



TEST REPORT

Report Number. : 14040863-E17V3

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

Model : A2650 (Parent Model, Full Test)
A2889, A2890, A2891, A2892 (Variant Models)

FCC ID : BCG-E8140A (Parent Model)
BCG-E8150A, BCG-E8151A, BCG-E8152A (Variant Models)

IC : 579C-E8140A (Parent Model)
579C-E8150A, 579C-E8151A, 579C-E8152A (Variant Models)

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 09, 2022

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	6/28/2022	Initial Issue	Chin Pang
V2	6/28/2022	Address TCB questions on page 1, section 5.1 5.4 and section 8.1	Chin Pang
V3	7/9/2022	Address TCB's questions on page 21-26, 33, 22, 24, 26, 34, 36, 46-65	Chin Pang

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	5
2. TEST METHODOLOGY	7
3. FACILITIES AND ACCREDITATION.....	7
4. DECISION RULES AND MEASUREMENT UNCERTAINTY.....	7
4.1. METROLOGICAL TRACEABILITY	7
4.2. DECISION RULES	7
4.3. MEASUREMENT UNCERTAINTY	7
4.4. SAMPLE CALCULATION.....	8
5. EQUIPMENT UNDER TEST	9
5.1. DESCRIPTION OF EUT.....	9
5.2. MAXIMUM E-FIELD STRENGTH.....	9
5.3. WORST-CASE CONFIGURATION AND MODE.....	10
5.4. SUPPORT EQUIPMENT.....	11
6. TEST AND MEASUREMENT EQUIPMENT	14
7. OCCUPIED BANDWIDTH.....	15
7.1. PRIMARY ANTENNA	16
7.1.1. READER MODE, Type B 848 Kbps	16
7.1.2. CE MODE, Type B 848 Kbps	16
7.1.3. TAG MODE, Type B 848 Kbps.....	17
7.2. SECONDARY ANTENNA.....	18
7.2.1. READER MODE, Type B 848 Kbps	18
7.2.2. TAG MODE, Type B 848 Kbps.....	18
8. RADIATED EMISSION TEST RESULTS.....	19
8.1. LIMITS AND PROCEDURE	19
8.2. PRIMARY ANTENNA FUNDAMENTAL & SPURIOUS EMISSION 0.15-30 MHz.....	21
8.2.1. READER MODE, Type B 848 Kbps	21
8.2.2. TAG MODE, Type B 848 Kbps.....	23
8.2.3. CE MODE, Type B 848 Kbps	25
8.3. PRIMARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz.....	27
8.3.1. READER MODE, Type B 848 Kbps	27
8.3.2. TAG MODE, Type B 848 Kbps.....	29
8.3.3. CE MODE, Type B 848 Kbps	31
8.4. SECONDARY ANTENNA FUNDAMENTAL & SPURIOUS EMISSION 0.15-30 MHz ..	33
8.4.1. READER MODE, Type B 848 Kbps	33
8.4.2. TAG MODE, Type B 848 Kbps.....	35
8.5. SECONDARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz	37
8.5.1. READER MODE, Type B 848 Kbps	37
8.5.2. TAG MODE, Type B 848 Kbps.....	39

9. FREQUENCY STABILITY	41
9.1. PRIMARY ANTENNA	42
9.1.1. READER MODE, Type B 848 Kbps	42
9.1.2. TAG MODE	42
9.1.3. CE MODE, Type B 848 Kbps	43
9.2. SECONDARY ANTENNA.....	44
9.2.1. READER MODE, Type B 848 Kbps	44
9.2.2. TAG MODE, Type B 848 Kbps.....	44
10. AC MAINS LINE CONDUCTED EMISSIONS	45
10.1. PRIMARY ANTENNA	46
10.1.1. READER MODE, Type B 848 Kbps, with Antenna.....	46
10.1.2. READER MODE, Type B 848 Kbps, Antenna Port Terminated	48
10.1.3. CE MODE, Type B 848 Kbps, with Antenna.....	50
10.1.4. CE MODE, Type B 848 Kbps, Antenna Port Terminated	52
10.1.5. TAG MODE, Type B 848 Kbps, with Antenna	54
10.1.6. TAG MODE, Type B 848 Kbps, Antenna Port Terminated	56
10.2. SECONDARY ANTENNA	58
10.2.1. READER MODE, Type B 848 Kbps, with Antenna.....	58
10.2.2. READER MODE, Type B 848 Kbps, Antenna Port Terminated	60
10.2.3. TAG MODE, Type B 848 Kbps, with Antenna	62
10.2.4. TAG MODE Type B 848 Kbps, Antenna Port Terminated	64
11. SETUP PHOTOS	66

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: SMARTPHONE

MODEL: A2650 (Parent Model)
A2889, A2890, A2891, A2892 (Variant Models)

BRAND: APPLE

FCC ID: BCG-E8140A (Parent Model)
BCG-E8150A, BCG-E8151A, BCG-E8152A (Variant Models)

IC: 579C-E8140A (Parent Model)
579C-E8150A, 579C-E8151A, 579C-E8152A (Variant Models)

SERIAL NUMBER: R9VD6JPQTY

SAMPLE RECEIPT DATE: June 01, 2022

DATE TESTED: JUNE 02-23, 2022

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 LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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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Consumer Technology Division
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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	US0104	22541	550739
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA	US0104	2324B	550739

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}
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)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

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.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

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 and MSS. All models except reference model support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

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.

Parent Model: A2650, FCC ID: BCG-E8140A, IC: 579C-E8140A

Variant Models: A2889, FCC ID: BCG-E8150A, IC: 579C-E8150A
 A2890; FCC ID: BCG-E8151A, IC: 579C-E8151A
 A2891 & A2892, FCC ID: BCG-E8152A, IC: 579C-E8152A

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 B	Reader	848	26.90
			Tag	848	26.93
			CE	848	25.02
Secondary	13.56	Type B	Reader	848	6.04
			Tag	848	6.90

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 B 848 Kbps was determined to be the worst case and therefore Type B 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.

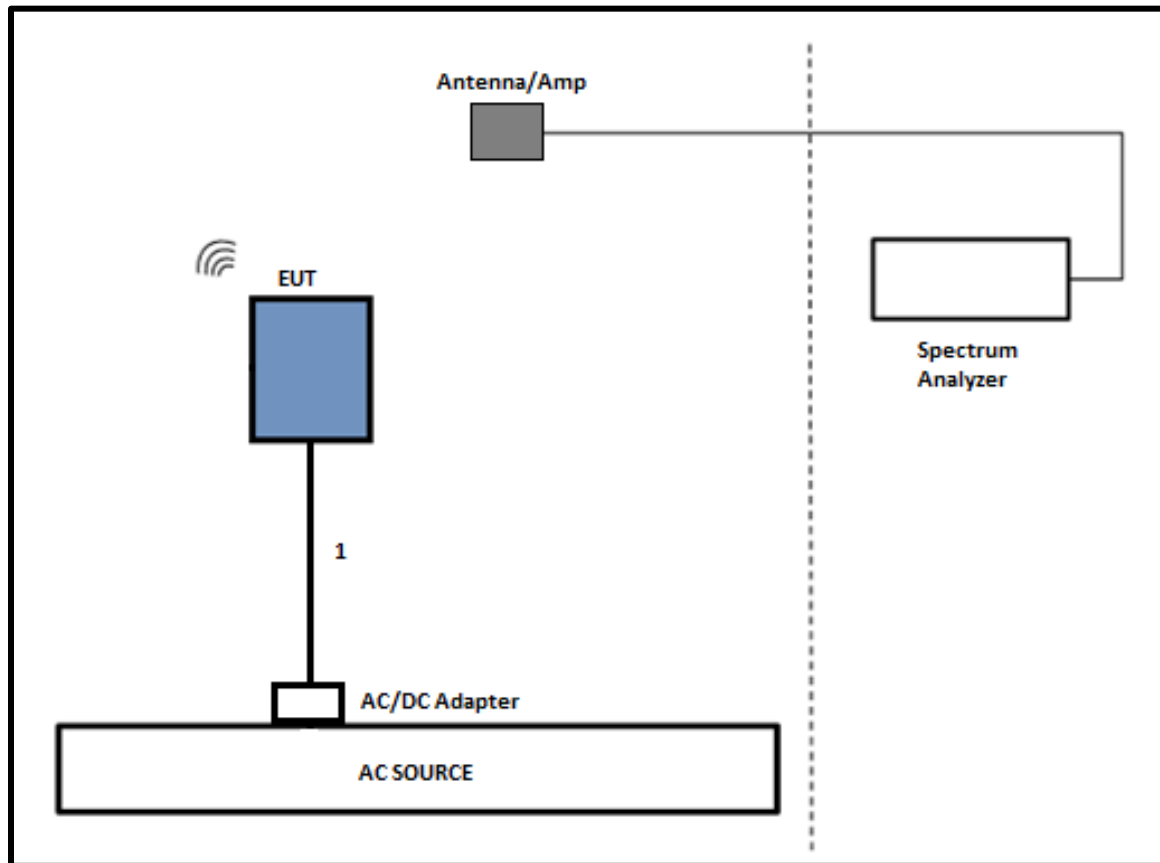
Testing was performed on the parent model and is used to support the application for the parent and variants identified in this report based on the test plan submitted and approved via KDB inquiry by the FCC and by ISED-Canada.

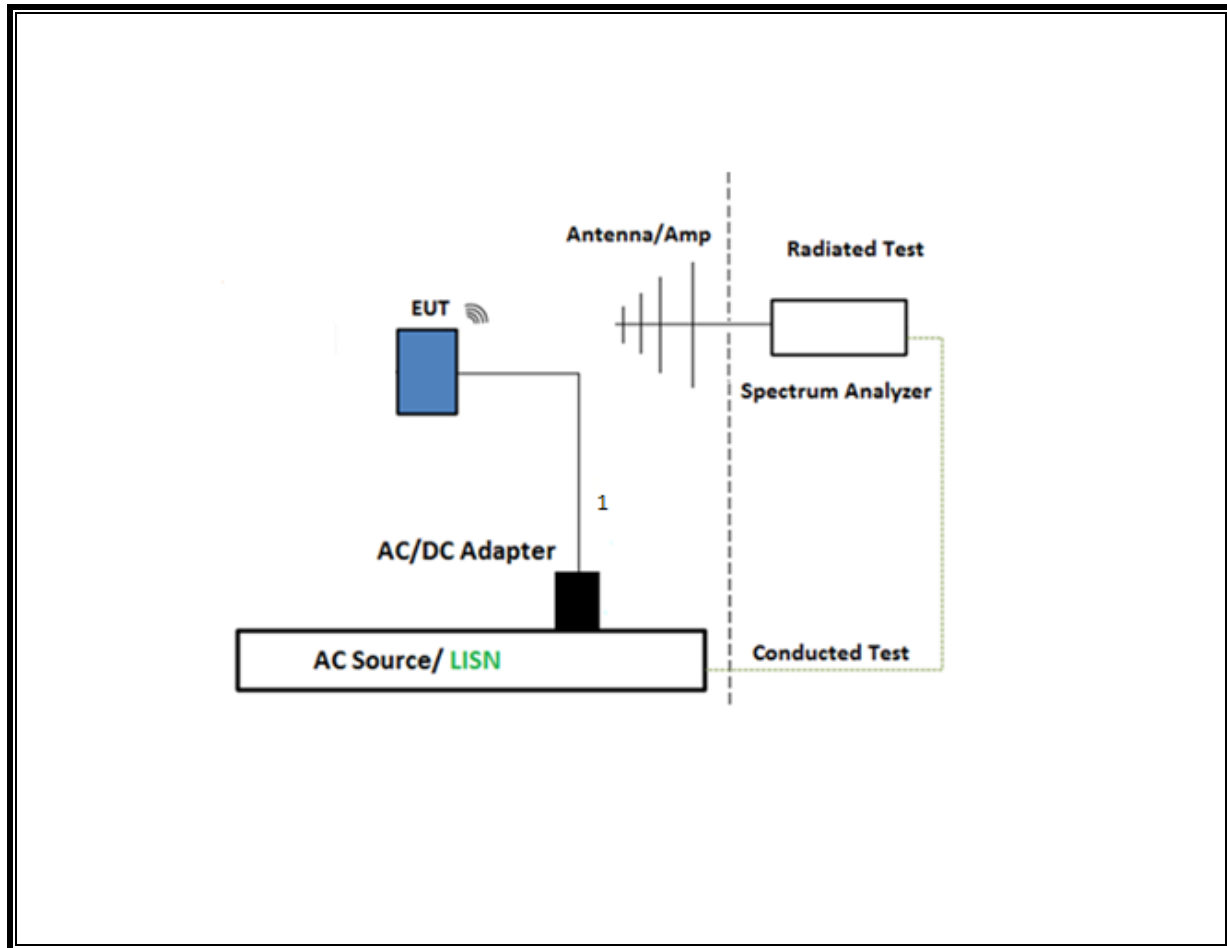
5.4. SUPPORT EQUIPMENT

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	01/30/2023	01/30/2022
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp	JB1	80293	07/22/2022	07/22/2021
Amplifier 10KHz to 1GHz 32dB	Sonoma	310N	89831	07/21/2022	07/21/2021
Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	170013	07/29/2022	07/29/2021
Antenna, Passive Loop 100KHz to 30MHz	ETS-Lindgren	EM-6872	170015	07/29/2022	07/29/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A (MY55410147)	125179	02/01/2023	02/01/2022
EMI Test Receiver	Rohde & Schwarz	ESW44	201497	02/18/2023	02/18/2022
Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T754	05/12/2023	05/12/2022
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	206415	03/17/2023	03/17/2022

AC Line Conducted					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	T1436	02/21/2023	02/21/2022
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	01/26/2023	01/26/2022
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		

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 B (Reader Mode)

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	21.920	25.41

Type B (CE Mode)

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	22.301	25.01

TAG Mode

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	21.909	25.42

Secondary Antenna

Type B (Reader Mode)

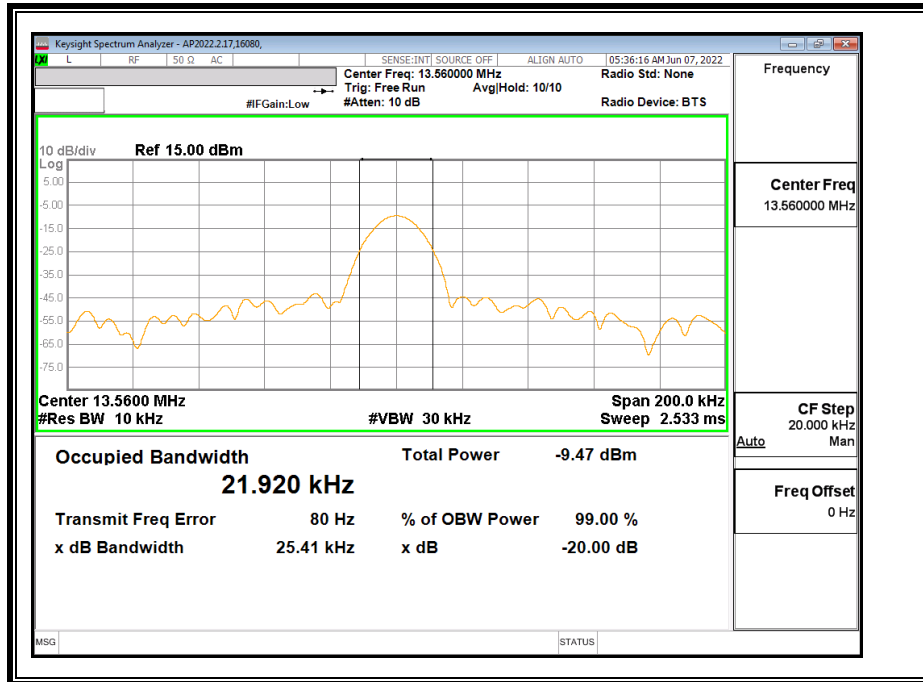
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	22.008	25.24

TAG Mode

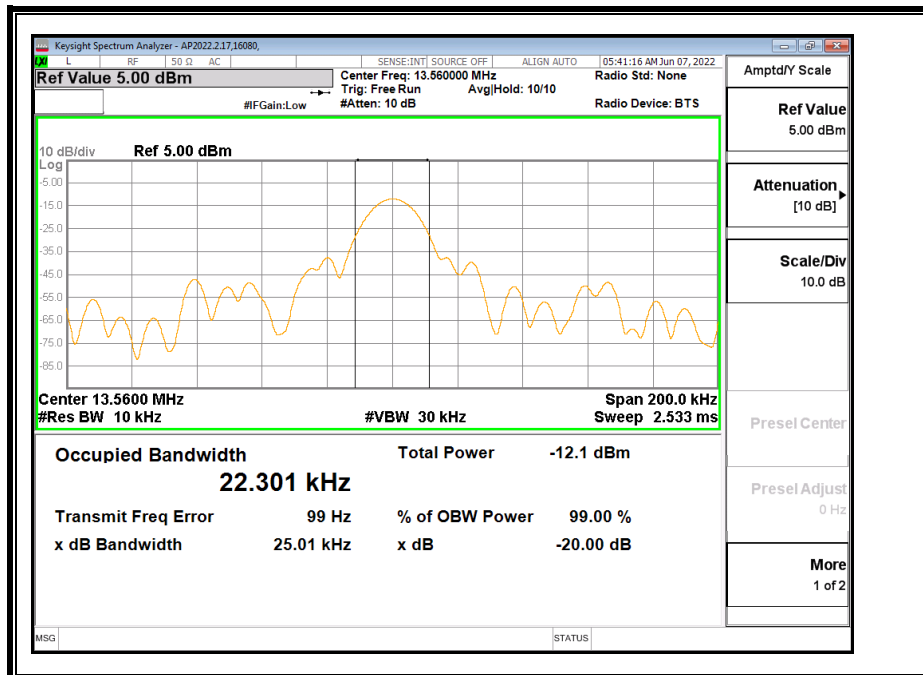
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	22.061	25.21

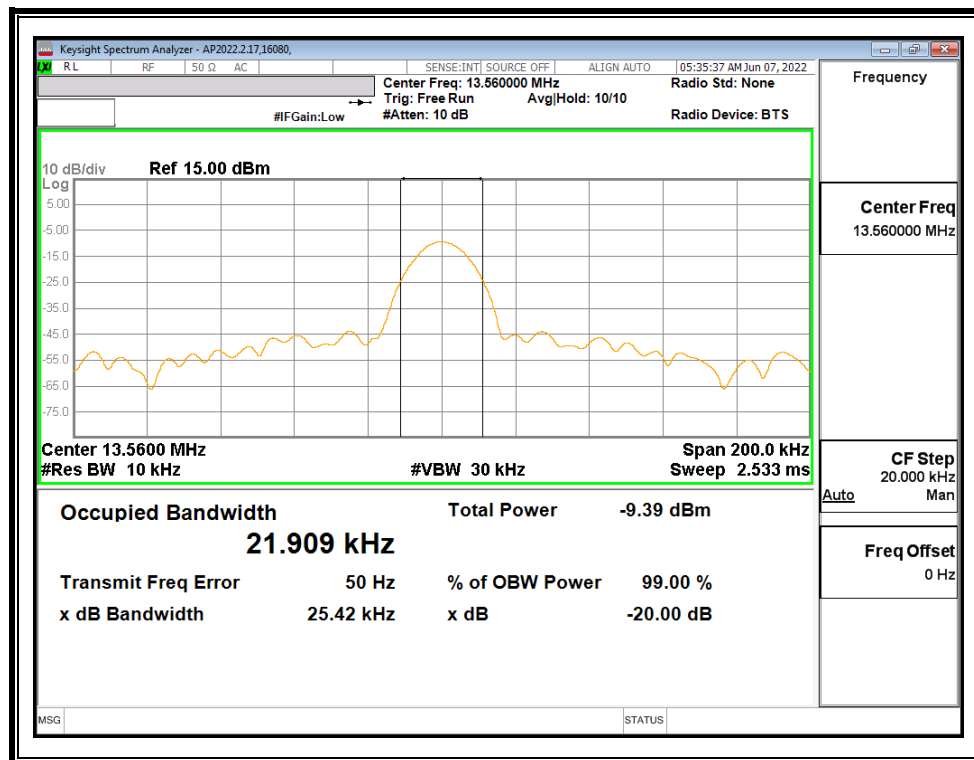
7.1. PRIMARY ANTENNA

7.1.1. READER MODE, Type B 848 Kbps



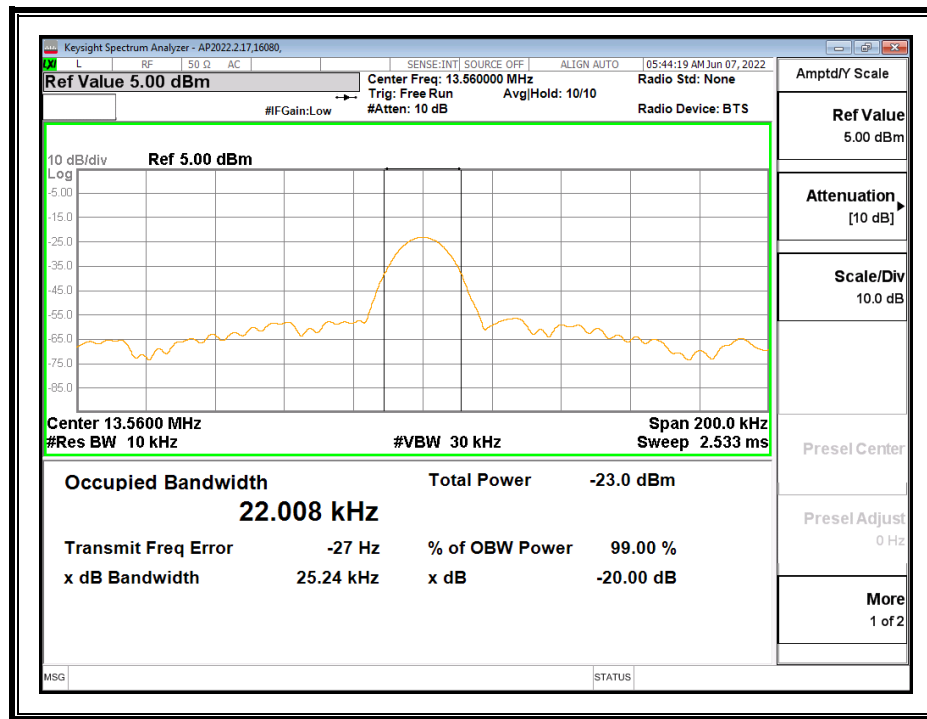
7.1.2. CE MODE, Type B 848 Kbps



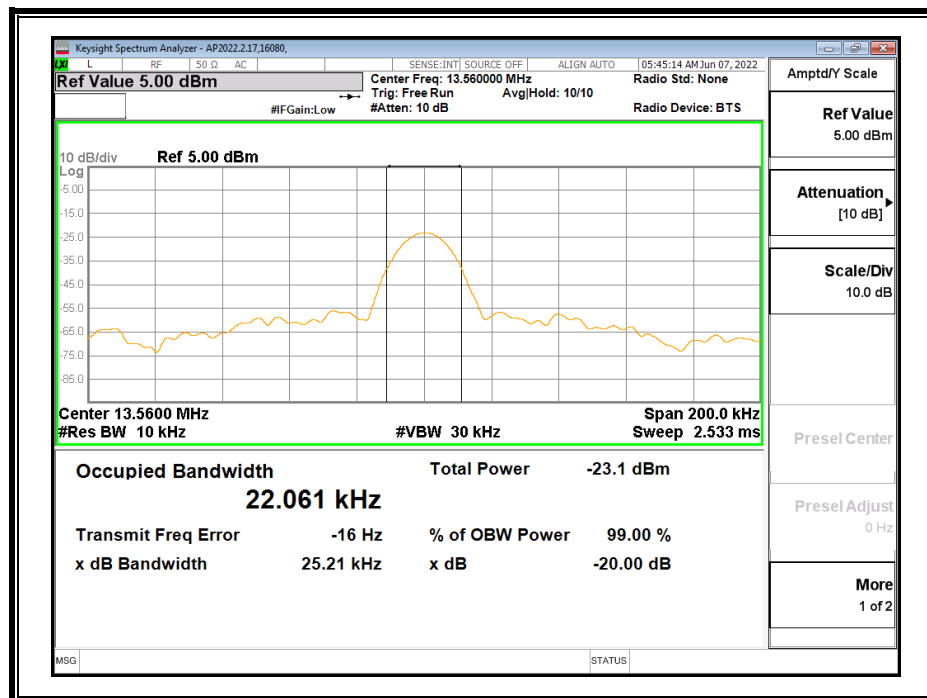
7.1.3. TAG MODE, Type B 848 Kbps

7.2. SECONDARY ANTENNA

7.2.1. READER MODE, Type B 848 Kbps



7.2.2. TAG MODE, Type B 848 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

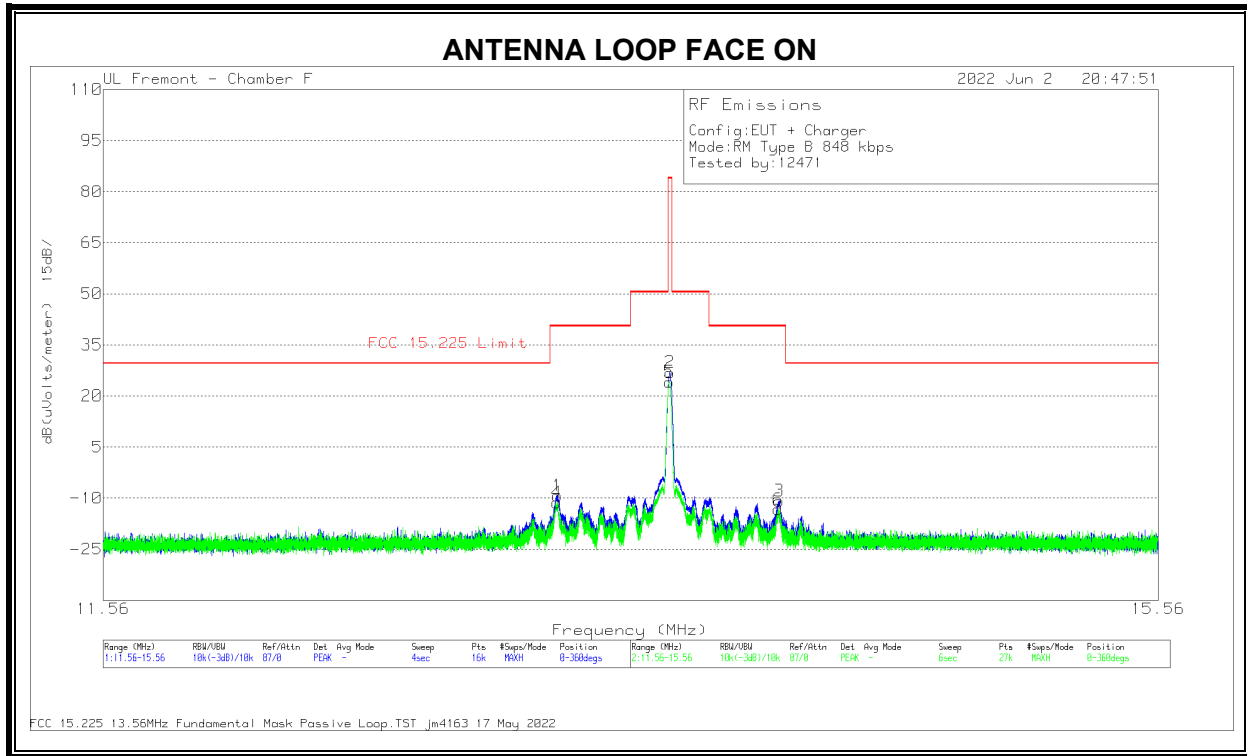
The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 13.56 MHz; therefore, the frequency range was investigated from 0.15 MHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

RESULTS

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

8.2.1. READER MODE, Type B 848 Kbps

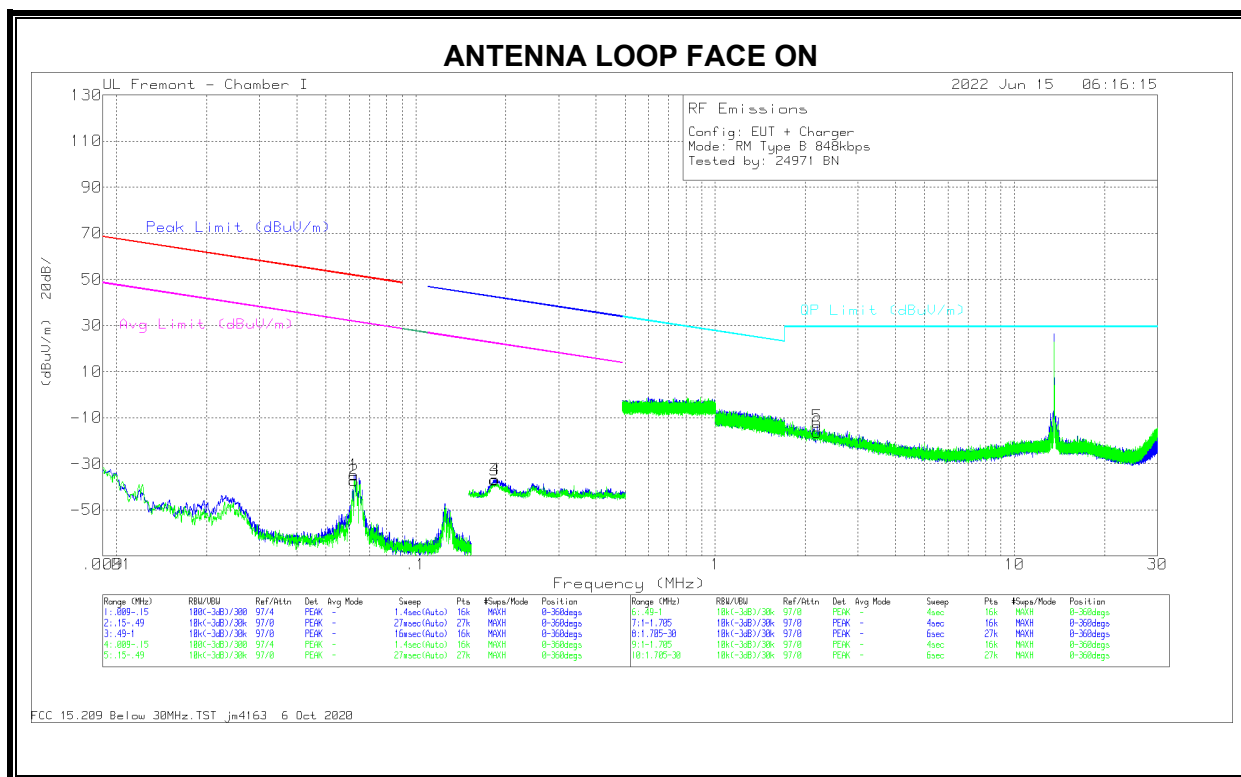
FUNDAMENTAL



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dBuV/m	FCC 15.225 Limit dBuV/m	PK Margin (dB)	Azimuth (Degs)	Polarity
1	13.138	28.92	Pk	34.4	-32.6	-40	-9.28	40.51	-49.79	0-360	Face-On
2	13.56	65.2	Pk	34.3	-32.6	-40	26.9	84	-57.1	0-360	Face-On
3	13.9838	27.49	Pk	34.2	-32.5	-40	-10.81	40.51	-51.32	0-360	Face-On
4	13.1356	26.91	Pk	34.4	-32.6	-40	-11.29	40.51	-51.8	0-360	Face-Off
5	13.5579	62.4	Pk	34.3	-32.6	-40	24.1	84	-59.9	0-360	Face-Off
6	13.9798	25.01	Pk	34.2	-32.5	-40	-13.29	40.51	-53.8	0-360	Face-Off

Pk - Peak detector



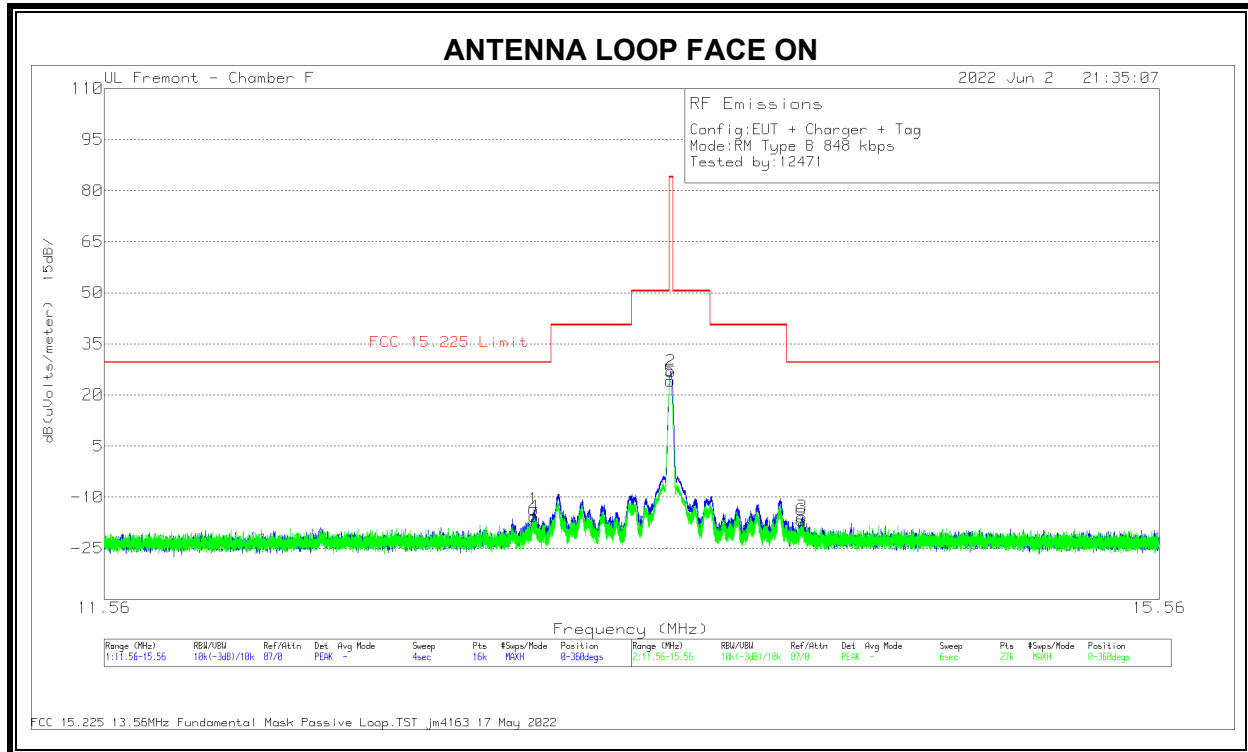
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
4	.014	35.12	Pk	59.8	-31.1	-80	-16.18	64.68	-80.86	44.68	-60.86	0-360	Face-Off
1	.029	23.51	Pk	58.1	-32.2	-80	-30.59	58.35	-88.94	38.35	-68.94	0-360	Face-On
5	.1703	15.58	Pk	56.1	-32.4	-80	-40.72	43	-83.72	23	-63.72	0-360	Face-Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
2	.6799	19.41	Pk	49.8	-32.4	-40	-3.19	30.96	-34.15	0-360	Face-On
6	.682	20.01	Pk	49.7	-32.4	-40	-2.69	30.94	-33.63	0-360	Face-Off
3	1.8318	16.3	Pk	42.5	-32.3	-40	-13.5	29.5	-43	0-360	Face-On

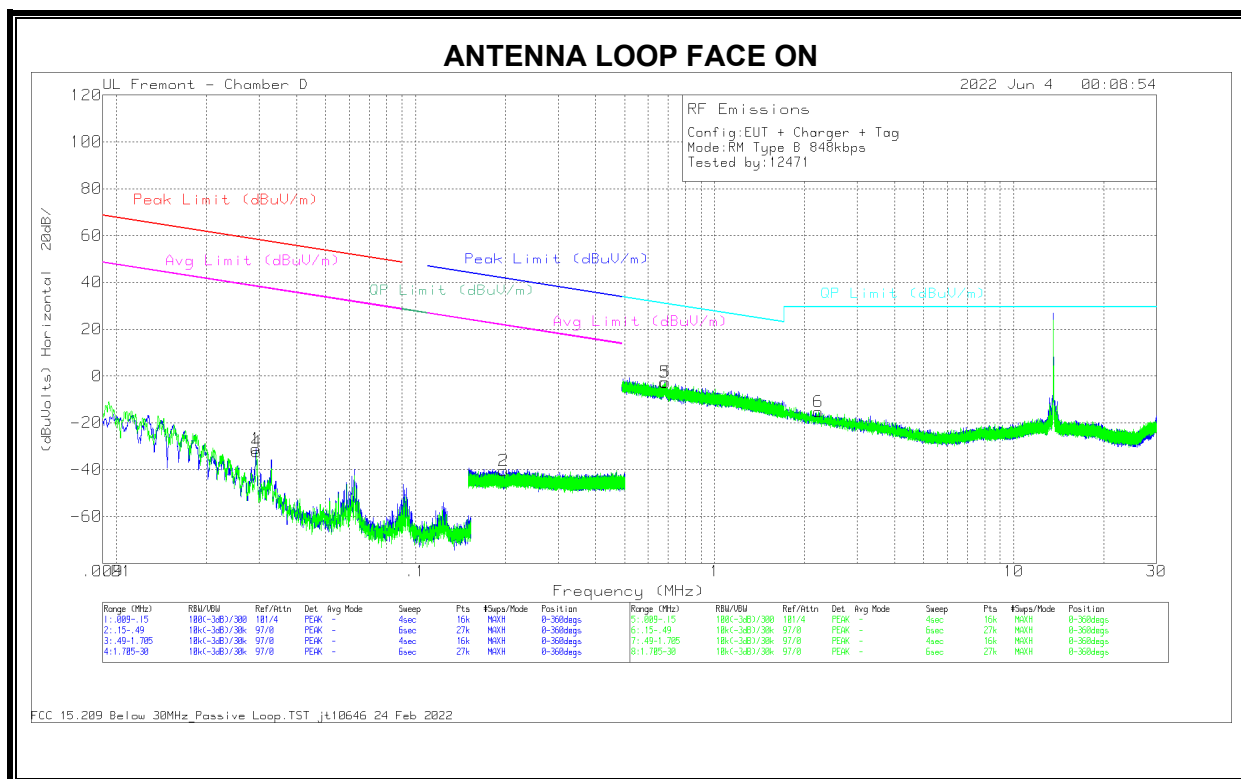
Pk - Peak detector

Note: Marker 3 and 6 are from Fundamental signals.

8.2.2. TAG MODE, Type B 848 Kbps**FUNDAMENTAL****DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuV/m)	FCC 15.225 Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Polarity
1	13.0463	24.67	Pk	34.4	-32.6	-40	-13.53	29.54	-43.07	0-360	Face On
2	13.56	65.23	Pk	34.3	-32.6	-40	26.93	84	-57.07	0-360	Face On
3	14.0703	22.56	Pk	34.2	-32.6	-40	-15.84	29.54	-45.38	0-360	Face On
4	13.0481	22.52	Pk	34.4	-32.6	-40	-15.68	29.54	-45.22	0-360	Face Off
5	13.5582	62.47	Pk	34.3	-32.6	-40	24.17	84	-59.83	0-360	Face Off
6	14.0676	21.72	Pk	34.2	-32.6	-40	-16.68	29.54	-46.22	0-360	Face Off

Pk - Peak detector

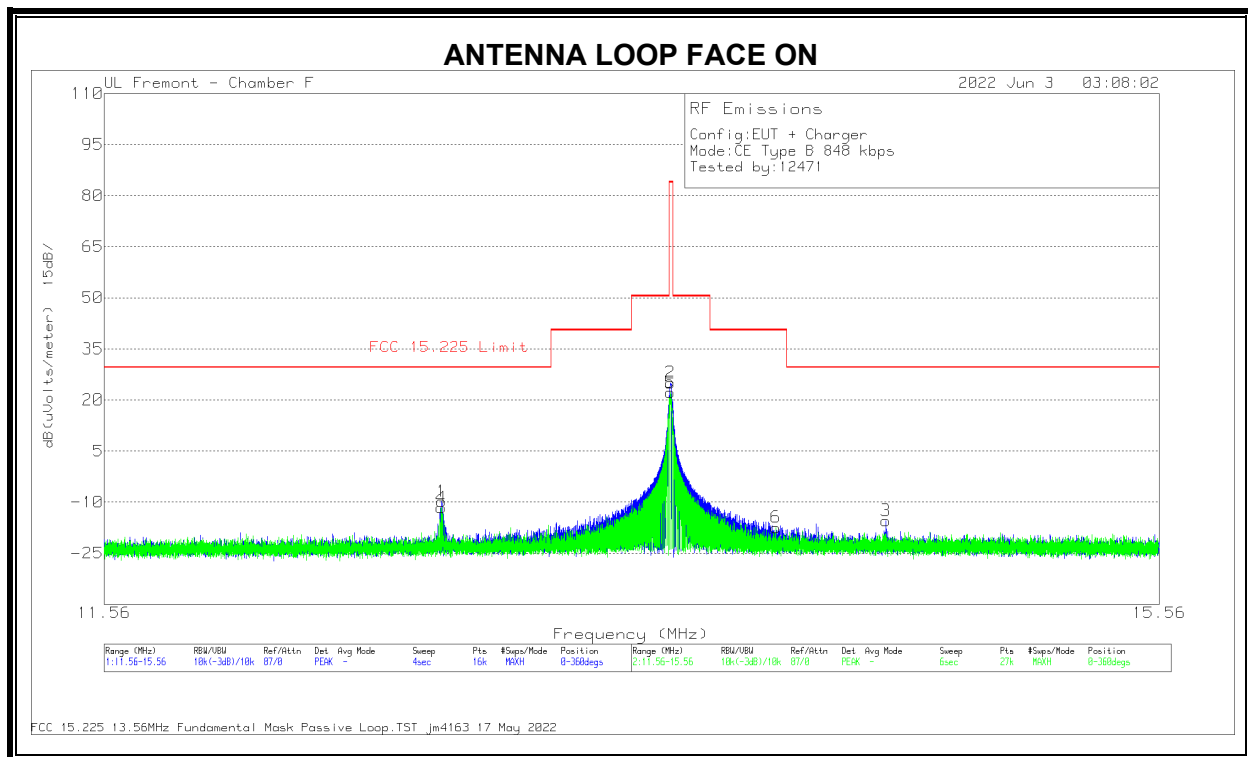


DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0293	23.08	Pk	58.1	-32.2	-80	-31.02	58.24	-89.26	38.24	-69.26	0-360	Face-On
4	.0295	21.61	Pk	58.1	-32.2	-80	-32.49	58.2	-90.69	38.2	-70.69	0-360	Face-Off
2	.1971	15.7	Pk	56.3	-32.4	-80	-40.4	41.72	-82.12	21.72	-62.12	0-360	Face-On

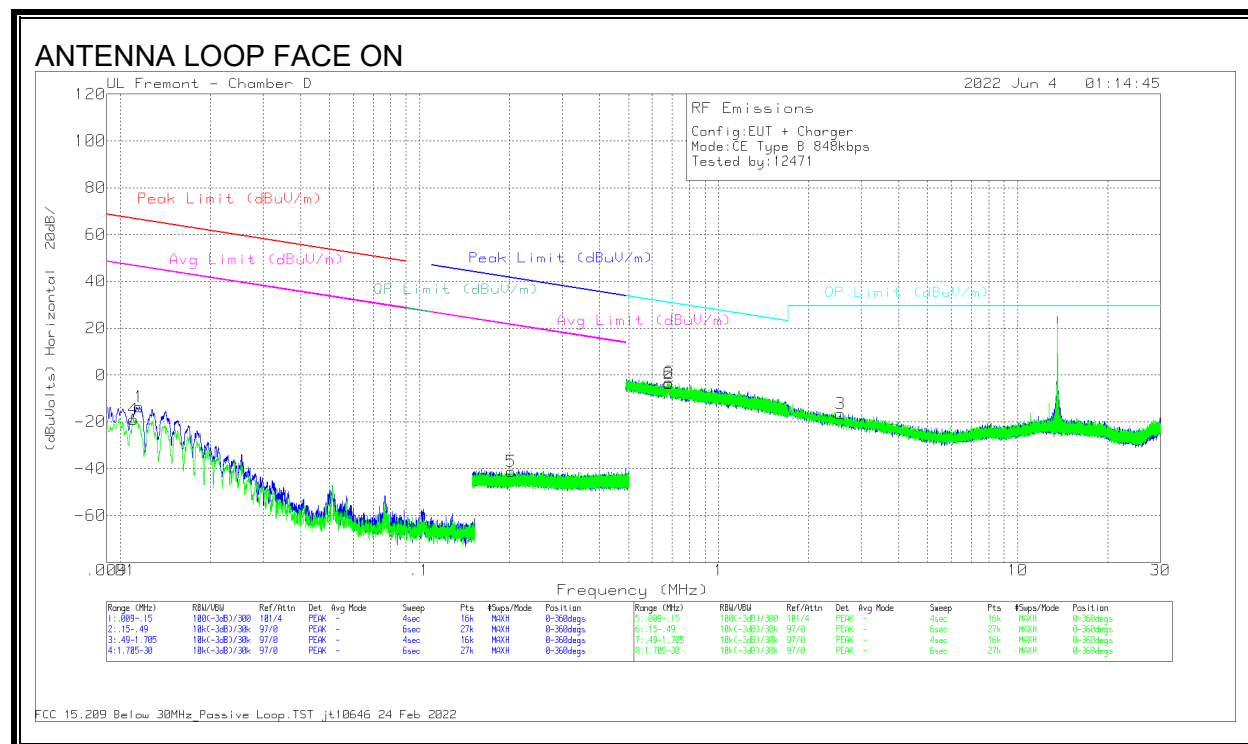
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
3	.6772	20.05	Pk	49.8	-32.4	-40	-2.55	31	-33.55	0-360	Face-On
5	.6853	19.93	Pk	49.7	-32.4	-40	-2.77	30.89	-33.66	0-360	Face-Off
6	2.2259	16.04	Pk	41	-32.3	-40	-15.26	29.5	-44.76	0-360	Face-Off

Pk - Peak detector

8.2.3. CE MODE, Type B 848 Kbps**FUNDAMENTAL****DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuV/m)	FCC 15.225 Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Polarity
1	12.7128	28.32	Pk	34.5	-32.6	-40	-9.78	29.54	-39.32	0-360	Face On
2	13.5588	63.32	Pk	34.3	-32.6	-40	25.02	84	-58.98	0-360	Face On
3	14.4065	22.83	Pk	34.2	-32.5	-40	-15.47	29.54	-45.01	0-360	Face On
4	12.7111	26.49	Pk	34.5	-32.6	-40	-11.61	29.54	-41.15	0-360	Face Off
5	13.5579	60.48	Pk	34.3	-32.6	-40	22.18	84	-61.82	0-360	Face Off
6	13.9675	20.86	Pk	34.2	-32.5	-40	-17.44	40.51	-57.95	0-360	Face Off

Pk - Peak detector

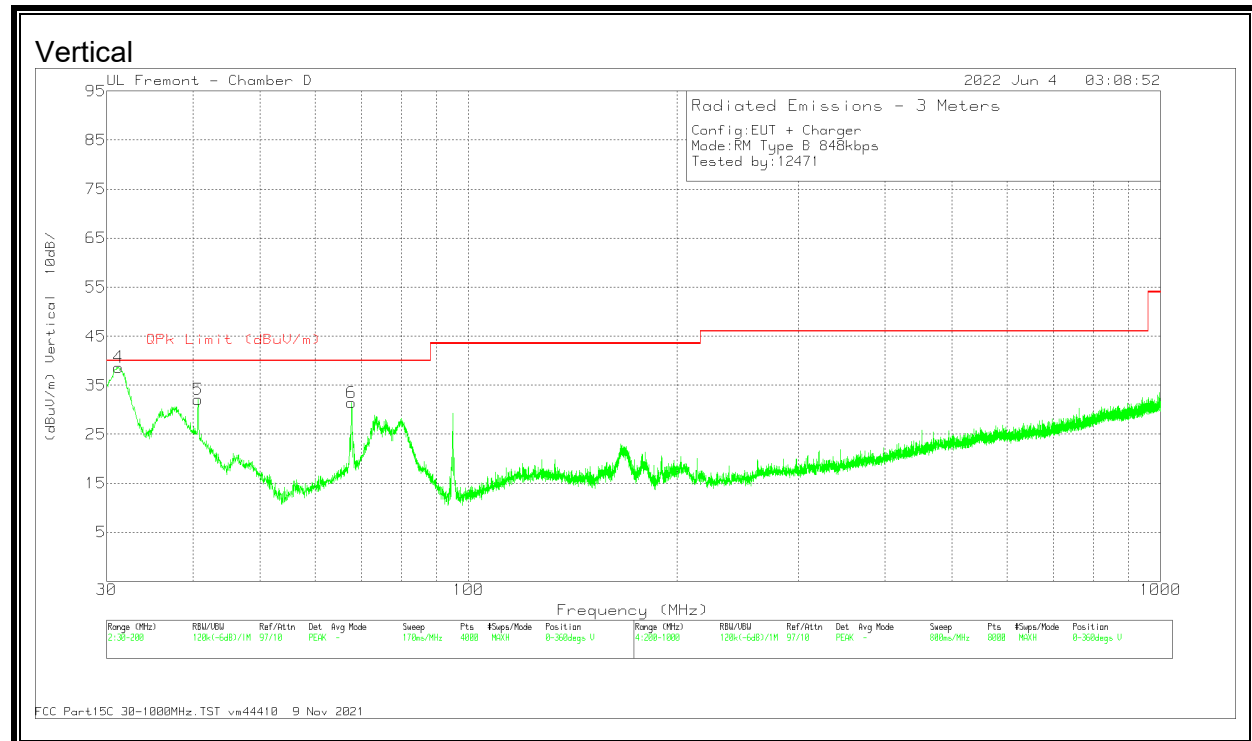
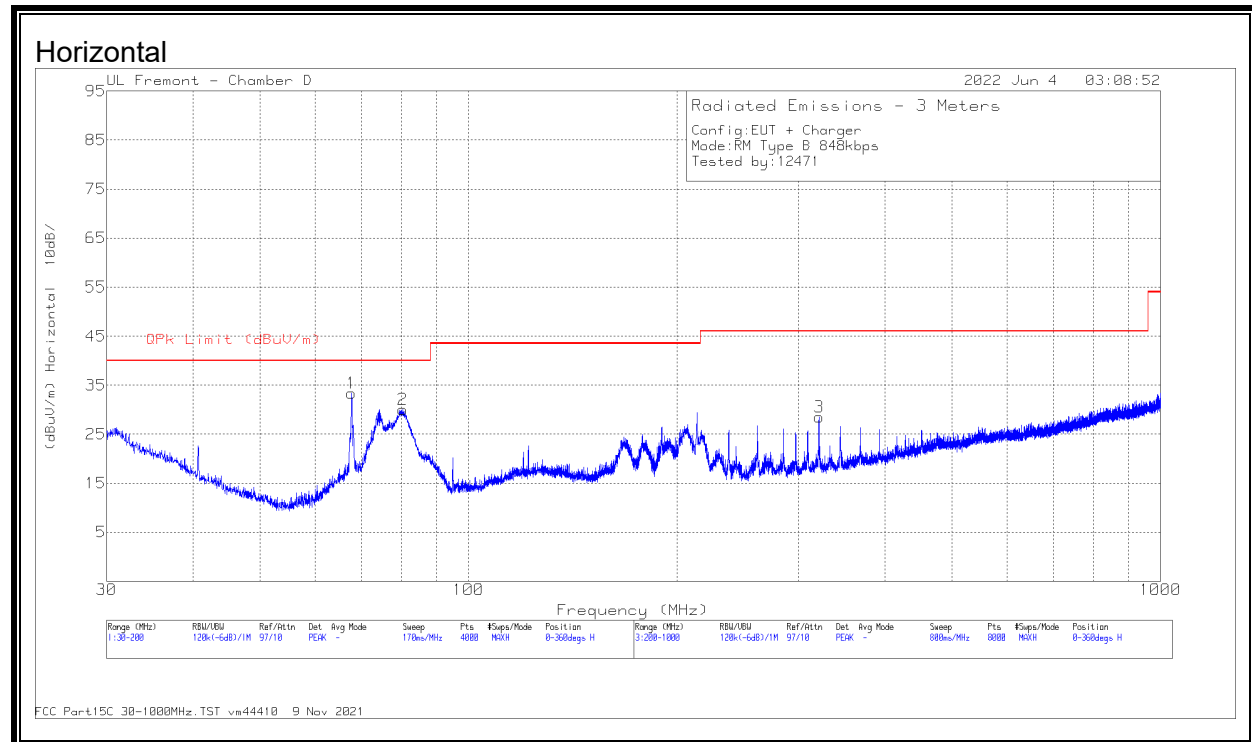


DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
4	.011	31.51	Pk	60.2	-30.8	-80	-19.09	66.72	-85.81	46.72	-65.81	0-360	Face Off
1	.0116	37	Pk	60.1	-30.8	-80	-13.7	66.32	-80.02	46.32	-60.02	0-360	Face On
5	.2023	14.88	Pk	56.3	-32.4	-80	-41.22	41.5	-82.72	21.5	-62.72	0-360	Face Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading dBuV/m	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
2	.6805	18.93	Pk	49.8	-32.4	-40	-3.67	30.96	-34.63	0-360	Face-On
6	.6833	19.39	Pk	49.7	-32.4	-40	-3.31	30.92	-34.23	0-360	Face-Off
3	2.5539	15.51	Pk	40.1	-32.3	-40	-16.69	29.5	-46.19	0-360	Face-On

Pk - Peak detector

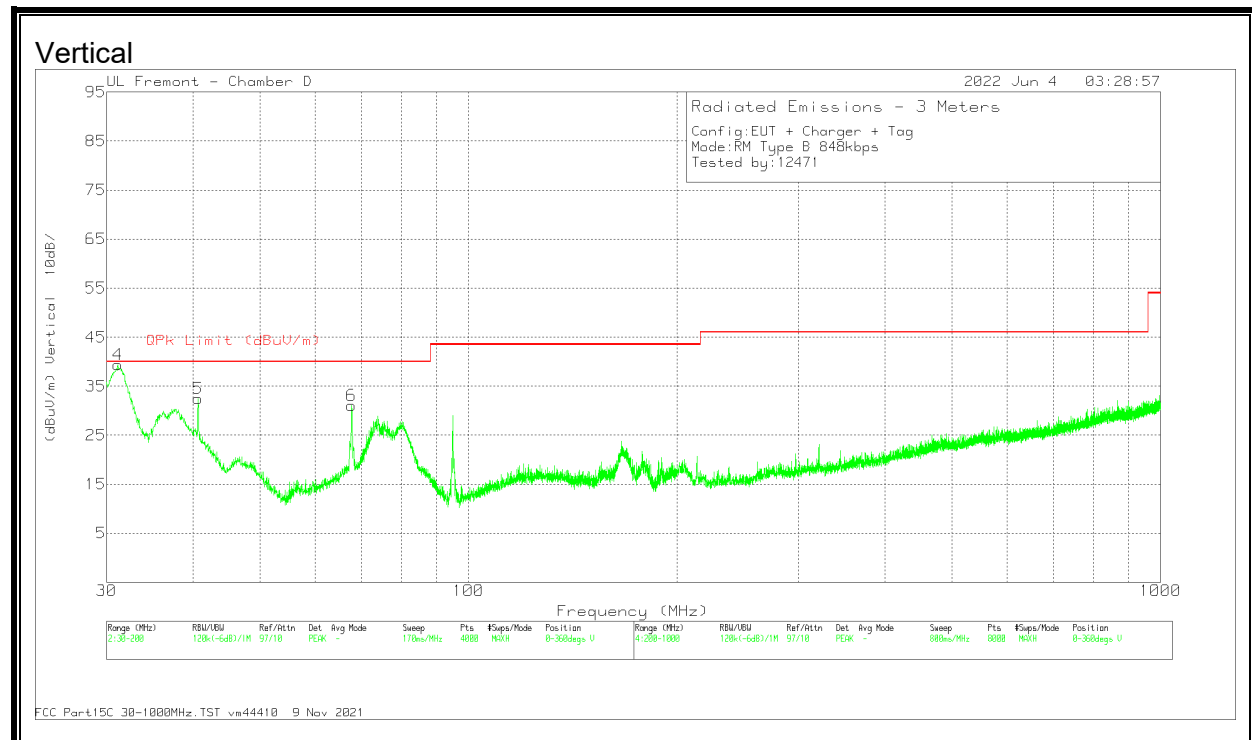
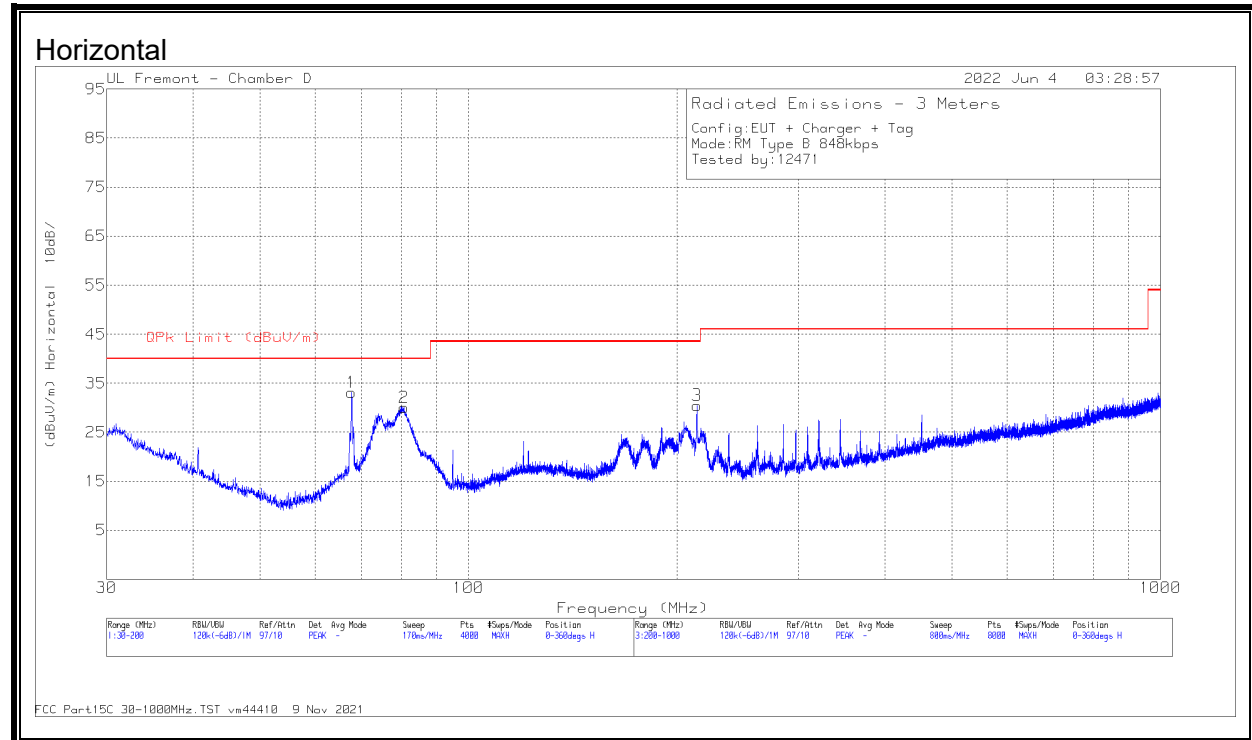
8.3. PRIMARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz**8.3.1. READER MODE, Type B 848 Kbps****SPURIOUS EMISSION**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80293 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.1903	43.18	Pk	27.2	-31.7	38.68	40	-1.32	0-360	100	V
4	31.3082	41.18	Qp	27.2	-31.7	36.68	40	-3.32	199	102	V
5	40.6278	43.74	Pk	20	-31.6	32.14	40	-7.86	0-360	100	V
1	67.7923	50.47	Pk	14.2	-31.3	33.37	40	-6.63	0-360	199	H
6	67.7923	48.61	Pk	14.2	-31.3	31.51	40	-8.49	0-360	100	V
2	80.2905	47.3	Pk	13.9	-31.2	30	40	-10	0-360	299	H
3	320.916	37.39	Pk	20.4	-29.3	28.49	46.02	-17.53	0-360	101	H

Pk - Peak detector

Qp - Quasi-Peak detector

8.3.2. TAG MODE, Type B 848 Kbps**SPURIOUS EMISSION**

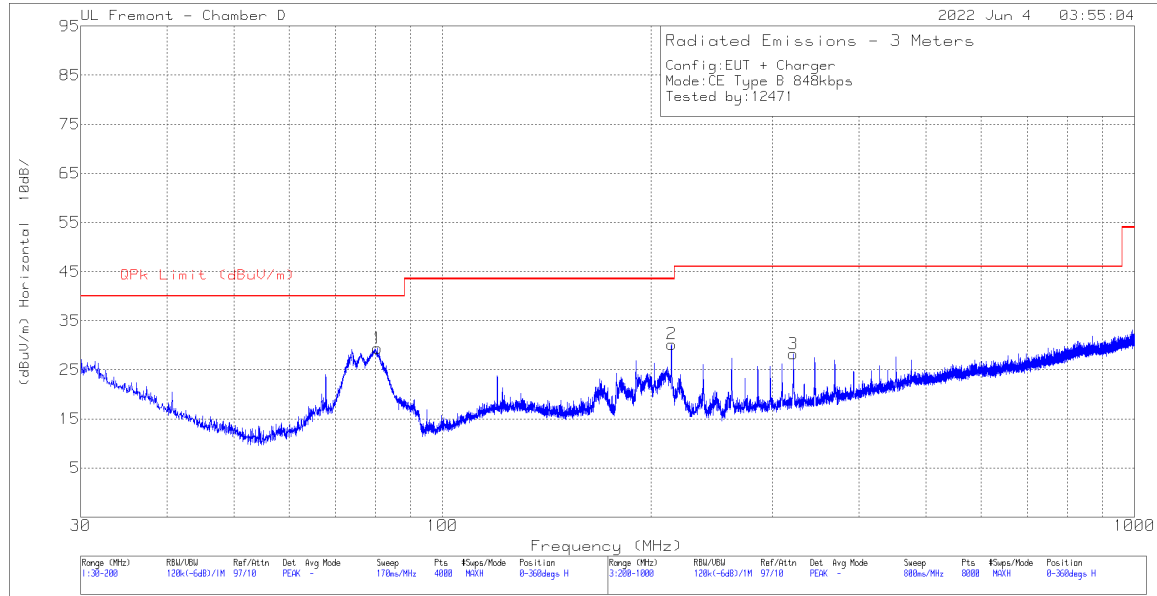
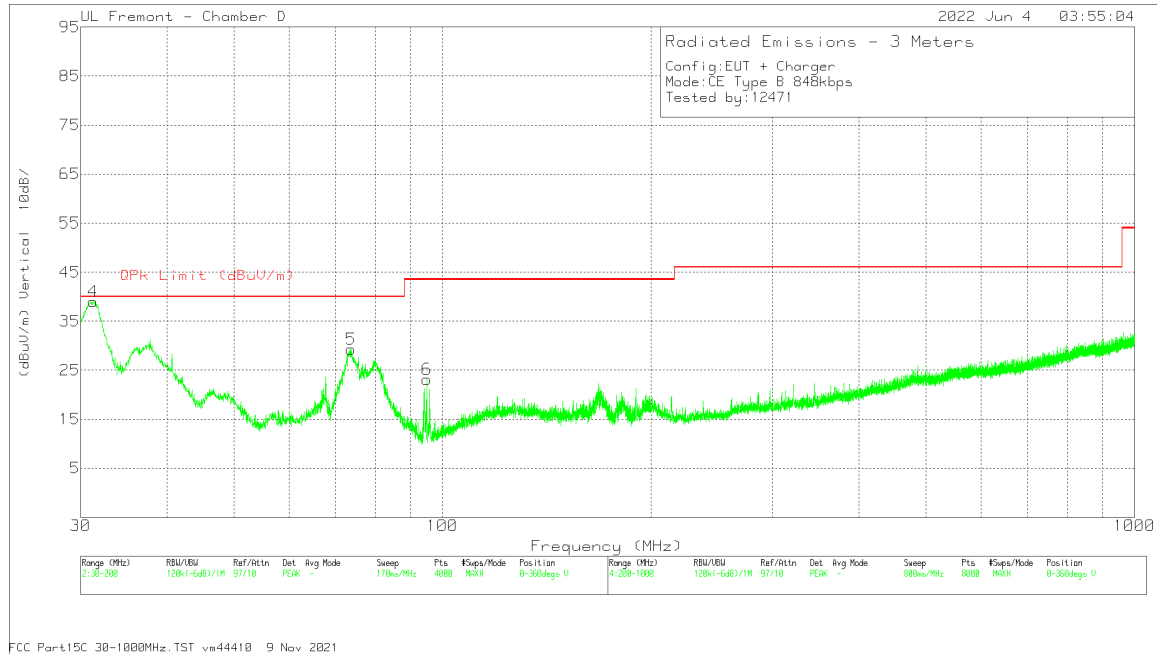
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80293 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.1478	43.75	Pk	27.3	-31.7	39.35	40	-.65	0-360	100	V
4	31.4461	40.84	Qp	27	-31.7	36.14	40	-3.86	252	105	V
5	40.6703	44.08	Pk	20	-31.6	32.48	40	-7.52	0-360	100	V
1	67.7923	50.18	Pk	14.2	-31.3	33.08	40	-6.92	0-360	199	H
6	67.7923	48.22	Pk	14.2	-31.3	31.12	40	-8.88	0-360	100	V
2	80.6731	47.24	Pk	13.9	-31.1	30.04	40	-9.96	0-360	300	H
3	213.902	43.29	Pk	17.2	-30	30.49	43.52	-13.03	0-360	99	H

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

Pk - Peak detector

Qp - Quasi-Peak detector

8.3.3. CE MODE, Type B 848 Kbps**Horizontal****Vertical**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80293 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 73.7438	46.18	Pk	14.3	-31.2	29.28	40	-10.72	0-360	100	V
4	31.2753	43.56	Pk	27.2	-31.7	39.06	40	-.94	0-360	100	V
4	31.3472	41.3	Qp	27.1	-31.7	36.7	40	-3.3	215	103	V
1	80.5031	46.57	Pk	13.9	-31.1	29.37	40	-10.63	0-360	399	H
6	94.9143	39.5	Pk	14.6	-31	23.1	43.52	-20.42	0-360	100	V
2	214.302	43.04	Pk	17.2	-30	30.24	43.52	-13.28	0-360	101	H
3	321.316	37.17	Pk	20.4	-29.3	28.27	46.02	-17.75	0-360	101	H

* -

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

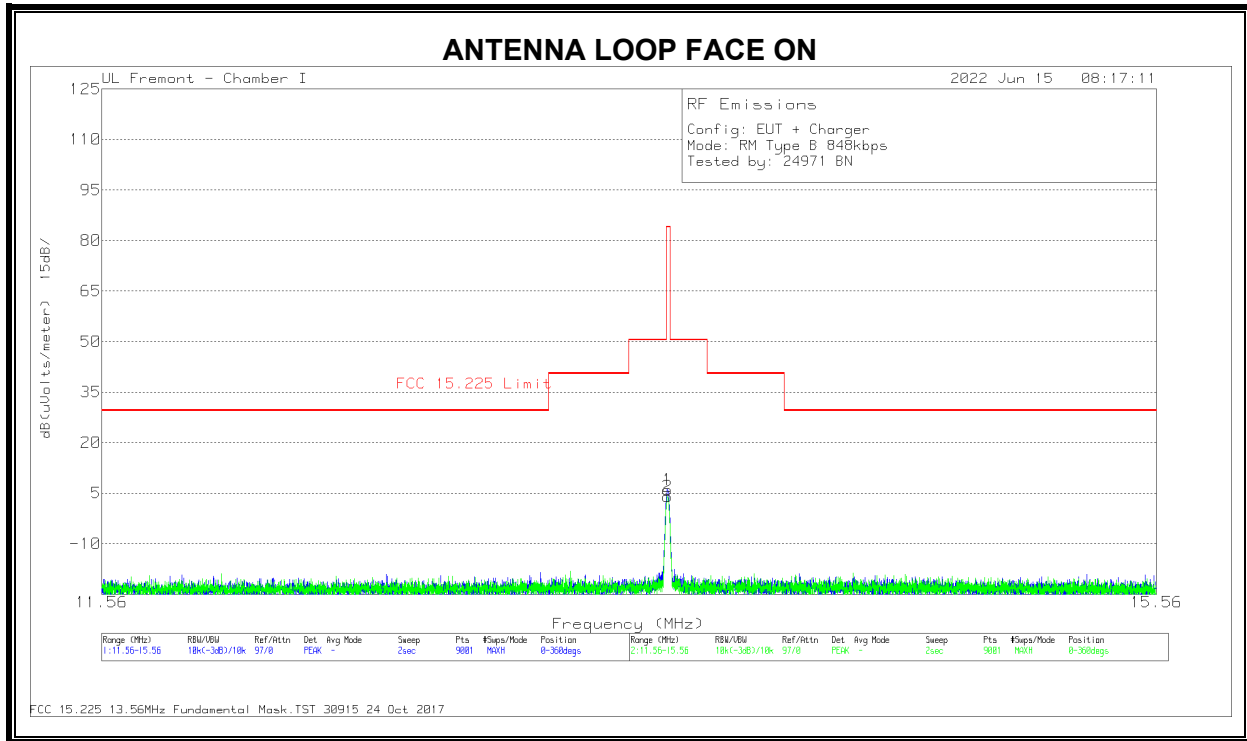
Pk - Peak detector

Qp - Quasi-Peak detector

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

8.4.1. READER MODE, Type B 848 Kbps

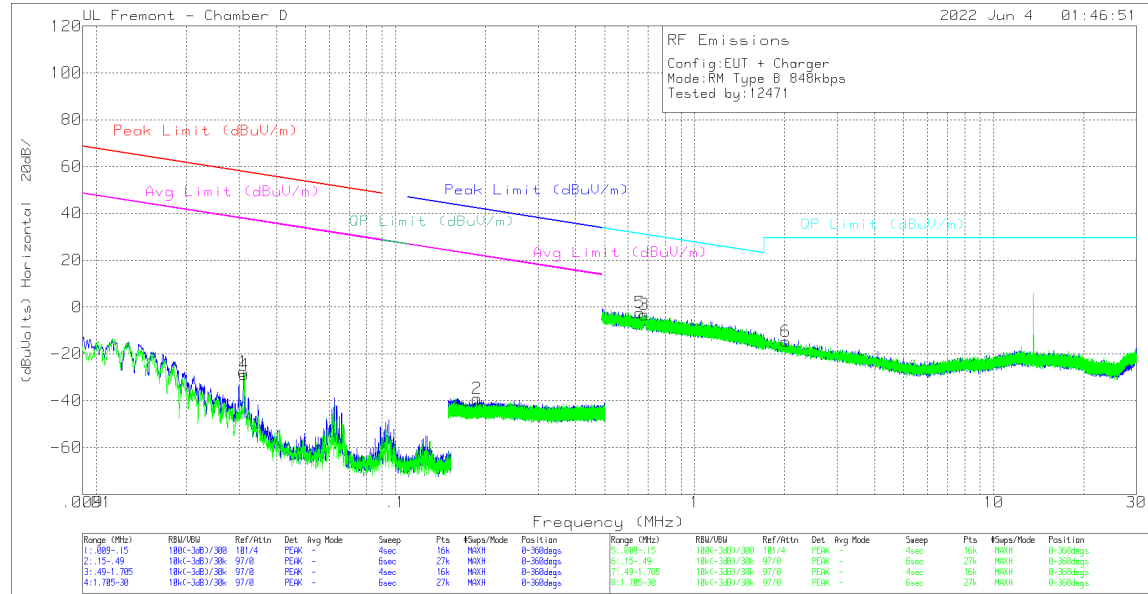
FUNDAMENTAL



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading dBuV/m	FCC 15.225 Limit dBuV/m	PK Margin (dB)	Azimuth (Degs)	Polarity
1	13.5571	43.34	Pk	34.3	-31.6	-40	6.04	84	-77.96	0-360	Face-On
2	13.5571	41.28	Pk	34.3	-31.6	-40	3.98	84	-80.02	0-360	Face-Off

Pk - Peak detector

SPURIOUS EMISSION**ANTENNA LOOP FACE ON**

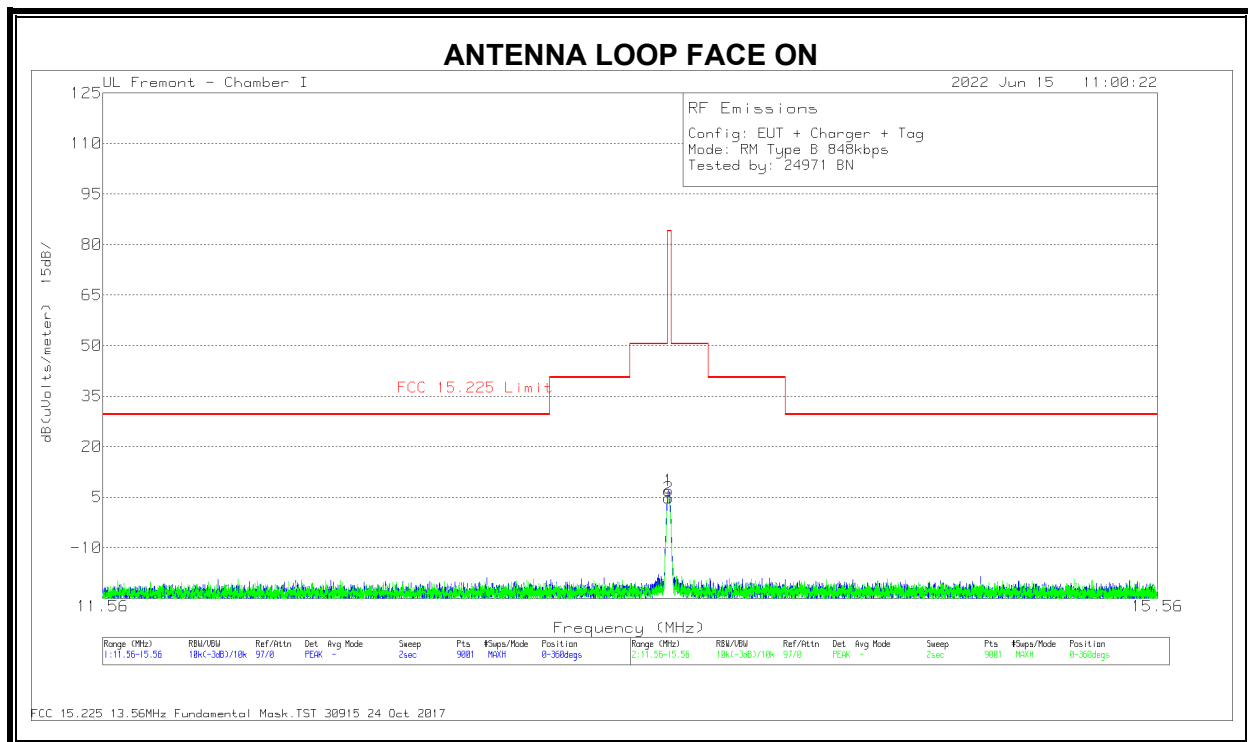
FCC 15.209 Below 30MHz Passive Loop.TST jt10646 24 Feb 2022

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading dBuV/m	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0311	26.87	Pk	57.9	-32.3	-80	-27.53	57.74	-85.27	37.74	-65.27	0-360	Face-On
4	.0313	25.48	Pk	57.9	-32.3	-80	-28.92	57.68	-86.6	37.68	-66.6	0-360	Face-Off
2	.1871	16.99	Pk	56.2	-32.4	-80	-39.21	42.18	-81.39	22.18	-61.39	0-360	Face-On

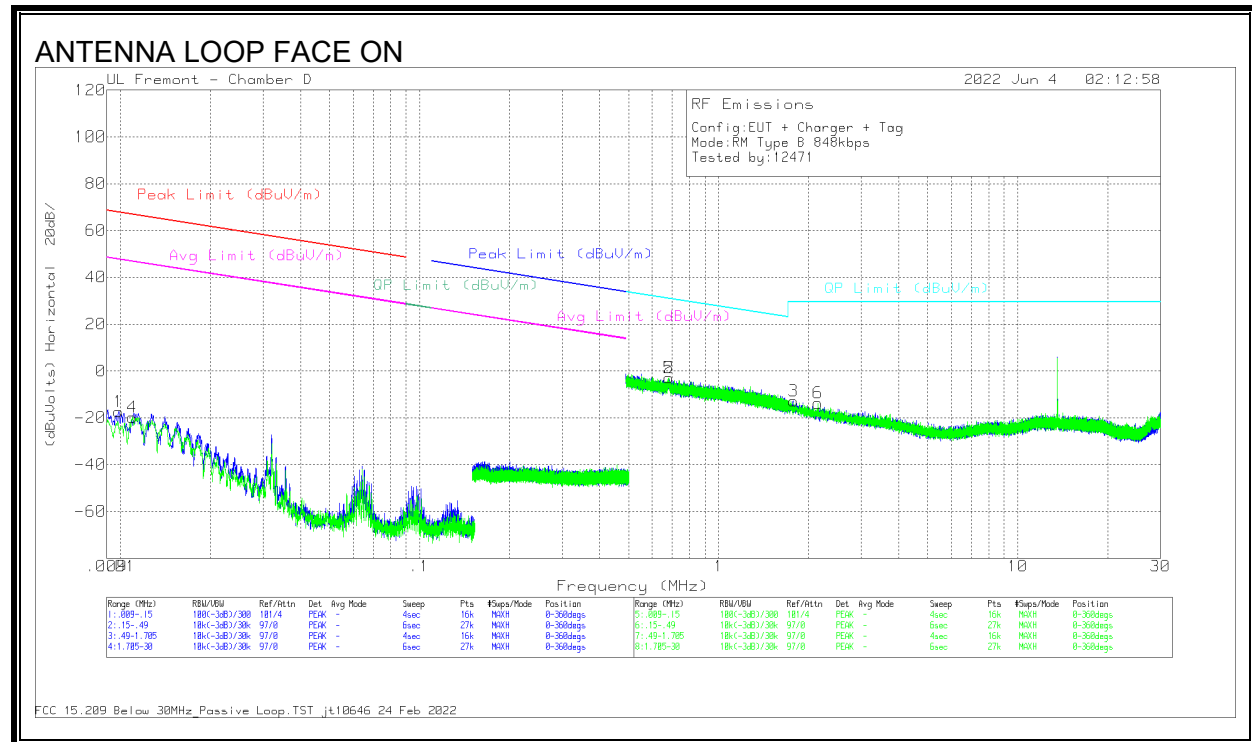
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading dBuV/m	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
5	.6571	19.93	Pk	50.1	-32.4	-40	-2.37	31.26	-33.63	0-360	Face-Off
3	.6772	19.29	Pk	49.8	-32.4	-40	-3.31	31	-34.31	0-360	Face-On
6	2.0205	16.15	Pk	41.5	-32.3	-40	-14.65	29.5	-44.15	0-360	Face-Off

Pk - Peak detector

8.4.2. TAG MODE, Type B 848 Kbps**FUNDAMENTAL****DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
1	13.5582	44.2	Pk	34.3	-31.6	-40	6.9	84	-77.1	0-360	Face-On
2	13.5576	42.04	Pk	34.3	-31.6	-40	4.74	84	-79.26	0-360	Face-Off

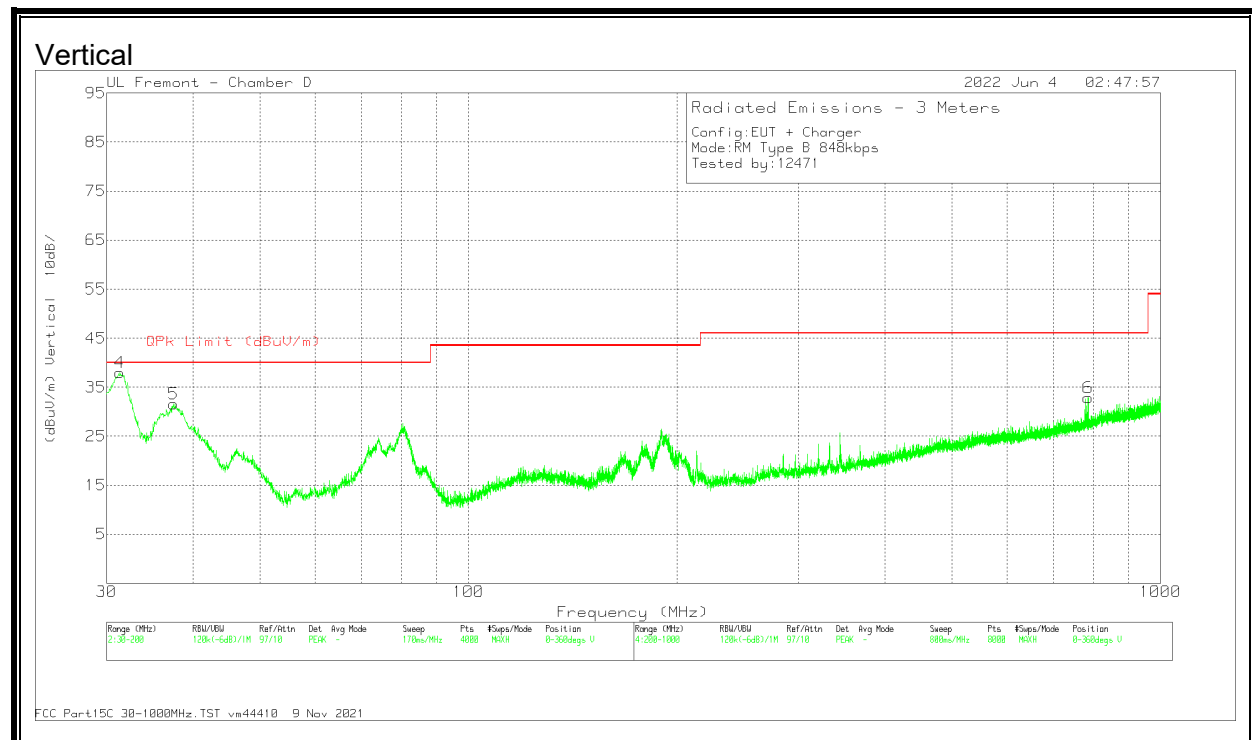
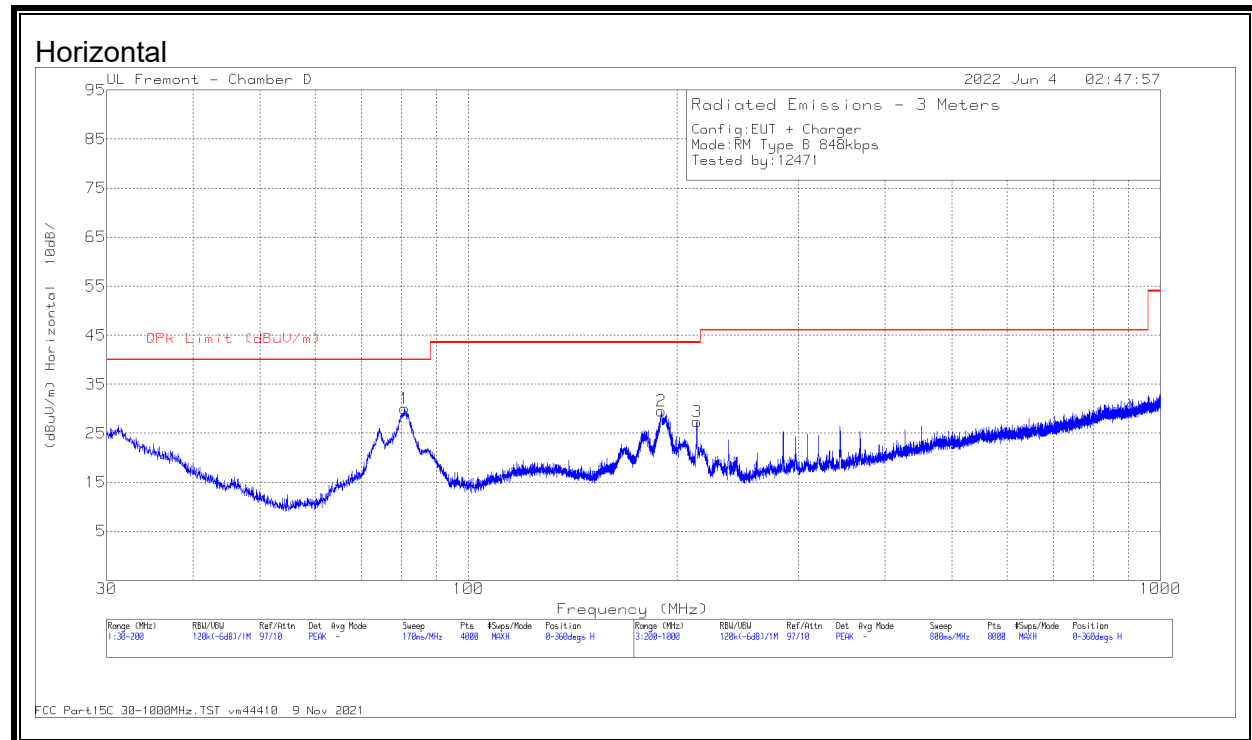
Pk - Peak detector

SPURIOUS EMISSION**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading dBuV/m	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0099	32.73	Pk	60.4	-30.6	-80	-17.47	67.7	-85.17	47.7	-65.17	0-360	Face-On
4	.011	30.87	Pk	60.2	-30.8	-80	-19.73	66.77	-86.5	46.77	-66.5	0-360	Face-Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading dBuV/m	OP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
2	.6808	19.8	Pk	49.8	-32.4	-40	-2.8	30.95	-33.75	0-360	Face-On
5	.6821	19.8	Pk	49.7	-32.4	-40	-2.9	30.94	-33.84	0-360	Face-Off
3	1.7836	16.83	Pk	42.7	-32.3	-40	-12.77	29.5	-42.27	0-360	Face-On
6	2.1504	17.34	Pk	41.2	-32.3	-40	-13.76	29.5	-43.26	0-360	Face-Off

Pk - Peak detector

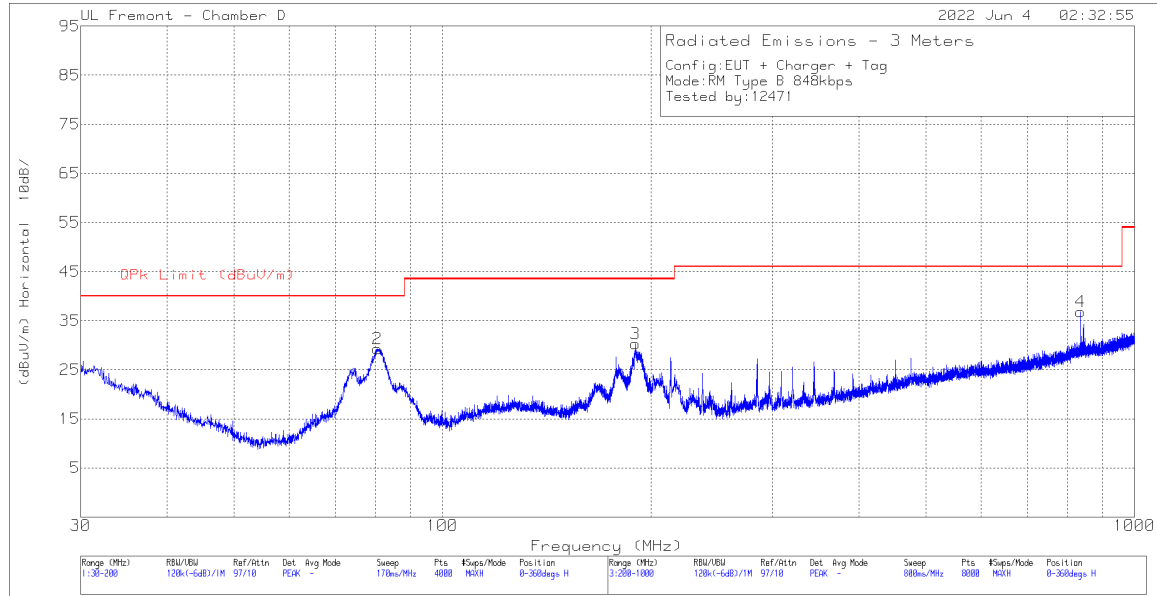
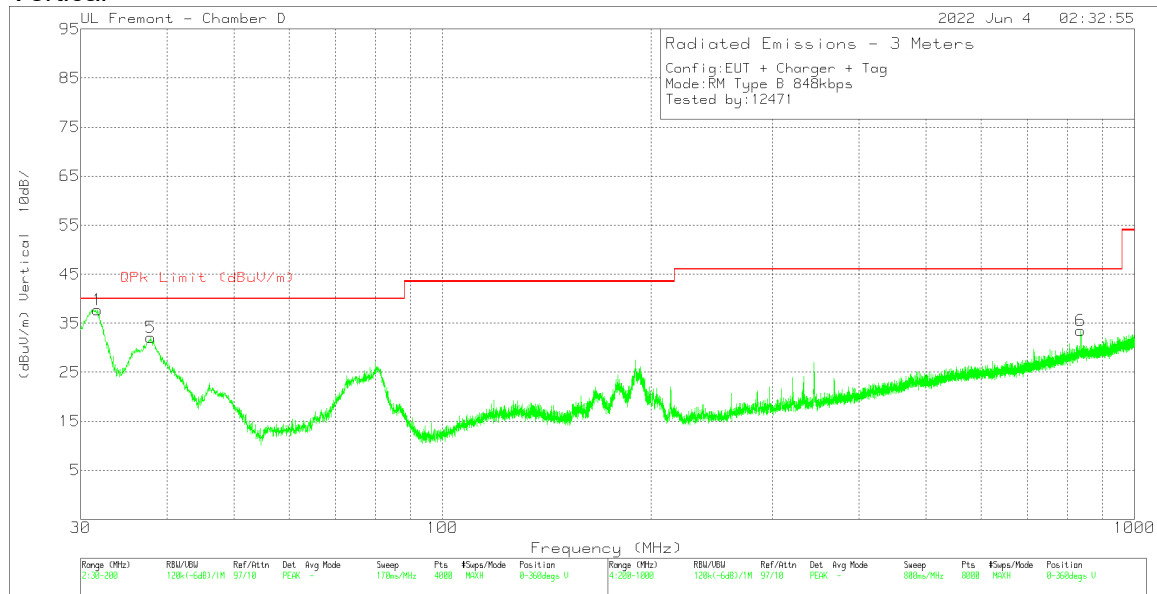
8.5. SECONDARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz**8.5.1. READER MODE, Type B 848 Kbps**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80293 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.3604	42.61	Pk	27.1	-31.7	38.01	40	-1.99	0-360	100	V
4	31.3711	40.09	Qp	27.1	-31.7	35.49	40	-4.51	238	107	V
5	37.4819	40.8	Pk	22.4	-31.6	31.6	40	-8.4	0-360	100	V
1	80.8857	47.28	Pk	13.9	-31.1	30.08	40	-9.92	0-360	399	H
2	190.011	42.29	Pk	17.4	-30.2	29.49	43.52	-14.03	0-360	199	H
3	213.802	40.14	Pk	17.2	-30	27.34	43.52	-16.18	0-360	199	H
6	786.076	32.77	Pk	27.5	-27.4	32.87	46.02	-13.15	0-360	399	V

Pk - Peak detector

Qp - Quasi-Peak detector

8.5.2. TAG MODE, Type B 848 Kbps**Horizontal****Vertical**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80293 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 37.8645	41.54	Pk	22.1	-31.6	32.04	40	-7.96	0-360	100	V
1	31.7004	42.68	Pk	26.8	-31.7	37.78	40	-2.22	0-360	100	V
1	31.515	40.19	Qp	27	-31.7	35.49	40	-4.51	263	101	V
2	80.5456	46.46	Pk	13.9	-31.1	29.26	40	-10.74	0-360	199	H
3	190.054	43.09	Pk	17.4	-30.2	30.29	43.52	-13.23	0-360	199	H
4	835.283	35.61	Pk	28.2	-27	36.81	46.02	-9.21	0-360	101	H
6	836.283	32.31	Pk	28.2	-27	33.51	46.02	-12.51	0-360	399	V

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

Pk - Peak detector

Qp - Quasi-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:	12482	Date:	6/14/2022
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9.1. PRIMARY ANTENNA**9.1.1. READER MODE, Type B 848 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	13.55981124	5.398	13.55981335	5.242	13.55980199	6.080	13.55979795	6.378	± 100
	40	13.55983682	3.512	13.55983466	3.671	13.55982856	4.121	13.55982015	4.741	± 100
	30	13.55985872	1.897	13.55985729	2.002	13.55984882	2.627	13.55984696	2.764	± 100
	20	13.55988444	0.000	13.55988463	-0.015	13.55989239	-0.586	13.55988137	0.226	± 100
	10	13.55990557	-1.559	13.55991358	-2.149	13.55991527	-2.274	13.55991904	-2.552	± 100
	0	13.55992866	-3.262	13.5599341	-3.662	13.55993675	-3.858	13.55994275	-4.300	± 100
	-10	13.55995484	-5.192	13.55995605	-5.281	13.55996108	-5.652	13.55996264	-5.767	± 100
	-20	13.55997628	-6.773	13.55998552	-7.455	13.55999832	-8.399	13.55999896	-8.445	± 100
3.23	20	13.55989248	-0.593	13.55989238	-0.586	13.55988806	-0.267	13.55990085	-1.210	± 100
4.37	20	13.55988071	0.275	13.55988239	0.151	13.55987139	0.962	13.55988271	0.128	± 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	13.55981352	5.228	13.55981255	5.300	13.55980277	6.022	13.55979582	6.534	± 100
	40	13.55983654	3.531	13.55983573	3.591	13.55981644	5.013	13.55982037	4.723	± 100
	30	13.55985842	1.917	13.55986187	1.663	13.55984755	2.719	13.55984556	2.866	± 100
	20	13.55988442	0.000	13.55988631	-0.140	13.55989168	-0.535	13.55988249	0.142	± 100
	10	13.55990623	-1.609	13.55991469	-2.232	13.55991494	-2.251	13.55990377	-1.427	± 100
	0	13.55992971	-3.340	13.55993432	-3.680	13.55993532	-3.754	13.55994371	-4.372	± 100
	-10	13.55995625	-5.297	13.55995517	-5.218	13.55996235	-5.747	13.55996275	-5.777	± 100
	-20	13.55997679	-6.812	13.55995481	-5.191	13.55998179	-7.181	13.55999741	-8.333	± 100
3.23	20	13.55989421	-0.722	13.55989485	-0.769	13.55988717	-0.203	13.55990137	-1.250	± 100
4.37	20	13.55986952	1.099	13.55988427	0.011	13.55987243	0.884	13.55988147	0.218	± 100

9.1.3. CE MODE, Type B 848 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	13.55982816	5.118	13.55981972	5.740	13.55981906	5.789	13.55981208	6.304	± 100
	40	13.55984431	3.927	13.55984021	4.229	13.55983274	4.780	13.55983155	4.867	± 100
	30	13.55987385	1.748	13.55986685	2.265	13.55986197	2.624	13.55985824	2.900	± 100
	20	13.55989756	0.000	13.55989747	0.006	13.55990368	-0.451	13.5598892	0.616	± 100
	10	13.55992166	-1.778	13.55992814	-2.255	13.55994188	-3.269	13.55994459	-3.469	± 100
	0	13.55994342	-3.382	13.5599519	-4.008	13.55995669	-4.361	13.55996467	-4.949	± 100
	-10	13.55995786	-4.447	13.5599661	-5.055	13.55997067	-5.392	13.55997233	-5.515	± 100
	-20	13.55999329	-7.060	13.56000526	-7.943	13.56000885	-8.207	13.56001453	-8.626	± 100
3.23	20	13.5599008	-0.239	13.55991063	-0.964	13.55991321	-1.154	13.55991119	-1.005	± 100
4.37	20	13.55988698	0.780	13.55988289	1.082	13.55989132	0.460	13.55988528	0.906	± 100

9.2. SECONDARY ANTENNA**9.2.1. READER MODE, Type B 848 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	13.55987539	4.430	13.55986427	5.249	13.55985909	5.632	13.55985578	5.876	± 100
	40	13.55989612	2.901	13.55988887	3.435	13.55988205	3.938	13.55987975	4.108	± 100
	30	13.55991858	1.245	13.55991326	1.637	13.55990851	1.987	13.55990449	2.283	± 100
	20	13.55993545	0.000	13.55993514	0.023	13.55993281	0.195	13.55994149	-0.445	± 100
	10	13.5599578	-1.648	13.55996146	-1.918	13.5599633	-2.054	13.55997043	-2.579	± 100
	0	13.55997386	-2.832	13.55998058	-3.328	13.55998745	-3.835	13.55999358	-4.286	± 100
	-10	13.55998647	-3.762	13.55998752	-3.840	13.55999473	-4.371	13.55999846	-4.646	± 100
	-20	13.56001754	-6.054	13.56002135	-6.334	13.5600242	-6.545	13.56002586	-6.667	± 100
3.23	20	13.55994915	-1.010	13.55995578	-1.499	13.55994878	-0.983	13.55994852	-0.964	± 100
4.37	20	13.55992024	1.122	13.55993067	0.353	13.55992501	0.770	13.5599285	0.513	± 100

9.2.2. TAG MODE, Type B 848 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	13.55987478	4.487	13.55986524	5.191	13.55985764	5.751	13.55985656	5.831	± 100
	40	13.55988808	3.506	13.55988696	3.589	13.55988106	4.024	13.55987949	4.140	± 100
	30	13.55991717	1.361	13.55991507	1.516	13.55990887	1.973	13.55991775	1.318	± 100
	20	13.55993563	0.000	13.55992887	0.498	13.55993217	0.255	13.55994235	-0.496	± 100
	10	13.55995709	-1.583	13.55996275	-2.000	13.55996446	-2.126	13.5599714	-2.638	± 100
	0	13.55997452	-2.868	13.55998178	-3.404	13.55998779	-3.847	13.55998484	-3.629	± 100
	-10	13.55998476	-3.624	13.55998447	-3.602	13.55999503	-4.381	13.55999875	-4.655	± 100
	-20	13.56001657	-5.969	13.5600239	-6.510	13.56002417	-6.530	13.56002631	-6.688	± 100
3.23	20	13.55994707	-0.844	13.55995704	-1.579	13.55994749	-0.875	13.55994964	-1.033	± 100
4.37	20	13.55992194	1.009	13.55993182	0.280	13.55992433	0.833	13.55992744	0.604	± 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

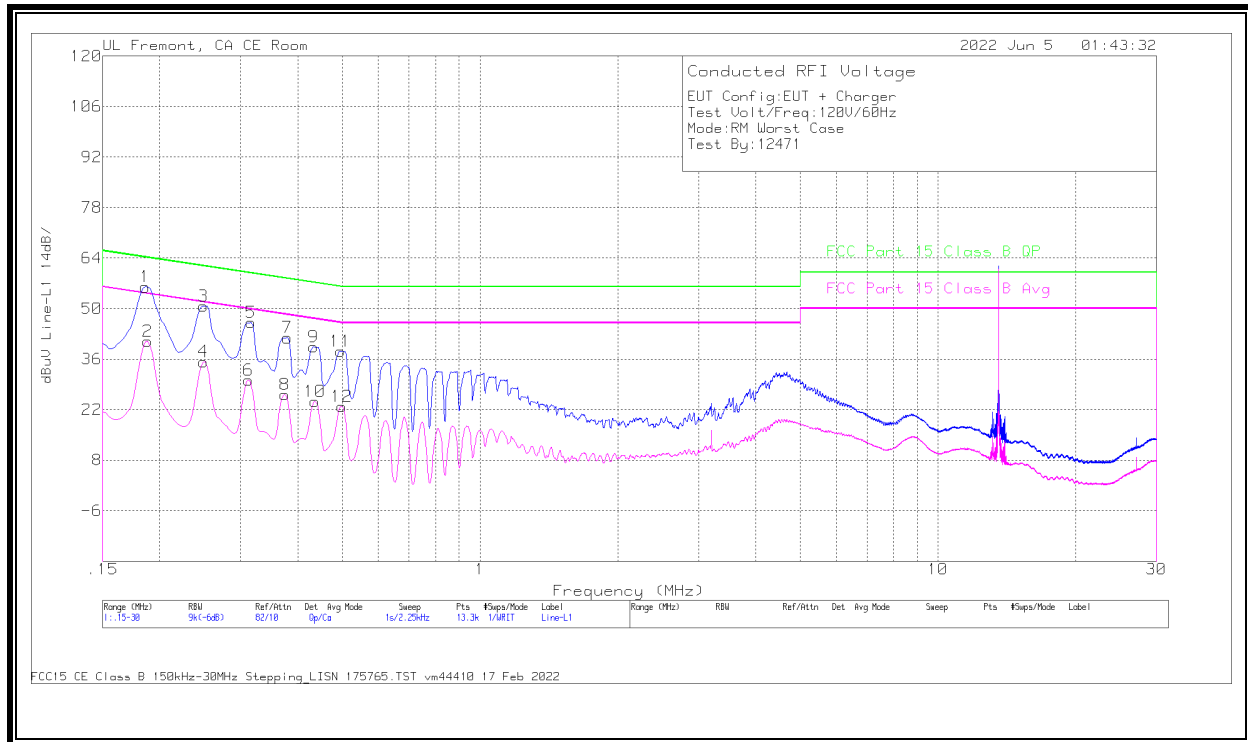
Notes:
1. The lower limit shall apply at the transition frequencies
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

TEST PROCEDURE

ANSI C63.10:2013

RESULTS

No non-compliance noted:

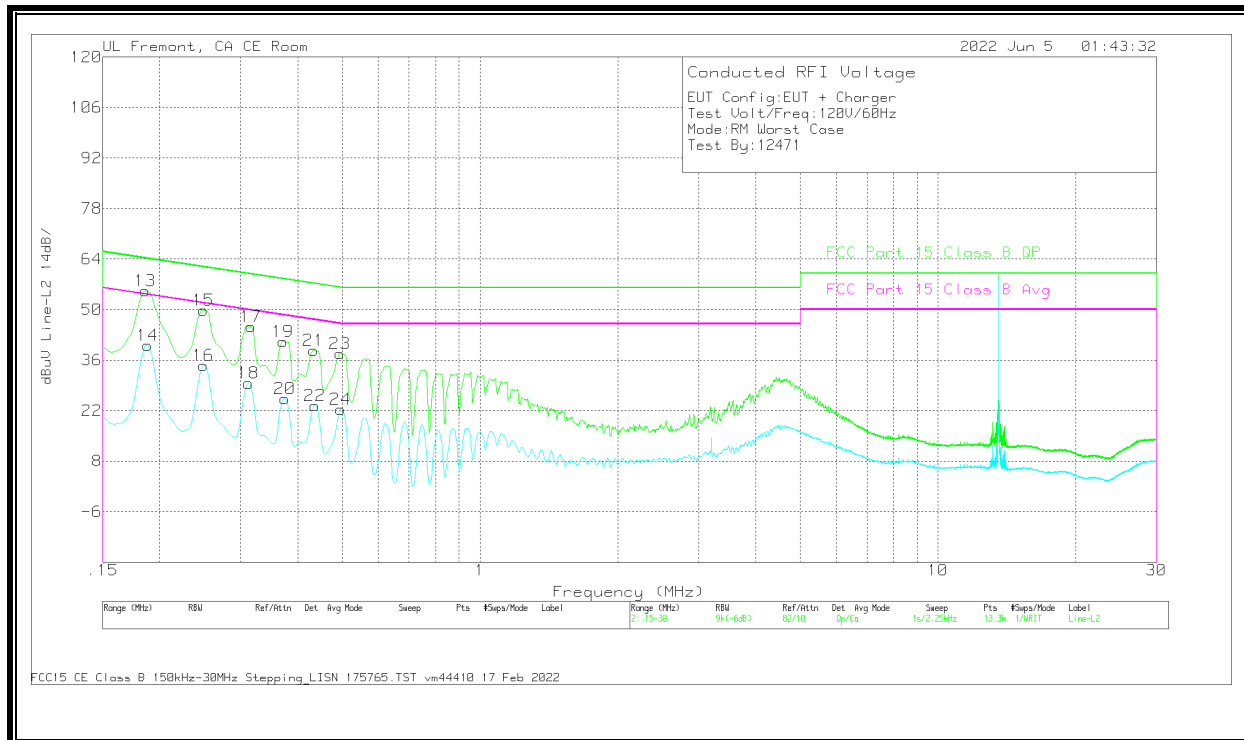
10.1. PRIMARY ANTENNA**10.1.1. READER MODE, Type B 848 Kbps, with Antenna****LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9K-600M_6-22. (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	.1883	30.74	Ca	.1	0	10.1	40.94	-	-	54.11	-13.17
4	.249	25.81	Ca	0	0	9.5	35.31	-	-	51.79	-16.48
6	.312	20.71	Ca	0	0	9.5	30.21	-	-	49.92	-19.71
8	.375	16.69	Ca	0	0	9.5	26.19	-	-	48.39	-22.2
10	.4358	14.81	Ca	0	0	9.5	24.31	-	-	47.14	-22.83
12	.4988	13.34	Ca	0	0	9.5	22.84	-	-	46.02	-23.18
1	.186	45.8	Qp	.1	0	10.1	56	64.21	-8.21	-	-
3	.249	41.19	Qp	0	0	9.5	50.69	61.79	-11.1	-	-
5	.3165	36.63	Qp	0	0	9.5	46.13	59.8	-13.67	-	-
7	.3795	32.42	Qp	0	0	9.5	41.92	58.29	-16.37	-	-
9	.4335	29.86	Qp	0	0	9.5	39.36	57.19	-17.83	-	-
11	.4954	28.74	Qp	0	0	9.5	38.24	56.08	-17.84	-	-

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.

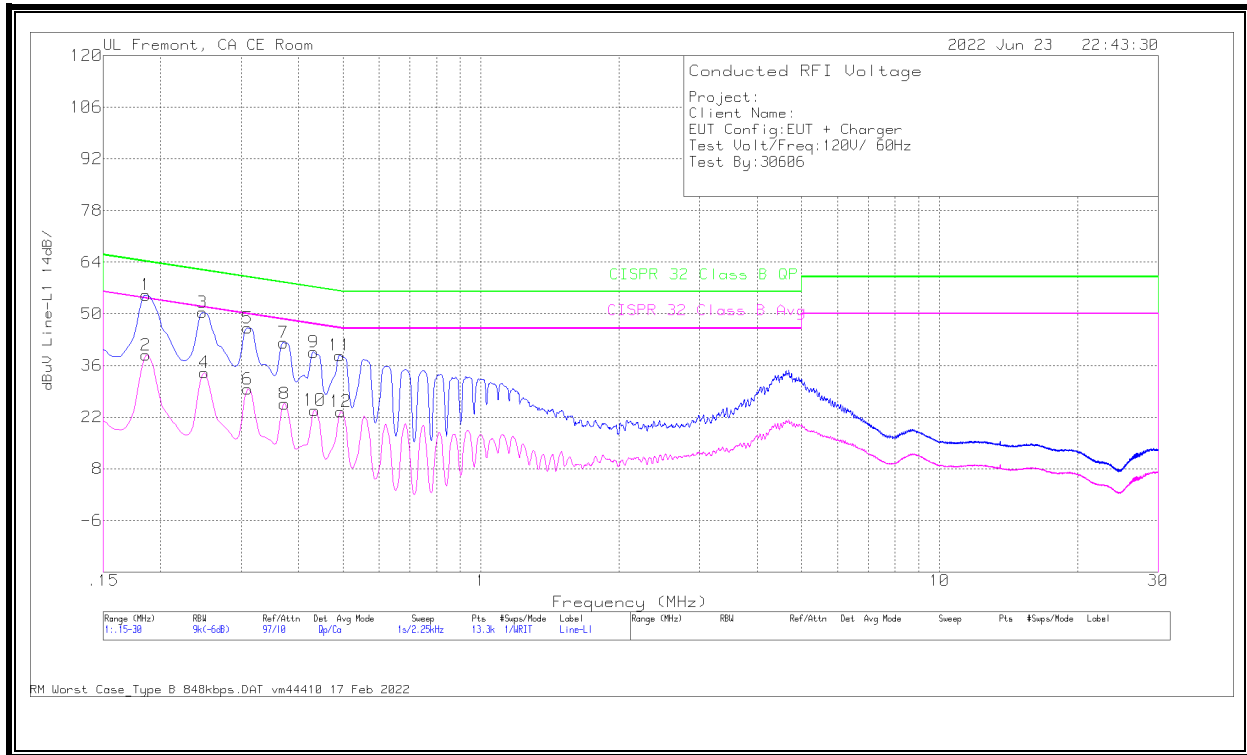
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (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)
14	.1883	29.97	Ca	.1	0	10.1	40.17	-	-	54.11	-13.94
16	.249	25.08	Ca	0	0	9.5	34.58	-	-	51.79	-17.21
18	.312	20.08	Ca	0	0	9.5	29.58	-	-	49.92	-20.34
20	.375	15.86	Ca	0	0	9.5	25.36	-	-	48.39	-23.03
22	.4358	13.95	Ca	0	0	9.5	23.45	-	-	47.14	-23.69
24	.4965	12.86	Ca	0	0	9.5	22.36	-	-	46.06	-23.7
13	.186	44.96	Qp	.1	0	10.1	55.16	64.21	-9.05	-	-
15	.249	40.39	Qp	0	0	9.5	49.89	61.79	-11.9	-	-
17	.3165	35.76	Qp	0	0	9.5	45.26	59.8	-14.54	-	-
19	.3716	31.62	Qp	0	0	9.5	41.12	58.46	-17.34	-	-
21	.4335	29.26	Qp	0	0	9.5	38.76	57.19	-18.43	-	-
23	.4943	28.38	Qp	0	0	9.5	37.88	56.1	-18.22	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

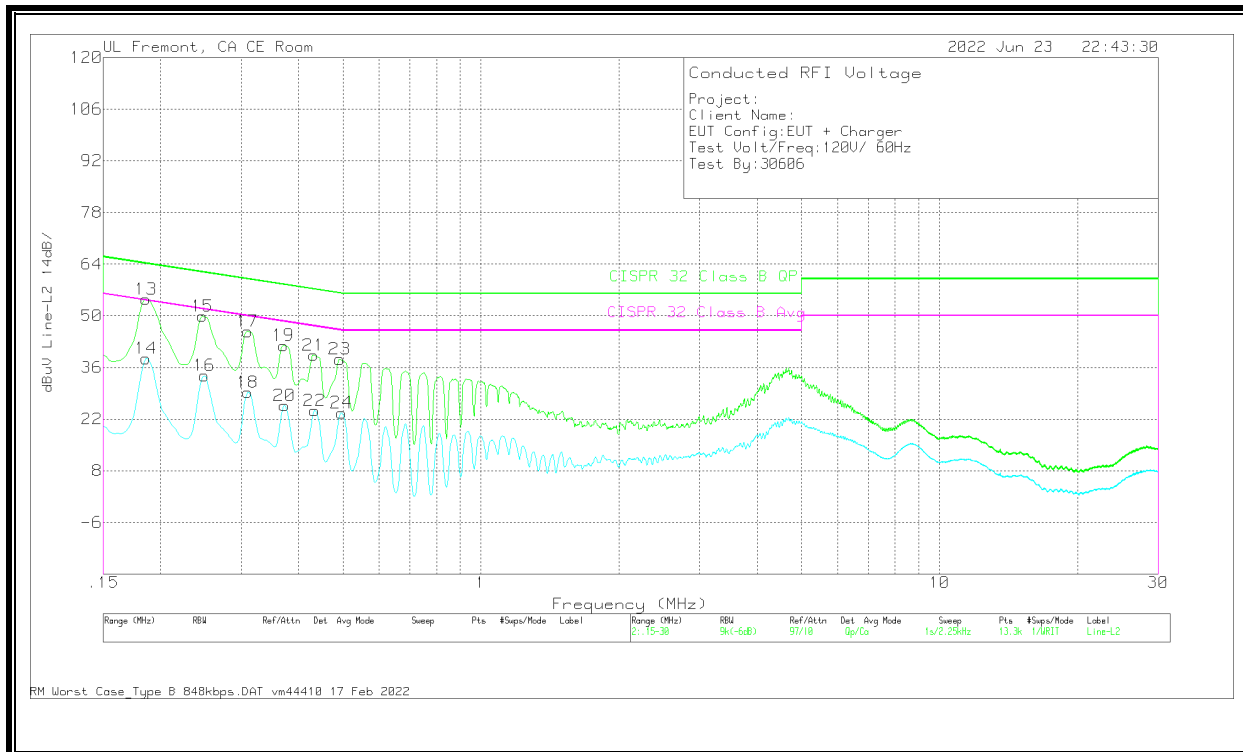
Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

10.1.2. READER MODE, Type B 848 Kbps, Antenna Port Terminated**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22.(dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.186	28.57	Ca	.1	0	10.1	38.77	-	-	54.21	-15.44
4	.249	24.47	Ca	.1	0	9.5	34.07	-	-	51.79	-17.72
6	.3098	19.98	Ca	.1	0	9.5	29.58	-	-	49.98	-20.4
8	.3728	16.12	Ca	0	0	9.5	25.62	-	-	48.44	-22.82
10	.4335	14.35	Ca	0	0	9.5	23.85	-	-	47.19	-23.34
12	.4943	13.97	Ca	0	0	9.5	23.47	-	-	46.1	-22.63
1	.186	44.9	Qp	.1	0	10.1	55.1	64.21	-9.11	-	-
3	.2468	40.78	Qp	.1	0	9.5	50.38	61.87	-11.49	-	-
5	.3098	36.5	Qp	.1	0	9.5	46.1	59.98	-13.88	-	-
7	.3705	32.67	Qp	0	0	9.5	42.17	58.49	-16.32	-	-
9	.4313	30.09	Qp	0	0	9.5	39.59	57.23	-17.64	-	-
11	.492	29.22	Qp	0	0	9.5	38.72	56.13	-17.41	-	-

Qp - Quasi-Peak detector

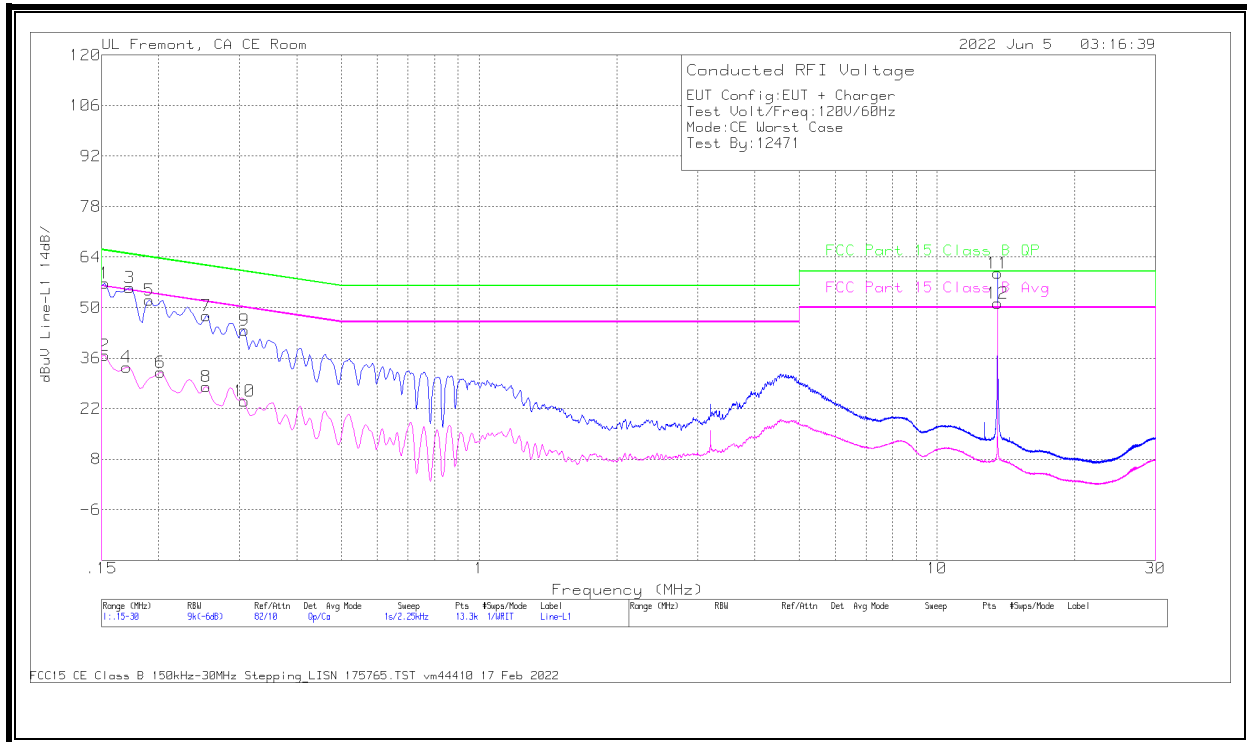
Ca - CISPR average detection

LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.186	28.22	Ca	.1	0	10.1	38.42	-	-	54.21	-15.79
16	.249	24.19	Ca	.1	0	9.5	33.79	-	-	51.79	-18
18	.3098	19.75	Ca	0	0	9.5	29.25	-	-	49.98	-20.73
20	.3728	16.14	Ca	0	0	9.5	25.64	-	-	48.44	-22.8
22	.4335	14.81	Ca	0	0	9.5	24.31	-	-	47.19	-22.88
24	.4965	14.19	Ca	0	0	9.5	23.69	-	-	46.06	-22.37
13	.186	44.3	Qp	.1	0	10.1	54.5	64.21	-9.71	-	-
15	.2468	40.29	Qp	.1	0	9.5	49.89	61.87	-11.98	-	-
17	.3098	36.23	Qp	0	0	9.5	45.73	59.98	-14.25	-	-
19	.3705	32.44	Qp	0	0	9.5	41.94	58.49	-16.55	-	-
21	.4313	29.82	Qp	0	0	9.5	39.32	57.23	-17.91	-	-
23	.492	28.72	Qp	0	0	9.5	38.22	56.13	-17.91	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

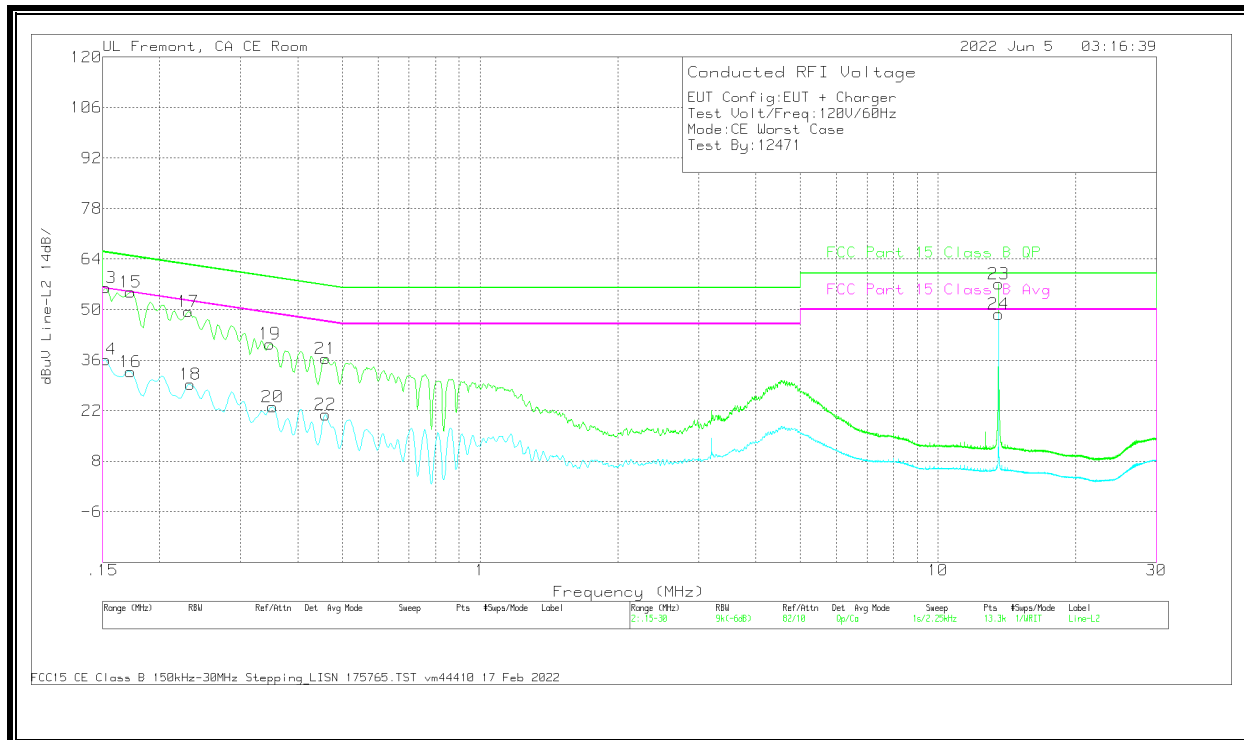
10.1.3. CE MODE, Type B 848 Kbps, with Antenna**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (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)
2	.1523	25.76	Ca	.1	0	11	36.86	-	-	55.88	-19.02
4	.1703	22.87	Ca	.1	0	10.6	33.57	-	-	54.95	-21.38
6	.2018	22.43	Ca	0	0	9.7	32.13	-	-	53.54	-21.41
8	.2535	18.67	Ca	0	0	9.5	28.17	-	-	51.64	-23.47
10	.3075	14.59	Ca	0	0	9.5	24.09	-	-	50.04	-25.95
12	13.56	41.37	Ca	.1	.2	9.5	51.17	-	-	50	1.17
1	.1523	45.67	Qp	.1	0	11	56.77	65.88	-9.11	-	-
3	.1725	44.97	Qp	.1	0	10.5	55.57	64.84	-9.27	-	-
5	.1905	41.91	Qp	.1	0	10	52.01	64.01	-12	-	-
7	.2535	38.29	Qp	0	0	9.5	47.79	61.64	-13.85	-	-
9	.3075	34.24	Qp	0	0	9.5	43.74	60.04	-16.3	-	-
11	13.56	49.74	Qp	.1	.2	9.5	59.54	60	-46	-	-

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.

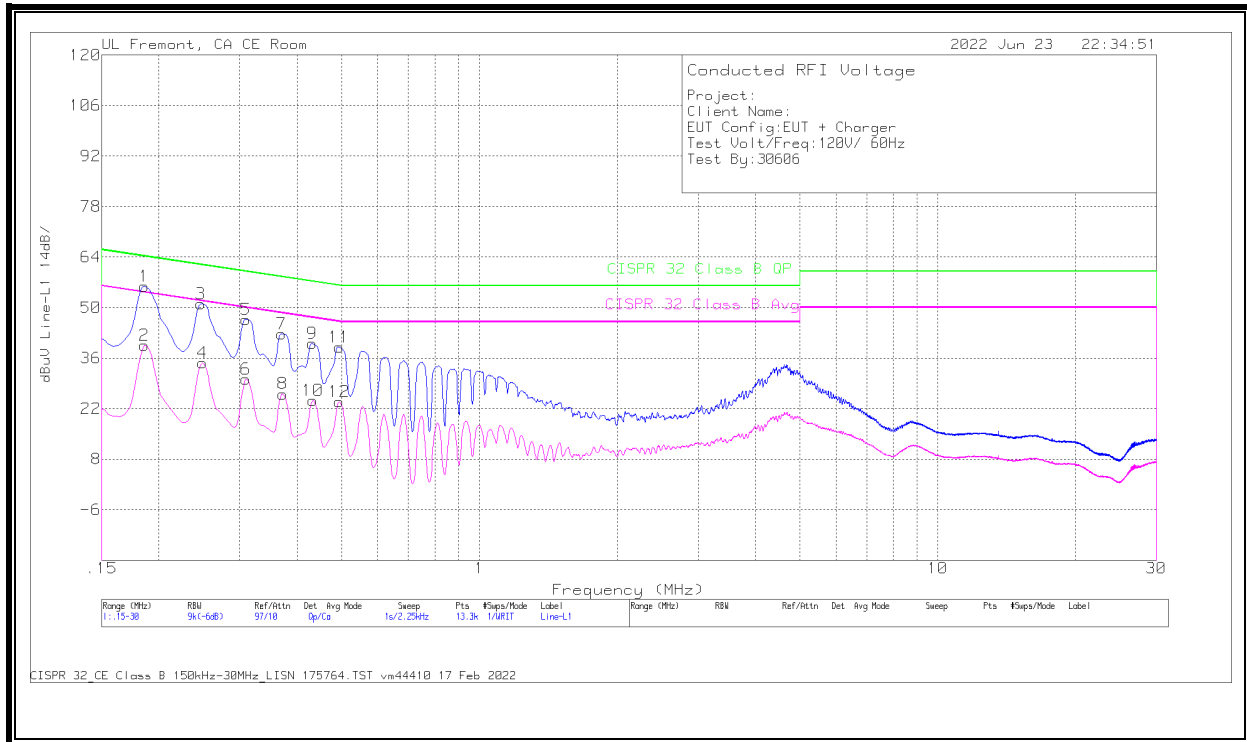
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22(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	.1523	25.08	Ca	.1	0	11	36.18	-	-	55.88	-19.7
16	.1725	22.19	Ca	.1	0	10.5	32.79	-	-	54.84	-22.05
18	.2333	19.81	Ca	0	0	9.5	29.31	-	-	52.33	-23.02
20	.3525	13.5	Ca	0	0	9.5	23	-	-	48.9	-25.9
22	.4605	11.39	Ca	0	0	9.5	20.89	-	-	46.68	-25.79
24	13.56	38.9	Ca	.1	.2	9.5	48.7	-	-	50	-1.3
13	.1523	44.92	Qp	.1	0	11	56.02	65.88	-9.86	-	-
15	.1725	44.2	Qp	.1	0	10.5	54.8	64.84	-10.04	-	-
17	.231	39.99	Qp	0	0	9.5	49.49	62.41	-12.92	-	-
19	.348	31.02	Qp	0	0	9.5	40.52	59.01	-18.49	-	-
21	.4605	26.97	Qp	0	0	9.5	36.47	56.68	-20.21	-	-
23	13.56	47.26	Qp	.1	.2	9.5	57.06	60	-2.94	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

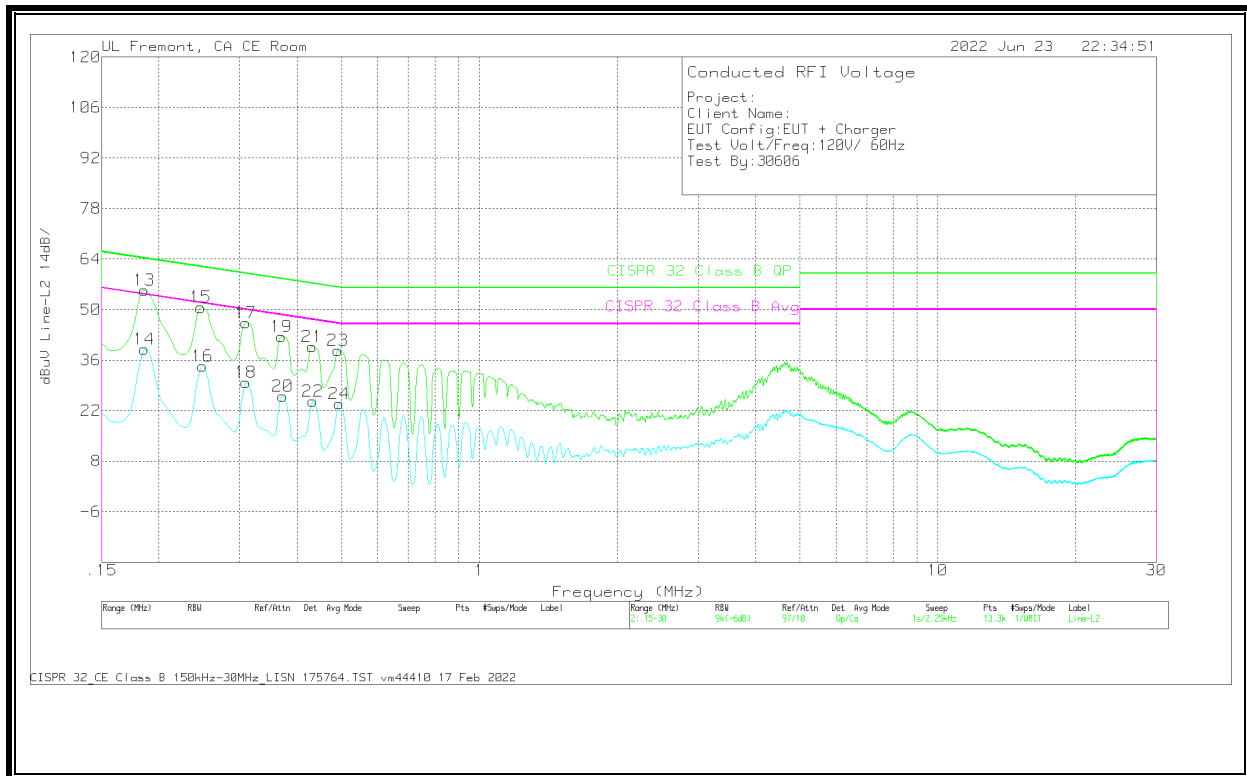
Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

10.1.4. CE MODE, Type B 848 Kbps, Antenna Port Terminated**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.186	29.35	Ca	.1	0	10.1	39.55	-	-	54.21	-14.66
4	.249	25.1	Ca	.1	0	9.5	34.7	-	-	51.79	-17.09
6	.3098	20.56	Ca	.1	0	9.5	30.16	-	-	49.98	-19.82
8	.3728	16.6	Ca	0	0	9.5	26.1	-	-	48.44	-22.34
10	.4335	14.75	Ca	0	0	9.5	24.25	-	-	47.19	-22.94
12	.4943	14.35	Ca	0	0	9.5	23.85	-	-	46.1	-22.25
1	.186	45.75	Qp	.1	0	10.1	55.95	64.21	-8.26	-	-
3	.2468	41.52	Qp	.1	0	9.5	51.12	61.87	-10.75	-	-
5	.3098	37.16	Qp	.1	0	9.5	46.76	59.98	-13.22	-	-
7	.3705	33.22	Qp	0	0	9.5	42.72	58.49	-15.77	-	-
9	.4313	30.53	Qp	0	0	9.5	40.03	57.23	-17.2	-	-
11	.4943	29.51	Qp	0	0	9.5	39.01	56.1	-17.09	-	-

Qp - Quasi-Peak detector

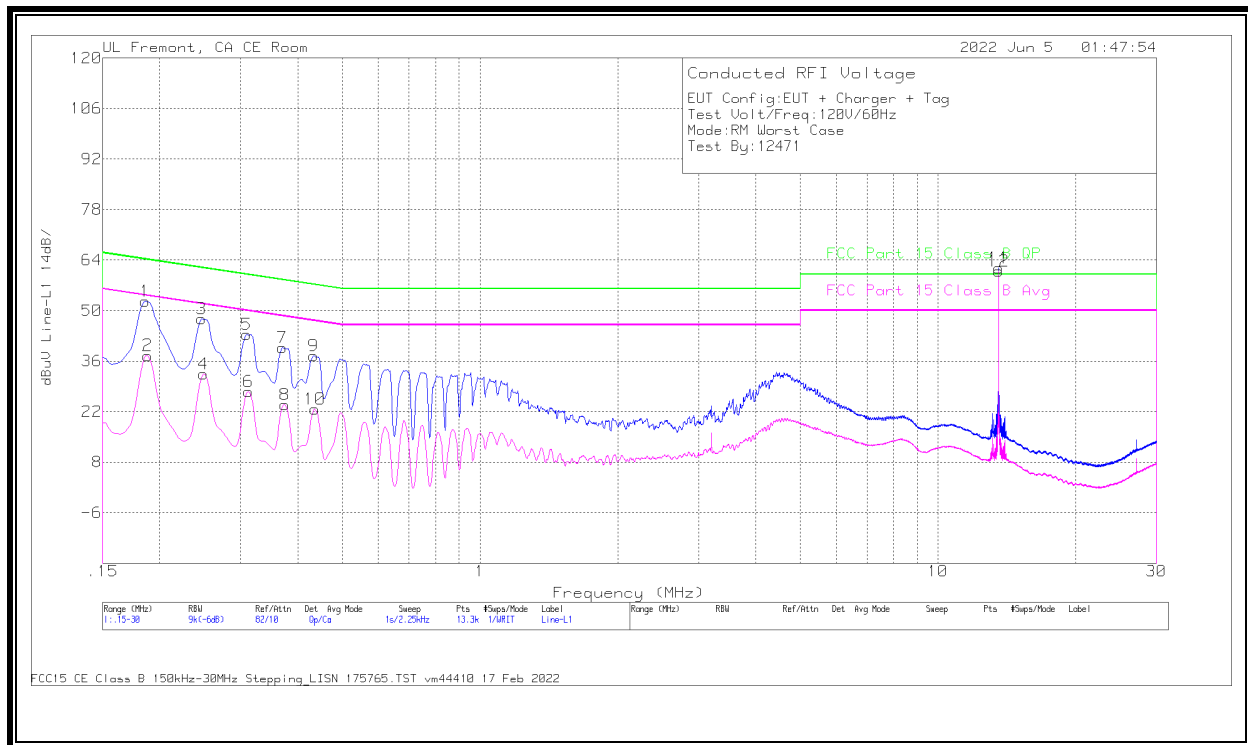
Ca - CISPR average detection

LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22.(dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.186	28.9	Ca	.1	0	10.1	39.1	-	-	54.21	-15.11
16	.249	24.77	Ca	.1	0	9.5	34.37	-	-	51.79	-17.42
18	.3098	20.35	Ca	0	0	9.5	29.85	-	-	49.98	-20.13
20	.3728	16.59	Ca	0	0	9.5	26.09	-	-	48.44	-22.35
22	.4335	15.15	Ca	0	0	9.5	24.65	-	-	47.19	-22.54
24	.4943	14.45	Ca	0	0	9.5	23.95	-	-	46.1	-22.15
13	.186	45.12	Qp	.1	0	10.1	55.32	64.21	-8.89	-	-
15	.2468	41.01	Qp	.1	0	9.5	50.61	61.87	-11.26	-	-
17	.3098	36.87	Qp	0	0	9.5	46.37	59.98	-13.61	-	-
19	.3705	33	Qp	0	0	9.5	42.5	58.49	-15.99	-	-
21	.4313	30.29	Qp	0	0	9.5	39.79	57.23	-17.44	-	-
23	.492	29.13	Qp	0	0	9.5	38.63	56.13	-17.5	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

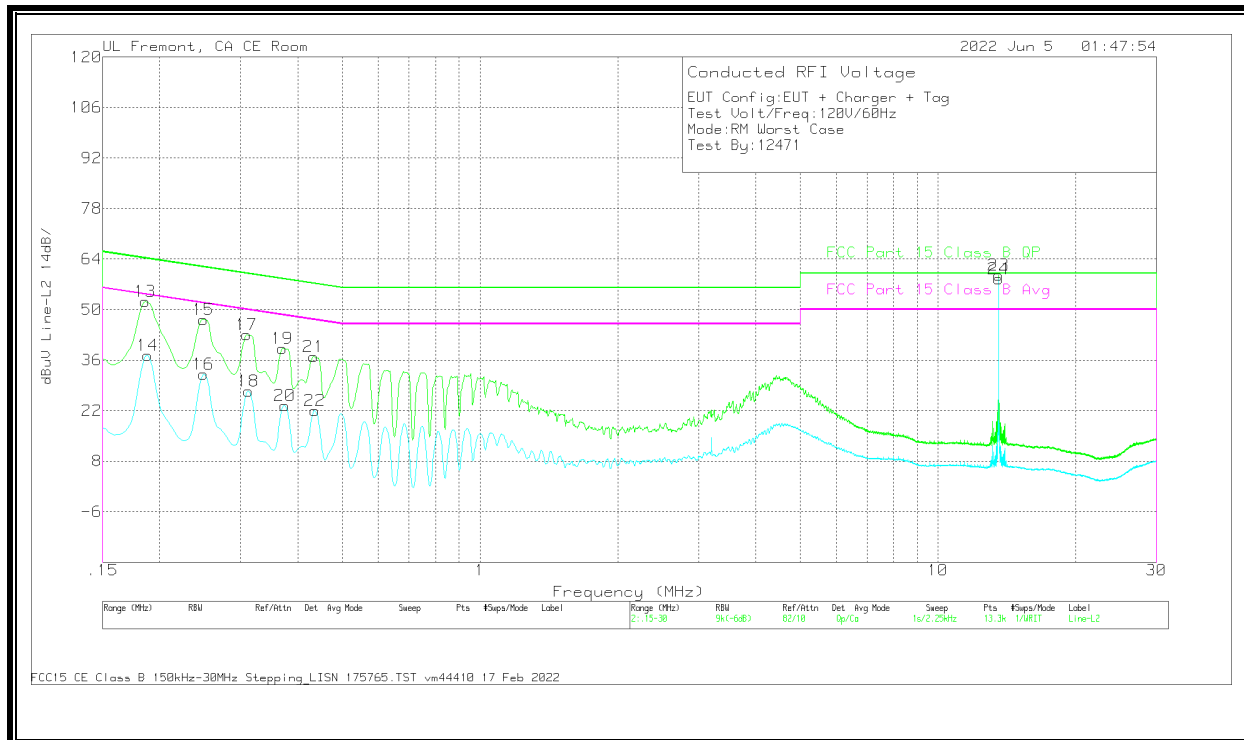
10.1.5. TAG MODE, Type B 848 Kbps, with Antenna**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M_6-2-22.(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	.1883	27.37	Ca	.1	0	10.1	37.57	-	-	54.11	-16.54
4	.249	22.9	Ca	0	0	9.5	32.4	-	-	51.79	-19.39
6	.312	18.15	Ca	0	0	9.5	27.65	-	-	49.92	-22.27
8	.375	14.45	Ca	0	0	9.5	23.95	-	-	48.39	-24.44
10	.4358	13.14	Ca	0	0	9.5	22.64	-	-	47.14	-24.5
12	13.56	51.11	Ca	.1	.2	9.5	60.91	-	-	50	10.91
1	.186	42.42	Qp	.1	0	10.1	52.62	64.21	-11.59	-	-
3	.2468	38.18	Qp	0	0	9.5	47.68	61.87	-14.19	-	-
5	.3098	33.95	Qp	0	0	9.5	43.45	59.98	-16.53	-	-
7	.3705	30.2	Qp	0	0	9.5	39.7	58.49	-18.79	-	-
9	.4335	28	Qp	0	0	9.5	37.5	57.19	-19.69	-	-
11	13.56	51.98	Qp	.1	.2	9.5	61.78	60	1.78	-	-

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.

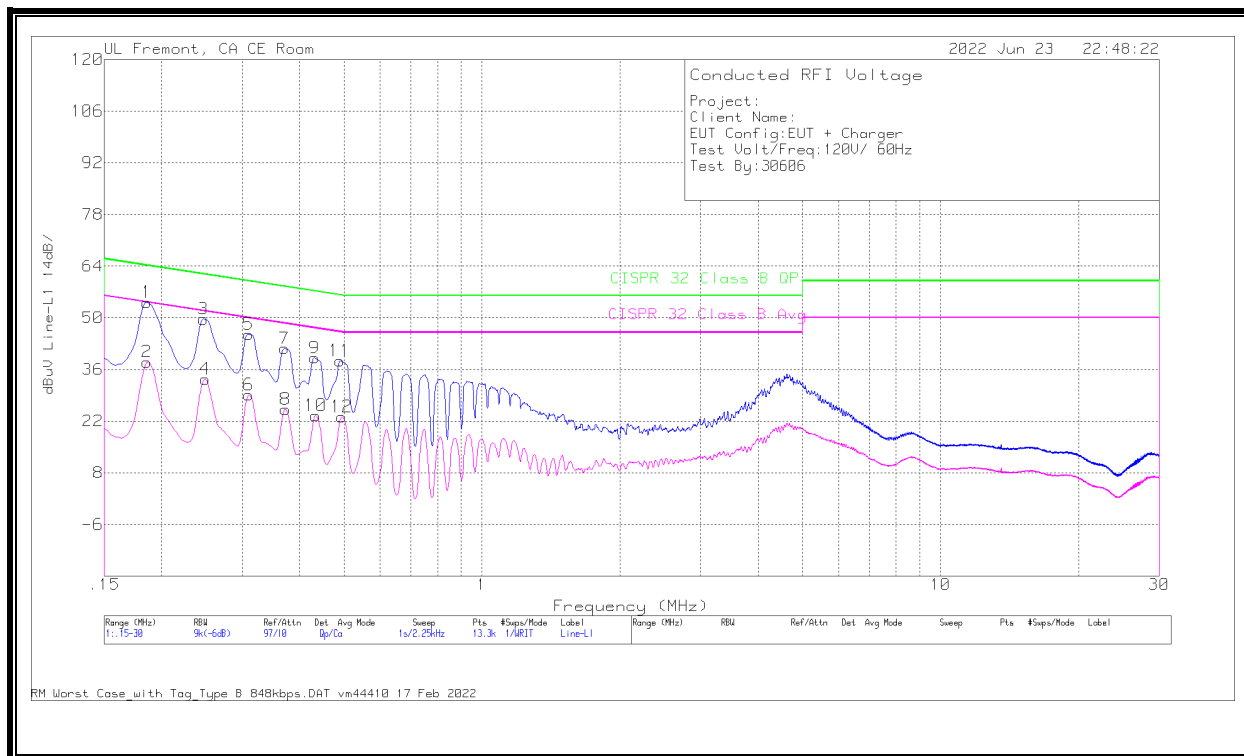
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M_6-2-22(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	.1883	27.1	Ca	.1	0	10.1	37.3	-	-	54.11	-16.81
16	.249	22.6	Ca	0	0	9.5	32.1	-	-	51.79	-19.69
18	.312	17.87	Ca	0	0	9.5	27.37	-	-	49.92	-22.55
20	.375	13.9	Ca	0	0	9.5	23.4	-	-	48.39	-24.99
22	.4358	12.46	Ca	0	0	9.5	21.96	-	-	47.14	-25.18
24	13.56	48.72	Ca	.1	.2	9.5	58.52	-	-	50	8.52
13	.186	42.03	Qp	.1	0	10.1	52.23	64.21	-11.98	-	-
15	.249	37.78	Qp	0	0	9.5	47.28	61.79	-14.51	-	-
17	.3098	33.55	Qp	0	0	9.5	43.05	59.98	-16.93	-	-
19	.3705	29.72	Qp	0	0	9.5	39.22	58.49	-19.27	-	-
21	.4335	27.51	Qp	0	0	9.5	37.01	57.19	-20.18	-	-
23	13.56	49.71	Qp	.1	.2	9.5	59.51	60	-49	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

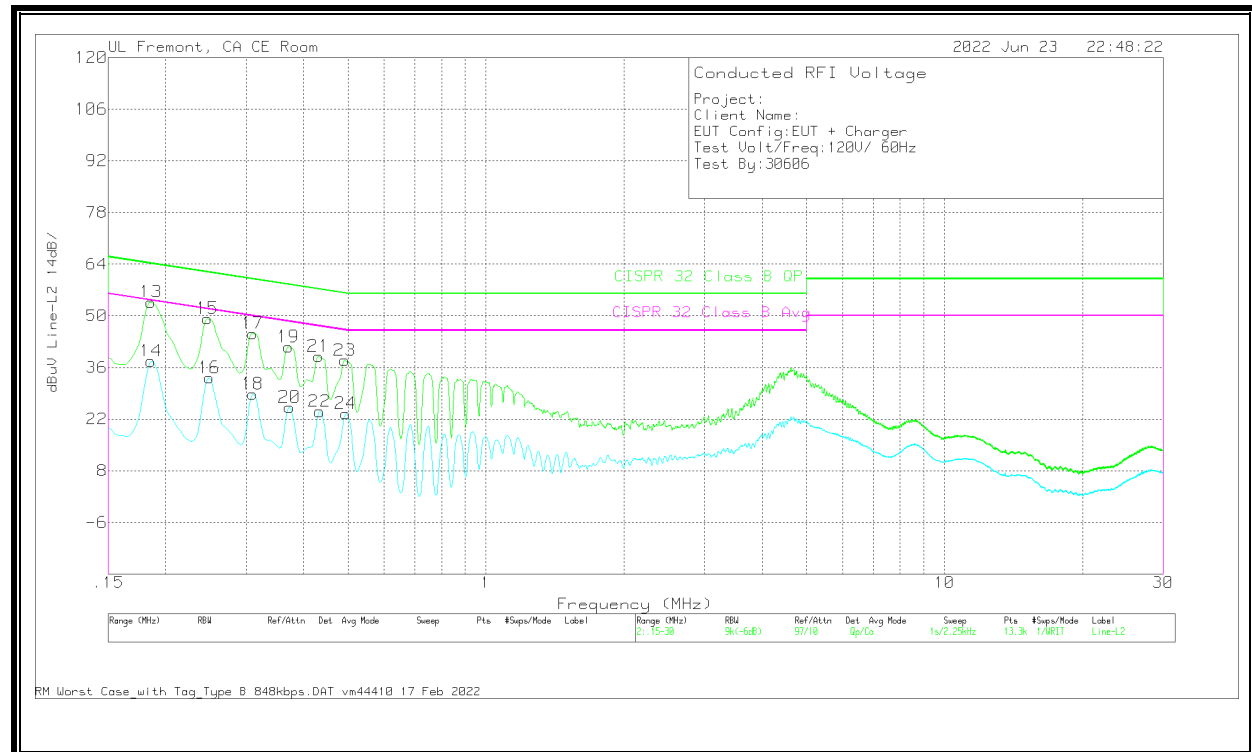
Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

10.1.6. TAG MODE, Type B 848 Kbps, Antenna Port Terminated**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9K-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.186	27.84	Ca	.1	0	10.1	38.04	-	-	54.21	-16.17
4	.249	23.82	Ca	.1	0	9.5	33.42	-	-	51.79	-18.37
6	.3098	19.5	Ca	.1	0	9.5	29.1	-	-	49.98	-20.88
8	.3728	15.68	Ca	0	0	9.5	25.18	-	-	48.44	-23.26
10	.4335	14.02	Ca	0	0	9.5	23.52	-	-	47.19	-23.67
12	.4943	13.67	Ca	0	0	9.5	23.17	-	-	46.1	-22.93
1	.186	44	Qp	.1	0	10.1	54.2	64.21	-10.01	-	-
3	.2468	40.06	Qp	.1	0	9.5	49.66	61.87	-12.21	-	-
5	.3098	35.91	Qp	.1	0	9.5	45.51	59.98	-14.47	-	-
7	.3705	32.18	Qp	0	0	9.5	41.68	58.49	-16.81	-	-
9	.4313	29.65	Qp	0	0	9.5	39.15	57.23	-18.08	-	-
11	.4898	28.82	Qp	0	0	9.5	38.32	56.17	-17.85	-	-

Qp - Quasi-Peak detector

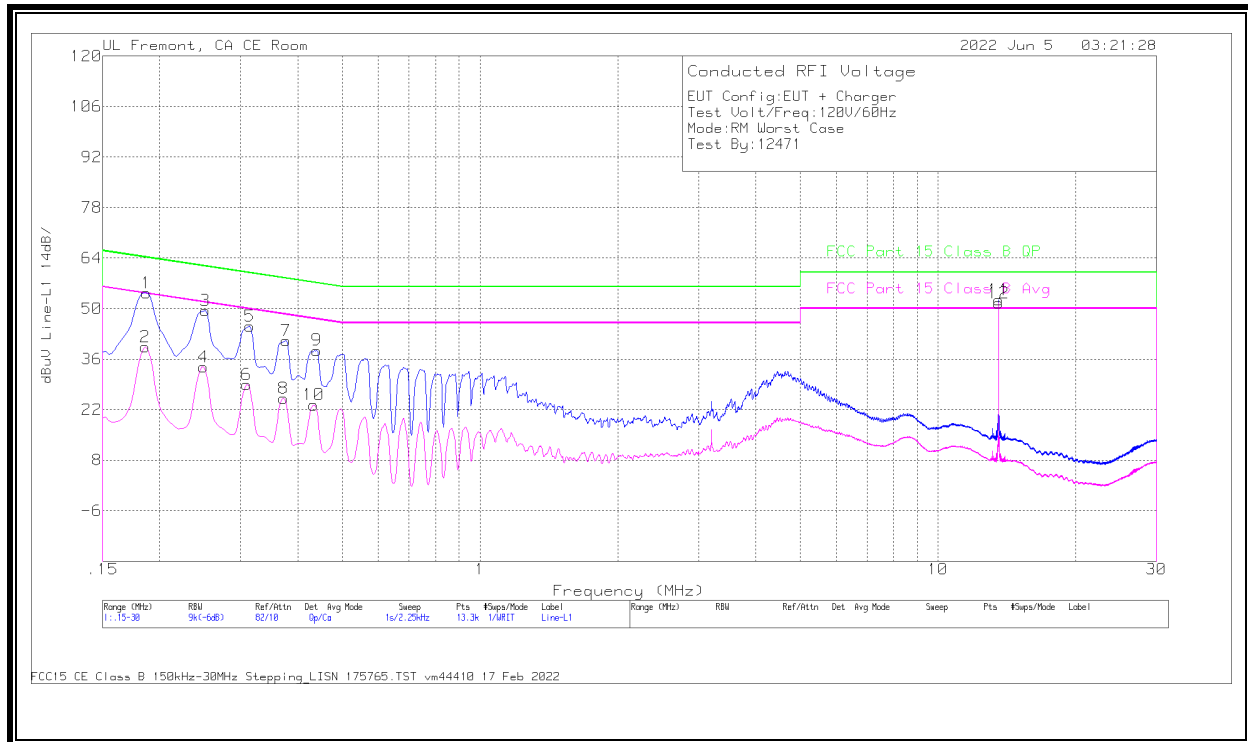
Ca - CISPR average detection

LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)	
14	.186	27.51	Ca	.1	0	10.1	37.71	-	-	54.21	-16.5	
16	.249	23.59	Ca	.1	0	9.5	33.19	-	-	51.79	-18.6	
18	.3098	19.29	Ca	0	0	9.5	28.79	-	-	49.98	-21.19	
20	.3728	15.69	Ca	0	0	9.5	25.19	-	-	48.44	-23.25	
22	.4335	14.57	Ca	0	0	9.5	24.07	-	-	47.19	-23.12	
24	.4943	14	Ca	0	0	9.5	23.5	-	-	46.1	-22.6	
13	.186	43.52	Qp	.1	0	10.1	53.72	64.21	-10.49	-	-	
15	.2468	39.65	Qp	.1	0	9.5	49.25	61.87	-12.62	-	-	
17	.3098	35.69	Qp	0	0	9.5	45.19	59.98	-14.79	-	-	
19	.3705	32.05	Qp	0	0	9.5	41.55	58.49	-16.94	-	-	
21	.4313	29.54	Qp	0	0	9.5	39.04	57.23	-18.19	-	-	
23	.492	28.44	Qp	0	0	9.5	37.94	56.13	-18.19	-	-	

Qp - Quasi-Peak detector

Ca - CISPR average detection

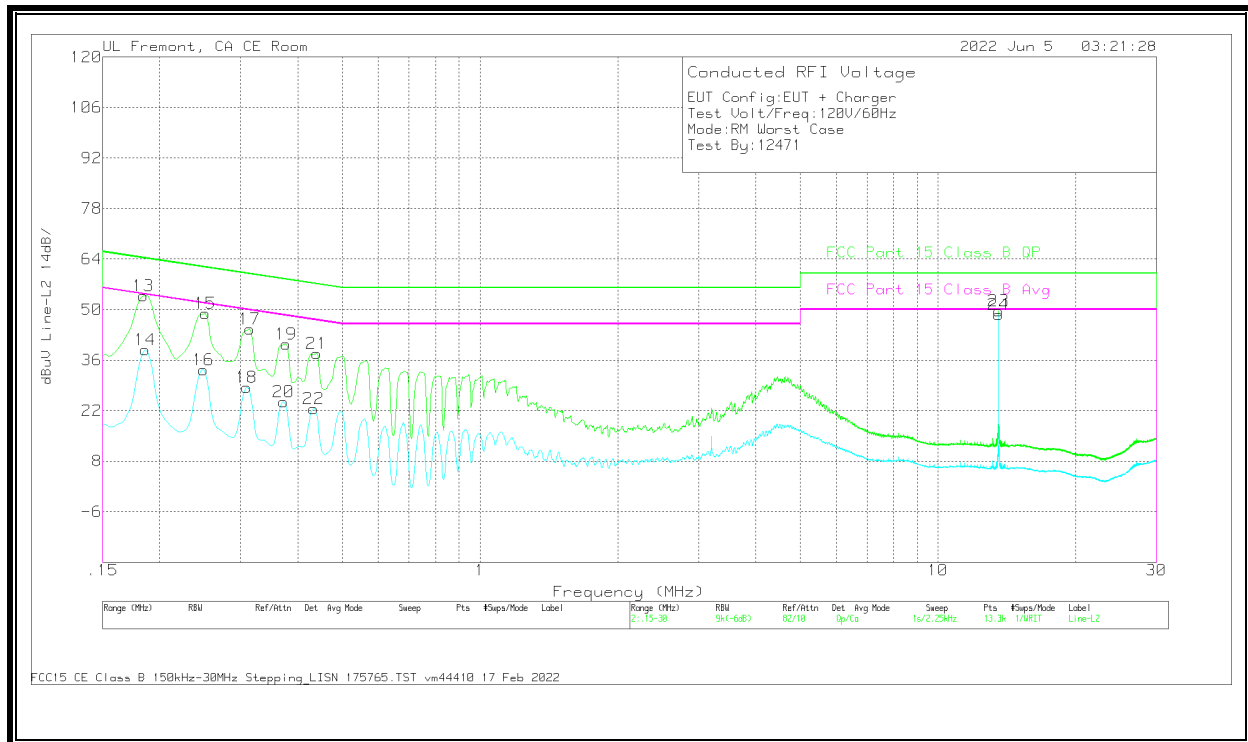
10.2. SECONDARY ANTENNA**10.2.1. READER MODE, Type B 848 Kbps, with Antenna****LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22(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	.186	29.2	Ca	.1	0	10.1	39.4	-	-	54.21	-14.81
4	.249	24.4	Ca	0	0	9.5	33.9	-	-	51.79	-17.89
6	.3098	19.47	Ca	0	0	9.5	28.97	-	-	49.98	-21.01
8	.3728	15.58	Ca	0	0	9.5	25.08	-	-	48.44	-23.36
10	.4335	13.82	Ca	0	0	9.5	23.32	-	-	47.19	-23.87
12	13.56	41.69	Ca	.1	.2	9.5	51.49	-	-	50	1.49
1	.1871	44.13	Qp	.1	0	10.1	54.33	64.16	-9.83	-	-
3	.2513	39.94	Qp	0	0	9.5	49.44	61.72	-12.28	-	-
5	.3143	35.59	Qp	0	0	9.5	45.09	59.86	-14.77	-	-
7	.3773	31.59	Qp	0	0	9.5	41.09	58.34	-17.25	-	-
9	.4403	28.94	Qp	0	0	9.5	38.44	57.06	-18.62	-	-
11	13.56	42.6	Qp	.1	.2	9.5	52.4	60	-7.6	-	-

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.

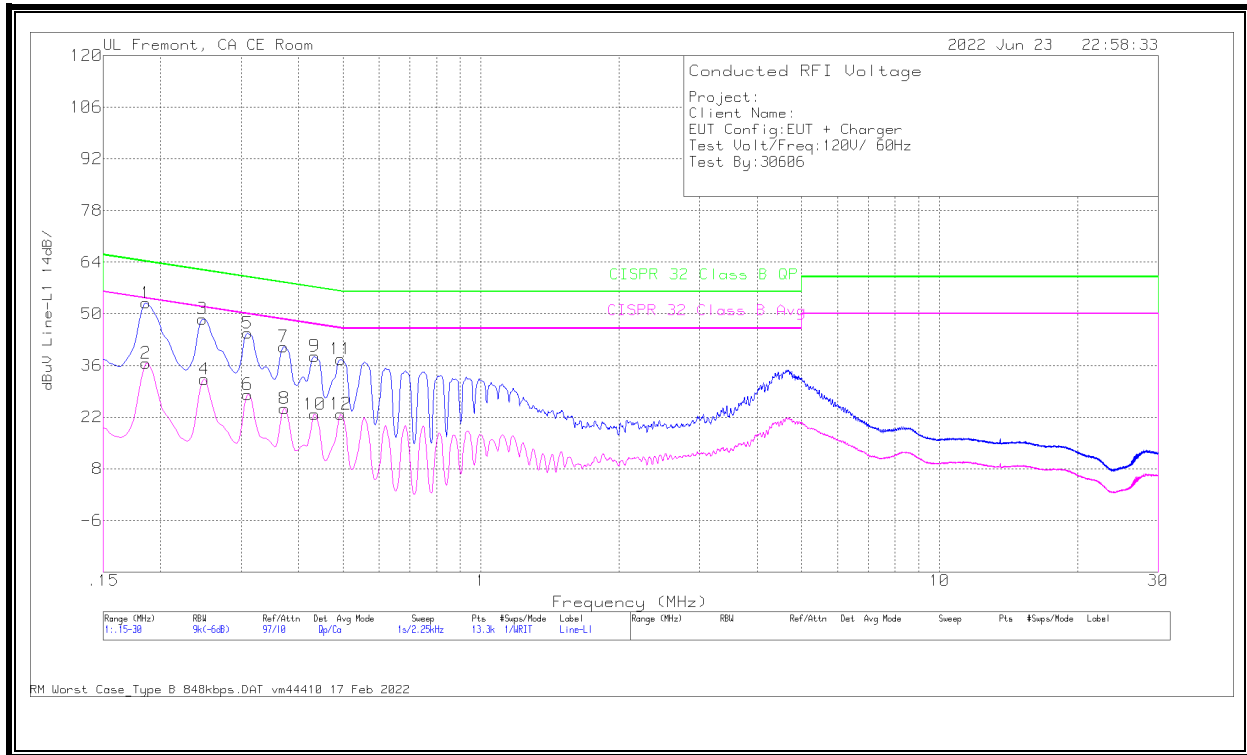
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22(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	.186	28.72	Ca	.1	0	10.1	38.92	-	-	54.21	-15.29
16	.249	23.89	Ca	0	0	9.5	33.39	-	-	51.79	-18.4
18	.3098	19.02	Ca	0	0	9.5	28.52	-	-	49.98	-21.46
20	.3728	14.92	Ca	0	0	9.5	24.42	-	-	48.44	-24.02
22	.4335	13.09	Ca	0	0	9.5	22.59	-	-	47.19	-24.6
24	13.56	38.85	Ca	.1	.2	9.5	48.65	-	-	50	-1.35
13	.1838	43.54	Qp	.1	0	10.2	53.84	64.31	-10.47	-	-
15	.2513	39.39	Qp	0	0	9.5	48.89	61.72	-12.83	-	-
17	.3143	35.04	Qp	0	0	9.5	44.54	59.86	-15.32	-	-
19	.3773	30.99	Qp	0	0	9.5	40.49	58.34	-17.85	-	-
21	.4403	28.34	Qp	0	0	9.5	37.84	57.06	-19.22	-	-
23	13.56	39.85	Qp	.1	.2	9.5	49.65	60	-10.35	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

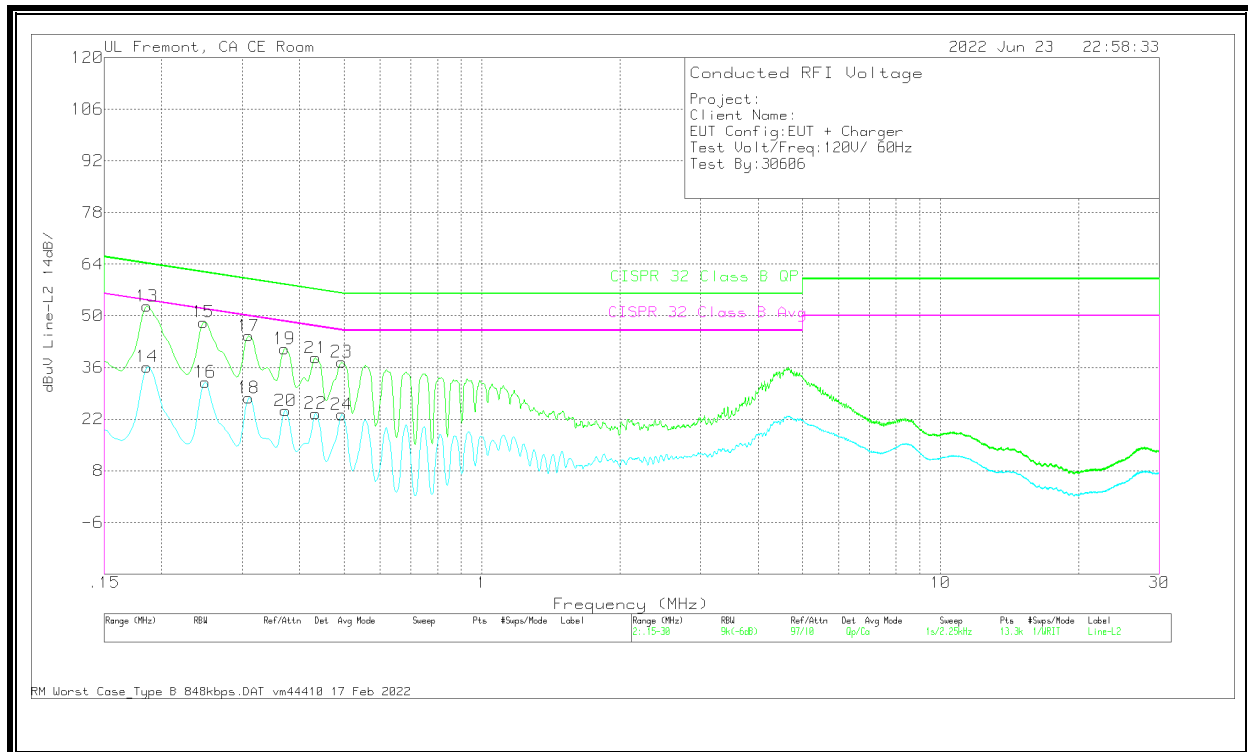
Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

10.2.2. READER MODE, Type B 848 Kbps, Antenna Port Terminated**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.186	26.4	Ca	.1	0	10.1	36.6	-	-	54.21	-17.61
4	.249	22.66	Ca	.1	0	9.5	32.26	-	-	51.79	-19.53
6	.3098	18.52	Ca	.1	0	9.5	28.12	-	-	49.98	-21.86
8	.3728	14.83	Ca	0	0	9.5	24.33	-	-	48.44	-24.11
10	.4335	13.28	Ca	0	0	9.5	22.78	-	-	47.19	-24.41
12	.4943	13.3	Ca	0	0	9.5	22.8	-	-	46.1	-23.3
1	.186	42.73	Qp	.1	0	10.1	52.93	64.21	-11.28	-	-
3	.2468	39.01	Qp	.1	0	9.5	48.61	61.87	-13.26	-	-
5	.3098	35.18	Qp	.1	0	9.5	44.78	59.98	-15.2	-	-
7	.3705	31.54	Qp	0	0	9.5	41.04	58.49	-17.45	-	-
9	.4335	29.01	Qp	0	0	9.5	38.51	57.19	-18.68	-	-
11	.4943	28.21	Qp	0	0	9.5	37.71	56.1	-18.39	-	-

Qp - Quasi-Peak detector

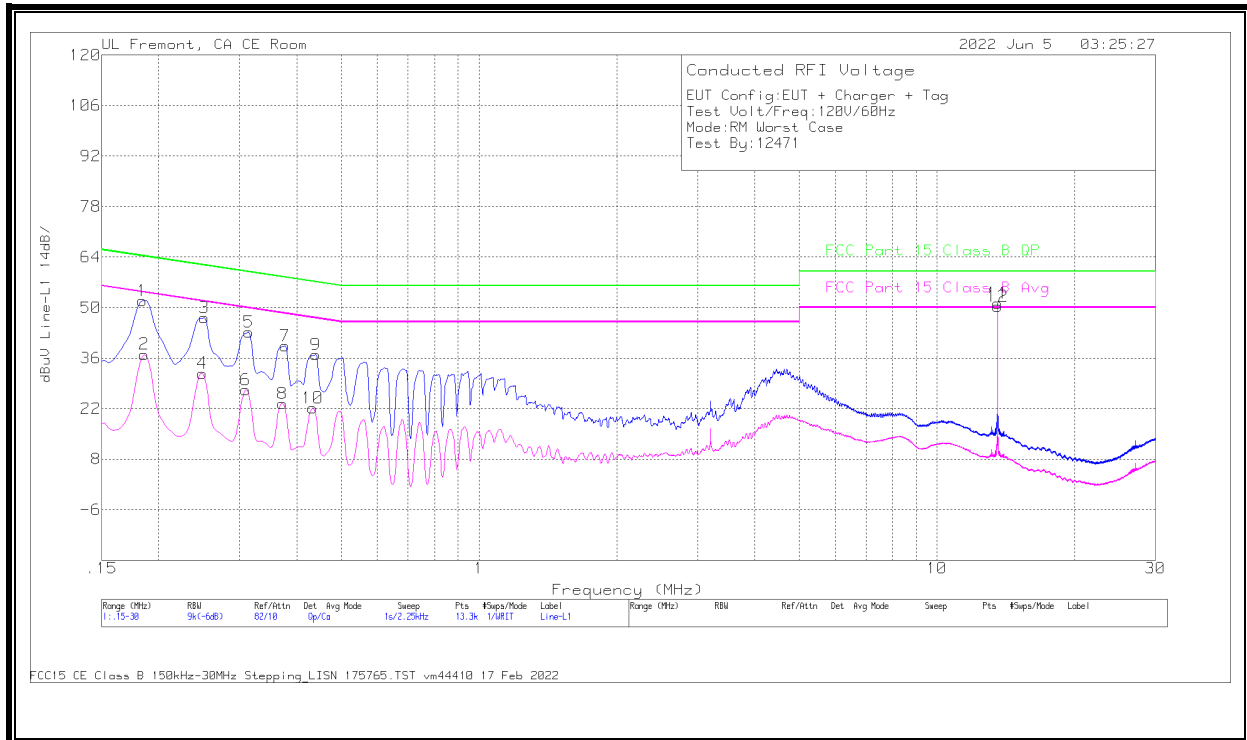
Ca - CISPR average detection

LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)	
14	.186	25.96	Ca	.1	0	10.1	36.16	-	-	54.21	-18.05	
16	.249	22.43	Ca	.1	0	9.5	32.03	-	-	51.79	-19.76	
18	.3098	18.23	Ca	0	0	9.5	27.73	-	-	49.98	-22.25	
20	.3728	14.78	Ca	0	0	9.5	24.28	-	-	48.44	-24.16	
22	.4335	14.02	Ca	0	0	9.5	23.52	-	-	47.19	-23.67	
24	.4943	13.74	Ca	0	0	9.5	23.24	-	-	46.1	-22.86	
13	.186	42.38	Qp	.1	0	10.1	52.58	64.21	-11.63	-	-	
15	.2468	38.67	Qp	.1	0	9.5	48.27	61.87	-13.6	-	-	
17	.3098	35.07	Qp	0	0	9.5	44.57	59.98	-15.41	-	-	
19	.3705	31.54	Qp	0	0	9.5	41.04	58.49	-17.45	-	-	
21	.4335	29.13	Qp	0	0	9.5	38.63	57.19	-18.56	-	-	
23	.4943	27.99	Qp	0	0	9.5	37.49	56.1	-18.61	-	-	

Qp - Quasi-Peak detector

Ca - CISPR average detection

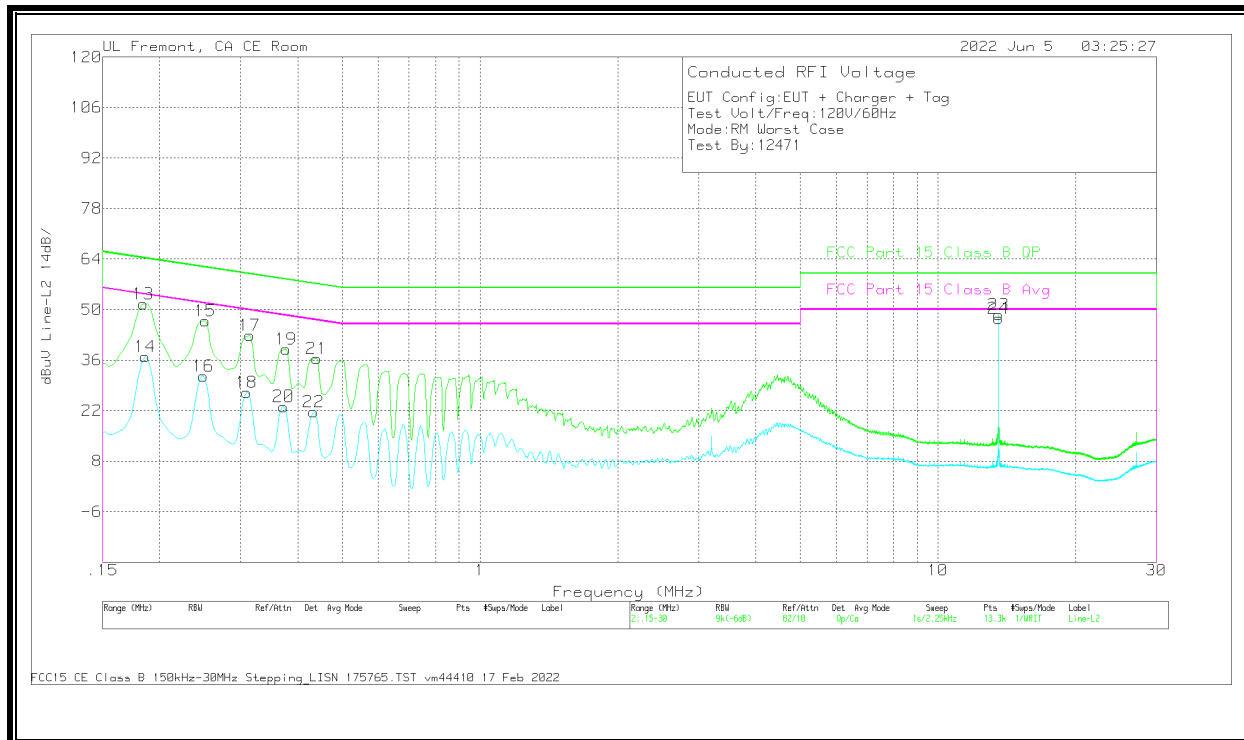
10.2.3. TAG MODE, Type B 848 Kbps, with Antenna**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22(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	.186	26.85	Ca	.1	0	10.1	37.05	-	-	54.21	-17.16
4	.249	22.33	Ca	0	0	9.5	31.83	-	-	51.79	-19.96
6	.3098	17.68	Ca	0	0	9.5	27.18	-	-	49.98	-22.8
8	.3728	13.96	Ca	0	0	9.5	23.46	-	-	48.44	-24.98
10	.4335	12.63	Ca	0	0	9.5	22.13	-	-	47.19	-25.06
12	13.56	40.55	Ca	.1	.2	9.5	50.35	-	-	50	.35
1	.1838	41.62	Qp	.1	0	10.2	51.92	64.31	-12.39	-	-
3	.2513	37.74	Qp	0	0	9.5	47.24	61.72	-14.48	-	-
5	.3143	33.66	Qp	0	0	9.5	43.16	59.86	-16.7	-	-
7	.3773	29.93	Qp	0	0	9.5	39.43	58.34	-18.91	-	-
9	.4403	27.5	Qp	0	0	9.5	37	57.06	-20.06	-	-
11	13.56	41.46	Qp	.1	.2	9.5	51.26	60	-8.74	-	-

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.

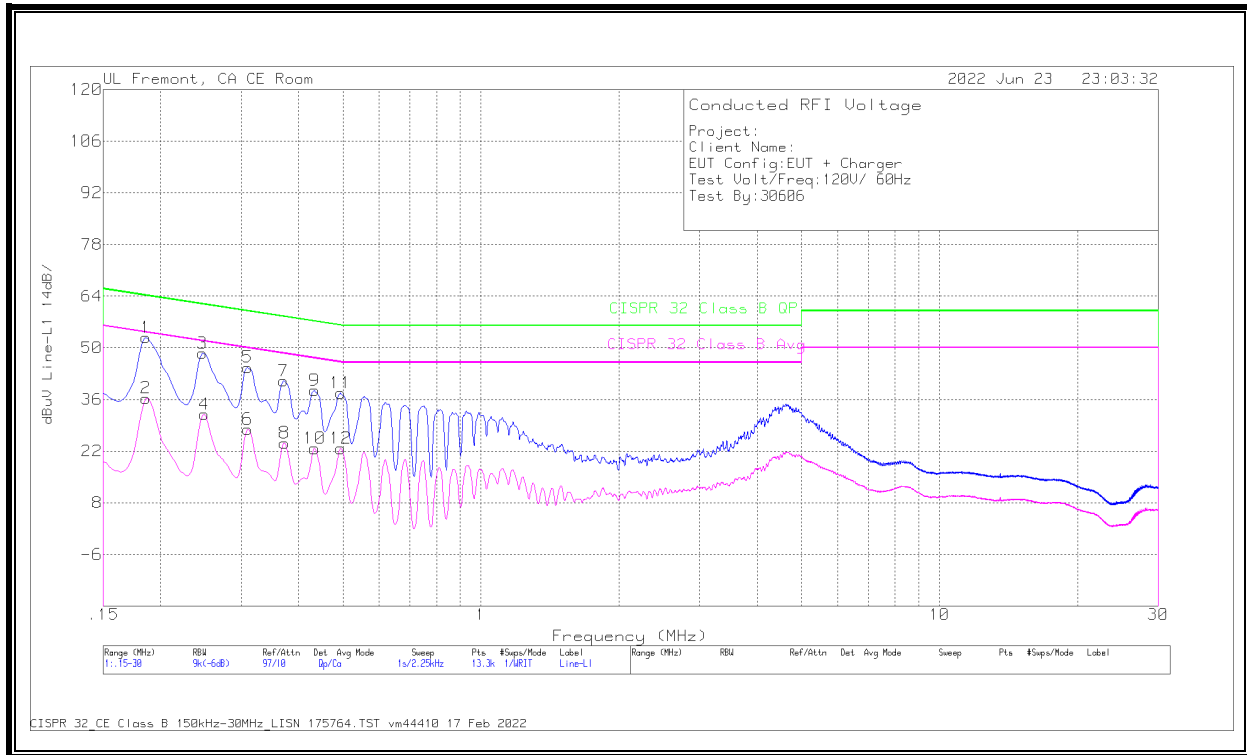
LINE 2 RESULTS**Worst Emission**

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22(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	.186	26.69	Ca	.1	0	10.1	36.89	-	-	54.21	-17.32
16	.249	22.14	Ca	0	0	9.5	31.64	-	-	51.79	-20.15
18	.3098	17.56	Ca	0	0	9.5	27.06	-	-	49.98	-22.92
20	.3728	13.64	Ca	0	0	9.5	23.14	-	-	48.44	-25.3
22	.4335	12.1	Ca	0	0	9.5	21.6	-	-	47.19	-25.59
24	13.56	37.73	Ca	.1	.2	9.5	47.53	-	-	50	-2.47
13	.1838	41.31	Qp	.1	0	10.2	51.61	64.31	-12.7	-	-
15	.2513	37.44	Qp	0	0	9.5	46.94	61.72	-14.78	-	-
17	.3143	33.35	Qp	0	0	9.5	42.85	59.86	-17.01	-	-
19	.3773	29.53	Qp	0	0	9.5	39.03	58.34	-19.31	-	-
21	.4403	27.01	Qp	0	0	9.5	36.51	57.06	-20.55	-	-
23	13.56	38.74	Qp	.1	.2	9.5	48.54	60	-11.46	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

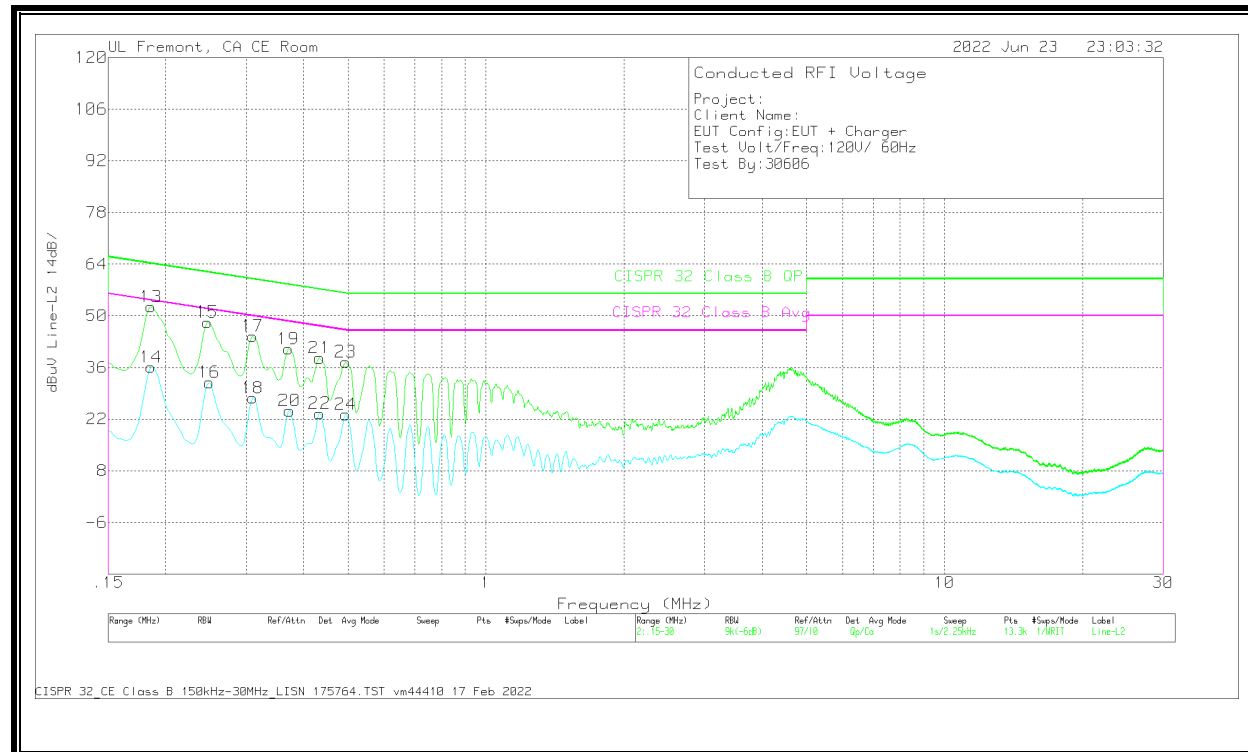
Note: 13.56MHz is a fundamental frequency of the EUT. Data under the following section indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

10.2.4. TAG MODE Type B 848 Kbps, Antenna Port Terminated**LINE 1 RESULTS****Worst Emission**

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175764 LISN L1 dB	C1&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
2	.186	26.13	Ca	.1	0	10.1	36.33	-	-	54.21	-17.88
4	.249	22.37	Ca	.1	0	9.5	31.97	-	-	51.79	-19.82
6	.3098	18.33	Ca	.1	0	9.5	27.93	-	-	49.98	-22.05
8	.3728	14.7	Ca	0	0	9.5	24.2	-	-	48.44	-24.24
10	.4335	13.22	Ca	0	0	9.5	22.72	-	-	47.19	-24.47
12	.4943	13.21	Ca	0	0	9.5	22.71	-	-	46.1	-23.39
1	.186	42.58	Qp	.1	0	10.1	52.78	64.21	-11.43	-	-
3	.2468	38.91	Qp	.1	0	9.5	48.51	61.87	-13.36	-	-
5	.3098	35.09	Qp	.1	0	9.5	44.69	59.98	-15.29	-	-
7	.3705	31.5	Qp	0	0	9.5	41	58.49	-17.49	-	-
9	.4335	28.96	Qp	0	0	9.5	38.46	57.19	-18.73	-	-
11	.4943	28.24	Qp	0	0	9.5	37.74	56.1	-18.36	-	-

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	175764 LISN L2 dB	C2&C3 cable dB	207996 Limiter 9k-600M 6-2-22 (dB)	Corrected Reading dBuV	CISPR 32 Class B QP dBuV	Margin (dB)	CISPR 32 Class B Avg dBuV	Margin (dB)
14	.186	25.88	Ca	.1	0	10.1	36.08	-	-	54.21	-18.13
16	.249	22.31	Ca	.1	0	9.5	31.91	-	-	51.79	-19.88
18	.3098	18.21	Ca	0	0	9.5	27.71	-	-	49.98	-22.27
20	.3728	14.75	Ca	0	0	9.5	24.25	-	-	48.44	-24.19
22	.4335	13.99	Ca	0	0	9.5	23.49	-	-	47.19	-23.7
24	.4943	13.72	Ca	0	0	9.5	23.22	-	-	46.1	-22.88
13	.186	42.24	Qp	.1	0	10.1	52.44	64.21	-11.77	-	-
15	.2468	38.61	Qp	.1	0	9.5	48.21	61.87	-13.66	-	-
17	.3098	34.96	Qp	0	0	9.5	44.46	59.98	-15.52	-	-
19	.3705	31.52	Qp	0	0	9.5	41.02	58.49	-17.47	-	-
21	.4335	29.07	Qp	0	0	9.5	38.57	57.19	-18.62	-	-
23	.4943	27.97	Qp	0	0	9.5	37.47	56.1	-18.63	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

11. SETUP PHOTOS

Please refer to 14040863-EP1V1 for setup photos.

END OF TEST REPORT