



FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

Bluetooth Remote Control for Video Set Top Box

MODEL NUMBER: IPRC1000

FCC ID: 2ABTE-L3YJC9

REPORT NUMBER: 15U22448-E1V4

ISSUE DATE: 3/7/2016

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NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	1/21/16	Initial Issue	C. Vergonio
V2	3/3/16	Added Below 30MHz data in Section 9.5 and Setup Photos in Section 10 and updated equipment list in Section 6.	C. Vergonio
V3	3/7/16	Updated setup photo in Section 10.	C. Vergonio
V4	3/7/16	Added note in Section 9.5	C. Vergonio

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Verizon Online LLC
1300 I Street
Washington, DC 20005 U.S.A

EUT DESCRIPTION: Bluetooth Remote Control for Video Set Top Box

MODEL: IPRC1000

SERIAL NUMBER: HCNZ5Dd30007 (Radiated), HCNZ5NK60019 (Conducted)

DATE TESTED: December 22, 2015 - March 2, 2016

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

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

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

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

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Bluetooth remote control for video set top box.

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	8.17	6.56
2402 - 2480	Enhanced 8PSK	7.48	5.60

Note: GFSK, Pi/4-DQPSK, 8PSK average Power are all investigated, The GFSK & 8PSK Power are the worst case. Testing is based on this mode to showing compliance. For average power data please refer to section 8.7.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Chip antenna, with a maximum gain of 3.21 dBi.

5.4. SOFTWARE

The test utility software used during testing was Broadcom Bluetooth, Ver. 1.8.8.6

5.5. WORST-CASE CONFIGURATION AND MODE

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

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	HP	EliteBook 8440P	SHI101747	N/A
Laptop Power Supply	HP	Series PPP016H	F1-09090462500A	N/A
Support Board	Verizon Online LLC	N/A	N/A	N/A
Battery AAA	Energizer	N/A	N/A	N/A

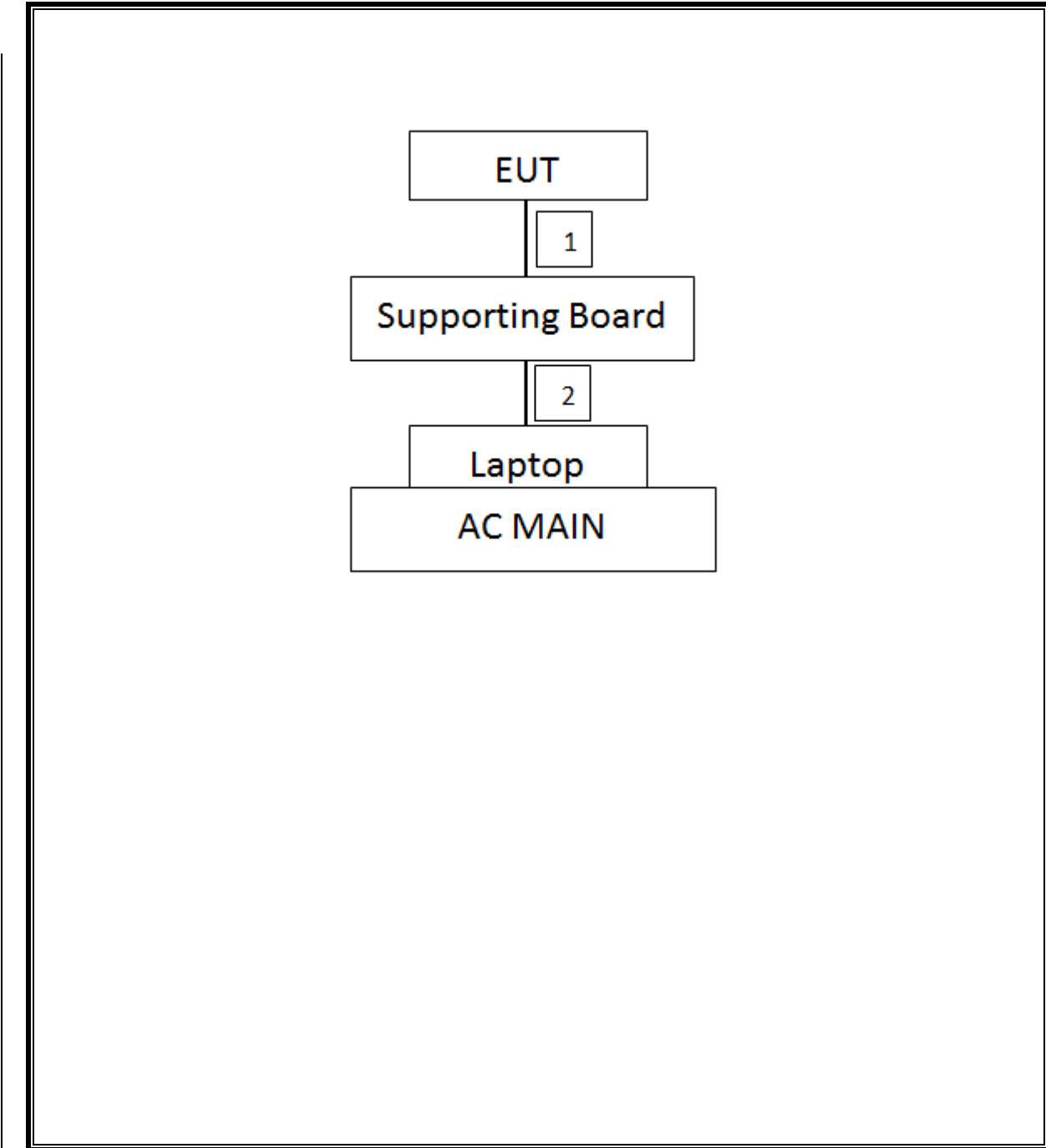
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Data	1	8 Pin	Unshielded	0.3	N/A
2	Data	1	USB	Unshielded	1.5	N/A

TEST SETUP

The EUT was tested stand alone and the communication was establish via USB cable to supporting board, which provided by client. Test software exercised the radio.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	T Number	Cal Due
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB3	477	06/10/16
Amplifier, 1 to 26.5GHz, 23.5dB Gain mi	Keysight	8449B	404	06/29/16
Antenna, Loop, 30 MHz	EMCO	6502	243	12/08/16
Antenna, Horn, 18GHz	ETS Lindgren	3117	136	03/03/16
Antenna, Horn, 26-40 GHz	ARA	MWH-2640/B	90	07/01/16
Antenna, Horn, 18-26 GHz	ARA	MWH-1826	447	05/12/16
RF Preamplifier, 10 KHz-1000 MHz	Sonoma	310N	300	11/05/16
RF Preamplifier, 1GHz - 8GHz	Miteq	AMF-4D-010008	1172	07/20/16
Spectrum Analyzer, PXA, 3 Hz to 44 GHz	Keysight	N9030A	908	03/03/16
Spectrum Analyzer, PXA, 3 Hz to 44 GHz	Keysight	N9030A	146	06/17/16
Spectrum Analyzer, 40 GHz	Keysight	8564E	106	08/14/16
Peak Power Meter	Keysight	N1911A	229	07/30/16

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
Antenna Port Software	UL	UL RF	Ver 3.9, Dec 16, 2015

7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1049	RSS-GEN 4.6	20 dB Occupied Band width	N/A	Conducted	Pass	0.940MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-48.02 dBm
15.247 (b)(1)	RSS-247 5.4.2	TX conducted output power	<21dBm		Pass	8.17 dBm
15.247 (a)(1)	RSS-247 5.1.2	Hopping frequency separation	> 25KHz		Pass	1 MHz
15.247 (a)(1)(iii)	RSS-247 5.1.4	Number of Hopping channels	More than 15 non-overlapping channels		Pass	79
15.247 (a)(1)(iii)	RSS-247 5.1.4	Avg Time of Occupancy	< 0.4sec		Pass	0.289 s
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass	45.05 dBuV

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, DUTY CYCLE

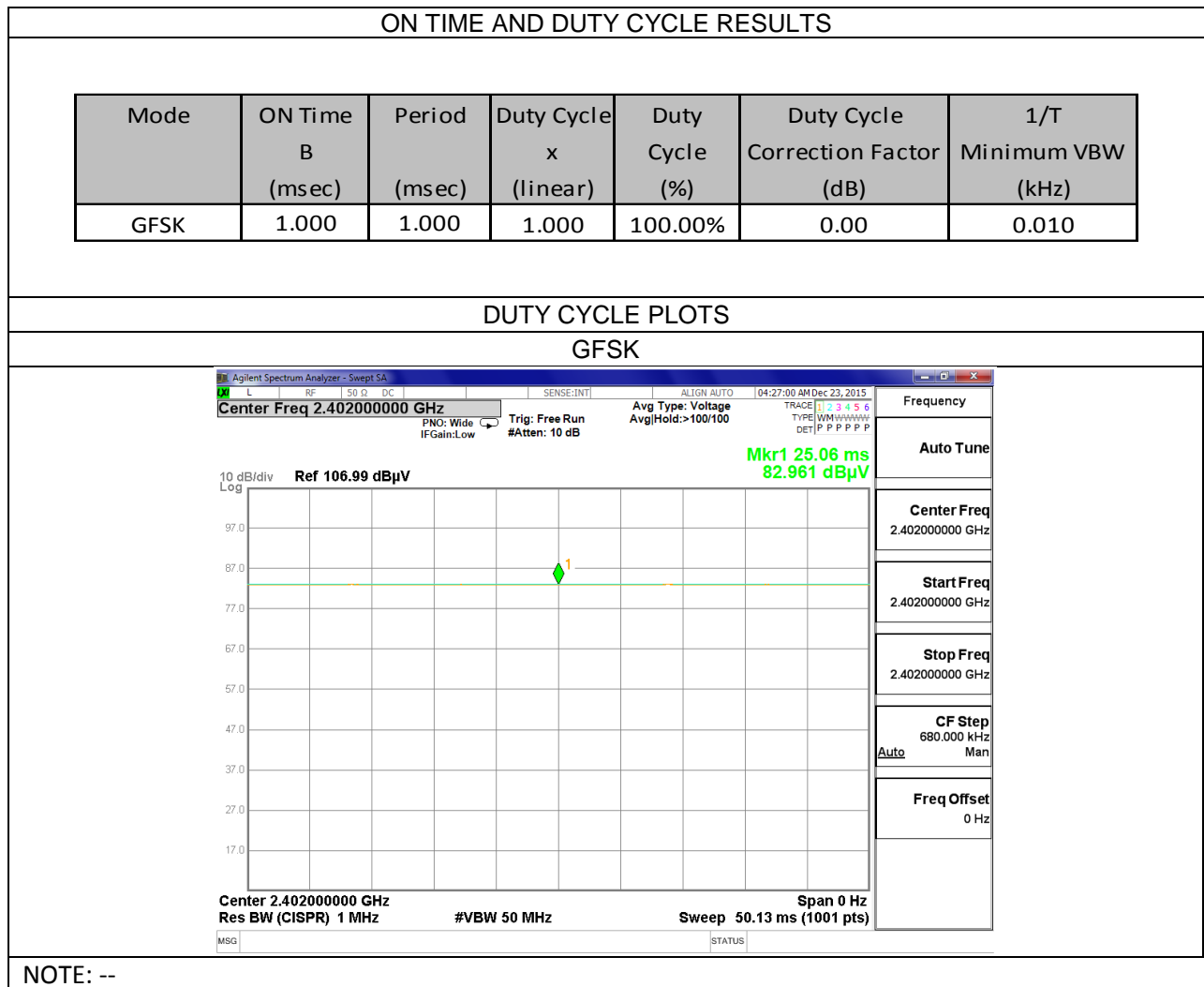
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

RESULTS



8.2. 20 dB AND 99% BANDWIDTH

LIMIT

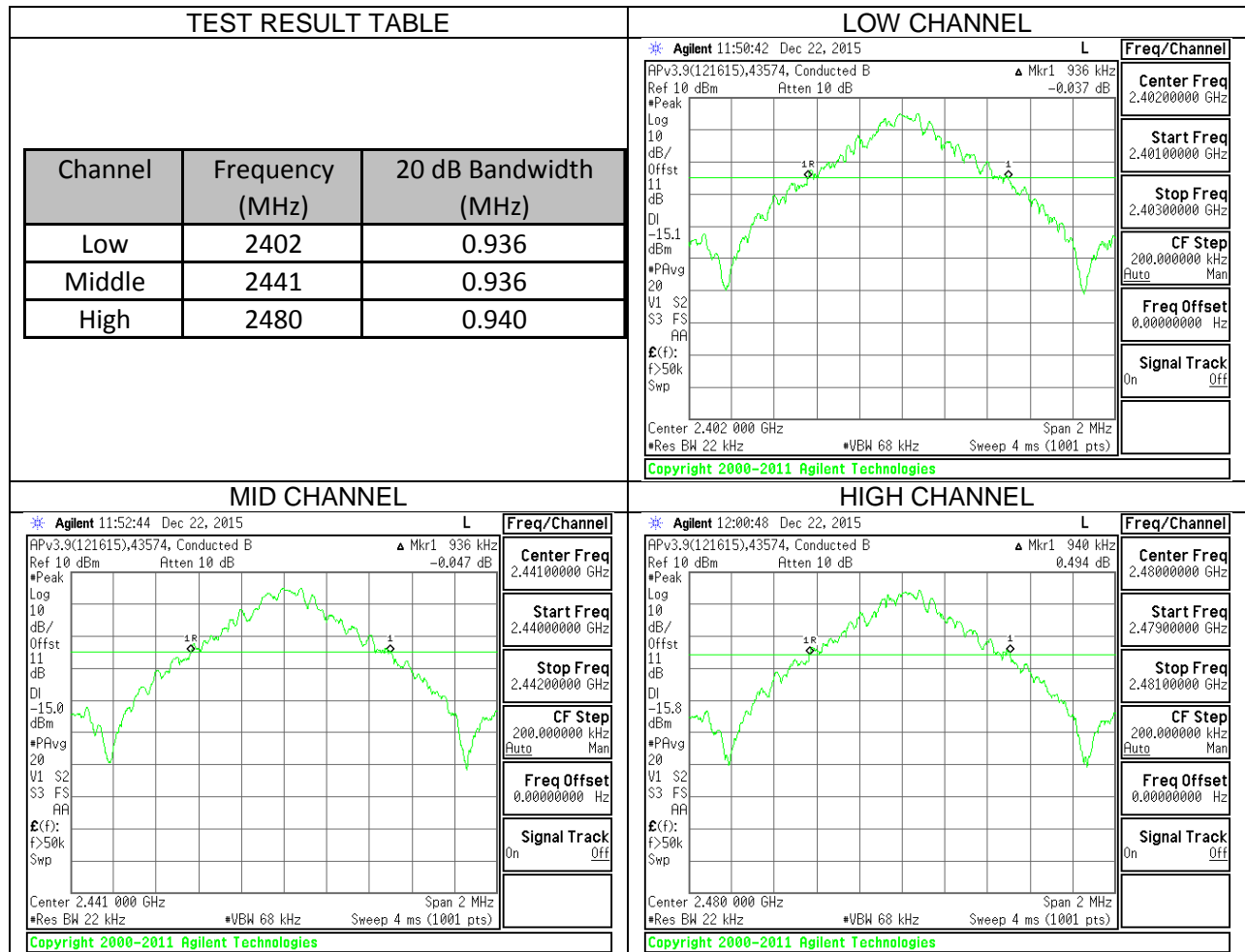
None; for reporting purposes only.

TEST PROCEDURE

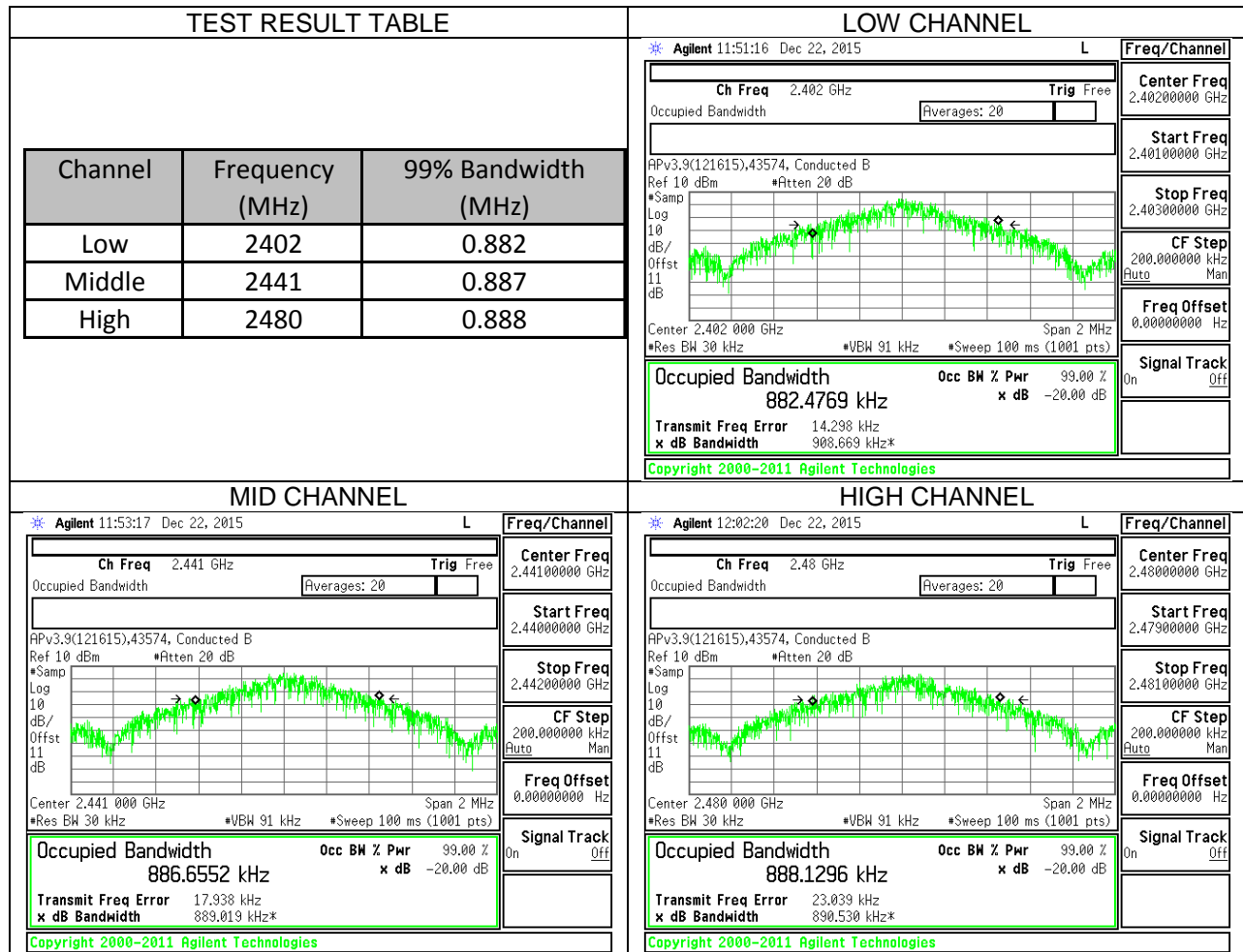
DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to \geq 1% of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

RESULTS

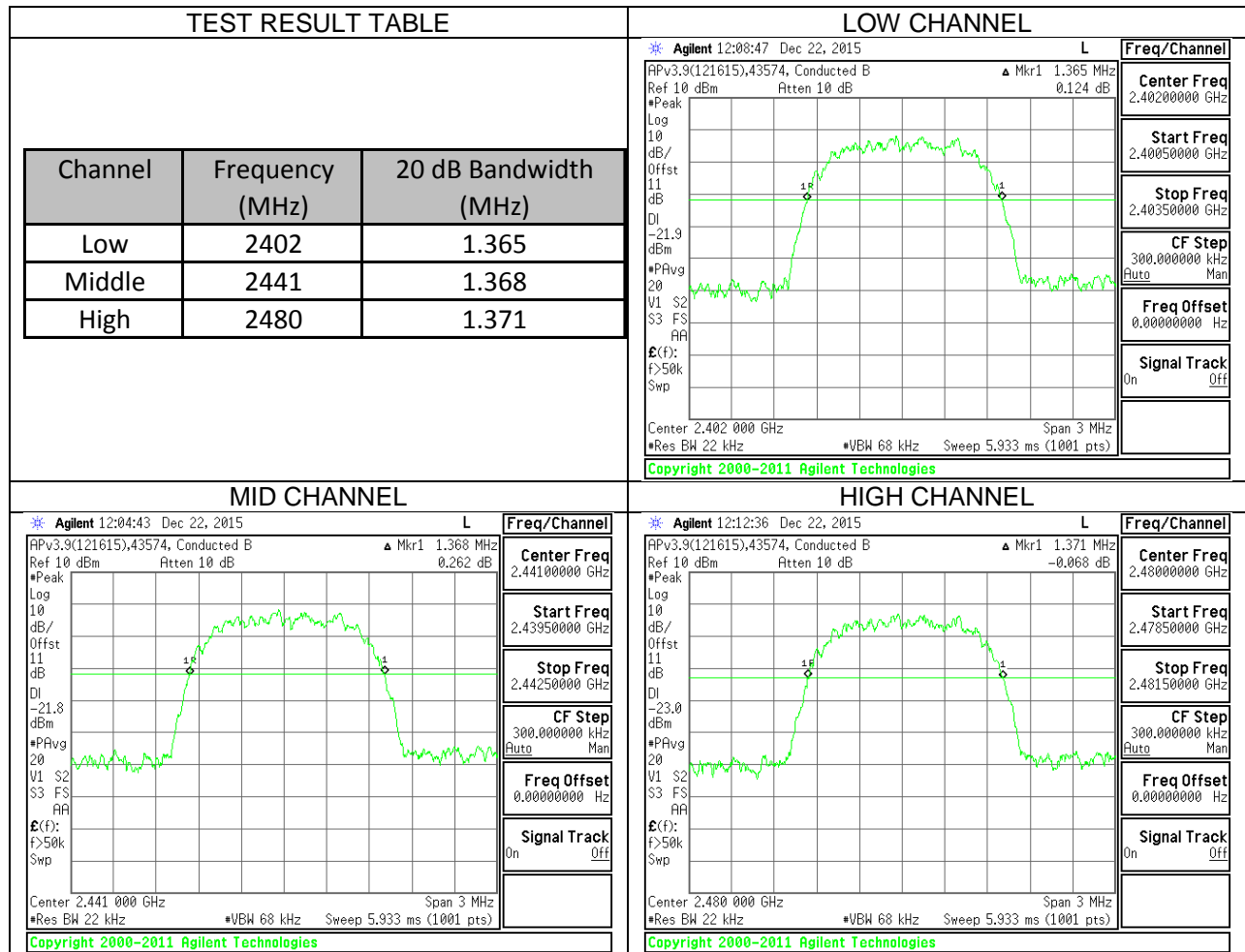
8.2.1. GFSK 20 dB BANDWIDTH PLOTS AND TABLE



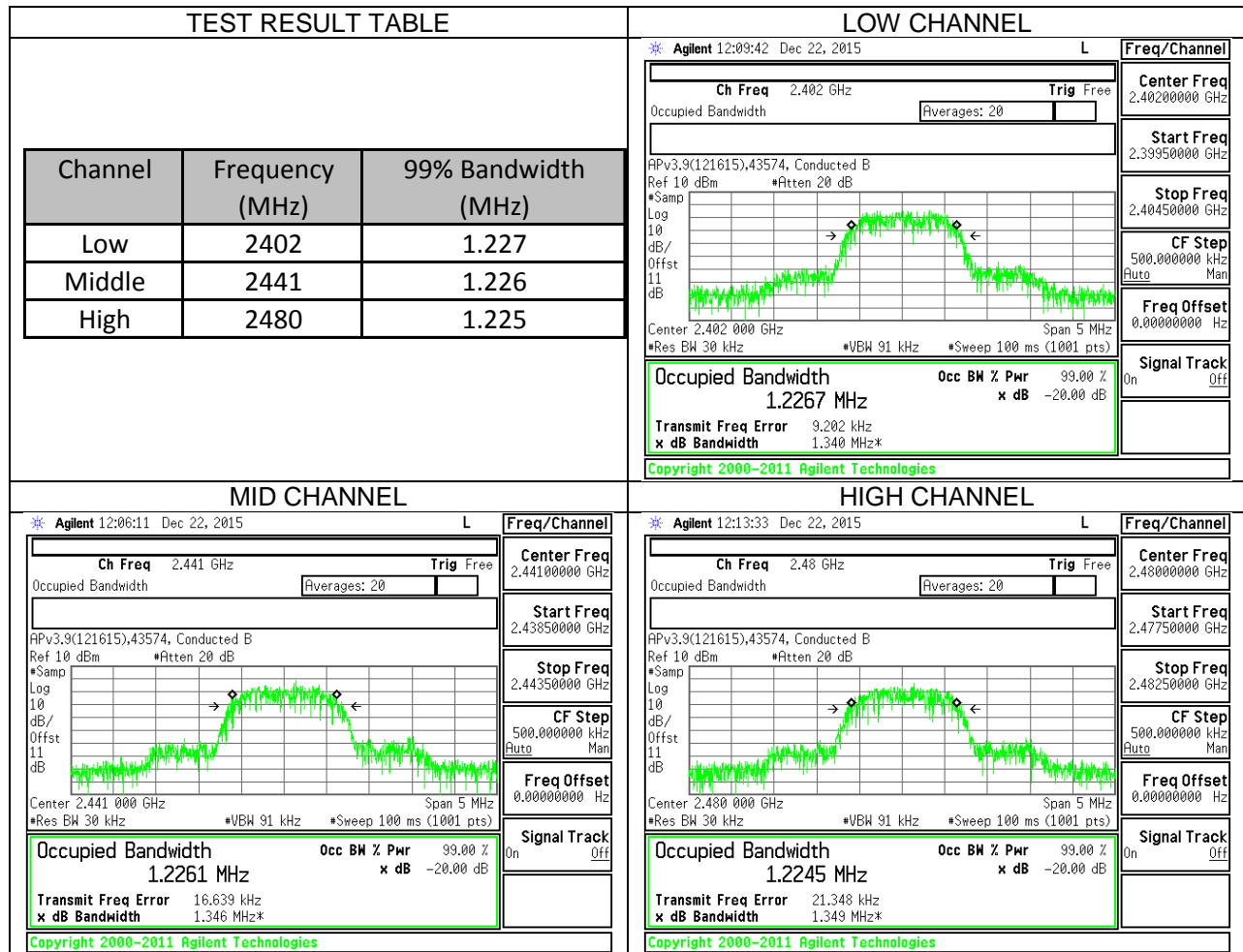
8.2.2. GFSK 99% BANDWIDTH PLOTS AND TABLE



8.2.3. 8PSK 20 dB BANDWIDTH PLOTS AND TABLE



8.2.4. 8PSK 99% BANDWIDTH PLOTS AND TABLE



8.3. HOPPING FREQUENCY SEPARATION

LIMIT

FCC §15.247 (a) (1)

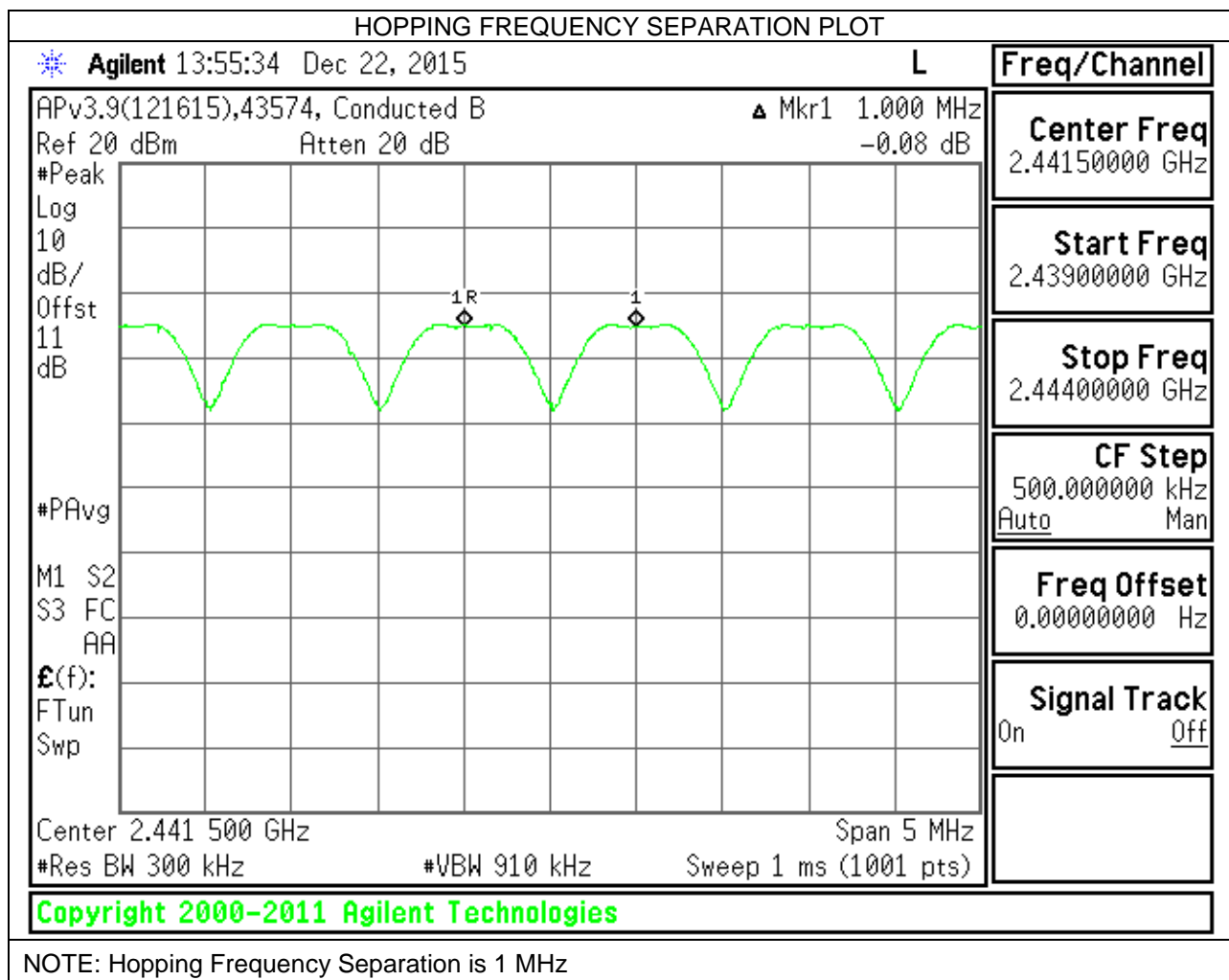
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 910 kHz. The sweep time is coupled.

RESULTS



8.4. NUMBER OF HOPPING CHANNELS

LIMIT

FCC §15.247 (a) (1) (iii)

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

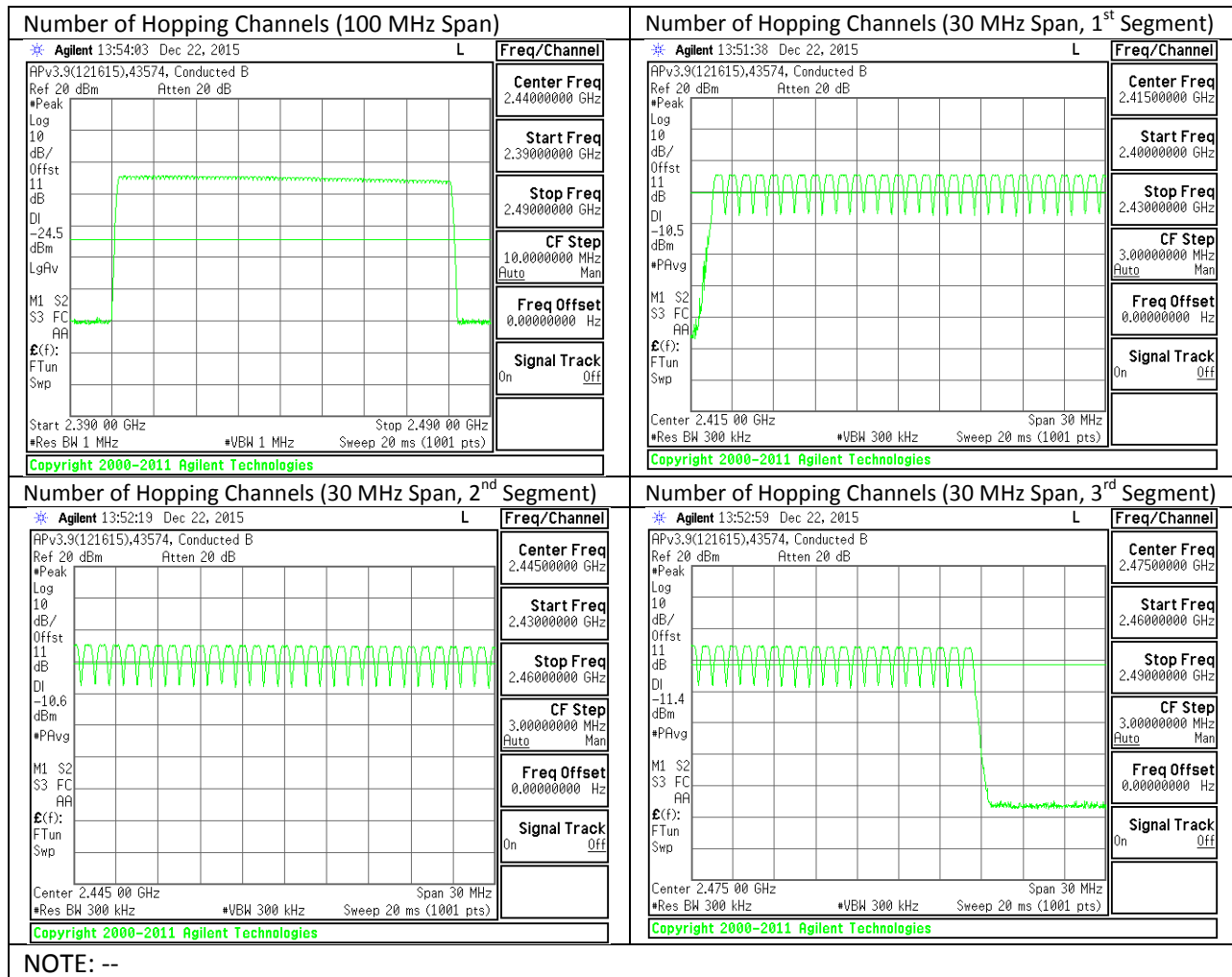
TEST PROCEDURE

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

RESULTS

Normal Mode: 79 Channels observed.

8.4.1. NUMBER OF HOPPING CHANNELS PLOTS



NOTE: --

8.5. AVERAGE TIME OF OCCUPANCY

LIMIT

FCC §15.247 (a) (1) (iii)

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

TEST PROCEDURE

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

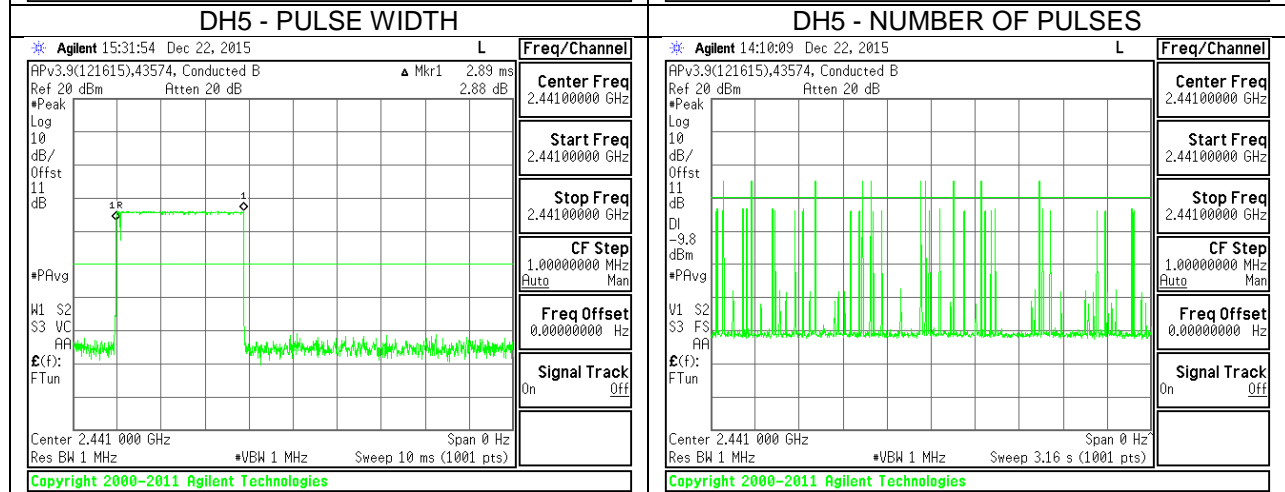
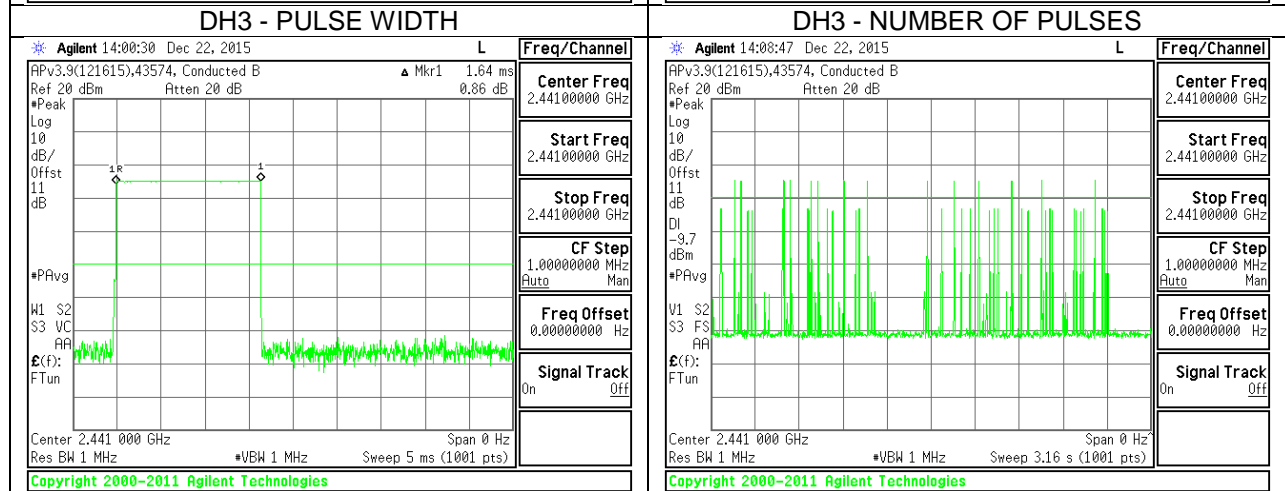
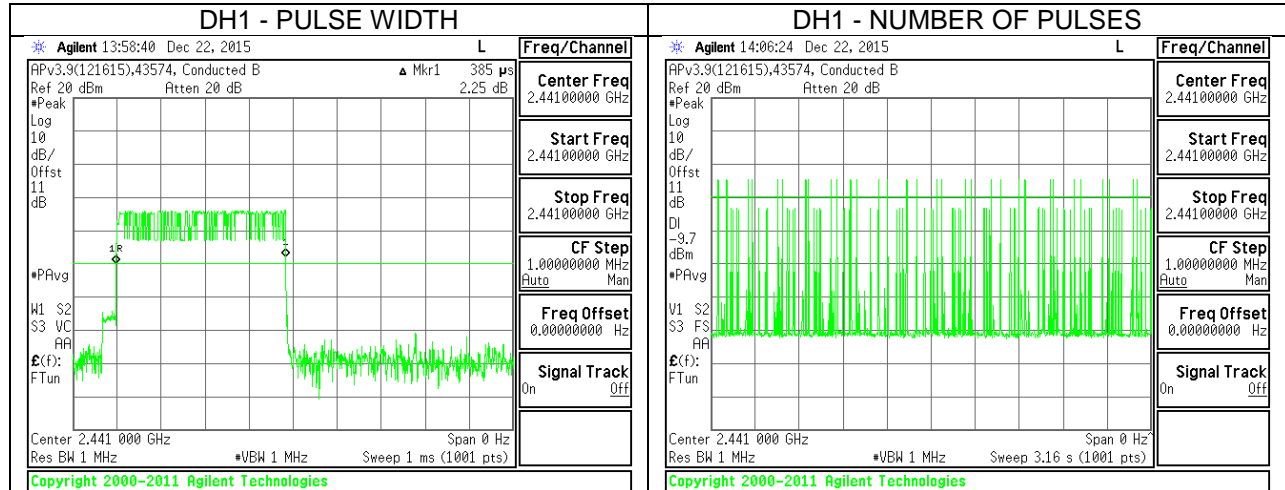
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$.

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

RESULTS

AVERAGE TIME OF OCCUPANCY						
DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)	
GFSK Normal Mode						
DH1	0.385	32	0.1232	0.4	-0.2768	
DH3	1.64	14	0.2296	0.4	-0.1704	
DH5	2.89	10	0.2890	0.4	-0.1110	
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	0.385	8	0.03080	0.4	-0.3692	
DH3	1.64	3.5	0.05740	0.4	-0.3426	
DH5	2.89	2.5	0.07225	0.4	-0.3278	
NOTE: --						

PULSE WIDTH and NUMBER of PULSES in 3.16 SECONDS PERIOD PLOTS



NOTE: --

8.6. OUTPUT POWER

LIMIT

§15.247 (b) (1)

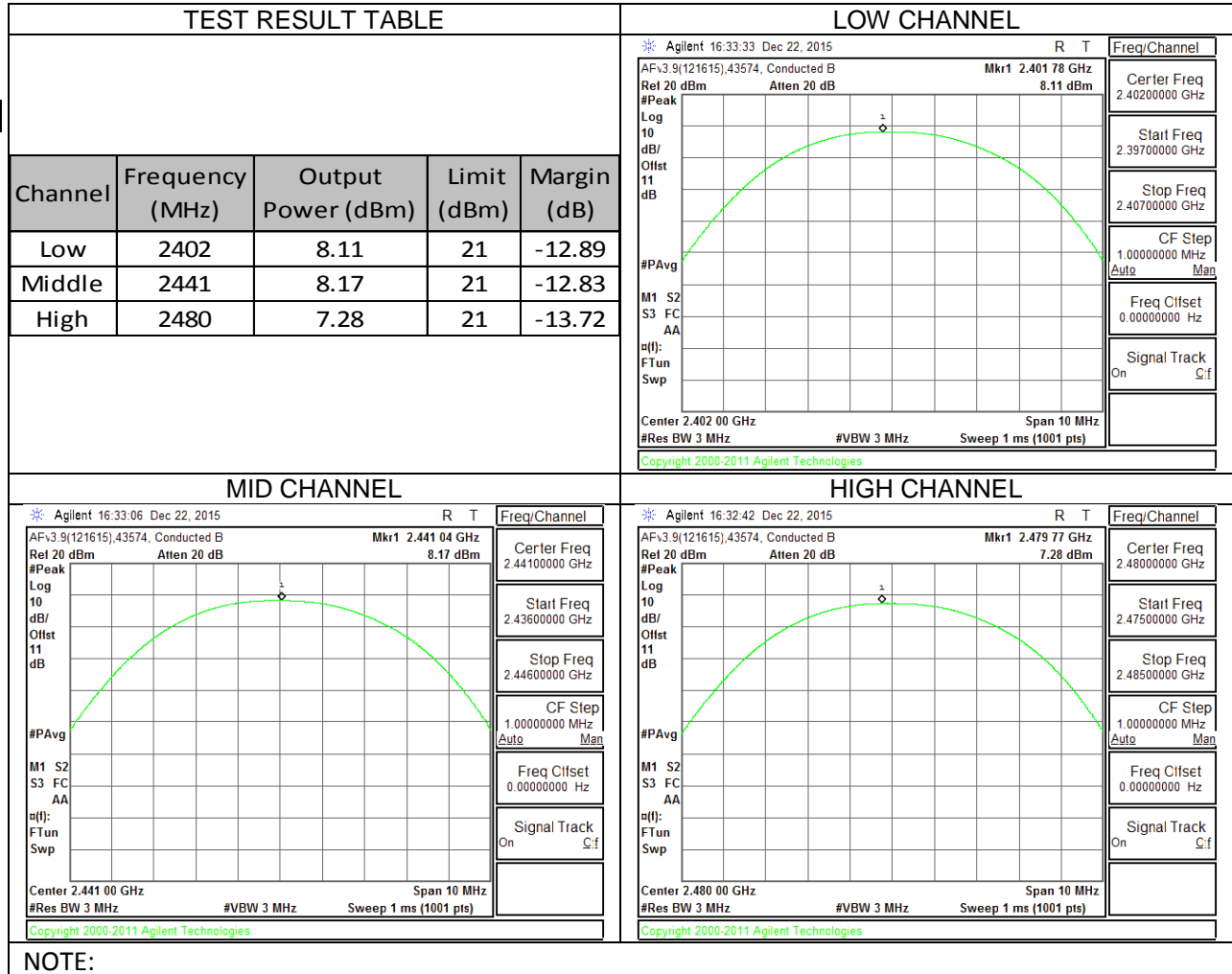
The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

TEST PROCEDURE

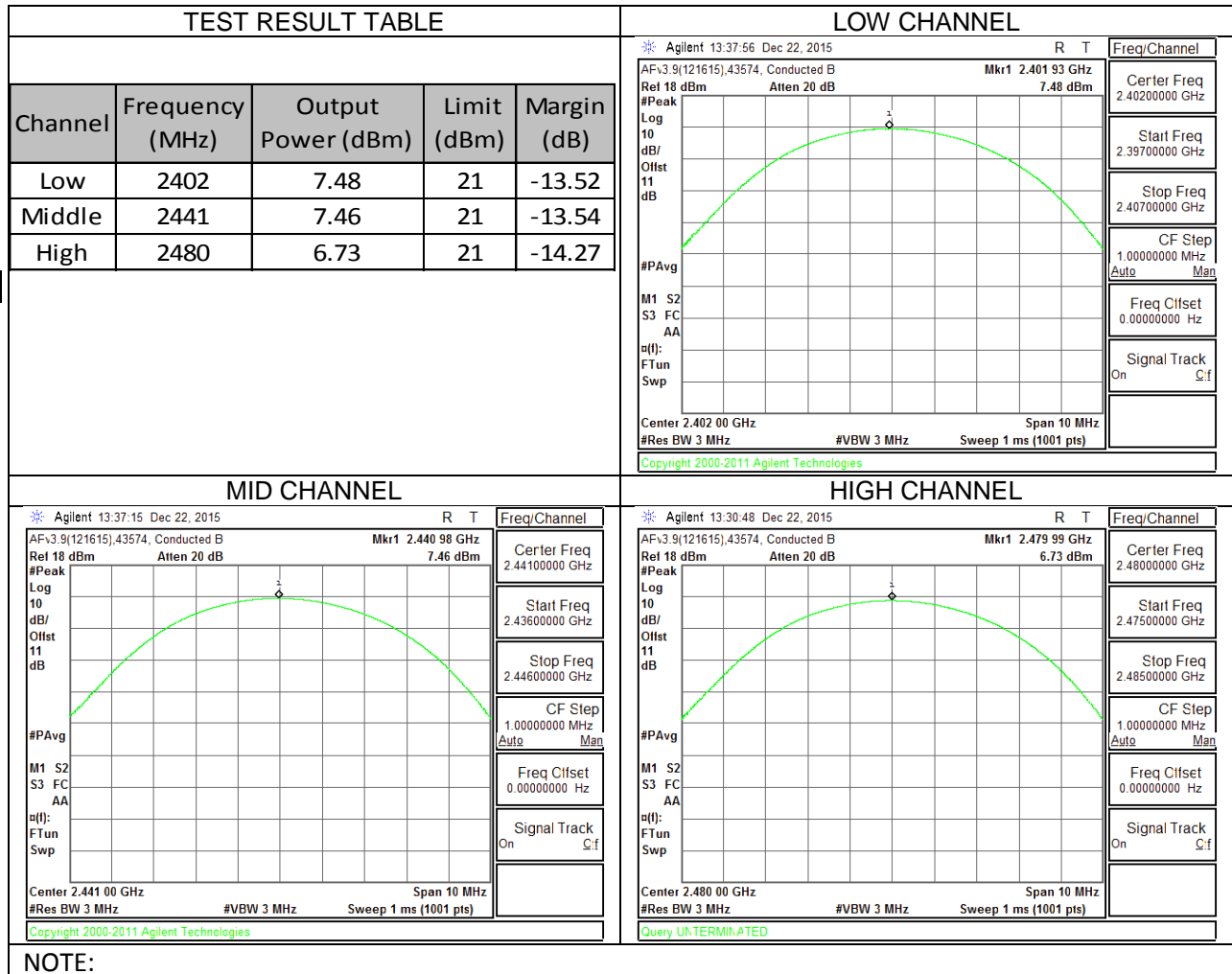
DA 00-705: The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

8.6.1. GFSK OUTPUT POWER PLOTS AND TABLE



8.6.2. 8PSK OUTPUT POWER PLOTS AND TABLE



8.7. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

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

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

GFSK		
Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.8
Middle	2441	7.8
High	2480	6.9

8PSK		
Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	4.4
Middle	2441	4.4
High	2480	3.4

NOTE: --

8.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Limit = -20 dBc

TEST PROCEDURE

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

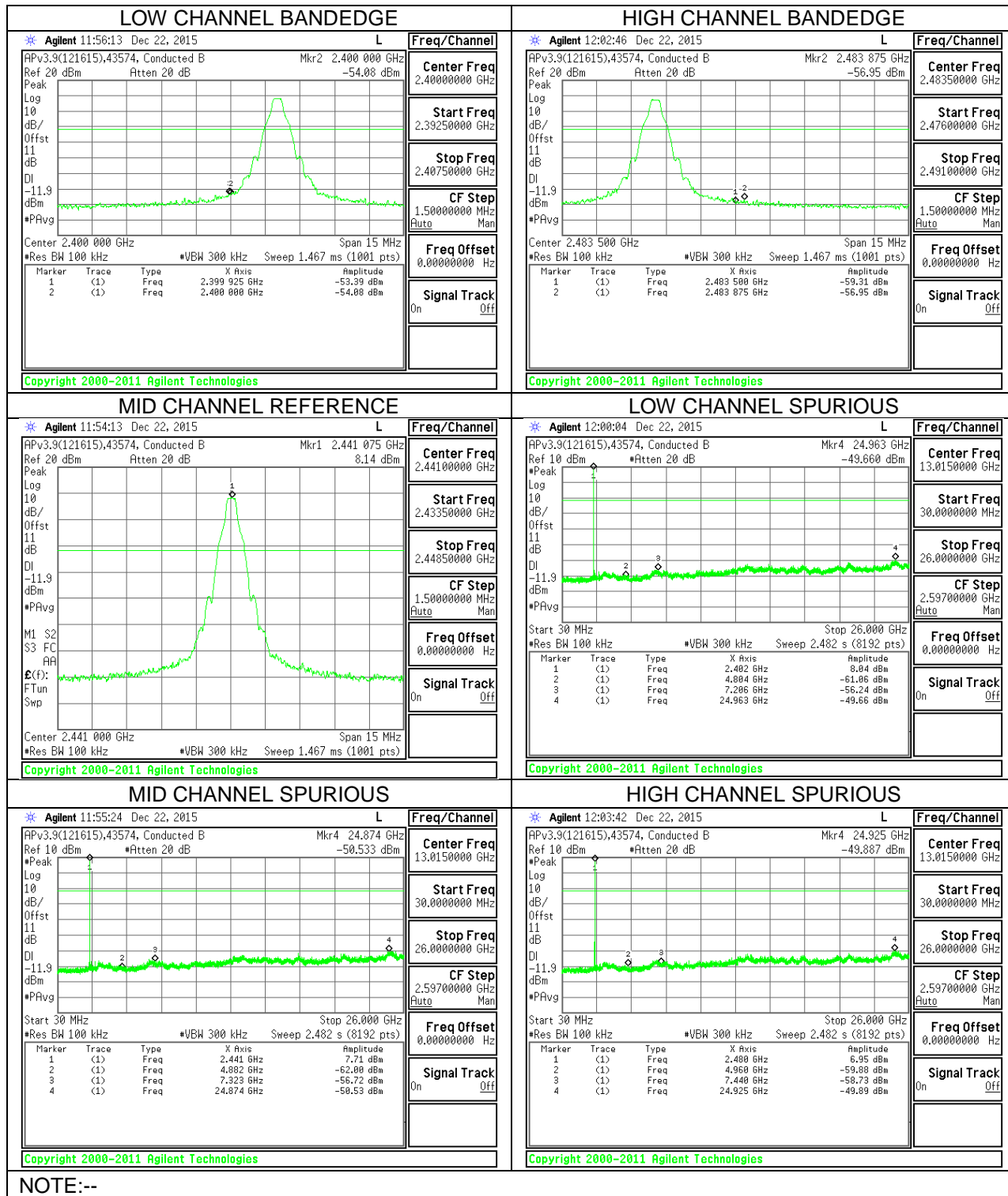
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

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

RESULTS

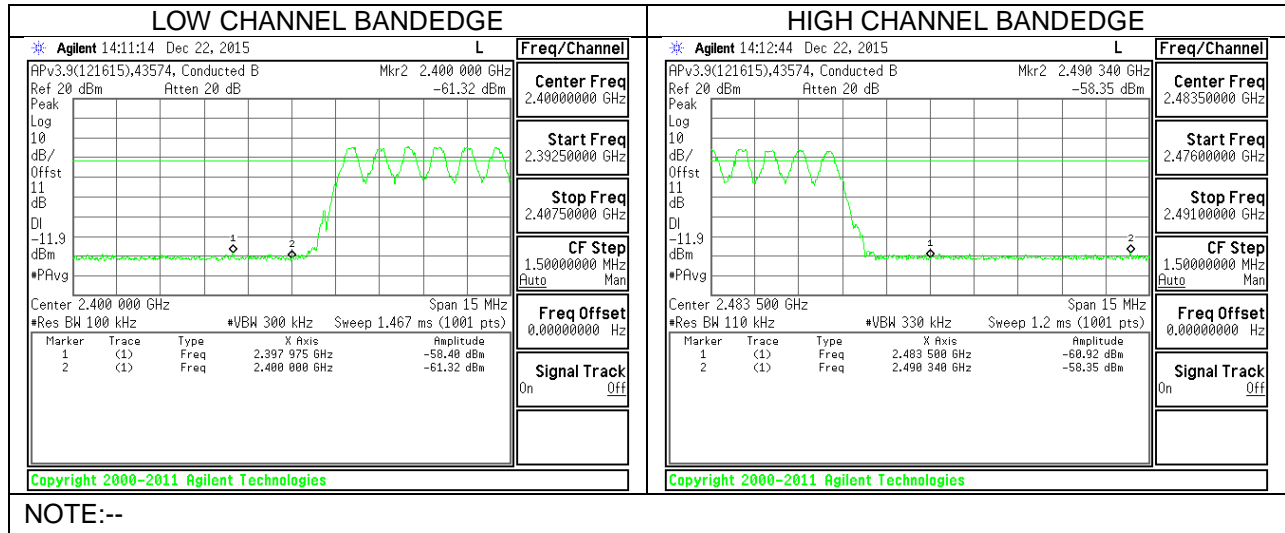
8.8.1. GFSK MODULATION NON-HOPPING MODE

BANDEDGE AND SPURIOUS EMISSIONS PLOTS



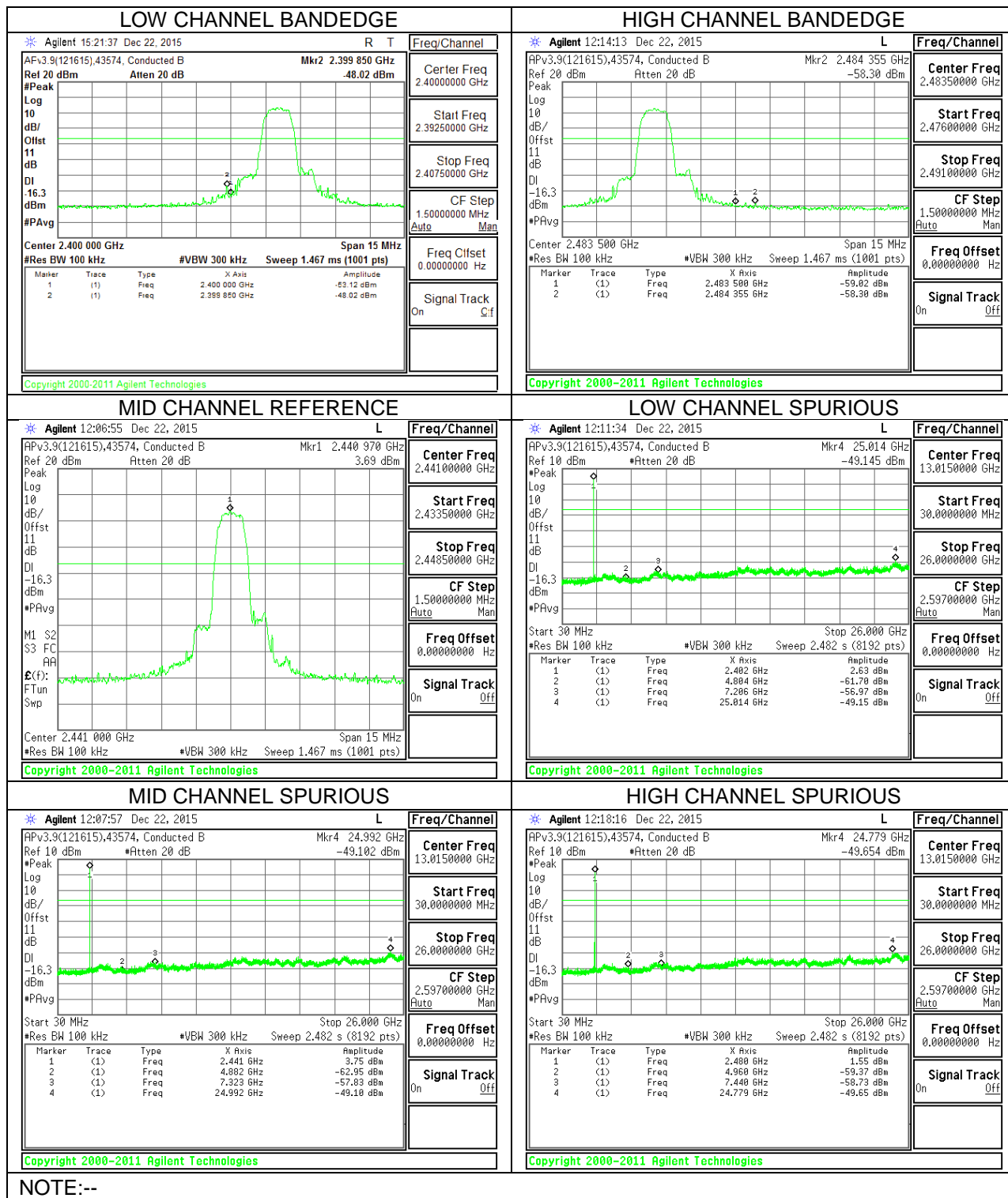
8.8.2. GFSK MODULATION HOPPING MODE

SPURIOUS BANDEDGE EMISSIONS PLOTS



8.8.3. 8PSK MODULATION NON-HOPPING MODE

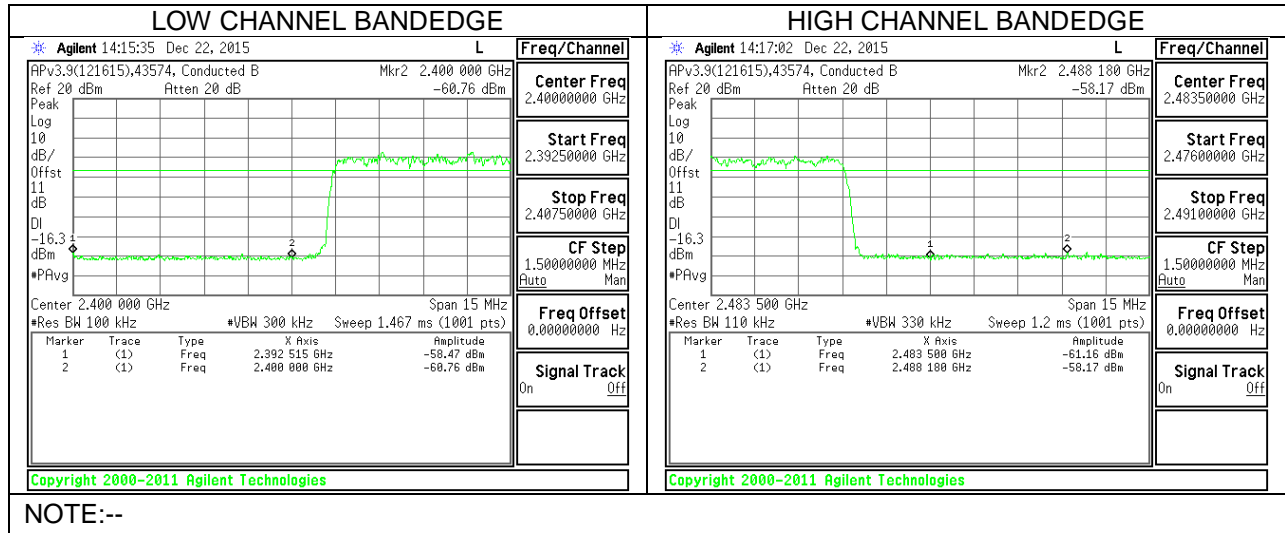
BANDEDGE AND SPURIOUS EMISSIONS PLOTS



NOTE:--

8.8.4. 8PSK MODULATION HOPPING MODE

SPURIOUS BANDEDGE EMISSIONS PLOTS



9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for Peak and Average measurement.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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

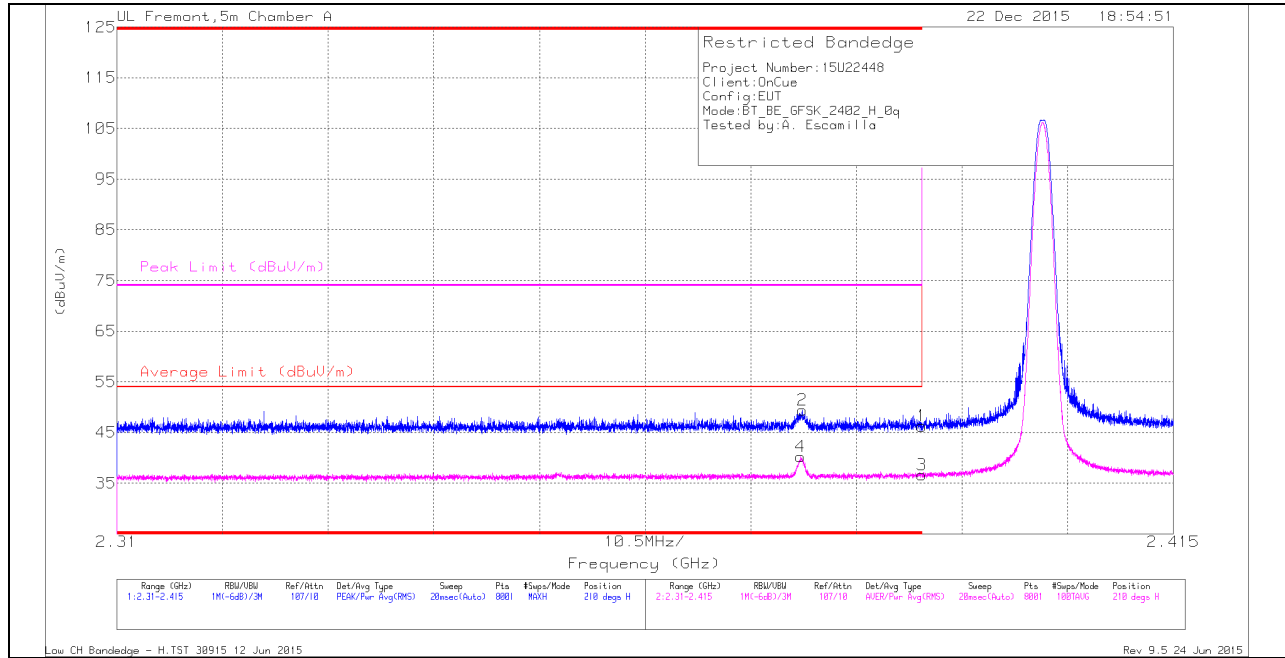
RESULTS

9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. GFSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

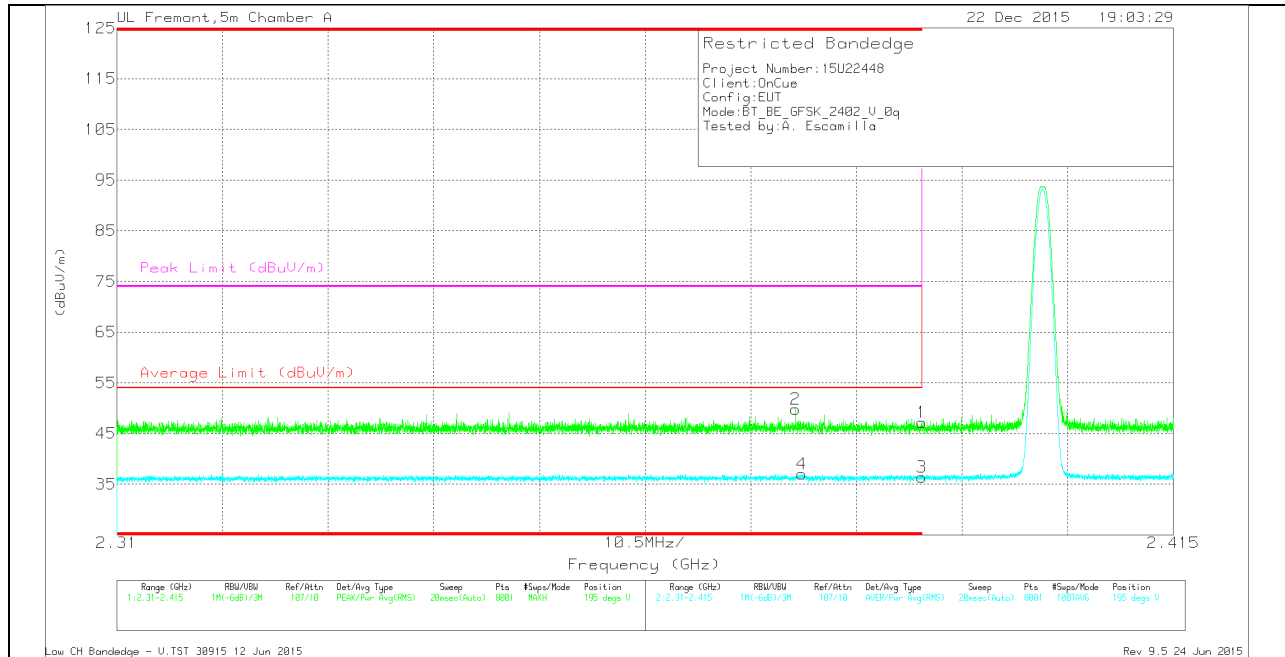
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fi tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.378	37.27	Pk	31.9	-19.8	0	49.37	-	-	74	-24.63	210	133	H
4	* 2.378	28.13	RMS	31.9	-19.8	0	40.23	54	-13.77	-	-	210	133	H
1	* 2.39	34.16	Pk	32	-19.9	0	46.26	-	-	74	-27.74	210	133	H
3	* 2.39	24.48	RMS	32	-19.9	0	36.58	54	-17.42	-	-	210	133	H

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.377	37.73	Pk	31.9	-19.8	0	49.83	-	-	74	-24.17	195	249	V
4	* 2.378	24.91	RMS	31.9	-19.8	0	37.01	54	-16.99	-	-	195	249	V
1	* 2.39	35.07	Pk	32	-19.9	0	47.17	-	-	74	-26.83	195	249	V
3	* 2.39	24.3	RMS	32	-19.9	0	36.4	54	-17.6	-	-	195	249	V

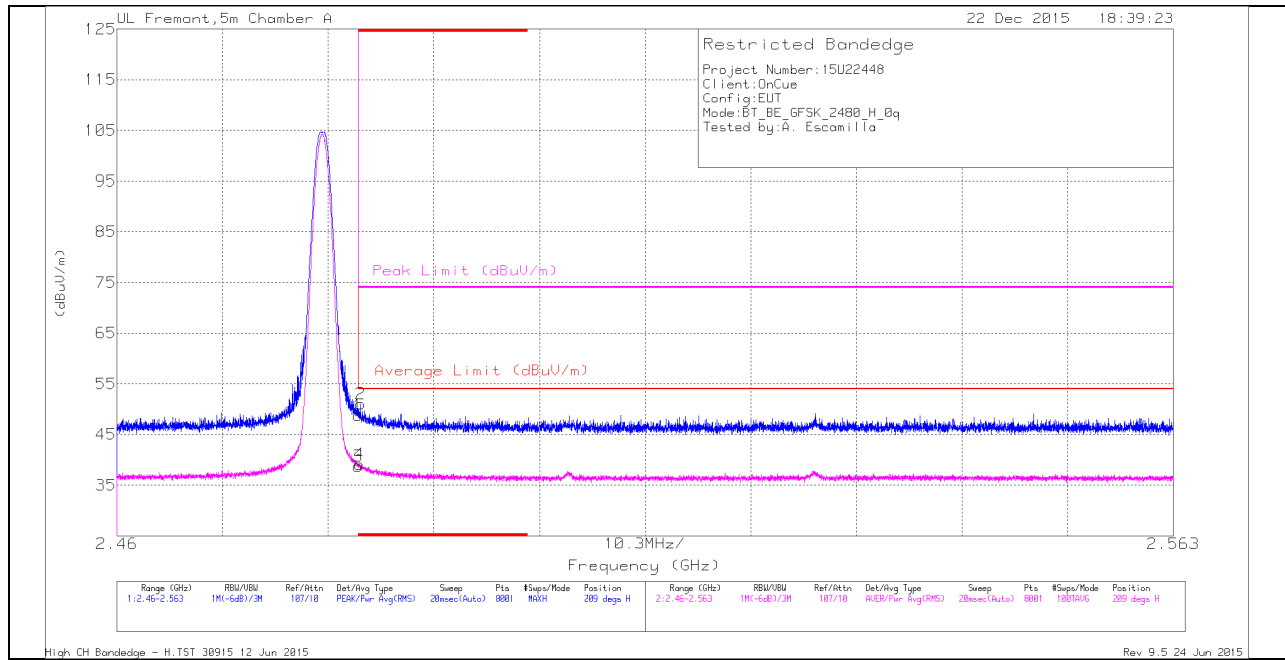
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

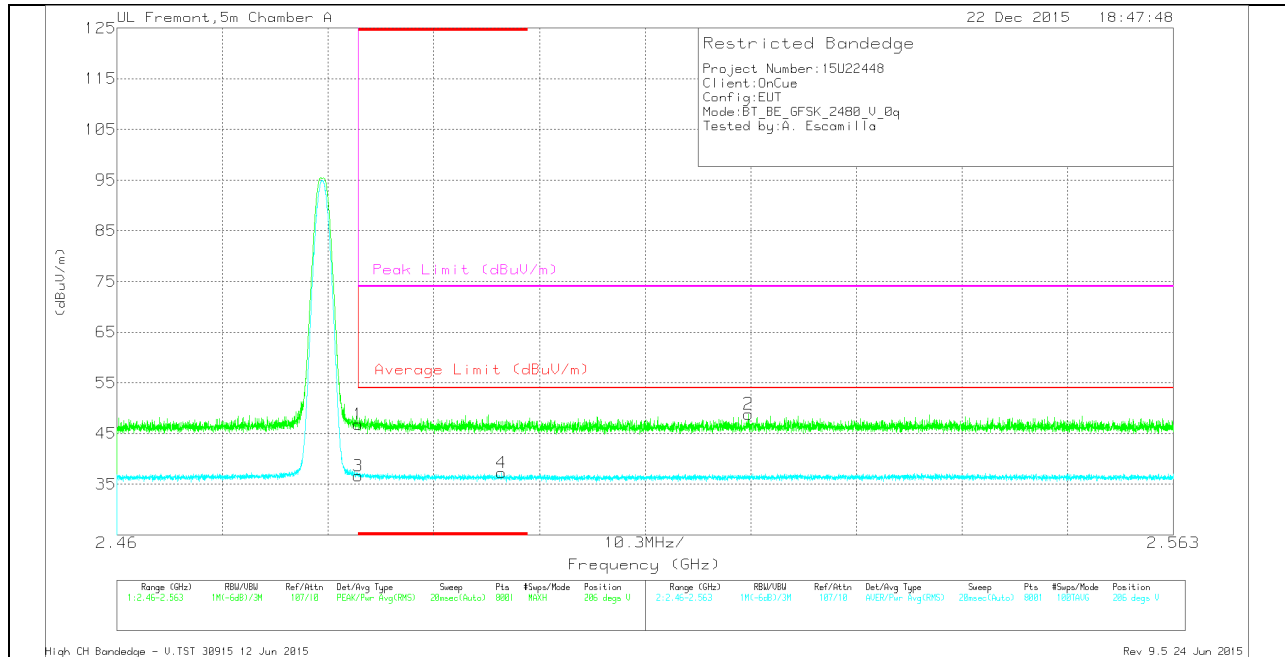
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.72	Pk	32.1	-20	0	48.82	-	-	74	-25.18	209	116	H
2	* 2.484	38.93	Pk	32.1	-20	0	51.03	-	-	74	-22.97	209	116	H
3	* 2.484	26.63	RMS	32.1	-20	0	38.73	54	-15.27	-	-	209	116	H
4	* 2.484	27.07	RMS	32.1	-20	0	39.17	54	-14.83	-	-	209	116	H

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	34.72	Pk	32.1	-20	0	46.82	-	-	74	-27.18	206	272	V
3	* 2.484	24.56	RMS	32.1	-20	0	36.66	54	-17.34	-	-	206	272	V
4	* 2.498	25.26	RMS	32.1	-20.1	0	37.26	54	-16.74	-	-	206	272	V
2	2.522	36.86	Pk	32.1	-20.1	0	48.86	-	-	74	-25.14	206	272	V

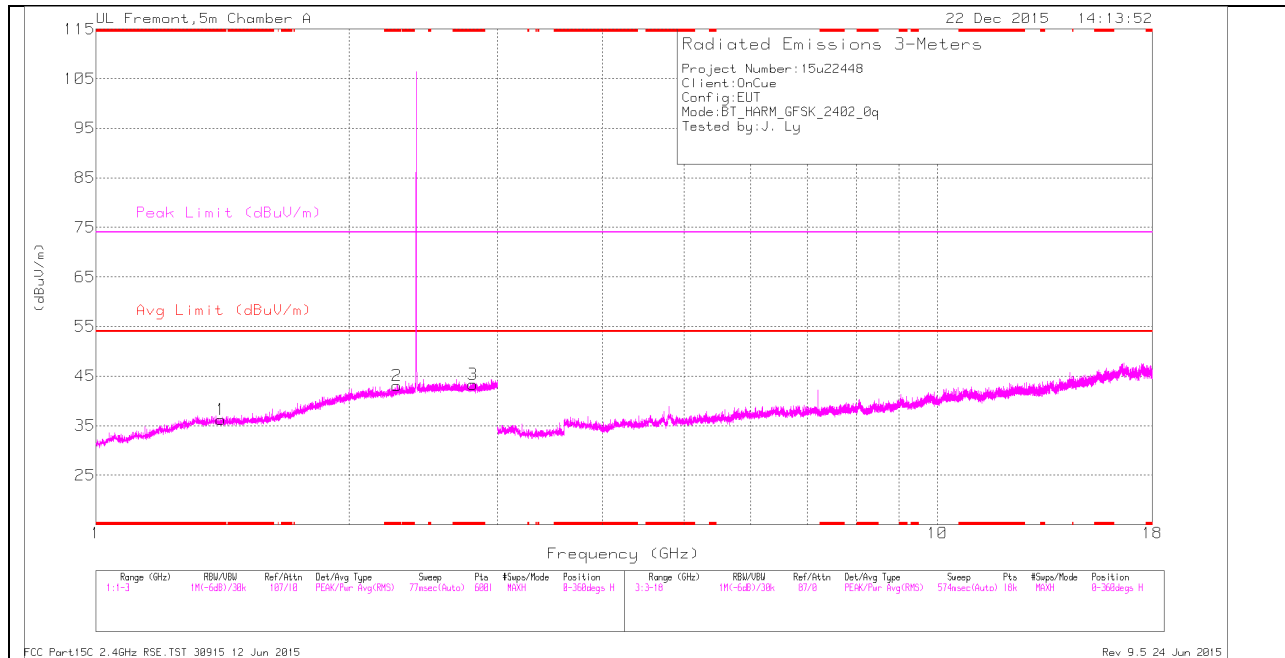
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

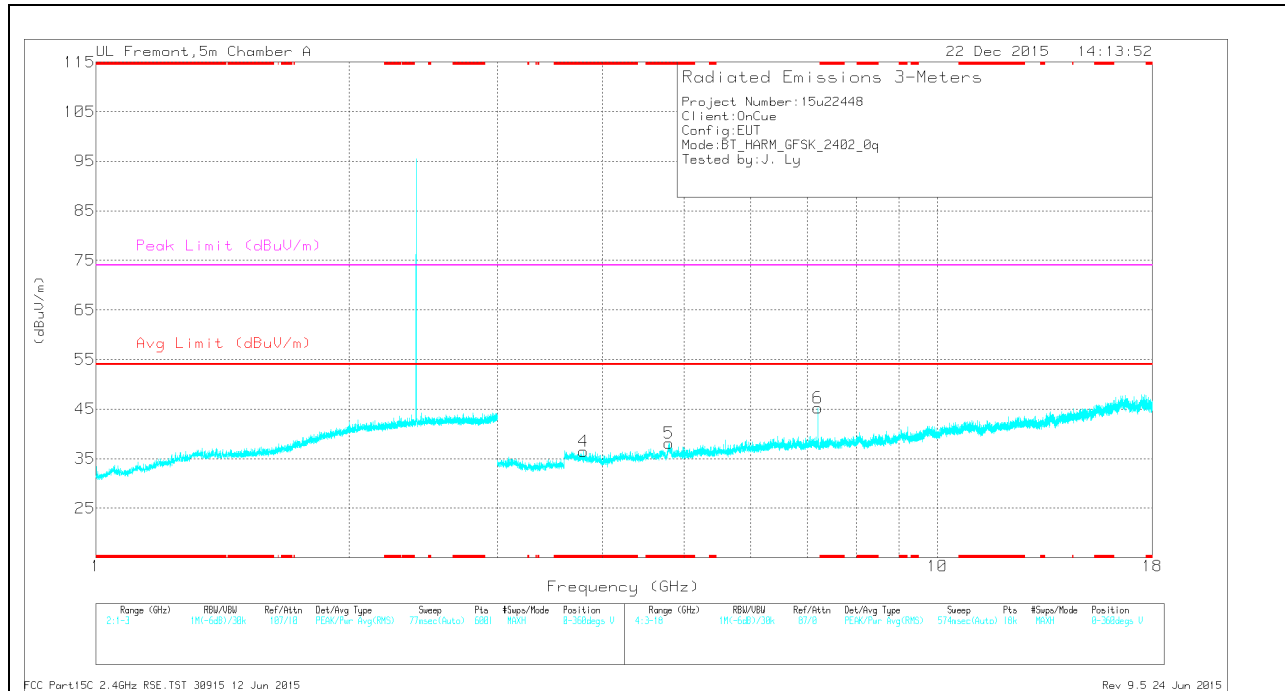
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.408	28.39	Pk	28.5	-20.7	36.19	-	-	74	-37.81	0-360	100	H
2	* 2.278	30.91	Pk	31.7	-19.6	43.01	-	-	74	-30.99	0-360	100	H
3	* 2.806	31.36	Pk	32.5	-20.5	43.36	-	-	74	-30.64	0-360	100	H
4	* 3.797	34.85	Pk	33.4	-31.8	36.45	-	-	74	-37.55	0-360	200	V
5	* 4.793	34.02	Pk	34	-29.9	38.12	-	-	74	-35.88	0-360	100	V
6	7.206	35.85	Pk	35.5	-26.1	45.25	-	-	74	-28.75	0-360	100	V

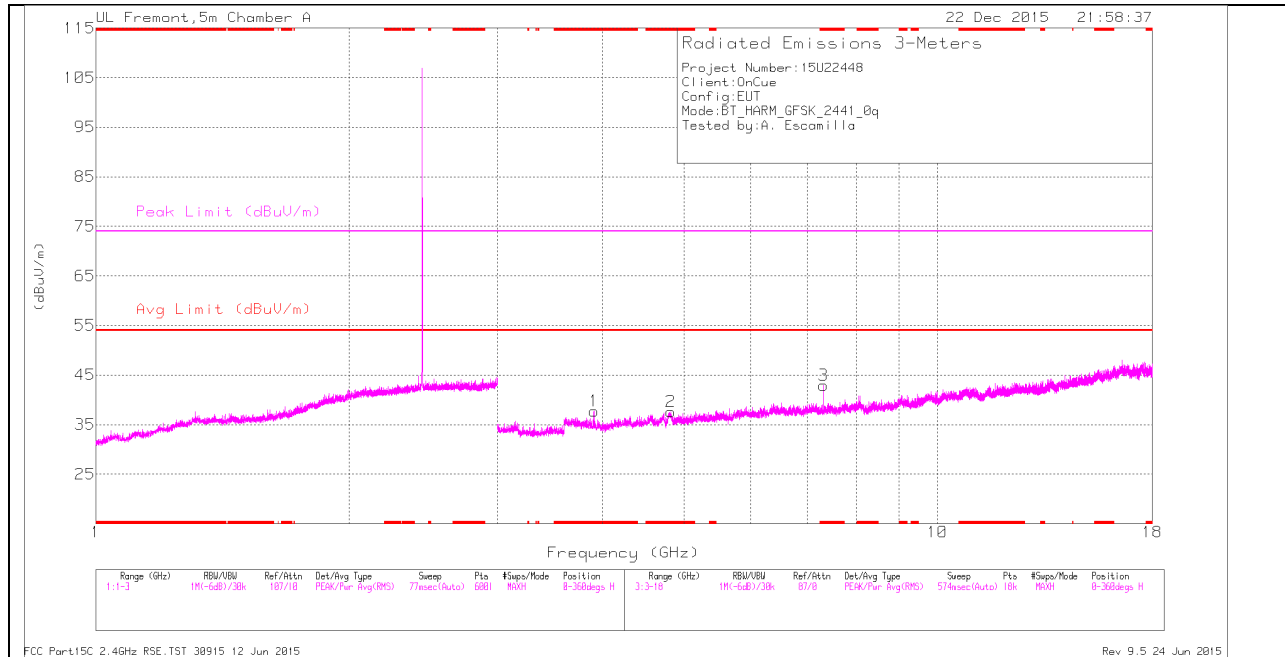
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

Radiated Emissions

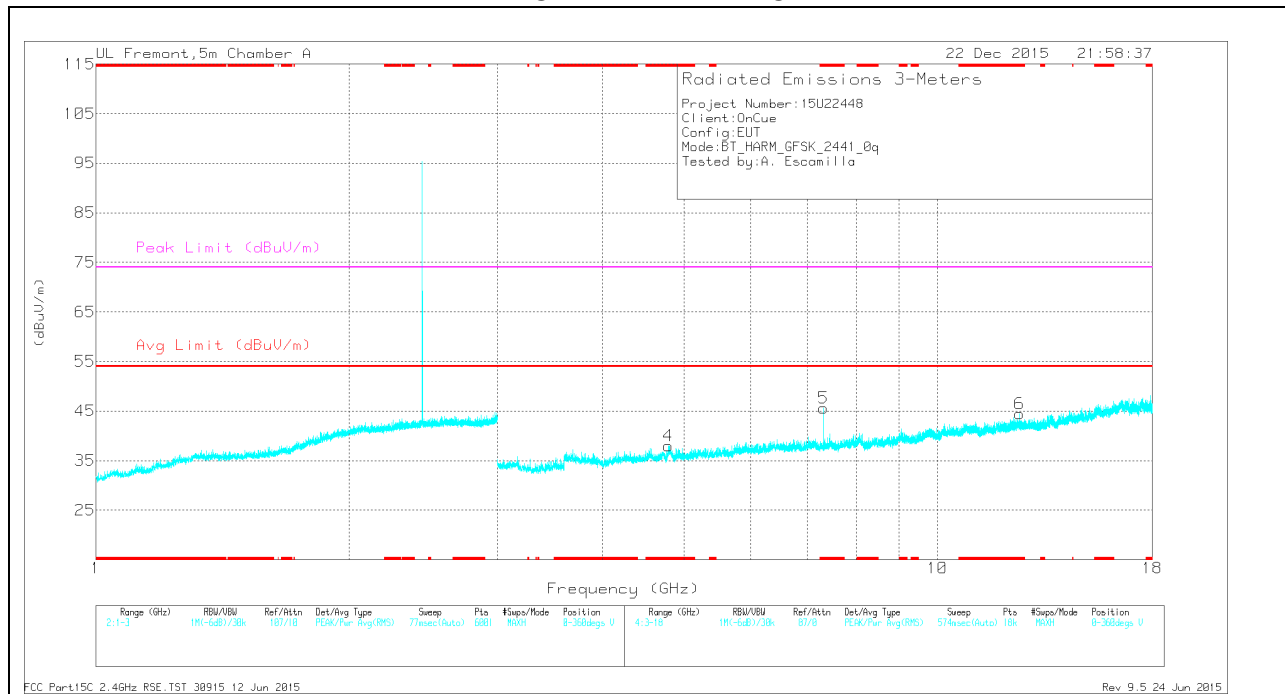
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.407	34.27	Pk	28.5	-20.7	42.07	-	-	74	-31.93	339	122	H
* 1.406	20.31	MAv1	28.5	-20.7	28.11	54	-25.89	-	-	339	122	H
* 2.28	36.32	Pk	31.7	-19.6	48.42	-	-	74	-25.58	342	100	H
* 2.276	21.98	MAv1	31.7	-19.6	34.08	54	-19.92	-	-	342	100	H
* 2.805	36.35	Pk	32.5	-20.5	48.35	-	-	74	-25.65	342	100	H
* 2.806	22.88	MAv1	32.5	-20.5	34.88	54	-19.12	-	-	342	100	H
* 3.798	32.13	Pk	33.4	-31.8	34.34	-	-	74	-39.66	342	100	V
* 3.796	32.74	MAv1	33.4	-31.8	33.73	54	-20.27	-	-	342	100	V
* 4.791	39.91	Pk	34	-29.9	44.01	-	-	74	-29.99	342	100	V
* 4.793	26.93	MAv1	34	-29.9	31.03	54	-22.97	-	-	342	100	V
7.206	41.36	Pk	35.5	-26.1	50.76	-	-	74	-23.24	232	104	V
7.206	33.13	MAv1	35.5	-26.1	42.53	54	-11.47	-	-	232	104	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.906	35.97	Pk	33.5	-31.7	0	37.77	-	-	74	-36.23	0-360	100	H
2	* 4.818	33.42	Pk	33.9	-29.7	0	37.62	-	-	74	-36.38	0-360	100	H
3	* 7.322	33.89	Pk	35.5	-26.5	0	42.89	-	-	74	-31.11	0-360	201	H
4	* 4.792	33.9	Pk	34	-29.9	0	38	-	-	74	-36	0-360	200	V
5	* 7.323	36.64	Pk	35.5	-26.5	0	45.64	-	-	74	-28.36	0-360	100	V
6	* 12.509	27.41	Pk	39.1	-22.1	0	44.41	-	-	74	-29.59	0-360	100	V

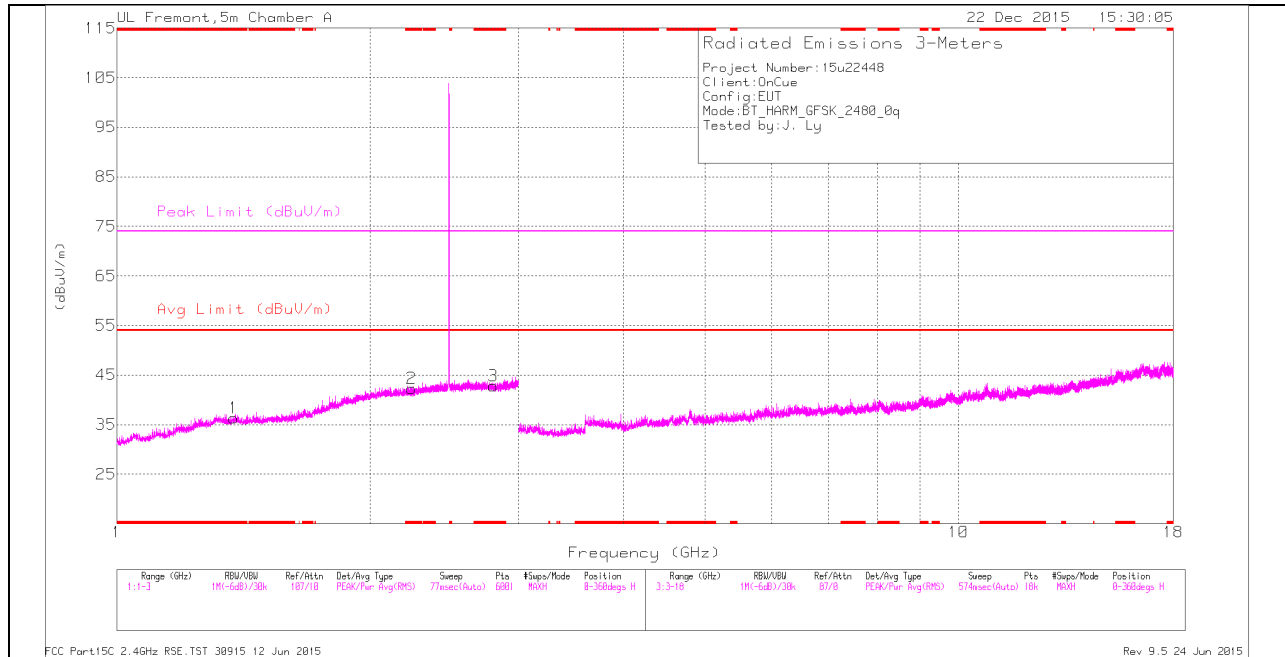
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

Radiated Emissions

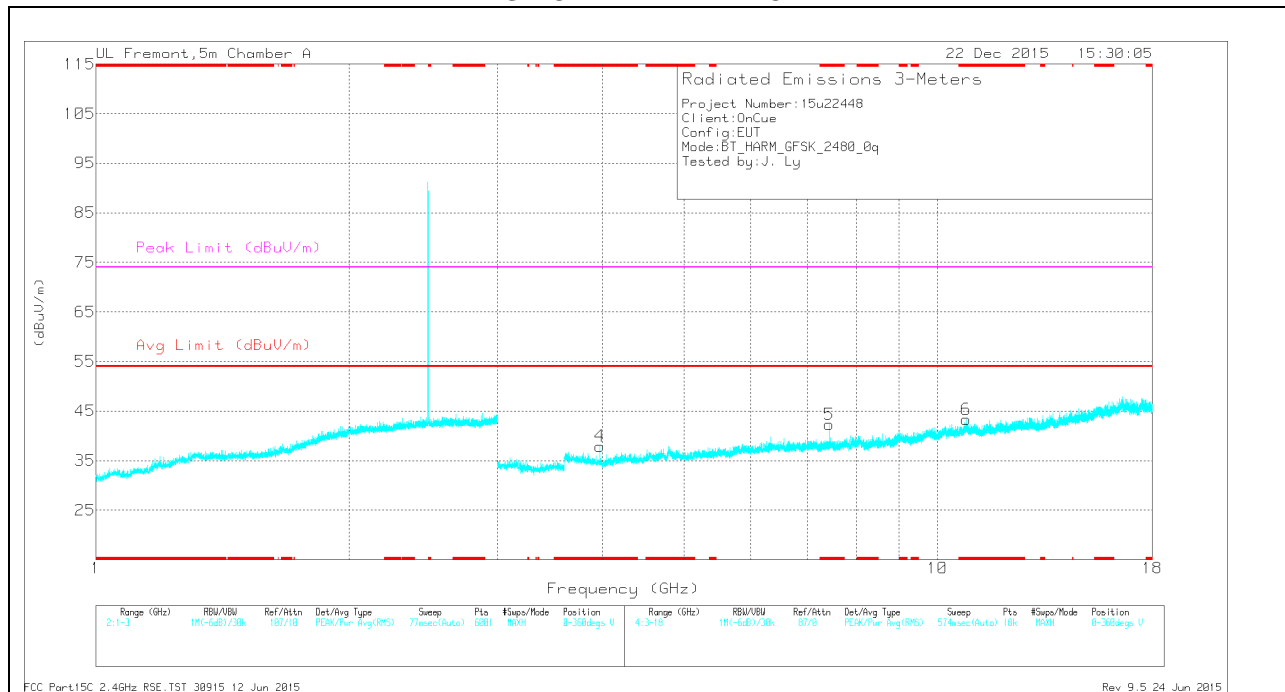
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.906	44.43	PK2	33.5	-31.7	0	46.23	-	-	74	-27.77	3	398	H
* 3.906	35.15	MAv1	33.5	-31.7	0	36.95	54	-17.05	-	-	3	398	H
* 4.818	42.04	PK2	33.9	-29.7	0	46.24	-	-	74	-27.76	35	218	H
* 4.819	30.14	MAv1	33.9	-29.7	0	34.34	54	-19.66	-	-	35	218	H
* 7.322	41.41	PK2	35.5	-26.5	0	50.41	-	-	74	-23.59	221	113	H
* 7.323	34.12	MAv1	35.5	-26.5	0	43.12	54	-10.88	-	-	221	113	H
* 4.79	42.13	PK2	34	-29.9	0	46.23	-	-	74	-27.77	174	152	V
* 4.792	30.3	MAv1	34	-29.9	0	34.4	54	-19.6	-	-	174	152	V
* 7.323	42.65	PK2	35.5	-26.5	0	51.65	-	-	74	-22.35	236	111	V
* 7.323	36.05	MAv1	35.5	-26.5	0	45.05	54	-8.95	-	-	236	111	V
* 12.51	34.22	PK2	39.1	-22	0	51.32	-	-	74	-22.68	274	129	V
* 12.508	22.8	MAv1	39.1	-22.1	0	39.8	54	-14.2	-	-	274	129	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.376	28.6	Pk	28.6	-20.9	36.3	-	-	74	-37.7	0-360	100	H
2	* 2.238	30.4	Pk	31.5	-19.6	42.3	-	-	74	-31.7	0-360	201	H
3	* 2.801	30.92	Pk	32.4	-20.5	42.82	-	-	74	-31.18	0-360	201	H
4	* 3.967	36.22	Pk	33.4	-31.7	37.92	-	-	74	-36.08	0-360	100	V
5	* 7.44	31.75	Pk	35.5	-24.9	42.35	-	-	74	-31.65	0-360	100	V
6	* 10.815	27.05	Pk	37.8	-21.5	43.35	-	-	74	-30.65	0-360	100	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

Radiated Emissions

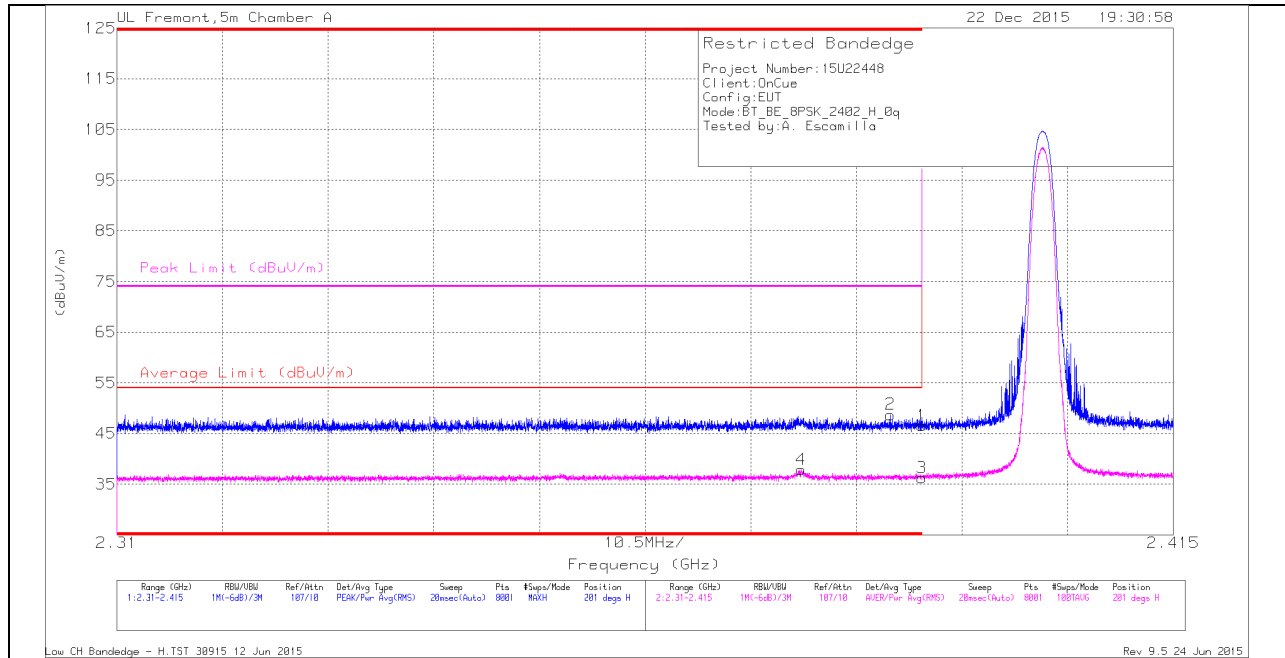
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.376	34.34	Pk	28.6	-20.9	42.04	-	-	74	-31.96	360	100	H
* 1.376	20.74	MAv1	28.6	-20.9	28.44	54	-25.56	-	-	360	100	H
* 2.239	35.05	Pk	31.5	-19.6	46.95	-	-	74	-27.05	360	100	H
* 2.239	21.9	MAv1	31.5	-19.6	33.8	54	-20.2	-	-	360	100	H
* 2.801	36.03	Pk	32.4	-20.5	47.93	-	-	74	-26.07	360	100	H
* 2.803	22.89	MAv1	32.5	-20.4	34.99	54	-19.01	-	-	360	100	H
* 3.968	41.13	Pk	33.4	-31.6	42.93	-	-	74	-31.07	360	100	V
* 3.968	32.68	MAv1	33.4	-31.6	34.48	54	-19.52	-	-	360	100	V
* 7.44	37.62	Pk	35.5	-24.9	48.22	-	-	74	-25.78	233	114	V
* 7.44	28.6	MAv1	35.5	-24.9	39.2	54	-14.8	-	-	233	114	V
* 10.815	32.03	Pk	37.8	-21.5	48.33	-	-	74	-25.67	233	114	V
* 10.814	19.39	MAv1	37.8	-21.5	35.69	54	-18.31	-	-	233	114	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

9.1.2. 8PSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

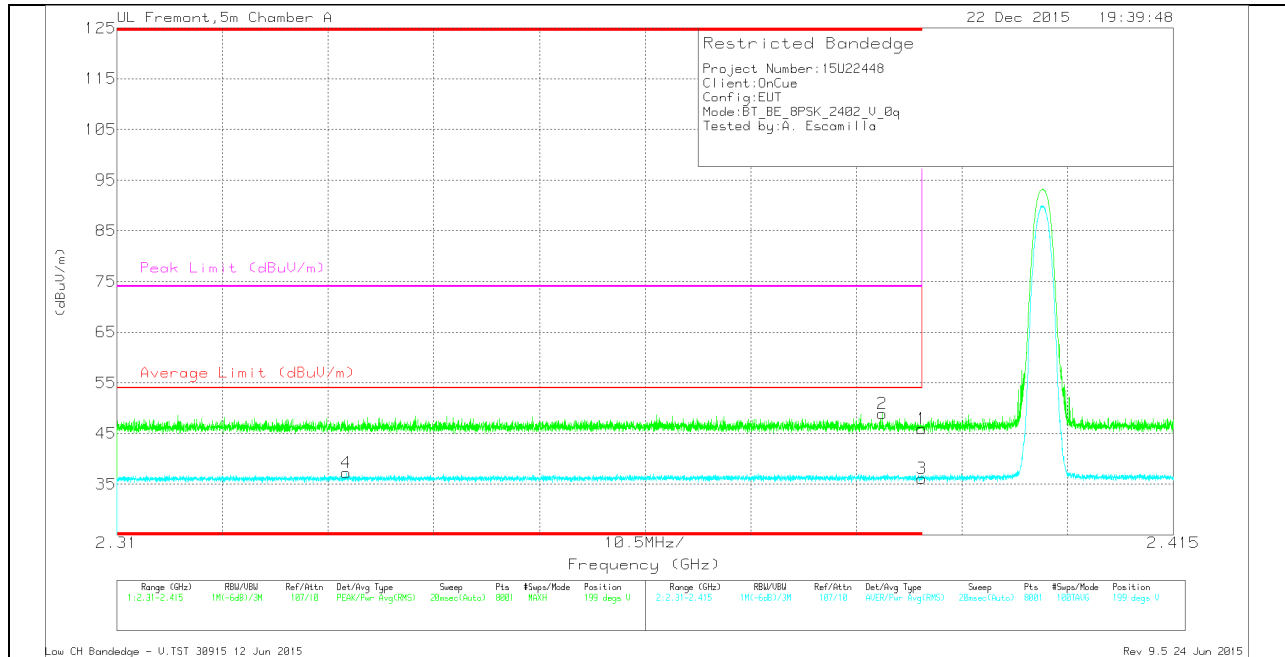
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.378	25.79	RMS	31.9	-19.8	0	37.89	54	-16.11	-	-	201	111	H
2	* 2.387	36.64	Pk	32	-19.9	0	48.74	-	-	74	-25.26	201	111	H
1	* 2.39	34.5	Pk	32	-19.9	0	46.6	-	-	74	-27.4	201	111	H
3	* 2.39	24.17	RMS	32	-19.9	0	36.27	54	-17.73	-	-	201	111	H

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.333	25.12	RMS	31.9	-19.8	0	37.22	54	-16.78	-	-	199	272	V
2	* 2.386	36.78	Pk	32	-19.9	0	48.88	-	-	74	-25.12	199	272	V
1	* 2.39	33.84	Pk	32	-19.9	0	45.94	-	-	74	-28.06	199	272	V
3	* 2.39	24	RMS	32	-19.9	0	36.1	54	-17.9	-	-	199	272	V

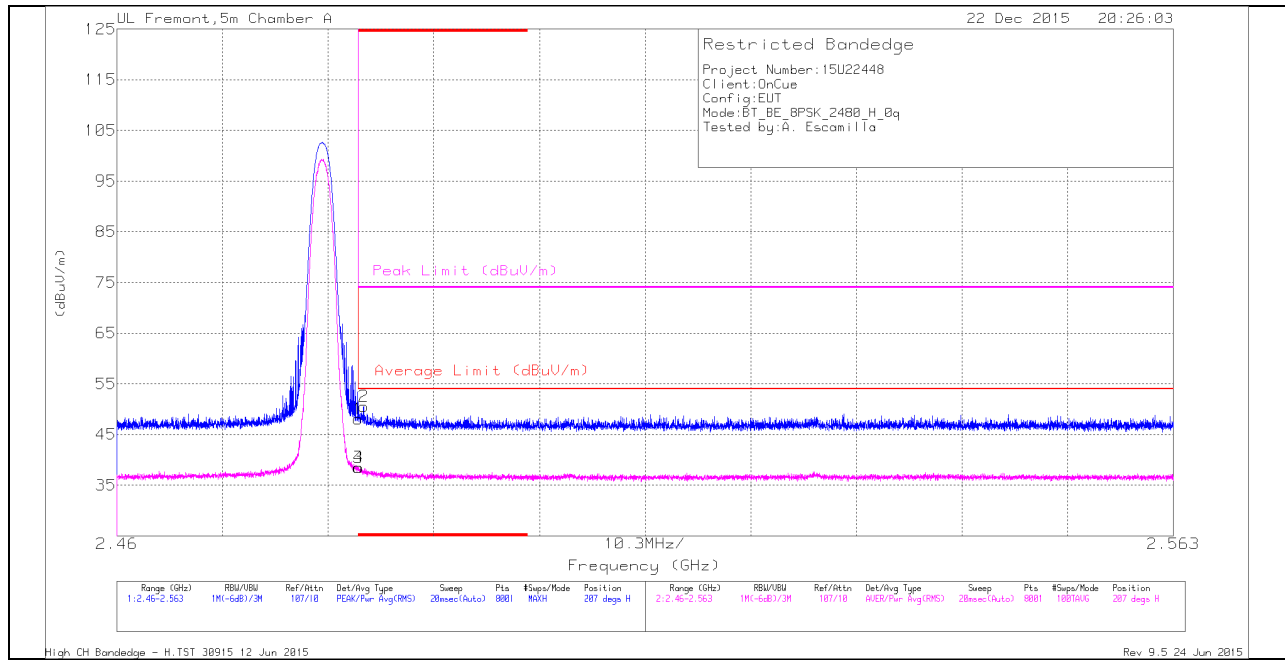
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

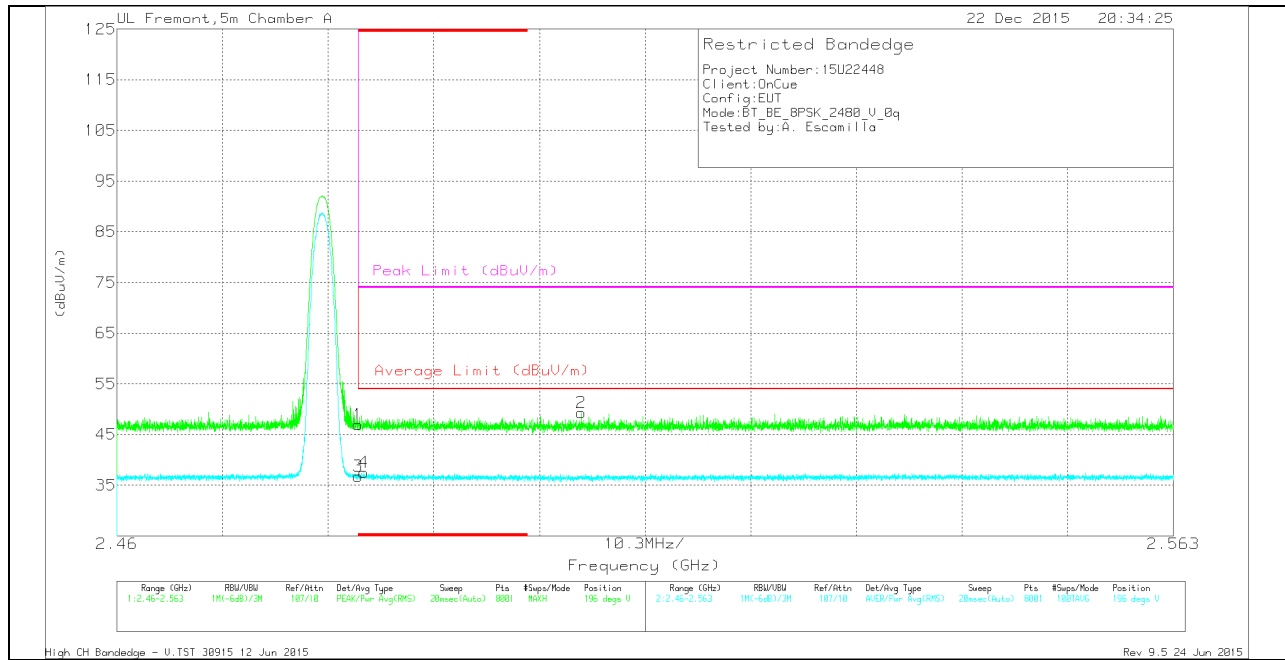
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36	Pk	32.1	-20	0	48.1	-	-	74	-25.9	207	181	H
2	* 2.484	38.41	Pk	32.1	-20	0	50.51	-	-	74	-23.49	207	181	H
3	* 2.484	26.39	RMS	32.1	-20	0	38.49	54	-15.51	-	-	207	181	H
4	* 2.484	26.44	RMS	32.1	-20	0	38.54	54	-15.46	-	-	207	181	H

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	34.79	Pk	32.1	-20	0	46.89	-	-	74	-27.11	196	274	V
3	* 2.484	24.69	RMS	32.1	-20	0	36.79	54	-17.21	-	-	196	274	V
4	* 2.484	25.38	RMS	32.1	-20	0	37.48	54	-16.52	-	-	196	274	V
2	2.505	37.29	Pk	32.1	-20.1	0	49.29	-	-	74	-24.71	196	274	V

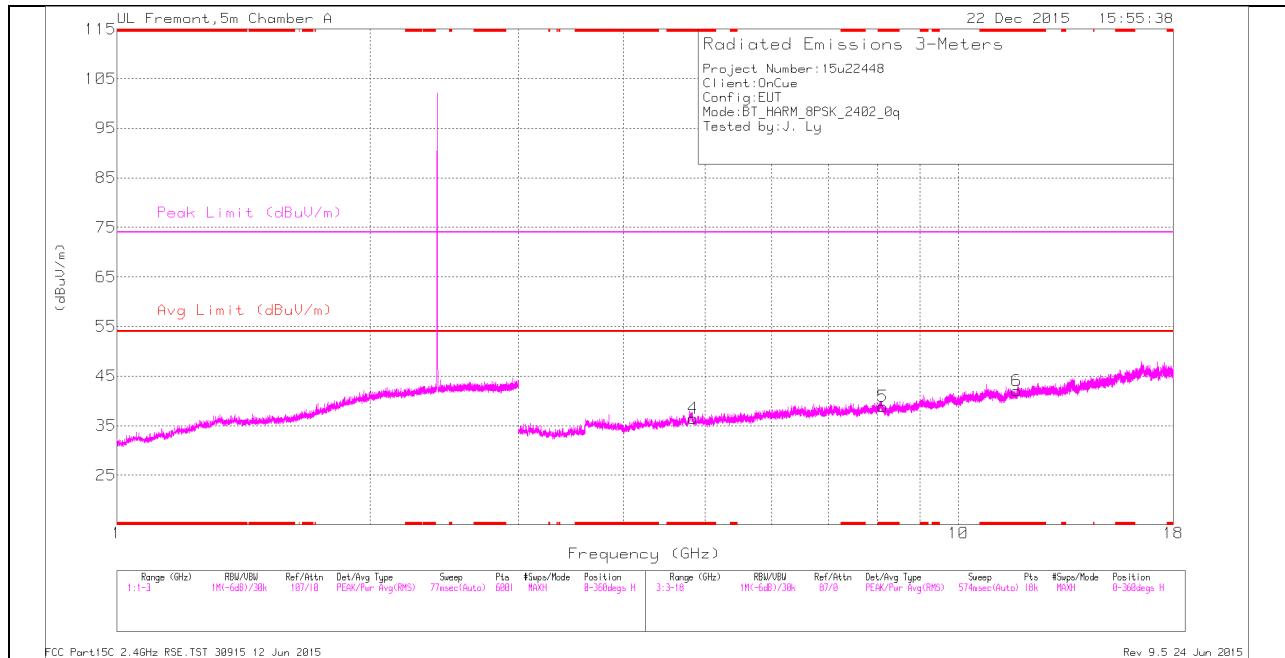
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band

Pk - Peak detector

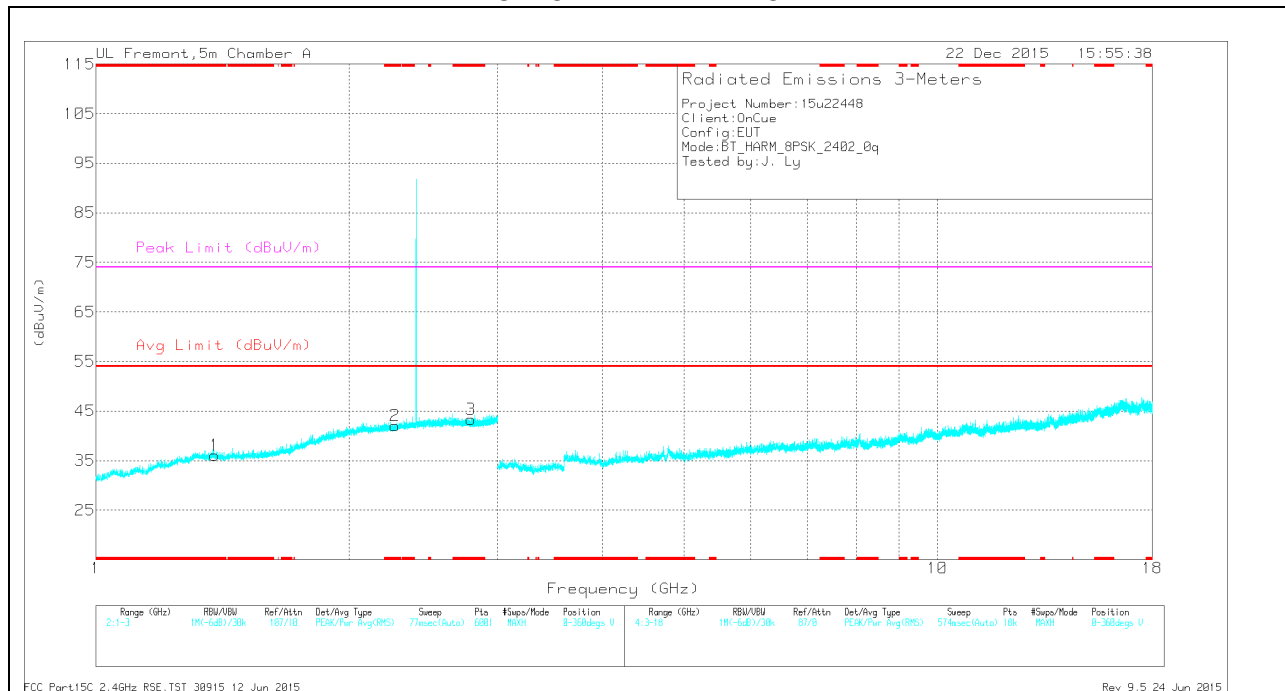
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.383	28.31	Pk	28.6	-20.8	36.11	-	-	74	-37.89	0-360	100	V
2	* 2.267	29.96	Pk	31.7	-19.6	42.06	-	-	74	-31.94	0-360	200	V
3	* 2.789	31.36	Pk	32.4	-20.5	43.26	-	-	74	-30.74	0-360	200	V
4	* 4.837	31.85	Pk	33.9	-29.3	36.45	-	-	74	-37.55	0-360	100	H
5	* 8.127	27.55	Pk	35.7	-24.4	38.85	-	-	74	-35.15	0-360	100	H
6	* 11.726	26.14	Pk	38.3	-22.4	42.04	-	-	74	-31.96	0-360	100	H

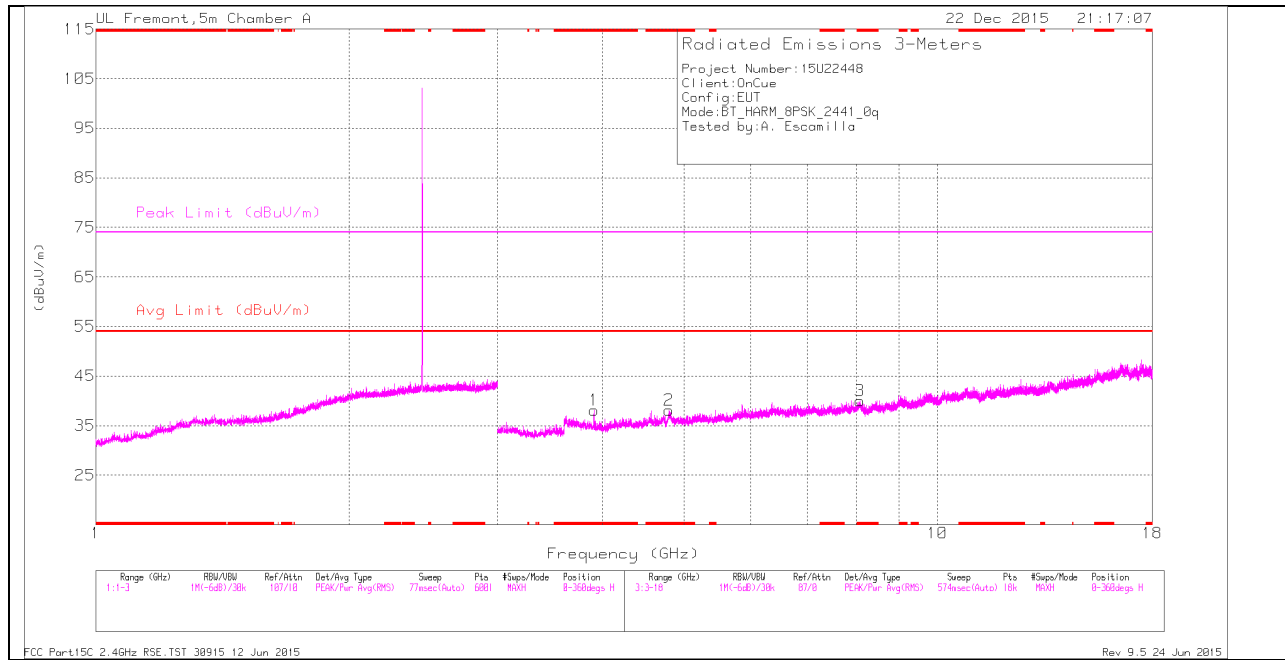
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

Radiated Emissions

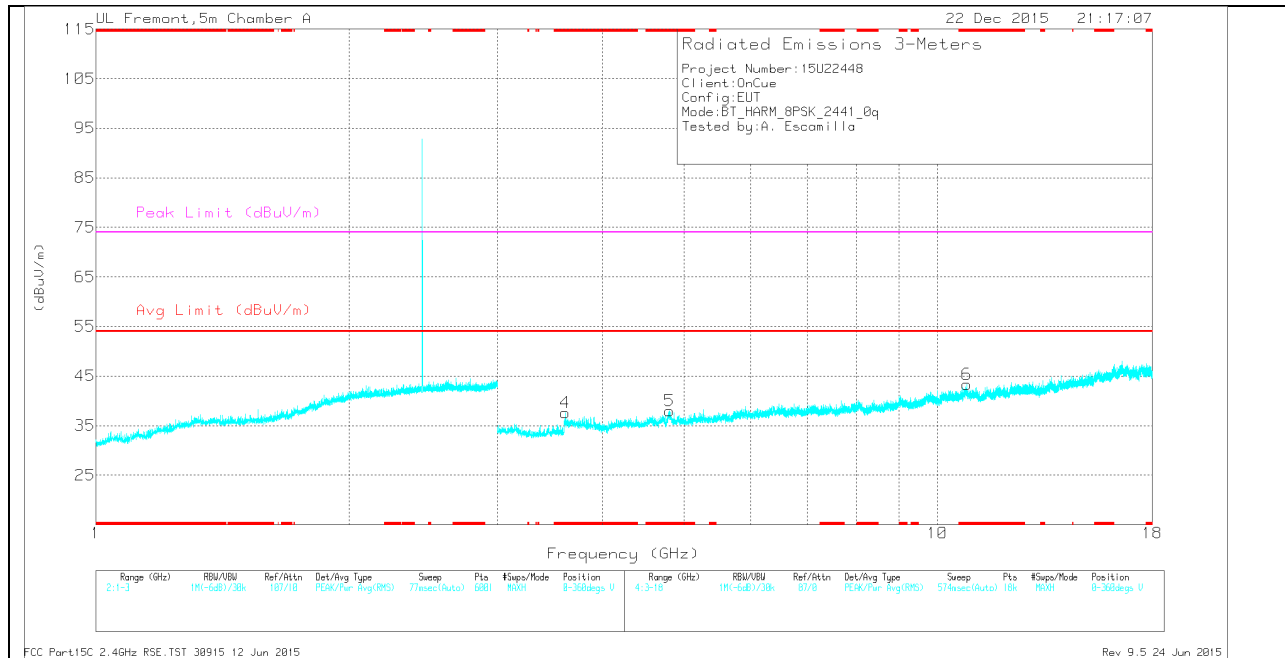
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.382	34.44	Pk	28.6	-20.8	42.24	-	-	74	-31.76	359	100	V
* 1.382	20.78	MAv1	28.6	-20.8	28.58	54	-25.42	-	-	359	100	V
* 2.266	35.69	Pk	31.7	-19.6	47.79	-	-	74	-26.21	359	100	V
* 2.267	21.99	MAv1	31.7	-19.6	34.09	54	-19.91	-	-	359	100	V
* 2.787	36.55	Pk	32.4	-20.5	48.45	-	-	74	-25.55	359	100	V
* 2.79	22.91	MAv1	32.4	-20.5	34.81	54	-19.19	-	-	359	100	V
* 4.836	37.63	Pk	33.9	-29.4	42.13	-	-	74	-31.87	359	100	H
* 4.835	25.55	MAv1	33.9	-29.4	30.05	54	-23.95	-	-	359	100	H
* 8.126	33.79	Pk	35.7	-24.4	45.09	-	-	74	-28.91	359	100	H
* 8.129	21.2	MAv1	35.7	-24.3	32.6	54	-21.4	-	-	359	100	H
* 11.728	32.75	Pk	38.3	-22.4	48.65	-	-	74	-25.35	359	100	H
* 11.725	19.37	MAv1	38.3	-22.4	35.27	54	-18.73	-	-	359	100	H

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.906	36.32	Pk	33.5	-31.7	0	38.12	-	-	74	-35.88	0-360	100	H
2	* 4.799	33.96	Pk	34	-29.8	0	38.16	-	-	74	-35.84	0-360	100	H
3	* 8.093	28.37	Pk	35.7	-24.1	0	39.97	-	-	74	-34.03	0-360	201	H
4	* 3.612	36.82	Pk	33.1	-32.3	0	37.62	-	-	74	-36.38	0-360	100	V
5	* 4.802	33.8	Pk	34	-29.8	0	38	-	-	74	-36	0-360	100	V
6	* 10.834	27.17	Pk	37.8	-21.6	0	43.37	-	-	74	-30.63	0-360	100	V

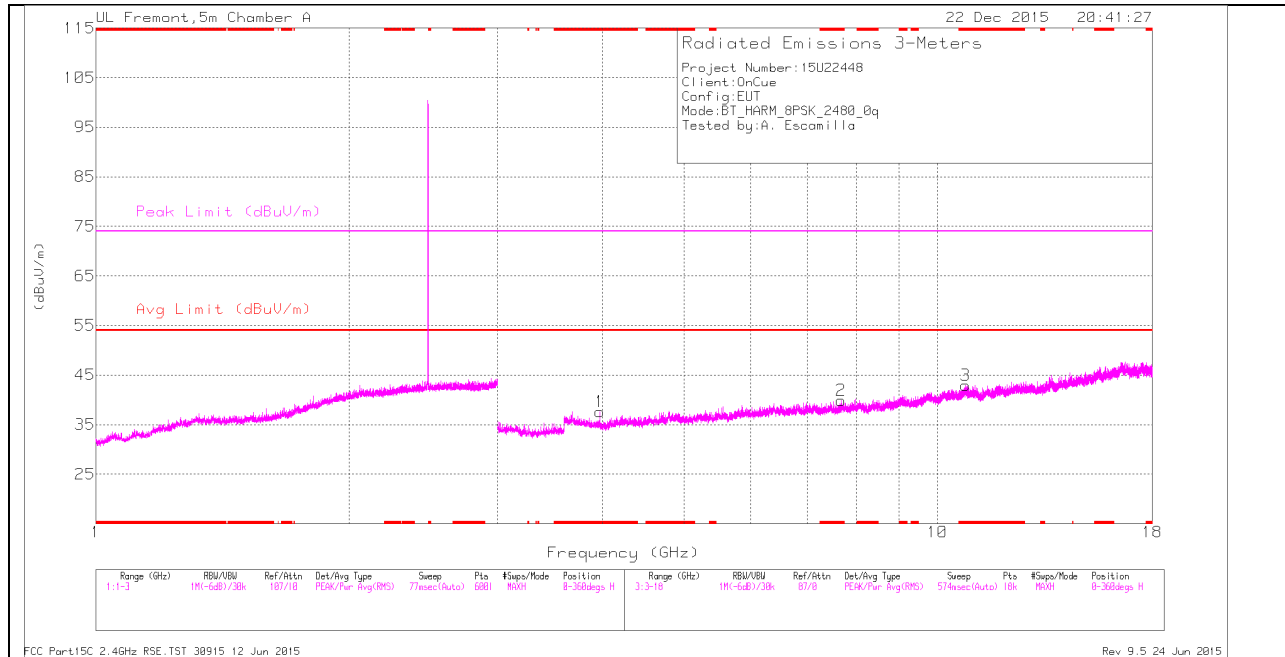
* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

Radiated Emissions

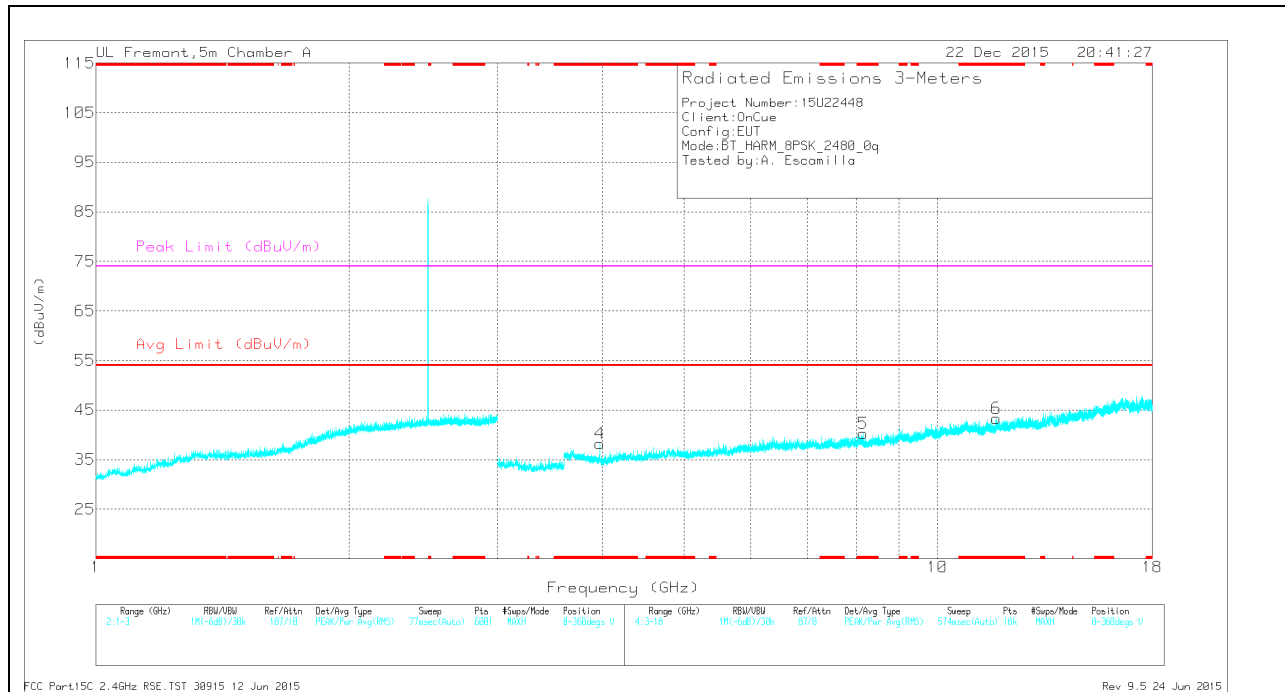
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.906	43.64	PK2	33.5	-31.7	0	45.44	-	-	74	-28.56	358	127	H
* 3.906	34.17	MAv1	33.5	-31.7	0	35.97	54	-18.03	-	-	358	127	H
* 4.8	41.34	PK2	34	-29.8	0	45.54	-	-	74	-28.46	325	151	H
* 4.799	30.18	MAv1	34	-29.8	0	34.38	54	-19.62	-	-	325	151	H
* 8.093	36.49	PK2	35.7	-24.1	0	48.09	-	-	74	-25.91	154	208	H
* 8.093	24.92	MAv1	35.7	-24.1	0	36.52	54	-17.48	-	-	154	208	H
* 3.614	43.05	PK2	33.1	-32.2	0	43.95	-	-	74	-30.05	187	178	V
* 3.611	31.36	MAv1	33.1	-32.3	0	32.16	54	-21.84	-	-	187	178	V
* 4.804	42.04	PK2	34	-29.8	0	46.24	-	-	74	-27.76	172	147	V
* 4.803	30.04	MAv1	34	-29.8	0	34.24	54	-19.76	-	-	172	147	V
* 10.832	34.07	PK2	37.8	-21.6	0	50.27	-	-	74	-23.73	5	121	V
* 10.834	22.82	MAv1	37.8	-21.6	0	39.02	54	-14.98	-	-	5	121	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 10.805	26.68	Pk	37.8	-21.5	0	42.98	-	-	74	-31.02	0-360	100	H
6	* 11.75	27.17	Pk	38.3	-22.1	0	43.37	-	-	74	-30.63	0-360	100	V
1	* 3.968	35.86	Pk	33.4	-31.6	0	37.66	-	-	74	-36.34	0-360	100	H
4	* 3.968	36.44	Pk	33.4	-31.6	0	38.24	-	-	74	-35.76	0-360	100	V
2	* 7.681	30.06	Pk	35.6	-25.8	0	39.86	-	-	74	-34.14	0-360	100	H
5	* 8.156	28.85	Pk	35.7	-24.3	0	40.25	-	-	74	-33.75	0-360	100	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

Radiated Emissions

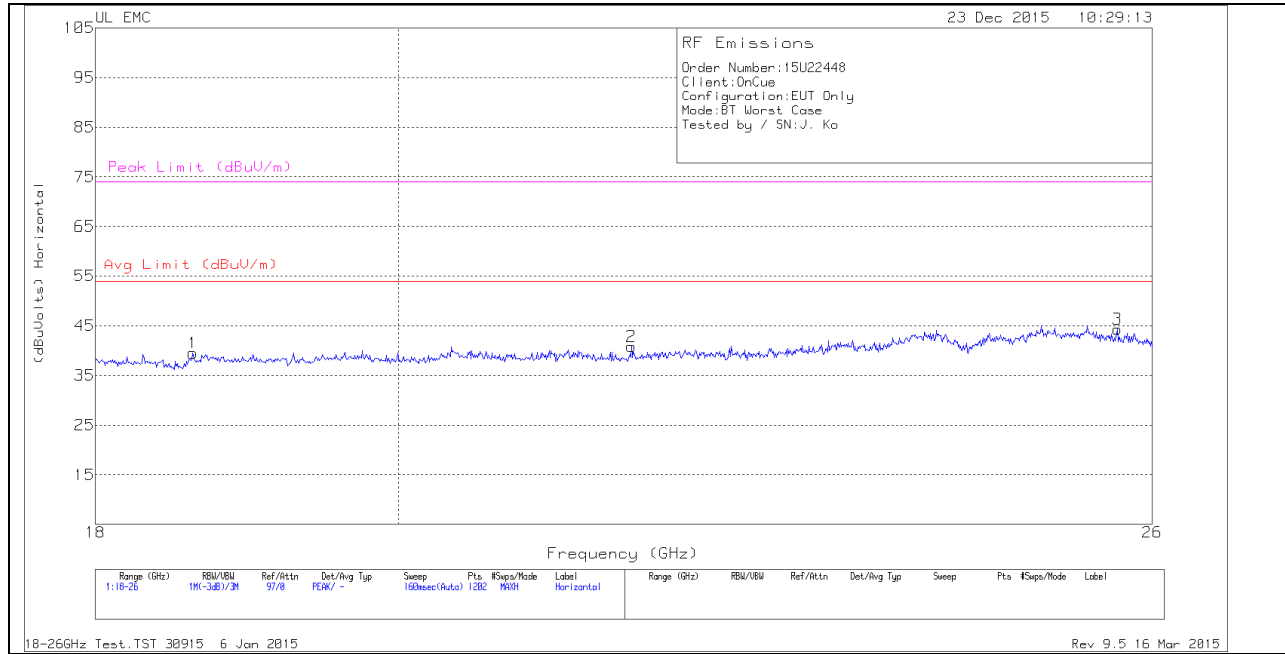
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.968	43.11	PK2	33.4	-31.6	0	44.91	-	-	74	-29.09	358	125	H
* 3.968	34.47	MAv1	33.4	-31.6	0	36.27	54	-17.73	-	-	358	125	H
* 7.681	36.79	PK2	35.6	-25.8	0	46.59	-	-	74	-27.41	191	159	H
* 7.68	25.91	MAv1	35.6	-25.8	0	35.71	54	-18.29	-	-	191	159	H
* 10.807	33.91	PK2	37.8	-21.5	0	50.21	-	-	74	-23.79	109	199	H
* 10.806	23.13	MAv1	37.8	-21.5	0	39.43	54	-14.57	-	-	109	199	H
* 3.968	43.14	PK2	33.4	-31.6	0	44.94	-	-	74	-29.06	162	131	V
* 3.968	34.42	MAv1	33.4	-31.6	0	36.22	54	-17.78	-	-	162	131	V
* 8.156	35.58	PK2	35.7	-24.3	0	46.98	-	-	74	-27.02	180	127	V
* 8.155	24.61	MAv1	35.7	-24.3	0	36.01	54	-17.99	-	-	180	127	V
* 11.751	33.93	PK2	38.3	-22	0	50.23	-	-	74	-23.77	35	232	V
* 11.75	23.03	MAv1	38.3	-22.1	0	39.23	54	-14.77	-	-	35	232	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

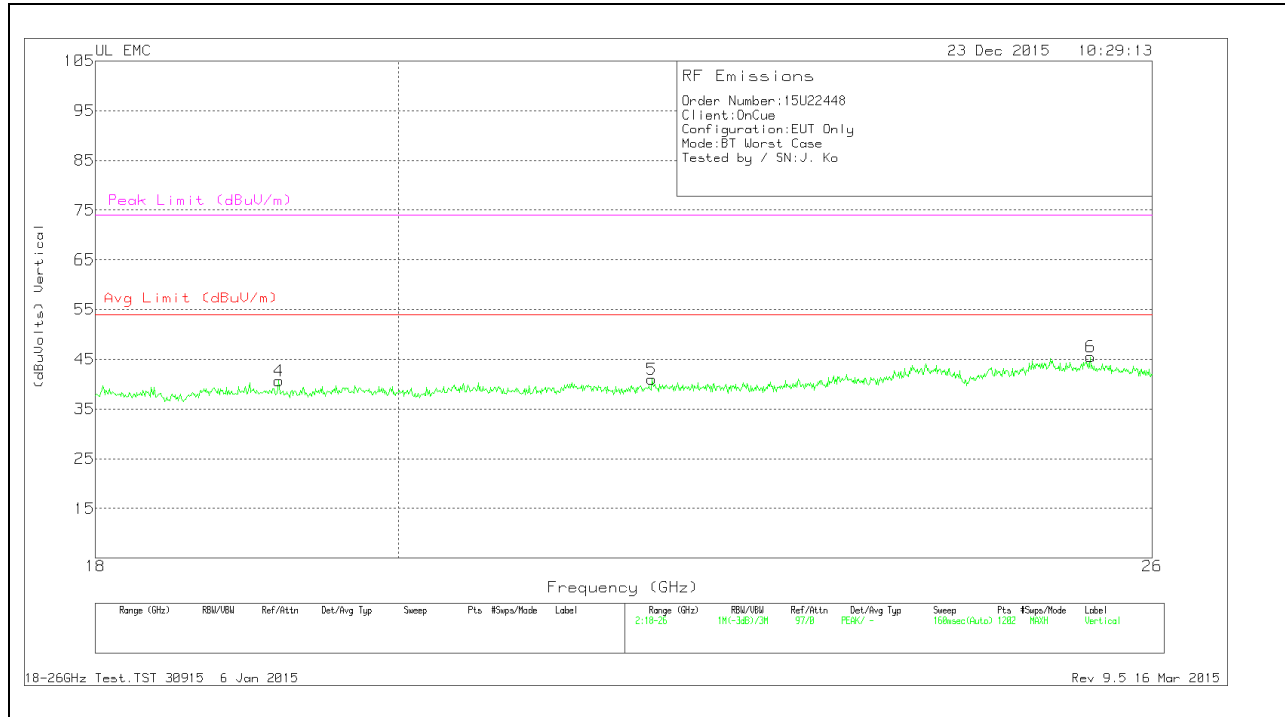
9.3. WORST-CASE 18-26GHz

HARMONICS and SPURIOUS EMISSIONS

HORIZONTAL



VERTICAL



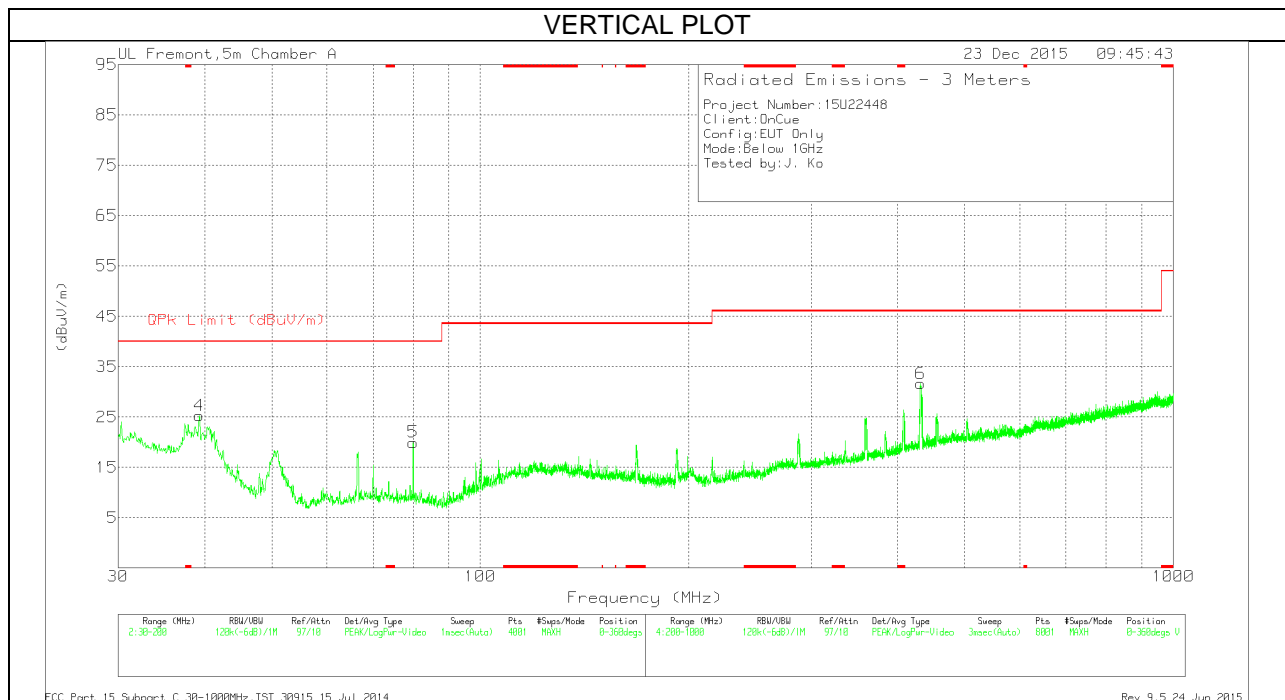
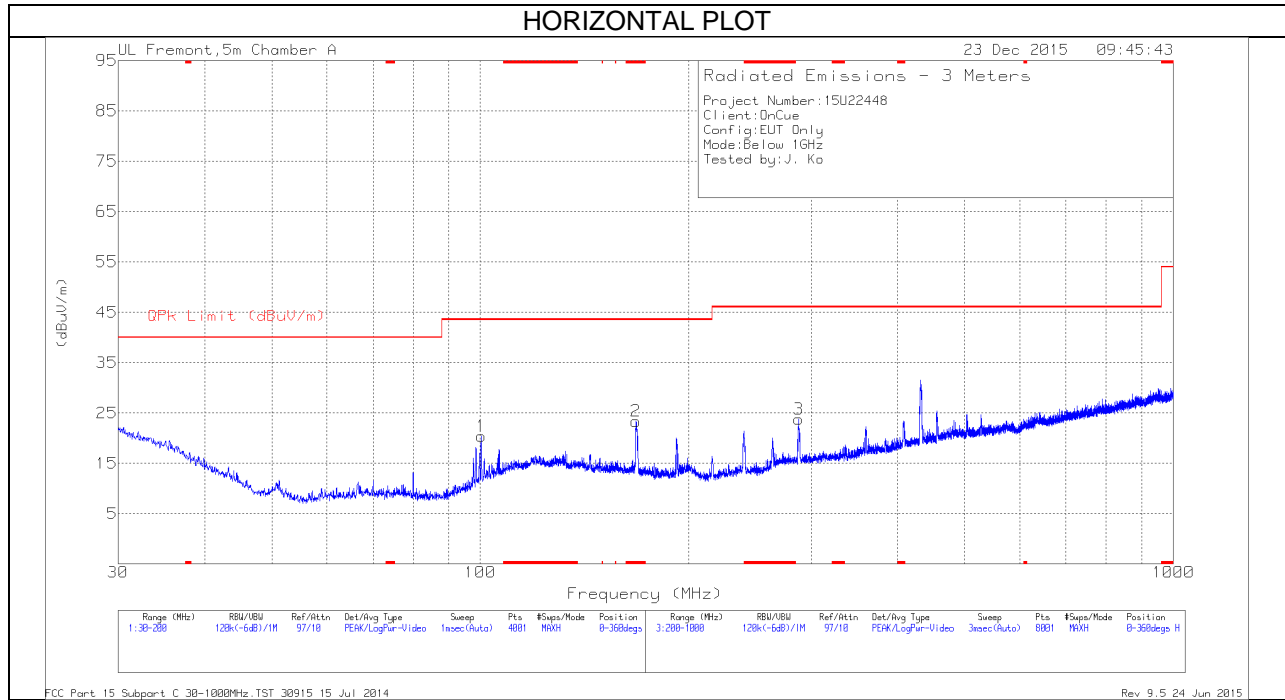
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T477 AF (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	18.619	41.5	Pk	32.3	-24.8	-9.5	39.5	54	-14.5	74	-34.5
2	21.69	41.93	Pk	33	-24.6	-9.5	40.83	54	-13.17	74	-33.17
3	25.687	44.13	Pk	34.4	-24.7	-9.5	44.33	54	-9.67	74	-29.67
4	19.186	42.27	Pk	32.6	-24.7	-9.5	40.67	54	-13.33	74	-33.33
5	21.843	42.3	Pk	33	-24.8	-9.5	41	54	-13	74	-33
6	25.447	45.2	Pk	34.2	-24.4	-9.5	45.5	54	-8.5	74	-28.5

Pk - Peak detector

9.4. WORST-CASE BELOW 1 GHz

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



BELOW 1 GHz TABLE

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 167.8275	37.56	Pk	15.9	-30.1	23.36	43.52	-20.16	0-360	199	H
4	39.3075	37.98	Pk	18.4	-31.1	25.28	40	-14.72	0-360	101	V
5	79.98	39.26	Pk	11.4	-30.7	19.96	40	-20.04	0-360	101	V
1	100.295	36.7	Pk	14.3	-30.6	20.4	43.52	-23.12	0-360	199	H
3	288	35.87	Pk	17.3	-29.4	23.77	46.02	-22.25	0-360	101	H
6	431.6	40.02	Pk	20.5	-28.9	31.62	46.02	-14.4	0-360	101	V

* - indicates frequency in CFR15.205/IC 8.10 Restricted Band
 Pk - Peak detector

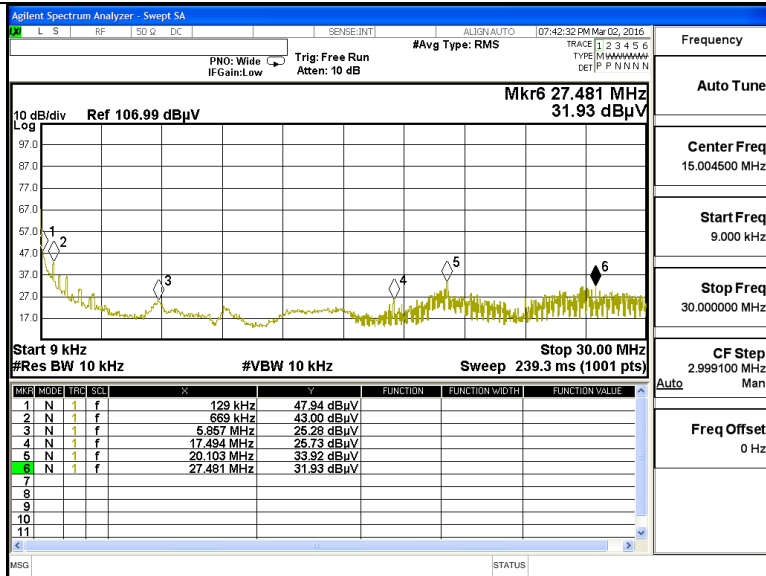
9.5 WORST-CASE BELOW 30 MHz

GFSK SPURIOUS EMISSIONS 9kHz TO 30 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

RESULTS													
FCC Part 15, Subpart C 3 Meter Distance Measurement At Emissions Chamber													
Company: Oncue													
Project #: 115U22448													
Tester: 39005RA													
Date: 3/2/16													
Frequency (MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	AF (dB/m)	Distance (m)	Distance Correction (dB)	PK Corrected Reading (dBuV/m)	AV Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dB)	AV Margin (dB)	Notes
Loop Antenna Face On: Y Position													
Spurious Emissions 490kHz - 30MHz:													
0.129	47.94	--	11.79	3	-80.00	-20.27	--	45.39	25.39	-65.7	--	--	9kHz-490kHz Spurious @ 300m
0.669	43.00	--	11.73	3	-40.00	14.73	--	31.10		-16.4	--	--	490kHz-1MHz Spurious @ 30m
5.857	25.28	--	11.41	3	-40.00	-3.31	--	29.54		-32.8	--	--	1.705MHz-5MHz Spurious @ 30m
17.494	25.73	--	10.15	3	-40.00	-4.12	--	29.54		-33.7	--	--	15-20MHz Spurious @ 30m
20.103	33.92	--	9.786	3	-40.00	3.71	--	29.54		-25.8	--	--	20-30MHz Spurious @ 30m
27.481	31.93	--	8.753	3	-40.00	0.68	--	29.54		-28.9	--	--	20-30MHz Spurious @ 30m
Loop Antenna Face Off: Y Position													
Spurious Emissions 490kHz - 30MHz:													
0.159	46.63	--	11.79	3	-80.00	-21.58	--	43.58	23.58	-65.2	--	--	9kHz-490kHz Spurious @ 300m
2.468	24.35	--	11.8	3	-40.00	-3.85	--	29.54		-33.4	--	--	1.705MHz-5MHz Spurious @ 30m
5.917	24.34	--	11.41	3	-40.00	-4.25	--	29.54		-33.8	--	--	5-10MHz Spurious @ 30m
14.615	20.38	--	10.54	3	-40.00	-9.08	--	29.54		-38.6	--	--	15-20MHz Spurious @ 30m
20.853	25.92	--	9.681	3	-40.00	-4.40	--	29.54		-33.9	--	--	20-30MHz Spurious @ 30m
25.651	25.72	--	9.009	3	-40.00	-5.27	--	29.54		-34.8	--	--	20-30MHz Spurious @ 30m
* No more emissions were found up to 30MHz													
Note: The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 10000Mhz. Radiated emission limits in these three bands are based on measurements employing an average detector.													
P.K. = Peak													
Q.P. = Quasi Peak Readings													
A.F. = Antenna factor													
Rev. 05.27.15													

Note: The anechoic chamber has been properly calibrated so that the measurement results correspond to what would be obtained from an open field sites.

FACE ON



FACE OFF

