



CERTIFICATION TEST REPORT

Report Number. : 14040868-E12V4

Applicant : APPLE, INC.
ONE 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-216 ISSUE 2
ISED RSS-GEN ISSUE 5 + A1 + A2

Date of Issue:
August 11, 2022

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	7/25/2022	Initial Issue	Chin Pang
V2	8/2/2022	Address TCB's questions on section 5.1 & 5.2	Chin Pang
V3	8/10/2022	Address TCB's questions on page 14/20	Chin Pang
V4	8/11/2022	Update section 9 AC Line plots	Chin Pang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE, INC.
ONE APPLE PARK WAY
CUPERTINO, CA 95014,

EUT DESCRIPTION: SMARTPHONE

MODEL: A2632 (Parent Model)
A2885, A2886, A2887, A2888 (Variant Models)

BRAND: APPLE

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)

SERIAL NUMBER: LFKGVKGW4X

SAMPLE RECEIPT DATE: JUNE 20, 2022

DATE TESTED: JUNE 23 -JULY 14, 2022

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	Complies
ISED RSS-216 Issue 2	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 LLC. By:



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UL LLC.

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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-216 Issue 2

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	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538	US0104	22541	550739
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538	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	UNCERTAINTY
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%.

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/IC ID 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 and H-FIELD

The transmitter has maximum peak radiated electric and magnetic field strength as follows:

Fundamental Frequency (KHz)	Mode	E field (300m distance) FCC (dBuV/m)	H field (3m distance) IC (dBuA/m)
360	Standby	-43.79	-11.16
	Operating	-21.77	8.99

5.3. WORST-CASE CONFIGURATION AND MODE

The EUT is a smartphone which connected to the AC/DC adapter via USB-C cable, and the inductive charging coil to charge WPT accessories (Load). For the entire radiated emissions test, the EUT was investigated on the following configuration during the test: 1. At its natural orientation with EUT set at center location on Load, 2. At its natural orientation with EUT including a case set at center location on load. The worst case was natural orientation with EUT including a case set at center location on load.

Mode	Descriptions
Standby	EUT with Case powered by AC/DC adapter
Operating	EUT with Case and Load powered by AC/DC adapter

For below 30MHz & 1GHz tests EUT was connected to AC power adapter as the worst case, For AC line conducted emission, test was investigated with AC power adapter.

The EUT was tested on standby and operation modes. During operational mode, EUT was tested with load.

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 300 m 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 D01.

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT & PERIPHERALS

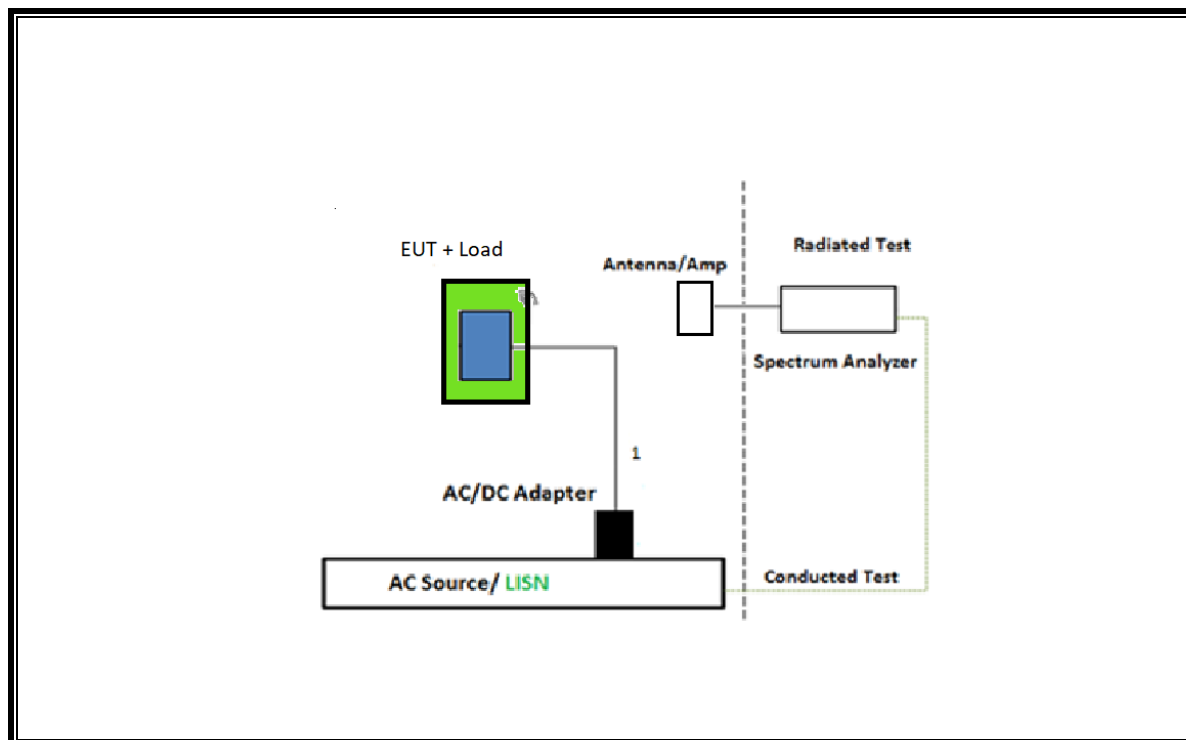
SUPPORT EQUIPMENT & PERIPHERALS LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC adapter	Apple	A2305	C4H748200RXH80MAY	DoC
WPT Accessory (Load)	Apple	A2384	DNDF66EN0NLJ	BCGA2384
WPT Accessory	Apple	Silicon Case	C03241PE0MACDKZ0133	DoC

I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC	1	USBC	Un-shielded	1	5W Power Supply

TEST SETUP

OPERATING MODE PHONE WITH LOAD



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
Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	PRE0179465	07/29/2022	07/29/2021
Antenna, Passive Loop 100KHz to 30MHz	ETS-Lindgren	EM-6872	PRE0179467	07/29/2022	07/29/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz w/4dB	Sunol Sciences Crop.	JB1	80714	08/20/2022	08/20/2021
*Amplifier, 9kHz to 1GHz, 32dB	Sonoma Instrument	310N	84489	07/20/2022	07/20/2021
Sniffer Probes	Electro Metrics	EM-6992	N/A	N/A	N/A
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A-544	85313	01/30/2023	01/30/2022

AC Line Conducted					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	02/21/2023	02/21/2022
Power Cable, Line Conducted Emissions	UL	PR1	T861	10/27/2022	10/27/2021
LISN for Conducted Emissions	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01	175765	01/26/2023	01/26/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, 21 Jan 2022		
Conducted Software	UL	UL EMC	Ver 9.5, 21 Jan 2022		

*Testing is completed before equipment expiration date.

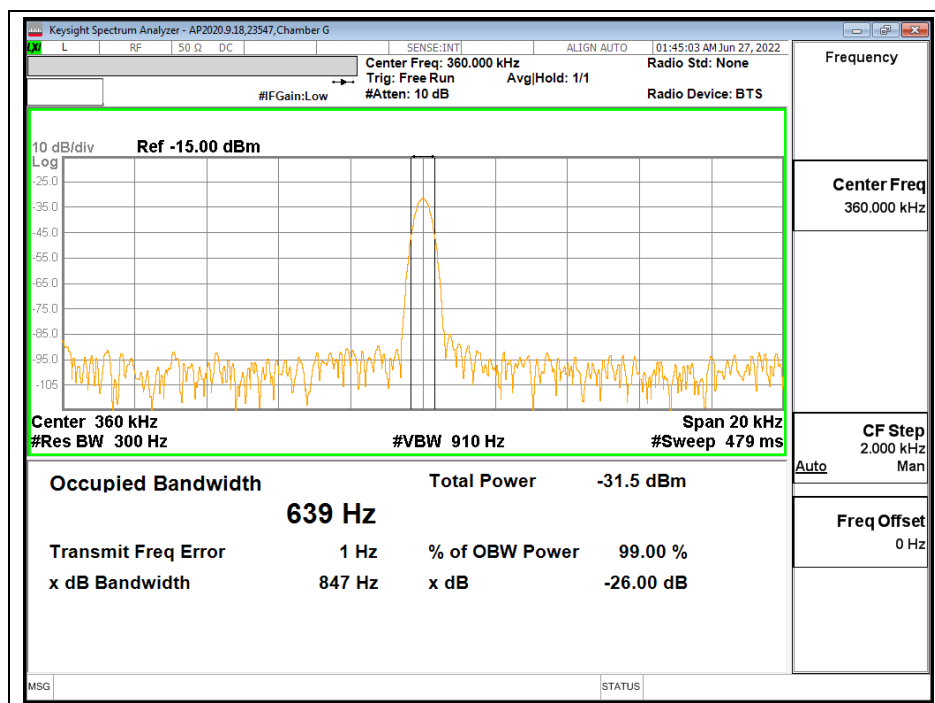
7. OCCUPIED BANDWIDTH

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 300Hz. 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-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



8. RADIATED EMISSION TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.209 (a)

ICES-001 Section 3.3.4, IC RSS-216 6.2.2, and IC RSS-GEN Sections 8.9 and 8.10.

Frequency (MHz)	Field Strength (microvolts/meter)	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 to 216	150	3
216 to 960	200	3
Above 960 MHz	500	3
Note: The lower limit shall apply at the transition frequency.		

ICES-001 Issue 5 Table 2 & Table 4:

Table 2: Magnetic field strength radiated emission limits for induction cooking appliances

Frequency range (MHz)	Quasi-peak, at 3 m distance (dBμA/m)
0.009 – 0.07	69
0.07 – 0.15	69 to 39 *
0.15 – 30	39 to 7 *
* The limit level in dBμA/m decreases linearly with the logarithm of frequency.	

Table 4: Electric field strength radiated emission limits for induction cooking appliances

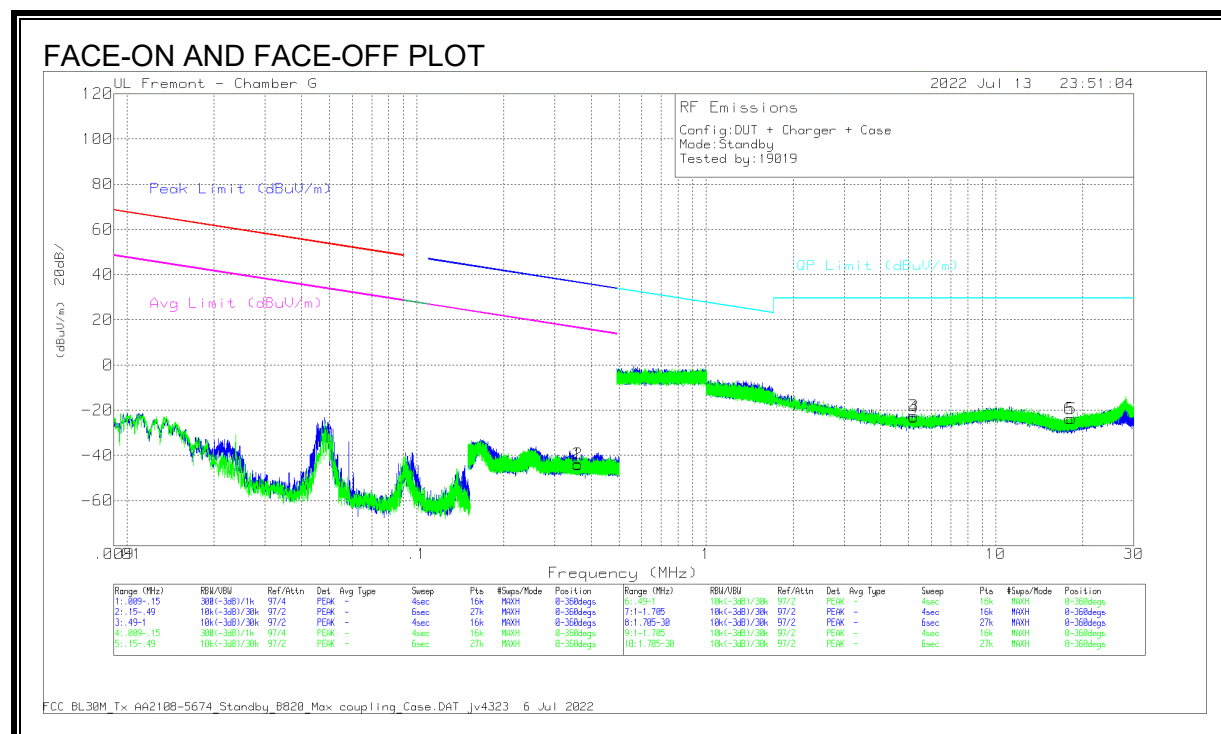
Frequency range (MHz)	OATS or SAC * 10 m measurement distance Quasi-peak (dBμV/m)	OATS or SAC * 3 m measurement distance Quasi-peak (dBμV/m)	FAR * 3 m measurement distance Quasi-peak (dBμV/m)
30 – 230	30	40	42 to 35**
230 – 1000	37	47	42
Note: The more stringent limit applies at the transition frequency. * OATS = open-area test site, SAC = semi-anechoic chamber, FAR = fully-anechoic room (see CSA C15.119). ** The limit level in dBμV/m decreases linearly with the logarithm of frequency.			

RESULTS

8.2.Standby

8.2.1. FCC TX FUNDAMENTAL & SPURIOUS EMISSIONS (9 kHz - 30 MHz)

Standby



DATA

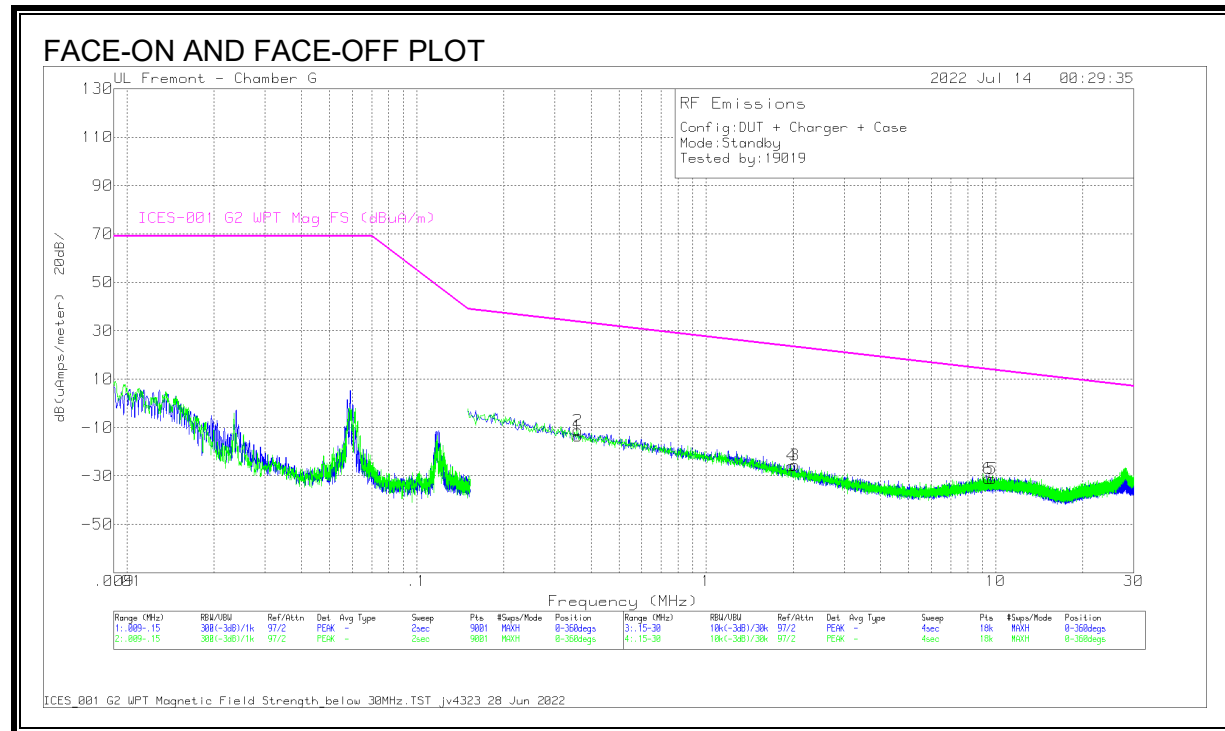
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.3603	11.82	Pk	56.1	-32	-80	-44.08	36.47	-80.55	16.47	-60.55	0-360	Face-On
2	.3603	12.11	Pk	56.1	-32	-80	-43.79	36.48	-80.27	16.48	-60.27	0-360	Face-Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Dist Corr 30m (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
3	5.2043	13.48	Pk	35.8	-31.8	-40	-22.52	29.5	-52.02	0-360	Face-On
4	5.2158	12.82	Pk	35.8	-31.8	-40	-23.18	29.5	-52.68	0-360	Face-Off
6	17.9521	13.72	Pk	34.1	-31.5	-40	-23.68	29.5	-53.18	0-360	Face-Off
5	18.2938	13.6	Pk	34.1	-31.5	-40	-23.8	29.5	-53.3	0-360	Face-On

Pk - Peak detector

8.2.2. IC/ ICES-001 TX FUNDAMENTAL & SPURIOUS EMISSIONS (9 kHz - 30 MHz)

Standby

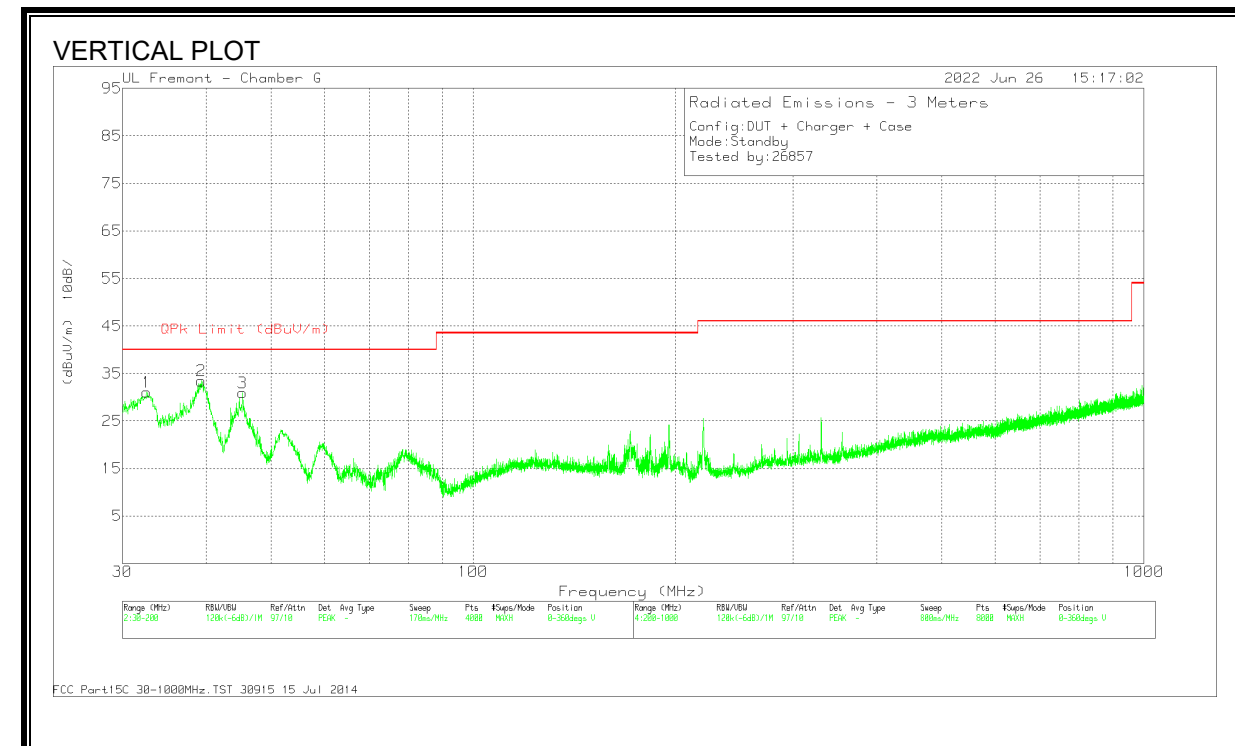
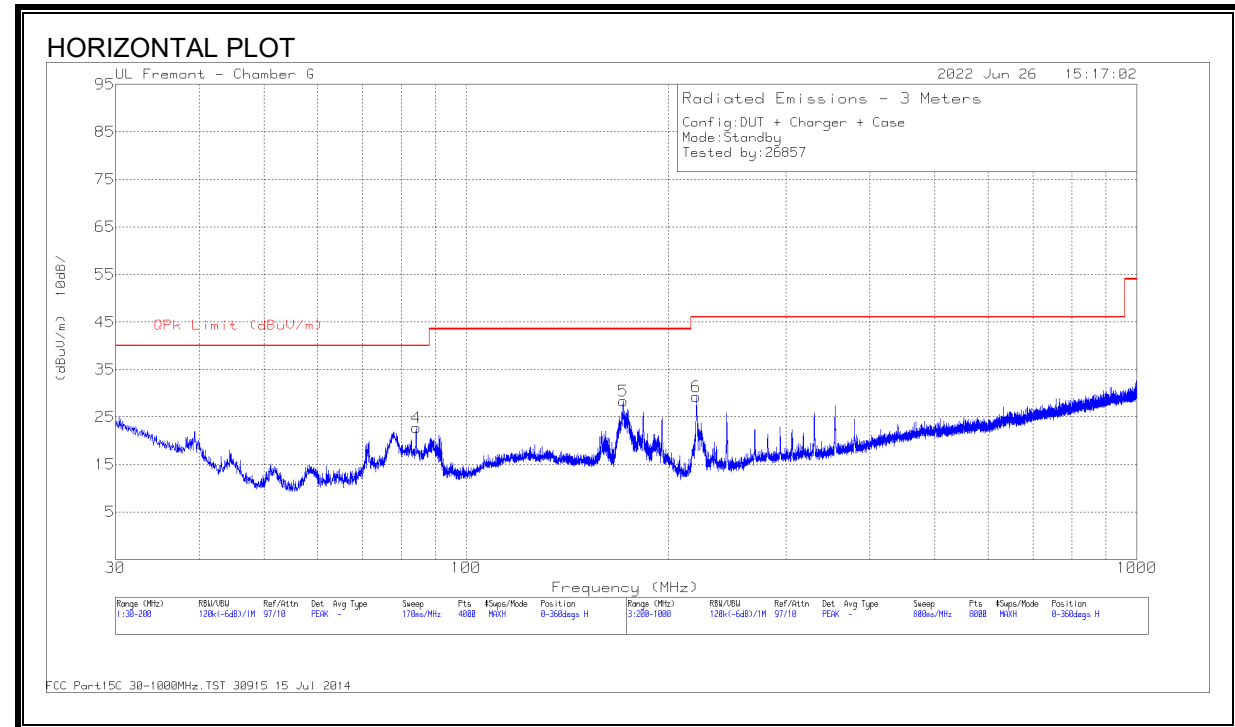


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Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Corrected Reading (dBuA/m)	ICES-001 G2 WPT Mag FS (dBuA/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.3606	14.97	Pk	3.6	-32	-13.43	33.7	-47.13	0-360	Face-Off
2	.3606	17.24	Pk	3.6	-32	-11.16	33.7	-44.86	0-360	Face-On
4	1.9721	15.84	Pk	-9.7	-31.9	-25.76	23.44	-49.2	0-360	Face-On
3	2.0219	16.35	Pk	-9.9	-31.9	-25.45	23.29	-48.74	0-360	Face-Off
6	9.463	17.5	Pk	-16.8	-31.7	-31	13.97	-44.97	0-360	Face-On
5	9.7366	17.32	Pk	-16.7	-31.7	-31.08	13.8	-44.88	0-360	Face-Off

Pk - Peak detector

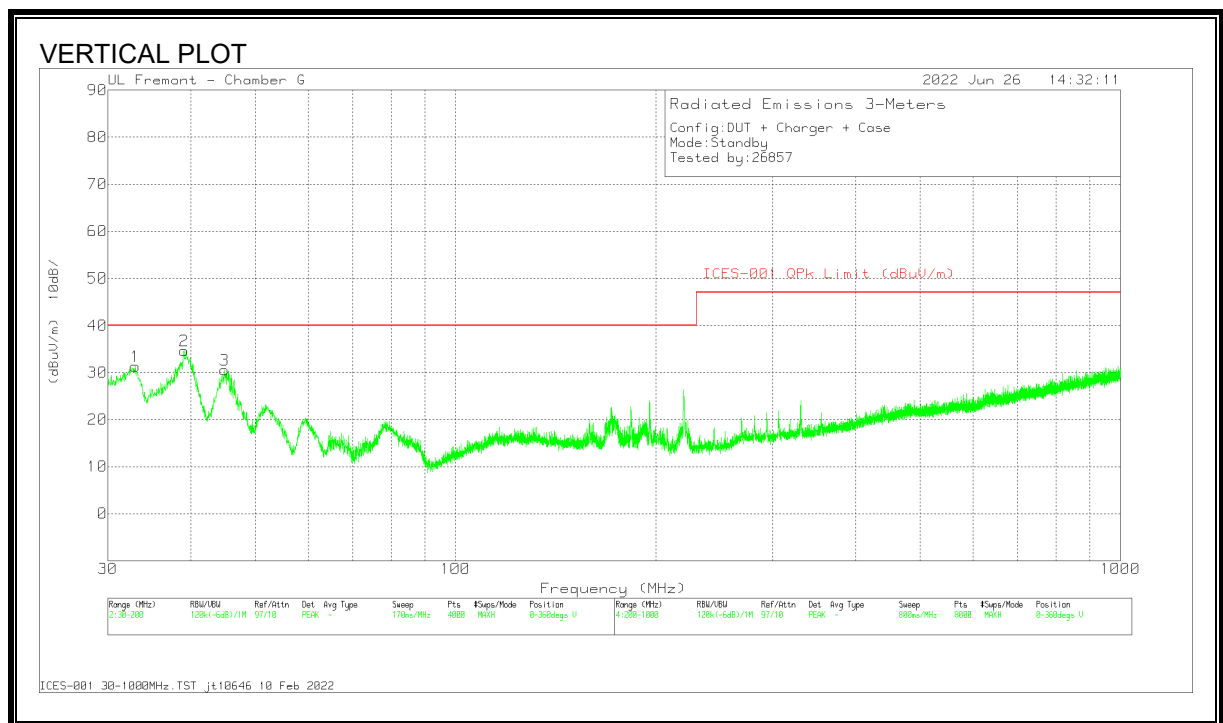
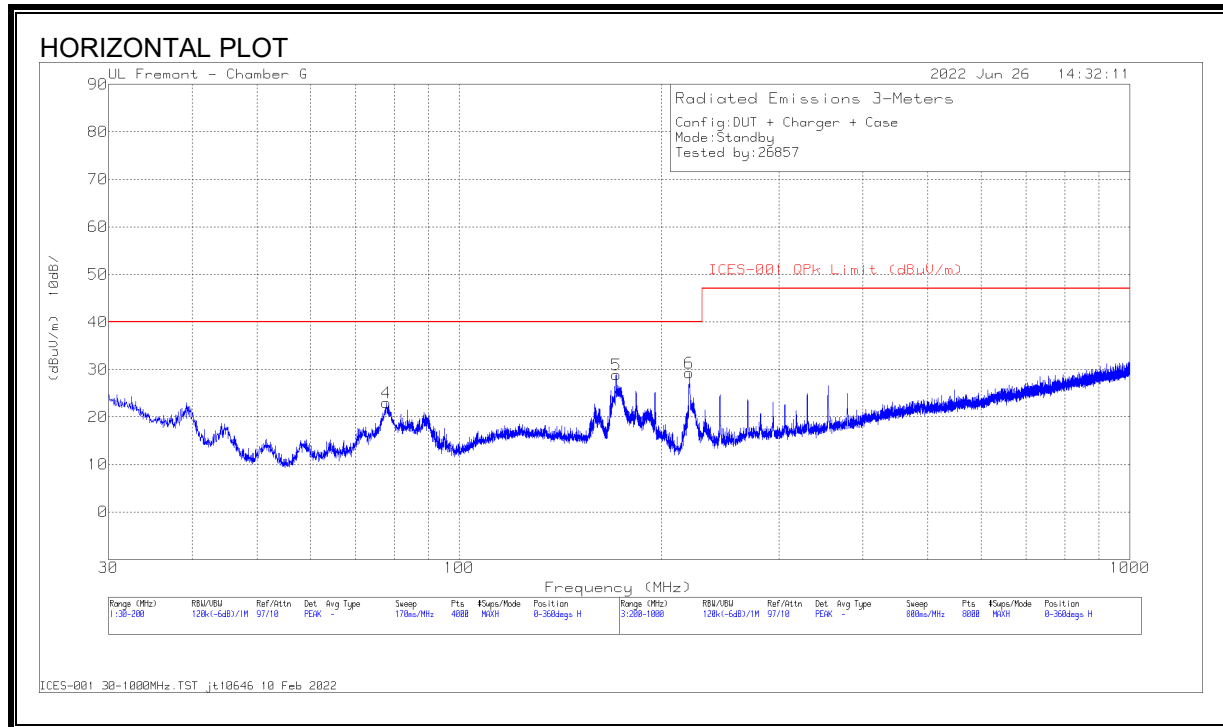
8.2.3. FCC TX SPURIOUS EMISSION (30 - 1000 MHz)**Standby**

DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80714 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 171.562	37.84	Qp	17.6	-30	25.44	43.52	-18.08	9	161	H
1	32.8572	32.2	Qp	25.1	-31.3	26	40	-14	253	107	V
2	39.4424	38.23	Qp	20.1	-31.2	27.13	40	-12.87	55	172	V
3	44.9105	39.7	Qp	16.2	-31.1	24.8	40	-15.2	63	131	V
4	82.54	30.83	Qp	13.2	-30.7	13.33	40	-26.67	102	278	H
6	220.313	38.81	Qp	16.6	-29.7	25.71	46.02	-20.31	307	142	H

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

Qp - Quasi-Peak detector

8.2.4. IC/ ICES-001 TX SPURIOUS EMISSION (30 - 1000 MHz)**Standby**

DATA

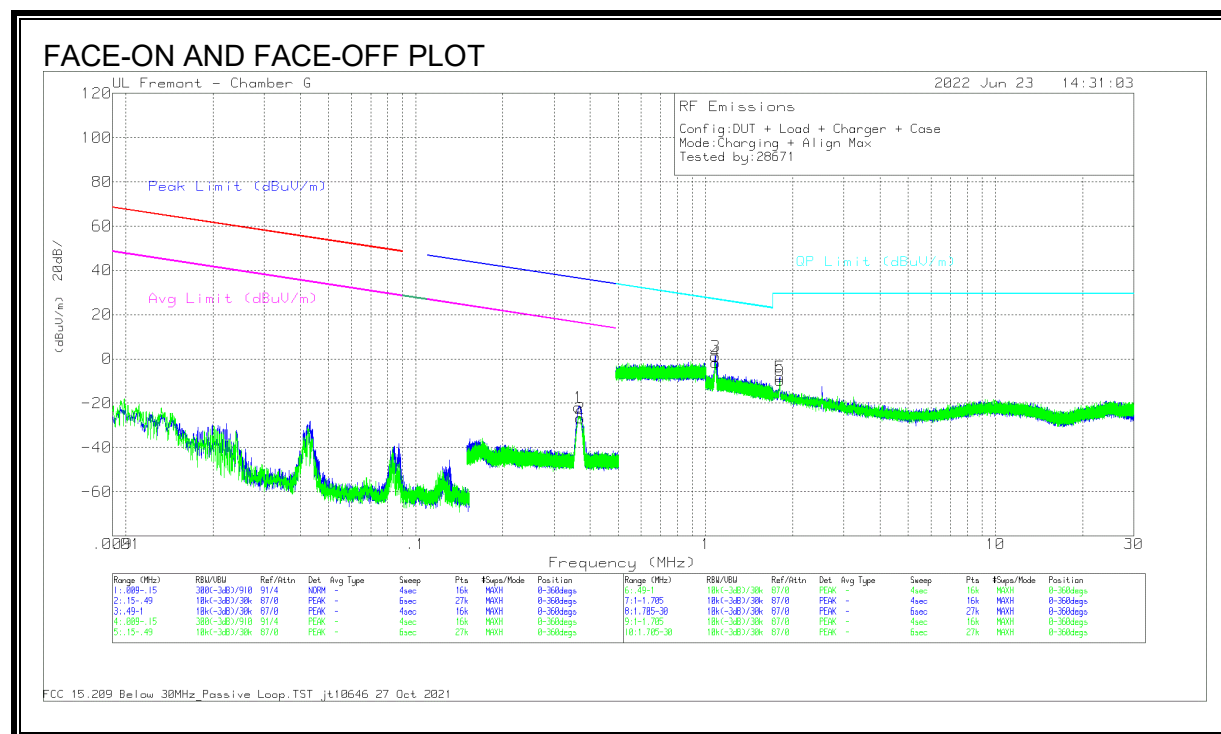
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80714 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	ICES-001 QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	32.8588	33.16	Qp	25.1	-31.3	26.96	40	-13.04	199	104	V
2	40.1318	39.38	Qp	19.6	-31.2	27.78	40	-12.22	6	100	V
3	44.6494	40.1	Qp	16.3	-31.1	25.3	40	-14.7	326	109	V
4	77.6569	33.15	Qp	13.5	-30.8	15.85	40	-24.15	120	209	H
5	171.324	36.72	Qp	17.7	-30	24.42	40	-15.58	168	290	H
6	220.347	40.7	Qp	16.6	-29.7	27.6	40	-12.4	137	144	H

Qp - Quasi-Peak detector

8.3.EUT With Load

8.3.1. FCC TX FUNDAMENTAL & SPURIOUS EMISSIONS (9 kHz - 30 MHz)

OPERATING WITH LOAD



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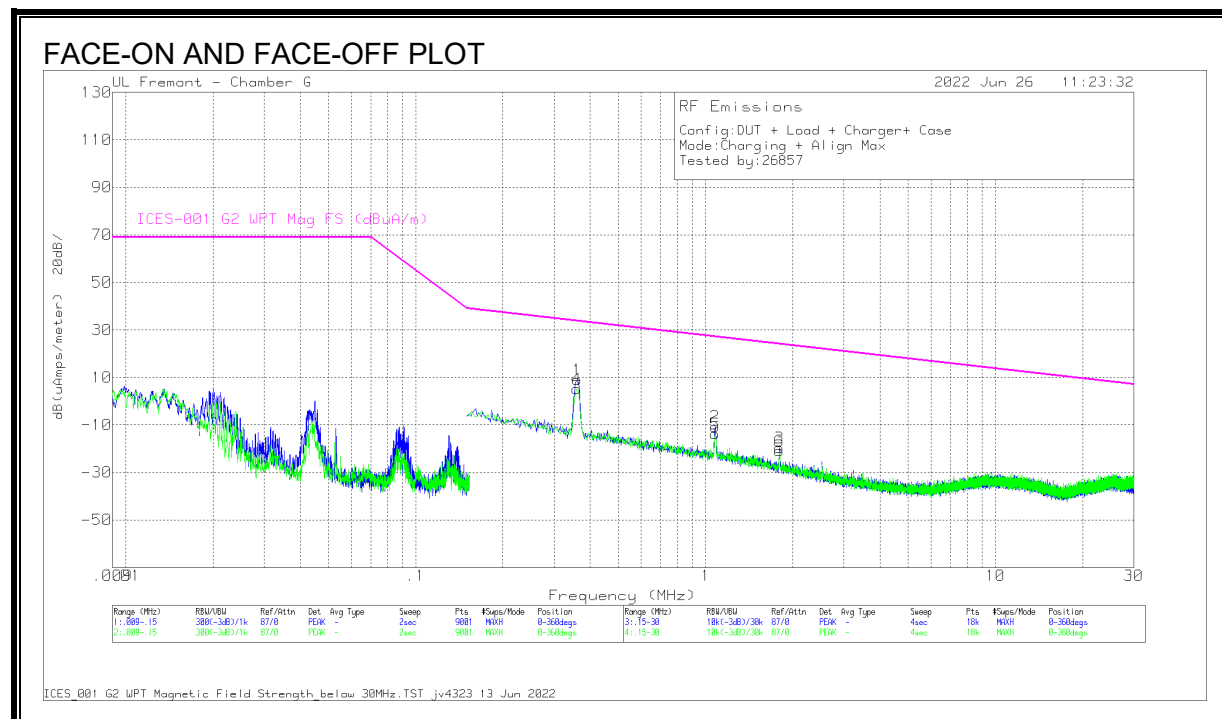
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.3646	34.03	Pk	56.2	-32	-80	-21.77	36.37	-58.14	16.37	-38.14	0-360	Face-On
2	.3699	29.1	Pk	56.2	-32	-80	-26.7	36.25	-62.95	16.25	-42.95	0-360	Face-Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Dist Corr 30m (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
3	1.0807	26.64	Pk	46.5	-32	-40	1.14	26.95	-25.81	0-360	Face-On
4	1.0809	23.87	Pk	46.5	-32	-40	-1.63	26.95	-28.58	0-360	Face-Off
6	1.8025	19.59	Pk	42.6	-31.9	-40	-9.71	29.5	-39.21	0-360	Face-Off
5	1.8046	21.24	Pk	42.6	-31.9	-40	-8.06	29.5	-37.56	0-360	Face-On

Pk - Peak detector

8.3.2. IC/ ICES-001 TX FUNDAMENTAL & SPURIOUS EMISSIONS (9 kHz - 30 MHz)

OPERATING WITH LOAD



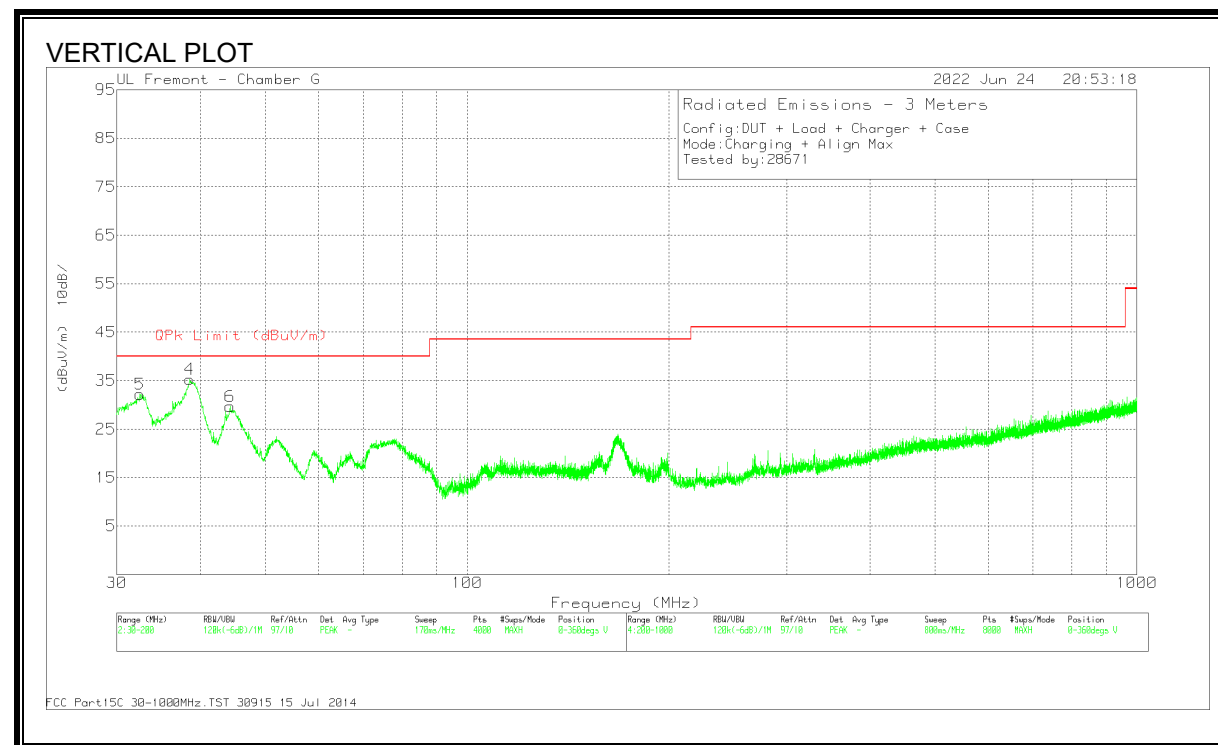
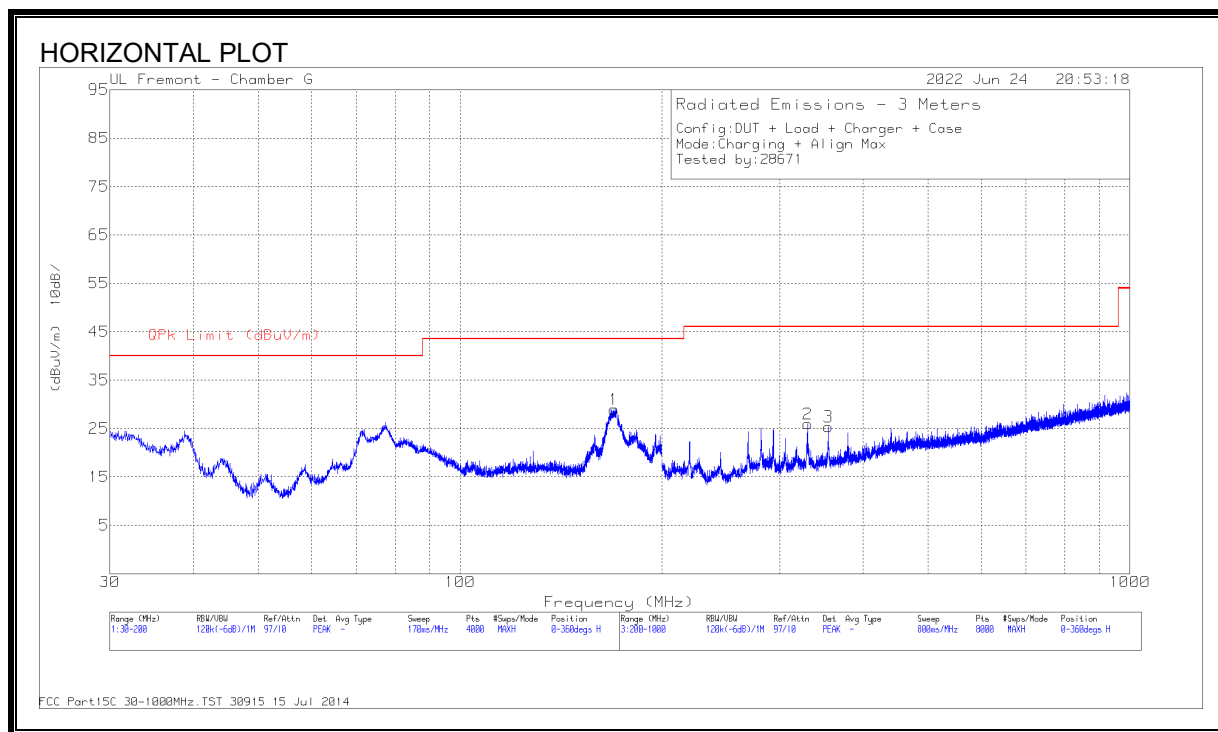
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Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Corrected Reading (dBuA/m)	ICES-001 G2 WPT Mag FS (dBuA/m)	Margin (dB)	Azimuth (Degs)	Polarity
4	.3589	33.7	Pk	3.6	-32	5.3	33.73	-28.43	0-360	Face-Off
1	.3606	37.39	Pk	3.6	-32	8.99	33.7	-24.71	0-360	Face-On
5	1.0785	23.28	Pk	-4.9	-32	-13.62	27.09	-40.71	0-360	Face-Off
2	1.0801	26.2	Pk	-4.9	-32	-10.7	27.08	-37.78	0-360	Face-On
3	1.7981	20.91	Pk	-8.7	-31.9	-19.69	24	-43.69	0-360	Face-On
6	1.7981	19.64	Pk	-8.7	-31.9	-20.96	24	-44.96	0-360	Face-Off

Pk - Peak detector

8.3.3. FCC TX SPURIOUS EMISSION (30 - 1000 MHz)

OPERATING WITH LOAD



DATA

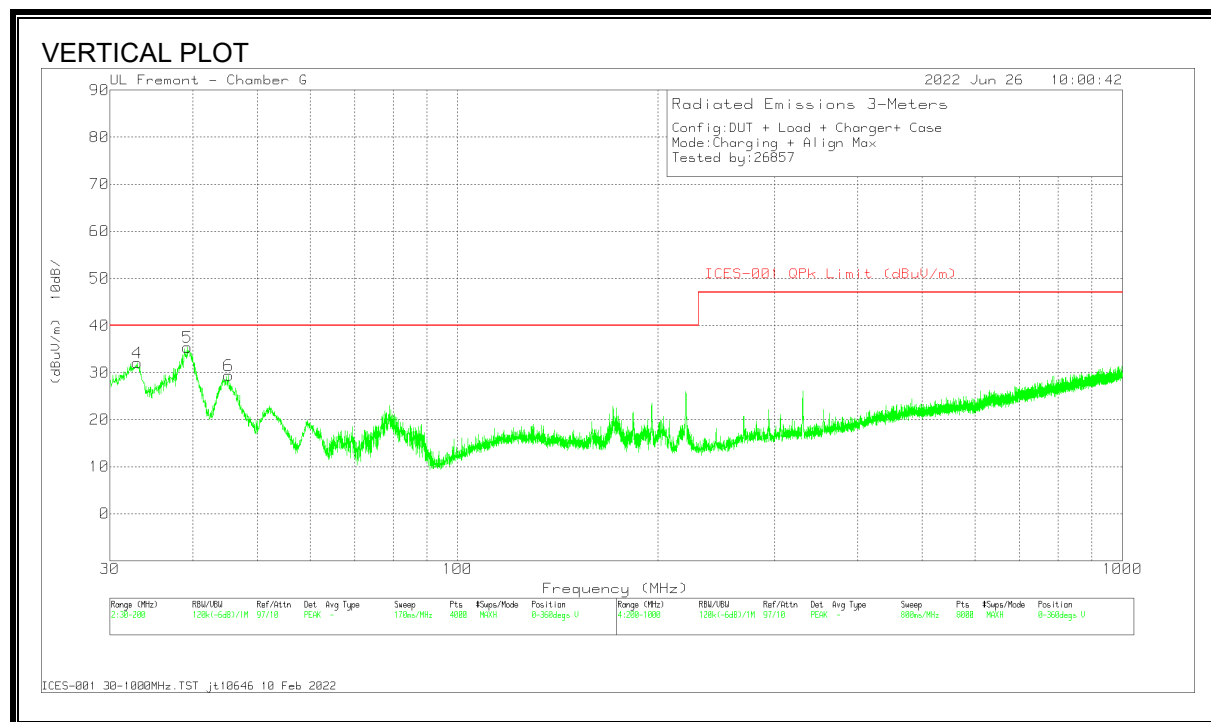
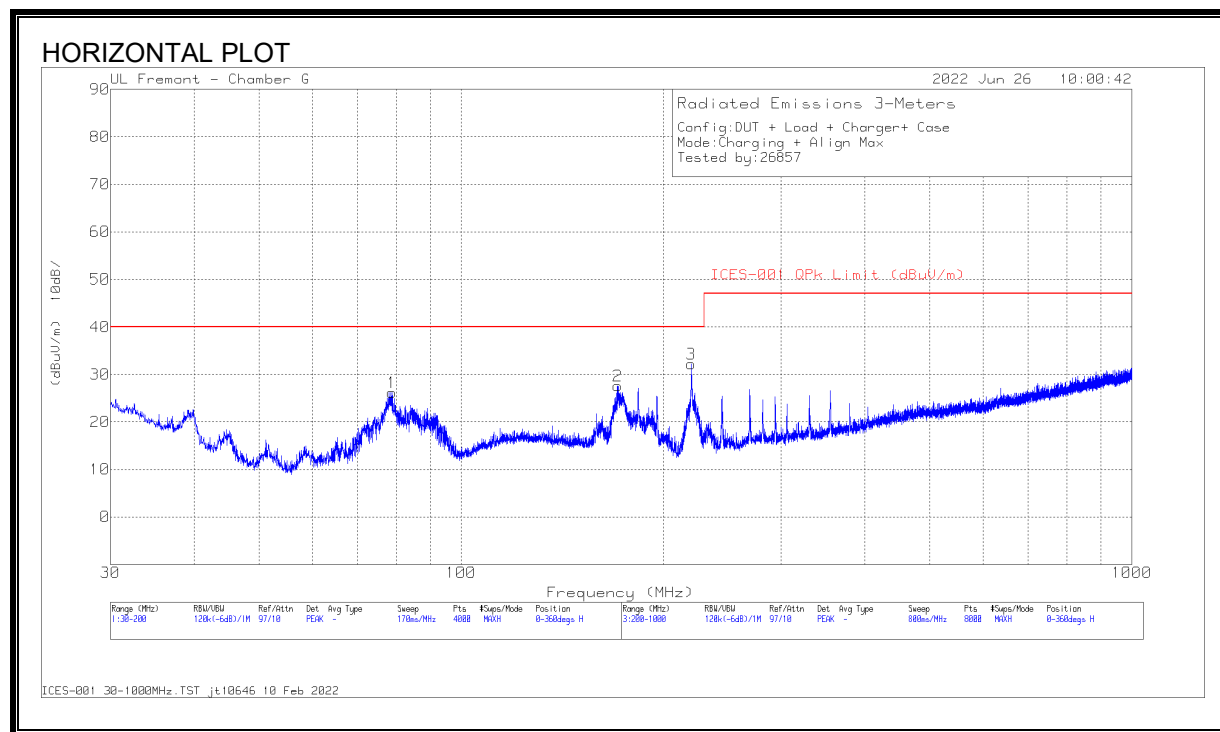
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80714 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 168.127	37.3	Qp	17.8	-30	25.1	43.52	-18.42	84	192	H
2	* 330.185	33.29	Qp	19.8	-29	24.09	46.02	-21.93	180	105	H
5	32.6486	33.94	Qp	25.2	-31.3	27.84	40	-12.16	209	102	V
4	38.8967	42.51	Qp	20.5	-31.2	31.81	40	-8.19	237	101	V
6	45.0037	40.85	Qp	16.1	-31.1	25.85	40	-14.15	27	101	V
3	354.605	31.56	Qp	20.4	-28.8	23.16	46.02	-22.86	178	100	H

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

Qp - Quasi-Peak detector

8.3.4. IC/ ICES-001 TX SPURIOUS EMISSION (30 - 1000 MHz)

OPERATING WITH LOAD



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80714 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	ICES-001 QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	32.3068	31.95	Qp	25.4	-31.3	26.05	40	-13.95	233	107	V
5	39.5344	39.44	Qp	20	-31.2	28.24	40	-11.76	0	101	V
6	44.9535	40.19	Qp	16.1	-31.1	25.19	40	-14.81	43	103	V
1	77.9911	35.57	Qp	13.5	-30.8	18.27	40	-21.73	299	342	H
2	171.545	36.64	Qp	17.6	-30	24.24	40	-15.76	18	142	H
3	220.523	44.21	Qp	16.5	-29.7	31.01	40	-8.99	335	141	H

Qp - Quasi-Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

ICES-001 Issue 5 Table 1:

Table 1: Conducted emission limits for induction cooking appliances (AC mains terminals)

Frequency range (MHz)	Appliances rated 100 V, without an earth connection Quasi-peak (dB μ V)	Appliances rated 100 V, without an earth connection Average (dB μ V)	All other appliances Quasi-peak (dB μ V)	All other appliances Average (dB μ V)
0.009 – 0.05	122	—	110	—
0.05 – 0.15	102 to 92 *	—	90 to 80 *	—
0.15 – 0.5	72 to 62 *	62 to 52 *	66 to 56 *	56 to 46 *
0.5 – 5	56	46	56	46
5 – 30	60	50	60	50
Note: The more stringent limit applies at transition frequencies. * The limit level in dB μ V decreases linearly with the logarithm of frequency.				

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

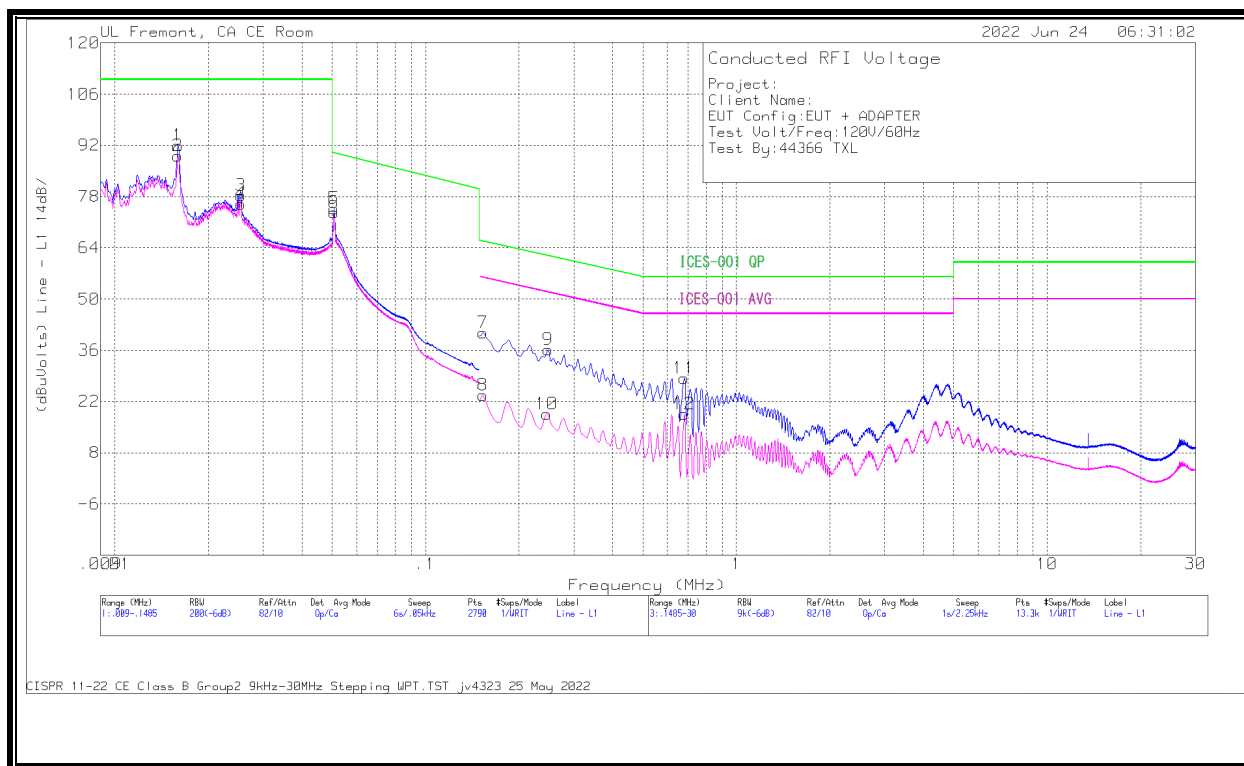
RESULTS

Note: The limits on the plots from 150kHz – 30MHz cover both ICES-001 and FCC Part 15.207.

9.1. Standby

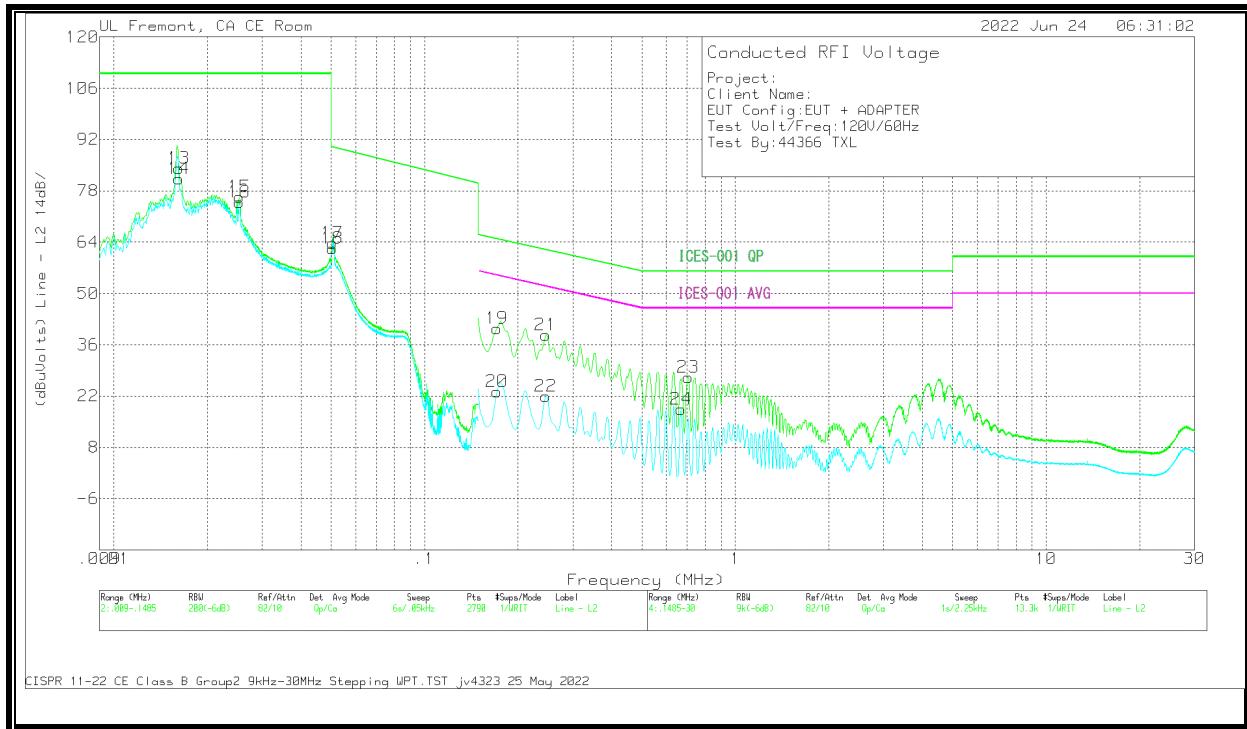
9.1.1. STANDBY MODE POWERED BY AC/DC ADAPTER

LINE 1 RESULTS



WORST EMISSIONS

Range 1: Line - L1 .009 - .1485MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
2	.016	71.45	Ca	2.8	0	14.8	89.05	-	-	-	-
4	.0255	60.06	Ca	1.5	0	14.5	76.06	-	-	-	-
6	.0508	59.46	Ca	.4	0	13.8	73.66	-	-	-	-
1	.016	74.38	Qp	2.8	0	14.8	91.98	110	-18.02	-	-
3	.0255	62.22	Qp	1.5	0	14.5	78.22	110	-31.78	-	-
5	.0508	60.46	Qp	.4	0	13.8	74.66	89.85	-15.19	-	-
Range 3: Line - L1 .1485 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
8	.153	12.7	Ca	.1	0	11	23.8	-	-	55.84	-32.04
10	.2453	9.12	Ca	0	0	9.5	18.62	-	-	51.92	-33.3
12	.6795	9	Ca	0	.1	9.5	18.6	-	-	46	-27.4
7	.153	29.71	Qp	.1	0	11	40.81	65.75	-24.94	-	-
9	.2475	26.69	Qp	0	0	9.5	36.19	61.79	-25.6	-	-
11	.6795	18.76	Qp	0	.1	9.5	28.36	56	-27.64	-	-

Line 2 Results**WORST EMISSIONS**

Range 2: Line - L2 .009 - .1485MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
14	.0162	63.95	Ca	2.5	0	14.8	81.25	-	-	-	-
16	.0253	58.94	Ca	1.4	0	14.5	74.84	-	-	-	-
18	.0506	48.26	Ca	.3	0	13.8	62.36	-	-	-	-
13	.0162	66.81	Qp	2.5	0	14.8	84.11	110	-25.89	-	-
15	.0254	60.51	Qp	1.4	0	14.5	76.41	110	-33.59	-	-
17	.0506	49.61	Qp	.3	0	13.8	63.71	89.9	-26.19	-	-

Range 4: Line - L2 .1485 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
20	.171	12.56	Ca	.1	0	10.5	23.16	-	-	54.91	-31.75
22	.2453	12.49	Ca	0	0	9.5	21.99	-	-	51.92	-29.93
24	.6683	8.8	Ca	0	.1	9.5	18.4	-	-	46	-27.6
19	.171	29.8	Qp	.1	0	10.5	40.4	64.84	-24.44	-	-
21	.2453	29.09	Qp	0	0	9.5	38.59	61.87	-23.28	-	-
23	.7043	17.54	Qp	0	.1	9.5	27.14	56	-28.86	-	-

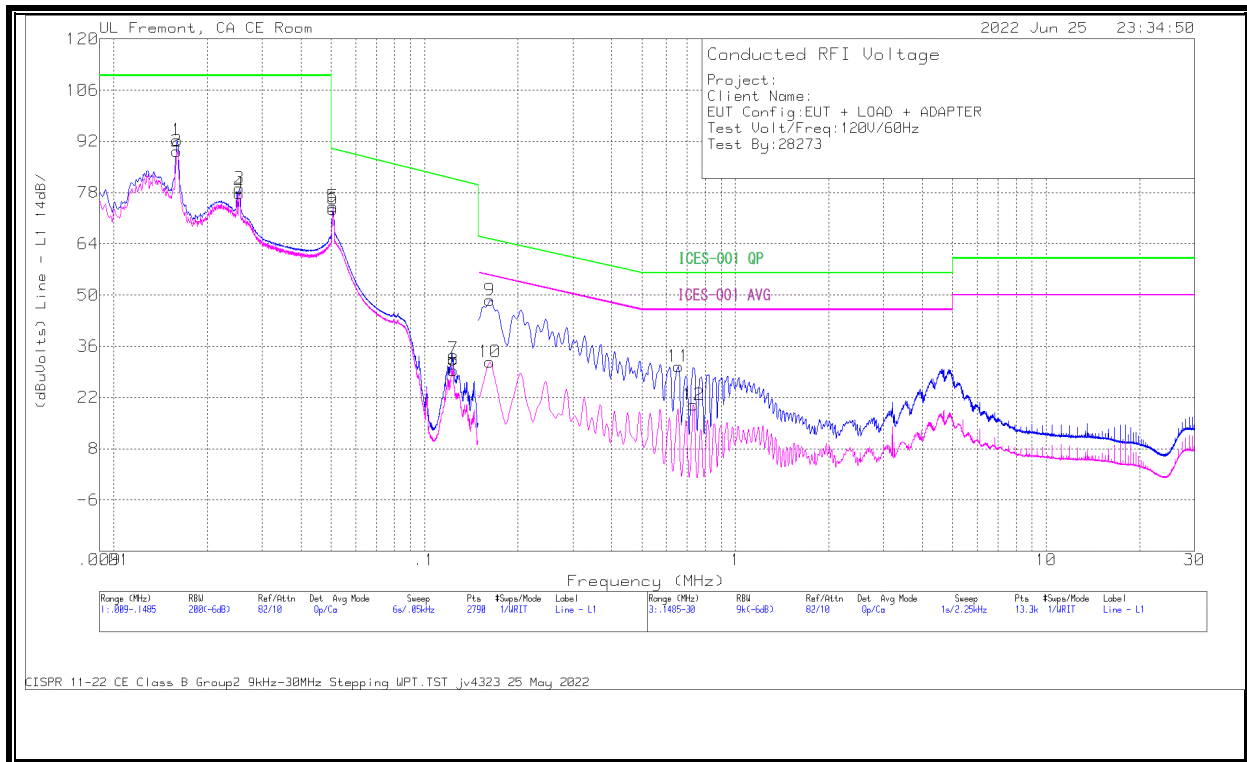
Qp - Quasi-Peak detector

Ca - CISPR average detection

9.2. EUT With Load

9.2.1. OPERATING MODE WITH LOAD POWERED BY AC/DC ADAPTER

LINE 1 RESULTS



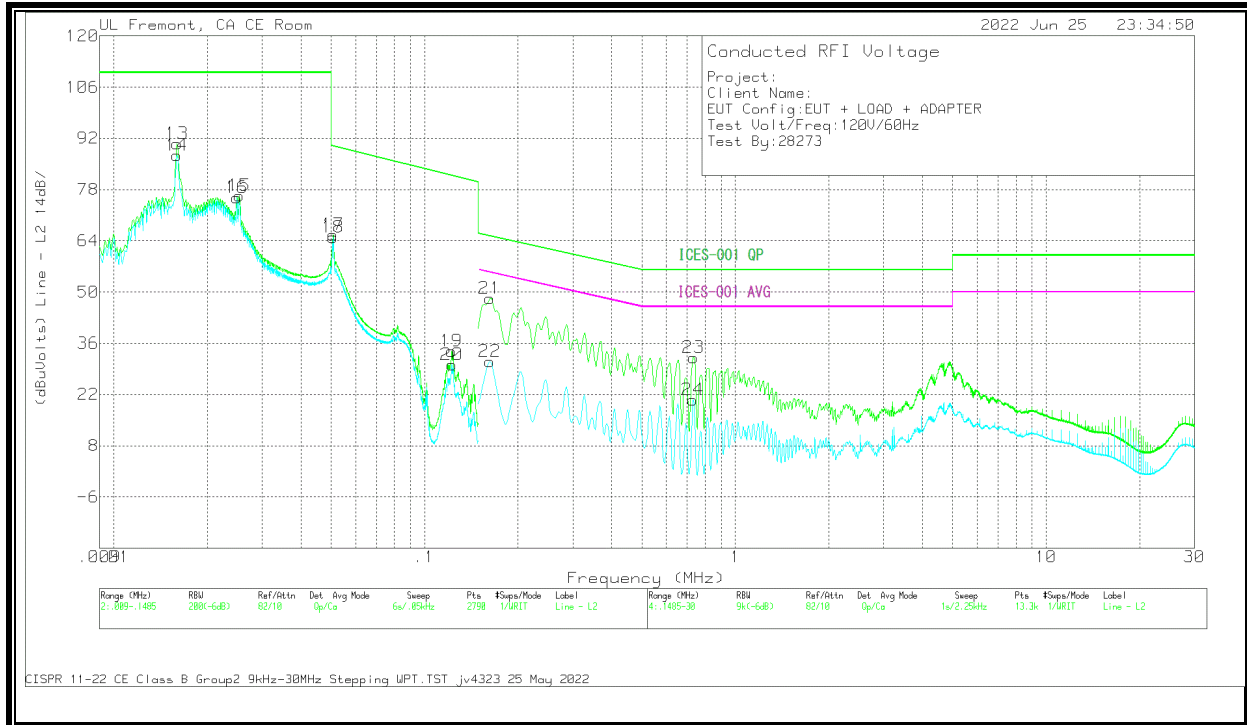
WORST EMISSIONS

Range 1: Line - L1 .009 - .1485MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
2	.016	71.64	Ca	2.8	0	14.8	89.24	-	-	-	-
4	.0253	61.68	Ca	1.5	0	14.5	77.68	-	-	-	-
6	.0508	59.27	Ca	.4	0	13.8	73.47	-	-	-	-
8	.1236	17.36	Ca	.2	0	11.8	29.36	-	-	-	-
1	.016	74.71	Qp	2.8	0	14.8	92.31	110	-17.69	-	-
3	.0254	63.11	Qp	1.5	0	14.5	79.11	110	-30.89	-	-
5	.0508	60.08	Qp	.4	0	13.8	74.28	89.85	-15.57	-	-
7	.1236	20.66	Qp	.2	0	11.8	32.66	81.69	-49.03	-	-

Range 3: Line - L1 .1485 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
10	.162	20.83	Ca	.1	0	10.8	31.73	-	-	55.36	-23.63
12	.7335	10.33	Ca	0	.1	9.5	19.93	-	-	46	-26.07
9	.162	37.71	Qp	.1	0	10.8	48.61	65.28	-16.67	-	-
11	.6548	20.84	Qp	0	.1	9.5	30.44	56	-25.56	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS**WORST EMISSIONS**

Range 2: Line - L2 .009 - .1485MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
14	.016	70.12	Ca	2.5	0	14.8	87.42	-	-	-	-
16	.0249	59.95	Ca	1.4	0	14.5	75.85	-	-	-	-
18	.0509	50.93	Ca	.3	0	13.8	65.03	-	-	-	-
20	.1224	18.15	Ca	.1	0	11.9	30.15	-	-	-	-
13	.016	73.3	Qp	2.5	0	14.8	90.6	110	-19.4	-	-
15	.0253	60.37	Qp	1.4	0	14.5	76.27	110	-33.73	-	-
17	.0509	51.52	Qp	.3	0	13.8	65.62	89.85	-24.23	-	-
19	.1223	21.8	Qp	.1	0	11.9	33.8	81.79	-47.99	-	-

Range 4: Line - L2 .1485 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L2 (dB)	C2&C3 cable dB	TekBox Limiter TBFL1 Model 207 (dB)	Corrected Reading dBuV	CISPR 11 Class QP dBuV	Margin (dB)	CISPR 11 Class B Avg dBuV	Margin (dB)
22	.162	20.18	Ca	.1	0	10.8	31.08	-	-	55.36	-24.28
24	.7313	11	Ca	0	.1	9.5	20.6	-	-	46	-25.4
21	.162	37.42	Qp	.1	0	10.8	48.32	65.28	-16.96	-	-
23	.7335	22.52	Qp	0	.1	9.5	32.12	56	-23.88	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

10. SETUP PHOTOS

Please refer to 14040868-EP1V1 for setup photos

END OF TEST REPORT