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Somatix Inc. TEST REPORT

SCOPE OF WORK

EMC TESTING – SOMATIX SMARTBAND V2.0

REPORT NUMBER

105007217LEX-001

ISSUE DATE

10/4/2022

PAGES

31

DOCUMENT CONTROL NUMBER

Non-Specific EMC Report Shell Rev. December 2017
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EMC TEST REPORT

(FULL COMPLIANCE)

Report Number: 105007217LEX-001

Project Number: G105007217

Report Issue Date: 10/4/2022

Model(s) Tested: Somatix Smartband v2.0

Standards: FCC Part 15B, ICES-003 Issue 7
FCC Part 15C, RSS-247 Issue 2
(Verification of Radiated
Spurious Emissions)

Tested by:
Intertek Testing Services NA, Inc.
731 Enterprise Dr.
Lexington, KY 40510
USA

Client:
Somatix Inc.
3 Columbus Circle
15th Floor
New York, NY 10019
USA

Report prepared by



Ben Coolbear, Engineer

Report reviewed by



Brian Lackey,
Engineering Team Leader

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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
6	Radiated Emissions (Transmitters Idle) (ANSI C63.4:2014)	Pass
6	Radiated Spurious Emissions (Transmitters Active) (ANSI C63.10:2013)	Pass
-	Conducted Emissions (ANSI C63.4:2014)	NA ¹

¹ The Somatix Smartband v2.0 is a battery powered device and does not connect to AC mains.



3 Client Information

This product was tested at the request of the following:

Client Information	
Client Name:	Somatix Inc.
Address:	3 Colombus Circle 15th Floor New York, NY 10019 USA
Contact:	Uri Schatzberg
Telephone:	+972-52-2586975
Email:	uris@somatix.com
Manufacturer Information	
Manufacturer Name:	Somatix Inc.
Manufacturer Address:	3 Colombus Circle 15th Floor New York, NY 10019 USA



4 Description of Equipment under Test and Variant Models

Equipment Under Test	
Product Name	Somatix Smartband v2.0
Model Number	Somatix Smartband v2.0
Serial Number	Sample 1
Hardware Version	REVB3
Software Version	04_02_0017
Supported Transmit Bands	802.11b/g/n 2.4GHz, Bluetooth 2.4 GHz
Embedded Module	Sterling EWB
Embedded Module hardware Version	R1
Embedded Module Software Version	7.45.98.102
Embedded Module FCCID	Add FCCIDs of all transmitter modules (not just cellular)
Receive Date	4/13/2022
Test Start Date	4/13/2022
Test End Date	5/19/2022
Device Received Condition	Good
Test Sample Type	Production
Rated Voltage	3.7C
Low Voltage	3.3C
High Voltage	4.2V
Description of Equipment Under Test (provided by client)	
WiFi-enabled wellness wearable (bracelet) that collects and send data to a backend database.	

4.1 Variant Models:

There were no variant models covered by this evaluation.



5 System Setup and Method

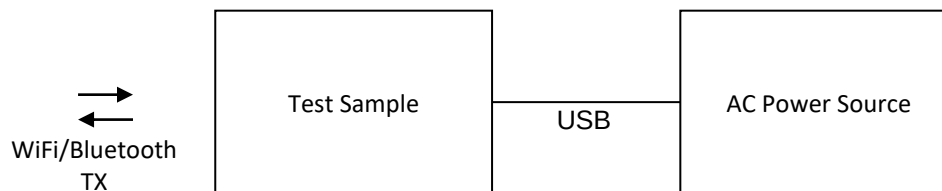
5.1 Method:

Configuration as required by ANSI C63.4:2014 and ANSI C63.10:2013

No.	Descriptions of EUT Exercising
1	The Somatix Smartband v2.0 was powered for the duration of the evaluation
2	The Somatix Smartband v2.0 was configured to transmit WiFi signals, for each supported technology.
3	The Somatix Smartband v2.0 was configured to transmit Bluetooth signals.

Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
1	Power Cable	1	None	None	AC/DC power Adapter.

5.2 EUT Block Diagram:





6 Radiated Emissions

6.1 Method

Tests are performed in accordance with ANSI C63.4:2014 and ANSI C63.10:2013

TEST SITE: 10m ALSE

Site Designation: 10m Chamber

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucisp
Radiated Emissions, 10m	30-1000 MHz	3.9dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	4.0dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.7dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	4.7dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	4.7dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	4.7dB	5.5 dB

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



6.2 Sample Calculation

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

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

Where

- FS = Field Strength in dB μ V/m
- RA = Receiver Amplitude (including preamplifier) in dB μ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB
- AG = Amplifier Gain in dB

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

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

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

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

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

NF = Net Reading in dB μ V

Example:

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

**6.3 Test Equipment Used:**

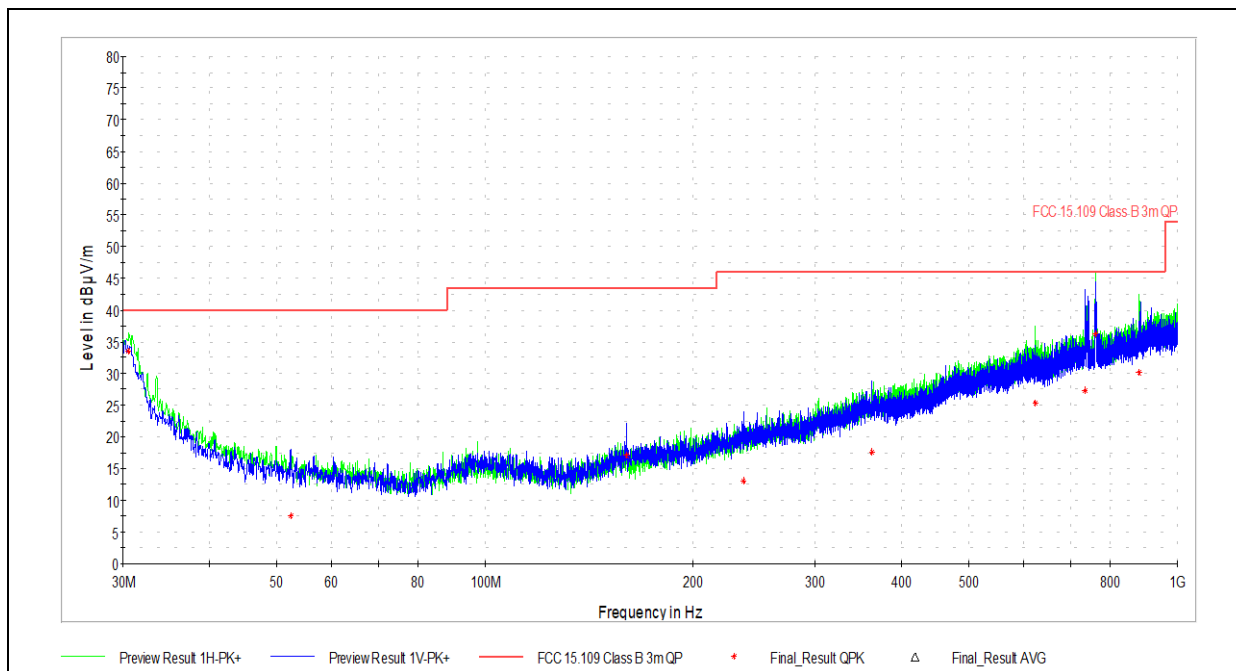
Description	Asset	Manufacturer	Model	Cal Date	Cal Due
EMI Test Receiver	8181	Rohde & Schwarz	ESW44	11/16/2021	11/16/2022
Bilog Antenna	3133	ETS	3142C	8/26/2021	8/26/2022
Horn Antenna	3780	ETS	3117	6/28/2021	6/28/2022
System Controller	4096	ETS Lindgren	2090	Verify at Time of Use	Verify at Time of Use
System Controller	3957	Sunol Sciences	SC99V	Verify at Time of Use	Verify at Time of Use
Preamplifier	3918	Rohde&Schwarz	TS-PR18	1/13/2022	1/13/2023
Preamplifier	3920	Rohde & Schwarz	TS-PR26	1/13/2022	1/13/2023
Coaxial Cable	3074			1/13/2022	1/13/2023
Coaxial Cable	2588			1/13/2022	1/13/2023
Coaxial Cable	2593			1/13/2022	1/13/2023
Coaxial Cable	2592			1/13/2022	1/13/2023
Coaxial Cable	3339			1/13/2022	1/13/2023

6.4 Software Utilized:

Name	Manufacturer	Version
EMC32	Rohde & Schwarz	Version 10.60.20

6.5 Results:

The sample tested was found to Comply.

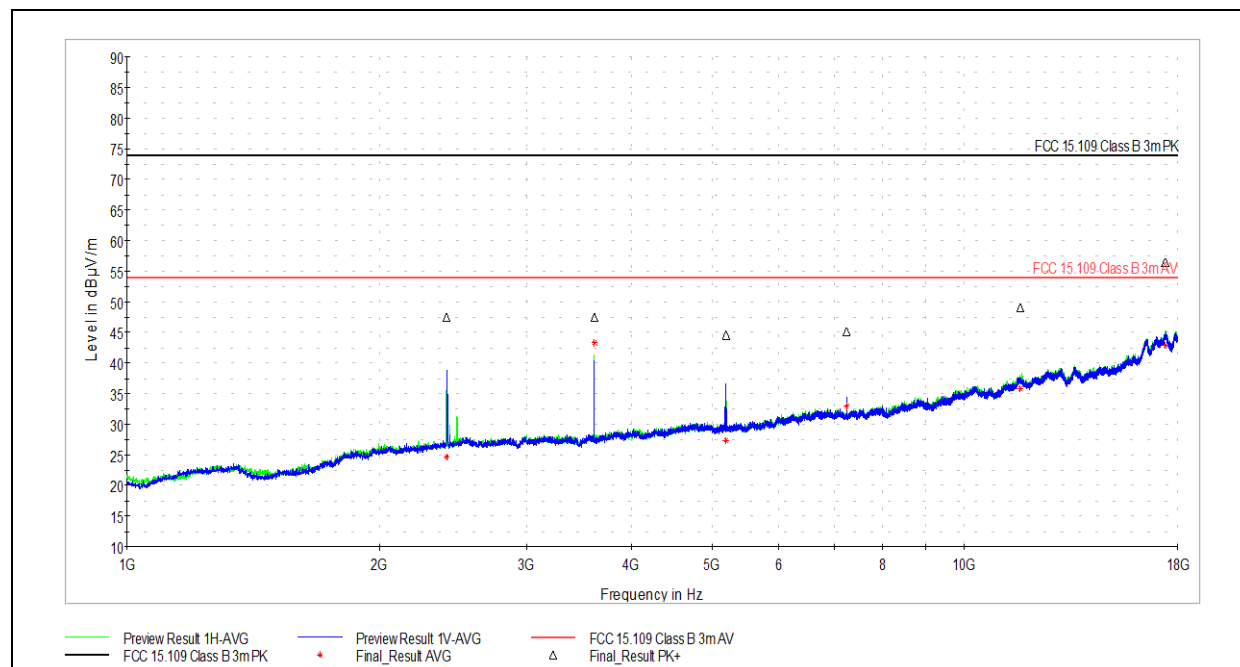
**6.6 Plots/Data: Radiated Emissions, 30MHz – 1GHz (Transmitters Idle)**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.538889	33.49	40.000	6.51	120.000	322.0	H	0.0	24.87
52.363889	7.54	40.000	32.46	120.000	357.0	V	334.0	15.44
159.980000	17.00	43.522	26.52	120.000	400.0	V	38.0	18.56
236.071111	13.06	46.021	32.96	120.000	400.0	V	280.0	21.45
362.063333	17.68	46.021	28.35	120.000	329.0	V	240.0	25.77
623.640000	25.26	46.021	20.76	120.000	159.0	H	212.0	32.71
734.758889	27.30	46.021	18.72	120.000	400.0	V	292.0	33.19
761.380000	36.22	46.021	9.80	120.000	95.0	H	229.0	34.21
880.851667	30.06	46.021	15.96	120.000	400.0	H	0.0	35.76

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: _____
 (Where Applicable) NA
 FCC Part 15B
 Product Standard: ICES-003 Issue 7
 Input Voltage: _____
 Pretest Verification w / Ambient
 Signals or BB Source: Yes

Test Date: 4/13/2022
 Limit Applied: Class B
 Ambient Temperature: 23.4 °C
 Relative Humidity: 31.1 %
 Atmospheric Pressure: 986.9 mbar

Deviations, Additions, or Exclusions: The FCC Part 15.109 limits are more stringent than the corresponding limits from ICES-003 Issue 7.

**6.7 Plots/Data: Radiated Emissions, 1GHz – 18GHz (Transmitters Idle)**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2407.500000	47.53	73.979	26.45	1000.000	184.0	V	0.0	4.38
3618.000000	47.51	73.979	26.47	1000.000	186.0	H	239.0	6.76
5195.000000	44.64	73.979	29.34	1000.000	193.0	V	270.0	9.62
7236.000000	45.12	73.979	28.86	1000.000	172.0	V	72.0	12.58
11671.000000	49.10	73.979	24.88	1000.000	100.0	H	0.0	19.39
17400.500000	56.54	73.979	17.44	1000.000	410.0	H	206.0	26.89

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2407.500000	24.58	53.979	29.40	1000.000	184.0	V	0.0	4.38
3618.000000	43.36	53.979	10.62	1000.000	186.0	H	239.0	6.76
5195.000000	27.42	53.979	26.56	1000.000	193.0	V	270.0	9.62
7236.000000	33.02	53.979	20.96	1000.000	172.0	V	72.0	12.58
11671.000000	35.79	53.979	18.19	1000.000	100.0	H	0.0	19.39
17400.500000	42.93	53.979	11.05	1000.000	410.0	H	206.0	26.89

Test Personnel: Ben Coolbear

Supervising/Reviewing Engineer: NA

(Where Applicable) FCC Part 15B

Product Standard: ICES-003 Issue 7

Input Voltage:

Pretest Verification w / Ambient

Signals or BB Source: Yes

Test Date: 4/12/2022

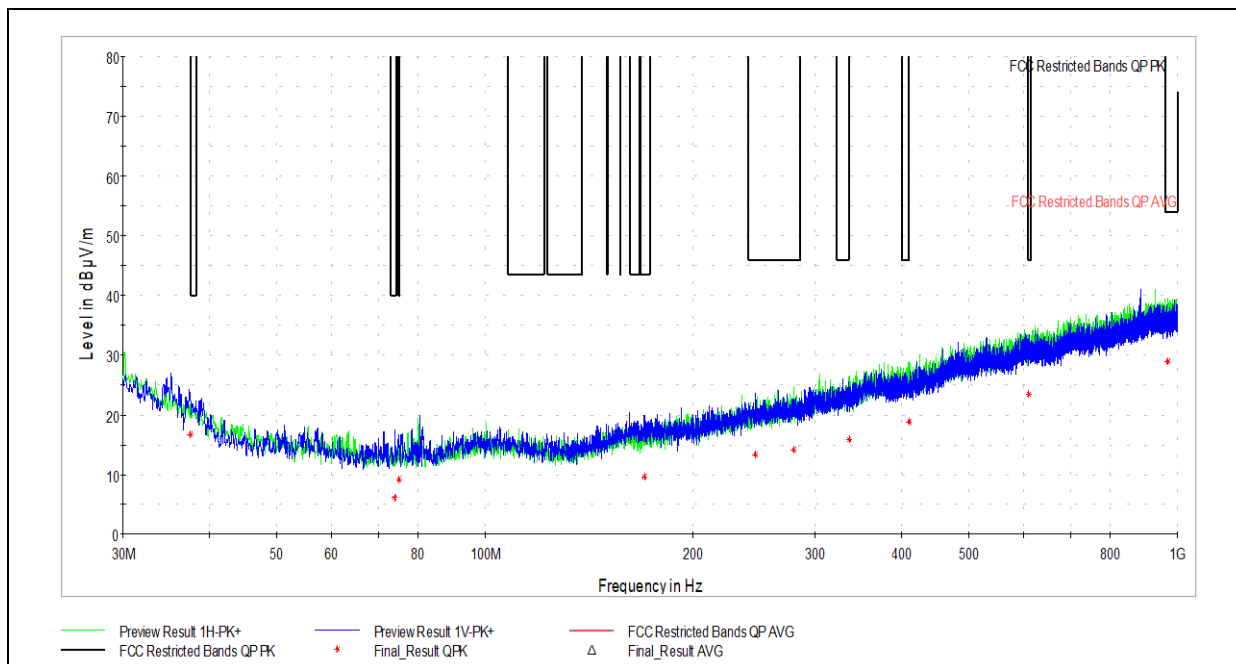
Limit Applied: Class B

Ambient Temperature: 23.8 °C

Relative Humidity: 52.2 %

Atmospheric Pressure: 982.4 mbar

Deviations, Additions, or Exclusions: None

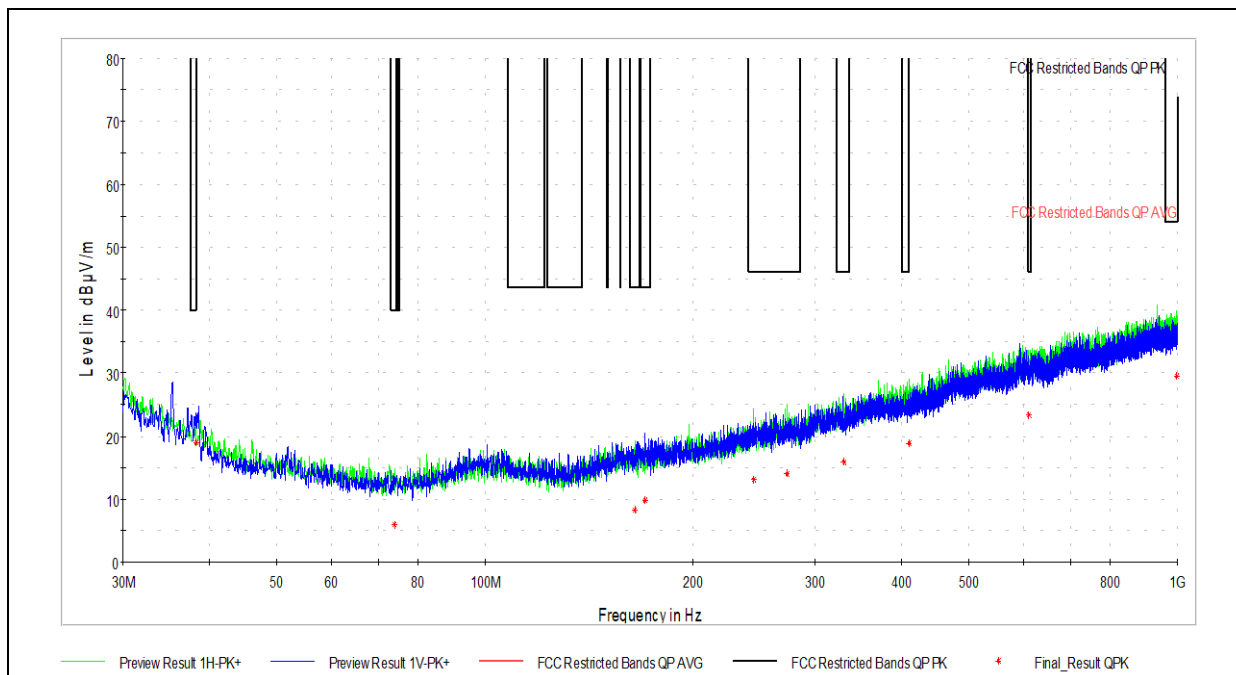
**6.8 FCC Part 15.247 Radiated Spurious Emissions (Bluetooth)****6.8.1 Radiated Spurious Emissions, 30 MHz – 1 GHz (Bluetooth, 2402 MHz)**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.544444	16.74	40.000	23.26	120.000	100.0	V	294.0	19.30
74.027222	6.04	40.000	33.96	120.000	136.0	V	7.0	14.18
74.997222	9.19	40.000	30.81	120.000	100.0	V	263.0	14.10
169.626111	9.60	43.522	33.92	120.000	169.0	V	102.0	18.86
245.663333	13.27	46.021	32.75	120.000	136.0	V	5.0	21.72
279.343889	14.09	46.021	31.93	120.000	136.0	H	0.0	22.88
335.226667	15.96	46.021	30.07	120.000	147.0	H	288.0	24.88
409.108333	18.78	46.021	27.24	120.000	343.0	H	169.0	27.27
610.060000	23.48	46.021	22.54	120.000	339.0	H	210.0	32.44
967.936111	28.86	53.979	25.12	120.000	395.0	H	306.0	37.36

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: _____
 (Where Applicable) NA
 FCC Part 15.247
 Product Standard: RSS-247 Issue 2
 Input Voltage: _____
 Pretest Verification w / Ambient
 Signals or BB Source: Yes

Test Date: 5/19/2022
 Limit Applied: FCC Part 15.209 in Restricted
 Bands from FCC Part 15.205
 Ambient Temperature: 24.0 °C
 Relative Humidity: 50.4 %
 Atmospheric Pressure: 974.5 mbar

Deviations, Additions, or Exclusions: None

**6.8.2 Radiated Spurious Emissions, 30 MHz – 1 GHz (Bluetooth, 2440 MHz)**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
38.245000	18.94	40.000	21.06	120.000	100.0	V	276.0	19.01
73.973333	5.85	40.000	34.15	120.000	277.0	H	310.0	14.38
164.614444	8.29	43.522	35.23	120.000	312.0	H	0.0	17.91
170.218889	9.77	43.522	33.76	120.000	183.0	V	6.0	18.86
244.477778	13.04	46.021	32.98	120.000	95.0	H	8.0	21.61
272.877222	13.95	46.021	32.07	120.000	116.0	H	190.0	22.83
329.676111	15.89	46.021	30.13	120.000	276.0	H	94.0	24.85
409.701111	18.90	46.021	27.12	120.000	210.0	H	274.0	27.27
609.575000	23.37	46.021	22.65	120.000	101.0	H	166.0	32.43
997.305556	29.54	53.979	24.44	120.000	394.0	H	0.0	37.39

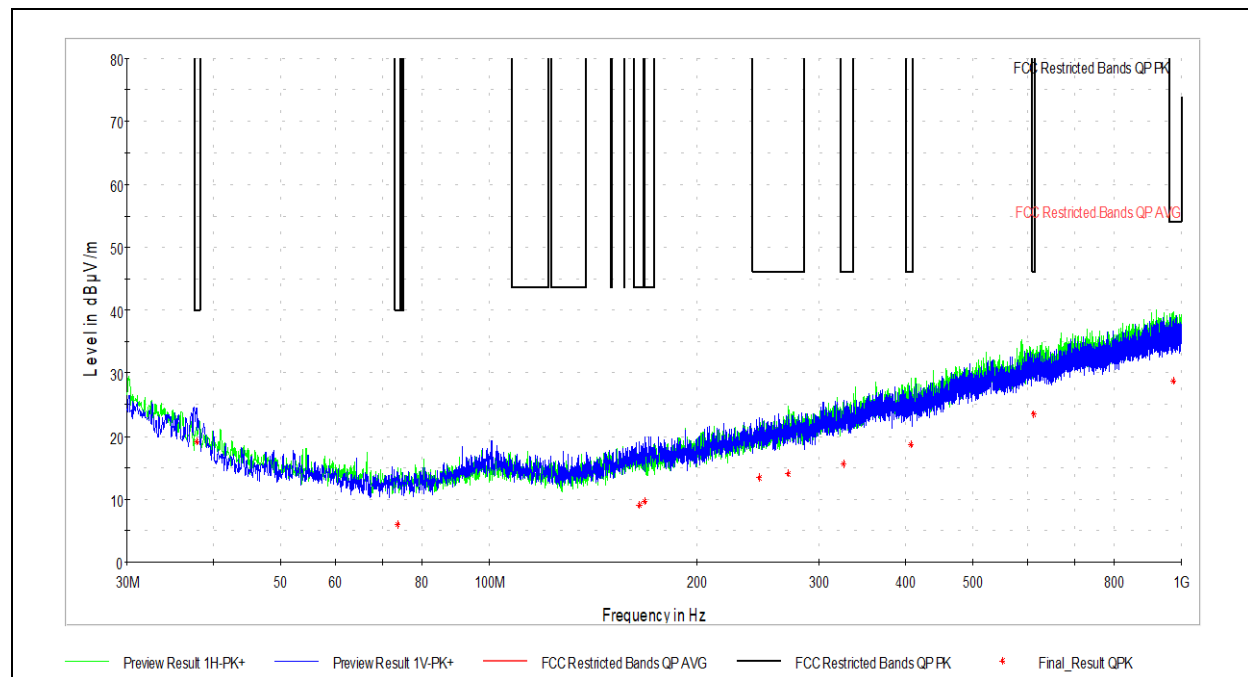
Test Personnel: Ben Coolbear
Supervising/Reviewing Engineer: (Where Applicable) NA
Product Standard: FCC Part 15.247
Input Voltage: RSS-247 Issue 2
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/19/2022
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
Ambient Temperature: 24.0 °C
Relative Humidity: 50.4 %
Atmospheric Pressure: 974.5 mbar

Deviations, Additions, or Exclusions: None



6.8.3 Radiated Spurious Emissions, 30 MHz – 1 GHz (Bluetooth, 2480 MHz)



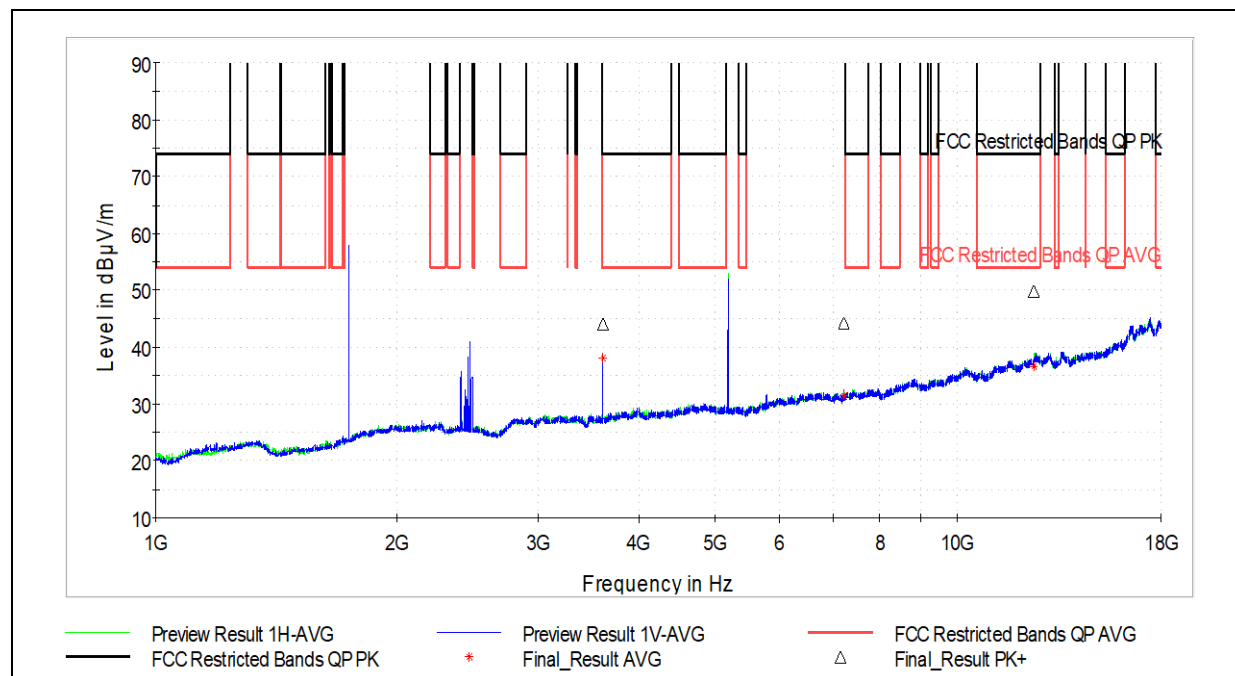
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.760000	19.07	40.000	20.93	120.000	99.0	V	0.0	19.22
73.811667	5.86	40.000	34.14	120.000	253.0	H	308.0	14.38
164.830000	9.04	43.522	34.48	120.000	100.0	V	339.0	18.61
167.955556	9.65	43.522	33.88	120.000	106.0	V	297.0	18.83
245.717222	13.41	46.021	32.61	120.000	184.0	V	145.0	21.72
270.613889	13.93	46.021	32.09	120.000	100.0	H	48.0	22.78
325.257222	15.51	46.021	30.51	120.000	168.0	V	38.0	24.41
406.845000	18.67	46.021	27.35	120.000	394.0	H	96.0	27.25
612.107778	23.48	46.021	22.54	120.000	395.0	H	210.0	32.54
972.732222	28.77	53.979	25.21	120.000	202.0	H	49.0	37.28

Test Personnel: Ben Coolbear
Supervising/Reviewing Engineer: (Where Applicable) NA
Product Standard: FCC Part 15.247
Input Voltage: RSS-247 Issue 2
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/19/2022
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
Ambient Temperature: 24.0 °C
Relative Humidity: 50.4 %
Atmospheric Pressure: 974.5 mbar

Deviations, Additions, or Exclusions: None

6.8.4 Radiated Spurious Emissions, 1 GHz – 18 GHz (Bluetooth, 2402 MHz)



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3618.000000	44.17	73.979	29.81	1000.000	294.0	V	12.0	6.50
7236.000000	44.22	1000.000	955.78	1000.000	100.0	V	288.0	12.58
12494.000000	49.96	73.979	24.02	1000.000	100.0	H	162.0	20.67

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3618.000000	38.02	53.979	15.96	1000.000	294.0	V	12.0	6.50
7236.000000	31.48	1000.000	968.52	1000.000	100.0	V	288.0	12.58
12494.000000	36.59	53.979	17.39	1000.000	100.0	H	162.0	20.67

Test Personnel: Ben Coolbear

Supervising/Reviewing Engineer: (Where Applicable) NA

Product Standard: FCC Part 15.247

Input Voltage: RSS-247 Issue 2

Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022

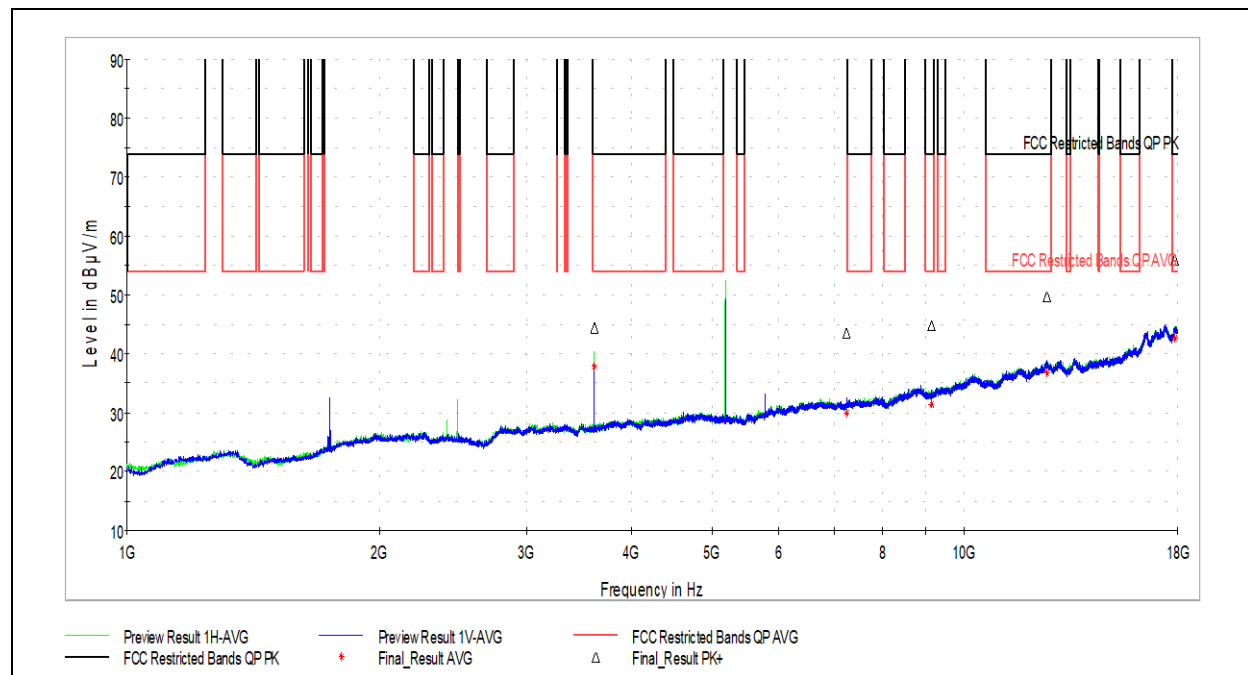
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205

Ambient Temperature: 23.2 °C

Relative Humidity: 51.1 %

Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.8.5 Radiated Spurious Emissions, 1 GHz – 18 GHz (Bluetooth, 2440 MHz)**

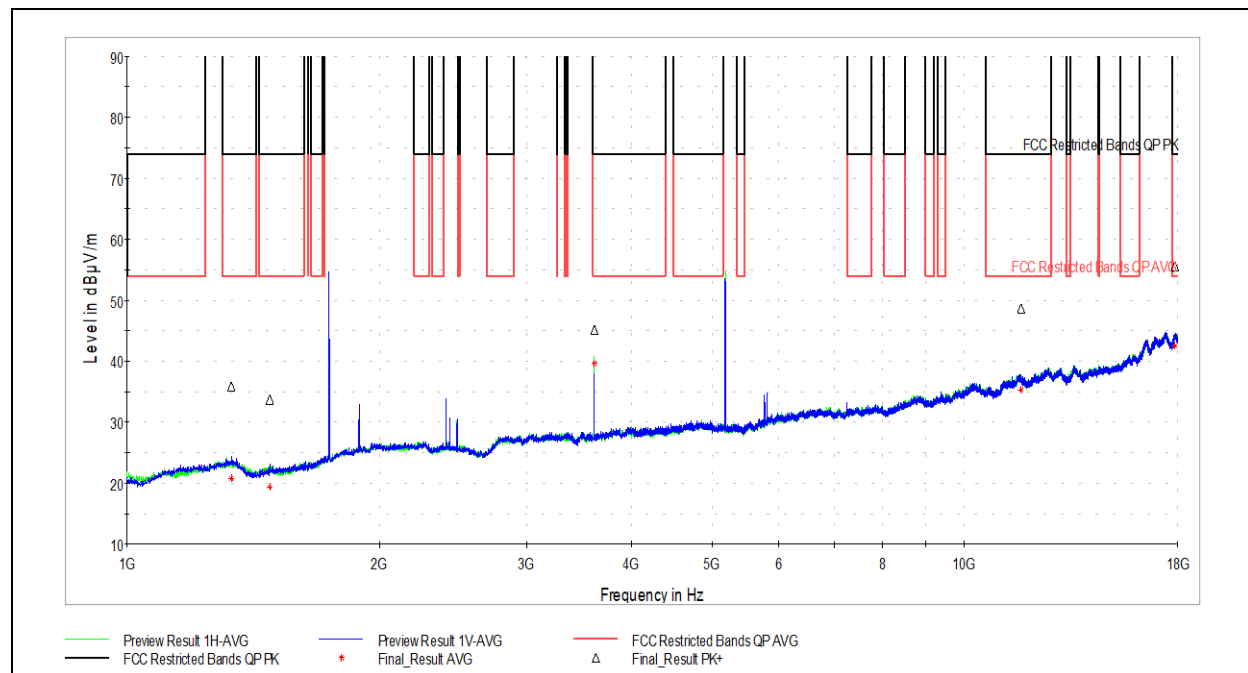
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3618.000000	44.46	73.979	29.52	1000.000	361.0	H	342.0	6.76
7236.500000	43.41	1000.000	956.59	1000.000	118.0	V	272.0	12.58
9141.500000	44.70	73.979	29.28	1000.000	410.0	V	0.0	15.52
12547.500000	49.74	73.979	24.24	1000.000	410.0	V	89.0	20.67
17866.000000	55.90	73.979	18.08	1000.000	221.0	H	0.0	27.63

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3618.000000	37.80	53.979	16.18	1000.000	361.0	H	342.0	6.76
7236.500000	29.92	1000.000	970.08	1000.000	118.0	V	272.0	12.58
9141.500000	31.39	53.979	22.59	1000.000	410.0	V	0.0	15.52
12547.500000	36.70	53.979	17.28	1000.000	410.0	V	89.0	20.67
17866.000000	42.63	53.979	11.35	1000.000	221.0	H	0.0	27.63

Test Personnel: Ben Coolbear
Supervising/Reviewing Engineer: NA
(Where Applicable)
Product Standard: FCC Part 15.247
Input Voltage: RSS-247 Issue 2
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
Ambient Temperature: 23.2 °C
Relative Humidity: 51.1 %
Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.8.6 Radiated Spurious Emissions, 1 GHz – 18 GHz (Bluetooth, 2480 MHz)**

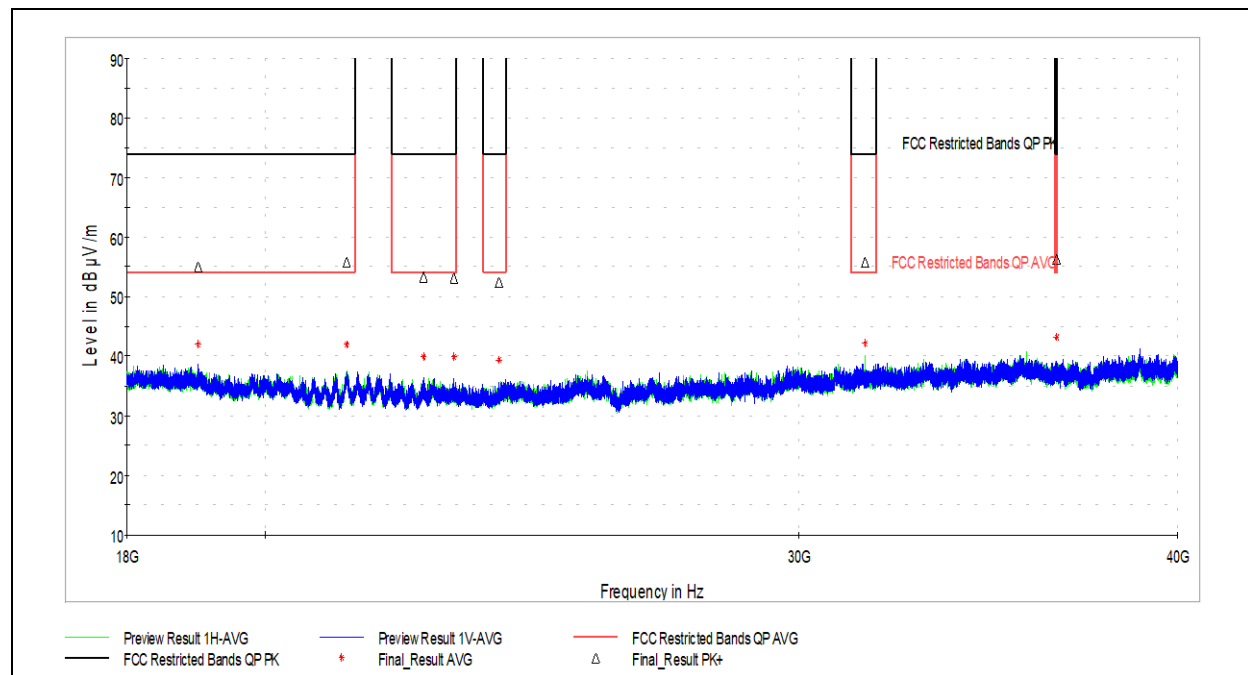
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1333.500000	35.83	73.979	38.15	1000.000	100.0	V	271.0	-0.21
1479.500000	33.72	73.979	40.26	1000.000	251.0	V	223.0	-1.55
3618.000000	45.17	73.979	28.81	1000.000	319.0	H	21.0	6.76
11702.000000	48.71	73.979	25.27	1000.000	365.0	V	320.0	19.32
17853.500000	55.66	73.979	18.32	1000.000	277.0	H	0.0	27.57

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1333.500000	20.80	53.979	33.18	1000.000	100.0	V	271.0	-0.21
1479.500000	19.44	53.979	34.54	1000.000	251.0	V	223.0	-1.55
3618.000000	39.58	53.979	14.40	1000.000	319.0	H	21.0	6.76
11702.000000	35.32	53.979	18.66	1000.000	365.0	V	320.0	19.32
17853.500000	42.56	53.979	11.42	1000.000	277.0	H	0.0	27.57

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: (Where Applicable) NA
 Product Standard: FCC Part 15.247
 Input Voltage: RSS-247 Issue 2
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.2 °C
 Relative Humidity: 51.1 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.8.7 Radiated Spurious Emissions, 18GHz – 40 GHz (Bluetooth, 2402 MHz)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19003.000000	55.07	73.979	18.91	1000.000	410.0	V	175.0	18.12
21266.000000	55.82	73.979	18.16	1000.000	137.0	H	272.0	10.27
22548.000000	53.32	73.979	20.66	1000.000	410.0	V	98.0	6.72
23072.000000	53.19	73.979	20.79	1000.000	109.0	V	348.0	6.52
23881.500000	52.38	73.979	21.60	1000.000	147.0	V	315.0	6.24
31545.000000	55.81	73.979	18.17	1000.000	100.0	H	348.0	11.21
36479.500000	56.22	73.979	17.76	1000.000	100.0	V	66.0	11.46

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19003.000000	41.95	53.979	12.03	1000.000	410.0	V	175.0	18.12
21266.000000	41.89	53.979	12.09	1000.000	137.0	H	272.0	10.27
22548.000000	39.83	53.979	14.15	1000.000	410.0	V	98.0	6.72
23072.000000	39.83	53.979	14.15	1000.000	109.0	V	348.0	6.52
23881.500000	39.34	53.979	14.64	1000.000	147.0	V	315.0	6.24
31545.000000	42.19	53.979	11.79	1000.000	100.0	H	348.0	11.21
36479.500000	43.21	53.979	10.77	1000.000	100.0	V	66.0	11.46

Test Personnel: Ben Coolbear

Supervising/Reviewing Engineer: (Where Applicable) NA

Product Standard: RSS-247 Issue 2

Input Voltage:

Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022

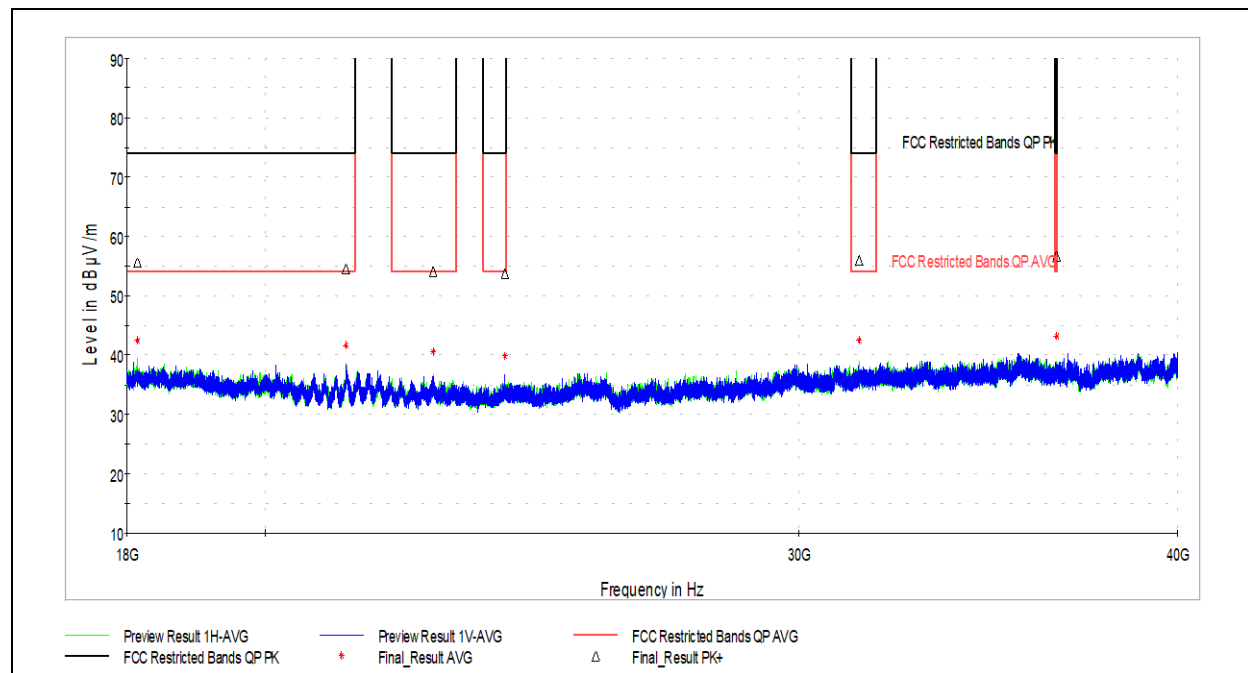
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205

Ambient Temperature: 23.2 °C

Relative Humidity: 51.1 %

Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.8.8 Radiated Spurious Emissions, 18GHz – 40 GHz (Bluetooth, 2440 MHz)**

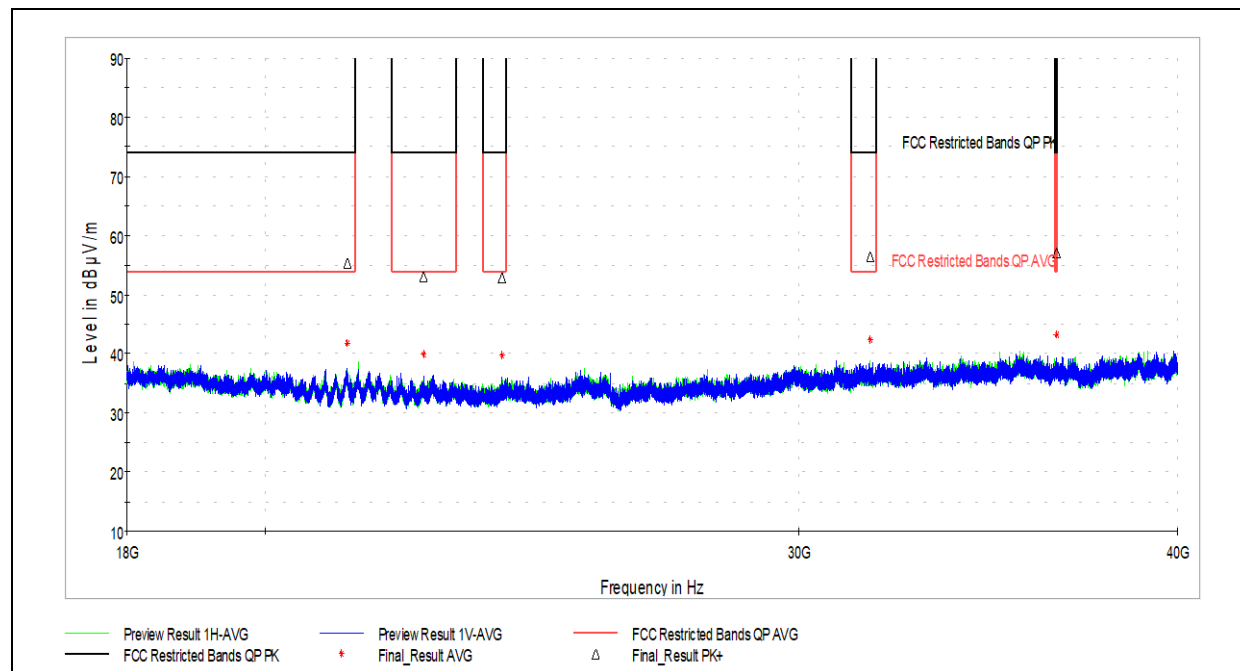
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18144.500000	55.70	73.979	18.28	1000.000	410.0	H	359.0	20.35
21257.000000	54.62	73.979	19.36	1000.000	366.0	V	0.0	10.32
22711.000000	54.02	73.979	19.96	1000.000	347.0	H	0.0	6.81
23992.500000	53.64	73.979	20.34	1000.000	118.0	V	339.0	6.58
31403.500000	56.00	73.979	17.98	1000.000	100.0	H	60.0	11.26
36485.000000	56.63	73.979	17.35	1000.000	100.0	H	61.0	11.45

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18144.500000	42.51	53.979	11.47	1000.000	410.0	H	359.0	20.35
21257.000000	41.54	53.979	12.44	1000.000	366.0	V	0.0	10.32
22711.000000	40.47	53.979	13.51	1000.000	347.0	H	0.0	6.81
23992.500000	39.84	53.979	14.14	1000.000	118.0	V	339.0	6.58
31403.500000	42.37	53.979	11.61	1000.000	100.0	H	60.0	11.26
36485.000000	43.18	53.979	10.80	1000.000	100.0	H	61.0	11.45

Test Personnel: Ben Coolbear
Supervising/Reviewing Engineer: (Where Applicable) NA
Product Standard: FCC Part 15.247
Input Voltage: RSS-247 Issue 2
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
Ambient Temperature: 23.2 °C
Relative Humidity: 51.1 %
Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.8.9 Radiated Spurious Emissions, 18GHz – 40 GHz (Bluetooth, 2480 MHz)**

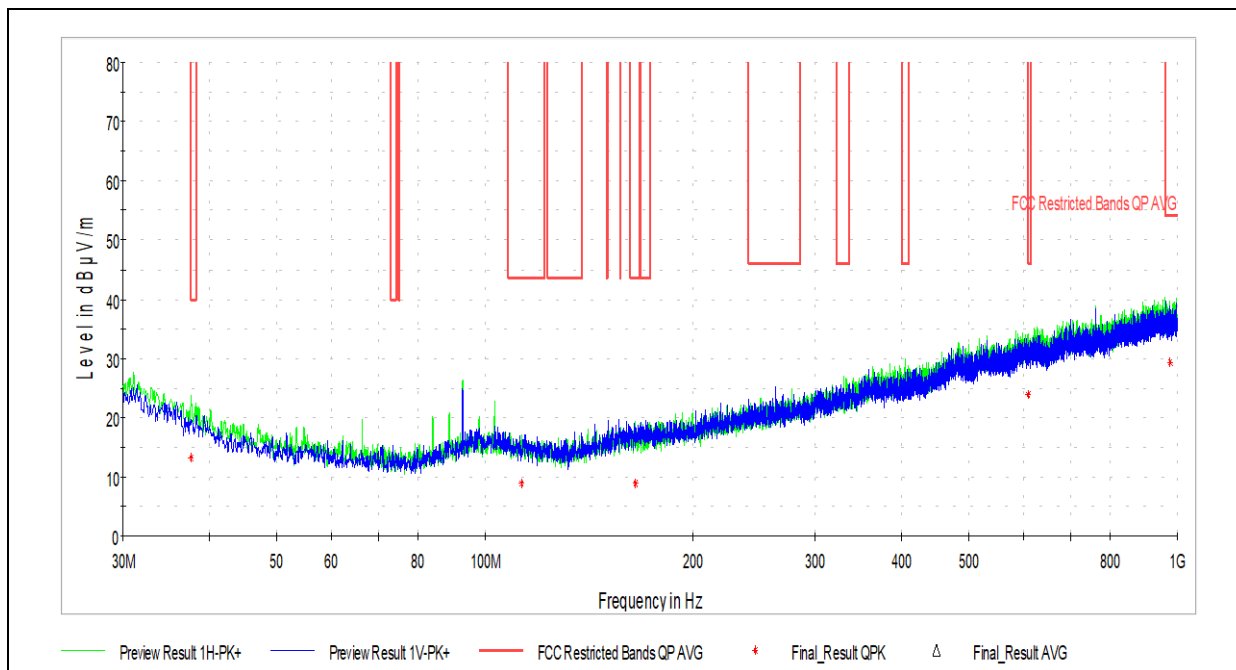
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21285.500000	55.44	73.979	18.54	1000.000	100.0	V	0.0	10.30
22553.000000	53.12	73.979	20.86	1000.000	147.0	V	84.0	6.73
23928.500000	52.92	73.979	21.06	1000.000	128.0	V	206.0	6.56
31662.000000	56.40	73.979	17.58	1000.000	100.0	H	10.0	11.14
36474.500000	57.10	73.979	16.88	1000.000	100.0	V	66.0	11.47

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21285.500000	41.76	53.979	12.22	1000.000	100.0	V	0.0	10.30
22553.000000	39.85	53.979	14.13	1000.000	147.0	V	84.0	6.73
23928.500000	39.65	53.979	14.33	1000.000	128.0	V	206.0	6.56
31662.000000	42.42	53.979	11.56	1000.000	100.0	H	10.0	11.14
36474.500000	43.16	53.979	10.82	1000.000	100.0	V	66.0	11.47

Test Personnel: Ben Coolbear
Supervising/Reviewing Engineer: (Where Applicable) NA
Product Standard: RSS-247 Issue 2
Input Voltage:
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
Ambient Temperature: 23.2 °C
Relative Humidity: 51.1 %
Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9 FCC Part 15.247 Radiated Spurious Emissions (Wi-Fi 802.11b/g/n)****6.9.1 Radiated Spurious Emissions, 30 MHz – 1 GHz (802.11b)**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.598333	13.09	40.000	26.91	120.000	400.0	H	254.0	21.06
112.827222	8.91	43.522	34.62	120.000	293.0	H	229.0	16.39
164.937778	8.92	43.522	34.61	120.000	172.0	H	81.0	17.91
608.605000	23.83	46.021	22.19	120.000	400.0	H	219.0	32.42
976.773889	29.39	53.979	24.59	120.000	200.0	H	234.0	37.20

Test Personnel: Michael Carlson

Supervising/Reviewing Engineer: (Where Applicable) NA

Product Standard: FCC Part 15.247
RSS-247 Issue 2

Input Voltage:

Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 3/29/2022

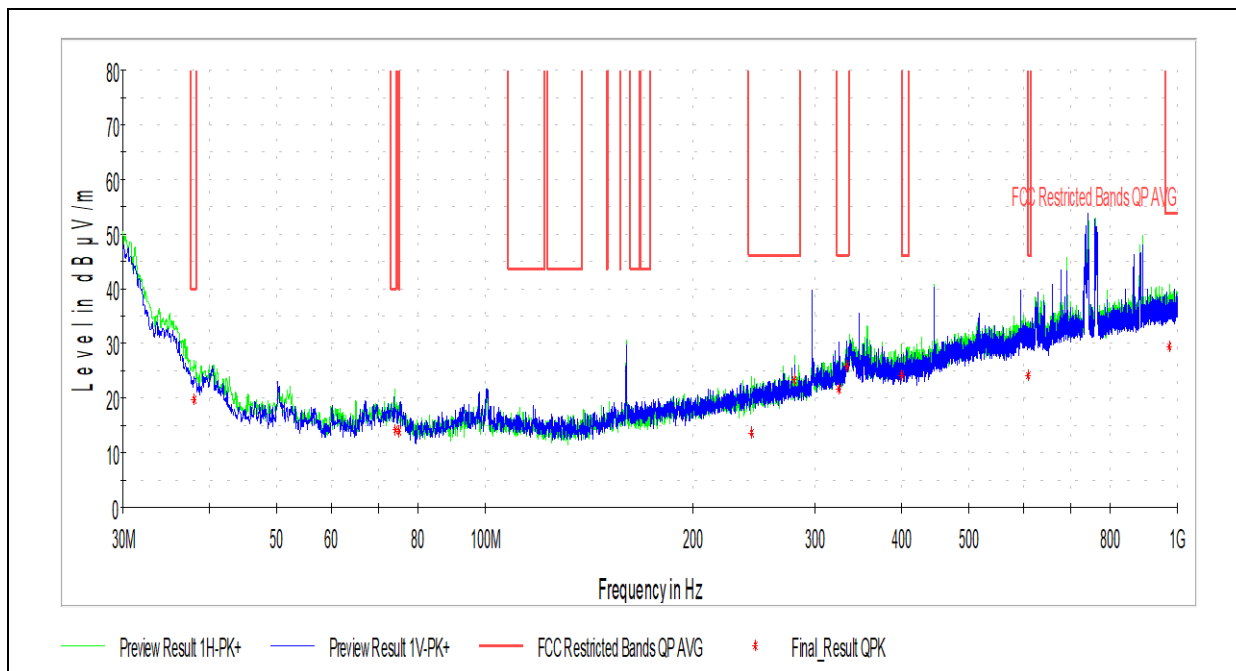
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205

Ambient Temperature: 22.3 °C

Relative Humidity: 18.4 %

Atmospheric Pressure: 989.7 mbar

Deviations, Additions, or Exclusions: None

**6.9.2 Radiated Spurious Emissions, 30 MHz – 1 GHz (802.11g)**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
38.029444	19.62	40.000	20.38	120.000	95.0	H	48.0	20.82
74.081111	14.14	40.000	25.86	120.000	100.0	H	122.0	14.39
74.997222	13.93	40.000	26.07	120.000	95.0	H	48.0	14.40
242.537778	13.55	46.021	32.47	120.000	134.0	H	220.0	21.50
279.990556	23.41	46.021	22.61	120.000	229.0	H	0.0	22.89
323.963889	21.62	46.021	24.40	120.000	324.0	V	304.0	24.40
333.340556	25.73	46.021	20.30	120.000	138.0	V	309.0	24.47
399.947222	24.14	46.021	21.88	120.000	189.0	H	18.0	27.21
608.012222	24.25	46.021	21.77	120.000	282.0	H	182.0	32.42
972.301111	29.57	53.979	24.41	120.000	165.0	H	38.0	37.28

Test Personnel: Ben Coolbear

Supervising/Reviewing Engineer: (Where Applicable) NA

Product Standard: FCC Part 15.247
RSS-247 Issue 2

Input Voltage:

Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 4/13/2022

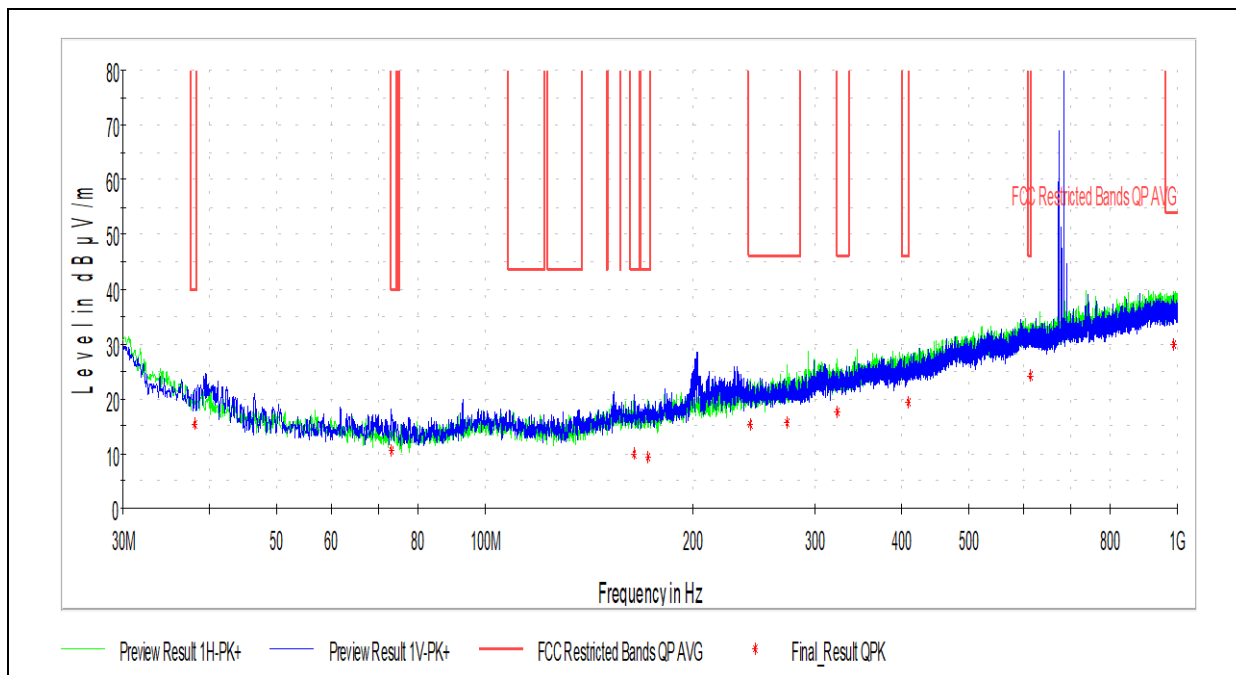
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205

Ambient Temperature: 22.3 °C

Relative Humidity: 18.4 %

Atmospheric Pressure: 989.7 mbar

Deviations, Additions, or Exclusions: None

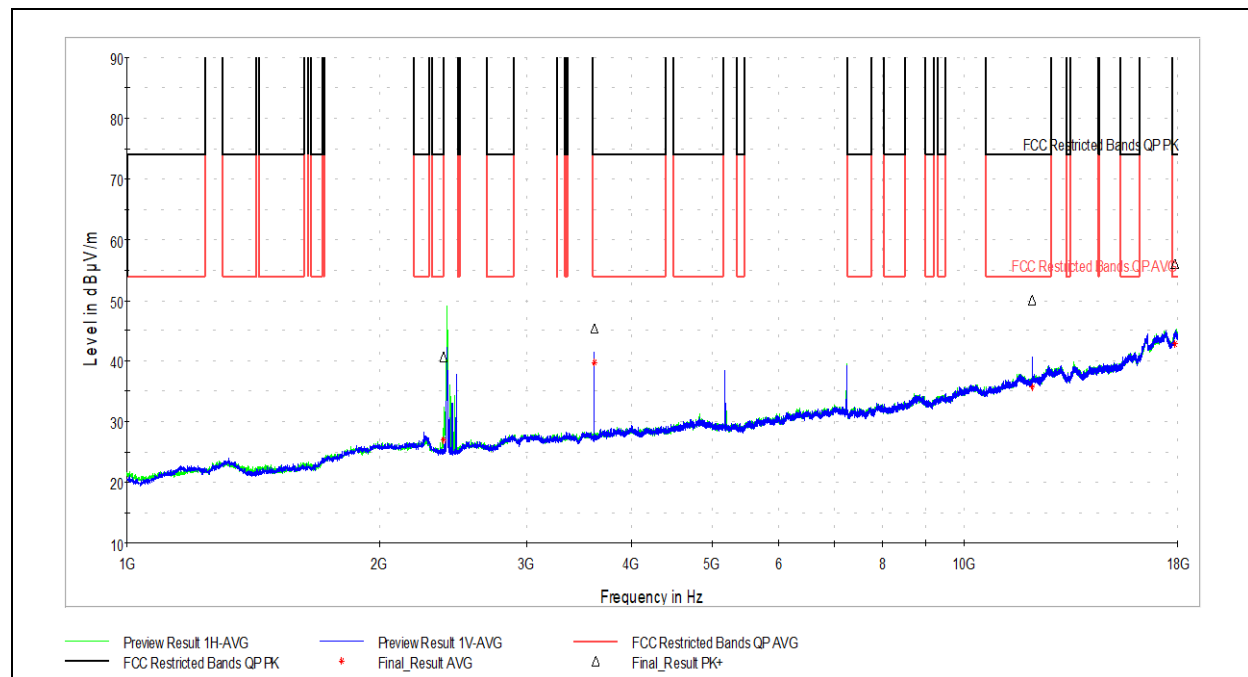
**6.9.3 Radiated Spurious Emissions, 30 MHz – 1 GHz (802.11n)**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
38.083333	15.39	40.000	24.61	120.000	100.0	V	316.0	19.09
73.272778	10.41	40.000	29.59	120.000	100.0	V	293.0	14.25
164.129444	9.99	43.522	33.53	120.000	100.0	V	201.0	18.60
171.781667	9.40	43.522	34.12	120.000	128.0	H	190.0	17.98
241.298333	15.30	46.021	30.72	120.000	104.0	H	274.0	21.49
273.146667	15.62	46.021	30.40	120.000	279.0	H	36.0	22.85
322.455000	17.71	46.021	28.31	120.000	234.0	H	49.0	24.64
408.677222	19.35	46.021	26.67	120.000	159.0	H	92.0	27.26
613.562778	24.16	46.021	21.86	120.000	95.0	H	294.0	32.55
987.713333	29.80	53.979	24.18	120.000	99.0	H	110.0	37.25

Test Personnel: Michael Carlson
 Supervising/Reviewing Engineer: (Where Applicable) NA
 Product Standard: RSS-247 Issue 2
 Input Voltage:
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 4/14/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.9 °C
 Relative Humidity: 54.5 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9.4 Radiated Spurious Emissions, 1 GHz – 18 GHz (802.11b)**

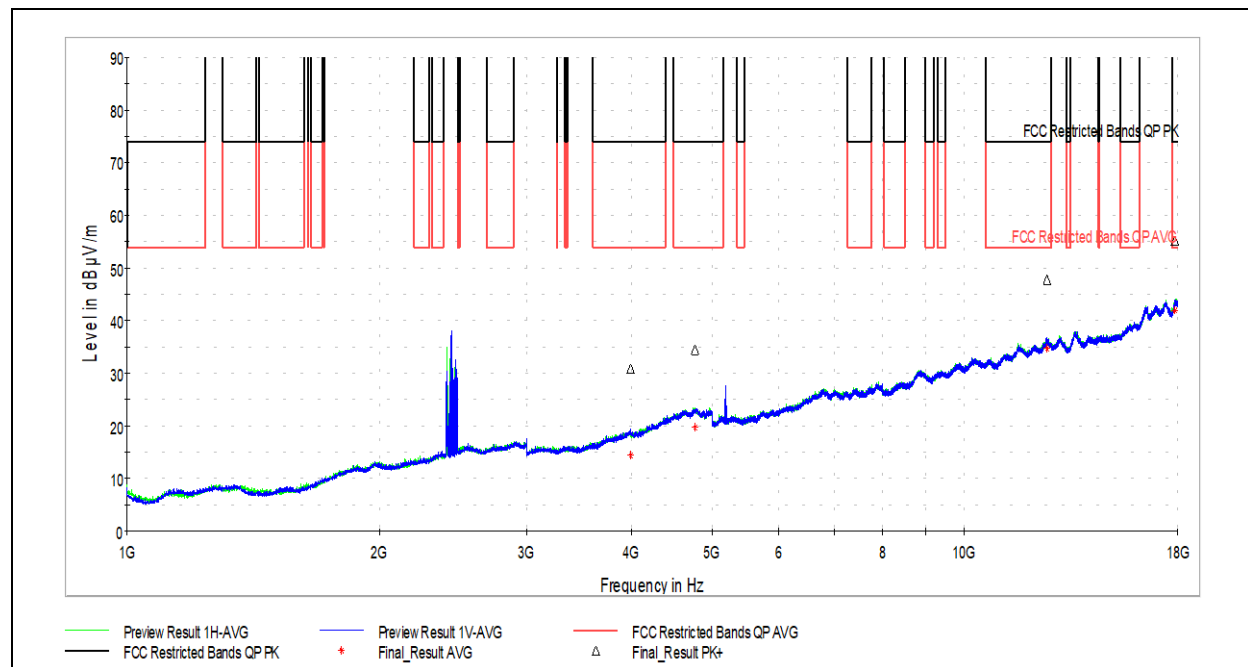
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.000000	40.69	73.979	33.29	1000.000	393.0	H	24.0	4.31
3618.000000	45.41	73.979	28.57	1000.000	316.0	V	291.0	6.50
12059.000000	50.07	73.979	23.91	1000.000	324.0	V	49.0	19.84
17865.500000	56.01	73.979	17.97	1000.000	264.0	H	194.0	27.63

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.000000	27.01	53.979	26.97	1000.000	393.0	H	24.0	4.31
3618.000000	39.80	53.979	14.18	1000.000	316.0	V	291.0	6.50
12059.000000	35.67	53.979	18.31	1000.000	324.0	V	49.0	19.84
17865.500000	42.88	53.979	11.10	1000.000	264.0	H	194.0	27.63

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: (Where Applicable) NA
 Product Standard: RSS-247 Issue 2
 Input Voltage:
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 4/14/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.9 °C
 Relative Humidity: 54.5 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9.5 Radiated Spurious Emissions, 1 GHz – 18 GHz (802.11g)**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3991.500000	30.95	73.979	43.03	1000.000	100.0	V	85.0	7.85
4768.000000	34.61	73.979	39.37	1000.000	284.0	H	163.0	9.48
12552.500000	47.84	73.979	26.14	1000.000	257.0	V	24.0	20.68
17862.000000	55.33	73.979	18.65	1000.000	138.0	H	24.0	27.61

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3991.500000	14.51	53.979	39.47	1000.000	100.0	V	85.0	7.85
4768.000000	19.71	53.979	34.27	1000.000	284.0	H	163.0	9.48
12552.500000	34.79	53.979	19.19	1000.000	257.0	V	24.0	20.68
17862.000000	41.97	53.979	12.01	1000.000	138.0	H	24.0	27.61

Test Personnel: Ben Coolbear

Supervising/Reviewing Engineer: (Where Applicable) NA

Product Standard: RSS-247 Issue 2

Input Voltage:

Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 4/14/2022

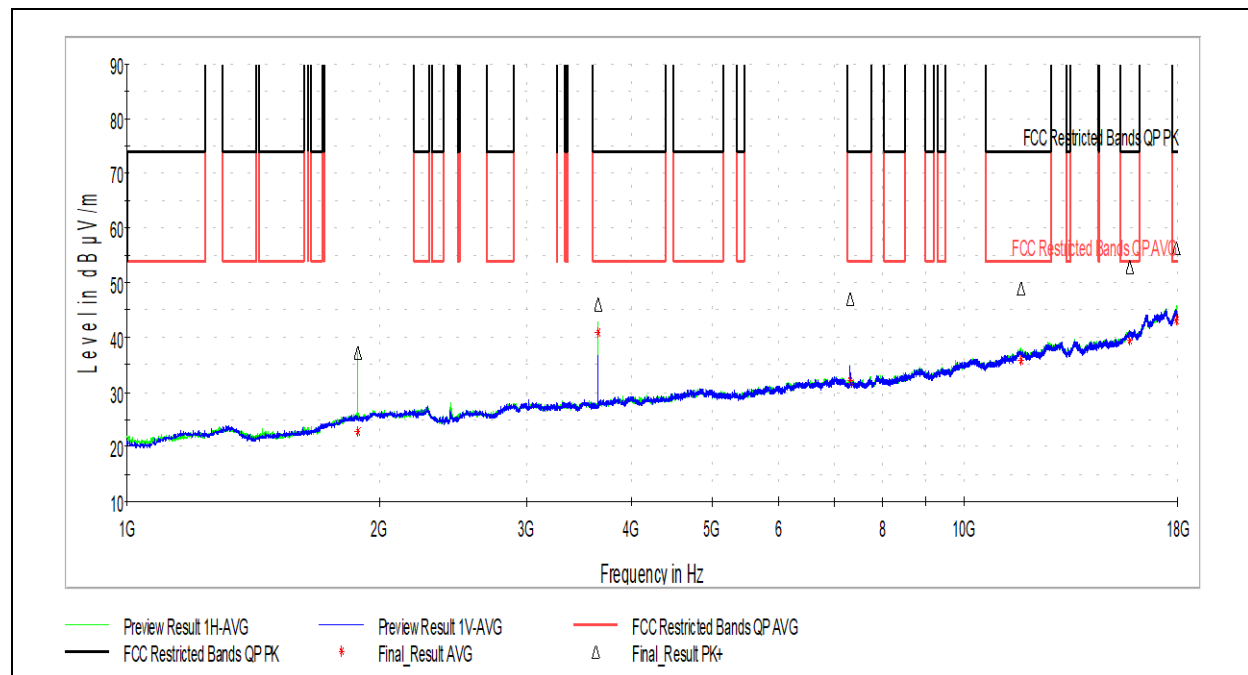
Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205

Ambient Temperature: 23.9 °C

Relative Humidity: 54.5 %

Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9.6 Radiated Spurious Emissions, 1 GHz – 18 GHz (802.11n)**

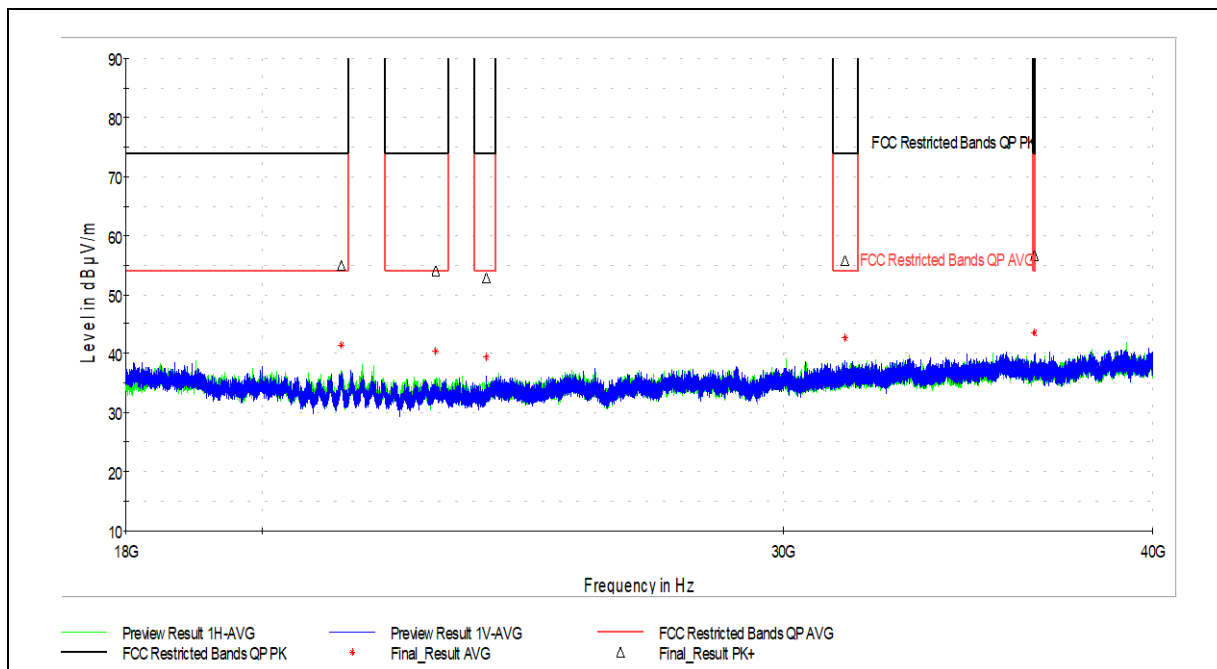
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1885.500000	37.13	1000.000	962.87	1000.000	100.0	H	33.0	2.84
3655.500000	46.08	73.979	27.90	1000.000	193.0	H	199.0	6.82
7310.000000	47.15	73.979	26.83	1000.000	127.0	H	289.0	12.64
11687.000000	48.92	73.979	25.06	1000.000	100.0	H	220.0	19.40
15784.500000	53.04	73.979	20.94	1000.000	100.0	V	253.0	23.78
17921.000000	56.43	73.979	17.55	1000.000	410.0	H	223.0	27.89

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1885.500000	22.87	1000.000	977.13	1000.000	100.0	H	33.0	2.84
3655.500000	40.92	53.979	13.06	1000.000	193.0	H	199.0	6.82
7310.000000	32.08	53.979	21.90	1000.000	127.0	H	289.0	12.64
11687.000000	35.67	53.979	18.31	1000.000	100.0	H	220.0	19.40
15784.500000	39.40	53.979	14.58	1000.000	100.0	V	253.0	23.78
17921.000000	43.17	53.979	10.81	1000.000	410.0	H	223.0	27.89

Test Personnel: Michael Carlson
 Supervising/Reviewing Engineer: NA
 (Where Applicable) FCC Part 15.247
 Product Standard: RSS-247 Issue 2
 Input Voltage: _____
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 4/14/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.9 °C
 Relative Humidity: 54.5 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9.7 Radiated Spurious Emissions, 18GHz – 40 GHz (802.11b)**

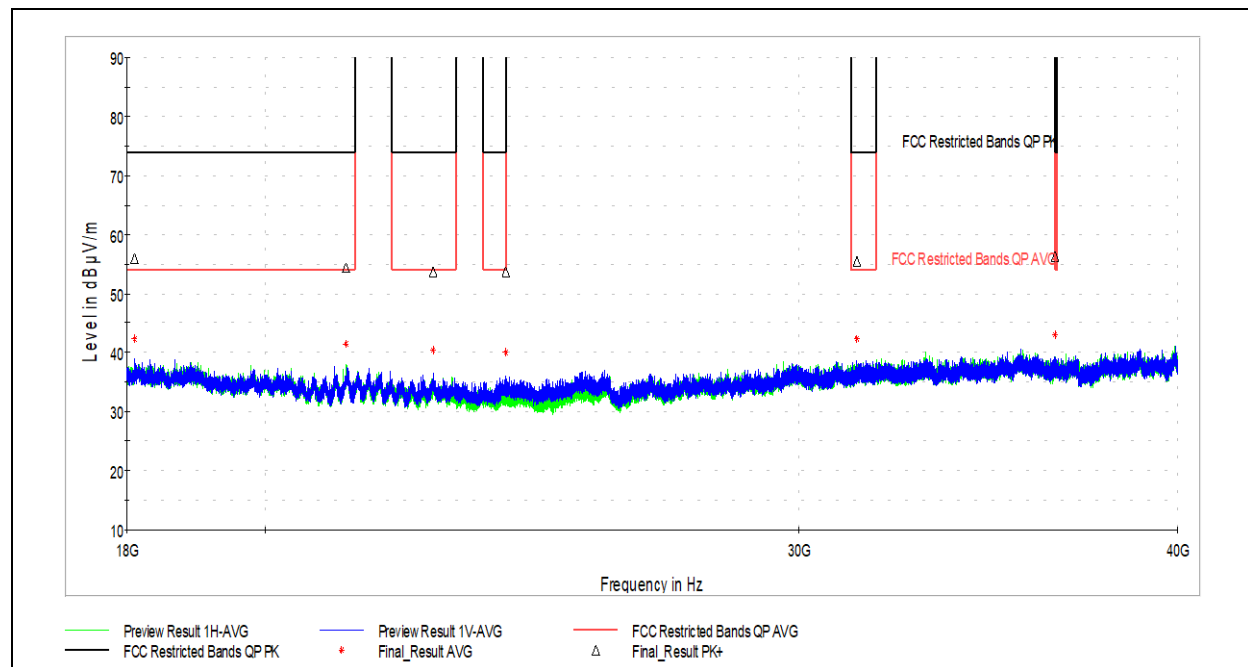
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21273.000000	54.93	73.979	19.05	1000.000	345.0	H	0.0	10.27
22902.000000	54.01	73.979	19.97	1000.000	128.0	H	164.0	6.43
23826.000000	52.78	73.979	21.20	1000.000	100.0	V	228.0	5.76
31474.000000	55.84	73.979	18.14	1000.000	100.0	V	0.0	11.33
36479.500000	56.67	73.979	17.31	1000.000	100.0	V	38.0	11.46

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21273.000000	41.45	53.979	12.53	1000.000	345.0	H	0.0	10.27
22902.000000	40.39	53.979	13.59	1000.000	128.0	H	164.0	6.43
23826.000000	39.31	53.979	14.67	1000.000	100.0	V	228.0	5.76
31474.000000	42.71	53.979	11.27	1000.000	100.0	V	0.0	11.33
36479.500000	43.47	53.979	10.51	1000.000	100.0	V	38.0	11.46

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: (Where Applicable) NA
 Product Standard: FCC Part 15.247
 Input Voltage: RSS-247 Issue 2
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.2 °C
 Relative Humidity: 51.1 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9.8 Radiated Spurious Emissions, 18GHz – 40 GHz (802.11g)**

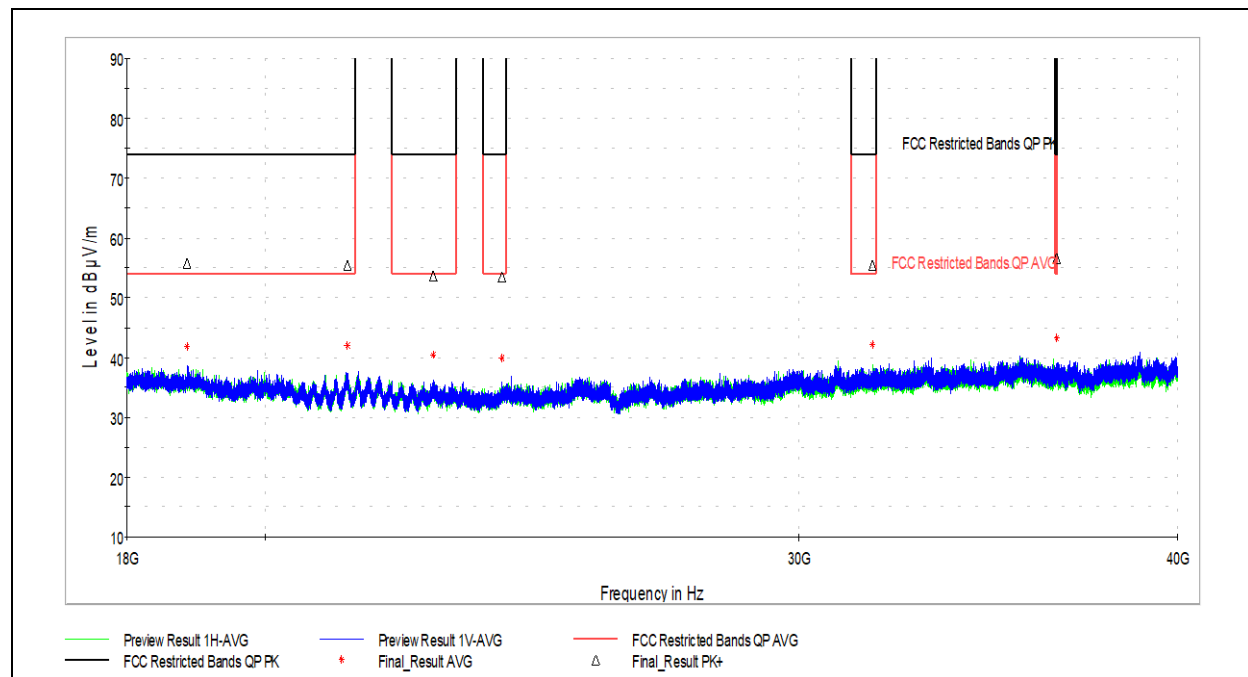
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18100.000000	56.04	73.979	17.94	1000.000	280.0	V	222.0	20.34
21260.500000	54.39	73.979	19.59	1000.000	191.0	H	0.0	10.27
22716.500000	53.71	73.979	20.27	1000.000	410.0	V	274.0	6.77
23994.000000	53.64	73.979	20.34	1000.000	100.0	V	0.0	6.58
31347.000000	55.46	73.979	18.52	1000.000	100.0	V	124.0	11.27
36436.000000	56.26	73.979	17.72	1000.000	100.0	H	148.0	11.53

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18100.000000	42.31	53.979	11.67	1000.000	280.0	V	222.0	20.34
21260.500000	41.49	53.979	12.49	1000.000	191.0	H	0.0	10.27
22716.500000	40.34	53.979	13.64	1000.000	410.0	V	274.0	6.77
23994.000000	40.12	53.979	13.86	1000.000	100.0	V	0.0	6.58
31347.000000	42.28	53.979	11.70	1000.000	100.0	V	124.0	11.27
36436.000000	43.06	53.979	10.92	1000.000	100.0	H	148.0	11.53

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: (Where Applicable) NA
 Product Standard: RSS-247 Issue 2
 Input Voltage: _____
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.2 °C
 Relative Humidity: 51.1 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**6.9.9 Radiated Spurious Emissions, 18GHz – 40 GHz (802.11n)**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18839.000000	55.72	73.979	18.26	1000.000	100.0	V	278.0	18.11
21276.000000	55.31	73.979	18.67	1000.000	365.0	V	286.0	10.31
22713.500000	53.68	73.979	20.30	1000.000	128.0	V	0.0	6.78
23940.000000	53.46	73.979	20.52	1000.000	146.0	V	0.0	6.56
31707.500000	55.36	73.979	18.62	1000.000	100.0	H	80.0	11.12
36473.000000	56.57	73.979	17.41	1000.000	100.0	V	0.0	11.47

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18839.000000	41.88	53.979	12.10	1000.000	100.0	V	278.0	18.11
21276.000000	42.00	53.979	11.98	1000.000	365.0	V	286.0	10.31
22713.500000	40.41	53.979	13.57	1000.000	128.0	V	0.0	6.78
23940.000000	39.87	53.979	14.11	1000.000	146.0	V	0.0	6.56
31707.500000	42.15	53.979	11.83	1000.000	100.0	H	80.0	11.12
36473.000000	43.21	53.979	10.77	1000.000	100.0	V	0.0	11.47

Test Personnel: Ben Coolbear
 Supervising/Reviewing Engineer: _____
 (Where Applicable) NA
 FCC Part 15.247
 Product Standard: RSS-247 Issue 2
 Input Voltage: _____
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 5/18/2022
 Limit Applied: FCC Part 15.209 in Restricted Bands from FCC Part 15.205
 Ambient Temperature: 23.2 °C
 Relative Humidity: 51.1 %
 Atmospheric Pressure: 976.6 mbar

Deviations, Additions, or Exclusions: None

**7 Revision History**

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	10/4/2022	105007217LEX-001	<i>JB</i>	<i>BZ</i>	Original Issue