



CERTIFICATION TEST REPORT

Report Number : 11600175-E2V1

Applicant : MICROSOFT CORP
ONE MICROSOFT WAY
REDMOND, WA 98052, U.S.A.

Model : 1796

FCC ID : C3K1796

IC : 3048A-1796

EUT Description : PORTABLE COMPUTING DEVICE

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS - 247 ISSUE 2

Date Of Issue:

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	03/14/2017	Initial Review	---
V2	05/02/2017	Updated Sections 5.5 and 8.1	F. de Anda

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: MICROSOFT CORP
ONE MICROSOFT WAY
REDMOND, WA 98052, U.S.A.

EUT DESCRIPTION: PORTABLE COMPUTING DEVICE

MODEL: 1796

SERIAL NUMBER: 035885670353 (Conducted); 035828270353 (Radiated)

DATE TESTED: March 2nd 2017 – March 13th 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 2	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 the U.S. government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

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

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

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, 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
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a handheld computing device with 802.11 2x2, a/b/g/n/ac WLAN, Bluetooth, Bluetooth LE.

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	2.76	1.89
2402 - 2480	DQPSK	6.31	4.28
2402 - 2480	Enhanced 8PSK	6.36	4.33

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	Basic GFSK	2.62	1.83
2402 - 2480	DQPSK	3.81	2.40
2402 - 2480	Enhanced 8PSK	3.81	2.40

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integrated antenna, with a maximum gain of 3.2 dBi.

5.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 14.2.201.157

The test utility software used during testing was WiFi tool v2.7.6.

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and 18-26GHz 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 Y orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in Y orientation.

Worst-case data rates were:

GFSK mode: 1-DH5

8PSK mode: 3-DH5

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop AC/DC adapter	Lenovo	ADLX45NCC2A	11S36200281ZZ20059W0H5	NA
Laptop	Lenovo	11e	LR-04N7BL	NA
USB-Internet Adapter	linksys	USB3GIGV1	15710S08406242	NA

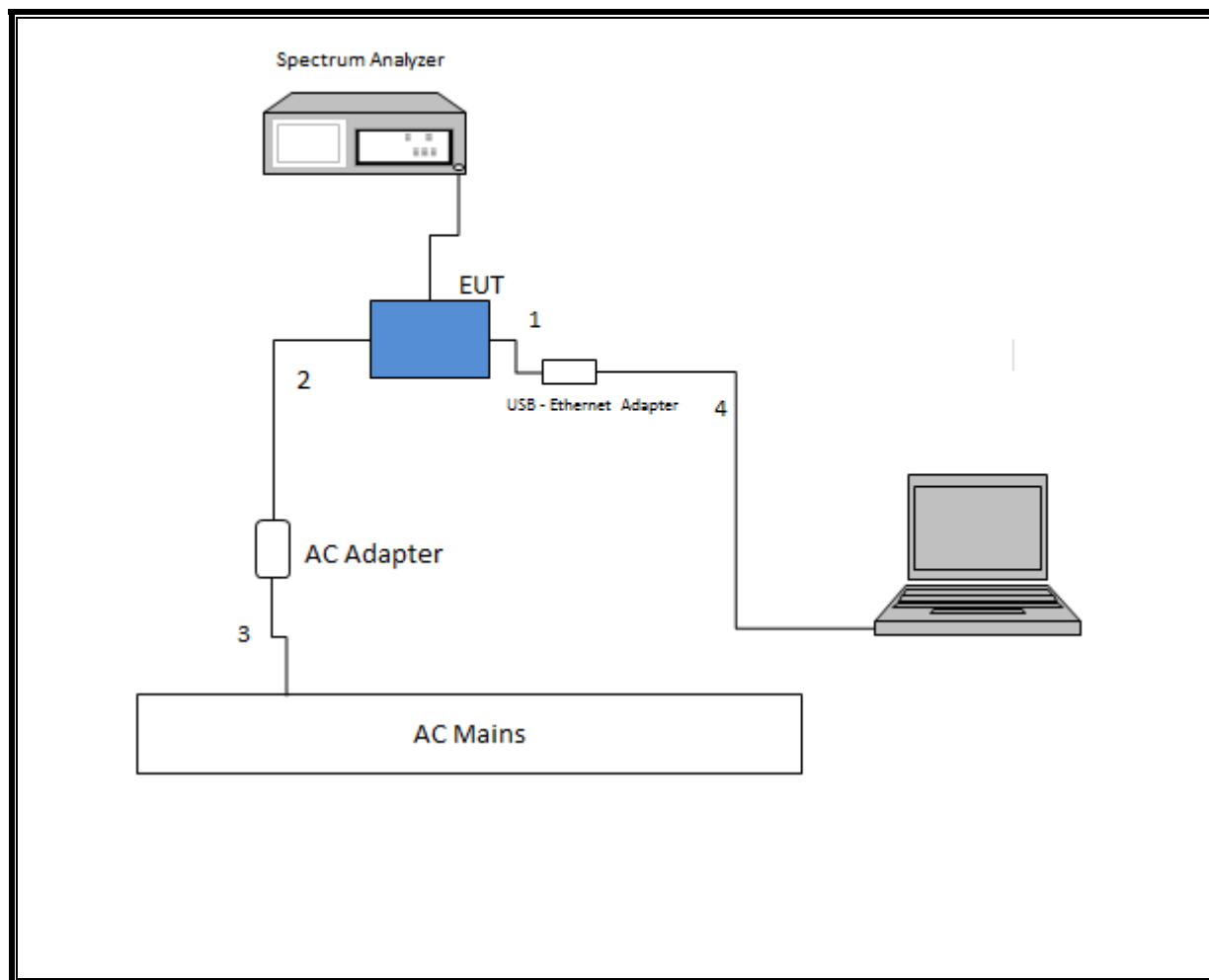
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Un-Shielded	0.17	
2	DC	1	Proprietary	Un-Shielded	1.75	
3	AC	1	2-prong	Un-Shielded	0.5	
4	Ethernet	1	RJ45	Un-Shielded	2	

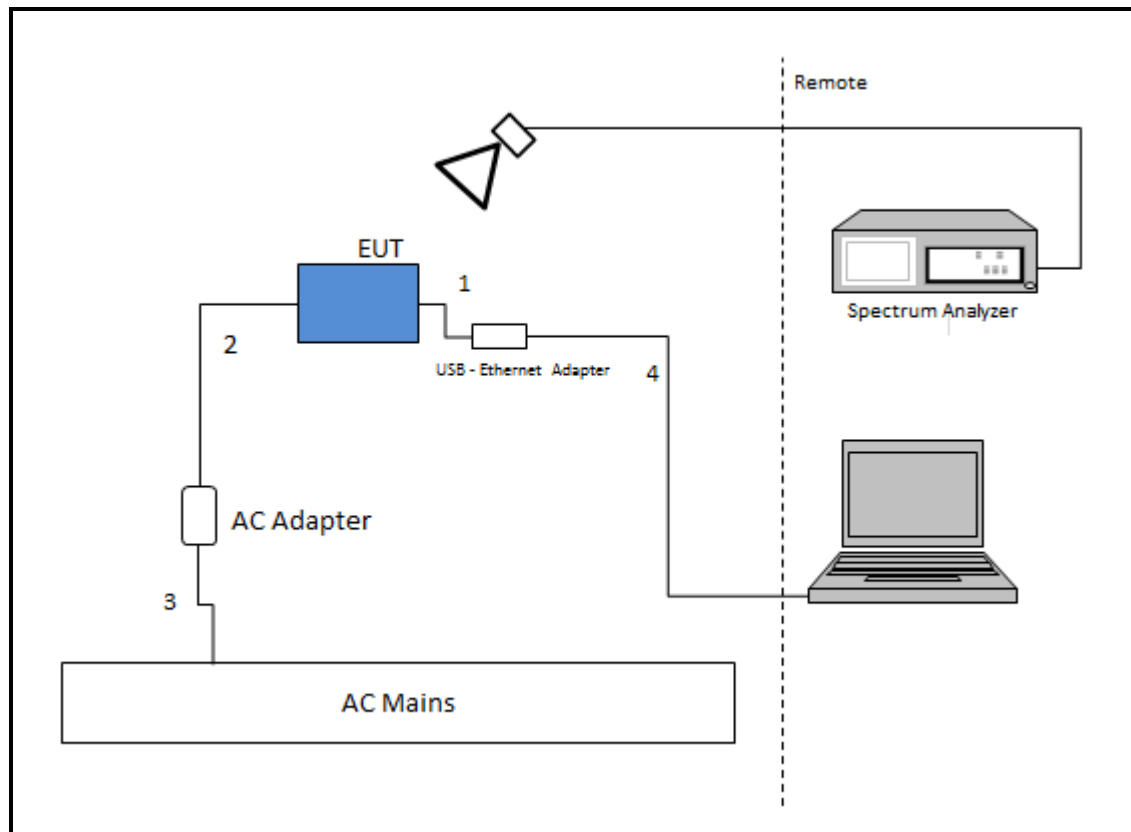
TEST SETUP

The EUT was tested connected to a host Laptop via RJ45/USB cable for antenna port and AC tests. Radiated tests were performed with EUT connected to AC adapter and remote laptop. Test software exercised the radio card.

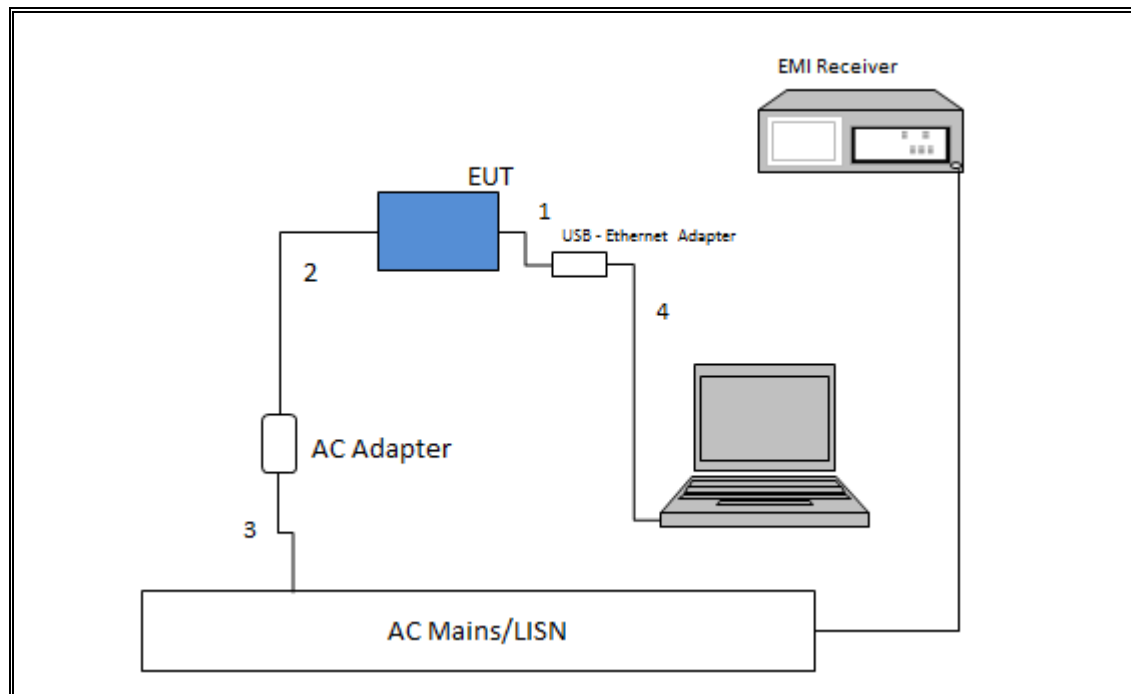
SETUP DIAGRAM FOR ANTENNA PORT CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



SETUP DIAGRAM FOR AC LINE CONDUCTED TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	T408	11/10/17
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T711	01/30/18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	T896	8/26/2017
RF Preamplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	T931	08/26/17
RF Preamplifier, 1 - 7GHz	Miteq	AMF-4D-01000800-30-29P	T1574	08/26/17
RF Preamplifier, 10kHz - 1GHz	Sonoma	310N	T15	08/26/17
Spectrum Analyzer	Keysight	N9030A	T905	01/11/18
Spectrum Analyzer	Agilent (Keysight) Technologies	E4440A	T199	7/22/17
Antenna, Horn, 18-26 GHz	ARA	MWH-1826/B	T449	05/26/17
RF Preamplifier, 1 - 26GHz	Agilent	8449B	T404	07/05/17
Spectrum Analyzer, 40 GHz	HP	8564E	T106	09/07/17
EMI Receiver	Rohde & Schwarz	ESR	T1436	1/6/2018
LISN	Fischer Custom Communications	FCC-LISN-50/250-25-2-01	T1310	6/8/2017
Power Meter	Keysight	N1911A	T229	7/28/17
Power Sensor	Keysight	N1921A	T413	6/20/17

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	9.5, 4/26/16
Antenna Port Software	UL	UL RF	6.1, 3/1/17
Conducted Emissions Software	UL	UL EMC	9.5, 5/26/15

NOTE: *testing is completed before equipment calibration expiration date.

7. ANTENNA PORT TEST RESULTS

ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

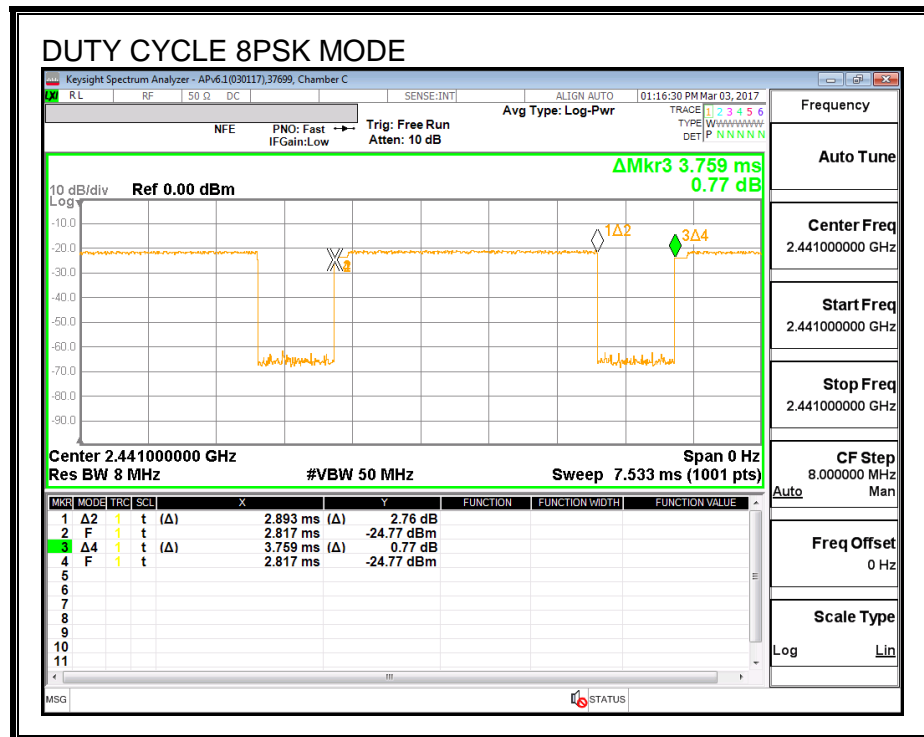
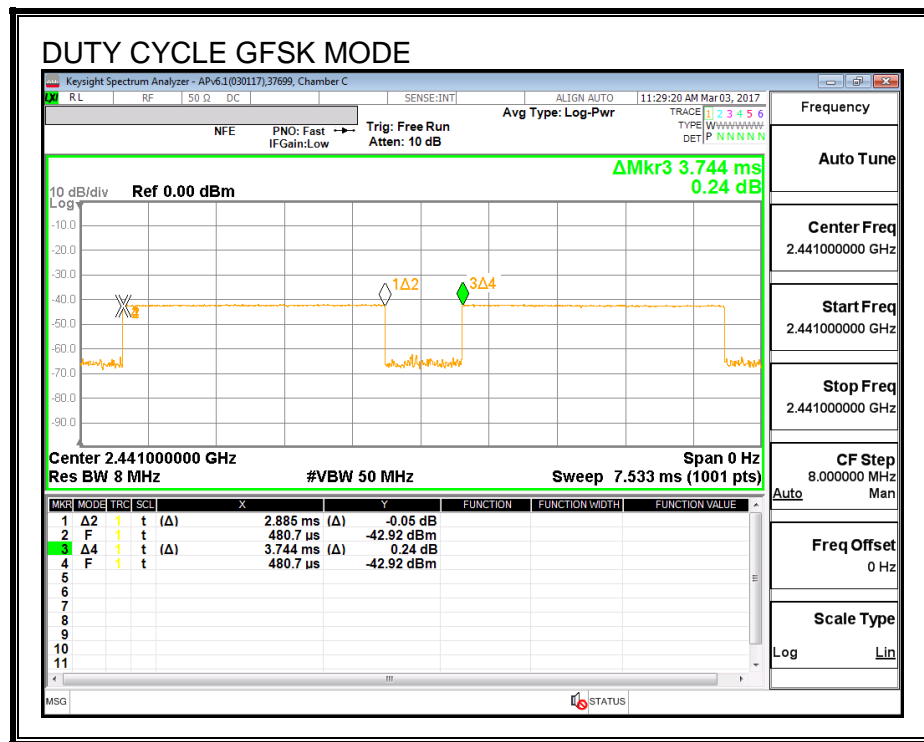
PROCEDURE

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/B Minimum VBW (khz)
GFSK	2.885	3.744	0.77	77.056	1.131	0.346
8PSK	2.893	3.759	0.769	76.961	1.137	0.345

DUTY CYCLE PLOTS



7.1. BASIC DATA RATE GFSK MODULATION

7.1.1. 20 dB AND 99% BANDWIDTH

LIMITS

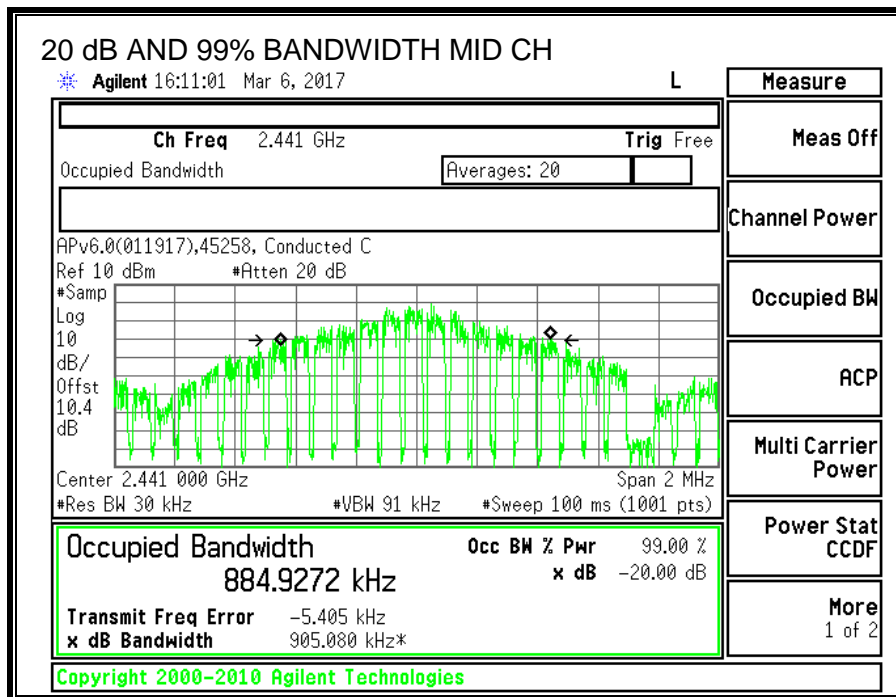
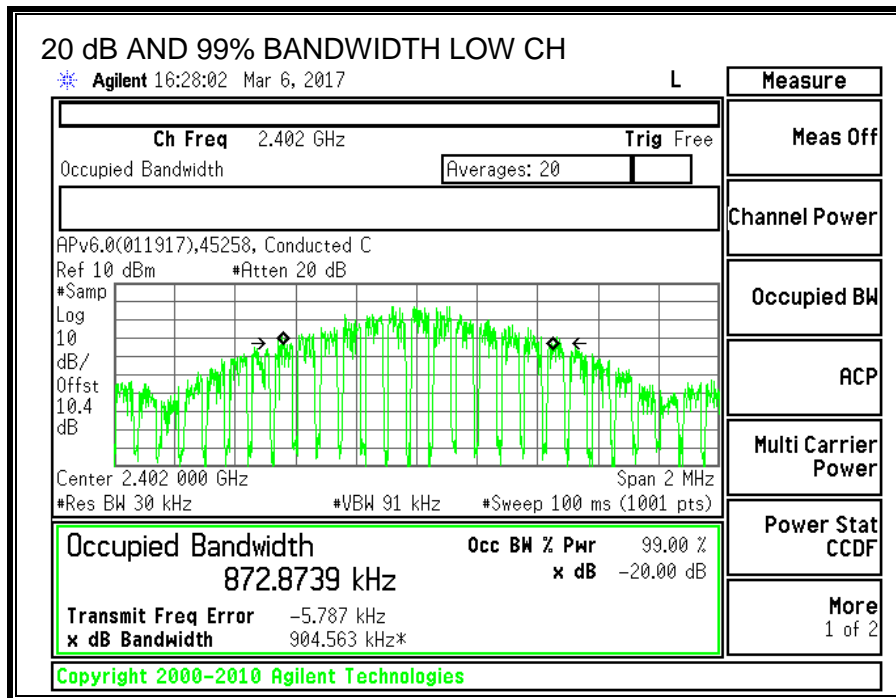
None; for reporting purposes only.

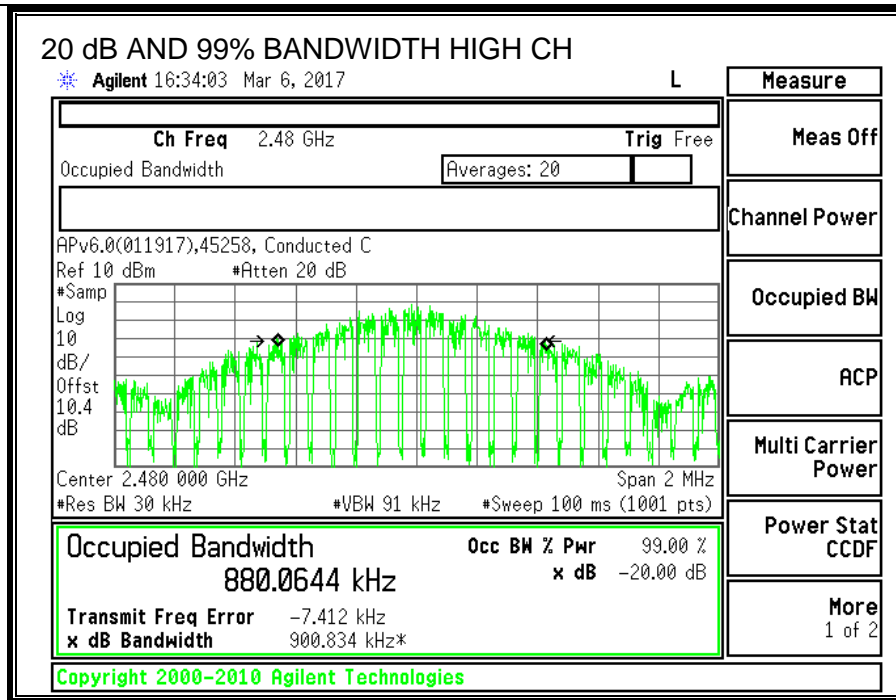
TEST PROCEDURE

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

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	0.905	0.873
Middle	2441	0.905	0.885
High	2480	0.901	0.880





7.1.2. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

IC RSS-247 (5.1) (b)

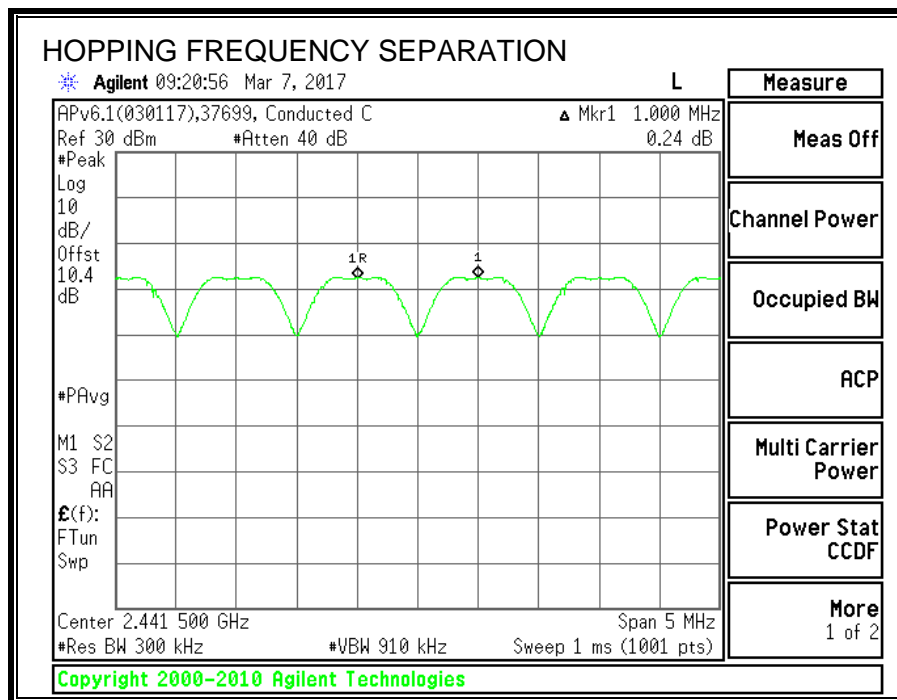
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 910 kHz. The sweep time is coupled.

RESULTS



7.1.3. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

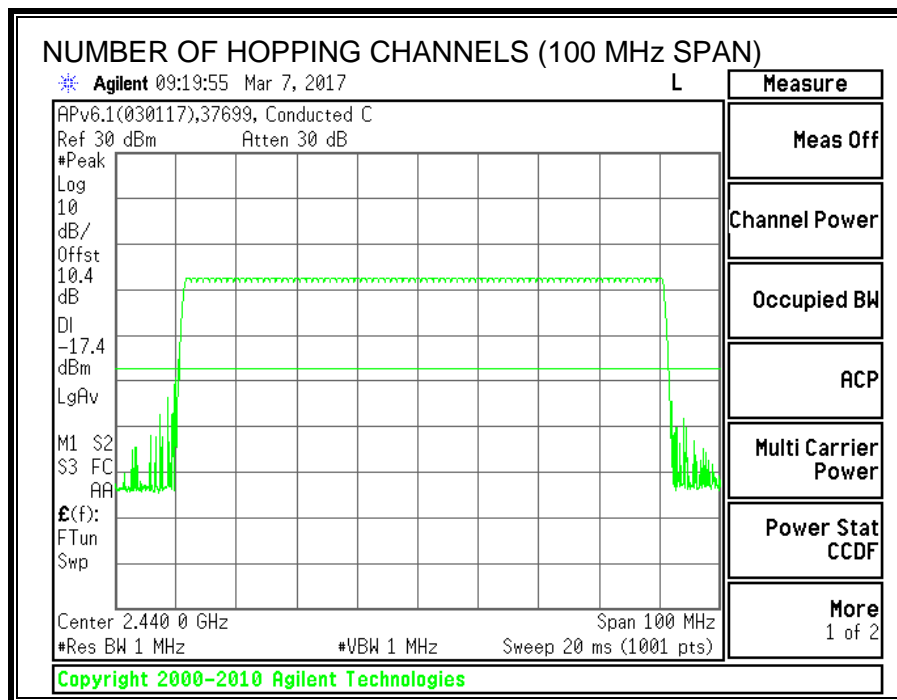
Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

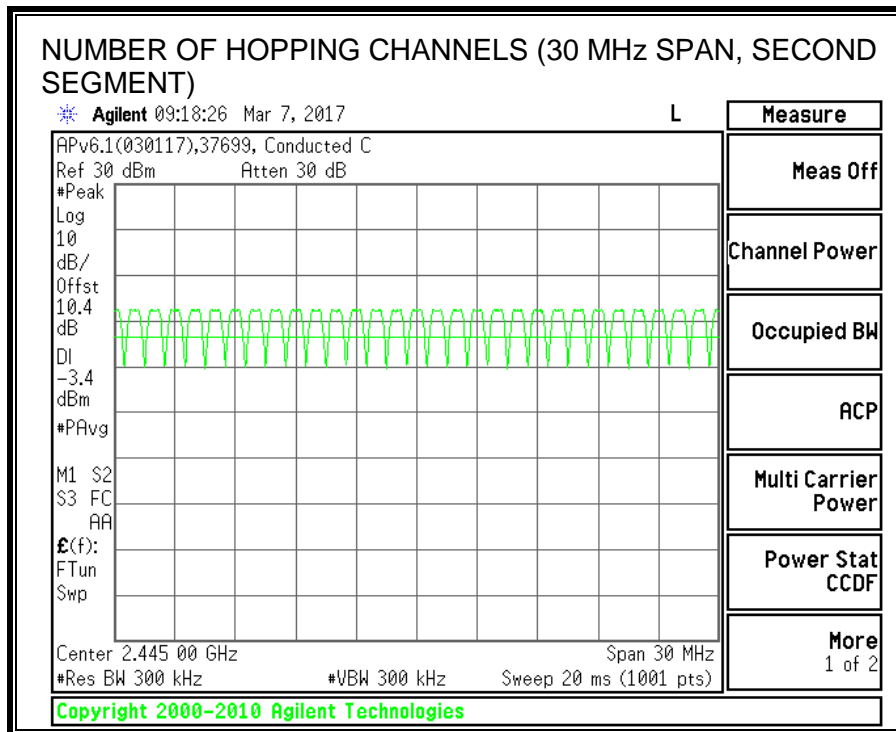
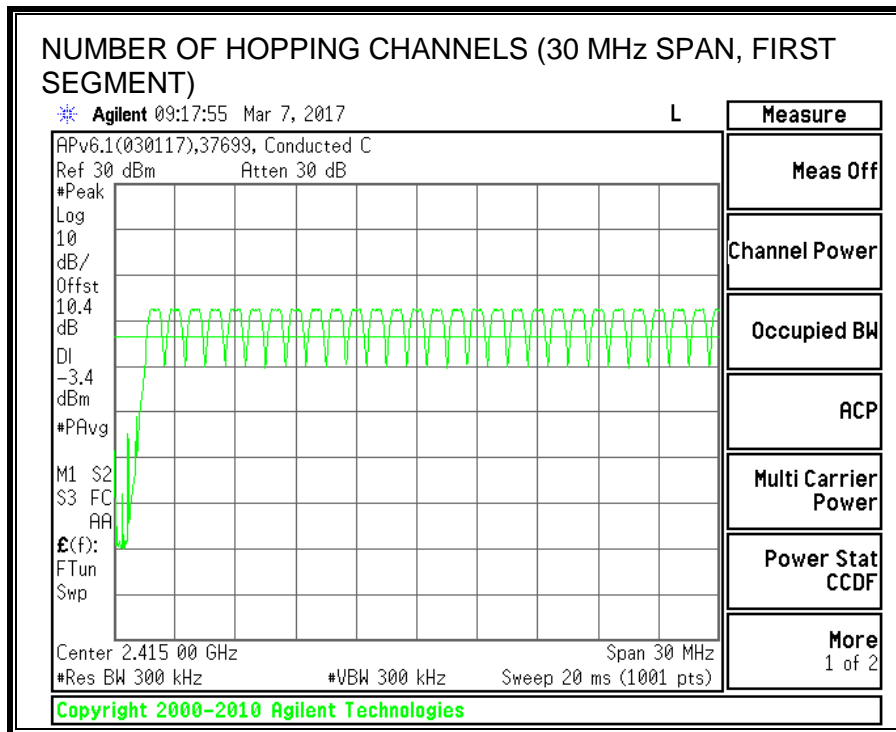
TEST PROCEDURE

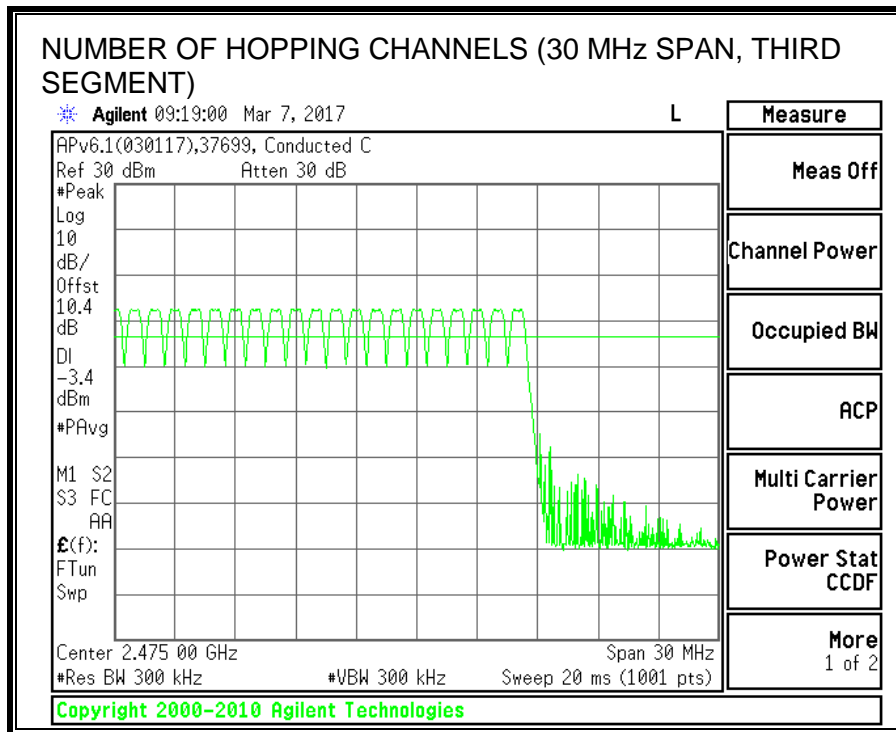
The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels observed.







7.1.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

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

TEST PROCEDURE

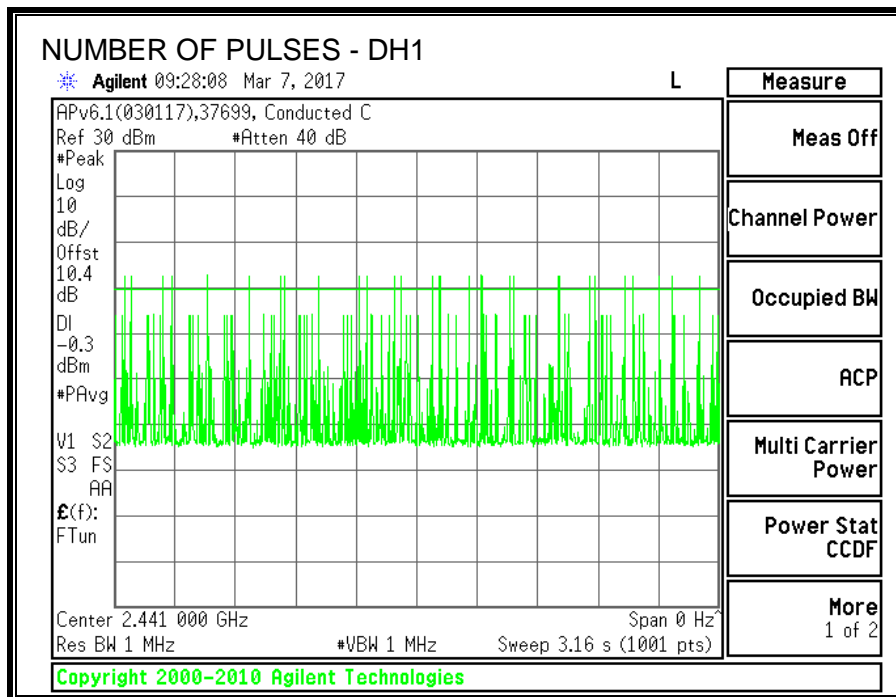
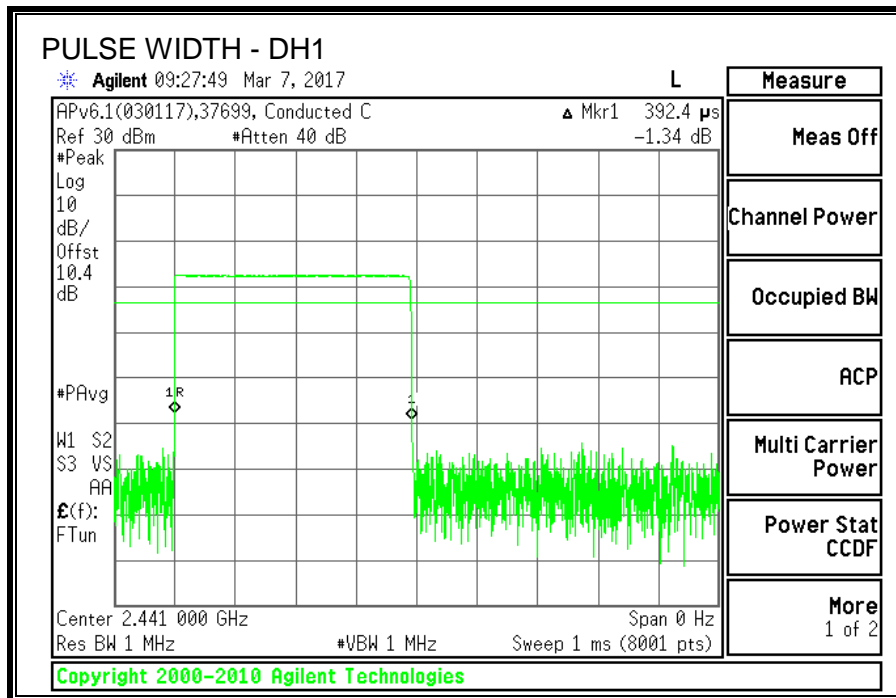
The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

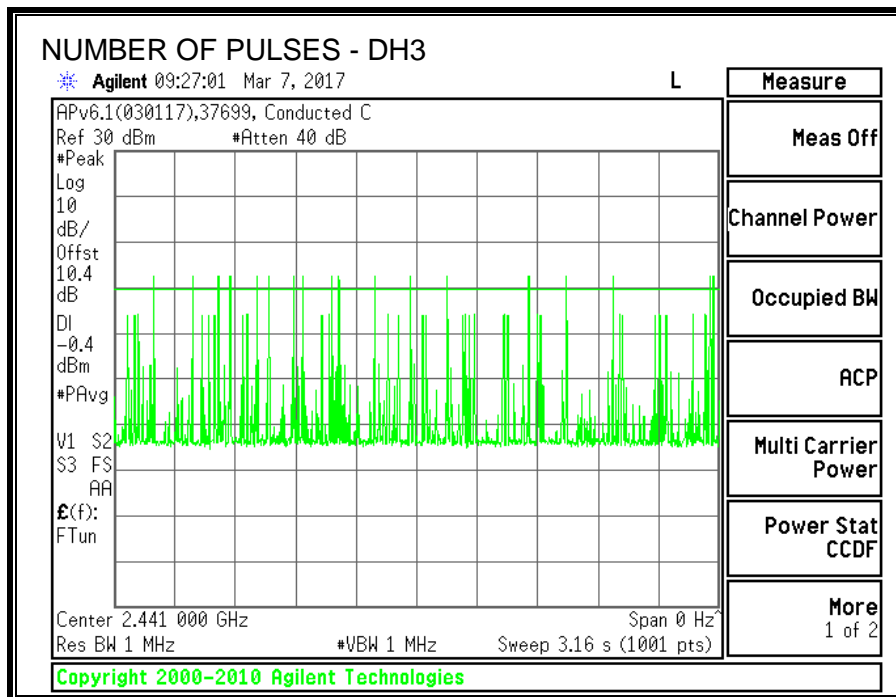
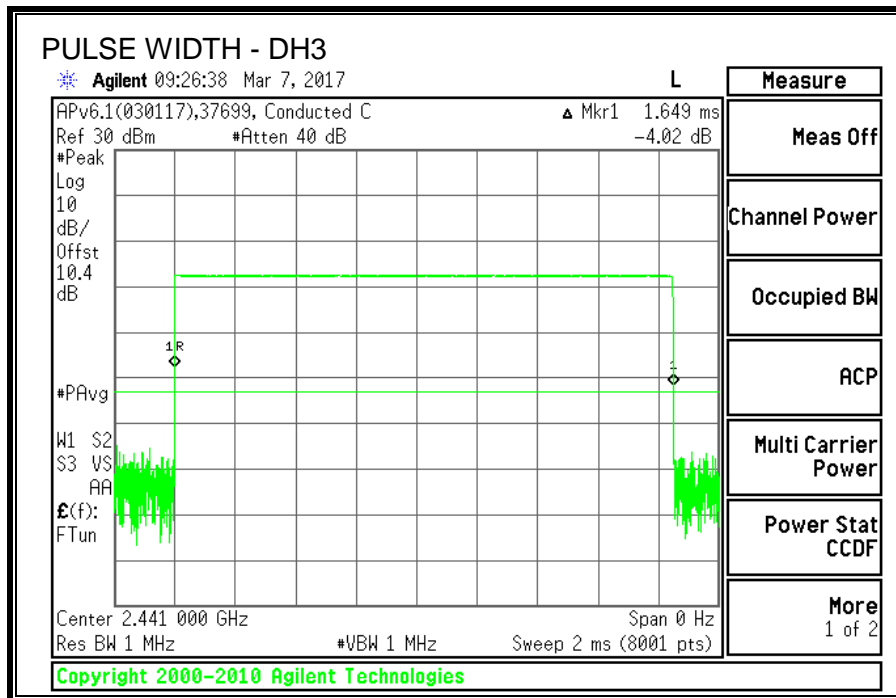
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{pulse width}$.

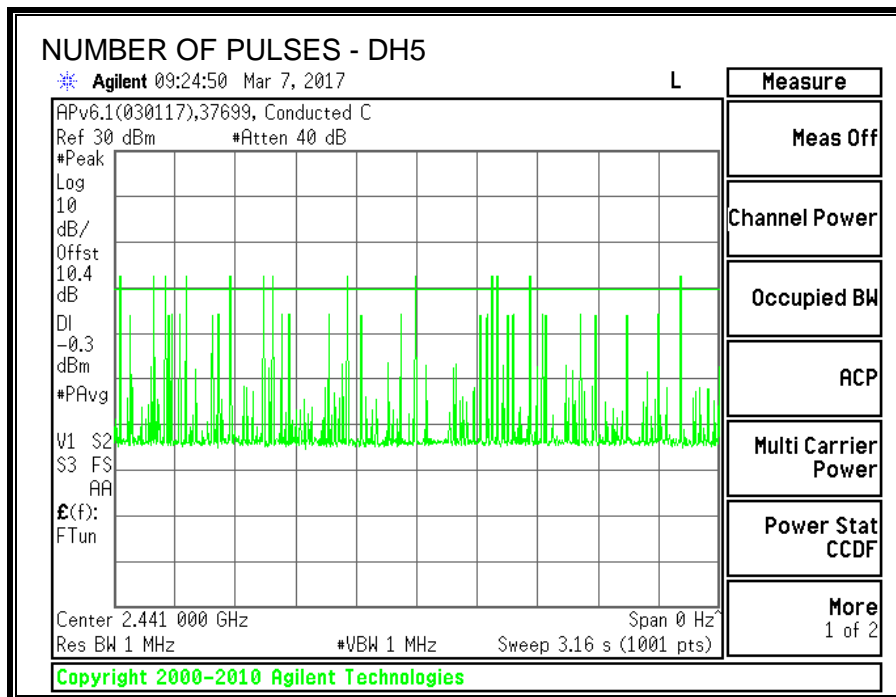
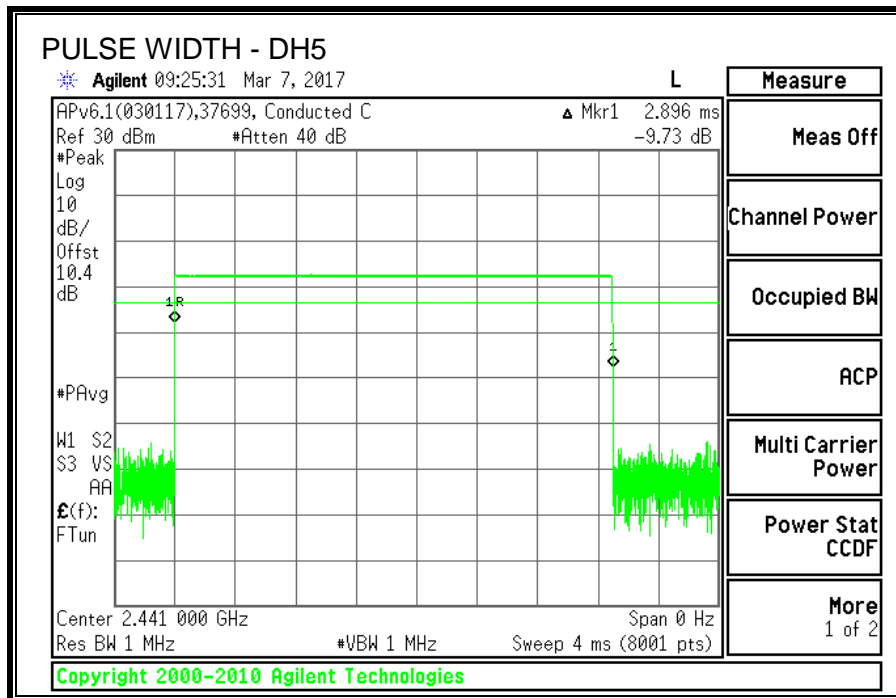
For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{pulse width}$.

RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.392	27	0.1058	0.4	-0.2942
DH3	1.649	18	0.2968	0.4	-0.1032
DH5	2.896	13	0.3765	0.4	-0.0235
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	0.392	6.75	0.02646	0.4	-0.3735
DH3	1.649	4.5	0.07421	0.4	-0.3258
DH5	2.896	3.25	0.09412	0.4	-0.3059







7.1.5. OUTPUT POWER

LIMITS

§15.247 (b) (1)

RSS-247 (5.4) (b)

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

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Tested by:	45258 JL
Date:	3/6/2017

Mode	Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
GFSK	Low	2402	2.74	21	-18.26
	Middle	2441	2.73	21	-18.27
	High	2480	2.76	21	-18.24

7.1.6. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

Tested By:	45258 JL
Date:	3/7/2017

Mode	Channel	Frequency (MHz)	Average Power (dBm)
GFSK	Low	2402	2.58
	Middle	2441	2.59
	High	2480	2.62

7.1.7. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

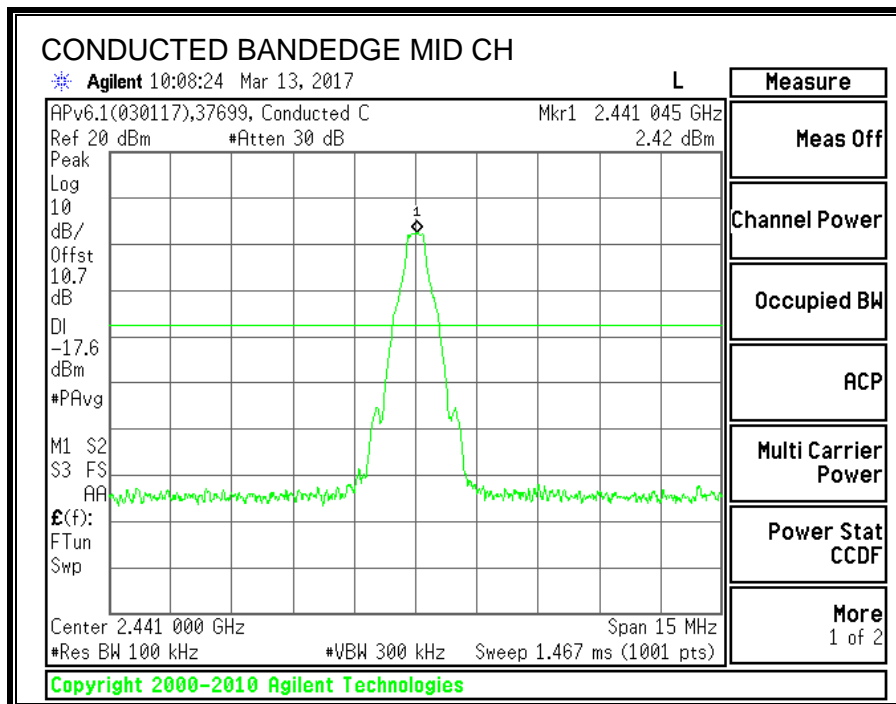
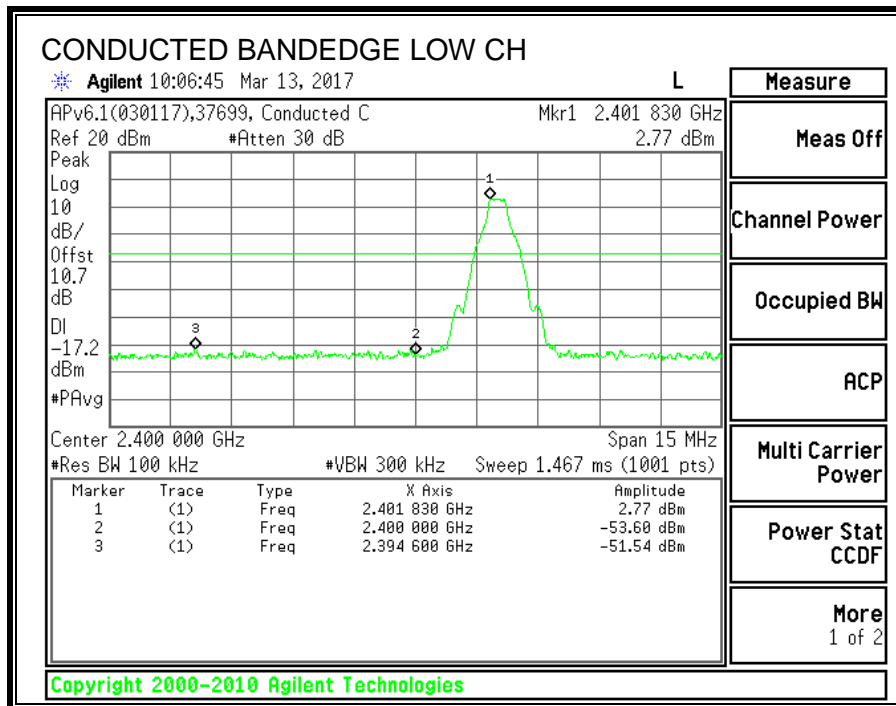
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

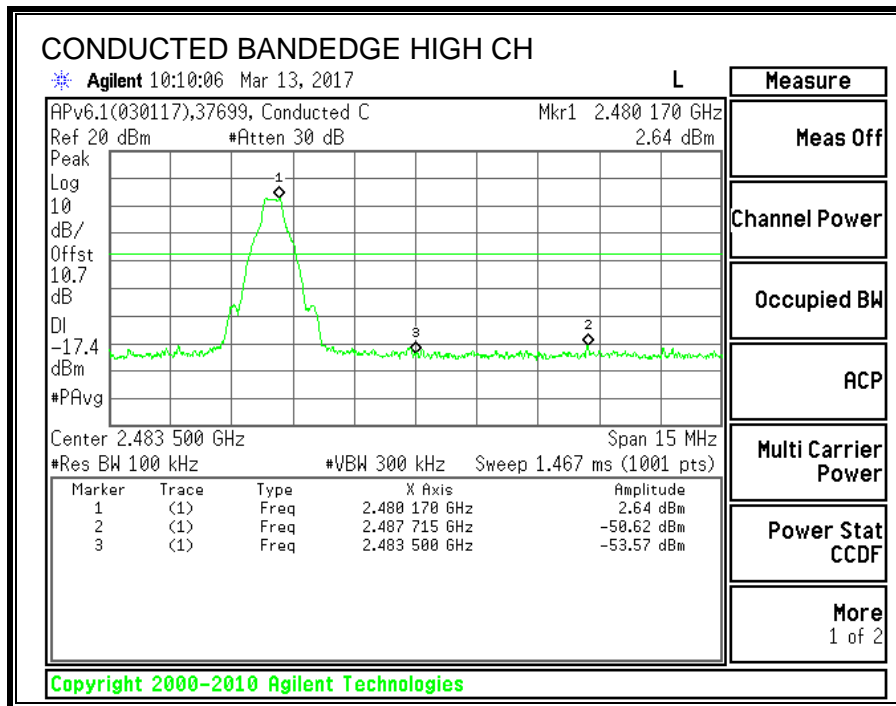
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

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

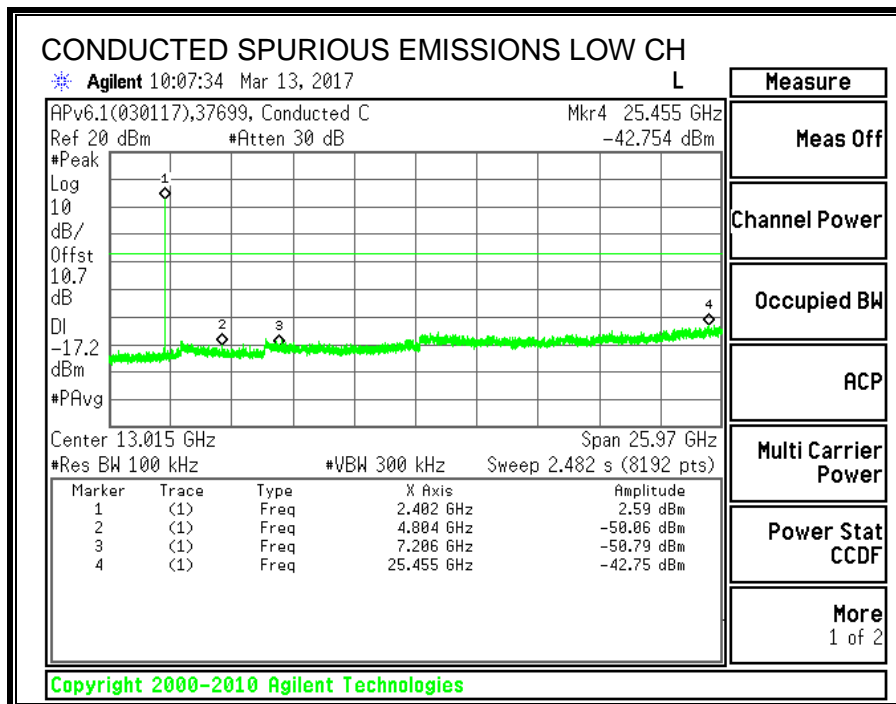
RESULTS

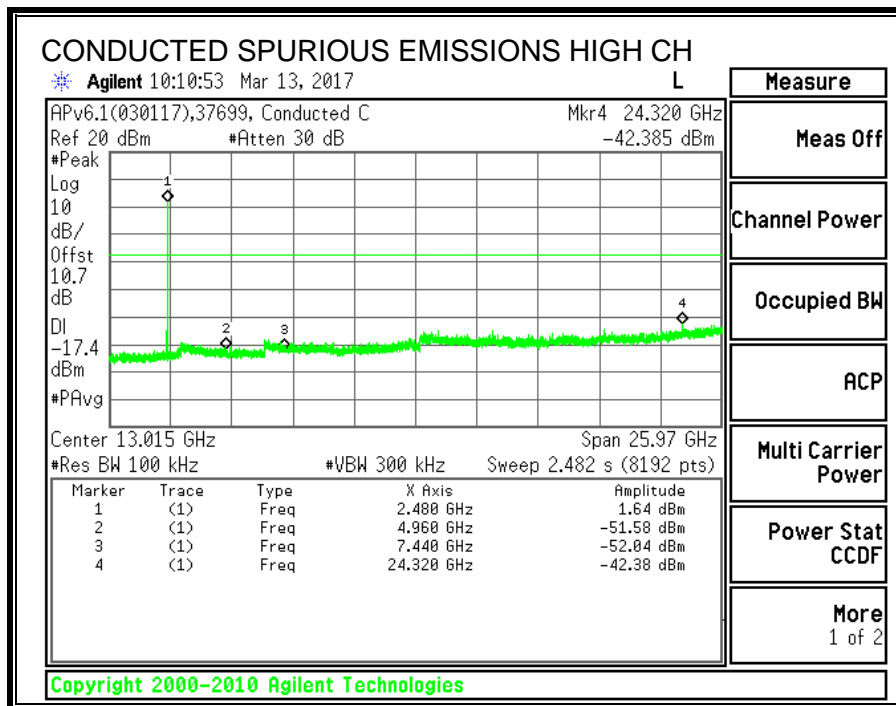
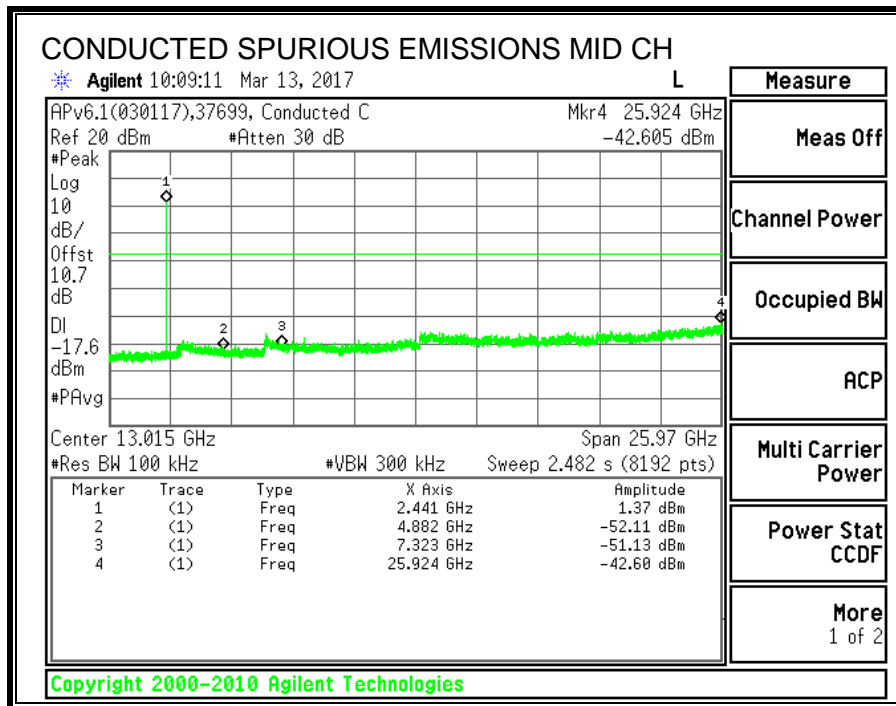
BANDEDGE



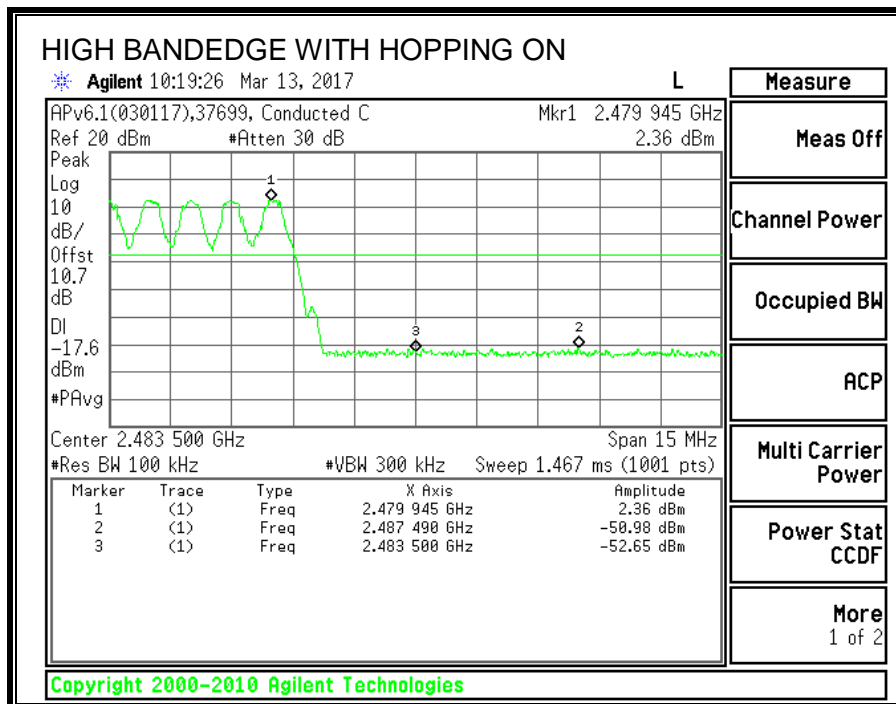
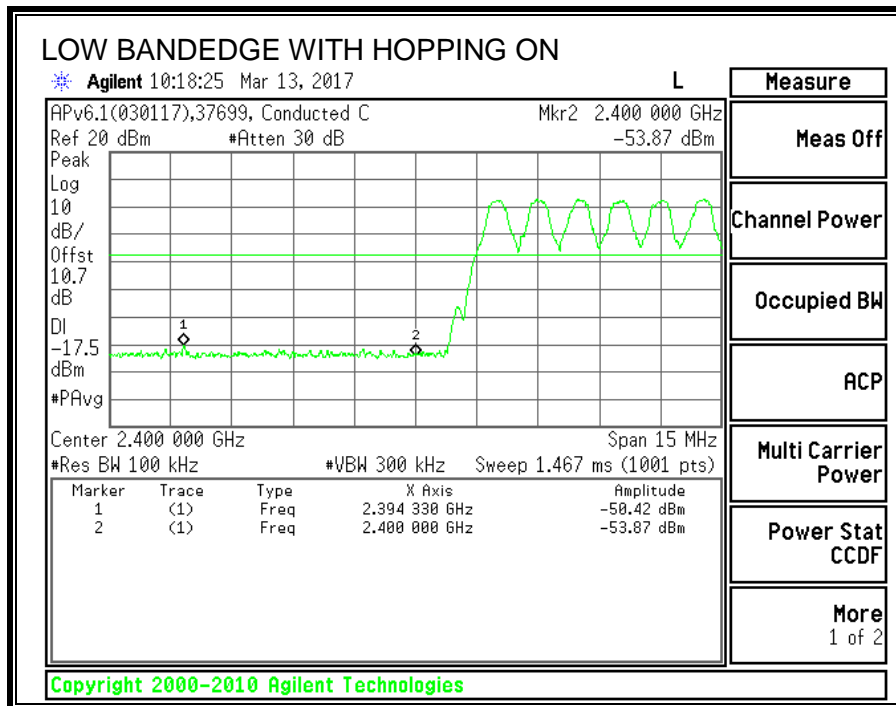


SPURIOUS EMISSIONS





BANDEDGE WITH HOPPING ON



7.2. ENHANCED DATA RATE DQPSK MODULATION

7.2.1. OUTPUT POWER

LIMITS

§15.247 (b) (1)

RSS-247 (5.4) (b)

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Tested by:	45258 JL
Date:	3/6/2017

Mode	Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
DQPSK	Low	2402	6.31	21	-14.69
	Middle	2441	6.2	21	-14.8
	High	2480	5.98	21	-15.02

7.2.2. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

Tested By:	45258 JL
Date:	3/7/2017

Mode	Channel	Frequency (MHz)	Average Power (dBm)
DQPSK	Low	2402	3.81
	Middle	2441	3.62
	High	2480	3.42

7.3. ENHANCED DATA RATE 8PSK MODULATION

7.3.1. 20 dB AND 99% BANDWIDTH

LIMITS

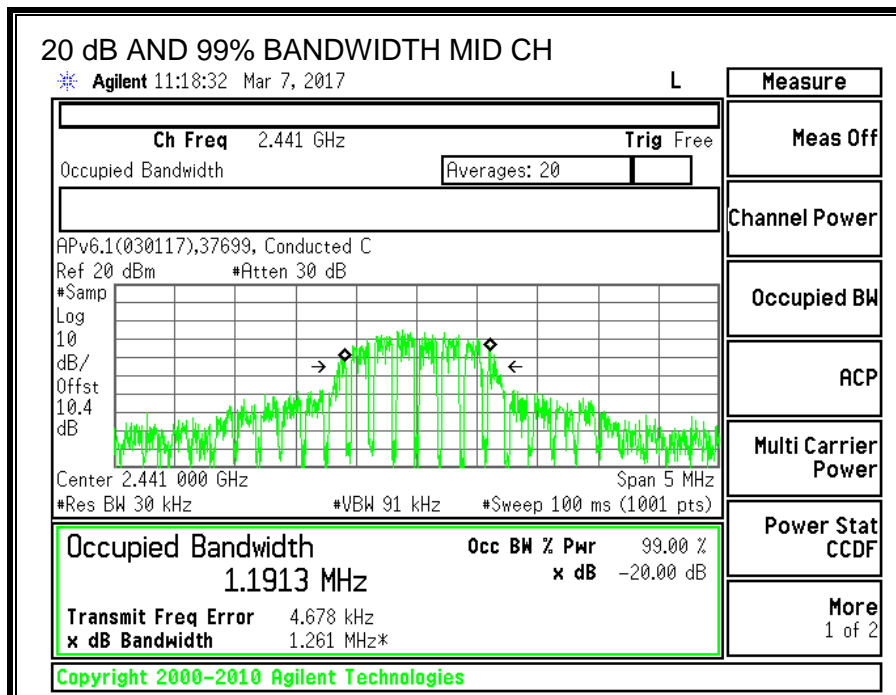
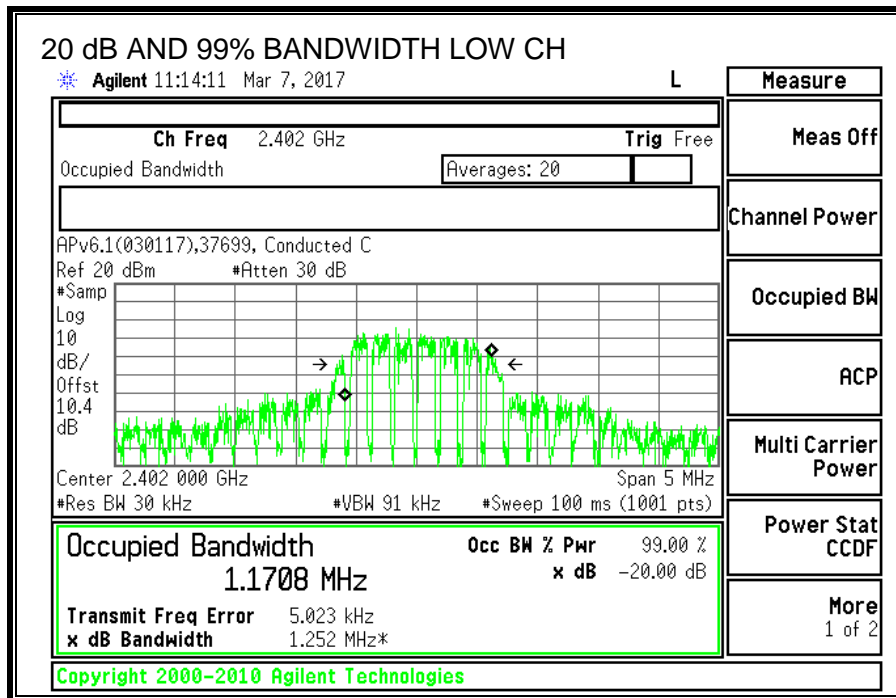
None; for reporting purposes only.

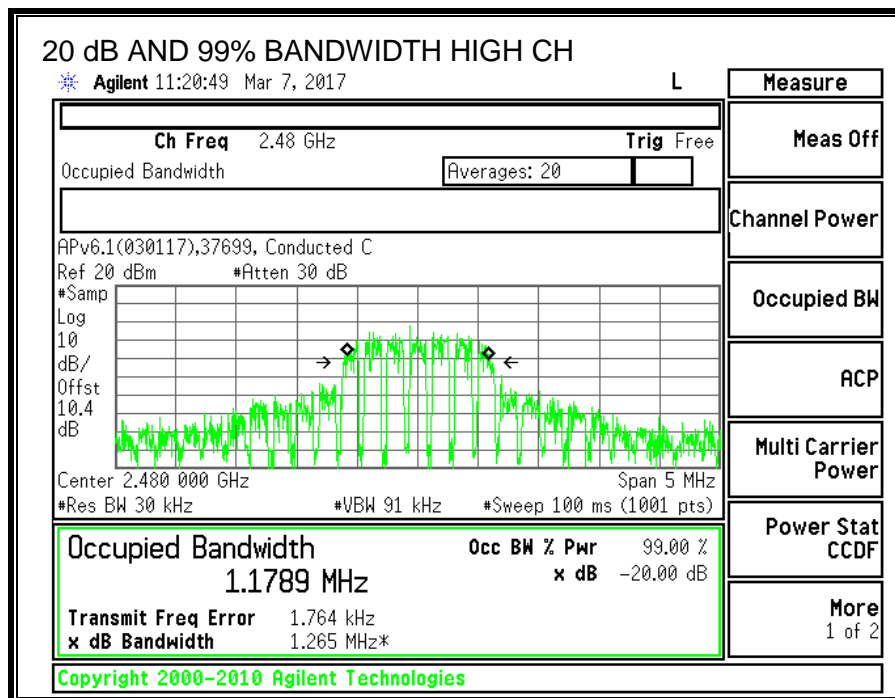
TEST PROCEDURE

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

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.252	1.171
Middle	2441	1.261	1.191
High	2480	1.265	1.179





7.3.2. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

IC RSS-247 (5.1) (b)

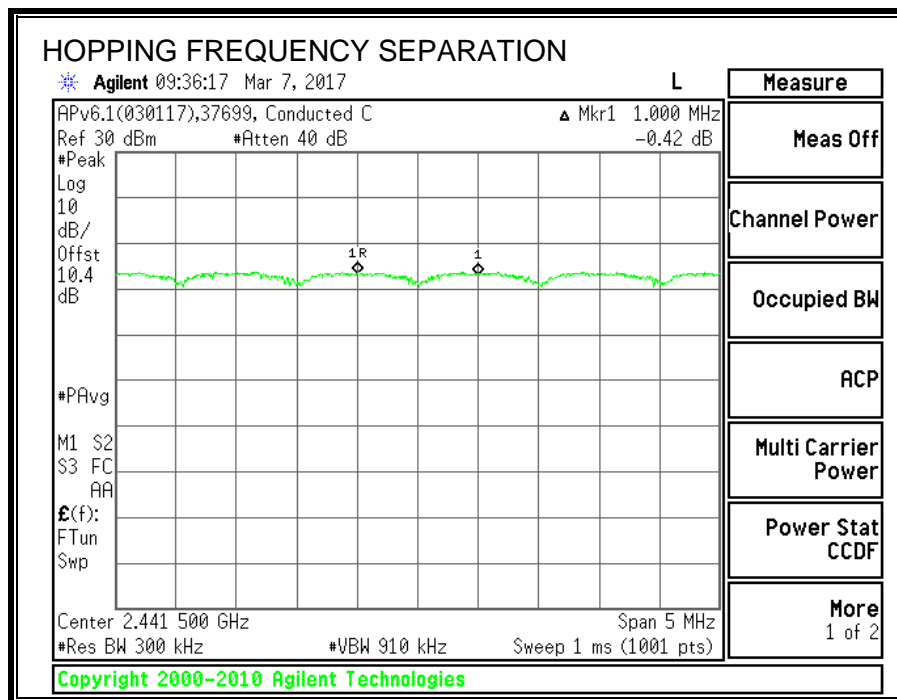
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 910 kHz. The sweep time is coupled.

RESULTS



7.3.3. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

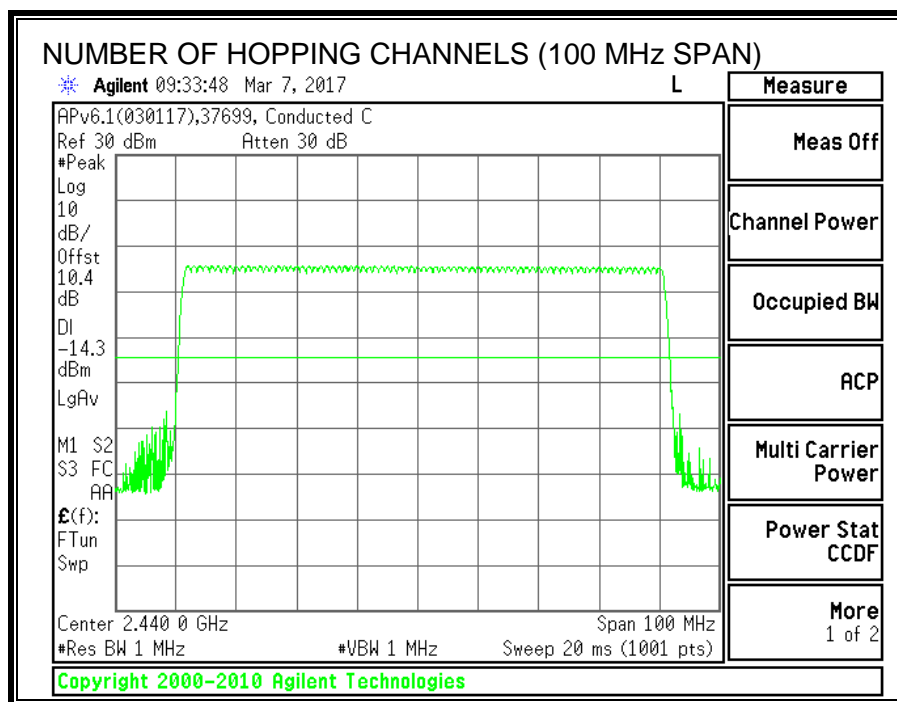
Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

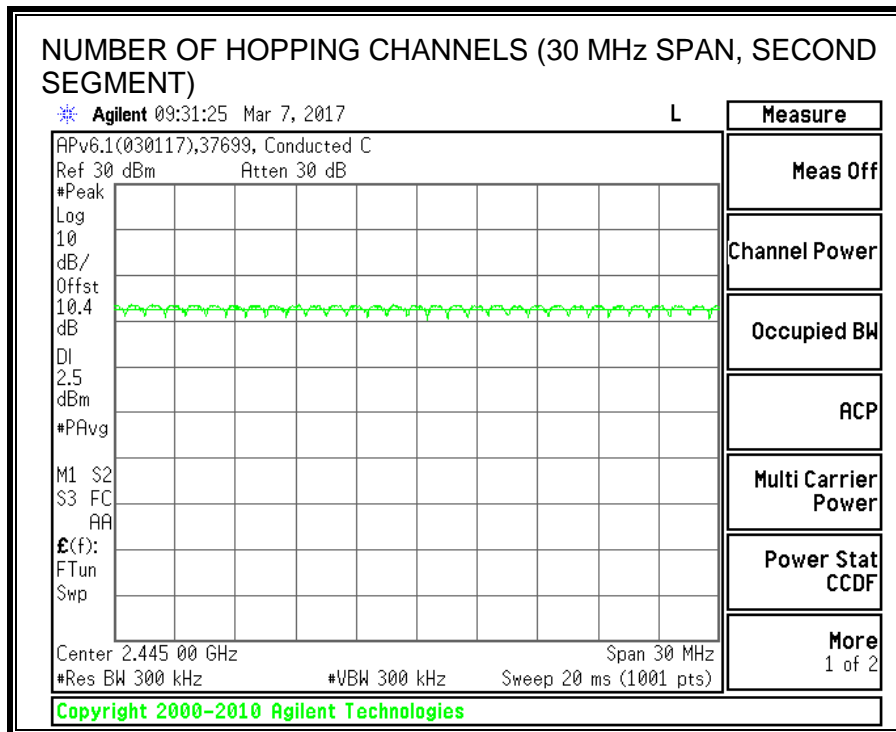
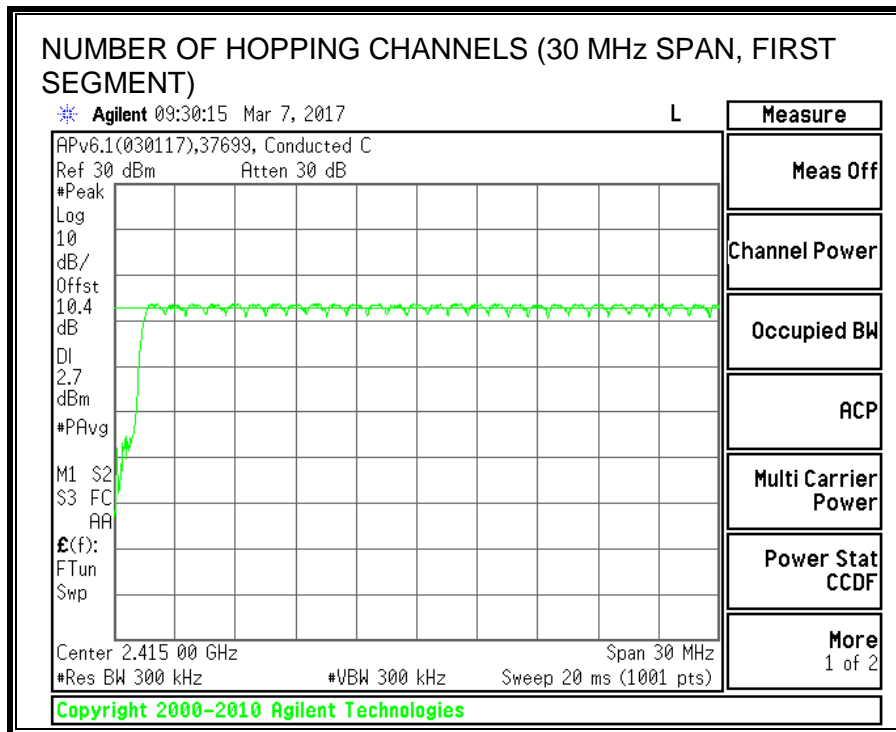
TEST PROCEDURE

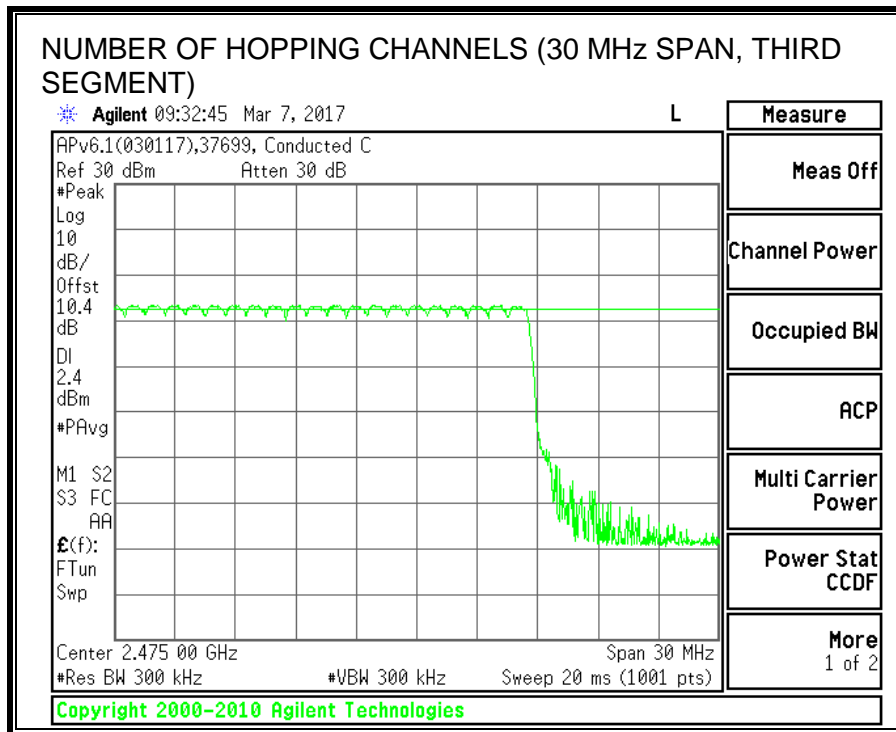
The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels observed.







7.3.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

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

TEST PROCEDURE

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

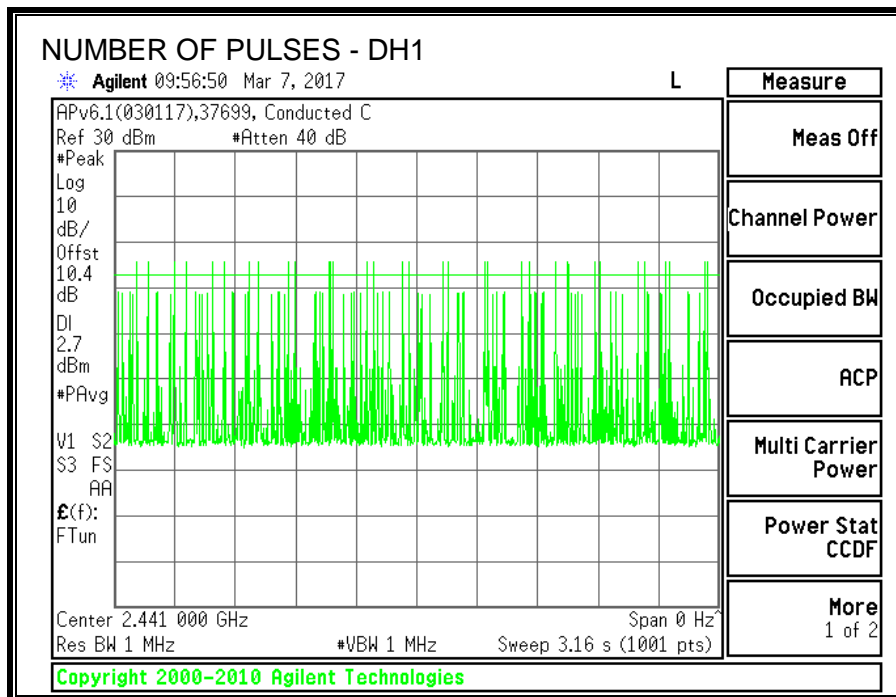
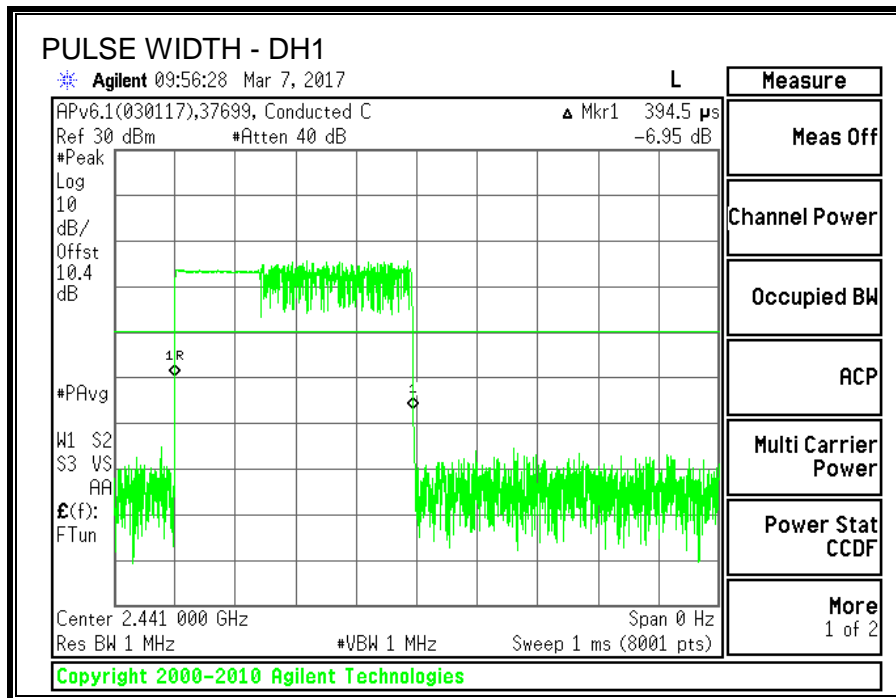
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{pulse width}$.

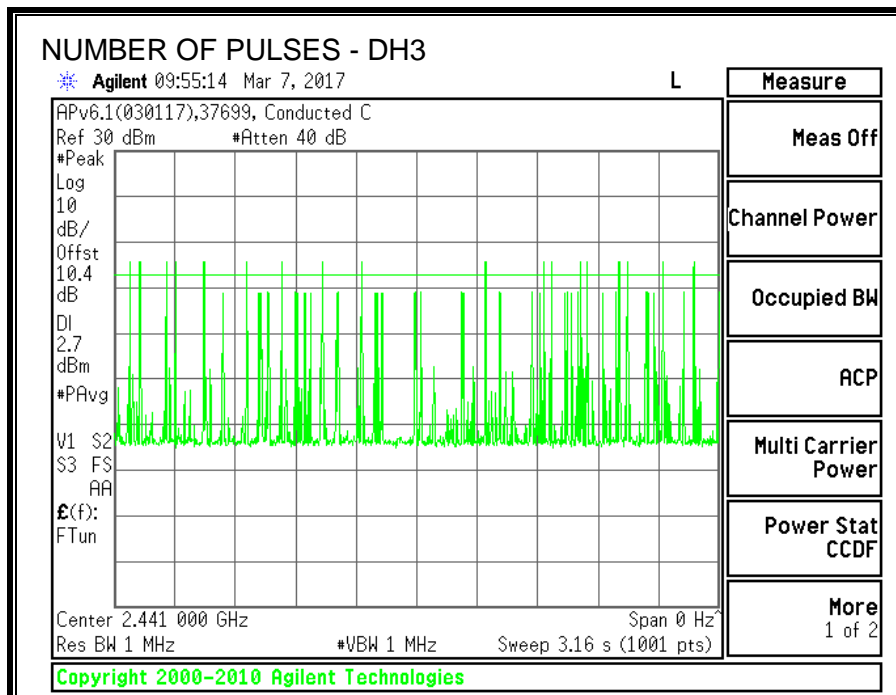
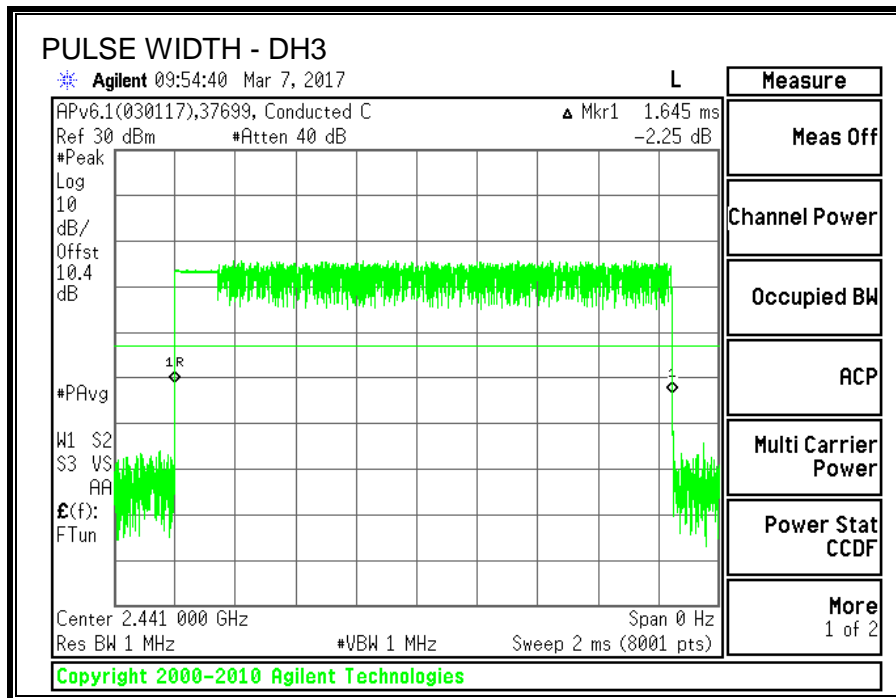
For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{pulse width}$.

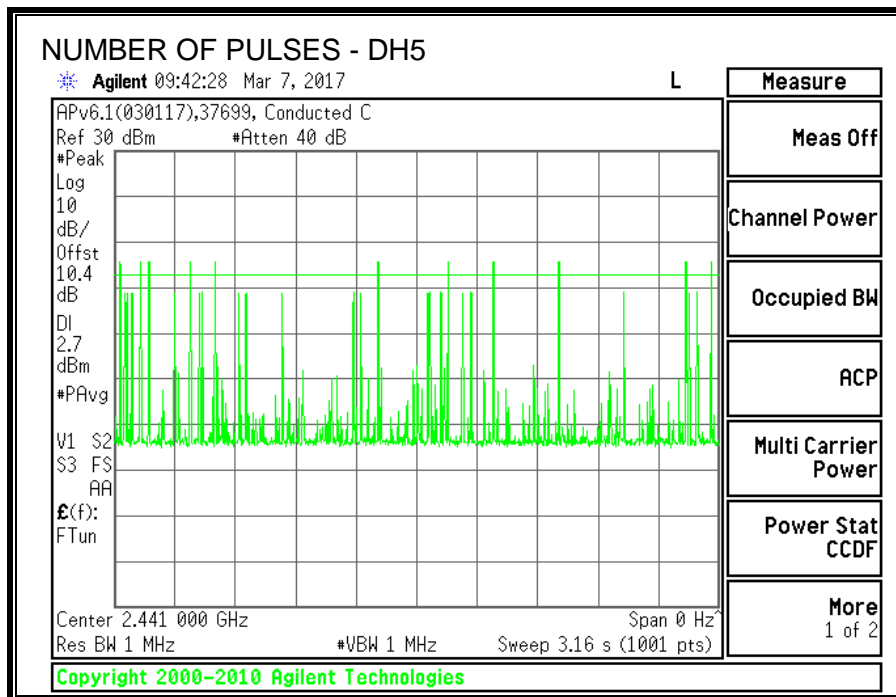
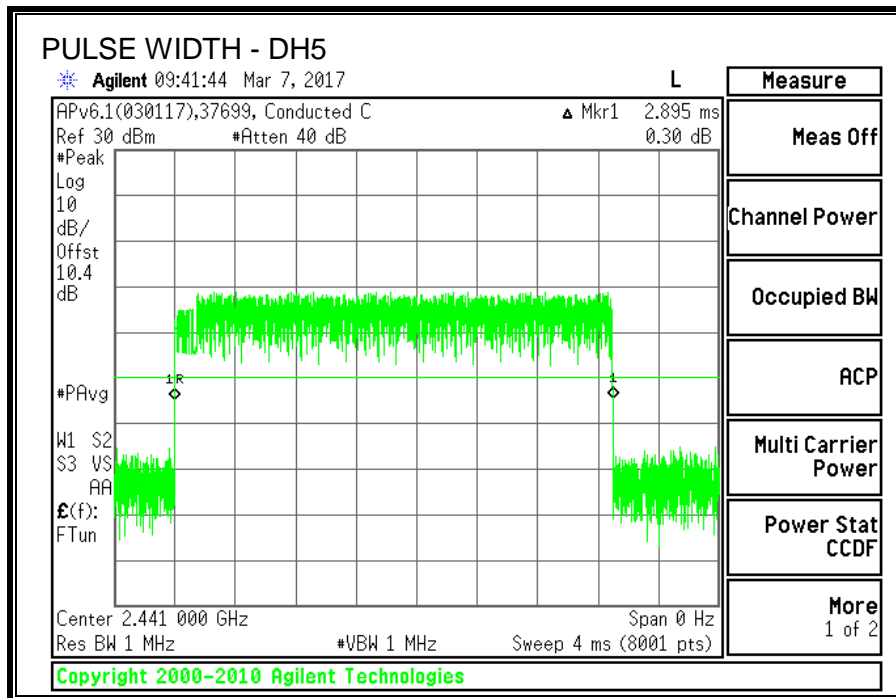
RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK Normal Mode					
DH1	0.3945	32	0.12624	0.4	-0.27376
DH3	1.645	18	0.2961	0.4	-0.1039
DH5	2.895	11	0.31845	0.4	-0.08155

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 7.1.4 demonstrates compliance with channel occupancy when AFH is employed.







7.3.5. OUTPUT POWER

LIMITS

§15.247 (b) (1)

RSS-247 (5.4) (b)

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Tested by:	45258 JL
Date:	3/6/2017

Mode	Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
8PSK	Low	2402	6.36	21	-14.64
	Middle	2441	6.16	21	-14.84
	High	2480	6.09	21	-14.91

7.3.6. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

Tested By:	45258 JL
Date:	3/7/2017

Mode	Channel	Frequency (MHz)	Average Power (dBm)
8PSK	Low	2402	3.81
	Middle	2441	3.64
	High	2480	3.42

7.3.7. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

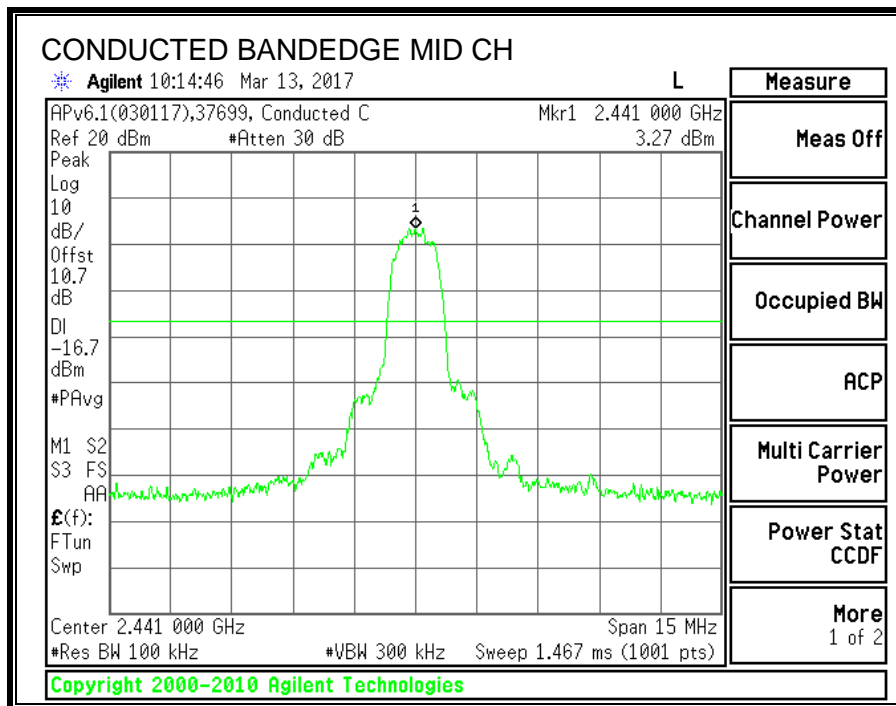
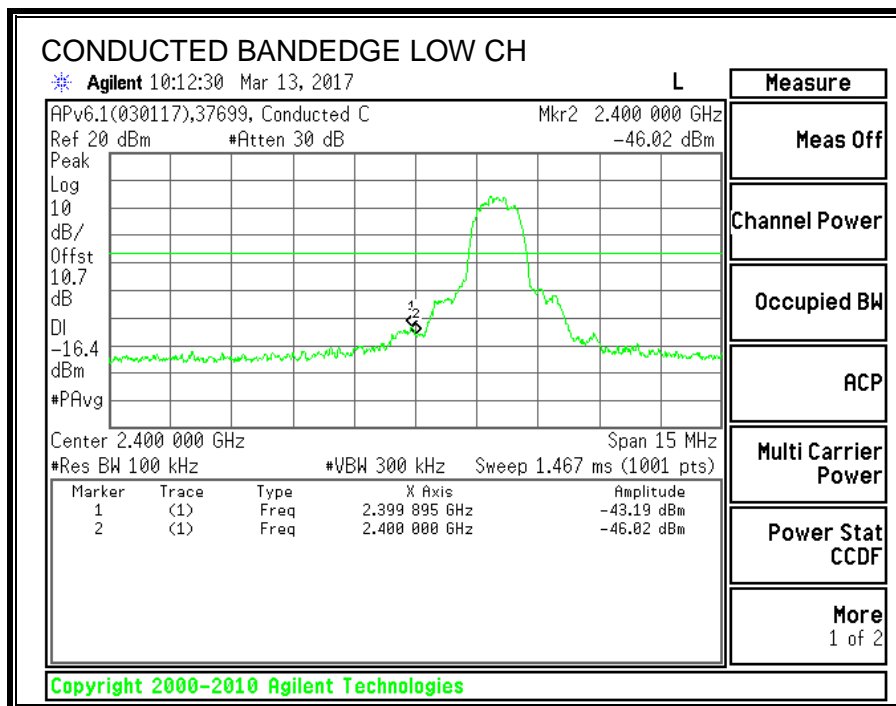
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

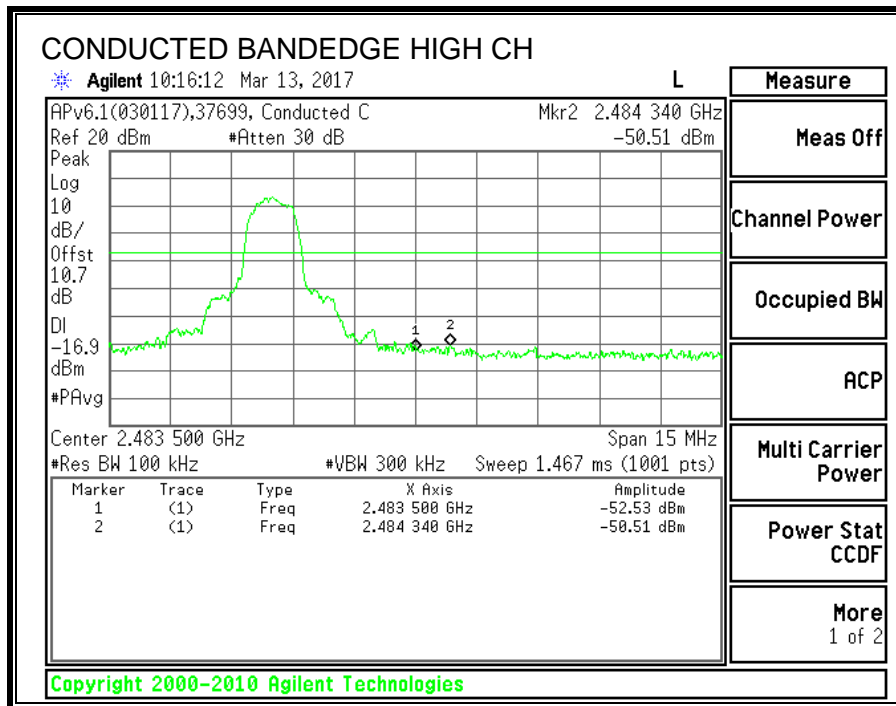
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

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

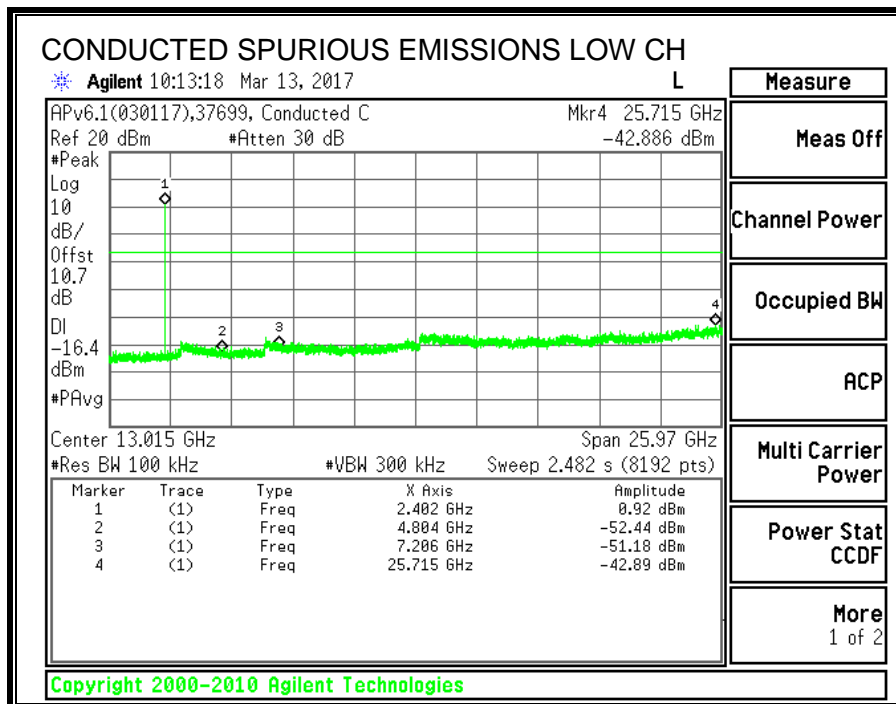
RESULTS

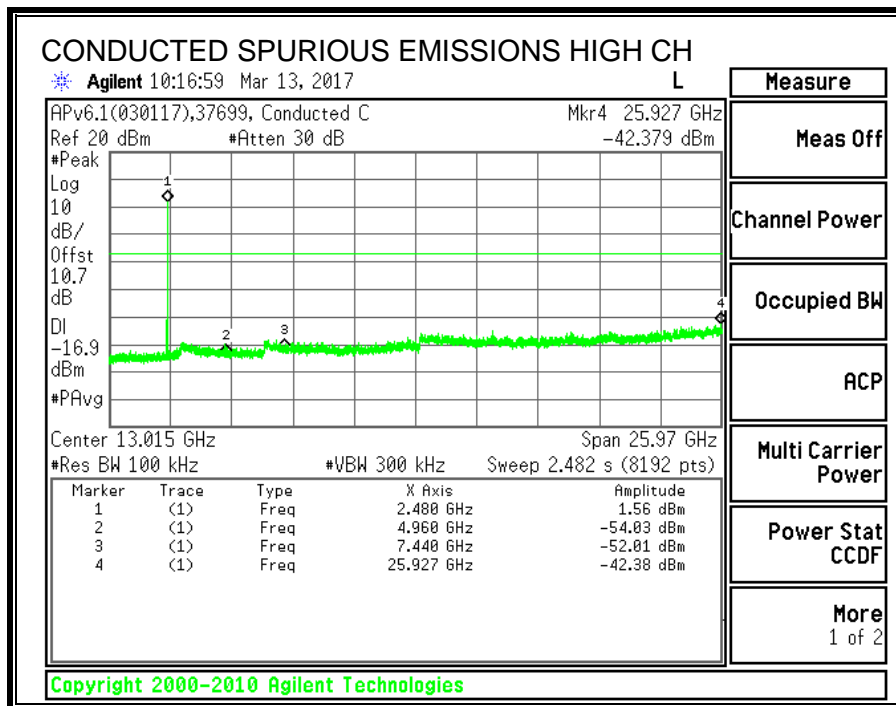
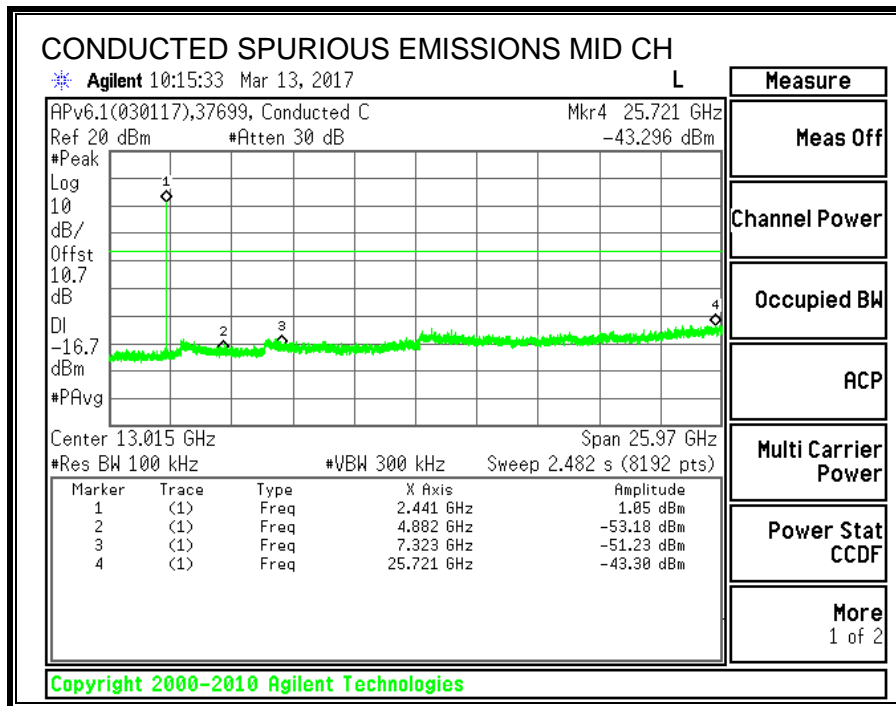
BANDEDGE



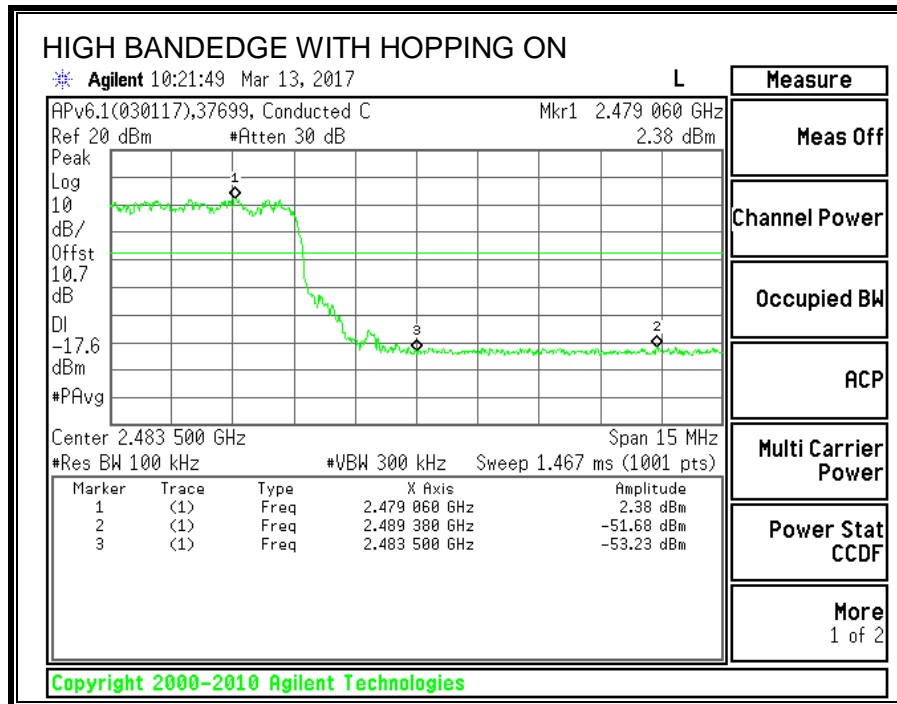
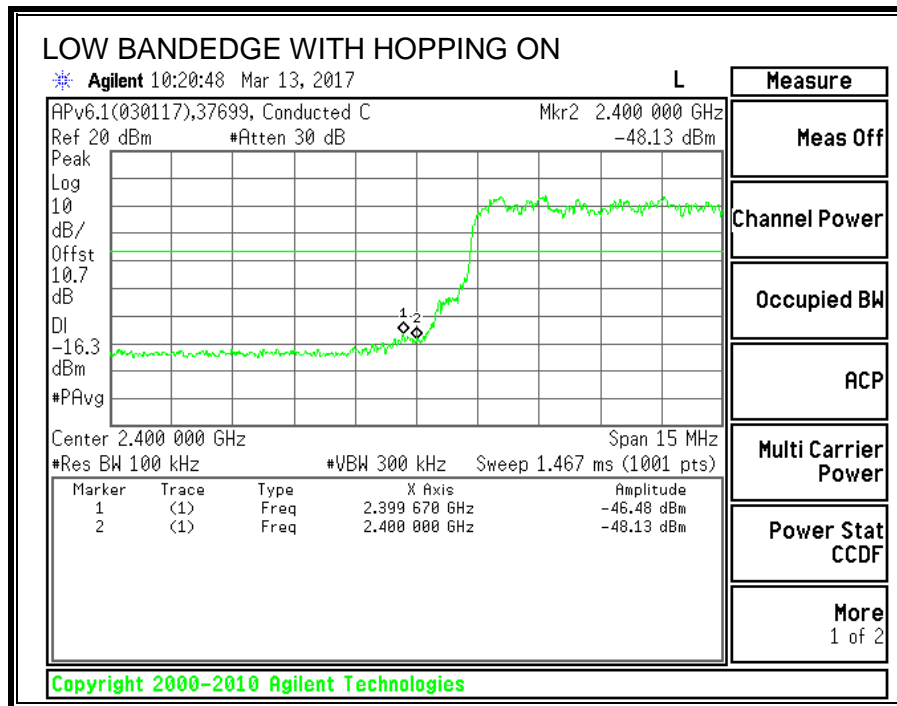


SPURIOUS EMISSIONS





BANDEDGE WITH HOPPING ON



8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

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 measurement below 1GHz; 1.5 m above the ground plane for measurement 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, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T (360 Hz) video bandwidth with peak detector for average measurements.

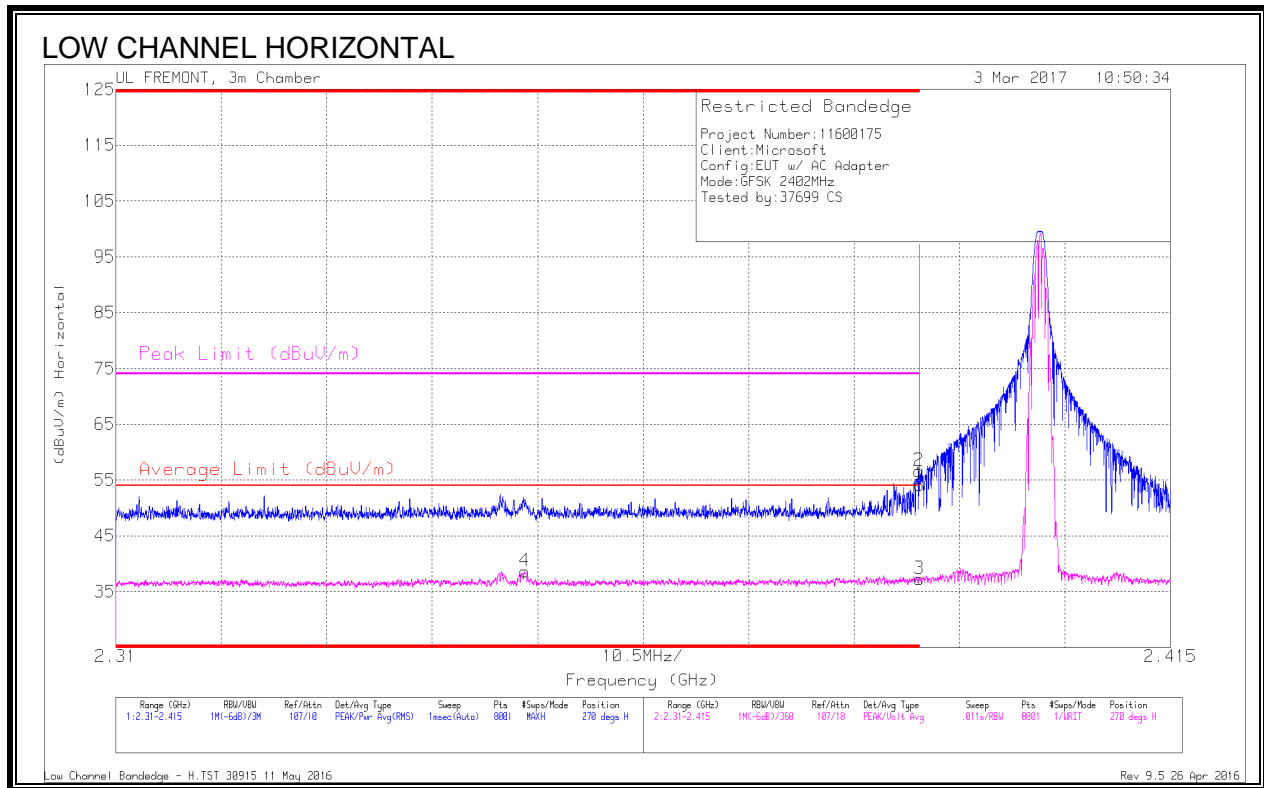
The spectrum from 30 MHz to 1GHz and 18GHz to 26 GHz was investigated with the transmitter set to transmit at the channel with highest output power as worst-case scenario. 1GHz to 18GHz was set to the lowest, middle, and highest channels in the 2.4 GHz band

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

8.2. BASIC DATA RATE GFSK MODULATION

8.2.1. RESTRICTED BANDEDGE (LOW CHANNEL)

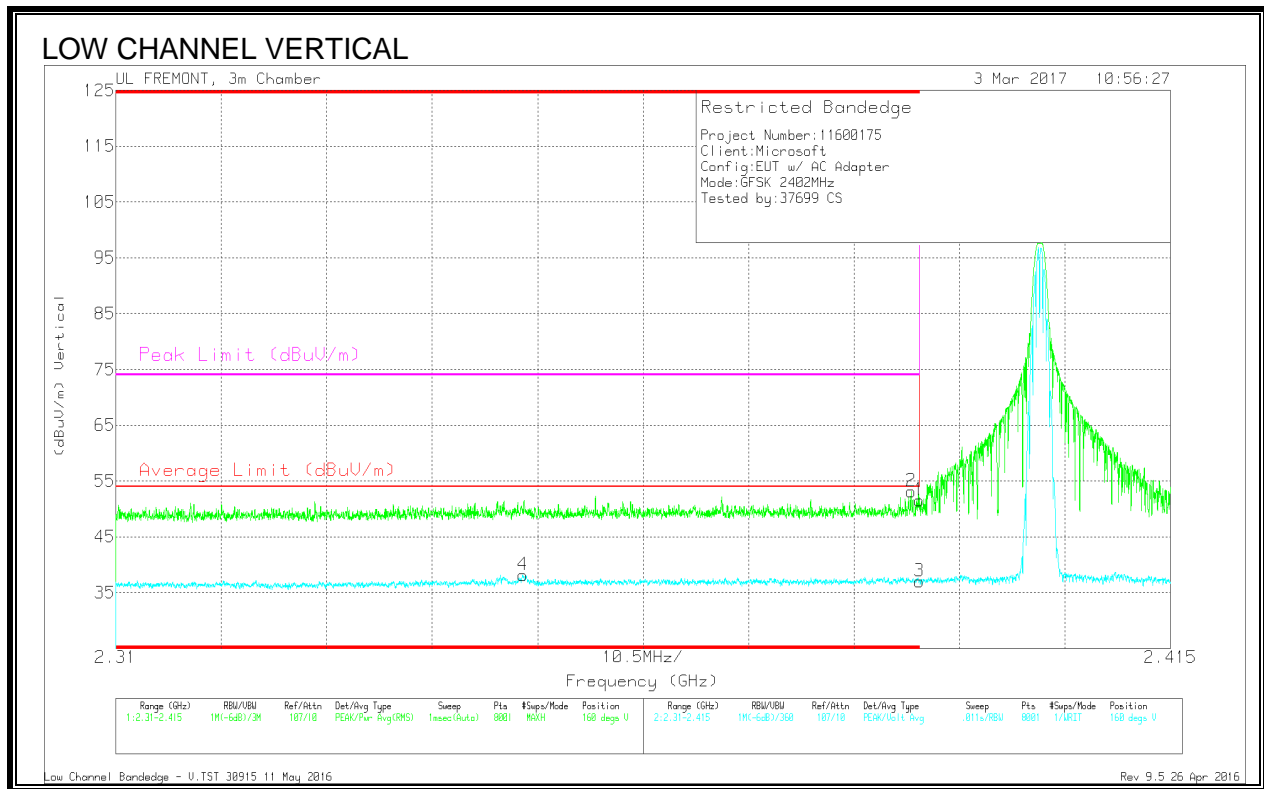


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Ftr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	43	Pk	31.9	-20.8	54.1	-	-	74	-19.9	270	102	H
2	* 2.39	45.57	Pk	31.9	-20.8	56.67	-	-	74	-17.33	270	102	H
3	* 2.39	26.13	VA1T	31.9	-20.8	37.23	54	-16.77	-	-	270	102	H
4	* 2.351	27.49	VA1T	31.9	-20.8	38.59	54	-15.41	-	-	270	102	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

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



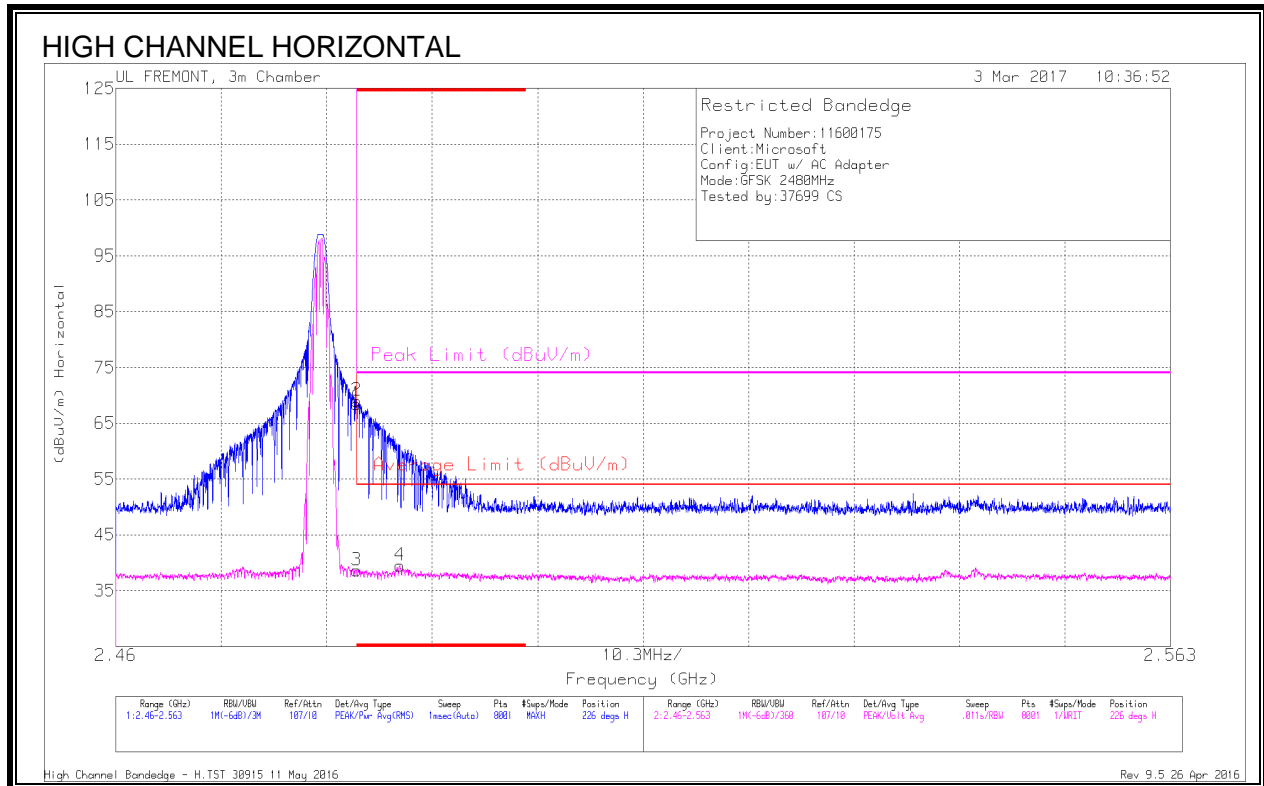
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Ftr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.39	Pk	31.9	-20.8	51.49	-	-	74	-22.51	160	128	V
2	* 2.389	42.07	Pk	31.9	-20.8	53.17	-	-	74	-20.83	160	128	V
3	* 2.39	25.9	VA1T	31.9	-20.8	37	54	-17	-	-	160	128	V
4	* 2.351	27.04	VA1T	31.9	-20.8	38.14	54	-15.86	-	-	160	128	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

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

8.2.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)

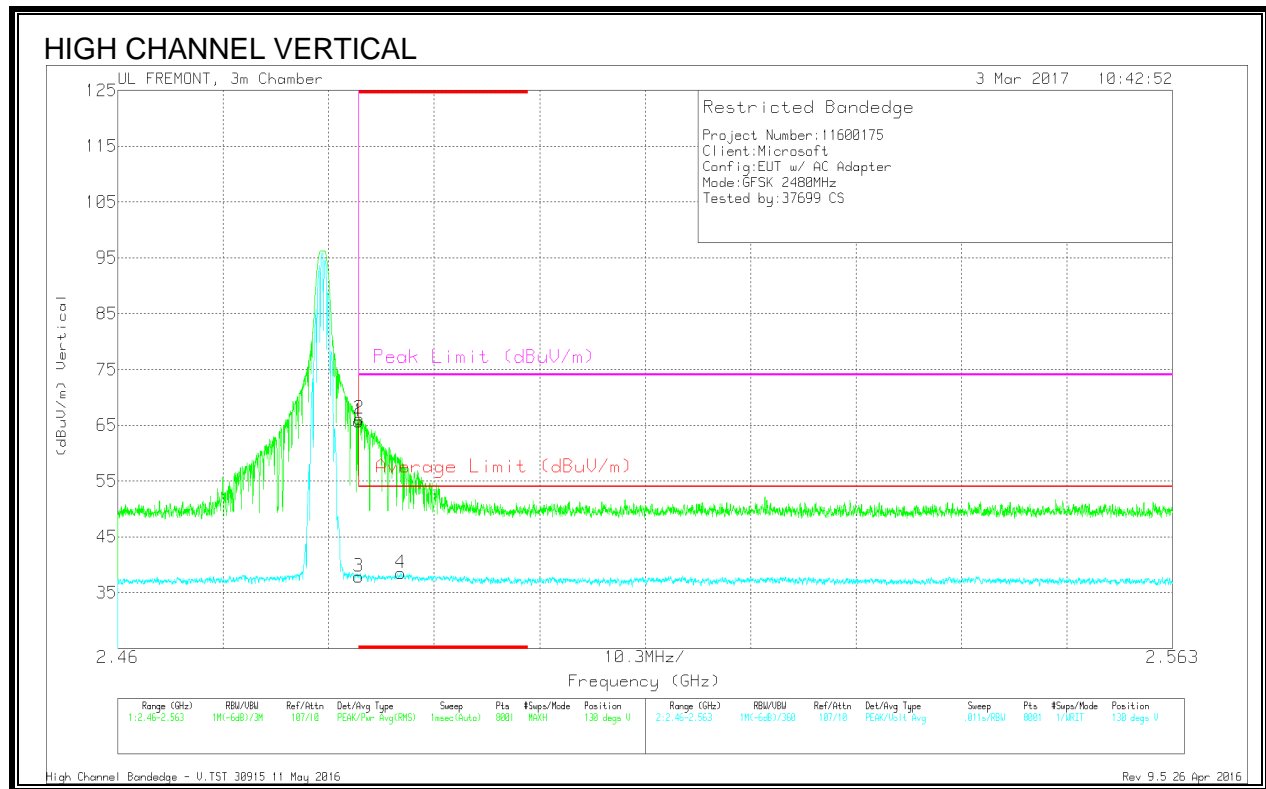


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.77	Pk	32.4	-20.8	68.37	-	-	74	-5.63	226	116	H
2	* 2.484	57.44	Pk	32.4	-20.8	69.04	-	-	74	-4.96	226	116	H
3	* 2.484	26.98	VA1T	32.4	-20.8	38.58	54	-15.42	-	-	226	116	H
4	* 2.488	28	VA1T	32.4	-20.9	39.5	54	-14.5	-	-	226	116	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

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



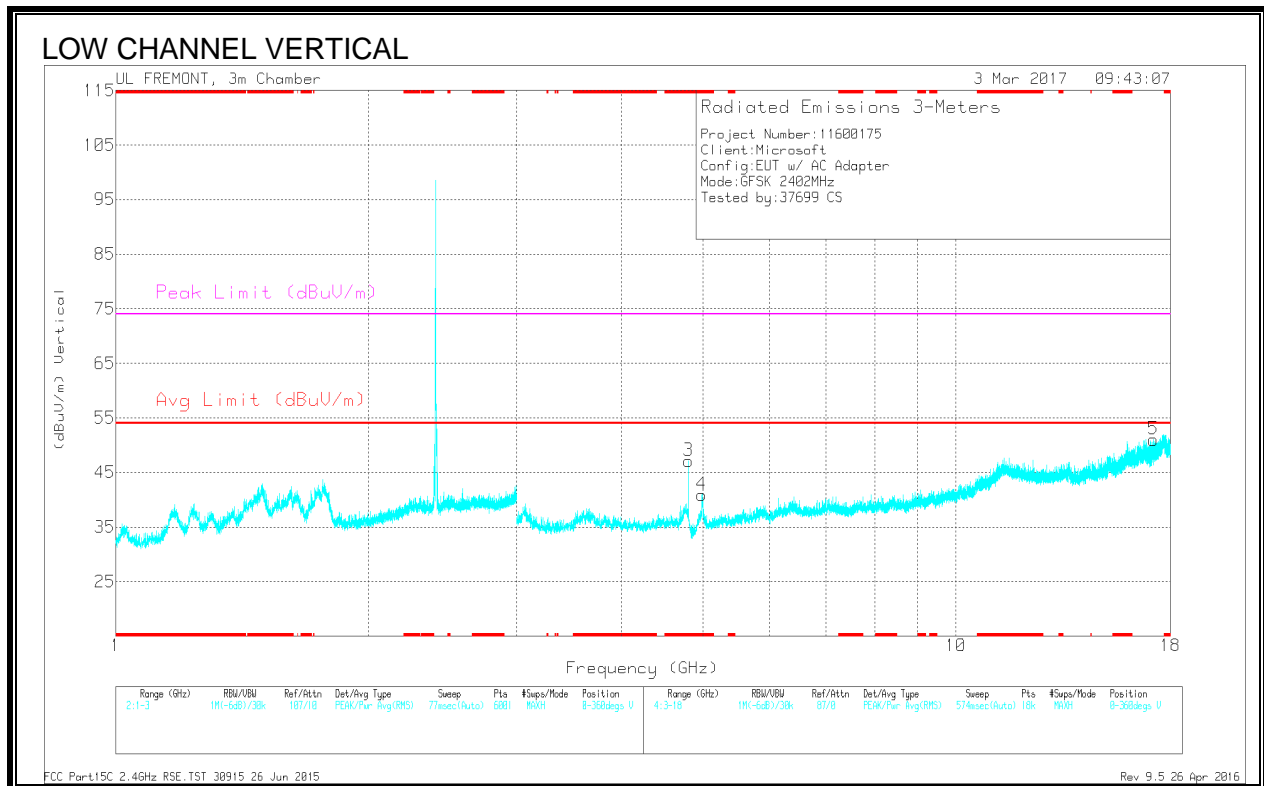
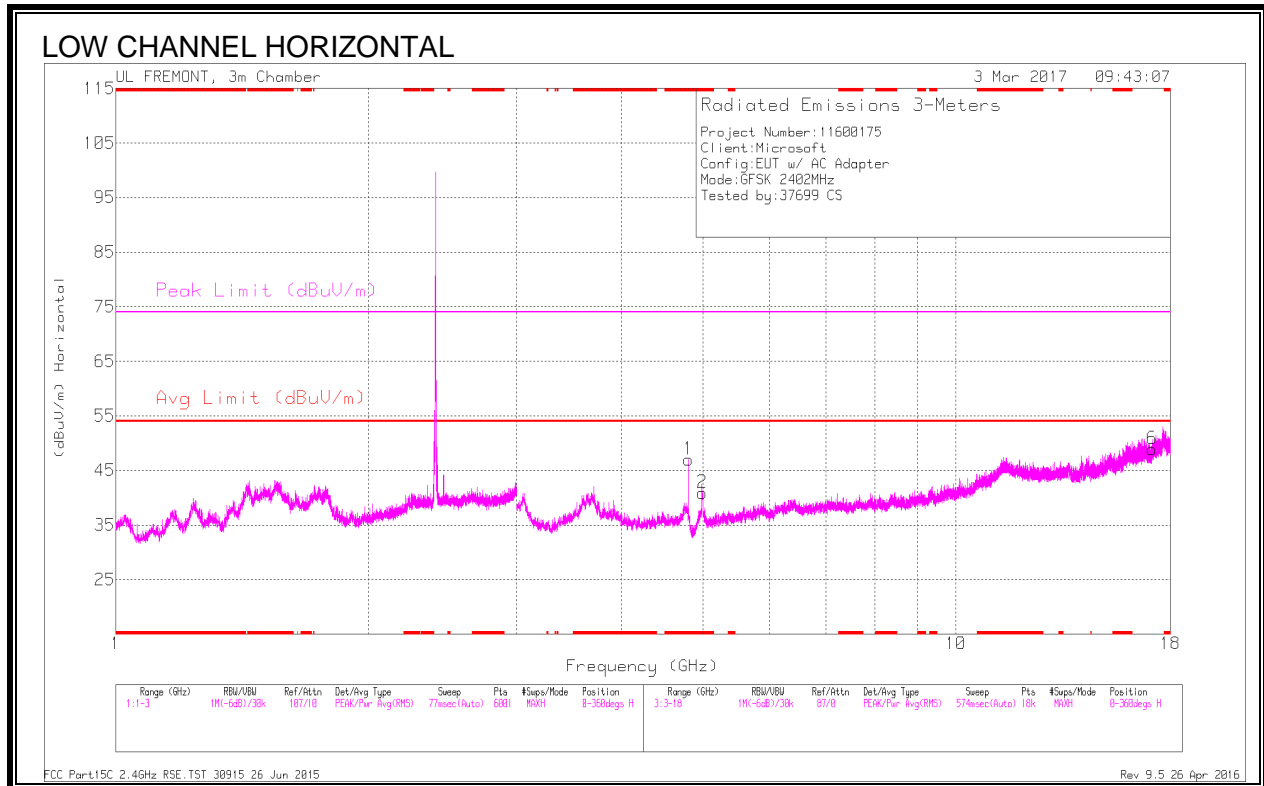
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	54.11	Pk	32.4	-20.8	65.71	-	-	74	-8.29	130	143	V
2	* 2.484	54.62	Pk	32.4	-20.8	66.22	-	-	74	-7.78	130	143	V
3	* 2.484	26.25	VA1T	32.4	-20.8	37.85	54	-16.15	-	-	130	143	V
4	* 2.488	26.95	VA1T	32.4	-20.9	38.45	54	-15.55	-	-	130	143	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

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

8.2.3. HARMONICS AND SPURIOUS EMISSIONS

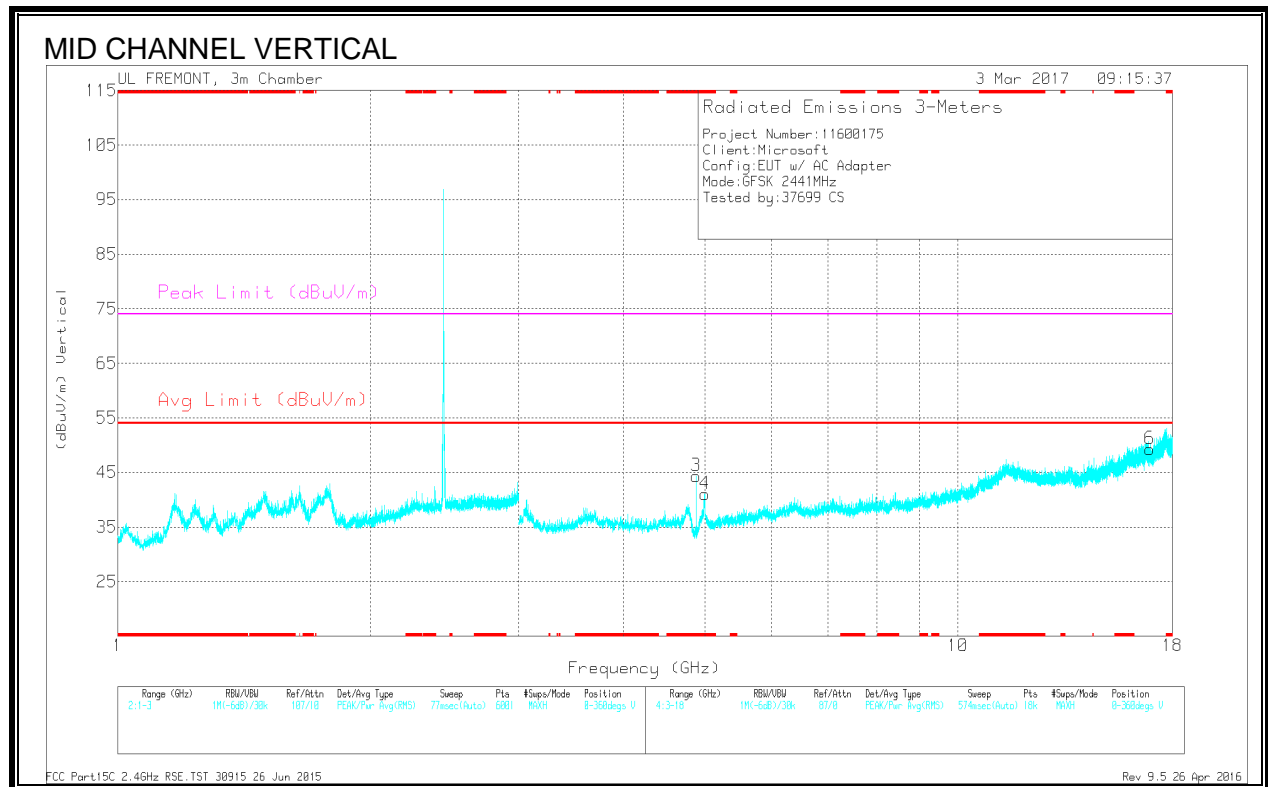
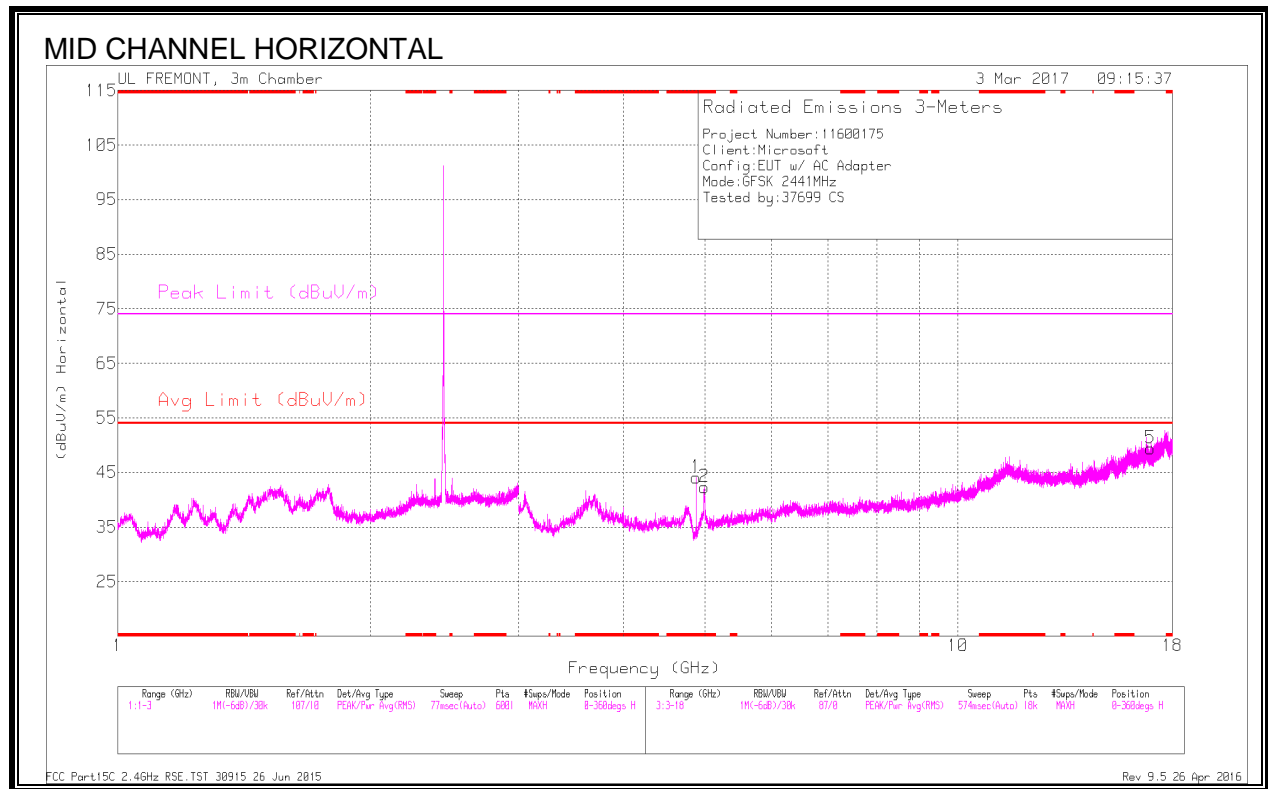


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.804	44.46	PKFH	34	-27.6	50.86	-	-	74	-23.14	201	179	H
	* 4.804	40.19	VA1T	34	-27.6	46.59	54	-7.41	-	-	201	179	H
2	* 4.99	42.3	PKFH	34.1	-28.4	48	-	-	74	-26	252	117	H
	* 4.989	28.23	VA1T	34.1	-28.4	33.93	54	-20.07	-	-	252	117	H
3	* 4.804	43.83	PKFH	34	-27.6	50.23	-	-	74	-23.77	143	109	V
	* 4.804	38.94	VA1T	34	-27.6	45.34	54	-8.66	-	-	143	109	V
4	* 4.98	41.99	PKFH	34.1	-28.4	47.69	-	-	74	-26.31	214	100	V
	* 4.982	27.79	VA1T	34.1	-28.5	33.39	54	-20.61	-	-	214	100	V
6	17.121	28.77	PKFH	41.3	-13.3	56.77	-	-	-	-	360	200	H
5	17.168	28.68	PKFH	41.3	-12.7	57.28	-	-	-	-	360	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=1MHz VB=3 x RB, Peak

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

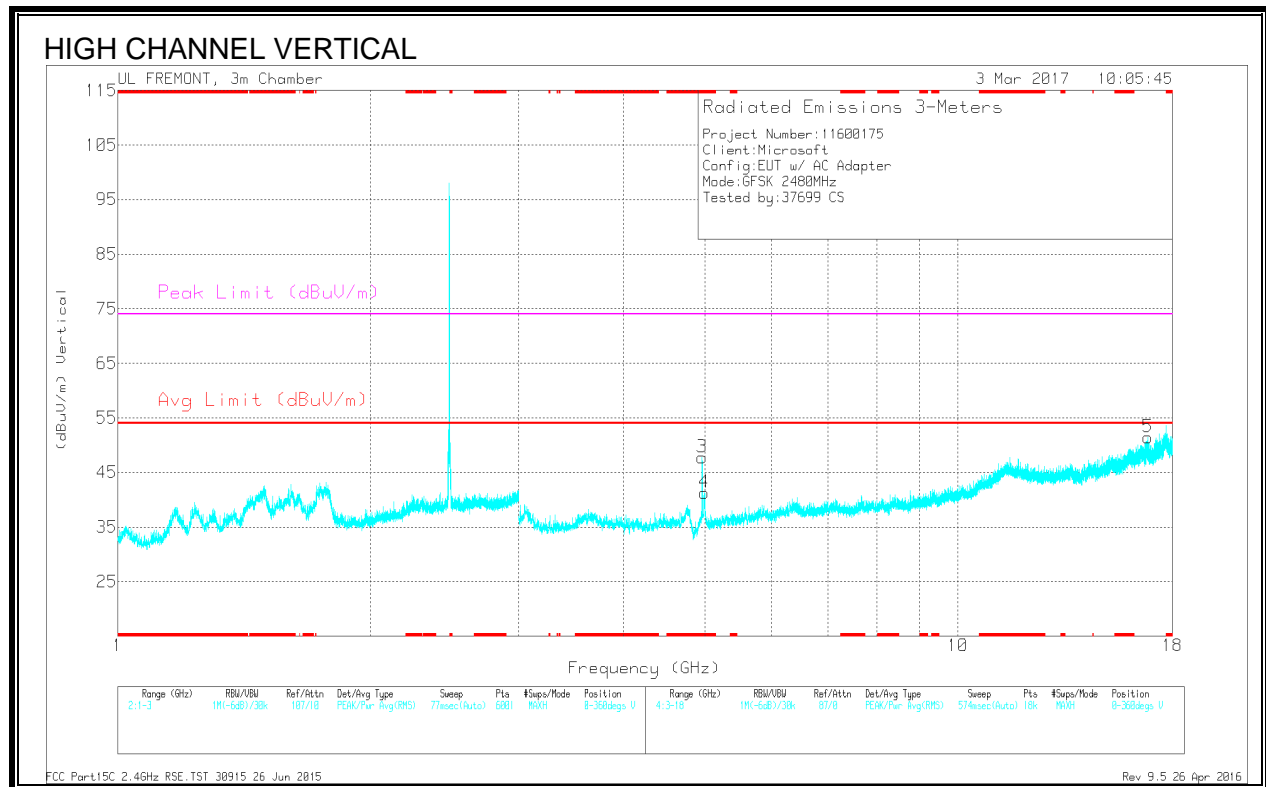
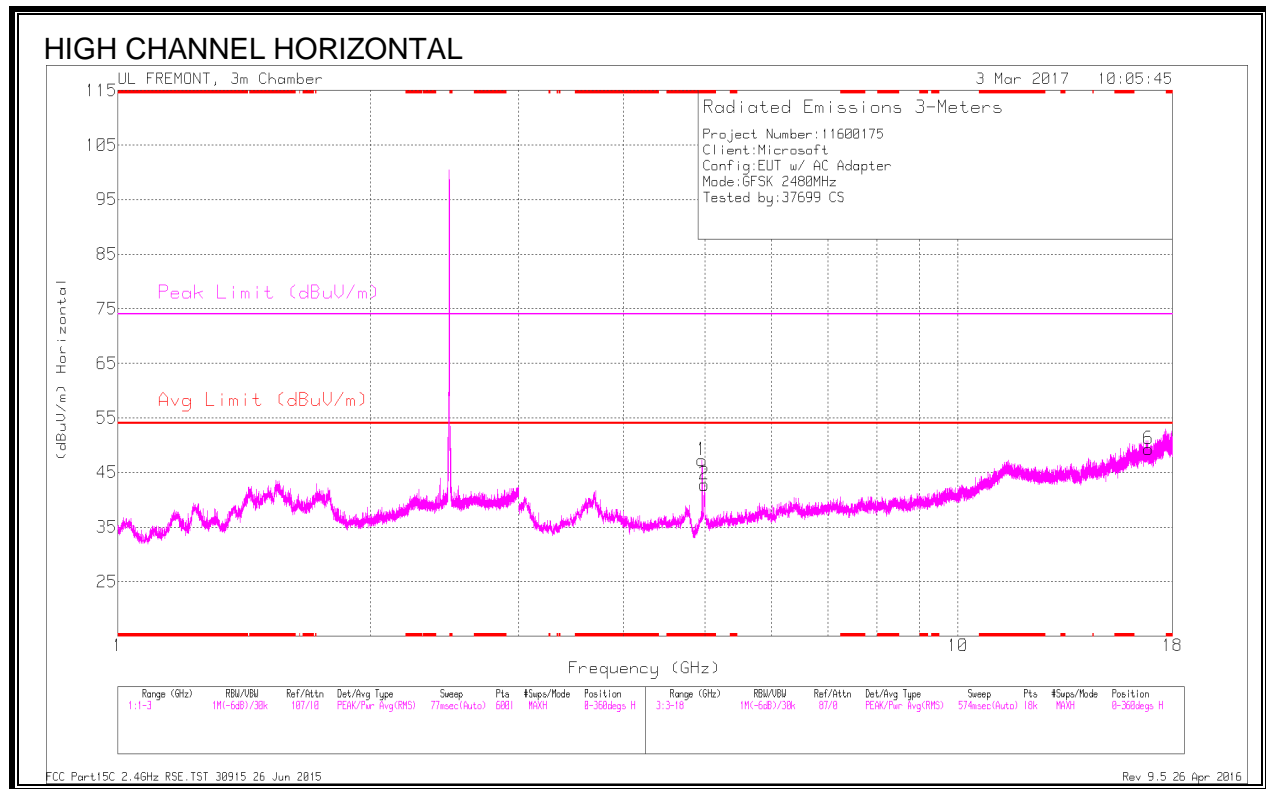


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.882	43.69	PKFH	34	-27.6	50.09	-	-	74	-23.91	173	100	H
	* 4.882	39.05	VA1T	34	-27.6	45.45	54	-8.55	-	-	173	100	H
2	* 4.99	43.48	PKFH	34.1	-28.4	49.18	-	-	74	-24.82	230	156	H
	* 4.987	28.57	VA1T	34.1	-28.5	34.17	54	-19.83	-	-	230	156	H
3	* 4.882	43	PKFH	34	-27.7	49.3	-	-	74	-24.7	135	100	V
	* 4.882	38.02	VA1T	34	-27.6	44.42	54	-9.58	-	-	135	100	V
4	* 4.998	40.4	PKFH	34.1	-28.3	46.2	-	-	74	-27.8	240	144	V
	* 4.998	26.56	VA1T	34.1	-28.3	32.36	54	-21.64	-	-	240	144	V
6	16.913	28.27	PKFH	41.3	-13.6	55.97	-	-	-	-	360	100	V
5	16.948	27.91	PKFH	41.3	-13.6	55.61	-	-	-	-	360	200	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=1MHz VB=3 x RB, Peak

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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.96	46.24	PKFH	34.1	-28.5	51.84	-	-	74	-22.16	167	101	H
	* 4.96	41.85	VA1T	34.1	-28.5	47.45	54	-6.55	-	-	167	101	H
2	* 4.991	43.58	PKFH	34.1	-28.4	49.28	-	-	74	-24.72	221	205	H
	* 4.991	28.36	VA1T	34.1	-28.4	34.06	54	-19.94	-	-	221	205	H
3	* 4.96	45.46	PKFH	34.1	-28.5	51.06	-	-	74	-22.94	141	110	V
	* 4.96	41.21	VA1T	34.1	-28.5	46.81	54	-7.19	-	-	141	110	V
4	* 4.992	41.75	PKFH	34.1	-28.4	47.45	-	-	74	-26.55	216	103	V
	* 4.994	27.88	VA1T	34.1	-28.4	33.58	54	-20.42	-	-	216	103	V
5	16.812	28.14	PKFH	41.3	-13	56.44	-	-	-	-	360	200	V
6	16.86	28.85	PKFH	41.3	-13.6	56.55	-	-	-	-	360	100	H

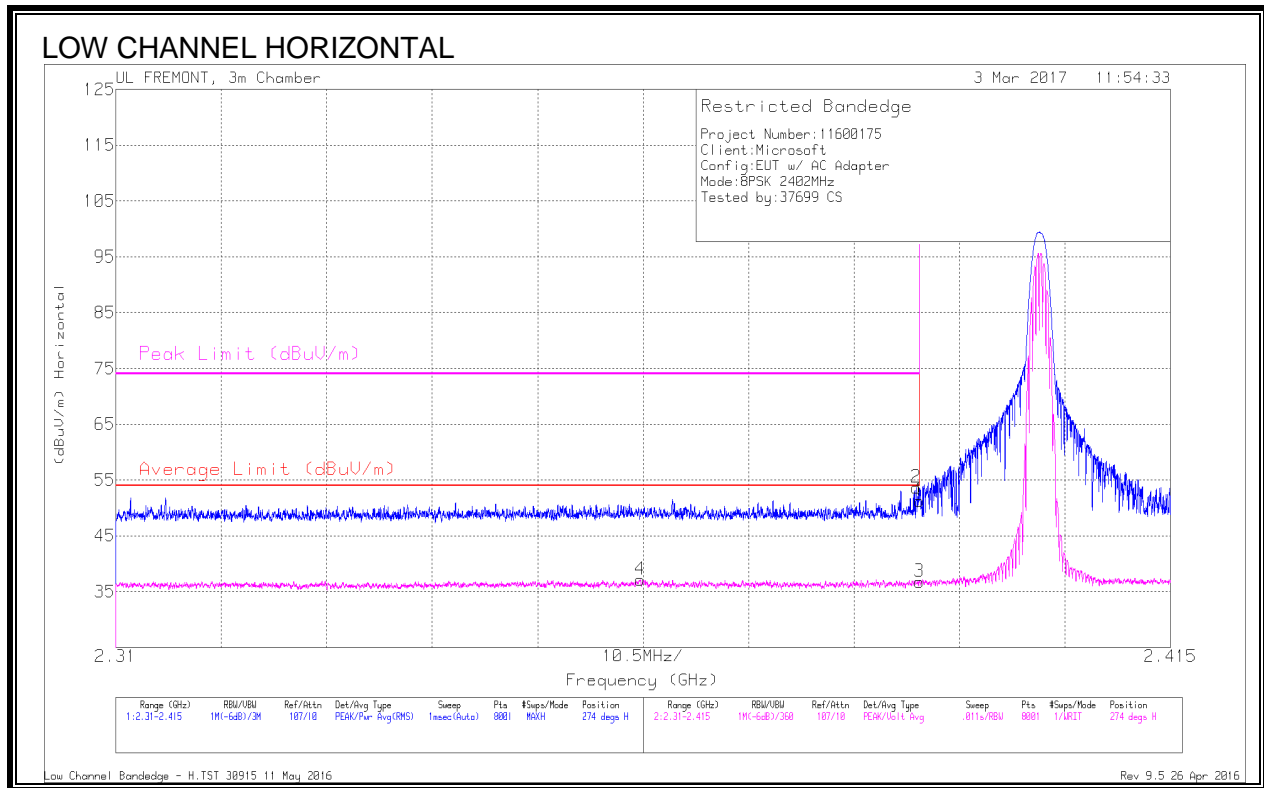
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=1MHz VB=3 x RB, Peak

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

8.3. ENHANCED DATA RATE 8PSK MODULATION

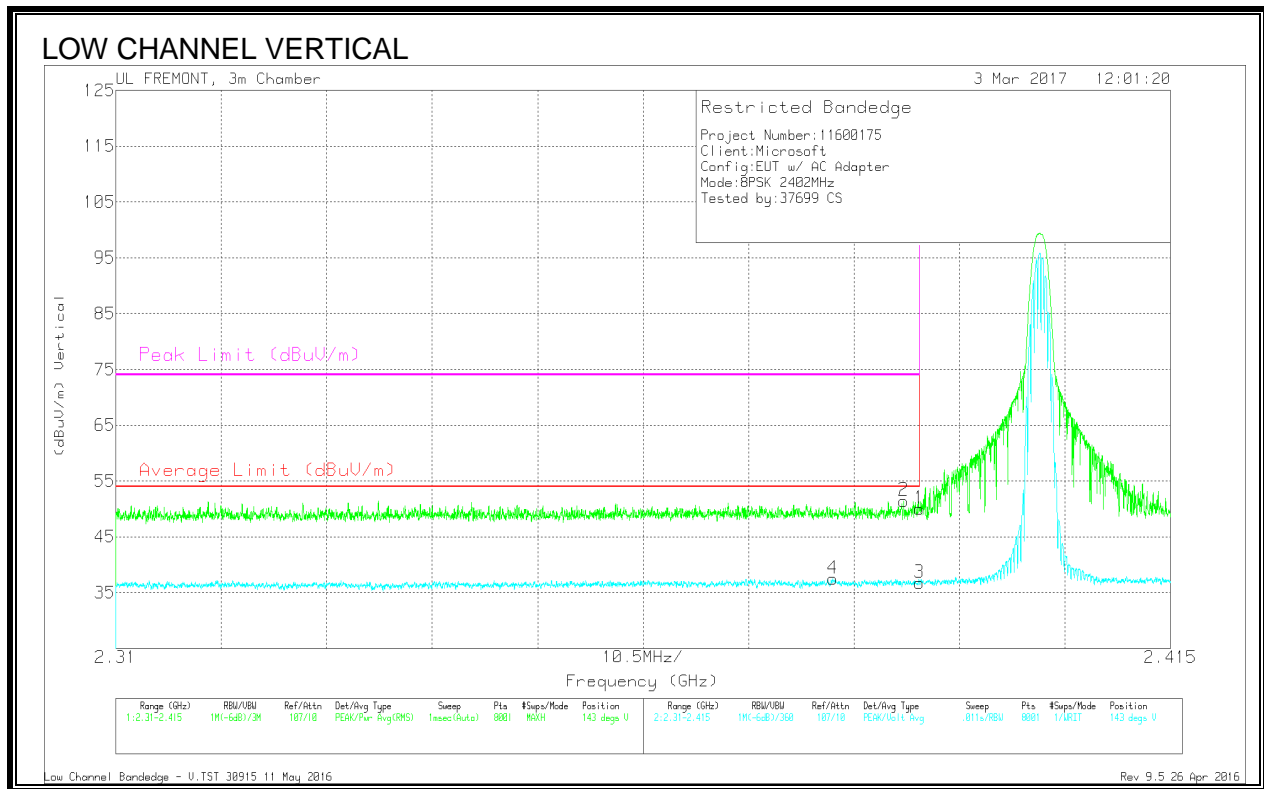
8.3.1. RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Filt/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.362	26.06	VA1T	31.9	-20.8	37.16	54	-16.84	-	-	274	244	H
1	2.39	40.24	Pk	31.9	-20.8	51.34	-	-	74	-22.66	274	244	H
2	2.39	42.57	Pk	31.9	-20.8	53.67	-	-	74	-20.33	274	244	H
3	2.39	25.67	VA1T	31.9	-20.8	36.77	54	-17.23	-	-	274	244	H

Pk - Peak detector

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

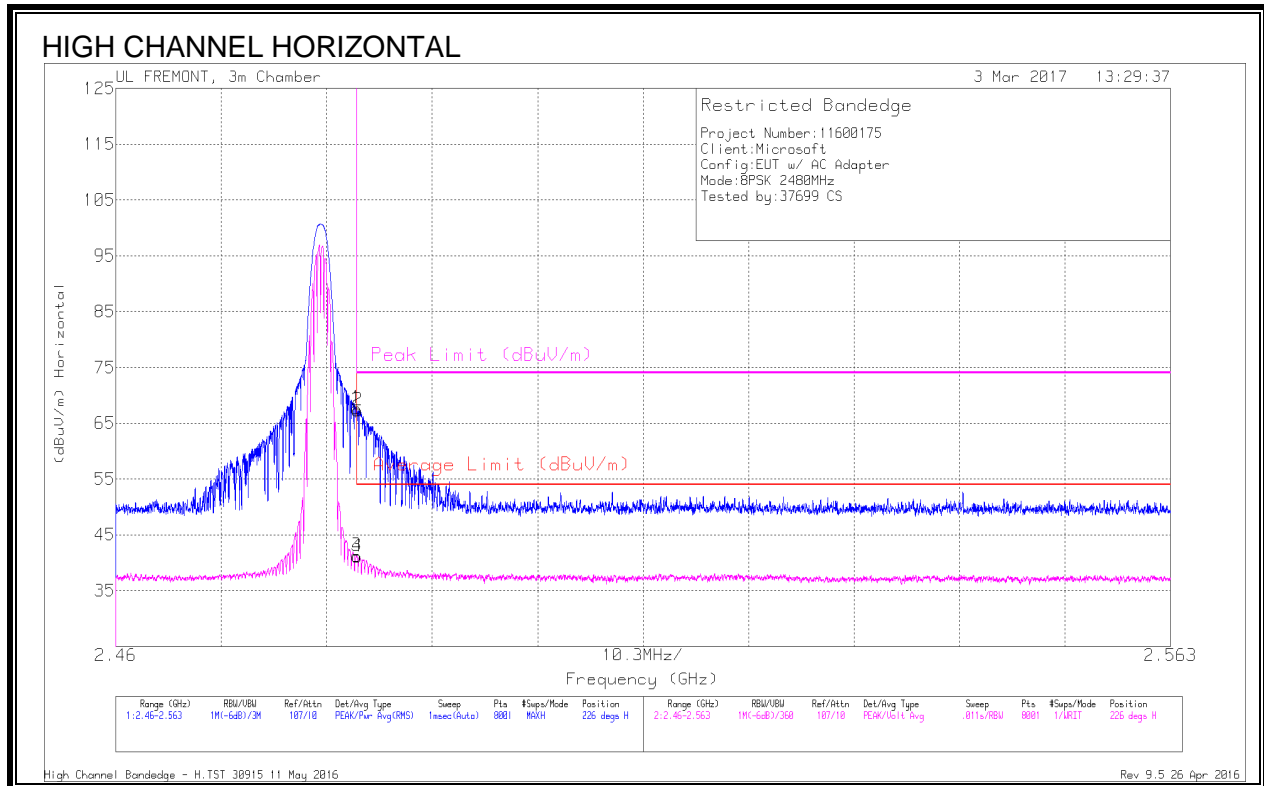


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.381	26.41	VA1T	31.9	-20.8	37.51	54	-16.49	-	-	143	150	V
2	2.388	40.37	Pk	31.9	-20.8	51.47	-	-	74	-22.53	143	150	V
1	2.39	38.98	Pk	31.9	-20.8	50.08	-	-	74	-23.92	143	150	V
3	2.39	25.71	VA1T	31.9	-20.8	36.81	54	-17.19	-	-	143	150	V

Pk - Peak detector

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

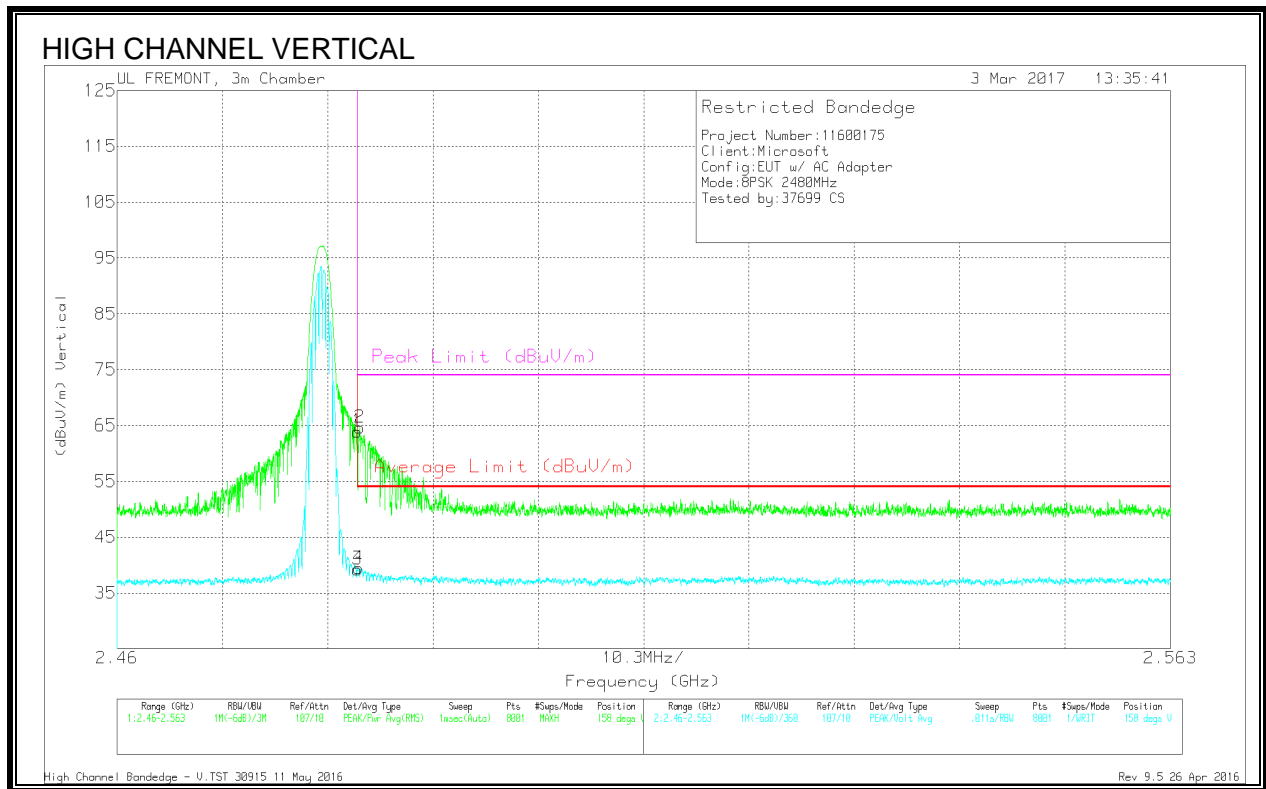
8.3.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/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	56.07	Pk	32.4	-20.8	67.67	-	-	74	-6.33	226	105	H
2	2.484	55.73	Pk	32.4	-20.8	67.33	-	-	74	-6.67	226	105	H
3	2.484	29.61	VA1T	32.4	-20.8	41.21	54	-12.79	-	-	226	105	H
4	2.484	29.49	VA1T	32.4	-20.8	41.09	54	-12.91	-	-	226	105	H

Pk - Peak detector

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

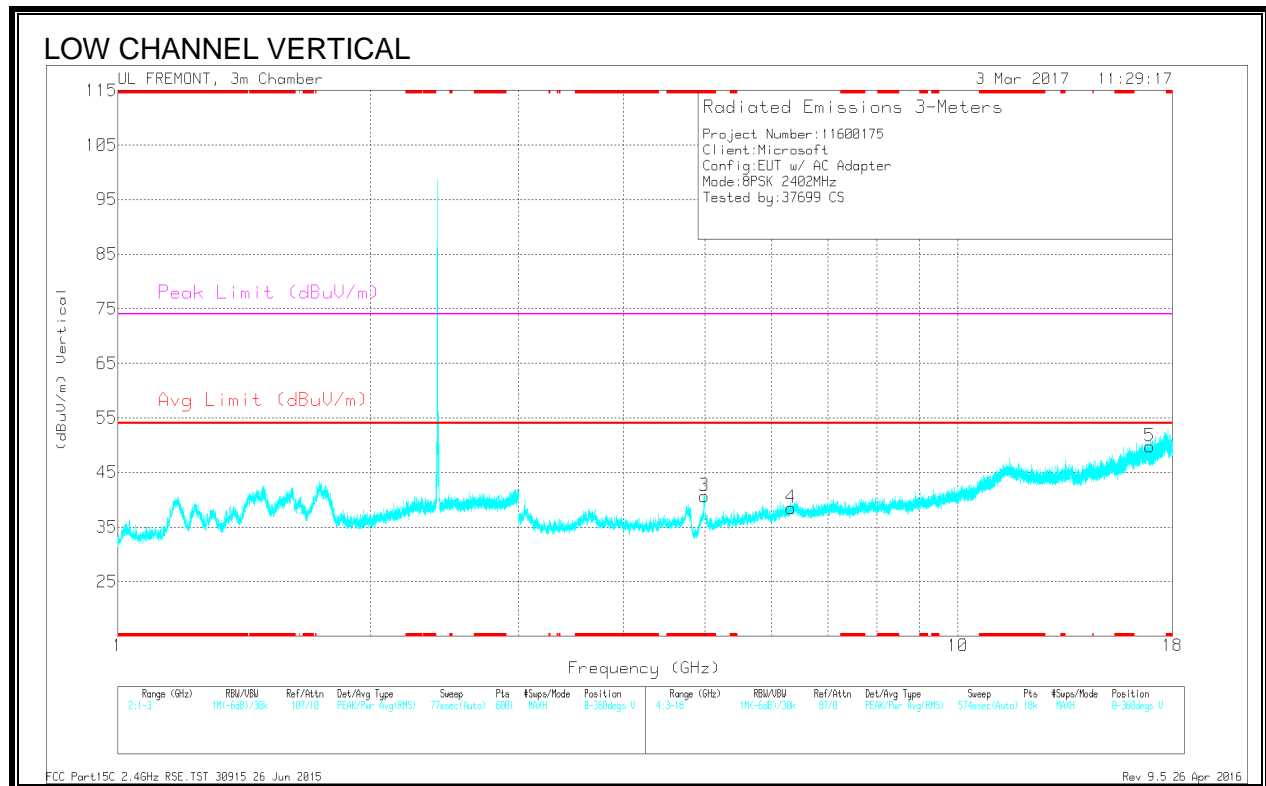
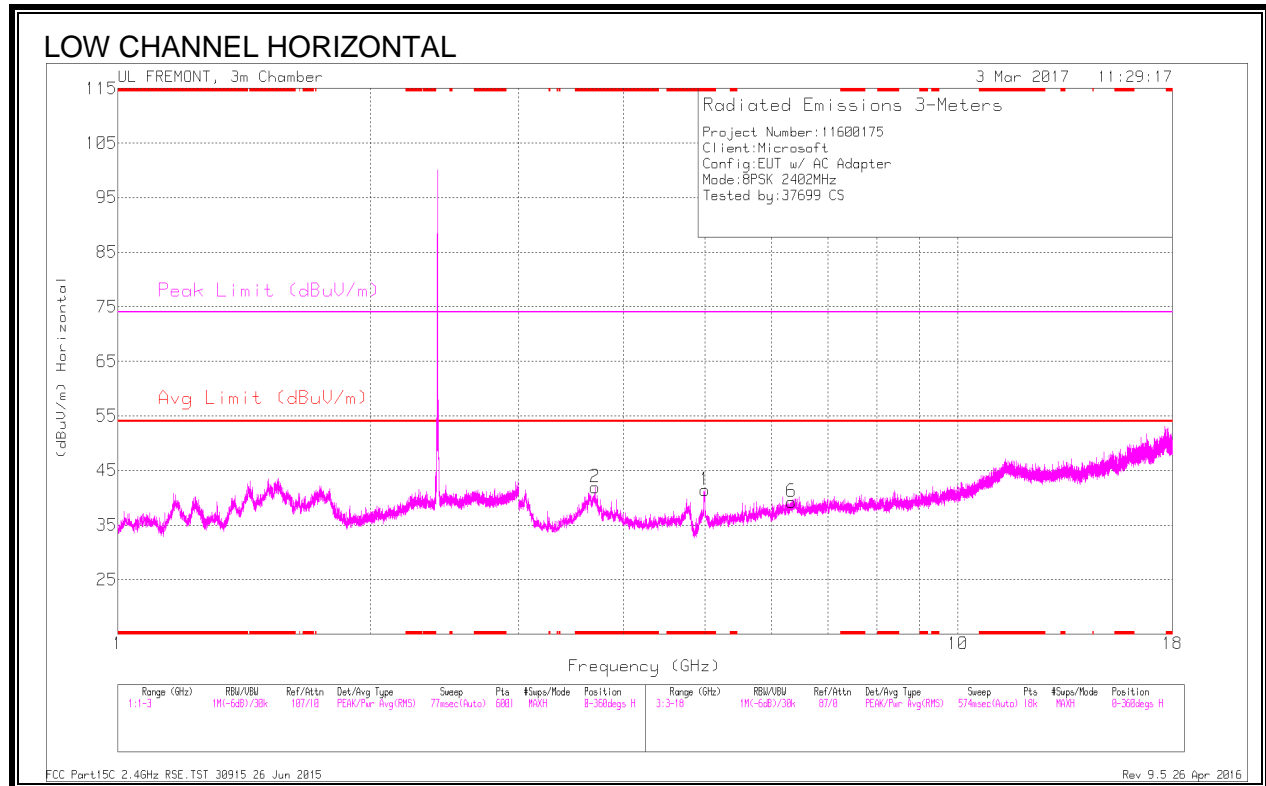


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Ftr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	52.32	Pk	32.4	-20.8	63.92	-	-	74	-10.08	158	119	V
2	2.484	53.03	Pk	32.4	-20.8	64.63	-	-	74	-9.37	158	119	V
3	2.484	27.63	VA1T	32.4	-20.8	39.23	54	-14.77	-	-	158	119	V
4	2.484	27.86	VA1T	32.4	-20.8	39.46	54	-14.54	-	-	158	119	V

Pk - Peak detector

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

8.3.3. HARMONICS AND SPURIOUS EMISSIONS

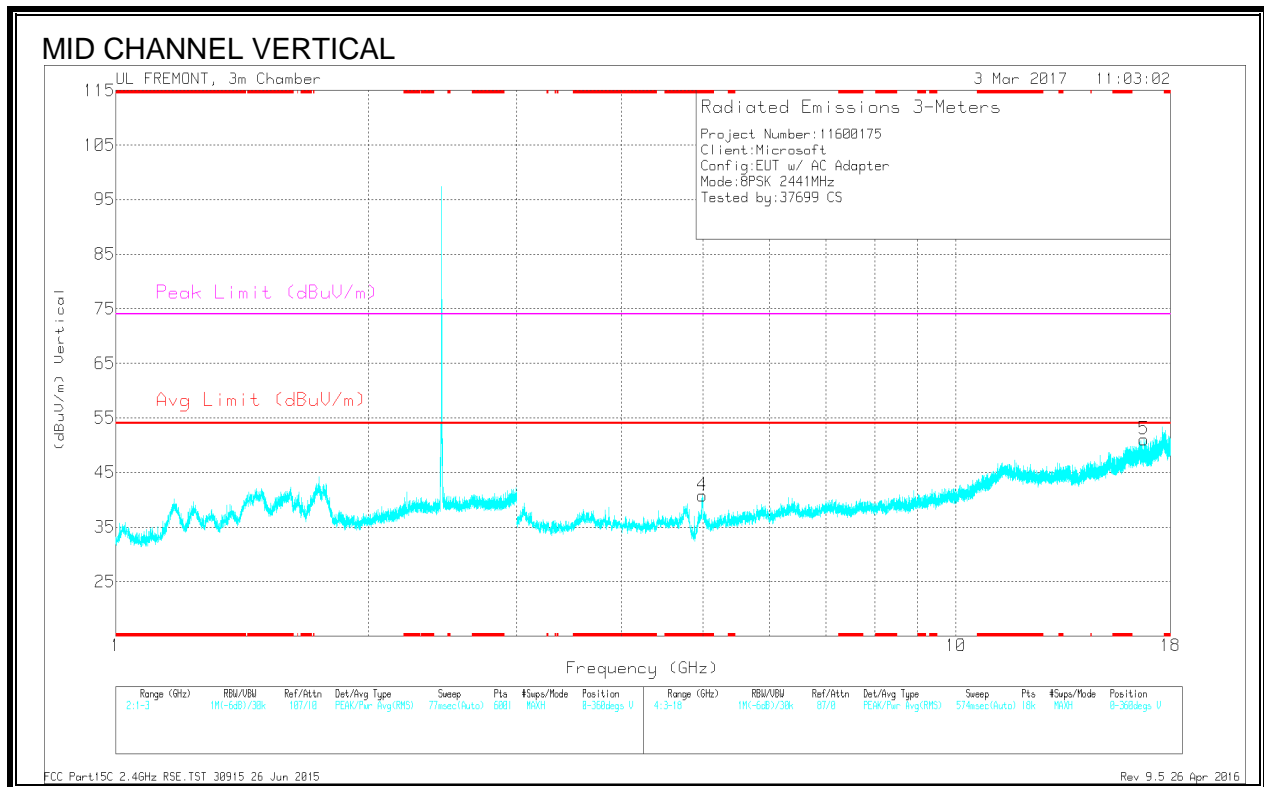
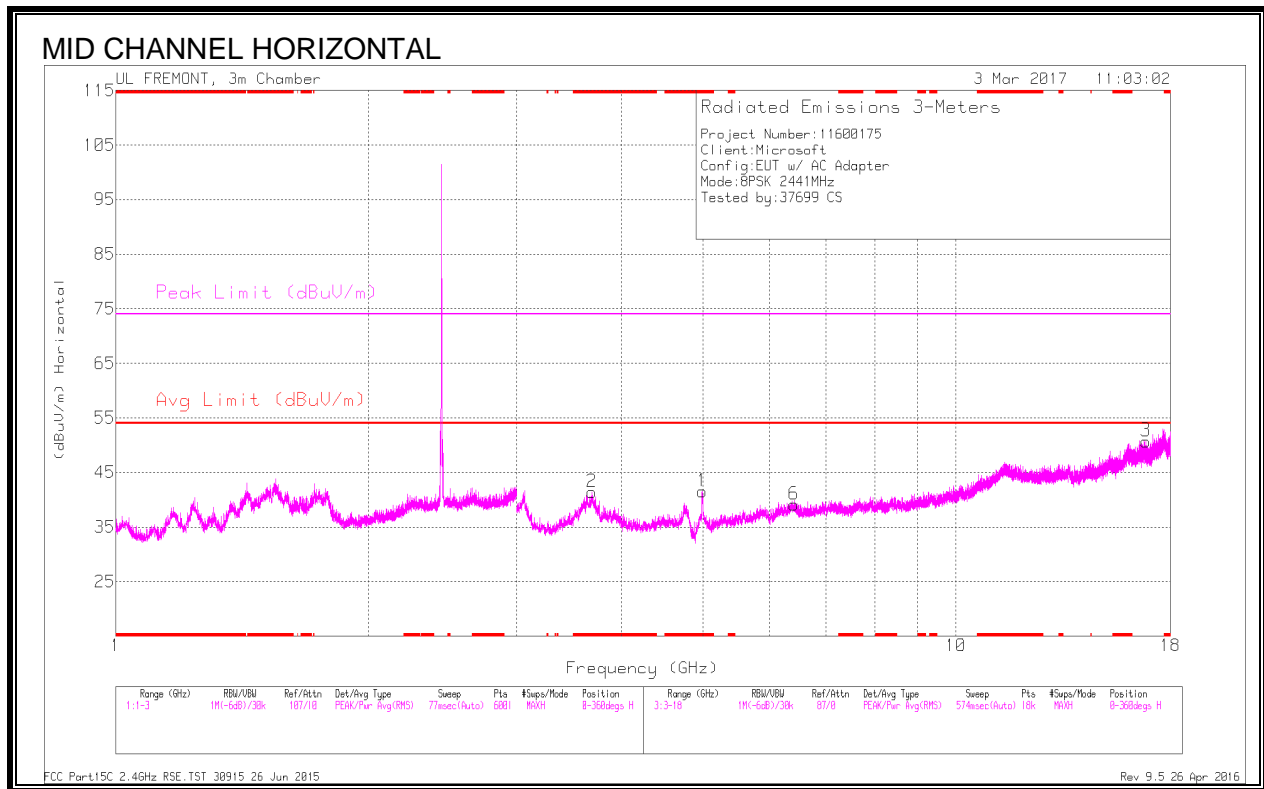


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.989	41.91	PKFH	34.1	-28.5	47.51	-	-	74	-26.49	229	151	H
	* 4.989	27.77	VA1T	34.1	-28.4	33.47	54	-20.53	-	-	229	151	H
2	* 3.7	41.53	PKFH	33.3	-28.6	46.23	-	-	74	-27.77	349	153	H
	* 3.699	30.89	VA1T	33.3	-28.6	35.59	54	-18.41	-	-	349	153	H
3	* 4.994	41.7	PKFH	34.1	-28.4	47.4	-	-	74	-26.6	226	100	V
	* 4.989	27.33	VA1T	34.1	-28.5	32.93	54	-21.07	-	-	226	100	V
4	6.33	35.12	PKFH	35.6	-26.8	43.92	-	-	-	-	360	200	V
6	6.332	35.05	PKFH	35.6	-26.9	43.75	-	-	-	-	360	200	H
5	16.92	28.42	PKFH	41.3	-13.7	56.02	-	-	-	-	360	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=1MHz VB=3 x RB, Peak

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

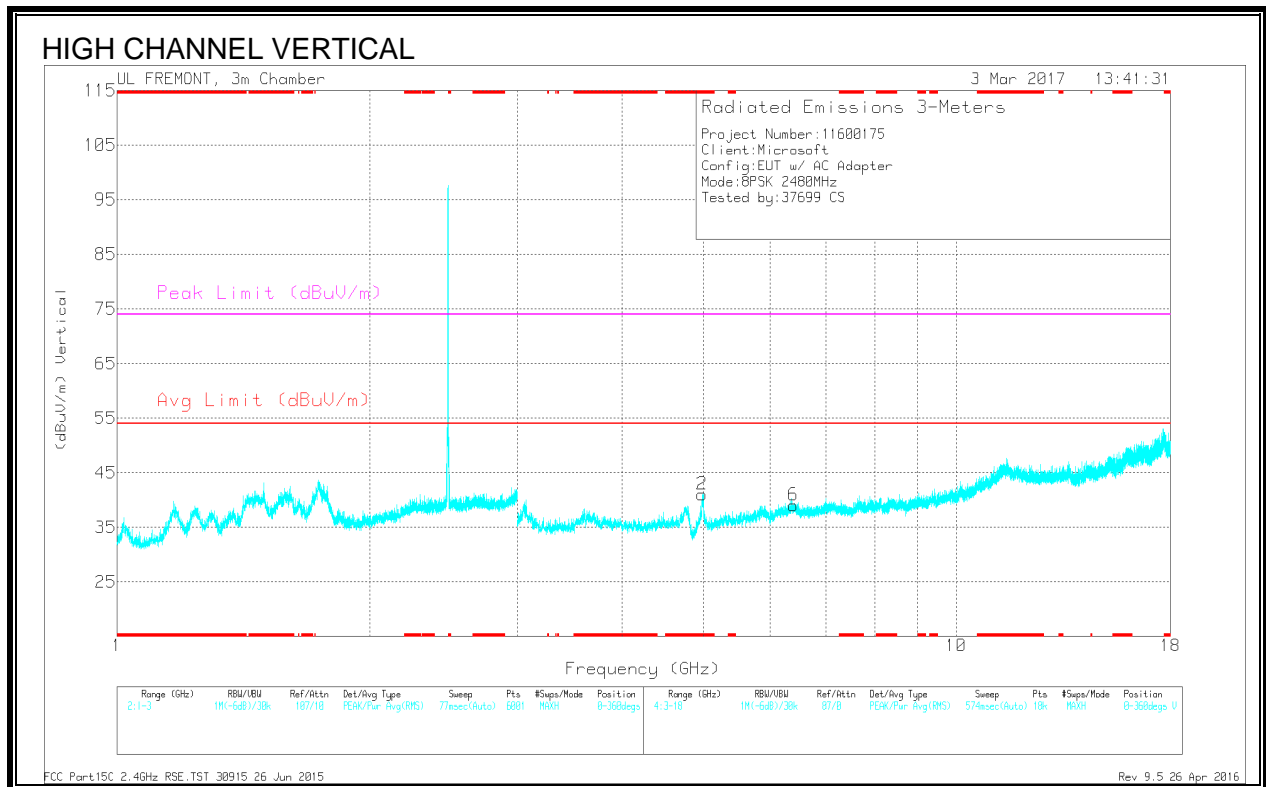
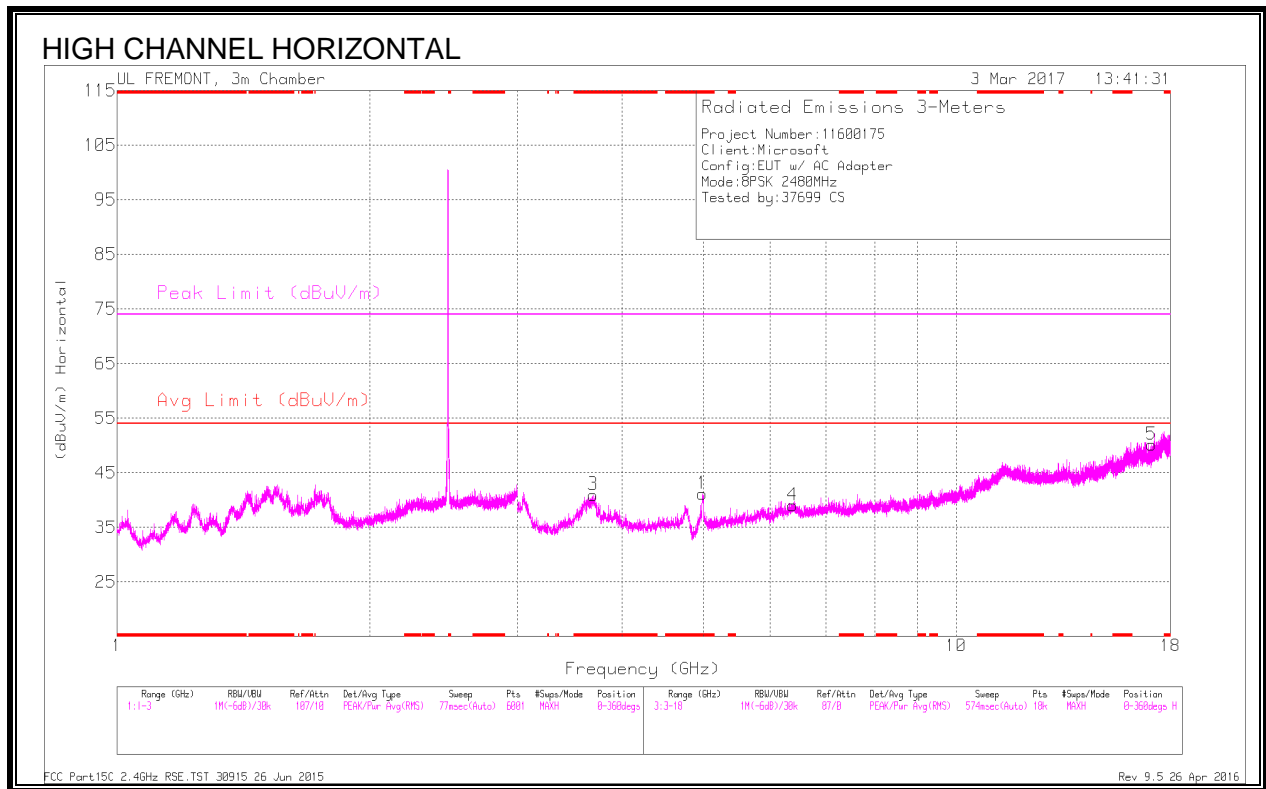


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.988	42.61	PKFH	34.1	-28.5	48.21	-	-	74	-25.79	225	162	H
	* 4.987	28.32	VA1T	34.1	-28.5	33.92	54	-20.08	-	-	225	162	H
2	* 3.684	42.86	PKFH	33.3	-28.9	47.26	-	-	74	-26.74	357	100	H
	* 3.683	31.58	VA1T	33.3	-28.9	35.98	54	-18.02	-	-	357	100	H
4	* 4.991	43.16	PKFH	34.1	-28.4	48.86	-	-	74	-25.14	216	100	V
	* 4.99	28.43	VA1T	34.1	-28.4	34.13	54	-19.87	-	-	216	100	V
6	6.413	36.24	PKFH	35.6	-26.6	45.24	-	-	-	-	360	100	H
5	16.756	28.75	PKFH	41.4	-12.8	57.35	-	-	-	-	360	100	V
3	16.819	28.34	PKFH	41.3	-13	56.64	-	-	-	-	360	100	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=1MHz VB=3 x RB, Peak

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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pa d (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.983	43.07	PKFH	34.1	-28.5	48.67	-	-	74	-25.33	236	127	H
	* 4.984	28.61	VA1T	34.1	-28.5	34.21	54	-19.79	-	-	236	127	H
3	* 3.693	42.2	PKFH	33.3	-28.6	46.9	-	-	74	-27.1	357	100	H
	* 3.694	31.33	VA1T	33.3	-28.6	36.03	54	-17.97	-	-	357	100	H
2	* 4.98	41.41	PKFH	34.1	-28.4	47.11	-	-	74	-26.89	311	115	V
	* 4.982	27.67	VA1T	34.1	-28.5	33.27	54	-20.73	-	-	311	115	V
4	6.387	36.58	PKFH	35.6	-27.1	45.08	-	-	-	-	360	200	H
6	6.398	36.58	PKFH	35.6	-27	45.18	-	-	-	-	360	100	V
5	17.1	28.92	PKFH	41.3	-13.3	56.92	-	-	-	-	360	100	H

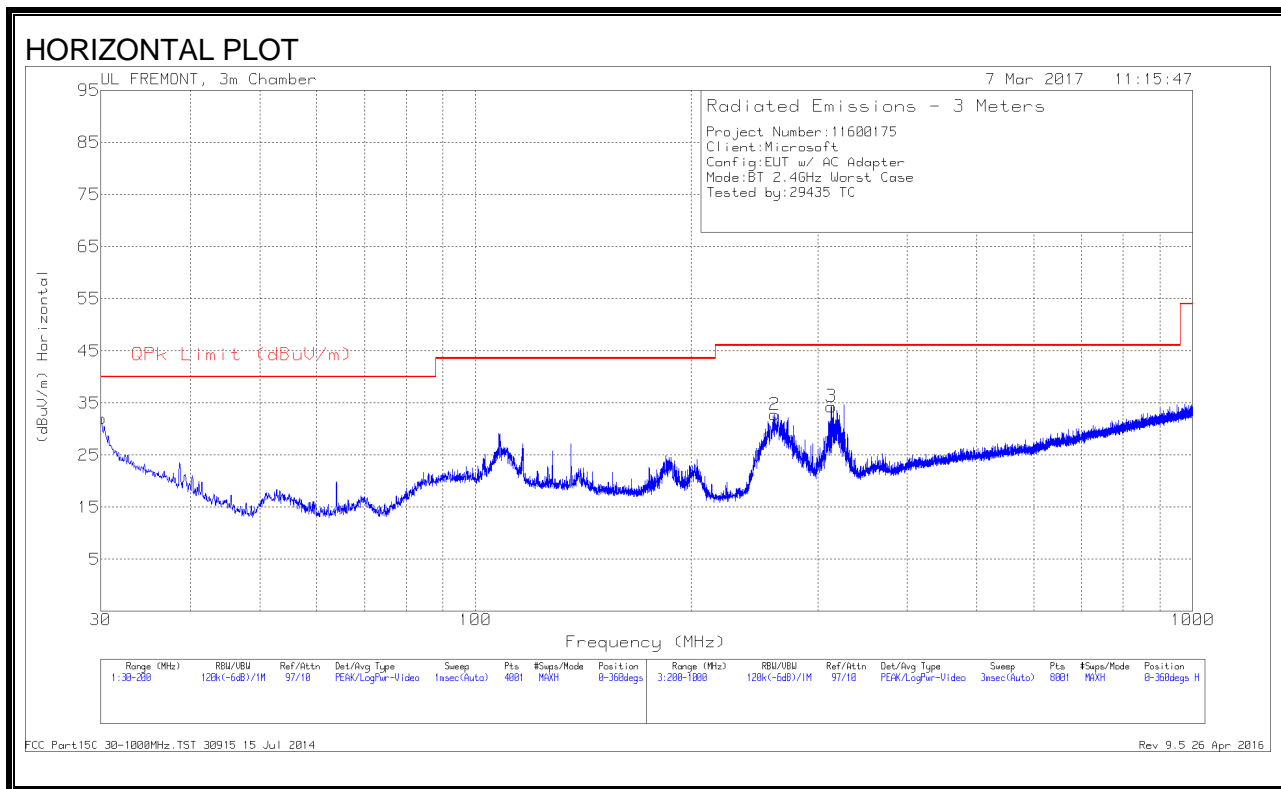
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=1MHz VB=3 x RB, Peak

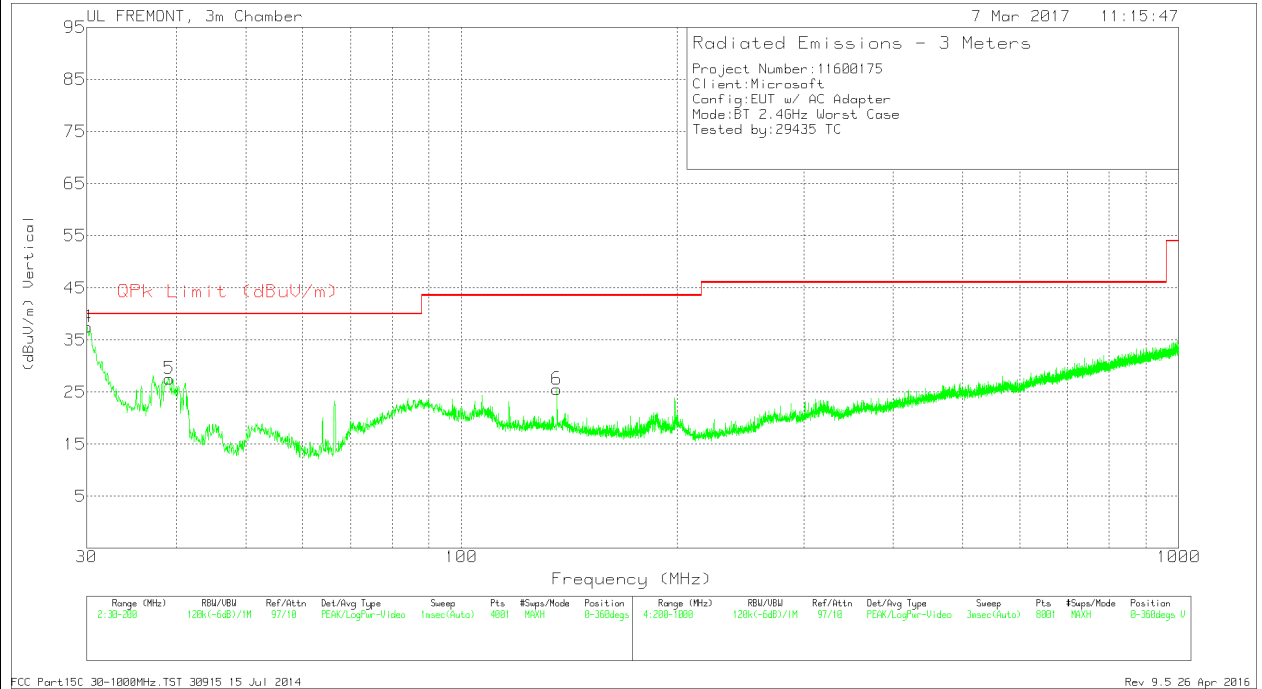
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

8.4. WORST-CASE BELOW 1 GHz

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



VERTICAL PLOT



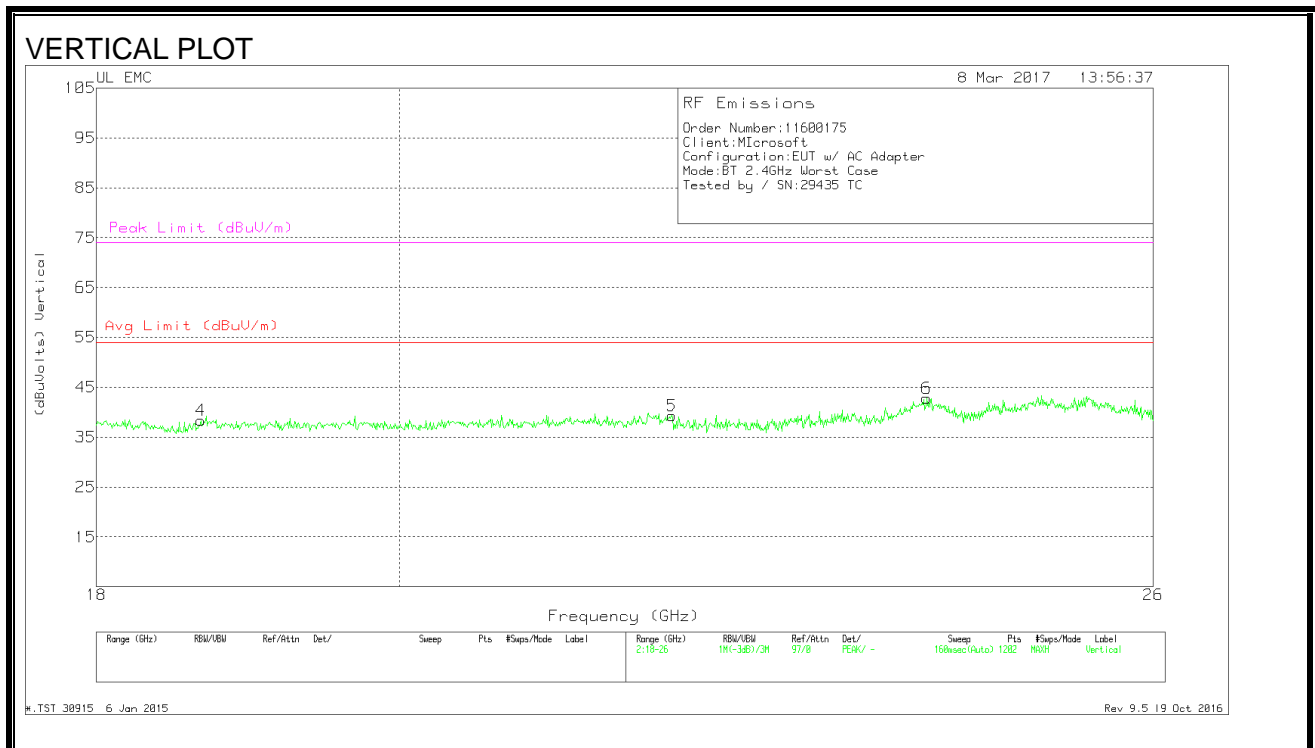
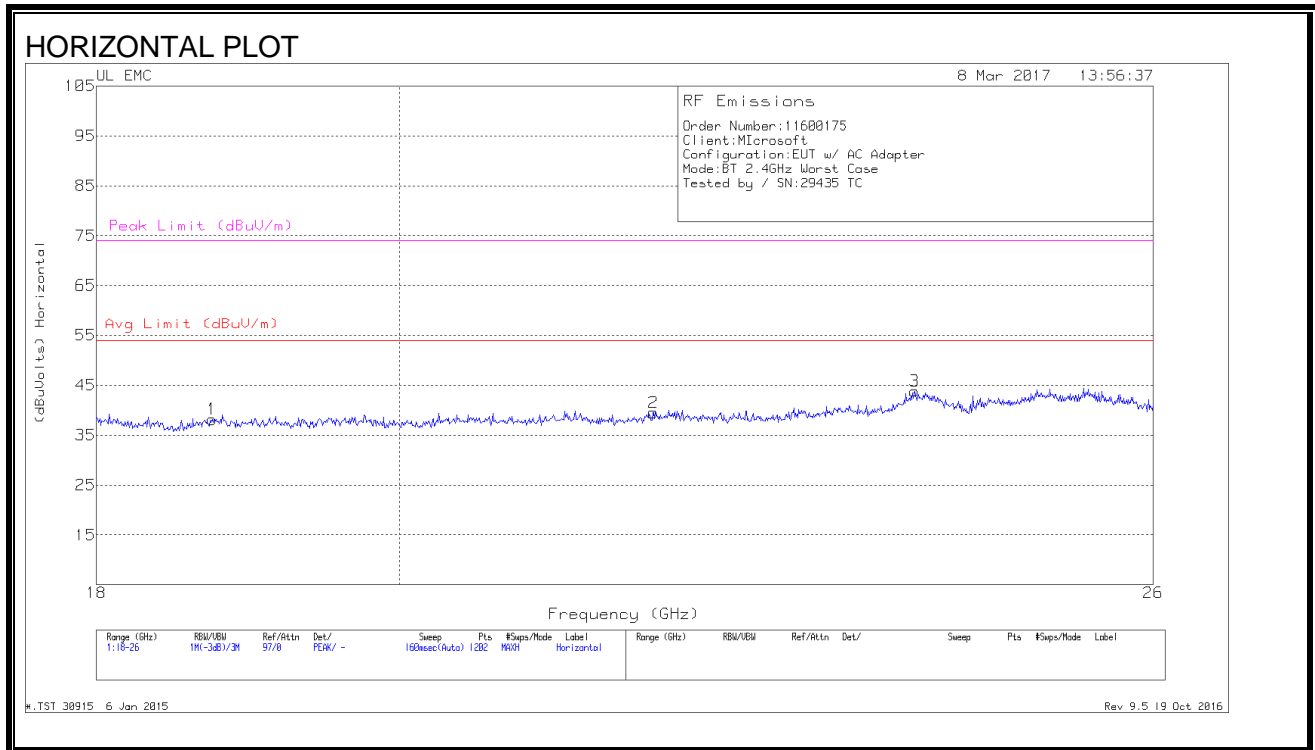
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	30.0763	34.27	Qp	25.3	-27.3	32.27	40	-7.73	153	106	V
5	39.095	36.07	Pk	18.6	-27.1	27.57	40	-12.43	0-360	100	V
6	135.825	34.05	Pk	17.3	-25.8	25.55	43.52	-17.97	0-360	100	V
2	261.3	40.96	Pk	16.2	-24.4	32.76	46.02	-13.26	0-360	100	H
3	313.4	40.72	Pk	17.8	-24.2	34.32	46.02	-11.7	0-360	100	H
1	30.0425	33.89	Pk	25.4	-27.3	31.99	40	-8.01	0-360	400	H

Qp - Quasi-Peak detector
Pk - Peak detector

8.5. WORST-CASE ABOVE 18 GHz

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



Data

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	18.739	39.87	Pk	32.4	-24.6	-9.5	38.17	54	-15.83	74	-35.83
2	21.847	40.4	Pk	33.3	-24.7	-9.5	39.5	54	-14.5	74	-34.5
3	23.928	43.33	Pk	34	-24	-9.5	43.83	54	-10.17	74	-30.17
4	18.666	40.13	Pk	32.5	-24.8	-9.5	38.33	54	-15.67	74	-35.67
5	21.99	40.43	Pk	33.5	-25.1	-9.5	39.33	54	-14.67	74	-34.67
6	24.028	42.43	Pk	34	-24.1	-9.5	42.83	54	-11.17	74	-31.17

Pk - Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

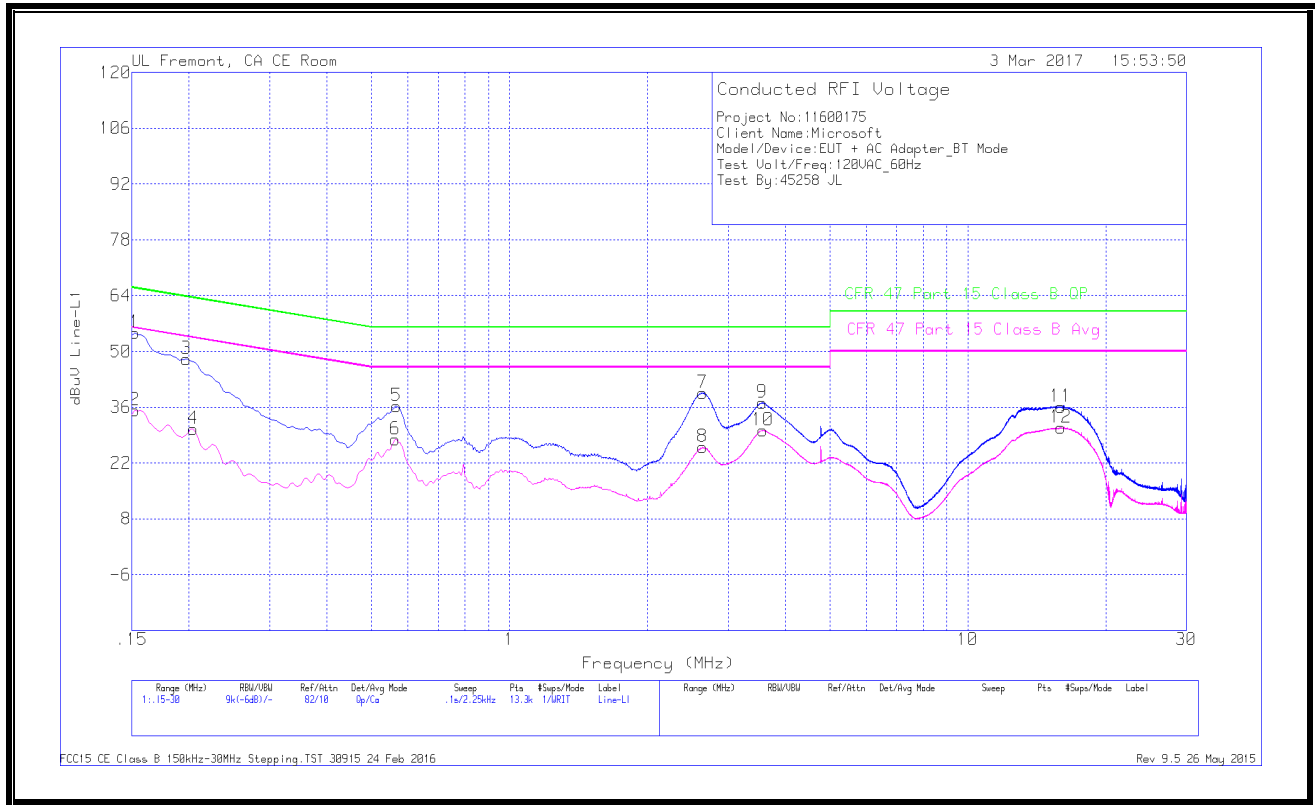
TEST PROCEDURE

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.

LINE 1 RESULTS

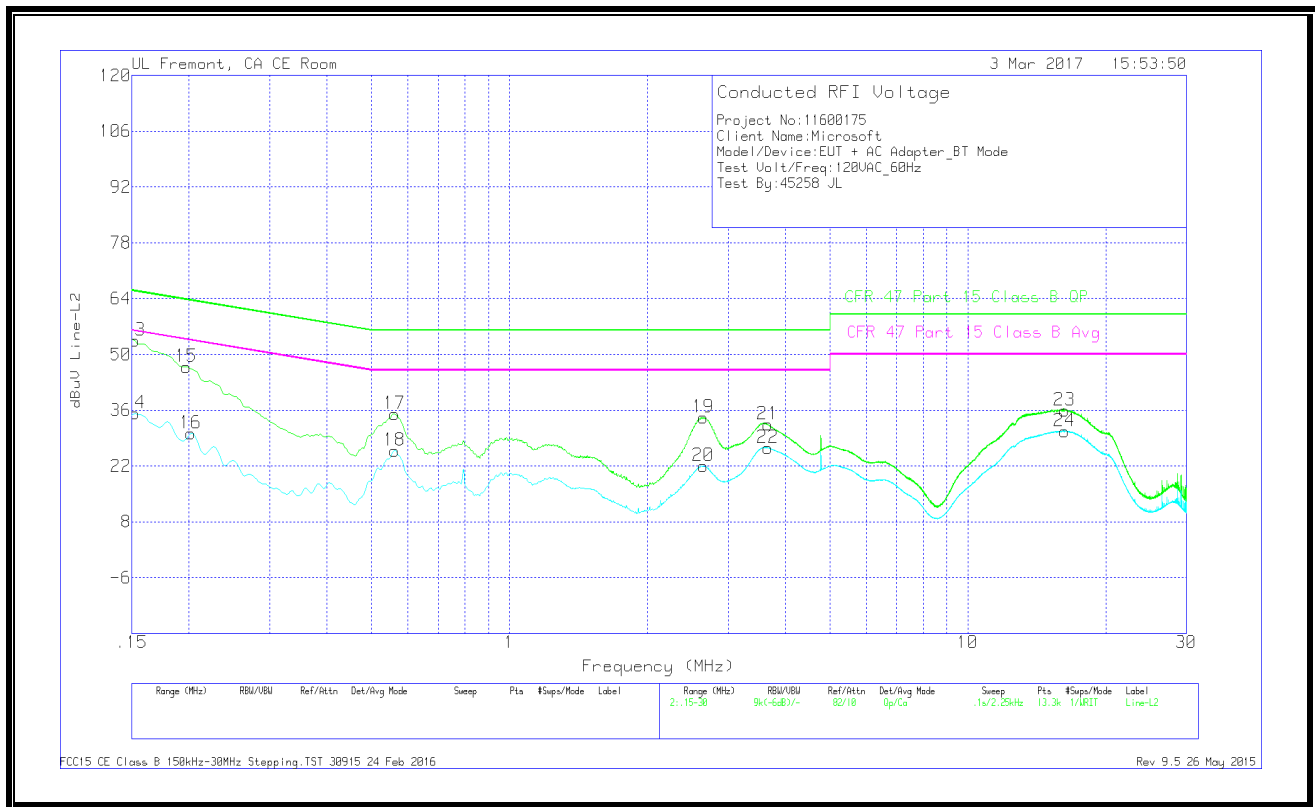


WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	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	.15225	44.37	Qp	.1	.1	10.1	54.67	65.88	-11.21	-	-
2	.15225	24.94	Ca	.1	.1	10.1	35.24	-	-	55.88	-20.64
3	.19725	37.86	Qp	0	.1	10.1	48.06	63.73	-15.67	-	-
4	.204	20.35	Ca	0	.1	10.1	30.55	-	-	53.45	-22.9
5	.56625	26.09	Qp	0	.1	10.1	36.29	56	-19.71	-	-
6	.564	17.7	Ca	0	.1	10.1	27.9	-	-	46	-18.1
7	2.63963	29.44	Qp	0	.1	10.1	39.64	56	-16.36	-	-
8	2.6385	15.76	Ca	0	.1	10.1	25.96	-	-	46	-20.04
9	3.56325	26.95	Qp	0	.1	10.1	37.15	56	-18.85	-	-
10	3.57113	19.97	Ca	0	.1	10.1	30.17	-	-	46	-15.83
11	15.972	25.47	Qp	0	.3	10.3	36.07	60	-23.93	-	-
12	15.972	20.2	Ca	0	.3	10.3	30.8	-	-	50	-19.2

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	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)
13	.15225	43.43	Qp	0	0	10.1	53.53	65.88	-12.35	-	-
14	.15225	25.07	Ca	0	0	10.1	35.17	-	-	55.88	-20.71
15	.19725	36.65	Qp	0	.1	10.1	46.85	63.73	-16.88	-	-
16	.20175	20.02	Ca	0	.1	10.1	30.22	-	-	53.54	-23.32
17	.56175	24.88	Qp	0	.1	10.1	35.08	56	-20.92	-	-
18	.56175	15.64	Ca	0	.1	10.1	25.84	-	-	46	-20.16
19	2.64525	23.96	Qp	0	.1	10.1	34.16	56	-21.84	-	-
20	2.64525	11.82	Ca	0	.1	10.1	22.02	-	-	46	-23.98
21	3.6645	22.29	Qp	0	.1	10.1	32.49	56	-23.51	-	-
22	3.66675	16.36	Ca	0	.1	10.1	26.56	-	-	46	-19.44
23	16.26225	25.45	Qp	0	.2	10.3	35.95	60	-24.05	-	-
24	16.26225	20.24	Ca	0	.2	10.3	30.74	-	-	50	-19.26

Qp - Quasi-Peak detector
Ca - CISPR average detection