FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

CDMA/LTE PHONE WITH BT & DTS WLAN b/g/n

MODEL NUMBER: LGL62VL, L62VL, LG-L62VL

FCC ID: ZNFL62VL

REPORT NUMBER: 15I22333-E2V1

ISSUE DATE: 12/14/2015

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	12/14/2015		D. CORONIA

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This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION:	CDMA/LTE PHONE WITH BT & DTS WLAN b/g/n
MODEL:	LGL62VL, L62VL, LG-L62VL
SERIAL NUMBER:	511KPWQ000233, 511KPXV000234, 511KPKN0002299, 511KPUU000230
DATE TESTED:	NOVEMBER 24 – DECEMBER 3, 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 ANSI C63.10-2013 for FCC, 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
☐ Chamber A	☐ Chamber D
☒ Chamber B	☐ Chamber E
☐ Chamber C	☐ Chamber F
	☐ Chamber G
	☒ 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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a CDMA/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	8.92	7.80
2402 - 2480	Enhanced 8PSK	9.26	8.43

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 0.24dBi.

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.

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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.

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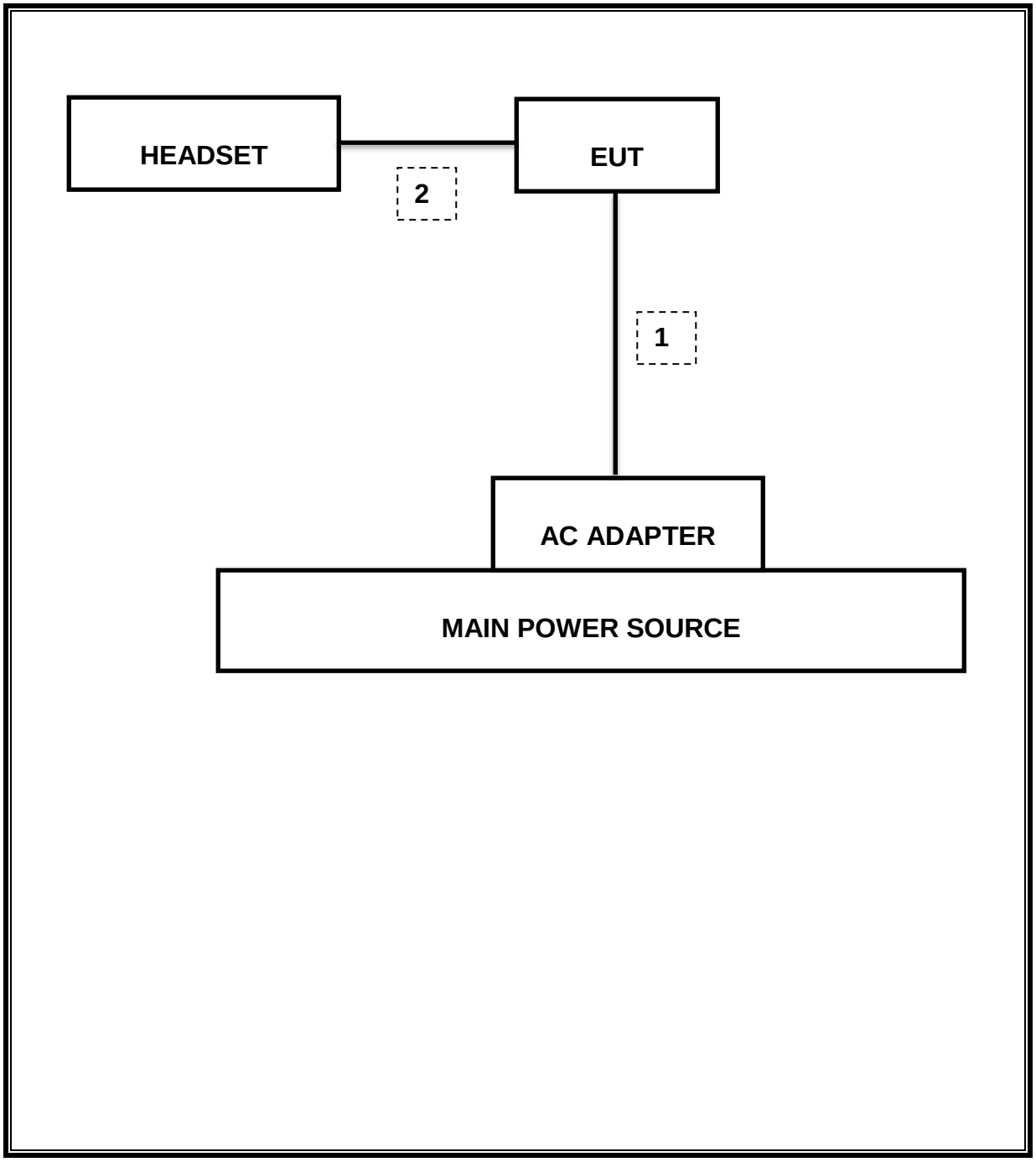
SETUP DIAGRAM FOR TESTS



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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, June 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

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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	20 dB Occupied Band width	N/A	Conducted	Pass	1.323 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-48.06 dBm
15.247 (b)(1)	RSS-247 5.4.2	TX conducted output power	<21dBm		Pass	9.26 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	0.2304 s
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	46.61dBuV PK
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	40.66 dBuV/m

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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

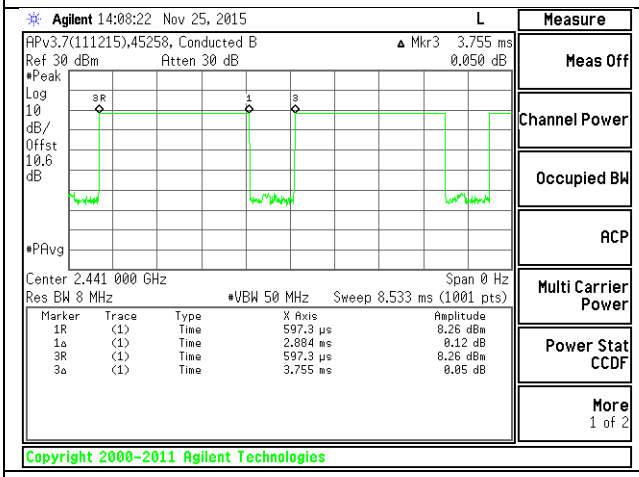
RESULTS

ON TIME AND DUTY CYCLE RESULTS

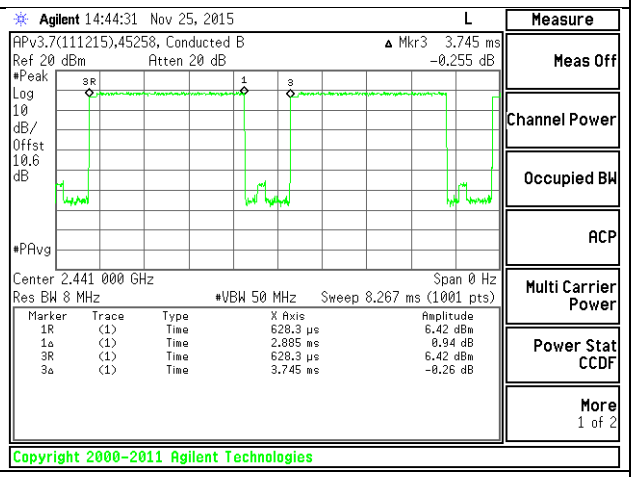
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
GFSK	2.884	3.755	0.768	76.80%	1.15	0.347
8PSK	2.885	3.745	0.770	77.04%	1.13	0.347

DUTY CYCLE PLOTS

GFSK



8PSK



NOTE: --

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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 ≥ 1% of the 20 dB bandwidth. The VBW is set to ≥ RBW. The sweep time is coupled.

RESULTS

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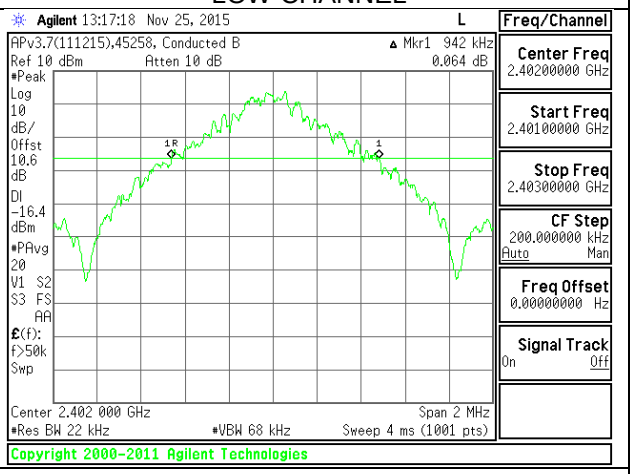
8.2.1. GFSK 20 dB BANDWIDTH PLOTS AND TABLE

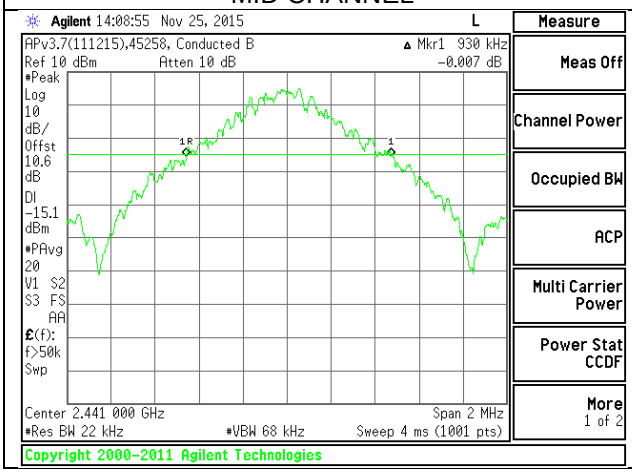
TEST RESULT TABLE

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	0.942
Middle	2441	0.930
High	2480	0.944
Worst		0.944

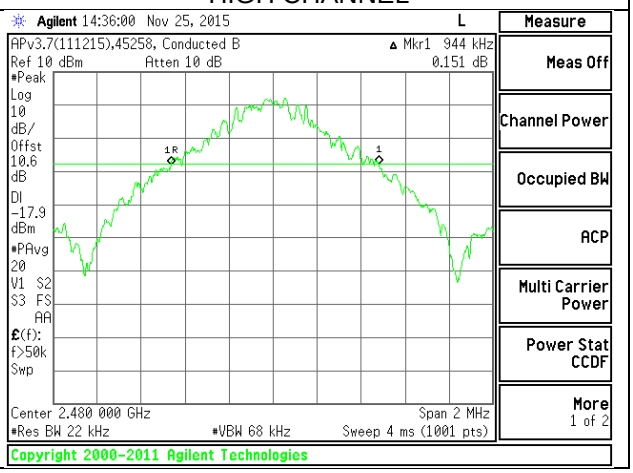
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



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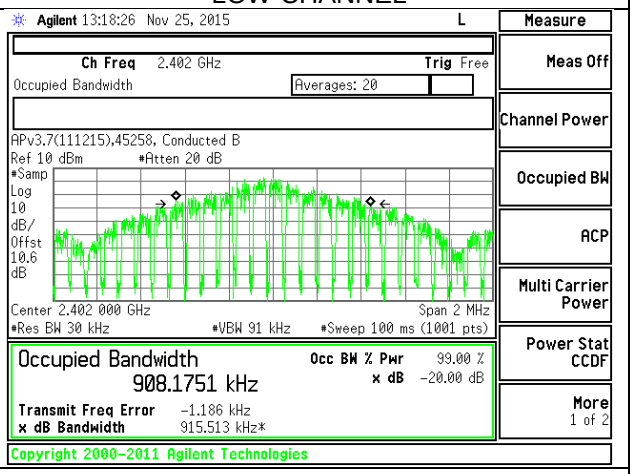
8.2.2. GFSK 99% BANDWIDTH PLOTS AND TABLE

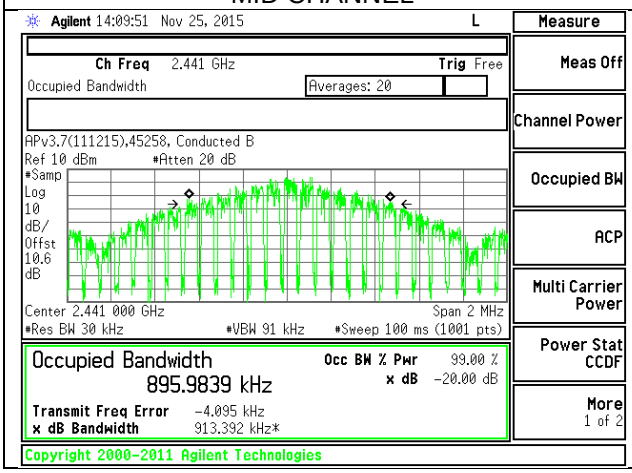
TEST RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	0.908
Middle	2441	0.896
High	2480	0.895
Worst		0.908

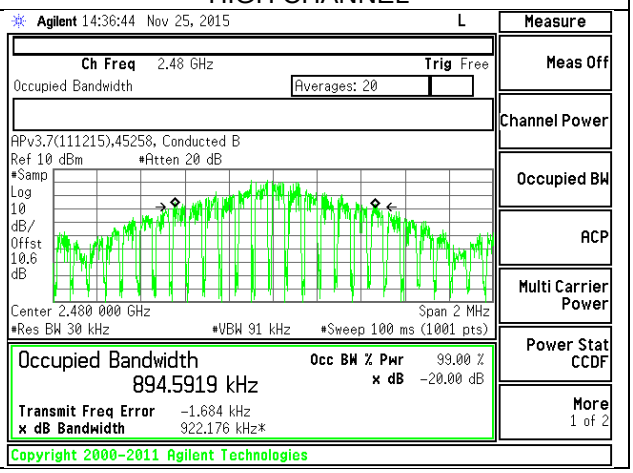
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



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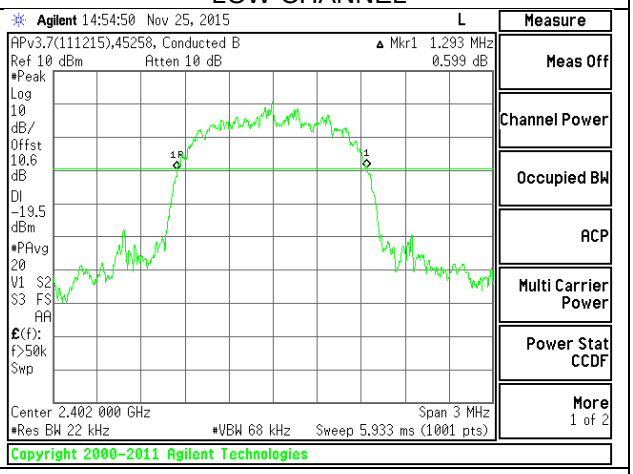
8.2.3. 8PSK 20 dB BANDWIDTH PLOTS AND TABLE

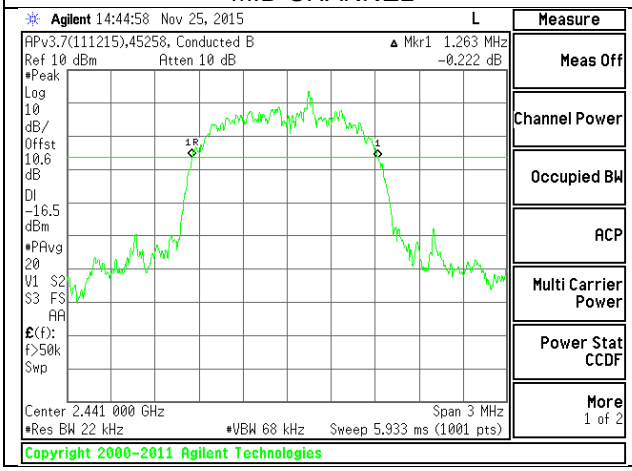
TEST RESULT TABLE

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	1.293
Middle	2441	1.263
High	2480	1.323
Worst		1.323

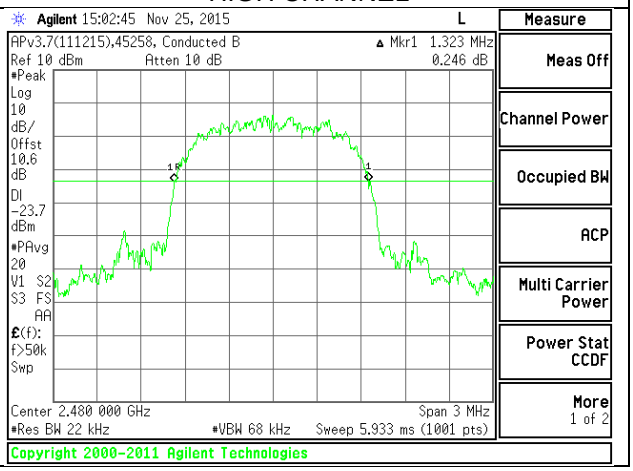
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



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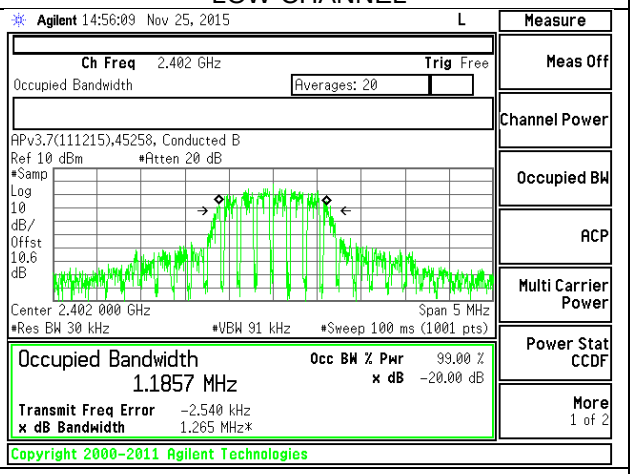
8.2.4. 8PSK 99% BANDWIDTH PLOTS AND TABLE

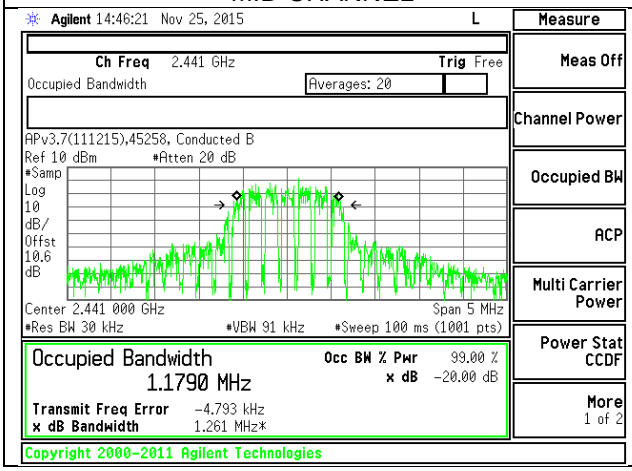
TEST RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.186
Middle	2441	1.179
High	2480	1.182
Worst		1.186

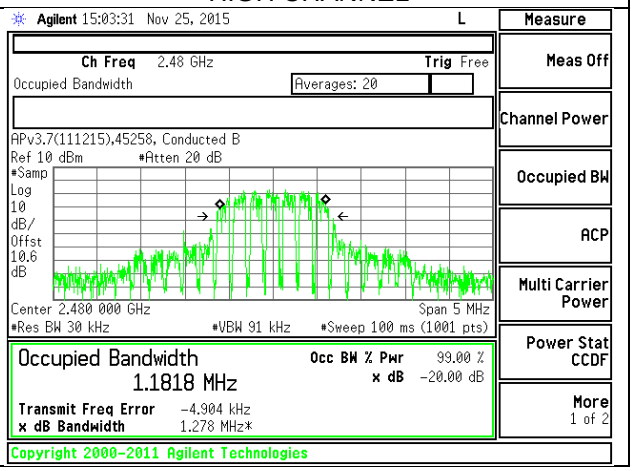
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



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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 hoping channel, whichever is greater.

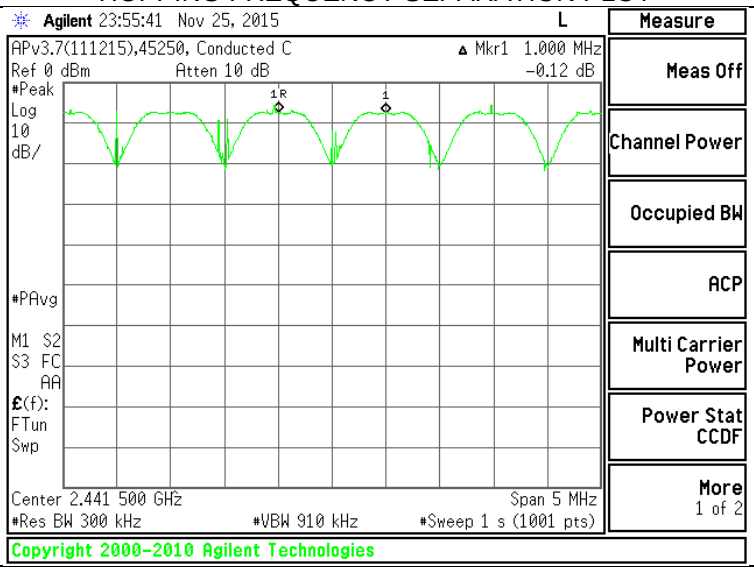
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

HOPPING FREQUENCY SEPARATION PLOT



NOTE: Hopping Frequency Separation is 1 MHz

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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.

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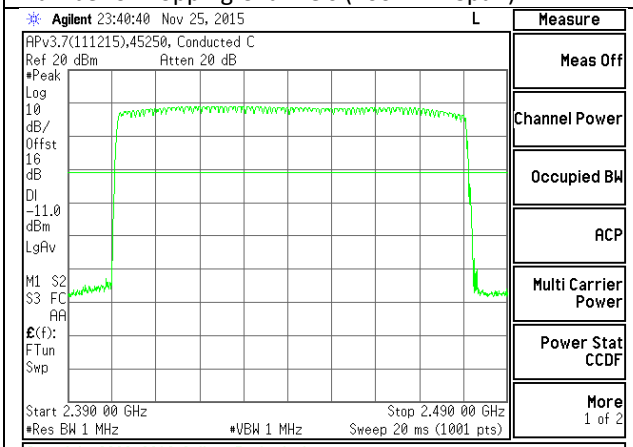
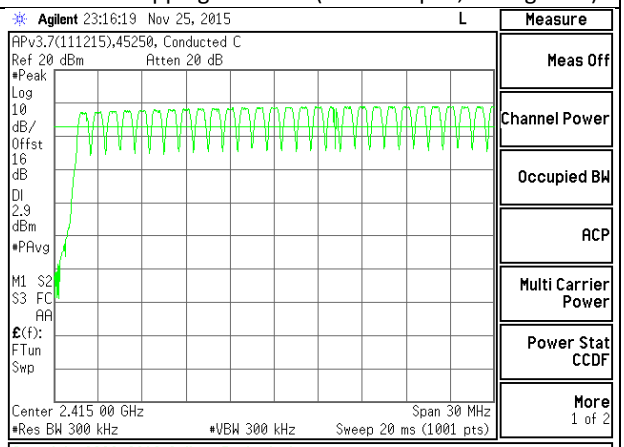
8.4.1. NUMBER OF HOPPING CHANNELS PLOTS

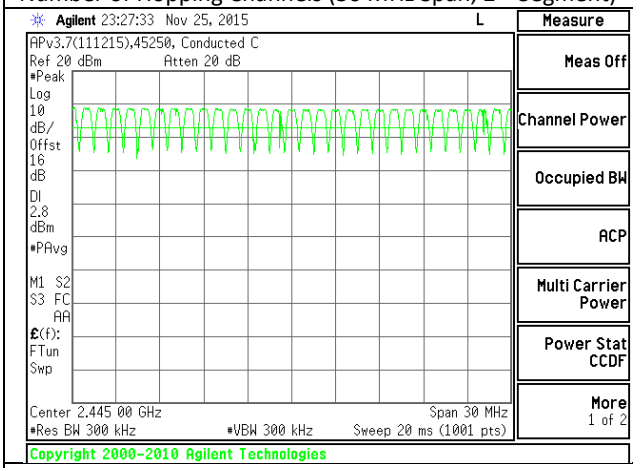
Number of Hopping Channels (100 MHz Span)



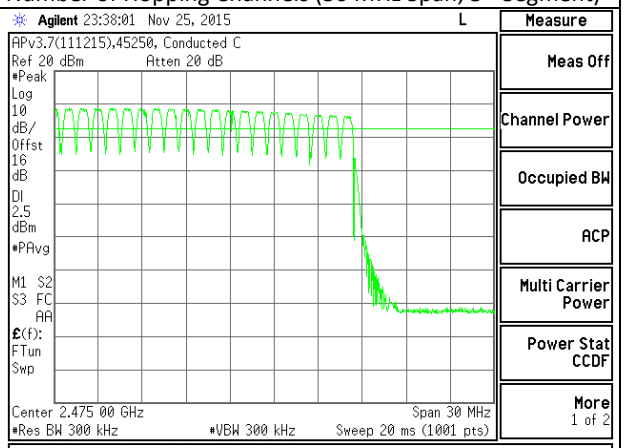
Number of Hopping Channels (30 MHz Span, 1st Segment)



Number of Hopping Channels (30 MHz Span, 2nd Segment)



Number of Hopping Channels (30 MHz Span, 3rd Segment)



NOTE: --

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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 * (# of pulses in 3.16 s) * 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 * (# of pulses in 0.8 s) * 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	0.37	32	0.1184	0.4	-0.2816
DH3	1.64	14	0.2296	0.4	-0.1704
DH5	2.88	8	0.2304	0.4	-0.1696

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	0.37	8	0.02960	0.4	-0.3704
DH3	1.64	3.5	0.05740	0.4	-0.3426
DH5	2.88	2	0.05760	0.4	-0.3424

NOTE: --

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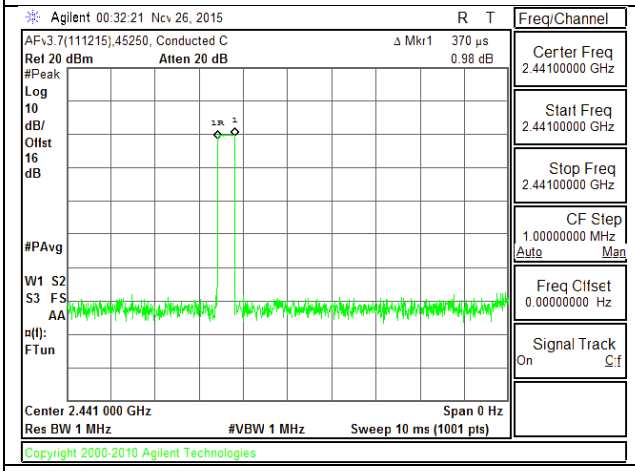
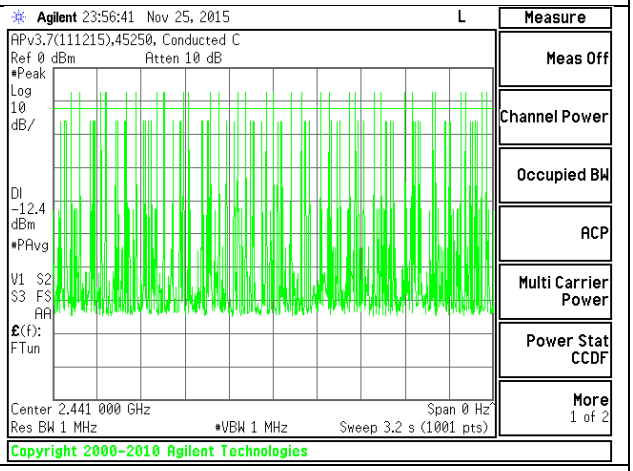
PULSE WIDTH and NUMBER of PULSES in 3.16 SECONDS PERIOD PLOTS

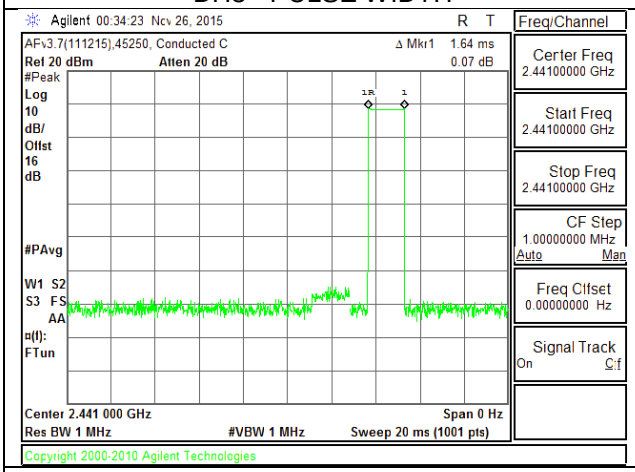
DH1 - PULSE WIDTH



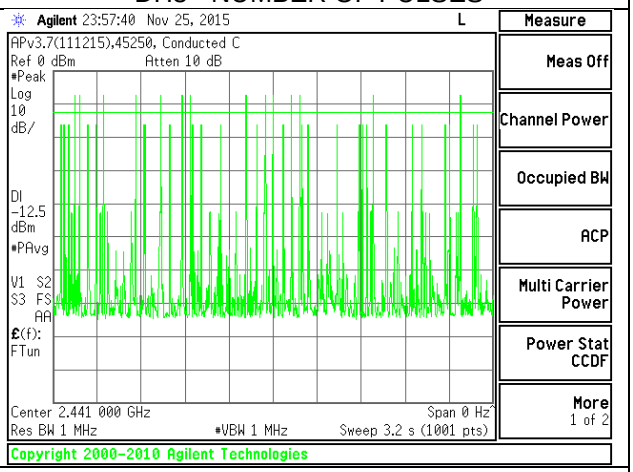
DH1 - NUMBER OF PULSES



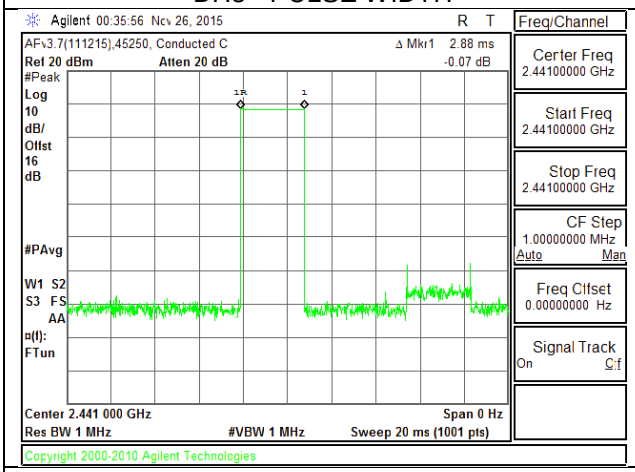
DH3 - PULSE WIDTH



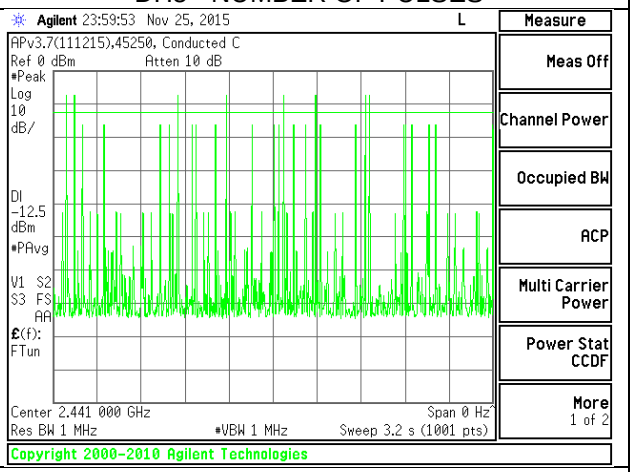
DH3 - NUMBER OF PULSES



DH5 - PULSE WIDTH



DH5 - NUMBER OF PULSES



NOTE: --

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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

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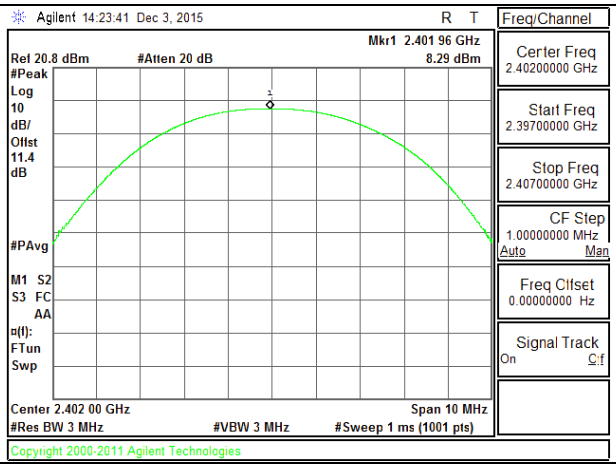
8.6.1. GFSK OUTPUT POWER PLOTS AND TABLE

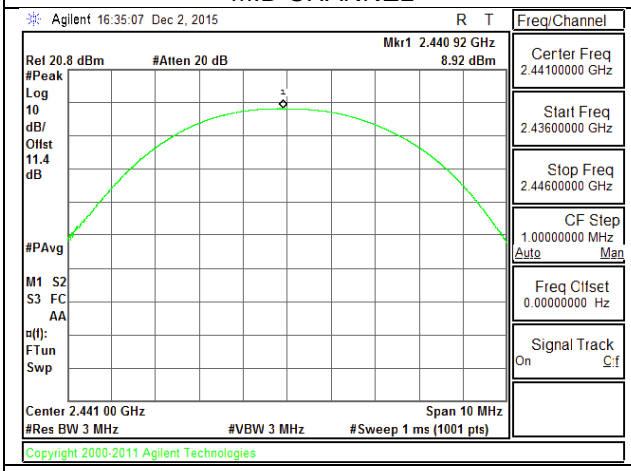
TEST RESULT TABLE

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	8.29	21	-12.71
Middle	2441	8.92	21	-12.08
High	2480	6.44	21	-14.56
Worst		8.92		-12.08

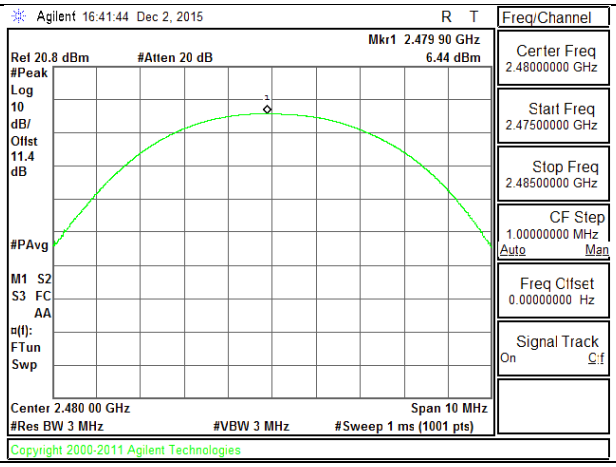
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



NOTE:

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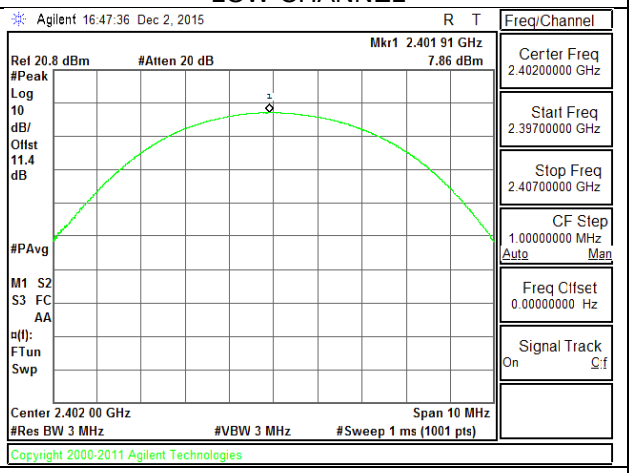
8.6.2. 8PSK OUTPUT POWER PLOTS AND TABLE

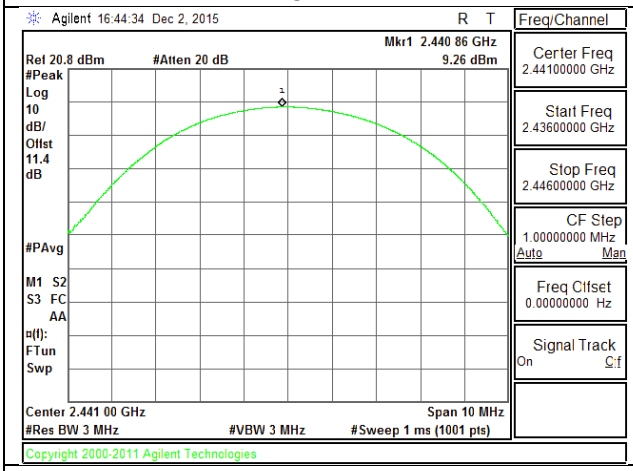
TEST RESULT TABLE

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.86	21	-13.14
Middle	2441	9.26	21	-11.74
High	2480	6.81	21	-14.19
Worst		9.26		-11.74

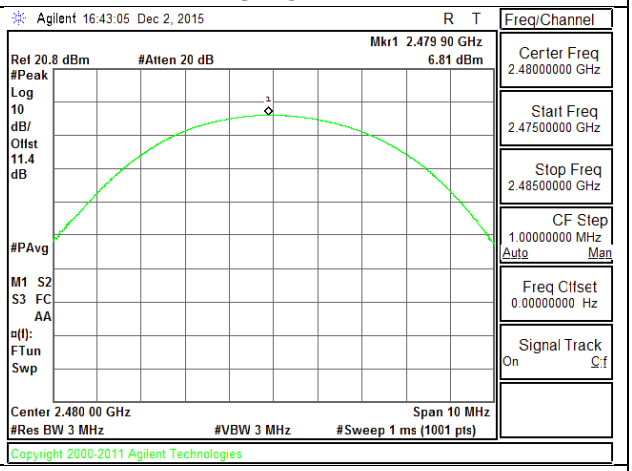
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



NOTE:

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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.

GFSK

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.6
Middle	2441	8.3
High	2480	6.2
Worst		8.3

8PSK

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	5.1
Middle	2441	6.0
High	2480	3.8
Worst		6.0

NOTE: --

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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

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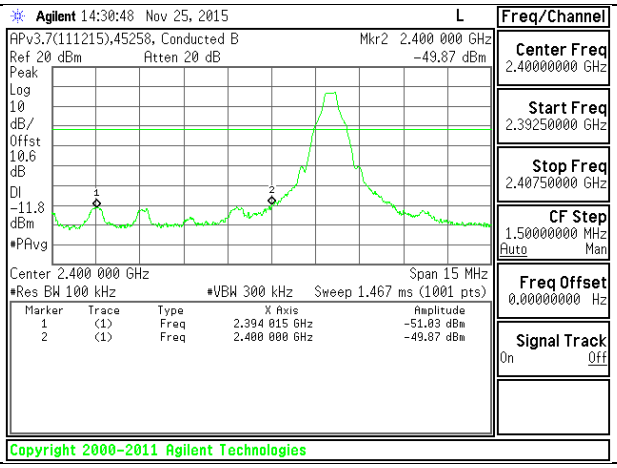
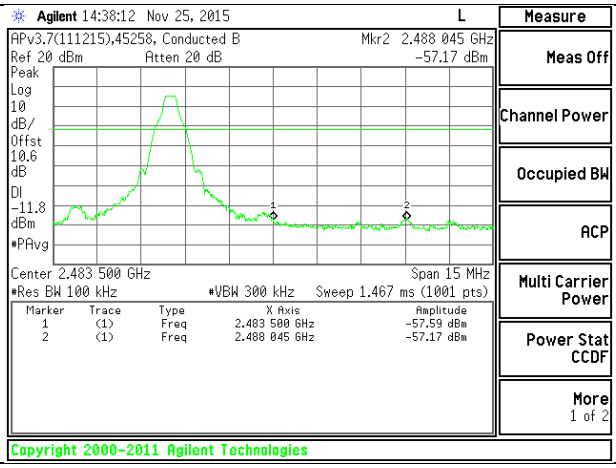
8.8.1. GFSK MODULATION NON-HOPPING MODE

BANDEDGE AND SPURIOUS EMISSIONS PLOTS

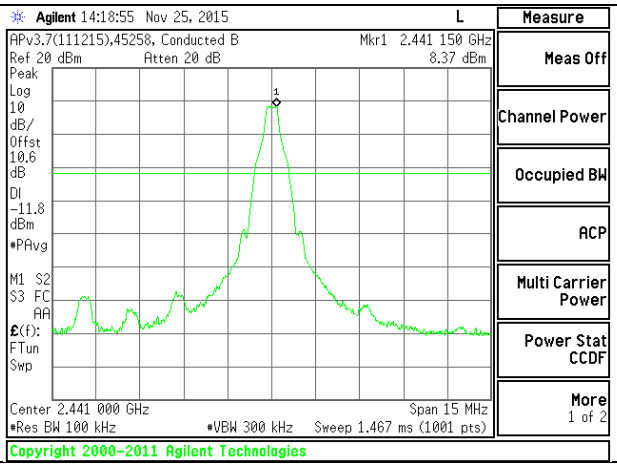
LOW CHANNEL BANDEDGE



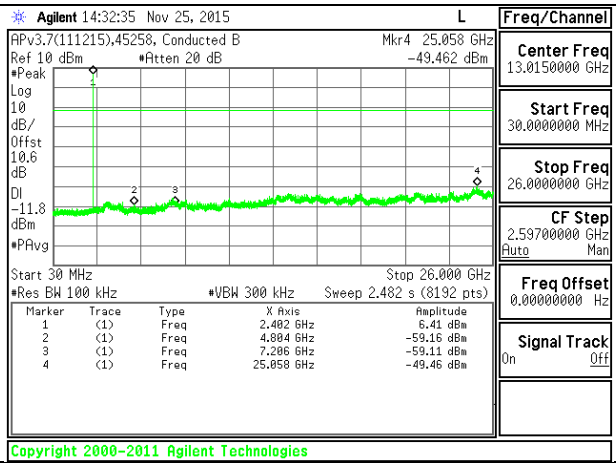
HIGH CHANNEL BANDEDGE



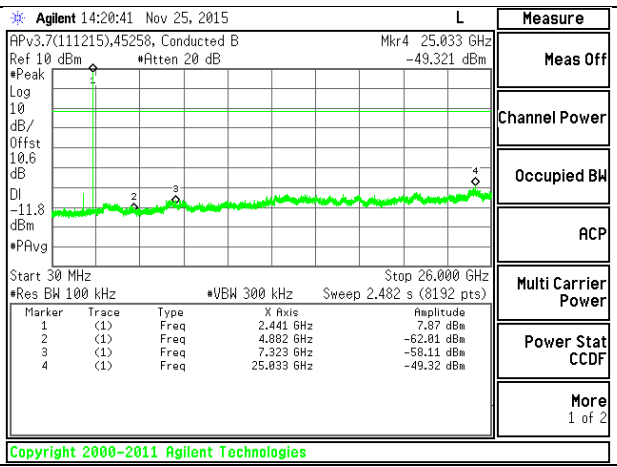
MID CHANNEL REFERENCE



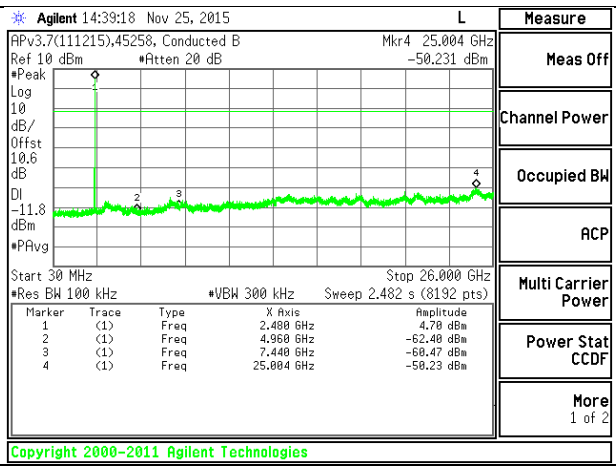
LOW CHANNEL SPURIOUS



MID CHANNEL SPURIOUS



HIGH CHANNEL SPURIOUS



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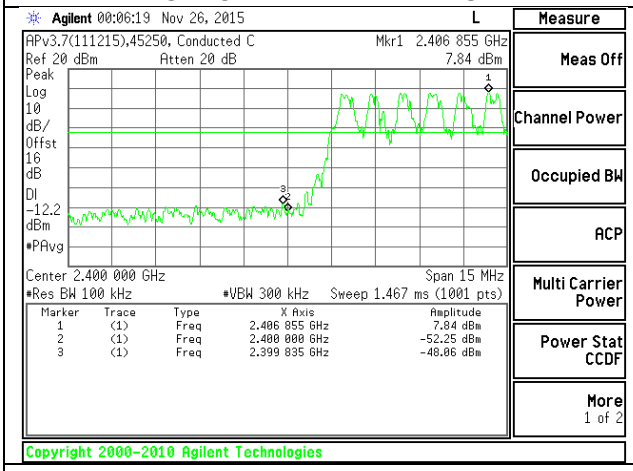
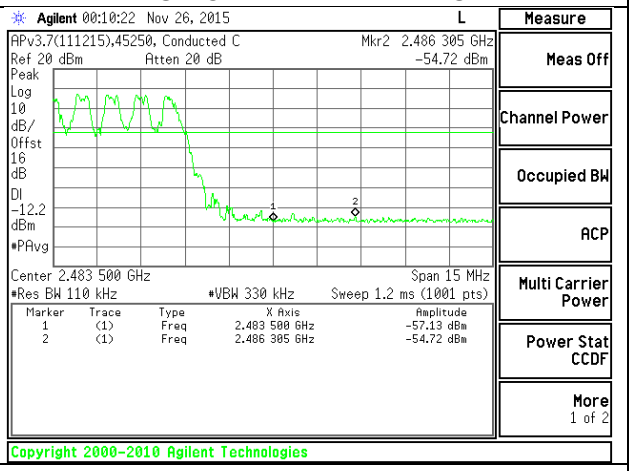
8.8.2. GFSK MODULATION HOPPING MODE

SPURIOUS BANDEDGE EMISSIONS PLOTS

LOW CHANNEL BANDEDGE	HIGH CHANNEL BANDEDGE
	

NOTE:--

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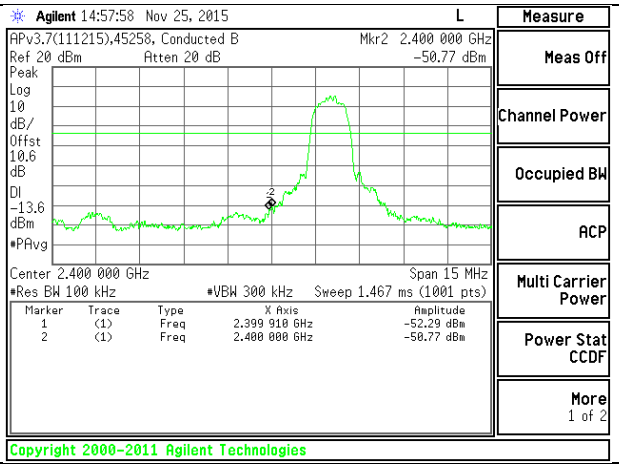
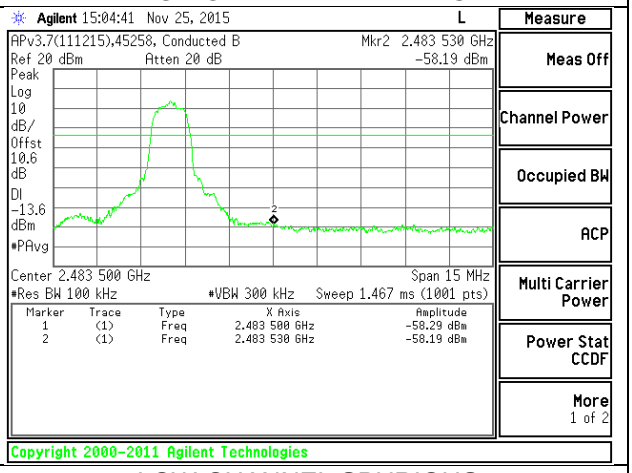
8.8.3. 8PSK MODULATION NON-HOPPING MODE

BANDEDGE AND SPURIOUS EMISSIONS PLOTS

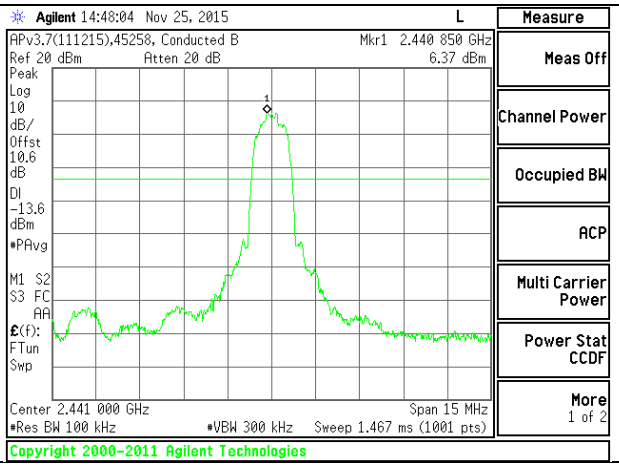
LOW CHANNEL BANDEDGE



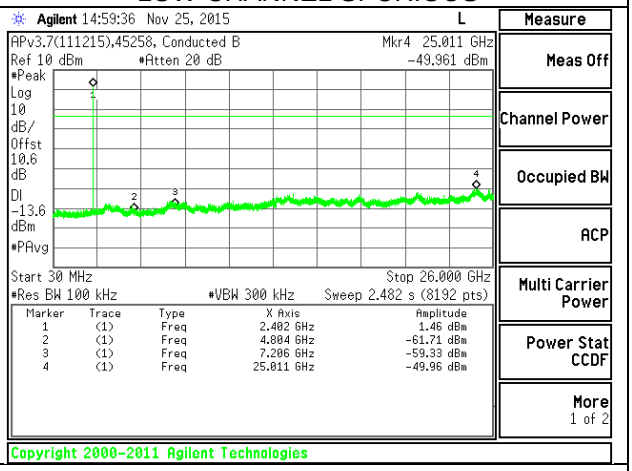
HIGH CHANNEL BANDEDGE



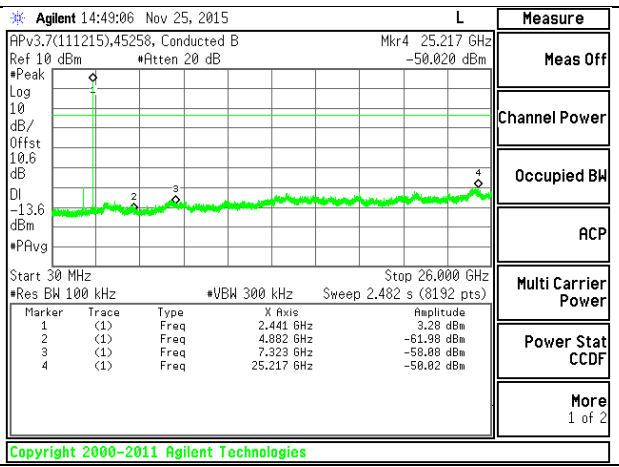
MID CHANNEL REFERENCE



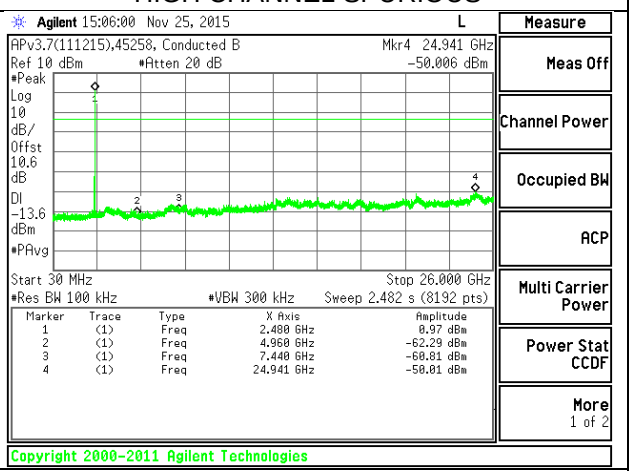
LOW CHANNEL SPURIOUS



MID CHANNEL SPURIOUS



HIGH CHANNEL SPURIOUS



NOTE:--

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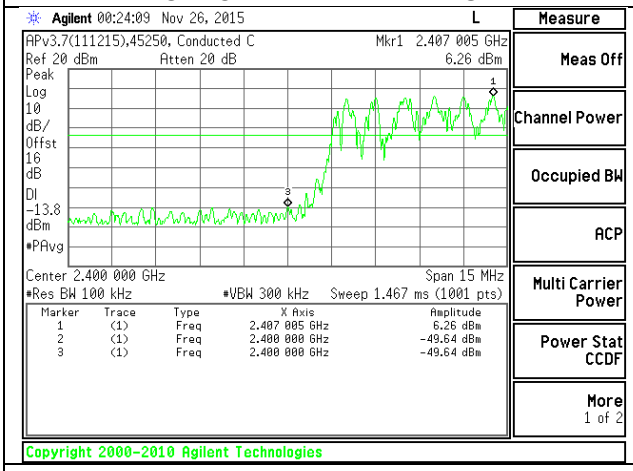
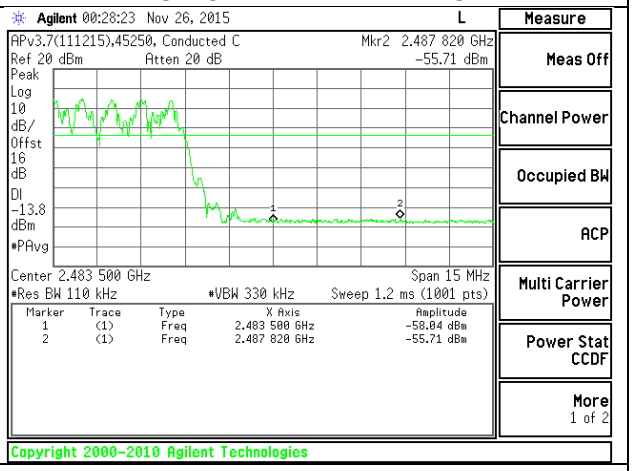
8.8.4. 8PSK MODULATION HOPPING MODE

SPURIOUS BANDEDGE EMISSIONS PLOTS

LOW CHANNEL BANDEDGE	HIGH CHANNEL BANDEDGE
	

NOTE:--

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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.
GFSK = 1/T = 1 / 0.00288S = 347Hz.

The spectrum from 30 MHz 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

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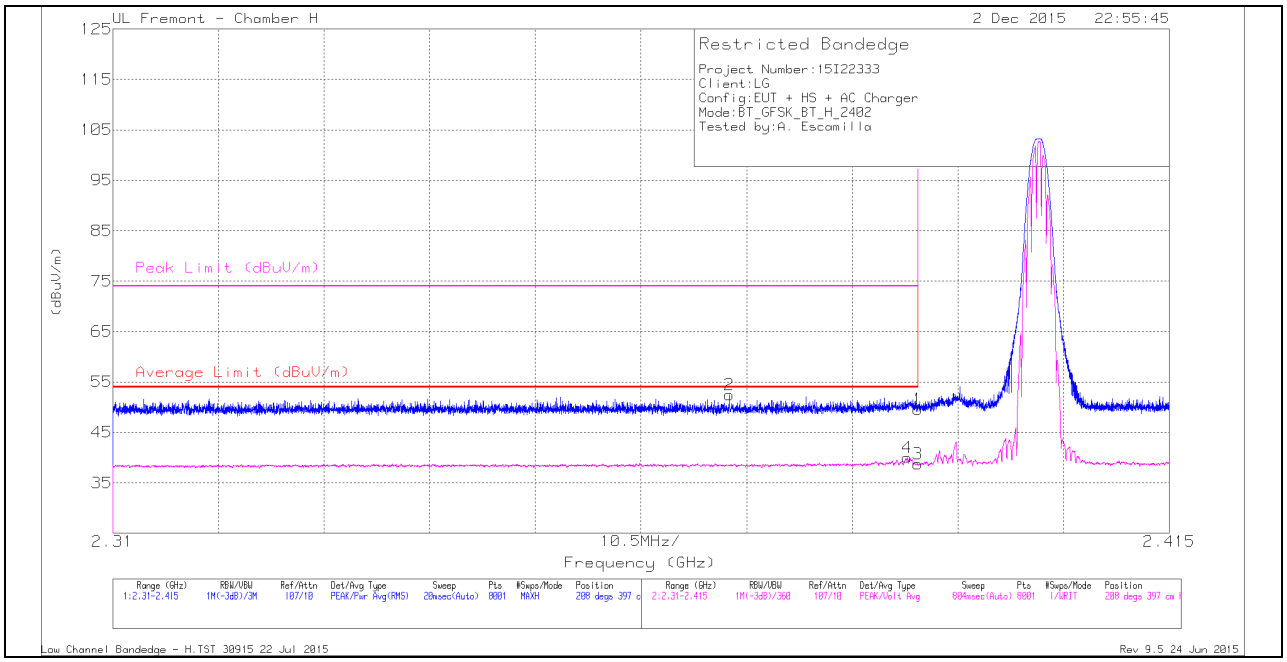
9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. 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	* 2.371	43.97	Pk	32	-23.5	52.47	-	-	74	-21.53	208	397	H
4	* 2.389	31.46	VA1T	32	-23.4	40.06	54	-13.94	-	-	208	397	H
1	* 2.39	41.13	Pk	32	-23.5	49.63	-	-	74	-24.37	208	397	H
3	* 2.39	30.28	VA1T	32	-23.5	38.78	54	-15.22	-	-	208	397	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

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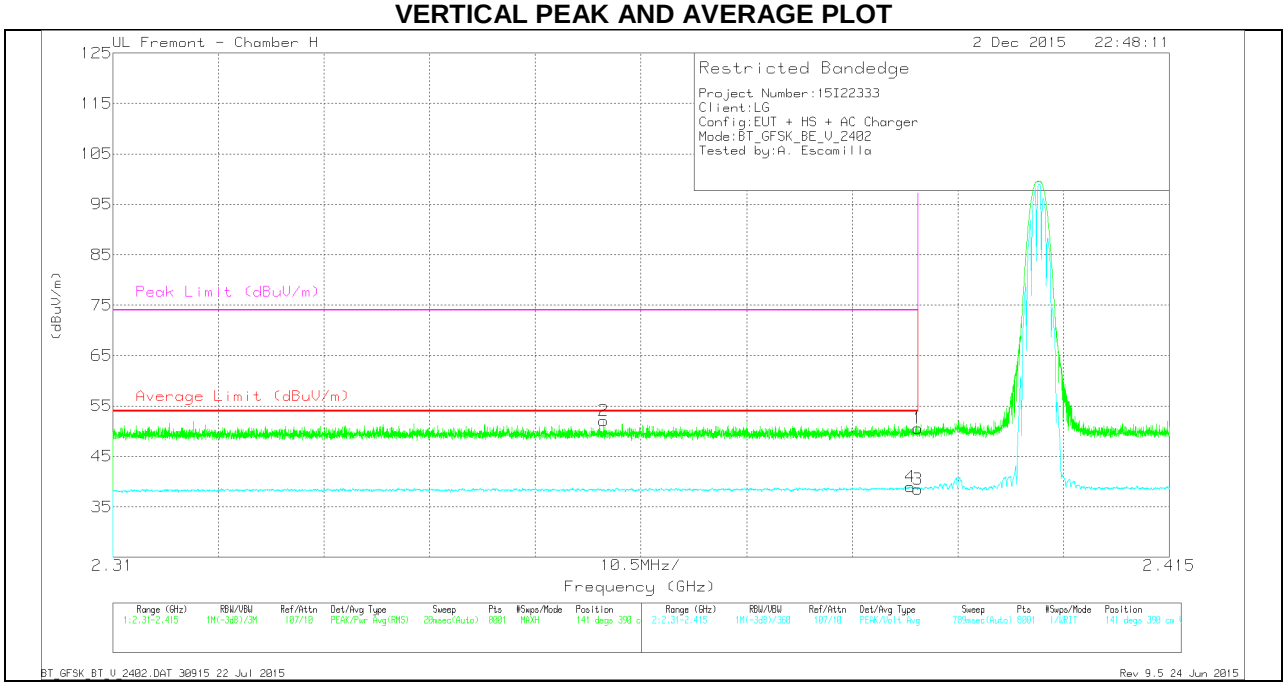
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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	* 2.359	43.75	Pk	31.9	-23.5	52.15	-	-	74	-21.85	141	390	V
4	* 2.389	30.42	VA1T	32	-23.4	39.02	54	-14.98	-	-	141	390	V
1	* 2.39	42.13	Pk	32	-23.5	50.63	-	-	74	-23.37	141	390	V
3	* 2.39	30.01	VA1T	32	-23.5	38.51	54	-15.49	-	-	141	390	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

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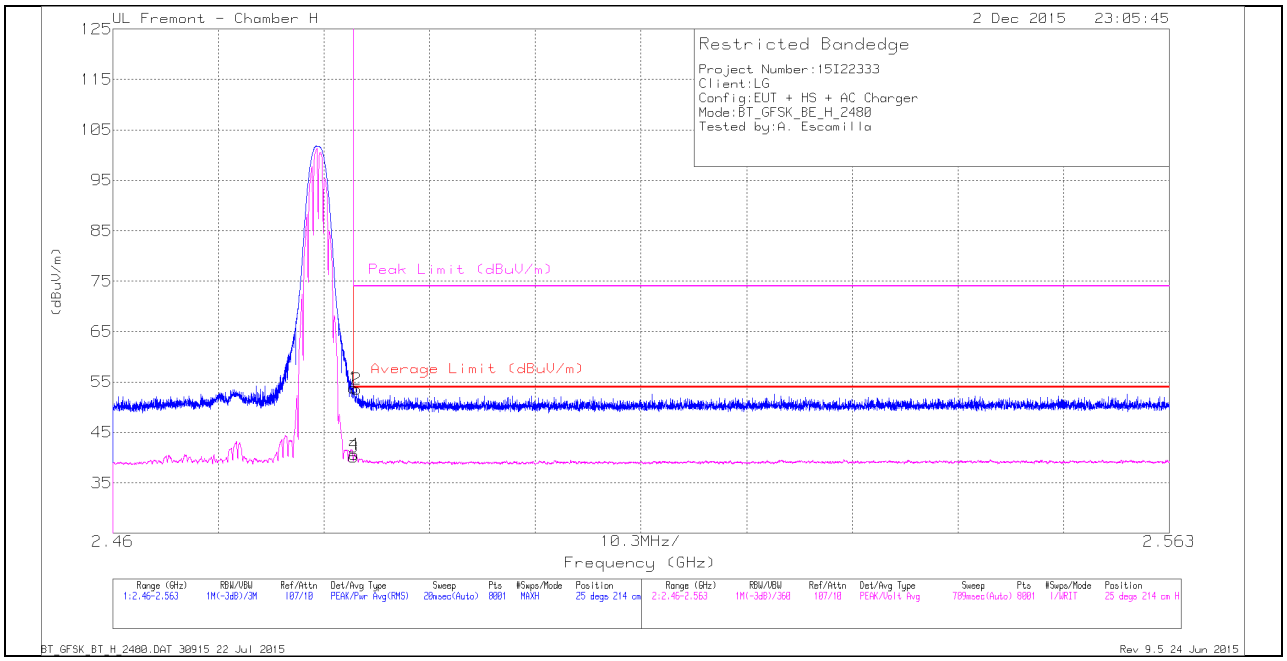
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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
1	* 2.484	44.85	Pk	32.4	-23.4	53.85	-	-	74	-20.15	25	214	H
2	* 2.484	44.63	Pk	32.4	-23.4	53.63	-	-	74	-20.37	25	214	H
3	* 2.484	31.15	VA1T	32.4	-23.4	40.15	54	-13.85	-	-	25	214	H
4	* 2.484	31.66	VA1T	32.4	-23.4	40.66	54	-13.34	-	-	25	214	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

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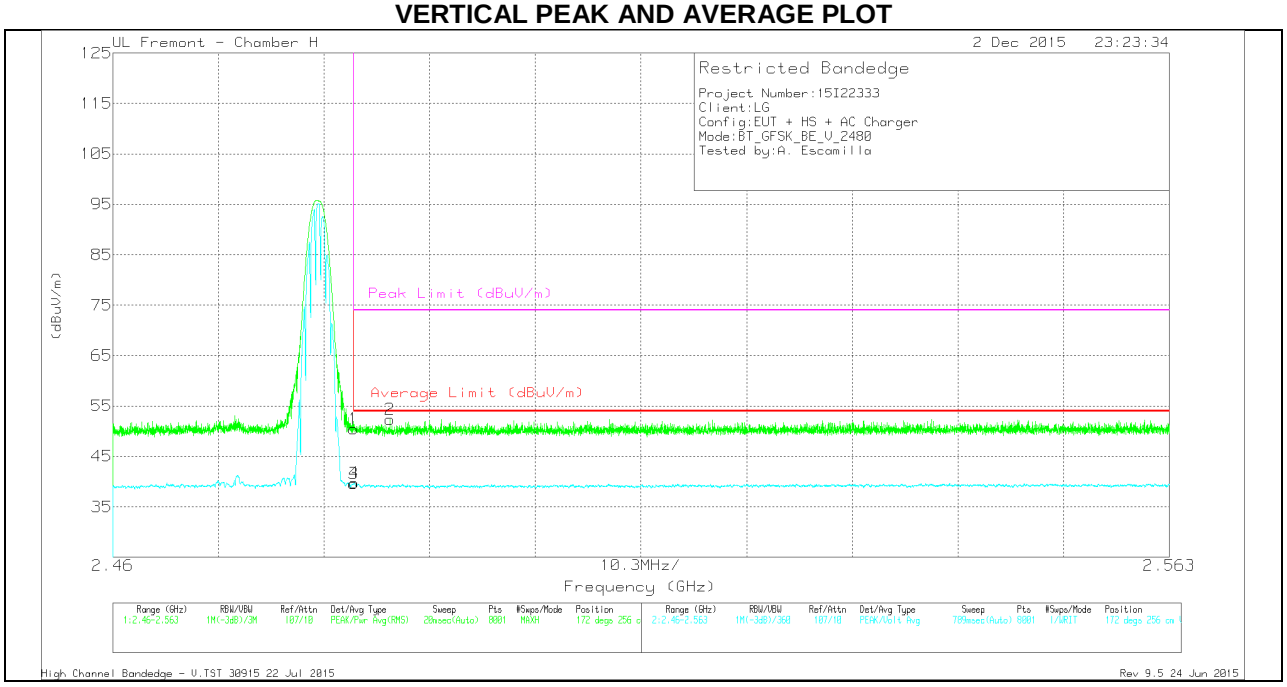
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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
1	* 2.484	41.49	Pk	32.4	-23.4	50.49	-	-	74	-23.51	172	256	V
3	* 2.484	30.67	VA1T	32.4	-23.4	39.67	54	-14.33	-	-	172	256	V
4	* 2.484	30.74	VA1T	32.4	-23.4	39.74	54	-14.26	-	-	172	256	V
2	* 2.487	43.34	Pk	32.4	-23.4	52.34	-	-	74	-21.66	172	256	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

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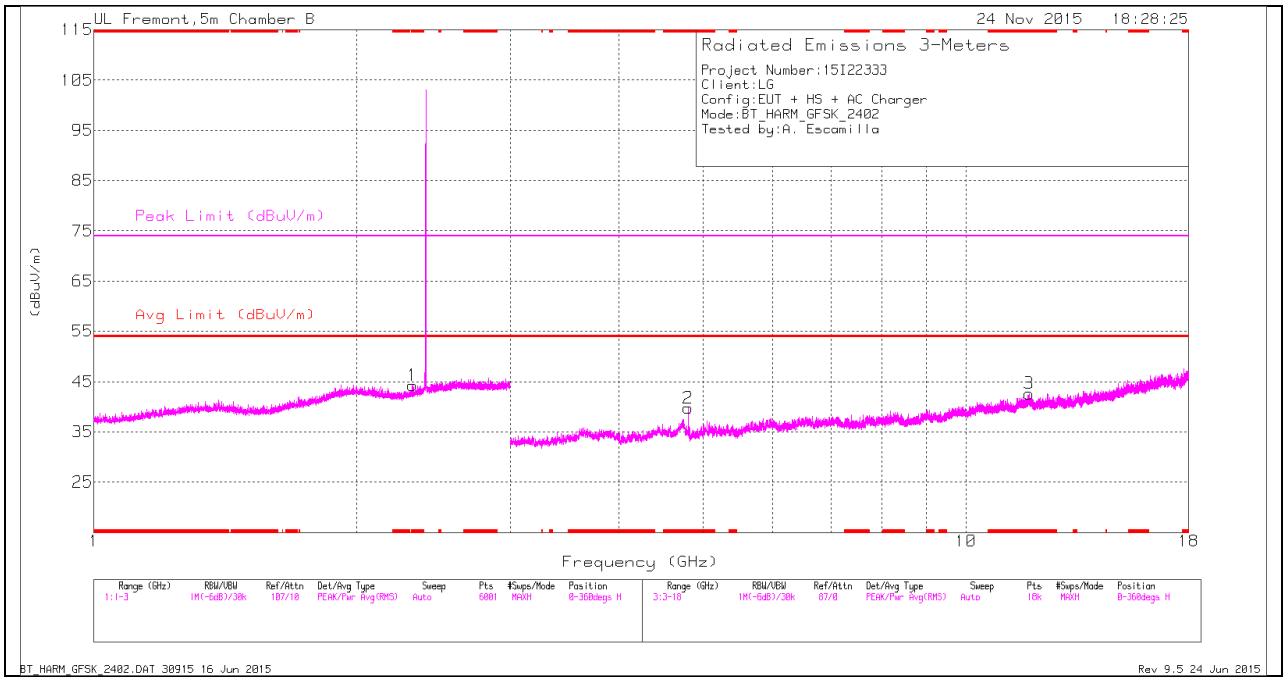
HARMONICS AND SPURIOUS EMISSIONS

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.

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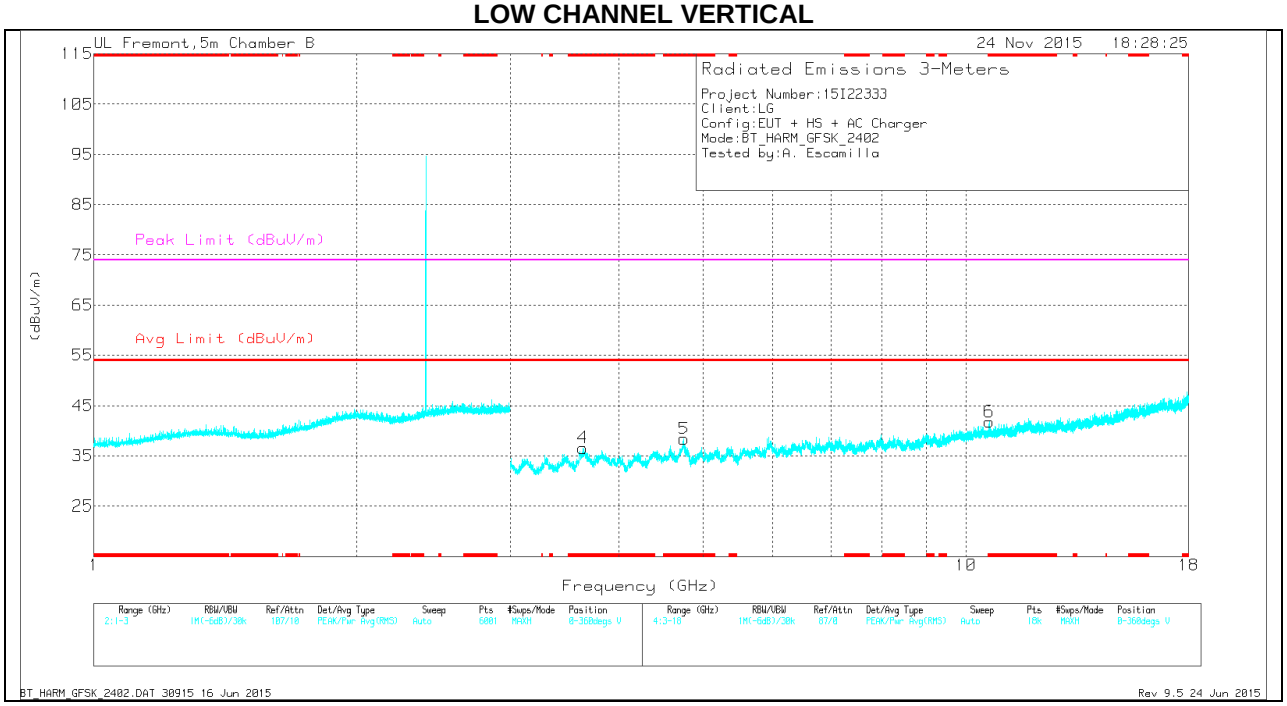
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	* 2.32	36.84	Pk	31.6	-24.2	44.24	-	-	74	-29.76	0-360	199	H
2	* 4.804	36.43	Pk	34.3	-31	39.73	-	-	74	-34.27	0-360	101	H
3	* 11.81	28.11	Pk	38.6	-24.1	42.61	-	-	74	-31.39	0-360	101	H
4	* 3.637	35.44	Pk	33.8	-32.7	36.54	-	-	74	-37.46	0-360	101	V
5	* 4.747	34.79	Pk	34.3	-30.7	38.39	-	-	74	-35.61	0-360	101	V
6	* 10.632	29.19	Pk	37.6	-25	41.79	-	-	74	-32.21	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/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.321	43.49	PK2	31.6	-24.2	50.89	-	-	74	-23.11	120	159	H
* 2.32	30.83	VA1T	31.6	-24.2	38.23	54	-15.77	-	-	120	159	H
* 4.804	43.84	PK2	34.3	-31	47.14	-	-	74	-26.86	339	114	H
* 4.804	34.97	VA1T	34.3	-31	38.27	54	-15.73	-	-	339	114	H
* 11.812	35.37	PK2	38.6	-24.1	49.87	-	-	74	-24.13	236	143	H
* 11.812	22.67	VA1T	38.6	-24.1	37.17	54	-16.83	-	-	236	143	H
* 3.636	42.14	PK2	33.8	-32.7	43.24	-	-	74	-30.76	171	175	V
* 3.639	29.29	VA1T	33.8	-32.7	30.39	54	-23.61	-	-	171	175	V
* 4.748	41.56	PK2	34.3	-30.7	45.16	-	-	74	-28.84	124	123	V
* 4.745	29.21	VA1T	34.3	-30.7	32.81	54	-21.19	-	-	124	123	V
* 10.632	35.68	PK2	37.6	-25	48.28	-	-	74	-25.72	64	170	V
* 10.632	23.15	VA1T	37.6	-25	35.75	54	-18.25	-	-	64	170	V

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

PK2 - KDB558074 Method: Maximum Peak

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

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

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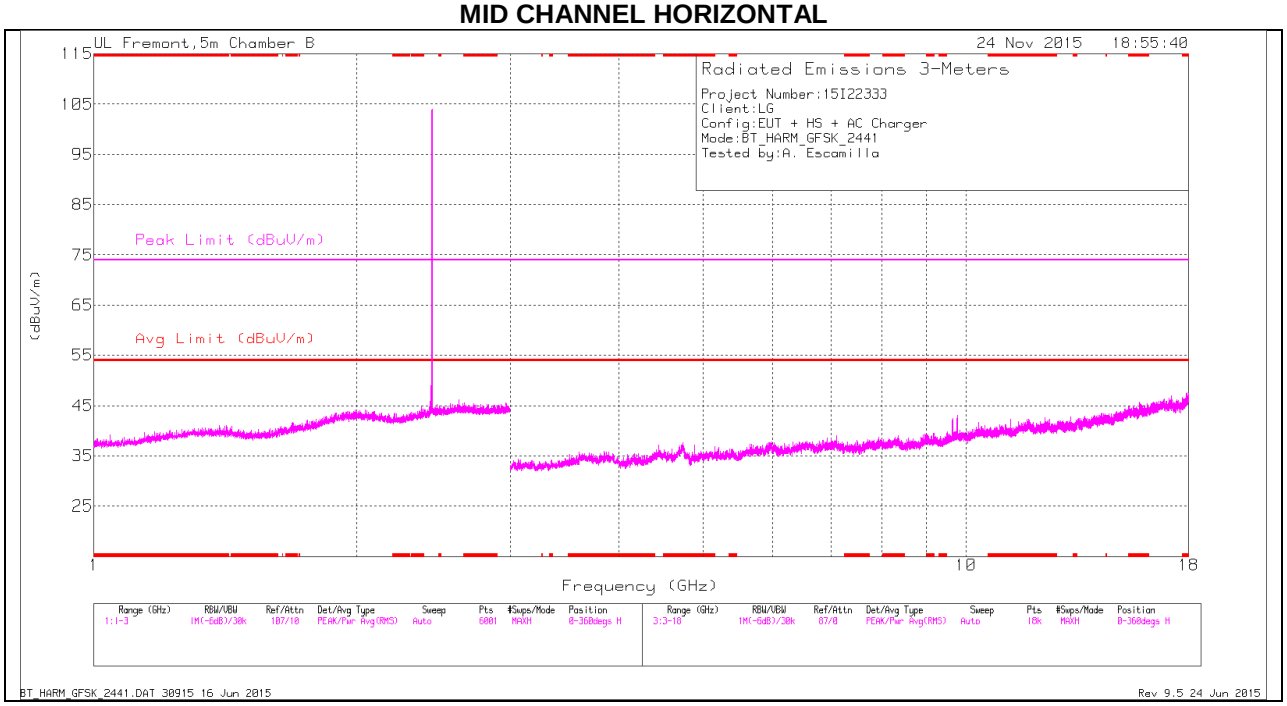
MID CHANNEL HORIZONTAL



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

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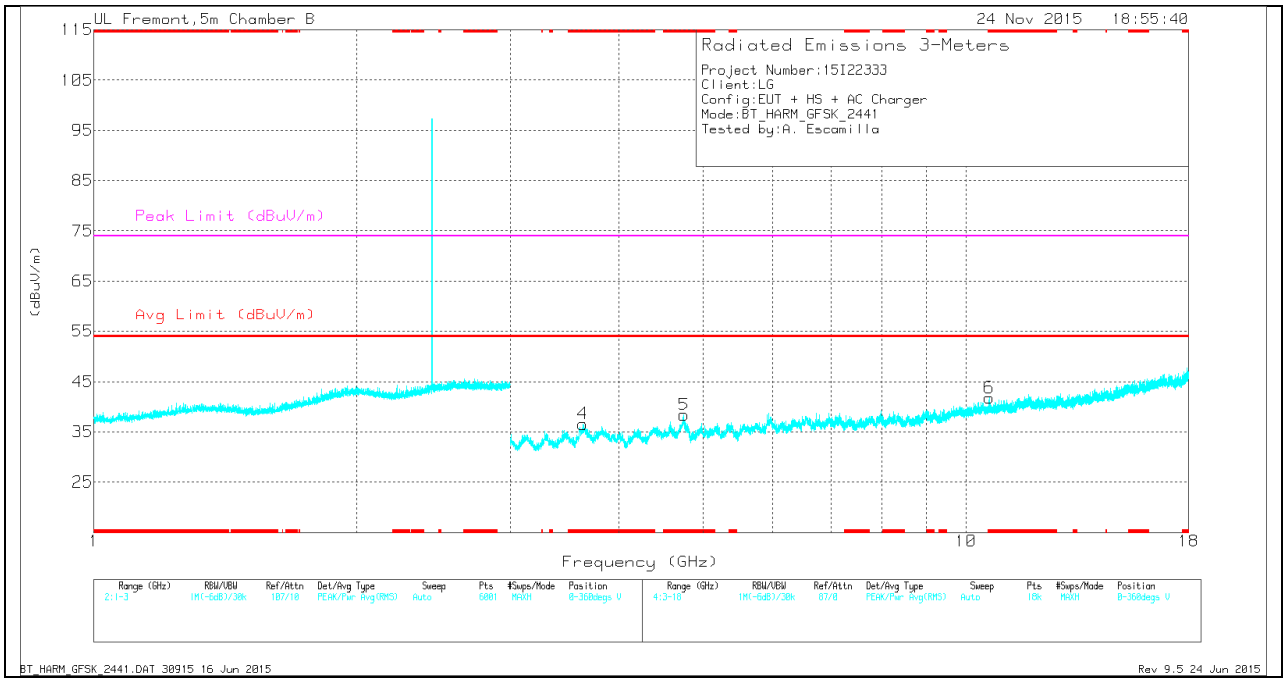
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	* 3.637	35.44	Pk	33.8	-32.7	36.54	-	-	74	-37.46	0-360	101	V
5	* 4.747	34.79	Pk	34.3	-30.7	38.39	-	-	74	-35.61	0-360	101	V
6	* 10.632	29.19	Pk	37.6	-25	41.79	-	-	74	-32.21	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/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.636	42.14	PK2	33.8	-32.7	43.24	-	-	74	-30.76	171	175	V
* 3.639	29.29	VA1T	33.8	-32.7	30.39	54	-23.61	-	-	171	175	V
* 4.748	41.56	PK2	34.3	-30.7	45.16	-	-	74	-28.84	124	123	V
* 4.745	29.21	VA1T	34.3	-30.7	32.81	54	-21.19	-	-	124	123	V
* 10.632	35.68	PK2	37.6	-25	48.28	-	-	74	-25.72	64	170	V
* 10.632	23.15	VA1T	37.6	-25	35.75	54	-18.25	-	-	64	170	V

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

PK2 - KDB558074 Method: Maximum Peak

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

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

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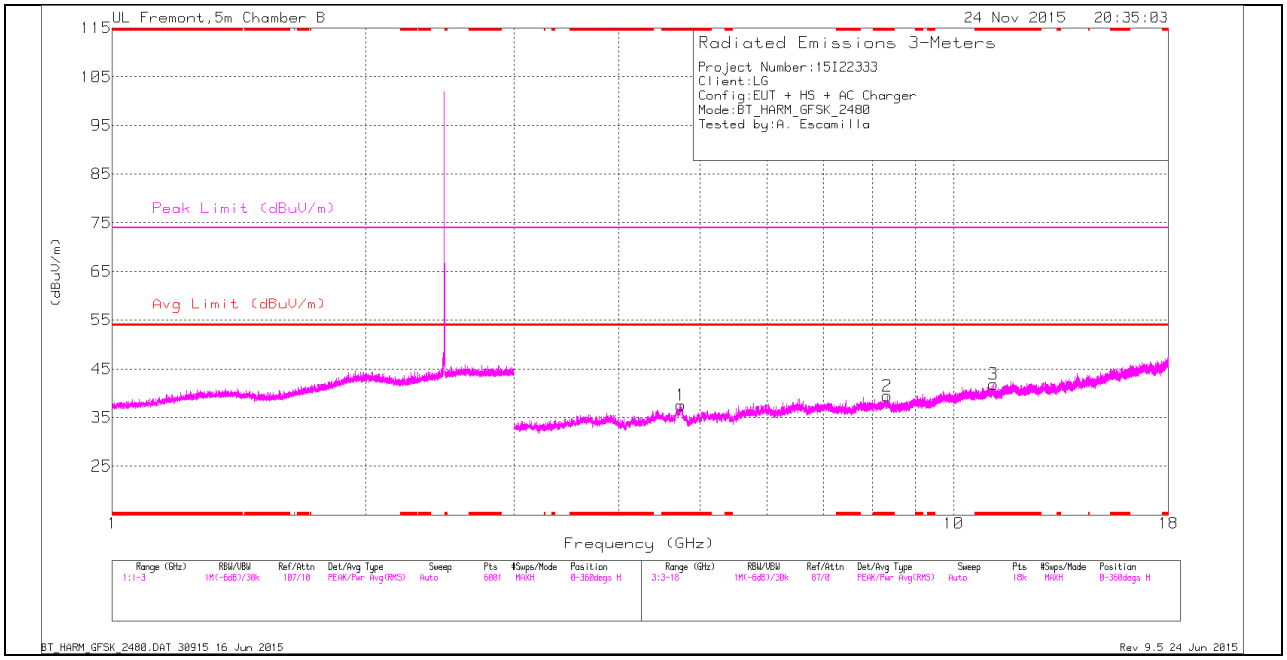
HIGH CHANNEL HORIZONTAL



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

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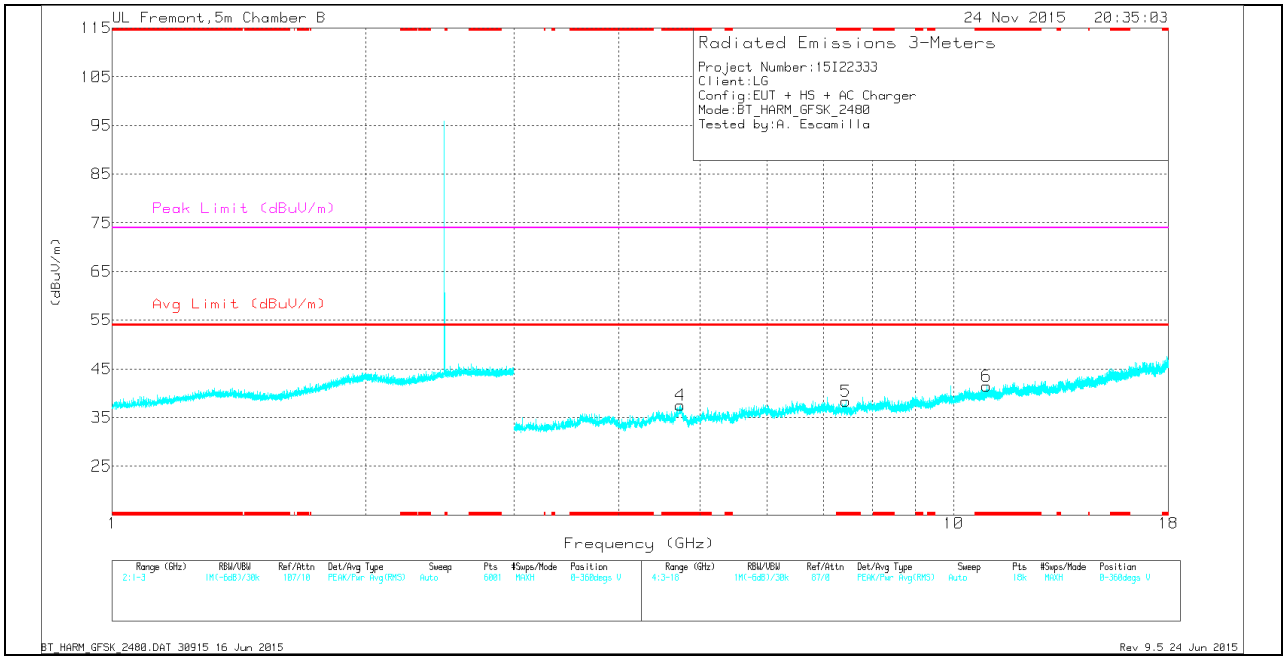
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	* 4.737	33.96	Pk	34.3	-30.7	37.56	-	-	74	-36.44	0-360	101	H
2	* 8.337	31.17	Pk	35.7	-27.4	39.47	-	-	74	-34.53	0-360	101	H
3	* 11.155	29.02	Pk	37.8	-25	41.82	-	-	74	-32.18	0-360	101	H
4	* 4.734	33.92	Pk	34.3	-30.7	37.52	-	-	74	-36.48	0-360	200	V
5	* 7.444	32.24	Pk	35.3	-29.2	38.34	-	-	74	-35.66	0-360	200	V
6	* 10.946	28.58	Pk	37.7	-24.8	41.48	-	-	74	-32.52	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 T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.735	41.72	PK2	34.3	-30.7	45.32	-	-	74	-28.68	108	165	H
* 4.735	29.12	VA1T	34.3	-30.7	32.72	54	-21.28	-	-	108	165	H
* 8.338	38.76	PK2	35.7	-27.4	47.06	-	-	74	-26.94	193	143	H
* 8.339	25.59	VA1T	35.7	-27.4	33.89	54	-20.11	-	-	193	143	H
* 11.154	36.33	PK2	37.8	-25	49.13	-	-	74	-24.87	186	107	H
* 11.155	23.14	VA1T	37.8	-25	35.94	54	-18.06	-	-	186	107	H
* 4.734	42.28	PK2	34.3	-30.7	45.88	-	-	74	-28.12	243	177	V
* 4.735	29.11	VA1T	34.3	-30.7	32.71	54	-21.29	-	-	243	177	V
* 7.445	39.99	PK2	35.3	-29.2	46.09	-	-	74	-27.91	150	212	V
* 7.445	26.56	VA1T	35.3	-29.2	32.66	54	-21.34	-	-	150	212	V
* 10.947	36	PK2	37.7	-24.8	48.9	-	-	74	-25.1	96	181	V
* 10.948	23.09	VA1T	37.7	-24.8	35.99	54	-18.01	-	-	96	181	V

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

PK2 - KDB558074 Method: Maximum Peak

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

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

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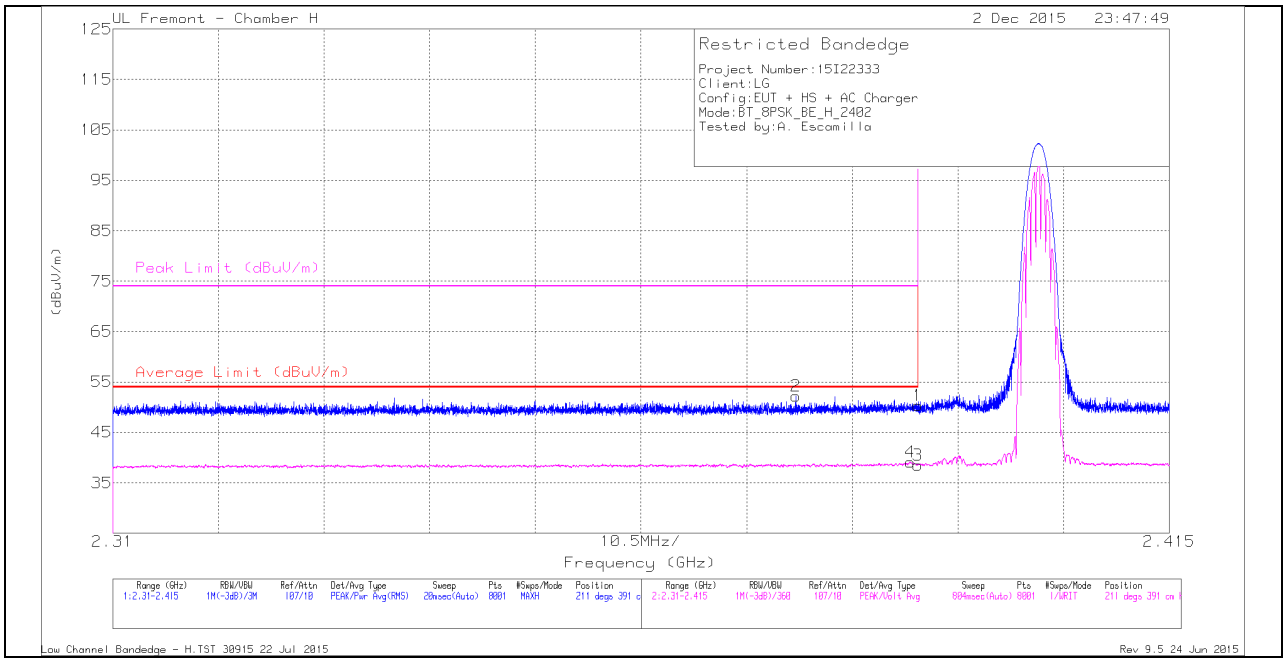
9.1.2. 8PSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ 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	* 2.378	43.69	Pk	32	-23.5	52.19	-	-	74	-21.81	211	391	H
4	* 2.389	30.54	VA1T	32	-23.4	39.14	54	-14.86	-	-	211	391	H
1	* 2.39	41.8	Pk	32	-23.5	50.3	-	-	74	-23.7	211	391	H
3	* 2.39	30.01	VA1T	32	-23.5	38.51	54	-15.49	-	-	211	391	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

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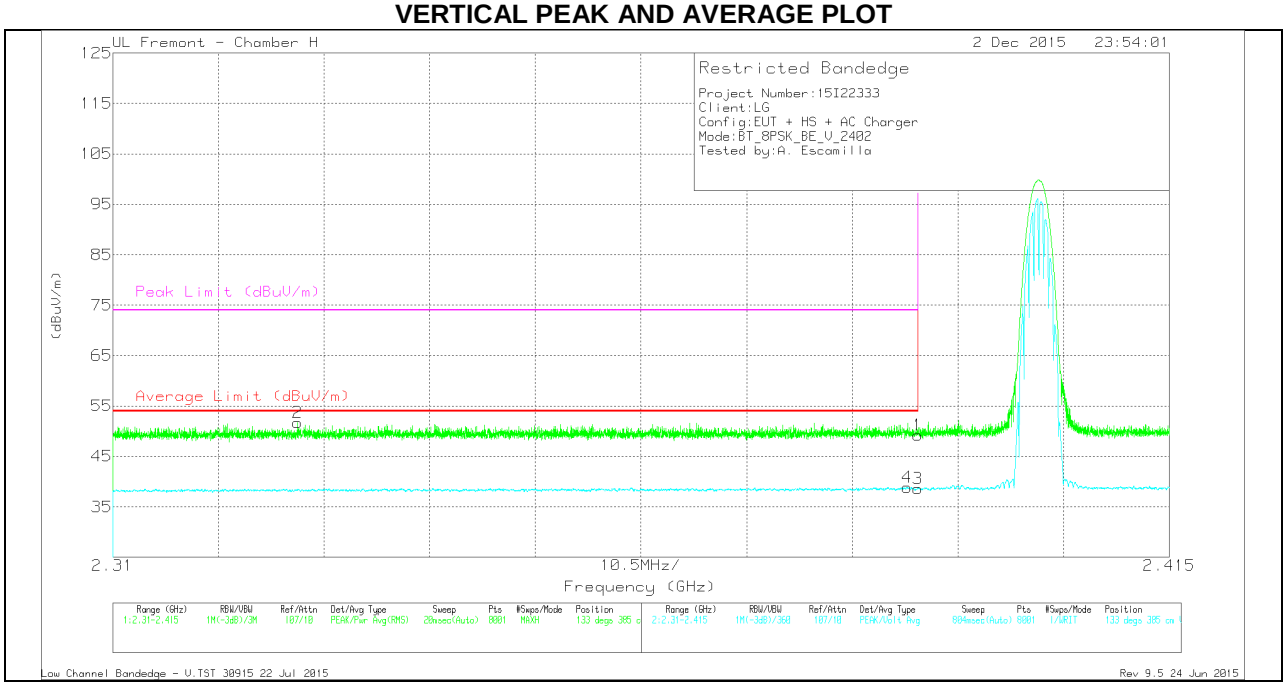
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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	* 2.328	43.34	Pk	31.9	-23.5	51.74	-	-	74	-22.26	133	385	V
4	* 2.389	30.31	VA1T	32	-23.4	38.91	54	-15.09	-	-	133	385	V
1	* 2.39	40.67	Pk	32	-23.5	49.17	-	-	74	-24.83	133	385	V
3	* 2.39	30.08	VA1T	32	-23.5	38.58	54	-15.42	-	-	133	385	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

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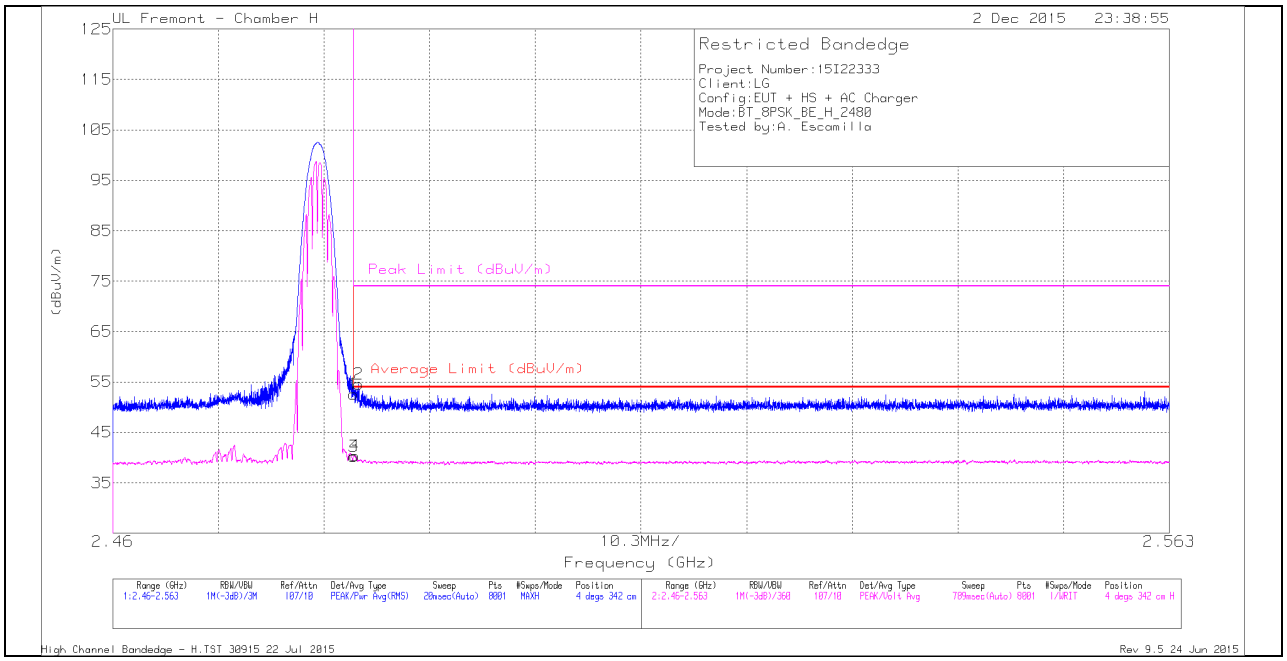
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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
1	* 2.484	43.59	Pk	32.4	-23.4	52.59	-	-	74	-21.41	4	342	H
2	* 2.484	45.57	Pk	32.4	-23.4	54.57	-	-	74	-19.43	4	342	H
3	* 2.484	31.26	VA1T	32.4	-23.4	40.26	54	-13.74	-	-	4	342	H
4	* 2.484	31.43	VA1T	32.4	-23.4	40.43	54	-13.57	-	-	4	342	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

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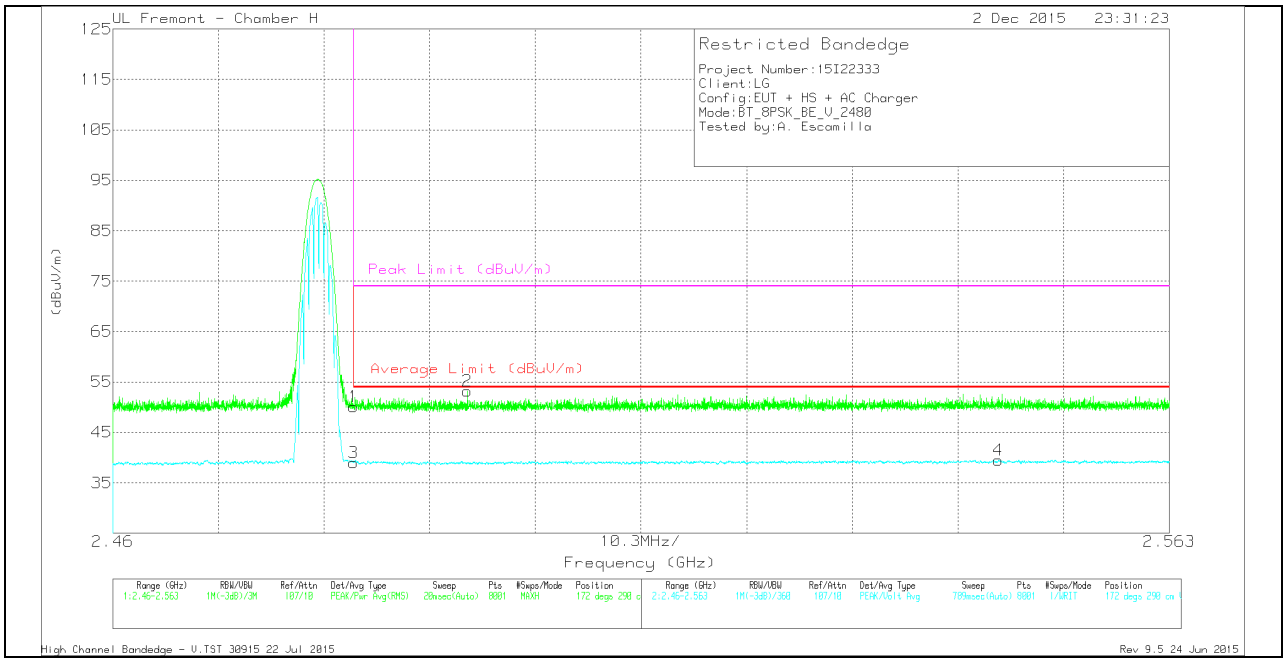
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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
1	* 2.484	41.09	Pk	32.4	-23.4	50.09	-	-	74	-23.91	172	290	V
3	* 2.484	30.05	VA1T	32.4	-23.4	39.05	54	-14.95	-	-	172	290	V
2	* 2.495	44.17	Pk	32.4	-23.4	53.17	-	-	74	-20.83	172	290	V
4	2.546	30.26	VA1T	32.5	-23.2	39.56	54	-14.44	-	-	172	290	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

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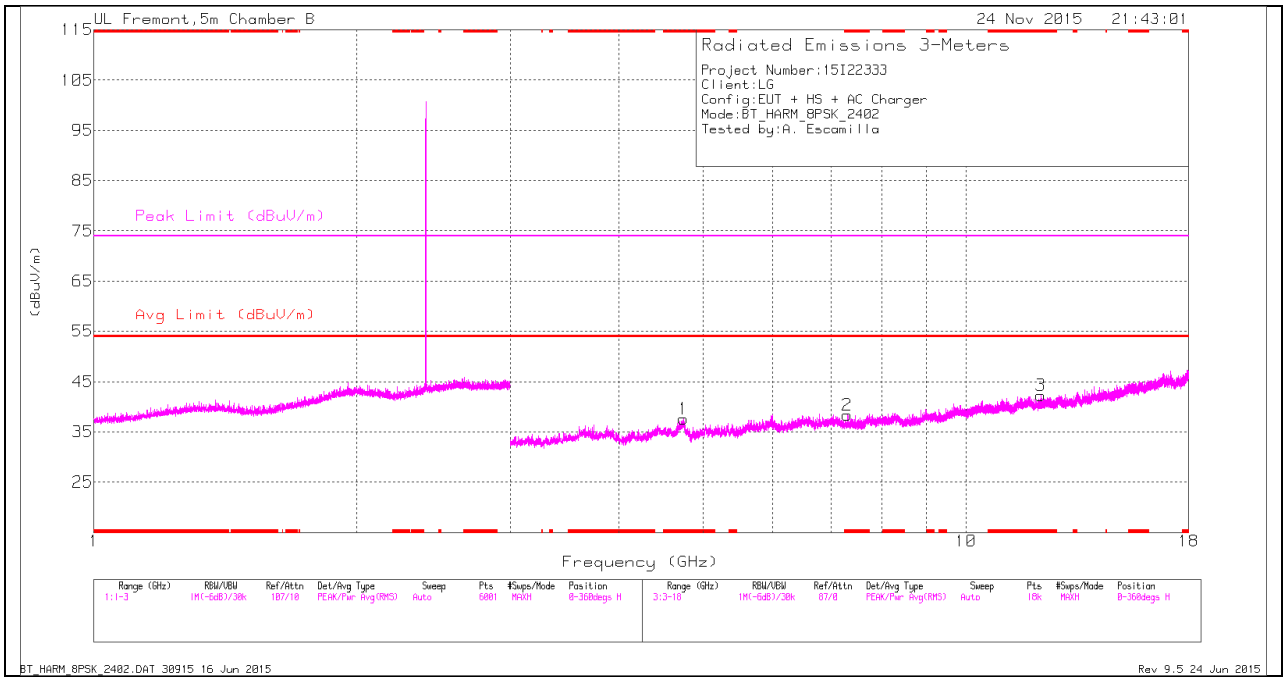
HARMONICS AND SPURIOUS EMISSIONS

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.

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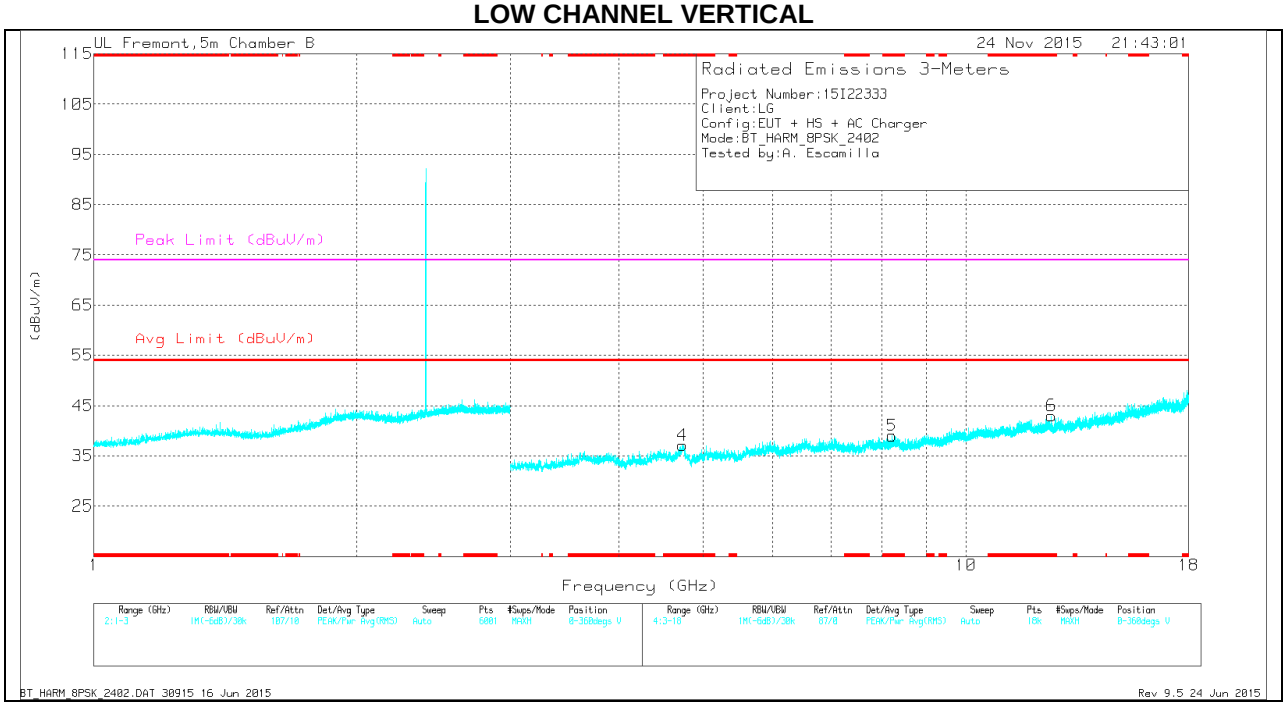
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	* 4.742	34	Pk	34.3	-30.7	37.6	-	-	74	-36.4	0-360	199	H
2	* 7.307	33.34	Pk	35.3	-30.3	38.34	-	-	74	-35.66	0-360	101	H
3	* 12.179	28.35	Pk	38.6	-24.7	42.25	-	-	74	-31.75	0-360	101	H
4	* 4.732	33.53	Pk	34.3	-30.7	37.13	-	-	74	-36.87	0-360	101	V
5	* 8.226	31.91	Pk	35.7	-28.6	39.01	-	-	74	-34.99	0-360	199	V
6	* 12.531	29.15	Pk	38.7	-24.9	42.95	-	-	74	-31.05	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/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.742	41.93	PK2	34.3	-30.7	45.53	-	-	74	-28.47	292	122	H
* 4.743	29.23	VA1T	34.3	-30.7	32.83	54	-21.17	-	-	292	122	H
* 7.309	40.12	PK2	35.3	-30.3	45.12	-	-	74	-28.88	211	201	H
* 7.307	27.64	VA1T	35.3	-30.3	32.64	54	-21.36	-	-	211	201	H
* 12.179	35.61	PK2	38.6	-24.7	49.51	-	-	74	-24.49	159	183	H
* 12.178	22.42	VA1T	38.6	-24.7	36.32	54	-17.68	-	-	159	183	H
* 4.733	41.39	PK2	34.3	-30.7	44.99	-	-	74	-29.01	189	164	V
* 4.734	29.01	VA1T	34.3	-30.7	32.61	54	-21.39	-	-	189	164	V
* 8.228	38.96	PK2	35.7	-28.6	46.06	-	-	74	-27.94	107	223	V
* 8.228	26.49	VA1T	35.7	-28.6	33.59	54	-20.41	-	-	107	223	V
* 12.532	35.83	PK2	38.7	-24.9	49.63	-	-	74	-24.37	16	195	V
* 12.531	22.82	VA1T	38.7	-24.9	36.62	54	-17.38	-	-	16	195	V

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

PK2 - KDB558074 Method: Maximum Peak

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

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

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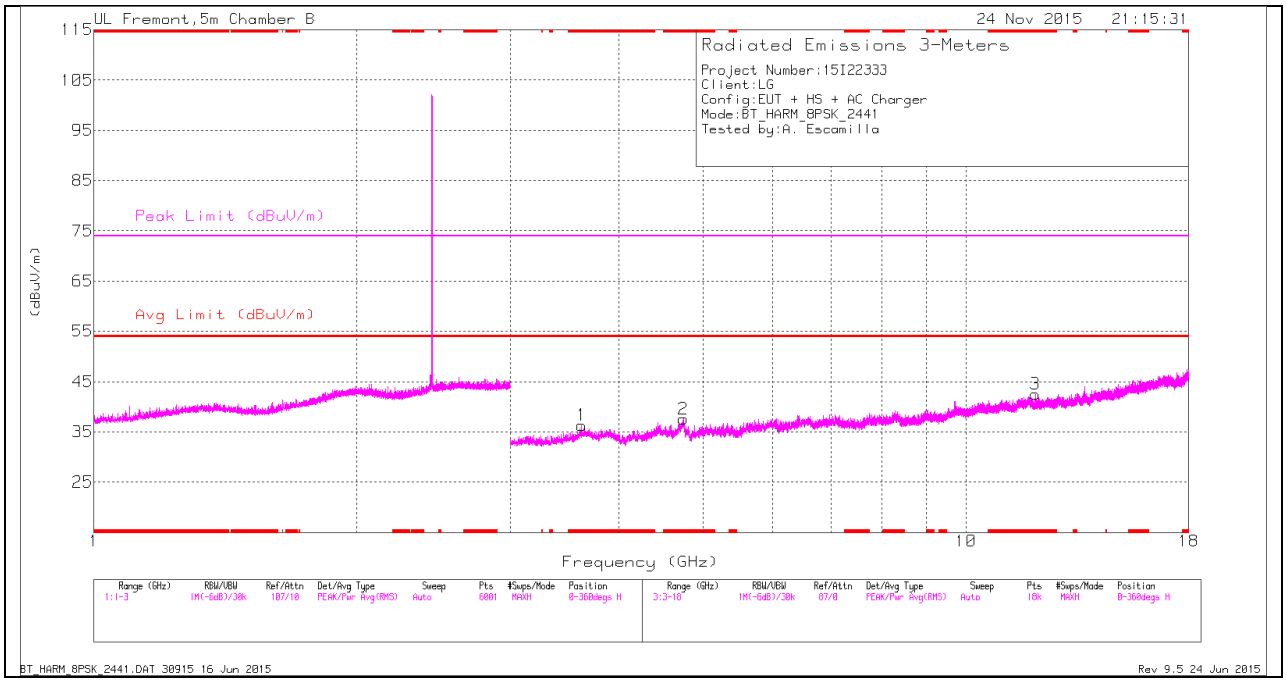
MID CHANNEL HORIZONTAL



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

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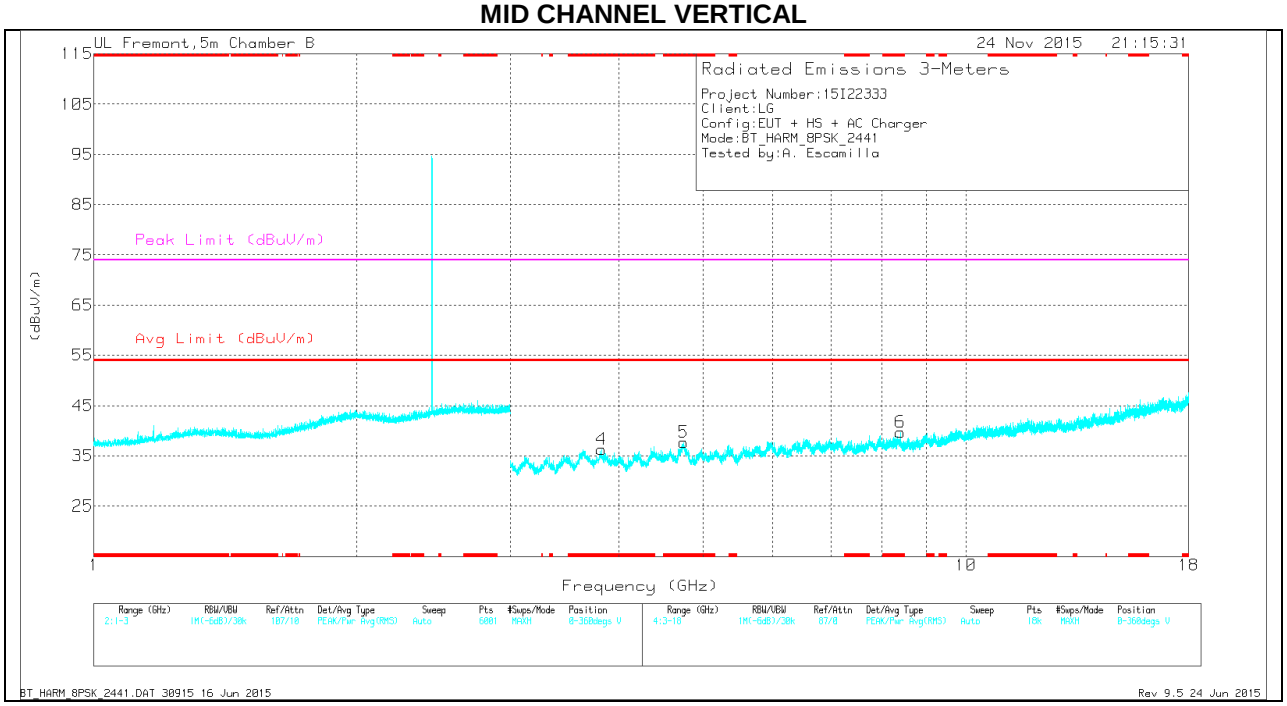
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	* 3.625	35.4	Pk	33.8	-32.9	36.3	-	-	74	-37.7	0-360	102	H
2	* 4.742	33.95	Pk	34.3	-30.7	37.55	-	-	74	-36.45	0-360	200	H
3	* 12.004	29.09	Pk	38.6	-25.2	42.49	-	-	74	-31.51	0-360	200	H
4	* 3.821	35.09	Pk	33.4	-32.2	36.29	-	-	74	-37.71	0-360	102	V
5	* 4.746	34.06	Pk	34.3	-30.7	37.66	-	-	74	-36.34	0-360	200	V
6	* 8.411	31.69	Pk	35.7	-27.7	39.69	-	-	74	-34.31	0-360	102	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/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.625	42.17	PK2	33.8	-32.9	43.07	-	-	74	-30.93	320	166	H
* 3.626	29.28	VA1T	33.8	-32.9	30.18	54	-23.82	-	-	320	166	H
* 4.742	42	PK2	34.3	-30.7	45.6	-	-	74	-28.4	237	180	H
* 4.744	29.21	VA1T	34.3	-30.7	32.81	54	-21.19	-	-	237	180	H
* 12.002	35.59	PK2	38.6	-25.2	48.99	-	-	74	-25.01	127	230	H
* 12.004	23	VA1T	38.6	-25.2	36.4	54	-17.6	-	-	127	230	H
* 3.822	42.78	PK2	33.4	-32.2	43.98	-	-	74	-30.02	159	192	V
* 3.821	29.3	VA1T	33.4	-32.2	30.5	54	-23.5	-	-	159	192	V
* 4.744	42	PK2	34.3	-30.7	45.6	-	-	74	-28.4	197	168	V
* 4.745	29.13	VA1T	34.3	-30.7	32.73	54	-21.27	-	-	197	168	V
* 8.412	39	PK2	35.7	-27.7	47	-	-	74	-27	122	148	V
* 8.411	25.33	VA1T	35.7	-27.7	33.33	54	-20.67	-	-	122	148	V

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

PK2 - KDB558074 Method: Maximum Peak

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

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

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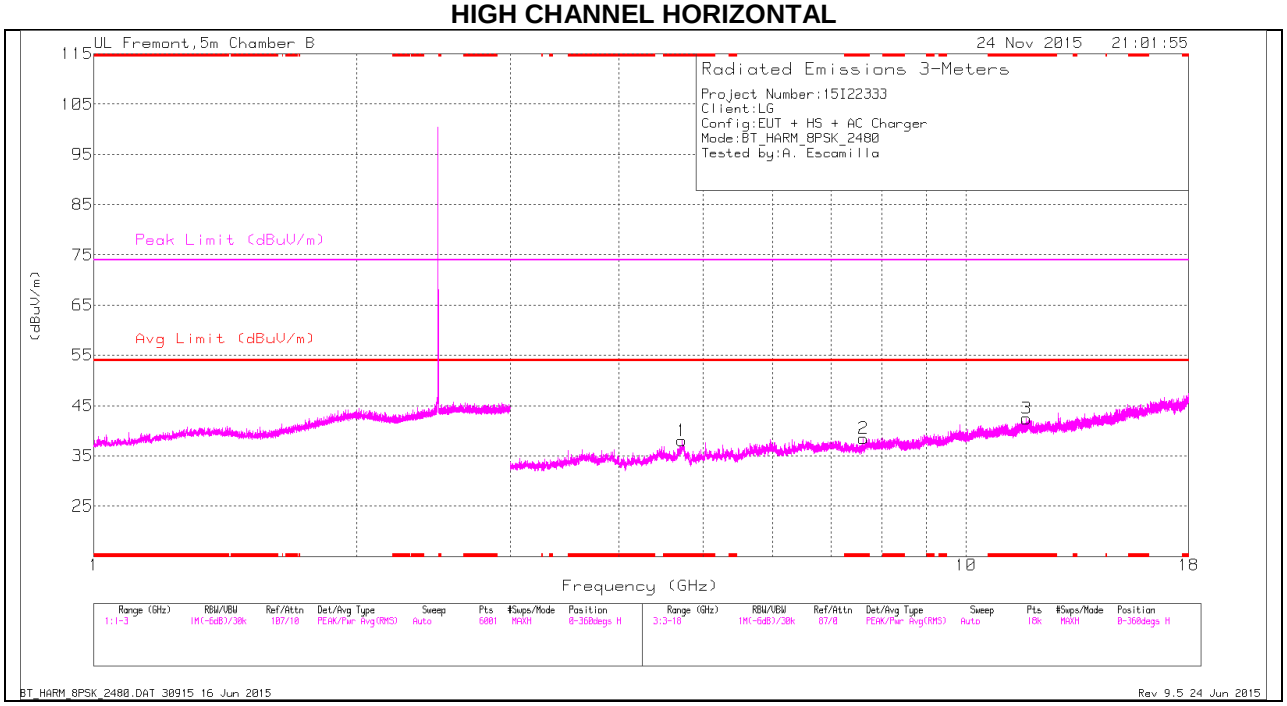
HIGH CHANNEL HORIZONTAL



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

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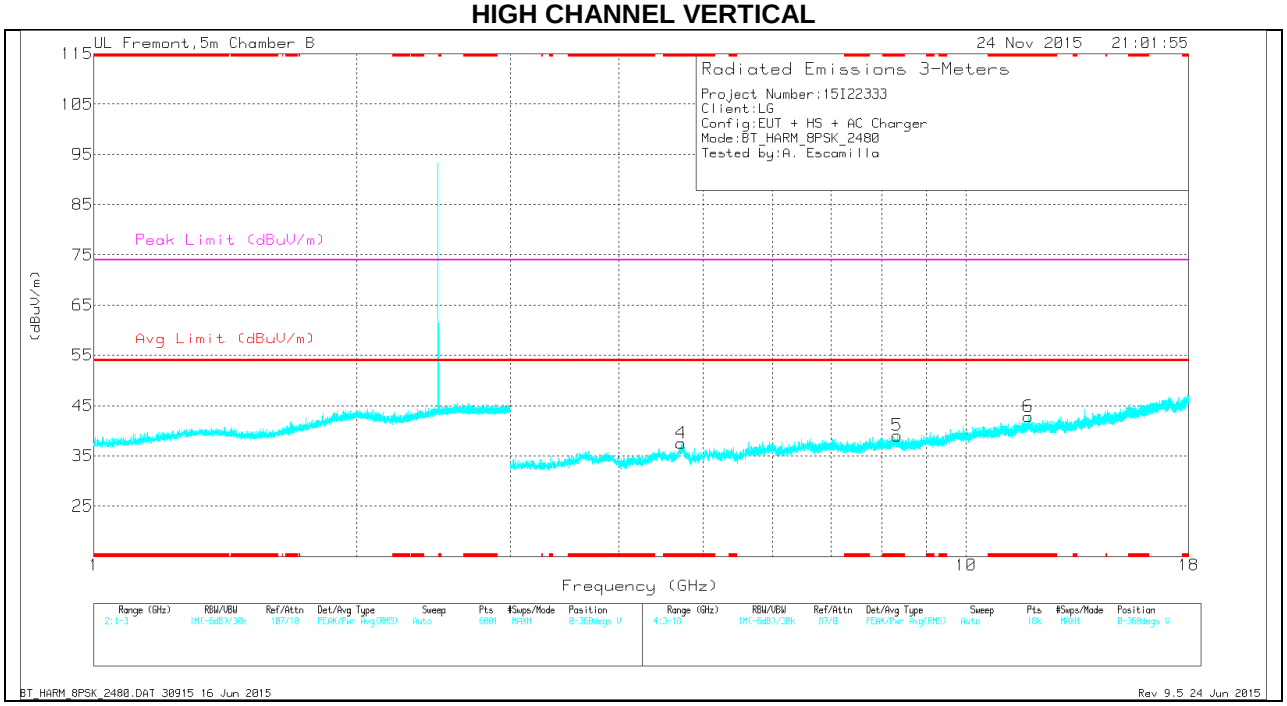
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/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	* 4.726	34.52	Pk	34.3	-30.8	38.02	-	-	74	-35.98	0-360	200	H
2	* 7.624	32.55	Pk	35.4	-29.5	38.45	-	-	74	-35.55	0-360	101	H
3	* 11.728	28.83	Pk	38.5	-24.9	42.43	-	-	74	-31.57	0-360	200	H
4	* 4.715	34.44	Pk	34.2	-31.1	37.54	-	-	74	-36.46	0-360	101	V
5	* 8.336	30.84	Pk	35.7	-27.5	39.04	-	-	74	-34.96	0-360	200	V
6	* 11.793	28.53	Pk	38.6	-24.3	42.83	-	-	74	-31.17	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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.726	41.66	PK2	34.3	-30.8	45.16	-	-	74	-28.84	87	159	H
* 4.728	28.98	VA1T	34.3	-30.8	32.48	54	-21.52	-	-	87	159	H
* 7.623	39.41	PK2	35.4	-29.6	45.21	-	-	74	-28.79	161	132	H
* 7.624	27.02	VA1T	35.4	-29.5	32.92	54	-21.08	-	-	161	132	H
* 11.727	35.55	PK2	38.5	-24.9	49.15	-	-	74	-24.85	218	154	H
* 11.73	22.98	VA1T	38.5	-24.9	36.58	54	-17.42	-	-	218	154	H
* 4.717	42.73	PK2	34.2	-31	45.93	-	-	74	-28.07	183	148	V
* 4.715	28.91	VA1T	34.2	-31.1	32.01	54	-21.99	-	-	183	148	V
* 8.338	38.16	PK2	35.7	-27.4	46.46	-	-	74	-27.54	279	189	V
* 8.338	25.52	VA1T	35.7	-27.4	33.82	54	-20.18	-	-	279	189	V
* 11.793	35.3	PK2	38.6	-24.3	49.6	-	-	74	-24.4	339	219	V
* 11.793	22.89	VA1T	38.6	-24.3	37.19	54	-16.81	-	-	339	219	V

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

PK2 - KDB558074 Method: Maximum Peak

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

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

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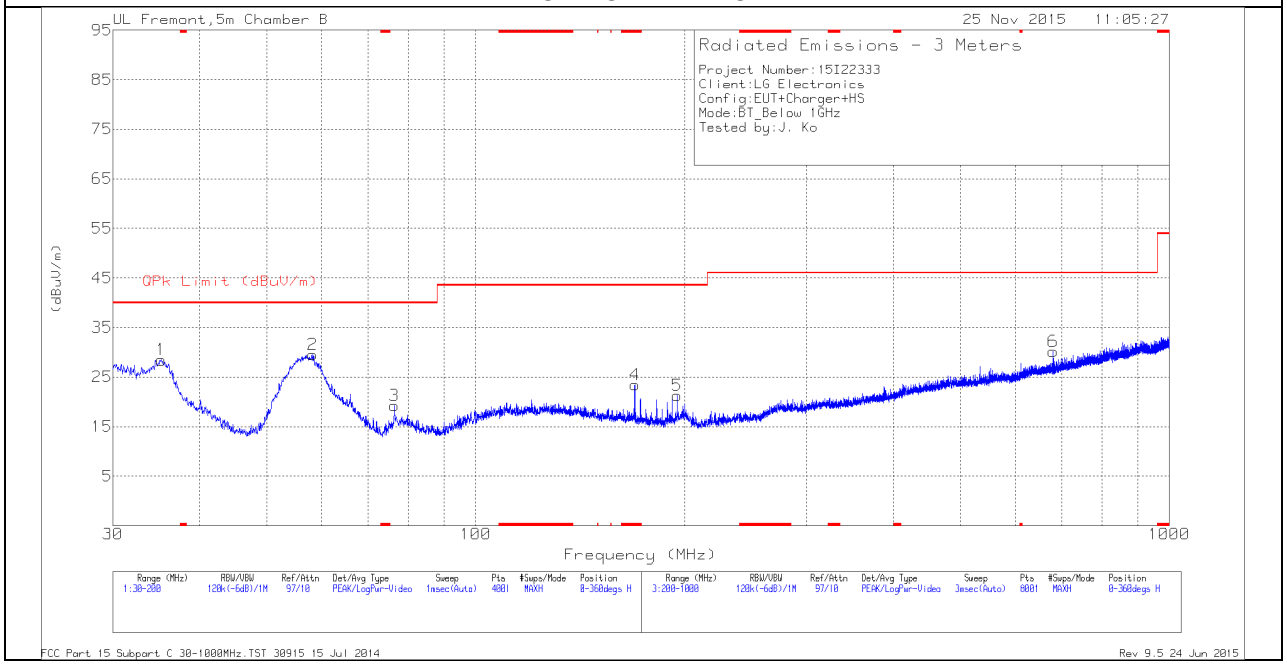
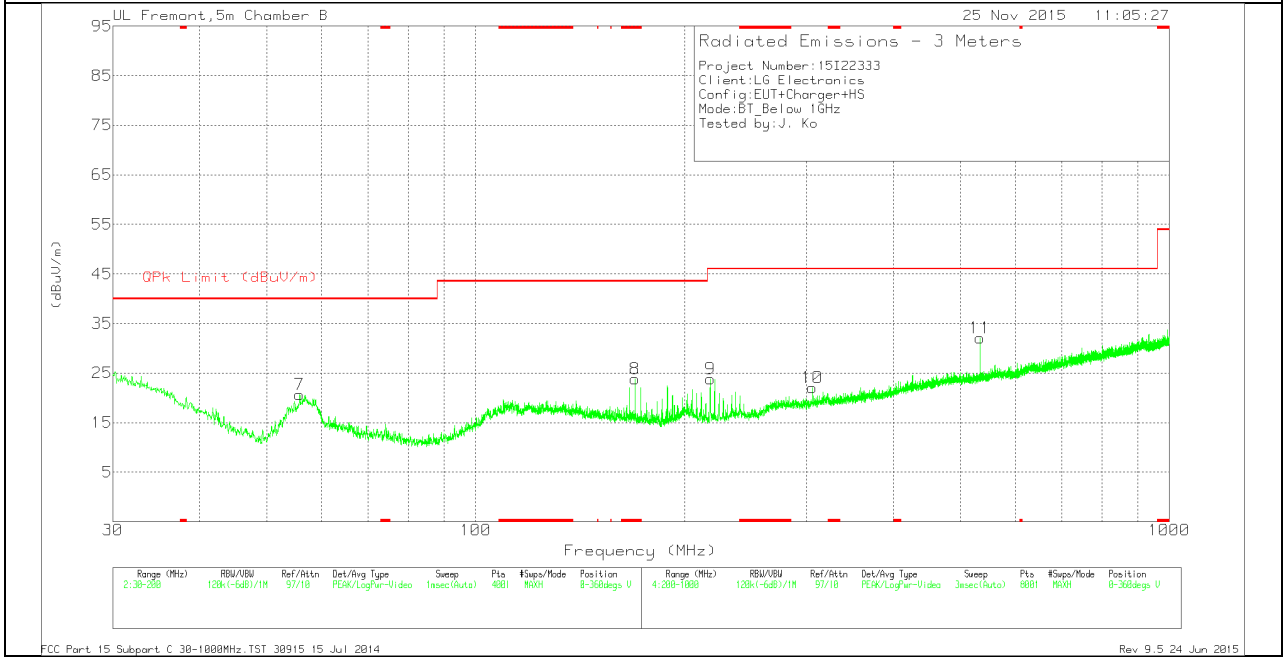
9.2. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



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BELOW 1 GHz TABLE

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 169.6125	35.12	Pk	15.7	-27.4	23.42	43.52	-20.1	0-360	101	H
8	* 169.7825	35.56	Pk	15.7	-27.4	23.86	43.52	-19.66	0-360	101	V
1	35.2275	35.76	Pk	21.5	-28.8	28.46	40	-11.54	0-360	101	H
7	55.755	38.11	Pk	11.1	-28.6	20.61	40	-19.39	0-360	101	V
2	58.22	46.84	Pk	11.3	-28.6	29.54	40	-10.46	0-360	101	H
3	76.3675	36.01	Pk	11.8	-28.5	19.31	40	-20.69	0-360	101	H
5	195.1975	32.61	Pk	15.8	-27.1	21.31	43.52	-22.21	0-360	101	H
9	217.9	36.13	Pk	14.6	-26.9	23.83	46.02	-22.19	0-360	199	V
10	305.7	30.7	Pk	17.5	-26.2	22	46.02	-24.02	0-360	101	V
11	533.6	36.29	Pk	22	-26.2	32.09	46.02	-13.93	0-360	199	V
6	680.3	31.83	Pk	23.8	-25.5	30.13	46.02	-15.89	0-360	299	H

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

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
57.504	36.33	Qp	11.3	-28.7	18.93	40	-21.07	48	159	H

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

Qp - Quasi-Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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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

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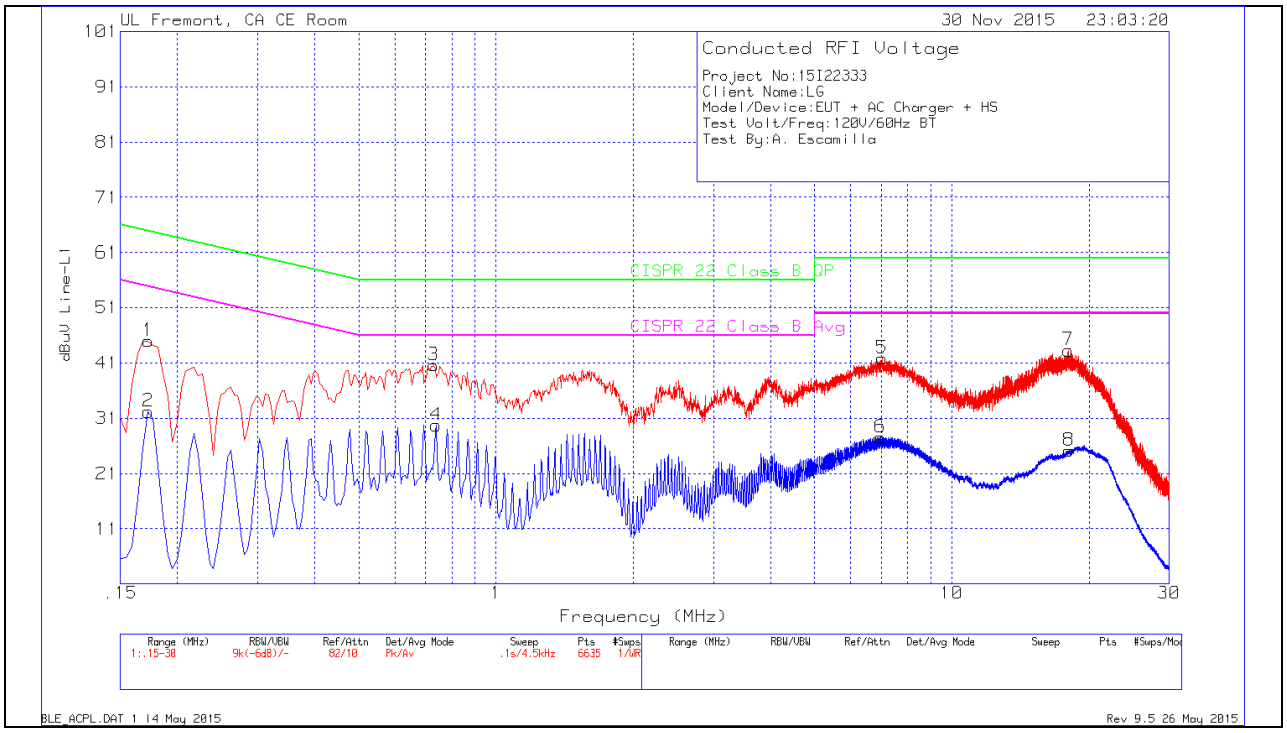
6 WORST EMISSIONS

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	.1725	43.86	Pk	1.1	0	44.96	64.84	-19.88	-	-
2	.1725	31.07	Av	1.1	0	32.17	-	-	54.84	-22.67
3	.7305	40.27	Pk	.3	0	40.57	56	-15.43	-	-
4	.7395	29.43	Av	.3	0	29.73	-	-	46	-16.27
5	7.044	41.55	Pk	.2	.1	41.85	60	-18.15	-	-
6	6.981	27.29	Av	.2	.1	27.59	-	-	50	-22.41
7	18.0285	42.77	Pk	.3	.2	43.27	60	-16.73	-	-
8	18.087	24.64	Av	.3	.2	25.14	-	-	50	-24.86

Pk - Peak detector
Av - Average detection

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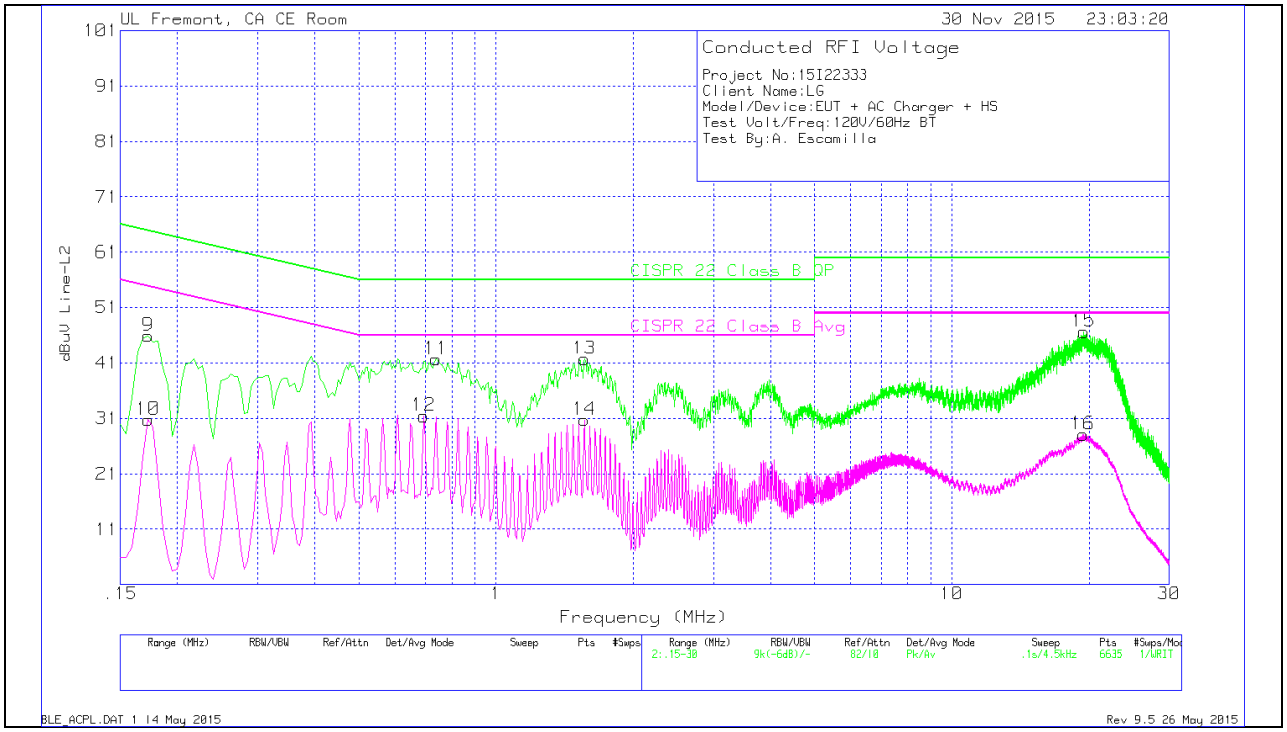
LINE 2 PLOT



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)
9	.1725	44.68	Pk	1.2	0	45.88	64.84	-18.96	-	-
10	.1725	29.57	Av	1.2	0	30.77	-	-	54.84	-24.07
11	.7395	41.42	Pk	.3	0	41.72	56	-14.28	-	-
12	.6945	31.12	Av	.3	0	31.42	-	-	46	-14.58
13	1.563	41.43	Pk	.2	.1	41.73	56	-14.27	-	-
14	1.563	30.43	Av	.2	.1	30.73	-	-	46	-15.27
15	19.4865	46.11	Pk	.3	.2	46.61	60	-13.39	-	-
16	19.4235	27.59	Av	.3	.2	28.09	-	-	50	-21.91

Pk - Peak detector
Av - Average detection

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