

EDARE LLC

EMISSIONS TEST REPORT

SCOPE OF WORK
EMISSIONS TESTING – WAHTS Audiometer

REPORT NUMBER
105406683BOX-022_R1

ISSUE DATE
08/23/2023

[REVISED DATE]
10/25/2023

DOCUMENT CONTROL NUMBER
Non-Specific Radio Report Shell Rev. October 2022
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EMISSIONS TEST REPORT (FULL COMPLIANCE)

Report Number: 105406683BOX-022

Project Number: G105406683

Report Issue Date: 08/23/2023

Report Revision Date: 10/25/2023

Model(s) Tested: AC

Model(s) Partially Tested: None

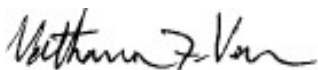
Model(s) Not Tested but declared equivalent by the client: None

Standards: CFR47 FCC Part 15.247 Subpart C: 08/2023,
CFR47 FCC Part 15 Subpart B: 08/2023,
RSS-247 Issue 2 February 2017,
ISED ICES-003 Issue 7 October 2020,
RSS-Gen Issue 5 April 2018,
KDB 558074 D01 15.247 Meas Guidance v05r02: 04/2019

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

Client:
Edare LLC
48 Lafayette St
Lebanon, NH 03766
USA

Report prepared by



Vathana Ven / Senior Staff Engineer

Report reviewed by



Kouma Sinn / Senior 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: 08/2023, 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: 08/2023, Section 15.247 (a)(2) RSS-247 Issue 2 February 2017	Pass
8	Maximum Power Spectral Density CFR47 FCC Part 15 Subpart C: 08/2023, Section 15.247 (e) RSS-247 Issue 2 February 2017	Pass
9	Band Edge Compliance CFR47 FCC Part 15 Subpart C: 08/2023, Section 15.247 (d) RSS-247 Issue 2: 02/2017)	Pass
10	Transmitter spurious emissions CFR47 FCC Part 15 Subpart C: 08/2023, 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: 08/2023 ISED ICES-003 Issue 7 October 2020	Pass
12	AC Mains Conducted Emissions FCC 47CFR Part 15.107:2023 ISED ICES-003 Issue 7 October 2020	Pass
13	Revision History	--

3 Client Information

This EUT was tested at the request of:

Client: Edare LLC
48 Lafayette St
Lebanon, NH 03766
USA

Contact: Jesse Norris
Telephone: 603-640-2865
Email: jnorris@edareinc.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Edare LLC
48 Lafayette St
Lebanon, NH 03766
USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
WAHTS	Edare	AC	E0050736

Receive Date:	06/07/2023
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)

The WAHTS AC is a wireless, air conduction audiometer and headset designed to provide audiometric screening and diagnostic capability for physicians' offices and industry.

The device has highly attenuating circumaural ear cups. The ear cups contain the audiometer electronics, embedded software, speakers, microphones, and a battery. A software app communicates with the WAHTS over Bluetooth. The software app services as the interface for clinicians to setup the system, and for patients to interact with the WAHTS during a hearing test.

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
Internal Battery (Charge from USB power port)	NA	N/A	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	The transmitter was programmed to transmit at low, mid, and high channels
2	The transmitter was programmed to receive at mid channel

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	WAHTS AC Headset Firmware
2	Audhere Tablet Software App

Radio/Receiver Characteristics	
Frequency Band(s)	2402-2480 MHz
Modulation Type(s)	GFSK
Maximum Output Power	Low Channel (2402 MHz): - 3.33 dBm Mid Channel (2442 MHz): - 8.94 dBm High Channel (2480 MHz): -8.17 dBm
Test Channels	Low Channel (2402 MHz) Mid Channel (2442 MHz) High Channel (2480 MHz)
Occupied Bandwidth	Low Channel (2402 MHz): 1.142 MHz Mid Channel (2442 MHz): 1.082 MHz High Channel (2480 MHz): 1.102 MHz
6 dB Bandwidth	Low Channel (2402 MHz): 779.2 kHz Mid Channel (2442 MHz): 754.2 kHz High Channel (2480 MHz): 769.2 kHz
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)	1
Equipment Type	Standalone
Antenna Type and Gain	Integral antenna, Gain: 2.75 dBi

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

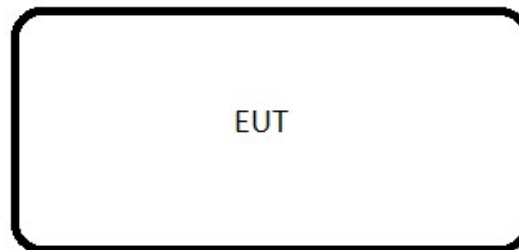
Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
--	None	--	--	--	--

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
Headset Charger	C2G	W05210DU	None
Laptop	HP	EliteBook 840	None

5.1 Method:

Configuration as required by Configuration as required by CFR47 FCC Part 15.247 Subpart C: 07/2023, CFR47 FCC Part 15 Subpart B: 07/2023, RSS-247 Issue 2 February 2017, ICES-003 Issue 7 October 2020, RSS-Gen Issue 5 April 2018, ANSI C 63.10: 2013, ANSI C 63.4: 2014, and 558074 D01 15.247 Meas Guidance v05r02: 04/2019.

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 D01.

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
DAV006'	Weather Station	Davis	6250	MS191218071	02/21/2023	02/21/2024
145108	EMI Test Receiver (20Hz - 40GHz)	Rohde & Schwarz	ESIB40	100209	06/23/2022	06/23/2023
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/14/2022	07/14/2023
IW002'	2 meter Armored cable	Insulated Wire	2800-NPS	002	10/11/2022	10/11/2023
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	07/14/2022	07/14/2023
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/14/2022	07/14/2023

Software Utilized:

Name	Manufacturer	Version
None	--	--

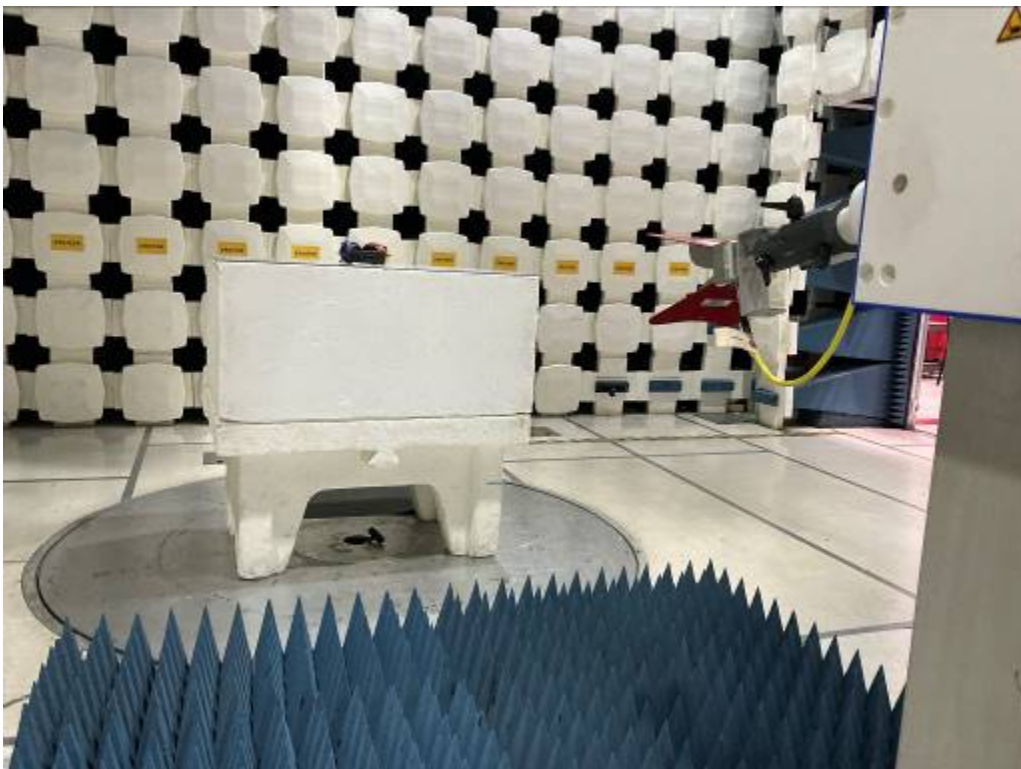
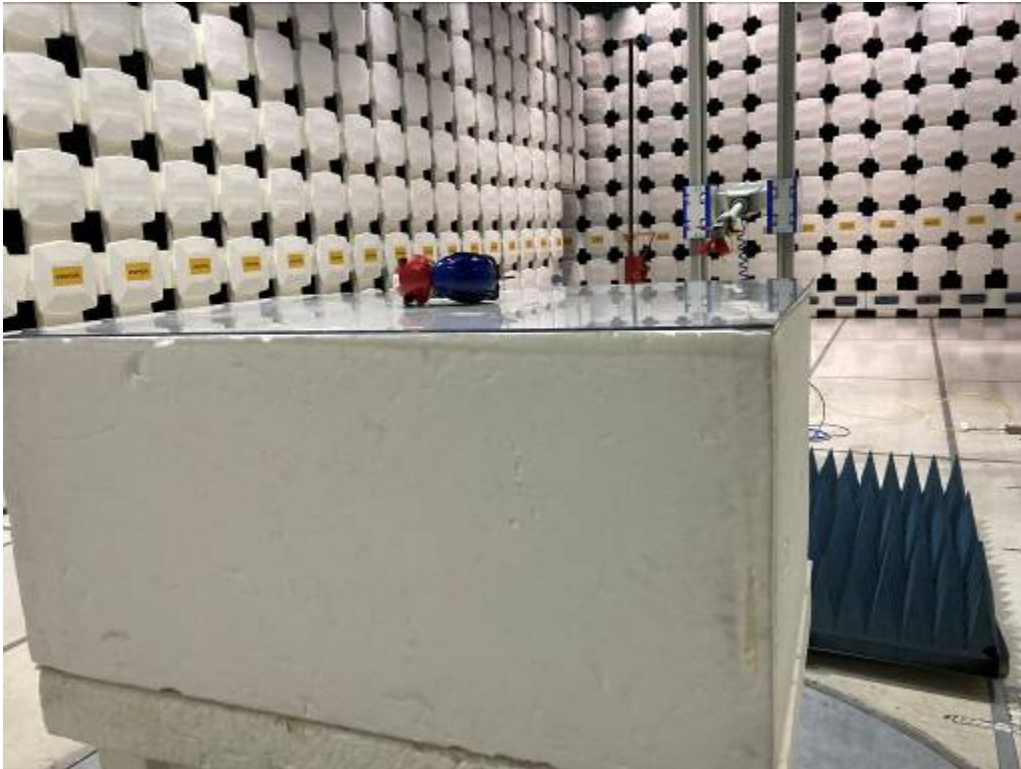
6.3 Results:

The sample tested was found to Comply.

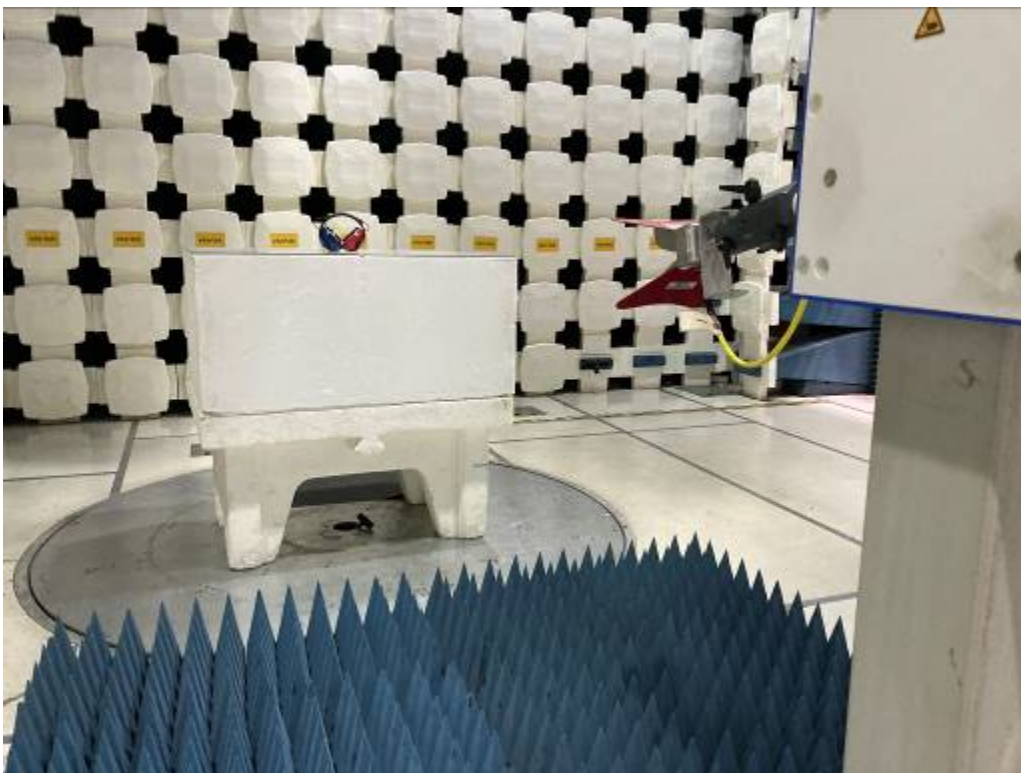
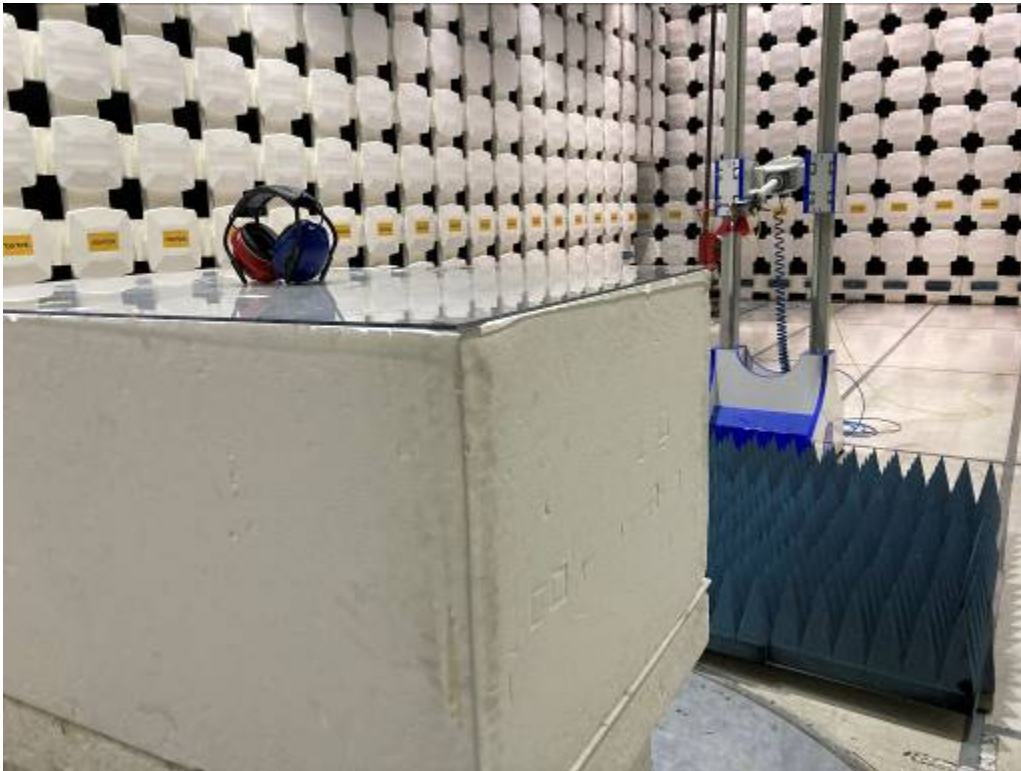
Limits – FCC Part §15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt or 30 dBm.

6.4 Setup Photographs:

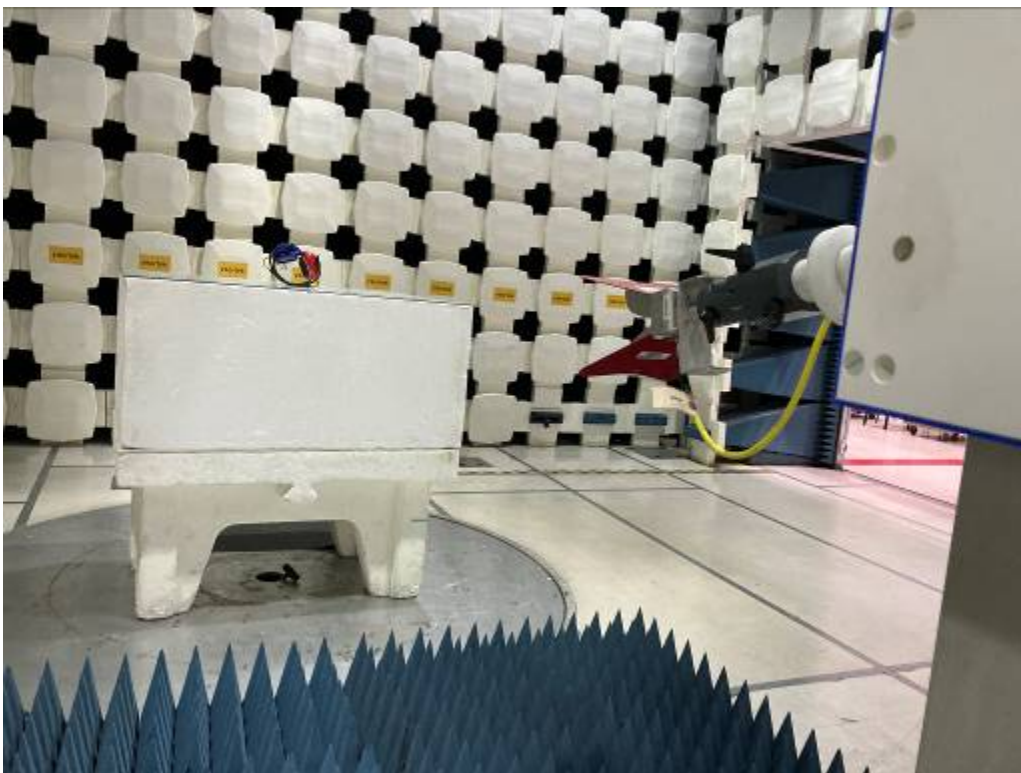
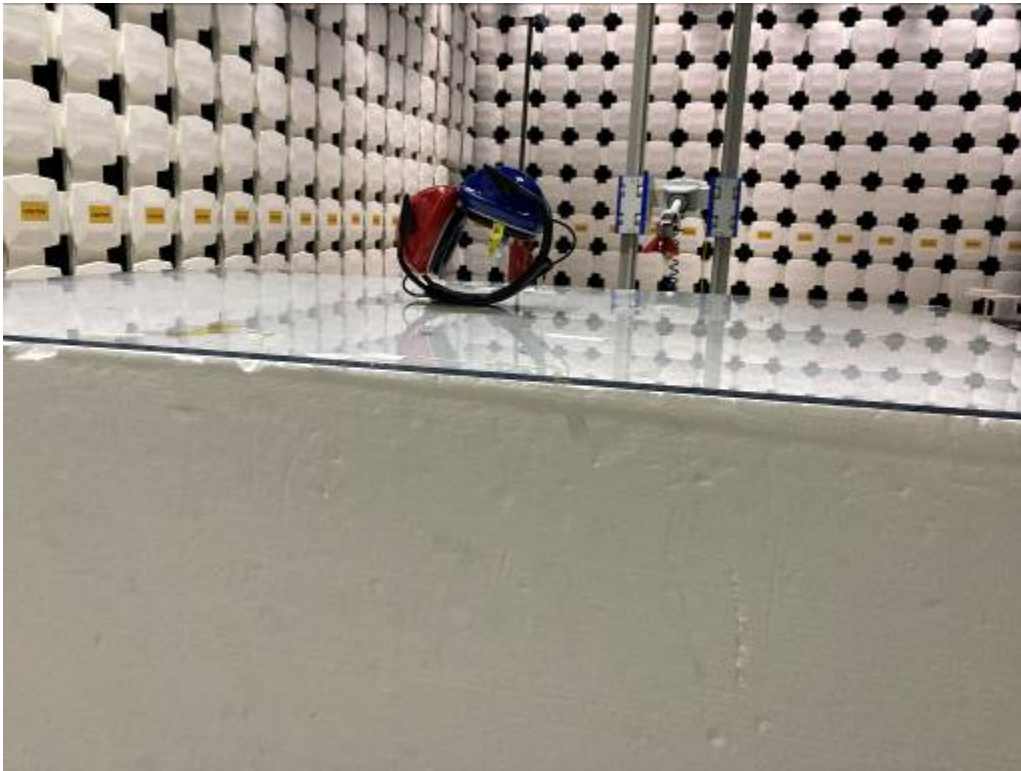
X-Axis



Y-Axis



Z-Axis



6.5 Plots/Data:

Low Channel Output Power

Company: Edare LLC
 Model #: AC
 Serial #: E0050736
 Engineers: Vathana Ven
 Project #: G105406683
 Standard: FCC Part 15.247/RSS-247
 Receiver: R&S ESI (145-128) 06-23-2023
 PreAmp: NONE
 PreAmp Used? (Y or N): N
 Antenna & Cables: HF
 Antenna: ETS002_09-27-2023
 Cable(s): IW001, IW002, IW006, 145-414
 Bands: N, LF, HF, SHF
 ETS002_09-27-2023
 Location: 10M Chamber
 Barometer: DAV006
 Filter: NONE
 Date(s): 06/12/23
 Temp/Humidity/Pressure: 26 deg C 38% 999 mB
 Limit Distance (m): 3
 Test Distance (m): 3
 Voltage/Frequency: Battery
 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(m)	Limit dB(m)	Margin dB	Bandwidth
Note: Output power, Tx mode, Low CH, X-Axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	50.50	31.95	7.50	0.00	0.00	-8.02	30.00	-38.02	3/10 MHz
PK	H	2402.000	55.19	31.95	7.50	0.00	0.00	-3.33	30.00	-33.33	3/10 MHz
PK	V	2402.000	49.02	31.95	7.50	0.00	0.00	-9.50	30.00	-39.50	1/3 MHz
PK	H	2402.000	54.02	31.95	7.50	0.00	0.00	-4.50	30.00	-34.50	1/3 MHz
PK	V	2402.000	48.85	31.95	7.50	0.00	0.00	-9.67	---	---	100/300 kHz
PK	H	2402.000	51.91	31.95	7.50	0.00	0.00	-6.61	---	---	100/300 kHz
Note: Output power, Tx mode, Low CH, Y-Axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	48.75	31.95	7.50	0.00	0.00	-9.77	30.00	-39.77	3/10 MHz
PK	H	2402.000	50.13	31.95	7.50	0.00	0.00	-8.39	30.00	-38.39	3/10 MHz
PK	V	2402.000	48.75	31.95	7.50	0.00	0.00	-9.77	30.00	-39.77	1/3 MHz
PK	H	2402.000	49.08	31.95	7.50	0.00	0.00	-9.39	30.00	-39.39	1/3 MHz
PK	V	2402.000	46.61	31.95	7.50	0.00	0.00	-11.91	---	---	100/300 kHz
PK	H	2402.000	48.31	31.95	7.50	0.00	0.00	-10.21	---	---	100/300 kHz
Note: Output power, Tx mode, Low CH, Z-Axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	50.38	31.95	7.50	0.00	0.00	-8.14	30.00	-38.14	3/10 MHz
PK	H	2402.000	52.52	31.95	7.50	0.00	0.00	-6.00	30.00	-36.00	3/10 MHz
PK	V	2402.000	49.51	31.95	7.50	0.00	0.00	-9.01	30.00	-39.01	1/3 MHz
PK	H	2402.000	51.85	31.95	7.50	0.00	0.00	-6.67	30.00	-36.67	1/3 MHz
PK	V	2402.000	48.61	31.95	7.50	0.00	0.00	-9.91	---	---	100/300 kHz
PK	H	2402.000	51.38	31.95	7.50	0.00	0.00	-7.14	---	---	100/300 kHz

Note: $P_{cond} = EIRP - Gain (dBi) = EIRP - 2.75$

Mid Channel Output power

Company: Edare LLC
Model #: AC
Serial #: E0050736
Engineers: Vathana Ven
Project #: G105406683
Standard: FCC Part 15.247/RSS-247
Receiver: R&S ESI (145-128) 06-23-2023
PreAmp: NONE
PreAmp Used? (Y or N): N
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

Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: ETS002_09-27-2023 ETS002
Cable(s): IW001, IW002, IW006, 145-414
Location: 10M Chamber Barometer: DAV006 Filter: NONE
Temp/Humidity/Pressure: 26 deg C 38% 999 mB
Limit Distance (m): 3
Test Distance (m): 3
Voltage/Frequency: Battery Frequency Range: See below

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(m)	Limit dB(m)	Margin dB	Bandwidth	FCC	IC
Note: Output power, Tx mode, Mid CH, X-Axis													
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP													
PK	V	2442.000	46.85	32.09	7.50	0.00	0.00	-11.54	30.00	-41.54	5/10 MHz		
PK	H	2442.000	49.45	32.09	7.50	0.00	0.00	-8.94	30.00	-38.94	5/10 MHz		
PK	V	2442.000	45.70	32.09	7.50	0.00	0.00	-12.69	30.00	-42.69	1/3 MHz		
PK	H	2442.000	48.52	32.09	7.50	0.00	0.00	-9.86	30.00	-39.87	1/3 MHz		
PK	V	2442.000	45.07	32.09	7.50	0.00	0.00	-13.32	---	---	100/300 kHz		
PK	H	2442.000	47.72	32.09	7.50	0.00	0.00	-10.67	---	---	100/300 kHz		
Note: Output power, Tx mode, Mid CH, Y-Axis													
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP													
PK	V	2442.000	45.13	32.09	7.50	0.00	0.00	-13.26	30.00	-43.26	5/10 MHz		
PK	H	2442.000	44.68	32.09	7.50	0.00	0.00	-13.71	30.00	-43.71	5/10 MHz		
PK	V	2442.000	41.10	32.09	7.50	0.00	0.00	-17.29	30.00	-47.29	1/3 MHz		
PK	H	2442.000	43.64	32.09	7.50	0.00	0.00	-14.75	30.00	-44.75	1/3 MHz		
PK	V	2442.000	41.97	32.09	7.50	0.00	0.00	-16.42	---	---	100/300 kHz		
PK	H	2442.000	42.86	32.09	7.50	0.00	0.00	-15.53	---	---	100/300 kHz		
Note: Output power, Tx mode, Mid CH, Z-Axis													
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP													
PK	V	2442.000	47.67	32.09	7.50	0.00	0.00	-10.72	30.00	-40.72	5/10 MHz		
PK	H	2442.000	47.94	32.09	7.50	0.00	0.00	-10.45	30.00	-40.45	5/10 MHz		
PK	V	2442.000	46.90	32.09	7.50	0.00	0.00	-11.49	30.00	-41.49	1/3 MHz		
PK	H	2442.000	47.13	32.09	7.50	0.00	0.00	-11.26	30.00	-41.26	1/3 MHz		
PK	V	2442.000	46.52	32.09	7.50	0.00	0.00	-11.87	---	---	100/300 kHz		
PK	H	2442.000	46.74	32.09	7.50	0.00	0.00	-11.65	---	---	100/300 kHz		

Note: $P_{\text{cond}} = \text{EIRP} - \text{Gain (dBi)} = \text{EIRP} - 2.75$

High Channel Output Power

Company: Edare LLC
Model #: AC
Serial #: E0050736
Engineers: Vathana Ven
Project #: G105406683
Standard: FCC Part 15.247/RSS-247
Receiver: R&S ESI (145-128) 06-23-2023
PreAmp: NONE
PreAmp Used? (Y or N): N
Voltage/Frequency: Battery
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

Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: ETS002_09-27-2023 ETS002_09-27-2023
Cable(s): IW001, IW002, IW006, 145-414
Location: 10M Chamber Barometer: DAV006 Filter: NONE
Temp/Humidity/Pressure: 26 deg C 38% 999 mB

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(m)	Limit dB(m)	Margin dB	Bandwidth
Note: Output power, Tx mode, High CH, X-Axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2480.000	47.26	32.43	7.50	0.00	0.00	-10.78	30.00	-40.78	3/10 MHz
PK	H	2480.000	49.87	32.43	7.50	0.00	0.00	-8.17	30.00	-38.17	3/10 MHz
PK	V	2480.000	46.13	32.43	7.50	0.00	0.00	-9.16	30.00	-39.16	1/3 MHz
PK	H	2480.000	49.06	32.43	7.50	0.00	0.00	-8.98	30.00	-38.98	1/3 MHz
PK	V	2480.000	43.96	32.43	7.50	0.00	0.00	-14.08	---	---	100/300 kHz
PK	H	2480.000	48.67	32.43	7.50	0.00	0.00	-9.37	---	---	100/300 kHz
Note: Output power, Tx mode, High CH, Y-Axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2480.000	48.35	32.43	7.50	0.00	0.00	-9.69	30.00	-39.69	3/10 MHz
PK	H	2480.000	47.53	32.43	7.50	0.00	0.00	-10.51	30.00	-40.51	3/10 MHz
PK	V	2480.000	47.60	32.43	7.50	0.00	0.00	-10.44	30.00	-40.44	1/3 MHz
PK	H	2480.000	46.63	32.43	7.50	0.00	0.00	-11.41	30.00	-41.41	1/3 MHz
PK	V	2480.000	46.74	32.43	7.50	0.00	0.00	-11.30	---	---	100/300 kHz
PK	H	2480.000	44.95	32.43	7.50	0.00	0.00	-13.09	---	---	100/300 kHz
Note: Output power, Tx mode, High CH, Z-Axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2480.000	44.68	32.43	7.50	0.00	0.00	-13.36	30.00	-43.36	3/10 MHz
PK	H	2480.000	45.27	32.43	7.50	0.00	0.00	-12.77	30.00	-42.77	3/10 MHz
PK	V	2480.000	42.35	32.43	7.50	0.00	0.00	-15.69	30.00	-45.69	1/3 MHz
PK	H	2480.000	43.90	32.43	7.50	0.00	0.00	-14.14	30.00	-44.14	1/3 MHz
PK	V	2480.000	41.79	32.43	7.50	0.00	0.00	-16.25	---	---	100/300 kHz
PK	H	2480.000	42.82	32.43	7.50	0.00	0.00	-15.22	---	---	100/300 kHz

Note: $P_{cond} = EIRP - \text{Gain (dBi)} = EIRP - 2.75$

Product Standard: CFR47 FCC Part 15.247 RSS-247					Limit applied: See Section 6.3 Pretest Verification w/BB source: Yes		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
06/12/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	38	999

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, ANSI C63.10, and KDB 558074 D01.

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
DAV006'	Weather Station	Davis	6250	MS191218071	02/21/2023	02/21/2024
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Schwartz	FSW43	100646	11/18/2022	11/18/2023
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/14/2022	07/14/2023
IW002'	2 meter Armored cable	Insulated Wire	2800-NPS	002	10/11/2022	10/11/2023
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	07/14/2022	07/14/2023
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/14/2022	07/14/2023
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/27/2022	09/27/2023

Software Utilized:

Name	Manufacturer	Version
None	--	--

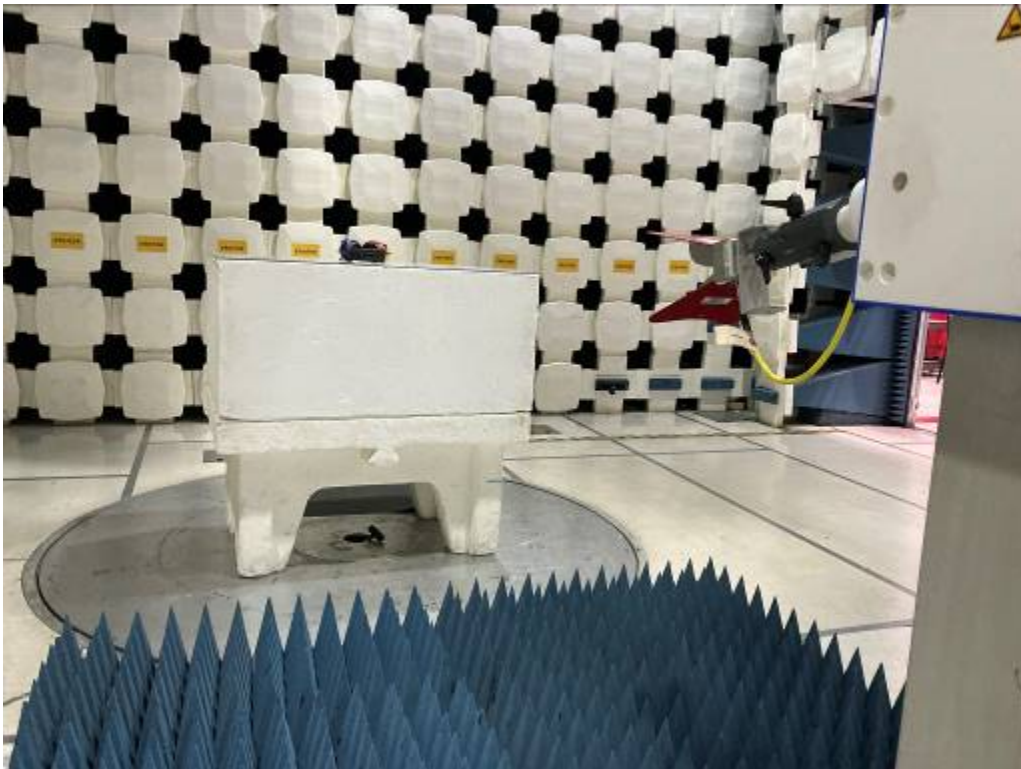
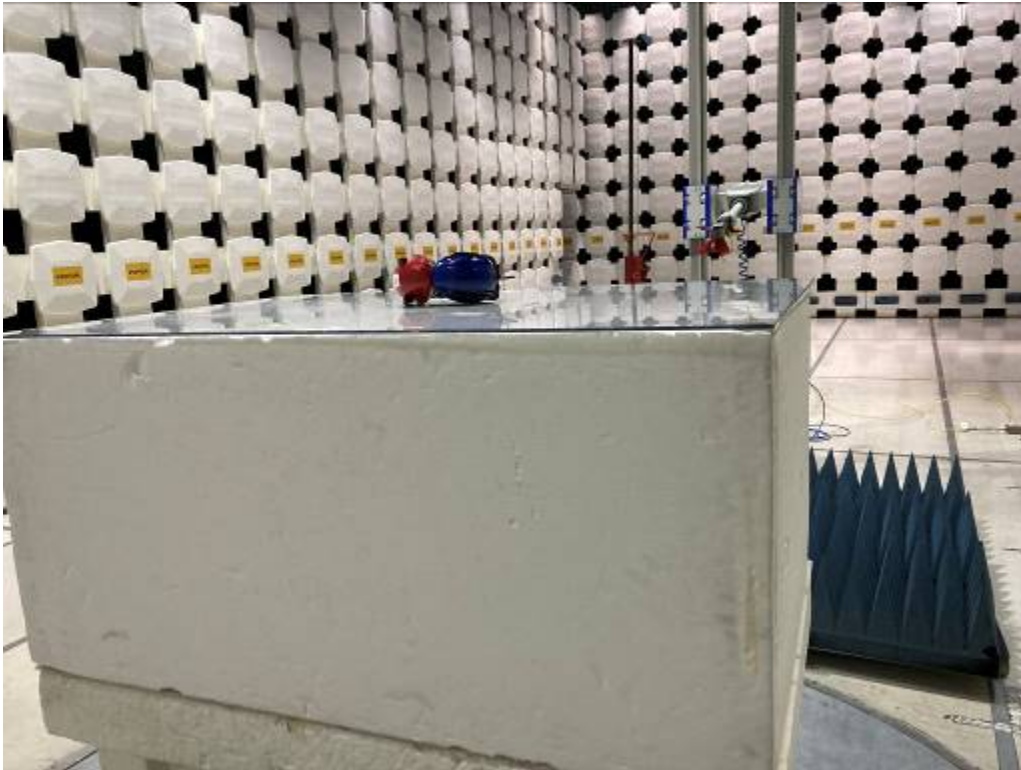
7.3 Results:

The sample tested was found to Comply.

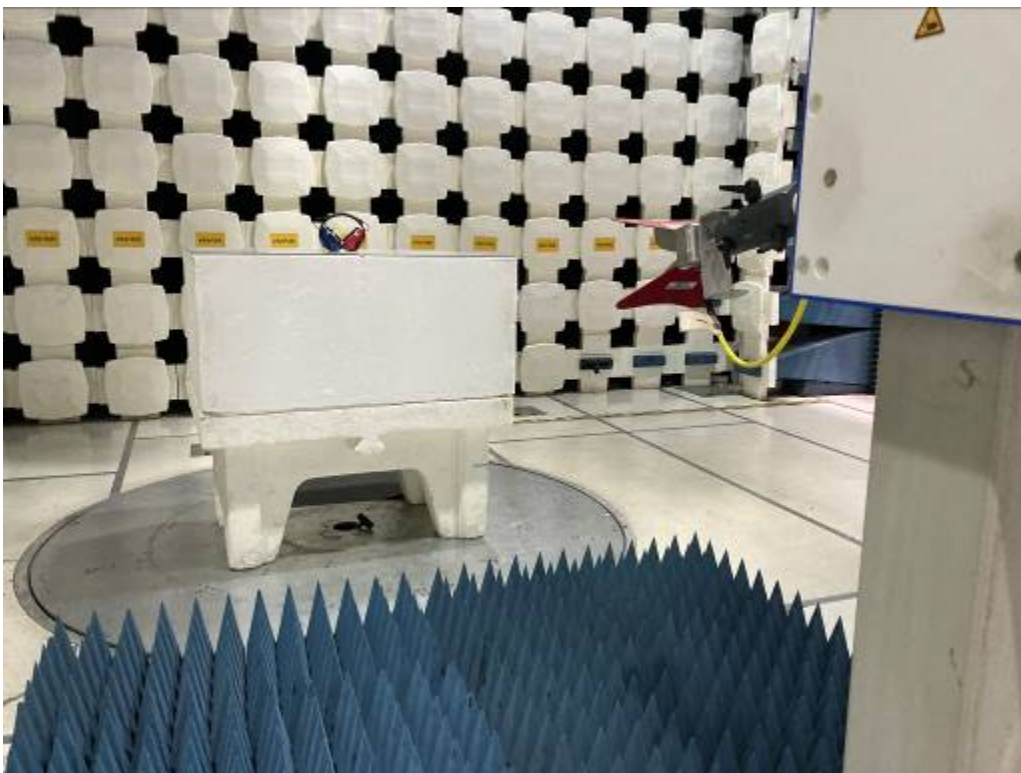
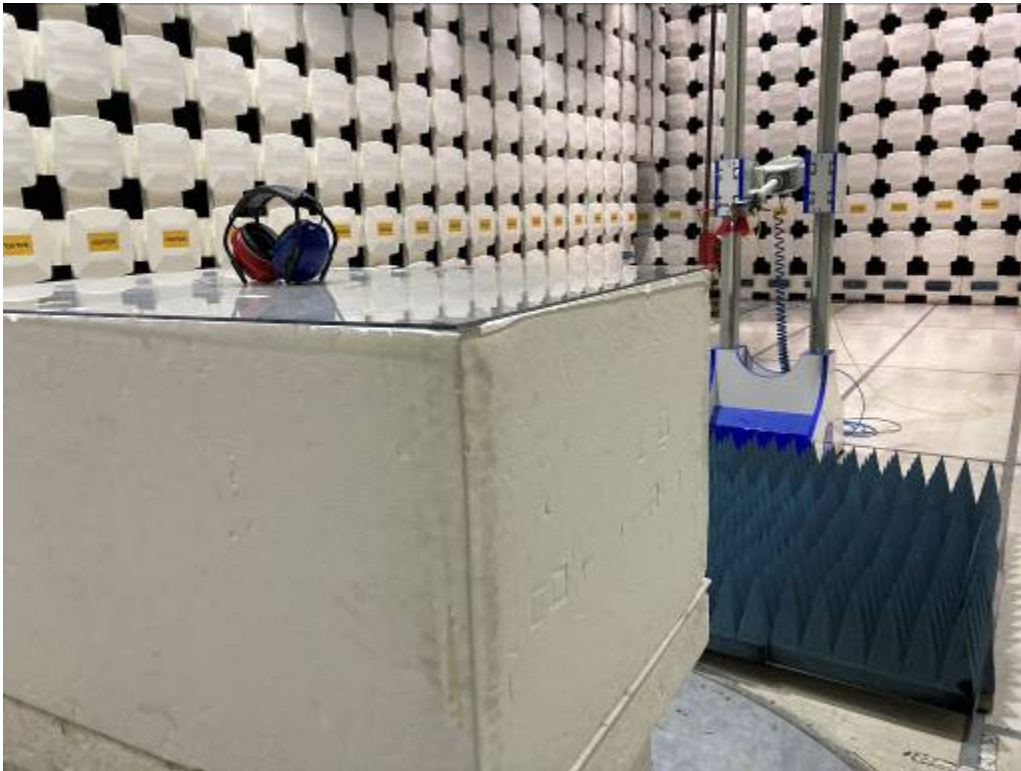
Limits – FCC Part §15.247 (a) (2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.4 Setup Photographs:

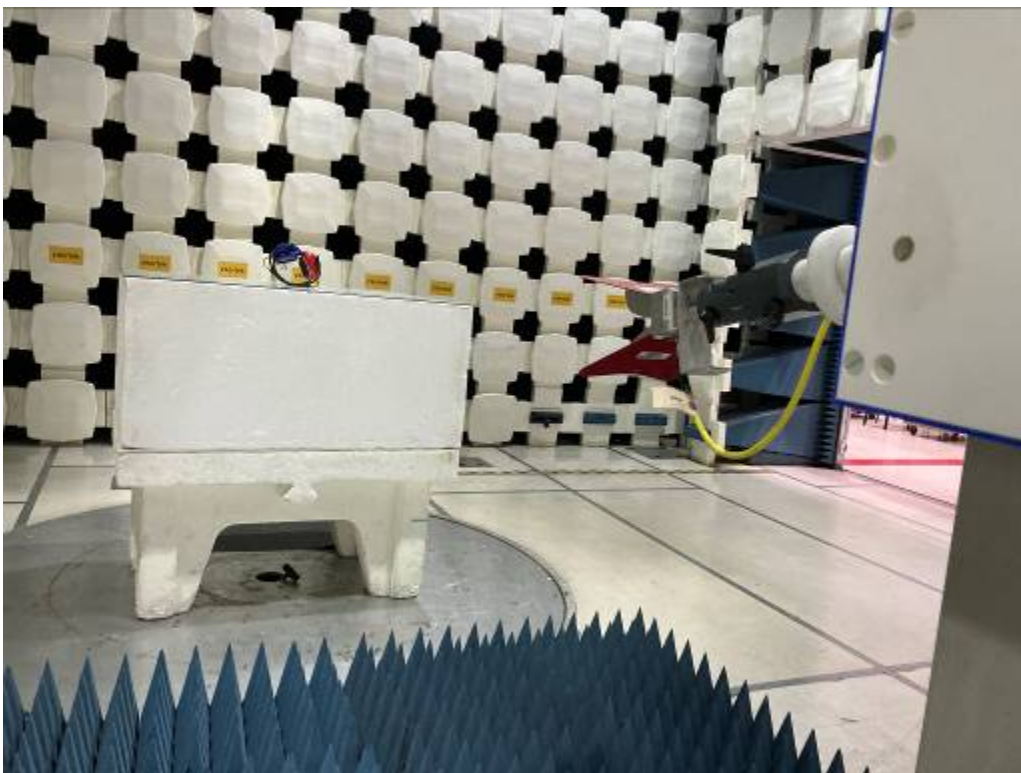
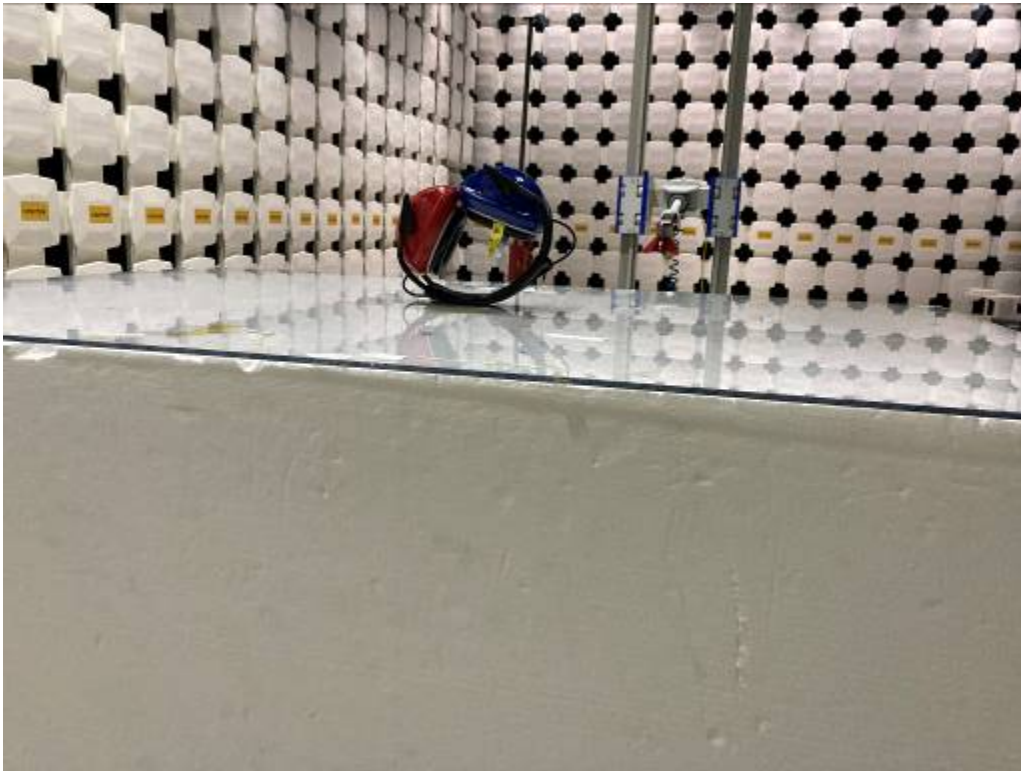
X-Axis



Y-Axis



Z-Axis



7.5 Plots / Data:

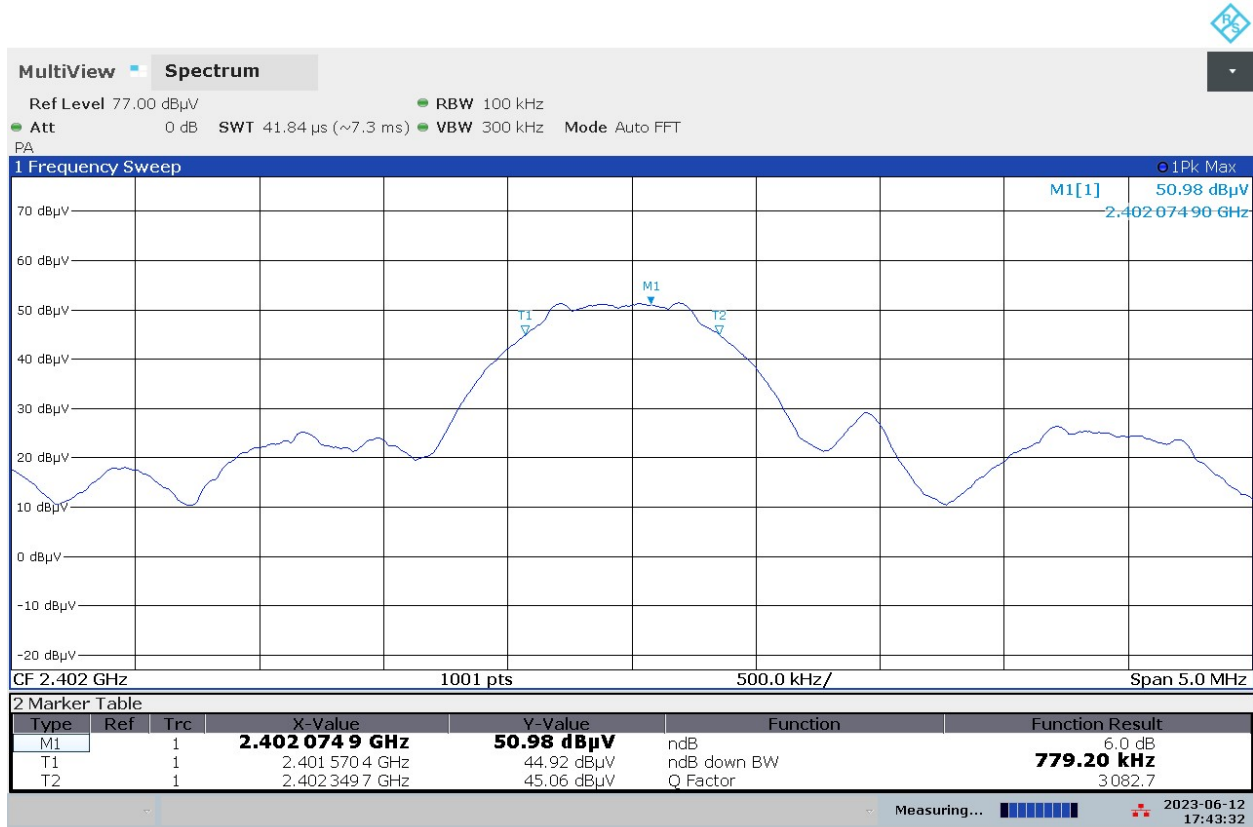
DTS Bandwidth (6 dB Bandwidth)

Frequency (MHz)	DTS Bandwidth (6 dB Bandwidth) (kHz)	DTS Bandwidth Limit (kHz)	Results
2402	779.2	≥ 500	Compliance
2442	754.2	≥ 500	Compliance
2480	769.2	≥ 500	Compliance

Occupied Bandwidth (OBW)

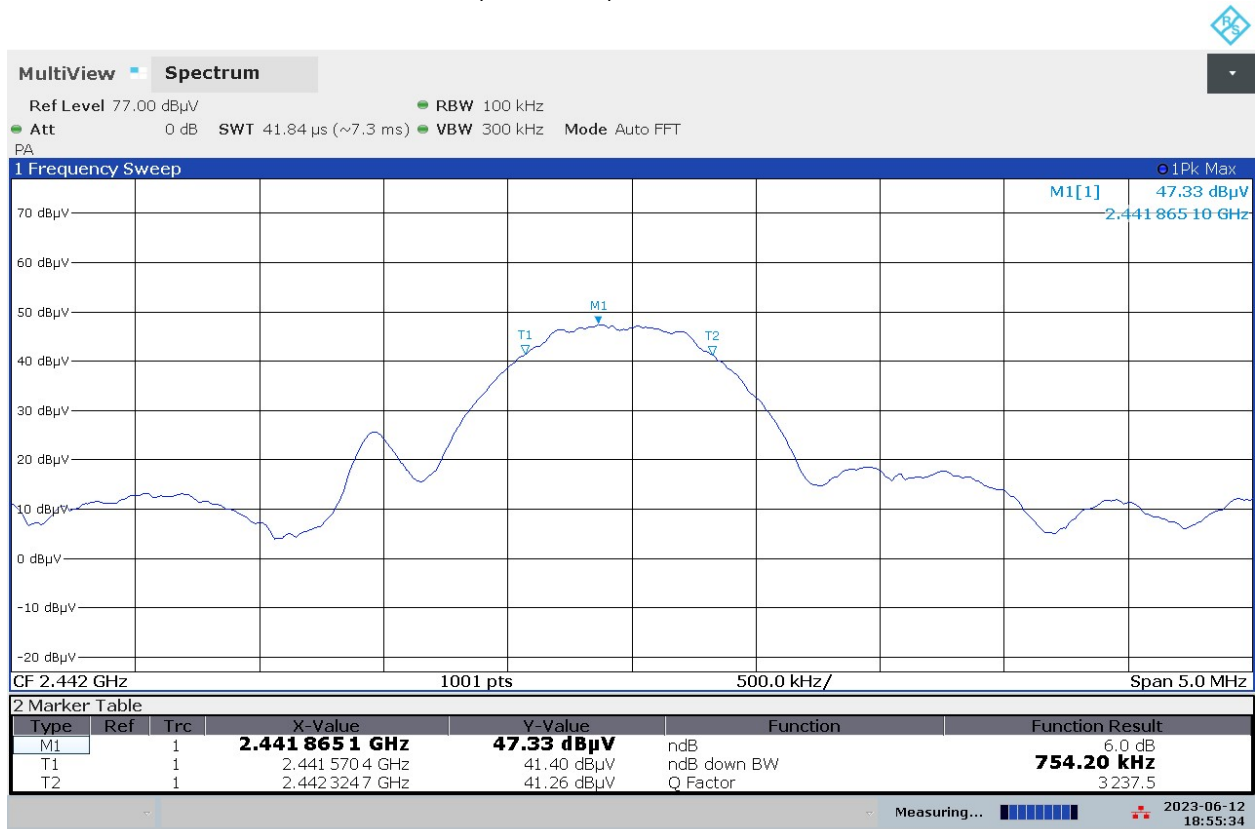
Frequency (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth Limit	Results
2402	1.142	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
2442	1.082	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
2480	1.102	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance

Low Channel (2402 MHz) DTS Bandwidth, 779.2 kHz



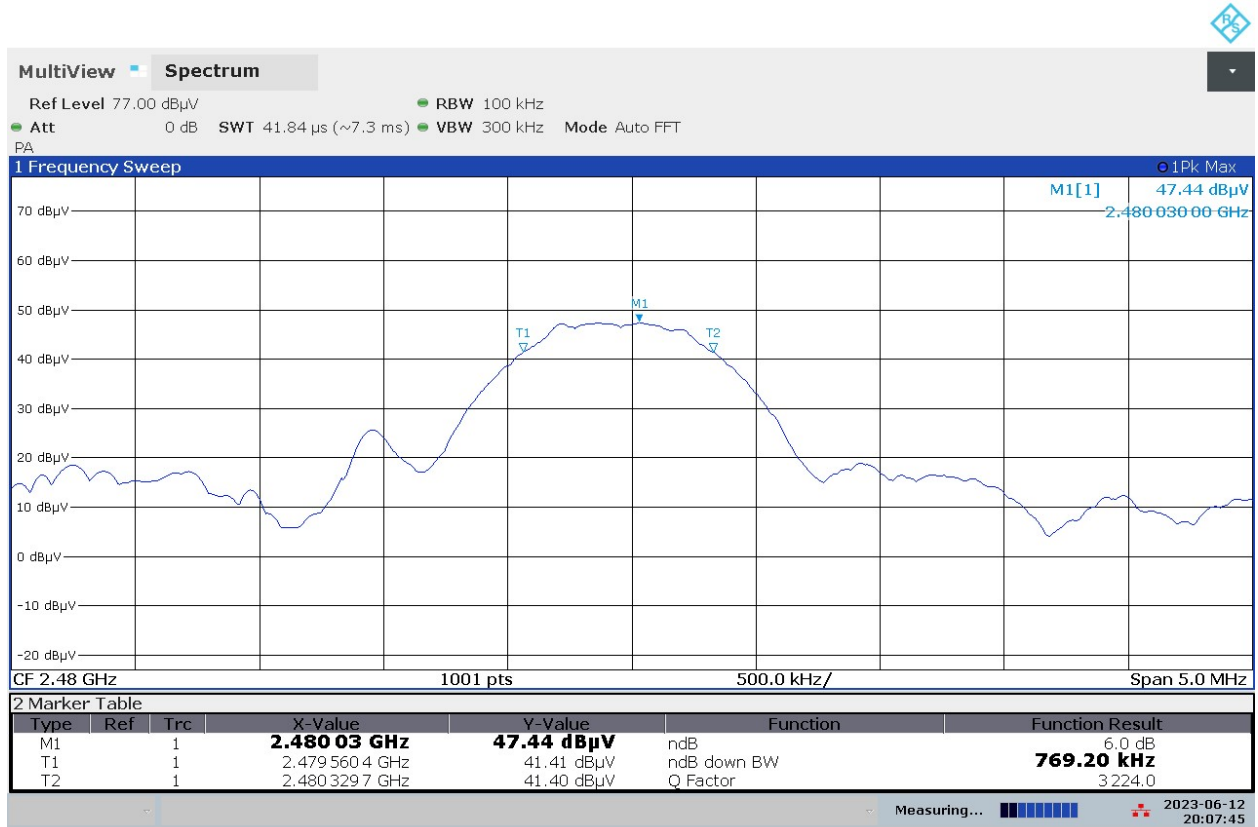
05:43:33 PM 06/12/2023

Mid Channel (2442 MHz) DTS Bandwidth, 754.2 kHz



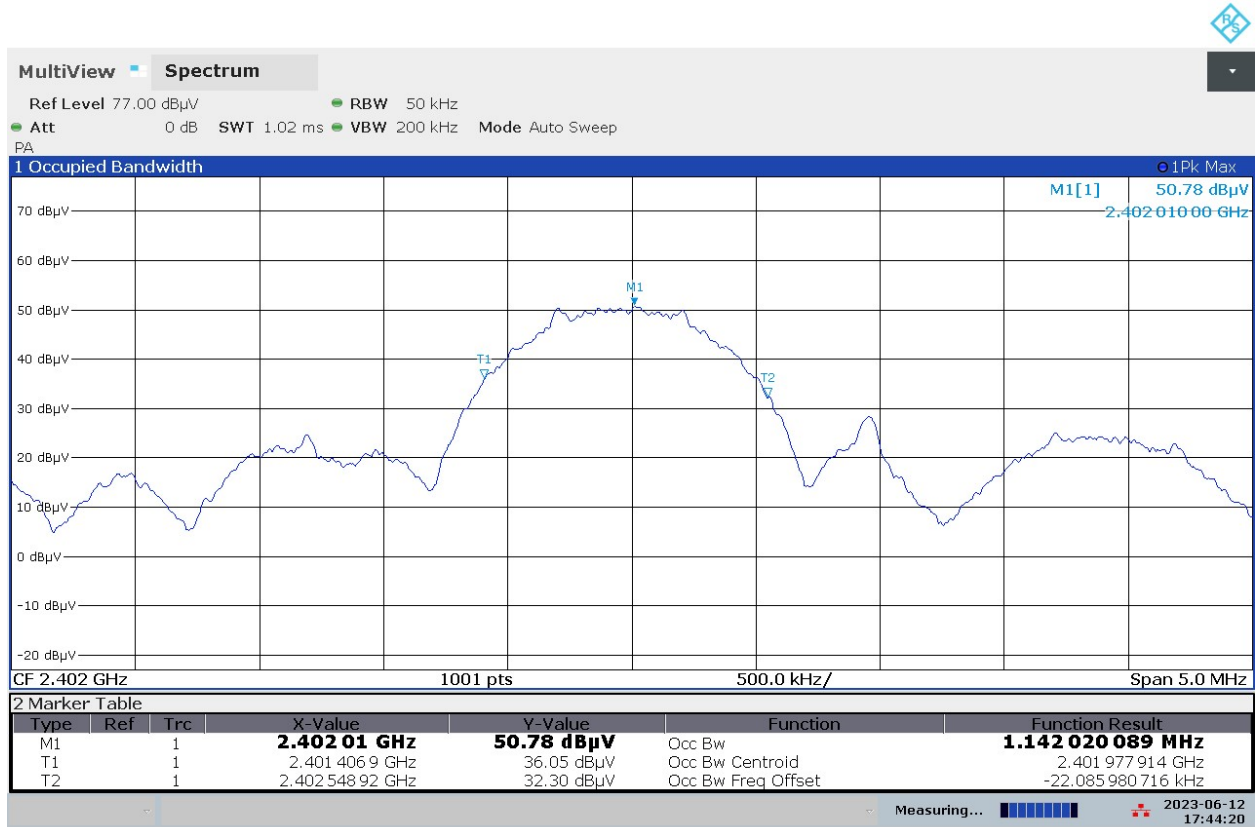
06:55:34 PM 06/12/2023

High Channel (2480 MHz) DTS Bandwidth, 769.2 kHz



08:07:46 PM 06/12/2023

Low Channel (2402 MHz) Occupied Bandwidth, 1.142 MHz



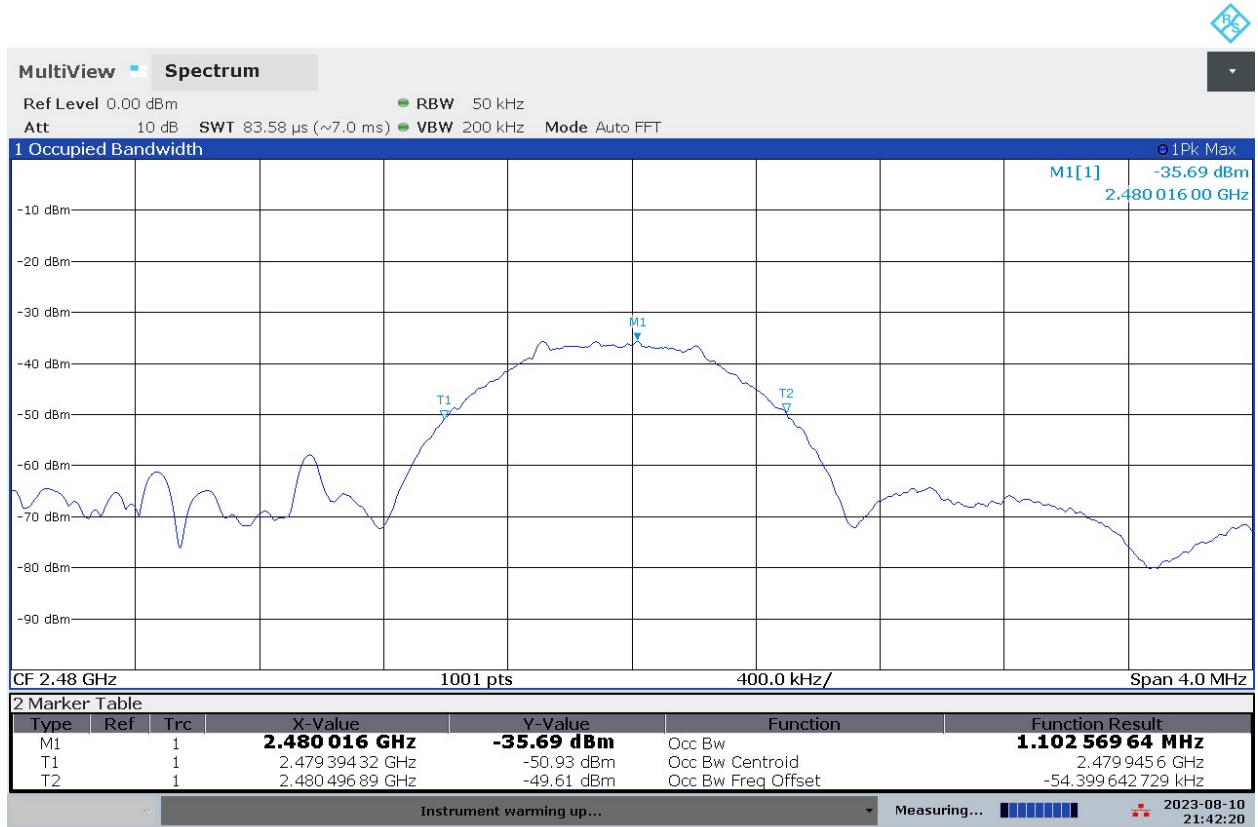
05:44:21 PM 06/12/2023

Mid (2442 MHz) Occupied Bandwidth, 1.082 MHz



06:54:21 PM 06/12/2023

High Channel (2480 MHz) Occupied Bandwidth, MHz



09:42:21 PM 08/10/2023

Product Standard: CFR47 FCC Part 15.247 RSS-247					Limit applied: See Section 7.3 Pretest Verification w/BB source: Yes		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
06/12/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	38	999
08/10/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	24	39	995

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, ANSI C63.10, and 558074 D01 15.247 Meas Guidance v05r02: 04/2019.

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
DAV006'	Weather Station	Davis	6250	MS191218071	02/21/2023	02/21/2024
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Schwartz	FSW43	100646	11/18/2022	11/18/2023
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/14/2022	07/14/2023
IW002'	2 meter Armored cable	Insulated Wire	2800-NPS	002	10/11/2022	10/11/2023
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	07/14/2022	07/14/2023
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/14/2022	07/14/2023
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/27/2022	09/27/2023

Software Utilized:

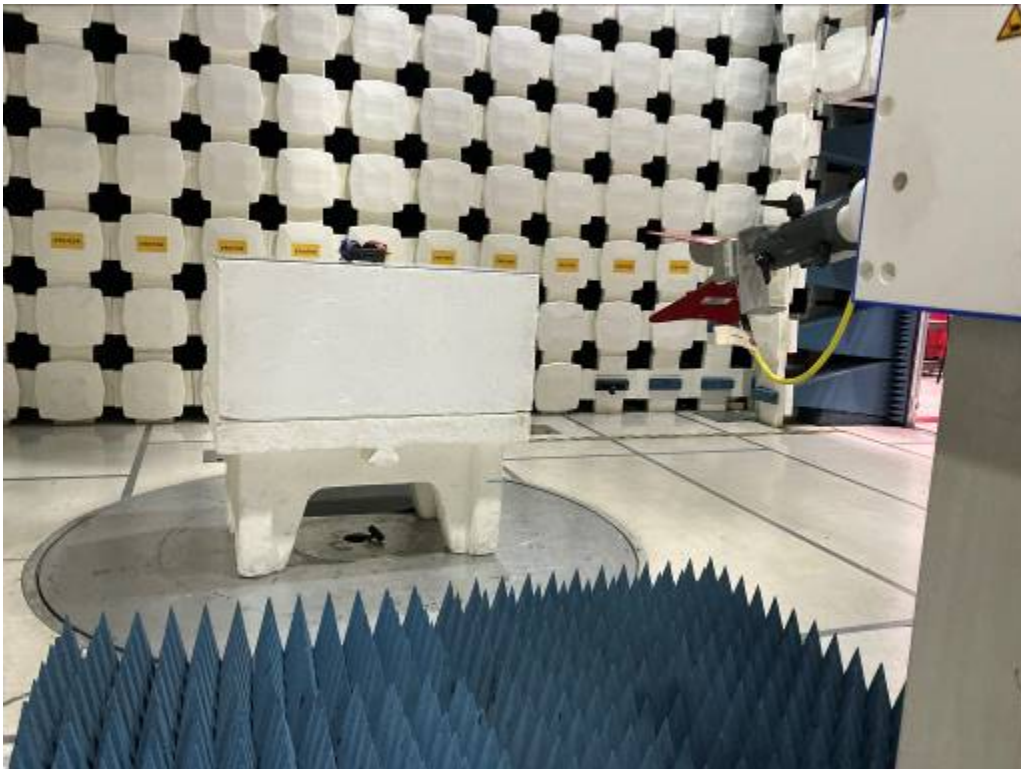
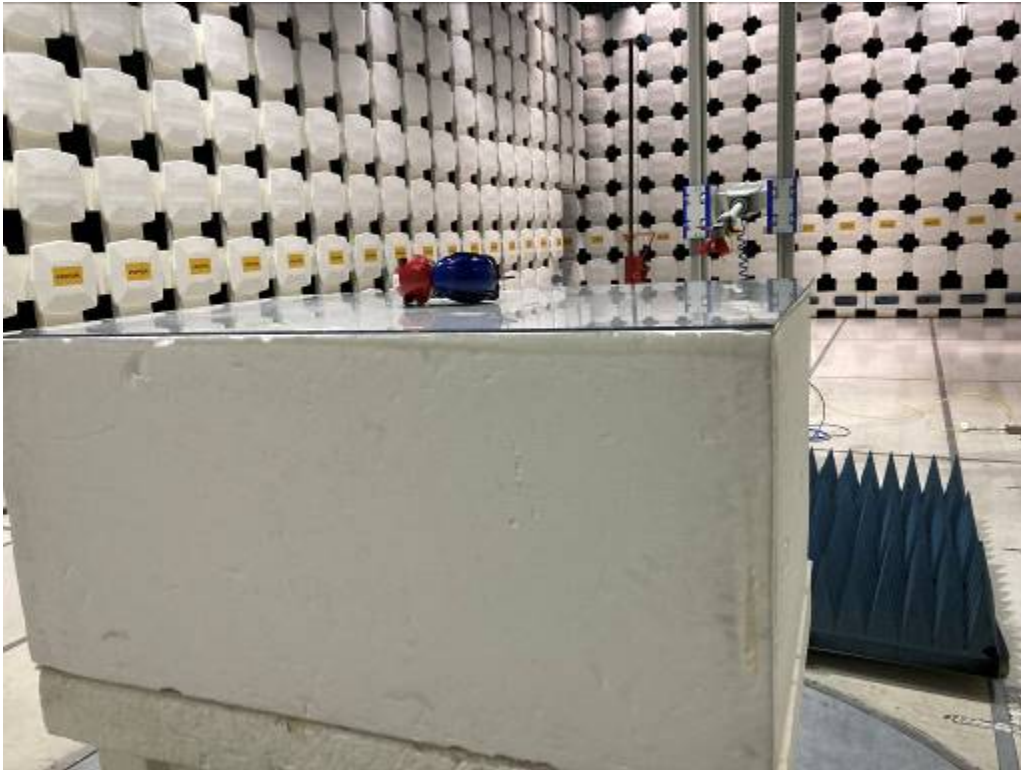
Name	Manufacturer	Version
None	--	--

8.3 Results:

The sample tested was found to Comply.

Limits – FCC Part §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 Photographs:



8.5 Test Data:

Power Spectral Density

Company: Edare LLC
 Model #: AC
 Serial #: E0050736
 Engineers: Vathana Ven
 Project #: G105406683
 Standard: FCC Part 15.247/RSS-247
 Receiver: R&S ESI (145-128) 06-23-2023
 PreAmp: NONE
 PreAmp Used? (Y or N): N
 Antenna & Cables: HF
 Antenna: ETS002_09-27-2023
 Cable(s): IW001, IW002, IW006, 145-414
 Bands: N, LF, HF, SHF
 ETS002_09-27-2023
 Location: 10M Chamber
 Barometer: DAV006
 Filter: NONE
 Date(s): 06/12/23
 Temp/Humidity/Pressure: 26 deg C 38% 999 mB
 Limit Distance (m): 3
 Test Distance (m): 3
 Voltage/Frequency: Battery
 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(m)	Limit dB(m)	Margin dB	Bandwidth
Note: Power Density measured in a 3 kHz RBW											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	33.83	31.95	7.50	0.00	0.00	-21.94	8.00	-29.94	3/10 kHz
PK	H	2402.000	38.41	31.95	7.50	0.00	0.00	-17.36	8.00	-25.36	3/10 kHz
PK	V	2442.000	33.73	32.09	7.50	0.00	0.00	-21.91	8.00	-29.91	3/10 kHz
PK	H	2442.000	32.93	32.09	7.50	0.00	0.00	-22.71	8.00	-30.71	3/10 kHz
PK	V	2480.000	29.42	32.43	7.50	0.00	0.00	-25.87	8.00	-33.87	3/10 kHz
PK	H	2480.000	31.04	32.43	7.50	0.00	0.00	-24.25	8.00	-32.25	3/10 kHz

Product Standard: CFR47 FCC Part 15.247 RSS-247					Limit applied: See Section 8.3 Pretest Verification w/BB source: Yes		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
06/12/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	38	999

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: 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	5.0 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.9 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.1 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	4.7 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	4.7 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 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV006'	Weather Station	Davis	6250	MS191218071	02/21/2023	02/21/2024
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Schwartz	FSW43	100646	11/18/2022	11/18/2023
IW001'	2 meter cable	Insulated Wire	2801-NPS	001	07/14/2022	07/14/2023
IW002'	2 meter Armored cable	Insulated Wire	2800-NPS	002	10/11/2022	10/11/2023
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	07/14/2022	07/14/2023
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/14/2022	07/14/2023
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/27/2022	09/27/2023

Software Utilized:

Name	Manufacturer	Version
None	--	--

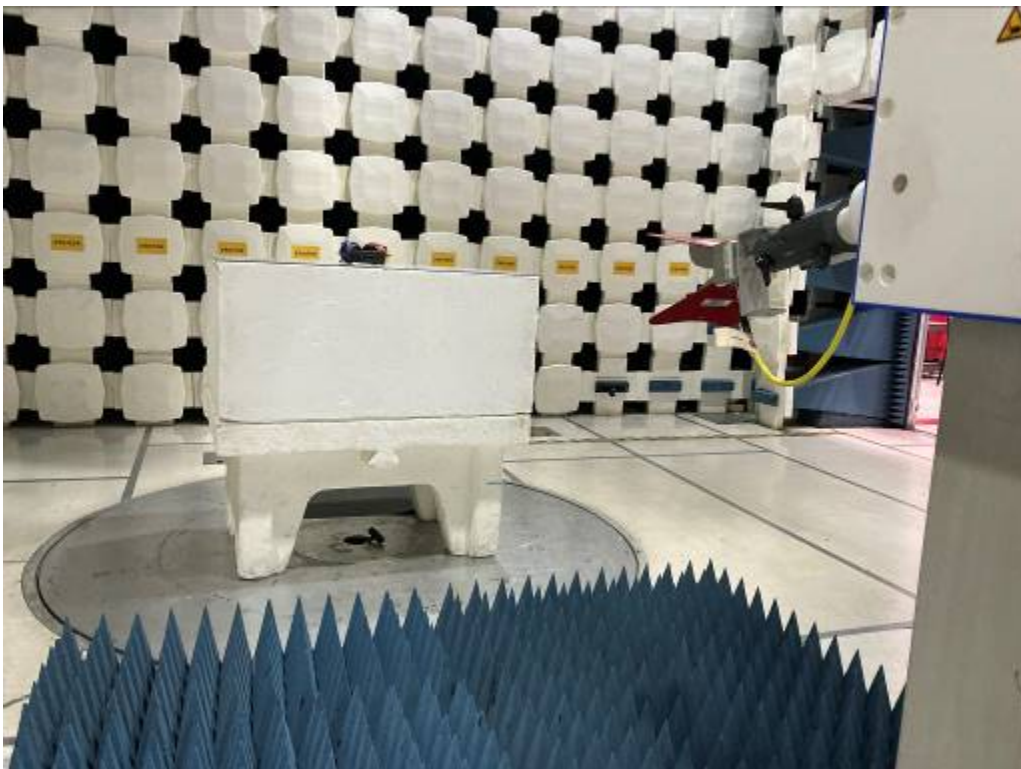
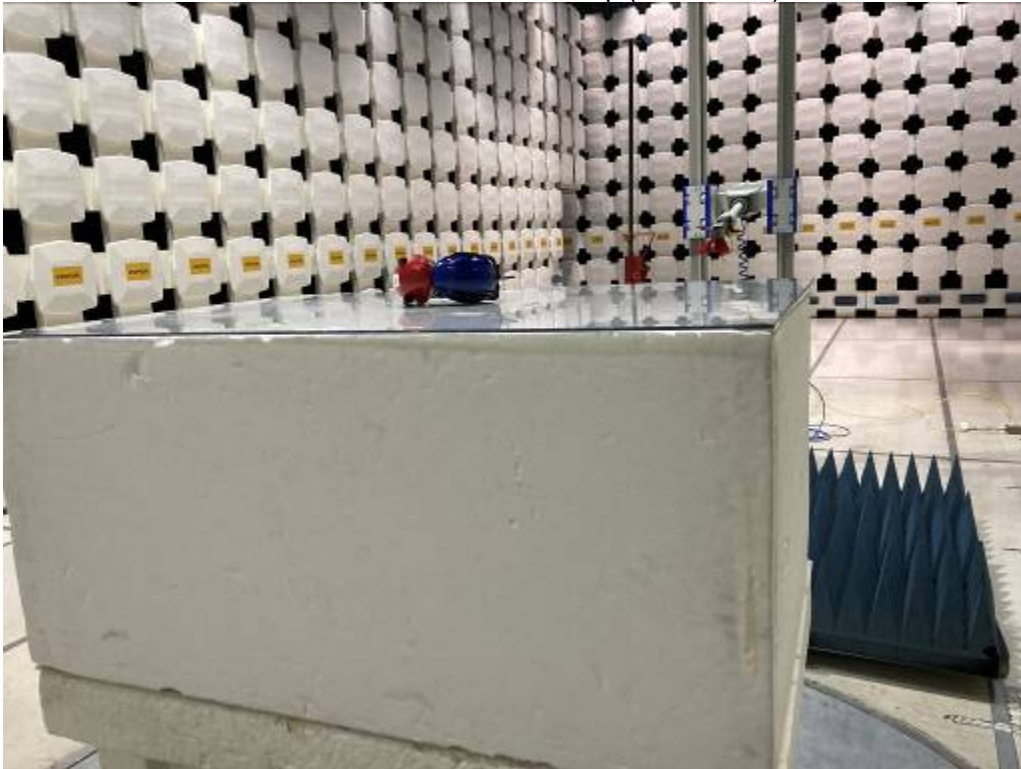
9.3 Results:

The sample tested was found to Comply.

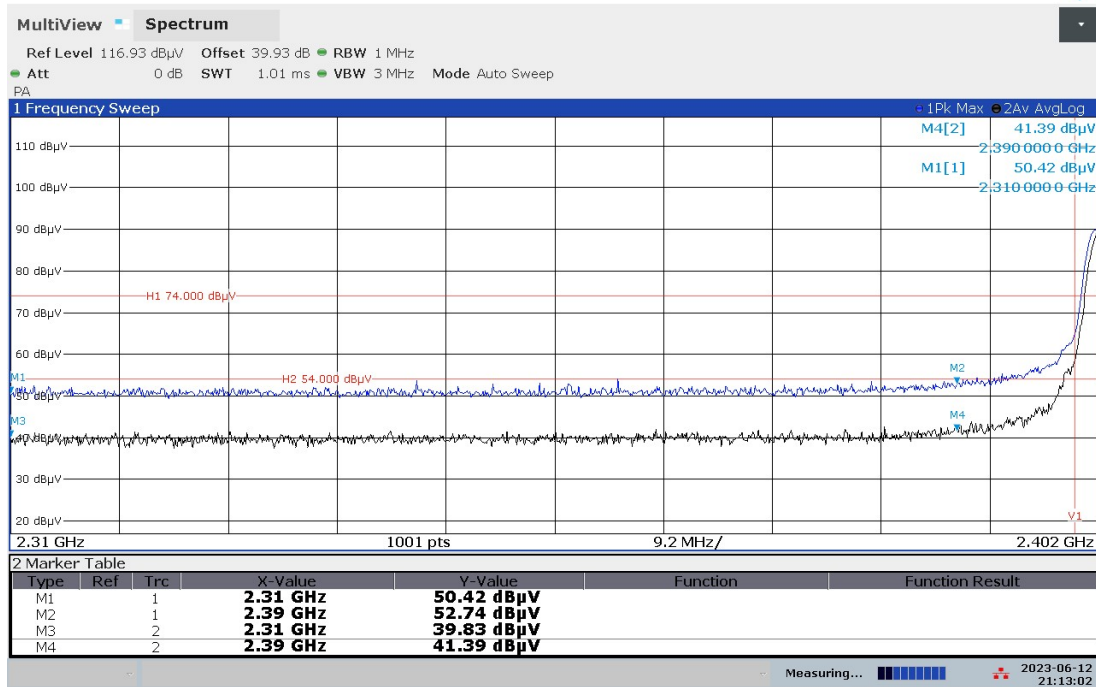
Limits – FCC Part §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within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

9.4 Setup Photographs:

Radiated Emissions Test Setup (Worst-case)

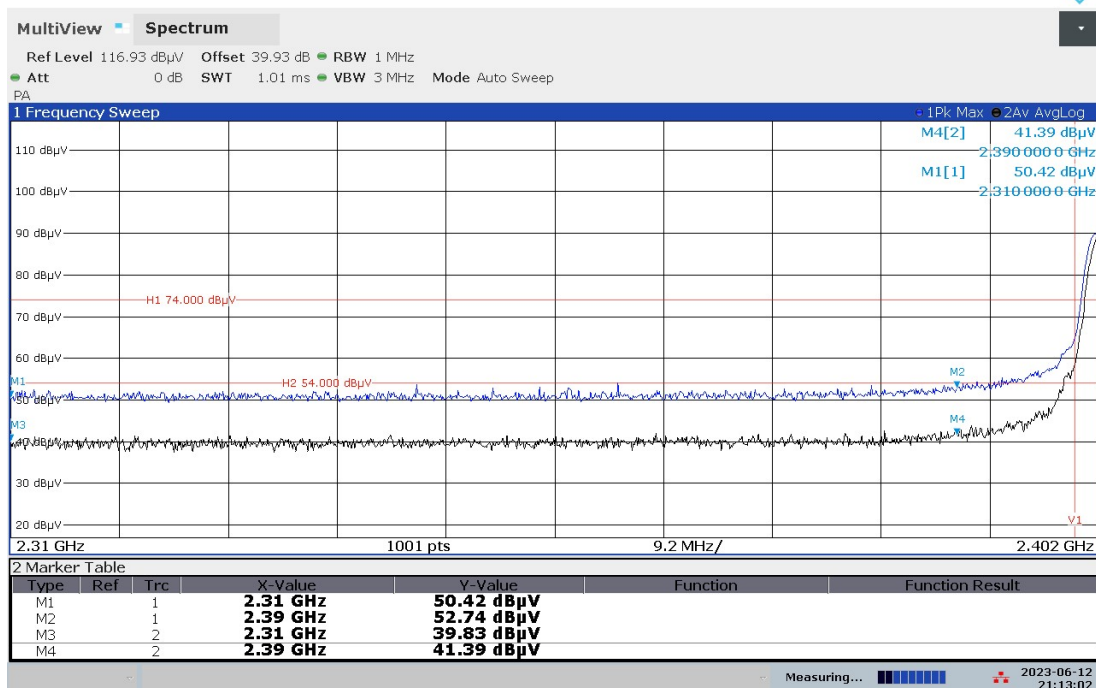


Lower Band Edge – Peak Readings Compared to Peak Limit (FCC 15.209), 74 dBμV/m



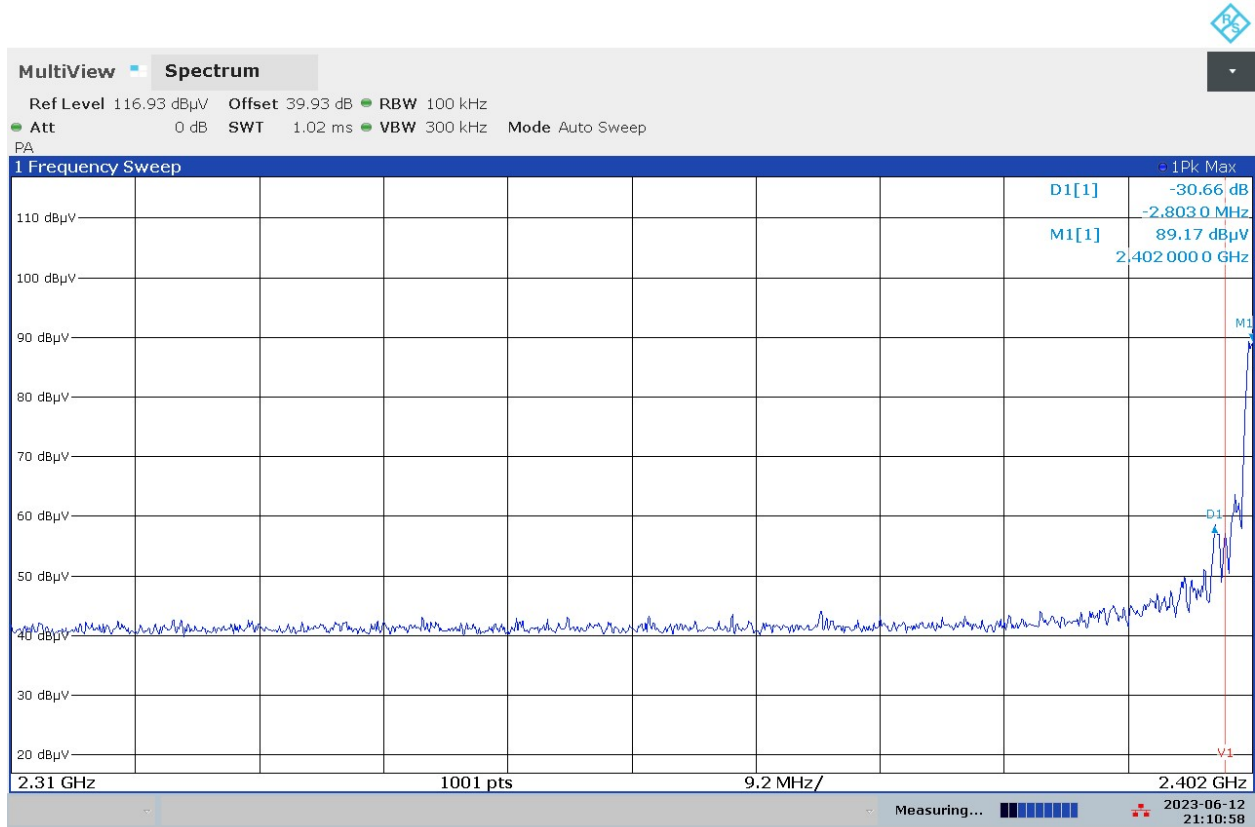
09:13:03 PM 06/12/2023

Lower Band Edge – Average Readings Compared to Average limit (FCC 15.209), 54 dBμV/m



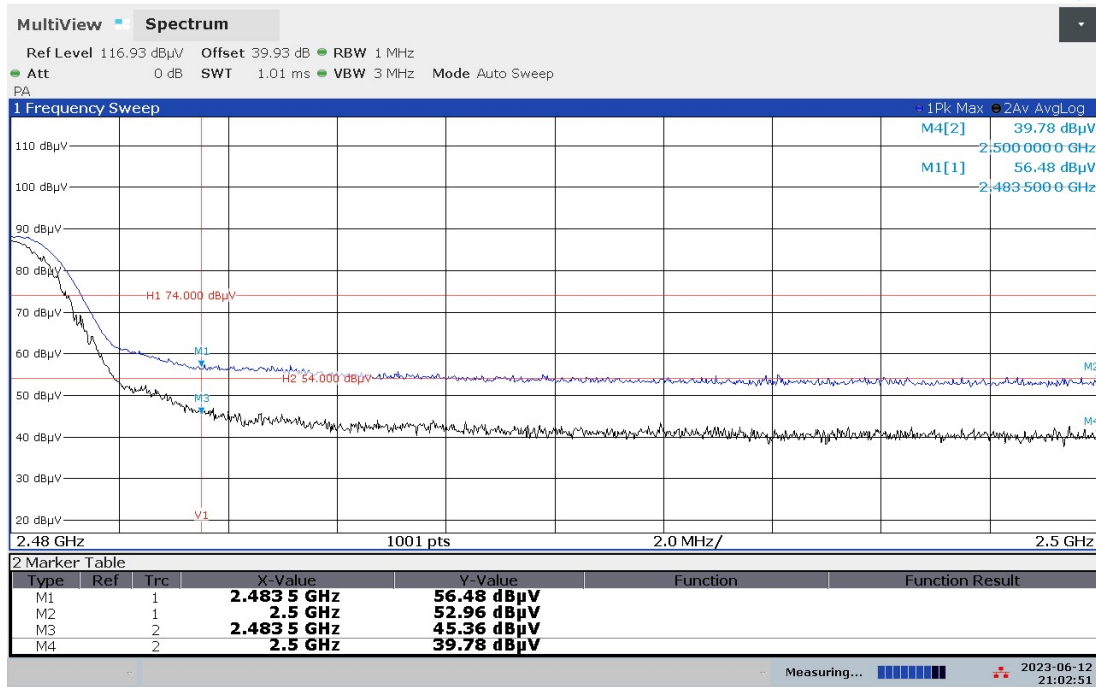
09:13:03 PM 06/12/2023

Lower Band Edge – Peak Readings Compared to 20 dBc limit (FCC 15.247 (d))



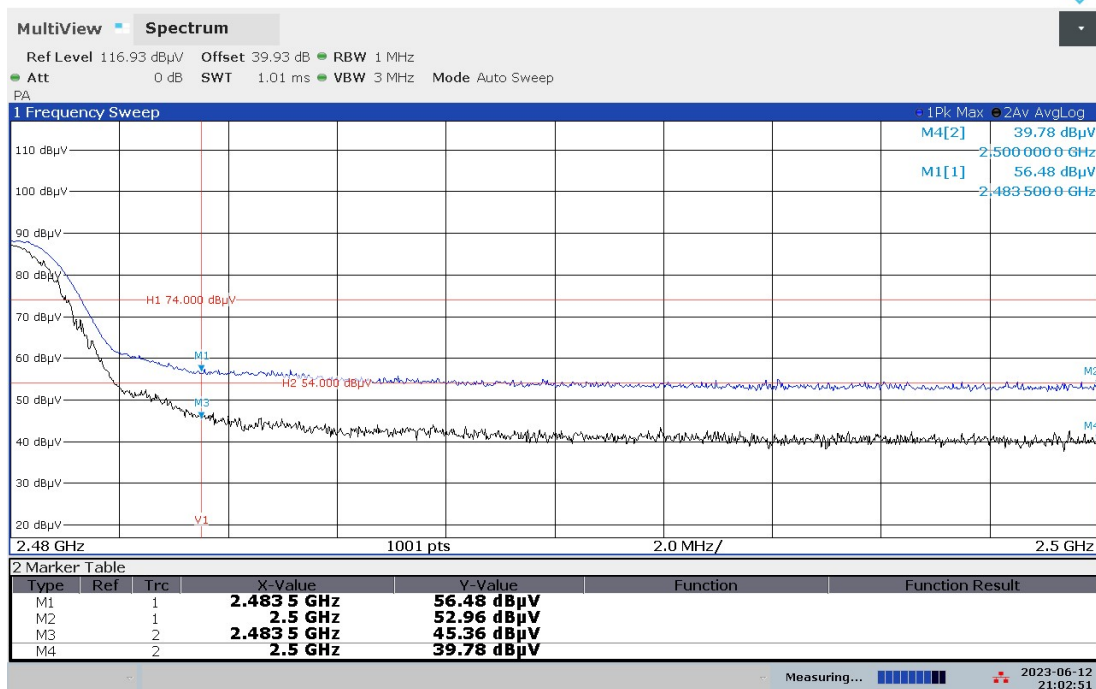
09:10:59 PM 06/12/2023

Upper Band Edge – Peak Readings Compared to Peak Limit (FCC 15.209), 74 dBμV/m



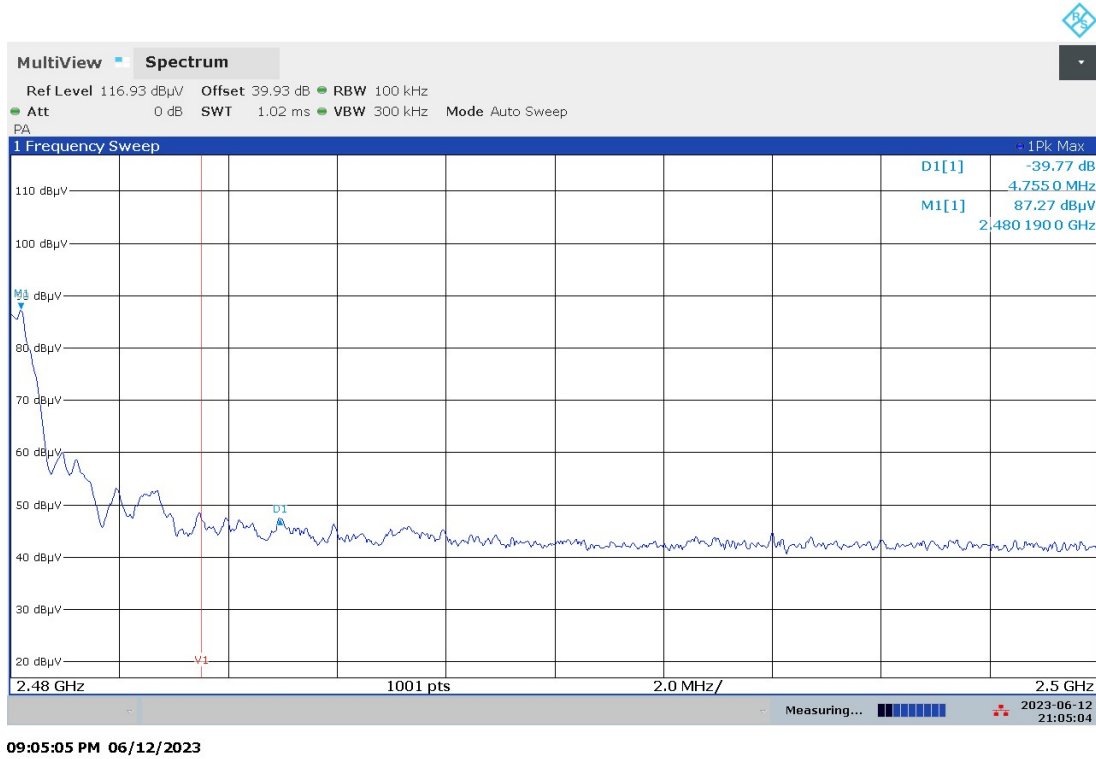
09:02:51 PM 06/12/2023

Upper Band Edge – Average Readings Compared to Average Limit (FCC 15.209), 54 dBμV/m



09:02:51 PM 06/12/2023

Upper Band Edge – Peak Readings Compared to 20 dBc limit (FCC 15.247 (d))



Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Section 9.3 Pretest Verification w/BB source: Yes		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
06/12/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	38	999

Notes: The worst-case axis was used for the final measurements. All cable and attenuation factors were internally compensated as dB offset.

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 ICES 003, ANSI C 63.10, 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	5.0 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.9 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.1 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	4.7 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	4.7 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 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/15/2023	03/15/2024
145108'	EMI Test Receiver (20Hz - 40GHz)	Rohde & Schwarz	ESIB40	100209	06/28/2023	06/28/2024
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/20/2022	09/20/2023
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	06/23/2023	06/23/2024
IW001'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/18/2023	02/18/2024
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/18/2023	02/18/2024
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/25/2023	01/25/2024
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	11/14/2022	11/14/2023
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	02/18/2023	02/18/2024
HS003'	10m under floor cable	Huber-Schuner	10m-1	HS003	02/18/2023	02/18/2024
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/27/2022	09/27/2023
REA004'	3GHz High Pass Filter	Reactel, Inc	7HSX-3G/18G-S11	06-1	02/14/2023	02/14/2024
REA006'	18GHz High Pass Filter	Reactel, Inc	7HS-18G/40G K11	(06)1	04/25/2023	04/25/2024
ETS004'	18-40GHz horn antenna	ets004	3116C	00218579	02/23/2023	02/23/2024
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	02/25/2023	02/25/2024
CBLHF2012-2M-2'	2m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252675002	02/18/2023	02/18/2024
PRE12'	Pre-amplifier	Com Power	PAM-118A	18040117	12/17/2022	12/17/2023
ETS003'	9kHz-30MHz Active Loop Antenna	ETS Lindgren	6502	00143396	09/06/2022	09/06/2023

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2022.0.27.0

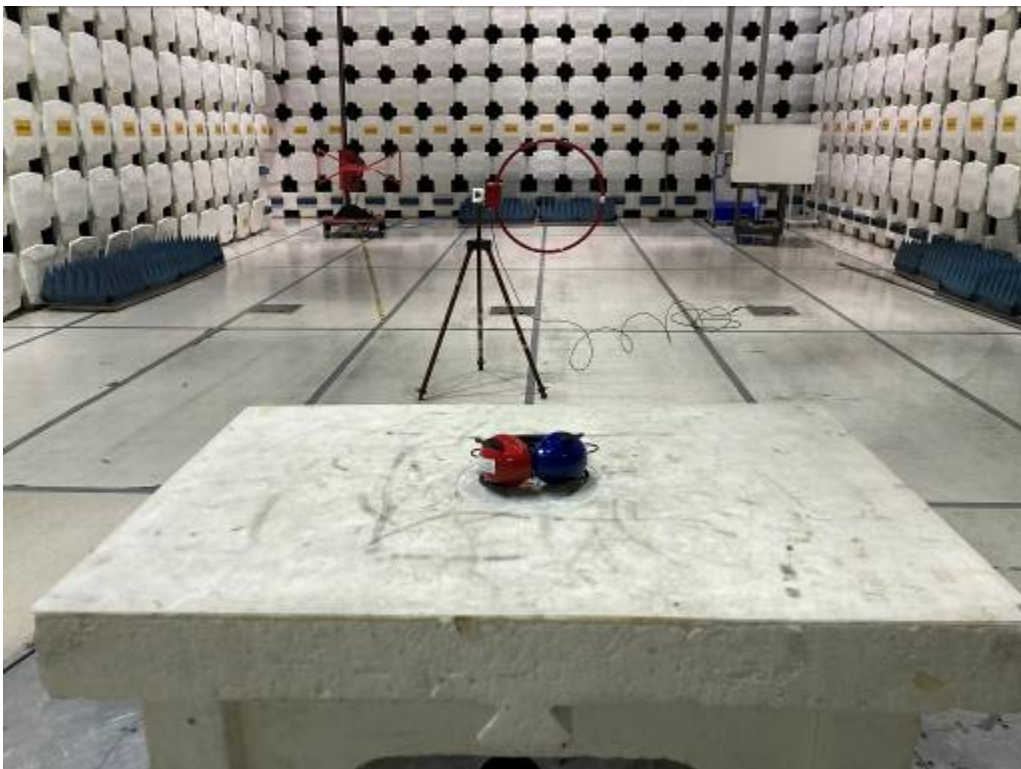
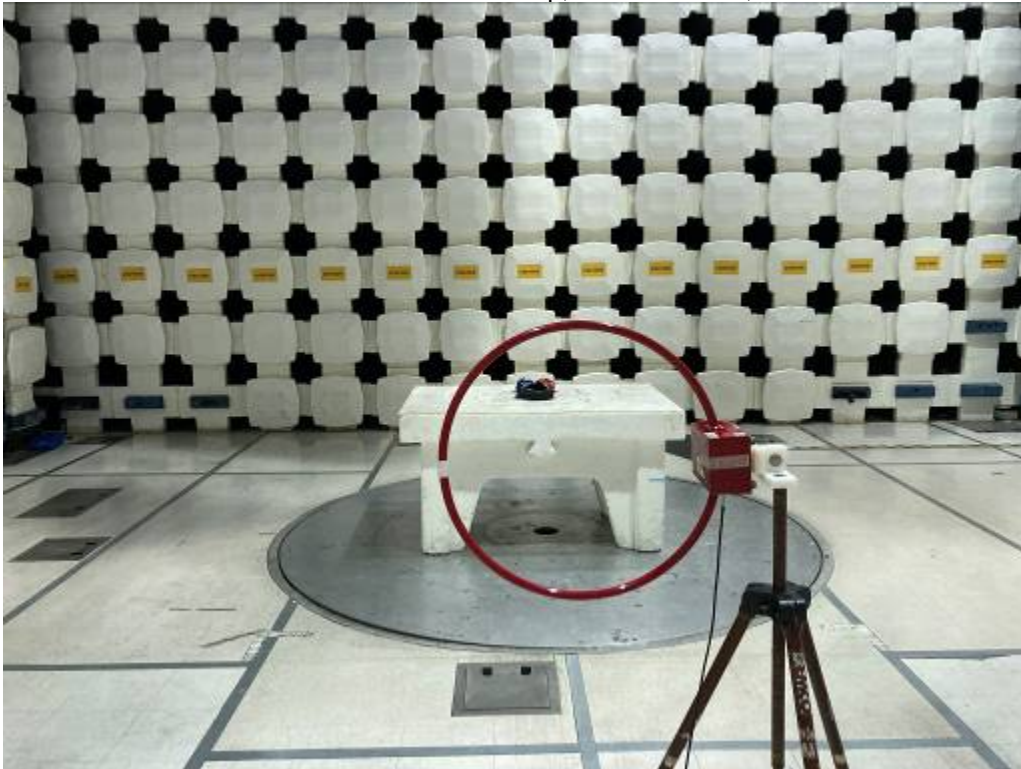
10.3 Results:

The sample tested was found to Comply.

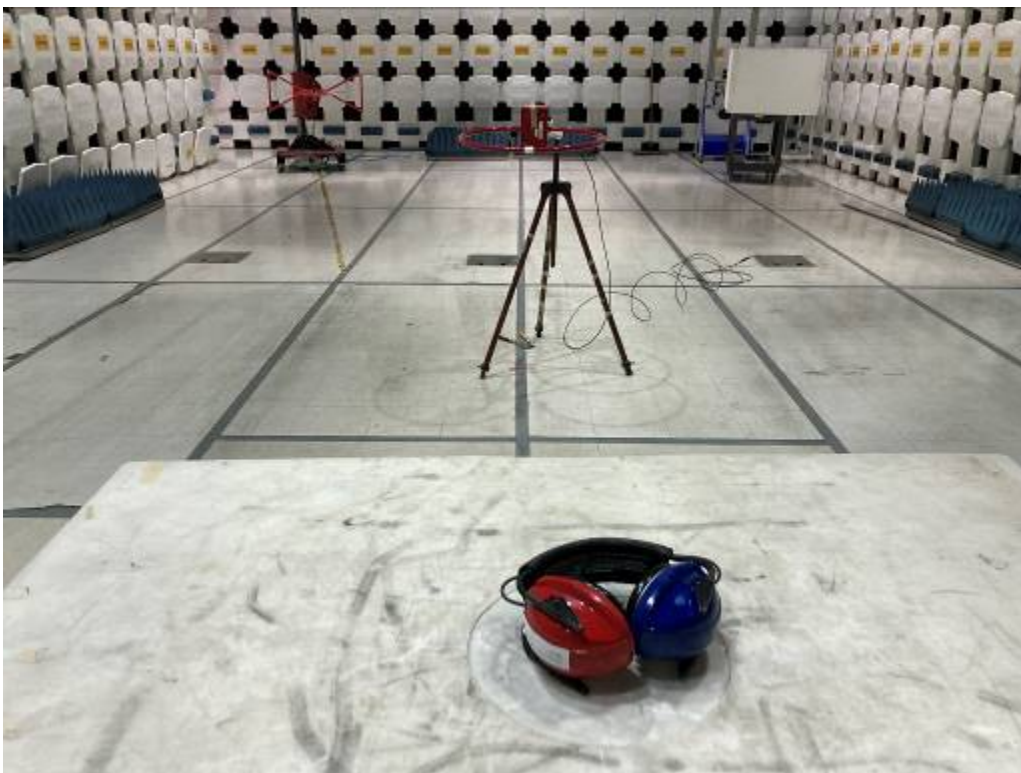
Limits – FCC Part §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within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

10.4 Setup Photographs:

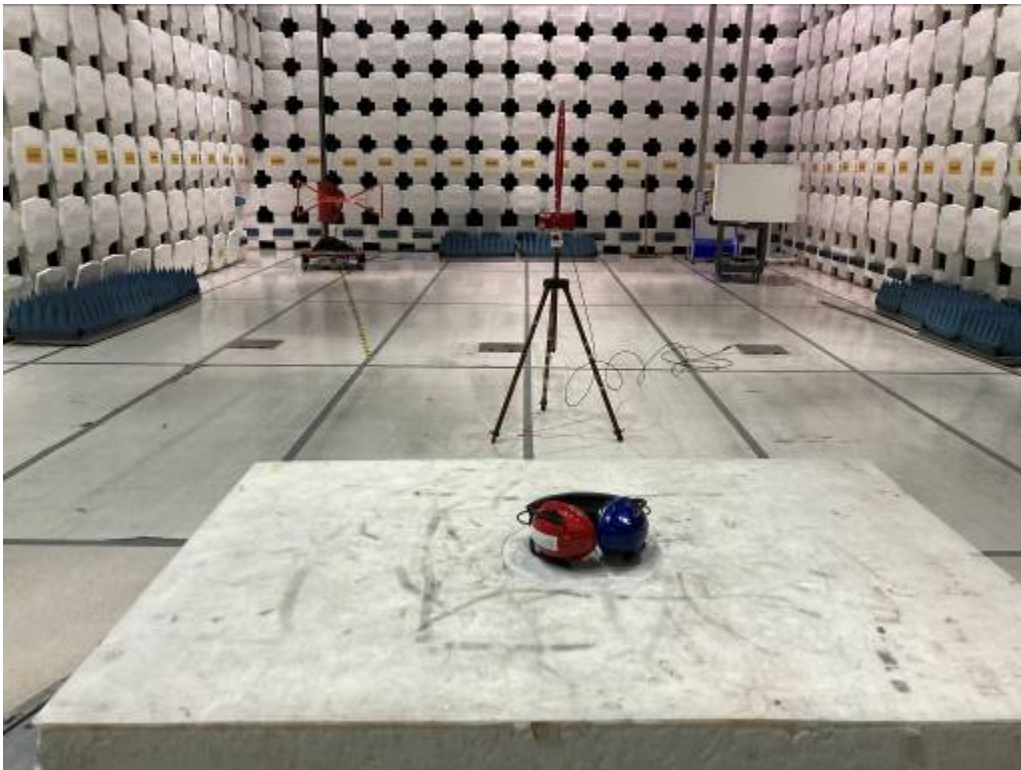
Radiated Emissions Test Setup, 9 kHz-30 MHz, X-Axis



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



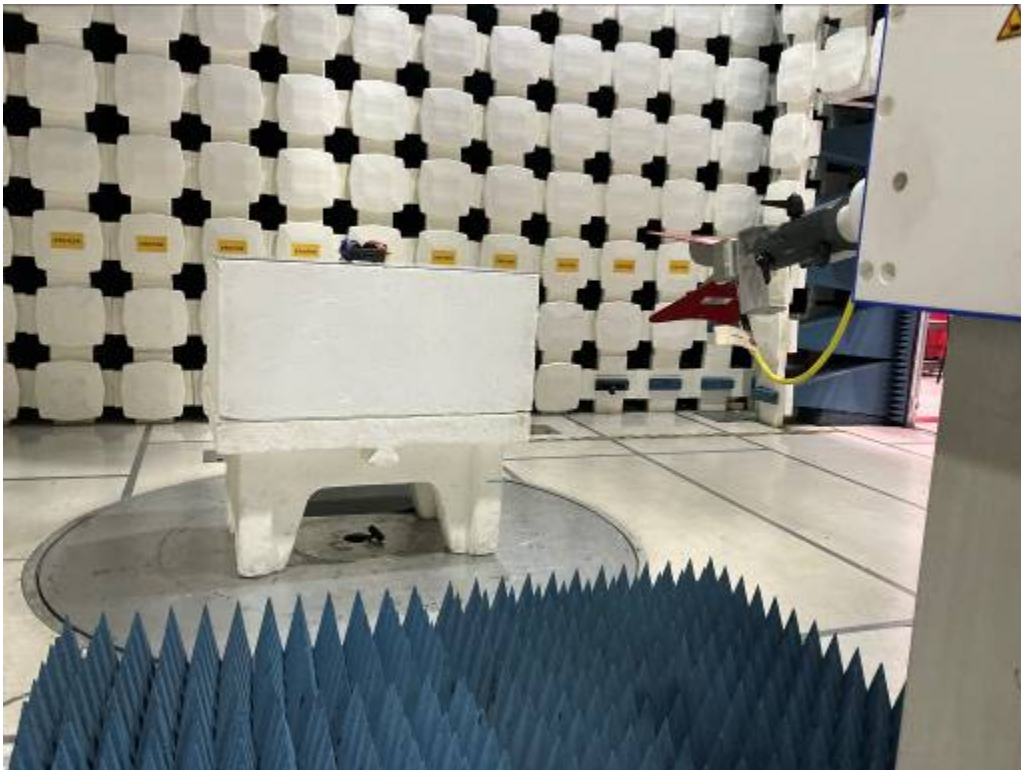
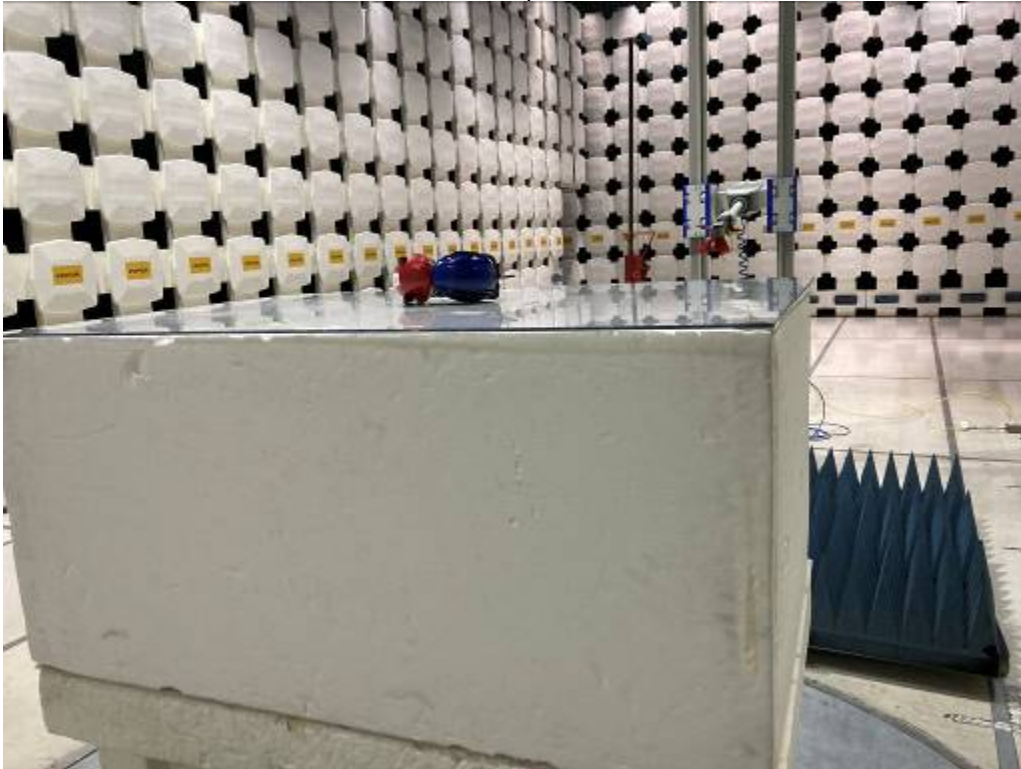
Radiated Emissions Test Setup, 9 kHz-30 MHz, Z-Axis



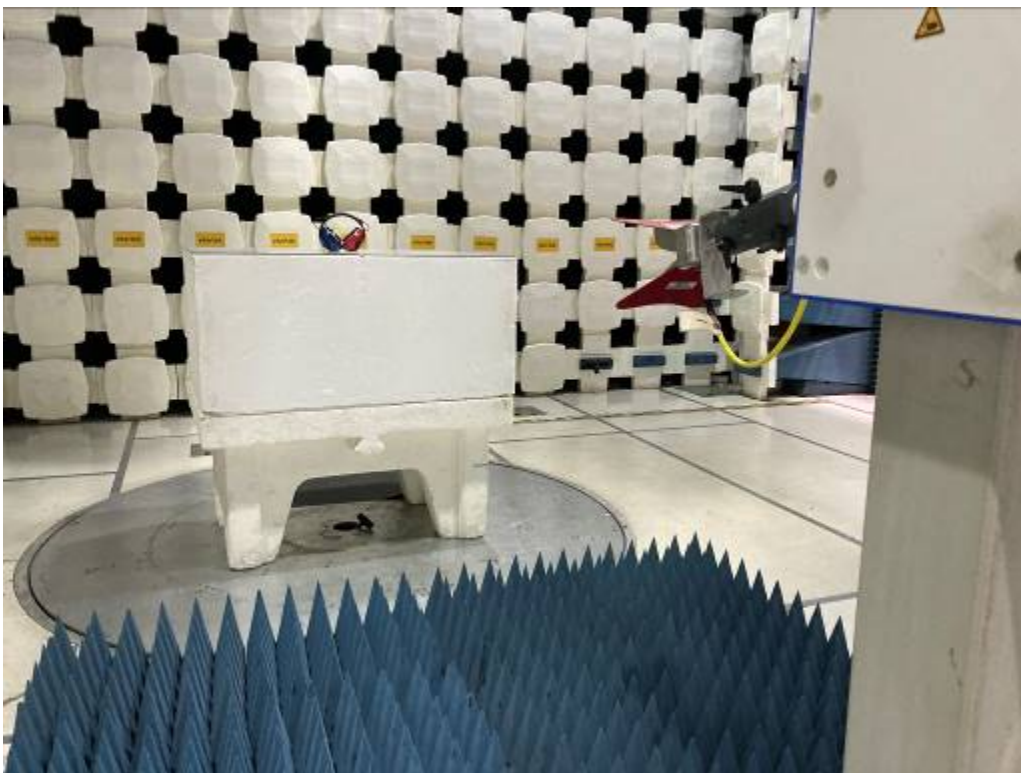
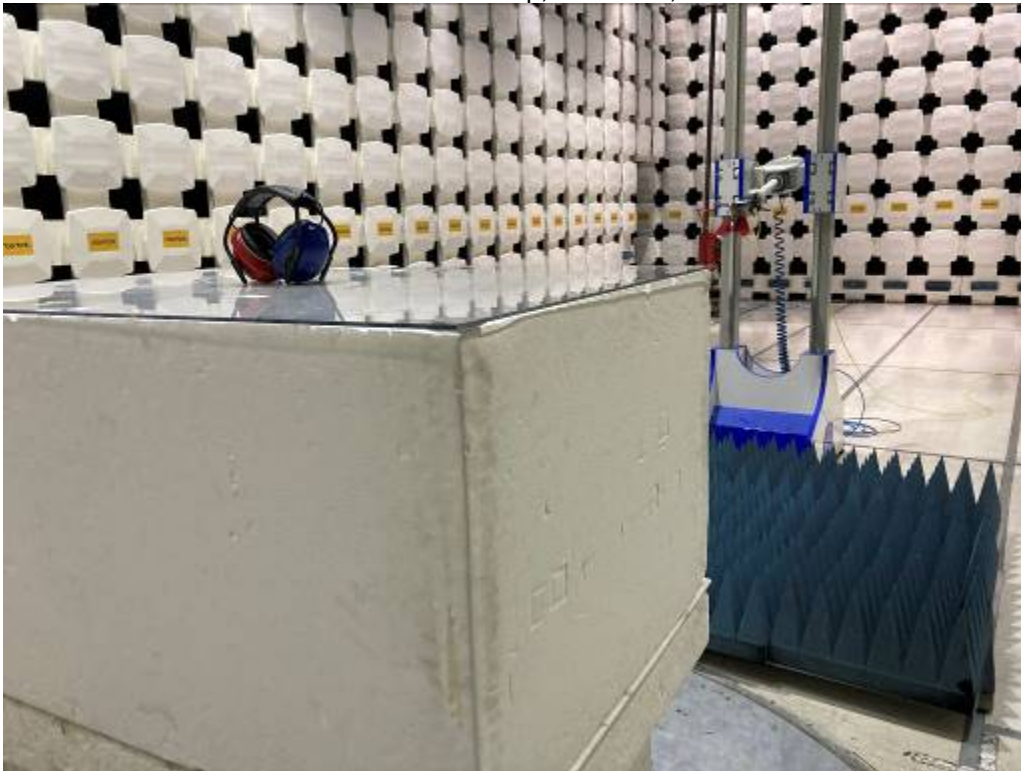
Radiated Emissions Test Setup, 30-1000 MHz (worst-case orientation is presented here)



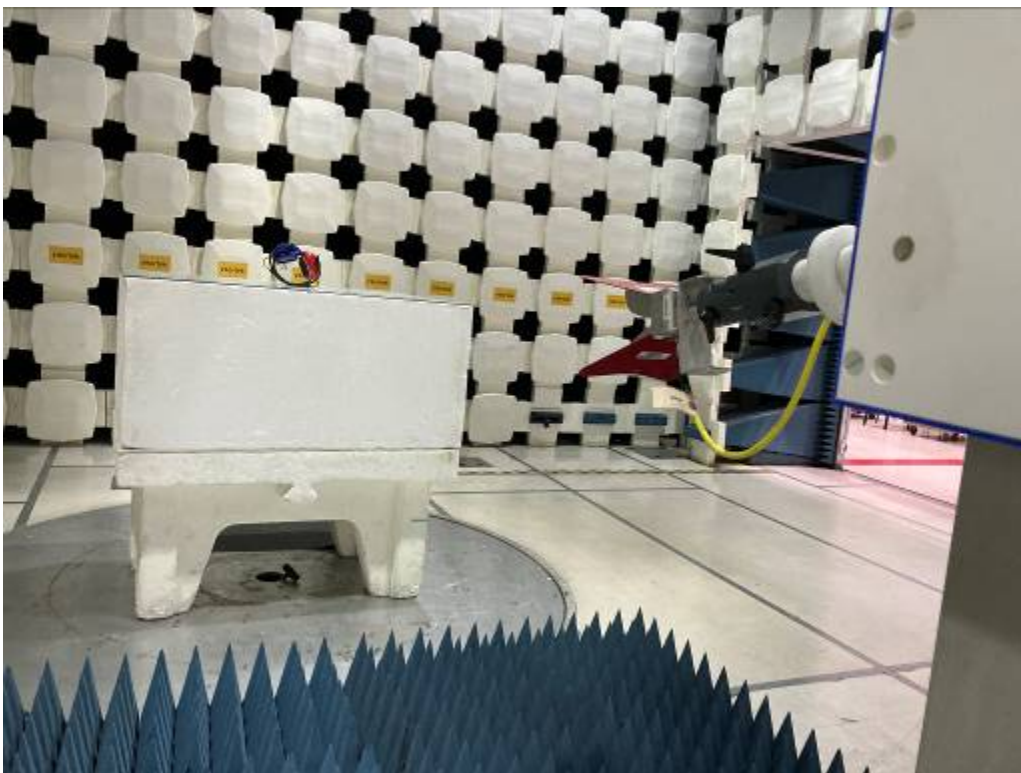
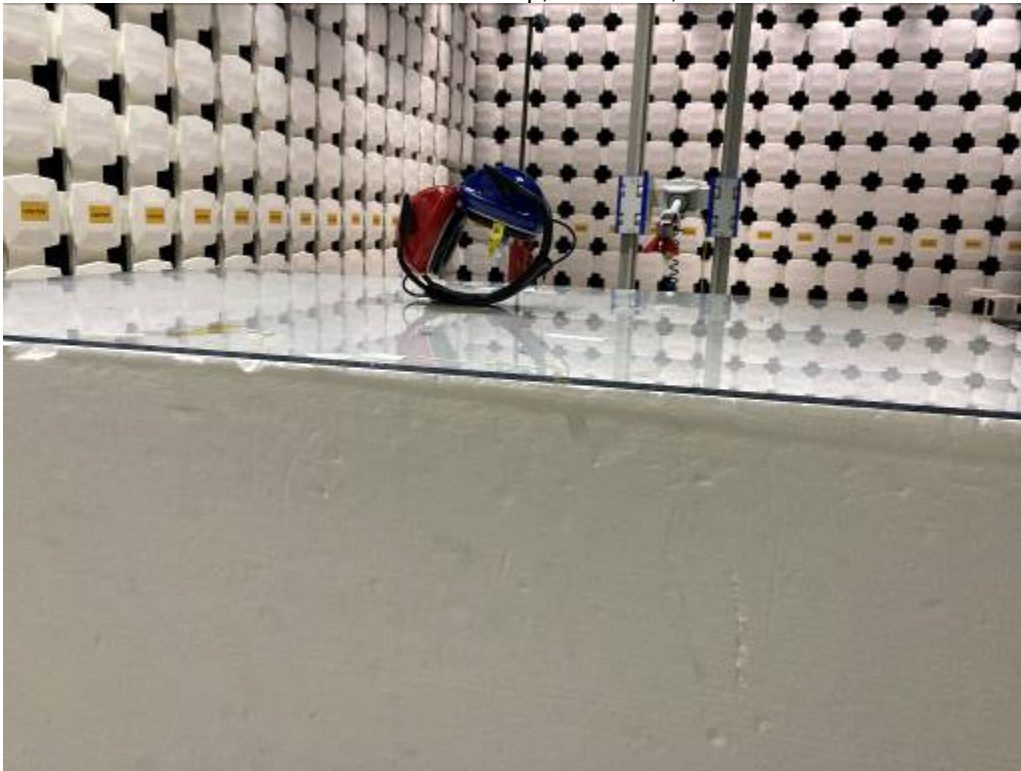
Radiated Emissions Test Setup, 1-18 GHz, EUT on X-Axis



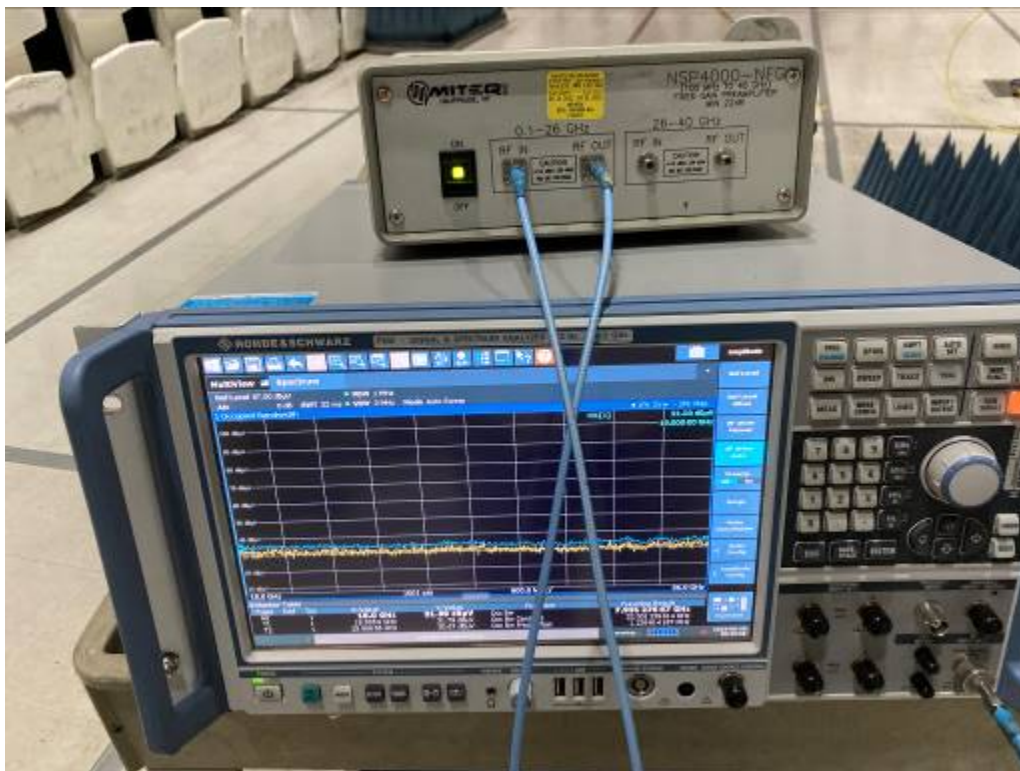
Radiated Emissions Test Setup, 1-18 GHz, EUT on Y-Axis



Radiated Emissions Test Setup, 1-18 GHz, EUT on Z-Axis



Radiated Emissions Test Setup, 18-25 GHz

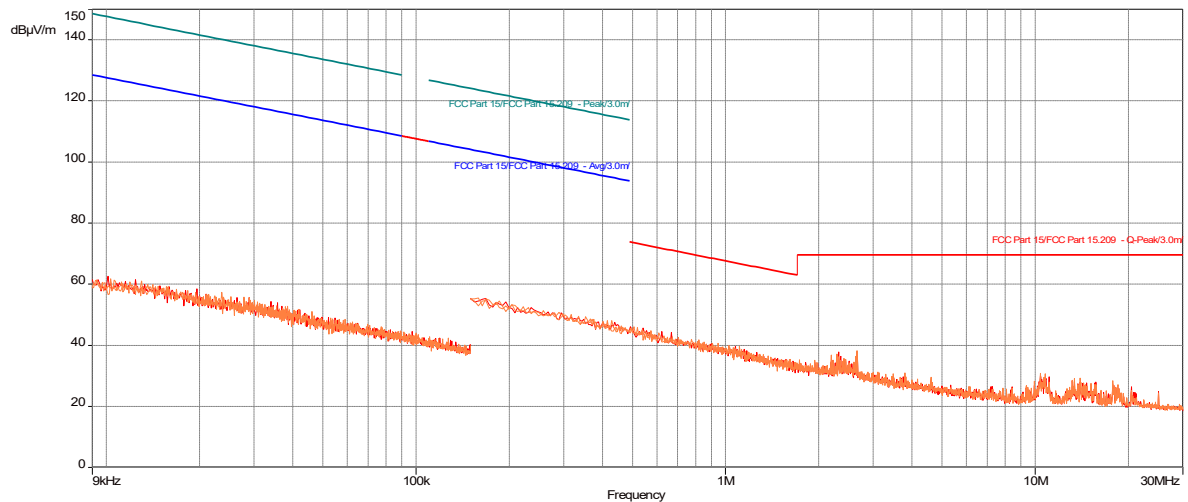


10.5 Plots / Data:

9 kHz-30 MHz

Test Information:

Date and Time	6/14/2023 9:36:58 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	37%
Atmospheric Pressure	990 mB
Comments	RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209)_Tx Mid Channel Worst-case orientation

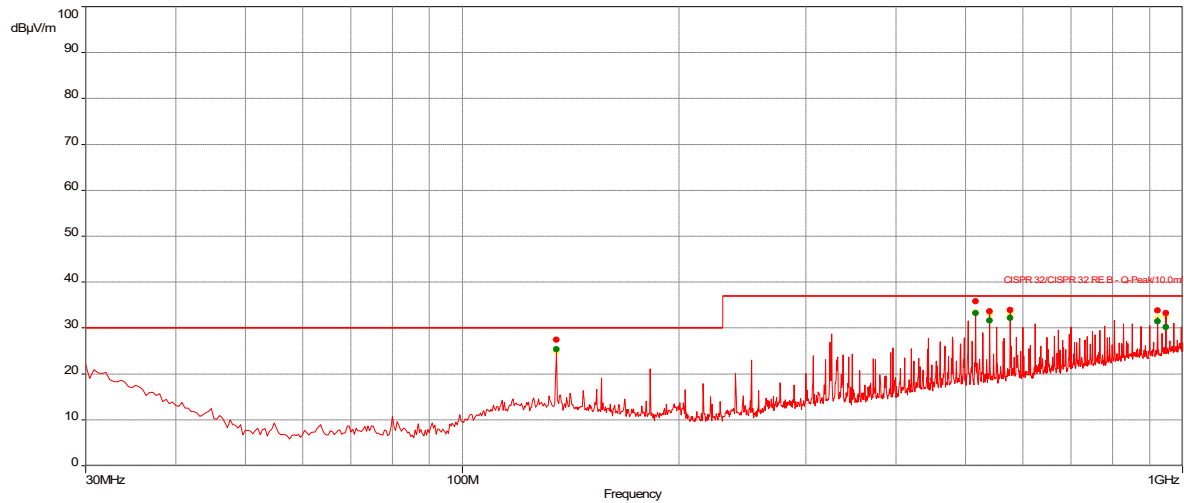
Graph:

Results: Only the worst-case channel was selected for testing in this frequency range. No emission was detected.

Transmit at low channel (EUT sits on its short side, worst-case orientation), 2402 MHz, 30-1000 MHz

Test Information:

Date and Time	6/14/2023 4:22:53 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	37%
Atmospheric Pressure	990 mB
Comments	RE 30-1000MHz_Battery power_Tx Low CH_Worst-case orientation

Graph:**Results:**

QuasiPeak (PASS) (6)

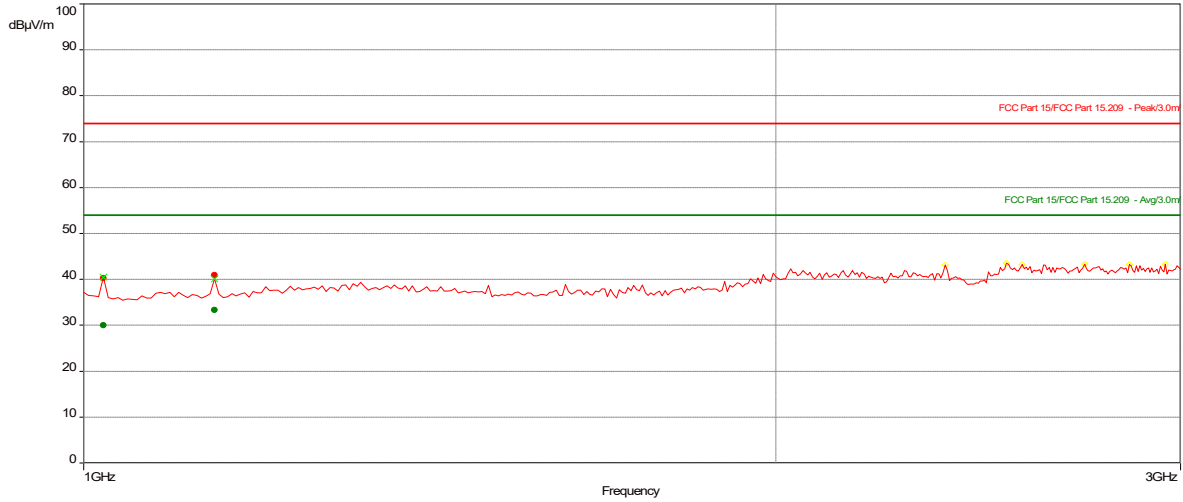
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
135.1684211	25.40	30.00	-4.60	359.00	3.24	Horizontal	120k	-18.83
516	33.27	37.00	-3.73	35.00	1.00	Horizontal	120k	-12.97
539.9684211	31.69	37.00	-5.31	44.00	1.00	Horizontal	120k	-12.43
575.9684211	32.27	37.00	-4.73	60.00	1.00	Horizontal	120k	-11.80
923.9684211	31.48	37.00	-5.52	243.00	1.77	Horizontal	120k	-5.89
947.9684211	30.20	37.00	-6.80	84.00	1.00	Vertical	120k	-5.27

Transmit at low channel (EUT on X-Axis), 2402 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 6:51:31 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx Low CH 2402 MHz_X-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	40.29	74.00	-33.71	321.00	2.38	Horizontal	1M	-23.26
1140	41.00	74.00	-33.00	123.00	1.21	Horizontal	1M	-22.54

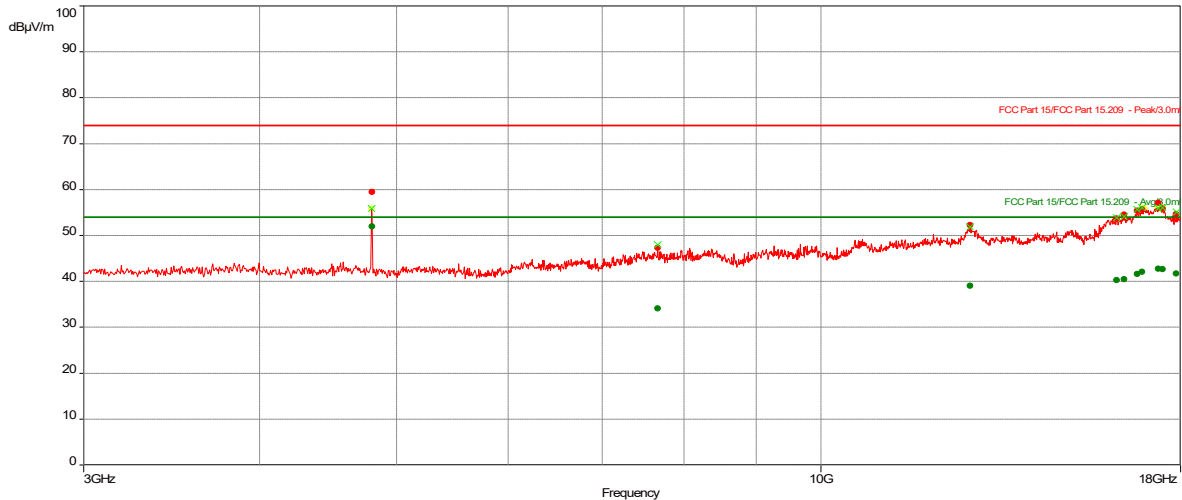
Average (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	30.09	54.00	-23.91	321.00	2.38	Horizontal	1M	-23.26
1140	33.37	54.00	-20.63	123.00	1.21	Horizontal	1M	-22.54

Transmit at low channel (EUT on X-Axis), 2402 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 7:31:08 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx Low CH 2402 MHz_X-Axis

Graph:**Results:****Peak (PASS) (10)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4804.473684	59.52	74.00	-14.48	297.00	1.54	Vertical	1M	-11.73
7664.736842	47.34	74.00	-26.66	140.00	1.91	Horizontal	1M	-7.43
12766.57895	52.25	74.00	-21.75	43.00	2.08	Vertical	1M	1.90
16215.78947	53.74	74.00	-20.26	206.00	3.06	Vertical	1M	4.07
16415.52632	54.58	74.00	-19.42	180.00	3.49	Horizontal	1M	4.38
16769.47368	55.43	74.00	-18.57	94.00	2.11	Vertical	1M	5.57
16907.10526	55.73	74.00	-18.27	308.00	2.45	Horizontal	1M	5.67
17356.84211	57.12	74.00	-16.88	359.00	3.86	Horizontal	1M	5.45
17483.68421	55.89	74.00	-18.11	320.00	1.24	Horizontal	1M	5.69
17877.36842	54.62	74.00	-19.38	155.00	3.73	Horizontal	1M	6.08

Average (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4804.473684	52.01	54.00	-1.99	297.00	1.54	Vertical	1M	-11.73
7664.736842	34.10	54.00	-19.90	140.00	1.91	Horizontal	1M	-7.43
12766.57895	39.11	54.00	-14.89	43.00	2.08	Vertical	1M	1.90
16215.78947	40.33	54.00	-13.67	206.00	3.06	Vertical	1M	4.07
16415.52632	40.54	54.00	-13.46	180.00	3.49	Horizontal	1M	4.38
16769.47368	41.60	54.00	-12.40	94.00	2.11	Vertical	1M	5.57
16907.10526	42.12	54.00	-11.88	308.00	2.45	Horizontal	1M	5.67
17356.84211	42.77	54.00	-11.23	359.00	3.86	Horizontal	1M	5.45
17483.68421	42.69	54.00	-11.31	320.00	1.24	Horizontal	1M	5.69
17877.36842	41.72	54.00	-12.28	155.00	3.73	Horizontal	1M	6.08

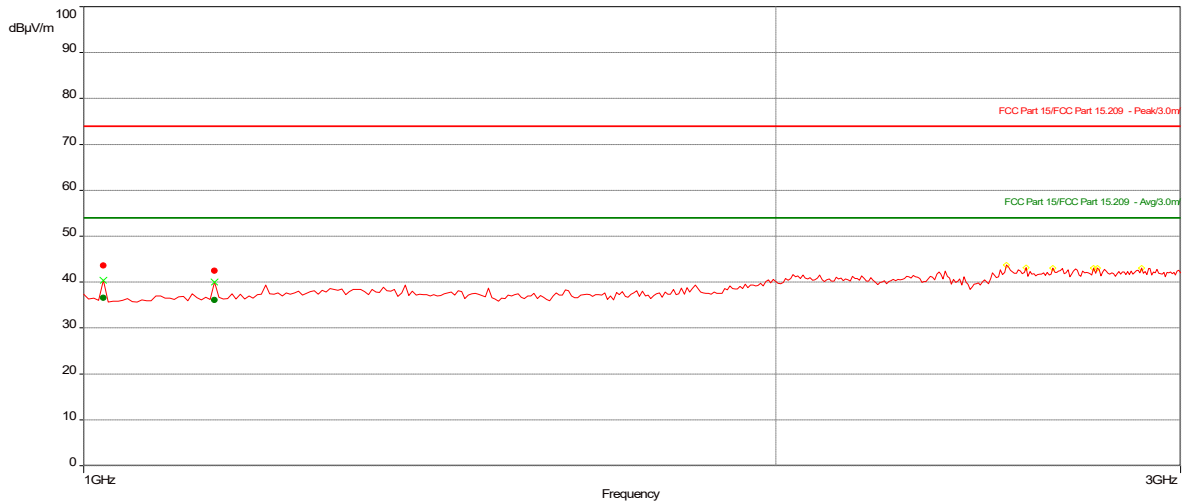
Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at low channel (EUT Y-Axis), 2402 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 7:03:09 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx Low CH 2402 MHz_Y-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	43.68	74.00	-30.32	202.00	1.27	Vertical	1M	-23.26
1140	42.47	74.00	-31.53	194.00	1.78	Horizontal	1M	-22.54

Average (PASS) (2)

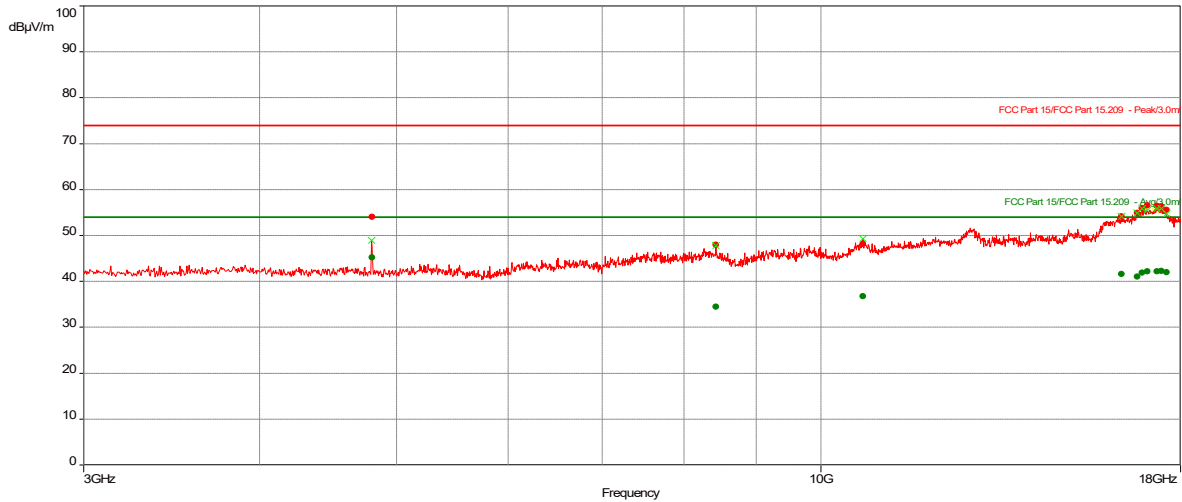
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	36.60	54.00	-17.40	202.00	1.27	Vertical	1M	-23.26
1140	36.10	54.00	-17.90	194.00	1.78	Horizontal	1M	-22.54

Transmit at low channel (EUT on Y-Axis), 2402 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 8:09:20 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx Low CH 2402 MHz_Y-Axis

Graph:



Results:

Peak (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4804.473684	54.06	74.00	-19.94	238.00	2.72	Vertical	1M	-11.73
8424.473684	48.05	74.00	-25.95	45.00	1.95	Horizontal	1M	-7.01
10716.31579	48.21	74.00	-25.79	334.00	1.61	Vertical	1M	-3.32
16349.47368	54.22	74.00	-19.78	5.00	2.18	Horizontal	1M	4.26
16766.57895	54.93	74.00	-19.07	29.00	2.75	Vertical	1M	5.56
16897.63158	56.03	74.00	-17.97	174.00	3.36	Horizontal	1M	5.67
17055.78947	56.56	74.00	-17.44	79.00	1.27	Horizontal	1M	5.63
17321.57895	56.51	74.00	-17.49	100.00	2.95	Horizontal	1M	5.44
17445.26316	56.40	74.00	-17.60	10.00	2.55	Vertical	1M	5.62
17590.52632	55.57	74.00	-18.43	143.00	1.88	Horizontal	1M	5.80

Average (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4804.473684	45.28	54.00	-8.72	238.00	2.72	Vertical	1M	-11.73
8424.473684	34.48	54.00	-19.52	45.00	1.95	Horizontal	1M	-7.01
10716.31579	36.80	54.00	-17.20	334.00	1.61	Vertical	1M	-3.32
16349.47368	41.62	54.00	-12.38	5.00	2.18	Horizontal	1M	4.26
16766.57895	41.08	54.00	-12.92	29.00	2.75	Vertical	1M	5.56
16897.63158	41.89	54.00	-12.11	174.00	3.36	Horizontal	1M	5.67
17055.78947	42.17	54.00	-11.83	79.00	1.27	Horizontal	1M	5.63
17321.57895	42.22	54.00	-11.78	100.00	2.95	Horizontal	1M	5.44
17445.26316	42.33	54.00	-11.67	10.00	2.55	Vertical	1M	5.62
17590.52632	42.04	54.00	-11.96	143.00	1.88	Horizontal	1M	5.80

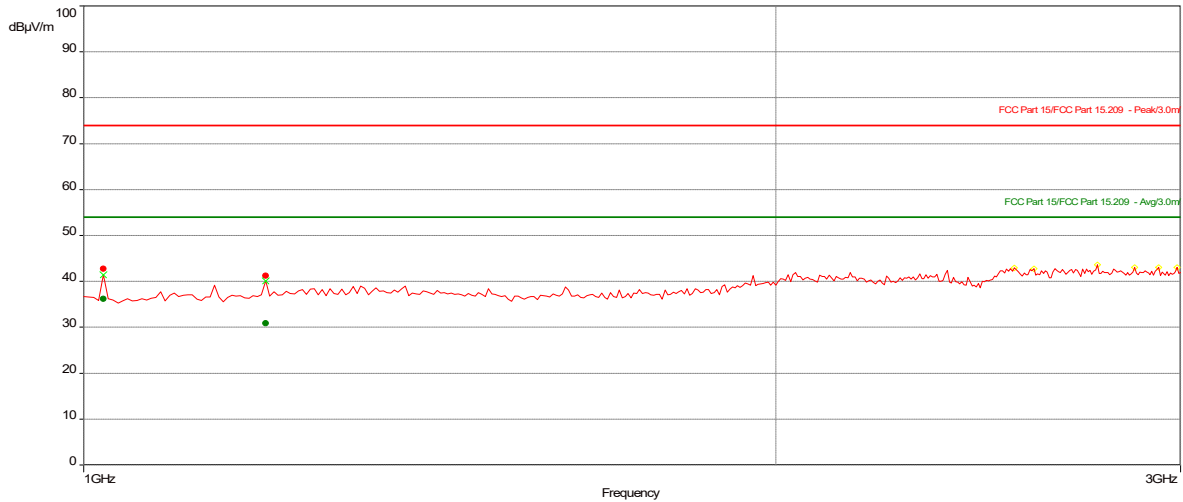
Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at low channel (EUT on Z-Axis), 2402 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx Low CH 2402 MHz_Z-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	42.79	74.00	-31.21	193.00	1.64	Horizontal	1M	-23.26
1200	41.30	74.00	-32.70	179.00	2.05	Horizontal	1M	-21.58

Average (PASS) (2)

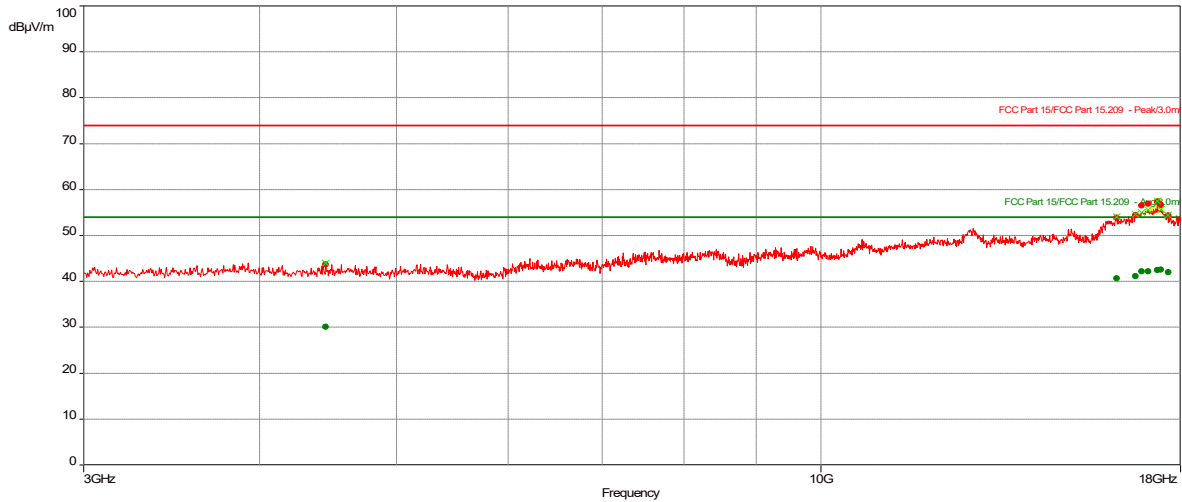
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	36.24	54.00	-17.76	193.00	1.64	Horizontal	1M	-23.26
1200	30.93	54.00	-23.07	179.00	2.05	Horizontal	1M	-21.58

Transmit at low channel (EUT on Z-Axis), 2402 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 8:48:12 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx Low CH 2402 MHz_Z-Axis

Graph:



Results:

Peak (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4455.526316	43.71	74.00	-30.29	2.00	3.93	Vertical	1M	-12.29
16214.47368	53.94	74.00	-20.06	267.00	3.86	Vertical	1M	4.07
16718.94737	54.52	74.00	-19.48	278.00	2.69	Horizontal	1M	5.45
16890.78947	56.60	74.00	-17.40	329.00	4.00	Vertical	1M	5.68
17073.42105	56.96	74.00	-17.04	144.00	2.62	Horizontal	1M	5.59
17328.42105	57.42	74.00	-16.58	50.00	1.00	Vertical	1M	5.44
17430	56.65	74.00	-17.35	325.00	1.51	Horizontal	1M	5.58
17637.89474	54.41	74.00	-19.59	249.00	1.41	Horizontal	1M	5.87

Average (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4455.526316	30.10	54.00	-23.90	2.00	3.93	Vertical	1M	-12.29
16214.47368	40.68	54.00	-13.32	267.00	3.86	Vertical	1M	4.07
16718.94737	41.15	54.00	-12.85	278.00	2.69	Horizontal	1M	5.45
16890.78947	42.26	54.00	-11.74	329.00	4.00	Vertical	1M	5.68
17073.42105	42.22	54.00	-11.78	144.00	2.62	Horizontal	1M	5.59
17328.42105	42.53	54.00	-11.47	50.00	1.00	Vertical	1M	5.44
17430	42.60	54.00	-11.40	325.00	1.51	Horizontal	1M	5.58
17637.89474	42.06	54.00	-11.94	249.00	1.41	Horizontal	1M	5.87

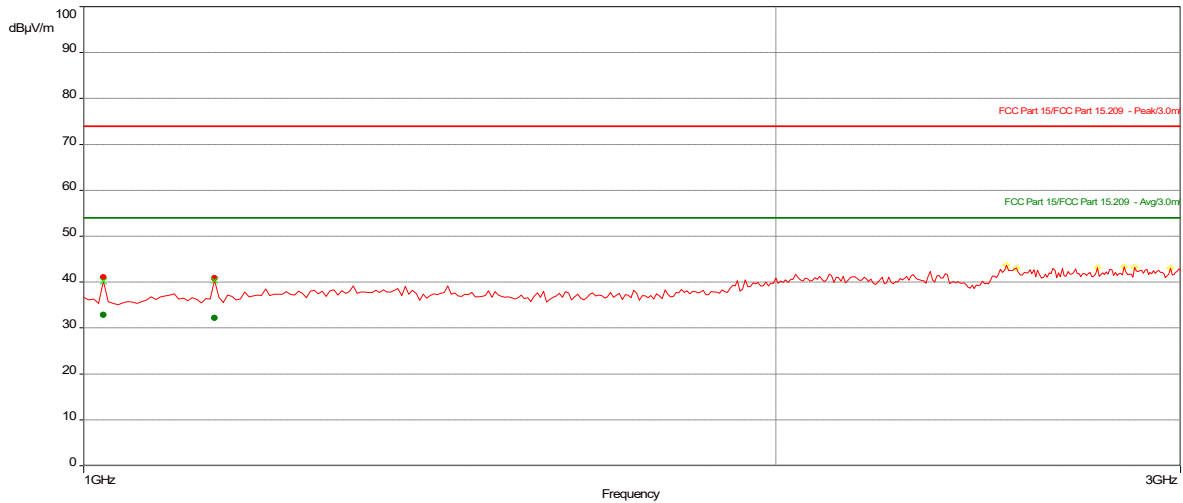
Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at Mid channel (EUT on X-Axis), 2442 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 7:29:27 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx Mid CH 2442 MHz_X-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1019.736842	41.08	74.00	-32.92	203.00	1.91	Horizontal	1M	-23.25
1140	40.87	74.00	-33.13	250.00	1.78	Horizontal	1M	-22.54

Average (PASS) (2)

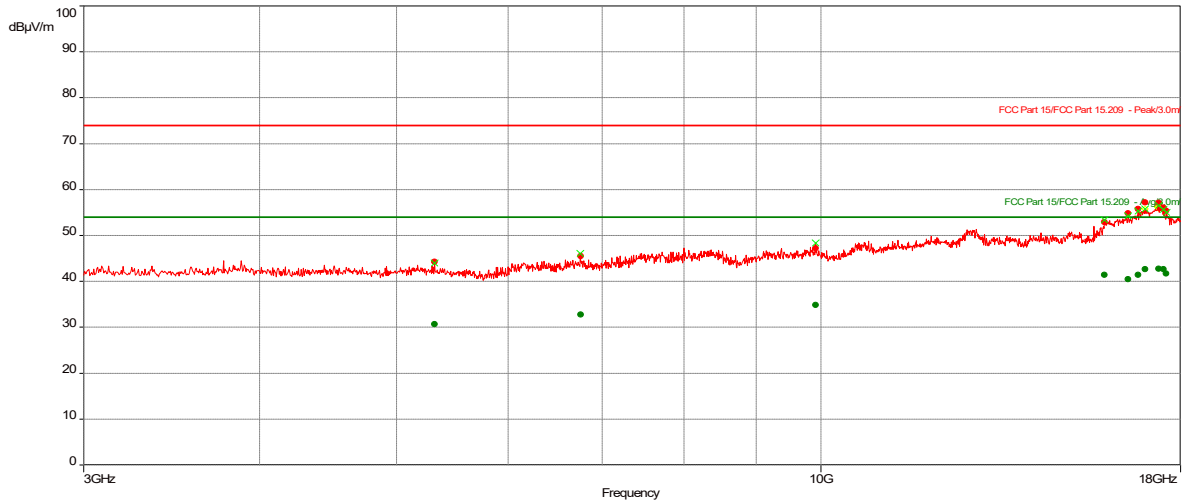
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1019.736842	32.88	54.00	-21.12	203.00	1.91	Horizontal	1M	-23.25
1140	32.26	54.00	-21.74	250.00	1.78	Horizontal	1M	-22.54

Transmit at Mid channel (EUT on X-Axis), 2442 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 9:23:24 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx Mid CH 2442 MHz_X-Axis

Graph:



Results:

Peak (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
5318.157895	44.32	74.00	-29.68	148.00	1.02	Horizontal	1M	-11.01
6752.894737	45.58	74.00	-28.42	154.00	2.15	Horizontal	1M	-8.47
9916.052632	47.29	74.00	-26.71	318.00	1.14	Horizontal	1M	-5.00
15895.26316	52.98	74.00	-21.02	149.00	2.58	Horizontal	1M	3.41
16517.63158	54.82	74.00	-19.18	44.00	1.00	Horizontal	1M	4.62
16797.63158	55.81	74.00	-18.19	318.00	3.86	Horizontal	1M	5.61
16991.84211	57.21	74.00	-16.79	348.00	2.79	Vertical	1M	5.69
17366.05263	57.13	74.00	-16.87	216.00	1.11	Horizontal	1M	5.46
17510.78947	56.07	74.00	-17.93	0.00	2.92	Horizontal	1M	5.72
17585.52632	55.47	74.00	-18.53	110.00	2.32	Vertical	1M	5.80

Average (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
5318.157895	30.68	54.00	-23.32	148.00	1.02	Horizontal	1M	-11.01
6752.894737	32.81	54.00	-21.19	154.00	2.15	Horizontal	1M	-8.47
9916.052632	34.93	54.00	-19.07	318.00	1.14	Horizontal	1M	-5.00
15895.26316	41.43	54.00	-12.57	149.00	2.58	Horizontal	1M	3.41
16517.63158	40.53	54.00	-13.47	44.00	1.00	Horizontal	1M	4.62
16797.63158	41.45	54.00	-12.55	318.00	3.86	Horizontal	1M	5.61
16991.84211	42.71	54.00	-11.29	348.00	2.79	Vertical	1M	5.69
17366.05263	42.74	54.00	-11.26	216.00	1.11	Horizontal	1M	5.46
17510.78947	42.70	54.00	-11.30	0.00	2.92	Horizontal	1M	5.72
17585.52632	41.72	54.00	-12.28	110.00	2.32	Vertical	1M	5.80

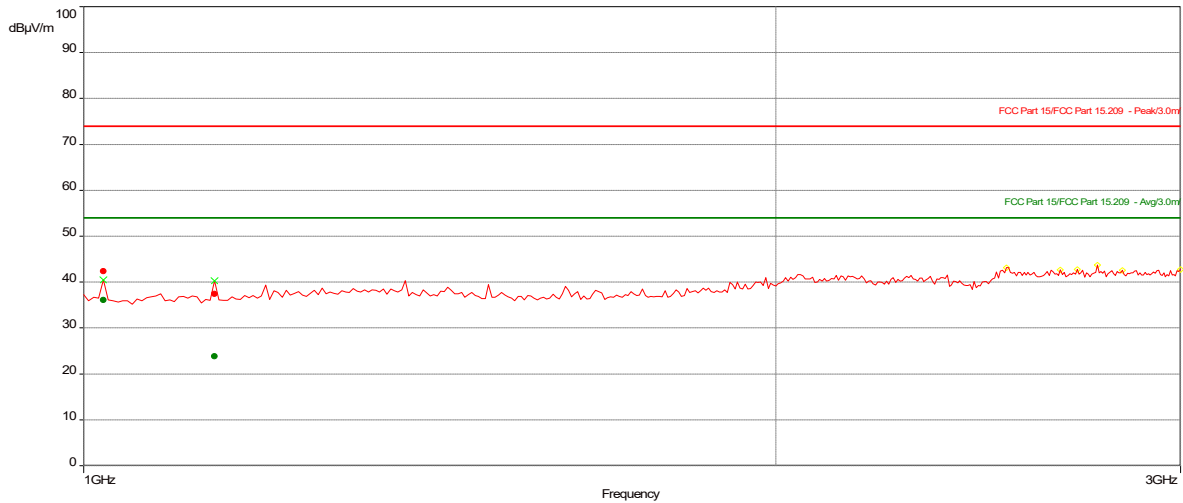
Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at Mid channel (EUT on Y-Axis), 2442 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 7:41:33 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_ Battery power_Tx Mid CH 2442 MHz_Y-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	42.39	74.00	-31.61	209.00	1.07	Horizontal	1M	-23.26
1140.263158	37.49	74.00	-36.51	200.00	3.49	Vertical	1M	-22.54

Average (PASS) (2)

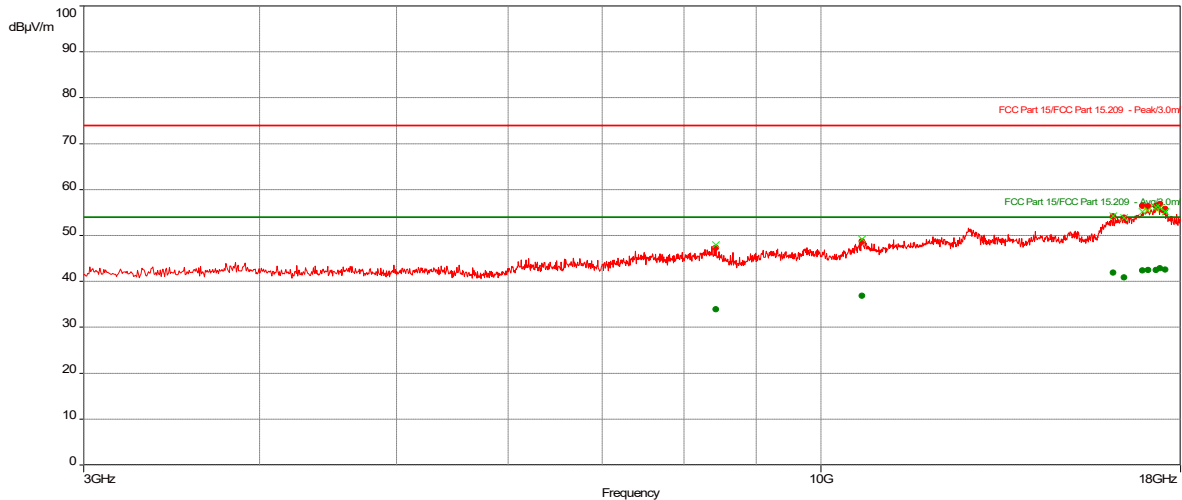
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	36.16	54.00	-17.84	209.00	1.07	Horizontal	1M	-23.26
1140.263158	23.90	54.00	-30.10	200.00	3.49	Vertical	1M	-22.54

Transmit at Mid channel (EUT on Y-Axis), 2442 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 9:59:31 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx Mid CH 2442 MHz_Y-Axis

Graph:



Results:

Peak (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
8424.473684	47.33	74.00	-26.67	159.00	3.83	Vertical	1M	-7.01
10695.26316	48.74	74.00	-25.26	70.00	4.00	Vertical	1M	-3.39
16121.57895	54.19	74.00	-19.81	119.00	3.06	Horizontal	1M	3.99
16413.68421	53.94	74.00	-20.06	273.00	2.05	Vertical	1M	4.37
16916.84211	56.44	74.00	-17.56	180.00	2.89	Vertical	1M	5.66
17068.94737	56.38	74.00	-17.62	264.00	1.44	Vertical	1M	5.60
17298.42105	56.51	74.00	-17.49	209.00	3.63	Vertical	1M	5.44
17399.47368	56.87	74.00	-17.13	294.00	1.07	Horizontal	1M	5.50
17555.78947	55.84	74.00	-18.16	240.00	1.31	Vertical	1M	5.77

Average (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
8424.473684	33.98	54.00	-20.02	159.00	3.83	Vertical	1M	-7.01
10695.26316	36.87	54.00	-17.13	70.00	4.00	Vertical	1M	-3.39
16121.57895	41.90	54.00	-12.10	119.00	3.06	Horizontal	1M	3.99
16413.68421	40.89	54.00	-13.11	273.00	2.05	Vertical	1M	4.37
16916.84211	42.42	54.00	-11.58	180.00	2.89	Vertical	1M	5.66
17068.94737	42.48	54.00	-11.52	264.00	1.44	Vertical	1M	5.60
17298.42105	42.51	54.00	-11.49	209.00	3.63	Vertical	1M	5.44
17399.47368	42.84	54.00	-11.16	294.00	1.07	Horizontal	1M	5.50
17555.78947	42.57	54.00	-11.43	240.00	1.31	Vertical	1M	5.77

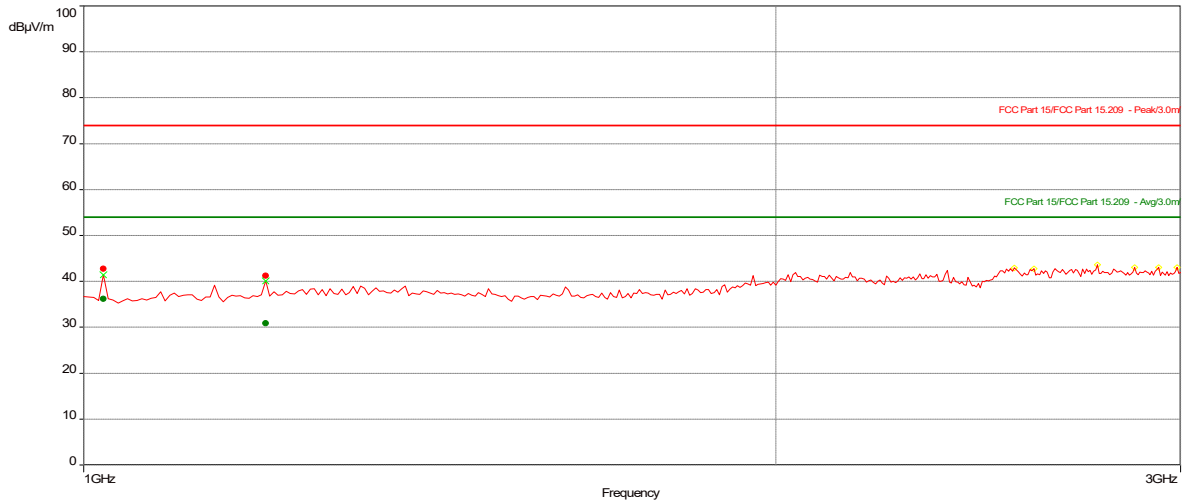
Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at Mid channel (EUT on Z-Axis), 2442 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 7:54:47 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx Mid CH 2442 MHz_Z-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	42.79	74.00	-31.21	193.00	1.64	Horizontal	1M	-23.26
1200	41.30	74.00	-32.70	179.00	2.05	Horizontal	1M	-21.58

Average (PASS) (2)

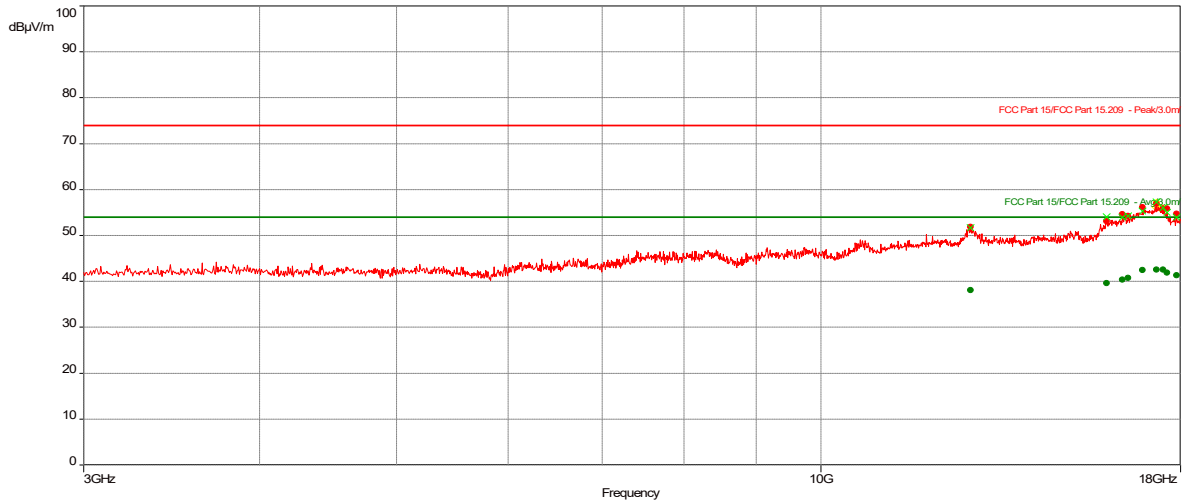
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	36.24	54.00	-17.76	193.00	1.64	Horizontal	1M	-23.26
1200	30.93	54.00	-23.07	179.00	2.05	Horizontal	1M	-21.58

Transmit at Mid channel (EUT on Z-Axis), 2442 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 10:32:55 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx Mid CH 2442 MHz_Z-Axis

Graph:



Results:

Peak (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
12770	51.95	74.00	-22.05	30.00	1.71	Horizontal	1M	1.88
15947.89474	53.10	74.00	-20.90	135.00	1.24	Vertical	1M	3.63
16370.78947	54.65	74.00	-19.35	124.00	2.22	Vertical	1M	4.30
16518.15789	54.29	74.00	-19.71	335.00	3.63	Horizontal	1M	4.62
16918.68421	56.16	74.00	-17.84	168.00	3.69	Horizontal	1M	5.66
17309.73684	56.97	74.00	-17.03	323.00	3.69	Vertical	1M	5.44
17491.57895	55.90	74.00	-18.10	271.00	2.69	Horizontal	1M	5.70
17601.84211	55.88	74.00	-18.12	104.00	3.12	Vertical	1M	5.82
17884.73684	54.76	74.00	-19.24	250.00	3.73	Horizontal	1M	6.08

Average (PASS) (9)

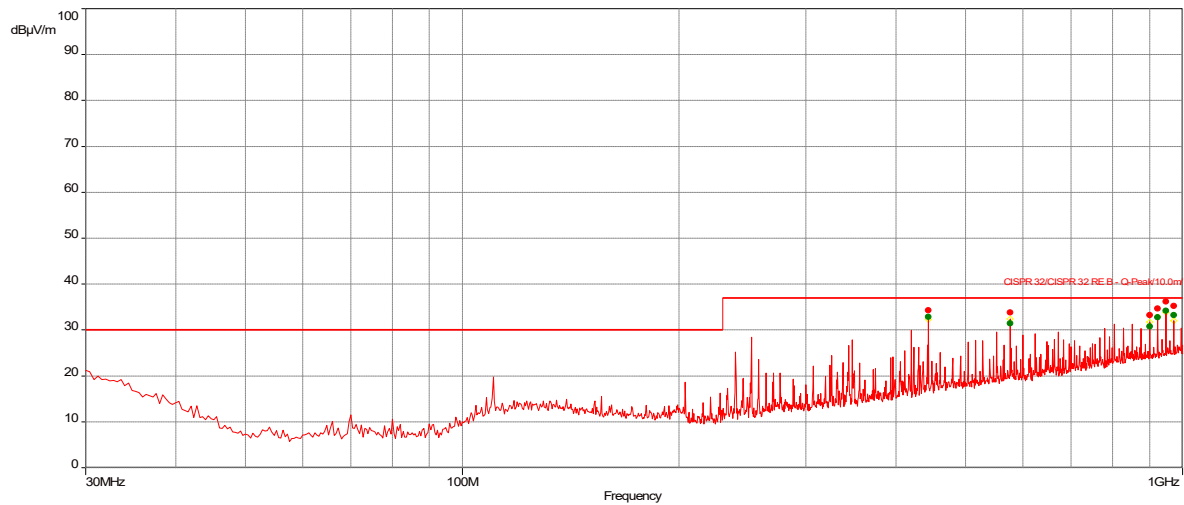
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
12770	38.09	54.00	-15.91	30.00	1.71	Horizontal	1M	1.88
15947.89474	39.67	54.00	-14.33	135.00	1.24	Vertical	1M	3.63
16370.78947	40.44	54.00	-13.56	124.00	2.22	Vertical	1M	4.30
16518.15789	40.74	54.00	-13.26	335.00	3.63	Horizontal	1M	4.62
16918.68421	42.46	54.00	-11.54	168.00	3.69	Horizontal	1M	5.66
17309.73684	42.63	54.00	-11.37	323.00	3.69	Vertical	1M	5.44
17491.57895	42.60	54.00	-11.40	271.00	2.69	Horizontal	1M	5.70
17601.84211	41.89	54.00	-12.11	104.00	3.12	Vertical	1M	5.82
17884.73684	41.35	54.00	-12.65	250.00	3.73	Horizontal	1M	6.08

Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at High channel (EUT on X-Axis, worst-case orientation), 2480 MHz, 30-1000 MHz

Test Information:

Date and Time	6/14/2023 5:02:14 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	37%
Atmospheric Pressure	990 mB
Comments	RE 30-1000MHz_Battery power_Tx High CH_Worst-case orientation

Graph:**Results:**

QuasiPeak (PASS) (6)

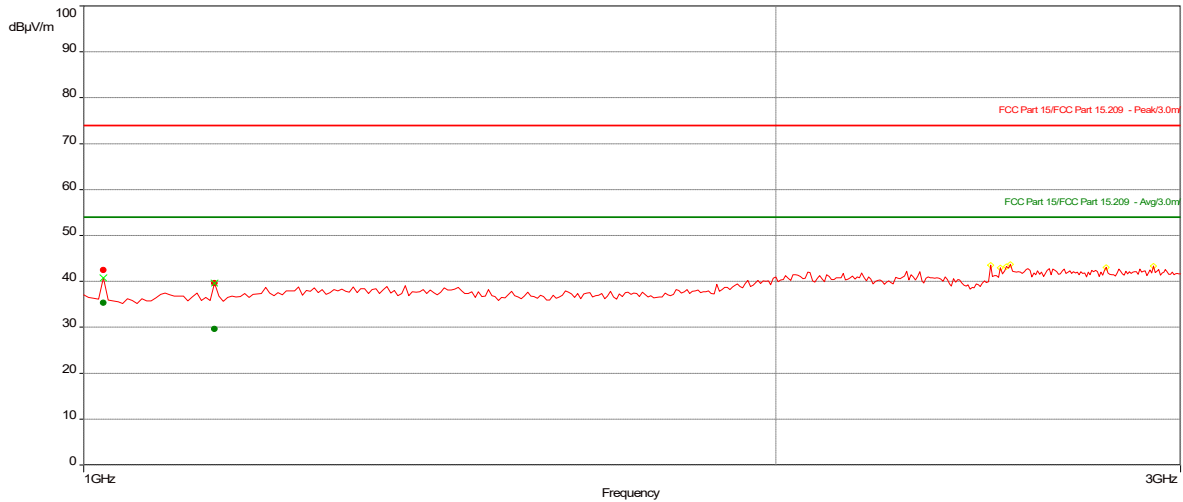
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
443.9684211	32.90	37.00	-4.10	239.00	1.30	Horizontal	120k	-14.39
575.9684211	31.45	37.00	-5.55	169.00	1.00	Horizontal	120k	-11.80
899.9684211	30.84	37.00	-6.16	239.00	1.00	Vertical	120k	-6.35
923.9684211	32.82	37.00	-4.18	218.00	1.69	Horizontal	120k	-5.89
947.9684211	34.25	37.00	-2.75	213.00	1.51	Horizontal	120k	-5.27
971.9684211	33.24	37.00	-3.76	209.00	1.54	Horizontal	120k	-5.23

Transmit at High channel (EUT on X-Axis), 2480 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 8:09:39 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx High CH 2480 MHz_X-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	42.54	74.00	-31.46	199.00	1.21	Horizontal	1M	-23.26
1140	39.65	74.00	-34.35	148.00	1.85	Horizontal	1M	-22.54

Average (PASS) (2)

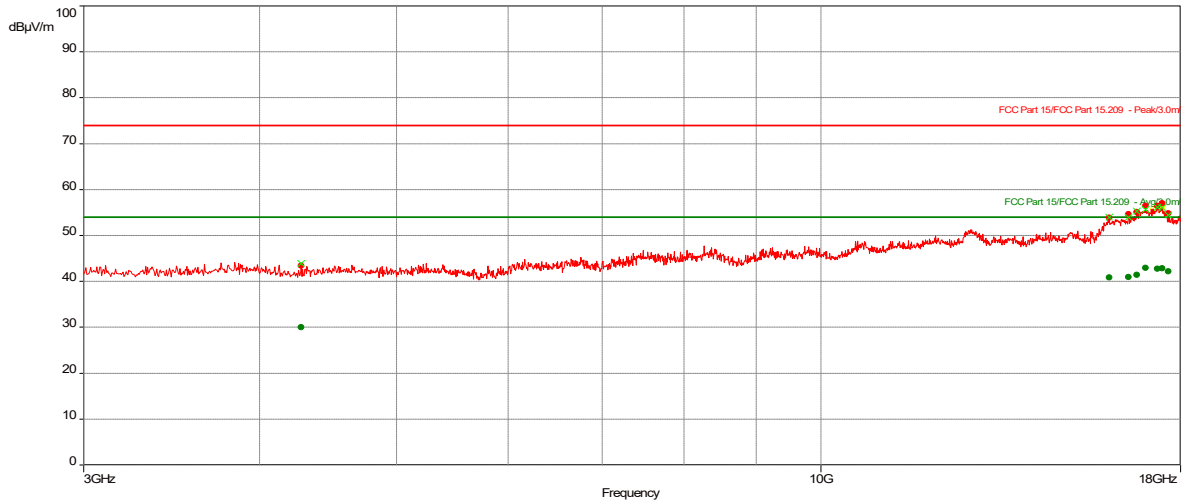
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	35.34	54.00	-18.66	199.00	1.21	Horizontal	1M	-23.26
1140	29.70	54.00	-24.30	148.00	1.85	Horizontal	1M	-22.54

Transmit at High channel (EUT X-Axis), 2480 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 11:09:33 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx High CH 2480 MHz_X-Axis

Graph:



Results:

Peak (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4279.736842	43.46	74.00	-30.54	90.00	1.48	Vertical	1M	-12.68
16026.84211	53.95	74.00	-20.05	29.00	1.14	Horizontal	1M	3.89
16529.73684	54.65	74.00	-19.35	25.00	2.35	Horizontal	1M	4.68
16759.21053	55.12	74.00	-18.88	60.00	3.49	Horizontal	1M	5.55
17004.73684	56.47	74.00	-17.53	241.00	2.75	Vertical	1M	5.69
17333.68421	56.51	74.00	-17.49	294.00	3.76	Vertical	1M	5.44
17467.63158	57.03	74.00	-16.97	174.00	2.35	Horizontal	1M	5.66
17641.05263	54.81	74.00	-19.19	349.00	1.27	Vertical	1M	5.88

Average (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4279.736842	30.00	54.00	-24.00	90.00	1.48	Vertical	1M	-12.68
16026.84211	40.89	54.00	-13.11	29.00	1.14	Horizontal	1M	3.89
16529.73684	40.93	54.00	-13.07	25.00	2.35	Horizontal	1M	4.68
16759.21053	41.49	54.00	-12.51	60.00	3.49	Horizontal	1M	5.55
17004.73684	42.93	54.00	-11.07	241.00	2.75	Vertical	1M	5.69
17333.68421	42.79	54.00	-11.21	294.00	3.76	Vertical	1M	5.44
17467.63158	42.89	54.00	-11.11	174.00	2.35	Horizontal	1M	5.66
17641.05263	42.18	54.00	-11.82	349.00	1.27	Vertical	1M	5.88

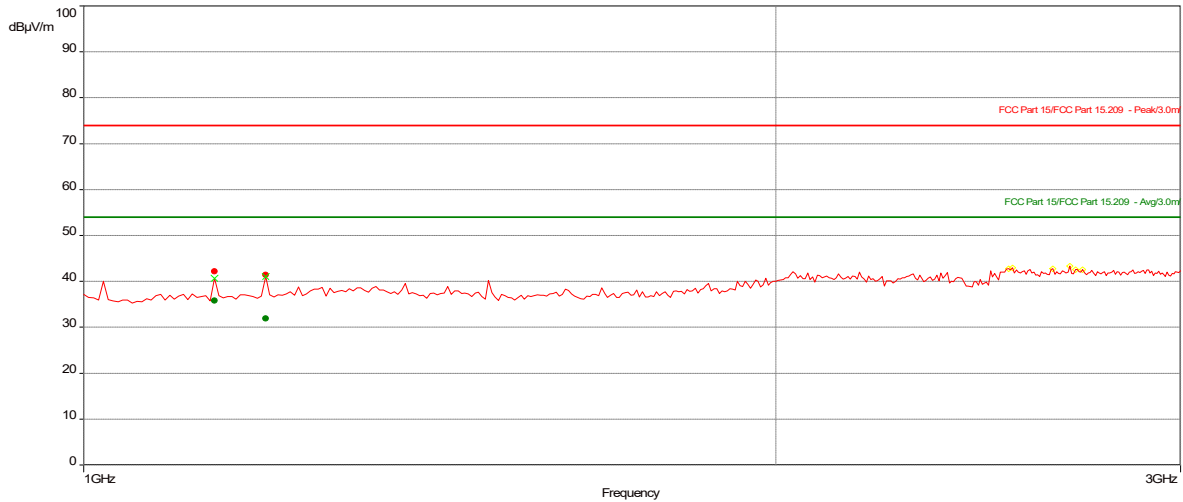
Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at High channel (EUT on Y-Axis), 2480 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 8:21:46 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx High CH 2480 MHz_Y-Axis

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1140	42.20	74.00	-31.80	190.00	1.02	Horizontal	1M	-22.54
1200	41.44	74.00	-32.56	26.00	1.14	Horizontal	1M	-21.58

Average (PASS) (2)

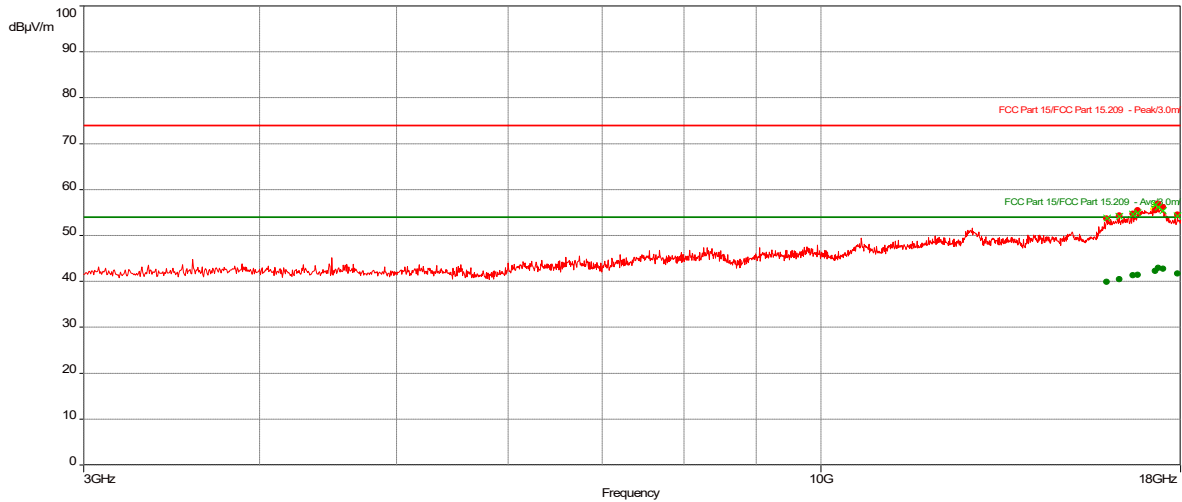
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1140	35.85	54.00	-18.15	190.00	1.02	Horizontal	1M	-22.54
1200	31.93	54.00	-22.07	26.00	1.14	Horizontal	1M	-21.58

Transmit at High channel (EUT on Y-Axis), 2480 MHz, 3-25 GHz

Test Information:

Date and Time	6/9/2023 11:39:16 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx High CH 2480 MHz_Y-Axis

Graph:



Results:

Peak (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
15957.10526	53.73	74.00	-20.27	25.00	3.02	Vertical	1M	3.67
16283.68421	54.36	74.00	-19.64	20.00	1.11	Horizontal	1M	4.16
16652.89474	54.79	74.00	-19.21	121.00	1.71	Vertical	1M	5.22
16779.47368	55.55	74.00	-18.45	70.00	3.83	Vertical	1M	5.58
17277.36842	55.50	74.00	-18.50	80.00	3.19	Vertical	1M	5.43
17359.47368	56.98	74.00	-17.02	65.00	1.34	Horizontal	1M	5.45
17493.94737	56.20	74.00	-17.80	114.00	1.04	Vertical	1M	5.70
17907.10526	54.61	74.00	-19.39	125.00	2.75	Horizontal	1M	6.08

Average (PASS) (8)

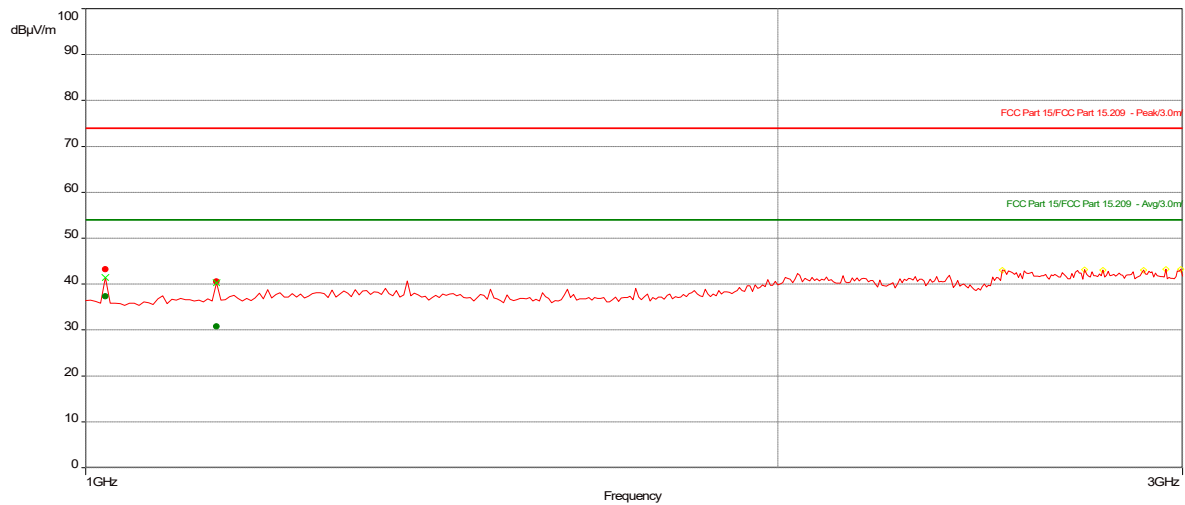
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
15957.10526	39.90	54.00	-14.10	25.00	3.02	Vertical	1M	3.67
16283.68421	40.48	54.00	-13.52	20.00	1.11	Horizontal	1M	4.16
16652.89474	41.34	54.00	-12.66	121.00	1.71	Vertical	1M	5.22
16779.47368	41.43	54.00	-12.57	70.00	3.83	Vertical	1M	5.58
17277.36842	42.29	54.00	-11.71	80.00	3.19	Vertical	1M	5.43
17359.47368	42.95	54.00	-11.05	65.00	1.34	Horizontal	1M	5.45
17493.94737	42.81	54.00	-11.19	114.00	1.04	Vertical	1M	5.70
17907.10526	41.76	54.00	-12.24	125.00	2.75	Horizontal	1M	6.08

Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

Transmit at High channel (EUT on Z-Axis), 2480 MHz, 1-3 GHz

Test Information:

Date and Time	6/15/2023 8:34:51 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 3 GHz_Battery power_Tx High CH 2480 MHz_Z-Axis

Graph:**Results:**

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	43.28	74.00	-30.72	200.00	1.31	Horizontal	1M	-23.26
1140	40.61	74.00	-33.39	0.00	2.72	Vertical	1M	-22.54

Average (PASS) (2)

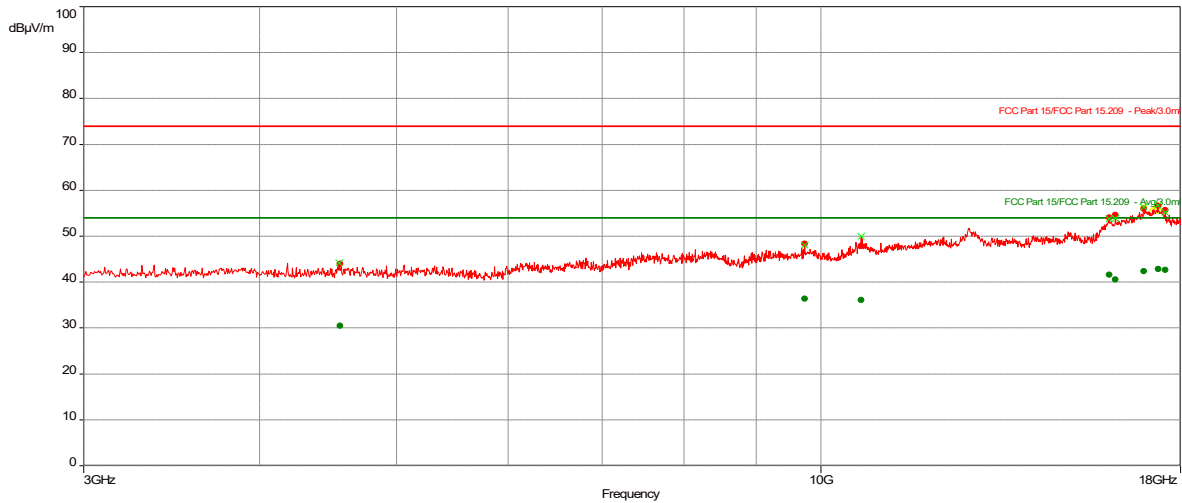
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
1020	37.36	54.00	-16.64	200.00	1.31	Horizontal	1M	-23.26
1140	30.77	54.00	-23.23	0.00	2.72	Vertical	1M	-22.54

Transmit at High channel (EUT on Z-Axis), 2480 MHz, 3-25 GHz

Test Information:

Date and Time	6/10/2023 12:09:43 AM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	23 deg C
Humidity	41%
Atmospheric Pressure	996 mB
Comments	RE 3 to 18 GHz_Tx High CH 2480 MHz_Z-Axis

Graph:



Results:

Peak (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4558.157895	44.03	74.00	-29.97	303.00	2.35	Vertical	1M	-11.97
9745.789474	48.43	74.00	-25.57	130.00	1.00	Horizontal	1M	-5.34
10685.26316	47.95	74.00	-26.05	135.00	2.62	Vertical	1M	-3.42
16027.36842	54.09	74.00	-19.91	308.00	3.16	Vertical	1M	3.89
16184.21053	54.67	74.00	-19.33	81.00	2.72	Horizontal	1M	4.04
16953.42105	56.00	74.00	-18.00	149.00	3.16	Vertical	1M	5.65
17348.94737	56.66	74.00	-17.34	309.00	3.93	Horizontal	1M	5.44
17549.73684	55.73	74.00	-18.27	30.00	1.64	Horizontal	1M	5.77

Average (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
4558.157895	30.51	54.00	-23.49	303.00	2.35	Vertical	1M	-11.97
9745.789474	36.42	54.00	-17.58	130.00	1.00	Horizontal	1M	-5.34
10685.26316	36.15	54.00	-17.85	135.00	2.62	Vertical	1M	-3.42
16027.36842	41.67	54.00	-12.33	308.00	3.16	Vertical	1M	3.89
16184.21053	40.58	54.00	-13.42	81.00	2.72	Horizontal	1M	4.04
16953.42105	42.44	54.00	-11.56	149.00	3.16	Vertical	1M	5.65
17348.94737	42.92	54.00	-11.08	309.00	3.93	Horizontal	1M	5.44
17549.73684	42.73	54.00	-11.27	30.00	1.64	Horizontal	1M	5.77

Notes: From 18-25 GHz, manual scan was performed at 10 cm from the EUT with no emission was detected above the measuring instrument noise floor.

	Product Standard: CFR47 FCC Part 15.247 RSS-247			Limit applied: See section 10.3 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
06/09/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	23	41	996
06/10/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	23	41	996
06/14/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	37	990
06/15/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	36	991

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, 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	03/15/2023	03/15/2024
145108'	EMI Test Receiver (20Hz - 40GHz)	Rohde & Schwarz	ESIB40	100209	06/28/2023	06/28/2024
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/20/2022	09/20/2023
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	06/23/2023	06/23/2024
IW001'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/18/2023	02/18/2024
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/18/2023	02/18/2024
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/25/2023	01/25/2024
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	11/14/2022	11/14/2023
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	02/18/2023	02/18/2024
HS003'	10m under floor cable	Huber-Schuner	10m-1	HS003	02/18/2023	02/18/2024
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/27/2022	09/27/2023
PRE12'	Pre-amplifier	Com Power	PAM-118A	18040117	12/17/2022	12/17/2023

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2022.0.27.0

11.3 Results:

The sample tested was found to Comply.

Limits – FCC Part §15.109 The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values.

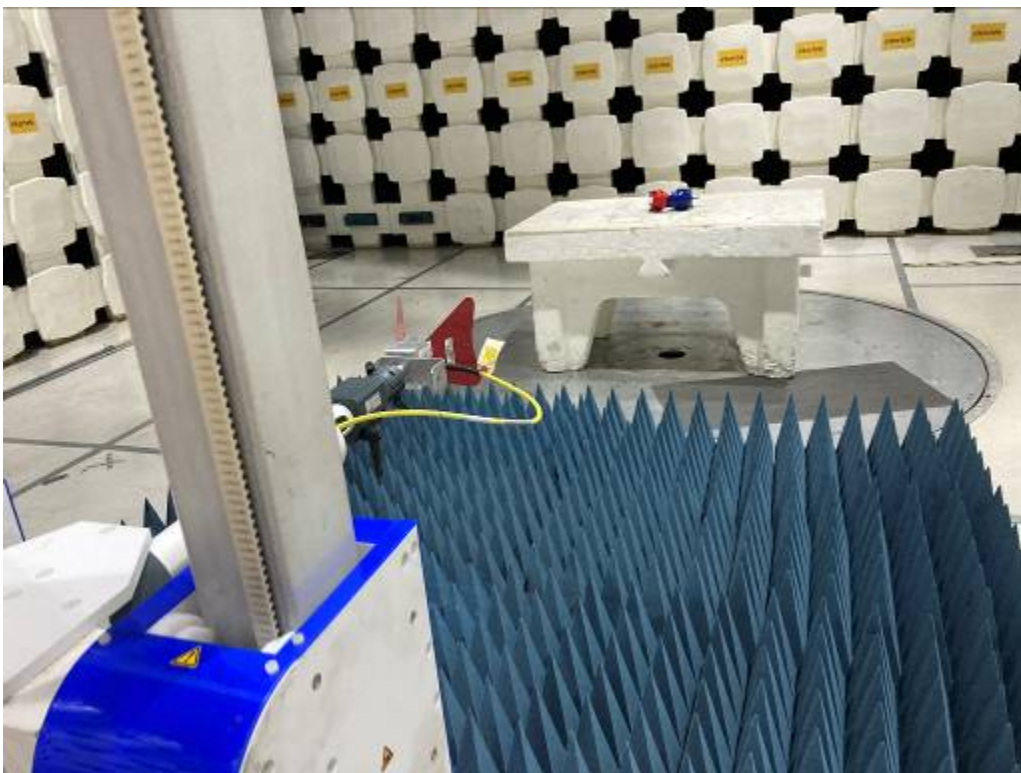
Frequency of emission (MHz)	Field strength (microvolts/meter)	Field strength (dBµV/m)
30-88	100	40.00
88-216	150	43.52
216-960	200	46.02
Above 960	500	54.00

11.4 Setup Photographs:

Radiated Emissions Test Setup, 30-1000 MHz

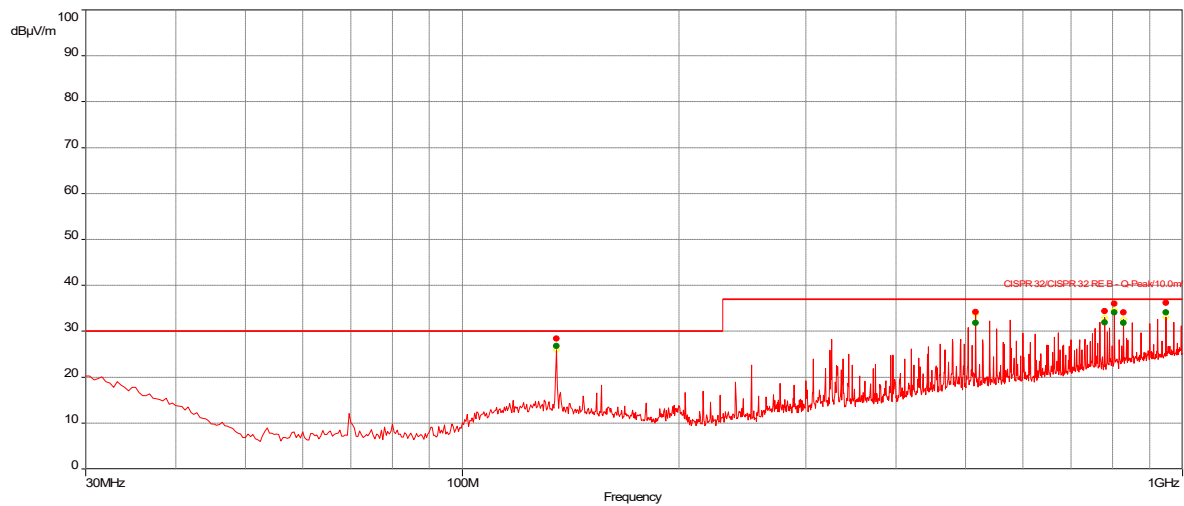


Radiated Emissions Test Setup, 1-13 GHz



11.5 Plots/Data:**Radiated Emissions, 30-1000 MHz****Test Information:**

Date and Time	6/14/2023 5:36:02 PM
Client and Project Number	Edare G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	37%
Atmospheric Pressure	990 mB
Comments	RE 30-1000MHz_ Battery power_ Rx mode

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

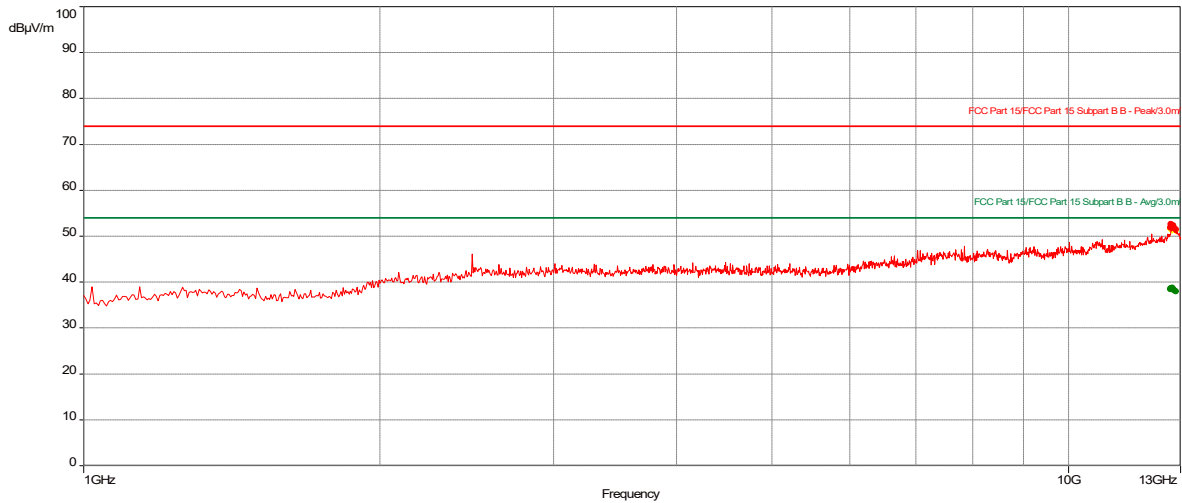
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
135.1368421	26.81	30.00	-3.19	349.00	3.63	Horizontal	120k	-18.83
516	31.82	37.00	-5.18	330.00	3.03	Horizontal	120k	-12.97
779.9684211	31.92	37.00	-5.08	35.00	2.02	Horizontal	120k	-8.34
803.9684211	34.17	37.00	-2.83	30.00	1.98	Horizontal	120k	-7.56
828	31.89	37.00	-5.11	29.00	1.95	Horizontal	120k	-7.00
947.9684211	34.08	37.00	-2.92	29.00	1.68	Horizontal	120k	-5.27

Radiated Emissions, 1-13 GHz

Test Information:

Date and Time	6/15/2023 5:59:58 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	26 deg C
Humidity	36%
Atmospheric Pressure	991 mB
Comments	RE 1 to 13 GHz_Battery power_Rx mode

Graph:



Results:

Peak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
12701.57895	51.95	74.00	-22.05	9.00	1.00	Horizontal	1M	1.60
12714.73684	52.63	74.00	-21.37	318.00	1.00	Vertical	1M	1.70
12747.36842	52.32	74.00	-21.68	2.00	2.08	Horizontal	1M	1.97
12769.73684	52.38	74.00	-21.62	104.00	2.08	Horizontal	1M	1.88
12783.68421	52.01	74.00	-21.99	64.00	3.12	Vertical	1M	1.81
12848.42105	51.51	74.00	-22.49	50.00	3.16	Vertical	1M	1.45

Average (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
12701.57895	38.48	54.00	-15.52	9.00	1.00	Horizontal	1M	1.60
12714.73684	38.66	54.00	-15.34	318.00	1.00	Vertical	1M	1.70
12747.36842	38.79	54.00	-15.21	2.00	2.08	Horizontal	1M	1.97
12769.73684	38.45	54.00	-15.55	104.00	2.08	Horizontal	1M	1.88
12783.68421	38.37	54.00	-15.63	64.00	3.12	Vertical	1M	1.81
12848.42105	38.01	54.00	-15.99	50.00	3.16	Vertical	1M	1.45

Product Standard: CFR47 FCC Part 15B, ISED ICES-003					Limit applied: Class B Pretest Verification w/BB source: Yes		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
06/14/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	37	990
06/15/2023	Vathana Ven <i>VSV</i>	N/A	Battery power	Tx mode	26	36	991

Deviations, Additions, or Exclusions: None

12 AC Mains

12.1 Method

Tests are performed in accordance with ANSI C63.4.

TEST SITE: EMC

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.

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	1.2 dB	3.4dB
Telco Port Emissions	150 kHz - 30 MHz	2.8 dB	5.0dB
AC Line Conducted Emissions	9 kHz - 150 MHz	2.2 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 = Net Reading in dB μ 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.

12.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV009'	weather station	Davis Instruments	6351 Vantage VUE	DAV009	03/27/2023	03/27/2024
LISN35'	LISN 50uH/250uH 50ohm	Com Power	LI-215A	191960	07/03/2023	07/03/2024
WEI32'	10 dB 18GHz 5W Attenuator	Weinschel	WA2-10-0403	WEI32	12/16/2022	12/16/2023
CBL310E'	30' CABLE, BNC/BNC	Alpha	RG58B/U	CBL310E	03/21/2023	03/21/2024
ROS002'	79kHz to 3GHz EMI Test Receiver	Rohde & Schwartz	ESCI 1166.5950K03	100067	07/20/2023	07/20/2024

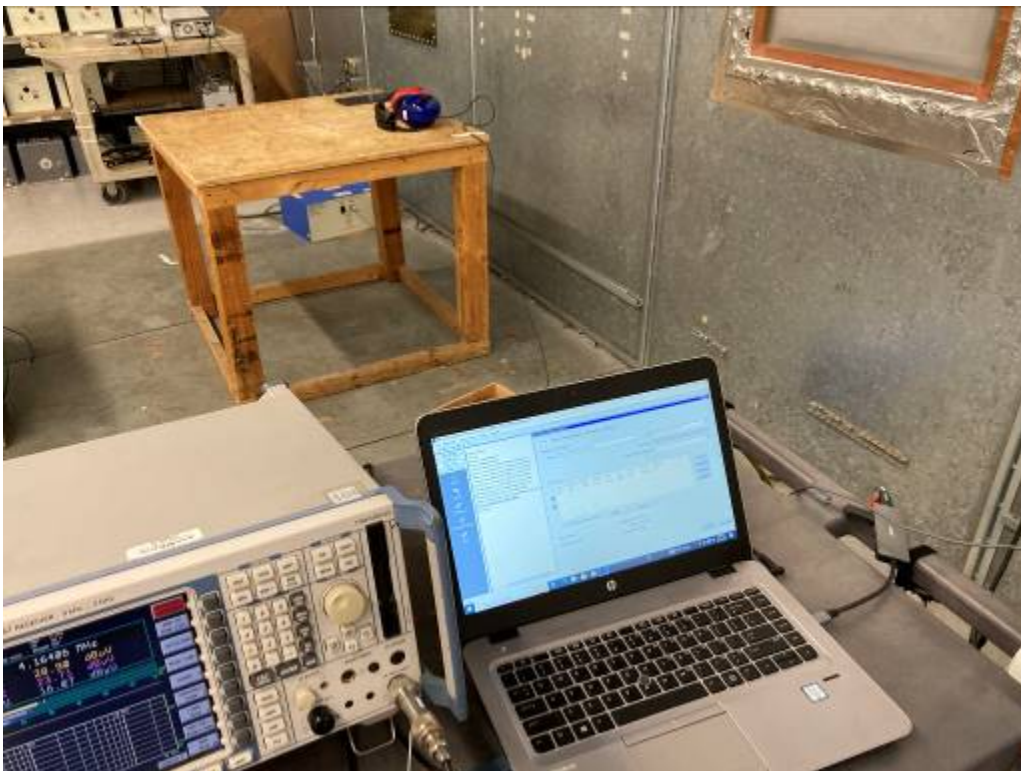
Software Utilized:

Name	Manufacturer	Version
BAT- EMC Emission	NEXIO	2022.0.27.0

12.3 Results:

The sample tested was found to Comply.

12.4 Setup Photographs:



12.5 Plots/Data:**Test Information:**

Date and Time	10/25/2023 6:31:21 PM
Client and Project Number	Edare_G105406683
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	44%
Atmospheric Pressure	1023mbars
Comments	150kHz to 30 MHz ESCI_120VAC 60Hz

Graph:

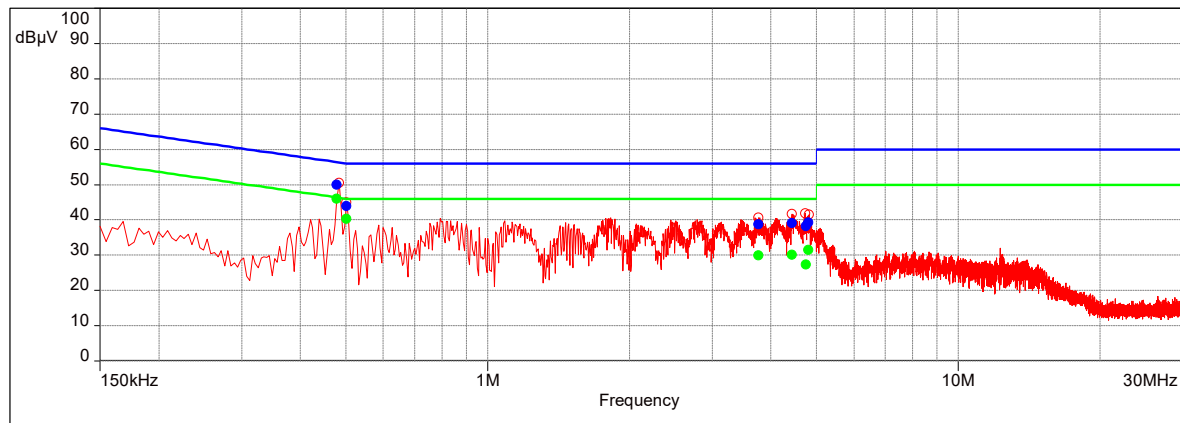
- Conducted Emissions Limit Lines/FCC Part 15 Subpart B CE Main Ports B - Average/
- Conducted Emissions Limit Lines/FCC Part 15 Subpart B CE Main Ports B - QPeak/
- Peak (RF Output Measure)
- Peak (Peak/Lim.Avg) (RF Output Measure)
- AVG Level (Average(Pass)) (RF Output Measure)
- QP Level (QuasiPeak(Pass)) (RF Output Measure)

Sub-range 1

Frequencies: 150 kHz - 30 MHz (Mode: Lin - Step: 4.5 kHz)

Settings: RBW: 9kHz, VBW: Auto, Sweep time: 5 ms/Pts, Attenuation: Auto, Sweep count: 1, Preamp: Off, LN Preamp: Off, Preselector: On

Line: RF Output Measure



test name 150kHz to 30 MHz ESCI_120VAC 60Hz Time at 25/10/2023 18:39

Results:**QuasiPeak(Pass) (6)**

Frequency (MHz)	SR	QP Level (dBμV)	QP Limit (dBμV)	QP Margin (dB)	Line	RBW	Meas.Time	Correction (dB)
0.48028	1	49.99	56.37	-6.37	Phase 1	9k	0.01	9.88
0.50086	1	43.92	56.00	-12.08	Phase 1	9k	0.01	9.88
3.76378	1	38.62	56.00	-17.38	Phase 1	9k	0.01	10.03
4.42762	1	39.13	56.00	-16.87	Phase 1	9k	0.01	10.06
4.74366	1	38.11	56.00	-17.89	Phase 1	9k	0.01	10.07
4.81174	1	39.17	56.00	-16.83	Phase 1	9k	0.01	10.07

Average(Pass) (6)

Frequency (MHz)	SR	AVG Level (dBμV)	AVG Limit (dBμV)	AVG Margin (dB)	Line	RBW	Meas.Time	Correction (dB)
0.48028	1	45.90	46.37	-0.46	Phase 1	9k	0.01	9.88
0.50086	1	40.21	46.00	-5.79	Phase 1	9k	0.01	9.88
3.76378	1	29.90	46.00	-16.10	Phase 1	9k	0.01	10.03
4.42762	1	30.08	46.00	-15.92	Phase 1	9k	0.01	10.06
4.74366	1	27.29	46.00	-18.71	Phase 1	9k	0.01	10.07
4.81174	1	31.49	46.00	-14.51	Phase 1	9k	0.01	10.07

	Product Standard: FCC Part 15B, FCC Part 15C, ISED ICES-003			Limit applied: B Pretest Verification w/ signal generator: Yes			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
10/25/2023	Vathana Ven 	N/A	120VAC 60Hz	RF link mode	24	44	1023

Deviations, Additions, or Exclusions: None

13 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	08/23/2022	105406683BOX-022	VFV <i>VFV</i>	KPS <i>KPS</i>	Original Issue
1	10/25/2023	105406683BOX-022_R1	VFV <i>VFV</i>	KPS <i>KPS</i>	Addressed TCB reviewer's comments