



FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE PHONE WITH BT & DTS WLAN b/g/n

MODEL NUMBER: LG-L61AL, L61AL, LGL61AL

FCC ID: ZNFL61AL

REPORT NUMBER: 15I22343-E2V1

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Prepared for

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NVLAP LAB CODE 200065-0

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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>ON TIME, DUTY CYCLE</i>	<i>13</i>
8.2. <i>20 dB AND 99% BANDWIDTH</i>	<i>14</i>
8.2.1. <i>GFSK 20 dB BANDWIDTH PLOTS AND TABLE</i>	<i>15</i>
8.2.2. <i>GFSK 99% BANDWIDTH PLOTS AND TABLE</i>	<i>16</i>
8.2.3. <i>8PSK 20 dB BANDWIDTH PLOTS AND TABLE.....</i>	<i>17</i>
8.2.4. <i>8PSK 99% BANDWIDTH PLOTS AND TABLE.....</i>	<i>18</i>
8.3. <i>HOPPING FREQUENCY SEPARATION</i>	<i>19</i>
8.4. <i>NUMBER OF HOPPING CHANNELS.....</i>	<i>20</i>
8.4.1. <i>NUMBER OF HOPPING CHANNELS PLOTS</i>	<i>21</i>
8.5. <i>AVERAGE TIME OF OCCUPANCY.....</i>	<i>22</i>
8.5.1. <i>Pulse Width and Number of Pulses in 3.16 Seconds Period Plots</i>	<i>23</i>
8.6. <i>OUTPUT POWER.....</i>	<i>24</i>
8.6.1. <i>GFSK OUTPUT POWER PLOTS AND TABLE</i>	<i>25</i>
8.6.2. <i>8PSK OUTPUT POWER PLOTS AND TABLE</i>	<i>26</i>
8.7. <i>AVERAGE POWER.....</i>	<i>27</i>
8.8. <i>CONDUCTED SPURIOUS EMISSIONS.....</i>	<i>28</i>
8.8.1. <i>BASIC DATA RATE GFSK MODULATION NON-HOPPING MODE</i>	<i>29</i>
8.8.2. <i>BASIC DATA RATE GFSK MODULATION HOPPING MODE</i>	<i>30</i>
8.8.3. <i>ENHANCED DATA RATE 8PSK MODULATION NON-HOPPING MODE</i>	<i>31</i>
8.8.4. <i>ENHANCED DATA RATE 8PSK MODULATION HOPPING MODE</i>	<i>32</i>

9. RADIATED TEST RESULTS.....	33
9.1. TRANSMITTER ABOVE 1 GHz.....	34
9.1.1. BASIC DATA RATE GFSK MODULATION.....	34
9.1.2. ENHANCED DATA RATE 8PSK MODULATION.....	47
9.2. WORST-CASE BELOW 1 GHz.....	60
10. AC POWER LINE CONDUCTED EMISSIONS	62
11. SETUP PHOTOS	65

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION: GSM/WCDMA/LTE PHONE WITH BT & DTS WLAN b/g/n
MODEL: LG-L61AL, L61AL, LGL61AL
SERIAL NUMBER: 510KP AE000152, 510KPFX00155, 510KPJP00156, 510KPBF00157
DATE TESTED: NOVEMBER 30 – DECEMBER 5, 2015

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 C63.10-2013, FCC CFR 47 Part 2, and FCC CFR 47 Part 15.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
<input checked="" type="checkbox"/> Chamber A	<input type="checkbox"/> Chamber D
<input type="checkbox"/> Chamber B	<input type="checkbox"/> Chamber E
<input type="checkbox"/> Chamber C	<input type="checkbox"/> Chamber F
	<input type="checkbox"/> Chamber G
	<input type="checkbox"/> Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
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 WITH BT & DTS WLAN b/g/n

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	8.72	7.45
2402 - 2480	Enhanced 8PSK	9.21	8.34

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 8.7.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 0.24 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	MCS-02WRE	N/A	N/A
Earphone	LG	N/A	N/A	N/A

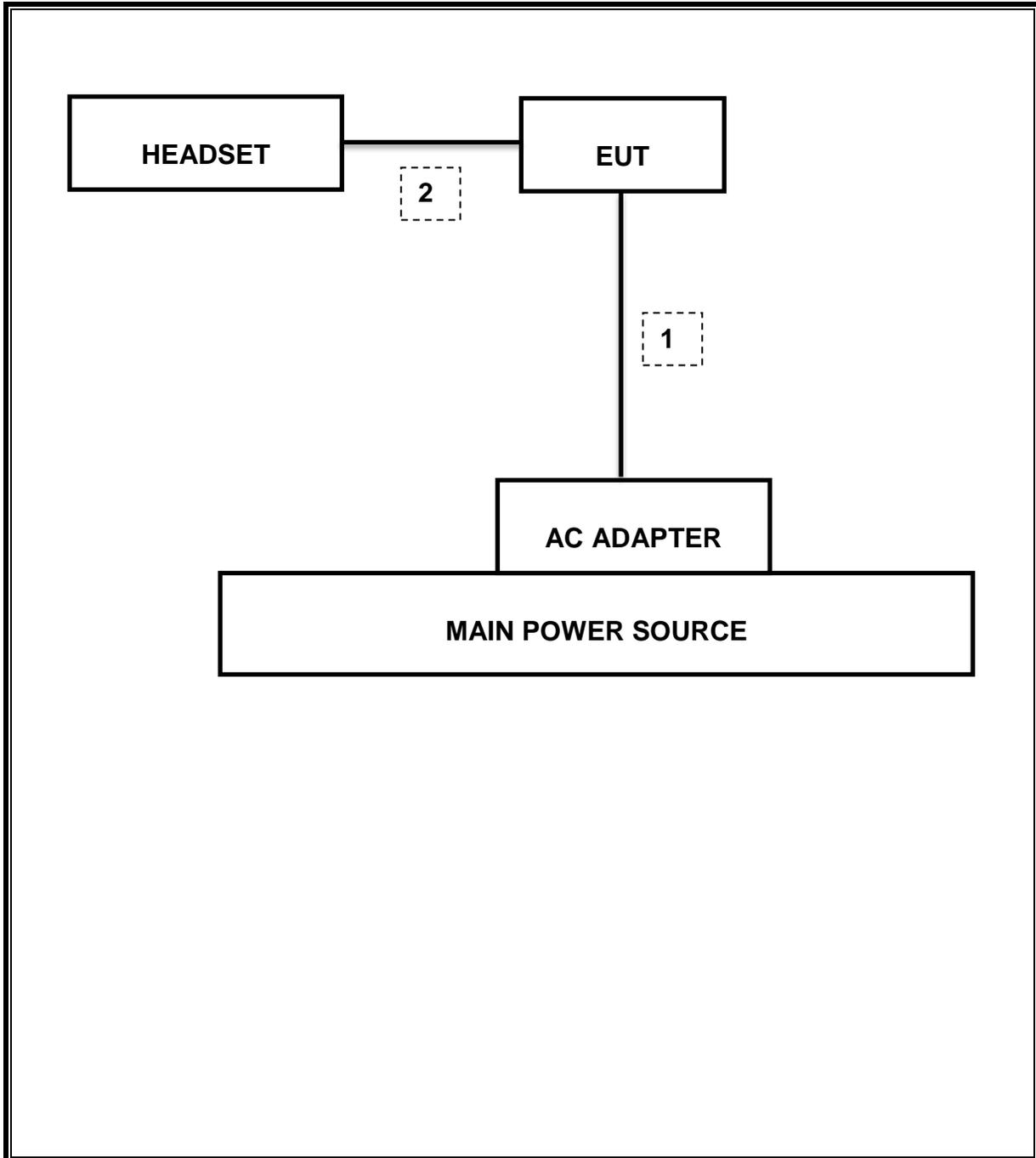
I/O CABLES

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	T Number	Cal Due
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	130	09/01/16
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	477	06/10/16
Antenna, Horn, 18GHz	EMCO	3115	59	11/18/16
Antenna, Horn, 18GHz	ETS Lindgren	3117	345	03/03/16
Antenna, Horn, 18GHz	ETS Lindgren	3117	136	03/03/16
Antenna, Horn, 18GHz	ETS Lindgren	3117	863	04/10/16
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	447	05/12/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	88	04/07/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	404	06/29/16
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	123	10/22/16
Spectrum Analyzer, PXA, 3 Hz to 44 GHz	Keysight	N9030A	908	03/03/16
Spectrum Analyzer, PXA, 3 Hz to 44 GHz	Keysight	N9030A	907	01/07/16
EMI Test Receiver, 9 KHz to 7 GHz	Rohde & Schwarz	ECSI7	284	09/10/16
Peak Power Meter	Agilent / HP	E4416A	84	01/26/16
Peak / Average Power Sensor	Keysight	E9327A	117	03/09/16
LISN, 30 MHz	FCC	50/250-25-2	24	01/16/16
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	160	CNR
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	417	05/04/16
High Pass Filter 6GHz	Micro-Tronics	HPS17542	893	04/25/16
High Pass Filter 3GHz	Micro-Tronics	HPS17543	898	04/25/16

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, July 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.0, Feb 2, 2015
Antenna Port Software	UL	UL RF	Ver 3.7, Nov 12, 2015

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 (20dB)	N/A	Conducted	Pass	1.311 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-44.619 dBm
15.247 (b)(1)	RSS-247 5.4.2	TX conducted output power	<21dBm		Pass	9.21 dBm
15.247 (a)(1)	RSS-247 5.1.2	Hopping frequency separation	> 25KHz		Pass	1 MHz
15.247 (a)(1)(iii)	RSS-247 5.1.4	Number of Hopping channels	More than 15 non-overlapping channels		Pass	79 channels
15.247 (a)(1)(iii)	RSS-247 5.1.4	Avg Time of Occupancy	< 0.4sec		Pass	0.3948 s
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	47.82dBuV PK
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	41.42 dBuV/m

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, DUTY CYCLE

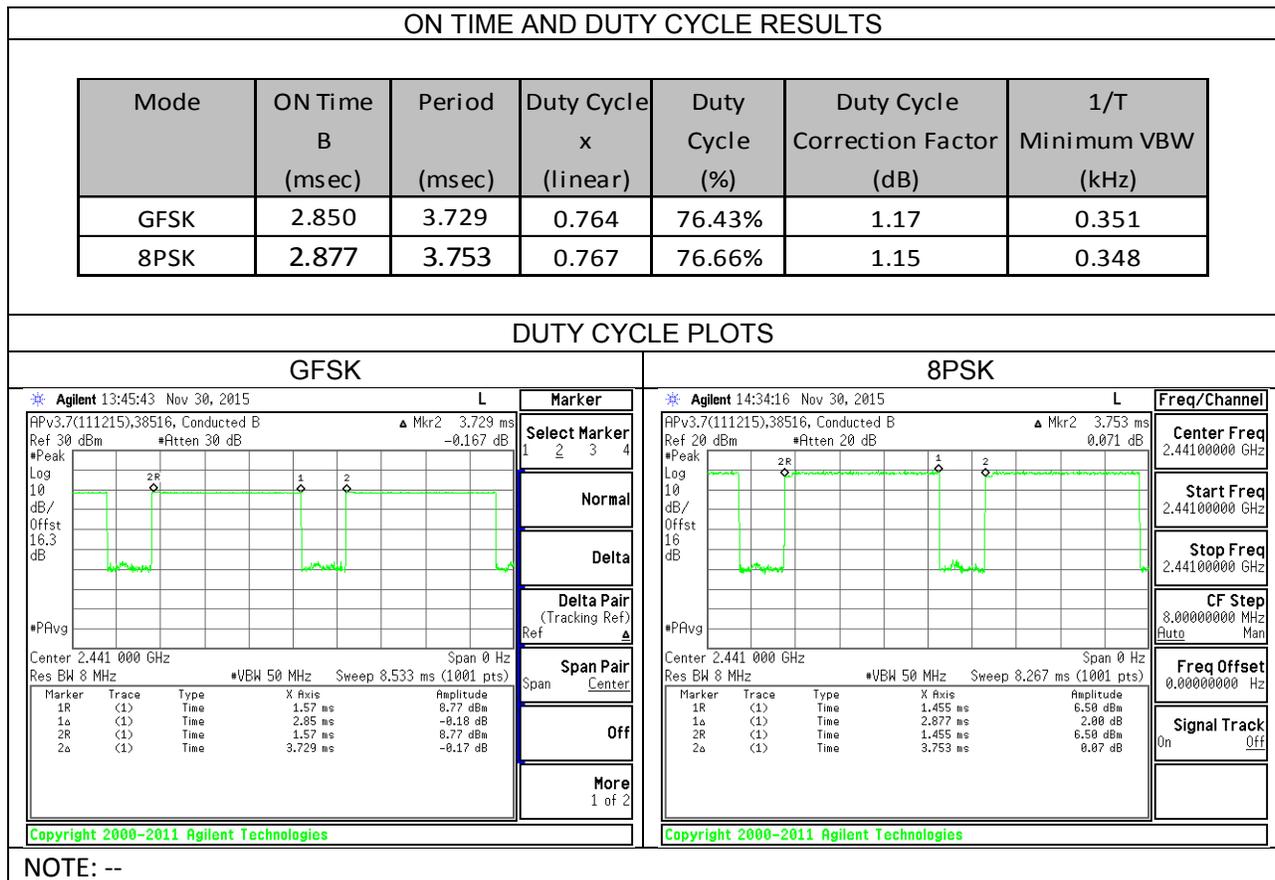
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

RESULTS



8.2. 20 dB AND 99% BANDWIDTH

LIMIT

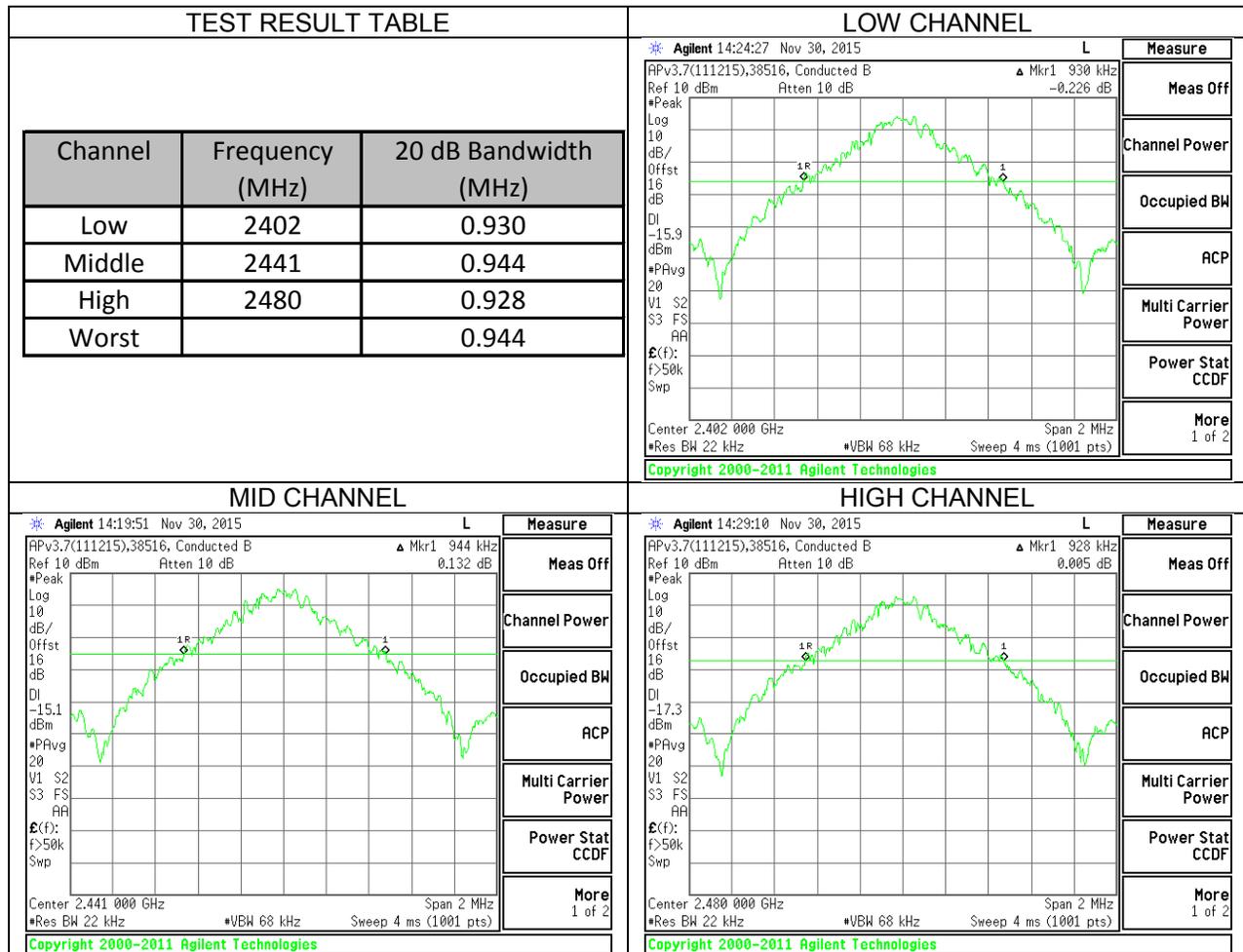
None; for reporting purposes only.

TEST PROCEDURE

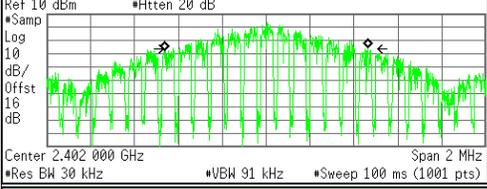
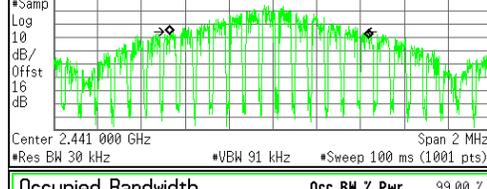
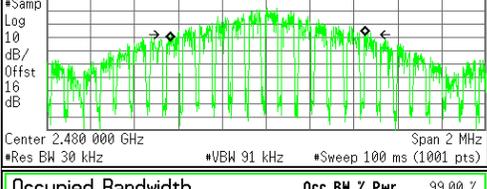
DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to \geq 1% of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

RESULTS

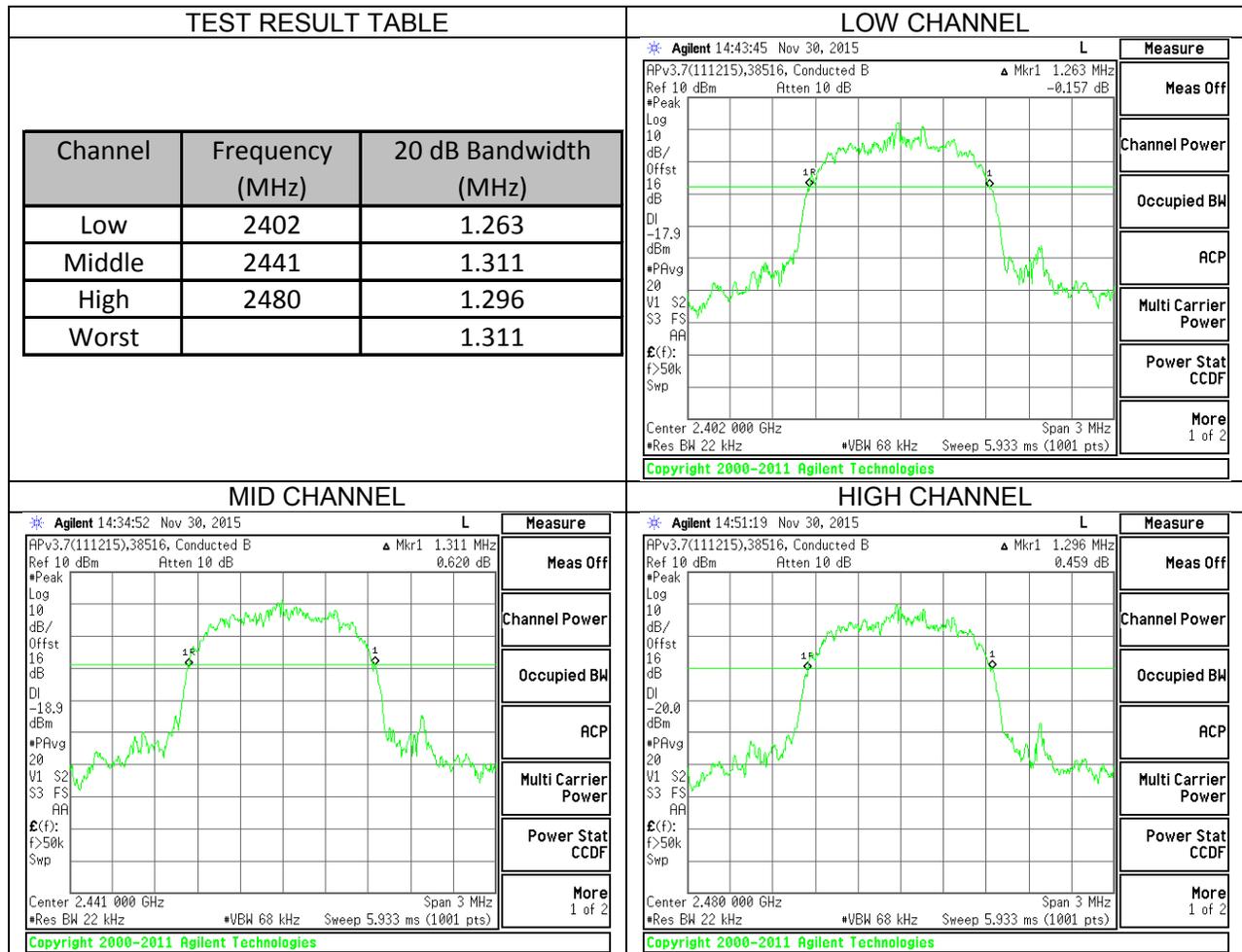
8.2.1. GFSK 20 dB BANDWIDTH PLOTS AND TABLE



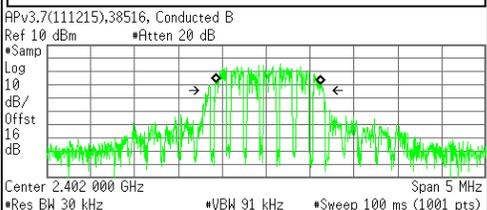
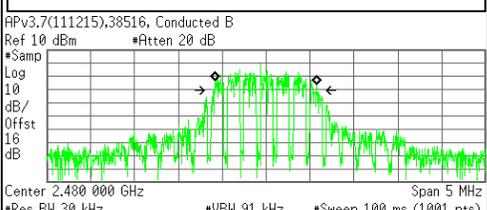
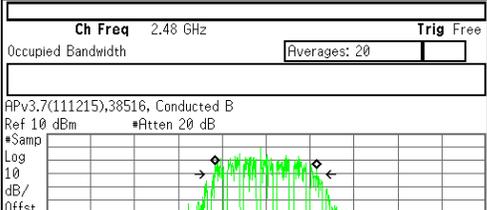
8.2.2. GFSK 99% BANDWIDTH PLOTS AND TABLE

TEST RESULT TABLE			LOW CHANNEL	
Channel	Frequency (MHz)	99% Bandwidth (MHz)	* Agilent 14:24:59 Nov 30, 2015 L Measure Ch Freq 2.402 GHz Trig Free Occupied Bandwidth Averages: 20 APv3.7(111215),38516, Conducted B Ref 10 dBm *Atten 20 dB *Samp Log 10 dB/Offst 16 dB  Center 2.402 000 GHz Span 2 MHz *Res BW 30 kHz *VBW 91 kHz *Sweep 100 ms (1001 pts)	
Low	2402	0.901	Occupied Bandwidth 900.9954 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -4.611 kHz x dB Bandwidth 903.059 kHz*	
Middle	2441	0.897	Channel Power Occupied BW ACP Multi Carrier Power Power Stat CCDF More 1 of 2	
High	2480	0.903	Copyright 2000-2011 Agilent Technologies	
Worst		0.903		
MID CHANNEL			HIGH CHANNEL	
* Agilent 14:20:33 Nov 30, 2015 L Measure Ch Freq 2.441 GHz Trig Free Occupied Bandwidth Averages: 20 APv3.7(111215),38516, Conducted B Ref 10 dBm *Atten 20 dB *Samp Log 10 dB/Offst 16 dB  Center 2.441 000 GHz Span 2 MHz *Res BW 30 kHz *VBW 91 kHz *Sweep 100 ms (1001 pts)			* Agilent 14:29:41 Nov 30, 2015 L Measure Ch Freq 2.48 GHz Trig Free Occupied Bandwidth Averages: 20 APv3.7(111215),38516, Conducted B Ref 10 dBm *Atten 20 dB *Samp Log 10 dB/Offst 16 dB  Center 2.480 000 GHz Span 2 MHz *Res BW 30 kHz *VBW 91 kHz *Sweep 100 ms (1001 pts)	
Occupied Bandwidth 897.3706 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -4.385 kHz x dB Bandwidth 909.990 kHz*			Occupied Bandwidth 903.0209 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -6.070 kHz x dB Bandwidth 908.334 kHz*	
Channel Power Occupied BW ACP Multi Carrier Power Power Stat CCDF More 1 of 2			Channel Power Occupied BW ACP Multi Carrier Power Power Stat CCDF More 1 of 2	
Copyright 2000-2011 Agilent Technologies			Copyright 2000-2011 Agilent Technologies	

8.2.3. 8PSK 20 dB BANDWIDTH PLOTS AND TABLE



8.2.4. 8PSK 99% BANDWIDTH PLOTS AND TABLE

TEST RESULT TABLE			LOW CHANNEL	
Channel	Frequency (MHz)	99% Bandwidth (MHz)	* Agilent 14:44:36 Nov 30, 2015 L Measure Ch Freq 2.402 GHz Trig Free Occupied Bandwidth Averages: 20 APv3.7(111215),38516, Conducted B Ref 10 dBm *Atten 20 dB *Samp Log  Center 2.402 000 GHz Span 5 MHz *Res BW 30 kHz *VBW 91 kHz *Sweep 100 ms (1001 pts)	
Low	2402	1.181	Occupied Bandwidth 1.1808 MHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -4.688 kHz x dB Bandwidth 1.284 MHz* Copyright 2000-2011 Agilent Technologies	
Middle	2441	1.181	Meas Off	Channel Power
High	2480	1.176	Occupied BW	ACP
Worst		1.181	Multi Carrier Power	Power Stat CCDF
			More 1 of 2	
MID CHANNEL			HIGH CHANNEL	
* Agilent 14:35:55 Nov 30, 2015 L Measure Ch Freq 2.441 GHz Trig Free Occupied Bandwidth Averages: 20 APv3.7(111215),38516, Conducted B Ref 10 dBm *Atten 20 dB *Samp Log  Center 2.441 000 GHz Span 5 MHz *Res BW 30 kHz *VBW 91 kHz *Sweep 100 ms (1001 pts)			* Agilent 14:52:17 Nov 30, 2015 L Measure Ch Freq 2.48 GHz Trig Free Occupied Bandwidth Averages: 20 APv3.7(111215),38516, Conducted B Ref 10 dBm *Atten 20 dB *Samp Log  Center 2.480 000 GHz Span 5 MHz *Res BW 30 kHz *VBW 91 kHz *Sweep 100 ms (1001 pts)	
Occupied Bandwidth 1.1811 MHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -4.824 kHz x dB Bandwidth 1.265 MHz* Copyright 2000-2011 Agilent Technologies			Occupied Bandwidth 1.1762 MHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -10.320 kHz x dB Bandwidth 1.277 MHz* Copyright 2000-2011 Agilent Technologies	
			Meas Off	Channel Power
			Occupied BW	ACP
			Multi Carrier Power	Power Stat CCDF
			More 1 of 2	

8.3. HOPPING FREQUENCY SEPARATION LIMIT

FCC §15.247 (a) (1)

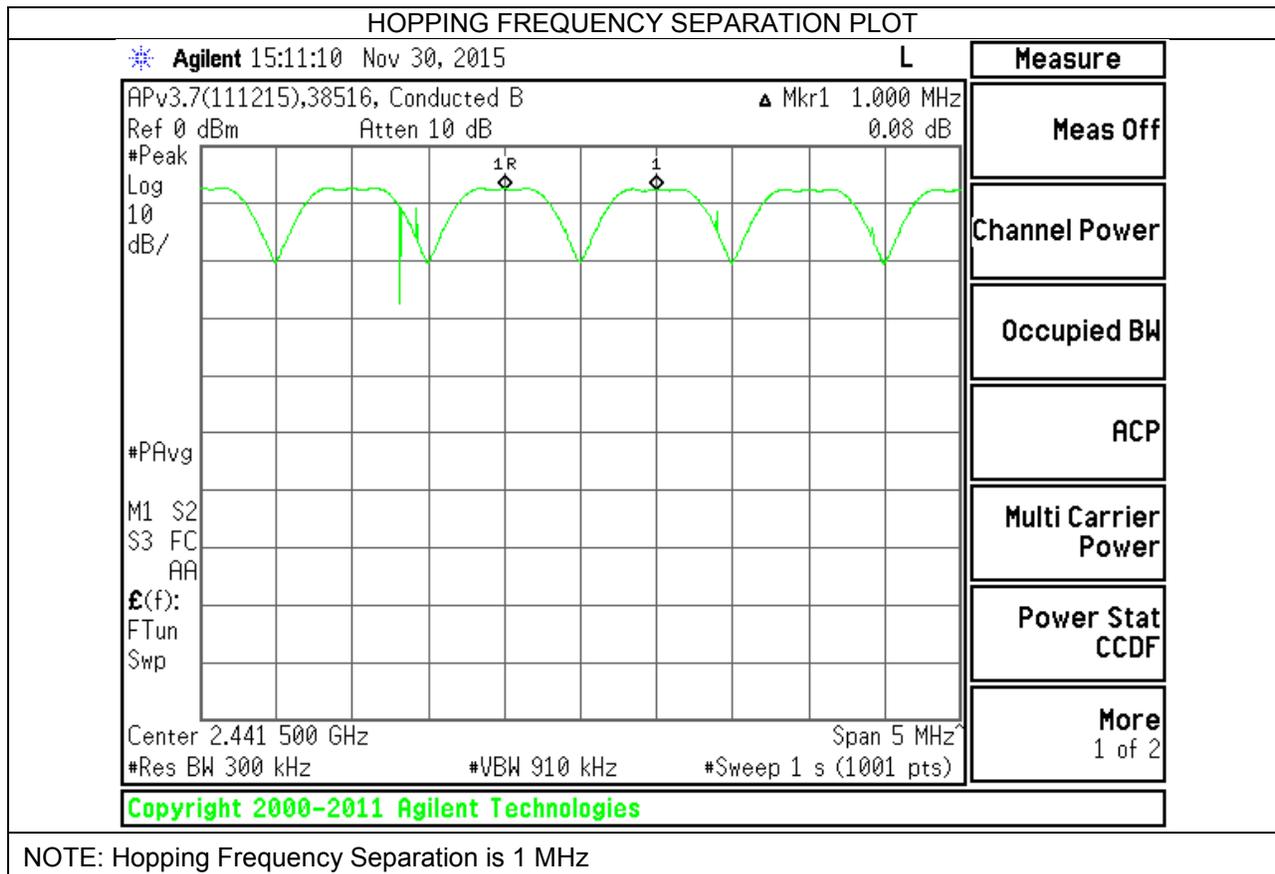
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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 RBW is set to 300 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS



**8.4. NUMBER OF HOPPING CHANNELS
LIMIT**

FCC §15.247 (a) (1) (iii)

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

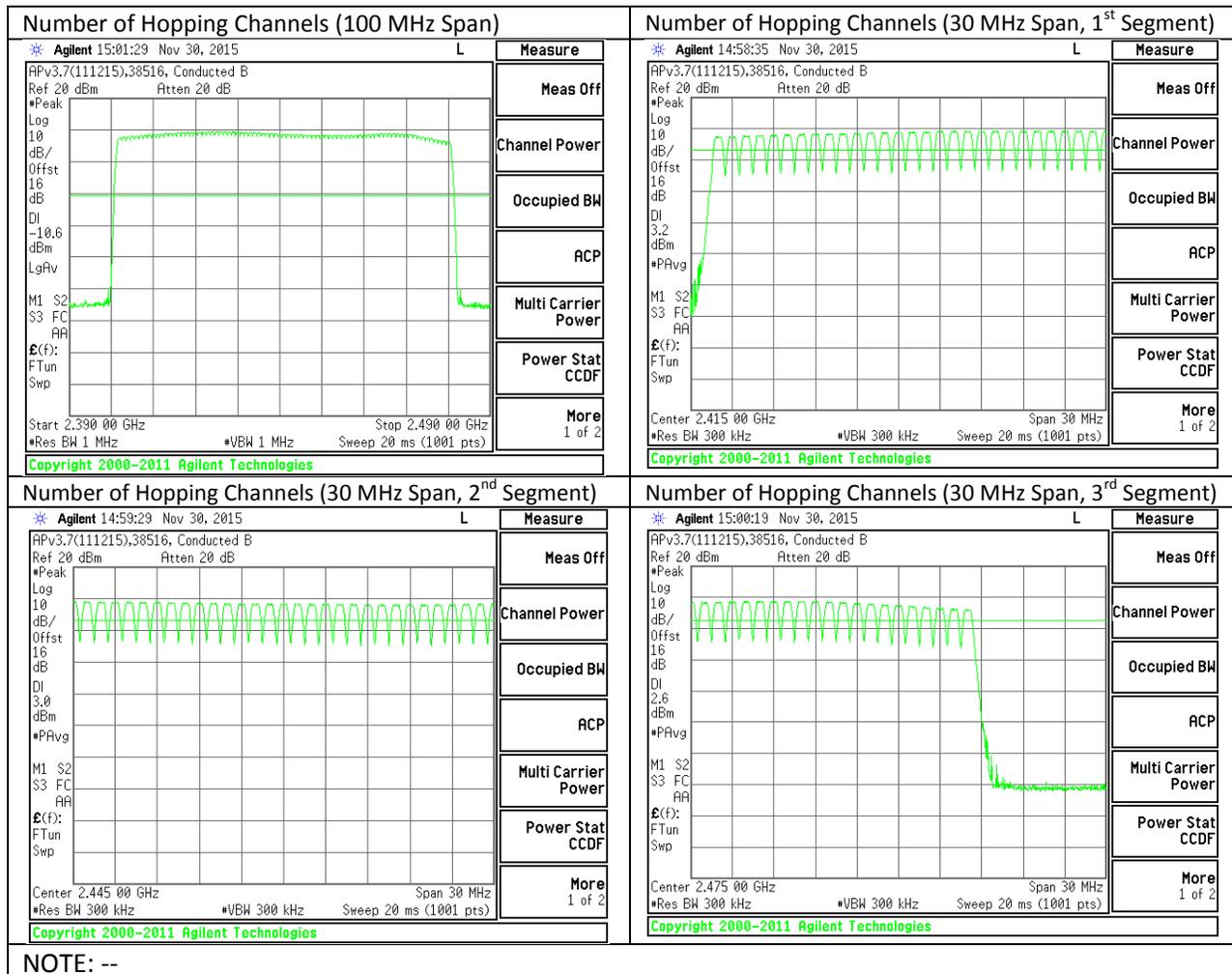
TEST PROCEDURE

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.

8.4.1. NUMBER OF HOPPING CHANNELS PLOTS



NOTE: --

**8.5. AVERAGE TIME OF OCCUPANCY
 LIMIT**

FCC §15.247 (a) (1) (iii)

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.

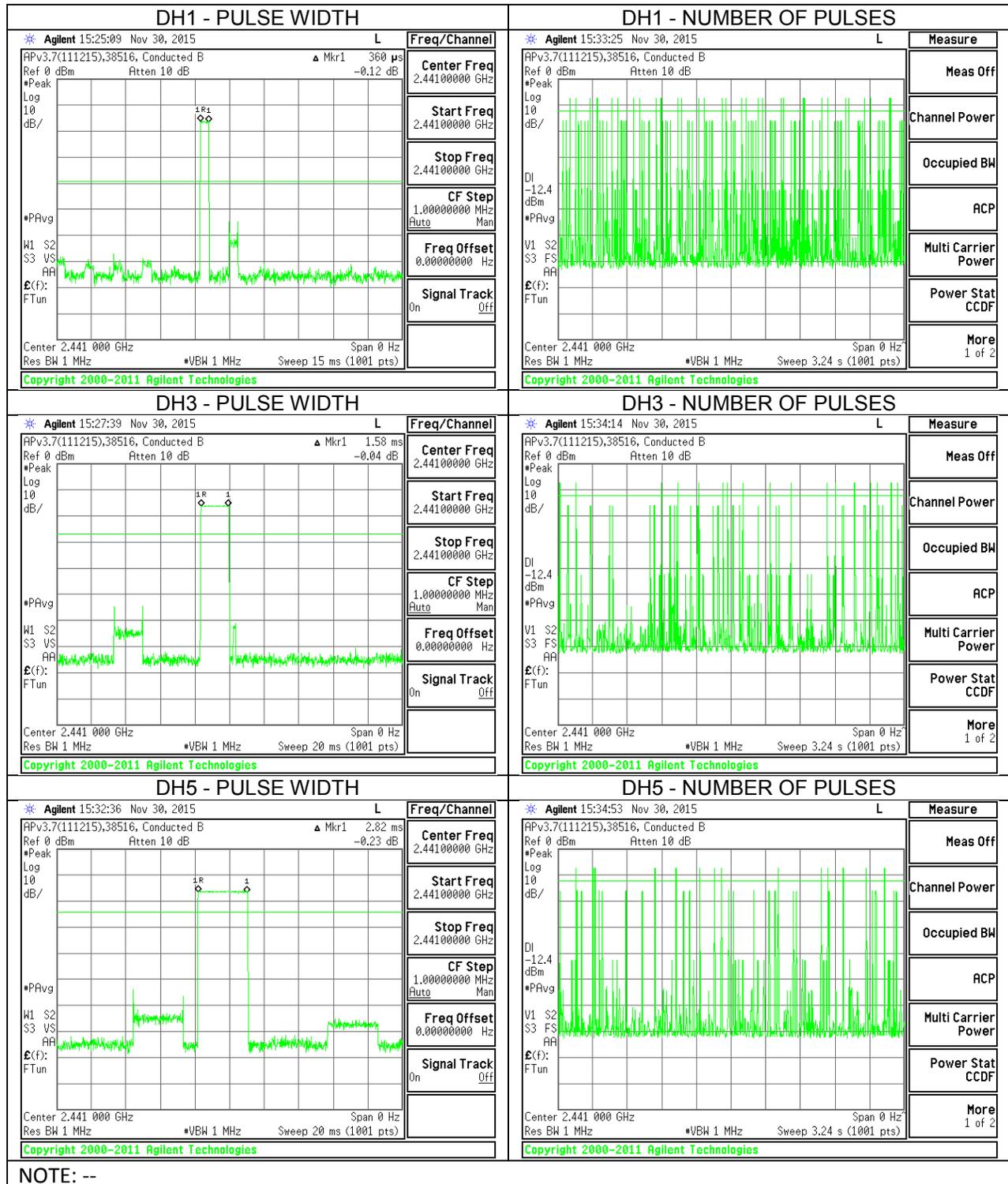
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$.

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

AVERAGE TIME OF OCCUPANCY						
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	0.36	30	0.1080	0.4	-0.2920	
DH3	1.58	17	0.2686	0.4	-0.1314	
DH5	2.82	14	0.3948	0.4	-0.0052	
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)	
GFSK AFH Mode						
DH1	0.36	7.5	0.02700	0.4	-0.3730	
DH3	1.58	4.25	0.06715	0.4	-0.3329	
DH5	2.82	3.5	0.09870	0.4	-0.3013	
NOTE: --						

8.5.1. Pulse Width and Number of Pulses in 3.16 Seconds Period Plots



NOTE: --

**8.6. OUTPUT POWER
LIMIT**

§15.247 (b) (1)

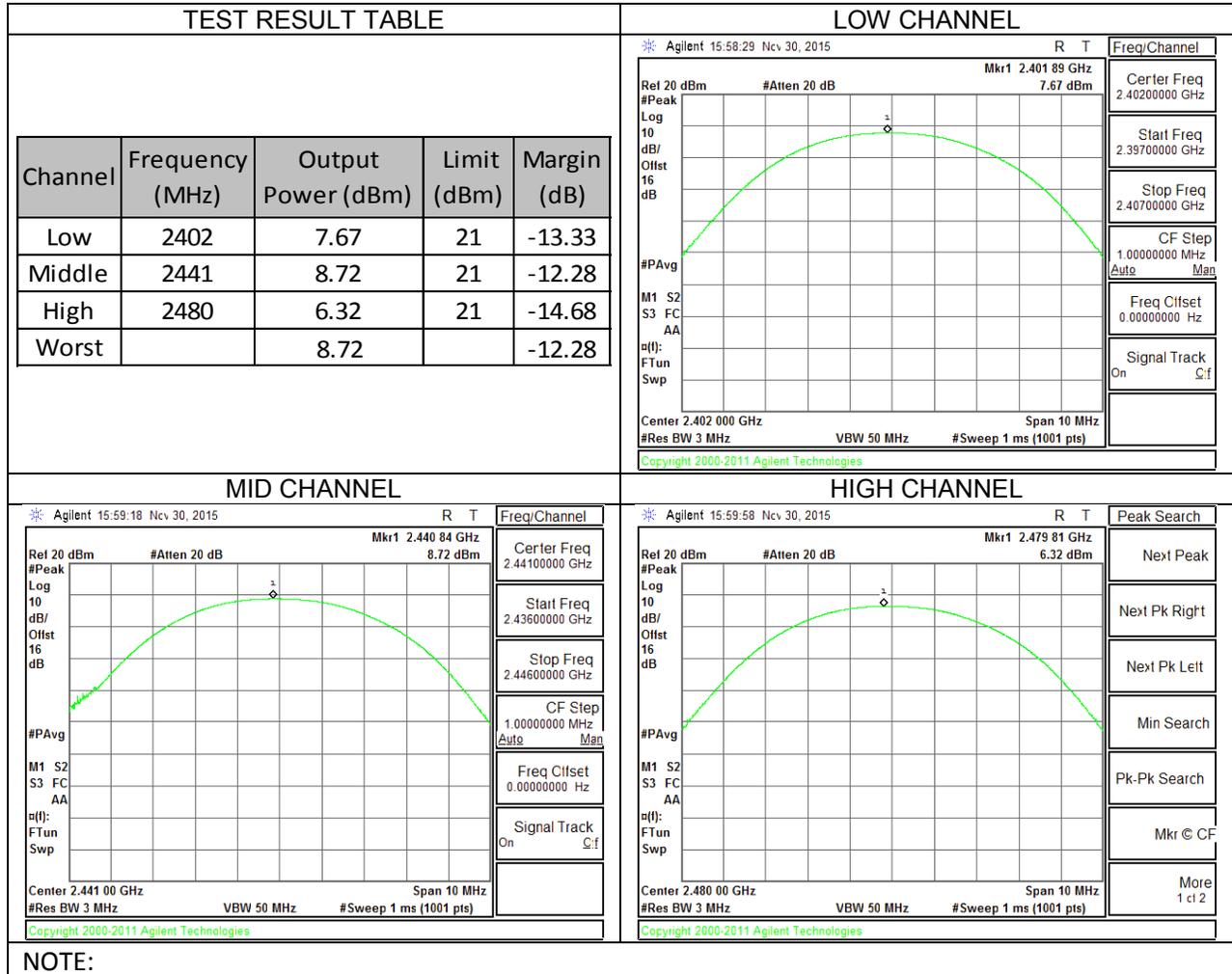
The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

TEST PROCEDURE

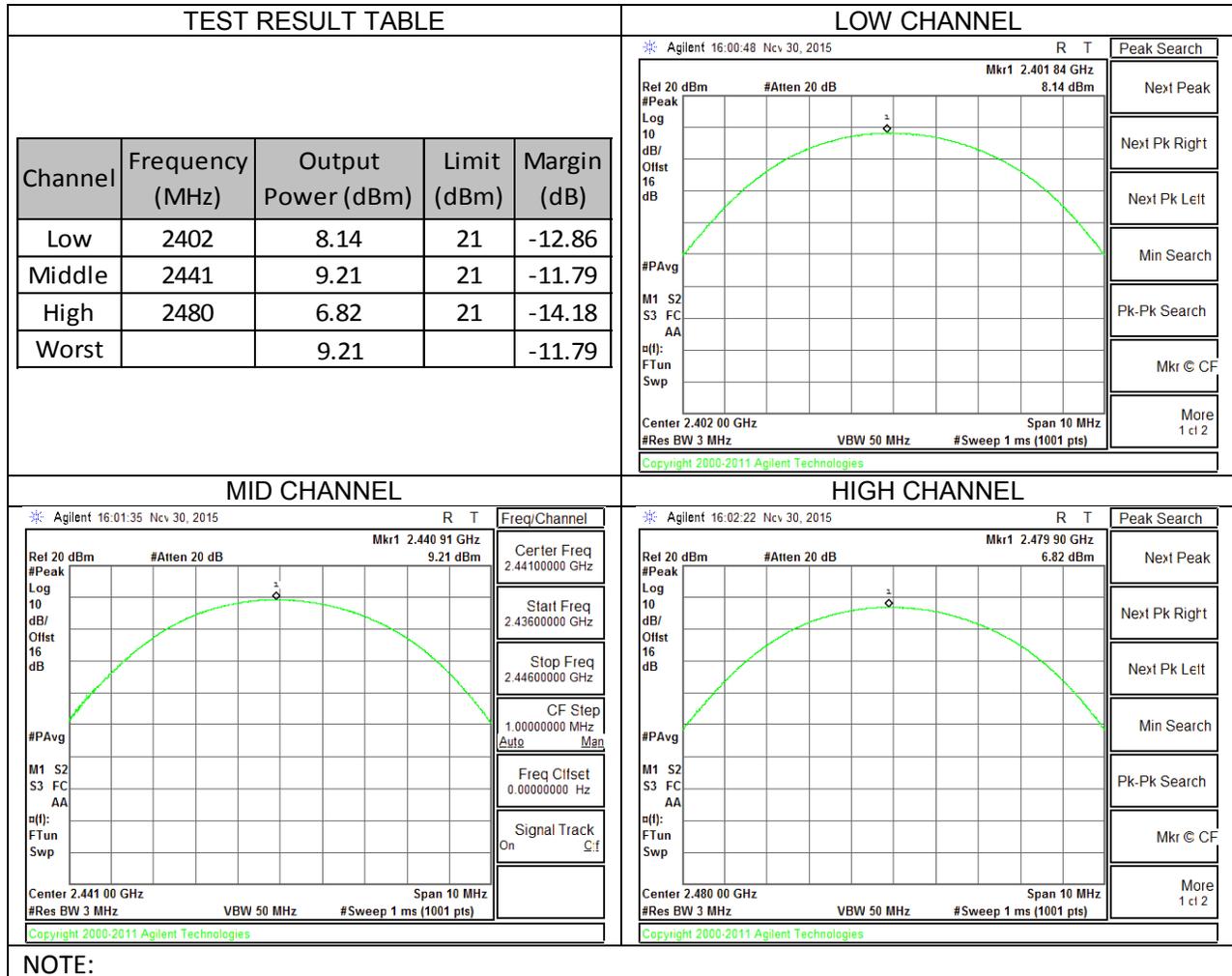
DA 00-705: The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

8.6.1. GFSK OUTPUT POWER PLOTS AND TABLE



8.6.2. 8PSK OUTPUT POWER PLOTS AND TABLE



**8.7. 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.

BASIC DATA RATE GFSK		
Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.3
Middle	2441	8.1
High	2480	5.6
Worst		8.1

ENHANCED DATA RATE 8DPSK		
Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	4.8
Middle	2441	5.6
High	2480	3.1
Worst		5.6

NOTE: --

8.8. CONDUCTED SPURIOUS EMISSIONS LIMITS

FCC §15.247 (d)

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.

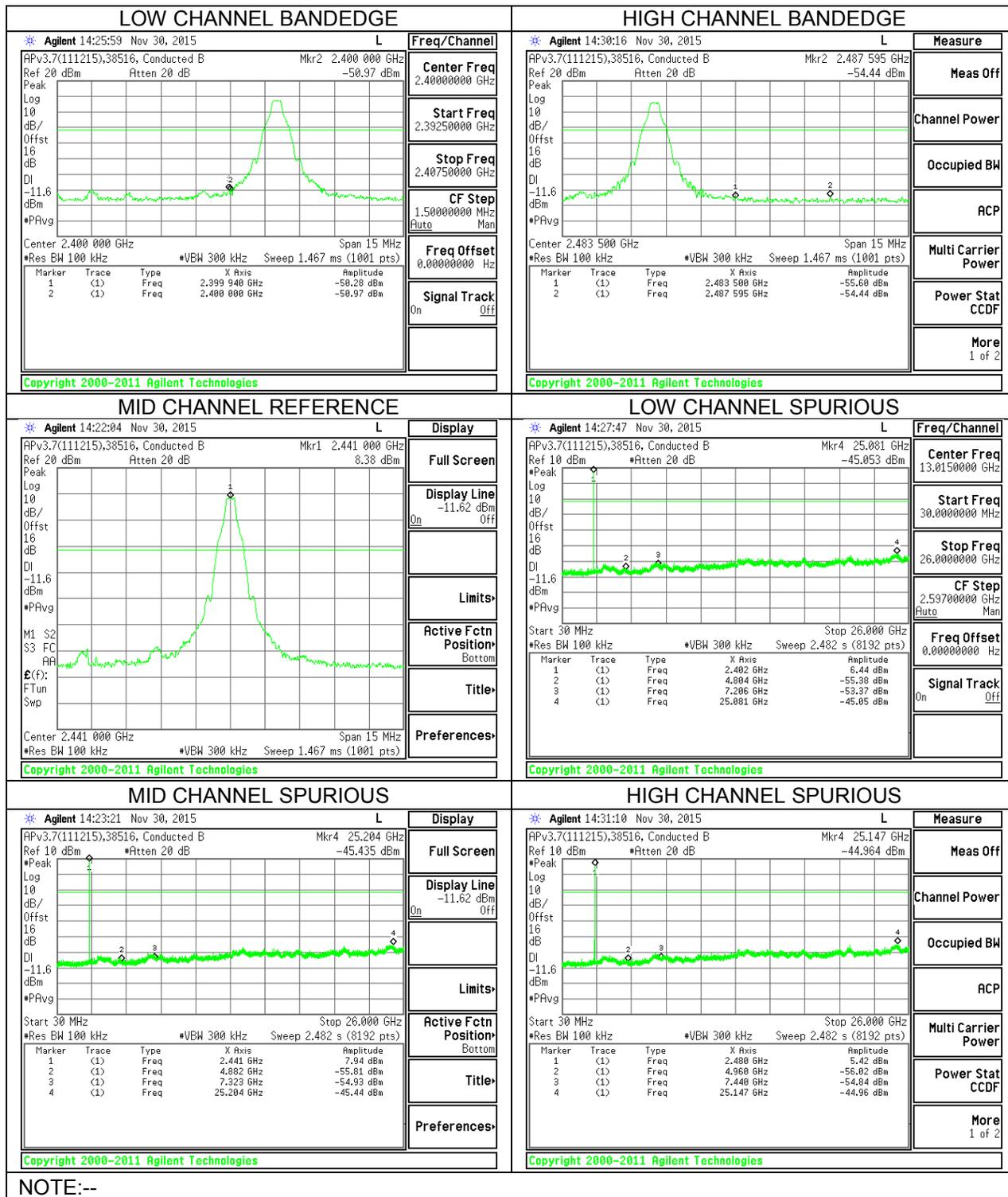
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

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

RESULTS

8.8.1. BASIC DATA RATE GFSK MODULATION NON-HOPPING MODE

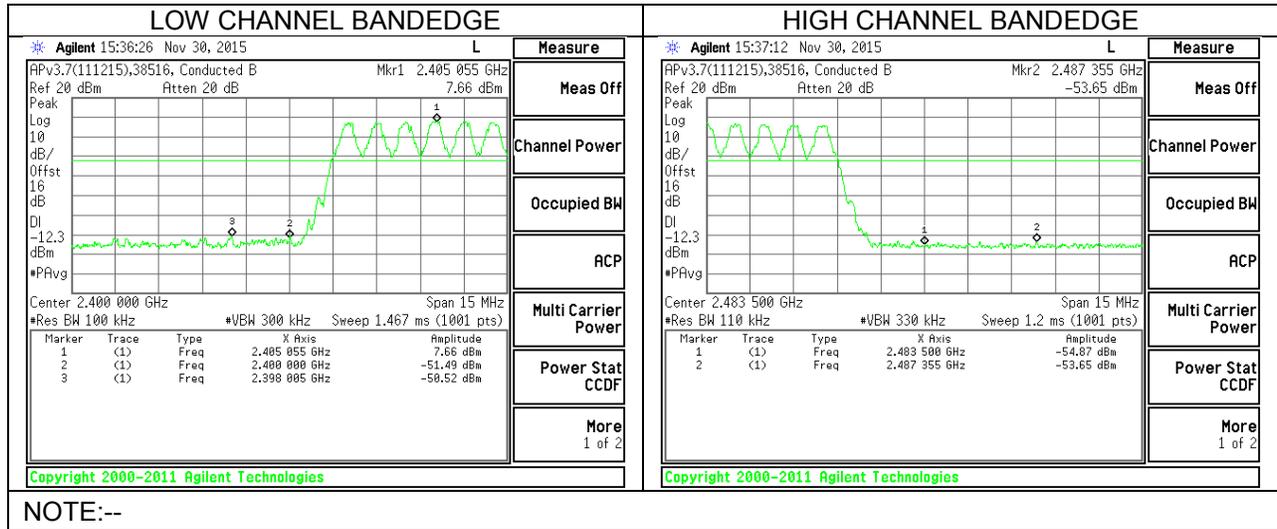
BANDEDGE AND SPURIOUS EMISSIONS PLOTS



NOTE:--

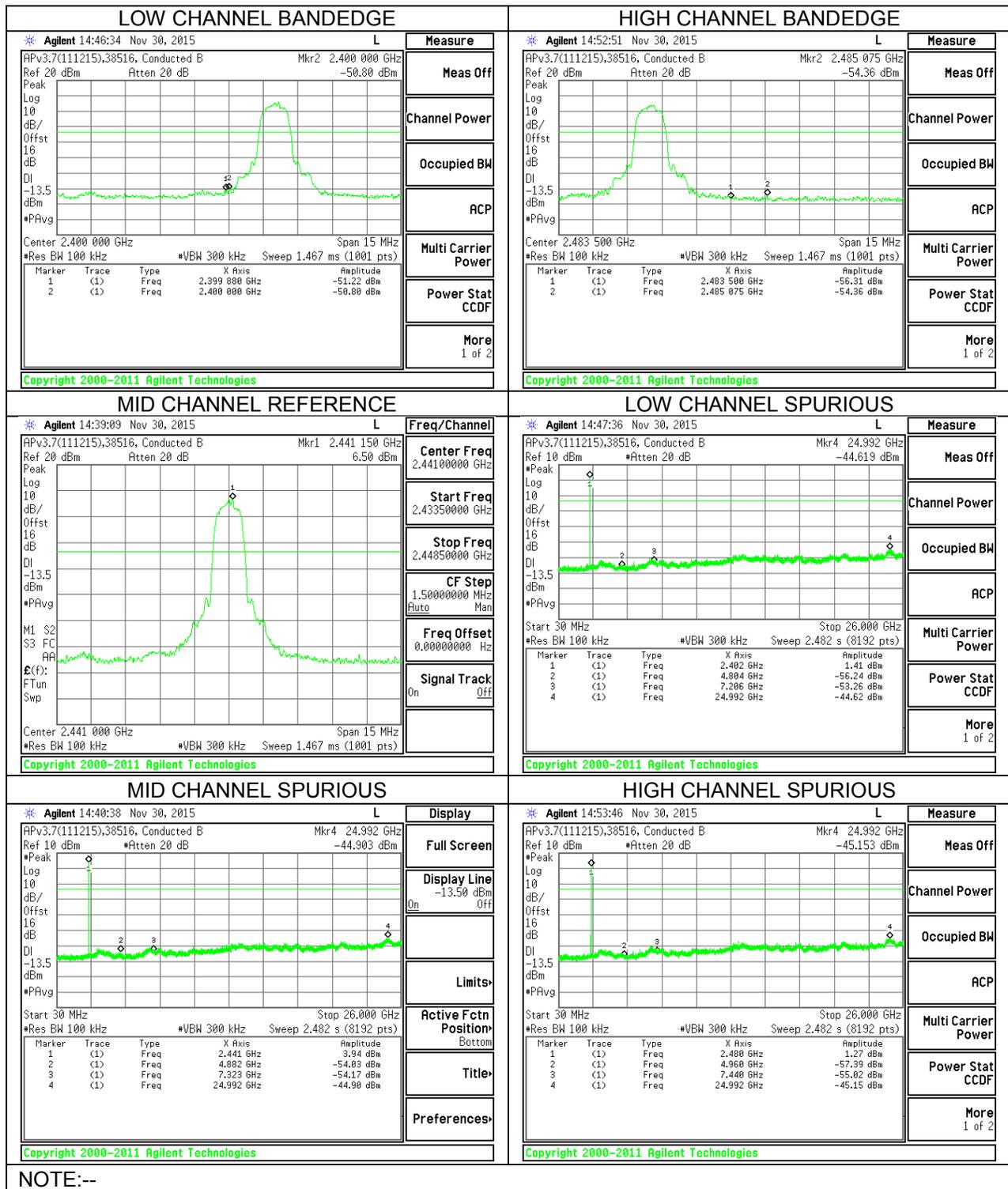
8.8.2. BASIC DATA RATE GFSK MODULATION HOPPING MODE

SPURIOUS BANDEDGE EMISSIONS PLOTS



8.8.3. ENHANCED DATA RATE 8PSK MODULATION NON-HOPPING MODE

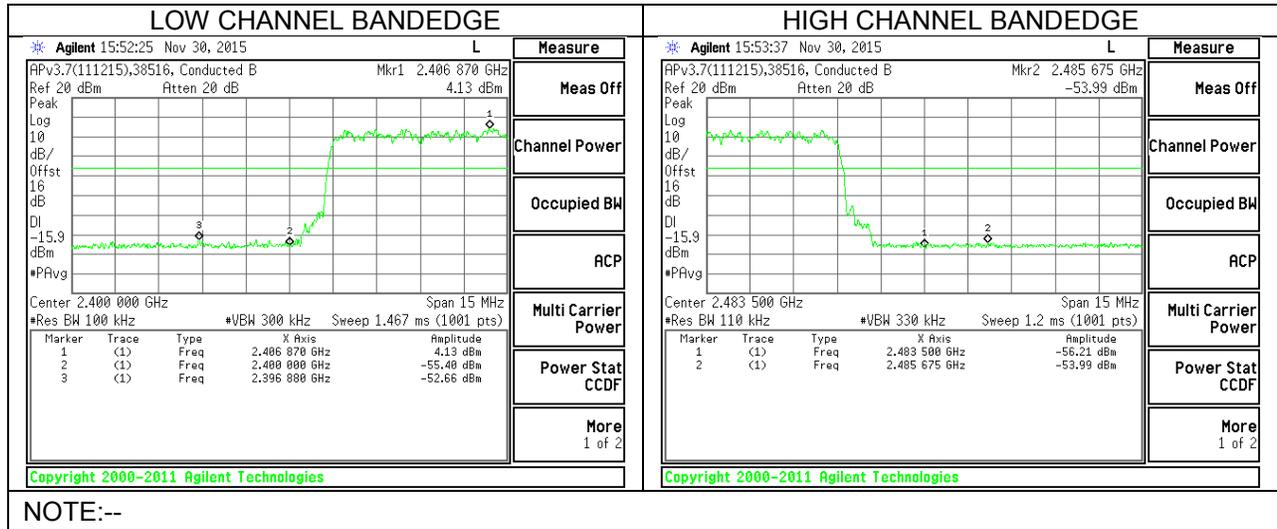
BANDEDGE AND SPURIOUS EMISSIONS PLOTS



NOTE:--

8.8.4. ENHANCED DATA RATE 8PSK MODULATION HOPPING MODE

SPURIOUS BANDEDGE EMISSIONS PLOTS



NOTE:--

9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

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 for below 1GHz and 150cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. 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.

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.

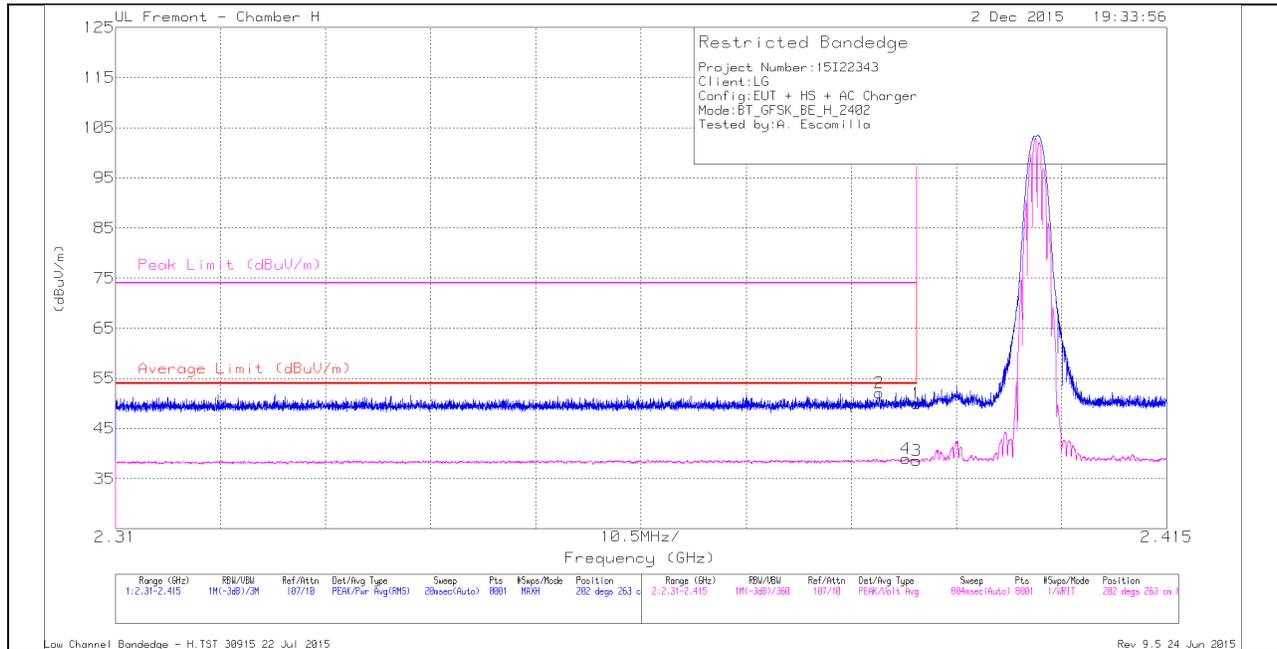
RESULTS

9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. BASIC DATA RATE GFSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

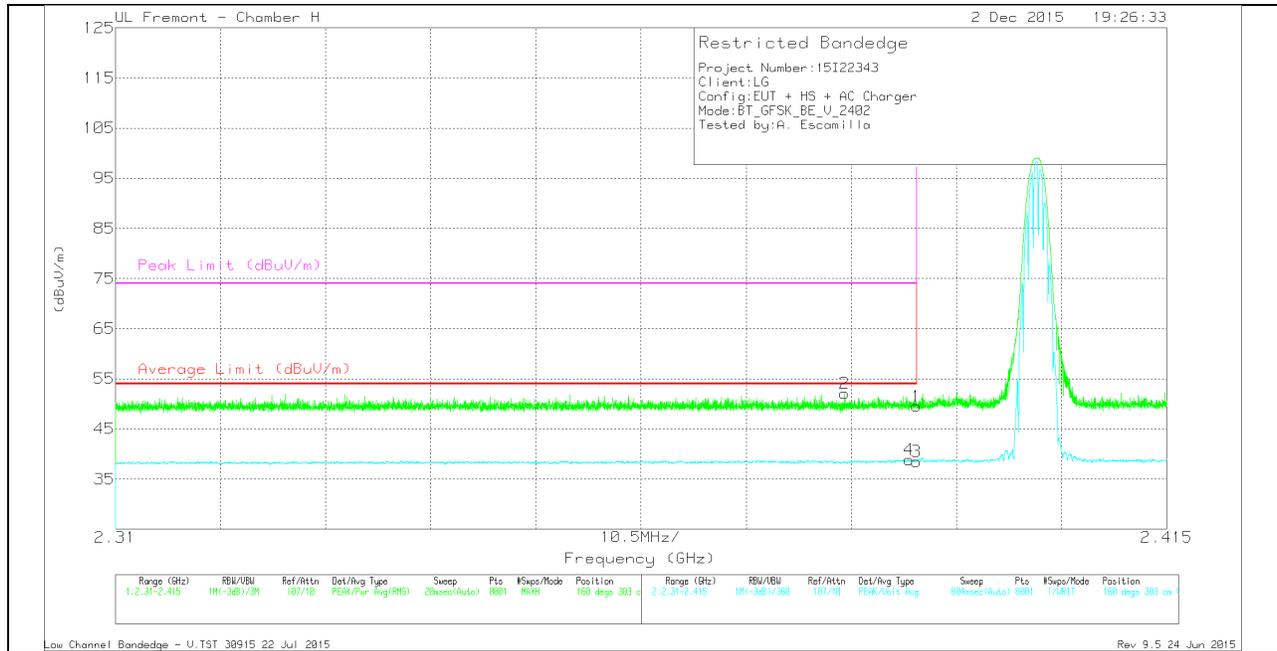
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.386	43.45	Pk	32	-23.4	52.05	-	-	74	-21.95	202	263	H
4	* 2.389	30.4	VA1T	32	-23.4	39	54	-15	-	-	202	263	H
1	* 2.39	41.43	Pk	32	-23.5	49.93	-	-	74	-24.07	202	263	H
3	* 2.39	30.09	VA1T	32	-23.5	38.59	54	-15.41	-	-	202	263	H

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average $V_B=1/T_{on}$ where: T_{on} is transmit duration

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ 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
2	* 2.383	43.49	Pk	32	-23.4	52.09	-	-	74	-21.91	160	303	V
4	* 2.389	30.23	VA1T	32	-23.4	38.83	54	-15.17	-	-	160	303	V
1	* 2.39	41.04	Pk	32	-23.5	49.54	-	-	74	-24.46	160	303	V
3	* 2.39	30	VA1T	32	-23.5	38.5	54	-15.5	-	-	160	303	V

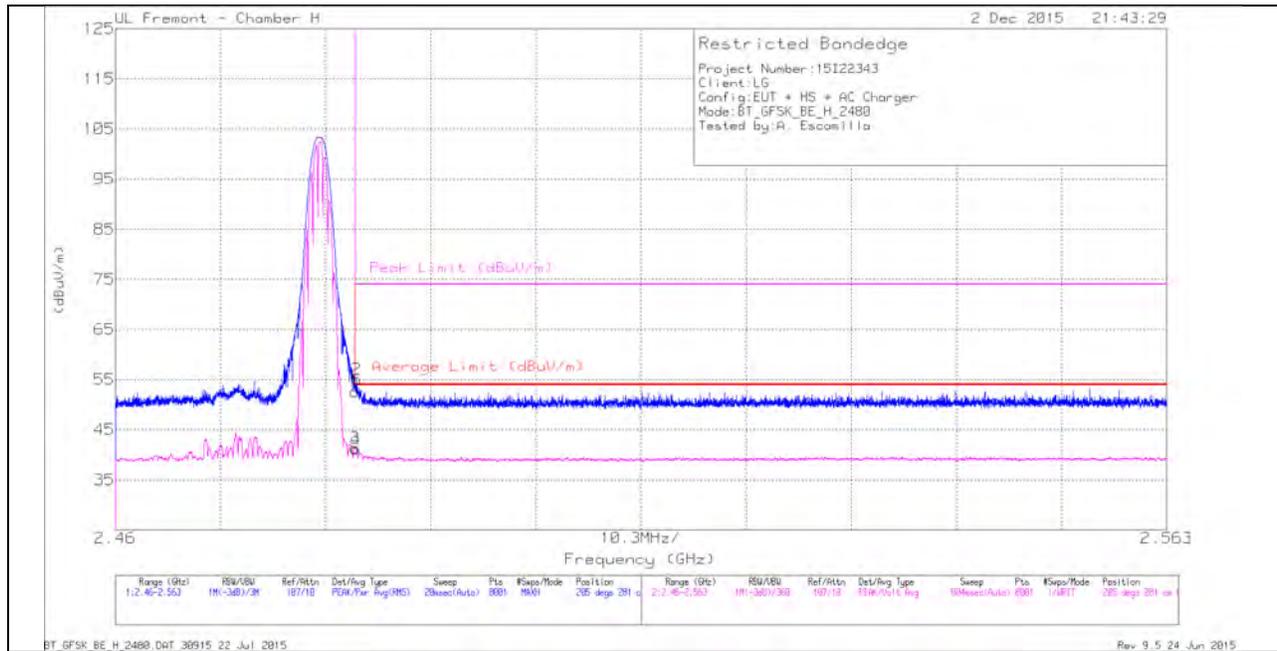
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average $V_B=1/T_{on}$ where: T_{on} is transmit duration

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

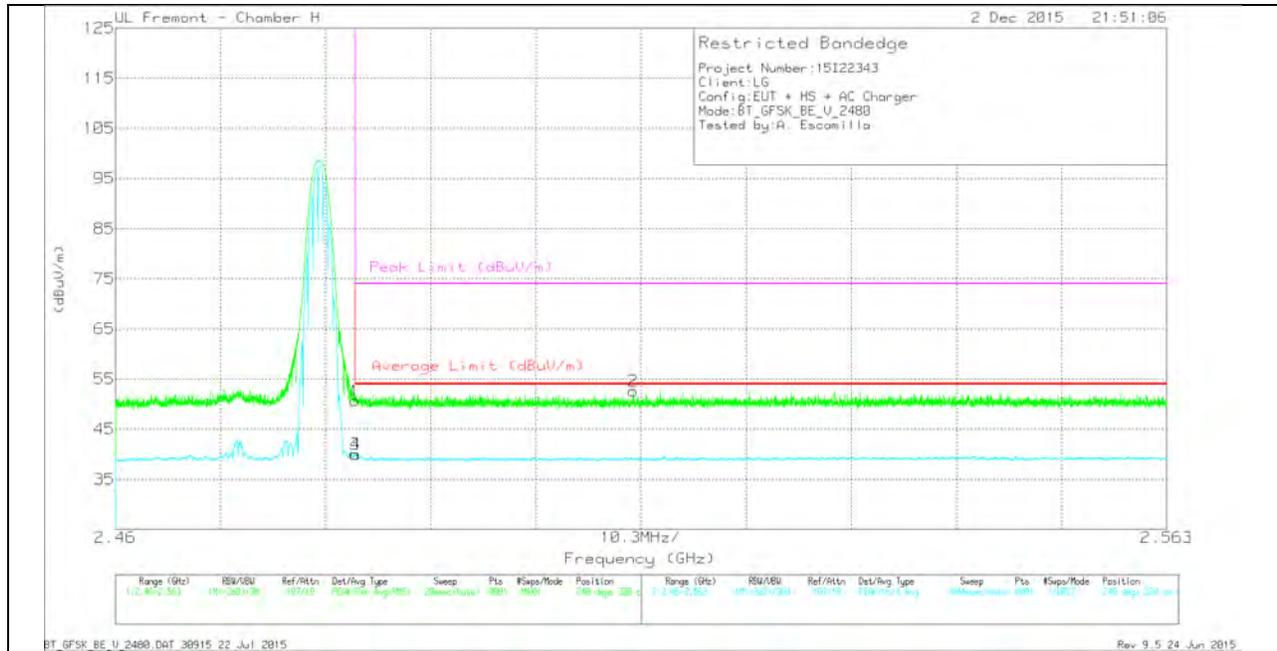
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	43.62	Pk	32.4	-23.4	52.62	-	-	74	-21.38	205	281	H
2	* 2.484	46.03	Pk	32.4	-23.4	55.03	-	-	74	-18.97	205	281	H
3	* 2.484	32.42	VA1T	32.4	-23.4	41.42	54	-12.58	-	-	205	281	H
4	* 2.484	32.07	VA1T	32.4	-23.4	41.07	54	-12.93	-	-	205	281	H

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/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	41.66	Pk	32.4	-23.4	50.66	-	-	74	-23.34	240	320	V
3	* 2.484	31.01	VA1T	32.4	-23.4	40.01	54	-13.99	-	-	240	320	V
4	* 2.484	31.01	VA1T	32.4	-23.4	40.01	54	-13.99	-	-	240	320	V
2	2.511	43.43	Pk	32.5	-23.3	52.63	-	-	74	-21.37	240	320	V

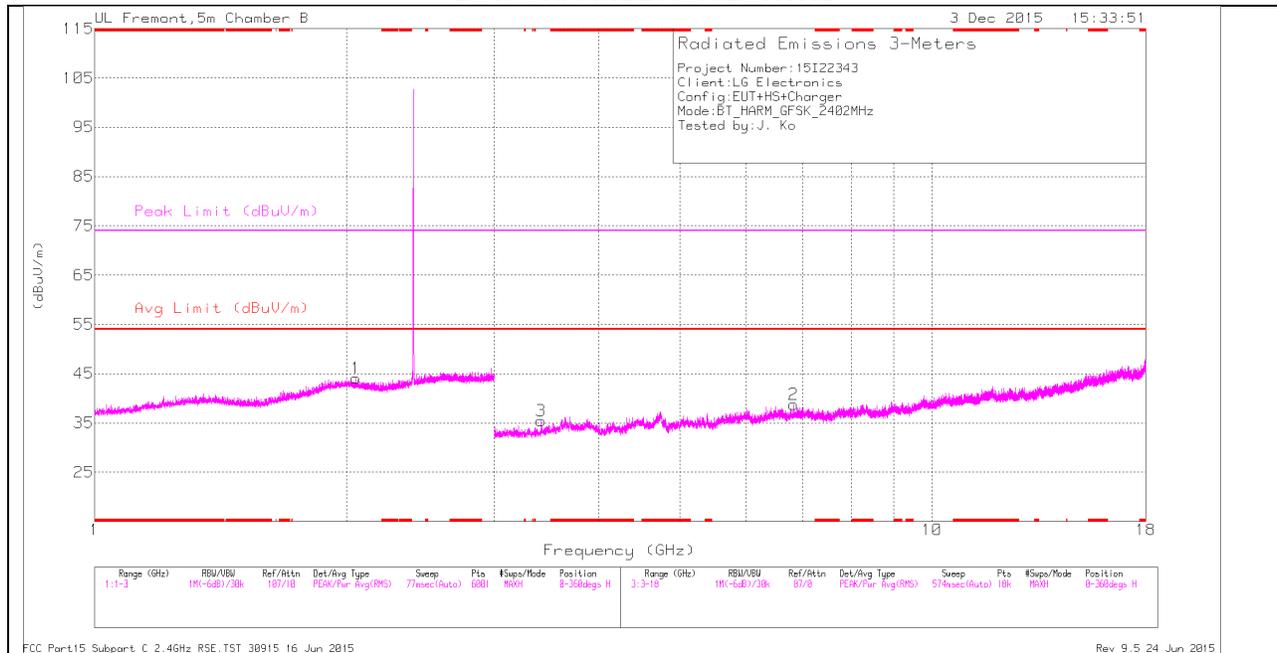
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average $V_B=1/T_{on}$ where: T_{on} is transmit duration

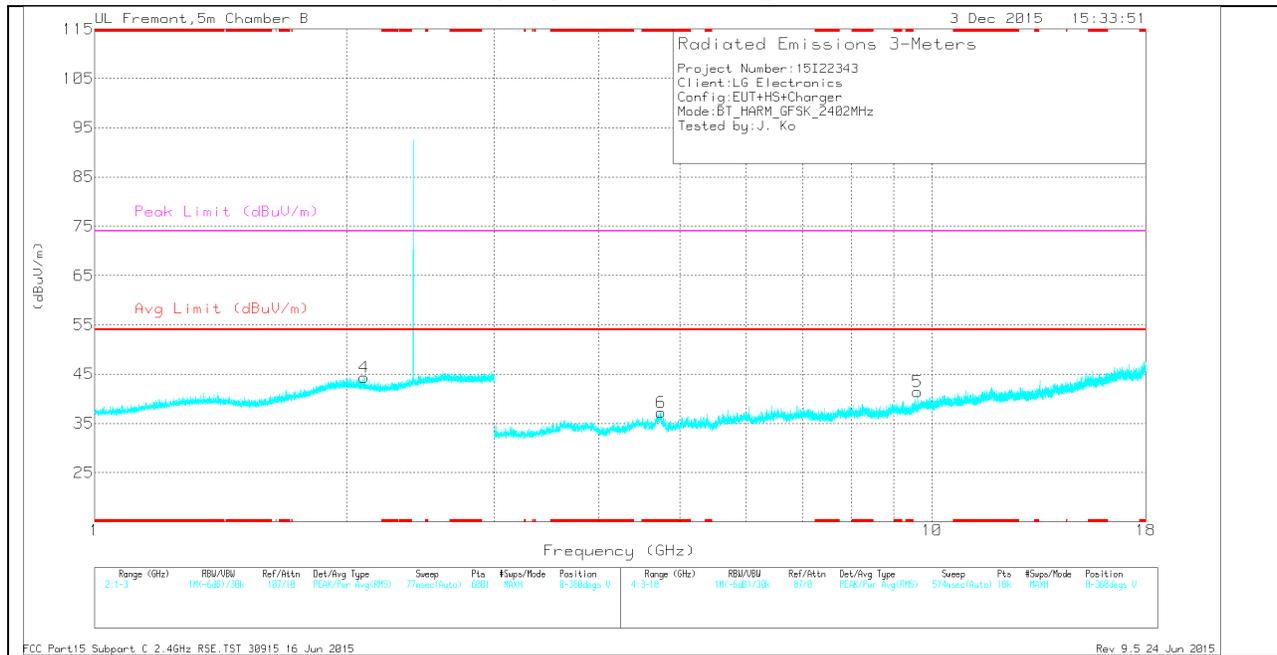
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL 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.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /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
6	* 4.745	33.66	Pk	34.3	-30.7	0	37.26	-	-	74	-36.74	0-360	101	V
1	2.053	36.39	Pk	32.1	-24.4	0	44.09	-	-	-	-	0-360	199	H
4	2.099	36.94	Pk	31.8	-24.4	0	44.34	-	-	-	-	0-360	199	V
3	3.414	35.15	Pk	33.1	-32.8	0	35.45	-	-	-	-	0-360	101	H
2	6.84	33.12	Pk	36	-30.4	0	38.72	-	-	-	-	0-360	200	H
5	9.608	31.08	Pk	36.7	-26.4	0	41.38	-	-	-	-	0-360	101	V

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

Pk - Peak detector

RADIATED EMISSIONS

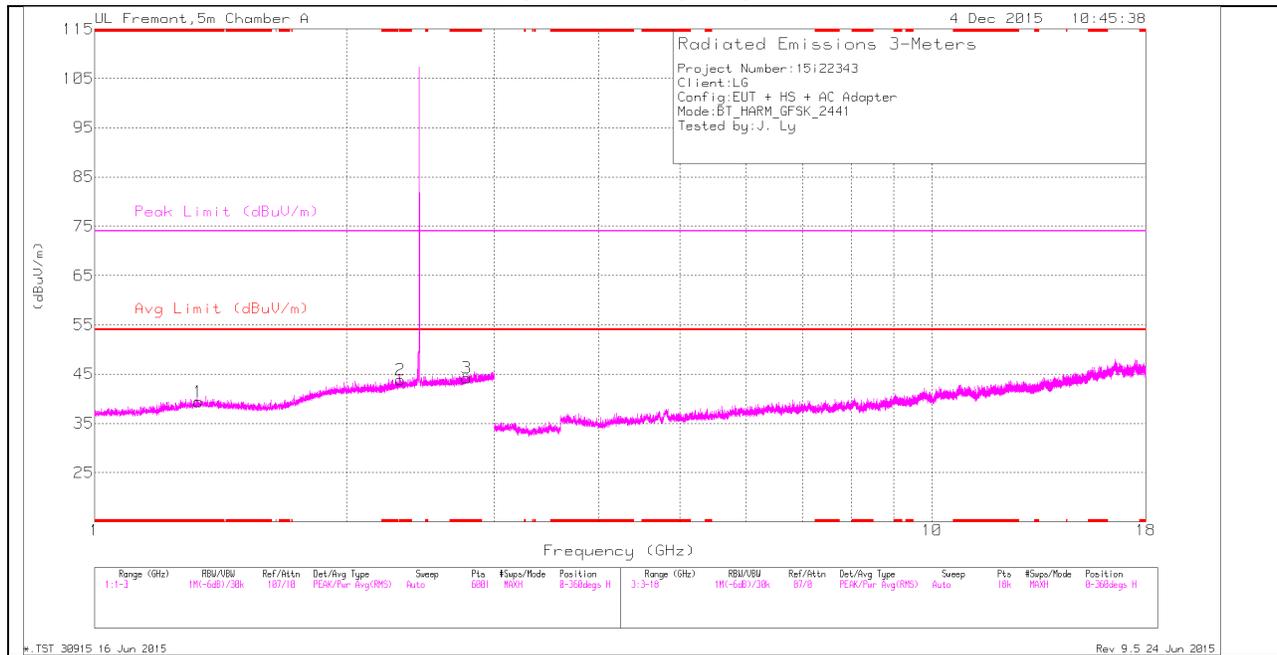
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.746	42.04	PK2	34.3	-30.7	45.64	-	-	74	-28.36	322	131	H
* 4.744	29.1	VA1T	34.3	-30.7	32.7	54	-21.3	-	-	322	131	H
2.051	44.59	PK2	32.1	-24.4	52.29	-	-	74	-21.71	360	198	H
2.053	30.66	VA1T	32.1	-24.4	38.36	54	-15.64	-	-	360	198	H
2.099	43.7	PK2	31.8	-24.4	51.1	-	-	74	-22.9	360	198	V
2.099	30.67	VA1T	31.8	-24.4	38.07	54	-15.93	-	-	360	198	V
3.412	29.01	VA1T	33.1	-32.9	29.21	54	-24.79	-	-	360	102	H
3.415	42.48	PK2	33.1	-32.8	42.78	-	-	74	-31.22	360	102	H
6.839	27.09	VA1T	36	-30.4	32.69	54	-21.31	-	-	360	198	H
6.841	40.41	PK2	36	-30.4	46.01	-	-	74	-27.99	360	198	H
9.608	38.45	PK2	36.7	-26.4	48.75	-	-	74	-25.25	360	102	V
9.608	27.64	VA1T	36.7	-26.4	37.94	54	-16.06	-	-	360	102	V

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

PK2 - KDB558074 Method: Maximum Peak

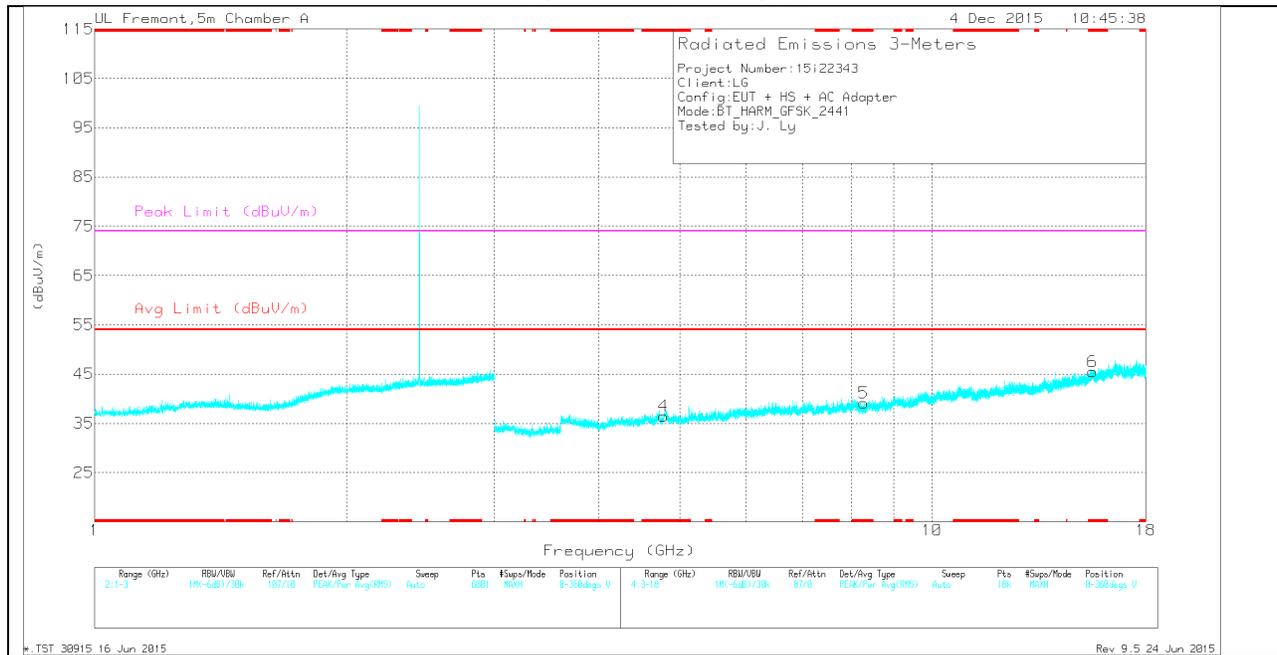
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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.

MID CHANNEL 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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /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	* 1.331	36.57	Pk	28.7	-25.9	0	39.37	-	-	74	-34.63	0-360	201	H
2	* 2.319	36.66	Pk	31.9	-24.7	0	43.86	-	-	74	-30.14	0-360	100	H
3	* 2.78	35.88	Pk	32.4	-24.1	0	44.18	-	-	74	-29.82	0-360	201	H
4	* 4.782	32.44	Pk	34	-30	0	36.44	-	-	74	-37.56	0-360	200	V
5	* 8.291	28.88	Pk	35.7	-25.5	0	39.08	-	-	74	-34.92	0-360	200	V
6	* 15.55	25.99	Pk	40.3	-20.8	0	45.49	-	-	74	-28.51	0-360	200	V

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

Pk - Peak detector

RADIATED EMISSIONS

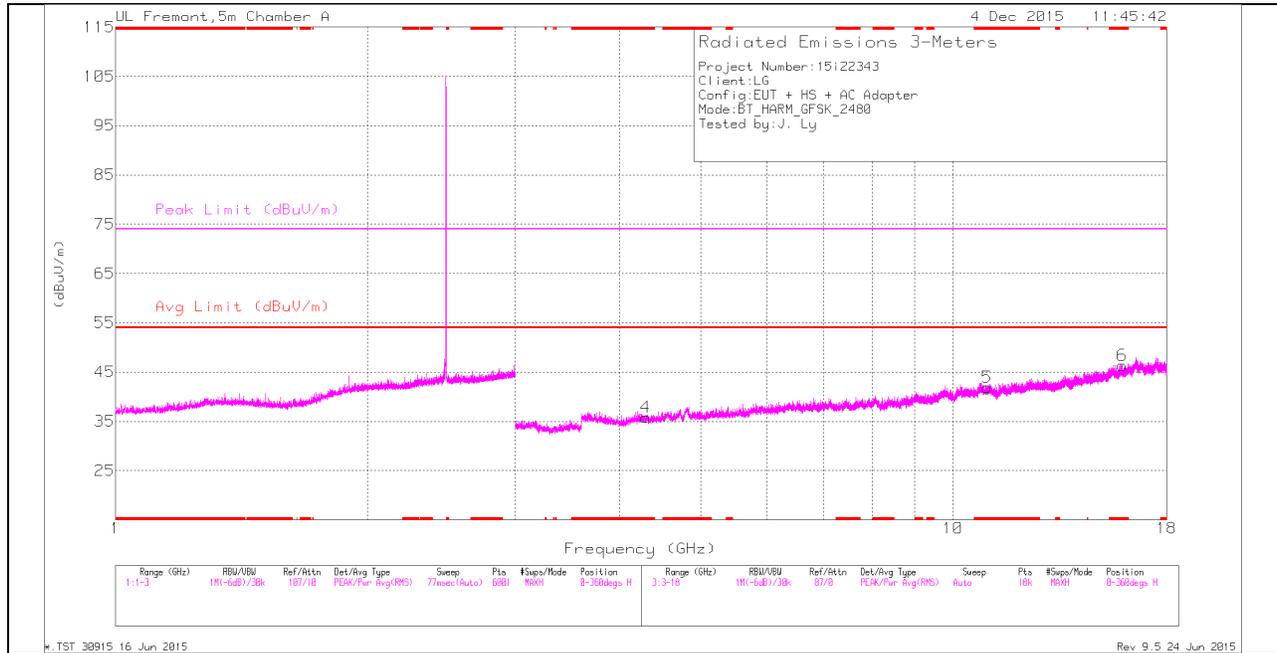
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.329	45	PK2	28.8	-25.9	47.9	-	-	74	-26.1	360	130	H
* 1.333	31.75	VA1T	28.7	-25.9	34.55	54	-19.45	-	-	360	130	H
* 2.319	44.45	PK2	31.9	-24.7	51.65	-	-	74	-22.35	360	130	H
* 2.317	31.15	VA1T	31.9	-24.7	38.35	54	-15.65	-	-	360	130	H
* 2.78	43.73	PK2	32.4	-24.1	52.03	-	-	74	-21.97	360	130	H
* 2.779	30.91	VA1T	32.4	-24.2	39.11	54	-14.89	-	-	360	130	H
* 4.783	40.5	PK2	34	-30	44.5	-	-	74	-29.5	360	130	V
* 4.78	28.2	VA1T	34	-30	32.2	54	-21.8	-	-	360	130	V
* 8.292	36.51	PK2	35.7	-25.5	46.71	-	-	74	-27.29	360	130	V
* 8.291	23.85	VA1T	35.7	-25.5	34.05	54	-19.95	-	-	360	130	V
* 15.548	34.1	PK2	40.3	-20.9	53.5	-	-	74	-20.5	360	130	V
* 15.55	21.82	VA1T	40.3	-20.8	41.32	54	-12.68	-	-	360	130	V

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

PK2 - KDB558074 Method: Maximum Peak

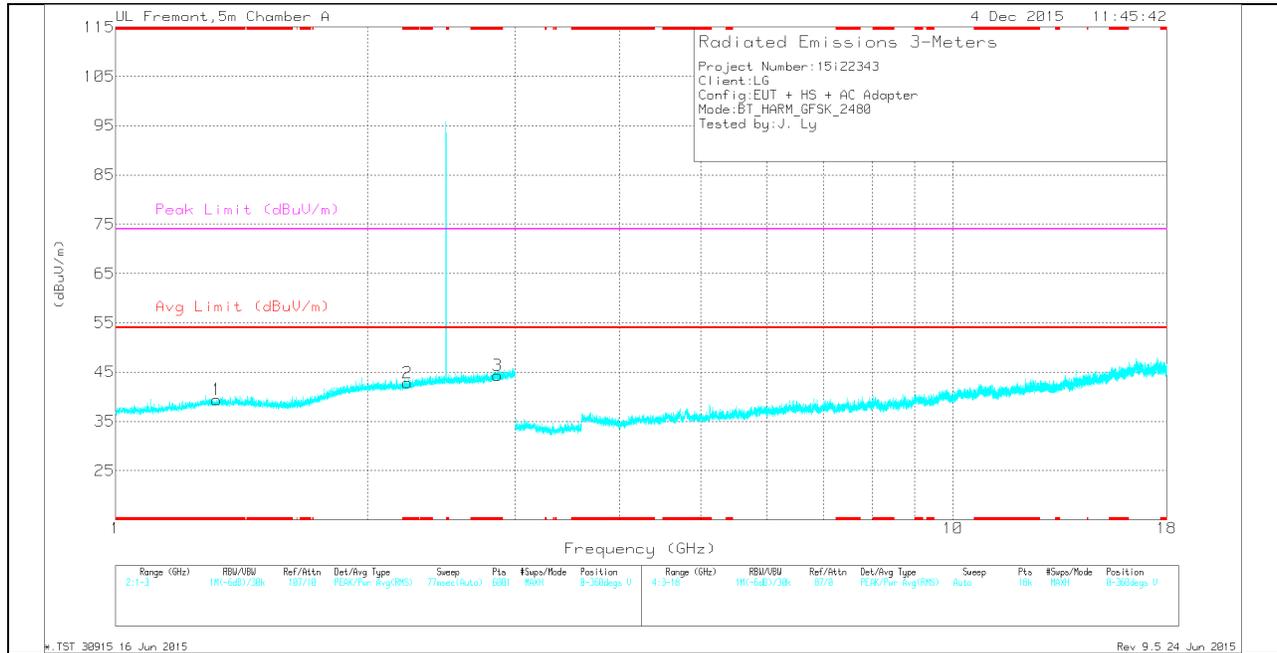
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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.

HIGH CHANNEL 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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /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	* 1.322	36.54	Pk	28.8	-25.9	0	39.44	-	-	74	-34.56	0-360	200	V
2	* 2.232	36.16	Pk	31.5	-24.8	0	42.86	-	-	74	-31.14	0-360	100	V
3	* 2.86	35.74	Pk	32.6	-24	0	44.34	-	-	74	-29.66	0-360	100	V
4	* 4.293	32.87	Pk	33.5	-30.6	0	35.77	-	-	74	-38.23	0-360	100	H
5	* 10.988	26.3	Pk	37.8	-22.2	0	41.9	-	-	74	-32.1	0-360	100	H
6	* 15.925	27.21	Pk	40.8	-21.7	0	46.31	-	-	74	-27.69	0-360	100	H

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

Pk - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.322	46.04	PK2	28.8	-25.9	48.94	-	-	74	-25.06	360	100	V
* 1.323	31.67	VA1T	28.8	-25.9	34.57	54	-19.43	-	-	360	100	V
* 2.231	43.91	PK2	31.5	-24.8	50.61	-	-	74	-23.39	360	100	V
* 2.233	31.11	VA1T	31.5	-24.8	37.81	54	-16.19	-	-	360	100	V
* 2.861	43.79	PK2	32.6	-24	52.39	-	-	74	-21.61	360	100	V
* 2.859	30.89	VA1T	32.6	-24	39.49	54	-14.51	-	-	360	100	V
* 4.292	41.63	PK2	33.5	-30.6	44.53	-	-	74	-29.47	360	100	H
* 4.295	28.69	VA1T	33.5	-30.6	31.59	54	-22.41	-	-	360	100	H
* 10.99	34.18	PK2	37.8	-22.3	49.68	-	-	74	-24.32	360	100	H
* 10.986	21.72	VA1T	37.8	-22.2	37.32	54	-16.68	-	-	360	100	H
* 15.926	35.15	PK2	40.8	-21.7	54.25	-	-	74	-19.75	360	100	H
* 15.926	22.03	VA1T	40.8	-21.7	41.13	54	-12.87	-	-	360	100	H

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

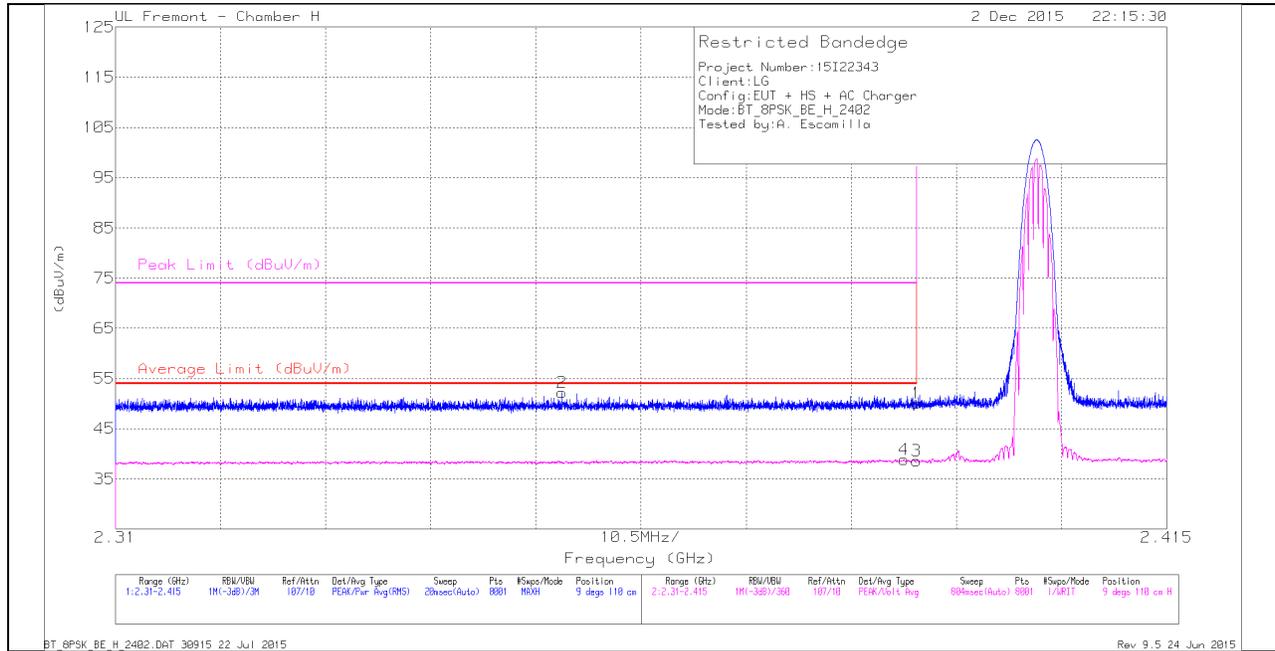
PK2 - KDB558074 Method: Maximum Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

9.1.2. ENHANCED DATA RATE 8PSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

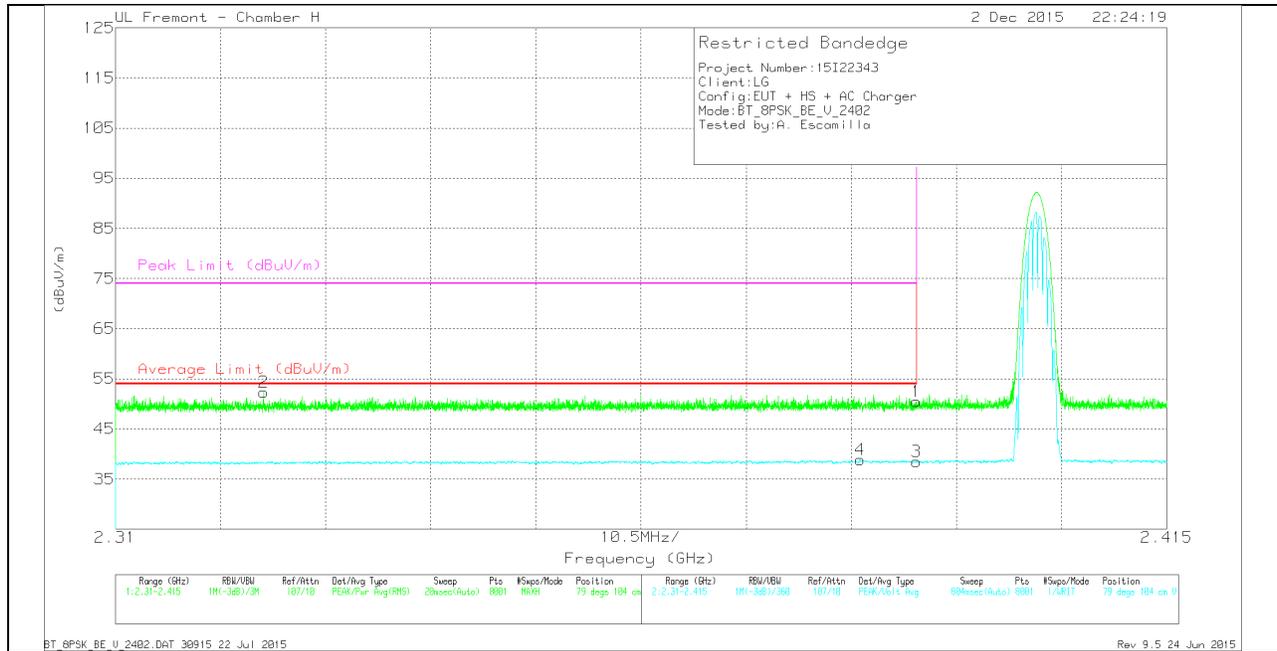
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.6	Pk	32	-23.5	50.1	-	-	74	-23.9	9	110	H
2	* 2.355	43.76	Pk	31.9	-23.4	52.26	-	-	74	-21.74	9	110	H
3	* 2.39	30.11	VA1T	32	-23.5	38.61	54	-15.39	-	-	9	110	H
4	* 2.389	30.33	VA1T	32	-23.4	38.93	54	-15.07	-	-	9	110	H

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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
2	* 2.325	44.03	Pk	31.8	-23.5	52.33	-	-	74	-21.67	79	104	V
4	* 2.384	30.24	VA1T	32	-23.4	38.84	54	-15.16	-	-	79	104	V
1	* 2.39	42	Pk	32	-23.5	50.5	-	-	74	-23.5	79	104	V
3	* 2.39	30.03	VA1T	32	-23.5	38.53	54	-15.47	-	-	79	104	V

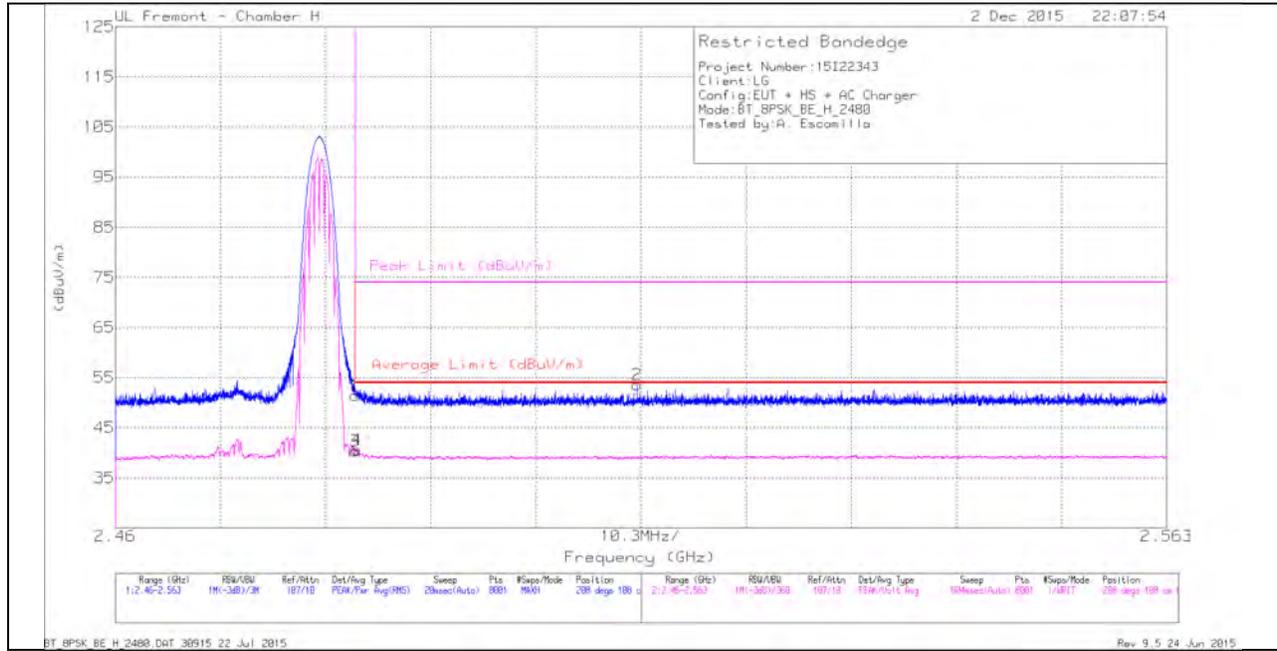
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

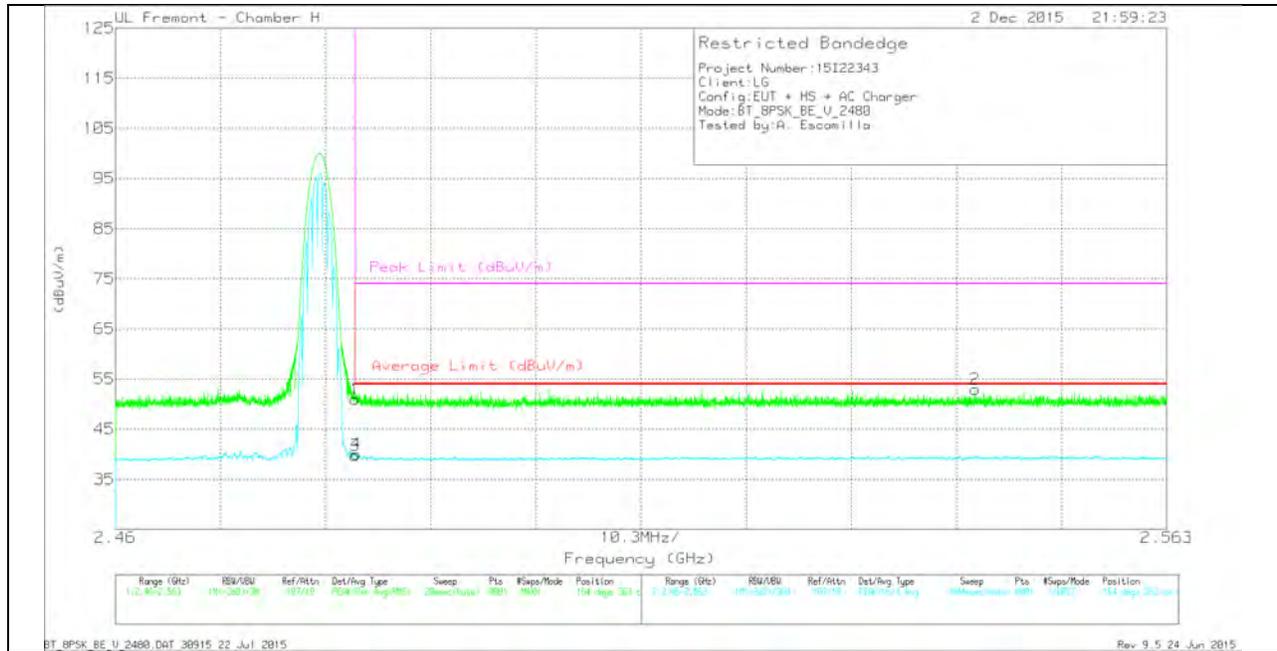
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.44	Pk	32.4	-23.4	51.44	-	-	74	-22.56	208	108	H
3	* 2.484	31.4	VA1T	32.4	-23.4	40.4	54	-13.6	-	-	208	108	H
4	* 2.484	31.61	VA1T	32.4	-23.4	40.61	54	-13.39	-	-	208	108	H
2	2.511	44.38	Pk	32.5	-23.3	53.58	-	-	74	-20.42	208	108	H

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

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average $V_B=1/T_{on}$ where: T_{on} is transmit duration

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	41.94	Pk	32.4	-23.4	50.94	-	-	74	-23.06	164	363	V
3	* 2.484	30.75	VA1T	32.4	-23.4	39.75	54	-14.25	-	-	164	363	V
4	* 2.484	30.97	VA1T	32.4	-23.4	39.97	54	-14.03	-	-	164	363	V
2	2.544	43.61	Pk	32.5	-23.2	52.91	-	-	74	-21.09	164	363	V

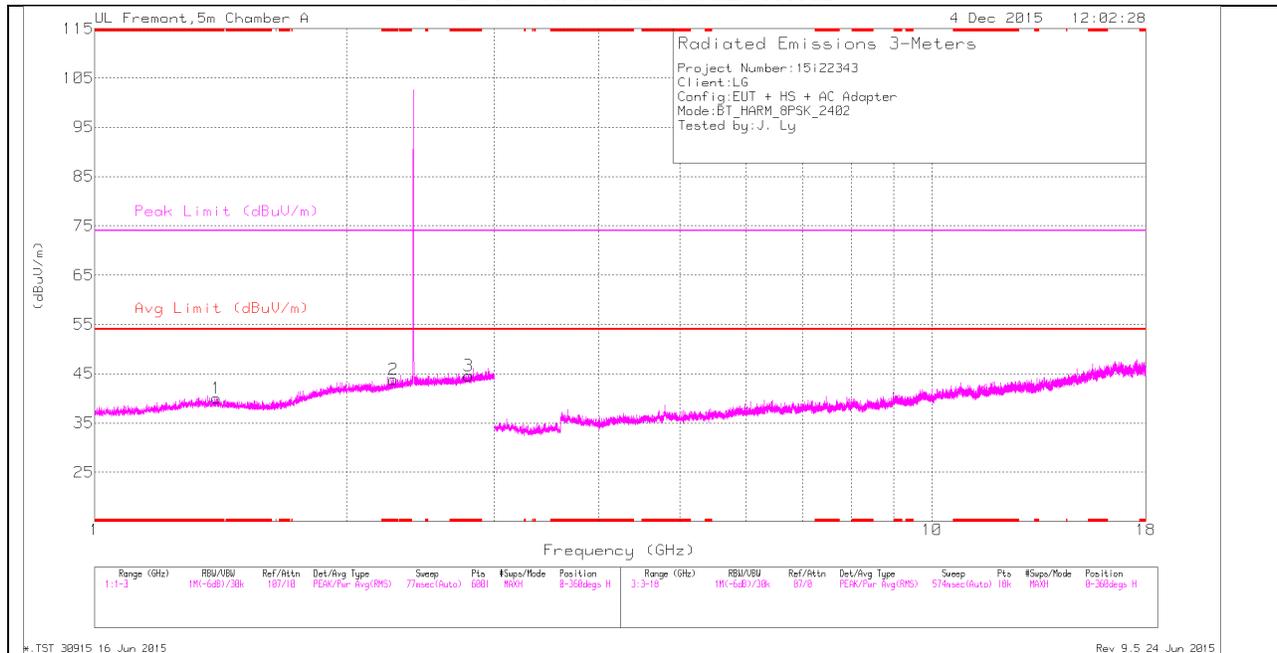
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

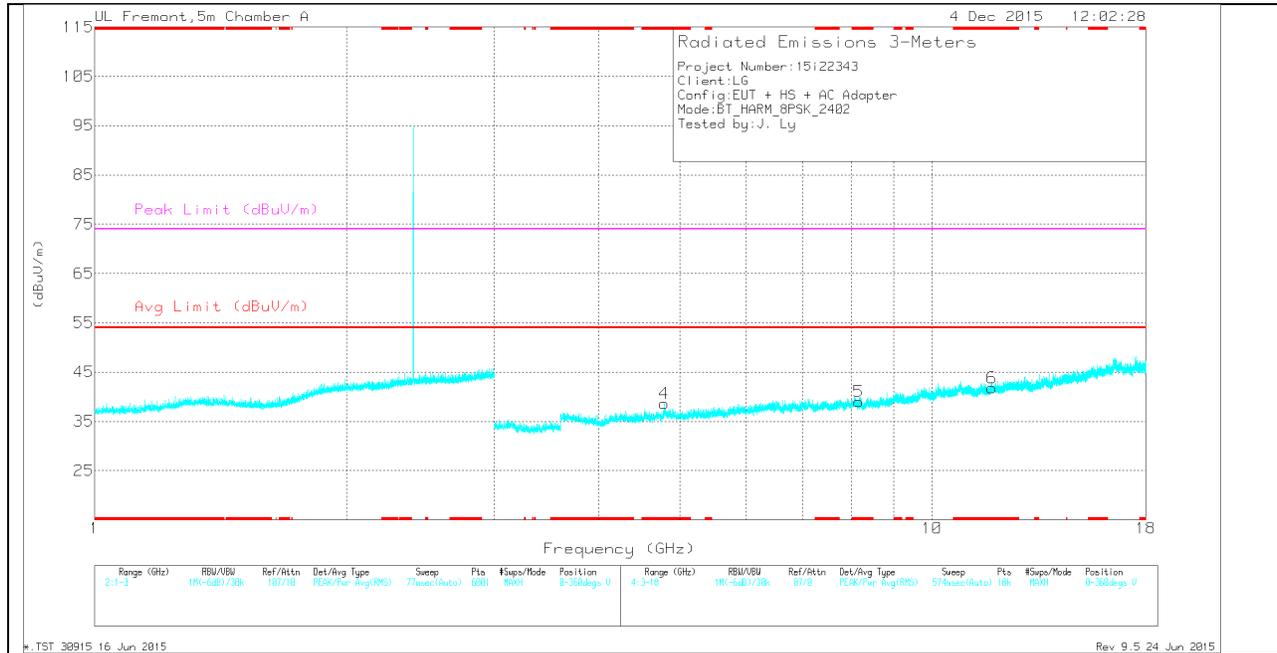
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL 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.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /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	* 1.398	37.17	Pk	28.5	-25.7	0	39.97	-	-	74	-34.03	0-360	100	H
2	* 2.273	36.9	Pk	31.7	-24.8	0	43.8	-	-	74	-30.2	0-360	100	H
3	* 2.796	36.32	Pk	32.4	-24.1	0	44.62	-	-	74	-29.38	0-360	100	H
4	* 4.791	34.47	Pk	34	-29.9	0	38.57	-	-	74	-35.43	0-360	100	V
5	* 8.175	28.05	Pk	35.7	-24.7	0	39.05	-	-	74	-34.95	0-360	200	V
6	* 11.79	25.32	Pk	38.4	-21.9	0	41.82	-	-	74	-32.18	0-360	200	V

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

Pk - Peak detector

RADIATED EMISSIONS

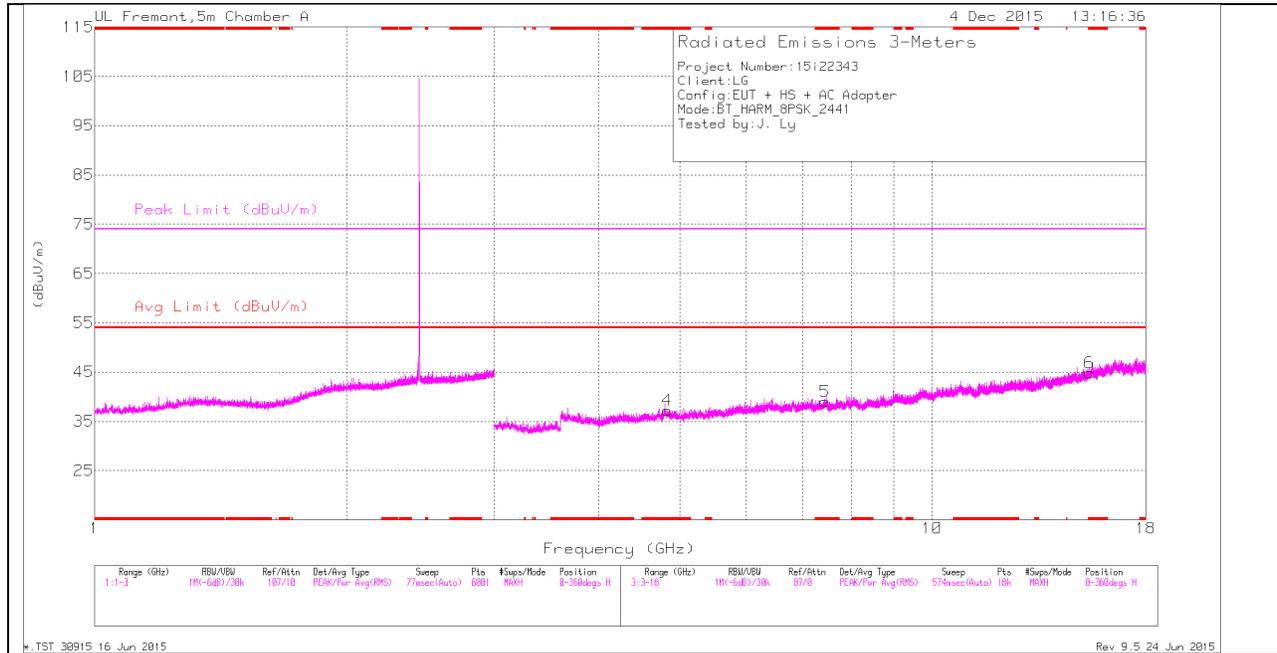
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.399	44.98	PK2	28.5	-25.7	47.78	-	-	74	-26.22	360	100	H
* 1.397	31.87	VA1T	28.5	-25.7	34.67	54	-19.33	-	-	360	100	H
* 2.273	44.03	PK2	31.7	-24.8	50.93	-	-	74	-23.07	360	100	H
* 2.272	31.08	VA1T	31.7	-24.8	37.98	54	-16.02	-	-	360	100	H
* 2.796	43.8	PK2	32.4	-24.1	52.1	-	-	74	-21.9	360	100	H
* 2.794	30.89	VA1T	32.4	-24.1	39.19	54	-14.81	-	-	360	100	H
* 4.791	41.28	PK2	34	-29.9	45.38	-	-	74	-28.62	360	100	V
* 4.791	28.89	VA1T	34	-29.9	32.99	54	-21.01	-	-	360	100	V
* 8.175	35.89	PK2	35.7	-24.7	46.89	-	-	74	-27.11	360	100	V
* 8.173	23.06	VA1T	35.7	-24.7	34.06	54	-19.94	-	-	360	100	V
* 11.788	34.22	PK2	38.4	-21.9	50.72	-	-	74	-23.28	360	100	V
* 11.788	21.21	VA1T	38.4	-21.9	37.71	54	-16.29	-	-	360	100	V

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

PK2 - KDB558074 Method: Maximum Peak

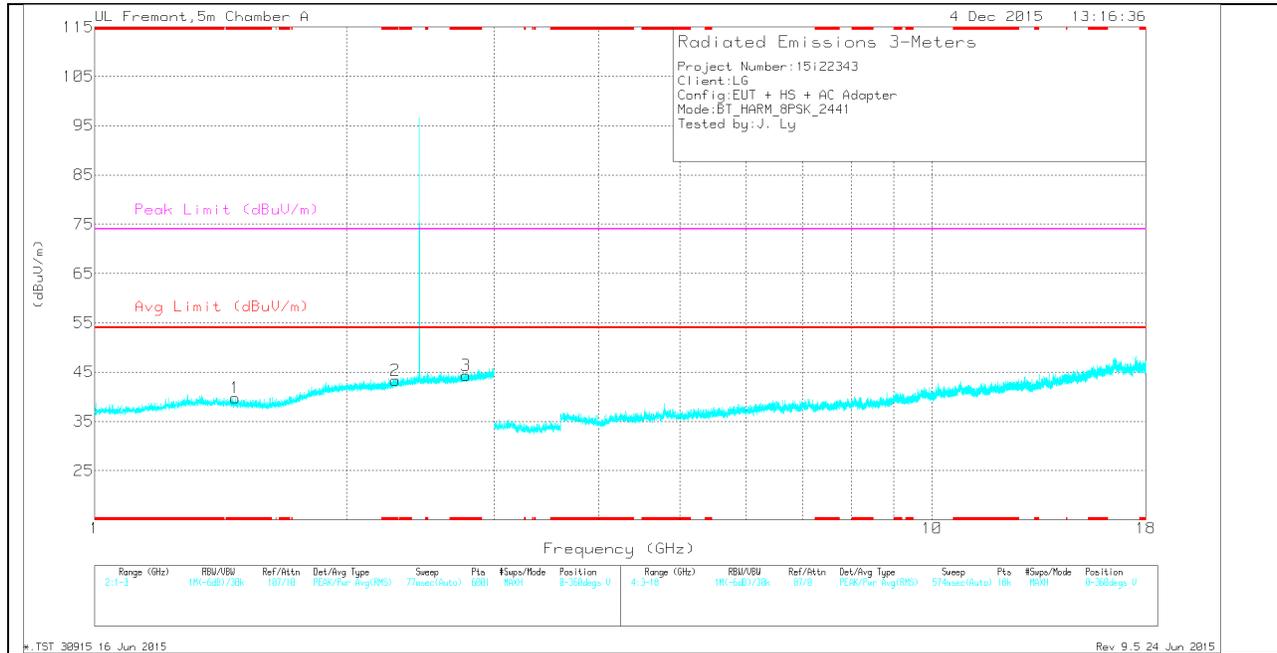
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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.

MID CHANNEL 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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /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	* 1.471	37.17	Pk	28.2	-25.6	0	39.77	-	-	74	-34.23	0-360	100	V
2	* 2.285	36.18	Pk	31.8	-24.7	0	43.28	-	-	74	-30.72	0-360	100	V
3	* 2.776	36.08	Pk	32.4	-24.2	0	44.28	-	-	74	-29.72	0-360	200	V
4	* 4.828	32.85	Pk	33.9	-29.5	0	37.25	-	-	74	-36.75	0-360	201	H
5	* 7.45	28.29	Pk	35.5	-24.8	0	38.99	-	-	74	-35.01	0-360	201	H
6	* 15.415	26.49	Pk	40.1	-21.7	0	44.89	-	-	74	-29.11	0-360	100	H

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

Pk - Peak detector

RADIATED EMISSIONS

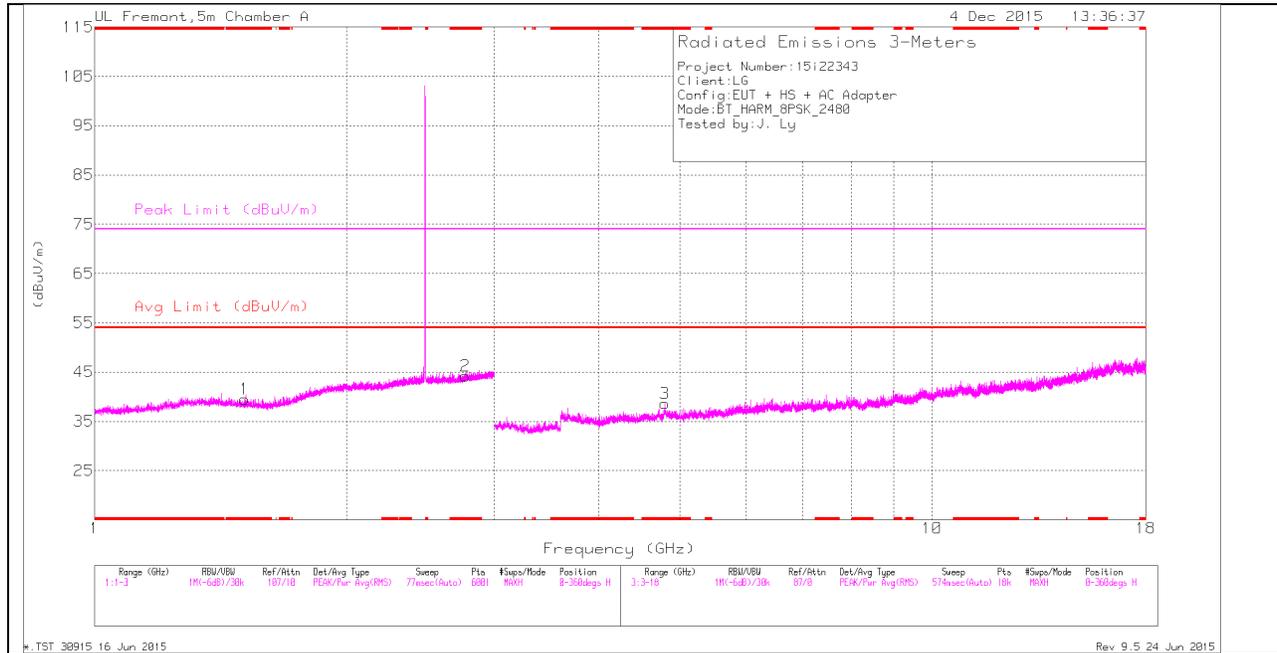
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.471	44.78	PK2	28.2	-25.6	47.38	-	-	74	-26.62	359	100	V
* 1.471	31.66	VA1T	28.2	-25.6	34.26	54	-19.74	-	-	359	100	V
* 2.284	44.29	PK2	31.8	-24.7	51.39	-	-	74	-22.61	359	100	V
* 2.286	31.11	VA1T	31.8	-24.8	38.11	54	-15.89	-	-	359	100	V
* 2.777	43.96	PK2	32.4	-24.2	52.16	-	-	74	-21.84	359	100	V
* 2.775	30.95	VA1T	32.4	-24.2	39.15	54	-14.85	-	-	359	100	V
* 4.827	41.34	PK2	33.9	-29.6	45.64	-	-	74	-28.36	359	100	H
* 4.828	28.73	VA1T	33.9	-29.5	33.13	54	-20.87	-	-	359	100	H
* 7.45	36.71	PK2	35.5	-24.8	47.41	-	-	74	-26.59	359	100	H
* 7.449	23.66	VA1T	35.5	-24.9	34.26	54	-19.74	-	-	359	100	H
* 15.416	34.86	PK2	40.1	-21.7	53.26	-	-	74	-20.74	359	100	H
* 15.415	21.91	VA1T	40.1	-21.7	40.31	54	-13.69	-	-	359	100	H

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

PK2 - KDB558074 Method: Maximum Peak

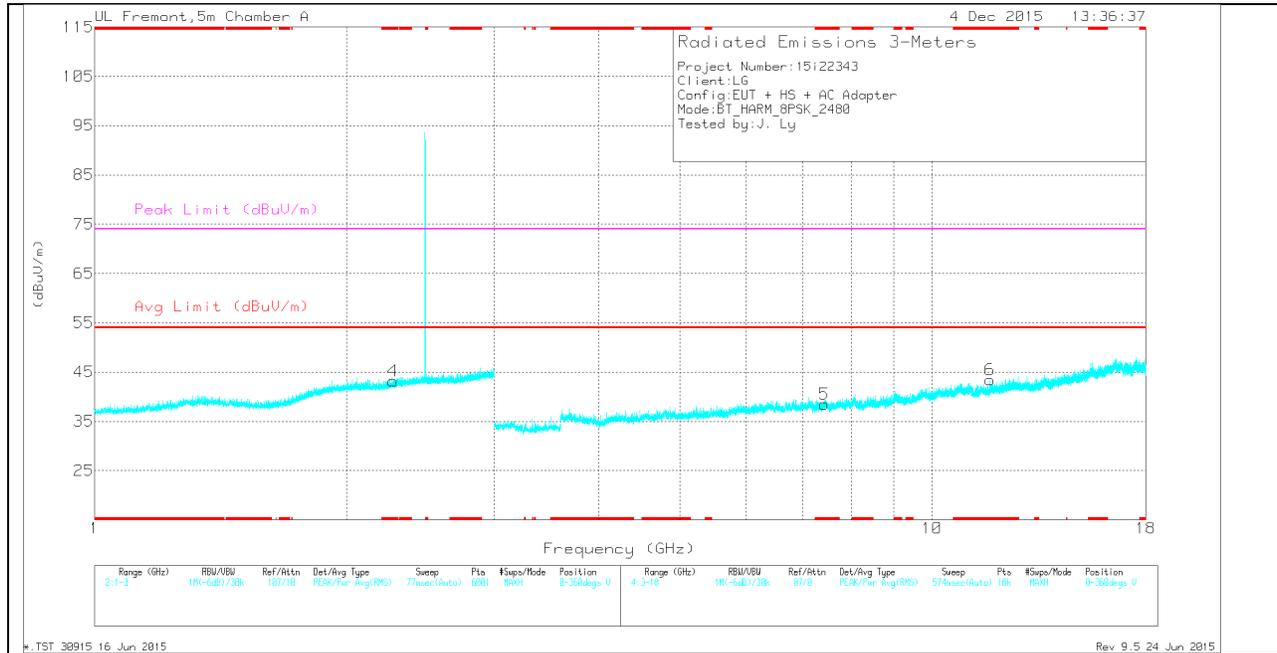
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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.

HIGH CHANNEL 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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /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	* 1.509	36.99	Pk	28.1	-25.6	0	39.49	-	-	74	-34.51	0-360	201	H
2	* 2.773	35.96	Pk	32.4	-24.2	0	44.16	-	-	74	-29.84	0-360	100	H
4	* 2.272	36.29	Pk	31.7	-24.8	0	43.19	-	-	74	-30.81	0-360	200	V
3	* 4.798	34.39	Pk	34	-29.8	0	38.59	-	-	74	-35.41	0-360	201	H
5	* 7.433	27.94	Pk	35.5	-25	0	38.44	-	-	74	-35.56	0-360	100	V
6	* 11.72	27.55	Pk	38.3	-22.4	0	43.45	-	-	74	-30.55	0-360	201	V

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

Pk - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.508	44.86	PK2	28.1	-25.6	47.36	-	-	74	-26.64	360	100	H
* 1.508	31.69	VA1T	28.1	-25.6	34.19	54	-19.81	-	-	360	100	H
* 2.771	44.73	PK2	32.4	-24.2	52.93	-	-	74	-21.07	360	100	H
* 2.774	30.96	VA1T	32.4	-24.2	39.16	54	-14.84	-	-	360	100	H
* 2.272	44.66	PK2	31.7	-24.8	51.56	-	-	74	-22.44	360	100	V
* 2.274	31.11	VA1T	31.7	-24.8	38.01	54	-15.99	-	-	360	100	V
* 4.798	41.22	PK2	34	-29.8	45.42	-	-	74	-28.58	360	100	H
* 4.798	28.76	VA1T	34	-29.8	32.96	54	-21.04	-	-	360	100	H
* 7.432	36.25	PK2	35.5	-25	46.75	-	-	74	-27.25	360	100	V
* 7.432	23.78	VA1T	35.5	-25	34.28	54	-19.72	-	-	360	100	V
* 11.72	33.81	PK2	38.3	-22.4	49.71	-	-	74	-24.29	360	100	V
* 11.719	21.47	VA1T	38.3	-22.4	37.37	54	-16.63	-	-	360	100	V

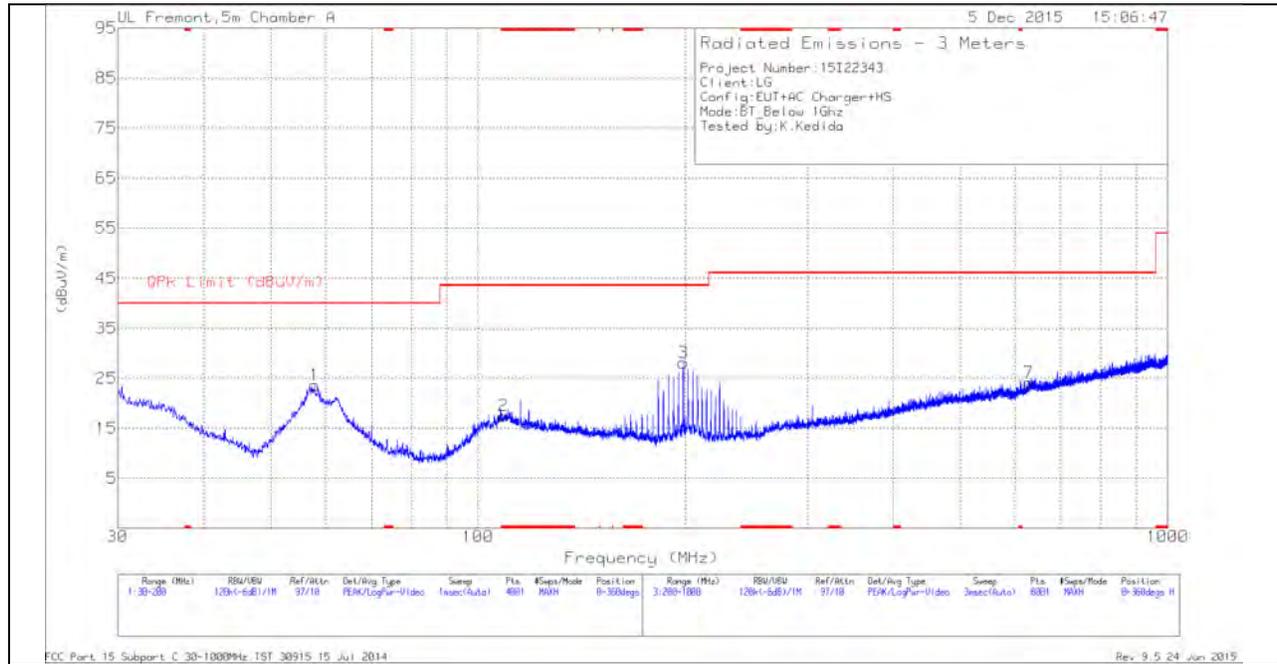
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

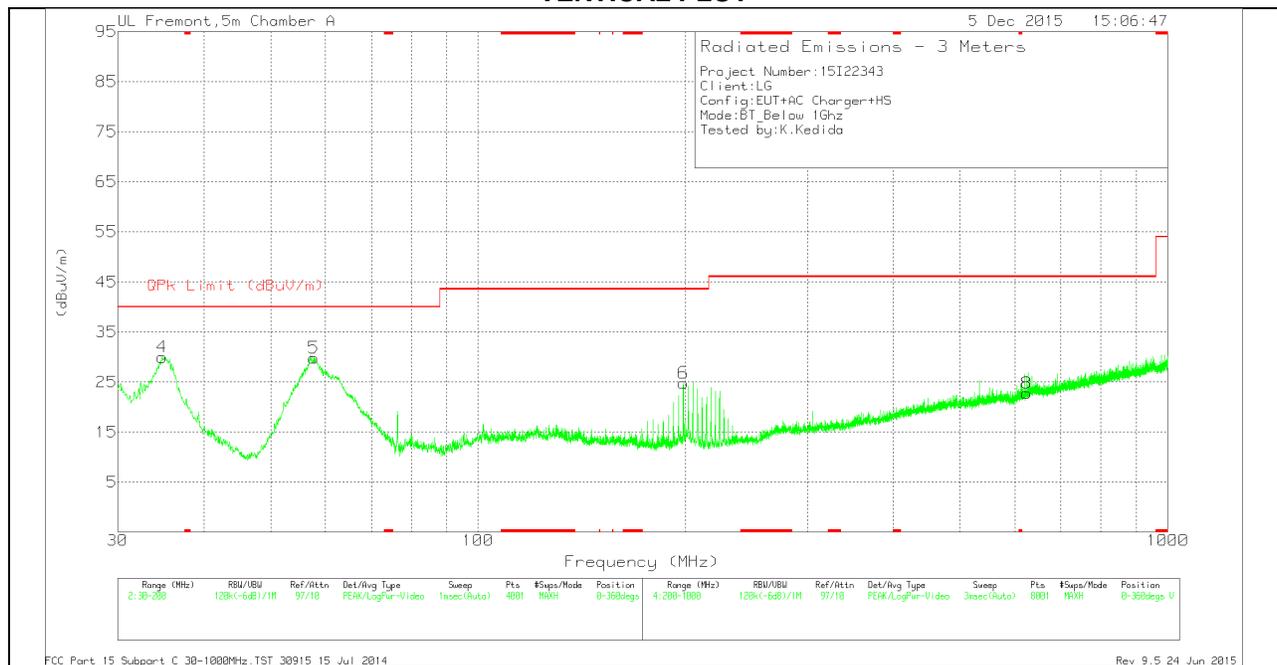
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

9.2. WORST-CASE BELOW 1 GHz
GFSK SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



VERTICAL PLOT



BELOW 1 GHz TABLE

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 108.8163	31.57	Pk	16.4	-30.5	17.47	43.52	-26.05	0-360	399	H
4	34.8025	39.48	Pk	21.7	-31.2	29.98	40	-10.02	0-360	101	V
5	57.7525	49.62	Pk	11.1	-30.9	29.82	40	-10.18	0-360	101	V
1	57.9225	43.51	Pk	11.1	-31	23.61	40	-16.39	0-360	299	H
3	198.385	41.81	Pk	16.3	-30	28.11	43.52	-15.41	0-360	100	H
6	198.385	38.5	Pk	16.3	-30	24.8	43.52	-18.72	0-360	101	V
8	624.4	27.87	Pk	23.3	-28.4	22.77	46.02	-23.25	0-360	199	V
7	629.4	29.11	Pk	23.5	-28.5	24.11	46.02	-21.91	0-360	299	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)

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56	56 to 46
0.5 - 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10

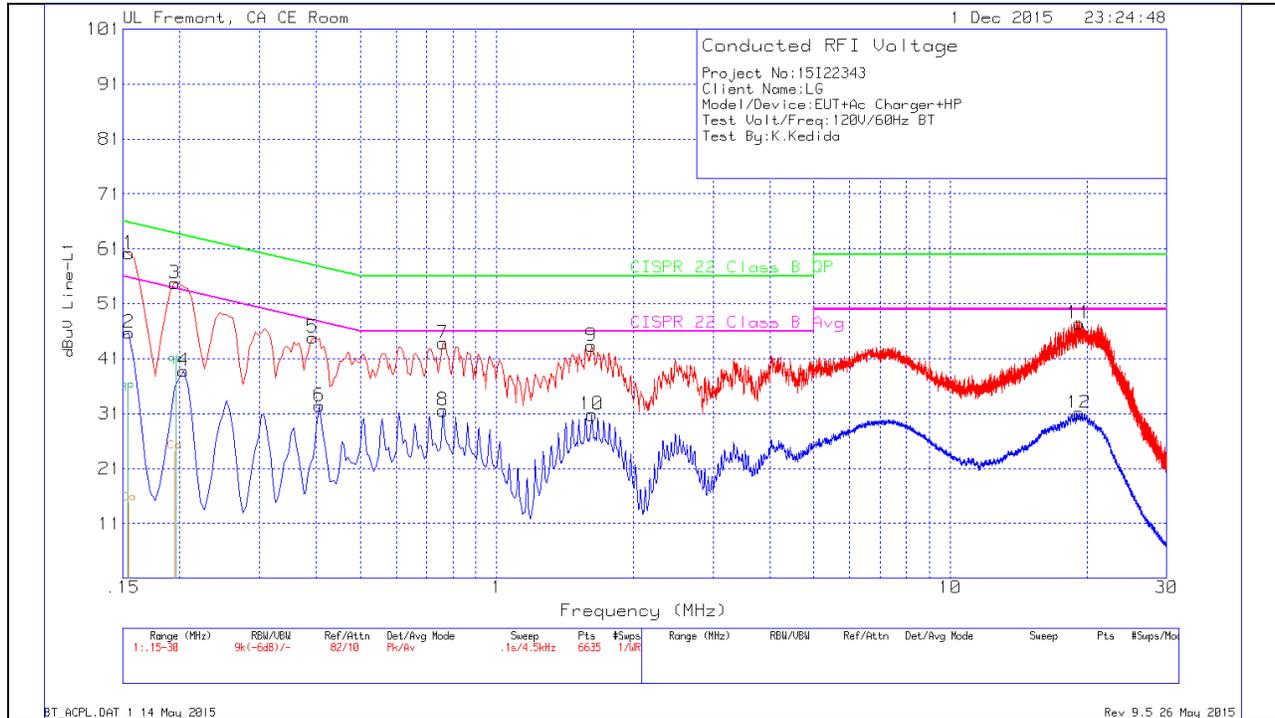
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



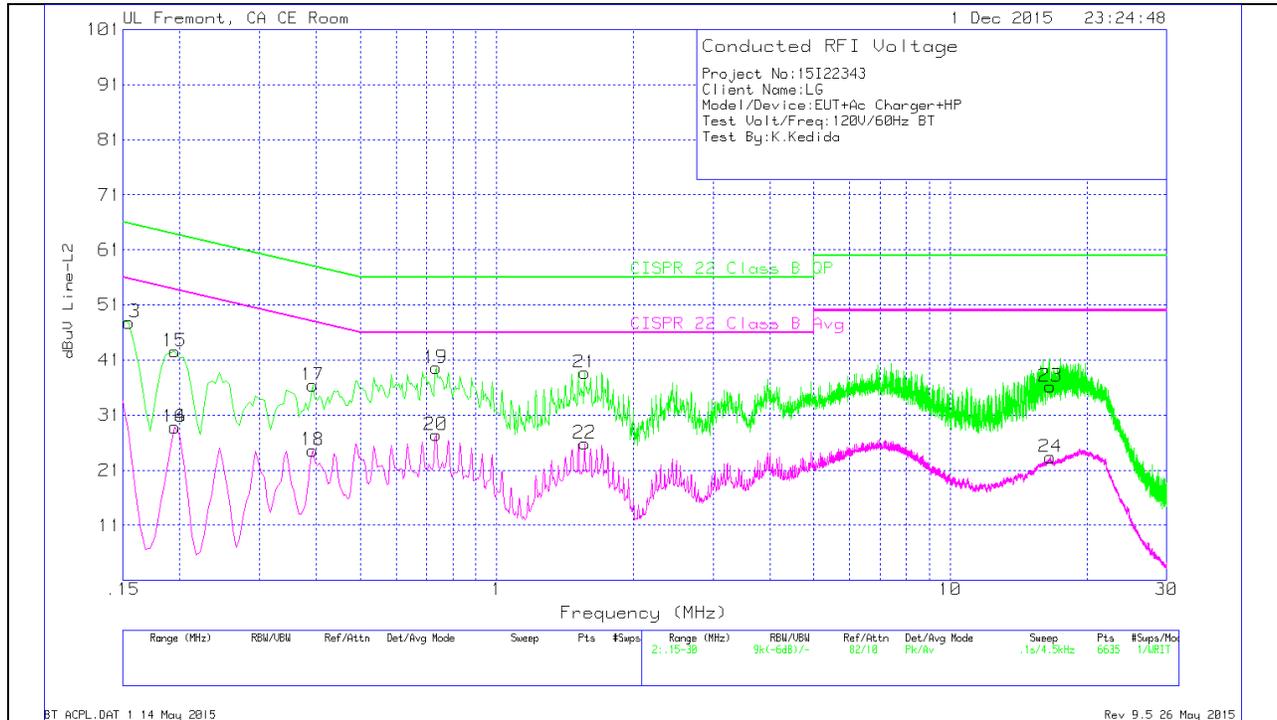
LINE 1 RESULT

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.15338	33.77	Qp	1.4	0	35.17	65.81	-30.64	-	-
2	.1545	44.46	Av	1.3	0	45.76	-	-	55.75	-9.99
3	.19613	39.01	Qp	1	0	40.01	63.77	-23.76	-	-
4	.204	37.84	Av	.9	0	38.74	-	-	53.45	-14.71
5	.393	44.46	Pk	.4	0	44.86	58	-13.14	48	-3.14
6	.4065	32.02	Av	.4	0	32.42	-	-	47.72	-15.3
7	.762	43.56	Pk	.3	0	43.86	56	-12.14	46	-2.14
8	.762	31.28	Av	.3	0	31.58	-	-	46	-14.42
9	1.617	43.05	Pk	.2	.1	43.35	56	-12.65	46	-2.65
10	1.6215	30.51	Av	.2	.1	30.81	-	-	46	-15.19
11	19.23	46.9	Pk	.3	.2	47.4	60	-12.6	50	-2.6
12	19.2255	30.6	Av	.3	.2	31.1	-	-	50	-18.9

Pk - Peak detector
 Av - Average detection
 Qp - Quasi-Peak detector

LINE 2 PLOT



LINE 2 RESULT

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
13	.1545	46.42	Pk	1.4	0	47.82	65.75	-17.93	55.75	-7.93
14	.195	27.82	Av	1	0	28.82	-	-	53.82	-25
15	.195	41.57	Pk	1	0	42.57	63.82	-21.25	53.82	-11.25
16	.195	27.82	Av	1	0	28.82	-	-	53.82	-25
17	.393	36.02	Pk	.4	0	36.42	58	-21.58	48	-11.58
18	.393	24.19	Av	.4	0	24.59	-	-	48	-23.41
19	.735	39.3	Pk	.3	0	39.6	56	-16.4	46	-6.4
20	.735	27.09	Av	.3	0	27.39	-	-	46	-18.61
21	1.563	38.39	Pk	.2	.1	38.69	56	-17.31	46	-7.31
22	1.563	25.55	Av	.2	.1	25.85	-	-	46	-20.15
23	16.629	35.72	Pk	.3	.2	36.22	60	-23.78	50	-13.78
24	16.6245	22.85	Av	.3	.2	23.35	-	-	50	-26.65

Pk - Peak detector

Av - Average detection