

## FCC 47 CFR PART 15 SUBPART C

# C2PC CERTIFICATION TEST REPORT FOR

CDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + NFC

MODEL NUMBER: LG-VS880, VS880, LGVS880

FCC ID: ZNFVS880

REPORT NUMBER: 14U17461-2 ISSUE DATE: June 13, 2014

Prepared for LG ELECTRONICS MOBILECOMM U.S.A., INC 1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NEW JERSEY, 07632, U.S.A.

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NVLAP LAB CODE 200065-0

## **Revision History**

Rev.	lssue Date	Revisions	Revised By
	6/13/14	Initial Issue	P. Kim

Page 2 of 47

## TABLE OF CONTENTS

1.	ATT	TESTATION OF TEST RESULTS
2.	TES	ST METHODOLOGY
3.	FAC	CILITIES AND ACCREDITATION
4.	CAI	LIBRATION AND UNCERTAINTY
4	4.1.	MEASURING INSTRUMENT CALIBRATION
4	1.2.	SAMPLE CALCULATION
4	1.3.	MEASUREMENT UNCERTAINTY
5.	EQ	UIPMENT UNDER TEST
Ę	5.1.	DESCRIPTION OF EUT
Ę	5.2.	MAXIMUM OUTPUT POWER
Ę	5.3.	DESCRIPTION OF AVAILABLE ANTENNAS
Ę	5.4.	WORST-CASE CONFIGURATION AND MODE
Ę	5.5.	DESCRIPTION OF TEST SETUP 8
6.	TES	ST AND MEASUREMENT EQUIPMENT10
7.	SUI	MMARY TABLE11
8.	RAI	DIATED TEST RESULTS12
٤	3.1.	LIMITS AND PROCEDURE
٤	3 <i>.2.</i> 8.2. 8.2.	
٤	3.3.	WORST-CASE BELOW 1 GHz41
9.	SEI	<b>FUP PHOTOS</b>

Page 3 of 47

## **1. ATTESTATION OF TEST RESULTS**

COMPANY NAME:	LG ELECTRONICS MOBIL	ECOMM U.S.A., INC
EUT DESCRIPTION:	CDMA/LTE Phone + Blueto	ooth & DTS/UNII a/b/g/n + NFC
MODEL:	LG-VS880, VS880, LGVS88	0
SERIAL NUMBER:	1879444	
DATE TESTED:	MAY 20 - JUNE 13, 2014	
	APPLICABLE STANDARI	JS
	STANDARD	TEST RESULTS

CFR 47 Part 15 Subpart C

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 & Released For UL Verification Services Inc. By:

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Page 4 of 47

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15

## 3. FACILITIES AND ACCREDITATION

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

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <u>http://www.ccsemc.com</u>.

## 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:

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

## 4.3. 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 18000 MHz	4.94 dB

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

Page 5 of 47

## 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

The EUT is a CDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + NFC.

## 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range	Mode	Output Power	Output Power
(MHz)		(dBm)	(mW)
2402 - 2480	Basic GFSK	11.30	13.49
2402 - 2480	Enhanced 8PSK	8.40	6.92

Note: GFSK, Pi/4-DQPSK, 8PSK average Power are all investigated, The GFSK & 8PSK Power are the worst case. Testing is based on this mode to showing compliance. For average power data please refer to section 8.6.

## 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -6.9dBi

Page 6 of 47

## 5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

Page 7 of 47

## 5.5. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

Support Equipment List									
Description	Manufacturer	Model	Serial Number	FCC ID					
AC Adapter	LG Electronics	MCS-01WD	DB3Y0094683	N/A					
Earphone	LG Electronics	N/A	N/A	N/A					

### I/O CABLES

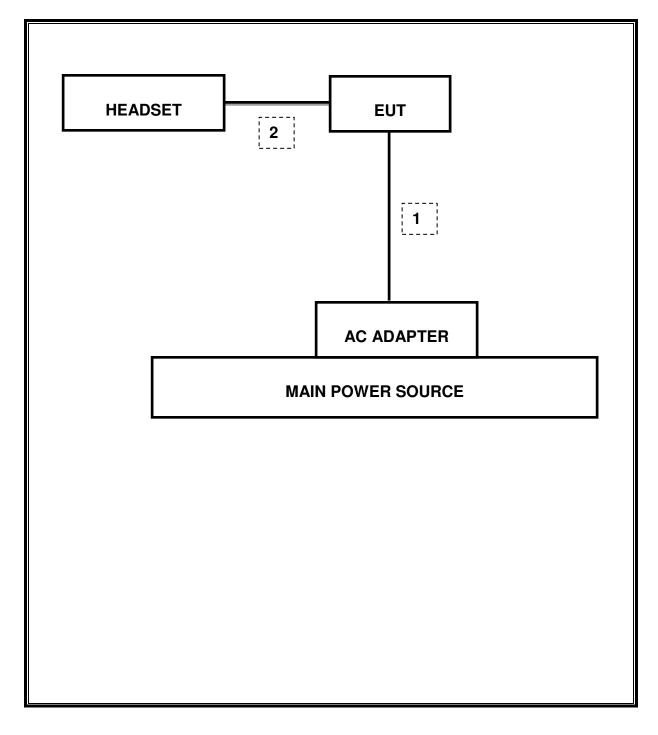
	I/O Cable List										
Cable	Port	# of identical	Connector	Cable Type	<b>Cable Length</b>	Remarks					
No		ports	Туре		(m)						
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A					
2	Audio	1	Mini-Jack	Unshielded	1m	N/A					

### TEST SETUP

The EUT is continuously communicating to the Bluetooth tester during the tests. EUT was set in the Hidden menu mode to enable BT communications.

Page 8 of 47

### SETUP DIAGRAM FOR TESTS



Page 9 of 47

## 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	Asset	Cal Due							
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/13/15							
Antenna, Horn, 18GHz	EMCO	3115	C00783	10/25/14							
Antenna, Horn, 25.5 GHz	ARA	MWH-1826/B	C00980	11/14/14							
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/28/15							
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/14							
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/14							
CBT Bluetooth Tester	R & S	CBT	None	07/12/14							
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14							
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14							
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/15							
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	N02684	CNR							

Page 10 of 47

## 7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1049	RSS-GEN 4.6	Occupied Band width (99%)	N/A	_	Pass	see original
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	see original
15.247 (b)(1)	RSS-210 A8.4	TX conducted output power	<21dBm		Pass	see original
15.247 (a)(1)	RSS-210 A8.1(b)	Hopping frequency separation	> 25KHz	25KHz Conducted		see original
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Number of Hopping channels	More than 15 non- overlapping channels		Pass	see original
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Avg Time of Occupancy	< 0.4sec		Pass	see original
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10		Pass	see original
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass	38.15dBuV/m

Page 11 of 47

## 8. RADIATED TEST RESULTS

## 8.1. LIMITS AND PROCEDURE

### LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
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. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 1/T (on time) for average measurement. GFSK = 1/T = 1 / 0.0038S = 260Hz.

The spectrum from 1GHzHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

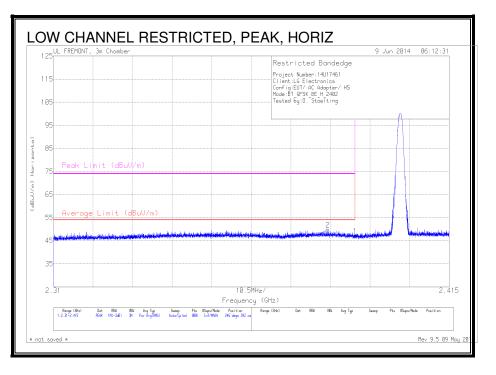
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

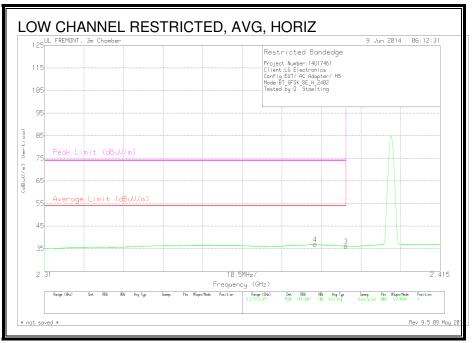
Page 12 of 47

## 8.2. TRANSMITTER ABOVE 1 GHz

## 8.2.1. BASIC DATA RATE GFSK MODULATION

### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)





Page 13 of 47

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.383	41.25	PK	32.2	-23.7	49.75	-	-	74	-24.25	246	392	Н
1	2.39	39.41	PK	32.2	-24.4	47.21	-	-	74	-26.79	246	392	Н

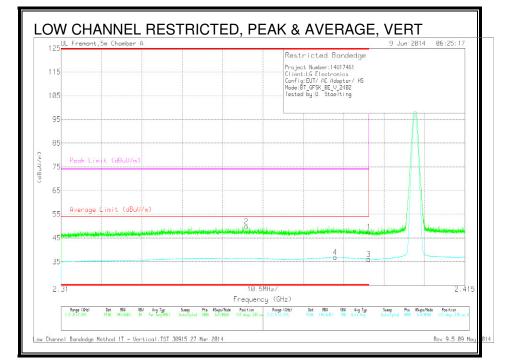
PK - Peak detector

Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Correcte d Reading (dBuV/m )	Average Limit (dBuV/m )	Margin (dB)	Peak Limit (dBuV/m )	PK Margin (dB)
4	2.382	28.28	VB1T	32.2	-23.6	36.88	54	-17.12	-	-
3	2.39	28.2	VB1T	32.2	-24.4	36	54	-18	-	-

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 14 of 47

#### RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.358	41.69	PK	32	-23.8	49.89	-	-	74	-24.11	112	338	V
4	* 2.381	28.24	VB1T	32.2	-23.5	36.94	54	-17.06	-	-	112	338	V
1	* 2.39	39.88	PK	32.2	-24.4	47.68	-	-	74	-26.32	112	338	V
3	* 2.39	28.25	VB1T	32.2	-24.4	36.05	54	-17.95	-	-	112	338	V

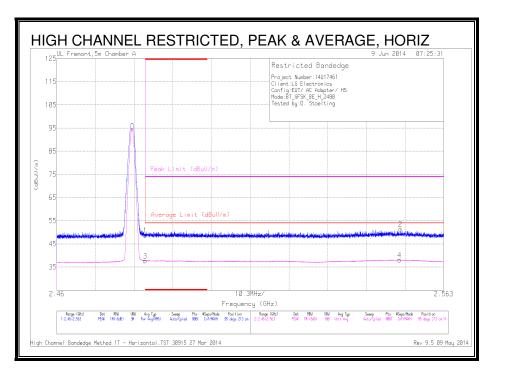
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 15 of 47

#### RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.59	PK	32.7	-23.5	48.79	-	-	74	-25.21	95	213	Н
3	* 2.484	28.56	VB1T	32.7	-23.5	37.76	54	-16.24	-	-	95	213	Н
2	2.551	41.64	PK	32.9	-23.1	51.44	-	-	74	-22.56	95	213	Н
4	2.551	28.35	VB1T	32.9	-23.1	38.15	54	-15.85	-	-	95	213	Н

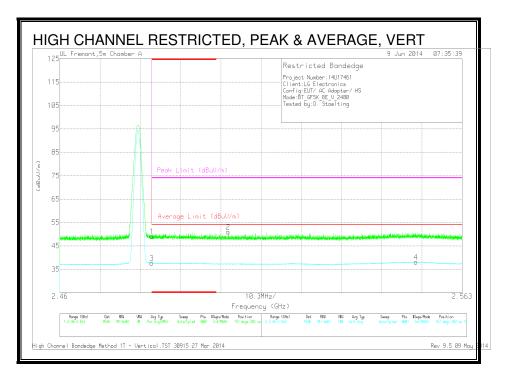
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 16 of 47

#### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.91	PK	32.7	-23.5	49.11	-	-	74	-24.89	157	202	V
3	* 2.484	28.48	VB1T	32.7	-23.5	37.68	54	-16.32	-	-	157	202	V
2	2.503	41.94	PK	32.8	-23.7	51.04	-	-	74	-22.96	157	202	V
4	2.551	28.29	VB1T	32.9	-23.1	38.09	54	-15.91	-	-	157	202	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

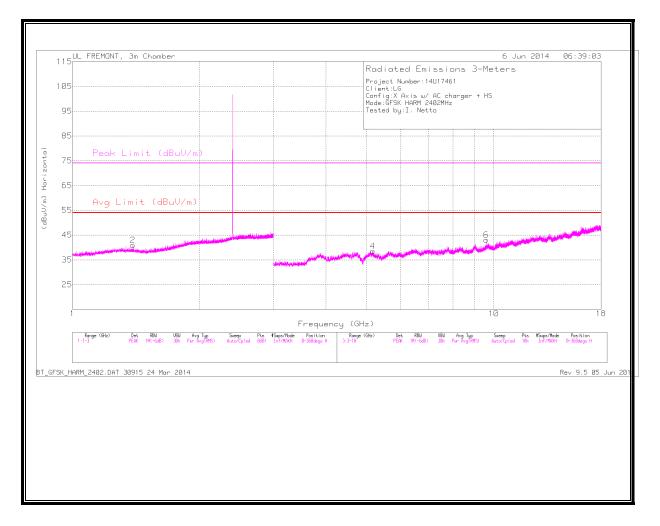
PK - Peak detector

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 17 of 47

#### HARMONICS AND SPURIOUS EMISSIONS

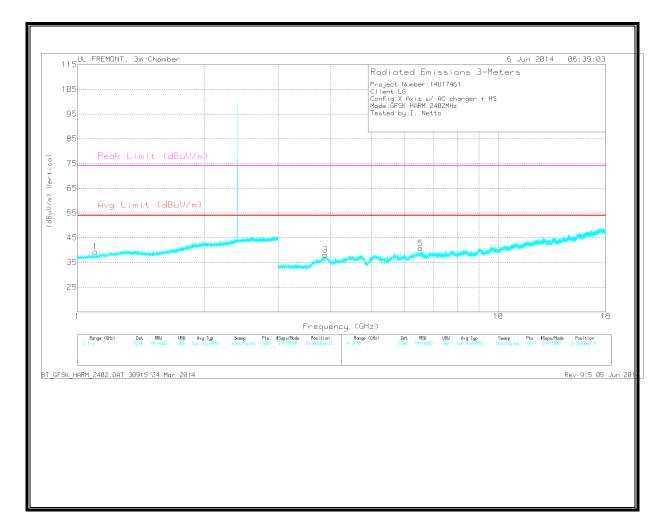
### LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 18 of 47

### VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 19 of 47

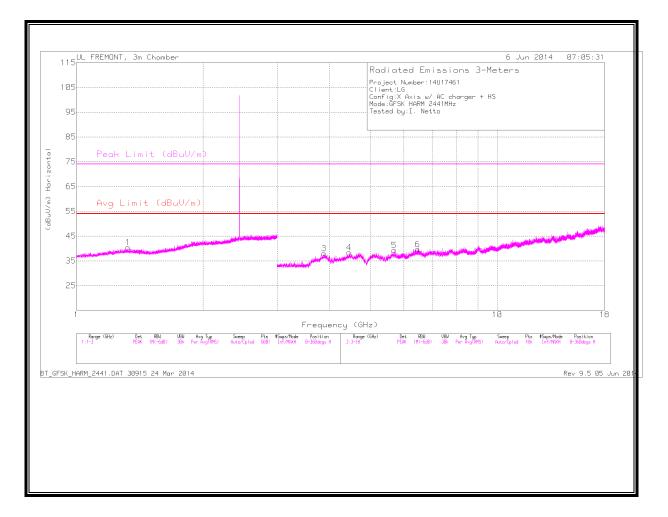
### LOW CHANNEL DATA

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.392	43.23	PK3	28.5	-24.3	47.43	-	-	74	-26.57	1	101	Н
* 1.102	43.87	PK3	27.4	-24.7	46.57	-	-	74	-27.43	1	101	V
* 3.88	42.13	PK3	33.8	-30.2	45.73	-	-	74	-28.27	1	202	V
5.169	41.88	PK3	34.3	-30.2	45.98	-	-	-	-	1	202	Н
6.534	39.01	PK3	35.7	-27.7	47.01	-	-	-	-	1	101	V
9.608	36.5	PK3	36.8	-24.1	49.2	-	-	-	-	1	202	Н

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK3 - FHSS Method: Maximum Peak

Page 20 of 47

#### MID CHANNEL HORIZONTAL

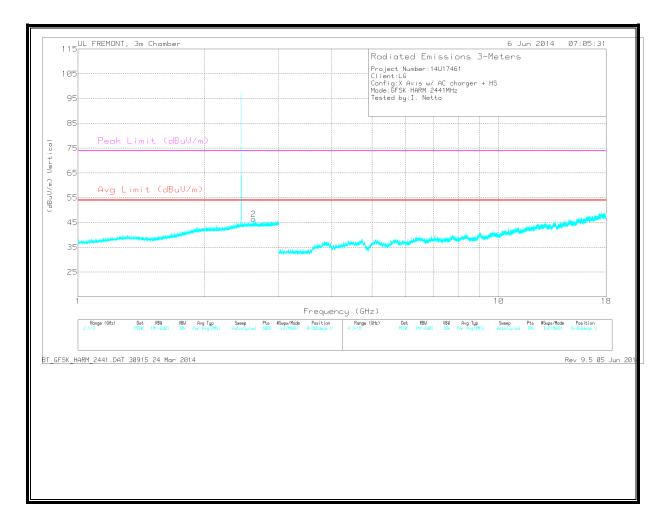


Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 21 of 47

#### REPORT NO: 14U17461-2 FCC ID: ZNFVS880

### VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 22 of 47

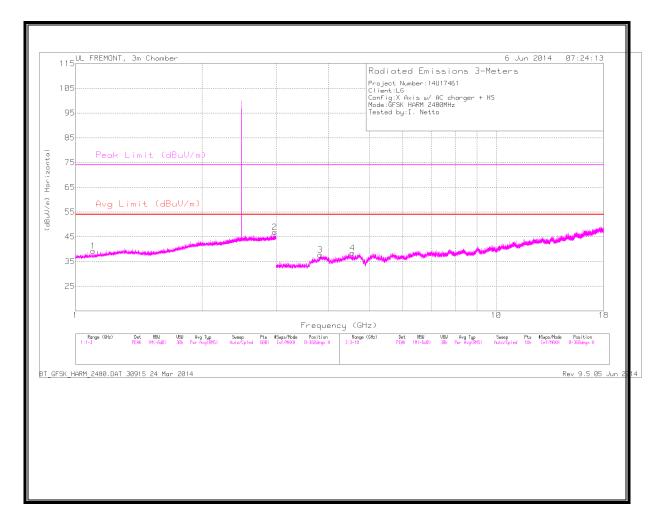
#### MID CHANNEL DATA

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.327	43.88	PK3	28.8	-24.5	48.18	-	-	74	-25.82	1	100	Н
* 3.876	42.09	PK3	33.8	-30.3	45.59	-	-	74	-28.41	1	102	Н
2.615	42.7	PK3	32.4	-22.6	52.5	-	-	-	-	1	202	V
4.446	40.74	PK3	33.9	-29.3	45.34	-	-	-	-	1	102	Н
5.692	40.74	PK3	34.5	-29.1	46.14	-	-	-	-	1	102	Н
6.473	39.68	PK3	35.6	-28.7	46.58	-	-	-	-	1	202	Н

 $^{\star}$  - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK3  $\,$  - FHSS Method: Maximum Peak

Page 23 of 47

### HIGH CHANNEL HORIZONTAL

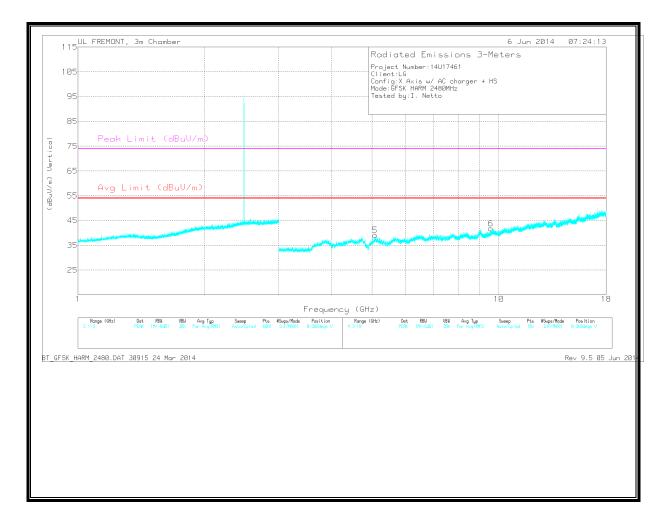


Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 24 of 47

#### REPORT NO: 14U17461-2 FCC ID: ZNFVS880

### VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 25 of 47

#### REPORT NO: 14U17461-2 FCC ID: ZNFVS880

### HIGH CHANNEL DATA

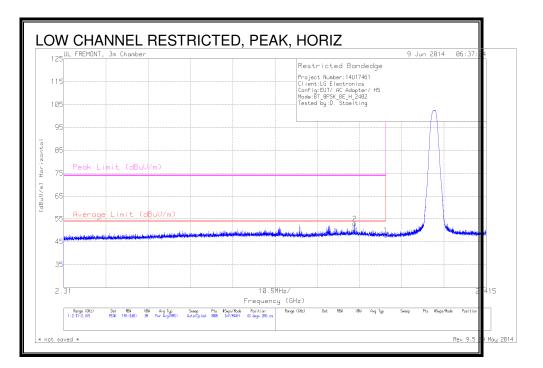
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.101	44.36	PK3	27.4	-24.7	47.06	-	-	74	-26.94	1	100	Н
* 3.813	42.04	PK3	33.7	-30.7	45.04	-	-	74	-28.96	1	203	Н
* 4.555	40.89	PK3	34.1	-30.4	44.59	-	-	74	-29.41	1	102	Н
* 5.089	40.07	PK3	34.2	-28.5	45.77	-	-	74	-28.23	1	102	V
2.975	42.83	PK3	32.8	-22.3	53.33	-	-	-	-	1	203	Н
9.573	35.79	PK3	36.7	-24.2	48.29	-	-	-	-	1	102	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK3 - FHSS Method: Maximum Peak

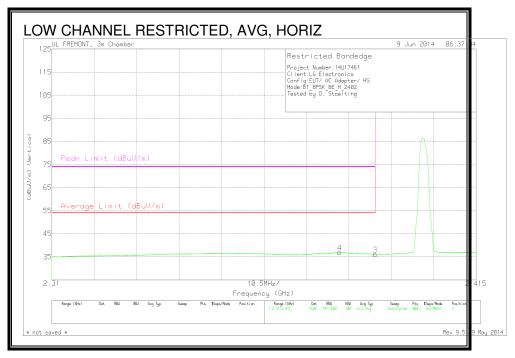
Page 26 of 47

## 8.2.2. ENHANCED DATA RATE 8PSK MODULATION

### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



Page 27 of 47



Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.382	44.47	PK	32.2	-23.6	53.07	-	-	74	-20.93	43	286	Н
1	2.39	40.24	PK	32.2	-24.4	48.04	-	-	74	-25.96	43	286	Н

PK - Peak detector

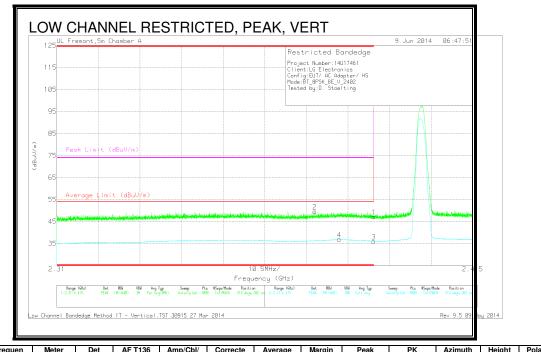
Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Correcte d Reading (dBuV/m )	Average Limit (dBuV/m )	Margin (dB)	Peak Limit (dBuV/m )	PK Margin (dB)
4	2.381	28.19	VB1T	32.2	-23.5	36.89	54	-17.11	-	-
3	2.39	28.2	VB1T	32.2	-24.4	36	54	-18	-	-

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Page 28 of 47

### RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



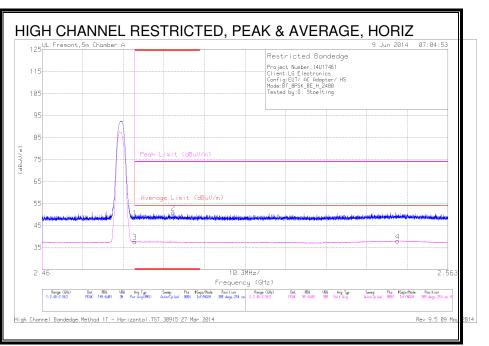
Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.375	41.49	PK	32.1	-24	49.59	-	-	74	-24.41	212	382	V
4	* 2.381	28.21	VB1T	32.2	-23.5	36.91	54	-17.09	-	-	212	382	V
1	* 2.39	39.39	PK	32.2	-24.4	47.19	-	-	74	-26.81	212	382	V
3	* 2.39	28.24	VB1T	32.2	-24.4	36.04	54	-17.96	-	-	212	382	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK - Peak detector

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 29 of 47

#### RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



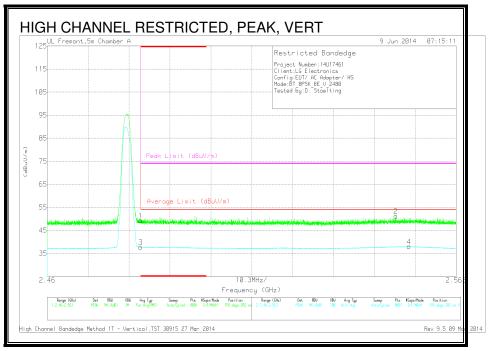
Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.44	PK	32.7	-23.5	48.64	-	-	74	-25.36	309	254	Н
3	* 2.484	28.39	VB1T	32.7	-23.5	37.59	54	-16.41	-	-	309	254	Н
2	* 2.493	41.64	PK	32.8	-23.5	50.94	-	-	74	-23.06	309	254	Н
4	2.55	28.22	VB1T	32.9	-23.1	38.02	54	-15.98	-	-	309	254	Н

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK - Peak detector

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 30 of 47

### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.11	PK	32.7	-23.5	49.31	-	-	74	-24.69	158	202	V
3	* 2.484	28.61	VB1T	32.7	-23.5	37.81	54	-16.19	-	-	158	202	V
2	2.548	41.53	PK	32.9	-23.2	51.23	-	-	74	-22.77	158	202	V
4	2.551	28.25	VB1T	32.9	-23.1	38.05	54	-15.95	-	-	158	202	V

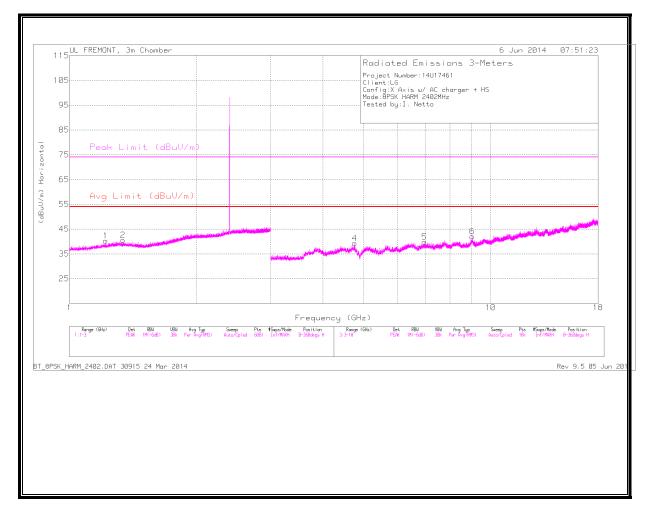
PK - Peak detector

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

Page 31 of 47

#### HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL

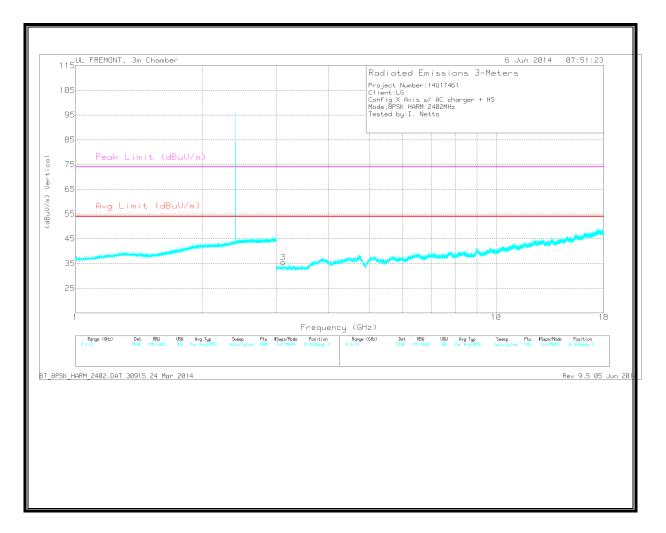


Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 32 of 47

#### REPORT NO: 14U17461-2 FCC ID: ZNFVS880

### VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 33 of 47

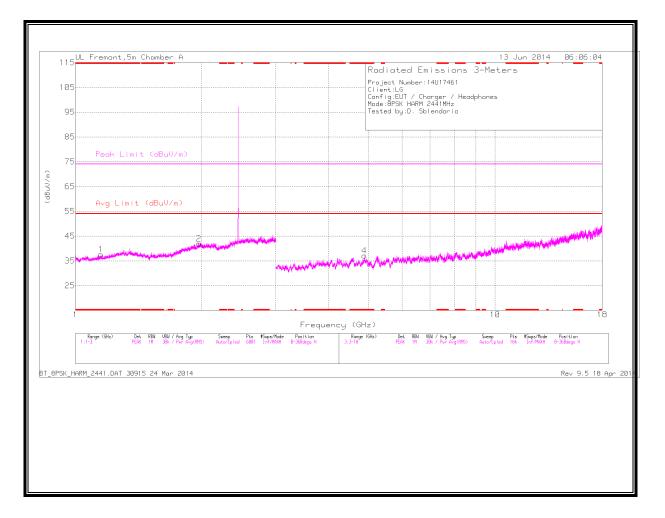
### LOW CHANNEL DATA

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.221	43.4	PK3	28.3	-24.6	47.1	-	-	74	-26.9	1	201	Н
* 1.339	43.56	PK3	28.7	-24.5	47.76	-	-	74	-26.24	1	201	Н
* 1.341	43.44	PK3	28.7	-24.4	47.74	-	-	74	-26.26	1	201	Н
* 4.753	40.89	PK3	34.2	-29.3	45.79	-	-	74	-28.21	1	102	Н
* 9.042	36.24	PK3	36.2	-23.5	48.94	-	-	74	-25.06	1	101	Н
3.115	41.3	PK3	32.9	-31.5	42.7	-	-	-	-	1	202	V
6.963	39.64	PK3	35.6	-28.3	46.94	-	-	-	-	1	202	Н

 $^{\star}$  - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK3  $\,$  - FHSS Method: Maximum Peak

Page 34 of 47

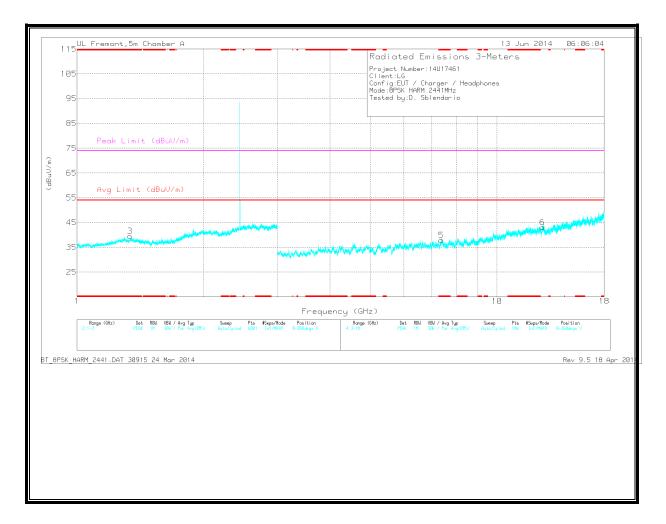
#### MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 35 of 47

### VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 36 of 47

#### MID CHANNEL DATA

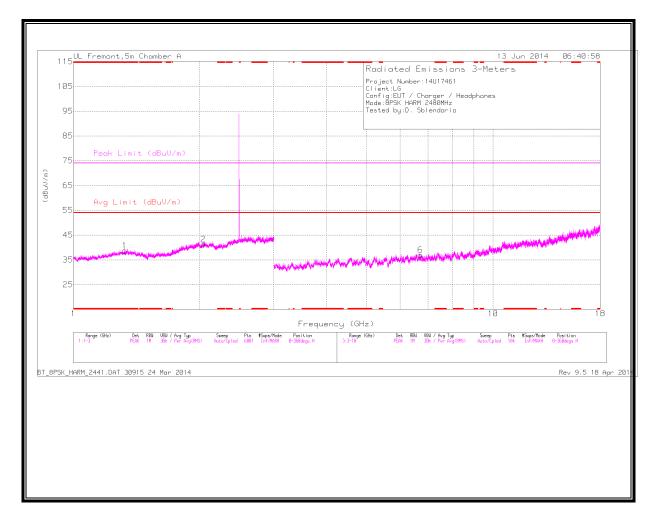
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.151	44.51	PK3	28.8	-27.3	46.01	-	-	74	-27.99	1	100	Н
* 1.15	31.22	VB1T	28.8	-27.2	32.82	54	-21.18	-	-	1	100	Н

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK3 - FHSS Method: Maximum Peak

Page 37 of 47

### HIGH CHANNEL HORIZONTAL

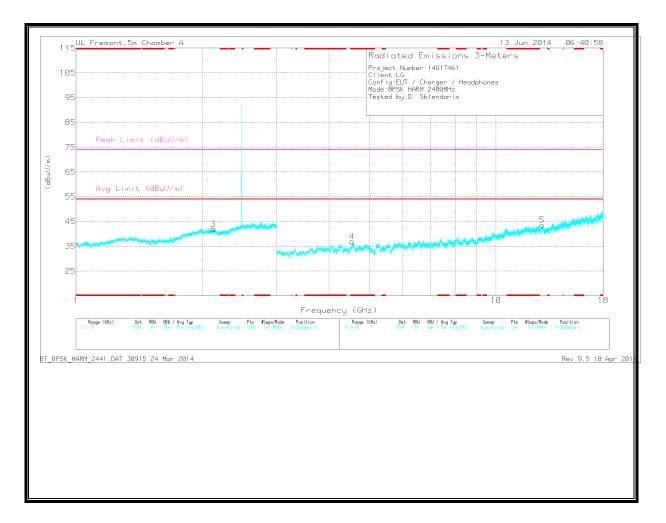


Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 38 of 47

#### REPORT NO: 14U17461-2 FCC ID: ZNFVS880

### VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Page 39 of 47

### **HIGH CHANNEL DATA**

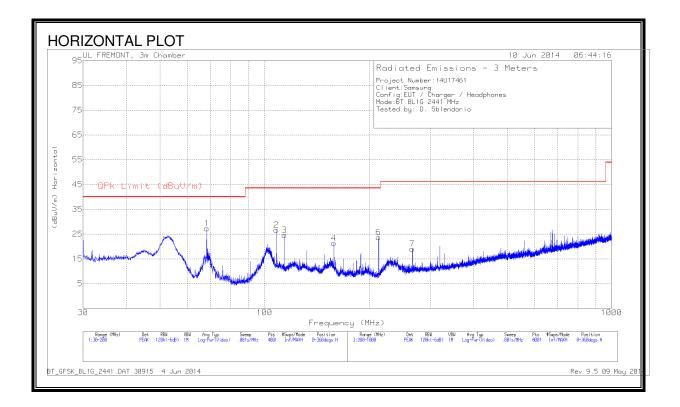
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.346	43.83	PK3	30	-26.4	47.43	-	-	74	-26.57	359	100	Н
* 1.302	30.41	VB1T	30.2	-26.7	33.91	54	-20.09	-	-	359	100	Н

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band PK3 - FHSS Method: Maximum Peak

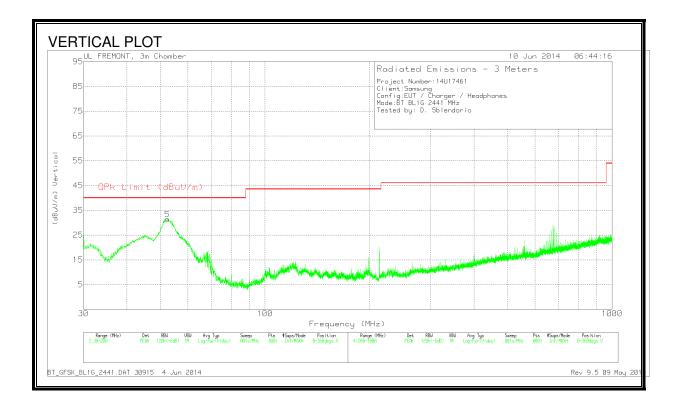
Page 40 of 47

## 8.3. WORST-CASE BELOW 1 GHz

### GFSK SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



Page 41 of 47



Page 42 of 47

#### REPORT NO: 14U17461-2 FCC ID: ZNFVS880

Marker	Frequenc y (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Correcte d Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	52.355	54.67	PK	7.4	-30.7	31.37	40	-8.63	0-360	101	V
1	68.165	49.93	PK	8.2	-30.9	27.23	40	-12.77	0-360	200	Н
2	108.2425	44.47	PK	12.3	-30.2	26.57	43.52	-16.95	0-360	300	Н
3	114.2775	41.56	PK	13.3	-30.3	24.56	43.52	-18.96	0-360	100	Н
4	158.5625	38.99	PK	12.3	-30	21.29	43.52	-22.23	0-360	100	Н
6	213.3	42.91	PK	10.6	-29.8	23.71	43.52	-19.81	0-360	101	Н
7	266.6	35.55	PK	12.9	-29.5	18.95	46.02	-27.07	0-360	101	Н

PK - Peak detector

Page 43 of 47