

RF Test Report

Project Number: 5046586

Offer Number: SUW-202304004536

Report Number: 5046586EMC01

Revision Level: 1

Client: iKeyless, LLC

Equipment Under Test: Keyless Entry Remote Control

Model / HVIN: FDHKL-G050

FCC ID: X32-FDHKG050

IC: 8797A-FDHKG050

Applicable Standards: FCC Part 15 Subpart C, § 15.231 Periodic Operation in the band 40.66-40.77MHz and above 70MHz

ANSI C63.10: 2013

RSS-210, Issue 10 (Annex A)

RSS-GEN Issue 5

Report issued on: 15 May 2023


Test Result: Compliant



FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01

Report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

Prepared by:


Daniel Alvarez, RF/EMC Sr. Staff Engineer

Reviewed by:


Martin Taylor, EMC/RF Project Engineer

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1 Summary of Test Results

Test Description	Test Specification	Test Result
Antenna requirement	47 CFR Part 15, Subpart C 15.203	Compliant
Field strength of fundamental	15.231(b); RSS-210 A.1.2(a) ANSI C63.10:2013, Section 6.5	Compliant
Field strength of spurious radiation	15.231(b); RSS-210 A.1.2(b) ANSI C63.10:2013, Section 6.5	Compliant
Bandwidth	15.231(c); RSS-210 A.1.3 ANSI C63.10:2013, Section 6.9	Compliant
Deactivation time (manual)	15.231(a)(1); RSS-210 A.1.1(a) ANSI C63.10:2013, Section 7.4	Compliant
Polling transmissions	15.231(a)(3); RSS-210 A.1.1(c)	N/A ¹
Transmission time for setup	15.231(a)(5) ANSI C63.10:2013, Section 7.4	N/A ²
Frequency stability	15.231(d) ANSI C63.10:2013, Section 6.8	N/A ³

Note 1: Not applicable since this device does not use polling or supervision transmissions.

Note 2: Not applicable since the transmission duration limits in paragraph (a)(1) are met.

Note 3: Not applicable since this device does not operate within the frequency band 40.66-40.70MHz.

1.1 Modifications Required for Compliance

None

2 General Information

2.1 Client Information

Name: iKeyless LLC
Address: 12101 Sycamore Station Place, Suite 101
City, State, Zip, Country: Louisville, KY 40299

2.2 Test Laboratory

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 3212.01
ISED CAB Identifier: US0186
FCC Designation Number: US1126

2.3 General Information of EUT

Type of Product: Keyless Entry Remote Control
Product Marketing Name (PMN): FDHKL-G050
Model Number (HVIN): FDHKL-G050
Firmware Version ID (FVIN): FDHKL-F010
Sample ID: SUWEM2301000004
FCC ID: X32-FDHKG050
IC: 8797A-FDHKG050

Frequency Range: 315.0 MHz
Modulation: FSK
Antenna: PCB trace loop

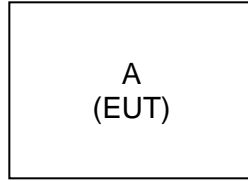
Rated Voltage: 3Vdc CR1620 coin cell battery
Test Voltage: 3Vdc CR1620 coin cell battery

Sample Received Date: 08 May 2023
Dates of testing: 10 May 2023 to 05 June 2023

2.4 Operating Modes and Conditions

The EUT was powered by one standard CR1620 coin cell battery during testing. Two types of samples were provided to SGS: normal and test mode. The test mode sample was configured by the client such that a button press would start a continuous transmit signal using the same modulation and power as a normal transmit signal but with a higher duty cycle than normal to make most testing easier. Pressing a different button would stop the continuous transmit signal. The normal sample was configured to operate as it would in the field with temporary transmissions triggered by pressing the various buttons. This sample was used to test the deactivation time as well as the normal operational duty cycle.

2.5 EUT Connection Block Diagram – Radiated Measurements



Inside Chamber



Outside Chamber

2.6 System Configurations

Device reference	Manufacturer	Description	Model Number	Serial Number
A	iKeyless LLC	Keyless Entry Remote Control (Continuous)	FDHKL-G050	Sample ID: SUWSP20230501533
	iKeyless LLC	Keyless Entry Remote Control (Single)	FDHKL-G050	Sample ID: SUWSP20230501534

3 Antenna Requirement

3.1 Result

Test Description	Test Specification	Test Result
Antenna requirement	FCC 15.203	Compliant

3.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

3.3 Conclusion

The antenna in the device is a loop PCB trace antenna. It is permanently attached and thus meets the antenna requirement.

4 Field Strength of Fundamental

4.1 Test Result

Test Description	Test Specification		Test Result
Field strength of fundamental	15.231(b)	RSS-210 A.1.2	Compliant
	ANSI C63.10:2013, Section 6.5		

4.2 Test Method

The test data was measured using a Peak detector. Average measurements were made by using a CISPR Ave detector on the EMI receiver. No duty cycle correction factor was utilized on the average measurements as both the Radiated test sample, and the normal use sample's duty cycle are the same. The receiver's resolution bandwidth was set to 120 kHz for measurements taken in the 30MHz to 1GHz frequency range and 1MHz for measurements for 1GHz and higher. Measurements were made with the antenna positioned at a 3m distance from the EUT in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency. The radiated measurements were recorded and compared to the limits indicated in the table below.

The EUT was oriented in each of its three orthogonal axes and data for each was reported.

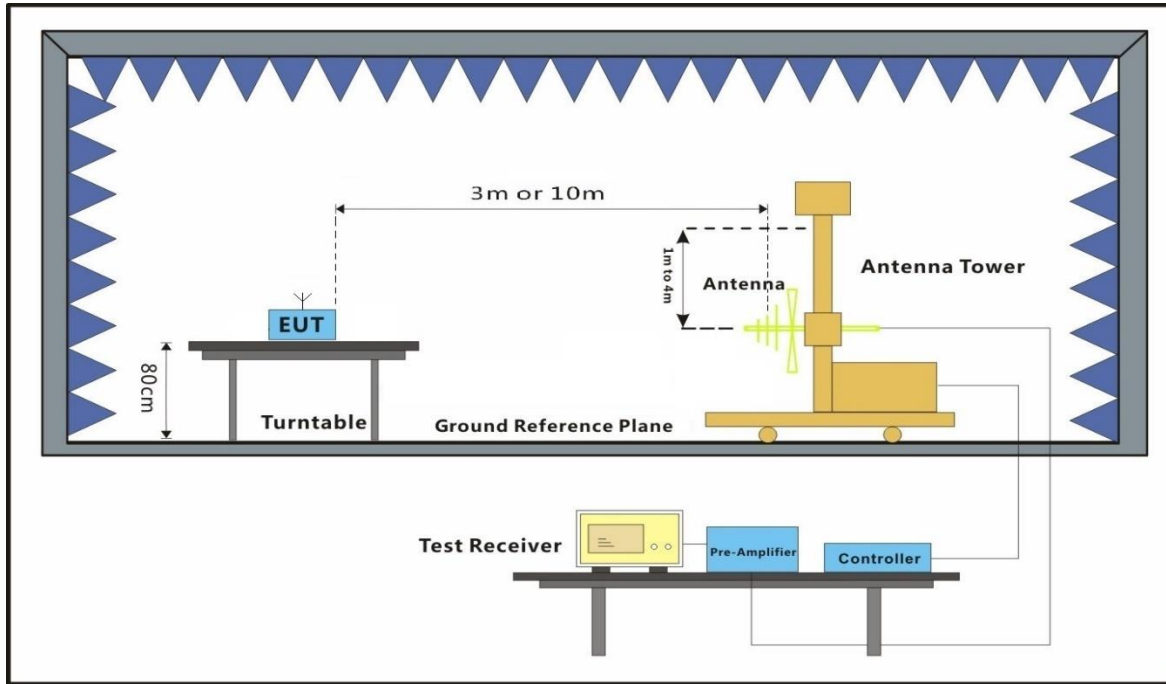
Limits for average value of emissions measured at 3m distance

Fundamental frequency (MHz)	FCC	RSS-210
	Field strength of fundamental (microvolts/meter)	Field strength of fundamental (microvolts/meter)
40.66-40.70	2,250	Not allowed
70-130	1,250	
130-174	1,250 to 3,750 ¹	
174-260	3,750	
260-470	3,750 to 12,500 ¹	
Above 470	12,500	

1) Linear interpolations

From the table above, the fundamental limit for a 315 MHz fundamental frequency is determined by linear interpolation to be 75.6 dBuV/m.

4.3 Test Setup Diagram



4.4 Test Site

10m Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

Environmental Conditions

Test Date: 11-May-2023

Temperature: 23.8 °C

Relative Humidity: 45.5 %

Atmospheric Pressure: 98.22 kPa

4.5 Test Equipment

Test End Date: 11-May-2023

Tester: DA

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
SIGNAL ANALYZER (TS8997)	FSV30	ROHDE & SCHWARZ	B085749	7-Dec-2022	7-Dec-2023
RF CABLE SMA TO SMA, 0.01-40GHZ	084-0505-059	TELEDYNE STORM MICROWAVE	20108	13-Mar-2023	13-Mar-2024

Test End Date: 11-May-2023

Tester: ZH

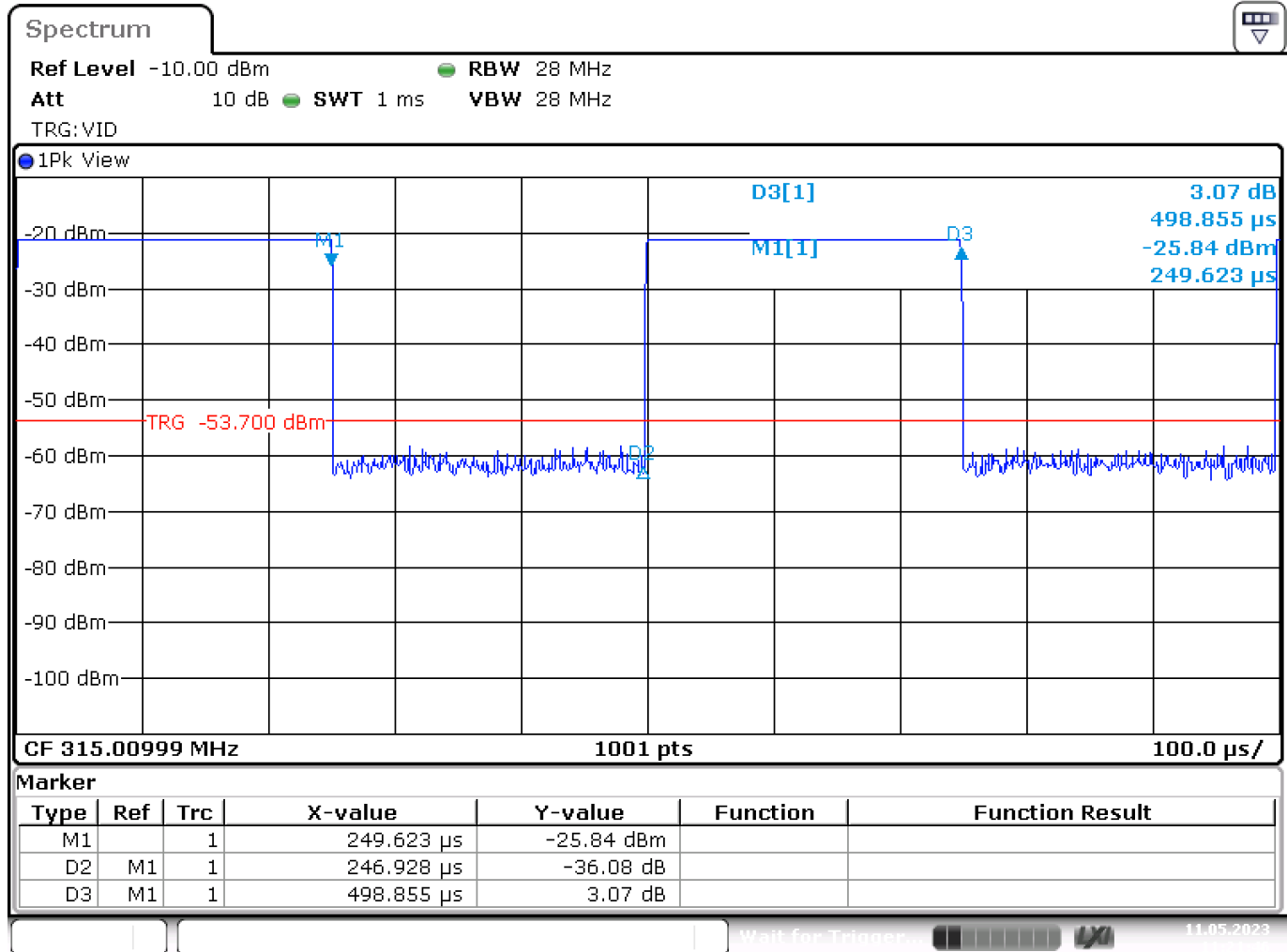
Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
ANTENNA, BILOG	JB6	SUNOL	B079690	19-Apr-2022	19-Apr-2024
N to N RF Cable	EM-B810NM-276	Echelon	22034	23-Jan-2023	23-Jan-2024
RF CABLE	SF106	HUBER & SUHNER	B079713	25-Aug-2022	25-Aug-2023
RF CABLE, NM TO NM.	90-195-157	TELEDYNE STORM MICROWAVE	21019	14-Mar-2023	14-Mar-2024
RF CABLE RIGHT ANGLE NM TO NM, 0.01-18GHZ	90-076-020	TELEDYNE STORM MICROWAVE	20131	13-Mar-2023	13-Mar-2024
LOW NOISE AMPLIFIER	ZKL-2+	MINI-CIRCUITS	B079817	25-Aug-2022	25-Aug-2023
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	22027	13-Sep-2022	13-Sep-2023

Software: "RSE 30-1000 MHz T7 220318" TILE7 profile dated 18 March 2022

4.6 Duty Cycle Correction Factor (DCCF)

Normal Operation of Device:

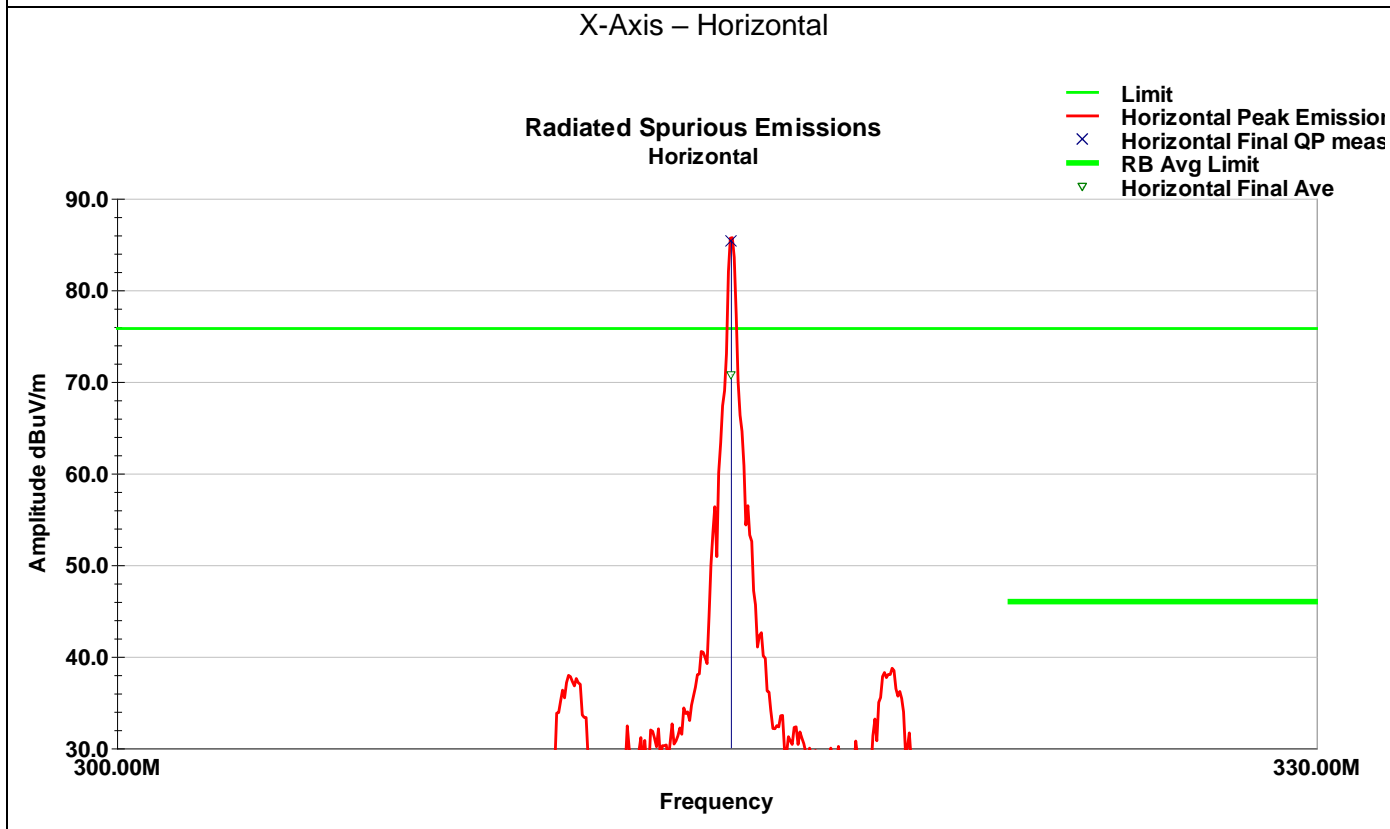
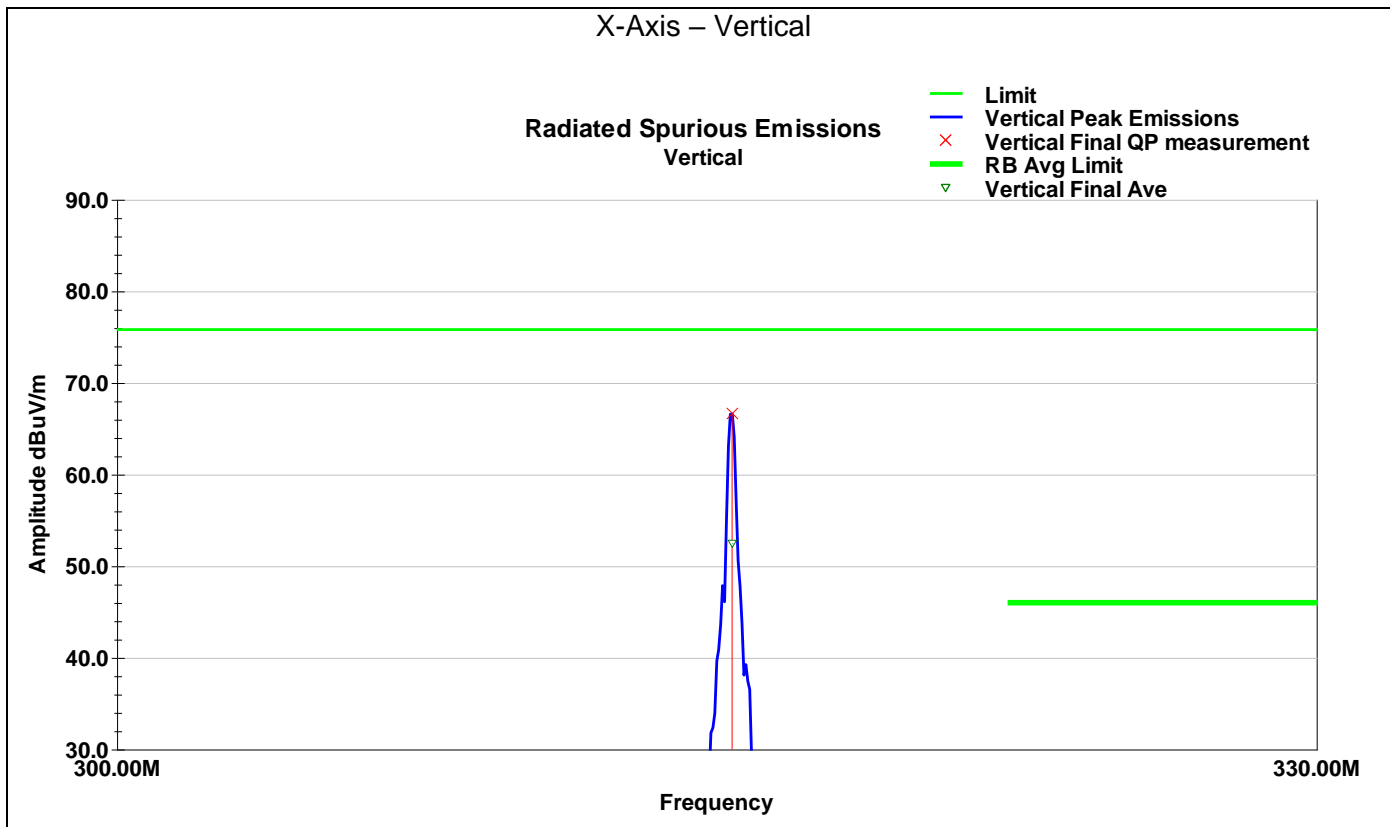
Duty Cycle				
Configuration	TX ON (us)	Period, T (us)	Duty Cycle (%)	DCCF (dB)
Normal	251.927	498.855	51	-5.9

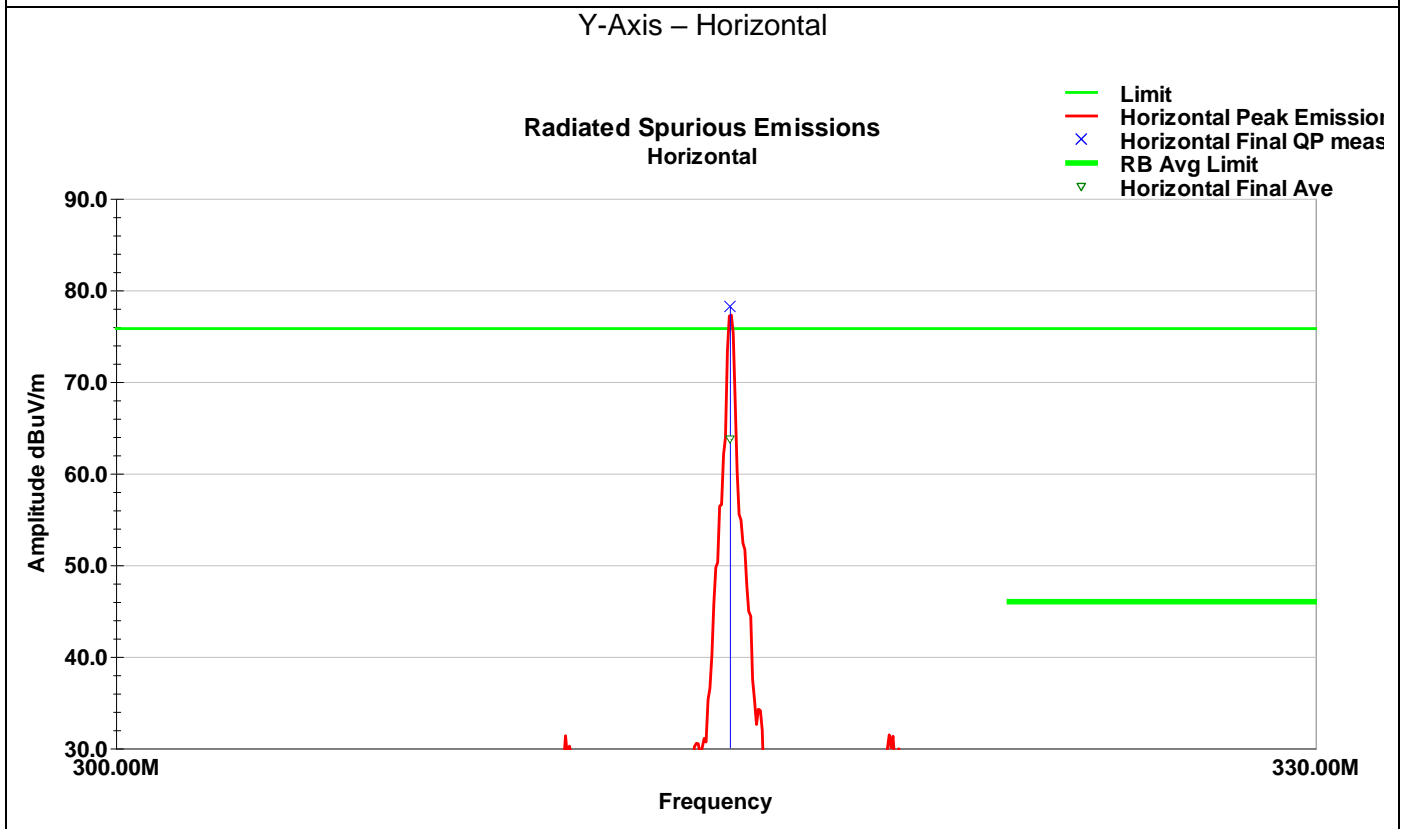
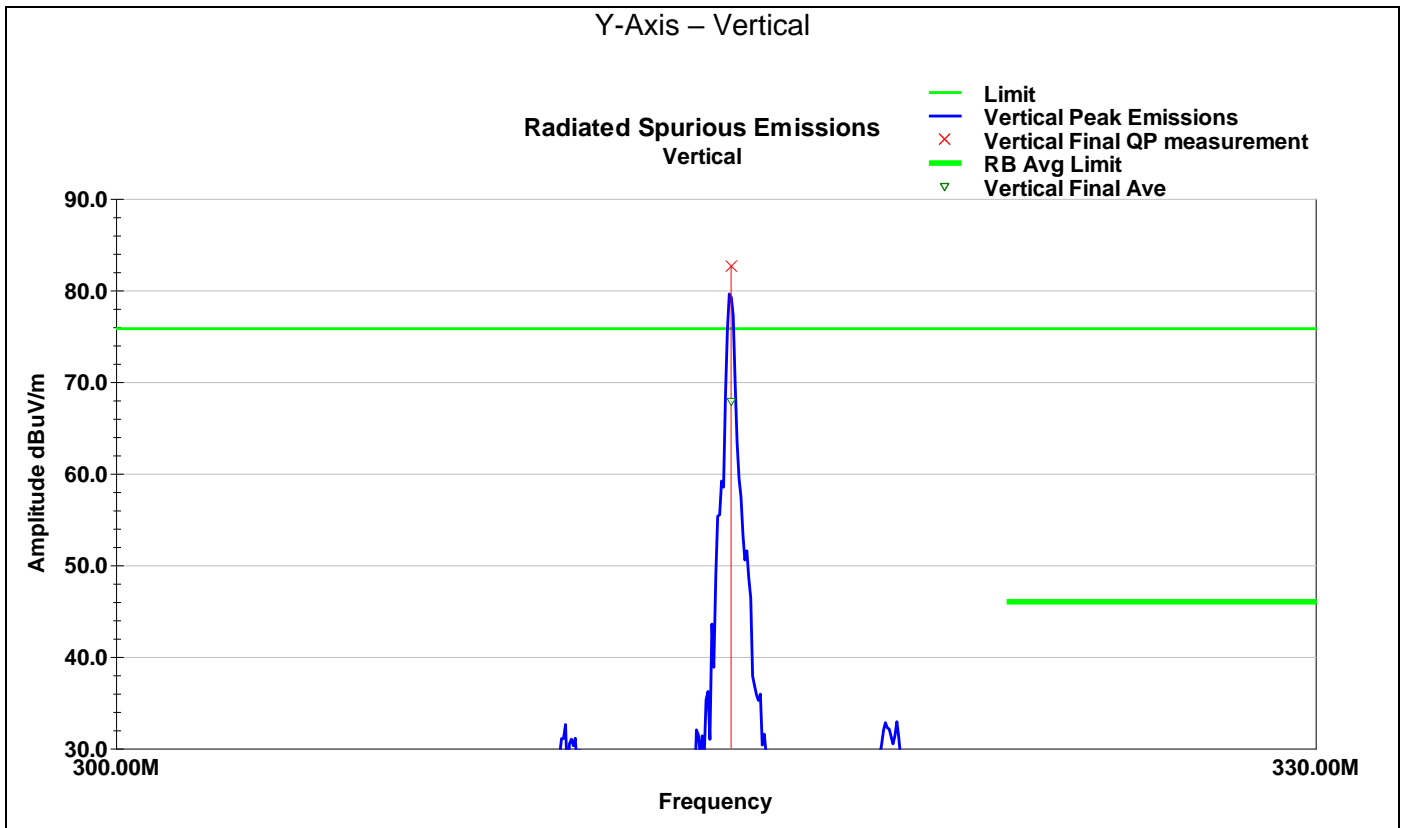


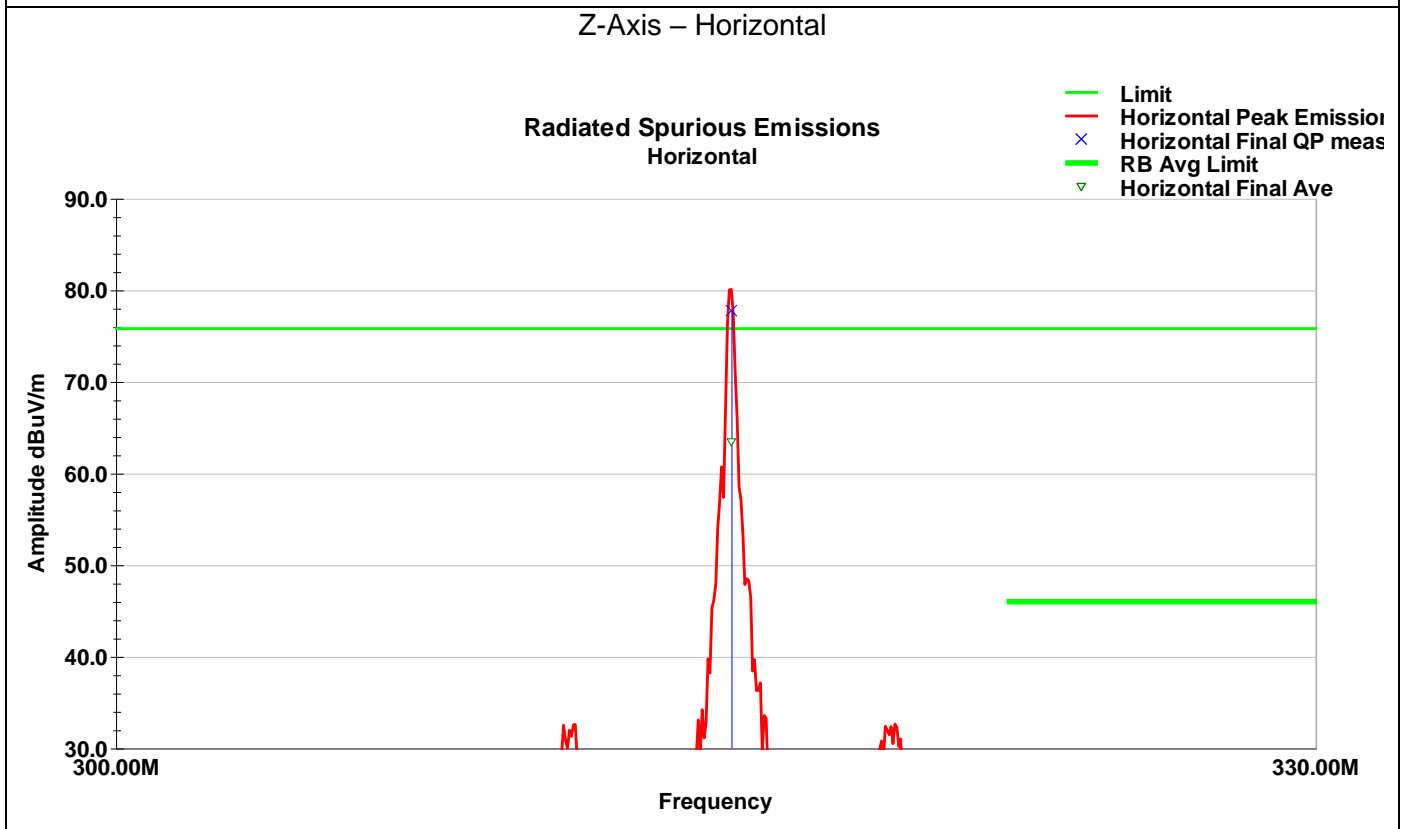
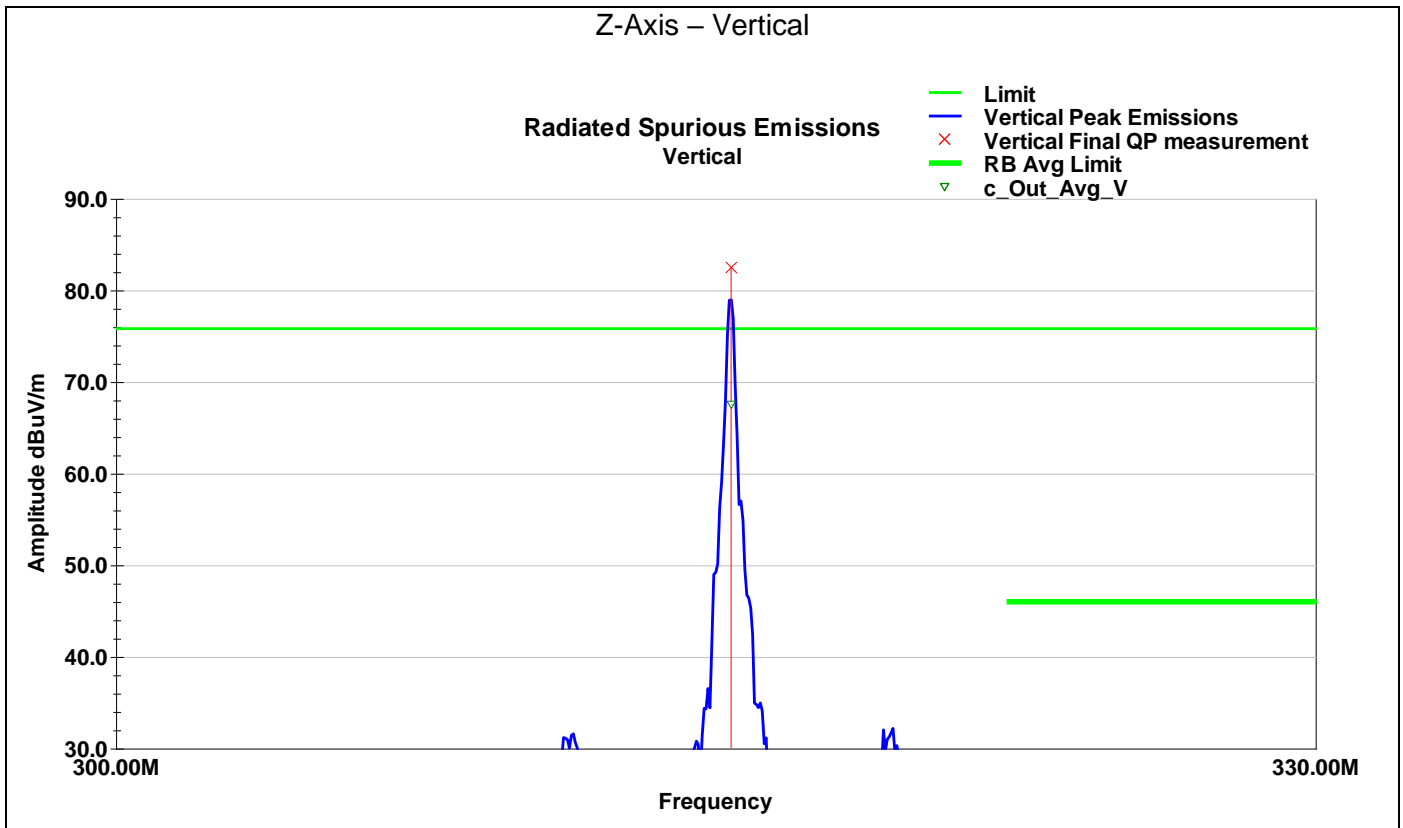
Date: 11.MAY.2023 11:21:47

Note: Duty Cycle of Device when set to Continuous Operation was the same as when operating under its normal configuration. For this reason, no DCCF will be applied to measurements taken during RSE testing.

4.7 Test Data – Plots







4.8 Test Data – Tabular

Average Measurements:

EUT Orientation	Frequency MHz	Raw Ave (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Ave Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
X	315.03	52.5	V	342.0	113.0	18.5	1.9	30.5	42.4	75.6	-33.2
X	315.01	70.8	H	243.0	100.0	18.5	1.9	30.5	60.7	75.6	-14.9
Y	315.03	67.9	V	274.0	159.0	18.5	1.9	30.5	57.8	75.6	-17.8
Y	315.01	63.8	H	187.0	171.0	18.5	1.9	30.5	53.7	75.6	-21.9
Z	315.03	67.6	V	259.0	144.0	18.5	1.9	30.5	57.5	75.6	-18.1
Z	315.01	63.4	H	176.0	100.0	18.5	1.9	30.5	53.3	75.6	-22.3
QP Value =		QP Value = Raw QP+AF+Loss - Amp									
Margin = QP		Margin = QP Value - Limit									

5 Field Strength of Spurious Radiation

5.1 Test Result

Test Description	Test Specification		Test Result
Field strength of spurious emissions	15.231(b)	RSS-210, A.1.2	Compliant
	ANSI C63.10:2013, Section 6.5		

5.2 Test Method

Exploratory scans were performed using the max hold function and incorporating a Peak detector and using TILE! software. The final test data was measured using a Quasi-Peak detector below 1GHz and a Peak detector above 1GHz. For harmonics of the fundamental, Average measurements were made by correcting the peak value with the duty cycle correction factor. For emissions other than harmonics of the fundamental, the Average measurements were made using the Average detector. The receiver's resolution bandwidth was set to 120 kHz for measurements taken in the 30MHz to 1GHz frequency range and 1MHz for measurements for 1GHz and higher. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency. The radiated measurements were recorded and compared to the limits indicated in the table below.

The EUT was oriented in each of its three orthogonal axes and data for each was reported.

Limits for average value of emissions measured at 3m distance

Fundamental frequency (MHz)	FCC	RSS-210
	Field strength of spurious emission (microvolts/meter)	Field strength of spurious emission (microvolts/meter)
40.66-40.70	225	Not allowed
70-130	125	
130-174	125 to 375 ¹	
174-260	375	
260-470	375 to 1250 ¹	
Above 470	1250	

1) Linear interpolations

From the table above, the spurious emission limit for a 315 MHz fundamental frequency is determined by linear interpolation to be 55.6 dBuV/m.

Spurious emissions shall meet the average limits shown in the table above or to the general limits in §15.209, whichever limit permits a higher field strength.

5.3 Test Site

10m Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

Environmental Conditions	30-1000MHz	1-5GHz
Temperature:	23.8 °C	22.9 °C
Relative Humidity:	45.5 %	45.3 %
Atmospheric Pressure:	98.22 kPa	97.6 kPa

5.4 Test Equipment

Test End Date: 11-May-2023

Tester: ZH

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
ANTENNA, BILOG	JB6	SUNOL	B079690	19-Apr-2022	19-Apr-2024
N to N RF Cable	EM-B810NM-276	Echelon	22034	23-Jan-2023	23-Jan-2024
RF CABLE	SF106	HUBER & SUHNER	B079713	25-Aug-2022	25-Aug-2023
RF CABLE, NM TO NM.	90-195-157	TELEDYNE STORM MICROWAVE	21019	14-Mar-2023	14-Mar-2024
RF CABLE RIGHT ANGLE NM TO NM, 0.01-18GHZ	90-076-020	TELEDYNE STORM MICROWAVE	20131	13-Mar-2023	13-Mar-2024
LOW NOISE AMPLIFIER	ZKL-2+	MINI-CIRCUITS	B079817	25-Aug-2022	25-Aug-2023
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	22027	13-Sep-2022	13-Sep-2023

Software: "RSE 30-1000 MHz T7 220318" TILE7 profile dated 18 March 2022

Test End Date: 5-Jun-2023

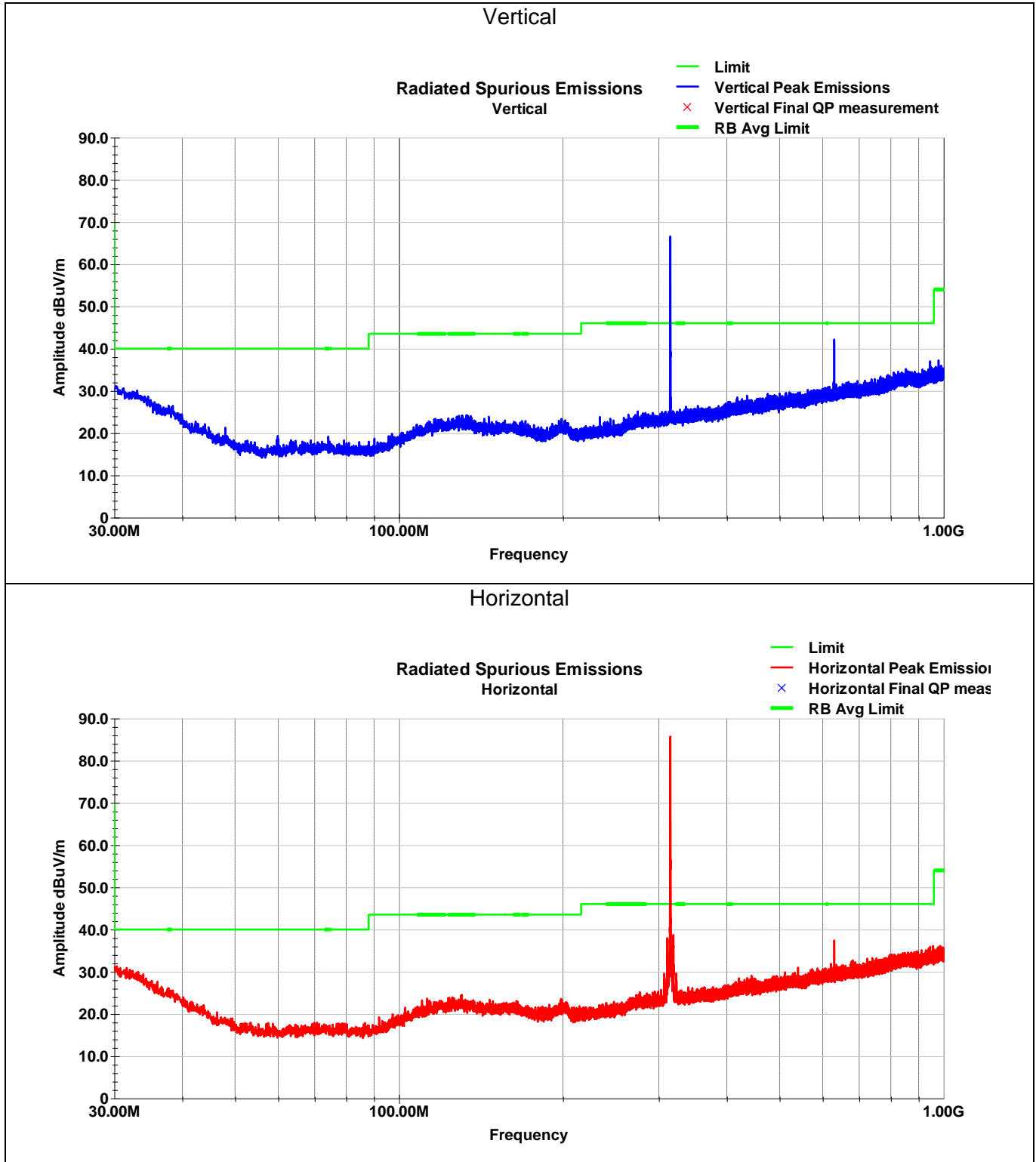
Tester: ZH

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
ANTENNA, DRG HORN (MEDIUM)	3117	ETS LINDGREN	B079691	15-Aug-2022	15-Aug-2024
N to N RF Cable	EM-B810NM-276	ECHELON	23007	31-Mar-2023	31-Mar-2024
RF CABLE RIGHT ANGLE NM TO NM, 0.01-18GHZ	90-076-020	TELEDYNE STORM MICROWAVE	20132	13-Mar-2023	13-Mar-2024
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	15003	3-Oct-2022	3-Oct-2023
EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	22032	24-Nov-2022	24-Nov-2023
FILTER, HIGH PASS, >1000MHZ	HPM50108	MICRO-TRONICS	B079802	5-Jul-2022	5-Jul-2023

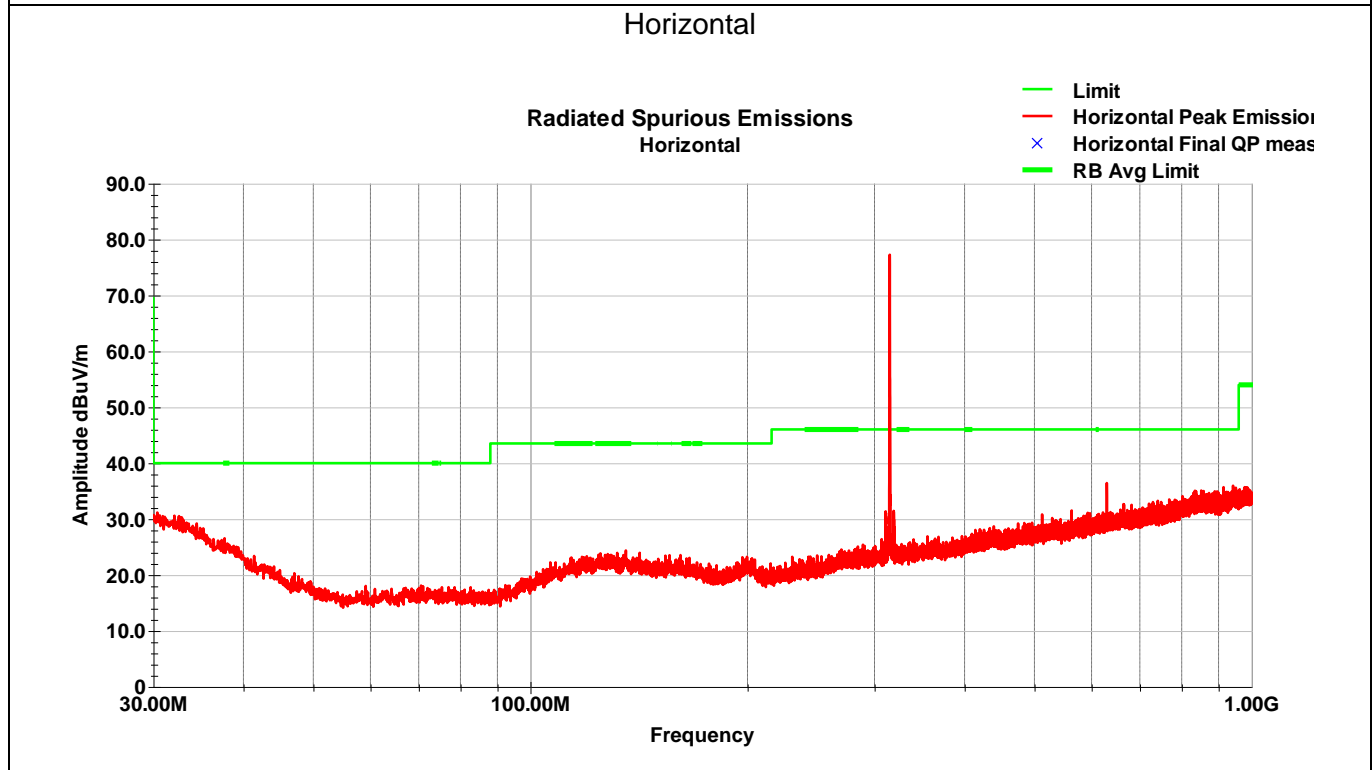
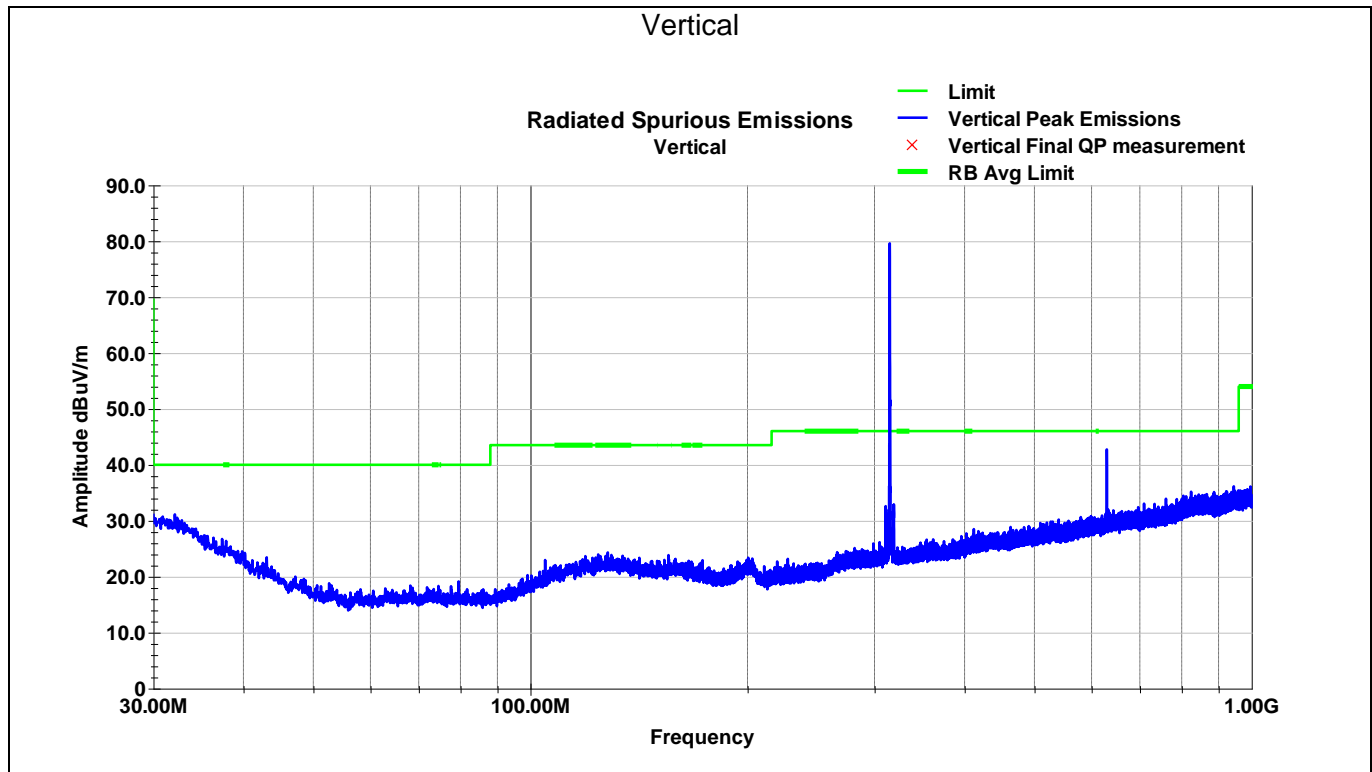
Software: "RSE 1-18 GHz T7 210212" TILE7 profile dated 12 Feb 2021

5.5 Test Data – Below 1 GHz

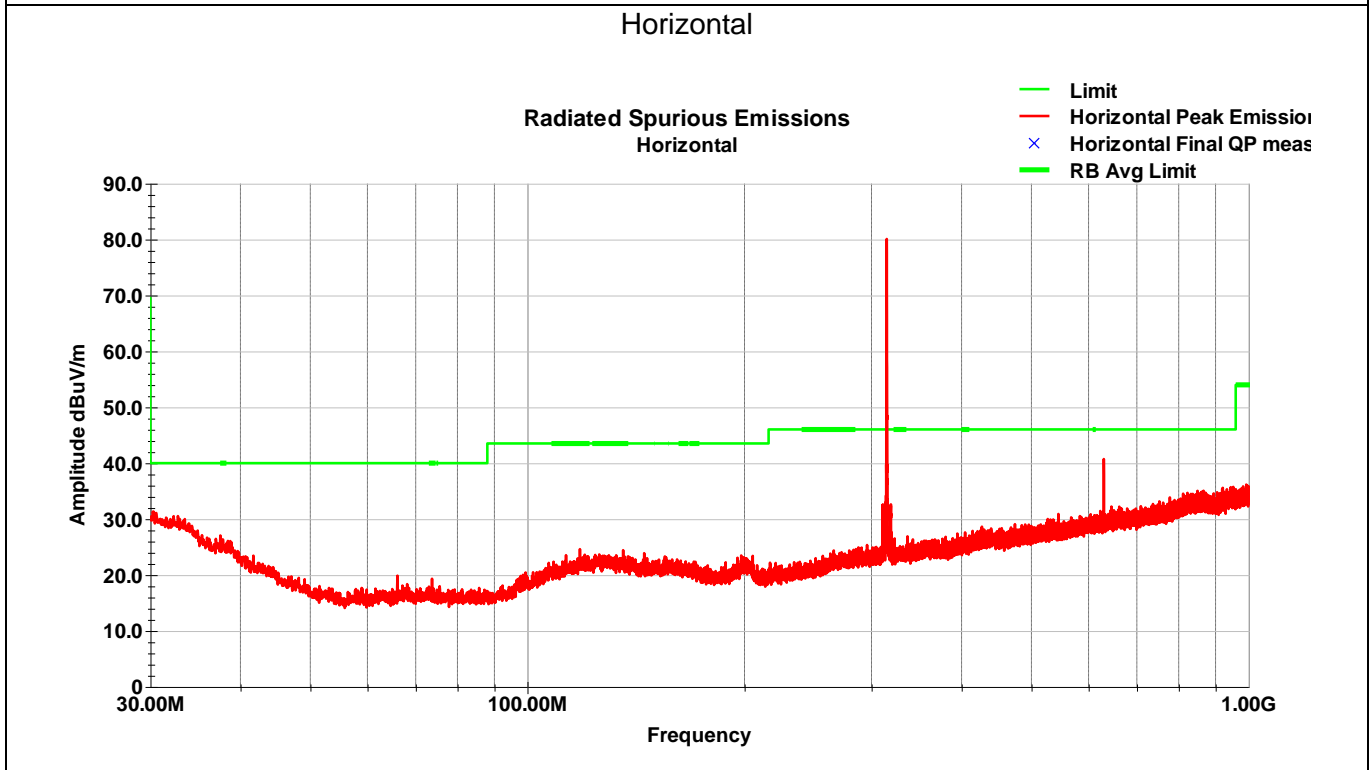
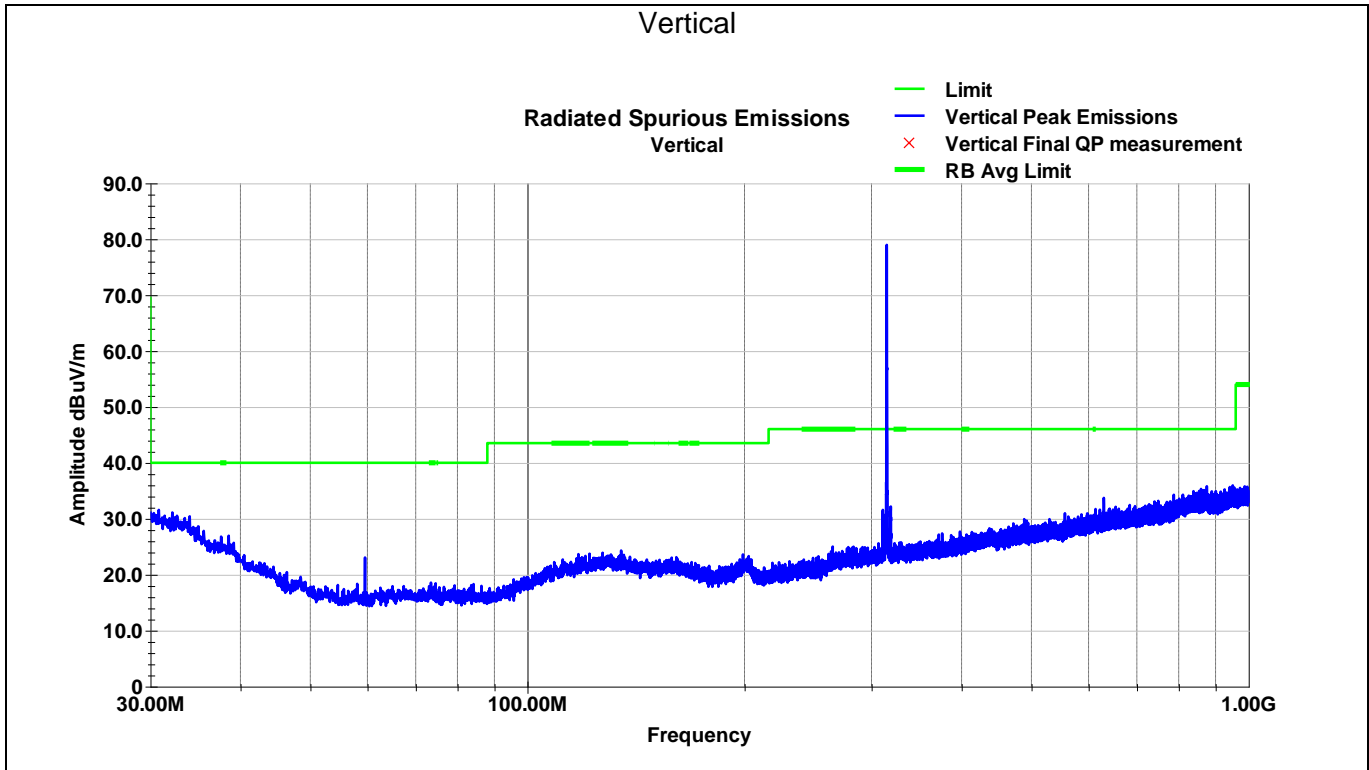
5.5.1 X-Axis



5.5.2 Y-Axis



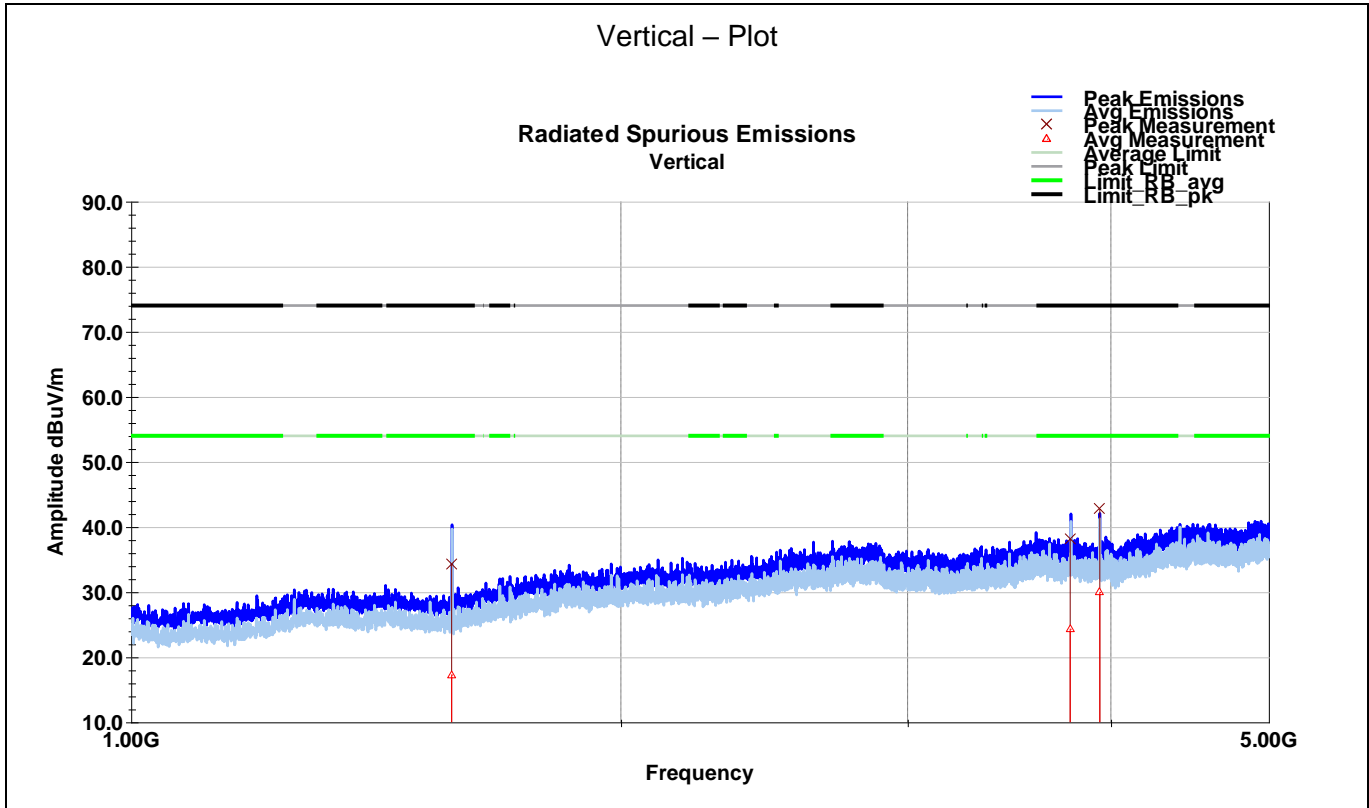
5.5.3 Z-Axis



Only intentional radiator exceeds spurious emission limit

5.6 Test Data – Above 1 GHz

5.6.1 X-Axis



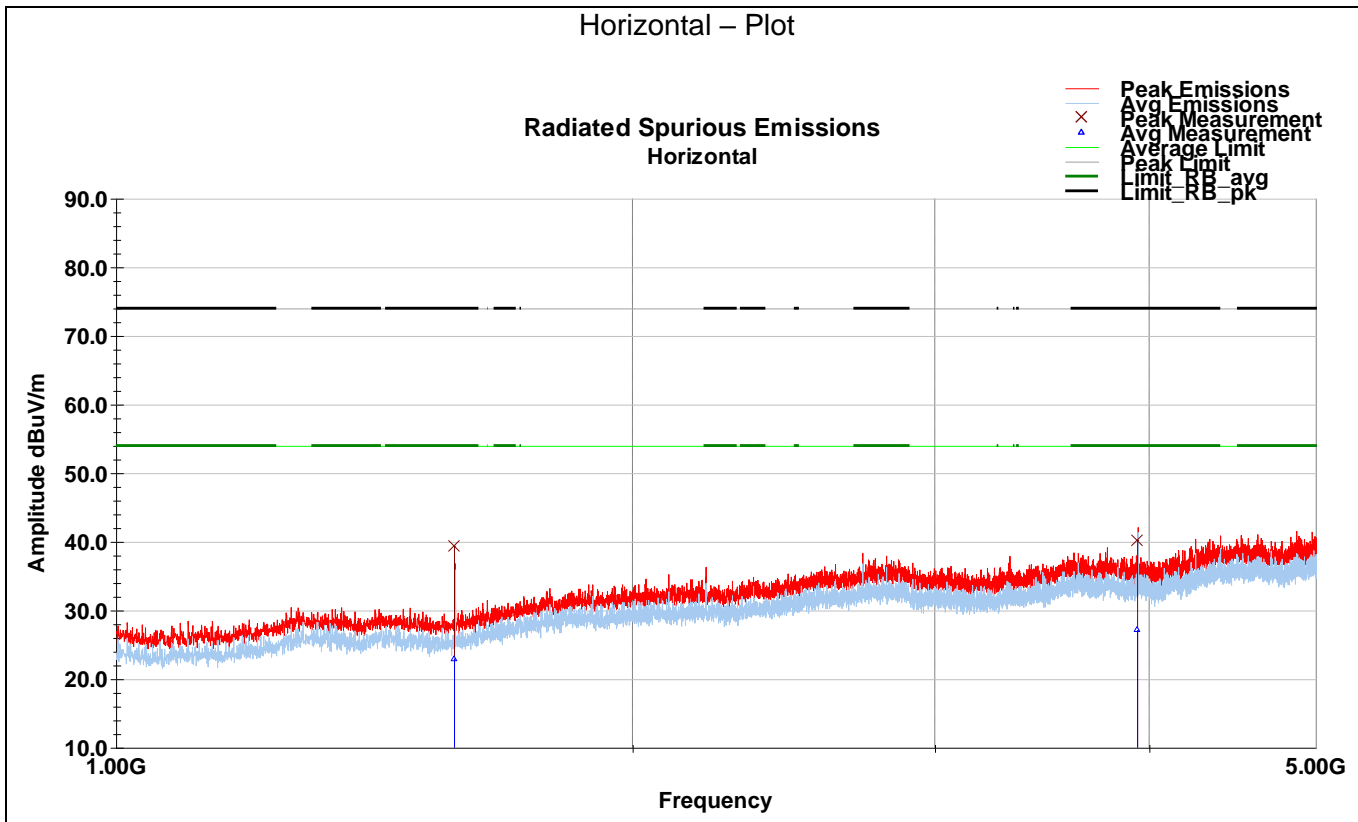
Vertical – Tabular Data

Peak Data

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
3938.36	35.7	V	28.0	117.0	33.2	2.3	33.7	37.5	74.0	-36.5
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average Data

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Avg dBuV/m	Limit (dBuV/m)	Margin (dB)
3938.36	22.6	V	28.0	117.0	33.2	2.3	33.7	24.4	54.0	-29.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										



Horizontal – Tabular Data

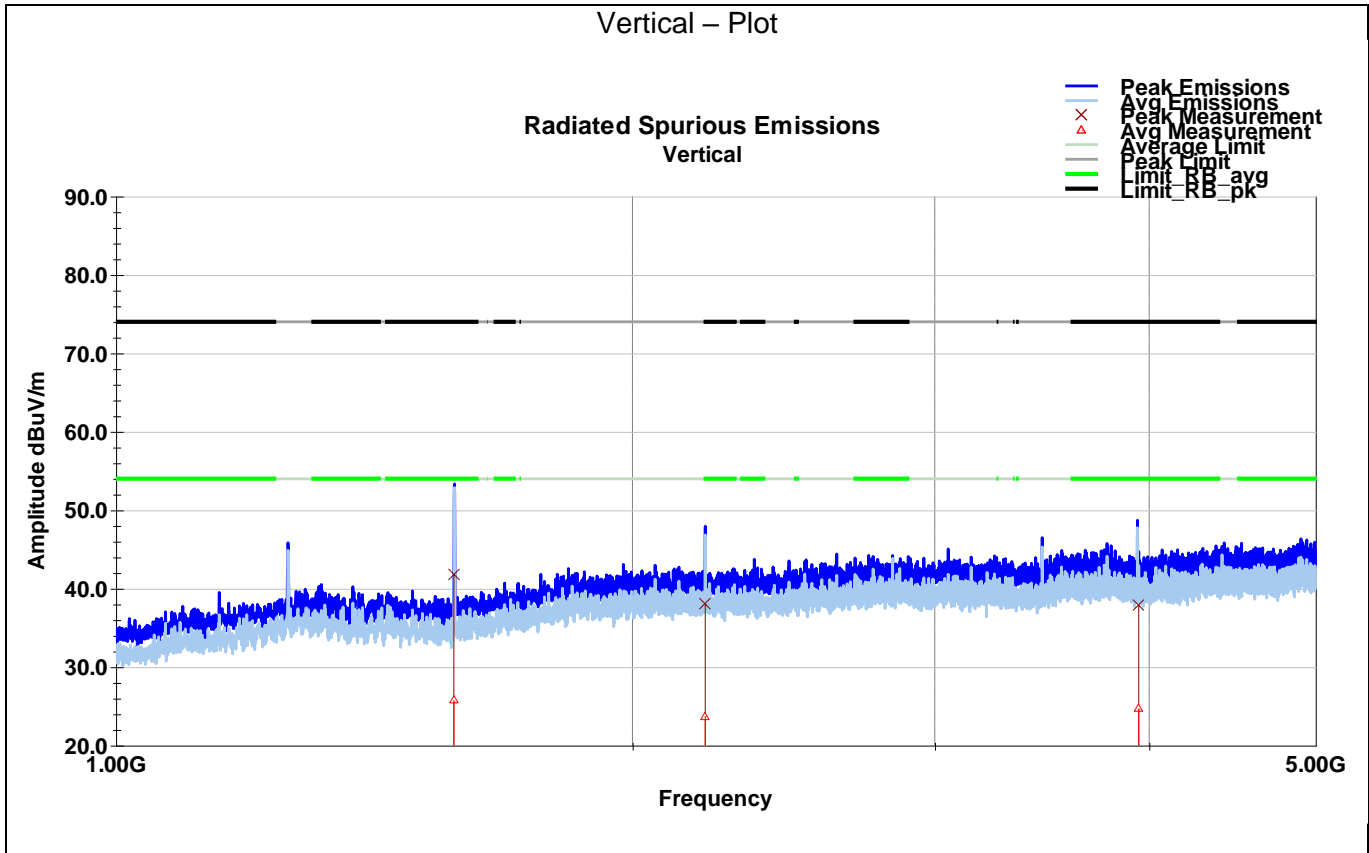
Peak Data

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
1575.08	45.3	H	17.0	170.0	28.3	1.5	33.4	41.8	74.0	-32.2
3780.28	39.9	H	276.0	138.0	33.3	2.3	33.7	41.9	74.0	-32.1
3937.52	41.5	H	243.0	180.0	33.2	2.3	33.7	43.3	74.0	-30.7
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average Data

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
1575.08	29.1	H	17.0	170.0	28.3	1.5	33.4	25.6	54.0	-28.4
3780.28	24.2	H	276.0	138.0	33.3	2.3	33.7	26.2	54.0	-27.8
3937.52	29.2	H	243.0	180.0	33.2	2.3	33.7	31.0	54.0	-23.0
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

5.6.2 Y-Axis



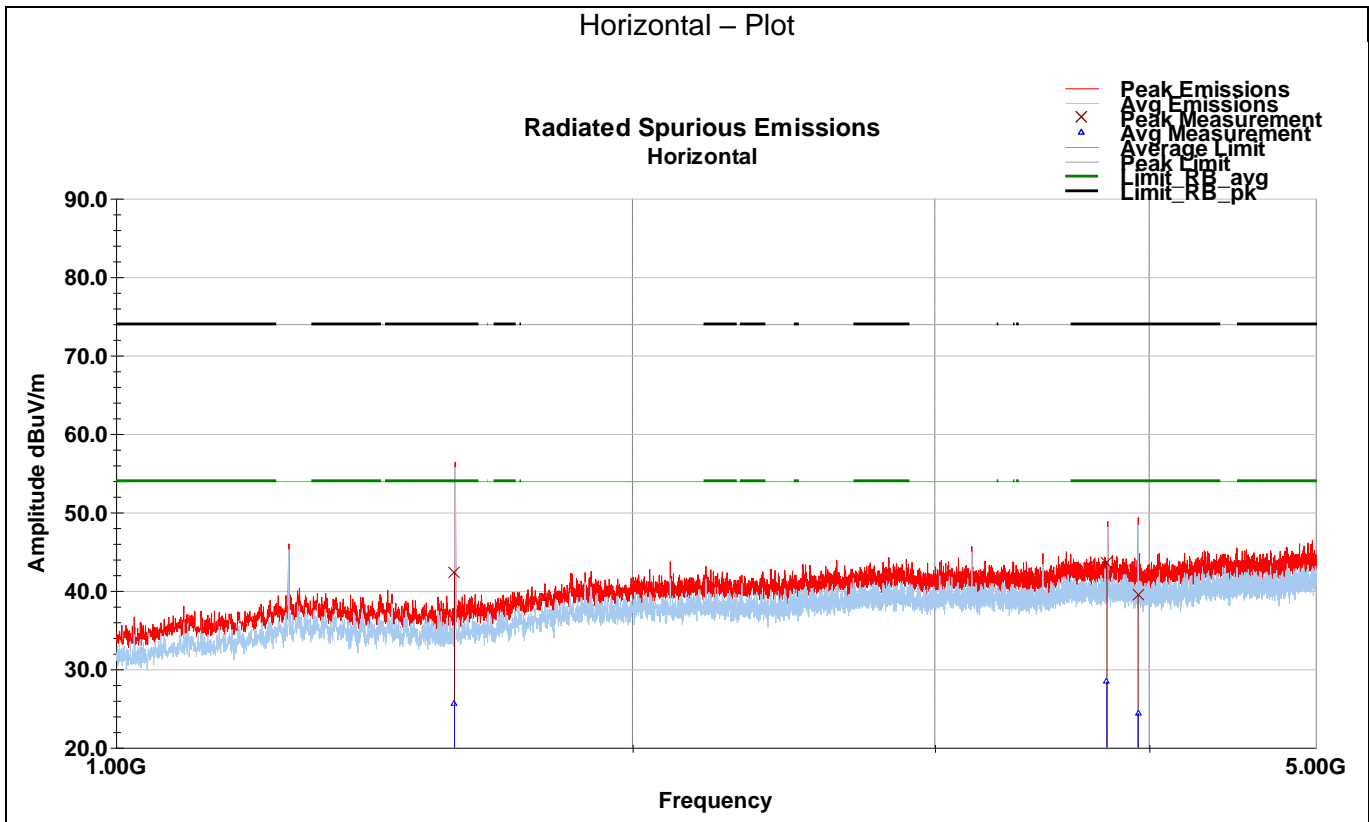
Vertical – Tabular Data

Peak Data

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
1573.84	45.3	V	249.0	245.0	28.3	1.5	33.4	41.7	74.0	-32.3
2205.00	38.2	V	215.0	146.0	31.4	1.8	33.4	38.0	74.0	-36.0
3944.60	36.1	V	321.0	100.0	33.2	2.3	33.7	37.9	74.0	-36.1
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average Data

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Avg dBuV/m	Limit (dBuV/m)	Margin (dB)
1573.84	29.3	V	249.0	245.0	28.3	1.5	33.4	25.7	54.0	-28.2
2205.00	23.9	V	215.0	146.0	31.4	1.8	33.4	23.7	54.0	-30.3
3944.60	22.9	V	321.0	100.0	33.2	2.3	33.7	24.7	54.0	-29.3
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										



Horizontal – Tabular Data

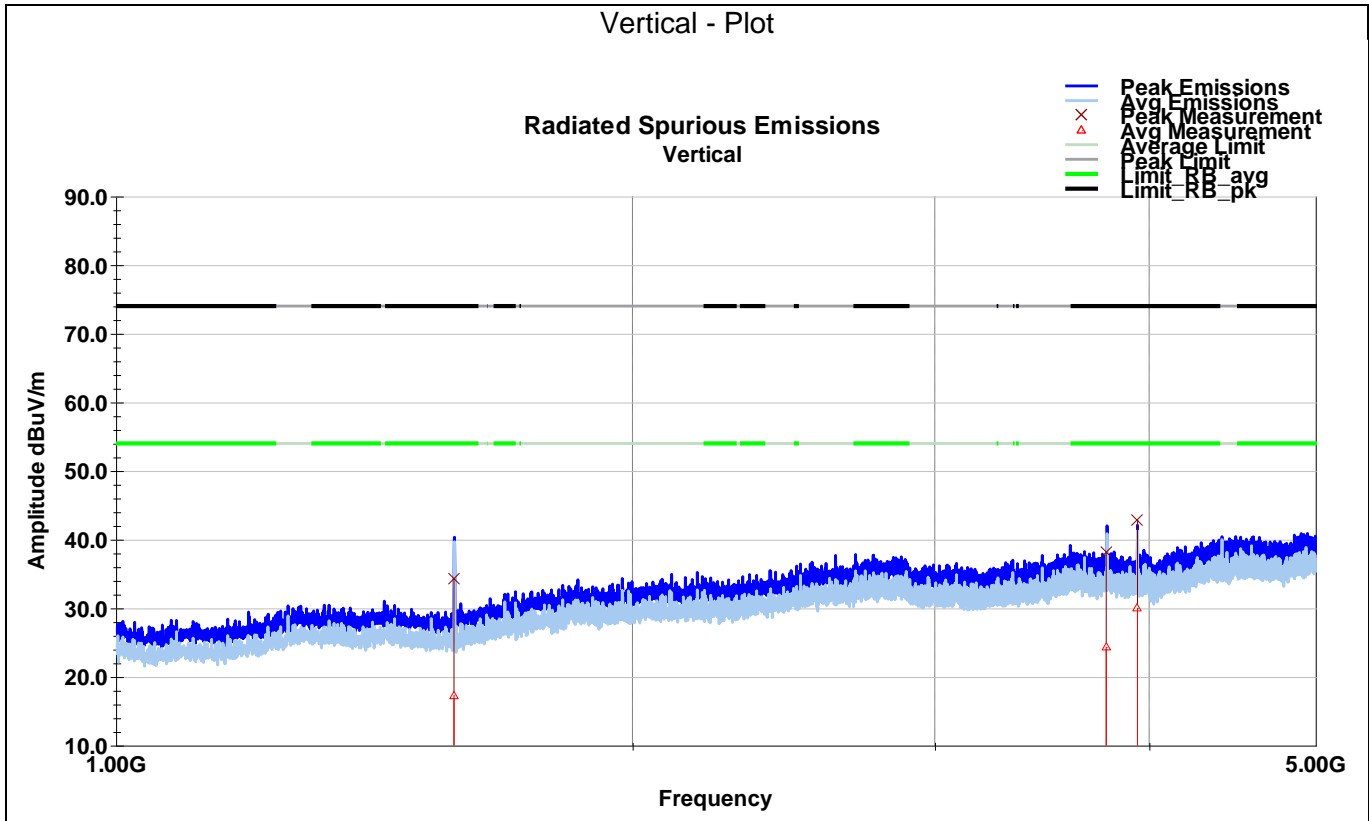
Peak Data

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
1575.04	45.8	H	7.0	128.0	28.3	1.5	33.4	42.3	74.0	-31.7
3779.92	41.6	H	182.0	103.0	33.3	2.3	33.7	43.6	74.0	-30.4
3941.00	37.6	H	219.0	137.0	33.2	2.3	33.7	39.4	74.0	-34.6
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average Data

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
1575.04	29.2	H	7.0	128.0	28.3	1.5	33.4	25.7	54.0	-28.3
3779.92	26.4	H	182.0	103.0	33.3	2.3	33.7	28.4	54.0	-25.6
3941.00	22.6	H	219.0	137.0	33.2	2.3	33.7	24.4	54.0	-29.6
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

5.6.3 Z-Axis



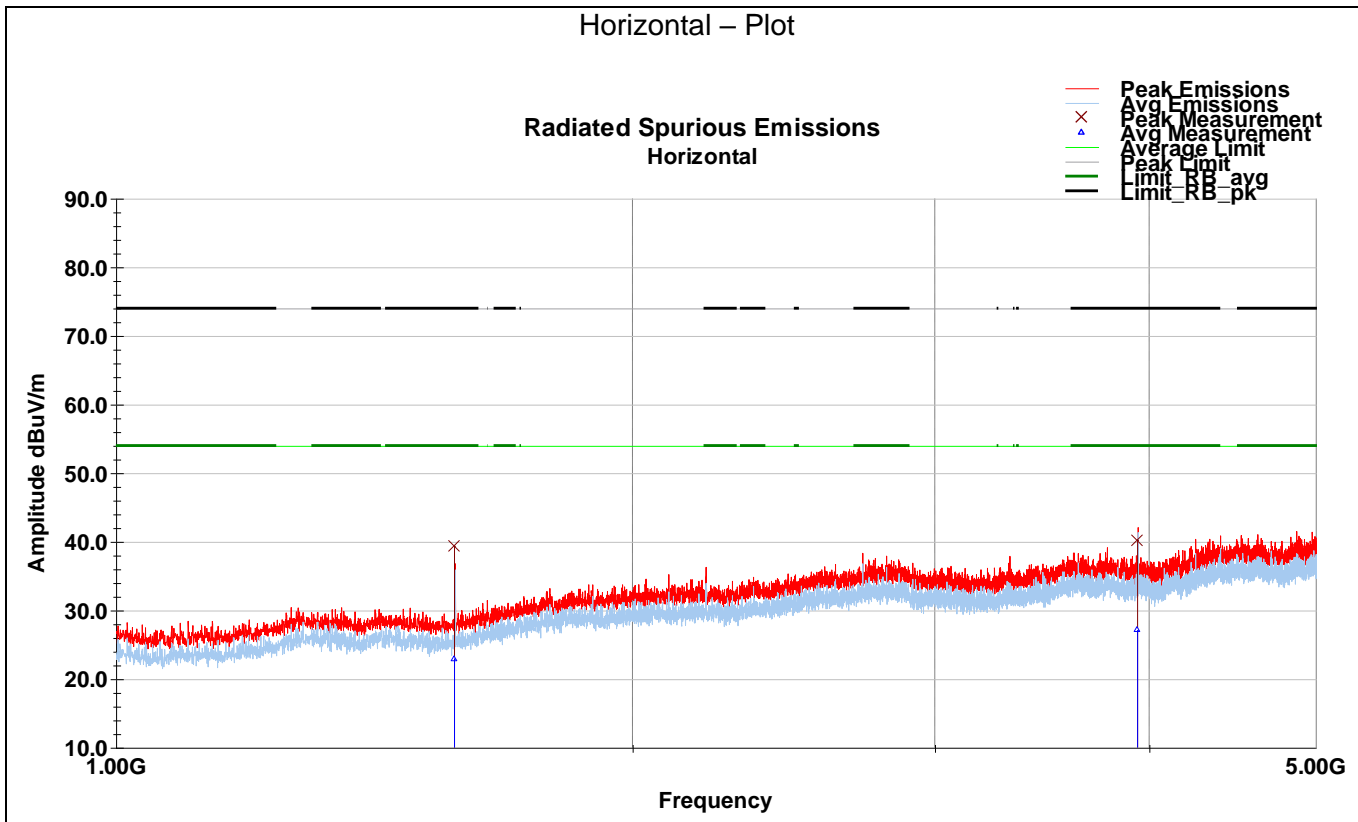
Vertical – Tabular Data

Peak Data

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
1574.08	37.9	V	72.0	121.0	28.3	1.5	33.4	34.4	74.0	-39.6
3776.08	36.1	V	192.0	117.0	33.3	2.3	33.7	38.1	74.0	-35.9
3937.76	41.0	V	305.0	225.0	33.2	2.3	33.7	42.8	74.0	-31.2
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average Data

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Avg dBuV/m	Limit (dBuV/m)	Margin (dB)
1574.08	20.9	V	72.0	121.0	28.3	1.5	33.4	17.3	54.0	-36.7
3776.08	22.4	V	192.0	117.0	33.3	2.3	33.7	24.4	54.0	-29.6
3937.76	28.2	V	305.0	225.0	33.2	2.3	33.7	30.0	54.0	-24.0
Final Avg = Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										



Horizontal – Tabular Data

Peak Data

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
1575.04	42.9	H	0.0	130.0	28.3	1.5	33.4	39.4	74.0	-34.6
3938.36	38.5	H	170.0	109.0	33.2	2.3	33.7	40.3	74.0	-33.7
Final Pk = Raw Pk + AF + Loss - Amp										
Margin = Final Pk - Limit										

Average Data

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
1575.04	26.5	H	0.0	130.0	28.3	1.5	33.4	23.0	54.0	-31.0
3938.36	25.3	H	170.0	109.0	33.2	2.3	33.7	27.1	54.0	-26.9
Raw Avg + AF + Loss - Amp										
Margin = Final Avg - Limit										

6 Bandwidth

6.1 Test Result

Test Description	Test Specification		Test Result
20 dB Bandwidth	15.231(c)	RSS-210 A.1.3	Compliant

6.2 Test Method

The procedures from ANSI C63.10 (2013) clause 6.9 were used to determine the 20 dB bandwidth.

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

6.3 Test Site

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 24.16 °C

Relative Humidity: 45.7 %

Atmospheric Pressure: 98.2 kPa

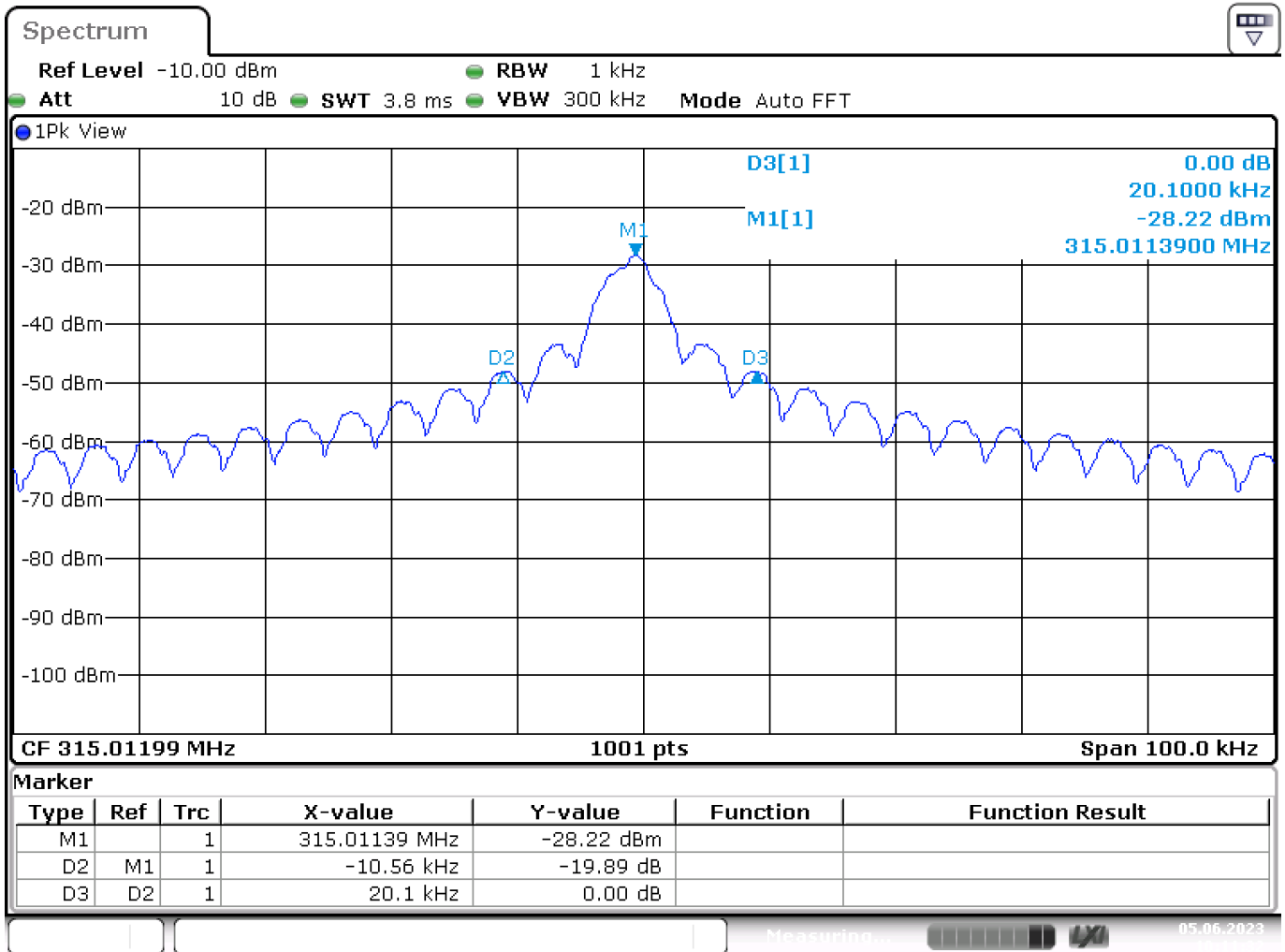
6.4 Test Equipment

Test End Date: 5-Jun-2023

Tester: DA

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
SIGNAL ANALYZER (TS8997)	FSV30	ROHDE & SCHWARZ	B085749	7-Dec-2022	7-Dec-2023
RF CABLE SMA TO SMA, 0.01-40GHZ	084-0505-059	TELEDYNE STORM MICROWAVE	20108	13-Mar-2023	13-Mar-2024

6.5 Test Data



Date: 5.JUN.2023 10:11:32

The maximum allowable bandwidth is 0.25% of 315.0 MHz which is 787.5kHz.
 The measured bandwidth derived from the plot above is 20.1kHz.
 The EUT complies with the limit.

7 Deactivation Time

7.1 Test Result

Test Description	Test Specification		Test Result
Deactivation time, manual	15.231(a)(1)	RSS-210 A.1.1a	Compliant
	ANSI C63.10:2013, Section 7.4		

7.2 Test Method

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

7.3 Test Site

Environmental Conditions

Temperature: 24.16 °C

Relative Humidity: 45.7 %

Atmospheric Pressure: 98.3 kPa

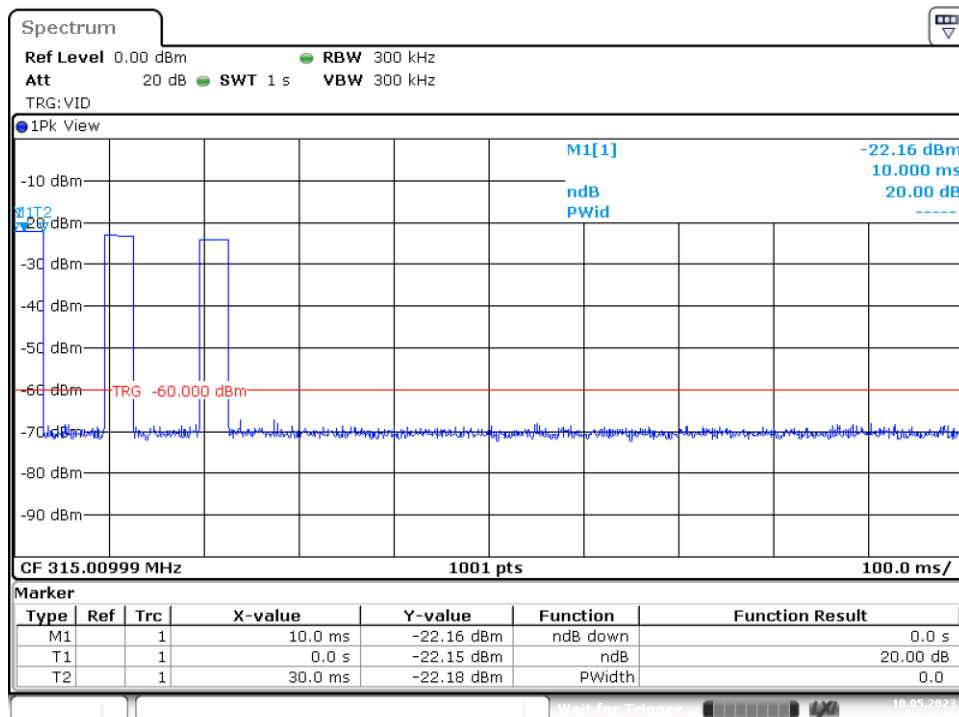
7.4 Test Equipment

Test End Date: 10-May-2023

Tester: DA

Equipment	Model	Manufacturer	Asset	Cal Date	Cal Due Date
SIGNAL ANALYZER (TS8997)	FSV30	ROHDE & SCHWARZ	B085749	7-Dec-2022	7-Dec-2023
RF CABLE SMA TO SMA, 0.01-40GHZ	084-0505-059	TELEDYNE STORM MICROWAVE	20108	13-Mar-2023	13-Mar-2024

7.5 Test Data



Date: 10.MAY.2023 14:42:28

The transmitter is deactivated under 240 milliseconds of the button being released.

8 Measurement Uncertainty

The measurement uncertainty figures are be calculated in accordance with TR 100 028-1 [2] and correspond to an expansion factor (coverage factor) $k = 2$ (which provide confidence levels of 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Parameter	Expanded Uncertainty for Normal k factor equal to 2	
	Required	Laboratory Actual
Radio Frequency	$\pm 1 \times 10^{-5}$	$\pm 9.8 \times 10^{-8}$
total RF power, conducted	± 1.5 dB	± 1.2 dB
RF power density, conducted	± 3 dB	± 0.7 dB
spurious emissions, conducted	± 3 dB	± 2.1 dB
all emissions, radiated	± 6 dB	± 4.8 dB
temperature	$\pm 1^{\circ}\text{C}$	$\pm 0.5^{\circ}\text{C}$
humidity	± 5 %	$\pm 3.5\%$
DC and low frequency voltages	± 3 %	$\pm 0.4\%$

9 Revision History

Revision Level	Description of changes	Revision Date
Draft	--	
1	Initial release	15 May 2023