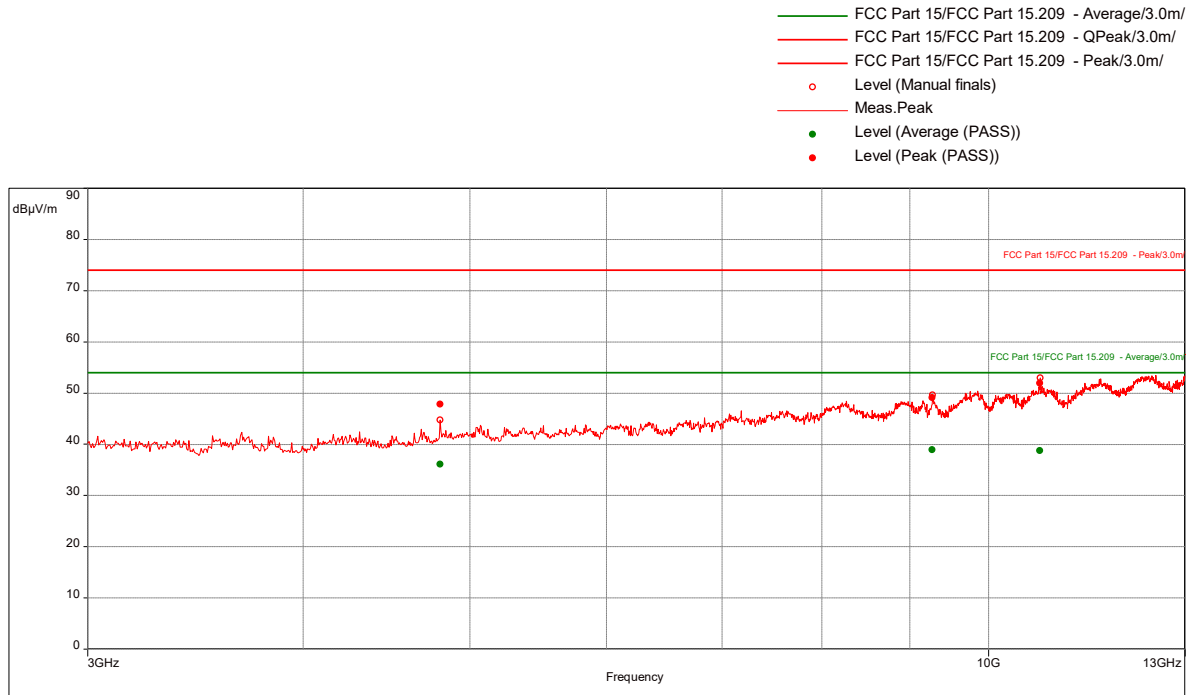
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2276.842105	26.63	54.00	-27.37	329.00	1.00	Vertical	1000000.00	-4.04

Low Channel Tx mode, Z-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 4:12:59 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3-13 GHz Tx Low CH 2402 MHz SN 15 Z-axis (long side), 1.5m, REA008

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4804.473684	47.83	74.00	-26.17	317.00	1.06	Vertical	1000000.00	0.76
9271.578947	49.09	74.00	-24.91	83.00	2.80	Horizontal	1000000.00	8.40
10706.57895	51.91	74.00	-22.09	141.00	1.80	Horizontal	1000000.00	10.58

Average (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4804.473684	36.10	54.00	-17.90	317.00	1.06	Vertical	1000000.00	0.76
9271.578947	38.90	54.00	-15.10	83.00	2.80	Horizontal	1000000.00	8.40
10706.57895	38.76	54.00	-15.24	141.00	1.80	Horizontal	1000000.00	10.58

Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

Mid Channel Tx mode, X-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 12:38:56 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx Mid CH 2440 MHz X-axis (back), 1.5m, REA008

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1851.578947	38.39	74.00	-35.61	139.00	1.01	Horizontal	1000000.00	-5.03
1866.842105	38.92	74.00	-35.08	359.00	1.76	Horizontal	1000000.00	-4.88

Average (PASS) (2)

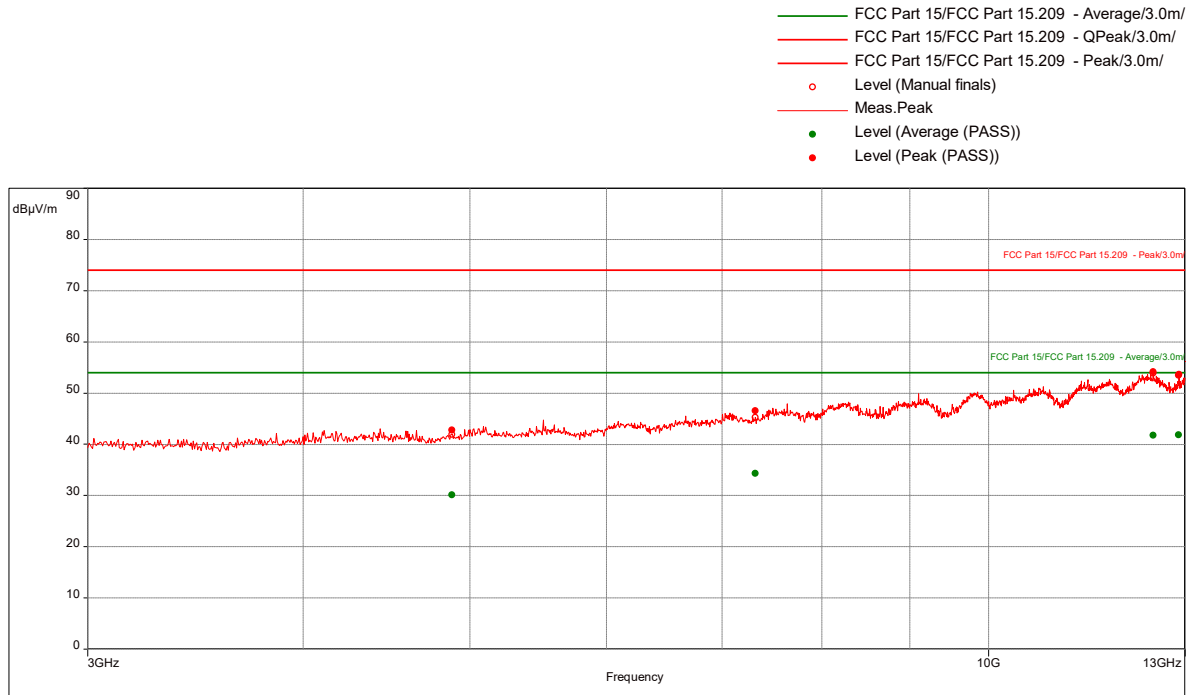
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1851.578947	25.47	54.00	-28.53	139.00	1.01	Horizontal	1000000.00	-5.03
1866.842105	25.58	54.00	-28.42	359.00	1.76	Horizontal	1000000.00	-4.88

Mid Channel Tx mode, X-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 10:59:01 AM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3-13 GHz Tx Mid CH 2440 MHz SN 16 X-Axis (back), 1.5m, REA004

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4881.578947	42.78	74.00	-31.22	9.00	2.55	Vertical	1000000.00	0.92
7319.210526	46.53	74.00	-27.47	359.00	3.79	Vertical	1000000.00	5.33
12461.57895	54.17	74.00	-19.83	243.00	2.15	Horizontal	1000000.00	13.61
12891.84211	53.52	74.00	-20.48	204.00	3.30	Horizontal	1000000.00	14.90

Average (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4881.578947	30.11	54.00	-23.89	9.00	2.55	Vertical	1000000.00	0.92
7319.210526	34.27	54.00	-19.73	359.00	3.79	Vertical	1000000.00	5.33
12461.57895	41.80	54.00	-12.20	243.00	2.15	Horizontal	1000000.00	13.61
12891.84211	41.81	54.00	-12.19	204.00	3.30	Horizontal	1000000.00	14.90

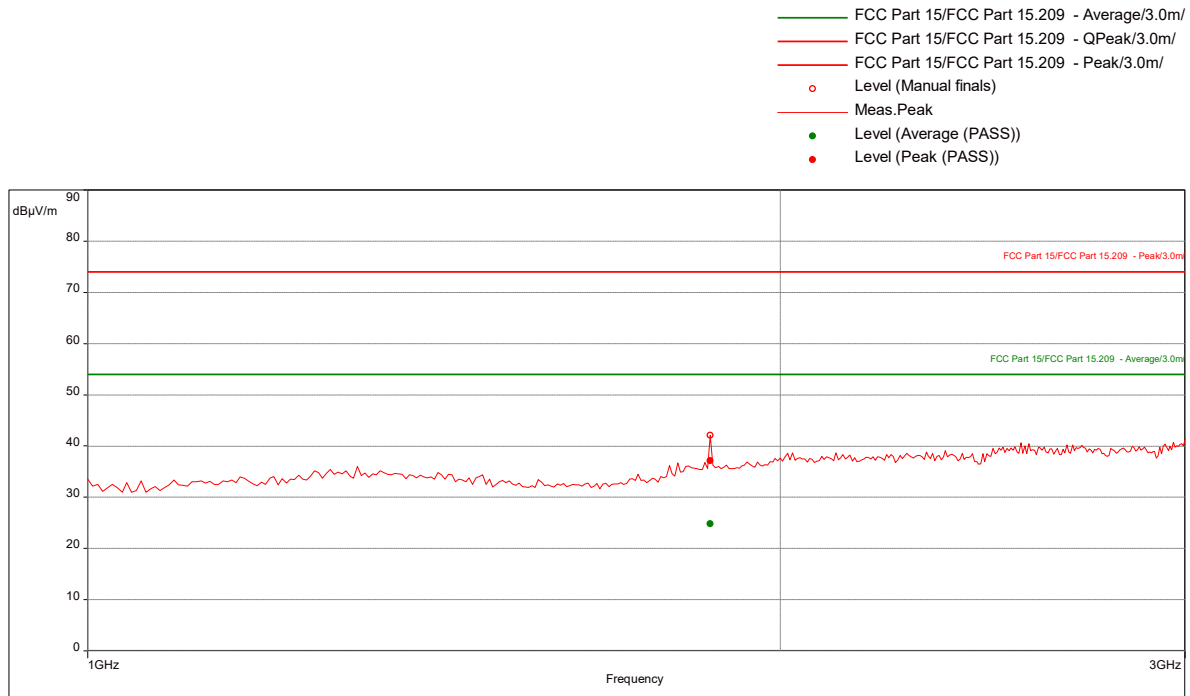
Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

Mid Channel Tx mode, Y-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 12:23:42 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx Mid CH 2440 MHz Y-axis (short side), 1.5m, REA008

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1866.842105	37.13	74.00	-36.87	271.00	1.02	Vertical	1000000.00	-4.88

Average (PASS) (1)

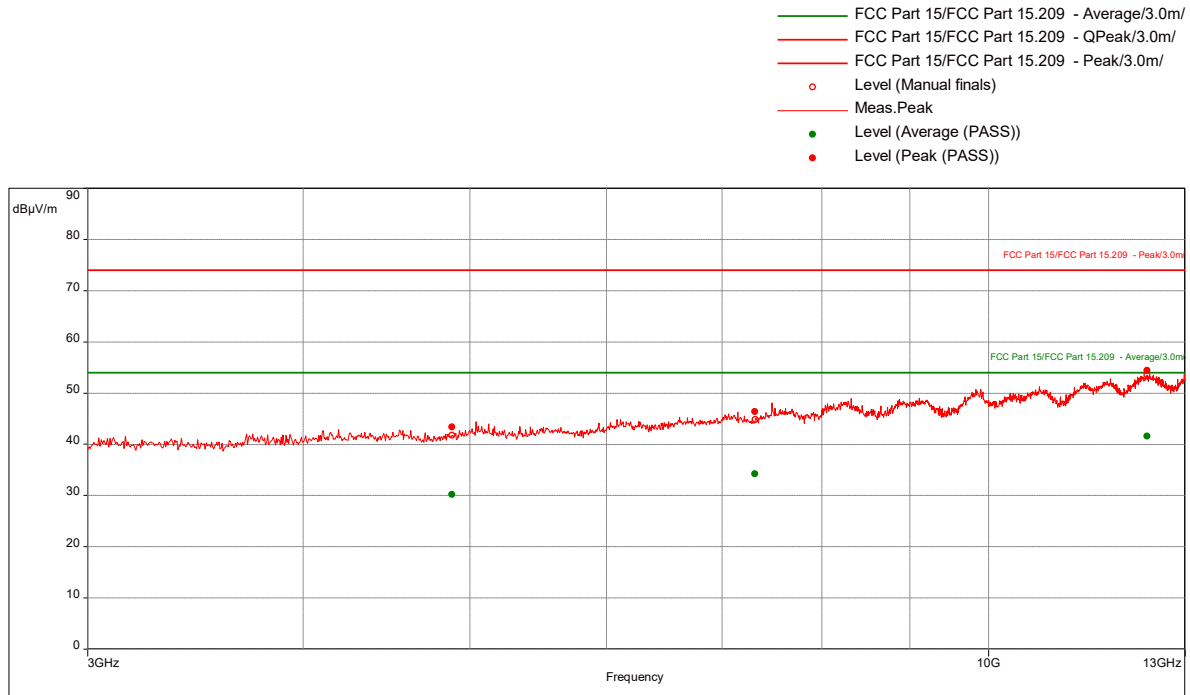
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1866.842105	24.85	54.00	-29.15	271.00	1.02	Vertical	1000000.00	-4.88

Mid Channel Tx mode, Y-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 11:23:51 AM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3-13 GHz Tx Mid CH 2440 MHz SN 16 Y-Axis (short side), 1.5m, REA004

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4881.052632	43.35	74.00	-30.65	315.00	1.45	Vertical	1000000.00	0.92
7317.105263	46.39	74.00	-27.61	228.00	3.94	Vertical	1000000.00	5.32
12355.78947	54.40	74.00	-19.60	133.00	1.75	Vertical	1000000.00	13.33

Average (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4881.052632	30.21	54.00	-23.79	315.00	1.45	Vertical	1000000.00	0.92
7317.105263	34.26	54.00	-19.74	228.00	3.94	Vertical	1000000.00	5.32
12355.78947	41.57	54.00	-12.43	133.00	1.75	Vertical	1000000.00	13.33

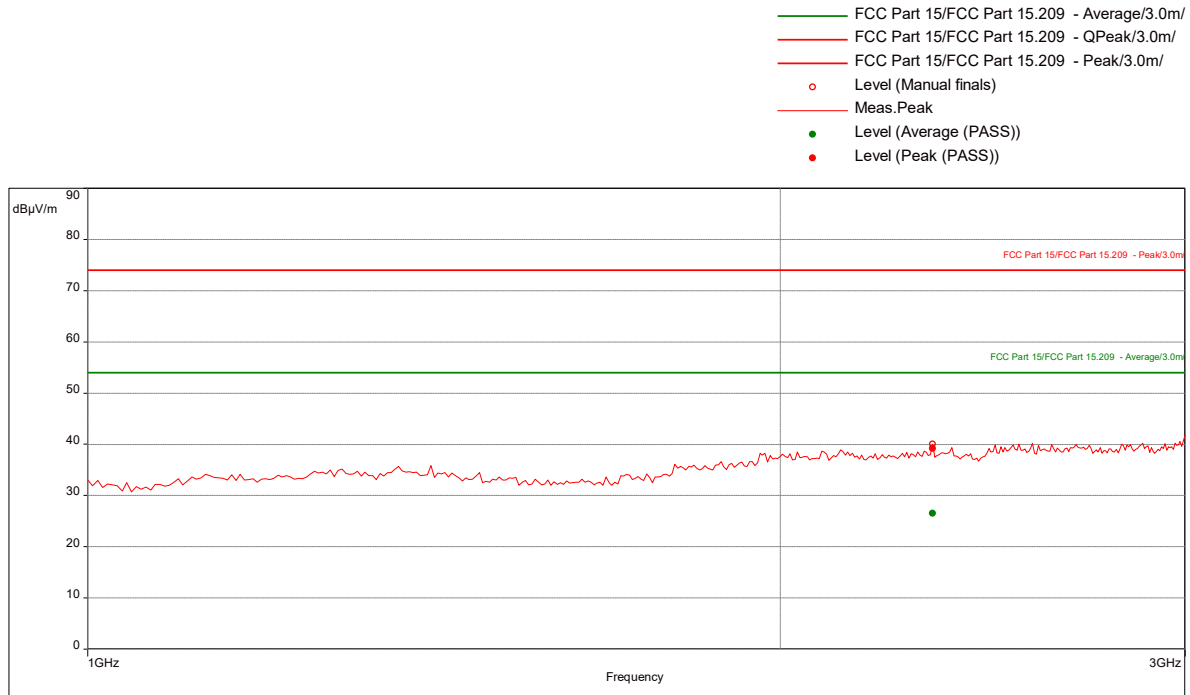
Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

Mid Channel Tx mode, Z-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 12:20:26 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx Mid CH 2440 MHz Z-axis (long side), 1.5m, REA008

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2330.526316	39.22	74.00	-34.78	82.00	2.20	Horizontal	1000000.00	-3.94

Average (PASS) (1)

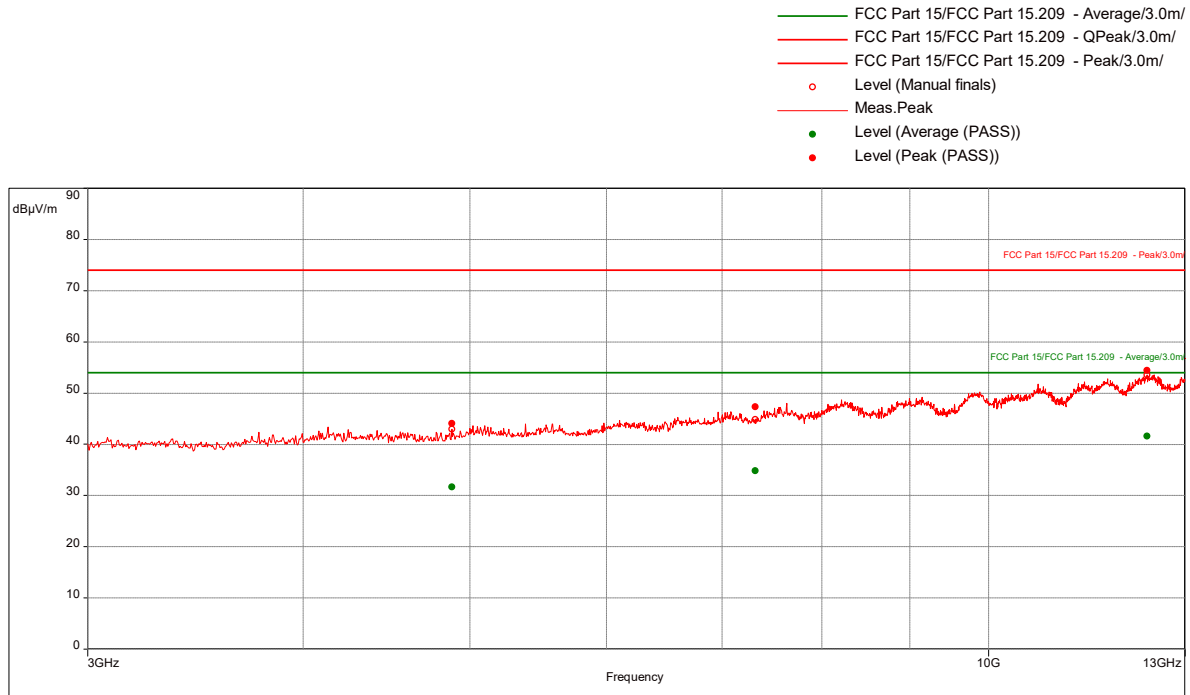
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2330.526316	26.52	54.00	-27.48	82.00	2.20	Horizontal	1000000.00	-3.94

Mid Channel Tx mode, Z-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 11:45:24 AM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3-13 GHz Tx Mid CH 2440 MHz Z-axis (long side), 1.5m, REA004

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4879.473684	44.07	74.00	-29.93	46.00	3.34	Horizontal	1000000.00	0.92
7318.421053	47.33	74.00	-26.67	32.00	1.00	Vertical	1000000.00	5.33
12352.63158	54.40	74.00	-19.60	82.00	1.90	Vertical	1000000.00	13.32

Average (PASS) (3)

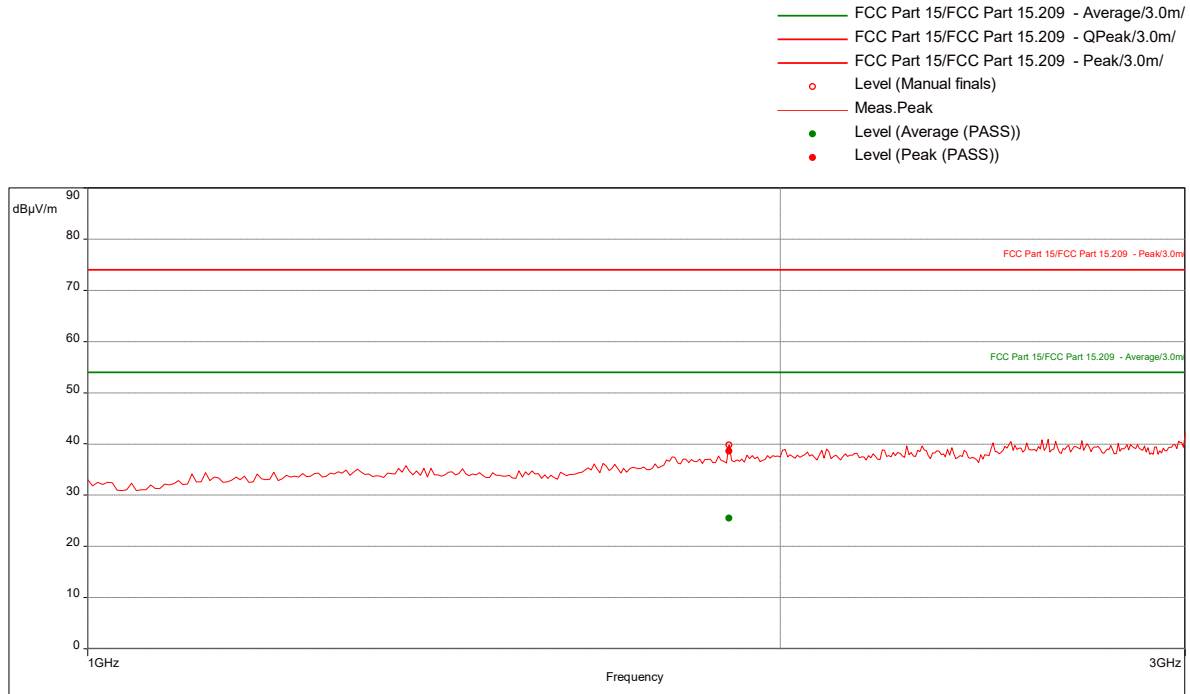
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4879.473684	31.63	54.00	-22.37	46.00	3.34	Horizontal	1000000.00	0.92
7318.421053	34.82	54.00	-19.18	32.00	1.00	Vertical	1000000.00	5.33
12352.63158	41.62	54.00	-12.38	82.00	1.90	Vertical	1000000.00	13.32

Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

High Channel Tx mode, X-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 1:48:22 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx High CH 2480 MHz X-axis (Back), 1.5m, REA008

Graph:**Results:**

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1900.263158	38.57	74.00	-35.43	299.00	3.79	Horizontal	1000000.00	-4.85

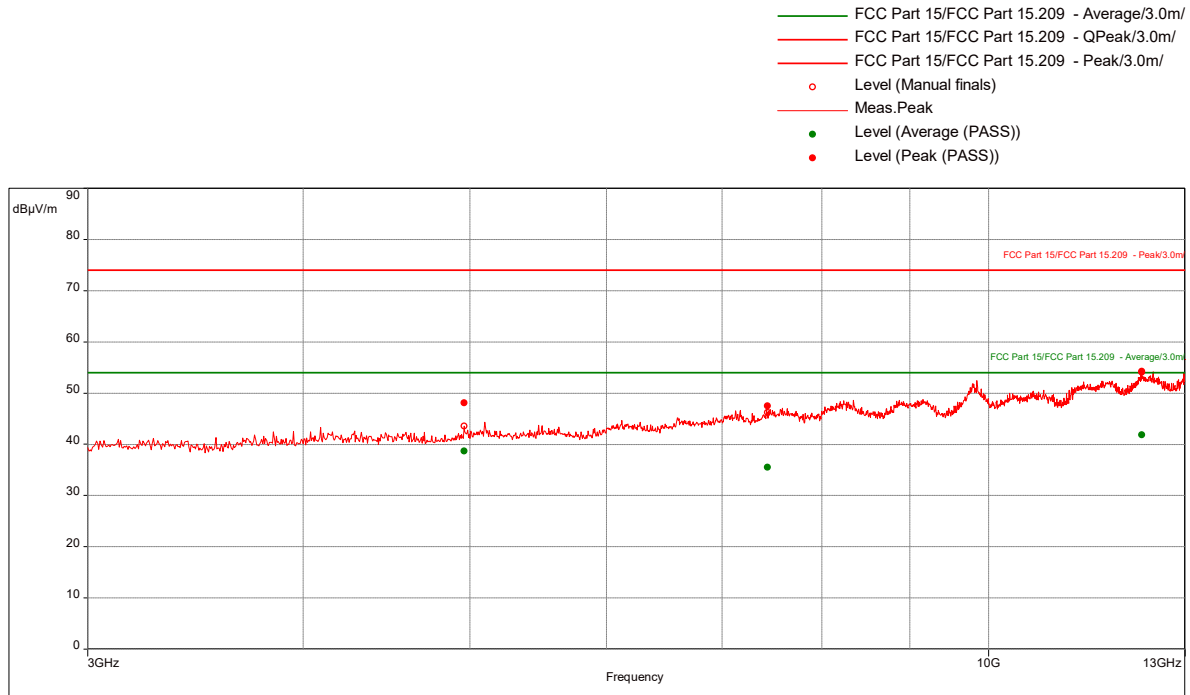
Average (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1900.263158	25.52	54.00	-28.48	299.00	3.79	Horizontal	1000000.00	-4.85

High Channel Tx mode, X-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 1:57:59 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3 -13GHz Tx High CH 2480 MHz X-axis (Back), 1.5m, REA004

Graph:**Results:**

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4959.473684	48.07	74.00	-25.93	257.00	1.60	Vertical	1000000.00	1.14
7440	47.49	74.00	-26.51	183.00	1.80	Horizontal	1000000.00	5.75
12268.42105	54.06	74.00	-19.94	292.00	3.74	Horizontal	1000000.00	13.25

Average (PASS) (3)

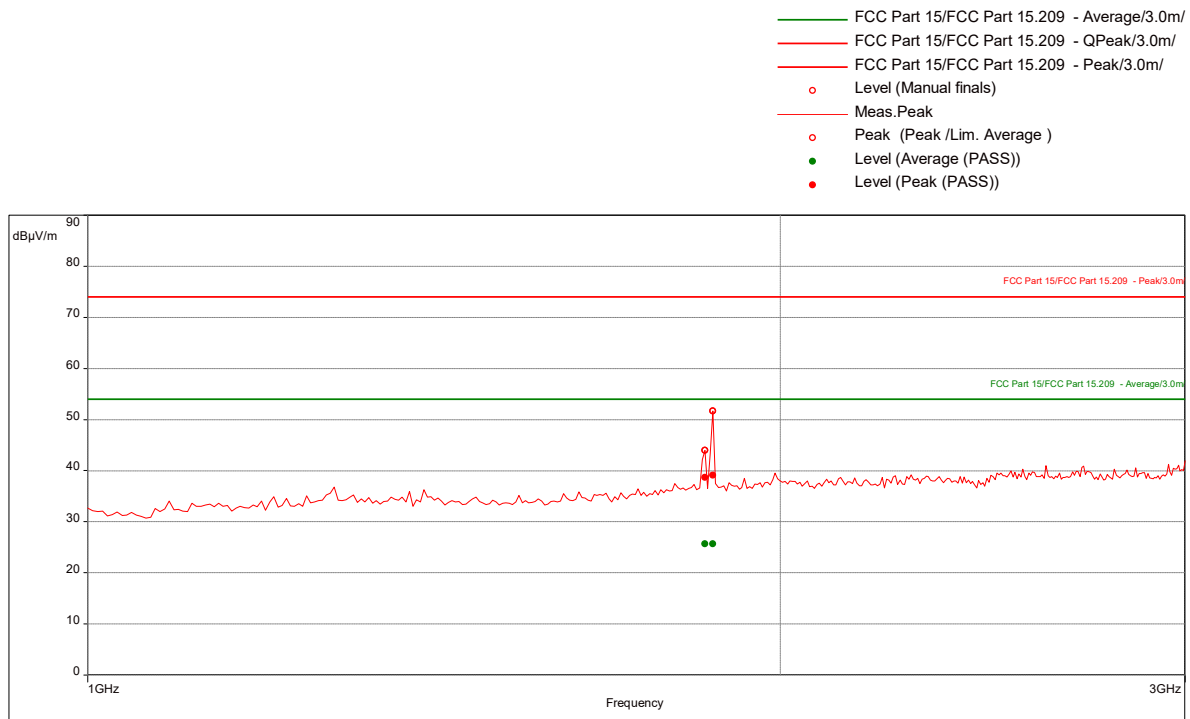
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4959.473684	38.66	54.00	-15.34	257.00	1.60	Vertical	1000000.00	1.14
7440	35.48	54.00	-18.52	183.00	1.80	Horizontal	1000000.00	5.75
12268.42105	41.87	54.00	-12.13	292.00	3.74	Horizontal	1000000.00	13.25

Note: Manual scan was performed from 3-25 GHz, no emissions were detected above the measuring equipment noise floor.

High Channel Tx mode, Y-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 1:38:03 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx High CH 2480 MHz Y-axis (short side), 1.5m, REA008

Graph:**Results:**

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1855.263158	38.68	74.00	-35.32	306.00	1.45	Horizontal	1000000.00	-4.99
1871.578947	39.11	74.00	-34.89	256.00	2.90	Horizontal	1000000.00	-4.82

Average (PASS) (2)

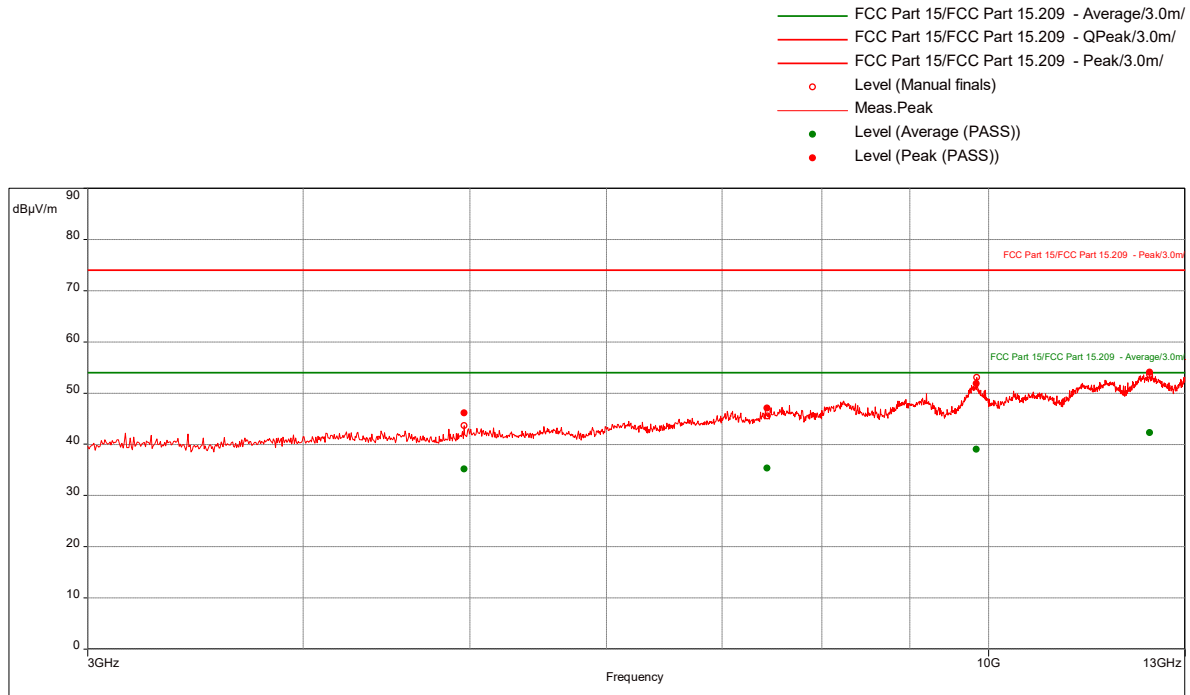
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
1855.263158	25.67	54.00	-28.33	306.00	1.45	Horizontal	1000000.00	-4.99
1871.578947	25.67	54.00	-28.33	256.00	2.90	Horizontal	1000000.00	-4.82

High Channel Tx mode, Y-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 2:18:19 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3 -13GHz Tx High CH 2480 MHz Y-axis (short side), 1.5m, REA004

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4959.473684	46.16	74.00	-27.84	68.00	3.49	Vertical	1000000.00	1.14
7437.105263	47.08	74.00	-26.92	147.00	2.30	Horizontal	1000000.00	5.74
9836.315789	51.84	74.00	-22.16	68.00	3.69	Horizontal	1000000.00	9.84
12397.63158	54.08	74.00	-19.92	69.00	1.05	Vertical	1000000.00	13.39

Average (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4959.473684	35.21	54.00	-18.79	68.00	3.49	Vertical	1000000.00	1.14
7437.105263	35.33	54.00	-18.67	147.00	2.30	Horizontal	1000000.00	5.74
9836.315789	38.99	54.00	-15.01	68.00	3.69	Horizontal	1000000.00	9.84
12397.63158	42.23	54.00	-11.77	69.00	1.05	Vertical	1000000.00	13.39

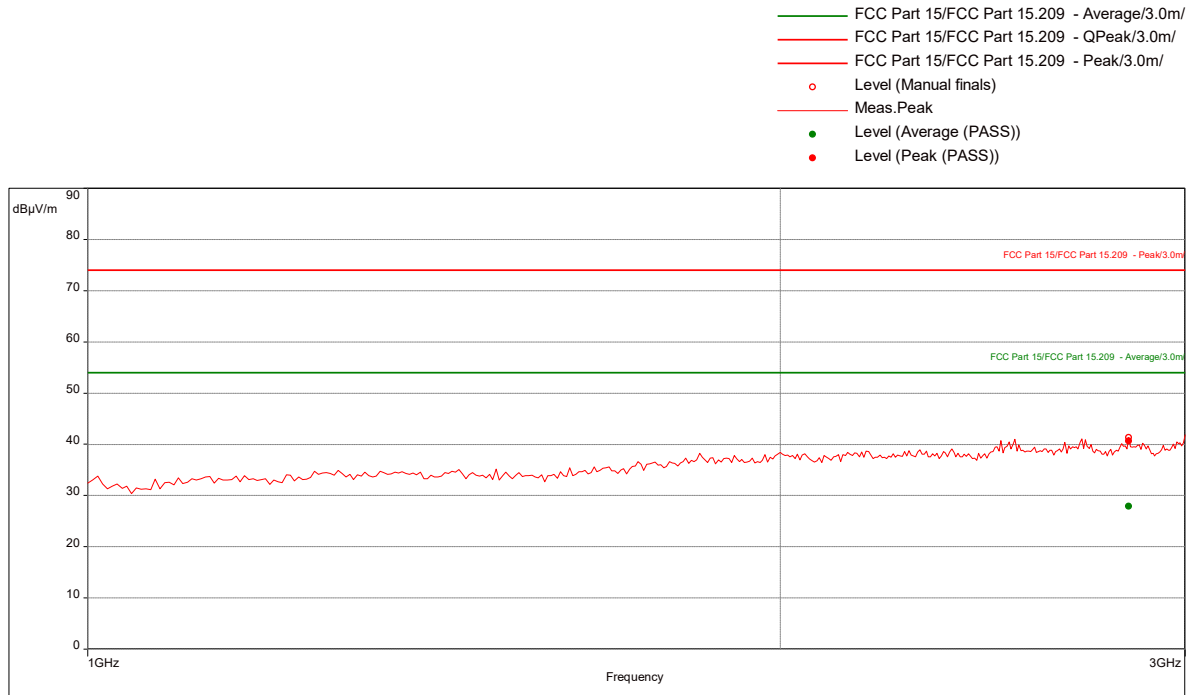
Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

High Channel Tx mode, Z-Axis, 1-3 GHz

Test Information:

Date and Time	3/22/2022 1:29:44 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1-3 GHz Tx High CH 2480 MHz Z-axis (long side), 1.5m, REA008

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2835.263158	40.60	74.00	-33.40	341.00	1.01	Vertical	1000000.00	-2.81

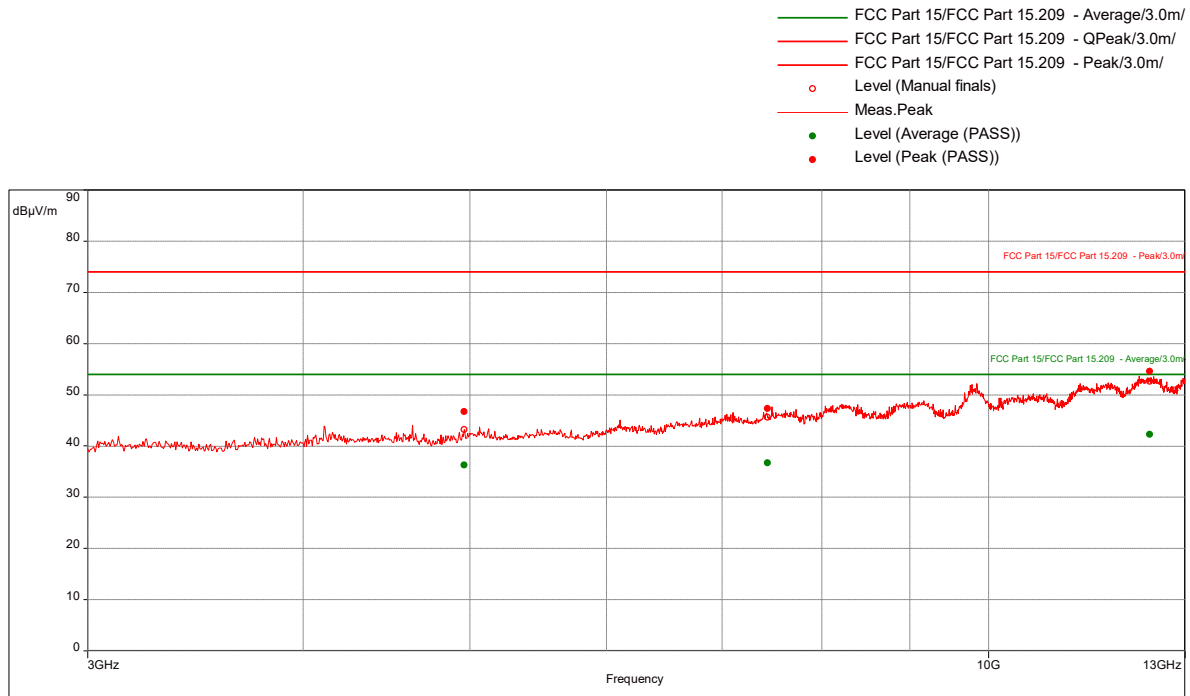
Average (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
2835.263158	27.90	54.00	-26.10	341.00	1.01	Vertical	1000000.00	-2.81

High Channel Tx mode, Z-Axis, 3-25 GHz

Test Information:

Date and Time	3/22/2022 2:45:41 PM
Client and Project Number	Insulet Corporation
Engineer	Kouma Sinn
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 3 -13GHz Tx High CH 2480 MHz SN 17 Z-axis (long side), 1.5m, REA004

Graph:**Results:**

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
4959.473684	46.69	74.00	-27.31	264.00	1.01	Horizontal	1000000.00	1.14
7438.947368	47.35	74.00	-26.65	214.00	2.66	Horizontal	1000000.00	5.75
12398.15789	54.59	74.00	-19.41	83.00	2.35	Horizontal	1000000.00	13.39

Average (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol. (dB)	RBW (dB)	Correction (dB)
4959.473684	36.28	54.00	-17.72	264.00	1.01	Horizontal	1000000.00	1.14
7438.947368	36.71	54.00	-17.29	214.00	2.66	Horizontal	1000000.00	5.75
12398.15789	42.23	54.00	-11.77	83.00	2.35	Horizontal	1000000.00	13.39

Note: Manual scan was performed from 13-25 GHz, no emissions were detected above the measuring equipment noise floor.

Test Personnel:	Vathana Ven <i>VSV</i>	Test Date:	03/20/2022, 03/22/2022,
Supervising/Reviewing Engineer:	Kouma Sinn <i>KPS</i>		03/24/2022
(Where Applicable)	N/A		
Product Standard:	CFR47 FCC Part 15.247	Limit Applied:	See report section 10.3
Input Voltage:	RSS-247		
Pretest Verification w/ Ambient Signals or BB Source:	Battery Powered (3VDC)	Ambient Temperature:	24, 24, 24 °C
		Relative Humidity:	35, 17, 17 %
		Atmospheric Pressure:	996, 1007, 1007 mbars

Deviations, Additions, or Exclusions: None

11 Digital Device and Receiver 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. 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	4.6dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 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.

11.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007	Weather Station Vantage Vue	Davis	6250	MS191212003	03/08/2022	03/08/2023
145108'	EMI Test Receiver (20Hz - 40GHz)	Rohde & Schwarz	ESIB40	100209	06/22/2021	06/22/2022
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/02/2021	09/02/2022
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	06/09/2021	06/09/2022
HS003'	10m under floor cable	Huber-Schuner	10m-1	HS003	02/15/2022	02/15/2023
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	08/24/2021	08/24/2022
PRE12'	Pre-amplifier	Com Power	PAM-118A	18040117	12/06/2021	12/06/2022
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/21/2022	02/21/2023
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	02/21/2022	02/21/2023
145-130'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	10/15/2021	10/15/2022
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	09/23/2021	09/23/2022
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	07/22/2021	07/22/2022
HS002'	DC-18GHz cable 1.5M long	Huber & Suhner	SucoFlex 106A	HS002	12/06/2021	12/06/2022

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	3.18.0.16
EMI Boxborough.xls	Intertek	08/27/2010

11.3 Results:

The sample tested was found to Comply.

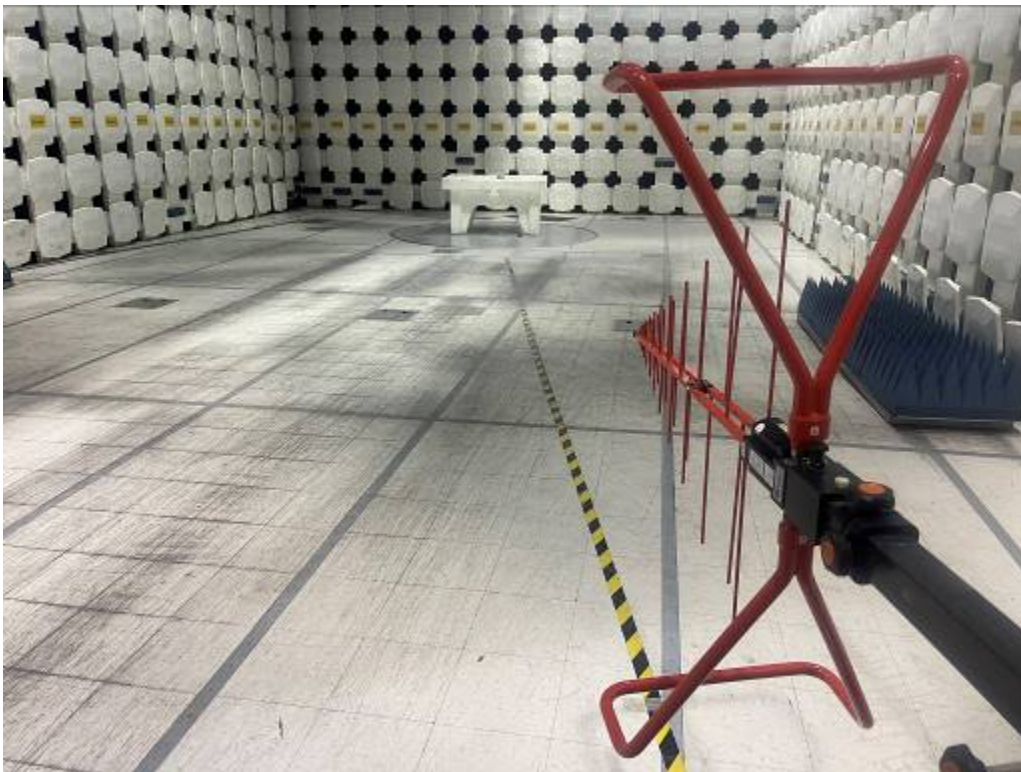
§15.109 Radiated emission limits.

The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values.

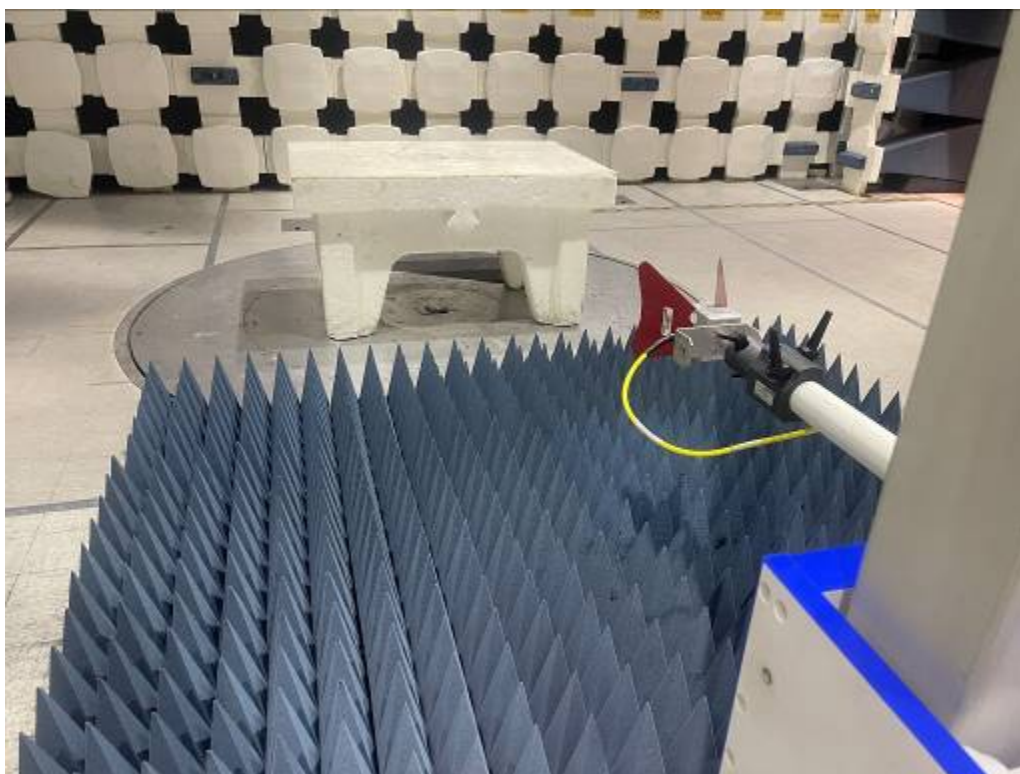
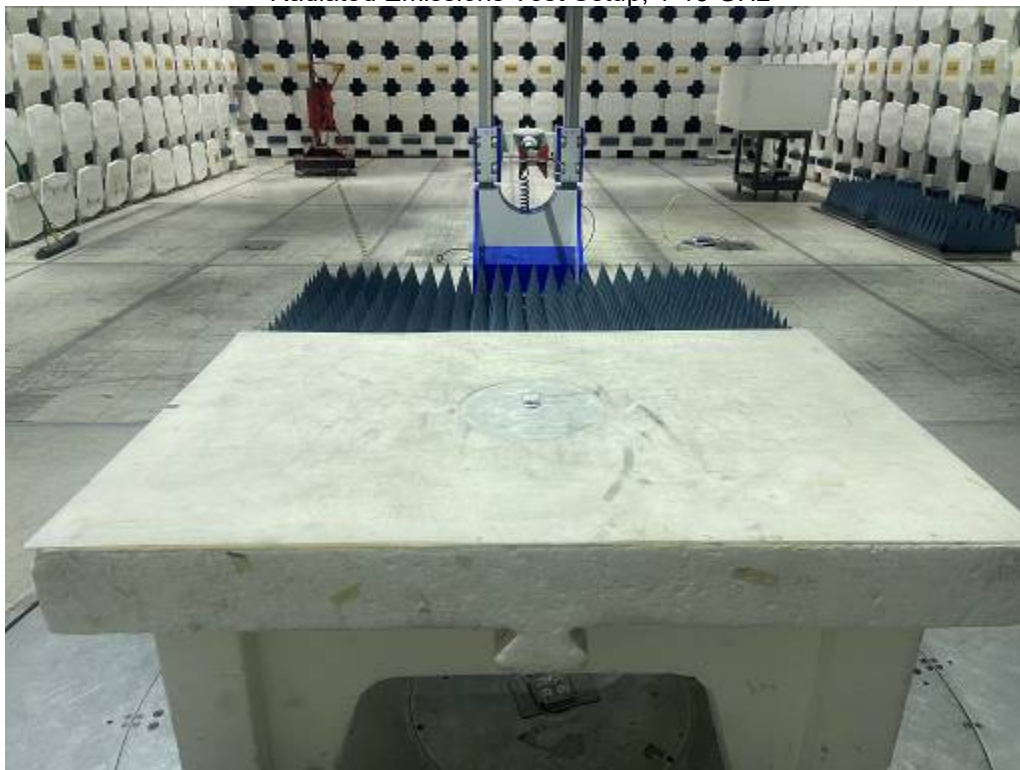
Frequency of emission (MHz)	Field strength (microvolts/meter)	Field strength (dBµV/m)
30-88	100	40.00
88-216	150	43.52
216-960	200	46.02
Above 960	500	54.00

11.4 Setup Photographs:

Radiated Emissions Test Setup, 30-1000 MHz



Radiated Emissions Test Setup, 1-13 GHz



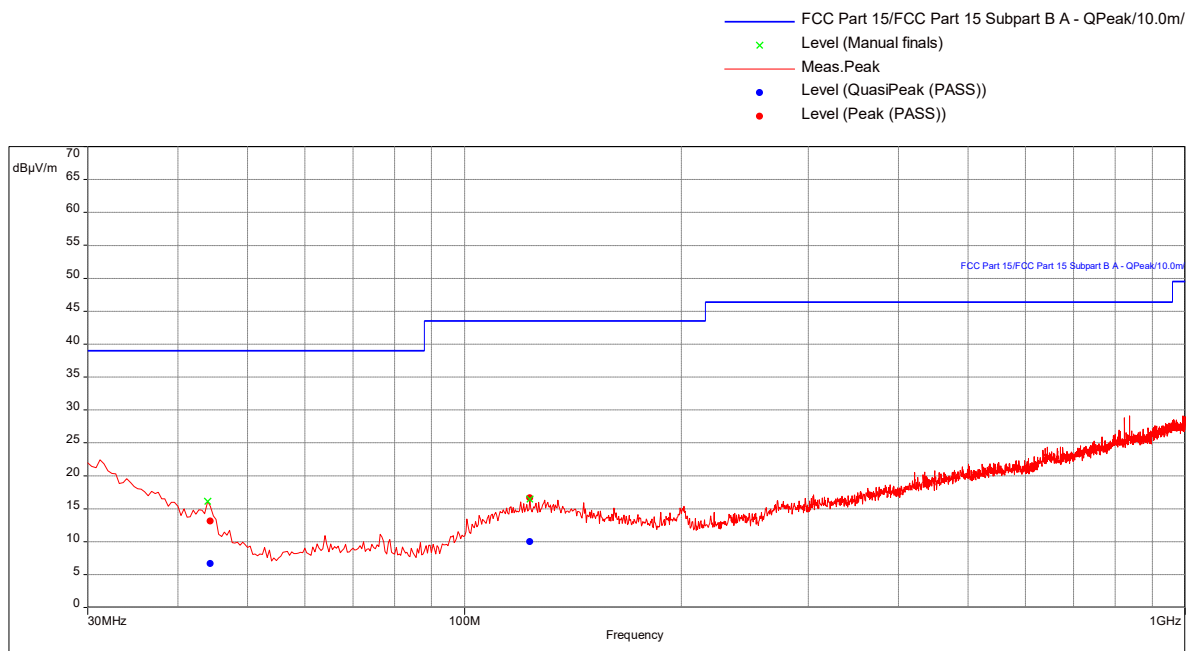
11.5 Plots/Data:

30-1000 MHz

Test Information:

Date and Time	3/20/2022 8:46:50 AM
Client and Project Number	Insulet_G104993662
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	996 mB
Comments	RE 30-1000MHz Normal mode

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
44.47368421	13.11	39.00	-25.89	330.00	1.29	Vertical	120000.00	-22.47
123.2947368	16.64	43.50	-26.86	126.00	2.30	Horizontal	120000.00	-18.80

QuasiPeak (PASS) (2)

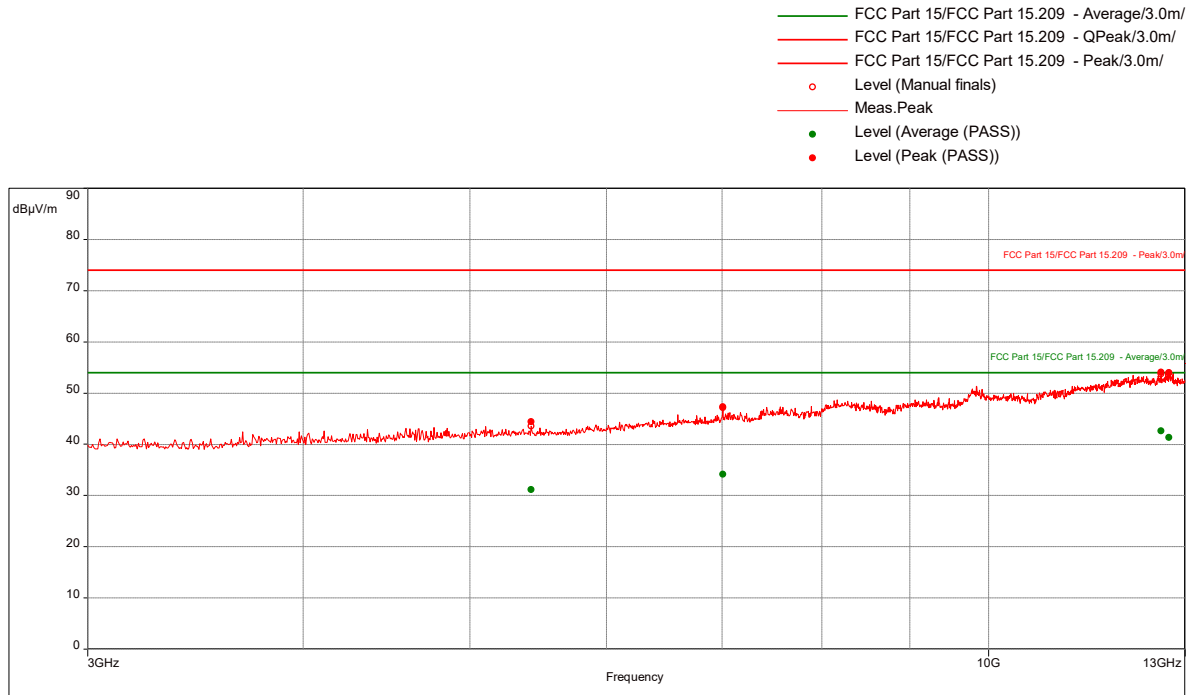
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
44.47368421	6.67	39.00	-32.33	330.00	1.29	Vertical	120000.00	-22.47
123.2947368	9.99	43.50	-33.51	126.00	2.30	Horizontal	120000.00	-18.80

1 - 13 GHz

Test Information:

Date and Time	3/22/2022 5:58:46 PM
Client and Project Number	Insulet Corporation
Engineer	Vathana Ven
Temperature	24 C
Humidity	17 %
Atmospheric Pressure	1007 mbar
Comments	RE 1 -13 GHz Rx Low CH 2402 MHz SN 15 X-axis

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
5426.315789	44.45	74.00	-29.55	177.00	1.02	Vertical	1000000.00	2.31
7010	47.36	74.00	-26.64	119.00	2.70	Horizontal	1000000.00	4.93
12587.63158	54.05	74.00	-19.95	285.00	1.00	Horizontal	1000000.00	14.06
12725.52632	53.95	74.00	-20.05	53.00	1.35	Horizontal	1000000.00	14.52

Average (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
5426.315789	31.14	54.00	-22.86	177.00	1.02	Vertical	1000000.00	2.31
7010	34.12	54.00	-19.88	119.00	2.70	Horizontal	1000000.00	4.93
12587.63158	42.57	54.00	-11.43	285.00	1.00	Horizontal	1000000.00	14.06
12725.52632	41.36	54.00	-12.64	53.00	1.35	Horizontal	1000000.00	14.52

Note: 1-3 GHz was performed manually, no emissions were detected above the measuring equipment noise floor.

Test Personnel: Vathana Ven *VSV*
Supervising/Reviewing
Engineer:
(Where Applicable) Kouma Sinn *KPS*
Product Standard: CFR47 FCC Part 15.247
RSS-247
Input Voltage: Battery Powered (3VDC)
Pretest Verification w/
Ambient Signals or
BB Source: N/A

Test Date: 03/20/2022, 03/22/2022

Limit Applied: See report section 11.3

Ambient Temperature: 24, 24 °C

Relative Humidity: 35, 17 %

Atmospheric Pressure: 996, 1007 mbars

Deviations, Additions, or Exclusions: None

12 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	03/29/2022	104993662BOX-010	VFV <i>VFV</i>	KPS <i>KPS</i>	Original Issue