



CERTIFICATION TEST REPORT

Report Number. : R12598159-E1

Applicant : CyberOptics Corporation
5900 Golden Hills Drive
Golden Valley, MN 55416, USA

Model : 8023764

EUT Description : Wireless Charger

Test Standard(s) : LP0002:2018

Date Of Issue:

2019-03-29

Prepared by:

UL LLC

12 Laboratory Dr.

Research Triangle Park, NC 27709 U.S.A.

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REPORT REVISION HISTORY

Ver.	Issue Date	Revisions	Revised By
1	2019-03-29	Initial Issue	Brian T. Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: CyperOptics Corporation
5900 Golden Hills Drive
Golden Valley, MN 55416, USA

EUT DESCRIPTION: Wireless Charger

MODEL: 8023764

SERIAL NUMBER: Non-Serialized

DATE TESTED: 2019-03-05 to 2019-03-06

LP0002 Clause	Requirement	Result	Comment
ANSI C63.10 Section 6.9.3	Occupied BW	Compliant	Because the measured signal is CW, adjusting the RBW per C63.10 would not be pragmatic as the measured bandwidth will always follow the RBW and be approximately twice the RBW. Therefore, the RBW and VBW settings were used as shown in Section 8.
2.7, 2.8	Radiated Emissions	Compliant	None
2.3	AC Mains Conducted Emissions	Compliant	None

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.

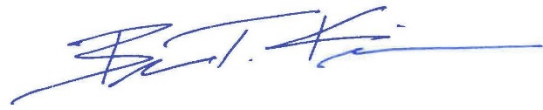
This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

Approved & Released
For UL LLC By:



Jeffrey Moser
Operations Leader
UL – Consumer Technology Division

Prepared By:



Brian T. Kiewra
Project Engineer
UL – Consumer Technology Division

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with LP0002:2018 and ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Drive, Research Triangle Park, NC 27709, USA and 2800 Perimeter Park Dr., Suite B, Morrisville, NC 27560, USA. 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.

12 Laboratory Dr.	2800 Suite Perimeter Park Dr.
☐ Chamber A	☐ Chamber North
☐ Chamber C	☒ Chamber South

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0

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

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Occupied Channel Bandwidth	2.00%
Conducted Emissions, LISN	3.65 dB
All emissions, radiated	4.88 dB
Time	3.39%

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

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a wireless charging base.

5.2. MAXIMUM FIELD STRENGTH

The transmitter has maximum field strength as follows:

Fundamental Frequency	Mode	Field Strength (dBuV/m)
114.3 – 171kHz	Charging	-14.45
170.7 – 201kHz	Standby	-10.46

Note: Fundamental changes depending upon the load when charging. When in standby, the fundamental shifts between 170.7 to 201kHz.

5.3. SOFTWARE AND FIRMWARE

Firmware installed in the EUT during Testing was A5E3.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emissions and AC Line conducted were performed with the EUT in active charging and in standby modes. OBW was performed with EUT in active charging mode.

The EUT is only intended to operate in one orientation; therefore, all final radiated testing was performed with the EUT in the intended orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Multi-Sensor (Used as device to charge)	CyberOptics	AMSR-6025Q	AM000586	SPD003
Power Supply	CUI Inc	EMSA050300	Non-Serialized	NA

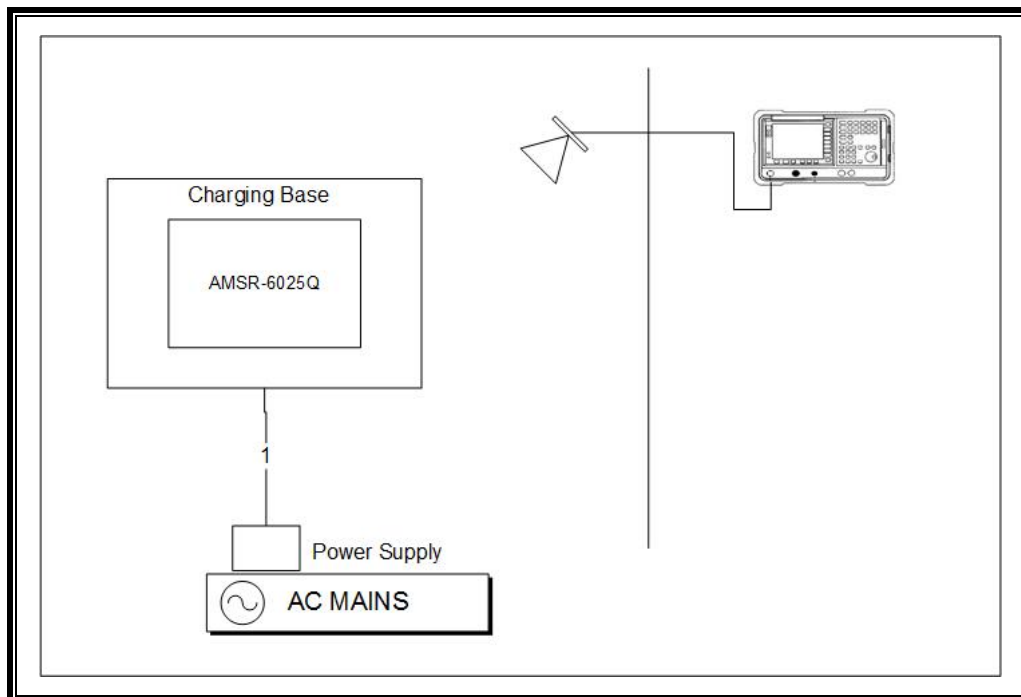
I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Mains	1	Barrel	DC Mains	<3m	Provides DC Mains to charger.

TEST SETUP

The EUT is installed in as a standalone device.

SETUP DIAGRAM



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2018-06-19	2019-06-19
s/n 181562858	Environmental Meter	Fisher Scientific	14-650-118	2018-09-04	2020-09-04
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2018-08-21	2019-08-21
PRE0101521 (75141)	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2018-08-22	2019-08-22
TL001	Transient Limiter, 0.009-30MHz	Com-Power	LIT-930A	2018-06-13	2019-06-13
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
MM0167	Multi-meter	Agilent	U1232A	2018-10-12	2019-10-31
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2018-07-16	2019-07-16

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville - South Chamber)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
AT0079	Active Loop Antenna	ETS-Lindgren	6502	2019-01-24	2020-01-31
AT0074	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2018-07-24	2019-07-24
S-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2018-09-06	2019-09-06
S-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2018-05-20	2019-05-20
SA0026	Spectrum Analyzer	Agilent	N9030A	2018-03-20	2019-03-20
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
s/n 181474409	Environmental Meter	Fisher Scientific	15-077-963	2018-07-27	2020-07-27

7. MEASUREMENT METHOD

Occupied Bandwidth: ANSI C63.10 Section 6.9.3. Deviation: RBW was not 1-5% because the measured signal is CW and adjusting the RBW per C63.10 would not be pragmatic as the measured bandwidth will always follow the RBW and be approximately twice the RBW.

General Radiated Emissions: ANSI C63.10:2013 Sections 6.3 – 6.6

Line Conducted Emissions: ANSI C63.10:2013 Sections 6.2

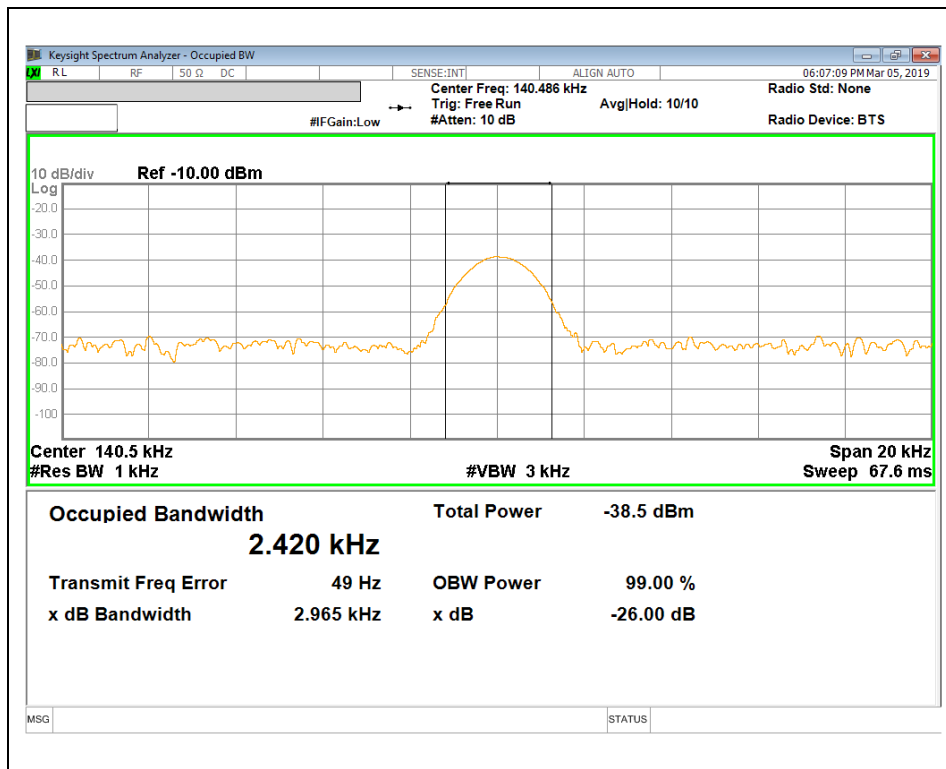
8. OCCUPIED BANDWIDTH

LIMITS

None; for reporting purposes only.

Because the measured signal is CW, adjusting the RBW per C63.10 would not be pragmatic as the measured bandwidth will always follow the RBW and be approximately twice the RBW.

RESULTS



9. RADIATED TEST RESULTS

LIMITS

NCC LP0002 2.7, 2.8

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10.

For measurements below 1 GHz the resolution bandwidth is set to 120 kHz for peak and/or quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

KDB 414788 OFS AND CHAMBER CORRELATION JUSTIFICATION

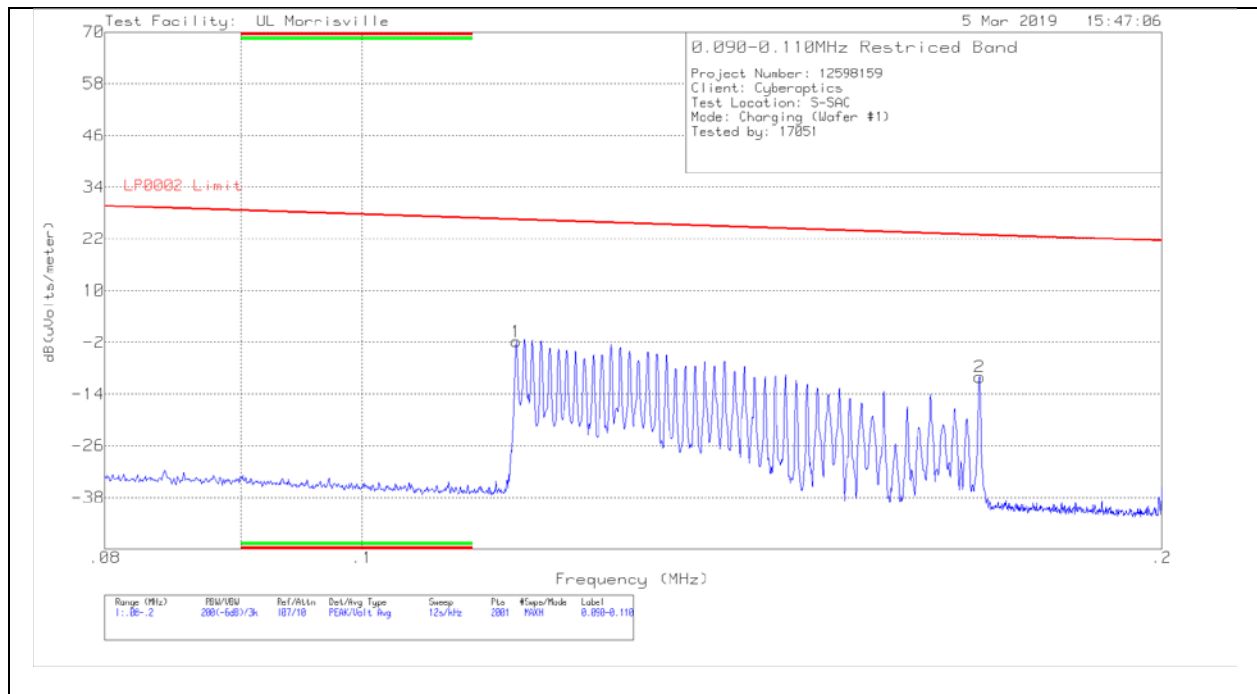
Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

Open Field Site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

9.1. BELOW 30MHz

Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were $40 \cdot \log(\text{test distance} / \text{specification distance})$.

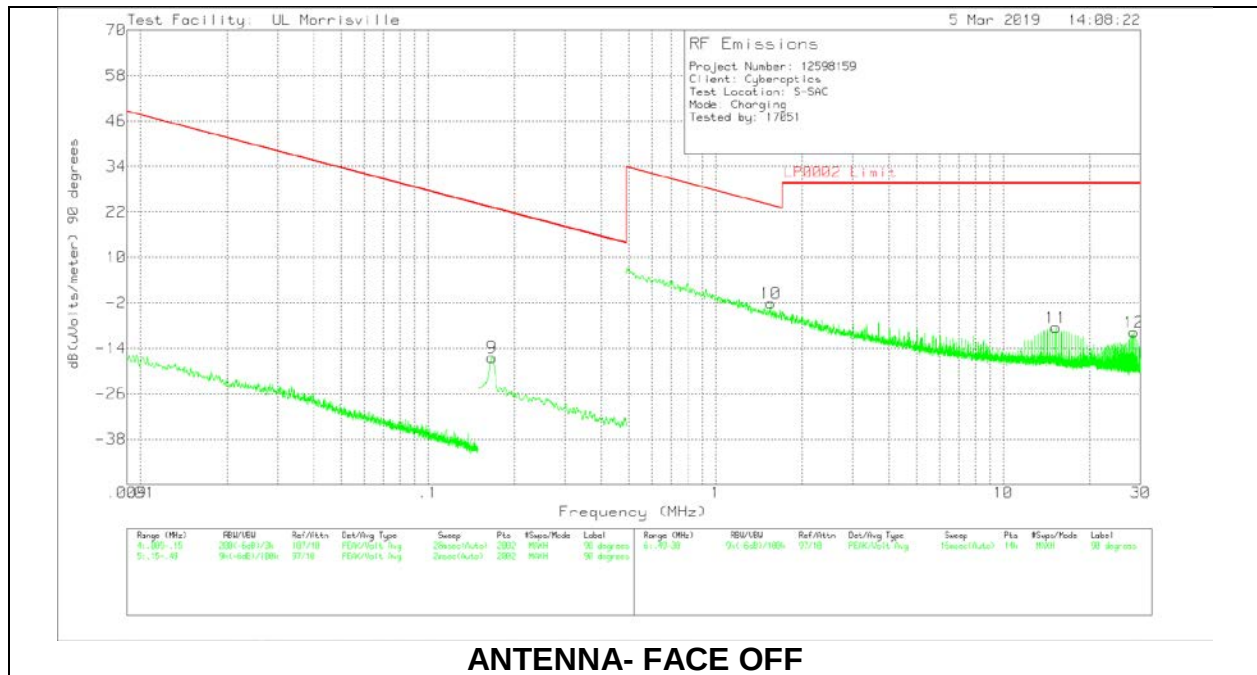
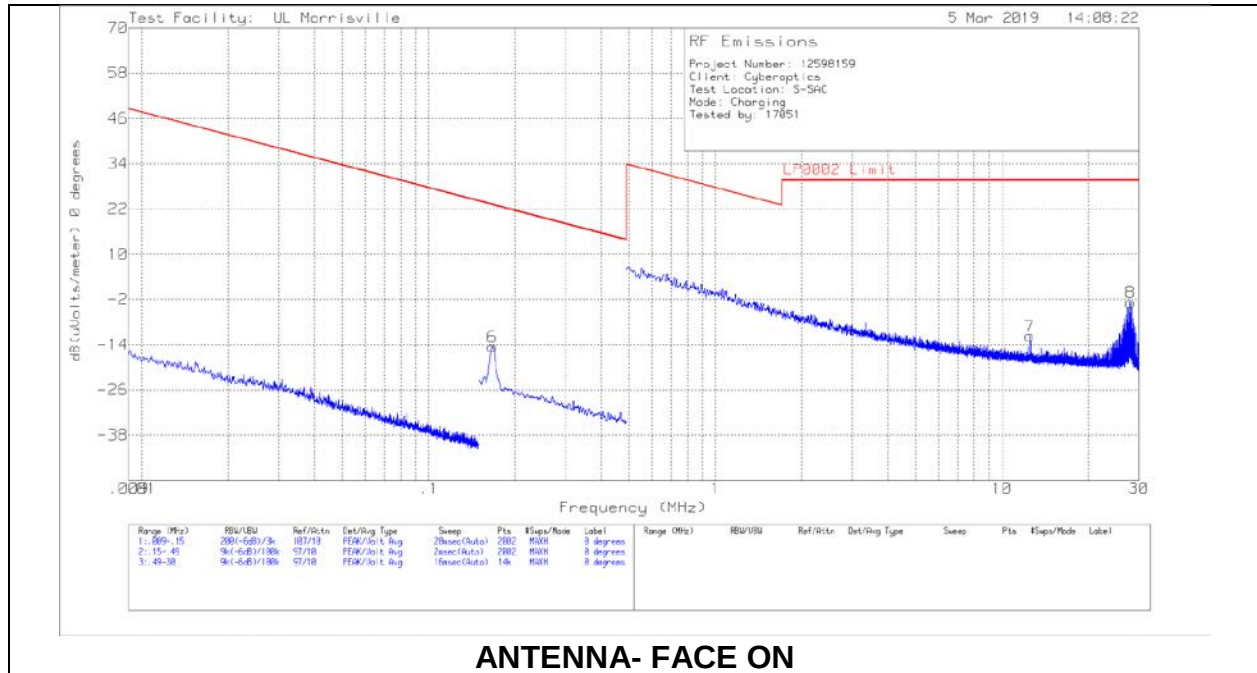
0.090 – 0.110MHz RESTRICTED BAND

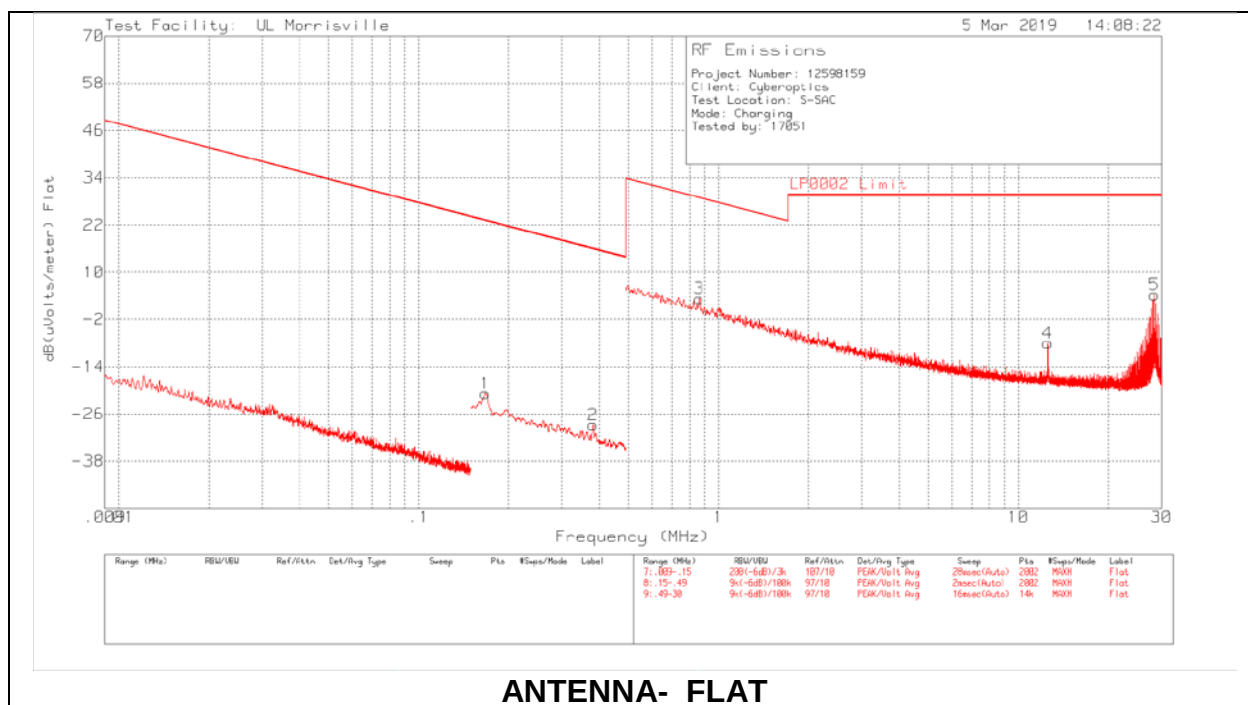


Marker	Frequency (MHz)	Restricted Band (MHz)	Margin (kHz)
1	.11426	0.110	-4.26
2	.17078	0.110	-60.78

NOTE: The above frequency profile was obtained by manually moving the wafer (moved by tester) around the charging unit to change the EUT's charging frequency. Markers 1 and 2 represent the lowest and highest frequencies, respectively. The purpose of this plot is to show as the wafer is moved around the charging unit, the frequencies do not extend beyond markers 1 and 2 and they do not extend into the restricted bands (110 kHz). This measurement is not intended to be an amplitude measurement since the tester was in the measurement field moving the sample to manipulate the frequency.

SPURIOUS EMISSIONS BELOW 30 MHz - CHARGING



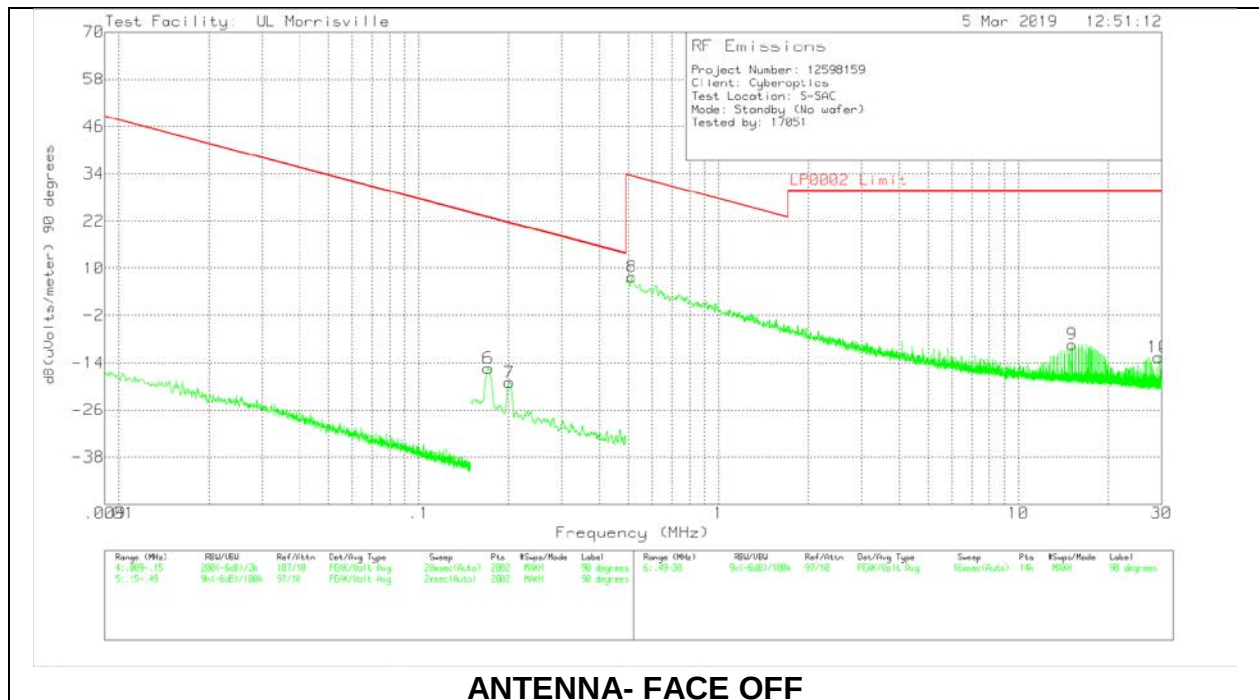
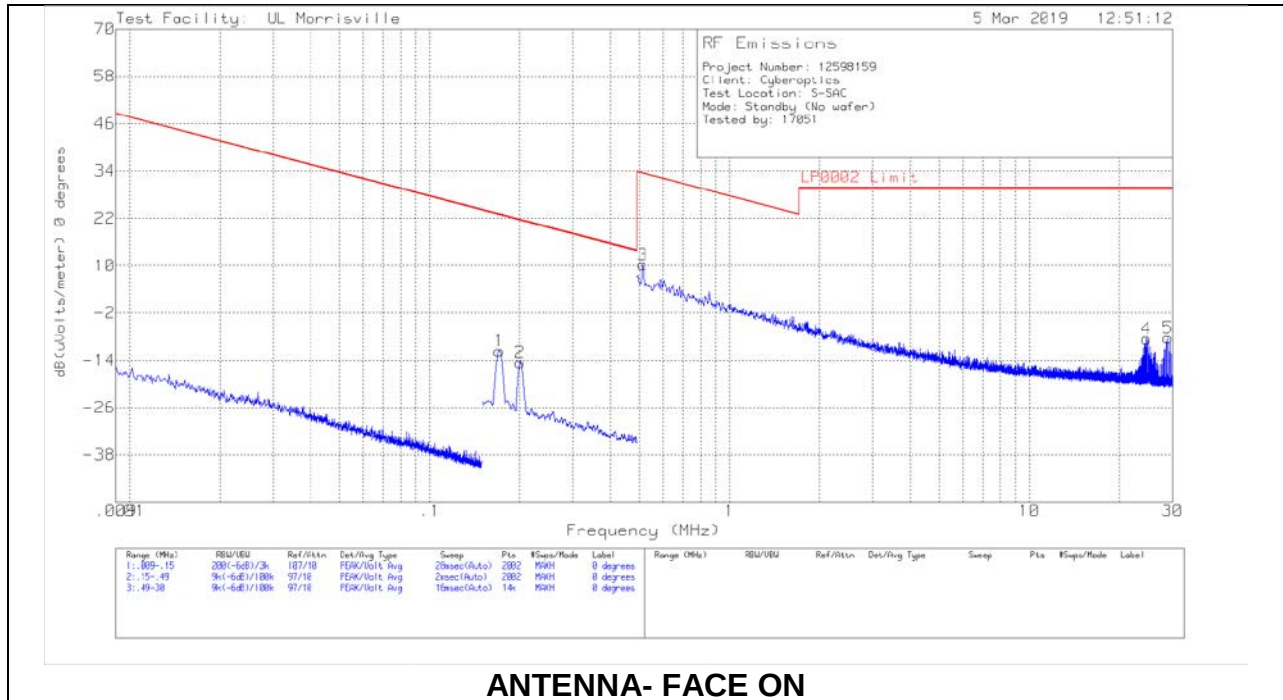


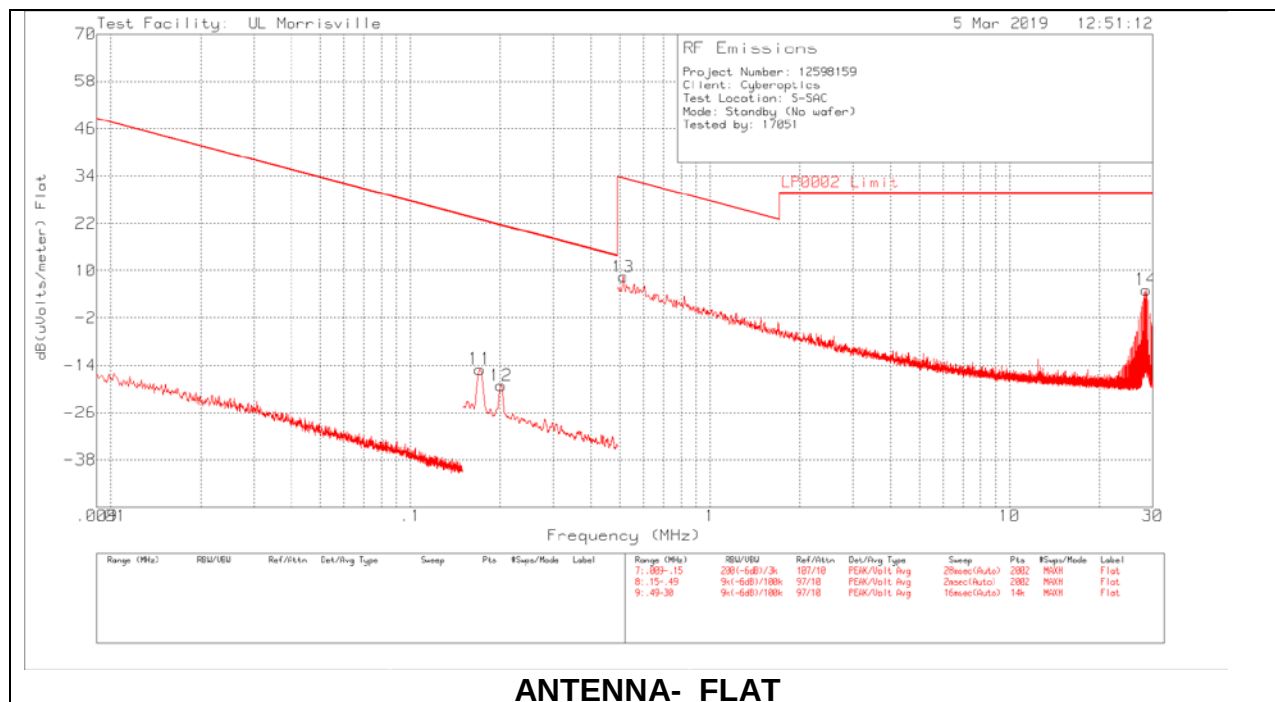
BELOW 30MHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 AF (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uV/m)	LP0002 QP Limit	LP0002 AV Limit	LP0002 PK Limit	Worst-Case Margin (dB)	Azimuth (Degr)
Loop Antenna: 0 degrees												
6	.16691	54.75	Pk	10.7	.1	-80	-14.45	-	-	43.15	-57.6	253
	.1672	51.42	Av	10.7	.1	-80	-17.78	-	23.14	-	-40.92	253
7	12.53511	17.26	Pk	10.4	.6	-40	-11.74	29.54	-	-	-41.28	0-360
8	28.08794	27.9	Pk	8.4	.9	-40	-2.8	29.54	-	-	-32.34	0-360
Loop Antenna: 90 degrees												
9	.16716	52.68	Pk	10.7	.1	-80	-16.52	-	-	43.14	-39.66	153
	.16716	48.51	Av	10.7	.1	-80	-20.69	-	23.14	-	-43.83	153
10	1.55243	26.58	Pk	11.1	.2	-40	-2.12	23.78	-	-	-25.9	0-360
11	15.21649	20.64	Pk	10.3	.6	-40	-8.46	29.54	-	-	-38	0-360
12	28.42311	21.06	Pk	8.3	.9	-40	-9.74	29.54	-	-	-39.28	0-360
Loop Antenna: Flat												
1	.16718	50.57	Pk	10.7	.1	-80	-18.63	-	-	43.14	-61.77	70
	.16718	43.49	Av	10.7	.1	-80	-25.71	-	23.14	-	-48.85	70
2	.38146	40.5	Pk	10.6	.1	-80	-28.8	-	15.97	35.97	-44.77	0-360
3	.86312	32.45	Pk	10.8	.1	-40	3.35	28.88	-	-	-25.53	0-360
4	12.53722	20.97	Pk	10.4	.6	-40	-8.03	29.54	-	-	-37.57	0-360
5	28.42311	35.05	Pk	8.3	.9	-40	4.25	29.54	-	-	-25.29	0-360

Pk - Peak detector

SPURIOUS EMISSIONS BELOW 30 MHz - STANDBY



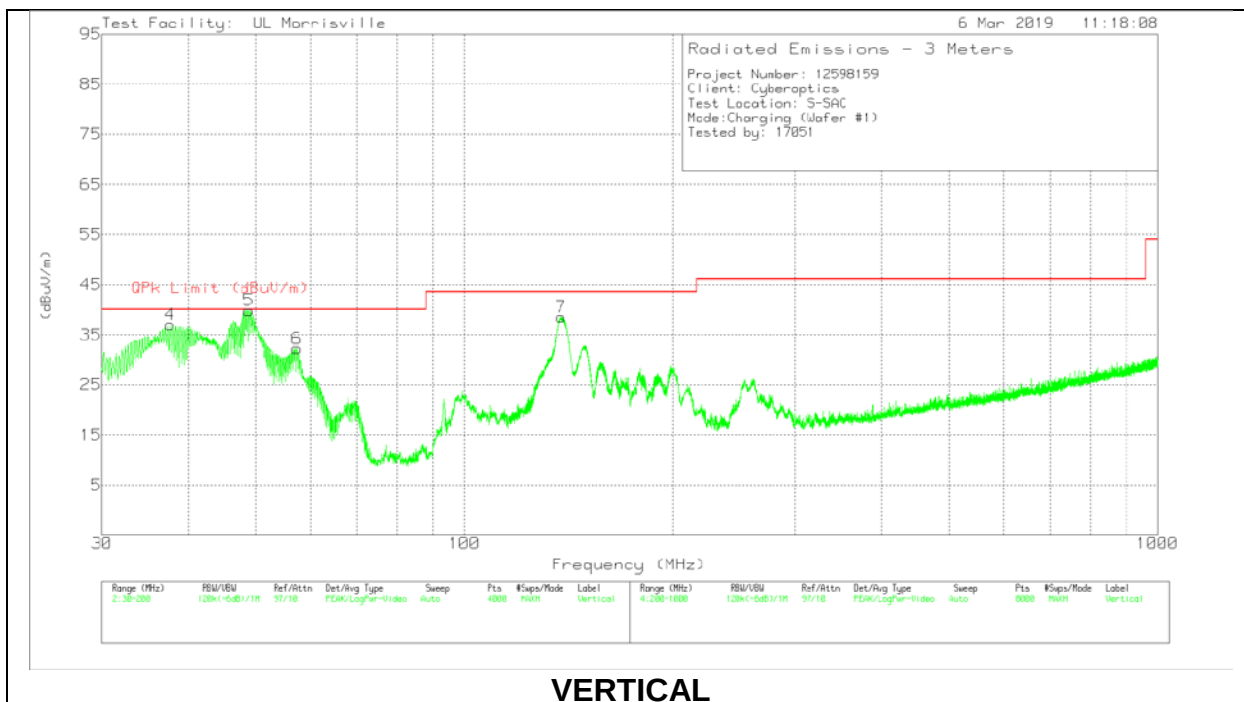
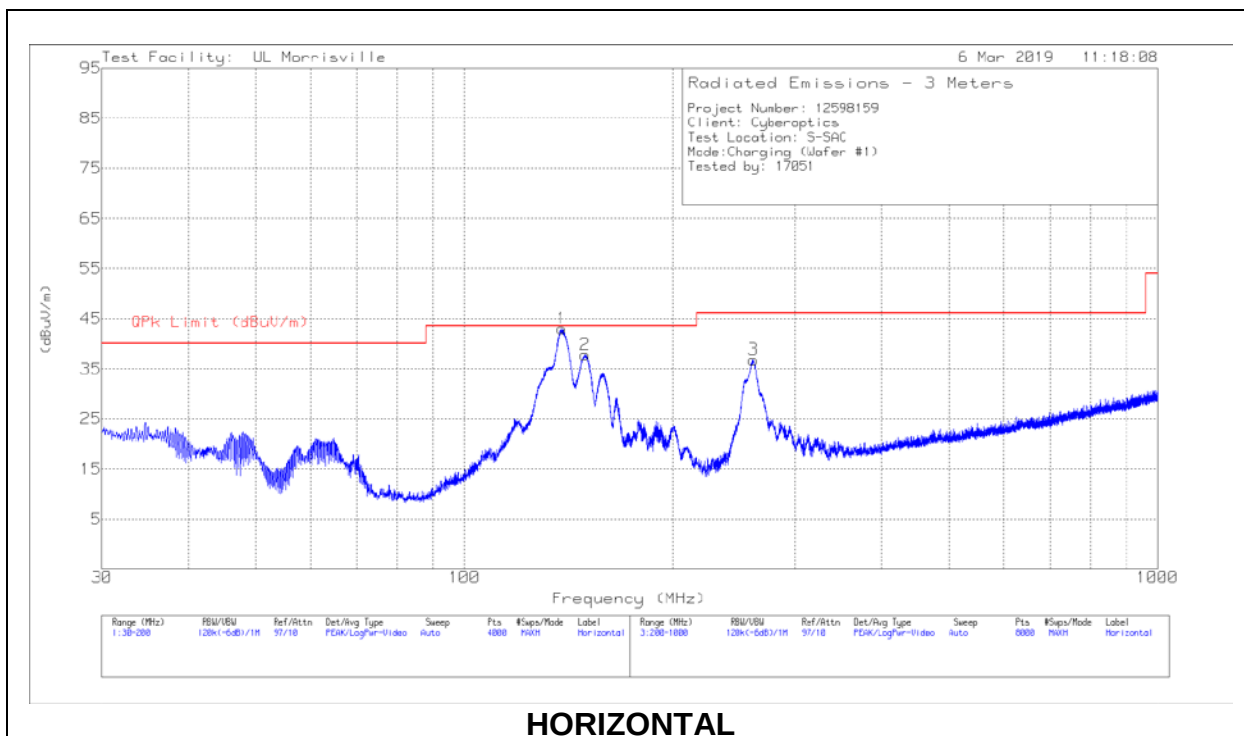


BELOW 30MHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 AF (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uV/m)	LP0002 QP Limit	LP0002 AV Limit	LP0002 PK Limit	Margin (dB)	Azimuth (Degs)
Loop Antenna: 0 degrees												
1	.17077	58.74	Pk	10.7	.1	-80	-10.46	-	-	42.96	-53.42	83
	.17077	44.86	Av	10.7	.1	-80	-24.34	-	22.96	-	-47.3	83
2	.20088	56.21	Pk	10.7	.1	-80	-12.99	-	-	41.55	-54.54	79
	.20088	34.52	Av	10.7	.1	-80	-34.68	-	21.55	-	-56.23	79
3	.51319	39.32	Pk	10.8	.1	-40	10.22	33.4	-	-	-23.18	0-360
4	24.58655	21.54	Pk	9.1	.8	-40	-8.56	29.54	-	-	-38.1	0-360
5	28.9343	22.61	Pk	8.2	.9	-40	-8.29	29.54	-	-	-37.83	0-360
Loop Antenna: 90 degrees												
6	.17077	55.75	Pk	10.7	.1	-80	-13.45	-	-	42.96	-56.41	353
	.17077	41.86	Av	10.7	.1	-80	-27.34	-	22.96	-	-50.3	353
7	.20075	52.86	Pk	10.7	.1	-80	-16.34	-	-	41.55	-57.89	353
	.20075	33.83	Av	10.7	.1	-80	-35.37	-	21.55	-	-56.92	353
8	.51319	36.91	Pk	10.8	.1	-40	7.81	33.4	-	-	-25.59	0-360
9	15.07736	19.73	Pk	10.3	.6	-40	-9.37	29.54	-	-	-38.91	0-360
10	29.34009	18.38	Pk	8.1	.9	-40	-12.62	29.54	-	-	-42.16	0-360
Loop Antenna: Flat												
11	.17073	55.36	Pk	10.7	.1	-80	-13.84	-	-	42.96	-56.8	72
	.17073	41.7	Av	10.7	.1	-80	-27.5	-	22.96	-	-50.46	72
12	.20097	52.88	Pk	10.7	.1	-80	-16.32	-	-	41.54	-57.86	72
	.20097	33.84	Av	10.7	.1	-80	-35.36	-	21.54	-	-56.9	72
13	.51319	37.55	Pk	10.8	.1	-40	8.45	33.4	-	-	-24.95	0-360
14	28.54748	35.96	Pk	8.3	.9	-40	5.16	29.54	-	-	-24.38	0-360

Pk - Peak detector

9.2. 30 TO 1000 MHz - CHARGING



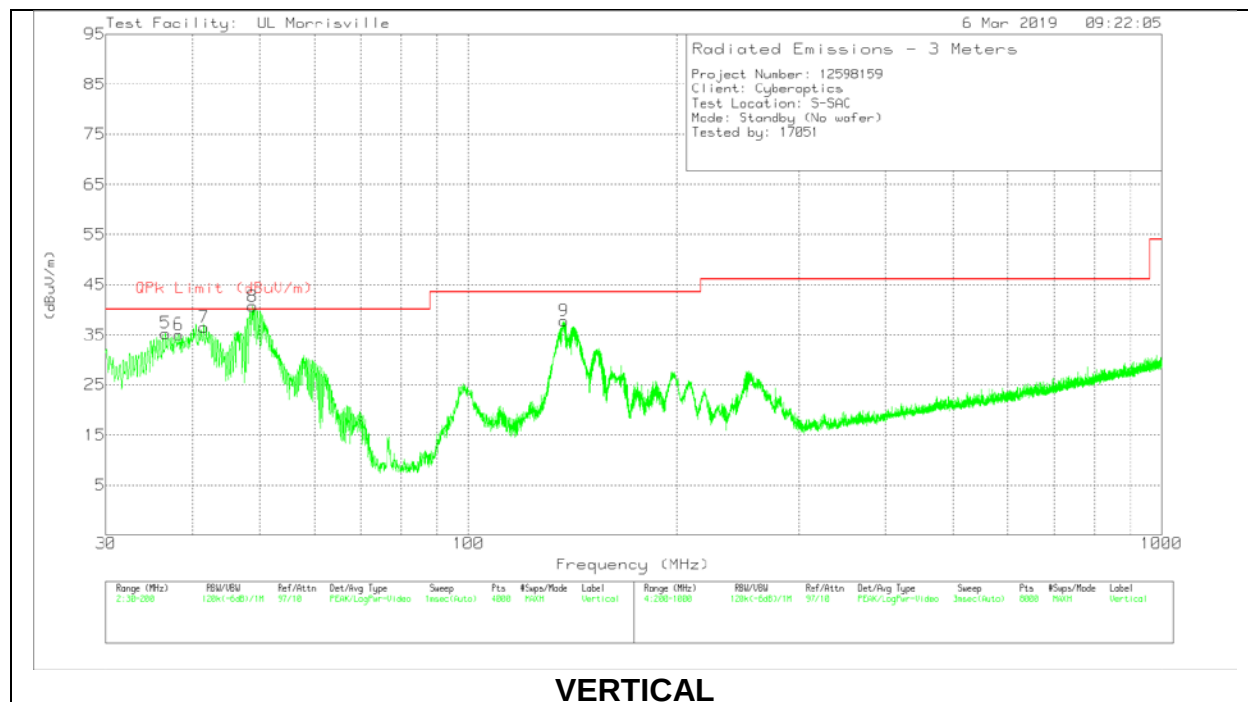
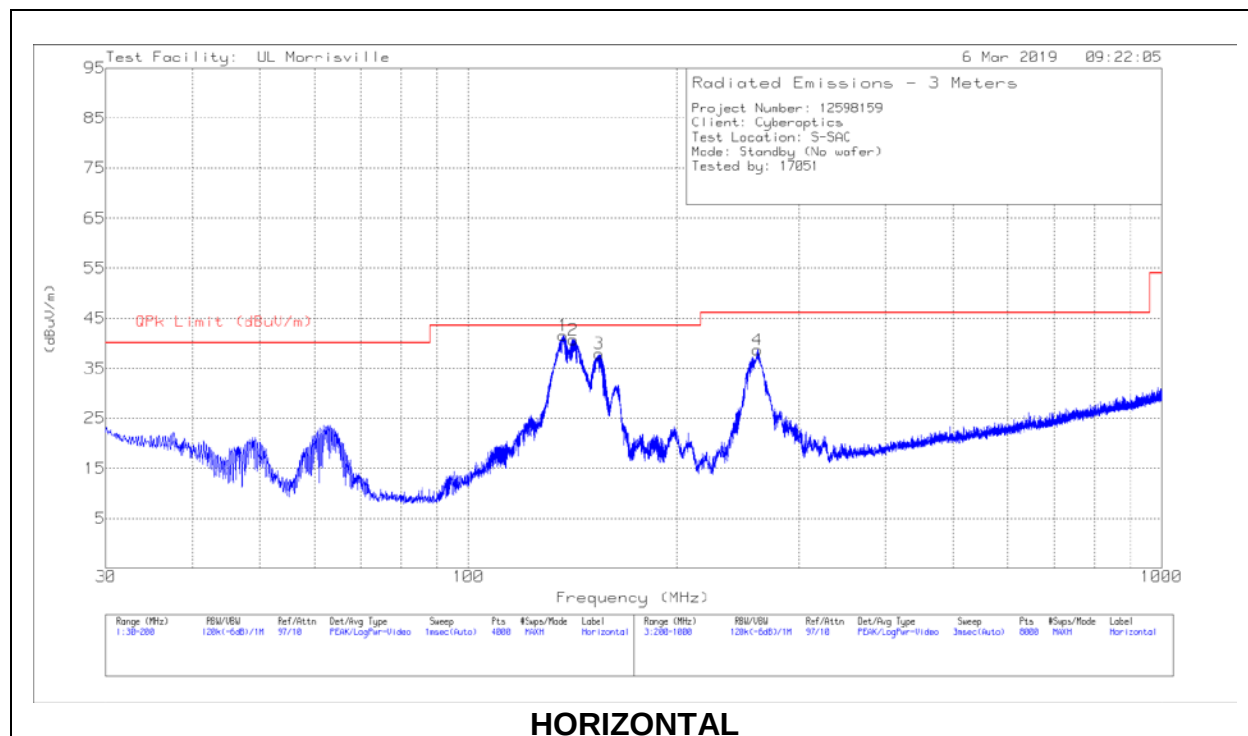
30 TO 1000MHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0074 AF (dB/m)	Cbl/Amp	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	138.1055	54.95	Qp	17.7	-30.7	41.95	43.52	-1.57	187	225	H
2	149.2057	50.61	Qp	17	-30.6	37.01	43.52	-6.51	11	255	H
3	261.1079	49.62	Pk	17	-29.8	36.82	46.02	-9.2	0-360	102	H
4	37.6433	46.85	Qp	20.3	-31.7	35.45	40	-4.55	289	101	V
5	48.9174	56.95	Qp	13.1	-31.5	38.55	40	-1.45	13	100	V
6	57.3346	51.85	Pk	11.8	-31.4	32.25	40	-7.75	0-360	101	V
7	137.7709	50.21	Qp	17.7	-30.7	37.21	43.52	-6.31	264	101	V

Pk - Peak detector

Qp - Quasi-Peak detector

9.3. 30 TO 1000 MHz - STANDBY



30 TO 1000MHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0074 AF (dB/m)	Cbl/Amp	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	136.9142	53.63	Qp	17.8	-30.7	40.73	43.52	-2.79	184	240	H
2	141.5712	52.12	Qp	17.4	-30.6	38.92	43.52	-4.6	192	232	H
3	154.3631	49.68	Qp	16.9	-30.5	36.08	43.52	-7.44	1	180	H
4	261.1079	47.84	Qp	17	-29.8	35.04	46.02	-10.98	186	121	H
5	36.5467	43.19	Qp	21.1	-31.7	32.59	40	-7.41	241	100	V
6	38.255	44.15	Qp	19.8	-31.7	32.25	40	-7.75	246	100	V
7	41.4989	47.6	Qp	17.5	-31.6	33.5	40	-6.5	75	100	V
8	48.8449	56.45	Qp	13.2	-31.5	38.15	40	-1.85	21	101	V
9	137.2893	48.66	Qp	17.8	-30.7	35.76	43.52	-7.76	242	100	V

Pk - Peak detector

Qp - Quasi-Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

NCC LP0002 2.3

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	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.

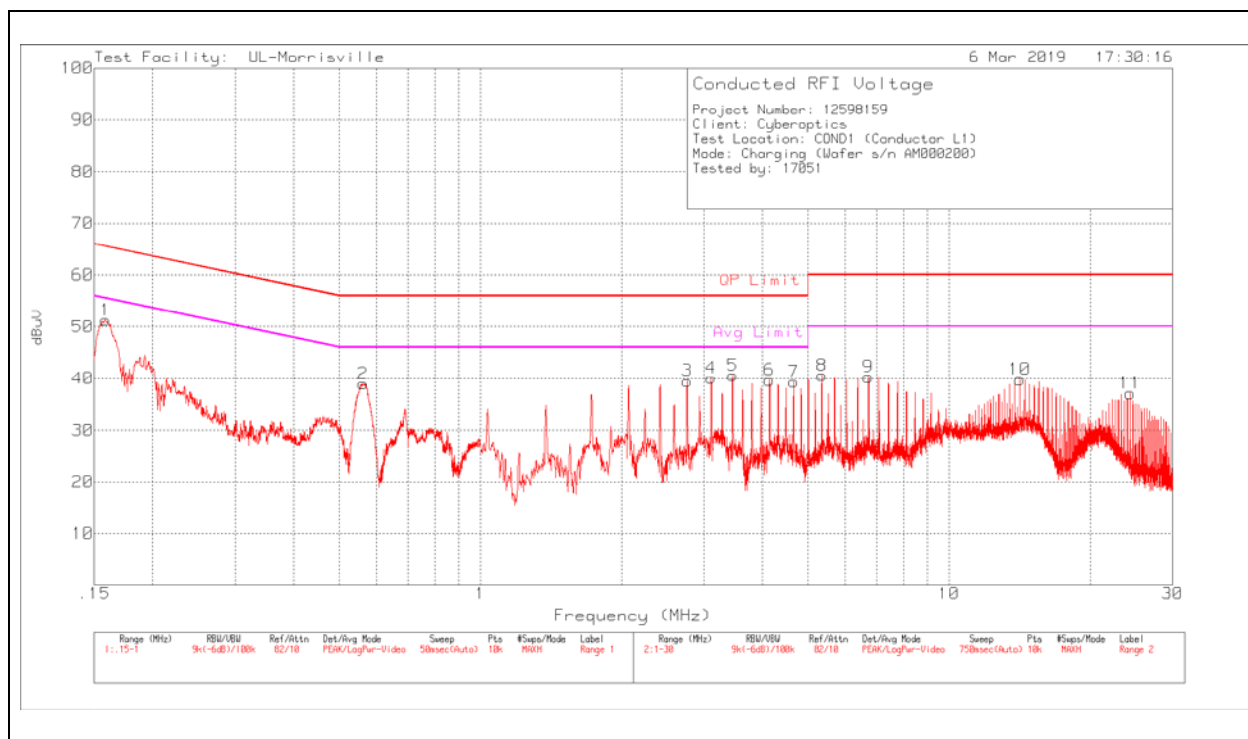
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

RESULTS

10.1.1. AC POWER LINE CHARGING

LINE 1 RESULTS



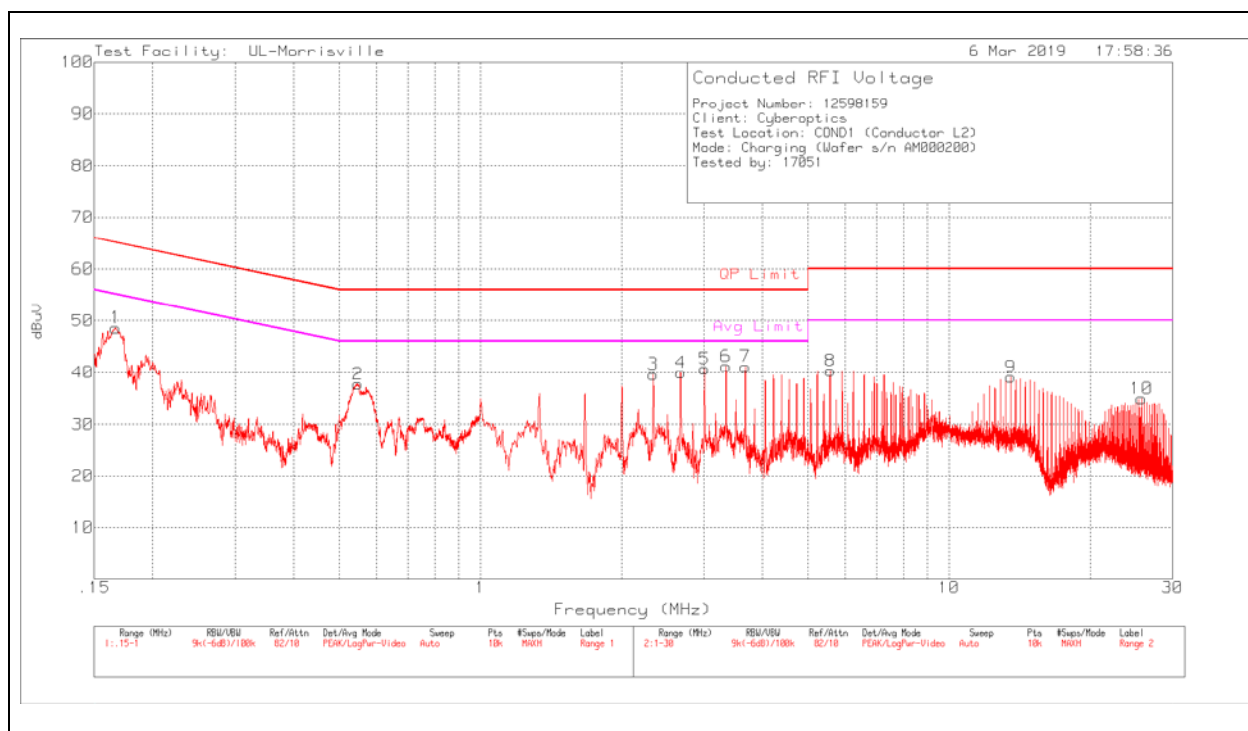
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.15863	33.21	Qp	.2	10	43.41	65.54	-22.13	-	-
	.15863	19.73	Ca	.2	10	29.93	-	-	55.54	-25.61
2	.56153	28.99	Pk	0	10	38.99	56	-17.01	46	-7.01
3	2.76232	27.49	Qp	0	10.1	37.59	56	-18.41	-	-
	2.76232	26.41	Ca	0	10.1	36.51	-	-	46	-9.49
4	3.10852	28.09	Qp	0	10.1	38.19	56	-17.81	-	-
	3.10852	26.68	Ca	0	10.1	36.78	-	-	46	-9.22
5	3.45369	27.88	Qp	0	10.1	37.98	56	-18.02	-	-
	3.45369	26.54	Ca	0	10.1	36.64	-	-	46	-9.36
6	4.14465	26.76	Qp	0	10.1	36.86	56	-19.14	-	-
	4.14465	25.34	Ca	0	10.1	35.44	-	-	46	-10.56
7	4.66282	27.28	Qp	0	10.1	37.38	56	-18.62	-	-
	4.66282	25.94	Ca	0	10.1	36.04	-	-	46	-9.96
8	5.35419	30.27	Pk	.1	10.2	40.57	60	-19.43	50	-9.43
9	6.73316	29.99	Pk	.1	10.2	40.29	60	-19.71	50	-9.71
10	14.15528	29.29	Pk	.1	10.4	39.79	60	-20.21	50	-10.21
11	24.34403	26.29	Pk	.2	10.6	37.09	60	-22.91	50	-12.91

Pk - Peak detector

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS

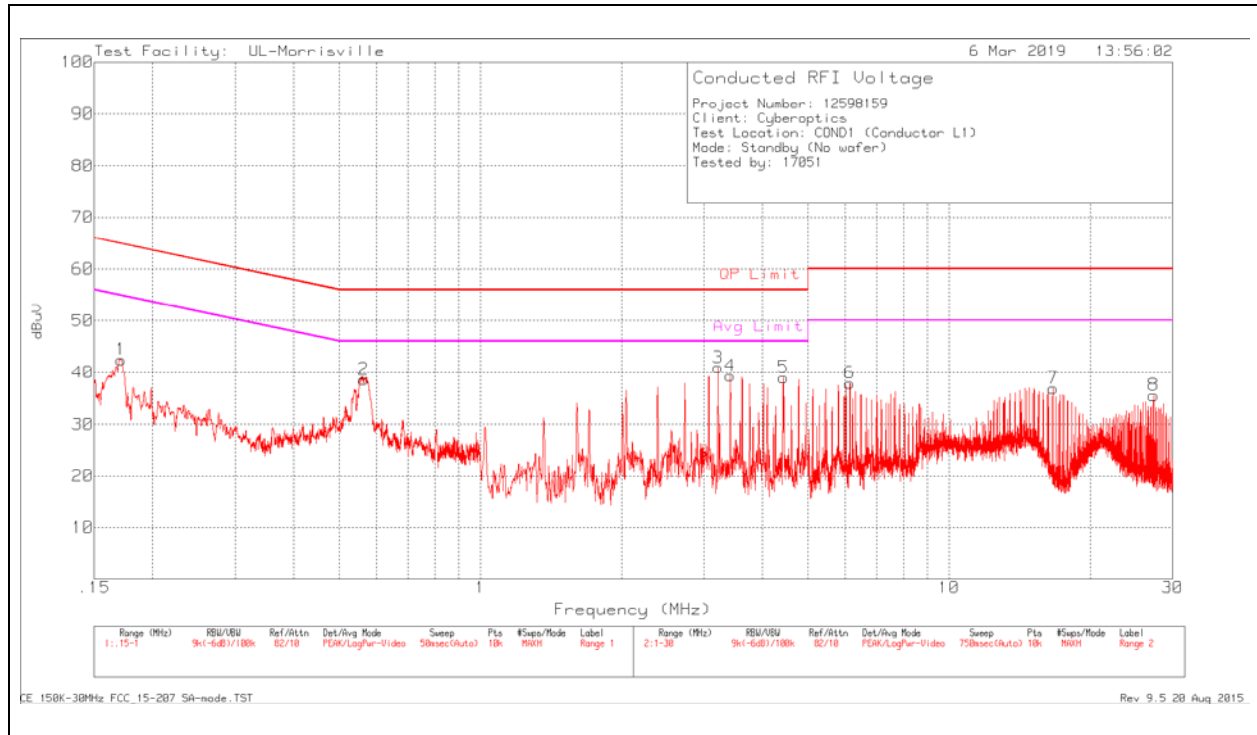


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.1671	35.07	Qp	.2	10	45.27	65.1	-19.83	-	-
	.1671	28.32	Ca	.2	10	38.52	-	-	55.1	-16.58
2	.54776	27.75	Pk	0	10	37.75	56	-18.25	46	-8.25
3	2.33971	27.26	Qp	0	10.1	37.36	56	-18.64	-	-
	2.33971	25.95	Ca	0	10.1	36.05	-	-	46	-9.95
4	2.67447	28.27	Qp	0	10.1	38.37	56	-17.63	-	-
	2.67447	26.94	Ca	0	10.1	37.04	-	-	46	-8.96
5	3.00762	28.72	Qp	0	10.1	38.82	56	-17.18	-	-
	3.00762	27.3	Ca	0	10.1	37.4	-	-	46	-8.6
6	3.34367	29.29	Qp	0	10.1	39.39	56	-16.61	-	-
	3.34367	27.75	Ca	0	10.1	37.85	-	-	46	-8.15
7	3.67683	28.51	Qp	0	10.1	38.61	56	-17.39	-	-
	3.67683	27.61	Ca	0	10.1	37.71	-	-	46	-8.29
8	5.57726	30.02	Pk	.1	10.2	40.32	60	-19.68	50	-9.68
9	13.54111	28.6	Pk	.1	10.4	39.1	60	-20.9	50	-10.9
10	25.73748	23.99	Pk	.2	10.7	34.89	60	-25.11	50	-15.11

Pk - Peak detector
Qp - Quasi-Peak detector
Ca - CISPR average detection

10.1.1. AC POWER LINE STANDBY

LINE 1 RESULTS



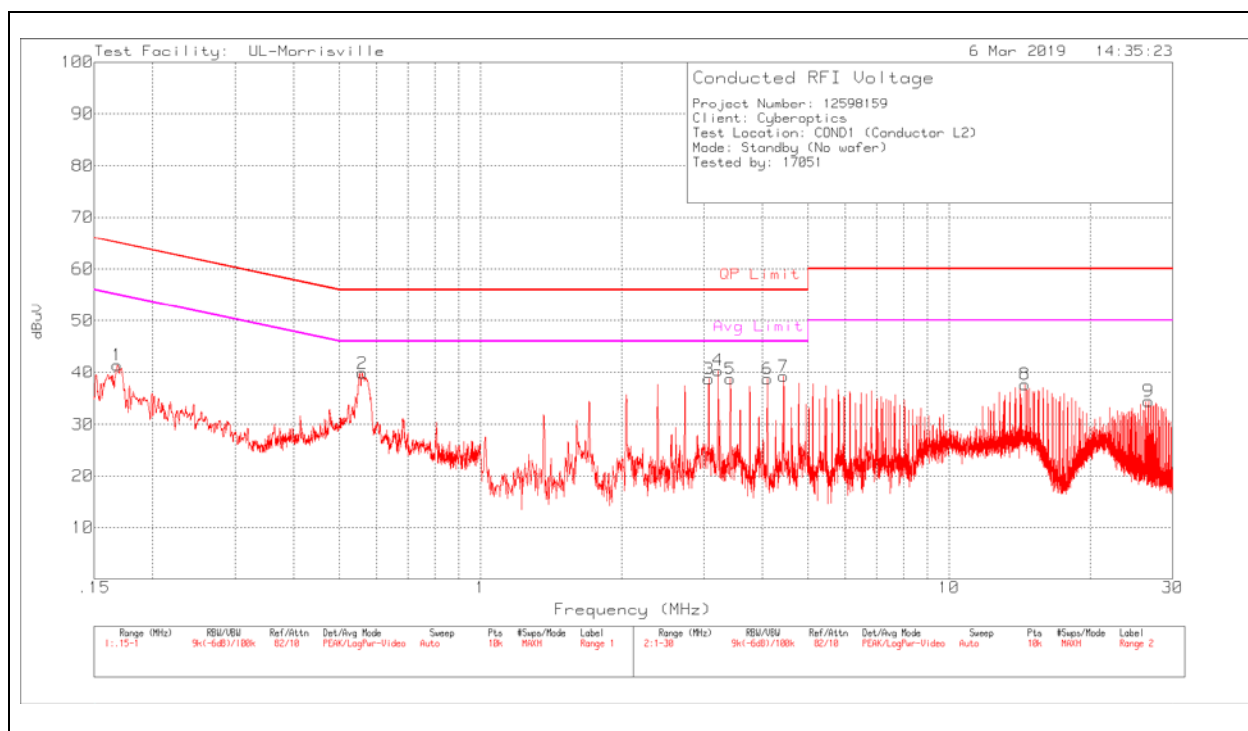
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.17121	32.29	Pk	.2	10	42.49	64.9	-22.41	54.9	-12.41
2	.56421	28.66	Pk	0	10	38.66	56	-17.34	46	-7.34
3	3.21611	23.54	Qp	0	10.1	33.64	56	-22.36	-	-
	3.21611	-2.04	Ca	0	10.1	8.06	-	-	46	-37.94
4	3.41498	22.24	Qp	0	10.1	32.34	56	-23.66	-	-
	3.41498	14.46	Ca	0	10.1	24.56	-	-	46	-21.44
5	4.43906	21.71	Qp	0	10.1	31.81	56	-24.19	-	-
	4.43906	14.08	Ca	0	10.1	24.18	-	-	46	-21.82
6	6.14507	27.64	Pk	.1	10.2	37.94	60	-22.06	50	-12.06
7	16.68726	26.33	Pk	.1	10.5	36.93	60	-23.07	50	-13.07
8	27.32214	24.7	Pk	.2	10.7	35.6	60	-24.4	50	-14.4

Pk - Peak detector

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.16811	31.24	Pk	.2	10	41.44	65.05	-23.61	55.05	-13.61
2	.56064	22.69	Qp	0	10	32.69	56	-23.31	-	-
	.56064	10.26	Ca	0	10	20.26	-	-	46	-25.74
3	3.07136	28.66	Pk	0	10.1	38.76	56	-17.24	46	-7.24
4	3.21545	23.46	Qp	0	10.1	33.56	56	-22.44	-	-
	3.21545	.87	Ca	0	10.1	10.97	-	-	46	-35.03
5	3.4161	28.66	Pk	0	10.1	38.76	56	-17.24	46	-7.24
6	4.09689	28.63	Pk	0	10.1	38.73	56	-17.27	46	-7.27
7	4.43999	21.73	Qp	0	10.1	31.83	56	-24.17	-	-
	4.43999	14.03	Ca	0	10.1	24.13	-	-	46	-21.87
8	14.51161	27.18	Pk	.1	10.4	37.68	60	-22.32	50	-12.32
9	26.64714	23.56	Pk	.2	10.7	34.46	60	-25.54	50	-15.54

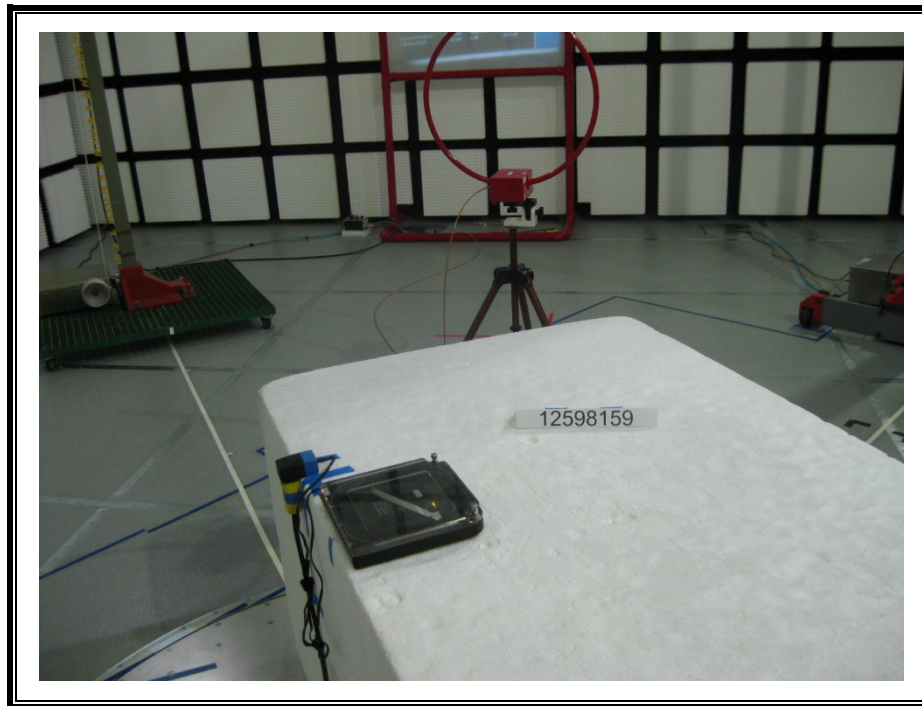
Pk - Peak detector

Qp - Quasi-Peak detector

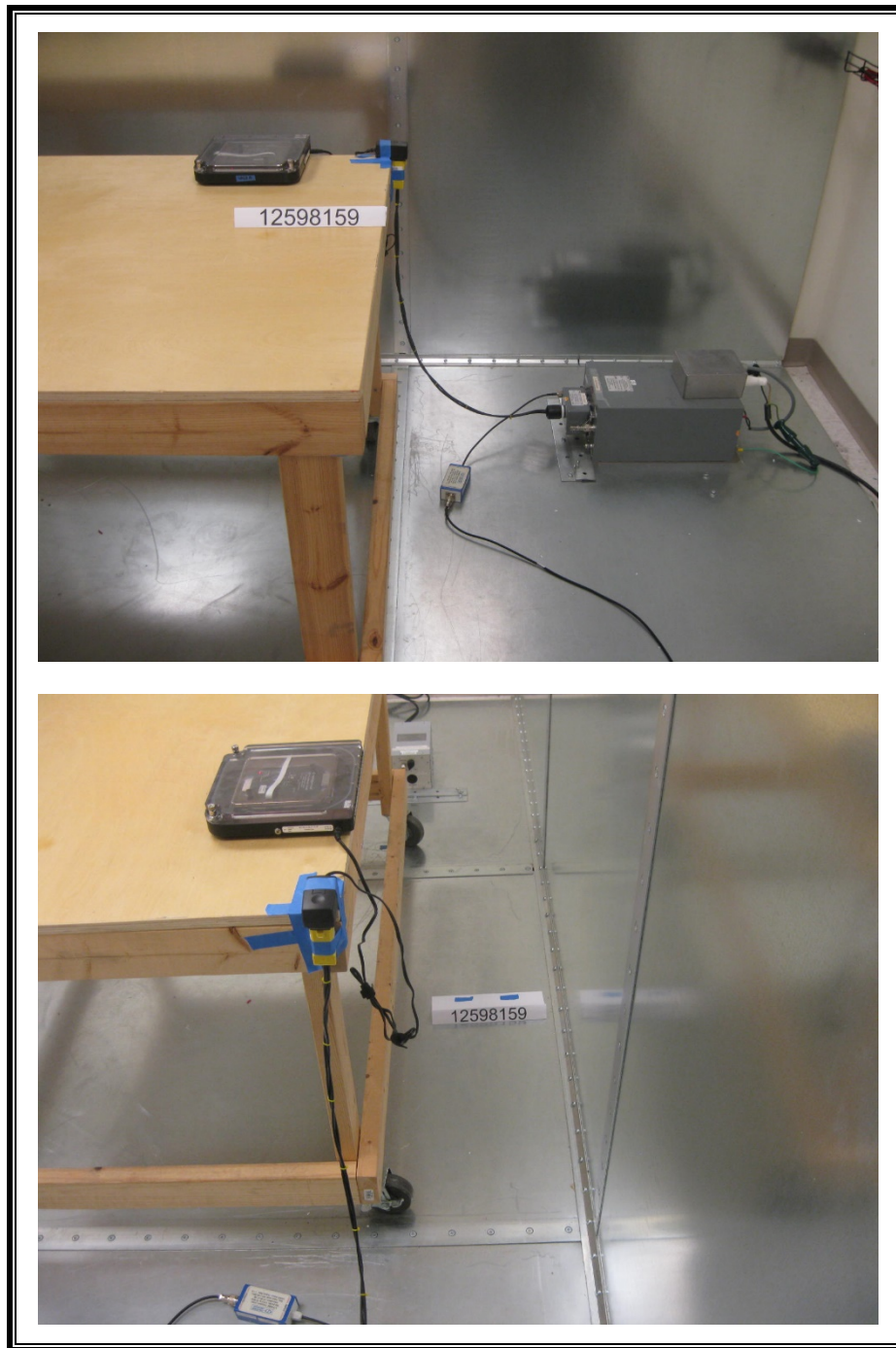
Ca - CISPR average detection

11. SETUP PHOTOS

OBW MEASUREMENT SETUP

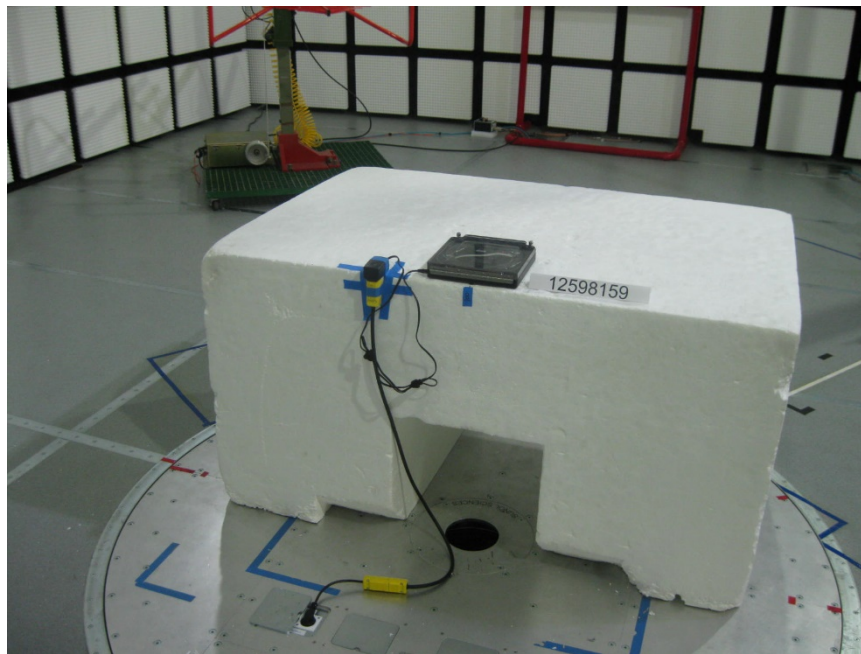


AC MAINS MEASUREMENT SETUP



RADIATED RF MEASUREMENT SETUP

RADIATED EMISSIONS PHOTO (BELOW 1GHz)



END OF TEST REPORT