COGNOSOS INC.

TEST REPORT

SCOPE OF WORK
RADIO TESTING – RG-400 / RG-401 GATEWAYS

REPORT NUMBER
106348906ATL-001

ISSUE DATE
18 November 2025

REVISED DATE
12 January 2026

PAGES
35

DOCUMENT CONTROL NUMBER
Non-Specific Radio Report Shell Rev. January 2025

RADIO TEST REPORT

Report Number:	**106348906ATL-001**
Project Number:	**G106348906**
Report Issue Date:	**18 November 2025**
Revision Date:	**12 January 2026**
Model(s) Tested:	**RG-400 and RG-401**
FCC ID:	**2AKFQRG40X**
IC:	**22165-RG40X**
Standards:	**47 CFR Part 15 Subpart C, 15.247** **RSS-247, Issue 4** **ANSI C63.10-2020+Cor.1-2023** **RSS-GEN, Issue 5**

Test Location

Intertek
1950 Evergreen Blvd., Suite 100
Duluth, GA 30096 USA
FCC Designation: US1046
CAB Designator: US0128

Client

Cognosos Inc.
1100 Spring St. NW #300a
Atlanta, GA 30309 USA

Report prepared by

Jeremy Pickens / Senior Staff Engineer

Report reviewed by

Aaron Chang / EMC Team Leader

Table of Contents

1 Introduction and Conclusion

The tests indicated in Section 2 were performed on the product constructed as described in Section 4. 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 Description	Test Specification		Result
		FCC	ISED	
5	Occupied and DTS Bandwidth	15.247(a)(2)	RSS-247 S5.2(a) RSS-GEN S6.7	Compliant
6	Output Power	15.247(b)(3)	RSS-247 S5.4(d)	Compliant
7	Power Spectral Density	15.247(e)	RSS-247 S5.2(b)	Compliant
8	Conducted Spurious Emissions / Band Edge	15.247(d)	RSS-247 S5.5	Compliant
9	Emissions in Restricted Frequency Bands	15.247(d) 15.205(a), 15.209(a)	RSS-GEN S8.9-8.10	Compliant
10	AC Mains Conducted Emissions	15.207	RSS-GEN S8.8	Compliant
NA	Antenna Requirement	15.203	RSS-GEN S6.8	Compliant[1]

1) The system is professionally installed.

3 Client Information

This evaluation was performed at the request of:

Client: Cognosos Inc.
1100 Spring St. NW #300a
Atlanta, GA 30309 USA

Contact: Sean Nowlan

Email: sean.nowlan@cognosos.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Cognosos Inc.
1100 Spring St. NW #300a
Atlanta, GA 30309 USA

Equipment Under Test			
Description	**Manufacturer**	**Model Number**	**Serial Number**
Indoor Gateway	Cognosos	RG-400	4000010400
Outdoor Gateway	Cognosos	RG-401	4000010211

Receive Date:	29 September 2025
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
The DUTs were wireless gateways that can be powered either via PoE or an AC/DC power supply.

Radio/Receiver Characteristics	
Frequency Range / Number of Channels	902.6 – 927.4MHz, 63 Channels
Data Rate / Modulation Type(s)	50kbps, O-QPSK DSSS
Channel Separation:	400kHz
Maximum Conducted Output Power:	25.44 dBm (349.95mW)
Equipment Type	Portable – 20cm Separation Distance
Antenna Type and Gain	Indoor: Dipole (Rubber Duck) Antenna: 3dBi Outdoor: Dipole: 8 dBi

Software

No.	Description of EUT Software
1	Cognosos Linux vaoa1.4.0

4.1 Justification

All testing performed in this report was for the radio only.

For antenna conducted port measurements, the DUT was directly connected to the measurement equipment using an SMA cable and a 20dB attenuator. The DUT was powered via PoE which also allowed control using a test laptop through terminal commands.

For radiated emission measurements each DUT was placed on a non-conductive platform (80cm or 1.5meters depending on the frequency range). The DUTs were tested at low, mid, and high channels.

Software Setting for Power: 29 (98% Duty Cycle)

4.2 Modifications Required for Compliance

No modifications were made during compliance testing in order to bring the product into compliance.

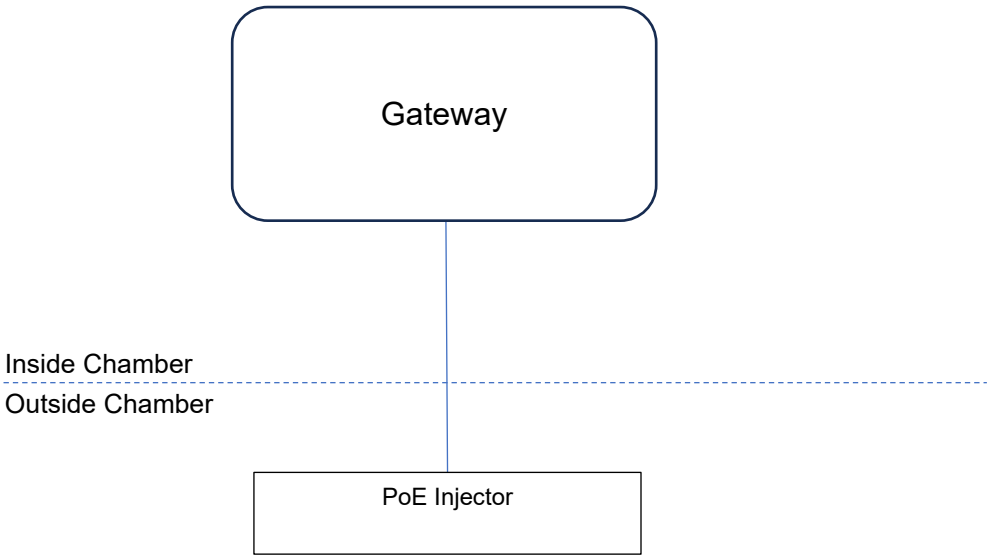
4.3 Additions, Deviations and Exclusions from Standards

No additions, deviations or exclusion have been made from standard.

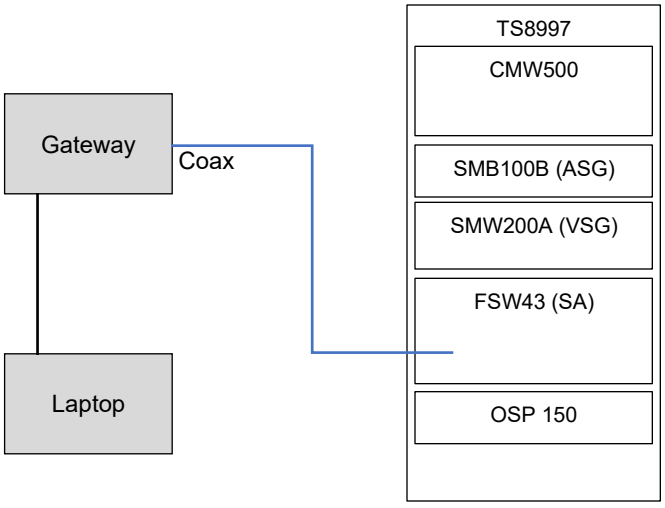
4.4 Method

Configuration as required by ANSI C63.10.

4.5 EUT Block Diagram – Radiated Measurements



4.6 EUT Block Diagram – Conducted Measurements



5 Bandwidth

5.1 Method

The procedures from ANSI C63.10 clause 11.8 and 558074 D01 DTS Meas Guidance v05r2 were used to determine the 6 dB bandwidth.

The procedures from ANSI C63.10 clause 6.9.3 were used to measure the 99% Occupied Bandwidth.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

5.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026

Software Utilized

Name	Manufacturer	Version
RSCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

5.3 Results

The sample tested was found to Comply.

5.4 Test Data

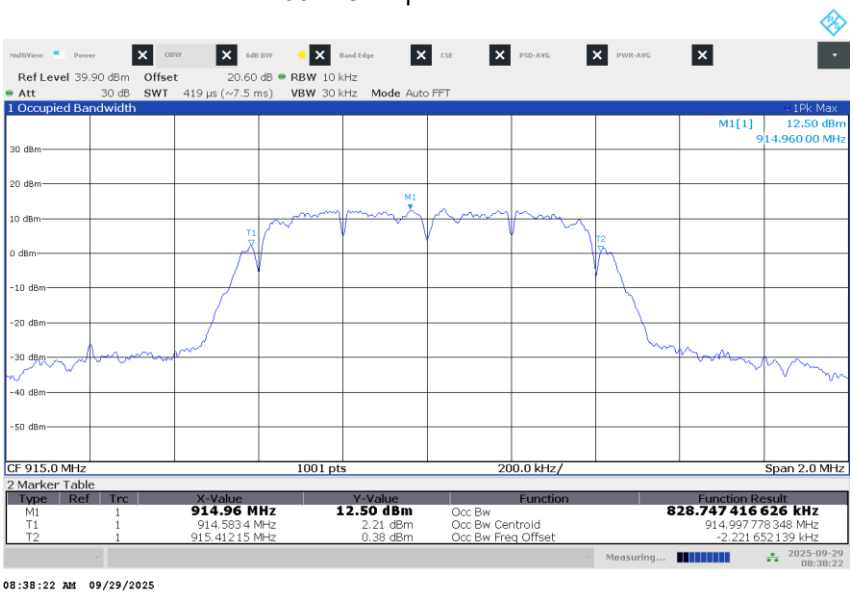
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)	Result
902.6	759.2	>500	Compliant
915.0	734.3	>500	Compliant
927.4	734.3	>500	Compliant

Frequency (MHz)	99% OBW (kHz)	Limit (kHz)	Result
902.6	828.05	NA	Reported
915.0	828.75	NA	Reported
927.4	828.65	NA	Reported

Sample Plots

6dB Bandwidth

99% Occupied Bandwidth



Test Personnel:	Jeremy Pickens	Test Date:	29 September 2025
Supervising/Reviewing Engineer: (Where Applicable)		Ambient Temperature:	22.1ºC
Product Standard:	ANSI C63.10	Relative Humidity:	49.5%
Input Voltage:	48Vdc (PoE)	Atmospheric Pressure:	98.6kPa

6 Output Power

6.1 Method

The procedures from KDB 558074 D01 DTS Meas Guidance v05r2 and ANSI C63.10 Clause 11.9.2.2.2 were used to measure the average output power.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

6.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026

Software Utilized

Name	Manufacturer	Version
RSCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

6.3 Results

The sample tested was found to Comply.

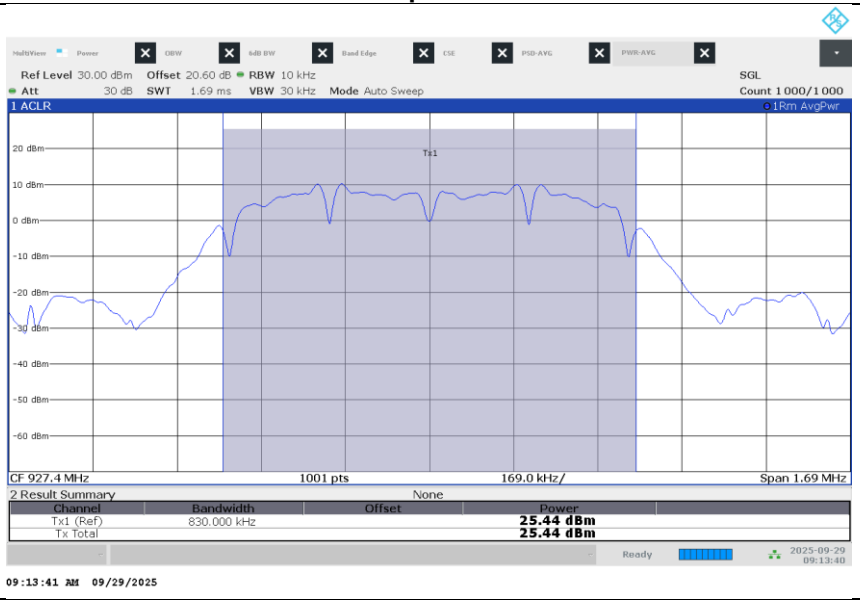
6.4 Test Data

Frequency (MHz)	Conducted AVG Power (dBm)	Conducted Limit (dBm)	Result
902.6	24.29	30	Pass
915.0	23.82	30	Pass
927.4	25.44	30	Pass

Frequency (MHz)	Conducted AVG Power	Worst-case Antenna Gain (dBi)	EIRP (dBm)	ISED EIRP Limit (dBm)	Result
902.6	24.29	8.0	31.29	36	Pass
915.0	23.82	8.0	25.82	36	Pass
927.4	25.44	8.0	32.44	36	Pass

EIRP = Power + Antenna Gain

Sample Plot



Test Personnel:	Jeremy Pickens	Test Date:	29 September 2025
Supervising/Reviewing Engineer: (Where Applicable)		Ambient Temperature:	22.1ºC
Product Standard:	ANSI C63.10	Relative Humidity:	49.5%
Input Voltage:	5Vdc (USB-C)	Atmospheric Pressure:	98.6kPa

7 Power Spectral Density

7.1 Method

The procedures from KDB 558074 D01 DTS Meas Guidance v05r2 and ANSI C63.10 Clause 11.10.3 were used to measure the average PSD.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

7.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026

Software Utilized

Name	Manufacturer	Version
RSCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

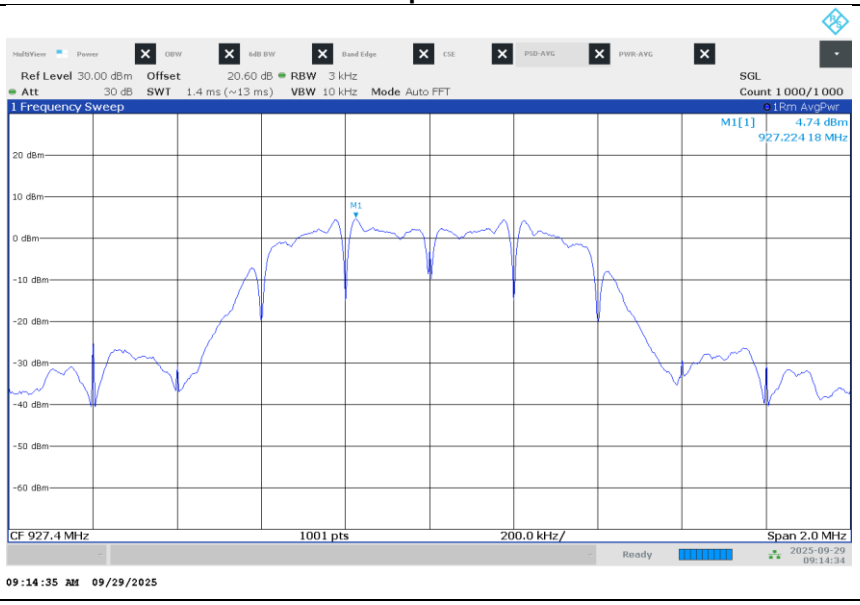
7.3 Results

The sample tested was found to Comply.

7.4 Test Data

Frequency (MHz)	Average PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
902.6	3.54	8	Pass
915.0	3.29	8	Pass
927.4	4.74	8	Pass

Sample Plot



Test Personnel:	Jeremy Pickens	Test Date:	29 September 2025
Supervising/Reviewing Engineer: (Where Applicable)		Ambient Temperature:	22.1ºC
Product Standard:	ANSI C63.10	Relative Humidity:	49.5%
Input Voltage:	5Vdc (USB-C)	Atmospheric Pressure:	98.6kPa

8 Conducted Spurious Emissions / Band Edge

8.1 Method

The procedures from KDB 558074 D01 DTS Meas Guidance v05r2 and ANSI C63.10 Clause 11.11 were used to measure the conducted spurious emissions and allocated band edges.

The limit is 20 dB below the measured peak power in any 100kHz band.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

8.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026

Software Utilized

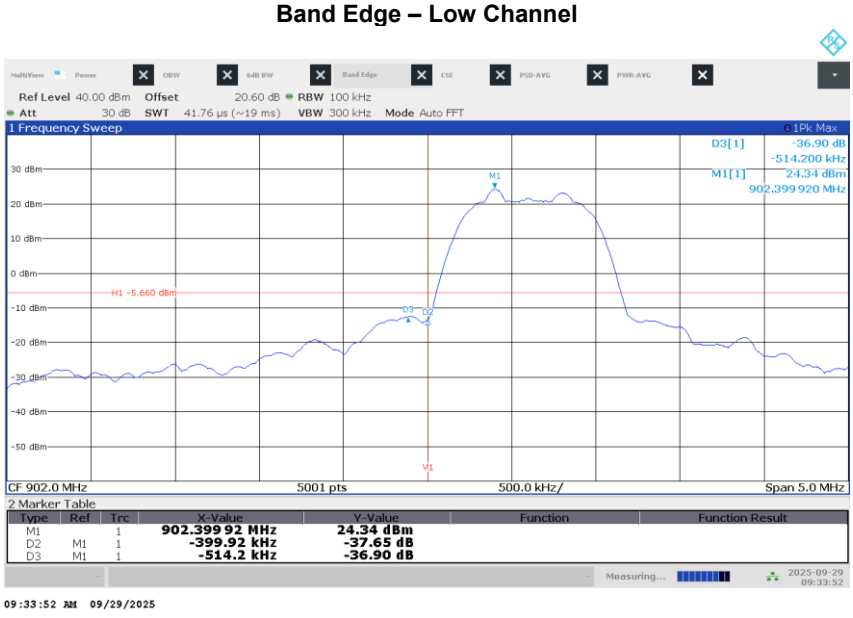
Name	Manufacturer	Version
RSCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

8.3 Results

The sample tested was found to Comply.

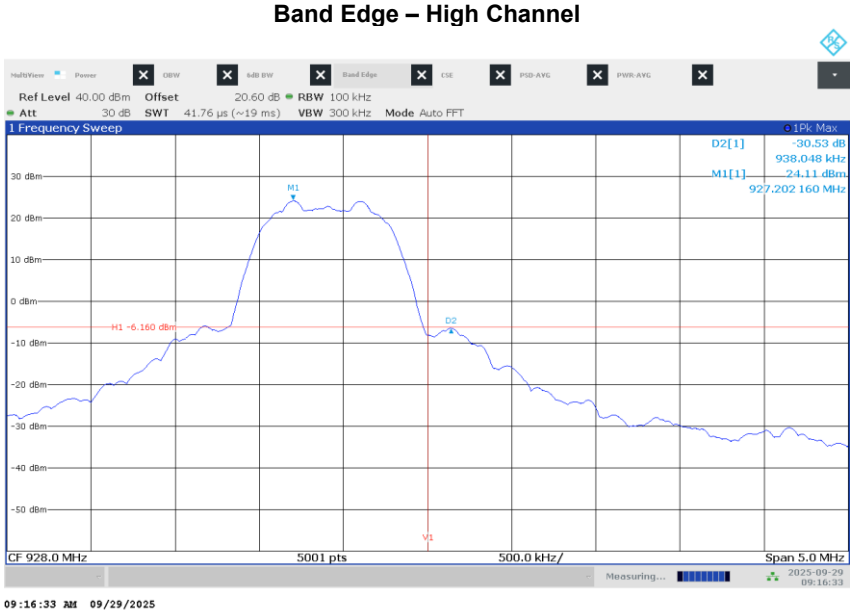
8.4 Plots

Band Edge – Low Channel



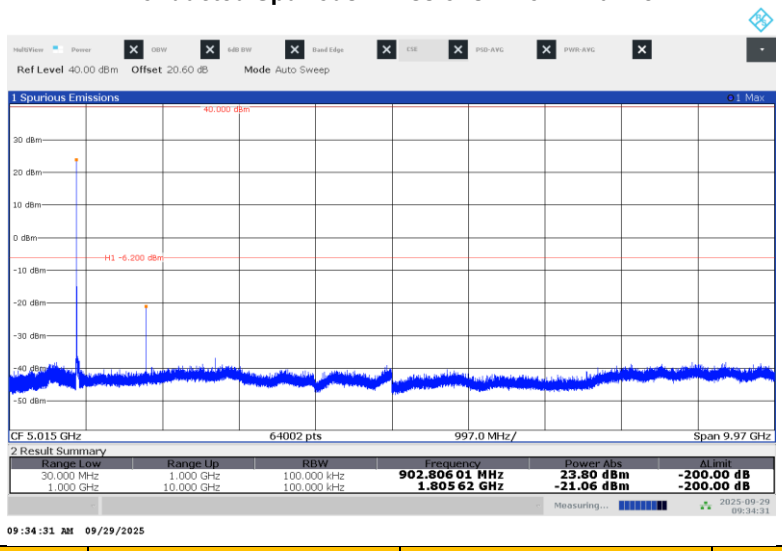
Frequency	Measurement (dBc)	Limit (dBc)	Result
901.886MHz	-36.9	-30	Compliant
902.000MHz	-37.65	-30	Compliant

Band Edge – High Channel



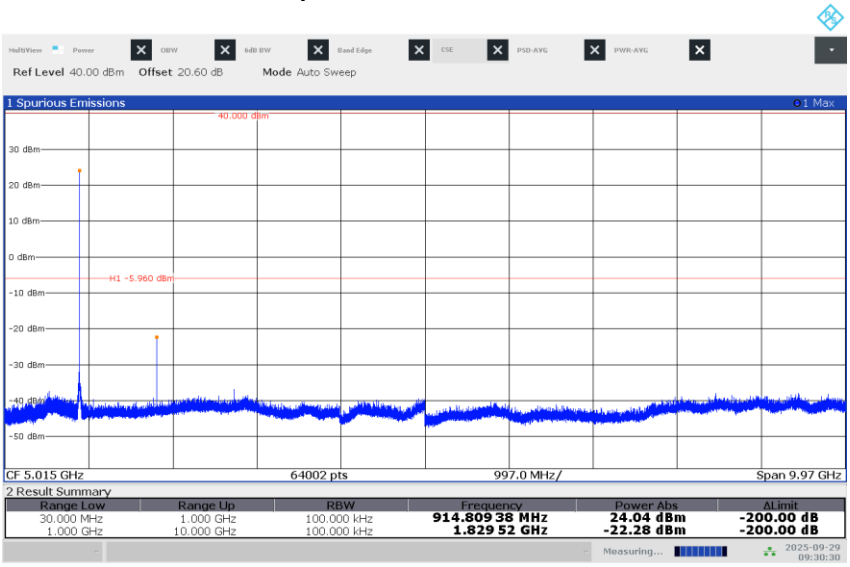
Frequency	Measurement (dBc)	Limit (dBc)	Result
928.140MHz	-30.53	-30	Compliant

Conducted Spurious Emissions – Low Channel



Frequency (MHz)	Measurement (dBc)	Limit (dBc)	Result
1805.62	-44.86	-30	Compliant

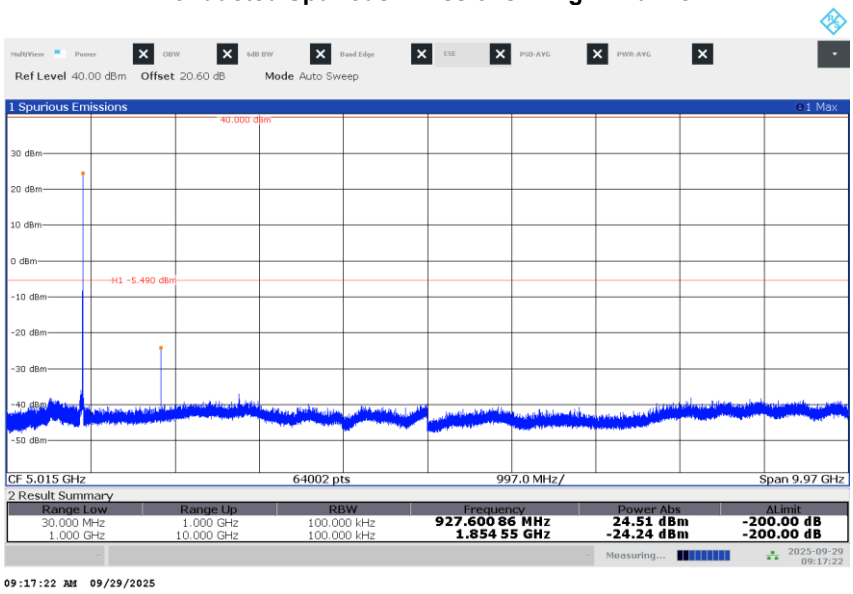
Conducted Spurious Emissions – Mid Channel



4

Frequency (MHz)	Measurement (dBc)	Limit (dBc)	Result
1829.52	-46.32	-30	Compliant

Conducted Spurious Emissions – High Channel



Frequency (MHz)	Measurement (dBc)	Limit (dBc)	Result
1854.55	-48.75	-30	Compliant

Test Personnel:	Jeremy Pickens	Test Date:	29 September 2025
Supervising/Reviewing Engineer: (Where Applicable)		Ambient Temperature:	22.1ºC
Product Standard:	ANSI C63.10	Relative Humidity:	49.5%
Input Voltage:	5Vdc (USB-C)	Atmospheric Pressure:	98.6kPa

9 Radiated Spurious Emissions / Restricted Frequency Bands

9.1 Method

Tests were performed in accordance with ANSI C63.10. The EUT was tested at a height of 0.8m for measurements below 1GHz and at 1.5 meters for measurements above 1GHz.

TEST SITE: 10 Meter Chamber

10 Meter Semi-Anechoic Chamber The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096. It is a 10-meter semi-anechoic chamber manufactured by Panashield. Embedded in the floor is a 3-meter diameter turntable.

Sample Calculation

The field strength was 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 dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
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 dBμV 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 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

FS = 32 dBμV/m
RA = 52.0 dBμV
CF = 1.6 dB
AF = 7.4 dB/m
AG = 29.0 dB

To convert from dBμV to μV or mV the following was used

UF = $10^{(NF / 20)}$ where UF = Net Reading in μV
NF = Net Reading in dBμV

Example

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

9.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
200074	Preamplifier, 10 MHz to 2000 MHz	Mini-Circuits	ZKL-2	D011105	01/24/2025	01/24/2026
211262	Controller - Turntable and Mast	Sunol	SC99V	SC99V-1	VBU	VBU
211264	Mast - Antenna	Sunol	TWR95	NNN2	VBU	VBU
211386	Antenna, BiLog, 20-2000MHz	Chase	CBL6112B	2622	06/30/2025	06/30/2026
212166	Temperature/Pressure/Humidity Sensor	Extech	SD700	110392	04/02/2025	04/02/2026
213058A	Antenna, Horn, <18 GHz	A.H. Systems	SAS-200/571	246	04/03/2025	04/03/2026
213103	High Pass Filter - Rated 1GHz	Micro-Tronics	HPM50108	140	06/18/2025	06/18/2026
213365	PreAmplifier 100Hz-30MHz	Com-Power	PAL-010	181492	06/18/2025	06/18/2026
213451	Omni -directional Comb Generator	Com-Power	CGO-520	281266	VBU	VBU
213453	Preamplifier 500MHz-18GHz	Com-Power	PAM-118A	18040030	10/16/2024	10/16/2025
232944	EMI Receiver 10Hz-26.5GHz	Agilent	MXE-9038A	MY51210135	11/06/2024	11/06/2025
MM1	RF Coax Cable 9kHz-18GHz	Maury Microwave	UC-N-MM36	161471	10/21/2024	10/21/2025
MM5	RF Coax Cable 9kHz-18GHz	Maury Microwave	UC-N-MM-118	163203	04/01/2025	04/01/2026
MM8	RF Coax Cable 9kHz-18GHz	Maury Microwave	UC-N-MM-267	1635289	06/18/2025	06/18/2026
MP10	RF Coax Cable 9kHz-18GHz	Fairview Microwave	FMCA1282-394	MP10	06/18/2025	06/18/2026
MP12	RF Coax Cable 9kHz-18GHz	Fairview Microwave	SCE180060505-700CM	MP12	01/23/2025	01/23/2026
MP14	RF Coax Cable 9kHz-18GHz	Megaphase	EC29-N1N1-276-H	20938802	09/19/2025	09/19/2026
NYM-EMC-36	Antenna, Loop, Passive (10 kHz - 30 MHz)	EMCO	6512	9810-1228	07/14/2025	07/14/2026

Software Utilized

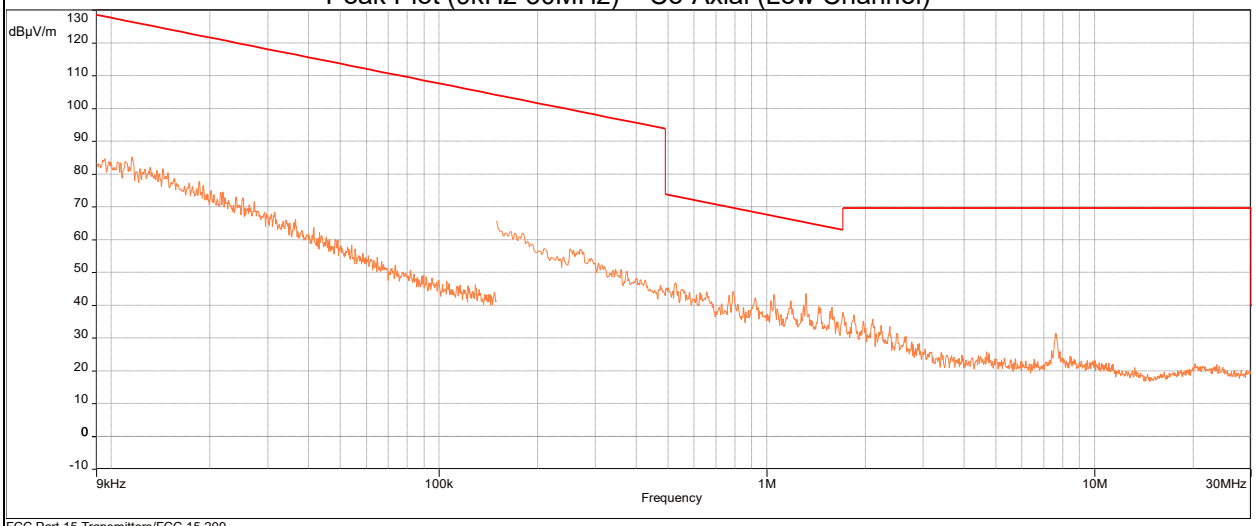
Name	Manufacturer	Version
BAT EMC	NEXIO	3.19.1.18

9.3 Results

The sample tested was found to Comply.

9.4 Plots/Data – Spurious Emissions – Indoor Gateway

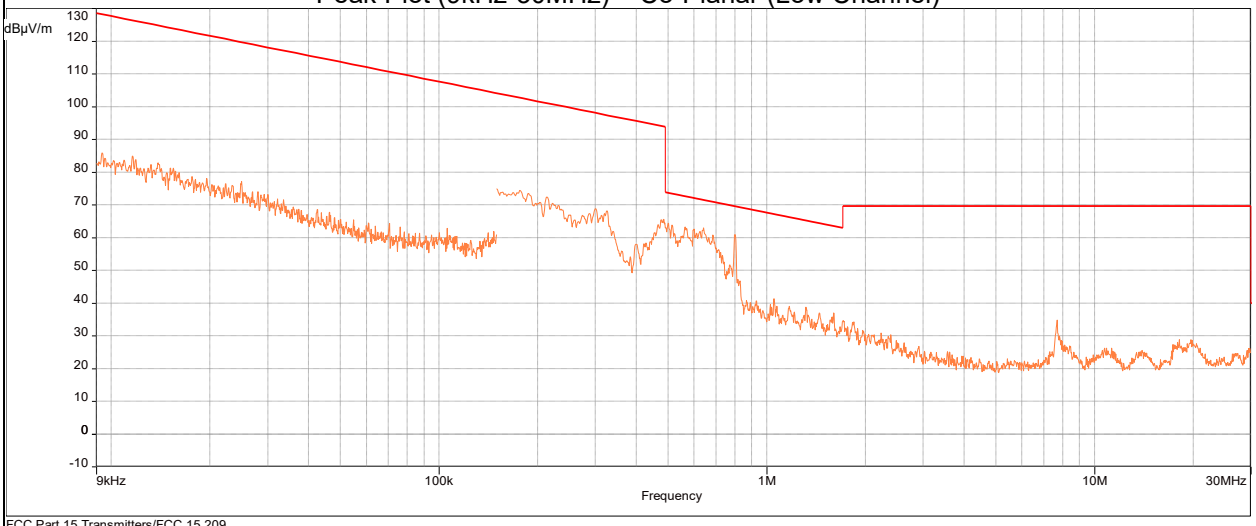
Peak Plot (9kHz-30MHz) – Co-Axial (Low Channel)



FCC Part 15 Transmitters/FCC 15.209

Note: The emissions profile below 30MHz did not change among channels.

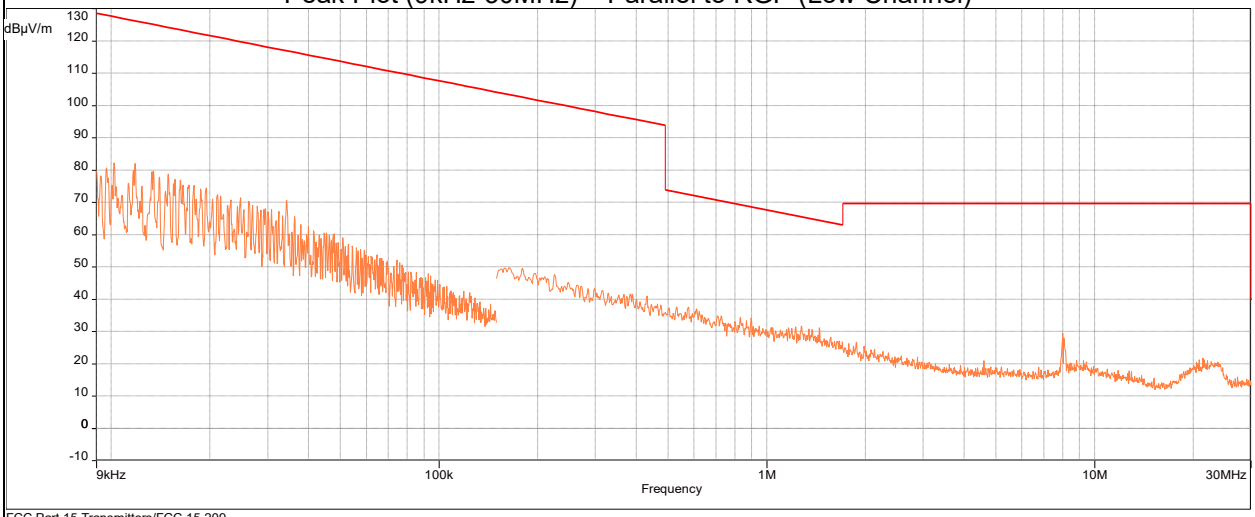
Peak Plot (9kHz-30MHz) – Co-Planar (Low Channel)



FCC Part 15 Transmitters/FCC 15.209

Note: The emissions profile below 30MHz did not change among channels.

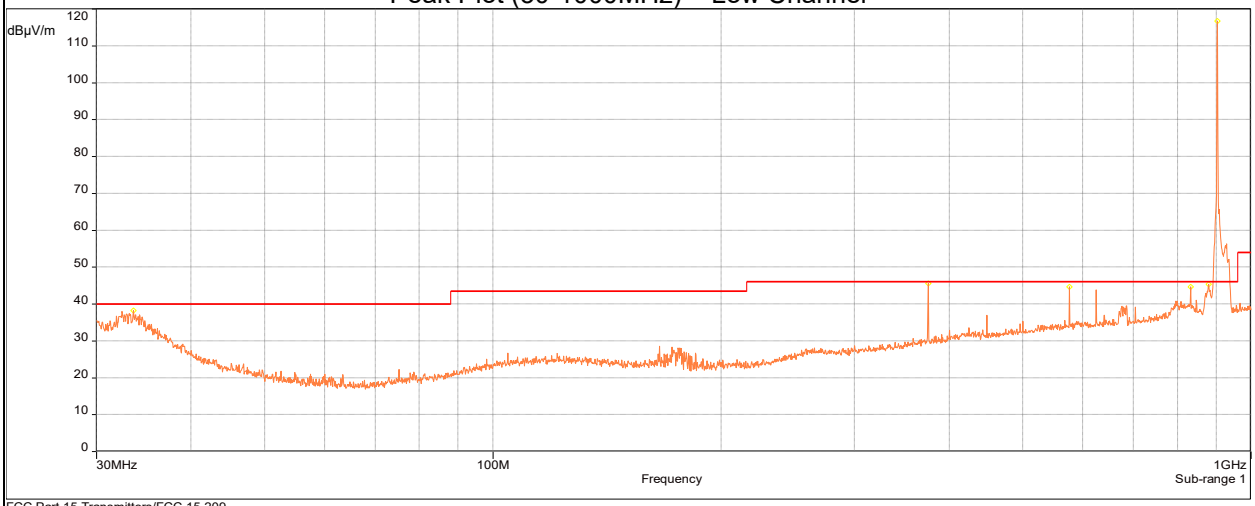
Peak Plot (9kHz-30MHz) – Parallel to RGP (Low Channel)



FCC Part 15 Transmitters/FCC 15.209

Note: The emissions profile below 30MHz did not change among channels.

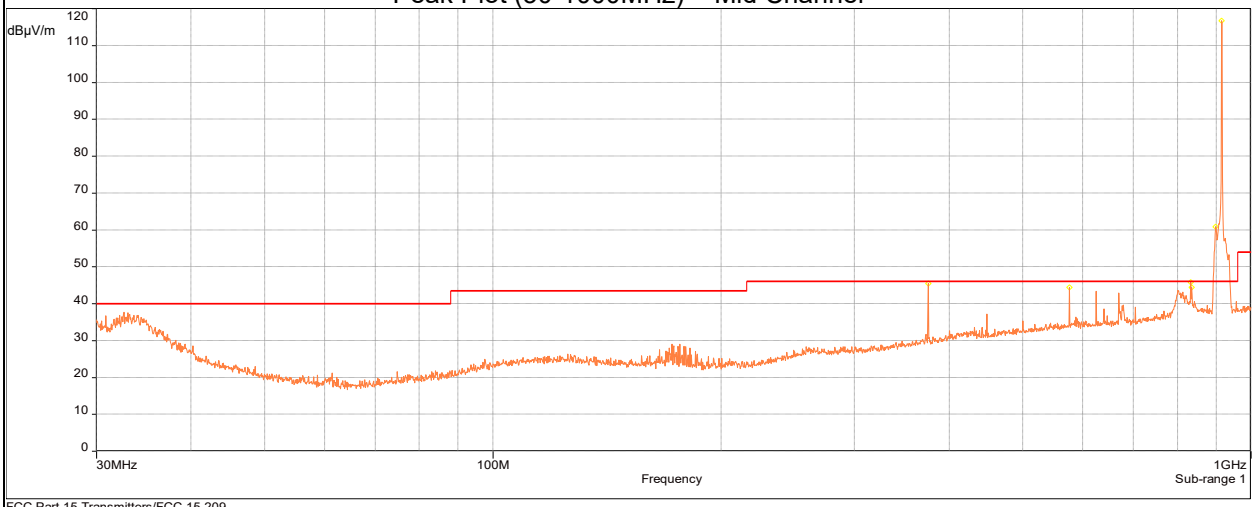
Peak Plot (30-1000MHz) – Low Channel



FCC Part 15 Transmitters/FCC 15.209

Note: No emissions other than the fundamental were associated with the 900MHz radio

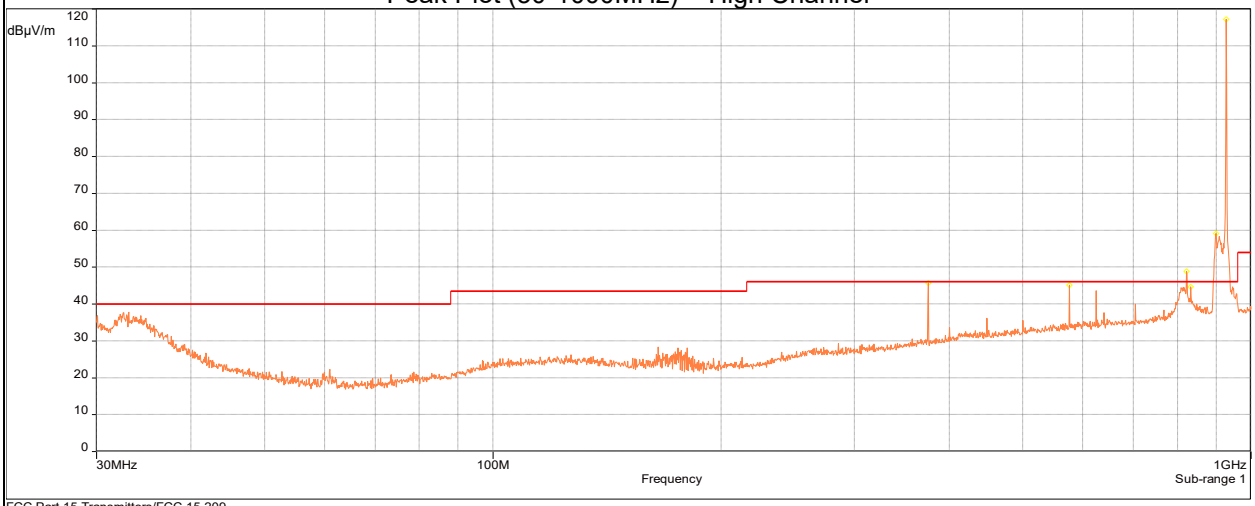
Peak Plot (30-1000MHz) – Mid Channel



FCC Part 15 Transmitters/FCC 15.209

Note: No emissions other than the fundamental were associated with the 900MHz radio

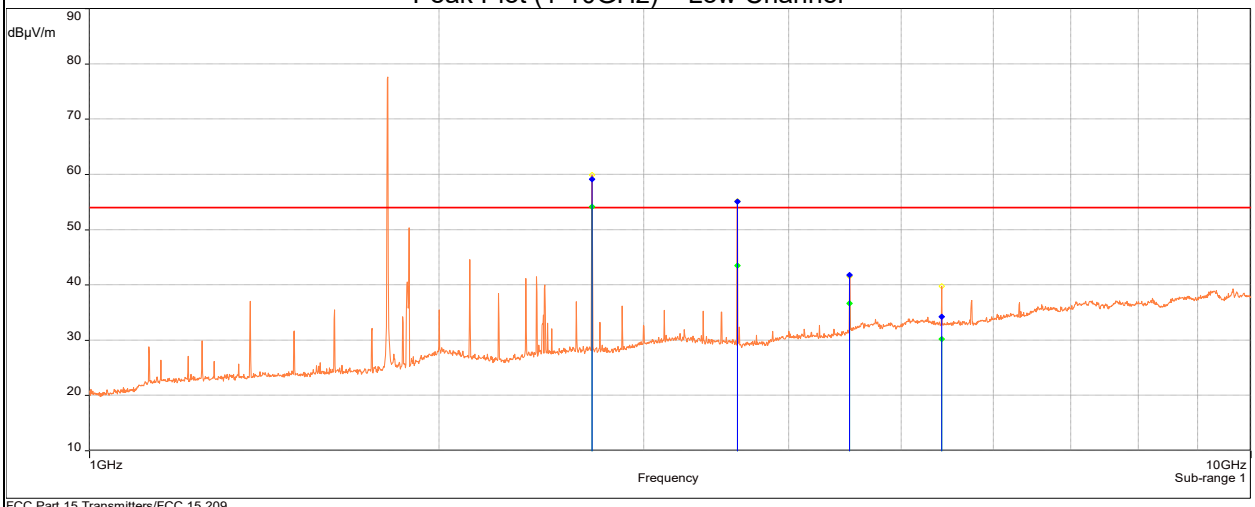
Peak Plot (30-1000MHz) – High Channel



FCC Part 15 Transmitters/FCC 15.209

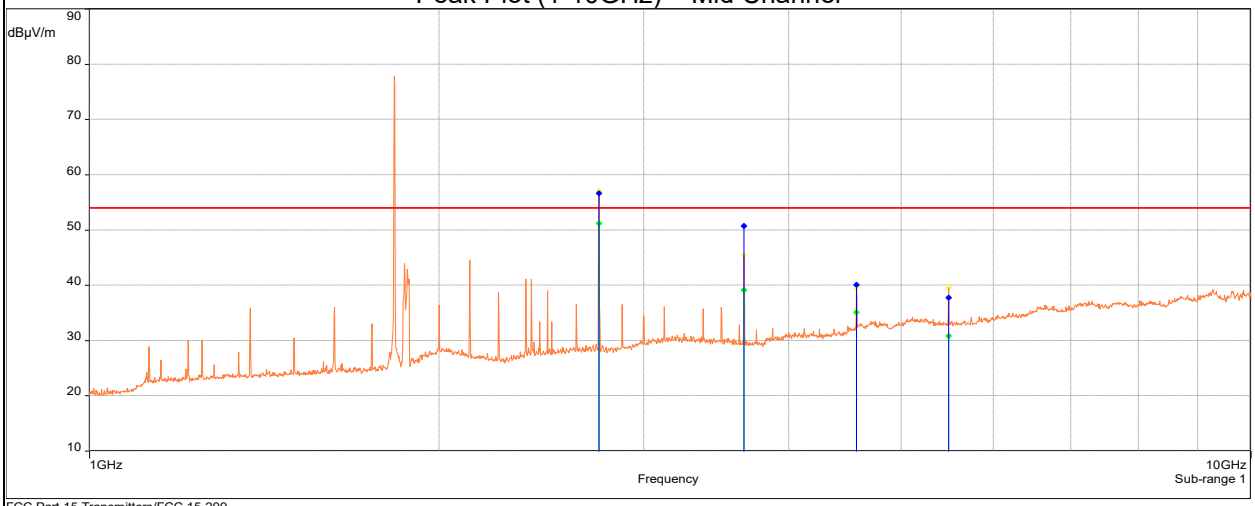
Note: No emissions other than the fundamental were associated with the 900MHz radio

Peak Plot (1-10GHz) – Low Channel



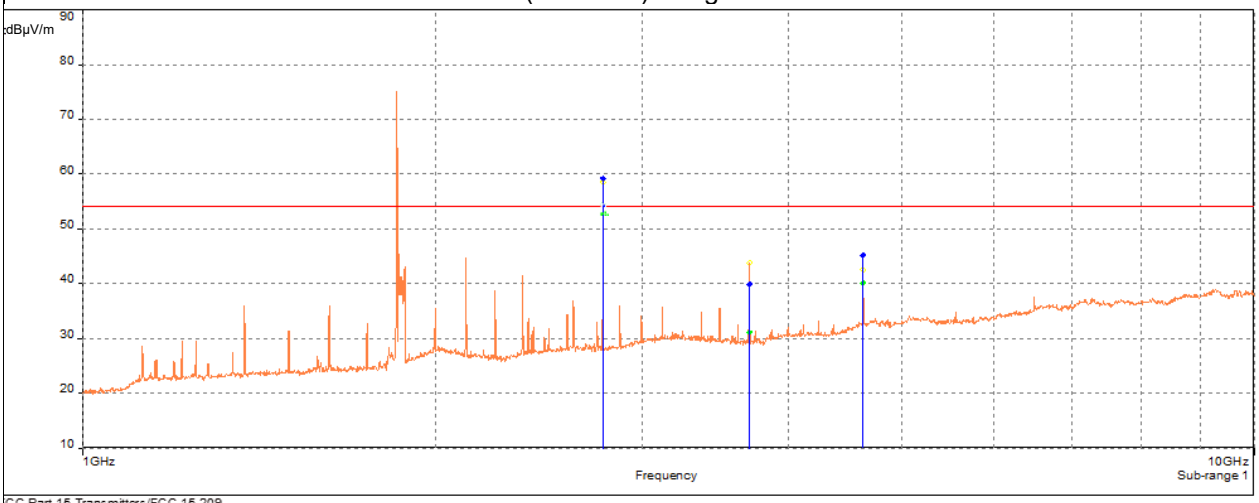
FCC Part 15 Transmitters/FCC 15.209

Peak Plot (1-10GHz) – Mid Channel



FCC Part 15 Transmitters/FCC 15.209

Peak Plot (1-10GHz) – High Channel



Tabular Data

Peak

Frequency (MHz)	Peak Level (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB)
Low Channel								
2708.409	59.1	74	-14.9	1	1.33	Vertical	1	-9.41
3611.287	55.09	74	-18.91	40	1.09	Vertical	1	-8.76
4512.040	41.84	74	-32.16	186	1.49	Vertical	1	-6.2
5414.199	34.28	74	-39.72	68	2.03	Vertical	1	-4.15
Mid Channel								
2744.322	56.62	74	-17.38	70	1.18	Vertical	1	-9.49
3659.387	50.77	74	-23.23	54	2.94	Vertical	1	-8.68
4575.989	40.09	74	-33.91	245	1.08	Vertical	1	-5.98
5488.724	37.76	74	-36.24	29	1.36	Vertical	1	-3.94
High Channel								
2781.630	58.65	74	-15.35	59	1.12	Vertical	1	-9.61
3708.847	38.46	74	-35.54	285	1.11	Vertical	1	-8.49
4635.995	45.76	74	-28.24	214	1.07	Vertical	1	-5.69

Average

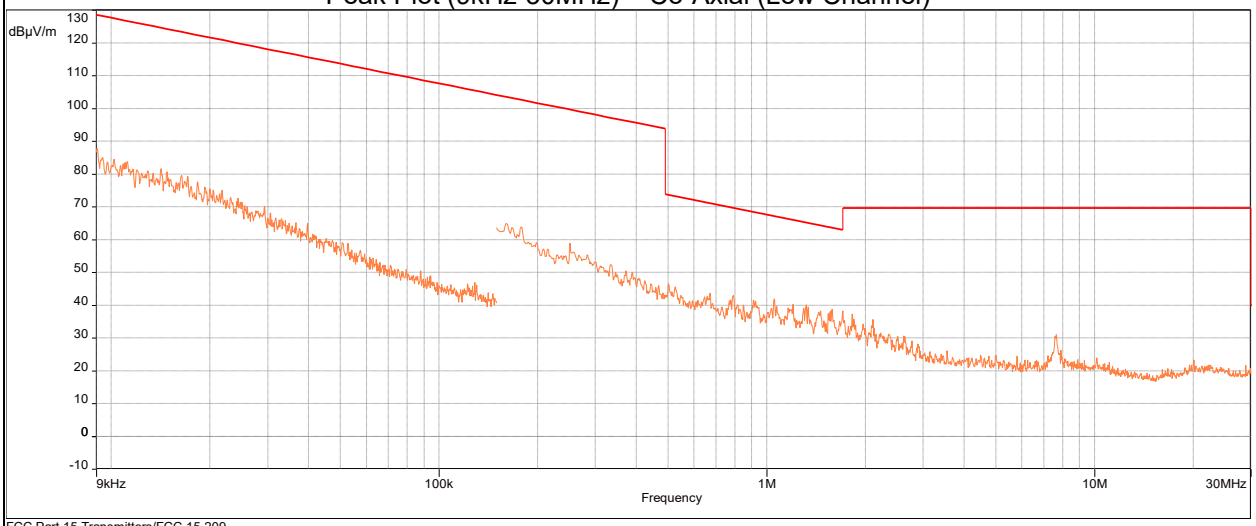
Frequency (MHz)	AVG Level (dBµV/m)	AVG Limit (dBµV/m)	AVG Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB)
Low Channel								
2708.409	53.81	54	-0.19	1	1.33	Vertical	1	-9.41
3611.287	43.48	54	-10.52	40	1.09	Vertical	1	-8.76
4512.040	36.68	54	-17.32	186	1.49	Vertical	1	-6.2
5414.199	30.25	54	-23.75	68	2.03	Vertical	1	-4.15
Mid Channel								
2744.322	51.19	54	-2.81	70	1.18	Vertical	1	-9.49
3659.387	39.13	54	-14.87	54	2.94	Vertical	1	-8.68
4575.989	35.09	54	-18.91	245	1.08	Vertical	1	-5.98
5488.724	30.84	54	-23.16	29	1.36	Vertical	1	-3.94
High Channel								
2781.630	52.51	54	-1.49	59	1.12	Vertical	1	-9.61
3708.847	30.94	54	-23.06	285	1.11	Vertical	1	-8.49
4635.995	40.45	54	-13.55	214	1.07	Vertical	1	-5.69

Note: The following emissions close to or exceeding the 15.209 limits did not fall within restricted bands of operation:

Frequency (MHz)	Peak Level (dBµV/m)	Limit (dBµV/m)	AVG Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB)
Low Channel								
374.997	45.66	NA	NA	NA	NA	Verical	0.1	-6.53
576.013	44.63	NA	NA	NA	NA	Horizontal	0.1	-2.51
624.998	43.85	NA	NA	NA	NA	Horizontal	0.1	-1.9
831.996	44.65	NA	NA	NA	NA	Verical	0.1	0.27
879.623	45.39	NA	NA	NA	NA	Verical	0.1	0.49
1805.200	77.82	NA	NA	NA	NA	Verical	1	-11.95
Mid Channel								
374.997	45.49	NA	NA	NA	NA	Vertical	0.1	-6.53
576.013	44.48	NA	NA	NA	NA	Horizontal	0.1	-2.51
624.998	43.44	NA	NA	NA	NA	Horizontal	0.1	-1.9
669.230	42.92	NA	NA	NA	NA	Vertical	0.1	-1.61
831.996	45.86	NA	NA	NA	NA	Vertical	0.1	0.27
834.971	44.39	NA	NA	NA	NA	Vertical	0.1	0.37
898.182	60.89	NA	NA	NA	NA	Vertical	0.1	0.6
1830.000	78.12	NA	NA	NA	NA	Vertical	1	-11.54
High Channel								
374.997	45.76	NA	NA	NA	NA	Vertical	0.1	-6.53
576.013	45.17	NA	NA	NA	NA	Horizontal	0.1	-2.51
625.030	43.22	NA	NA	NA	NA	Horizontal	0.1	-1.9
822.490	48.89	NA	NA	NA	NA	Vertical	0.1	-0.03
831.996	44.67	NA	NA	NA	NA	Vertical	0.1	0.27
899.023	59.16	NA	NA	NA	NA	Vertical	0.1	0.6
1854.800	76.45	NA	NA	NA	NA	Vertical	1	-11.25

9.5 Plots/Data – Spurious Emissions – Outdoor Gateway

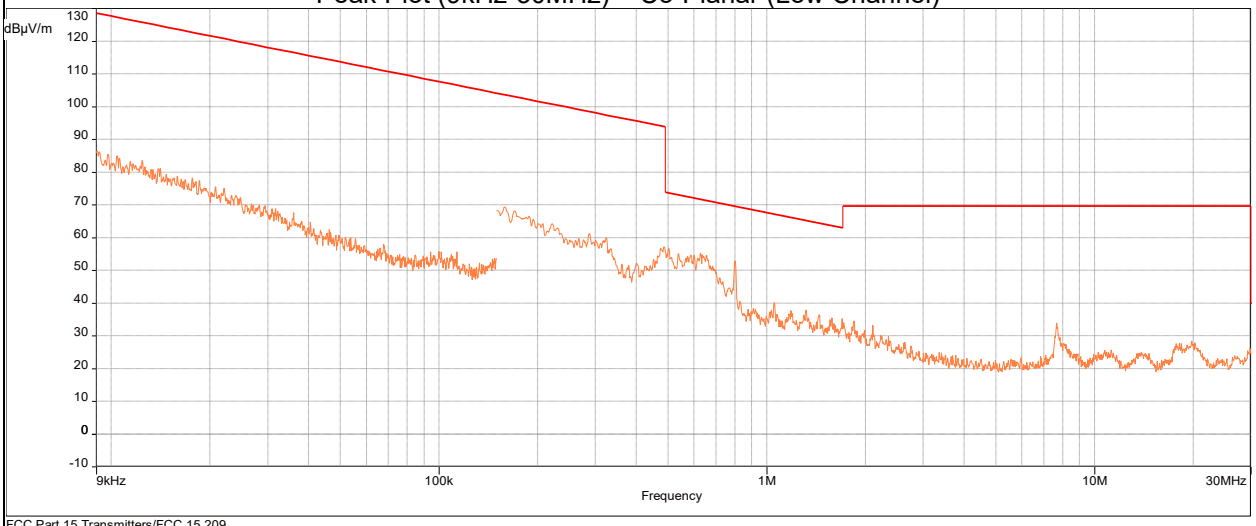
Peak Plot (9kHz-30MHz) – Co-Axial (Low Channel)



FCC Part 15 Transmitters/FCC 15.209

Note: The emissions profile below 30MHz did not change among channels.

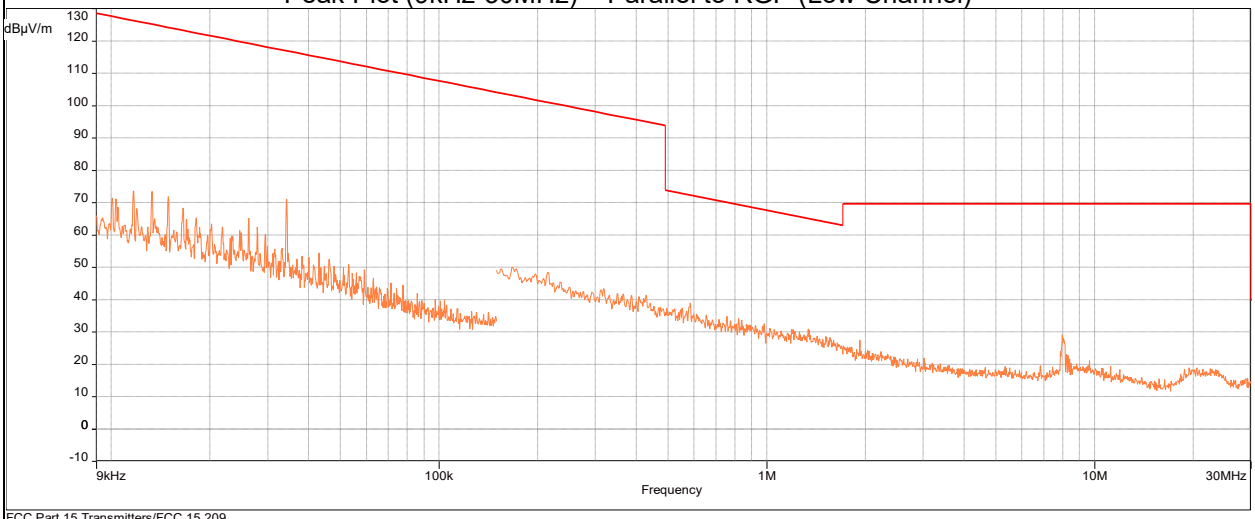
Peak Plot (9kHz-30MHz) – Co-Planar (Low Channel)



FCC Part 15 Transmitters/FCC 15.209

Note: The emissions profile below 30MHz did not change among channels.

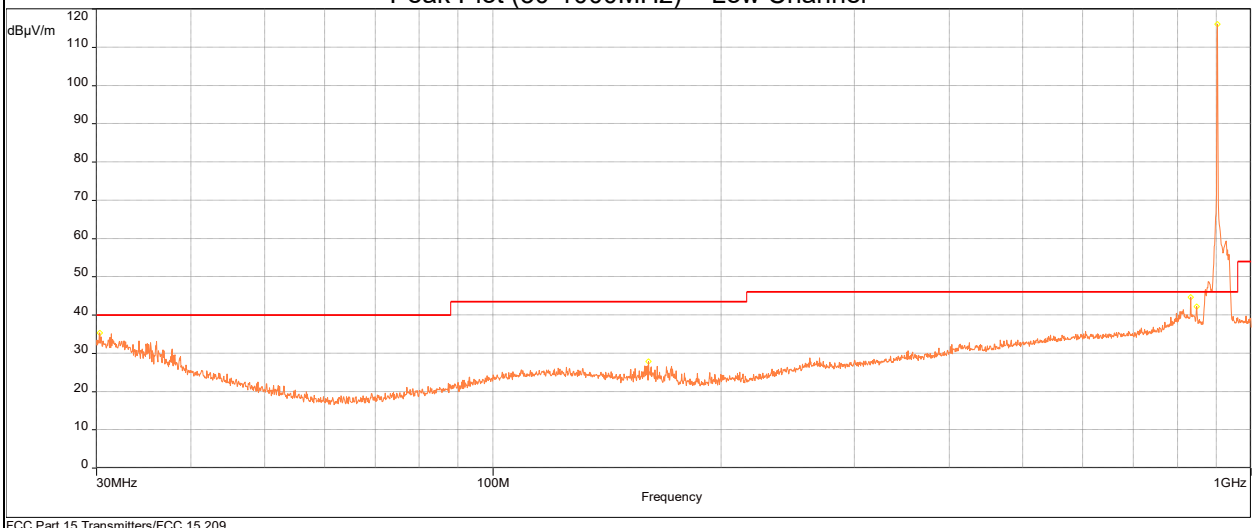
Peak Plot (9kHz-30MHz) – Parallel to RGP (Low Channel)



FCC Part 15 Transmitters/FCC 15.209

Note: The emissions profile below 30MHz did not change among channels.

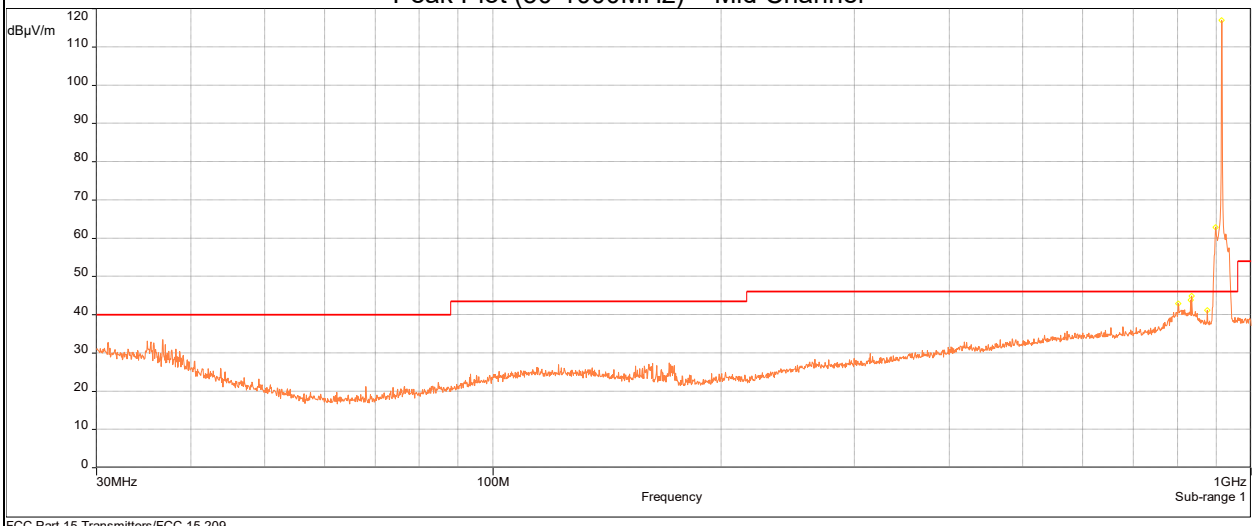
Peak Plot (30-1000MHz) – Low Channel



FCC Part 15 Transmitters/FCC 15.209

Note: No emissions other than the fundamental were associated with the 900MHz radio

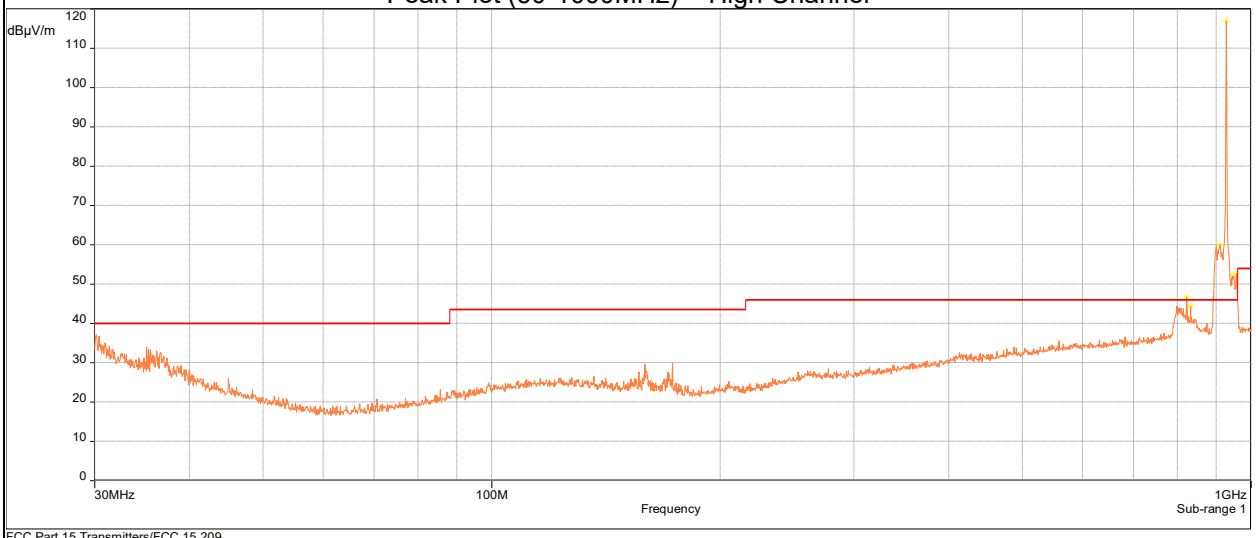
Peak Plot (30-1000MHz) – Mid Channel



FCC Part 15 Transmitters/FCC 15.209

Note: No emissions other than the fundamental were associated with the 900MHz radio

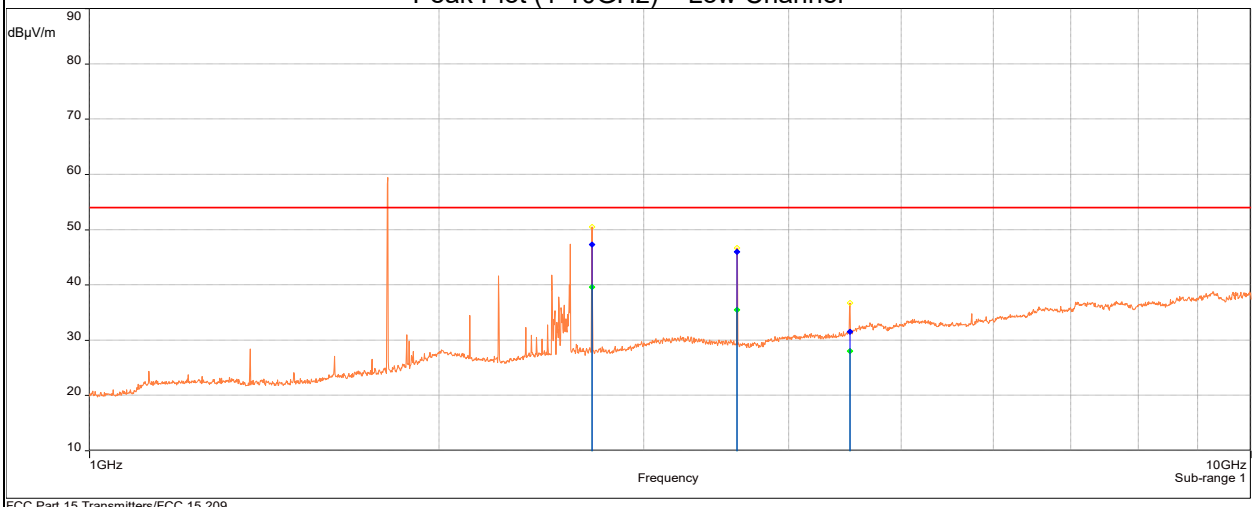
Peak Plot (30-1000MHz) – High Channel



FCC Part 15 Transmitters/FCC 15.209

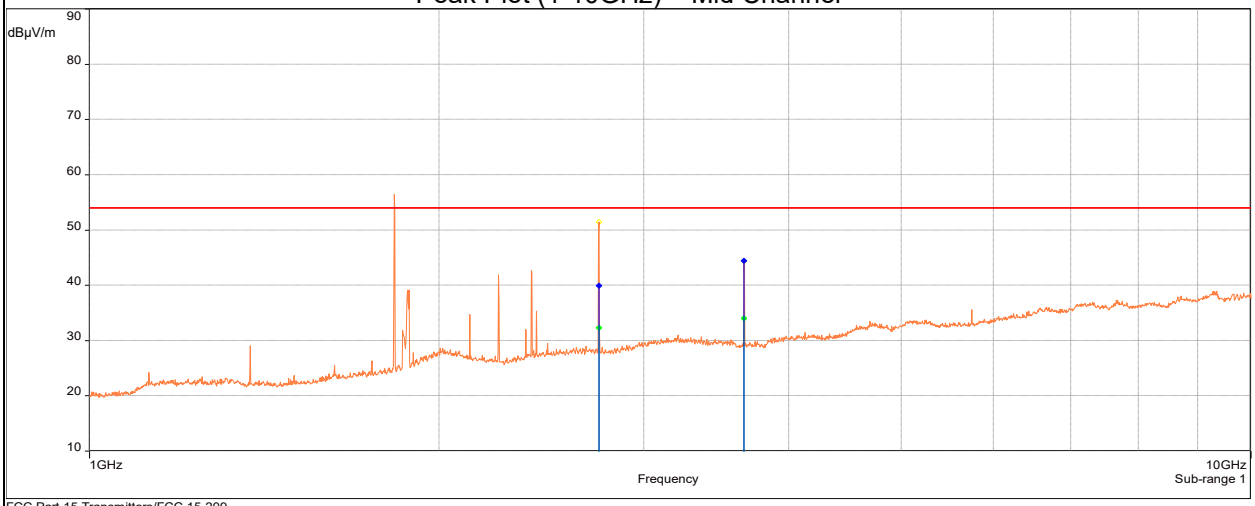
Note: No emissions other than the fundamental were associated with the 900MHz radio

Peak Plot (1-10GHz) – Low Channel



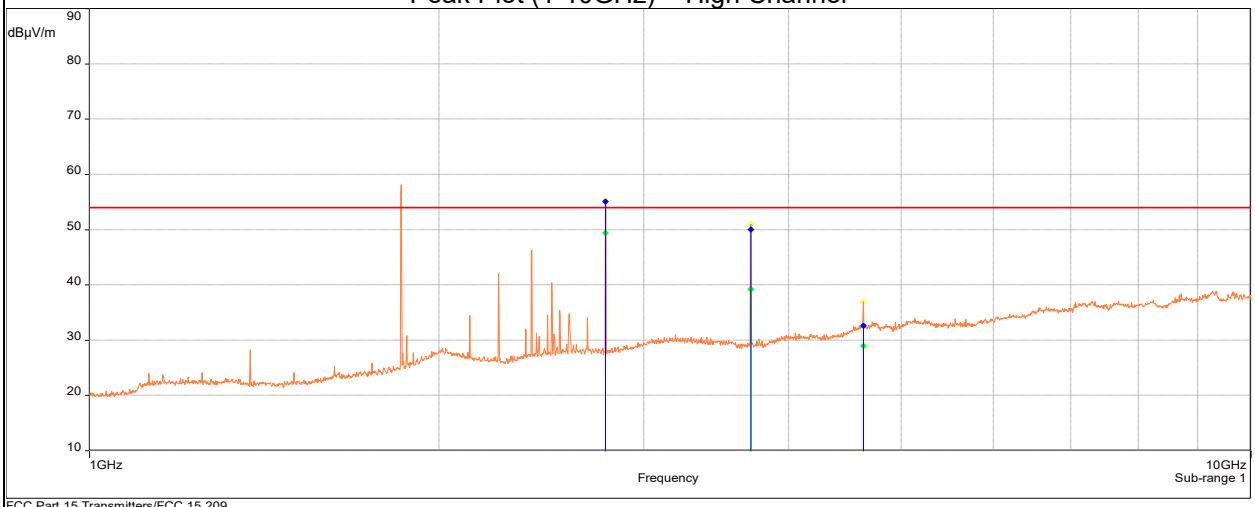
FCC Part 15 Transmitters/FCC 15.209

Peak Plot (1-10GHz) – Mid Channel



FCC Part 15 Transmitters/FCC 15.209

Peak Plot (1-10GHz) – High Channel



FCC Part 15 Transmitters/FCC 15.209

Tabular Data

Peak

Frequency (MHz)	Peak Level (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB)
Low Channel								
2707.196	47.31	74	-26.69	27	1.04	Vertical	1	-9.41
3609.688	45.98	74	-28.02	150	1.31	Vertical	1	-8.76
4514.502	31.53	74	-42.47	51	1.13	Vertical	1	-6.19
Mid Channel								
2744.262	39.98	74	-34.02	136	2.05	Vertical	1	-9.49
3659.108	44.43	74	-29.57	186	2	Vertical	1	-8.68
High Channel								
2781.570	55.12	74	-18.88	0	1.67	Vertical	1	-9.61
3708.690	50.01	74	-23.99	292	2.18	Vertical	1	-8.49
4635.673	32.65	74	-41.35	340	2.8	Vertical	1	-5.7

Average

Frequency (MHz)	AVG Level (dBµV/m)	AVG Limit (dBµV/m)	AVG Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB)
Low Channel								
2707.196	39.59	54	-14.41	27	1.04	Vertical	1	-9.41
3609.688	35.51	54	-18.49	150	1.31	Vertical	1	-8.76
4514.502	28.06	54	-25.94	51	1.13	Vertical	1	-6.19
Mid Channel								
2744.262	32.3	54	-21.7	136	2.05	Vertical	1	-9.49
3659.108	34.04	54	-19.96	186	2	Vertical	1	-8.68
High Channel								
2781.570	49.4	54	-4.6	0	1.67	Vertical	1	-9.61
3708.690	39.24	54	-14.76	292	2.18	Vertical	1	-8.49
4635.673	29	54	-25	340	2.8	Vertical	1	-5.7

Note: The following emissions close to or exceeding the 15.209 limits did not fall within restricted bands of operation:

Frequency (MHz)	Peak Level (dBµV/m)	Limit (dBµV/m)	AVG Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB)
Low Channel								
831.996	44.69	NA	NA	NA	NA	Verical	0.1	0.27
847.193	42.18	NA	NA	NA	NA	Vertical	0.1	0.38
1805.200	59.85	NA	NA	NA	NA	Vertical	1	-11.95
Mid Channel								
835.132	44.9	NA	NA	NA	NA	Vertical	0.1	0.36
874.999	41.14	NA	NA	NA	NA	Horizontal	0.1	0.49
1830.000	56.95	NA	NA	NA	NA	Vertical	1	-11.54
High Channel								
822.490	46.76	NA	NA	NA	NA	Vertical	0.1	-0.03
831.996	44.47	NA	NA	NA	NA	Vertical	0.1	0.27
955.380	52.66	NA	NA	NA	NA	Vertical	0.1	1.13
1854.800	58.74	NA	NA	NA	NA	Vertical	1	-11.25

Test Personnel: Jeremy Pickens
Test Date: 06-07 October 2025
Supervising/Reviewing Engineer: (Where Applicable)
Product Standard: ANSI C63.10
Limit Applied: 15.209
Input Voltage: 48Vdc (PoE)
Pretest Verification w/ Ambient Signals or BB Source: BB
Ambient Temperature: 20.5 – 21.5ºC
Relative Humidity: 44.2 – 46.9%
Atmospheric Pressure: 98.1 – 98.6kPa

Deviations, Additions, or Exclusions: None

10 AC Conducted Emissions

10.1 Method

Tests were performed in accordance with ANSI C63.10.

TEST SITE: 10 Meter Chamber

10 Meter Semi-Anechoic Chamber The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096. It is a 10 meter semi-anechoic chamber manufactured by Panashield. Embedded in the floor is a 3-meter diameter turntable.

Sample Calculations

The following calculations were used to determine the net line-conducted measurements:

NF = RF + LF + CF + AF

Where NF = Net Reading in dBμV
RF = Reading from receiver in dBμV
LF = LISN or ISN Correction Factor in dB
CF = Cable Correction Factor in dB
AF = Attenuator Loss Factor in dB

To convert from dBμV to μV or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μV
NF = Net Reading in dBμV

Example:

NF = RF + LF + CF + AF = 28.5 + 0.2 + 0.4 + 20.0 = 49.1 dBμV
$UF = 10^{(49.1\ dB\mu V / 20)}$ = 285.1 μV/m

10.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
200162	EMI Receiver (20Hz-40GHz)	Rohde & Schwarz	ESU 40	100314	10/07/2025	10/07/2026
212165	Temp/Pressure/Humidity Sensor	Extech	SD700	110344	04/29/2025	04/29/2026
213149	Line Impedance Stabilization Network (LISN)	Com-Power	LI-215A	191966	08/04/2025	08/04/2026
MM12	RF Coax Cable 9KHz-18GHz	Fairview Microwave	SCE18110505-600CM	MM12	09/11/2025	09/11/2026

Software Utilized

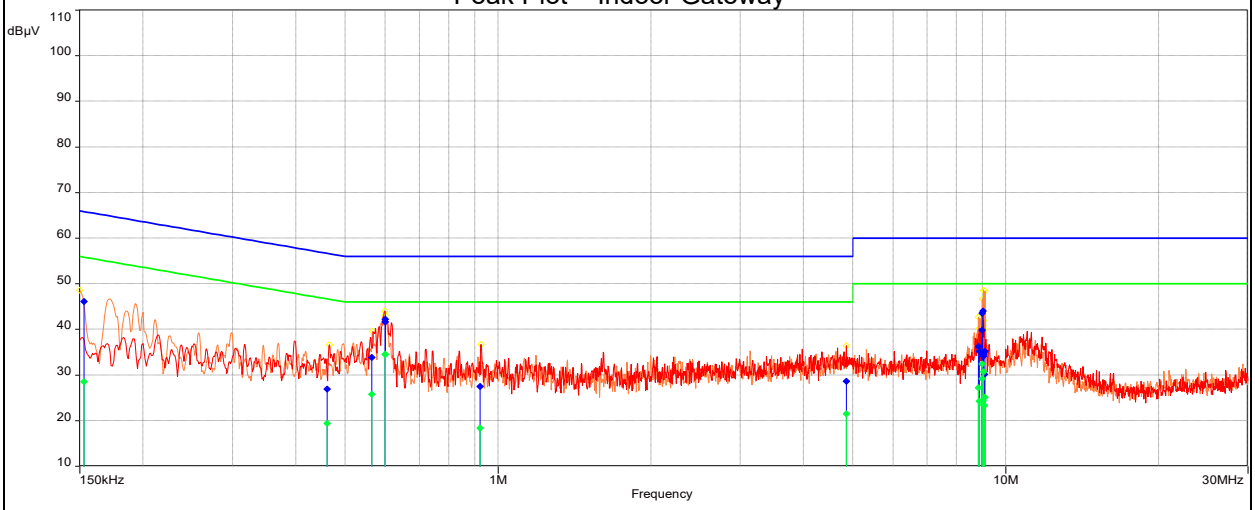
Name	Manufacturer	Version
EMC BAT	Nexio	3.19.1.18

10.3 Results

The sample tested was found to Comply.

10.4 Plots/Data

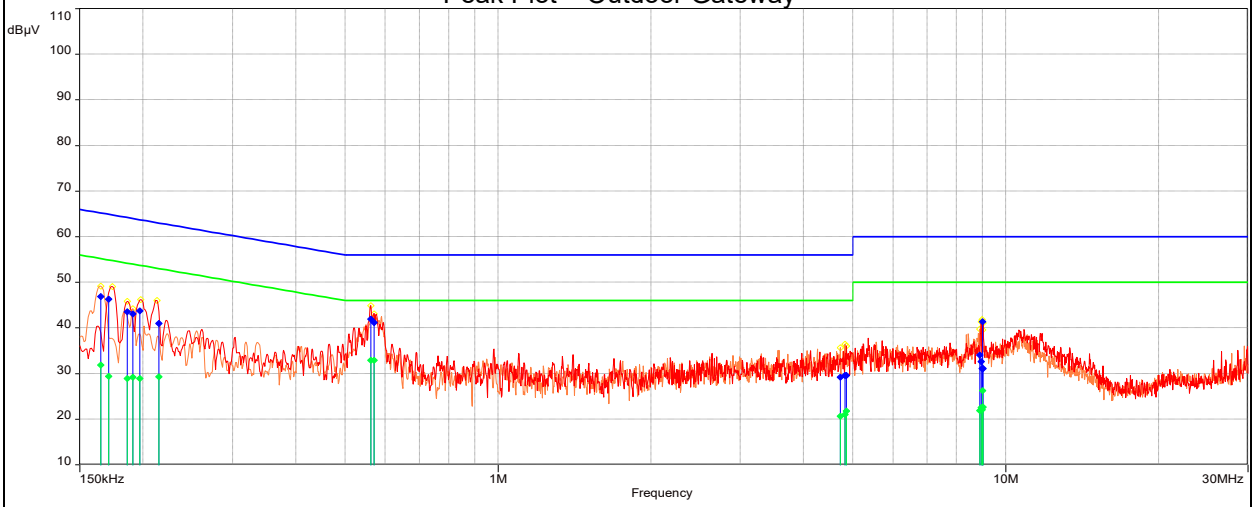
Peak Plot – Indoor Gateway



Tabular Data – Indoor Gateway

Frequency (MHz)	AVG Level (dBµV)	QP Level (dBµV)	AVG Limit (dBuV)	QP Limit (dBuV)	AVG Margin (dB)	QPeak Margin (dB)	Position	Correction (dB)
0.461	19.38	26.92	46.7	56.7	-27.3	-29.8	Phase 1	10.0
0.599	34.54	42.2	46.0	56.0	-11.5	-13.8	Phase 1	10.0
0.922	18.38	27.51	46.0	56.0	-27.6	-28.5	Phase 1	10.1
4.850	21.48	28.68	46.0	56.0	-24.5	-27.3	Phase 1	10.1
8.861	24.31	35.24	50.0	60.0	-25.7	-24.8	Phase 1	10.2
9.021	24.31	44.02	50.0	60.0	-25.7	-16.0	Phase 1	10.2
9.038	23.45	34.16	50.0	60.0	-26.6	-25.8	Phase 1	10.2
9.076	23.32	30.13	50.0	60.0	-26.7	-29.9	Phase 1	10.2
0.153	28.58	46.1	55.8	65.8	-27.3	-19.7	Neutral	10.0
0.564	25.82	33.83	46.0	56.0	-20.2	-22.2	Neutral	10.0
0.600	34.48	41.64	46.0	56.0	-11.5	-14.4	Neutral	10.0
8.831	27.24	36.21	50.0	60.0	-22.8	-23.8	Neutral	10.1
8.976	29.23	43.6	50.0	60.0	-20.8	-16.4	Neutral	10.1
8.990	32.43	39.9	50.0	60.0	-17.6	-20.1	Neutral	10.1
9.043	30.72	34.58	50.0	60.0	-19.3	-25.4	Neutral	10.1
9.093	25.15	35.24	50.0	60.0	-24.9	-24.8	Neutral	10.1

Peak Plot – Outdoor Gateway



Tabular Data – Outdoor Gateway

Frequency (MHz)	AVG Level (dBµV)	QP Level (dBµV)	AVG Limit (dBuV)	QP Limit (dBuV)	AVG Margin (dB)	QPeak Margin (dB)	Position	Correction (dB)
0.171	29.41	46.29	54.9	64.9	-25.5	-18.6	Phase 1	10.1
0.186	28.91	43.58	54.2	64.2	-25.3	-20.6	Phase 1	10.0
0.197	28.91	43.76	53.8	63.8	-24.8	-20.0	Phase 1	10.0
0.215	29.3	40.96	53.0	63.0	-23.7	-22.1	Phase 1	10.0
0.562	32.9	41.99	46.0	56.0	-13.1	-14.0	Phase 1	10.0
4.851	21.76	29.63	46.0	56.0	-24.2	-26.4	Phase 1	10.1
8.937	22.56	32.59	50.0	60.0	-27.4	-27.4	Phase 1	10.2
9.021	22.67	31.09	50.0	60.0	-27.3	-28.9	Phase 1	10.2
0.165	31.88	46.84	55.2	65.2	-23.3	-18.4	Neutral	10.0
0.191	29.22	43.07	54.0	64.0	-24.8	-20.9	Neutral	10.0
0.570	32.89	41.23	46.0	56.0	-13.1	-14.8	Neutral	10.0
4.718	20.61	29.22	46.0	56.0	-25.4	-26.8	Neutral	10.1
4.826	21.08	29.62	46.0	56.0	-24.9	-26.4	Neutral	10.1
8.886	21.88	34.04	50.0	60.0	-28.1	-26.0	Neutral	10.1
8.979	22.06	31.08	50.0	60.0	-27.9	-28.9	Neutral	10.1
8.998	26.22	41.39	50.0	60.0	-23.8	-18.6	Neutral	10.1

Test Personnel: Jeremy Pickens Test Date: 09 October 2025

Supervising/Reviewing Engineer: (Where Applicable)

Product Standard: ANSI C63.4 Limit Applied: 15.207

Input Voltage: 120Vac, 60Hz

Pretest Verification w/ Ambient Signals or BB Source: BB

Ambient Temperature: 22.5ºC

Relative Humidity: 51.4%

Atmospheric Pressure: 98.8kPa

Deviations, Additions, or Exclusions: None

11 Measurement Uncertainty

Parameter	Expanded Uncertainty for Normal k factor equal to 2
Radio Frequency	0.07
Total RF Power (Conducted)	0.65
Power Density (Conducted)	0.65
RF Spurious (Conducted)	1.8 dB
Radiated Emissions (9kHz-30MHz)	4.7 dB
Radiated Emissions (30MHz-1GHz)	4.1 dB
Radiated Emissions (1GHz-18GHz)	4.5dB
Radiated Emissions (18GHz-40GHz)	4.7 dB
AC Line Conducted Emissions	2.8 dB
Temperature	0.7°
Humidity	3.9%

12 Revision History

Revision Level	Date	Prepared By	Reviewed By	Notes
0	18 November 2025	JOP	AC	Original Issue
1	02 December 2025	JOP	AC	• Corrected modulation type in Section 4 • Corrected typos in emissions table on page 23
2	12 January 2026	JOP	AC	• Corrected outdoor antenna gain from 5dBi to 8dBi and corrected EIRP calculations accordingly • Corrected PSD table heading from peak to average