



**FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-216 ISSUE 2**

CERTIFICATION TEST REPORT

FOR

MAGNETIC CHARGING BRACELET

MODEL NO: A2002

FCC ID: BCGA2002

IC: 579C-A2002

REPORT NUMBER: 12488666-E1V2

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	08/28/2018	Initial Issue	Chin Pang
V2	9/5/2018	Address TCB Questions	Tony Li

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: MAGNETIC CHARGING BRACELET

MODEL NUMBER: A2002

SERIAL NUMBER: DLCWQ09QJTN7

DATE TESTED: AUGUST 16 to 28, 2018


APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	Complies
INDUSTRY CANADA RSS-216 ISSUE 2	Complies
INDUSTRY CANADA RSS-GEN ISSUE 5	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

Prepared By:



CHIN PANG
SENIOR TEST ENGINEER
UL VERIFICATION SERVICES INC.

JINGANG LI
LAB ENGINEER
UL VERIFICATION SERVICES INC.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, and FCC CFR 47 Part 15, RSS-GEN Issue 5 and RSS-216 Issue 2 January 2016.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
<input type="checkbox"/> Chamber A (IC:2324B-1)	<input type="checkbox"/> Chamber D (IC: 22541-1)
<input type="checkbox"/> Chamber B (IC:2324B-2)	<input checked="" type="checkbox"/> Chamber E (IC: 22541-2)
<input type="checkbox"/> Chamber C (IC:2324B-3)	<input type="checkbox"/> Chamber F (IC: 22541-3)
	<input type="checkbox"/> Chamber G (IC: 22541-4)
	<input type="checkbox"/> Chamber H (IC: 22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at [NVLAP Lab Search](#).

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a magnetic charging bracelet which has a single inductive charging coil to charge Apple Watch. The charging frequency is 326.5 kHz, and the maximum power consumption is 5W in charging status.

5.2. MAXIMUM OUTPUT POWER

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)
326.5	Standby (Config 1)	-24.56	6.44
326.5	Operating (Config 2)	-26.02	3.15

5.3. SOFTWARE AND FIRMWARE

The firmware version installed in the EUT during testing was 9.0.9.

5.4. WORST-CASE CONFIGURATION AND MODE

The EUT is a single frequency magnetic charger enclosed in a stainless steel case. For the entire radiated emissions test, the EUT was examined with configurations 1 and 2.

Config	Mode	Descriptions
1	Standby	EUT Alone powered by AC/DC adapter
2	Operating	EUT and Watch powered by AC/DC adapter

An AC Power Line conducted Emissions were also investigated on the following configurations.

Config	Mode	Descriptions
1	Standby	EUT Alone powered by AC/DC adapter
2	Operating	EUT and Watch powered by AC/DC adapter
3	Standby	EUT Alone powered by laptop
4	Operating	EUT and Watch powered by laptop

For below 30MHz & 1GHz tests EUT was connected to AC power adapter as the worst case, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop.

EUT was tested as standby and operation modes. For worst case operational mode, EUT was tested with two different sizes of watches, small and big of having similar mechanical structure.

For all radiated emissions tests, both small and big watches were investigated and no significant different were observed between both watches. However, the big watch was chosen to test as the worst case condition since it has max overall load, hence all final data for operational mode represents EUT with the big watch. During the charging process, the watch actively indicates the status of the charging process. Device being charged was at a state of 20 – 50% charged.

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.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT & PERIPHERALS

SUPPORT EQUIPMENT & PERIPHERALS LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC adapter	Apple	A1385	N/A	N/A
Watch	Apple	A2007	D92X303AKTK6	BCG-A2007
Laptop	Apple	MacBook Pro	C02NQ00QG45V	FCC DoC
Laptop Adapter	Apple	A1435	C046042GFYFG6HKAY	N/A
Charging Base	Apple	N/A	920-00855-01	N/A

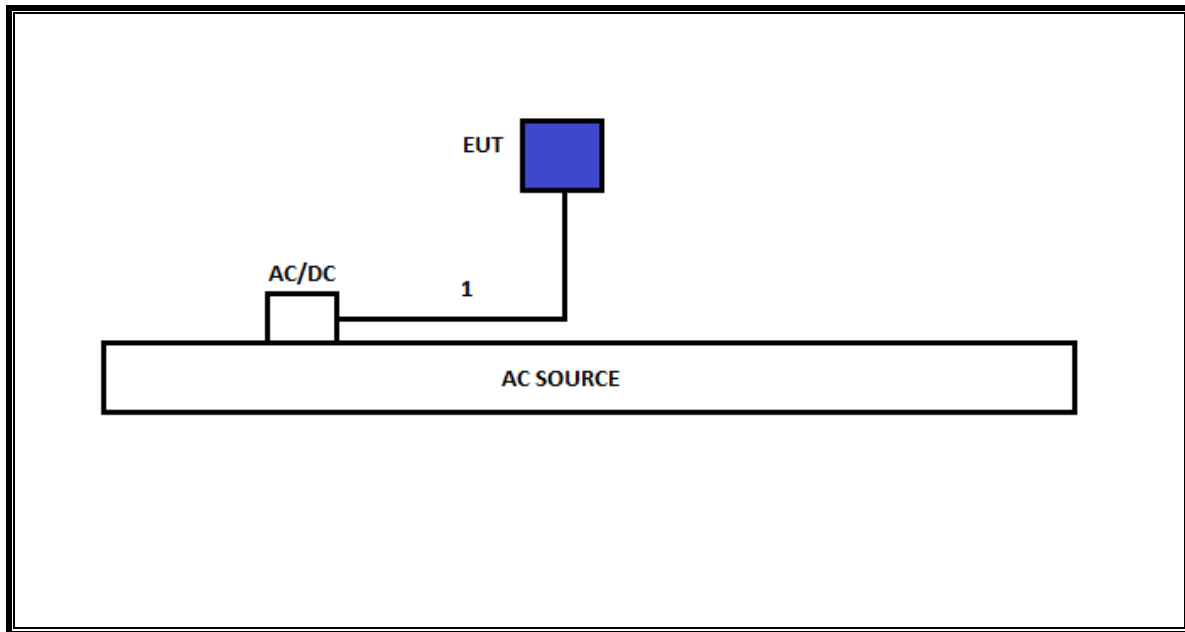
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC	1	USB	Un-shielded	1.5	5W Power Supply
2	DC	1	Magnetic 5 pin	Un-shielded	2	60W Power Supply

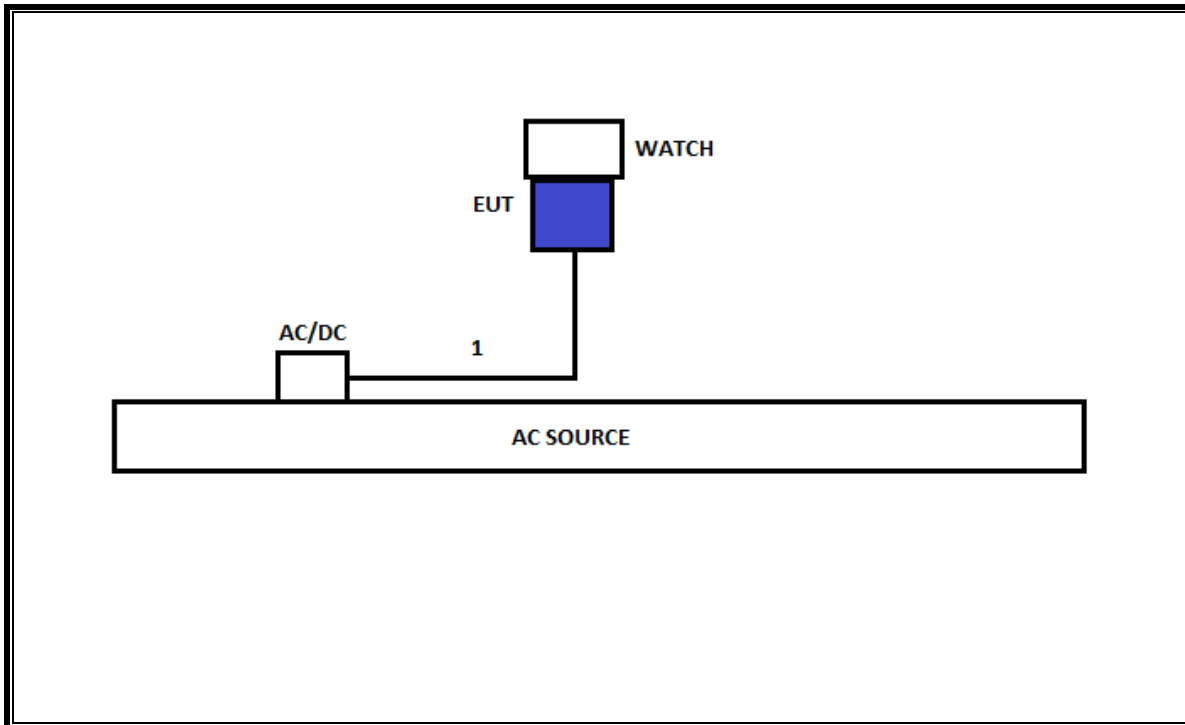
TEST SETUP

Please see the following configurations for the test setups. Configurations 1 and 2 indicate that the EUT is directly connected to an AC/DC adapter via USB cable. Configurations 3 and 4 indicate that the EUT is directly connected to a Host PC via USB cable.

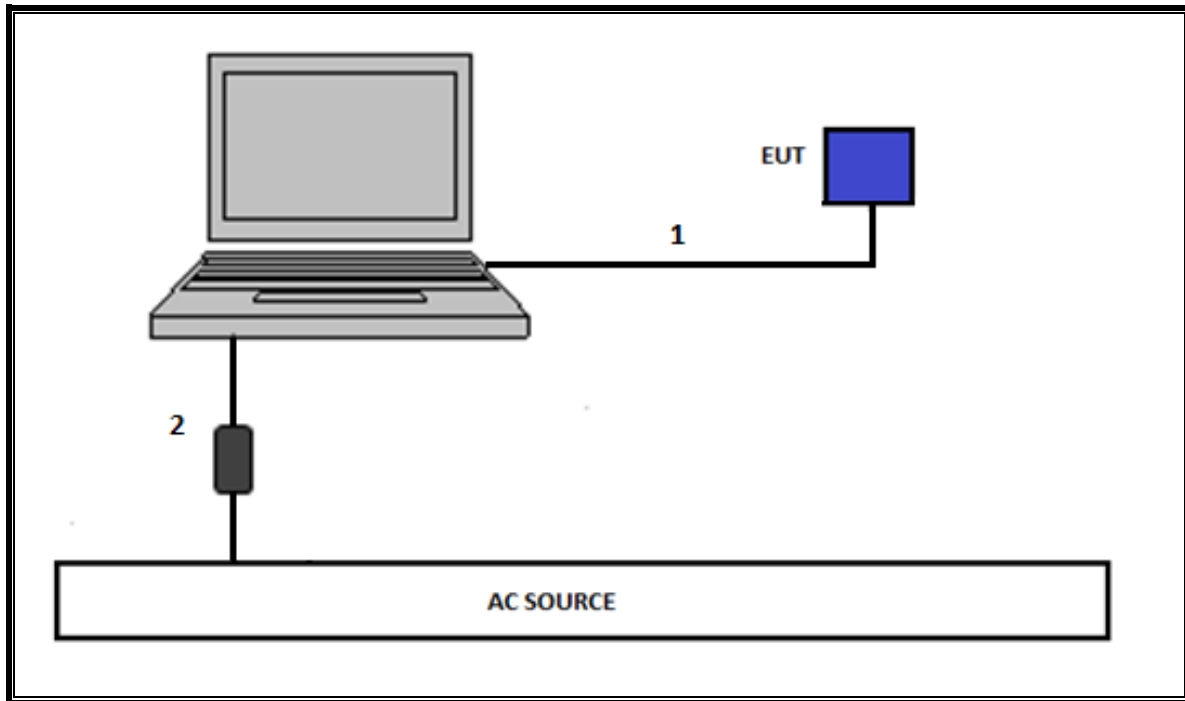
CONFIGURATION 1: STANDBY MODE



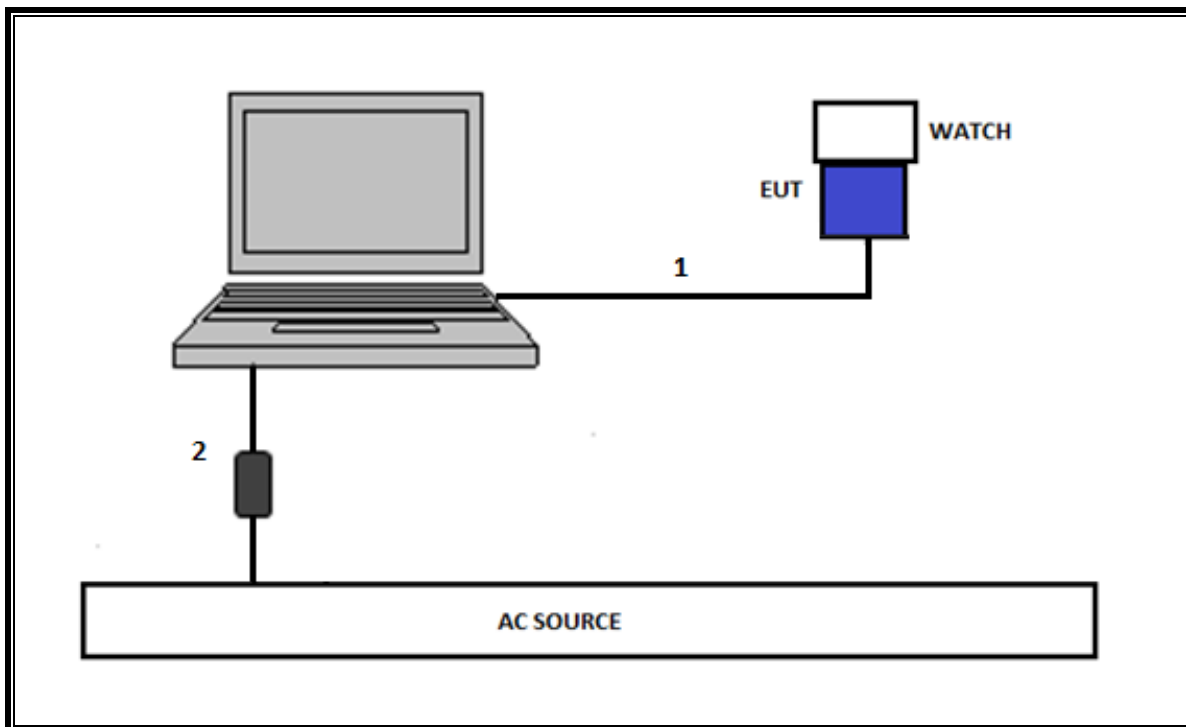
CONFIGURATION 2: OPERATING MODE WITH WATCH



CONFIGURATION 3: STANDBY MODE BY HOST PC VIA USB CABLE



CONFIGURATION 4: OPERATING MODE WITH WATCH BY HOST PC VIA USB CABLE



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	ID Num	Cal Due
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T899	07/24/2019
Amplifier, 10KHz to 1GHz, 32dB	Sonoma Instrument Co.	310N	T285	07/06/2019
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T907	02/07/2019
Thermometer	Control Company	14-650-118, 15557603	T1816	01/11/2019
Antenna, Active Loop 9kHz-30MHz	ETS-Lindgren	6502	T1616	09/14/2018
Sniffer Probes	Electro Metrics	EM-6992	N/A	N/A
AC Line Conducted				
EMI Test Receiver 9Khz-7GHz	Rohde & Schwarz	ESC17	T1436	01/25/2019
Power Cable, Line Conducted Emissions	UL	PG1	T861	08/31/2018
LISN for Conducted Emissions CISPR-16	Fischer	50/250-25-2-01	T1310	06/15/2019

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver. 9.5, April 26, 2016

7. OCCUPIED BANDWIDTH

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 200Hz. 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.

Note that when the EUT was in standby mode the only signal that comes out from the EUT was the intentional charging signal of 326.5kHz. On the other hand, when the EUT was in operational mode there were two signals. One of the intentional charging signal of 326.5kHz and the other one the control signal of 340kHz that controls the communication/charging status between EUT and the client device-the watch.

EUT SETUP

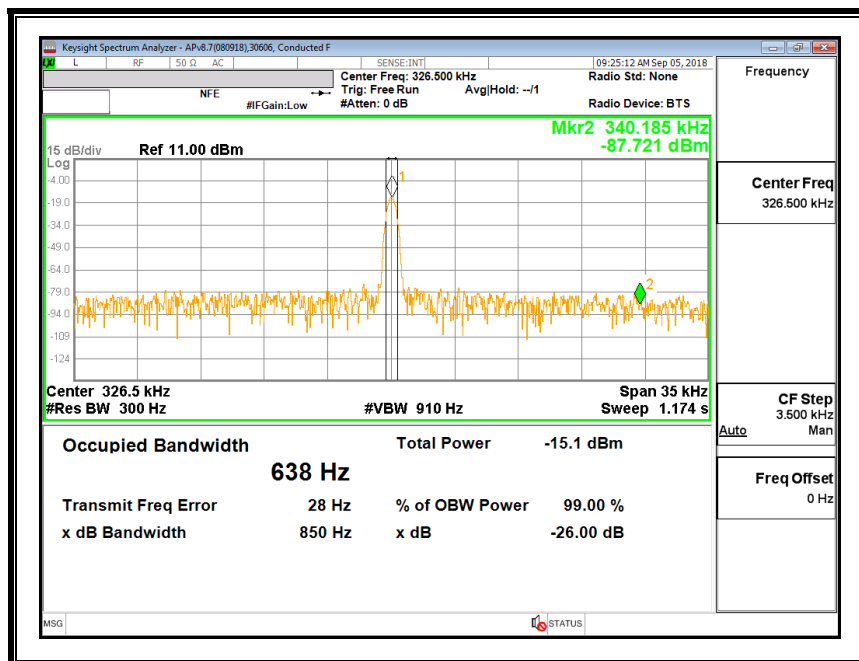
Configuration 1: Charger in standby mode, transmitting low duty cycle CW signal at 326.5kHz test.

Configuration 2: Charger in pairing mode with FSK modulation (-0/+15 kHz) which occurs over a very short period of time as soon as the watch is placed on the charger.

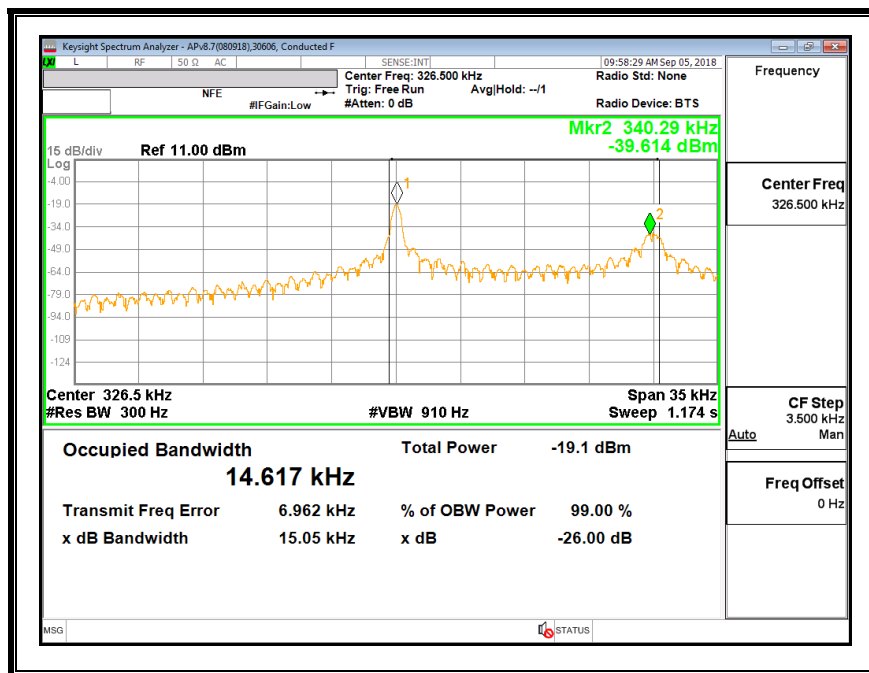
Configuration 3: Charger in charging mode with CW signal and duty cycle varied to control charge level via load modulation from watch.

RESULTS

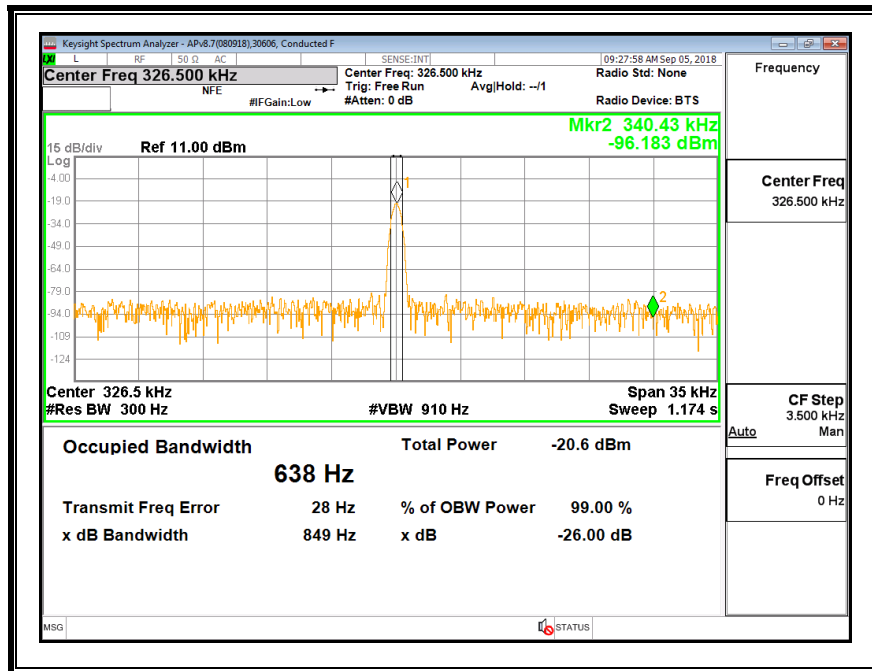
7.1.1. CONFIGURATION 1



7.1.2. CONFIGURATION 2



7.1.3. CONFIGURATION 3



8. RADIATED EMISSION TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.209 (a)

ICES-001 Section 6.2, 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.		

CISPR 11:04

Electromagnetic radiation disturbance limits for class B group 2 equipment measured on a test site

Frequency Range (MHz)	Magnetic Field Strength Limit Class B Group 2 @ 3m Distance (dBuA/m)
	Quasi-peak
0.009 - 0.070	69
0.070 - 0.1485	69
	Decreasing Linearly with Logarithm of Frequency to 39
0.1485 - 4.0	39
	Decreasing Linearly with Logarithm of Frequency to 3
4.0 - 30	3

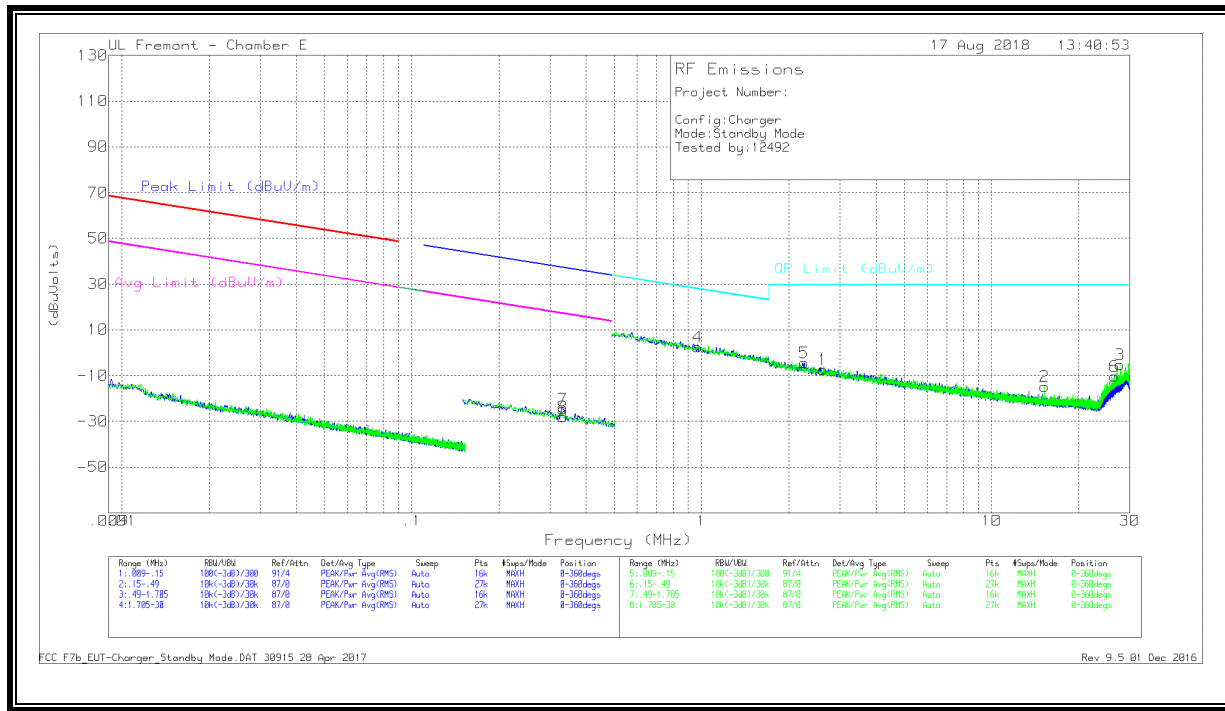
The limits of this table apply to induction cooking appliances intended for commercial use and those for domestic use with a diagonal diameter of more than 1.6m.
The measurements are performed at 3m distance with a 0.6 m loop antenna as described in 4.2.1 of CISPR 16-1-4.
The antenna should be vertically installed, with the lower edge of the loop at 1m height above the floor.

Frequency Range (MHz)	Electric Field Strength Limit Class B Group 2 @ 3m Distance (dBuV/m)	
	Quasi-peak	Average
30 – 80,872	40	35
80,872 – 81,848	60	55
81,848 – 134,786	40	35
134,786 – 136,414	60	55
136,414 – 230	40	35
230 – 1 000	47	42

RESULTS

8.2. FCC TX FUNDAMENTAL AND SPURIOUS EMISSIONS FROM 9 kHz TO 30 MHz

8.2.1. STANDBY CONFIGURATION



DATA

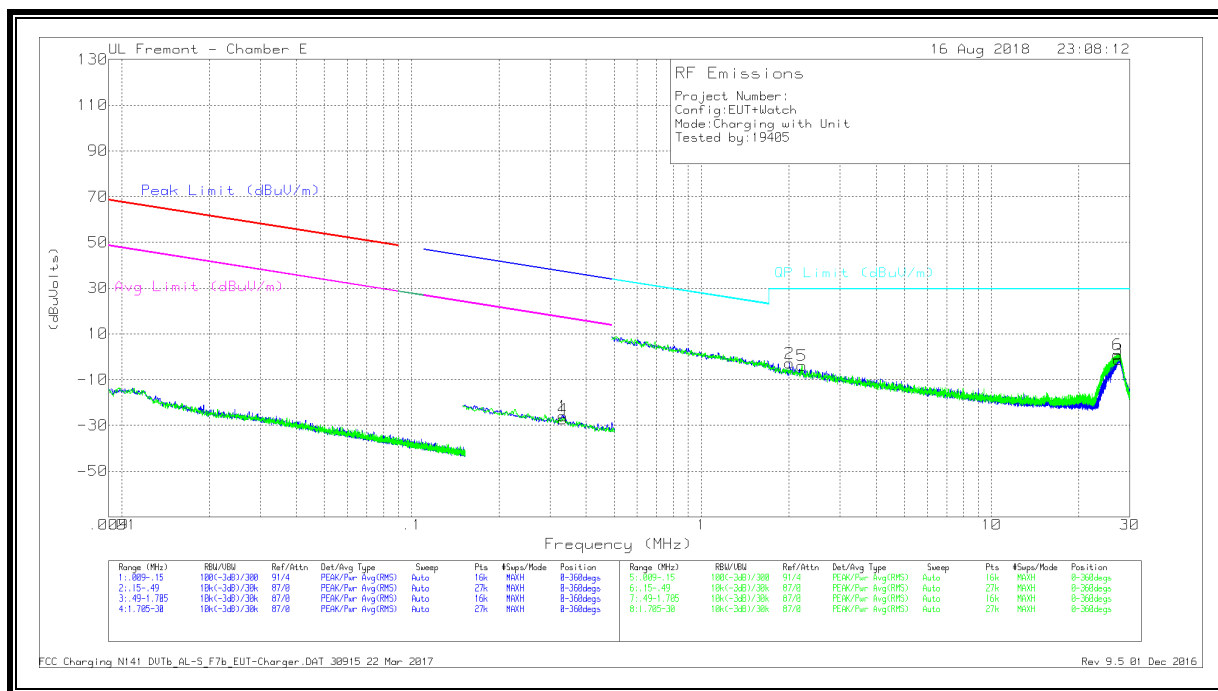
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
8	.33242	40.3	Pk	11.5	.1	-80	-28.1	37.18	-65.28	17.18	-45.28	0-360
7	.33262	43.84	Pk	11.5	.1	-80	-24.56	37.17	-61.73	17.17	-41.73	0-360

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.97047	30.75	Pk	11.5	.2	-40	2.45	27.88	-25.43	0-360
5	2.26044	23.5	Pk	11.7	.3	-40	-4.5	29.5	-34	0-360
1	2.6241	20.67	Pk	11.6	.3	-40	-7.43	29.5	-36.93	0-360
2	15.23049	14.47	Pk	10.1	.7	-40	-14.73	29.5	-44.23	0-360
6	26.62015	20.41	Pk	8.5	.9	-40	-10.19	29.5	-39.69	0-360
3	27.7195	25.56	Pk	8.3	.9	-40	-5.24	29.5	-34.74	0-360

Pk - Peak detector

8.2.2. OPERATING WITH WATCH



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.33229	42.98	Pk	10.9	.1	-80	-26.02	37.18	-63.2	17.18	-43.2	0-360
4	.33241	41.71	Pk	10.9	.1	-80	-27.29	37.18	-64.47	17.18	-44.47	0-360

Pk - Peak detector

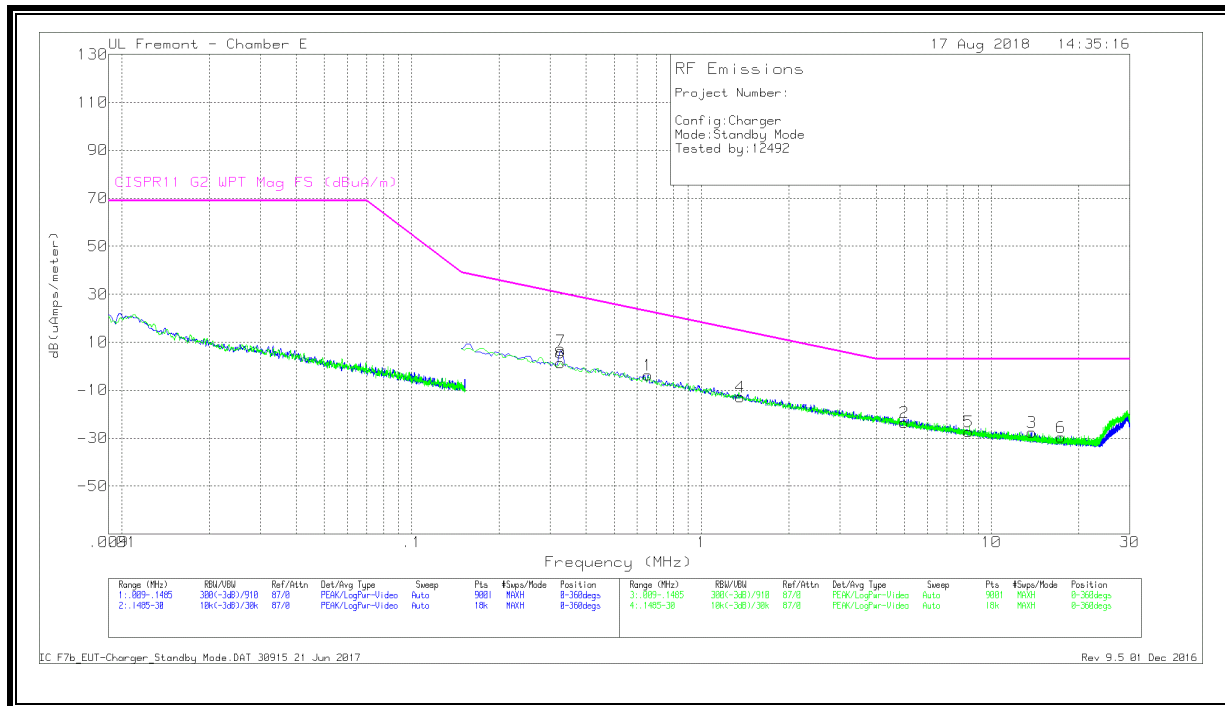
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
2	2.00997	25.59	Pk	11.4	.2	-40	-2.81	29.5	-32.31	0-360
5	2.21904	24.44	Pk	11.4	.2	-40	-3.96	29.5	-33.46	0-360
6	27.21489	30.05	Pk	10.1	.7	-40	.85	29.5	-28.65	0-360
3	27.3527	28.15	Pk	10	.7	-40	-1.15	29.5	-30.65	0-360

Pk - Peak detector

FCC Charging N141 DVtb_AL-S_F7b_EUT-Charger.DAT 30915 22 Mar 2017
Rev 9.5 01 Dec 2016

8.3. IC / CISPR 11 TX FUNDAMENTAL AND SPURIOUS EMISSIONS FROM 9 kHz TO 30 MHz

8.3.1. STANDBY CONFIGURATION

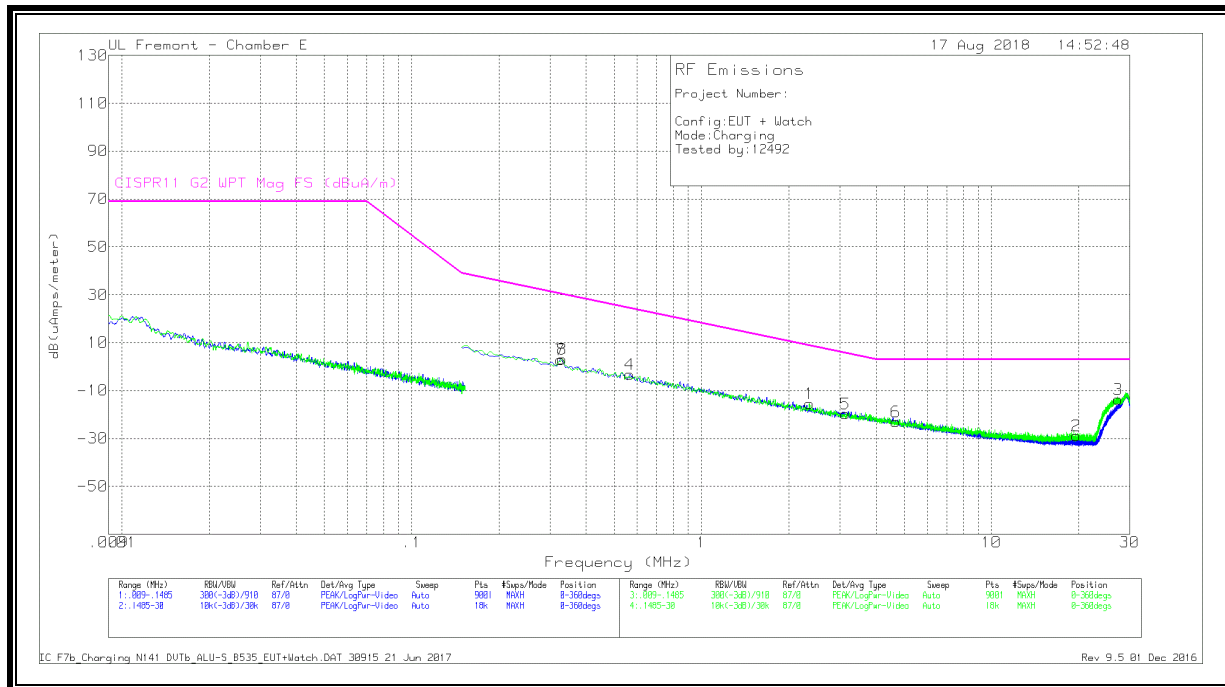


DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Corrected Reading dB(uAmps/meter)	CISPR11 G2 WPT Mag FS (dBuA/m)	Margin (dB)	Azimuth (Degs)
8	.32591	41.81	Pk	-40.5	.1	1.41	30.41	-29	0-360
7	.32756	46.84	Pk	-40.5	.1	6.44	30.35	-23.91	0-360
1	.65419	36.59	Pk	-40.4	.2	-3.61	22.79	-26.4	0-360
4	1.35884	27.12	Pk	-40.2	.2	-12.88	14.8	-27.68	0-360
2	5.00644	16.31	Pk	-40.2	.4	-23.49	3	-26.49	0-360
5	8.35394	12.76	Pk	-40.6	.5	-27.34	3	-30.34	0-360
3	13.77892	12.45	Pk	-40.7	.7	-27.55	3	-30.55	0-360
6	17.37844	10.69	Pk	-41	.7	-29.61	3	-32.61	0-360

Pk - Peak detector

8.3.2. OPERATING WITH WATCH



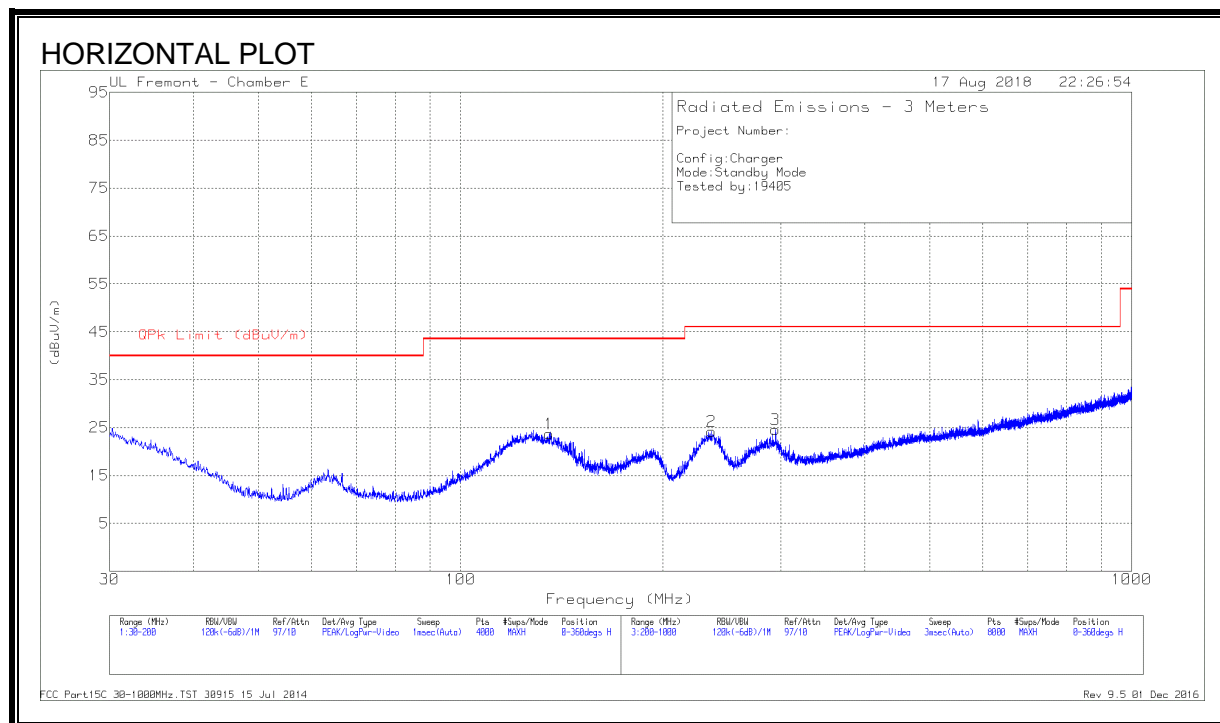
DATA

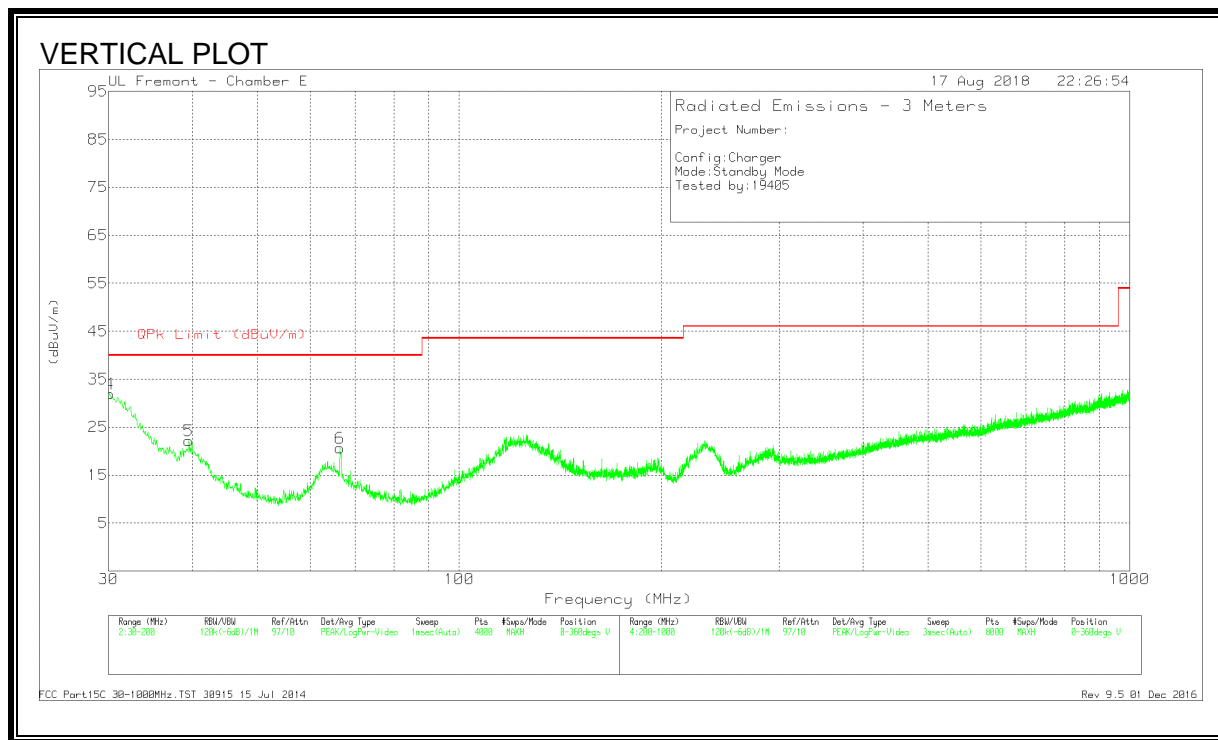
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Corrected Reading dB(uAmps/meter)	CISPR11 G2 WPT Mag FS (dBuA/m)	Margin (dB)	Azimuth (Degs)
7	.32591	43.35	Pk	-40.5	.1	2.95	30.41	-27.46	0-360
8	.33088	43.55	Pk	-40.5	.1	3.15	30.24	-27.09	0-360
4	.56632	36.94	Pk	-40.4	.2	-3.26	24.37	-27.63	0-360
1	2.35364	24.4	Pk	-40.1	.3	-15.4	8.8	-24.2	0-360
5	3.12627	20.14	Pk	-40.1	.3	-19.66	5.69	-25.35	0-360
6	4.66821	16.65	Pk	-40.1	.4	-23.05	3	-26.05	0-360
2	19.5927	11.65	Pk	-41.2	.8	-28.75	3	-31.75	0-360
3	27.34467	28.02	Pk	-42.6	.9	-13.68	3	-16.68	0-360

Pk - Peak detector

8.4. FCC TX SPURIOUS EMISSION 30 TO 1000 MHz

8.4.1. STANDBY CONFIGURATION





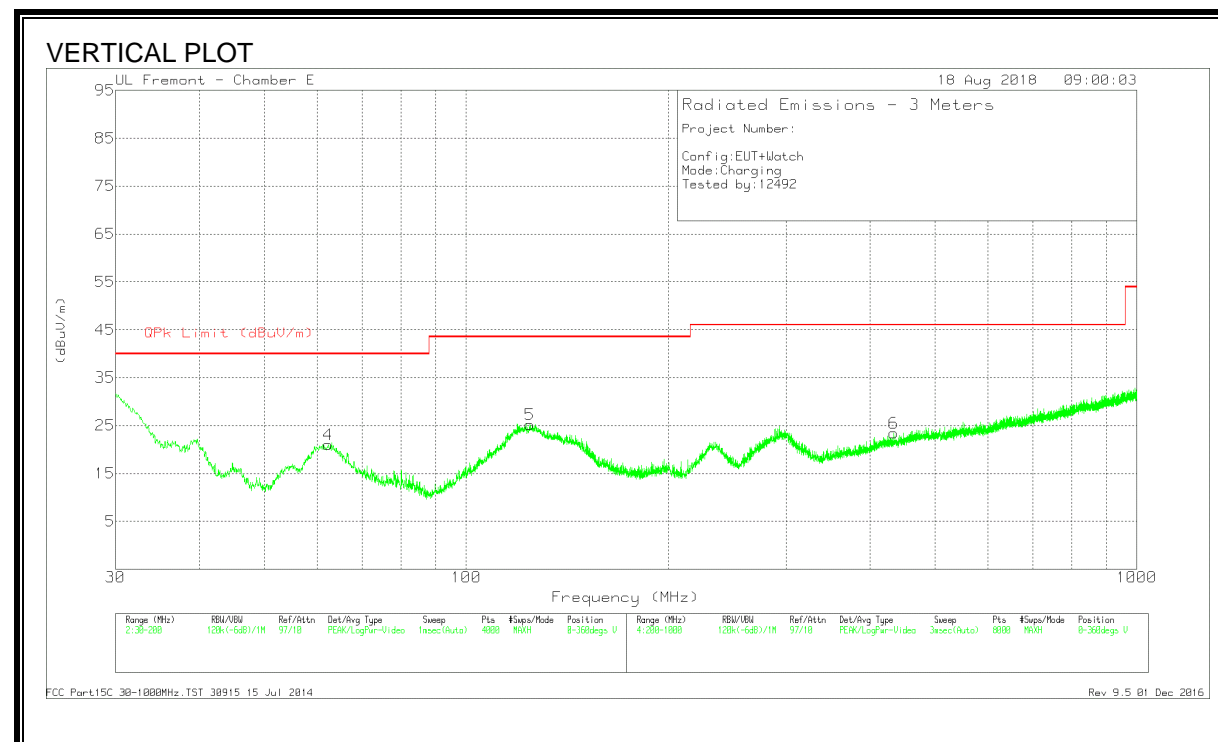
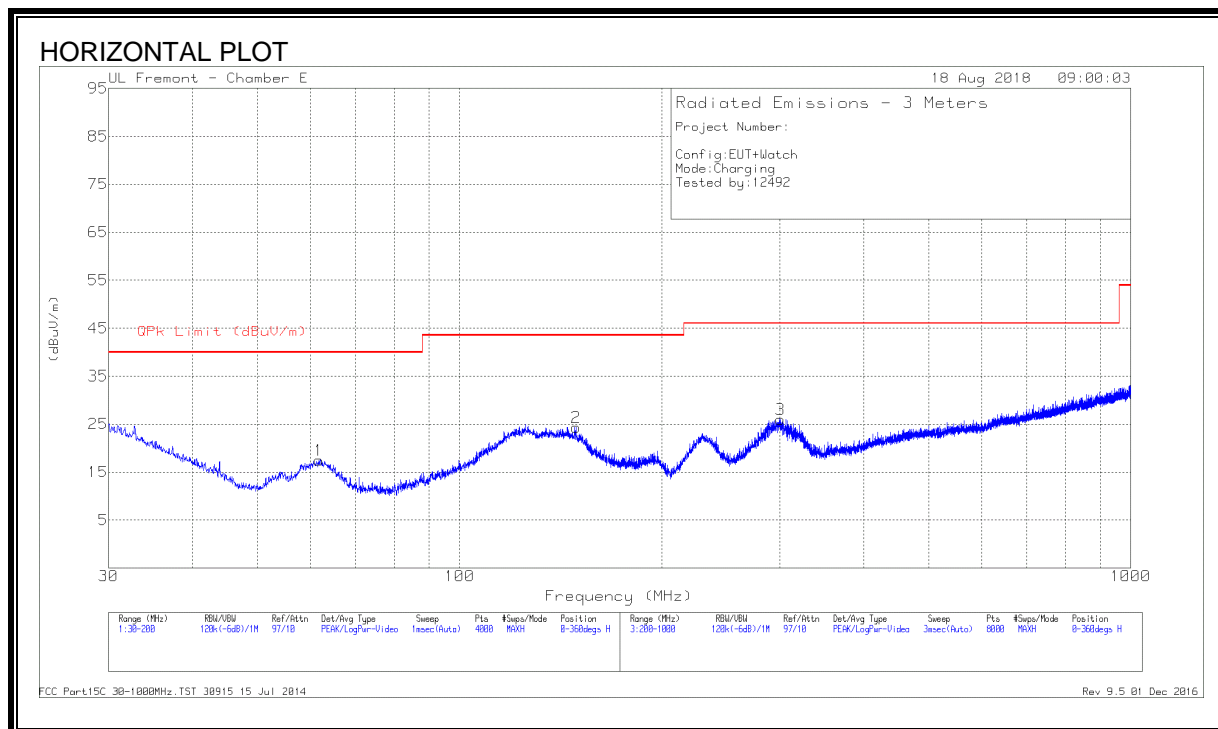
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T899 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 135.5123	34.36	Pk	19.7	-30.4	23.66	43.52	-19.86	0-360	200	H
2	236.4047	36.64	Pk	17.2	-29.6	24.24	46.02	-21.78	0-360	100	H
3	294.5123	34.57	Pk	19.2	-29.2	24.57	46.02	-21.45	0-360	100	H
4	30.1275	36.83	Pk	26.7	-31.6	31.93	40	-8.07	0-360	100	V
5	39.5225	33.12	Pk	20.6	-31.5	22.22	40	-17.78	0-360	100	V
6	66.3894	37.54	Pk	14.2	-31.1	20.64	40	-19.36	0-360	100	V

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

Pk - Peak detector

8.4.2. OPERATING WITH WATCH



DATA

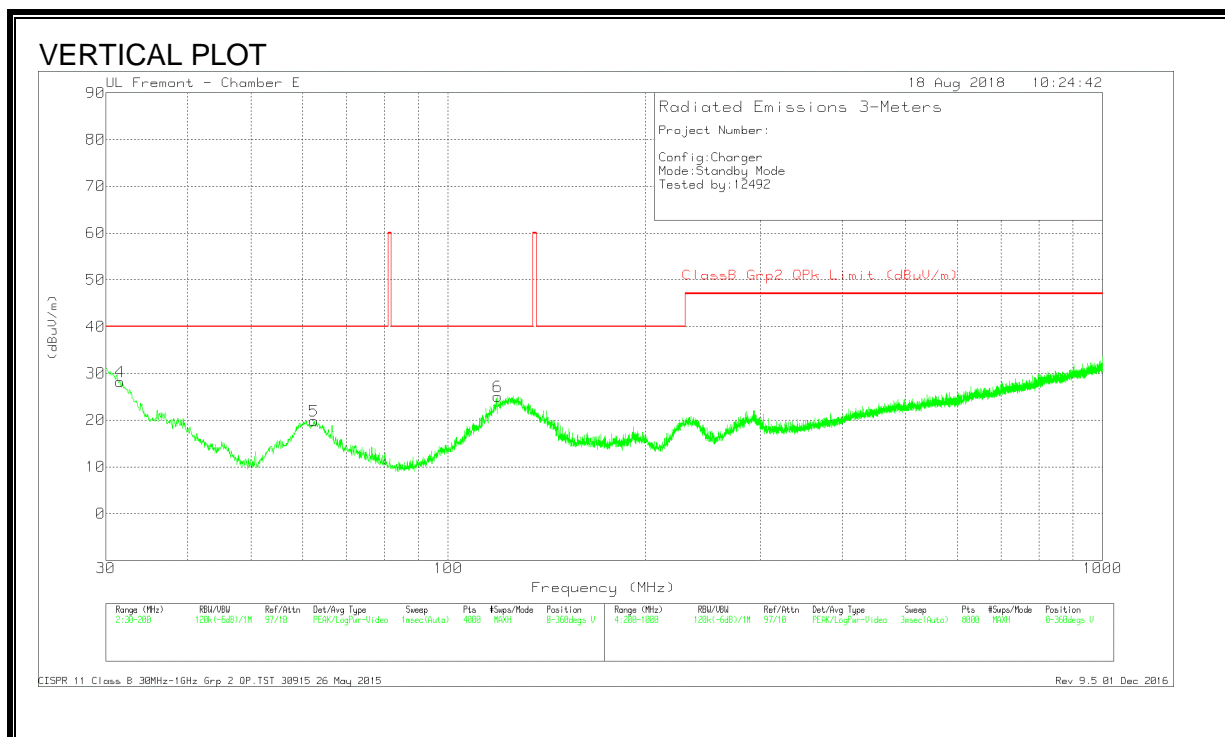
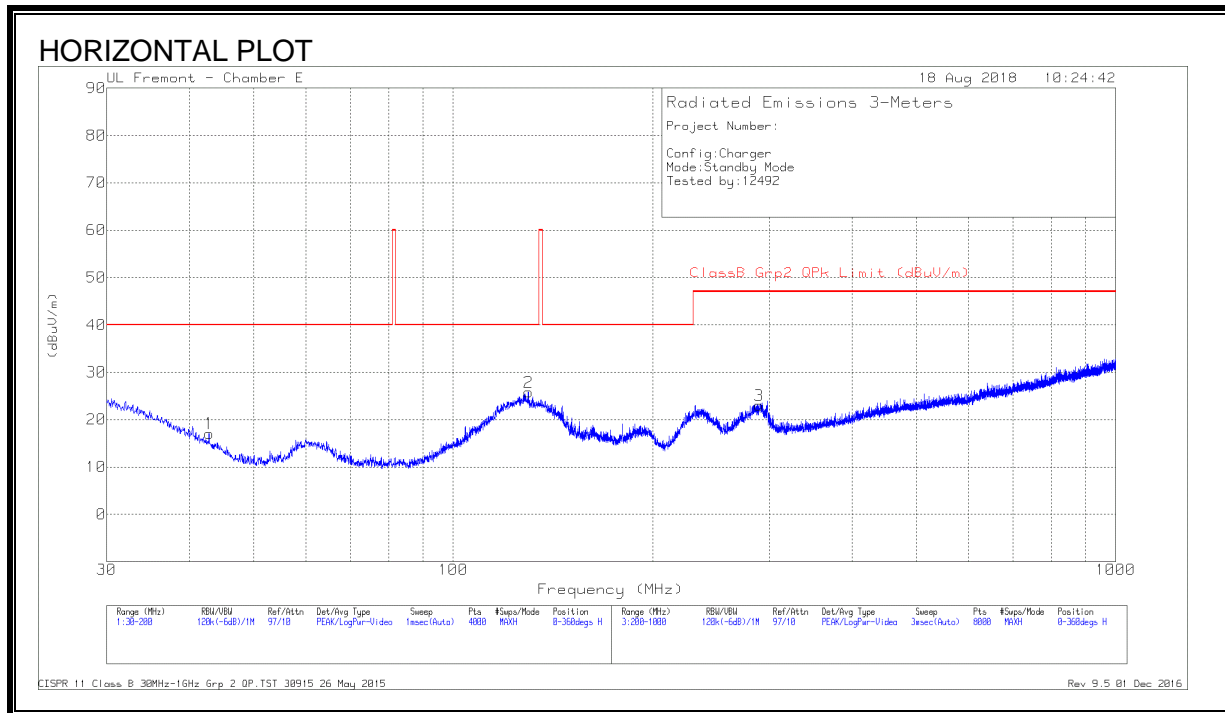
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T899 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 124.3319	35.85	Pk	20	-30.6	25.25	43.52	-18.27	0-360	100	V
1	61.7557	34.45	Pk	14.2	-31.2	17.45	40	-22.55	0-360	399	H
4	62.2233	38.02	Pk	14.2	-31.2	21.02	40	-18.98	0-360	100	V
2	149.0946	35.98	Pk	18.7	-30.3	24.38	43.52	-19.14	0-360	100	H
3	300.7131	35.9	Pk	19.3	-29.2	26	46.02	-20.02	0-360	101	H
6	433.7304	29.47	Pk	22.4	-28.4	23.47	46.02	-22.55	0-360	200	V

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

Pk - Peak detector

8.5. IC / CISPR 11 TX SPURIOUS EMISSION 30 TO 1000 MHz

8.5.1. STANDBY CONFIGURATION

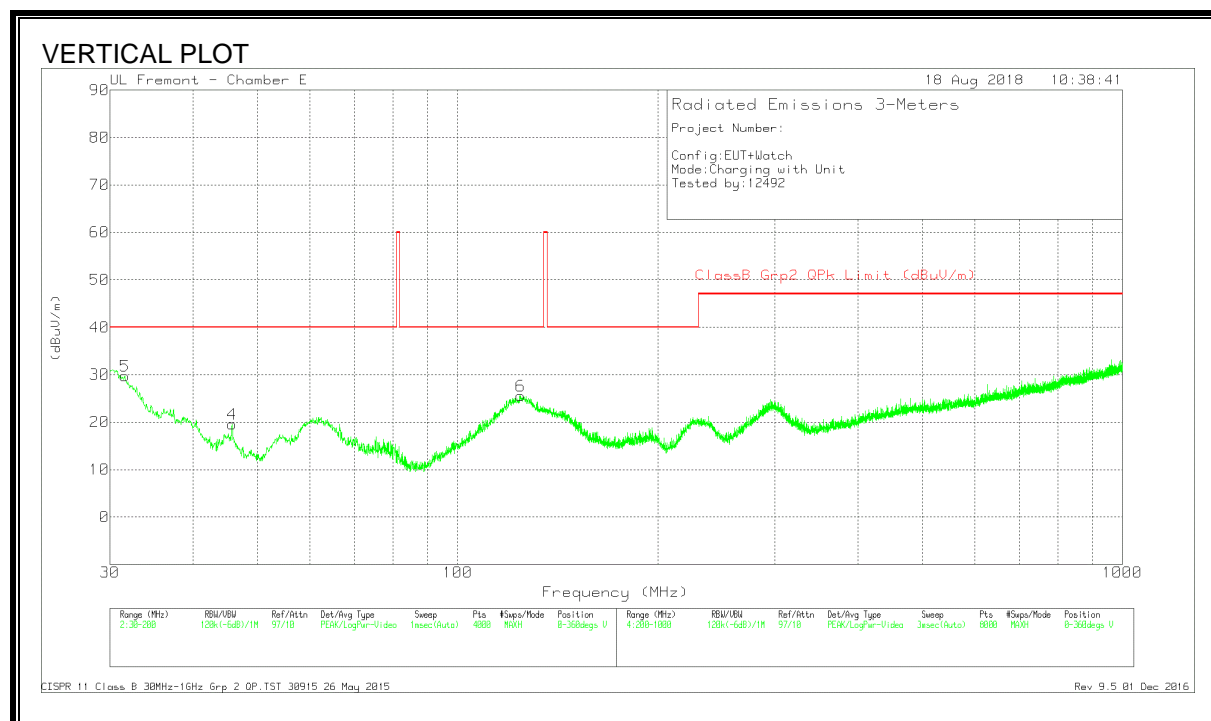
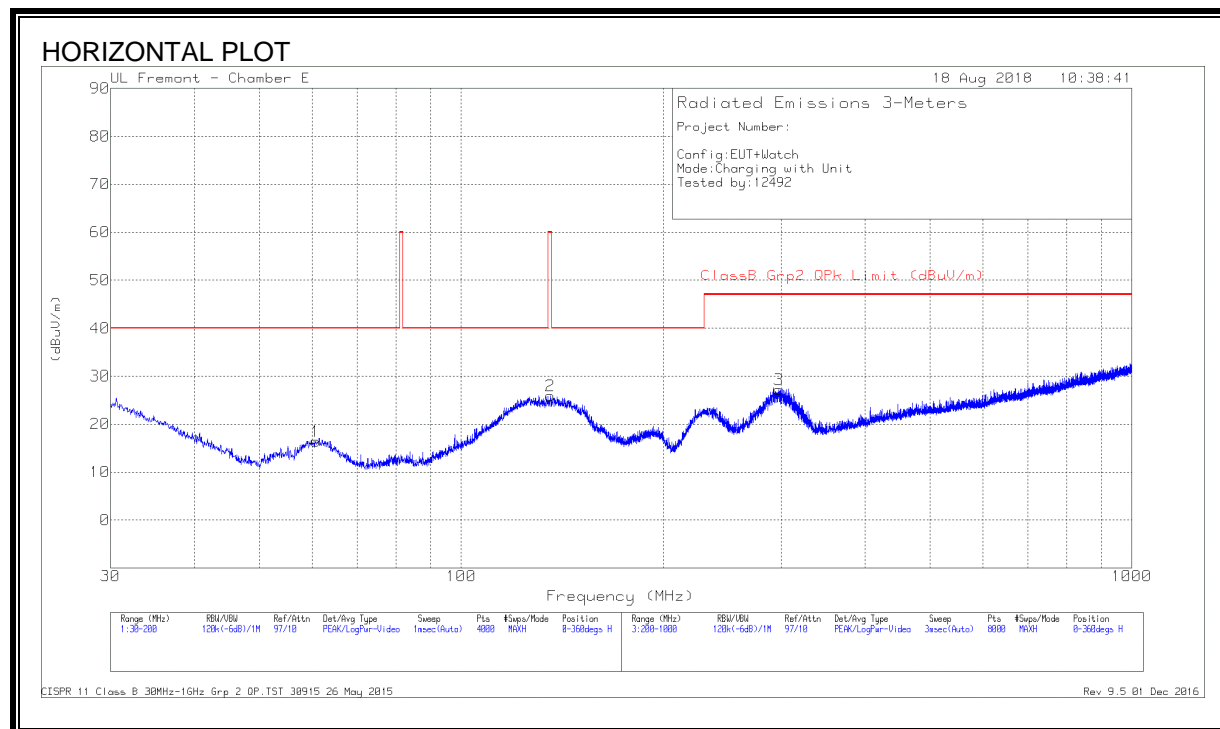


DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T899 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	ClassB Grp2 QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.5304	33.69	Pk	26.1	-31.6	28.19	40	-11.81	0-360	100	V
1	42.8383	30.51	Pk	18	-31.4	17.11	40	-22.89	0-360	400	H
5	62.3509	36.8	Pk	14.2	-31.2	19.8	40	-20.2	0-360	100	V
6	119.0605	35.69	Pk	19.9	-30.6	24.99	40	-15.01	0-360	100	V
2	129.8583	36.43	Pk	19.9	-30.5	25.83	40	-14.17	0-360	200	H
3	289.4116	33.07	Pk	19.2	-29.3	22.97	47	-24.03	0-360	100	H

Pk - Peak detector

8.5.2. OPERATING WITH WATCH



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T899 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	ClassB Grp2 QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	31.5729	35.39	Pk	26	-31.6	29.79	40	-10.21	0-360	100	V
4	45.7716	34.96	Pk	16	-31.4	19.56	40	-20.44	0-360	100	V
1	60.7355	33.51	Pk	14.1	-31.2	16.41	40	-23.59	0-360	200	H
6	124.3319	36.1	Pk	20	-30.6	25.5	40	-14.5	0-360	100	V
2	135.8949	36.65	Pk	19.7	-30.4	25.95	60	-34.05	0-360	200	H
3	297.8127	37.22	Pk	19.2	-29.2	27.22	47	-19.78	0-360	100	H

Pk - Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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.

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.

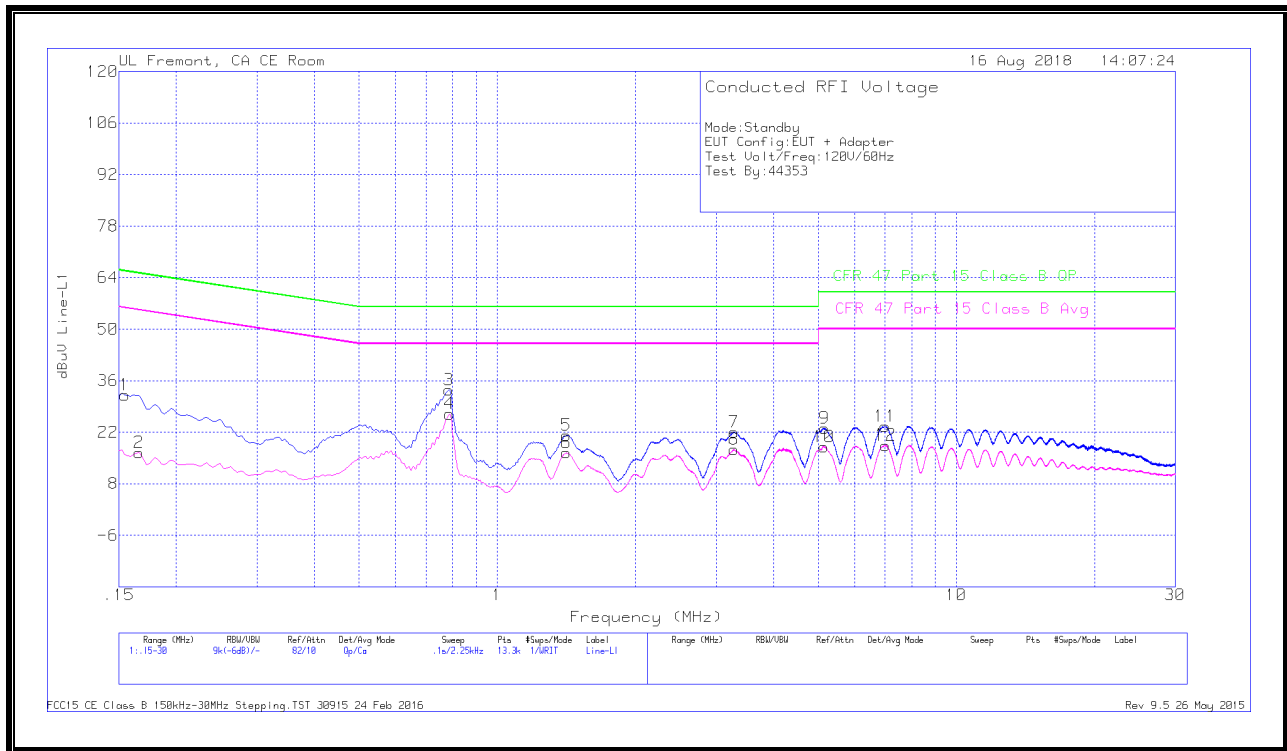
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

9.1.1. STANDBY MODE POWERED BY AC/DC ADAPTER

LINE 1 RESULTS



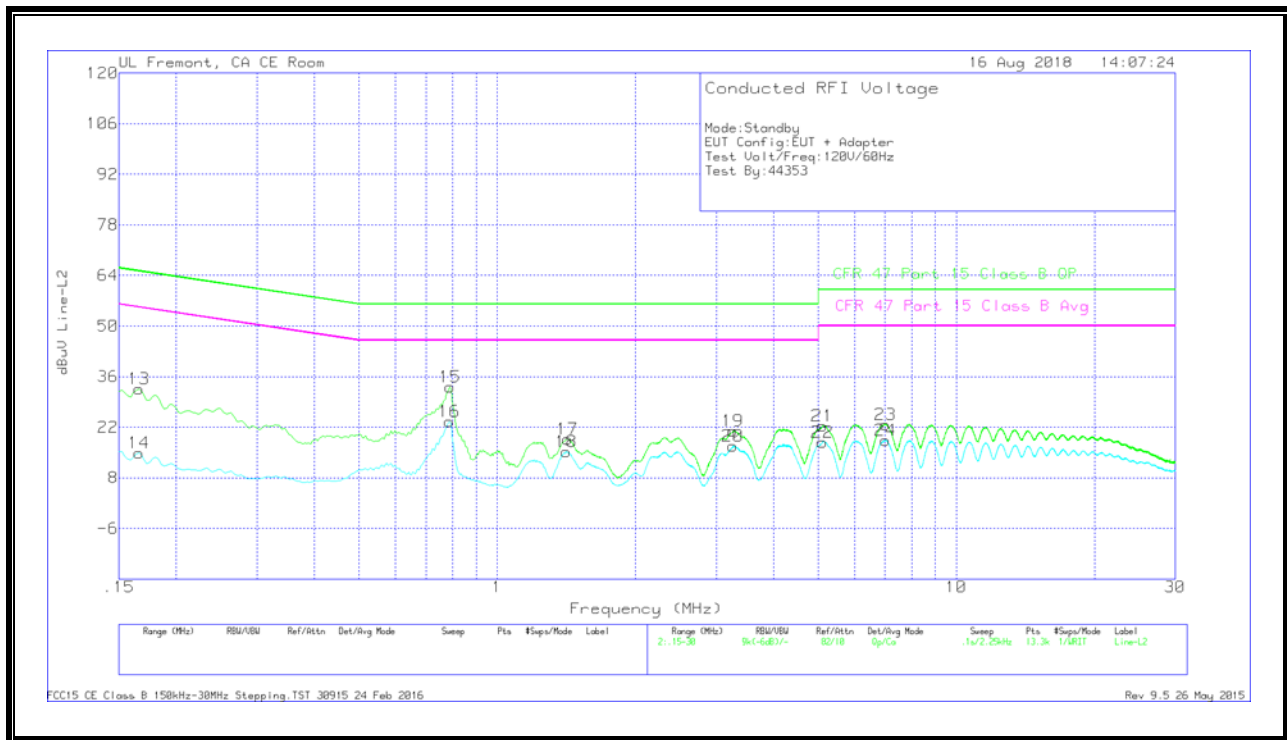
WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.1545	21.9	Qp	.1	0	10.1	32.1	65.75	-33.65	-	-
2	.16575	6.27	Ca	.1	0	10.1	16.47	-	-	55.17	-38.7
3	.7845	23.41	Qp	0	0	10.1	33.51	56	-22.49	-	-
4	.78675	16.87	Ca	0	0	10.1	26.97	-	-	46	-19.03
5	1.4145	10.96	Qp	0	.1	10.1	21.16	56	-34.84	-	-
6	1.41225	6.21	Ca	0	.1	10.1	16.41	-	-	46	-29.59
7	3.27975	11.86	Qp	0	.1	10.1	22.06	56	-33.94	-	-
8	3.27975	7.18	Ca	0	.1	10.1	17.38	-	-	46	-28.62
9	5.16975	12.89	Qp	0	.1	10.1	23.09	60	-36.91	-	-
10	5.154	7.85	Ca	0	.1	10.1	18.05	-	-	50	-31.95
11	7.00125	13.13	Qp	0	.2	10.2	23.53	60	-36.47	-	-
12	7.01588	8.05	Ca	0	.2	10.2	18.45	-	-	50	-31.55

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

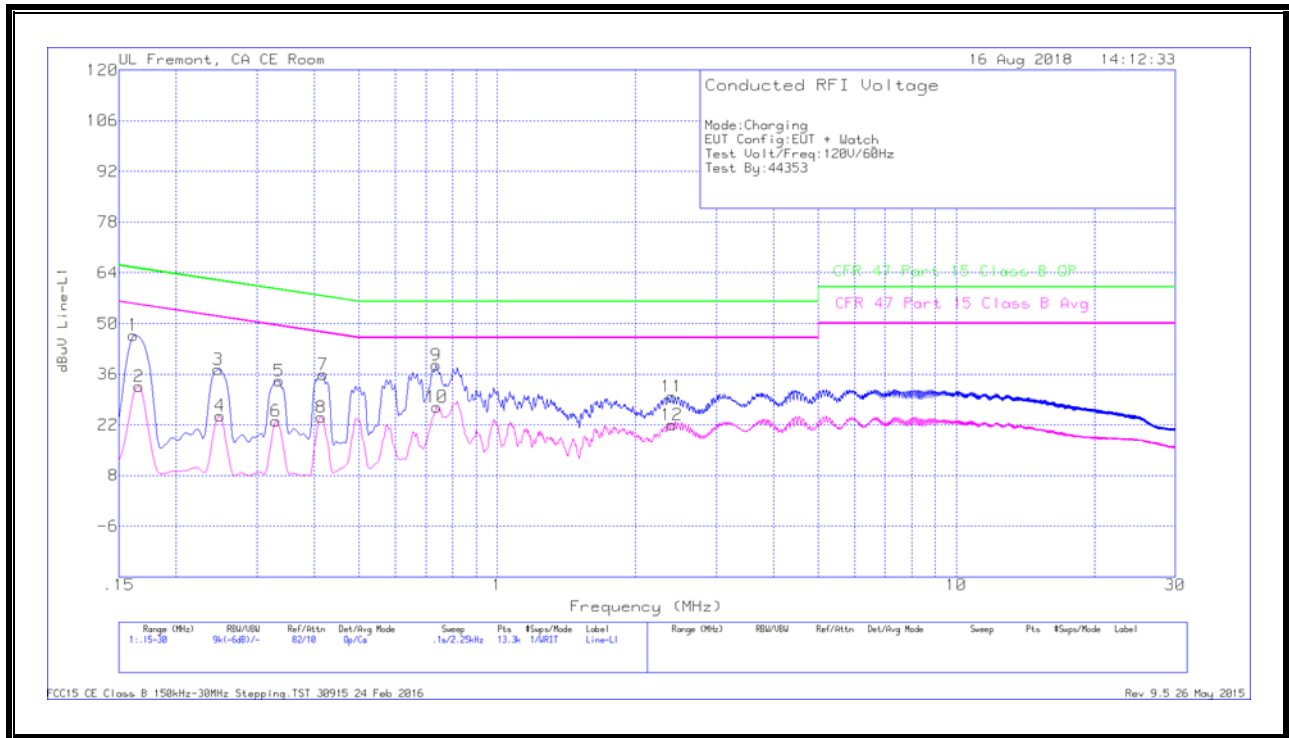
Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.16575	22.34	Qp	.1	0	10.1	32.54	65.17	-32.63	-	-
14	.16575	4.74	Ca	.1	0	10.1	14.94	-	-	55.17	-40.23
15	.789	22.99	Qp	0	0	10.1	33.09	56	-22.91	-	-
16	.78675	13.46	Ca	0	0	10.1	23.56	-	-	46	-22.44
17	1.4235	8.57	Qp	0	.1	10.1	18.77	56	-37.23	-	-
18	1.41225	5	Ca	0	.1	10.1	15.2	-	-	46	-30.8
19	3.26175	10.81	Qp	0	.1	10.1	21.01	56	-34.99	-	-
20	3.264	6.66	Ca	0	.1	10.1	16.86	-	-	46	-29.14
21	5.109	12.2	Qp	0	.1	10.1	22.4	60	-37.6	-	-
22	5.109	7.66	Ca	0	.1	10.1	17.86	-	-	50	-32.14
23	7.008	12.36	Qp	0	.2	10.2	22.76	60	-37.24	-	-
24	7.01363	7.98	Ca	0	.2	10.2	18.38	-	-	50	-31.62

Qp - Quasi-Peak detector

Ca - CISPR average detection

9.1.2. OPERATING MODE WITH WATCH POWERED BY AC/DC ADAPTER

LINE 1 RESULTS



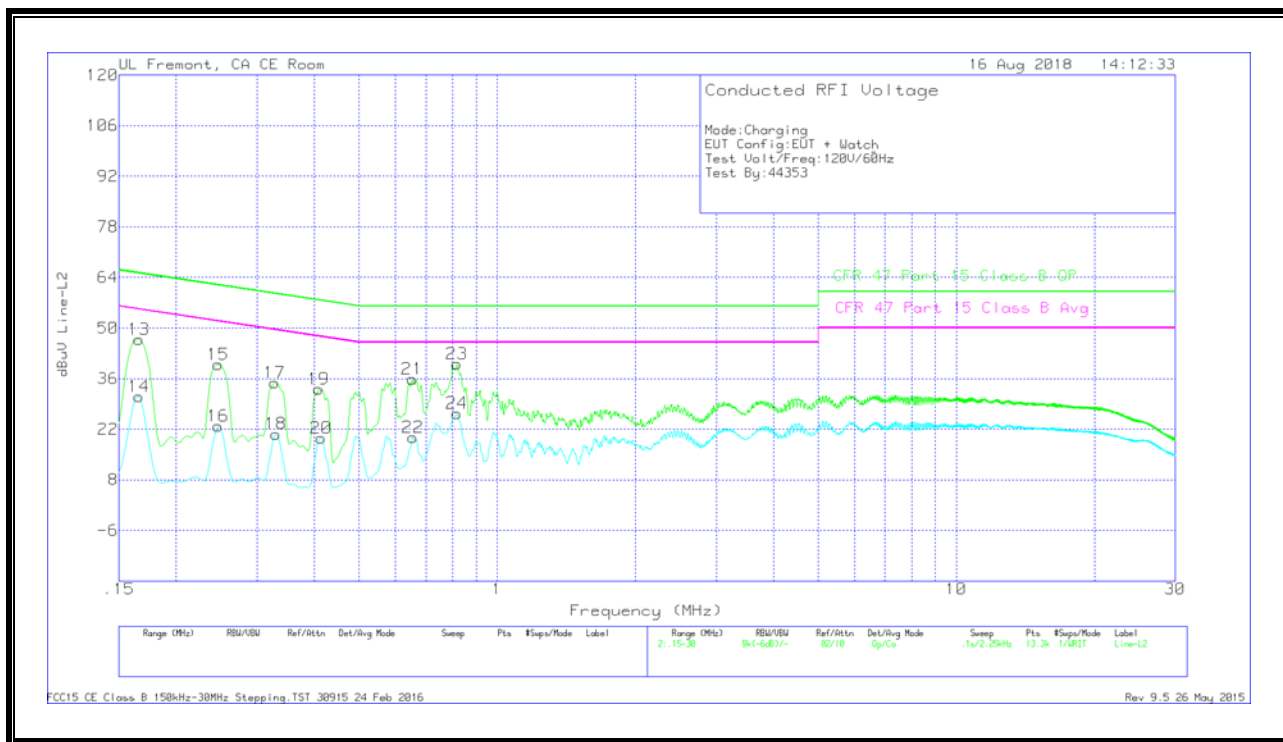
WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.16125	36.58	Qp	.1	0	10.1	46.78	65.4	-18.62	-	-
2	.16575	22.48	Ca	.1	0	10.1	32.68	-	-	55.17	-22.49
3	.24675	27.21	Qp	0	0	10.1	37.31	61.87	-24.56	-	-
4	.249	14.43	Ca	0	0	10.1	24.53	-	-	51.79	-27.26
5	.3345	24.01	Qp	0	0	10.1	34.11	59.34	-25.23	-	-
6	.33	13.02	Ca	0	0	10.1	23.12	-	-	49.45	-26.33
7	.41775	25.76	Qp	0	0	10.1	35.86	57.49	-21.63	-	-
8	.41325	14.07	Ca	0	0	10.1	24.17	-	-	47.58	-23.41
9	.73725	28.45	Qp	0	0	10.1	38.55	56	-17.45	-	-
10	.7395	16.86	Ca	0	0	10.1	26.96	-	-	46	-19.04
11	2.4045	19.65	Qp	0	.1	10.1	29.85	56	-26.15	-	-
12	2.4045	11.88	Ca	0	.1	10.1	22.08	-	-	46	-23.92

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

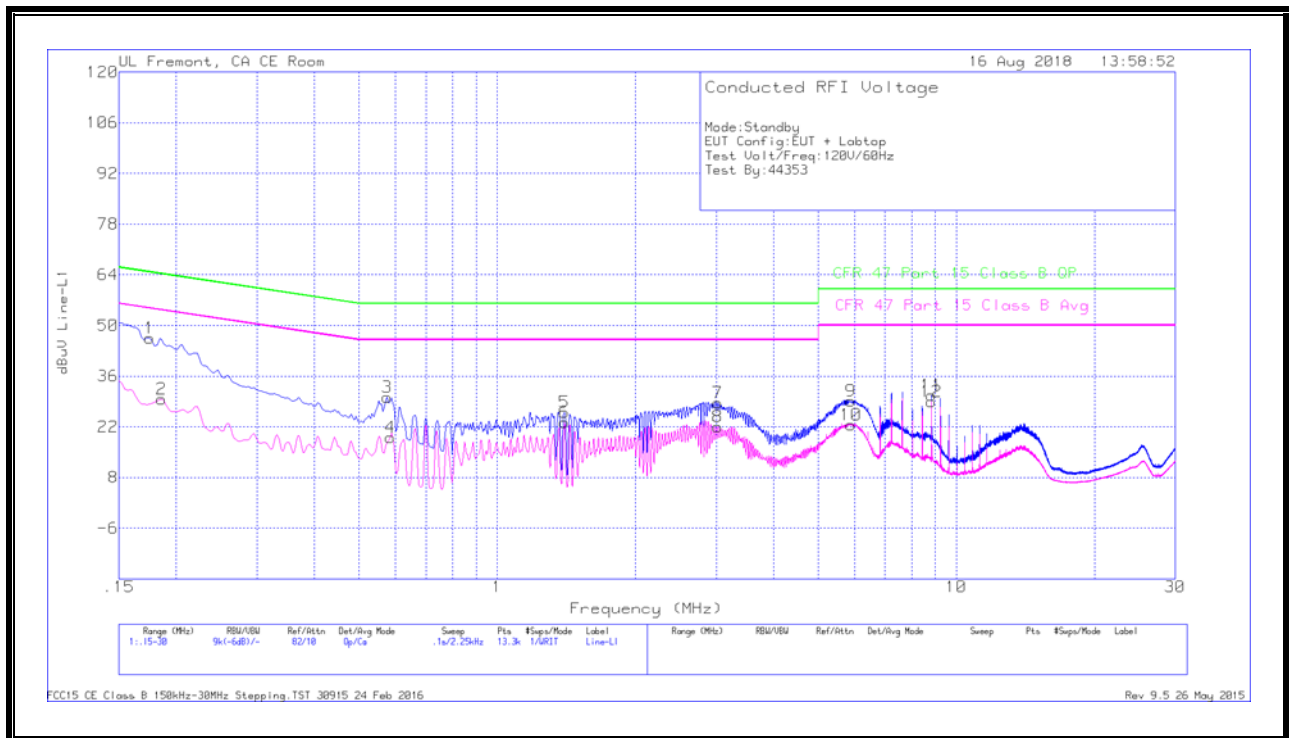
Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.16575	36.64	Qp	.1	0	10.1	46.84	65.17	-18.33	-	-
14	.16575	20.8	Ca	.1	0	10.1	31	-	-	55.17	-24.17
15	.24675	29.85	Qp	0	0	10.1	39.95	61.87	-21.92	-	-
16	.24675	12.75	Ca	0	0	10.1	22.85	-	-	51.87	-29.02
17	.32775	24.78	Qp	0	0	10.1	34.88	59.51	-24.63	-	-
18	.33	10.61	Ca	0	0	10.1	20.71	-	-	49.45	-28.74
19	.40875	23.05	Qp	0	0	10.1	33.15	57.67	-24.52	-	-
20	.41325	9.54	Ca	0	0	10.1	19.64	-	-	47.58	-27.94
21	.654	25.87	Qp	0	0	10.1	35.97	56	-20.03	-	-
22	.65625	9.64	Ca	0	0	10.1	19.74	-	-	46	-26.26
23	.81825	29.94	Qp	0	0	10.1	40.04	56	-15.96	-	-
24	.81825	16.34	Ca	0	0	10.1	26.44	-	-	46	-19.56

Qp - Quasi-Peak detector

Ca - CISPR average detection

9.1.3. STANDBY MODE POWERED BY HOST PC VIA USB CABLE

LINE 1 RESULTS



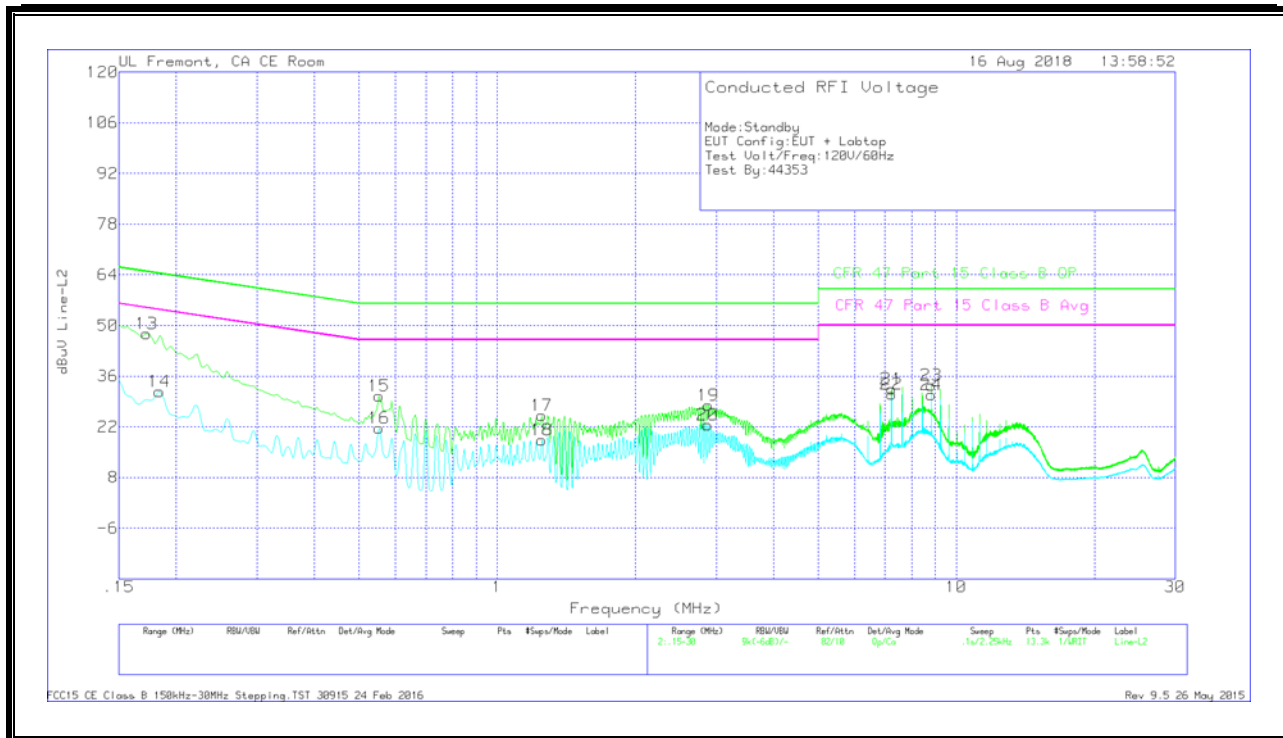
WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.17475	36.46	Qp	0	0	10.1	46.56	64.73	-18.17	-	-
2	.186	19.6	Ca	0	0	10.1	29.7	-	-	54.21	-24.51
3	.57525	20.09	Qp	0	0	10.1	30.19	56	-25.81	-	-
4	.58425	8.93	Ca	0	0	10.1	19.03	-	-	46	-26.97
5	1.401	15.88	Qp	0	.1	10.1	26.08	56	-29.92	-	-
6	1.401	12.97	Ca	0	.1	10.1	23.17	-	-	46	-22.83
7	3.0255	18.4	Qp	0	.1	10.1	28.6	56	-27.4	-	-
8	3.0255	11.88	Ca	0	.1	10.1	22.08	-	-	46	-23.92
9	5.90325	18.67	Qp	0	.2	10.2	29.07	60	-30.93	-	-
10	5.90325	12.16	Ca	0	.2	10.2	22.56	-	-	50	-27.44
11	8.8305	20.38	Qp	0	.2	10.2	30.78	60	-29.22	-	-
12	8.83275	18.58	Ca	0	.2	10.2	28.98	-	-	50	-21.02

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

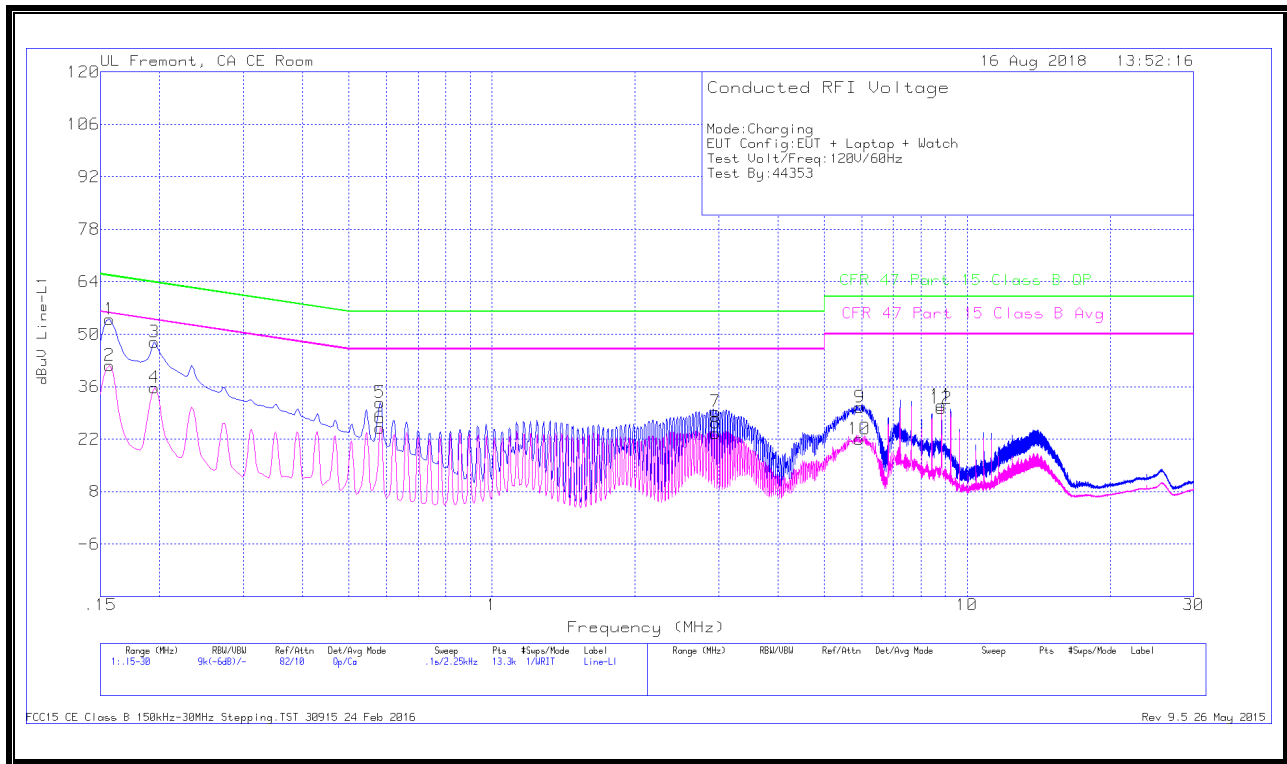
Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.1725	37.61	Qp	0	0	10.1	47.71	64.84	-17.13	-	-
14	.18375	21.59	Ca	0	0	10.1	31.69	-	-	54.31	-22.62
15	.55275	20.39	Qp	0	0	10.1	30.49	56	-25.51	-	-
16	.55275	11.61	Ca	0	0	10.1	21.71	-	-	46	-24.29
17	1.25025	14.92	Qp	0	.1	10.1	25.12	56	-30.88	-	-
18	1.2525	8.14	Ca	0	.1	10.1	18.34	-	-	46	-27.66
19	2.87925	17.69	Qp	0	.1	10.1	27.89	56	-28.11	-	-
20	2.877	12.32	Ca	0	.1	10.1	22.52	-	-	46	-23.48
21	7.22625	21.98	Qp	0	.2	10.2	32.38	60	-27.62	-	-
22	7.22625	20.6	Ca	0	.2	10.2	31	-	-	50	-19
23	8.8305	23.12	Qp	0	.2	10.2	33.52	60	-26.48	-	-
24	8.83275	20.48	Ca	0	.2	10.2	30.88	-	-	50	-19.12

Qp - Quasi-Peak detector

Ca - CISPR average detection

9.1.4. OPERATING MODE WITH WATCH POWERED BY HOST PC VIA USB CABLE

LINE 1 RESULTS



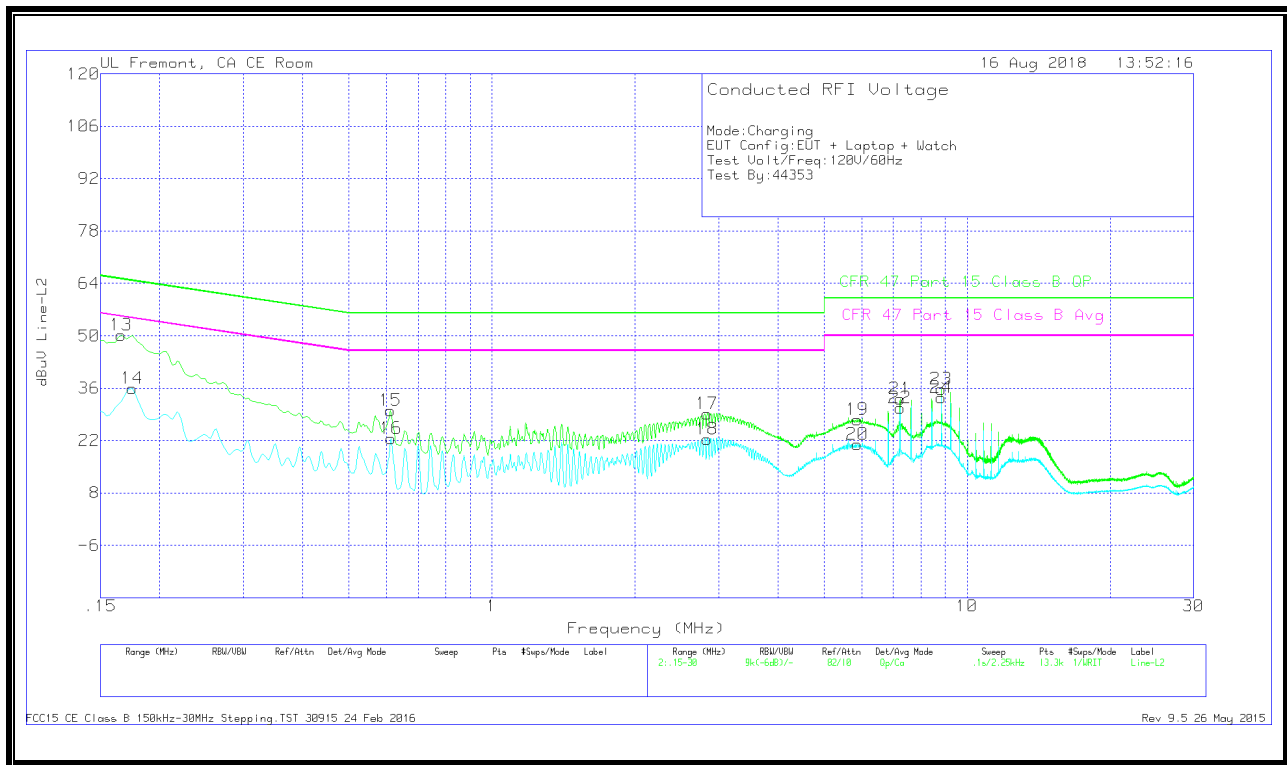
WORST EMISSIONS

Range 1: Line-L1 0.15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.15675	43.83	Qp	.1	0	10.1	54.03	65.63	-11.6	-	-
2	.15675	31.48	Ca	.1	0	10.1	41.68	-	-	55.63	-13.95
3	.195	37.82	Qp	0	0	10.1	47.92	63.82	-15.9	-	-
4	.195	25.61	Ca	0	0	10.1	35.71	-	-	53.82	-18.11
5	.582	21.71	Qp	0	0	10.1	31.81	56	-24.19	-	-
6	.582	14.81	Ca	0	0	10.1	24.91	-	-	46	-21.09
7	2.958	19.16	Qp	0	.1	10.1	29.36	56	-26.64	-	-
8	2.958	13.41	Ca	0	.1	10.1	23.61	-	-	46	-22.39
9	5.95275	20.2	Qp	0	.2	10.2	30.6	60	-29.4	-	-
10	5.9415	11.56	Ca	0	.2	10.2	21.96	-	-	50	-28.04
11	8.835	20.61	Qp	0	.2	10.2	31.01	60	-28.99	-	-
12	8.835	19.82	Ca	0	.2	10.2	30.22	-	-	50	-19.78

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.16575	39.97	Qp	.1	0	10.1	50.17	65.17	-15	-	-
14	.17475	25.75	Ca	0	0	10.1	35.85	-	-	54.73	-18.88
15	.61125	19.9	Qp	0	0	10.1	30	56	-26	-	-
16	.6135	12.36	Ca	0	0	10.1	22.46	-	-	46	-23.54
17	2.841	18.95	Qp	0	.1	10.1	29.15	56	-26.85	-	-
18	2.841	12.22	Ca	0	.1	10.1	22.42	-	-	46	-23.58
19	5.87175	17.16	Qp	0	.2	10.2	27.56	60	-32.44	-	-
20	5.87175	10.56	Ca	0	.2	10.2	20.96	-	-	50	-29.04
21	7.2285	22.7	Qp	0	.2	10.2	33.1	60	-26.9	-	-
22	7.22625	20.29	Ca	0	.2	10.2	30.69	-	-	50	-19.31
23	8.83275	25.29	Qp	0	.2	10.2	35.69	60	-24.31	-	-
24	8.83275	23.05	Ca	0	.2	10.2	33.45	-	-	50	-16.55

Qp - Quasi-Peak detector

Ca - CISPR average detection

10. SETUP PHOTOS

Please refer to 12488666 E1V1 for setup photos.

END OF REPORT