



CERTIFICATION TEST REPORT

Report Number. : 14040867-E14V3

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

Model : A2649 (Parent Model, Full Test)
A2881, A2882, A2883, A2884 (Variant Models)

FCC ID : BCG-E8138A (Parent Model))
BCG-E8142A, BCG-E8143A, BCG-E8144A (Variant Models)

IC : 579C-E8138A (Parent Model)
579C-E8142A, 579C-E8143A, 579C-E8144A (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

Rev.	Issue Date	Revisions	Revised By
V1	6/22/2022	Initial Issue	Chin Pang
V2	6/27/2022	Address TCB question on section 5.2	Chin Pang
V3	8/11/2022	Update section 9 AC Line plots, 8.2.1 & 8.3.1	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: A2649 (Parent Model)
A2881, A2882, A2883, A2884 (Variant Models)

BRAND: APPLE

FCC ID: BCG-E8138A (Parent Model)
BCG-E8142A, BCG-E8143A, BCG-E8144A (Variant Models)

IC: 579C-E8138A (Parent Model)
579C-E8142A, 579C-E8143A, 579C-E8144A (Variant Models)

SERIAL NUMBER: GK4JQDNFP1

SAMPLE RECEIPT DATE: MAY 20, 2022

DATE TESTED: MAY 21 – JUNE 21, 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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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-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.

Location	Address	ISED CABID	ISED Company	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	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 IDs / ISED covered by this report includes:

Parent Model: A2649, FCC ID: BCG-E8138A, IC: 579C-E8138A

Variant Models: A2881, FCC ID: BCG-E8142A, IC: 579C-E8142A
A2882; FCC ID: BCG-E8143A, IC: 579C-E8143A
A2883 & A2884, FCC ID: BCG-E8144A, IC: 579C-E8144A

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	-41.44	-11.39
	Operating	-24.17	5.57

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

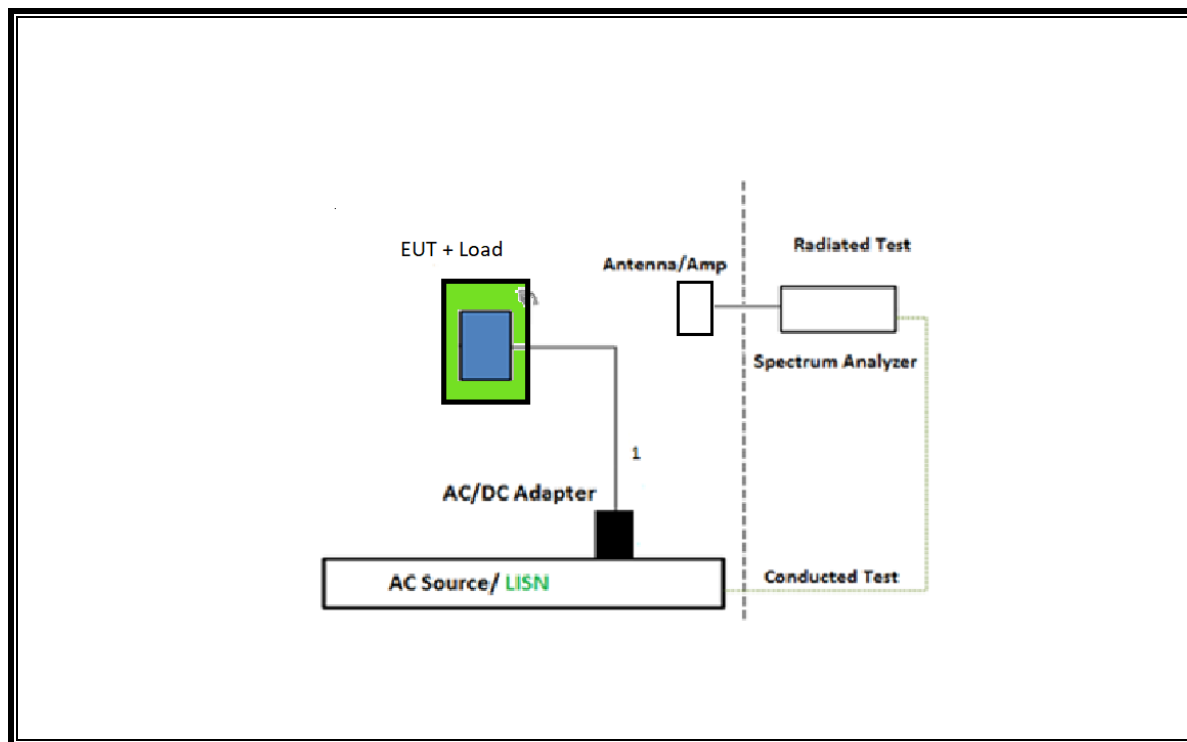
SUPPORT EQUIPMENT & PERIPHERALS LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC adapter	Apple	A2305	C4H748200RXH80MAY	DoC
WPT Accessory (Load)	Apple	A2384	DNDF66EN0NLJ	BCGA2384
WPT Accessory	Apple	Silicon Case	C03241PE0MACDKZ0133	DoC

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.	JB3	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	Keysight	N9030A	206415	03/17/2023	03/17/2022
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		

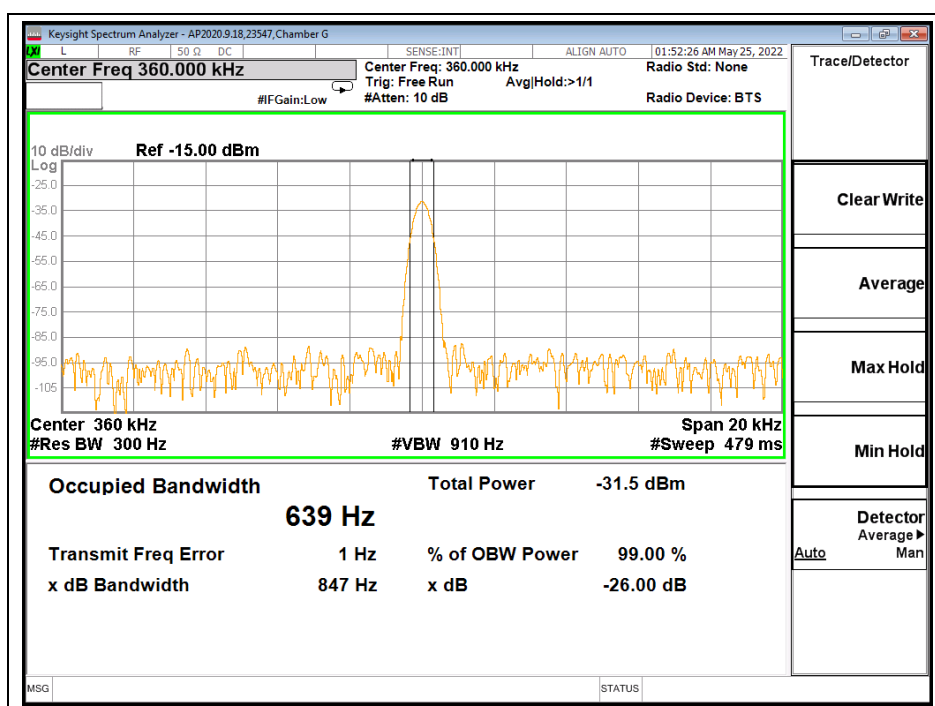
7. OCCUPIED BANDWIDTH

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

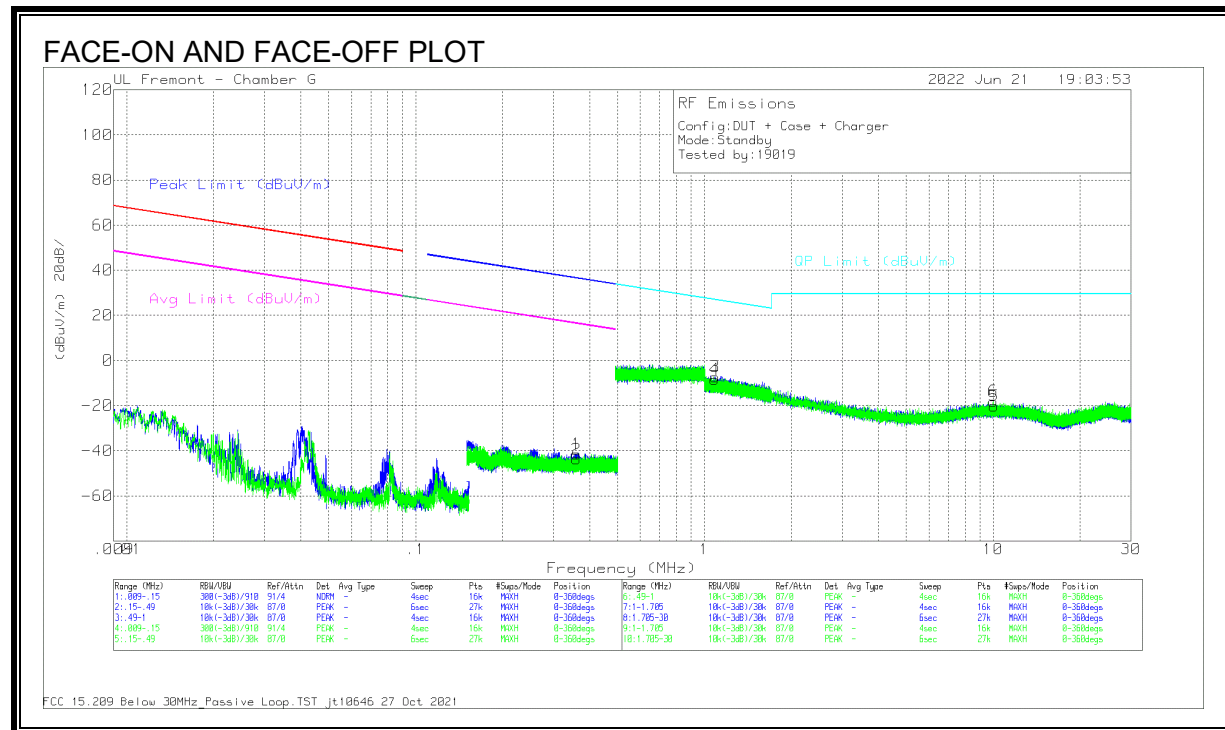
Frequency range (MHz)	OATS or SAC * 10 m measurement distance Quasi-peak (dBμV/m)	OATS or SAC * 3 m measurement distance Quasi-peak (dBμV/m)	FAR * 3 m measurement distance Quasi-peak (dBμV/m)
30 – 230	30	40	42 to 35**
230 – 1000	37	47	42
Note: The more stringent limit applies at the transition frequency. * 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

Radiated Emissions

Trace Markers

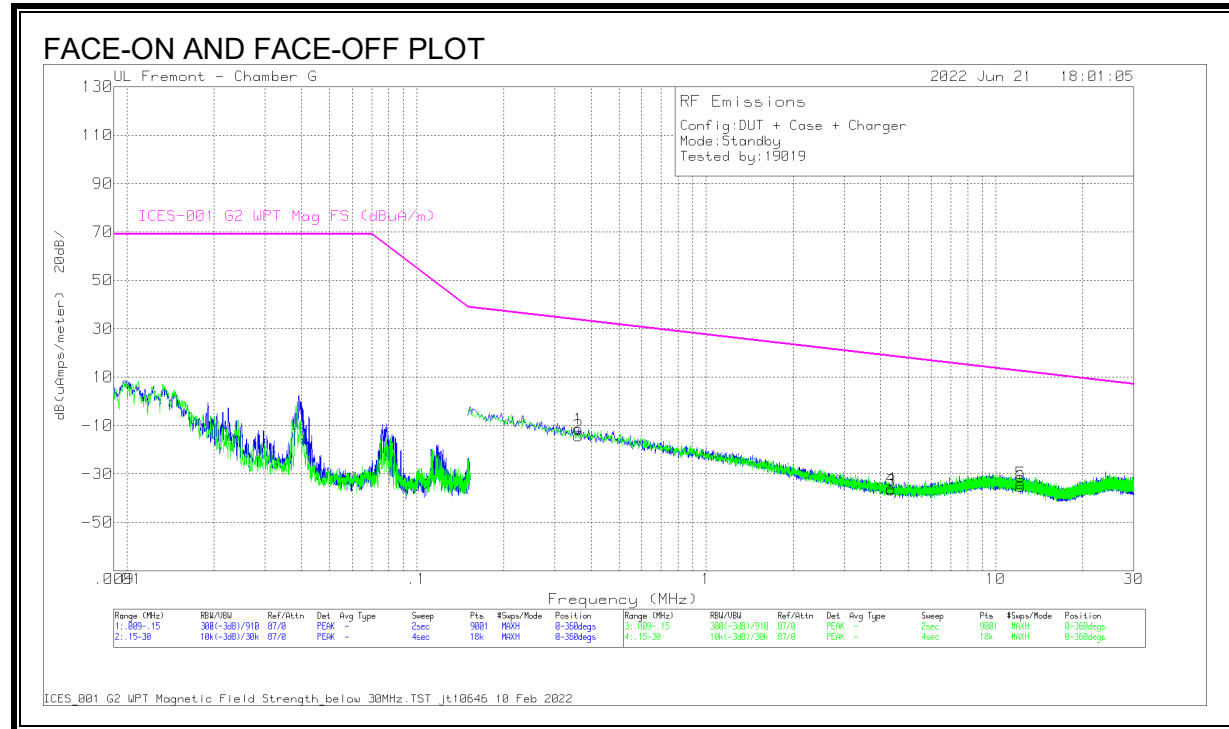
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.36	14.36	Pk	56.2	-32	-80	-41.44	36.48	-77.92	16.48	-57.92	0-360	Face-On
2	.36	12.12	Pk	56.2	-32	-80	-43.68	36.48	-80.16	16.48	-60.16	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
4	1.0866	17.27	Pk	46.4	-32	-40	-8.33	26.9	-35.23	0-360	Face-Off
3	1.0921	18.39	Pk	46.4	-32	-40	-7.21	26.86	-34.07	0-360	Face-On
6	10.0261	18.72	Pk	34.9	-31.7	-40	-18.08	29.5	-47.58	0-360	Face-off
5	10.0659	16.7	Pk	34.9	-31.7	-40	-20.1	29.5	-49.6	0-360	Face-On

Pk - Peak detector

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

Standby

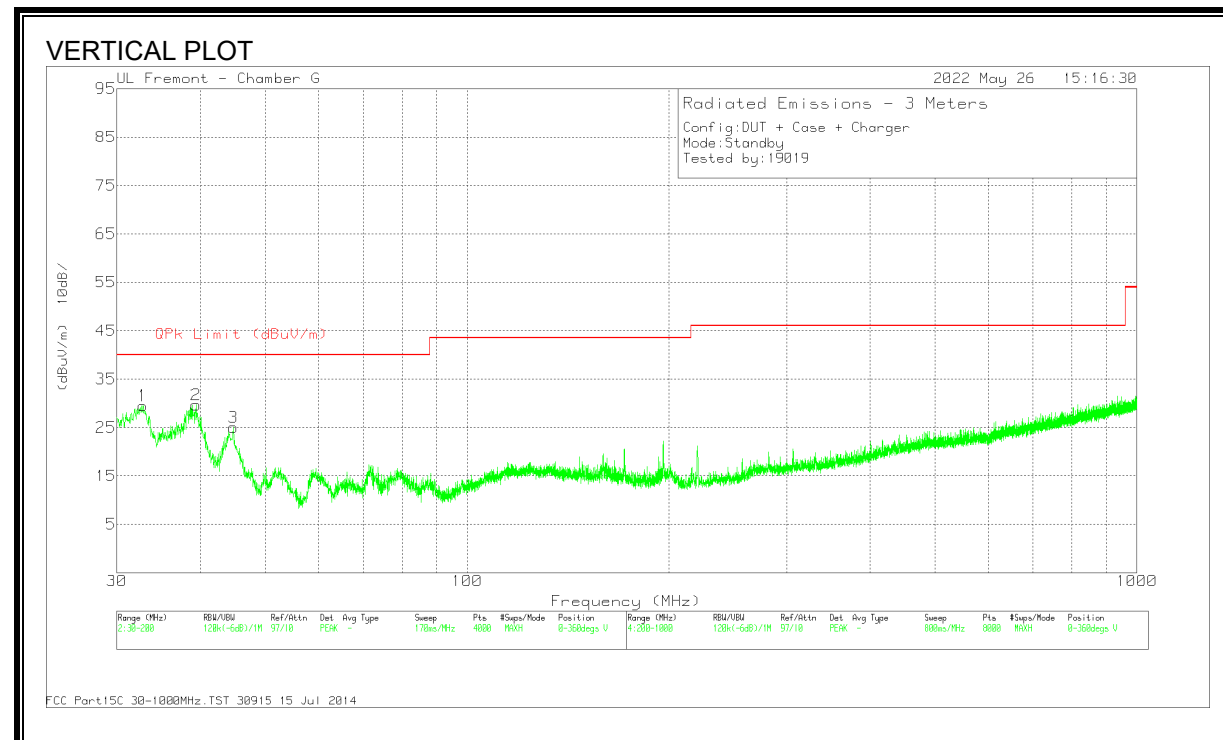
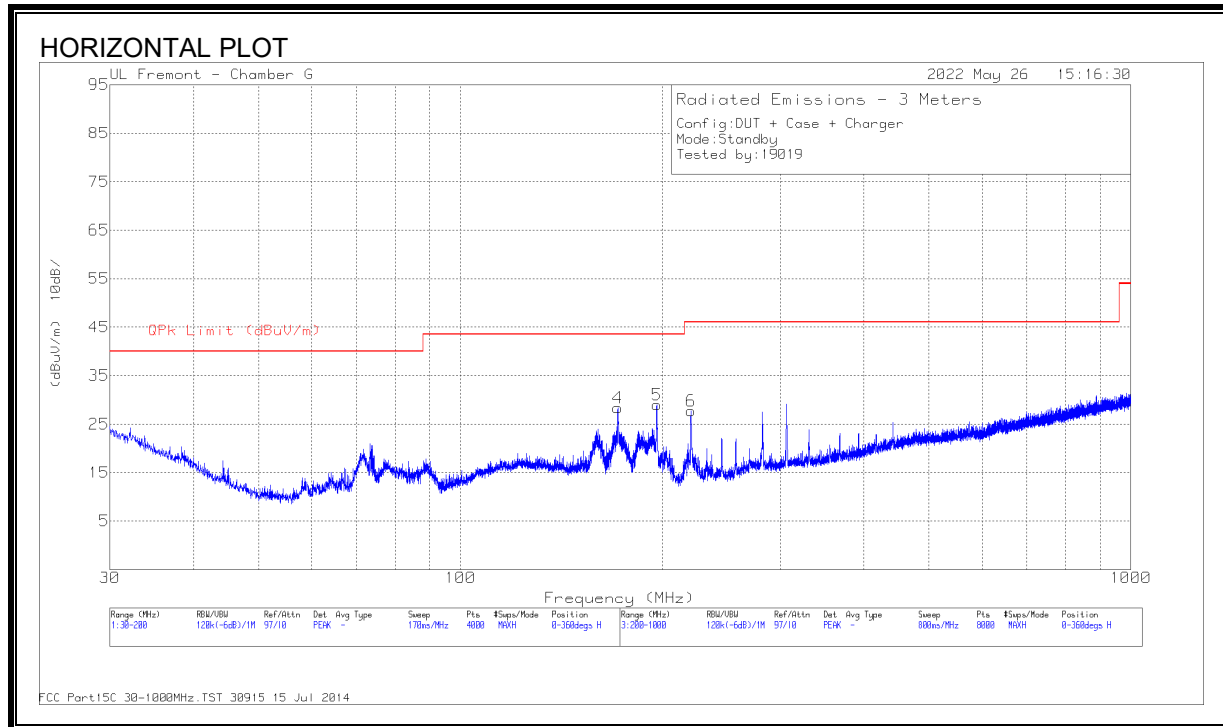


DATA

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	.3622	17.11	Pk	3.5	-32	-11.39	33.68	-45.07	0-360	Face-On
2	.3622	14.2	Pk	3.5	-32	-14.3	33.68	-47.98	0-360	Face-Off
3	4.368	9.67	Pk	-14.6	-31.8	-36.73	18.64	-55.37	0-360	Face-On
4	4.368	10.38	Pk	-14.6	-31.8	-36.02	18.64	-54.66	0-360	Face-Off
5	12.197	14.57	Pk	-16.8	-31.6	-33.83	12.44	-46.27	0-360	Face-On
6	12.2003	13.21	Pk	-16.8	-31.6	-35.19	12.43	-47.62	0-360	Face-Off

Pk - Peak detector

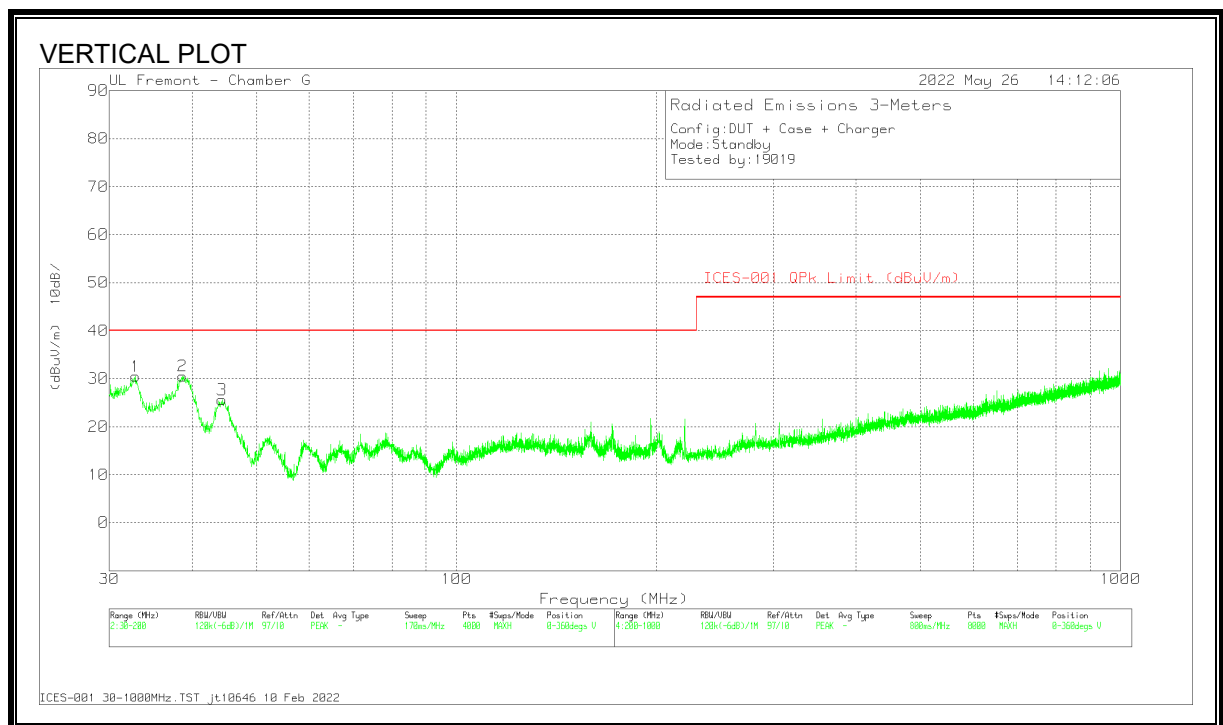
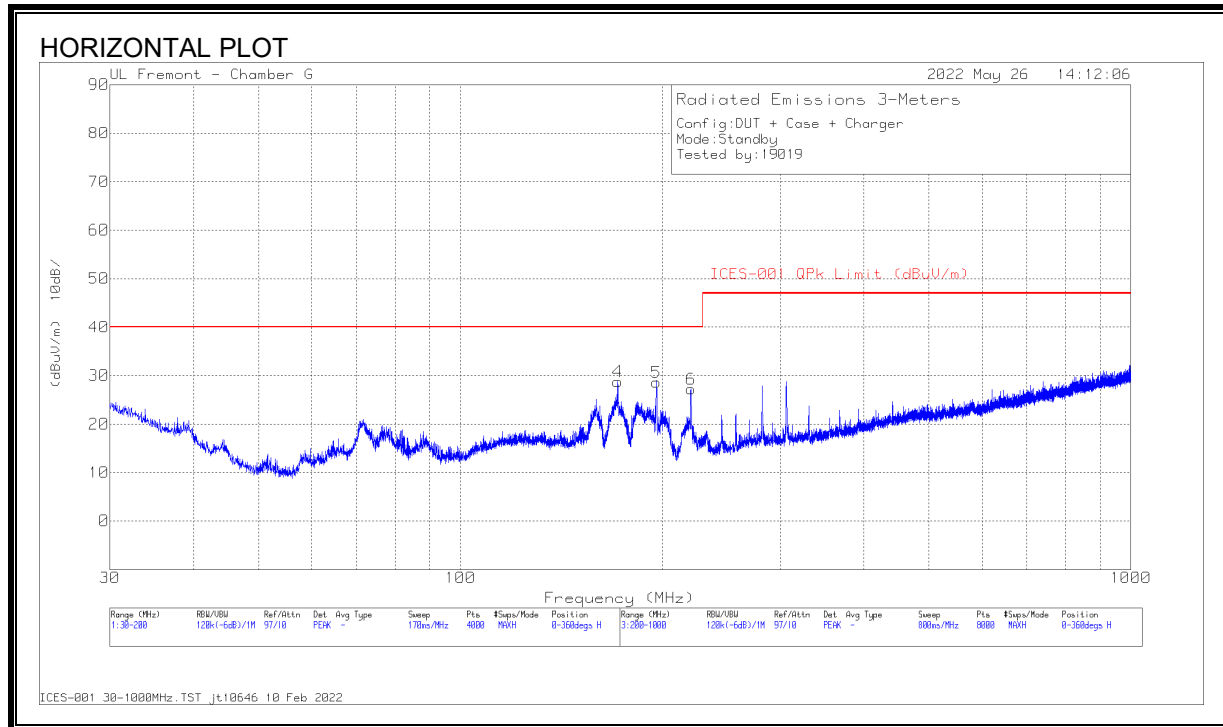
8.2.3. FCC TX SPURIOUS EMISSION (30 - 1000 MHz)**Standby**

DATA**Radiated Emissions**

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
* 171.732	40.02	Qp	17.6	-30	27.62	43.52	-15.9	6	151	H
32.9287	29.41	Qp	25	-31.3	23.11	40	-16.89	265	117	V
39.3091	34.67	Qp	20.2	-31.2	23.67	40	-16.33	230	113	V
44.4697	34.87	Qp	16.5	-31.1	20.27	40	-19.73	55	114	V
196.16	35.84	Qp	18	-29.8	24.04	43.52	-19.48	354	247	H
220.835	40.53	Qp	16.5	-29.7	27.33	46.02	-18.69	349	127	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**Radiated Emissions**

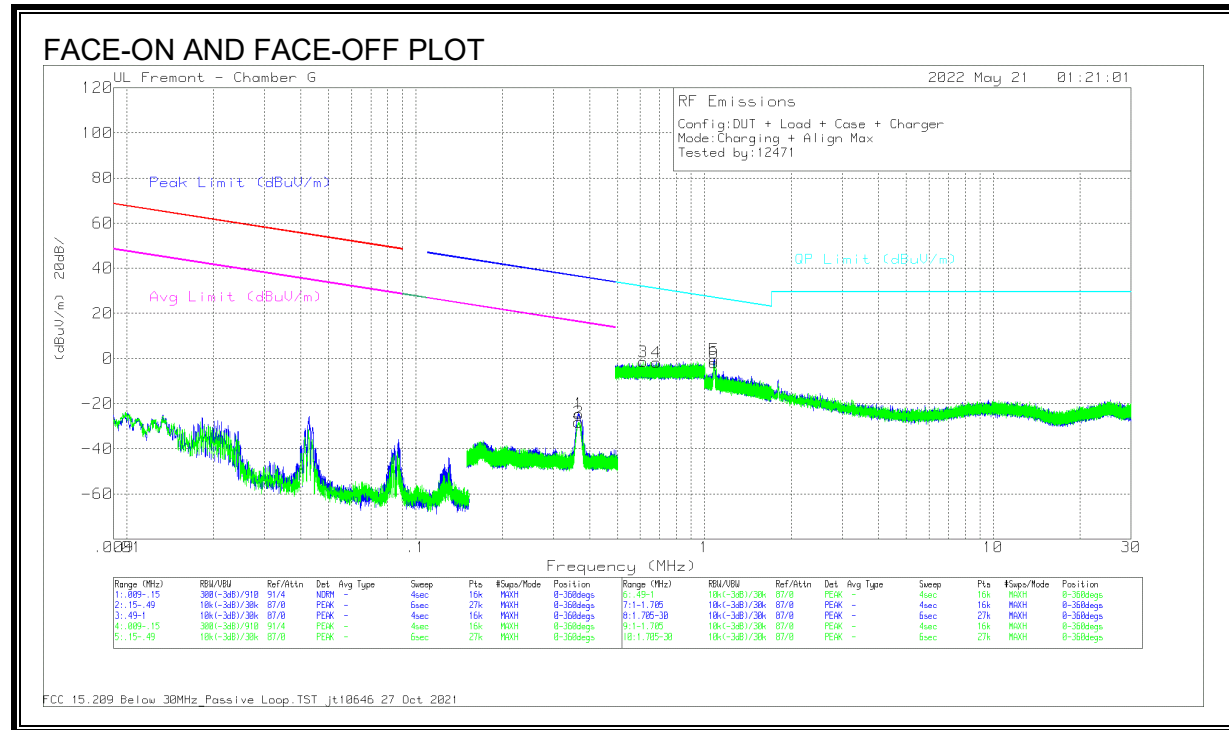
Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80714 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	ICES-001 QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
32.7678	32.35	Qp	25.1	-31.3	26.15	40	-13.85	231	106	V
38.5742	34.61	Qp	20.7	-31.2	24.11	40	-15.89	353	106	V
44.4527	34.11	Qp	16.5	-31.1	19.51	40	-20.49	78	130	V
171.655	38.26	Qp	17.6	-30	25.86	40	-14.14	170	173	H
196.18	38.8	Qp	18	-29.8	27	40	-13	1	168	H
220.578	43.54	Pk	16.5	-29.7	30.34	40	-9.66	346	147	H
220.835	40.44	Qp	16.5	-29.7	27.24	40	-12.76	346	147	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



DATA

Radiated Emissions

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)	Antenna Orientation
1	.3599	31.63	Pk	56.2	-32	-80	-24.17	36.48	-60.65	16.48	-40.65	284	Face-on
2	.3599	27.84	Pk	56.2	-32	-80	-27.96	36.49	-64.45	16.49	-44.45	189	Face-off

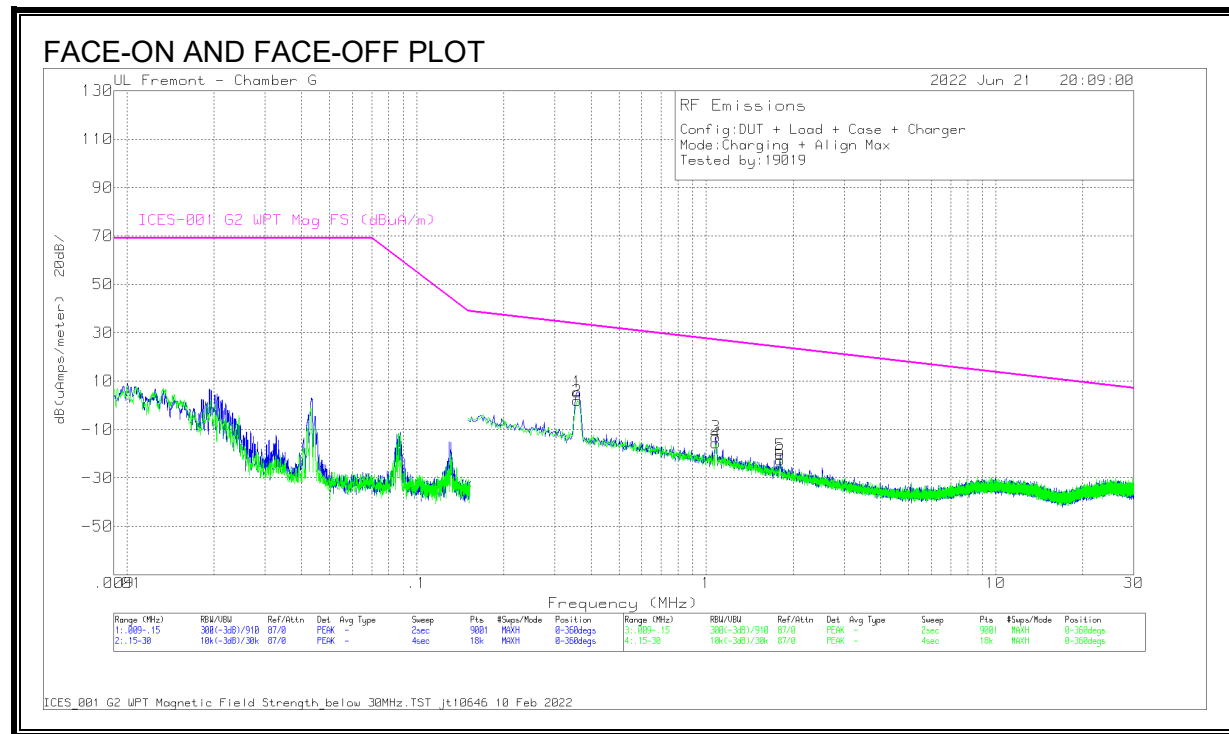
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables w/T834 (dB)	Dist Corr 30m (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Orientation
3	.6044	6.48	Qp	56.2	-32	-40	-9.32	31.98	-41.3	345	Face-on
4	.6936	6.32	Qp	56.2	-32	-40	-9.48	30.79	-40.27	199	Face-off
5	1.0788	20.47	Qp	46.5	-32	-40	-5.03	26.96	-31.99	187	Face-on
6	1.0793	23.8	Qp	46.5	-32	-40	-1.7	26.96	-28.66	270	Face-off

Pk - Peak detector

QP - Quasi-Peak detection

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

OPERATING WITH LOAD

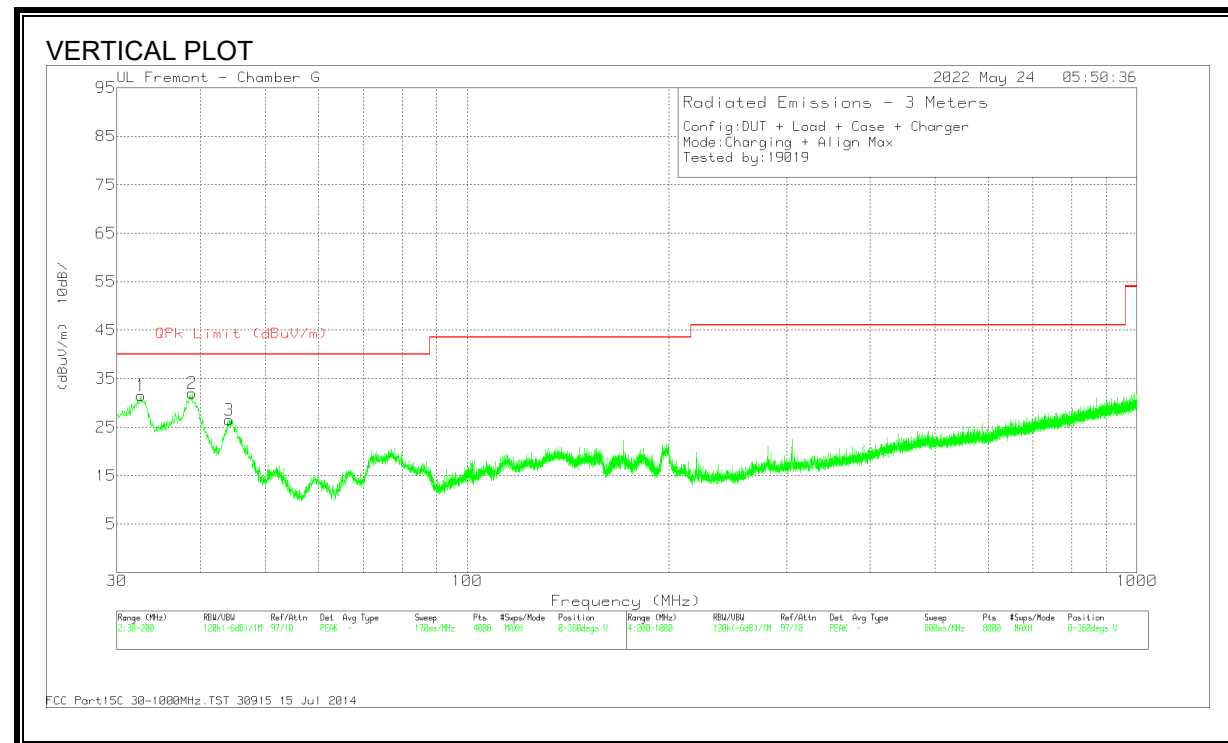
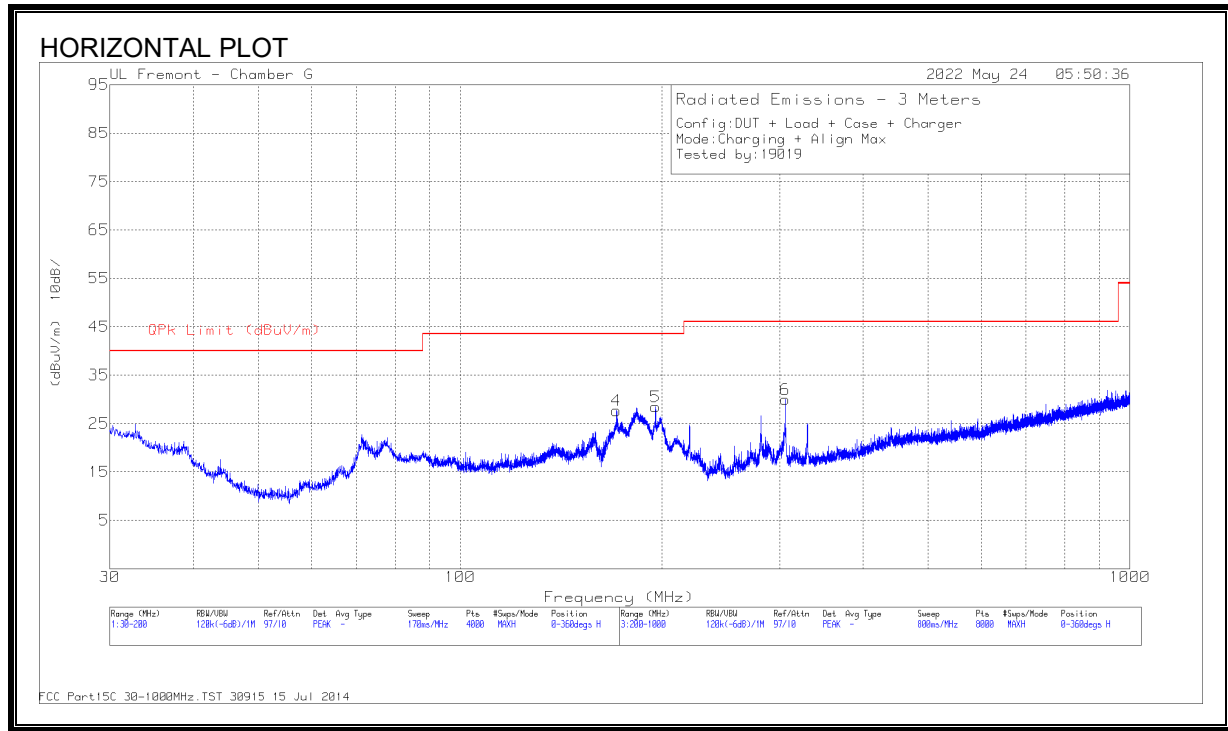


DATA

Radiated Emissions

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	.3589	33.97	Pk	3.6	-32	5.57	33.73	-28.16	0-360	Face-On
2	.3589	30.32	Pk	3.6	-32	1.92	33.73	-31.81	0-360	Face-Off
3	1.0801	24.06	Pk	-5	-32	-12.94	27.08	-40.02	0-360	Face-On
4	1.0801	21.37	Pk	-5	-32	-15.63	27.08	-42.71	0-360	Face-Off
5	1.7997	20.32	Pk	-8.8	-31.9	-20.38	23.99	-44.37	0-360	Face-On
6	1.7997	18.05	Pk	-8.8	-31.9	-22.65	23.99	-46.64	0-360	Face-Off

Pk - Peak detector

8.3.3. FCC TX SPURIOUS EMISSION (30 - 1000 MHz)**OPERATING WITH LOAD**

DATA**Radiated Emissions**

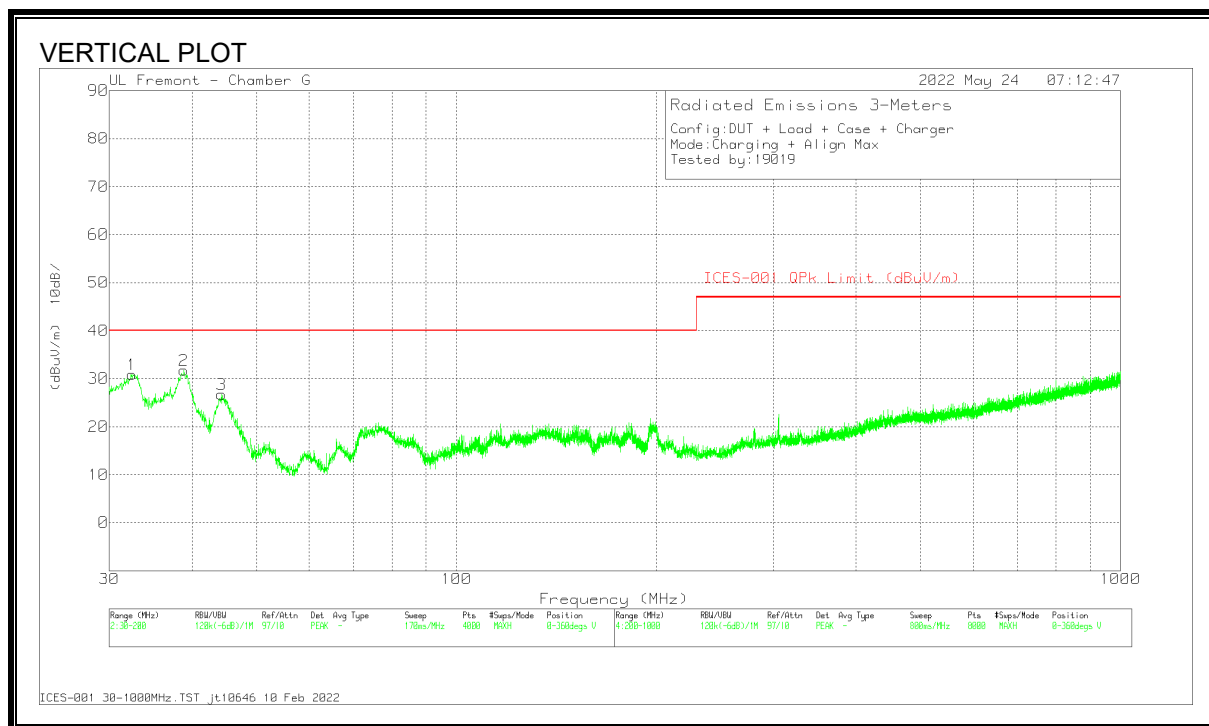
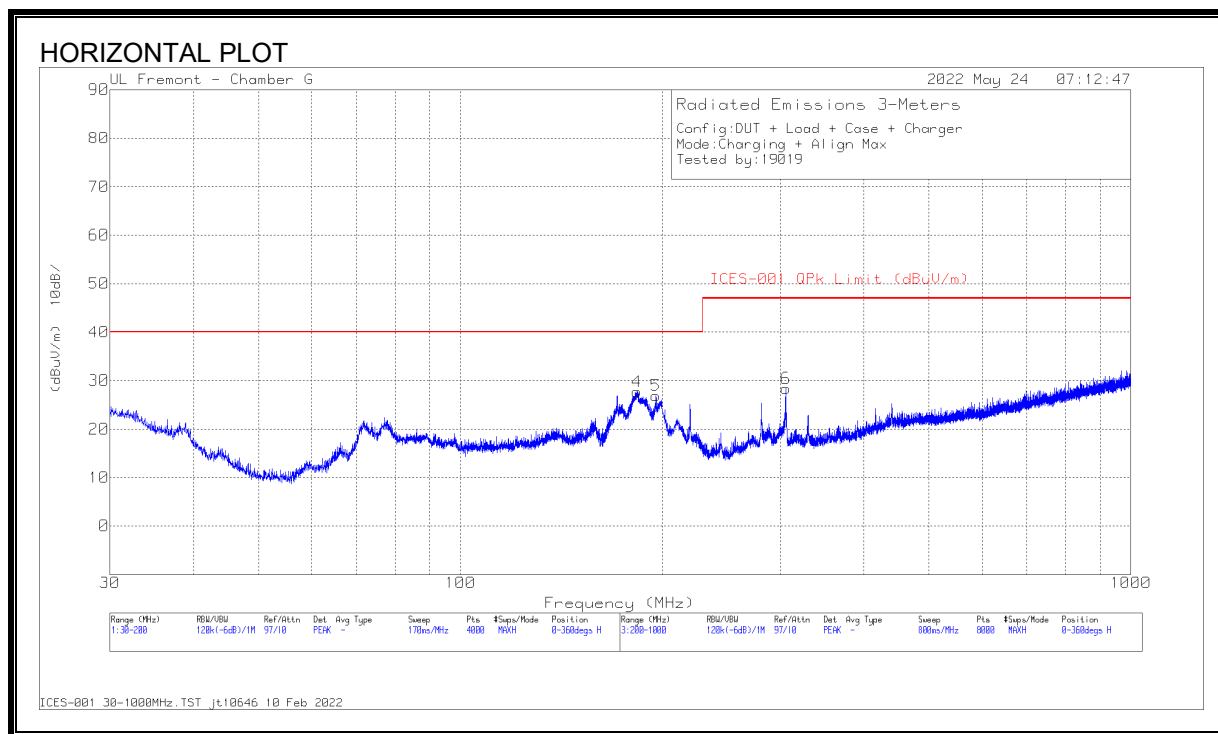
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 80714 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 170.746	34.17	Qp	17.7	-30	21.87	43.52	-21.65	358	143	H
1	32.7552	33.41	Qp	25.1	-31.3	27.21	40	-12.79	222	102	V
2	38.881	39.78	Qp	20.5	-31.2	29.08	40	-10.92	24	102	V
3	44.6402	38.33	Qp	16.4	-31.1	23.63	40	-16.37	50	103	V
5	180.38	37.84	Qp	17.2	-29.9	25.14	43.52	-18.38	10	130	H
6	305.304	38.24	Qp	19.3	-29.2	28.34	46.02	-17.68	106	108	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**Radiated Emissions**

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	32.4416	32.73	Qp	25.3	-31.3	26.73	40	-13.27	176	112	V
2	38.8731	39.11	Qp	20.5	-31.2	28.41	40	-11.59	356	104	V
3	44.6637	38.44	Qp	16.3	-31.1	23.64	40	-16.36	31	102	V
4	180.343	37.02	Qp	17.2	-29.9	24.32	40	-15.68	161	133	H
5	195.517	37.73	Qp	18	-29.8	25.93	40	-14.07	170	181	H
6	305.344	36.82	Qp	19.3	-29.2	26.92	47	-20.08	19	108	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.

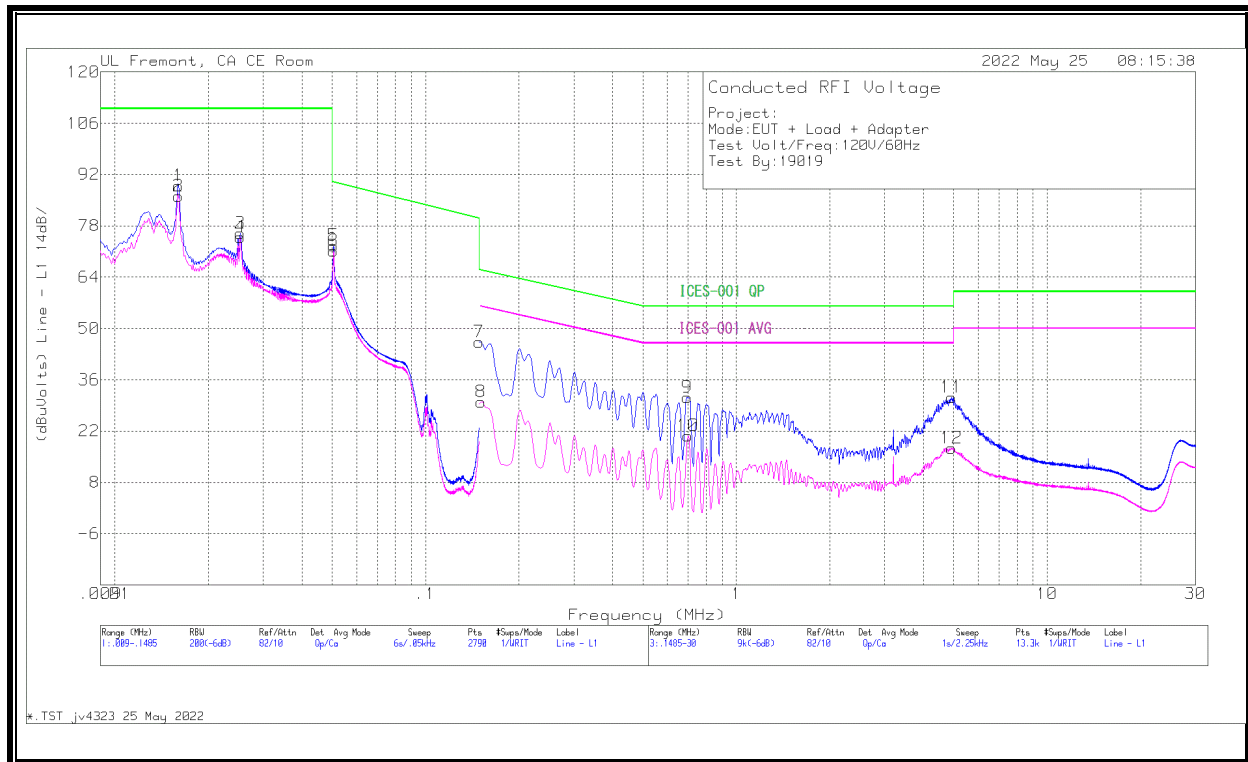
RESULTS

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

9.1. Standby

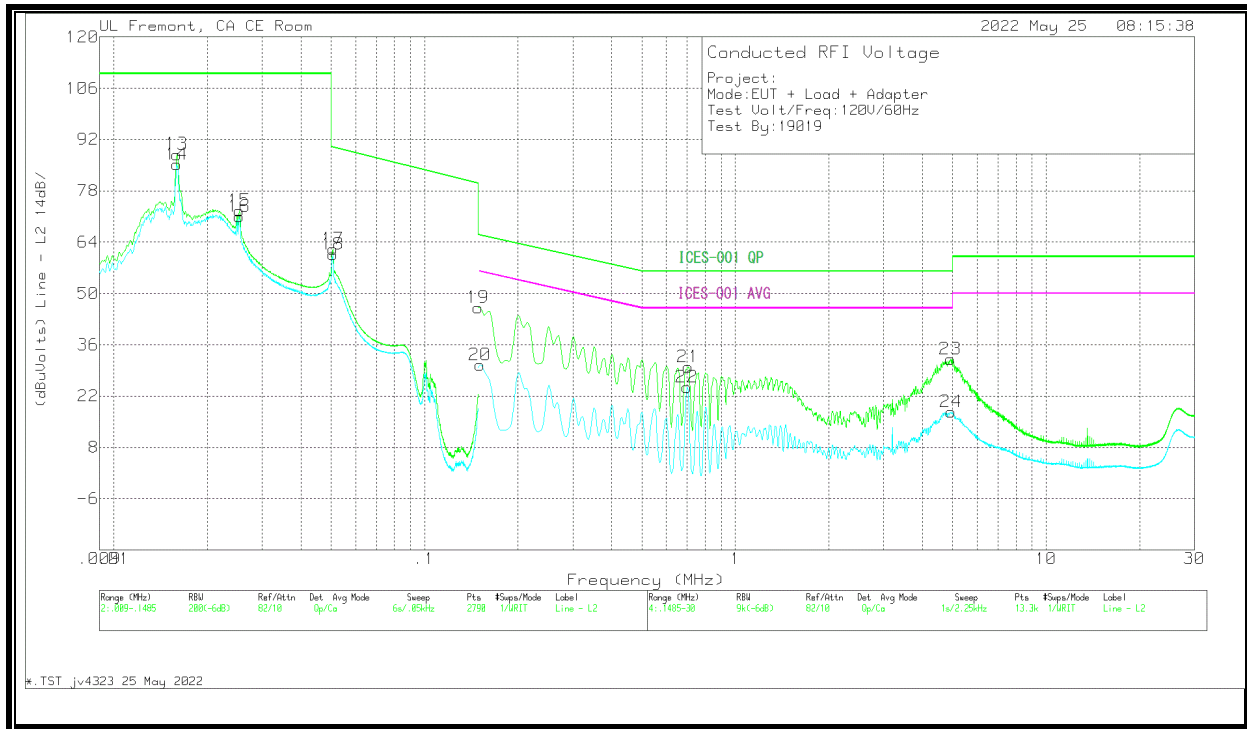
9.1.1. STANDBY MODE POWERED BY AC/DC ADAPTER

LINE 1 RESULTS



WORST EMISSIONS

Range 1: Line - L1 .009 - .1485MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 (dB)	C1&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	.0161	71.16	Ca	2.7	0	12.3	86.16	-	-	-	-
4	.0253	61.4	Ca	1.5	0	12	74.9	-	-	-	-
6	.0506	59.53	Ca	.4	0	11.2	71.13	-	-	-	-
1	.0161	74.01	Qp	2.7	0	12.3	89.01	110	-20.99	-	-
3	.0253	62.45	Qp	1.5	0	12	75.95	110	-34.05	-	-
5	.0506	60.94	Qp	.4	0	11.2	72.54	89.89	-17.35	-	-
Range 3: Line - L1 .1485 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 (dB)	C1&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	.1508	20.52	Ca	.1	0	9.4	30.02	-	-	55.96	-25.94
10	.6998	11.35	Ca	0	.1	9.3	20.75	-	-	46	-25.25
12	4.9219	7.99	Ca	0	.1	9.3	17.39	-	-	46	-28.61
7	.1485	36.84	Qp	.1	0	9.4	46.34	66	-19.66	-	-
9	.6953	21.87	Qp	0	.1	9.3	31.27	56	-24.73	-	-
11	4.9185	21.79	Qp	0	.1	9.3	31.19	56	-24.81	-	-

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	70.4	Ca	2.5	0	12.3	85.2	-	-	-	-
16	.0253	57.59	Ca	1.4	0	12	70.99	-	-	-	-
18	.0507	49.21	Ca	.3	0	11.2	60.71	-	-	-	-
13	.016	73.17	Qp	2.5	0	12.3	87.97	110	-22.03	-	-
15	.0254	59.12	Qp	1.4	0	12	72.52	110	-37.48	-	-
17	.0507	50.63	Qp	.3	0	11.2	62.13	89.87	-27.74	-	-

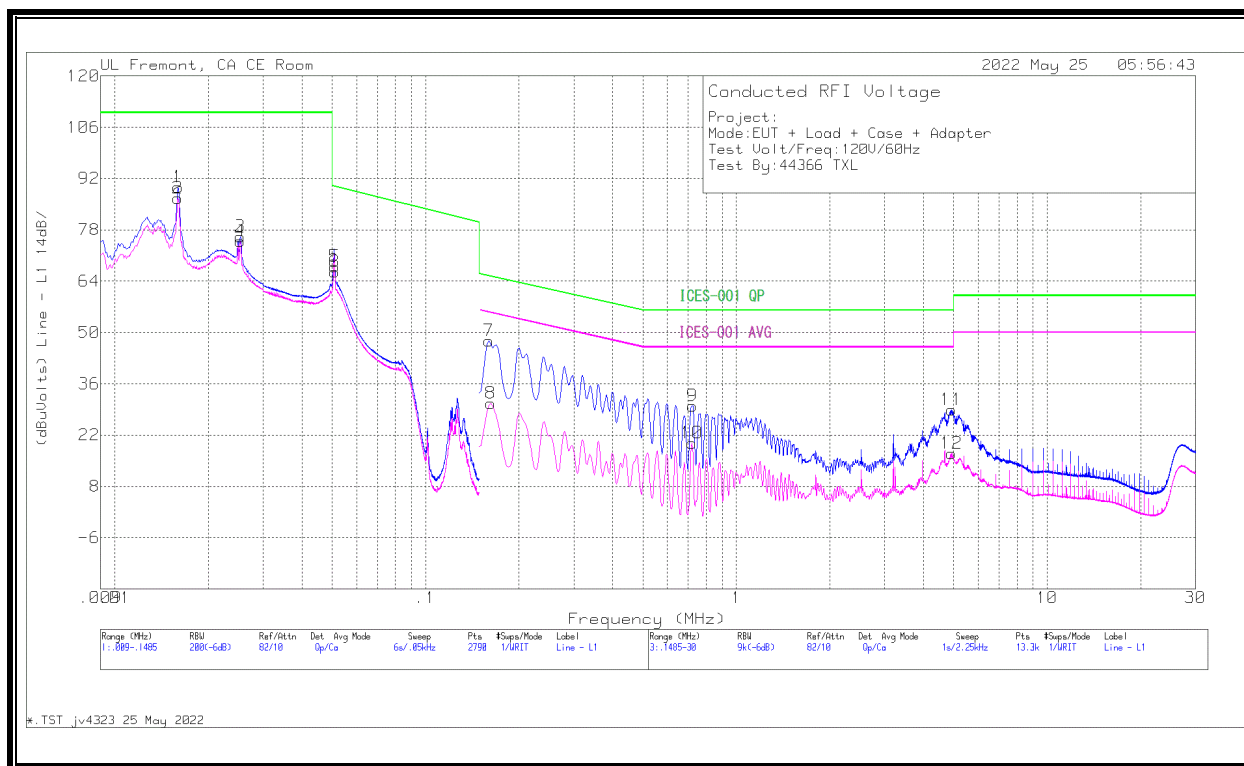
Range 4: Line - L2 .1485 - 30MHz

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	.1508	20.91	Ca	.1	0	9.4	30.41	-	-	55.96	-25.55
22	.6998	15.05	Ca	0	.1	9.3	24.45	-	-	46	-21.55
24	4.9343	8.21	Ca	0	.1	9.3	17.61	-	-	46	-28.39
19	.1485	36.63	Qp	.1	0	9.4	46.13	66	-19.87	-	-
21	.7065	20.49	Qp	0	.1	9.3	29.89	56	-26.11	-	-
23	4.9275	22.74	Qp	0	.1	9.3	32.14	56	-23.86	-	-

9.2. EUT With Load

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

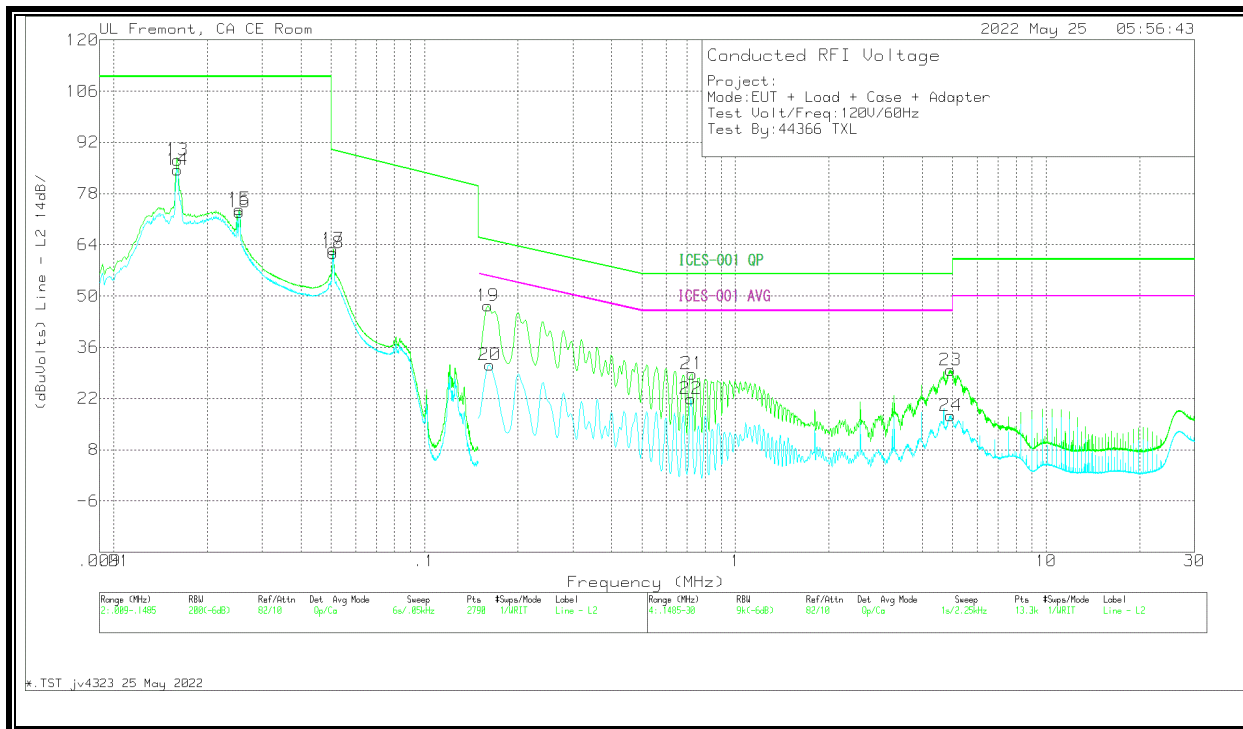
LINE 1 RESULTS



WORST EMISSIONS

Range 1: Line - L1 .009 - .1485MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 (dB)	C1&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	71.48	Ca	2.8	0	12.3	86.58	-	-	-	-
4	.0253	61.34	Ca	1.5	0	12	74.84	-	-	-	-
6	.051	55.05	Ca	.3	0	11.2	66.55	-	-	-	-
1	.016	74.5	Qp	2.8	0	12.3	89.6	110	-20.4	-	-
3	.0254	62.61	Qp	1.5	0	12	76.11	110	-33.89	-	-
5	.051	56.51	Qp	.3	0	11.2	68.01	89.82	-21.81	-	-

Range 3: Line - L1 .1485 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	175765 LISN L1 (dB)	C1&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	.162	21.1	Ca	.1	0	9.4	30.6	-	-	55.36	-24.76
10	.7178	10.36	Ca	0	.1	9.3	19.76	-	-	46	-26.24
12	4.9309	7.53	Ca	0	.1	9.3	16.93	-	-	46	-29.07
7	.1598	38.24	Qp	.1	0	9.4	47.74	65.4	-17.66	-	-
9	.7223	20.63	Qp	0	.1	9.3	30.03	56	-25.97	-	-
11	4.932	19.41	Qp	0	.1	9.3	28.81	56	-27.19	-	-

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	.0161	69.7	Ca	2.5	0	12.3	84.5	-	-	-	-
16	.0253	59.57	Ca	1.4	0	12	72.97	-	-	-	-
18	.0509	50.26	Ca	.3	0	11.2	61.76	-	-	-	-
13	.0161	72.45	Qp	2.5	0	12.3	87.25	110	-22.75	-	-
15	.0253	60.35	Qp	1.4	0	12	73.75	110	-36.25	-	-
17	.0509	51.4	Qp	.3	0	11.2	62.9	89.85	-26.95	-	-
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	.162	21.71	Ca	.1	0	9.4	31.21	-	-	55.36	-24.15
22	.7178	12.56	Ca	0	.1	9.3	21.96	-	-	46	-24.04
24	4.932	7.98	Ca	0	.1	9.3	17.38	-	-	46	-28.62
19	.1598	37.82	Qp	.1	0	9.4	47.32	65.4	-18.08	-	-
21	.7245	19.39	Qp	0	.1	9.3	28.79	56	-27.21	-	-
23	4.9286	20.34	Qp	0	.1	9.3	29.74	56	-26.26	-	-

10. SETUP PHOTOS

Please refer to 14040867-EP1V1 for setup photos

END OF TEST REPORT