



FCC 47 CFR PART 15 SUBPART C

**CERTIFICATION TEST REPORT
FOR**

GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n and NFC

MODEL NUMBER: LG-D725, D725, LGD725

FCC ID: ZNFD725

REPORT NUMBER: 14U17493-2

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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. <i>MEASURING INSTRUMENT CALIBRATION</i>	<i>6</i>
4.2. <i>SAMPLE CALCULATION</i>	<i>6</i>
4.3. <i>MEASUREMENT UNCERTAINTY.....</i>	<i>6</i>
5. EQUIPMENT UNDER TEST	7
5.1. <i>DESCRIPTION OF EUT</i>	<i>7</i>
5.2. <i>MAXIMUM OUTPUT POWER.....</i>	<i>7</i>
5.3. <i>DESCRIPTION OF AVAILABLE ANTENNAS</i>	<i>7</i>
5.4. <i>WORST-CASE CONFIGURATION AND MODE.....</i>	<i>8</i>
5.5. <i>DESCRIPTION OF TEST SETUP.....</i>	<i>9</i>
6. TEST AND MEASUREMENT EQUIPMENT	11
7. SUMMARY TABLE	12
8. ANTENNA PORT TEST RESULTS	13
8.1. <i>20 dB AND 99% BANDWIDTH</i>	<i>13</i>
8.1.1. <i>BASIC DATA RATE GFSK MODULATION</i>	<i>13</i>
8.1.1. <i>ENHANCED DATA RATE 8PSK MODULATION</i>	<i>13</i>
8.2. <i>HOPPING FREQUENCY SEPARATION</i>	<i>22</i>
8.3. <i>NUMBER OF HOPPING CHANNELS.....</i>	<i>24</i>
8.4. <i>AVERAGE TIME OF OCCUPANCY.....</i>	<i>27</i>
8.5. <i>OUTPUT POWER.....</i>	<i>31</i>
8.5.1. <i>BASIC DATA RATE GFSK MODULATION</i>	<i>31</i>
8.5.2. <i>ENHANCED DATA RATE 8PSK MODULATION</i>	<i>31</i>
8.6. <i>AVERAGE POWER.....</i>	<i>36</i>
8.6.1. <i>BASIC DATA RATE GFSK MODULATION</i>	<i>36</i>
8.6.2. <i>ENHANCED DATA RATE 8PSK MODULATION</i>	<i>36</i>
8.7. <i>CONDUCTED SPURIOUS EMISSIONS.....</i>	<i>37</i>
8.7.1. <i>BASIC DATA RATE GFSK MODULATION</i>	<i>38</i>
8.7.1. <i>ENHANCED DATA RATE 8PSK MODULATION</i>	<i>42</i>
9. RADIATED TEST RESULTS.....	46
9.1. <i>LIMITS AND PROCEDURE.....</i>	<i>46</i>
9.2. <i>TRANSMITTER ABOVE 1 GHz.....</i>	<i>47</i>
9.2.1. <i>BASIC DATA RATE GFSK MODULATION</i>	<i>47</i>

9.2.2.	ENHANCED DATA RATE 8PSK MODULATION	60
9.3.	WORST-CASE BELOW 1 GHz.....	73
10.	AC POWER LINE CONDUCTED EMISSIONS	76
11.	SETUP PHOTOS	80

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n and NFC
MODEL: LG-D725, D725, LGD725
SERIAL NUMBER: 403KPVH000431 (Radiated) & 403KPXV000426 (Conducted)
DATE TESTED: APRIL 2 – 25, 2014

APPLICABLE STANDARDS	
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.

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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 <http://www.ccsemc.com>.

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, 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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n and NFC

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	Basic GFSK	12.32	17.06
2402 - 2480	Enhanced 8PSK	12.25	16.79

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 a PIF antenna, with a maximum gain of -0.4 dBi.

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.

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

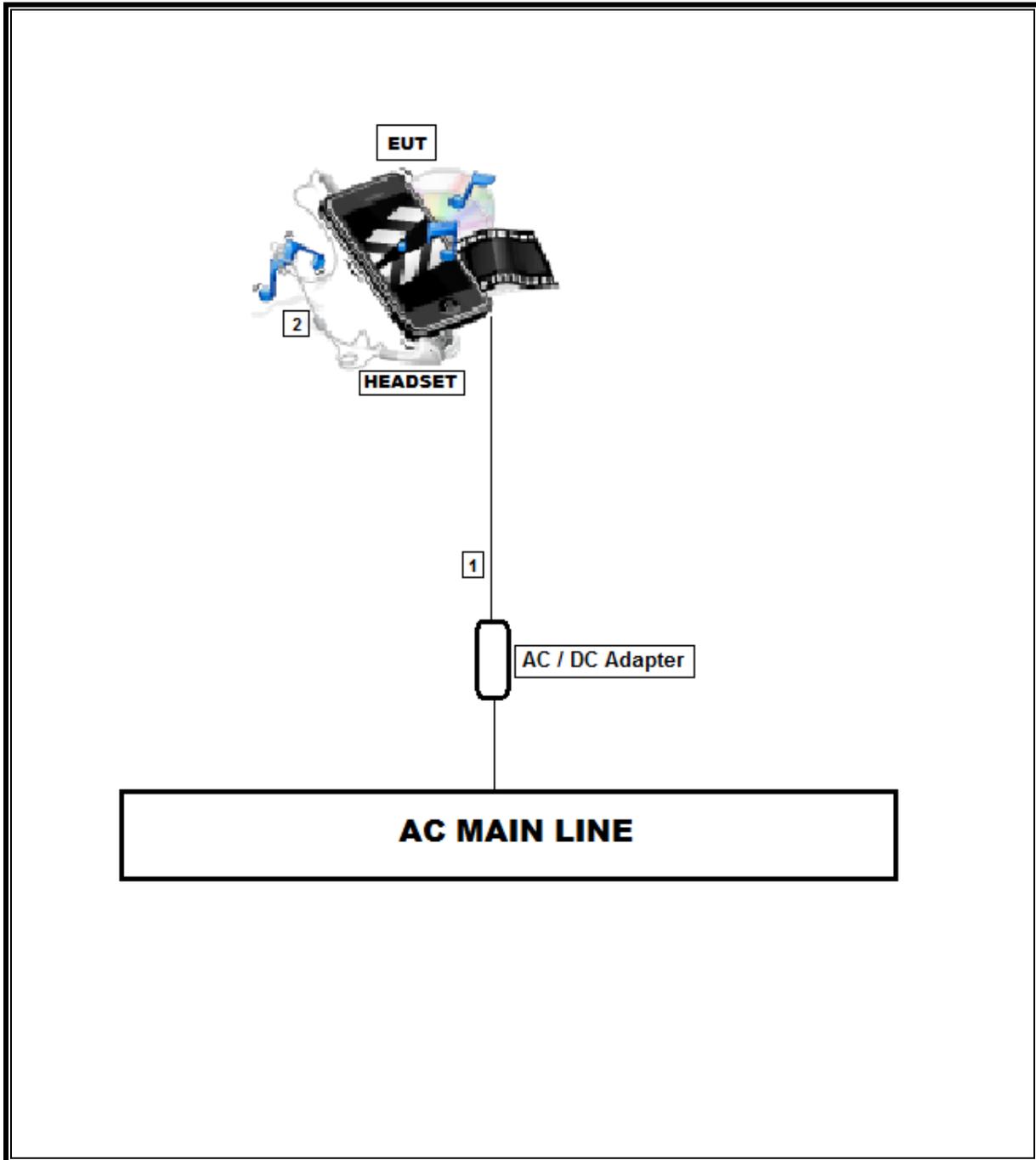
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
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.

SETUP DIAGRAM FOR TESTS



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

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	Conducted	Pass	1.2167MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-49.94dBm
15.247 (b)(1)	RSS-210 A8.4	TX conducted output power	<21dBm		Pass	12.32dBm
15.247 (a)(1)	RSS-210 A8.1(b)	Hopping frequency separation	> 25KHz		Pass	1MHz
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Number of Hopping channels	More than 15 non-overlapping channels		Pass	79
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Avg Time of Occupancy	< 0.4sec		Pass	0.373sec
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	53.24dBuV(AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	47.68dBuV/m

8. ANTENNA PORT TEST RESULTS

8.1. 20 dB AND 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to \geq 1% of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

RESULTS

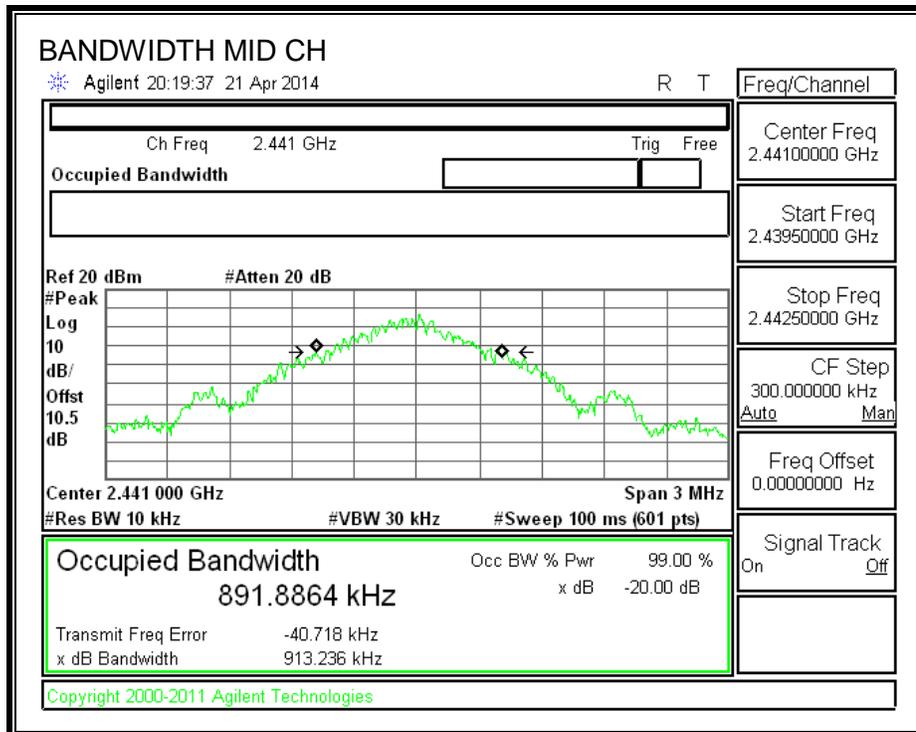
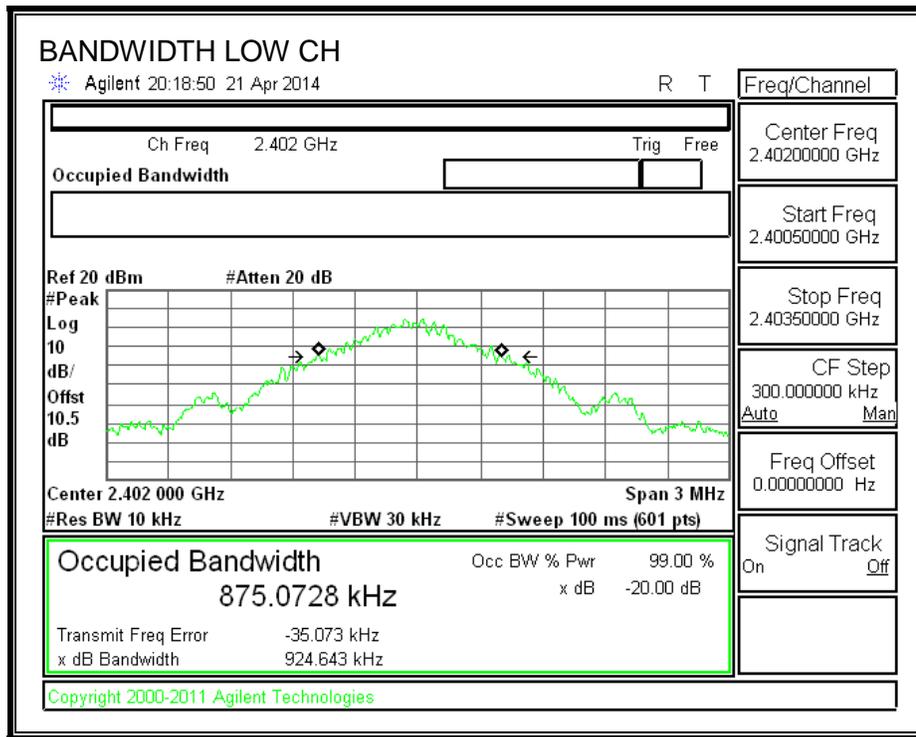
8.1.1. BASIC DATA RATE GFSK MODULATION

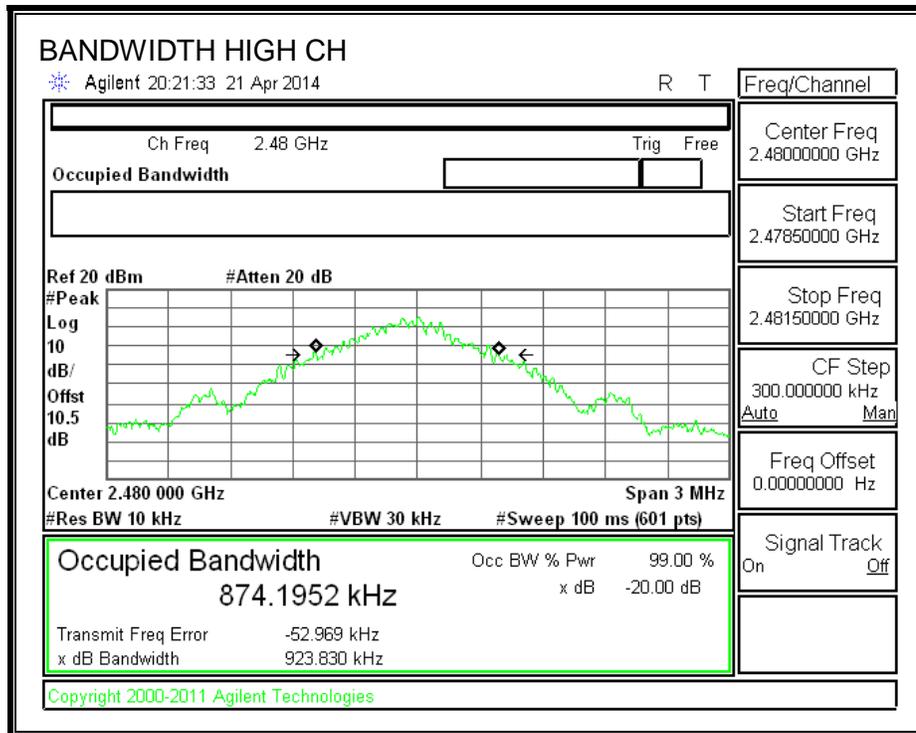
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	0.925	0.887
Middle	2441	0.913	0.889
High	2480	0.924	0.884
Worst		0.925	0.889

8.1.1. ENHANCED DATA RATE 8PSK MODULATION

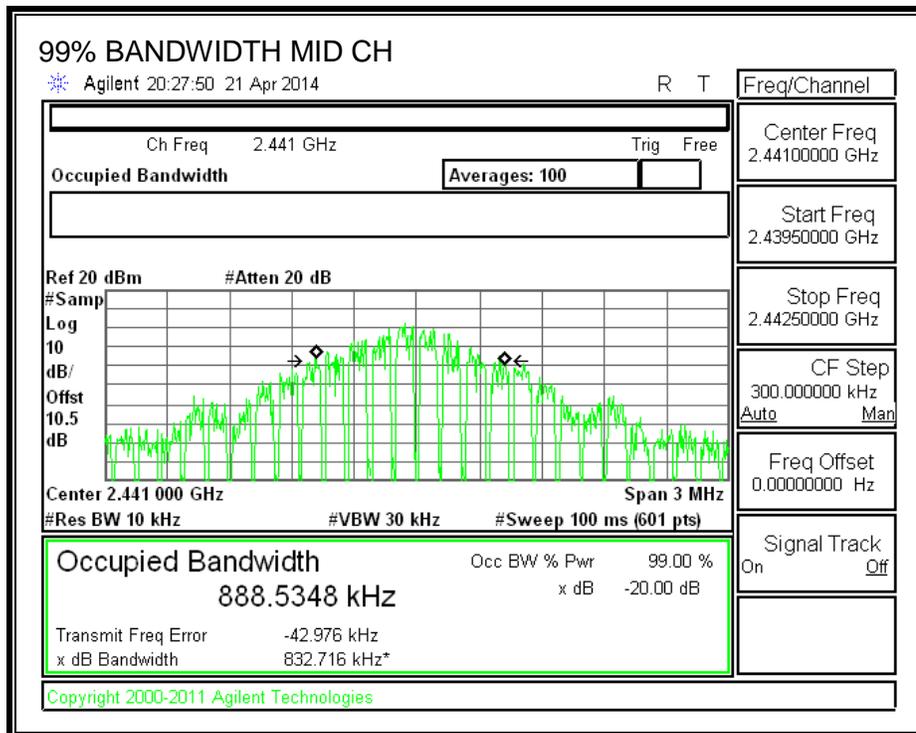
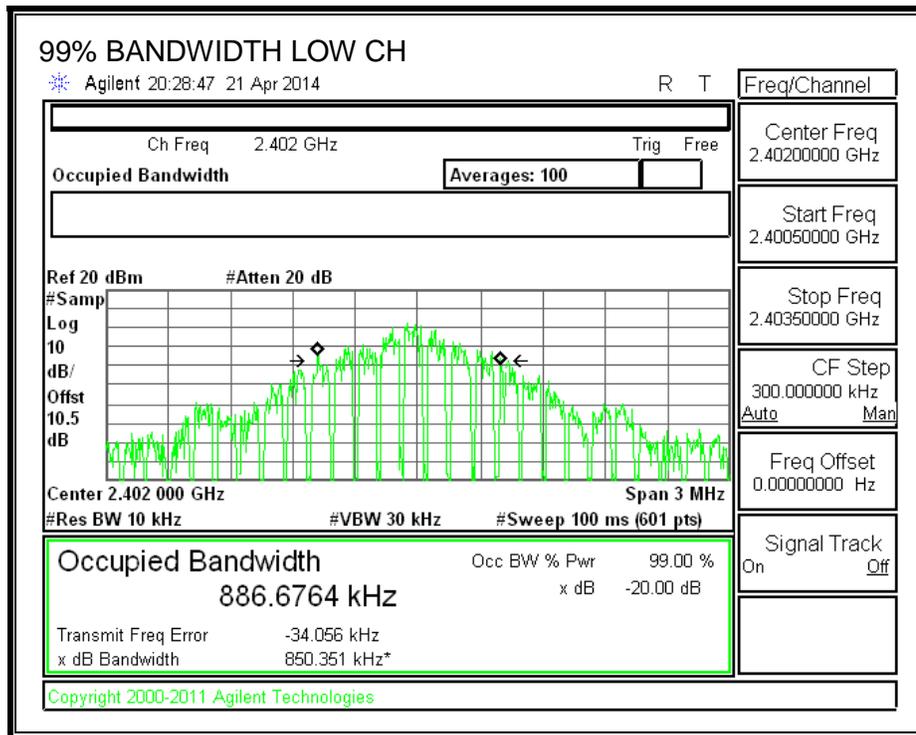
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.338	1.2157
Middle	2441	1.336	1.2167
High	2480	1.340	1.2147
Worst		1.340	1.2167

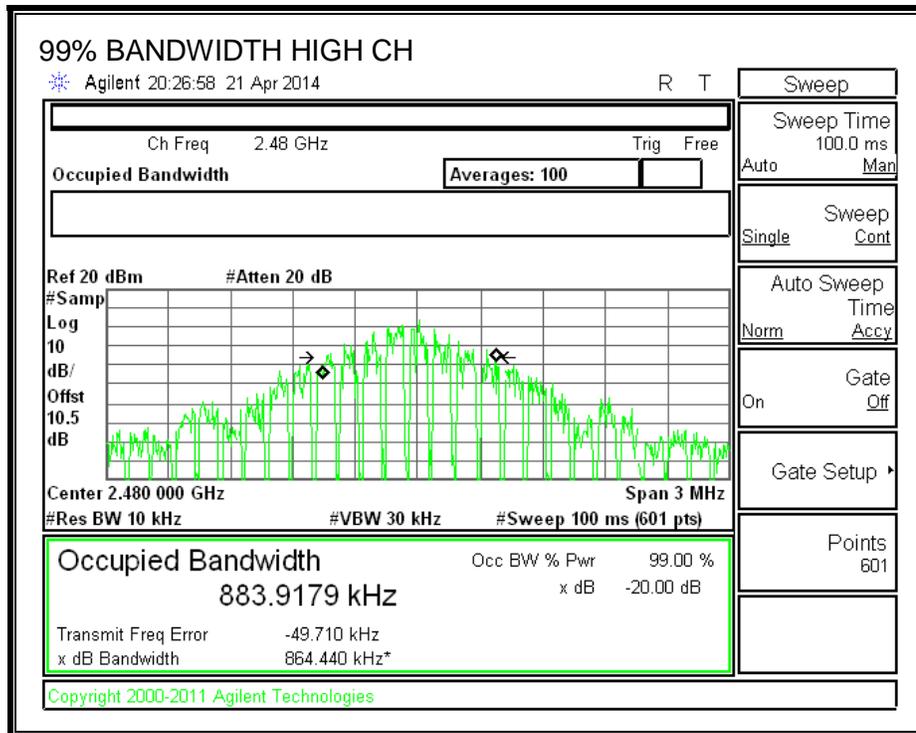
GFSK 20 dB BANDWIDTH



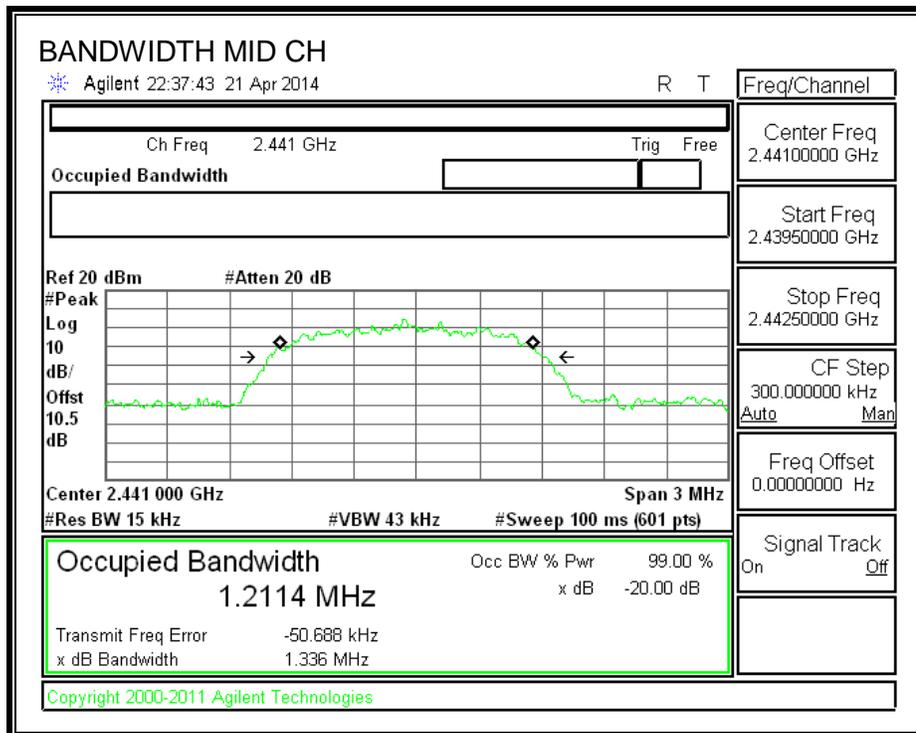
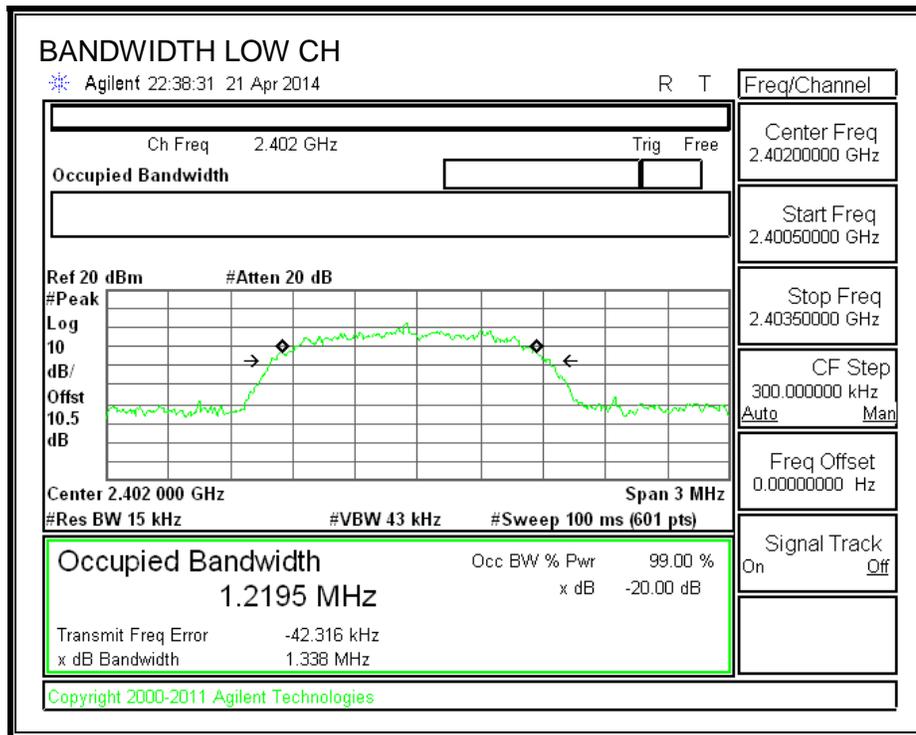


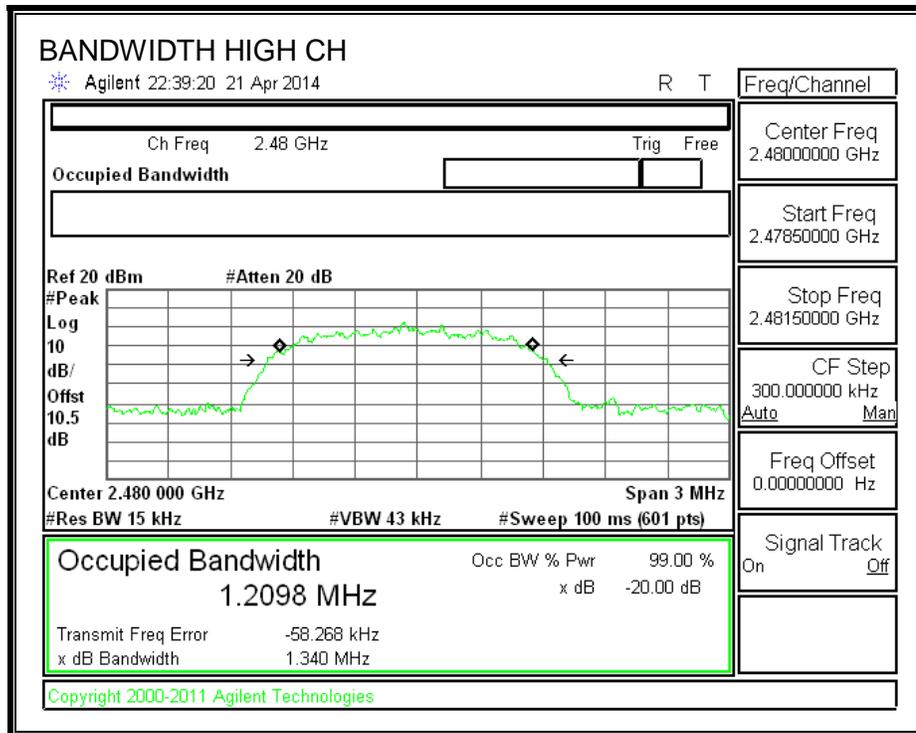
GFSK 99% BANDWIDTH



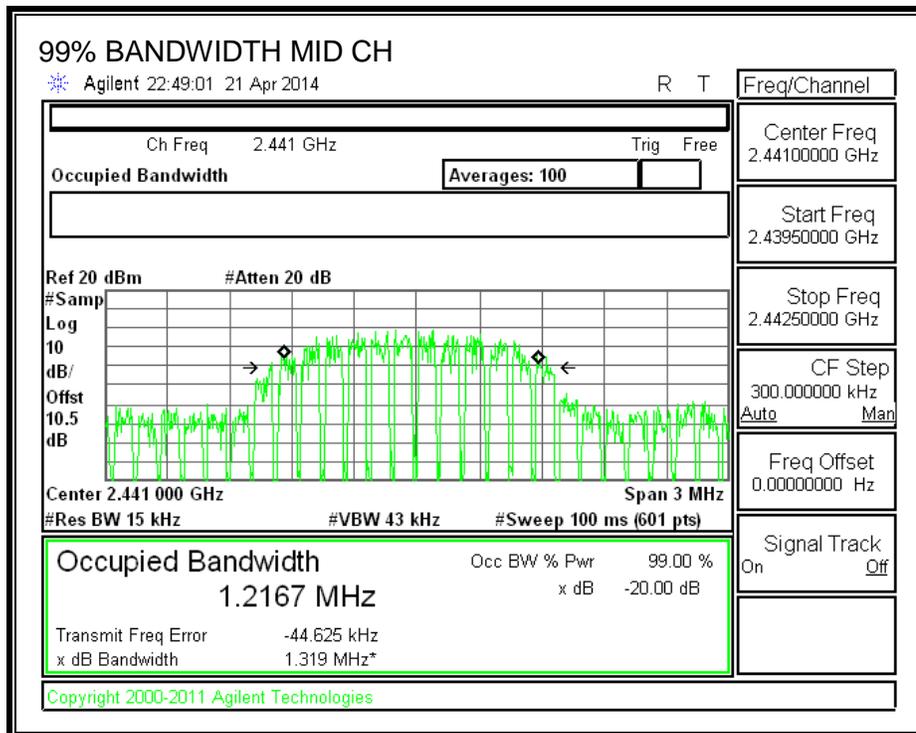
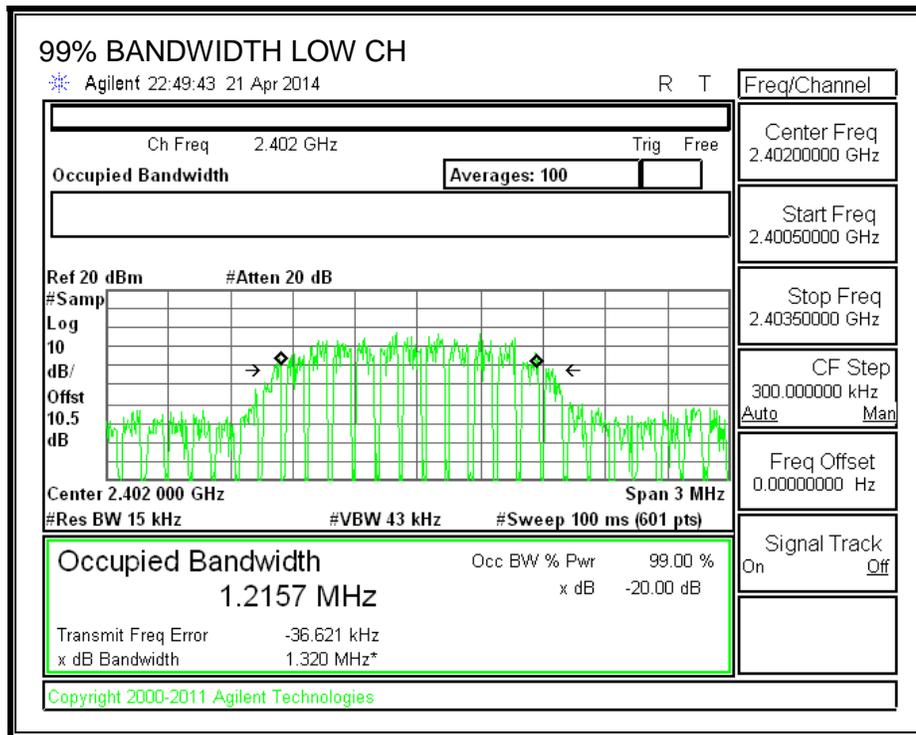


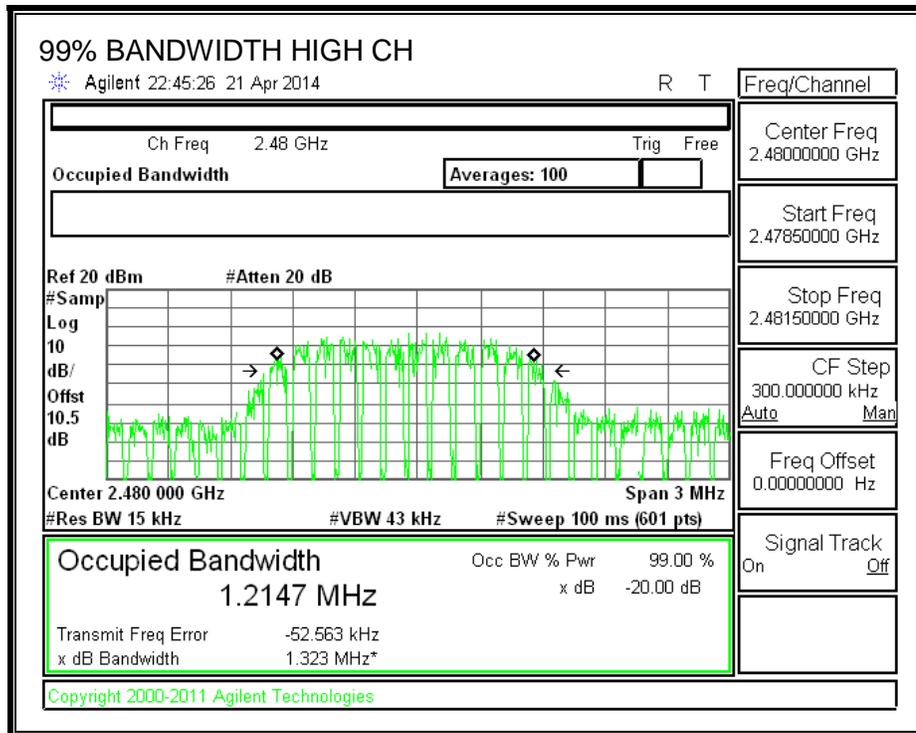
8PSK 20 dB BANDWIDTH





8PSK 99% BANDWIDTH





8.2. FOR GFSK HOPPING FREQUENCY SEPARATION

LIMIT

FCC §15.247 (a) (1)

IC RSS-210 A8.1 (b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

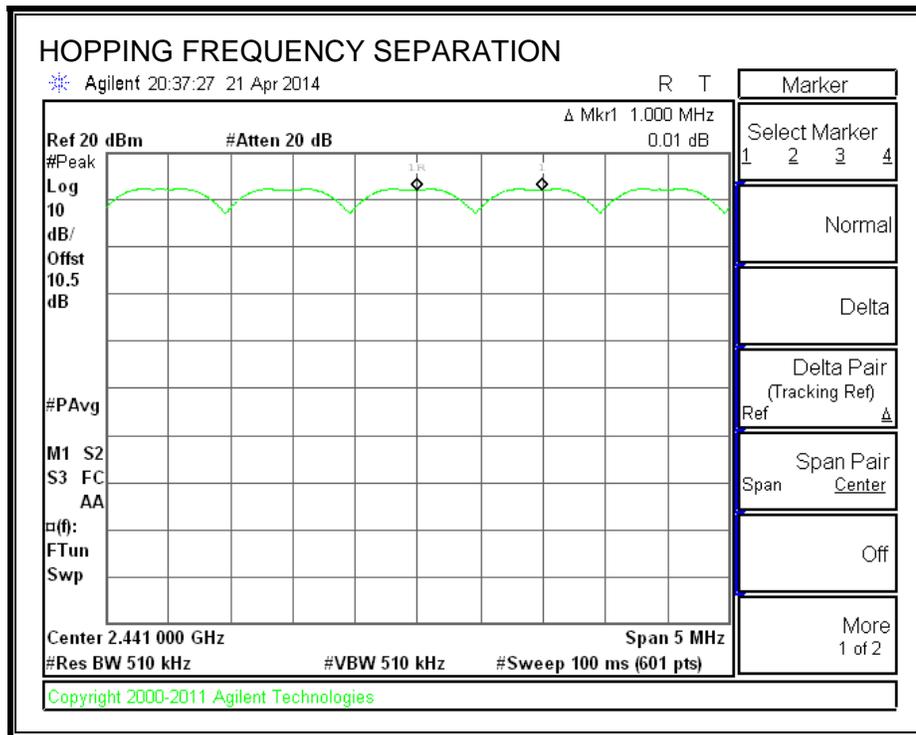
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The sweep time is coupled.

RESULTS

HOPPING FREQUENCY SEPARATION



8.3. NUMBER OF HOPPING CHANNELS

LIMIT

FCC §15.247 (a) (1) (iii)

IC RSS-210 A8.1 (d)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

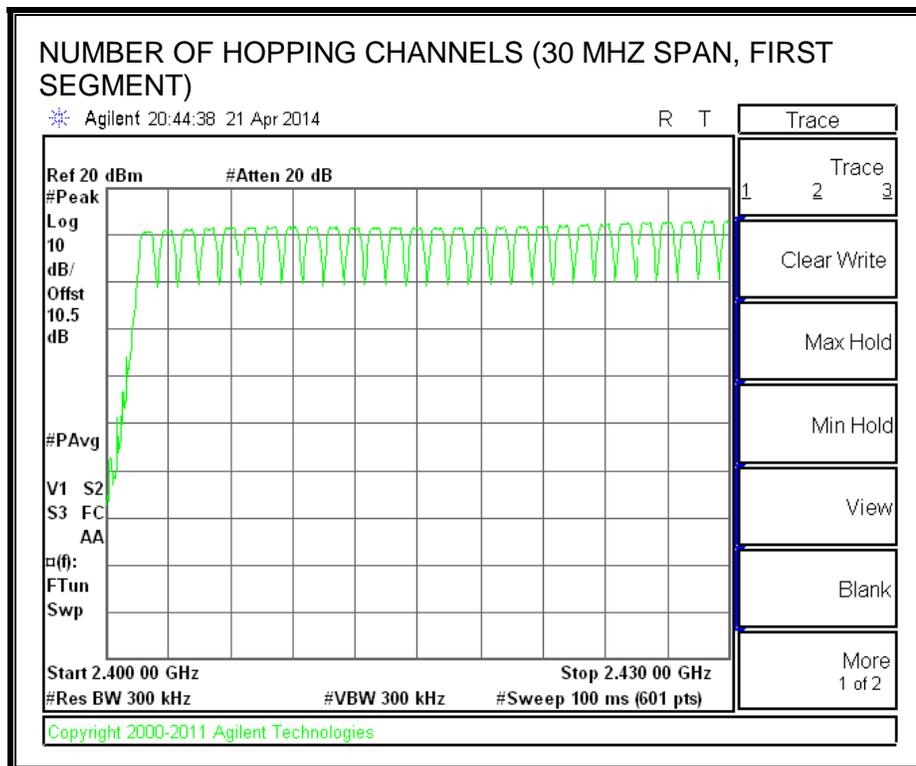
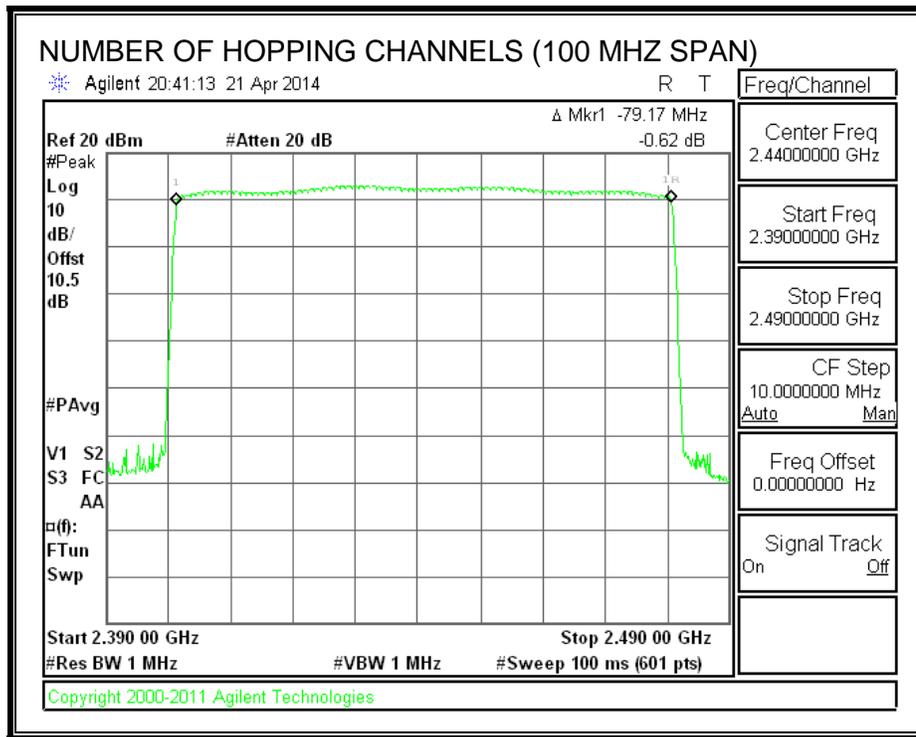
TEST PROCEDURE

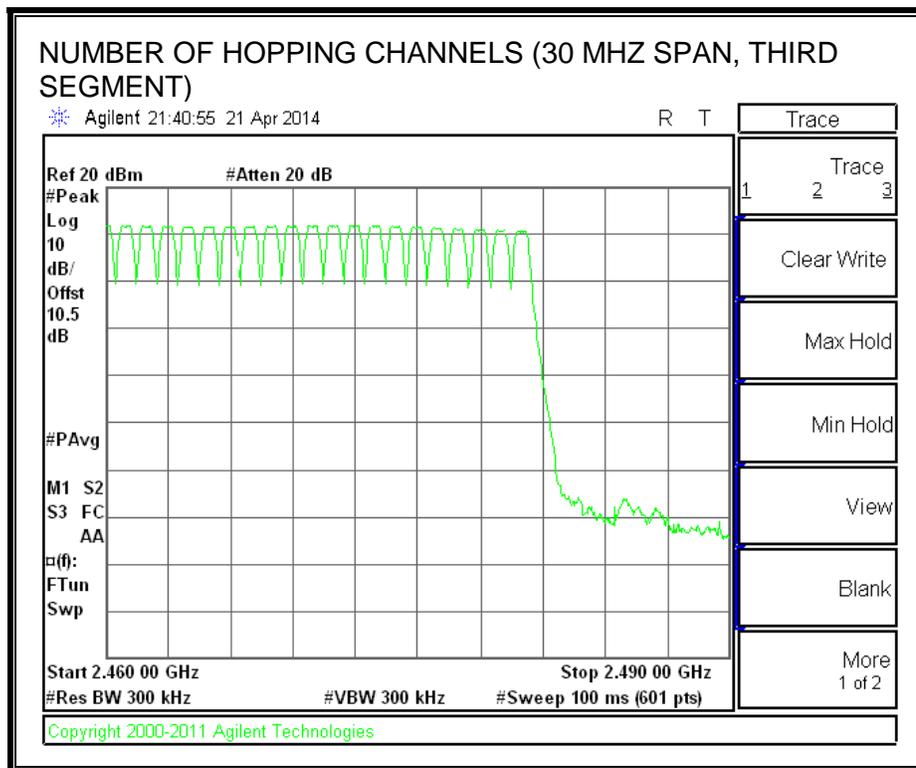
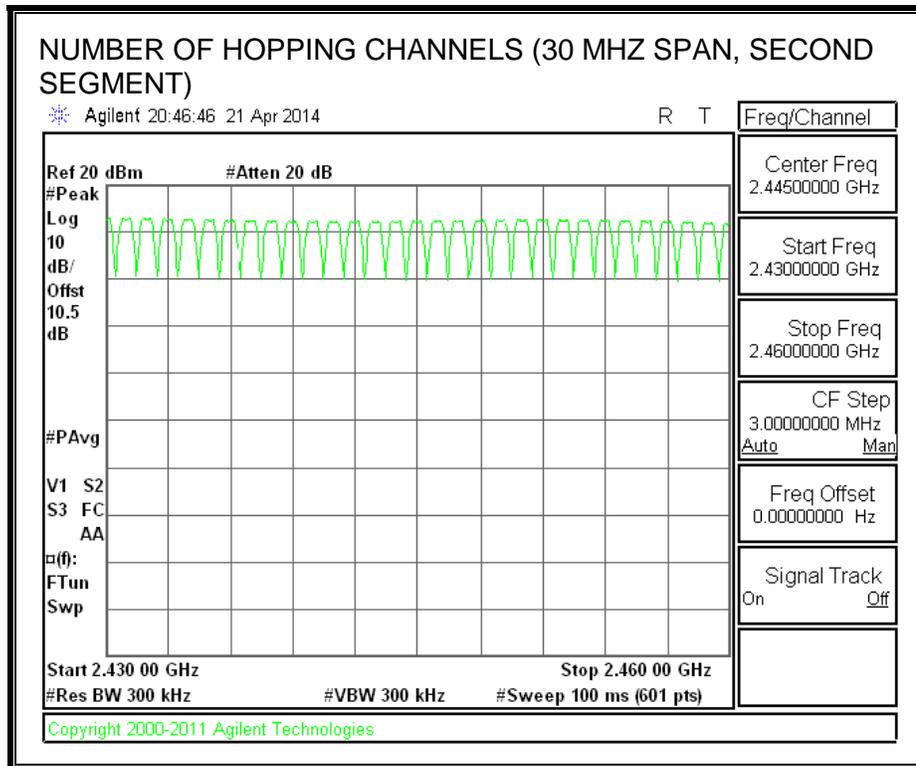
DA 00-705: The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels observed.

NUMBER OF HOPPING CHANNELS





8.4. AVERAGE TIME OF OCCUPANCY

LIMIT

FCC §15.247 (a) (1) (iii)

IC RSS-210 A8.1 (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

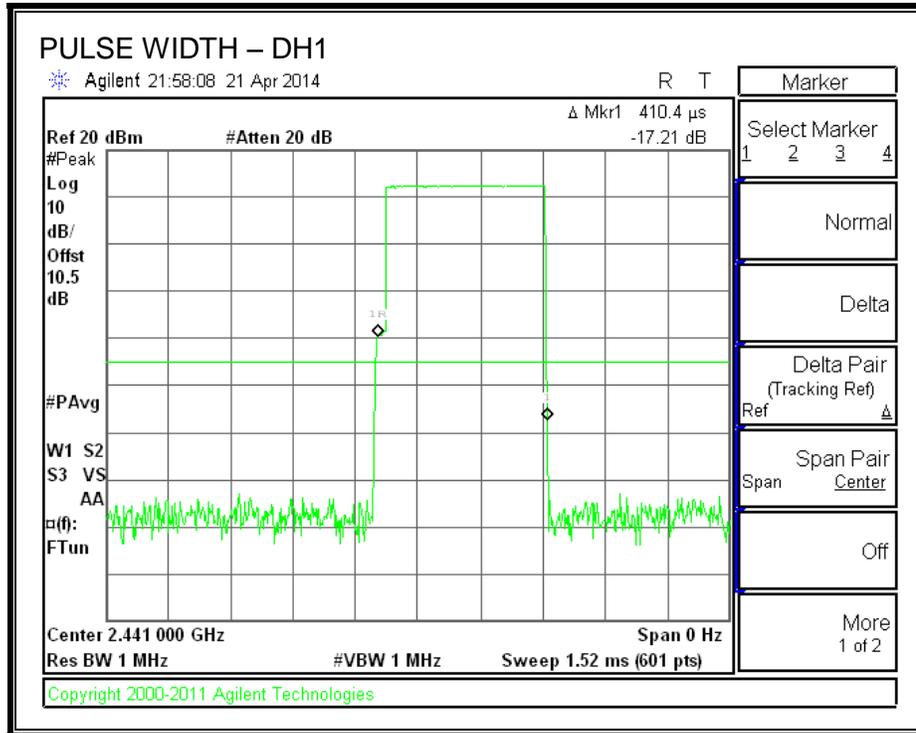
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{ pulse width}$.

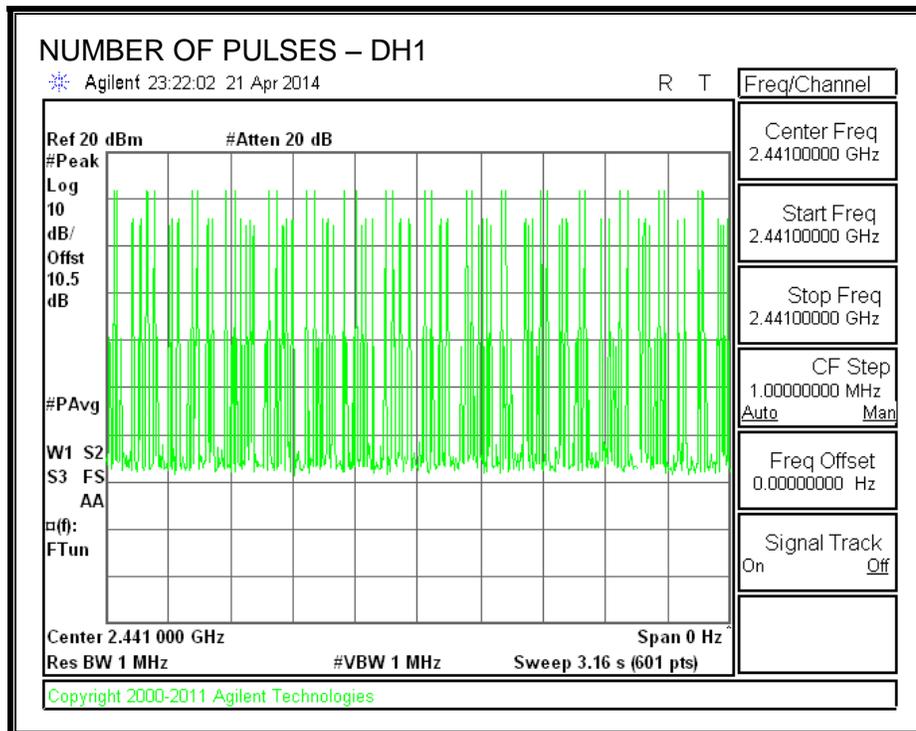
RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.4104	31	0.127	0.4	-0.273
DH3	1.635	16	0.262	0.4	-0.138
DH5	2.867	13	0.373	0.4	-0.027
GFSK AFH Mode					
DH Packet	Pulse Width (msec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
DH1	0.4104	8	0.033	0.4	-0.367
DH3	1.635	5	0.082	0.4	-0.318
DH5	2.867	4	0.115	0.4	-0.285

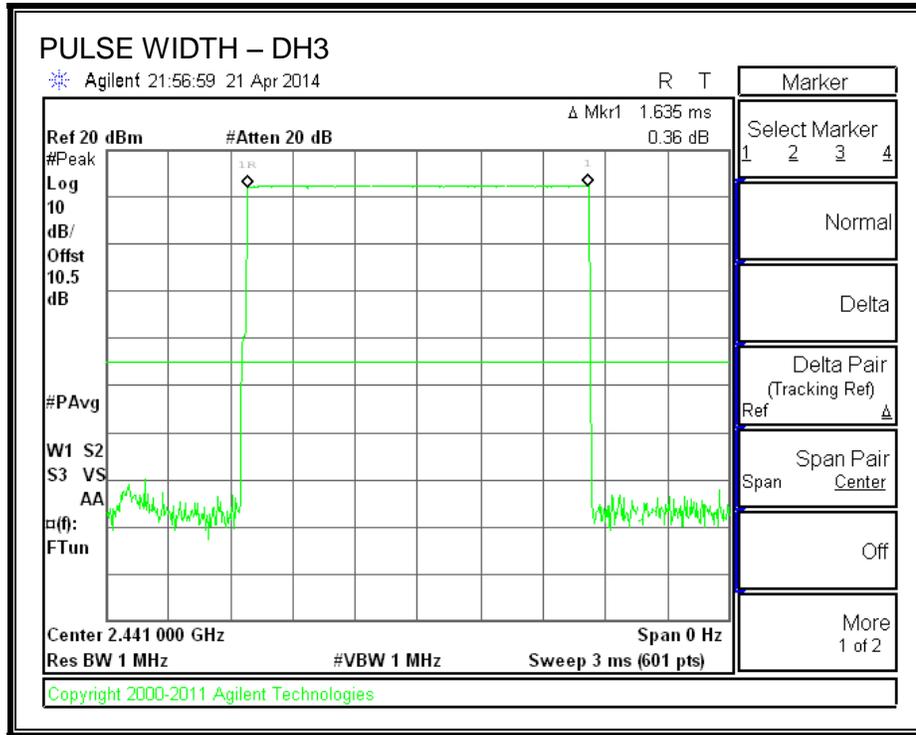
PULSE WIDTH - DH1



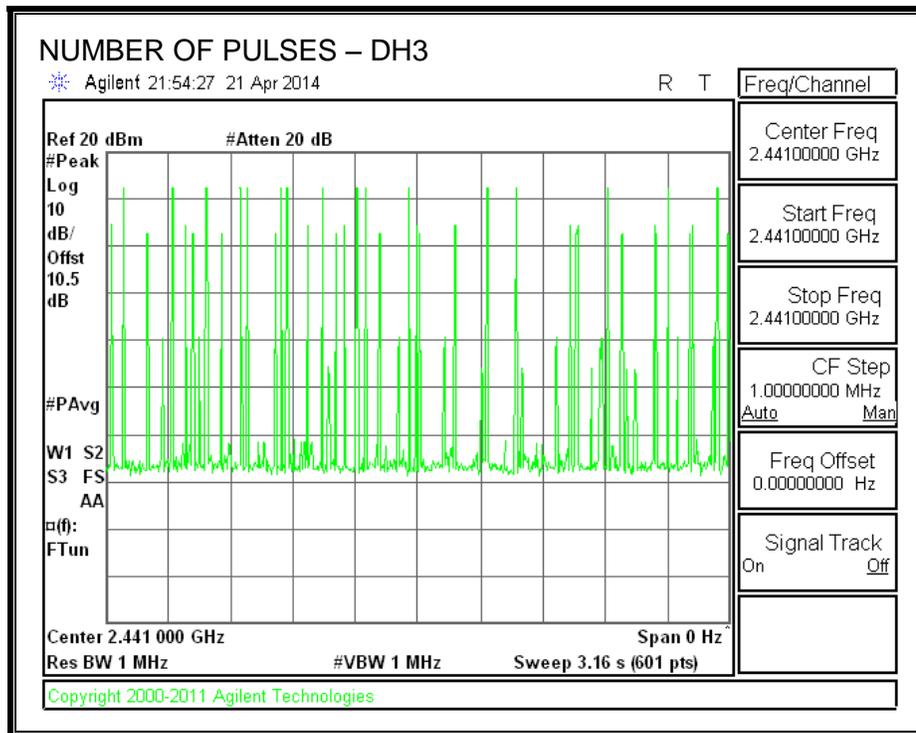
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH1



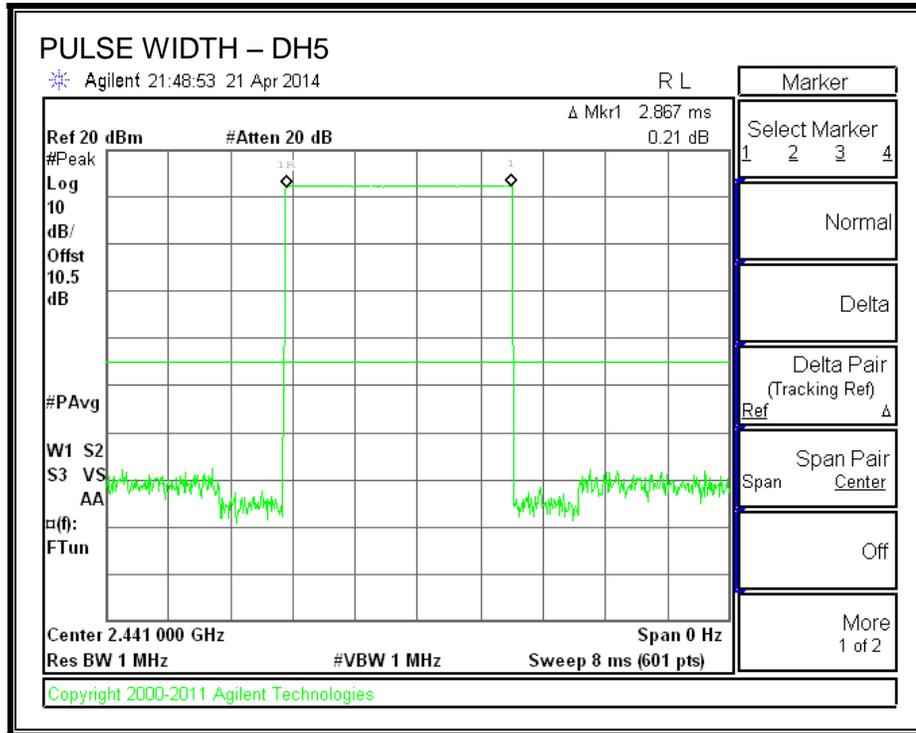
PULSE WIDTH – DH3



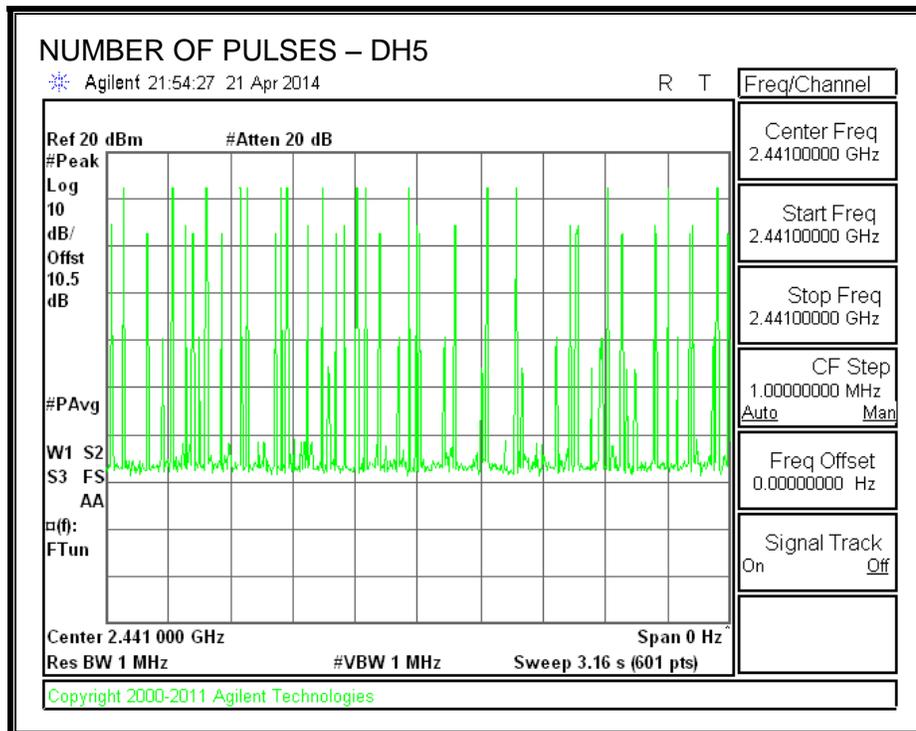
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



PULSE WIDTH – DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5



8.5. OUTPUT POWER

LIMIT

§15.247 (b) (1)

RSS-210 Issue 7 Clause A8.4

The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

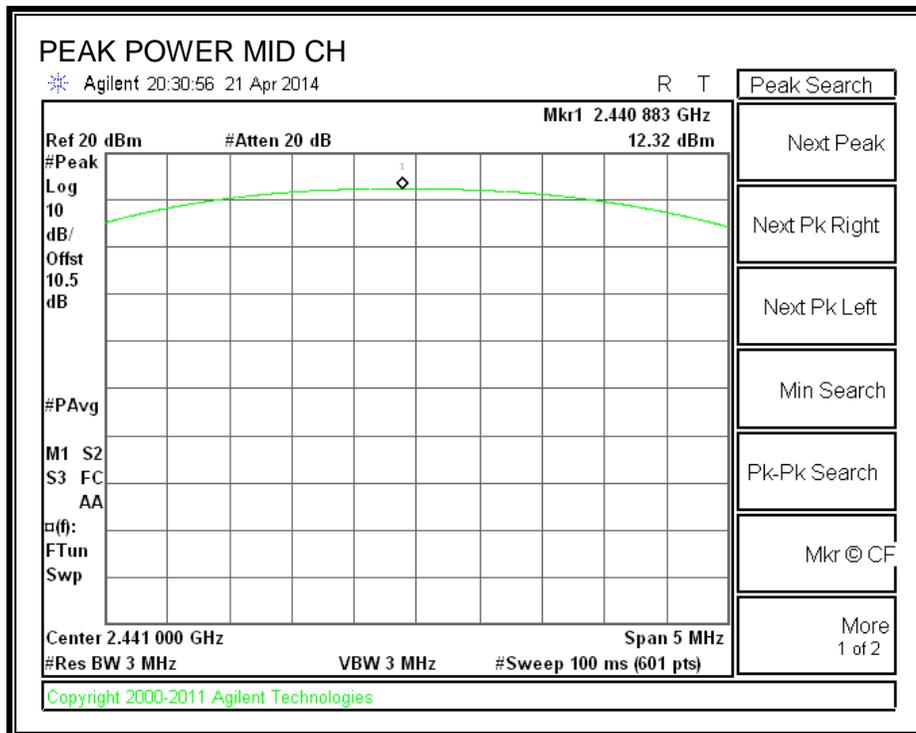
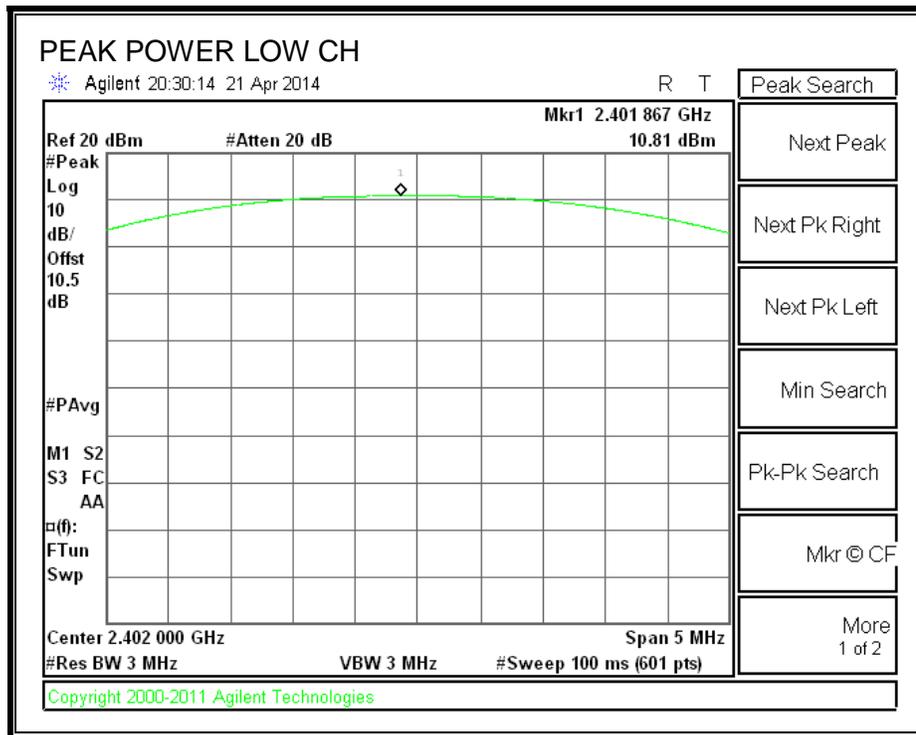
8.5.1. BASIC DATA RATE GFSK MODULATION

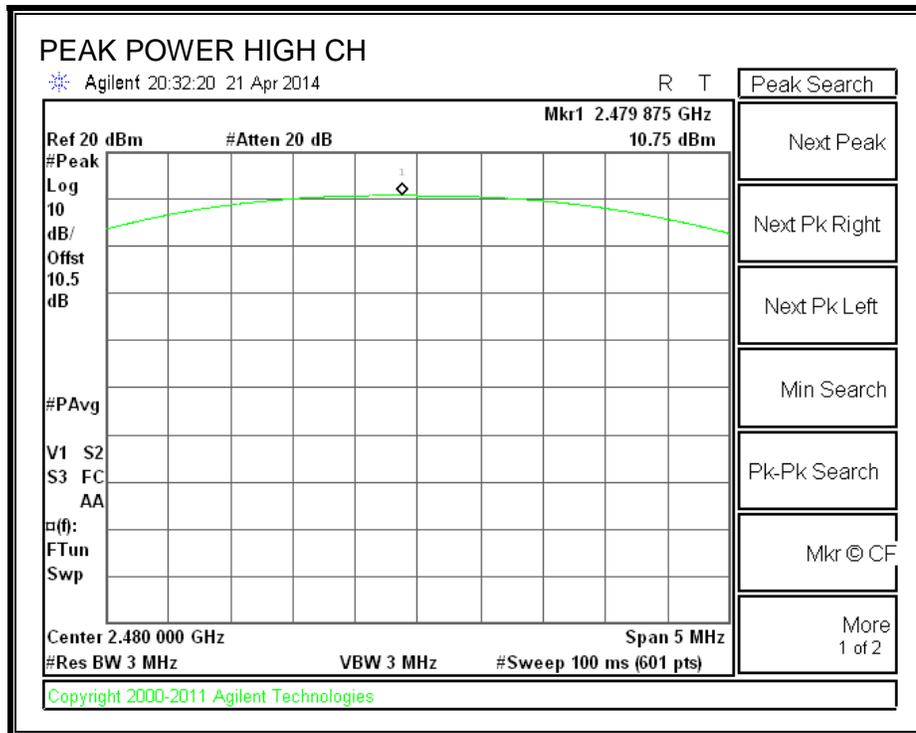
Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.81	21	-10.19
Middle	2441	12.32	21	-8.68
High	2480	10.75	21	-10.25
Worst		12.32		-8.68

8.5.2. ENHANCED DATA RATE 8PSK MODULATION

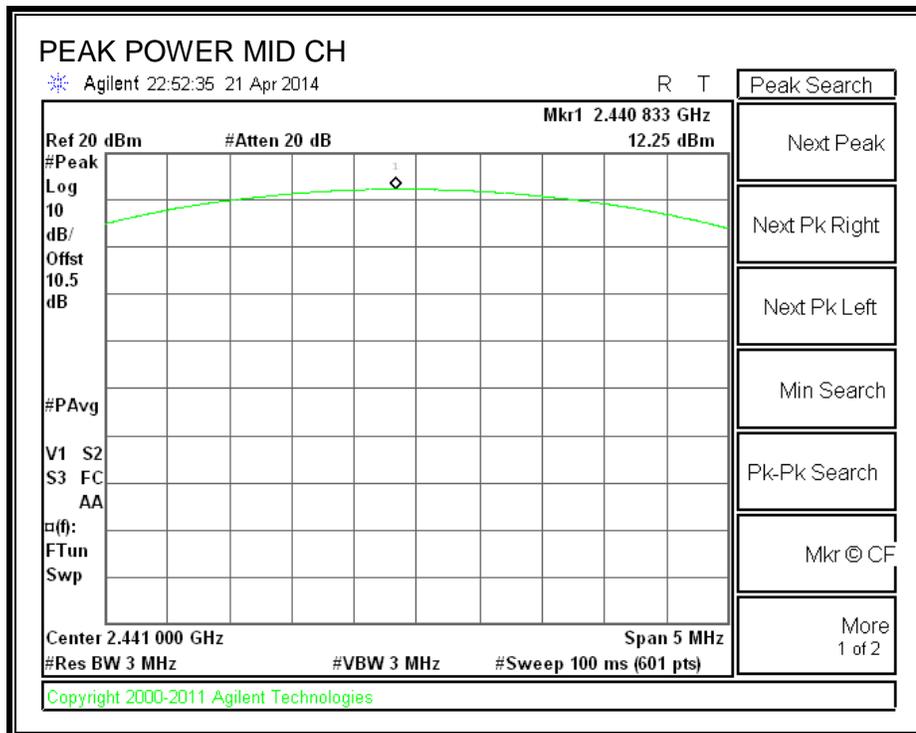
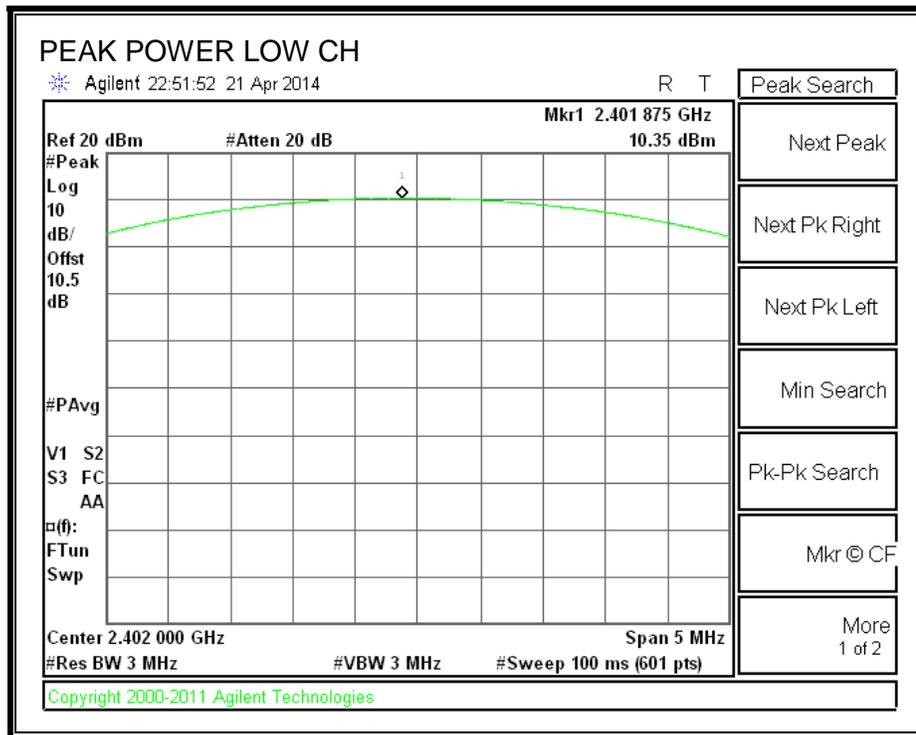
Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.35	21	-10.65
Middle	2441	12.25	21	-8.75
High	2480	10.66	21	-10.34
Worst		12.25		-8.75

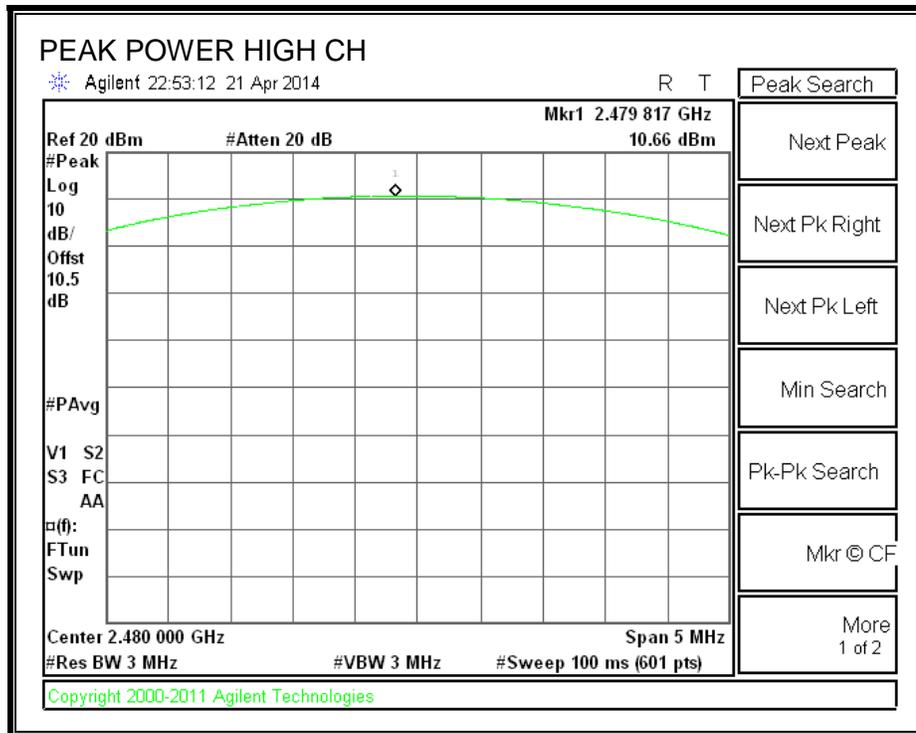
GFSK OUTPUT POWER





8PSK OUTPUT POWER





8.6. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 10.7 dB (including 10 dB pad and 0.7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

8.6.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	10.45
Middle	2441	11.93
High	2480	10.51
Worst		11.93

8.6.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.40
Middle	2441	9.30
High	2480	7.80
Worst		9.30

8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

Limit = -20 dBc

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

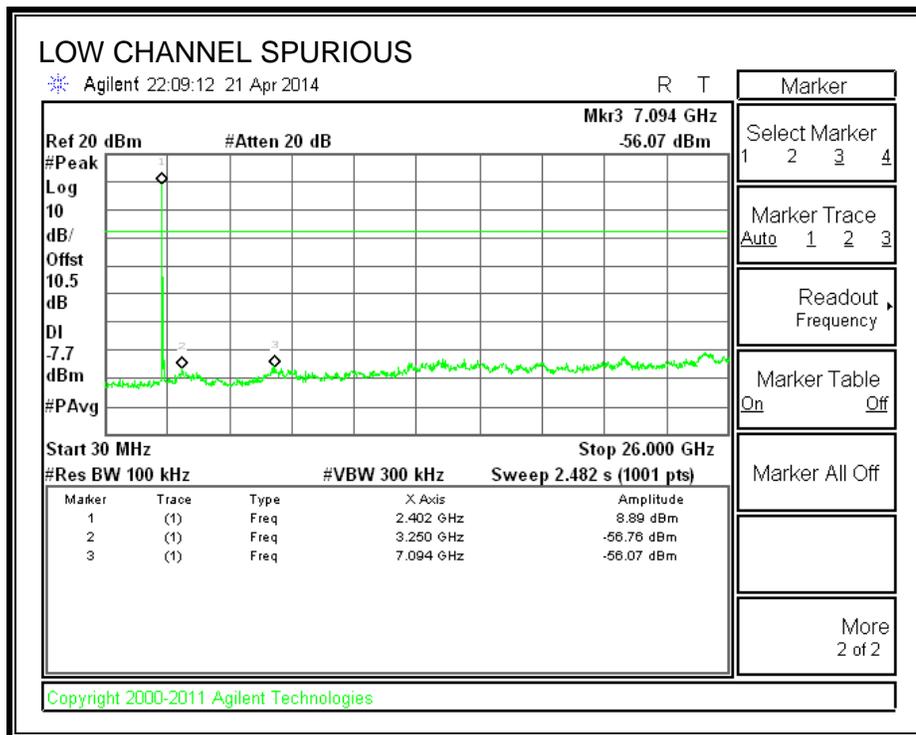
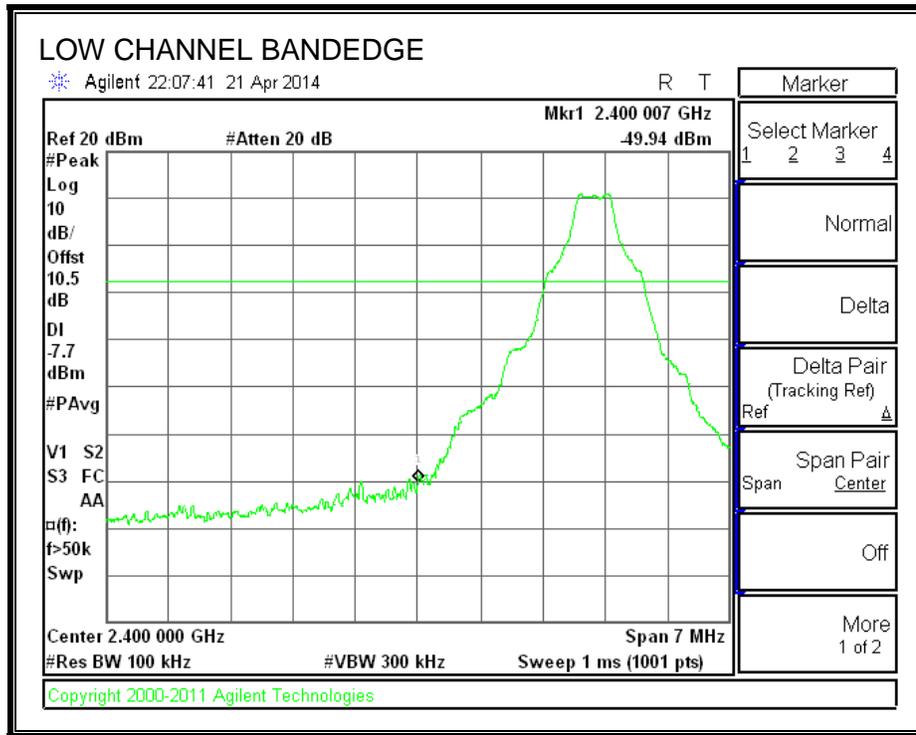
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

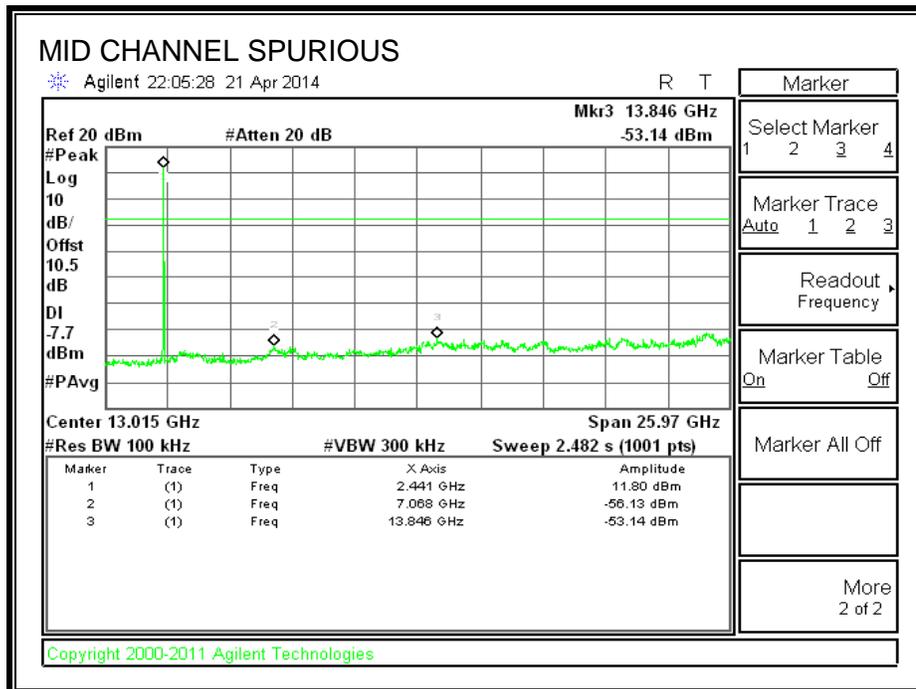
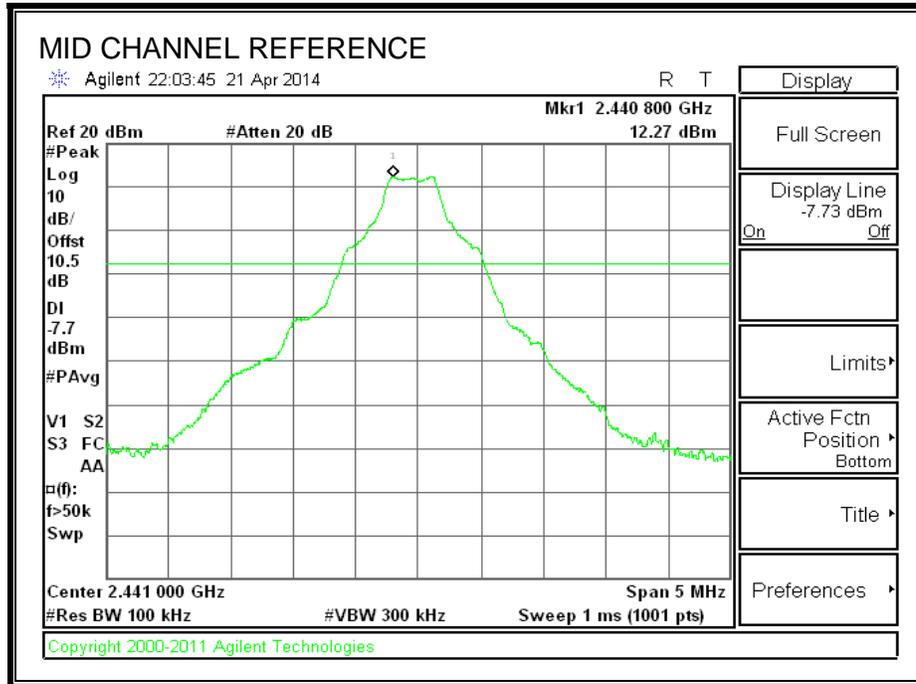
RESULTS

8.7.1. BASIC DATA RATE GFSK MODULATION

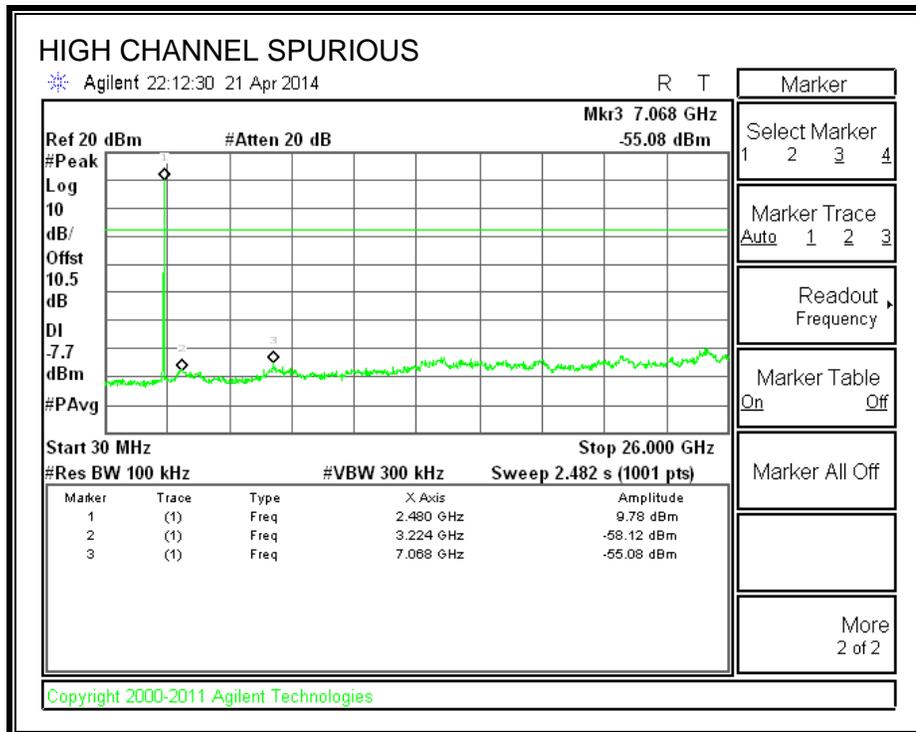
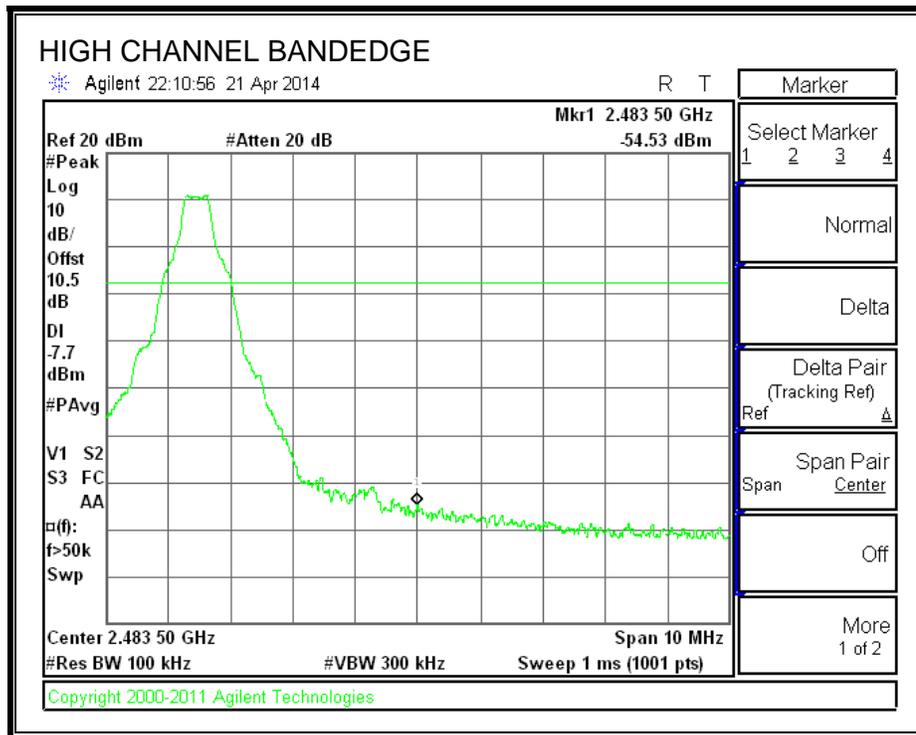
SPURIOUS EMISSIONS, LOW CHANNEL



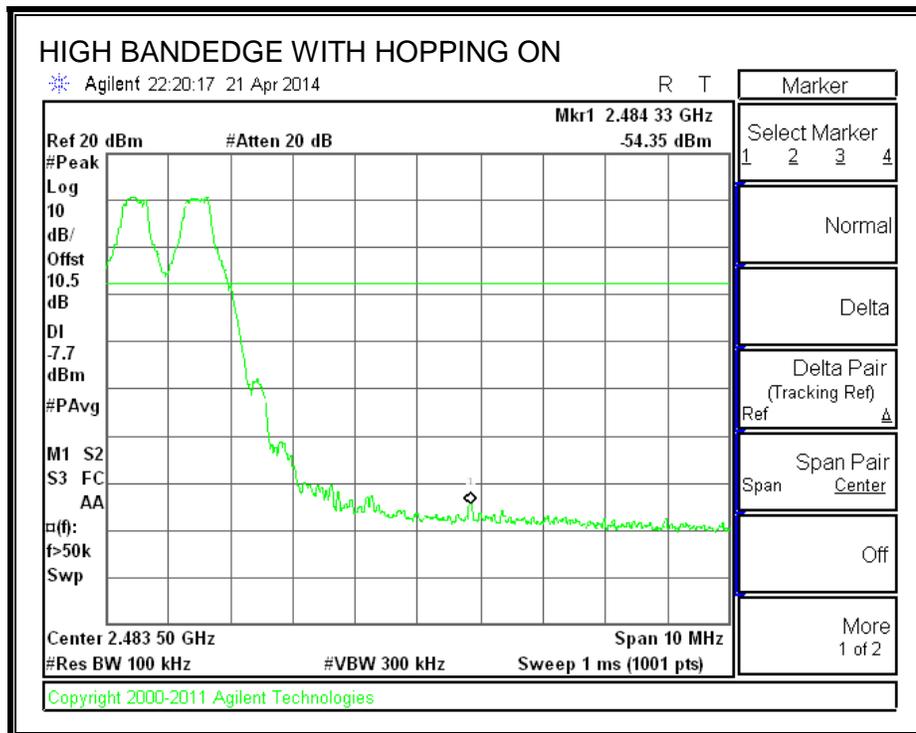
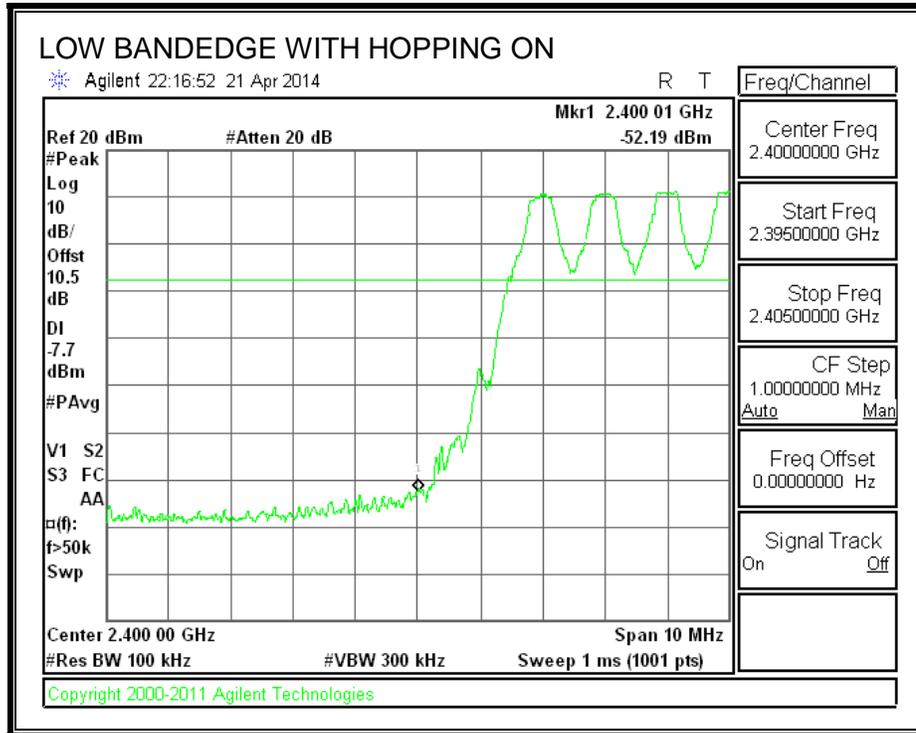
SPURIOUS EMISSIONS, MID CHANNEL



SPURIOUS EMISSIONS, HIGH CHANNEL

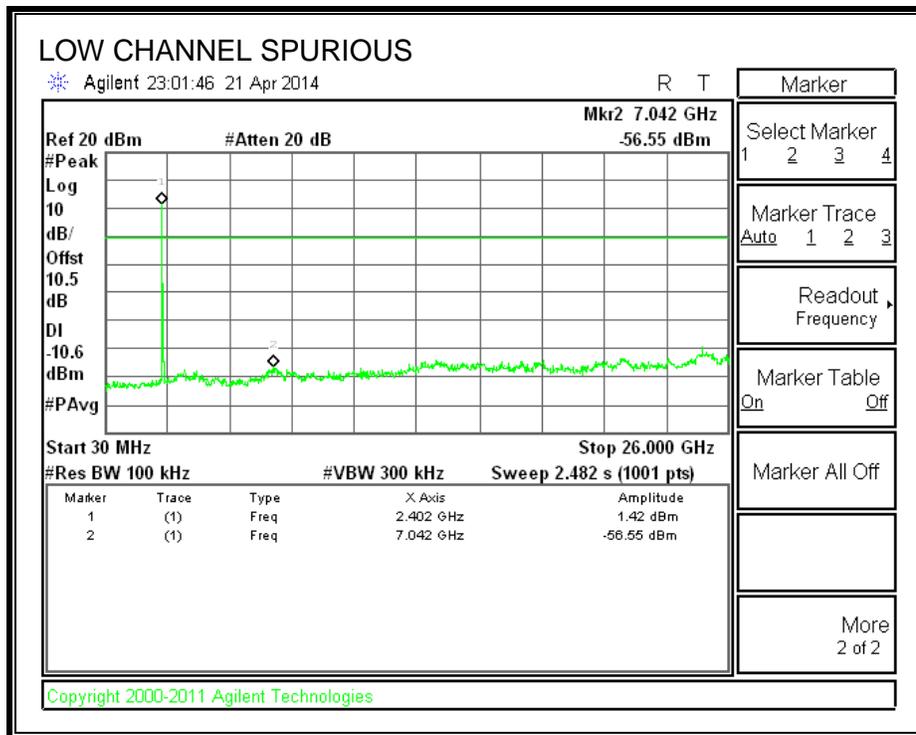
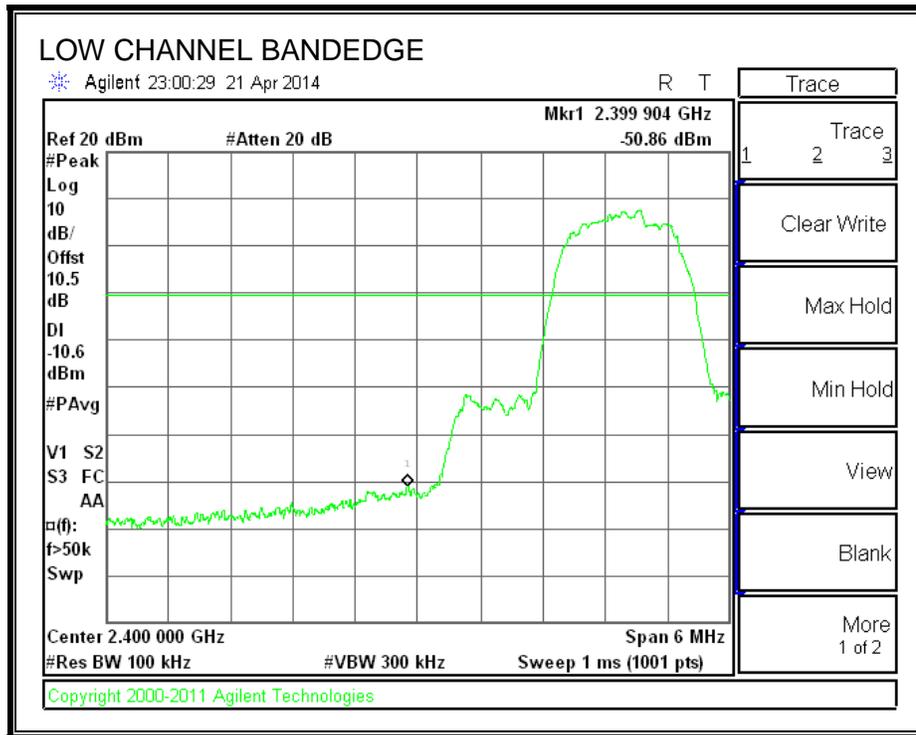


SPURIOUS BANDEDGE EMISSIONS WITH GFSK HOPPING ON

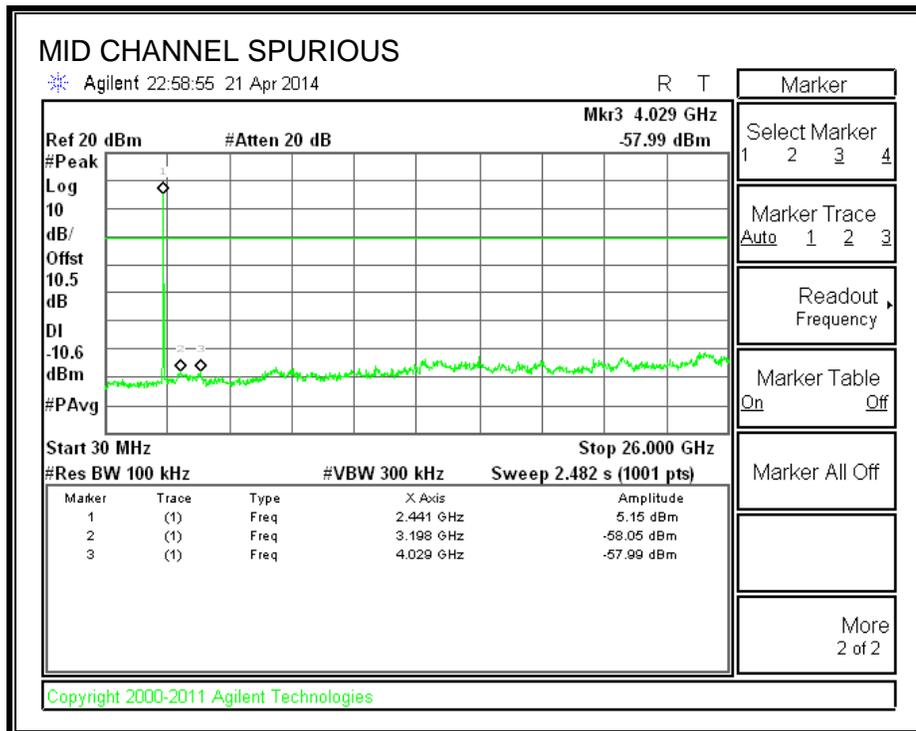
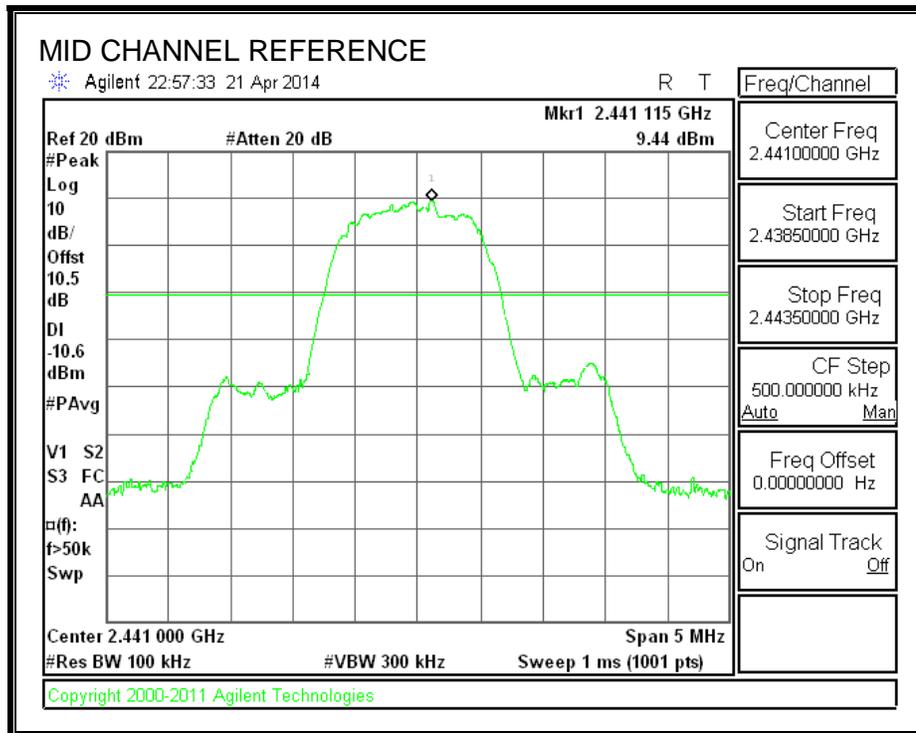


8.7.1. ENHANCED DATA RATE 8PSK MODULATION

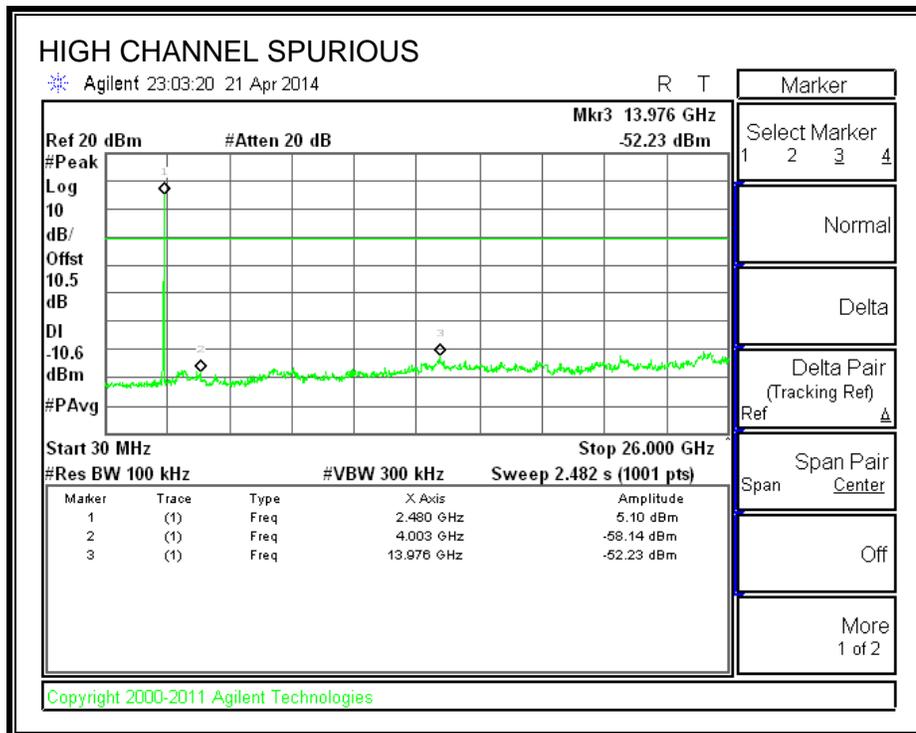
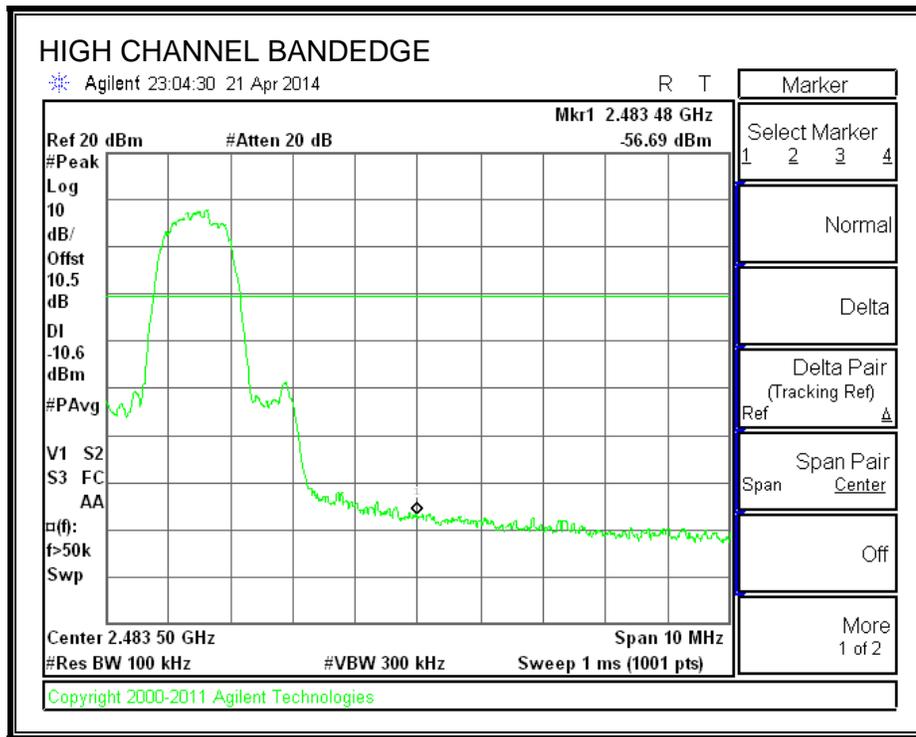
SPURIOUS EMISSIONS, LOW CHANNEL



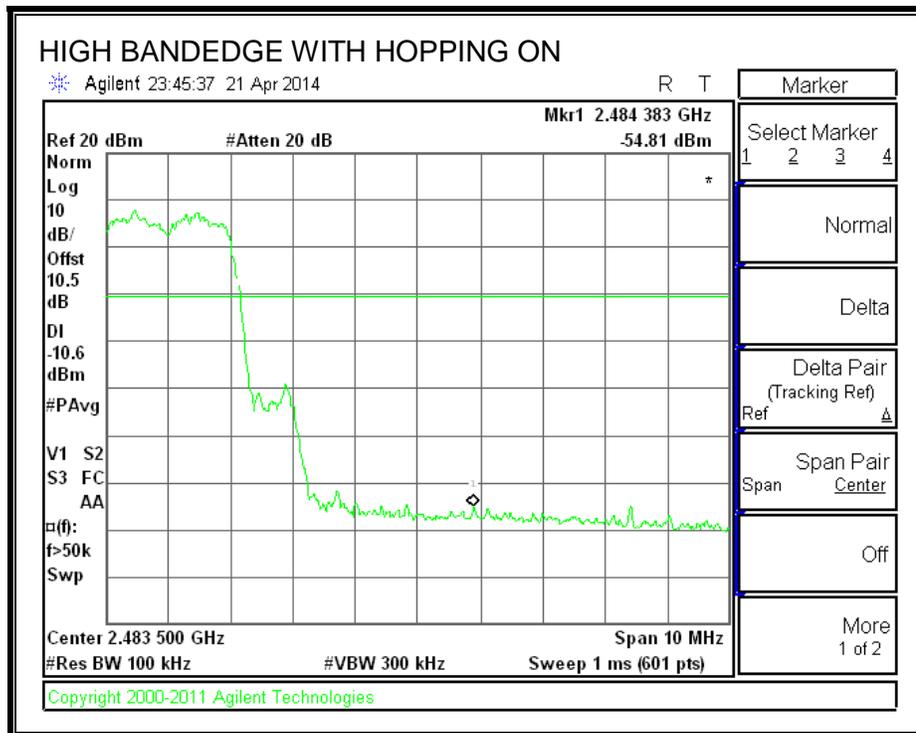
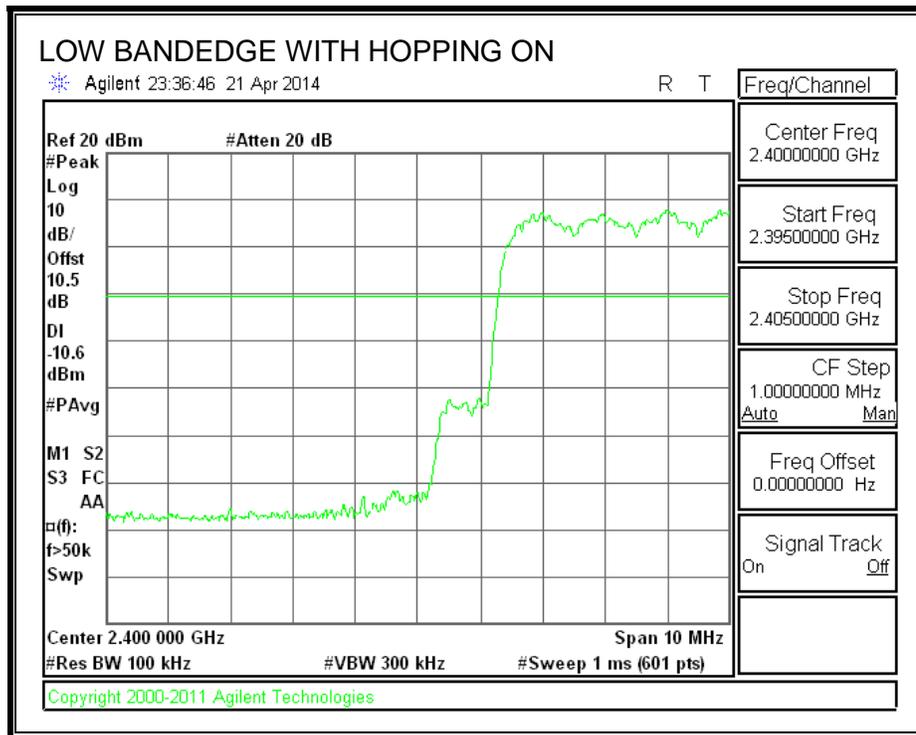
SPURIOUS EMISSIONS, MID CHANNEL



SPURIOUS EMISSIONS, HIGH CHANNEL



SPURIOUS BANDEDGE EMISSIONS WITH 8PSK HOPPING ON



9. RADIATED TEST RESULTS

9.1. 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. $GFSK = 1/T = 1 / 0.0028S = 360Hz$.

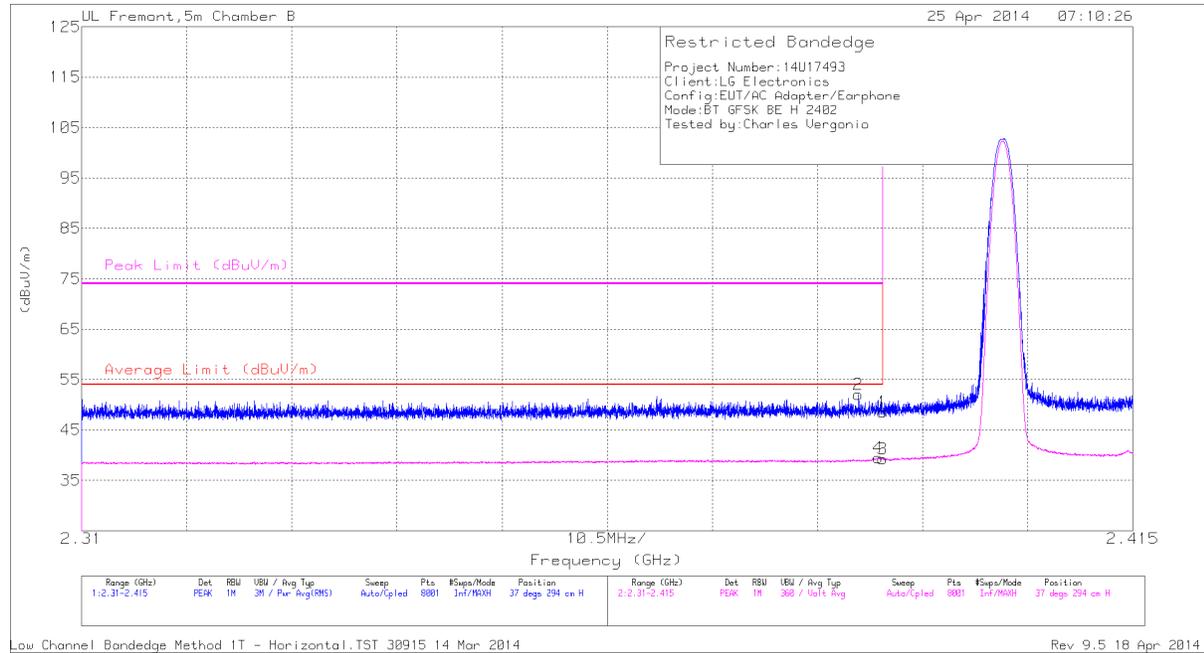
The spectrum from 1GHzHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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.

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. BASIC DATA RATE GFSK MODULATION

RESTRICTED BANDEGE (LOW CHANNEL, HORIZONTAL)



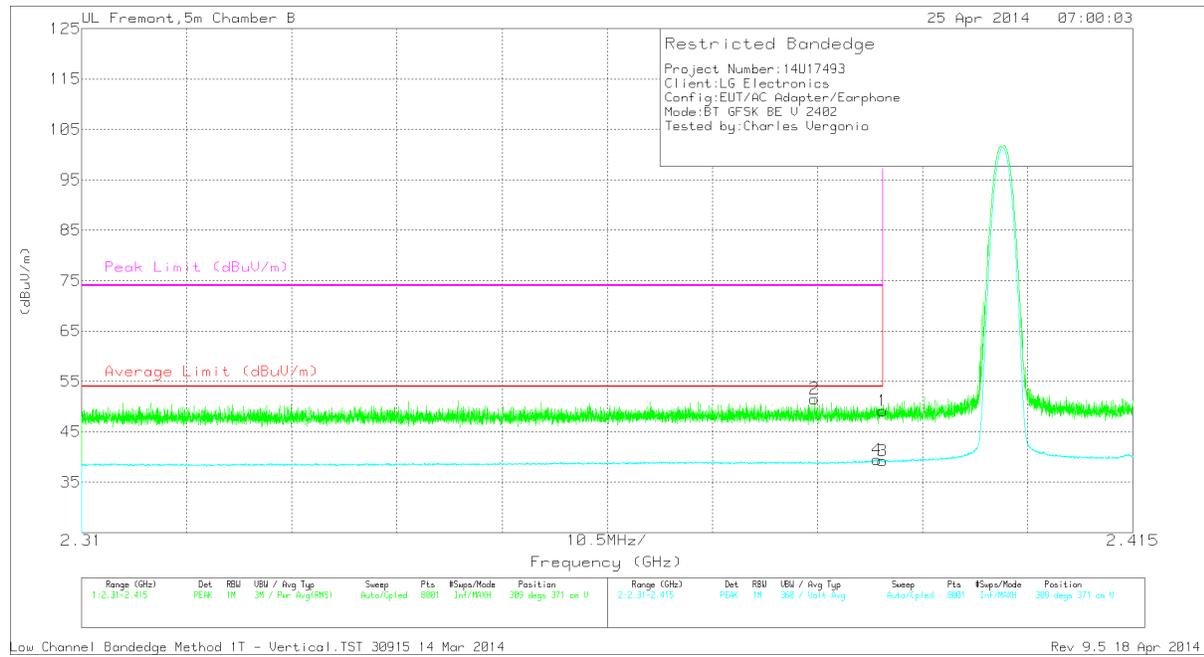
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.3	PK	32.1	-22.9	0	48.5	-	-	74	-25.5	37	294	H
2	* 2.388	42.85	PK	32.1	-22.9	0	52.05	-	-	74	-21.95	37	294	H
3	* 2.39	30.04	VB1T	32.1	-22.9	0	39.24	54	-14.76	-	-	37	294	H
4	* 2.39	30.33	VB1T	32.1	-22.9	0	39.53	54	-14.47	-	-	37	294	H

* - 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

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



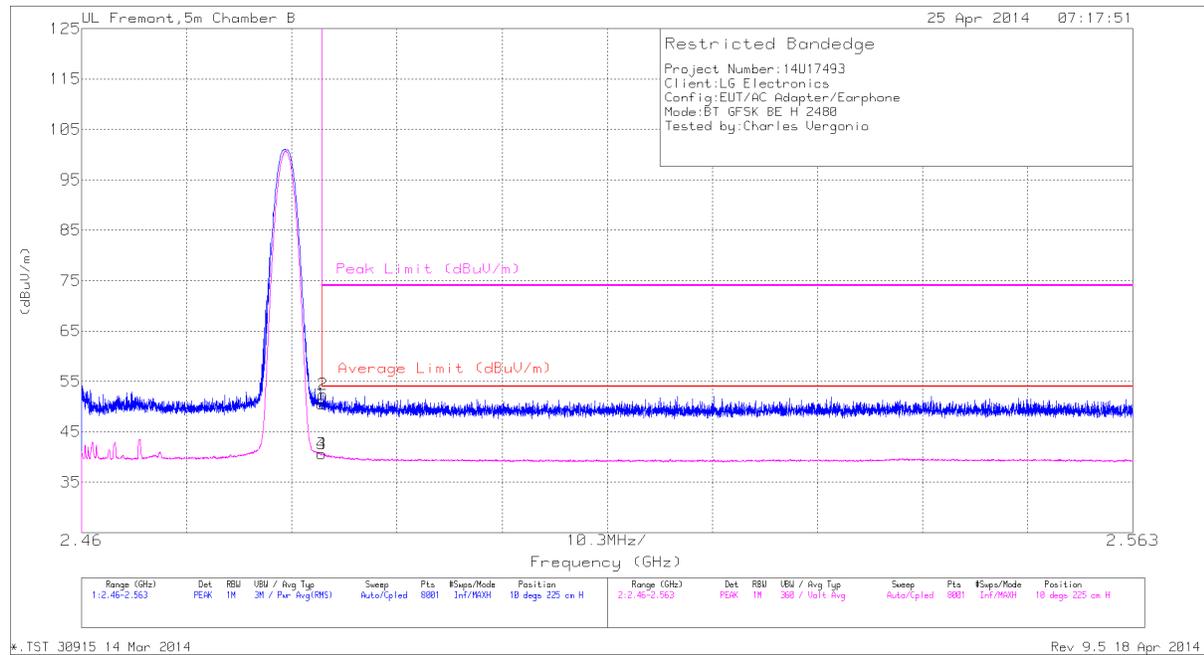
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.99	PK	32.1	-22.9	49.19	-	-	74	-24.81	309	371	V
2	* 2.383	42.39	PK	32.1	-22.9	51.59	-	-	74	-22.41	309	371	V
3	* 2.39	30.04	VB1T	32.1	-22.9	39.24	54	-14.76	-	-	309	371	V
4	* 2.389	30.29	VB1T	32.1	-22.9	39.49	54	-14.51	-	-	309	371	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

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



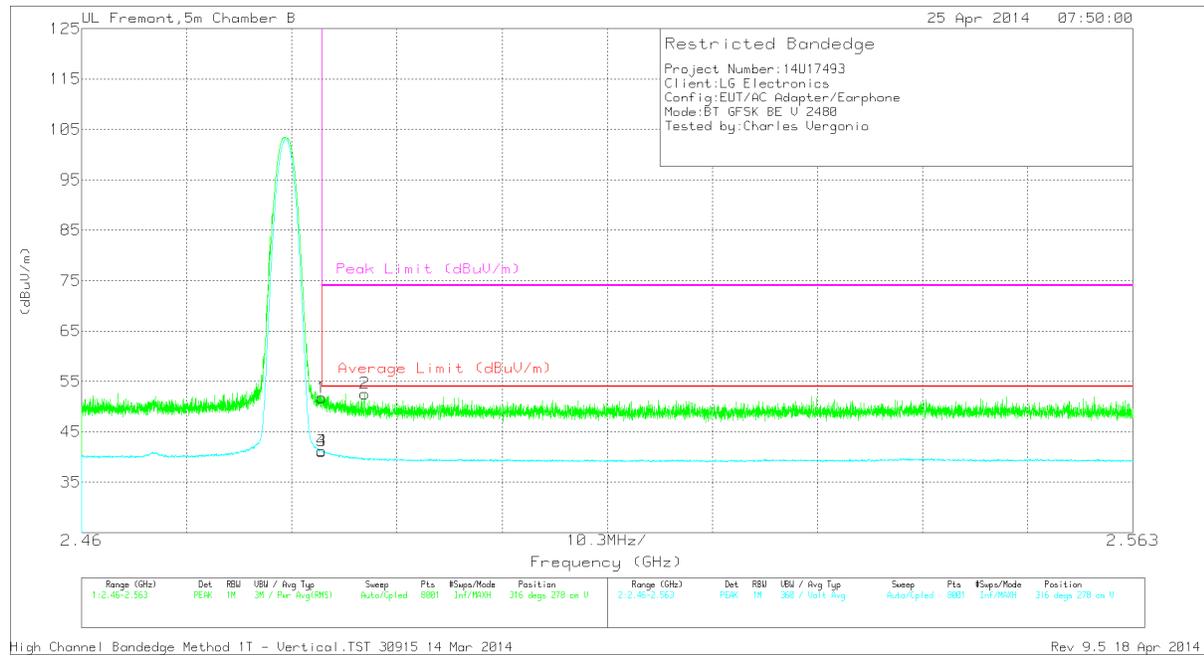
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.77	PK	32.4	-22.6	50.57	-	-	74	-23.43	10	225	H
2	* 2.484	42.57	PK	32.4	-22.6	52.37	-	-	74	-21.63	10	225	H
3	* 2.484	30.79	VB1T	32.4	-22.6	40.59	54	-13.41	-	-	10	225	H
4	* 2.484	30.86	VB1T	32.4	-22.6	40.66	54	-13.34	-	-	10	225	H

* - 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

RESTRICTED BANDEGE (HIGH CHANNEL, VERTICAL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.98	PK	32.4	-22.6	51.78	-	-	74	-22.22	316	278	V
2	* 2.488	42.79	PK	32.4	-22.6	52.59	-	-	74	-21.41	316	278	V
3	* 2.484	31.45	VB1T	32.4	-22.6	41.25	54	-12.75	-	-	316	278	V
4	* 2.484	31.37	VB1T	32.4	-22.6	41.17	54	-12.83	-	-	316	278	V

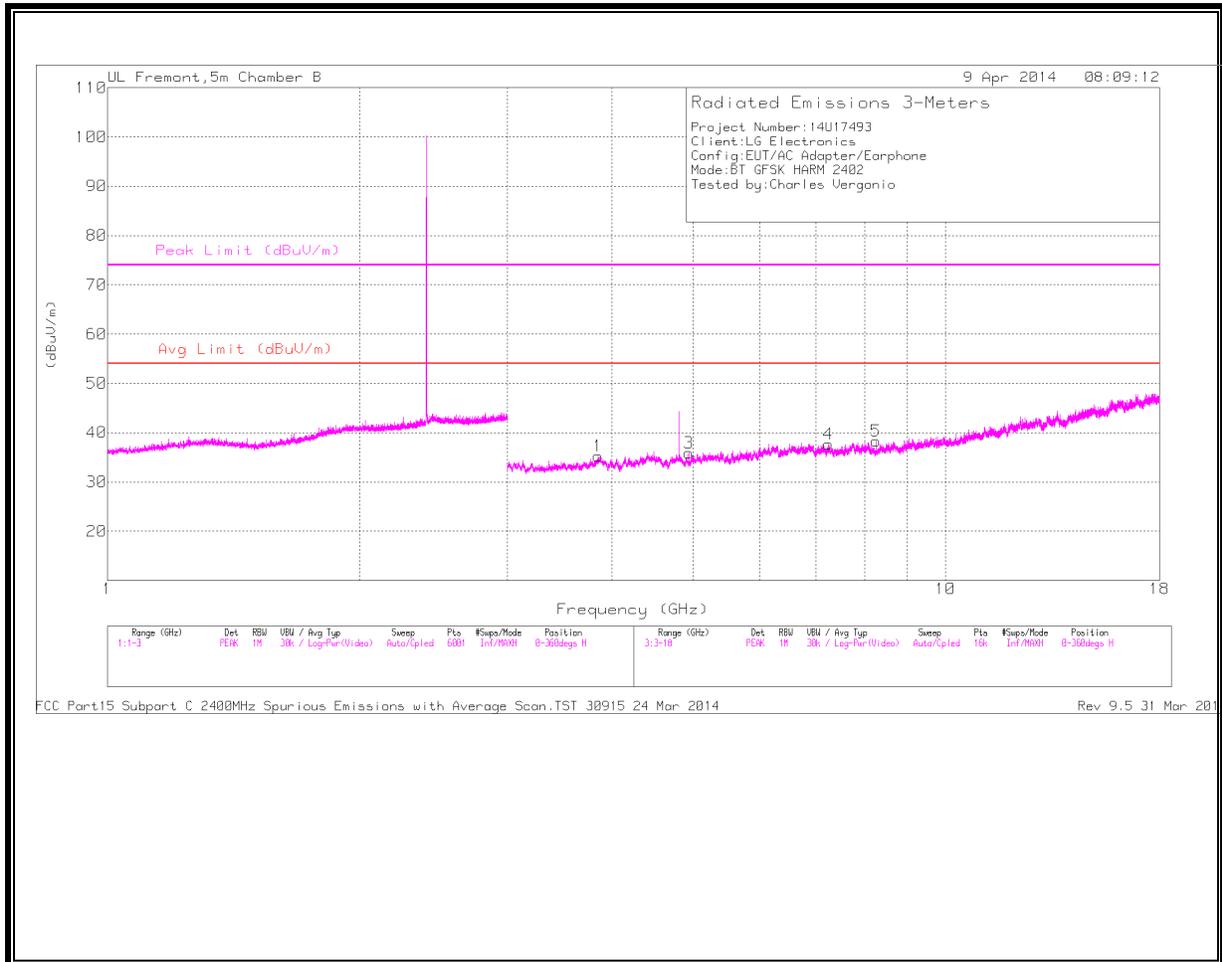
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

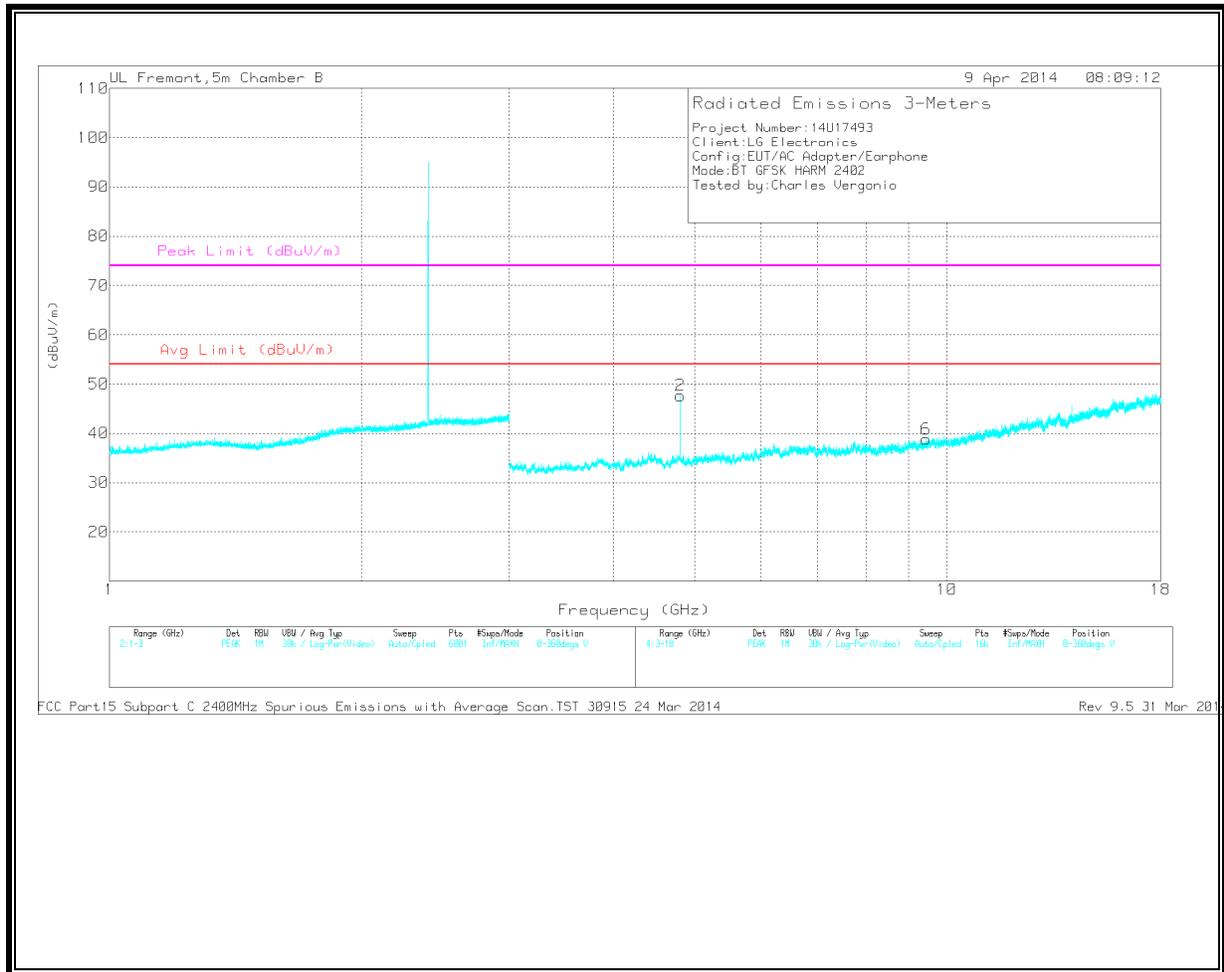
VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

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.



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.852	31.75	PK	33.7	-30.2	0	35.25	-	-	74	-38.75	0-360	99	H
3	* 4.94	32.23	PK	34.2	-30.5	0	35.93	-	-	74	-38.07	0-360	202	H
4	* 7.252	29.38	PK	35.6	-27.3	0	37.68	-	-	74	-36.32	0-360	99	H
5	* 8.254	29.07	PK	35.7	-26.4	0	38.37	-	-	74	-35.63	0-360	99	H
2	* 4.804	42.25	PK	34.2	-28.8	0	47.65	-	-	74	-26.35	0-360	202	V
6	* 9.451	26.89	PK	36.6	-24.7	0	38.79	-	-	74	-35.21	0-360	99	V

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

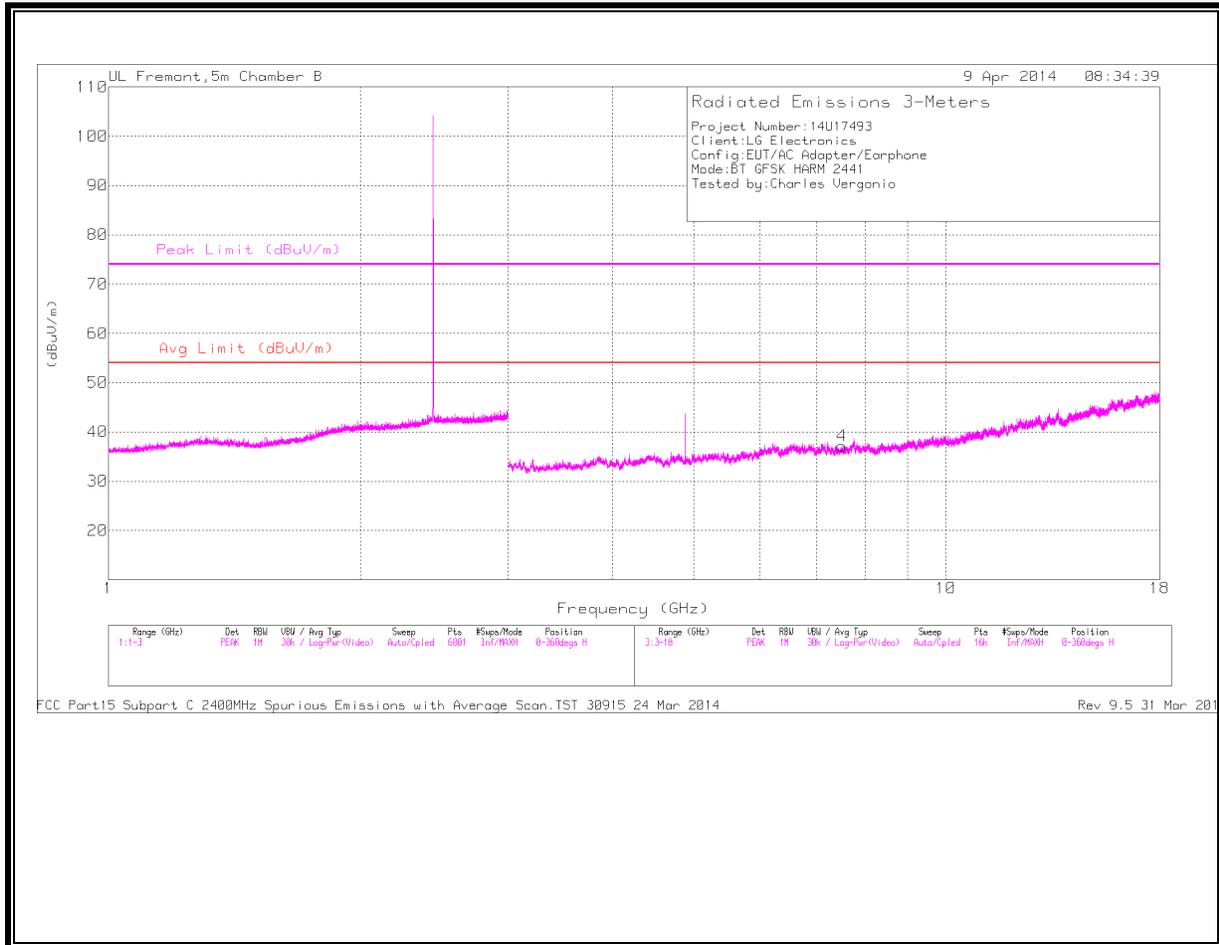
PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.854	39.8	PK3	33.7	-30.2	43.3	54	-10.7	74	-30.7	1	100	H
* 4.939	40.08	PK3	34.2	-30.5	43.78	54	-10.22	74	-30.22	1	100	H
* 7.252	38.43	PK3	35.6	-27.4	46.63	54	-7.37	74	-27.37	1	100	H
* 8.256	36.14	PK3	35.7	-26.4	45.44	54	-8.56	74	-28.56	1	100	H
* 9.451	35.1	PK3	36.6	-24.7	47	54	-7.0	74	-27	1	100	V
* 4.804	46.94	PK3	34.2	-28.8	52.34	54	-1.66	74	-21.66	69	259	V
* 4.804	41.18	VB10	34.2	-28.8	47.68	54	-6.32	-	-	69	259	V

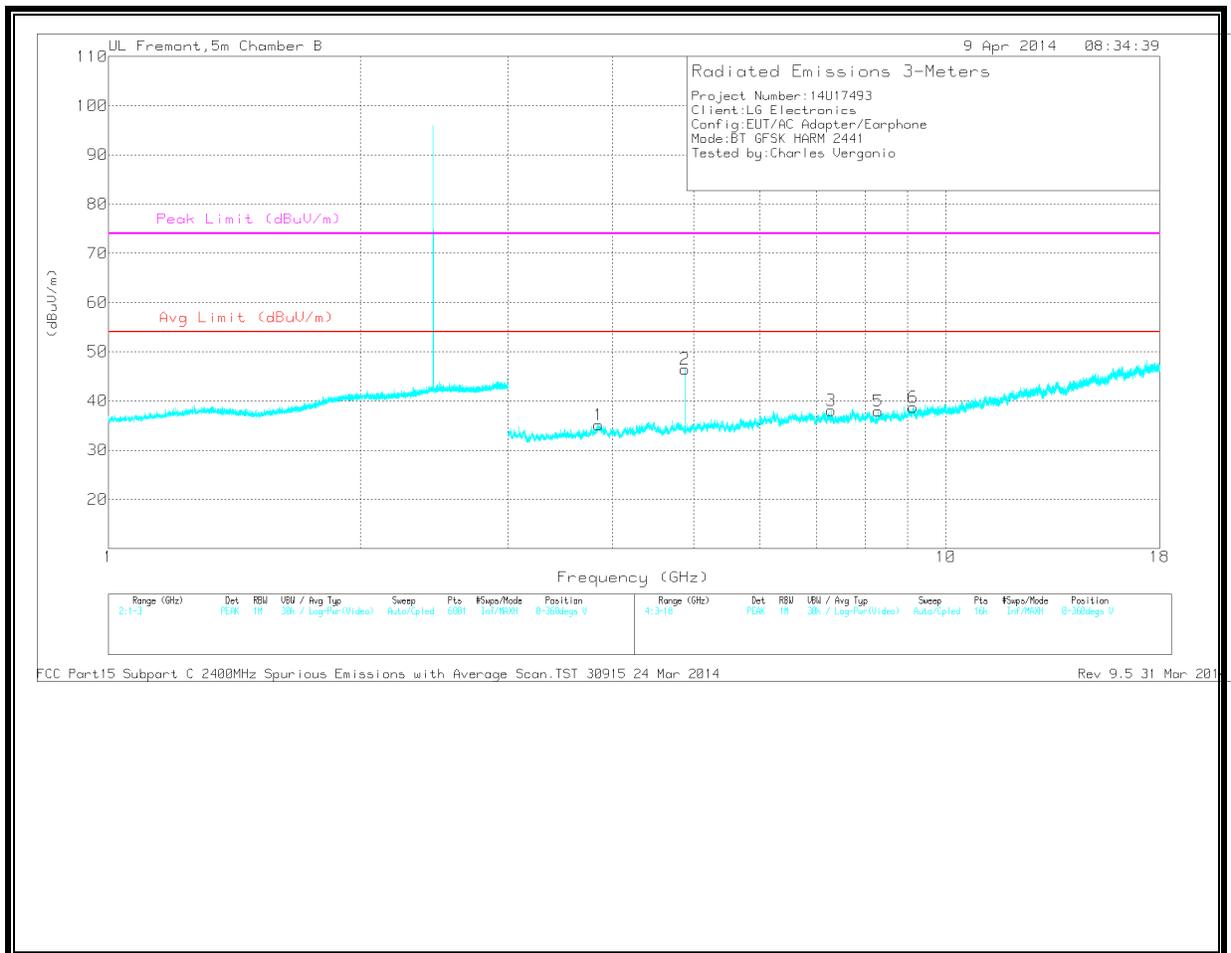
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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.

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.

MID CHANNEL DATA

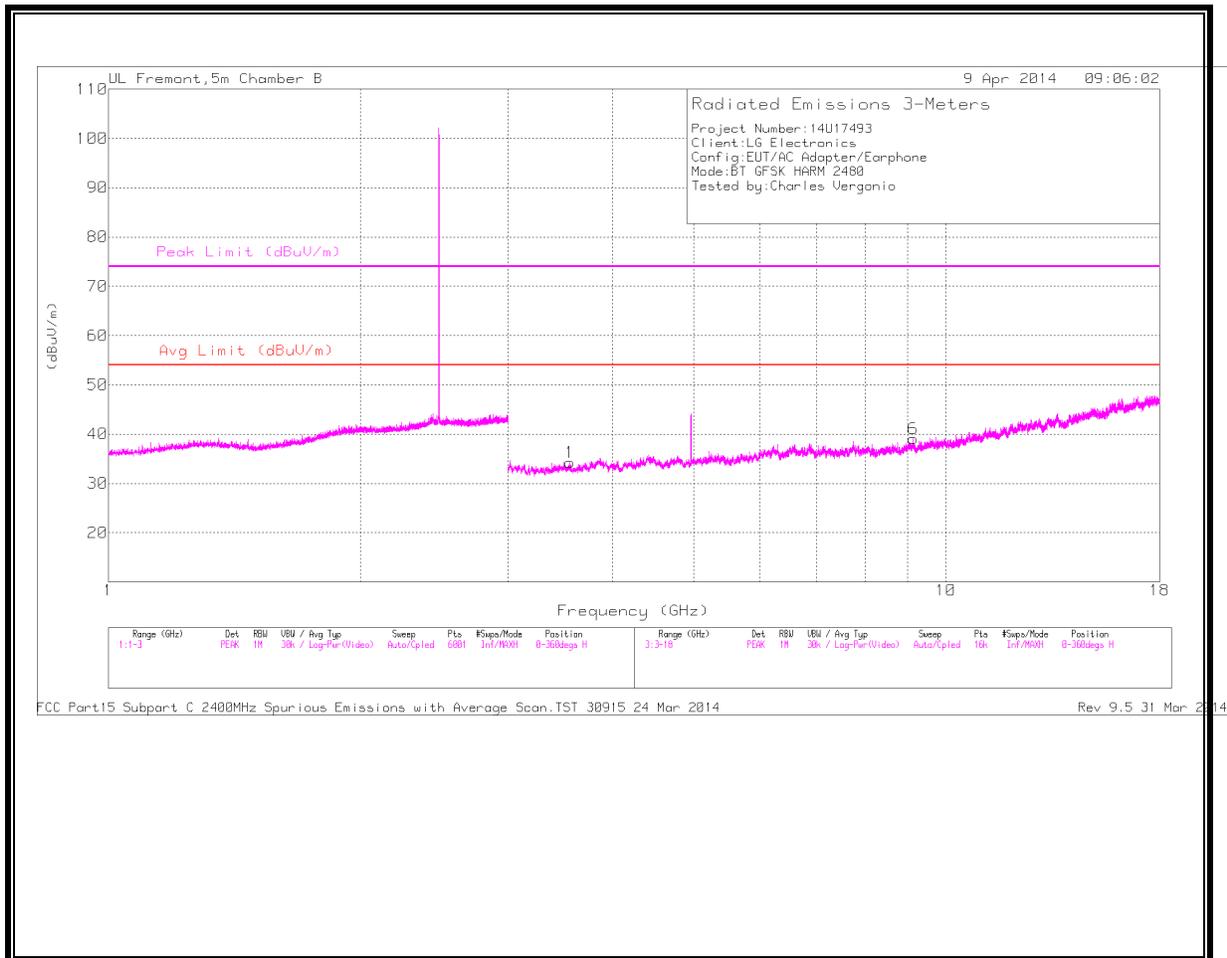
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 7.517	28.46	PK	35.6	-26.9	0	37.16	-	-	74	-36.84	0-360	202	H
1	* 3.847	31.66	PK	33.7	-30.2	0	35.16	-	-	74	-38.84	0-360	99	V
2	* 4.881	42.9	PK	34.2	-30.6	0	46.5	-	-	74	-27.5	0-360	202	V
3	* 7.299	30.25	PK	35.6	-27.8	0	38.05	-	-	74	-35.95	0-360	99	V
5	* 8.299	28.36	PK	35.7	-26.1	0	37.96	-	-	74	-36.04	0-360	99	V
6	* 9.137	27.35	PK	36.3	-24.9	0	38.75	-	-	74	-35.25	0-360	99	V

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

PK - Peak detector
Radiated Emissions

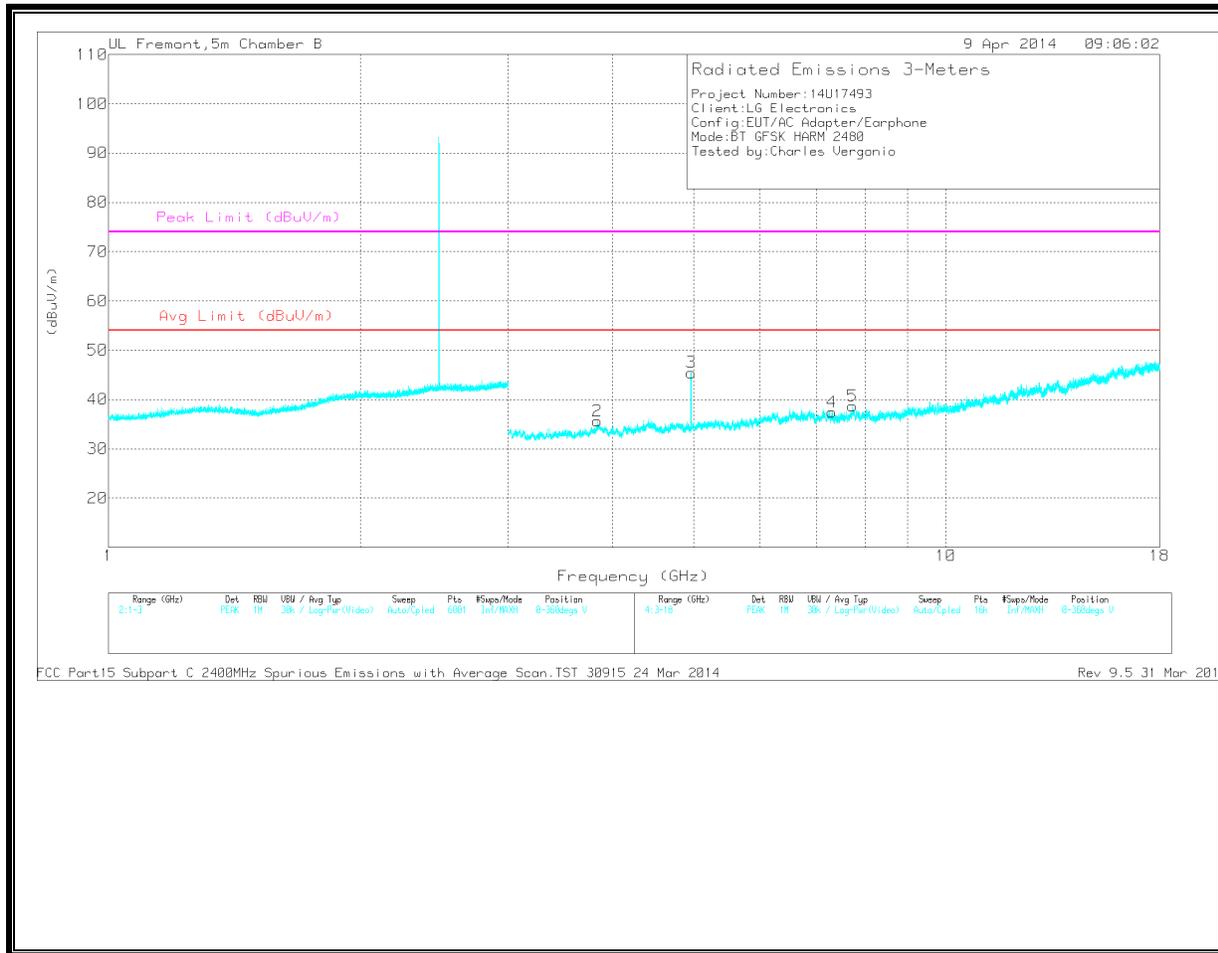
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.516	37.21	PK3	35.6	-26.8	46.01	54	-7.99	74	-27.99	1	100	H
* 3.845	40.29	PK3	33.7	-30.2	43.79	54	-10.21	74	-30.21	1	100	V
* 7.298	38.81	PK3	35.6	-27.8	46.61	54	-7.39	74	-27.39	1	100	V
* 8.298	36.57	PK3	35.7	-26.2	46.07	54	-7.93	74	-27.93	1	100	V
* 9.138	35.71	PK3	36.3	-24.9	47.11	54	-6.89	74	-26.89	1	100	V
* 4.882	47.8	PK3	34.2	-30.6	51.4	54	-2.6	74	-22.6	104	274	V
* 4.882	41.57	VB10	34.2	-30.6	46.27	54	-7.73	-	-	104	274	V

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



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

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.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.555	32.5	PK	33	-31.2	0	34.3	-	-	74	-39.7	0-360	99	H
6	* 9.144	27.86	PK	36.3	-25.1	0	39.06	-	-	74	-34.94	0-360	202	H
2	* 3.835	32.13	PK	33.7	-30.2	0	35.63	-	-	74	-38.37	0-360	99	V
3	* 4.96	41.49	PK	34.2	-30.2	0	45.49	-	-	74	-28.51	0-360	202	V
4	* 7.31	29.52	PK	35.6	-27.7	0	37.42	-	-	74	-36.58	0-360	99	V
5	* 7.738	29.02	PK	35.7	-26	0	38.72	-	-	74	-35.28	0-360	99	V

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

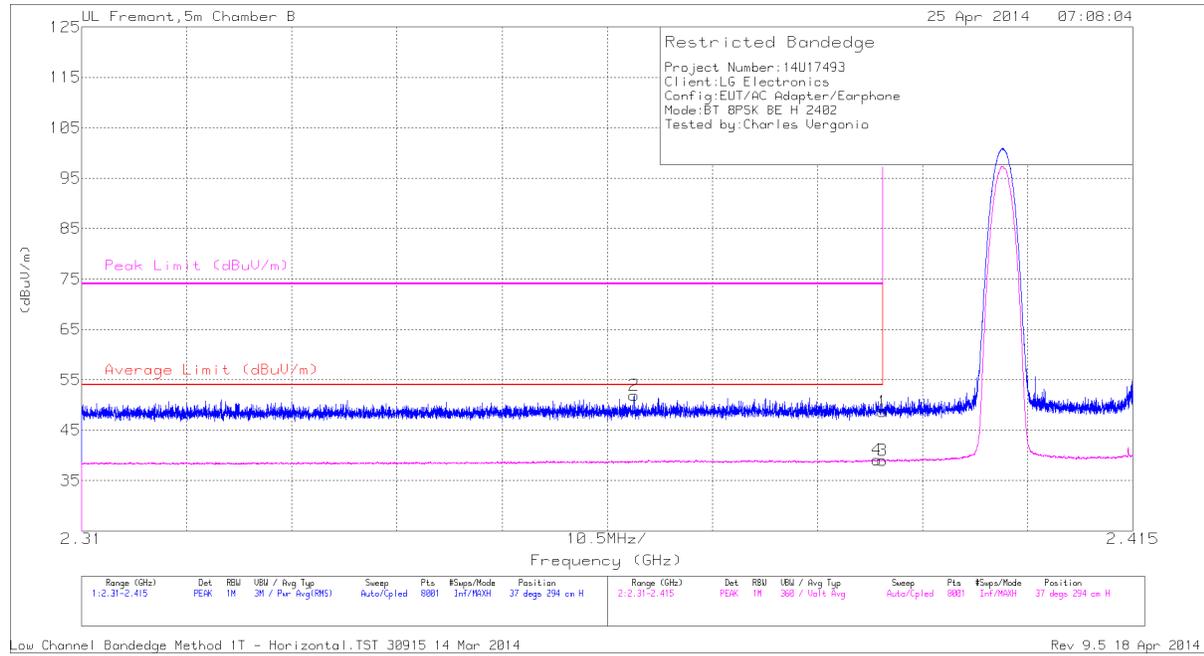
PK - Peak detector
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.556	40.96	PK3	33	-31.2	42.76	54	-11.24	74	-31.24	1	100	H
* 9.145	36.39	PK3	36.3	-25.1	47.59	54	-6.41	74	-26.41	1	100	H
* 3.835	40.06	PK3	33.7	-30.2	43.56	54	-10.44	74	-30.44	1	100	V
* 7.309	38.52	PK3	35.6	-27.7	46.42	54	-7.58	74	-27.58	1	100	V
* 7.737	37.65	PK3	35.7	-26	47.35	54	-6.65	74	-26.65	1	100	V
* 4.96	47.1	PK3	34.2	-30.2	51.1	54	-2.9	74	-22.9	74	271	V
* 4.96	40.94	VB10	34.2	-30.2	46.04	54	-7.96	-	-	74	271	V

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

9.2.2. ENHANCED DATA RATE 8PSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



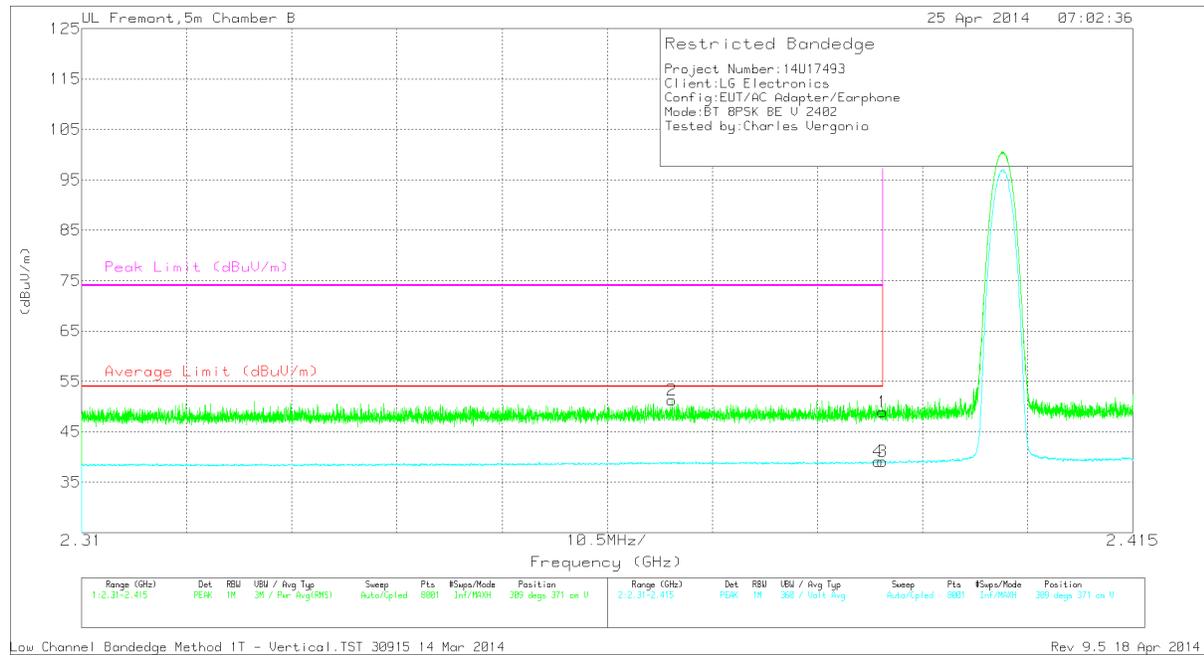
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/FI tr/Pad (dB)	DC Corr (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.51	PK	32.1	-22.9	0	48.71	-	-	74	-25.29	37	294	H
2	* 2.365	42.77	PK	32	-22.9	0	51.87	-	-	74	-22.13	37	294	H
3	* 2.39	29.75	VB1T	32.1	-22.9	0	38.95	54	-15.05	-	-	37	294	H
4	* 2.389	29.96	VB1T	32.1	-22.9	0	39.16	54	-14.84	-	-	37	294	H

* - 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

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



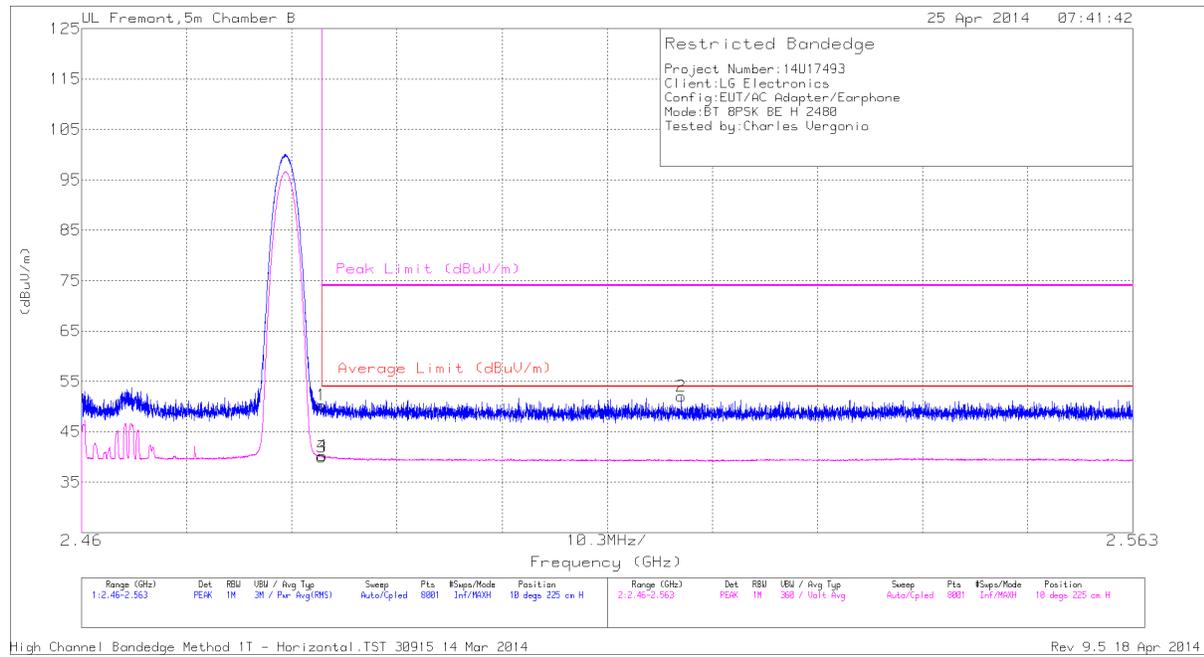
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.76	PK	32.1	-22.9	48.96	-	-	74	-25.04	309	371	V
2	* 2.369	42.09	PK	32	-22.8	51.29	-	-	74	-22.71	309	371	V
3	* 2.39	29.88	VB1T	32.1	-22.9	39.08	54	-14.92	-	-	309	371	V
4	* 2.39	29.95	VB1T	32.1	-22.9	39.15	54	-14.85	-	-	309	371	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

RESTRICTED BANDEGE (HIGH CHANNEL, HORIZONTAL)



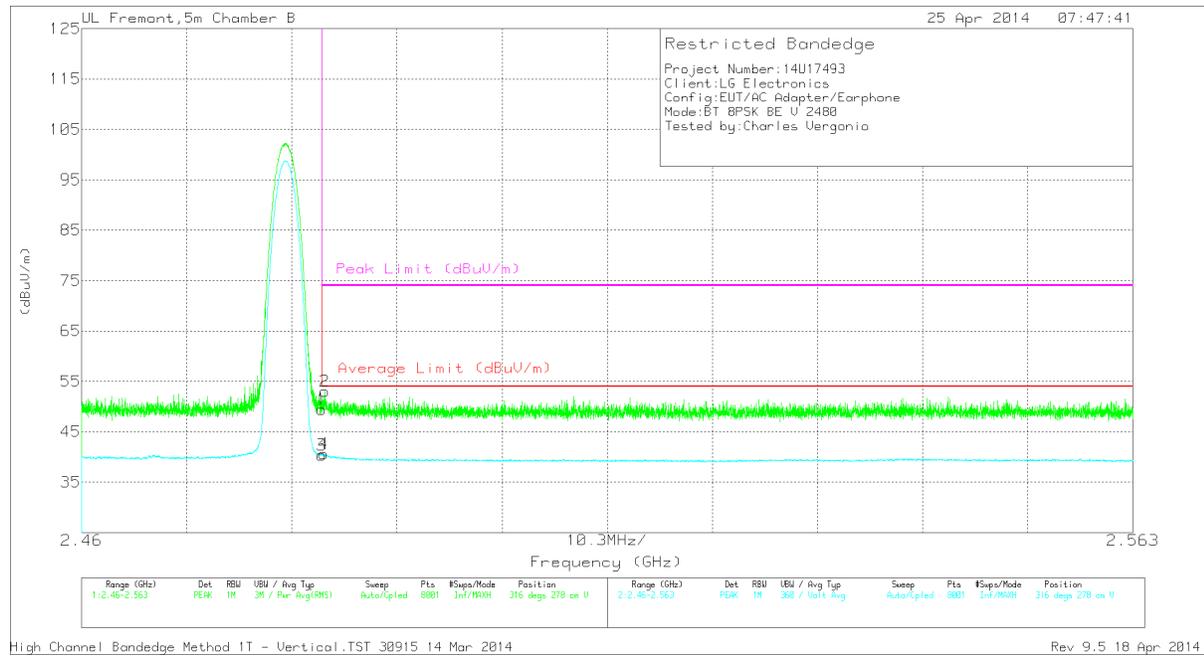
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.45	PK	32.4	-22.6	50.25	-	-	74	-23.75	10	225	H
3	* 2.484	30.14	VB1T	32.4	-22.6	39.94	54	-14.06	-	-	10	225	H
4	* 2.484	30.49	VB1T	32.4	-22.6	40.29	54	-13.71	-	-	10	225	H
2	2.519	42.28	PK	32.5	-22.8	51.98	-	-	74	-22.02	10	225	H

* - 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

RESTRICTED BANDEGE (HIGH CHANNEL, VERTICAL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.64	PK	32.4	-22.6	49.44	-	-	74	-24.56	316	278	V
2	* 2.484	43.24	PK	32.4	-22.6	53.04	-	-	74	-20.96	316	278	V
3	* 2.484	30.59	VB1T	32.4	-22.6	40.39	54	-13.61	-	-	316	278	V
4	* 2.484	30.76	VB1T	32.4	-22.6	40.56	54	-13.44	-	-	316	278	V

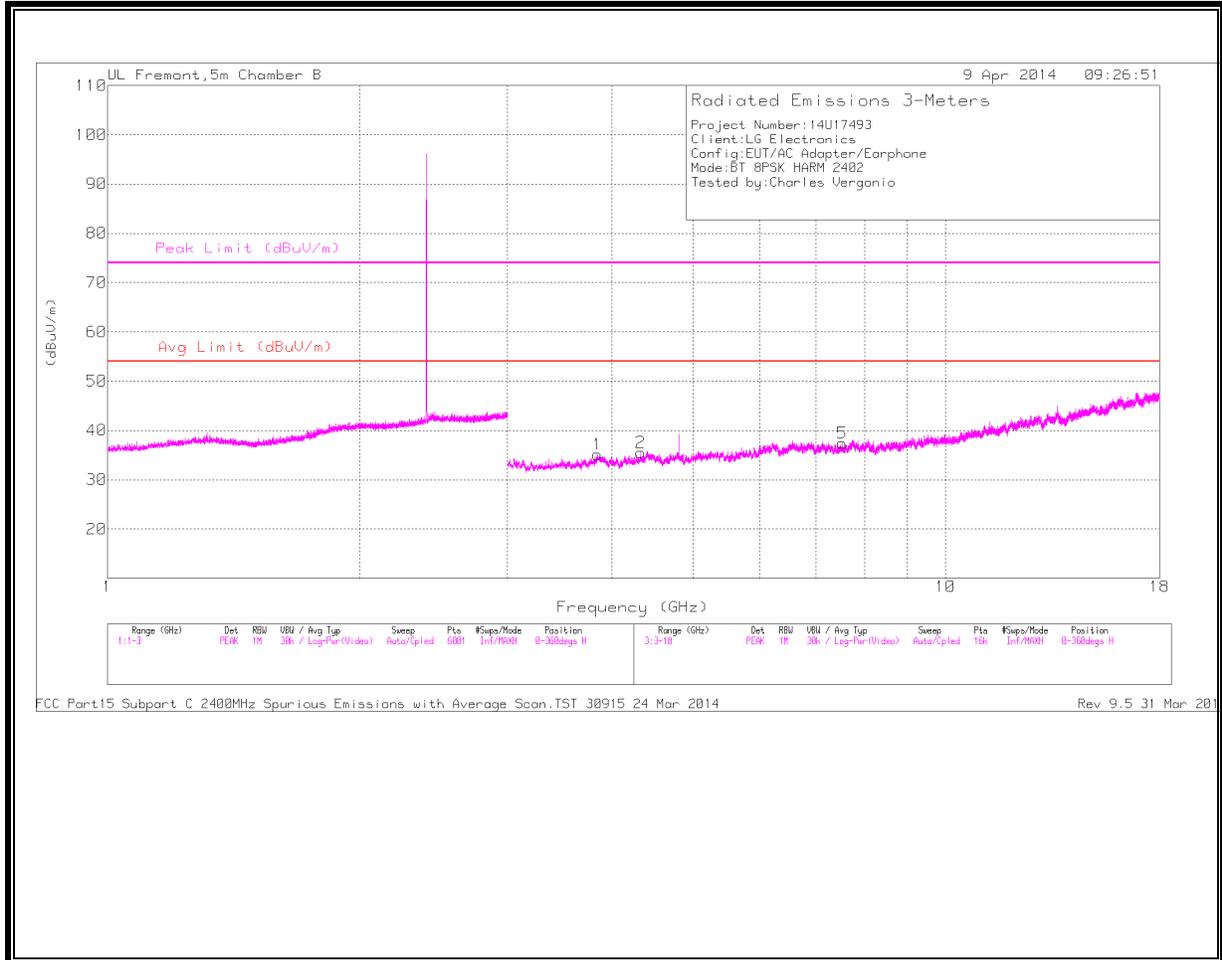
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

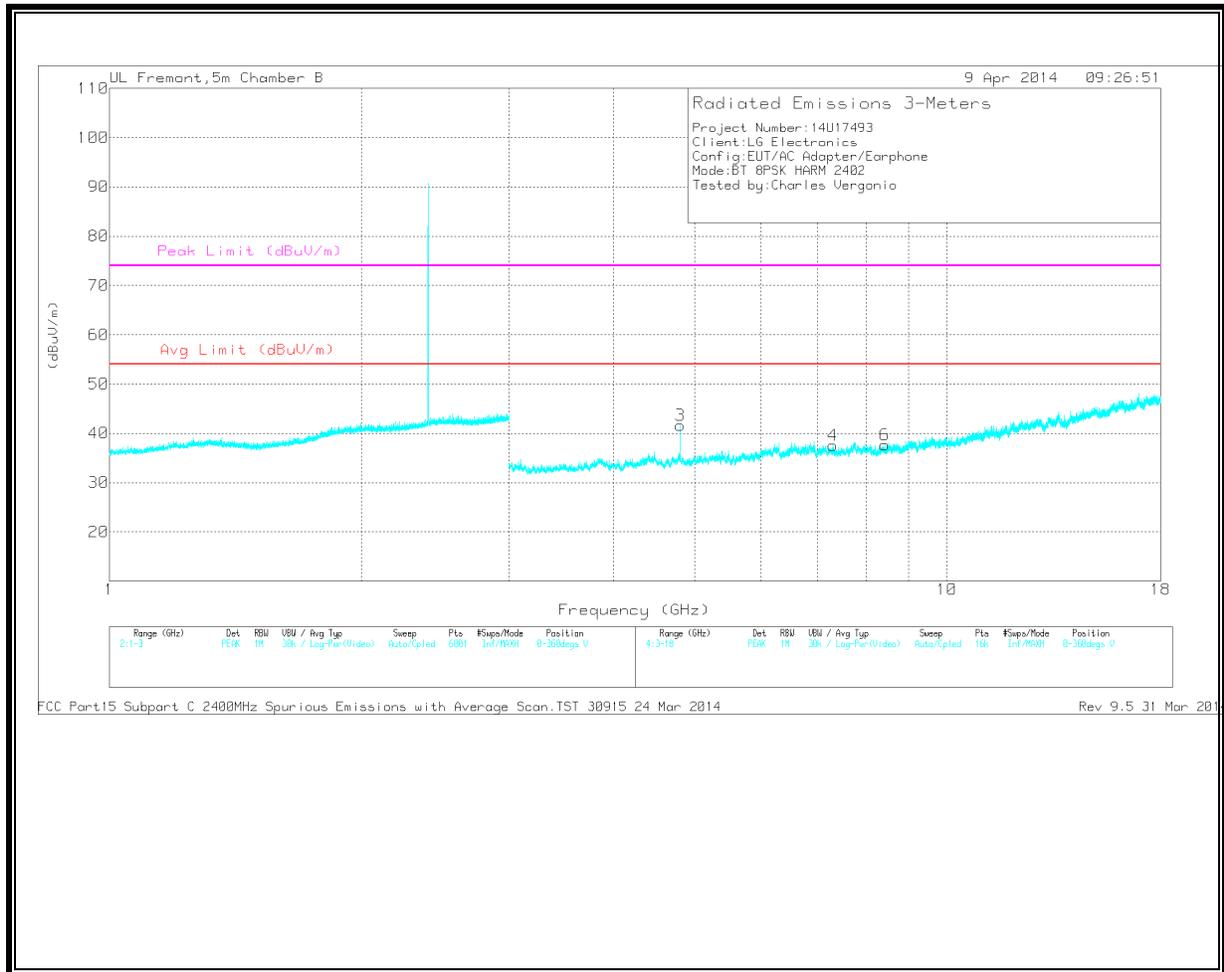
VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

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.



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.842	31.7	PK	33.7	-30.2	0	35.2	-	-	74	-38.8	0-360	99	H
2	* 4.328	32.78	PK	33.7	-31	0	35.48	-	-	74	-38.52	0-360	99	H
5	* 7.53	29.01	PK	35.6	-27.2	0	37.41	-	-	74	-36.59	0-360	99	H
3	* 4.804	36.21	PK	34.2	-28.8	0	41.61	-	-	74	-32.39	0-360	202	V
4	* 7.314	29.62	PK	35.6	-27.7	0	37.52	-	-	74	-36.48	0-360	202	V
6	* 8.432	27.28	PK	35.8	-25.4	0	37.68	-	-	74	-36.32	0-360	202	V

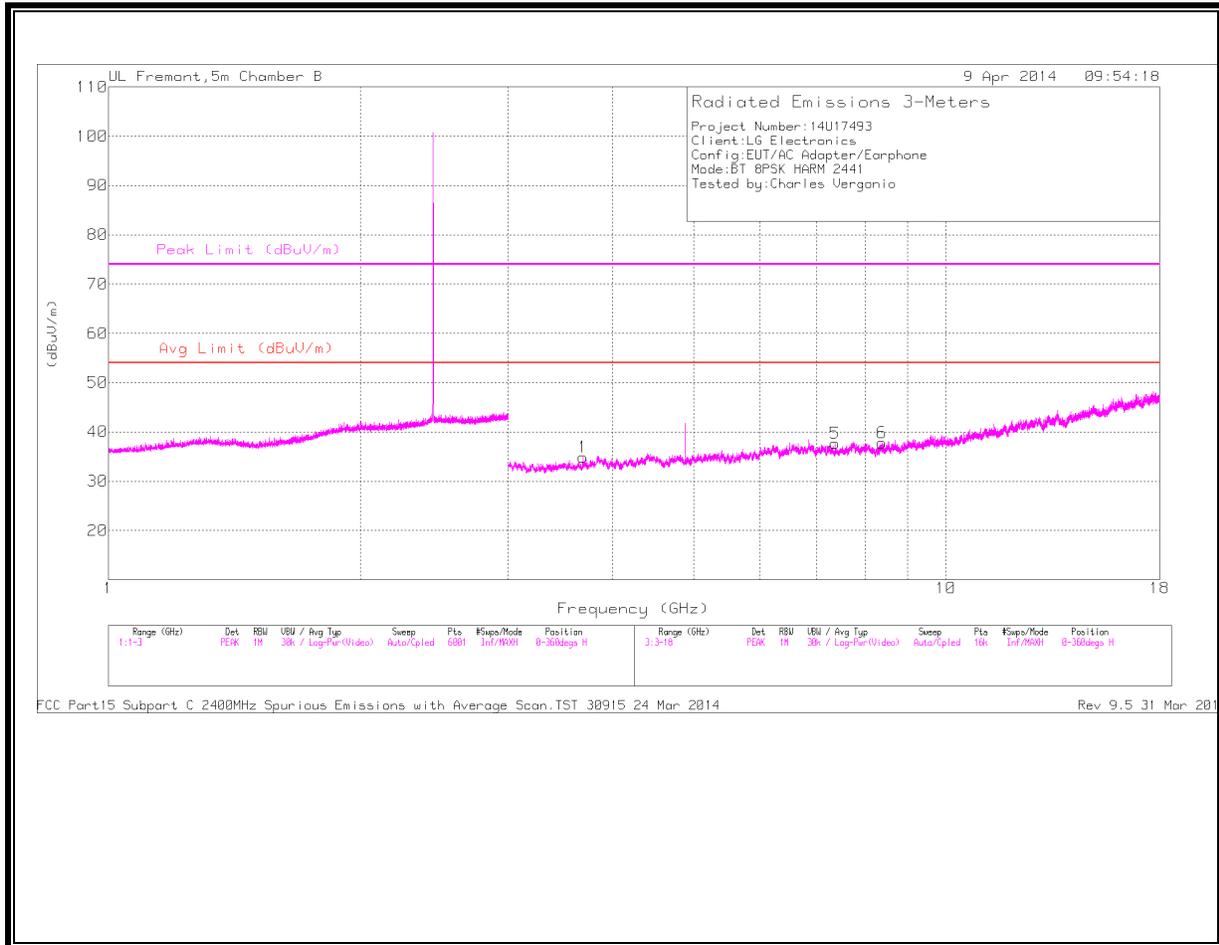
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.841	40.95	PK3	33.7	-30.2	44.45	54	-9.55	74	-29.55	1	100	H
* 4.327	41.05	PK3	33.7	-30.9	43.85	54	-10.15	74	-30.15	1	100	H
* 7.531	37.15	PK3	35.6	-27.2	45.55	54	-8.45	74	-28.45	1	100	H
* 7.314	38.27	PK3	35.6	-27.7	46.17	54	-7.83	74	-27.83	1	100	V
* 8.432	35.19	PK3	35.8	-25.4	45.59	54	-8.41	74	-28.41	1	100	V
* 4.804	43.45	PK3	34.2	-28.8	48.85	54	-5.15	74	-25.15	103	247	V
* 4.804	32.89	VB10	34.2	-28.8	39.39	54	-14.61	-	-	103	247	V

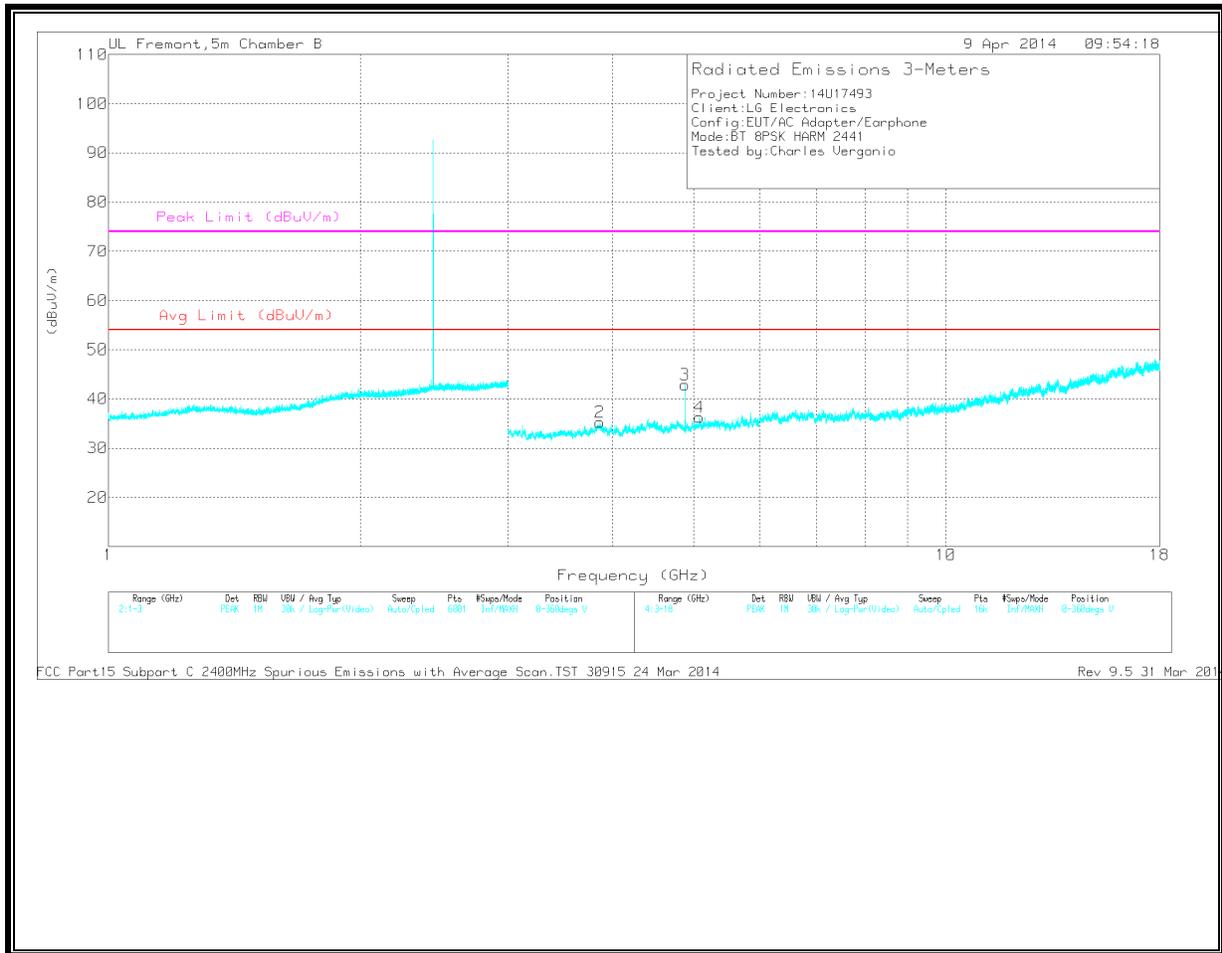
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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.

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.

MID CHANNEL DATA

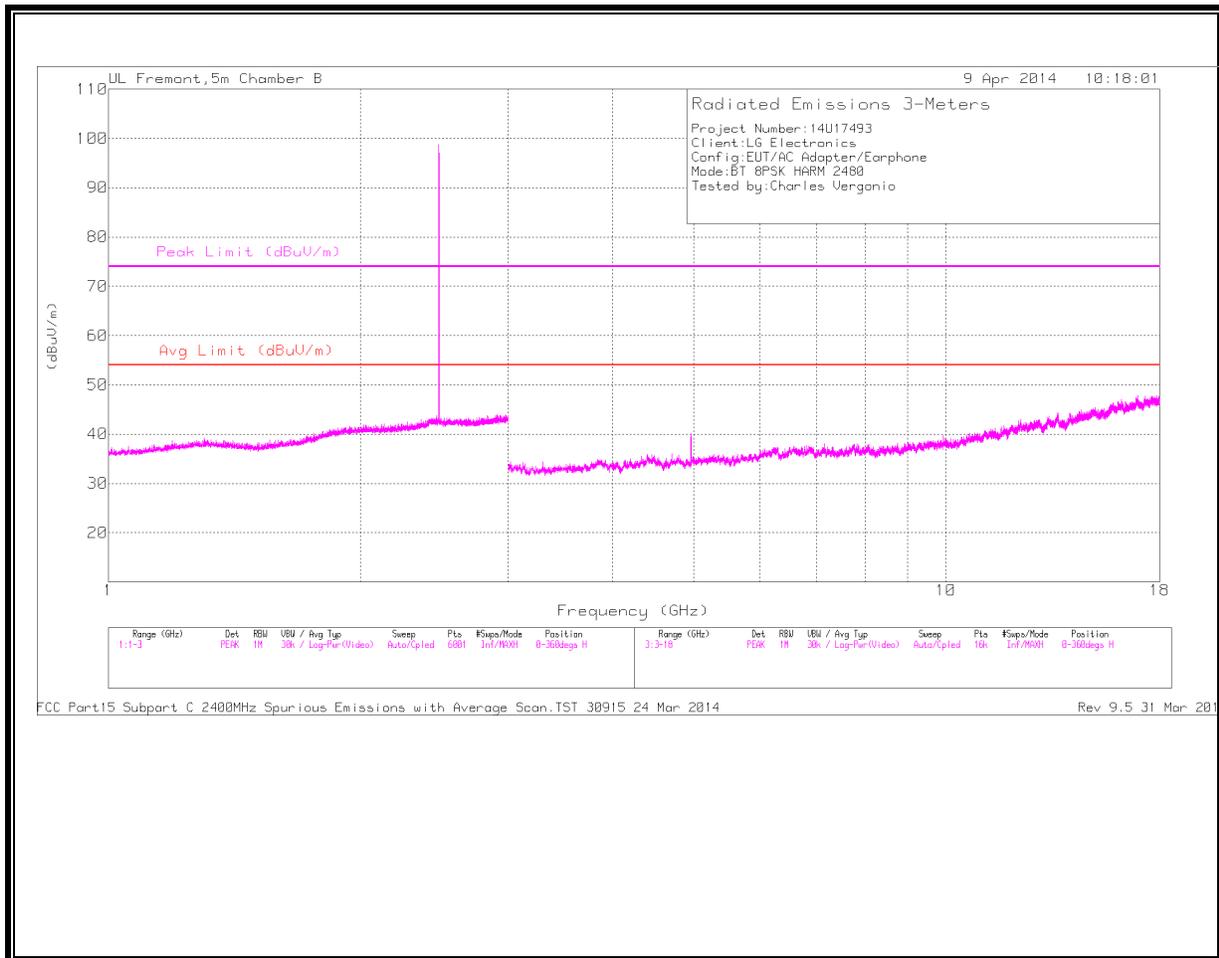
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.685	32.78	PK	33.3	-31.2	0	34.88	-	-	74	-39.12	0-360	202	H
5	* 7.372	29.76	PK	35.6	-27.7	0	37.66	-	-	74	-36.34	0-360	99	H
6	* 8.385	27.65	PK	35.7	-25.6	0	37.75	-	-	74	-36.25	0-360	202	H
2	* 3.862	31.82	PK	33.7	-30.2	0	35.32	-	-	74	-38.68	0-360	99	V
3	* 4.882	39.31	PK	34.2	-30.6	0	42.91	-	-	74	-31.09	0-360	202	V
4	* 5.08	30.82	PK	34.2	-28.7	0	36.32	-	-	74	-37.68	0-360	202	V

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

PK - Peak detector
 Radiated Emissions

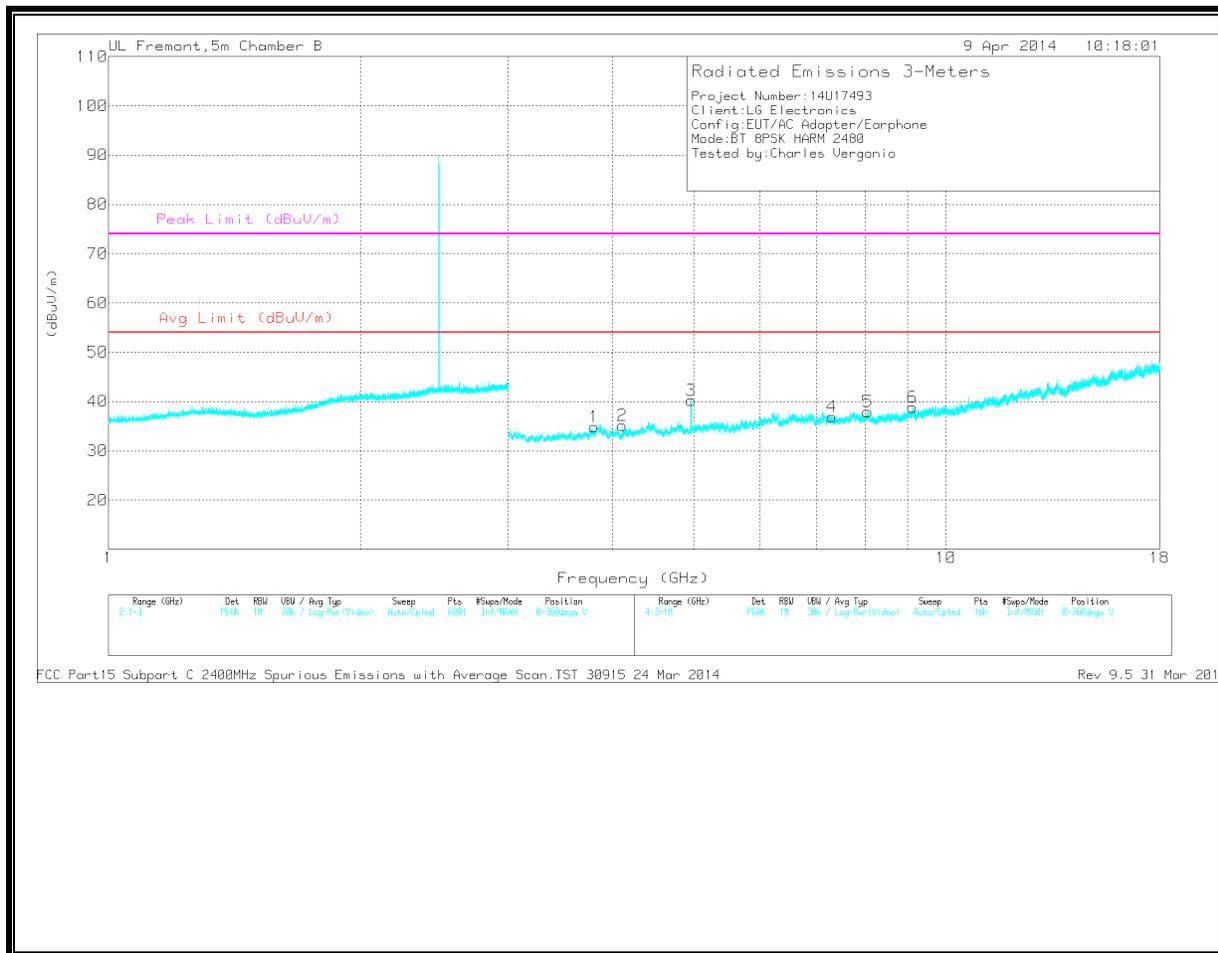
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.684	40.33	PK3	33.3	-31.2	42.43	54	-11.57	74	-31.57	2	100	H
* 7.373	38.58	PK3	35.6	-27.7	46.48	54	-7.52	74	-27.52	2	100	H
* 8.385	36.59	PK3	35.7	-25.5	46.79	54	-7.21	74	-27.21	2	100	H
* 3.863	40.46	PK3	33.7	-30.2	43.96	54	-10.04	74	-30.04	2	100	V
* 5.08	39.29	PK3	34.2	-28.7	44.79	54	-9.21	74	-29.21	2	100	V
* 4.882	46.4	PK3	34.2	-30.6	50	54	-4.0	74	-24	81	248	V
* 4.882	37.35	VB10	34.2	-30.6	42.05	54	-11.95	-	-	81	248	V

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



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

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.

HIGH CHANNEL DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (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	* 3.802	32.11	PK	33.6	-30.8	0	34.91	-	-	74	-39.09	0-360	99	V
2	* 4.112	32.19	PK	33.6	-30.6	0	35.19	-	-	74	-38.81	0-360	99	V
3	* 4.96	36.18	PK	34.2	-30.2	0	40.18	-	-	74	-33.82	0-360	202	V
4	* 7.315	29.07	PK	35.6	-27.7	0	36.97	-	-	74	-37.03	0-360	202	V
5	* 8.069	28.4	PK	35.7	-26.2	0	37.9	-	-	74	-36.1	0-360	202	V
6	* 9.123	27.54	PK	36.3	-25	0	38.84	-	-	74	-35.16	0-360	99	V

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

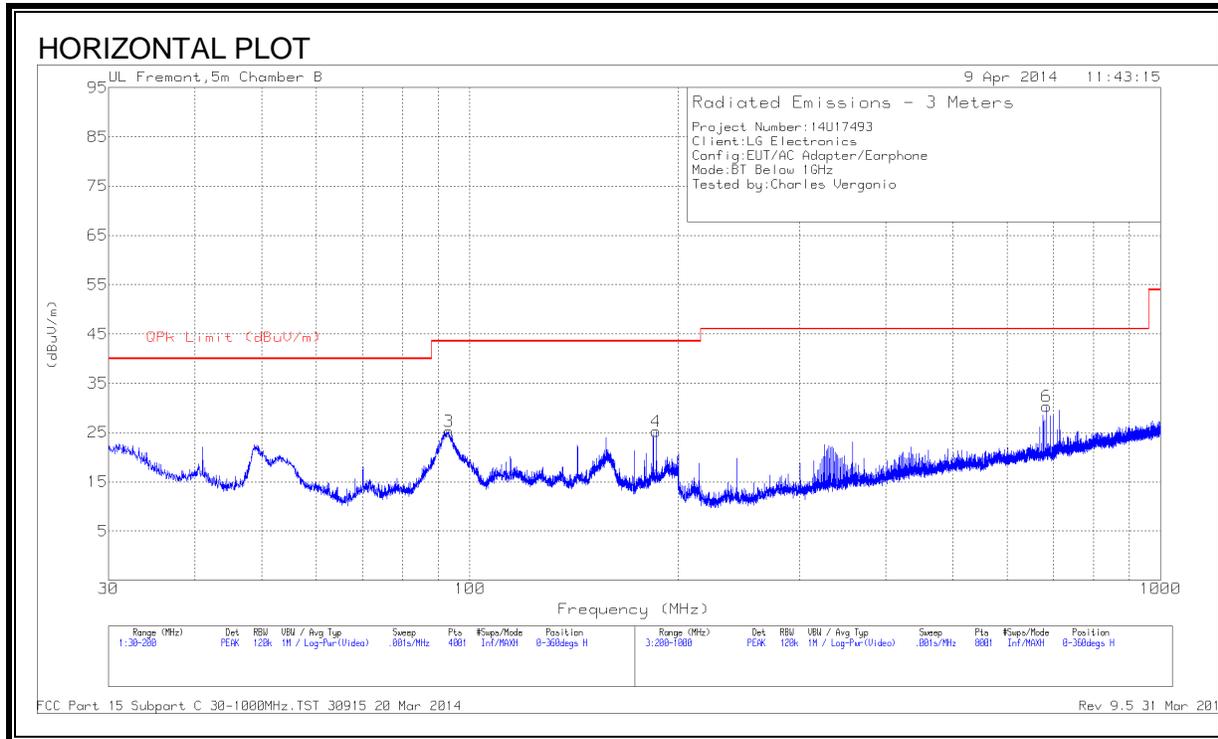
PK - Peak detector
Radiated Emissions

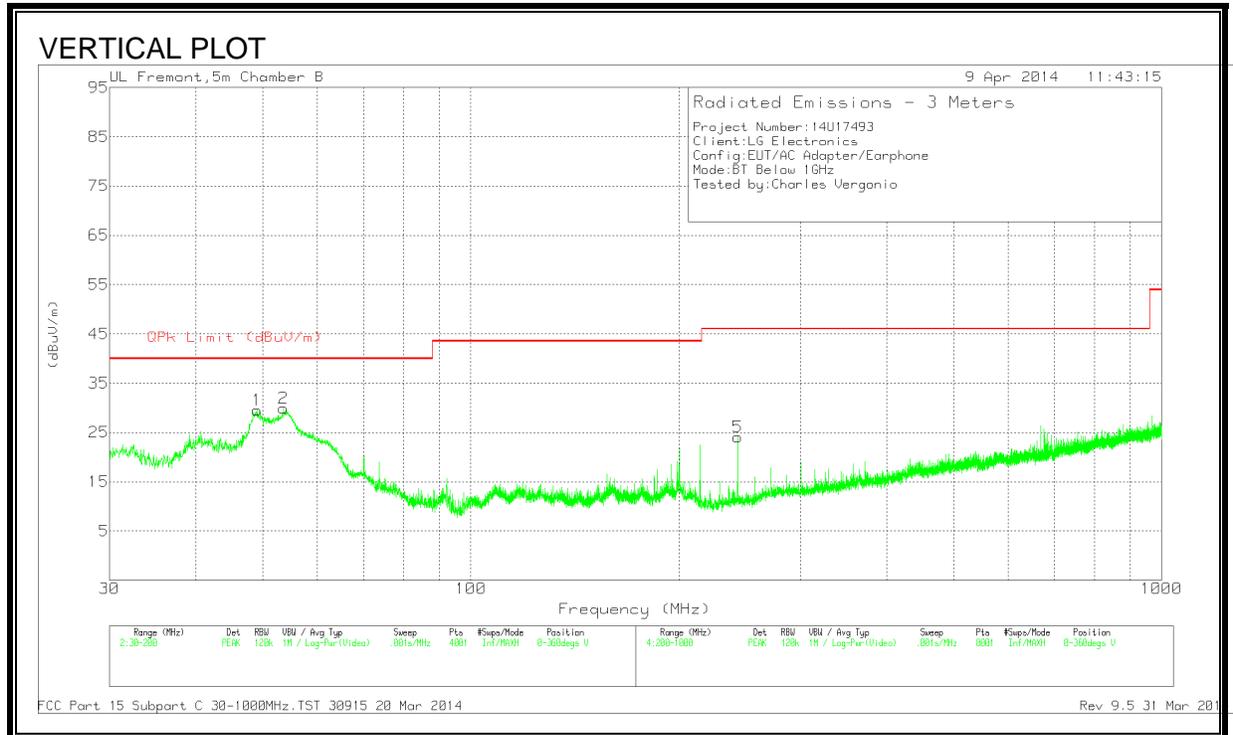
Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.803	41.49	PK3	33.6	-30.8	44.29	54	-9.71	74	-29.71	1	100	V
* 4.113	39.47	PK3	33.6	-30.6	42.47	54	-11.53	74	-31.53	1	100	V
* 7.314	39.38	PK3	35.6	-27.7	47.28	54	-6.72	74	-26.72	1	100	V
* 8.068	37.07	PK3	35.7	-26.2	46.57	54	-7.43	74	-27.43	1	100	V
* 9.122	36.64	PK3	36.3	-25	47.94	54	-6.06	74	-26.06	1	100	V
* 4.96	44.91	PK3	34.2	-30.2	48.91	54	-5.09	74	-25.09	93	215	V
* 4.96	34.58	VB10	34.2	-30.2	39.68	54	-14.32	-	-	93	215	V

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

9.3. WORST-CASE BELOW 1 GHz

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





DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 243.4	39.12	PK	11.5	-26.5	24.12	46.02	-21.9	0-360	200	V
1	49.04	49.88	PK	8.2	-28.6	29.48	40	-10.52	0-360	101	V
2	53.5875	51.41	PK	7.1	-28.6	29.91	40	-10.09	0-360	101	V
3	93.1975	44.97	PK	8.4	-28.1	25.27	43.52	-18.25	0-360	200	H
4	186.1025	41.06	PK	11.3	-27.1	25.26	43.52	-18.26	0-360	400	H
6	684	35.59	PK	19.6	-24.9	30.29	46.02	-15.73	0-360	200	H

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

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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 C63.4.

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

WORST EMISSIONS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.15	51.84	PK	1.4	0	53.24	66	-12.76	-	-
2	.15	13.99	Av	1.4	0	15.39	-	-	56	-40.61
3	.168	50.48	PK	1.2	0	51.68	65.1	-13.42	-	-
4	.168	11.36	Av	1.2	0	12.56	-	-	55.1	-42.54
5	.366	47.55	PK	.5	0	48.05	58.6	-10.55	-	-
6	.366	38.72	Av	.5	0	39.22	-	-	48.6	-9.38
7	.501	51.71	PK	.3	0	52.01	56	-3.99	-	-
8	.501	42.69	Av	.3	0	42.99	-	-	46	-3.01
9	1.0455	52.17	PK	.2	0	52.37	56	-3.63	-	-
10	1.0455	38.91	Av	.2	0	39.11	-	-	46	-6.89
11	2.0895	47.41	PK	.2	.1	47.71	56	-8.29	-	-
12	2.0895	27.71	Av	.2	.1	28.01	-	-	46	-17.99
13	6.2385	42.96	PK	.2	.1	43.26	60	-16.74	-	-
14	6.2385	25.02	Av	.2	.1	25.32	-	-	50	-24.68
15	9.357	42.04	PK	.2	.2	42.44	60	-17.56	-	-
16	9.357	23.71	Av	.2	.2	24.11	-	-	50	-25.89
17	13.542	39.65	PK	.2	.2	40.05	60	-19.95	-	-
18	13.542	16.91	Av	.2	.2	17.31	-	-	50	-32.69

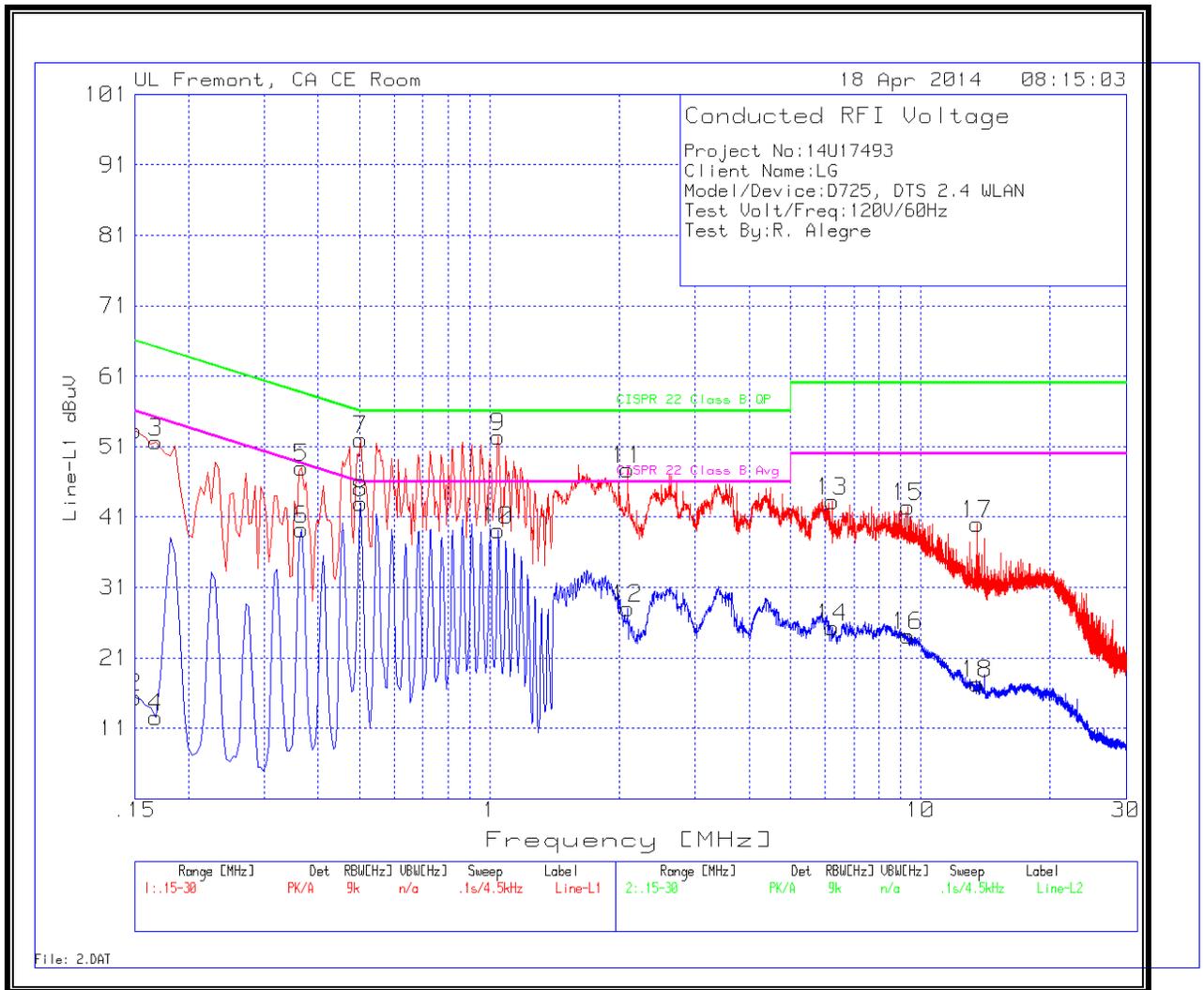
Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
19	.1995	39.12	PK	1	0	40.12	63.6	-23.48	-	-
20	.1995	23.79	Av	1	0	24.79	-	-	53.6	-28.81
21	.249	40.58	PK	.7	0	41.28	61.8	-20.52	-	-
22	.249	21.29	Av	.7	0	21.99	-	-	51.8	-29.81
23	.3075	41.02	PK	.6	0	41.62	60	-18.38	-	-
24	.3075	20.3	Av	.6	0	20.9	-	-	50	-29.1
25	.4785	50.99	PK	.4	0	51.39	56.4	-5.01	-	-
26	.4785	31	Av	.4	0	31.4	-	-	46.4	-15
27	.5955	47.07	PK	.3	0	47.37	56	-8.63	-	-
28	.5955	28.13	Av	.3	0	28.43	-	-	46	-17.57
29	1.4505	45.14	PK	.2	.1	45.44	56	-10.56	-	-
30	1.4505	26.4	Av	.2	.1	26.7	-	-	46	-19.3
31	1.8645	43.9	PK	.2	.1	44.2	56	-11.8	-	-
32	1.8645	27.84	Av	.2	.1	28.14	-	-	46	-17.86
33	3.624	42.42	PK	.2	.1	42.72	56	-13.28	-	-
34	3.624	27.11	Av	.2	.1	27.41	-	-	46	-18.59
35	13.569	44.45	PK	.3	.2	44.95	60	-15.05	-	-
36	13.569	24.29	Av	.3	.2	24.79	-	-	50	-25.21

PK - Peak detector
 Av - average detection

LINE 1 RESULTS



LINE 2 RESULTS

