

FCC ISED RF Test Report

Test Report Number	AXN-22061451-LC-FCC IC-TNT		
FCC ID	2AEEGS		
IC	20225-S		
Applicant	Axonics Modulation Technologies, Inc.		
Applicant Address	7575 Irvine Center Drive Suite 200, Irvine, CA 92618		
Product Name	Implantable Pulse Generator (IPG)		
Model (s)	5101		
Date of Receipt	10/10/2022		
Date of Test	10/10/2022- 10/13/2022		
Report Issue Date	10/21/2022		
Test Standards	47 CFR Part 95 Subpart I RSS 243 Issue3, February 2010		
Test Result	PASS		
		Issued by: Vista Compliance Laboratories 1261 Puerta Del Sol, San Clemente, CA 92673 USA www.vista-compliance.com	
 Devin Tai (Test Engineer)		 David Zhang (Technical Manager)	
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REVISION HISTORY

Report Number	Version	Description	Issued Date
AXN-22061451-LC-FCC IC-TNT	01	Initial report	10/21/2022

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1 Test Summary

Test Item	Test Requirement	Test Method	Result
Frequency Stability	FCC 95.2565 FCC 2.1055 RSS-243 § 5.3	ANSI C63.26-2015	Pass
Emission Bandwidth	FCC 95.2573(a) & 2563(a) FCC 2.1047 RSS-GEN	ANSI C63.26-2015	Pass
Emission Mask	FCC 95.2579(a)(c) RSS-243 § 5.5 (b)	ANSI C63.26-2015 RSS-Gen Issue 5, Feb 2021	Pass
Occupied Bandwidth	FCC 2.1049 RSS-GEN § 6.7	ANSI C63.26-2015 RSS-Gen Issue 5, Feb 2021	Pass
Transmitter Conducted Output Power	FCC 2.1046 RSS-Gen § 6.12	RSS-Gen Issue 5, Feb 2021	Pass
MedRadio equivalent isotropic radiated power (M-EIRP)	FCC 95.2567(a)(1) FCC 2.1046 RSS-243 § 5.4	ANSI C63.26-2015	Pass
Transmitter Unwanted Emission	FCC 95.2579(a)(1) & (c) & (g) FCC 2.1053 RSS-243 § 5.5 (a)	ANSI C63.26-2015	Pass
Spurious Conducted Emissions	FCC 95.2579(a)(1) & (c) & (g) FCC 2.1053	ANSI C63.26-2015	Pass
Receiver Spurious Radiated Emissions	RSS-GEN § 7.3 RSS-243 § 7.3	ANSI C63.26-2015 RSS-Gen Issue 5, Feb 2021	Pass

2 General Information

2.1 Applicant

Applicant	Axonics Modulation Technologies, Inc.
Applicant address	7575 Irvine Center Drive Suite 200, Irvine, CA 92618
Manufacturer	Axonics Modulation Technologies, Inc.
Manufacturer Address	7575 Irvine Center Drive Suite 200, Irvine, CA 92618

2.2 Product information

Product Name	Implantable Pulse Generator (IPG)
Model Number	5101
Family Models	N/A
Serial Number	AX9H150423
Frequency Band	MedRadio (MICS) 402-405 MHz, 300KHz channel spacing
Type of modulation	2-FSK
Equipment Type	Medical Devices
Equipment Class	TNT
Radio type	MedRadio (MICS), implant
Antenna Information	Integral Antenna
Clock Frequencies	N/A
Input Power	Internal battery 3.65V (nominal)
Power Adapter	N/A
Manufacturer/Model	
Power Adapter SN	N/A
Hardware version	N/A
Software version	N/A
Additional Info	N/A

2.3 Test standard and method

Test standard	47 CFR Part 95 Subpart I RSS 243 Issue3, February 2010
Test method	ANSI C63.26-2015 RSS-Gen Issue 5, Feb 2021

3 Test Site Information

Lab performing tests	Vista Laboratories, Inc.
Lab Address	1261 Puerta Del Sol, San Clemente, CA 92673 USA
Phone Number	+1 (949) 393-1123
Website	www.vista-compliance.com

Test Condition	Temperature	Humidity	Atmospheric Pressure
RF Testing	23.2°C	57.5%	996 mbar
Radiated Emission Testing	23.2°C	57.5%	996 mbar

4 Modification of EUT / Deviations from Standards

The EUT is an engineering test sample loaded with RF testing firmware specifically designed to support the RF TX/RX measurement in different aspects.

5 Test Configuration and Operation

5.1 EUT Test Configuration

EUT is set to different transmission mode in terms of radio mode bandwidth, power level, test channel, etc. EUT is placed into a test fixture (phantom) that simulates the human torso. The dimension of this phantom and the tissue-equivalent material used to fill this phantom comply with the requirement in 47cfr 95.2569 (c) and FCC KDB 617965.

The aforementioned liquid-filled phantom with mounting grid is placed on a turntable such that the implant transmitter is located at a nominal 1.5 m height above ground and at a 3 m distance from the measurement antenna.

The following software was used for testing and to monitor EUT performance

Software	Description
EMISoft Vasona	EMC/RF Spurious emission test software used during testing

Operating frequency list (9 channels):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	402.3 (Lowest)	5	403.8
1	402.6	6	404.1
2	402.9	7	404.4
3	403.2	8	404.7 (Highest)
4	403.5 (Middle)		

5.2 Supporting Equipment

For Radiated test setup

Description	Manufacturer	Model #	Serial #	Software	Remark
Lead	Axonics, Inc.	1201	AL1T701967	N/A	Provide by client
PR	Axonics, Inc.	2301	AP1F590001	V72	Provide by client
IpgLink	Axonics, Inc.	N/A	N/A	1.0.1.148	Provide by client
Laptop	Dell	Latitude 7490	25825576862	N/A	Provide by client

For Conducted test setup

Description	Manufacturer	Model #	Serial #	Software	Remark
PCBA Board	Axonics, Inc.	TE-1742	WX2145004	N/A	Provide by client
PRComms	Axonics, Inc.	1300	AP1F590001	V40	Provide by client
IpgLink	Axonics, Inc.	N/A	N/A	1.0.1.148	Provide by client
DC Power Supply	GW INSTEK	GPD-3303S	GE0861898	N/A	Provide by client

6 Uncertainty of Measurement

Test item	Measurement Uncertainty (dB)
RF Output Power (Conducted)	±1.2 dB
Power Spectral Density	±0.9 dB
Unwanted Emission (conducted)	±2.6 dB
Occupied Channel Bandwidth	±5 %
Radiated Emission (9KHz-30MHz)	±3.5 dB
Radiated Emission (30MHz-1GHz)	±4.6 dB
Radiated Emission (1-18GHz)	±4.9 dB
Radiated Emission (18-40GHz)	±3.5 dB

7 Test Results

7.1 Frequency stability

7.1.1 Requirement

§ 95.2565,

The frequency error for equipment operating in the 402 MHz to 405 MHz band shall not exceed ± 100 ppm under normal, extreme or any intermediate set of conditions.

(a) 25 °C to 45 °C in the case of medical implant transmitters; and

(b) 0 °C to 55 °C in the case of MedRadio programmer/control transmitters and medical body-worn transmitters.

RSS-243 §5.3

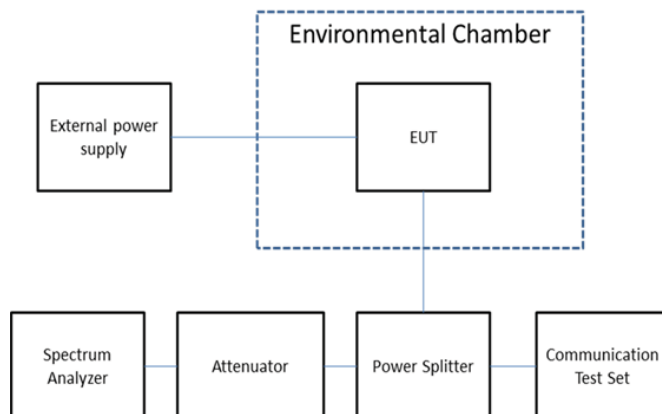
The carrier frequency shall not depart from the reference frequency in excess of ± 100 parts per million.

RSS-243 §3.3

(b) For internal and body-worn medical devices:

(i) at temperatures of +25°C, +37°C and +45°C, and at the manufacturer's rated operating voltage.

7.1.2 Test Setup



7.1.3 Test Procedure

According to section 5.6.3 of ANSI C63.26-2015:

- Device is placed at the environmental chamber. The environmental chamber could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be recording the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be holding the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. Each temperature step shall be at least 60 second ~ 10 minutes, consider the EUT could be test under the stability condition.

7.1.4 Result

Low CH						
Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Measured Frequency (MHz)	Frequency error (ppm)	Limit (ppm)	Result
3.65	20	402.3	402.29780	-5.469	±100	PASS
	25	402.3	402.29770	-5.717		
	35	402.3	402.29745	-6.339		
	37	402.3	402.29715	-7.084		
	45	402.3	402.29690	-7.706		
3.15	25	402.3	402.29760	-5.966		
4.05	25	402.3	402.29760	-5.966		

Mid CH						
Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Measured Frequency (MHz)	Frequency error (ppm)	Limit (ppm)	Result
3.65	20	403.5	403.49745	-6.320	±100	PASS
	25	403.5	403.49740	-6.444		
	35	403.5	403.49710	-7.187		
	37	403.5	403.49690	-7.683		
	45	403.5	403.49660	-8.426		
3.15	25	403.5	403.49725	-6.815		
4.05	25	403.5	403.49730	-6.691		

High CH						
Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Measured Frequency (MHz)	Frequency error (ppm)	Limit (ppm)	Result
3.65	20	404.7	404.69720	-6.919	±100	PASS
	25	404.7	404.69715	-7.042		
	35	404.7	404.69675	-8.031		
	37	404.7	404.69665	-8.278		
	45	404.7	404.69625	-9.266		
3.15	25	404.7	404.69700	-7.413		
4.05	25	404.7	404.69700	-7.413		

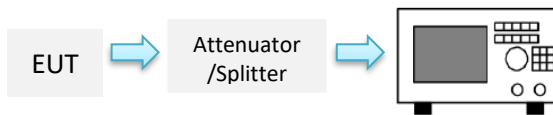
7.2 Emission Bandwidth (20dB bandwidth)

7.2.1 Requirement

§ 95.2573 (a), RSS-243 3.2

For MedRadio transmitters operating in the 402-405 MHz band, the maximum MedRadio emission bandwidth is 300 kHz. Such transmitters must not use more than 300 kHz of bandwidth (total) during a MedRadio communications session. This provision does not preclude full duplex or half duplex communications provided that the total bandwidth of all of the channels employed in a MedRadio communications session does not exceed 300 kHz.

7.2.2 Test Setup



7.2.3 Test Procedure

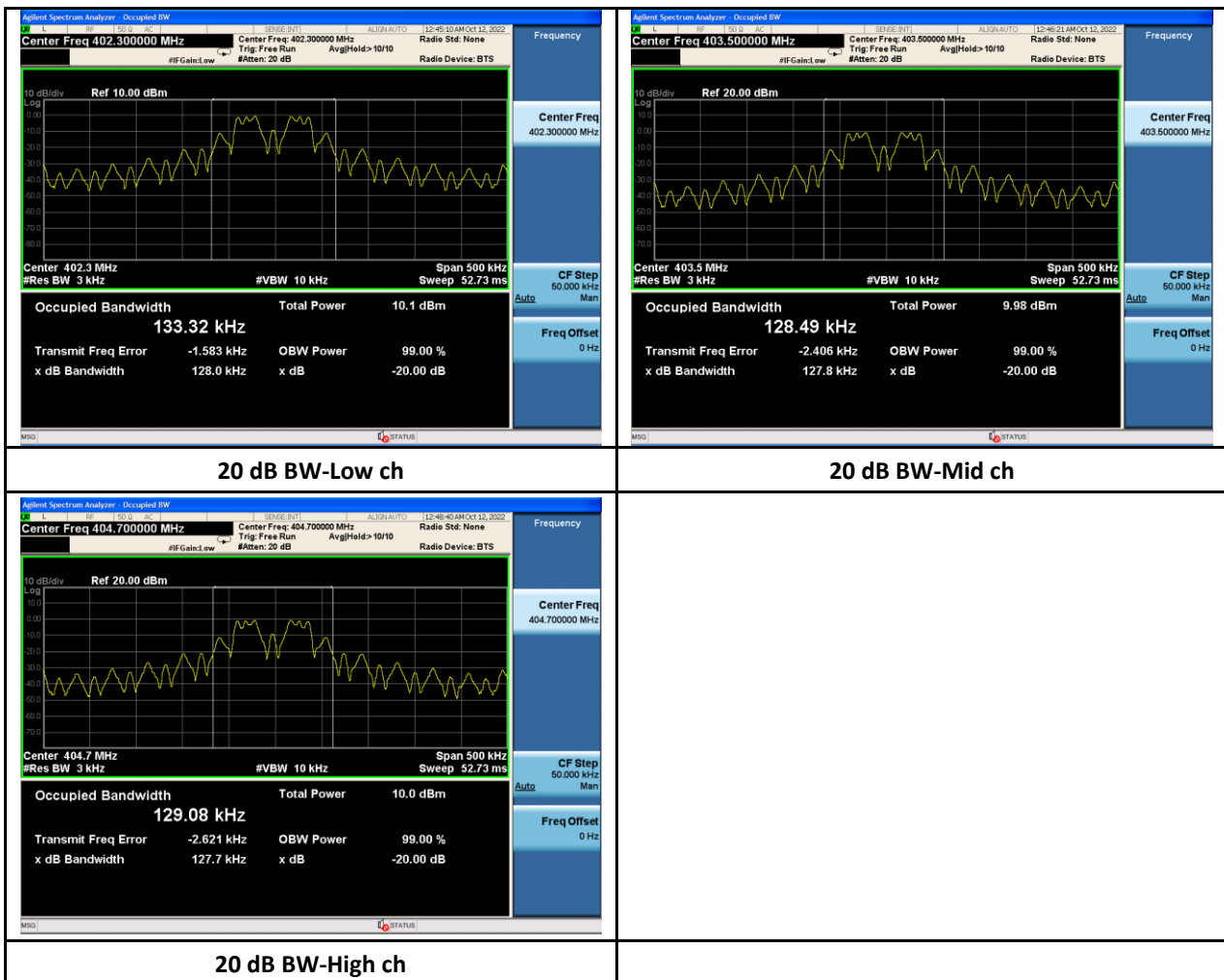
According to section 5.4.3 of ANSI C63.26-2015:

1. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
2. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set to $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Use automatic bandwidth measurement capability on instrument to obtain BW result.

7.2.4 Test Result

Modulation	Frequency (MHz)	Measured 20dB Bandwidth (kHz)	Limit (kHz)	Result
2-FSK	402.3	128.0	300	Pass
	403.5	127.8	300	Pass
	404.7	127.7	300	Pass

7.2.5 Test Plots



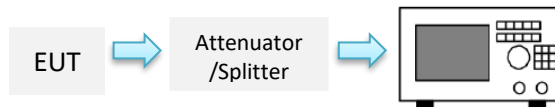
7.3 Occupied Bandwidth (99%)

7.3.1 Requirement

RSS-Gen §6.7

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

7.3.2 Test Setup



7.3.3 Test Procedure

According to section RSS-Gen §6.7 and 5.4.4 of ANSI C63.26-2015:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW $\geq 3 \times$ RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

1. Set RBW = 1% to 5% of the actual occupied BW.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Span = large enough to capture all products of the modulation process
7. Allow the trace to stabilize.
8. Use automatic bandwidth measurement capability on instrument to obtain BW result.

7.3.4 Test Result

Modulation	Frequency (MHz)	99% Occupied Bandwidth (KHz)	Limit (kHz)	Result
2-FSK	402.3	133.32	N/A	N/A
	403.5	128.49	N/A	N/A
	404.7	129.08	N/A	N/A

7.3.5 Test Plots

Please refer to section 7.2.5

7.4 Emission Mask

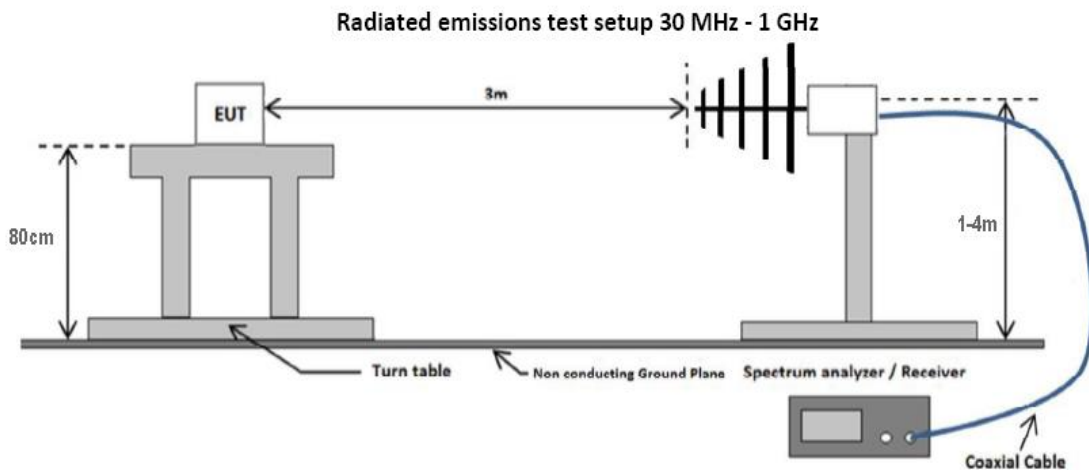
7.4.1 Requirement

§ 95.2579 (a) (c), RSS-243 §5.5 (b)

Attenuation requirements, 402-405 MHz. For MedRadio transmitter types designed to operate in the 402-405 MHz band, unwanted emissions must be attenuated below the maximum permitted transmitter output power by at least:

- (1) 20 dB, on any frequency within the 402-405 MHz band that is more than 150 kHz away from the center frequency of the MedRadio channel the transmission is intended to occupy;
- (2) 20 dB, on any frequency between 401.750 MHz and 402.000 MHz, and on any frequency between 405 MHz and 405.250 MHz.

7.4.2 Test Setup



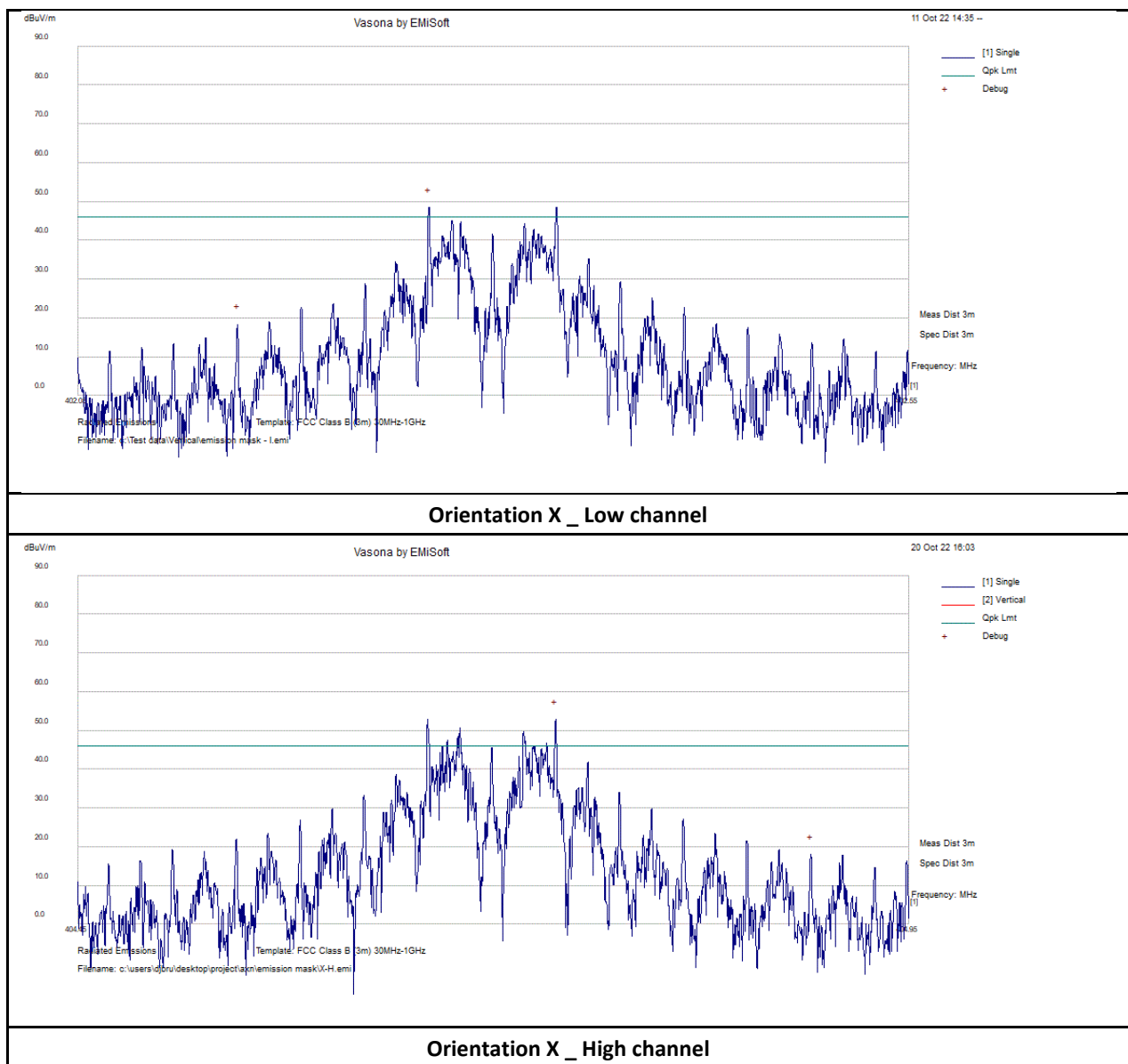
7.4.3 Test Procedure

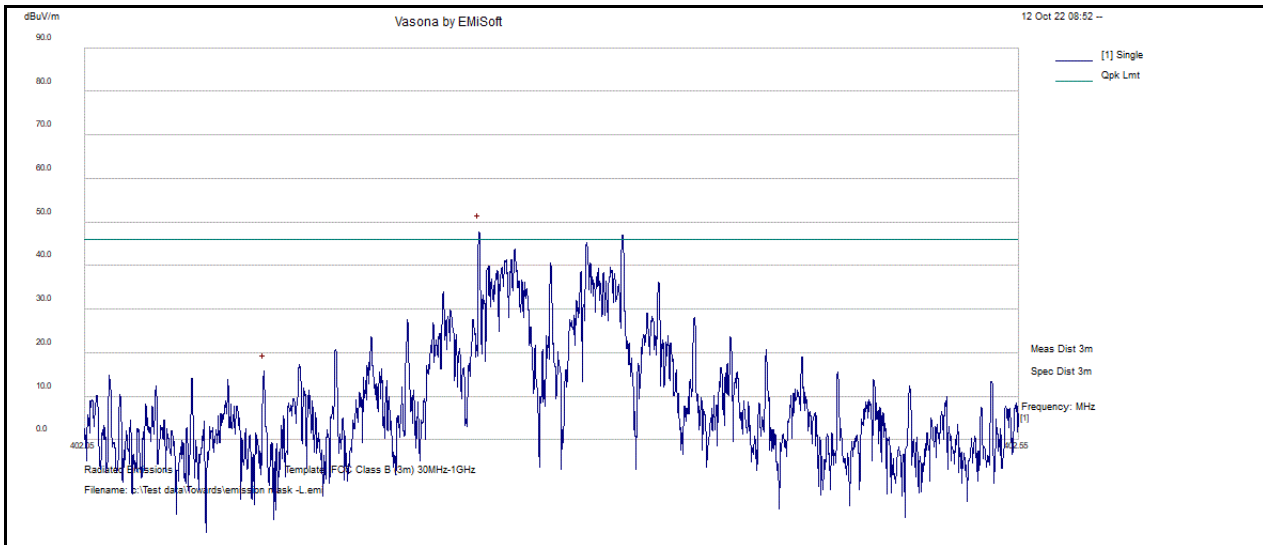
1. The emission bandwidth was radiated measurement.
2. EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power.
3. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 3kHz and VBW = 10kHz. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB (spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth).

7.4.4 Test Result

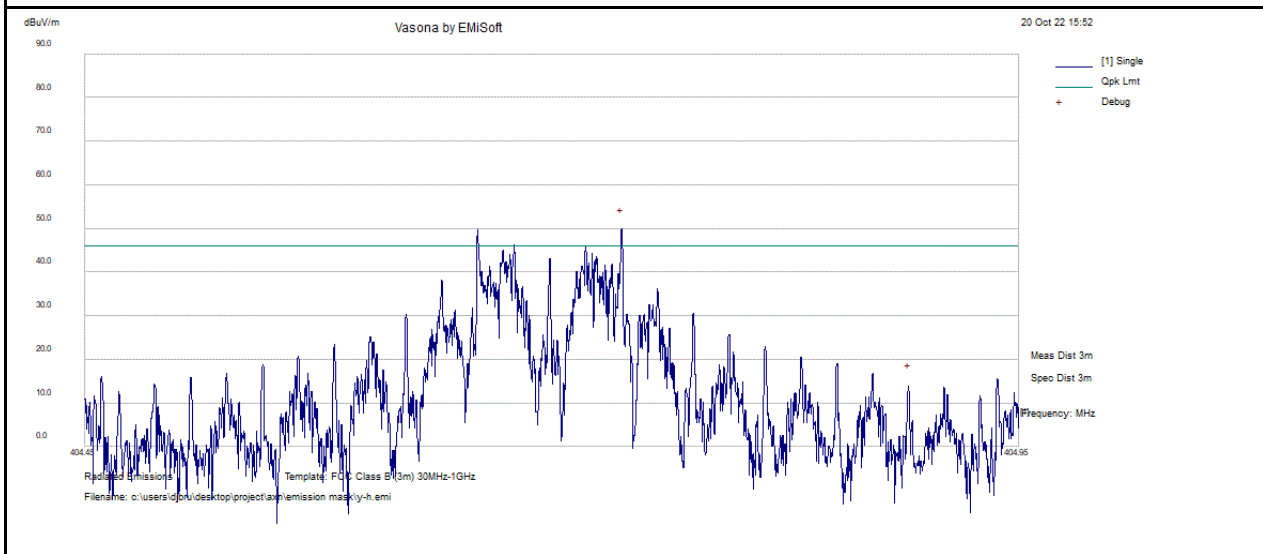
Orientation	Channel Frequency (MHz)	Measured Frequency F _H (MHz)	Emission Level F _H (dBuV)	Measured Frequency F _L (MHz)	Emission Level F _L (dBuV)	Δ (F _L -F _H) (dBc)	Limit dBc	Result
X	402.3	402.261	48.4	402.146	18.2	-30.2	-20	Pass
	404.7	404.737	52.7	404.891	17.9	-34.8	-20	Pass
Y	402.3	402.261	47.3	402.146	13.0	-34.3	-20	Pass
	404.7	404.737	49.6	404.891	13.9	-35.7	-20	Pass
Z	402.3	402.261	51.8	402.146	20.4	-31.4	-20	Pass
	404.7	404.737	51.9	404.891	16.7	-35.2	-20	Pass

7.4.5 Test Plots

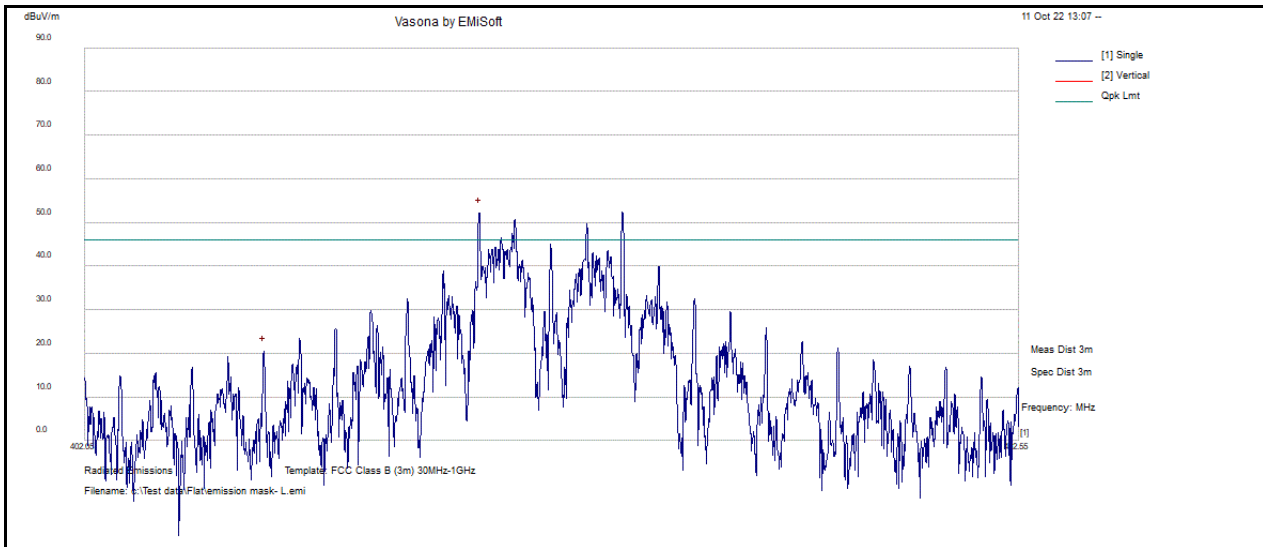




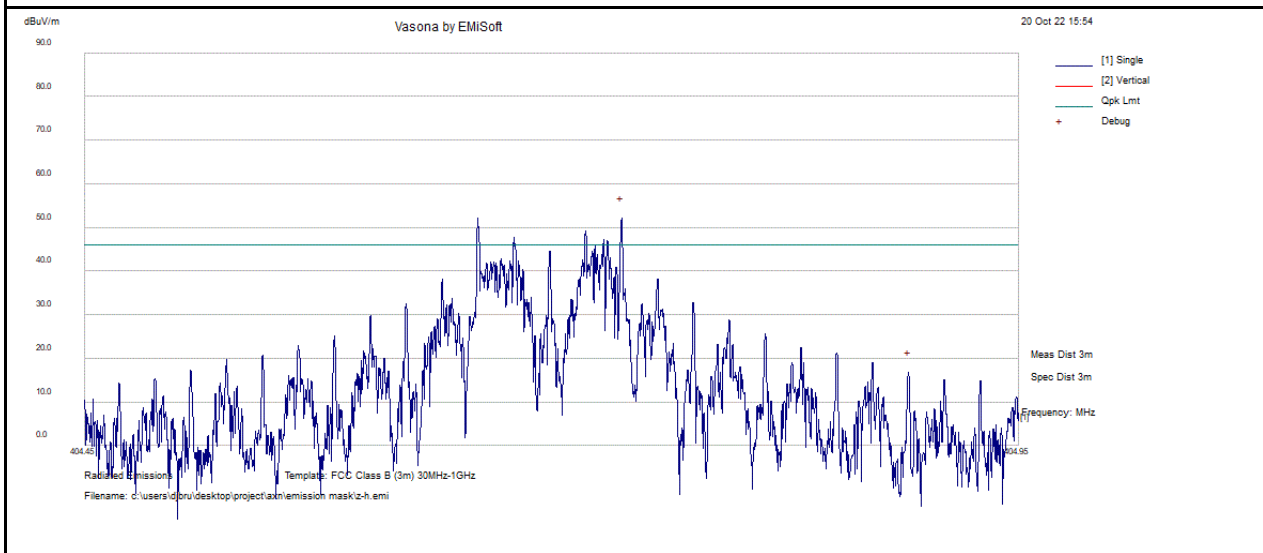
Orientation Y _ Low channel



Orientation Y _ High channel



Orientation Z _ Low channel



Orientation Z _ High channel

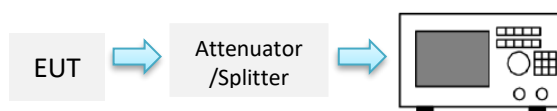
7.5 Transmitter conducted output power

7.5.1 Requirement

§ 2.1046, RSS-GEN § 6.12

No conducted output power limit requirement, reference only.

7.5.2 Test Setup



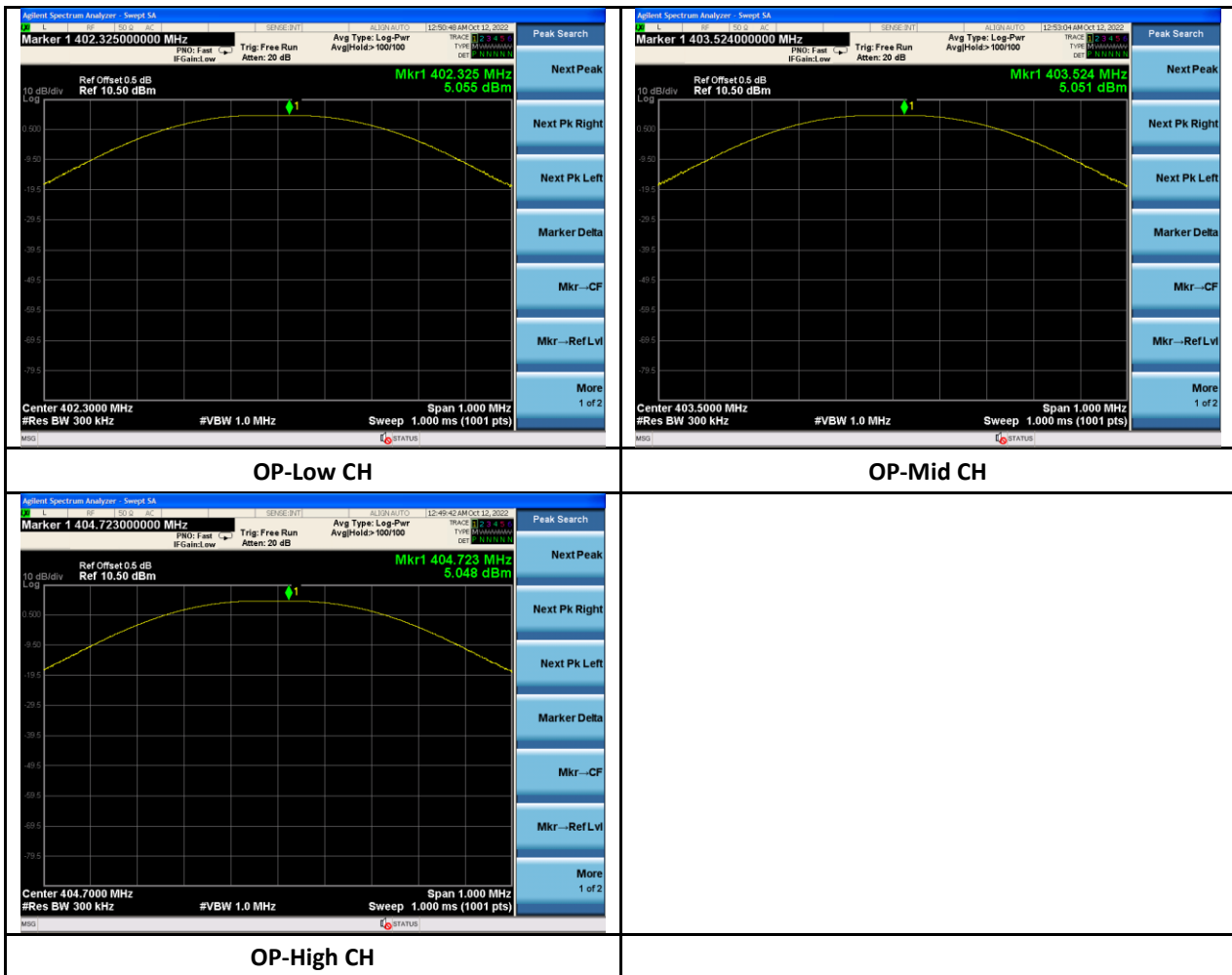
7.5.3 Test Procedure

1. Set analyser centre frequency to nominal EUT channel centre frequency.
2. Set the span wide enough to capture the fundamental emission bandwidth.
3. Set the RBW to: $RBW \geq 300 \text{ kHz}$.
4. Set the VBW $\geq 3 \times RBW$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.

7.5.4 Test Result

Modulation	Frequency (MHz)	Measured Output power (dBm)	Limit (dBm)	Result
2-FSK	402.3	5.055	N/A	N/A
	403.5	5.051	N/A	N/A
	404.7	5.048	N/A	N/A

7.5.5 Test Plots



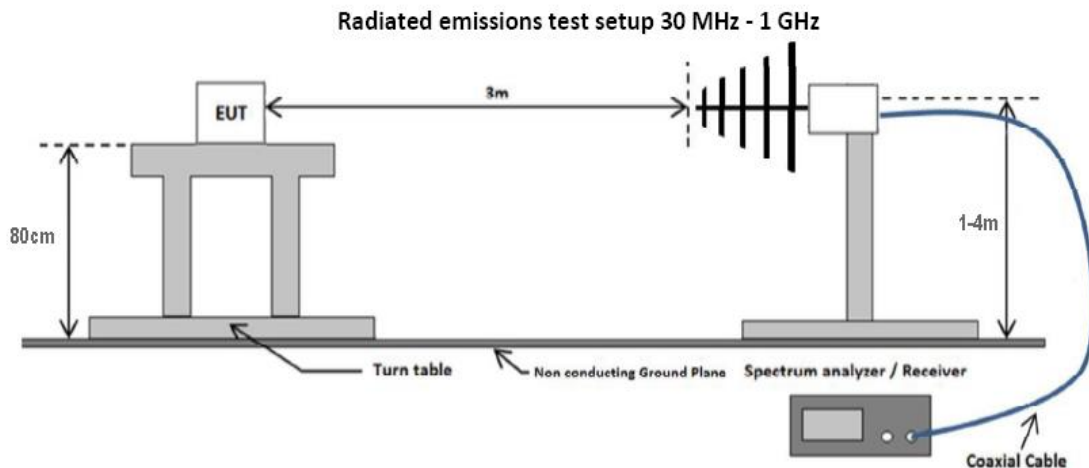
7.6 MedRadio equivalent isotropic radiated power (M-EIRP)

7.6.1 Requirement

§ 95.2567 (a) (1), RSS-243 §5.4

The M-EIRP within any 300 kHz bandwidth within the 402-405 MHz band must not exceed 25 microwatts.

7.6.2 Test Setup



7.6.3 Test Procedure

According to ANSI C63.26-2015 clause 6.2.3

The medical implant transmitter must be configured to transmit continuously at maximum power over the measurement duration.

1. The EUT located at a nominal 1.5 m height above ground and at a 3 m distance from the measurement antenna, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
2. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
4. Following C63.26 section 5.5 and 5.2.7.
 - $EIRP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
 - $ERP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.
5. Repeat above procedures until all measured frequencies were complete and record the results in the test report.

7.6.4 Test Result

Test standard	47 CFR Part 95 Subpart I RSS 243 Issue3, February 2010	Mode	Transmit Mode _ Low/Mid/High CH
Frequency range	Below 1G	Test Date	10/10/2022
Antenna Type/Polarity	Bi-Log/Hor & Ver	Test Personnel	Devin Tai
Remark	Orientation X	Test Result	Pass

Frequency (MHz)	Raw (dBuV)	Cable loss (dB)	AF (dB/m)	Correct Factor (dB/m)	Degree	Hgt (cm)	Pol (V/H)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
402.3	62.39	6.36	-7.97	-96.87	232	100	V	-34.48	-16.02	-18.46
402.3	59.44	6.36	-7.97	-96.87	278	200	H	-37.43	-16.02	-21.41
403.5	62.48	6.36	-8	-96.90	230	100	V	-34.42	-16.02	-18.40
403.5	59.22	6.36	-8	-96.90	279	200	H	-37.68	-16.02	-21.66
404.7	62.3	6.35	-8.02	-96.93	219	200	V	-34.63	-16.02	-18.61
404.7	58.85	6.35	-8.02	-96.93	285	199	H	-38.08	-16.02	-22.06

Remarks:

1. EIRP (dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. AF (dB/m) = Antenna Factor(dB/m) – Pre-Amplifier Factor(dB)
3. Correct Factor = AF + Cable loss + 20log(D) – 104.8
4. Margin value = EIPR – Limit value

Test standard	47 CFR Part 95 Subpart I RSS 243 Issue3, February 2010	Mode	Transmit Mode _ Low/Mid/High CH
Frequency range	Below 1G	Test Date	10/10/2022
Antenna Type/Polarity	Bi-Log/Hor & Ver	Test Personnel	Devin Tai
Remark	Orientation Y	Test Result	Pass

Frequency (MHz)	Raw (dBuV)	Cable loss (dB)	AF (dB/m)	Correct Factor (dB/m)	Degree	Hgt (cm)	Pol (V/H)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
402.3	57.62	6.36	-7.97	-96.87	234	100	V	-39.25	-16.02	-23.23
402.3	52.69	6.36	-7.97	-96.87	192	198	H	-44.18	-16.02	-28.16
403.5	56.34	6.36	-8	-96.90	323	100	V	-40.56	-16.02	-24.54
403.5	52.39	6.36	-8	-96.90	198	200	H	-44.51	-16.02	-28.49
404.7	58.82	6.35	-8.02	-96.93	228	100	V	-38.11	-16.02	-22.09
404.7	51.6	6.35	-8.02	-96.93	204	203	H	-45.33	-16.02	-29.31

Remarks:

1. EIRP (dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. AF (dB/m) = Antenna Factor(dB/m) – Pre-Amplifier Factor(dB)
3. Correct Factor = AF + Cable loss + 20log(D) – 104.8
4. Margin Value = EIRP – Limit value

Test standard	47 CFR Part 95 Subpart I RSS 243 Issue3, February 2010	Mode	Transmit Mode _ Low/Mid/High CH
Frequency range	Below 1G	Test Date	10/10/2022
Antenna Type/Polarity	Bi-Log/Hor & Ver	Test Personnel	Devin Tai
Remark	Orientation Z	Test Result	Pass

Frequency (MHz)	Raw (dBuV)	Cable loss (dB)	AF (dB/m)	Correct Factor (dB/m)	Degree	Hgt (cm)	Pol (V/H)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
402.3	61.36	6.36	-7.97	-96.87	198	109	V	-35.51	-16.02	-19.49
402.3	58.64	6.36	-7.97	-96.87	211	221	H	-38.23	-16.02	-22.21
403.5	61.09	6.36	-8	-96.90	203	100	V	-35.81	-16.02	-19.79
403.5	58.31	6.36	-8	-96.90	232	204	H	-38.59	-16.02	-22.57
404.7	61	6.35	-8.02	-96.93	183	114	V	-35.93	-16.02	-19.91
404.7	58.3	6.35	-8.02	-96.93	218	210	H	-38.63	-16.02	-22.61

Remarks:

1. EIRP (dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. AF (dB/m) = Antenna Factor(dB/m) – Pre-Amplifier Factor(dB)
3. Correct Factor = AF + Cable loss + 20log(D) – 104.8
4. Margin value = EIRP – Limit value

7.7 Transmitter Unwanted Spurious Emissions

7.7.1 Requirement

§ 95.2579, RSS-243 §5.5

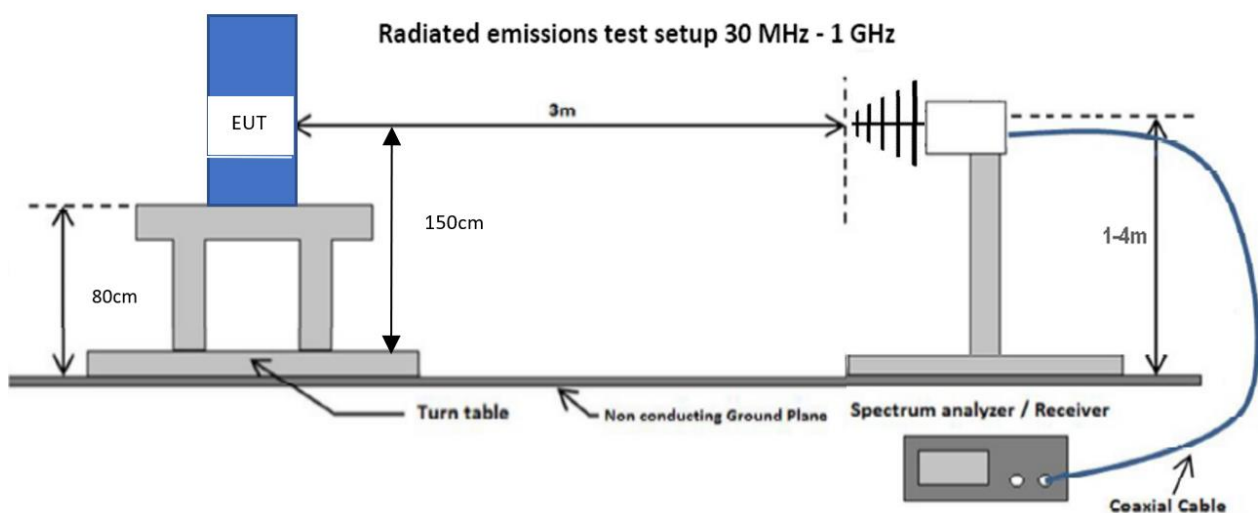
(a) Emissions from MICS devices more than 250 kHz outside of the 402-405 MHz band shall not exceed the field strength limits specified in Table.

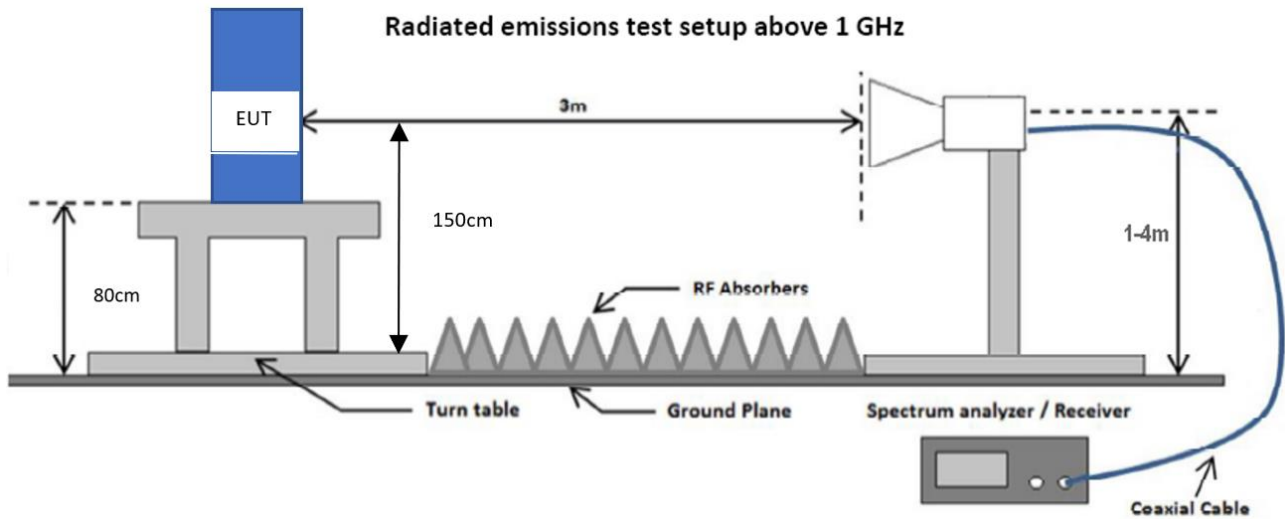
Frequency Range (MHZ)	Field Strength ($\mu\text{V/m}$)
30 – 88	100
88 – 216	150
216 960	200
Above 960	500

Radiated unwanted emissions from a MedRadio transmitter type must be measured to at least the tenth harmonic of the highest fundamental frequency emitted.

(b) Emissions within the 402-405 MHz MICS band which are more than 150 kHz away from the centre frequency of the spectrum, and the transmissions that occupy up to 250 kHz above and below the band shall be attenuated at least 20 dB below the maximum transmitter output power.

7.7.2 Test Setup





7.7.3 Test Procedure

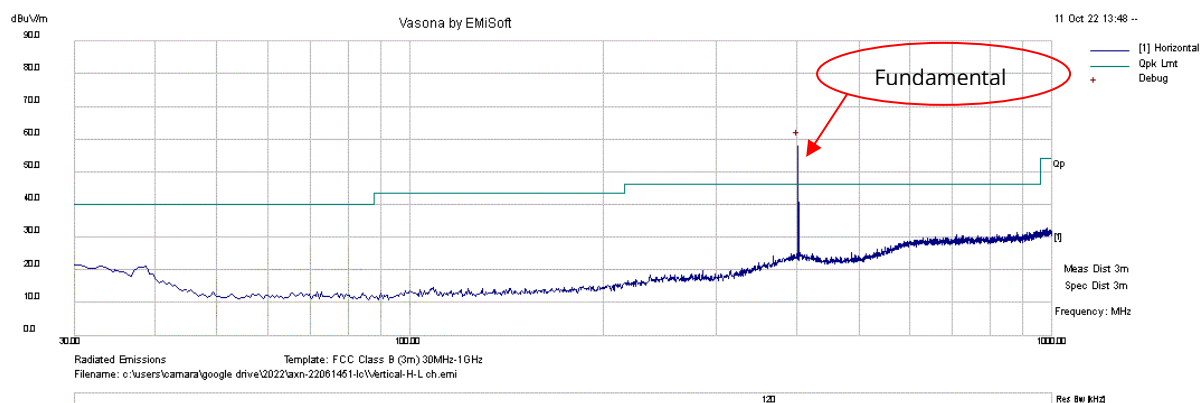
According to ANSI C63.26-2015 clause 5.5.2

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
 - a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
 - b. The EUT was then rotated to the direction that gave the maximum emission.
 - c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz for frequency below 150KHz.
4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 10 kHz for frequency between 150KHz – 30MHz.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-Peak detection at frequency between 30MHz - 1GHz.
6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak and average measurement at frequency above 1GHz.
7. Steps 2 and 3/4/5/6 were repeated for the next frequency point, until all selected frequency points were measured.

7.7.4 Test Result

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



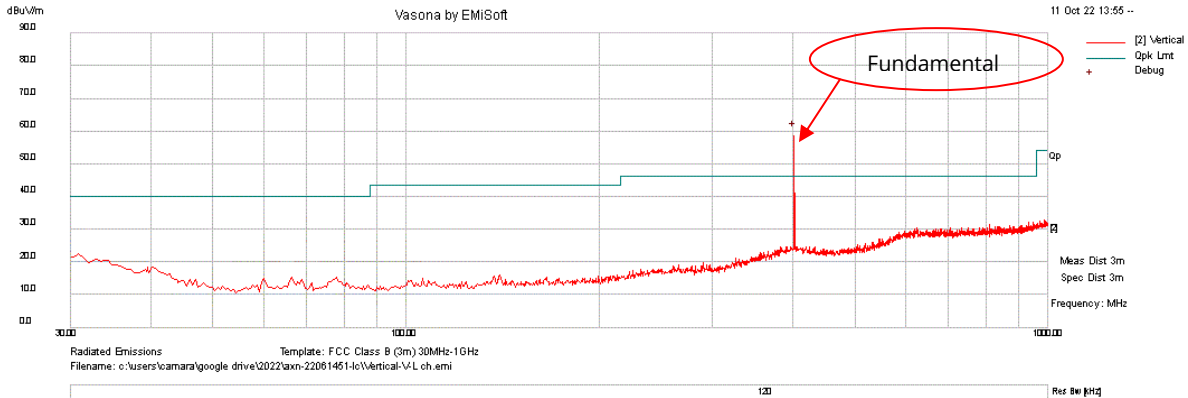
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.342	31.9	2.2	-11.5	22.6	Peak	H	400	0	40	-17.4	Pass
2	894.66	26.5	7.6	-3.7	30.4	Peak	H	400	360	46	-15.6	Pass
3	658.021	28.7	7.3	-5.2	30.8	Peak	H	400	360	46	-15.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



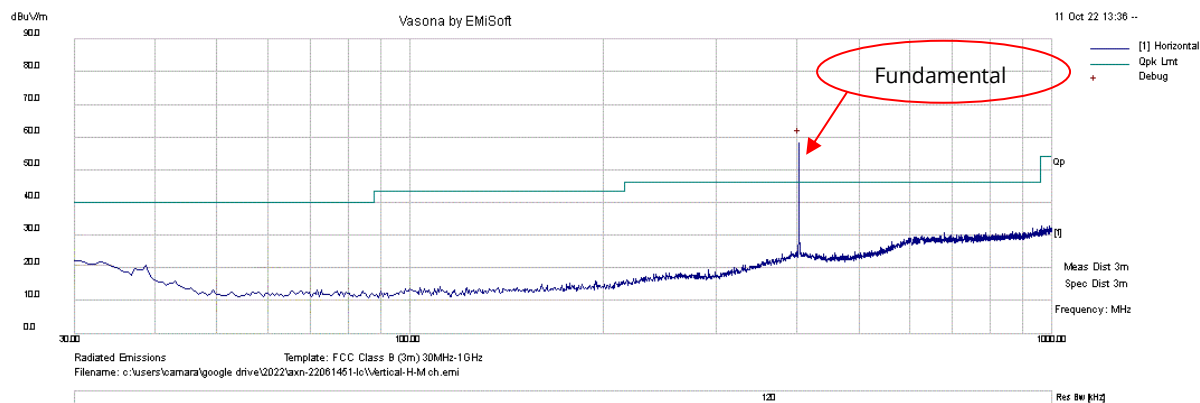
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	31.244	32.4	2.2	-11.5	23.1	Peak	V	200	0	40	-16.9	Pass
2	77.233	31.4	3.3	-20.2	14.5	Peak	V	107	360	40	-25.5	Pass
3	823.511	26.9	7.3	-4.1	30.1	Peak	V	100	360	46	-15.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



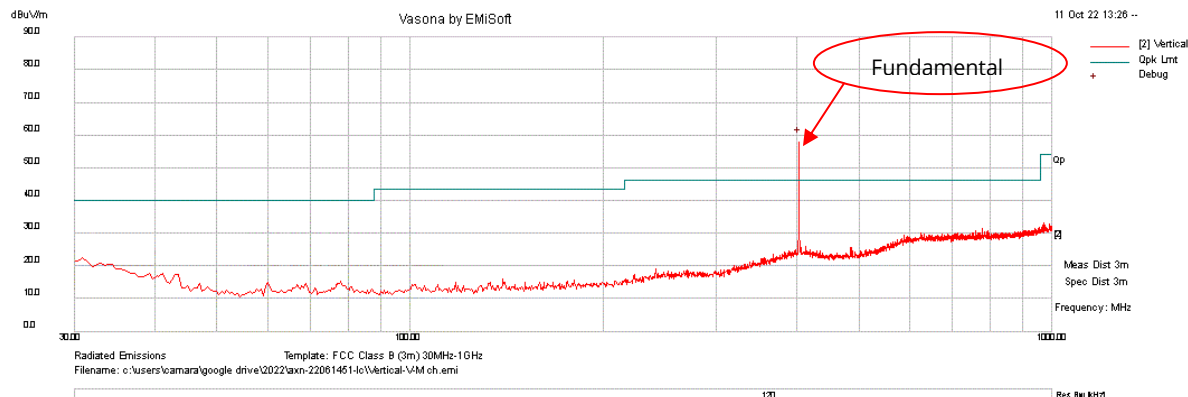
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.345	31.9	2.2	-11.5	22.6	Peak	H	400	0	40	-17.4	Pass
2	894.366	26.5	7.6	-3.7	30.4	Peak	H	400	360	46	-15.6	Pass
3	658.032	28.2	7.3	-5.2	30.3	Peak	H	400	360	46	-15.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



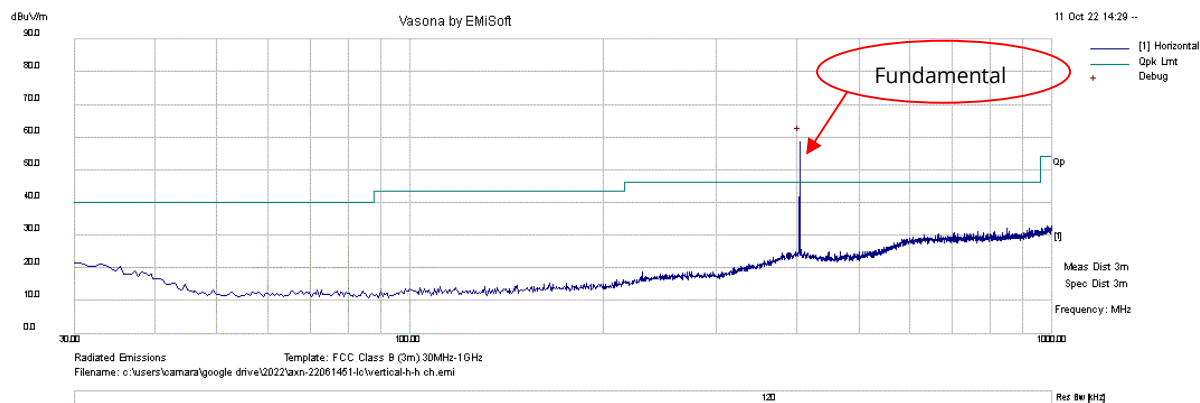
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	31.049	32.4	2.2	-11.5	23.1	Peak	V	200	0	40	-16.9	Pass
2	77.031	31.1	3.3	-20.2	14.2	Peak	V	400	360	40	-25.8	Pass
3	823.348	27.6	7.3	-4.1	30.8	Peak	V	100	360	46	-15.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



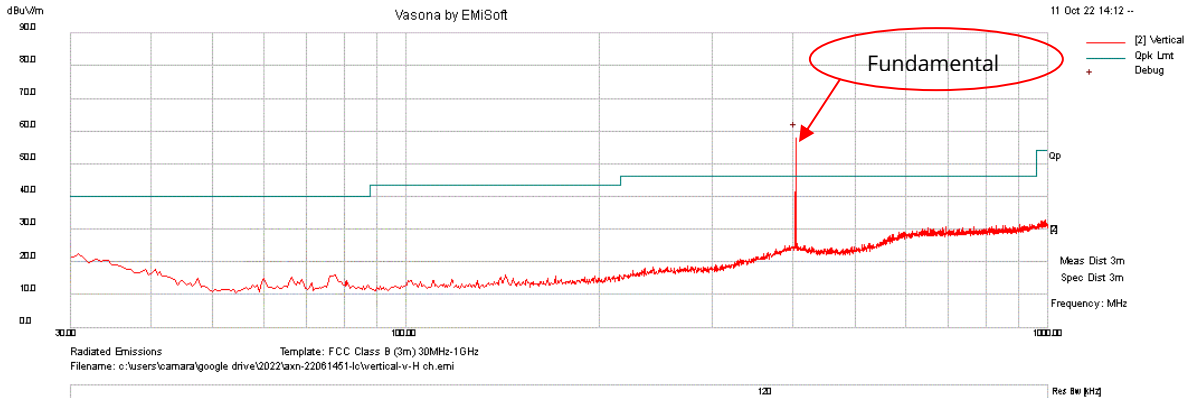
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	31.023	30.5	2.2	-11.5	21.2	Peak	H	300	0	40	-18.8	Pass
2	680.221	28.1	7.3	-5.3	30.1	Peak	H	400	360	46	-15.9	Pass
3	913.42	27.6	7.7	-3.4	31.9	Peak	H	207	360	46	-14.1	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



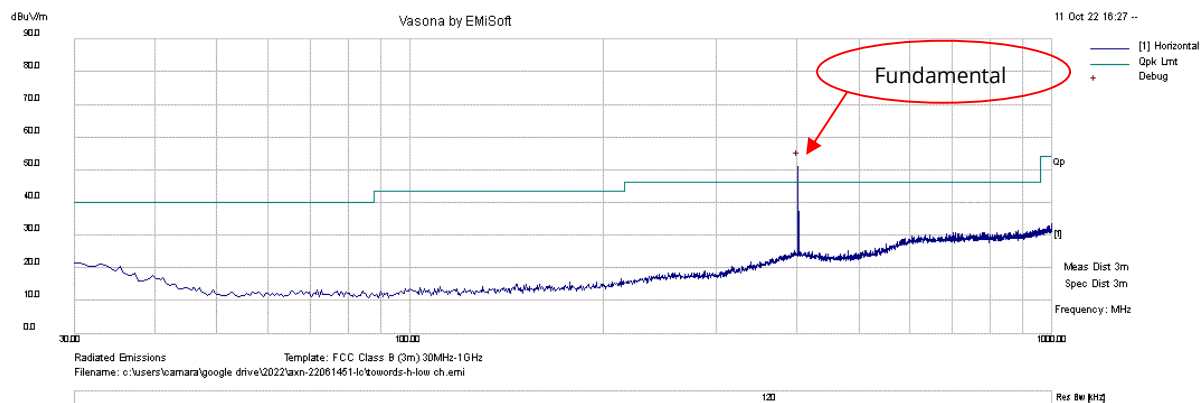
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	31.45	32.4	2.2	-11.5	23.1	Peak	V	100	0	40	-16.9	Pass
2	77.045	32.1	3.3	-20.2	15.2	Peak	V	100	360	40	-24.8	Pass
3	823.348	27	7.3	-4.1	30.2	Peak	V	100	360	46	-15.8	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



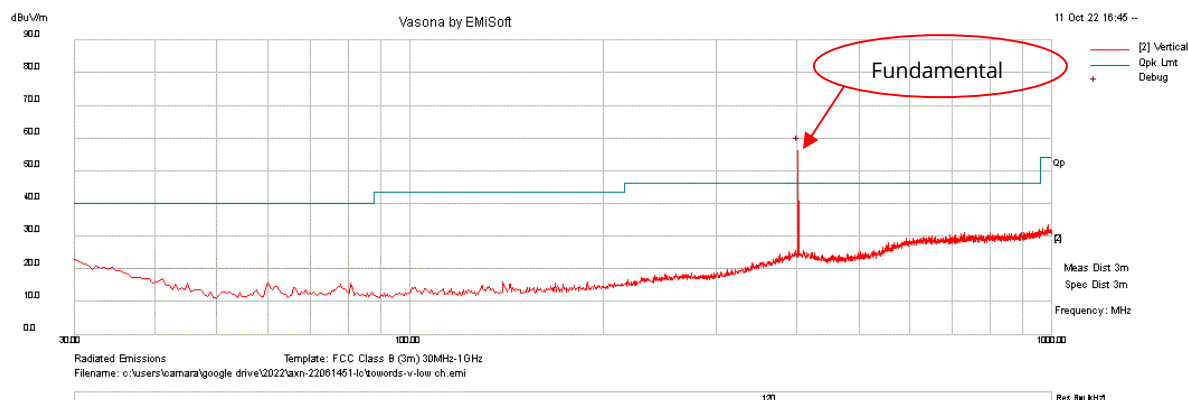
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.566	31.1	2.2	-11.5	21.8	Peak	H	400	0	40	-18.2	Pass
2	893.42	26.3	7.6	-3.7	30.2	Peak	H	400	360	46	-15.8	Pass
3	659.112	28	7.3	-5.2	30.1	Peak	H	400	360	46	-15.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



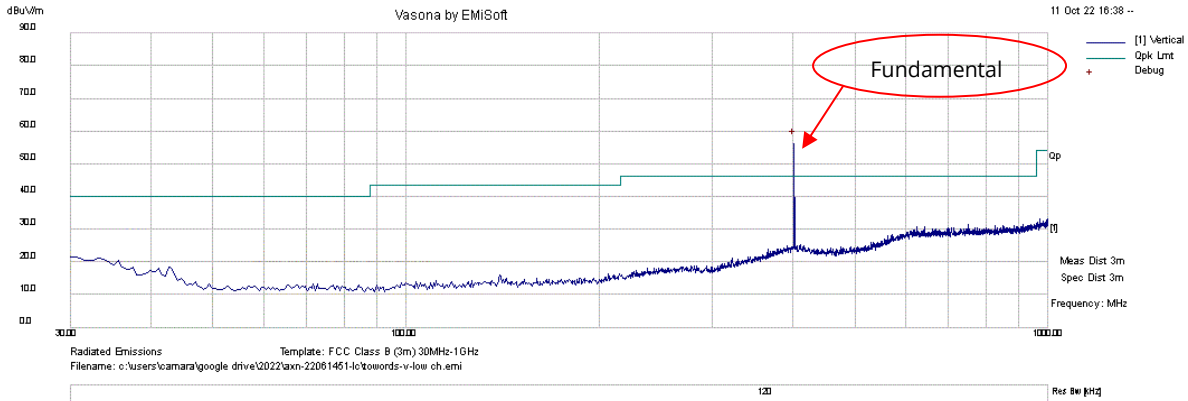
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30	32.6	2.2	-11.5	23.3	Peak	V	100	0	40	-16.7	Pass
2	60.07	32.8	3	-20.7	15.1	Peak	V	300	0	40	-24.9	Pass
3	823.348	26.9	7.3	-4.1	30.1	Peak	V	100	360	46	-15.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



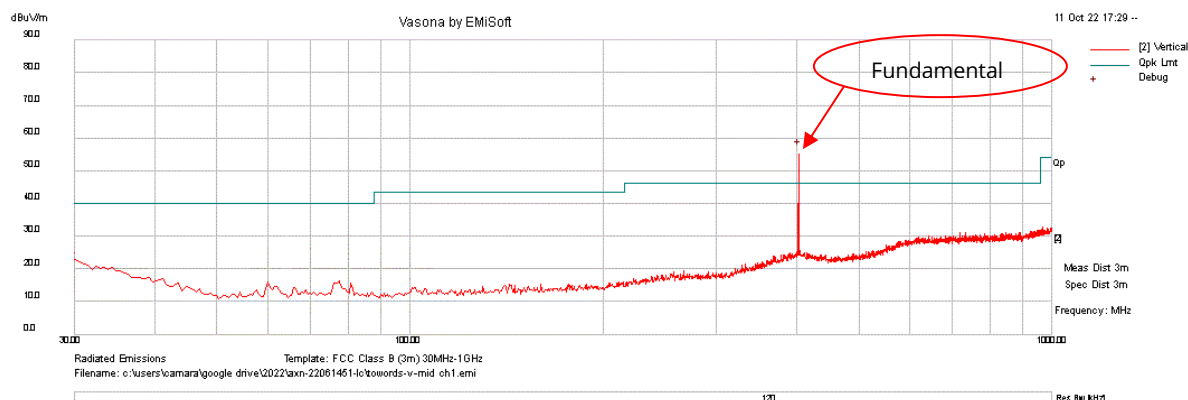
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.022	31.4	2.2	-11.5	22.1	Peak	H	400	0	40	-17.9	Pass
2	894.31	26.3	7.6	-3.7	30.2	Peak	H	207	360	46	-15.8	Pass
3	658.134	28	7.3	-5.2	30.1	Peak	H	40	360	46	-15.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



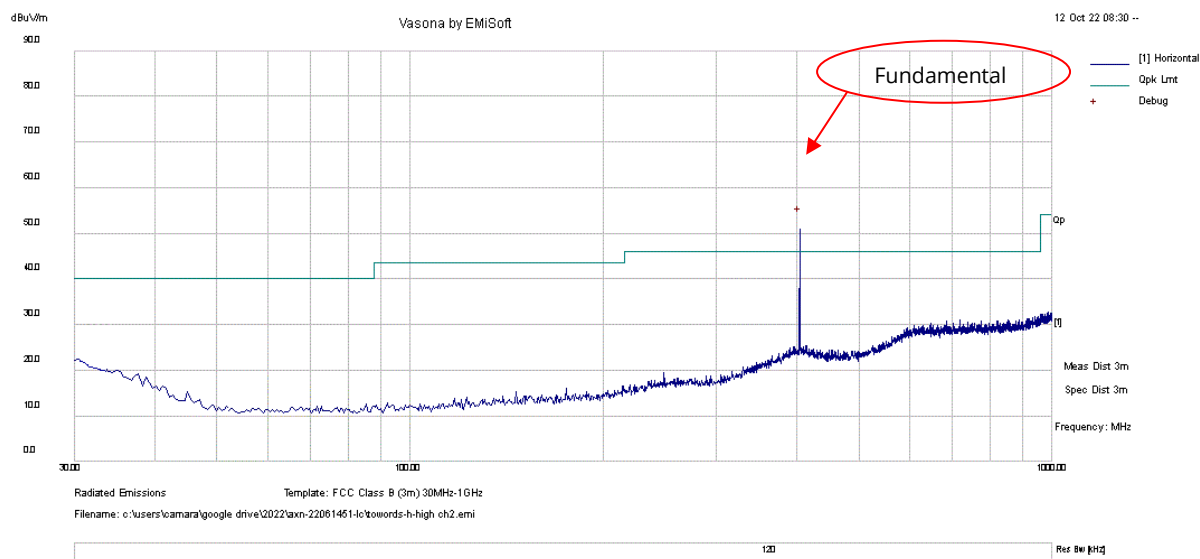
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30	41.4	2.2	-11.5	32.1	Peak	V	400	0	40	-7.9	Pass
2	77.045	32.1	3.3	-20.2	15.2	Peak	V	100	0	40	-24.8	Pass
3	69.8	32.1	3.1	-20.1	15.1	Peak	V	200	0	40	-24.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



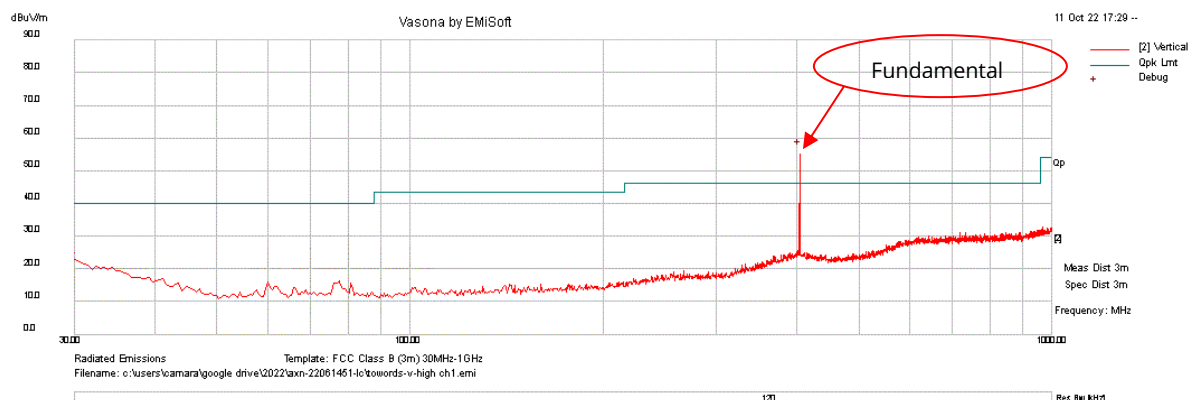
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.022	31.7	2.2	-11.5	22.4	Peak	H	100	360	40	-17.6	Pass
2	894.219	26.3	7.6	-3.7	30.2	Peak	H	400	360	46	-15.8	Pass
3	659.113	28.2	7.3	-5.2	30.3	Peak	H	400	360	46	-15.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



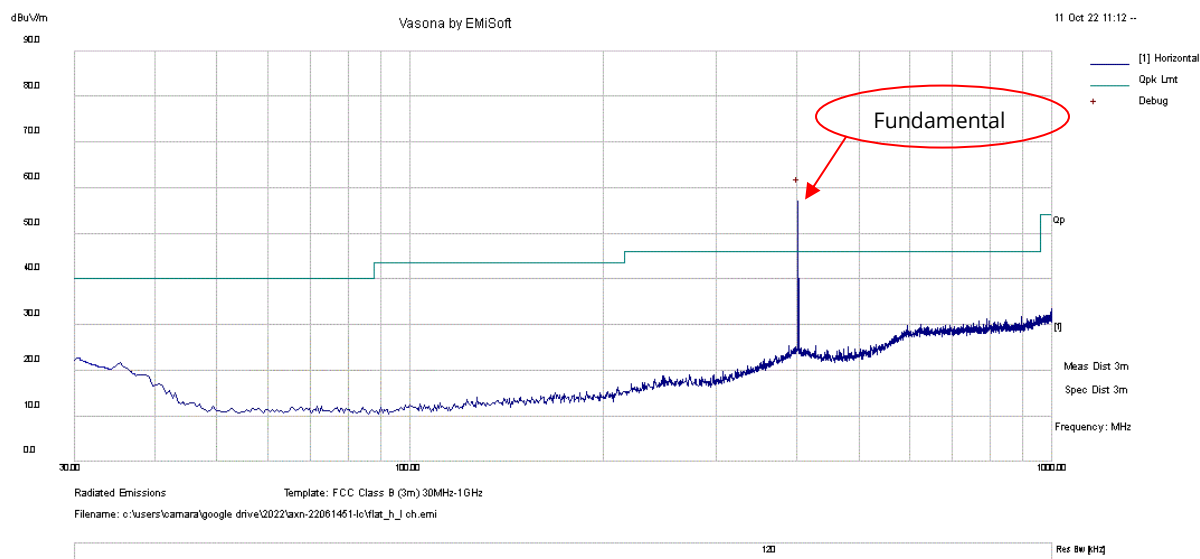
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.01	31.6	2.2	-11.5	22.3	Peak	V	400	0	40	-17.7	Pass
2	77.042	32	3.3	-20.2	15.1	Peak	V	100	0	40	-24.9	Pass
3	69.988	32	3.1	-20.1	15	Peak	V	200	0	40	-25	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



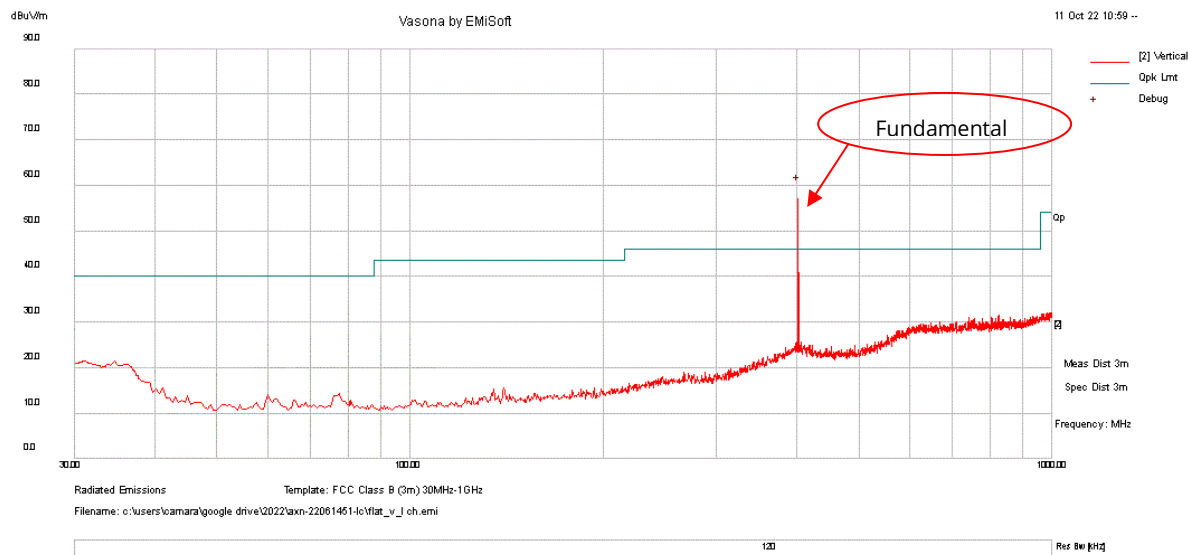
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30	31.7	2.2	-11.5	22.4	Peak	H	300	0	40	-17.6	Pass
2	680.988	28.1	7.3	-5.3	30.1	Peak	H	200	360	46	-15.9	Pass
3	915.024	27.6	7.7	-3.4	31.9	Peak	H	200	360	46	-14.1	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



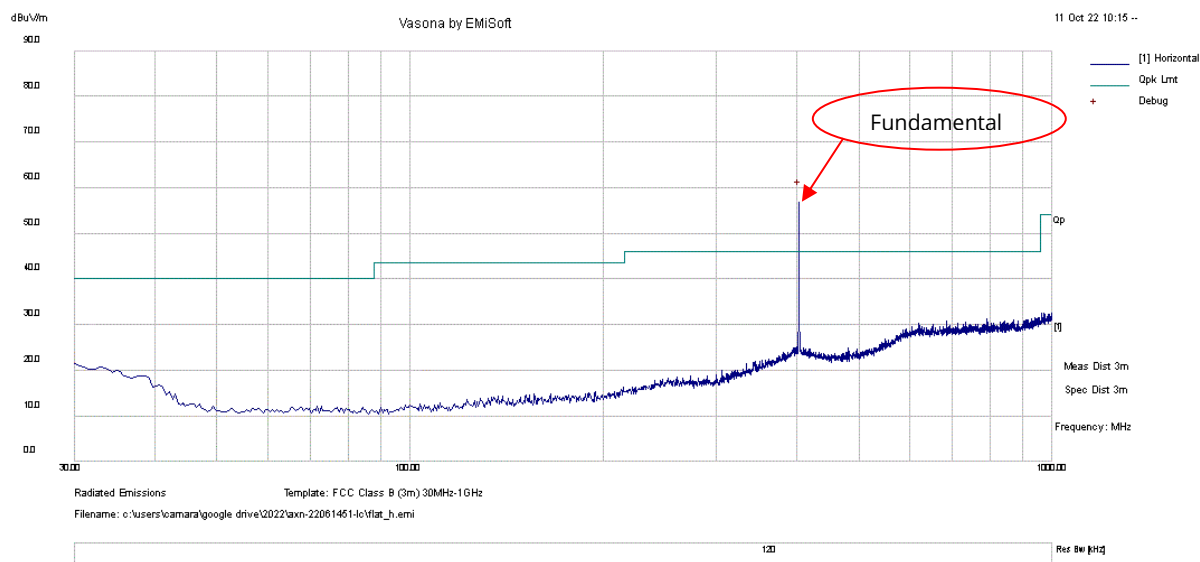
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.488	31.4	2.2	-11.8	21.8	Peak	V	300	0	40	-18.2	Pass
2	644.389	28	7.2	-5.1	30.1	Peak	V	306	360	46	-15.9	Pass
3	853.22	27.6	7.5	-3.9	31.2	Peak	V	200	360	46	-14.8	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



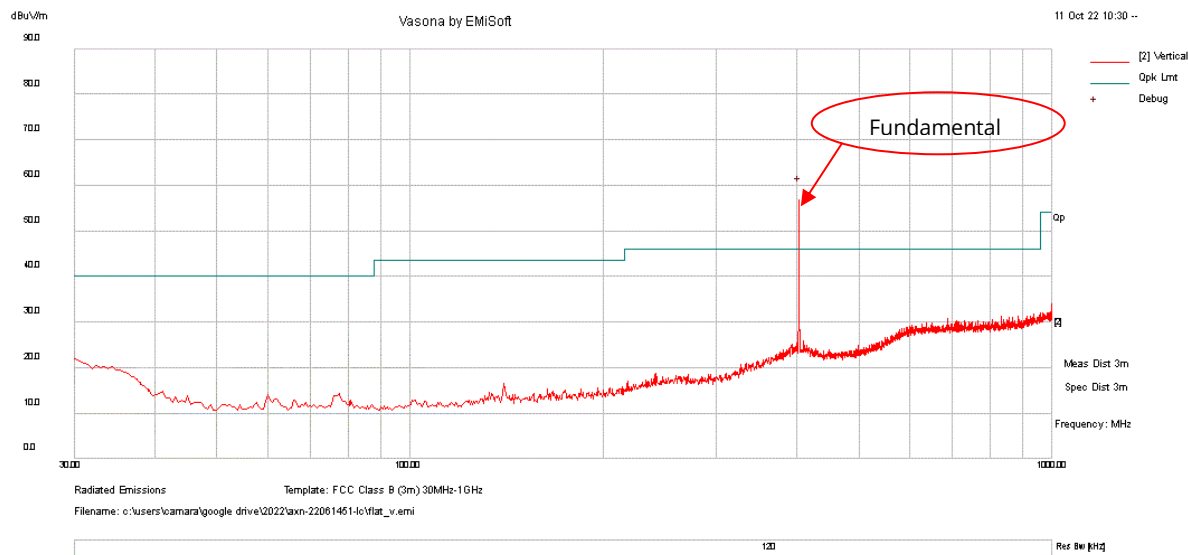
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.002	31.8	2.2	-11.5	22.5	Peak	H	400	0	40	-17.5	Pass
2	894.255	26.2	7.6	-3.7	30.1	Peak	H	200	360	46	-15.9	Pass
3	658.115	28.1	7.3	-5.2	30.2	Peak	H	200	360	46	-15.8	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



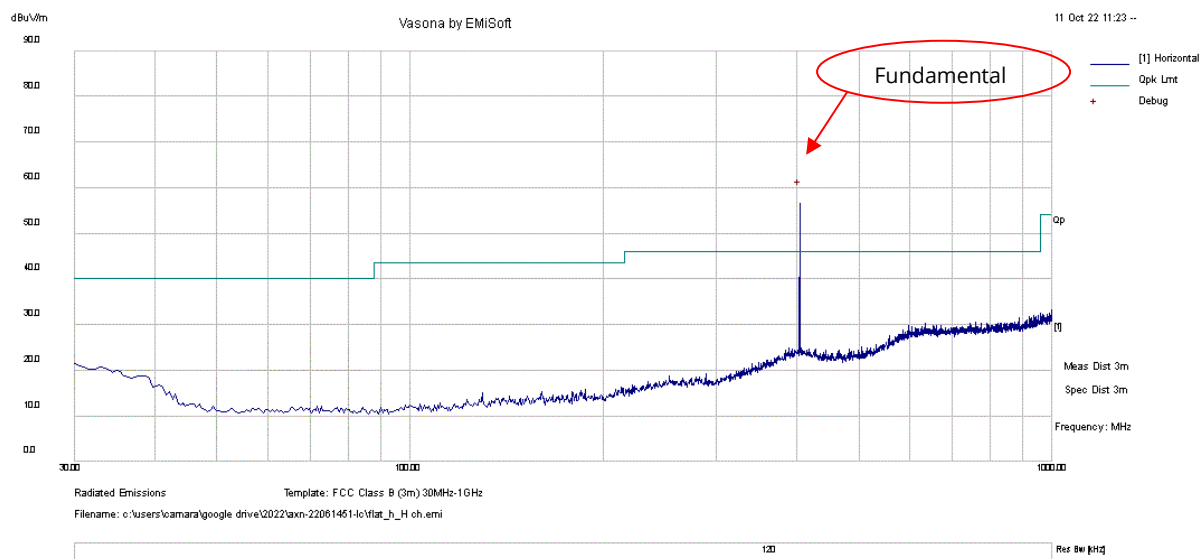
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.02	31.9	2.2	-11.5	22.6	Peak	V	100	0	40	-17.4	Pass
2	77.133	31.7	3.3	-20.2	14.8	Peak	V	100	360	40	-25.2	Pass
3	823.323	26.9	7.3	-4.1	30.1	Peak	V	100	360	46	-15.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



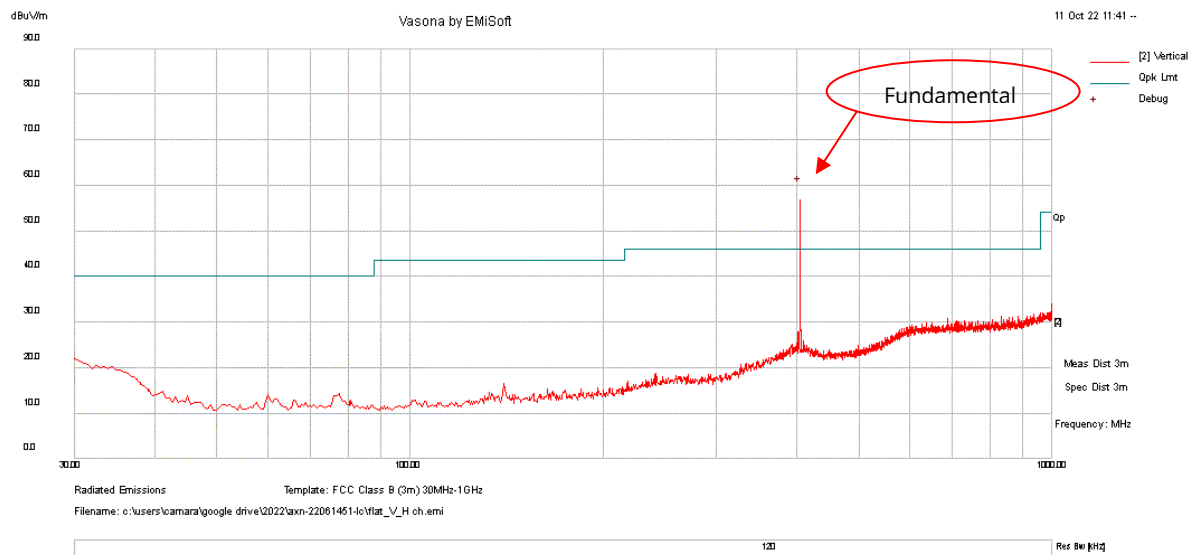
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30	31.2	2.2	-11.5	21.9	Peak	H	400	0	40	-18.1	Pass
2	894.31	26.2	7.6	-3.7	30.1	Peak	H	407	360	46	-15.9	Pass
3	658.329	28.1	7.3	-5.2	30.2	Peak	H	407	360	46	-15.8	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High Channel
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/11/2022
Antenna Type/Polarity:	Bi-Log / Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



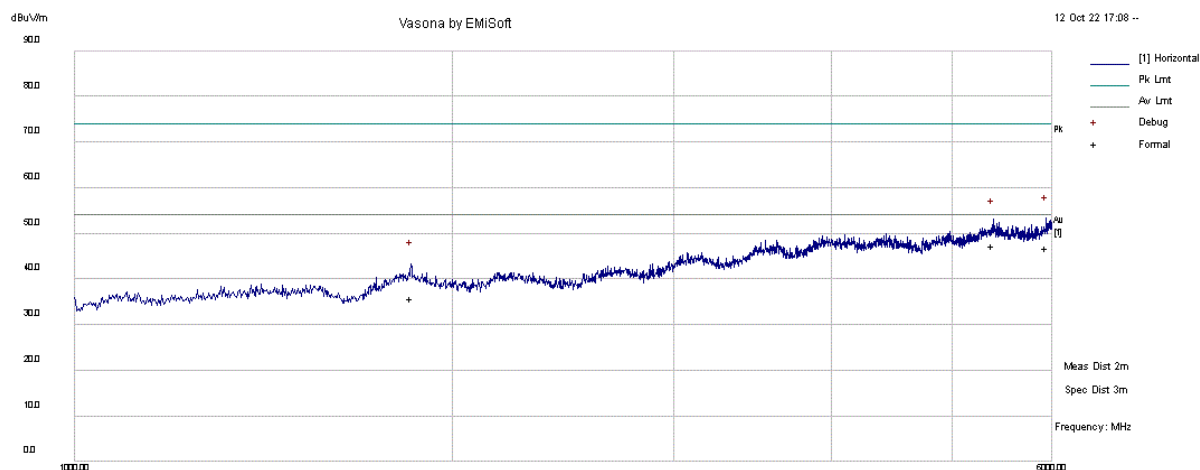
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30	32.7	2.2	-11.5	23.4	Peak	V	100	0	40	-16.6	Pass
2	60.09	31.9	3	-20.7	14.2	Peak	V	300	0	40	-25.8	Pass
3	823.246	26.9	7.3	-4.1	30.1	Peak	V	100	360	46	-15.9	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)
4. No emissions found, noise floor only.

RADIATED EMISSIONS 1 - 6 GHz

Test Standard:	§ 95.2579, RSS-243	Mode:	Low channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



Radiated Emissions
Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\vertical\low ch_h_v_emi

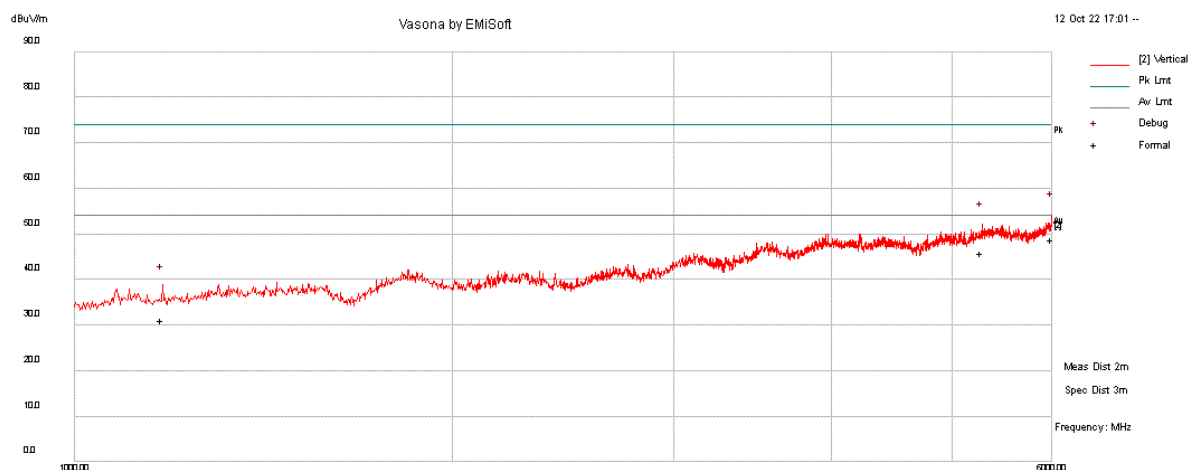
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5940	33.8	15.5	4	53.3	Peak Max	H	198	335	74	-20.7	Pass
2	1852.5	35.2	9.7	-1.6	43.3	Peak Max	H	202	133	74	-30.7	Pass
3	5386.209	35	14.2	3.2	52.4	Peak Max	H	208	360	74	-21.6	Pass
4	5940	27.4	15.5	4	46.9	Average Max	H	198	335	54	-7.1	Pass
5	1852.5	27.7	9.7	-1.6	35.8	Average Max	H	202	133	54	-18.2	Pass
6	5386.209	29.9	14.2	3.2	47.3	Average Max	H	208	360	54	-6.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



Radiated Emissions
Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\vertical\low ch_v_v.emi

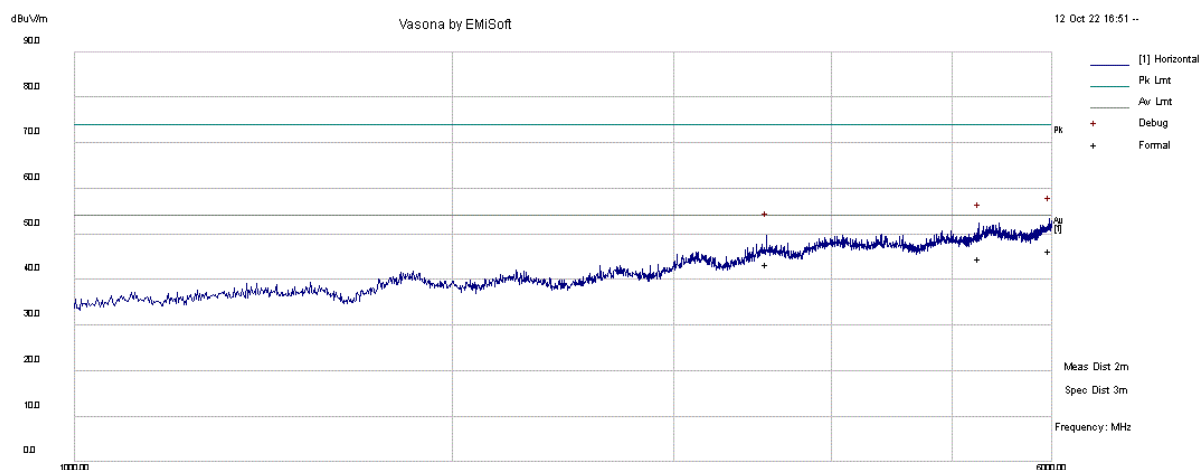
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5277.606	34.7	14.1	3.1	51.9	Peak Max	V	233	155	74	-22.1	Pass
2	5997.736	34.2	15.6	4.3	54.1	Peak Max	V	176	18	74	-19.9	Pass
3	1175.356	33.7	8.7	-4.1	38.3	Peak Max	V	184	129	74	-35.7	Pass
4	5277.606	28.7	14.1	3.1	45.9	Average Max	V	233	155	54	-8.1	Pass
5	5997.736	29	15.6	4.3	48.9	Average Max	V	176	18	54	-5.1	Pass
6	1175.356	26.7	8.7	-4.1	31.3	Average Max	V	184	129	54	-22.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHz

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



Radiated Emissions Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\vertical\mid ch_h_v.emi

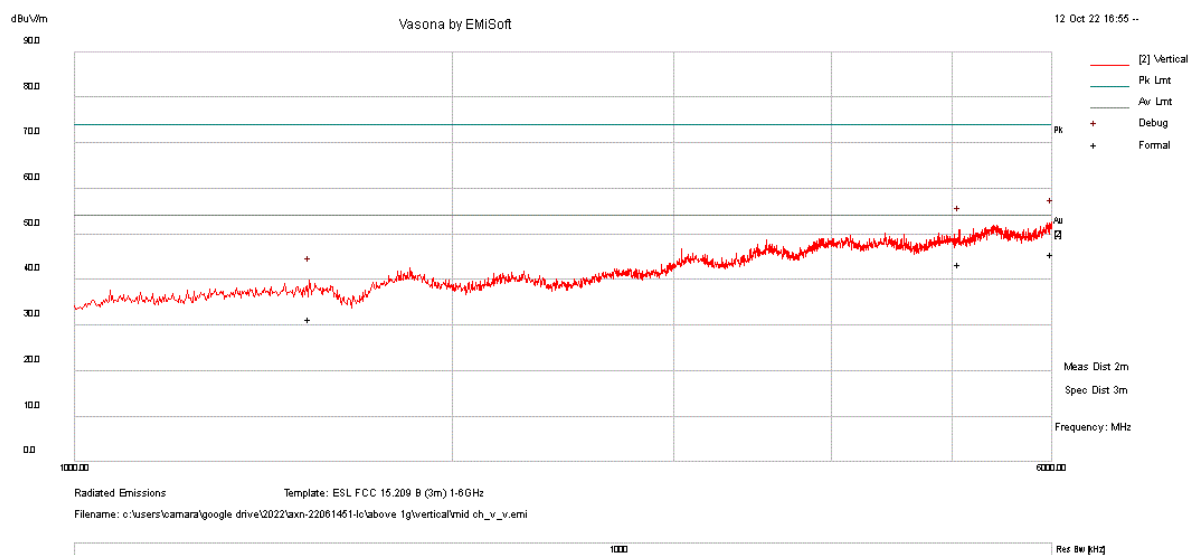
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5970	33.6	15.5	4.1	53.2	Peak Max	H	100	344	74	-20.8	Pass
2	5250.947	34.5	14.1	3	51.6	Peak Max	H	208	360	74	-22.4	Pass
3	3555.025	35	12.9	1.8	49.7	Peak Max	H	155	255	74	-24.3	Pass
4	5970	26.6	15.5	4.1	46.3	Average Max	H	100	344	54	-7.7	Pass
5	5250.947	27.5	14.1	3	44.6	Average Max	H	208	360	54	-9.4	Pass
6	3555.025	28.7	12.9	1.8	43.4	Average Max	H	155	255	54	-10.6	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



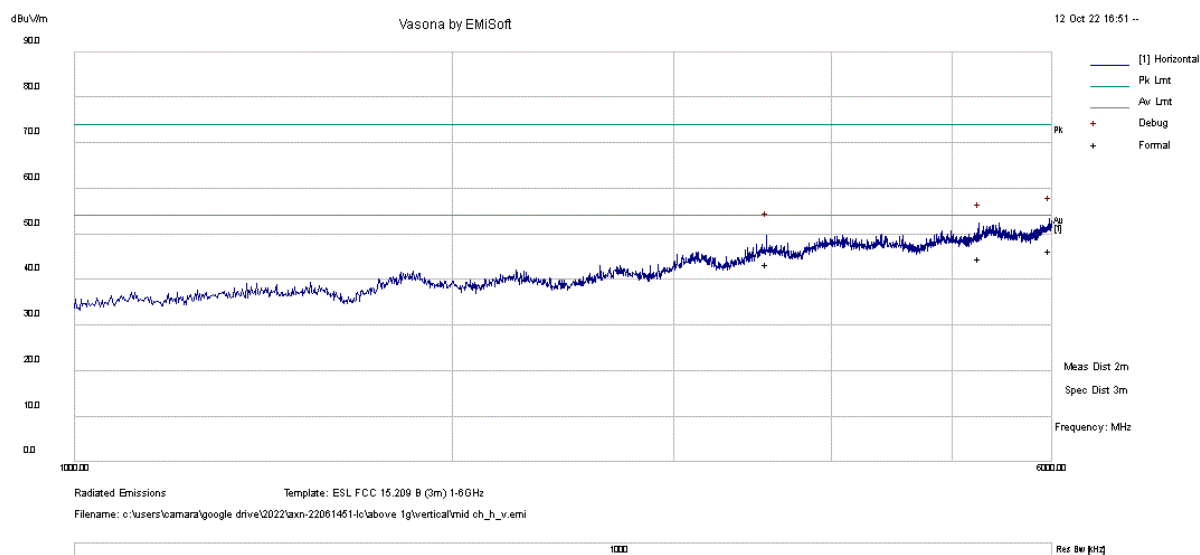
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5997.5	32.7	15.6	4.3	52.6	Peak Max	V	100	45	74	-21.4	Pass
2	1537.5	34.5	9.7	-4.2	39.9	Peak Max	V	100	189	74	-34.1	Pass
3	5064.565	34.2	14.1	2.6	50.9	Peak Max	V	207	102	74	-23.1	Pass
4	5997.5	25.8	15.6	4.3	45.7	Average Max	V	100	45	54	-8.3	Pass
5	1537.5	25.9	9.7	-4.2	31.4	Average Max	V	100	189	54	-22.6	Pass
6	5064.565	26.8	14.1	2.6	43.5	Average Max	V	207	102	54	-10.5	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHz

Test Standard:	§ 95.2579, RSS-243	Mode:	High channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



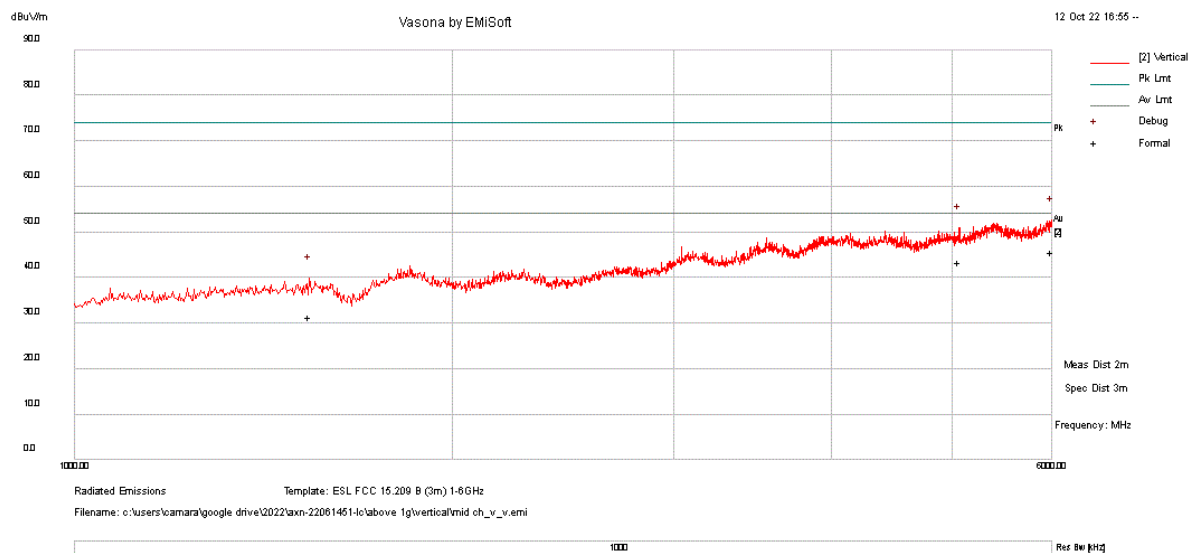
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5997.5	33.7	15.6	4.3	53.6	Peak Max	H	200	33	74	-20.4	Pass
2	4922.584	34.5	14	2.5	51.1	Peak Max	H	201	138	74	-22.9	Pass
3	3540.022	34.1	12.9	1.8	48.8	Peak Max	H	187	209	74	-25.2	Pass
4	5997.5	26.7	15.6	4.3	46.6	Average Max	H	200	33	54	-7.4	Pass
5	4922.584	27	14	2.5	43.5	Average Max	H	201	138	54	-10.5	Pass
6	3540.022	26.8	12.9	1.8	41.4	Average Max	H	187	209	54	-12.6	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



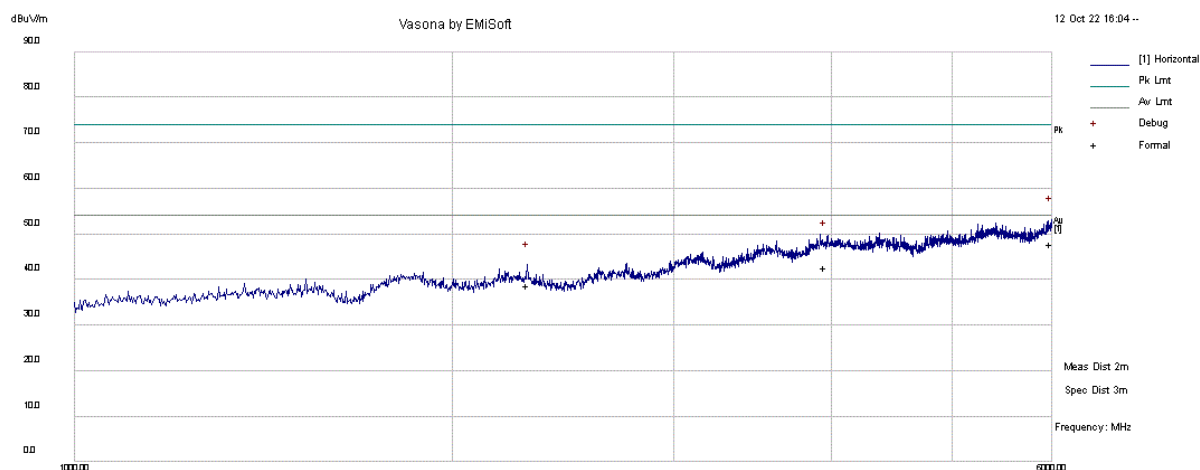
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	6000	33.2	15.6	4.3	53.1	Peak Max	V	100	198	74	-2.1	Pass
2	5507.868	35	14.2	3	52.2	Peak Max	V	141	0	74	0.1	Pass
3	3563.234	34.2	12.9	1.8	48.9	Peak Max	V	145	355	74	-15.7	Pass
4	6000	27.4	15.6	4.3	47.3	Average Max	V	100	198	54	-6.7	Pass
5	5507.868	28.6	14.2	3	45.9	Average Max	V	141	0	54	-8.1	Pass
6	3563.234	28.2	12.9	1.8	42.9	Average Max	V	145	355	54	-11.1	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHz

Test Standard:	§ 95.2579, RSS-243	Mode:	Low channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



Radiated Emissions
Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\towards\vw ch_h_t.emi

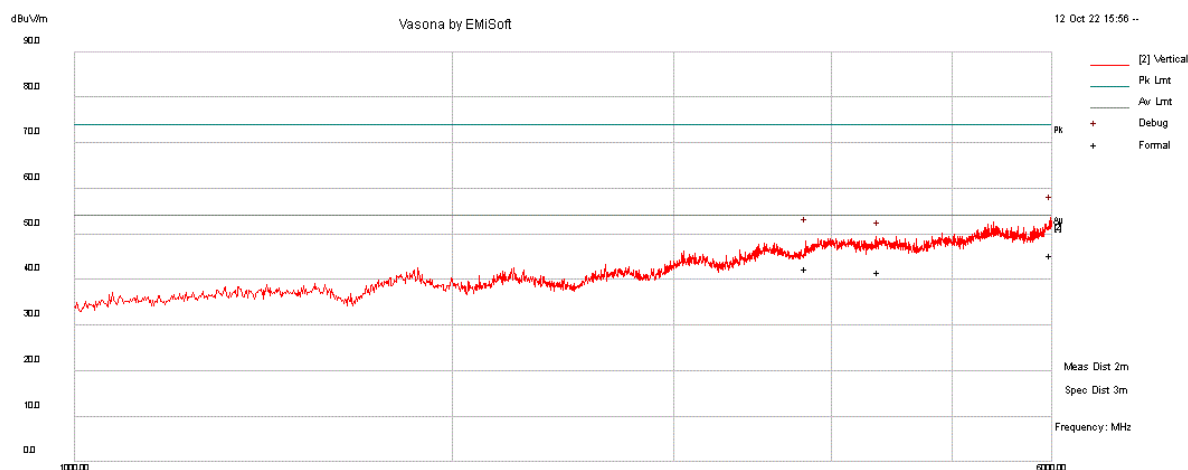
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5990	33.3	15.6	4.2	53.1	Peak Max	H	188	90	74	-20.9	Pass
2	2294.79	35.1	10.4	-2.4	43.2	Peak Max	H	192	187	74	-30.8	Pass
3	3955.77	31.7	13.3	2.8	47.8	Peak Max	H	120	223	74	-26.2	Pass
4	5990	28	15.6	4.2	47.8	Average Max	H	188	90	54	-6.2	Pass
5	2294.79	30.9	10.4	-2.4	38.9	Average Max	H	192	187	54	-15.1	Pass
6	3955.77	26.7	13.3	2.8	42.8	Average Max	H	120	223	54	-11.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



Radiated Emissions Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\towards\low ch_v_1.emi

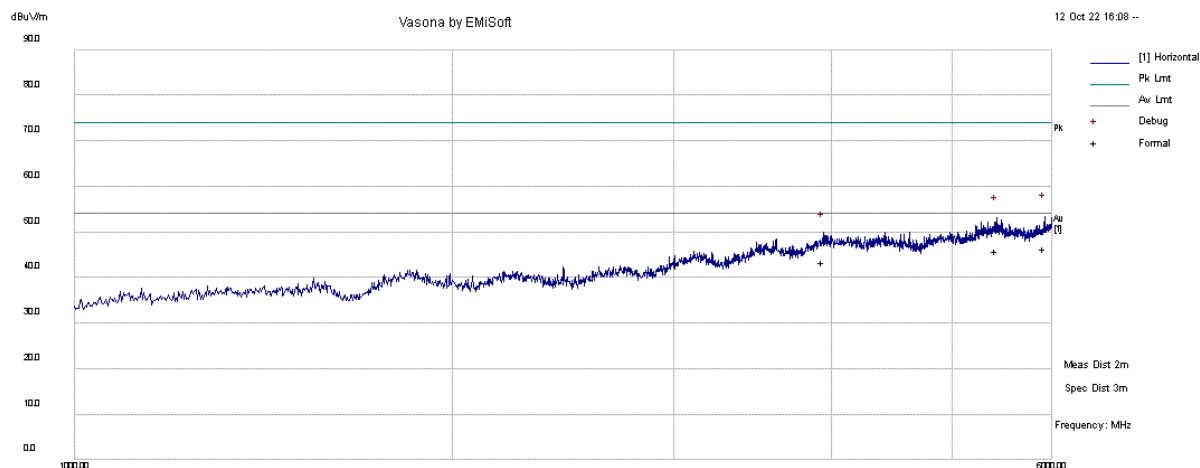
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5985	33.7	15.6	4.2	53.5	Peak Max	V	100	233	74	-20.5	Pass
2	3819.945	32.5	13.2	2.8	48.4	Peak Max	V	207	141	74	-25.6	Pass
3	4365.454	31.7	13.7	2.3	47.8	Peak Max	V	163	164	74	-26.2	Pass
4	5985	25.7	15.6	4.2	45.5	Average Max	V	100	233	54	-8.5	Pass
5	3819.945	26.5	13.2	2.8	42.4	Average Max	V	207	141	54	-11.6	Pass
6	4365.454	25.7	13.7	2.3	41.8	Average Max	V	163	164	54	-12.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



Radiated Emissions Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\towards\mid_ch_h_t.emi

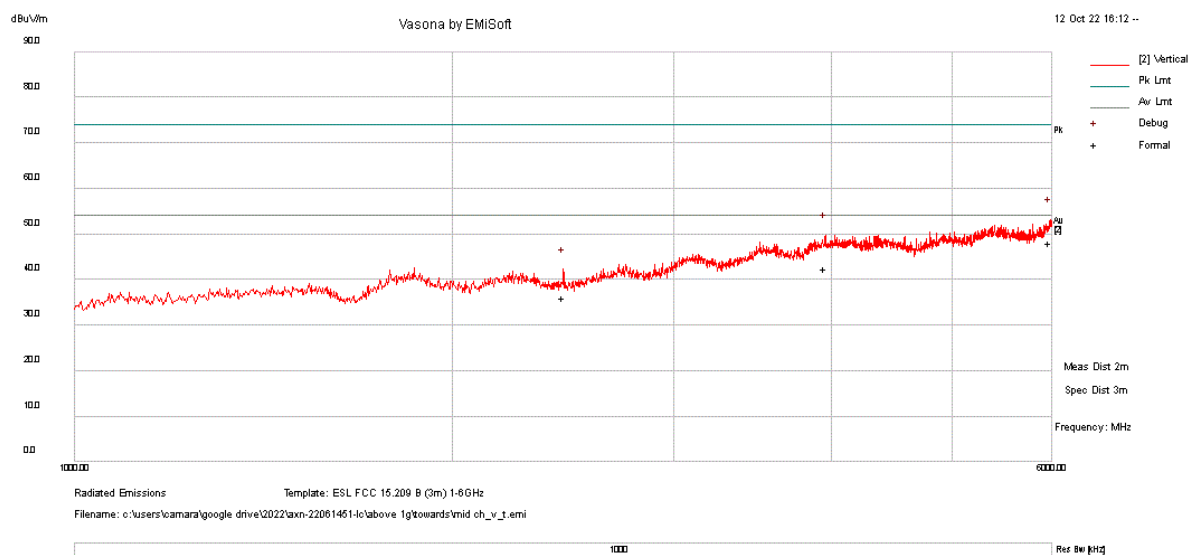
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	3945.392	33.2	13.3	2.9	49.4	Peak Max	H	143	360	74	-24.6	Pass
2	5417.789	35.5	14.2	3.1	52.9	Peak Max	H	124	157	74	-21.1	Pass
3	5917.5	34	15.4	3.9	53.4	Peak Max	H	202	33	74	-20.6	Pass
4	3945.392	27.2	13.3	2.9	43.4	Average Max	H	143	360	54	-10.6	Pass
5	5417.789	28.6	14.2	3.1	45.9	Average Max	H	124	157	54	-8.1	Pass
6	5917.5	27.1	15.4	3.9	46.4	Average Max	H	202	33	54	-7.6	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



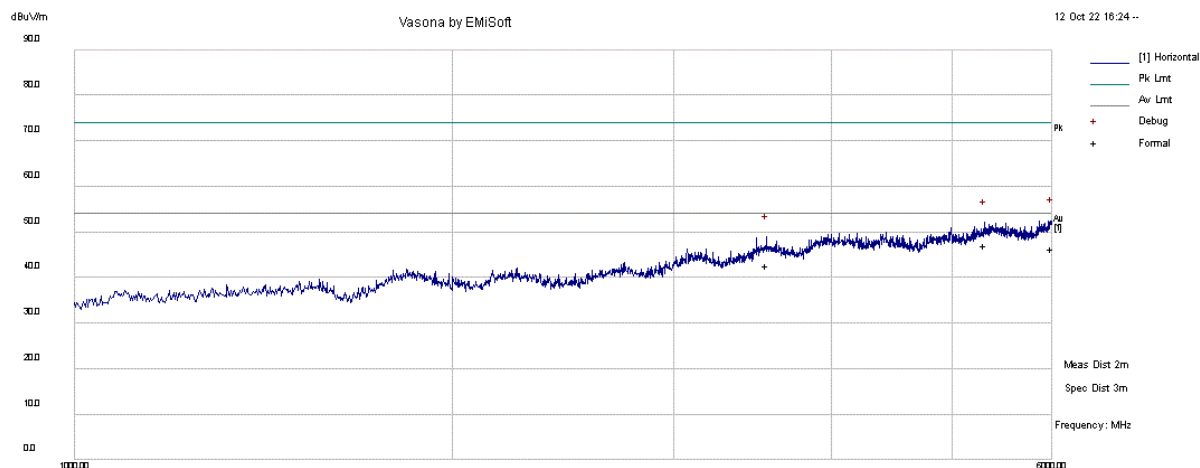
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5980	33.3	15.6	4.2	53	Peak Max	V	199	0	74	-21	Pass
2	2450.95	33.9	10.7	-2.5	42	Peak Max	V	165	332	74	-32	Pass
3	3959.862	33.5	13.3	2.8	49.6	Peak Max	V	132	152	74	-24.4	Pass
4	5980	28.4	15.6	4.2	48.1	Average Max	V	199	0	54	-5.9	Pass
5	2450.95	27.9	10.7	-2.5	36	Average Max	V	165	332	54	-18	Pass
6	3959.862	26.5	13.3	2.8	42.6	Average Max	V	132	152	54	-11.4	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



Radiated Emissions Template: ESL FCC 15.209 B (3m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\towards\high ch_h_1.emi

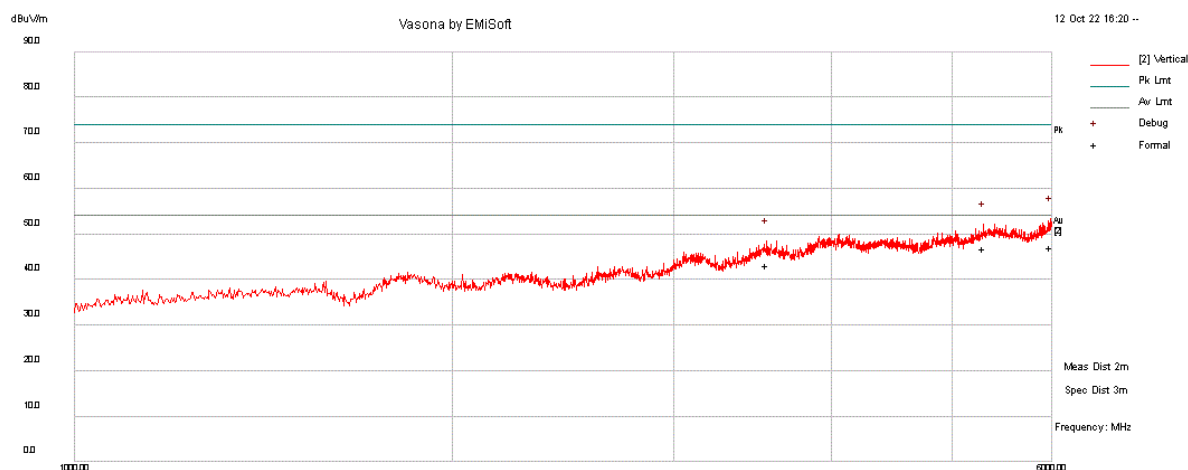
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5995	32.6	15.6	4.2	52.4	Peak Max	H	149	208	74	-21.6	Pass
2	5303.72	34.8	14.2	3.1	52.1	Peak Max	H	209	29	74	-21.9	Pass
3	3555.123	34.1	12.9	1.8	48.8	Peak Max	H	331	102	74	-25.2	Pass
4	5995	26.5	15.6	4.2	46.4	Average Max	H	149	208	54	-7.6	Pass
5	5303.72	29.8	14.2	3.1	47.1	Average Max	H	209	29	54	-6.9	Pass
6	3555.123	28.1	12.9	1.8	42.8	Average Max	H	331	102	54	-11.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Y	Test Result:	Pass



Radiated Emissions Template: ESL FCC 15.209 B (2m) 1-6GHz
Filename: c:\users\camara\google drive\2022\axn-22061451-lc\above 1g\towards\high ch_v_1.emi

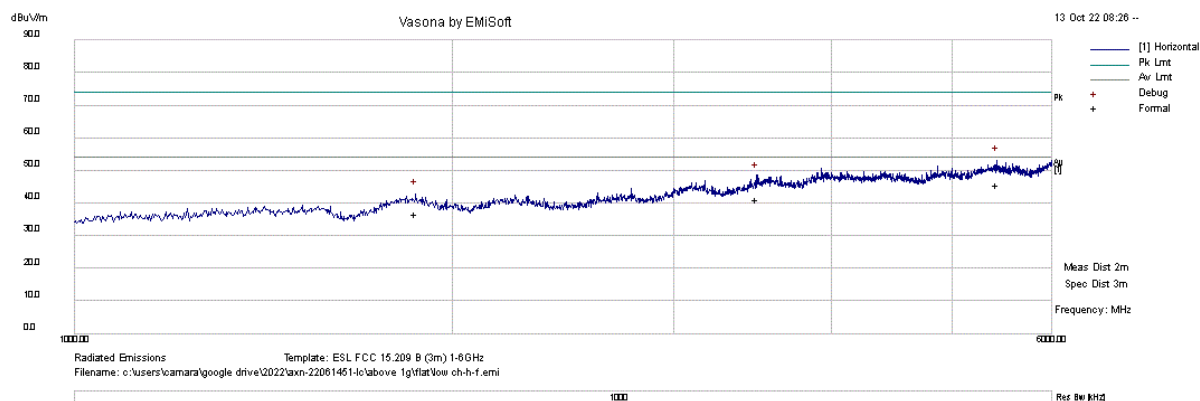
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5987.5	33.4	15.6	4.2	53.2	Peak Max	V	100	188	74	-20.8	Pass
2	3554.938	33.6	12.9	1.8	48.3	Peak Max	V	207	344	74	-25.7	Pass
3	5289.789	34.7	14.2	3.1	52	Peak Max	V	207	360	74	-22	Pass
4	5987.5	27.4	15.6	4.2	47.2	Average Max	V	100	188	54	-6.8	Pass
5	3554.938	28.6	12.9	1.8	43.3	Average Max	V	207	344	54	-10.7	Pass
6	5289.789	29.7	14.2	3.1	47	Average Max	V	207	360	54	-7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHz

Test Standard:	§ 95.2579, RSS-243	Mode:	Low channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



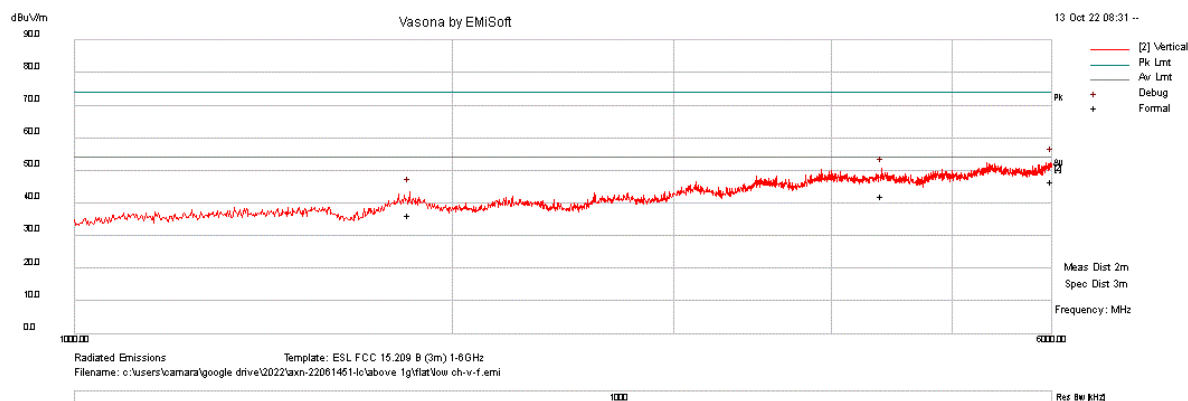
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5422.5	35.7	14.2	3.1	53	Peak Max	H	225	33	74	-21	Pass
2	3490.828	33.3	12.8	1.6	47.6	Peak Max	H	125	267	74	-26.4	Pass
3	1869.883	34.6	9.8	-1.7	42.7	Peak Max	H	178	353	74	-31.3	Pass
4	5422.5	28.5	14.2	3.1	45.8	Average Max	H	225	33	54	-8.2	Pass
5	3490.828	27	12.8	1.6	41.3	Average Max	H	125	267	54	-12.7	Pass
6	1869.883	28.7	9.8	-1.7	36.8	Average Max	H	178	353	54	-17.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Low channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



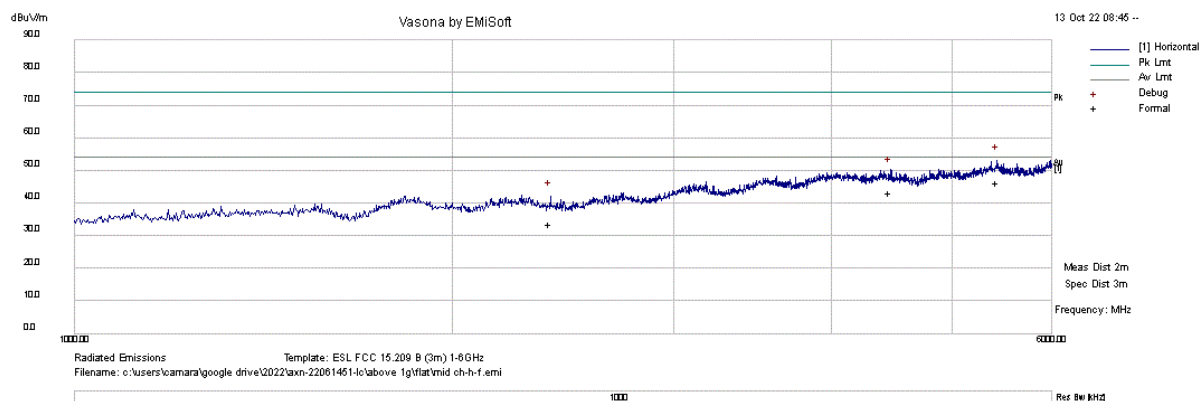
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	6000	32.6	15.6	4.3	52.5	Peak Max	V	100	233	74	-21.5	Pass
2	1847.5	35.3	9.7	-1.7	43.3	Peak Max	V	200	142	74	-30.7	Pass
3	4395.74	33.4	13.8	2.4	49.6	Peak Max	V	206	360	74	-24.4	Pass
4	6000	26.8	15.6	4.3	46.7	Average Max	V	100	233	54	-7.3	Pass
5	1847.5	28.4	9.7	-1.7	36.5	Average Max	V	200	142	54	-17.5	Pass
6	4395.74	26.1	13.8	2.4	42.3	Average Max	V	206	360	54	-11.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



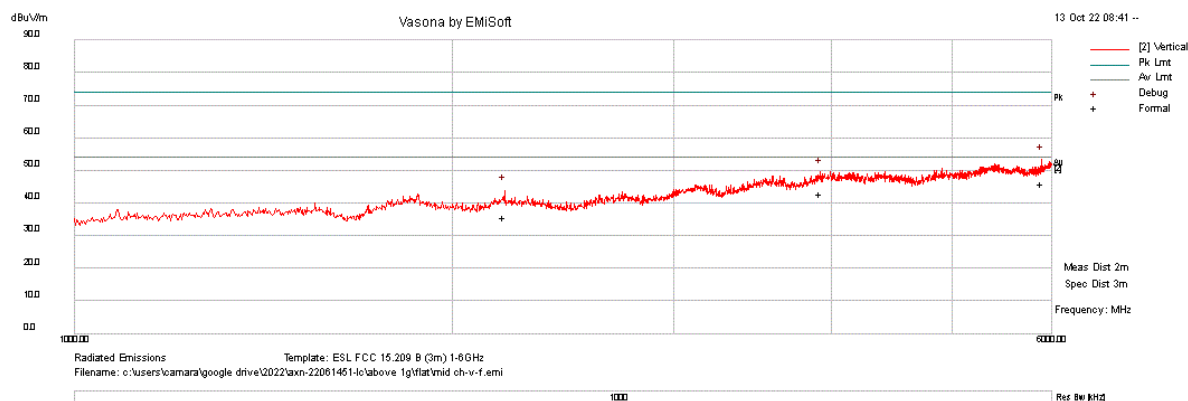
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5427.5	35.9	14.2	3.1	53.2	Peak Max	H	200	22	74	-20.8	Pass
2	2392.498	34.1	10.6	-2.5	42.2	Peak Max	H	208	157	74	-31.8	Pass
3	4460.81	33.1	13.8	2.4	49.3	Peak Max	H	213	341	74	-24.7	Pass
4	5427.5	29	14.2	3.1	46.3	Average Max	H	200	22	54	-7.7	Pass
5	2392.498	25.7	10.6	-2.5	33.8	Average Max	H	208	157	54	-20.2	Pass
6	4460.81	26.9	13.8	2.4	43.2	Average Max	H	213	341	54	-10.8	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	Mid channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



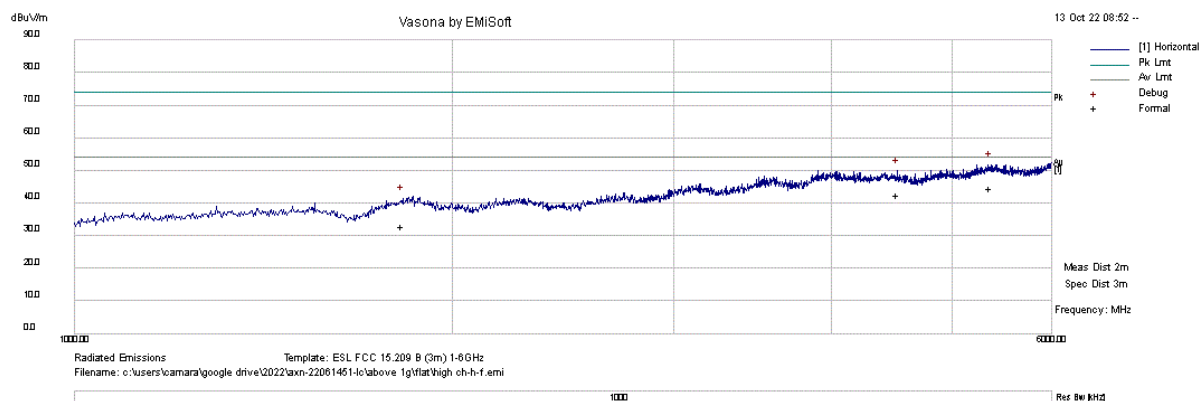
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5890	34.1	15.3	3.9	53.3	Peak Max	V	100	252	74	-20.7	Pass
2	2200	35.9	10.2	-2.3	43.9	Peak Max	V	200	142	74	-30.1	Pass
3	3923.097	33	13.3	2.9	49.2	Peak Max	V	207	360	74	-24.8	Pass
4	5890	26.9	15.3	3.9	46.1	Average Max	V	100	252	54	-7.9	Pass
5	2200	27.9	10.2	-2.3	35.8	Average Max	V	200	142	54	-18.2	Pass
6	3923.097	26.7	13.3	2.9	42.9	Average Max	V	207	360	54	-11.1	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



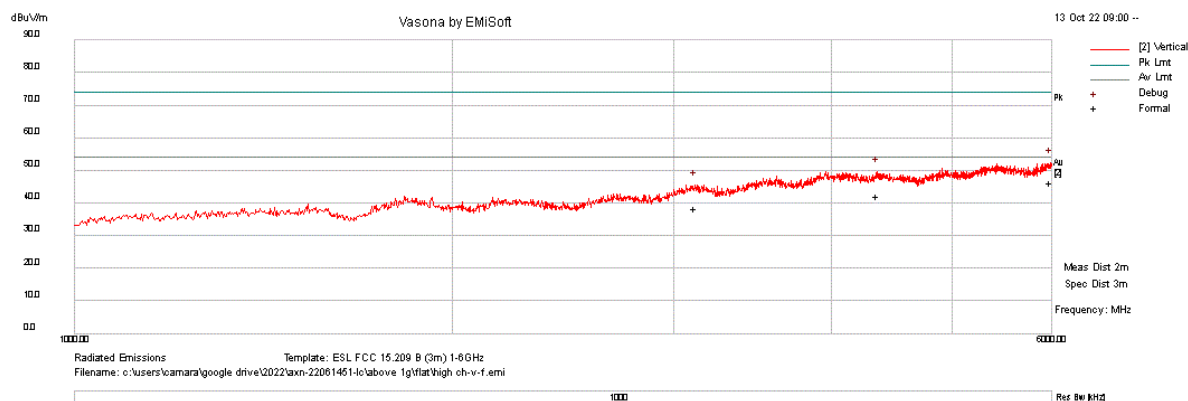
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	4520.836	32.8	13.9	2.5	49.2	Peak Max	H	207	164	74	-24.8	Pass
2	5363.629	33.7	14.2	3.2	51.1	Peak Max	H	234	342	74	-22.9	Pass
3	1825.694	33.2	9.7	-2	40.9	Peak Max	H	137	144	74	-33.1	Pass
4	4520.836	26.2	13.9	2.5	42.6	Average Max	H	207	164	54	-11.4	Pass
5	5363.629	27.1	14.2	3.2	44.5	Average Max	H	234	342	54	-9.5	Pass
6	1825.694	25.1	9.7	-2	32.8	Average Max	H	137	144	54	-21.2	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	§ 95.2579, RSS-243	Mode:	High channel
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/12/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation Z	Test Result:	Pass



No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5987.5	32.4	15.6	4.2	52.2	Peak Max	V	122	322	74	-21.8	Pass
2	4355.516	33.3	13.7	2.3	49.3	Peak Max	V	144	1	74	-24.7	Pass
3	3119.509	32.5	12	0.8	45.3	Peak Max	V	124	214	74	-28.7	Pass
4	5987.5	26.6	15.6	4.2	46.4	Average Max	V	122	322	54	-7.6	Pass
5	4355.516	26.2	13.7	2.3	42.2	Average Max	V	144	1	54	-11.8	Pass
6	3119.509	25.6	12	0.8	38.4	Average Max	V	124	214	54	-15.6	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

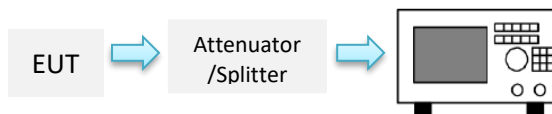
7.8 Conducted Spurious Emissions

7.8.1 Requirement

§ 2.1051; RSS-GEN

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

7.8.2 Test setup

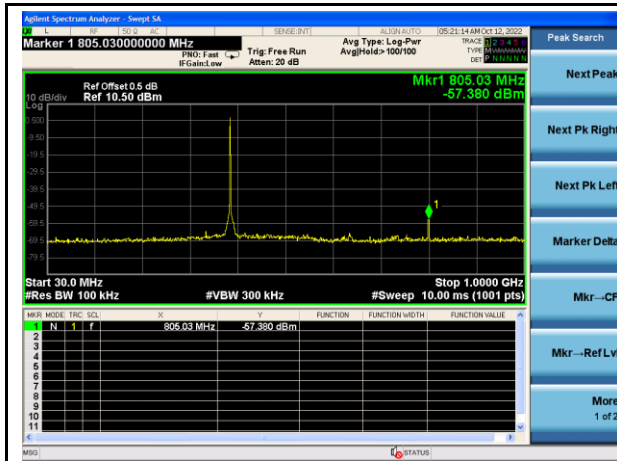


7.8.3 Test Procedure

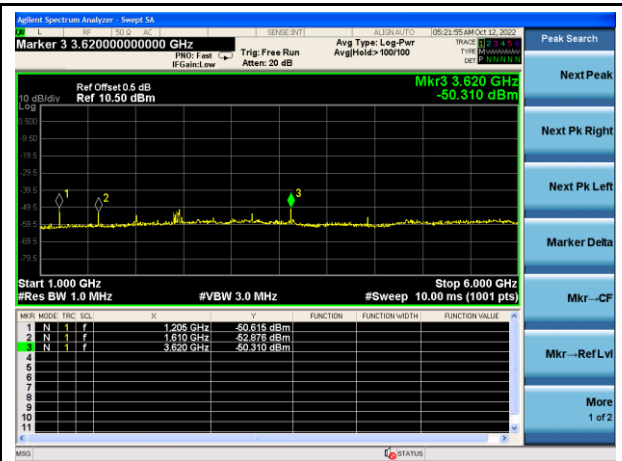
According to ANSI C63.26-2015 clause 5.7

1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW=100 KHZ, VBW=300 KHZ, Peak Detector for below 1000MHz and RBW=1 MHZ, VBW=3 MHZ for above 1000MHz. Any emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete and record the results in the test report.

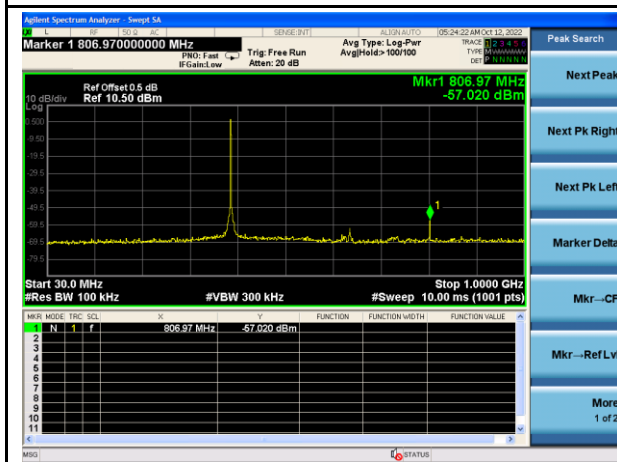
7.8.4 Test Result



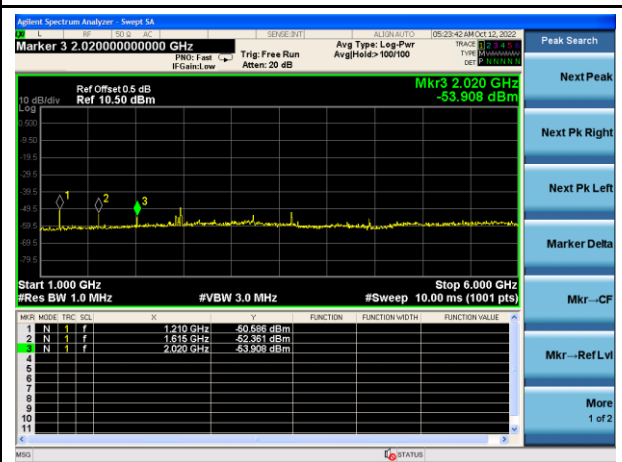
CSE_30MHz-1000MHz_Low CH



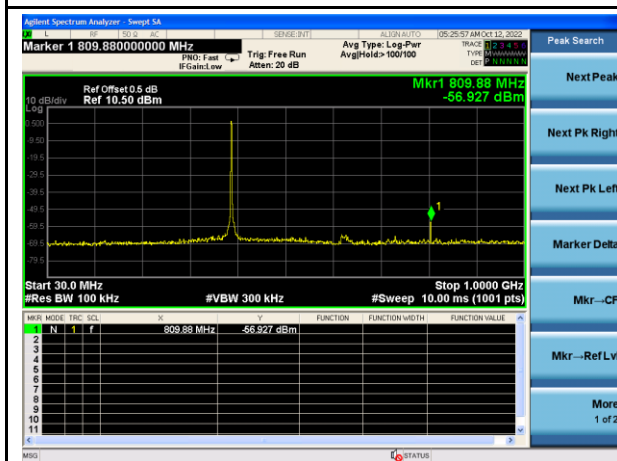
CSE_1000MHz-6000MHz_Low CH



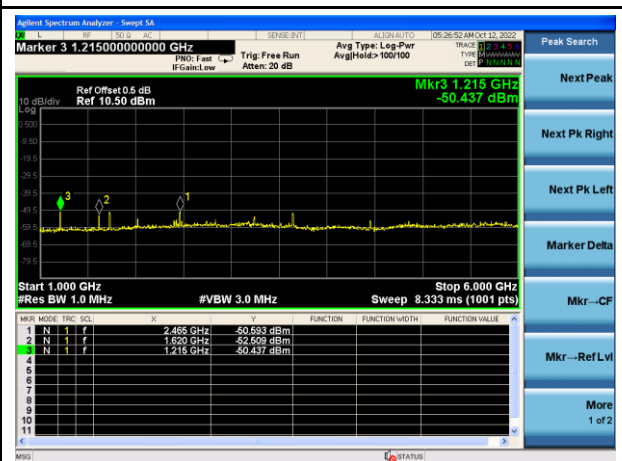
CSE_30MHz-1000MHz_Mid CH



CSE_1000MHz-6000MHz_Mid CH



CSE_30MHz-1000MHz_High CH



CSE_1000MHz-6000MHz_High CH

7.9 Receiver Spurious Emissions

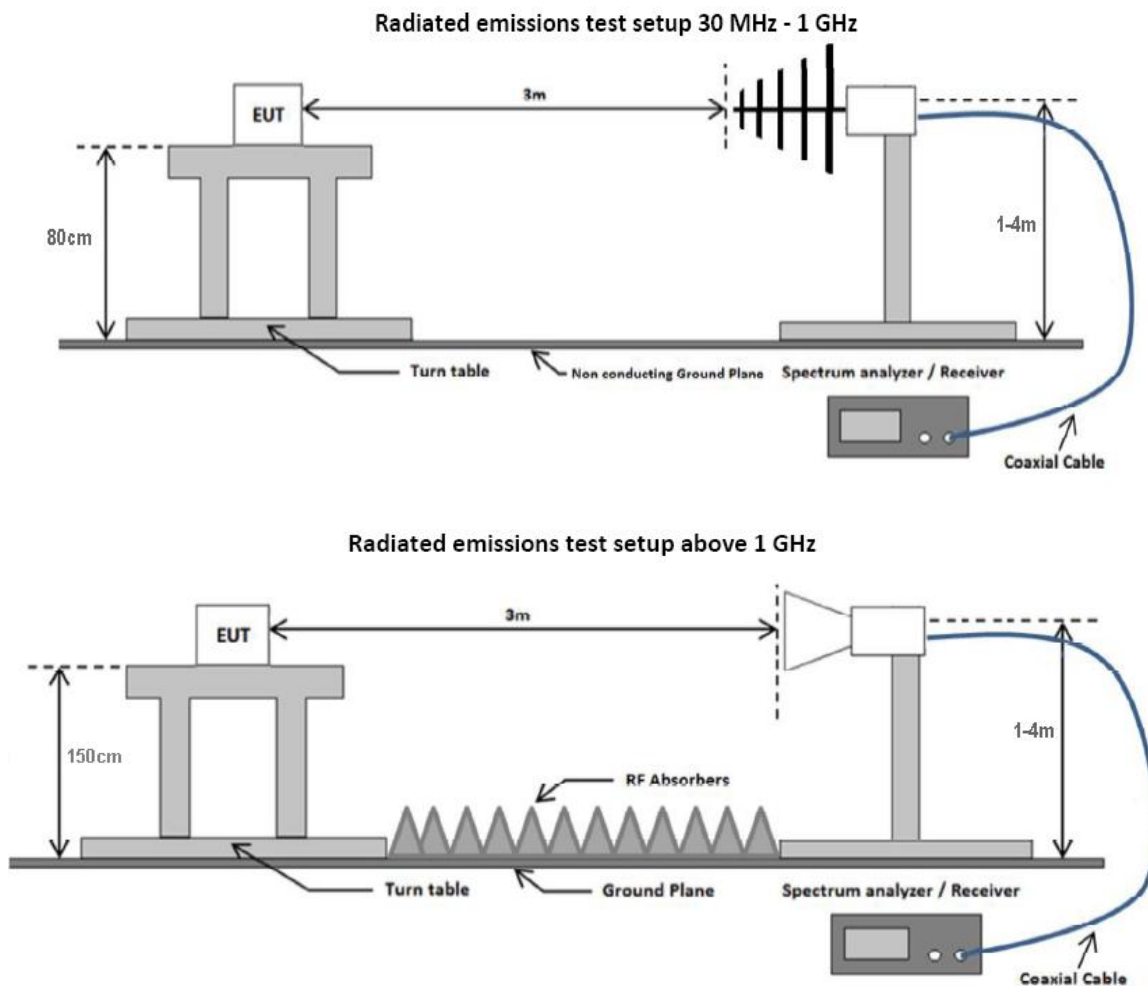
7.9.1 Requirement

RSS-243 §5.6; RSS-GEN §7.3

(Radiated emission measurements shall be performed with the receiver antenna connected to the receiver antenna ports. The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least five times the highest tunable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.

Frequency Range (MHZ)	Field Strength ($\mu\text{V/m}$) at 3m
30 – 88	100
88 – 216	150
216 960	200
Above 960	500

7.9.2 Test Setup



7.9.3 Test Procedure

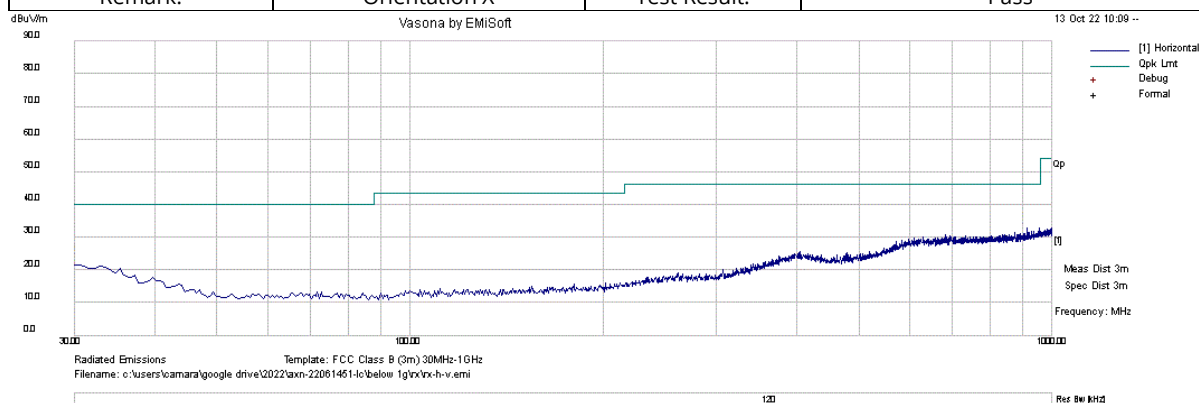
According to ANSI C63.26-2015 clause 5.5.2

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
 - a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
 - b. The EUT was then rotated to the direction that gave the maximum emission.
 - c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz for frequency below 150KHz.
4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 10 kHz for frequency between 150KHz – 30MHz.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-Peak detection at frequency between 30MHz - 1GHz.
6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak and average measurement at frequency above 1GHz.
7. Steps 2 and 3/4/5/6 were repeated for the next frequency point, until all selected frequency points were measured.

7.9.4 Test Result

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	RSS-243, RSS-GEN	Mode:	Receiver mode
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/13/2022
Antenna Type/Polarity:	Bi-Log/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



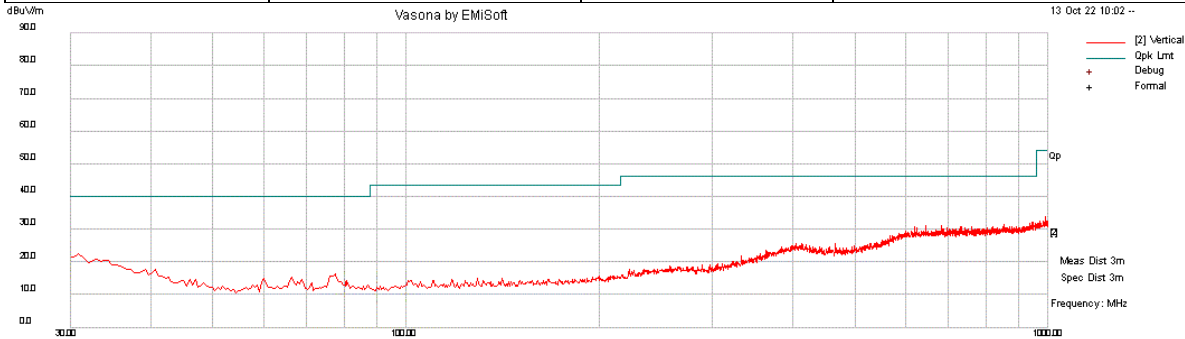
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30	30.8	2.2	-11.5	21.5	Peak [Scan]	H	300	0	40	-18.5	Pass
2	681.047	28.3	7.3	-5.3	30.3	Peak [Scan]	H	407	360	46	-15.7	Pass
3	915.061	28.1	7.7	-3.4	32.4	Peak [Scan]	H	407	360	46	-13.6	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS BELOW 1 GHZ

Test Standard:	RSS-243, RSS-GEN	Mode:	Receiver mode
Frequency Range:	30 MHz - 1 GHz	Test Date:	10/13/2022
Antenna Type/Polarity:	Bi-Log/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	30.485	32.8	2.2	-11.8	23.3	Peak [Scan]	V	300	0	40	-16.7	Pass
2	644.496	28.9	7.2	-5.1	31	Peak [Scan]	V	306	360	46	-15.1	Pass
3	853.556	28	7.5	-3.9	31.5	Peak [Scan]	V	306	360	46	-14.5	Pass

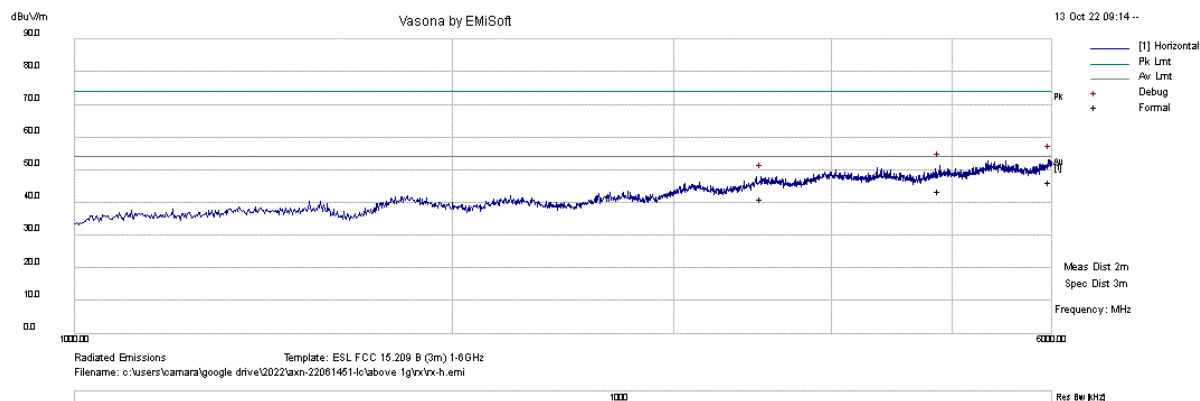
Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

Note: all X/Y/Z orientation tested, noise floor only, no emissions found.

RADIATED EMISSIONS 1 - 6 GHZ

Test Standard:	RSS-243, RSS-GEN	Mode:	Receiver mode
Frequency Range:	1 GHz - 6 GHz	Test Date:	10/13/2022
Antenna Type/Polarity:	Horn/Horizontal	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



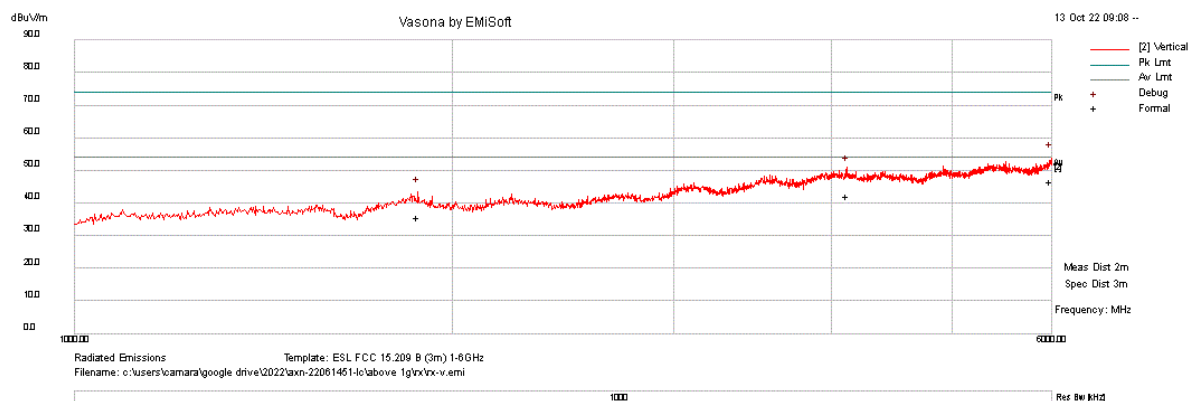
No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5975	33.4	15.6	4.1	53.1	Peak Max	H	100	148	74	-20.9	Pass
2	4882.752	34.3	14	2.7	51	Peak Max	H	398	123	74	-23	Pass
3	3522.82	33	12.8	1.7	47.5	Peak Max	H	208	193	74	-26.5	Pass
4	5975	26.7	15.6	4.1	46.4	Average Max	H	100	148	54	-7.6	Pass
5	4882.752	26.9	14	2.7	43.6	Average Max	H	398	123	54	-10.4	Pass
6	3522.82	26.7	12.8	1.7	41.2	Average Max	H	208	193	54	-12.8	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) - Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

RADIATED EMISSIONS 1 – 6 GHZ

Test Standard:	RSS-243, RSS-GEN	Mode:	Receiver mode
Frequency Range:	1 GHz – 6 GHz	Test Date:	10/13/2022
Antenna Type/Polarity:	Horn/Vertical	Test Personnel:	Devin Tai
Remark:	Orientation X	Test Result:	Pass



No.	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
1	5992.5	34	15.6	4.2	53.9	Peak Max	V	200	144	74	-20.1	Pass
2	1877.5	35.2	9.8	-1.7	43.3	Peak Max	V	178	354	74	-30.7	Pass
3	4121.209	34	13.5	2.4	49.8	Peak Max	V	165	21	74	-24.2	Pass
4	5992.5	26.8	15.6	4.2	46.6	Average Max	V	200	144	54	-7.4	Pass
5	1877.5	27.6	9.8	-1.7	35.7	Average Max	V	178	354	54	-18.3	Pass
6	4121.209	26.4	13.5	2.4	42.3	Average Max	V	165	21	54	-11.7	Pass

Remarks:

1. Level (dBuV) = Raw (dBuV) + Cable loss(dB) + AF (dB).
2. AF (dB/m) = Antenna Factor (dB) – Preamplifier Gain (dB)
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)

Note: all X/Y/Z orientation tested, noise floor only, no emissions found.

8 EUT and Test Setup Photos

See FCC exhibits

9 Test Instrument List

Equipment	Manufacturer	Model	Instrument Number	Cal. Date	Cal. Due
Semi-Anechoic Chamber	ETS-Lindgren	10M	VL001	10/18/2021	10/18/2023
Shielding Control Room	ETS-Lindgren	Series 81	VL006	N/A	N/A
Spectrum Analyzer	Keysight	N9020A	MY50110074	06/17/2022	06/17/2023
EMC Test Receiver	R&S	ESL6	100230	06/14/2022	06/14/2023
LISN (9KHz – 30MHz)	EMCO	3816/2	9705-1066	05/04/2022	05/04/2023
LISN (9KHz – 30MHz)	Com-Power	LI-550C	20140050	01/29/2022	01/29/2023
LISN (9KHz – 30MHz)	Com-Power	LI-550C	20140051	01/29/2022	01/29/2023
Bi-Log Antenna	ETS-Lindgren	3142E	217921	11/15/2022	11/15/2023
Horn Antenna (1-18GHz)	Electro-Metrics	EM-6961	6292	05/14/2022	05/14/2023
Horn Antenna (18-40GHz)	Com-Power	AH-840	101109	06/24/2022	06/24/2023
Preamplifier	RF Bay, Inc.	LPA-10-20	11180621	07/16/2022	07/16/2023
True RMS Multi-meter	UNI-T	UT181A	C173014829	05/05/2022	05/05/2023
Temp / Humidity / Pressure Meter	PCE Instruments	PCE-THB 40	R062028	05/15/2022	05/15/2023
RF Attenuator	Pasternack	PE7005-3	VL061	07/16/2022	07/16/2023
Preamplifier 100KHz - 40GHz	Aeroflex	33711-392-77150-11	064	07/16/2022	07/16/2023
EM Center Control	ETS-Lindgren	7006-001	160136	N/A	N/A
Turn Table	ETS-Lindgren	2181-3.03	VL002	N/A	N/A
Boresight Antenna Tower	ETS-Lindgren	2171B	VL003	N/A	N/A
Loop Antenna (9k-30MHz)	Com-Power	AL-130	121012	05/16/2022	05/16/2023
RE test cable(below 6GHz)	Vista	RE-6GHz-01	RE-6GHz-01	07/16/2022	07/16/2023
RE test cable (1-18GHz)	PhaseTrack	II-240	RE-18GHz-01	07/16/2022	07/16/2023
RE test cable (>18GHz)	Sucoflex	104	344903/4	07/16/2022	07/16/2023
Pulse limiter	Com-Power	LIT-930A	531727	07/16/2022	07/16/2023
CE test cable #1	FIRST RF	FRF-C-1002-001	CE-6GHz-01	07/16/2022	07/16/2023
CE test cable#2	FIRST RF	FRF-C-1002-001	CE-6GHz-02	07/16/2022	07/16/2023
Vector Signal Generator	Keysight	N5182A	US47080548	06/17/2022	06/17/2023
USB RF Power Sensor	ETS-Lindgren	7002-006	SN 00151268	05/15/2022	05/15/2024
RF Power Amplifier (80-1000MHz)	Ophir	5226FE	1013/1815	N/A	N/A
RF Power Amplifier (700-6000MHz)	Ophir	5293FE	1063/1815	N/A	N/A
Horn Antenna (1-18GHz)	FT-RF	HA-07M18G-NF	180010HA	N/A	N/A

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