



CERTIFICATION TEST REPORT

Report Number. : 11740661-E8V2

Applicant : SONY MOBILE COMMUNICATIONS INC.
4-12-3 HIGASHI-SHINAGAWA,
SHINAGAWA -KU,TOKYO, 140-0002, JAPAN

FCC ID : PY7-81775I

EUT Description : GSM/WCDMA/LTE Phone with BT,DTS/UNII a/b/g/n/ac, & NFC

Test Standard(s) : FCC 47 CFR PART 15 SUBPART B

Date Of Issue:

July 08, 2017

Prepared by:

UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888



NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	06/23/17	Initial Issue	D. Coronia
V2	07/08/17	Updated Section 5.6 & 6.1	D. Coronia

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY.....	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY	5
4.1. MEASURING INSTRUMENT CALIBRATION.....	5
4.2. SAMPLE CALCULATION.....	5
4.3. MEASUREMENT UNCERTAINTY	6
5. EQUIPMENT UNDER TEST	7
5.1. DESCRIPTION OF EUT.....	7
5.2. TEST CONFIGURATIONS.....	7
5.3. MODE(S) OF OPERATION.....	7
5.4. SOFTWARE AND FIRMWARE	7
5.5. MODIFICATIONS.....	7
5.6. DETAILS OF TESTED SYSTEM.....	8
6. APPLICABLE EMISSIONS LIMITS AND TEST RESULTS	11
6.1. EMISSIONS TEST AND MEASUREMENT EQUIPMENT.....	11
6.2. RADIATED EMISSIONS LIMITS AND RESULTS.....	12
6.2.1. RADIATED EMISSIONS 30 TO 1000 MHz (SYNC MODE).....	13
6.2.2. RADIATED EMISSIONS 1GHz to 18GHz (SYNC MODE).....	15
6.2.3. RADIATED EMISSIONS 18 to 26 GHz (SYNC MODE).....	17
6.2.4. RADIATED EMISSIONS 26 to 40 GHz (SYNC MODE).....	19
6.2.5. RADIATED EMISSIONS 30 TO 1000 MHz (CHARGING MODE)	21
6.2.6. RADIATED EMISSIONS 1GHz to 18GHz (CHARGING MODE)	23
6.2.7. RADIATED EMISSIONS 18 to 26 GHz (CHARGING MODE)	25
6.2.8. RADIATED EMISSIONS 26 to 40 GHz (CHARGING MODE)	27
6.3. AC MAINS LINE CONDUCTED EMISSIONS.....	29
6.3.1. RESULTS- SYNC MODE	30
6.3.2. RESULTS- CHARGING MODE	32
7. SETUP PHOTOS	34

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONY MOBILE COMMUNICATIONS, INC.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, & NFC.
SERIAL NUMBER: QV7001D00N
DATE TESTED: June 07 to 29, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47 CFR PART 15 SUBPART B	Pass

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 and released for
UL Verification Services Inc. by:



DAN CORONIA
CONSUMER TECHNOLOGY DIVISION
WISE PROJECT LEAD
UL VERIFICATION SERVICES INC

Prepared by:



GLENN ESCANO
CONSUMER TECHNOLOGY DIVISION
WISE LAB ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2014.

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 checked="" type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 22541-1)
<input type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 22541-2)
<input checked="" 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. Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

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
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case 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 GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, & NFC.

GENERAL INFORMATION

Highest frequency generated or used by the EUT	5GHz
--	------

5.2. TEST CONFIGURATIONS

The following configuration was tested:

EUT Configuration	Description
1	Laptop Sync Mode - The EUT was configured as table top equipment. The EUT is installed in a typical configuration. The EUT is connected to a laptop via USB, is charging and transferring data via the laptop.
2	Charging - The EUT was configured as table top equipment. The EUT is installed in a typical configuration. The EUT is connected to an AC adapter for charging and in a functional mode.

5.3. MODE(S) OF OPERATION

Mode	Description
Sync mode	Data transfer; Sync video file from laptop to EUT and continued playing video during testing.
Charging Mode	Charging with supplied USB charger. EUT and its charger shall be on back edge of table, with charger connected to extension cord.

5.4. SOFTWARE AND FIRMWARE

The software version installed in the EUT during testing was 0.274.

5.5. MODIFICATIONS

No modifications were made during testing.

5.6. DETAILS OF TESTED SYSTEM

SUPPORT EQUIPMENT & PERIPHERALS

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	2349CW5	PB05HPL	DoC
Earphone	Sony	N/A	N/A	N/A
AC Adapter	Lenovo	ADLX90NLT2A	11S45N0307ZLZ436RDM2	N/A
Mouse	Logitech	M-U0026	1304HS02AX68	N/A
Keyboard	Lenovo	KU-0225	54Y9400	N/A
Switch	Netgear	FS105 v2	1D52163304A74	DoC
AC Adapter	Netgear	FA-0751000SUA	332-10154-01	N/A

I/O CABLES

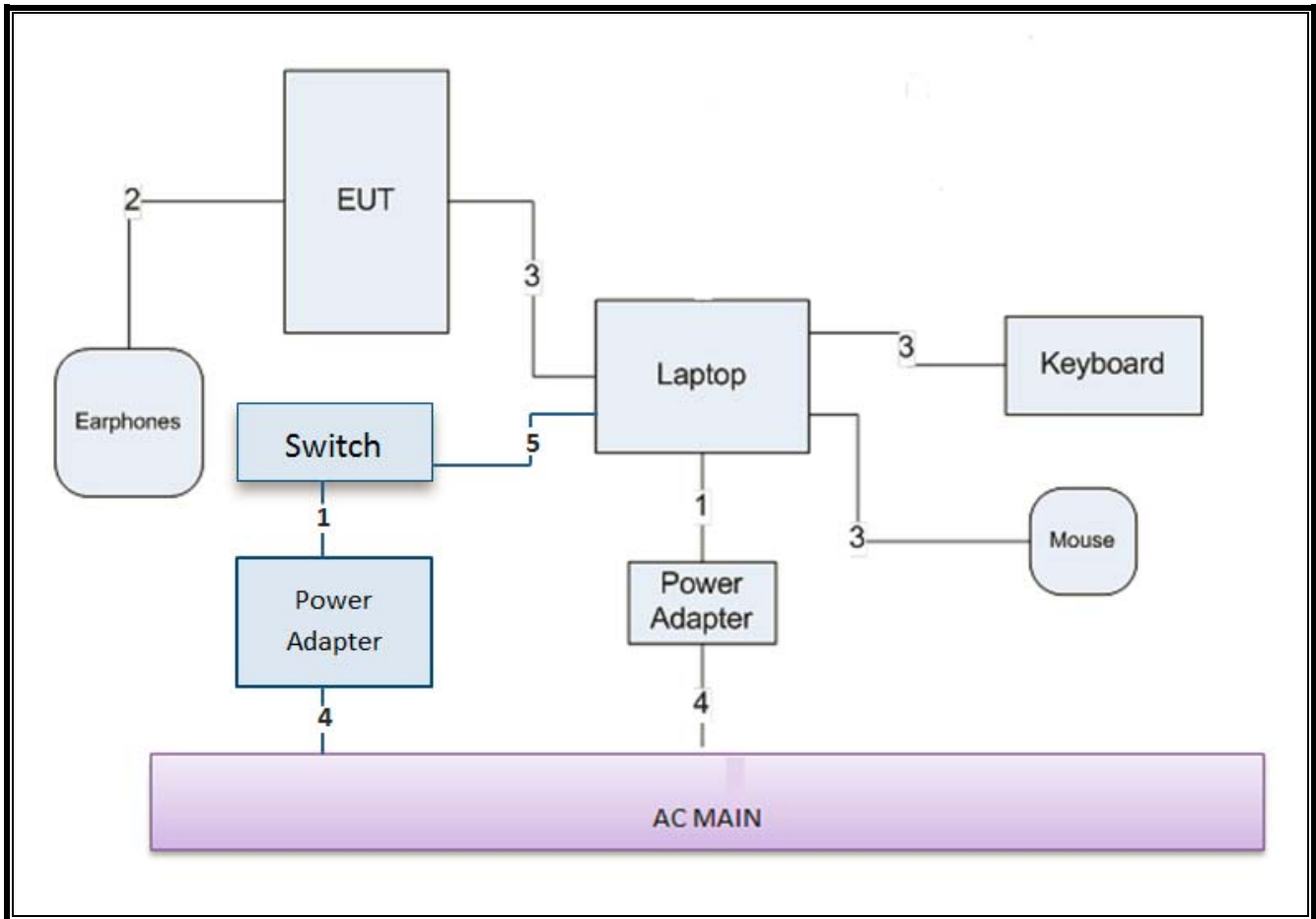
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	2	Power	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A
3	USB	1	Mini-USB	Shielded	0.9 m	UCB20 cable from EUT to Laptop
3	USB	2	USB	Shielded	2m	From laptop to keyboard & mouse
4	AC Power	2	IEC	Unshielded	1m	N/A
5	Ethernet	1	RJ45	Unshielded	2m	N/A

TEST SETUP

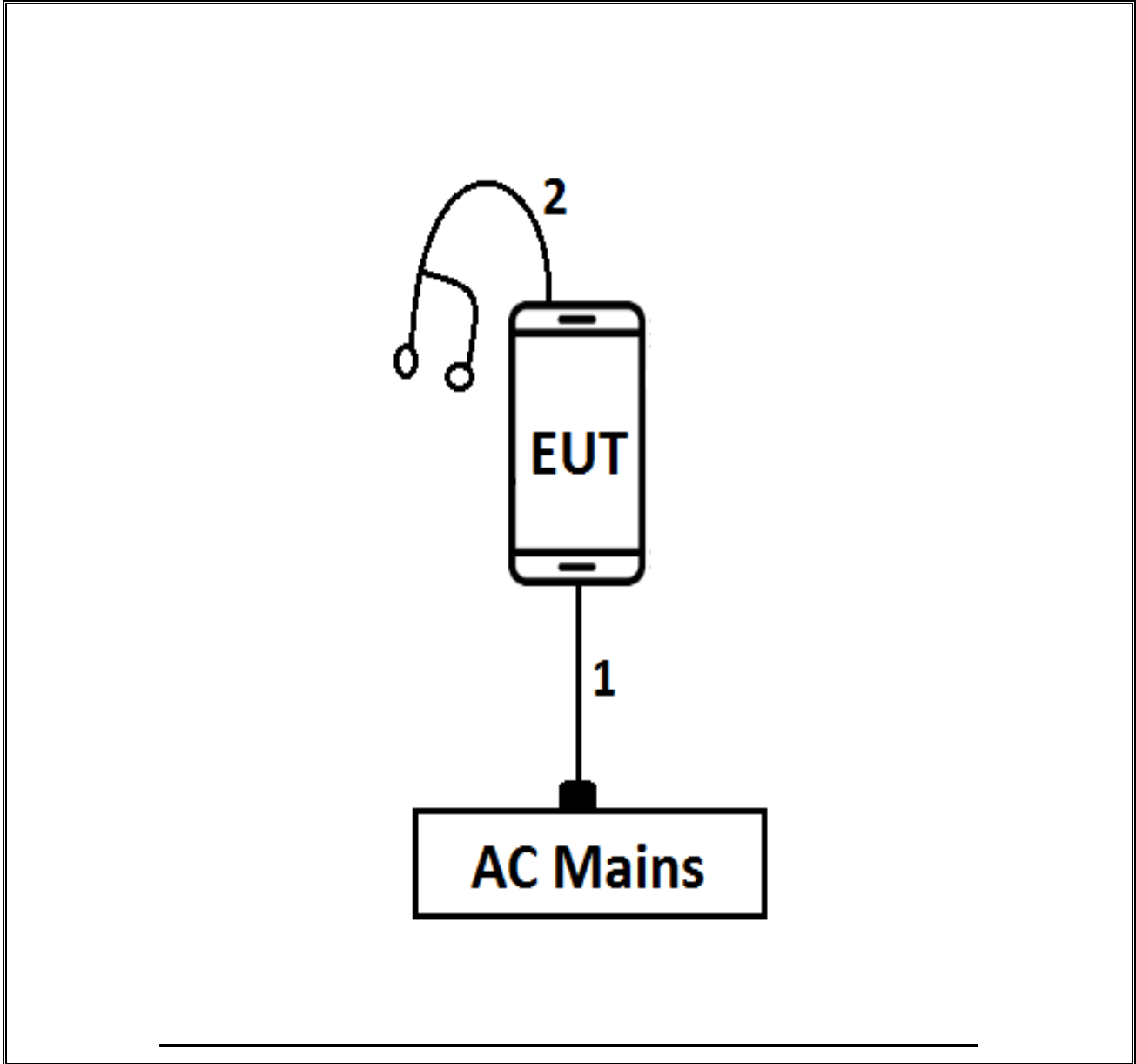
The EUT is installed in a typical configuration. Test software exercised the EUT.

SETUP DIAGRAM

Sync Mode



Charging Mode



6. APPLICABLE EMISSIONS LIMITS AND TEST RESULTS

6.1. EMISSIONS 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	T Number	Cal Date	Cal Due
Amplifier, 1 to 18 GHz	Miteq	AFS43-00101800-25-S-42	493	02/15/17	02/15/18
Amplifier, 1 to 8 GHz	Miteq	AMF-4D-01000800-30-29P	1170	04/28/17	04/28/18
Amplifier, 10KHz to 1GHz, 32dB	Keysight	8447D	300	11/10/16	11/10/17
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	130	09/23/16	09/23/17
PXA Spectrum Analyzer, 3Hz to 44GHz	Agilent	N9030A	1466	04/11/17	04/11/18
EMI Reciever	Rohde & Schwarz	ESR-EMI	1436	01/06/17	01/06/18
LISN	FISCHER	FCC-LISN-50/250-25-2-01	1310	06/08/17	06/08/18
18 - 26.5 GHz Horn Antenna	Seavey Division	MWH-1826/B	449	05/26/16	5/26/2017
26.5 - 40 GHz Horn Antenna	ARA	MWH-2640/B	446	05/25/16	5/25/2017
Pre-Amp 1-26.5 GHz	Agilent	8449B	404	07/05/16	07/05/17
Pre-Amp, 26-40GHz	MITEQ	NSP4000-SP2	88	04/29/17	04/29/2018
Spectrum Analyzer	Agilent	8564E	106	09/07/16	09/07/17

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, Dec 01, 2016

6.2. RADIATED EMISSIONS LIMITS AND RESULTS

LIMIT

FCC Part 15 Subpart B

§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dBµV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

Note: The lower limit shall apply at the transition frequency.

TEST PROCEDURE

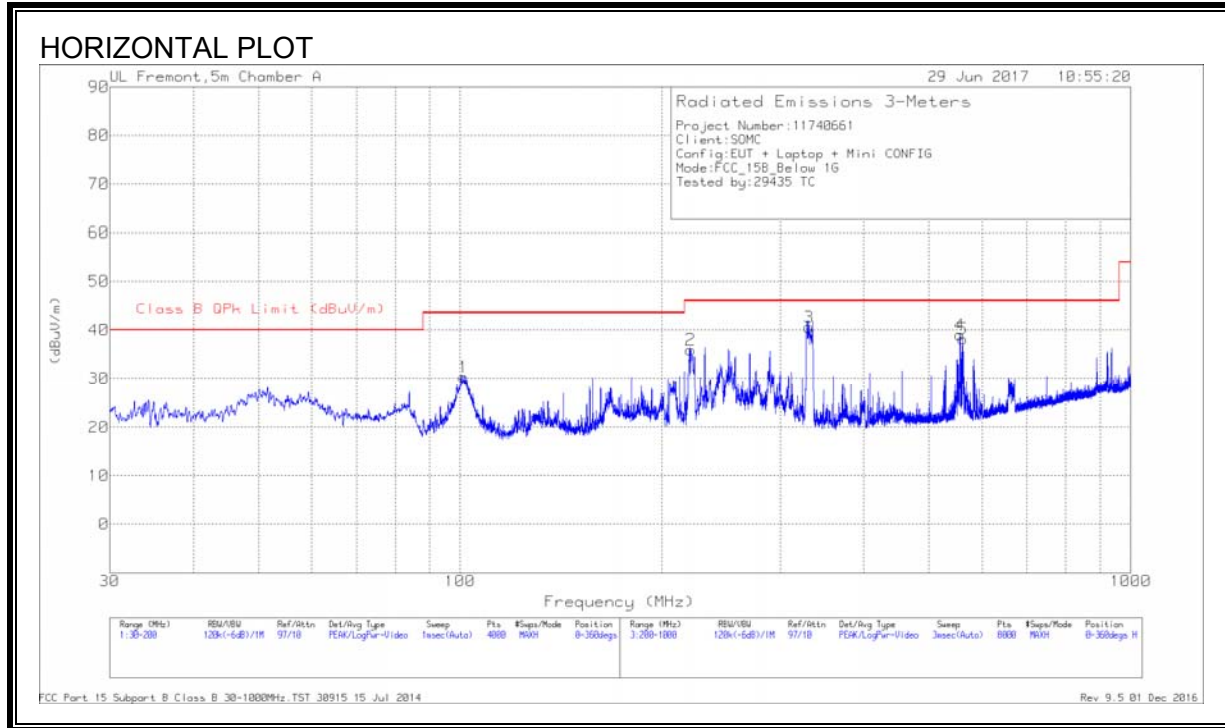
ANSI C63.4: 2014

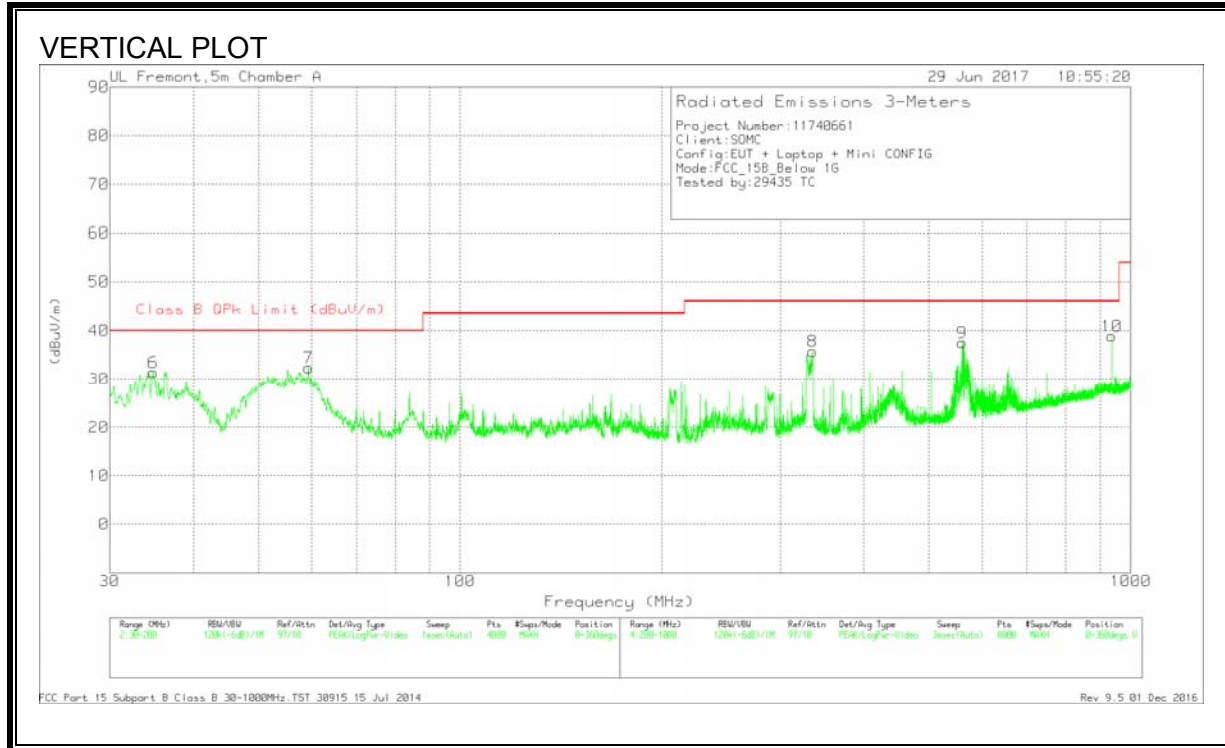
The highest frequency generated or used in the EUT is 5.8 GHz therefore the frequency range was investigated from 30 MHz to 40 GHz.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1000
108-500	2000
500-1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

RESULTS

6.2.1. RADIATED EMISSIONS 30 TO 1000 MHz (SYNC MODE)





HORIZONTAL AND VERTICAL DATA

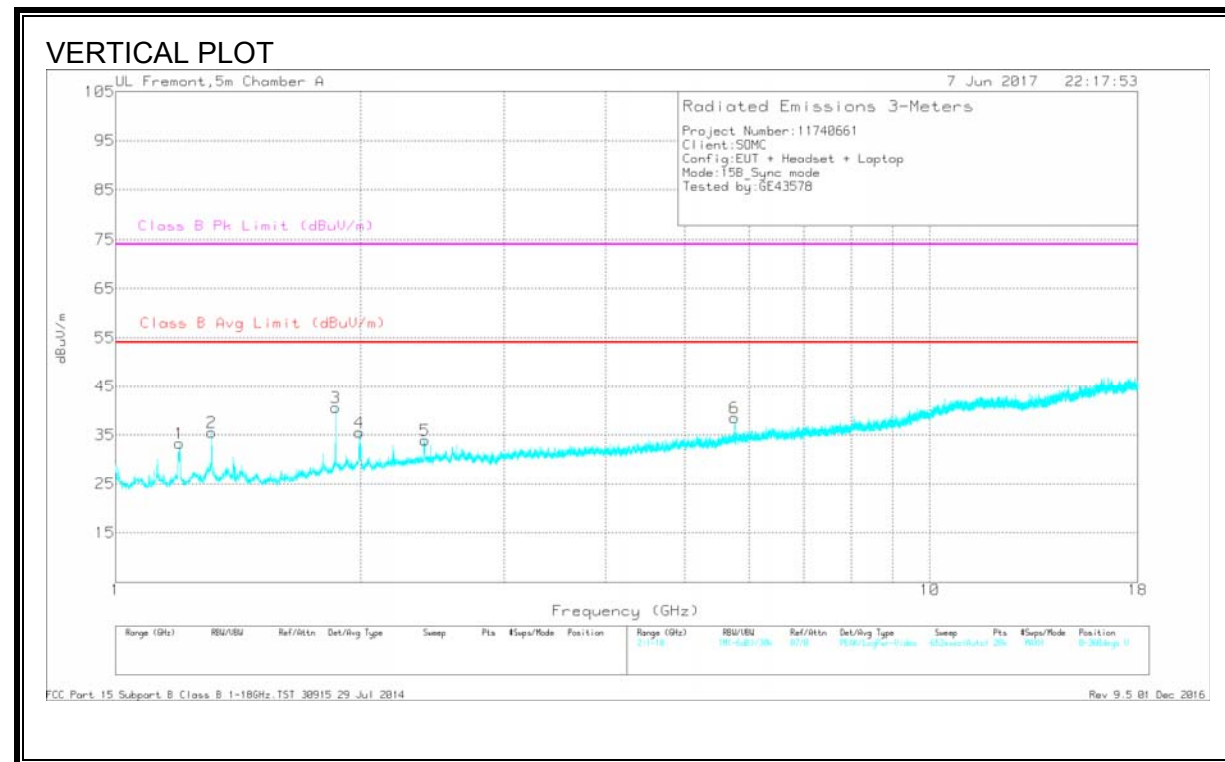
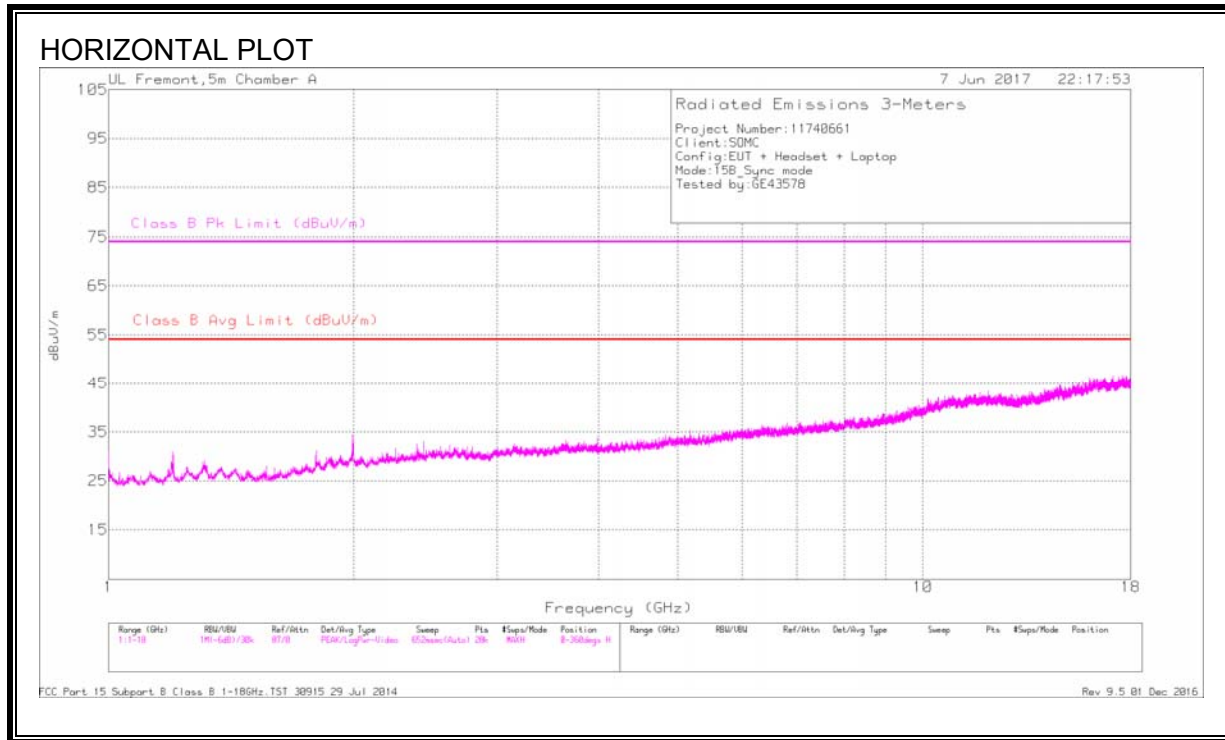
Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	34.8463	41.3	Pk	21.3	-31.2	31.4	40	-8.6	0-360	100	V
7	59.4176	51.65	Pk	11.6	-30.9	32.35	40	-7.65	0-360	100	V
1	101.1634	46.39	Pk	14.5	-30.6	30.29	43.52	-13.23	0-360	300	H
2	220.7027	51.04	Pk	14.7	-29.8	35.94	46.02	-10.08	0-360	101	H
3	331.2205	47.99	Qp	18	-29.3	36.69	46.02	-9.33	333	112	H
8	335.2176	46.91	Pk	18	-29.2	35.71	46.02	-10.31	0-360	101	V
4	556.4463	45.12	Pk	22.5	-28.6	39.02	46.02	-7	0-360	300	H
9	560.3468	43.58	Pk	22.6	-28.7	37.48	46.02	-8.54	0-360	101	V
5	562.2471	44.28	Pk	22.6	-28.7	38.18	46.02	-7.84	0-360	300	H
10	937.4959	39.1	Pk	26.8	-27	38.9	46.02	-7.12	0-360	101	V

Pk - Peak detector

Qp - Quasi-Peak detector

6.2.2. RADIATED EMISSIONS 1GHz to 18GHz (SYNC MODE)



HORIZONTAL AND VERTICAL DATA

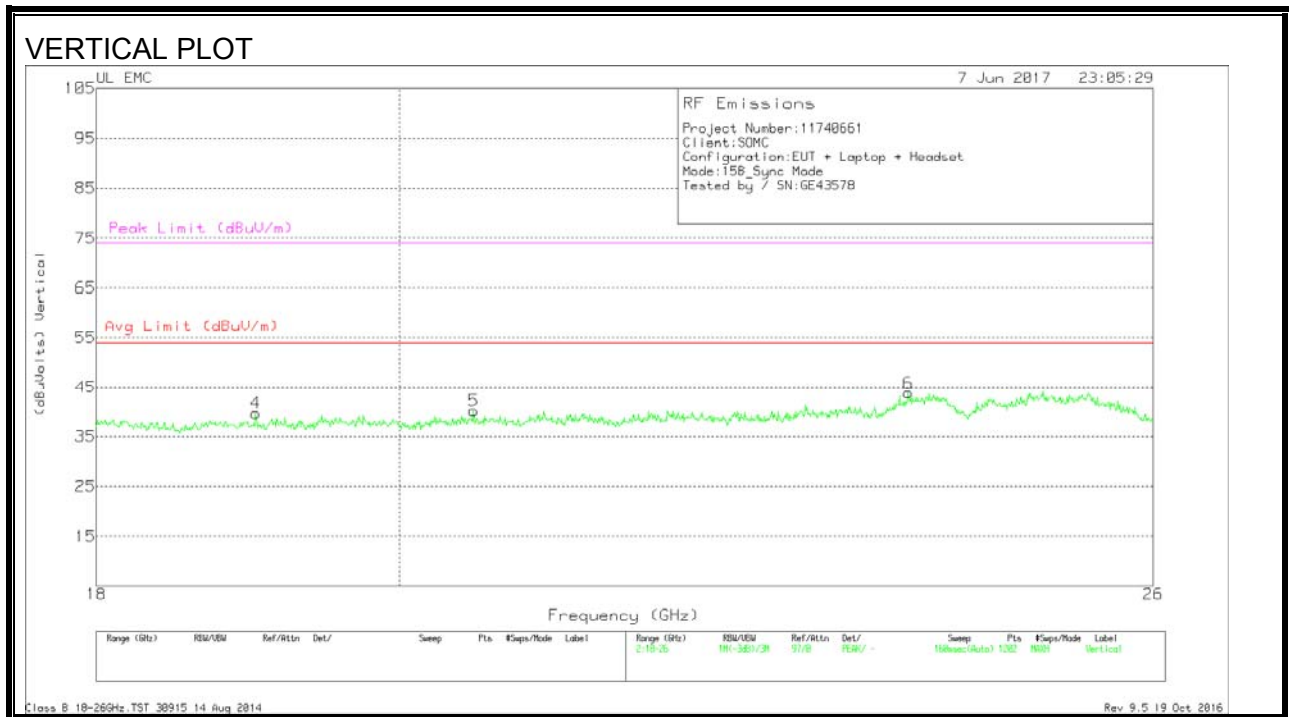
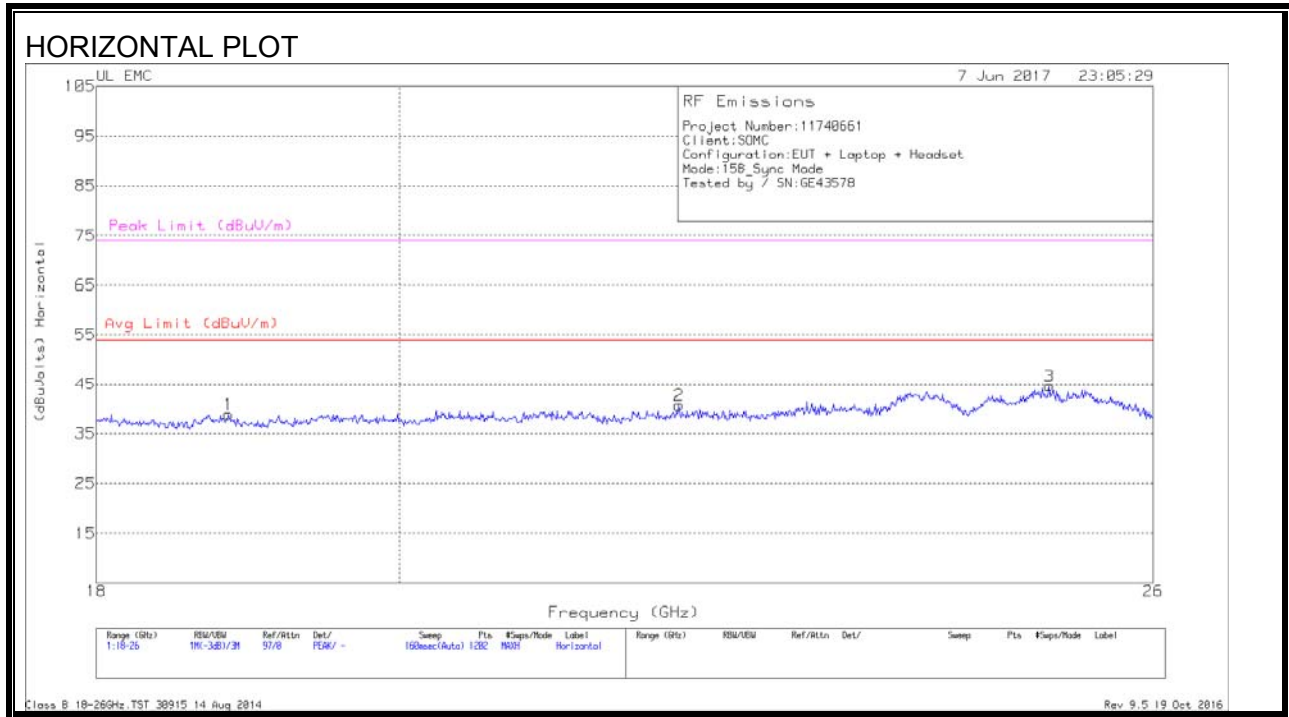
Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.196	49.29	Pk	28.6	-34.3	43.59	-	-	74	-30.41	115	196	V
	1.196	28.58	Av	28.6	-34.3	22.88	54	-31.12	-	-	115	196	V
2	1.312	49.01	Pk	29.5	-34.1	44.41	-	-	74	-29.59	108	168	V
	1.312	28.85	Av	29.5	-34.1	24.25	54	-29.75	-	-	108	168	V
3	1.864	40.94	Pk	30.9	-33.3	38.54	-	-	74	-35.46	12	181	V
	1.864	27.36	Av	30.9	-33.3	24.96	54	-29.04	-	-	12	181	V
4	1.994	49.04	Pk	31.4	-33.3	47.14	-	-	74	-26.86	281	105	V
	1.994	27.55	Av	31.4	-33.3	25.65	54	-28.35	-	-	281	105	V
5	2.398	33.13	Pk	32.1	-32.7	32.53	-	-	74	-41.47	137	367	V
	2.398	27.16	Av	32.1	-32.7	26.56	54	-27.44	-	-	137	367	V
6	5.76	29.57	Pk	34.7	-27.7	36.57	-	-	74	-37.43	256	128	V
	5.76	28.5	Av	34.7	-27.7	35.5	54	-18.5	-	-	256	128	V

Pk - Peak detector

Av - Average detection

6.2.3. RADIATED EMISSIONS 18 to 26 GHz (SYNC MODE)



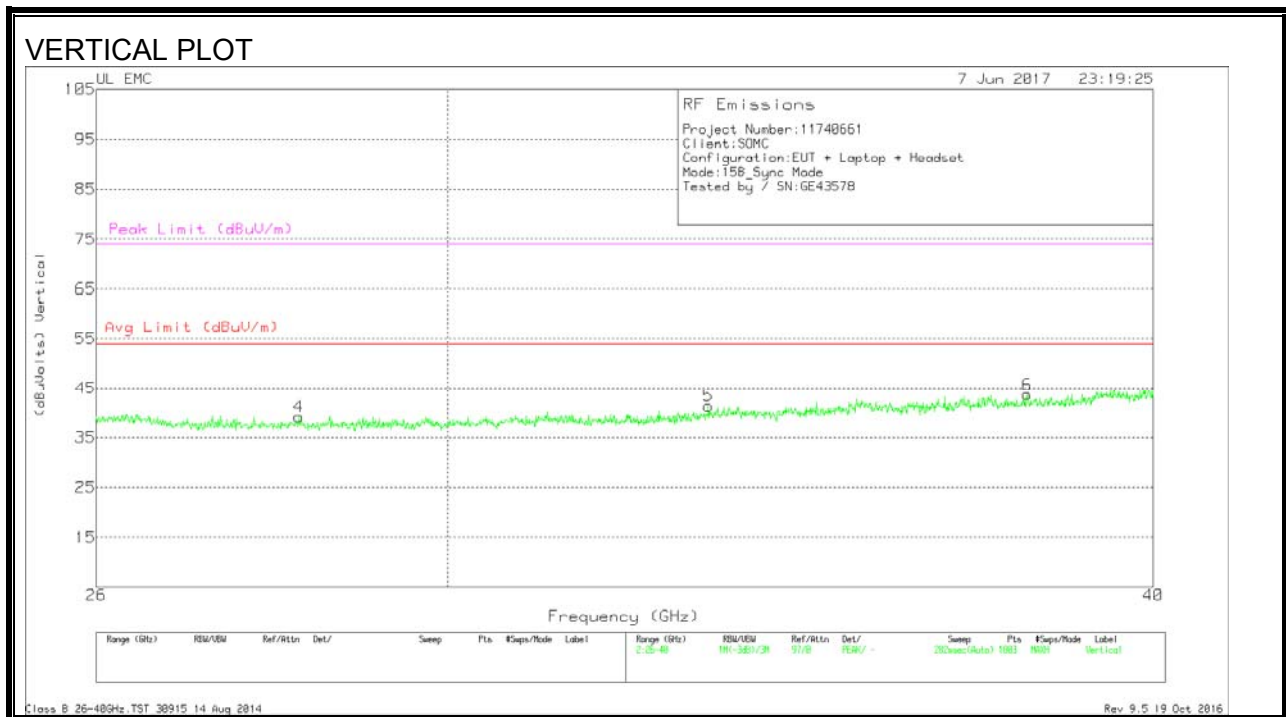
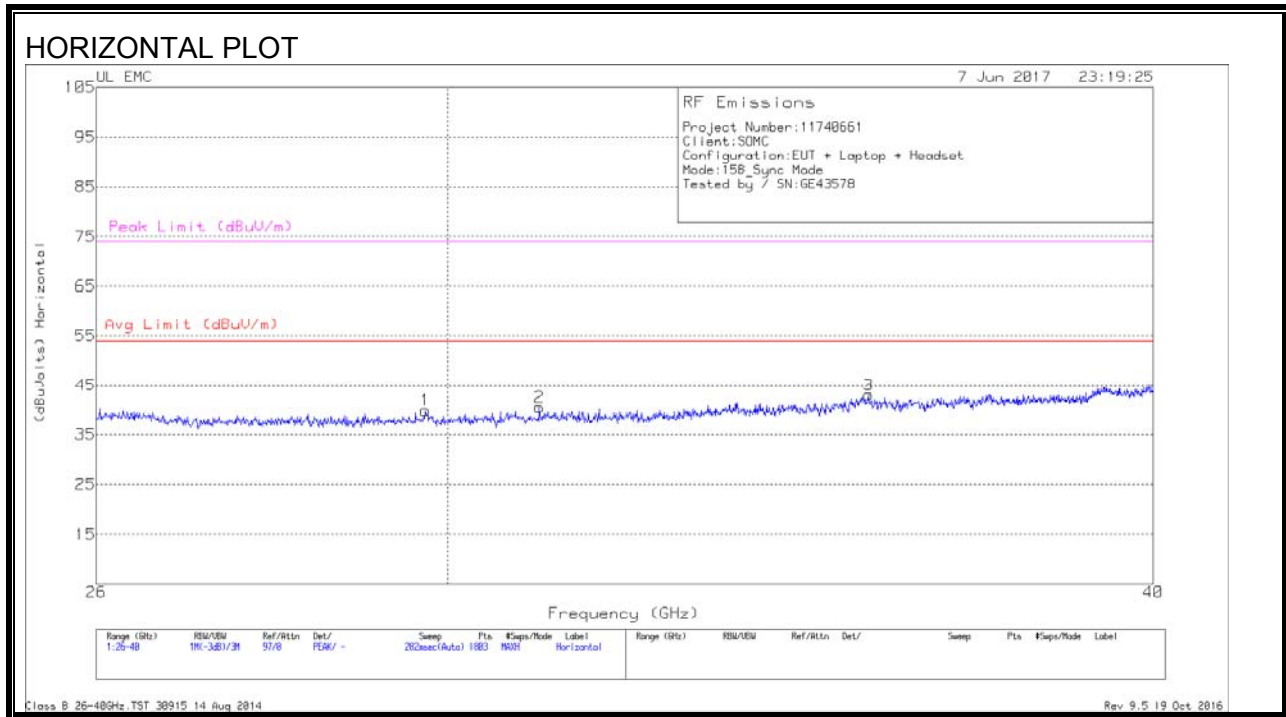
HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T447 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.846	41.23	Pk	32.2	-25.1	-9.5	38.83	54	-15.17	74	-35.17
2	22.043	41.97	Pk	33.4	-25.2	-9.5	40.67	54	-13.33	74	-33.33
3	25.074	44.27	Pk	34.5	-24.6	-9.5	44.67	54	-9.33	74	-29.33
4	19.026	41.67	Pk	32.3	-24.8	-9.5	39.67	54	-14.33	74	-34.33
5	20.525	42.17	Pk	32.9	-25.4	-9.5	40.17	54	-13.83	74	-33.83
6	23.875	43.33	Pk	34.1	-24.1	-9.5	43.83	54	-10.17	74	-30.17

Pk - Peak detector

6.2.4. RADIATED EMISSIONS 26 to 40 GHz (SYNC MODE)



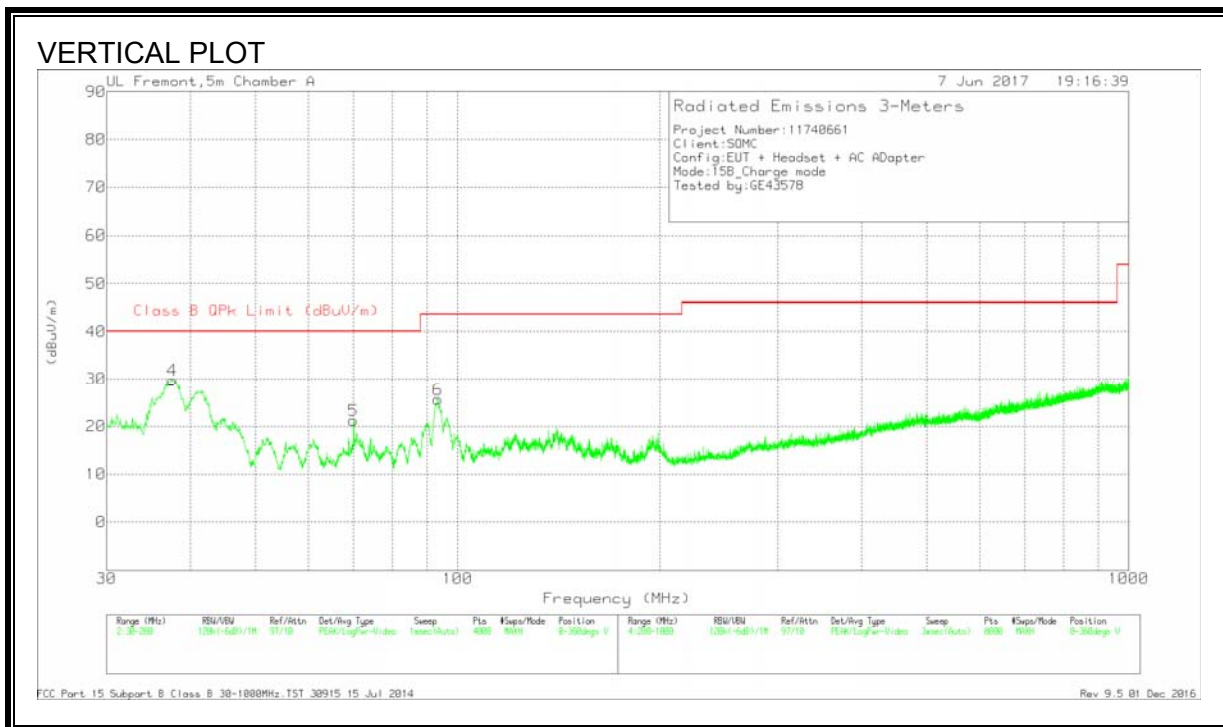
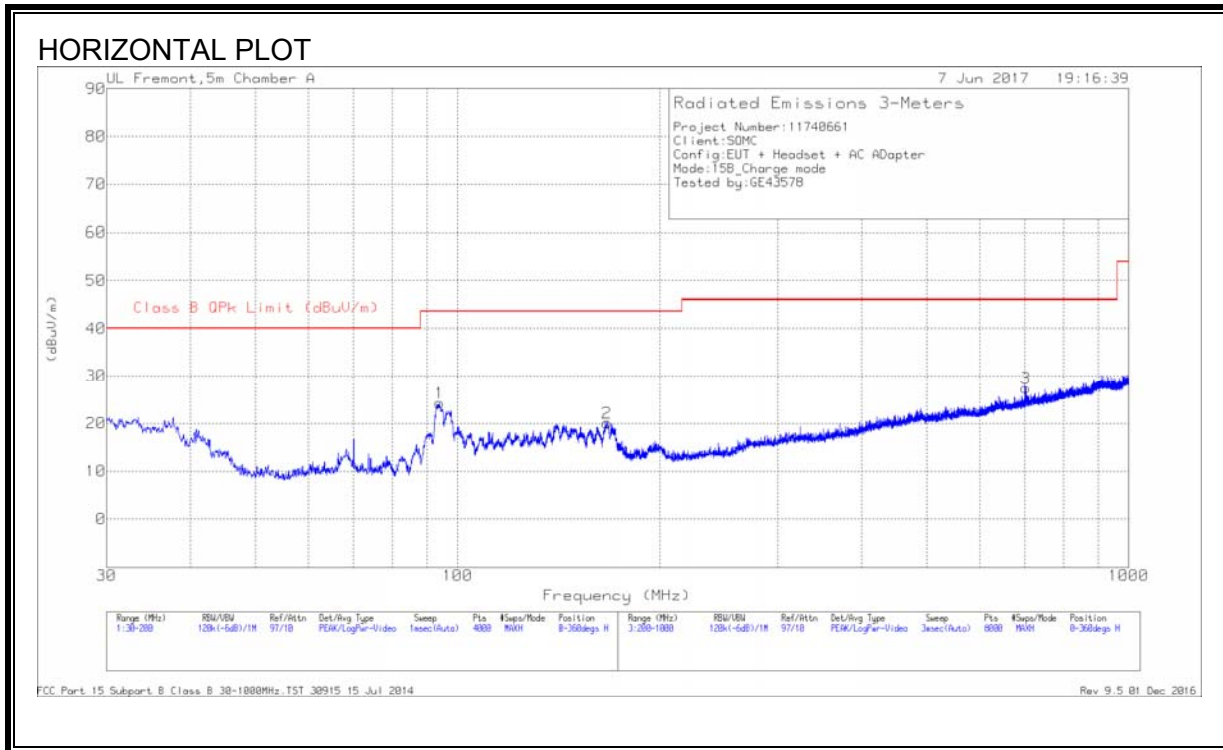
HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	29.729	46.13	Pk	36.1	-32.9	-9.5	39.83	54	-14.17	74	-34.17
2	31.143	47.3	Pk	35.9	-33.2	-9.5	40.5	54	-13.5	74	-33.5
3	35.618	49.1	Pk	37.6	-34.2	-9.5	43	54	-11	74	-31
4	28.238	44.67	Pk	35.9	-31.9	-9.5	39.17	54	-14.83	74	-34.83
5	33.365	47.33	Pk	37	-33.5	-9.5	41.33	54	-12.67	74	-32.67
6	37.996	49.47	Pk	37.3	-33.6	-9.5	43.67	54	-10.33	74	-30.33

Pk - Peak detector

6.2.5. RADIATED EMISSIONS 30 TO 1000 MHz (CHARGING MODE)



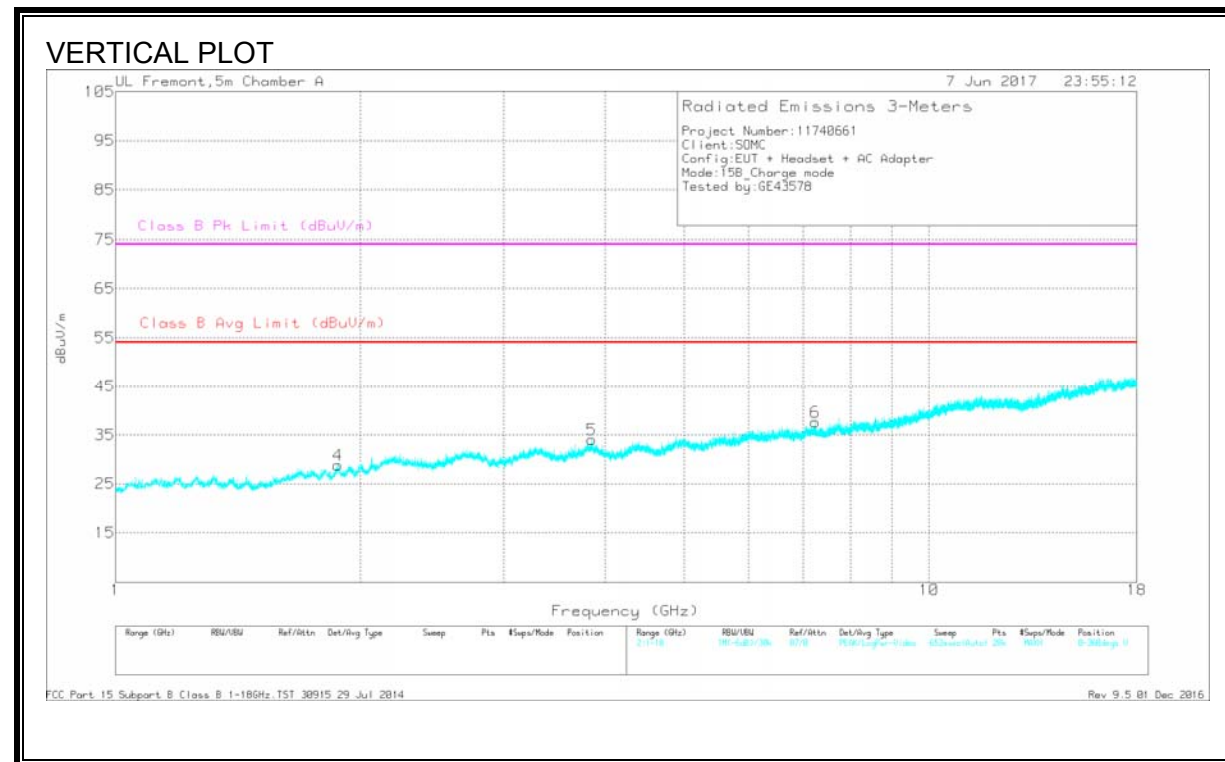
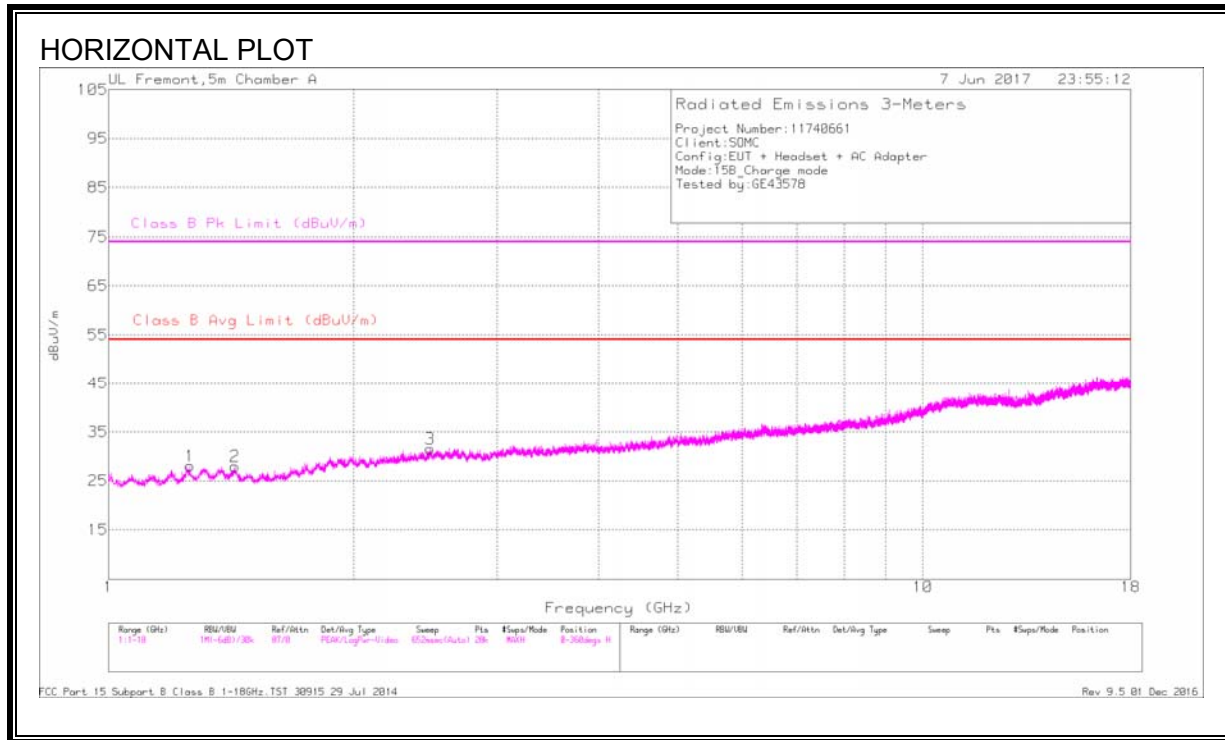
HORIZONTAL AND VERTICAL DATA

Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	37.5985	34.59	Qp	19.7	-31.2	23.09	40	-16.91	88	103	V
5	70.0399	33.93	Qp	12.5	-30.8	15.63	40	-24.37	181	104	V
6	93.508	35.47	Qp	12.5	-30.6	17.37	43.52	-26.15	231	160	V
1	94.085	13.68	Qp	12.6	-30.6	-4.32	43.52	-47.84	196	288	H
2	167.0186	27.55	Qp	15.9	-30.2	13.25	43.52	-30.27	122	297	H
3	702.493	16.96	Qp	24.3	-28.2	13.06	46.02	-32.96	317	353	H

Qp - Quasi-Peak detector

6.2.6. RADIATED EMISSIONS 1GHz to 18GHz (CHARGING MODE)



HORIZONTAL AND VERTICAL DATA

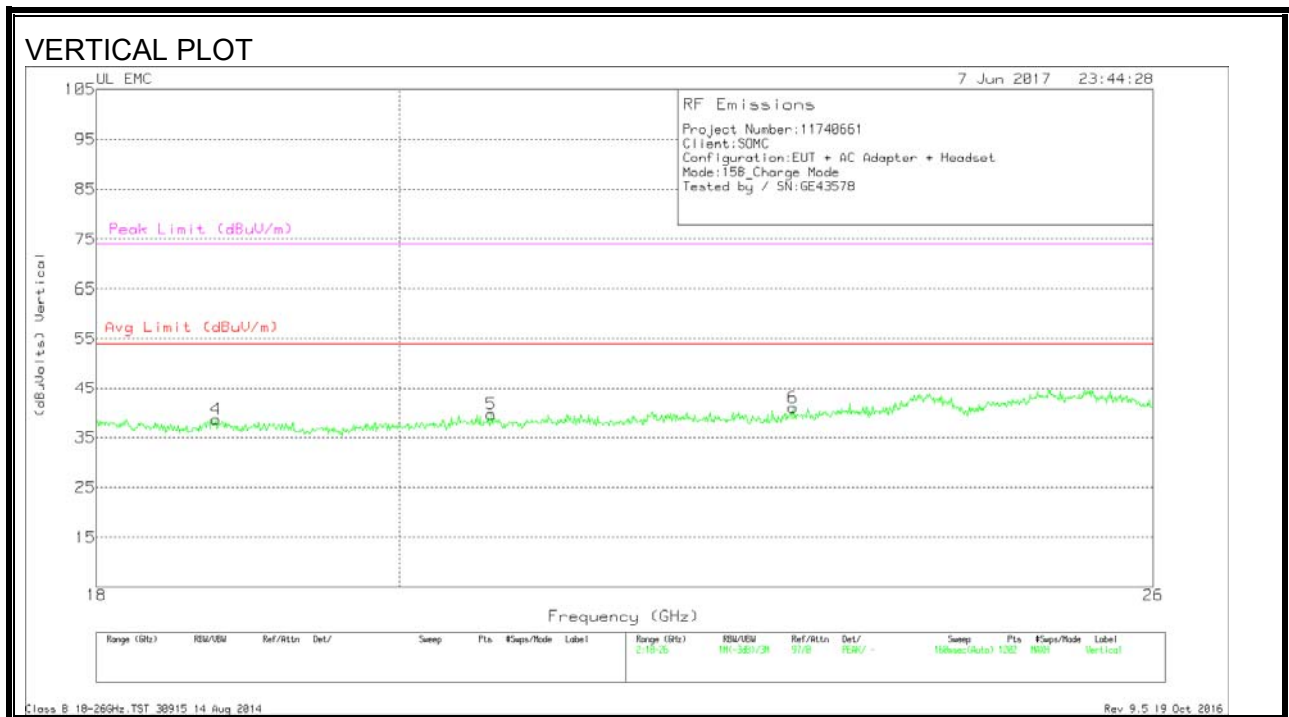
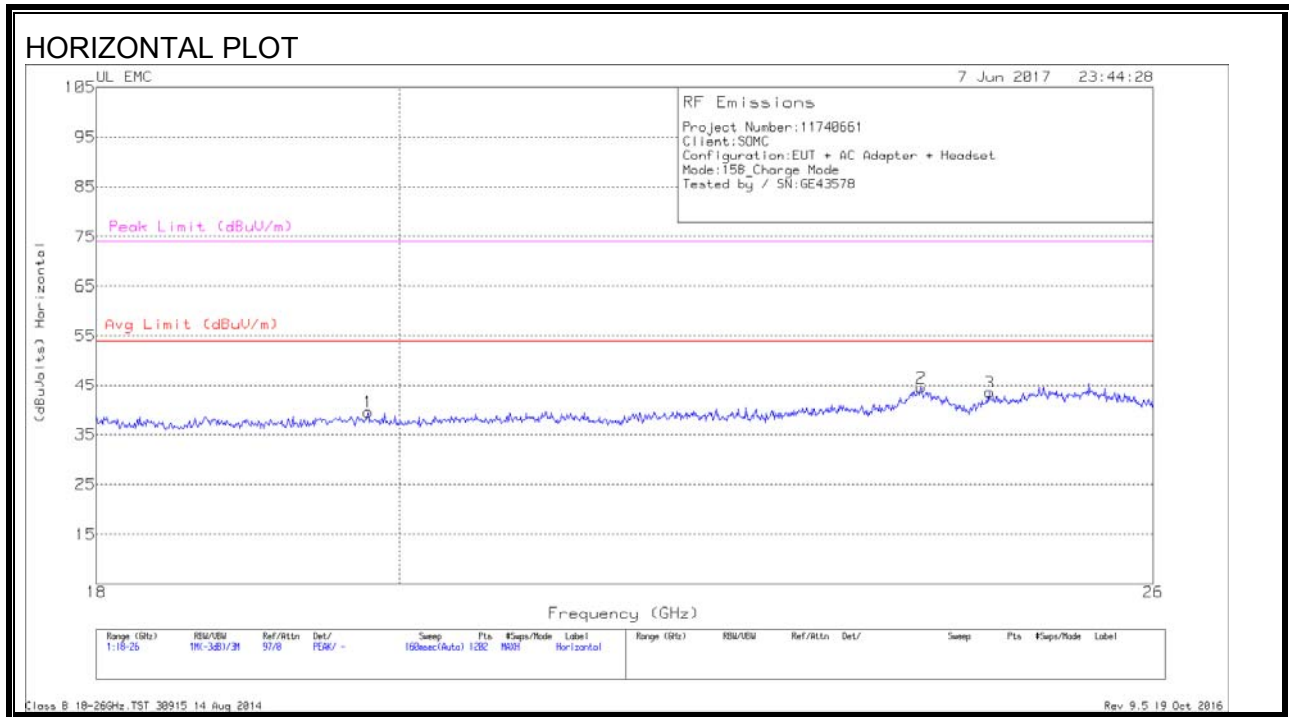
Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.257	40.84	Pk	29.2	-34.2	35.84	-	-	74	-38.16	17	199	H
	1.257	27.71	Av	29.2	-34.2	22.71	54	-31.29	-	-	17	199	H
2	1.431	39.7	Pk	28.9	-33.7	34.9	-	-	74	-39.1	216	199	H
	1.431	27.61	Av	28.9	-33.7	22.81	54	-31.19	-	-	216	199	H
4	1.874	39.18	Pk	31	-33.4	36.78	-	-	74	-37.22	317	102	V
	1.874	27	Av	31	-33.4	24.6	54	-29.4	-	-	317	102	V
3	2.485	38.76	Pk	32.6	-32.6	38.76	-	-	74	-35.24	313	102	H
	2.485	26.35	Av	32.6	-32.6	26.35	54	-27.65	-	-	313	102	H
5	3.852	36.62	Pk	33.2	-30.4	39.42	-	-	74	-34.58	300	200	V
	3.852	24.98	Av	33.2	-30.4	27.78	54	-26.22	-	-	300	200	V
6	7.241	34.01	Pk	35.5	-25.1	44.41	-	-	74	-29.59	176	200	V
	7.241	21.21	Av	35.5	-25.1	31.61	54	-22.39	-	-	176	200	V

Pk - Peak detector

Av - Average detection

6.2.7. RADIATED EMISSIONS 18 to 26 GHz (CHARGING MODE)



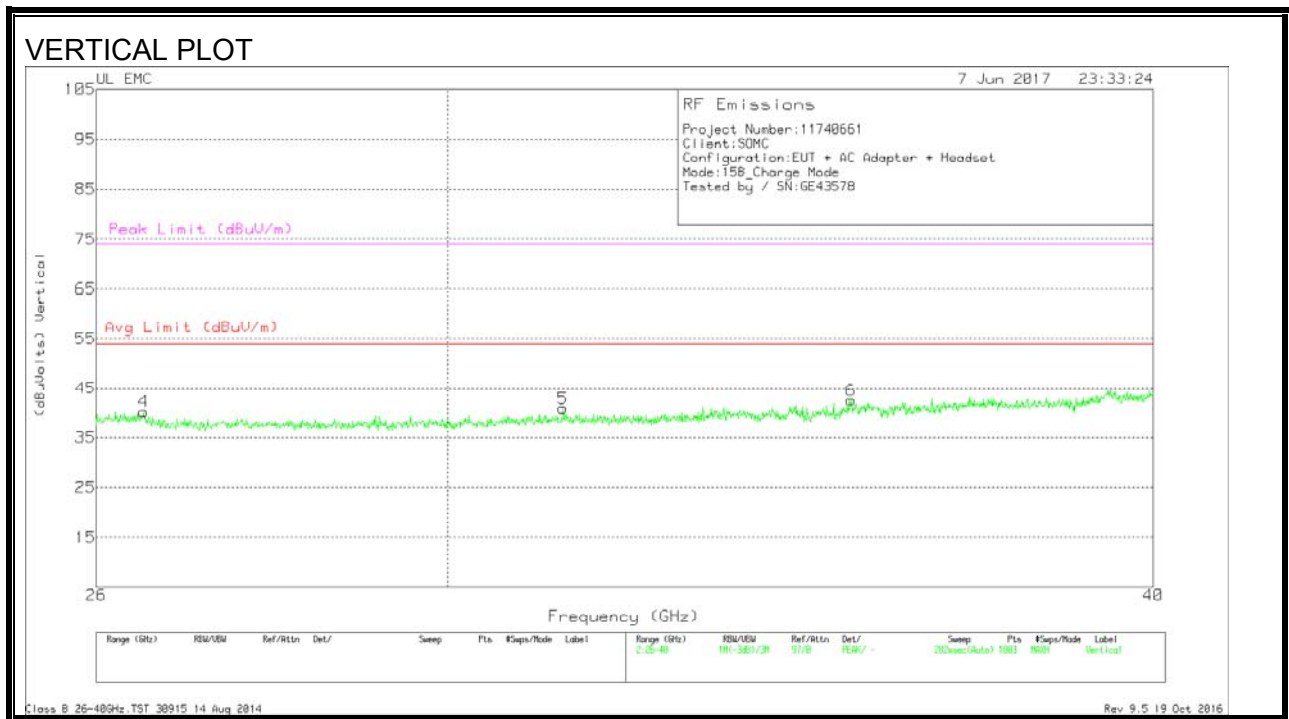
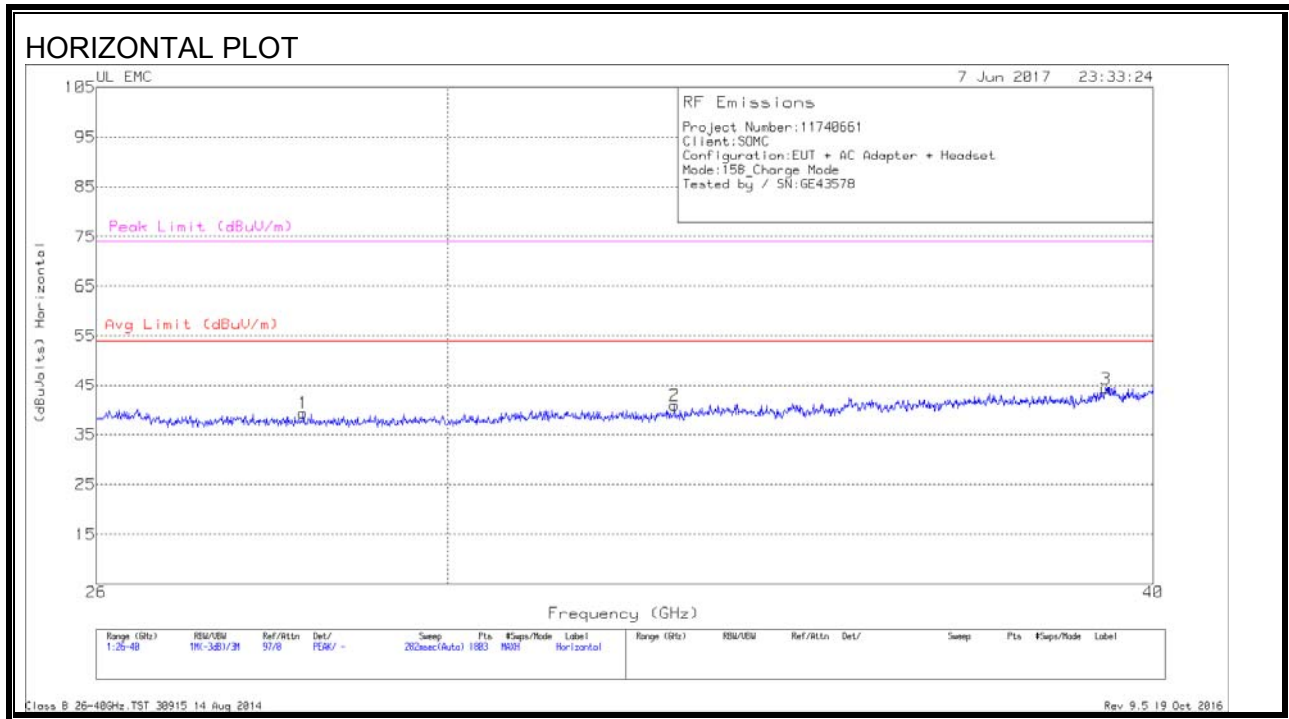
HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T447 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.785	40.9	Pk	32.8	-24.7	-9.5	39.5	54	-14.5	74	-34.5
2	23.982	44	Pk	34.3	-24.3	-9.5	44.5	54	-9.5	74	-29.5
3	24.561	42.8	Pk	34.1	-23.9	-9.5	43.5	54	-10.5	74	-30.5
4	18.766	40.87	Pk	32.2	-24.9	-9.5	38.67	54	-15.33	74	-35.33
5	20.651	41.57	Pk	32.9	-25.3	-9.5	39.67	54	-14.33	74	-34.33
6	22.936	42.1	Pk	33.4	-25	-9.5	41	54	-13	74	-33

Pk - Peak detector

6.2.8. RADIATED EMISSIONS 26 to 40 GHz (CHARGING MODE)



HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	28.284	44.93	Pk	35.9	-32	-9.5	39.33	54	-14.67	74	-34.67
2	32.907	47.23	Pk	36.6	-33.5	-9.5	40.83	54	-13.17	74	-33.17
3	39.231	47.73	Pk	38.5	-32.4	-9.5	44.33	54	-9.67	74	-29.67
4	26.505	45.07	Pk	35.5	-30.9	-9.5	40.17	54	-13.83	74	-33.83
5	31.446	47.43	Pk	36.2	-33.3	-9.5	40.83	54	-13.17	74	-33.17
6	35.362	47.9	Pk	37.8	-33.7	-9.5	42.5	54	-11.5	74	-31.5

Pk - Peak detector

6.3. AC MAINS LINE CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4: 2014

LIMIT

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

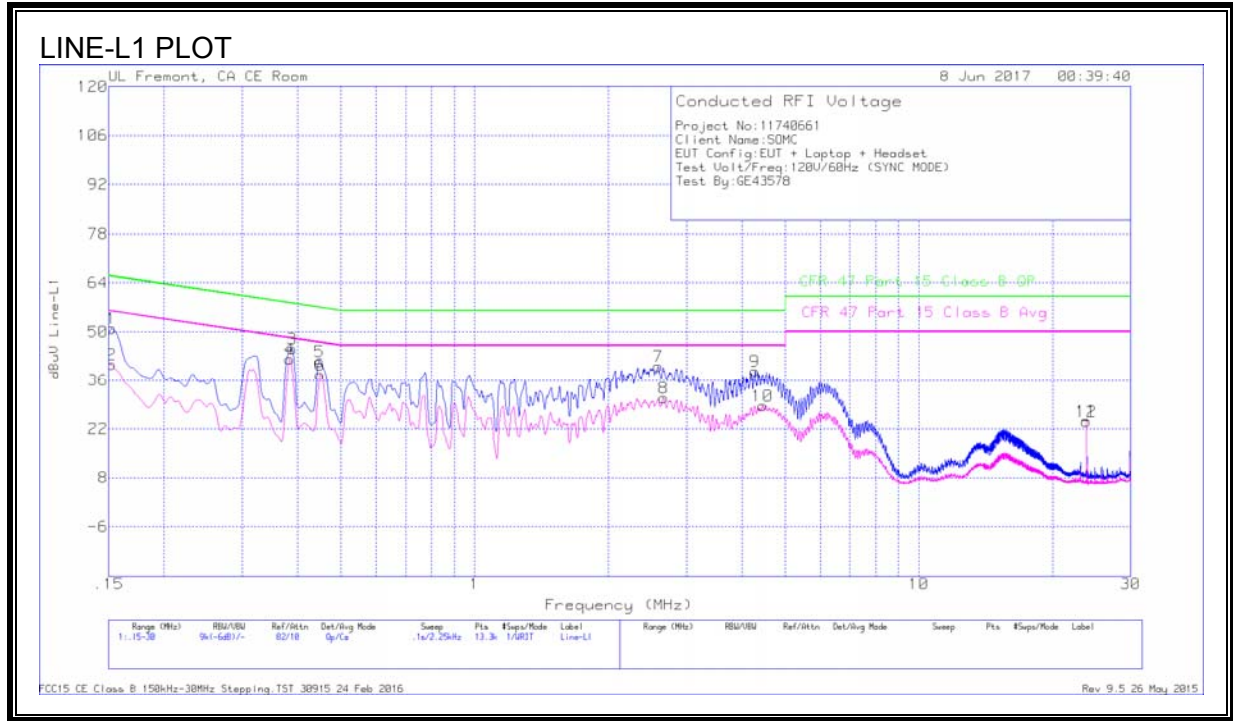
Frequency range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

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

6.3.1. RESULTS- SYNC MODE

6 WORST EMISSIONS

Line-L1 .15 - 30MHz

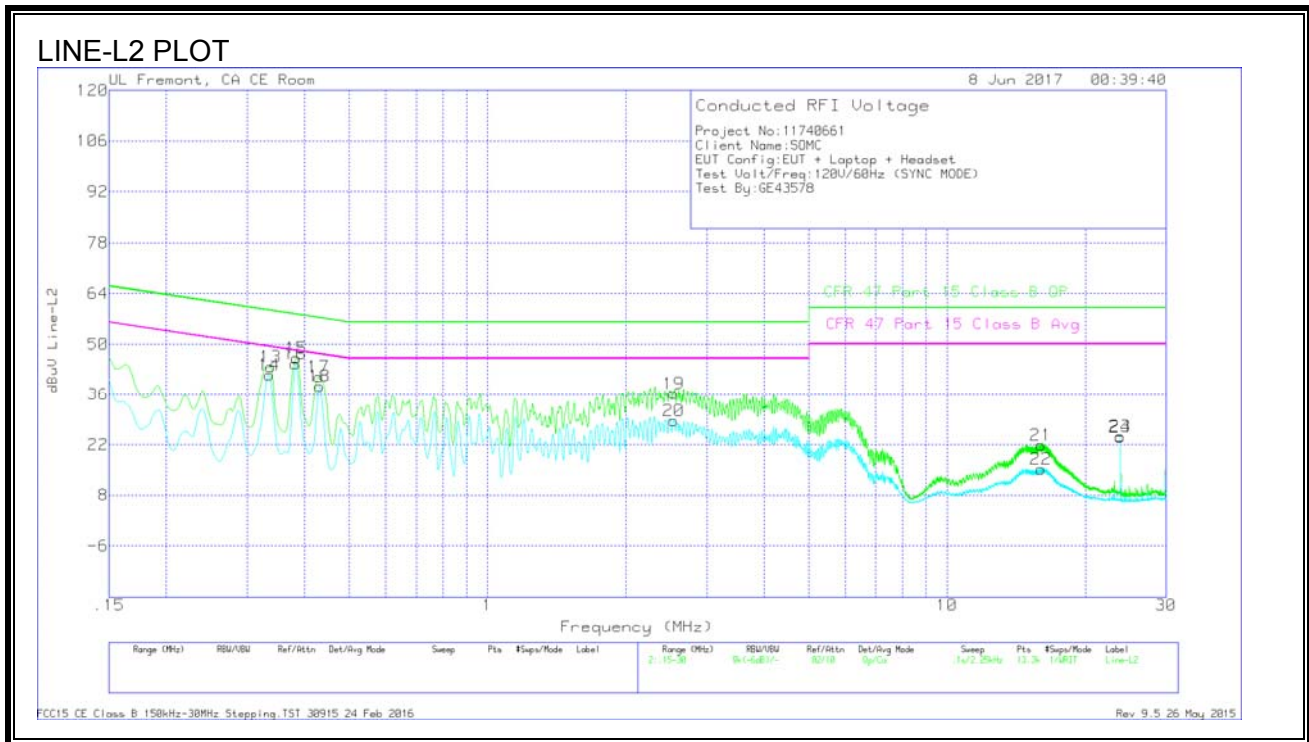


Trace Markers

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	.15225	40.66	Qp	.1	.1	10.1	50.96	65.88	-14.92	-	-
2	.15225	30.39	Ca	.1	.1	10.1	40.69	-	-	55.88	-15.19
3	.3885	34.97	Qp	0	.1	10.1	45.17	58.1	-12.93	-	-
4	.384	31.96	Ca	0	.1	10.1	42.16	-	-	48.19	-6.03
5	.447	31.2	Qp	0	.1	10.1	41.4	56.93	-15.53	-	-
6	.44925	27.5	Ca	0	.1	10.1	37.7	-	-	46.89	-9.19
7	2.589	29.95	Qp	0	.1	10.1	40.15	56	-15.85	-	-
8	2.66325	20.73	Ca	0	.1	10.1	30.93	-	-	46	-15.07
9	4.281	28.54	Qp	0	.1	10.1	38.74	56	-17.26	-	-
10	4.4475	18.43	Ca	0	.1	10.1	28.63	-	-	46	-17.37
11	23.84025	13.39	Qp	.1	.3	10.4	24.19	60	-35.81	-	-
12	23.84025	13.3	Ca	.1	.3	10.4	24.1	-	-	50	-25.9

Qp - Quasi-Peak detector
 Ca - CISPR average detection

Line-L2 .15 - 30MHz



Trace Markers

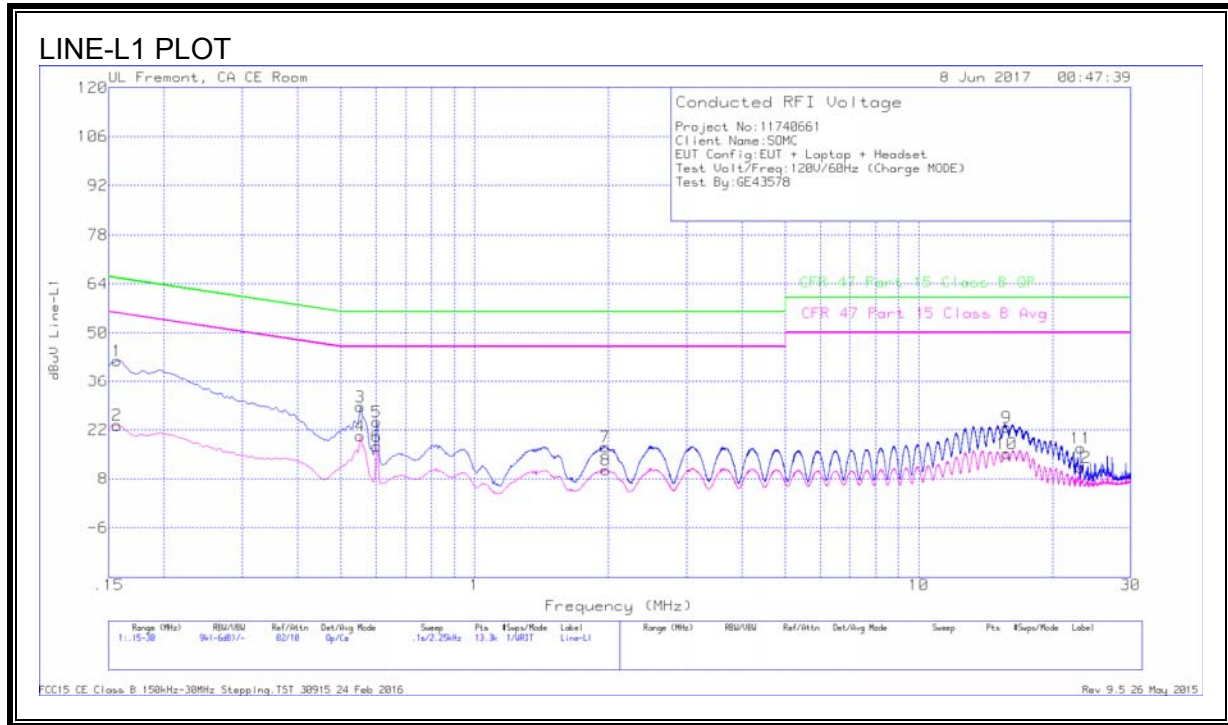
Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.33675	33.52	Qp	0	.1	10.1	43.72	59.28	-15.56	-	-
14	.3345	31.24	Ca	0	.1	10.1	41.44	-	-	49.34	-7.9
15	.384	35.9	Qp	0	.1	10.1	46.1	58.19	-12.09	-	-
16	.38175	34.45	Ca	0	.1	10.1	44.65	-	-	48.24	-3.59
17	.429	30.79	Qp	0	.1	10.1	40.99	57.27	-16.28	-	-
18	.43125	28.08	Ca	0	.1	10.1	38.28	-	-	47.23	-8.95
19	2.544	26.1	Qp	0	.1	10.1	36.3	56	-19.7	-	-
20	2.544	18.38	Ca	0	.1	10.1	28.58	-	-	46	-17.42
21	16.026	11.27	Qp	0	.3	10.3	21.87	60	-38.13	-	-
22	16.026	4.66	Ca	0	.3	10.3	15.26	-	-	50	-34.74
23	23.84025	13.48	Qp	.1	.3	10.4	24.28	60	-35.72	-	-
24	23.84025	13.37	Ca	.1	.3	10.4	24.17	-	-	50	-25.83

Qp - Quasi-Peak detector
 Ca - CISPR average detection

6.3.2. RESULTS- CHARGING MODE

6 WORST EMISSIONS

Line-L1 .15 - 30MHz

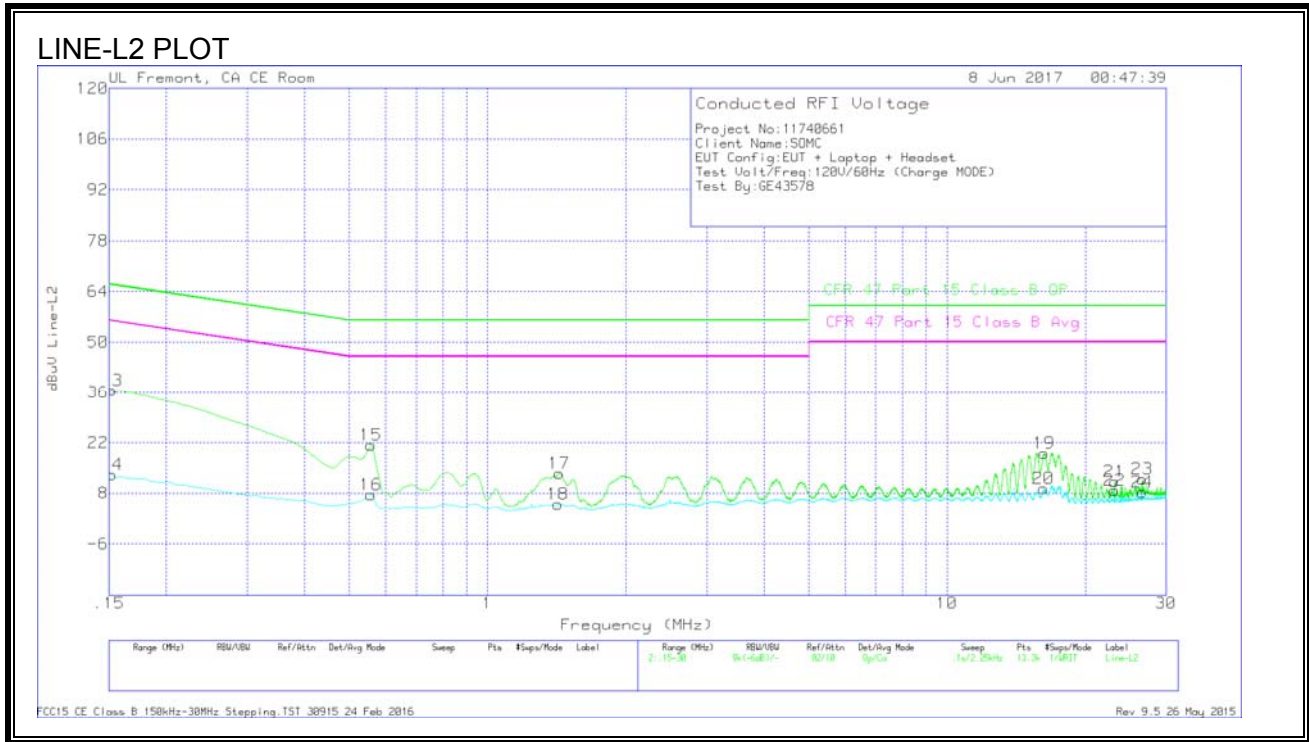


Trace Markers

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	.15675	31.83	Qp	0	.1	10.1	42.03	65.63	-23.6	-	-
2	.15675	13.12	Ca	0	.1	10.1	23.32	-	-	55.63	-32.31
3	.55275	18.35	Qp	0	.1	10.1	28.55	56	-27.45	-	-
4	.55275	10.06	Ca	0	.1	10.1	20.26	-	-	46	-25.74
5	.60225	14.13	Qp	0	.1	10.1	24.33	56	-31.67	-	-
6	.60225	7.14	Ca	0	.1	10.1	17.34	-	-	46	-28.66
7	1.97025	6.92	Qp	0	.1	10.1	17.12	56	-38.88	-	-
8	1.9725	.29	Ca	0	.1	10.1	10.49	-	-	46	-35.51
9	15.76275	12.22	Qp	0	.2	10.3	22.72	60	-37.28	-	-
10	15.75825	4.72	Ca	0	.2	10.3	15.22	-	-	50	-34.78
11	23.1315	5.98	Qp	.1	.3	10.4	16.78	60	-43.22	-	-
12	23.1315	.36	Ca	.1	.3	10.4	11.16	-	-	50	-38.84

Qp - Quasi-Peak detector
 Ca - CISPR average detection

Line-L2 .15 - 30MHz



Trace Markers

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	.15225	26.46	Qp	0	0	10.1	36.56	65.88	-29.32	-	-
14	.15225	3.05	Ca	0	0	10.1	13.15	-	-	55.88	-42.73
15	.55725	11.04	Qp	0	.1	10.1	21.24	56	-34.76	-	-
16	.55725	-2.57	Ca	0	.1	10.1	7.63	-	-	46	-38.37
17	1.4325	3.24	Qp	0	.1	10.1	13.44	56	-42.56	-	-
18	1.4235	-5.25	Ca	0	.1	10.1	4.95	-	-	46	-41.05
19	16.287	8.51	Qp	0	.2	10.3	19.01	60	-40.99	-	-
20	16.23075	-1.21	Ca	0	.2	10.3	9.29	-	-	50	-40.71
21	23.1315	.41	Qp	.1	.3	10.4	11.21	60	-48.79	-	-
22	23.1315	-1.95	Ca	.1	.3	10.4	8.85	-	-	50	-41.15
23	26.61225	.98	Qp	.1	.3	10.5	11.88	60	-48.12	-	-
24	26.61225	-2.56	Ca	.1	.3	10.5	8.34	-	-	50	-41.66

Qp - Quasi-Peak detector
 Ca - CISPR average detection