



TEST REPORT

Report Number : 11360398-E2V2

Applicant : JUNE LIFE INC.
1805 BROADWAY
SAN FRANCISCO, CA 94109, U.S.A.

Model : JCP01

FCC ID : 2AJGA-CP16A

IC ID : 21848-CP16A

EUT Description : INTELLIGENT OVEN Wi-Fi / BLUETOOTH

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 1
INDUSTRY CANADA RSS-GEN Issue 4

Date of Issue:
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	10/13/16	Initial Issue	D. Corona
V2	10/28/16	Updated Section 5.5 & added Section 4.4	D. Corona

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: JUNE LIFE INC.
EUT DESCRIPTION: INTELLIGENT OVEN Wi-Fi / BLUETOOTH
MODEL: JCP01
SERIAL NUMBER: KQ263C0006
DATE TESTED: AUGUST 4 – SEPTEMBER 1, 2016

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	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, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 4, and RSS-247 Issue 1.

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 type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 2324B-4)
<input checked="" type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 2324B-5)
<input type="checkbox"/> Chamber C(IC: 2324B-3)	<input type="checkbox"/> Chamber F(IC: 2324B-6)
	<input type="checkbox"/> Chamber G(IC: 2324B-7)
	<input type="checkbox"/> Chamber H(IC: 2324B-8)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

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

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	3.84 dB
Radiated Disturbance, 9KHz to 30 MHz	2.14 dB
Radiated Disturbance, 30 to 1000 MHz	4.98 dB
Radiated Disturbance,1000 to 6000 MHz	3.86 dB
Radiated Disturbance,6000 to 18000 MHz	4.23 dB
Radiated Disturbance,18000 to 26000 MHz	5.30 dB
Radiated Disturbance,26000 to 40000 MHz	5.23 dB

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

4.4. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 558074 D01 v03r05, Section 6.

20 dB BW: DA 00-705, Section §15.247 (a)(1).

Carrier/Hopping Frequency Separation: DA 00-705, Section 15.247 (a)(1).

Number of Hopping Frequencies/Channels: DA 00-705, Section 15.247 (a)(1)(iii).

Time of Occupancy (Dwell Time)/Average Time of Occupancy: DA 00-705, Section 15.247(a)(1)(iii).

Output Power: DA 00-705, Section 15.247 (b)(1).

Spurious RF Conducted Emissions: DA 00-705, Section 15.247 (d).

Band-edge/Conducted Spurious Emissions: DA 00-705, Section 15.247 (d).

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an Intelligent OVEN Wi-Fi / Bluetooth.

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	8.99	7.93
2402 - 2480	Enhanced 8PSK	8.64	7.31

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna, with a maximum gain as below:

Frequency (MHz)	Max. Peak Gain (dBi) (Main)	Max. Peak Gain (dBi) (Aux)
2400-2483.5	2.98	2.98

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Broadcom, rev. 6.37 RC32.0.

The test utility software used during testing was Broadcom, rev. AFTW_BRCMBT.

5.5. WORST-CASE CONFIGURATION AND MODE

Above 1GHz Low/Middle/High channels were tested for radiated emissions with the EUT set to transmit at the channels with highest output power as worst-case scenario.

The EUT can only be setup in desktop orientation; therefore, all radiated testing was performed with the EUT in desktop orientation.

Radiated emission below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	T450	PC-04AVGP	PD97265NGU
AC Adapter	Lenovo	ADLX65NLC2A	PA-1650-71	N/A

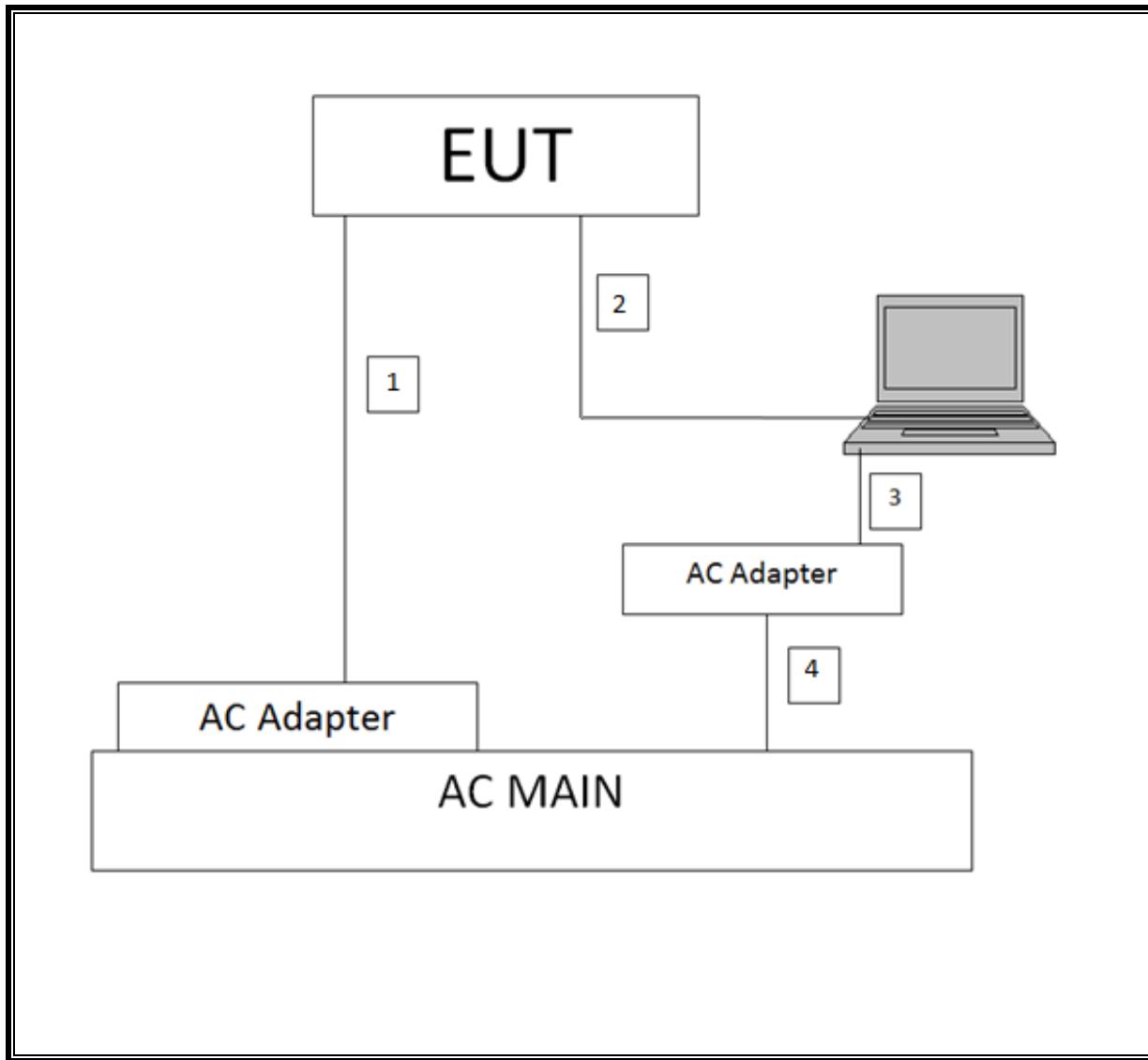
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	DC	unshielded	1	N/A
2	USB port	1	Micro-USB	unshielded	3	Ferrite at Micro-USB side
3	DC	1	20V DC	Unshielded	1.5	
4	AC	1	US115V	Unshielded	1	

TEST SETUP

The EUT is a stand-alone unit, and the radio is exercised by software, Broadcom rev. AFTW_BRCMBT 6.37 RC32.0 via USB cable.

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 No.	Cal Date	Cal Due
Amplifier, 1 - 18GHz	Miteq	AFS42	493	03/09/16	03/09/17
Amplifier, 10KHz to 1GHz, 32dB	HP	8447D	10	02/01/16	02/01/17
Amplifier, 1GHz to 26.5GHz, 23.5dB	Agilent	8449B	404	07/05/16	07/05/17
Antenna, Broadband Hybrid 30MHz to 2000MHz	Sunol Science	JB1	130	09/01/15	09/01/16
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	345	03/07/16	03/07/17
Antenna, Horn 18-26.5GHz	Seavey Division	MWH-1826/B	449	05/26/16	05/26/17
EMI Test Receiver 9Khz-7GHz	R & S	ESCI7	1436	09/10/15	09/10/16
LISN for Conducted Emissions	Fischer	50/250-25-2	1310	09/16/15	09/16/16
Loop Antenna, 10Khz-30MHz	EMCO	6502	35	03/24/16	03/24/17
Power Cable, Line Conducted Emissions	UL	PG1	N/A	07/28/16	07/28/17
Power Meter, P-series single channel	Keysight	N1911A	1262	07/08/16	07/08/17
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Agilent	N1921A	750	09/17/25	09/17/16
PSA Spectrum Analyzer 40GHz	Agilent	E4446A	146	07/13/16	07/13/17
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	907	01/06/16	01/06/17

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, Apr 26, 2016
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
Antenna Port Software	UL	UL RF	Ver 5.1.1, July 15, 2016

7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result
2.1049	RSS-GEN 4.6	Occupied Band width (99%)	N/A	Conducted	N/A
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass
15.247 (b)(1)	RSS-247 5.4.2	TX conducted output power	<21dBm		Pass
15.247 (a)(1)	RSS-247 5.1.2	Hopping frequency separation	> 25KHz		N/A
15.247 (a)(1)(iii)	RSS-247 5.1.4	Number of Hopping channels	More than 15 non-overlapping channels		N/A
15.247 (a)(1)(iii)	RSS-247 5.1.4	Avg Time of Occupancy	< 0.4sec		N/A
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10		Pass
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

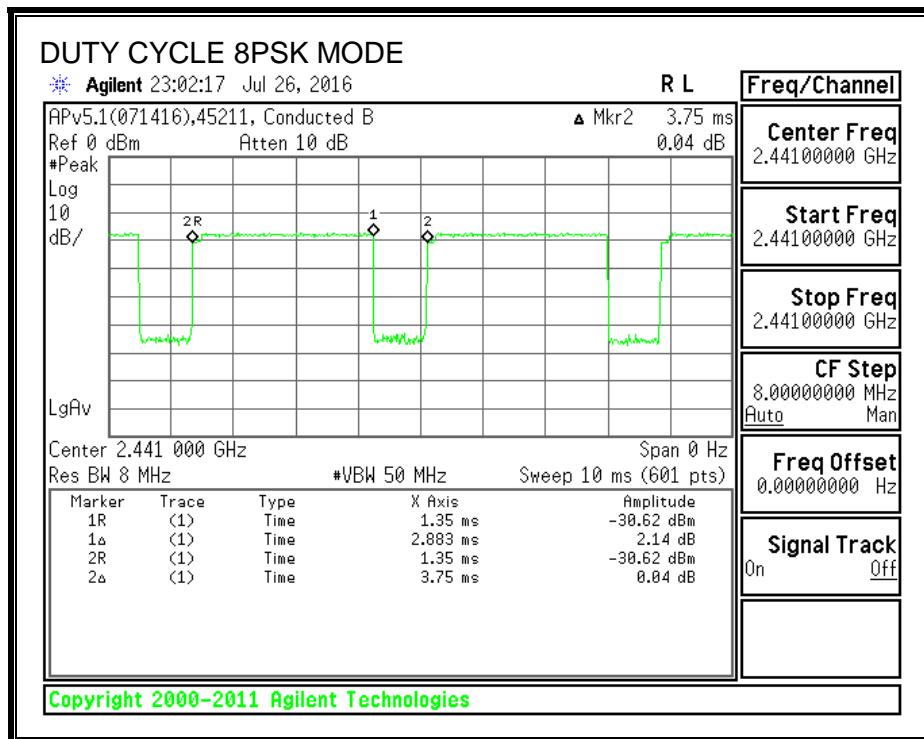
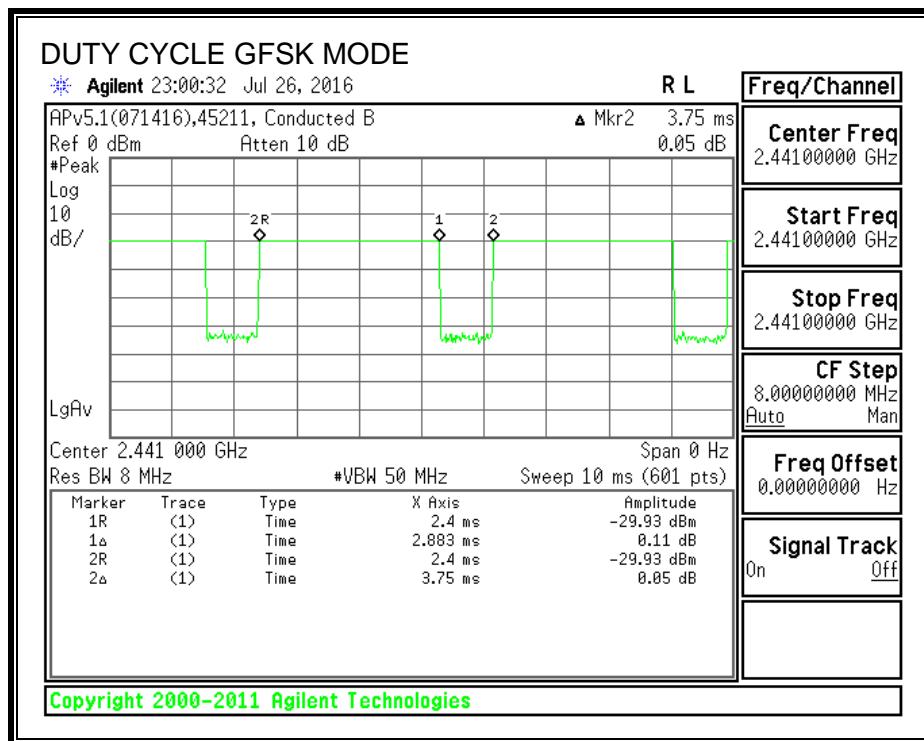
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

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	2.883	3.750	0.769	76.88%	1.14	0.347
8PSK	2.883	3.750	0.769	76.88%	1.14	0.347

DUTY CYCLE PLOTS



8.2. 20 dB AND 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

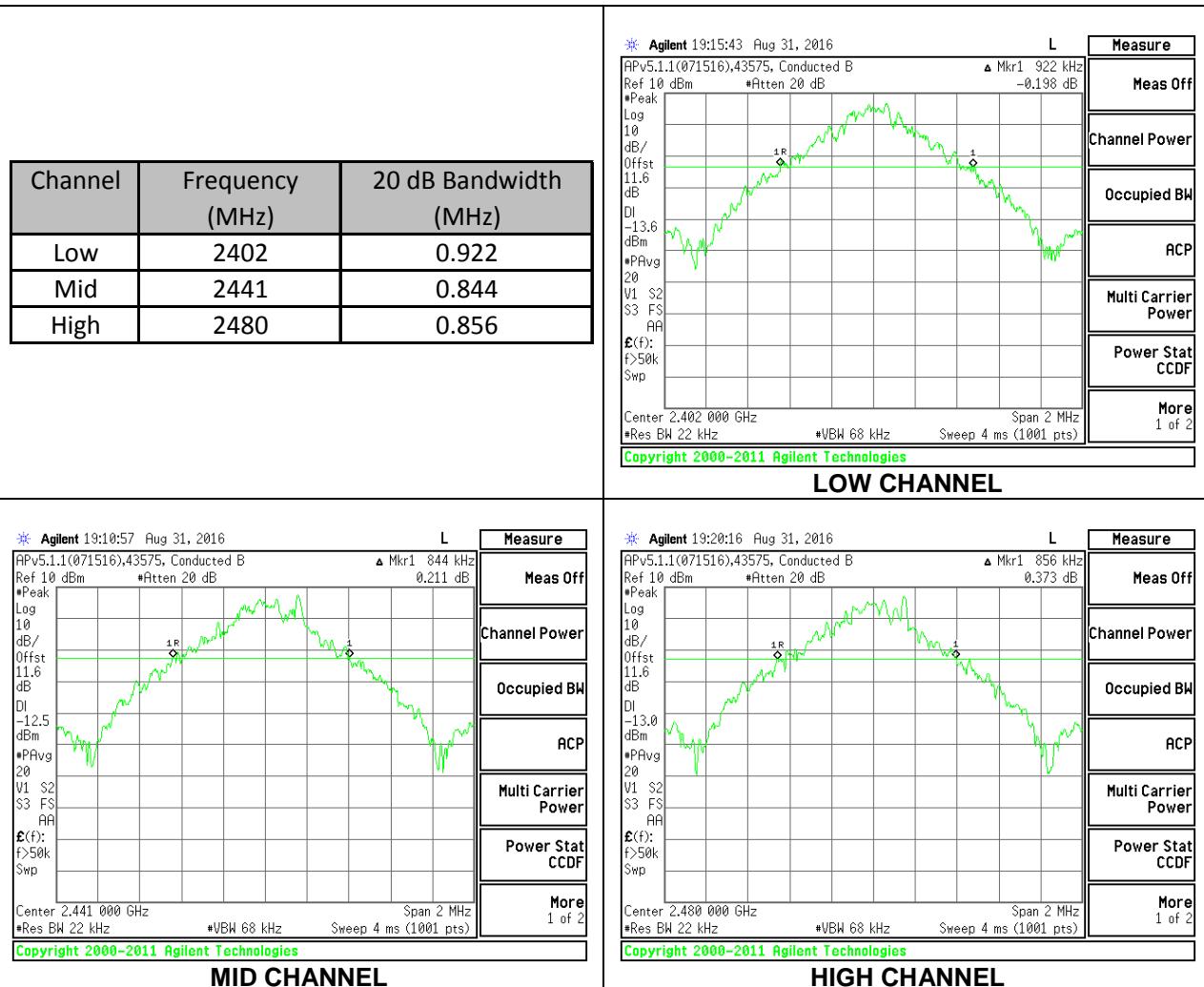
TEST PROCEDURE

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.

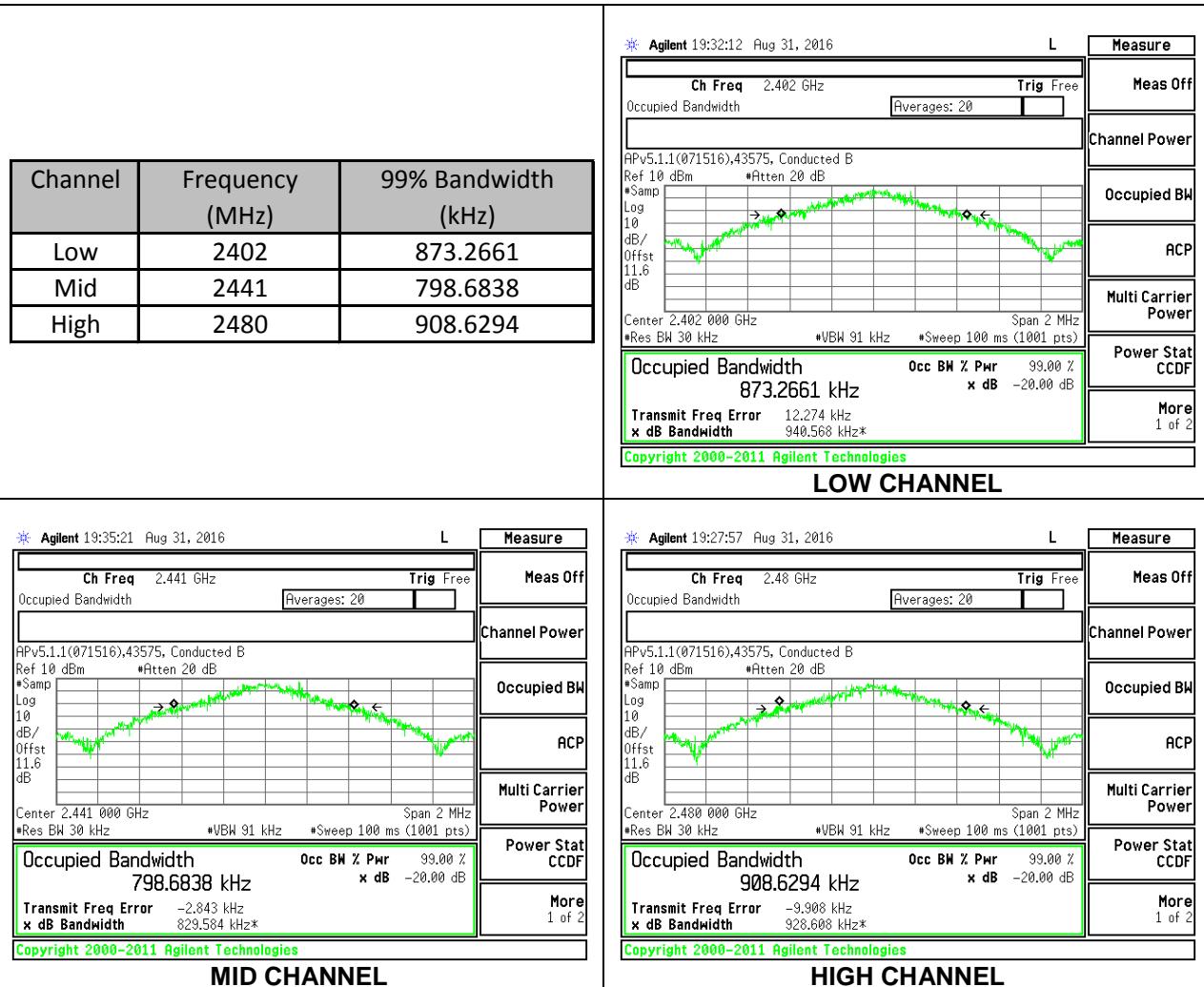
RESULTS

8.2.1. BASIC DATA RATE GFSK MODULATION

20dB BANDWIDTH

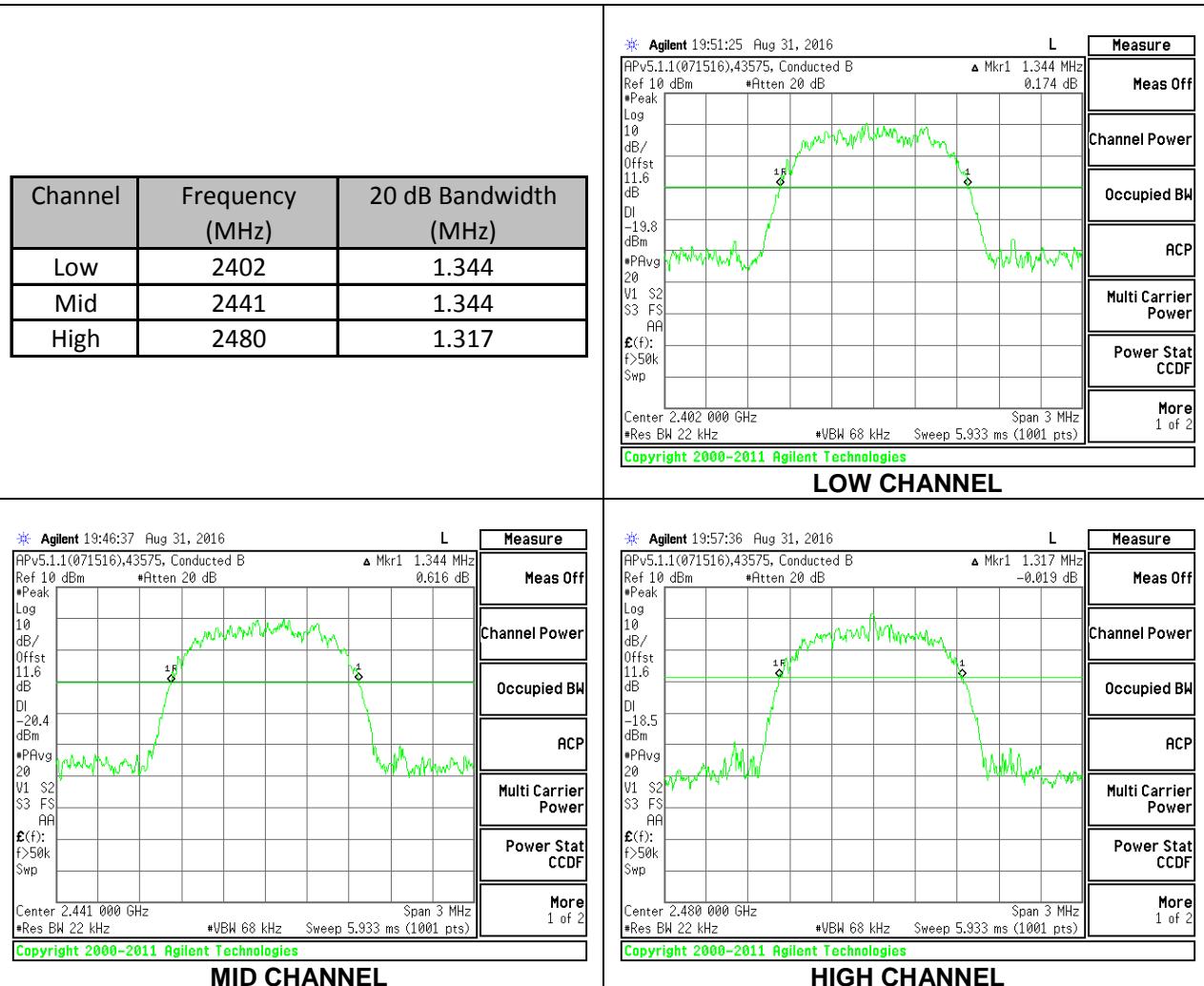


99% BANDWIDTH

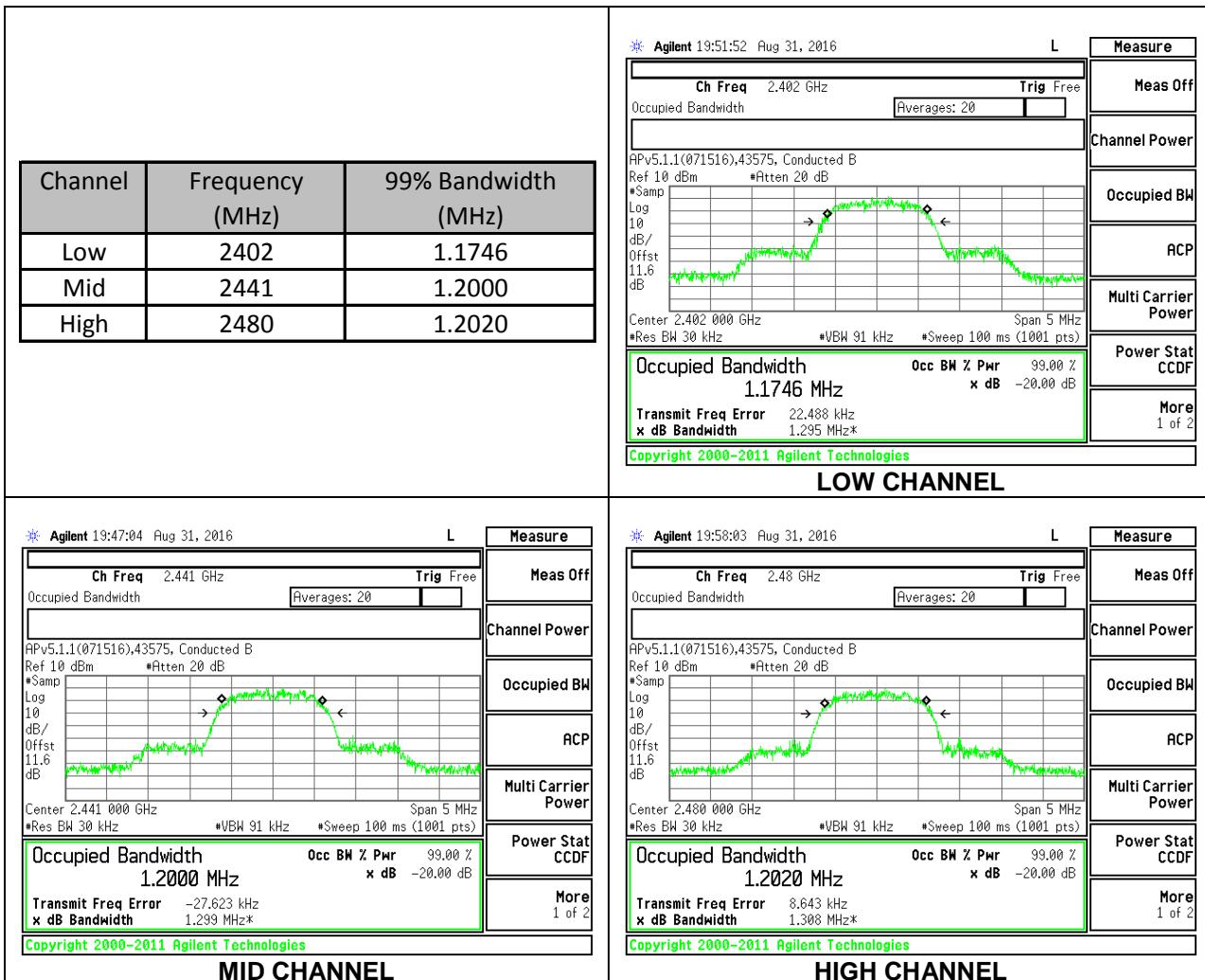


8.2.2. ENHANCED DATA RATE 8PSK MODULATION

20dB BANDWIDTH



99% BANDWIDTH



8.3. HOPPING FREQUENCY SEPARATION

LIMIT

FCC §15.247 (a) (1)

IC RSS-247 5.1.2

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.

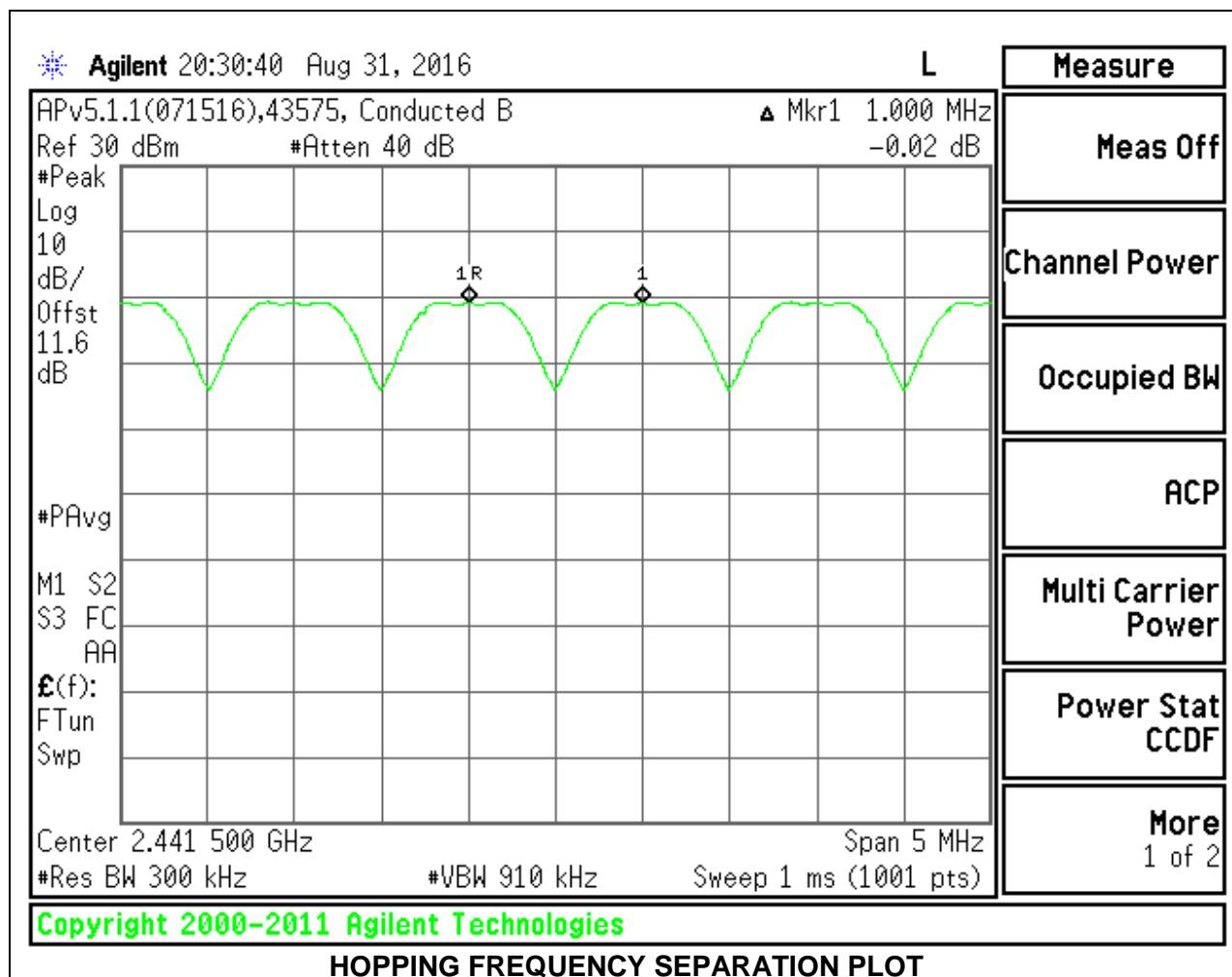
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

TEST PROCEDURE

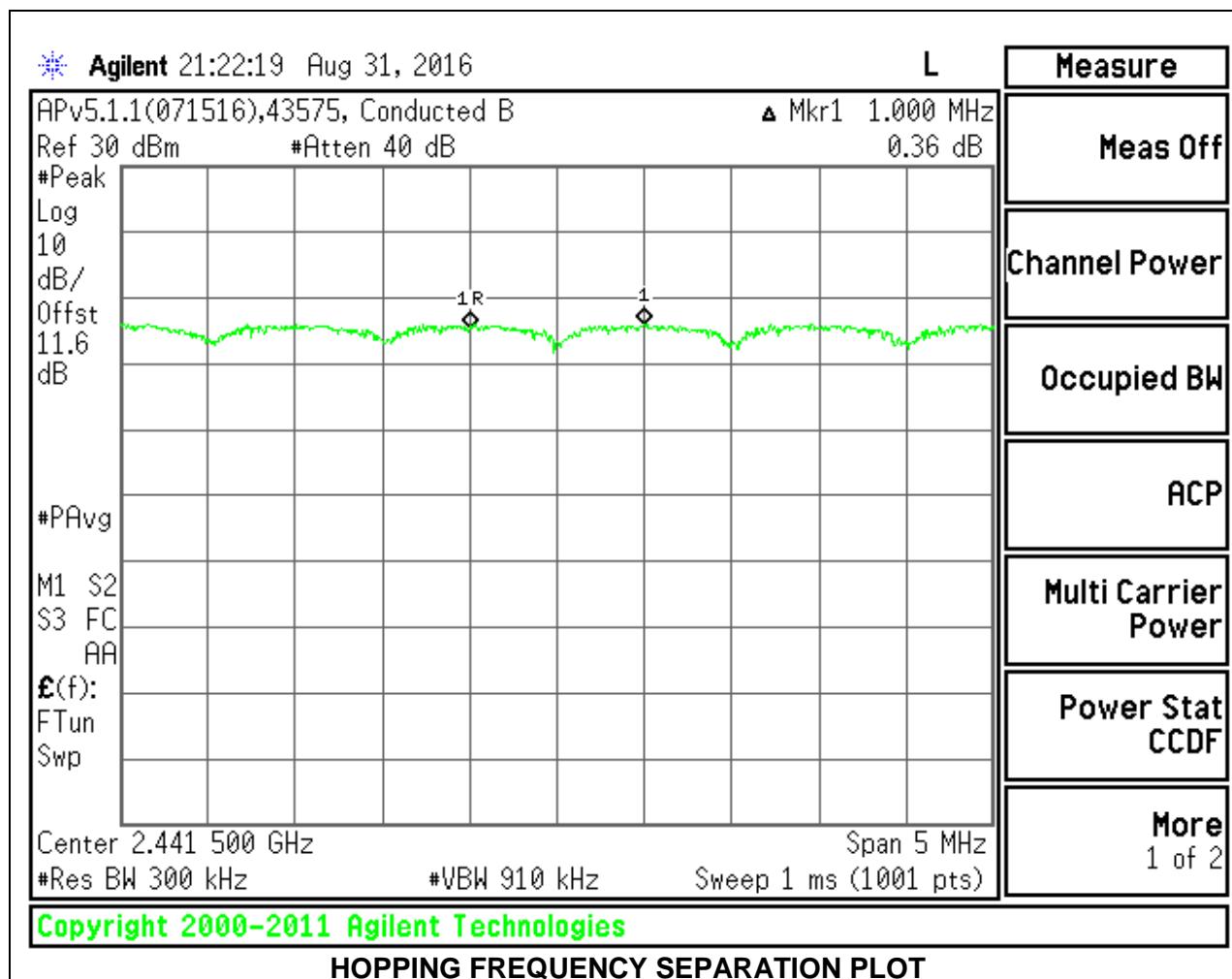
DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

8.3.1. BASIC DATA RATE GFSK MODULATION



8.3.2. ENHANCED DATA RATE 8PSK MODULATION



8.4. NUMBER OF HOPPING CHANNELS

LIMIT

FCC §15.247 (a) (1) (iii)

IC RSS-247 5.1.4

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

TEST PROCEDURE

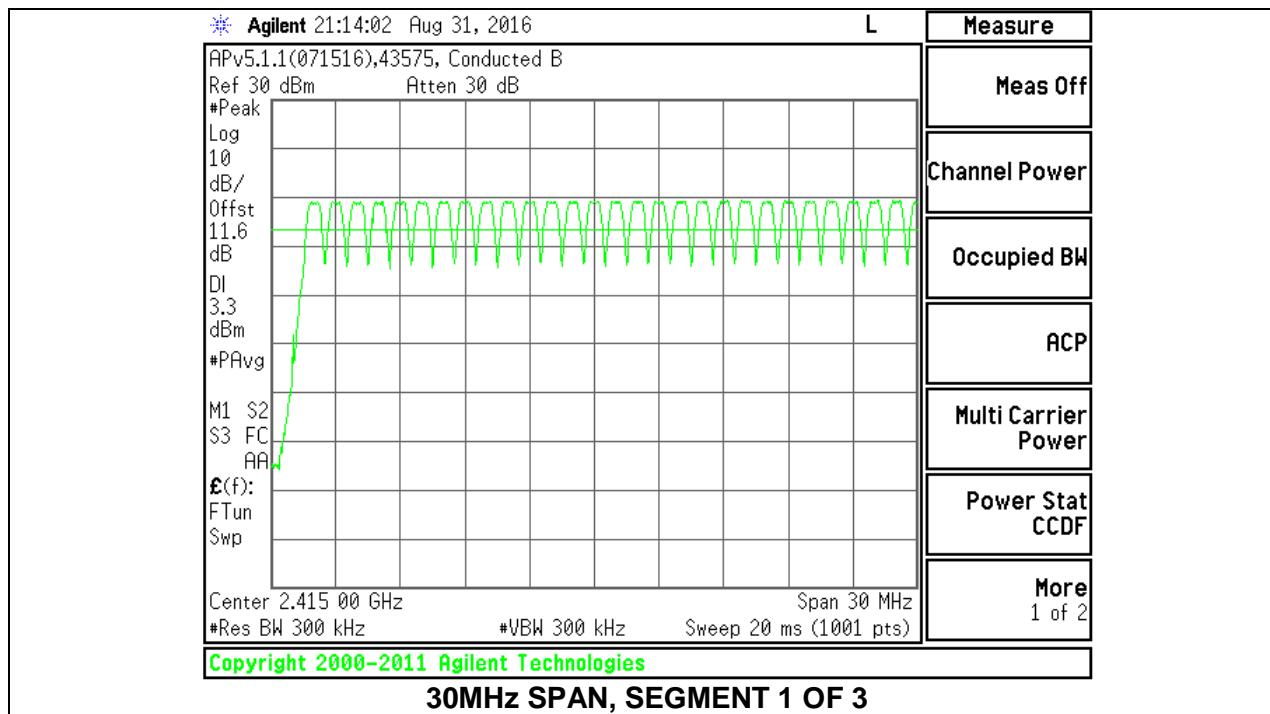
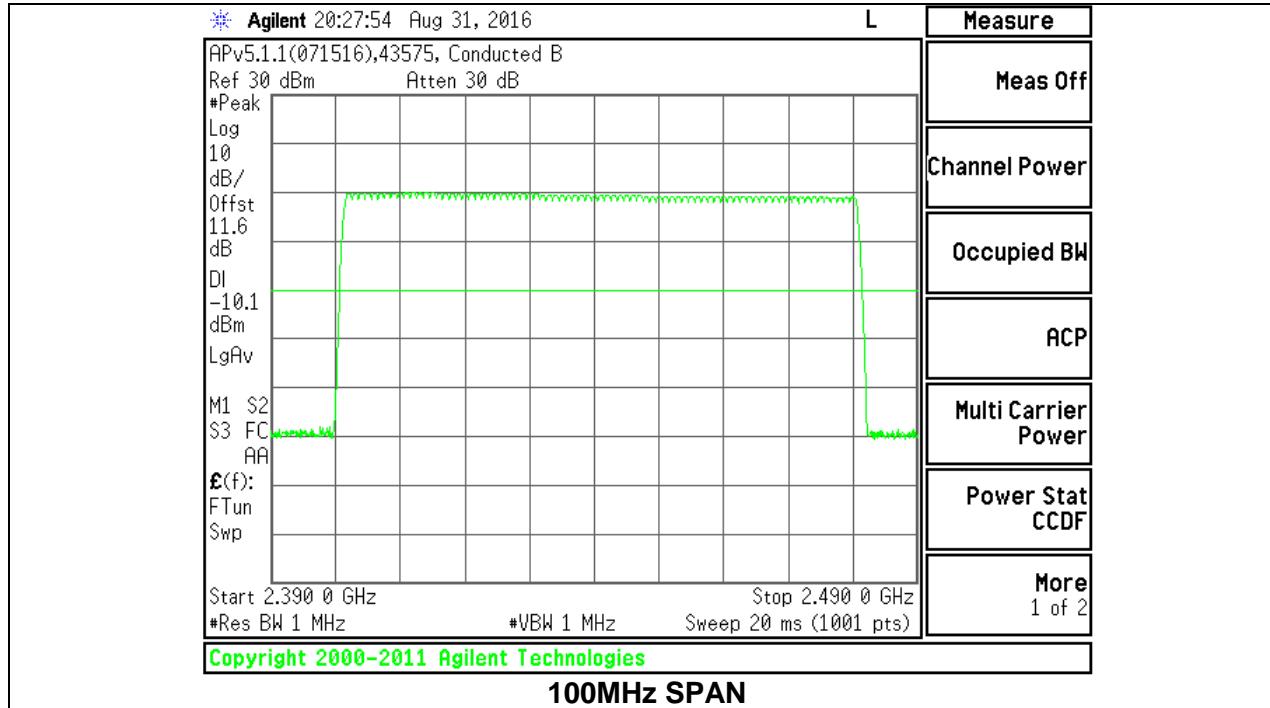
DA 00-705: The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

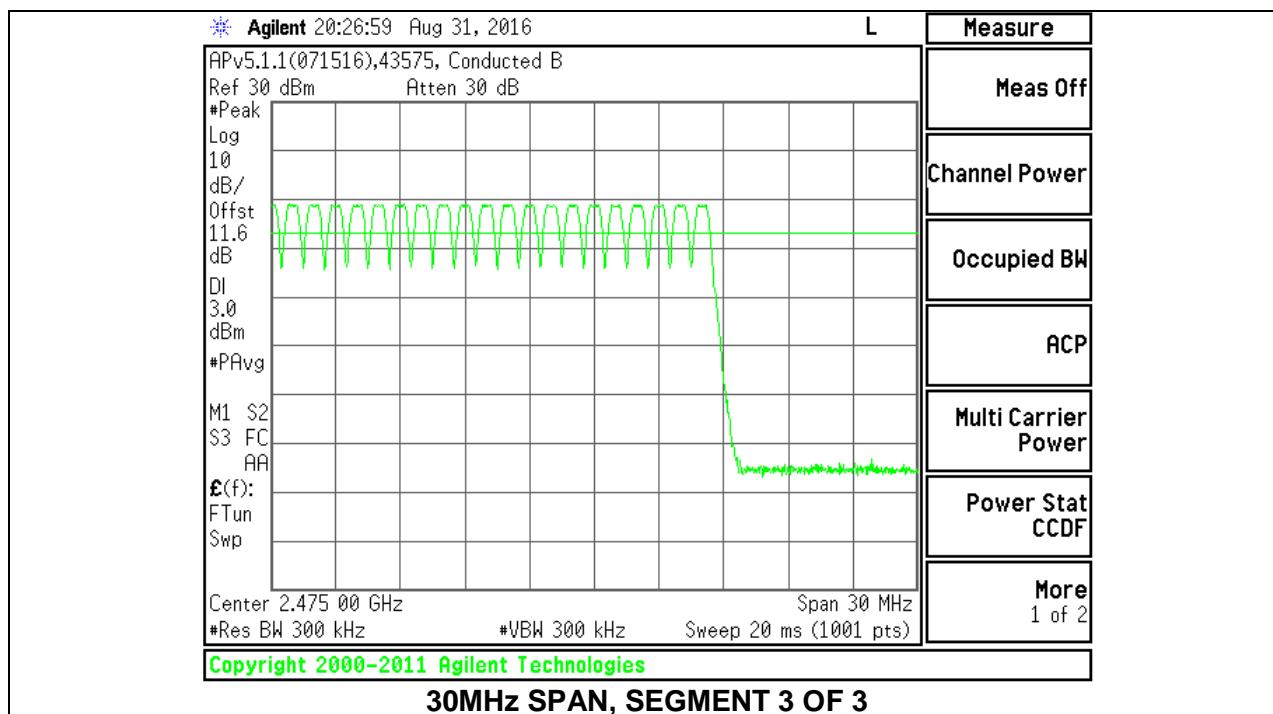
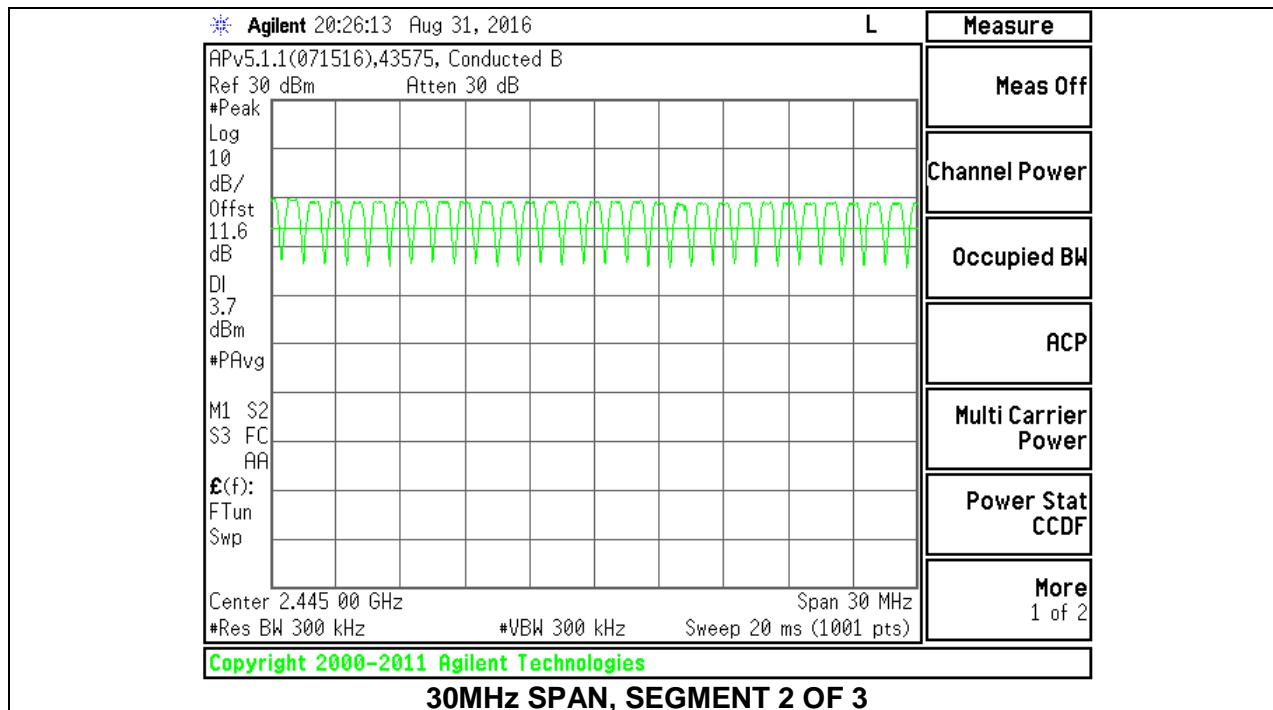
RESULTS

Normal Mode: 79 Channels observed.

8.4.1. BASIC DATA RATE GFSK MODULATION

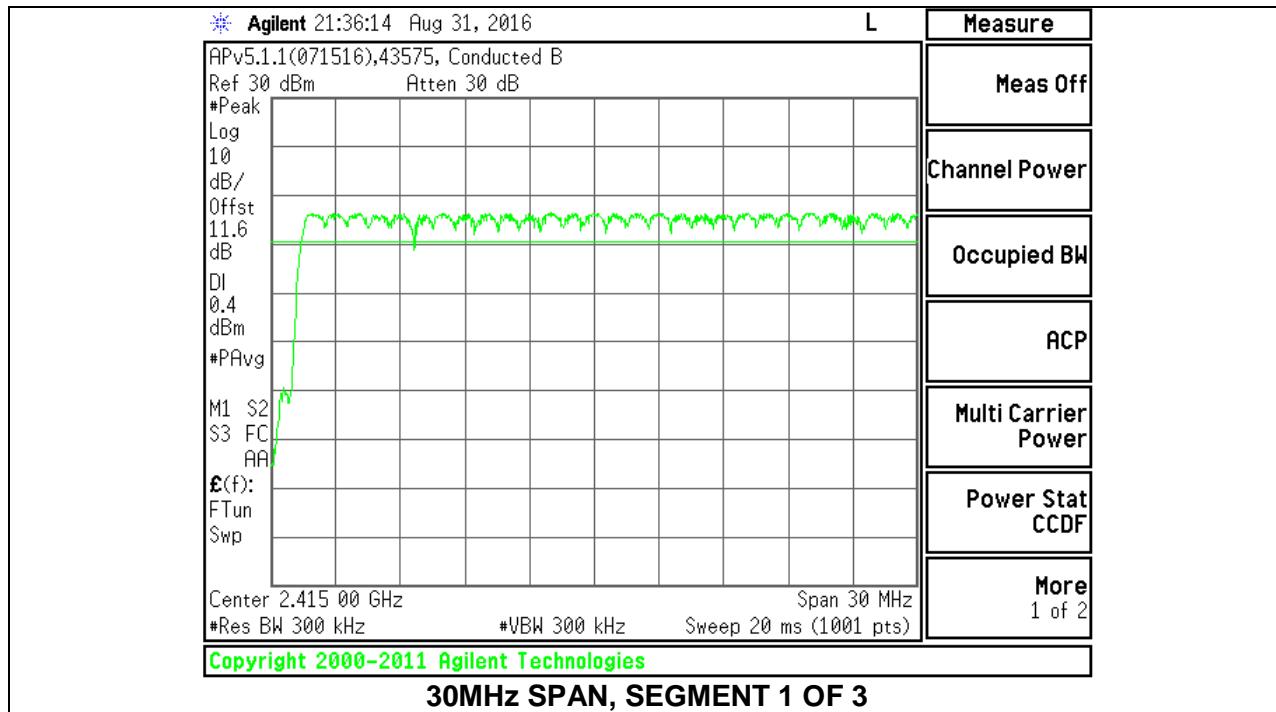
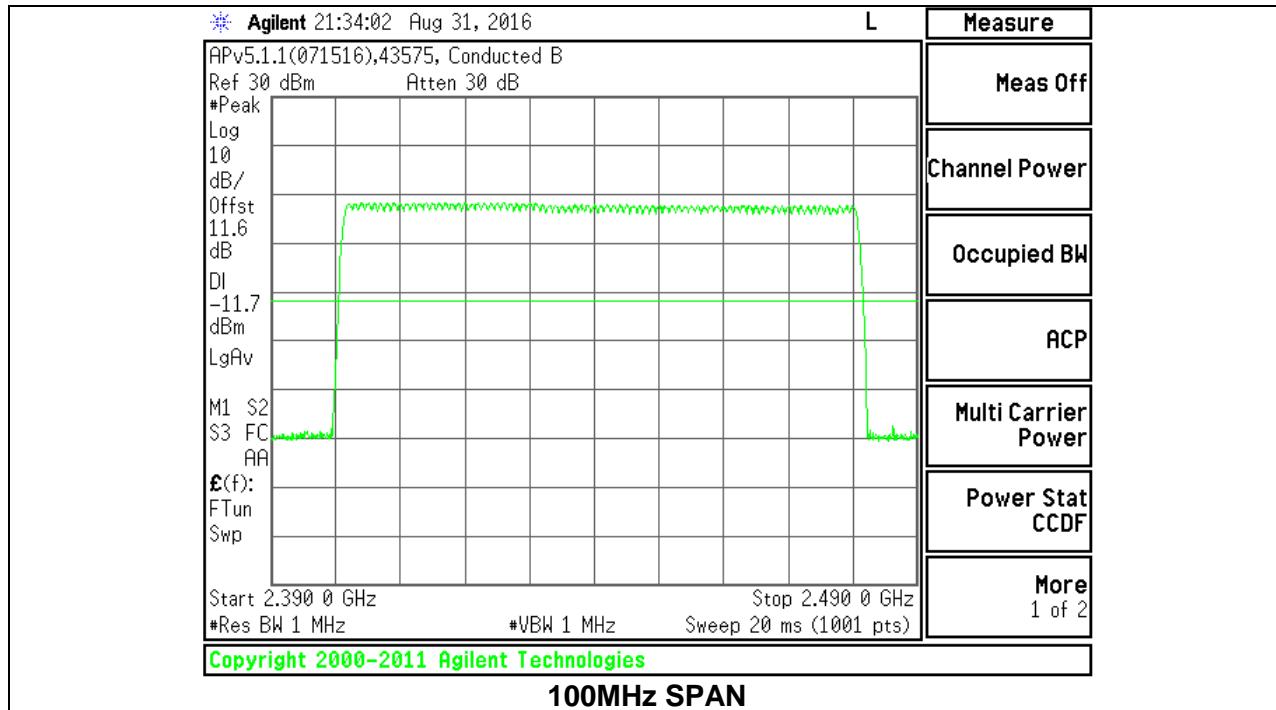
NUMBER OF HOPPING CHANNELS

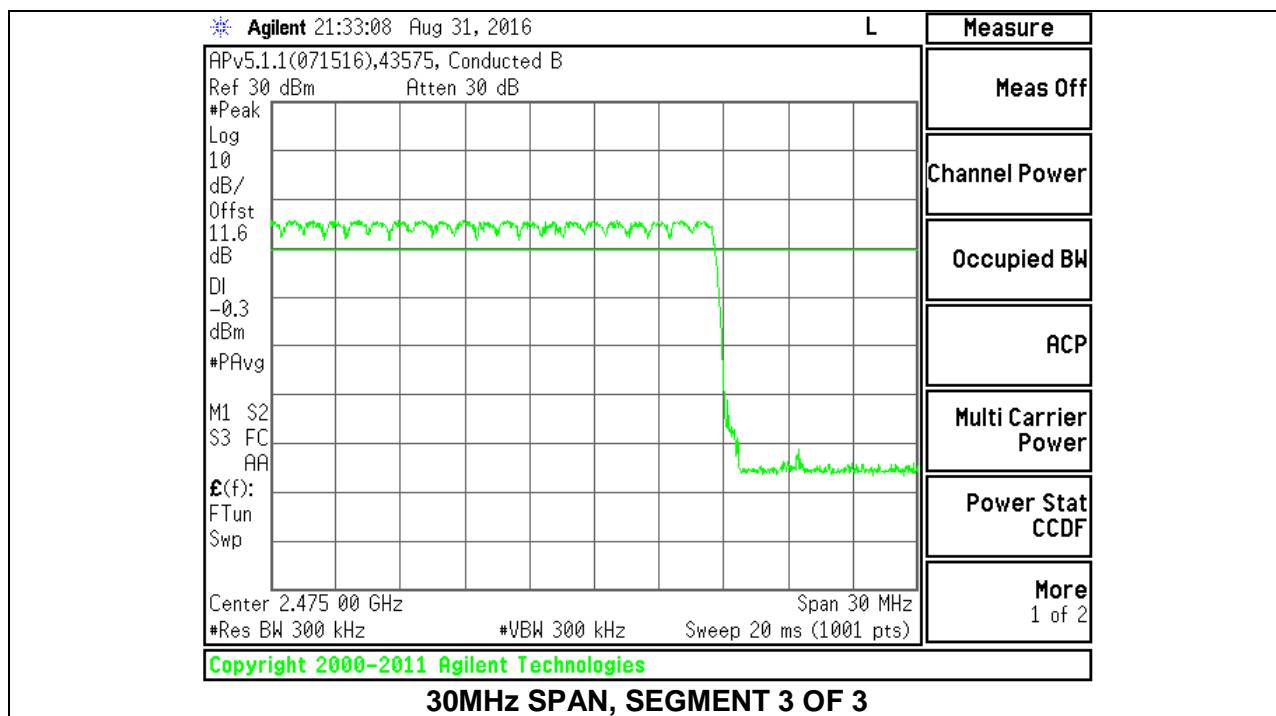
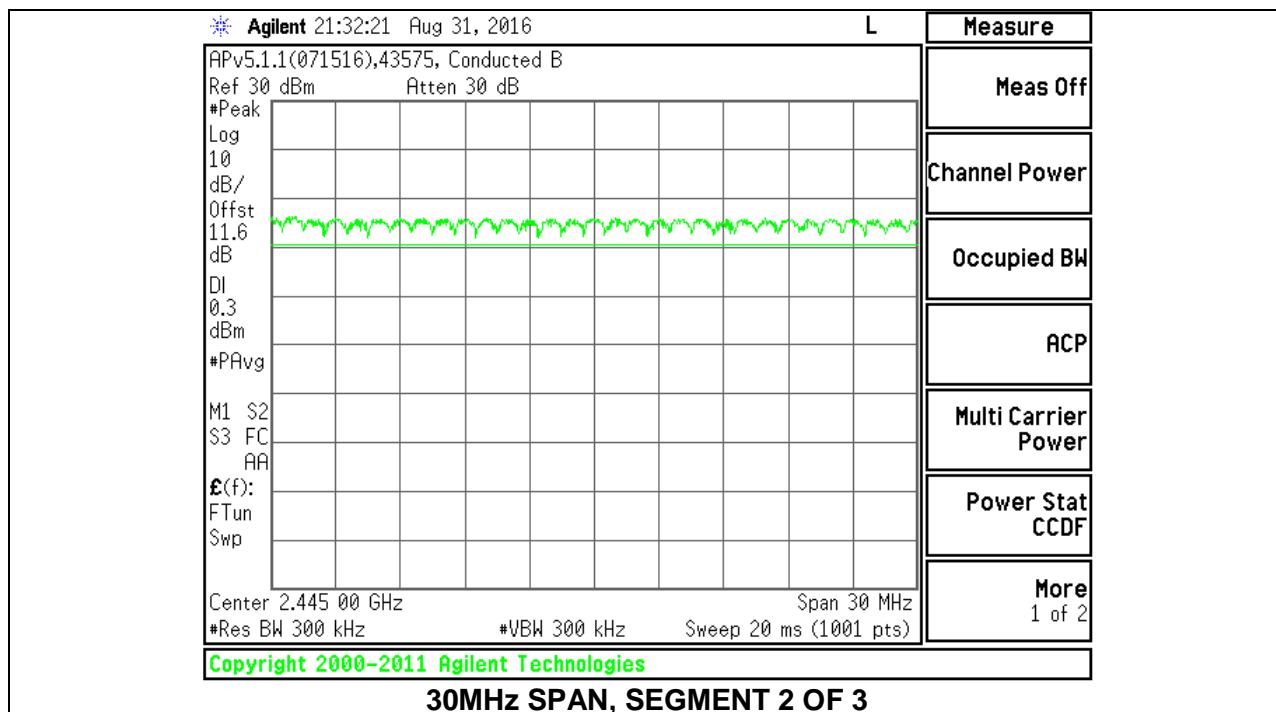




8.4.2. ENHANCED DATA RATE 8PSK MODULATION

NUMBER OF HOPPING CHANNELS





8.5. AVERAGE TIME OF OCCUPANCY

LIMIT

FCC §15.247 (a) (1) (iii)

IC RSS-247 5.1.4

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

DA 00-705:

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 3.16 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{pulse width}$.

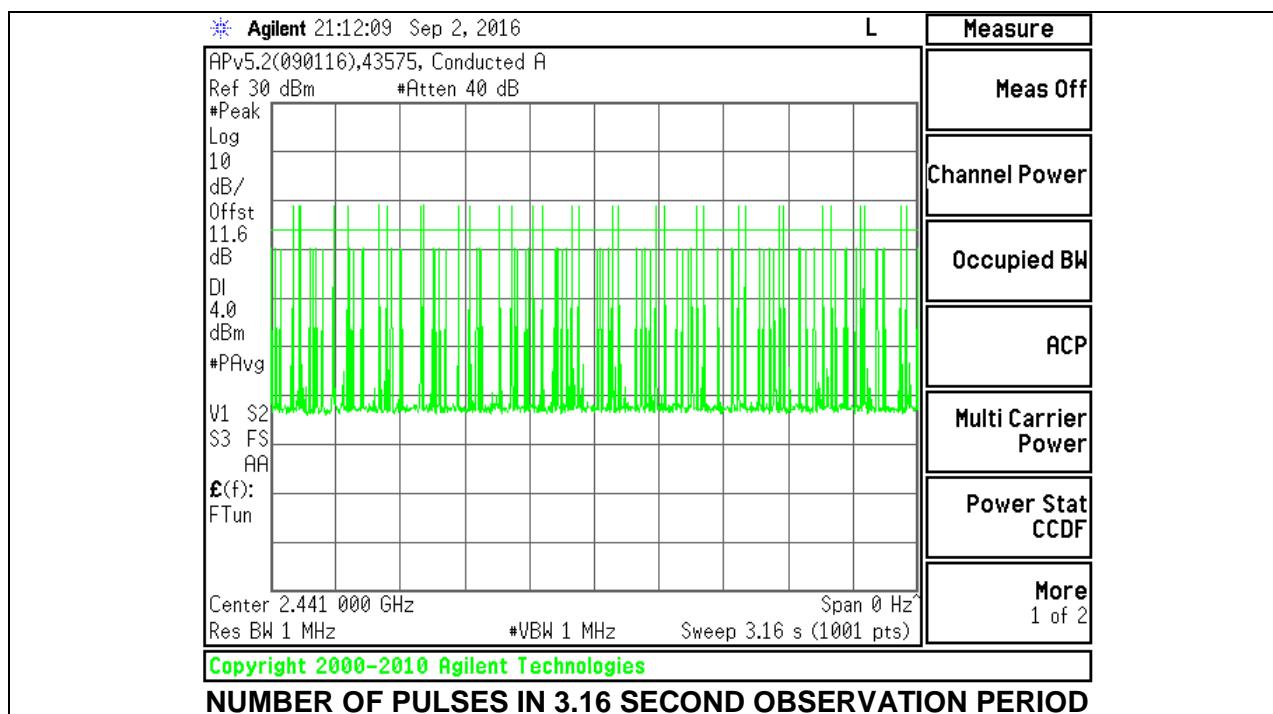
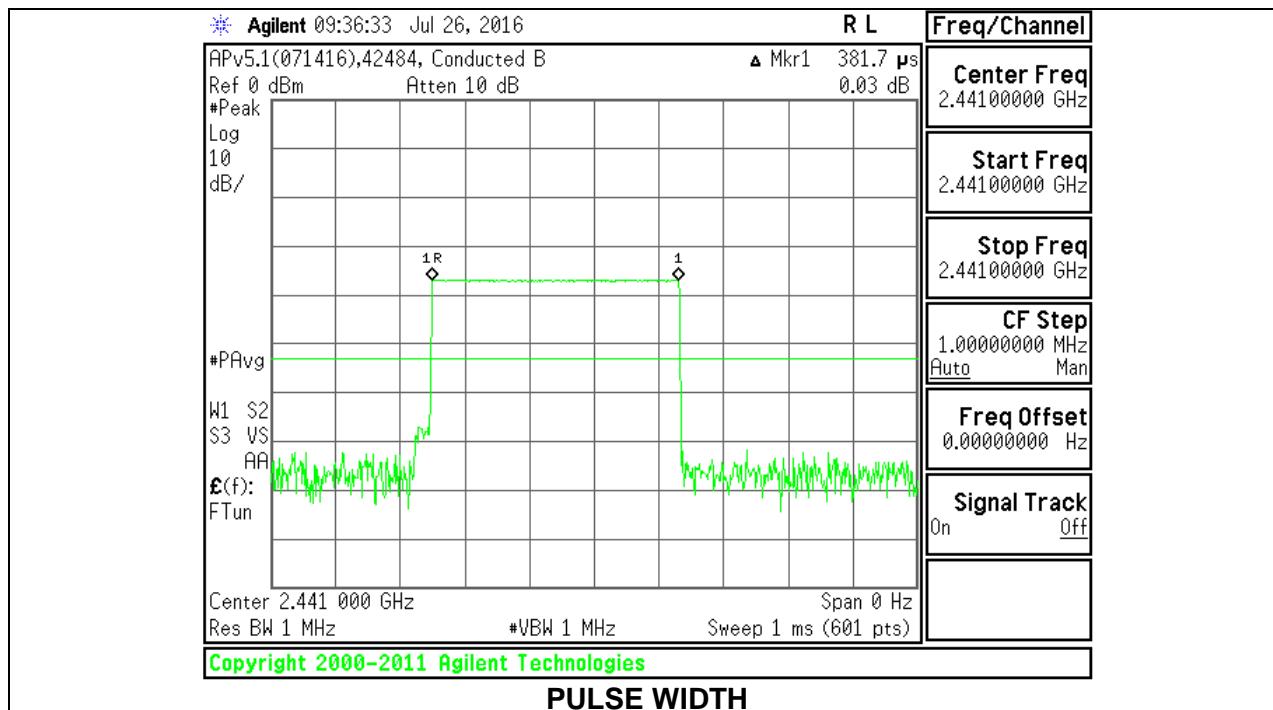
For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{pulse width}$.

RESULTS

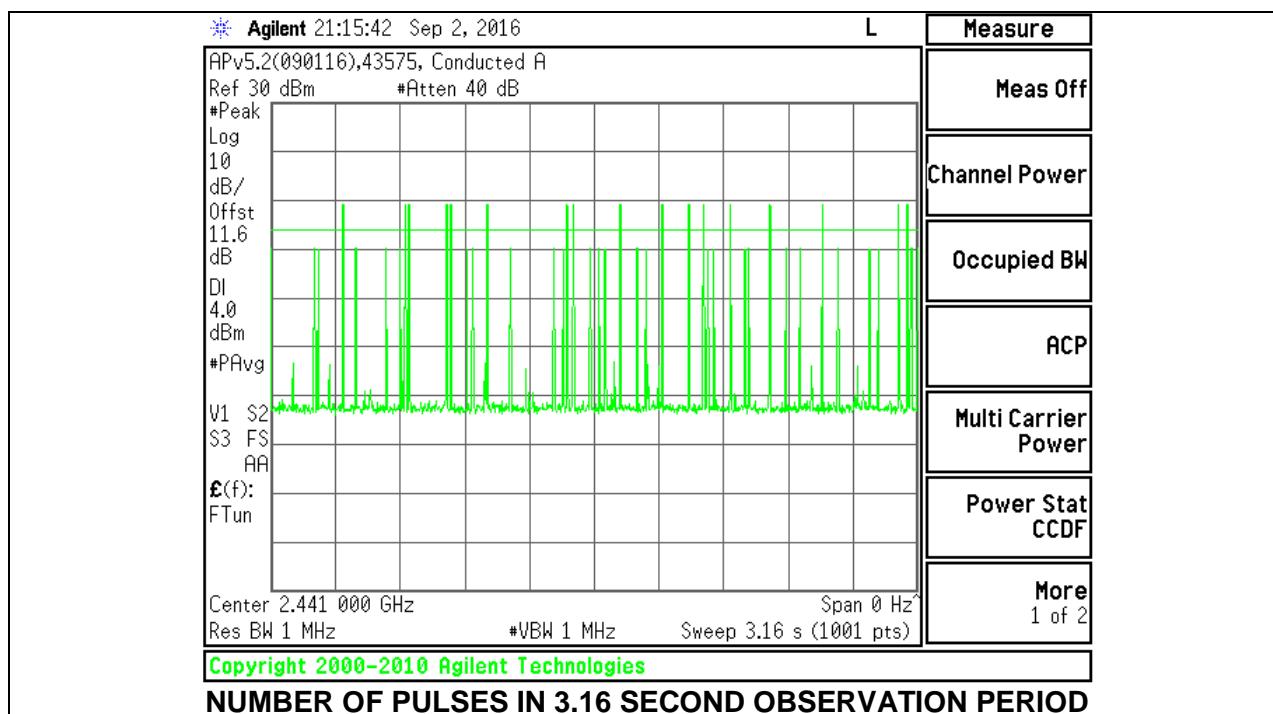
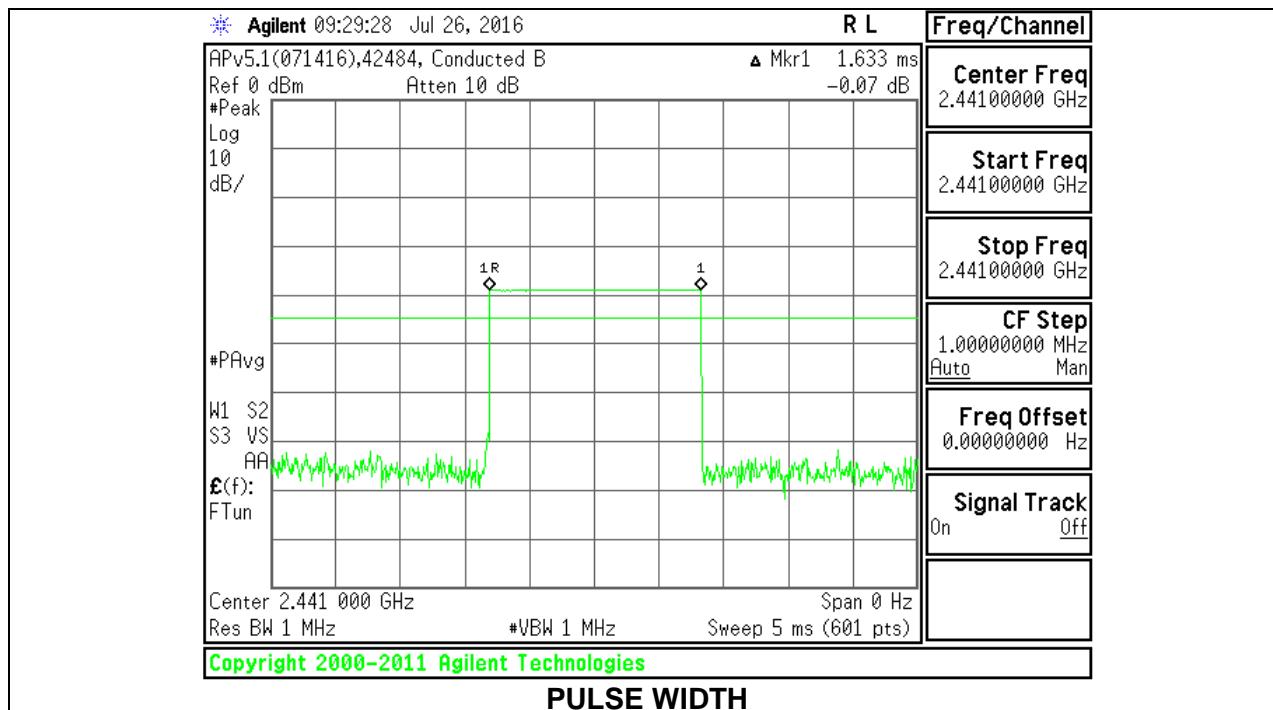
8.6. BASIC DATA RATE GFSK MODULATION

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	0.3817	32	0.1221	0.4	-0.2779
DH3	1.633	17	0.2776	0.4	-0.1224
DH5	2.883	13	0.3748	0.4	-0.0252
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	0.3817	8	0.03054	0.4	-0.3695
DH3	1.633	4.25	0.06940	0.4	-0.3306
DH5	2.883	3.25	0.09370	0.4	-0.3063

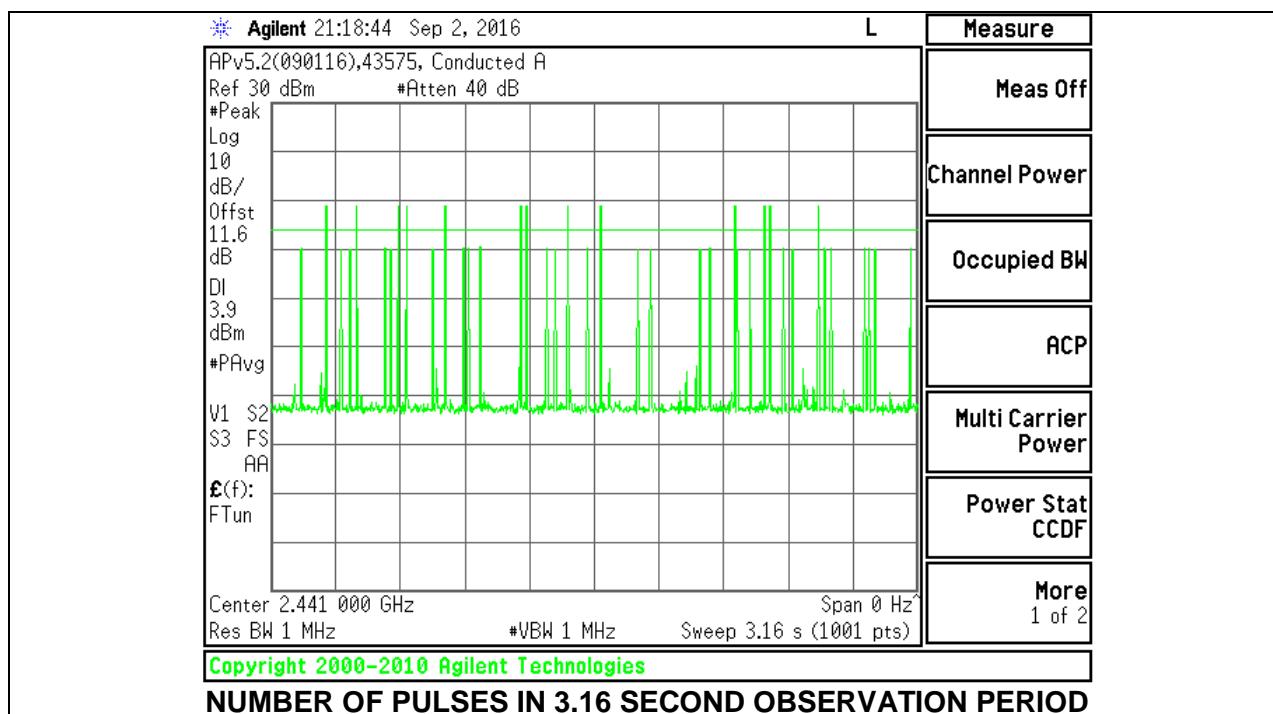
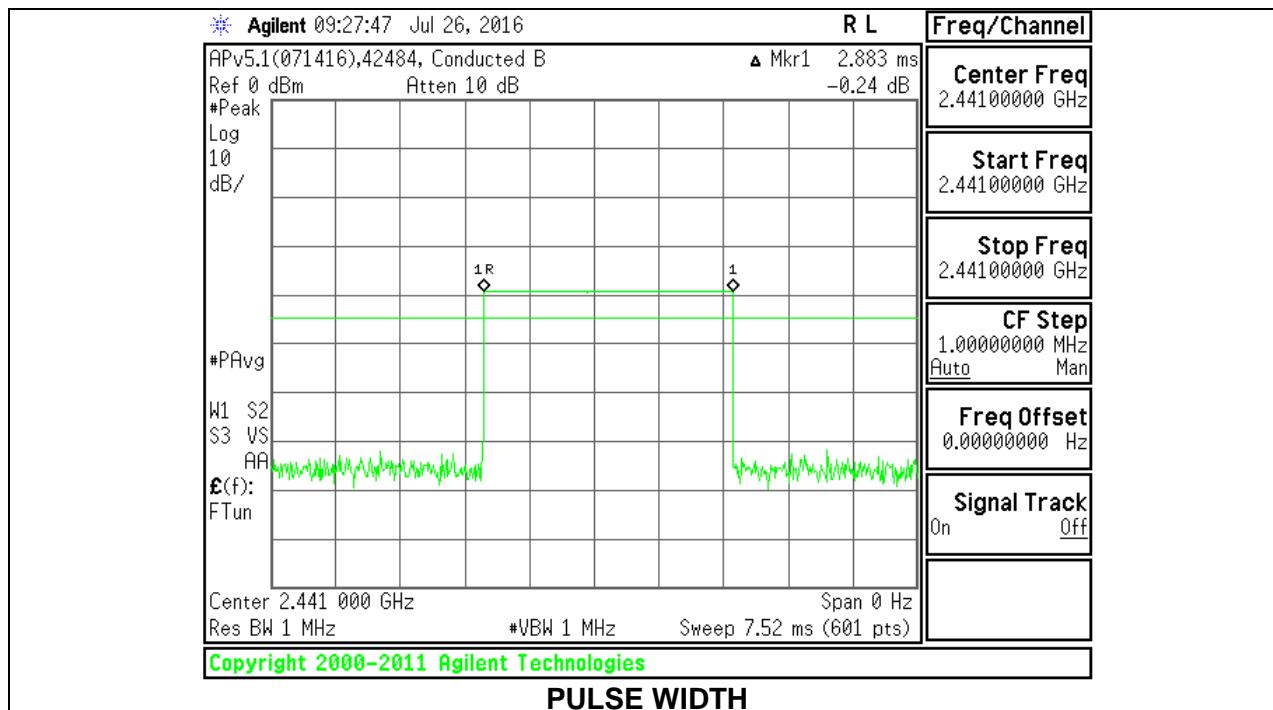
DH1 PLOTS



DH3 PLOTS



DH5 PLOTS

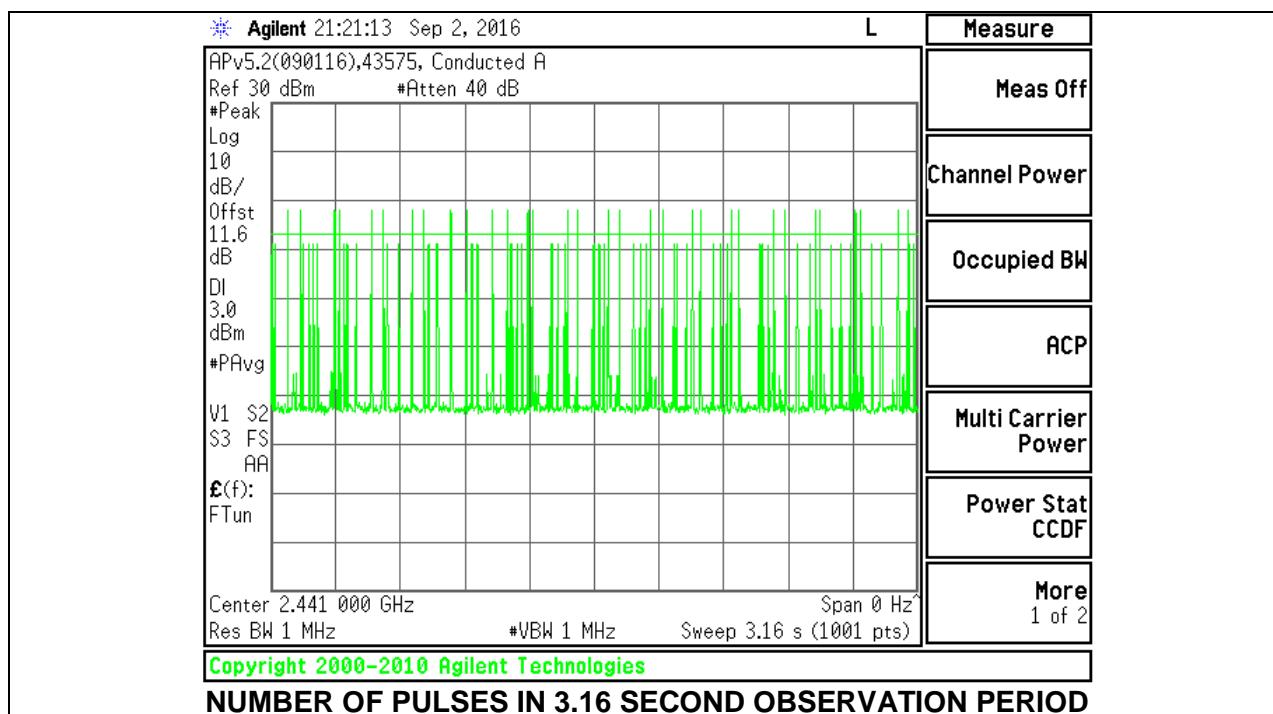
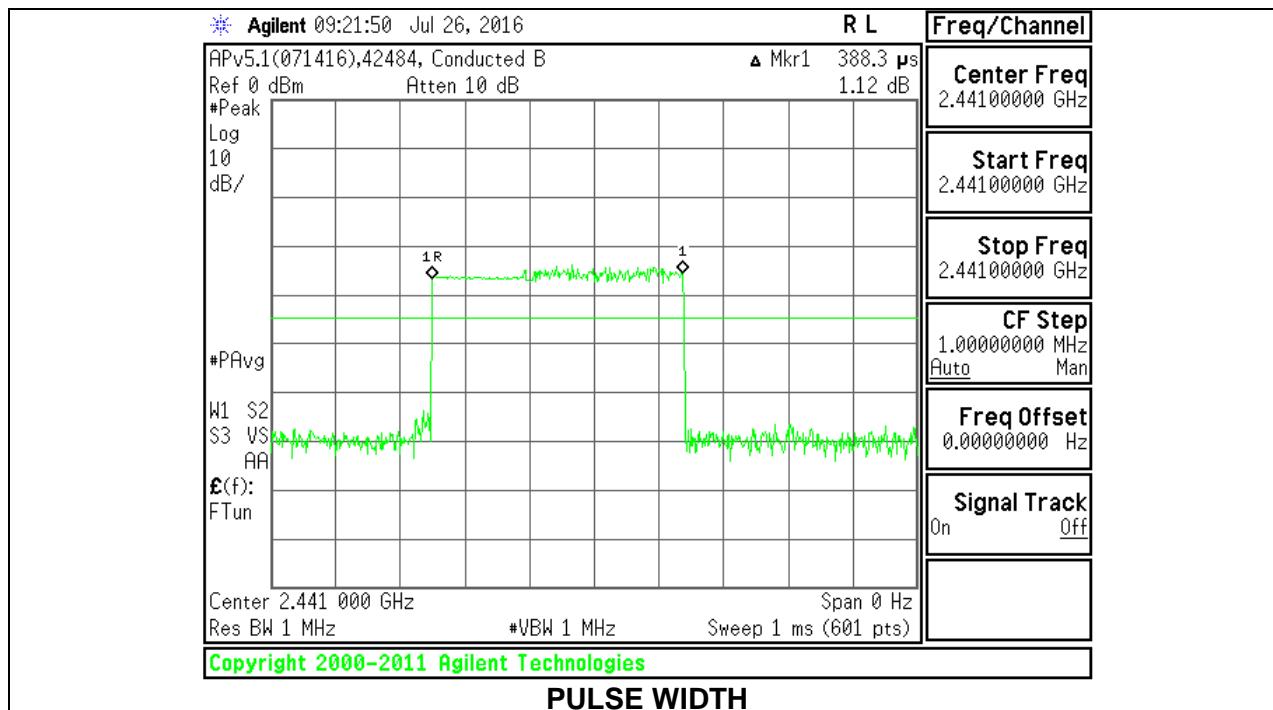


8.6.1. ENHANCED DATA RATE 8PSK MODULATION

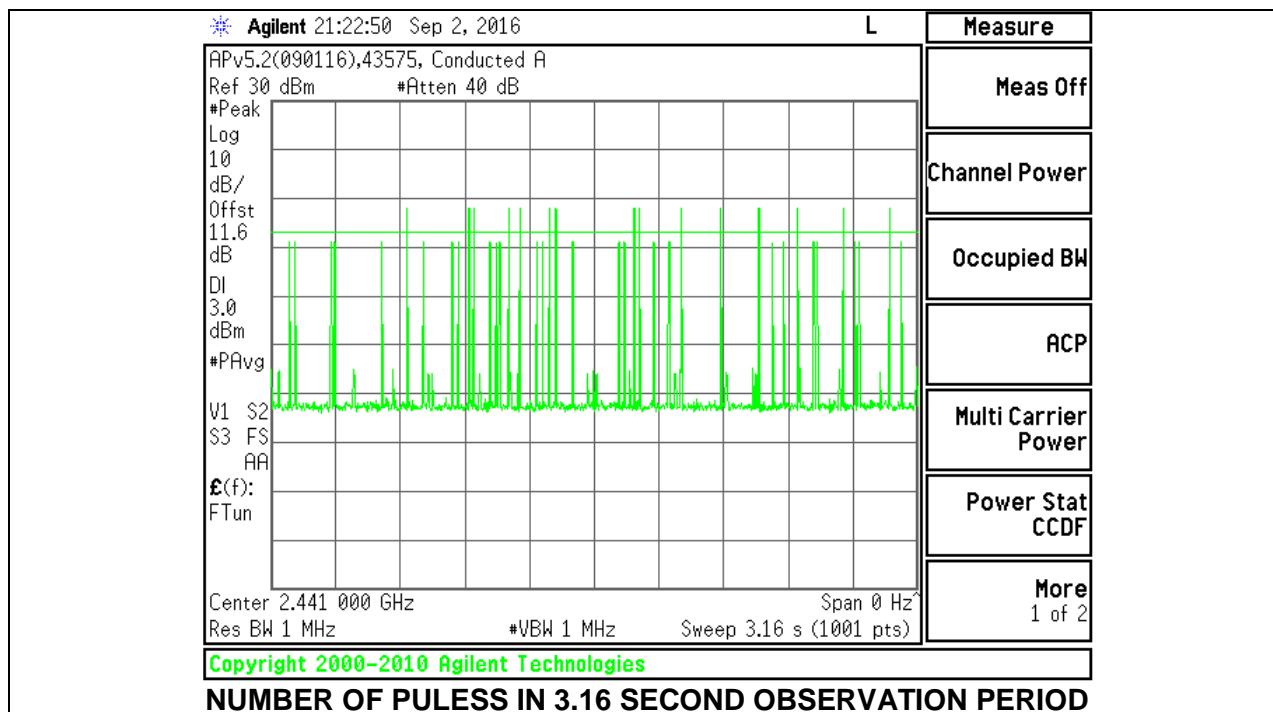
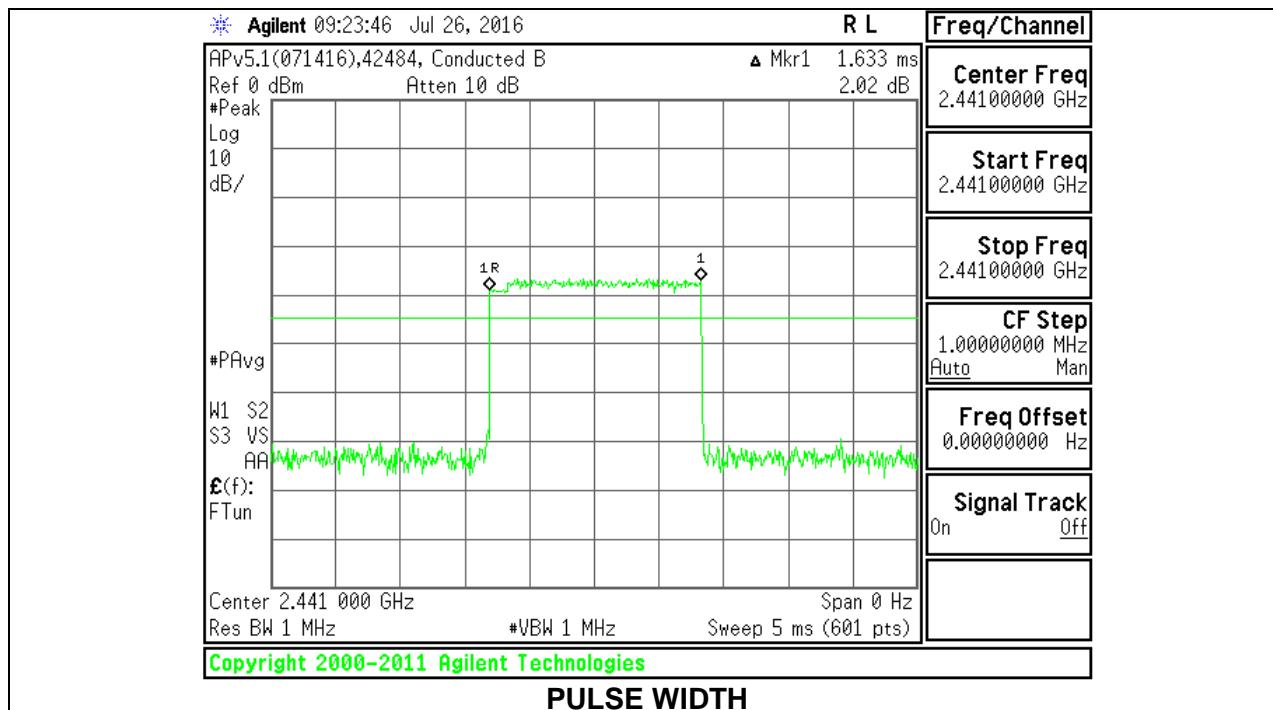
DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK Normal Mode					
DH1	0.3883	32	0.124256	0.4	-0.27574
DH3	1.633	15	0.24495	0.4	-0.15505
DH5	2.895	13	0.37635	0.4	-0.02365

Note: for AFH (8PSK) mode, please refer to the results of AFH (GFSK) mode; the channel selection and hopping rate are the same for both EDR and Basic Rate operation, data for Basic Rate in section 4.5.1 demonstrates compliance with channel occupancy when AFH is employed.

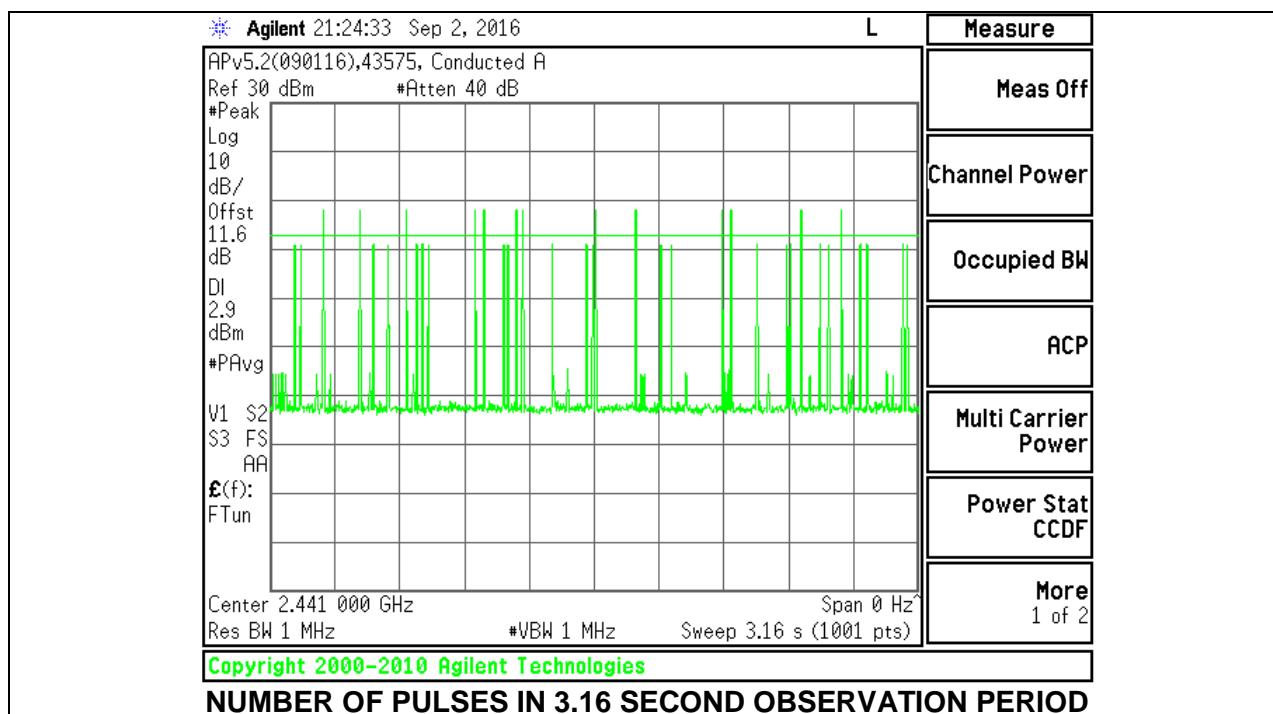
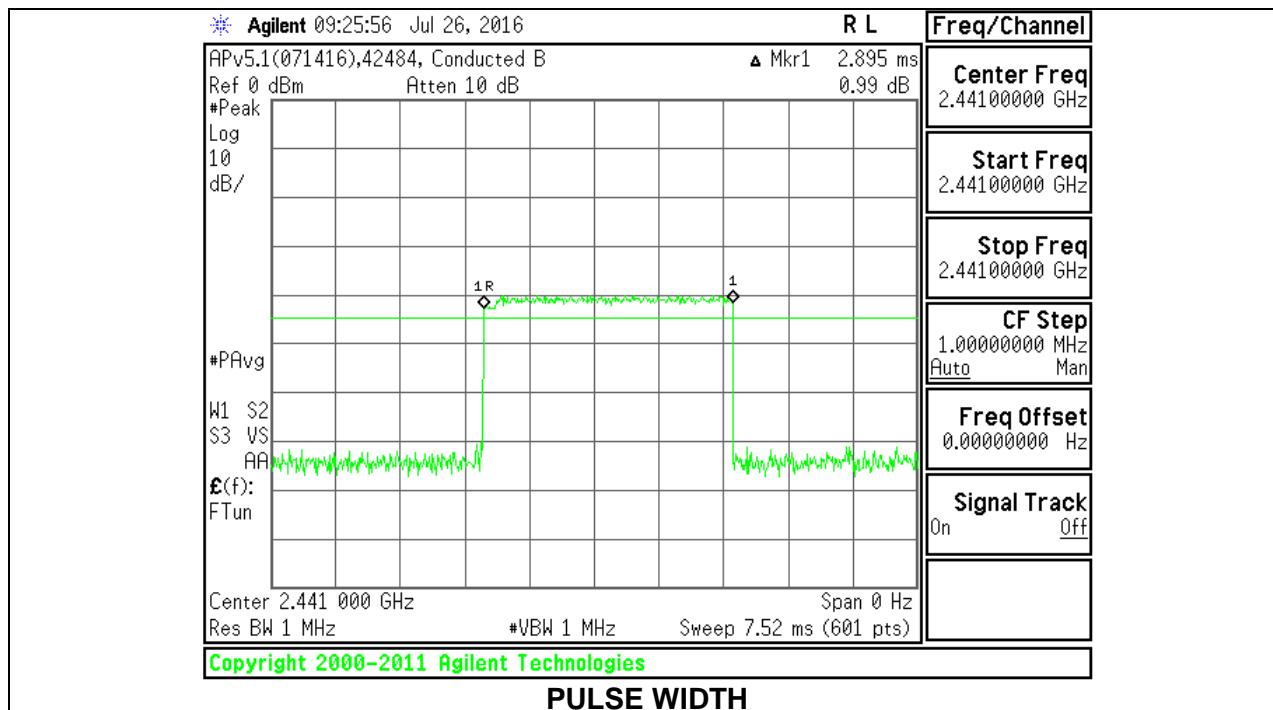
DH1 PLOTS



DH3 PLOTS



DH5 PLOTS



8.7. PEAK OUTPUT POWER

LIMIT

§15.247 (b) (1)

RSS-247 5.4.2

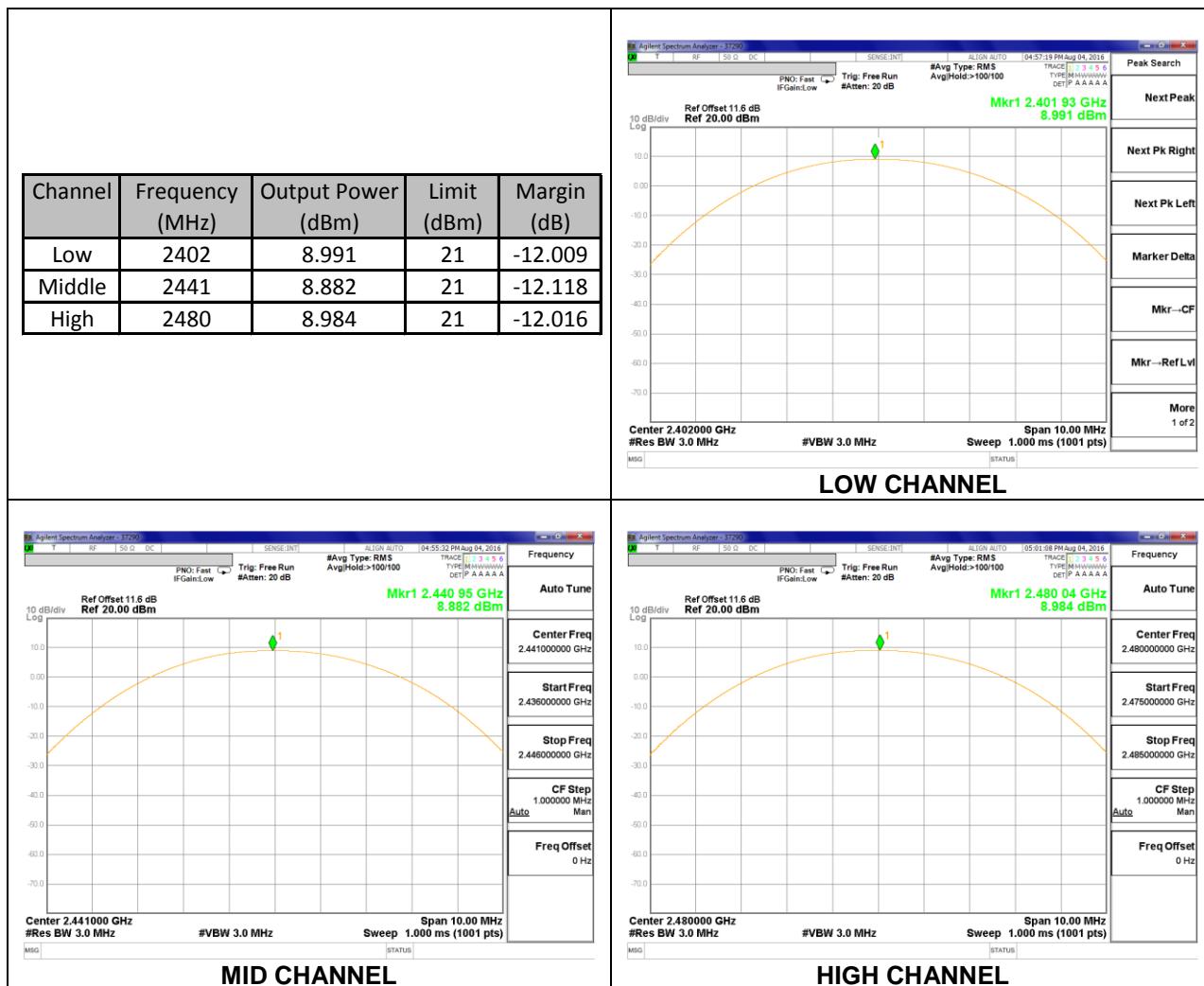
The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

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.

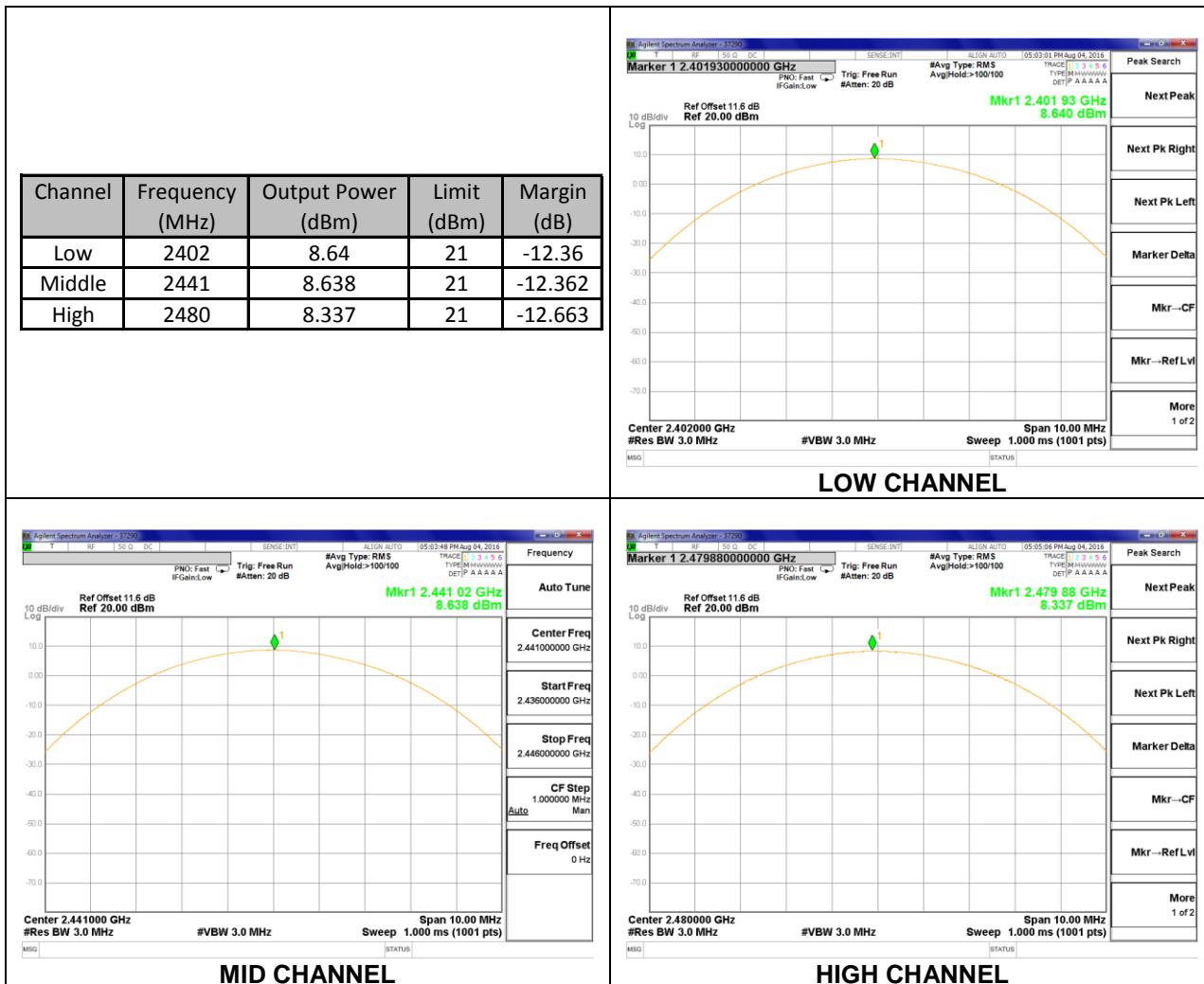
RESULTS

8.7.1. BASIC DATA RATE GFSK MODULATION



ID:	43575	Date:	8/4/16
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8.7.2. ENHANCED DATA RATE 8PSK MODULATION



ID:	43575	Date:	8/4/16
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8.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

DA 00-705:

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.

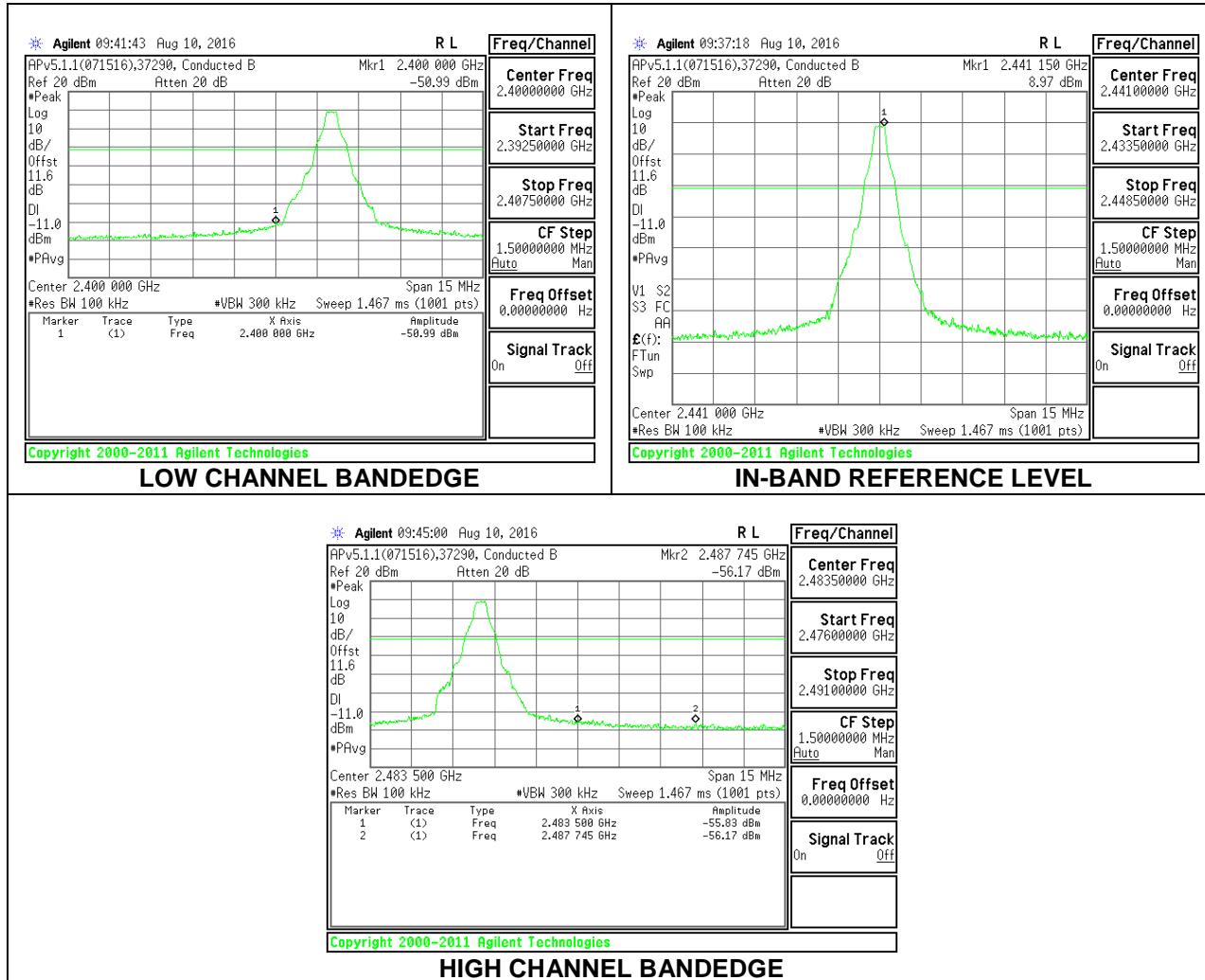
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

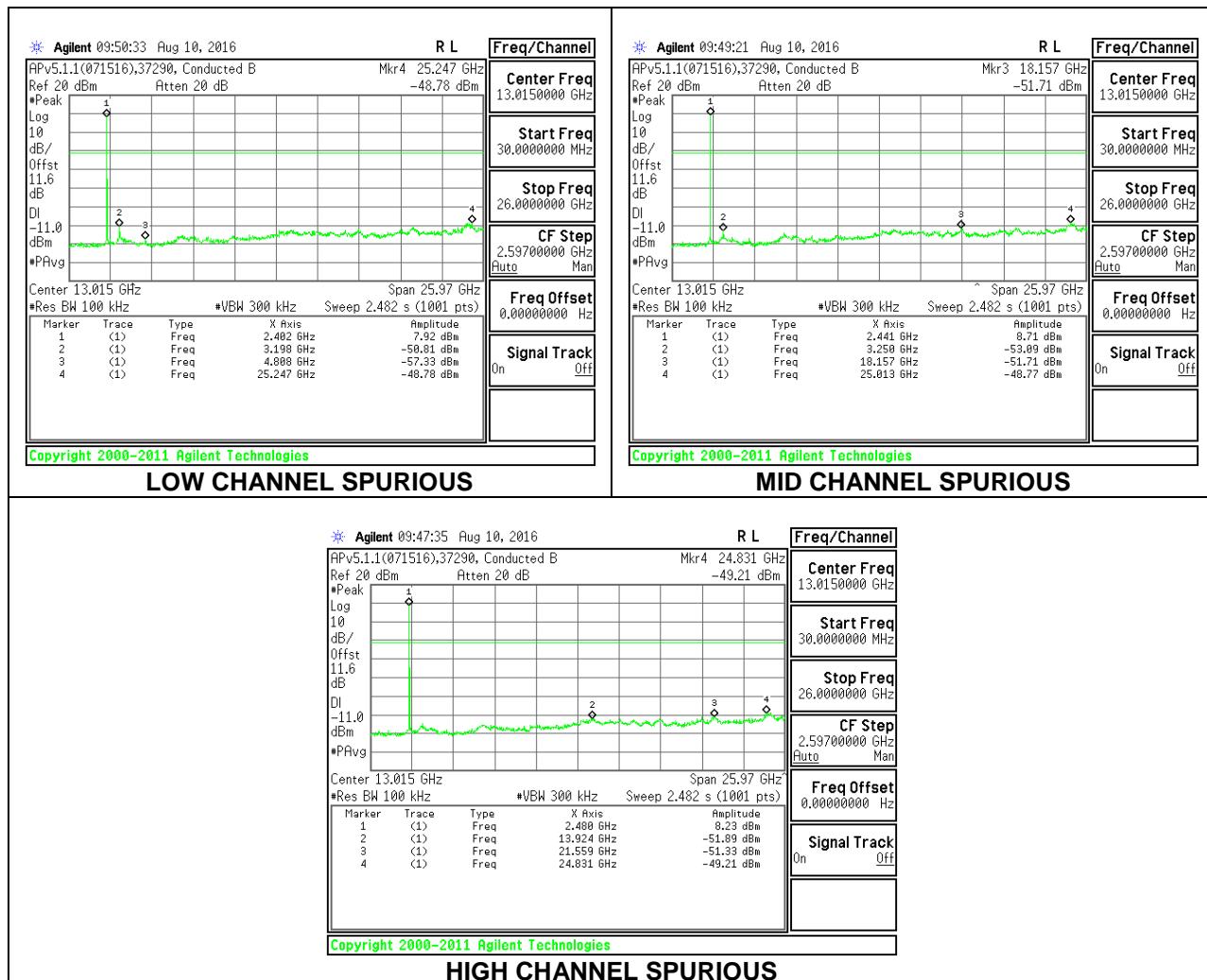
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

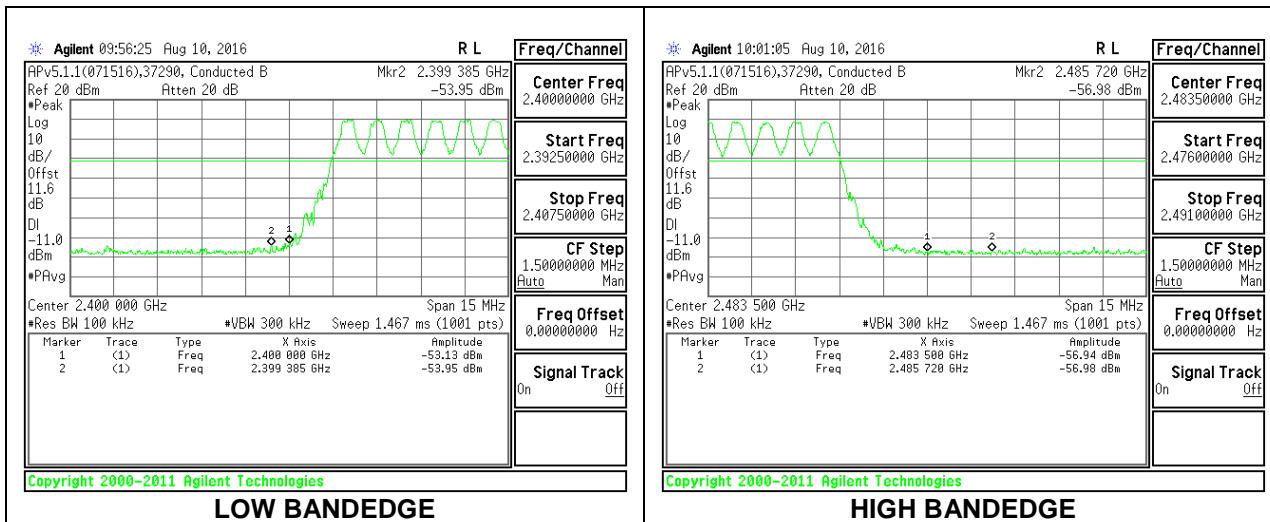
8.8.1. BASIC DATA RATE GFSK MODULATION

SPURIOUS EMISSIONS, NON HOPPING



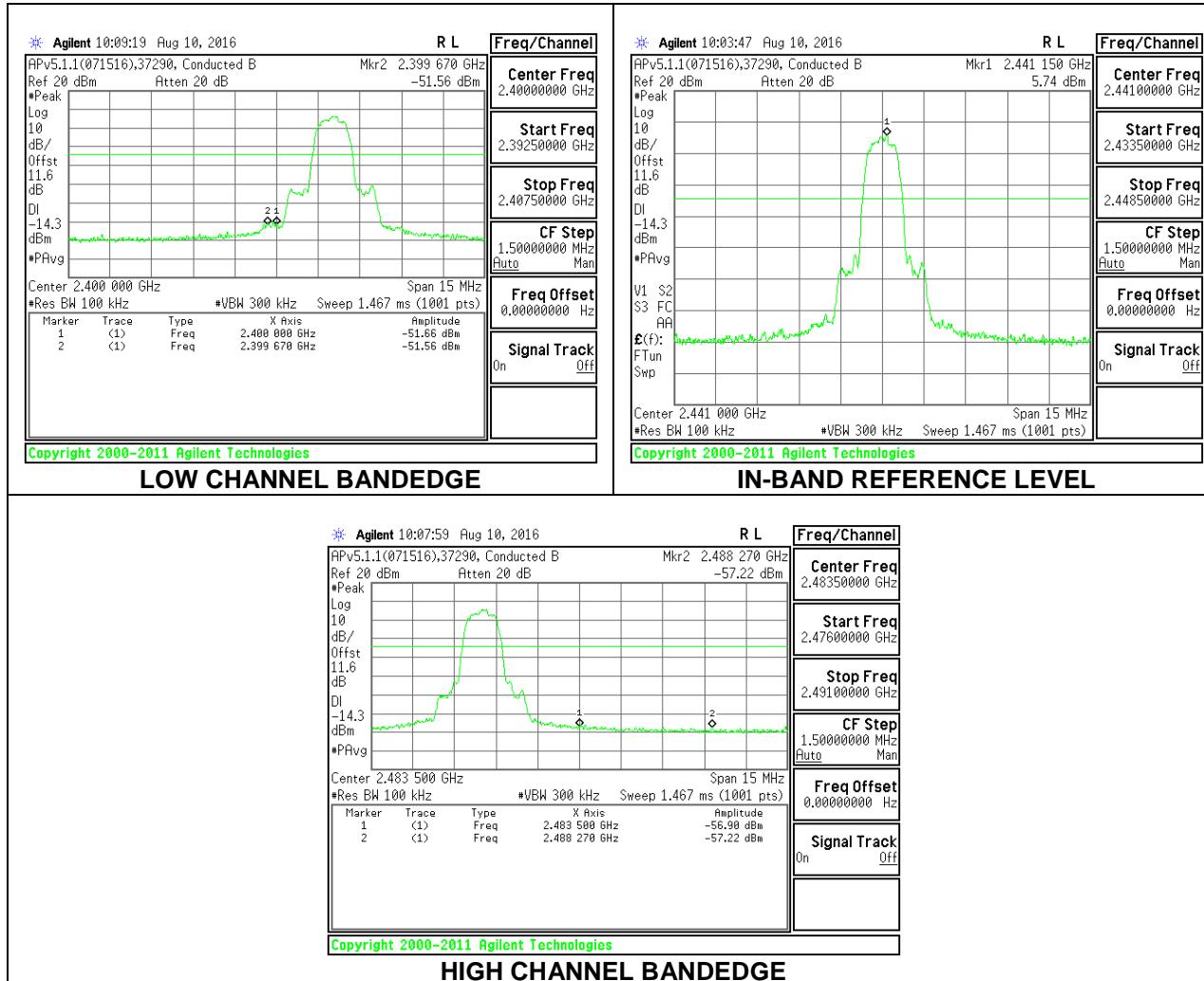


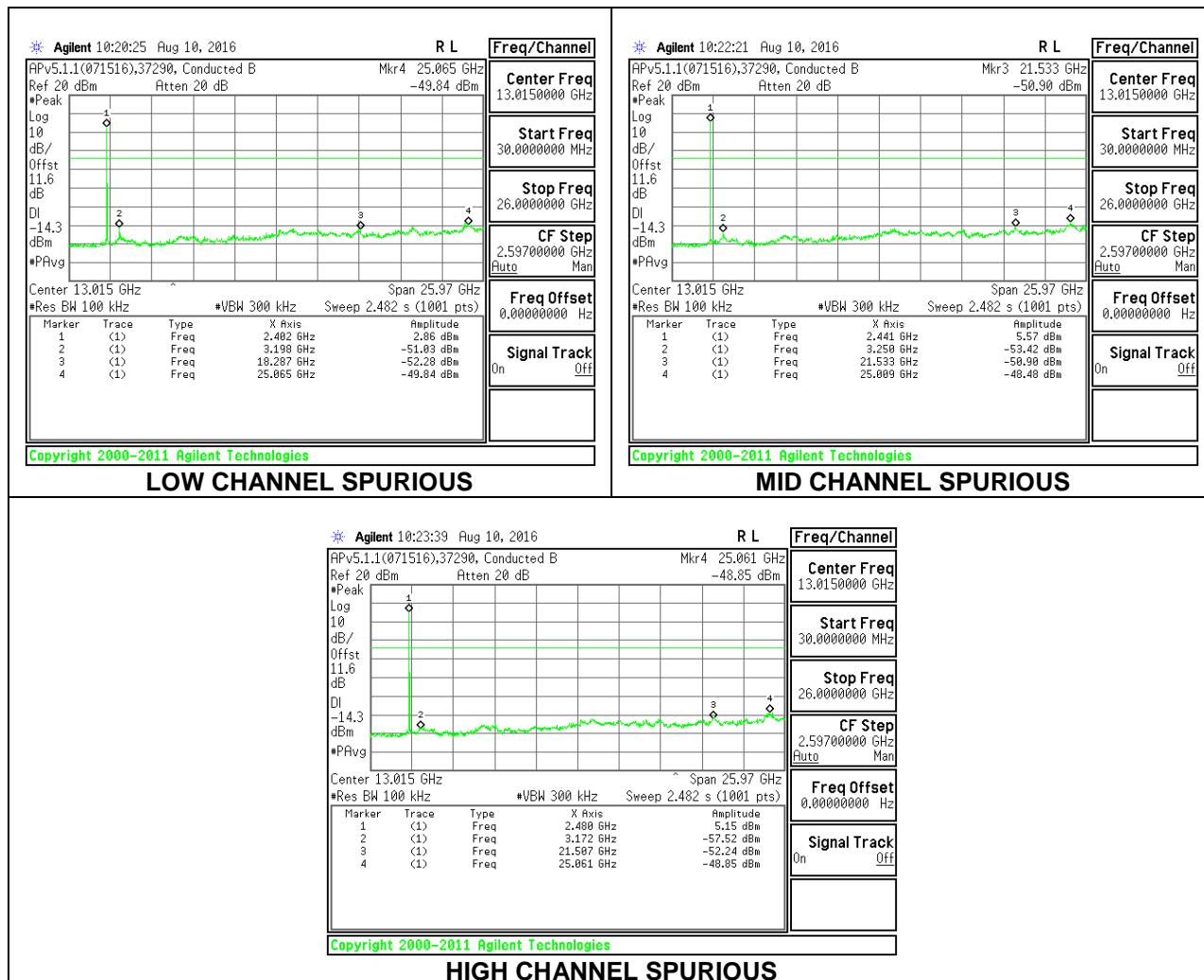
SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



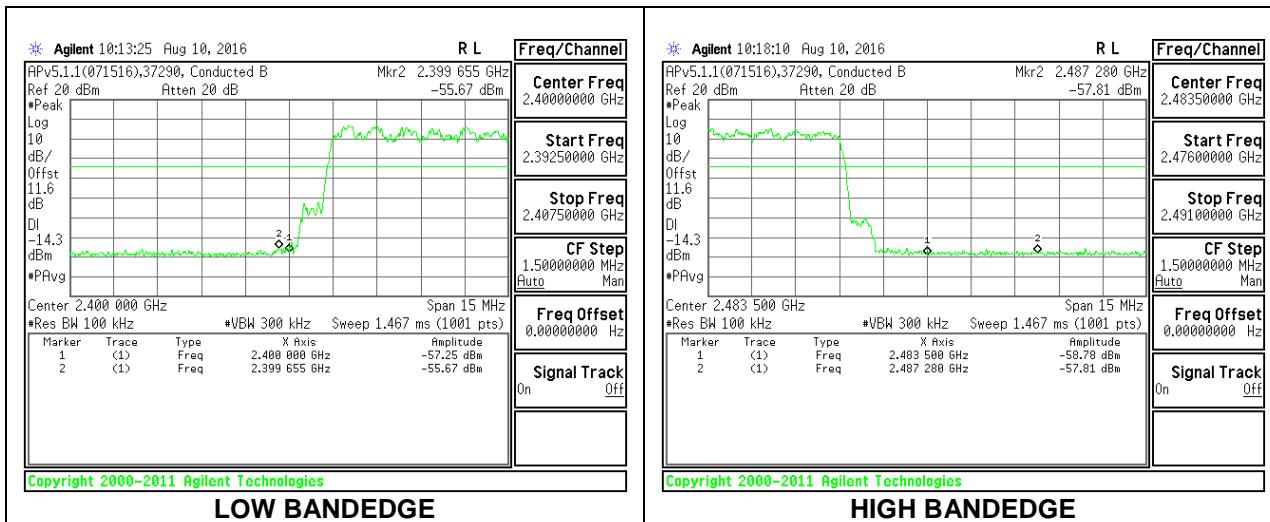
8.8.2. ENHANCED DATA RATE 8PSK MODULATION

SPURIOUS EMISSIONS, NON HOPPING





SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN Clause 8.9 and 8.10 (Transmitter)

IC RSS-GEN Clause 7.1.2 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300m	2400/F(kHz) @ 300m
0.490-1.705	24000/F(kHz) @ 30m	24000/F(kHz) @ 30m
1.705-30.0	30 @ 30m	30 @ 30m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

NOTE: KDB 937606 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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 measurements above 1 GHz the resolution bandwidth is set to 1 MHz, the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

Note: The pre-scan measurements above 1GHz the VBW is set to 30 kHz.

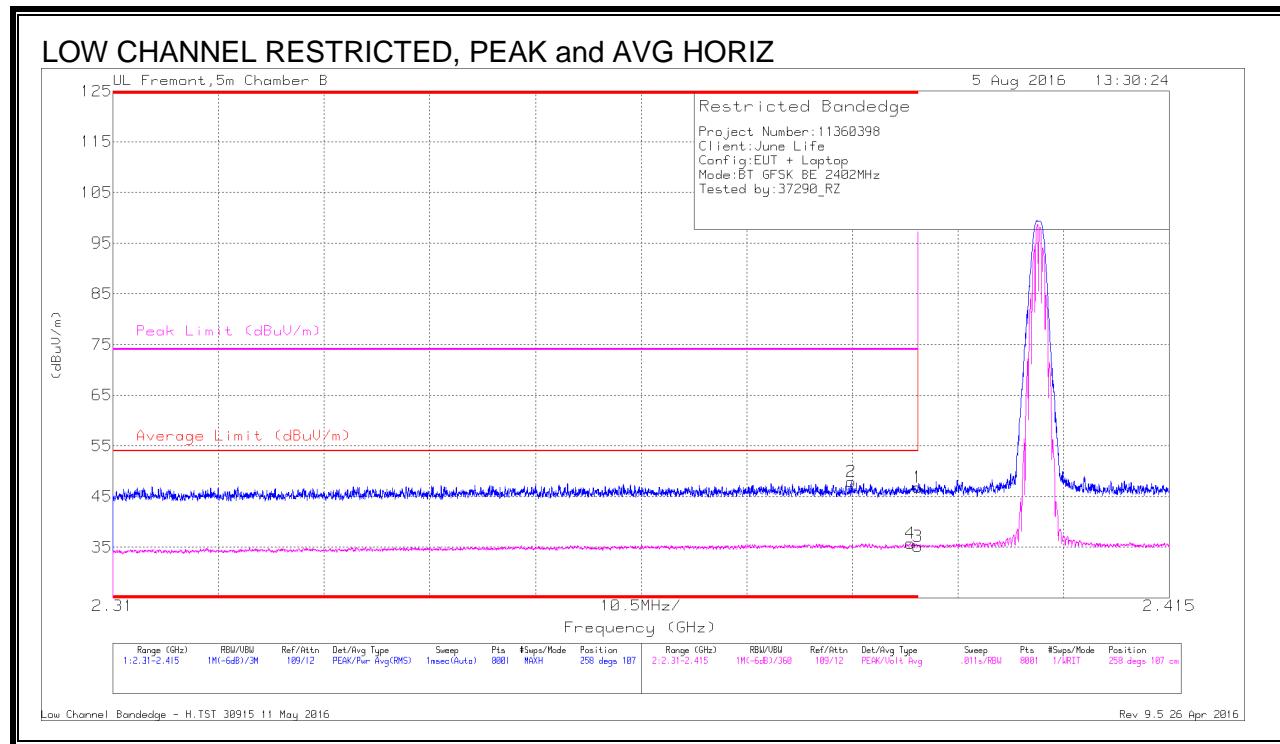
The spectrum from 9 kHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. BASIC DATA RATE GFSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



Trace Markers

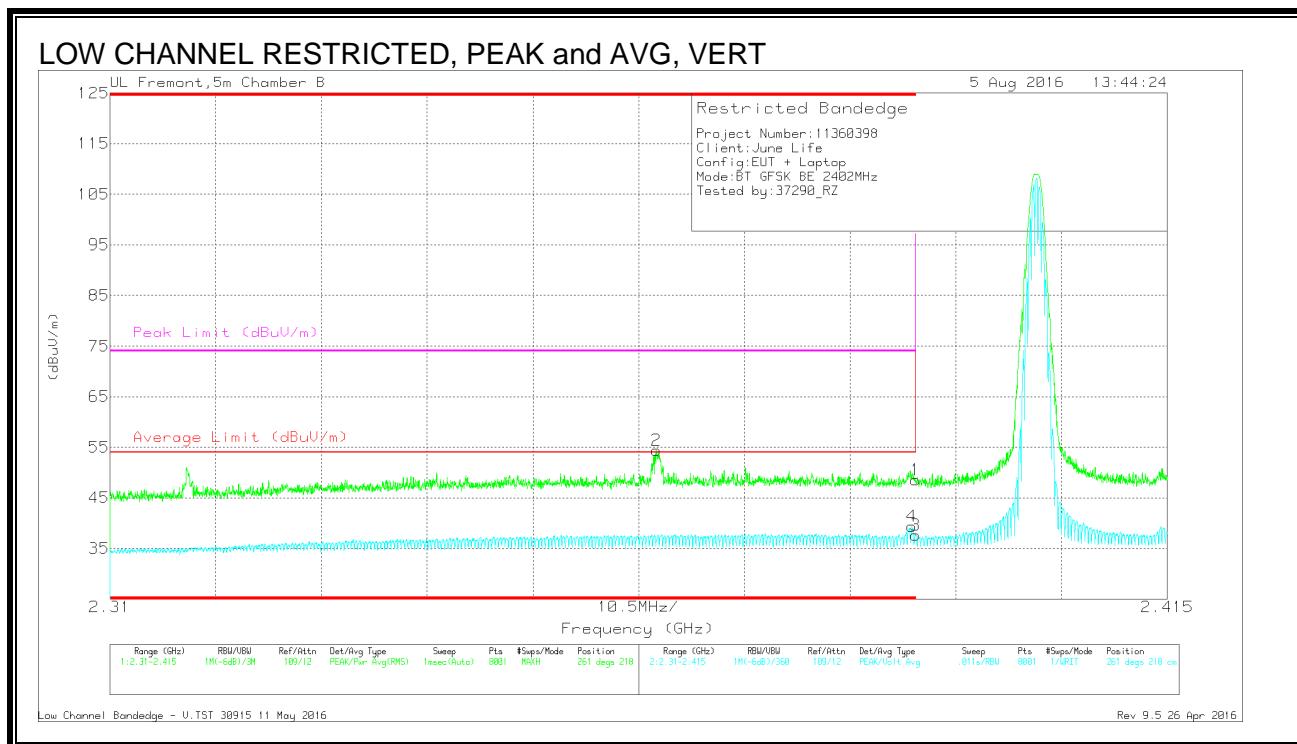
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBm/m)	Average Limit (dBm/m)	Margin (dB)	Peak Limit (dBm/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.07	PK	32.1	-22.3	46.87	-	-	74	-27.13	258	107	H
2	* 2.383	38.22	PK	32.1	-22.4	47.92	-	-	74	-26.08	258	107	H
3	* 2.39	25.31	VA1T	32.1	-22.3	35.11	54	-18.89	-	-	258	107	H
4	* 2.389	25.98	VA1T	32.1	-22.3	35.78	54	-18.22	-	-	258	107	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



Trace Markers

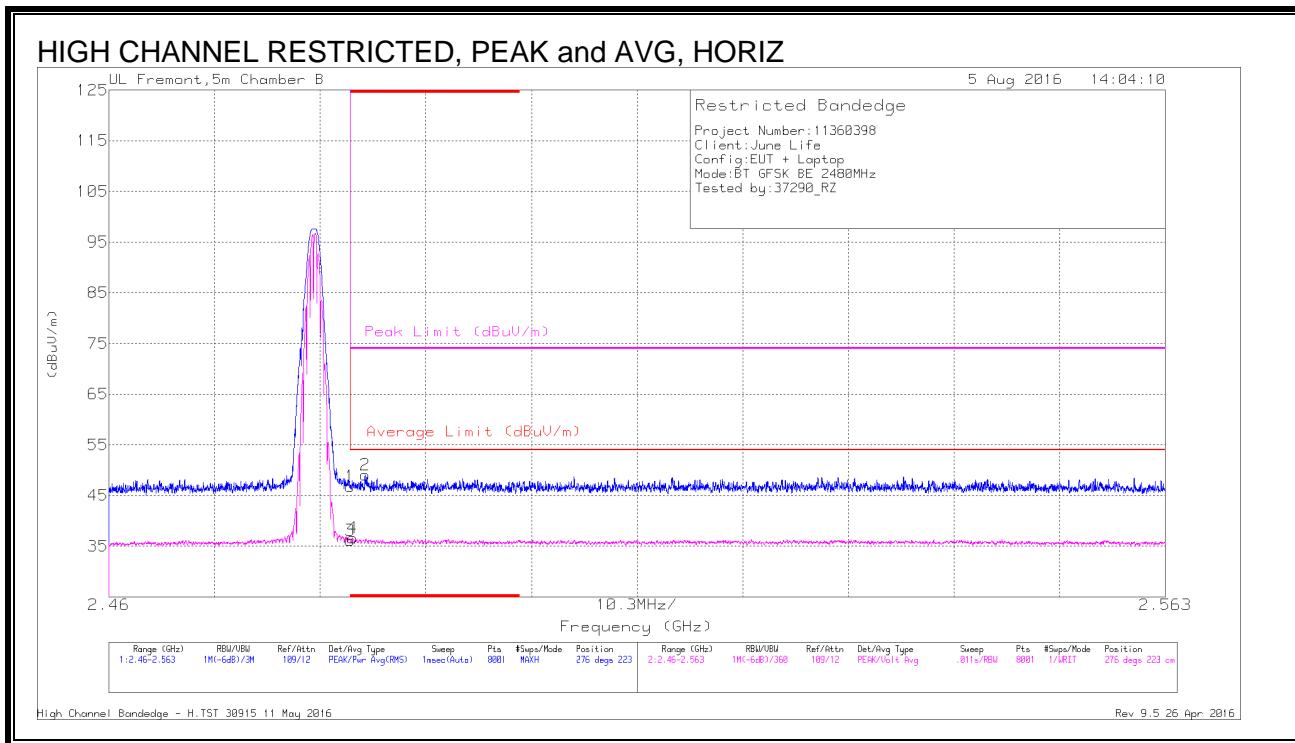
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.8	Pk	32.1	-22.3	48.6	-	-	74	-25.4	261	218	V
2	* 2.364	44.77	Pk	31.9	-22.3	54.37	-	-	74	-19.63	261	218	V
3	* 2.39	27.88	VA1T	32.1	-22.3	37.68	54	-16.32	-	-	261	218	V
4	* 2.39	29.51	VA1T	32.1	-22.3	39.31	54	-14.69	-	-	261	218	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



Trace Markers

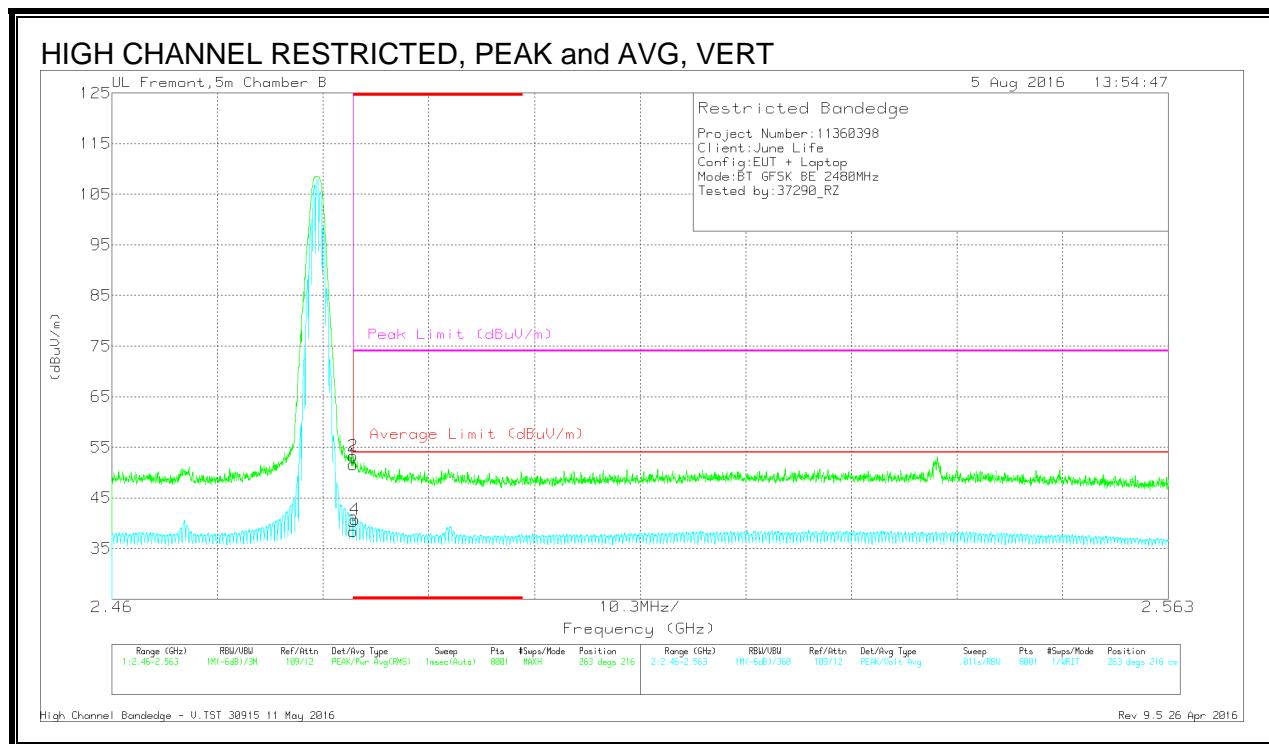
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbf/Ftr/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.78	PK	32.3	-22.3	46.78	-	-	74	-27.22	276	223	H
2	* 2.485	38.91	PK	32.3	-22.2	49.01	-	-	74	-24.99	276	223	H
3	* 2.484	26.17	VA1T	32.3	-22.3	36.17	54	-17.83	-	-	276	223	H
4	* 2.484	26.64	VA1T	32.3	-22.3	36.64	54	-17.36	-	-	276	223	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	41.6	PK	32.3	-22.3	51.6	-	-	74	-22.4	263	216	V
2	* 2.484	43.23	PK	32.3	-22.3	53.23	-	-	74	-20.77	263	216	V
3	* 2.484	28.4	VA1T	32.3	-22.3	38.4	54	-15.6	-	-	263	216	V
4	* 2.484	30.78	VA1T	32.3	-22.3	40.78	54	-13.22	-	-	263	216	V

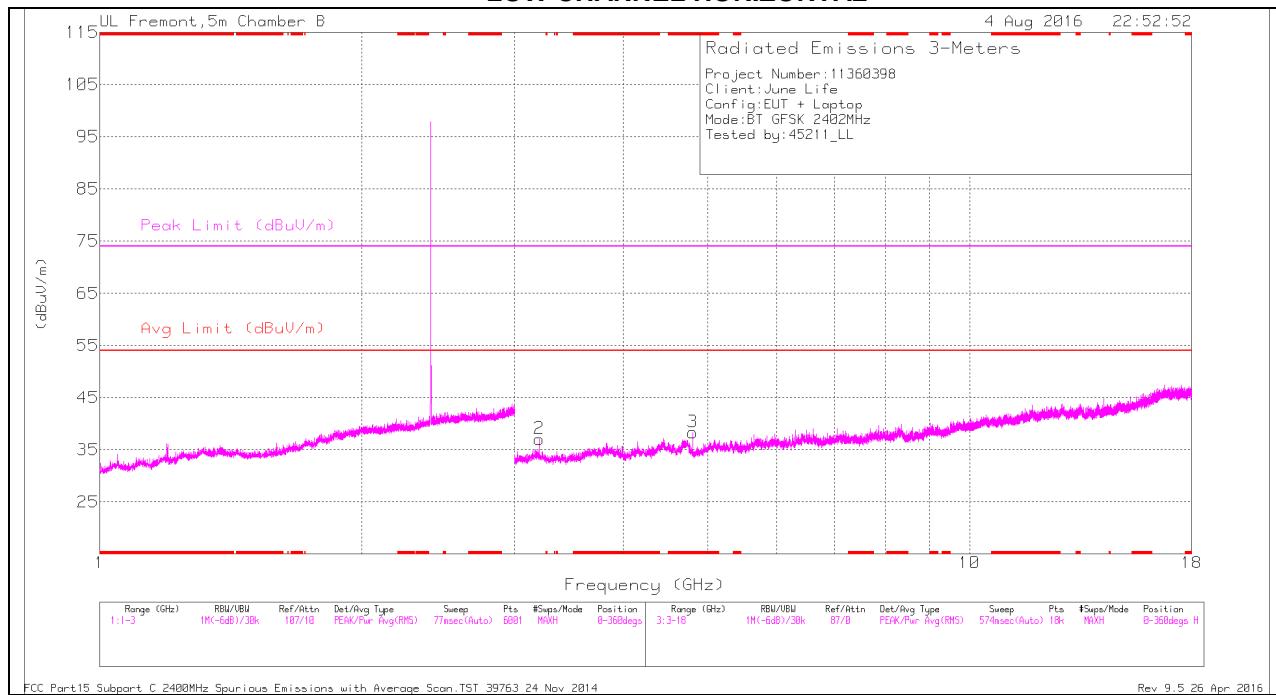
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

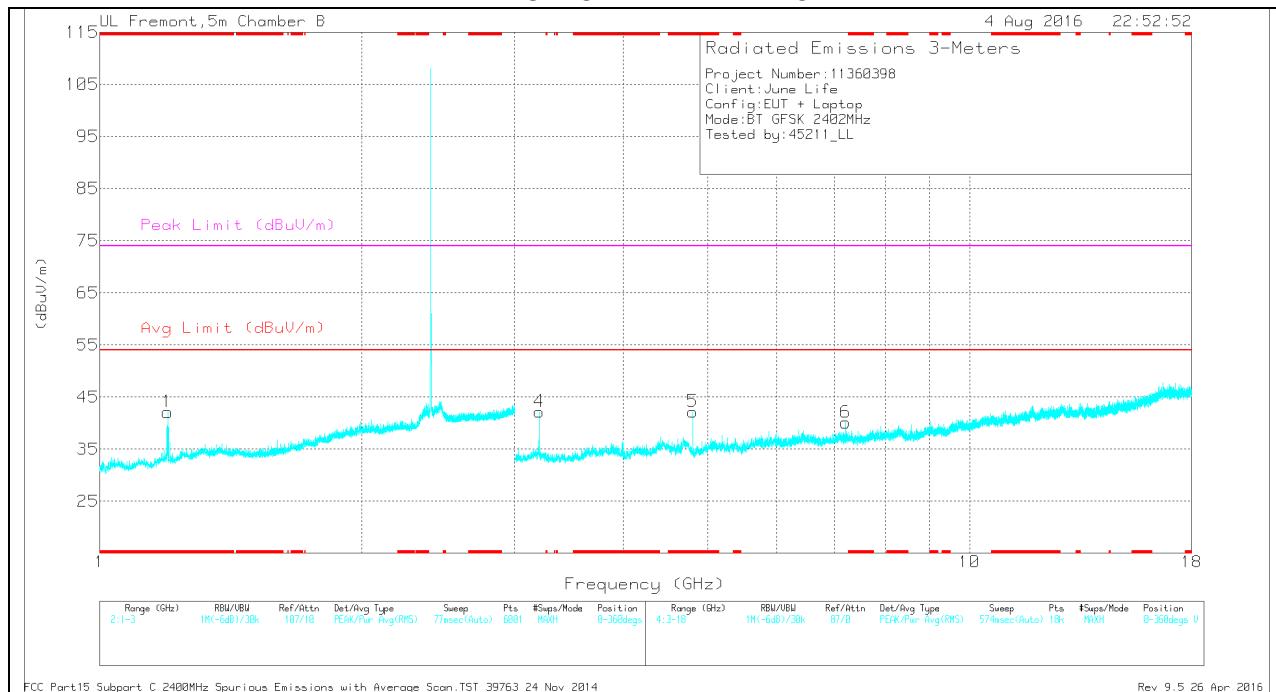
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



LOW CHANNEL DATA

Trace Markers

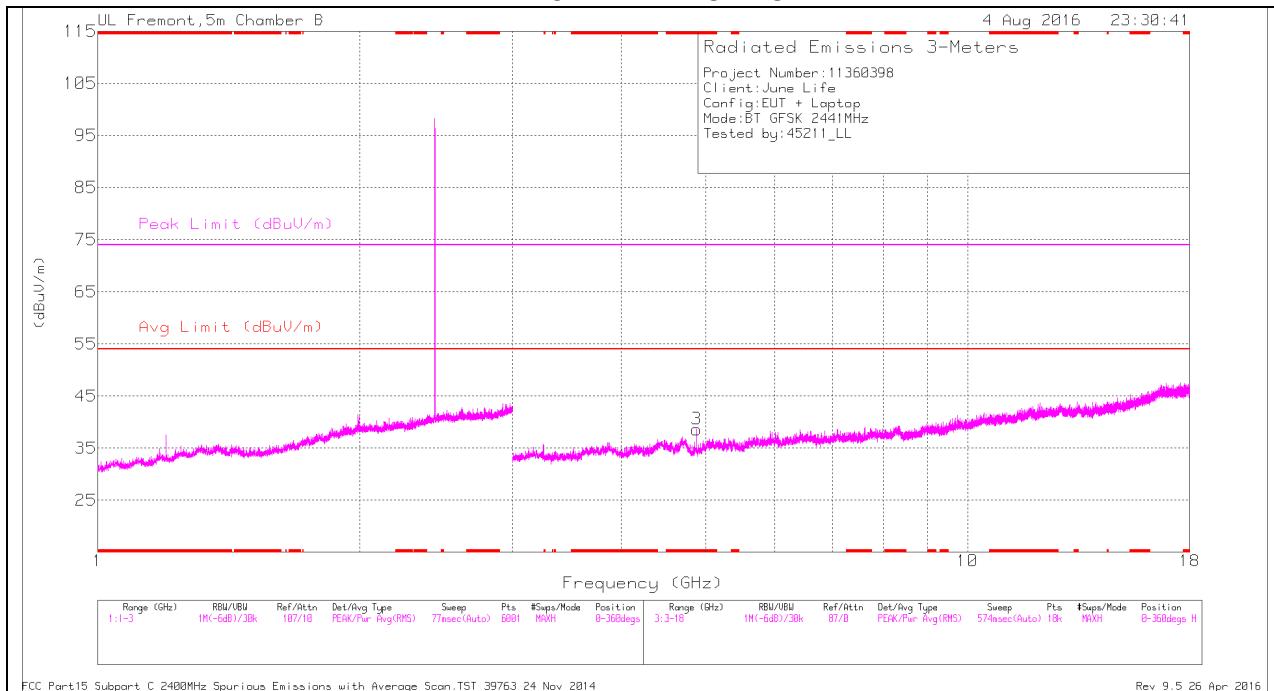
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.196	43.79	PK	28.3	-23.4	48.69	-	-	74	-25.31	44	218	V
	* 1.195	25.74	VA1T	28.3	-23.5	30.54	54	-23.46	-	-	44	218	V
3	* 4.804	40.85	PK	33.8	-31.3	43.35	-	-	74	-30.65	142	183	H
	* 4.804	33.4	VA1T	33.8	-31.3	35.90	54	-18.10	-	-	142	183	H
5	* 4.804	43.06	PK	33.8	-31.3	45.56	-	-	74	-28.44	210	112	V
	* 4.804	36.63	VA1T	33.8	-31.3	39.13	54	-14.87	-	-	210	112	V
2	3.203	42.86	PK	33	-32.3	43.56	-	-	74	-30.44	242	345	H
4	3.203	45.58	PK	33	-32.3	46.28	-	-	74	-27.72	152	216	V
6	7.206	42.21	PK	35.6	-30	47.81	-	-	74	-26.19	185	184	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

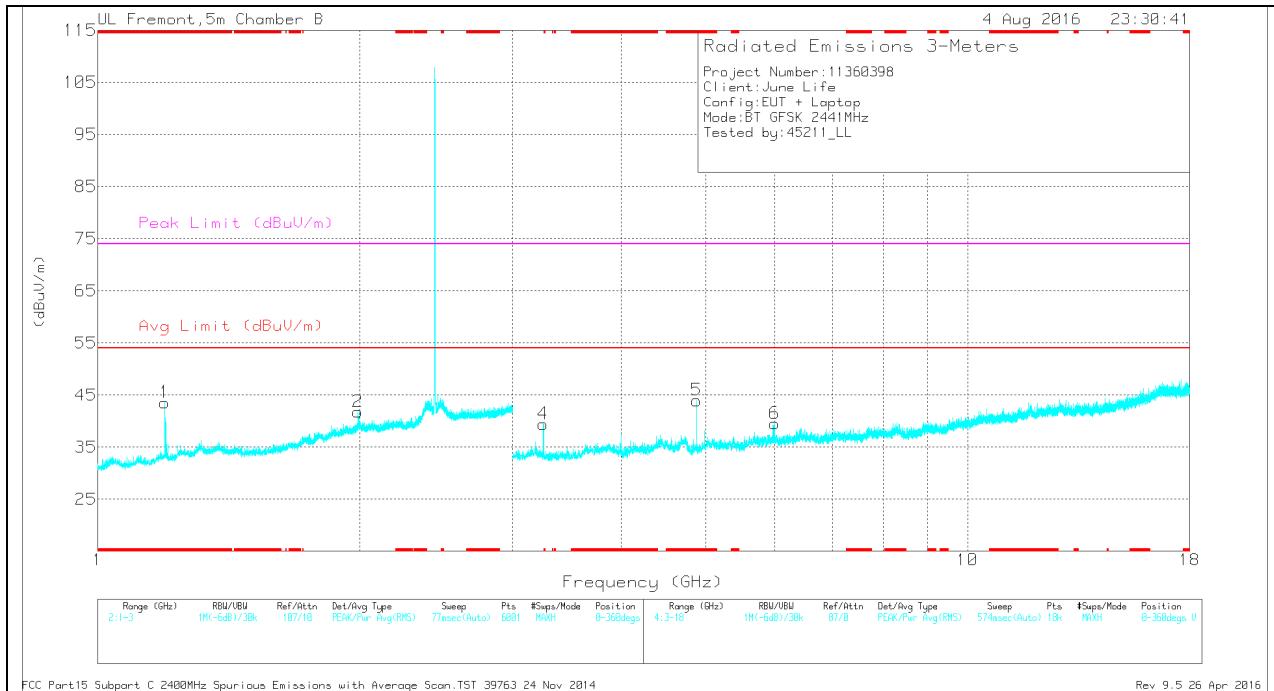
Pk - Peak detector

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

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



MID CHANNEL DATA

Trace Markers

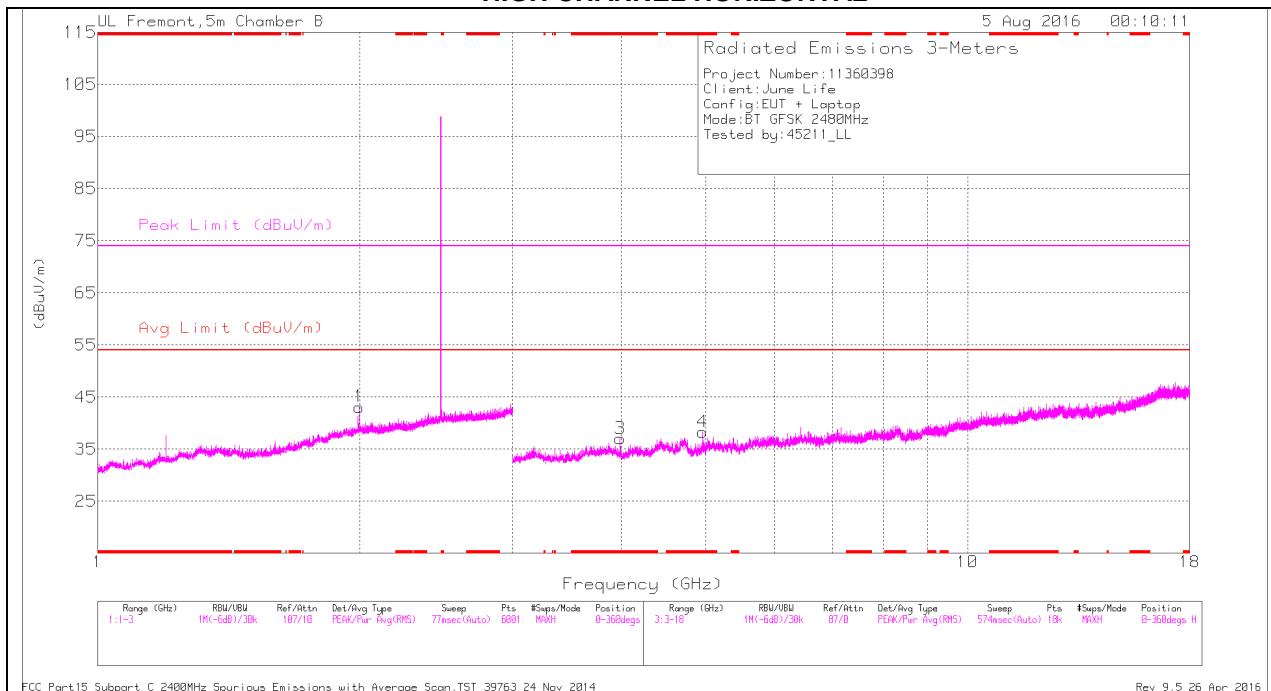
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.195	43.41	PK	28.3	-23.5	48.21	-	-	74	-25.79	72	178	V
	* 1.196	25.09	VA1T	28.3	-23.4	29.99	54	-24.01	-	-	72	178	V
3	* 4.882	43.38	PK	33.8	-32.8	44.38	-	-	74	-29.62	134	217	H
	* 4.882	35.97	VA1T	33.8	-32.8	36.97	54	-17.03	-	-	134	217	H
5	* 4.882	46.81	PK	33.8	-32.8	47.81	-	-	74	-26.19	180	193	V
	* 4.882	41.41	VA1T	33.8	-32.8	42.41	54	-11.59	-	-	180	193	V
2	1.991	39.95	PK	31.4	-22.2	49.15	-	-	74	-24.85	2	353	V
4	3.255	45.88	PK	32.7	-32.9	45.68	-	-	74	-28.32	157	204	V
6	5.997	40.32	PK	35.2	-31.2	44.32	-	-	74	-29.68	52	238	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

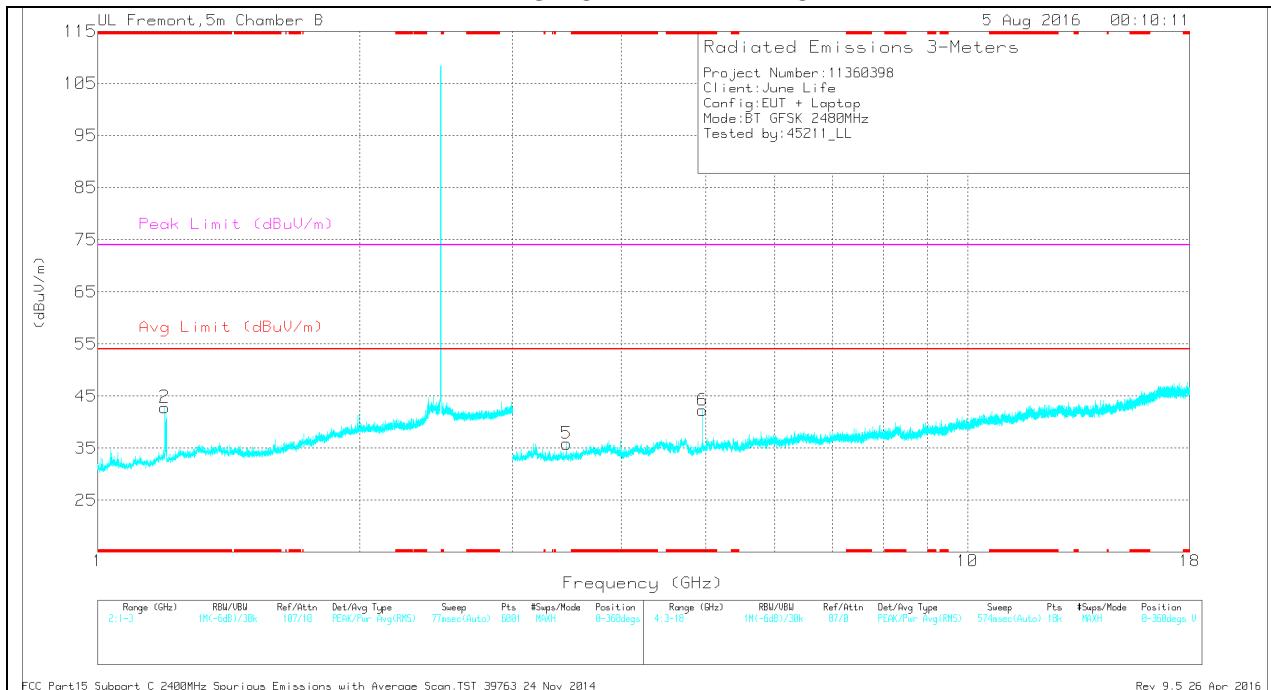
Pk - Peak detector

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

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filt/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	* 1.192	34.68	PK	28.3	-23.5	39.48	-	-	74	-34.52	218	179	V
	* 1.194	24.27	VA1T	28.3	-23.5	29.07	54	-24.93	-	-	218	179	V
3	* 4.96	43.25	PK	34	-32.2	45.05	-	-	74	-28.95	125	147	H
	* 4.96	34.91	VA1T	34	-32.2	36.71	54	-17.29	-	-	125	147	H
4	* 3.99	42.17	PK	33.3	-32.9	42.57	-	-	74	-31.43	59	127	H
	* 3.991	29.34	VA1T	33.3	-32.9	29.74	54	-24.26	-	-	59	127	H
6	* 4.96	45.99	PK	34	-32.2	47.79	-	-	74	-26.21	174	104	V
	* 4.96	39.29	VA1T	34	-32.2	41.09	54	-12.91	-	-	174	104	V
1	1.999	40.38	PK	31.5	-22.1	49.78	-	-	-	-	73	229	H
5	3.459	40.86	PK	32.8	-33	40.66	-	-	-	-	71	252	V

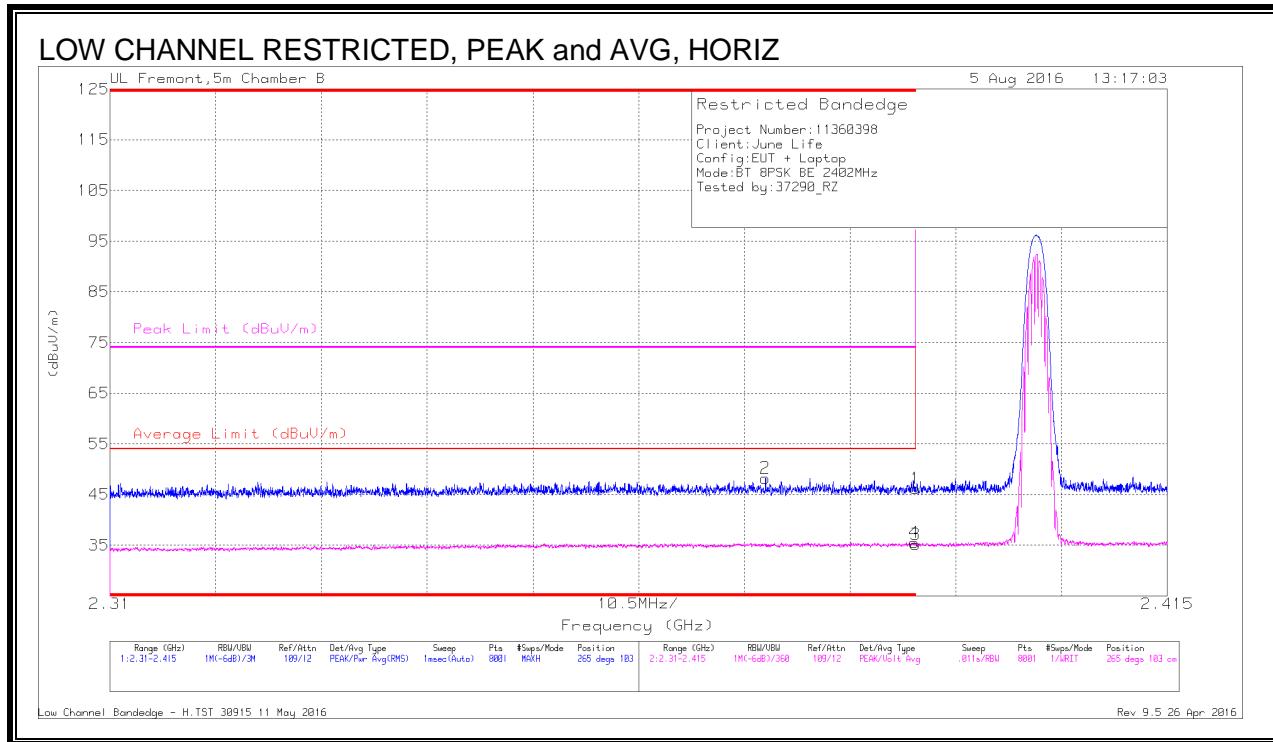
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

9.2.2. ENHANCED DATA RATE 8PSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



Trace Markers

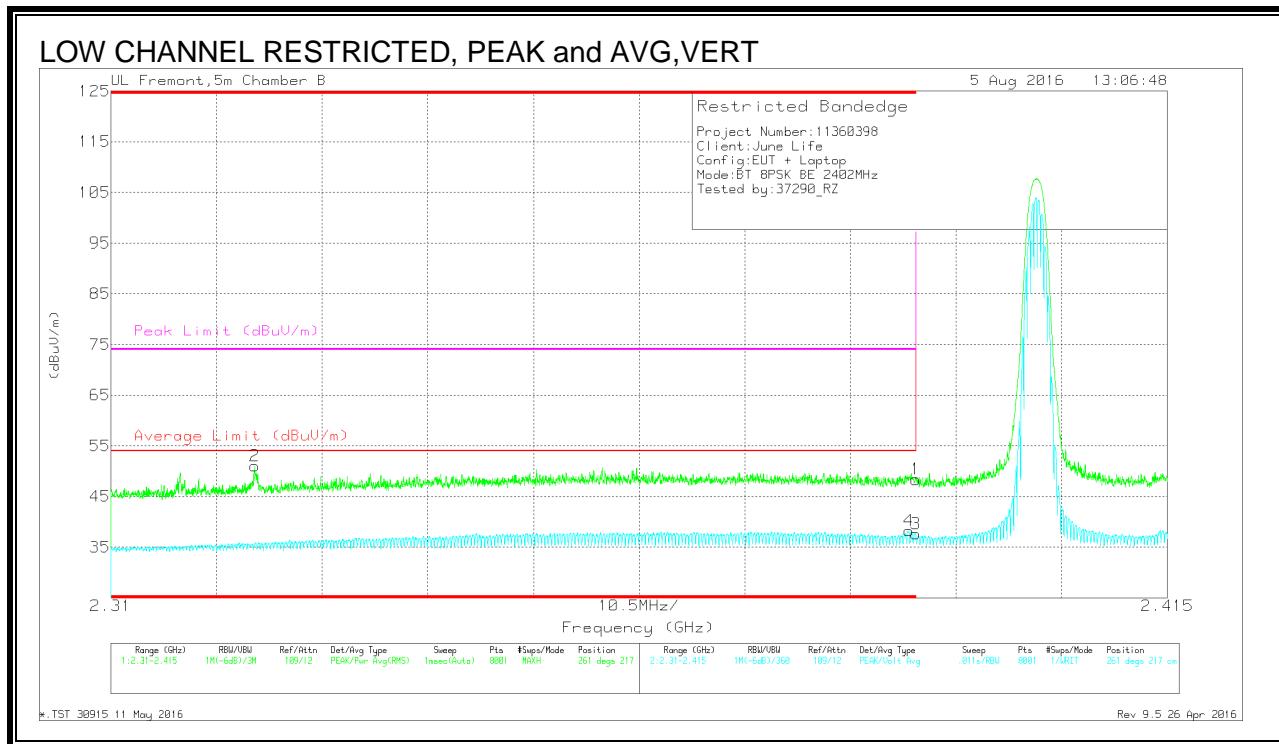
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.43	PK	32.1	-22.3	46.23	-	-	74	-27.77	265	103	H
2	* 2.375	38.54	PK	32	-22.3	48.24	-	-	74	-25.76	265	103	H
3	* 2.39	25.38	VA1T	32.1	-22.3	35.18	54	-18.82	-	-	265	103	H
4	* 2.39	25.77	VA1T	32.1	-22.3	35.57	54	-18.43	-	-	265	103	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



Trace Markers

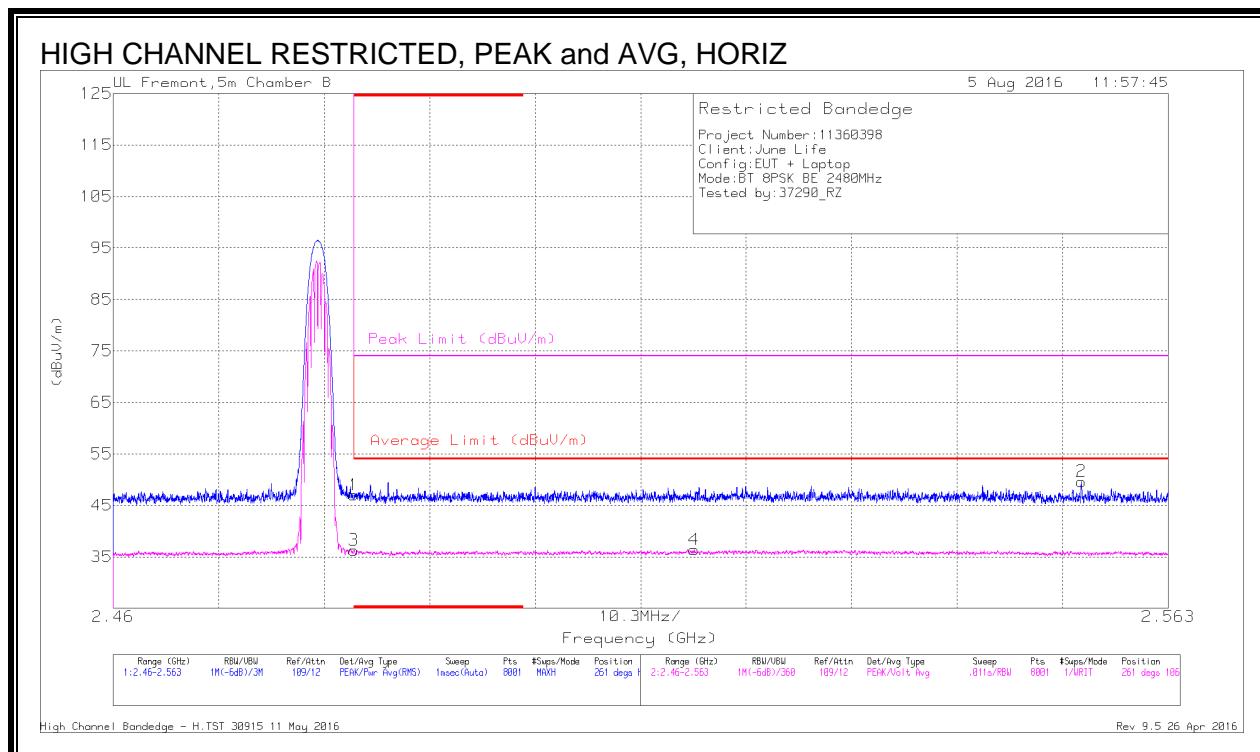
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.57	Pk	32.1	-22.3	48.37	-	-	74	-25.63	261	217	V
2	* 2.324	41.79	Pk	31.6	-22.3	51.09	-	-	74	-22.91	261	217	V
3	* 2.39	27.79	VA1T	32.1	-22.3	37.59	54	-16.41	-	-	261	217	V
4	* 2.389	28.42	VA1T	32.1	-22.3	38.22	54	-15.78	-	-	261	217	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



Trace Markers

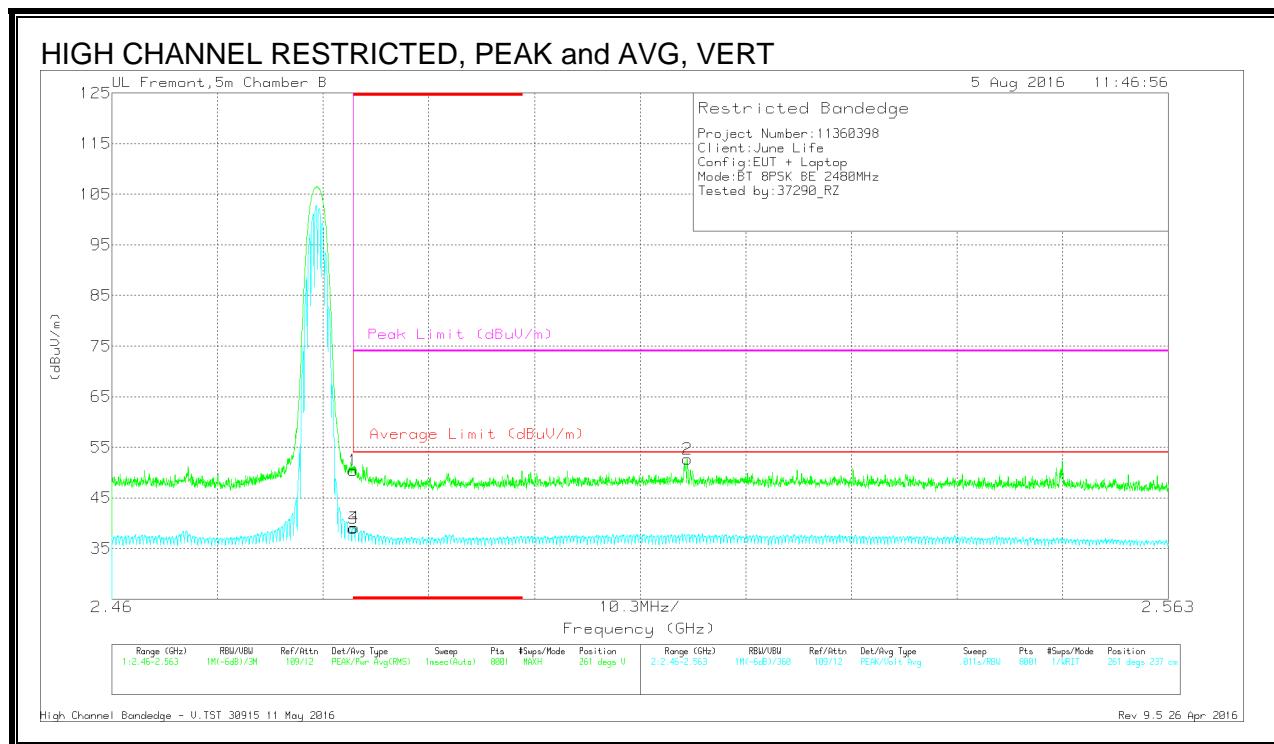
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	37.02	PK	32.3	-22.3	47.02	-	-	74	-26.98	261	106	H
3	* 2.484	26.29	VA1T	32.3	-22.3	36.29	54	-17.71	-	-	261	106	H
4	2.517	26.28	VA1T	32.3	-22.2	36.38	54	-17.62	-	-	261	106	H
2	2.555	39.64	PK	32.2	-22.2	49.64	-	-	74	-24.36	261	106	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	40.47	Pk	32.3	-22.3	50.47	-	-	74	-23.53	261	237	V
3	* 2.484	28.99	VA1T	32.3	-22.3	38.99	54	-15.01	-	-	261	237	V
4	* 2.484	29.15	VA1T	32.3	-22.3	39.15	54	-14.85	-	-	261	237	V
2	2.516	42.46	Pk	32.3	-22.1	52.66	-	-	74	-21.34	261	237	V

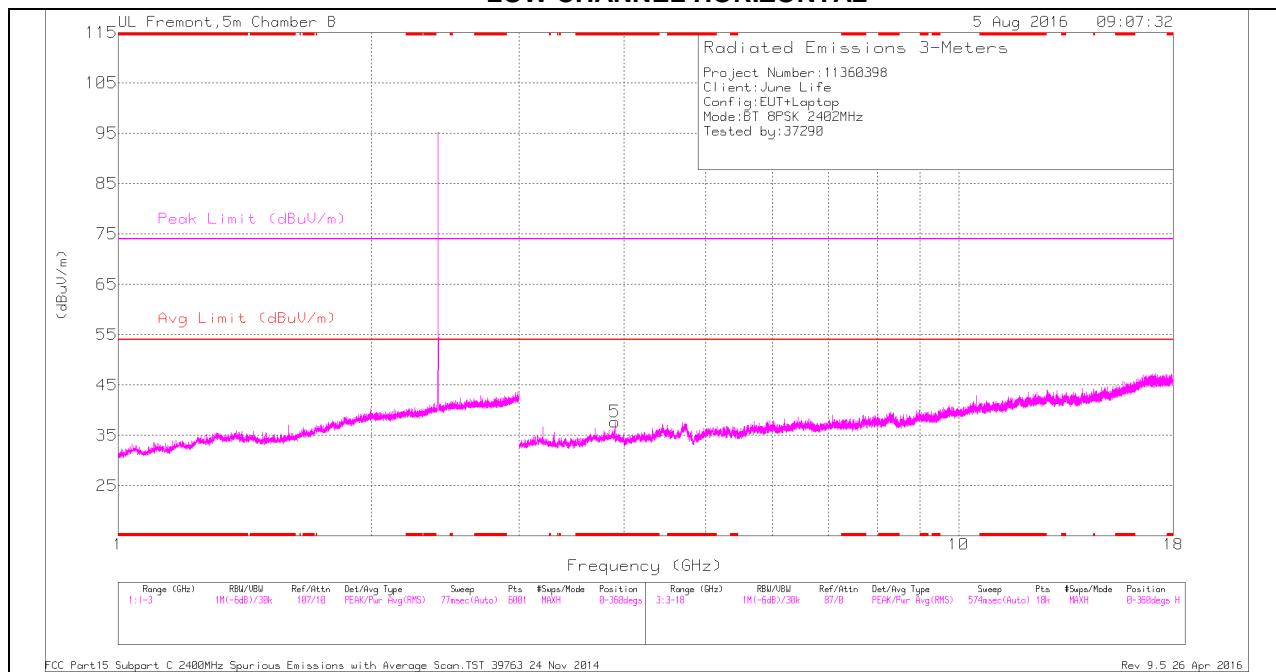
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

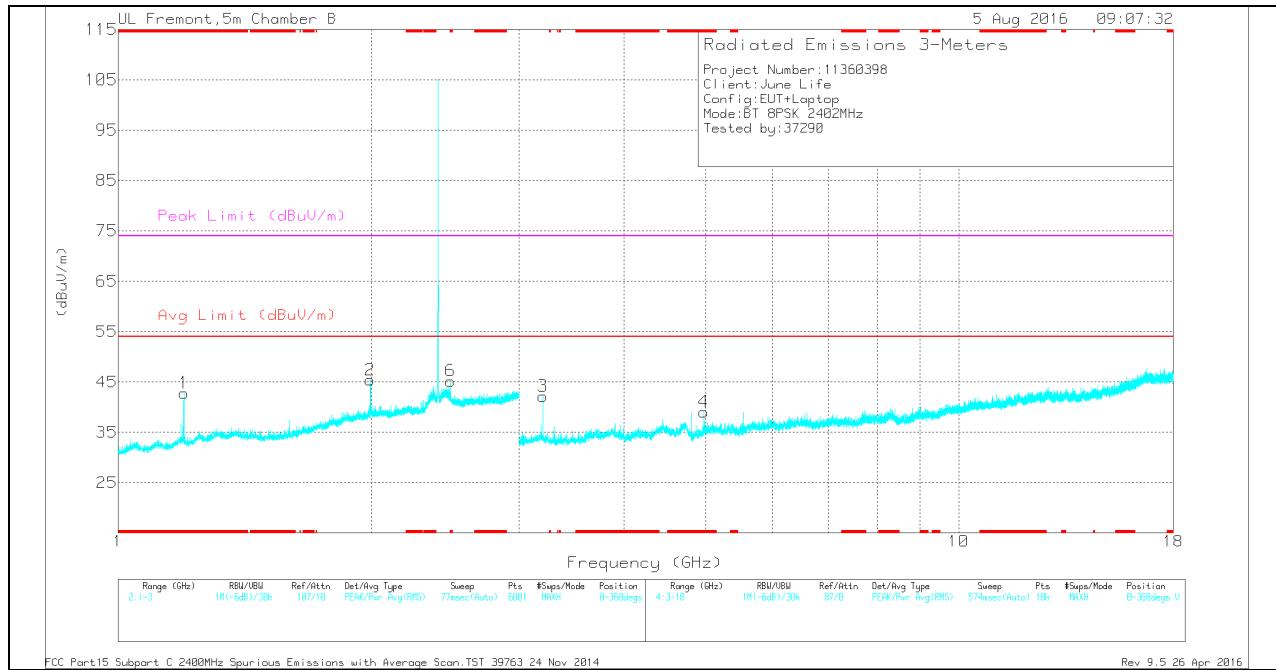
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



LOW CHANNEL DATA

Trace Markers

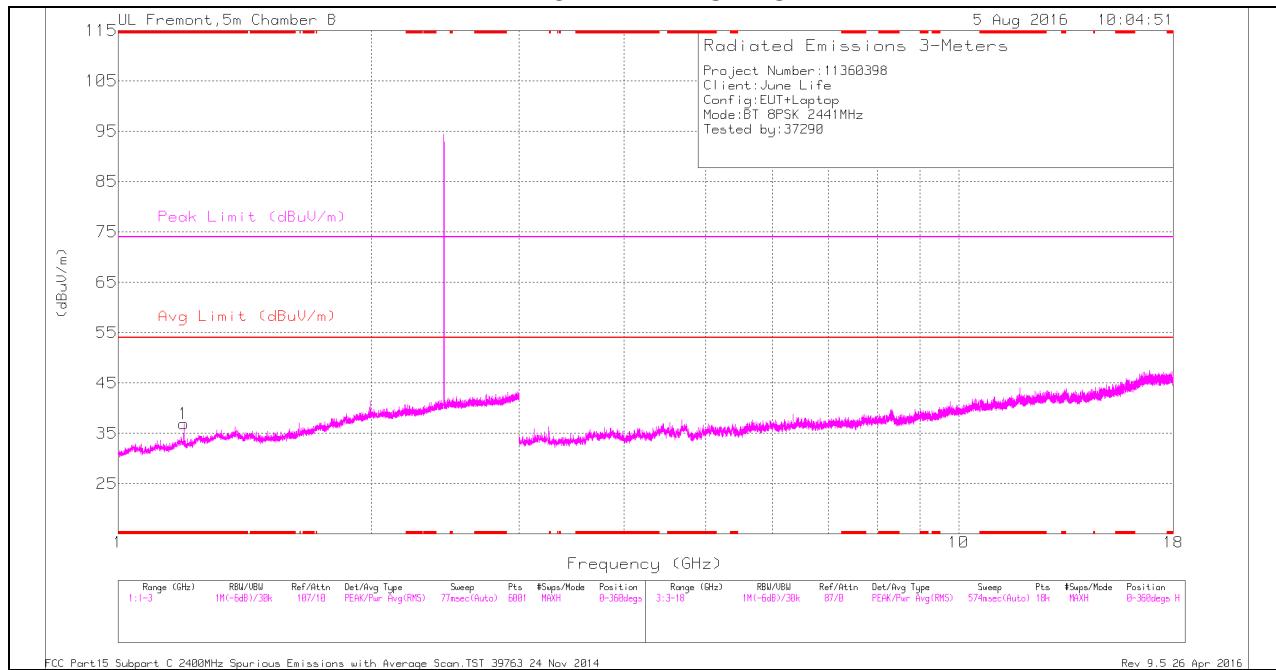
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.2	44.97	PK	28.3	-23.5	49.77	-	-	74	-24.23	51	252	V
	* 1.198	25.18	VA1T	28.3	-23.5	29.98	54	-24.02	-	-	51	252	V
6	* 2.487	43.44	PK	32.3	-22.3	53.44	-	-	74	-20.56	233	157	V
	* 2.487	27.75	VA1T	32.3	-22.3	37.75	54	-16.25	-	-	233	157	V
5	* 3.897	39.91	PK	33.3	-31.8	41.41	-	-	74	-32.59	180	129	H
	* 3.903	28.9	VA1T	33.3	-31.9	30.30	54	-23.70	-	-	180	129	H
4	* 4.98	39.65	PK	34	-31.9	41.75	-	-	74	-32.25	122	102	V
	* 4.979	28.82	VA1T	34	-31.9	30.92	54	-23.08	-	-	122	102	V
2	1.996	43.37	PK	31.5	-22.1	52.77	-	-	74	-21.23	56	283	V
3	3.203	45.87	PK	33	-32.3	46.57	-	-	74	-27.43	171	200	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



MID CHANNEL DATA

Trace Markers

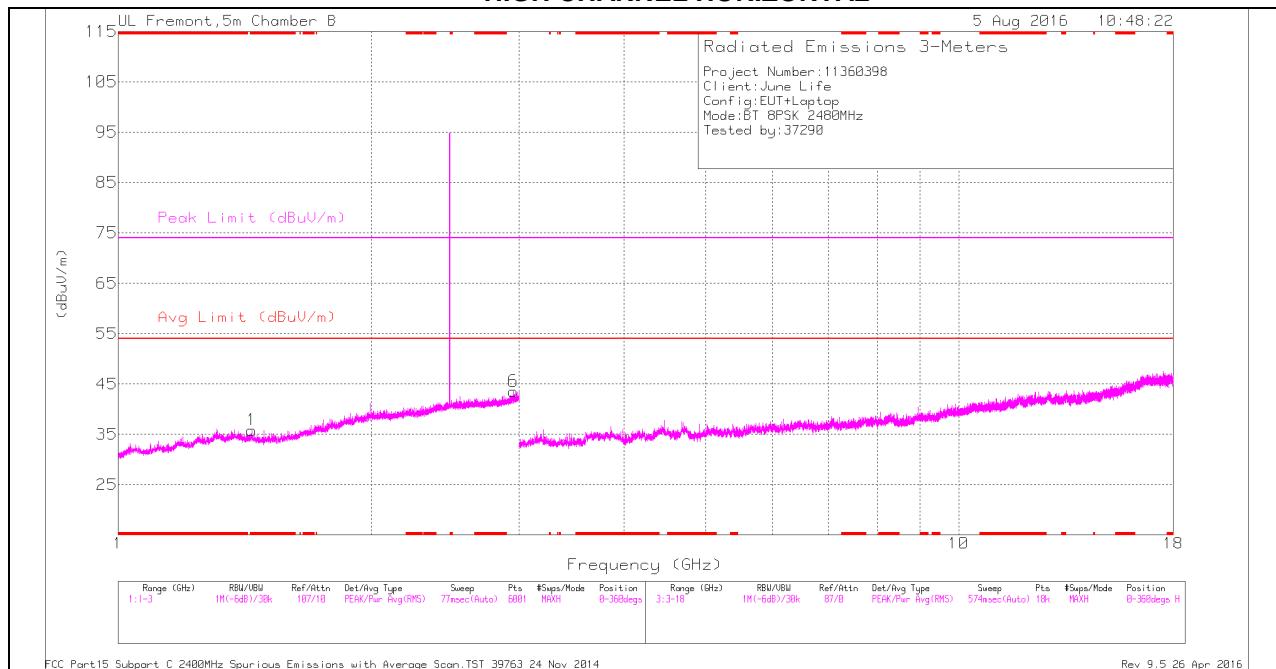
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.197	42.66	PK	28.3	-23.4	47.56	-	-	74	-26.44	136	309	H
	* 1.199	24.73	VA1T	28.3	-23.5	29.53	54	-24.47	-	-	136	309	H
2	* 1.196	44.74	PK	28.3	-23.4	49.64	-	-	74	-24.36	30	313	V
	* 1.195	25.37	VA1T	28.3	-23.4	30.27	54	-23.73	-	-	30	313	V
5	* 4.882	43.64	PK	33.8	-32.8	44.64	-	-	74	-29.36	190	198	V
	* 4.882	35.17	VA1T	33.8	-32.8	36.17	54	-17.83	-	-	190	198	V
6	* 4.982	39.78	PK	34	-31.8	41.98	-	-	74	-32.02	195	308	V
	* 4.982	28.94	VA1T	34	-31.8	31.14	54	-22.86	-	-	195	308	V
3	1.995	42.8	PK	31.5	-22.2	52.1	-	-	74	-21.9	55	237	V
4	3.255	45.64	PK	32.7	-32.9	45.44	-	-	74	-28.56	175	209	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

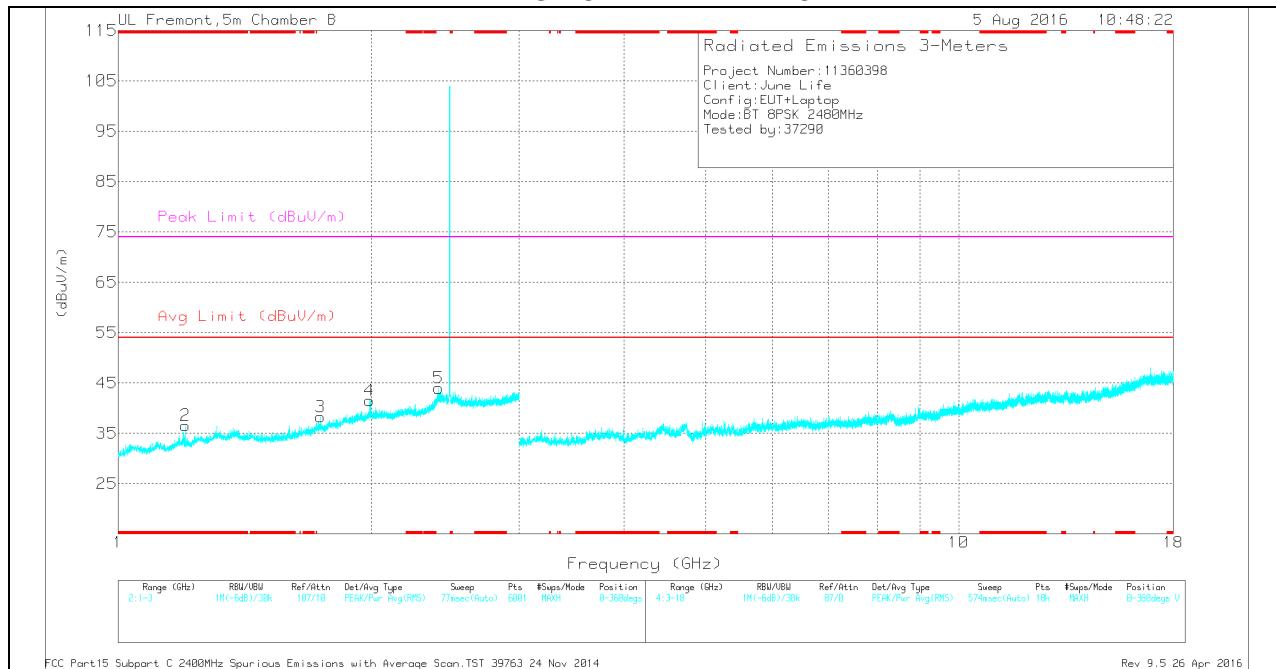
Pk - Peak detector

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

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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	* 1.44	35.18	PK	28.4	-22.6	40.98	-	-	74	-33.02	354	128	H
	* 1.44	24.31	VA1T	28.4	-22.6	30.11	54	-23.89	-	-	354	128	H
2	* 1.203	39.13	PK	28.3	-23.5	43.93	-	-	74	-30.07	48	251	V
	* 1.201	23.7	VA1T	28.3	-23.4	28.60	54	-25.40	-	-	48	251	V
3	1.741	35.05	PK	29.6	-22	42.65	-	-	74	-31.35	175	114	V
4	1.99	35.54	PK	31.4	-22.2	44.74	-	-	74	-29.26	120	297	V
5	2.407	44.98	PK	32.2	-22.4	54.78	-	-	74	-19.22	263	217	V
6	2.957	36.79	PK	32.5	-21	48.29	-	-	74	-25.71	110	204	H

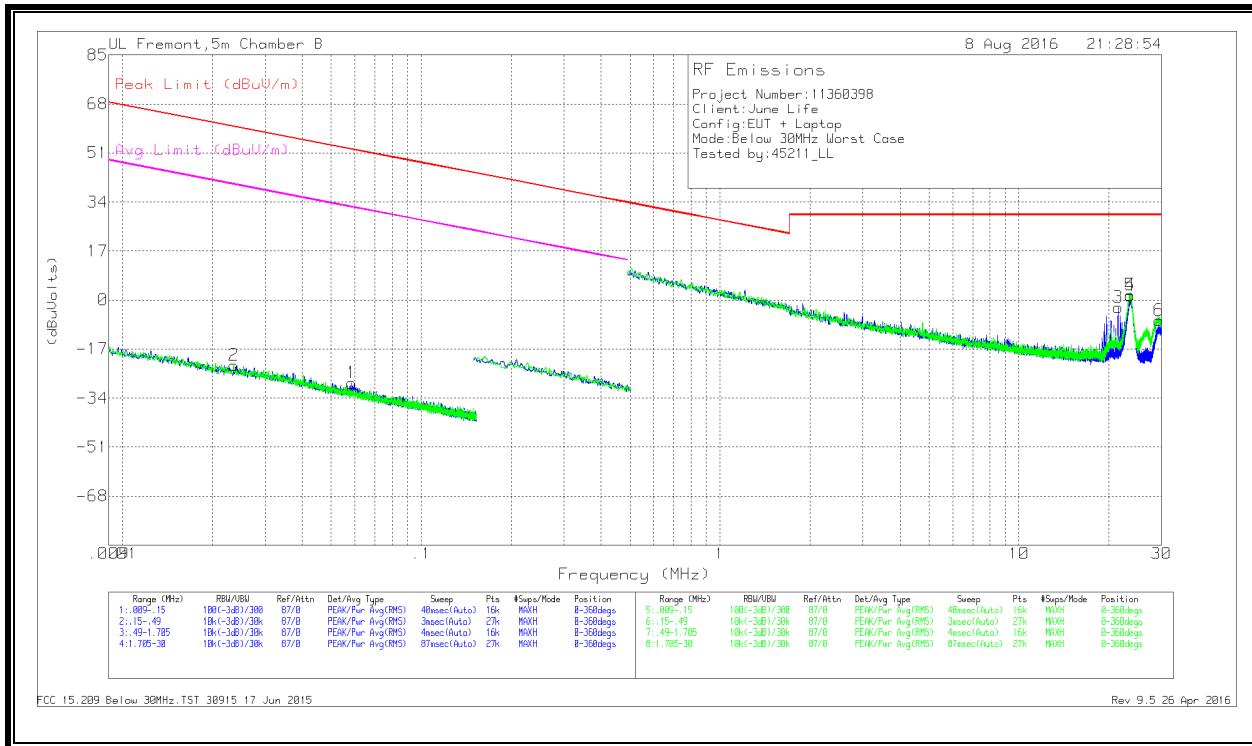
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

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

9.3. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS BELOW 30MHz (WORST-CASE CONFIGURATION)



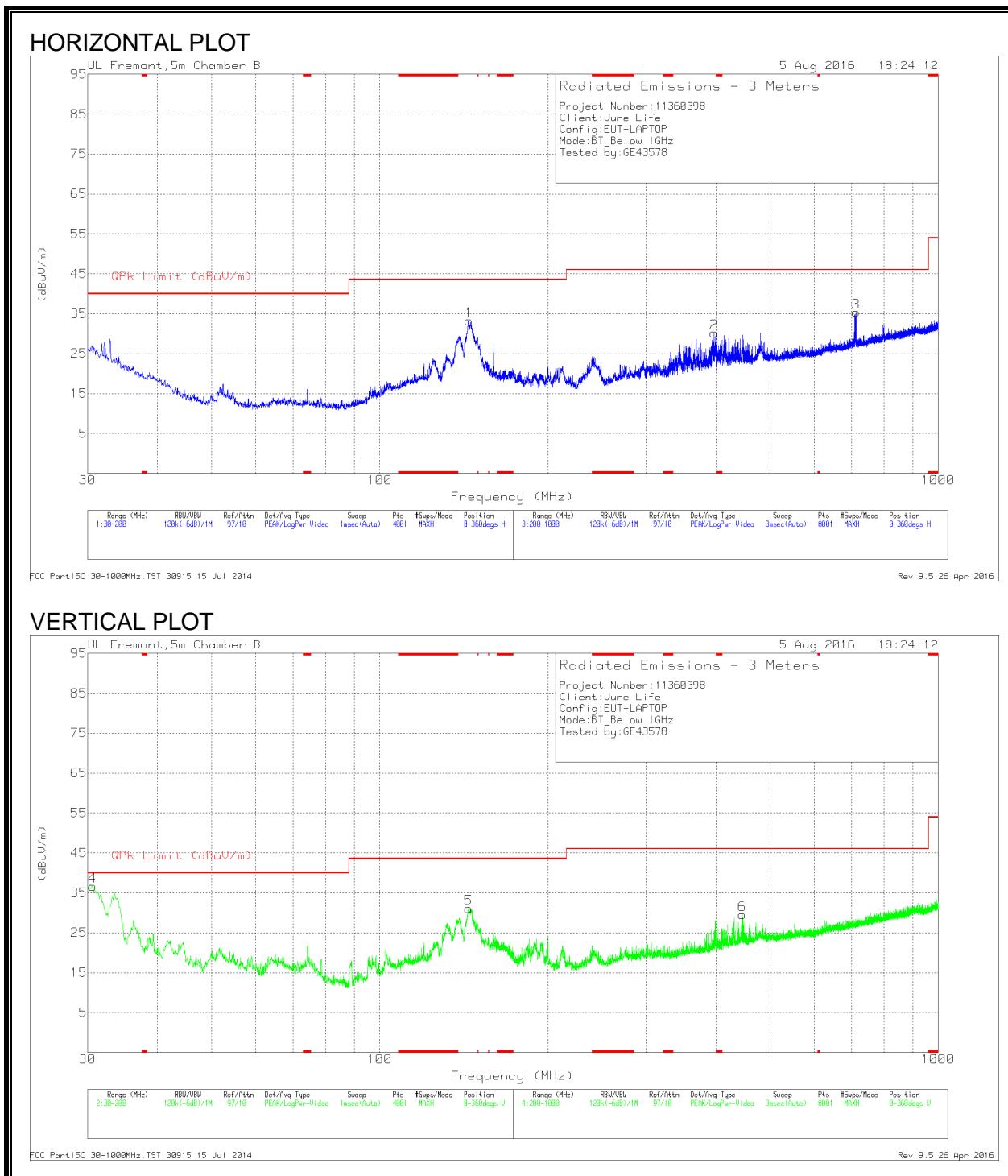
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.05857	38.52	Pk	11.2	1.4	-80	-28.88	52.25	-81.13	32.25	-61.13	0-360
2	.02356	42.5	Pk	13.5	1.4	-80	-22.6	60.16	-82.76	40.16	-62.76	0-360
3	21.44198	25.95	Pk	9.8	1.7	-40	-2.55	29.54	-32.09	-	-	0-360
4	23.593	30.2	Pk	9.5	1.7	-40	1.4	29.54	-28.14	-	-	0-360
5	23.582	30.56	Pk	9.5	1.7	-40	1.76	29.54	-27.78	-	-	0-360
6	29.40207	23.01	Pk	8.1	1.7	-40	-7.19	29.54	-36.73	-	-	0-360

Pk - Peak detector

9.4. WORST-CASE BELOW 1 GHz

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



BELOW 1GHz DATA

Trace Markers

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	30.6449	36.11	Qp	24.7	-28.9	31.91	40	-8.09	222	111	V
5	144.41	41.81	Pk	16.9	-27.6	31.11	43.52	-12.41	0-360	100	V
1	144.495	43.92	Pk	16.9	-27.6	33.22	43.52	-10.3	0-360	200	H
2	396.5	36.95	Pk	19.4	-26.2	30.15	46.02	-15.87	0-360	100	H
6	446.3	35.09	Pk	20.7	-26.3	29.49	46.02	-16.53	0-360	200	V
3	712.6	36.22	Pk	24.3	-25.2	35.32	46.02	-10.7	0-360	400	H

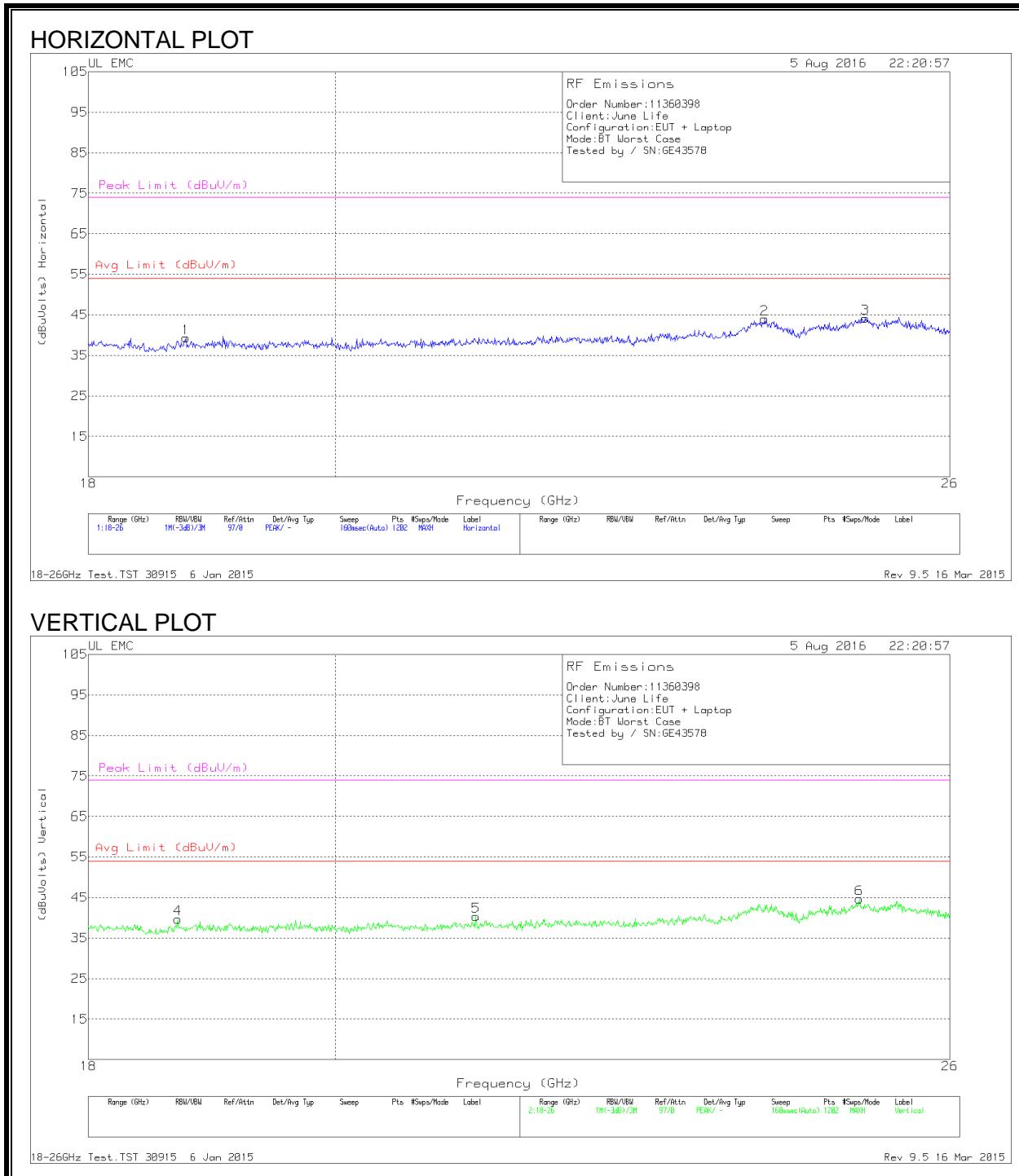
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

9.5. WORST-CASE 18-26GHz

SPURIOUS EMISSIONS 18-26GHz (WORST-CASE CONFIGURATION)



BELOW 1GHz DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T449 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.766	41.33	Pk	32.4	-24.9	-9.5	39.33	54	-14.67	74	-34.67
2	24.022	43.7	Pk	34	-24.2	-9.5	44	54	-10	74	-30
3	25.074	43.97	Pk	34.3	-24.6	-9.5	44.17	54	-9.83	74	-29.83
4	18.699	40.97	Pk	32.4	-24.2	-9.5	39.67	54	-14.33	74	-34.33
5	21.237	42.03	Pk	33.1	-25.3	-9.5	40.33	54	-13.67	74	-33.67
6	25.014	44.47	Pk	34.2	-24.5	-9.5	44.67	54	-9.33	74	-29.33

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

Pk - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

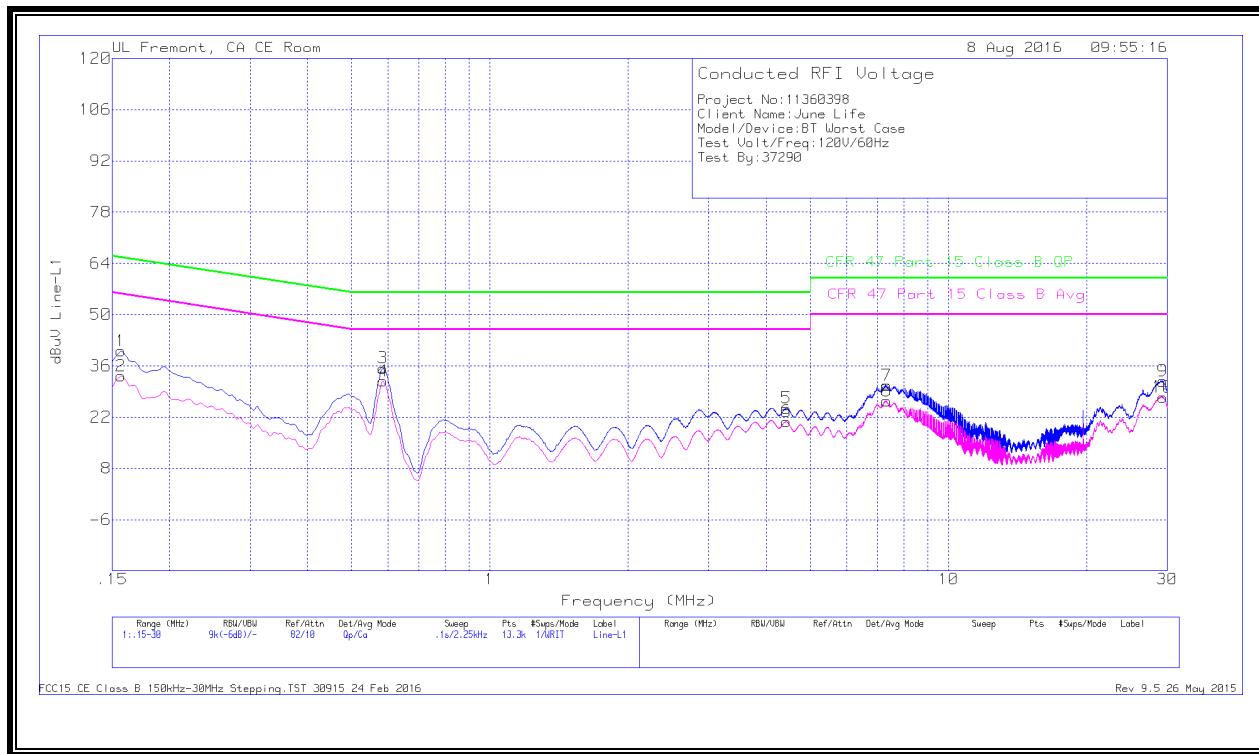
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

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

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

RESULTS

LINE 1 RESULTS



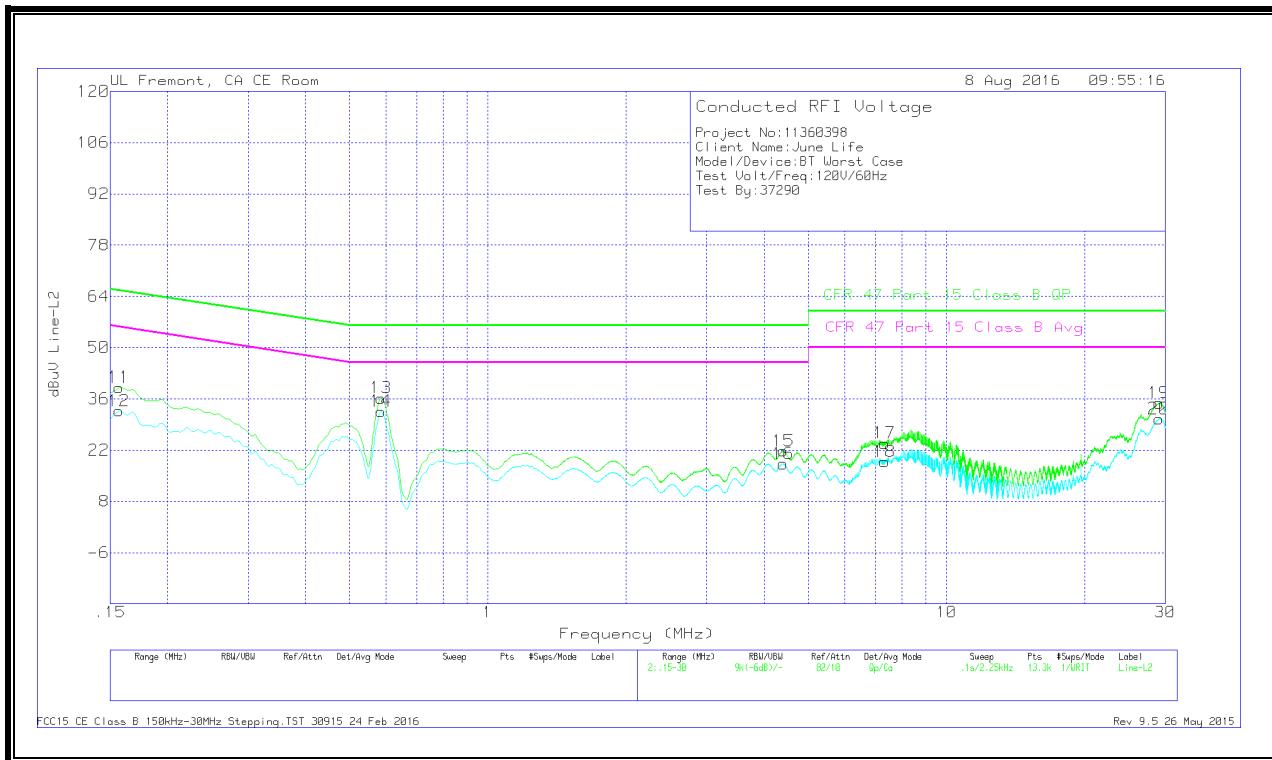
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables 1&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.15675	29.95	Qp	0	0	10.1	40.05	65.63	-25.58	-	-
2	.15675	23.16	Ca	0	0	10.1	33.26	-	-	55.63	-22.37
3	.58425	25.28	Qp	0	0	10.1	35.38	56	-20.62	-	-
4	.58425	21.75	Ca	0	0	10.1	31.85	-	-	46	-14.15
5	4.434	14.23	Qp	0	.1	10.1	24.43	56	-31.57	-	-
6	4.4295	10.62	Ca	0	.1	10.1	20.82	-	-	46	-25.18
7	7.332	20.35	Qp	0	.1	10.2	30.65	60	-29.35	-	-
8	7.332	16.16	Ca	0	.1	10.2	26.46	-	-	50	-23.54
9	29.32575	21	Qp	.1	.3	10.4	31.8	60	-28.2	-	-
10	29.337	16.69	Ca	.1	.3	10.4	27.49	-	-	50	-22.51

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables 2&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
11	.15675	29.03	Qp	0	0	10.1	39.13	65.63	-26.5	-	-
12	.15675	22.64	Ca	0	0	10.1	32.74	-	-	55.63	-22.89
13	.58425	26.14	Qp	0	0	10.1	36.24	56	-19.76	-	-
14	.58425	22.53	Ca	0	0	10.1	32.63	-	-	46	-13.37
15	4.40925	11.56	Qp	0	.1	10.1	21.76	56	-34.24	-	-
16	4.40025	8.1	Ca	0	.1	10.1	18.3	-	-	46	-27.7
17	7.32975	13.62	Qp	0	.1	10.2	23.92	60	-36.08	-	-
18	7.32975	8.55	Ca	0	.1	10.2	18.85	-	-	50	-31.15
19	29.058	24.1	Qp	.1	.3	10.4	34.9	60	-25.1	-	-
20	29.067	19.75	Ca	.1	.3	10.4	30.55	-	-	50	-19.45

Qp - Quasi-Peak detector

Ca - CISPR average detection