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Medicalgorithmics S.A. TEST REPORT

SCOPE OF WORK

EMC TESTING – POCKETECG-LTE-M

REPORT NUMBER

104993808LEX-001.2

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EMC TEST REPORT

(FULL COMPLIANCE)

Report Number: 104993808LEX-001.2

Project Number: G104993808

Report Issue Date: 9/13/2022

Report Revised Date: 12/13/2022

Model(s) Tested: PocketECG-LTE-M

Standards: FCC Part 15B
ICES-003 Issue 7
FCC Part 22, 24, 27
(Radiated Spurious Emissions)

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

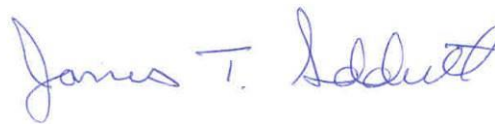
Client:
Medicalgorithmics S.A.
Al. Jerozolimskie 81 Budynek ORCO Tower, 19
pietro
02-001 Warszawa
Poland

Report prepared by



Brian Lackey, Team Leader

Report reviewed by



James Sudduth, 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
6	Radiated Emissions (Transmitters Idle) (ANSI C63.4:2014)	Pass
6	Radiated Spurious Emissions (Transmitters Active) (ANSI C63.26:2015)	Pass
-	Conducted Emissions (ANSI C63.4:2014)	NA ¹

¹ The EUT is battery powered and does not connect directly or indirectly to AC mains.



3 Client Information

This product was tested at the request of the following:

Client Information	
Client Name:	Medicalgorithmics S.A.
Address:	Al. Jerozolimskie 81 Budynek ORCO Tower, 19 pietro 02-001 Warszawa Poland
Contact:	Joanna Dąbala
Telephone:	48 22 825 12 49
Email:	j.dabala@medicalgorithmics.com
Manufacturer Information	
Manufacturer Name:	Medicalgorithmics S.A.
Manufacturer Address:	Al. Jerozolimskie 81 Budynek ORCO Tower, 19 pietro 02-001 Warszawa Poland



4 Description of Equipment under Test and Variant Models

Equipment Under Test	
Product Name	PocketECG-LTE-M
Model Number	P4TR-CA-ADS
Hardware Version	P4.TR-400-PCB-B-1.1
Software Version	v11.000-7.10-0063
Supported Transmit Bands	LTE Cat M1 Bands: 2, 4, 5, 12, 13
Embedded Module	Quectel BG95-M3
Embedded Module hardware Version	R2.1
Embedded Module Software Version	BG95M3LAR02A03
FCCID	2AB2MP4TRCA
Receive Date	4/29/2022
Test Start Date	4/29/2022
Test End Date	8/25/2022
Device Received Condition	Good
Test Sample Type	Production
Rated Voltage	3.7VDC
Description of Equipment Under Test (provided by client)	
The Medicalgorithmics S.A. PocketECG-LTE-M is a system for heart arrhythmia diagnostics	

4.1 Variant Models:

There were no variant models covered by this evaluation.



5 System Setup and Method

5.1 Method:

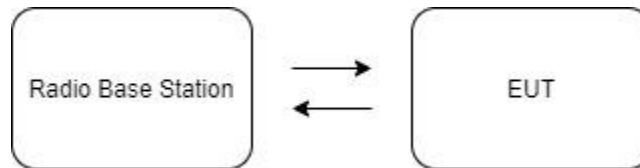
Configuration as required by ETSI EN 301 489-1 v2.2.0 (2017-02) as modified by ETSI EN 301 489-3 v2.1.1 (2019-03).

No.	Descriptions of EUT Exercising
1	Battery Power: ON, Cell Radios: OFF
2	Battery Power: ON, Cell Radios: ON and transmitting to a CMW 500 Radio Base Station Simulator

Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
1	ECG Cables	1	None	None	None



5.2 EUT Block Diagram:





6 Radiated Emissions

6.1 Method

Tests are performed in accordance with ANSI C63.4:2014 and ANSI C63.26:2015.

TEST SITE: 10m ALSE

Site Designation: 10m Chamber

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	U _{CISPR}
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.

$$RA = 52.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB/m}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = 32 \text{ dB}\mu\text{V/m}$$

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

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

Example:

$$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0$$

$$UF = 10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$$

6.3 Field Strength to Power Calculation

As allowable by ANSI C63.26: 2015 section 5.2.7, the output power of unwanted emissions can be calculated from a field strength measurement. The transmitter measurements that follow in this report have applied the following calculation to the -13dBm limit to arrive an equivalent field strength limit at 3 meters as follows:

$E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance (in the far field region) in m.

Example:

$$\text{Limit (dB}\mu\text{V/m)} = -13 - 20\log(3) + 104.8 = 82.25 \text{ dB}\mu\text{V/m}$$



6.4 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	7085	SunAR	JB6	10/5/2021	10/5/2022
Horn Antenna	4001	ETS	3117	2/23/2022	2/23/2023
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

6.5 Software Utilized:

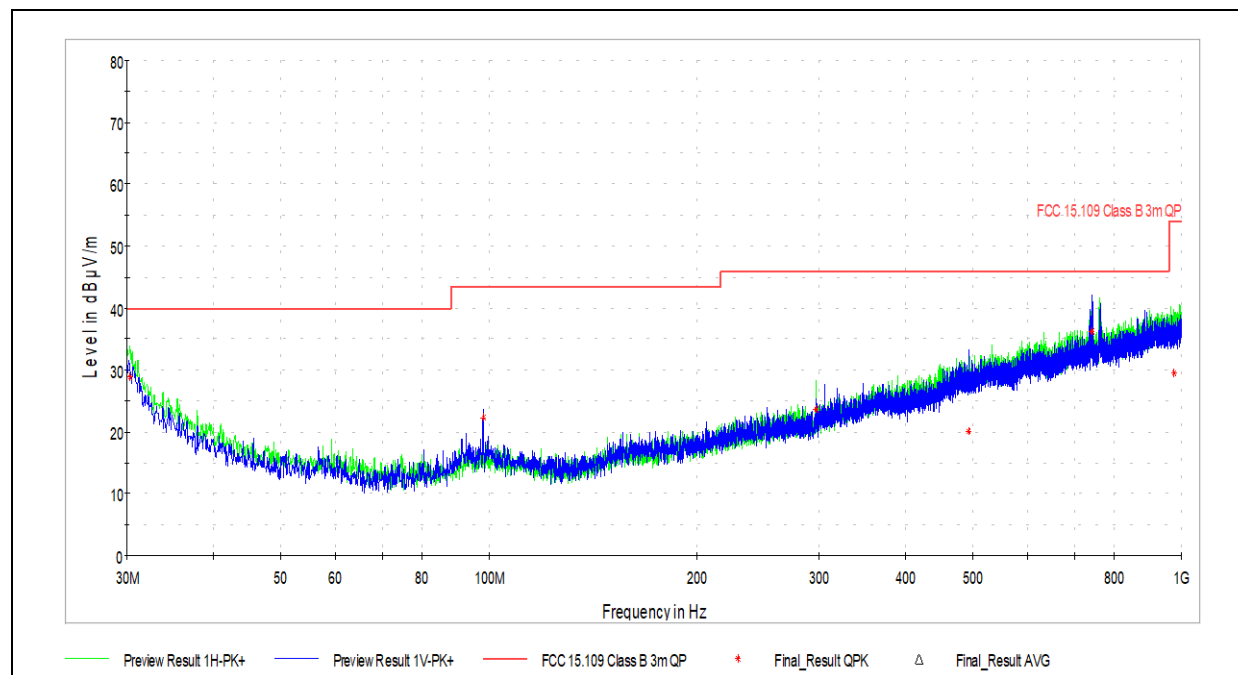
Name	Manufacturer	Version
EMC32	Rohde & Schwarz	Version 10.60.20

6.6 Results:

The sample tested was found to Comply.



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

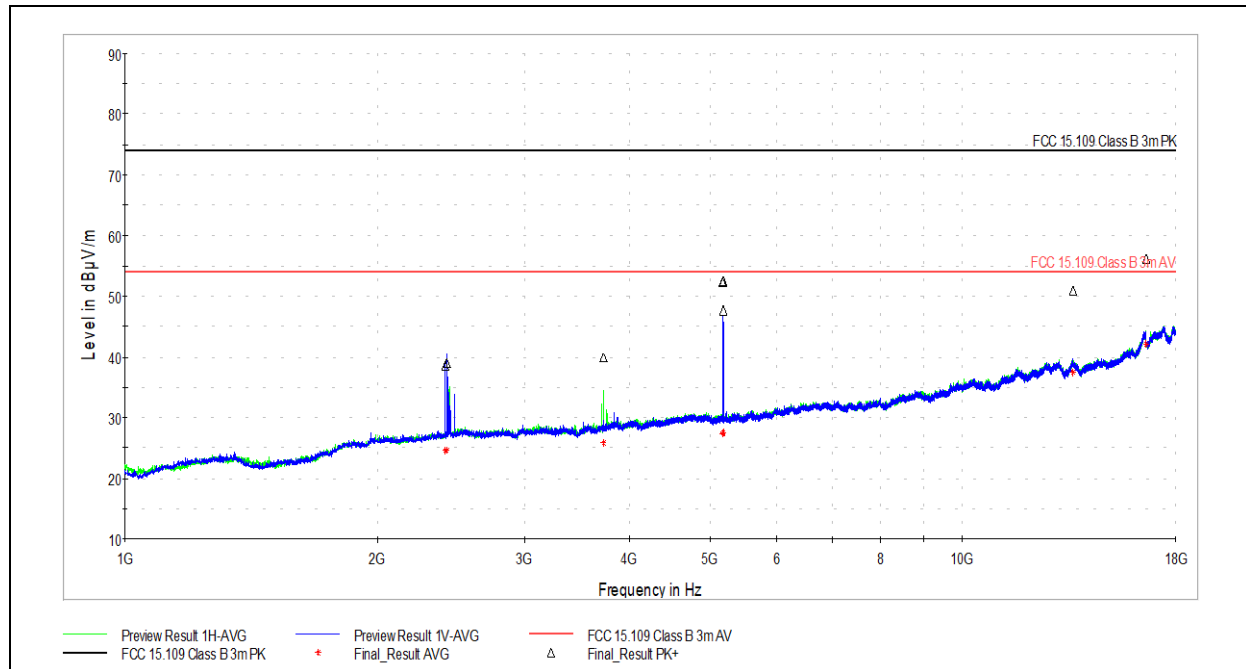


Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.269444	28.81	40.000	11.19	120.000	223.0	H	0.0	25.02
98.061667	22.29	43.522	21.23	120.000	100.0	V	1.0	17.30
297.019444	23.67	46.021	22.35	120.000	100.0	H	177.0	23.42
493.121111	20.17	46.021	25.85	120.000	152.0	V	48.0	28.67
743.542778	36.17	46.021	9.85	120.000	100.0	V	230.0	33.21
974.833889	29.54	53.979	24.44	120.000	256.0	H	113.0	37.29

Test Personnel: Ben Coolbear
Supervising/Reviewing Engineer: (Where Applicable) NA
Product Standard: FCC Part 15B
Input Voltage: ICES-003 Issue 7
Pretest Verification w / Ambient Signals or BB Source: 3.7 VDC Battery
Yes

Test Date: 4/29/2022
Limit Applied: Class B
Ambient Temperature: 24.6C
Relative Humidity: 33.9%
Atmospheric Pressure: 983.3mbar

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

**6.8 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)
2414.000000	38.45	73.979	35.53	1000.000	100.0	V	189.0	4.38
2422.500000	38.92	73.979	35.06	1000.000	100.0	V	24.0	4.40
3728.000000	39.89	73.979	34.09	1000.000	265.0	H	359.0	7.12
5177.500000	52.36	73.979	21.62	1000.000	128.0	V	81.0	9.58
5182.500000	52.42	73.979	21.56	1000.000	386.0	V	101.0	9.59
5186.500000	47.68	73.979	26.30	1000.000	368.0	V	207.0	9.60
13562.000000	50.86	73.979	23.12	1000.000	100.0	H	292.0	20.94
16596.500000	56.14	73.979	17.84	1000.000	127.0	H	0.0	26.08

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2414.000000	24.57	53.979	29.41	1000.000	100.0	V	189.0	4.38
2422.500000	24.53	53.979	29.45	1000.000	100.0	V	24.0	4.40
3728.000000	25.85	53.979	28.13	1000.000	265.0	H	359.0	7.12
5177.500000	27.41	53.979	26.57	1000.000	128.0	V	81.0	9.58
5182.500000	27.48	53.979	26.50	1000.000	386.0	V	101.0	9.59
5186.500000	27.47	53.979	26.51	1000.000	368.0	V	207.0	9.60
13562.000000	37.45	53.979	16.53	1000.000	100.0	H	292.0	20.94
16596.500000	42.03	53.979	11.95	1000.000	127.0	H	0.0	26.08

Test Personnel: Ben Coolbear

Supervising/Reviewing Engineer: NA

(Where Applicable)

Product Standard: ICES-003 Issue 7

Input Voltage: 3.7 VDC Battery

Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 4/29/2022

Limit Applied: Class B

Ambient Temperature: 24.6C

Relative Humidity: 33.9%

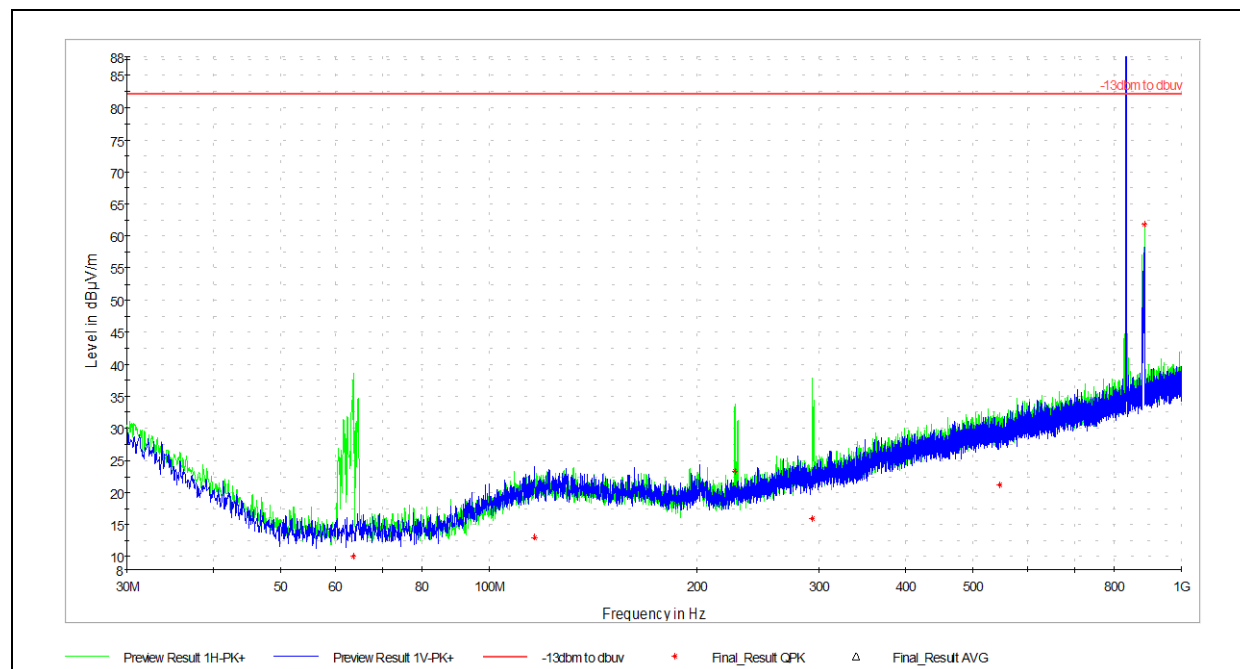
Atmospheric Pressure: 983.3mbar

Deviations, Additions, or Exclusions: None



6.9 FCC Part 22 Radiated Spurious Emissions (LTE B5)

6.9.1 Radiated Spurious Emissions, 30 MHz – 1 GHz



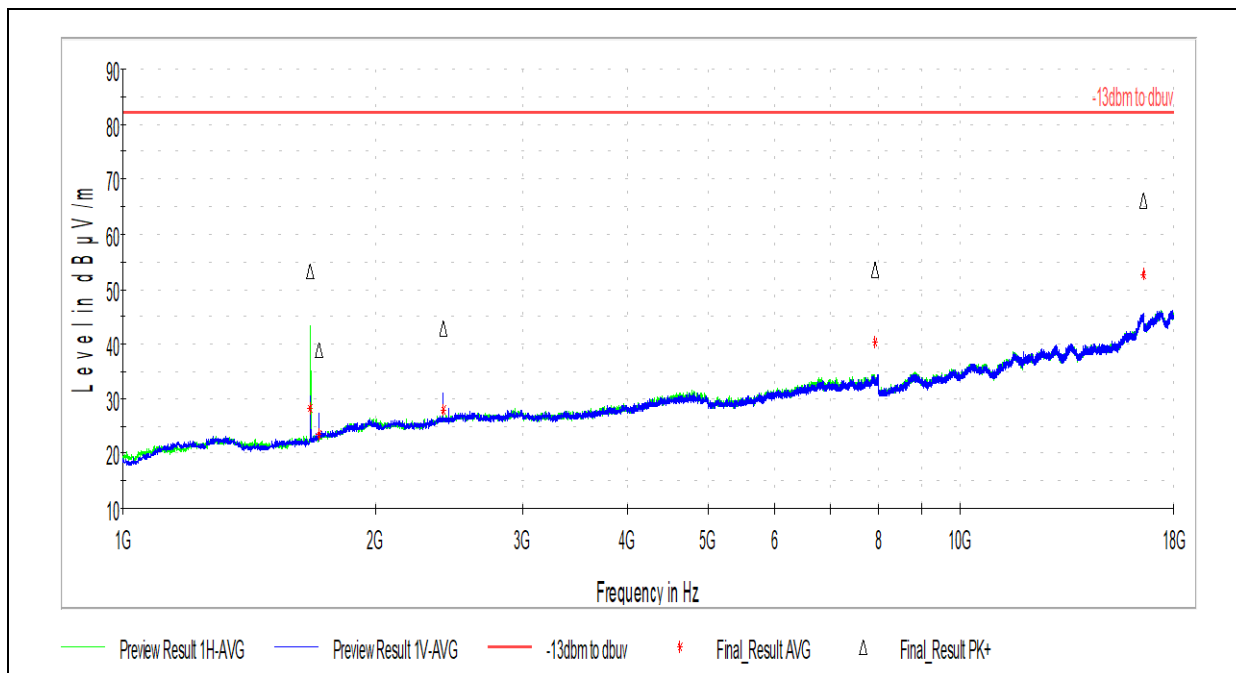
The large peak is the fundamental emission not subject to these limits.

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
63.680556	10.01	82.250	72.24	120.000	400.0	H	0.0	15.44
116.222222	13.02	82.250	69.23	120.000	400.0	V	302.0	21.83
226.640556	23.31	82.250	58.94	120.000	132.0	H	112.0	20.93
293.355000	15.88	82.250	66.37	120.000	323.0	H	346.0	23.79
545.555000	21.14	82.250	61.11	120.000	325.0	H	18.0	30.08
884.300556	61.80	82.250	20.45	120.000	100.0	H	303.0	35.98

Test Personnel: Jeremiah Andrade
Supervising/Reviewing Engineer: Michael Carlson
(Where Applicable)
Product Standard: FCC Part 22
Input Voltage: 3.7 VDC Battery
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
Limit Applied: -13dBm converted to field strength
Ambient Temperature: 23.5C
Relative Humidity: 66.0%
Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None

**6.9.2 Radiated Spurious Emissions, 1 GHz – 18 GHz**

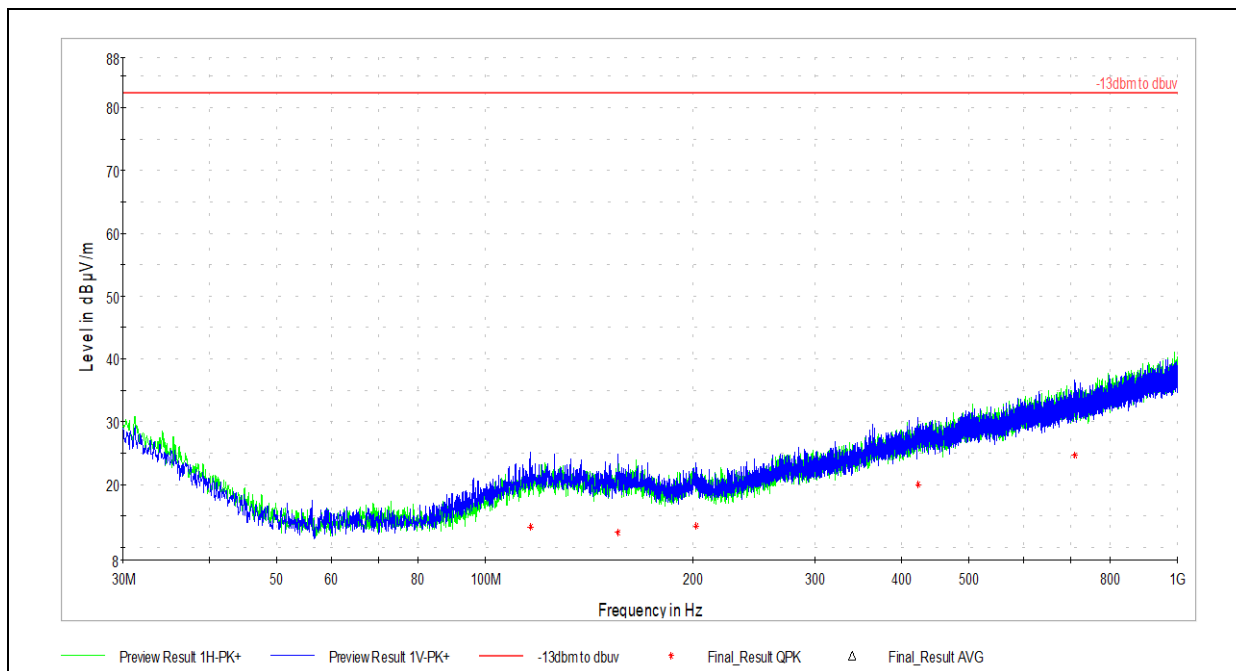
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1674.000000	53.33	82.250	28.92	1000.000	183.0	H	287.0	-0.21
1714.500000	38.90	82.250	43.35	1000.000	391.0	V	0.0	0.70
2412.500000	42.91	82.250	39.34	1000.000	410.0	V	350.0	4.06
7914.500000	53.61	82.250	28.64	1000.000	203.0	H	0.0	13.38
16545.500000	66.20	82.250	16.05	1000.000	303.0	V	35.0	26.25

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1674.000000	28.18	82.250	54.07	1000.000	183.0	H	287.0	-0.21
1714.500000	23.52	82.250	58.73	1000.000	391.0	V	0.0	0.70
2412.500000	28.02	82.250	54.23	1000.000	410.0	V	350.0	4.06
7914.500000	40.30	82.250	41.95	1000.000	203.0	H	0.0	13.38
16545.500000	52.76	82.250	29.49	1000.000	303.0	V	35.0	26.25

Test Personnel: David Perry
 Supervising/Reviewing Engineer: Brian Lackey
 (Where Applicable)
 Product Standard: FCC Part 22
 Input Voltage: 3.7 VDC Battery
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
 Limit Applied: -13dBm converted to field strength
 Ambient Temperature: 23.5C
 Relative Humidity: 66.0%
 Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None

**6.10 FCC Part 24 Radiated Spurious Emissions (LTE B2)****6.10.1 Radiated Spurious Emissions, 30 MHz – 1 GHz**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.243889	6.18	82.250	76.07	120.000	306.0	V	120.0	14.53
116.168333	13.24	82.250	69.01	120.000	164.0	V	124.0	21.82
155.399444	12.30	82.250	69.95	120.000	152.0	V	124.0	21.82
201.959444	13.39	82.250	68.86	120.000	105.0	V	124.0	22.35
421.448889	19.93	82.250	62.32	120.000	400.0	V	0.0	27.06
711.263333	24.61	82.250	57.64	120.000	300.0	V	0.0	32.85

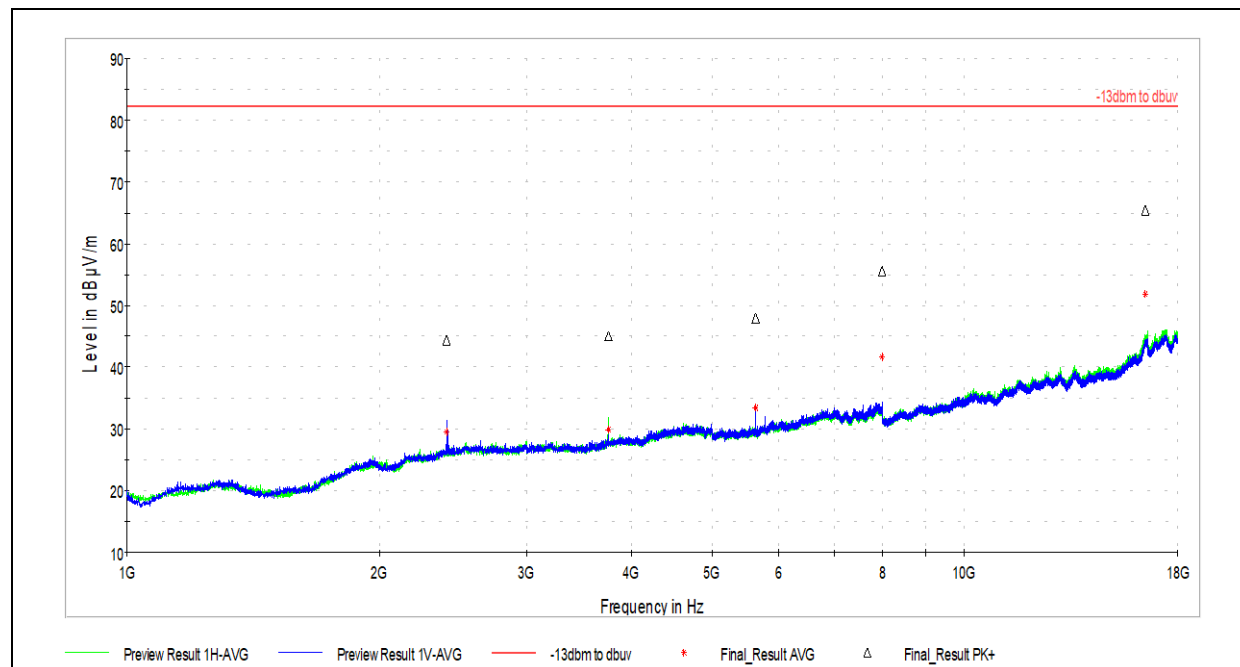
Test Personnel: Jeremiah Andrade
Supervising/Reviewing Engineer: Michael Carlson
(Where Applicable)
Product Standard: FCC Part 24
Input Voltage: 3.7 VDC Battery
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
Limit Applied: -13dBm converted to field strength
Ambient Temperature: 23.5C
Relative Humidity: 66.0%
Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None



6.10.2 Radiated Spurious Emissions, 1 GHz – 18 GHz



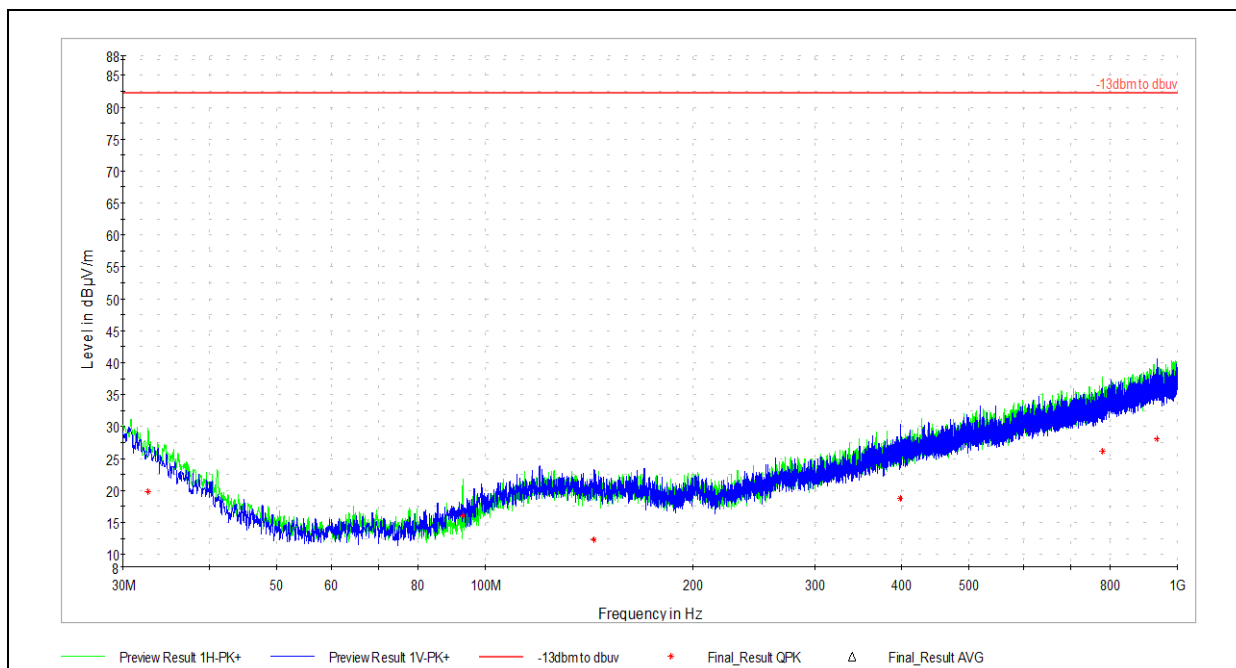
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2409.500000	44.42	82.250	37.83	1000.000	410.0	V	0.0	4.05
3755.500000	45.00	82.250	37.25	1000.000	410.0	H	302.0	7.15
5633.500000	47.91	82.250	34.34	1000.000	410.0	V	120.0	10.06
7977.500000	55.60	82.250	26.65	1000.000	410.0	V	244.0	13.46
16455.000000	65.43	82.250	16.82	1000.000	279.0	H	241.0	25.90

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2409.500000	29.55	82.250	52.70	1000.000	410.0	V	0.0	4.05
3755.500000	29.84	82.250	52.41	1000.000	410.0	H	302.0	7.15
5633.500000	33.40	82.250	48.85	1000.000	410.0	V	120.0	10.06
7977.500000	41.65	82.250	40.60	1000.000	410.0	V	244.0	13.46
16455.000000	51.89	82.250	30.36	1000.000	279.0	H	241.0	25.90

Test Personnel: Jordan Coughenour
Supervising/Reviewing Engineer: Brian Lackey
(Where Applicable)
Product Standard: FCC Part 24
Input Voltage: 3.7 VDC Battery
Pretest Verification w / Ambient
Signals or BB Source: Yes

Test Date: 8/24/2022
Limit Applied: -13dBm converted to field strength
Ambient Temperature: 23.5C
Relative Humidity: 66.0%
Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None

**6.11 FCC Part 27 Radiated Spurious Emissions (LTE B4/B12/B13)****6.11.1 Radiated Spurious Emissions, 30 MHz – 1 GHz****6.11.1.1 LTE Band 4**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
32.640556	19.86	82.250	62.39	120.000	100.0	H	340.0	26.98
92.888333	16.02	82.250	66.23	120.000	322.0	H	94.0	16.50
143.813333	12.29	82.250	69.96	120.000	376.0	V	18.0	21.91
398.061111	18.71	82.250	63.54	120.000	239.0	V	182.0	26.40
779.163333	26.09	82.250	56.16	120.000	227.0	H	316.0	34.49
933.285556	28.04	82.250	54.21	120.000	166.0	V	6.0	36.11

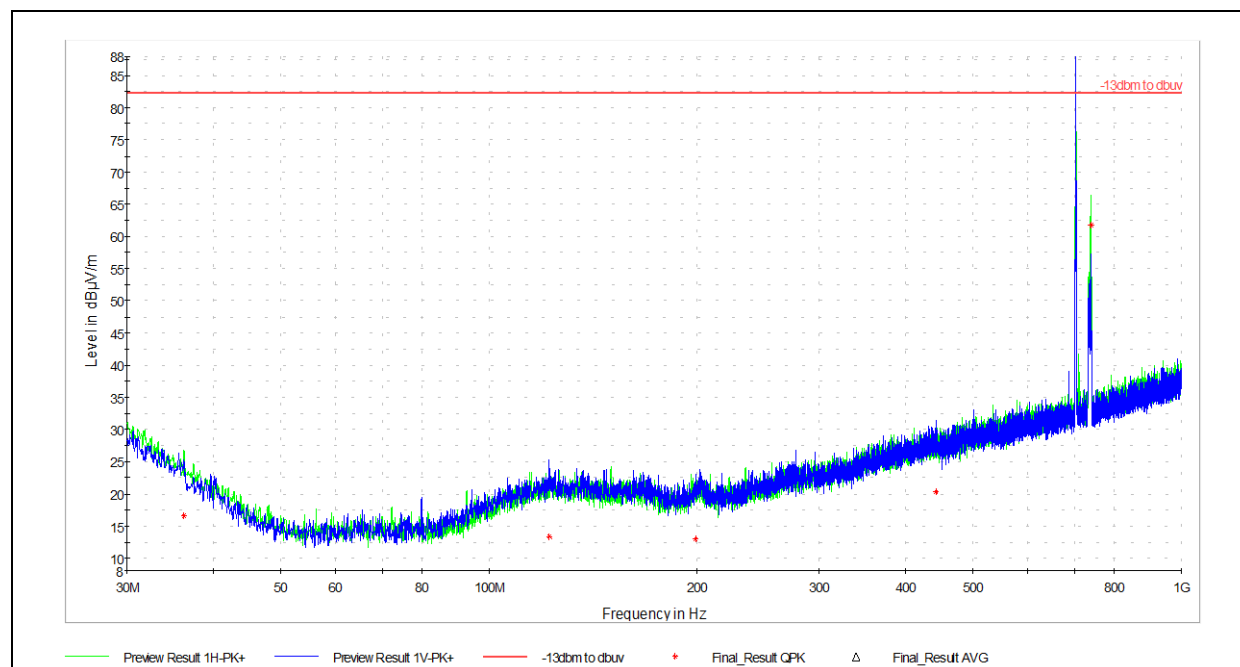
Test Personnel: Jeremiah Andrade
Supervising/Reviewing Engineer: Michael Carlson
(Where Applicable)
Product Standard: FCC Part 27
Input Voltage: 3.7 VDC Battery
Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
Limit Applied: -13dBm converted to field strength
Ambient Temperature: 23.5C
Relative Humidity: 66.0%
Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None



6.11.1.2 LTE Band 12



The large spike is the fundamental emission not subject to these limits.

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.251111	16.61	82.250	65.64	120.000	132.0	H	16.0	24.32
79.955000	7.86	82.250	74.39	120.000	400.0	V	200.0	15.37
122.203889	13.31	82.250	68.94	120.000	105.0	V	49.0	22.20
198.833889	12.95	82.250	69.30	120.000	167.0	V	0.0	21.60
441.980556	20.37	82.250	61.88	120.000	150.0	V	39.0	27.58
740.363333	61.79	82.250	20.46	120.000	99.0	H	90.0	33.49

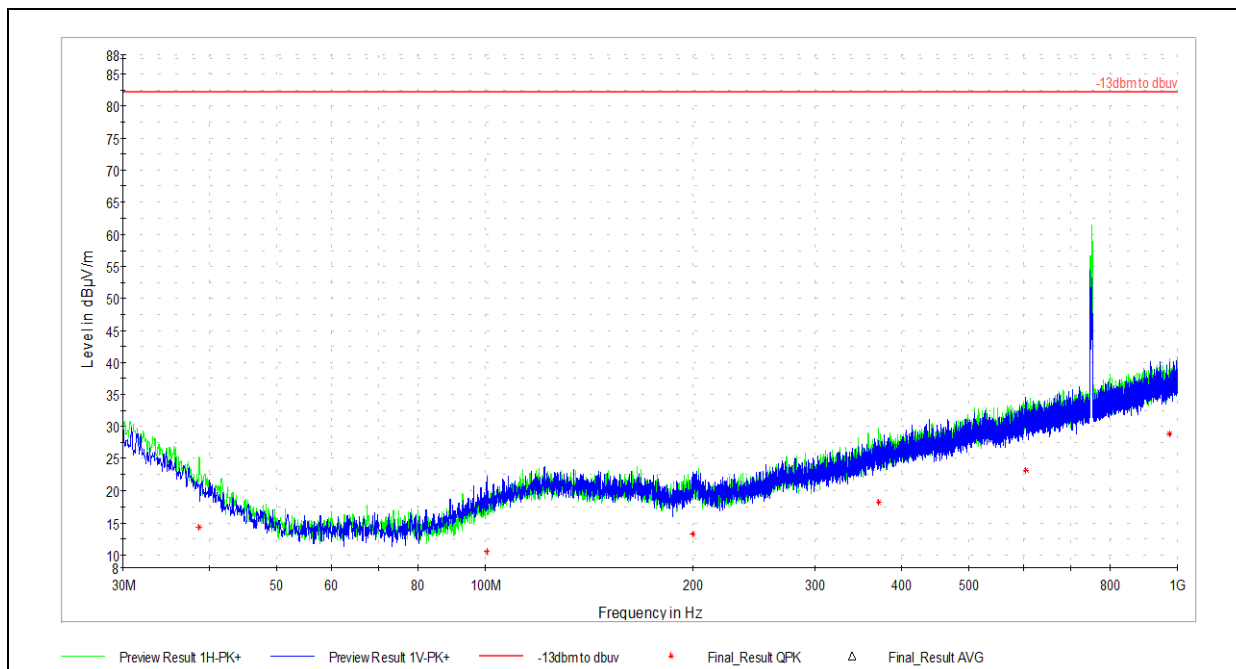
Test Personnel: Jeremiah Andrade
 Supervising/Reviewing Engineer: Michael Carlson
 (Where Applicable)
 Product Standard: FCC Part 27
 Input Voltage: 3.7 VDC Battery
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
 Limit Applied: -13dBm converted to field strength
 Ambient Temperature: 23.5C
 Relative Humidity: 66.0%
 Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None



6.11.1.3 LTE Band 13



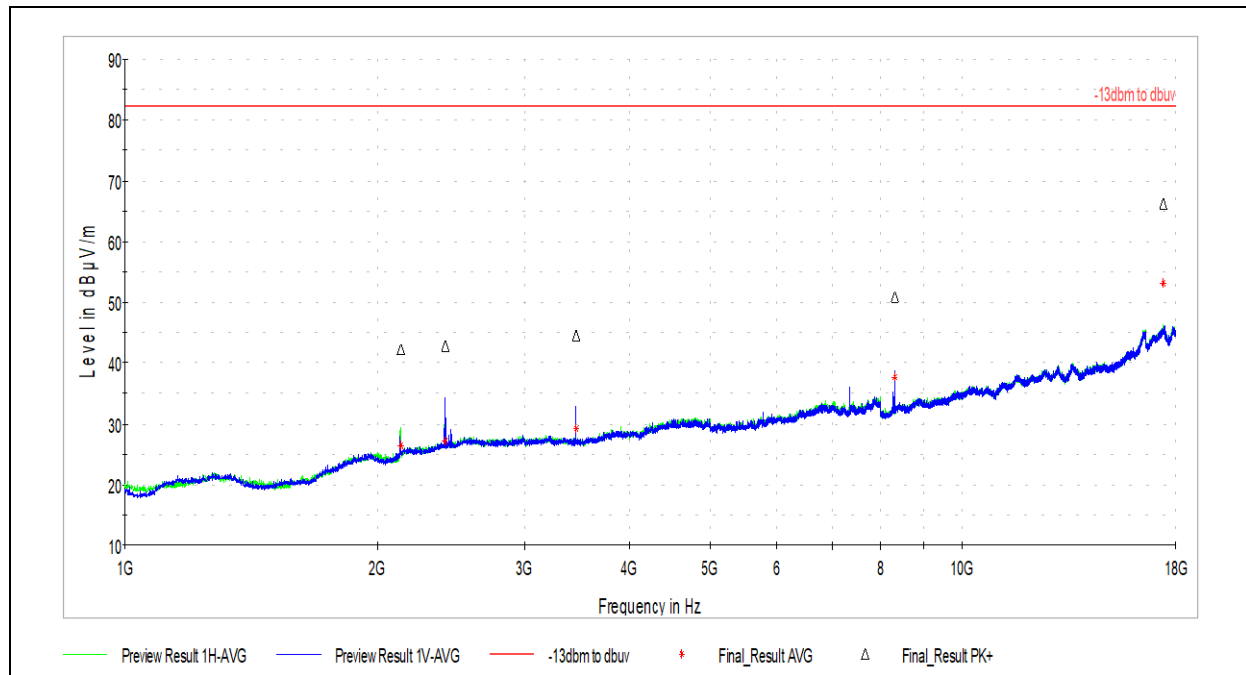
The large spike is the fundamental emission not subject to these limits.

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
38.676111	14.27	82.250	67.98	120.000	204.0	H	314.0	22.57
100.540556	10.54	82.250	71.71	120.000	120.0	V	123.0	19.34
199.965556	13.24	82.250	69.01	120.000	135.0	V	0.0	21.93
369.931111	18.26	82.250	63.99	120.000	265.0	H	0.0	25.94
604.725000	23.25	82.250	59.00	120.000	374.0	V	7.0	30.98
973.163333	28.82	82.250	53.43	120.000	255.0	H	246.0	37.00

Test Personnel: Jeremiah Andrade
 Supervising/Reviewing Engineer: Michael Carlson
 (Where Applicable)
 Product Standard: FCC Part 27
 Input Voltage: 3.7 VDC Battery
 Pretest Verification w / Ambient
 Signals or BB Source: Yes

Test Date: 8/25/2022
 Limit Applied: -13dBm converted to field strength
 Ambient Temperature: 23.5C
 Relative Humidity: 66.0%
 Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None

**6.11.2 Radiated Spurious Emissions, 1 GHz – 18 GHz****6.11.2.1 LTE Band 4**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2135.500000	42.21	82.250	40.04	1000.000	159.0	H	279.0	3.07
2410.500000	42.90	82.250	39.35	1000.000	410.0	V	0.0	4.05
3457.500000	44.41	82.250	37.84	1000.000	294.0	V	32.0	6.00
8308.500000	51.01	82.250	31.24	1000.000	146.0	V	0.0	13.96
17395.000000	66.22	82.250	16.03	1000.000	109.0	H	342.0	27.02

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2135.500000	26.38	82.250	55.87	1000.000	159.0	H	279.0	3.07
2410.500000	27.19	82.250	55.06	1000.000	410.0	V	0.0	4.05
3457.500000	29.14	82.250	53.11	1000.000	294.0	V	32.0	6.00
8308.500000	37.67	82.250	44.58	1000.000	146.0	V	0.0	13.96
17395.000000	53.18	82.250	29.07	1000.000	109.0	H	342.0	27.02

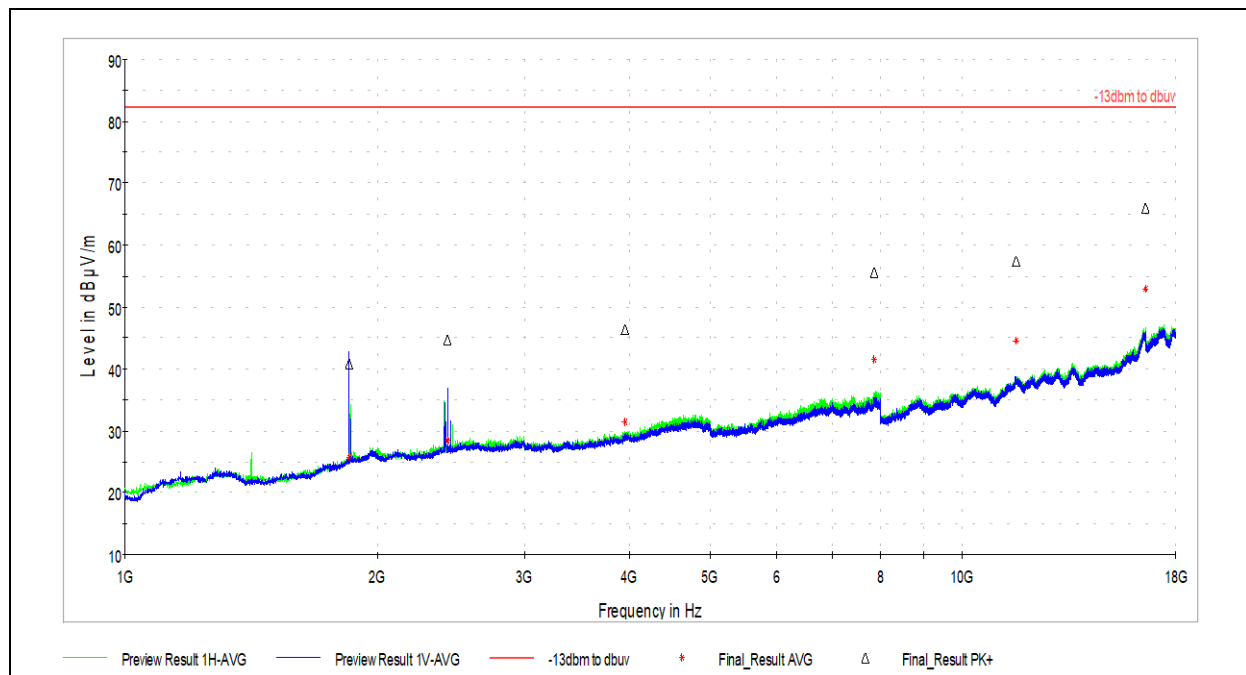
Test Personnel: David Perry
 Supervising/Reviewing Engineer: (Where Applicable) Brian Lackey
 Product Standard: FCC Part 27
 Input Voltage: 3.7 VDC Battery
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
 Limit Applied: -13dBm converted to field strength
 Ambient Temperature: 23.5C
 Relative Humidity: 66.0%
 Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None



6.11.2.2 LTE Band 12



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1851.500000	40.81	82.250	41.44	1000.000	198.0	V	135.0	2.21
2426.000000	44.69	82.250	37.56	1000.000	335.0	V	244.0	4.14
3956.000000	46.45	82.250	35.80	1000.000	319.0	H	0.0	7.48
7853.000000	55.64	82.250	26.61	1000.000	384.0	H	332.0	13.19
11607.500000	57.39	82.250	24.86	1000.000	262.0	H	306.0	19.18
16567.500000	66.09	82.250	16.16	1000.000	277.0	H	58.0	26.34

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1851.500000	25.74	82.250	56.51	1000.000	198.0	V	135.0	2.21
2426.000000	28.39	82.250	53.86	1000.000	335.0	V	244.0	4.14
3956.000000	31.48	82.250	50.77	1000.000	319.0	H	0.0	7.48
7853.000000	41.51	82.250	40.74	1000.000	384.0	H	332.0	13.19
11607.500000	44.51	82.250	37.74	1000.000	262.0	H	306.0	19.18
16567.500000	52.94	82.250	29.31	1000.000	277.0	H	58.0	26.34

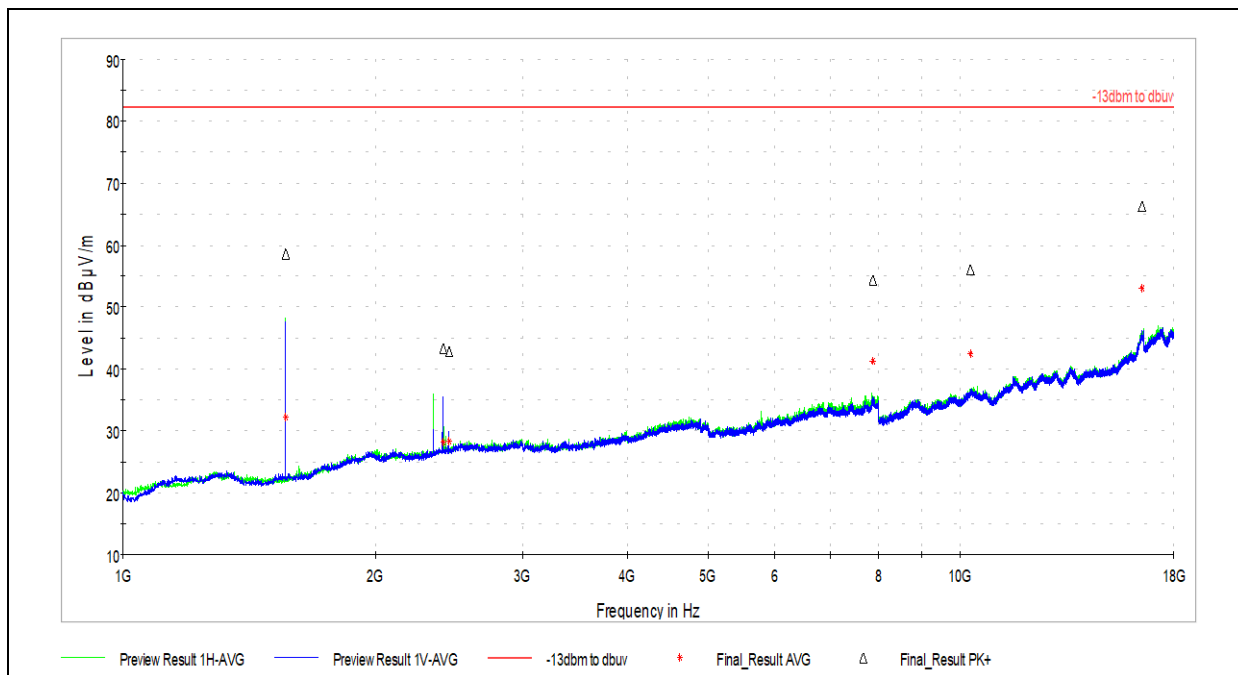
Test Personnel: Jeremiah Andrade
 Supervising/Reviewing Engineer: (Where Applicable) Michael Carlson
 Product Standard: FCC Part 27
 Input Voltage: 3.7 VDC Battery
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
 Limit Applied: -13dBm converted to field strength
 Ambient Temperature: 23.5C
 Relative Humidity: 66.0%
 Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None



6.11.2.3 LTE Band 13



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1564.000000	58.50	82.250	23.75	1000.000	395.0	H	271.0	-1.14
2412.000000	43.28	82.250	38.97	1000.000	210.0	V	247.0	4.06
2452.500000	42.83	82.250	39.42	1000.000	164.0	V	184.0	4.18
7865.500000	54.35	82.250	27.90	1000.000	410.0	H	79.0	13.23
10298.000000	56.08	82.250	26.17	1000.000	410.0	H	86.0	17.56
16506.000000	66.26	82.250	15.99	1000.000	146.0	V	220.0	26.11

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1564.000000	32.16	82.250	50.09	1000.000	395.0	H	271.0	-1.14
2412.000000	28.10	82.250	54.15	1000.000	210.0	V	247.0	4.06
2452.500000	28.25	82.250	54.00	1000.000	164.0	V	184.0	4.18
7865.500000	41.27	82.250	40.98	1000.000	410.0	H	79.0	13.23
10298.000000	42.43	82.250	39.82	1000.000	410.0	H	86.0	17.56
16506.000000	53.05	82.250	29.20	1000.000	146.0	V	220.0	26.11

Test Personnel: Jeremiah Andrade
 Supervising/Reviewing Engineer: (Where Applicable) Michael Carlson
 Product Standard: FCC Part 27
 Input Voltage: 3.7 VDC Battery
 Pretest Verification w / Ambient Signals or BB Source: Yes

Test Date: 8/25/2022
 Limit Applied: -13dBm converted to field strength
 Ambient Temperature: 23.5C
 Relative Humidity: 66.0%
 Atmospheric Pressure: 985.4mbar

Deviations, Additions, or Exclusions: None



7 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	9/13/2022	104993808LEX-001	BZ	JTS	Original Issue
1	10/20/2022	104993808LEX-001.1	BZ	JTS	Updated per TCB feedback
2	12/13/2022	104993808LEX-001.2	BZ	JTS	Updated per TCB feedback