

TEST REPORT

Report Number. : 14523740-E12V2

Applicant : APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

Model : A2848

FCC ID : BCG-E8435A

IC : 579C-E8435A

EUT Description : SMARTPHONE

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-210 ISSUE 10
ISED RSS-GEN ISSUE 5 + A1 + A2

Date of Issue:
July 20, 2023

Prepared by:
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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	7/17/2023	Initial Issue	Chin Pang
V2	7/20/2023	Address TCB's Questions section 5.3, 8.4, 10	Chin Pang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: SMARTPHONE

MODEL: A2848

BRAND: APPLE

FCC ID: BCG-E8435A

IC: 579C-E8435A

SERIAL NUMBER: KN6GN712QW, LPKX71XH65

SAMPLE RECEIPT DATE: APRIL 04, JUNE 01, JUNE 20, 2023

DATE TESTED: APRIL 05 -JULY 04, 2023

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	Complies
ISED RSS-210 Issue 10, Annex B	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL Verification Services Inc. By:



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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:

- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- ANSI C63.10-2013
- KDB 414788 D01 Radiated Test Site v01r01
- RSS-GEN Issue 5 + A1 + A2
- RSS-210 Issue 10

3. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.).

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U _{Lab}
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.2%
Temperature	±0.57 %
Relative Humidity	3.39 %
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB

Uncertainty figures are valid to a confidence level of 95%.

4.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
 36.5 dBuV + 0 dB + 10.1 dB + 0 dB = 46.6 dBuV

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC, NB UNII, 802.15.4, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

5.2. MAXIMUM E-FIELD STRENGTH

The transmitter has a maximum peak radiated E-field strength as follows:

Antenna	Frequency Range (MHz)	Mode		Kbps	E Field at 30m distance (dBuV/m)
Primary	13.56	Type A	Reader	106	26.73
			Tag	106	25.85
			CE	106	23.48
Secondary	13.56	Type A	Reader	106	5.07
			Tag	106	6.89

5.3. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated under three orthogonal orientations X (Flatbed), Y (Landscape), and Z (Portrait). The Y (Landscape) orientation was determined to be the worst-case orientation. The EUT has primary and secondary antennas and worst case was investigated on the primary antenna since it has the highest power.

The worst-case position of the EUT was investigated under two configurations: EUT with power supply, EUT with earphones. The EUT with power supply configuration was determined to be worst-case configurations; therefore, all final tests were performed on the EUT with power supply.

In addition, Tag, Reader, and CE mode mode were investigated with Type A, B and F with data rates, such as 106Kbp/s, 212Kbp/s, 424Kbp/s and 848Kbp/s and ISO 15693 configuration to determine the worst case based on the highest power and spurious emissions. Type A 106Kbps was determined to be the worst case and therefore Type A was selected for all final tests

For below 30MHz testing, investigation was done on three antenna orientations: RX antenna Face-on, Face-off and horizontal (parallel to ground). The worst-case configurations were determined on RX antenna Face-on and Face-off; therefore, all final tests were performed using these two orientations.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 meter open area test site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

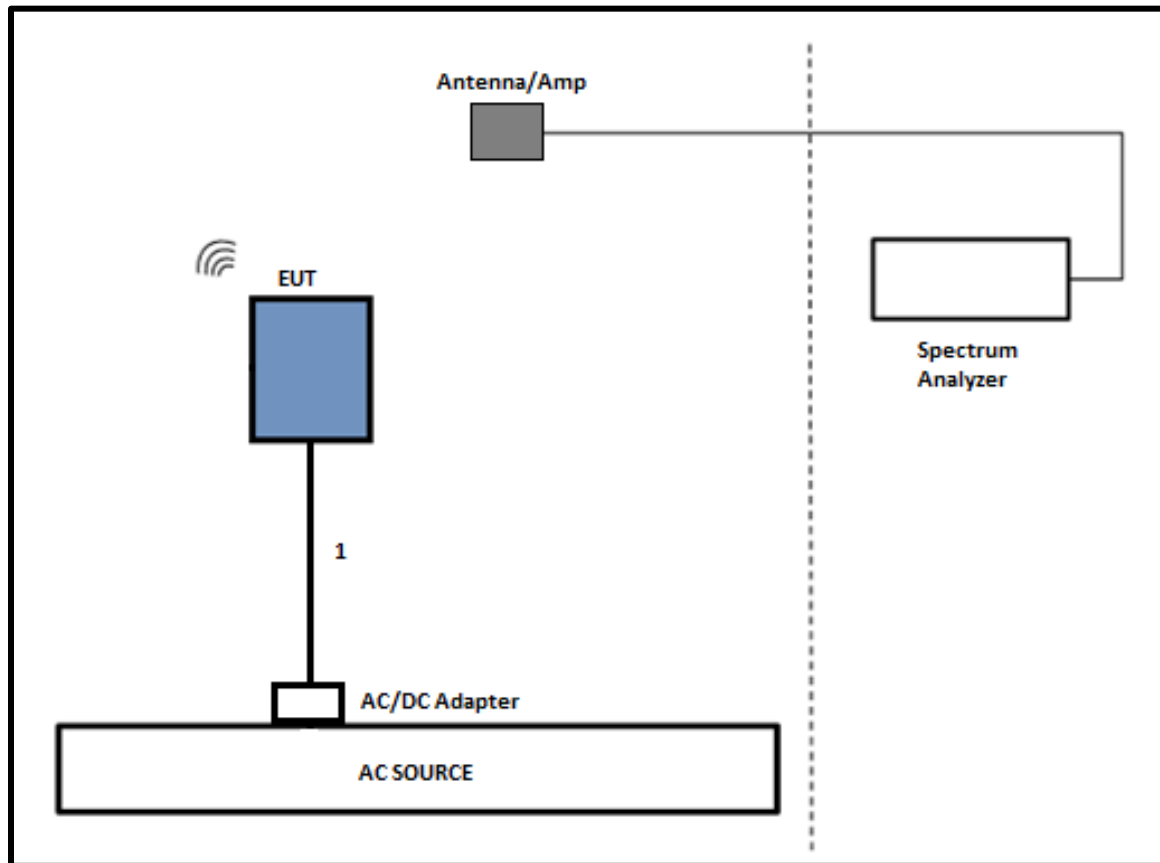
Testing was performed on the parent model and is used to support the application for the parent and variants identified in this report based on the test plan submitted and approved via KDB inquiry by the FCC and by ISED-Canada.

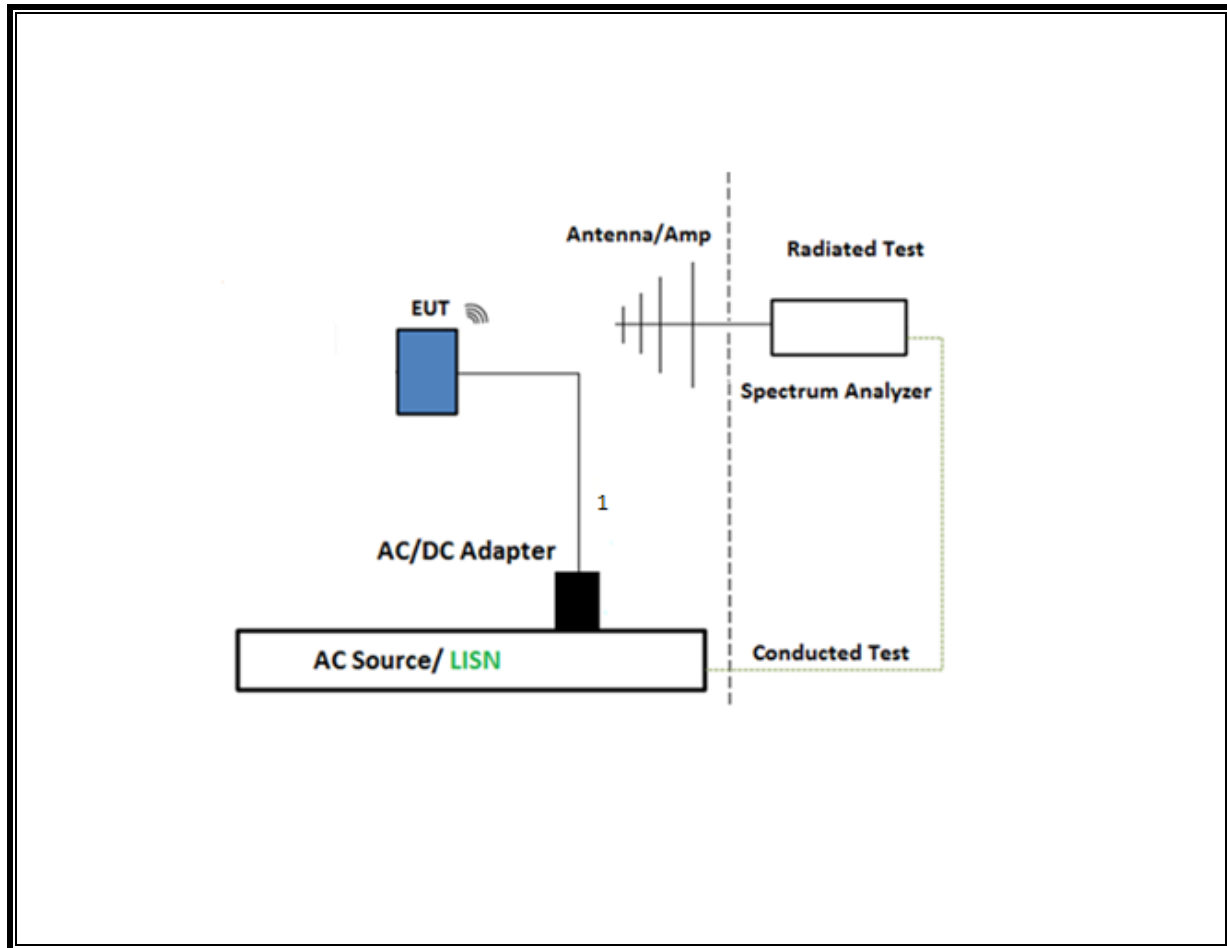
5.4. SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
EUT AC/DC adapter	Apple	A1720	C3D8417A7R93KVPA8	DoC

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-Shielded	1	N/A

SETUP DIAGRAM FOR RADIATED TESTS

SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment were utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	125188	01/31/2024	01/31/2023
*Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB1	80508	06/08/2023	05/08/2022
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	89831	08/10/2023	08/10/2022
Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	170013	07/28/2023	07/28/2022
Antenna, Passive Loop 100KHz to 30MHz	ETS-Lindgren	EM-6872	170015	07/28/2023	07/28/2022
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A (MY55410147)	125179	02/29/2024	02/29/2023
EMI Test Receiver	Rohde & Schwarz	ESW44	169937	02/29/2024	02/29/2023
Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	82472	01/31/2024	01/31/2023

AC Line Conducted					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	02/29/2024	02/29/2023
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	01/31/2024	01/31/2023
Transient Limiter	TE	TBFL1	207996	07/15/2023	07/15/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, Mar 6, 2020		
Conducted Software	UL	UL EMC	2020.2.26		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, February 21, 2020		

*Testing is completed before equipment expiration date.

7. OCCUPIED BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 10kHz. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

Note: Because the measured signal is CW or CW-like adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

RESULTS

99% and 20dB BW

Primary Antenna

Type A (Reader Mode)

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
106	13.56	21.681	24.99

TAG Mode

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
106	13.56	22.035	25.47

Type A (CE Mode)

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
106	13.56	22.309	25.22

Secondary Antenna

Type A (Reader Mode)

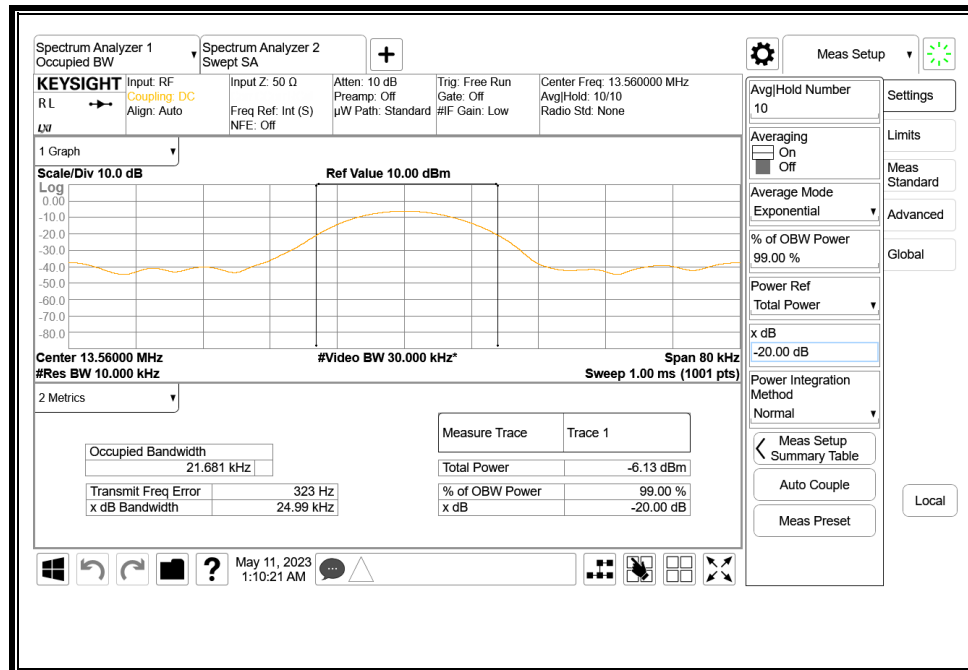
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
106	13.56	22.007	25.32

TAG Mode

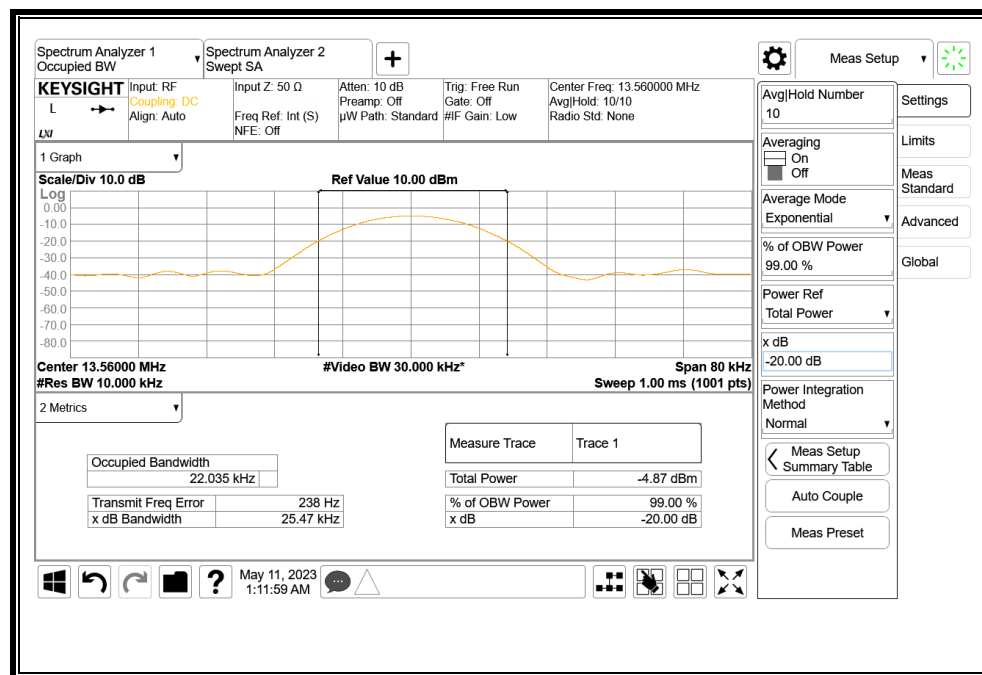
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
106	13.56	21.90	25.07

7.1. PRIMARY ANTENNA

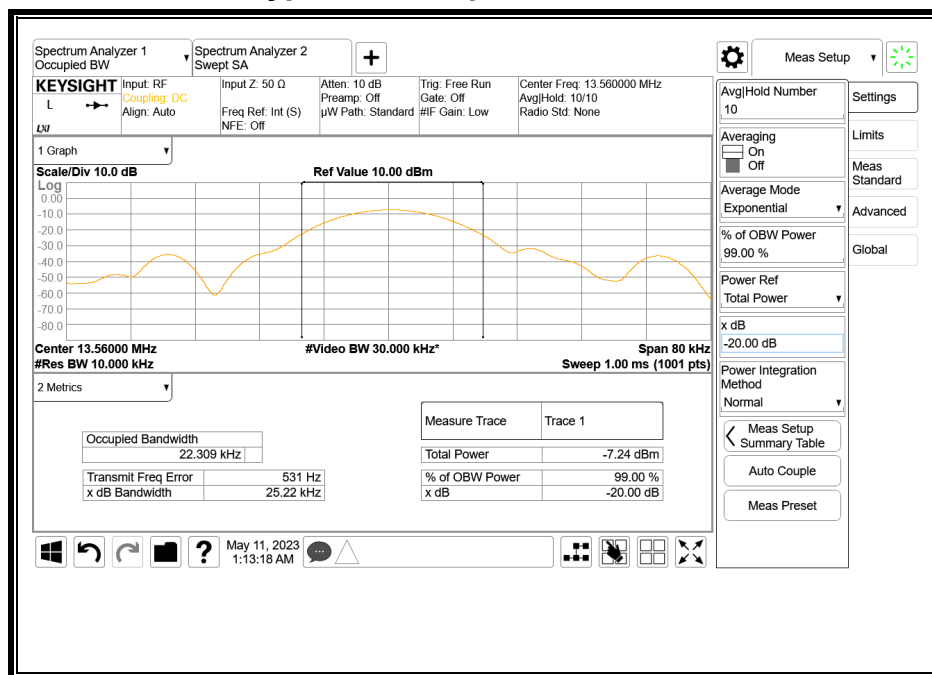
7.1.1. READER MODE, Type A 106 Kbps



7.1.2. TAG MODE, Type A 106 Kbps



7.1.3. CE MODE, Type A 106 Kbps



8. RADIATED EMISSION TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMIT

§15.225

IC RSS-210, Annex B.6

IC RSS-GEN, Section 8.9 (Transmitter)

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/ meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:

§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

Formula for converting the field strength from uV/m to dBuV/m is:

Limit (dBuV/m) = 20 log limit (uV/m)

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as report in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to $Y - 51.5 = Z$ dBuA/m, which has the same margin, W dB to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

TEST PROCEDURE

ANSI C63.10, 2013

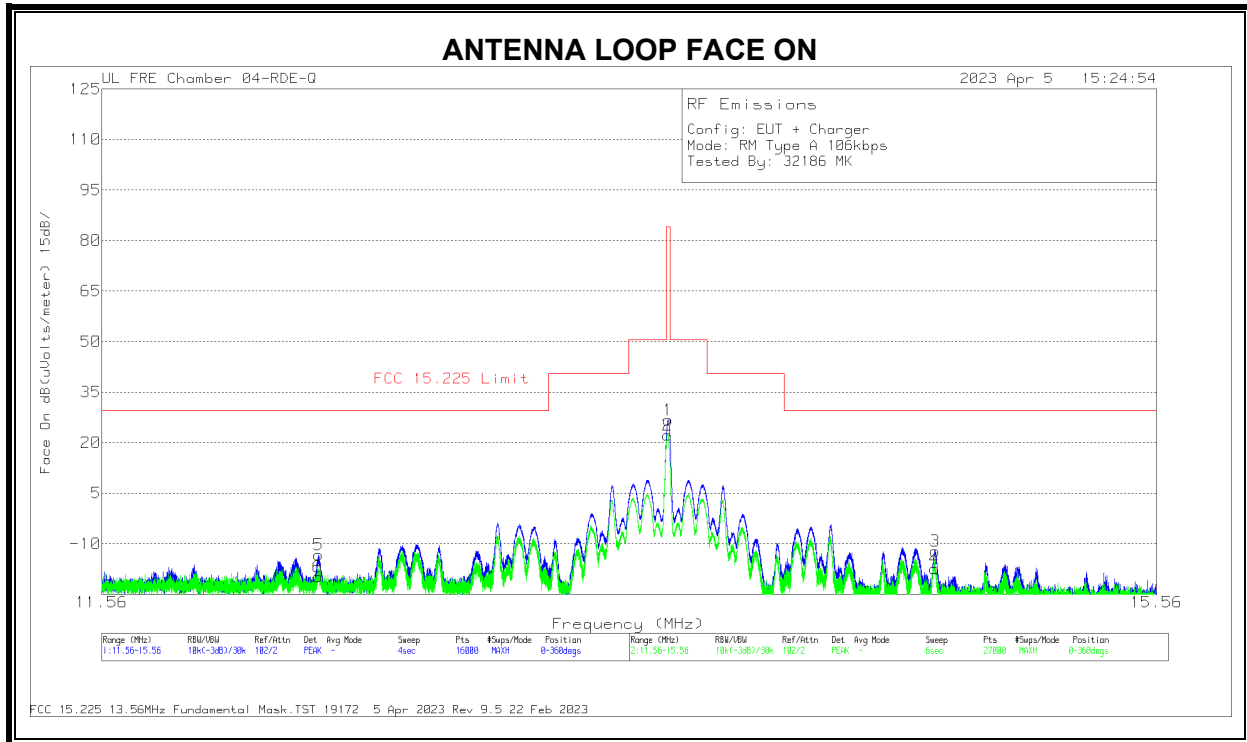
The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 13.56 MHz; therefore, the frequency range was investigated from 0.15 MHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

RESULTS

8.2. PRIMARY ANTENNA FUNDAMENTAL & SPURIOUS EMISSION 0.15-30 MHz

8.2.1. READER MODE, Type A 106 Kbps

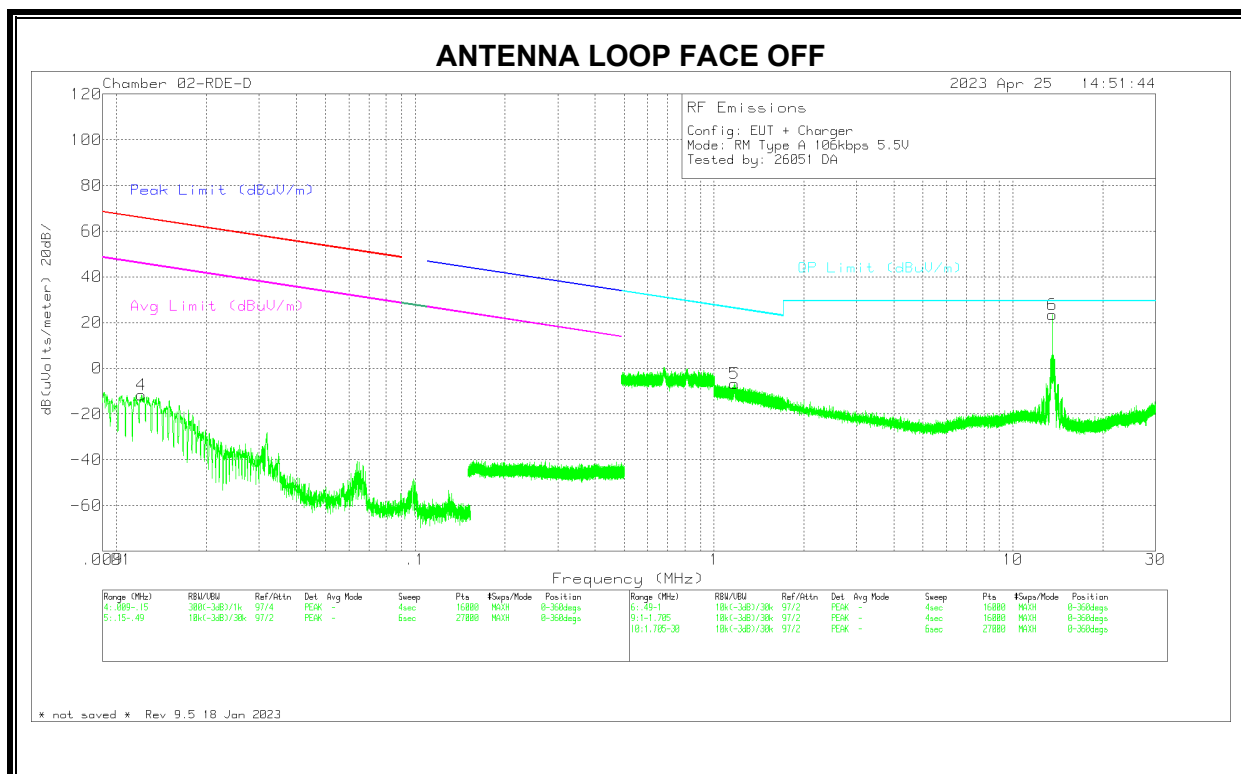
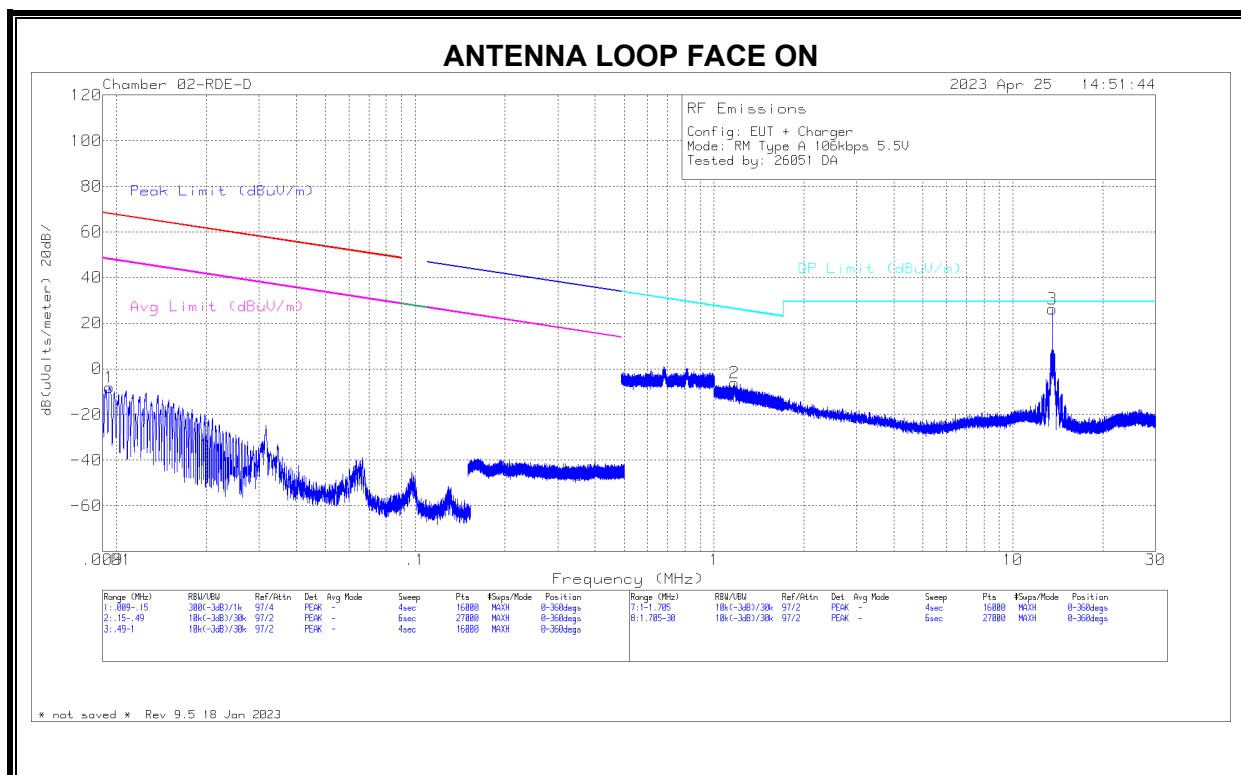
FUNDAMENTAL



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB)	Corrected Reading dB(uV/m)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
6	12.2859	18.44	Pk	34.4	-32.7	-40	-19.86	29.54	-49.4	0-360	Face-Off
5	12.2878	24.95	Pk	34.4	-32.7	-40	-13.35	29.54	-42.89	0-360	Face-On
2	13.5587	60.79	Pk	34.1	-32.6	-40	22.29	84	-61.71	0-360	Face-Off
1	13.56	65.23	Pk	34.1	-32.6	-40	26.73	84	-57.27	0-360	Face-On
4	14.6169	21.31	Pk	33.9	-32.6	-40	-17.39	29.54	-46.93	0-360	Face-Off
3	14.6195	26.43	Pk	33.9	-32.6	-40	-12.27	29.54	-41.81	0-360	Face-On

Pk - Peak detector



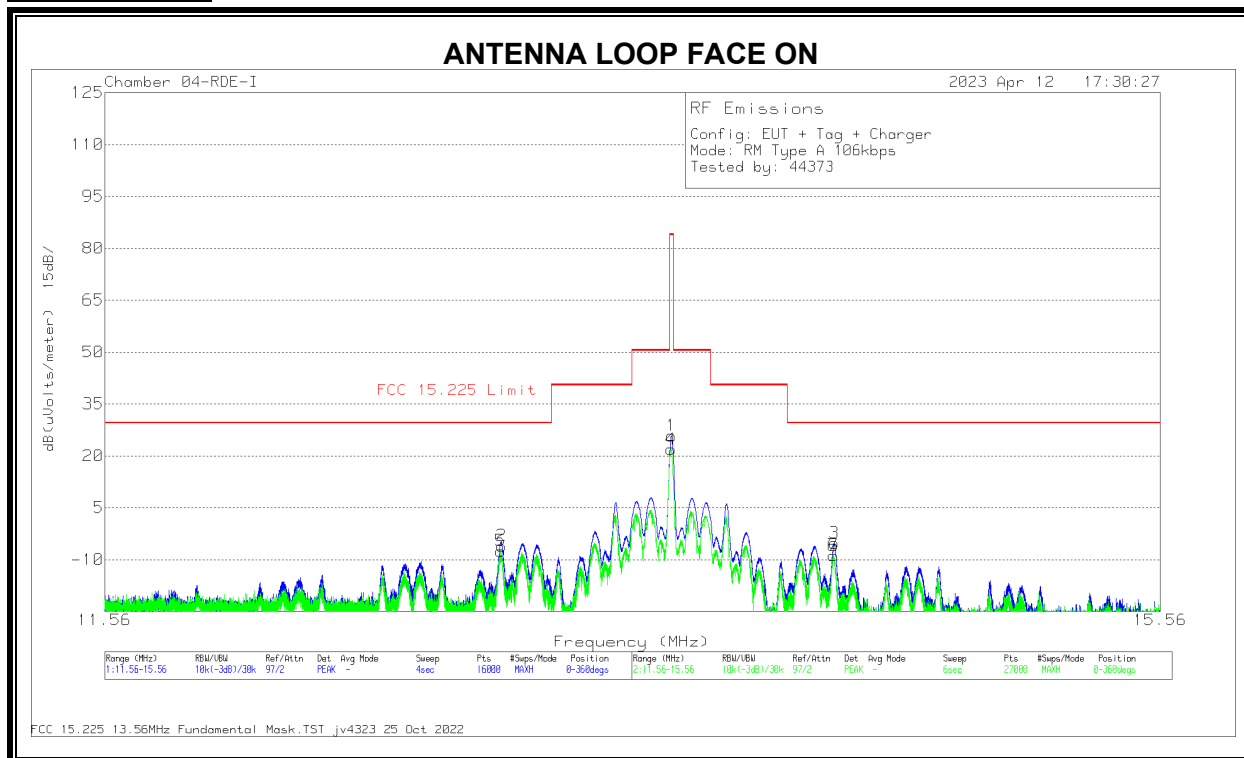
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Cbl/Amp (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0095	41.19	Pk	60.9	-30.1	-80	-8.01	68.05	-76.06	48.05	-56.06	0-360	Face-On
4	.0122	39.23	Pk	60.1	-30.9	-80	-11.57	65.89	-77.46	45.89	-57.46	0-360	Face-Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Cbl/Amp (dB)	Dist Corr 30m (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
2	1.1705	20.51	Pk	45.8	-32.4	-40	-6.09	26.26	-32.35	0-360	Face-On
5	1.1705	19.99	Pk	45.8	-32.4	-40	-6.61	26.26	-32.87	0-360	Face-Off
6	13.5589	60.49	Pk	34.2	-31.1	-40	23.59	29.5	-5.91	0-360	Face-Off
3	13.56	63.09	Pk	34.2	-31.1	-40	26.19	29.5	-3.31	0-360	Face-On

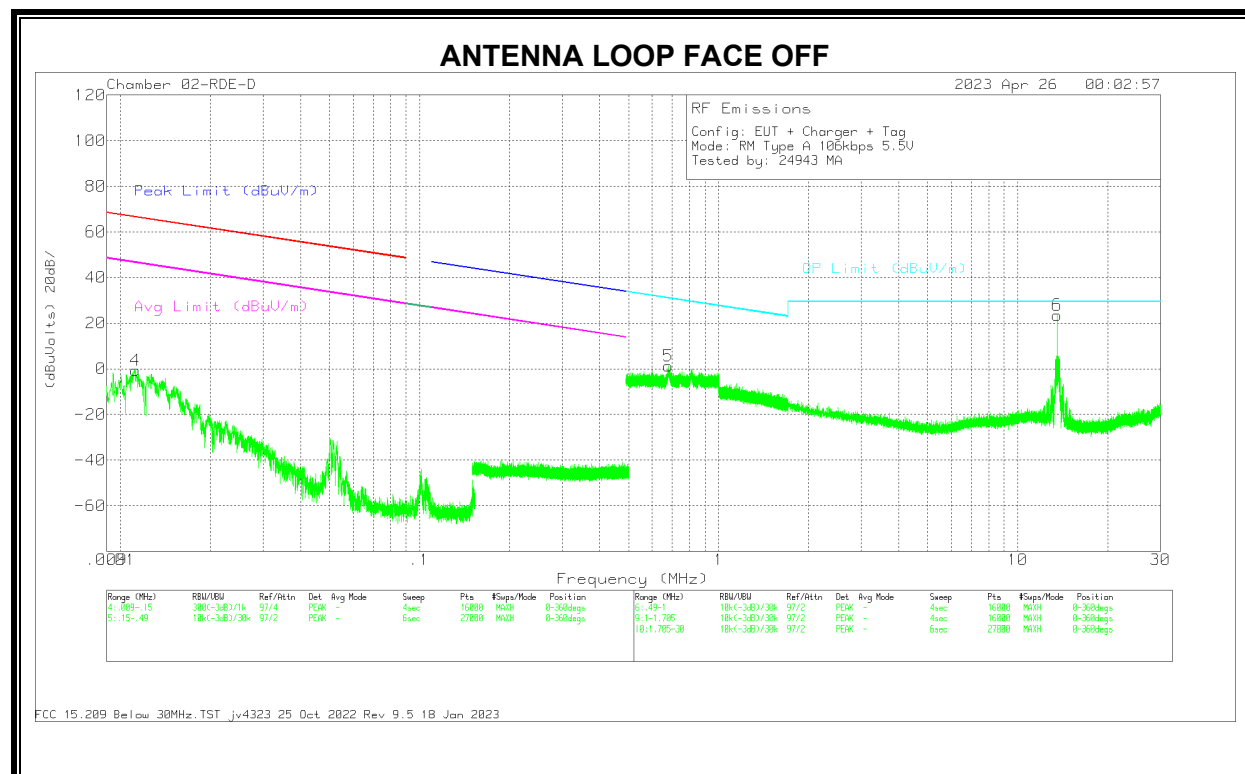
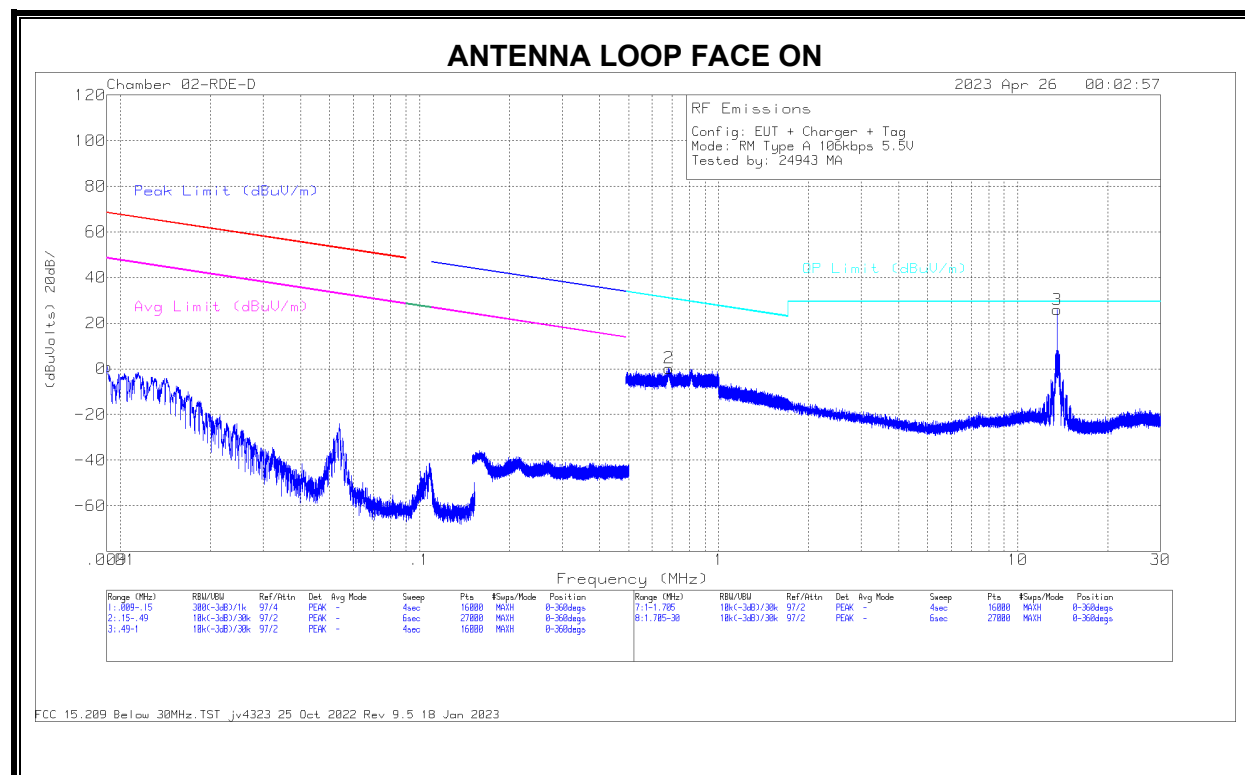
Pk - Peak detector

Note: Marker 3 and 6 are from Fundamental signals.

8.2.2. TAG MODE, Type A 106 Kbps**FUNDAMENTAL****DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log (dB)	Corrected Reading (dBuV/m)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.5598	63.15	Pk	34.2	-31.5	-40	25.85	84	-58.15	0-360
2	12.9278	31.32	Pk	34.3	-31.6	-40	-5.98	29.54	-35.52	0-360
3	14.196	32.09	Pk	34.2	-31.5	-40	-5.21	29.54	-34.75	0-360
4	13.5584	59.19	Pk	34.2	-31.5	-40	21.89	84	-62.11	0-360
5	12.9235	29.85	Pk	34.3	-31.6	-40	-7.45	29.54	-36.99	0-360
6	14.1926	28.49	Pk	34.2	-31.5	-40	-8.81	29.54	-38.35	0-360
7	14.1926	28.49	Pk	34.2	-31.5	-40	-8.81	29.54	-38.35	0-360

Pk - Peak detector



DATA

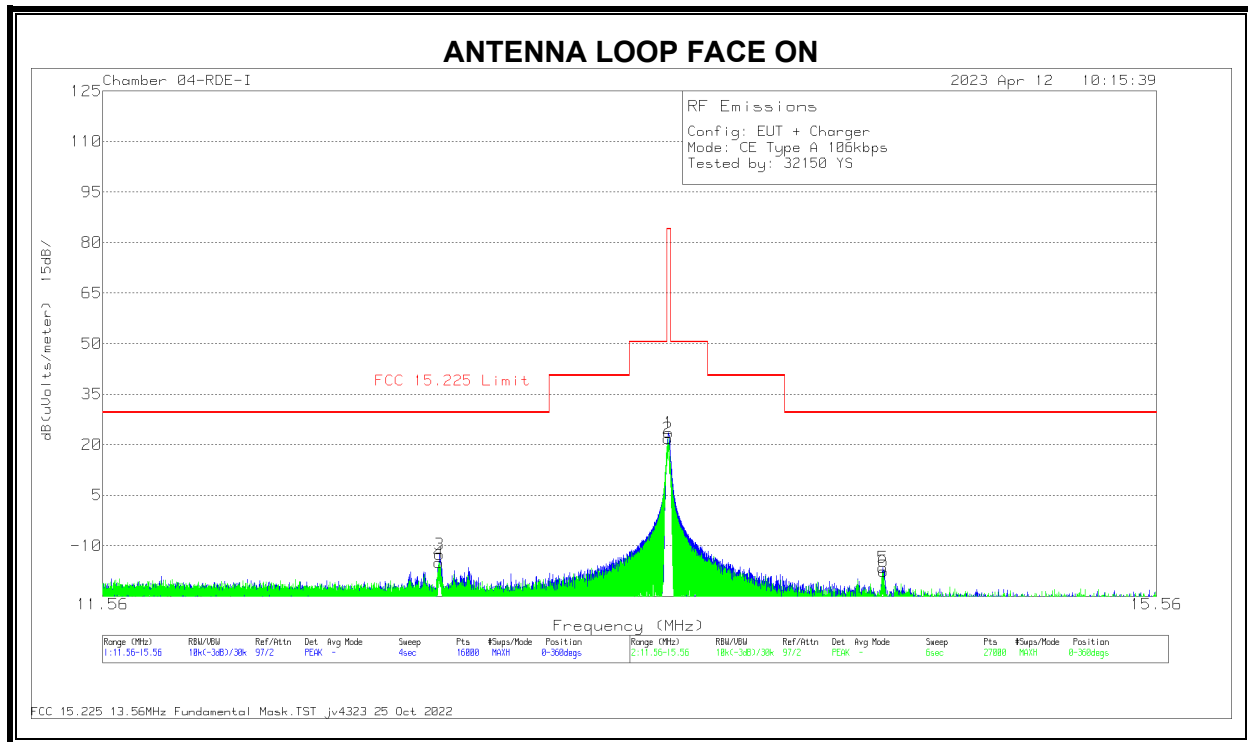
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Cbl/Amp (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.009	49.35	Pk	61.4	-29.9	-80	.85	68.47	-67.62	48.47	-47.62	0-360	Face-On
4	.0112	49.9	Pk	60.2	-30.7	-80	-.6	66.59	-67.19	46.59	-47.19	0-360	Face-Off

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Cbl/Amp (dB)	Dist Corr 30m	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
5	.6784	17.3	Pk	56.4	-32.4	-40	1.3	30.98	-29.68	0-360	Face-Off
2	.6812	16.29	Pk	56.4	-32.4	-40	.29	30.95	-30.66	0-360	Face-On
3	13.56	62.81	Pk	34.2	-31.1	-40	25.91	29.5	-3.59	0-360	Face-On
6	13.5605	60.51	Pk	34.2	-31.1	-40	23.61	29.5	-5.89	0-360	Face-Off

Pk - Peak detector

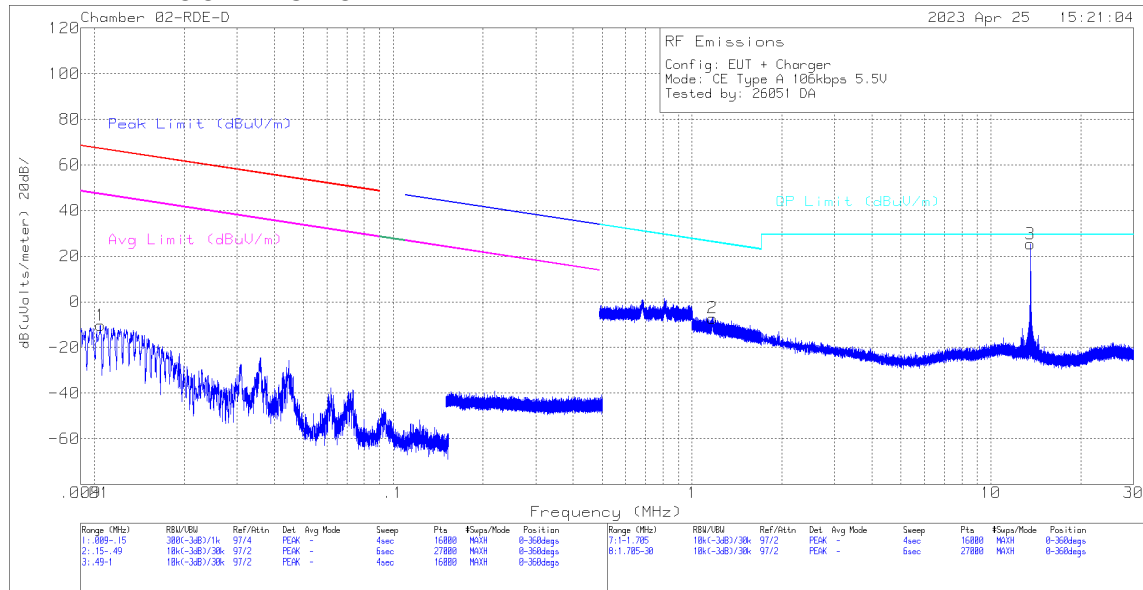
Note: Marker 3 and 6 are from Fundamental signals.

8.2.3. CE MODE, Type A 106 Kbps**FUNDAMENTAL****DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading dBuV/m)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
1	13.5598	60.78	Pk	34.2	-31.5	-40	23.48	84	-60.52	0-360	Face-On
3	12.7123	24.58	Pk	34.4	-31.5	-40	-12.52	29.54	-42.06	0-360	Face-On
5	14.4053	20.91	Pk	34.1	-31.5	-40	-16.49	29.54	-46.03	0-360	Face-On
2	13.5582	59.14	Pk	34.2	-31.5	-40	21.84	84	-62.16	0-360	Face-Off
4	12.7086	22.15	Pk	34.4	-31.5	-40	-14.95	29.54	-44.49	0-360	Face-Off
6	14.4072	19.74	Pk	34.1	-31.5	-40	-17.66	29.54	-47.2	0-360	Face-Off

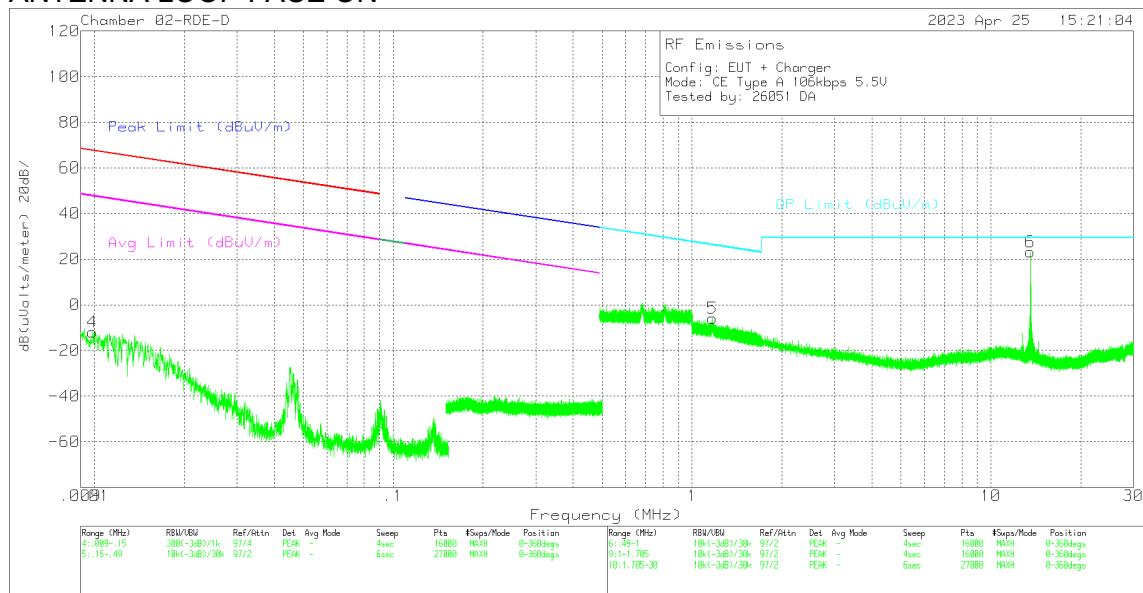
Pk - Peak detector

ANTENNA LOOP FACE ON



FCC 15.209 Below 30MHz.TST_jv4323 25 Oct 2022 Rev 9.5 18 Jan 2023

ANTENNA LOOP FACE ON



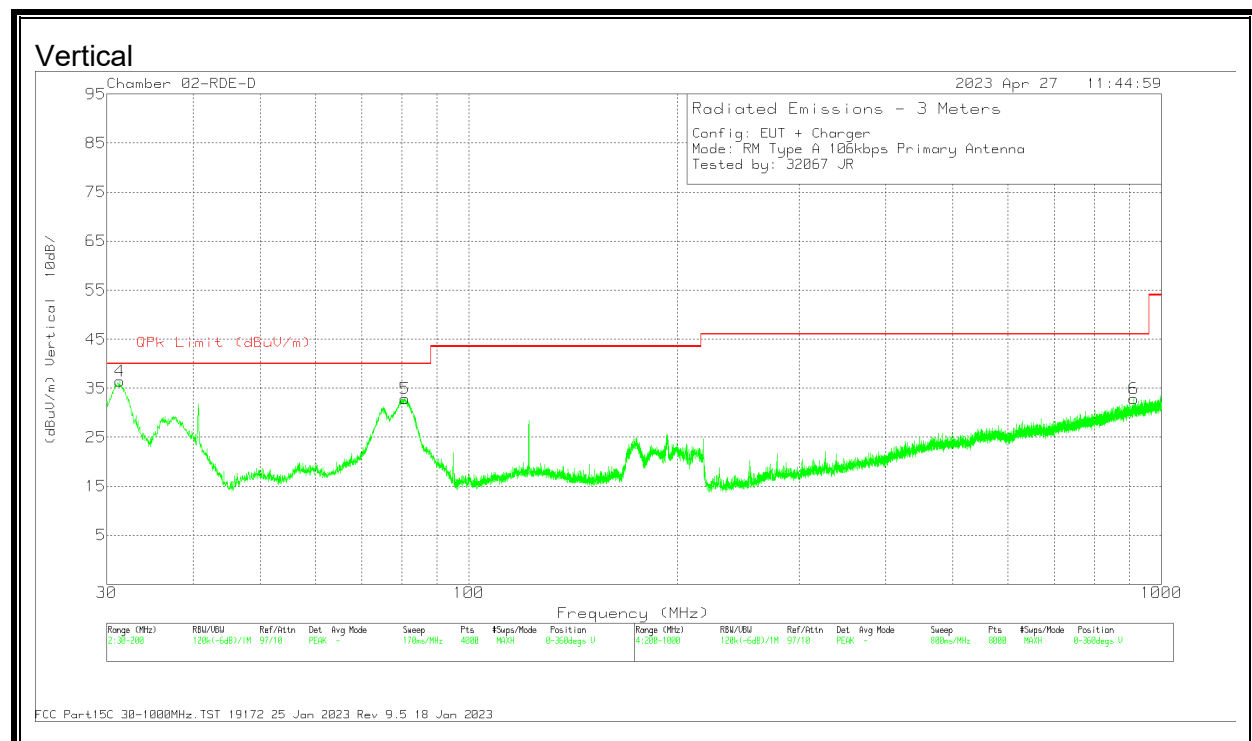
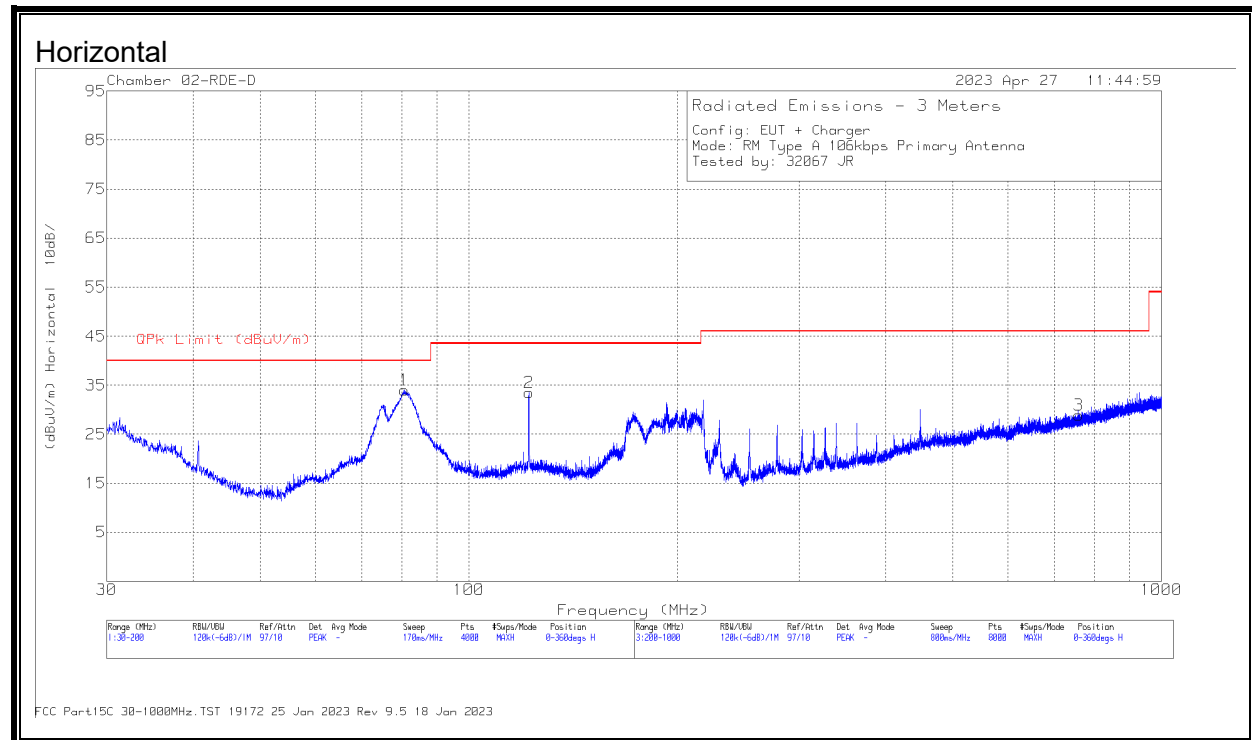
FCC 15.209 Below 30MHz.TST_jv4323 25 Oct 2022 Rev 9.5 18 Jan 2023

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Cbl/Amp (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
4	.0099	37.84	Pk	60.5	-30.2	-80	-11.86	67.71	-79.57	47.71	-59.57	0-360	Face-Off
1	.0105	39.8	Pk	60.3	-30.5	-80	-10.4	67.18	-77.58	47.18	-57.58	0-360	Face-On

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Cbl/Amp (dB)	Dist Corr 30m (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
5	1.1698	20.83	Pk	45.8	-32.4	-40	-5.77	26.26	-32.03	0-360	Face-Off
2	1.1707	19.48	Pk	45.8	-32.4	-40	-7.12	26.26	-33.38	0-360	Face-On
6	13.5579	60.07	Pk	34.2	-31.1	-40	23.17	29.5	-6.33	0-360	Face-Off
3	13.56	62.39	Pk	34.2	-31.1	-40	25.49	29.5	-4.01	0-360	Face-On

Pk - Peak detector

8.3. PRIMARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz**8.3.1. READER MODE, Type A 106 Kbps****SPURIOUS EMISSION**

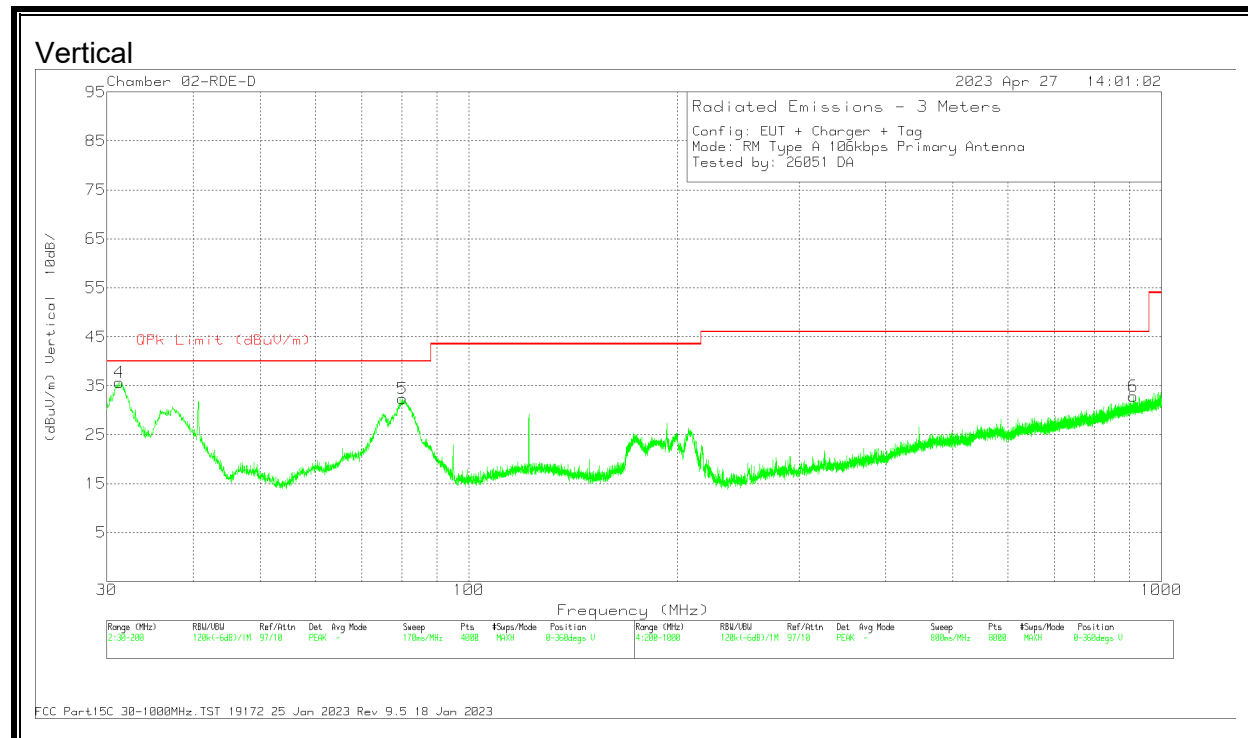
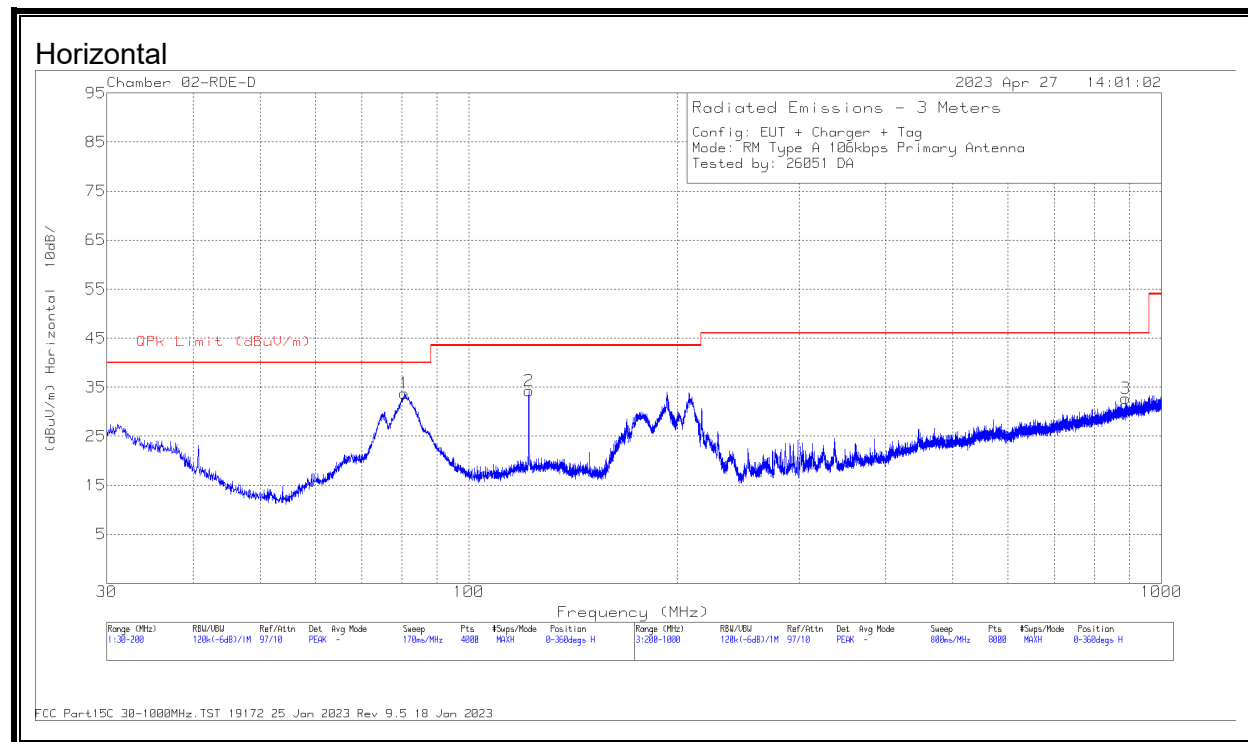
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80508 ACF (dB)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 122.036	43.58	Pk	20	-30.1	33.48	43.52	-10.04	0-360	199	H
4	31.3178	40.83	Pk	26	-30.4	36.43	40	-3.57	0-360	98	V
	31.5783	37.63	Qp	25.8	-30.4	33.03	40	-6.97	353	102	V
1	80.7156	50.77	Pk	13.4	-30.2	33.97	40	-6.03	0-360	299	H
	80.7206	46.43	Qp	13.4	-30.2	29.63	40	-10.37	25	248	H
5	80.8219	49.69	Pk	13.4	-30.2	32.89	40	-7.11	0-360	98	V
	80.7809	44.32	Qp	13.4	-30.2	27.52	40	-12.48	86	104	V
3	759.273	28.84	Pk	27.2	-27.2	28.84	46.02	-17.18	0-360	401	H
6	911.693	29.96	Pk	29	-26.1	32.86	46.02	-13.16	0-360	199	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

8.3.2. TAG MODE, Type A 106 Kbps**SPURIOUS EMISSION**

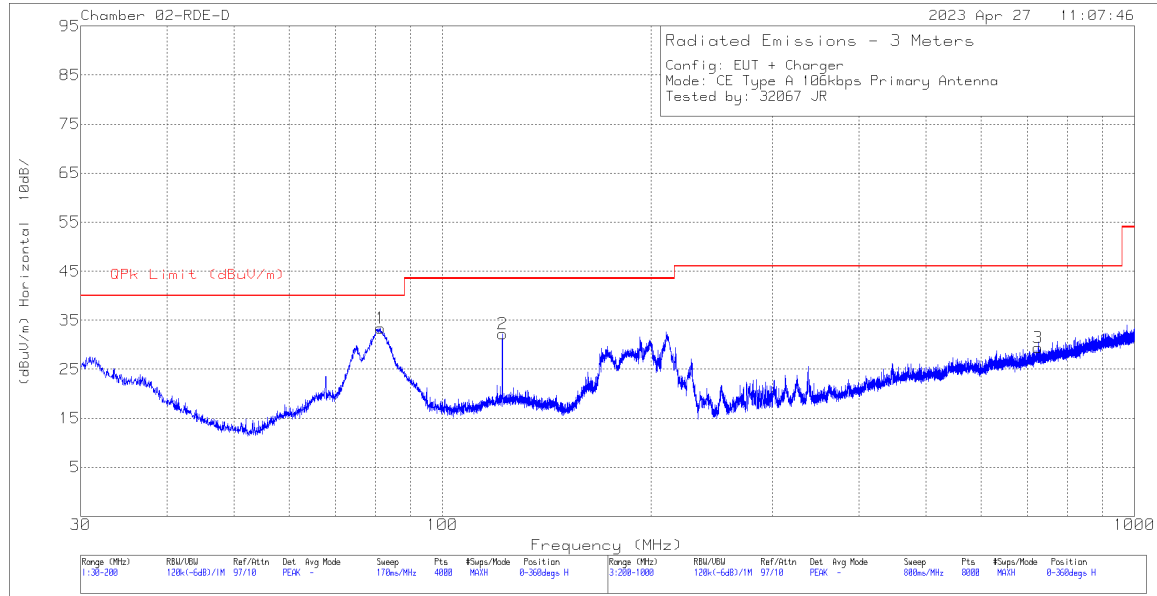
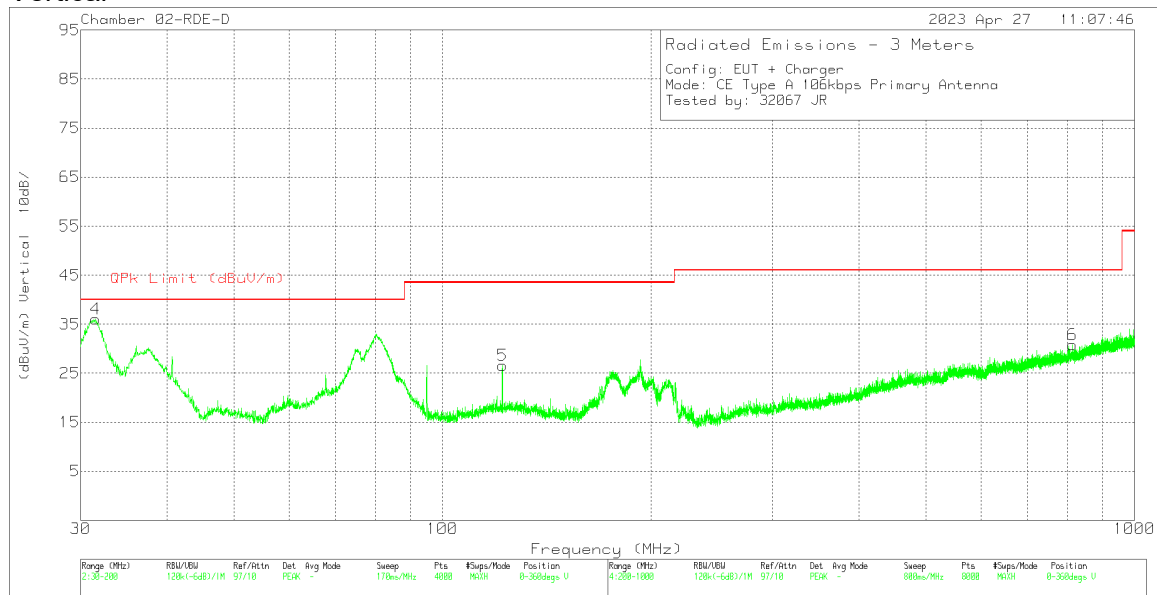
DATA**Trace Markers**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80508 ACF (dB)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 122.036	44.42	Pk	20	-30.1	34.32	43.52	-9.2	0-360	199	H
4	31.2753	40.03	Pk	26.1	-30.4	35.73	40	-4.27	0-360	98	V
	31.2750	37.9	Qp	26	-30.4	33.5	40	-6.5	49	100	V
5	80.1205	49.08	Pk	13.5	-30.2	32.38	40	-7.62	0-360	199	V
1	80.7581	50.55	Pk	13.4	-30.2	33.75	40	-6.25	0-360	299	H
	81.7580	47.88	Qp	13.4	-30.2	31.08	40	-8.92	15	239	H
3	887.189	30.61	Pk	28.4	-26.3	32.71	46.02	-13.31	0-360	401	H
6	910.792	29.91	Pk	29	-26.1	32.81	46.02	-13.21	0-360	199	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Qp - Quasi-Peak detector

Pk - Peak detector

8.3.3. CE MODE, Type A 106 Kbps**Horizontal****Vertical**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80508 ACF (dB)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 122.036	42.27	Pk	20	-30.1	32.17	43.52	-11.35	0-360	199	H
5	* 122.036	36.71	Pk	20	-30.1	26.61	43.52	-16.91	0-360	299	V
4	31.5304	40.51	Pk	25.9	-30.4	36.01	40	-3.99	0-360	100	V
	31.5310	38.62	Qp	26.1	-30.4	34.32	40	-5.68	360	100	V
1	81.3533	50.21	Pk	13.4	-30.2	33.41	40	-6.59	0-360	299	H
	81.4243	47.05	Qp	13.4	-30.2	30.25	40	-9.75	7	250	H
3	725.068	30.05	Pk	26.8	-27.4	29.45	46.02	-16.57	0-360	201	H
6	812.88	30.12	Pk	27.6	-26.9	30.82	46.02	-15.2	0-360	299	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

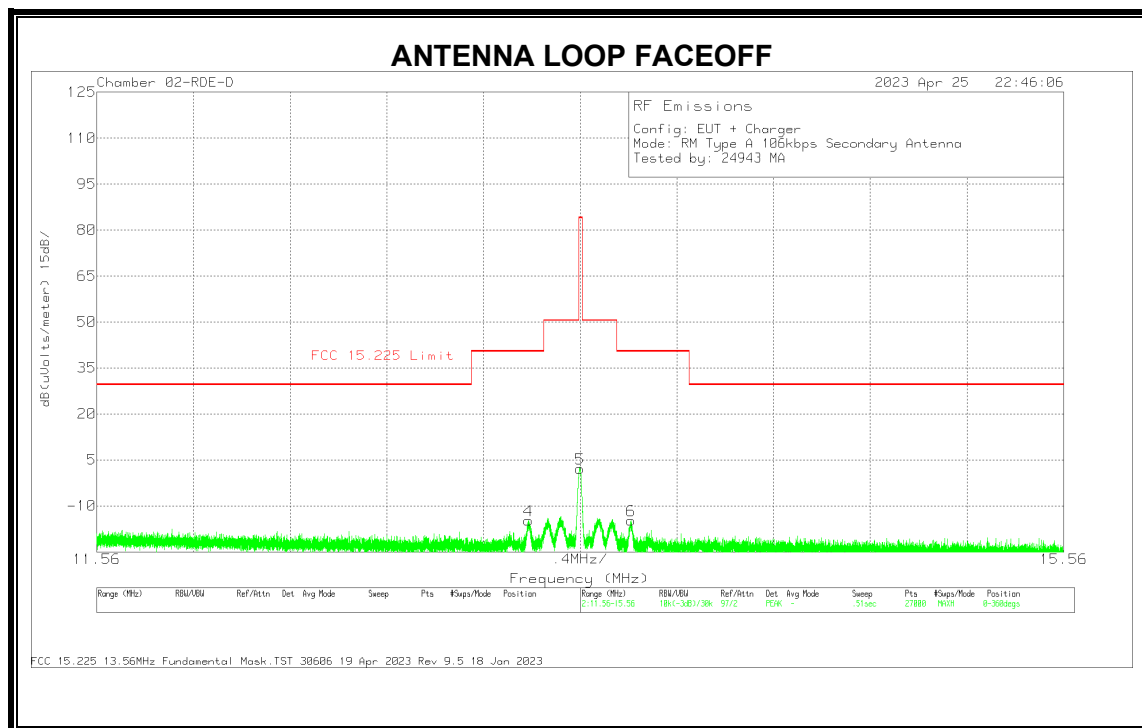
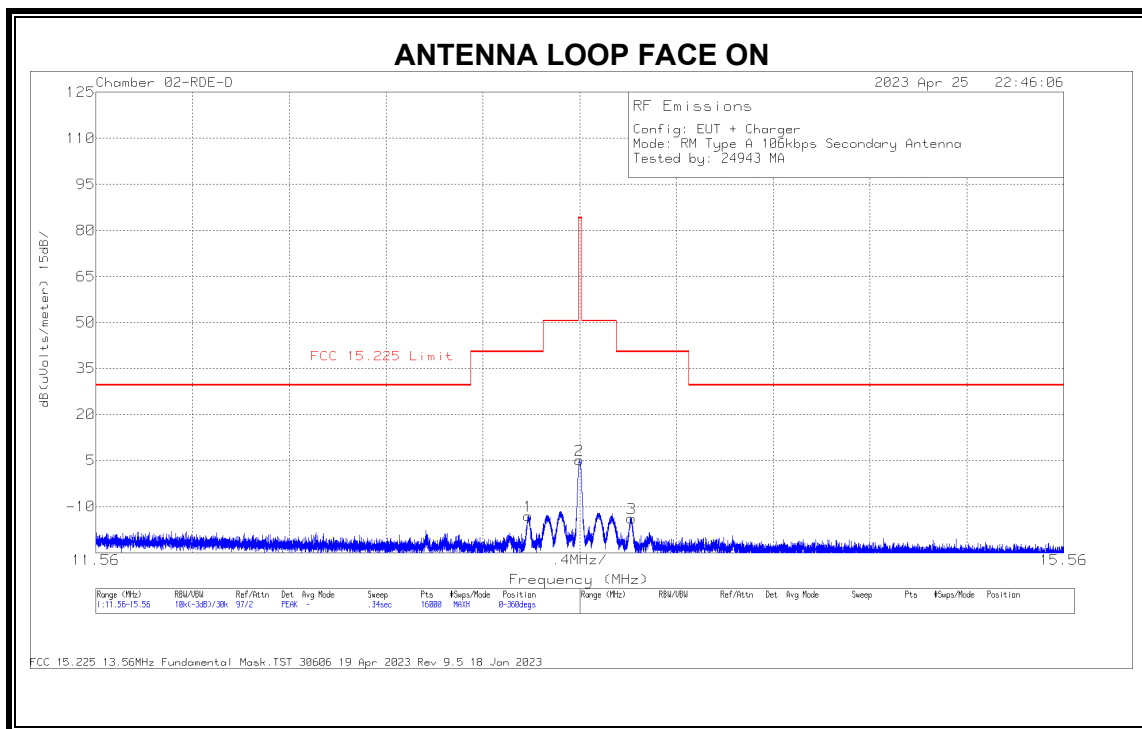
Qp - Quasi-Peak detector

Pk - Peak detector

8.4. SECONDARY ANTENNA FUNDAMENTAL & SPURIOUS EMISSION 0.15-30 MHz

8.4.1. READER MODE, Type A 106 Kbps

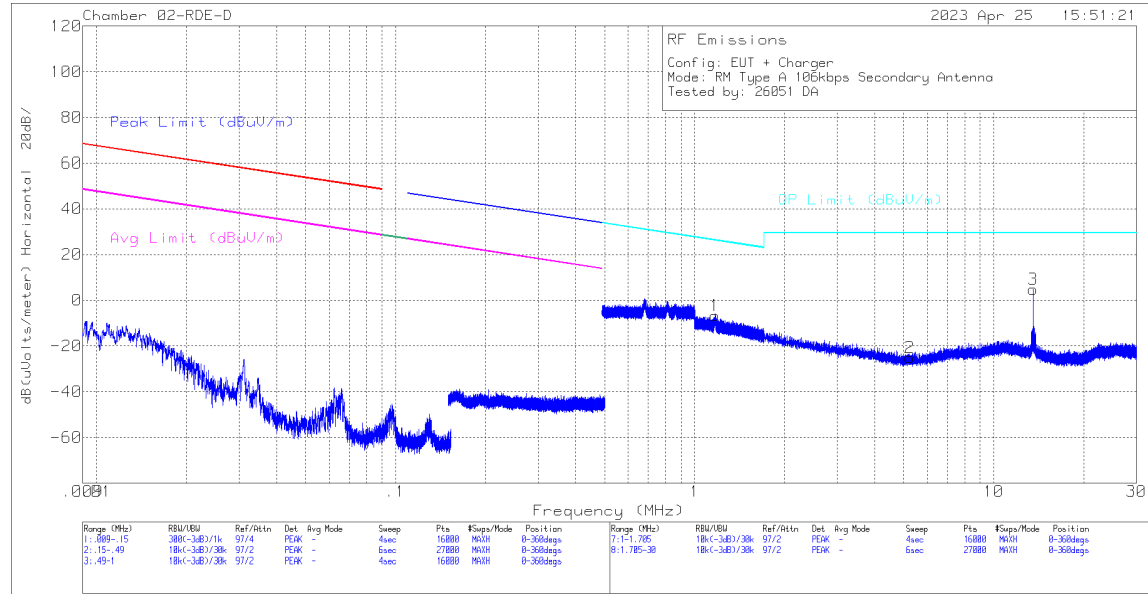
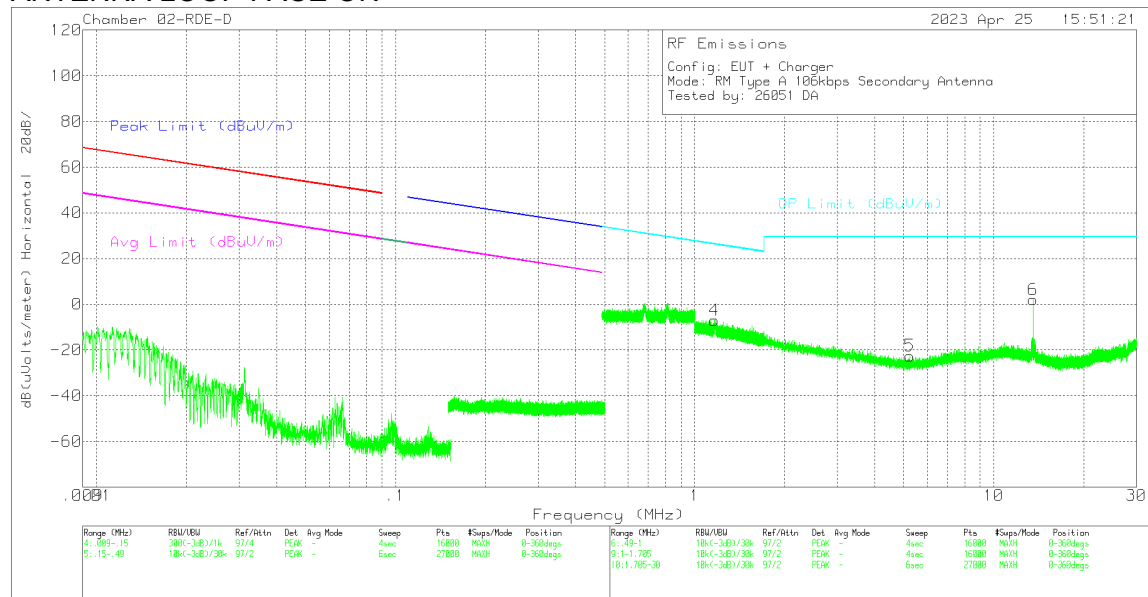
FUNDAMENTAL



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (db/m)	Cbl/Amp (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/ meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
4	13.3459	22.05	Pk	34.3	-31.1	-40	-14.75	40.51	-55.26	0-360	Face-Off
1	13.3468	23.79	Pk	34.3	-31.1	-40	-13.01	40.51	-53.52	0-360	Face-On
5	13.559	38.96	Pk	34.2	-31.1	-40	2.06	84	-81.94	0-360	Face-Off
2	13.5593	41.97	Pk	34.2	-31.1	-40	5.07	84	-78.93	0-360	Face-On
6	13.7692	22.12	Pk	34.2	-31.1	-40	-14.78	40.51	-55.29	0-360	Face-Off
3	13.7738	23.05	Pk	34.2	-31.1	-40	-13.85	40.51	-54.36	0-360	Face-On

Pk - Peak detector

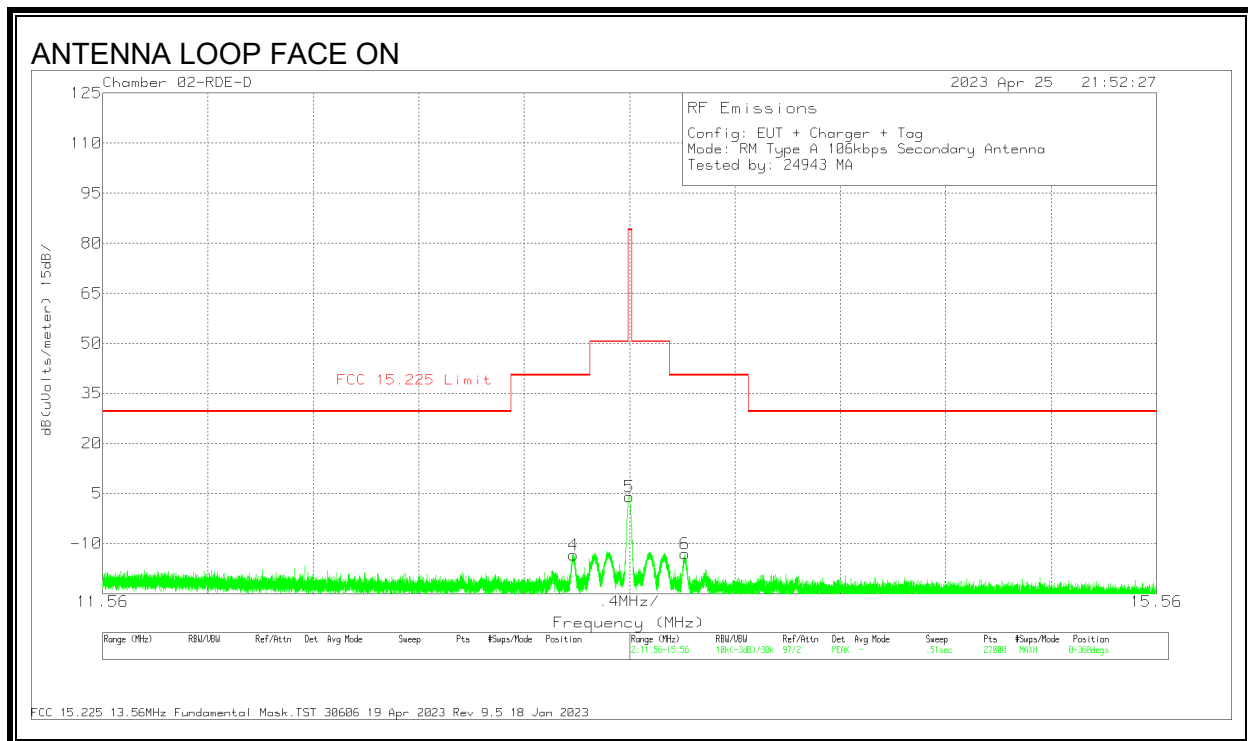
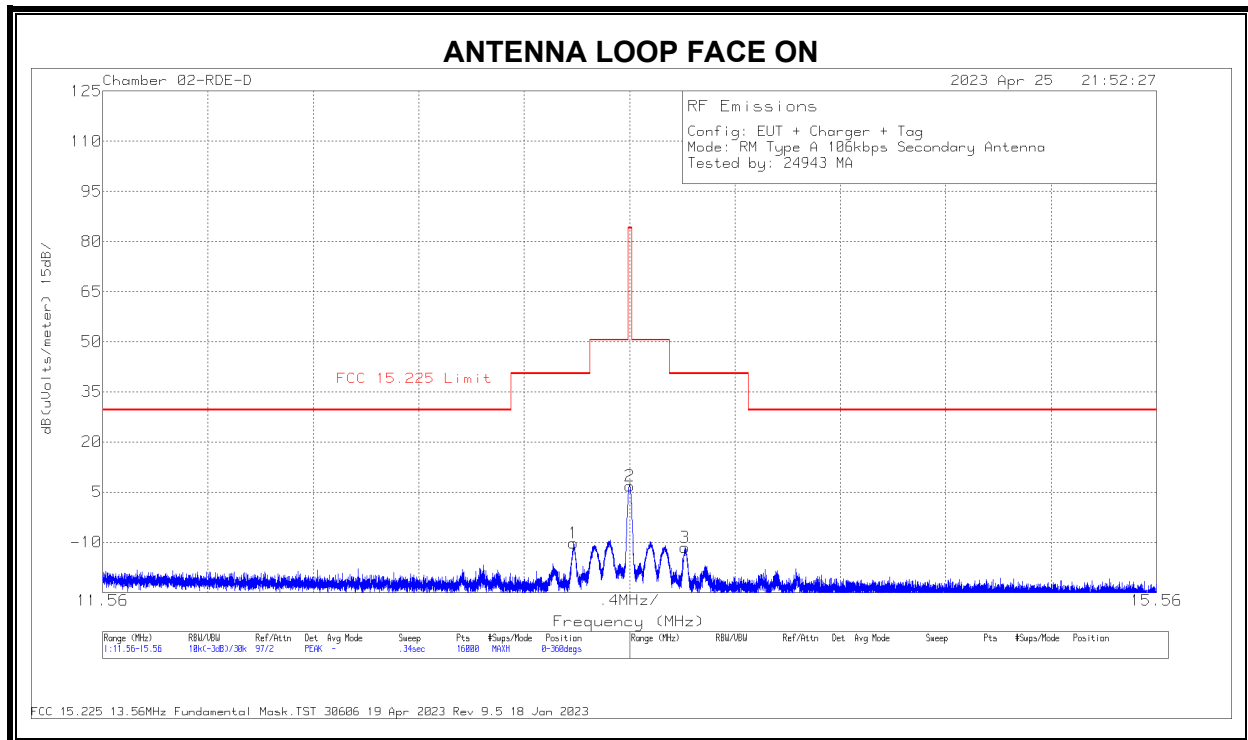
SPURIOUS EMISSION**ANTENNA LOOP FACE ON****ANTENNA LOOP FACE ON**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) dB/m	Cbl/Amp (dB)	Dist Corr 30m (dB)	Corrected Reading dB(uVolts/meter)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	1.1667	19.67	Pk	45.8	-32.4	-40	-6.93	26.29	-33.22	0-360
1	1.1703	19.91	Pk	45.8	-32.4	-40	-6.69	26.26	-32.95	0-360
5	5.2357	13.91	Pk	35.8	-32.2	-40	-22.49	29.5	-51.99	0-360
2	5.241	11.2	Pk	35.8	-32.2	-40	-25.2	29.5	-54.7	0-360
3	13.56	41.83	Pk	34.2	-31.1	-40	4.93	29.5	-24.57	0-360
6	13.561	38.96	Pk	34.2	-31.1	-40	2.06	29.5	-27.44	0-360

Pk - Peak detector

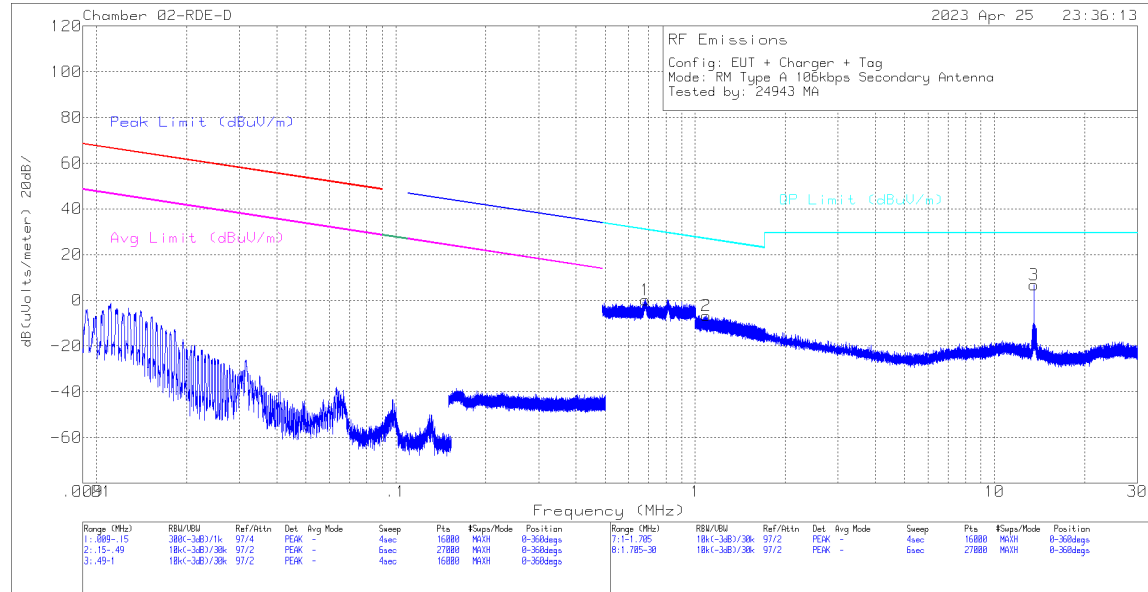
Note: Marker 3 and 6 are from Fundamental signals.

8.4.2. TAG MODE, Type A 106 Kbps**FUNDAMENTAL**

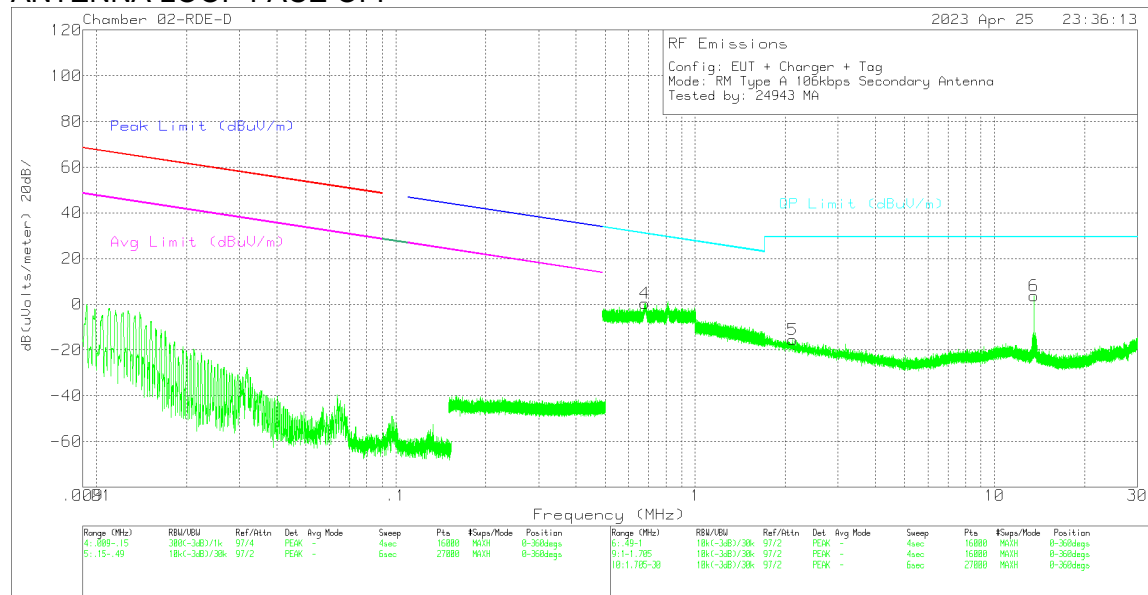
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) dB/m	Cbl/Amp (dB)	Dist Corr 30m (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Polarity
4	13.3461	23.41	Pk	34.3	-31.1	-40	-13.39	40.51	-53.9	0-360	Face-Off
1	13.3468	26.56	Pk	34.3	-31.1	-40	-10.24	40.51	-50.75	0-360	Face-On
5	13.559	40.87	Pk	34.2	-31.1	-40	3.97	84	-80.03	0-360	Face-Off
2	13.5615	43.79	Pk	34.2	-31.1	-40	6.89	84	-77.11	0-360	Face-On
6	13.7696	23.75	Pk	34.2	-31.1	-40	-13.15	40.51	-53.66	0-360	Face-Off
3	13.771	25.33	Pk	34.2	-31.1	-40	-11.57	40.51	-52.08	0-360	Face-On

Pk - Peak detector

SPURIOUS EMISSION**ANTENNA LOOP FACE ON**

RM_Type_A_Tag_106kbps_Secondary_Antenna_7.2U_Unit_855.DAT_jv4323 25 Oct 2022 Rev 9.5 01 May 2023

ANTENNA LOOP FACE OFF

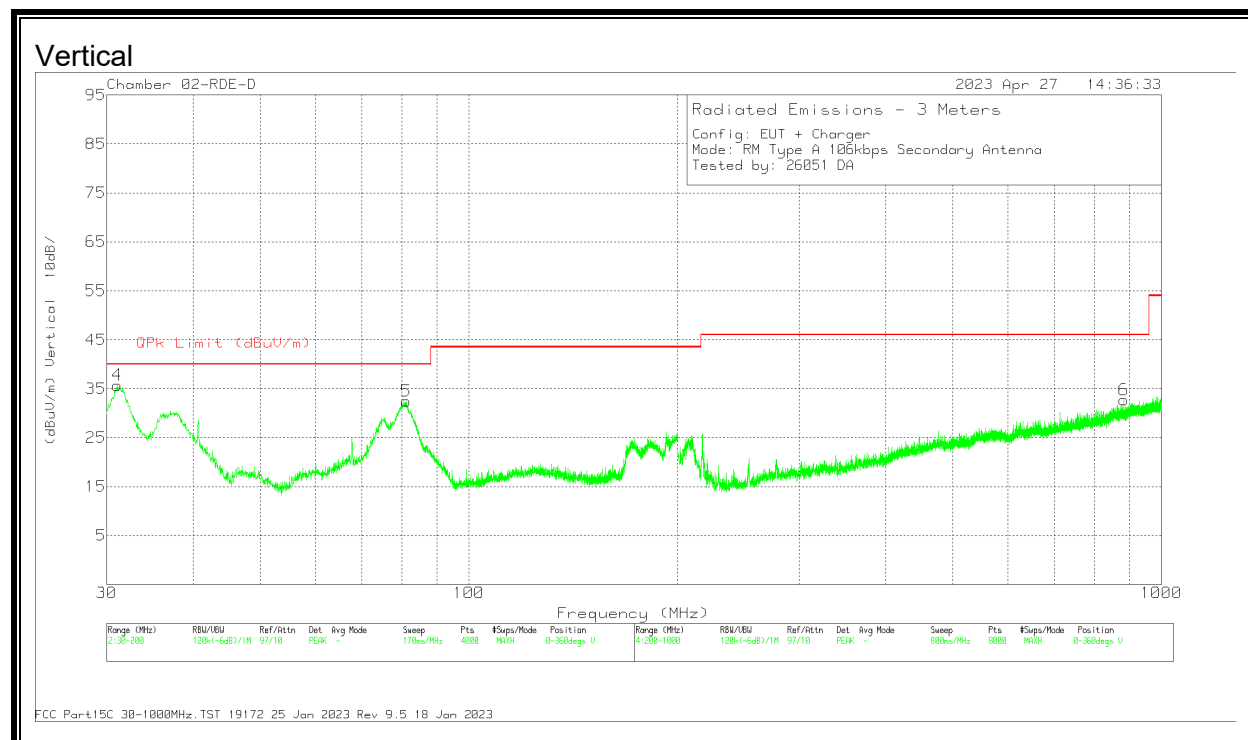
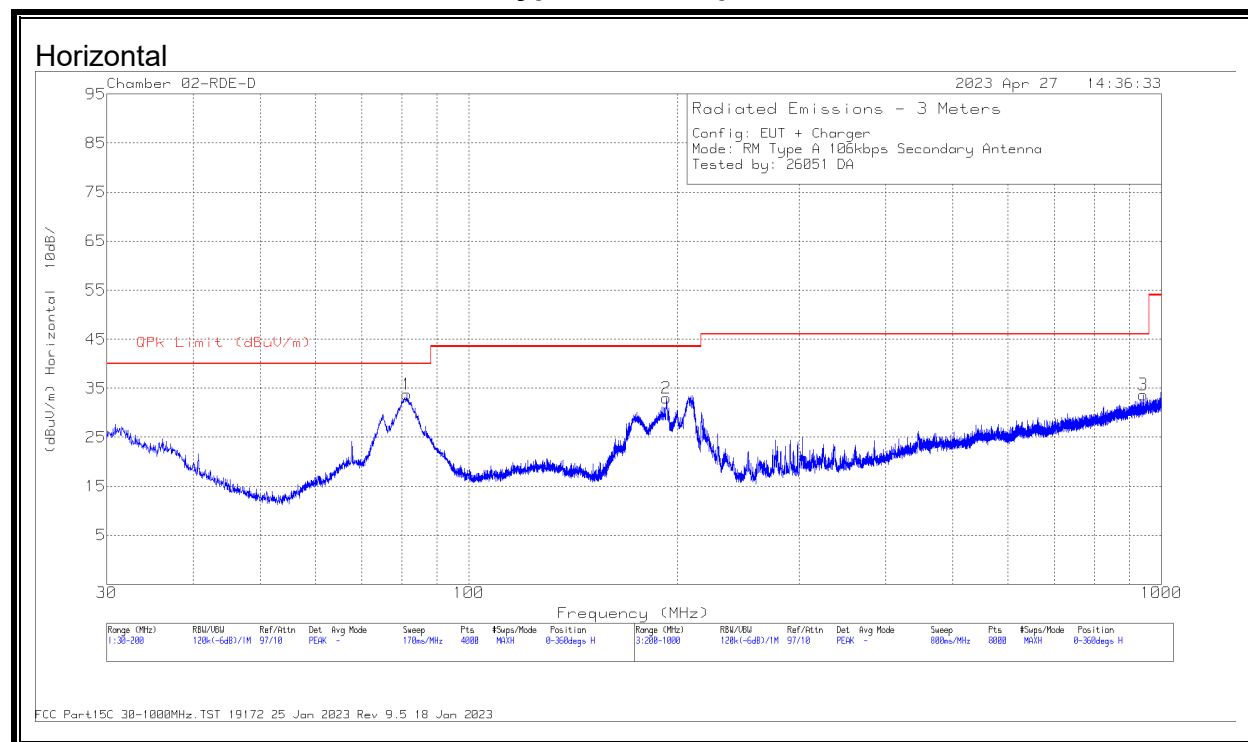
RM_Type_A_Tag_106kbps_Secondary_Antenna_7.2U_Unit_855.DAT_jv4323 25 Oct 2022 Rev 9.5 01 May 2023

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Cbl/Amp (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
4	.6788	16.49	Pk	56.4	-32.4	-40	.49	30.98	-30.49	0-360	Face-Off
1	.6825	16.08	Pk	56.4	-32.4	-40	.08	30.93	-30.85	0-360	Face-On
2	1.0889	19.45	Pk	46.2	-32.4	-40	-6.75	26.88	-33.63	0-360	Face-On
5	2.12	15.69	Pk	41.2	-32.3	-40	-15.41	29.5	-44.91	0-360	Face-Off
6	13.5589	40.5	Pk	34.2	-31.1	-40	3.6	29.5	-25.9	0-360	Face-Off
3	13.56	43.55	Pk	34.2	-31.1	-40	6.65	29.5	-22.85	0-360	Face-On

Pk - Peak detector

Note: Marker 3 and 6 are from Fundamental signals.

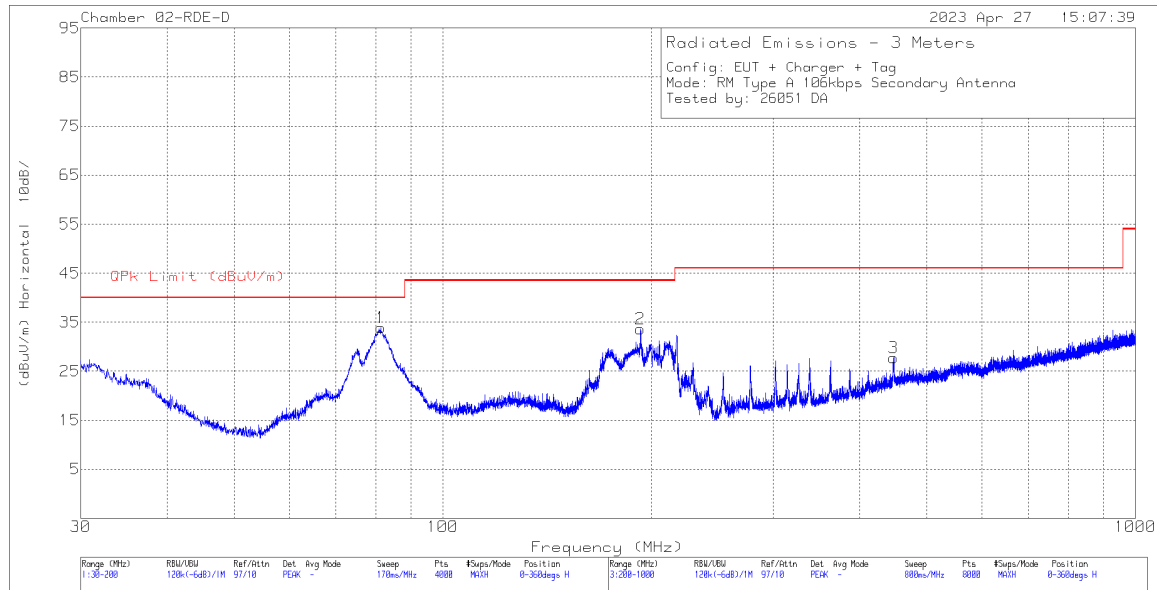
8.5. SECONDARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz**8.5.1. READER MODE, Type A 106 Kbps**

DATA

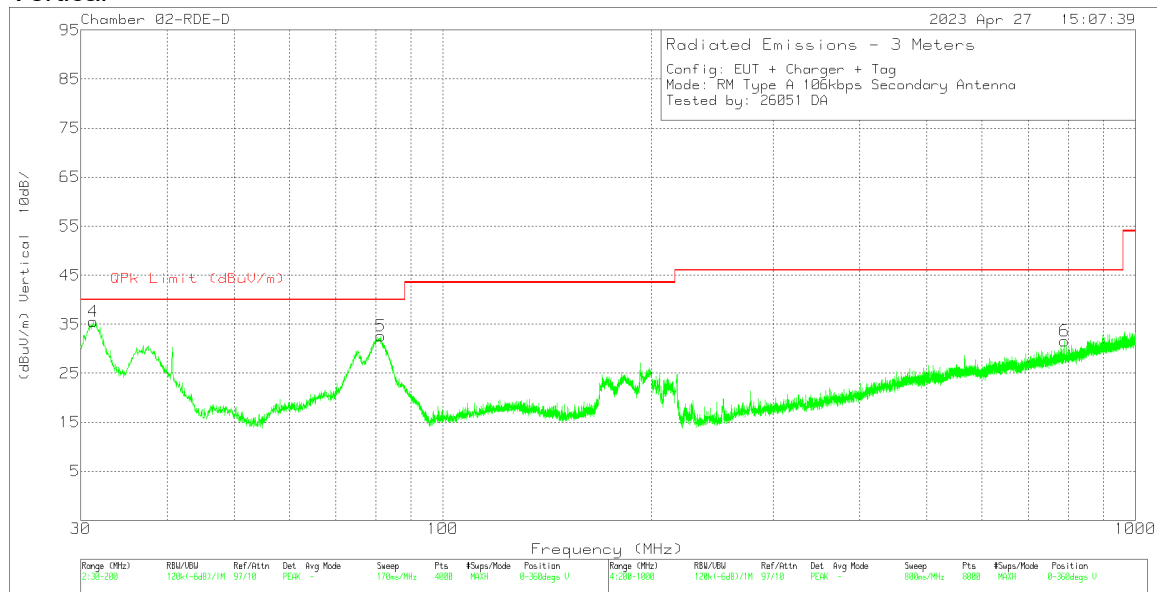
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80508 ACF (dB)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.1053	39.94	Pk	26.2	-30.4	35.74	40	-4.26	0-360	98	V
	30.9057	36.69	Qp	26.4	-30.4	32.69	40	-7.31	357	105	V
5	81.1407	49.22	Pk	13.4	-30.2	32.42	40	-7.58	0-360	98	V
1	81.3533	50.58	Pk	13.4	-30.2	33.78	40	-6.22	0-360	299	H
	81.3563	48.41	Qp	13.4	-30.2	31.61	40	-8.39	16	239	H
2	192.987	45.03	Pk	17.9	-29.9	33.03	43.52	-10.49	0-360	100	H
6	881.789	30.79	Pk	28.3	-26.4	32.69	46.02	-13.33	0-360	199	V
3	941.996	30.39	Pk	29	-25.7	33.69	46.02	-12.33	0-360	101	H

Pk - Peak detector

Qp - Quasi-Peak detector

8.5.2. TAG MODE, Type A 106 Kbps**Horizontal**

FCC Part15C 30-1000MHz.TST 19172 25 Jan 2023 Rev 9.5 18 Jan 2023

Vertical

FCC Part15C 30-1000MHz.TST 19172 25 Jan 2023 Rev 9.5 18 Jan 2023

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80508 ACF (dB)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.2753	39.79	Pk	26.1	-30.4	35.49	40	-4.51	0-360	98	V
	31.2831	37.97	Qp	25.9	-30.4	33.47	40	-6.53	30	107	V
1	81.3108	50.63	Pk	13.4	-30.2	33.83	40	-6.17	0-360	299	H
	81.3118	48.42	Qp	13.4	-30.2	31.62	40	-8.38	20	263	H
5	81.3958	49.36	Pk	13.4	-30.2	32.56	40	-7.44	0-360	98	V
2	192.945	45.59	Pk	17.9	-29.9	33.59	43.52	-9.93	0-360	99	H
3	447.132	33.43	Pk	22.8	-28.5	27.73	46.02	-18.29	0-360	201	H
6	790.577	31.34	Pk	27.3	-27	31.64	46.02	-14.38	0-360	399	V

Pk - Peak detector

9. FREQUENCY STABILITY

LIMIT

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

IC RSS-210, Annex B.6

Carrier frequency stability shall be maintained to $\pm 0.01\%$ (± 100 ppm).

TEST PROCEDURE

ANSI C63.10-2013 Clause 6.8

RESULTS

No non-compliance noted.

ID:	27342	Date:	06/16-25, 2023
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9.1. PRIMARY ANTENNA**9.1.1. READER MODE, Type A 106 Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(VAC)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.559899	-0.147	13.559899	-0.147	13.559898	-0.074	13.559899	-0.147	± 100
	40	13.559855	3.097	13.559854	3.171	13.559855	3.097	13.559854	3.171	± 100
	30	13.559898	-0.074	13.559898	-0.074	13.559897	0.000	13.559898	0.590	± 100
	20	13.559897	0.000	13.559898	-0.074	13.559897	0.000	13.559899	-0.147	± 100
	10	13.559969	-5.310	13.559967	-5.162	13.559967	-5.162	13.559967	-5.162	± 100
	0	13.559973	-5.605	13.559973	-5.605	13.559974	-5.678	13.559975	-5.752	± 100
	-10	13.559996	-7.301	13.559995	-7.227	13.559995	-7.227	13.559997	-7.375	± 100
	-20	13.559997	-7.375	13.559998	-7.448	13.559998	-7.448	13.559998	-7.448	± 100
3.23	20	13.559942	-3.319	13.559941	-3.245	13.559942	-3.319	13.559941	-3.245	± 100
4.37	20	13.559915	-1.327	13.559925	-2.065	13.559922	-1.844	13.559921	-1.770	± 100

9.1.2. TAG MODE

Reference Frequency: EUT Channel 13.56 MHz @ 20°C										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(VAC)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.559877	-0.442	13.559871	0.000	13.559865	0.442	13.559863	0.590	± 100
	40	13.559854	1.254	13.559855	1.180	13.559851	1.475	13.559849	1.622	± 100
	30	13.559853	1.327	13.559851	1.475	13.559861	0.737	13.559862	0.664	± 100
	20	13.559871	0.000	13.559875	-0.295	13.559877	-0.442	13.559869	0.147	± 100
	10	13.559864	0.516	13.559869	0.147	13.559866	0.369	13.559871	0.000	± 100
	0	13.559877	-0.442	13.559875	-0.295	13.559881	-0.737	13.559878	-0.516	± 100
	-10	13.559859	0.885	13.559861	0.737	13.559867	0.295	13.559868	0.221	± 100
	-20	13.559865	0.442	13.559867	0.295	13.55987	0.074	13.559865	0.442	± 100
3.23	20	13.559845	1.917	13.559861	0.737	13.559867	0.295	13.559845	1.917	± 100
4.37	20	13.559855	1.180	13.559867	0.295	13.559864	0.516	13.559862	0.664	± 100

9.1.3. CE MODE, Type A 106 Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20°C										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(VAC)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.559866	-5.826	13.559867	-5.900	13.559866	-5.826	13.559866	-5.826	± 100
	40	13.559851	-4.720	13.55985	-4.646	13.559851	-4.720	13.55985	-4.646	± 100
	30	13.559797	-0.737	13.559799	-0.885	13.559798	-0.811	13.559798	-0.811	± 100
	20	13.559787	0.000	13.559785	0.147	13.559788	-0.074	13.559786	0.074	± 100
	10	13.559971	-13.569	13.55997	-13.496	13.55997	-13.496	13.559971	-13.569	± 100
	0	13.559975	-13.864	13.559975	-13.864	13.559974	-13.791	13.559975	-13.864	± 100
	-10	13.559998	-15.560	13.559998	-15.560	13.559997	-15.487	13.559997	-15.487	± 100
	-20	13.559696	6.711	13.559995	-15.339	13.559996	-15.413	13.559996	-15.413	± 100
3.23	20	13.559937	-11.062	13.559938	-11.136	13.559938	-11.136	13.559935	-10.914	± 100
4.37	20	13.559931	-10.619	13.559914	-9.366	13.559931	-10.619	13.559916	-9.513	± 100

9.2. SECONDARY ANTENNA**9.2.1. READER MODE, Type A 106 Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(VAC)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.560455	-0.295	13.560465	-1.032	13.560466	-1.106	13.560459	-0.590	± 100
	40	13.560456	-0.369	13.560461	-0.737	13.560466	-1.106	13.560472	-1.549	± 100
	30	13.560475	-1.770	13.560441	0.737	13.560421	2.212	13.560449	0.147	± 100
	20	13.560451	0.000	13.560461	-0.737	13.560463	-0.885	13.560451	0.000	± 100
	10	13.560456	-0.369	13.56046	-0.664	13.560461	-0.737	13.560466	-1.106	± 100
	0	13.560461	-0.737	13.560465	-1.032	13.560464	-0.959	13.560454	-0.221	± 100
	-10	13.560531	-5.900	13.560543	-6.785	13.560521	-5.162	13.560523	-5.310	± 100
	-20	13.560444	0.516	13.560451	0.000	13.560449	0.147	13.560451	0.000	± 100
3.23	20	13.560456	-0.369	13.560451	0.000	13.560419	2.360	13.56043	1.549	± 100
4.37	20	13.560457	-0.442	13.56046	-0.664	13.560461	-0.737	13.560414	2.729	± 100

9.2.2. TAG MODE, Type A 106 Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20°C										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(VAC)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.559849	0.516	13.559851	0.369	13.55986	-0.295	13.559847	0.664	± 100
	40	13.559865	-0.664	13.559861	-0.369	13.559851	0.369	13.559855	0.074	± 100
	30	13.559842	1.032	13.559851	0.369	13.559854	0.147	13.559855	0.074	± 100
	20	13.559856	0.000	13.559855	0.074	13.559851	0.369	13.559849	0.516	± 100
	10	13.559845	0.811	13.559854	0.147	13.559851	0.369	13.559557	22.050	± 100
	0	13.559845	0.811	13.559861	-0.369	13.559865	-0.664	13.559864	-0.590	± 100
	-10	13.559849	0.516	13.559851	0.369	13.559861	-0.369	13.559862	-0.442	± 100
	-20	13.55986	-0.295	13.559862	-0.442	13.559867	-0.811	13.55987	-1.032	± 100
3.23	20	13.559861	-0.369	13.559864	-0.590	13.559868	-0.885	13.559864	-0.590	± 100
4.37	20	13.559865	-0.664	13.559866	-0.737	13.559845	0.811	13.559864	-0.590	± 100

10. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

§15.207

IC RSS-GEN, Section 8.8

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

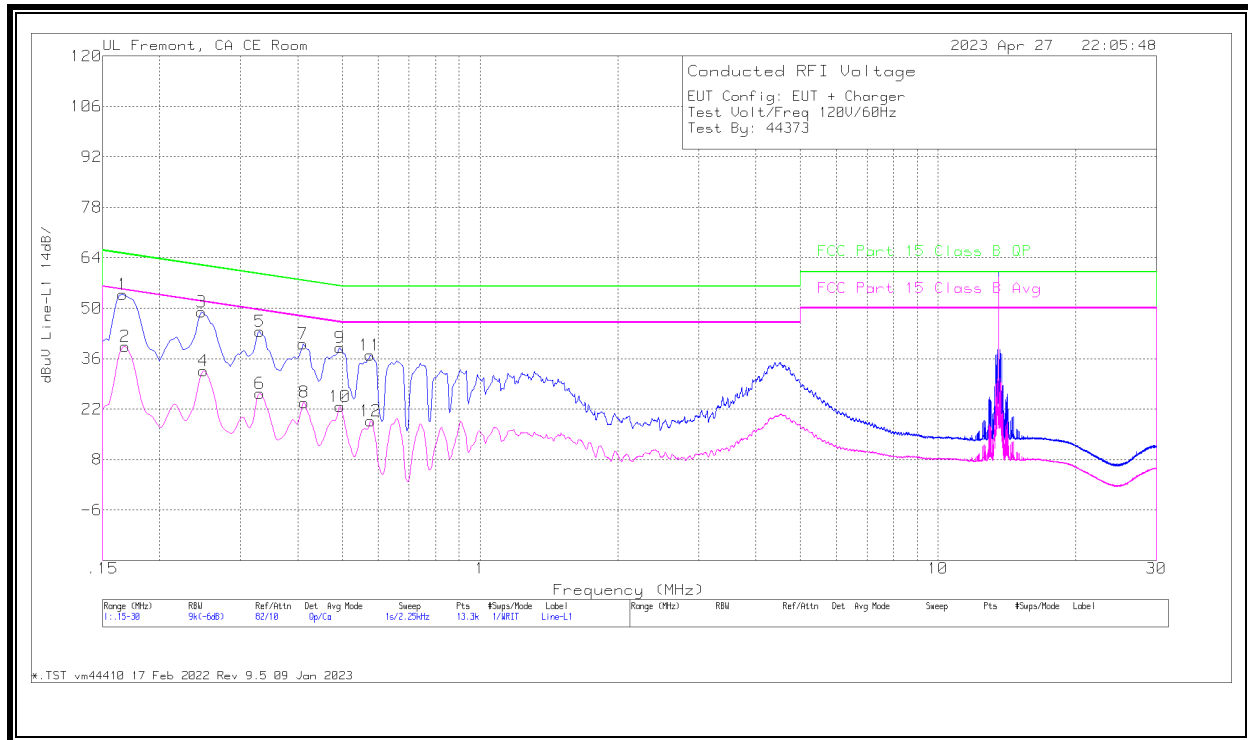
Notes:
1. The lower limit shall apply at the transition frequencies
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

TEST PROCEDURE

ANSI C63.10:2013

RESULTS

No non-compliance noted:

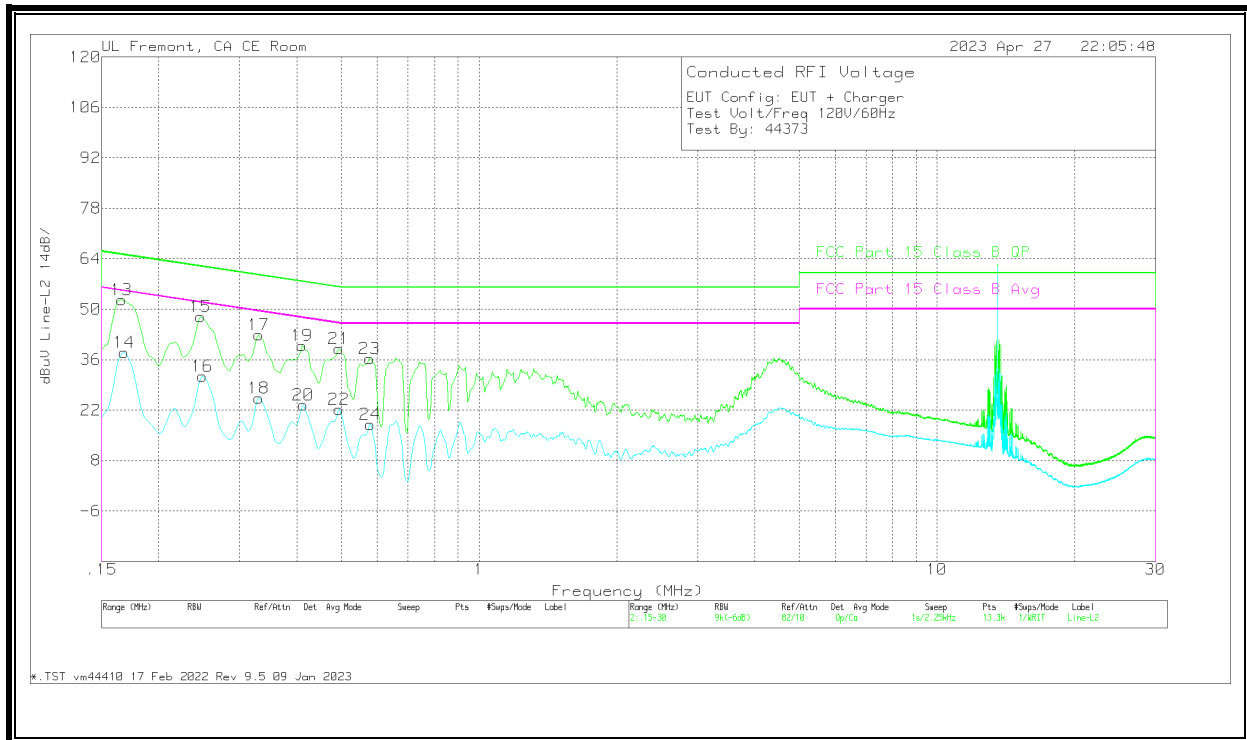
10.1. PRIMARY ANTENNA**10.1.1. READER MODE, WORST CASE WITH ANTENNA****LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
2	.168	30.06	Ca	0	0	9.4	39.46	-	-	55.06	-15.6
4	.249	23.27	Ca	0	0	9.3	32.57	-	-	51.79	-19.22
6	.33	17.05	Ca	0	0	9.3	26.35	-	-	49.45	-23.1
8	.4133	14.44	Ca	0	.1	9.3	23.84	-	-	47.58	-23.74
10	.4943	13.37	Ca	0	.1	9.3	22.77	-	-	46.1	-23.33
12	.5775	9.29	Ca	0	.1	9.3	18.69	-	-	46	-27.31
1	.1658	44.5	Qp	0	0	9.4	53.9	65.17	-11.27	-	-
3	.2468	39.62	Qp	0	0	9.3	48.92	61.87	-12.95	-	-
5	.33	34.24	Qp	0	0	9.3	43.54	59.45	-15.91	-	-
7	.411	30.64	Qp	0	.1	9.3	40.04	57.63	-17.59	-	-
9	.4943	29.58	Qp	0	.1	9.3	38.98	56.1	-17.12	-	-
11	.5753	27.51	Qp	0	.1	9.3	36.91	56	-19.09	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicate that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

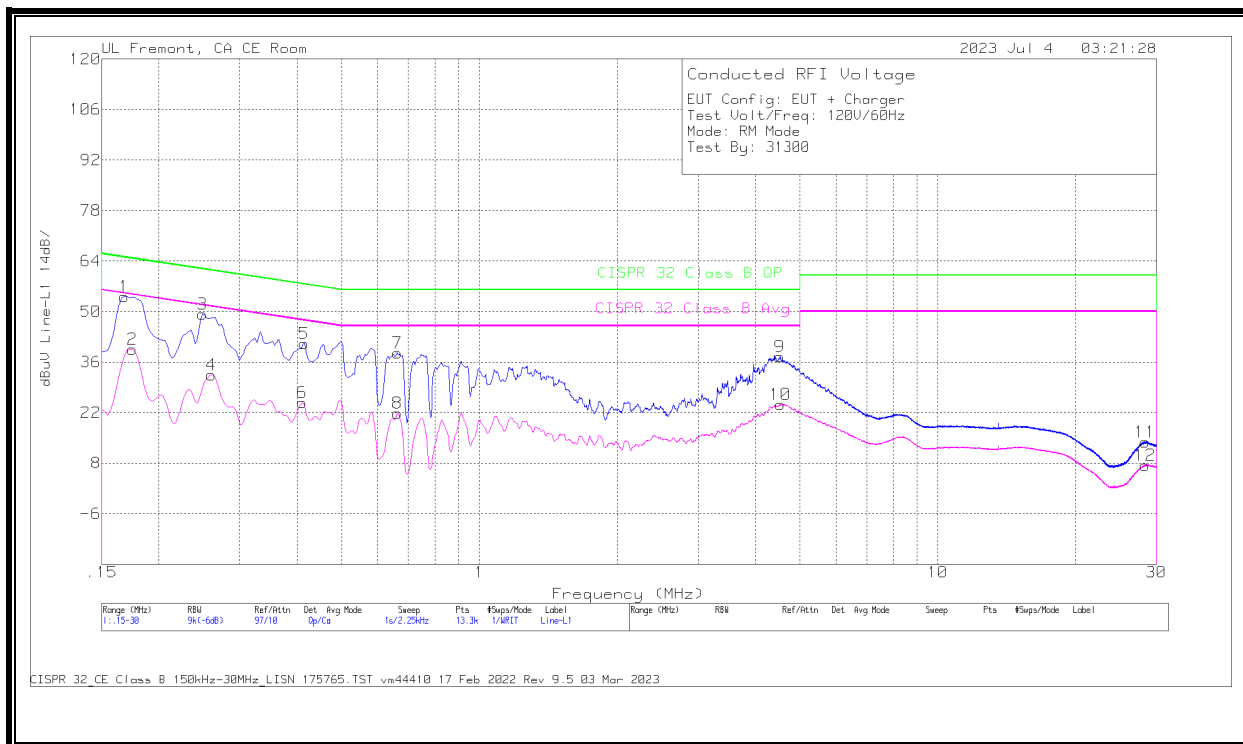
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
14	.168	28.53	Ca	0	0	9.4	37.93	-	-	55.06	-17.13
16	.249	22.14	Ca	0	0	9.3	31.44	-	-	51.79	-20.35
18	.33	16.03	Ca	0	0	9.3	25.33	-	-	49.45	-24.12
20	.4133	13.93	Ca	0	.1	9.3	23.33	-	-	47.58	-24.25
22	.4943	12.78	Ca	0	.1	9.3	22.18	-	-	46.1	-23.92
24	.5786	8.57	Ca	0	.1	9.3	17.97	-	-	46	-28.03
13	.1658	43.26	Qp	0	0	9.4	52.66	65.17	-12.51	-	-
15	.2468	38.55	Qp	0	0	9.3	47.85	61.87	-14.02	-	-
17	.33	33.5	Qp	0	0	9.3	42.8	59.45	-16.65	-	-
19	.411	30.49	Qp	0	.1	9.3	39.89	57.63	-17.74	-	-
21	.4943	29.69	Qp	0	.1	9.3	39.09	56.1	-17.01	-	-
23	.5775	26.87	Qp	0	.1	9.3	36.27	56	-19.73	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

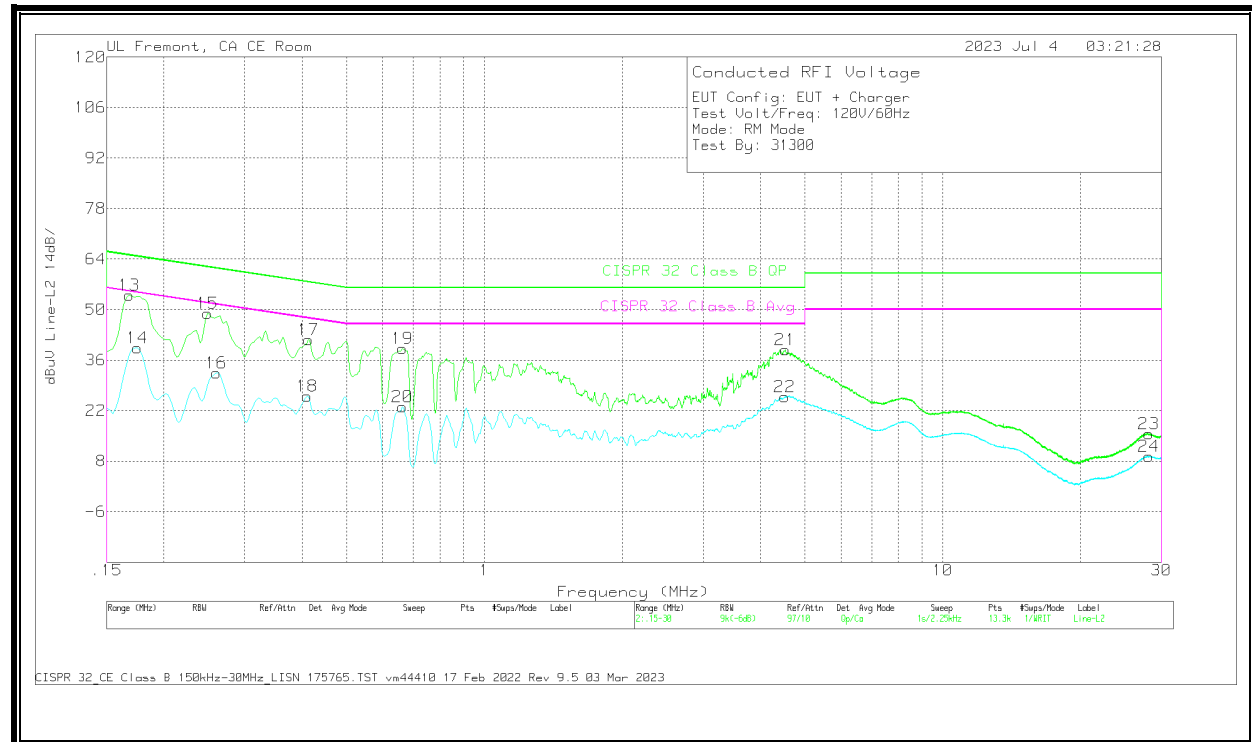
10.1.2. READER MODE, ANTENNA PORT TERMINATED**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.1748	30.18	Ca	0	0	9.4	39.58	-	-	54.73	-15.15
4	.2603	23.21	Ca	0	0	9.3	32.51	-	-	51.42	-18.91
6	.411	15.4	Ca	0	.1	9.3	24.8	-	-	47.63	-22.83
8	.663	12.47	Ca	0	.1	9.3	21.87	-	-	46	-24.13
10	4.5308	14.87	Ca	0	.1	9.3	24.27	-	-	46	-21.73
12	28.3223	-2.55	Ca	.3	.3	9.4	7.45	-	-	50	-42.55
1	.168	44.79	Qp	0	0	9.4	54.19	65.06	-10.87	-	-
3	.249	40.08	Qp	0	0	9.3	49.38	61.79	-12.41	-	-
5	.4144	31.73	Qp	0	.1	9.3	41.13	57.56	-16.43	-	-
7	.663	29.08	Qp	0	.1	9.3	38.48	56	-17.52	-	-
9	4.5285	28.07	Qp	0	.1	9.3	37.47	56	-18.53	-	-
11	28.3605	3.77	Qp	.3	.3	9.4	13.77	60	-46.23	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

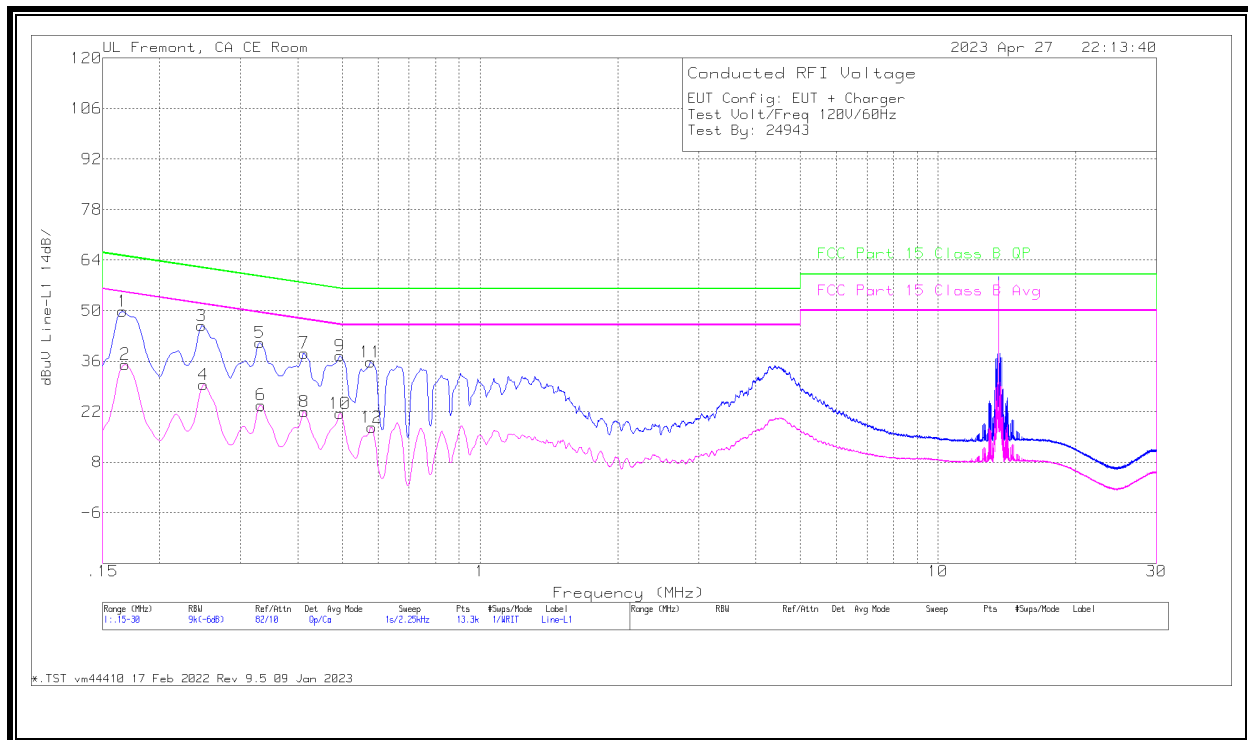
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.1748	29.98	Ca	0	0	9.4	39.38	-	-	54.73	-15.35
16	.2603	23.17	Ca	0	0	9.3	32.47	-	-	51.42	-18.95
18	.411	16.63	Ca	0	.1	9.3	26.03	-	-	47.63	-21.6
20	.663	13.69	Ca	0	.1	9.3	23.09	-	-	46	-22.91
22	4.5263	16.42	Ca	0	.1	9.3	25.82	-	-	46	-20.18
24	28.1828	-72	Ca	.3	.3	9.4	9.28	-	-	50	-40.72
13	.168	44.53	Qp	0	0	9.4	53.93	65.06	-11.13	-	-
15	.249	39.64	Qp	0	0	9.3	48.94	61.79	-12.85	-	-
17	.4133	32.23	Qp	0	.1	9.3	41.63	57.58	-15.95	-	-
19	.663	29.9	Qp	0	.1	9.3	39.3	56	-16.7	-	-
21	4.5308	29.43	Qp	0	.1	9.3	38.83	56	-17.17	-	-
23	28.1783	5.56	Qp	.3	.3	9.4	15.56	60	-44.44	-	-

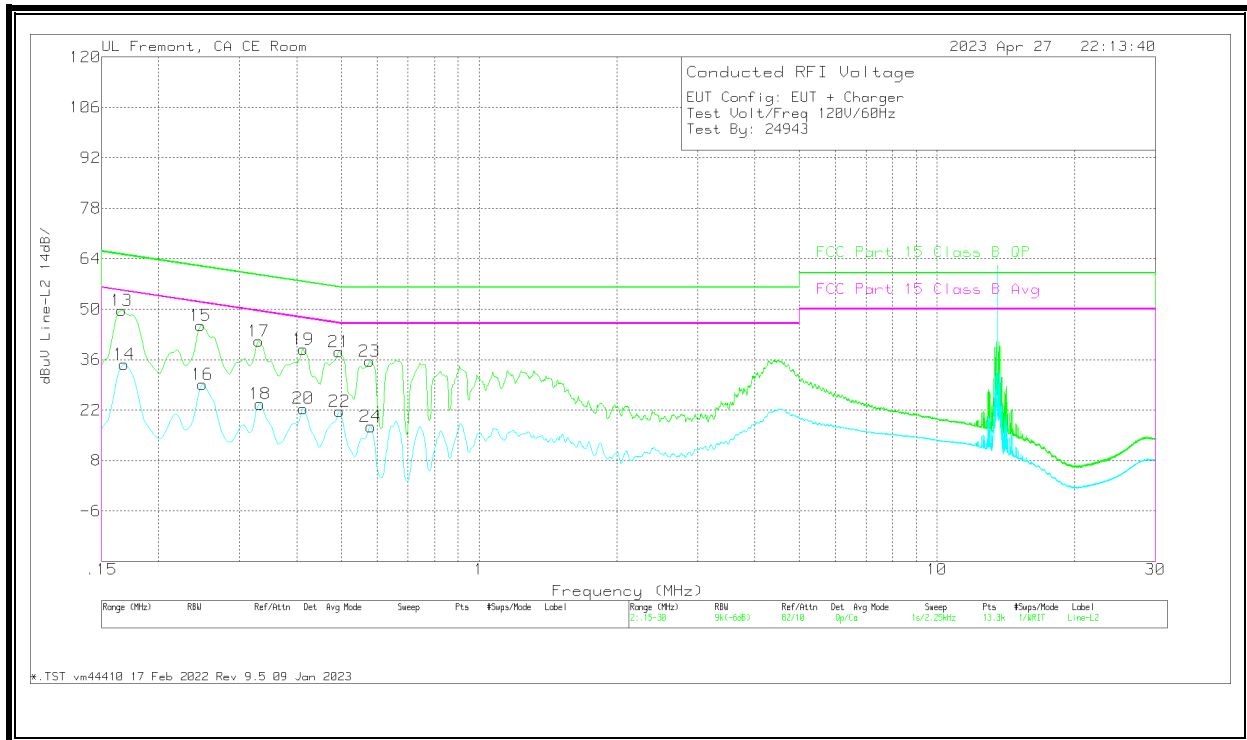
Qp - Quasi-Peak detector

Ca - CISPR average detection

10.1.3. TAG MODE, WORST CASE WITH ANTENNA**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
2	.168	25.73	Ca	0	0	9.4	35.13	-	-	55.06	-19.93
4	.249	20.11	Ca	0	0	9.3	29.41	-	-	51.79	-22.38
6	.3323	14.54	Ca	0	0	9.3	23.84	-	-	49.39	-25.55
8	.4133	12.61	Ca	0	.1	9.3	22.01	-	-	47.58	-25.57
10	.4943	12.15	Ca	0	.1	9.3	21.55	-	-	46.1	-24.55
12	.5798	8.22	Ca	0	.1	9.3	17.62	-	-	46	-28.38
1	.1658	40.35	Qp	0	0	9.4	49.75	65.17	-15.42	-	-
3	.2468	36.46	Qp	0	0	9.3	45.76	61.87	-16.11	-	-
5	.33	31.86	Qp	0	0	9.3	41.16	59.45	-18.29	-	-
7	.4133	28.86	Qp	0	.1	9.3	38.26	57.58	-19.32	-	-
9	.4943	28.13	Qp	0	.1	9.3	37.53	56.1	-18.57	-	-
11	.5775	26.29	Qp	0	.1	9.3	35.69	56	-20.31	-	-

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicate that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

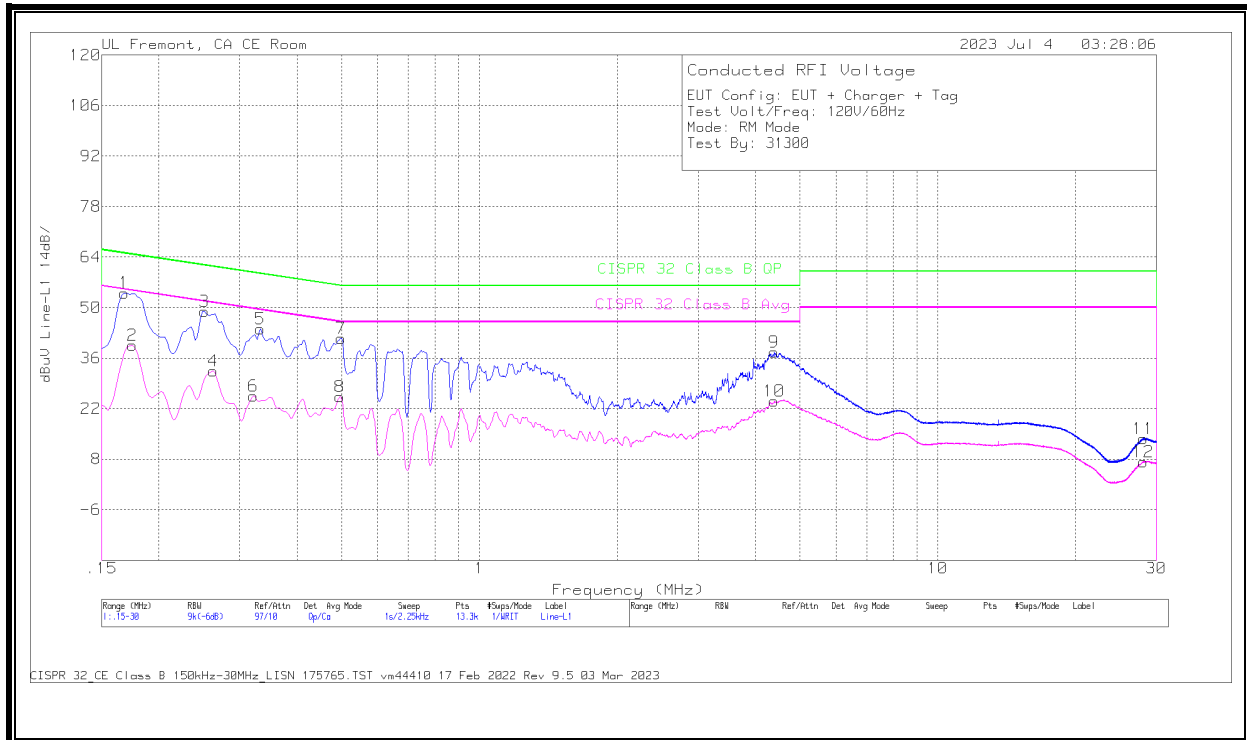
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
14	.168	25.3	Ca	0	0	9.4	34.7	-	-	55.06	-20.36
16	.249	19.82	Ca	0	0	9.3	29.12	-	-	51.79	-22.67
18	.3323	14.37	Ca	0	0	9.3	23.67	-	-	49.39	-25.72
20	.4133	13.05	Ca	0	.1	9.3	22.45	-	-	47.58	-25.13
22	.4965	12.31	Ca	0	.1	9.3	21.71	-	-	46.06	-24.35
24	.5798	8.01	Ca	0	.1	9.3	17.41	-	-	46	-28.59
13	.1658	40.24	Qp	0	0	9.4	49.64	65.17	-15.53	-	-
15	.2468	36.23	Qp	0	0	9.3	45.53	61.87	-16.34	-	-
17	.33	31.83	Qp	0	0	9.3	41.13	59.45	-18.32	-	-
19	.4133	29.45	Qp	0	.1	9.3	38.85	57.58	-18.73	-	-
21	.4943	28.8	Qp	0	.1	9.3	38.2	56.1	-17.9	-	-
23	.5775	26.1	Qp	0	.1	9.3	35.5	56	-20.5	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

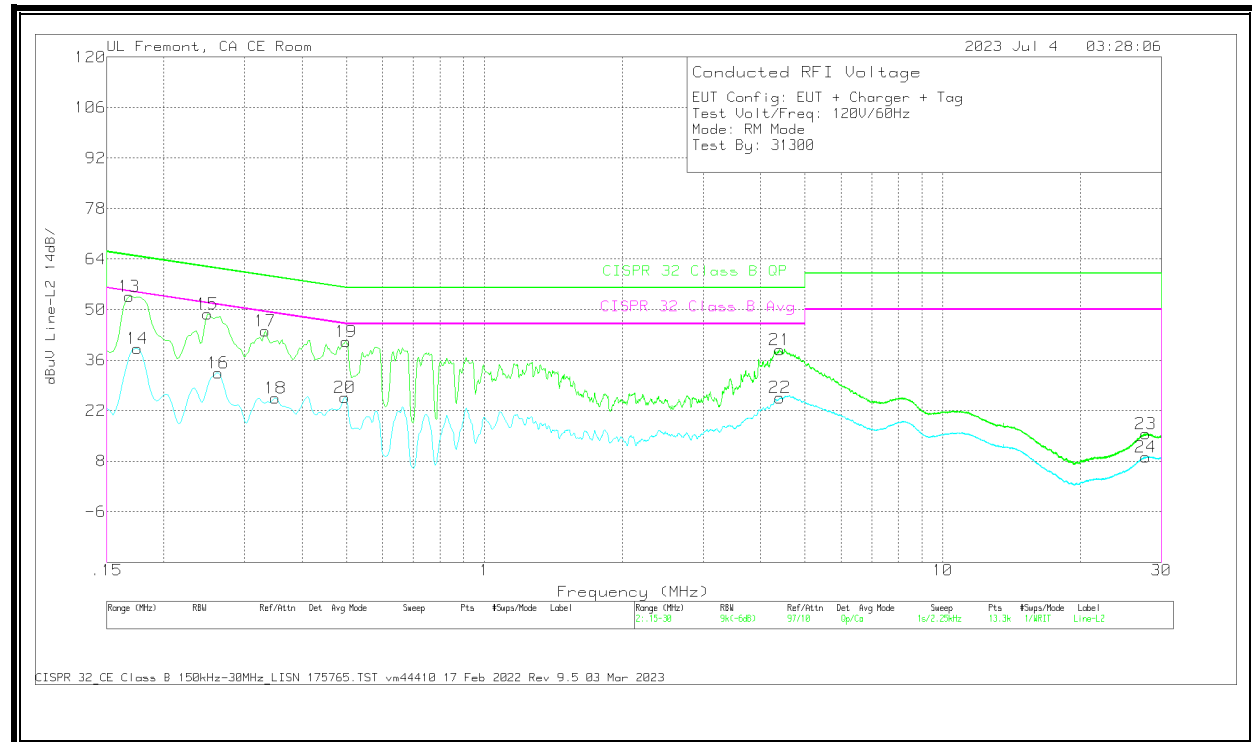
Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

10.1.4. TAG MODE, Antenna Port Terminated**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.1748	30.13	Ca	0	0	9.4	39.53	-	-	54.73	-15.2
4	.2625	23.11	Ca	0	0	9.3	32.41	-	-	51.35	-18.94
6	.321	16.17	Ca	0	0	9.3	25.47	-	-	49.68	-24.21
8	.4965	15.87	Ca	0	.1	9.3	25.27	-	-	46.06	-20.79
10	4.398	14.62	Ca	0	.1	9.3	24.02	-	-	46	-21.98
12	28.0838	-2.78	Ca	.3	.3	9.4	7.22	-	-	50	-42.78
1	.168	44.68	Qp	0	0	9.4	54.08	65.06	-10.98	-	-
3	.2513	39.73	Qp	0	0	9.3	49.03	61.72	-12.69	-	-
5	.3323	34.75	Qp	0	0	9.3	44.05	59.39	-15.34	-	-
7	.4988	32.04	Qp	0	.1	9.3	41.44	56.02	-14.58	-	-
9	4.398	28.23	Qp	0	.1	9.3	37.63	56	-18.37	-	-
11	28.0815	3.69	Qp	.3	.3	9.4	13.69	60	-46.31	-	-

Qp - Quasi-Peak detector

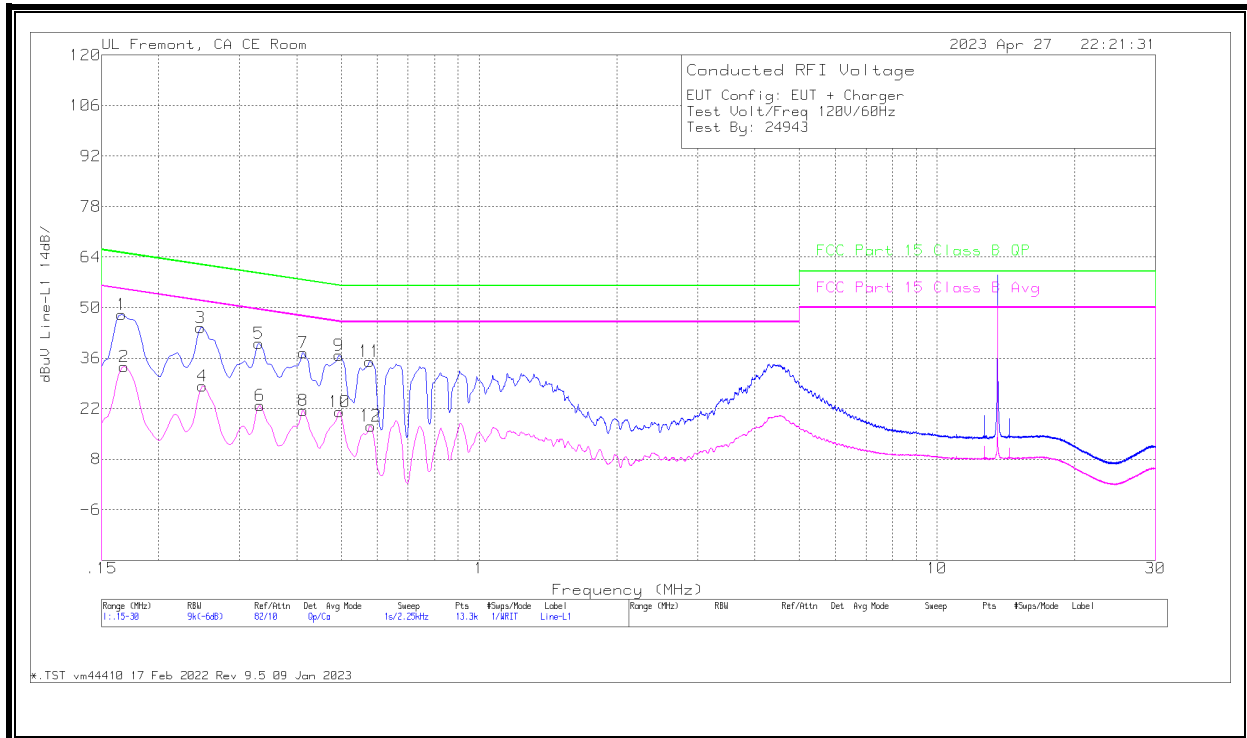
Ca - CISPR average detection

LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.1748	29.88	Ca	0	0	9.4	39.28	-	-	54.73	-15.45
16	.2625	23.16	Ca	0	0	9.3	32.46	-	-	51.35	-18.89
18	.3503	16.15	Ca	0	0	9.3	25.45	-	-	48.96	-23.51
20	.4965	16.27	Ca	0	.1	9.3	25.67	-	-	46.06	-20.39
22	4.416	16.18	Ca	0	.1	9.3	25.58	-	-	46	-20.42
24	27.7283	-89	Ca	.3	.3	9.4	9.11	-	-	50	-40.89
13	.168	44.28	Qp	0	0	9.4	53.68	65.06	-11.38	-	-
15	.249	39.42	Qp	0	0	9.3	48.72	61.79	-13.07	-	-
17	.3323	34.81	Qp	0	0	9.3	44.11	59.39	-15.28	-	-
19	.4988	31.75	Qp	0	.1	9.3	41.15	56.02	-14.87	-	-
21	4.4138	29.55	Qp	0	.1	9.3	38.95	56	-17.05	-	-
23	27.7283	5.58	Qp	.3	.3	9.4	15.58	60	-44.42	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

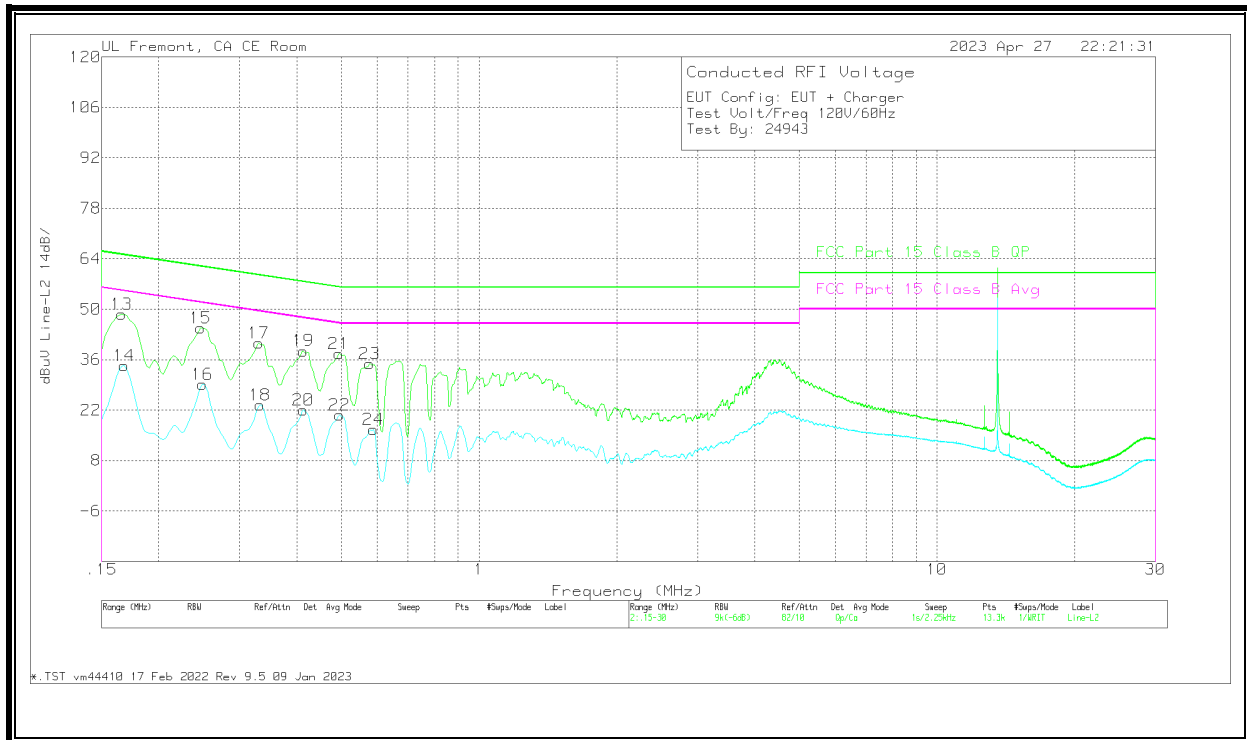
10.1.5. CE MODE, WORST CASE WITH ANTENNA**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
2	.168	24.32	Ca	0	0	9.4	33.72	-	-	55.06	-21.34
4	.249	18.9	Ca	0	0	9.3	28.2	-	-	51.79	-23.59
6	.3323	13.53	Ca	0	0	9.3	22.83	-	-	49.39	-26.56
8	.4133	12.12	Ca	0	.1	9.3	21.52	-	-	47.58	-26.06
10	.4965	11.72	Ca	0	.1	9.3	21.12	-	-	46.06	-24.94
12	.5798	7.83	Ca	0	.1	9.3	17.23	-	-	46	-28.77
1	.1658	38.72	Qp	0	0	9.4	48.12	65.17	-17.05	-	-
3	.2468	35.2	Qp	0	0	9.3	44.5	61.87	-17.37	-	-
5	.33	30.83	Qp	0	0	9.3	40.13	59.45	-19.32	-	-
7	.4133	28.1	Qp	0	.1	9.3	37.5	57.58	-20.08	-	-
9	.4943	27.46	Qp	0	.1	9.3	36.86	56.1	-19.24	-	-
11	.5775	25.73	Qp	0	.1	9.3	35.13	56	-20.87	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

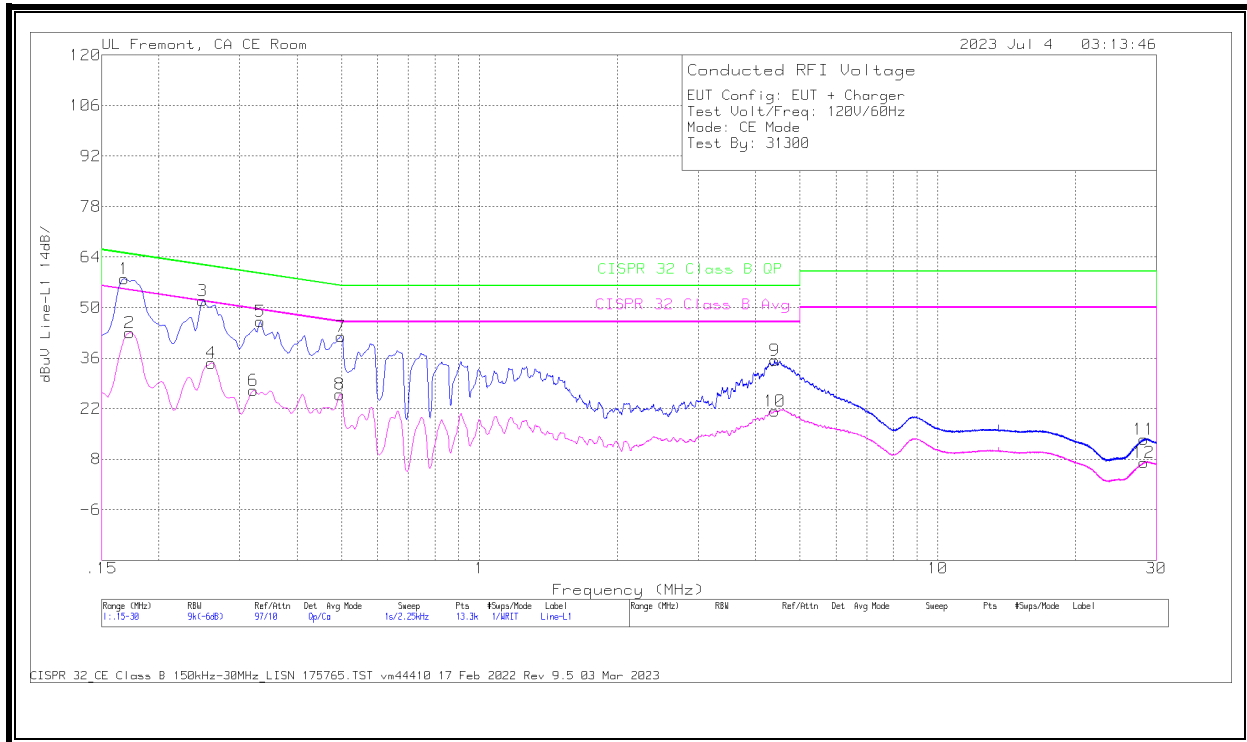
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
14	.168	24.95	Ca	0	0	9.4	34.35	-	-	55.06	-20.71
16	.249	19.81	Ca	0	0	9.3	29.11	-	-	51.79	-22.68
18	.3323	14.14	Ca	0	0	9.3	23.44	-	-	49.39	-25.95
20	.4133	12.55	Ca	0	.1	9.3	21.95	-	-	47.58	-25.63
22	.4965	11.29	Ca	0	.1	9.3	20.69	-	-	46.06	-25.37
24	.5888	7.17	Ca	0	.1	9.3	16.57	-	-	46	-29.43
13	.1658	39.25	Qp	0	0	9.4	48.65	65.17	-16.52	-	-
15	.2468	35.5	Qp	0	0	9.3	44.8	61.87	-17.07	-	-
17	.33	31.25	Qp	0	0	9.3	40.55	59.45	-18.9	-	-
19	.4133	29.04	Qp	0	.1	9.3	38.44	57.58	-19.14	-	-
21	.4943	28.23	Qp	0	.1	9.3	37.63	56.1	-18.47	-	-
23	.5775	25.54	Qp	0	.1	9.3	34.94	56	-21.06	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

ote: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

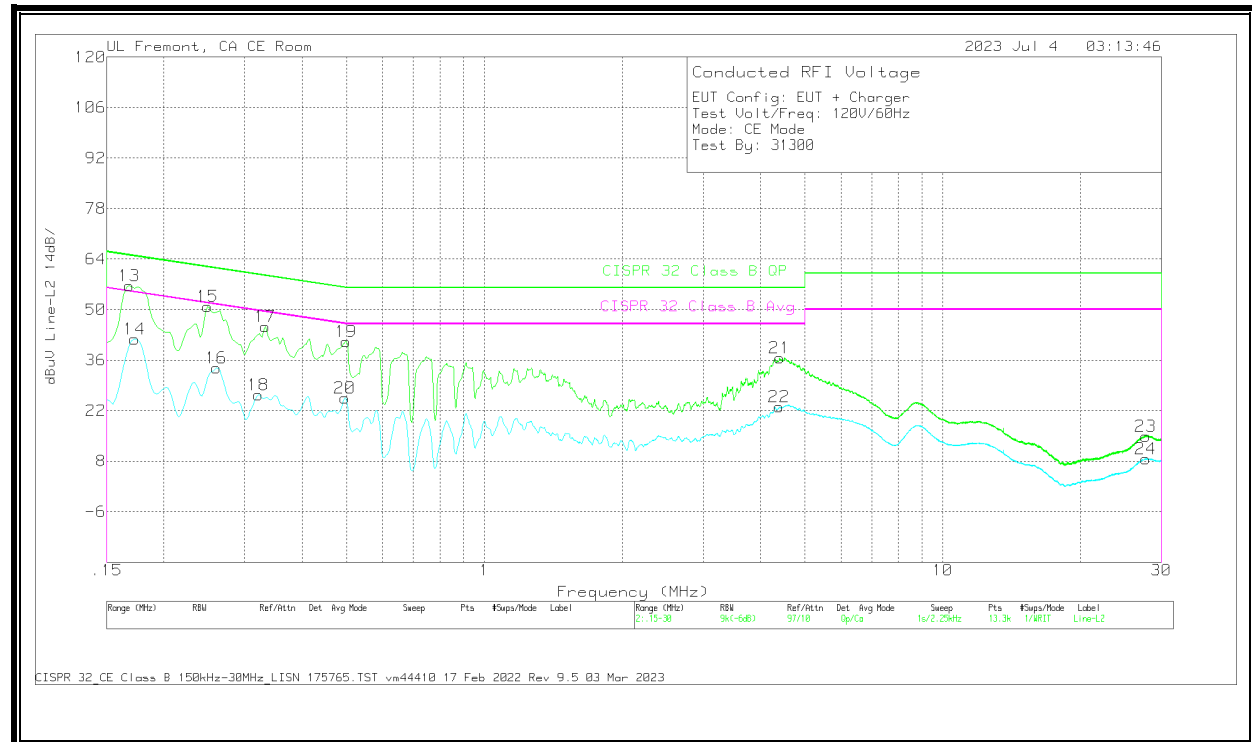
10.1.6. CE MODE, ANTENNA PORT TERMINATED**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.1725	33.59	Ca	0	0	9.4	42.99	-	-	54.84	-11.85
4	.2603	25.32	Ca	0	0	9.3	34.62	-	-	51.42	-16.8
6	.321	17.83	Ca	0	0	9.3	27.13	-	-	49.68	-22.55
8	.4965	16.53	Ca	0	.1	9.3	25.93	-	-	46.06	-20.13
10	4.4048	11.98	Ca	0	.1	9.3	21.38	-	-	46	-24.62
12	28.1715	-2.9	Ca	.3	.3	9.4	7.1	-	-	50	-42.9
1	.168	48.54	Qp	0	0	9.4	57.94	65.06	-7.12	-	-
3	.249	42.66	Qp	0	0	9.3	51.96	61.79	-9.83	-	-
5	.3323	36.88	Qp	0	0	9.3	46.18	59.39	-13.21	-	-
7	.4988	32.6	Qp	0	.1	9.3	42	56.02	-14.02	-	-
9	4.4048	25.98	Qp	0	.1	9.3	35.38	56	-20.62	-	-
11	28.176	3.48	Qp	.3	.3	9.4	13.48	60	-46.52	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

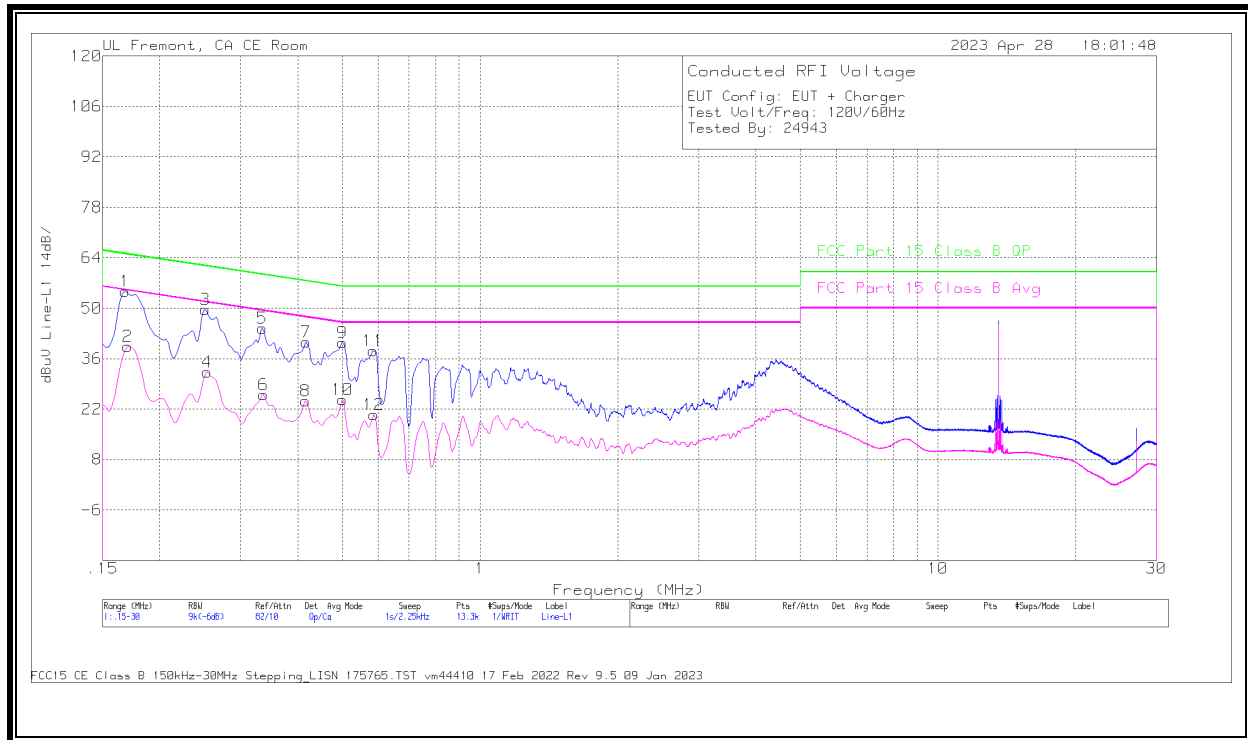
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.1725	32.35	Ca	0	0	9.4	41.75	-	-	54.84	-13.09
16	.2603	24.47	Ca	0	0	9.3	33.77	-	-	51.42	-17.65
18	.321	17.09	Ca	0	0	9.3	26.39	-	-	49.68	-23.29
20	.4965	16.14	Ca	0	.1	9.3	25.54	-	-	46.06	-20.52
22	4.3958	13.58	Ca	0	.1	9.3	22.98	-	-	46	-23.02
24	27.7328	-1.33	Ca	.3	.3	9.4	8.67	-	-	50	-41.33
13	.168	47.15	Qp	0	0	9.4	56.55	65.06	-8.51	-	-
15	.249	41.52	Qp	0	0	9.3	50.82	61.79	-10.97	-	-
17	.3323	36.08	Qp	0	0	9.3	45.38	59.39	-14.01	-	-
19	.4988	31.8	Qp	0	.1	9.3	41.2	56.02	-14.82	-	-
21	4.4093	27.23	Qp	0	.1	9.3	36.63	56	-19.37	-	-
23	27.7485	4.96	Qp	.3	.3	9.4	14.96	60	-45.04	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

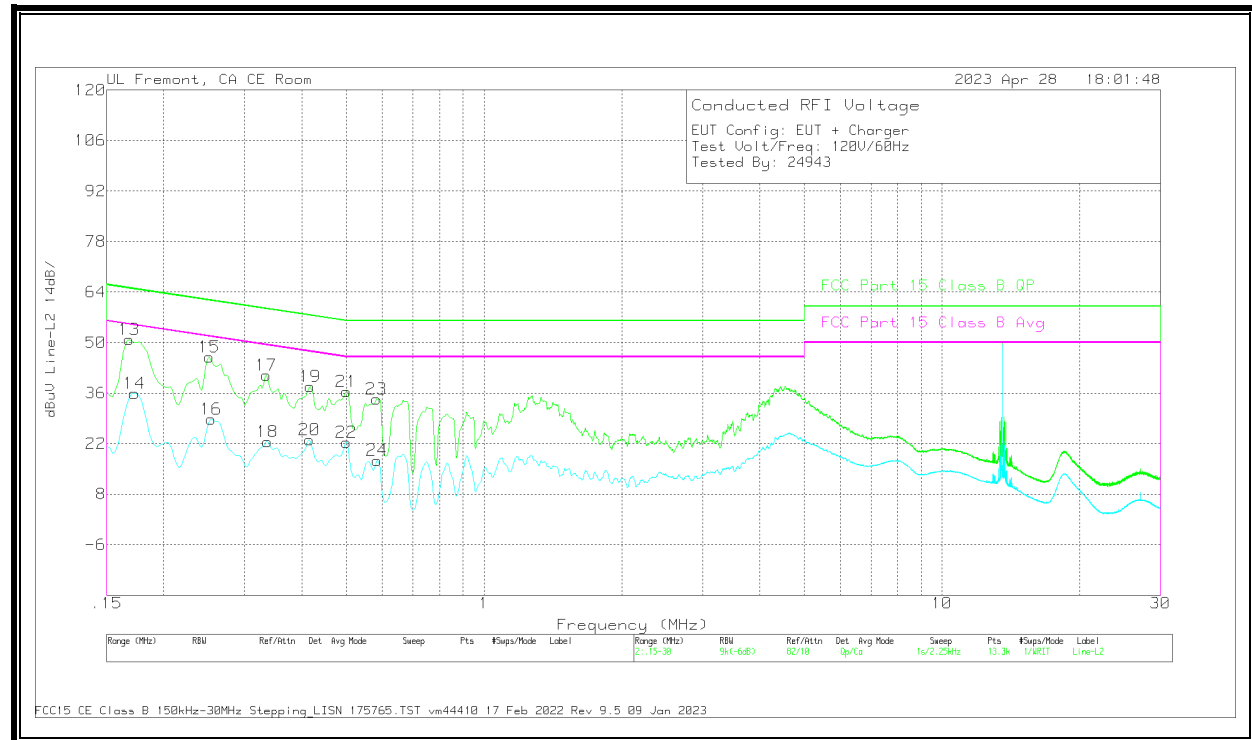
10.2. SECONDARY ANTENNA**10.2.1. READER MODE, WORST CASE WITH ANTENNA****LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
1	.168	45.29	Qp	0	0	9.4	54.69	65.06	-10.37	-	-
2	.1703	30.03	Ca	0	0	9.4	39.43	-	-	54.95	-15.52
3	.2513	40.42	Qp	0	0	9.3	49.72	61.72	-12	-	-
4	.2535	22.9	Ca	0	0	9.3	32.2	-	-	51.64	-19.44
5	.3345	35.12	Qp	0	0	9.3	44.42	59.34	-14.92	-	-
6	.3368	16.68	Ca	0	0	9.3	25.98	-	-	49.28	-23.3
7	.4178	31.29	Qp	0	.1	9.3	40.69	57.49	-16.8	-	-
8	.4155	14.9	Ca	0	.1	9.3	24.3	-	-	47.54	-23.24
9	.501	31.1	Qp	0	.1	9.3	40.5	56	-15.5	-	-
10	.501	15.2	Ca	0	.1	9.3	24.6	-	-	46	-21.4
11	.5843	28.79	Qp	0	.1	9.3	38.19	56	-17.81	-	-
12	.5865	10.97	Ca	0	.1	9.3	20.37	-	-	46	-25.63

Qp - Quasi-Peak detector

Ca - CISPR average detection

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

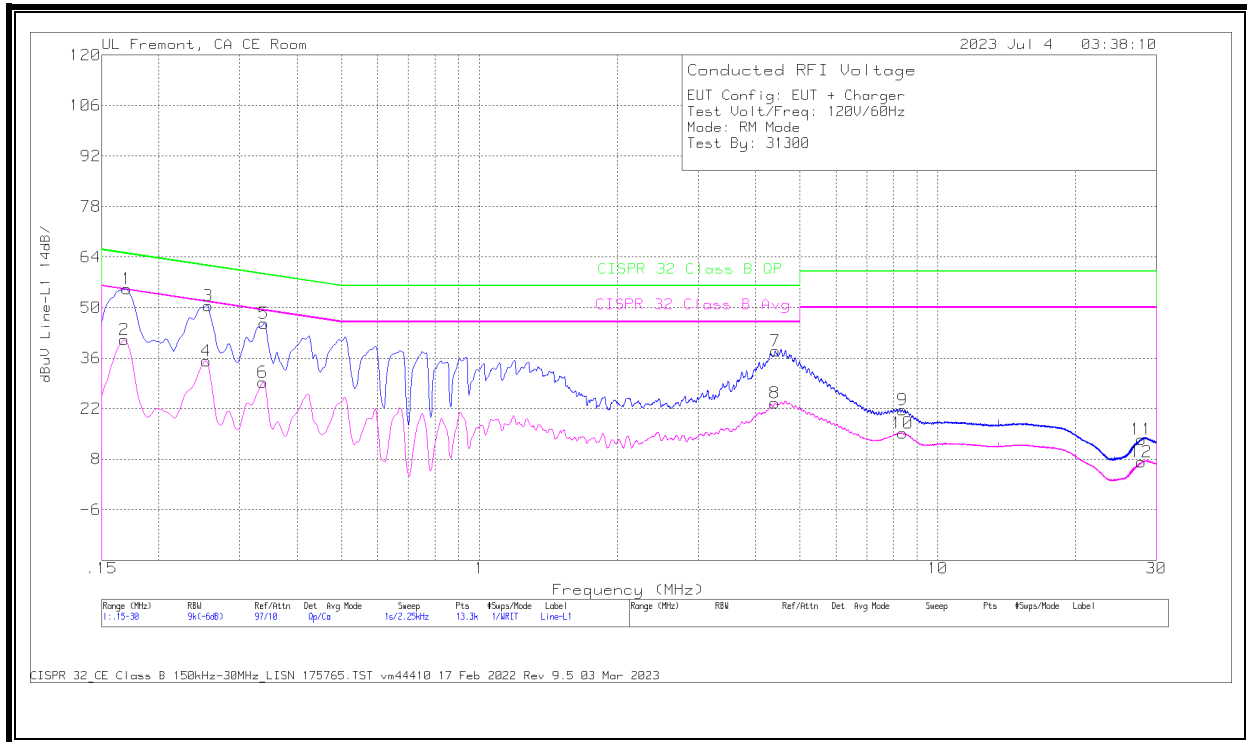
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)Margin (dB)
13	.168	41.52	Qp	0	0	9.4	50.92	65.06	-14.14	-	-
14	.1725	26.56	Ca	0	0	9.4	35.96	-	-	54.84	-18.88
15	.2513	36.65	Qp	0	0	9.3	45.95	61.72	-15.77	-	-
16	.2535	19.52	Ca	0	0	9.3	28.82	-	-	51.64	-22.82
17	.3345	31.65	Qp	0	0	9.3	40.95	59.34	-18.39	-	-
18	.3368	13.28	Ca	0	0	9.3	22.58	-	-	49.28	-26.7
19	.4178	28.48	Qp	0	.1	9.3	37.88	57.49	-19.61	-	-
20	.4155	13.63	Ca	0	.1	9.3	23.03	-	-	47.54	-24.51
21	.501	27.05	Qp	0	.1	9.3	36.45	56	-19.55	-	-
22	.501	13	Ca	0	.1	9.3	22.4	-	-	46	-23.6
23	.582	25.01	Qp	0	.1	9.3	34.41	56	-21.59	-	-
24	.5843	8	Ca	0	.1	9.3	17.4	-	-	46	-28.6

Qp - Quasi-Peak detector

Ca - CISPR average detection

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

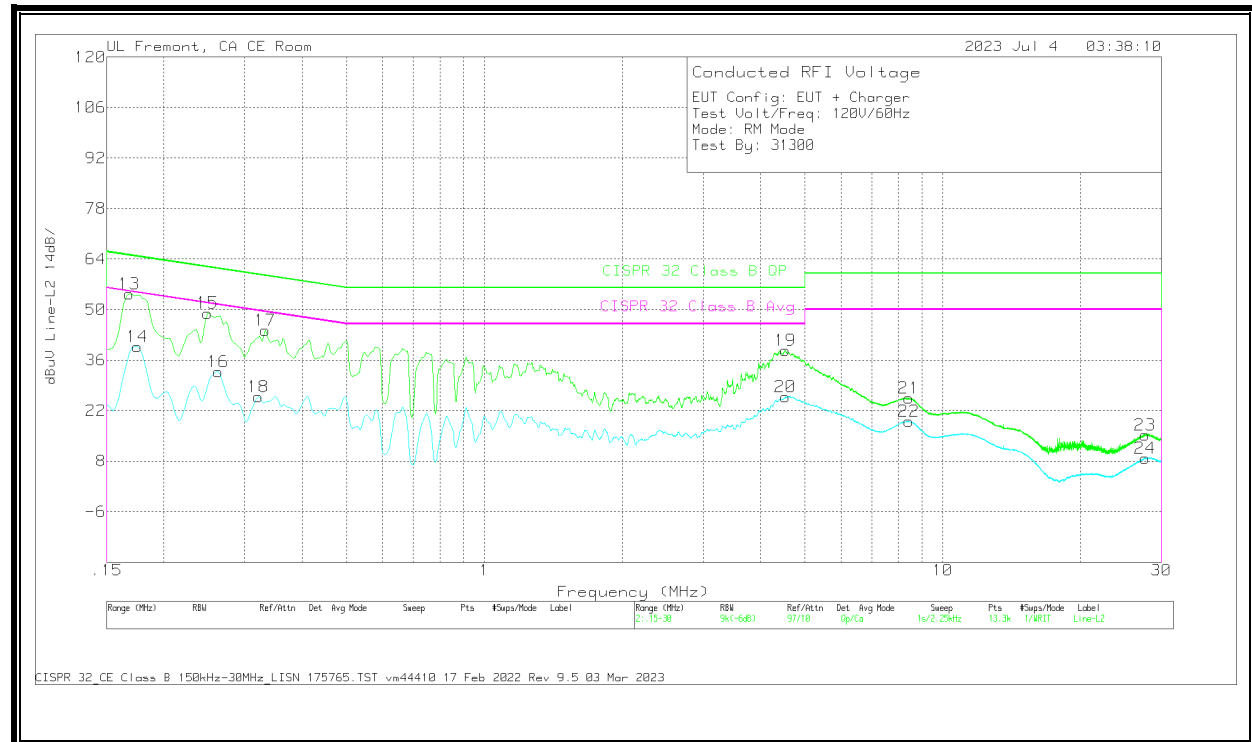
10.2.2. READER MODE, ANTENNA PORT TERMINATED**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1 LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.168	31.76	Ca	0	0	9.4	41.16	-	-	55.06	-13.9
4	.2535	25.92	Ca	0	0	9.3	35.22	-	-	51.64	-16.42
6	.3368	20.05	Ca	0	0	9.3	29.35	-	-	49.28	-19.93
8	4.4138	14.1	Ca	0	.1	9.3	23.5	-	-	46	-22.5
10	8.3715	5.76	Ca	0	.2	9.3	15.26	-	-	50	-34.74
12	27.816	-2.81	Ca	.3	.3	9.4	7.19	-	-	50	-42.81
1	.1703	45.83	Qp	0	0	9.4	55.23	64.95	-9.72	-	-
3	.2558	41.24	Qp	0	0	9.3	50.54	61.57	-11.03	-	-
5	.339	36.34	Qp	0	0	9.3	45.64	59.23	-13.59	-	-
7	4.4205	28.68	Qp	0	.1	9.3	38.08	56	-17.92	-	-
9	8.376	12.22	Qp	0	.2	9.3	21.72	60	-38.28	-	-
11	27.816	3.55	Qp	.3	.3	9.4	13.55	60	-46.45	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

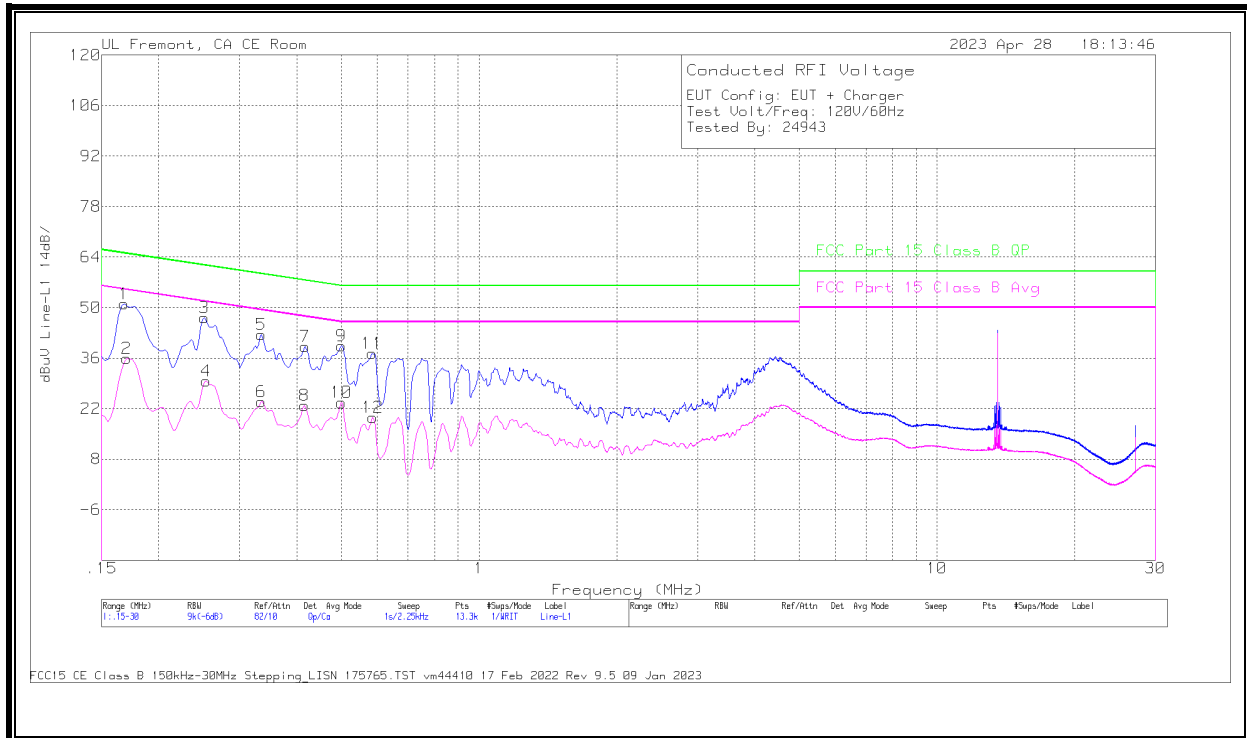
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.1748	30.38	Ca	0	0	9.4	39.78	-	-	54.73	-14.95
16	.2625	23.44	Ca	0	0	9.3	32.74	-	-	51.35	-18.61
18	.321	16.55	Ca	0	0	9.3	25.85	-	-	49.68	-23.83
20	4.542	16.37	Ca	0	.1	9.3	25.77	-	-	46	-20.23
22	8.4278	9.6	Ca	0	.2	9.3	19.1	-	-	50	-30.9
24	27.627	-1.19	Ca	.3	.3	9.4	8.81	-	-	50	-41.19
13	.168	44.88	Qp	0	0	9.4	54.28	65.06	-10.78	-	-
15	.249	39.74	Qp	0	0	9.3	49.04	61.79	-12.75	-	-
17	.3323	34.96	Qp	0	0	9.3	44.26	59.39	-15.13	-	-
19	4.5375	29.35	Qp	0	.1	9.3	38.75	56	-17.25	-	-
21	8.43	15.91	Qp	0	.2	9.3	25.41	60	-34.59	-	-
23	27.645	5.3	Qp	.3	.3	9.4	15.3	60	-44.7	-	-

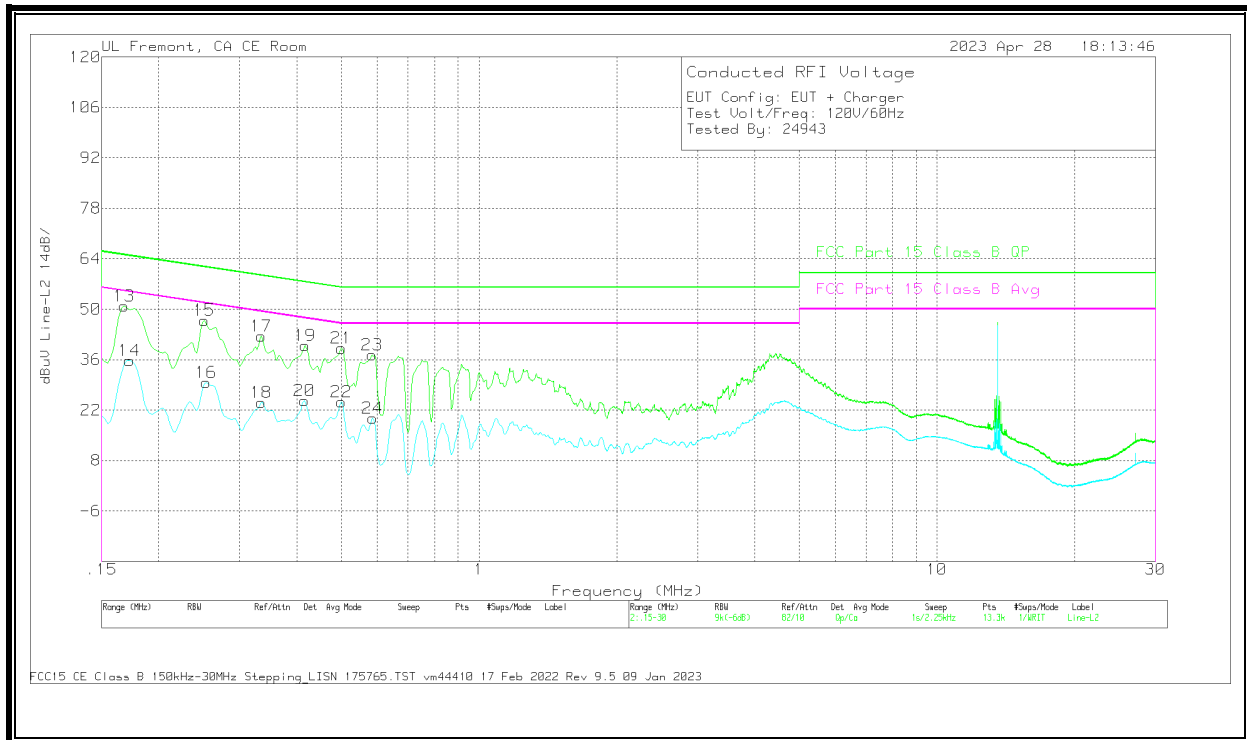
Qp - Quasi-Peak detector

Ca - CISPR average detection

10.2.3. TAG MODE, WORST CASE WITH ANTENNA**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
1	.168	41.68	Qp	0	0	9.4	51.08	65.06	-13.98	-	-
2	.1703	26.45	Ca	0	0	9.4	35.85	-	-	54.95	-19.1
3	.2513	37.91	Qp	0	0	9.3	47.21	61.72	-14.51	-	-
4	.2535	20.29	Ca	0	0	9.3	29.59	-	-	51.64	-22.05
5	.3345	33.2	Qp	0	0	9.3	42.5	59.34	-16.84	-	-
6	.3345	14.69	Ca	0	0	9.3	23.99	-	-	49.34	-25.35
7	.4178	29.82	Qp	0	.1	9.3	39.22	57.49	-18.27	-	-
8	.4155	13.42	Ca	0	.1	9.3	22.82	-	-	47.54	-24.72
9	.501	30.07	Qp	0	.1	9.3	39.47	56	-16.53	-	-
10	.501	14.27	Ca	0	.1	9.3	23.67	-	-	46	-22.33
11	.5843	27.93	Qp	0	.1	9.3	37.33	56	-18.67	-	-
12	.5865	10.2	Ca	0	.1	9.3	19.6	-	-	46	-26.4

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

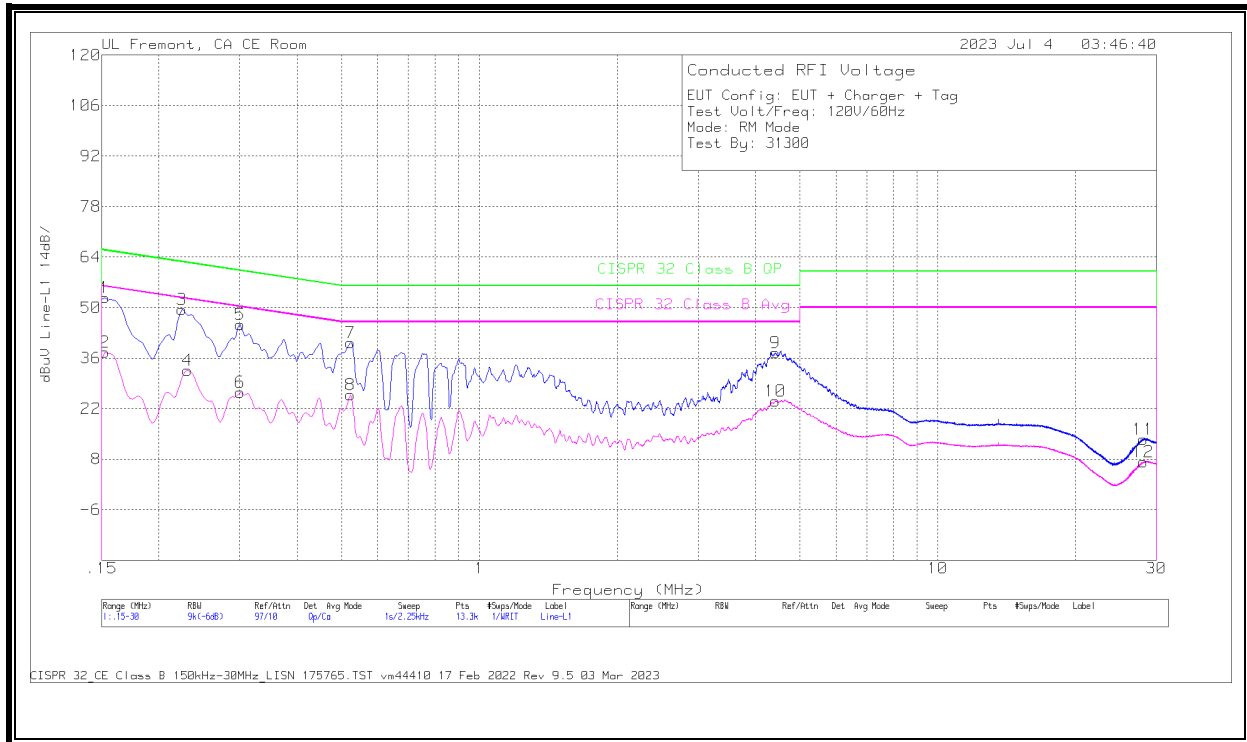
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
13	.168	41.54	Qp	0	0	9.4	50.94	65.06	-14.12	-	-
14	.1725	26.34	Ca	0	0	9.4	35.74	-	-	54.84	-19.1
15	.2513	37.65	Qp	0	0	9.3	46.95	61.72	-14.77	-	-
16	.2535	20.35	Ca	0	0	9.3	29.65	-	-	51.64	-21.99
17	.3345	33.19	Qp	0	0	9.3	42.49	59.34	-16.85	-	-
18	.3345	14.75	Ca	0	0	9.3	24.05	-	-	49.34	-25.29
19	.4178	30.52	Qp	0	.1	9.3	39.92	57.49	-17.57	-	-
20	.4155	15.19	Ca	0	.1	9.3	24.59	-	-	47.54	-22.95
21	.501	29.74	Qp	0	.1	9.3	39.14	56	-16.86	-	-
22	.501	14.88	Ca	0	.1	9.3	24.28	-	-	46	-21.72
23	.5843	27.83	Qp	0	.1	9.3	37.23	56	-18.77	-	-
24	.5865	10.31	Ca	0	.1	9.3	19.71	-	-	46	-26.29

Qp - Quasi-Peak detector

Ca - CISPR average detection

Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

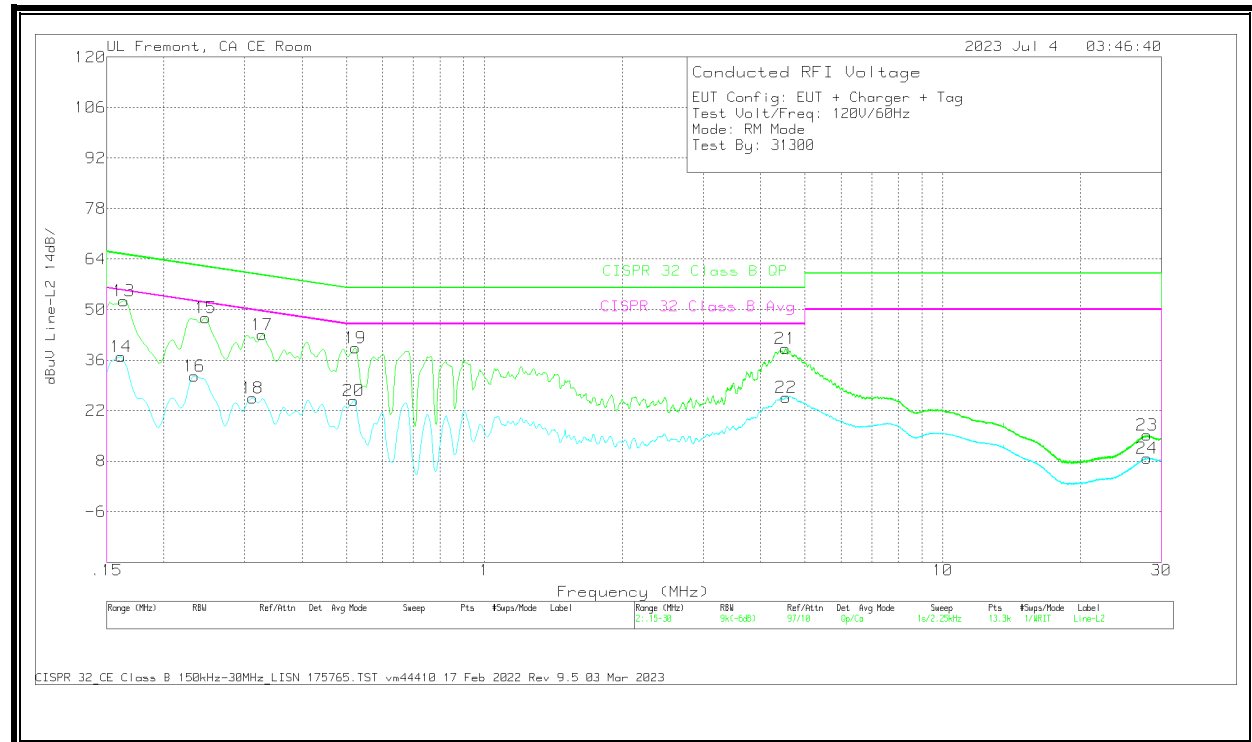
10.2.4. TAG MODE ANTENNA PORT TERMINATED**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.1523	28.18	Ca	0	0	9.4	37.58	-	-	55.88	-18.3
4	.231	23.24	Ca	0	0	9.3	32.54	-	-	52.41	-19.87
6	.3008	17.23	Ca	0	0	9.3	26.53	-	-	50.22	-23.69
8	.5235	16.38	Ca	0	.1	9.3	25.78	-	-	46	-20.22
10	4.4295	14.73	Ca	0	.1	9.3	24.13	-	-	46	-21.87
12	28.0748	-2.76	Ca	.3	.3	9.4	7.24	-	-	50	-42.76
1	.1523	43.35	Qp	0	0	9.4	52.75	65.88	-13.13	-	-
3	.2243	40.18	Qp	0	0	9.3	49.48	62.66	-13.18	-	-
5	.3008	35.96	Qp	0	0	9.3	45.26	60.22	-14.96	-	-
7	.5235	30.9	Qp	0	.1	9.3	40.3	56	-15.7	-	-
9	4.4273	28.07	Qp	0	.1	9.3	37.47	56	-18.53	-	-
11	28.059	3.51	Qp	.3	.3	9.4	13.51	60	-46.49	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.1613	27.55	Ca	0	0	9.4	36.95	-	-	55.4	-18.45
16	.2333	22.31	Ca	0	0	9.3	31.61	-	-	52.33	-20.72
18	.312	16.2	Ca	0	0	9.3	25.5	-	-	49.92	-24.42
20	.519	15.47	Ca	0	.1	9.3	24.87	-	-	46	-21.13
22	4.5476	16.32	Ca	0	.1	9.3	25.72	-	-	46	-20.28
24	27.8948	-1.25	Ca	.3	.3	9.4	8.75	-	-	50	-41.25
13	.1635	43.07	Qp	0	0	9.4	52.47	65.28	-12.81	-	-
15	.2468	38.43	Qp	0	0	9.3	47.73	61.87	-14.14	-	-
17	.3278	33.81	Qp	0	0	9.3	43.11	59.51	-16.4	-	-
19	.5235	29.97	Qp	0	.1	9.3	39.37	56	-16.63	-	-
21	4.542	29.84	Qp	0	.1	9.3	39.24	56	-16.76	-	-
23	27.8993	5.28	Qp	.3	.3	9.4	15.28	60	-44.72	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

11. SETUP PHOTOS

Please refer to 14523740-EP1V1 for setup photos.

END OF TEST REPORT