

CONTROL CHIEF CORPORATION TEST REPORT

SCOPE OF WORK

Emissions Testing – Model vImpulse

REPORT NUMBER

106538840BOX-001 Rev1

ISSUE DATE

04/28/2026

[REVISED DATE]

05/26/2026



DOCUMENT CONTROL NUMBER

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

Report Number: 106538840BOX-001 Rev1

Project Number: G106538840

Report Issue Date: 04/28/2026

Report Revision Date: 05/26/2026

Model(s) Tested: vImpulse

Model(s) Partially Tested: None

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

Standards: CFR47 FCC Part 15.247 Subpart C: 04/2026,
CFR47 FCC Part 15 Subpart B: 04/2026,
RSS-247 Issue 4 July 24, 2025
ISED ICES-003 Issue 7 October 2020,
RSS-Gen Issue 5 April 2018 +Amendment 1 March 2019

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

Client:
Control Chief Corporation
200 Williams Street
Bradford, PA 16701
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 and Duty Cycle CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (b)(2), RSS-247 Issue 4 July 2025	Pass
7	Transmitter Radiated Spurious Emissions CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (d), RSS-247 Issue 4 July 2025	Pass
8	Hopping Channel Separation CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (a)(1), RSS-247 Issue 4 July 2025	Pass
9	Number of Hopping Frequency CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (a)(1) (i), RSS-247 Issue 4 July 2025	Pass
10	Hopping Channel Bandwidths and Occupied Bandwidths CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (a)(1)(1), RSS-247 Issue 4 July 2025	Pass
11	Hopping Dwell time CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (a)(1) (i), RSS-247 Issue 4 July 2025	Pass
12	Band-edge Compliance CFR47 FCC Part 15 Subpart C:04/2026, Section 15.247 (d), ISED RSS-247 Issue 4 July 2025	Pass
13	Receiver Radiated Spurious CFR47 FCC Part 15 Subpart B:04/2026, Section 15.109 (a), RSS-Gen Issue 5 April 2018, Section 7.3 (Table 3), ISED ICES-003 Issue 7 October 2020	Pass
--	AC Mains Conducted Emissions CFR47 FCC Part 15.107: 05/2025 RSS-Gen Issue 5 April 2018, Section 8.8 (Table 4)	N/A*
14	Revision History	---

Note: *Line-conducted emissions test is not applicable as the device is battery powered. A DC power supply was used to facilitate the testing.

3 Client Information

This EUT was tested at the request of:

Client: Control Chief Corporation
200 Williams Street
Bradford, PA 16701
USA

Contact: Jake Bryner
Email: jbryner@controlchief.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Control Chief Corporation
200 Williams Street
Bradford, PA 16701
USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Transmitter module	Control Chief Corporation	vImpulse	# 6

Receive Date:	05/02/2025, 02/26/2026
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
The EUT is a transmitter module.

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
DC 4.5 V	N/A	N/A	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	The EUT was set to transmit at Low, Mid, and High channels continuously with modulation at 100 % duty cycle.
2	The EUT was set to receive mode.

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	PuTTY 0.83

Radio/Receiver Characteristics	
Frequency Band(s)	902.3 - 927.8 MHz
Modulation Type(s)	GFSK
Maximum Conducted Output Power	Low Channel (902.3 MHz) = 27.67 dBm Mid Channel (915 MHz) = 26.92 dBm High Channel (927.8 MHz) = 26.34 dBm
Test Channels	Low Channel (902.3 MHz) Mid Channel (915 MHz) High Channel (927.8 MHz)
Occupied Bandwidth	Low Channel (902.3 MHz) = 51.55 kHz Mid Channel (915 MHz) = 52.35 kHz High Channel (927.8 MHz) = 52.25 kHz
20 dB Bandwidth	Low Channel (902.3 MHz) = 40.16 kHz Mid Channel (915 MHz) = 27.77 kHz High Channel (927.8 MHz) = 28.57 kHz
Frequency Hopper: Number of Hopping Channels	50
Frequency Hopper: Channel Dwell Time	12.9 msec
MIMO Information (# of Transmit and Receive antenna ports)	1
Equipment Type	Standalone modular transmitter
Antenna Type and Gain	Dipole antenna gain of 5.4 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
--	USB Cable ¹	2.00	Shielded	--	Laptop

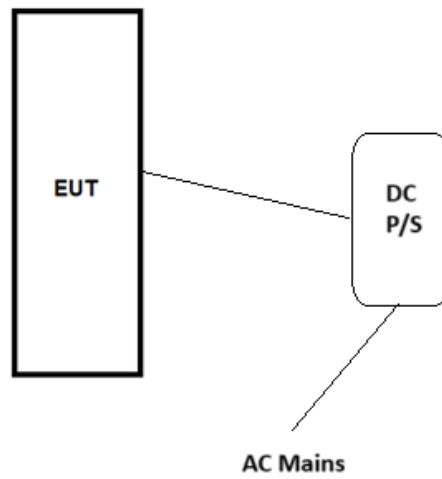
¹Not part of the EUT. It was used to accommodate the testing only.

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
DC Power Supply	Electro Industries	DIGI 35A	None
Laptop	HP	LT-1680	None
Power Adapter	PWR	PWR-TAJ195333	201111004

5.1 Method:

Configuration as required by Configuration as required by FCC Part 15 Subpart C 15.247: 04/2026, FCC Part 15 Subpart B: 04/2026, RSS 247 Issue 4 July 2025, ISED ICES-003 Issue 7 October 2020, RSS-Gen Issue 5 April 2018 +Amendment 1 March 2019, ANSIC63.10-2020, and ANSI C 63.4: 2014.

5.2 EUT Block Diagram:



6 Maximum Conducted Peak Output Power and Duty Cycle

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 Limit:

CFR47 FCC Part 15.247 (b) (2)

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under [paragraph \(a\)\(1\)\(i\)](#) of this section.

6.3 Test Equipment Used:

Test Equipment Used on 05/12/2025

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/10/2025	03/10/2026
ROS011'	ESW44 receiver 1Hz-44GHz	Rhode and Schwarz	ESW44	103296	07/09/2024	07/09/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	03/11/2025	03/11/2026
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	03/06/2025	03/06/2026

Test Equipment Used on 04/24/2026

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/16/2026	03/16/2027
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	01/29/2026	01/29/2027
MIN27'	Attenuator 20dB 50watt DC-18Ghz	Mini Circuits	BW-N20W50	VY6127411835	09/16/2025	09/16/2026
MEG002'	Cable,SMA-SMA,9KHz-40GHz, (Cable Kit 6)	Megaphase	TM40-K1K1-197	59006401001	01/28/2026	01/28/2027

Software Utilized:

Name	Manufacturer	Version
None		

6.4 Results:

The sample tested was found to Comply.

6.5 Setup Photograph:

Antenna Port Conducted Output Power Measurements



6.6 Test Data:**Output Power**

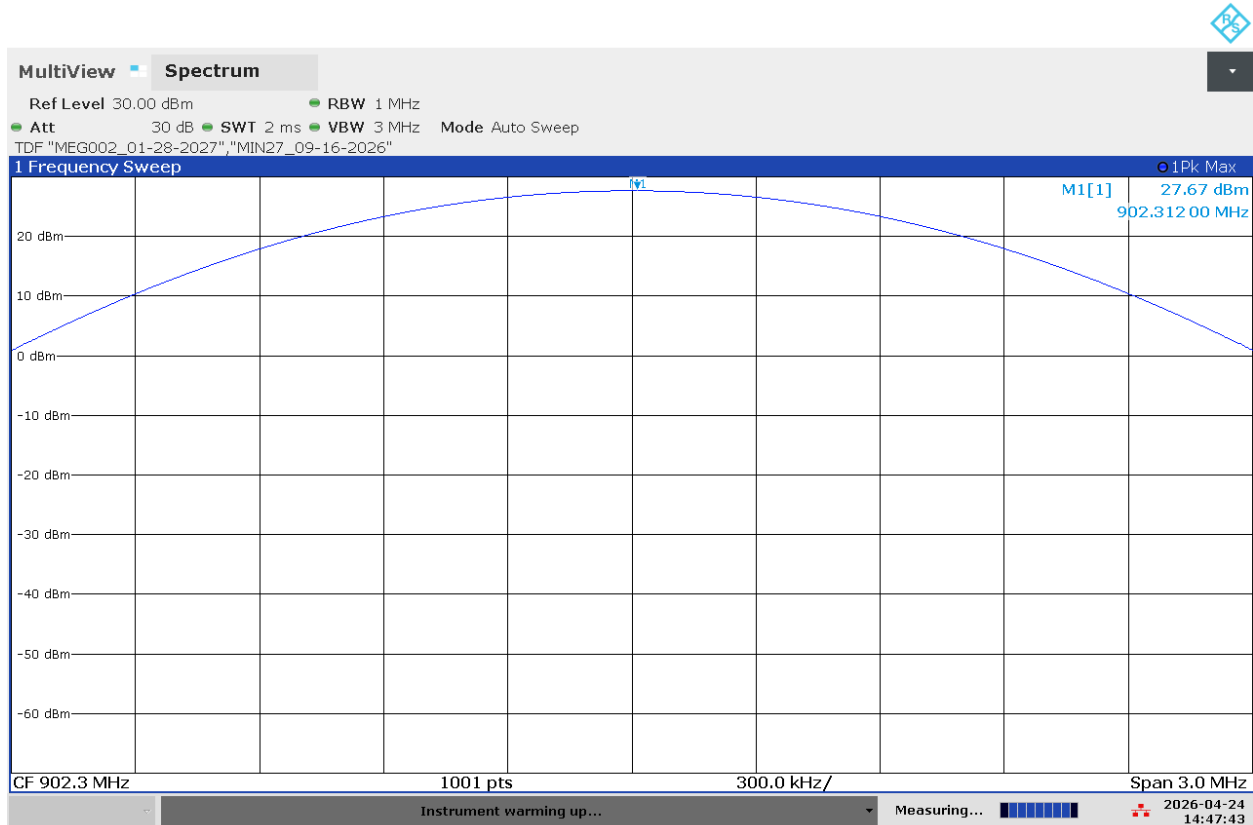
Channels	Cond. Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Cond. Power Limit (dBm)	Con. Power Margin (dB)
Low: 902.3 MHz	27.67	5.4	33.07	2027.683	30	-2.33
Mid: 915 MHz	26.92	5.4	32.32	1706.082	30	-3.08
High: 927.8 MHz	26.34	5.4	31.74	1492.794	30	-3.66

EIRP Calculations:

Power (Conducted) = EIRP – (Antenna gain)

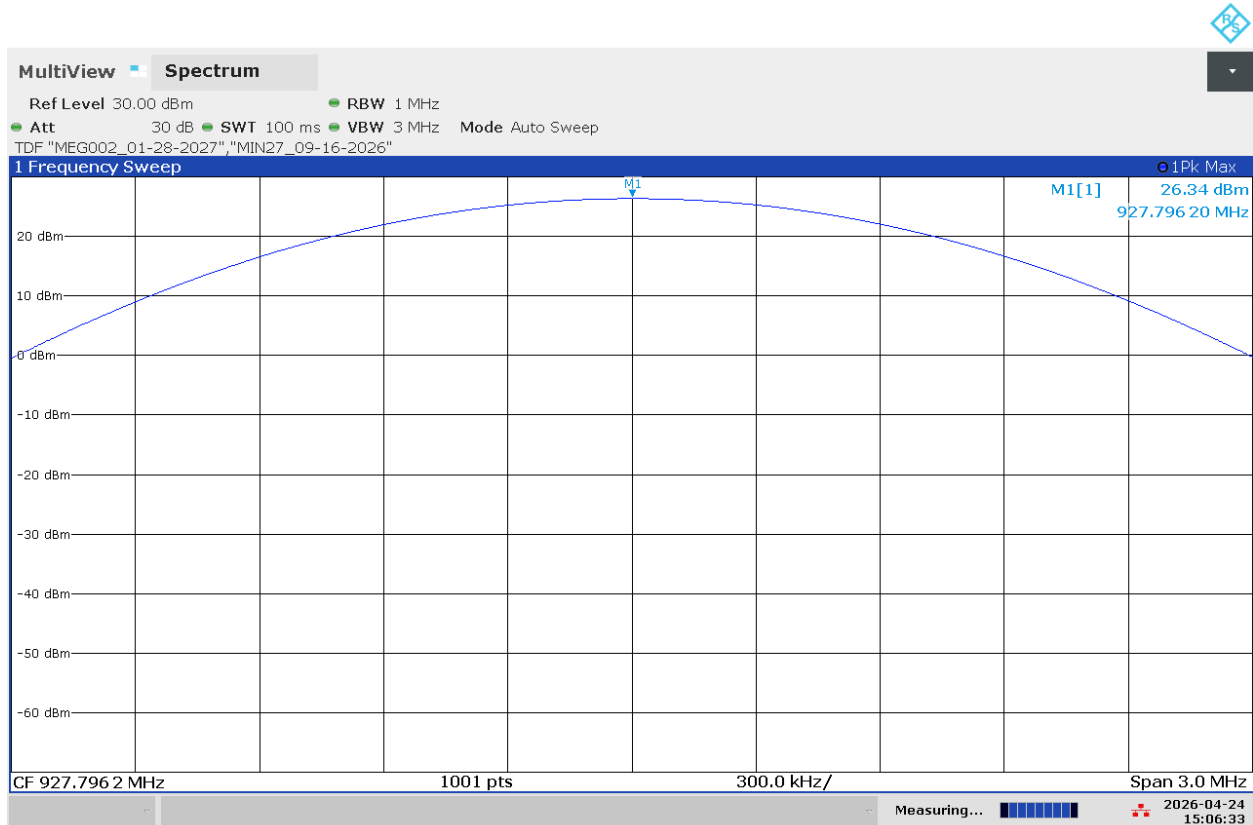
EIRP = Power (Conducted) + (Antenna gain) = Power (Conducted) + 5.4

Low Channel (902.3 MHz) Conducted Output Power: 27.67 dBm



02:47:43 PM 04/24/2026

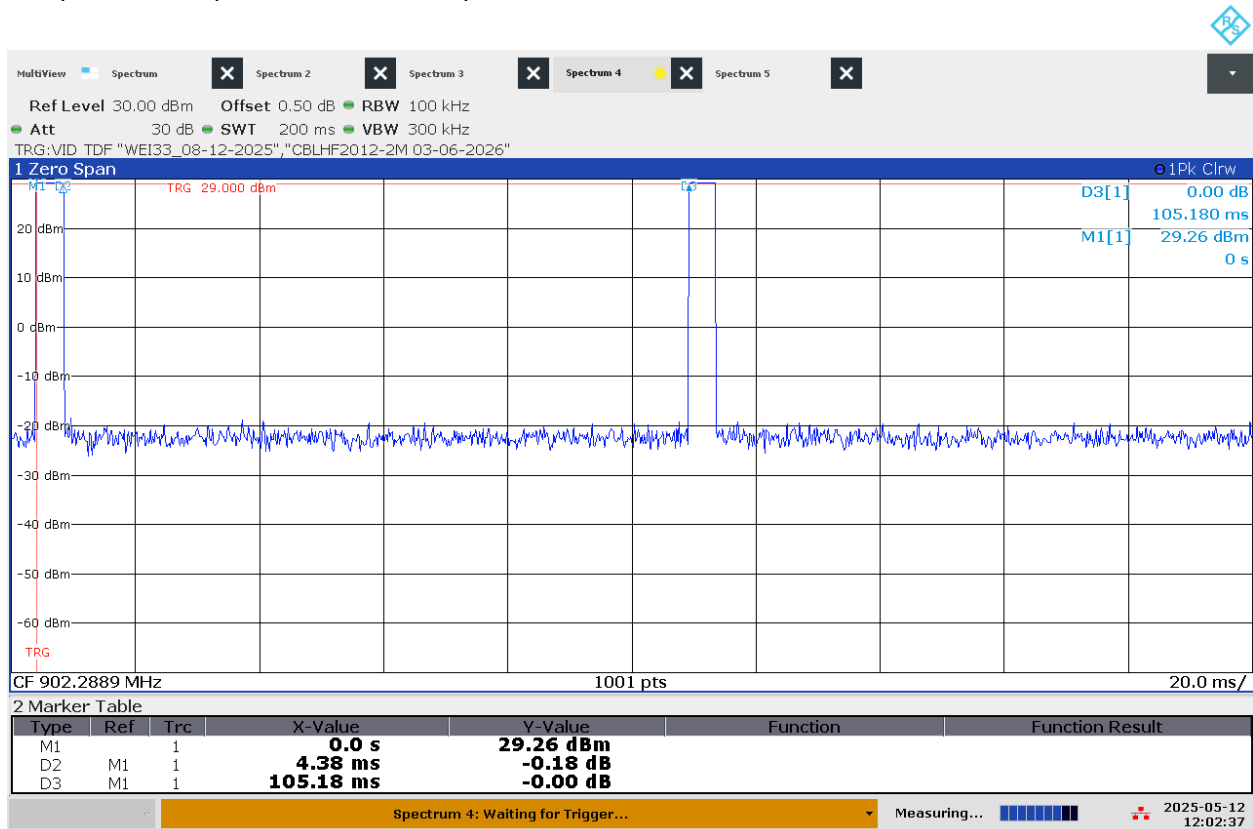
High Channel (927.8 MHz) Conducted Output Power: 26.34 dBm



03:06:33 PM 04/24/2026

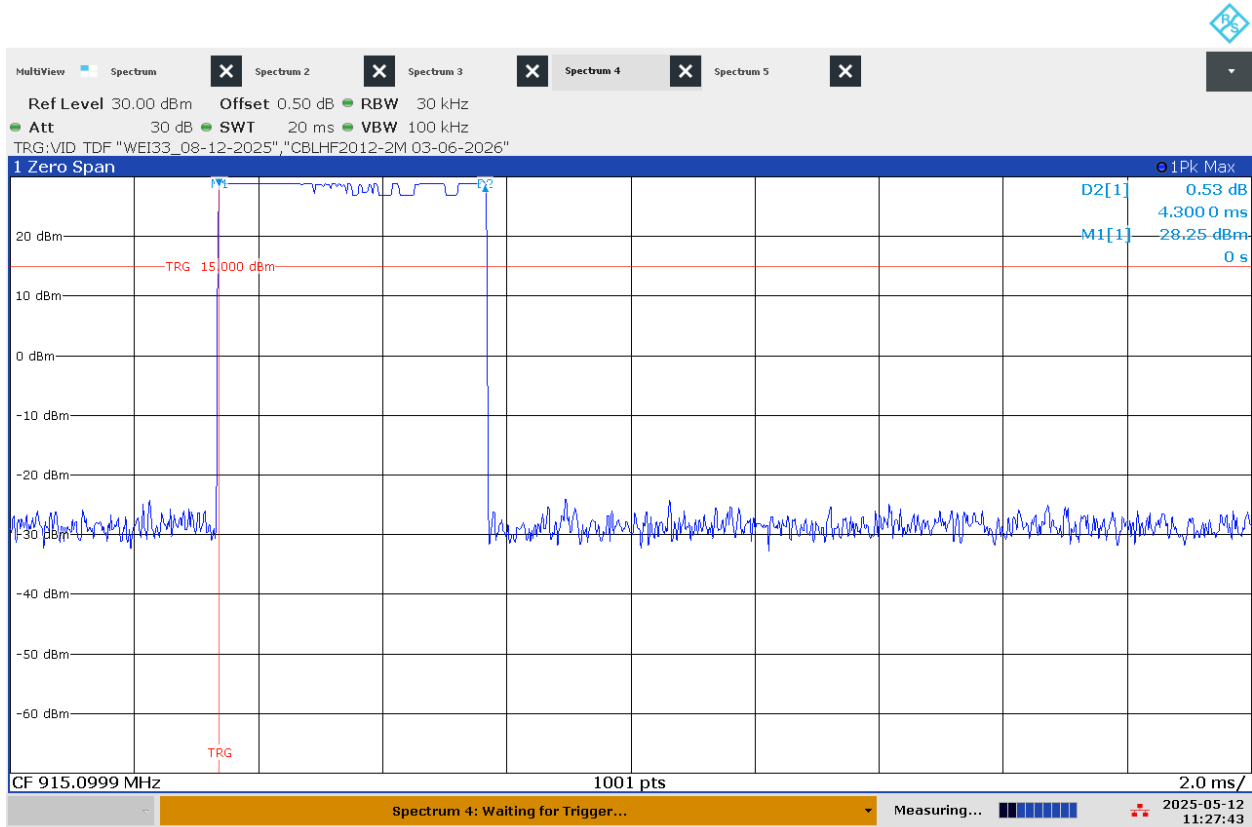
Duty Cycle Factor Calculation

The pulse train repeats over a a 100 ms period.



12:02:37 PM 05/12/2025

Pulse Width



11:27:43 AM 05/12/2025

The duty cycle = 4.3 ms/100 ms = 0.043
Duty Cycle factor = 10*LOG(0.043) = 13.67 dB

Product Standards: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 6.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
05/12/2025	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC Power	Continuous transmit	22	31	1018
04/24/2026	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC Power	Continuous transmit	26	22	1002

Deviations, Additions, or Exclusions: None

7 Transmitter Spurious emissions

7.1 Method

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

TEST SITE: 10m ALSE and EMC Lab

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.

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 Limit

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))

7.3 Test Equipment Used:

Test equipment used for radiated spurious emissions testing

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/16/2026	03/16/2027
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/17/2025	06/17/2026
HS006'	2m Long	Huber suhner	SF118A	505110/118A	10/09/2025	10/09/2026
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	05/28/2025	05/28/2026
145-406'	10m Track A In-floor Cable #1	Huber + Suhner	sucoflex 160-19220mm	001	06/26/2025	06/26/2026
HS004'	2M long	Huber suhner	SF118A	505108/118A	10/09/2025	10/09/2026
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/16/2025	09/16/2026
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	07/17/2025	07/17/2026
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/18/2025	09/18/2026
HS013'	12.5M long	Hubner Suhner	SF106	537114/6	10/09/2025	10/09/2026
HS005'	2M long	Huber suhner	SF118A	505109/118A	10/09/2025	10/09/2026
HS009'	8m long	Hubner Suhner	SF106	537115/6	10/09/2025	10/09/2026
FAIR001'	Tunable notch filter 500-1000MHz	Fairview Microwave	SBRF-0500-1000-01-N	DC 1651	05/01/2025	05/01/2026
REA003'	1GHz High Pass Filter	Reactel, Inc	7HS-1G/10G-S11	06-1	03/06/2025	03/06/2026

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2023.0.9.0

Equipment used for antenna port conducted spurious emissions testing

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/16/2026	03/16/2027
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Schwartz	FSW43	100646	01/29/2026	01/29/2027
MIN27'	Attenuator 20dB 50watt DC-18Ghz	Mini Circuits	BW-N20W50	VY6127411835	09/16/2025	09/16/2026
MEG002'	Cable,SMA-SMA,9KHz-40GHz, (Cable Kit 6)	Megaphase	TM40-K1K1-197	59006401001	01/28/2026	01/28/2027

Software Utilized:

Name	Manufacturer	Version
None		

7.4 Results:

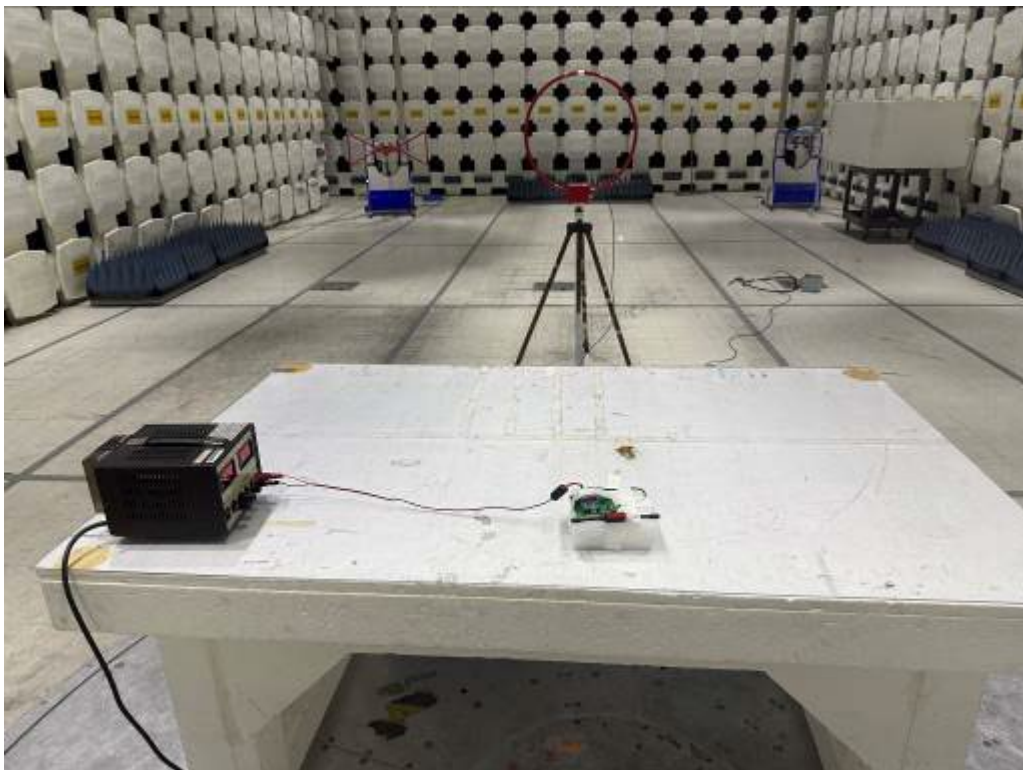
The sample tested was found to Comply.

7.5 Setup Photographs:

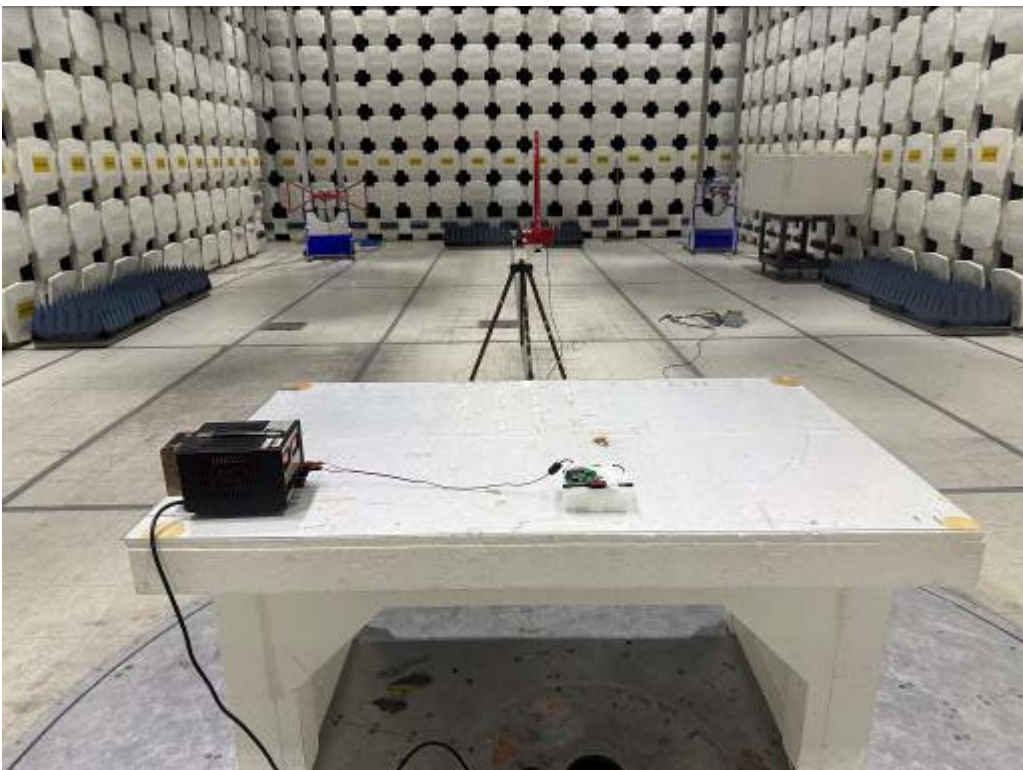
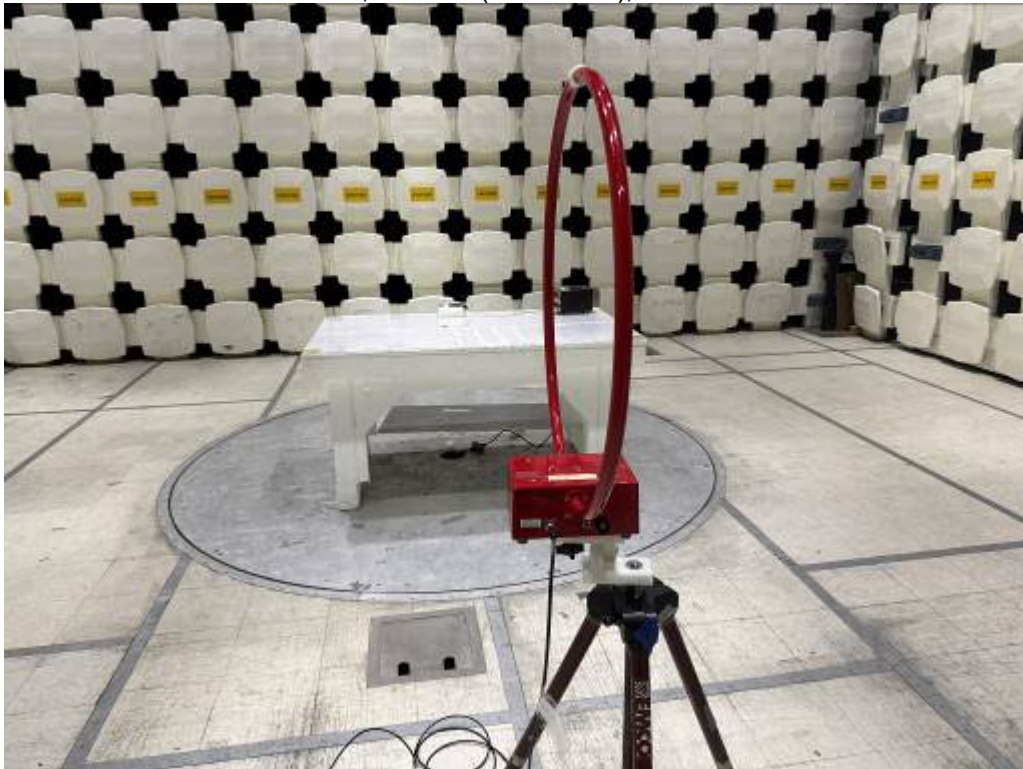
Antenna Conducted Spurious Emissions Test Setup



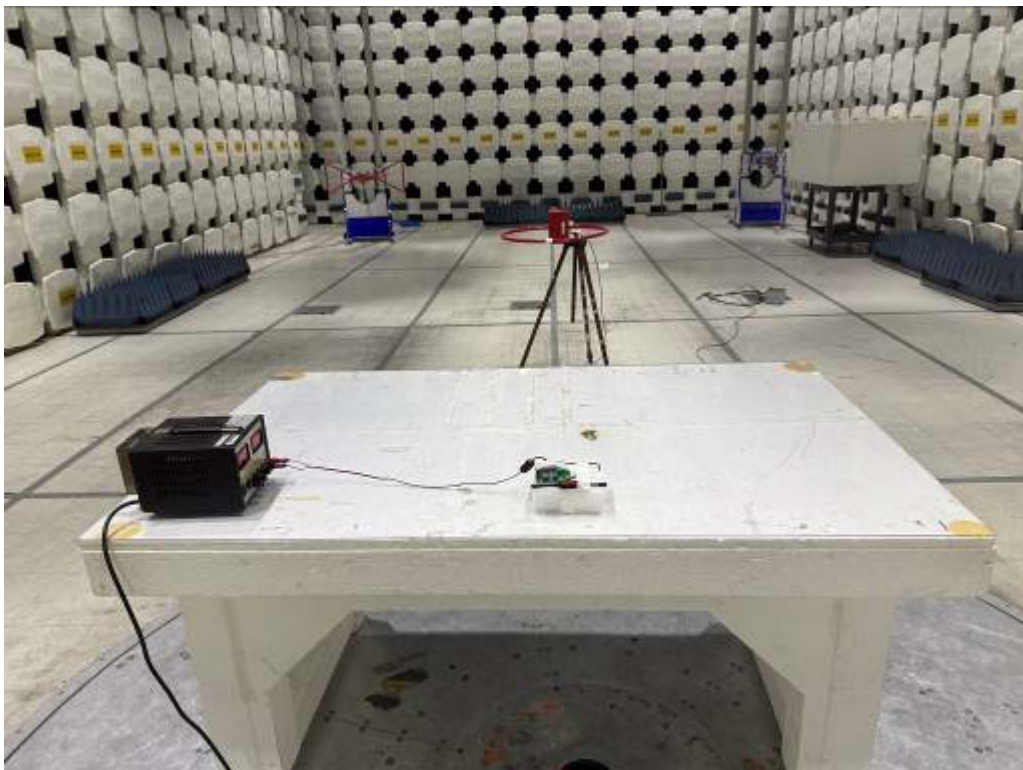
9 kHz – 30 MHz, EUT flat (worst case), Antenna on X-Axis



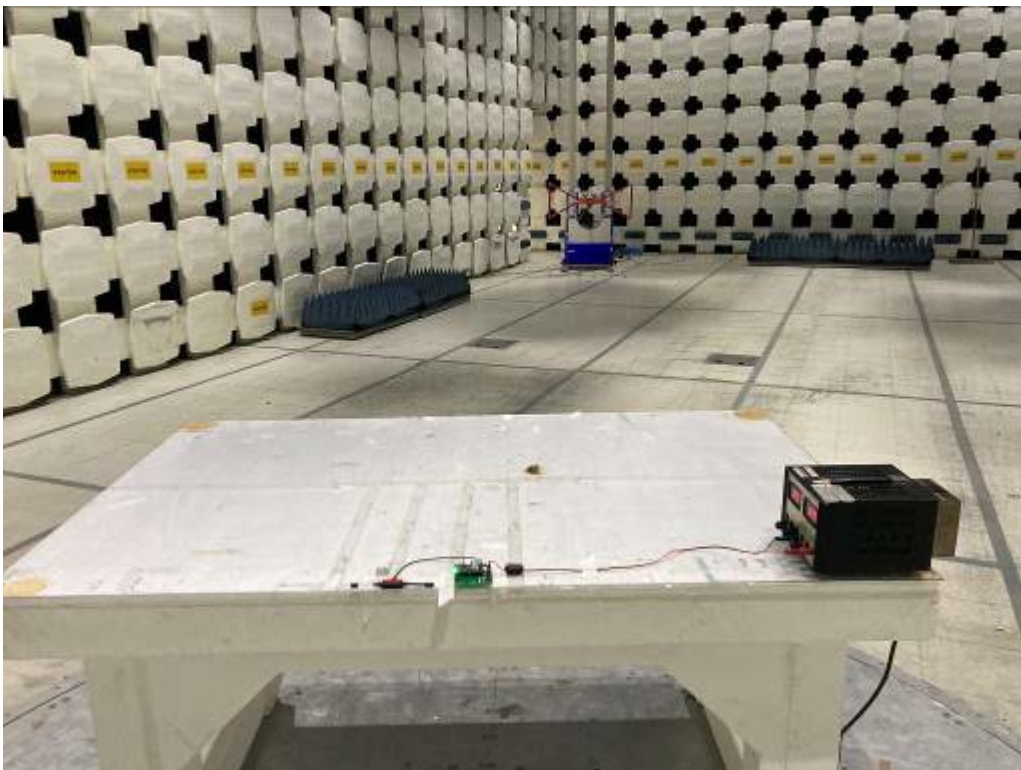
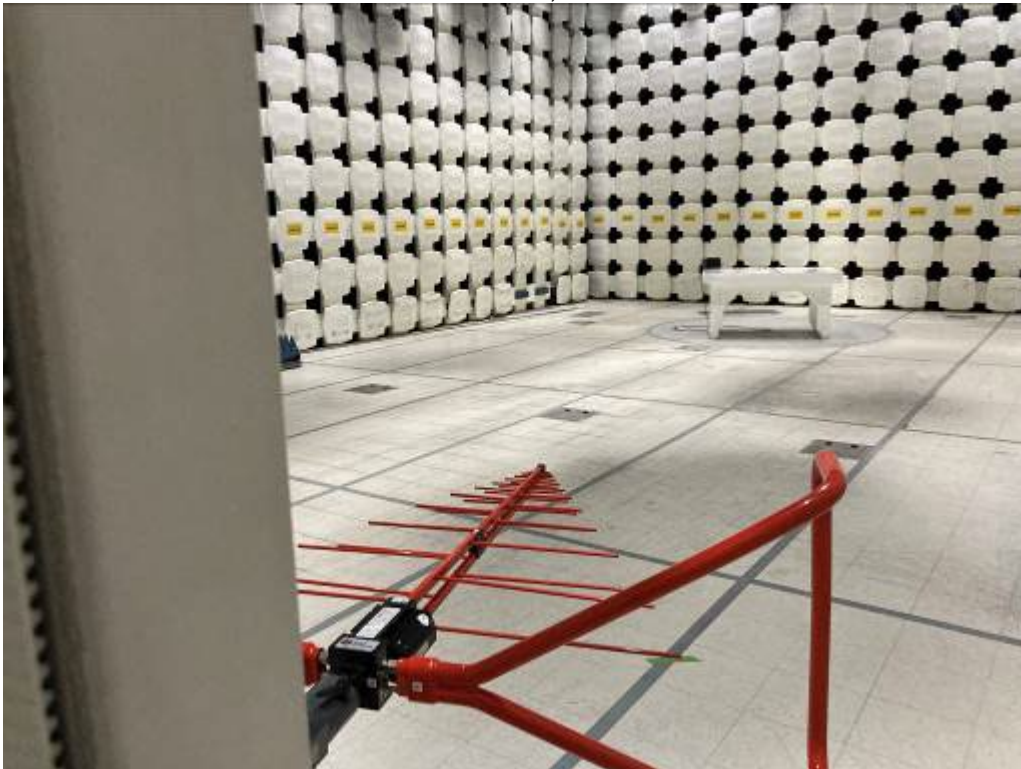
9 kHz – 30 MHz, EUT flat (worst case), Antenna on Y-Axis



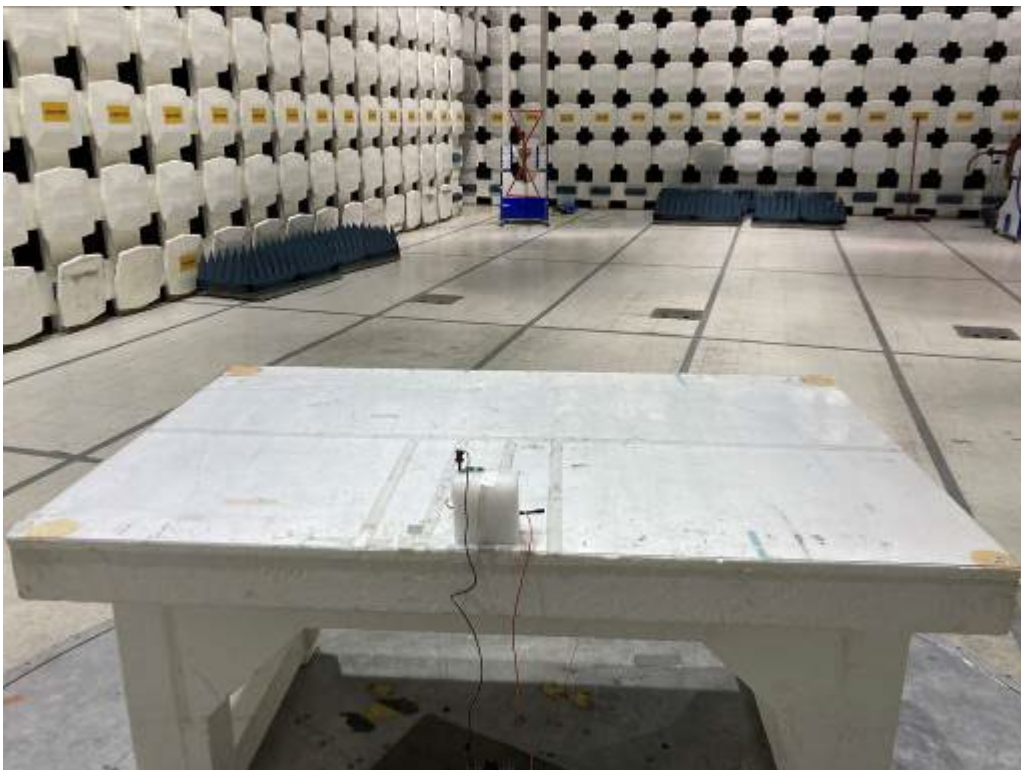
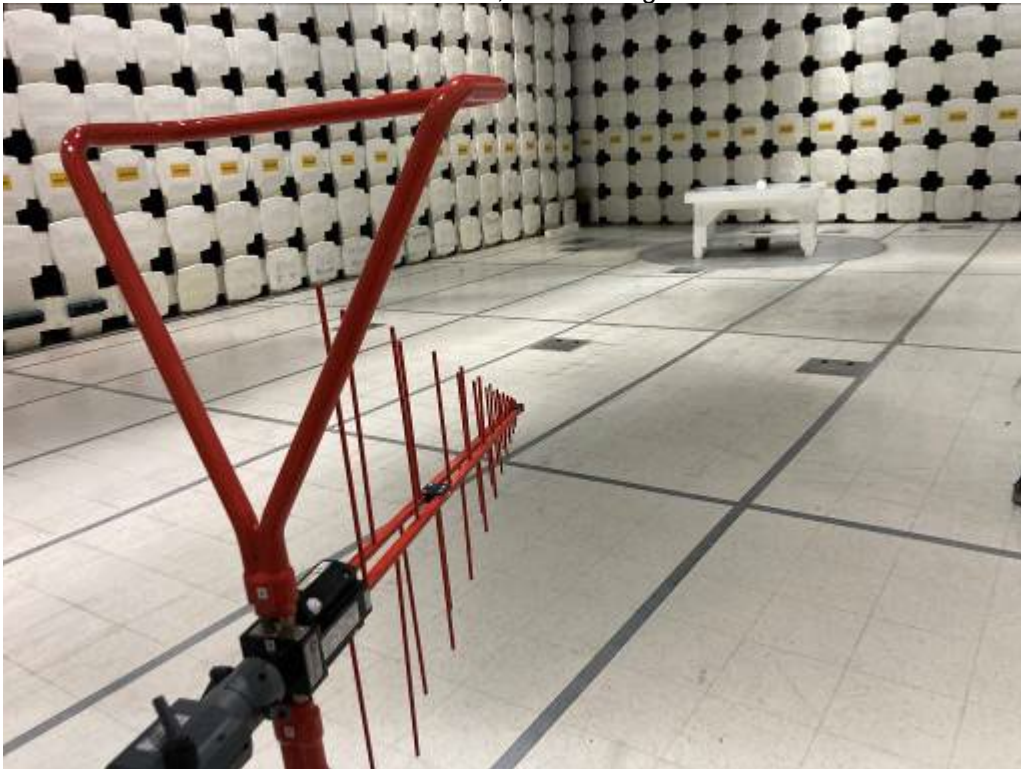
9 kHz – 30 MHz, EUT flat (worst case), Antenna on Z-Axis



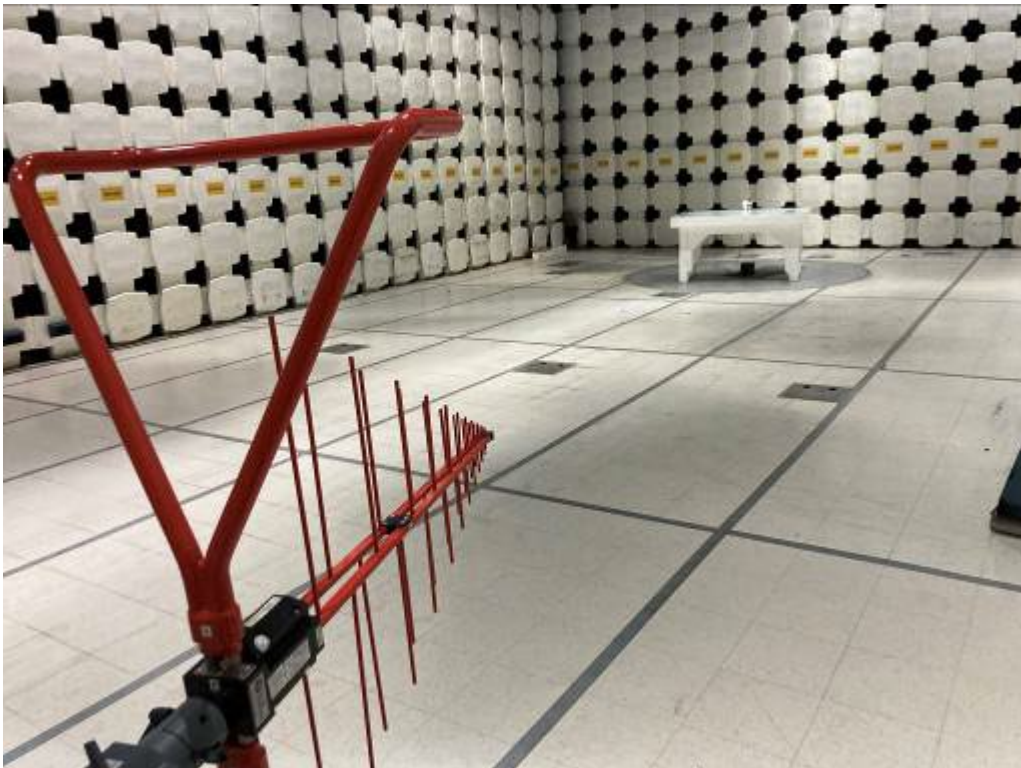
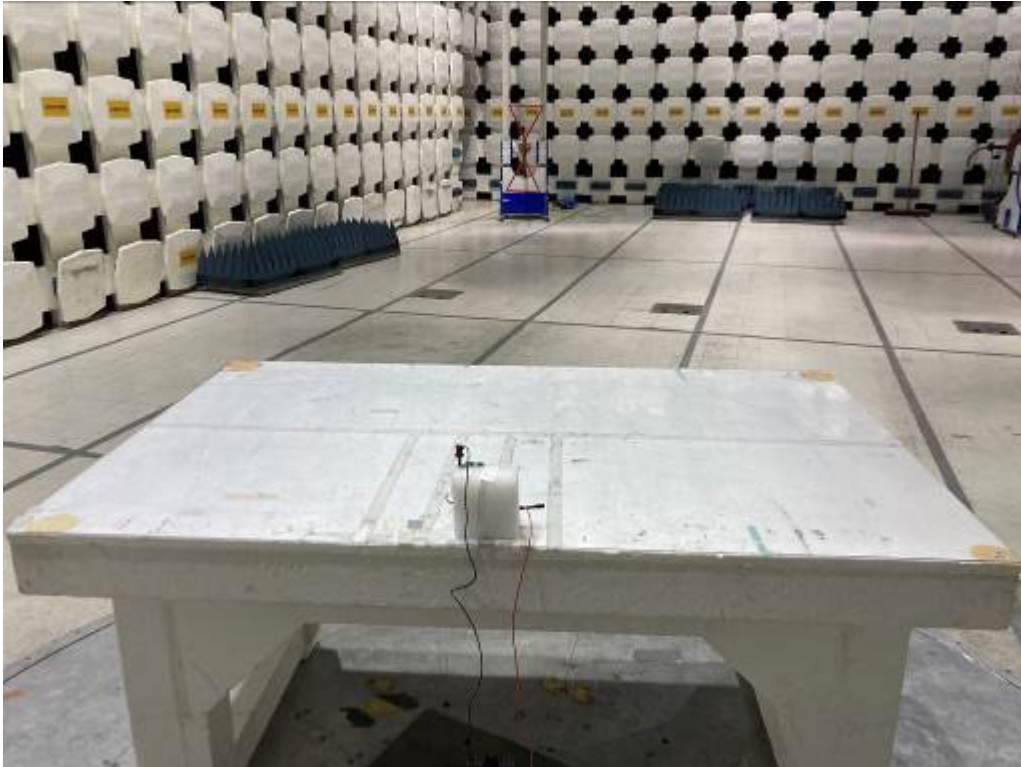
30 – 1000 MHz, EUT flat



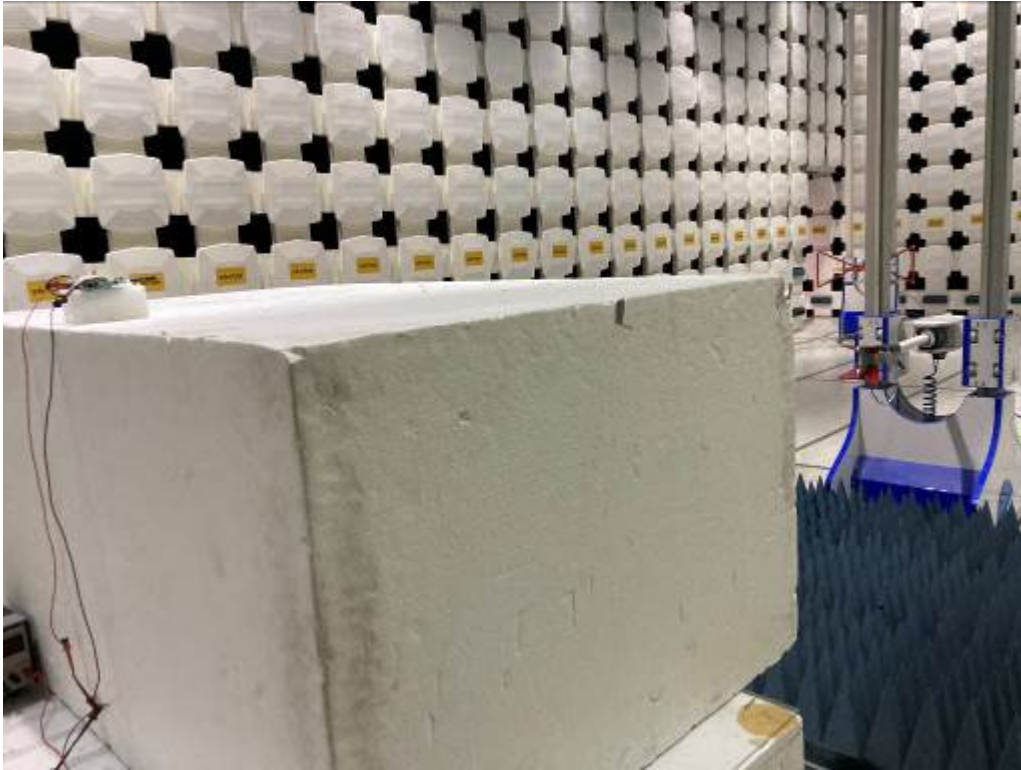
30 – 1000 MHz, EUT its long side



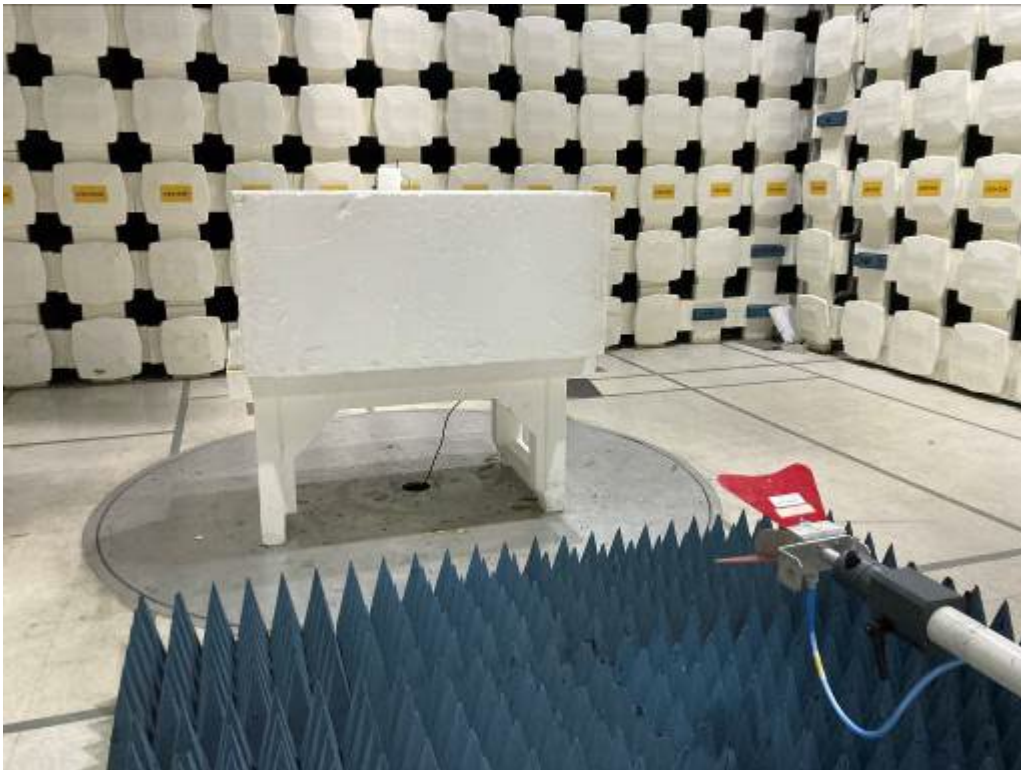
30 – 1000 MHz, EUT its short side



1 – 10 GHz, EUT flat



1 – 10 GHz EUT its long side

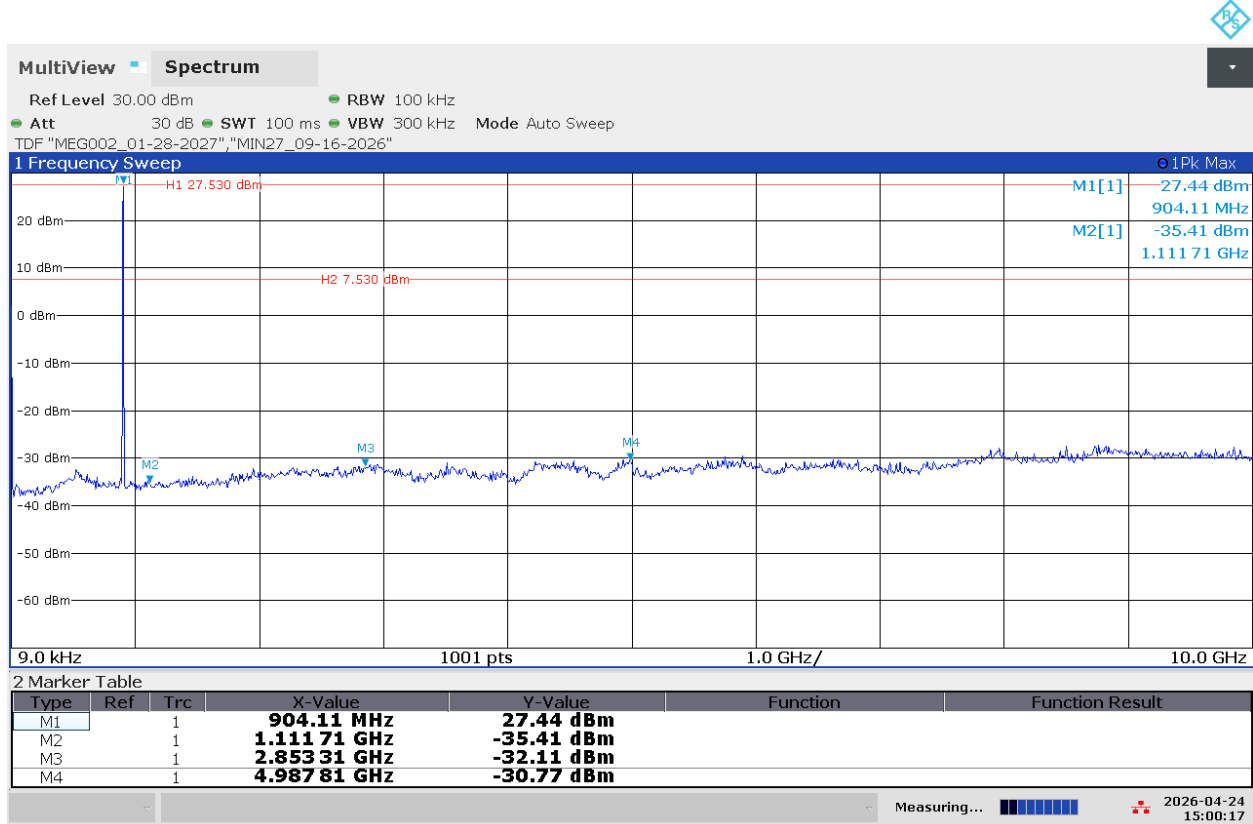


1 – 10 GHz, EUT its short side



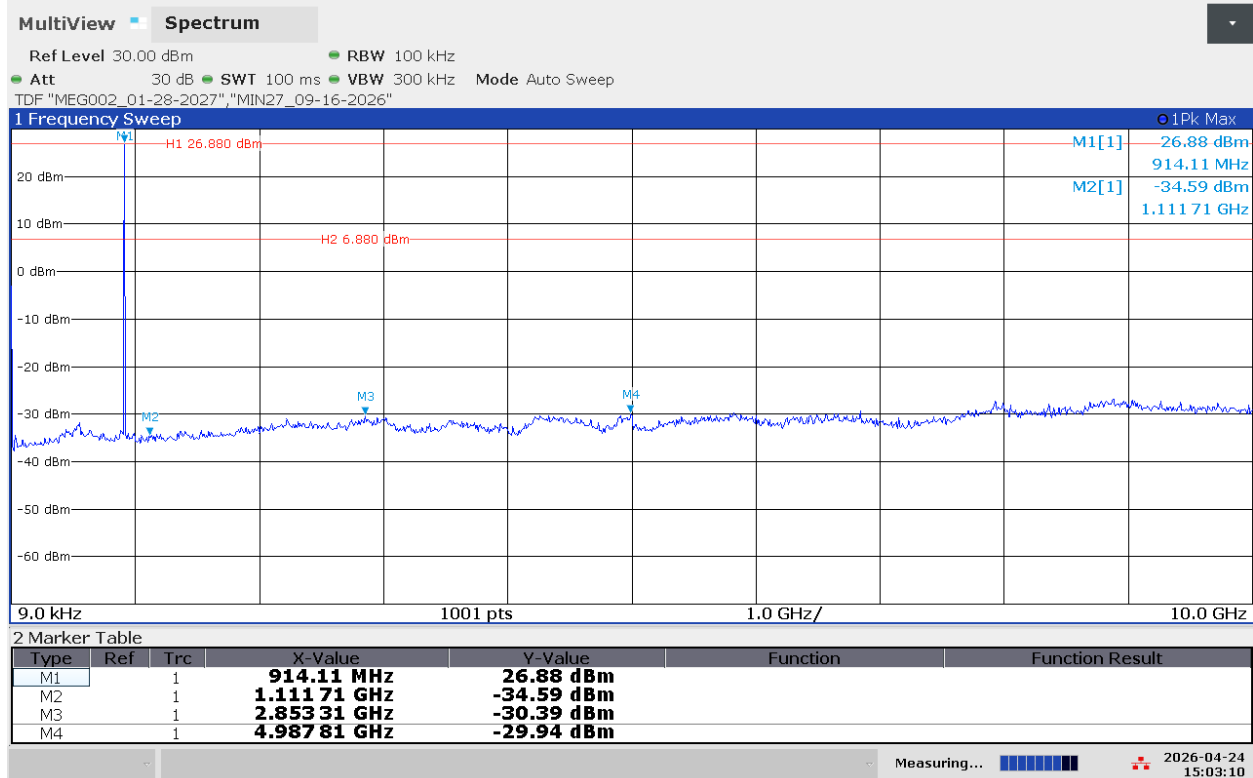
7.6 Test Data:

Low Channel Antenna Port Conducted Spurious Emissions From 9 kHz to 10 GHz



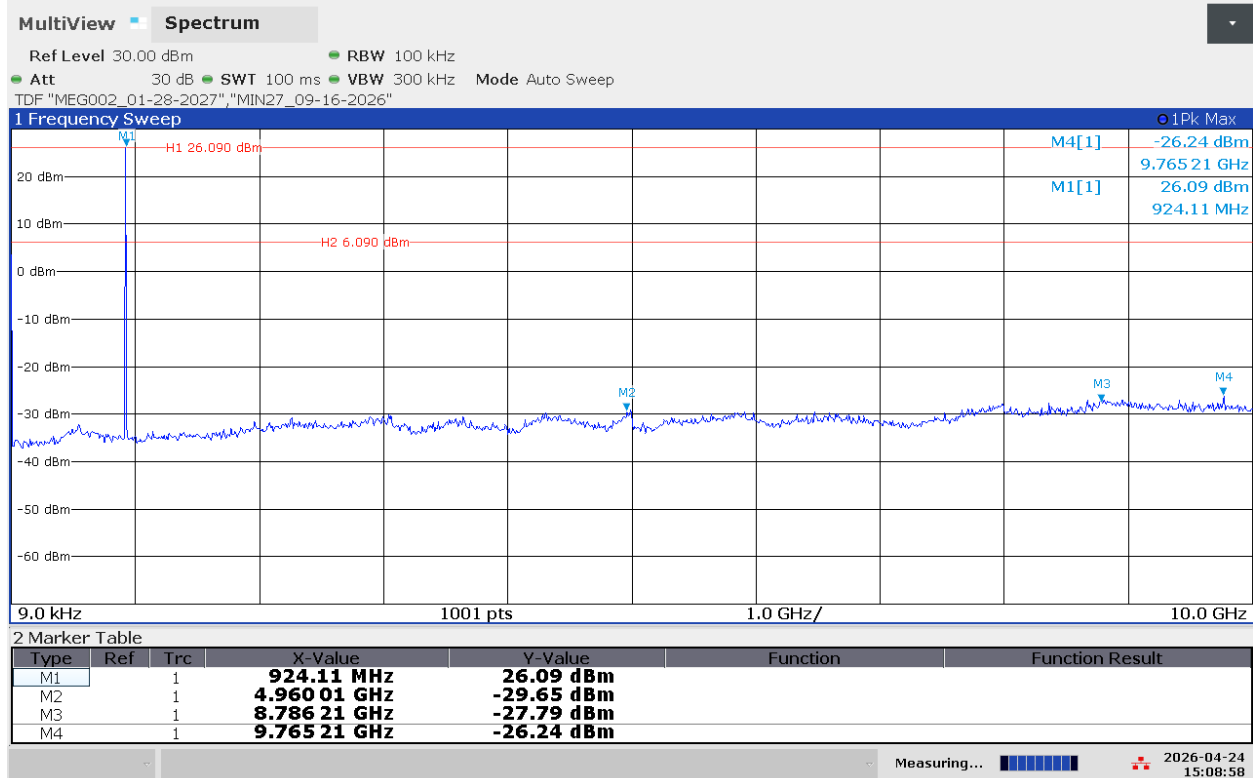
03:00:18 PM 04/24/2026

Mid Channel Antenna Port Conducted Spurious Emissions From 9 kHz to 10 GHz



03:03:10 PM 04/24/2026

High Channel Antenna Port Conducted Spurious Emissions From 9 kHz to 10 GHz



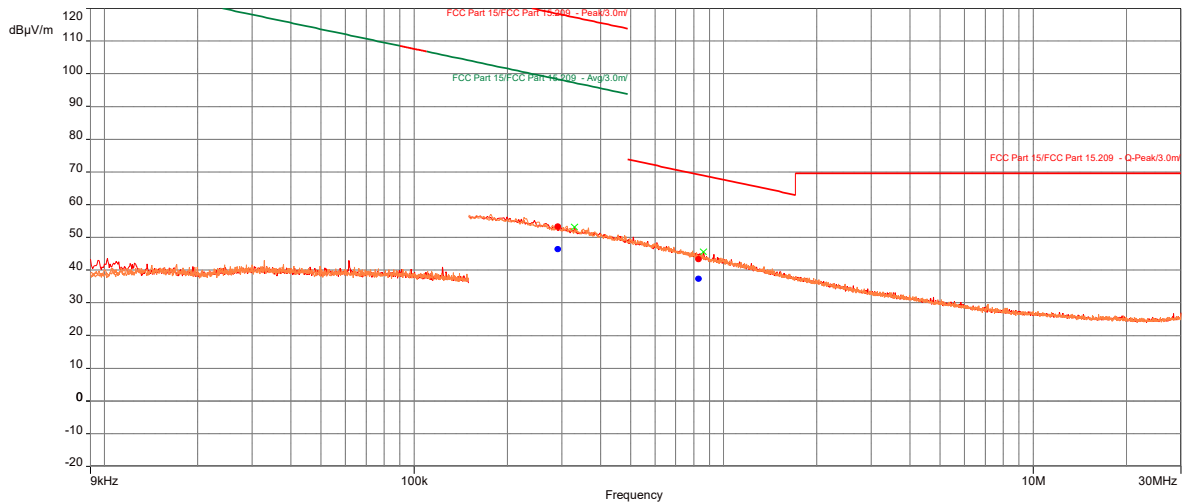
03:08:58 PM 04/24/2026

Transmit at Low Channel, Radiated Spurious Emissions From 9 kHz to 30 MHz

Test Information:

Date and Time	4/19/2026 12:15:13 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	22 deg C
Humidity	45 %
Atmospheric Pressure	999 mbars
Comments	Scan 27_RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209)_EUT on its back (worst-case)_Tx Low CH

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
0.29162	53.40	69.23	-15.83	97.10	Horizontal	9k	1.00	12.60
0.82924	43.31	69.23	-25.92	188.10	Horizontal	9k	1.00	12.62

QuasiPeak (PASS) (2)

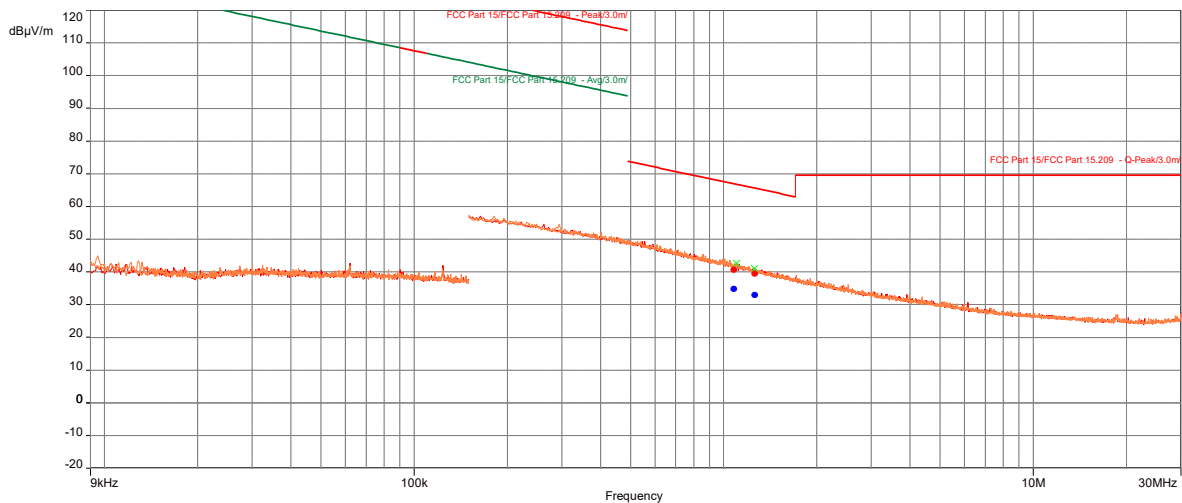
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
0.29162	46.42	69.23	-22.81	97.10	Horizontal	9k	1.00	12.60
0.82924	37.37	69.23	-31.85	188.10	Horizontal	9k	1.00	12.62

Transmit at Mid Channel, Radiated Spurious Emissions From 9 kHz to 30 MHz

Test Information:

Date and Time	4/19/2026 12:34:53 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	22 deg C
Humidity	45 %
Atmospheric Pressure	999 mbars
Comments	Scan 28_RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209) EUT on its back (worst-case) Tx Mid CH

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1.07986	40.74	66.94	-26.20	156.40	Horizontal	9k	1.00	12.86
1.25924	39.44	65.60	-26.16	295.00	Horizontal	9k	1.00	12.84

QuasiPeak (PASS) (2)

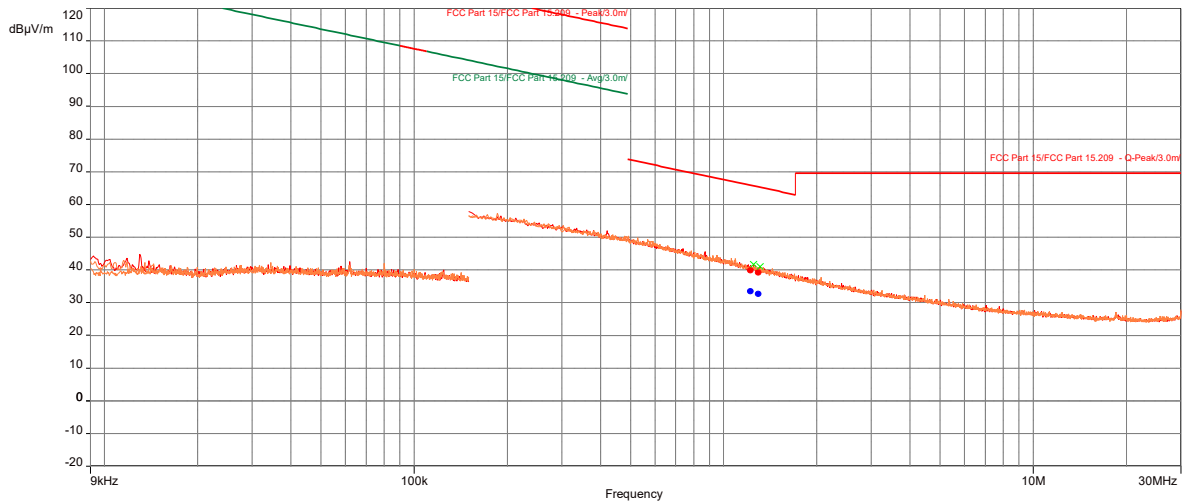
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1.07986	34.88	66.94	-32.06	156.40	Horizontal	9k	1.00	12.86
1.25924	33.00	65.60	-32.60	295.00	Horizontal	9k	1.00	12.84

Transmit at High Channel, Radiated Spurious Emissions From 9 kHz to 30 MHz

Test Information:

Date and Time	4/19/2026 12:47:23 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	22 deg C
Humidity	45 %
Atmospheric Pressure	999 mbars
Comments	Scan 29_RE 9kHz-30MHz Loop antenna, Electric Field, 3M Location (FCC 15.209) EUT on its back (worst-case) Tx High CH

Graph:



Results:

Peak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1.21803	39.92	65.89	-25.97	124.40	Horizontal	9k	1.00	12.84
1.29473	39.25	65.36	-26.11	215.40	Horizontal	9k	1.00	12.83

QuasiPeak (PASS) (2)

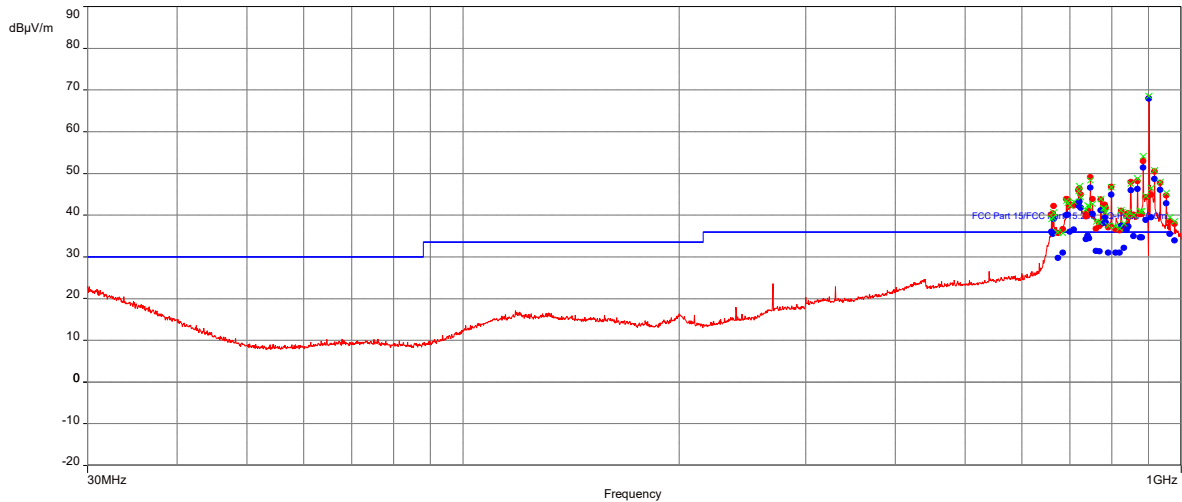
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1.21803	33.45	65.89	-32.44	124.40	Horizontal	9k	1.00	12.84
1.29473	32.77	65.36	-32.59	215.40	Horizontal	9k	1.00	12.83

**Transmit at Low Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its back)**

Test Information:

Date and Time	3/16/2026 9:02:52 AM
Client and Project Number	Control Chief
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 9_ Transmit at low Channel, EUT on its back, FAIR001 + PRE11, RE 30-1000 MHz

Graph:



Results:

QuasiPeak (PASS) (17) – Used FCC 15.209 General Limits

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
662.3324	35.49	36.00	-0.51	214.90	1.39	Horizontal	120k	1.00	-10.16
673.6553	29.74	36.00	-6.26	220.30	1.03	Horizontal	120k	1.00	-10.15
684.2231	30.99	36.00	-5.01	215.20	1.20	Horizontal	120k	1.00	-9.91
736.6957	34.32	36.00	-1.68	204.90	1.39	Horizontal	120k	1.00	-8.97
741.4004	35.14	36.00	-0.86	198.40	1.00	Horizontal	120k	1.00	-8.89
744.3921	34.46	36.00	-1.54	204.50	1.51	Horizontal	120k	1.00	-8.88
761.4178	31.44	36.00	-4.56	204.20	1.21	Horizontal	120k	1.00	-8.50
769.5968	31.32	36.00	-4.68	182.50	1.00	Horizontal	120k	1.00	-8.21
791.0901	31.02	36.00	-4.98	188.60	1.33	Horizontal	120k	1.00	-7.96
810.398	31.08	36.00	-4.92	177.30	1.09	Horizontal	120k	1.00	-7.49
820.8565	31.02	36.00	-4.98	177.80	1.09	Horizontal	120k	1.00	-7.25
832.2886	32.19	36.00	-3.81	209.50	1.09	Horizontal	120k	1.00	-7.06
858.2686	34.99	36.00	-1.01	177.70	1.14	Horizontal	120k	1.00	-6.65
876.2476	34.69	36.00	-1.31	172.40	1.00	Horizontal	120k	1.00	-6.59
881.6912	34.67	36.00	-1.33	204.60	1.00	Horizontal	120k	1.00	-6.32
964.5886	35.49	43.50	-8.01	172.00	1.00	Horizontal	120k	1.00	-5.12
979.6352	33.93	43.50	-23.43	177.40	1.00	Horizontal	120k	1.00	-4.82

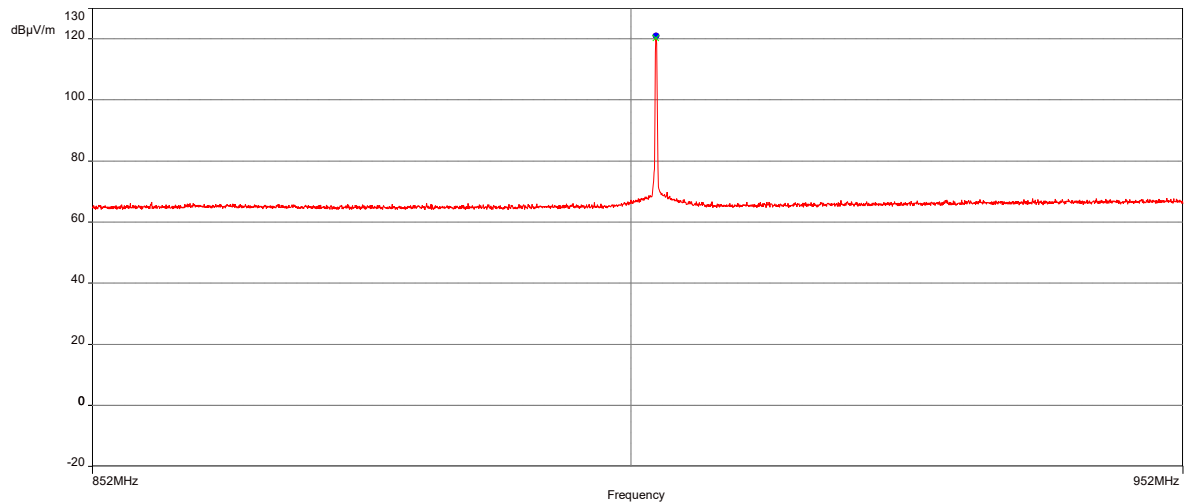
QuasiPeak (Pass) (28) – Used 20 dBc limit

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
659.991	36.00	101	-65	221.60	1.27	Horizontal	120k	1.00	-10.16
664.596	39.09	101	-61.91	214.60	1.45	Horizontal	120k	1.00	-10.16
692.289	40.07	101	-60.93	209.90	1.03	Horizontal	120k	1.00	-9.73
694.5886	40.13	101	-60.87	321.20	1.21	Horizontal	120k	1.00	-9.73
700.2579	36.08	101	-64.92	214.40	1.21	Horizontal	120k	1.00	-9.61
708.3783	36.60	101	-64.4	209.20	1.39	Horizontal	120k	1.00	-9.36
720.0239	42.34	101	-58.66	332.50	1.27	Horizontal	120k	1.00	-9.15
721.9316	43.25	101	-57.75	337.60	1.00	Horizontal	120k	1.00	-9.05
724.6019	41.85	101	-59.15	209.70	1.21	Horizontal	120k	1.00	-9.04
747.7092	46.61	101	-54.39	200.00	1.15	Horizontal	120k	1.00	-8.80
752.2875	40.39	101	-60.61	199.00	1.33	Horizontal	120k	1.00	-8.73
773.4702	41.22	101	-59.78	193.50	1.15	Horizontal	120k	1.00	-8.15
779.9881	38.16	101	-62.84	188.30	1.03	Horizontal	120k	1.00	-8.08
782.2935	39.45	101	-61.55	188.30	1.21	Horizontal	120k	1.00	-8.08
784.5826	38.34	101	-62.66	193.10	1.21	Horizontal	120k	1.00	-8.07
799.2163	44.94	101	-56.06	182.60	1.00	Horizontal	120k	1.00	-7.93
825.0238	37.52	101	-63.48	177.50	1.00	Horizontal	120k	1.00	-7.24
840.003	36.51	101	-64.49	177.40	1.00	Horizontal	120k	1.00	-6.98
844.5931	37.31	101	-63.69	182.70	1.15	Horizontal	120k	1.00	-6.86
850.7564	46.02	101	-54.98	177.30	1.00	Horizontal	120k	1.00	-6.82
869.4448	46.28	101	-54.72	177.30	1.00	Horizontal	120k	1.00	-6.61
885.8654	51.46	101	-49.54	198.30	1.09	Horizontal	120k	1.00	-5.88
893.4083	38.93	101	-62.07	172.40	1.09	Horizontal	120k	1.00	-6.06
902.2994	67.95	101	-33.05	171.60	1.09	Horizontal	120k	1.00	-6.14
908.0768	39.53	101	-61.47	177.40	1.00	Horizontal	120k	1.00	-5.94
918.7201	48.69	101	-52.31	177.00	1.00	Horizontal	120k	1.00	-5.77
935.1616	46.11	101	-54.89	171.80	1.00	Horizontal	120k	1.00	-5.55
953.8291	42.81	101	-58.19	194.60	1.00	Horizontal	120k	1.00	-5.19

FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 121 dBuV/m (Scan 10) and the limit is 121 dBuV/m – 20 = 101. The carrier was measured separately with no pre-amp or notch filter.

**Scan 10: Transmit at Low Channel, Radiated Fundamental Signal
(EUT on its back)****Test Information:**

Date and Time	3/16/2026 11:58:51 AM
Client and Project Number	Control Chief
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 10 Transmit at low Channel, EUT on its back, Fundamental

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

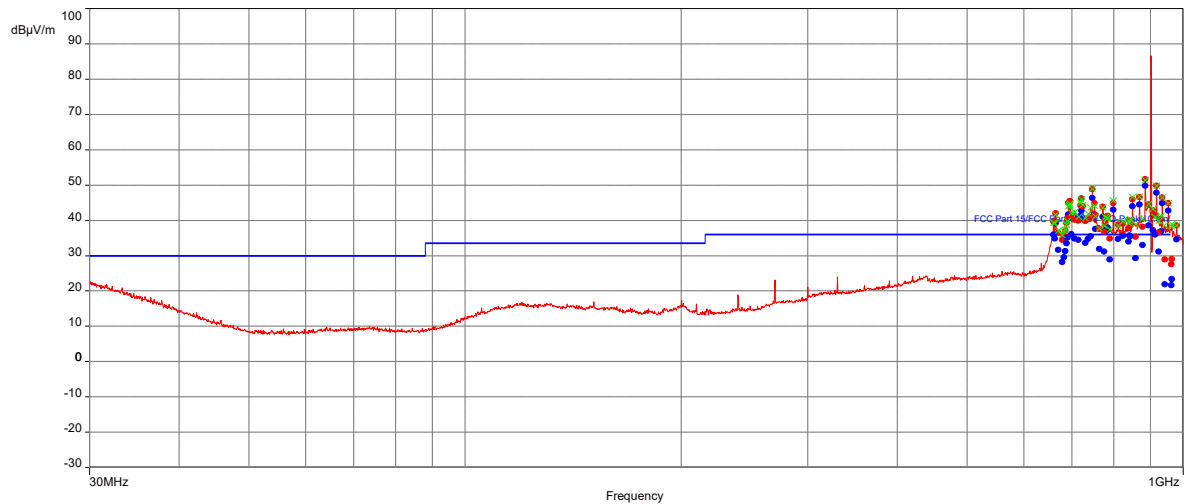
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
902.301	121.02	--	172.40	1.03	Horizontal	120k	1.00	33.46

**Transmit at Low Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its DC Power Side)**

Test Information:

Date and Time	4/14/2026 1:04:41 PM
Client and Project Number	Control Chief
Engineer	Kouma Sinn
Temperature	25 deg C
Humidity	35 %
Atmospheric Pressure	1004 mbars
Comments	Scan 24_ Transmit at Low Channel, EUT on its DC power side, FAIR001 + PRE11, 30-1000 MHz

Graph:



Intertek

Report Number: 106538840BOX-001 Rev1

Issued: 04/28/2026
Revised: 05/26/2026

Results:

Peak (PASS) (54)

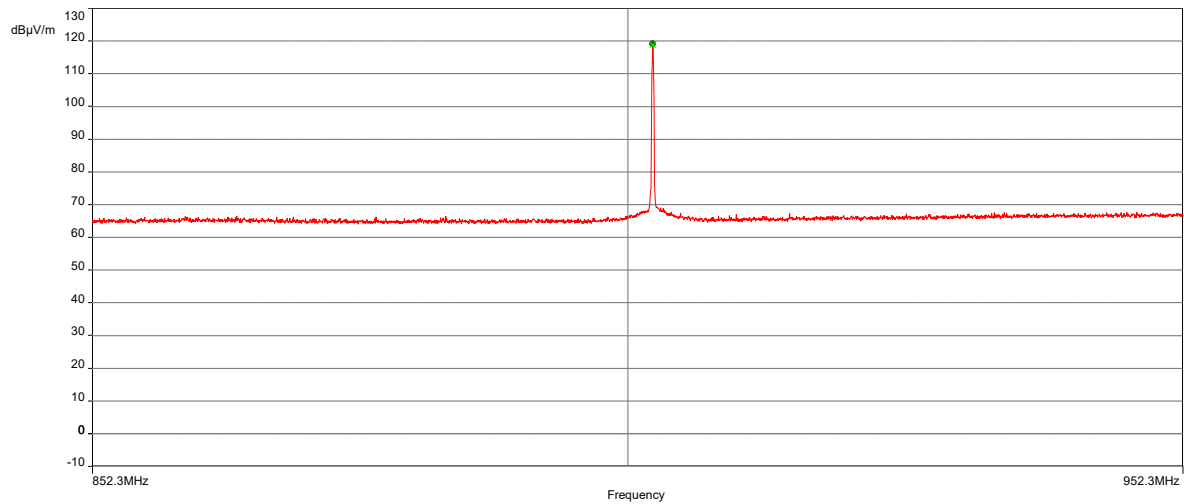
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
660.003	39.66	99.18	-59.52	129.10	1.27	Horizontal	120k	1.00	-10.16
662.3325	39.77	99.18	-59.41	135.00	1.09	Horizontal	120k	1.00	-10.16
664.5946	42.08	99.18	-57.1	135.40	1.27	Horizontal	120k	1.00	-10.16
669.7395	36.53	99.18	-62.65	129.30	1.00	Horizontal	120k	1.00	-10.15
678.5746	34.58	99.18	-64.6	86.90	1.15	Horizontal	120k	1.00	-10.07
682.2944	35.84	99.18	-63.34	214.90	1.09	Horizontal	120k	1.00	-9.94
685.7215	37.16	99.18	-62.02	92.00	1.15	Horizontal	120k	1.00	-9.91
687.7039	39.24	99.18	-59.94	86.90	1.00	Horizontal	120k	1.00	-9.83
689.9998	40.63	99.18	-58.55	81.60	1.00	Horizontal	120k	1.00	-9.83
692.3024	44.96	99.18	-54.22	87.10	1.39	Horizontal	120k	1.00	-9.73
694.5946	45.43	99.18	-53.75	87.00	1.21	Horizontal	120k	1.00	-9.73
695.6593	45.51	99.18	-53.67	92.50	1.45	Horizontal	120k	1.00	-9.72
699.3281	41.52	99.18	-57.66	87.00	1.27	Horizontal	120k	1.00	-9.62
706.1919	40.23	99.18	-58.95	92.10	1.09	Horizontal	120k	1.00	-9.40
715.1165	39.98	99.18	-59.2	76.20	1.00	Horizontal	120k	1.00	-9.17
719.997	44.26	99.18	-54.92	97.70	1.09	Horizontal	120k	1.00	-9.16
721.4565	46.21	99.18	-52.97	87.60	1.00	Horizontal	120k	1.00	-9.05
724.587	44.02	99.18	-55.16	86.90	1.09	Horizontal	120k	1.00	-9.04
731.2359	39.84	99.18	-59.34	76.00	1.39	Horizontal	120k	1.00	-9.02
737.2391	40.39	99.18	-58.79	92.20	1.21	Horizontal	120k	1.00	-8.96
743.2471	40.99	99.18	-58.19	86.70	1.00	Horizontal	120k	1.00	-8.88
747.3045	48.82	99.18	-50.36	92.30	1.21	Horizontal	120k	1.00	-8.84
752.3069	44.84	99.18	-54.34	86.60	1.09	Horizontal	120k	1.00	-8.72
754.6215	41.52	99.18	-57.66	97.90	1.21	Horizontal	120k	1.00	-8.71
763.9664	37.63	99.18	-61.55	97.30	1.15	Horizontal	120k	1.00	-8.44
773.1329	43.87	99.18	-55.31	81.80	1.00	Horizontal	120k	1.00	-8.11
776.6167	36.83	99.18	-62.35	92.60	1.09	Horizontal	120k	1.00	-8.09
780.0104	40.58	99.18	-58.6	92.40	1.09	Horizontal	120k	1.00	-8.08
782.3084	41.07	99.18	-58.11	103.20	1.03	Horizontal	120k	1.00	-8.08
784.5961	41.34	99.18	-57.84	102.90	1.09	Horizontal	120k	1.00	-8.07
790.623	34.89	99.18	-64.29	108.30	3.63	Horizontal	120k	1.00	-7.99
798.972	44.88	99.18	-54.3	76.80	1.00	Horizontal	120k	1.00	-7.93
812.2919	38.83	99.18	-60.35	97.20	3.51	Horizontal	120k	1.00	-7.48
824.7989	39.07	99.18	-60.11	81.70	1.00	Horizontal	120k	1.00	-7.24
839.9851	37.82	99.18	-61.36	307.00	1.15	Horizontal	120k	1.00	-6.98
842.3189	40.00	99.18	-59.18	125.10	1.03	Horizontal	120k	1.00	-6.97
844.629	39.69	99.18	-59.49	108.50	1.00	Horizontal	120k	1.00	-6.86
850.6664	46.04	99.18	-53.14	119.10	1.03	Horizontal	120k	1.00	-6.83
858.2731	35.33	99.18	-63.85	258.70	4.00	Horizontal	120k	1.00	-6.65
869.7658	46.63	99.18	-52.55	87.00	1.15	Horizontal	120k	1.00	-6.60
878.3789	38.24	99.18	-60.94	87.00	1.00	Horizontal	120k	1.00	-6.53
886.023	51.64	99.18	-47.54	97.90	1.00	Horizontal	120k	1.00	-5.90
895.9095	44.47	99.18	-54.71	98.10	1.00	Horizontal	120k	1.00	-6.10
907.7445	42.78	99.18	-56.4	92.00	1.09	Horizontal	120k	1.00	-5.96
914.2481	41.41	99.18	-57.77	102.70	1.21	Horizontal	120k	1.00	-5.86
918.5596	49.89	99.18	-49.29	97.60	1.00	Horizontal	120k	1.00	-5.75
925.2765	36.66	99.18	-62.52	97.30	2.78	Horizontal	120k	1.00	-5.68
932.2905	40.50	99.18	-58.68	103.00	1.00	Horizontal	120k	1.00	-5.56
934.8422	46.46	99.18	-52.72	108.80	1.00	Horizontal	120k	1.00	-5.55
942.3539	28.97	99.18	-70.21	263.80	4.00	Horizontal	120k	1.00	-5.33
953.9625	44.92	99.18	-54.26	108.70	1.03	Horizontal	120k	1.00	-5.19
962.2859	27.59	54.00	-26.41	108.40	4.00	Horizontal	120k	1.00	-5.13
964.608	29.12	54.00	-24.88	81.20	4.00	Horizontal	120k	1.00	-5.12
979.7551	38.55	54.00	-15.45	108.00	2.78	Horizontal	120k	1.00	-4.82

FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 119.18 dBuV/m (Scan 23) and the limit is 119.18 dBuV/m – 20 = 99.18 dBuV/m. The carrier was measured separately with no pre-amp or notch filter.

Note: Peak readings were compared to Average limits in restricted band at frequencies 962.2859 MHz, 964.608 MHz, and 979.7551 MHz.

**Scan 23: Transmit at Low Channel, Radiated Fundamental Signal
(EUT on its DC Power Side)****Test Information:**

Date and Time	4/14/2026 12:44:48 PM
Client and Project Number	Control Chief
Engineer	Kouma Sinn
Temperature	25 deg C
Humidity	35 %
Atmospheric Pressure	1004 mbars
Comments	Scan 23_ Transmit at Low Channel, EUT on its DC power side, Fundamental

Graph:**Results:**

Peak (PASS) (1)

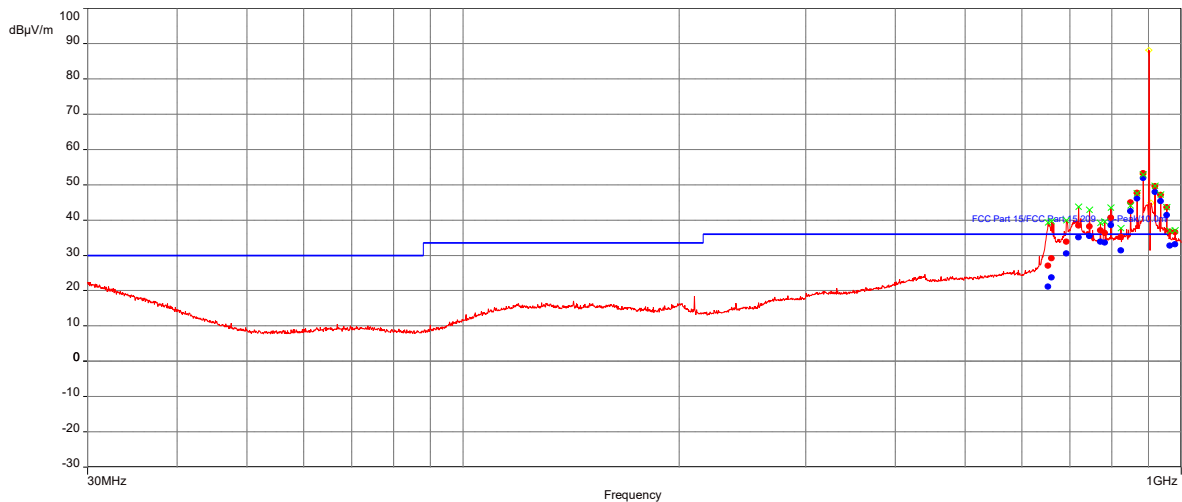
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
902.2994	119.18	---	97.80	1.09	Horizontal	120k	1.00	33.46

Transmit at Low Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz (EUT on its Long Side)

Test Information:

Date and Time	4/19/2026 8:50:18 AM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	22 deg C
Humidity	45 %
Atmospheric Pressure	999 mbars
Comments	Scan 25_ Transmit at Low Channel, EUT on its long side, FAIR001 + PRE11 30-1000 MHz

Graph:



Results:

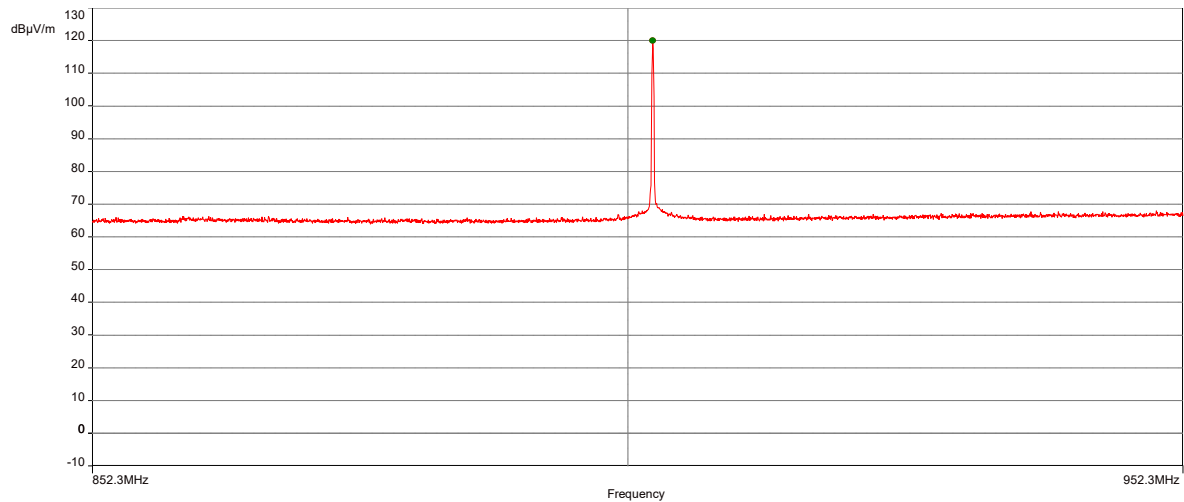
Peak

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
719.5875	38.50	99.98	-61.48	248.10	4.00	Vertical	120k	0.10	-9.16
745.7099	38.26	99.98	-61.72	248.20	4.00	Vertical	120k	0.10	-8.87
771.8234	37.08	99.98	-62.9	263.70	4.00	Vertical	120k	0.10	-8.20
782.3159	36.32	99.98	-63.66	247.70	4.00	Vertical	120k	0.10	-8.08
797.8815	40.75	99.98	-59.23	231.60	4.00	Vertical	120k	0.10	-7.95
850.1114	45.04	99.98	-54.94	323.40	1.21	Horizontal	120k	0.10	-6.84
868.1385	47.77	99.98	-52.21	328.10	1.09	Horizontal	120k	0.10	-6.61
885.216	53.31	99.98	-46.67	333.70	1.09	Horizontal	120k	0.10	-5.80
919.377	49.65	99.98	-50.33	345.00	1.03	Horizontal	120k	0.10	-5.76
936.4486	47.16	99.98	-52.82	349.30	1.00	Horizontal	120k	0.10	-5.47
954.498	43.69	99.98	-56.29	349.60	1.09	Horizontal	120k	0.10	-5.18
652.1049	27.11	99.98	-72.87	301.70	4.00	Vertical	120k	0.10	-10.17
659.988	29.15	99.98	-70.83	108.30	4.00	Vertical	120k	0.10	-10.16
692.3114	33.90	99.98	-66.08	301.00	4.00	Vertical	120k	0.10	-9.73
823.986	35.25	99.98	-64.73	216.30	4.00	Vertical	120k	0.10	-7.24
964.5765	36.78	54.00	-17.22	354.80	1.09	Horizontal	120k	0.10	-5.12
980.595	36.58	54.00	-17.42	338.40	1.03	Horizontal	120k	0.10	-4.74

FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above except two frequencies are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is dBuV/m (Scan 26) and the limit is 119.98 dBuV/m – 20 = 99.98. The carrier was measured separately with no pre-amp or notch filter. The highest peak is a fundamental frequency.

**Scan 26: Transmit at Low Channel, Radiated Fundamental Signal
(EUT on its Long Side)****Test Information:**

Date and Time	4/19/2026 8:30:40 AM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	22 deg C
Humidity	45 %
Atmospheric Pressure	999 mbars
Comments	Scan 26 Transmit at Low Channel, EUT on its long side, Fundamental

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

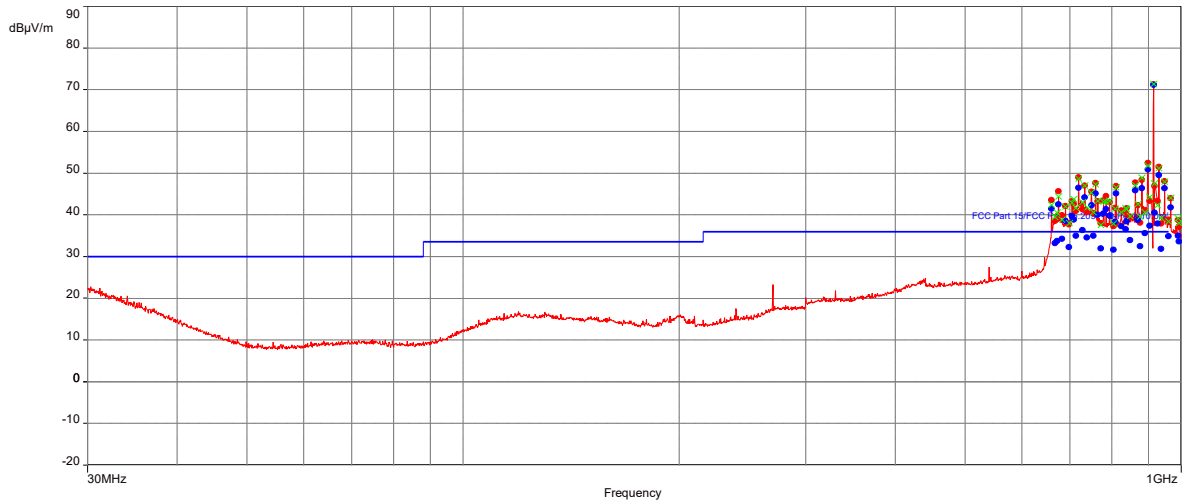
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
902.3009	119.98	---	333.70	1.36	Horizontal	120k	1.00	33.46

**Transmit at Mid Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its back)**

Test Information:

Date and Time	3/16/2026 12:20:15 PM
Client and Project Number	Control Chief
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 11_ Transmit at Mid Channel, EUT on its back, FAIR001 + PRE11, RE 30-1000 MHz

Graph:



Results:

QuasiPeak (PASS) (17) – Used FCC 15.209 General Limits

Frequency (MHz)	Level (dBiV/m)	Limit (dBiV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
667.3444	33.23	36.00	-2.77	225.60	1.33	Horizontal	120k	1.00	-10.15
672.07	33.76	36.00	-2.24	215.40	1.00	Horizontal	120k	1.00	-10.06
682.7567	34.25	36.00	-1.75	209.30	1.39	Horizontal	120k	1.00	-9.94
698.0292	32.25	36.00	-3.75	336.10	1.21	Horizontal	120k	1.00	-9.62
713.7779	35.05	36.00	-0.95	204.20	1.03	Horizontal	120k	1.00	-9.18
739.5475	34.60	36.00	-1.40	204.40	1.27	Horizontal	120k	1.00	-8.90
754.986	34.96	36.00	-1.04	193.30	1.15	Horizontal	120k	1.00	-8.75
773.0347	31.99	36.00	-4.01	188.30	1.15	Horizontal	120k	1.00	-8.10
804.9841	31.68	36.00	-4.32	182.60	1.27	Horizontal	120k	1.00	-7.71
849.0269	33.99	36.00	-2.01	177.30	1.00	Horizontal	120k	1.00	-6.84
876.9227	32.51	36.00	-3.49	204.50	1.03	Horizontal	120k	1.00	-6.59
890.9836	35.61	36.00	-0.39	172.00	1.03	Horizontal	120k	1.00	-6.21
937.4594	31.88	36.00	-4.12	204.30	1.00	Horizontal	120k	1.00	-5.40
960.0014	34.89	36.00	-1.11	167.10	1.09	Horizontal	120k	1.00	-5.15
966.5955	41.76	43.5	-1.74	172.20	1.00	Horizontal	120k	1.00	-5.16
989.9806	34.99	43.5	-8.51	172.40	1.00	Horizontal	120k	1.00	-4.46
992.4076	33.68	43.5	-9.82	172.20	1.03	Horizontal	120k	1.00	-4.50

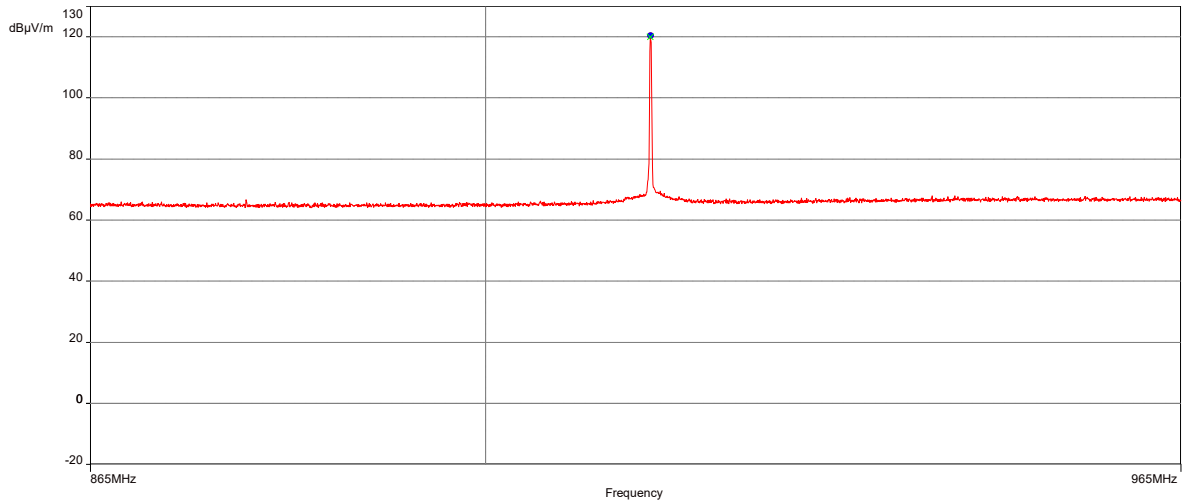
QuasiPeak (Pass) (29) – Used 20 dBc limit

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
659.9955	41.47	100.5	-59.03	220.70	1.39	Horizontal	120k	1.00	-10.16
674.9955	42.51	100.5	-57.99	216.50	1.33	Horizontal	120k	1.00	-10.05
690.0134	38.60	100.5	-61.9	215.00	1.21	Horizontal	120k	1.00	-9.83
704.9851	39.73	100.5	-60.77	209.40	1.09	Horizontal	120k	1.00	-9.41
708.5955	38.91	100.5	-61.59	332.10	1.09	Horizontal	120k	1.00	-9.33
720	46.53	100.5	-53.97	209.70	1.27	Horizontal	120k	1.00	-9.16
729.0115	36.35	100.5	-64.15	203.90	1.08	Horizontal	120k	1.00	-9.03
734.3506	44.16	100.5	-56.34	200.80	1.33	Horizontal	120k	1.00	-8.95
750.0179	42.37	100.5	-58.13	198.50	1.15	Horizontal	120k	1.00	-8.76
760.2013	45.14	100.5	-55.36	198.50	1.39	Horizontal	120k	1.00	-8.53
765.0045	40.08	100.5	-60.42	188.80	1.15	Horizontal	120k	1.00	-8.42
780.0209	40.33	100.5	-60.17	188.30	1.21	Horizontal	120k	1.00	-8.08
786.0088	41.36	100.5	-59.14	189.00	1.27	Horizontal	120k	1.00	-8.05
794.9895	39.84	100.5	-60.66	188.00	1.20	Horizontal	120k	1.00	-8.04
809.997	38.35	100.5	-62.15	182.60	1.33	Horizontal	120k	1.00	-7.49
811.8015	45.10	100.5	-55.4	177.40	1.15	Horizontal	120k	1.00	-7.49
825.009	37.26	100.5	-63.24	178.20	1.09	Horizontal	120k	1.00	-7.24
837.6449	36.60	100.5	-63.9	182.80	1.21	Horizontal	120k	1.00	-6.99
840.0105	38.50	100.5	-62	177.50	1.03	Horizontal	120k	1.00	-6.98
863.394	45.89	100.5	-54.61	177.30	1.15	Horizontal	120k	1.00	-6.68
870.018	38.74	100.5	-61.76	177.60	1.00	Horizontal	120k	1.00	-6.60
881.9744	46.44	100.5	-54.06	177.30	1.00	Horizontal	120k	1.00	-6.31
898.4911	50.91	100.5	-49.59	172.00	1.00	Horizontal	120k	1.00	-6.21
904.5422	37.38	100.5	-63.12	178.00	1.00	Horizontal	120k	1.00	-6.14
914.9985	71.20	100.5	-29.3	177.60	1.03	Horizontal	120k	1.00	-5.81
918.6493	40.54	100.5	-59.96	177.30	1.00	Horizontal	120k	1.00	-5.76
926.956	37.91	100.5	-62.59	172.80	1.00	Horizontal	120k	1.00	-5.67
931.5104	49.57	100.5	-50.93	172.00	1.00	Horizontal	120k	1.00	-5.56
948.027	46.44	100.5	-54.06	171.90	1.15	Horizontal	120k	1.00	-5.22

FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 120.5 dBμV/m (Scan 12) and the limit is, 120.5 dBμV/m – 20 = 100.5. The carrier was measured separately with no pre-amp or notch filter.

**Scan 12: Transmit at Mid Channel, Radiated Fundamental Signal
(EUT on its back)****Test Information:**

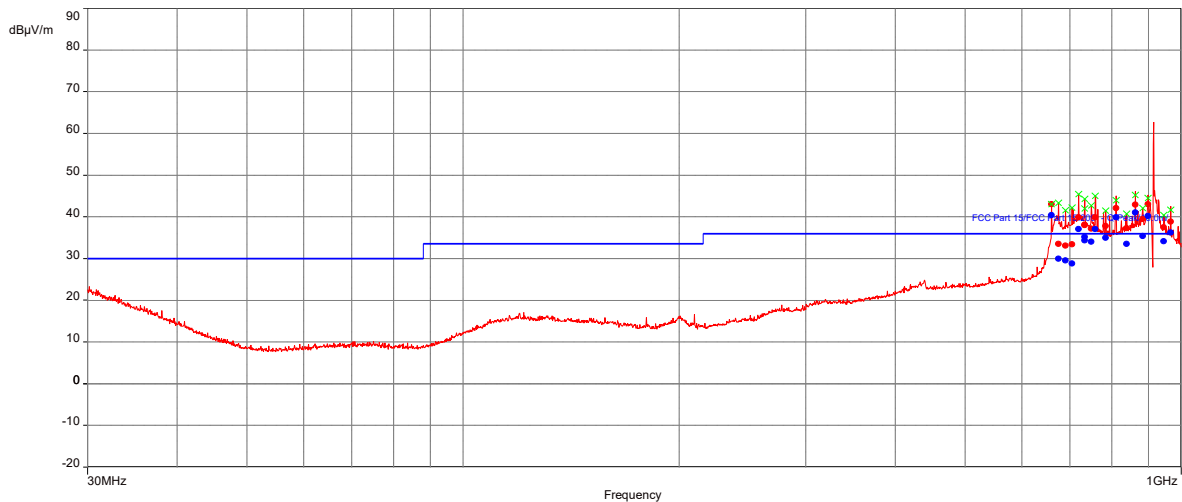
Date and Time	3/16/2026 3:25:18 PM
Client and Project Number	Control Chief
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 12 Transmit at Mid Channel, EUT on its back, Fundamental

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

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
914.9995	120.50	---	171.70	1.03	Horizontal	120k	1.00	33.69

**Transmit at Mid Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its long side)****Test Information:**

Date and Time	3/16/2026 9:03:15 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 20_ Transmit at Mid Channel, EUT on its long side, FAIR001 + PRE11, RE 30-1000 MHz

Graph:**Results:****QuasiPeak**

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
966.8309	36.27	44.00	-7.73	262.80	4.00	Vertical	120k	1.00	-5.19

Peak

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
659.9925	43.05	96.24	-53.19	183.50	1.21	Horizontal	120k	1.00	-10.16
720.003	39.89	96.24	-56.35	279.00	4.00	Vertical	120k	1.00	-9.16
733.5421	38.06	96.24	-58.18	285.10	4.00	Vertical	120k	1.00	-8.91
733.5934	38.15	96.24	-58.09	257.70	4.00	Vertical	120k	1.00	-8.91
749.9985	37.22	96.24	-59.02	279.00	4.00	Vertical	120k	1.00	-8.76
759.4486	39.95	96.24	-56.29	252.20	4.00	Vertical	120k	1.00	-8.59
785.4181	37.86	96.24	-58.38	242.40	4.00	Vertical	120k	1.00	-8.06
811.3079	42.14	96.24	-54.1	236.30	4.00	Vertical	120k	1.00	-7.49
840.0209	37.26	96.24	-58.98	226.00	4.00	Vertical	120k	1.00	-6.98
863.1527	42.99	96.24	-53.25	321.30	4.00	Vertical	120k	1.00	-6.70
884.0105	39.48	96.24	-56.76	279.00	4.00	Vertical	120k	1.00	-5.92
899.4855	43.07	96.24	-53.17	263.10	4.00	Vertical	120k	1.00	-6.27
945.8041	37.53	96.24	-58.71	268.50	4.00	Vertical	120k	1.00	-5.30
675.0045	33.58	96.24	-62.66	321.50	4.00	Vertical	120k	1.00	-10.05
690	33.12	96.24	-63.12	70.70	4.00	Vertical	120k	1.00	-9.83
704.9761	33.49	96.24	-62.75	284.10	4.00	Vertical	120k	1.00	-9.41

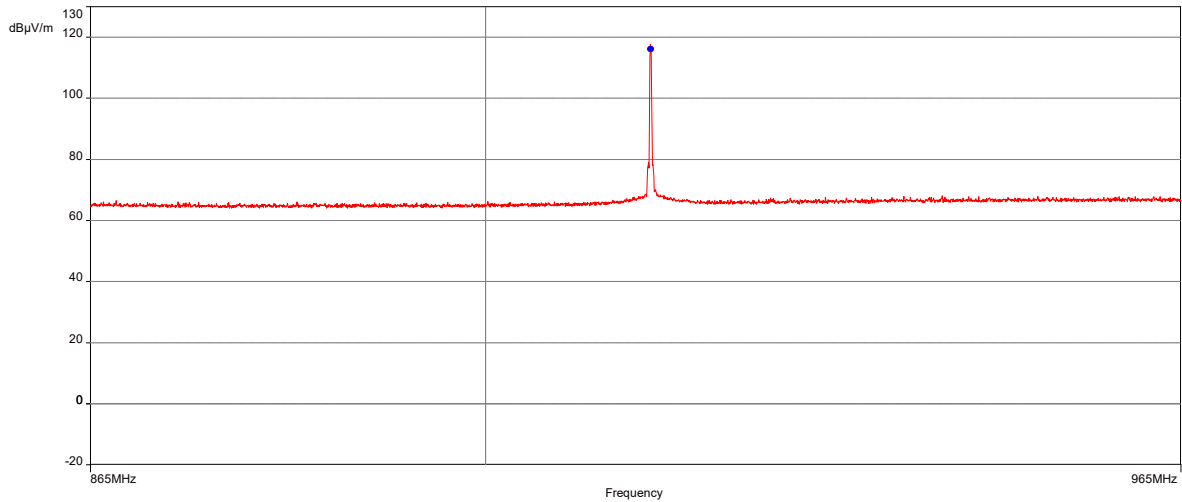
FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 116.24 dBuV/m (Scan 19) and the limit is 116.24 dBuV/m – 20 = dBuV/m. The carrier was measured separately with no pre-amp or notch filter.

**Scan 19: Transmit at Mid Channel, Radiated Fundamental Signal
(EUT on its long side)**

Test Information:

Date and Time	3/16/2026 8:43:51 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 19_ Transmit at Mid Channel, EUT on its long side, Fundamental

Graph:



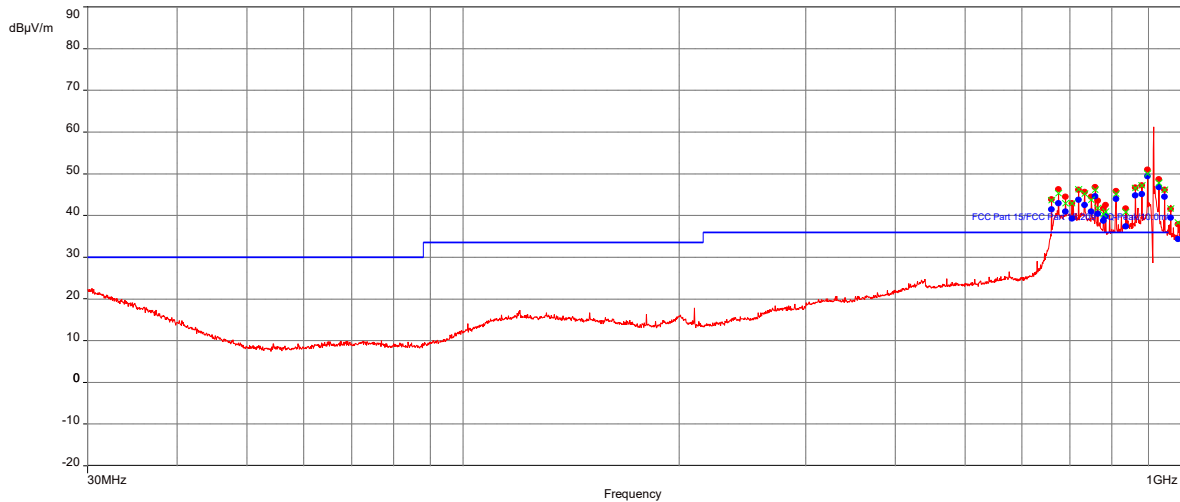
Results:

Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
914.998	116.24	----	270.00	4.00	Vertical	120k	1.00	33.69

**Transmit at Mid Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its short side)****Test Information:**

Date and Time	3/16/2026 9:59:49 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 21_ Transmit at Mid Channel, EUT on its short side, FAIR001 + PRE11, RE 30-1000 MHz

Graph:**Results:****QuasiPeak**

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
966.8311	39.50	44.00	-4.5	166.50	2.85	Horizontal	120k	1.00	-5.19
989.994	34.43	44.00	-9.57	177.60	1.03	Horizontal	120k	1.00	-4.45

Peak

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
659.9955	43.92	87.68	-43.76	183.00	1.51	Horizontal	120k	1.00	-10.16
674.9985	46.27	87.68	-41.41	182.60	1.27	Horizontal	120k	1.00	-10.05
689.9985	44.53	87.68	-43.15	183.00	1.00	Horizontal	120k	1.00	-9.83
705.0179	42.91	87.68	-44.77	188.30	1.09	Horizontal	120k	1.00	-9.40
720.0075	46.23	87.68	-41.45	182.70	1.27	Horizontal	120k	1.00	-9.16
733.5404	45.71	87.68	-41.97	177.80	1.00	Horizontal	120k	1.00	-8.91
750.0075	44.53	87.68	-43.15	172.40	1.21	Horizontal	120k	1.00	-8.76
759.4501	46.79	87.68	-40.89	172.30	1.27	Horizontal	120k	1.00	-8.59
764.9986	43.60	87.68	-44.08	172.30	1.09	Horizontal	120k	1.00	-8.42
779.9956	41.75	87.68	-45.93	172.10	1.00	Horizontal	120k	1.00	-8.08
785.4148	42.49	87.68	-45.19	166.70	1.27	Horizontal	120k	1.00	-8.06
811.3245	45.87	87.68	-41.81	183.00	1.15	Horizontal	120k	1.00	-7.49
837.2505	41.68	87.68	-46	182.90	1.15	Horizontal	120k	1.00	-6.99
863.1765	46.72	87.68	-40.96	177.30	1.00	Horizontal	120k	1.00	-6.70
881.7269	47.25	87.68	-40.43	177.70	1.00	Horizontal	120k	1.00	-6.32
898.35	51.05	87.68	-36.63	177.60	1.03	Horizontal	120k	1.00	-6.19
931.635	48.68	87.68	-39	172.30	1.03	Horizontal	120k	1.00	-5.56
948.2866	46.19	87.68	-41.49	166.50	1.00	Horizontal	120k	1.00	-5.21

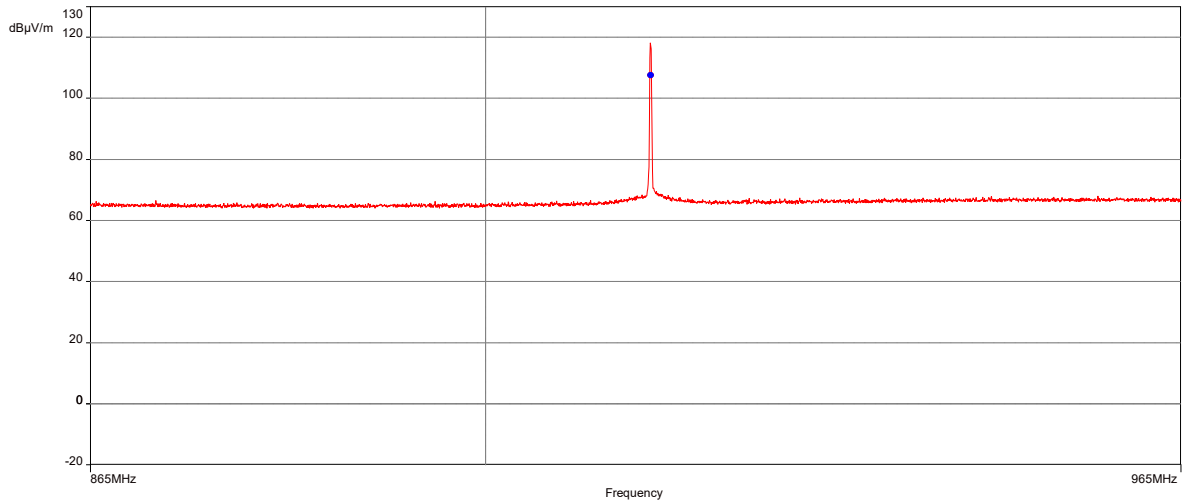
FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 107.68 dBuV/m (Scan 22) and the limit is 107.68 dBuV/m – 20 = 87.68 dBuV/m. The carrier was measured separately with no pre-amp or notch filter.

**Scan 22: Transmit at Mid Channel, Radiated Fundamental Signal
(EUT on its short side)**

Test Information:

Date and Time	3/16/2026 11:25:51 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 22_ Transmit at Mid Channel, EUT on its short side, Fundamental

Graph:



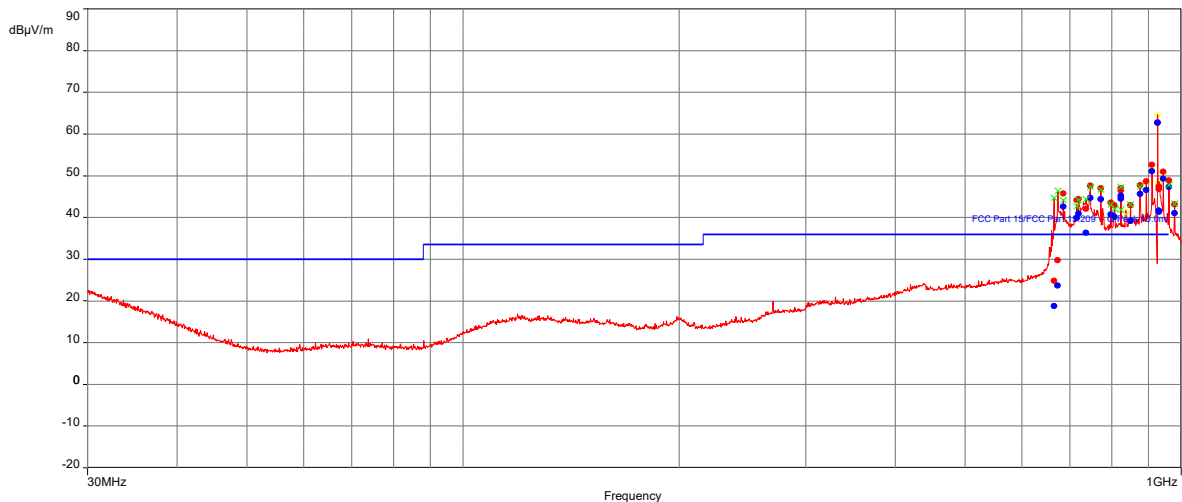
Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
914.9995	107.68	---	223.20	3.39	Vertical	120k	1.00	33.69

**Transmit at High Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its back)****Test Information:**

Date and Time	3/16/2026 3:46:23 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 13_ Transmit at High Channel, EUT on its back, FAIR001 + PRE11, RE 30-1000 MHz

Graph:**Results:****Peak**

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
685.6035	45.73	100.46	-54.73	215.70	1.39	Horizontal	120k	1.00	-9.89
715.6049	44.18	100.46	-56.28	209.50	1.15	Horizontal	120k	1.00	-9.17
719.9865	44.43	100.46	-56.03	337.70	1.39	Horizontal	120k	1.00	-9.16
737.1229	42.08	100.46	-58.38	209.70	1.00	Horizontal	120k	1.00	-8.96
746.9566	47.69	100.46	-52.77	204.30	1.08	Horizontal	120k	1.00	-8.87
772.776	47.01	100.46	-53.45	193.40	1.03	Horizontal	120k	1.00	-8.12
798.6646	43.61	100.46	-56.85	182.60	1.00	Horizontal	120k	1.00	-7.93
807.7921	42.97	100.46	-57.49	182.70	1.03	Horizontal	120k	1.00	-7.64
824.4342	47.00	100.46	-53.46	177.50	1.03	Horizontal	120k	1.00	-7.24
824.487	46.54	100.46	-53.92	172.00	1.21	Horizontal	120k	1.00	-7.24
850.2826	42.92	100.46	-57.54	172.30	1.03	Horizontal	120k	1.00	-6.83
876.1349	47.76	100.46	-52.7	204.30	1.00	Horizontal	120k	1.00	-6.59
894.4604	48.72	100.46	-51.74	178.00	1.03	Horizontal	120k	1.00	-5.99
911.124	52.67	100.46	-47.79	172.50	1.00	Horizontal	120k	1.00	-5.76
927.798	62.77	100.46	-37.69	174.50	4.00	Horizontal	120k	1.00	-5.67
931.0119	46.86	100.46	-53.6	177.10	1.00	Horizontal	120k	1.00	-5.56
931.1681	47.42	100.46	-53.04	167.50	1.15	Horizontal	120k	1.00	-5.56
944.4705	50.97	100.46	-49.49	171.70	1.00	Horizontal	120k	1.00	-5.23
665.1399	24.83	100.46	-75.63	0.00	4.00	Vertical	120k	1.00	-10.15
673.4011	29.77	100.46	-70.69	273.50	3.94	Vertical	120k	1.00	-10.15
961.1386	48.91	54.00	-5.09	166.80	1.00	Horizontal	120k	1.00	-5.14
979.4775	43.13	54.00	-10.87	166.90	1.00	Horizontal	120k	1.00	-4.82

FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 120.46 dBuV/m (Scan 14) and the limit is 120.46 dBuV/m – 20 = 100.46 dBuV/m. The carrier was measured separately with no pre-amp or notch filter.

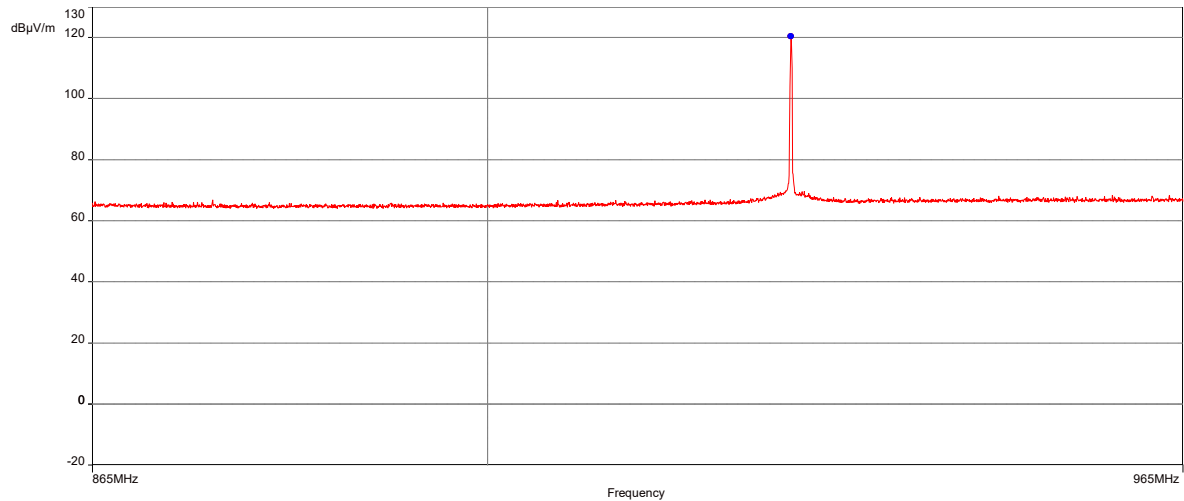
Note: Peak readings were compared to Average limits in restricted band at frequencies 961.1386 MHz and 979.4775 MHz.

**Scan 14: Transmit at High Channel, Radiated Fundamental Signal
(EUT on its back)**

Test Information:

Date and Time	3/16/2026 5:19:28 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 14 Transmit at High Channel, EUT on its back, Fundamental

Graph:



Results:

Peak (PASS) (1)

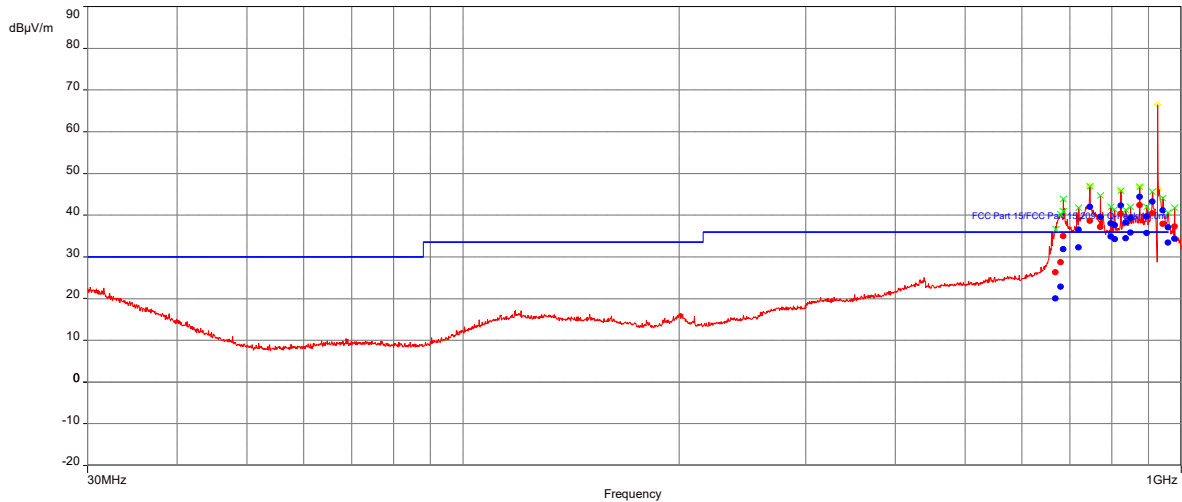
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
927.7976	120.46	---	172.30	1.00	Horizontal	120k	1.00	33.83

**Transmit at High Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its long side)**

Test Information:

Date and Time	3/16/2026 7:18:28 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 17 Transmit at High Channel, EUT on its long side, FAIR001 + PRE11, RE 30-1000 MHz

Graph:



Results:

QuasiPeak	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
979.7159	34.36	44.00	-9.64	257.50	4.00	Vertical	120k	1.00	-4.82

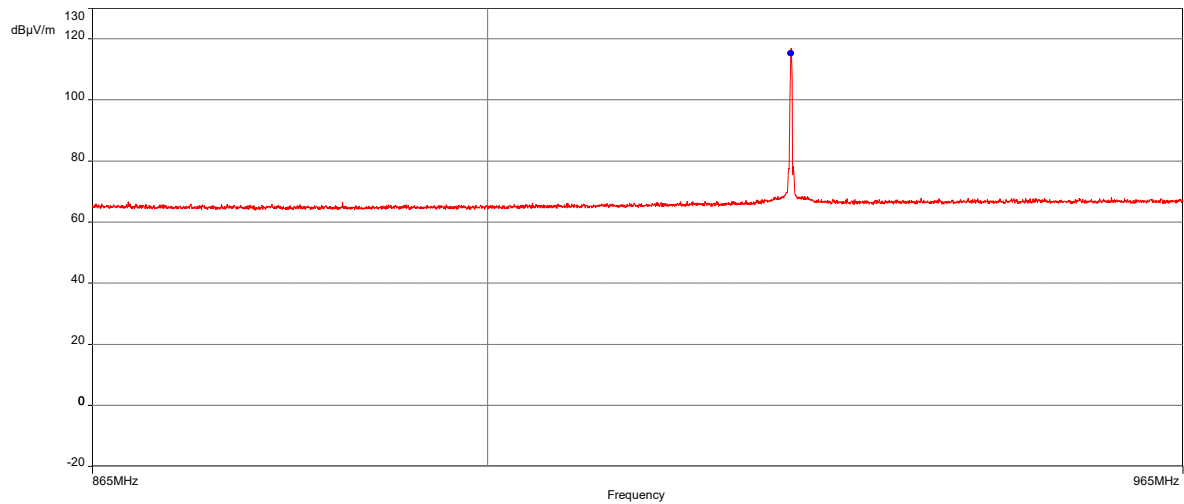
Peak

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
719.9985	36.61	95.38	-58.77	276.00	4.00	Vertical	120k	1.00	-9.16
746.1972	42.00	95.38	-53.38	275.10	4.00	Vertical	120k	1.00	-8.87
772.1684	39.62	95.38	-55.76	305.60	4.00	Vertical	120k	1.00	-8.19
798.0614	38.03	95.38	-57.35	247.20	4.00	Vertical	120k	1.00	-7.94
807.8054	37.60	95.38	-57.78	289.80	4.00	Vertical	120k	1.00	-7.64
824.0249	42.28	95.38	-53.1	236.70	4.00	Vertical	120k	1.00	-7.24
837.7949	38.29	95.38	-57.09	315.90	4.00	Vertical	120k	1.00	-6.99
849.9585	39.27	95.38	-56.11	316.70	4.00	Vertical	120k	1.00	-6.84
875.904	44.40	95.38	-50.98	274.80	4.00	Vertical	120k	1.00	-6.59
895.593	39.74	95.38	-55.64	268.50	4.00	Vertical	120k	1.00	-6.05
912.4315	43.24	95.38	-52.14	263.20	4.00	Vertical	120k	1.00	-5.81
943.1764	41.14	95.38	-54.24	274.00	4.00	Vertical	120k	1.00	-5.31
958.5439	37.07	95.38	-58.31	284.30	4.00	Vertical	120k	1.00	-5.16
668.4535	26.28	95.38	-69.1	60.00	4.00	Vertical	120k	1.00	-10.15
679.577	28.68	95.38	-66.7	265.00	4.00	Vertical	120k	1.00	-10.05
685.5901	35.04	95.38	-60.34	76.20	4.00	Vertical	120k	1.00	-9.89

FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 115.38 dBuV/m (Scan 18) and the limit is 115.38 dBuV/m – 20 = 95.38 dBuV/m. The carrier was measured separately with no pre-amp or notch filter.

**Scan 18: Transmit at High Channel, Radiated Fundamental Signal
(EUT on its long side)****Test Information:**

Date and Time	3/16/2026 8:18:21 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 18_ Transmit at High Channel, EUT on its long side, Fundamental

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

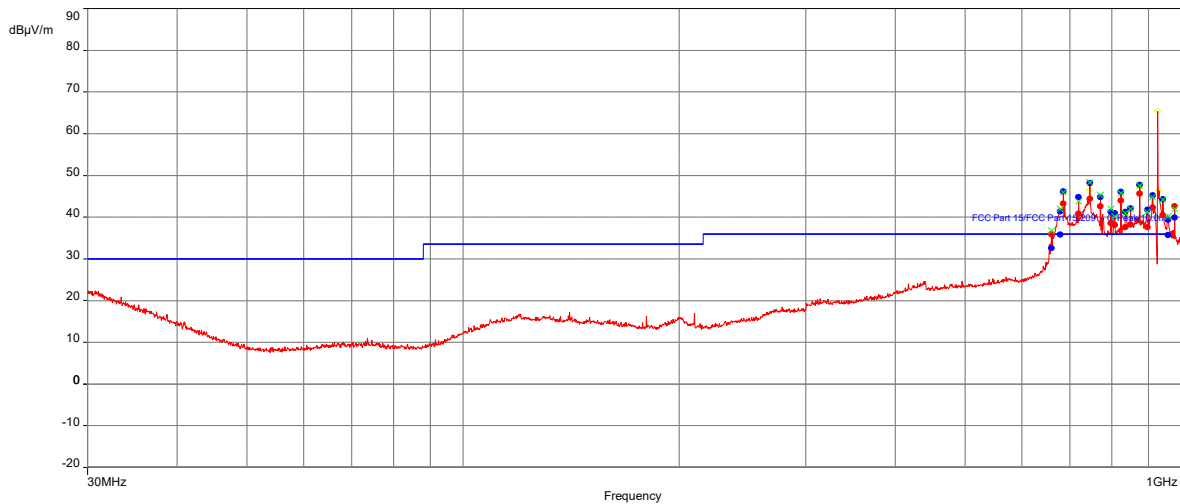
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
927.7991	115.38	---	269.60	4.00	Vertical	120k	1.00	33.83

**Transmit at High Channel, Radiated Spurious Emissions From 30 MHz to 1000 MHz
(EUT on its short side)**

Test Information:

Date and Time	3/16/2026 6:00:52 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 16_ Transmit at High Channel, EUT on its short side, FAIR001 + PRE11, RE 30-1000 MHz

Graph:



Results:

QP

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
979.7296	42.67	44.00	-1.33	183.10	1.00	Horizontal	120k	1.00	-4.82

Peak

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
678.5866	41.34	98.03	-56.69	187.90	1.27	Horizontal	120k	1.00	-10.07
685.6111	46.22	98.03	-51.81	182.80	1.27	Horizontal	120k	1.00	-9.90
720.0075	44.82	98.03	-53.21	177.60	1.15	Horizontal	120k	1.00	-9.16
746.0161	48.22	98.03	-49.81	172.50	1.21	Horizontal	120k	1.00	-8.87
772.0634	44.82	98.03	-53.21	188.80	1.15	Horizontal	120k	1.00	-8.20
797.9745	41.32	98.03	-56.71	166.50	1.03	Horizontal	120k	1.00	-7.94
807.81	40.98	98.03	-57.05	188.20	1.03	Horizontal	120k	1.00	-7.64
823.9424	46.09	98.03	-51.94	183.10	1.00	Horizontal	120k	1.00	-7.23
835.6124	41.26	98.03	-56.77	188.50	1.09	Horizontal	120k	1.00	-6.99
849.8865	42.12	98.03	-55.91	182.90	1.00	Horizontal	120k	1.00	-6.84
875.8815	47.76	98.03	-50.27	177.10	1.00	Horizontal	120k	1.00	-6.59
897.2698	41.78	98.03	-56.25	172.30	1.00	Horizontal	120k	1.00	-6.09
912.5111	45.27	98.03	-52.76	177.30	1.00	Horizontal	120k	1.00	-5.82
943.0758	44.27	98.03	-53.76	177.70	1.09	Horizontal	120k	1.00	-5.32
958.3561	39.40	98.03	-58.63	177.10	2.91	Horizontal	120k	1.00	-5.16
659.9895	35.96	98.03	-62.07	187.90	1.00	Horizontal	120k	1.00	-10.16

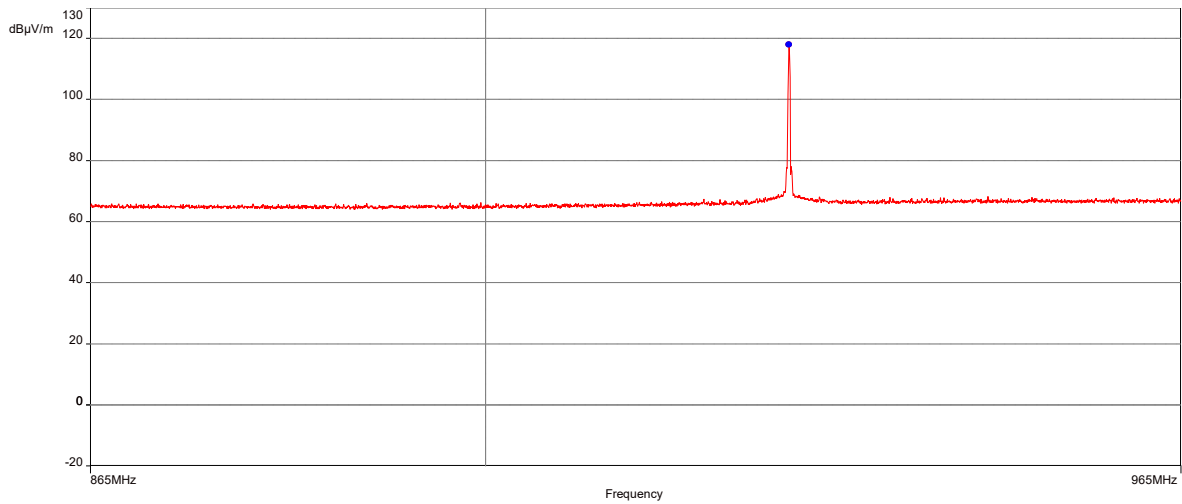
FCC Part 15.205 – Restricted Band: 608-614 MHz, 960-1240 MHz. The emissions above are not in the restricted band, therefore, the limit is 20 dB from the carrier. The carrier signal is 118.03 dBuV/m (Scan 15) and the limit is 118.03 dBuV/m – 20 = 98.03 dBuV/m. The carrier was measured separately with no pre-amp or notch filter.

Scan 15: Transmit at High Channel, Radiated Fundamental Signal (EUT on its short side)

Test Information:

Date and Time	3/16/2026 5:44:02 PM
Client and Project Number	Control Chief
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	24 %
Atmospheric Pressure	1004 mbars
Comments	Scan 15 Transmit at High Channel, EUT on its short side, Fundamental

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
927.7976	118.03	---	173.90	1.00	Horizontal	120k	1.00	33.83

Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 7.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
03/16/2026 1 st shift	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC power	Continuous Transmit	24	24	1004
03/16/2026 2 nd shift	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC power	Continuous Transmit	21	40	1008.6
04/14/2026 1 st shift	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC power	Continuous Transmit	25	35	1004
04/19/2026 2 nd shift	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC power	Continuous Transmit	22	45	999
04/24/2026 2 nd shift	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC power	Continuous Transmit	25	42	1009

Deviations, Additions, or Exclusions: None

8 Hopping Channel Separation

8.1 Method

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

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 Limits

§ 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

- (a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

- (1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

8.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/10/2025	03/10/2026
ROS011'	ESW44 receiver 1Hz-44GHz	Rhode and Schwarz	ESW44	103296	07/09/2024	07/09/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	03/11/2025	03/11/2026
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	03/06/2025	03/06/2026

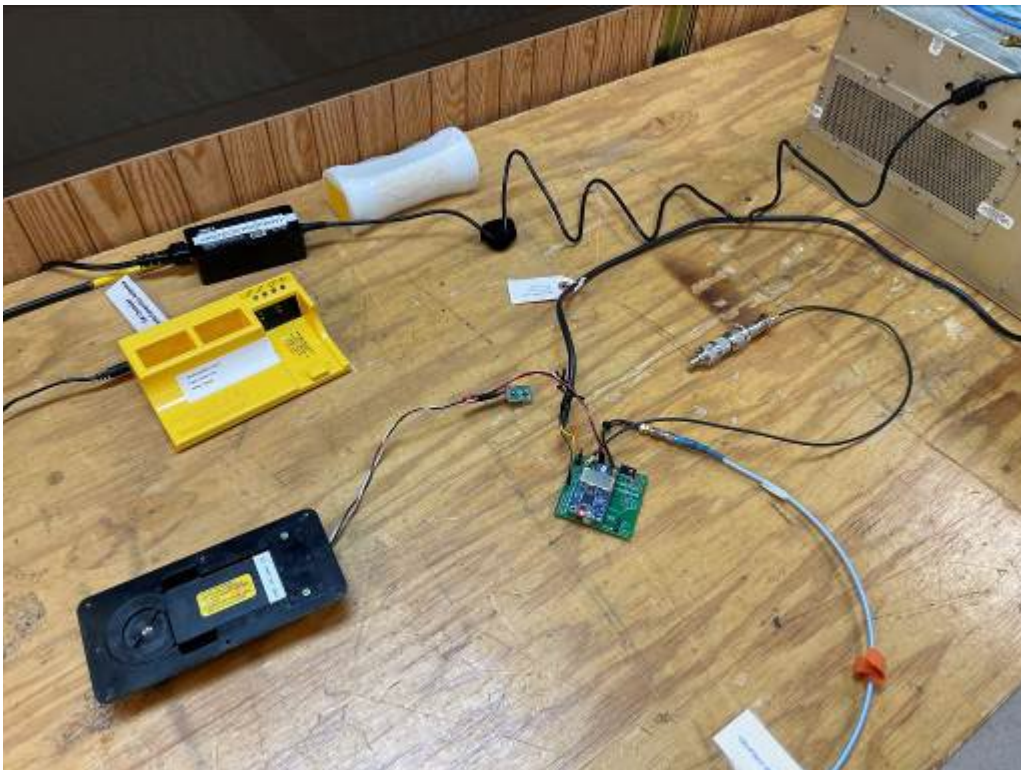
Software Utilized:

Name	Manufacturer	Version
None		

8.4 Results:

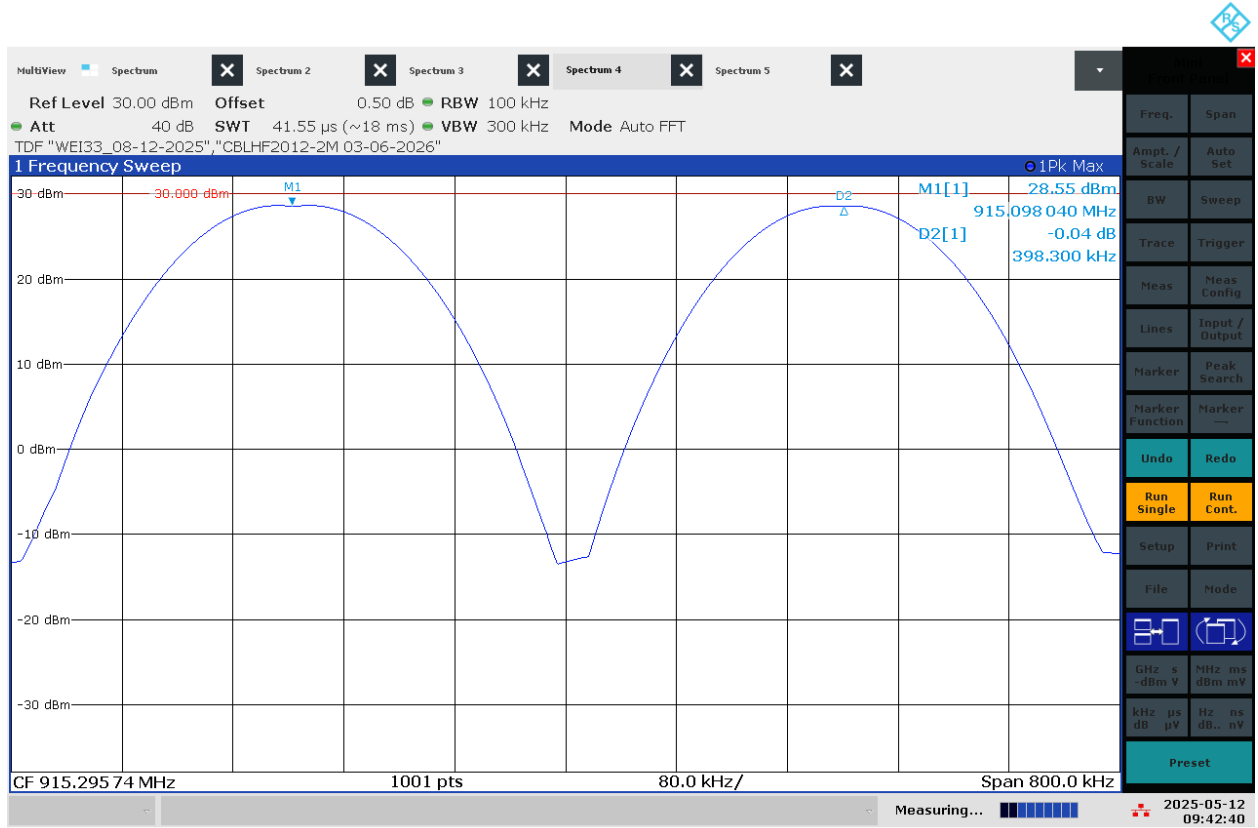
The sample tested was found to Comply.

8.5 Setup Photographs:



8.6 Plots/Data:

Hopping Channel Separation, 398.30 kHz



09:42:40 AM 05/12/2025

Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 8.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
05/12/2025	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC Power	Hopping mode	22	31	1018

Deviations, Additions, or Exclusions: None

9 Number of Hopping Frequency

9.1 Method

Tests are performed in accordance with CFR47 FCC Part 15 Subpart C, Section 15.247 (a)(1) (i), 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.

9.2 Limits

§ 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

- (a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

- (1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.
 - (i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

9.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005	Weather Station	Davis	6250	MS191218083	03/10/2025	03/10/2026
ROS011	ESW44 receiver 1Hz-44GHz	Rhode and Schwarz	ESW44	103296	07/09/2024	07/09/2025
CEN001	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	03/11/2025	03/11/2026
CBLHF2012-5M-2	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	03/06/2025	03/06/2026

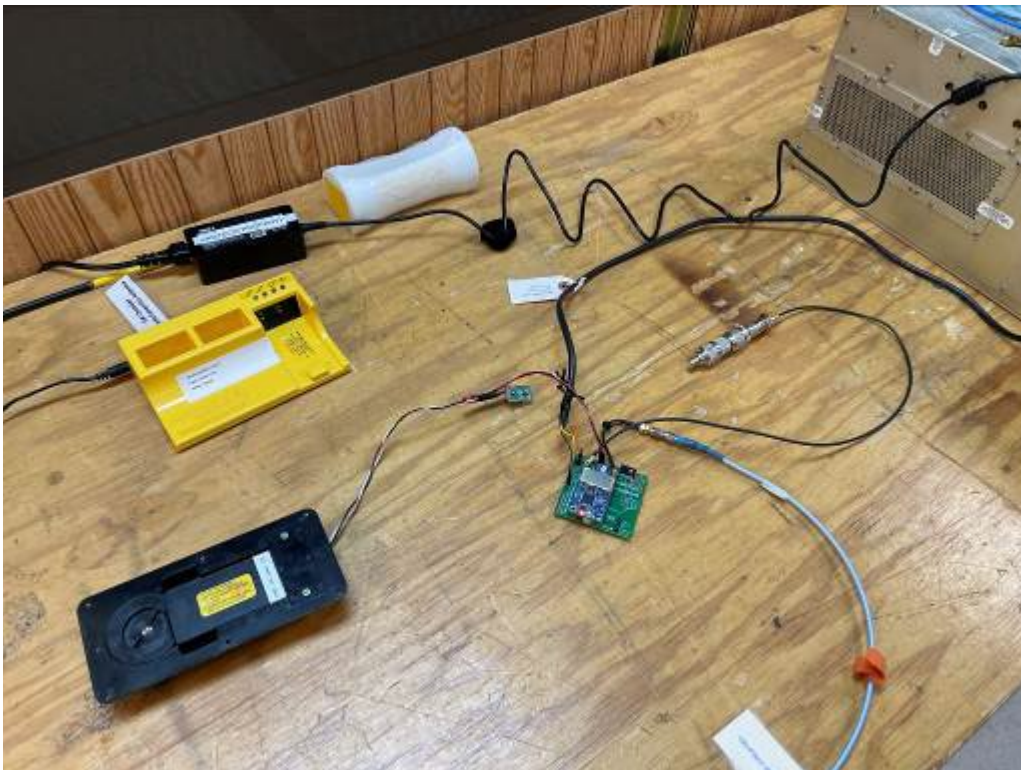
Software Utilized:

Name	Manufacturer	Version
None		

9.4 Results:

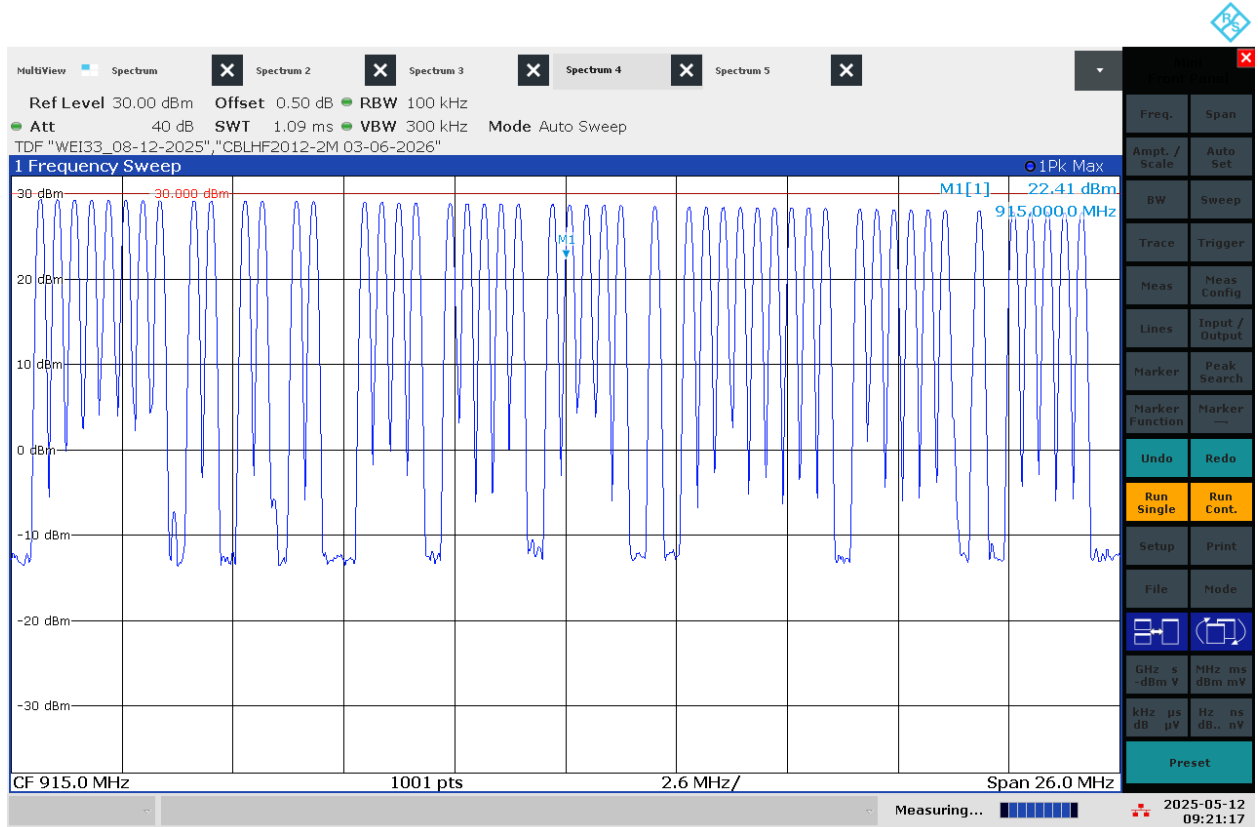
The sample tested was found to Comply.

9.5 Setup Photographs:



9.6 Plots/Data:

Number Hopping Frequency, 50



09:21:17 AM 05/12/2025

Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 9.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
05/12/2025	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC Power	Hopping mode	22	31	1018

Deviations, Additions, or Exclusions: None

10 Hopping Channel Bandwidths and Occupied Bandwidths

10.1 Method

Tests are performed in accordance with CFR47 FCC Part 15 Subpart C, Section 15.247 (a)(1) (i), 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.

10.2 Limits

FCC Part 15.247 (a) (1) (i)

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

10.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005	Weather Station	Davis	6250	MS191218083	03/10/2025	03/10/2026
ROS011	ESW44 receiver 1Hz-44GHz	Rhode and Schwarz	ESW44	103296	07/09/2024	07/09/2025
CEN001	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	03/11/2025	03/11/2026
CBLHF2012-5M-2	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	03/06/2025	03/06/2026

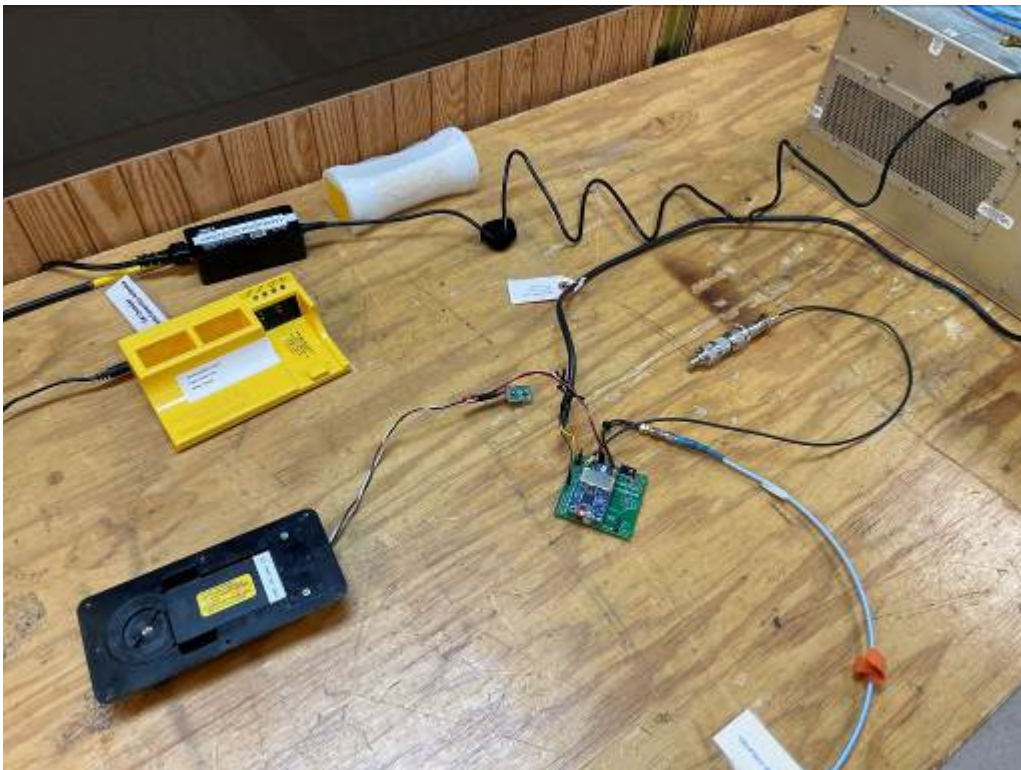
Software Utilized:

Name	Manufacturer	Version
None		

10.4 Results:

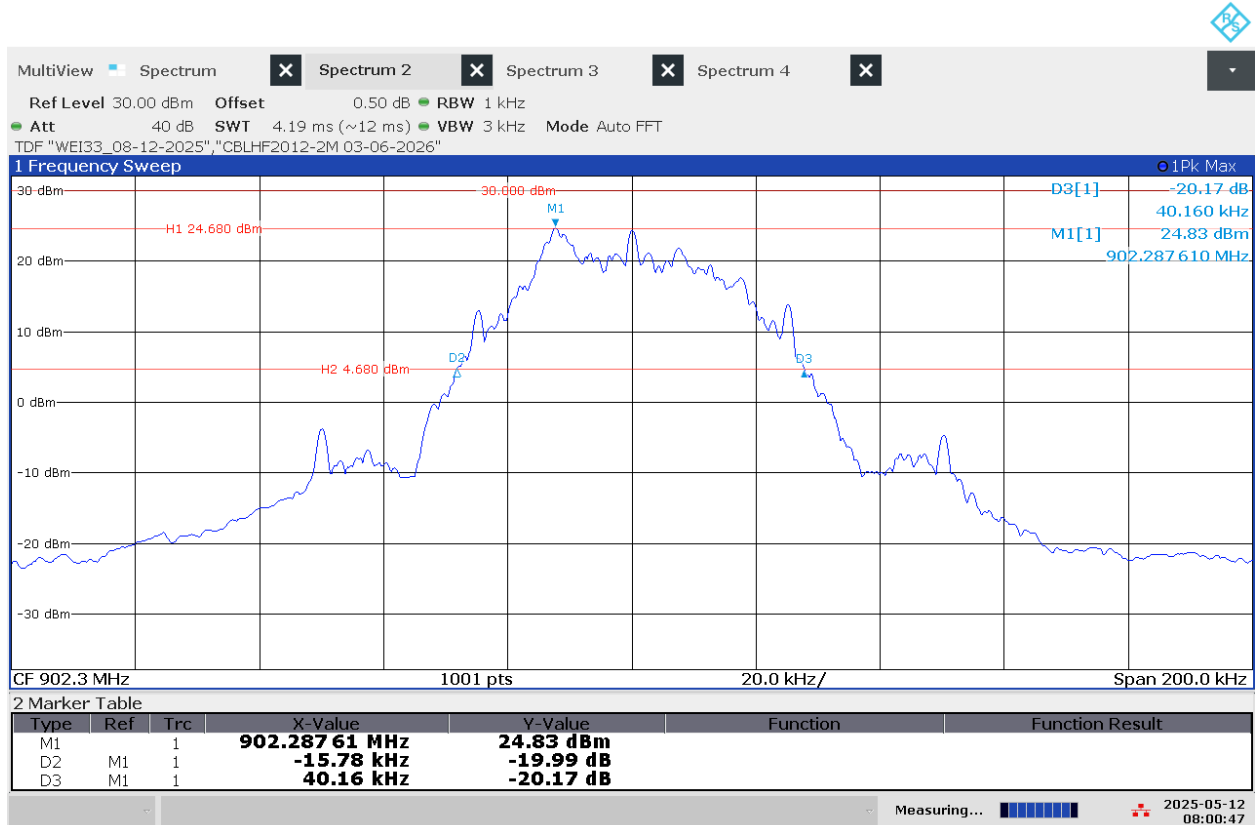
The sample tested was found to Comply.

10.5 Setup Photographs:



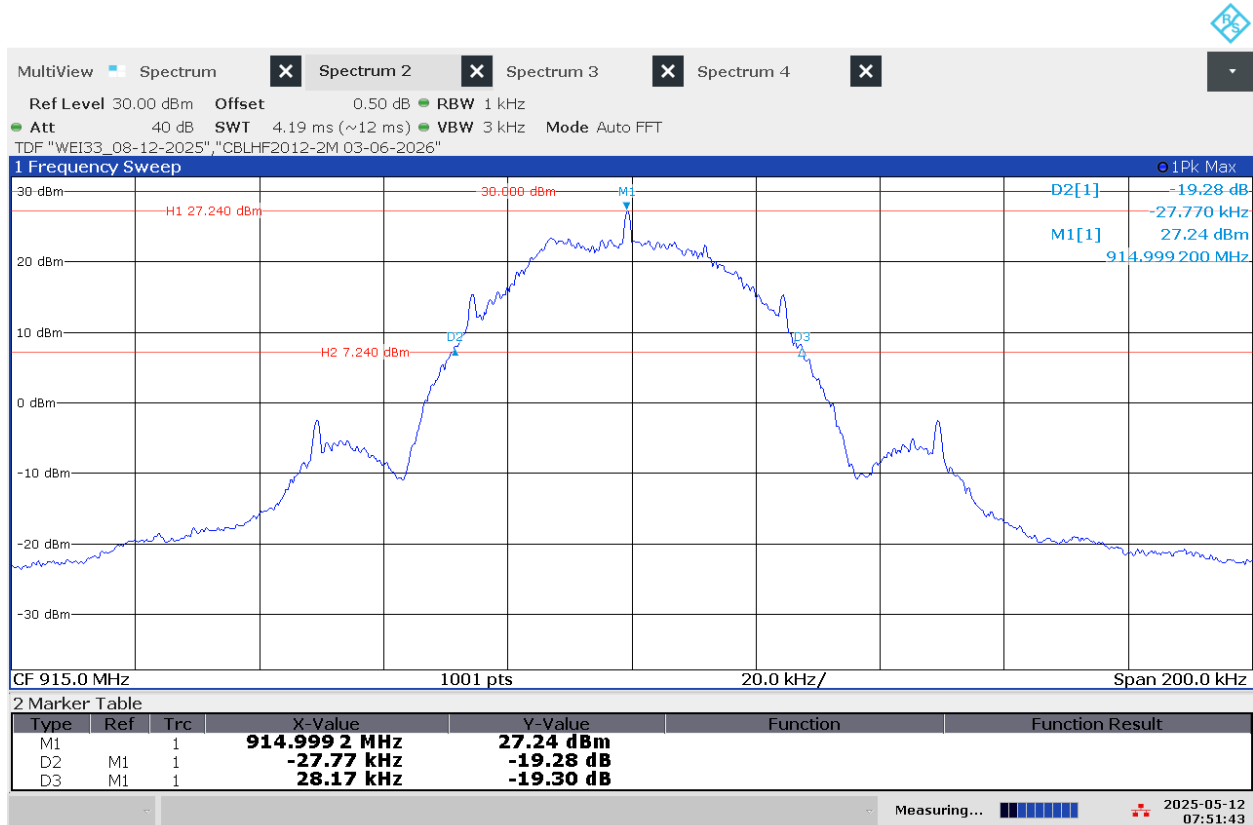
10.6 Plots/Data:

Low Channel, Hopping Channel Bandwidth, 40.16 kHz



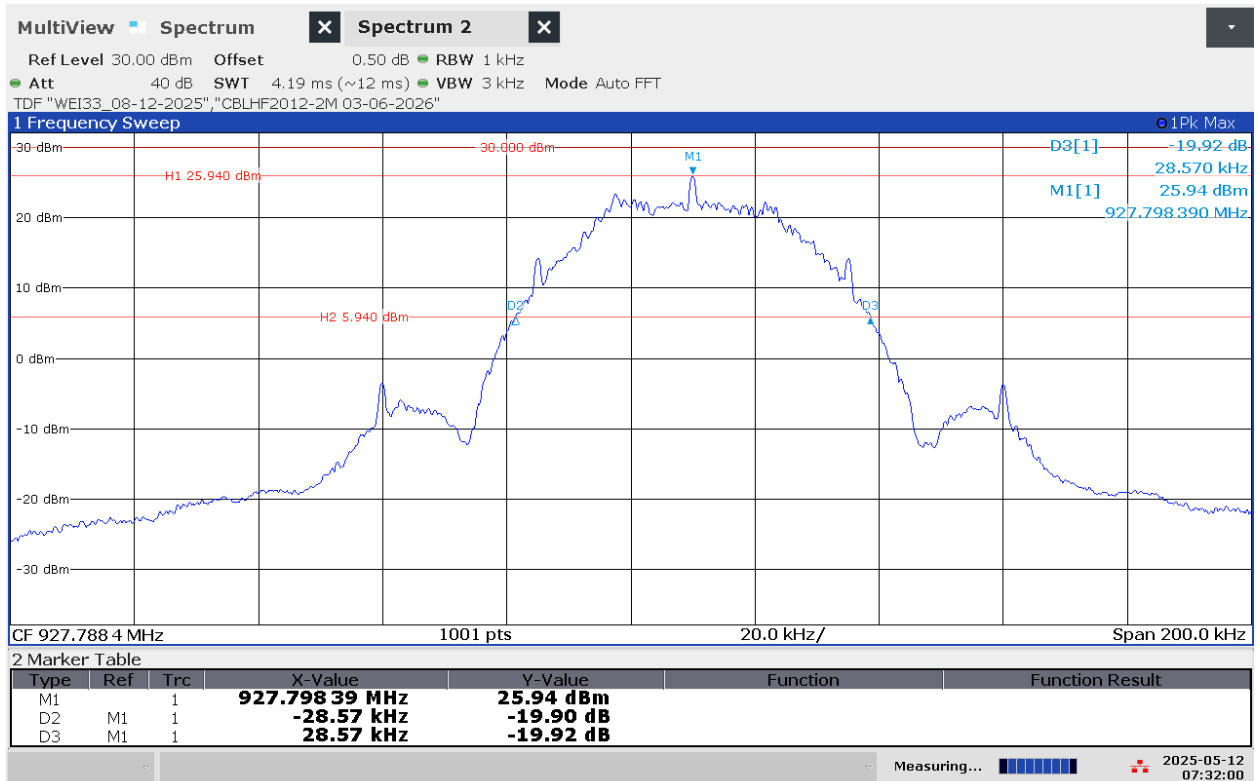
08:00:47 AM 05/12/2025

Mid Channel, Hopping Channel Bandwidth, 27.77 kHz



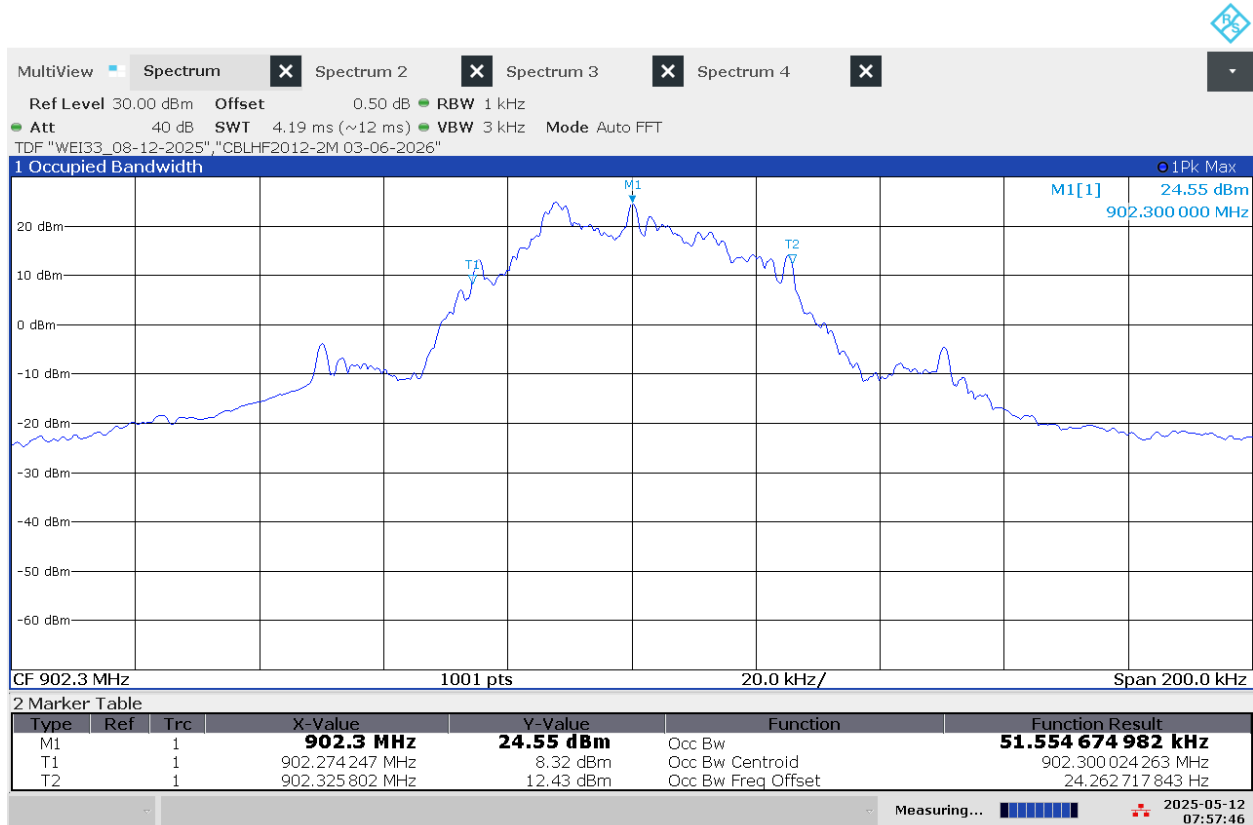
07:51:43 AM 05/12/2025

High Channel, Hopping Channel Bandwidth, 28.57 kHz



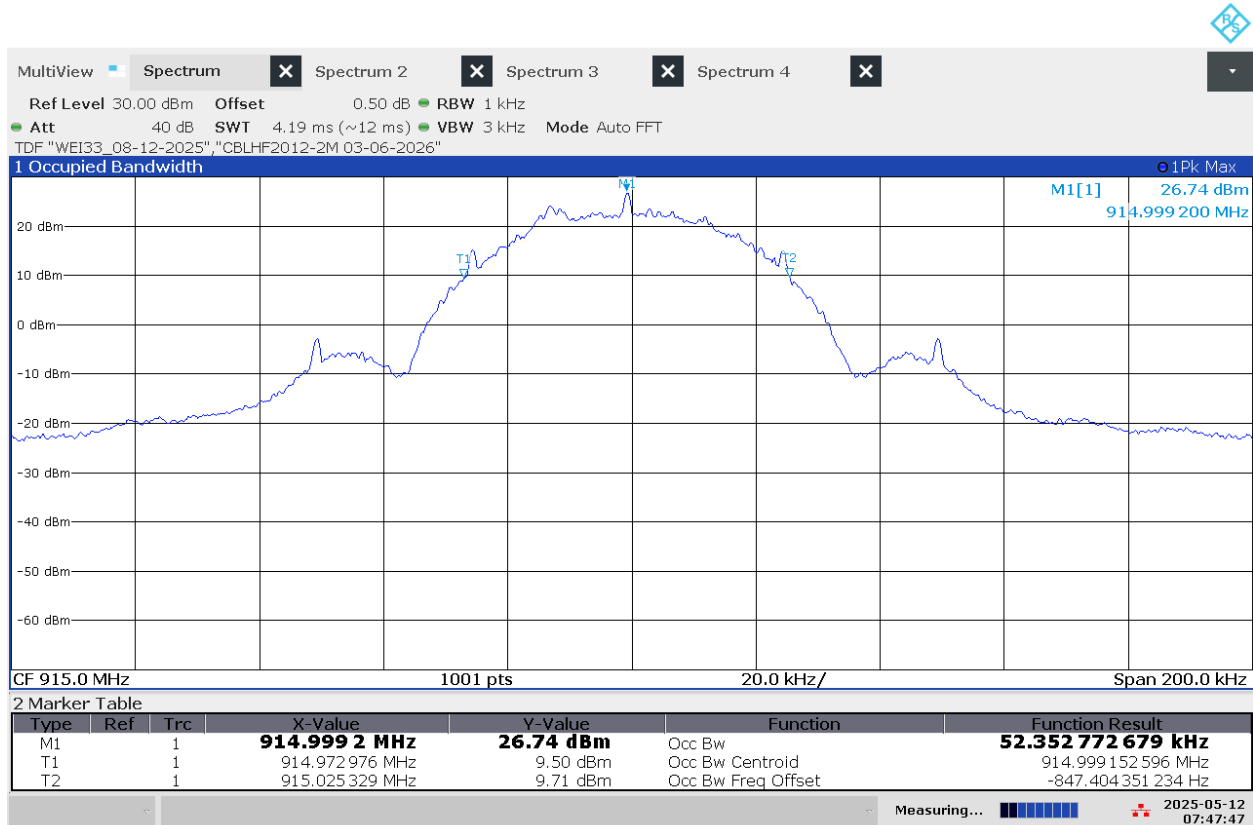
07:32:01 AM 05/12/2025

Low Channel, Occupied Bandwidth, 51.55 kHz



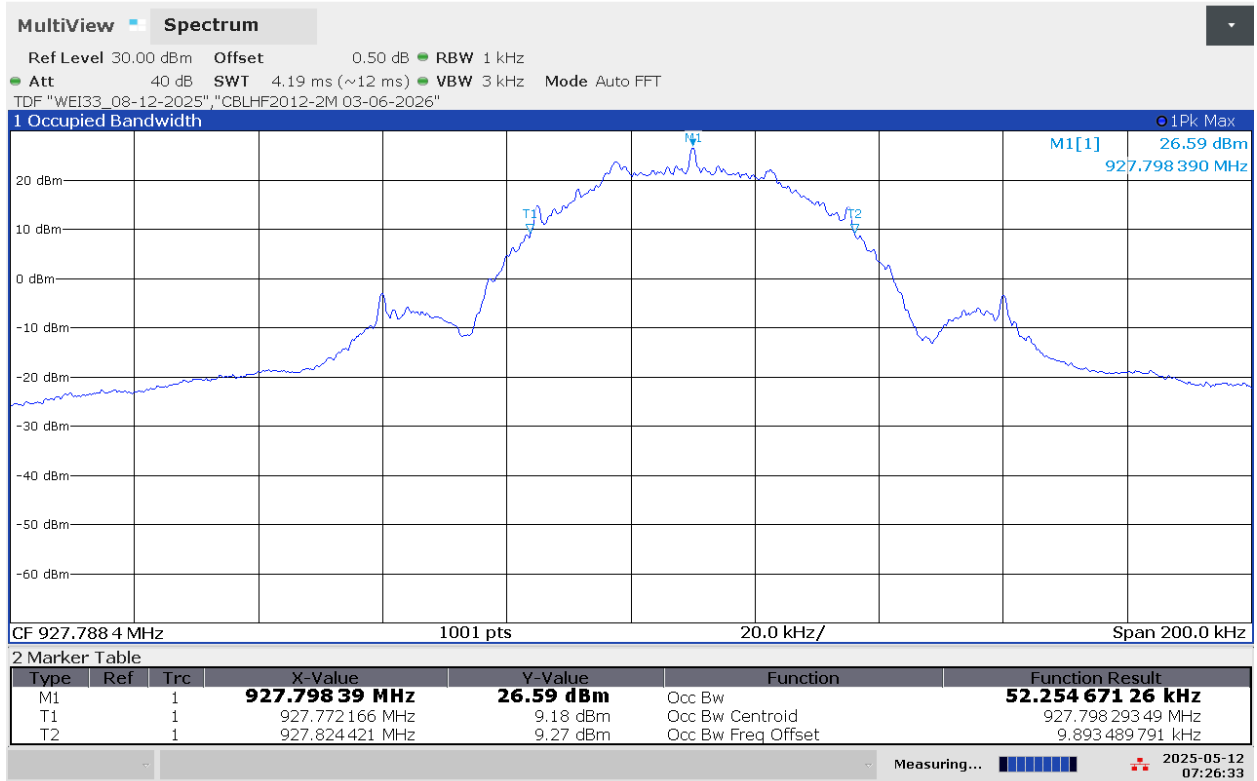
07:57:47 AM 05/12/2025

Mid Channel, Occupied Bandwidth, 52.35 kHz



07:47:47 AM 05/12/2025

High Channel, Occupied Bandwidth, 52.25 kHz



07:26:33 AM 05/12/2025

Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 10.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
05/12/2025	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC Power	Hopping mode	22	31	1018

Deviations, Additions, or Exclusions: None

11 Hopping Dwell Time

11.1 Method

Tests are performed in accordance with CFR47 FCC Part 15 Subpart C, Section 15.247 (a)(1) (i), 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.

11.2 Limits

§ 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

- (a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

- (1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.
- (i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

11.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005	Weather Station	Davis	6250	MS191218083	03/10/2025	03/10/2026
ROS011	ESW44 receiver 1Hz-44GHz	Rhode and Schwarz	ESW44	103296	07/09/2024	07/09/2025
CEN001	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	03/11/2025	03/11/2026
CBLHF2012-5M-2	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	03/06/2025	03/06/2026

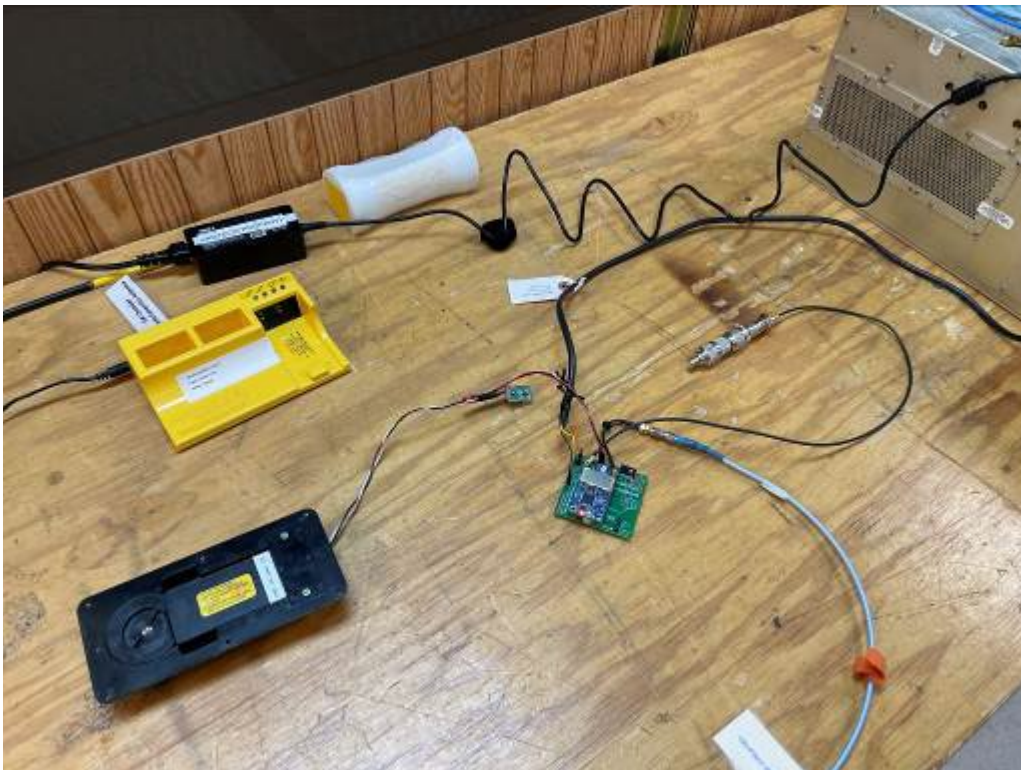
Software Utilized:

Name	Manufacturer	Version
None		

11.4 Results:

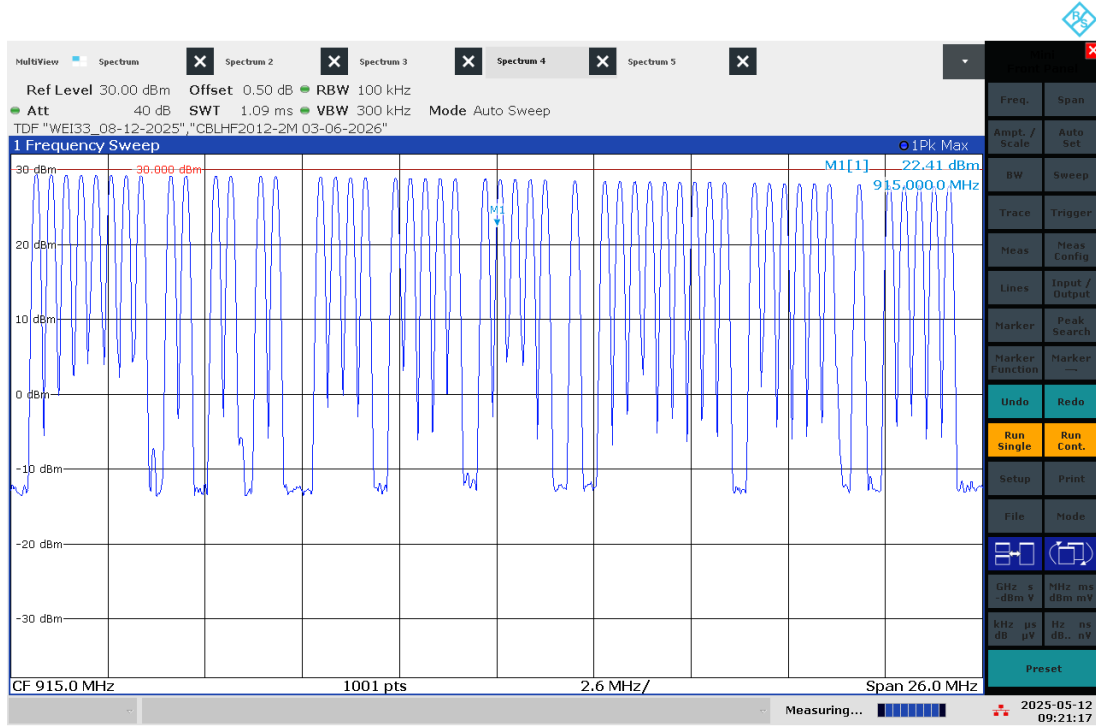
The sample tested was found to Comply.

11.5 Setup Photographs:



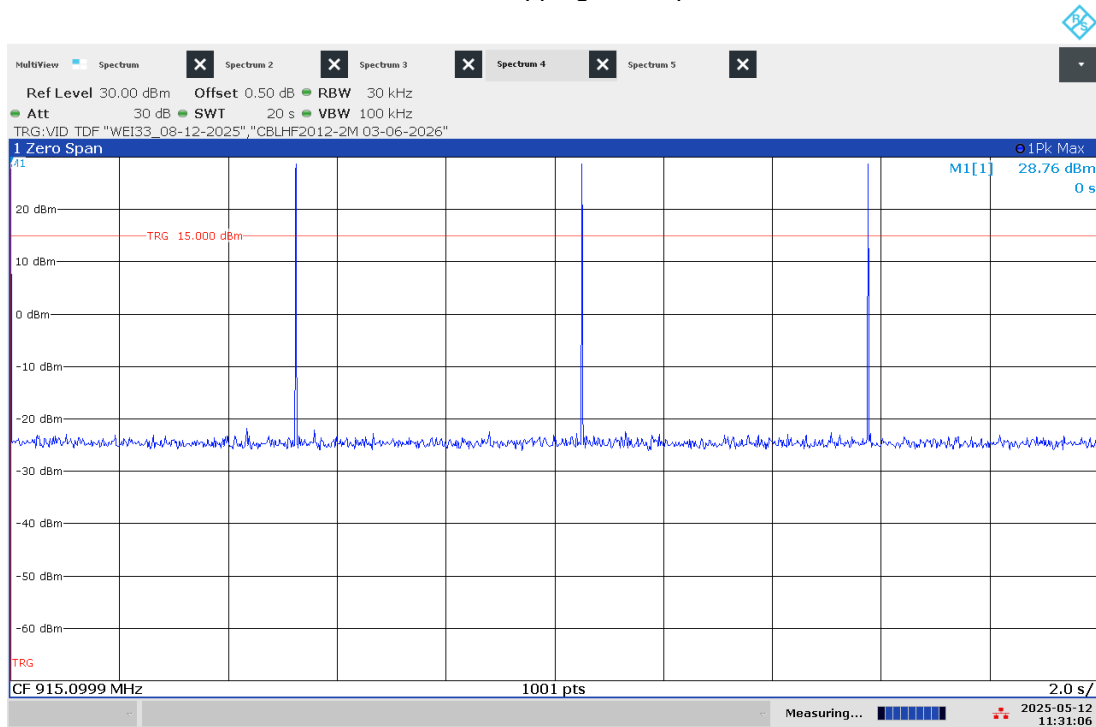
11.6 Plots/Data:

Number Hopping Frequency, 50



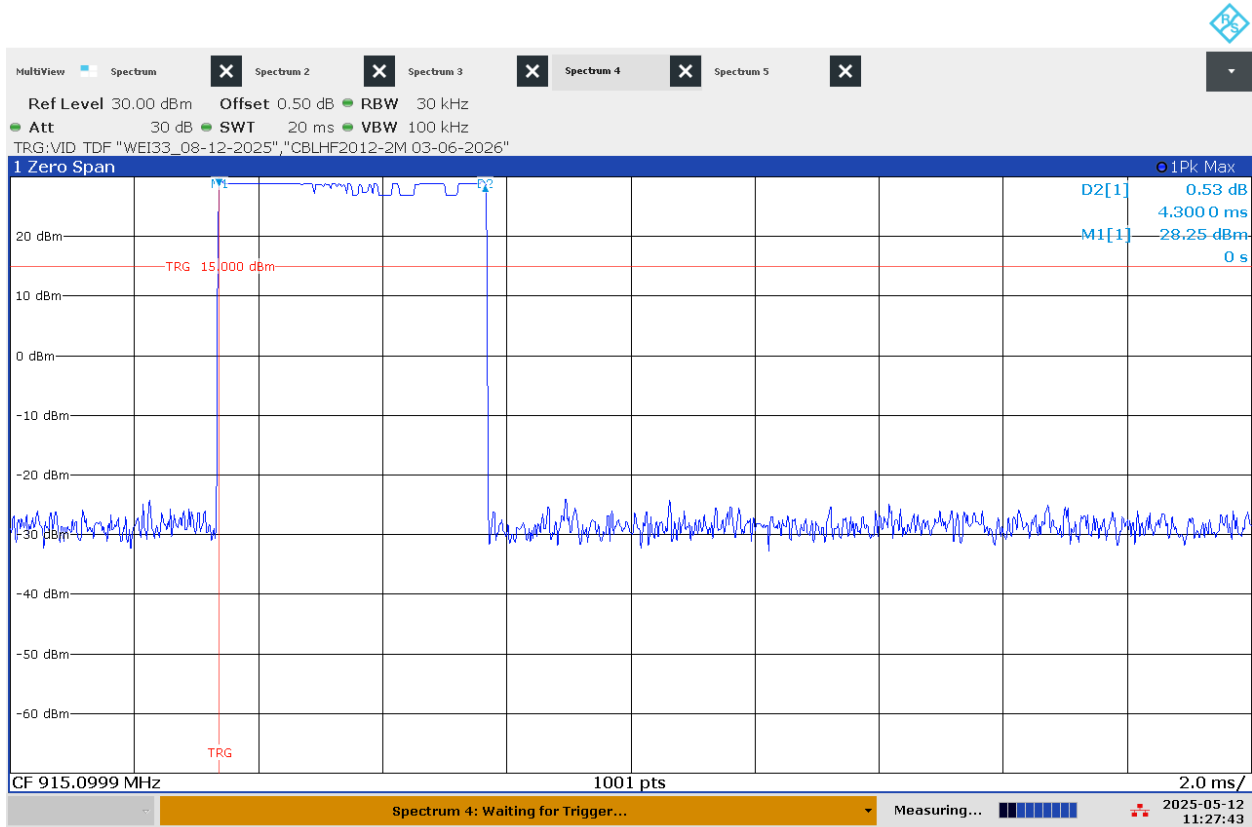
09:21:17 AM 05/12/2025

Number of Hopping in 20s plot, 3



11:31:06 AM 05/12/2025

Length of transmission time, 4.3 ms



11:27:43 AM 05/12/2025

Number of transmissions in 20s (0.4*50 hopping)	Length of transmission (msec)	Results (msec)	Limit (msec)
3	4.3	12.9	400

Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 11.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
05/12/2025	Kouma Sinn <i>KPS</i>	Vathana Ven <i>VSV</i>	DC Power	Hopping mode	22	31	1018

Deviations, Additions, or Exclusions: None

12 Band-edge Compliance

12.1 Method

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

TEST SITE: 10m ALSE and EMC Lab

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.

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.

12.2 Limit

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))

12.3 Test Equipment Used:

Test equipment used for radiated emissions testing

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/16/2026	03/16/2027
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/17/2025	06/17/2026
HS006'	2m Long	Huber suhner	SF118A	505110/118A	10/09/2025	10/09/2026
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	05/28/2025	05/28/2026
145-406'	10m Track A In-floor Cable #1	Huber + Suhner	sucoflex 160-19220mm	001	06/26/2025	06/26/2026
HS004'	2M long	Huber suhner	SF118A	505108/118A	10/09/2025	10/09/2026
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	07/17/2025	07/17/2026
HS005'	2M long	Huber suhner	SF118A	505109/118A	10/09/2025	10/09/2026
HS009'	8m long	Hubner Suhner	SF106	537115/6	10/09/2025	10/09/2026

Software Utilized:

Name	Manufacturer	Version
None		

Test equipment used for conducted spurious emissions testing

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV005'	Weather Station	Davis	6250	MS191218083	03/16/2026	03/16/2027
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	01/29/2026	01/29/2027
MIN27'	Attenuator 20dB 50watt DC-18Ghz	Mini Circuits	BW-N20W50	VY6127411835	09/16/2025	09/16/2026
MEG002'	Cable,SMA-SMA,9KHz-40GHz, (Cable Kit 6)	Megaphase	TM40-K1K1-197	59006401001	01/28/2026	01/28/2027

Software Utilized:

Name	Manufacturer	Version
None		

12.4 Results:

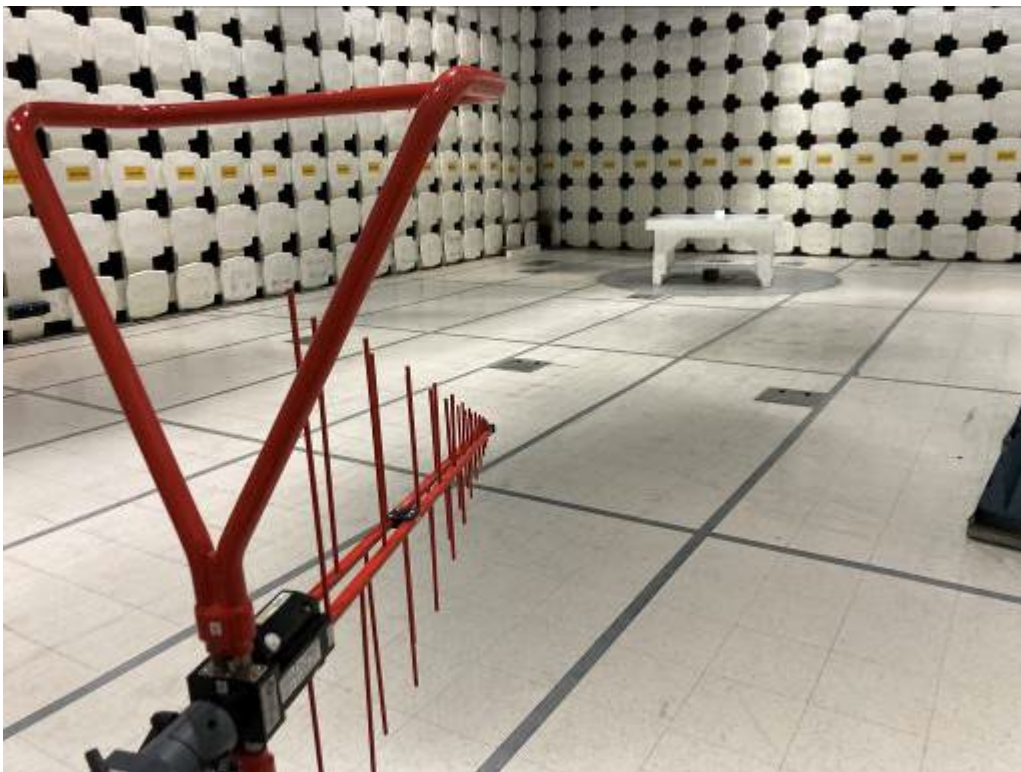
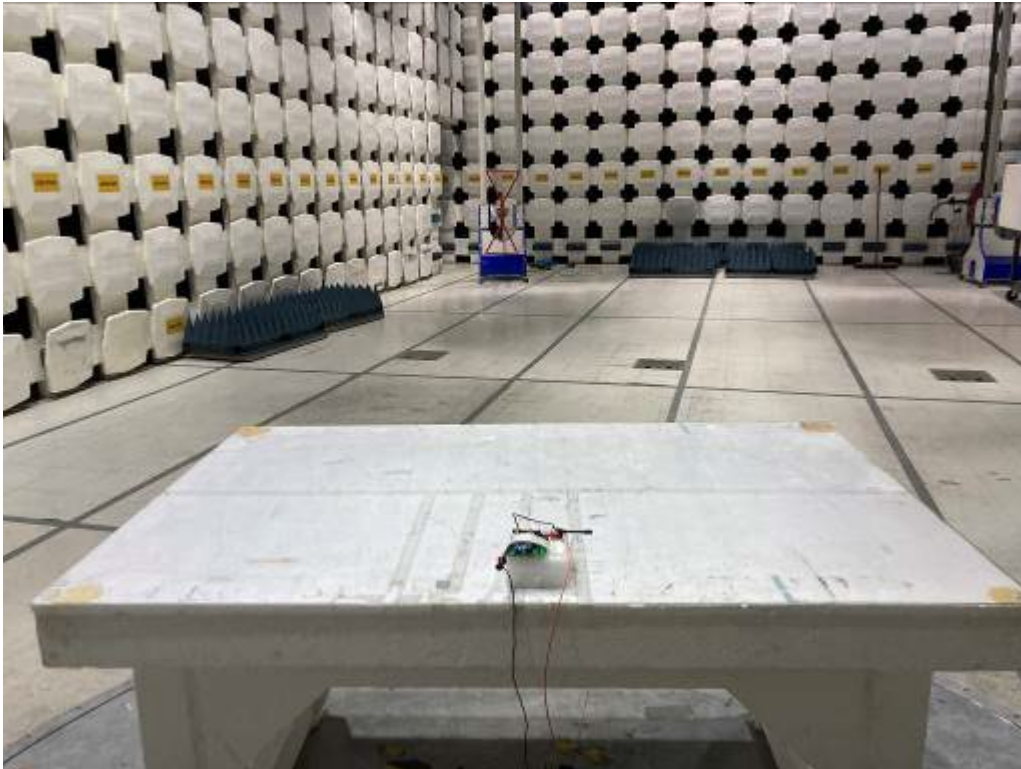
The sample tested was found to Comply.

12.5 Setup Photographs:

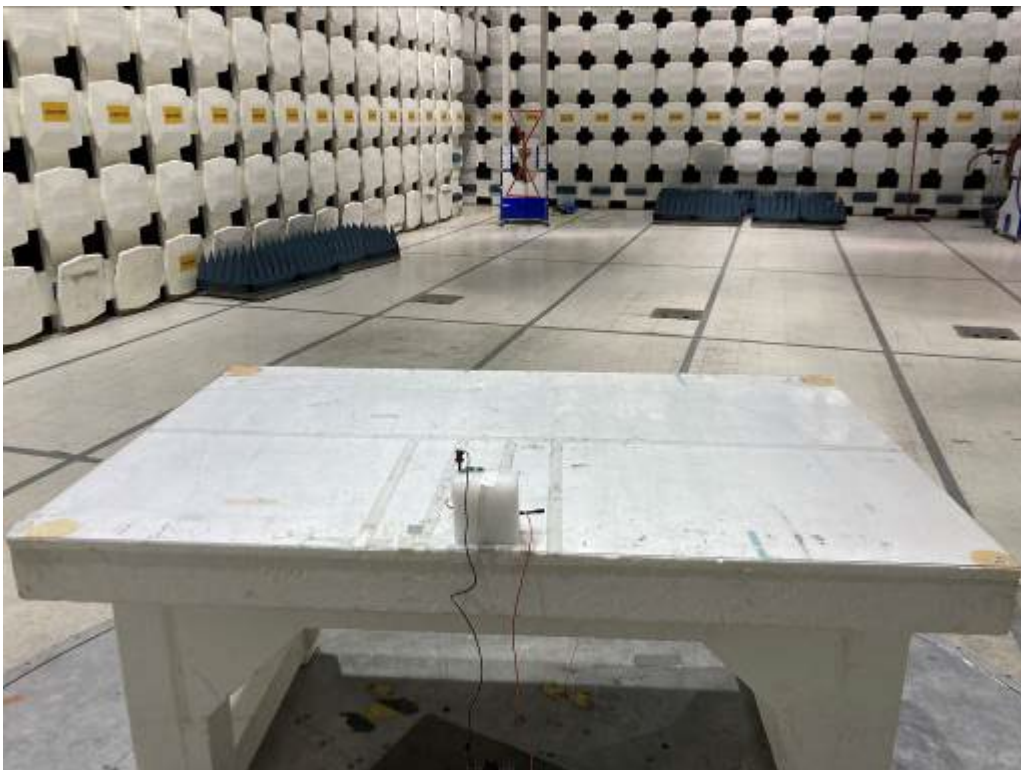
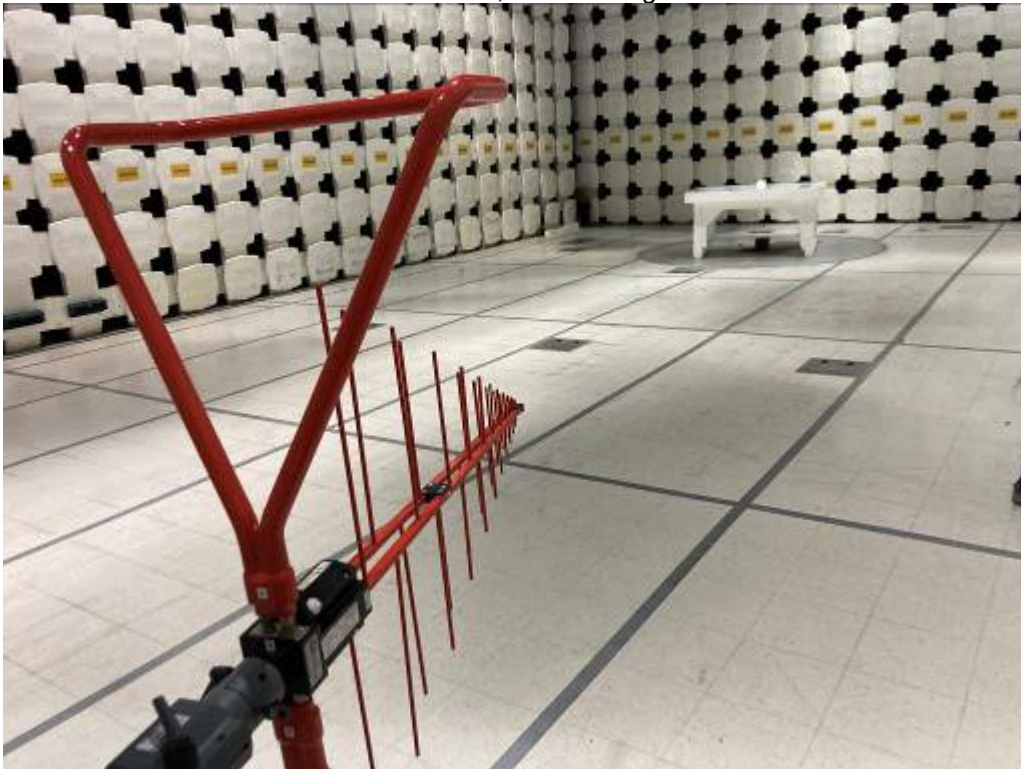
Conducted spurious emissions setup



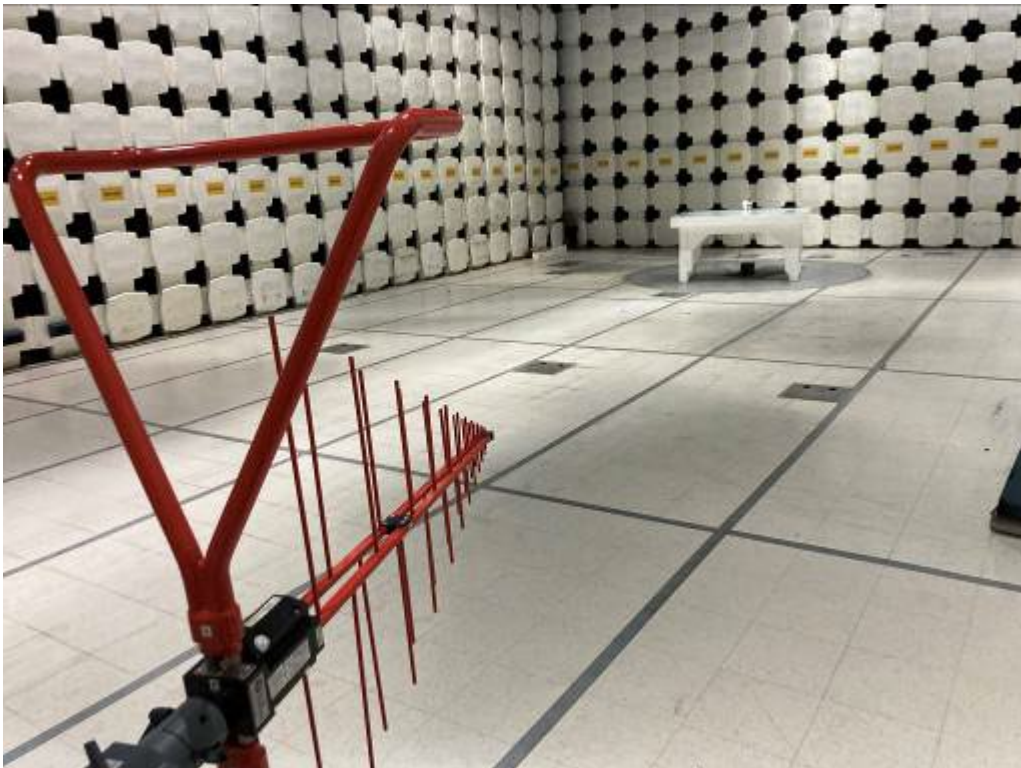
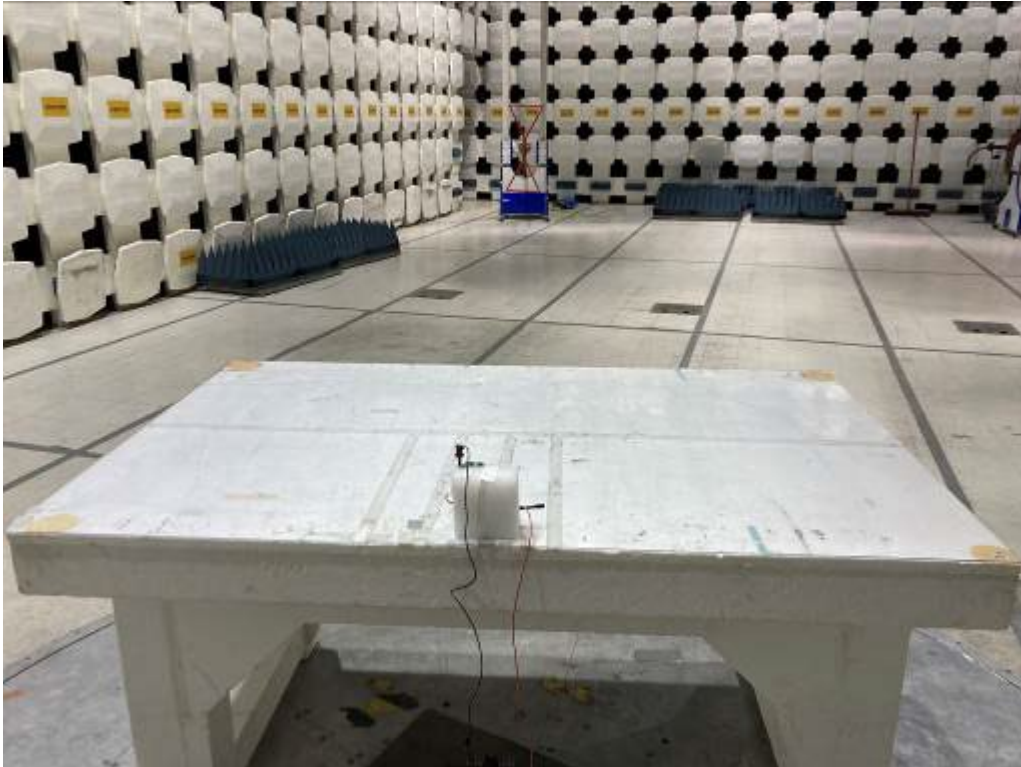
30 – 1000 MHz, EUT flat



30 – 1000 MHz, EUT its long side

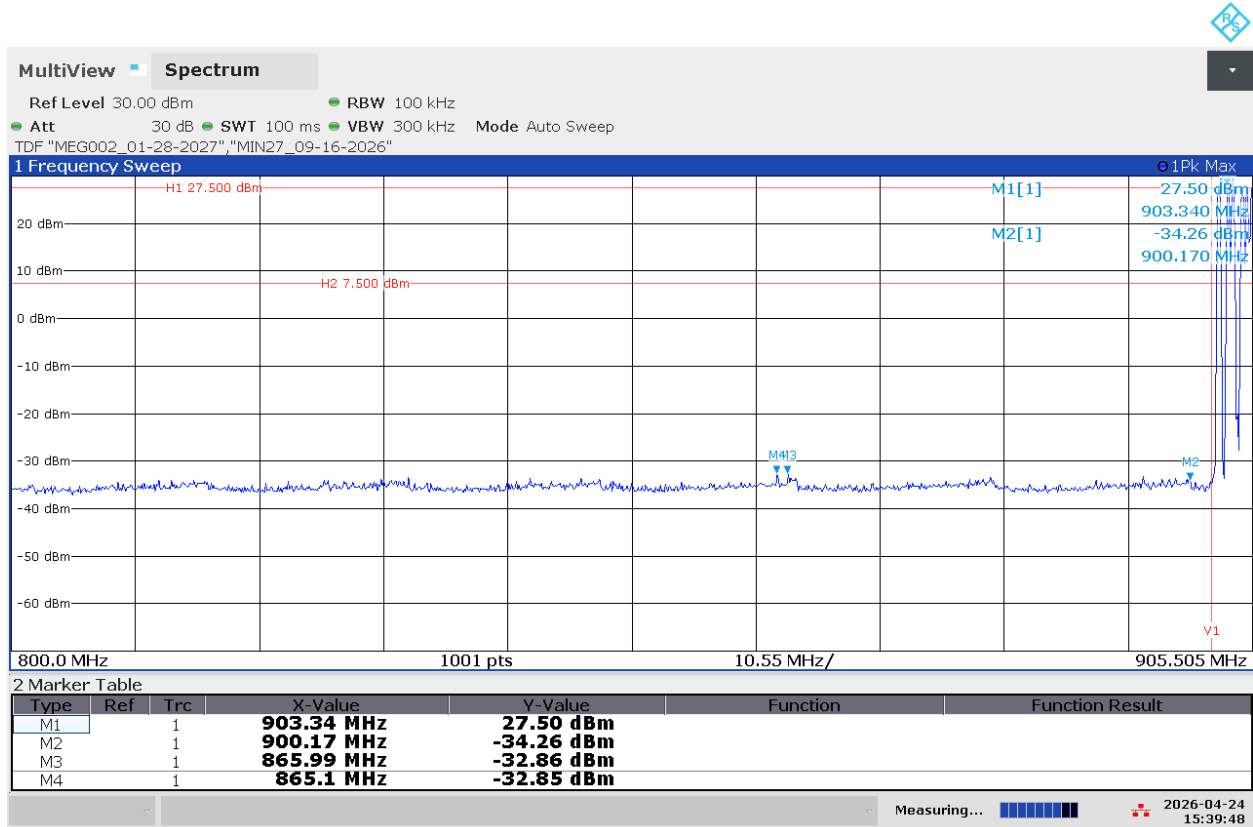


30 – 1000 MHz, EUT its short side



12.6 Test Data:

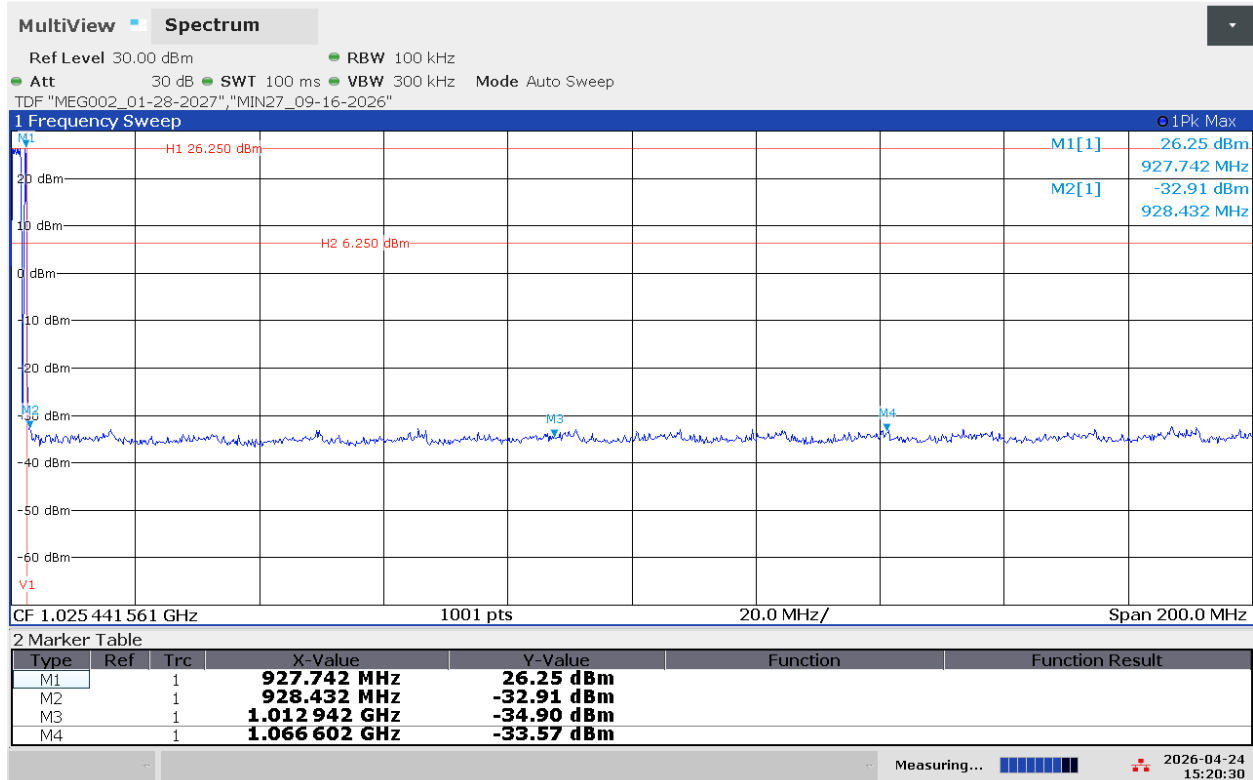
Lower Band-edge (conducted), 20 dBc at the lower band-edge



03:39:48 PM 04/24/2026

Note: All correction factors were internally compensated. M1, M2, M3, M3 indicated the net emissions levels at the 20 dBc from the peak of the fundamental emissions.

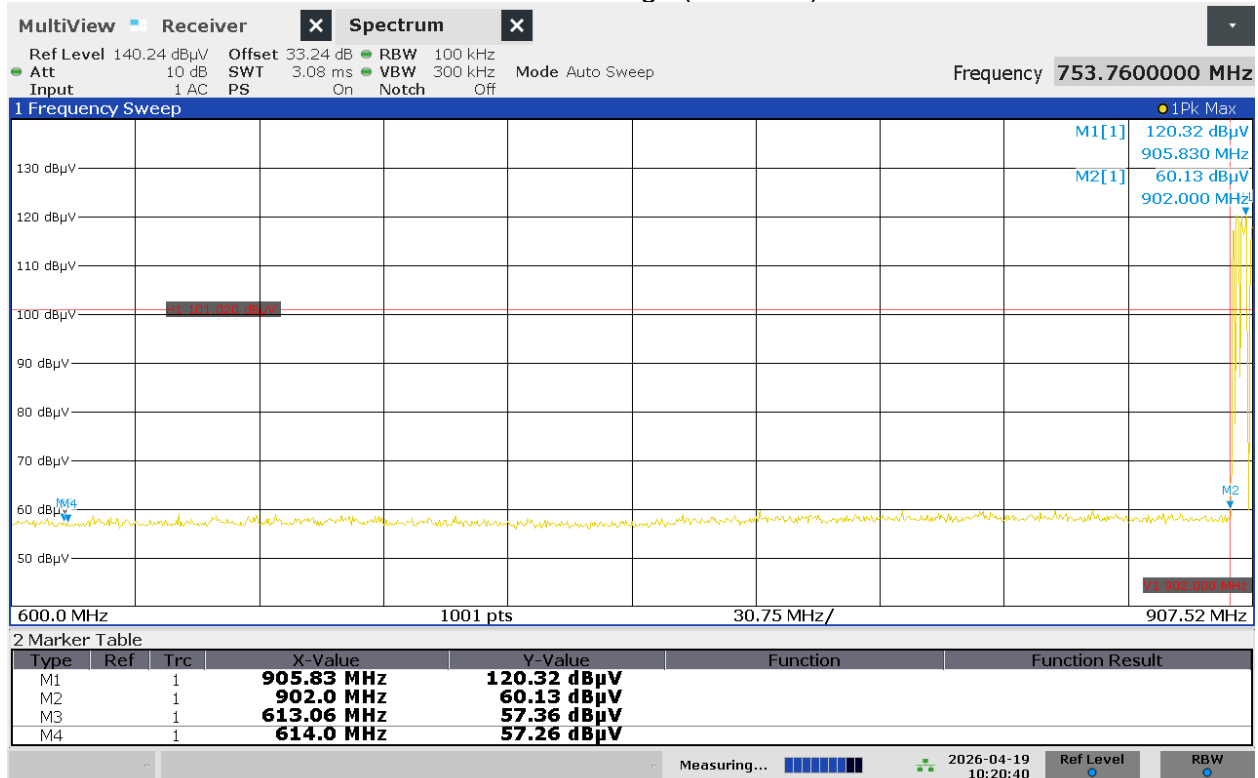
Upper Band-edge (conducted), 20 dBc at the upper band-edge



03:20:31 PM 04/24/2026

Note: All correction factors were internally compensated. M1, M2, M3, M3 indicated the net emissions levels at the 20 dBc from the peak of the fundamental emissions.

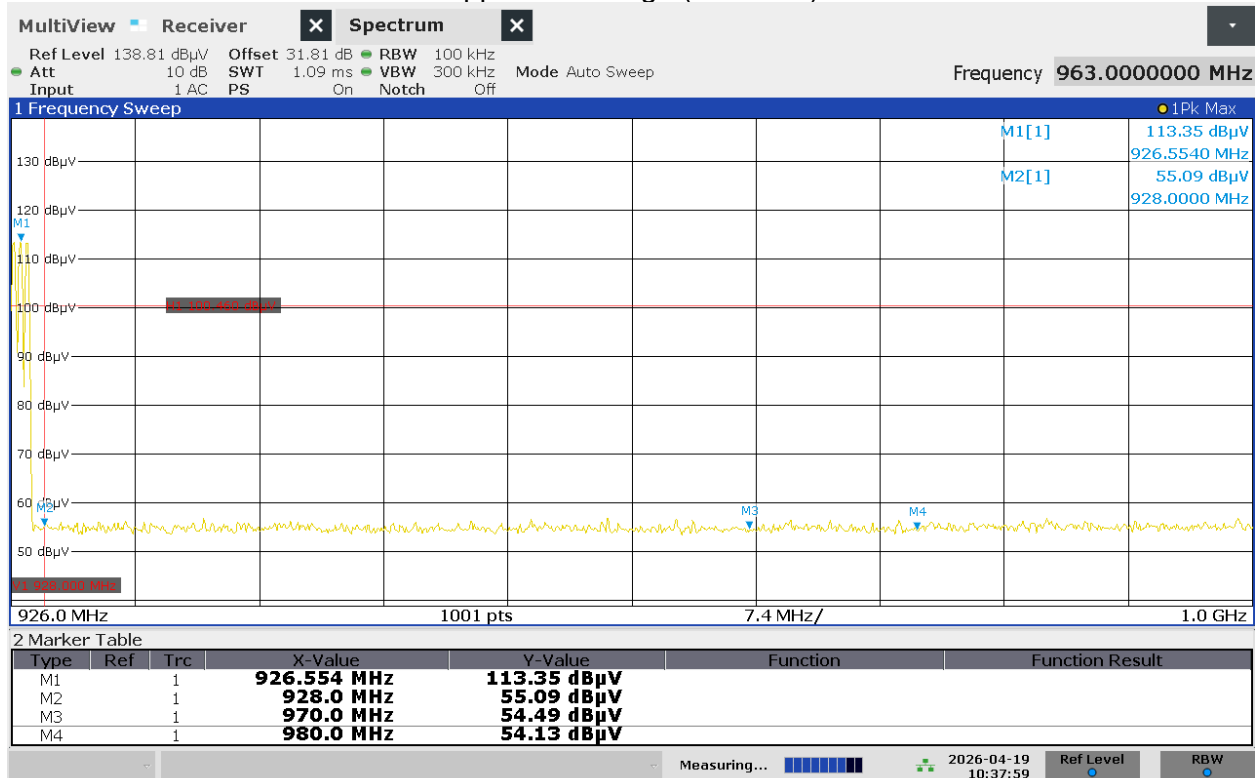
Lower Band-edge (Radiated)



10:20:40 AM 04/19/2026

Note: All correction factors were internally compensated. M1, M2, M3, M3 indicated the net emissions levels at the 20 dBc from the peak of the fundamental emissions.

Upper Band-edge (Radiated)



10:38:00 AM 04/19/2026

Note: All correction factors were internally compensated. M1, M2, M3, M3 indicated the net emissions levels at the 20 dBc from the peak of the fundamental emissions.

Product Standard: CFR47 FCC Part 15.247, RSS-247					Limit applied: See Report Section 12.2		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
04/19/2026 2 nd shift	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC power	Normal hopping	22	45	999
04/24/2026 2 nd shift	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC power	Normal hopping	25	42	1009

Deviations, Additions, or Exclusions: None

13 Receiver Spurious emissions

13.1 Method

Tests are performed in accordance with ANSI C63.4.

TEST SITE: 10m ALSE

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

13.2 Limit

§ 15.109 Radiated emission limits.

- (b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

	Frequency of emission (MHz)	Field strength (microvolts/meter)
and ple a	30-88	90
	88-216	150
	216-960	210
	Above 960	300

Note: Class B digital device limits are 10 dB lower than Class A limits.

13.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV006'	Weather Station	Davis	6250	MS191218071	03/10/2025	03/10/2026
RQS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
HS004'	2M long	Huber suhner	SF118A	505108/118A	10/05/2024	10/05/2025
HS005'	2M long	Huber suhner	SF118A	505109/118A	10/05/2024	10/05/2025
HS014'	19.5M long	Hubner Suhner	SF106	HS014	10/05/2024	10/05/2025
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/15/2024	09/15/2025
HS010'	8.2M long	Hubner Suhner	SF118A	521479/118A	10/05/2024	10/05/2025
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	07/11/2024	07/11/2025
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/04/2024	09/04/2025
HS009'	8m long	Hubner Suhner	SF106	537115/6	10/05/2024	10/05/2025
HS006'	2m Long	Huber suhner	SF118A	505110/118A	10/05/2024	10/05/2025
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/15/2024	07/15/2025
BONN001'	1-18GHz low noise pre-amp	Bonn	BLMA 0118-M	1811749	07/24/2024	07/24/2025

Software Utilized:

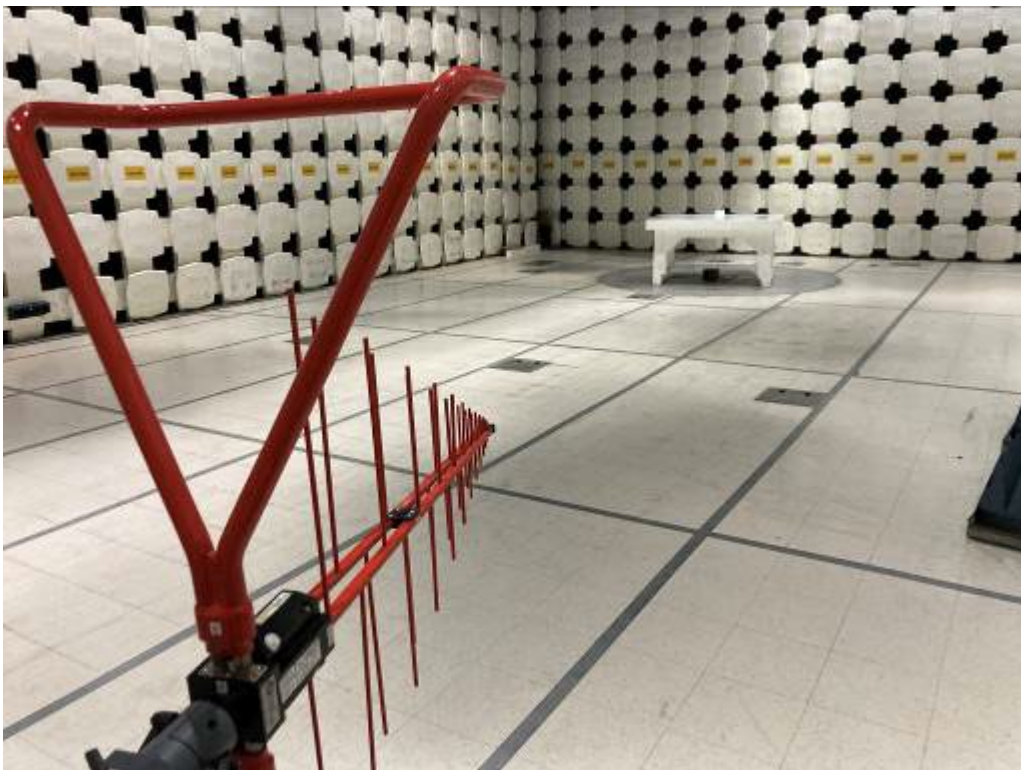
Name	Manufacturer	Version
BAT-EMC	Nexio	2023.0.9.0

13.4 Results:

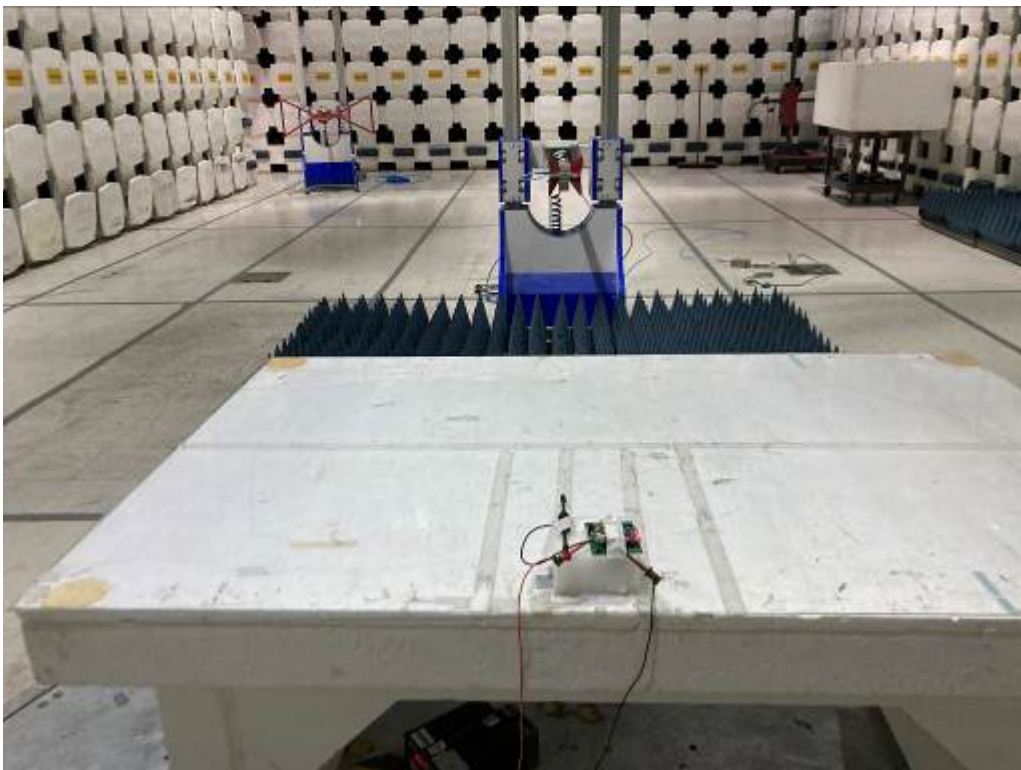
The sample tested was found to Comply.

13.5 Setup Photographs:

30 – 1000 MHz



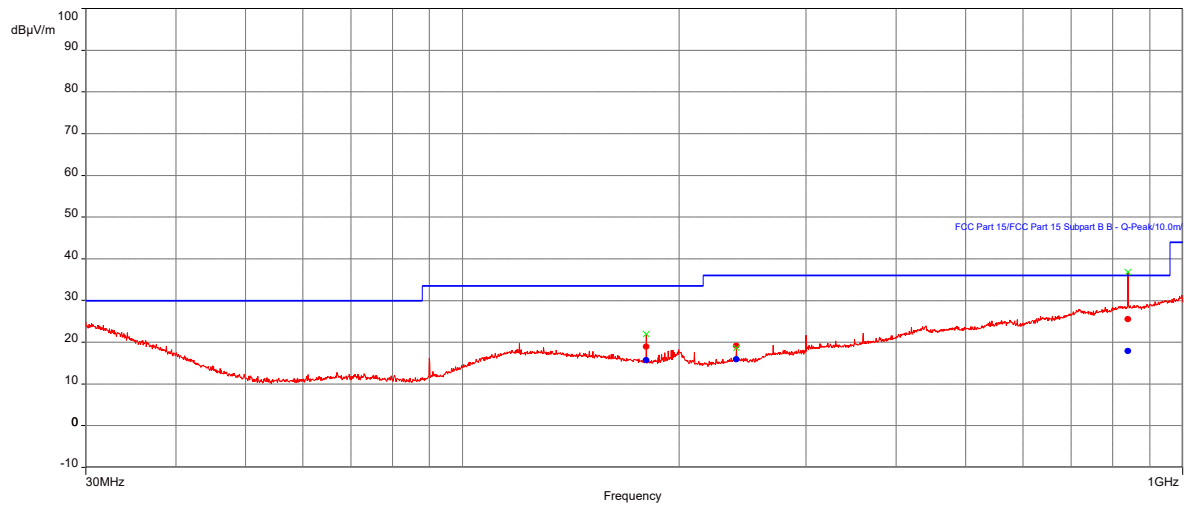
1 – 5 GHz



13.6 Test Data:

Test Information:

Date and Time	6/4/2025 4:18:43 PM
Client and Project Number	Control Chief G106137666
Engineer	Vathana Ven
Temperature	25 deg C
Humidity	42 %
Atmospheric Pressure	1009 mbars
Comments	Scan #14 RE 30-1000MHz Rx mode

Graph:**Results:**

QuasiPeak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
180.003	15.71	33.50	-17.79	231.90	3.63	Horizontal	120k	1.00	-20.84
240.0015	15.93	36.00	-20.07	353.70	1.00	Vertical	120k	1.00	-20.24
839.4649	17.88	36.00	-18.12	0.00	1.51	Horizontal	120k	1.00	-7.06

Intertek

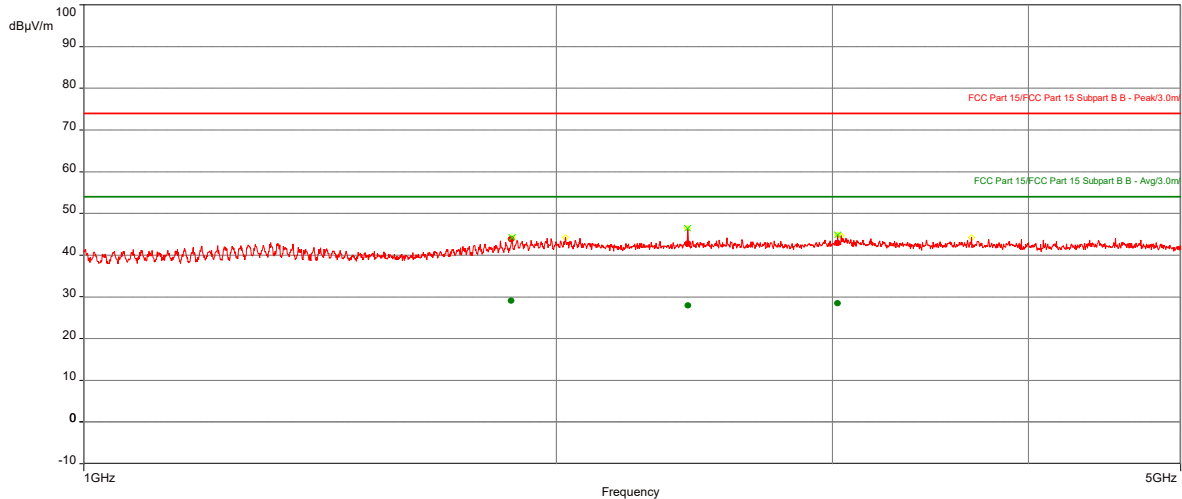
Report Number: 106538840BOX-001 Rev1

Issued: 04/28/2026
Revised: 05/26/2026

Test Information:

Date and Time	6/4/2025 4:52:07 PM
Client and Project Number	Control Chief G106137666
Engineer	Vathana Ven
Temperature	25 deg C
Humidity	42 %
Atmospheric Pressure	1009 mbars
Comments	Scan#15 RE 1 to 5 GHz Rx mode

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1872.181	43.87	74.00	-30.13	144.90	2.98	Horizontal	1M	1.00	-18.31
2426.549	42.82	74.00	-31.18	360.00	2.97	Vertical	1M	1.00	-16.70
3023.46	42.89	74.00	-31.11	0.00	2.98	Vertical	1M	1.00	-15.24

AVG (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1872.181	29.10	54.00	-24.90	144.90	2.98	Horizontal	1M	1.00	-18.31
2426.549	28.01	54.00	-25.99	360.00	2.97	Vertical	1M	1.00	-16.70
3023.46	28.46	54.00	-25.54	0.00	2.98	Vertical	1M	1.00	-15.24

Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 13.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
06/04/2025	Vathana Ven <i>VSV</i>	Kouma Sinn <i>KPS</i>	DC power	Rx mode	25	42	1009

Deviations, Additions, or Exclusions: None

14 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	04/28/2026	106538840BOX-001	VFV <i>VFV</i>	KPS <i>KPS</i>	Original Issue
1	05/26/2026	106538840BOX-001 Rev1	VFV <i>VFV</i>	KPS <i>KPS</i>	Fixed antenna type on page 7, fixed limits on page 40 and 51