TEST REPORT

Report Number. : 14040868-E14V2

Applicant	:	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A2632 (Parent Model, Full Test) A2885, A2886, A2887, A2888 (Variant Models)
FCC ID	:	BCG-E8139A (Parent Model) BCG-E8146A, BCG-E8147A, BCG-E8148A (Variant Models)
IC	:	579C-E8139A (Parent Model) 579C-E8146A, 579C-E8147A, 579C-E8148A (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:
August 02, 2022

Prepared by:
UL LLC.
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ACCREDITED
CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	7/25/2022	Initial Issue	Chin Pang
V2	8/2/2022	Address TCB's question on report number not match cover page	Chin Pang

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UL LLC. FORM NO: CCSUP4701I
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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:	A2632 (Parent Model, Full Test) A2885, A2886, A2887, A2888 (Variant Models)
BRAND:	APPLE
FCC ID:	BCG-E8139A (Parent Model) BCG-E8146A, BCG-E8147A, BCG-E8148A (Variant Models)
IC ID:	579C-E8139A (Parent Model) 579C-E8146A, 579C-E8147A, 579C-E8148A (Variant Models)
SERIAL NUMBER:	LFKGVKGW4X (Conducted), KCF16NH2M0 (Radiated)
SAMPLE RECEIPT DATE:	MARCH 18, 2022
DATE TESTED:	JUNE 26, 2022 TO JULY 17, 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:

Chin Pang
Senior Lab Engineer
Consumer Technology Division
UL LLC.

Prepared By:

Chris Xiong
Senior Test Engineer
Consumer Technology Division
UL LLC.

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 LLC. 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 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

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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.

The Model and FCC ID / ISED covered by this report includes:

Parent Model: A2632, FCC ID: BCG-E8139A, IC: 579C-E8139A

Variant Models: A2885, FCC ID: BCG-E8146A, IC: 579C-E8146A
A2886; FCC ID: BCG-E8147A, IC: 579C-E8147A
A2887 & A2888, FCC ID: BCG-E8148A, IC: 579C-E8148A

5.2. MAXIMUM E-FIELD STRENGTH

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

Antenna	Frequency Range (MHz)	Type	Mode	Kbps	E Field at 30m distance (dBuV/m)
Primary	13.56	Type B	Reader	848	28.34
			Tag	848	28.02
			CE	848	26.26
Secondary	13.56	Type B	Reader	848	6.96
			Tag	848	7.04

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 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.

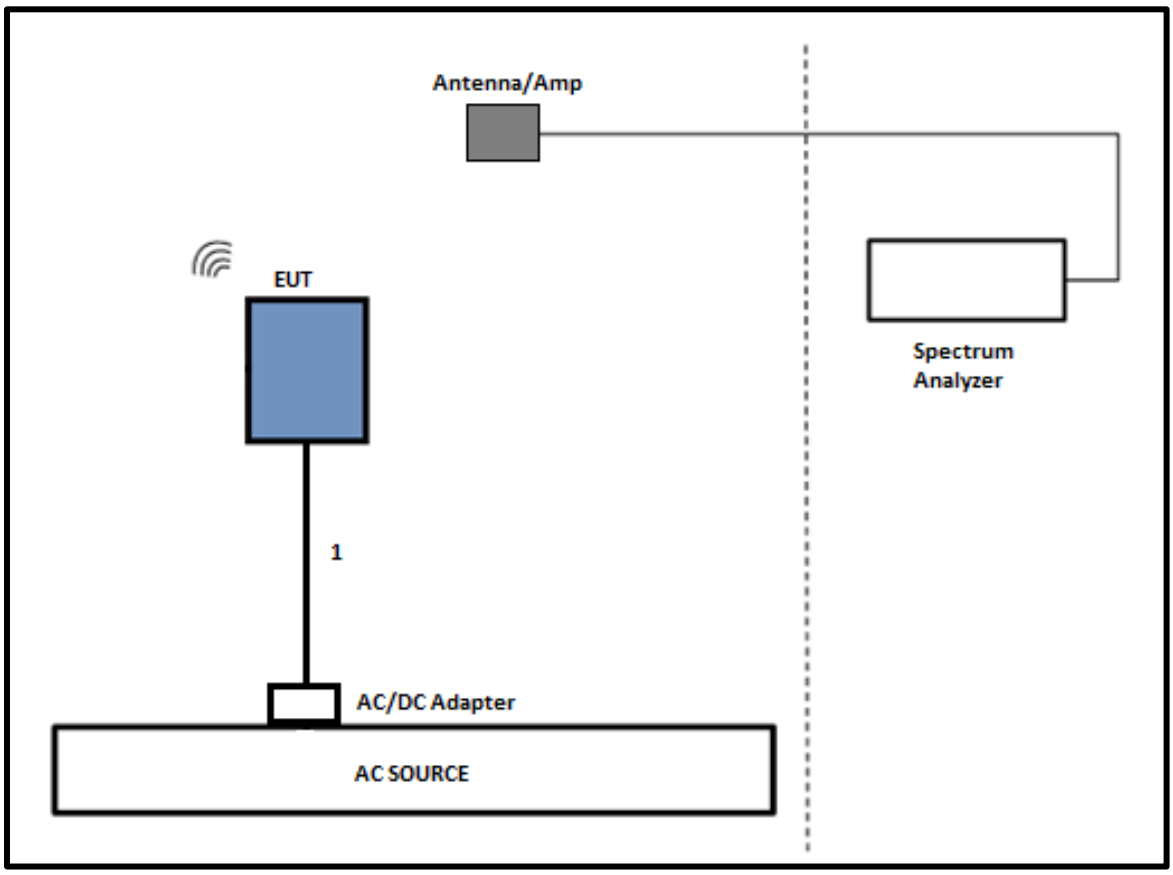
5.4. SUPPORT EQUIPMENT

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

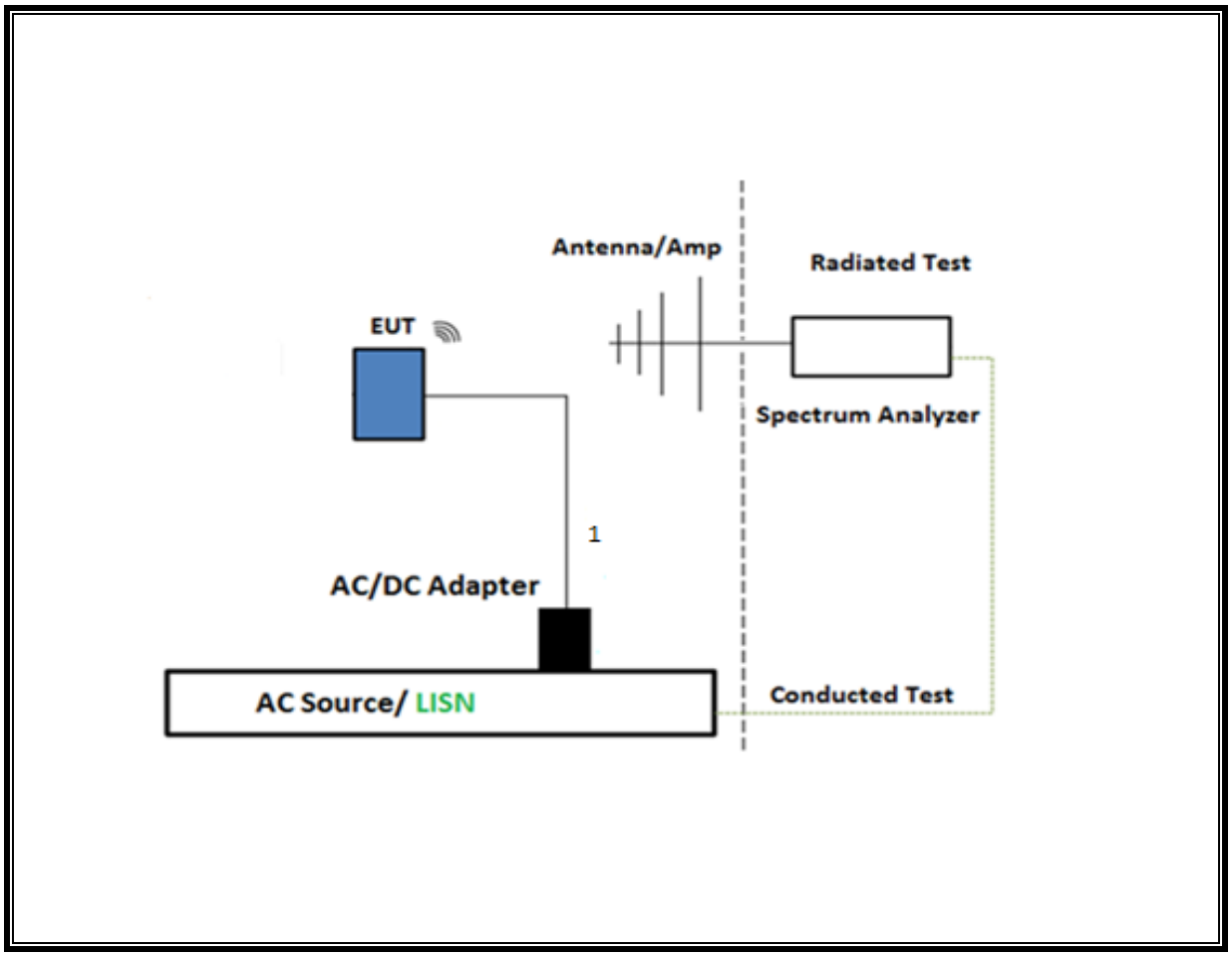
I/O CABLES

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 3GHz	Sunol Sciences Corp	JB3	85150	10/15/2022	10/15/2021
*Amplifier10KHz 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, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp	JB1	80293	07/22/2022	07/22/2021
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	89831	07/22/2022	07/22/2021
EMI Test Receiver	Rohde & Schwarz	ESW44	191428	02/20/2023	02/20/2022
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		

*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

Reader Mode, Type B

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	21.339	24.79

CE Mode, Type B

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	21.570	24.98

TAG Mode

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	21.668	25.06

Secondary Antenna

Reader Mode, Type B

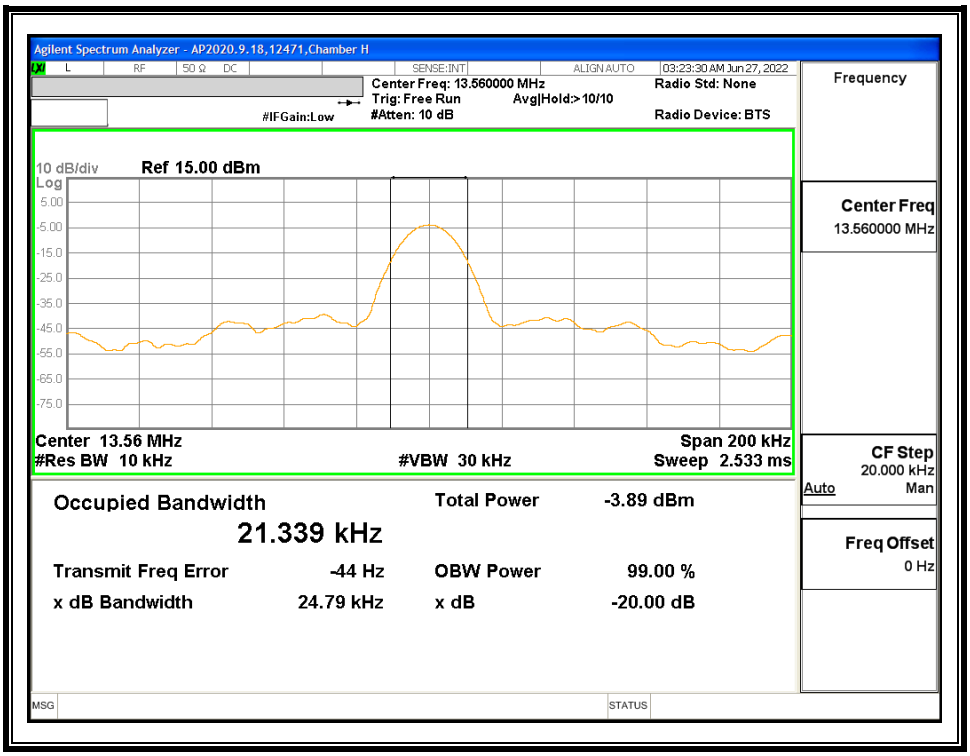
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	22.033	25.17

TAG Mode

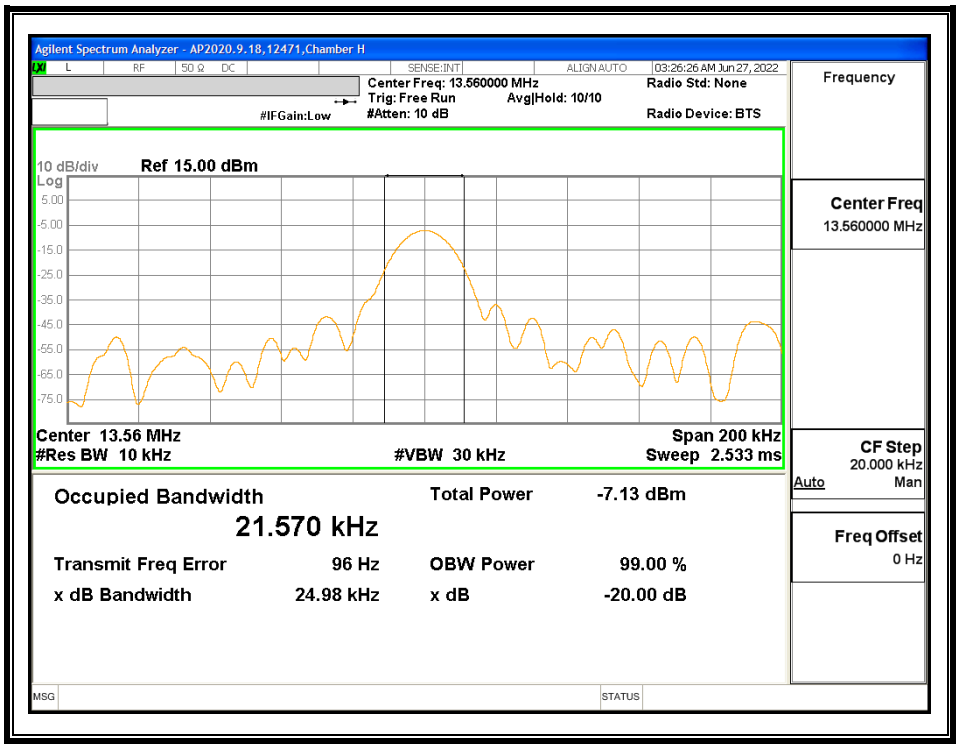
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
848	13.56	22.046	25.12

7.1. PRIMARY ANTENNA

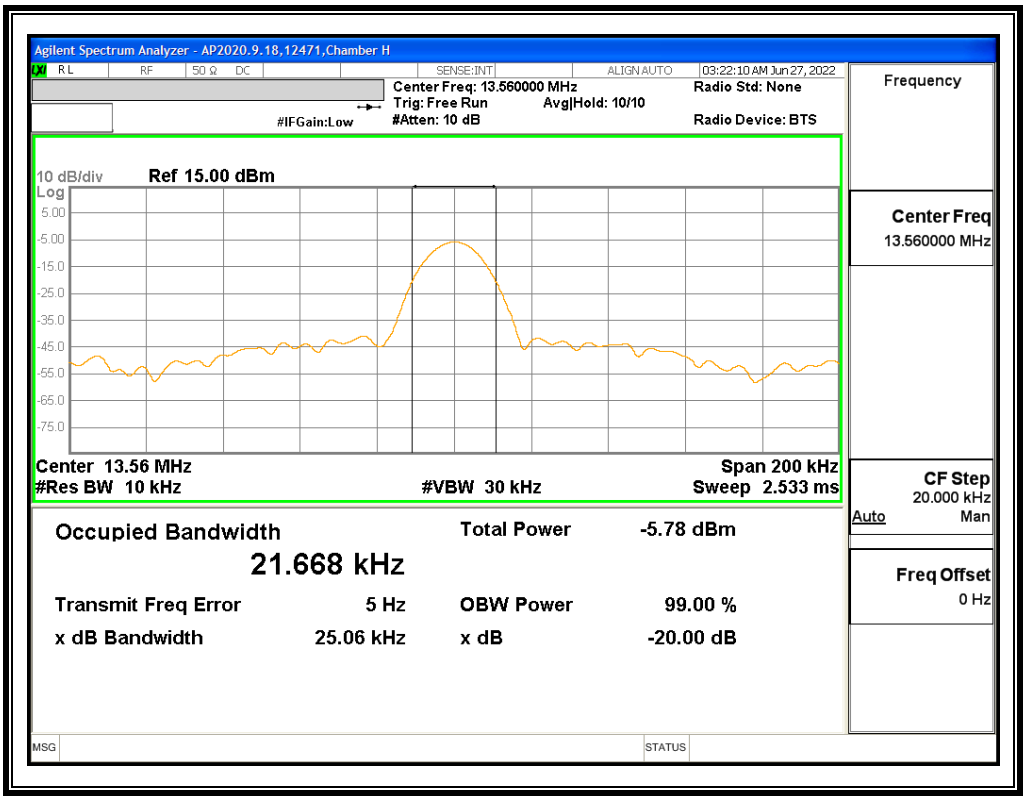
7.1.1. READER MODE, Type B 848 Kbps



7.1.2. CE MODE, Type B 848 Kbps



7.1.3. TAG MODE



7.2. SECONDARY ANTENNA

7.2.1. READER MODE, Type B 848 Kbps

7.2.2. TAG MODE

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 filed 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

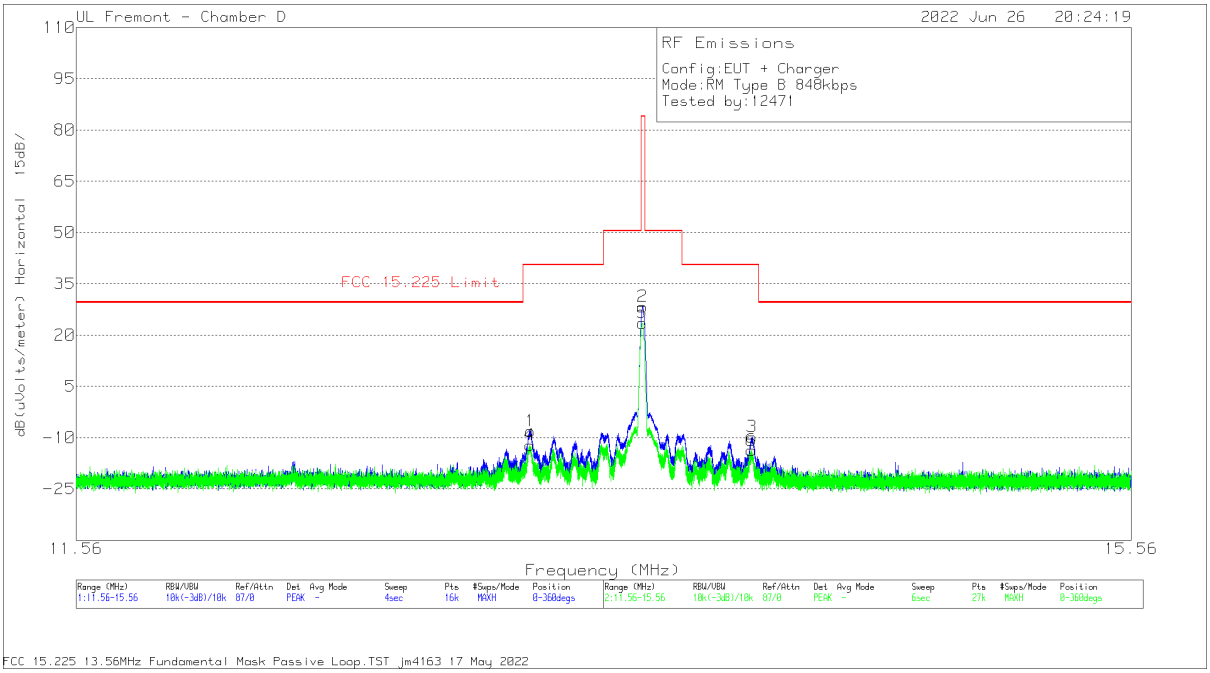
The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 13.56 MHz; therefore, the frequency range was investigated from 0.15 MHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

RESULTS

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

8.2.1. READER MODE, Type B 848 Kbps

FUNDAMENTAL



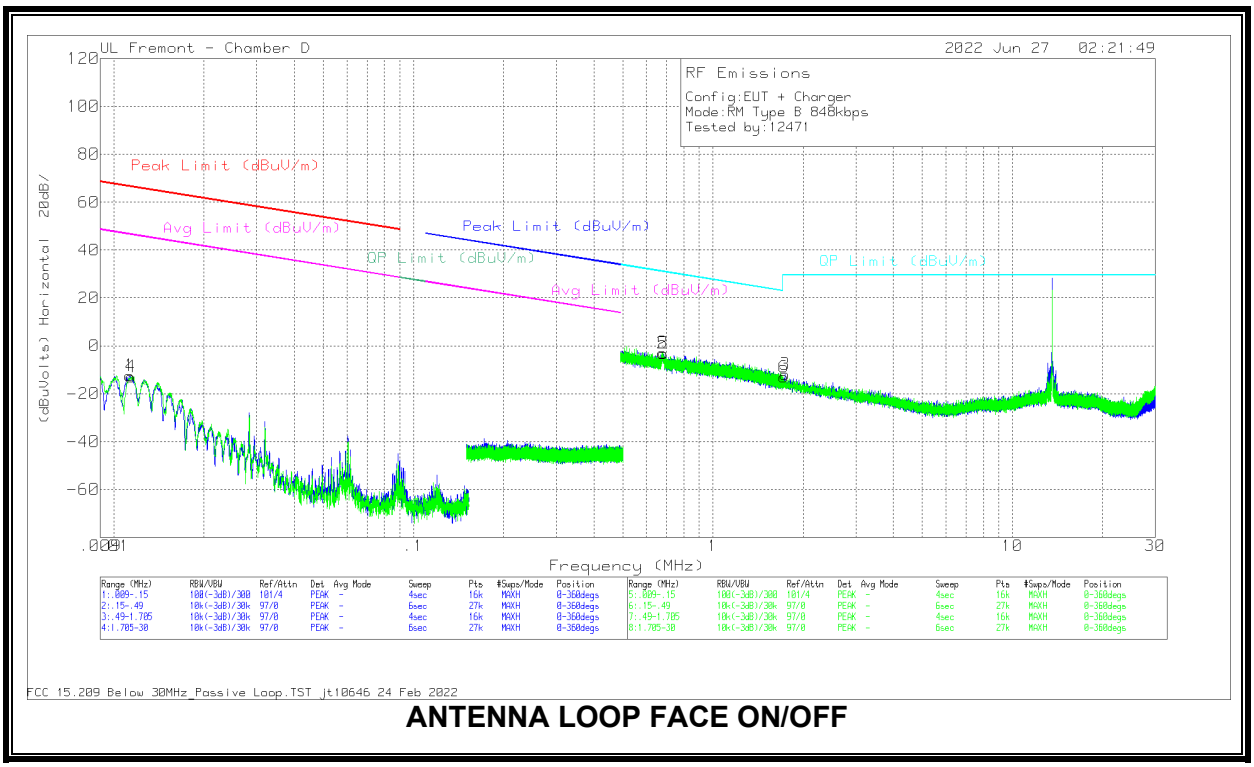
ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
4	13.1347	25.53	Pk	34.2	-31.9	-40	-12.17	40.51	-52.68	0-360	Face-Off
1	13.1385	29.6	Pk	34.2	-31.9	-40	-8.1	40.51	-48.61	0-360	Face-On
5	13.5582	61.36	Pk	34.1	-31.9	-40	23.56	84	-60.44	0-360	Face-Off
2	13.5595	66.14	Pk	34.1	-31.9	-40	28.34	84	-55.66	0-360	Face-On
6	13.9811	24.1	Pk	34.1	-31.9	-40	-13.7	40.51	-54.21	0-360	Face-Off
3	13.9836	28.03	Pk	34.1	-31.9	-40	-9.77	40.51	-50.28	0-360	Face-On

Pk - Peak detector

SPURIOUS EMISSION



ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0113	38.29	Pk	60.1	-30.8	-80	-12.41	66.53	-78.94	46.53	-58.94	0-360	Face-On
4	.0114	37.77	Pk	60.1	-30.8	-80	-12.93	66.44	-79.37	46.44	-59.37	0-360	Face-Off

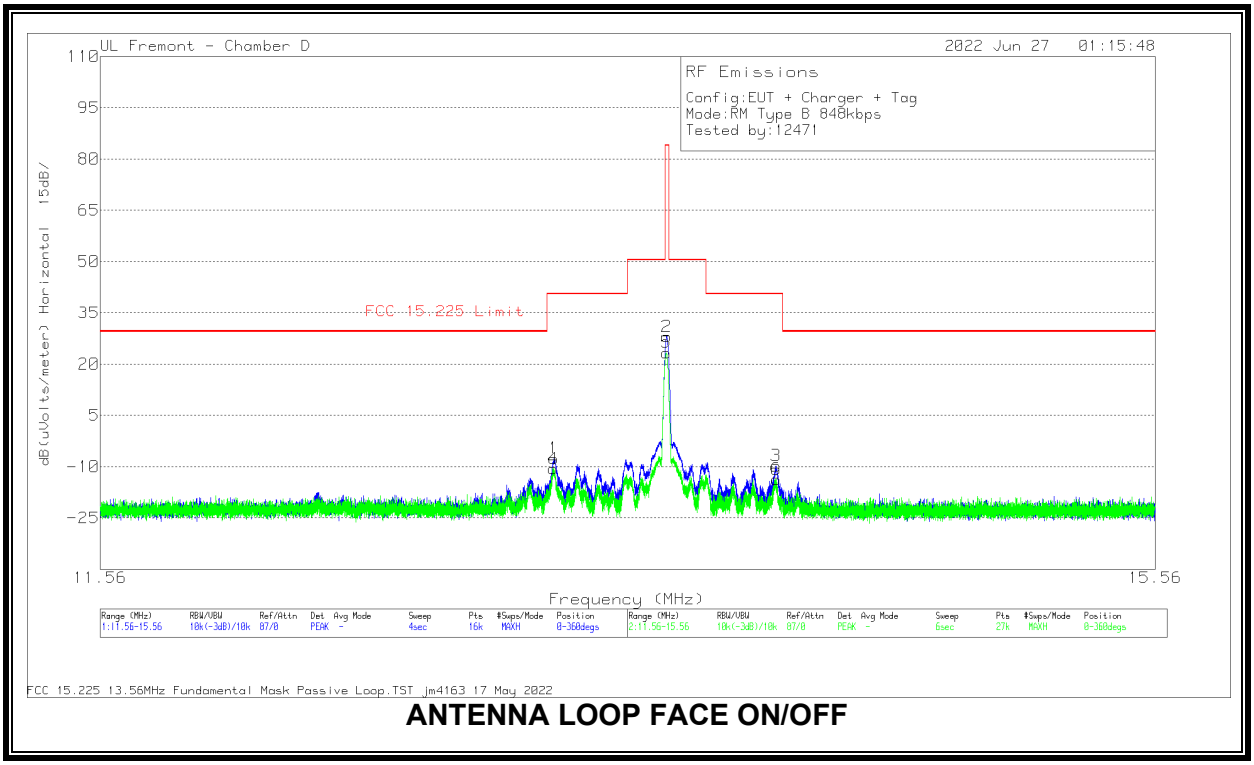
Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
2	.6802	19.6	Pk	49.8	-32.4	-40	-3	30.96	-33.96	0-360	Face-On
5	.6814	19.52	Pk	49.7	-32.4	-40	-3.18	30.94	-34.12	0-360	Face-Off
6	1.7249	16.18	Pk	43.1	-32.3	-40	-13.02	29.5	-42.52	0-360	Face-Off
3	1.7438	17.36	Pk	43	-32.3	-40	-11.94	29.5	-41.44	0-360	Face-On

Pk - Peak detector

8.2.2. TAG MODE

FUNDAMENTAL



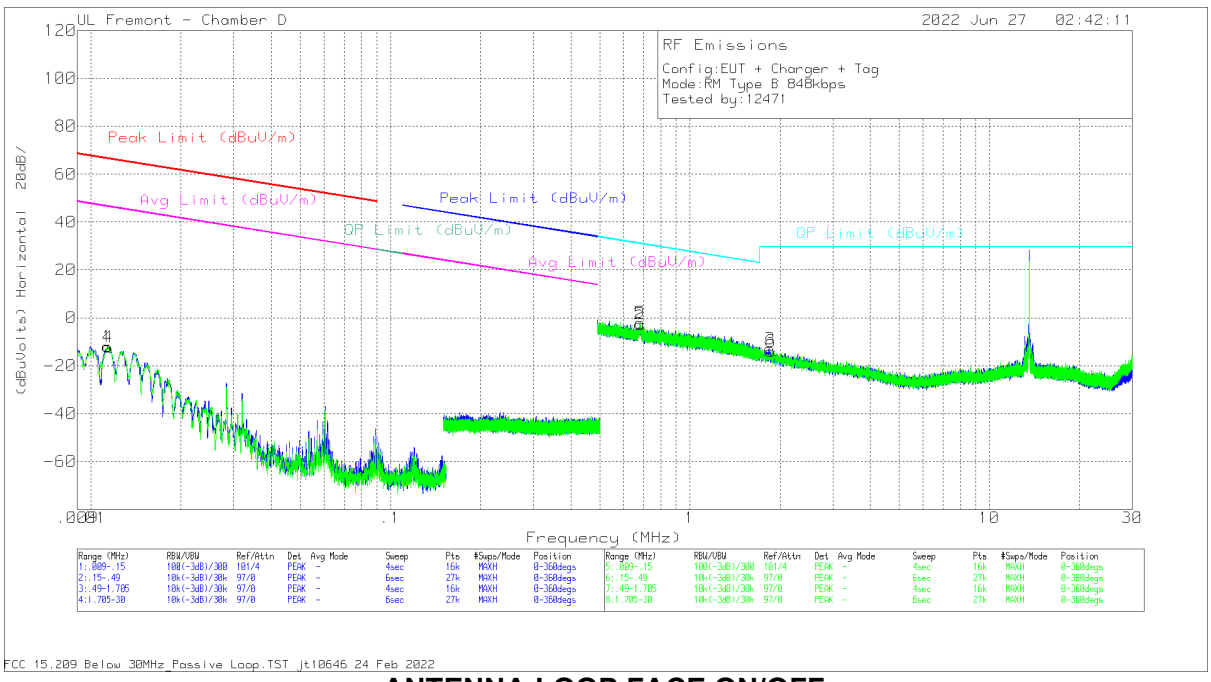
ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
4	13.1331	27.1	Pk	34.2	-31.9	-40	-10.6	40.51	-51.11	0-360	Face0Off
1	13.135	30.13	Pk	34.2	-31.9	-40	-7.57	40.51	-48.08	0-360	Face-On
5	13.5581	61.17	Pk	34.1	-31.9	-40	23.37	84	-60.63	0-360	Face-Off
2	13.5596	65.82	Pk	34.1	-31.9	-40	28.02	84	-55.98	0-360	Face-On
3	13.9833	28.04	Pk	34.1	-31.9	-40	-9.76	40.51	-50.27	0-360	Face-On
6	13.9851	24.1	Pk	34.1	-31.9	-40	-13.7	40.51	-54.21	0-360	Face-Off

Pk - Peak detector

SPURIOUS EMISSION



ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0113	38.72	Pk	60.1	-30.8	-80	-11.98	66.49	-78.47	46.49	-58.47	0-360	Face-On
4	.0114	38.44	Pk	60.1	-30.8	-80	-12.26	66.44	-78.7	46.44	-58.7	0-360	Face-Off

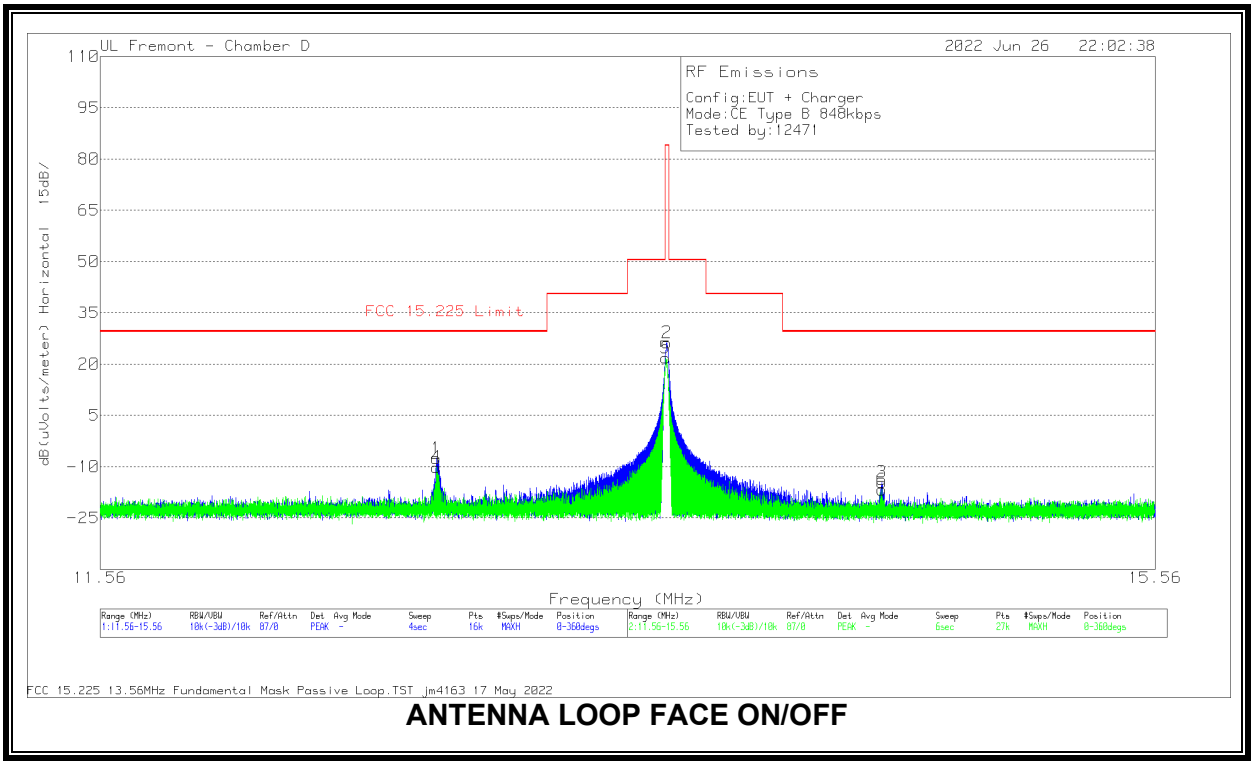
Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
2	.6804	19.97	Pk	49.8	-32.4	-40	-2.63	30.96	-33.59	0-360	Face-Off
5	.6816	20.62	Pk	49.7	-32.4	-40	-2.08	30.94	-33.02	0-360	Face-On
3	1.8496	16.82	Pk	42.4	-32.3	-40	-13.08	29.5	-42.58	0-360	Face-On
6	1.8653	16.02	Pk	42.3	-32.3	-40	-13.98	29.5	-43.48	0-360	Face-Off

Pk - Peak detector

8.2.3. CE MODE, Type B 848 Kbps

FUNDAMENTAL



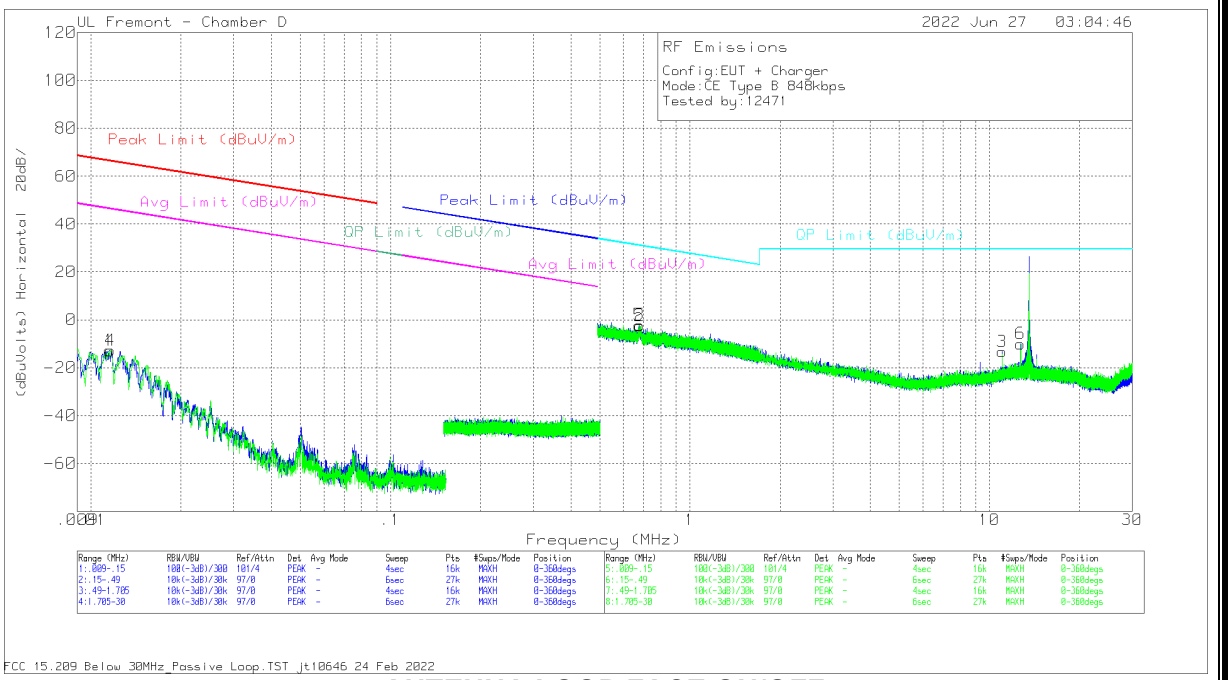
ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
4	12.7074	27.49	Pk	34.2	-31.9	-40	-10.21	29.54	-39.75	0-360	Face-Off
1	12.7085	30.17	Pk	34.2	-31.9	-40	-7.53	29.54	-37.07	0-360	Face-On
5	13.5565	59.64	Pk	34.1	-31.9	-40	21.84	84	-62.16	0-360	Face-Off
2	13.5608	64.06	Pk	34.1	-31.9	-40	26.26	84	-57.74	0-360	Face-On
6	14.4068	21.08	Pk	34.1	-31.9	-40	-16.72	29.54	-46.26	0-360	Face-Off
3	14.407	23.24	Pk	34.1	-31.9	-40	-14.56	29.54	-44.1	0-360	Face-On

Pk - Peak detector

SPURIOUS EMISSION



ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0115	37.85	Pk	60.1	-30.8	-80	-12.85	66.37	-79.22	46.37	-59.22	0-360	Face-Off
4	.0116	37.88	Pk	60.1	-30.8	-80	-12.82	66.29	-79.11	46.29	-59.11	0-360	Face-On

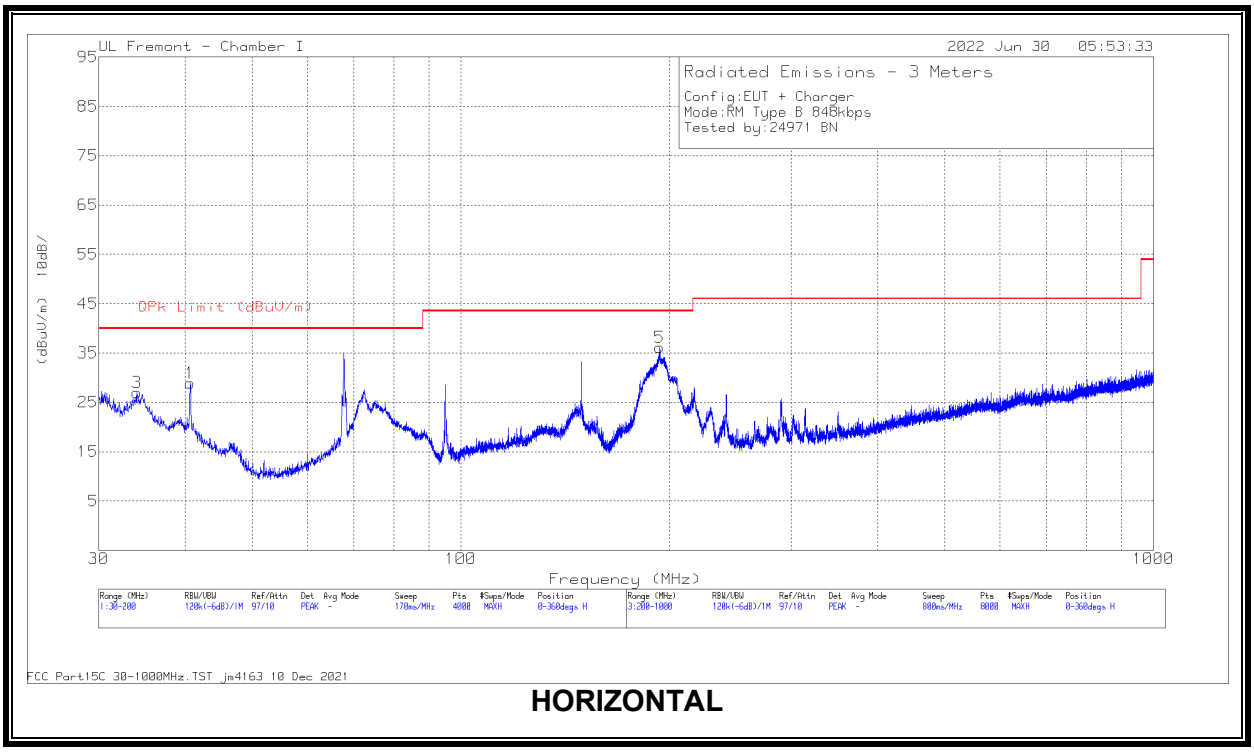
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
5	.6776	20.4	Pk	49.8	-32.4	-40	-2.2	30.99	-33.19	0-360	Face-On
2	.6793	20.19	Pk	49.8	-32.4	-40	-2.41	30.97	-33.38	0-360	Face-Off
3	11.0217	23.82	Pk	34.8	-31.9	-40	-13.28	29.5	-42.78	0-360	Face-Off
6	12.7101	27.4	Pk	34.5	-31.9	-40	-10	29.5	-39.5	0-360	Face-On

Pk - Peak detector

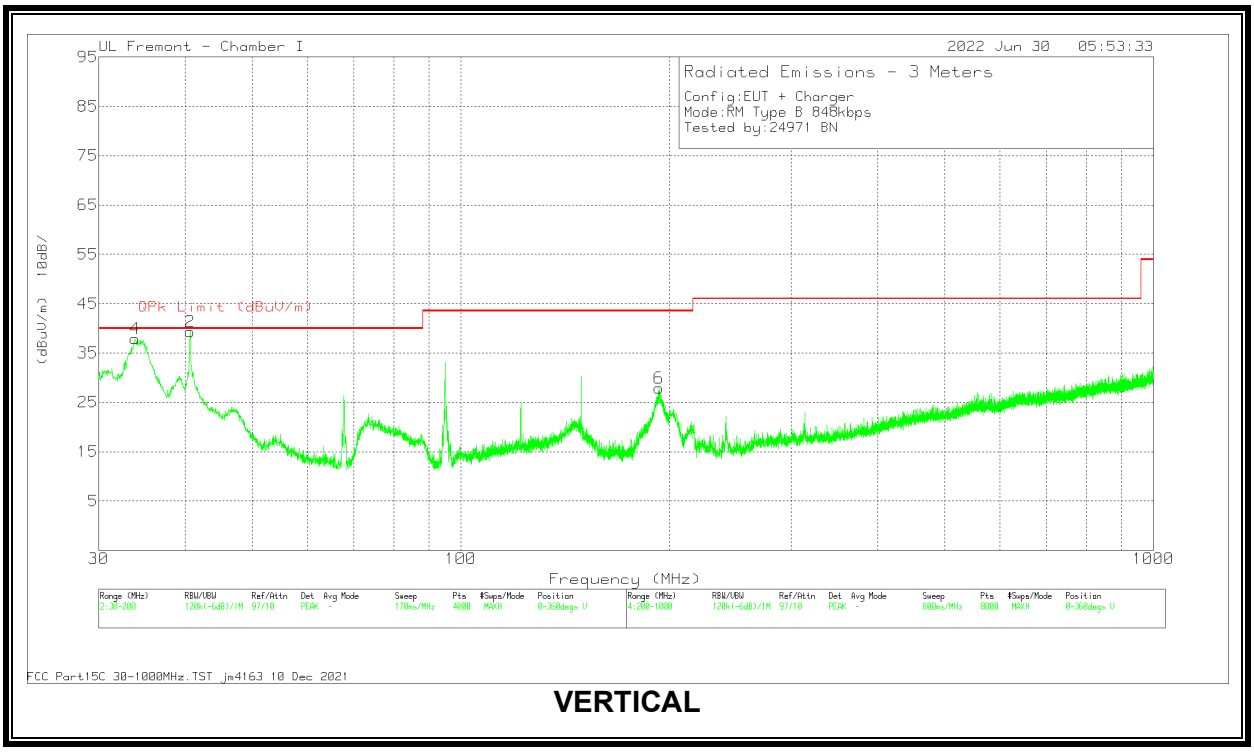
8.3. PRIMARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz

8.3.1. READER MODE, Type B 848 Kbps

SPURIOUS EMISSION



HORIZONTAL



VERTICAL

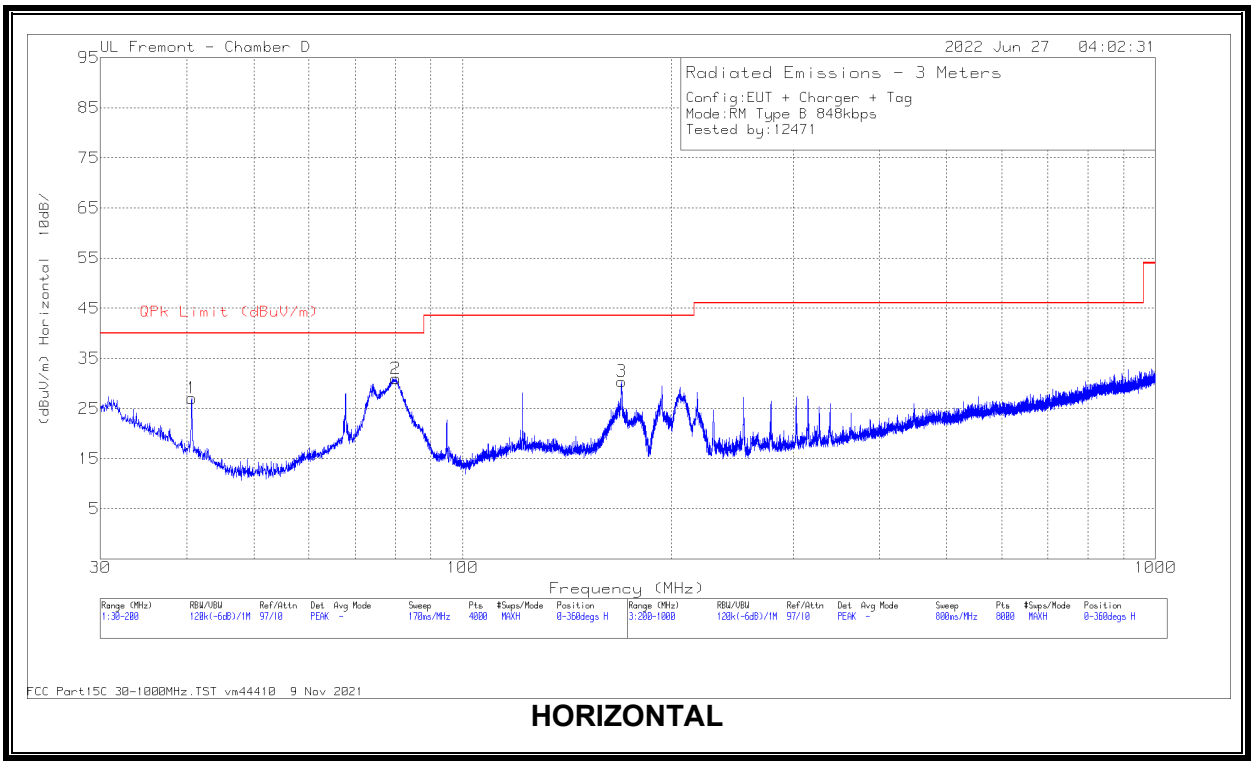
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	85150 AF (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	40.6866	39.24	Qp	19.9	-31.3	27.84	40	-12.16	327	388	H
3	34.1496	28.8	Qp	24.6	-31.4	22	40	-18	291	268	H
4	193.217	43.12	Qp	17.6	-30.3	30.42	43.52	-13.1	227	101	H
2	40.6752	49.1	Qp	19.9	-31.3	37.7	40	-2.3	63	111	V
4	33.9654	40.92	Qp	24.7	-31.4	34.22	40	-5.78	288	103	V
6	193.07	34.86	Qp	17.6	-30.3	22.16	43.52	-21.36	114	100	V

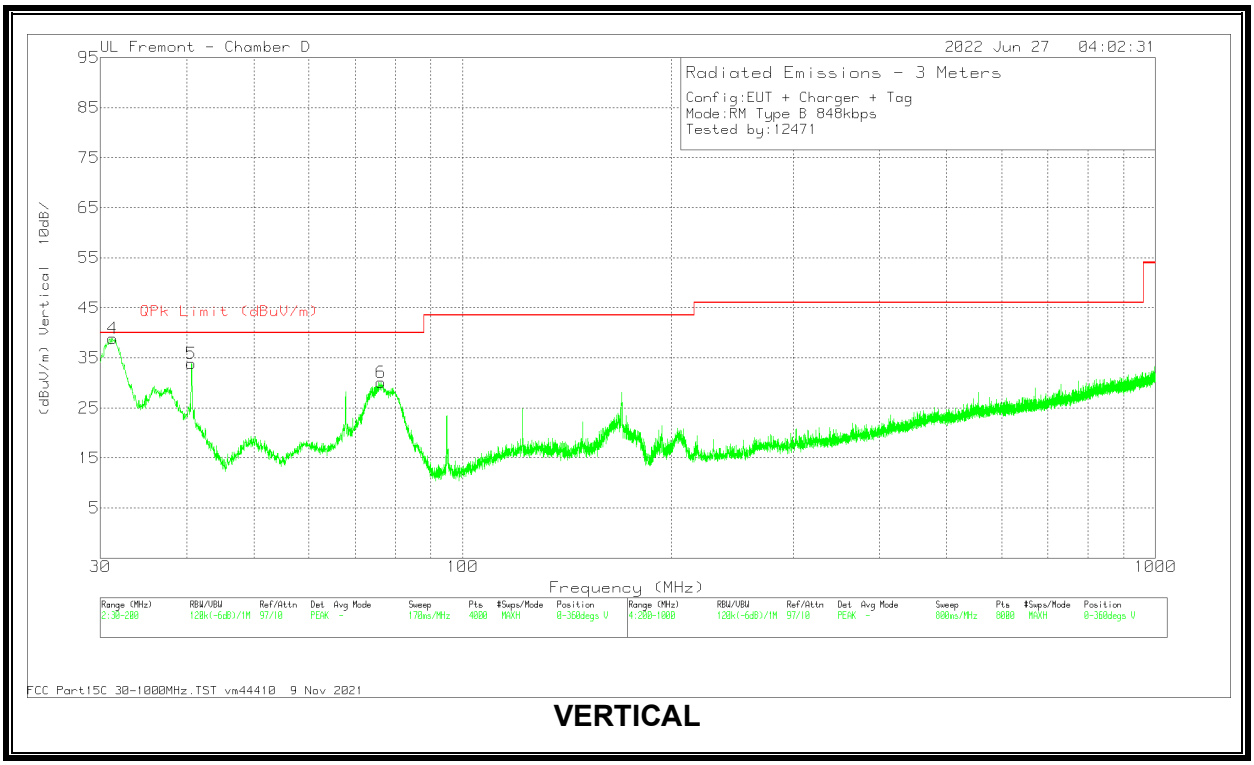
Qp - Quasi-Peak detector

8.3.2. TAG MODE

SPURIOUS EMISSION



HORIZONTAL



VERTICAL

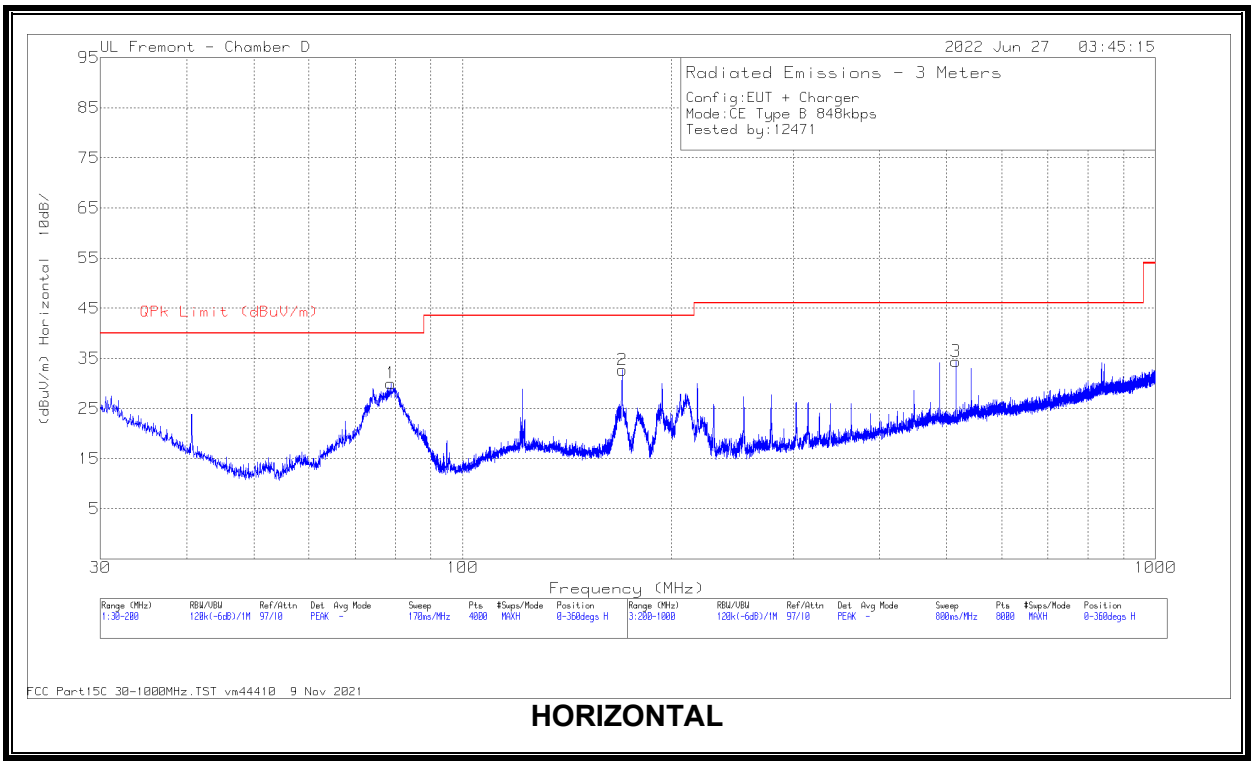
DATA

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
3	* 169.734	42.91	Pk	17.9	-30.4	30.41	43.52	-13.11	0-360	199	H
4	31.2753	43.39	Pk	27.2	-31.7	38.89	40	-1.11	0-360	100	V
	31.3292	40.49	Qp	27.1	-31.7	35.89	40	-4.11	267	106	V
5	40.6278	45.46	Pk	20	-31.6	33.86	40	-6.14	0-360	100	V
1	40.6703	38.66	Pk	20	-31.6	27.06	40	-12.94	0-360	299	H
6	76.252	47.01	Pk	14.3	-31.2	30.11	40	-9.89	0-360	100	V
2	80.1205	48.28	Pk	13.9	-31.2	30.98	40	-9.02	0-360	299	H

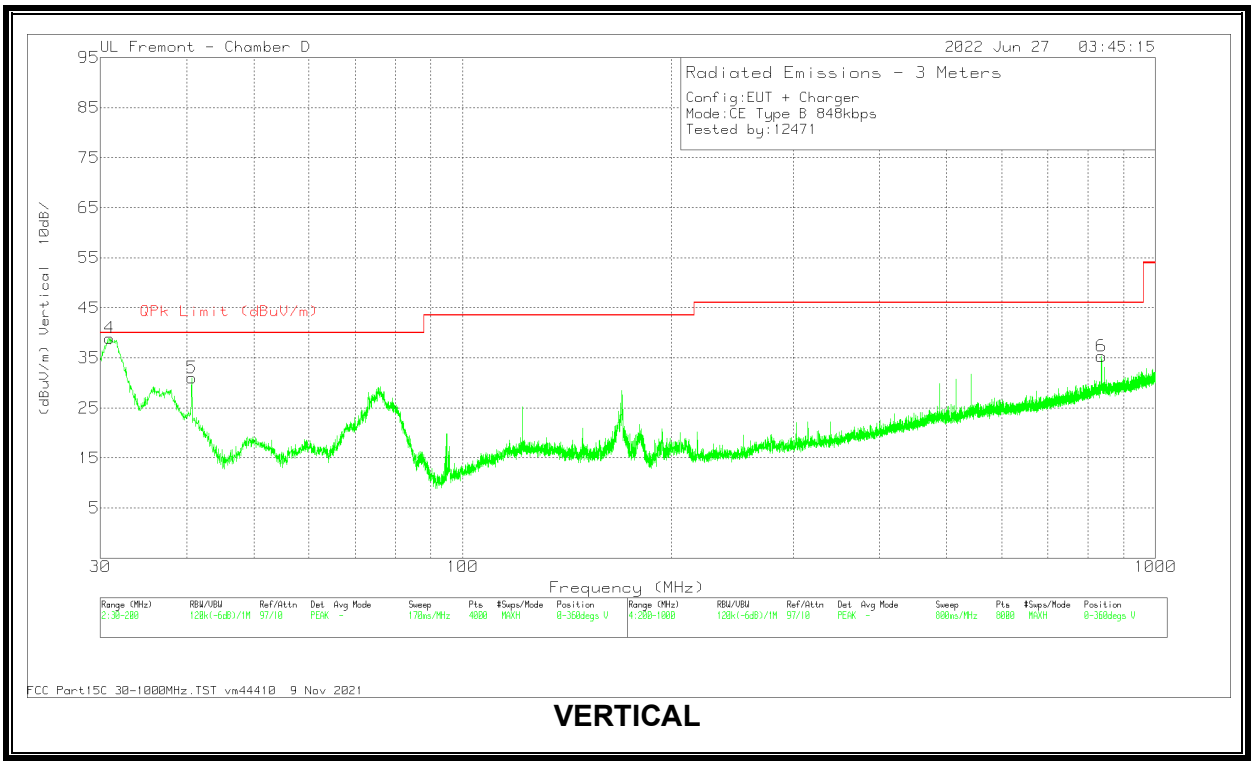
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

8.3.3. CE MODE, Type B 848 Kbps

SPURIOUS EMISSION



HORIZONTAL



VERTICAL

DATA

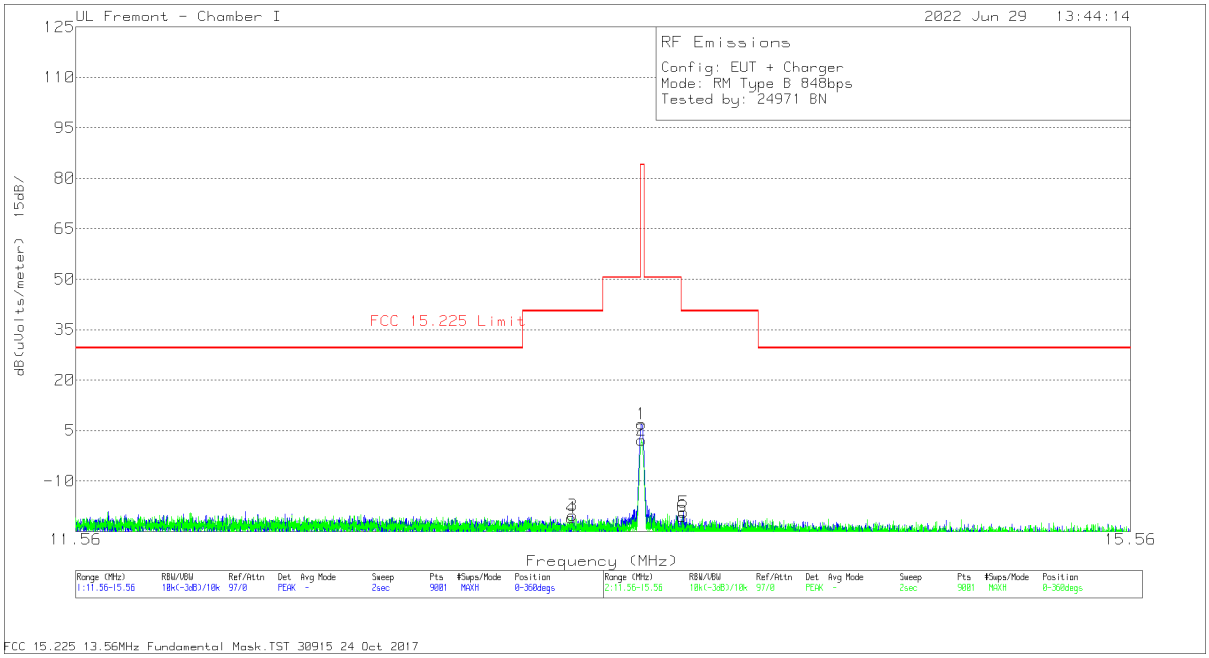
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80293 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 169.989	45.21	Pk	17.9	-30.4	32.71	43.52	-10.81	0-360	199	H
4	30.9352	43.15	Pk	27.5	-31.7	38.95	40	-1.05	0-360	100	V
	31.0864	40.55	Qp	27.3	-31.7	36.15	40	-3.85	209	101	V
5	40.6703	42.63	Pk	20	-31.6	31.03	40	-8.97	0-360	100	V
1	78.8026	47.24	Pk	14	-31.2	30.04	40	-9.96	0-360	199	H
3	515.241	38.89	Pk	24	-28.5	34.39	46.02	-11.63	0-360	199	H
6	836.083	34.14	Pk	28.2	-27	35.34	46.02	-10.68	0-360	99	V

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

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

8.4.1. READER MODE, Type B 848 Kbps

FUNDAMENTAL



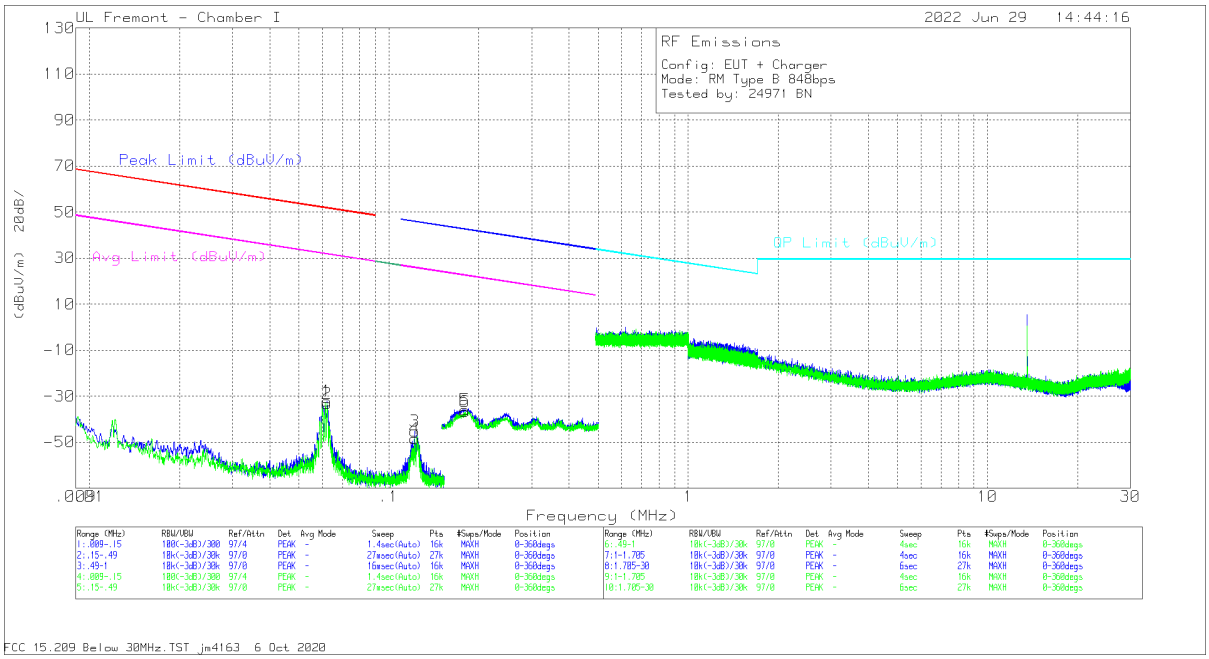
ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	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	44.26	Pk	34.3	-31.6	-40	6.96	84	-77.04	0-360	Face-On
3	13.2978	17.13	Pk	34.3	-31.6	-40	-20.17	40.51	-60.68	0-360	Face-Off
5	13.7196	17.99	Pk	34.3	-31.6	-40	-19.31	40.51	-59.82	0-360	Face-On
2	13.5584	39.39	Pk	34.3	-31.6	-40	2.09	84	-81.91	0-360	Face-Off
4	13.2934	16.41	Pk	34.3	-31.6	-40	-20.89	40.51	-61.4	0-360	Face-Off
6	13.7134	16.7	Pk	34.3	-31.6	-40	-20.6	40.51	-61.11	0-360	Face-On

Pk - Peak detector

SPURIOUS EMISSION



ANTENNA LOOP FACE ON/OFF

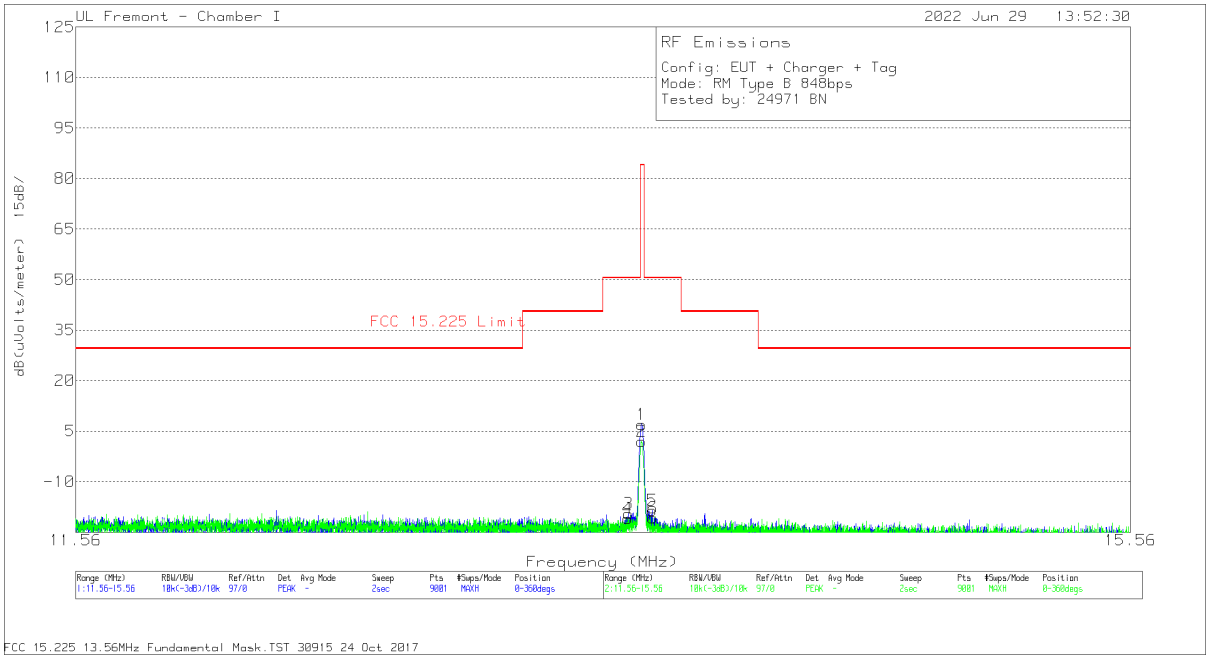
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	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	.0623	23.67	Pk	56.2	-32.1	-80	-32.23	51.7	-83.93	31.7	-63.93	0-360	Face-On
3	.122	11.09	Pk	55.8	-32.1	-80	-45.21	45.9	-91.11	25.9	-71.11	0-360	Face-On
5	.1798	19.95	Pk	56.2	-32.1	-80	-35.95	42.52	-78.47	22.52	-58.47	0-360	Face-On
2	.0622	22.61	Pk	56.2	-32.1	-80	-33.29	51.71	-85	31.71	-65	0-360	Face-Off
4	.1218	7.87	Pk	55.8	-32.1	-80	-48.43	45.91	-94.34	25.91	-74.34	0-360	Face-Off
6	.1796	19.26	Pk	56.2	-32.1	-80	-36.64	42.53	-79.17	22.53	-59.17	0-360	Face-Off

Pk - Peak detector

8.4.2. TAG MODE

FUNDAMENTAL



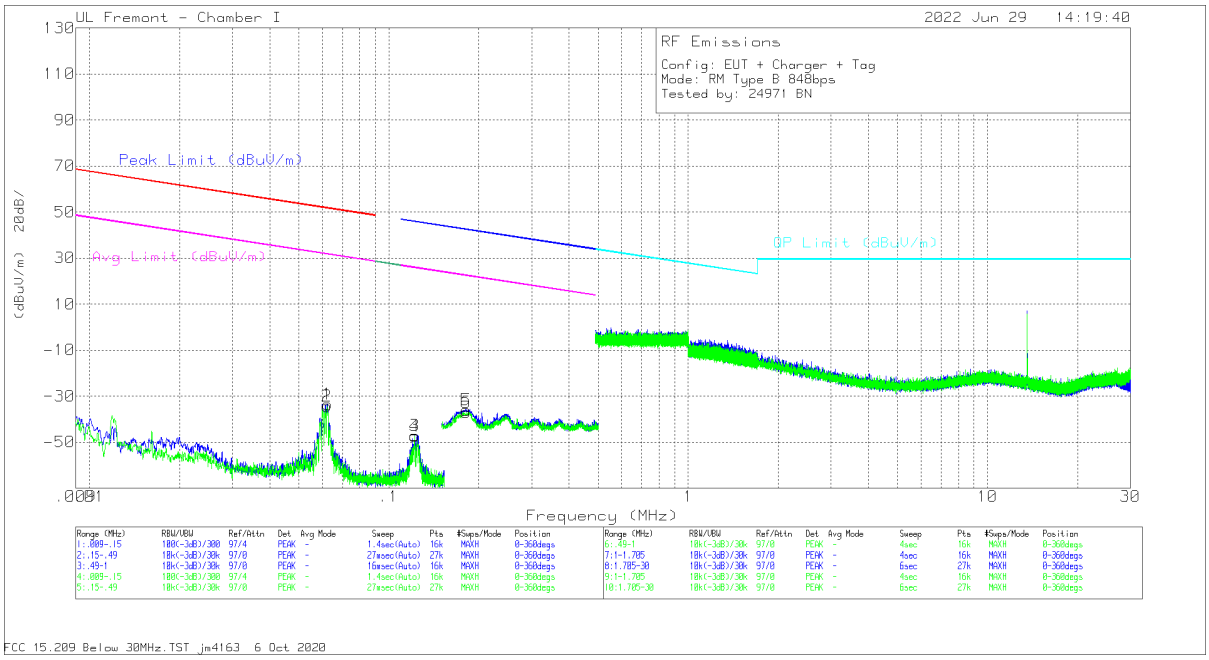
ANTENNA LOOP FACE ON/OFF

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading dB(uVolts/ meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)	Polarity
1	13.5571	44.34	Pk	34.3	-31.6	-40	7.04	84	-76.96	0-360	Face-On
3	13.5083	17.91	Pk	34.3	-31.6	-40	-19.39	50.5	-69.89	0-360	Face-On
5	13.5989	18.69	Pk	34.3	-31.6	-40	-18.61	50.5	-69.11	0-360	Face-On
2	13.5584	39.2	Pk	34.3	-31.6	-40	1.9	84	-82.1	0-360	Face-Off
4	13.5043	16.37	Pk	34.3	-31.6	-40	-20.93	50.5	-71.43	0-360	Face-Off
6	13.6015	16.48	Pk	34.3	-31.6	-40	-20.82	50.5	-71.32	0-360	Face-Off

Pk - Peak detector

SPURIOUS EMISSION



ANTENNA LOOP FACE ON/OFF

DATA

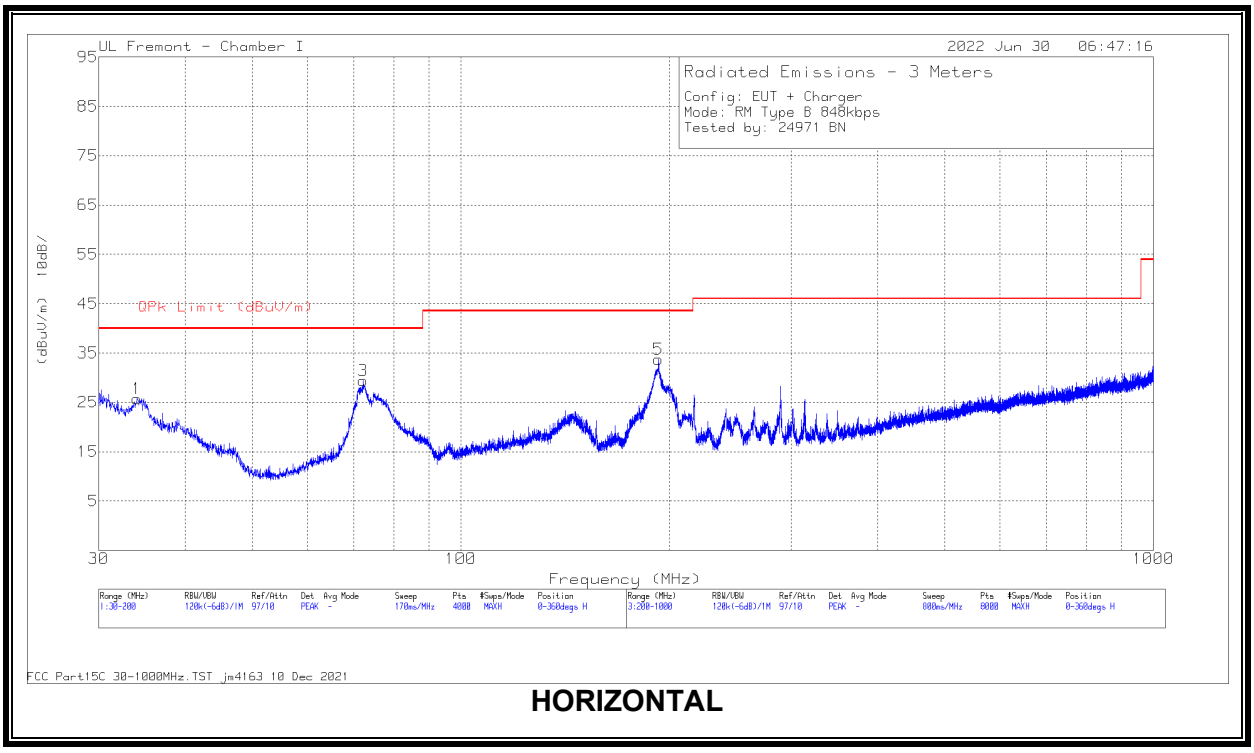
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.0625	22.6	Pk	56.1	-32.1	-80	-33.4	51.67	-85.07	31.67	-65.07	0-360	Face-On
3	.1222	9.21	Pk	55.8	-32.1	-80	-47.09	45.89	-92.98	25.89	-72.98	0-360	Face-On
5	.1813	19.84	Pk	56.2	-32.1	-80	-36.06	42.45	-78.51	22.45	-58.51	0-360	Face-On
2	.0621	21.53	Pk	56.2	-32.1	-80	-34.37	51.72	-86.09	31.72	-66.09	0-360	Face-Off
4	.1222	8.94	Pk	55.8	-32.1	-80	-47.36	45.88	-93.24	25.88	-73.24	0-360	Face-Off
6	.1811	18.81	Pk	56.2	-32.1	-80	-37.09	42.46	-79.55	22.46	-59.55	0-360	Face-Off

Pk - Peak detector

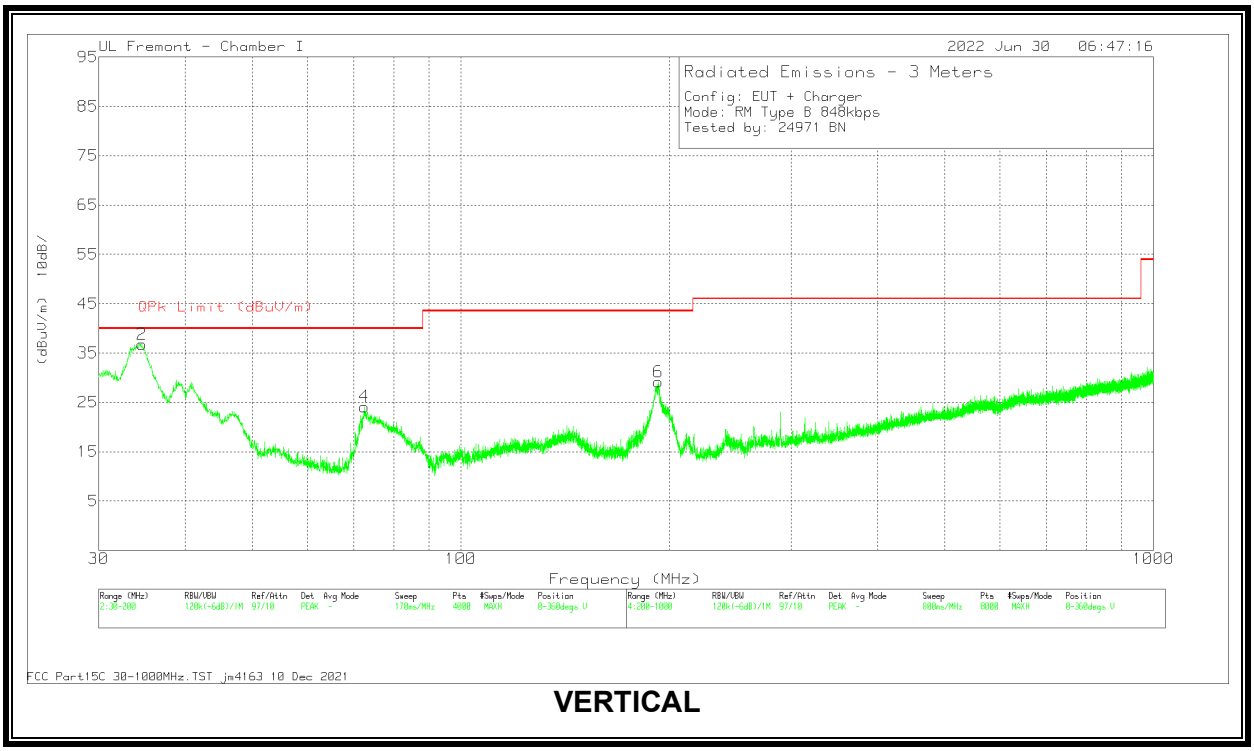
8.5. SECONDARY ANTENNA TX SPURIOUS EMISSION 30-1000 MHz

8.5.1. READER MODE, Type B 848 Kbps

SPURIOUS EMISSION



HORIZONTAL



VERTICAL

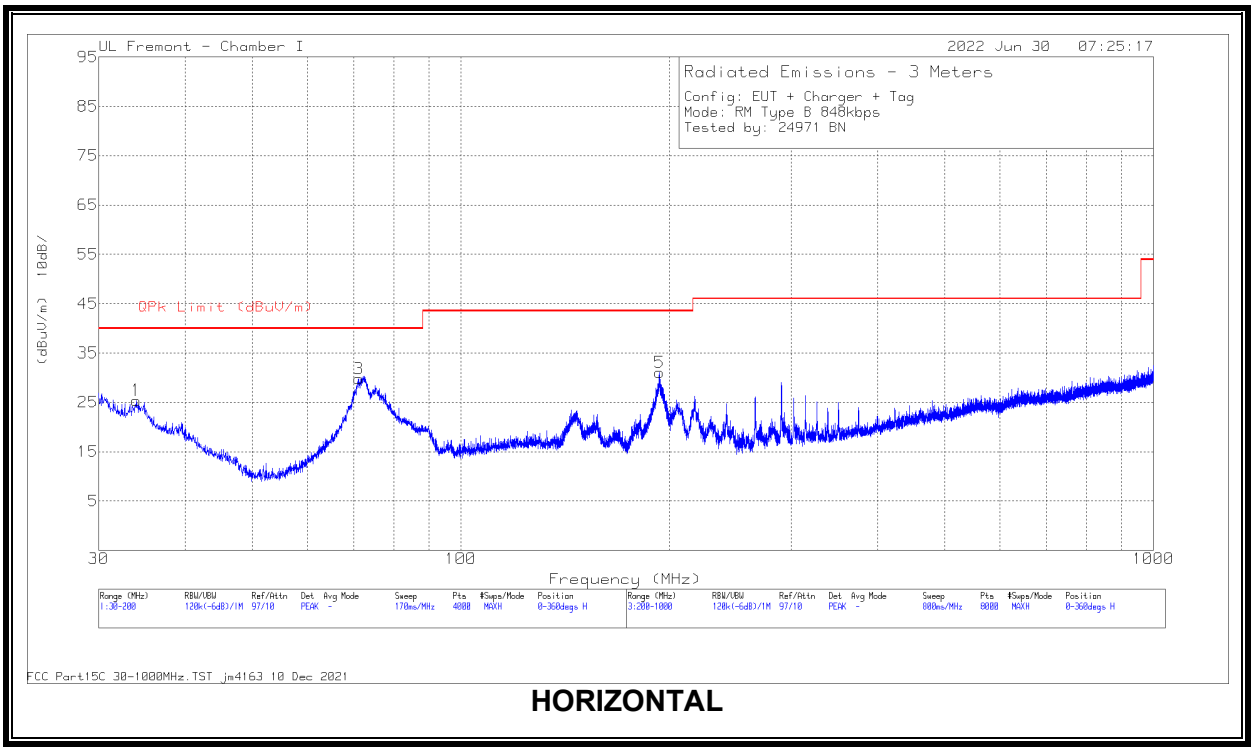
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	85150 AF (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	34.282	26.99	Qp	24.5	-31.4	20.09	40	-19.91	270	305	H
3	72.3303	44.52	Qp	14.1	-31.1	27.52	40	-12.48	312	223	H
5	192.925	38.29	Qp	17.6	-30.3	25.59	43.52	-17.93	221	107	H
2	34.7085	38.77	Qp	24.3	-31.4	31.67	40	-8.33	336	109	V
4	72.5559	38.06	Qp	14.1	-31	21.16	40	-18.84	114	104	V
6	193.038	35.14	Qp	17.6	-30.3	22.44	43.52	-21.08	319	101	V

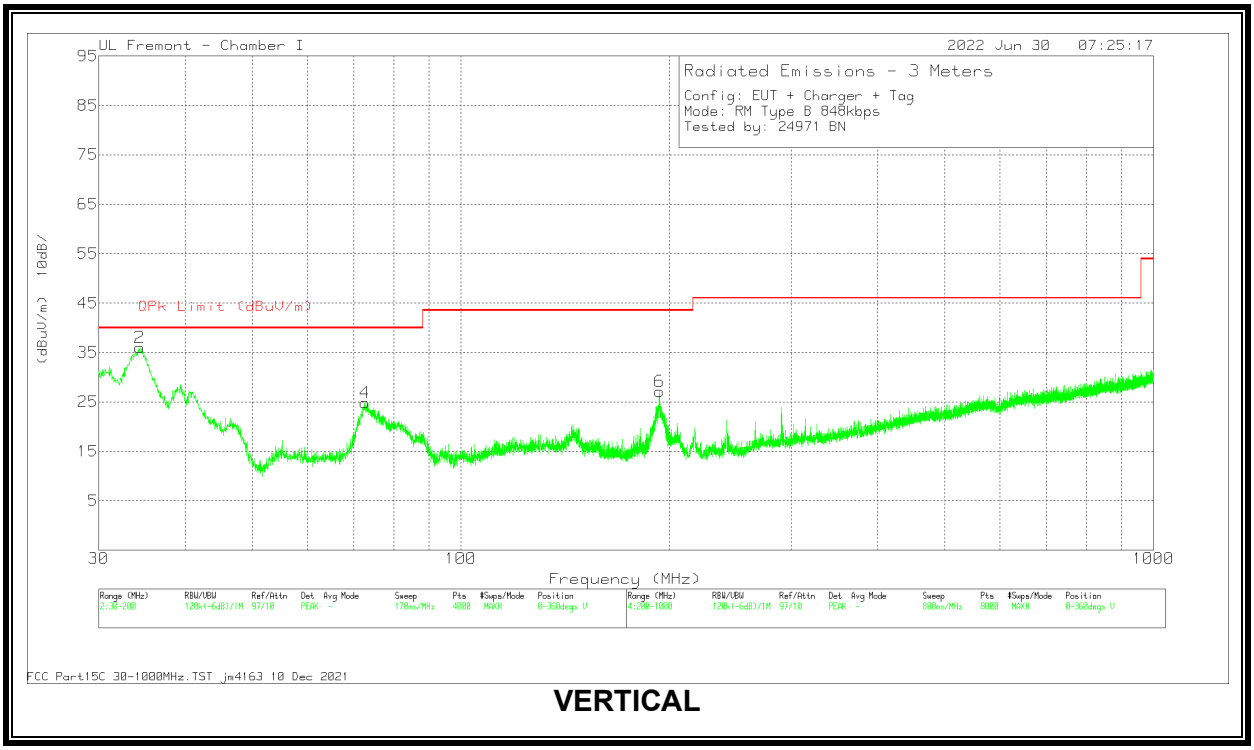
Qp - Quasi-Peak detector

8.5.2. TAG MODE

SPURIOUS EMISSION



HORIZONTAL



VERTICAL

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	85150 AF (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	33.9535	32.11	Pk	24.7	-31.4	25.41	40	-14.59	0-360	299	H
3	71.2782	46.69	Pk	14.2	-31.1	29.79	40	-10.21	0-360	199	H
5	193.455	43.74	Pk	17.6	-30.3	31.04	43.52	-12.48	0-360	100	H
2	34.3786	42.88	Pk	24.5	-31.4	35.98	40	-4.02	0-360	101	V
4	72.7236	41.72	Pk	14.1	-31	24.82	40	-15.18	0-360	101	V
6	193.625	39.69	Pk	17.7	-30.3	27.09	43.52	-16.43	0-360	101	V

Pk - Peak detector

9. FREQUENCY STABILITY

LIMIT

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within ±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 ±0.01% (±100 ppm).

TEST PROCEDURE

ANSI C63.10-2013 Clause 6.8

RESULTS

No non-compliance noted.

ID:	31300	**Date:**	7/17/2022

9.1. PRIMARY ANTENNA

9.1.1. READER MODE, Type B 848 Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(VAC)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
	50	13.55982476	2.184	13.5598278	1.959	13.55983127	1.704	13.55983478	1.445	± 100
	40	13.55982048	2.499	13.55982003	2.533	13.55981989	2.543	13.55981992	2.541	± 100
	30	13.55983149	1.688	13.55983041	1.767	13.55982953	1.832	13.55982831	1.922	± 100
3.80	***20***	***13.55985437***	***0.000***	***13.55985358***	***0.059***	***13.55985315***	***0.090***	***13.55985266***	***0.126***	***± 100***
	10	13.55985019	0.308	13.55985834	-0.293	13.55986618	-0.871	13.55987414	-1.458	± 100
	0	13.55990190	-3.505	13.55990724	-3.899	13.55991052	-4.141	13.55991420	-4.412	± 100
	-10	13.55993050	-5.614	13.5599379	-6.160	13.55994222	-6.478	13.55994738	-6.859	± 100
	-20	13.55996716	-8.318	13.55996903	-8.456	13.55997058	-8.570	13.55997196	-8.672	± 100
3.23	20	13.55984923	0.379	13.55984854	0.430	13.55984784	0.482	13.55984723	0.527	± 100
4.37	20	13.55986262	-0.608	13.55986021	-0.431	13.55985851	-0.305	13.55998566	-9.682	± 100

9.1.2. TAG MODE

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(VAC)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
	50	13.55982944	2.959	13.55983173	2.790	13.55983506	2.545	13.55983978	2.197	± 100
	40	13.55982163	3.536	13.55982168	3.532	13.55982176	3.526	13.55982196	3.511	± 100
	30	13.55983957	2.212	13.55983699	2.403	13.55983404	2.620	13.55983105	2.841	± 100
3.80	***20***	***13.55986957***	***0.000***	***13.55986631***	***0.240***	***13.55986242***	***0.527***	***13.55985792***	***0.859***	***± 100***
	10	13.55983112	2.836	13.55983821	2.312	13.55984822	1.575	13.55986113	0.622	± 100
	0	13.55988931	-1.455	13.55989483	-1.863	13.55990126	-2.337	13.55990845	-2.867	± 100
	-10	13.55992837	-4.336	13.55993312	-4.687	13.55993847	-5.081	13.55994405	-5.492	± 100
	-20	13.55996148	-6.778	13.55996454	-7.004	13.55996769	-7.236	13.55997077	-7.463	± 100
3.23	20	13.55982749	3.103	13.55982736	3.113	13.55982730	3.117	13.55982723	3.122	± 100
4.37	20	13.55982879	3.007	13.55982891	2.998	13.55982892	2.998	13.55982886	3.002	± 100

9.1.3. CE MODE, Type B 848 Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(VAC)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
	50	13.56007712	32.517	13.56027374	18.017	13.56094571	-31.538	13.56089131	-27.526	± 100
	40	13.56009517	31.186	13.56044211	5.600	13.56063844	-8.878	13.56058772	-5.138	± 100
	30	13.56066564	-10.884	13.56058251	-4.754	13.55985367	48.996	13.55962700	65.712	± 100
3.80	***20***	***13.56051805***	***0.000***	***13.56043920***	***5.815***	***13.56055317***	***-2.590***	***13.55993219***	***43.205***	***± 100***
	10	13.56023379	20.963	13.56044389	5.469	13.56048684	2.302	13.55998970	38.964	± 100
	0	13.56039879	8.795	13.56056638	-3.564	13.56082511	-22.645	13.56041651	7.488	± 100
	-10	13.56027773	17.723	13.56052345	-0.398	13.56032521	14.221	13.56126405	-55.015	± 100
	-20	13.56057339	-4.081	13.56057454	-4.166	13.56050992	0.600	13.55994939	41.937	± 100
3.23	20	13.56030793	15.496	13.56070723	-13.951	13.56052777	-0.717	13.56065759	-10.291	± 100
4.37	20	13.56060937	-6.734	13.56080709	-21.316	13.56015897	26.481	13.56034016	13.119	± 100

9.2. SECONDARY ANTENNA

9.2.1. READER MODE, Type B 848 Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(VAC)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
	50	13.56001213	-3.135	13.56001873	-3.622	13.56001395	-3.269	13.56002339	-3.965	± 100
	40	13.55995827	0.837	13.5599591	0.776	13.55996302	0.487	13.55996373	0.434	± 100
	30	13.55995872	0.804	13.55995709	0.924	13.55995653	0.966	13.55995588	1.014	± 100
3.80	***20***	***13.55996962***	***0.000***	***13.55996962***	***0.000***	***13.55997079***	***-0.086***	***13.55997131***	***-0.125***	***± 100***
	10	13.5599650	0.340	13.5599760	-0.470	13.55997964	-0.739	13.55998513	-1.144	± 100
	0	13.56000646	-2.716	13.56001429	-3.294	13.56001613	-3.430	13.56002557	-4.126	± 100
	-10	13.56004817	-5.793	13.56005256	-6.117	13.56005578	-6.354	13.56005944	-6.624	± 100
	-20	13.56007921	-8.081	13.56008138	-8.241	13.56008387	-8.426	13.56008551	-8.546	± 100
3.23	20	13.55986243	7.905	13.55986155	7.970	13.55985395	8.531	13.55985312	8.592	± 100
4.37	20	13.55985374	8.546	13.5598524	8.645	13.55985170	8.696	13.55985104	8.745	± 100

9.2.2. TAG MODE

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC										
Limit: ± 100 ppm = 1.35600 KHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(VAC)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
	50	13.5599784	-0.528	13.55997893	-0.568	13.55999864	-2.021	13.56000367	-2.392	± 100
	40	13.56000007	-2.127	13.55999731	-1.923	13.55998708	-1.169	13.55998794	-1.232	± 100
	30	13.5599700	0.090	13.55996592	0.392	13.55995983	0.841	13.55995670	1.071	± 100
3.80	***20***	***13.55997123***	***0.000***	***13.55997175***	***-0.038***	***13.55997184***	***-0.045***	***13.55996781***	***0.252***	***± 100***
	10	13.55997921	-0.588	13.55997918	-0.586	13.55998254	-0.834	13.55998652	-1.127	± 100
	0	13.56000628	-2.585	13.56000748	-2.673	13.56001750	-3.412	13.56002300	-3.818	± 100
	-10	13.56004109	-5.151	13.56004838	-5.689	13.56005377	-6.087	13.56005676	-6.307	± 100
	-20	13.56007686	-7.790	13.56008044	-8.054	13.56008186	-8.158	13.56008874	-8.665	± 100
3.23	20	13.55984508	9.303	13.5598450	9.313	13.55984492	9.315	13.55984490	9.317	± 100
4.37	20	13.55984945	8.981	13.55984878	9.031	13.55984789	9.096	13.55984792	9.094	± 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 50μH/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 (dBμV)	
	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

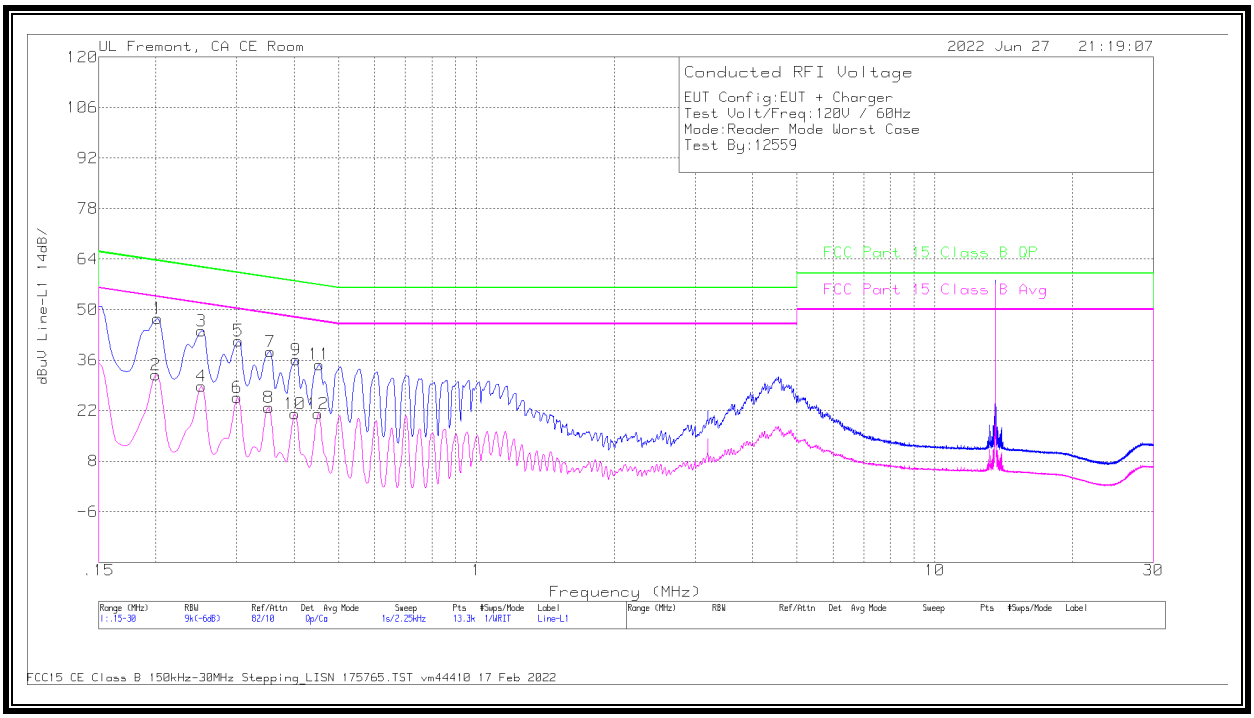
RESULTS

No non-compliance noted:

10.1. PRIMARY ANTENNA

10.1.1. READER MODE, Type B 848 Kbps, Antenna Port Not Terminated

LINE 1 RESULTS

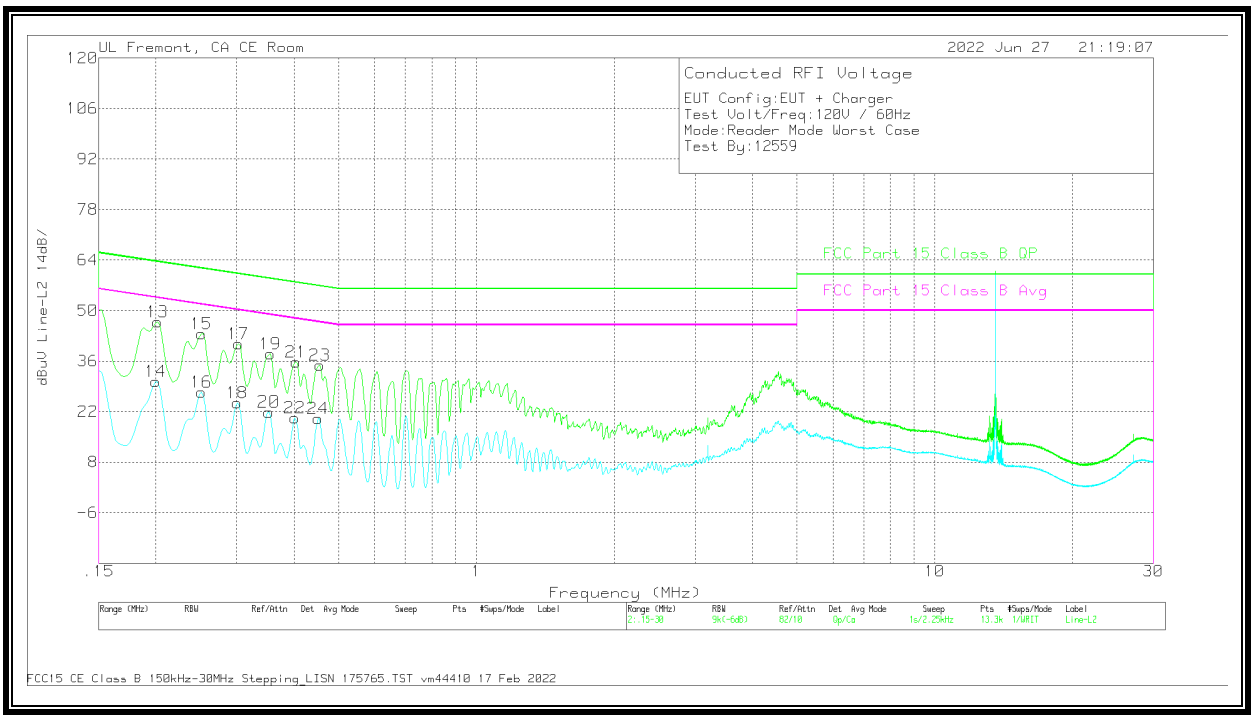


Worst Emission

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	.1995	21.99	Ca	.1	0	9.8	31.89	-	-	53.63	-21.74
4	.2513	19.26	Ca	0	0	9.5	28.76	-	-	51.72	-22.96
6	.3008	16.18	Ca	0	0	9.5	25.68	-	-	50.22	-24.54
8	.3525	13.38	Ca	0	0	9.5	22.88	-	-	48.9	-26.02
10	.402	11.7	Ca	0	0	9.5	21.2	-	-	47.81	-26.61
12	.4515	11.6	Ca	0	0	9.5	21.1	-	-	46.85	-25.75
1	.2018	37.81	Qp	0	0	9.7	47.51	63.54	-16.03	-	-
3	.2513	34.65	Qp	0	0	9.5	44.15	61.72	-17.57	-	-
5	.303	31.89	Qp	0	0	9.5	41.39	60.16	-18.77	-	-
7	.3548	28.89	Qp	0	0	9.5	38.39	58.85	-20.46	-	-
9	.4043	26.67	Qp	0	0	9.5	36.17	57.77	-21.6	-	-
11	.4538	25.29	Qp	0	0	9.5	34.79	56.81	-22.02	-	-

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 lowered below the limit line.

LINE 2 RESULTS



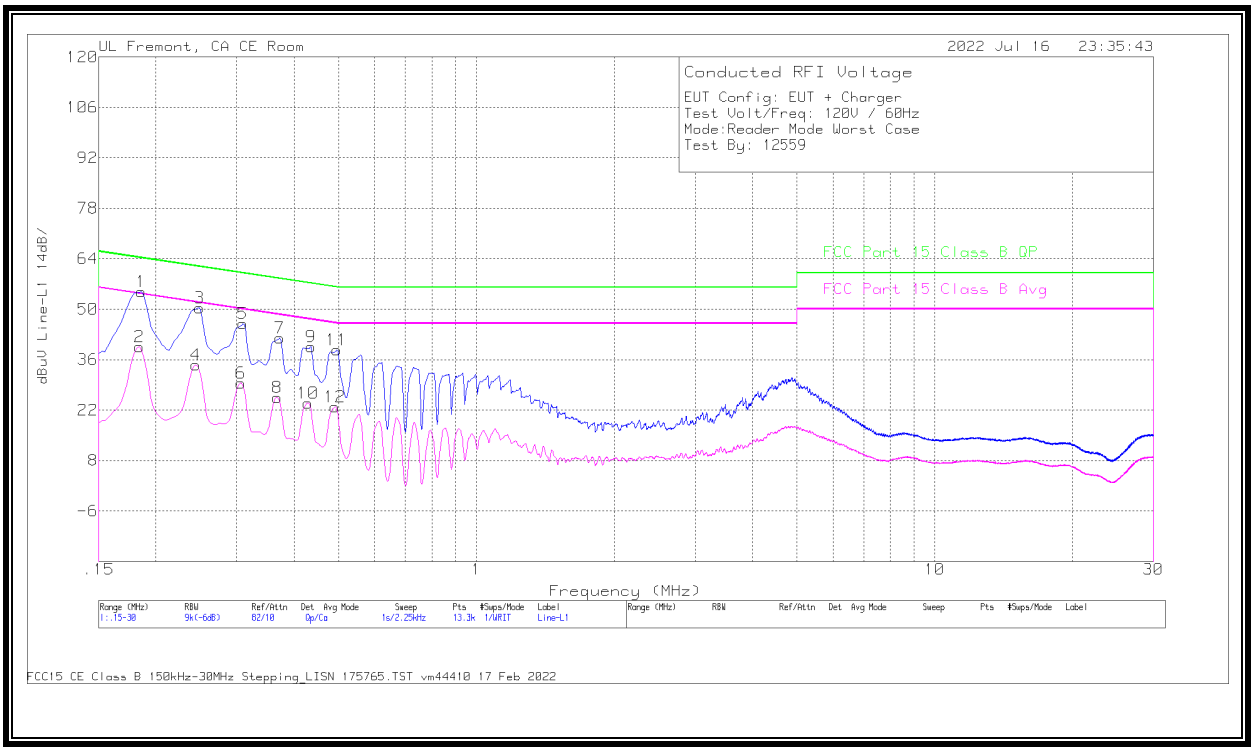
Worst Emission

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	.1995	20.61	Ca	0	0	9.8	30.41	-	-	53.63	-23.22
16	.2513	17.93	Ca	0	0	9.5	27.43	-	-	51.72	-24.29
18	.3008	15.02	Ca	0	0	9.5	24.52	-	-	50.22	-25.7
20	.3525	12.42	Ca	0	0	9.5	21.92	-	-	48.9	-26.98
22	.402	10.77	Ca	0	0	9.5	20.27	-	-	47.81	-27.54
24	.4515	10.67	Ca	0	0	9.5	20.17	-	-	46.85	-26.68
13	.2018	37.2	Qp	0	0	9.7	46.9	63.54	-16.64	-	-
15	.2513	34.05	Qp	0	0	9.5	43.55	61.72	-18.17	-	-
17	.303	31.35	Qp	0	0	9.5	40.85	60.16	-19.31	-	-
19	.3548	28.46	Qp	0	0	9.5	37.96	58.85	-20.89	-	-
21	.4043	26.31	Qp	0	0	9.5	35.81	57.77	-21.96	-	-
23	.456	25.31	Qp	0	0	9.5	34.81	56.77	-21.96	-	-

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 lowered below the limit line.

10.1.2. READER MODE, Type B 848 Kbps, Antenna Port Terminated

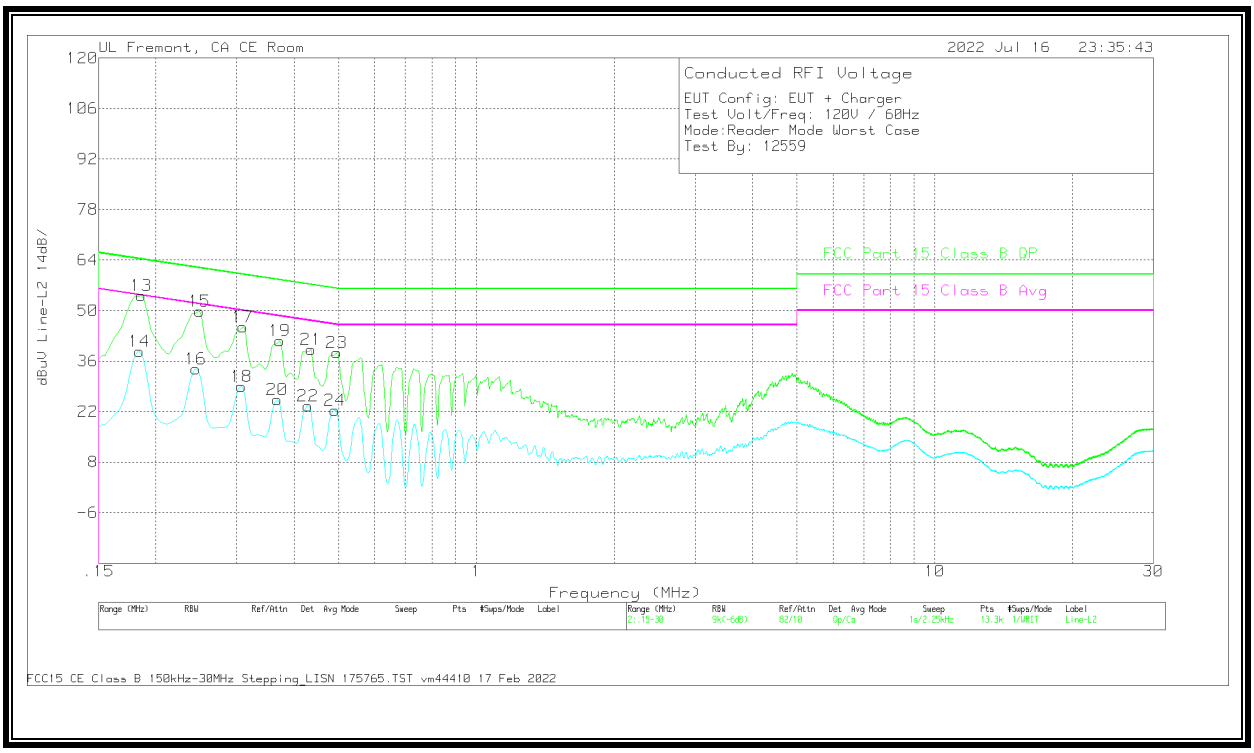
LINE 1 RESULTS



Worst Emission

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	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	.1838	30.04	Ca	.1	0	9.4	39.54	-	-	54.31	-14.77
4	.2445	25.3	Ca	0	0	9.3	34.6	-	-	51.94	-17.34
6	.3064	20.21	Ca	0	0	9.3	29.51	-	-	50.07	-20.56
8	.3683	16.26	Ca	0	0	9.3	25.56	-	-	48.54	-22.98
10	.429	14.56	Ca	0	.1	9.3	23.96	-	-	47.27	-23.31
12	.492	13.43	Ca	0	.1	9.3	22.83	-	-	46.13	-23.3
1	.186	45.34	Qp	.1	0	9.4	54.84	64.21	-9.37	-	-
3	.249	41.03	Qp	0	0	9.3	50.33	61.79	-11.46	-	-
5	.3098	36.71	Qp	0	0	9.3	46.01	59.98	-13.97	-	-
7	.3728	32.68	Qp	0	.1	9.3	42.08	58.44	-16.36	-	-
9	.4358	30.14	Qp	0	.1	9.3	39.54	57.14	-17.6	-	-
11	.4965	29.25	Qp	0	.1	9.3	38.65	56.06	-17.41	-	-

LINE 2 RESULTS

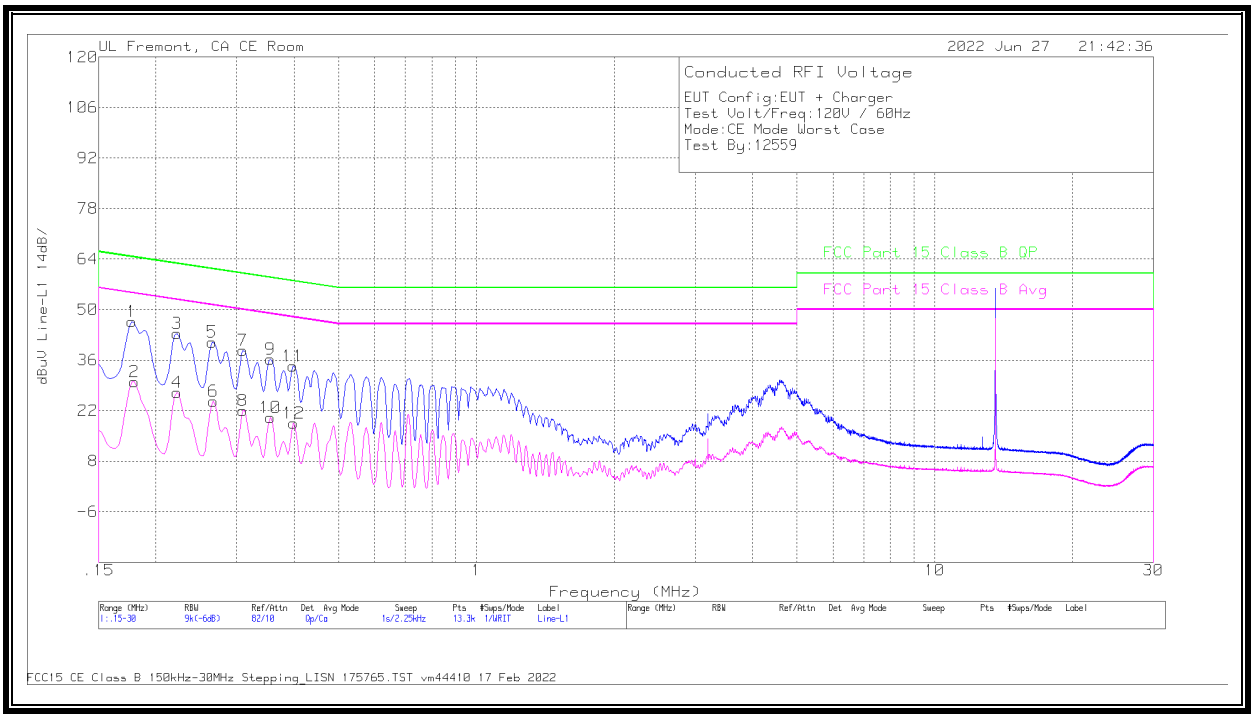


Worst Emission

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	.1838	29.26	Ca	.1	0	9.4	38.76	-	-	54.31	-15.55
16	.2445	24.59	Ca	0	0	9.3	33.89	-	-	51.94	-18.05
18	.3075	19.65	Ca	0	0	9.3	28.95	-	-	50.04	-21.09
20	.3683	15.95	Ca	0	0	9.3	25.25	-	-	48.54	-23.29
22	.429	14.22	Ca	0	.1	9.3	23.62	-	-	47.27	-23.65
24	.492	12.99	Ca	0	.1	9.3	22.39	-	-	46.13	-23.74
13	.186	44.74	Qp	.1	0	9.4	54.24	64.21	-9.97	-	-
15	.249	40.49	Qp	0	0	9.3	49.79	61.79	-12	-	-
17	.3098	36.18	Qp	0	0	9.3	45.48	59.98	-14.5	-	-
19	.3728	32.22	Qp	0	.1	9.3	41.62	58.44	-16.82	-	-
21	.4358	29.78	Qp	0	.1	9.3	39.18	57.14	-17.96	-	-
23	.4965	28.9	Qp	0	.1	9.3	38.3	56.06	-17.76	-	-

10.1.3. CE MODE, Type B 848 Kbps, Antenna Port Not Terminated

LINE 1 RESULTS

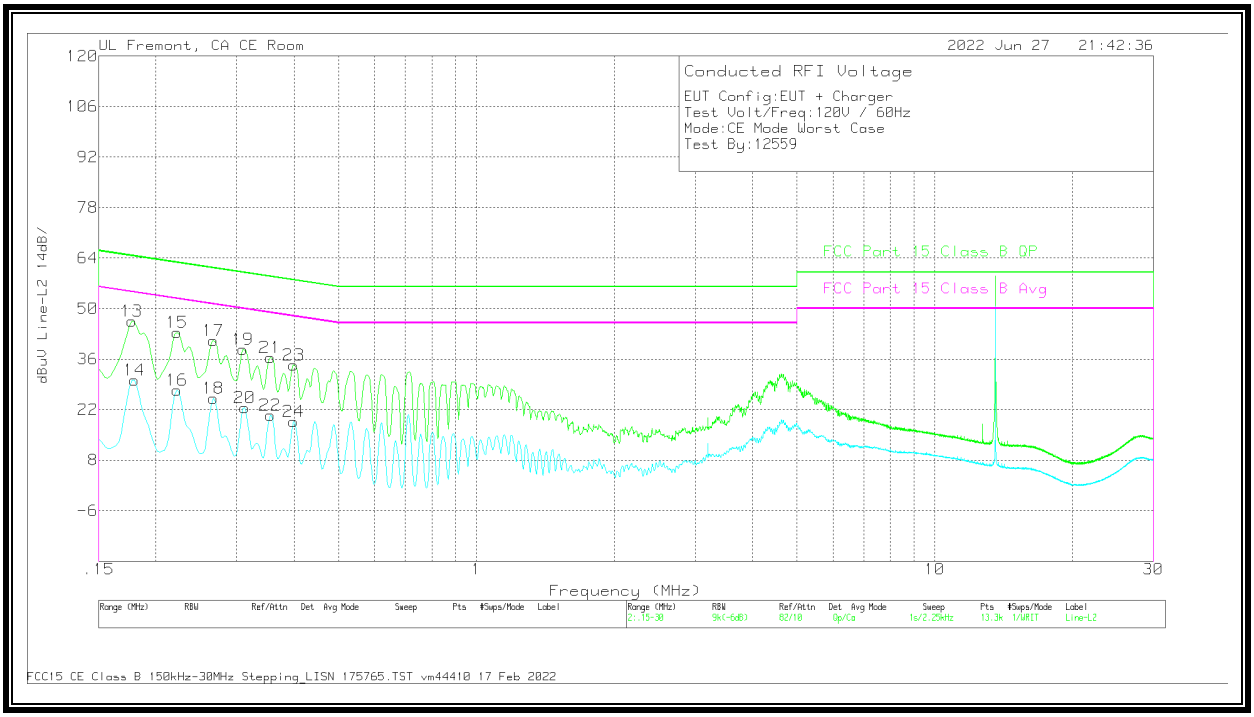


Worst Emission

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	.1793	19.58	Ca	.1	0	10.3	29.98	-	-	54.52	-24.54
4	.222	17.58	Ca	0	0	9.5	27.08	-	-	52.74	-25.66
6	.267	15.16	Ca	0	0	9.5	24.66	-	-	51.21	-26.55
8	.3098	12.55	Ca	0	0	9.5	22.05	-	-	49.98	-27.93
10	.3548	10.57	Ca	0	0	9.5	20.07	-	-	48.85	-28.78
12	.3998	8.99	Ca	0	0	9.5	18.49	-	-	47.86	-29.37
1	.177	36.14	Qp	.1	0	10.4	46.64	64.63	-17.99	-	-
3	.222	33.93	Qp	0	0	9.5	43.43	62.74	-19.31	-	-
5	.2648	31.54	Qp	0	0	9.5	41.04	61.28	-20.24	-	-
7	.3098	29.24	Qp	0	0	9.5	38.74	59.98	-21.24	-	-
9	.3548	26.83	Qp	0	0	9.5	36.33	58.85	-22.52	-	-
11	.3975	24.88	Qp	0	0	9.5	34.38	57.91	-23.53	-	-

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 lowered below the limit line.

LINE 2 RESULTS



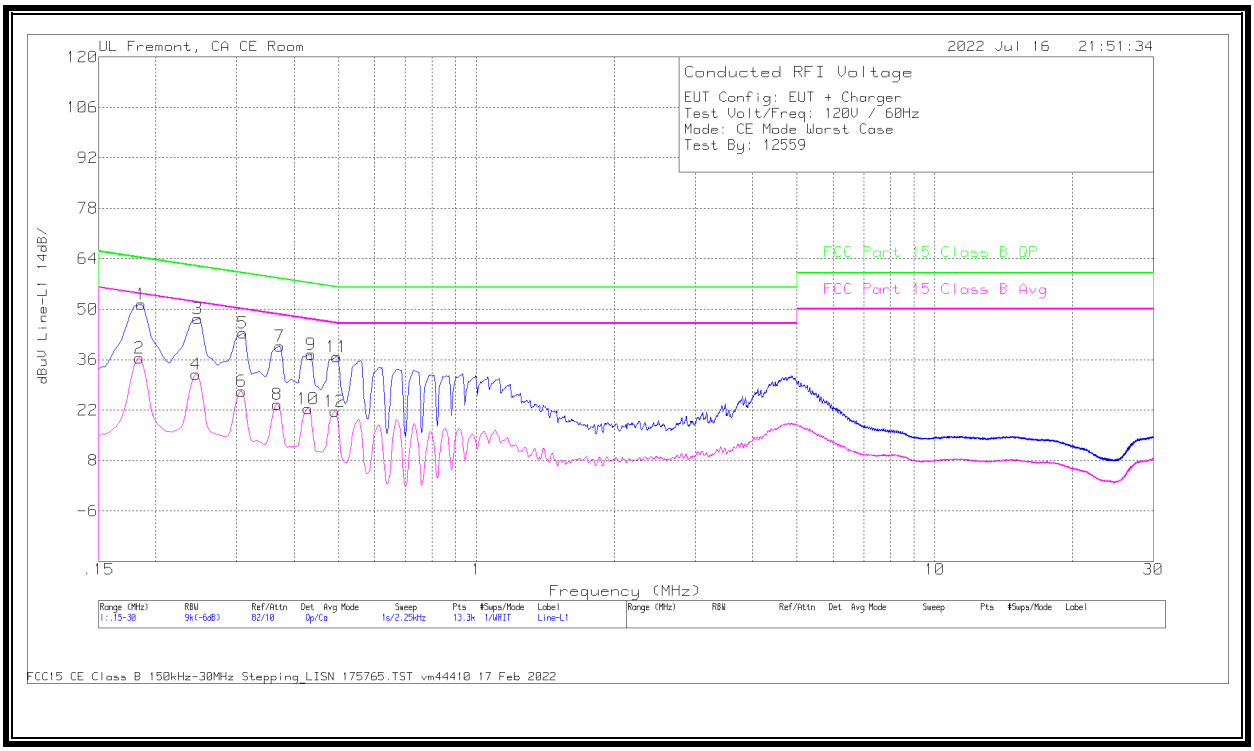
Worst Emission

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	.1793	19.78	Ca	.1	0	10.3	30.18	-	-	54.52	-24.34
16	.222	17.85	Ca	0	0	9.5	27.35	-	-	52.74	-25.39
18	.267	15.57	Ca	0	0	9.5	25.07	-	-	51.21	-26.14
20	.312	13.08	Ca	0	0	9.5	22.58	-	-	49.92	-27.34
22	.3548	10.97	Ca	0	0	9.5	20.47	-	-	48.85	-28.38
24	.3998	9.29	Ca	0	0	9.5	18.79	-	-	47.86	-29.07
13	.177	36.06	Qp	.1	0	10.4	46.56	64.63	-18.07	-	-
15	.222	33.92	Qp	0	0	9.5	43.42	62.74	-19.32	-	-
17	.267	31.63	Qp	0	0	9.5	41.13	61.21	-20.08	-	-
19	.3098	29.16	Qp	0	0	9.5	38.66	59.98	-21.32	-	-
21	.3548	26.91	Qp	0	0	9.5	36.41	58.85	-22.44	-	-
23	.3998	24.93	Qp	0	0	9.5	34.43	57.86	-23.43	-	-

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 lowered below the limit line.

10.1.4. CE MODE, Type B 848 Kbps, With Antenna Port Terminated

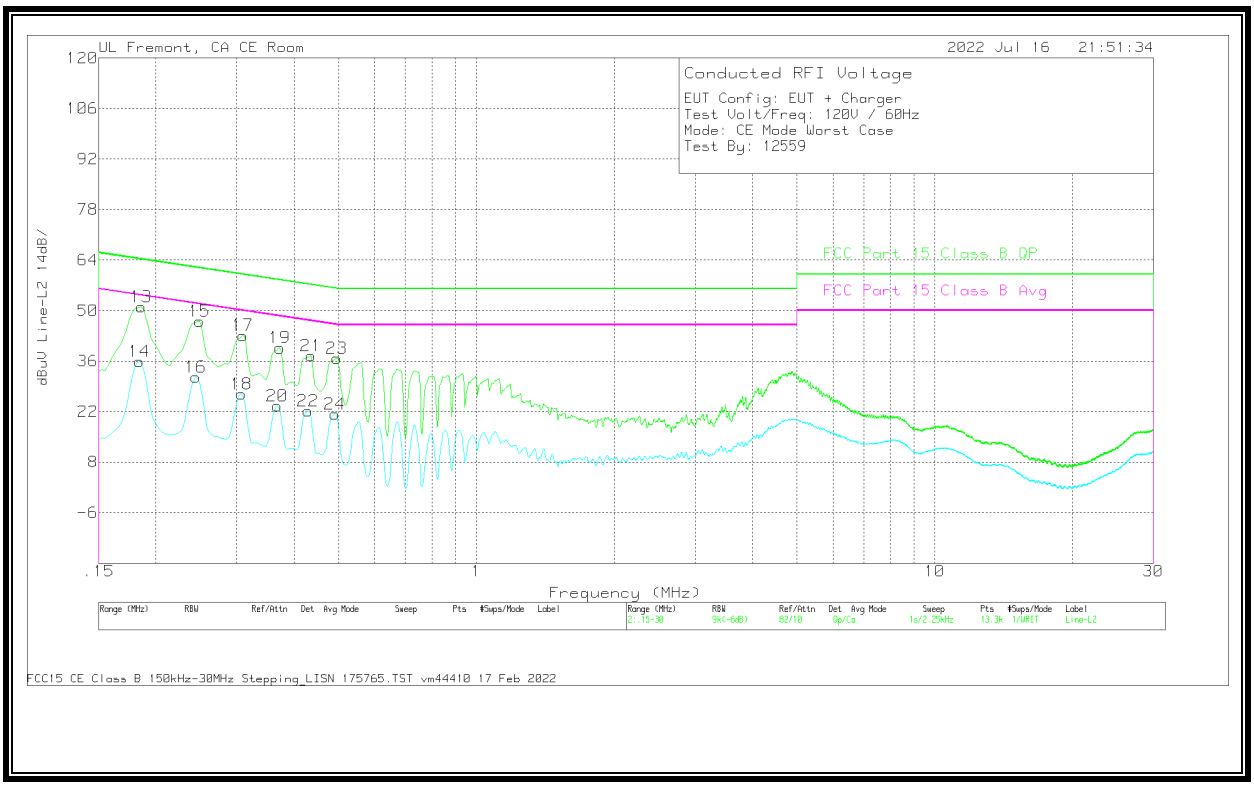
LINE 1 RESULTS



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	.1838	26.92	Ca	.1	0	9.4	36.42	-	-	54.31	-17.89
4	.2445	22.6	Ca	0	0	9.3	31.9	-	-	51.94	-20.04
6	.3075	17.92	Ca	0	0	9.3	27.22	-	-	50.04	-22.82
8	.3683	14.31	Ca	0	0	9.3	23.61	-	-	48.54	-24.93
10	.429	13.02	Ca	0	.1	9.3	22.42	-	-	47.27	-24.85
12	.492	12.22	Ca	0	.1	9.3	21.62	-	-	46.13	-24.51
1	.186	41.85	Qp	.1	0	9.4	51.35	64.21	-12.86	-	-
3	.2468	38.04	Qp	0	0	9.3	47.34	61.87	-14.53	-	-
5	.3098	34.1	Qp	0	0	9.3	43.4	59.98	-16.58	-	-
7	.3728	30.42	Qp	0	.1	9.3	39.82	58.44	-18.62	-	-
9	.4358	28.16	Qp	0	.1	9.3	37.56	57.14	-19.58	-	-
11	.4965	27.43	Qp	0	.1	9.3	36.83	56.06	-19.23	-	-

LINE 2 RESULTS

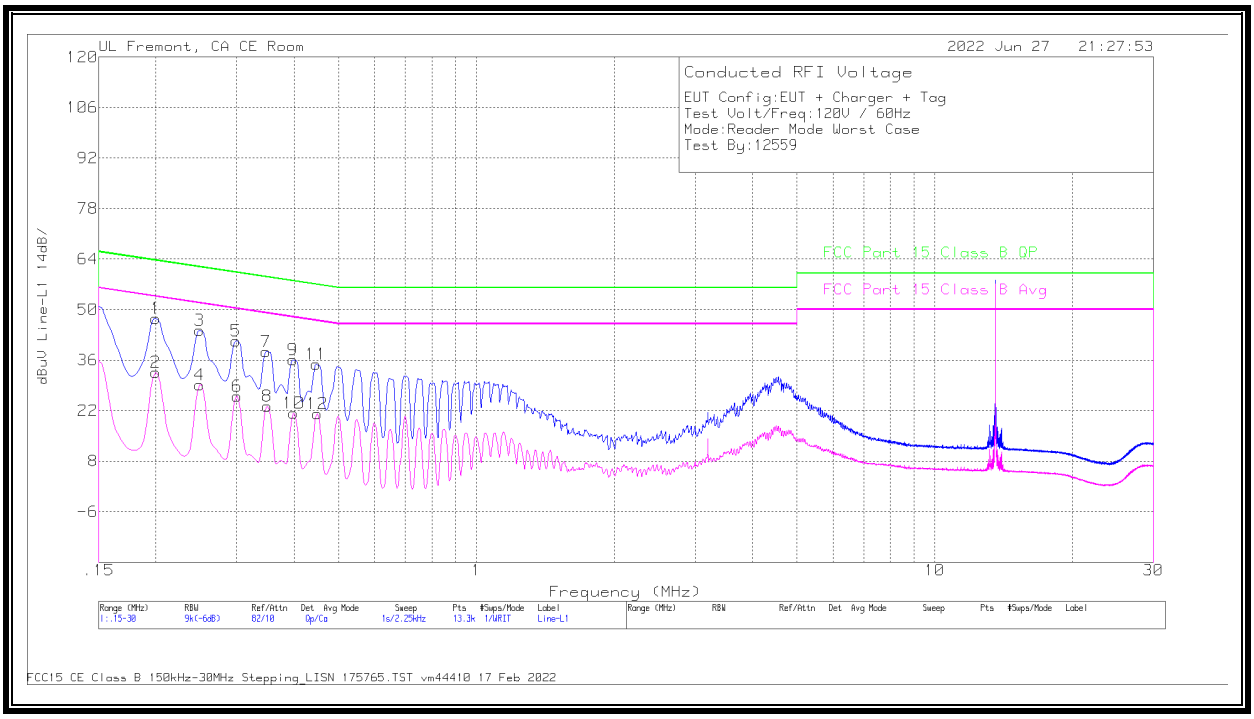


Worst Emission

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	.1838	26.48	Ca	.1	0	9.4	35.98	-	-	54.31	-18.33
16	.2445	22.23	Ca	0	0	9.3	31.53	-	-	51.94	-20.41
18	.3075	17.63	Ca	0	0	9.3	26.93	-	-	50.04	-23.11
20	.3683	14.2	Ca	0	0	9.3	23.5	-	-	48.54	-25.04
22	.429	12.83	Ca	0	.1	9.3	22.23	-	-	47.27	-25.04
24	.492	11.97	Ca	0	.1	9.3	21.37	-	-	46.13	-24.76
13	.186	41.54	Qp	.1	0	9.4	51.04	64.21	-13.17	-	-
15	.249	37.76	Qp	0	0	9.3	47.06	61.79	-14.73	-	-
17	.3098	33.83	Qp	0	0	9.3	43.13	59.98	-16.85	-	-
19	.3728	30.26	Qp	0	.1	9.3	39.66	58.44	-18.78	-	-
21	.4358	28.13	Qp	0	.1	9.3	37.53	57.14	-19.61	-	-
23	.4965	27.44	Qp	0	.1	9.3	36.84	56.06	-19.22	-	-

10.1.5. TAG MODE, Antenna Port Not Terminated

LINE 1 RESULTS

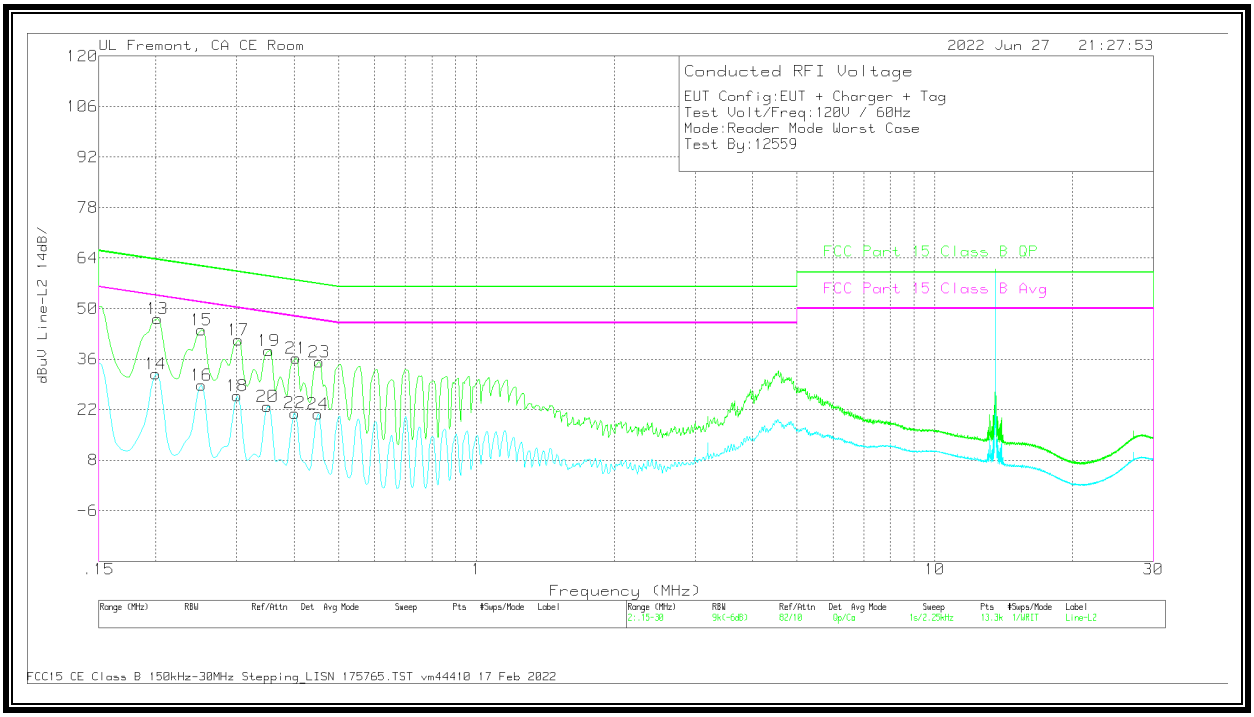


Worst Emission

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	.1995	22.76	Ca	.1	0	9.8	32.66	-	-	53.63	-20.97
4	.249	19.67	Ca	0	0	9.5	29.17	-	-	51.79	-22.62
6	.3008	16.55	Ca	0	0	9.5	26.05	-	-	50.22	-24.17
8	.3503	13.71	Ca	0	0	9.5	23.21	-	-	48.96	-25.75
10	.3998	11.82	Ca	0	0	9.5	21.32	-	-	47.86	-26.54
12	.4493	11.61	Ca	0	0	9.5	21.11	-	-	46.89	-25.78
1	.1995	37.67	Qp	.1	0	9.8	47.57	63.63	-16.06	-	-
3	.249	34.76	Qp	0	0	9.5	44.26	61.79	-17.53	-	-
5	.2985	31.83	Qp	0	0	9.5	41.33	60.28	-18.95	-	-
7	.348	28.86	Qp	0	0	9.5	38.36	59.01	-20.65	-	-
9	.3975	26.64	Qp	0	0	9.5	36.14	57.91	-21.77	-	-
11	.447	25.37	Qp	0	0	9.5	34.87	56.93	-22.06	-	-

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 lowered below the limit line.

LINE 2 RESULTS



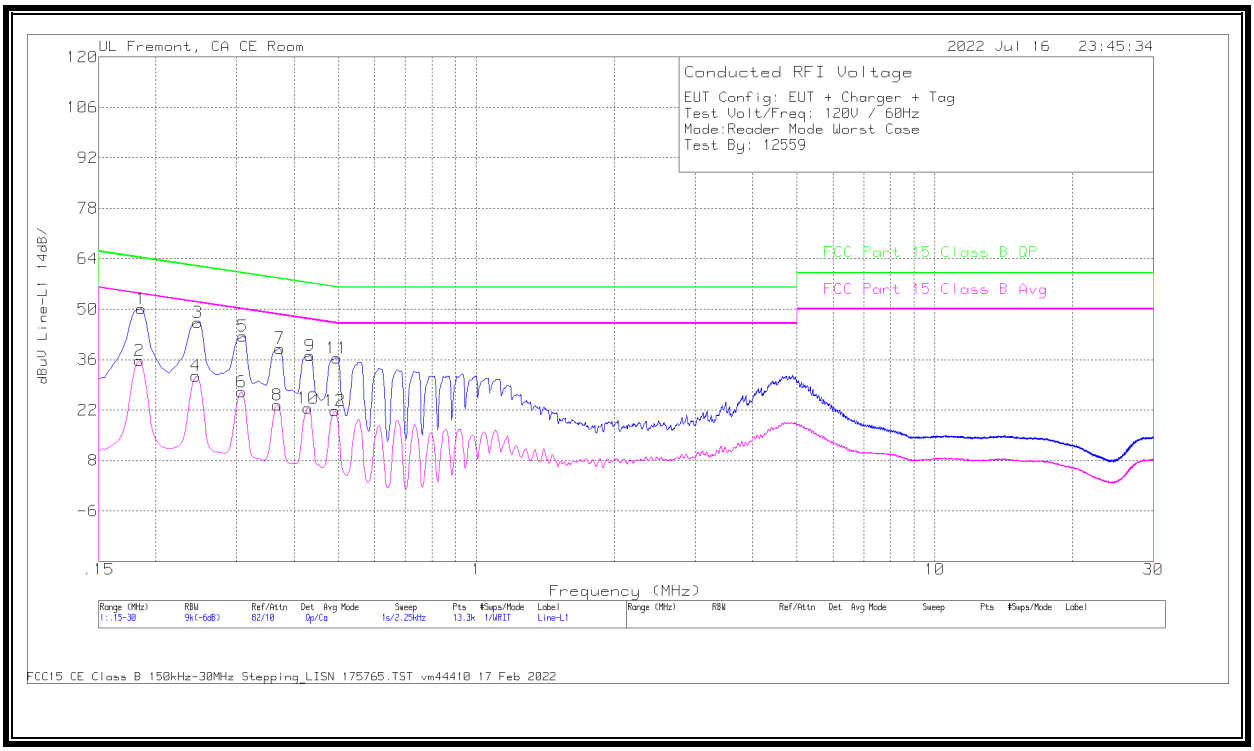
Worst Emission

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	.1995	22.07	Ca	0	0	9.8	31.87	-	-	53.63	-21.76
16	.2513	19.29	Ca	0	0	9.5	28.79	-	-	51.72	-22.93
18	.3008	16.29	Ca	0	0	9.5	25.79	-	-	50.22	-24.43
20	.3503	13.45	Ca	0	0	9.5	22.95	-	-	48.96	-26.01
22	.402	11.56	Ca	0	0	9.5	21.06	-	-	47.81	-26.75
24	.4515	11.31	Ca	0	0	9.5	20.81	-	-	46.85	-26.04
13	.2018	37.58	Qp	0	0	9.7	47.28	63.54	-16.26	-	-
15	.2513	34.55	Qp	0	0	9.5	44.05	61.72	-17.67	-	-
17	.303	31.83	Qp	0	0	9.5	41.33	60.16	-18.83	-	-
19	.3525	28.92	Qp	0	0	9.5	38.42	58.9	-20.48	-	-
21	.4043	26.75	Qp	0	0	9.5	36.25	57.77	-21.52	-	-
23	.4538	25.69	Qp	0	0	9.5	35.19	56.81	-21.62	-	-

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 lowered below the limit line.

10.1.6. TAG MODE, With Antenna Port Terminated

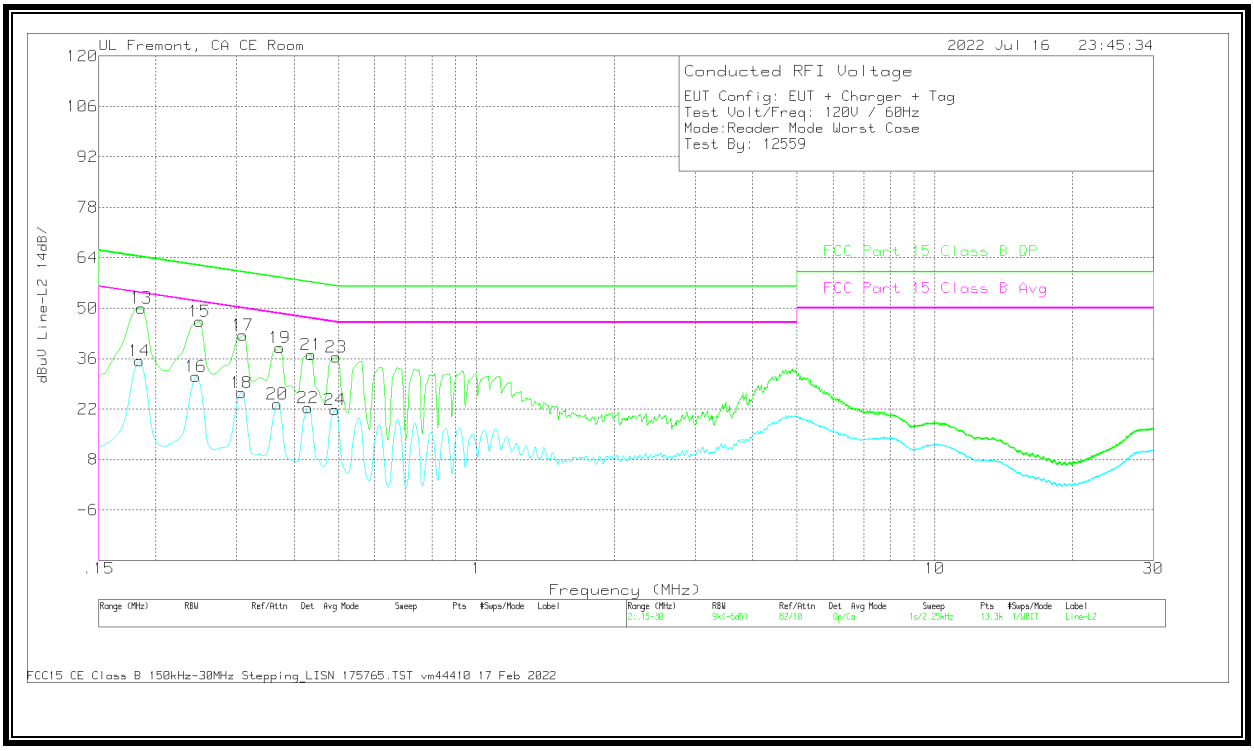
LINE 1 RESULTS



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	.1838	26.3	Ca	.1	0	9.4	35.8	-	-	54.31	-18.51
4	.2445	22.19	Ca	0	0	9.3	31.49	-	-	51.94	-20.45
6	.3075	17.69	Ca	0	0	9.3	26.99	-	-	50.04	-23.05
8	.3683	14.13	Ca	0	0	9.3	23.43	-	-	48.54	-25.11
10	.429	13.08	Ca	0	.1	9.3	22.48	-	-	47.27	-24.79
12	.492	12.45	Ca	0	.1	9.3	21.85	-	-	46.13	-24.28
1	.186	40.62	Qp	.1	0	9.4	50.12	64.21	-14.09	-	-
3	.2468	37.11	Qp	0	0	9.3	46.41	61.87	-15.46	-	-
5	.3098	33.3	Qp	0	0	9.3	42.6	59.98	-17.38	-	-
7	.3728	29.73	Qp	0	.1	9.3	39.13	58.44	-19.31	-	-
9	.4335	27.66	Qp	0	.1	9.3	37.06	57.19	-20.13	-	-
11	.4965	27	Qp	0	.1	9.3	36.4	56.06	-19.66	-	-

LINE 2 RESULTS



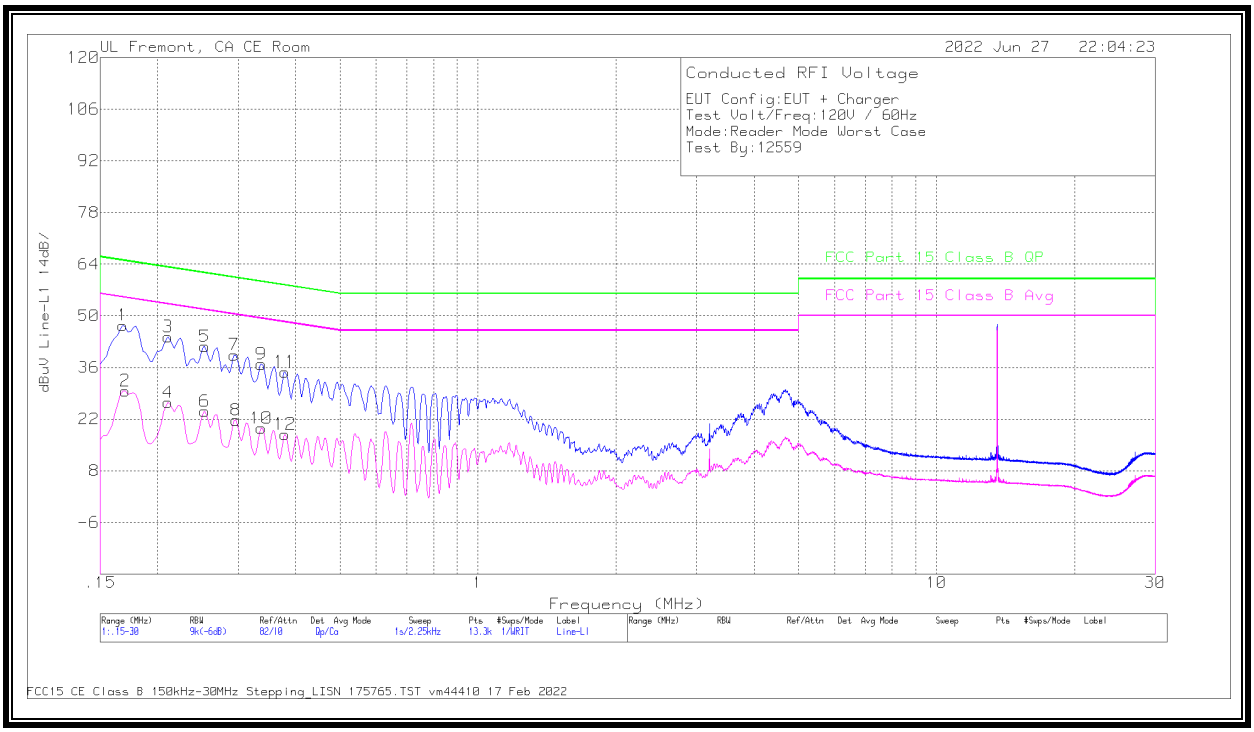
Worst Emission

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	.1838	25.86	Ca	.1	0	9.4	35.36	-	-	54.31	-18.95
16	.2445	21.69	Ca	0	0	9.3	30.99	-	-	51.94	-20.95
18	.3075	17.31	Ca	0	0	9.3	26.61	-	-	50.04	-23.43
20	.3683	14.05	Ca	0	0	9.3	23.35	-	-	48.54	-25.19
22	.429	12.99	Ca	0	.1	9.3	22.39	-	-	47.27	-24.88
24	.492	12.38	Ca	0	.1	9.3	21.78	-	-	46.13	-24.35
13	.186	40.58	Qp	.1	0	9.4	50.08	64.21	-14.13	-	-
15	.249	36.97	Qp	0	0	9.3	46.27	61.79	-15.52	-	-
17	.3098	33.16	Qp	0	0	9.3	42.46	59.98	-17.52	-	-
19	.3728	29.7	Qp	0	.1	9.3	39.1	58.44	-19.34	-	-
21	.4358	27.7	Qp	0	.1	9.3	37.1	57.14	-20.04	-	-
23	.4943	27.09	Qp	0	.1	9.3	36.49	56.1	-19.61	-	-

10.2. SECONDARY ANTENNA

10.2.1. READER MODE, Type B 848 Kbps, Antenna Port Not Terminated

LINE 1 RESULTS

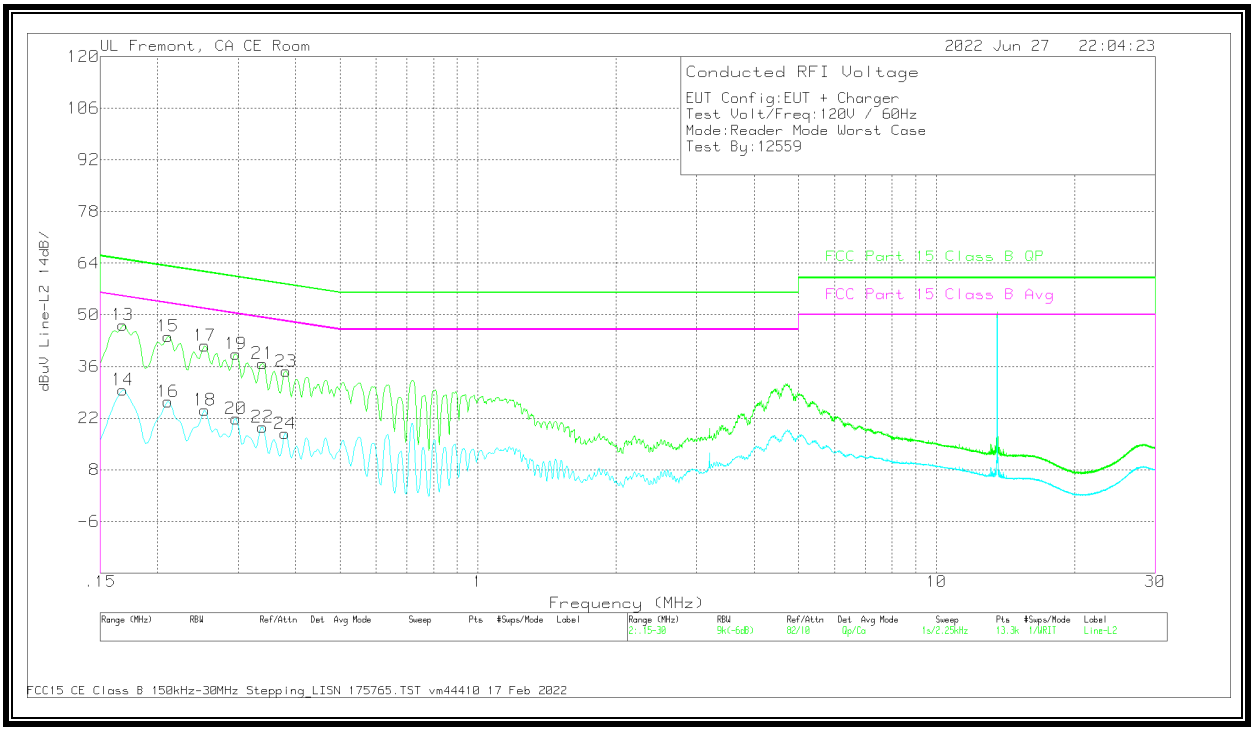


Worst Emission

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	.1703	18.94	Ca	.1	0	10.6	29.64	-	-	54.95	-25.31
4	.2108	17.01	Ca	0	0	9.5	26.51	-	-	53.18	-26.67
6	.2535	14.61	Ca	0	0	9.5	24.11	-	-	51.64	-27.53
8	.2963	12.21	Ca	0	0	9.5	21.71	-	-	50.35	-28.64
10	.3368	10	Ca	0	0	9.5	19.5	-	-	49.28	-29.78
12	.3795	8.38	Ca	0	0	9.5	17.88	-	-	48.29	-30.41
1	.168	36.71	Qp	.1	0	10.6	47.41	65.06	-17.65	-	-
3	.2108	34.78	Qp	0	0	9.5	44.28	63.18	-18.9	-	-
5	.2535	32.19	Qp	0	0	9.5	41.69	61.64	-19.95	-	-
7	.294	29.89	Qp	0	0	9.5	39.39	60.41	-21.02	-	-
9	.3368	27.38	Qp	0	0	9.5	36.88	59.28	-22.4	-	-
11	.3795	25.28	Qp	0	0	9.5	34.78	58.29	-23.51	-	-

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 lowered below the limit line.

LINE 2 RESULTS



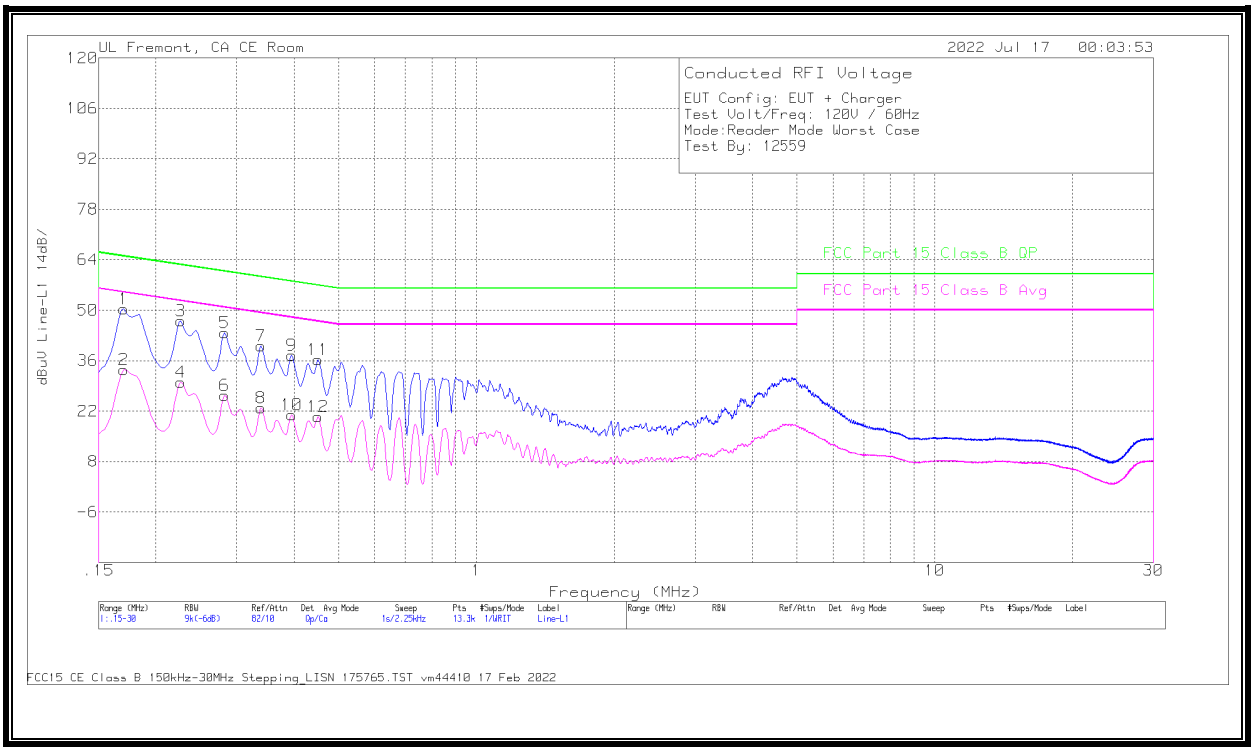
Worst Emission

Range 2: Line-L2 .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)
14	.168	18.93	Ca	.1	0	10.6	29.63	-	-	55.06	-25.43
16	.2108	16.98	Ca	0	0	9.5	26.48	-	-	53.18	-26.7
18	.2535	14.67	Ca	0	0	9.5	24.17	-	-	51.64	-27.47
20	.2963	12.37	Ca	0	0	9.5	21.87	-	-	50.35	-28.48
22	.339	10.09	Ca	0	0	9.5	19.59	-	-	49.23	-29.64
24	.3795	8.29	Ca	0	0	9.5	17.79	-	-	48.29	-30.5
13	.168	36.54	Qp	.1	0	10.6	47.24	65.06	-17.82	-	-
15	.2108	34.67	Qp	0	0	9.5	44.17	63.18	-19.01	-	-
17	.2535	32.13	Qp	0	0	9.5	41.63	61.64	-20.01	-	-
19	.2963	29.89	Qp	0	0	9.5	39.39	60.35	-20.96	-	-
21	.339	27.3	Qp	0	0	9.5	36.8	59.23	-22.43	-	-
23	.3818	25.19	Qp	0	0	9.5	34.69	58.24	-23.55	-	-

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 lowered below the limit line.

10.2.2. READER MODE, Type B 848 Kbps, With Antenna Port Terminated

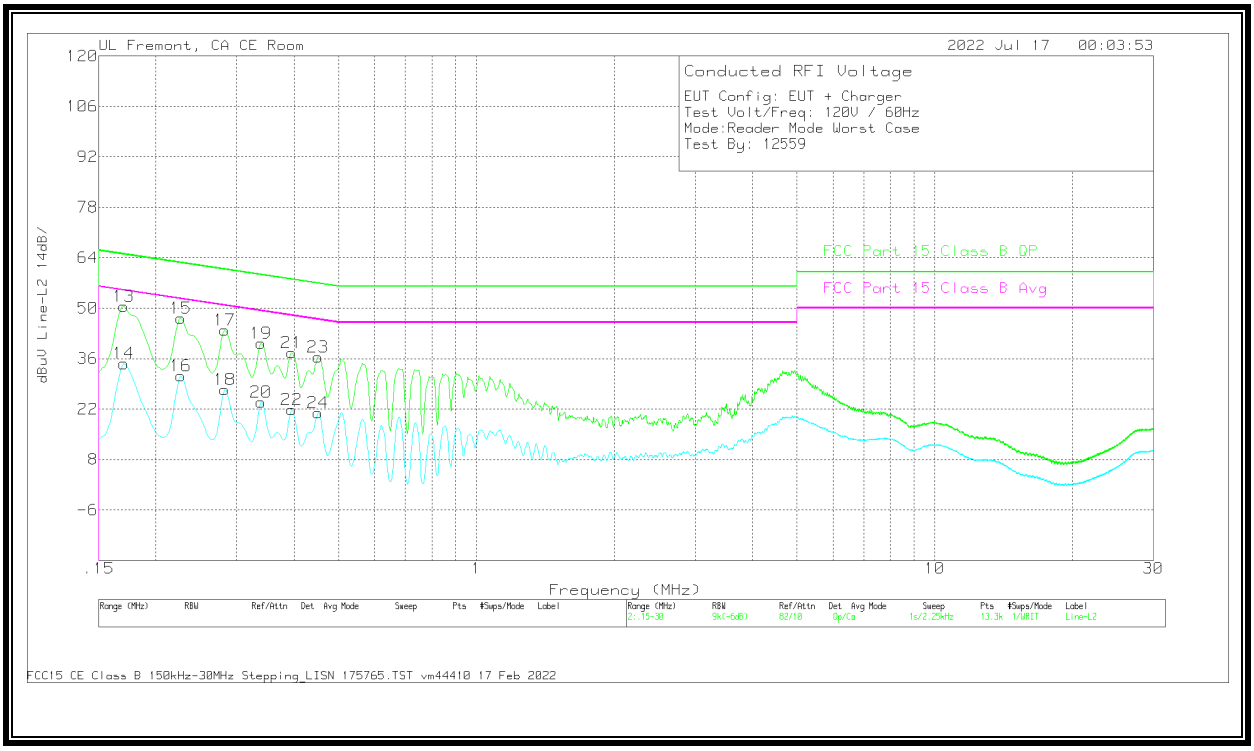
LINE 1 RESULTS



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	.1703	23.96	Ca	.1	0	9.4	33.46	-	-	54.95	-21.49
4	.2265	20.78	Ca	0	0	9.3	30.08	-	-	52.58	-22.5
6	.2828	17.07	Ca	0	0	9.3	26.37	-	-	50.73	-24.36
8	.339	13.56	Ca	0	0	9.3	22.86	-	-	49.23	-26.37
10	.3953	11.56	Ca	0	.1	9.3	20.96	-	-	47.95	-26.99
12	.4515	10.98	Ca	0	.1	9.3	20.38	-	-	46.85	-26.47
1	.1703	40.79	Qp	.1	0	9.4	50.29	64.95	-14.66	-	-
3	.2265	37.77	Qp	0	0	9.3	47.07	62.58	-15.51	-	-
5	.2828	34.39	Qp	0	0	9.3	43.69	60.73	-17.04	-	-
7	.339	30.72	Qp	0	0	9.3	40.02	59.23	-19.21	-	-
9	.3953	28.02	Qp	0	.1	9.3	37.42	57.95	-20.53	-	-
11	.4515	26.81	Qp	0	.1	9.3	36.21	56.85	-20.64	-	-

LINE 2 RESULTS

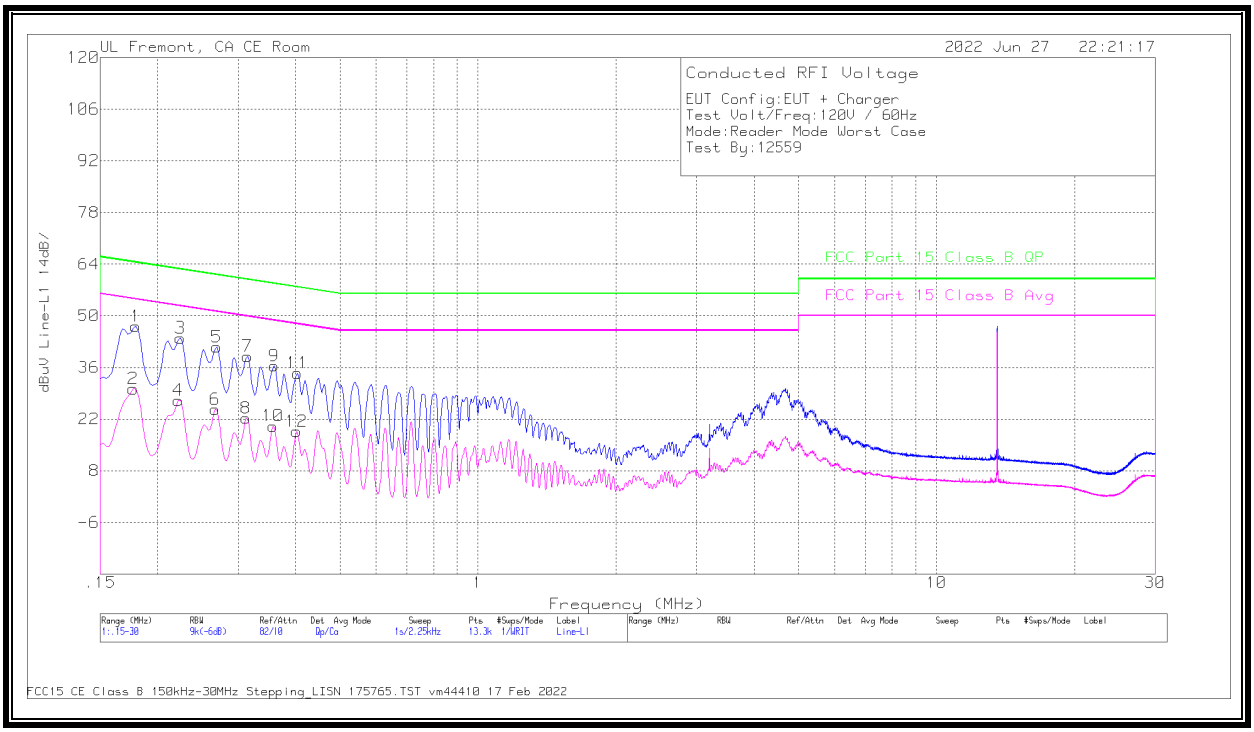


Worst Emission

Range 2: Line-L2 .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)
14	.1703	25.12	Ca	.1	0	9.4	34.62	-	-	54.95	-20.33
16	.2265	21.87	Ca	0	0	9.3	31.17	-	-	52.58	-21.41
18	.2828	18.08	Ca	0	0	9.3	27.38	-	-	50.73	-23.35
20	.339	14.65	Ca	0	0	9.3	23.95	-	-	49.23	-25.28
22	.3953	12.37	Ca	0	.1	9.3	21.77	-	-	47.95	-26.18
24	.4515	11.58	Ca	0	.1	9.3	20.98	-	-	46.85	-25.87
13	.1703	41.03	Qp	.1	0	9.4	50.53	64.95	-14.42	-	-
15	.2265	37.9	Qp	0	0	9.3	47.2	62.58	-15.38	-	-
17	.2828	34.58	Qp	0	0	9.3	43.88	60.73	-16.85	-	-
19	.339	30.95	Qp	0	0	9.3	40.25	59.23	-18.98	-	-
21	.3953	28.21	Qp	0	.1	9.3	37.61	57.95	-20.34	-	-
23	.4515	27.1	Qp	0	.1	9.3	36.5	56.85	-20.35	-	-

10.2.3. TAG MODE, Antenna Port Not Terminated

LINE 1 RESULTS

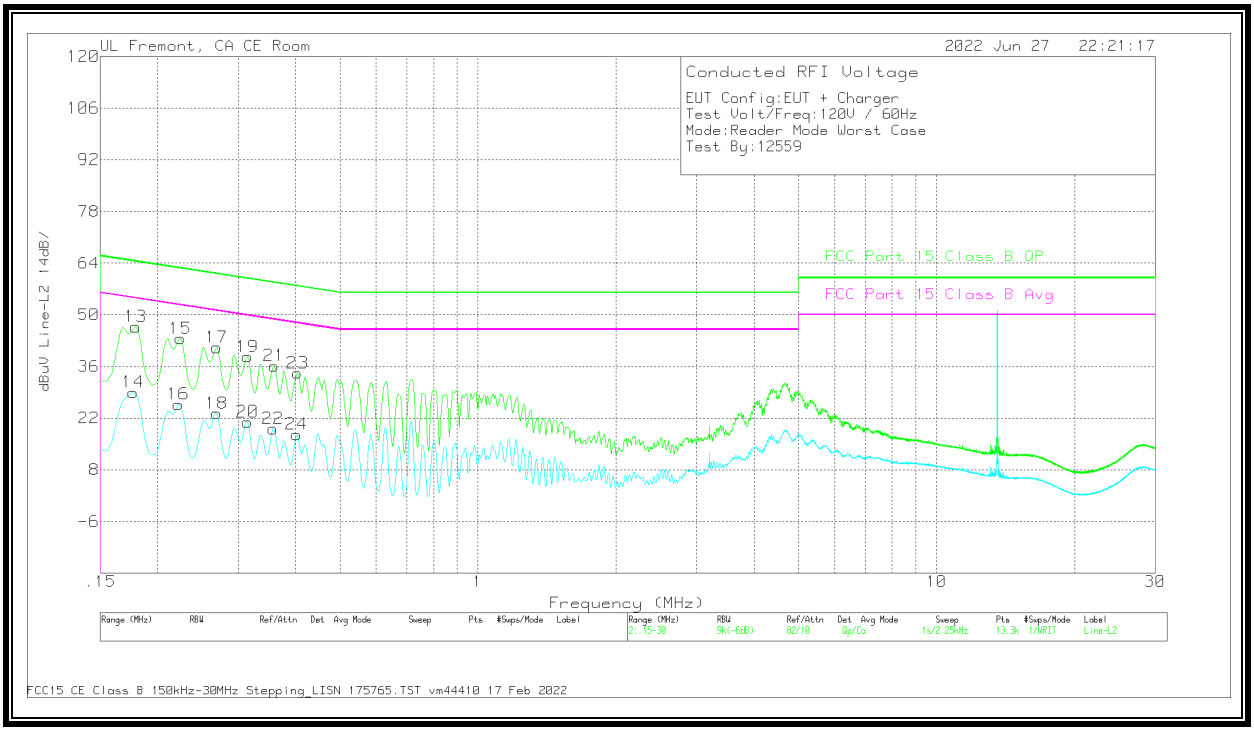


Worst Emission

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	.177	19.72	Ca	.1	0	10.4	30.22	-	-	54.63	-24.41
4	.222	17.58	Ca	0	0	9.5	27.08	-	-	52.74	-25.66
6	.267	15.16	Ca	0	0	9.5	24.66	-	-	51.21	-26.55
8	.312	12.76	Ca	0	0	9.5	22.26	-	-	49.92	-27.66
10	.357	10.64	Ca	0	0	9.5	20.14	-	-	48.8	-28.66
12	.402	9.17	Ca	0	0	9.5	18.67	-	-	47.81	-29.14
1	.1793	36.77	Qp	.1	0	10.3	47.17	64.52	-17.35	-	-
3	.2243	34.44	Qp	0	0	9.5	43.94	62.66	-18.72	-	-
5	.2693	32	Qp	0	0	9.5	41.5	61.14	-19.64	-	-
7	.3143	29.49	Qp	0	0	9.5	38.99	59.86	-20.87	-	-
9	.3593	26.9	Qp	0	0	9.5	36.4	58.75	-22.35	-	-
11	.4043	24.97	Qp	0	0	9.5	34.47	57.77	-23.3	-	-

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 lowered below the limit line.

LINE 2 RESULTS



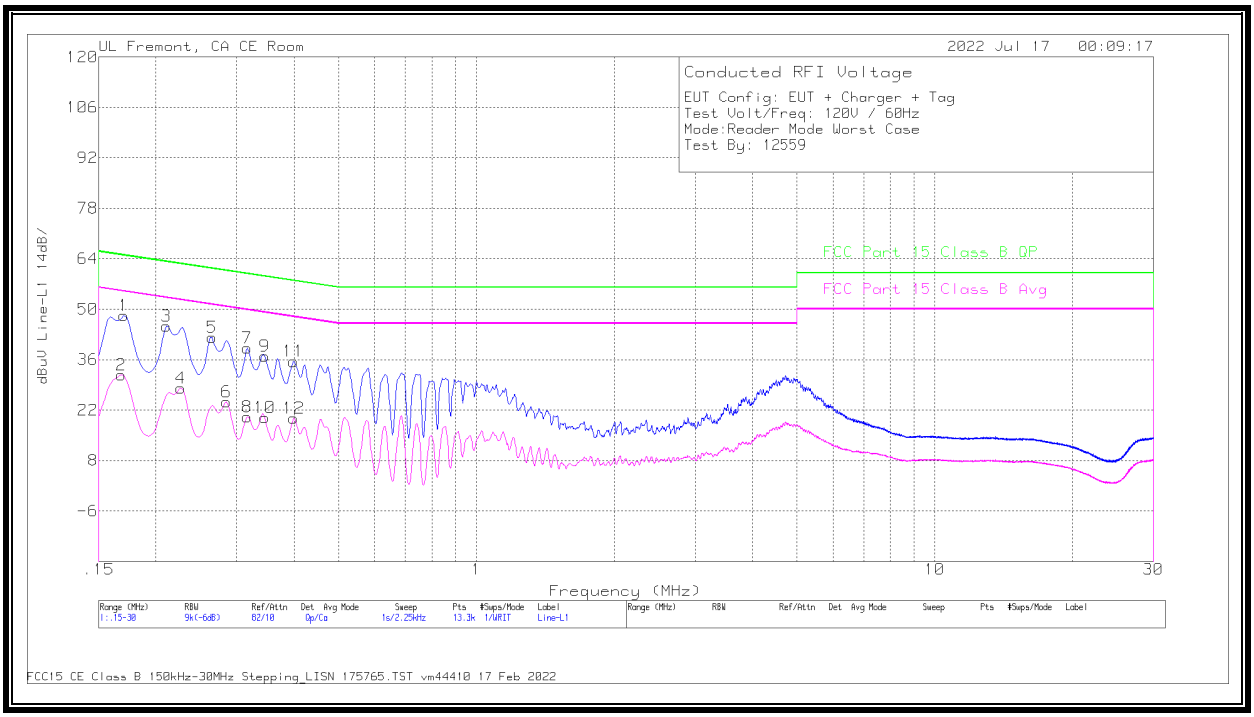
Worst Emission

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	.177	18.5	Ca	.1	0	10.4	29	-	-	54.63	-25.63
16	.222	16.26	Ca	0	0	9.5	25.76	-	-	52.74	-26.98
18	.2693	13.78	Ca	0	0	9.5	23.28	-	-	51.14	-27.86
20	.3143	11.42	Ca	0	0	9.5	20.92	-	-	49.86	-28.94
22	.357	9.64	Ca	0	0	9.5	19.14	-	-	48.8	-29.66
24	.402	8.07	Ca	0	0	9.5	17.57	-	-	47.81	-30.24
13	.1793	36.36	Qp	.1	0	10.3	46.76	64.52	-17.76	-	-
15	.2243	34.06	Qp	0	0	9.5	43.56	62.66	-19.1	-	-
17	.2693	31.65	Qp	0	0	9.5	41.15	61.14	-19.99	-	-
19	.3143	29.14	Qp	0	0	9.5	38.64	59.86	-21.22	-	-
21	.3593	26.66	Qp	0	0	9.5	36.16	58.75	-22.59	-	-
23	.4043	24.7	Qp	0	0	9.5	34.2	57.77	-23.57	-	-

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 lowered below the limit line.

10.2.4. TAG MODE, With Antenna Port Terminated

LINE 1 RESULTS

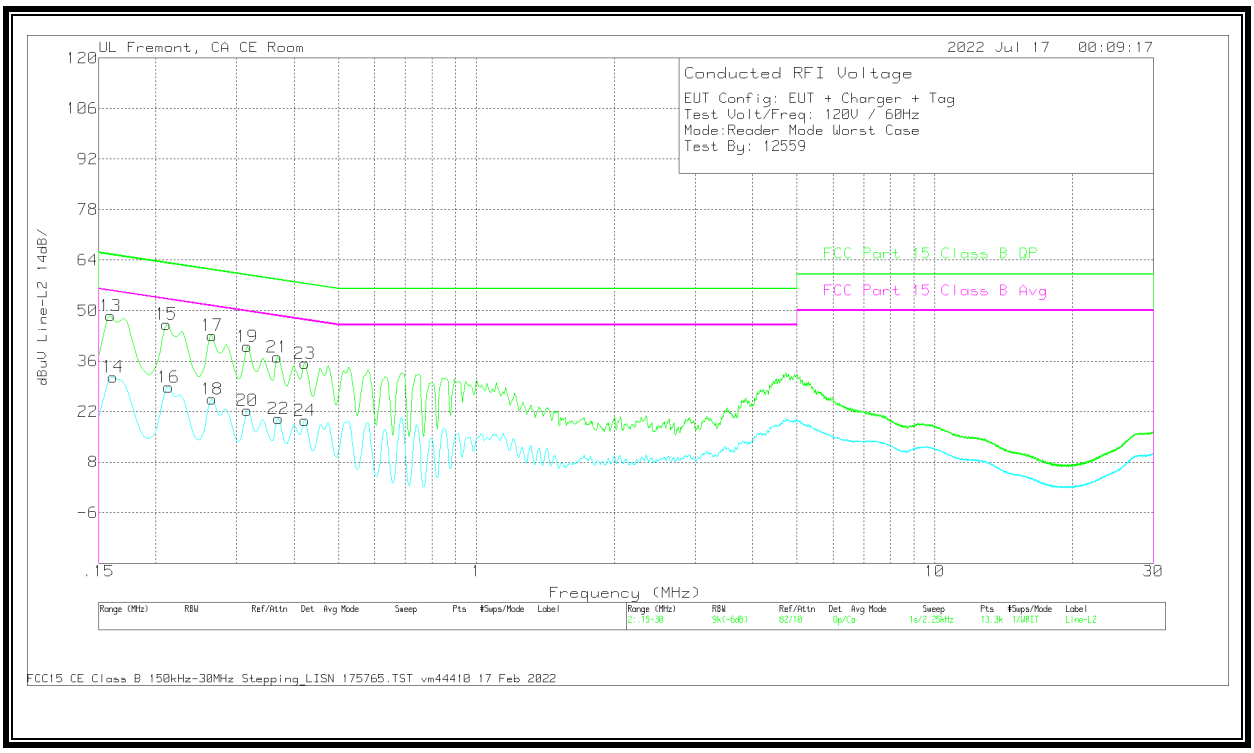


Worst Emission

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	.168	22.27	Ca	.1	0	9.4	31.77	-	-	55.06	-23.29
4	.2265	18.86	Ca	0	0	9.3	28.16	-	-	52.58	-24.42
6	.285	15.01	Ca	0	0	9.3	24.31	-	-	50.67	-26.36
8	.3165	10.83	Ca	0	0	9.3	20.13	-	-	49.8	-29.67
10	.3458	10.51	Ca	0	.1	9.3	19.91	-	-	49.06	-29.15
12	.3998	10.33	Ca	0	.1	9.3	19.73	-	-	47.86	-28.13
1	.1703	38.83	Qp	.1	0	9.4	48.33	64.95	-16.62	-	-
3	.2108	35.98	Qp	0	0	9.4	45.38	63.18	-17.8	-	-
5	.2648	32.91	Qp	0	0	9.3	42.21	61.28	-19.07	-	-
7	.3165	29.87	Qp	0	0	9.3	39.17	59.8	-20.63	-	-
9	.3458	27.56	Qp	0	.1	9.3	36.96	59.06	-22.1	-	-
11	.3998	26.09	Qp	0	.1	9.3	35.49	57.86	-22.37	-	-

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	.1613	22.16	Ca	.1	0	9.4	31.66	-	-	55.4	-23.74
16	.213	19.46	Ca	0	0	9.4	28.86	-	-	53.09	-24.23
18	.2648	16.22	Ca	0	0	9.3	25.52	-	-	51.28	-25.76
20	.3165	13.06	Ca	0	0	9.3	22.36	-	-	49.8	-27.44
22	.3705	10.69	Ca	0	.1	9.3	20.09	-	-	48.49	-28.4
24	.4223	10.14	Ca	0	.1	9.3	19.54	-	-	47.4	-27.86
13	.159	39.08	Qp	.1	0	9.4	48.58	65.52	-16.94	-	-
15	.2108	36.86	Qp	0	0	9.4	46.26	63.18	-16.92	-	-
17	.2648	33.83	Qp	0	0	9.3	43.13	61.28	-18.15	-	-
19	.3165	30.72	Qp	0	0	9.3	40.02	59.8	-19.78	-	-
21	.3683	27.88	Qp	0	0	9.3	37.18	58.54	-21.36	-	-
23	.4223	26.03	Qp	0	.1	9.3	35.43	57.4	-21.97	-	-

11. SETUP PHOTOS

Please refer to 14040868-EP1V1 for setup photos.

END OF TEST REPORT