FCC 47 CFR PART 15 SUBPART B

C2PC CERTIFICATION TEST REPORT

FOR

SMART WATCH with BT and BLE

MODEL NUMBER: LG-W100, W100, LGW100

FCC ID: ZNFW100
IC ID: 2703C-W100

REPORT NUMBER: 14U17754-3

ISSUE DATE: May 9, 2014

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC
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Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	5/9/14	Initial issue	P. Kim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC**.**

EUT DESCRIPTION: Smart watch with BT and BLE

MODEL: LG-W100, W100, LGW100

SERIAL NUMBER: 178J2 (Radiated)

DATE TESTED: MAY 9, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC 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.

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2. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☒ Chamber B	☐ Chamber E
☐ Chamber C	☐ Chamber F

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

3. CALIBRATION AND UNCERTAINTY

3.1. 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.

3.2. SAMPLE CALCULATION

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

3.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	±3.52 dB
Radiated Disturbance, 30 to 1000 MHz	±4.94 dB

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

4. EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF EUT

The EUT is a smart watch with BT and BLE

GENERAL INFORMATION

Power Requirements	Input :100-240 VAC / 50-60 Hz Output: 5VDC, 0.85 A
List of frequencies generated or used by the EUT	1.2GHz , 26MHz and 19.2MHz

SUBASSEMBLIES

The EUT was constructed using the following subassemblies:

Subassembly Description	Manufacturer	Part Number
Cradle	LG	SDT-310
AC adapter	DongDo	MCS-01WD
AC adapter	Sunlin	MCS-01WR
USB cable	Ningbo BROAD	EAD62289301
USB cable	KSD	EAD62377905

4.2. PRELIMINARY TEST CONFIGURATIONS

The following configurations were investigated during preliminary testing:

EUT Configuration	Description
1	**EUT with Cradle and adapter**
2	EUT with Laptop

The worst-case configuration was determined to be EUT with Laptop.

4.3. MODE(S) OF OPERATION

Mode	Description
1	**EUT attached with BT call box and under standby mode; EUT docked in the charger with charging function enabled**

4.4. DETAILS OF TESTED SYSTEM

SUPPORT EQUIPMENT & PERIPHERALS

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Cradle	LG	W0	N/A	N/A
AC adapter	DongDo	MCS-01WD	N/A	N/A
AC adapter	Sunlin	MCS-01WR	N/A	N/A
USB cable	Ningbo BROAD	EAD62289301	N/A	N/A
USB cable	KSD	EAD62377905	N/A	N/A
Laptop	Lenovo	T430	N/A	N/A
Headset	LG	N/A	N/A	N/A

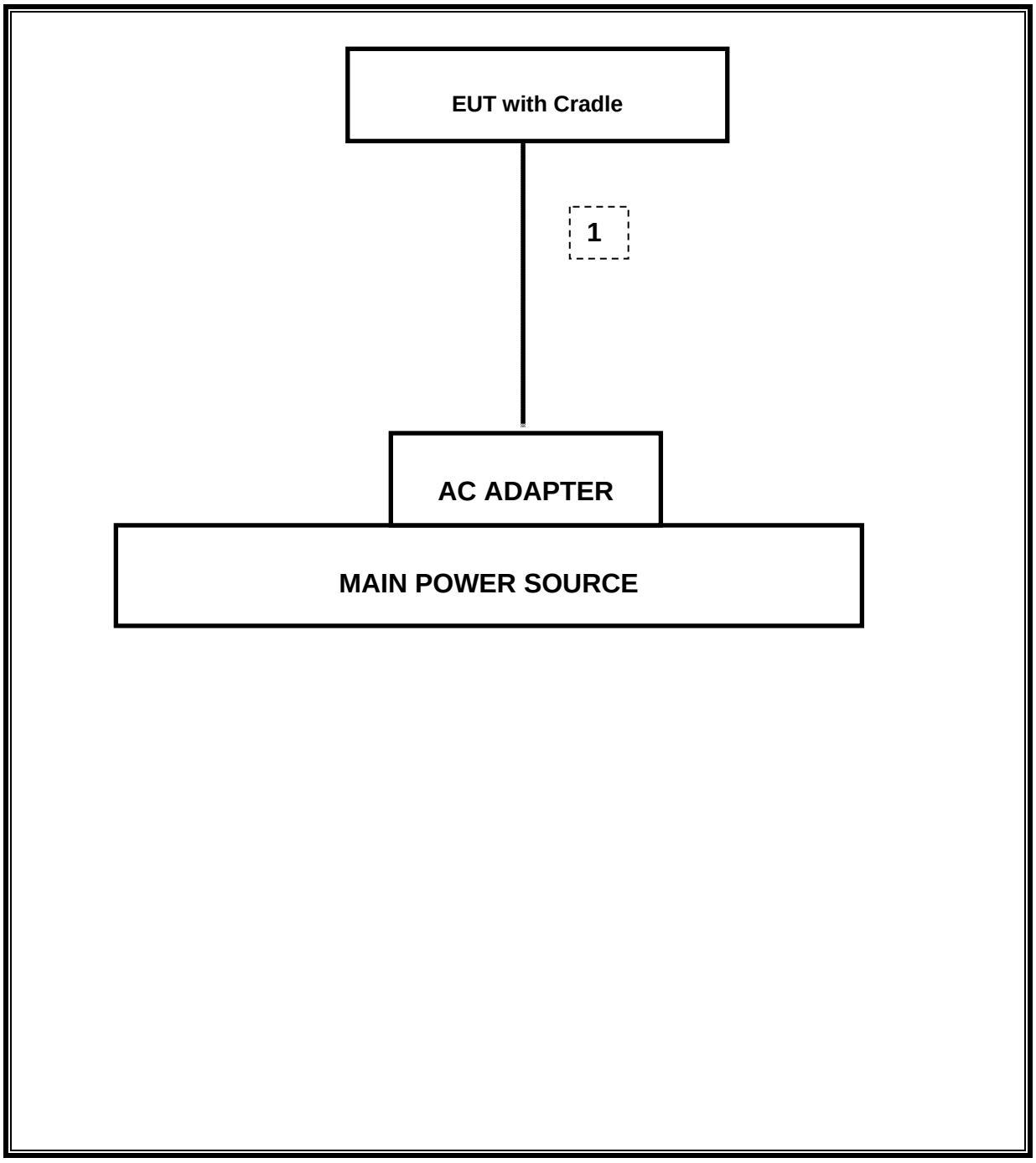
I/O CABLES

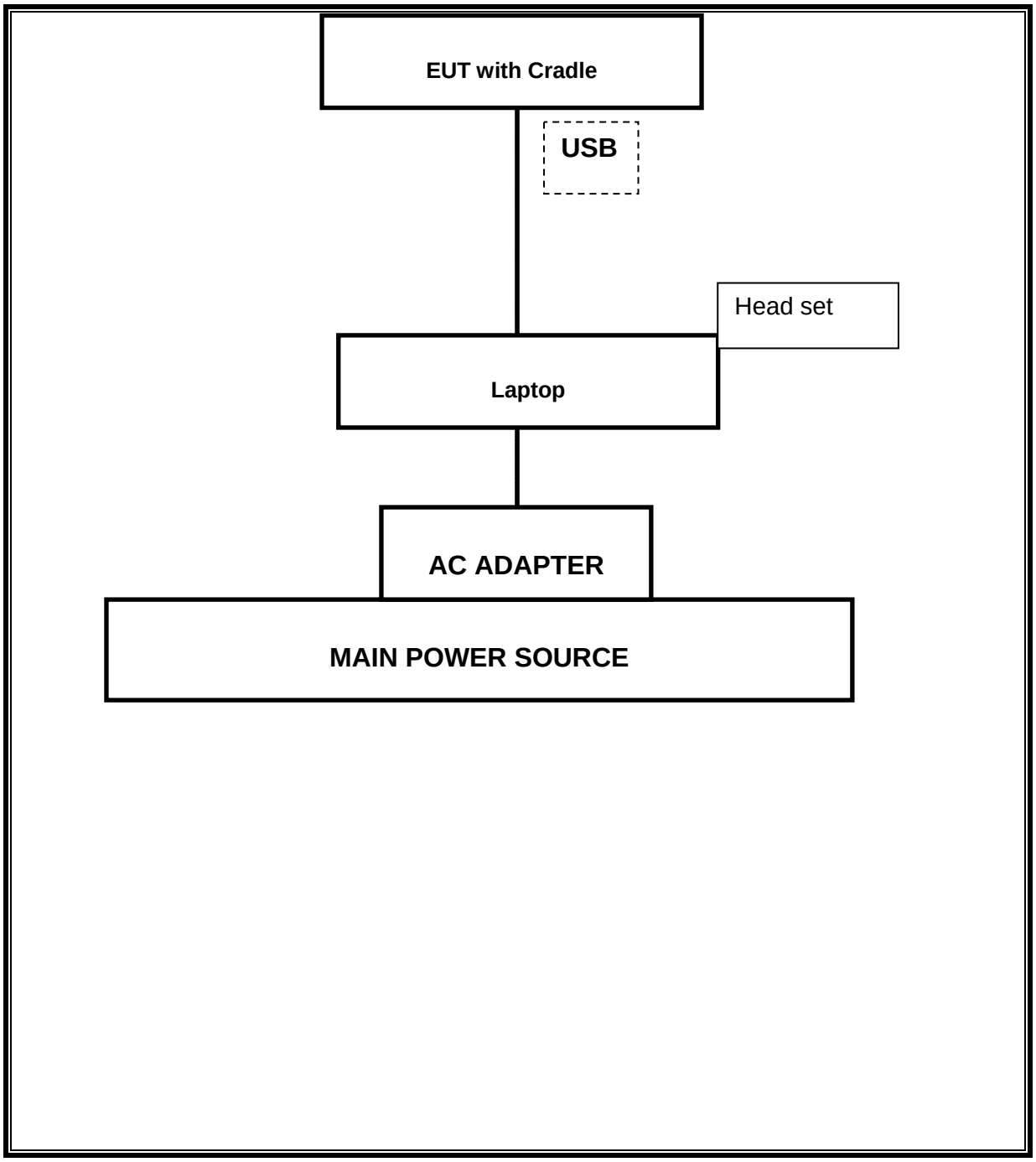
I/O CABLE LIST						
Cable No.	**Port**	**No. of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	USB(Charger)	1	mini USB	USB	1	
1	USB(Laptop)	1	mini USB	USB	1	

TEST SETUP

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

TEST SETUP DIAGRAM





5. 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**	**S/N**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	10/21/14
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	01/16/15
ESA-E Spectrum Analyzer, 9kHz-26.5 GHz	Agilent / HP	E4407B	C01098	03/26/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/12/15
OmniBER	HP	37717C	F00109	05/05/15
Spectrum Analyzer, 44 GHz	Agilent	N9030A	F00127	02/21/15
Antenna, Horn, 18 GHz	ETS	3117	F00131	02/19/15
EMI Test Receiver, 9 kHz-7GHz	R&S	ESCI 7	100935	08/21/14
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/15

6. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4

The highest clock frequency generated or used in the EUT is 26 MHz, therefore the frequency range was investigated from 30 MHz to 5000 MHz.

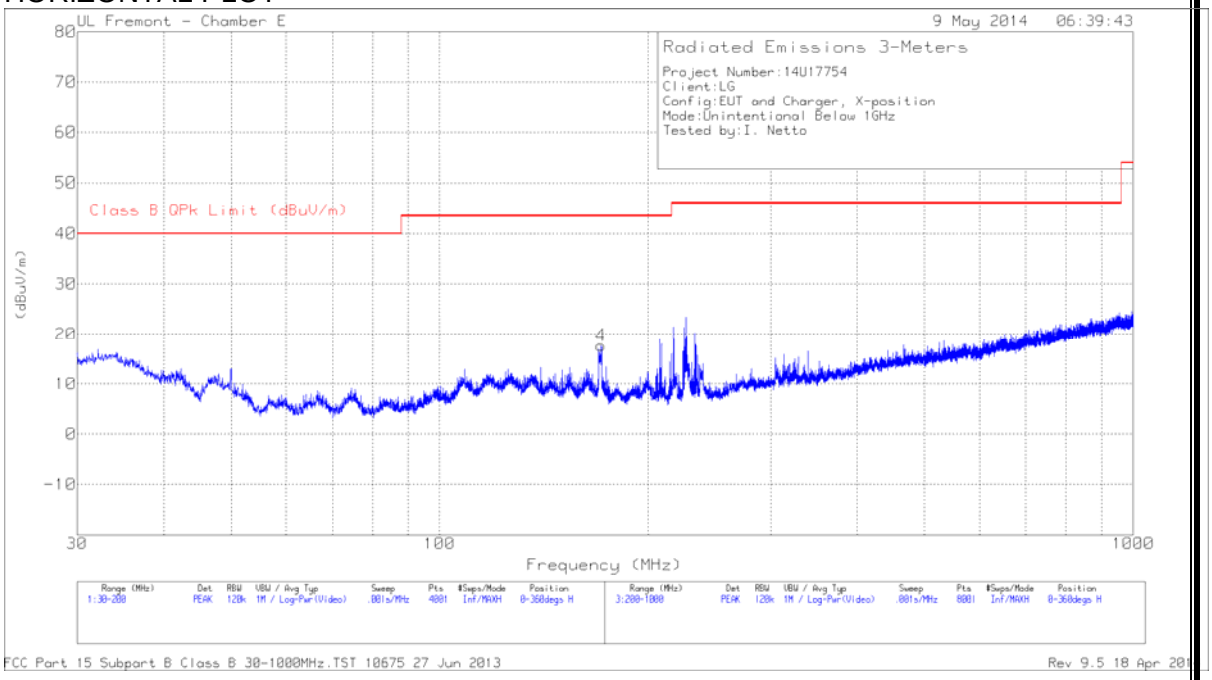
LIMIT

§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.	

EUT WITH Cradle CHARGER BELOW 1GHZ RESULTS

HORIZONTAL PLOT



VERTICAL PLOT

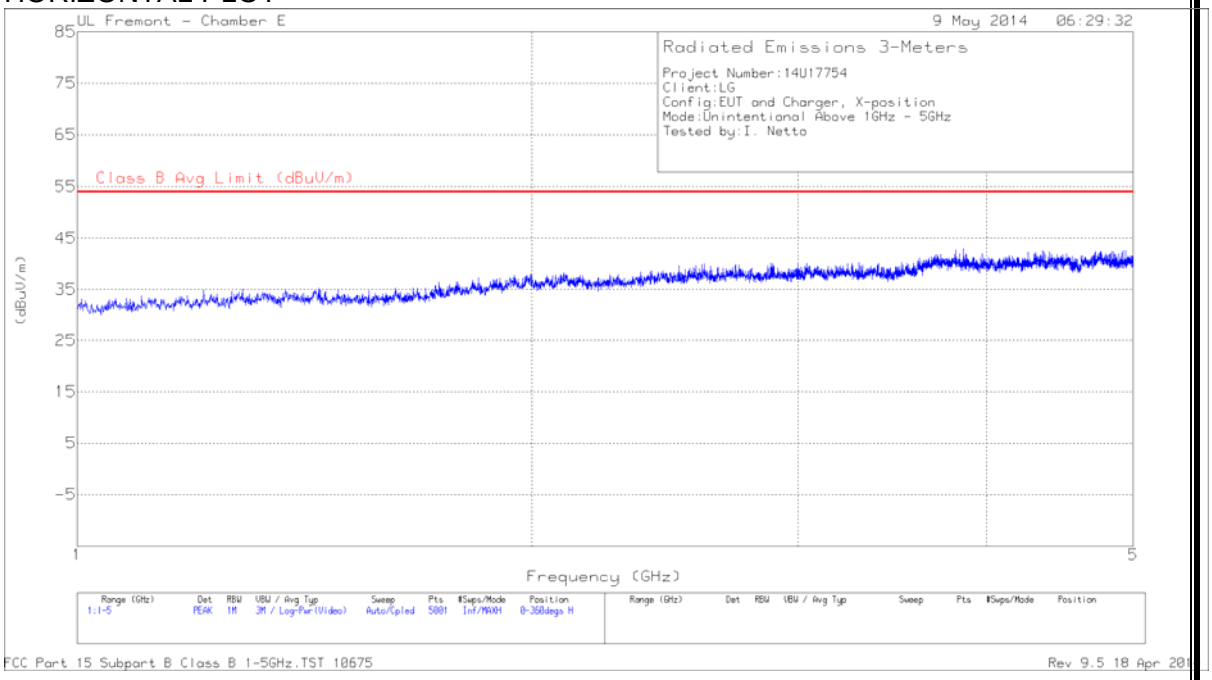
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Hybrid	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	37.1825	38.39	PK	16.2	-31.8	22.79	40	-17.21	0-360	100	V
2	43.345	43.12	PK	11.7	-31.8	23.02	40	-16.98	0-360	100	V
3	139.4375	43.9	PK	13.1	-31.1	25.9	43.52	-17.62	0-360	100	V
4	171.015	36.88	PK	11.7	-30.9	17.68	43.52	-25.84	0-360	100	H
5	232.3	49.13	PK	11.1	-30.6	29.63	46.02	-16.39	0-360	201	V
6	240.8	39.56	PK	11.6	-30.6	20.56	46.02	-25.46	0-360	201	V

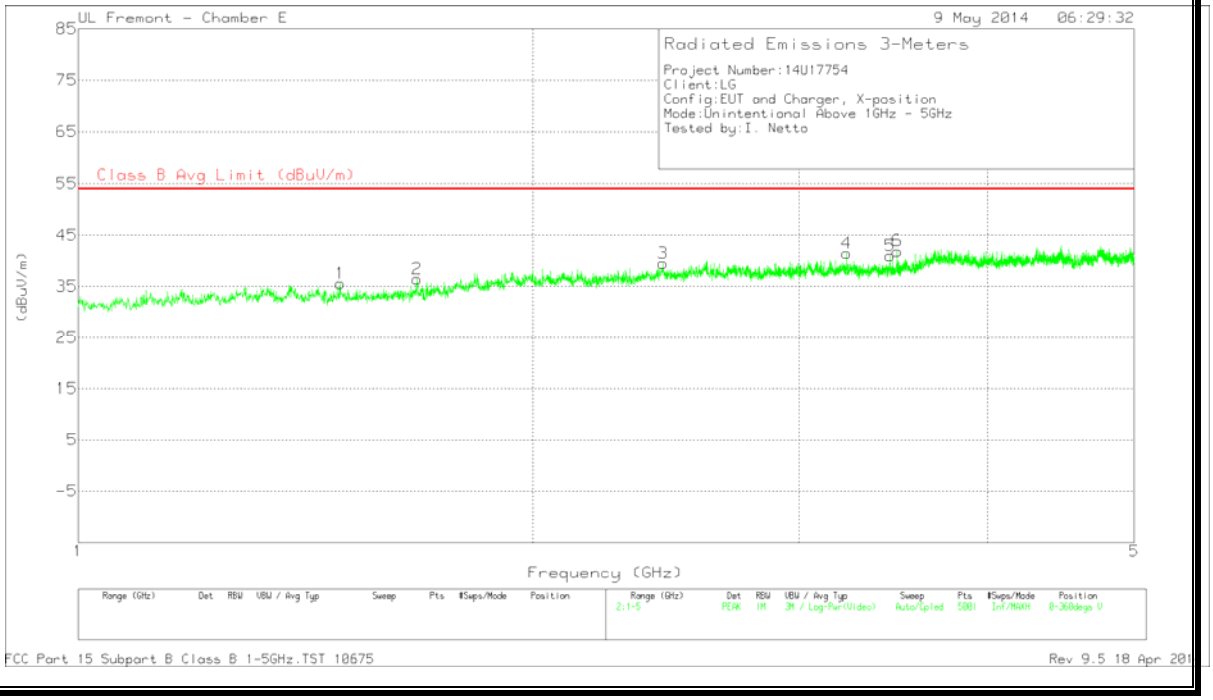
PK - Peak detector

EUT WITH Cradle CHARGER ABOVE 1GHZ RESULTS

HORIZONTAL PLOT



VERTICAL PLOT



DATA

Trace Markers

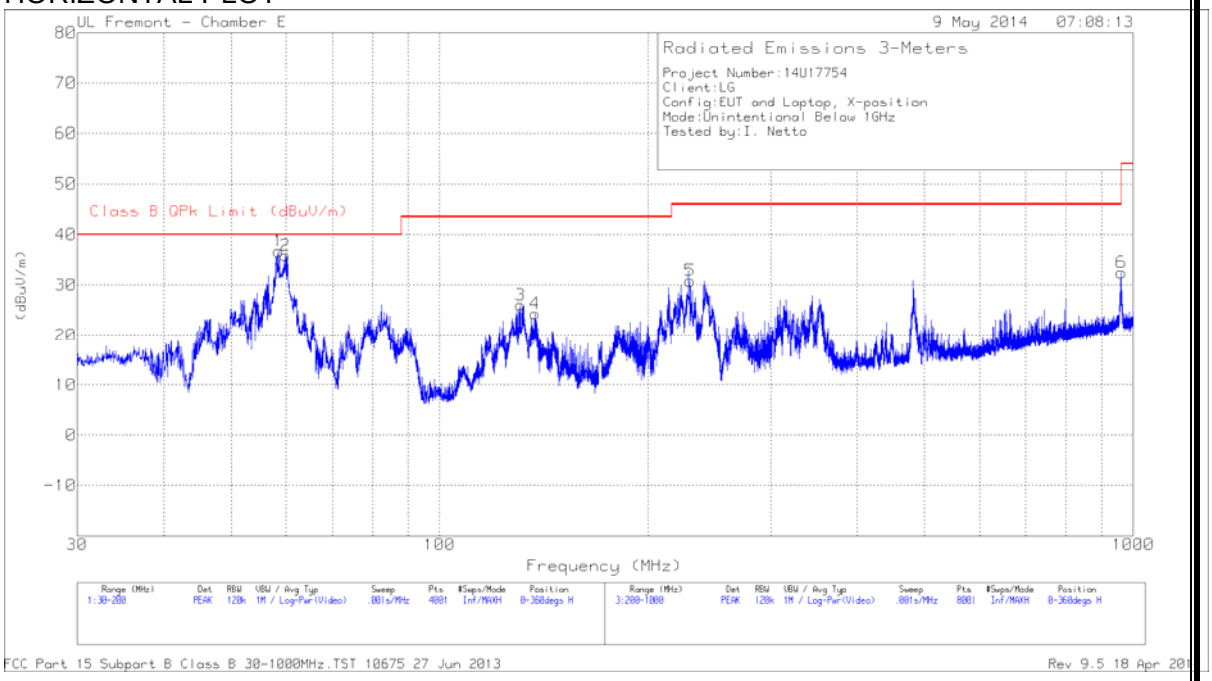
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR) Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.491	41.52	PK	28.4	-34.3	35.62	-	-	0-360	200	V
2	1.677	41.54	PK	29	-34.1	36.44	-	-	0-360	101	V
3	2.438	40.32	PK	32.2	-33	39.52	-	-	0-360	101	V
4	3.226	40.85	PK	32.8	-32.2	41.45	-	-	0-360	101	V
5	3.446	40.46	PK	32.7	-32.2	40.96	-	-	0-360	200	V
6	3.485	41.51	PK	32.9	-32.5	41.91	-	-	0-360	200	V

PK - Peak detector

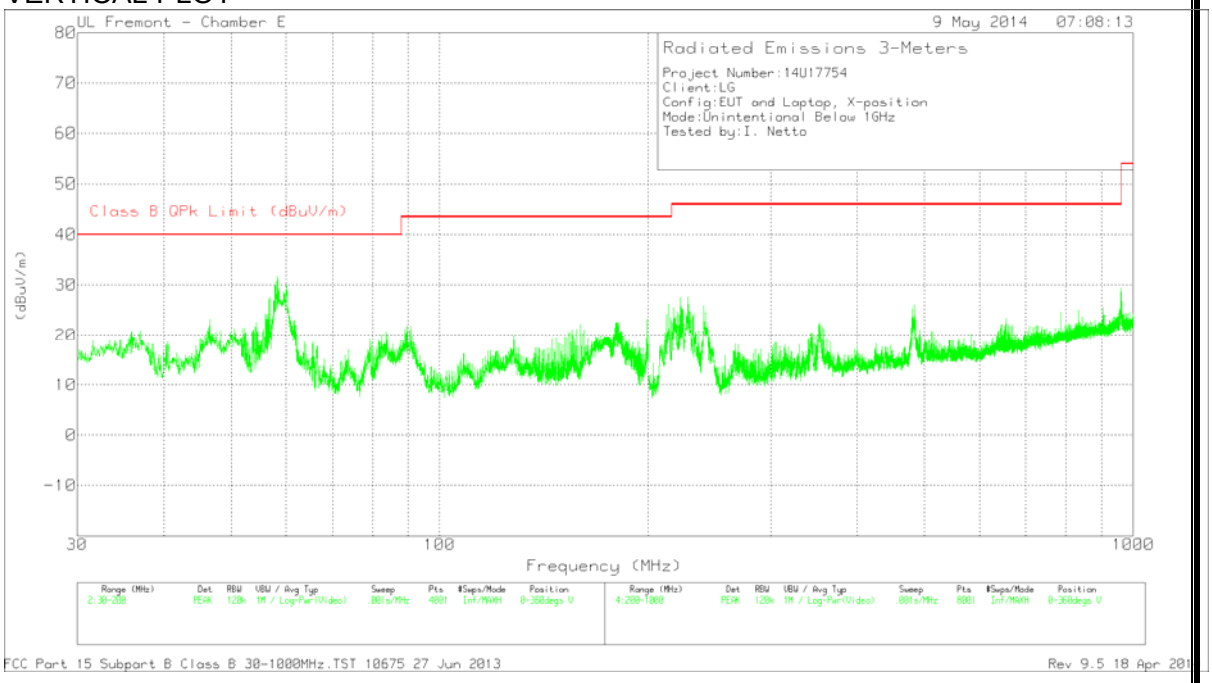
Note: additional above 1GHz testing performed to ensure the unit's performance purpose only.

EUT WITH LAPTOP BELOW 1GHZ RESULTS

HORIZONTAL PLOT



VERTICAL PLOT



DATA

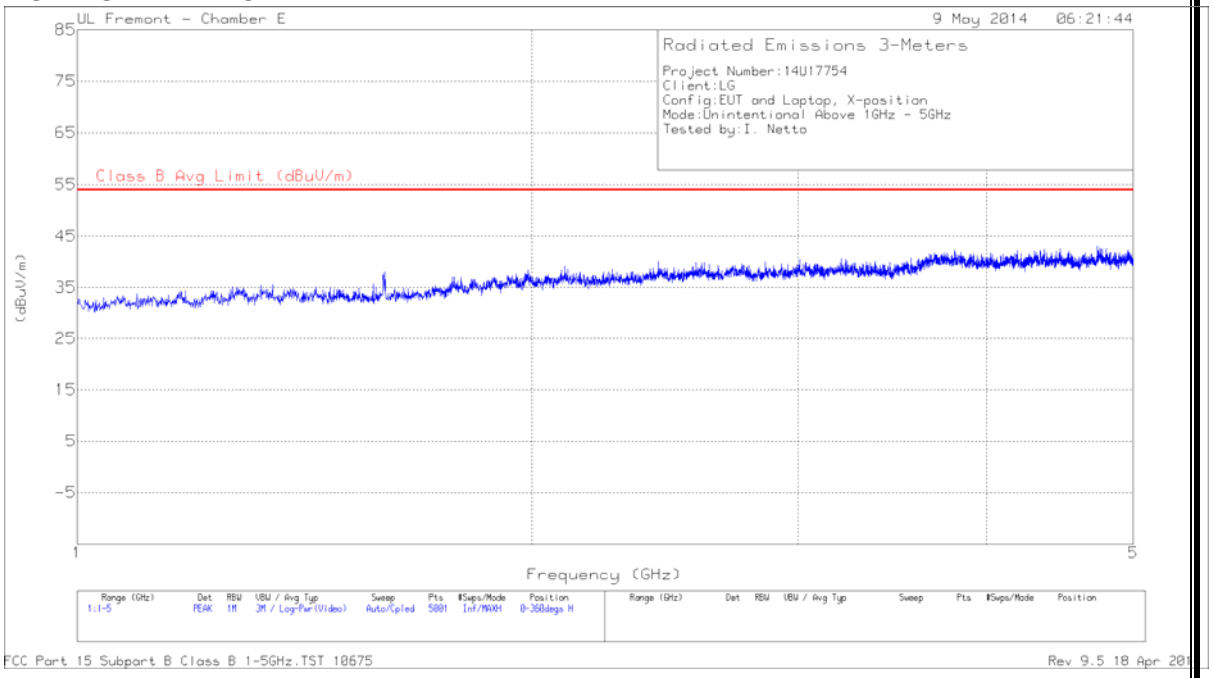
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Hybrid	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	58.5175	60.91	PK	7.4	-31.6	36.71	40	-3.29	0-360	400	H
2	59.92	59.96	PK	7.5	-31.6	35.86	40	-4.14	0-360	400	H
3	130.725	43.59	PK	13.6	-31.2	25.99	43.52	-17.53	0-360	200	H
4	137.1425	42.09	PK	13.3	-31.1	24.29	43.52	-19.23	0-360	200	H
5	229.6	50.43	PK	11	-30.6	30.83	46.02	-15.19	0-360	100	H
6	961.7	36.96	PK	23	-27.5	32.46	53.97	-21.51	0-360	200	H

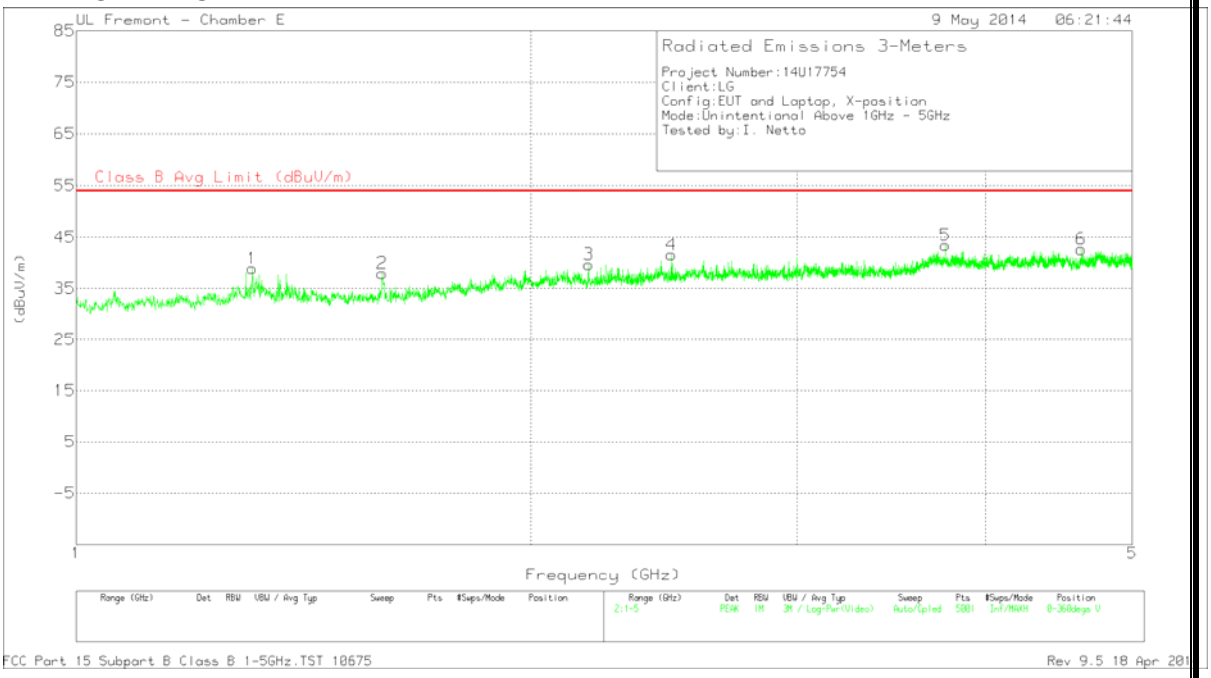
PK - Peak detector

EUT WITH LAPTOP ABOVE 1GHZ RESULTS

HORIZONTAL PLOT



VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR) Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.308	44.48	PK	29	-34.6	38.88	-	-	0-360	200	V
2	1.594	43.66	PK	28.4	-34.1	37.96	-	-	0-360	200	V
3	2.184	42.09	PK	31.3	-33.7	39.69	-	-	0-360	200	V
4	2.478	42.58	PK	32.3	-33.3	41.58	-	-	0-360	200	V
5	3.76	42.12	PK	33.4	-32.1	43.42	-	-	0-360	101	V
6	4.626	39.35	PK	34.1	-30.8	42.65	-	-	0-360	200	V

PK - Peak detector

Note: additional above 1GHz testing performed to ensure the unit's performance purpose only.