FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone with BT, BLE, DTS/UNII a/b/g/n/ac & NFC

FCC ID: PY7-29752M

REPORT NUMBER: 16J23633A-E4V2

ISSUE DATE: 2016-08-15

Prepared for
SONY MOBILE COMMUNICATIONS, INC.
4-12-3 HIGASHI-SHINAGAWA,
SHINAGAWA -KU,TOKYO, 140-0002, JAPAN

Prepared by
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Revision History

Ver.	Issue Date	Revisions	Revised By
V1	08/03/16	Initial Issue	Brian Kiewra
V2	2016-08-15	Updated frequency range in section 5.2 Corrected KDB reference in section 7 Corrected CH1 Low PSD result in section 8.2.3 Corrected 6dB BW result in section 8.3.1 Corrected CH1 High (12) PSD result in section 8.4.3 Identified measurement procedure in section 2 Corrected standard reference in section 10 Corrected measurement procedure in section 9.1	Brian Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONY MOBILE COMMUNICATIONS, INC.
4-12-3 HIGASHI-SHINAGAWA,
SHINAGAWA -KU,TOKYO, 140-0002, JAPAN

EUT DESCRIPTION: GSM/WCDMA/LTE Phone with BT, BLE, DTS/UNII a/b/g/n/ac & NFC

SERIAL NUMBER: Conducted: CB512AP7SV
Radiated: CB512AP5SN

DATE TESTED: 2016-07-13 to 2016-08-02

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

UL LLC 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 LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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.

Approved & Released
For UL LLC By:

Jeff Moser
EMC Program Manager
UL – Consumer Technology Division

Prepared By:

Brian T. Kiewra
EMC Engineer
UL – Consumer Technology Division

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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.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA and 2800 Suite B, Perimeter Park Drive, Morrisville, NC 27560.

12 Laboratory Dr., RTP, NC 27709
☐ Chamber A
☐ Chamber C

2800 Suite B Perimeter Park Dr., Morrisville, NC 27560
☐ Chamber NORTH
☒ Chamber SOUTH

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at http://www.nist.gov/nvlap/

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Radiated Disturbance,18000 to 26000 MHz	4.45 dB
Radiated Disturbance,26000 to 40000 MHz	5.24 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone with BT, BLE, DTS/UNII a/b/g/n/ac & NFC

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2472	802.11b Ch0	13.8	23.99
2412 - 2472	802.11b Ch1	8.60	7.24
2412 - 2472	802.11g	15.57	36.06
2412 - 2472	802.11n HT20	15.62	36.48

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two integrated antennas, with the following maximum gains:

Frequency Range (MHz)	Antenna Gain (dBi)	
	Ant 0 (Main)	Ant 1 (Sub)
2402 – 2480	-6.2	-13.9

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was SONY, s_atp_1_600_7_9

The test utility software used during testing was Tera Term ver 4.89 (SVN# 6182).

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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-Axis orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X-Axis orientation.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS8

802.11g/n SISO mode share same power per chain as 802.11g/n MIMO mode; therefore only MIMO mode was tested.

802.11b only support SISO mode.

5.6. LIST OF TEST REDUCTION AND MODES

2400 - 2483.5 MHz Authorized Frequency Band (Antenna Port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
2412 - 2472	802.11g Legacy 1TX	802.11g CDD 2TX
2412 - 2472	802.11n 1TX	802.11n HT20 CDD 2TX
2412 - 2472	802.11n STBC 1TX	802.11n HT20 CDD 2TX
2412 - 2472	802.11n STBC 2TX	802.11n HT20 CDD 2TX

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5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Desktop	Lenovo	ThinkCentre	MG00ADEN	NA
Laptop	Lenovo	T450	RTP0116PC0A2UQT	NA
Headphones	Sony	MH410x	12271A100010396	NA
PowerSupply	Sony	1300-7146.1B	5816W02400051	NA

I/O CABLES

I/O Cable List					
Cable No	**Port**	**# of Identical ports**	**Connector Type**	**Cable Length (m)**	**Remarks**
1	Antenna Port	1	RF	<1m	NA
2	DC Mains	1	AC	>1m	NA
3	Audio	1	3.5mm	>1m	Headphone

TEST SETUP

The EUT is setup as a standalone device. Test software exercised the radio card.

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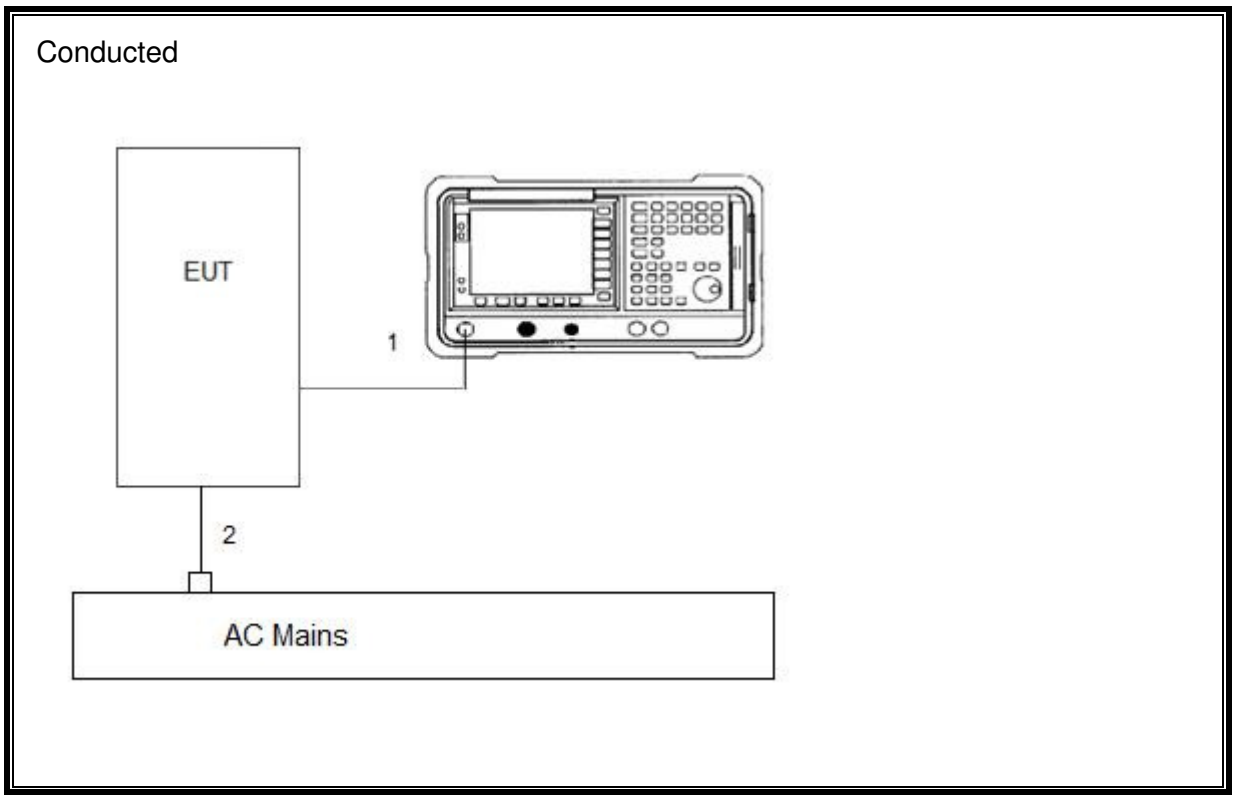
SETUP DIAGRAM FOR TESTS



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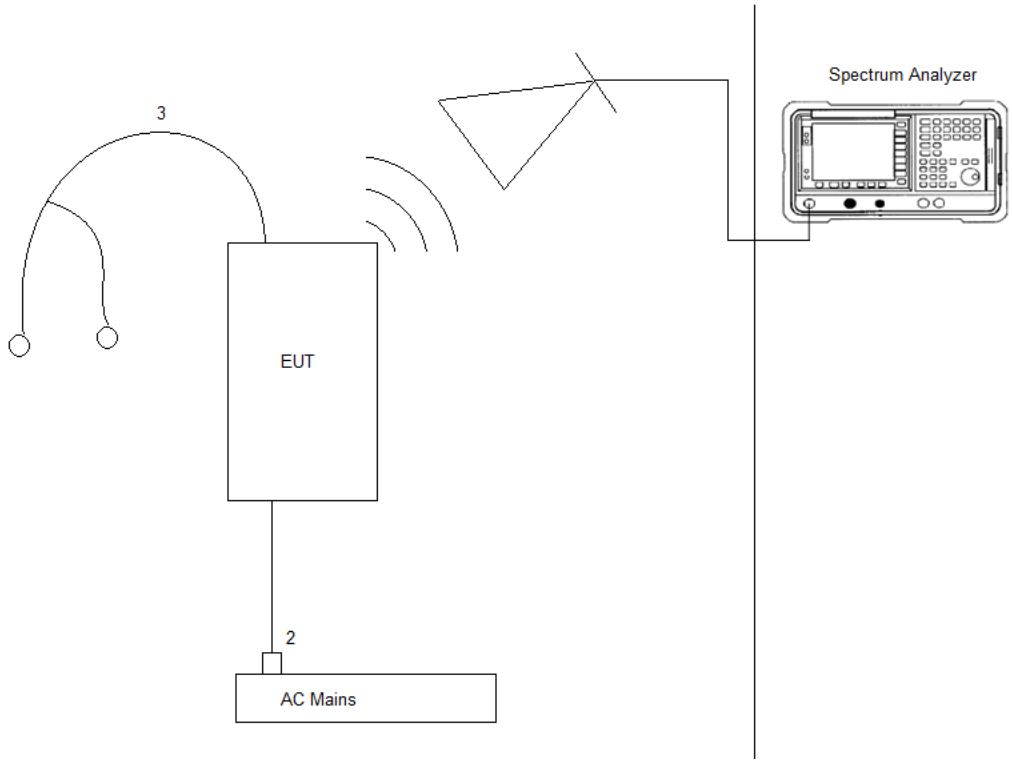
Radiated



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6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville - South Chamber)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	0.009-30MHz	**(Loop Ant.)**			
AT0079	Active Loop Antenna	ETS-Lindgren	6502	2015-12-08	2016-12-31
	30-1000 MHz				
AT0074	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2016-06-07	2017-06-30
	1-18 GHz				
AT0069	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2016-03-07	2017-03-31
	18-40 GHz				
AT0076	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2015-08-27	2016-08-31
AT0077	Horn Antenna, 26-40GHz	ARA	MWH-2640/B	2015-08-27	2016-08-31
	Gain-Loss Chains				
S-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2015-10-07	2016-10-31
S-SAC02	Gain-loss string: 30-1000MHz	Various	Various	2016-06-26	2017-06-30
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2015-08-22	2016-08-31
S-SAC04	Gain-loss string: 18-40GHz	Various	Various	2016-02-29	2017-02-28
	Receiver & Software				
SA0025	Spectrum Analyzer	Agilent	N9030A	2016-03-17	2017-03-31
SA0026 (18-40GHz RSE)	Spectrum Analyzer	Agilent	N9030A	2016-02-24	2017-02-28
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
HI0078	Temp/Humid/Pressure Meter	Springfield Precision	PreciseTemp	2016-06-13	2017-06-13

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Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL077	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3476-240	2016-06-15	2017-06-30
HI0078	Temp/Humid/Pressure Meter	Springfield Precision	PreciseTemp	2016-06-13	2017-06-13
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2015-08-24	2016-08-31
LISN008	LISN, 50-ohm/50-uH, 2-conductor, 25A (For support gear only.)	Solar Electronics	8012-50-R-24-BNC	2015-09-03	2016-09-30
MM0167	Multi-meter	Agilent	U1232A	2015-08-17	2016-08-31
PRE0101521 (75141)	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2015-08-26	2016-08-31
TL001	Transient Limiter, 0.009-30MHz	Com-Power	LIT-930A	2016-06-09	2017-06-30
PS214	AC Power Source	Elgar	CW2501M (s/n 1523A02396)	NA	NA
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Miscellaneous (if needed)				
ATA220	ISN for Unshielded Balanced Pairs	Teseq, Inc.	ISN T8	2015-08-24	2016-08-31
TN0129	ISN for Shielded Balanced Pairs	Teseq, Inc.	ISN ST08	2015-08-24	2016-08-31
TN0145	ISN for Cat-6 Unshielded Balanced Pairs	Teseq, Inc.	ISN T8-Cat6	2015-08-25	2016-08-31
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2016-06-04	2017-06-30

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Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Conducted Room 1				
72822	Spectrum Analyzer	Agilent Technologies	E4446A	2015-09-02	2016-09-30
PWM004	RF Power Meter	Keysight Technologies	N1911A	2016-06-22	2017-06-22
PWS004	Peak and Avg Power Sensor, 50MHz to 6GHz	Keysight Technologies	E9323A	2016-06-22	2017-06-22
HI0078	Temp/Humid/Pressure Meter	Springfield Precision	PreciseTemp	2016-06-13	2017-06-13
MM0167	True RMS Multimeter	Agilent	U1232A	2015-08-17	2016-08-31
76022	DC Regulated Power Supply	CircuitSpecialists.Com	CSI3005X5	N/A	N/A

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7. MEASUREMENT METHODS

6 dB BW: KDB 558074 D01 v03r05, Section 8.1.

Output Power: KDB 558074 D01 v03r05, Section 9.2.3.2

Power Spectral Density: KDB 558074 D01 v03r05, Section 10.3.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r05, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r05, Section 12.1.

Band-edge: KDB 558074 D01 v03r05, Section 12.1.

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

TEST INFORMATION

Date: 2016-07-15
Tester: Ron Reichard

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)
2.4GHz Band						
802.11b	4.373	4.421	0.989	98.91%	0.00	0.010
802.11g	3.095	3.142	0.985	98.50%	0.00	0.010
802.11n HT20	1.469	1.493	0.984	98.39%	0.00	0.010

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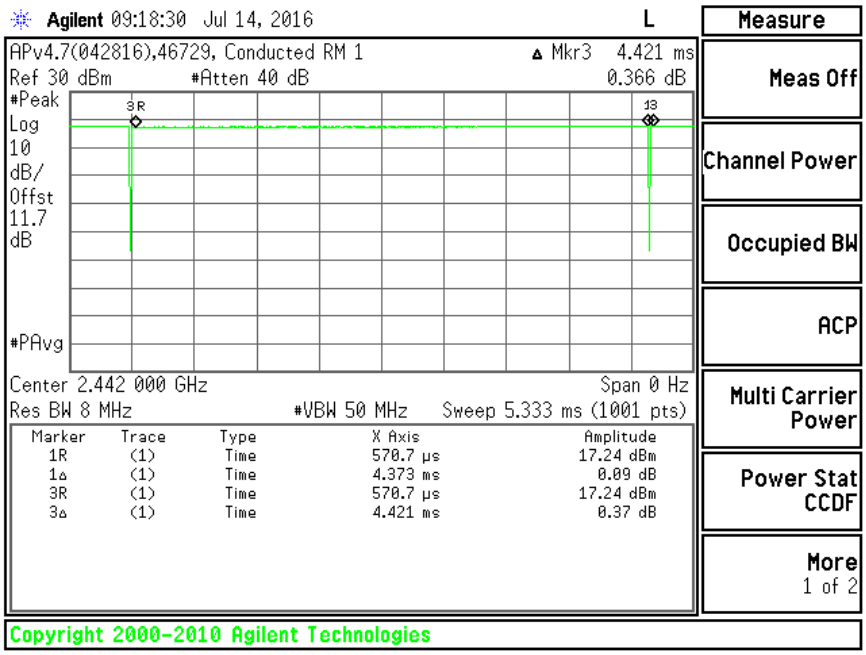
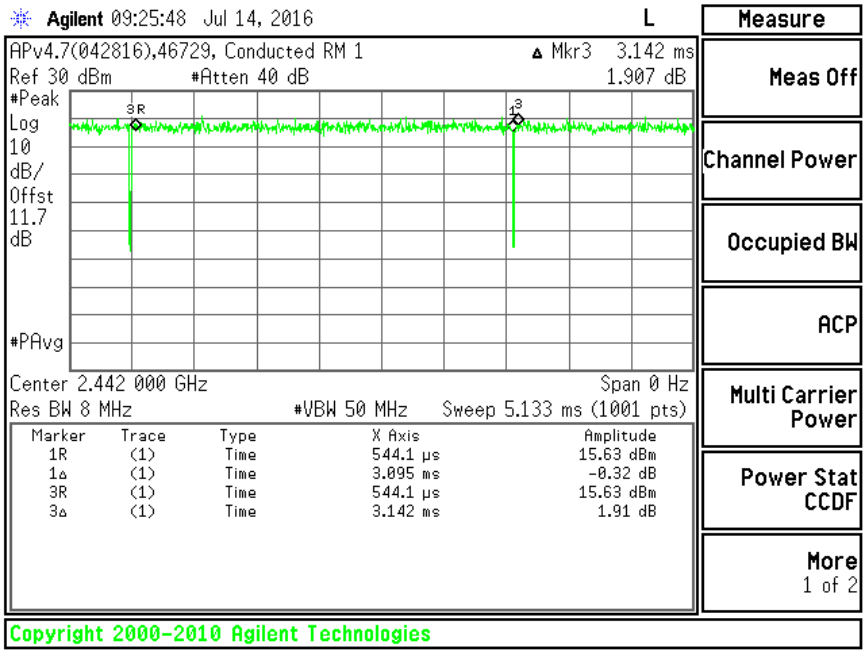
DUTY CYCLE PLOTS

DUTY CYCLE 802.11b MODE



DUTY CYCLE 802.11g MODE



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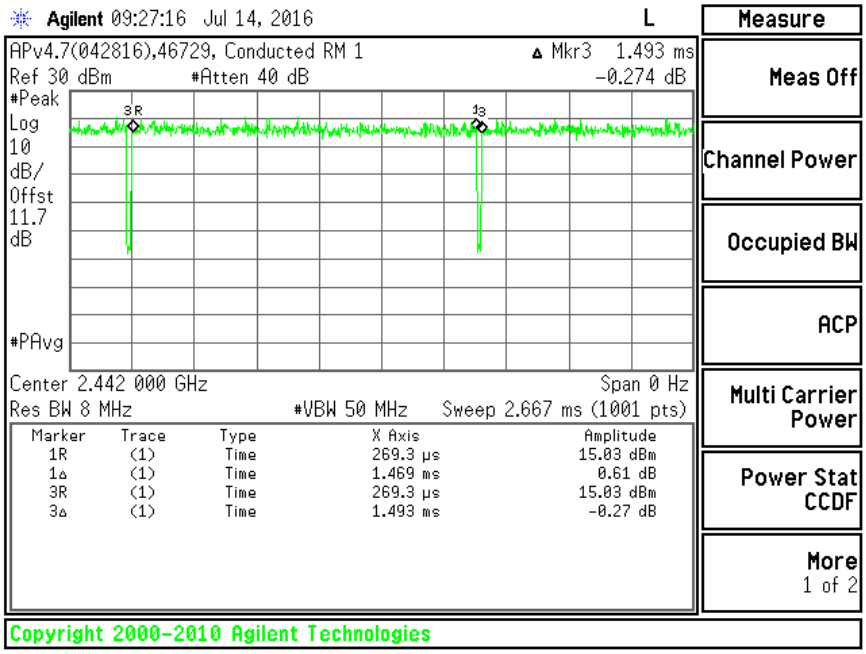
DUTY CYCLE 802.11n HT20 MODE



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8.2. 802.11b MODE IN THE 2.4 GHz BAND

8.2.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST INFORMATION

Date: 2016-07-18 to 2016-07-25
Tester: Ron Reichard

RESULTS

CH0

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	7.040	0.5
Mid	2437	7.095	0.5
High CH11	2462	7.572	0.5
High CH12	2467	7.084	0.5
High CH13	2472	6.590	0.5

CH1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	7.117	0.5
Mid	2437	7.084	0.5
High CH11	2462	7.106	0.5
High CH12	2467	7.073	0.5
High CH13	2472	6.580	0.5

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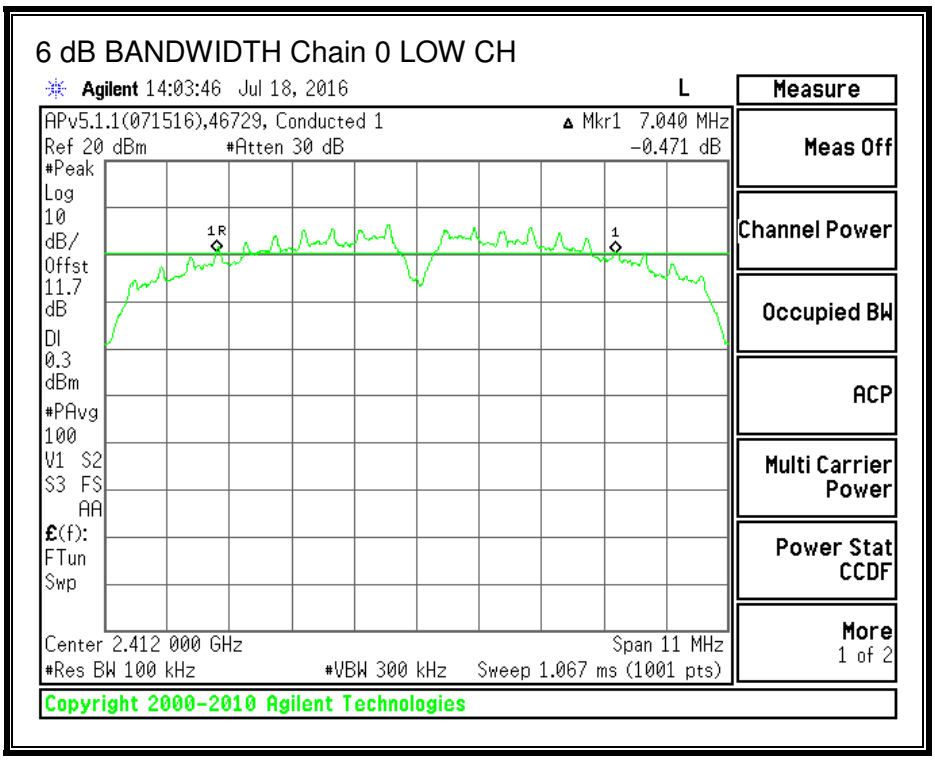
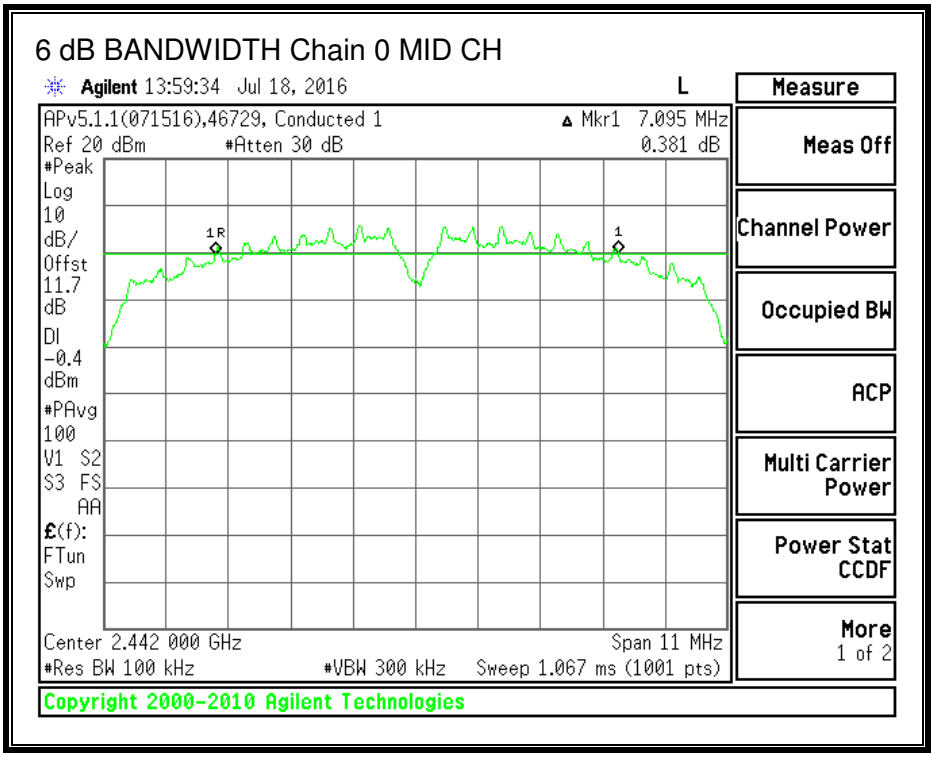
6 dB BANDWIDTH, Chain 0





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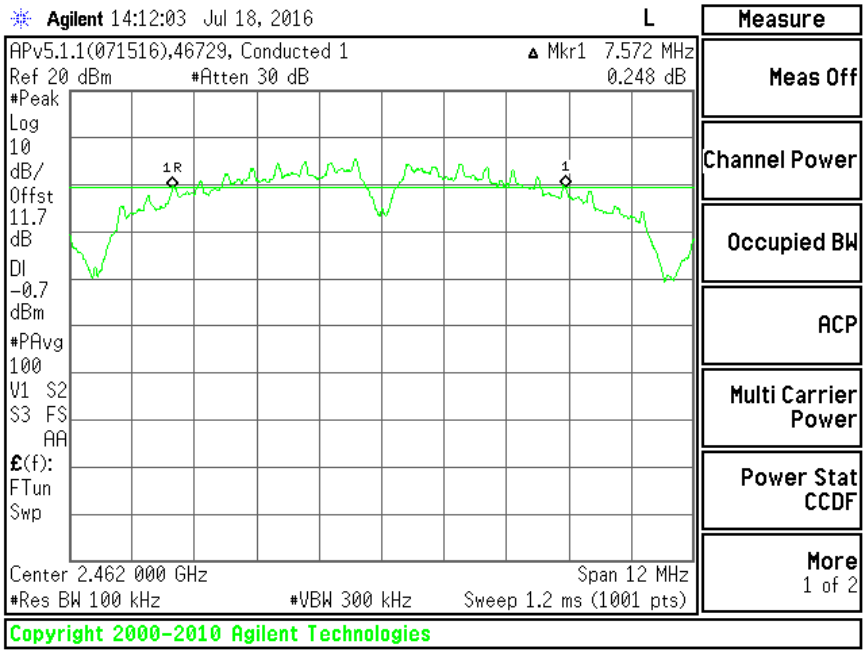
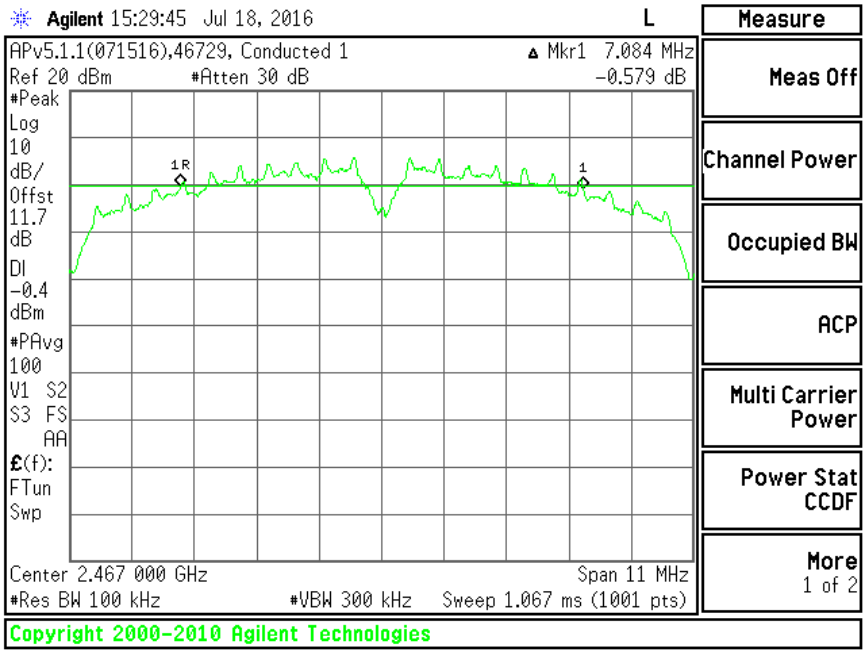
6 dB BANDWIDTH Chain 0 HIGH CH 11



6 dB BANDWIDTH Chain 0 HIGH CH 12



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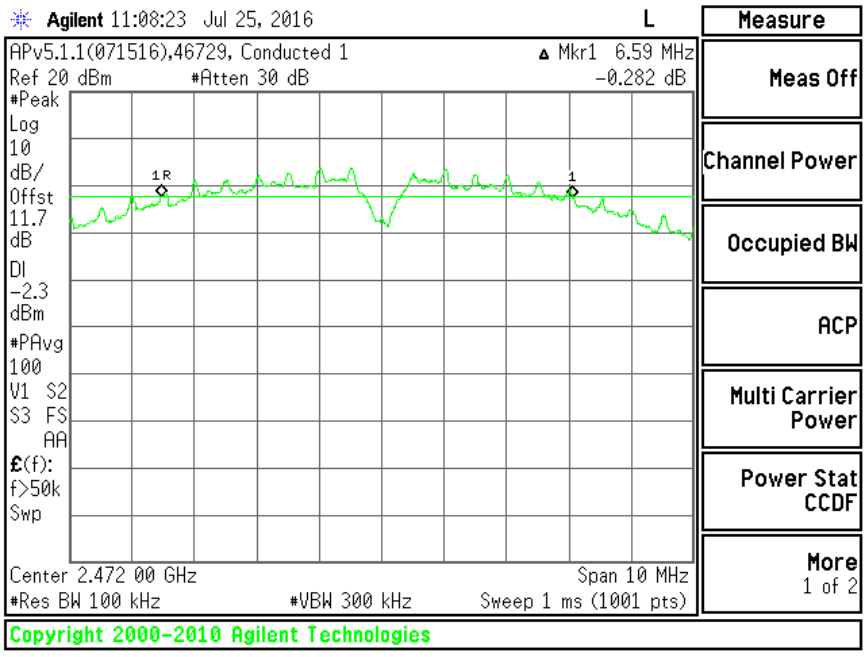
6 dB BANDWIDTH Chain 0 HIGH CH 13



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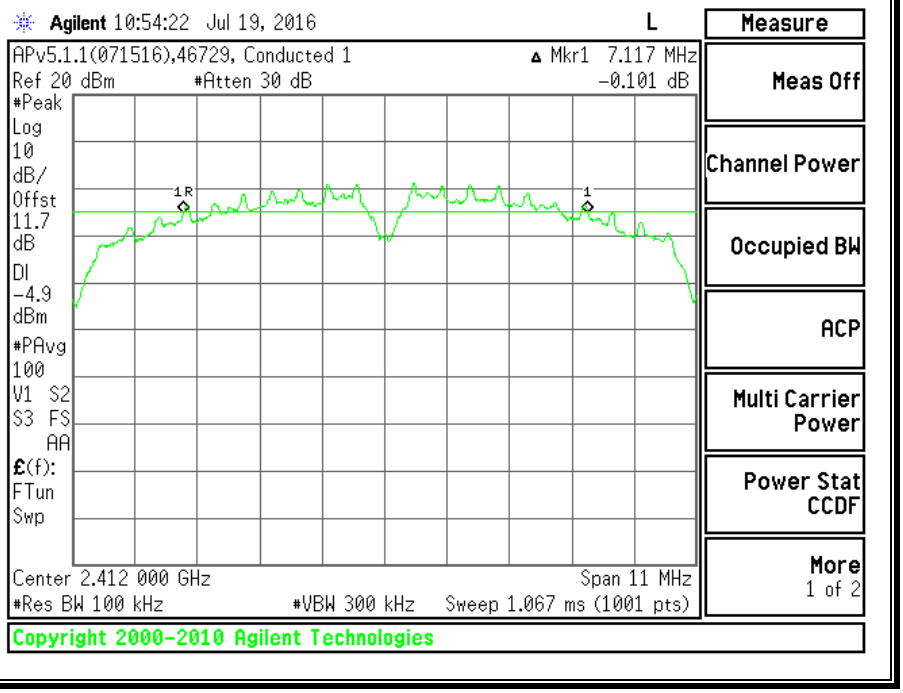
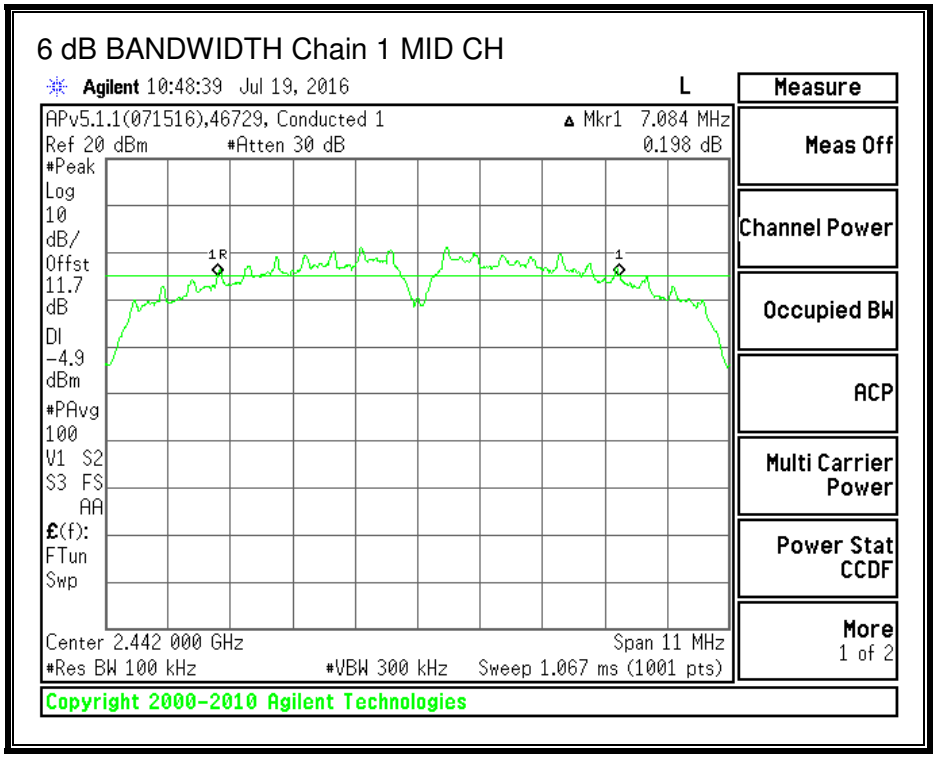
6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH Chain 1 LOW CH



6 dB BANDWIDTH Chain 1 MID CH



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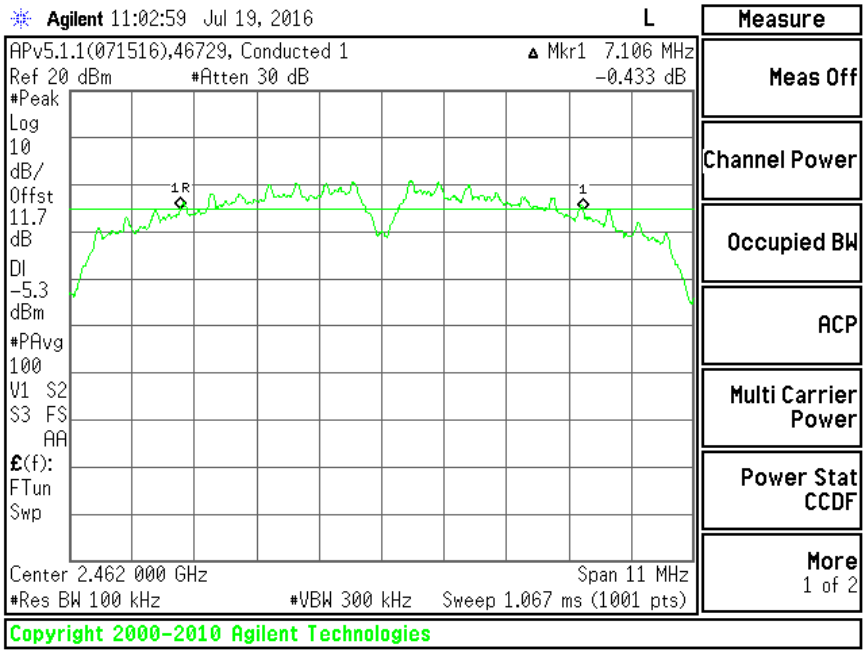
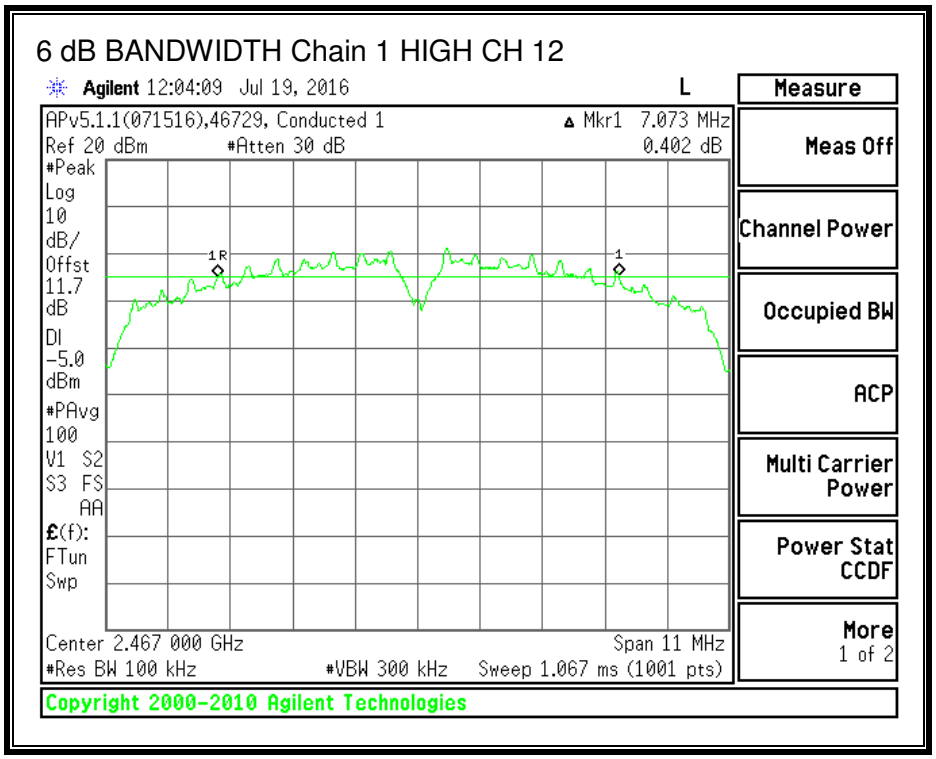
6 dB BANDWIDTH Chain 1 HIGH CH 11



6 dB BANDWIDTH Chain 1 HIGH CH 12



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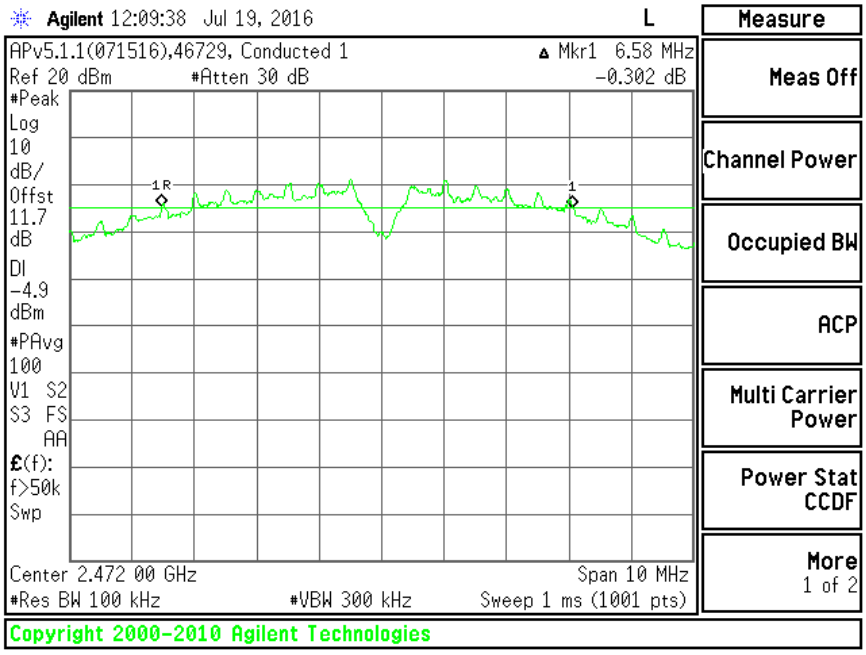
6 dB BANDWIDTH Chain 1 HIGH CH 13



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8.2.2. OUTPUT POWER

LIMITS

FCC §15.247

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

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RESULTS

CH0

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)
Low	2412	-6.20	30.00
Mid	2441	-6.20	30.00
High Ch11	2462	-6.20	30.00
High Ch 12	2467	-6.20	30.00
High Ch 13	2472	-6.20	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	13.80	13.80	30.00	-16.20
Mid	2441	13.80	13.80	30.00	-16.20
High Ch11	2462	13.70	13.70	30.00	-16.30
High Ch 12	2467	13.80	13.80	30.00	-16.20
High Ch 13	2472	11.70	11.70	30.00	-18.30

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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CH1

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)
Low	2412	-13.90	30.00
Mid	2441	-13.90	30.00
High Ch11	2462	-13.90	30.00
High Ch 12	2467	-13.90	30.00
High Ch 13	2472	-13.90	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	8.40	8.40	30.00	-21.60
Mid	2441	8.50	8.50	30.00	-21.50
High Ch11	2462	8.60	8.60	30.00	-21.40
High Ch 12	2467	8.50	8.50	30.00	-21.50
High Ch 13	2472	8.30	8.30	30.00	-21.70

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8.2.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

TEST INFORMATION

Date: 2016-07-25
Tester: Ron Reichard

RESULTS

CH0

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.53	-8.53	8.0	-16.5
Mid	2442	-8.66	-8.66	8.0	-16.7
High Ch11	2462	-9.74	-9.74	8.0	-17.7
High Ch12	2467	-8.92	-8.92	8.0	-16.9
High Ch13	2472	-10.02	-10.02	8.0	-18.0

CH1

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-12.82	-12.82	8.0	-20.8
Mid	2442	-12.92	-12.92	8.0	-20.9
High Ch11	2462	-13.13	-13.13	8.0	-21.1
High Ch12	2467	13.50	13.50	8.0	5.5
High Ch13	2472	-13.78	-13.78	8.0	-21.8

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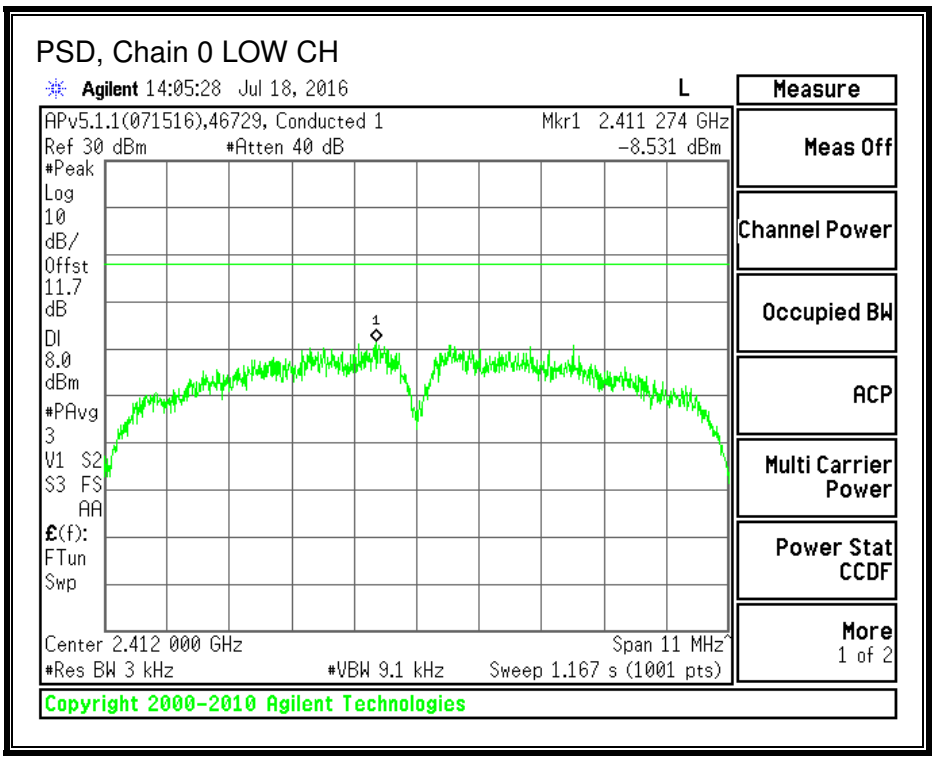
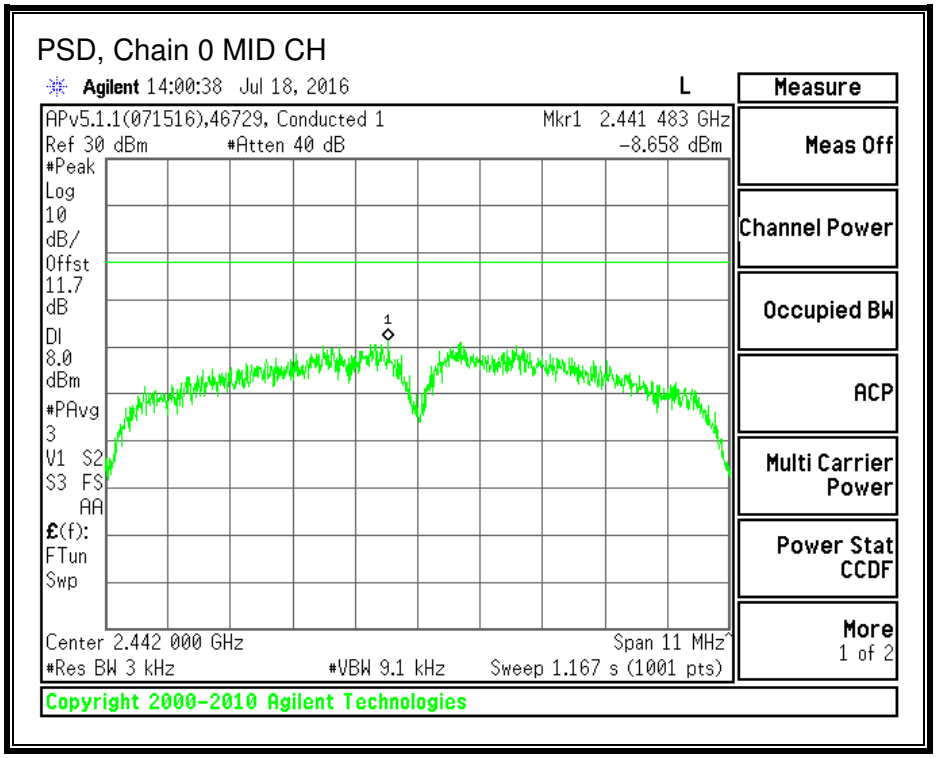
PSD, Chain 0





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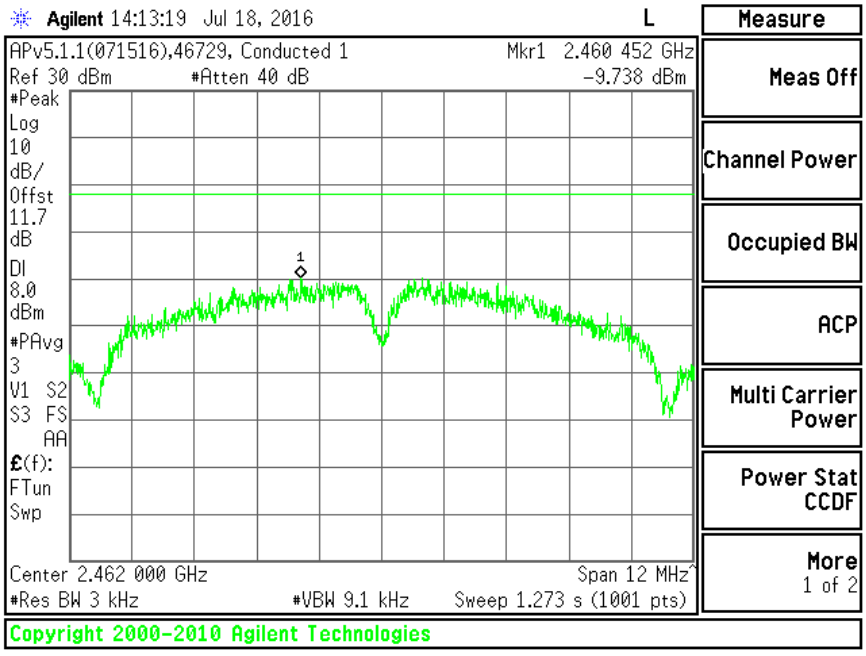
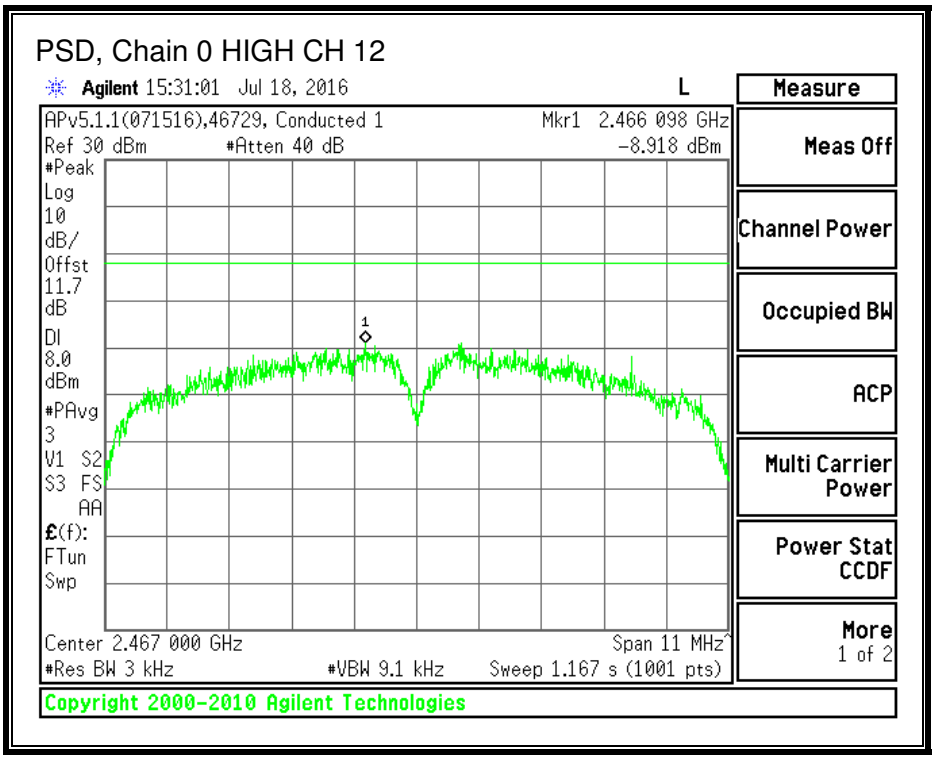
PSD, Chain 0 HIGH CH 11



PSD, Chain 0 HIGH CH 12



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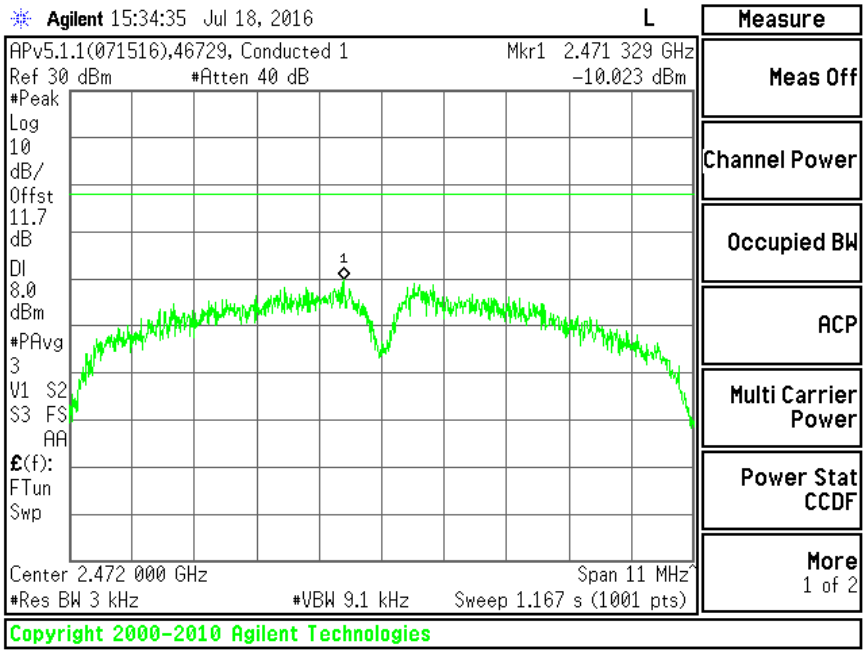
PSD, Chain 0 HIGH CH 13



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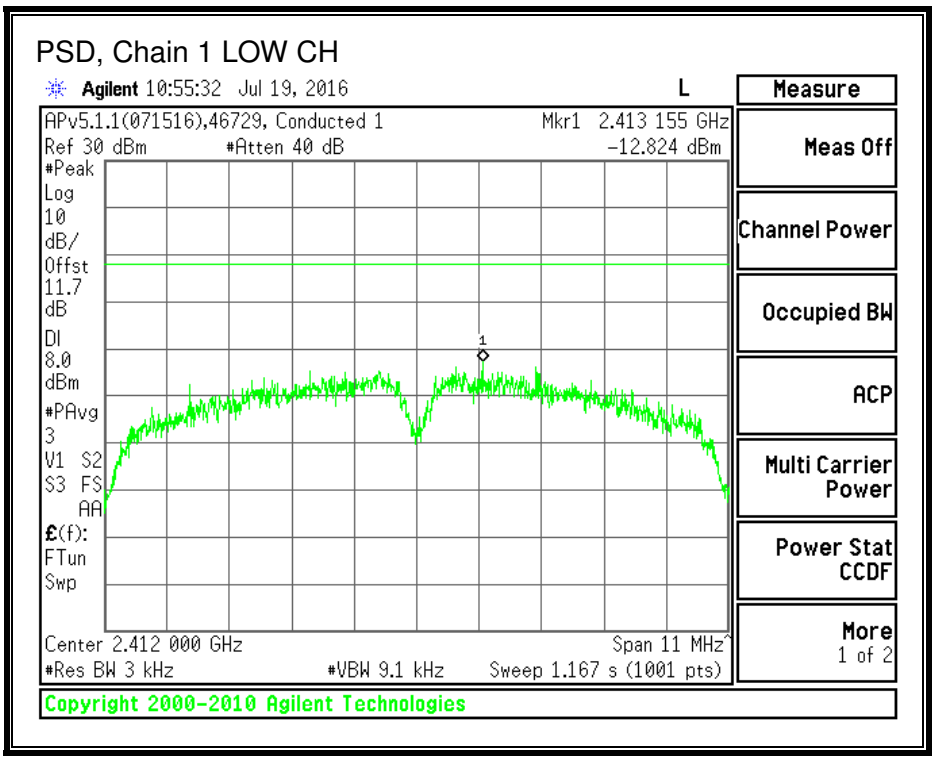
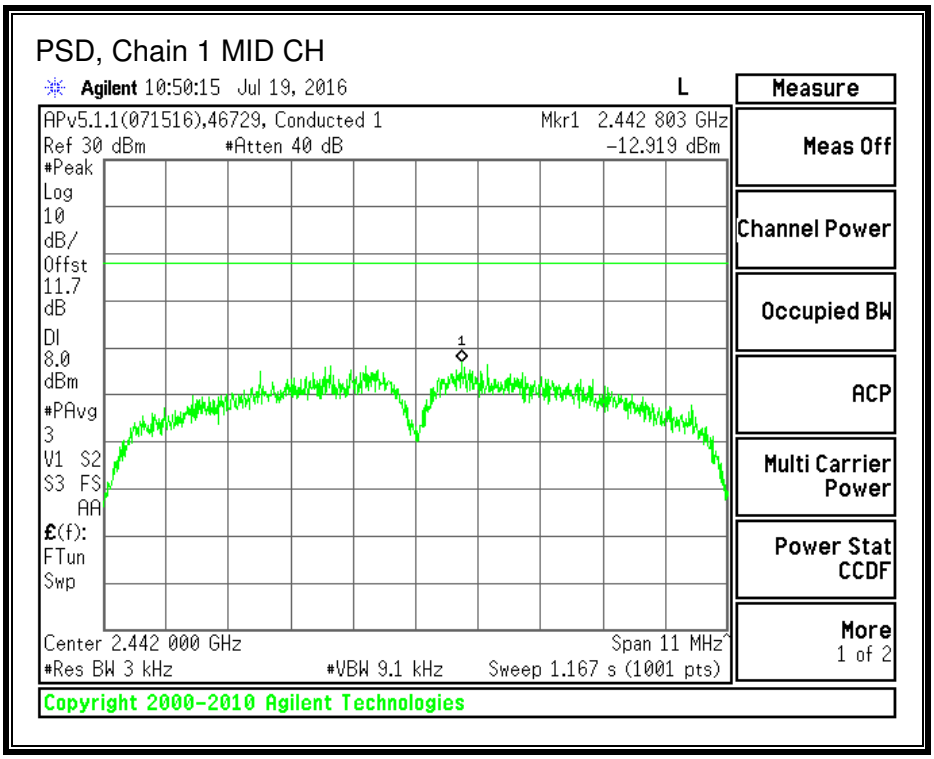
PSD, Chain 1





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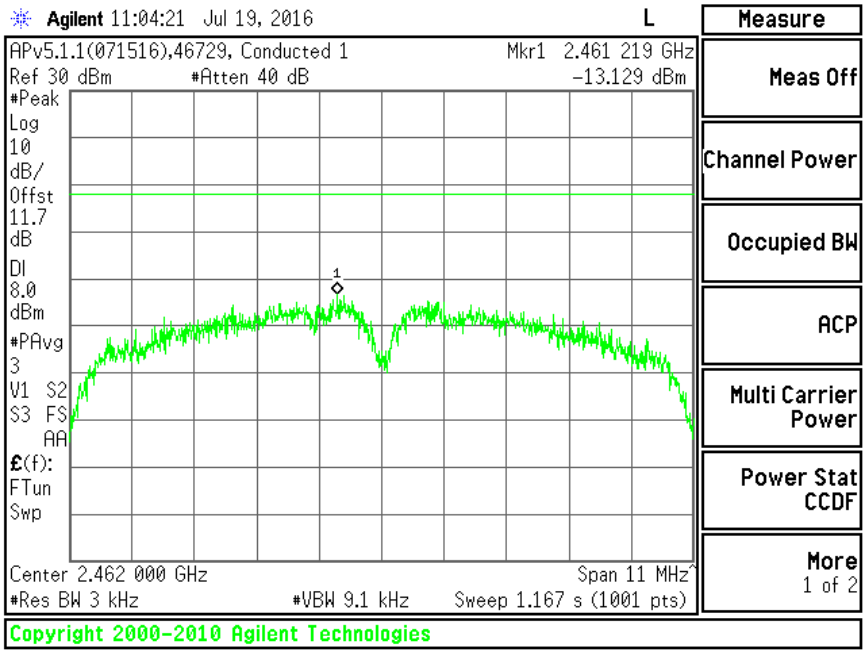
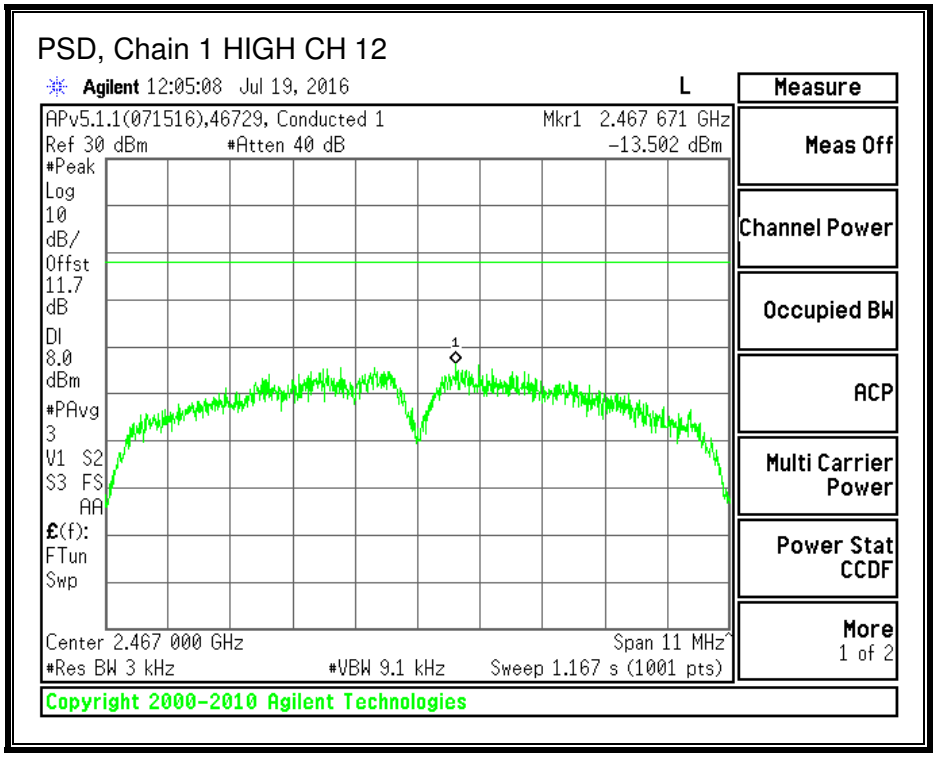
PSD, Chain 1 HIGH CH 11



PSD, Chain 1 HIGH CH 12



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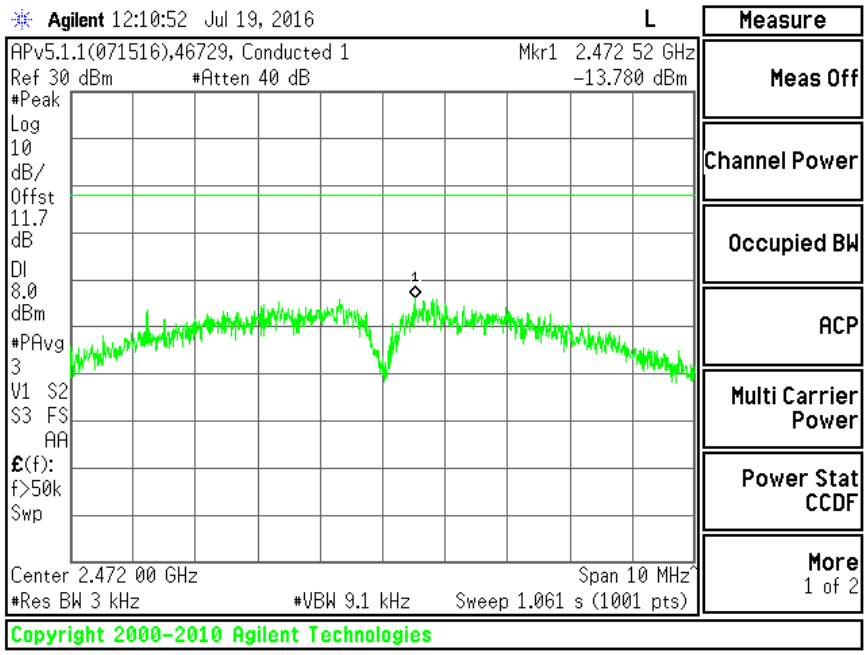
PSD, Chain 1 HIGH CH 13



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8.2.4. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

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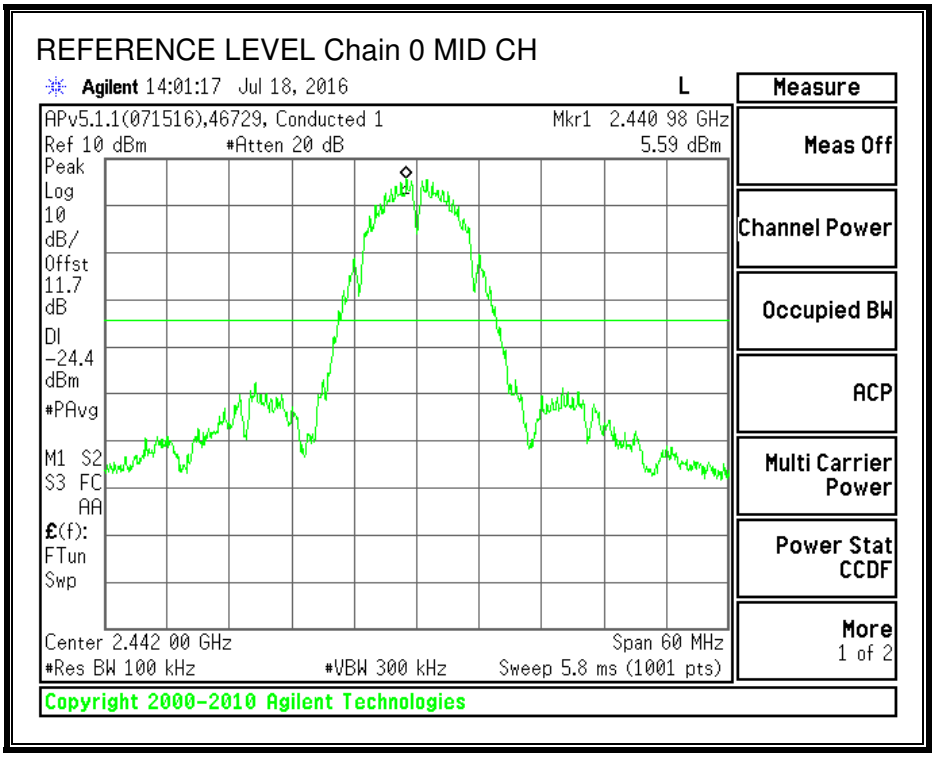
RESULTS

IN-BAND REFERENCE LEVEL, Chain 0



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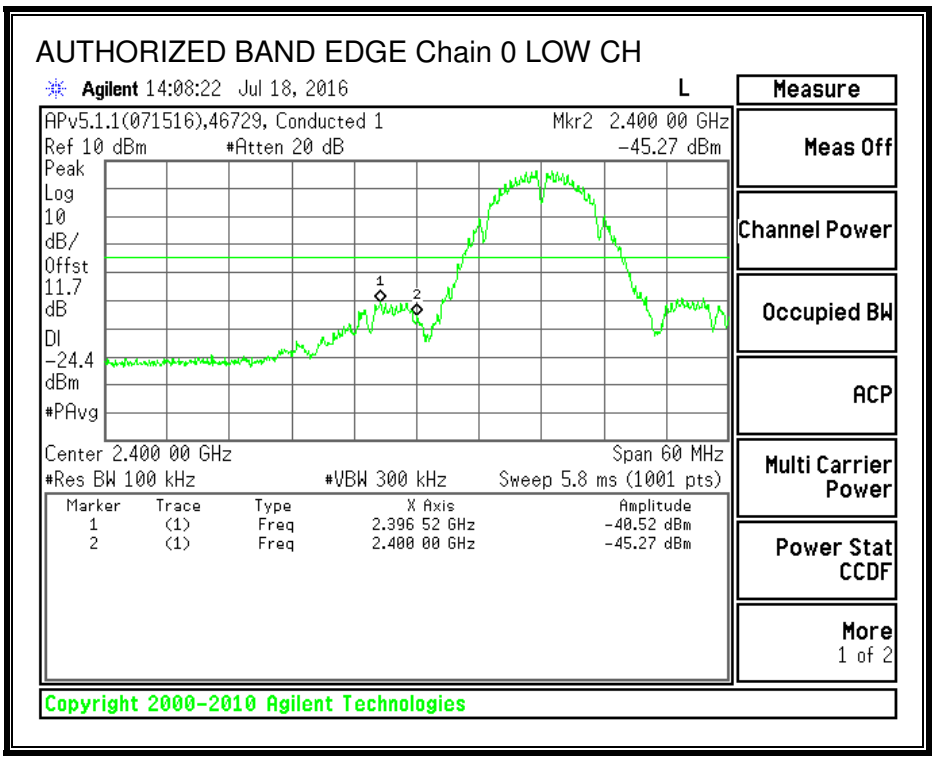
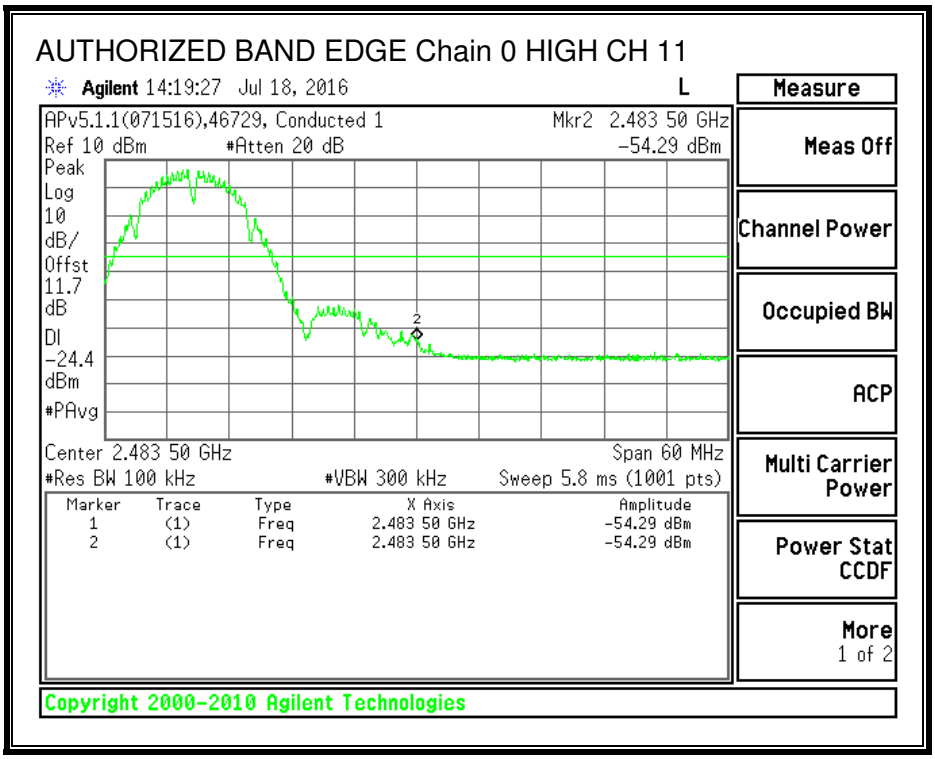
LOW CHANNEL BANDEDGE, Chain 0



HIGH CHANNEL BANDEDGE, Chain 0



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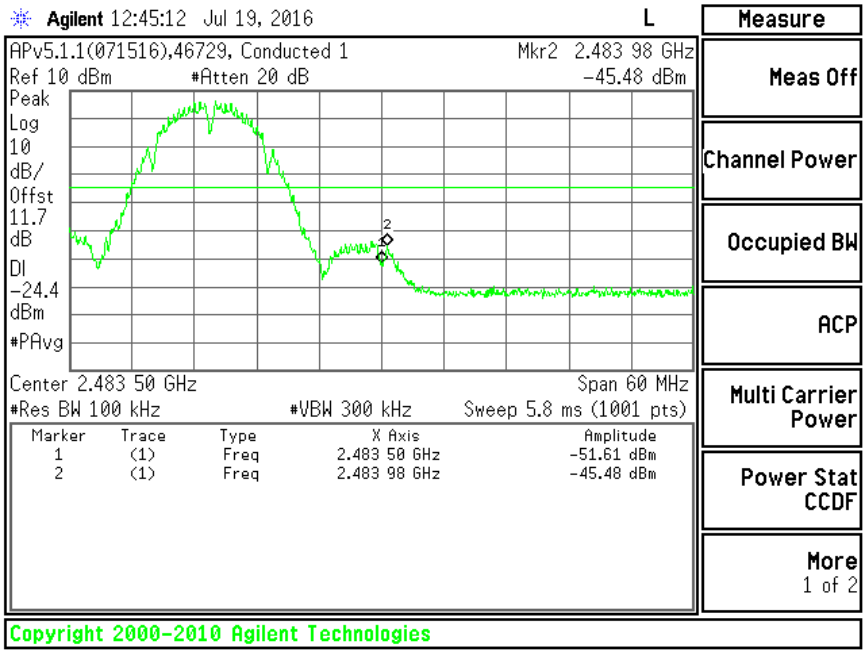
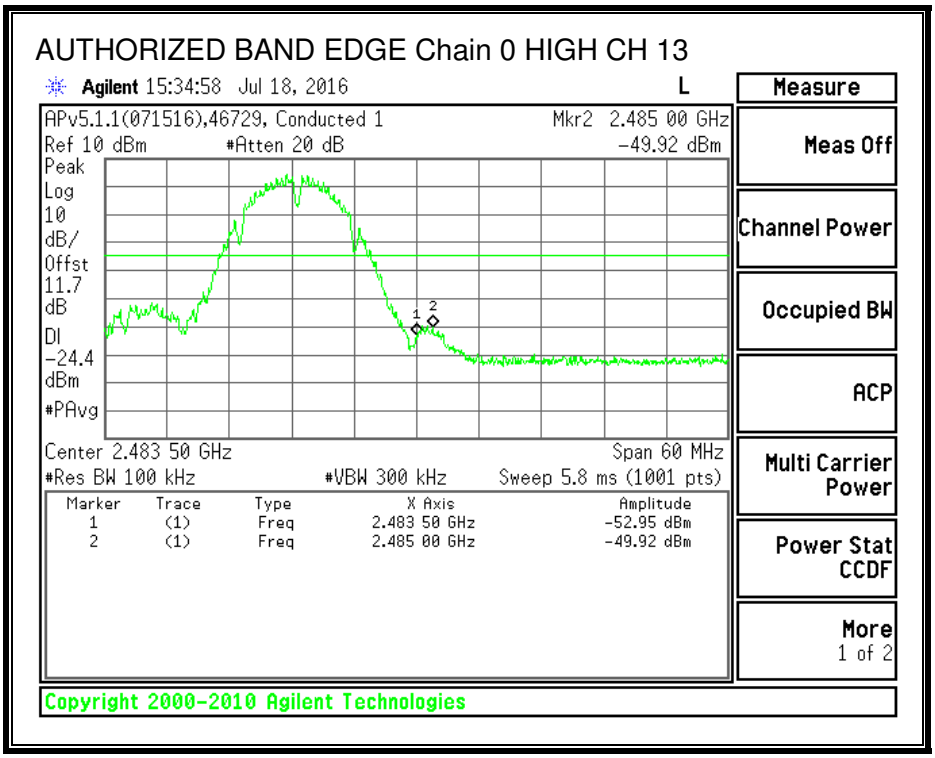
AUTHORIZED BAND EDGE Chain 0 HIGH CH 12



AUTHORIZED BAND EDGE Chain 0 HIGH CH 13



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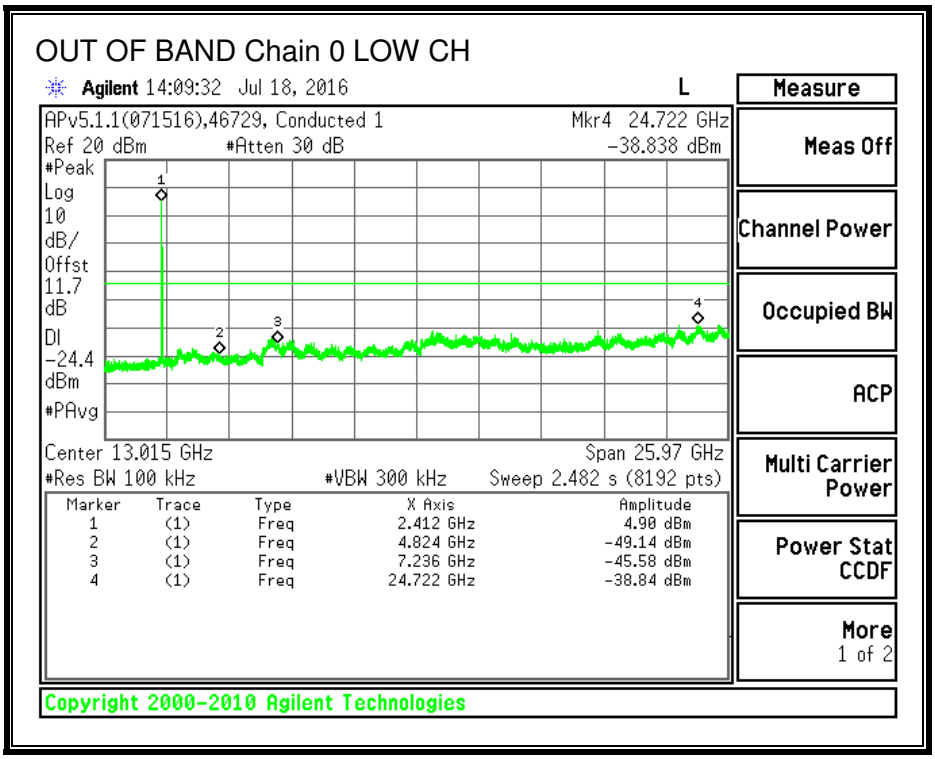
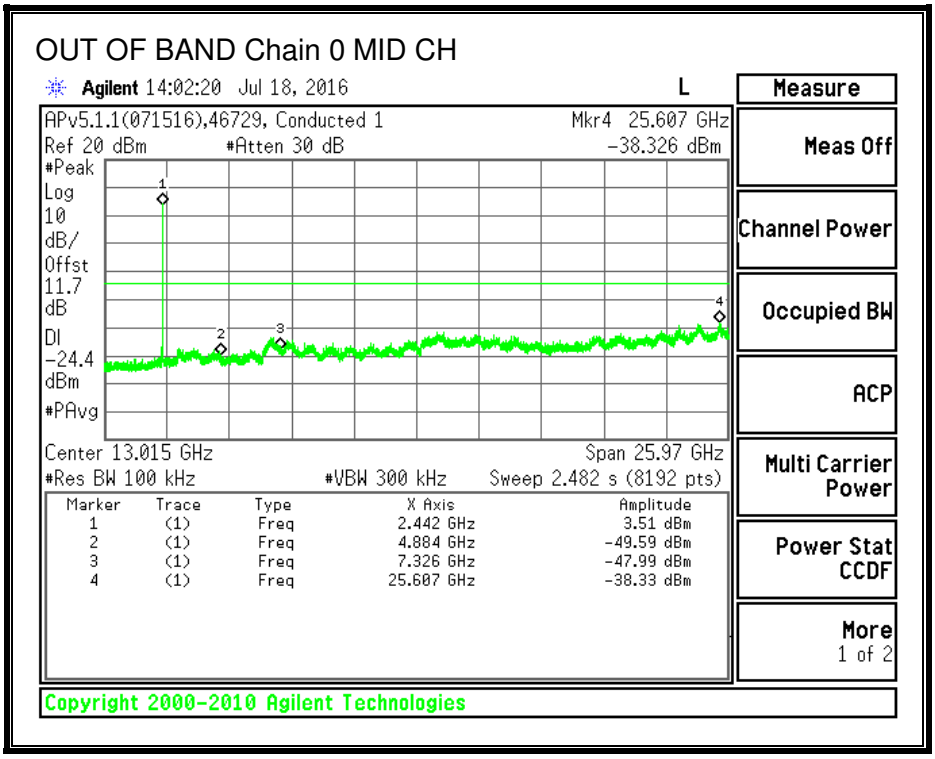
OUT-OF-BAND EMISSIONS, Chain 0





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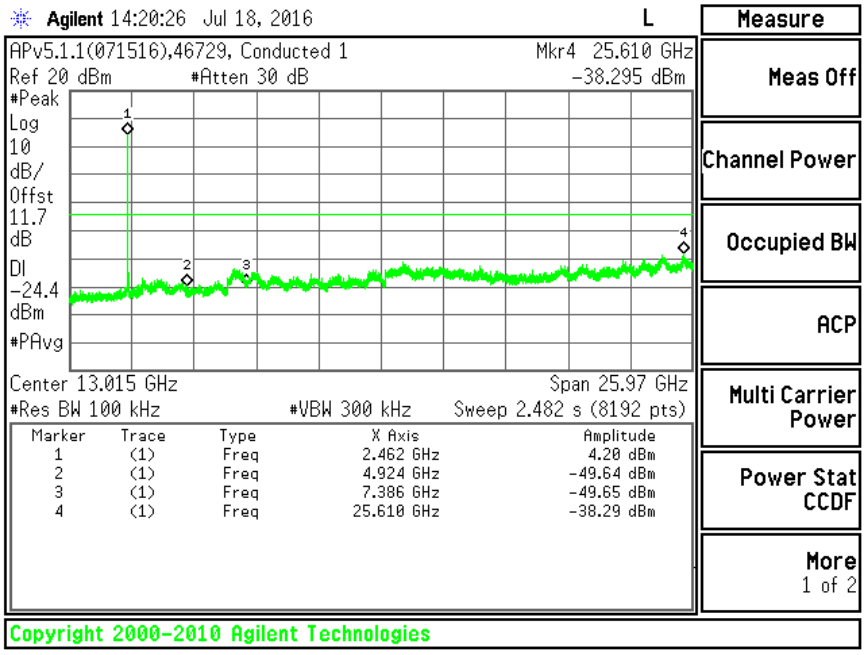
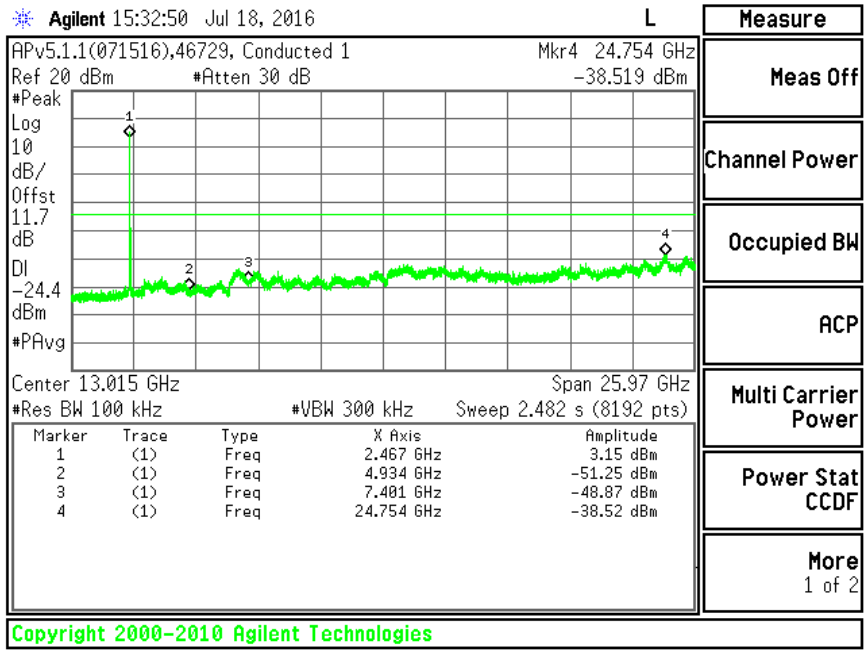
OUT OF BAND Chain 0 HIGH CH 11



OUT OF BAND Chain 0 HIGH CH 12



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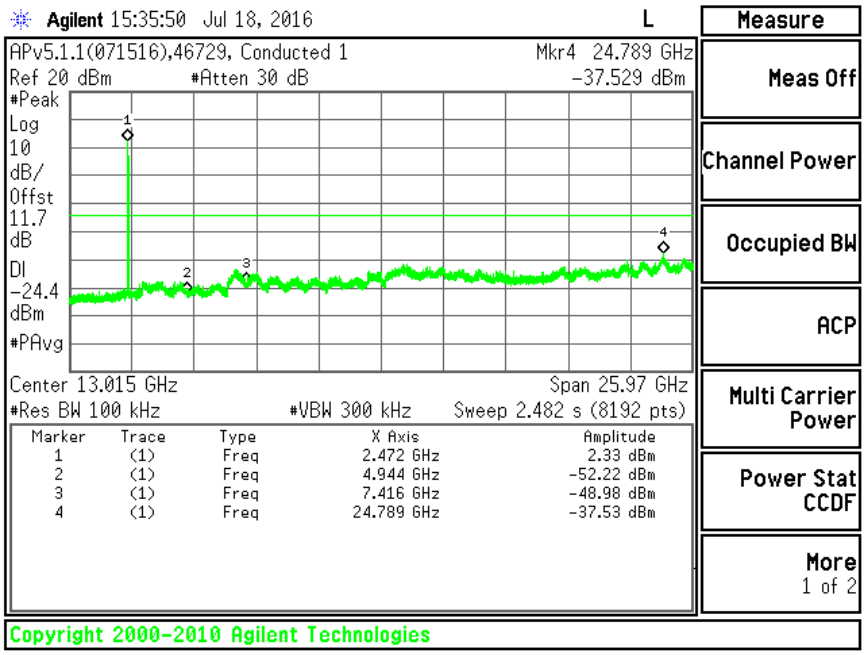
OUT OF BAND Chain 0 HIGH CH 13



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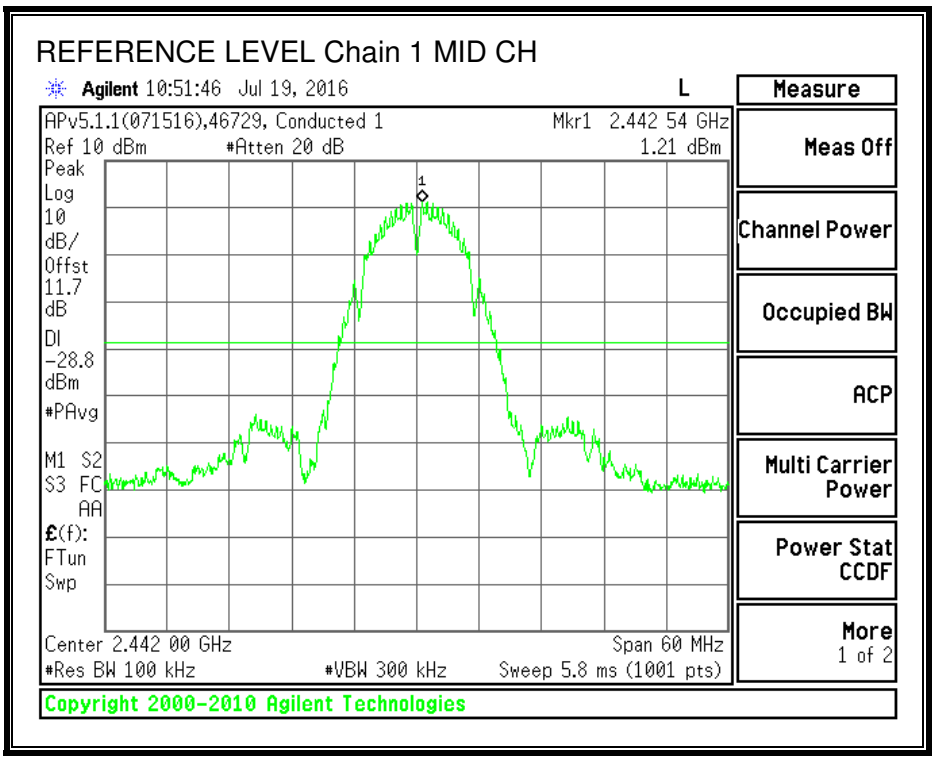
IN-BAND REFERENCE LEVEL, Chain 1



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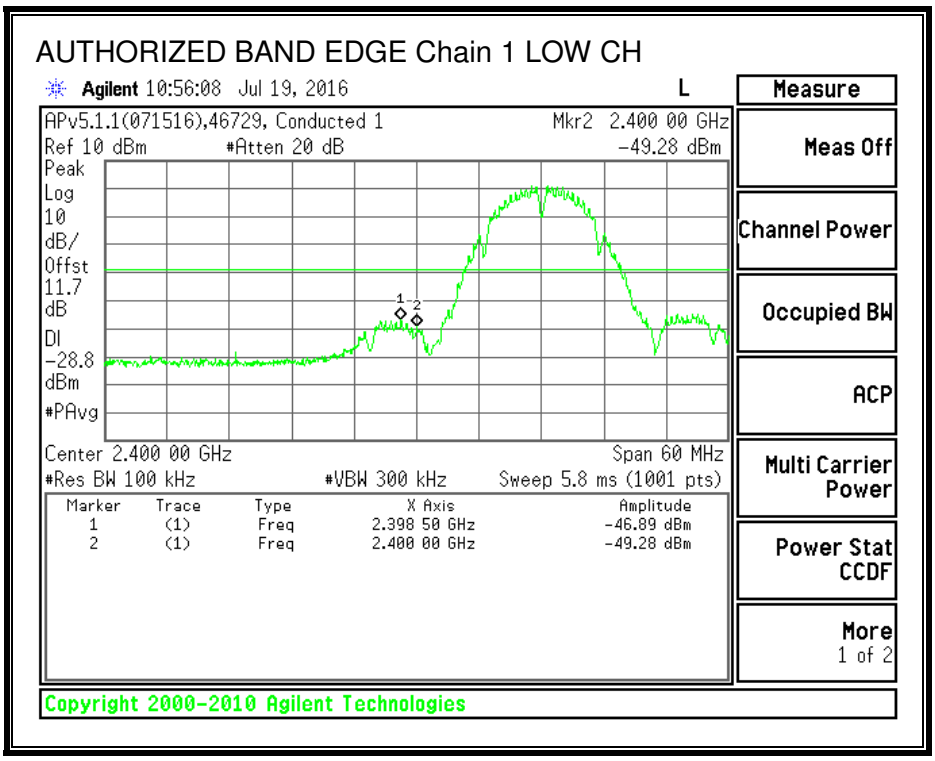
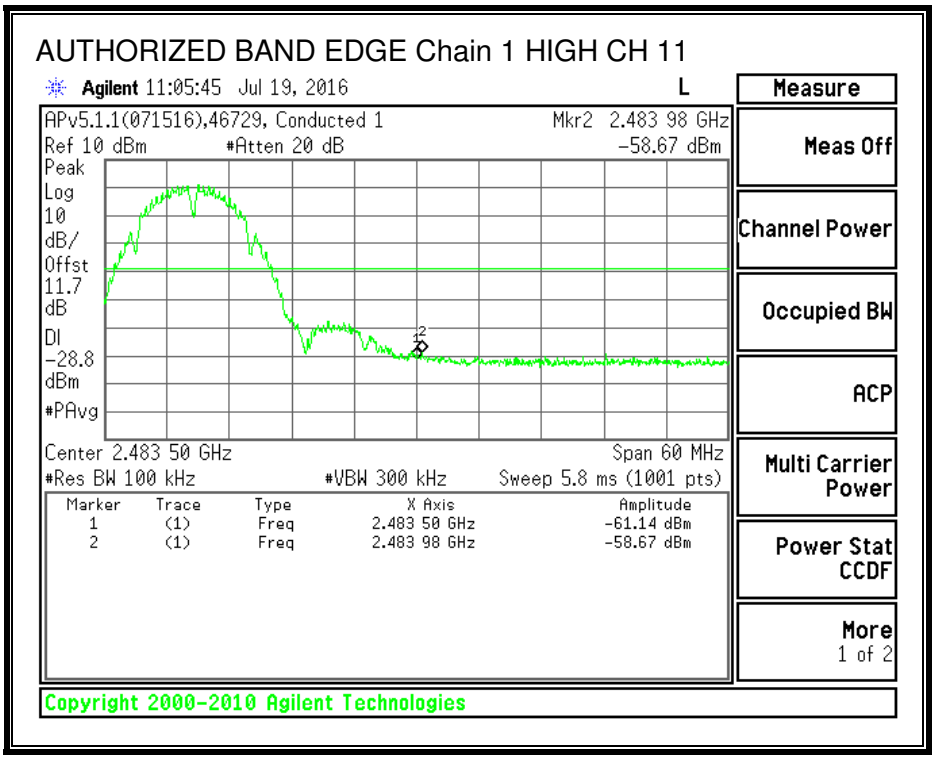
LOW CHANNEL BANDEDGE, Chain 1



HIGH CHANNEL BANDEDGE, Chain 1



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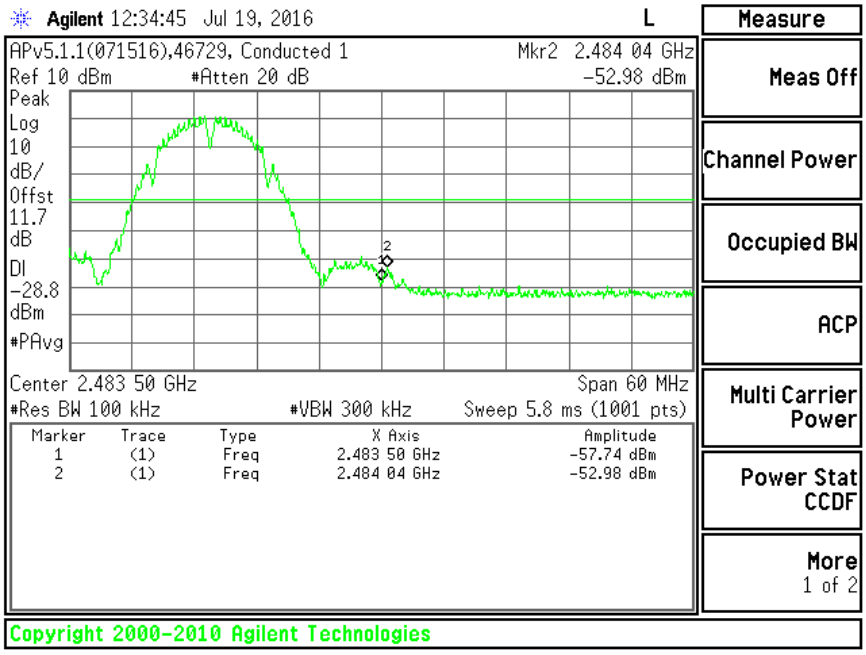
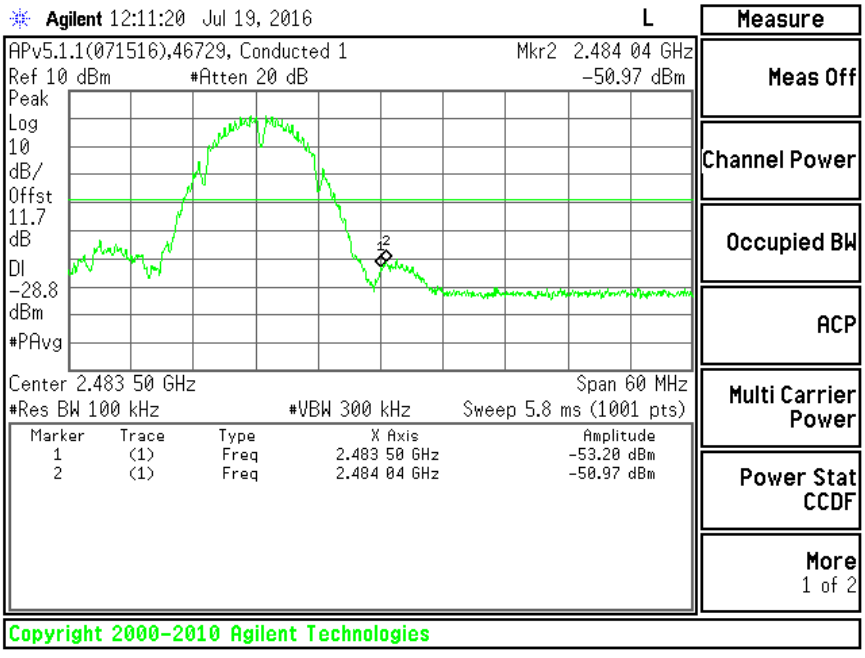
AUTHORIZED BAND EDGE Chain 1 HIGH CH 12



AUTHORIZED BAND EDGE Chain 1 HIGH CH 13



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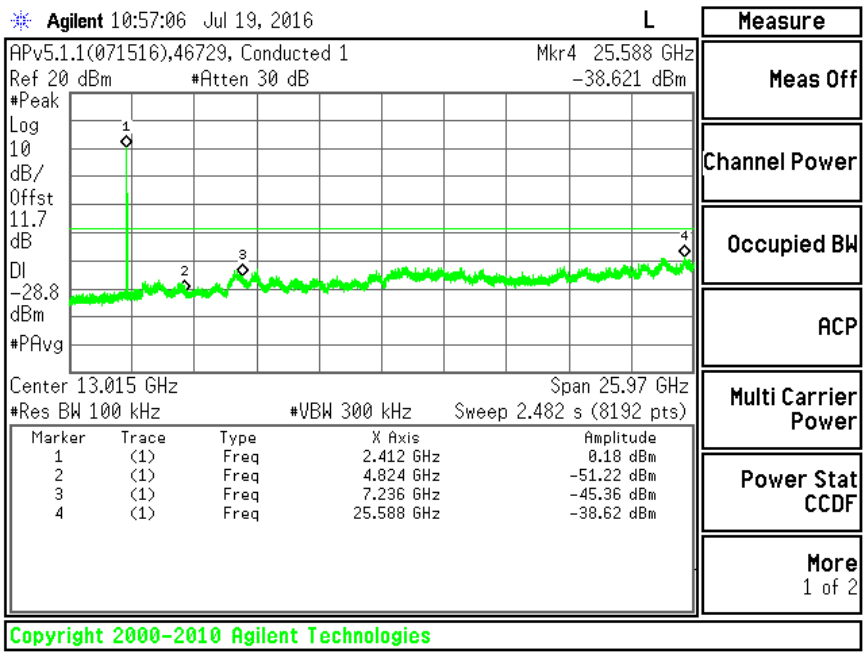
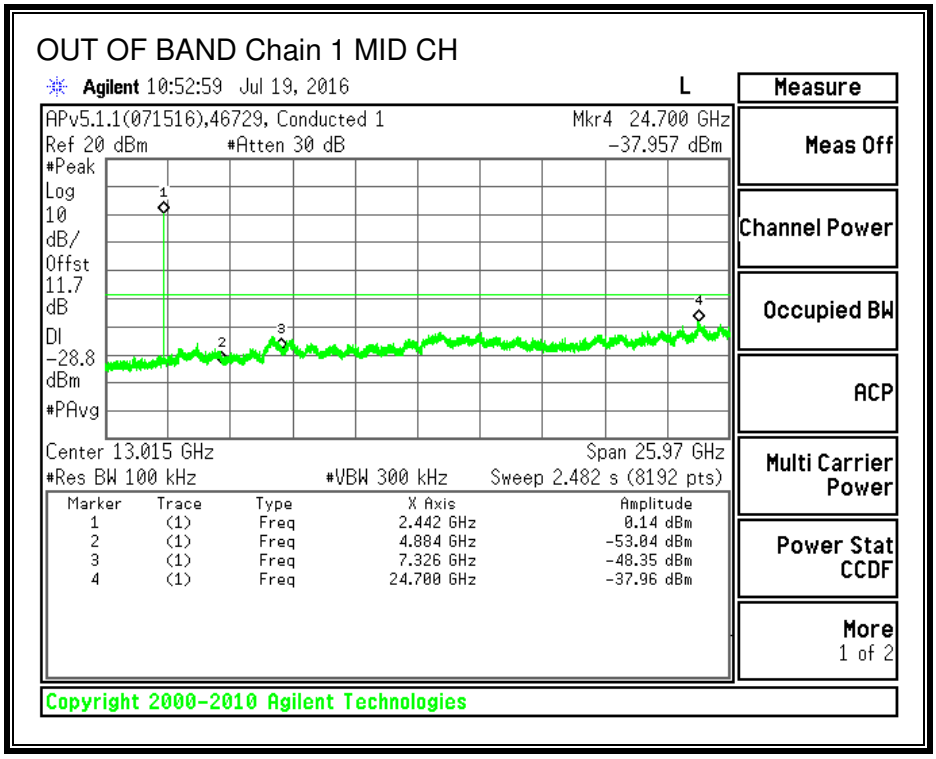
OUT-OF-BAND EMISSIONS, Chain 1

OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 MID CH



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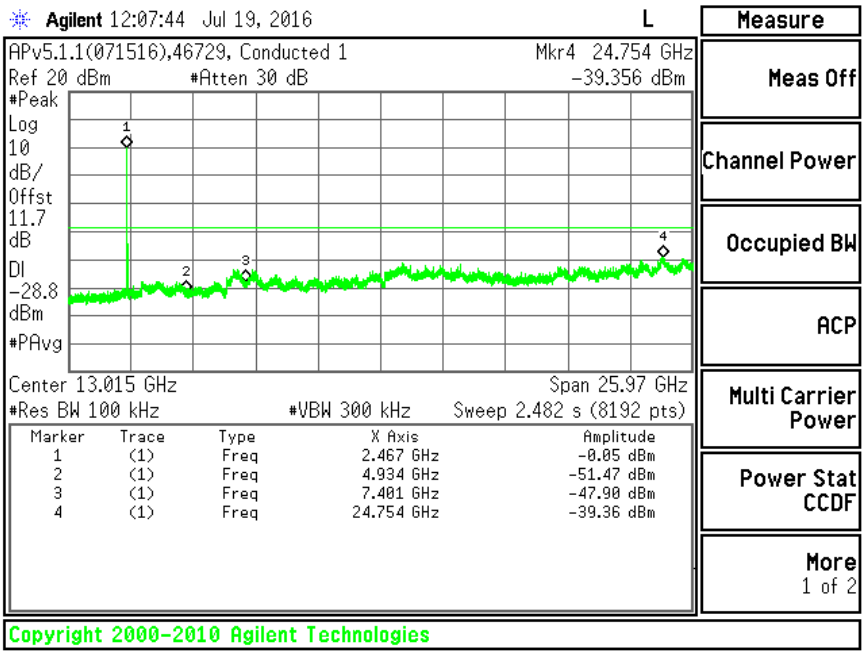
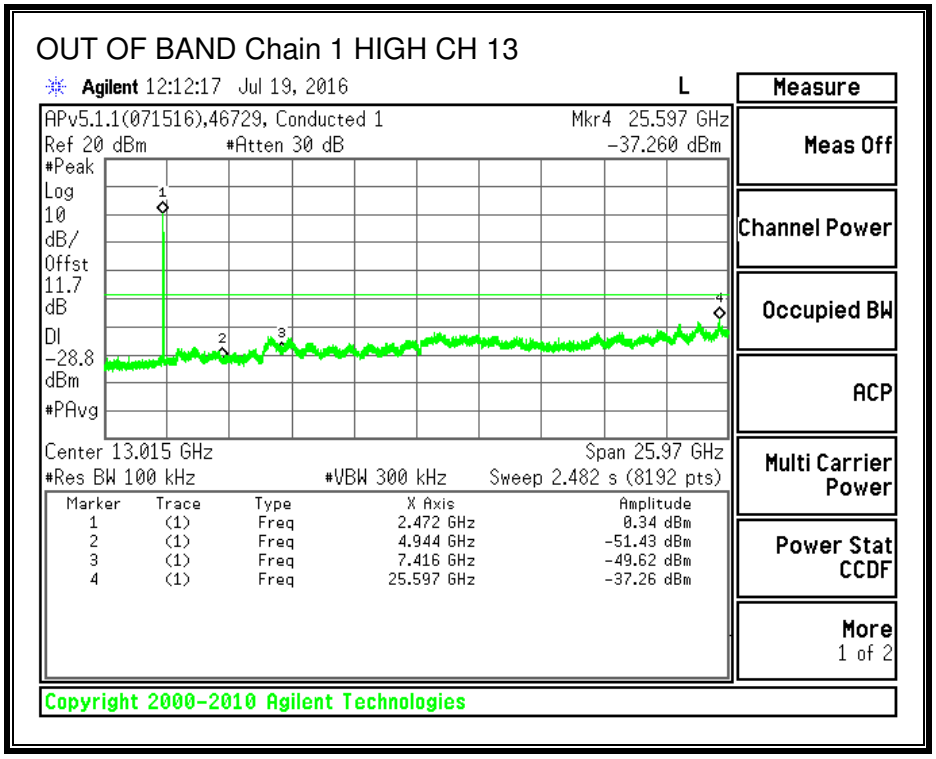
OUT OF BAND Chain 1 HIGH CH 12



OUT OF BAND Chain 1 HIGH CH 13



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8.3. 802.11g MODE IN THE 2.4 GHz BAND

8.3.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST INFORMATION

Date: 2016-07-18 to 2016-07-19
Tester: Ron Reichard

RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	16.400	16.400	0.5
Mid	2442	16.375	16.425	0.5
High Ch 11	2462	16.375	16.375	0.5
High Ch 12	2467	16.350	16.425	0.5
High Ch 13	2472	15.696	15.768	0.5

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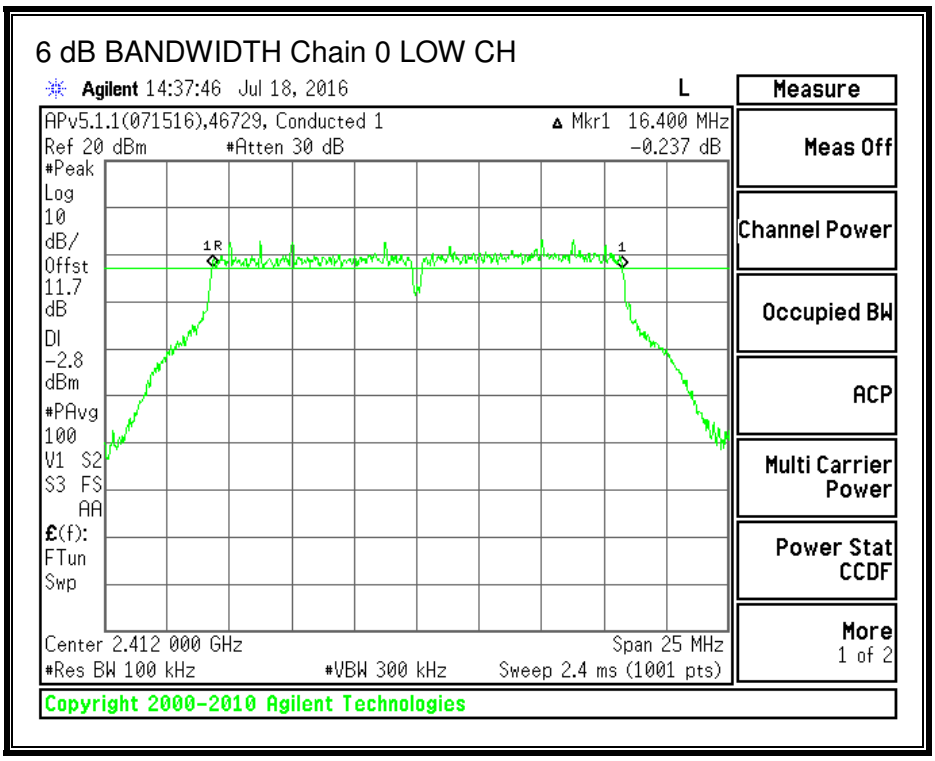
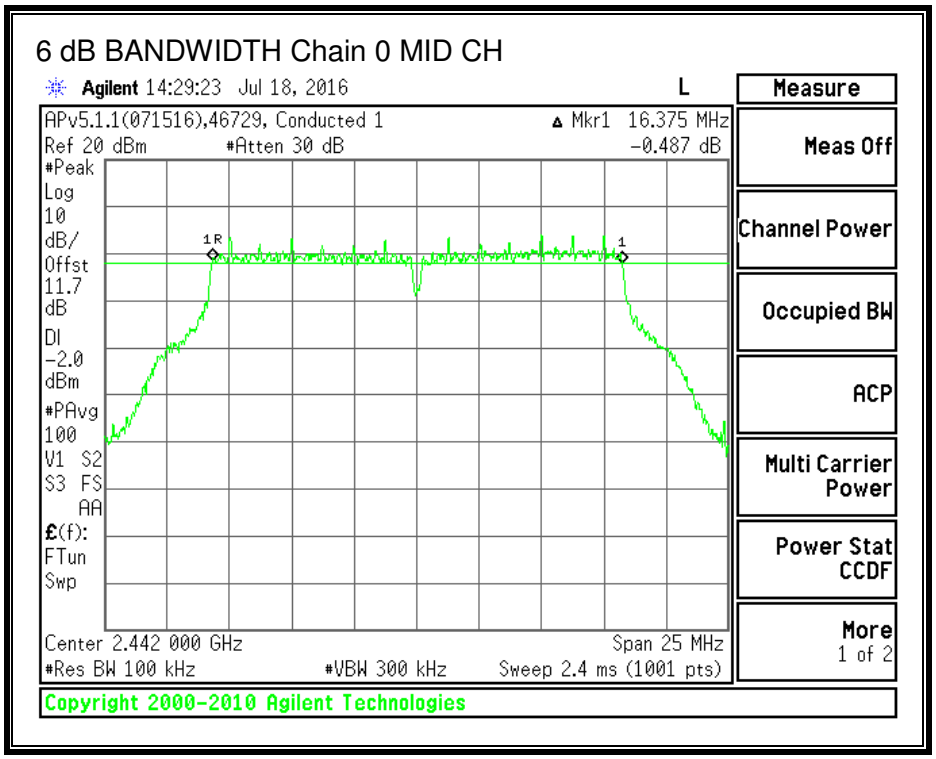
6 dB BANDWIDTH, Chain 0





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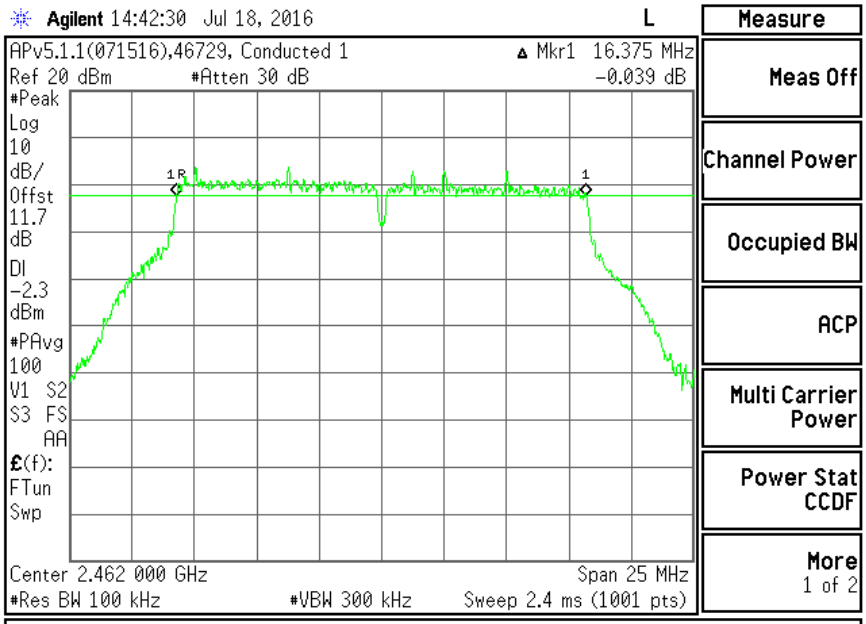
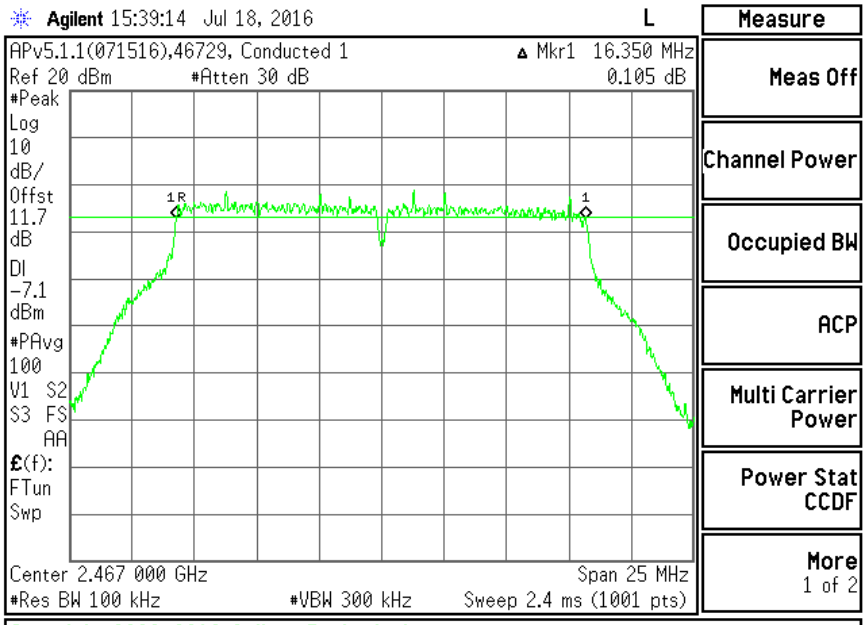
6 dB BANDWIDTH Chain 0 HIGH CH 11



6 dB BANDWIDTH Chain 0 HIGH CH 12



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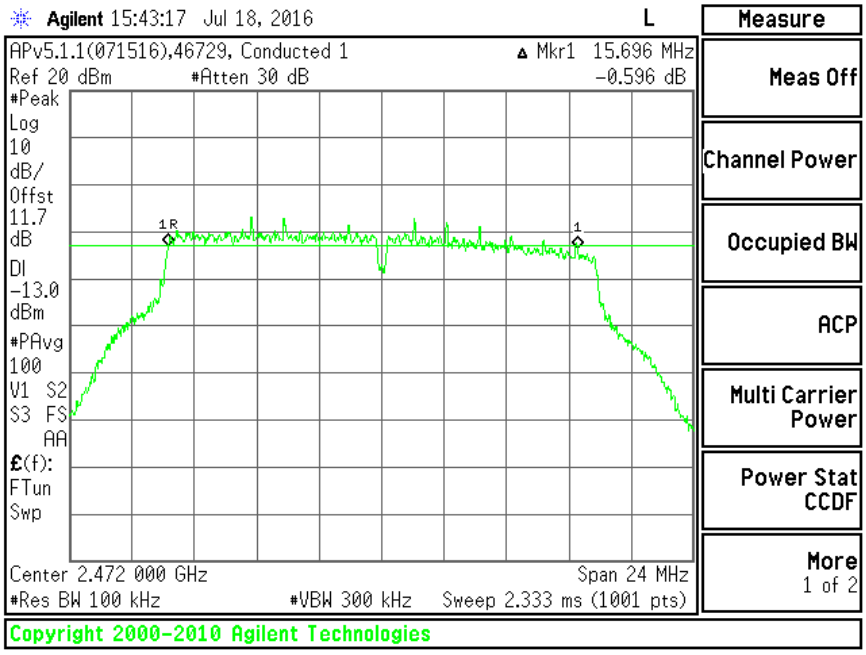
6 dB BANDWIDTH Chain 0 HIGH CH 13



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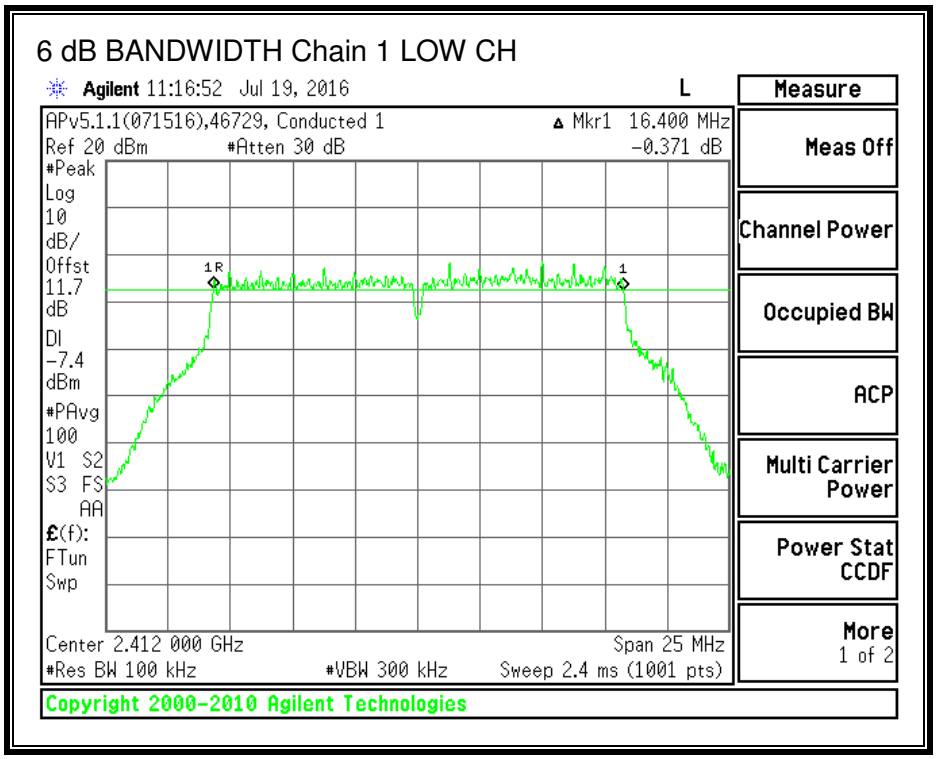
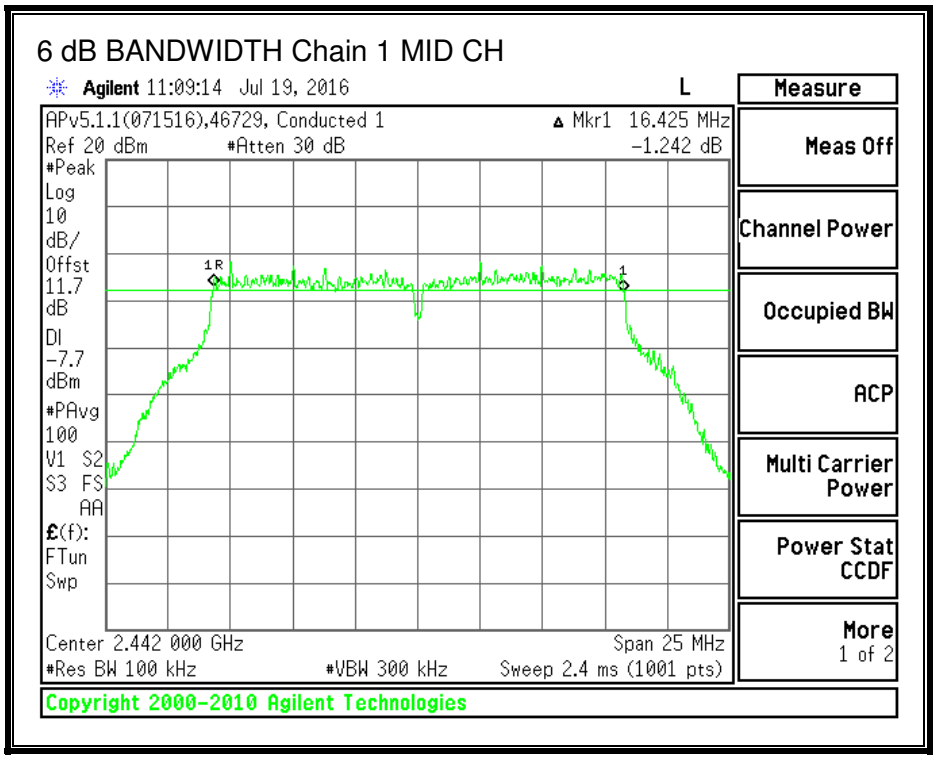
6 dB BANDWIDTH, Chain 1





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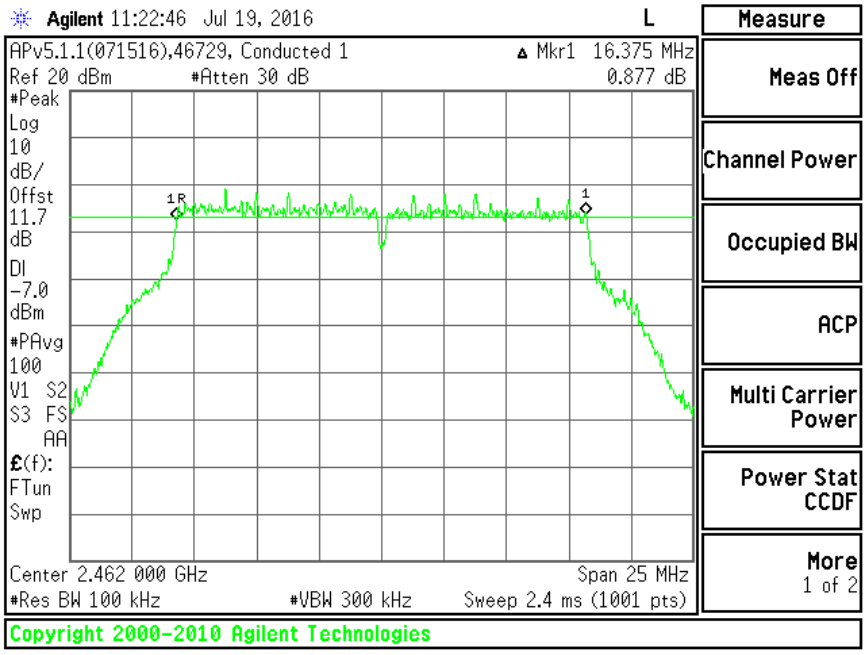
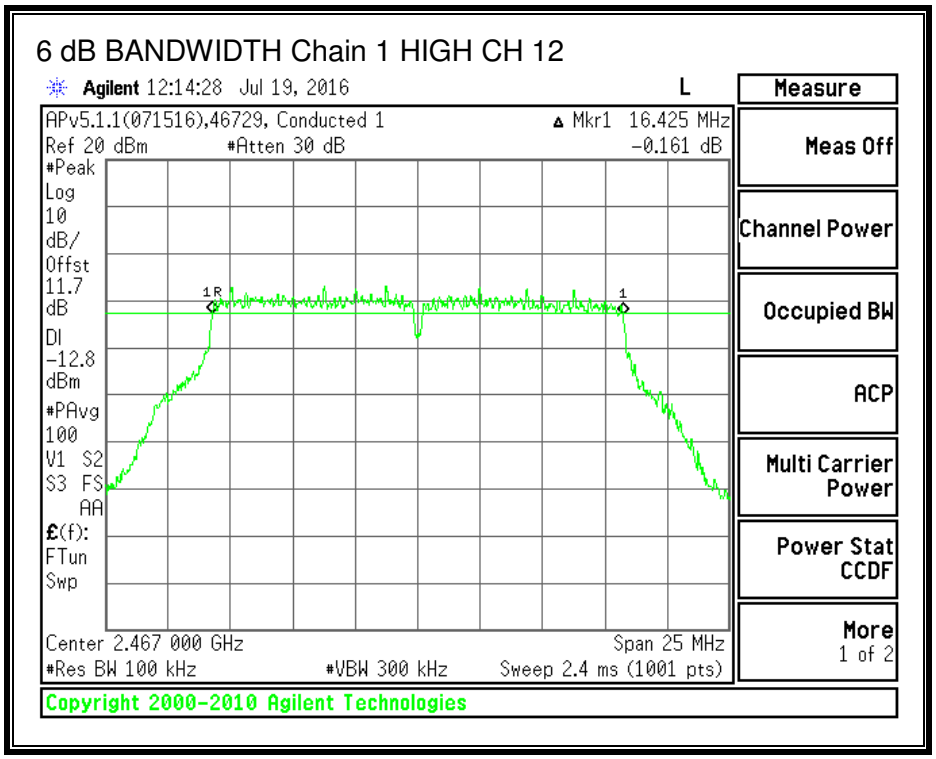
6 dB BANDWIDTH Chain 1 HIGH CH 11



6 dB BANDWIDTH Chain 1 HIGH CH 12



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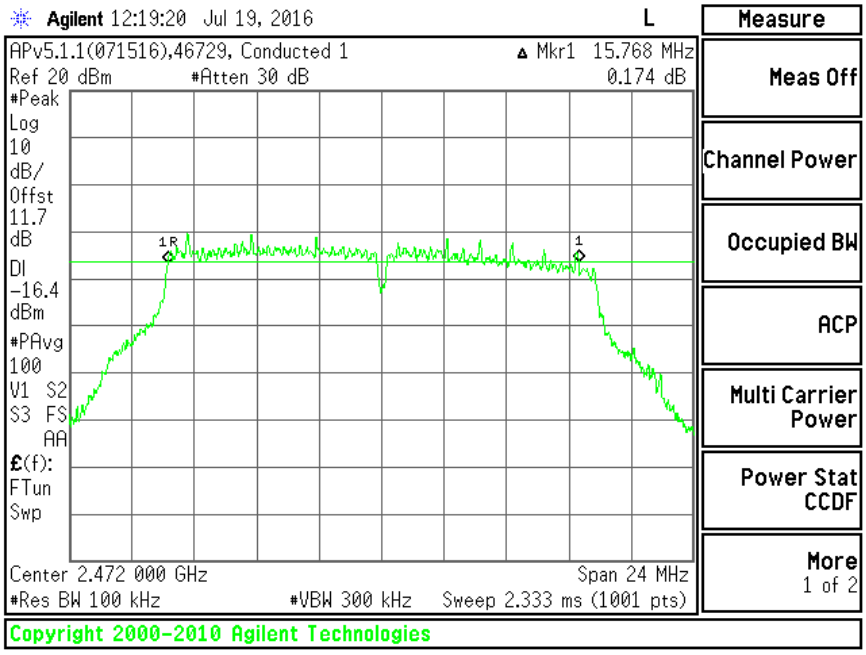
6 dB BANDWIDTH Chain 1 HIGH CH 13



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8.3.2. OUTPUT POWER

LIMITS

FCC §15.247

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-6.20	-13.90	-8.53

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

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RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)
Low	2412	-8.53	30.00
Mid	2437	-8.53	30.00
High Ch11	2462	-8.53	30.00
High Ch12	2467	-8.53	30.00
High Ch13	2472	-8.53	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	14.20	9.20	15.39	30.00	-14.61
Mid	2437	14.30	9.20	15.47	30.00	-14.53
High Ch11	2462	14.40	9.30	15.57	30.00	-14.43
High Ch12	2467	9.7	4.6	10.87	30.00	-19.13
High Ch13	2472	3.3	0.3	5.06	30.00	-24.94

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.3.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

RESULTS

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-10.70	-16.57	-9.70	8.0	-17.7
Mid	2437	-10.92	-15.01	-9.49	8.0	-17.5
High Ch11	2462	-11.19	-15.73	-9.88	8.0	-17.9
High Ch12	2467	-15.67	-19.07	-14.04	8.0	-22.0
High Ch13	2472	-20.85	-23.26	-18.88	8.0	-26.9

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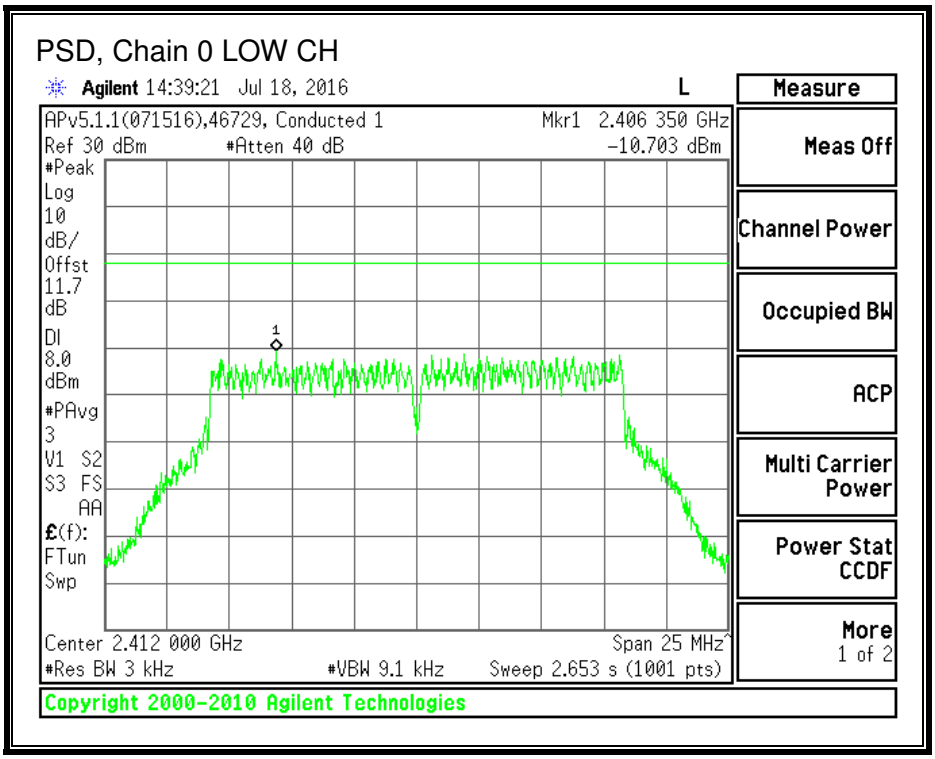
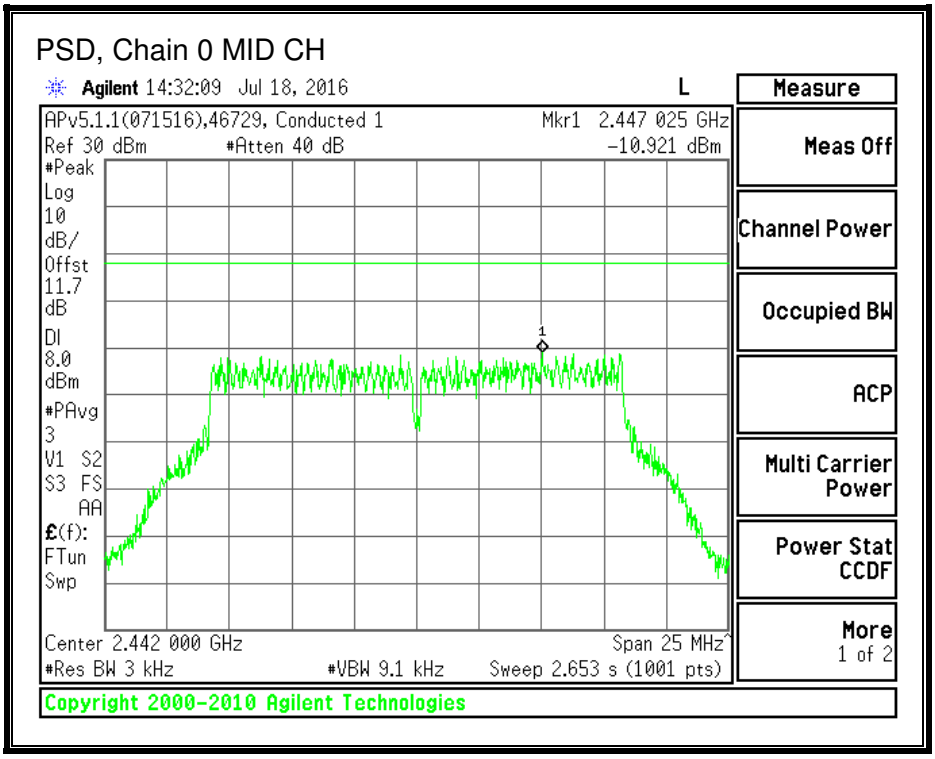
PSD, Chain 0





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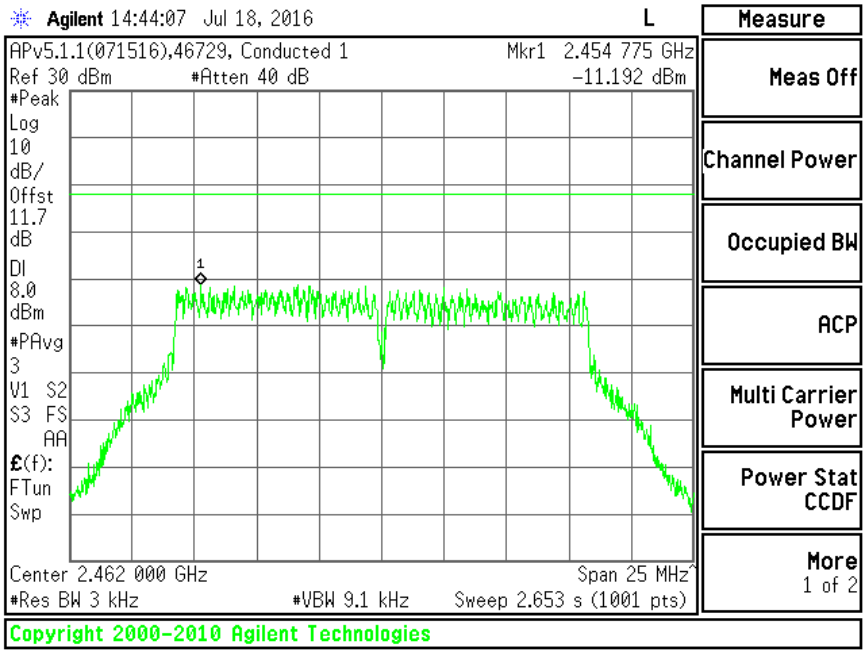
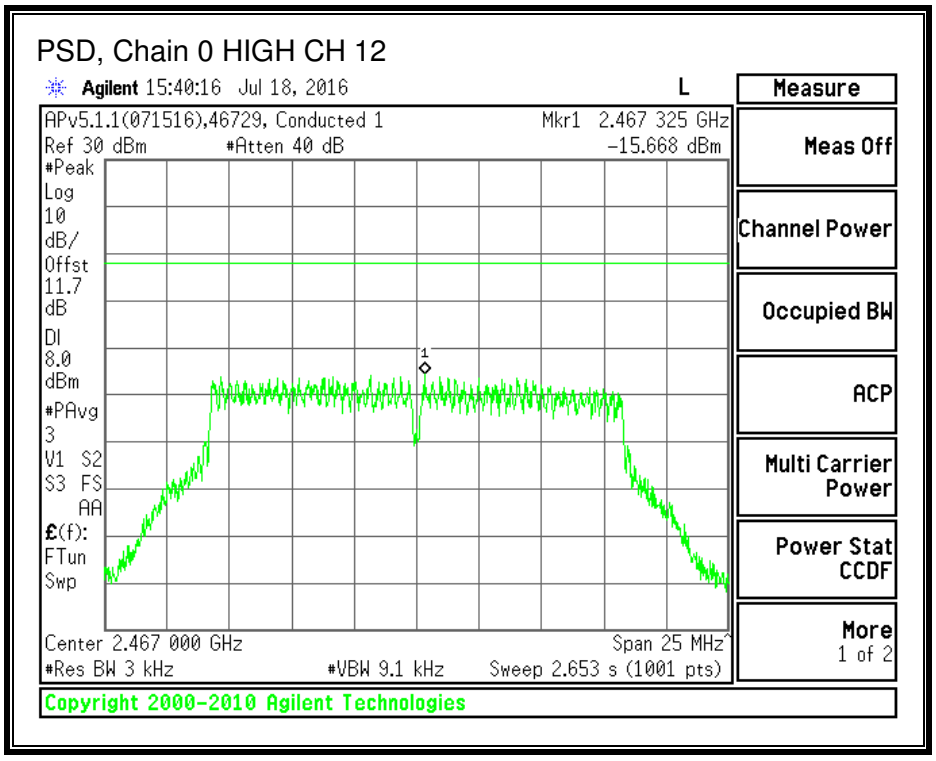
PSD, Chain 0 HIGH CH 11



PSD, Chain 0 HIGH CH 12



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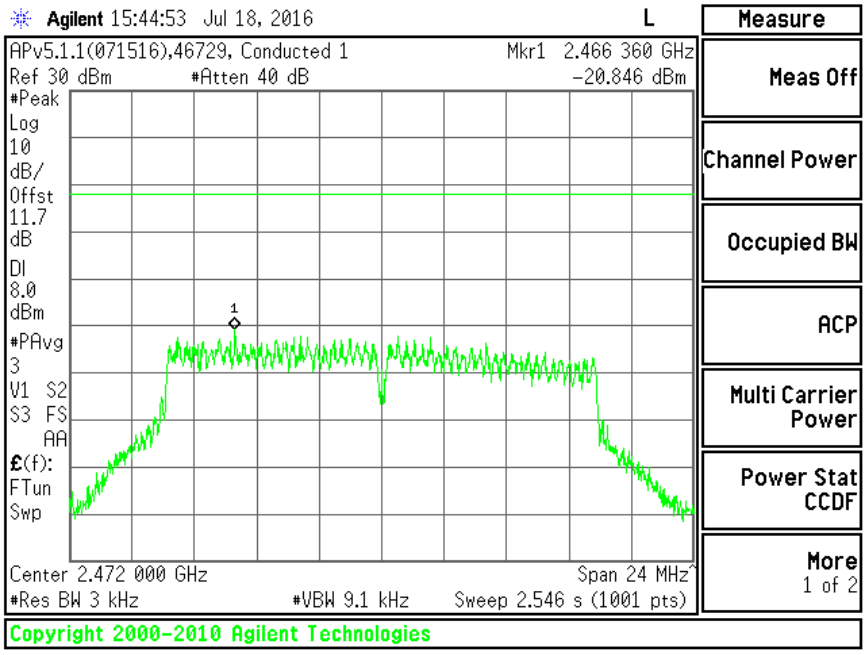
PSD, Chain 0 HIGH CH 13



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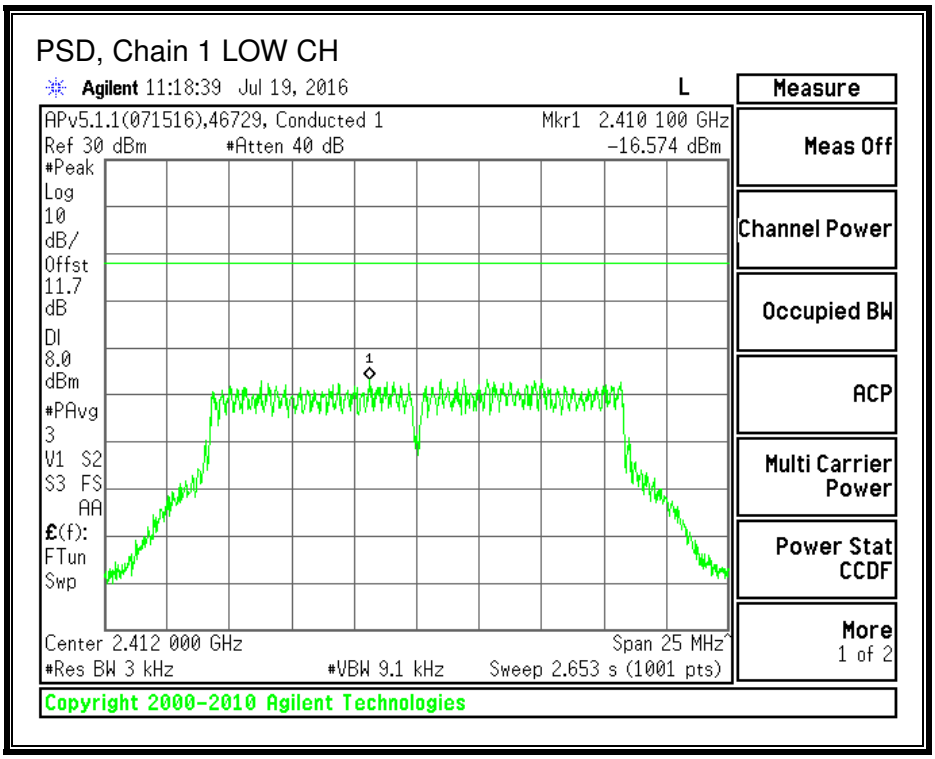
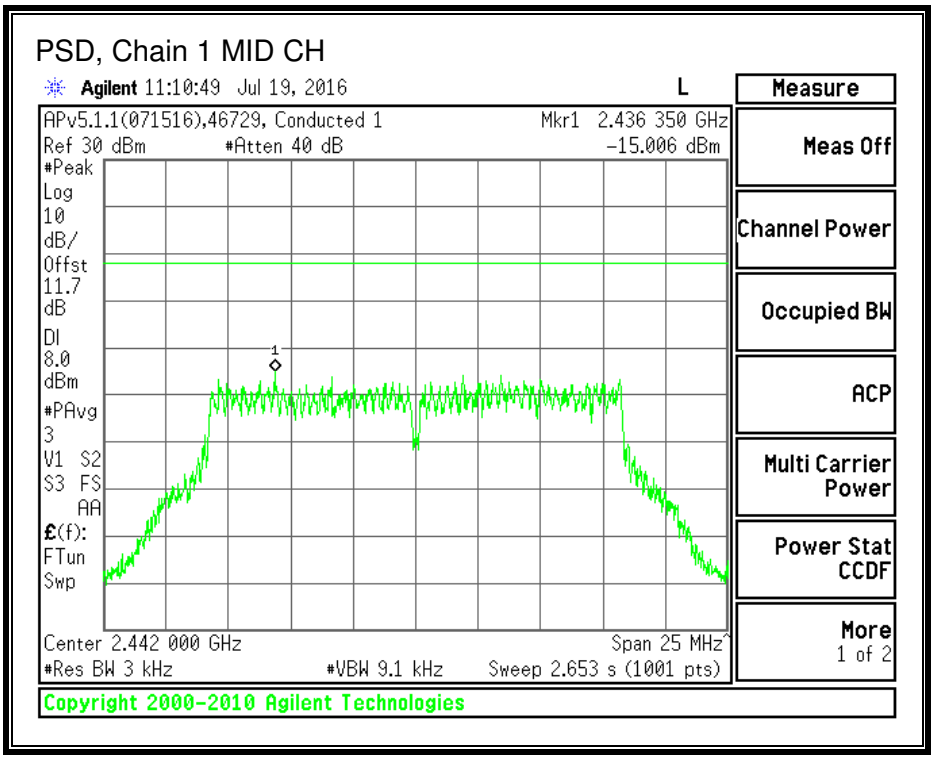
PSD, Chain 1





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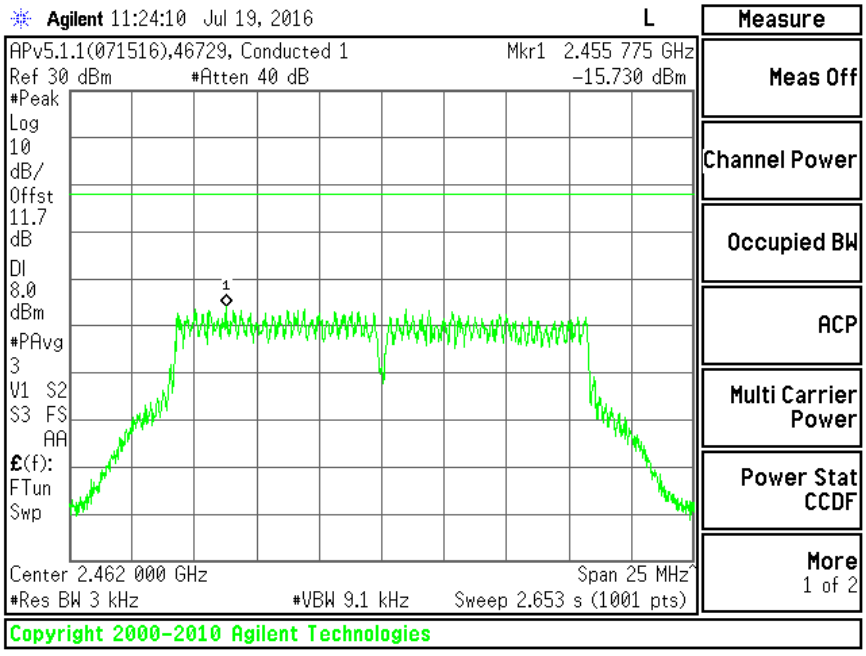
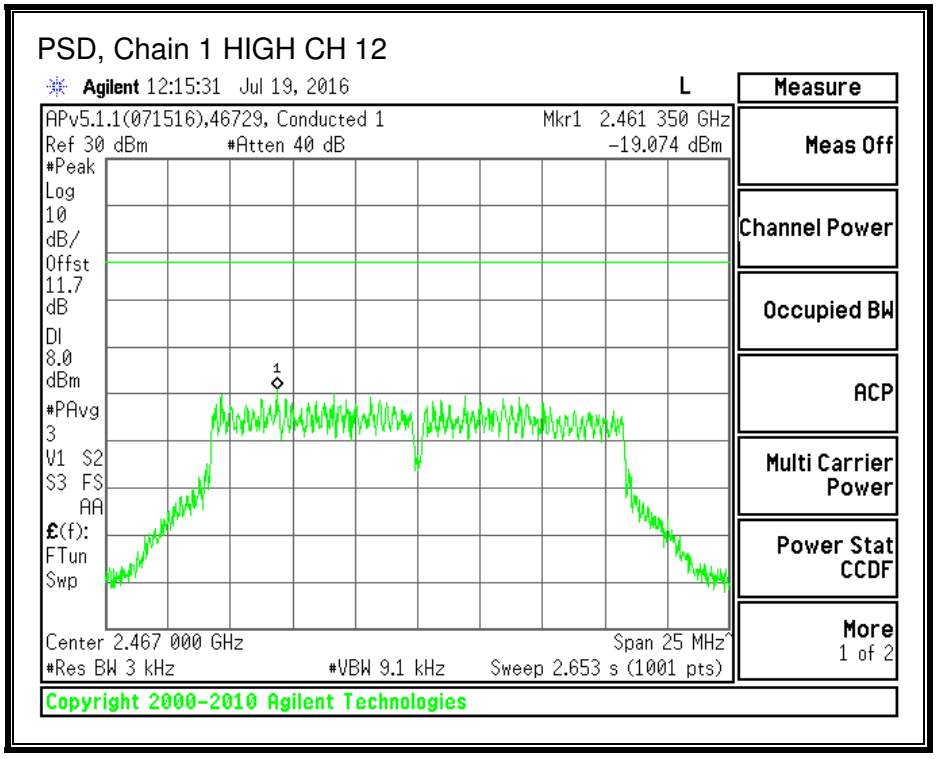
PSD, Chain 1 HIGH CH 11



PSD, Chain 1 HIGH CH 12



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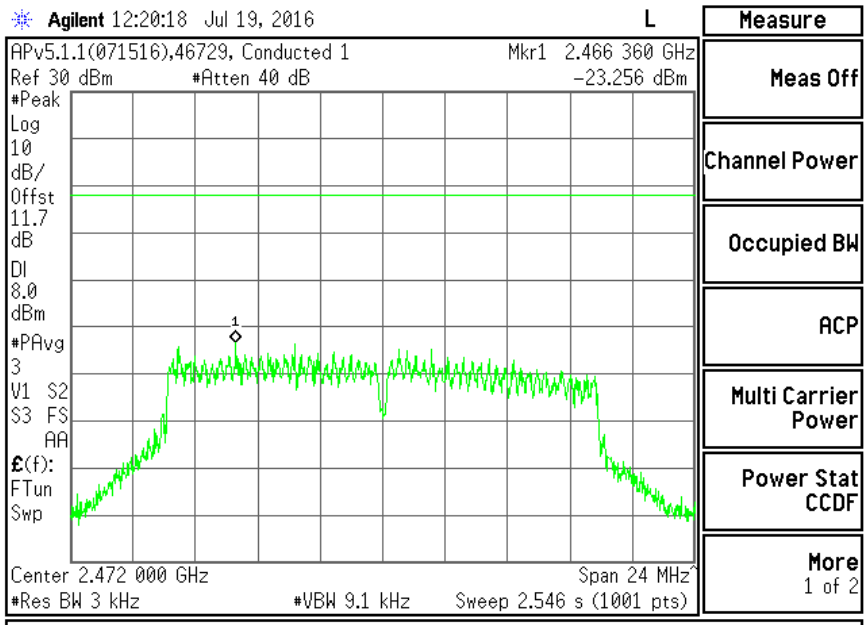
PSD, Chain 1 HIGH CH 13



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8.3.4. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

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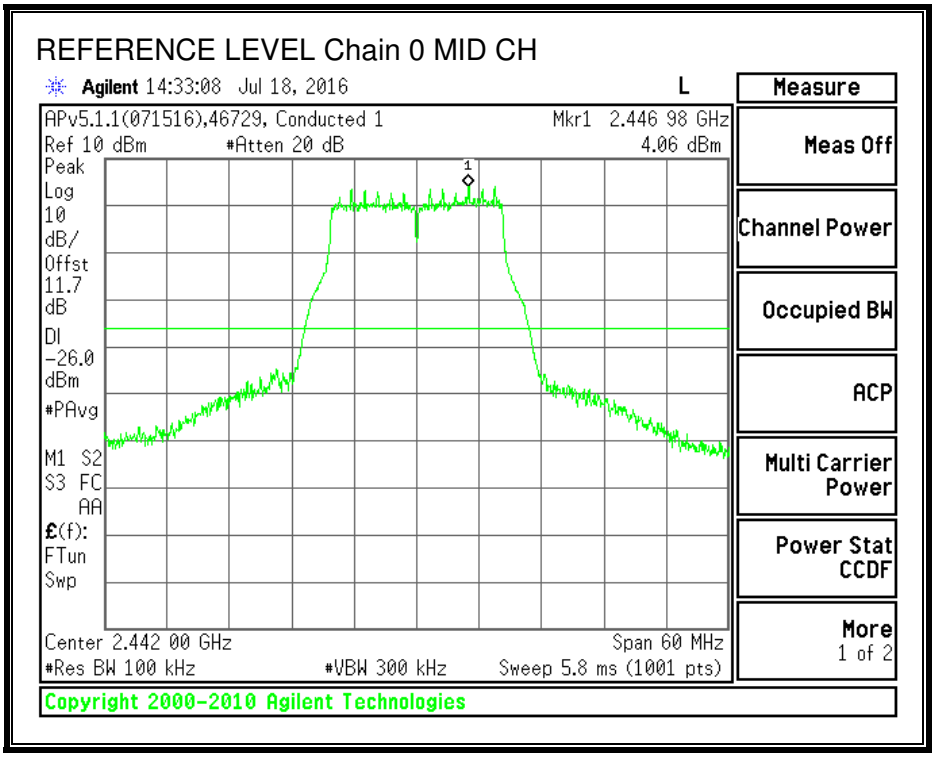
RESULTS

IN-BAND REFERENCE LEVEL, Chain 0



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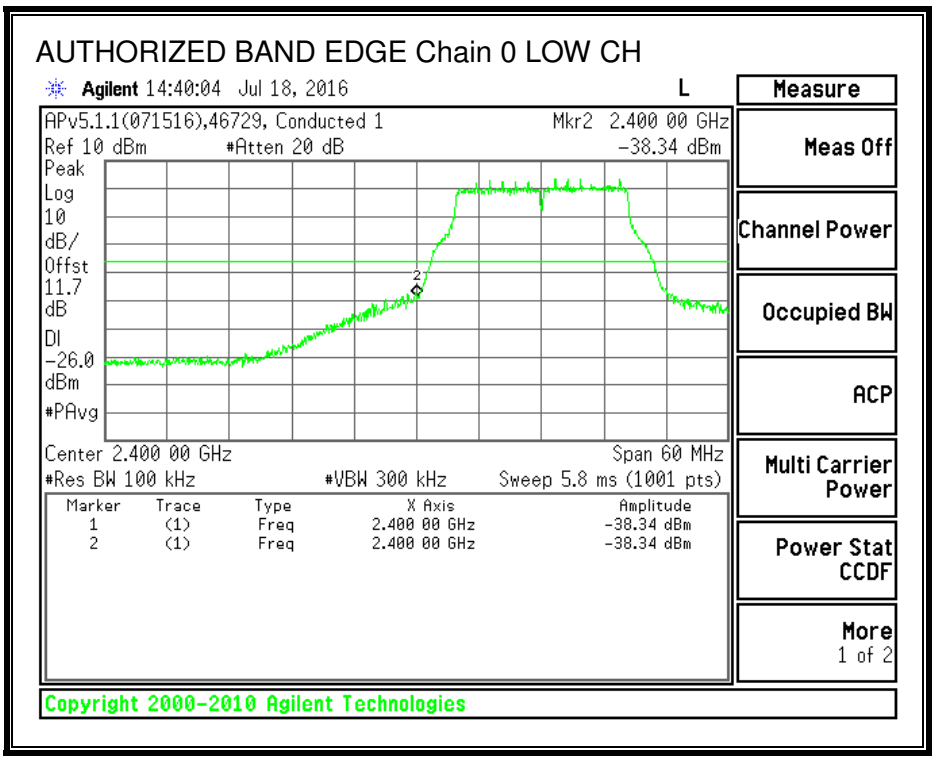
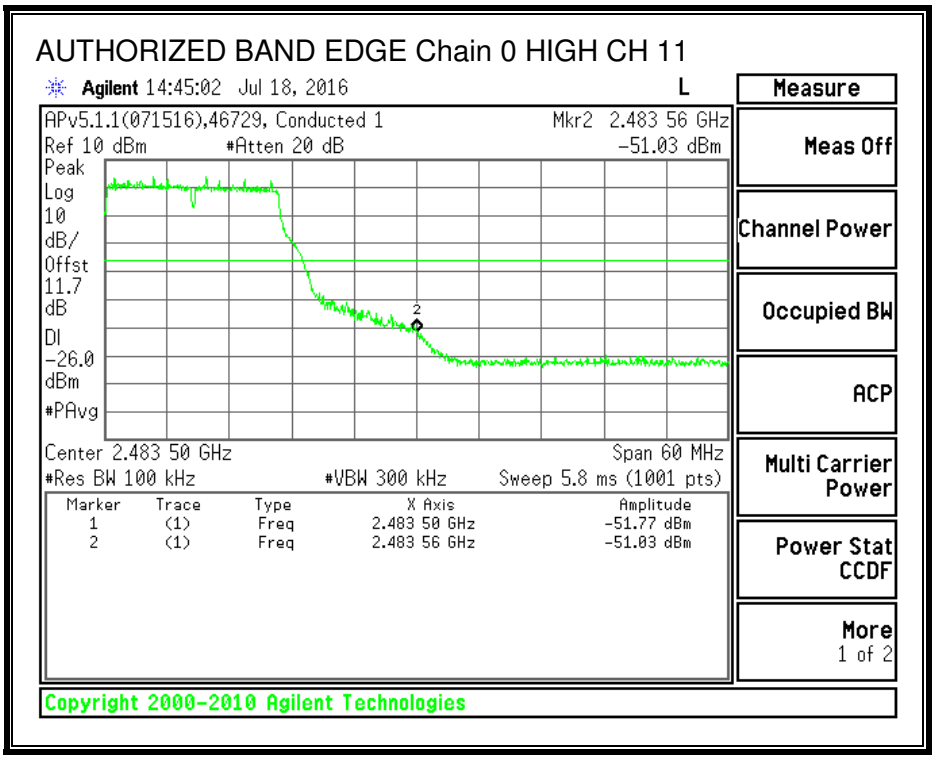
LOW CHANNEL BANDEDGE, Chain 0



HIGH CHANNEL BANDEDGE, Chain 0



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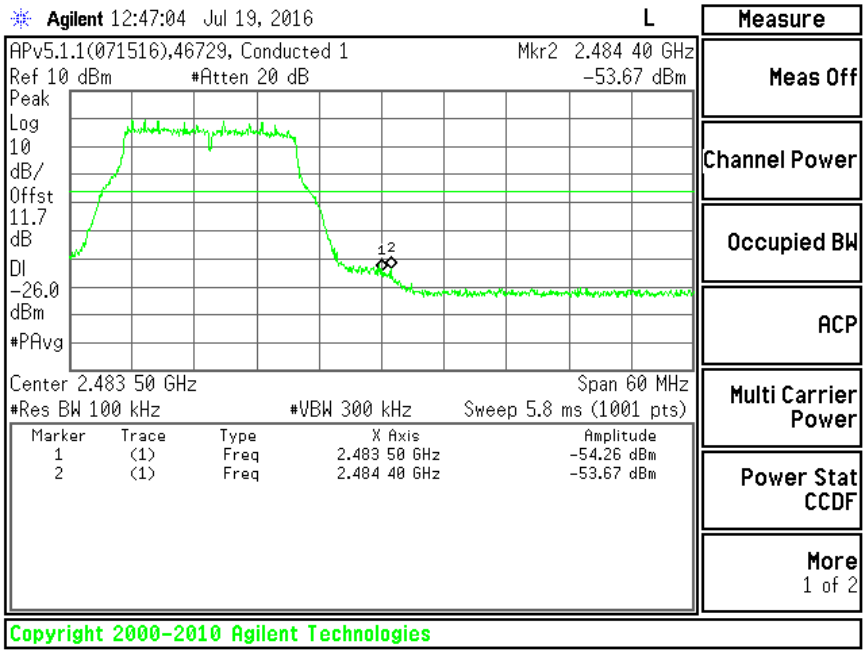
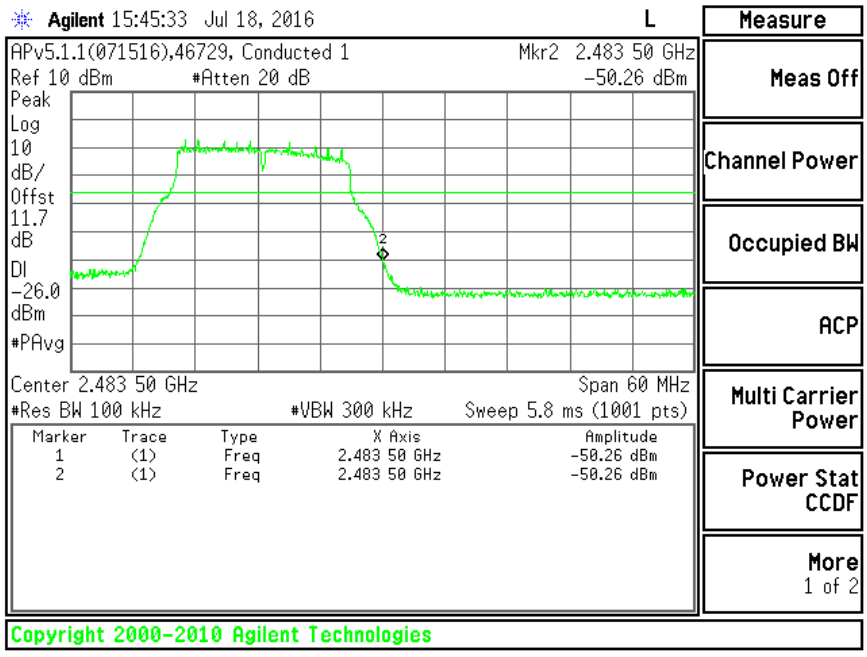
AUTHORIZED BAND EDGE Chain 0 HIGH CH 12



AUTHORIZED BAND EDGE Chain 0 HIGH CH 13



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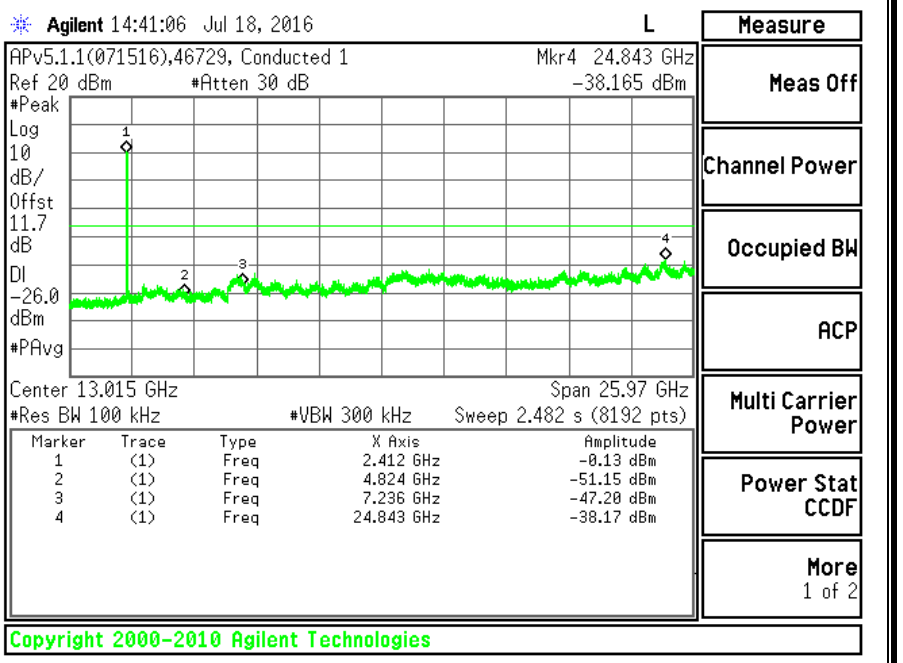
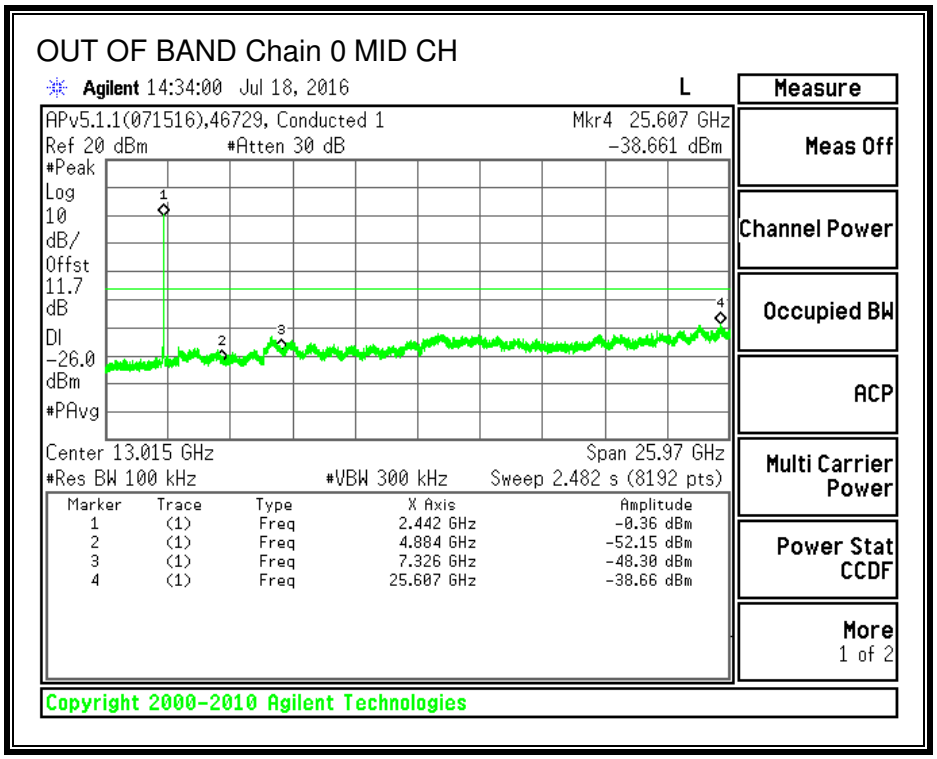
OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH



OUT OF BAND Chain 0 MID CH



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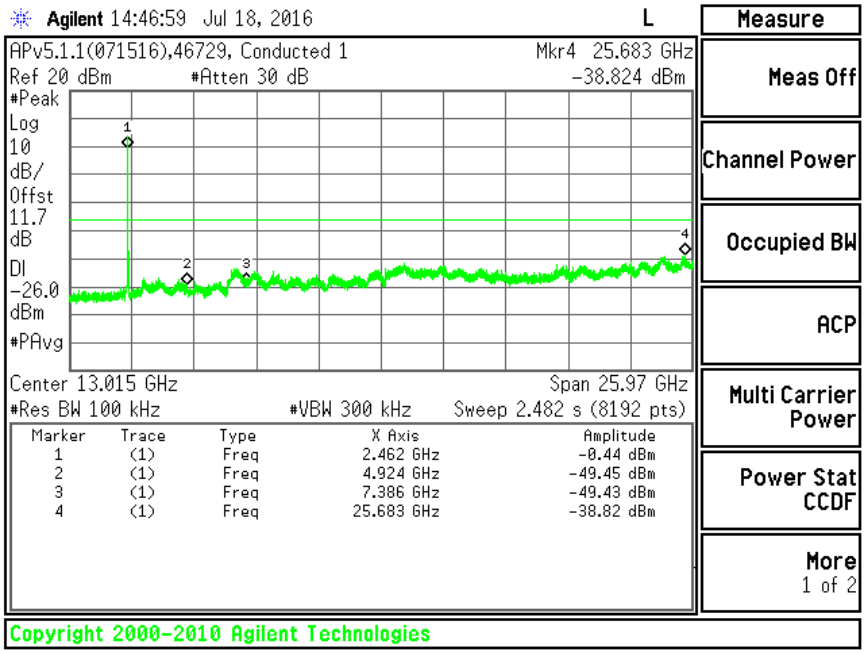
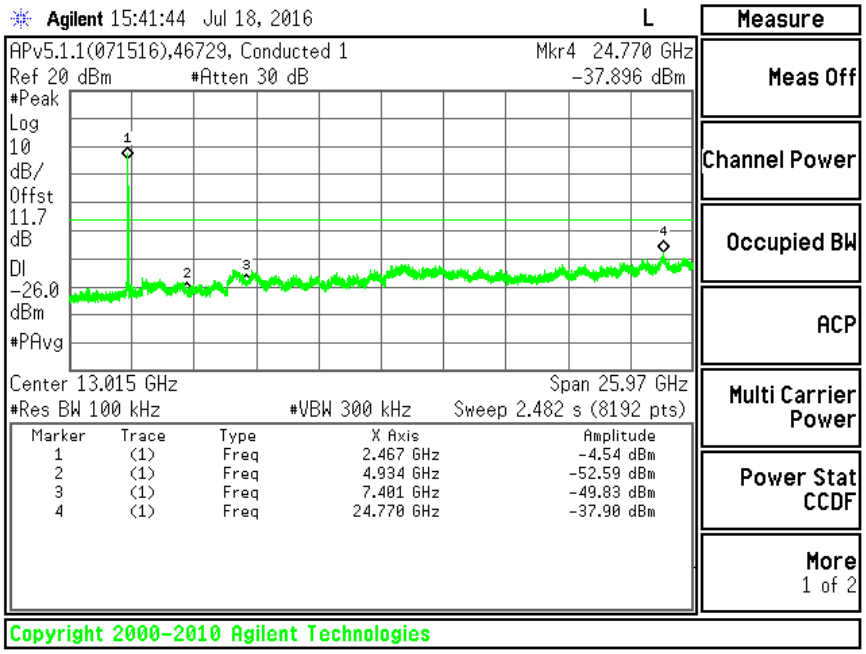
OUT OF BAND Chain 0 HIGH CH 11



OUT OF BAND Chain 0 HIGH CH 12



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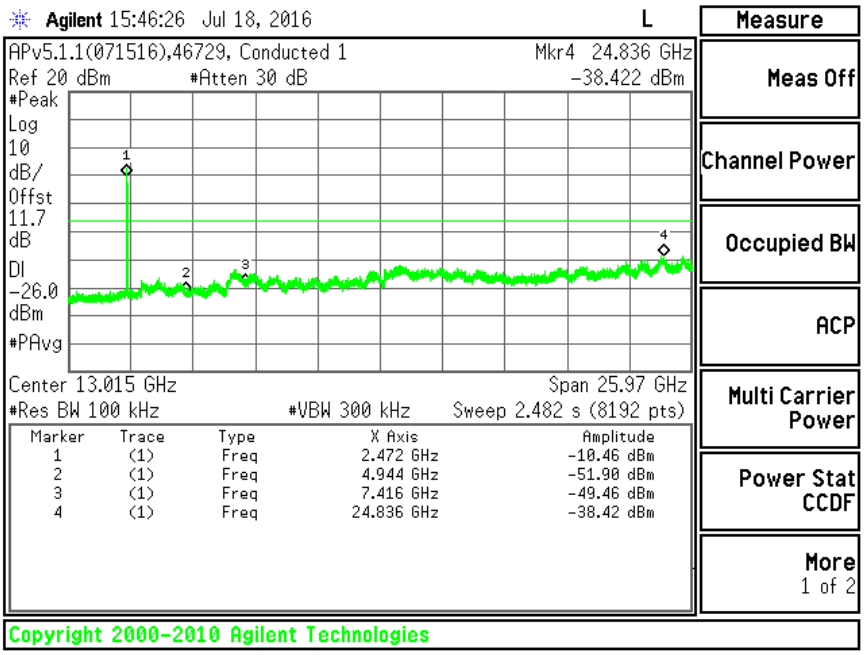
OUT OF BAND Chain 0 HIGH CH 13



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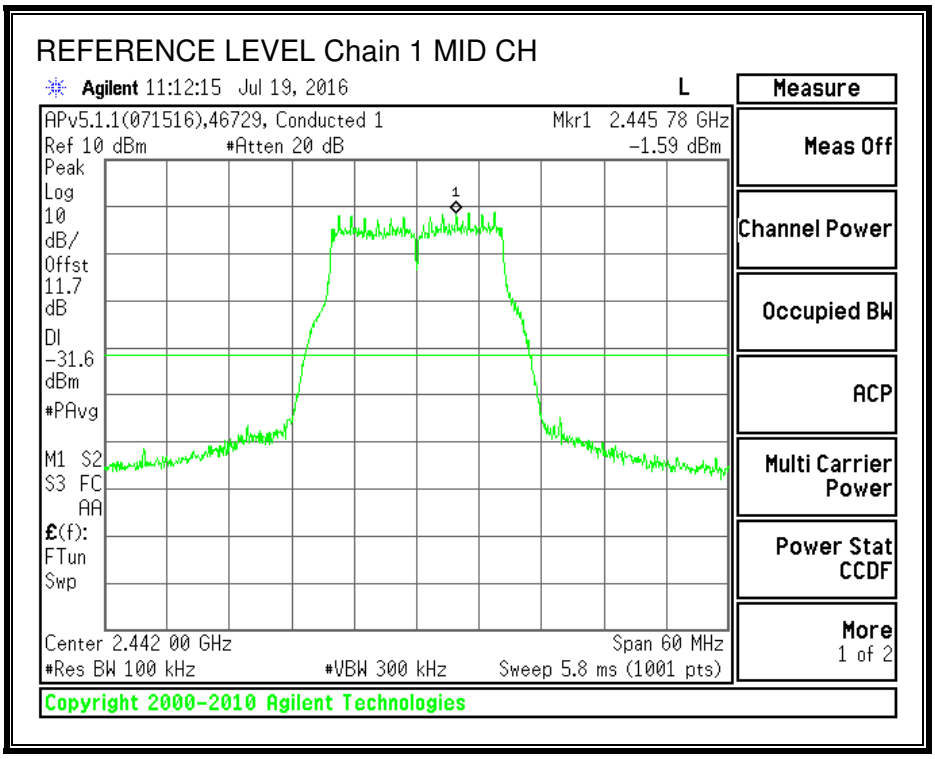
IN-BAND REFERENCE LEVEL, Chain 1



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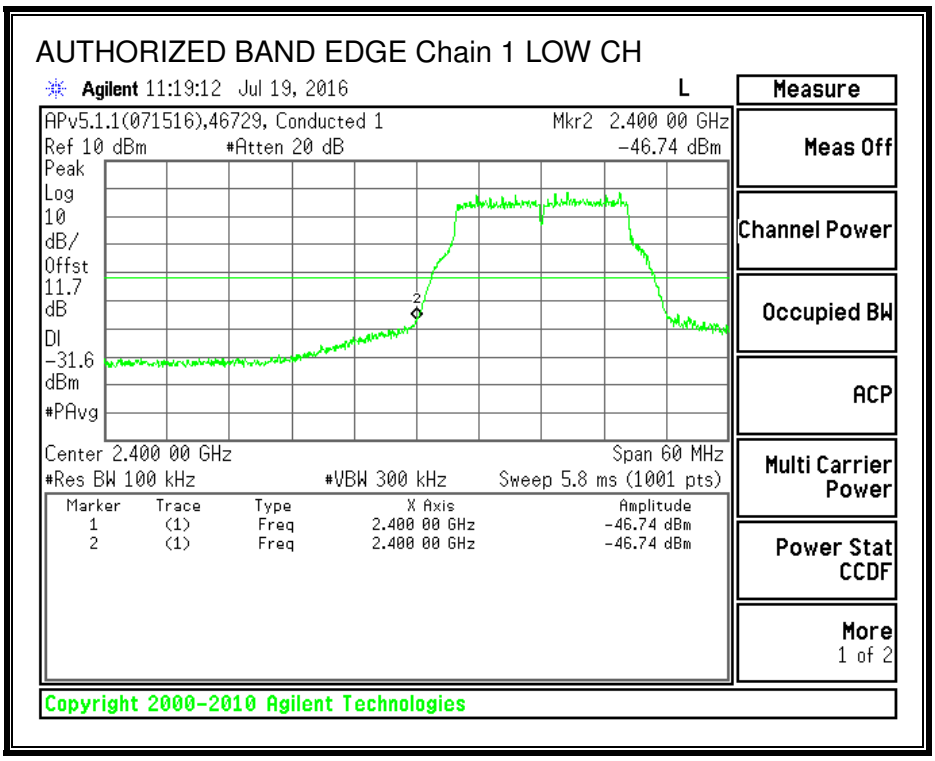
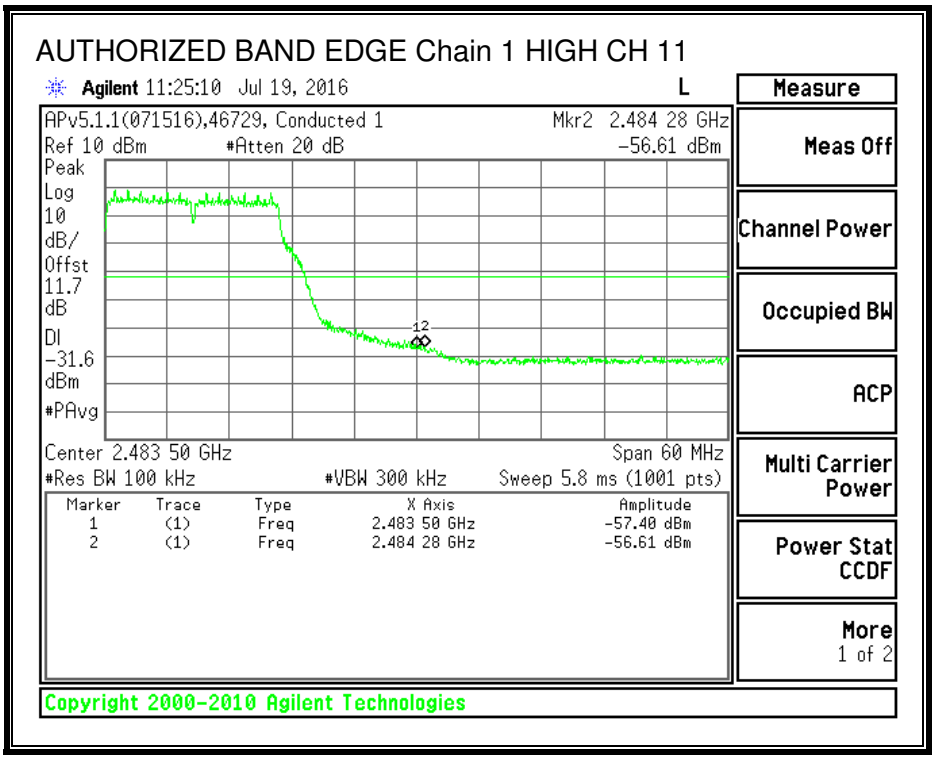
LOW CHANNEL BANDEDGE, Chain 1



HIGH CHANNEL BANDEDGE, Chain 1



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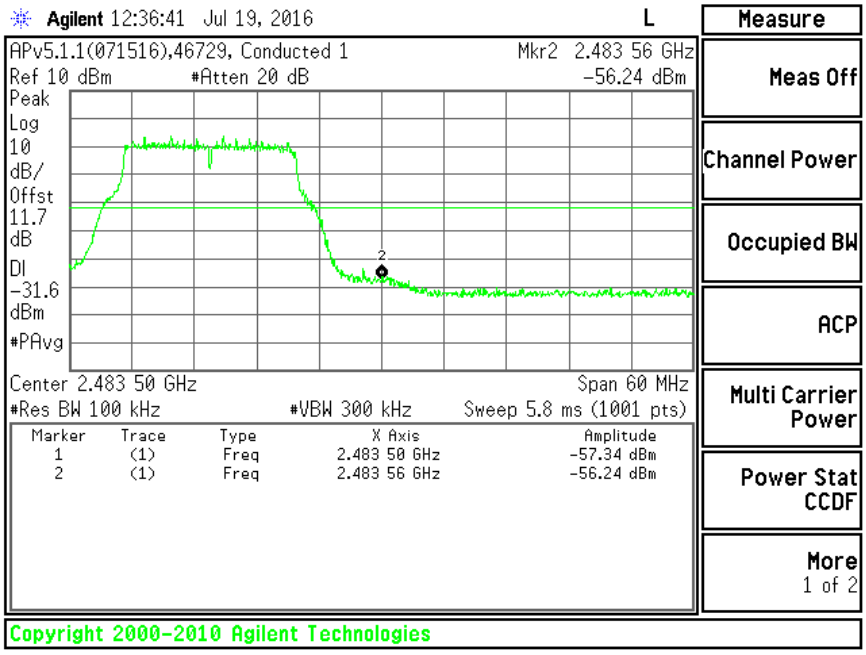
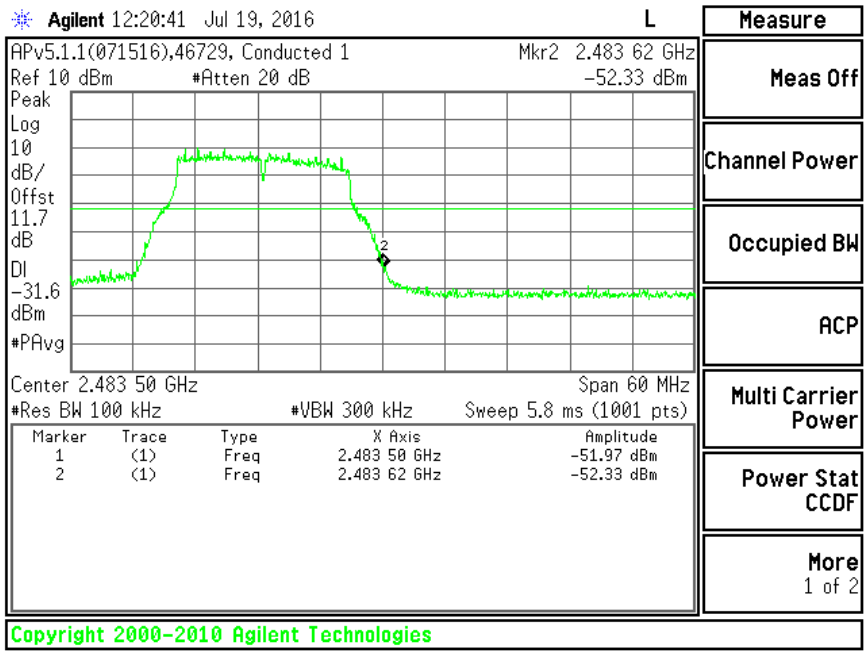
AUTHORIZED BAND EDGE Chain 1 HIGH CH 12



AUTHORIZED BAND EDGE Chain 1 HIGH CH 13



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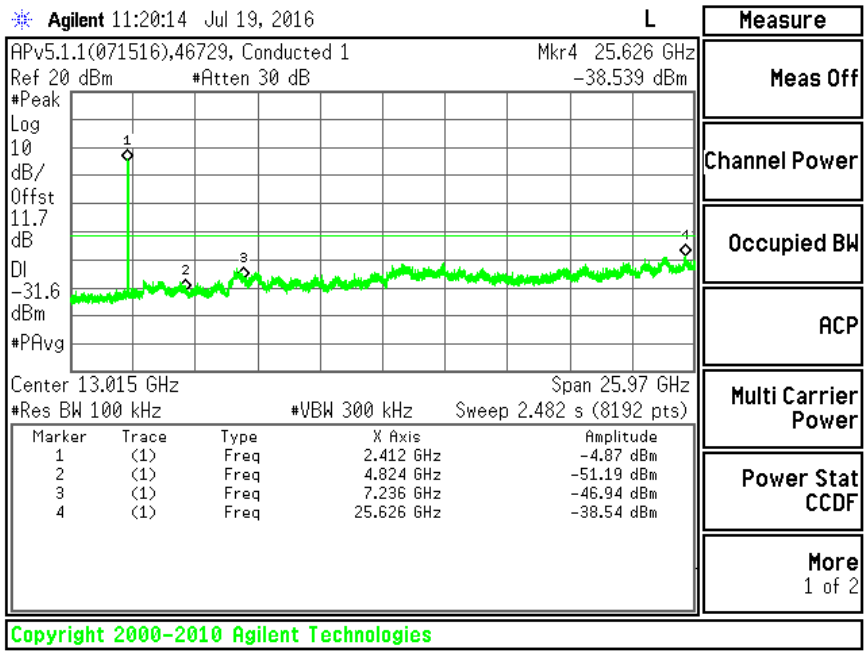
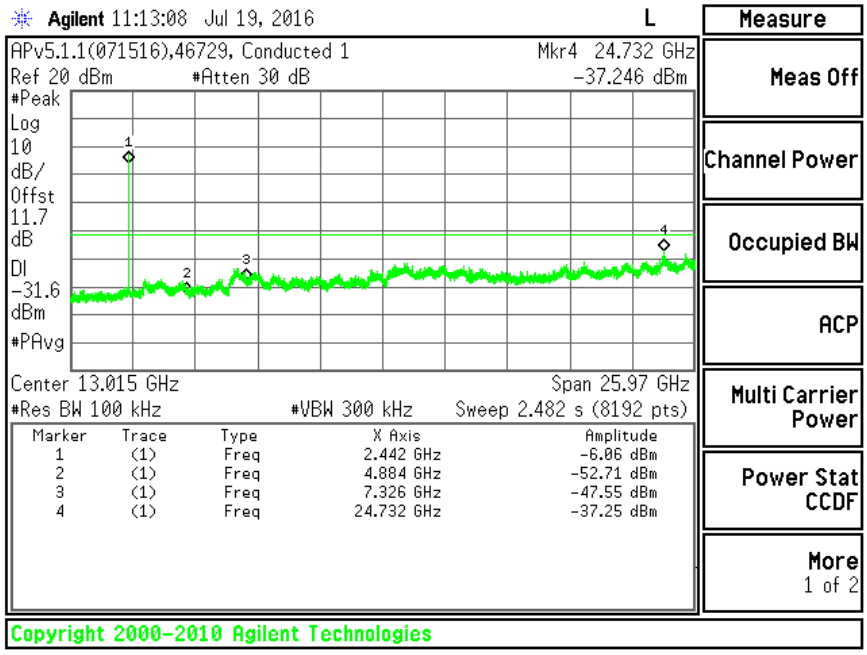
OUT-OF-BAND EMISSIONS, Chain 1

OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 MID CH



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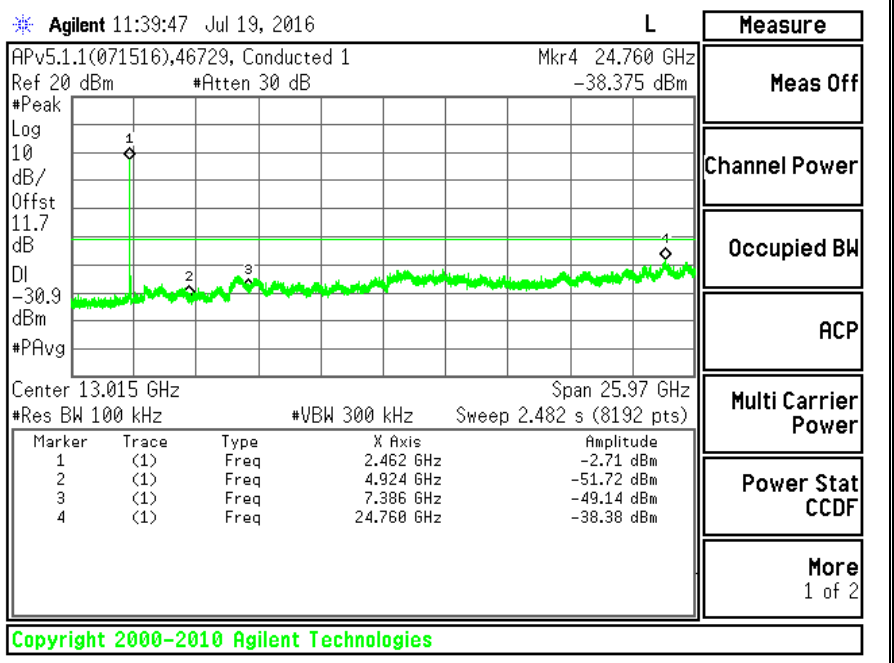
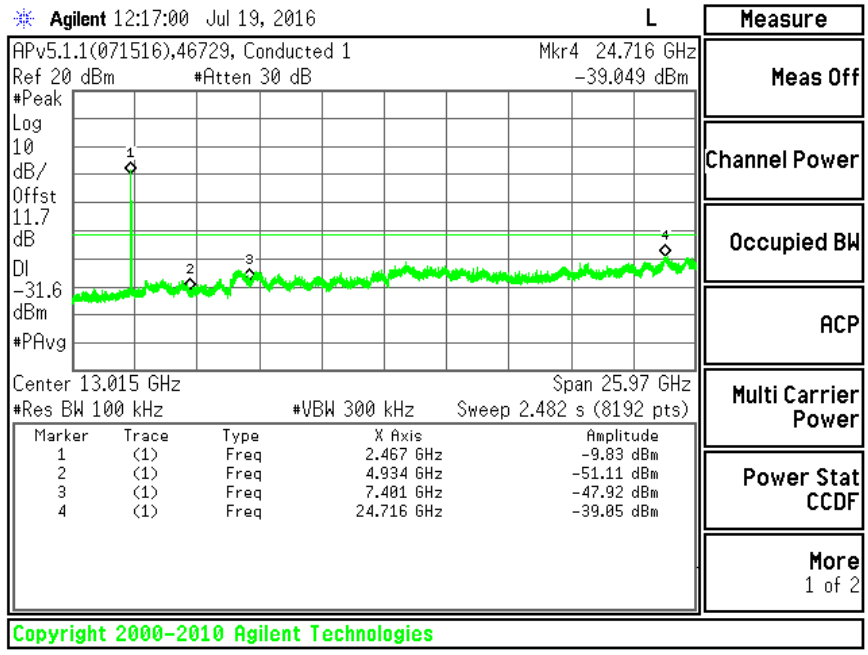
OUT OF BAND Chain 1 HIGH CH 11



OUT OF BAND Chain 1 HIGH CH 12



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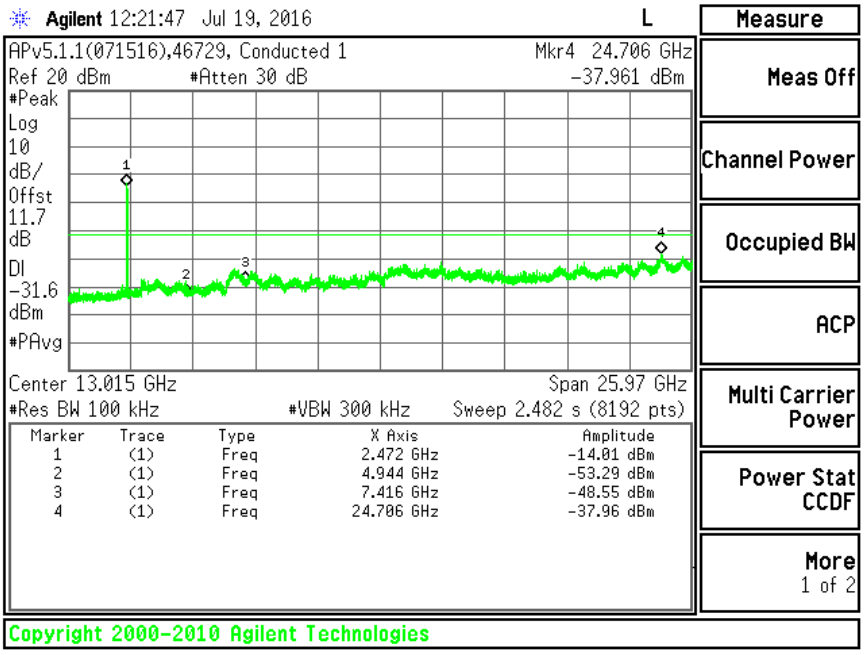
OUT OF BAND Chain 1 HIGH CH 13



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8.4. 802.11n HT20 MODE IN THE 2.4 GHz BAND

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST INFORMATION

Date: 2016-07-18 to 2016-07-25
Tester: Ron Reichard

RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	17.631	17.631	0.5
Mid	2442	17.658	17.631	0.5
High Ch 11	2462	17.264	17.631	0.5
High Ch 12	2467	17.212	17.604	0.5
High Ch 13	2472	16.300	16.400	0.5

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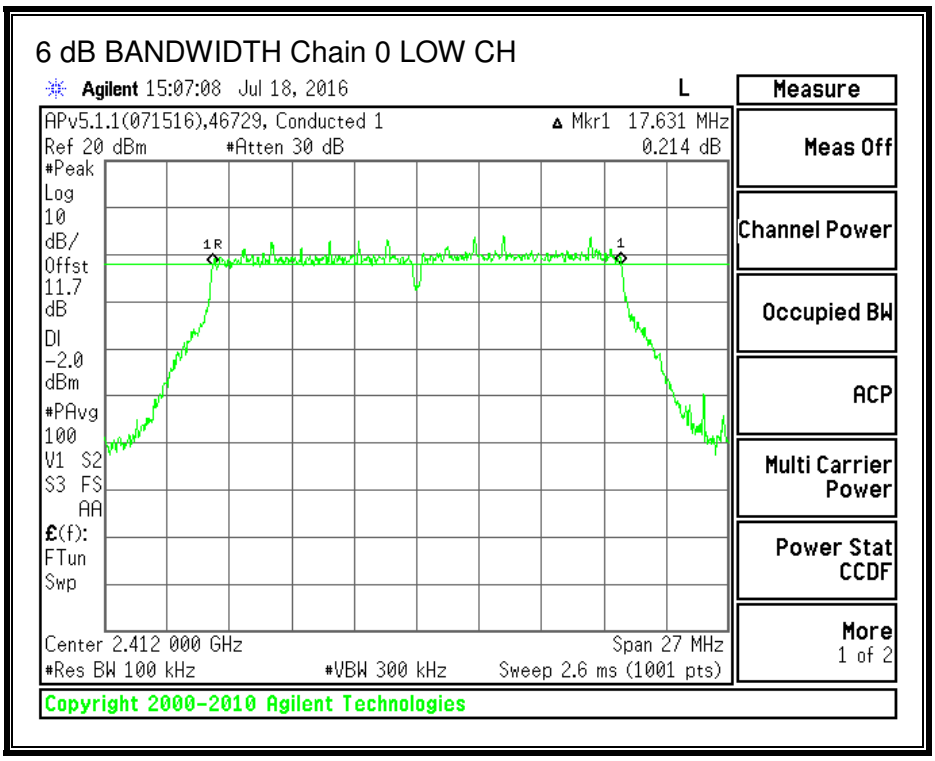
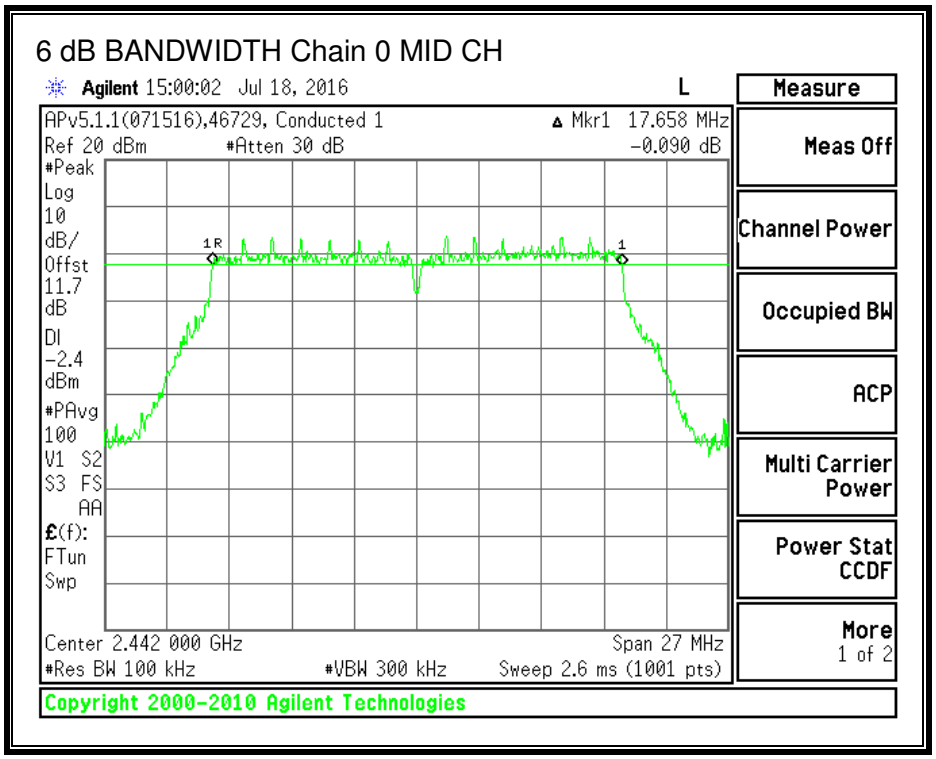
6 dB BANDWIDTH, Chain 0





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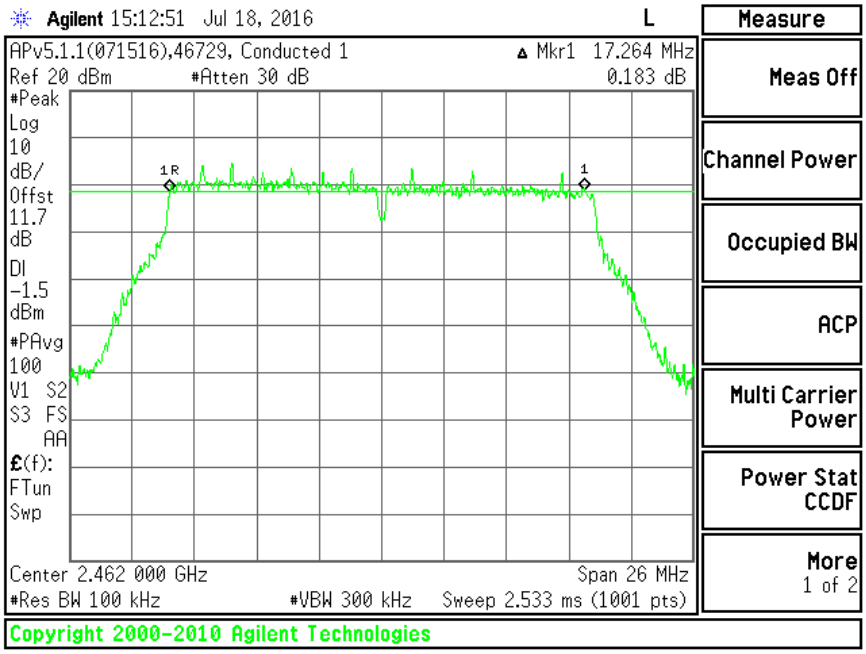
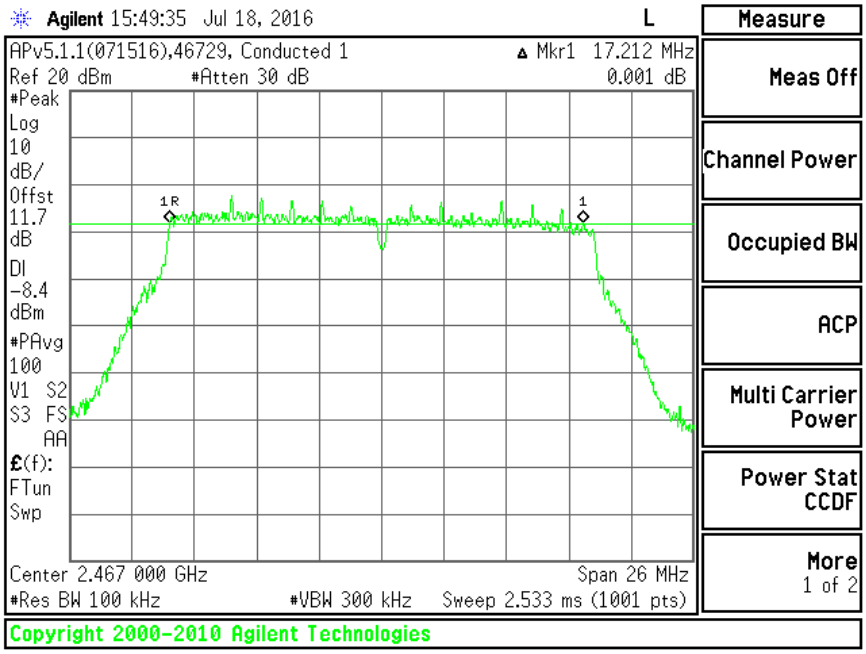
6 dB BANDWIDTH Chain 0 HIGH CH 11



6 dB BANDWIDTH Chain 0 HIGH CH 12



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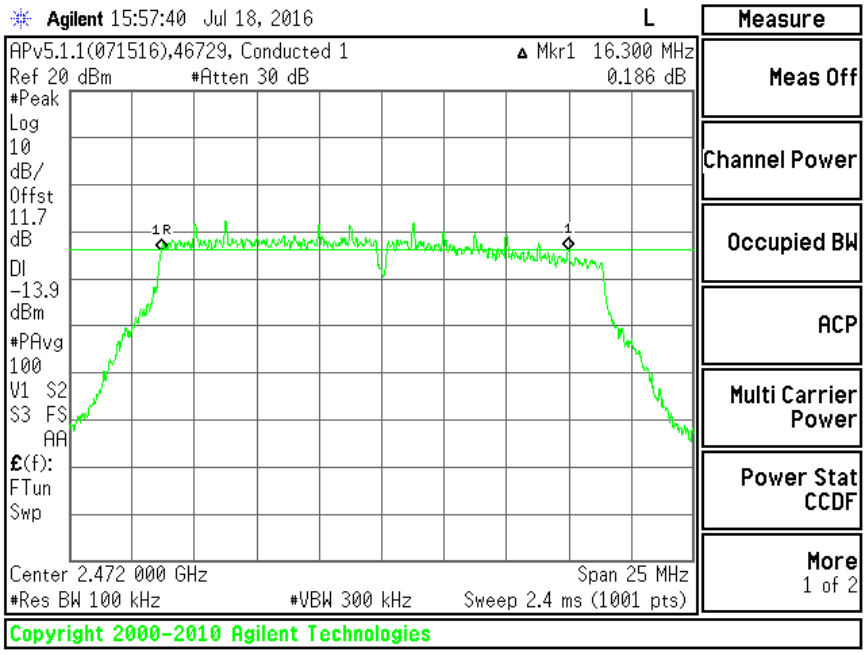
6 dB BANDWIDTH Chain 0 HIGH CH 13



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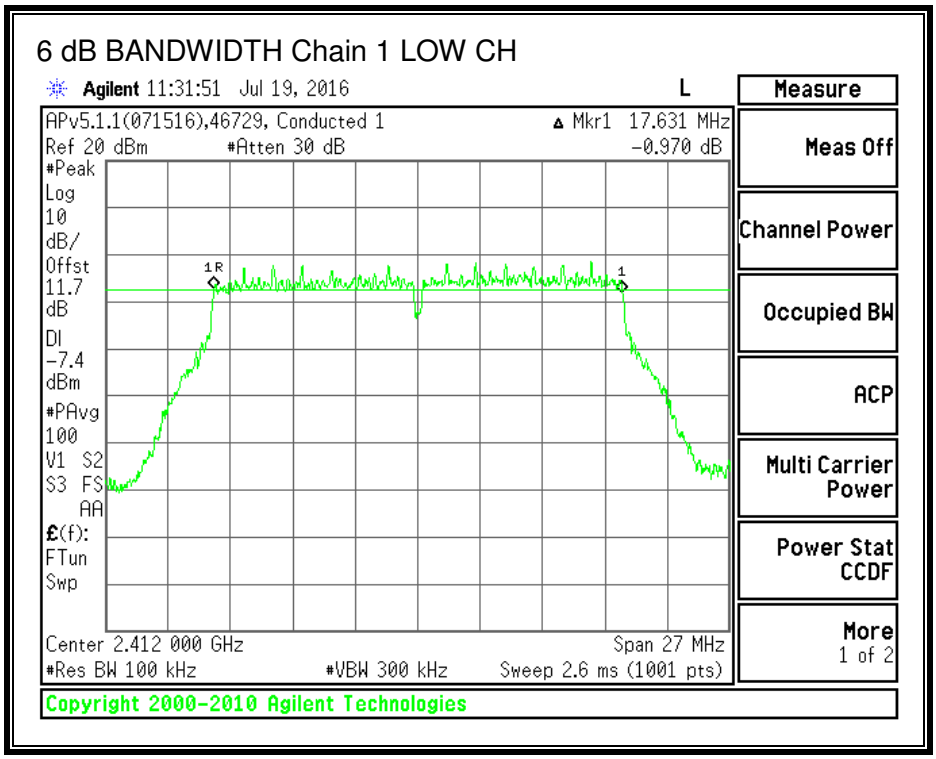
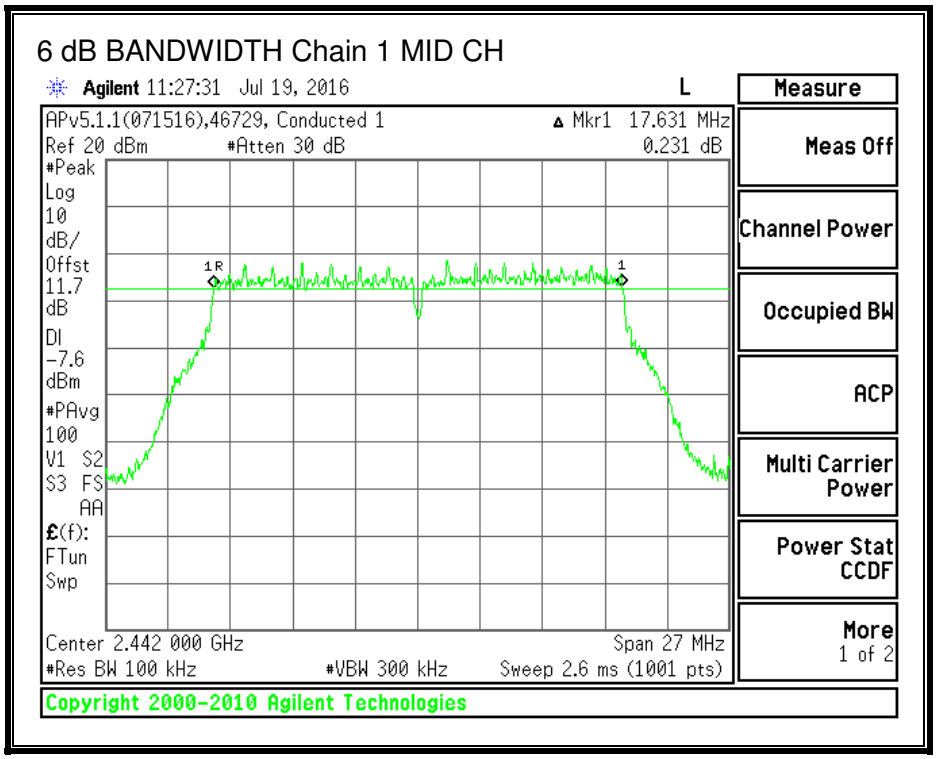
6 dB BANDWIDTH, Chain 1





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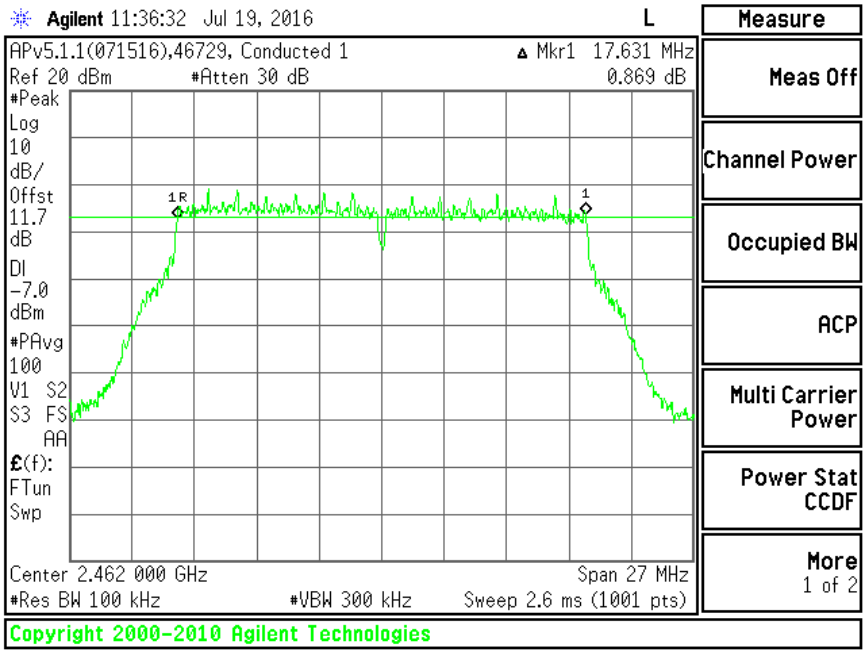
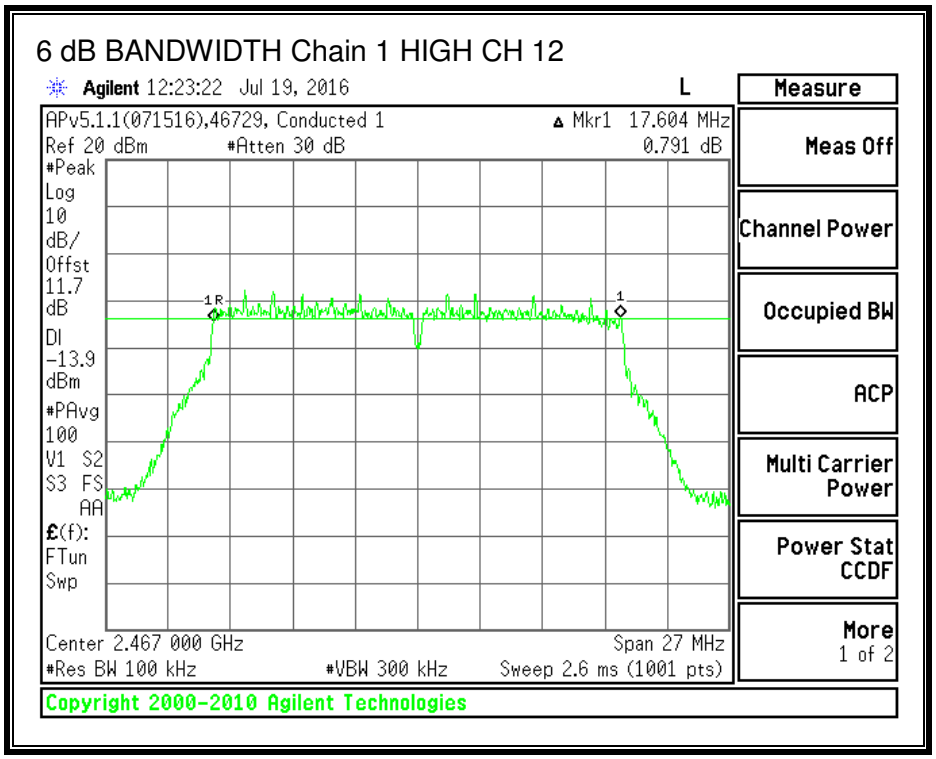
6 dB BANDWIDTH Chain 1 HIGH CH 11

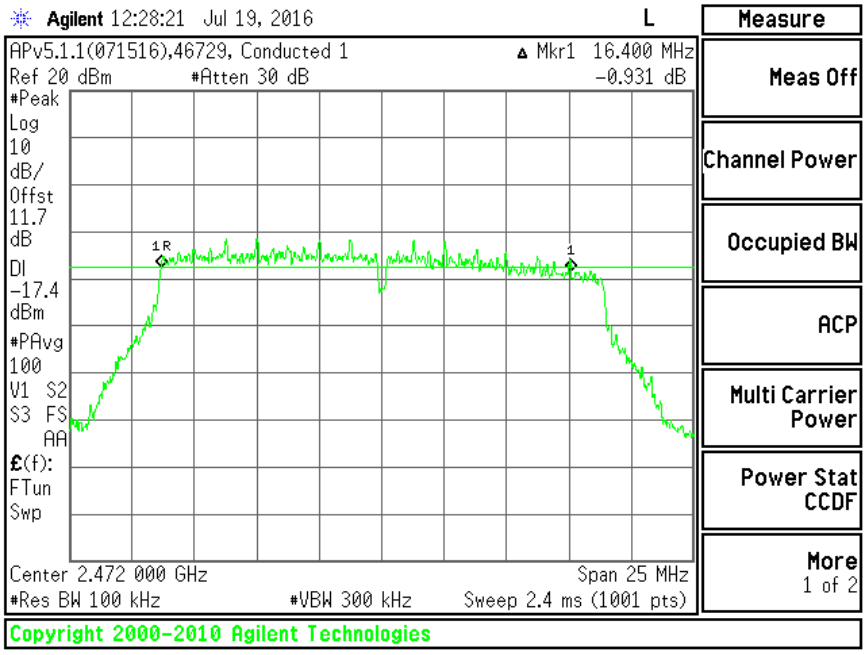


6 dB BANDWIDTH Chain 1 HIGH CH 12



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

6 dB BANDWIDTH Chain 1 HIGH CH 13



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

8.4.2. OUTPUT POWER

LIMITS

FCC §15.247

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-6.20	-13.90	-8.53

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

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RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)
Low	2412	-8.53	30.00
Mid	2437	-8.53	30.00
High Ch11	2462	-8.53	30.00
High Ch12	2467	-8.53	30.00
High Ch13	2472	-8.53	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	14.50	9.20	15.62	30.00	-14.38
Mid	2437	14.50	9.10	15.60	30.00	-14.40
High Ch11	2462	14.40	9.20	15.55	30.00	-14.45
High Ch12	2467	7.90	2.70	9.05	30.00	-20.95
High Ch13	2472	2.40	-0.90	4.07	30.00	-25.93

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.4.3. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

RESULTS

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-9.93	-14.29	-8.57	8.0	-16.6
Mid	2437	-9.86	-14.90	-8.68	8.0	-16.7
High Ch11	2462	-10.85	-15.58	-9.59	8.0	-17.6
High Ch12	2467	-16.92	-22.83	-15.93	8.0	-23.9
High Ch13	2472	-22.15	-26.45	-20.78	8.0	-28.8

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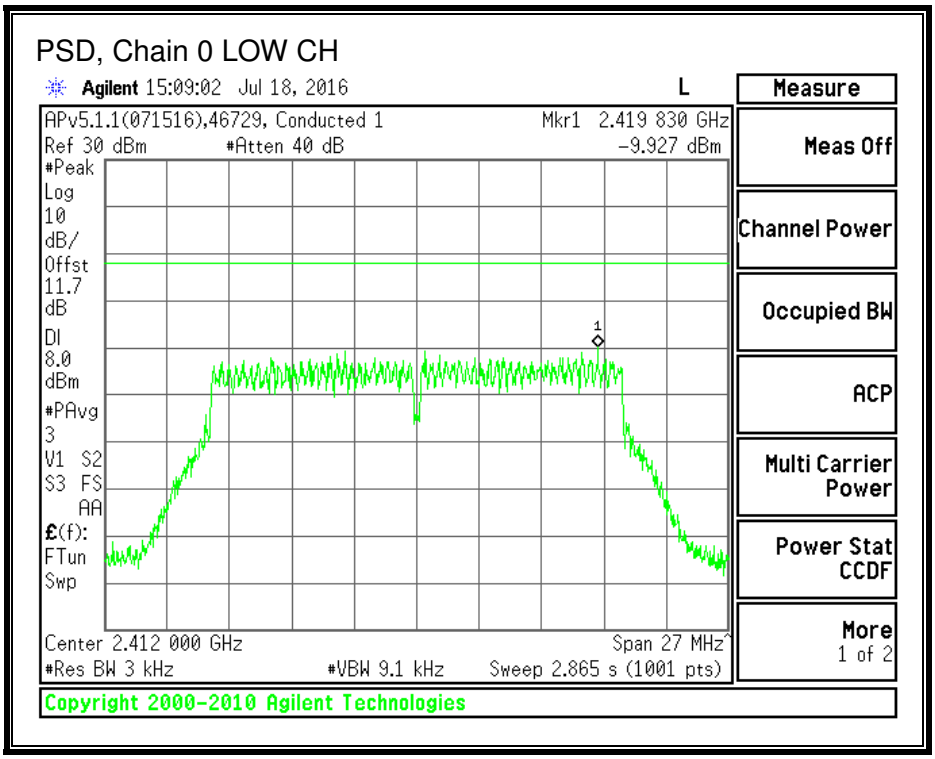
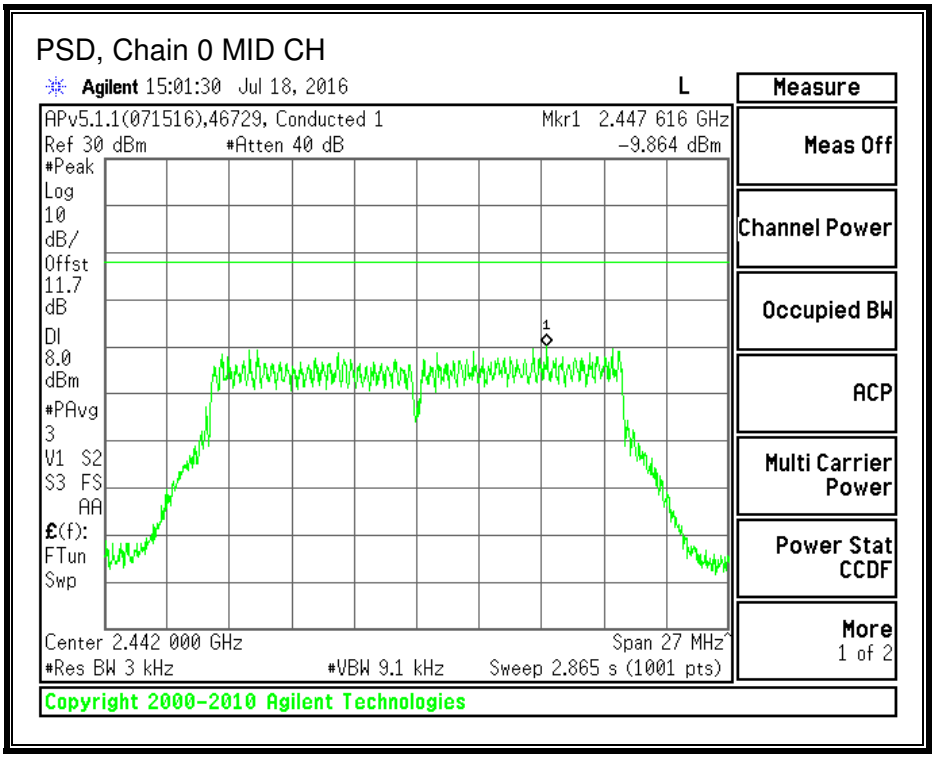
PSD, Chain 0





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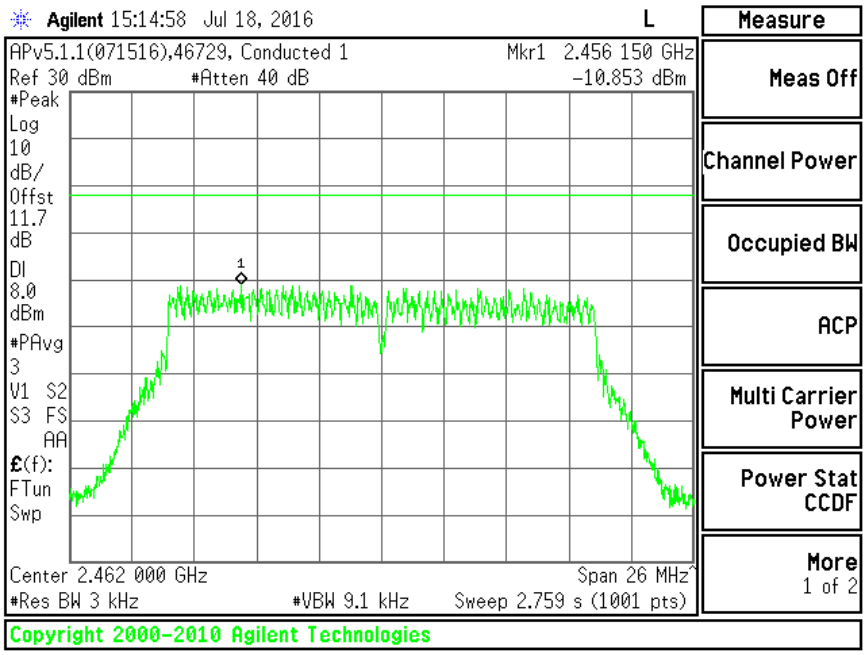
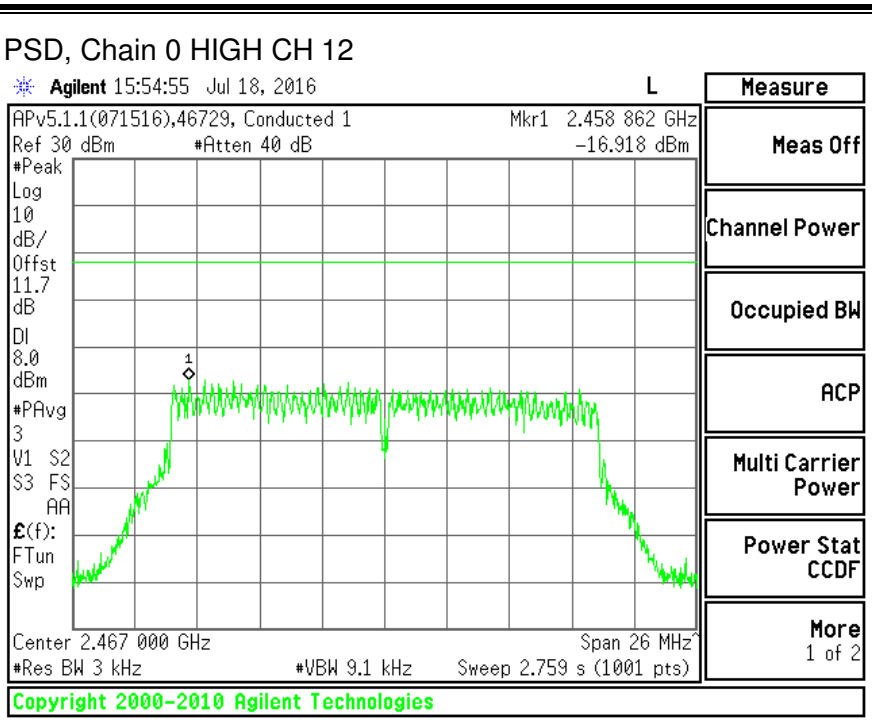
PSD, Chain 0 HIGH CH 11



PSD, Chain 0 HIGH CH 12



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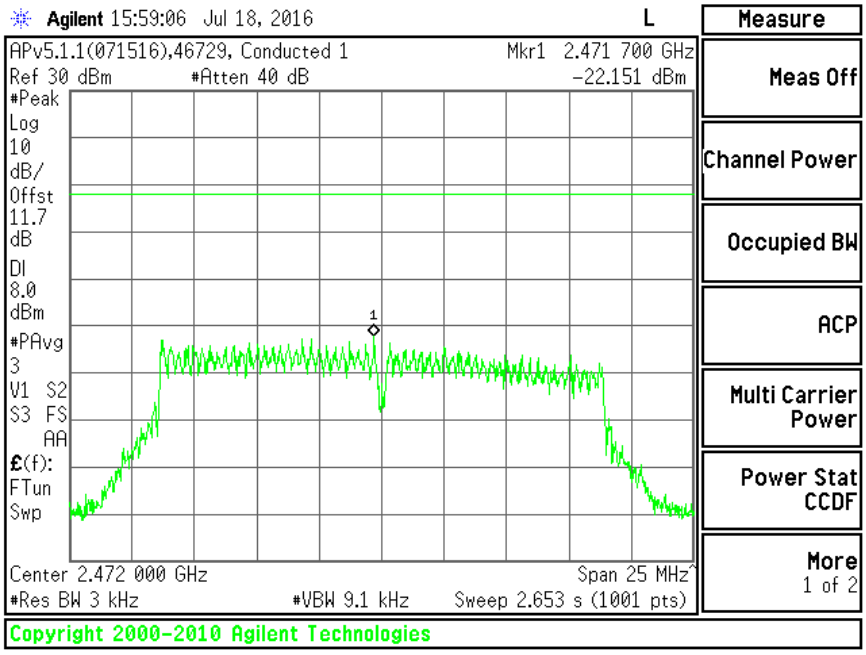
PSD, Chain 0 HIGH CH 13



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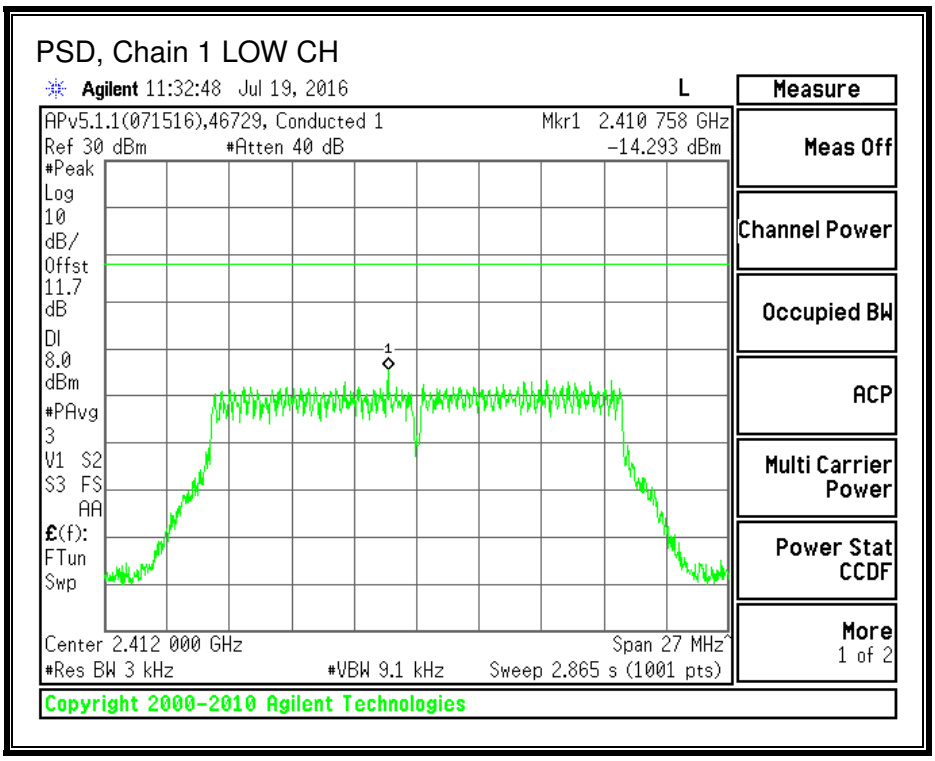
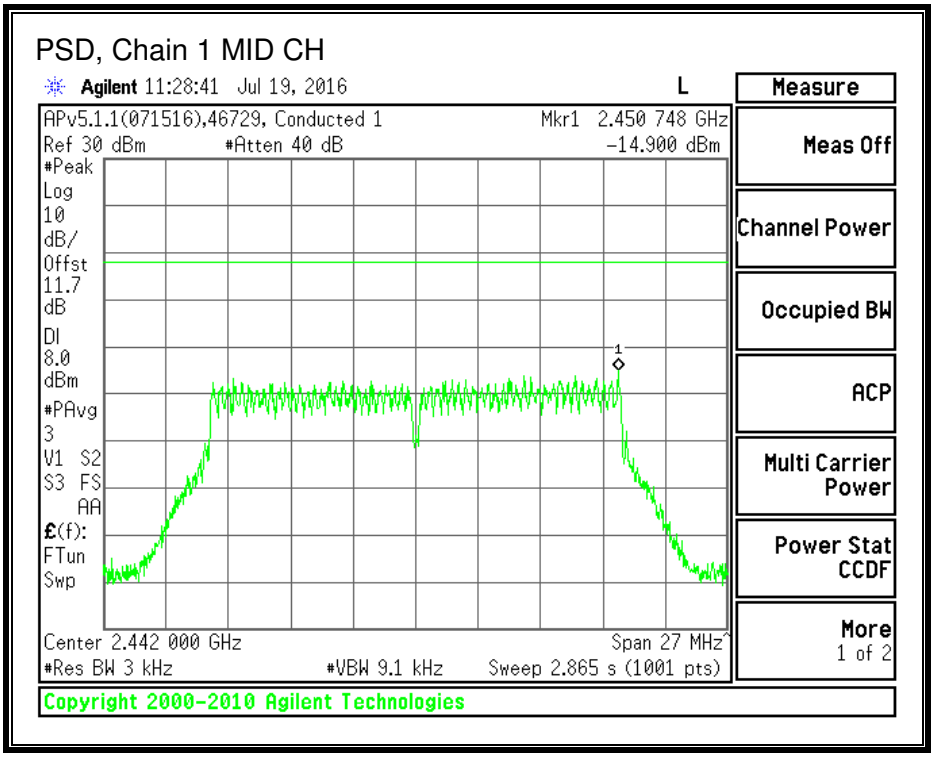
PSD, Chain 1





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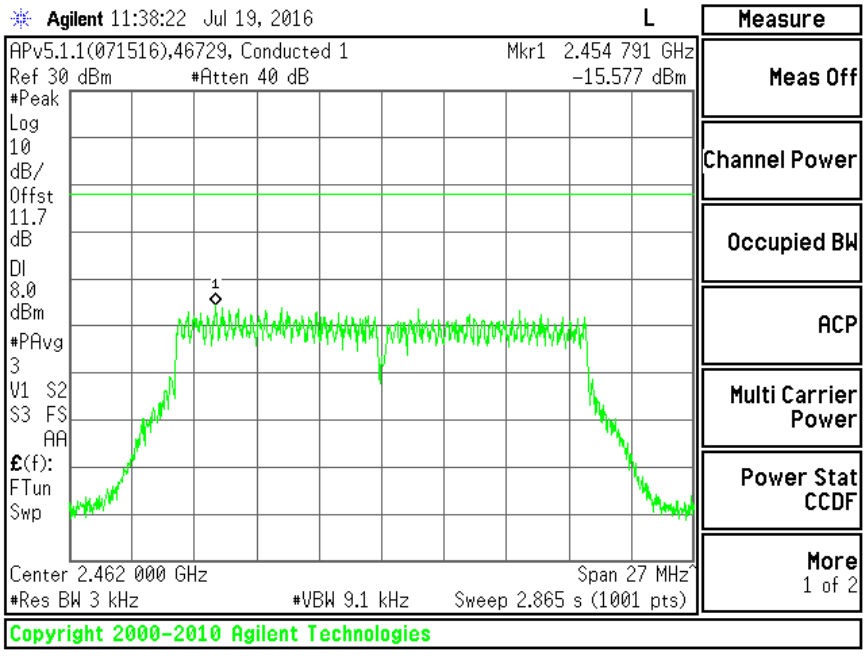
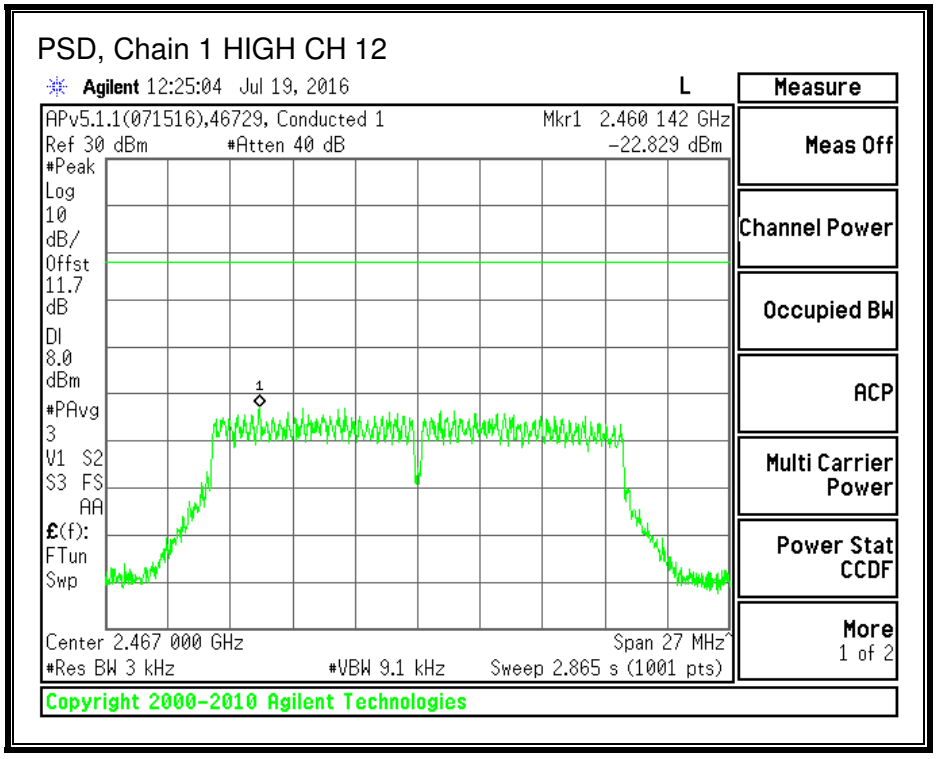
PSD, Chain 1 HIGH CH 11



PSD, Chain 1 HIGH CH 12



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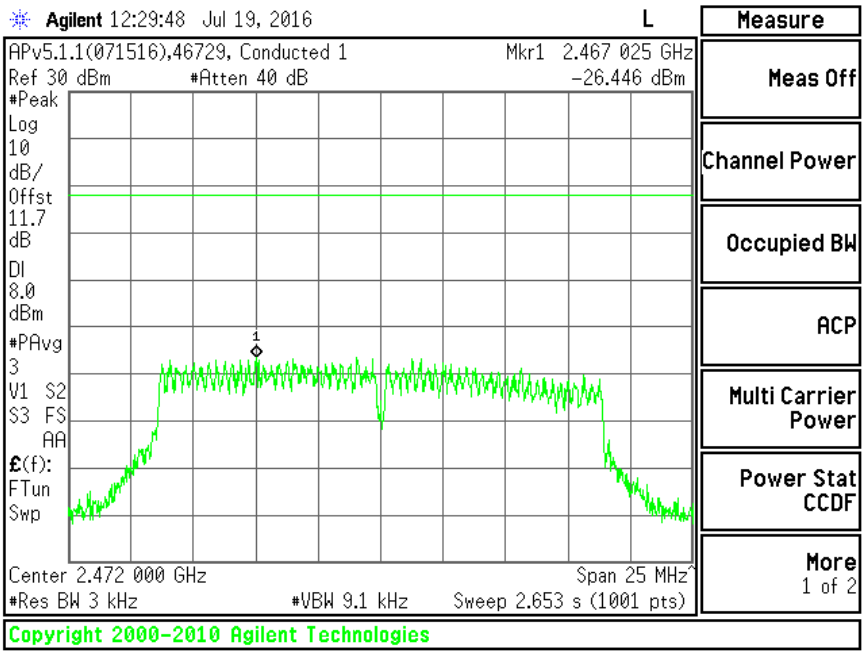
PSD, Chain 1 HIGH CH 13



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8.4.4. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST INFORMATION

Date: 2016-07-18
Tester: Ron Reichard

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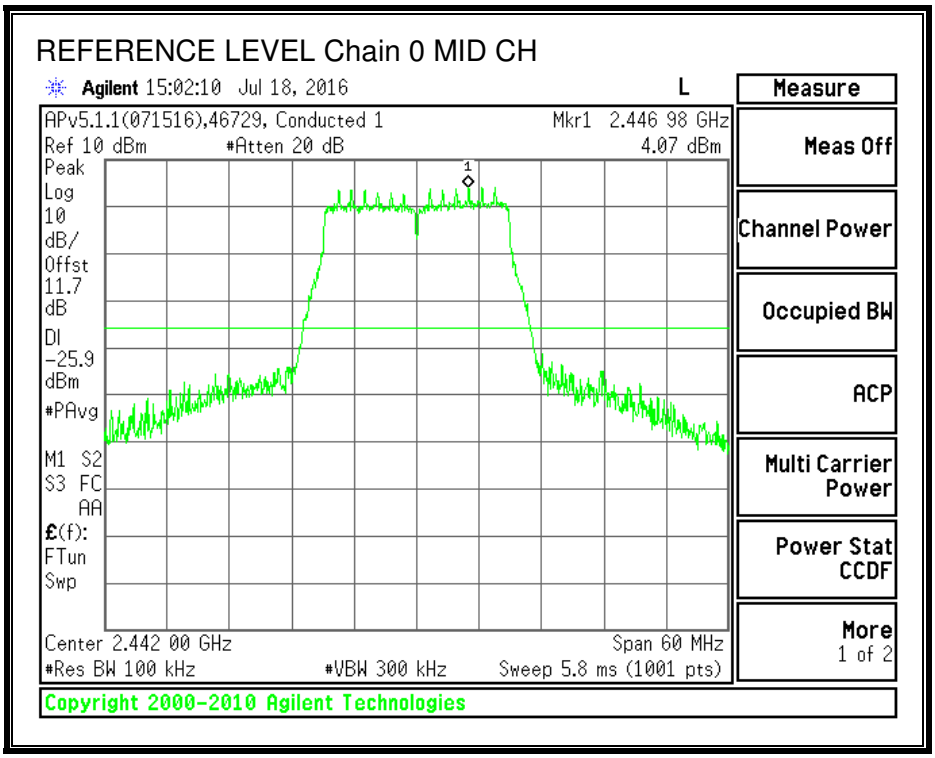
RESULTS
IN-BAND REFERENCE LEVEL, Chain 0



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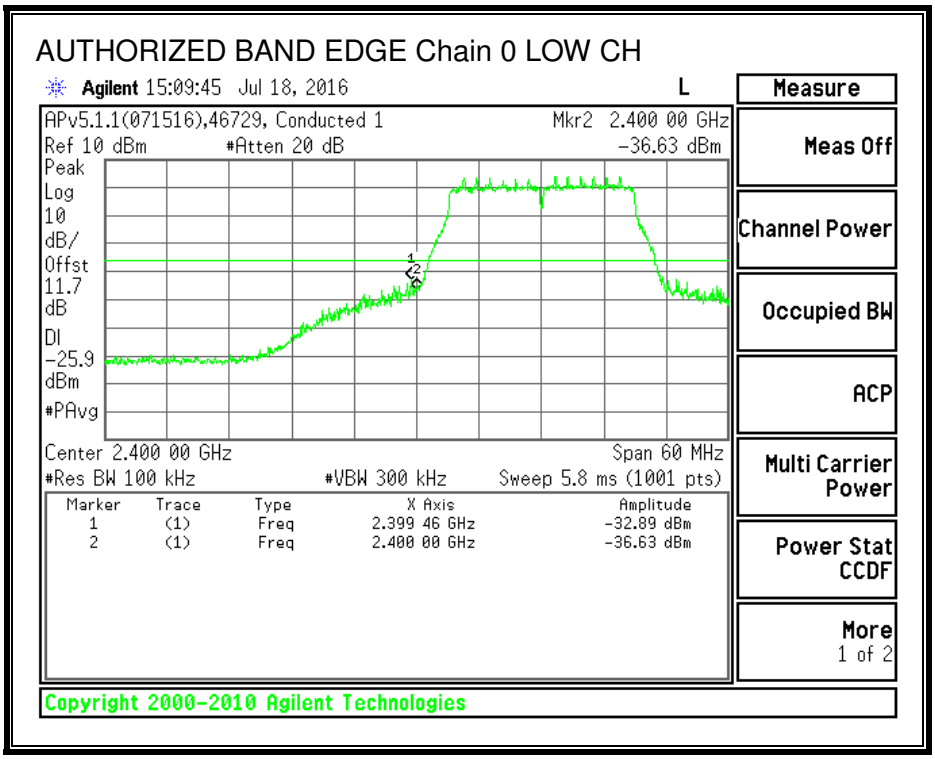
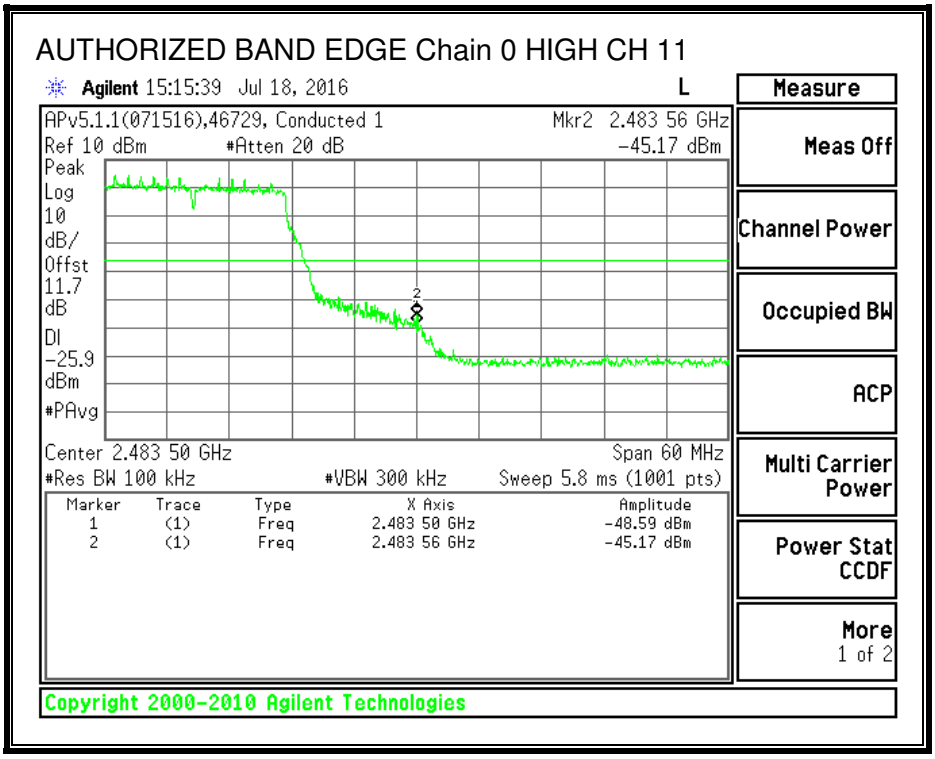
LOW CHANNEL BANDEDGE, Chain 0



HIGH CHANNEL BANDEDGE, Chain 0



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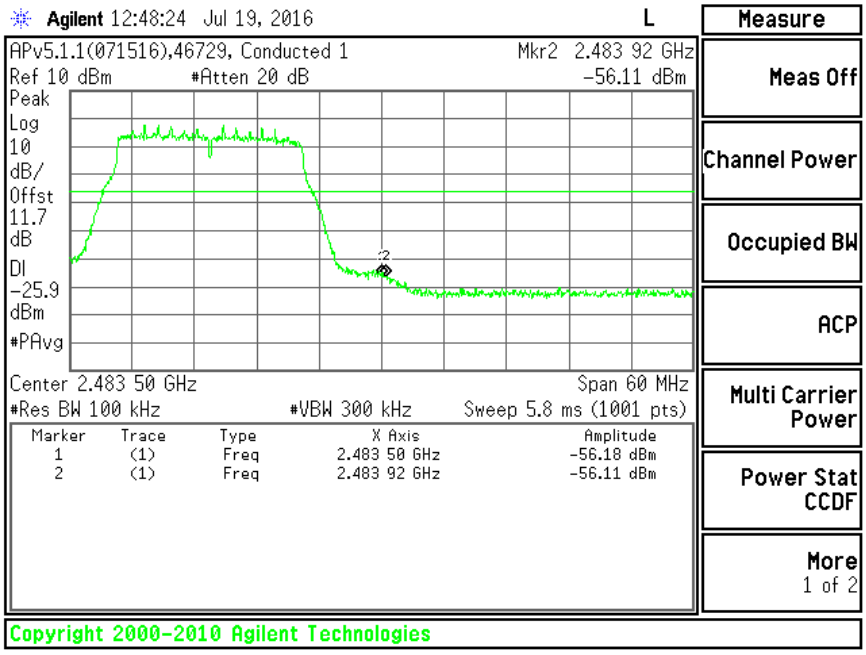
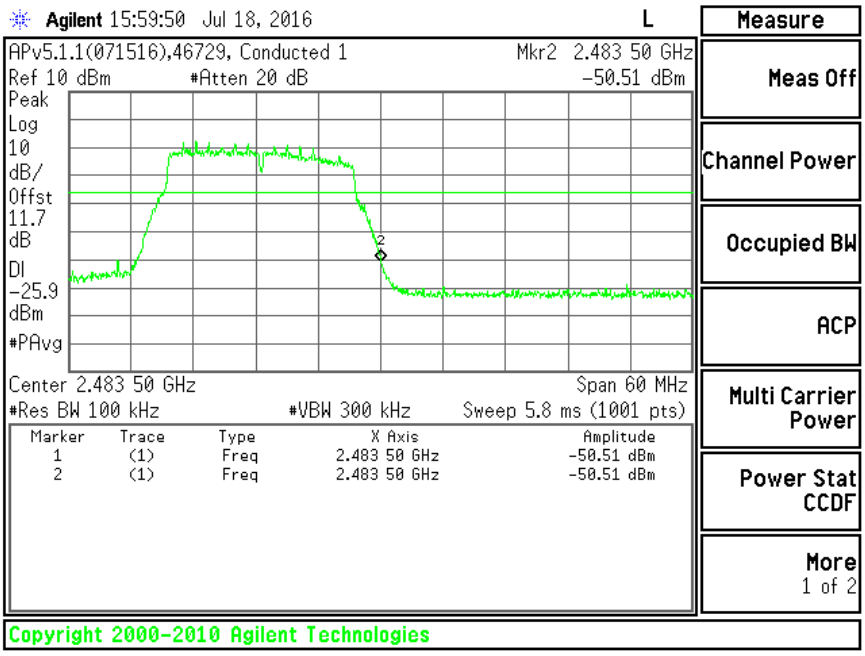
AUTHORIZED BAND EDGE Chain 0 HIGH CH 12



AUTHORIZED BAND EDGE Chain 0 HIGH CH 13



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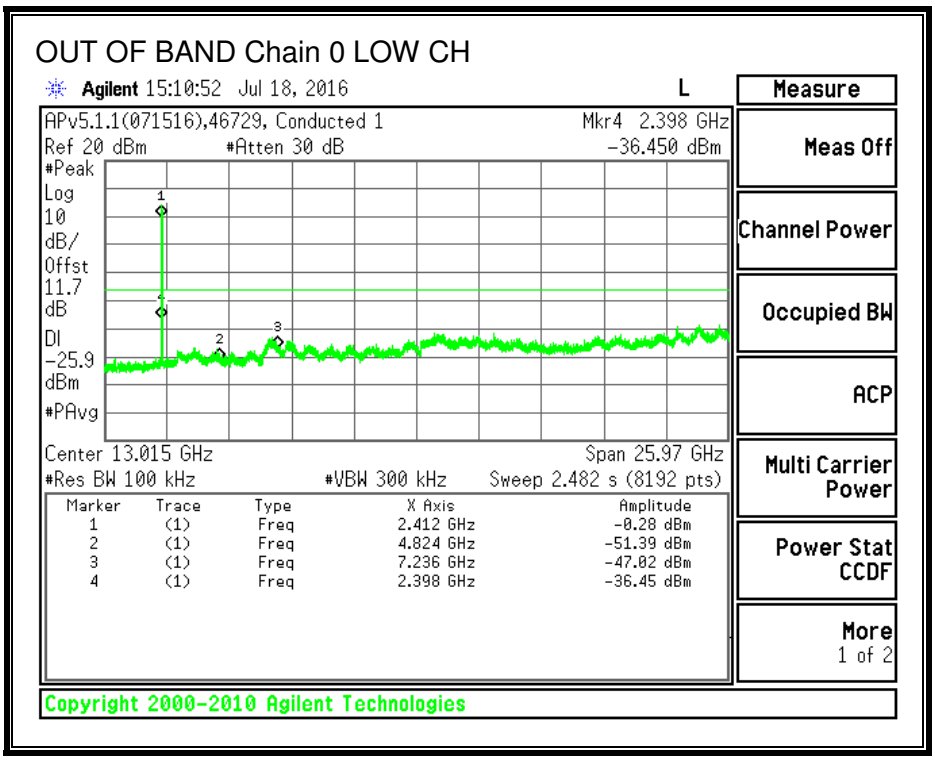
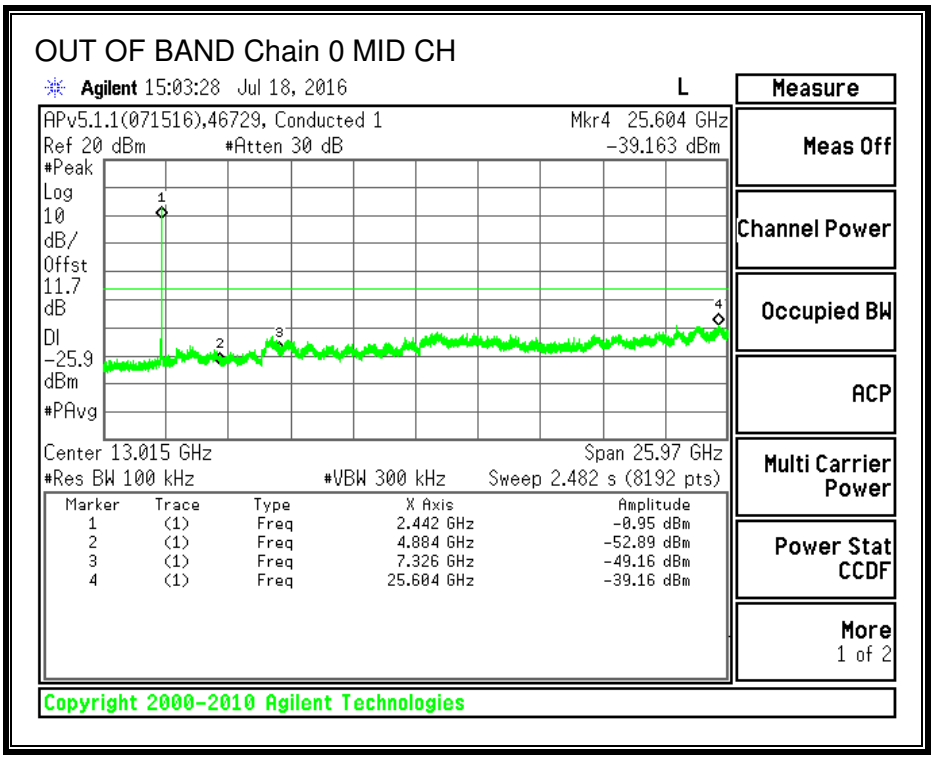
OUT-OF-BAND EMISSIONS, Chain 0





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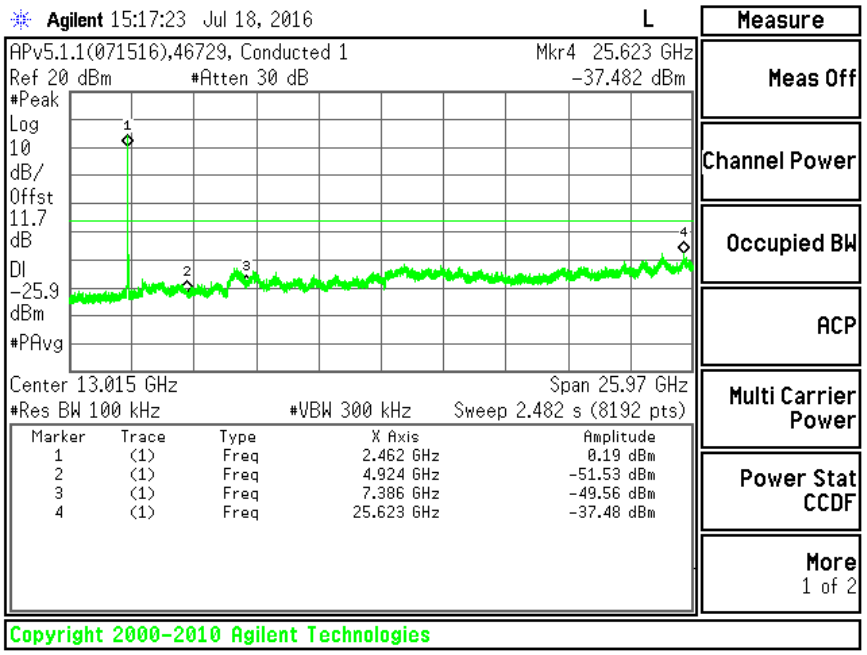
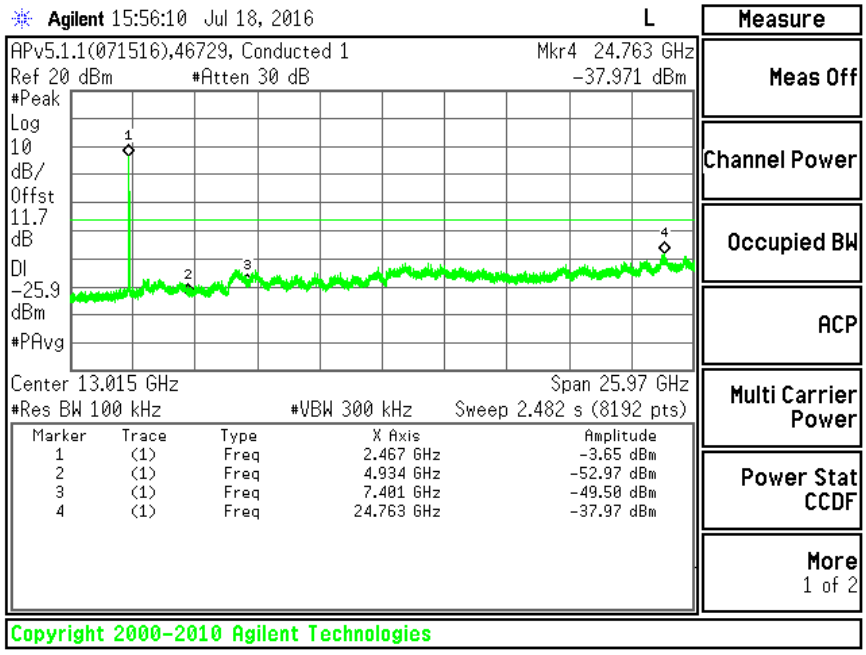
OUT OF BAND Chain 0 HIGH CH 11



OUT OF BAND Chain 0 HIGH CH 12



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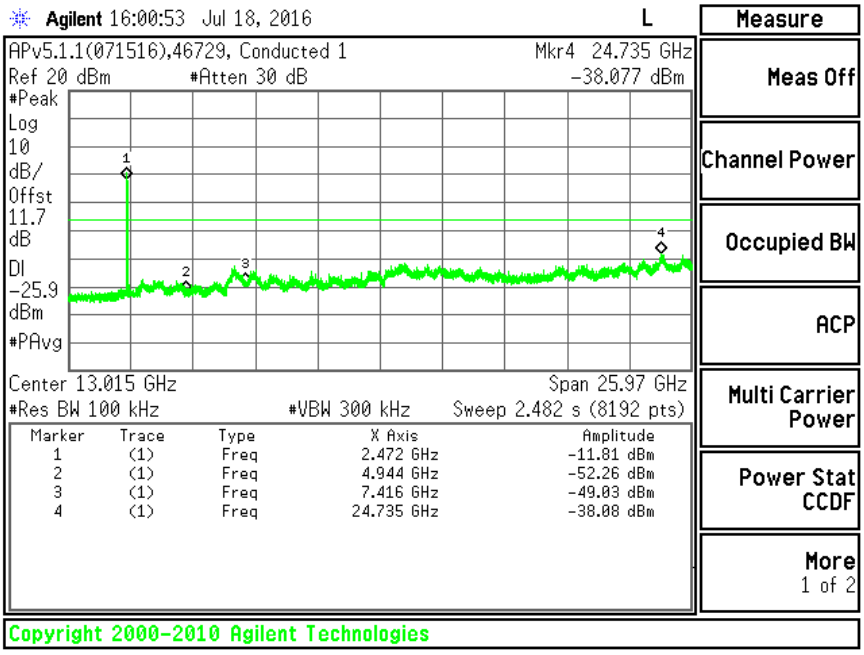
OUT OF BAND Chain 0 HIGH CH 13



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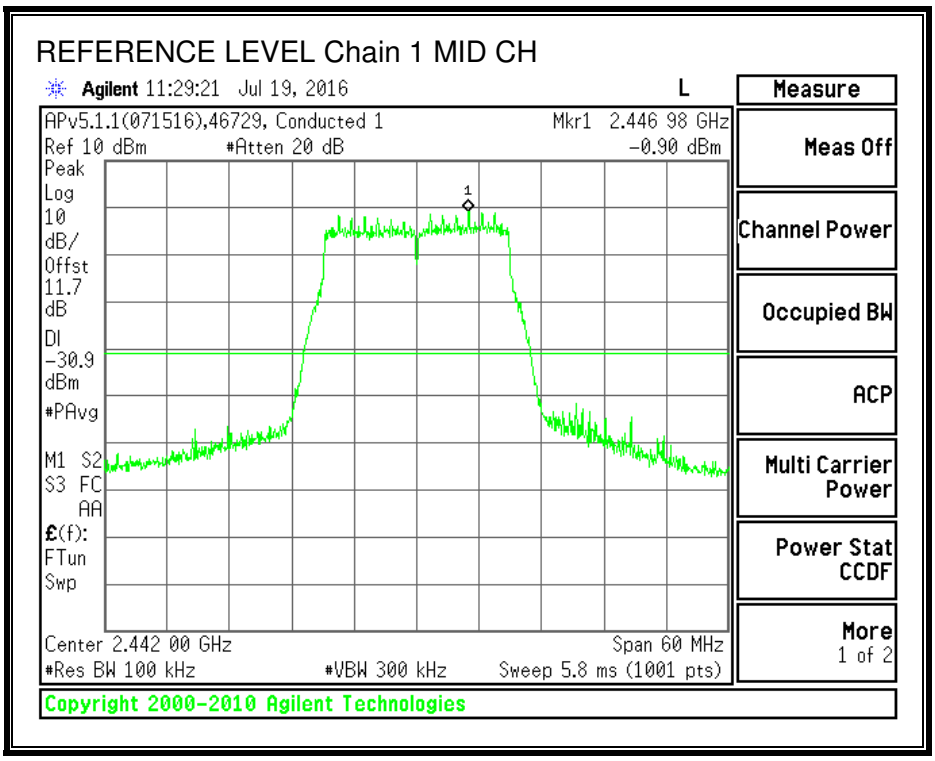
IN-BAND REFERENCE LEVEL, Chain 1



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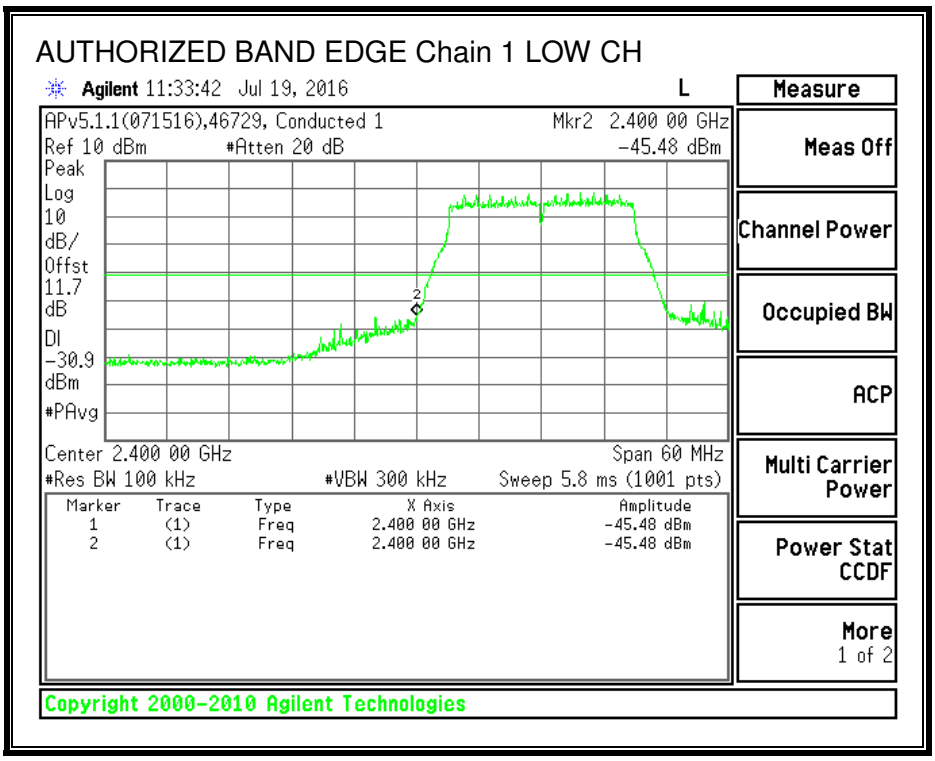
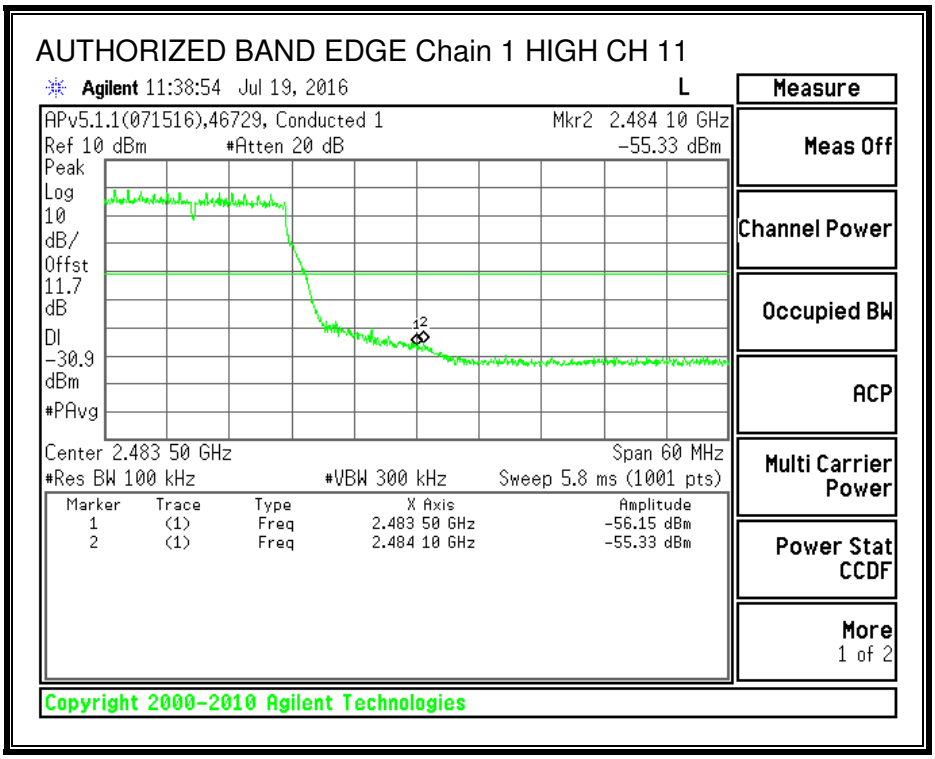
LOW CHANNEL BANDEDGE, Chain 1



HIGH CHANNEL BANDEDGE, Chain 1



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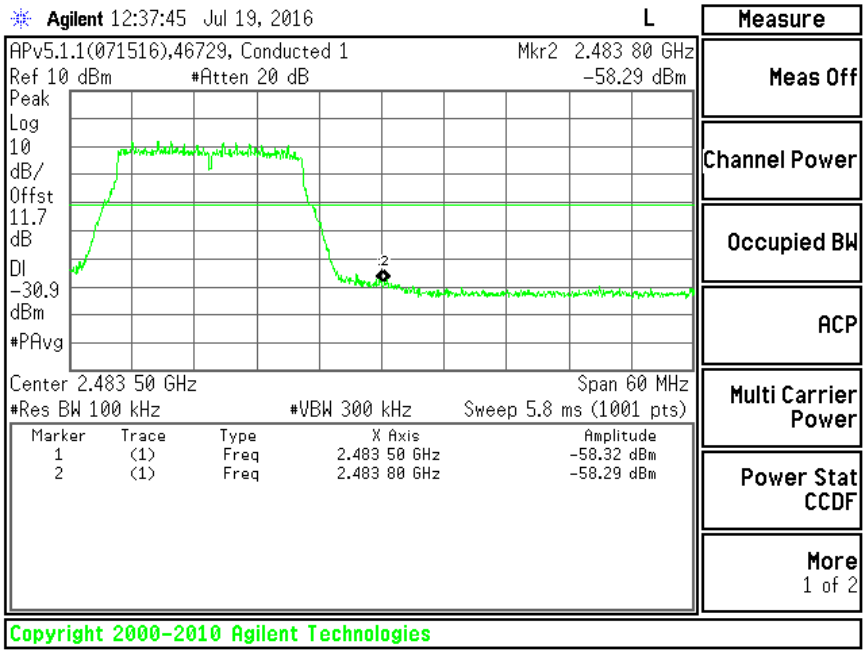
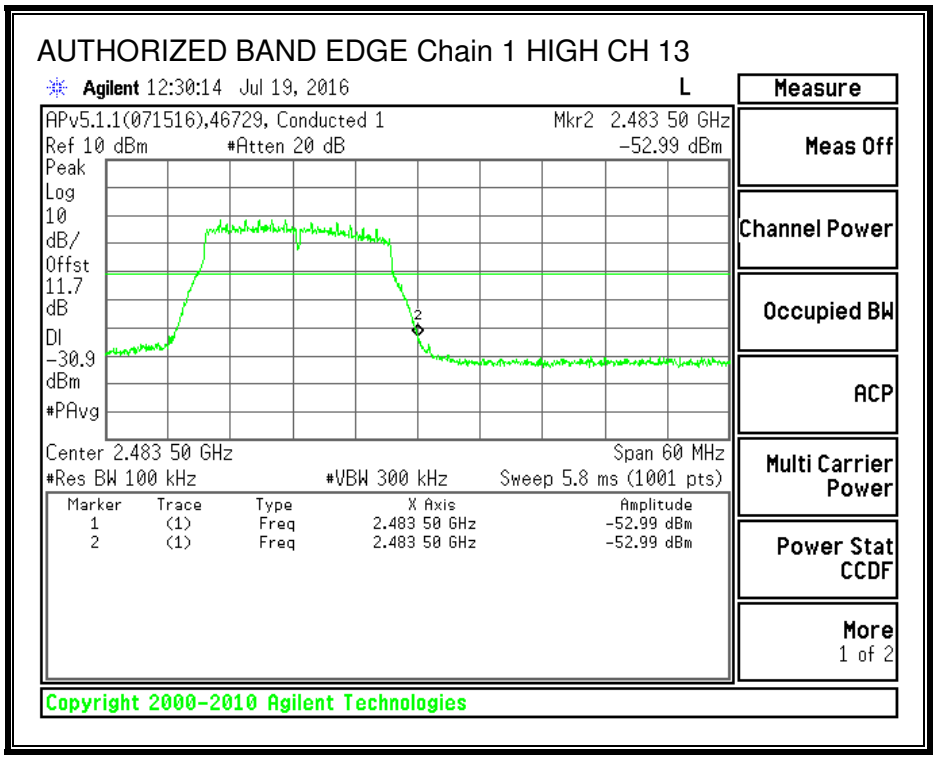
AUTHORIZED BAND EDGE Chain 1 HIGH CH 12



AUTHORIZED BAND EDGE Chain 1 HIGH CH 13



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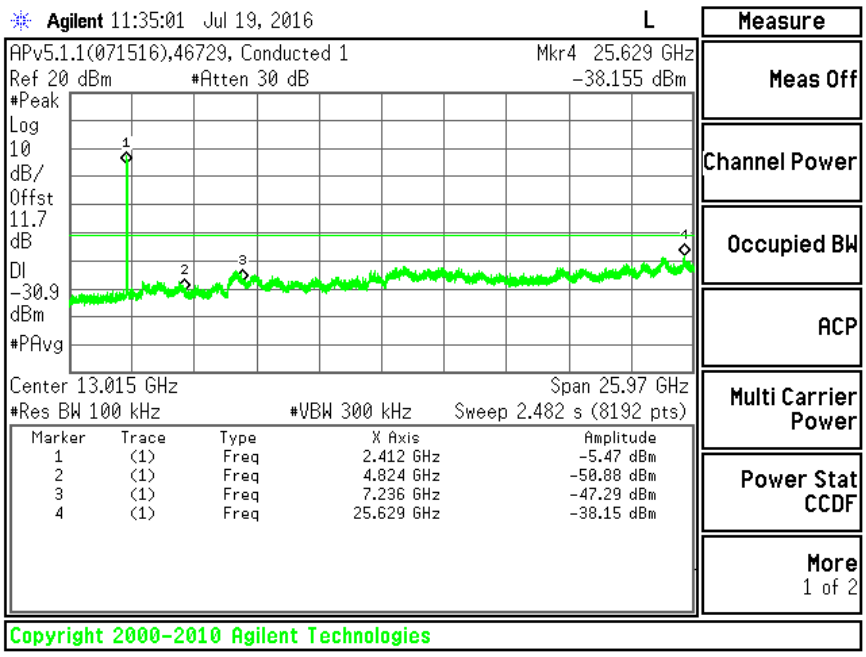
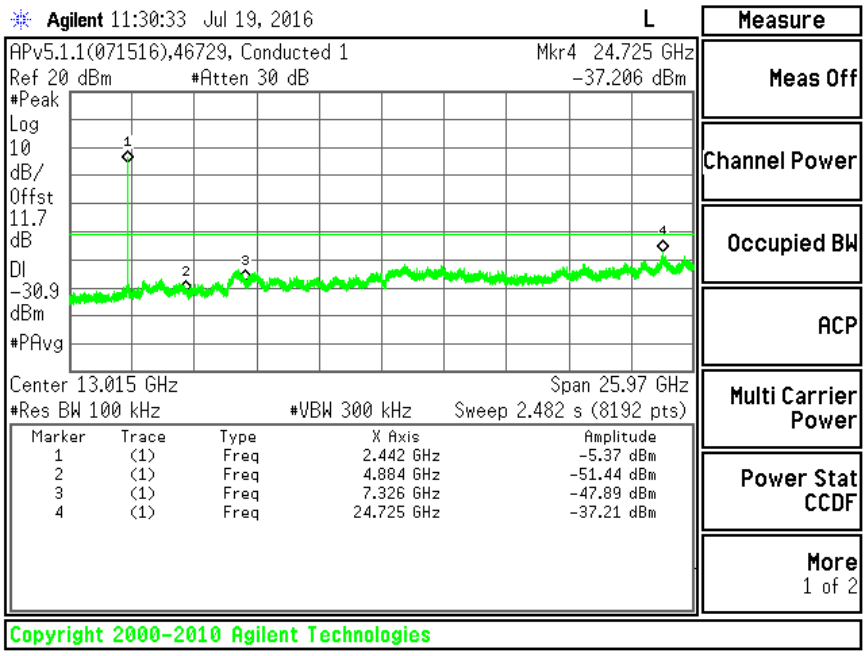
OUT-OF-BAND EMISSIONS, Chain 1

OUT OF BAND Chain 1 LOW CH



OUT OF BAND Chain 1 MID CH



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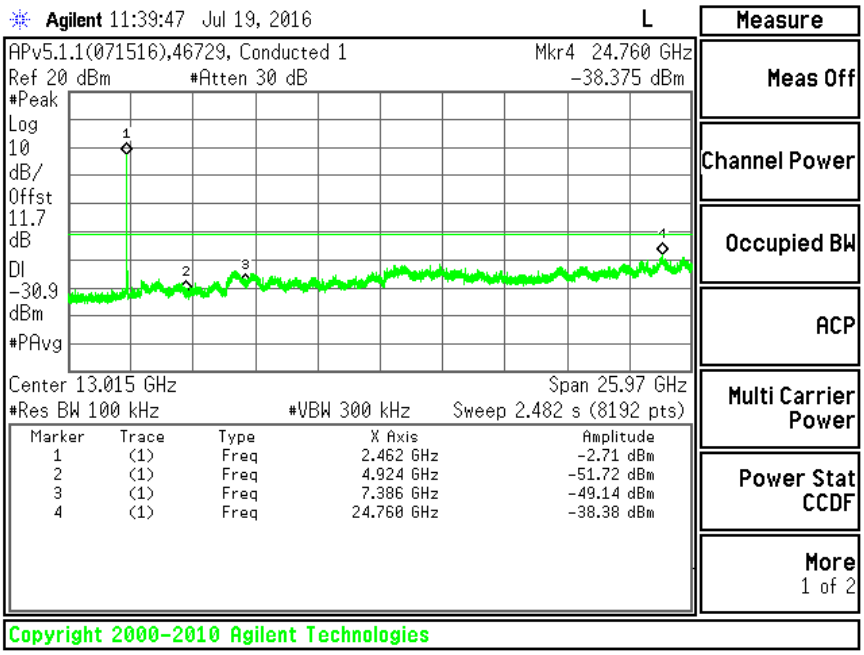
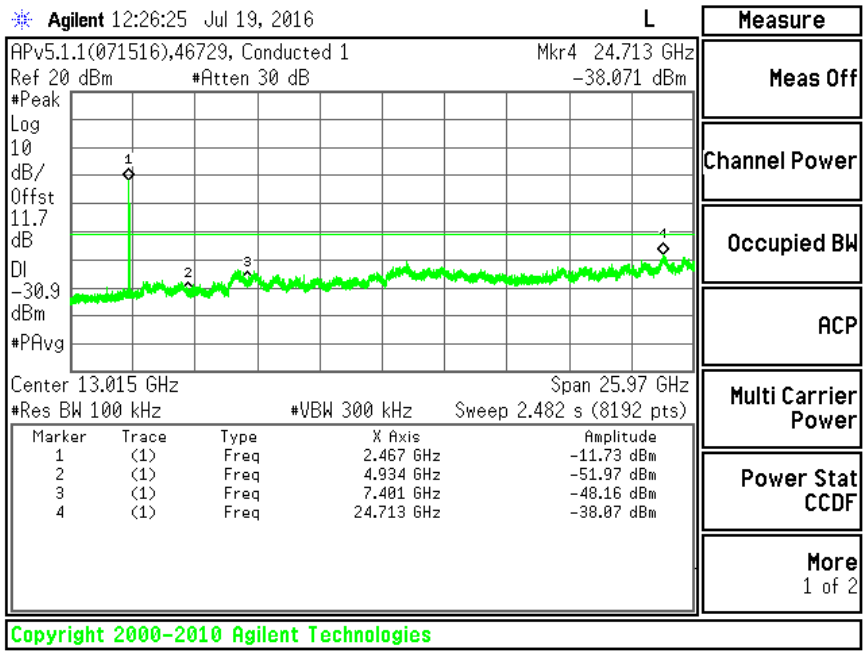
OUT OF BAND Chain 1 HIGH CH 11



OUT OF BAND Chain 1 HIGH CH 12



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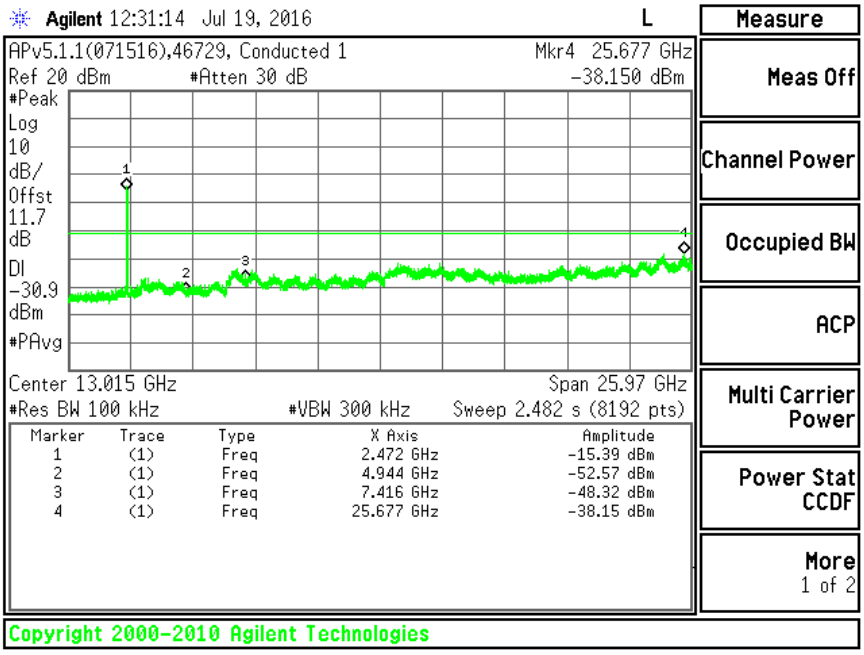
OUT OF BAND Chain 1 HIGH CH 13



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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

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
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
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 measurements and 1.5 m above the ground plane for above 1GHz measurements. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements for the 30-1000 MHz range, 9 kHz for peak detection measurements or 9 kHz for quasi-peak detection measurements for the 0.15-30 MHz range and 200 Hz for peak detection measurements or 200 Hz for quasi-peak detection measurements for the 9 to 150 kHz range. Peak detection is used unless otherwise noted as quasi-peak.

For peak measurements above 1 GHz, the resolution bandwidth is set to 1 MHz and the video bandwidth is set to 3 MHz. For average measurements above 1GHz, the resolution bandwidth and video bandwidth are set as described in ANSI C63.10:2013 for the applicable measurement. For this evaluation, RMS Power Averaging was used and the resolution/video bandwidth settings were 1MHz/3MHz.

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

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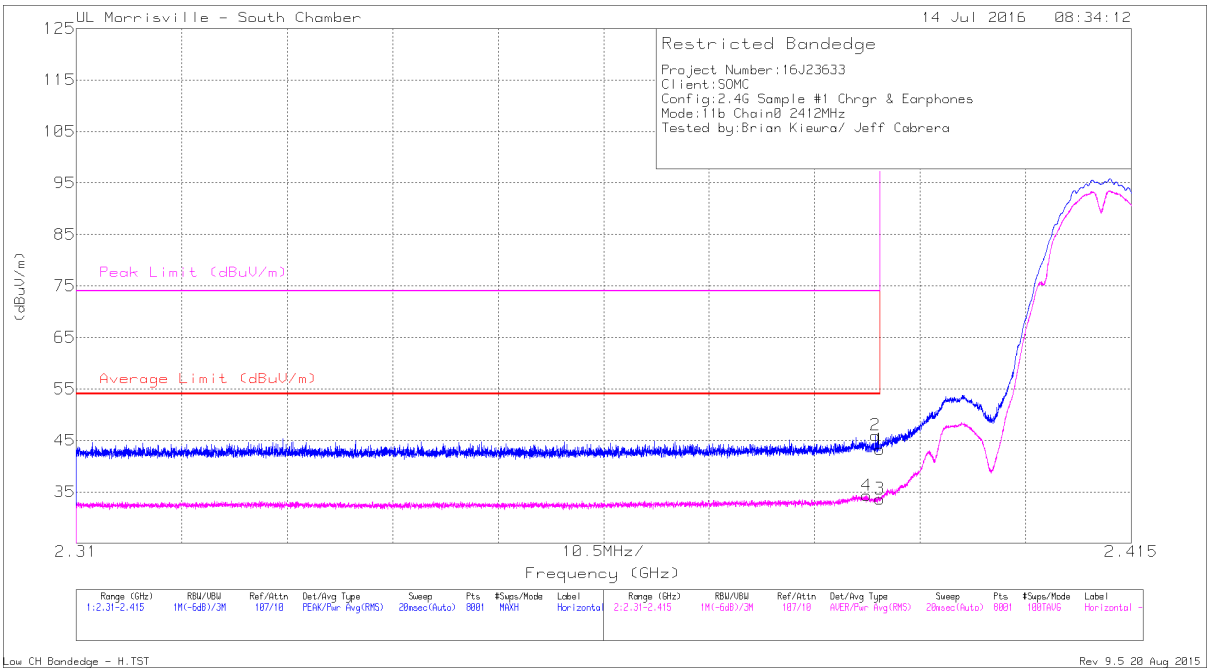
9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) Chain 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 2.39	35.24	Pk	32.2	-24.2	0	43.24	-	-	74	-30.76	264	111	H
2	* 2.39	37.89	Pk	32.2	-24.1	0	45.99	-	-	74	-28.01	264	111	H
3	* 2.39	25.64	RMS	32.2	-24.2	0	33.64	54	-20.36	-	-	264	111	H
4	* 2.389	26.22	RMS	32.2	-24.1	0	34.32	54	-19.68	-	-	264	111	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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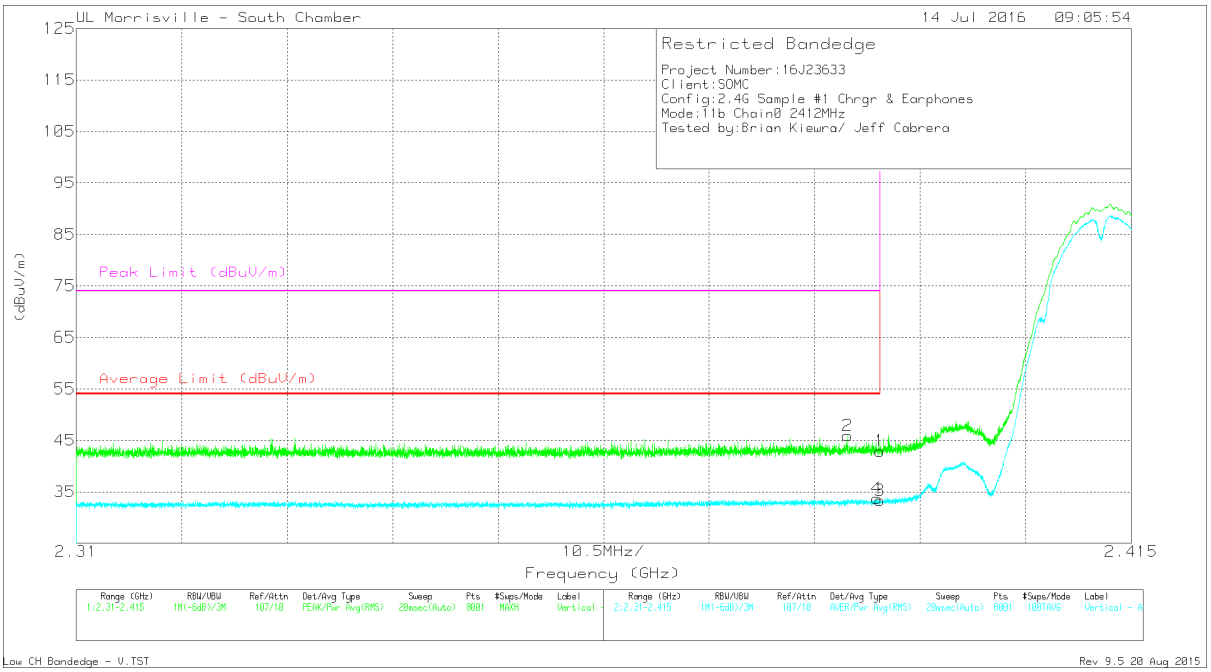

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	34.93	Pk	32.2	-24.2	0	42.93	-	-	74	-31.07	293	337	V
2	* 2.387	37.8	Pk	32.2	-24.1	0	45.9	-	-	74	-28.1	293	337	V
3	* 2.39	25.33	RMS	32.2	-24.2	0	33.33	54	-20.67	-	-	293	337	V
4	* 2.39	25.59	RMS	32.2	-24.1	0	33.69	54	-20.31	-	-	293	337	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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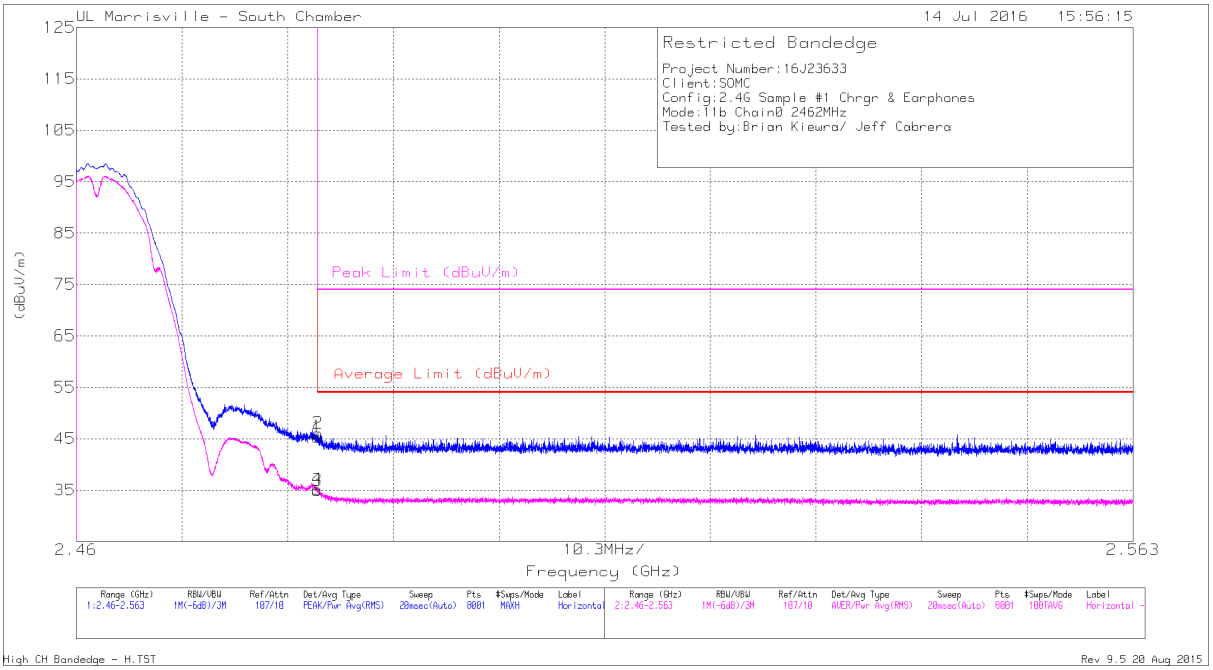
AUTHORIZED BANDEDGE (HIGH CHANNEL CH 11) Chain 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	37.65	Pk	32.4	-24.7	0	45.35	-	-	74	-28.65	333	349	H
2	* 2.484	38.37	Pk	32.4	-24.7	0	46.07	-	-	74	-27.93	333	349	H
3	* 2.484	27.26	RMS	32.4	-24.7	0	34.96	54	-19.04	-	-	333	349	H
4	* 2.484	27.48	RMS	32.4	-24.7	0	35.18	54	-18.82	-	-	333	349	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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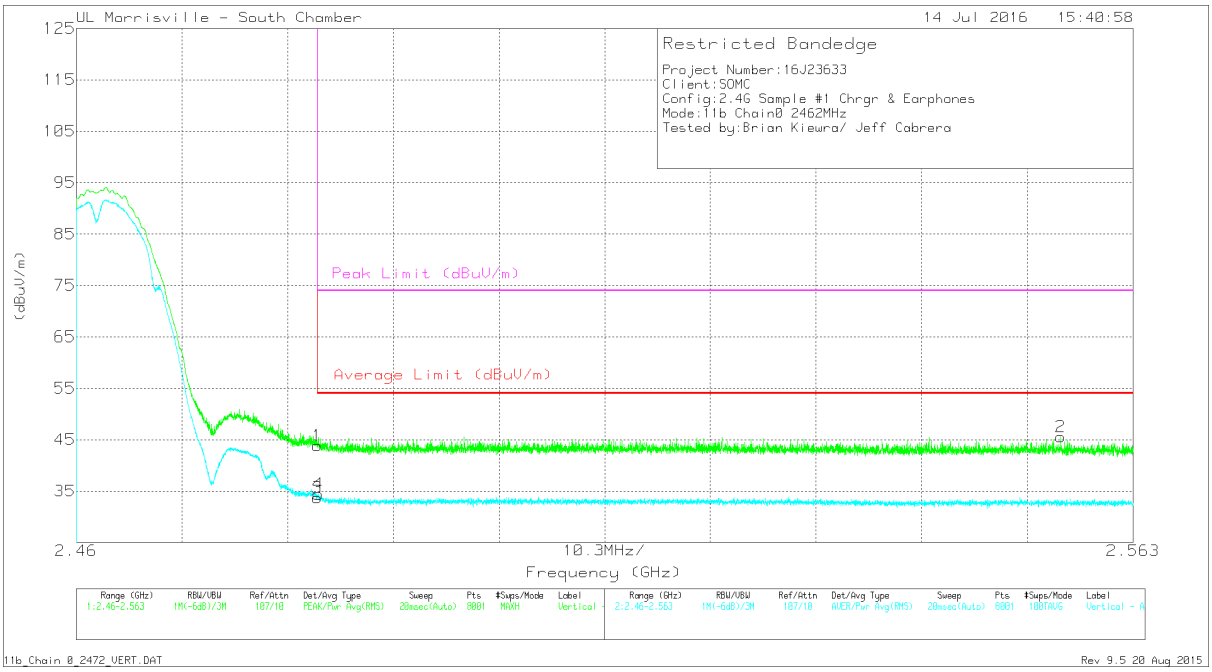

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.16	Pk	32.4	-24.7	0	43.86	-	-	74	-30.14	14	357	V
3	* 2.484	26	RMS	32.4	-24.7	0	33.7	54	-20.3	-	-	14	357	V
4	* 2.484	26.7	RMS	32.4	-24.7	0	34.4	54	-19.6	-	-	14	357	V
2	2.556	38.27	Pk	32.4	-25.1	0	45.57	-	-	74	-28.43	14	357	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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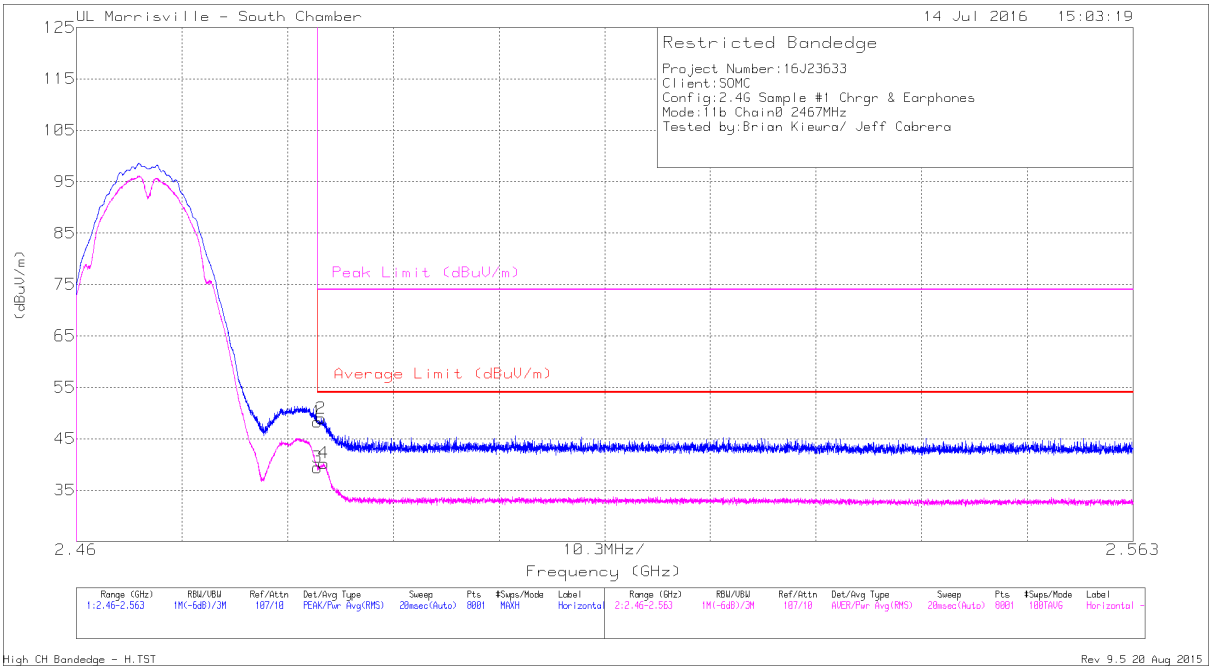
AUTHORIZED BANDEDGE (HIGH CHANNEL CH 12) Chain 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	40.59	Pk	32.4	-24.7	0	48.29	-	-	74	-25.71	333	353	H
2	* 2.484	41.28	Pk	32.4	-24.7	0	48.98	-	-	74	-25.02	333	353	H
3	* 2.484	31.7	RMS	32.4	-24.7	0	39.4	54	-14.6	-	-	333	353	H
4	* 2.484	32.55	RMS	32.4	-24.7	0	40.25	54	-13.75	-	-	333	353	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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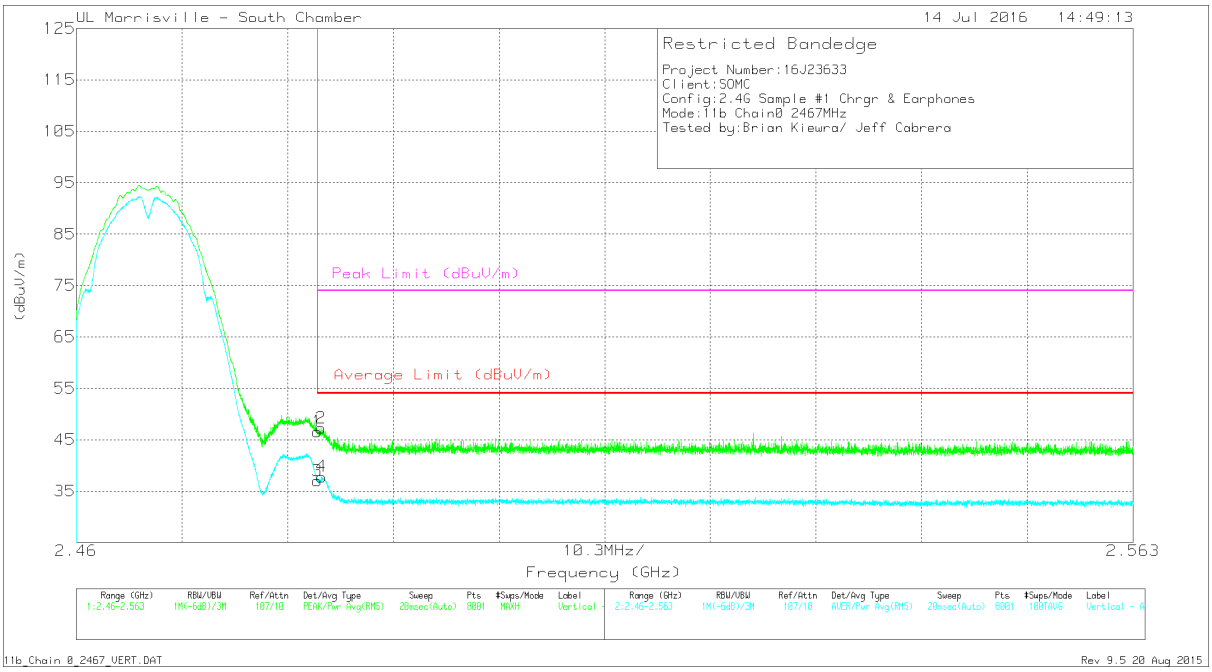

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.9	Pk	32.4	-24.7	0	46.6	-	-	74	-27.4	8	357	V
2	* 2.484	39.57	Pk	32.4	-24.7	0	47.27	-	-	74	-26.73	8	357	V
3	* 2.484	29.31	RMS	32.4	-24.7	0	37.01	54	-16.99	-	-	8	357	V
4	* 2.484	30.1	RMS	32.4	-24.7	0	37.8	54	-16.2	-	-	8	357	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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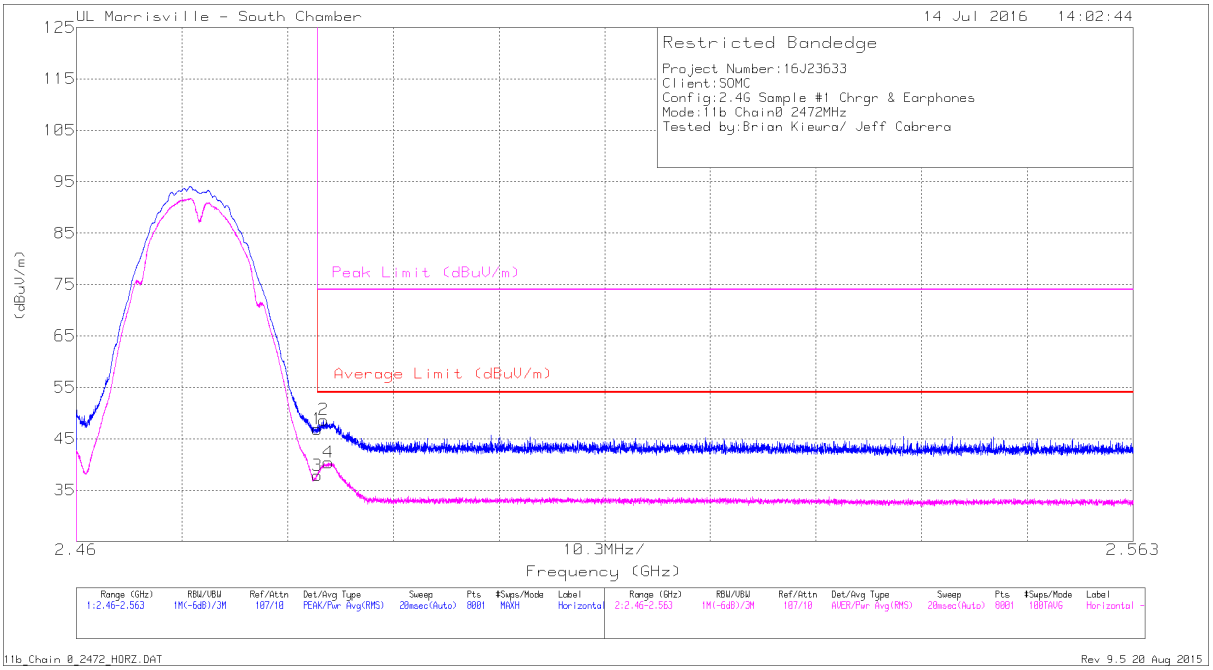
AUTHORIZED BANDEDGE (HIGH CHANNEL CH 13) Chain 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	39.16	Pk	32.4	-24.7	0	46.86	-	-	74	-27.14	330	391	H
2	* 2.484	40.98	Pk	32.4	-24.7	0	48.68	-	-	74	-25.32	330	391	H
3	* 2.484	30.04	RMS	32.4	-24.7	0	37.74	54	-16.26	-	-	330	391	H
4	* 2.485	32.57	RMS	32.4	-24.7	0	40.27	54	-13.73	-	-	330	391	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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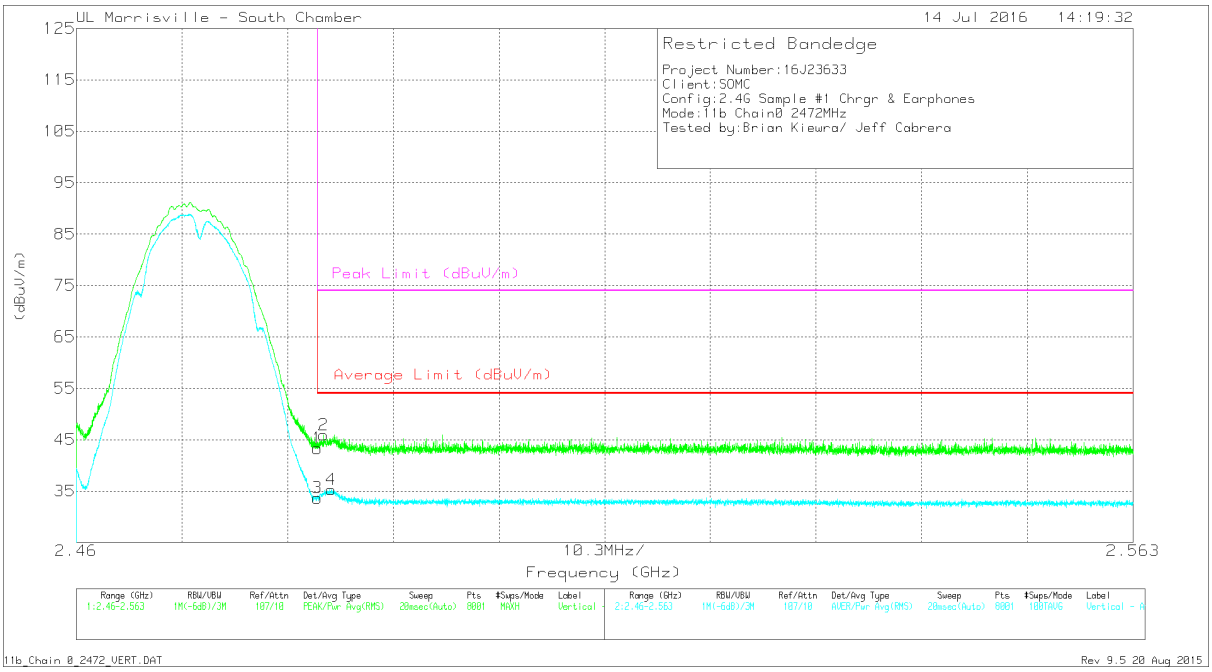

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	35.61	Pk	32.4	-24.7	0	43.31	-	-	74	-30.69	81	354	V
2	* 2.484	38.24	Pk	32.4	-24.7	0	45.94	-	-	74	-28.06	81	354	V
3	* 2.484	25.96	RMS	32.4	-24.7	0	33.66	54	-20.34	-	-	81	354	V
4	* 2.485	27.59	RMS	32.4	-24.7	0	35.29	54	-18.71	-	-	81	354	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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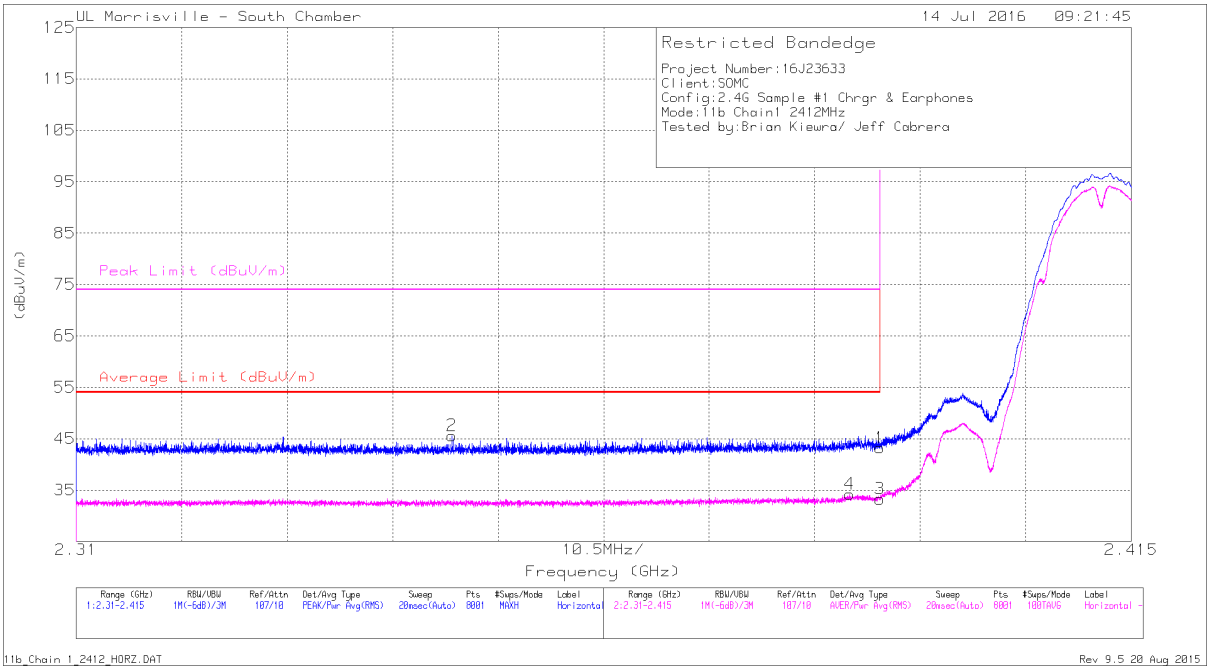
RESTRICTED BANDEDGE (LOW CHANNEL) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 2.39	35.24	Pk	32.2	-24.2	0	43.24	-	-	74	-30.76	343	324	H
2	* 2.347	37.8	Pk	31.8	-24	0	45.6	-	-	74	-28.4	343	324	H
3	* 2.39	25.3	RMS	32.2	-24.2	0	33.3	54	-20.7	-	-	343	324	H
4	* 2.387	26.12	RMS	32.2	-24.1	0	34.22	54	-19.78	-	-	343	324	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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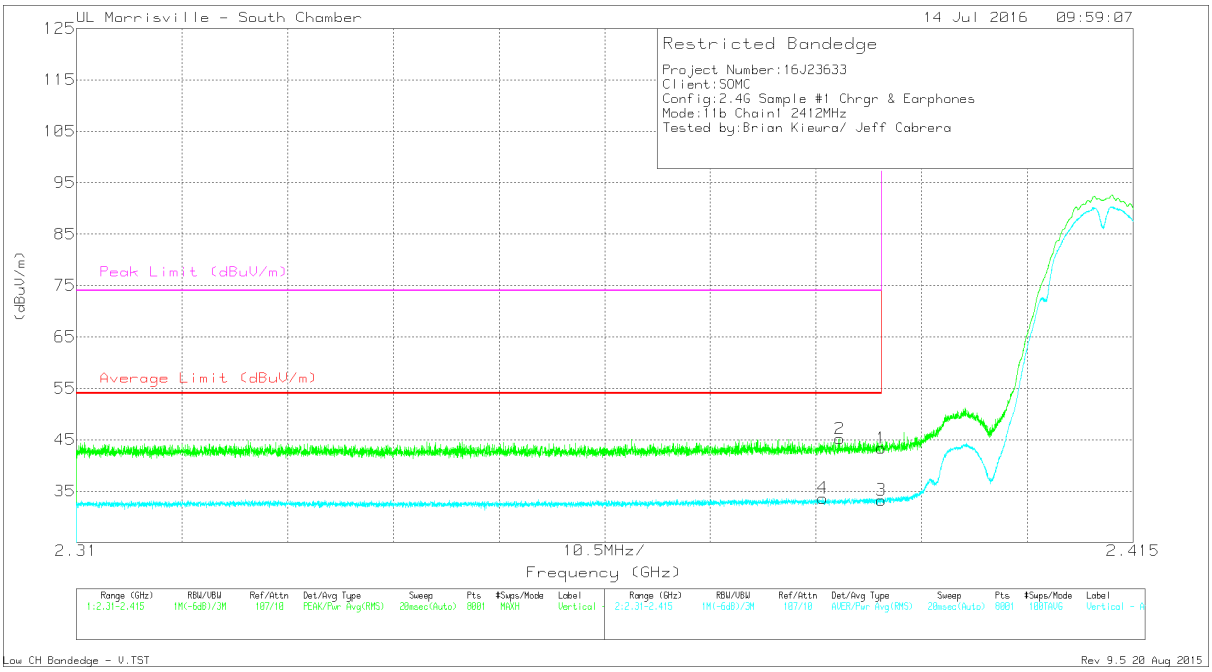

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	35.35	Pk	32.2	-24.2	0	43.35	-	-	74	-30.65	157	391	V
2	* 2.386	37.1	Pk	32.2	-24.1	0	45.2	-	-	74	-28.8	157	391	V
3	* 2.39	25.26	RMS	32.2	-24.2	0	33.26	54	-20.74	-	-	157	391	V
4	* 2.384	25.64	RMS	32.1	-24.1	0	33.64	54	-20.36	-	-	157	391	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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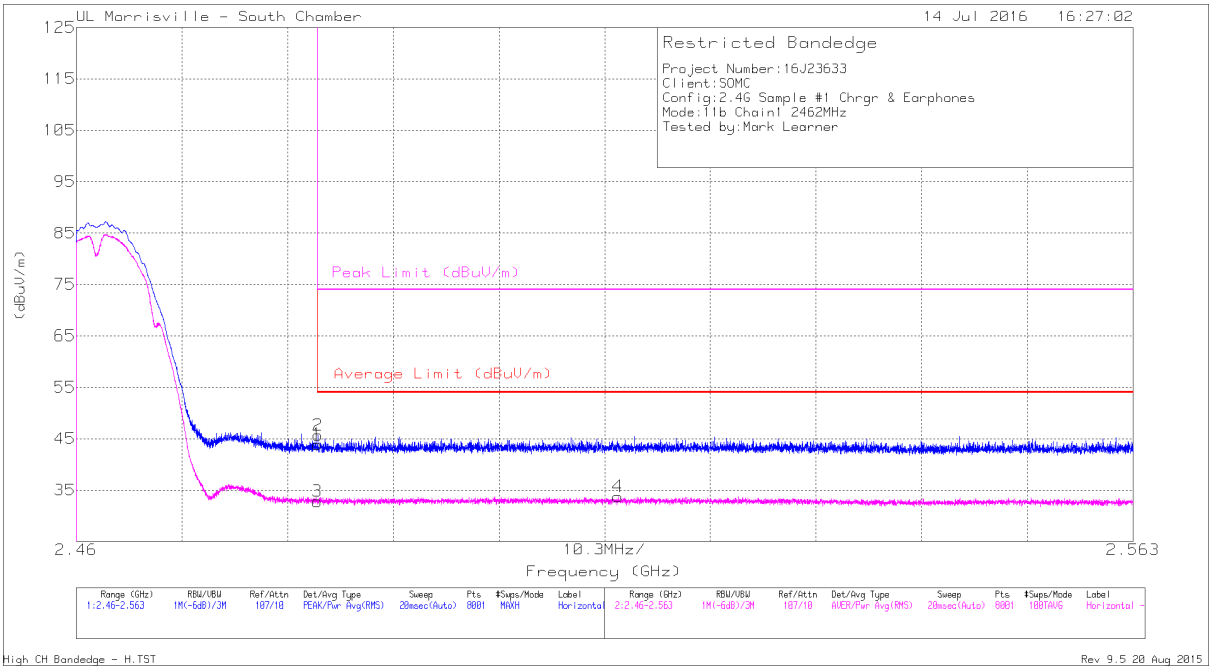
AUTHORIZED BANDEDGE (HIGH CHANNEL CH11) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	36.19	Pk	32.4	-24.7	0	43.89	-	-	74	-30.11	88	257	H
2	* 2.484	37.99	Pk	32.4	-24.7	0	45.69	-	-	74	-28.31	88	257	H
3	* 2.484	25.1	RMS	32.4	-24.7	0	32.8	54	-21.2	-	-	88	257	H
4	2.513	26.13	RMS	32.5	-24.9	0	33.73	54	-20.27	-	-	88	257	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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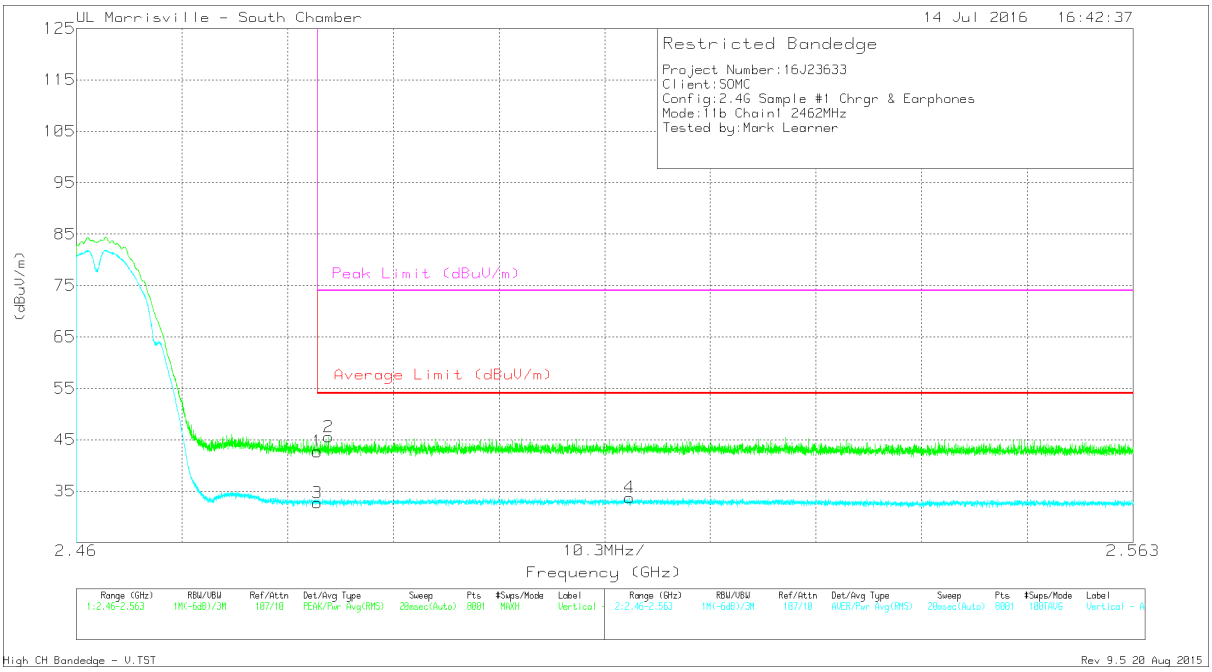

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	35	Pk	32.4	-24.7	0	42.7	-	-	74	-31.3	33	287	V
2	* 2.485	37.84	Pk	32.4	-24.7	0	45.54	-	-	74	-28.46	33	287	V
3	* 2.484	25.01	RMS	32.4	-24.7	0	32.71	54	-21.29	-	-	33	287	V
4	2.514	26.15	RMS	32.5	-24.9	0	33.75	54	-20.25	-	-	33	287	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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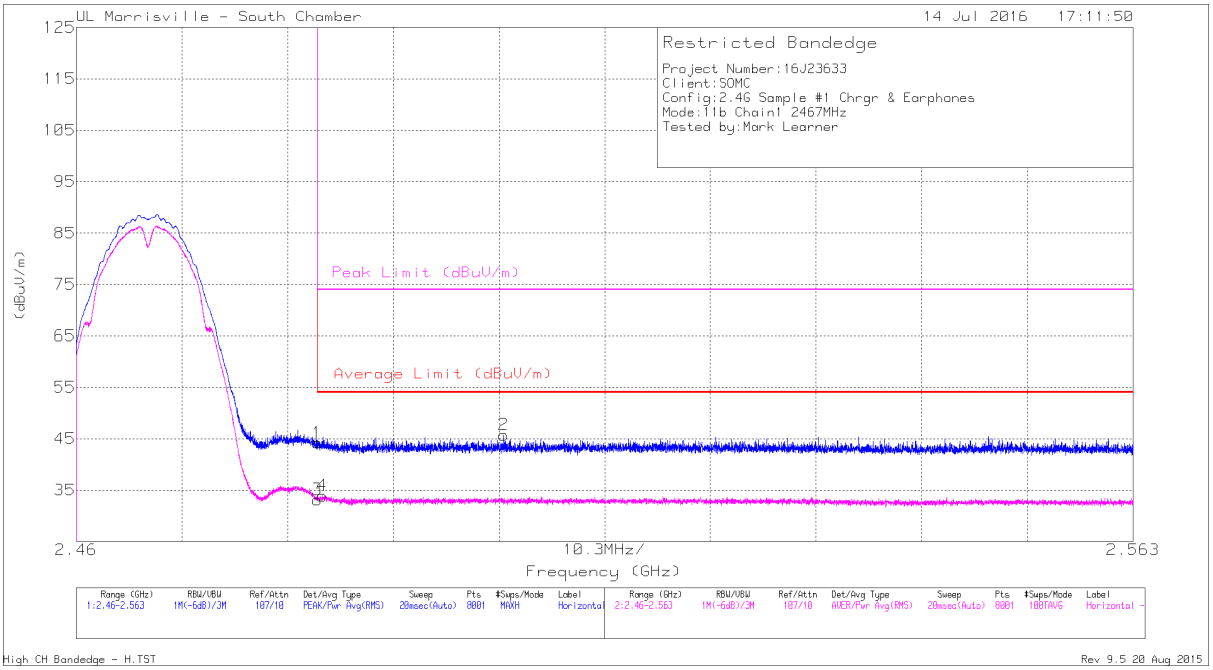
AUTHORIZED BANDEDGE (HIGH CHANNEL CH12) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	36.51	Pk	32.4	-24.7	0	44.21	-	-	74	-29.79	89	105	H
3	* 2.484	25.45	RMS	32.4	-24.7	0	33.15	54	-20.85	-	-	89	105	H
4	* 2.484	26.22	RMS	32.4	-24.7	0	33.92	54	-20.08	-	-	89	105	H
2	2.502	38.05	Pk	32.5	-24.8	0	45.75	-	-	74	-28.25	89	105	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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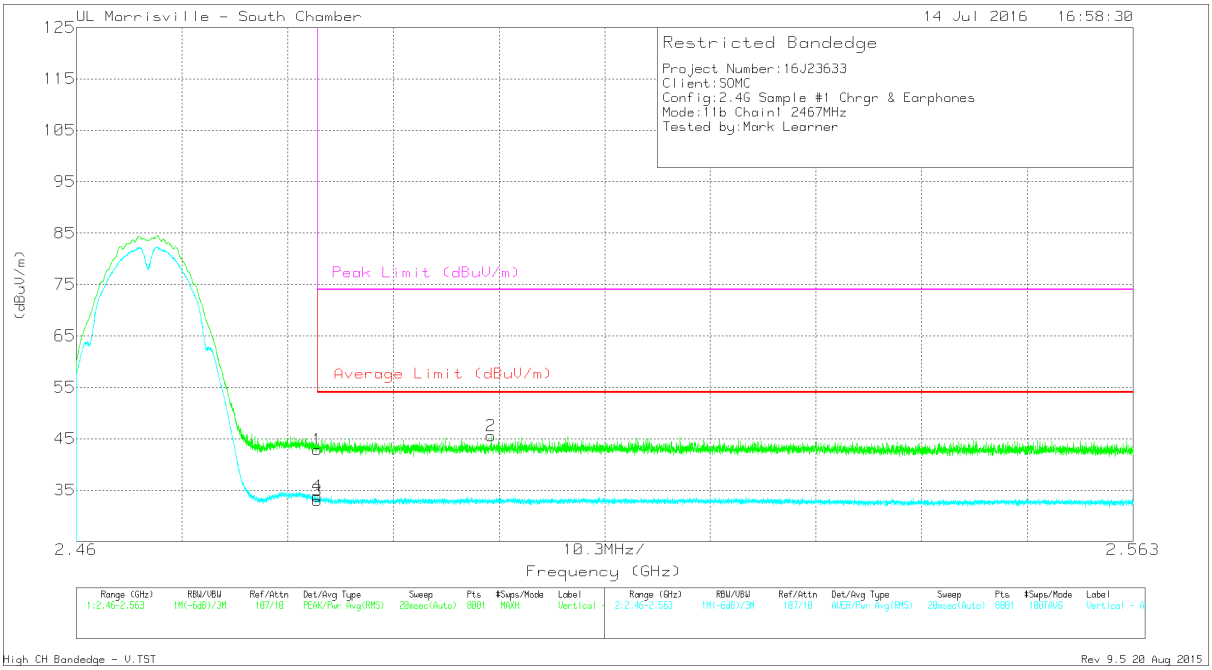

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	35.17	Pk	32.4	-24.7	0	42.87	-	-	74	-31.13	32	283	V
3	* 2.484	25.27	RMS	32.4	-24.7	0	32.97	54	-21.03	-	-	32	283	V
4	* 2.484	26.14	RMS	32.4	-24.7	0	33.84	54	-20.16	-	-	32	283	V
2	2.5	37.83	Pk	32.5	-24.8	0	45.53	-	-	74	-28.47	32	283	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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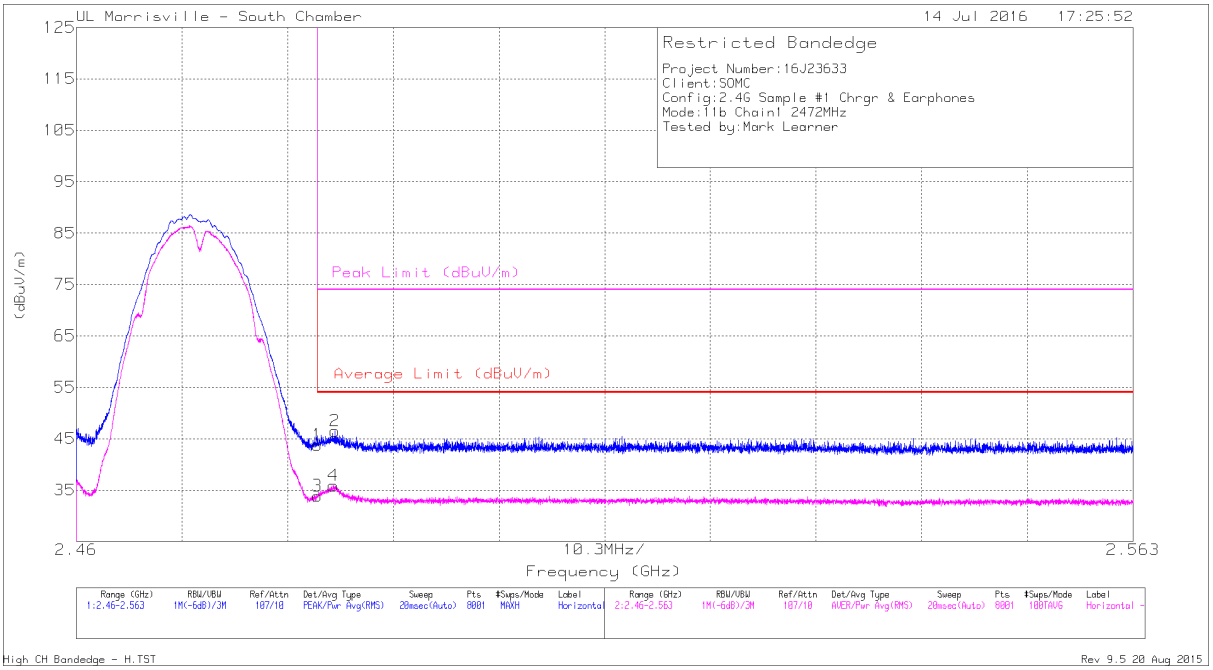
AUTHORIZED BANDEDGE (HIGH CHANNEL CH13) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	36.06	Pk	32.4	-24.7	0	43.76	-	-	74	-30.24	90	103	H
2	* 2.485	38.79	Pk	32.4	-24.7	0	46.49	-	-	74	-27.51	90	103	H
3	* 2.484	26.15	RMS	32.4	-24.7	0	33.85	54	-20.15	-	-	90	103	H
4	* 2.485	28.17	RMS	32.4	-24.7	0	35.87	54	-18.13	-	-	90	103	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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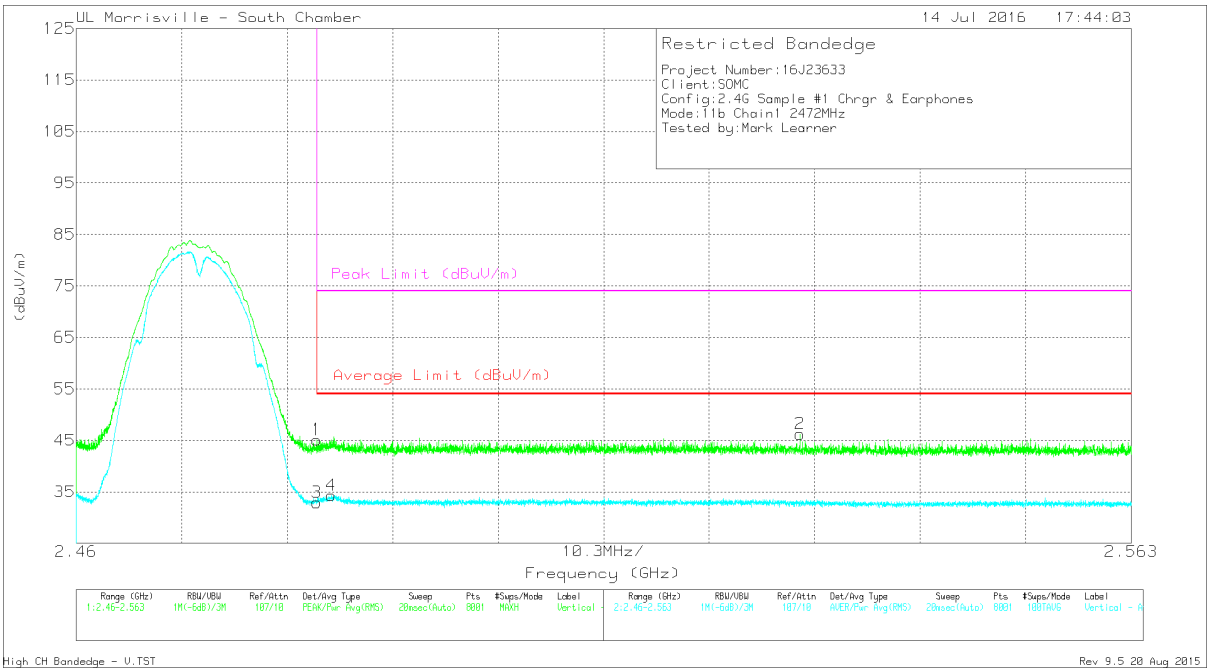

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	37.41	Pk	32.4	-24.7	0	45.11	-	-	74	-28.89	250	351	V
3	* 2.484	25.24	RMS	32.4	-24.7	0	32.94	54	-21.06	-	-	250	351	V
4	* 2.485	26.62	RMS	32.4	-24.7	0	34.32	54	-19.68	-	-	250	351	V
2	2.531	38.64	Pk	32.5	-24.9	0	46.24	-	-	74	-27.76	250	351	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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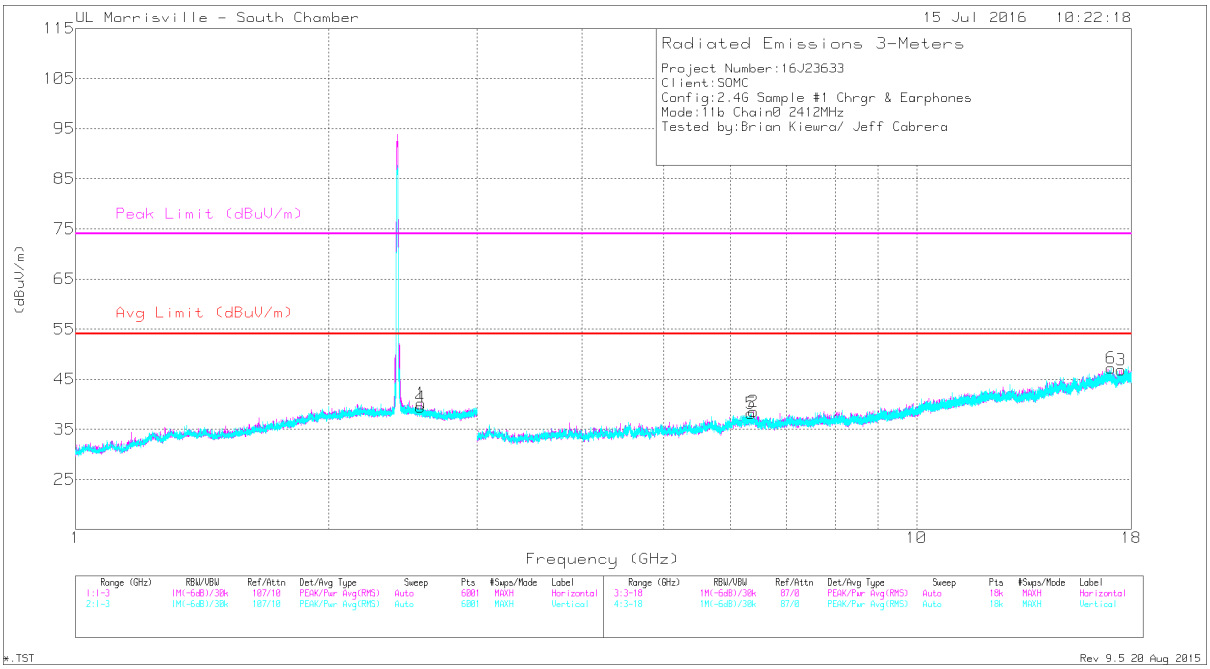
HARMONICS AND SPURIOUS EMISSIONS
LOW CHANNEL CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.574	32.93	Pk	32.4	-25.2	0	40.13	-	-	-	-	0-360	199	H
2	6.403	32.34	Pk	35.4	-29.2	0	38.54	-	-	-	-	0-360	102	H
3	17.499	29.63	Pk	41.1	-23.9	0	46.83	-	-	-	-	0-360	102	H
4	2.572	32.21	Pk	32.4	-25.2	0	39.41	-	-	-	-	0-360	199	V
5	6.357	31.69	Pk	35.4	-28.9	0	38.19	-	-	-	-	0-360	102	V
6	17.03	30.1	Pk	41.5	-24.4	0	47.2	-	-	-	-	0-360	199	V

Pk - Peak detector

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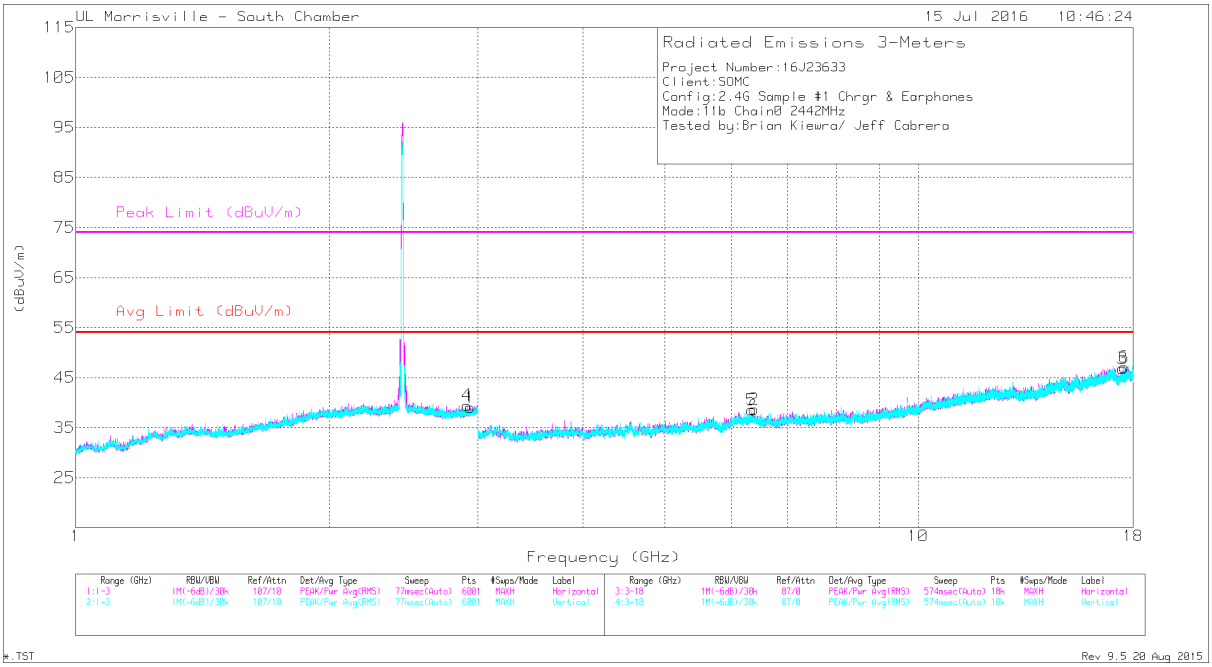
MID CHANNEL CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.942	32.44	Pk	32.7	-26.1	0	39.04	-	-	-	-	0-360	199	H
2	6.384	32.26	Pk	35.4	-29	0	38.66	-	-	-	-	0-360	102	H
3	17.493	29.67	Pk	41.1	-23.9	0	46.87	-	-	-	-	0-360	102	H
4	2.914	32.96	Pk	32.7	-26.2	0	39.46	-	-	-	-	0-360	102	V
5	6.342	31.52	Pk	35.5	-28.5	0	38.52	-	-	-	-	0-360	199	V
6	17.577	29.28	Pk	41.2	-23.4	0	47.08	-	-	-	-	0-360	199	V

Pk - Peak detector

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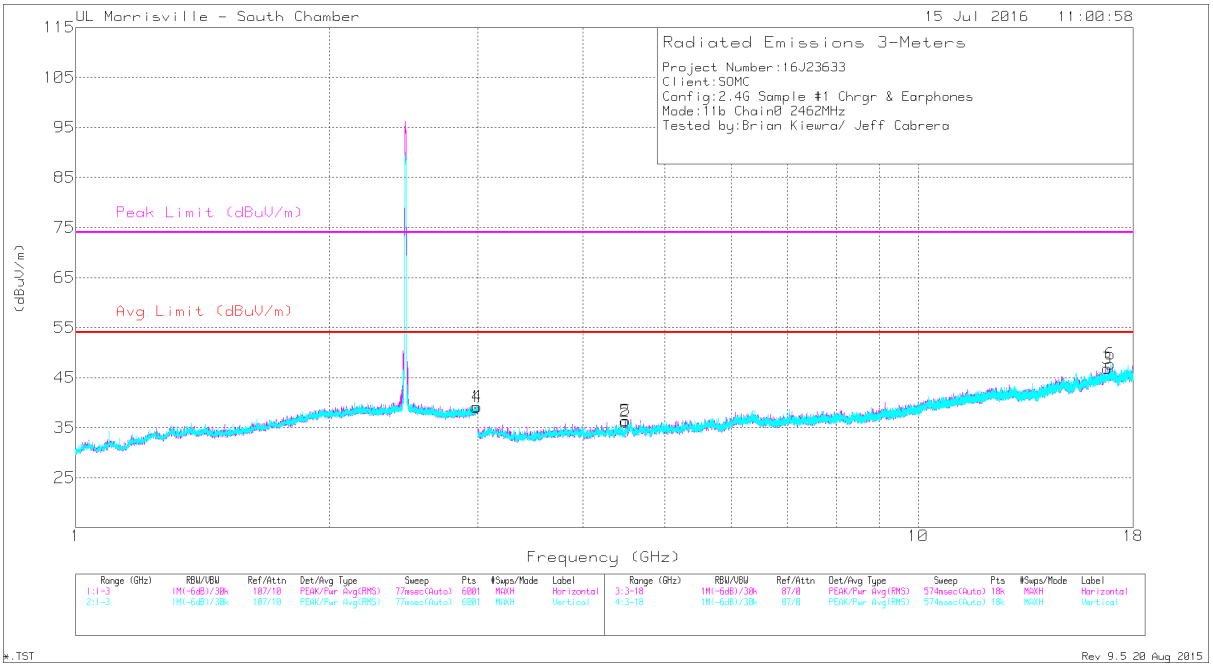
HIGH CHANNEL 11 CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.987	32.43	Pk	32.8	-26.1	0	39.13	-	-	-	-	0-360	199	H
2	4.492	34.54	Pk	33.8	-32.1	0	36.24	-	-	-	-	0-360	102	H
3	16.773	30.16	Pk	41.6	-24.9	0	46.86	-	-	-	-	0-360	199	H
4	2.997	32.47	Pk	32.8	-26.1	0	39.17	-	-	-	-	0-360	102	V
5	4.495	34.72	Pk	33.8	-32.1	0	36.42	-	-	-	-	0-360	199	V
6	16.912	30.21	Pk	41.6	-24.1	0	47.71	-	-	-	-	0-360	102	V

Pk - Peak detector

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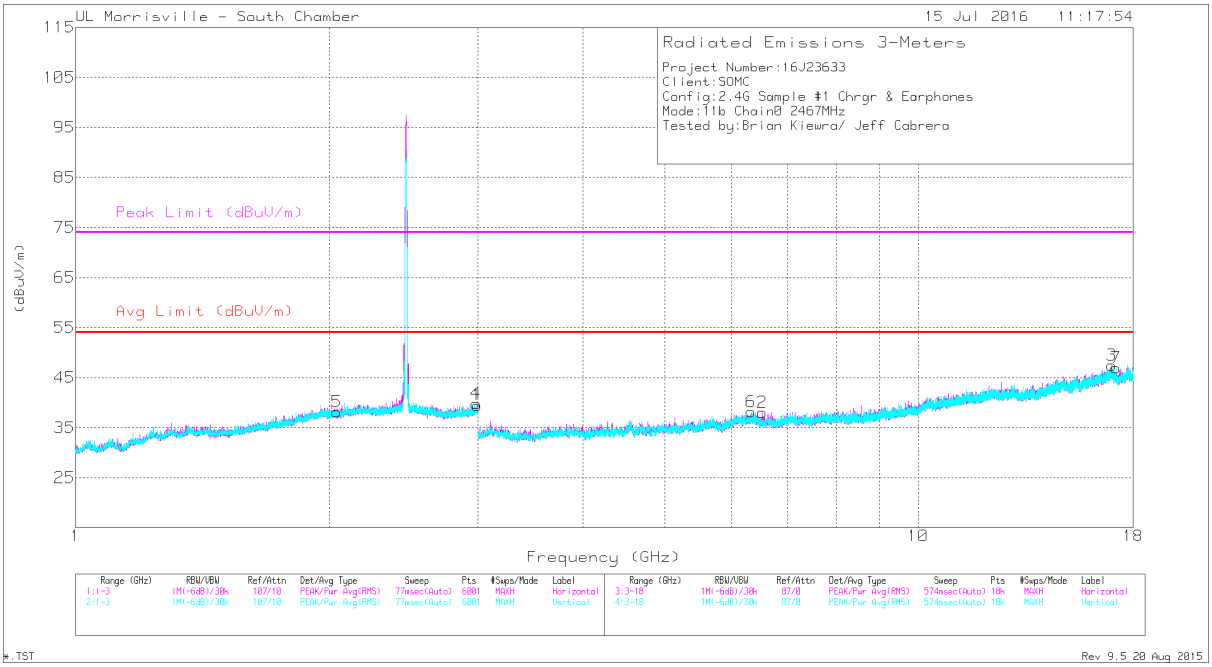
HIGH CHANNEL 12 CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.998	32.79	Pk	32.8	-26.1	0	39.49	-	-	-	-	0-360	199	H
2	6.535	32.53	Pk	35.4	-29.9	0	38.03	-	-	-	-	0-360	101	H
3	16.964	30.45	Pk	41.5	-24.5	0	47.45	-	-	-	-	0-360	101	H
4	2.989	33.17	Pk	32.8	-26.1	0	39.87	-	-	-	-	0-360	101	V
5	2.041	30.05	Pk	31.1	-23	0	38.15	-	-	-	-	0-360	101	V
6	6.337	31.4	Pk	35.4	-28.6	0	38.2	-	-	-	-	0-360	102	V
7	17.178	29.36	Pk	41.3	-23.7	0	46.96	-	-	-	-	0-360	102	V

Pk - Peak detector

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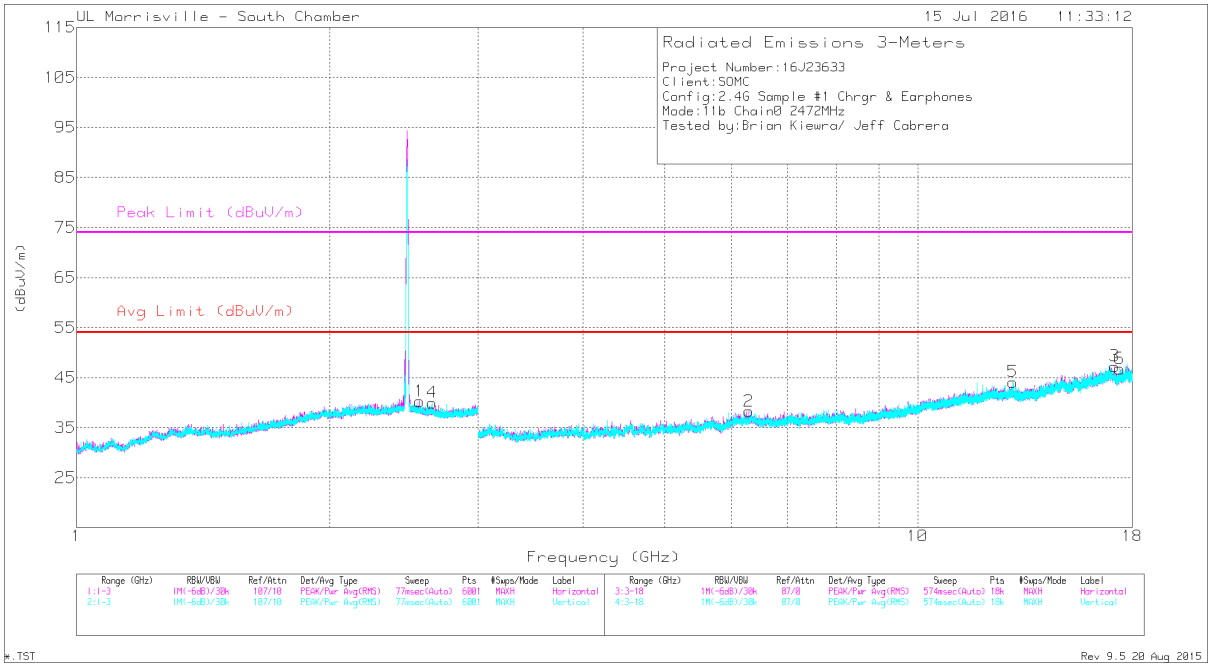
HIGH CHANNEL 13 CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.556	32.96	Pk	32.4	-25.1	0	40.26	-	-	-	-	0-360	102	H
2	6.297	31.76	Pk	35.4	-28.9	0	38.26	-	-	-	-	0-360	102	H
3	17.154	29.58	Pk	41.3	-23.6	0	47.28	-	-	-	-	0-360	102	H
4	2.647	33.19	Pk	32.5	-25.7	0	39.99	-	-	-	-	0-360	199	V
5	12.975	30.04	Pk	39.2	-25.1	0	44.14	-	-	-	-	0-360	102	V
6	17.377	29.69	Pk	41.2	-24.1	0	46.79	-	-	-	-	0-360	199	V

Pk - Peak detector

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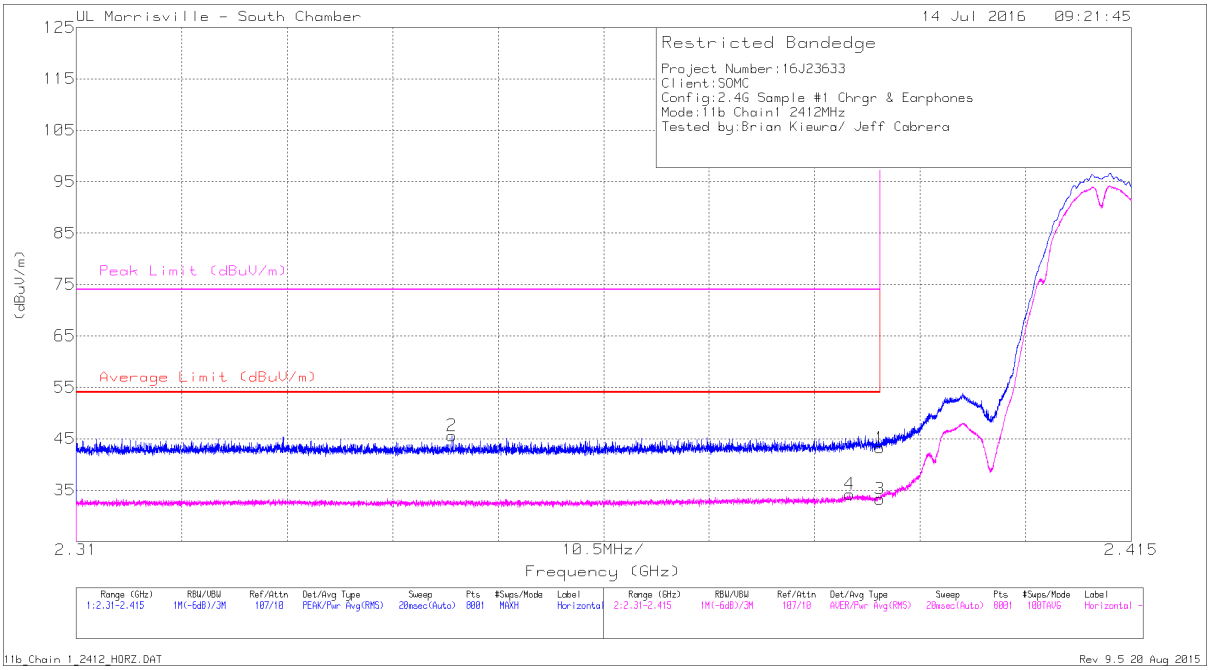
RESTRICTED BANDEDGE (LOW CHANNEL) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 2.39	35.24	Pk	32.2	-24.2	0	43.24	-	-	74	-30.76	343	324	H
2	* 2.347	37.8	Pk	31.8	-24	0	45.6	-	-	74	-28.4	343	324	H
3	* 2.39	25.3	RMS	32.2	-24.2	0	33.3	54	-20.7	-	-	343	324	H
4	* 2.387	26.12	RMS	32.2	-24.1	0	34.22	54	-19.78	-	-	343	324	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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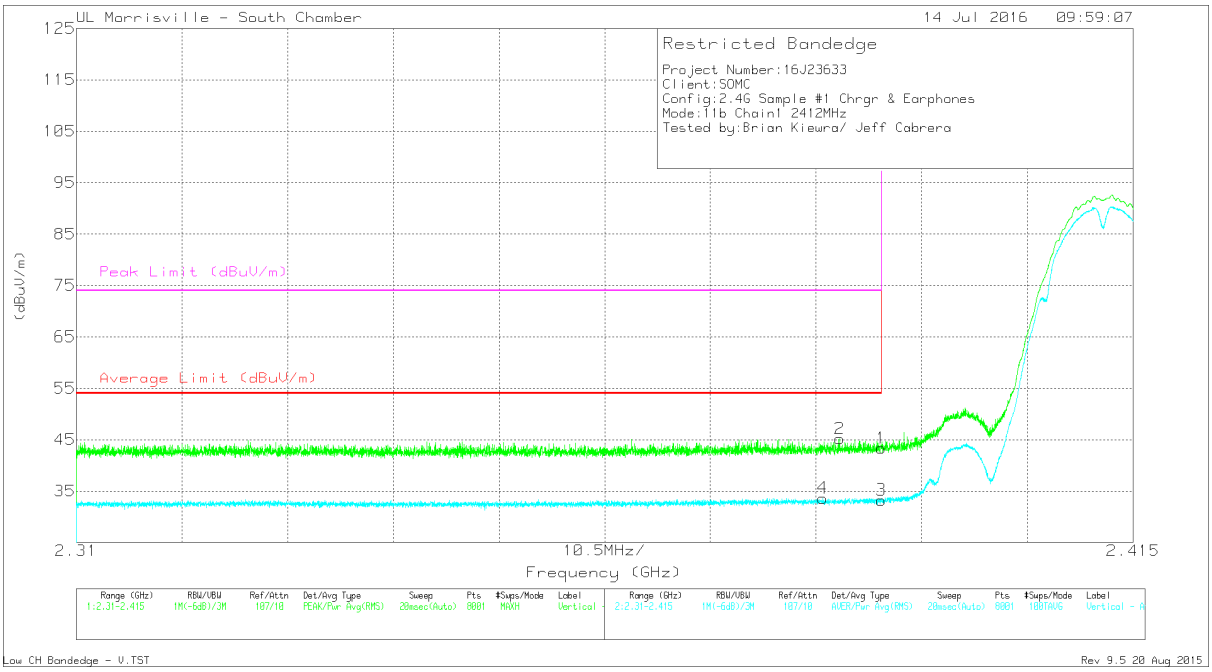

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	35.35	Pk	32.2	-24.2	0	43.35	-	-	74	-30.65	157	391	V
2	* 2.386	37.1	Pk	32.2	-24.1	0	45.2	-	-	74	-28.8	157	391	V
3	* 2.39	25.26	RMS	32.2	-24.2	0	33.26	54	-20.74	-	-	157	391	V
4	* 2.384	25.64	RMS	32.1	-24.1	0	33.64	54	-20.36	-	-	157	391	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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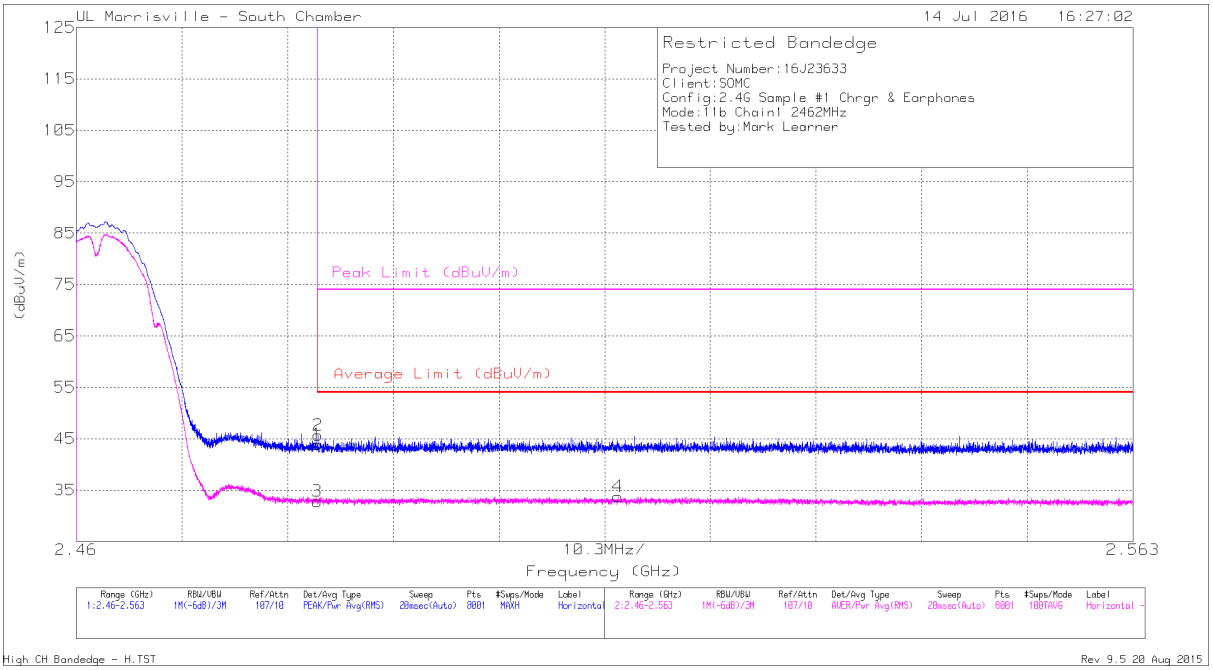
RESTRICTED BANDEDGE (HIGH CHANNEL 11) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	36.19	Pk	32.4	-24.7	0	43.89	-	-	74	-30.11	88	257	H
2	* 2.484	37.99	Pk	32.4	-24.7	0	45.69	-	-	74	-28.31	88	257	H
3	* 2.484	25.1	RMS	32.4	-24.7	0	32.8	54	-21.2	-	-	88	257	H
4	2.513	26.13	RMS	32.5	-24.9	0	33.73	54	-20.27	-	-	88	257	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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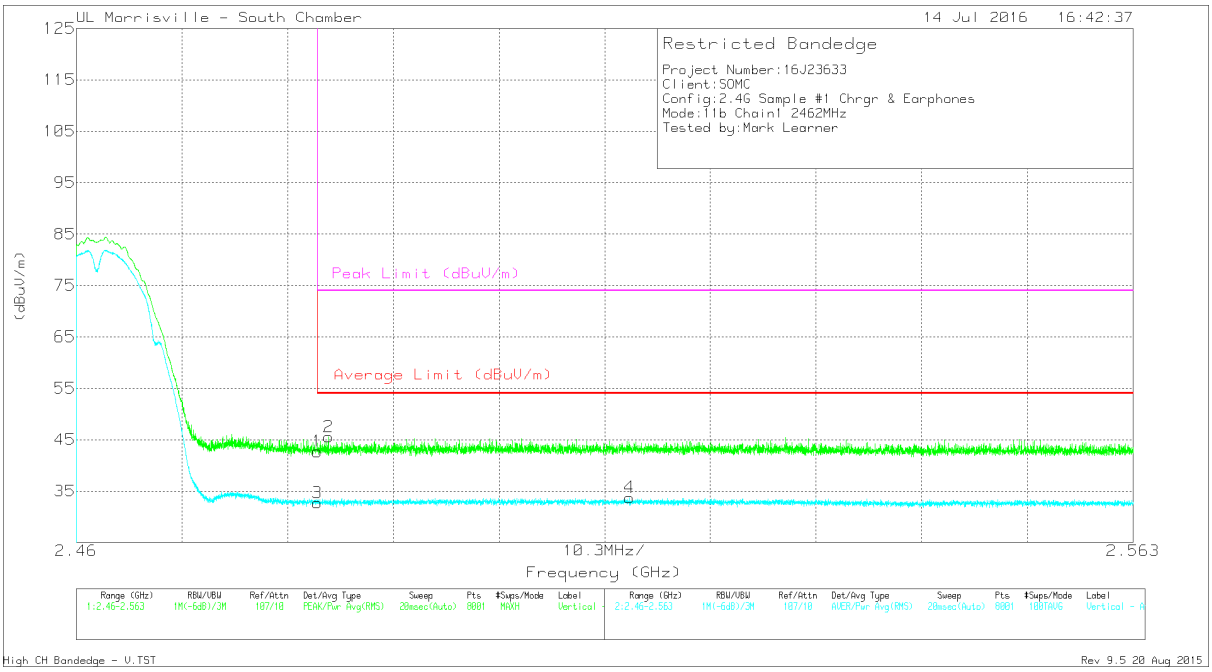

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	35	Pk	32.4	-24.7	0	42.7	-	-	74	-31.3	33	287	V
2	* 2.485	37.84	Pk	32.4	-24.7	0	45.54	-	-	74	-28.46	33	287	V
3	* 2.484	25.01	RMS	32.4	-24.7	0	32.71	54	-21.29	-	-	33	287	V
4	2.514	26.15	RMS	32.5	-24.9	0	33.75	54	-20.25	-	-	33	287	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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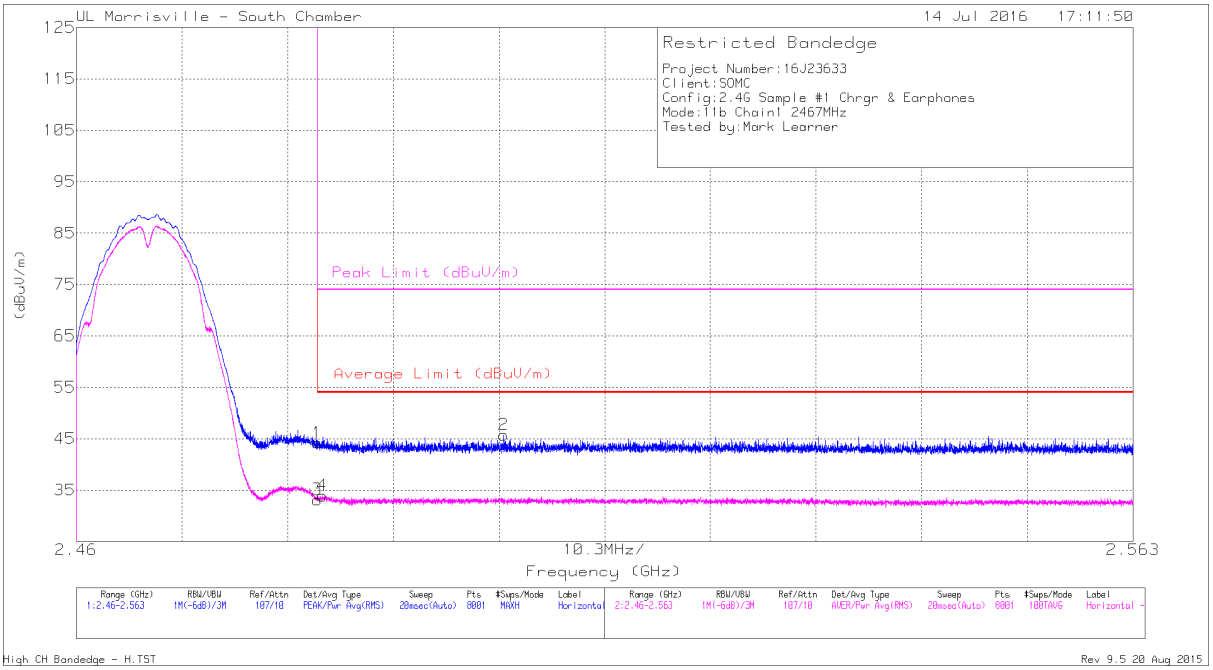
RESTRICTED BANDEDGE (HIGH CHANNEL 12) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	36.51	Pk	32.4	-24.7	0	44.21	-	-	74	-29.79	89	105	H
3	* 2.484	25.45	RMS	32.4	-24.7	0	33.15	54	-20.85	-	-	89	105	H
4	* 2.484	26.22	RMS	32.4	-24.7	0	33.92	54	-20.08	-	-	89	105	H
2	2.502	38.05	Pk	32.5	-24.8	0	45.75	-	-	74	-28.25	89	105	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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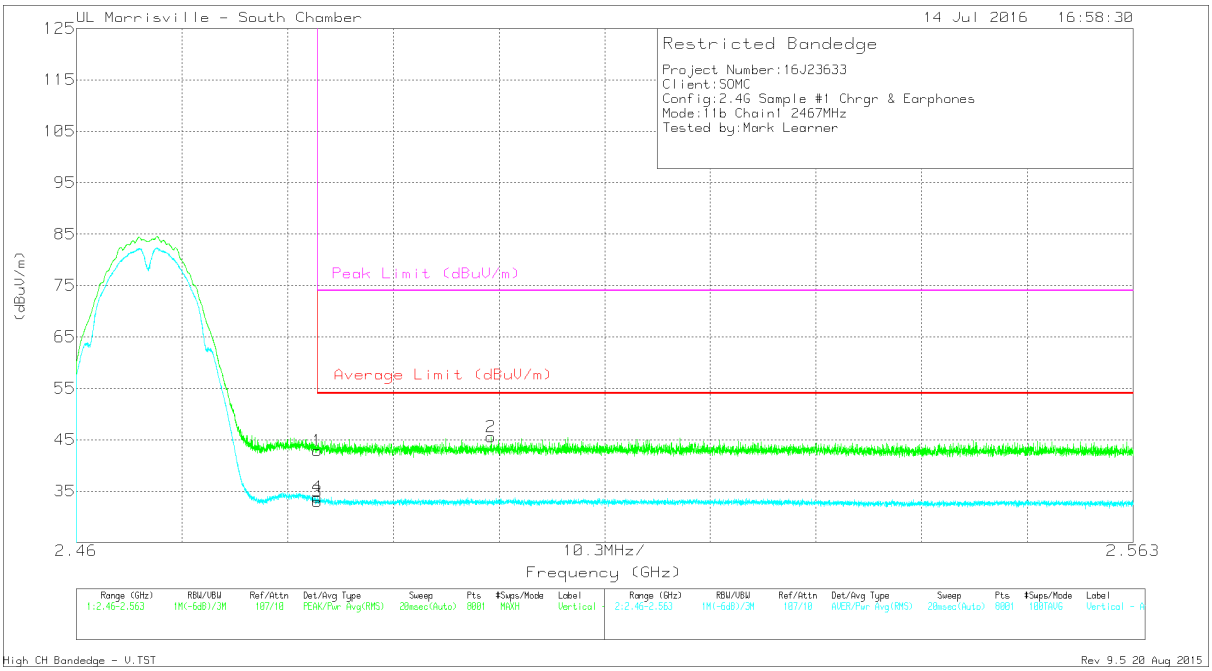

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	35.17	Pk	32.4	-24.7	0	42.87	-	-	74	-31.13	32	283	V
3	* 2.484	25.27	RMS	32.4	-24.7	0	32.97	54	-21.03	-	-	32	283	V
4	* 2.484	26.14	RMS	32.4	-24.7	0	33.84	54	-20.16	-	-	32	283	V
2	2.5	37.83	Pk	32.5	-24.8	0	45.53	-	-	74	-28.47	32	283	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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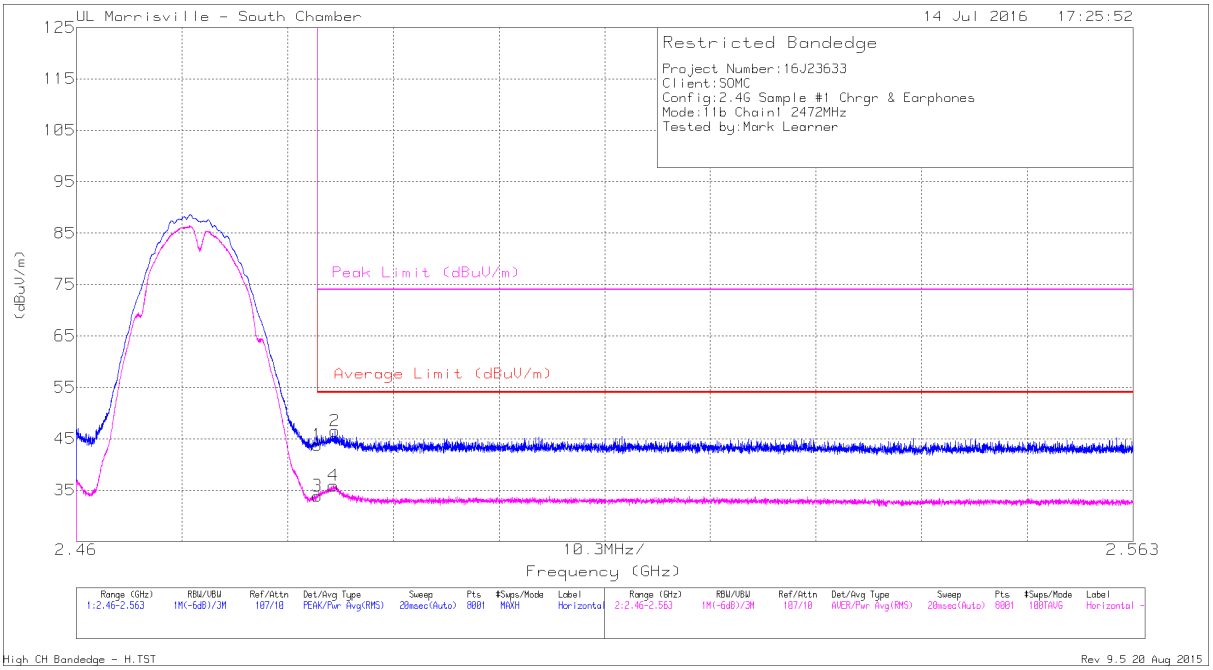
RESTRICTED BANDEDGE (HIGH CHANNEL 13) Chain 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	36.06	Pk	32.4	-24.7	0	43.76	-	-	74	-30.24	90	103	H
2	* 2.485	38.79	Pk	32.4	-24.7	0	46.49	-	-	74	-27.51	90	103	H
3	* 2.484	26.15	RMS	32.4	-24.7	0	33.85	54	-20.15	-	-	90	103	H
4	* 2.485	28.17	RMS	32.4	-24.7	0	35.87	54	-18.13	-	-	90	103	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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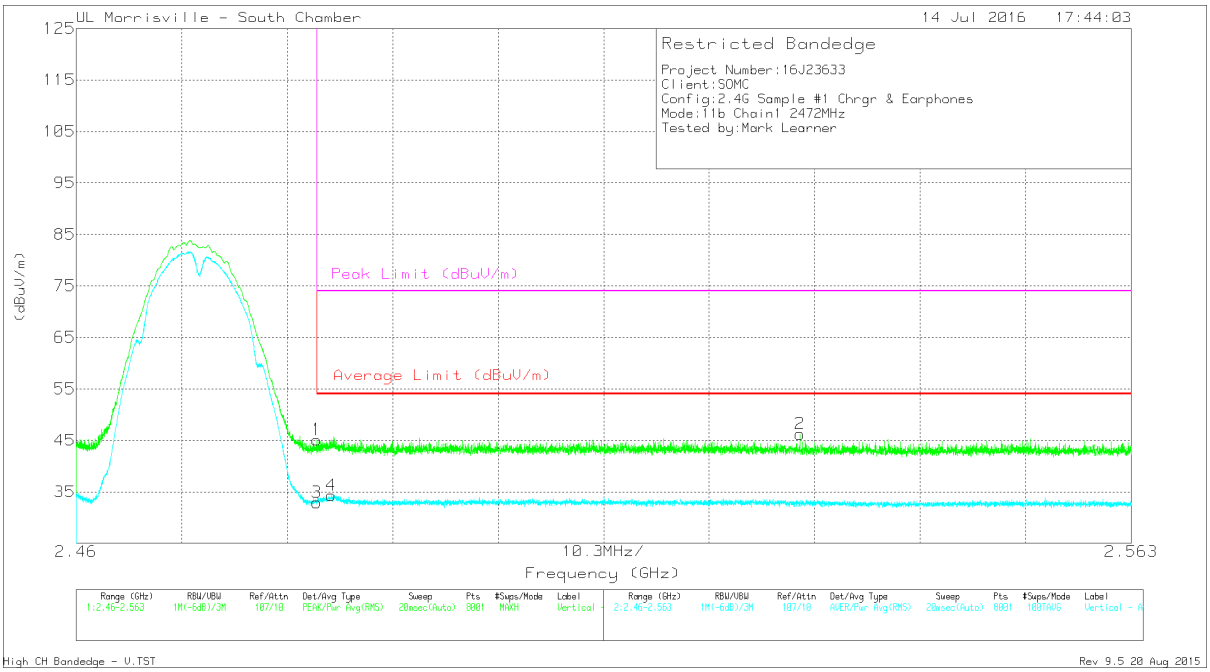

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	37.41	Pk	32.4	-24.7	0	45.11	-	-	74	-28.89	250	351	V
3	* 2.484	25.24	RMS	32.4	-24.7	0	32.94	54	-21.06	-	-	250	351	V
4	* 2.485	26.62	RMS	32.4	-24.7	0	34.32	54	-19.68	-	-	250	351	V
2	2.531	38.64	Pk	32.5	-24.9	0	46.24	-	-	74	-27.76	250	351	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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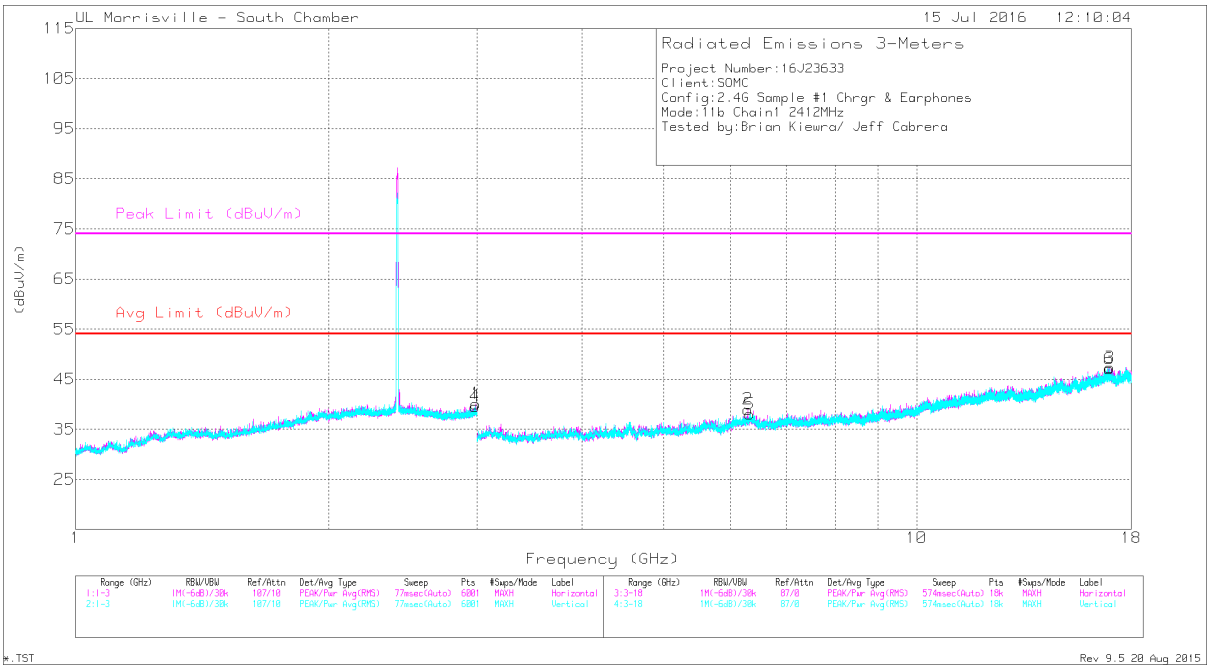
HARMONICS AND SPURIOUS EMISSIONS
LOW CHANNEL CHAIN 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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
4	2.984	32.99	Pk	32.7	-26.1	0	39.59	-	-	-	-	0-360	199	V
1	2.991	33.42	Pk	32.8	-26.1	0	40.12	-	-	-	-	0-360	199	H
2	6.296	32.49	Pk	35.4	-28.9	0	38.99	-	-	-	-	0-360	199	H
5	6.33	31.33	Pk	35.4	-28.7	0	38.03	-	-	-	-	0-360	102	V
6	16.948	30.12	Pk	41.5	-24.5	0	47.12	-	-	-	-	0-360	102	V
3	16.968	30.45	Pk	41.5	-24.6	0	47.35	-	-	-	-	0-360	199	H

Pk - Peak detector

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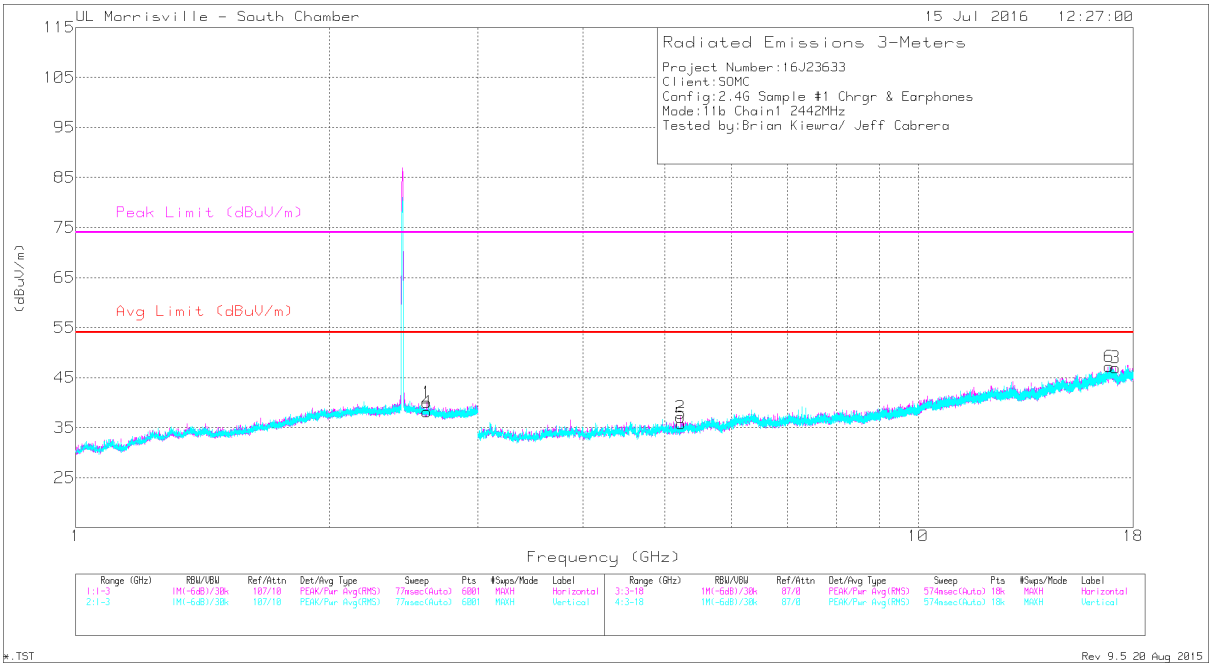
MID CHANNEL CHAIN 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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
4	2.611	31.25	Pk	32.4	-25.5	0	38.15	-	-	-	-	0-360	102	V
1	2.612	33.18	Pk	32.4	-25.5	0	40.08	-	-	-	-	0-360	200	H
2	5.225	34.12	Pk	34.3	-31.3	0	37.12	-	-	-	-	0-360	199	H
5	5.232	32.57	Pk	34.3	-31.1	0	35.77	-	-	-	-	0-360	199	V
6	16.853	29.61	Pk	41.6	-24	0	47.21	-	-	-	-	0-360	199	V
3	17.148	29.21	Pk	41.4	-23.6	0	47.01	-	-	-	-	0-360	199	H

Pk - Peak detector

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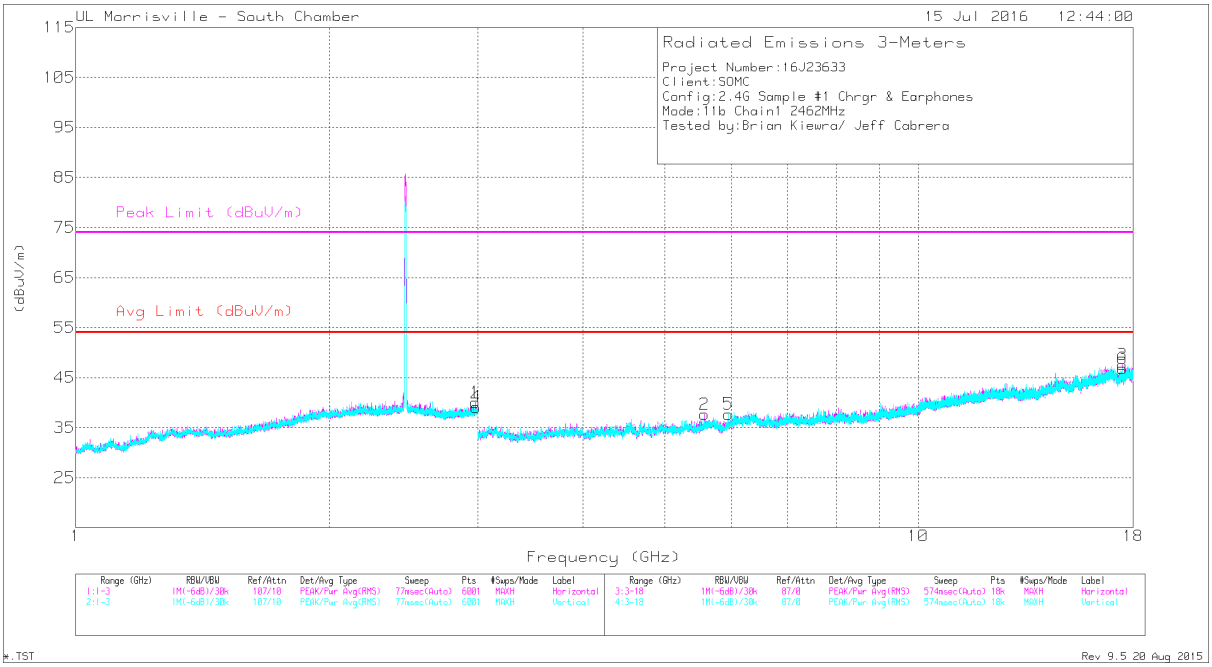
HIGH CHANNEL 11 CHAIN 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.983	33.42	Pk	32.7	-26.1	0	40.02	-	-	-	-	0-360	102	H
4	2.985	32.42	Pk	32.8	-26.1	0	39.12	-	-	-	-	0-360	101	V
2	5.576	34.13	Pk	34.6	-31.1	0	37.63	-	-	-	-	0-360	199	H
5	5.956	32.42	Pk	35.1	-29.8	0	37.72	-	-	-	-	0-360	102	V
6	17.483	29.6	Pk	41.1	-23.9	0	46.8	-	-	-	-	0-360	102	V
3	17.486	30.4	Pk	41.1	-23.9	0	47.6	-	-	-	-	0-360	199	H

Pk - Peak detector

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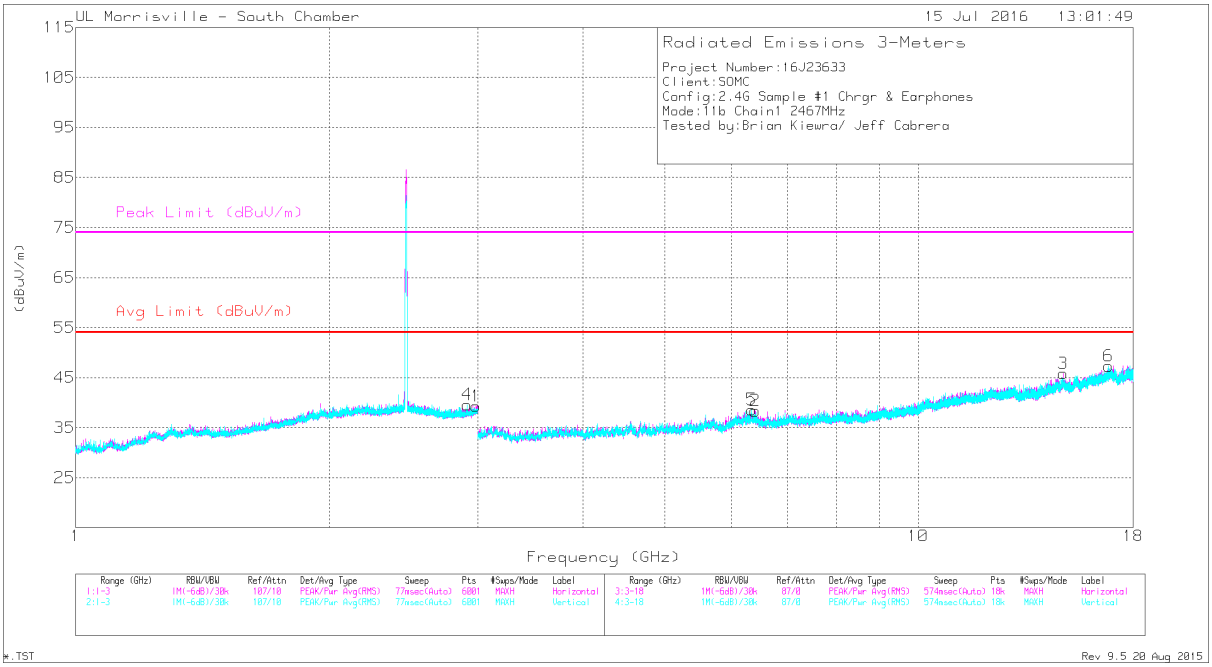
HIGH CHANNEL 12 CHAIN 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.986	32.63	Pk	32.8	-26.1	0	39.33	-	-	-	-	0-360	102	H
2	6.404	32.17	Pk	35.4	-29.2	0	38.37	-	-	-	-	0-360	102	H
3	14.875	29.52	Pk	39.9	-23.6	0	45.82	-	-	-	-	0-360	102	H
4	2.915	33.11	Pk	32.7	-26.2	0	39.61	-	-	-	-	0-360	199	V
5	6.343	31.6	Pk	35.5	-28.5	0	38.6	-	-	-	-	0-360	199	V
6	16.831	29.9	Pk	41.6	-24.2	0	47.3	-	-	-	-	0-360	199	V

Pk - Peak detector

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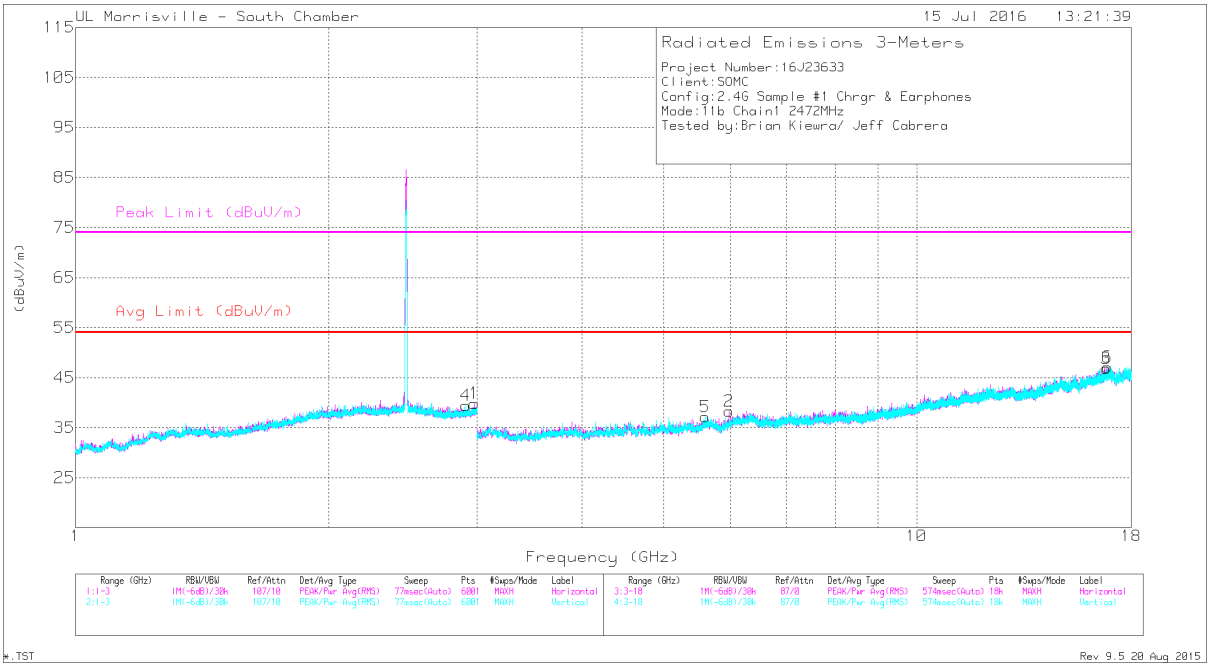
HIGH CHANNEL 13 CHAIN 1



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.978	33.24	Pk	32.7	-26.1	0	39.84	-	-	-	-	0-360	199	H
2	5.987	32.57	Pk	35	-29.3	0	38.27	-	-	-	-	0-360	102	H
3	16.81	29.32	Pk	41.6	-24.1	0	46.82	-	-	-	-	0-360	199	H
4	2.908	32.93	Pk	32.7	-26.2	0	39.43	-	-	-	-	0-360	199	V
5	5.602	33.39	Pk	34.6	-30.8	0	37.19	-	-	-	-	0-360	199	V
6	16.846	29.5	Pk	41.6	-24	0	47.1	-	-	-	-	0-360	199	V

Pk - Peak detector

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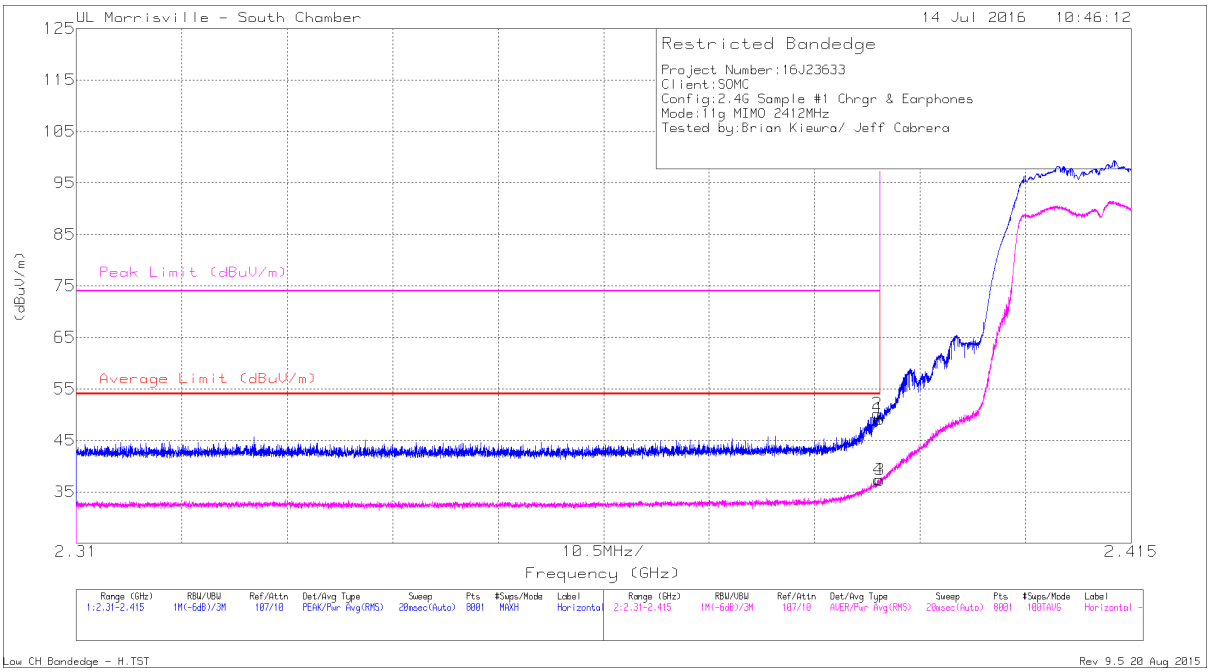
9.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 2.39	41.16	Pk	32.2	-24.2	0	49.16	-	-	74	-24.84	348	374	H
2	* 2.39	42.1	Pk	32.2	-24.1	0	50.2	-	-	74	-23.8	348	374	H
3	* 2.39	29.33	RMS	32.2	-24.2	0	37.33	54	-16.67	-	-	348	374	H
4	* 2.39	29.36	RMS	32.2	-24.2	0	37.36	54	-16.64	-	-	348	374	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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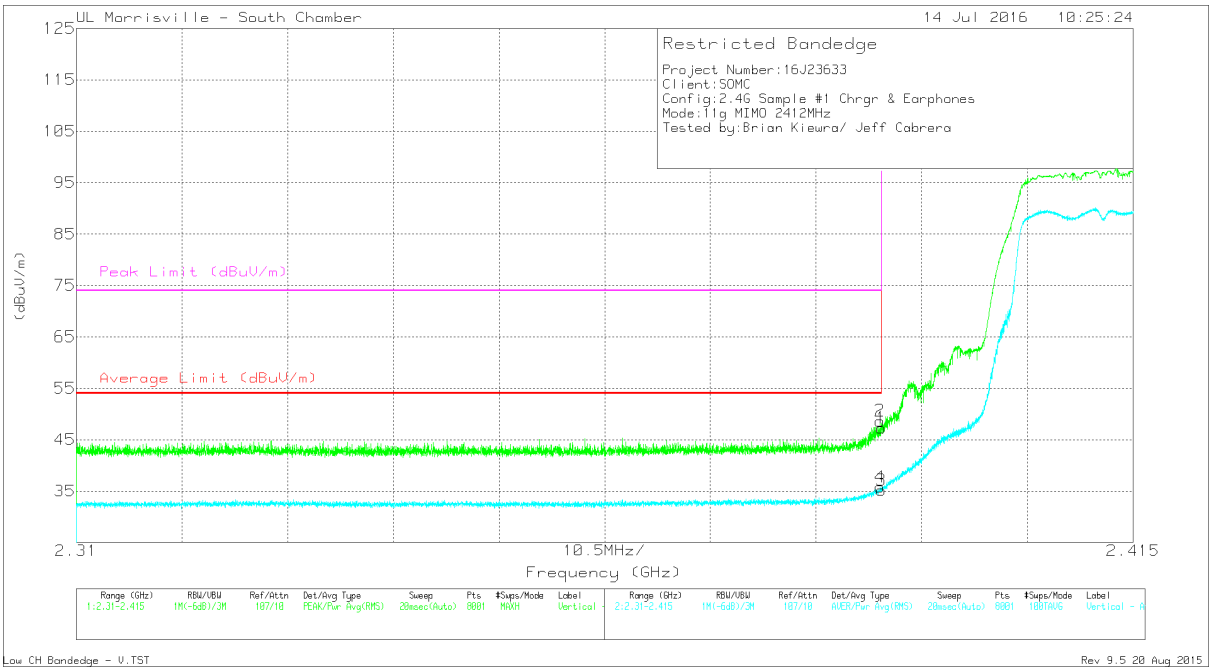

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.29	Pk	32.2	-24.2	0	47.29	-	-	74	-26.71	163	393	V
2	* 2.39	40.66	Pk	32.2	-24.2	0	48.66	-	-	74	-25.34	163	393	V
3	* 2.39	27.17	RMS	32.2	-24.2	0	35.17	54	-18.83	-	-	163	393	V
4	* 2.39	27.78	RMS	32.2	-24.2	0	35.78	54	-18.22	-	-	163	393	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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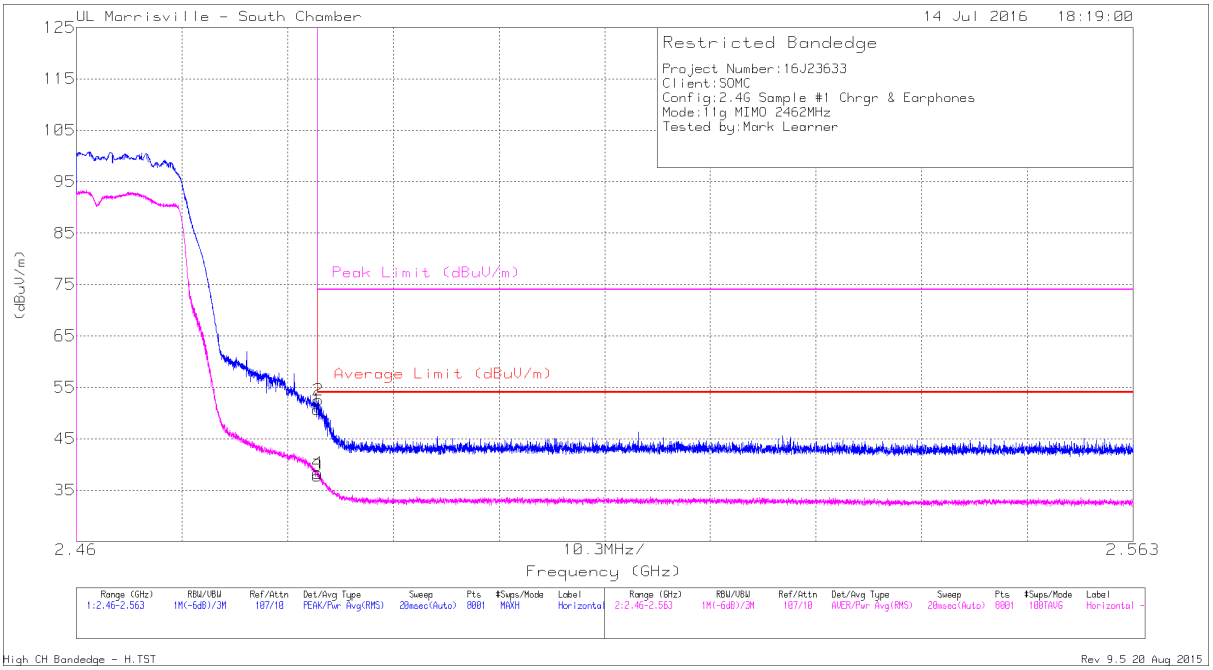
AUTHORIZED BANDEDGE (HIGH CHANNEL CH11)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	42.96	Pk	32.4	-24.7	0	50.66	-	-	74	-23.34	345	354	H
2	* 2.484	44.83	Pk	32.4	-24.7	0	52.53	-	-	74	-21.47	345	354	H
3	* 2.484	30.1	RMS	32.4	-24.7	0	37.8	54	-16.2	-	-	345	354	H
4	* 2.484	30.61	RMS	32.4	-24.7	0	38.31	54	-15.69	-	-	345	354	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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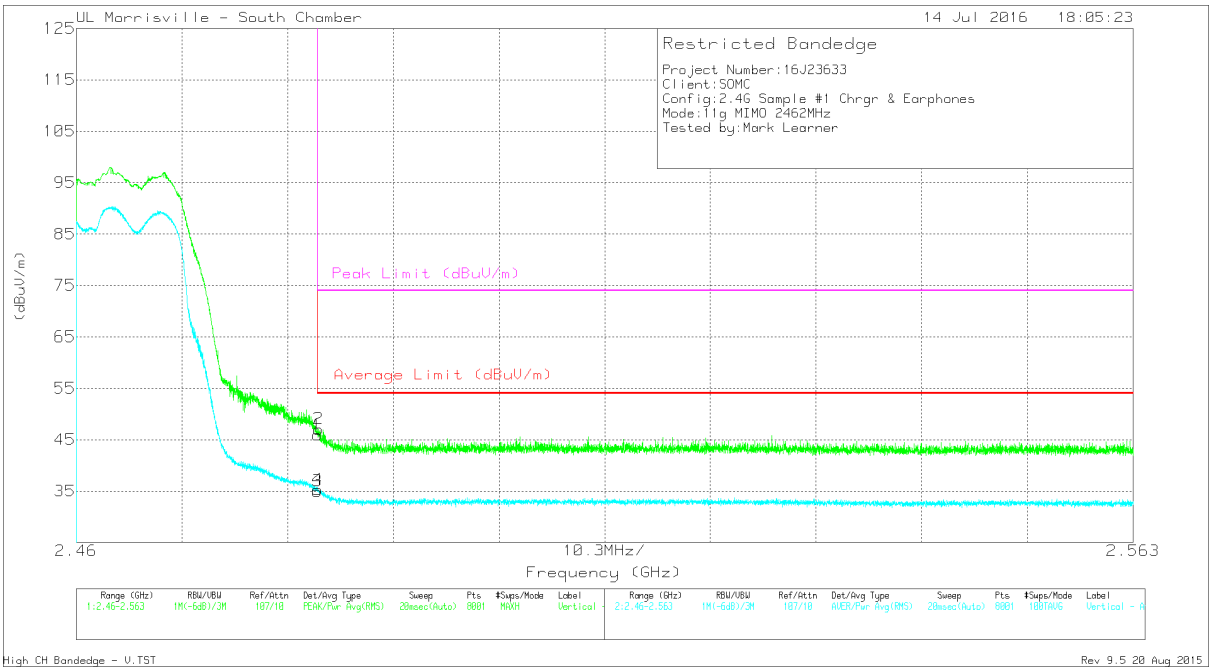

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.23	Pk	32.4	-24.7	0	45.93	-	-	74	-28.07	50	316	V
2	* 2.484	39.39	Pk	32.4	-24.7	0	47.09	-	-	74	-26.91	50	316	V
3	* 2.484	27.29	RMS	32.4	-24.7	0	34.99	54	-19.01	-	-	50	316	V
4	* 2.484	27.57	RMS	32.4	-24.7	0	35.27	54	-18.73	-	-	50	316	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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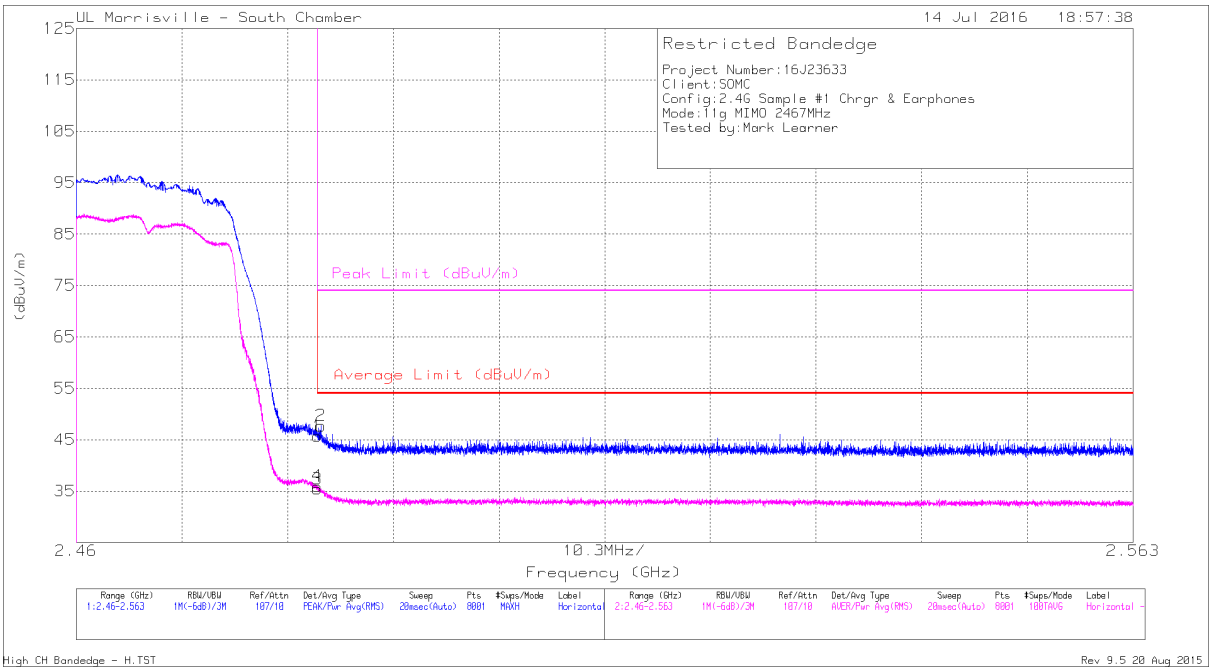
AUTHORIZED BANDEDGE (HIGH CHANNEL CH12)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	37.99	Pk	32.4	-24.7	0	45.69	-	-	74	-28.31	346	355	H
2	* 2.484	40.01	Pk	32.4	-24.7	0	47.71	-	-	74	-26.29	346	355	H
3	* 2.484	27.73	RMS	32.4	-24.7	0	35.43	54	-18.57	-	-	346	355	H
4	* 2.484	28.26	RMS	32.4	-24.7	0	35.96	54	-18.04	-	-	346	355	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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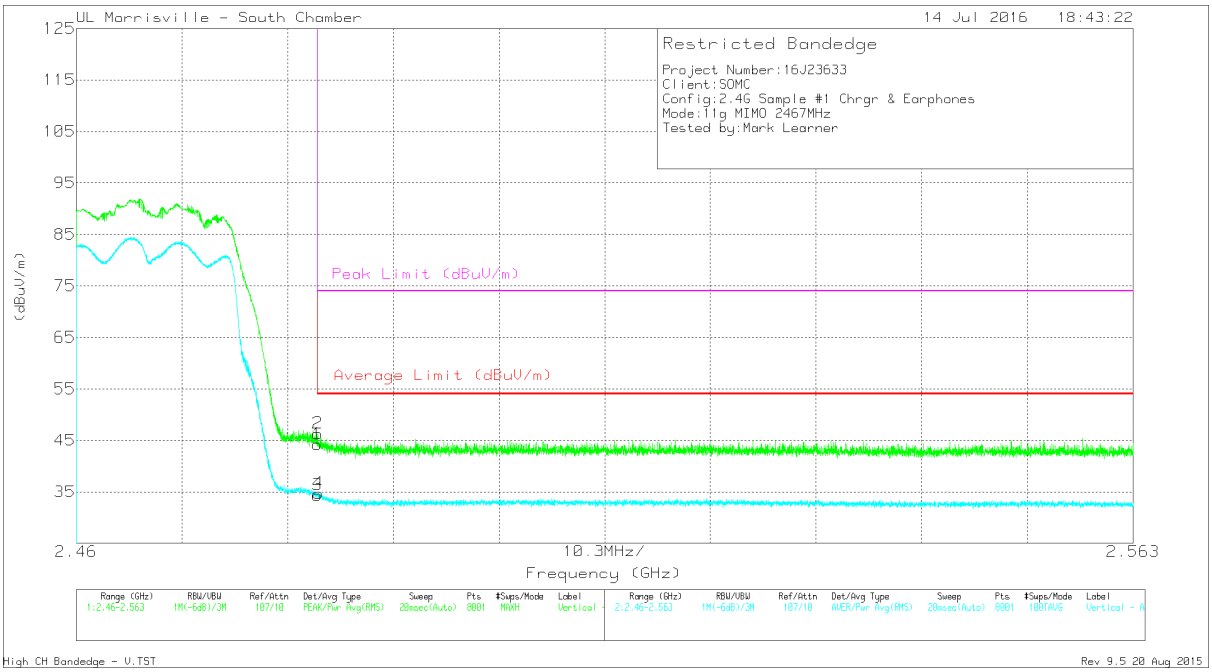

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.54	Pk	32.4	-24.7	0	44.24	-	-	74	-29.76	21	356	V
2	* 2.484	38.66	Pk	32.4	-24.7	0	46.36	-	-	74	-27.64	21	356	V
3	* 2.484	26.68	RMS	32.4	-24.7	0	34.38	54	-19.62	-	-	21	356	V
4	* 2.484	27.01	RMS	32.4	-24.7	0	34.71	54	-19.29	-	-	21	356	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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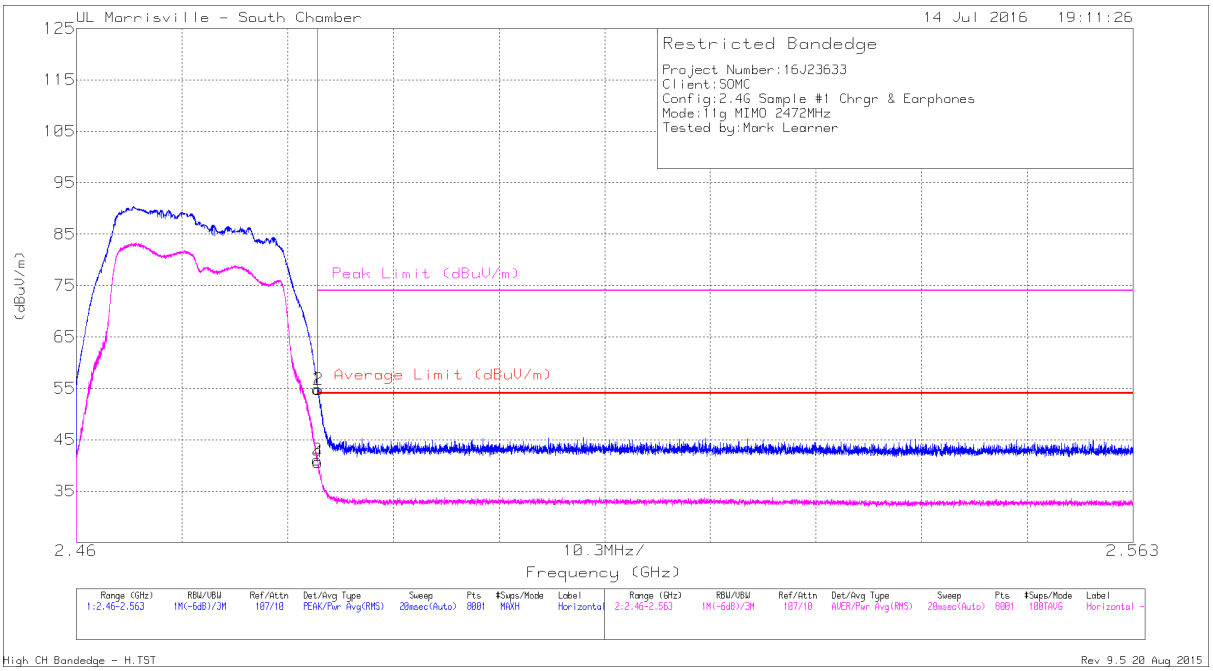
AUTHORIZED BANDEDGE (HIGH CHANNEL CH13)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	47.16	Pk	32.4	-24.7	0	54.86	-	-	74	-19.14	344	361	H
2	* 2.484	47.07	Pk	32.4	-24.7	0	54.77	-	-	74	-19.23	344	361	H
3	* 2.484	33.36	RMS	32.4	-24.7	0	41.06	54	-12.94	-	-	344	361	H
4	* 2.484	32.92	RMS	32.4	-24.7	0	40.62	54	-13.38	-	-	344	361	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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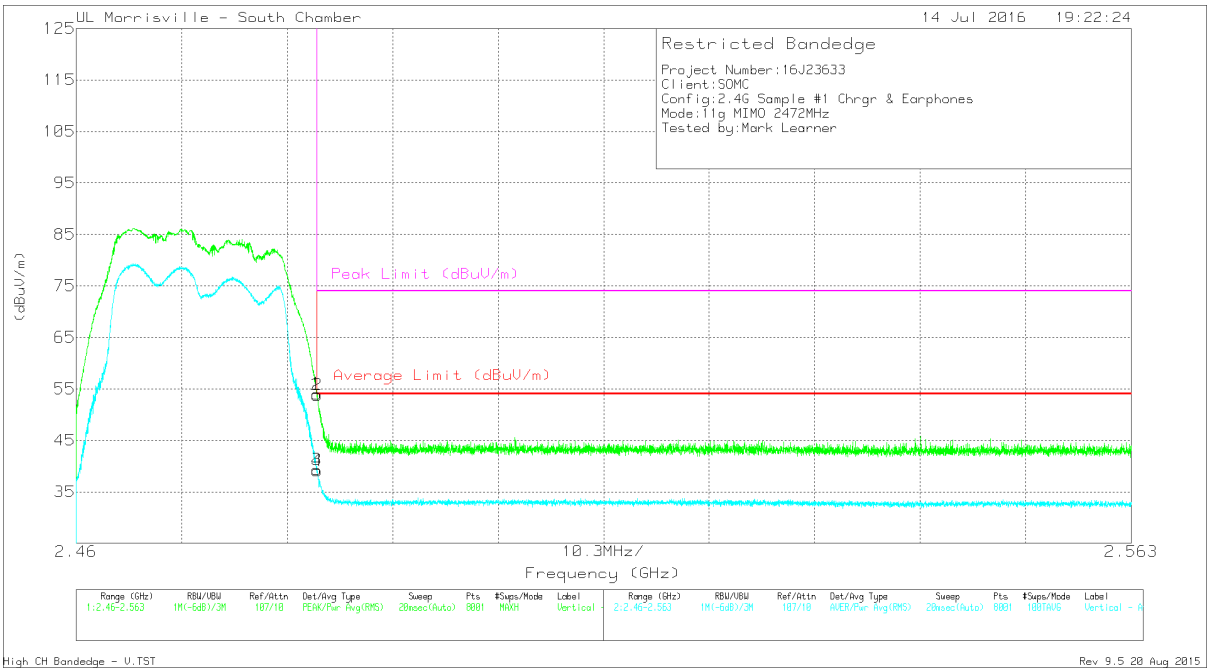

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.34	Pk	32.4	-24.7	0	54.04	-	-	74	-19.96	17	358	V
2	* 2.484	46.12	Pk	32.4	-24.7	0	53.82	-	-	74	-20.18	17	358	V
3	* 2.484	31.6	RMS	32.4	-24.7	0	39.3	54	-14.7	-	-	17	358	V
4	* 2.484	31.42	RMS	32.4	-24.7	0	39.12	54	-14.88	-	-	17	358	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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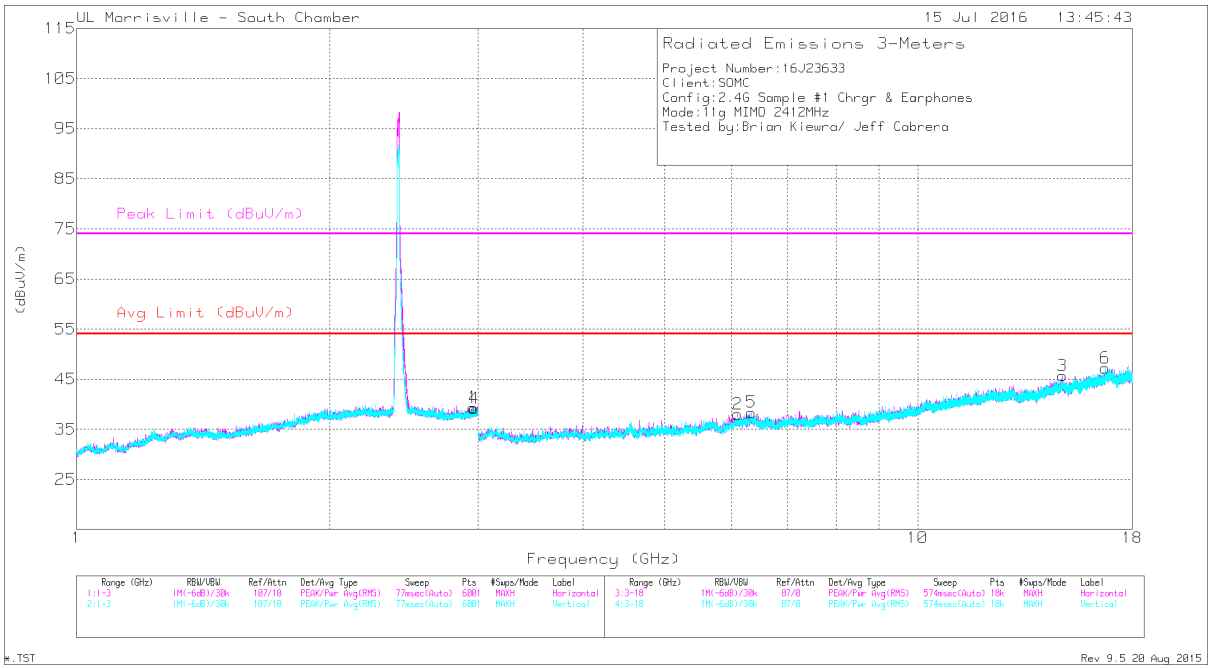
HARMONICS AND SPURIOUS EMISSIONS
LOW CHANNEL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.962	32.86	Pk	32.7	-26.2	0	39.36	-	-	-	-	0-360	199	H
4	2.972	32.58	Pk	32.7	-26.1	0	39.18	-	-	-	-	0-360	199	V
2	6.104	32.3	Pk	35.4	-29.7	0	38	-	-	-	-	0-360	101	H
5	6.345	31.36	Pk	35.5	-28.5	0	38.36	-	-	-	-	0-360	199	V
3	14.872	29.52	Pk	39.9	-23.7	0	45.72	-	-	-	-	0-360	199	H
6	16.719	30.94	Pk	41.6	-25.3	0	47.24	-	-	-	-	0-360	102	V

Pk - Peak detector

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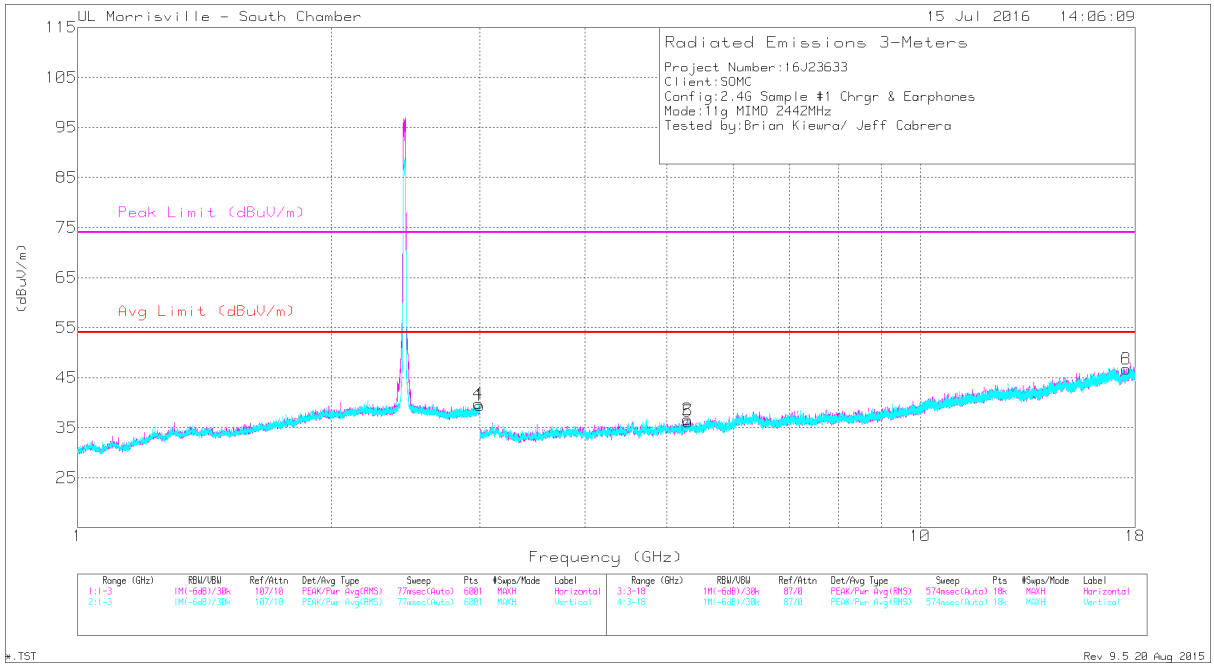
MID CHANNEL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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
4	2.99	33.13	Pk	32.8	-26.1	0	39.83	-	-	-	-	0-360	200	V
1	3	32.76	Pk	32.8	-26.1	0	39.46	-	-	-	-	0-360	102	H
2	5.297	32.37	Pk	34.4	-30.1	0	36.67	-	-	-	-	0-360	102	H
5	5.304	31.83	Pk	34.4	-30	0	36.23	-	-	-	-	0-360	102	H
3	17.566	28.92	Pk	41.2	-23.4	0	46.72	-	-	-	-	0-360	102	H
6	17.566	28.92	Pk	41.2	-23.4	0	46.72	-	-	-	-	0-360	102	H

Pk - Peak detector

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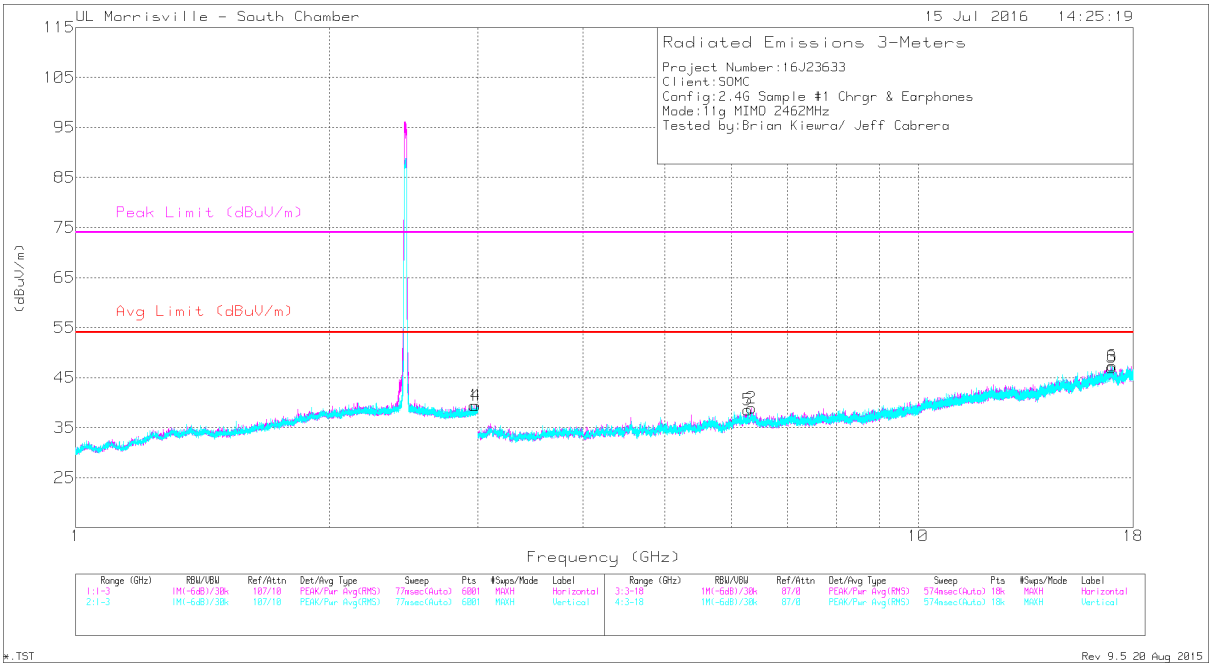
HIGH CHANNEL 11



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.971	32.84	Pk	32.7	-26.1	0	39.44	-	-	-	-	0-360	199	H
2	6.345	31.93	Pk	35.5	-28.5	0	38.93	-	-	-	-	0-360	199	H
3	16.971	30.24	Pk	41.5	-24.7	0	47.04	-	-	-	-	0-360	199	H
4	2.987	32.74	Pk	32.8	-26.1	0	39.44	-	-	-	-	0-360	199	V
5	6.275	32.12	Pk	35.4	-29	0	38.52	-	-	-	-	0-360	199	V
6	17.003	30.63	Pk	41.5	-24.8	0	47.33	-	-	-	-	0-360	199	V

Pk - Peak detector

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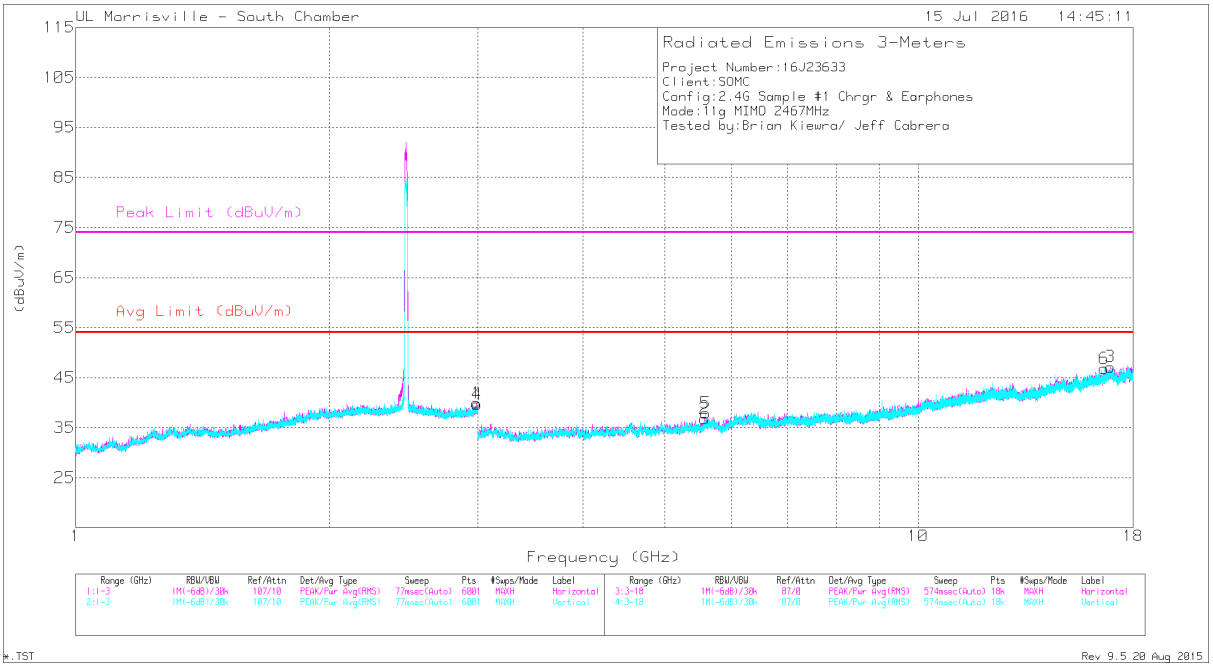
HIGH CHANNEL 12



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.989	33.26	Pk	32.8	-26.1	0	39.96	-	-	-	-	0-360	199	H
2	5.574	33.26	Pk	34.6	-31.1	0	36.76	-	-	-	-	0-360	102	H
3	16.917	29.76	Pk	41.6	-24.2	0	47.16	-	-	-	-	0-360	102	H
4	2.998	32.99	Pk	32.8	-26.1	0	39.69	-	-	-	-	0-360	199	V
5	5.592	34.21	Pk	34.6	-30.9	0	37.91	-	-	-	-	0-360	102	V
6	16.621	29.64	Pk	41.4	-24.2	0	46.84	-	-	-	-	0-360	199	V

Pk - Peak detector

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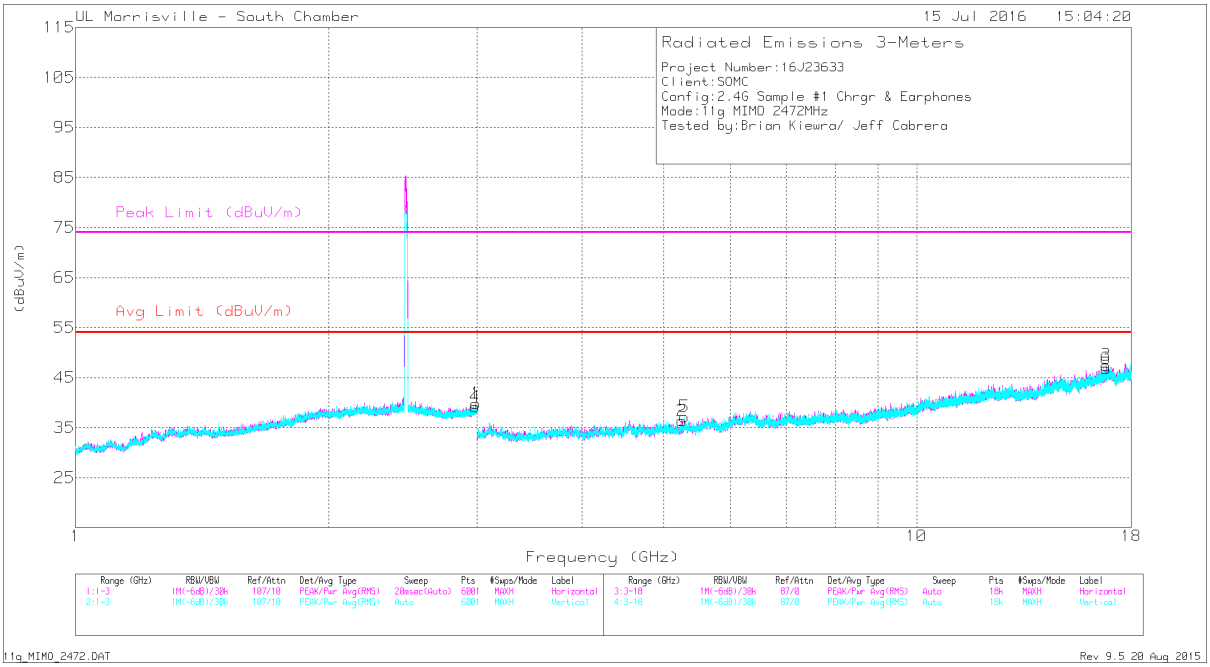
HIGH CHANNEL 13



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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
4	2.984	32.56	Pk	32.7	-26.1	0	39.16	-	-	-	-	0-360	102	V
1	2.992	33.15	Pk	32.8	-26.1	0	39.85	-	-	-	-	0-360	102	H
2	5.258	32.91	Pk	34.3	-30.8	0	36.41	-	-	-	-	0-360	102	H
5	5.297	32.9	Pk	34.4	-30.1	0	37.2	-	-	-	-	0-360	102	V
3	16.795	30.51	Pk	41.6	-24.6	0	47.51	-	-	-	-	0-360	200	H
6	16.796	29.87	Pk	41.6	-24.6	0	46.87	-	-	-	-	0-360	200	V

Pk - Peak detector

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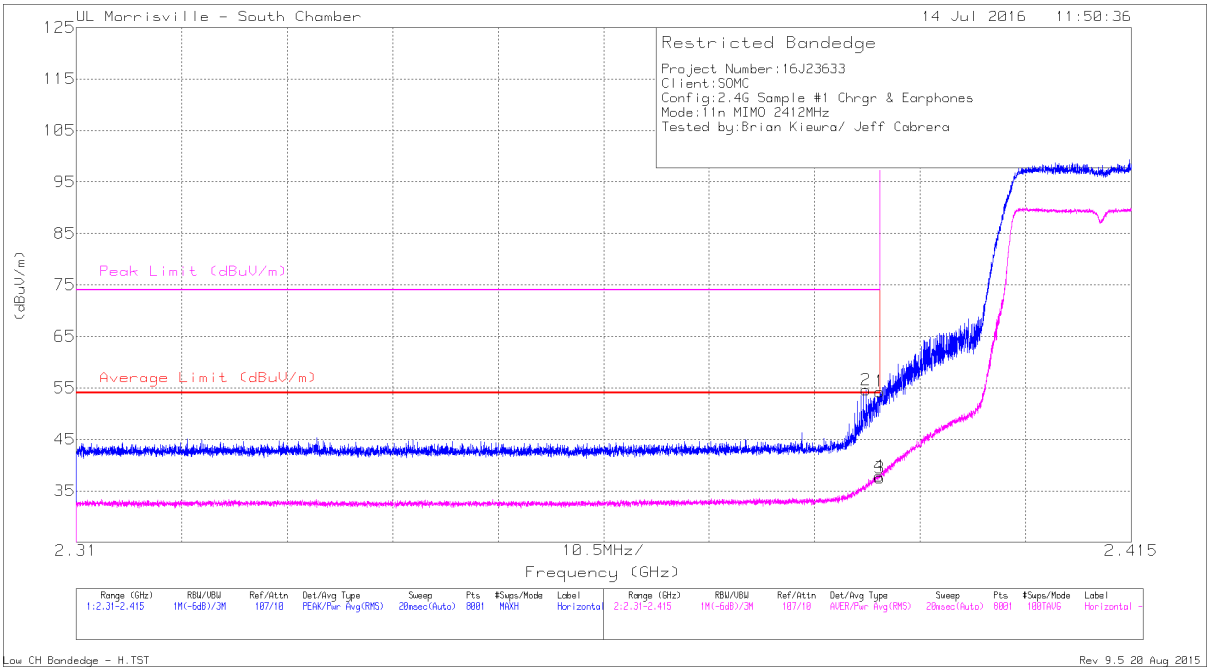
9.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 2.39	46.29	Pk	32.2	-24.2	0	54.29	-	-	74	-19.71	347	321	H
2	* 2.389	46.5	Pk	32.2	-24.1	0	54.6	-	-	74	-19.4	347	321	H
3	* 2.39	29.48	RMS	32.2	-24.2	0	37.48	54	-16.52	-	-	347	321	H
4	* 2.39	29.87	RMS	32.2	-24.2	0	37.87	54	-16.13	-	-	347	321	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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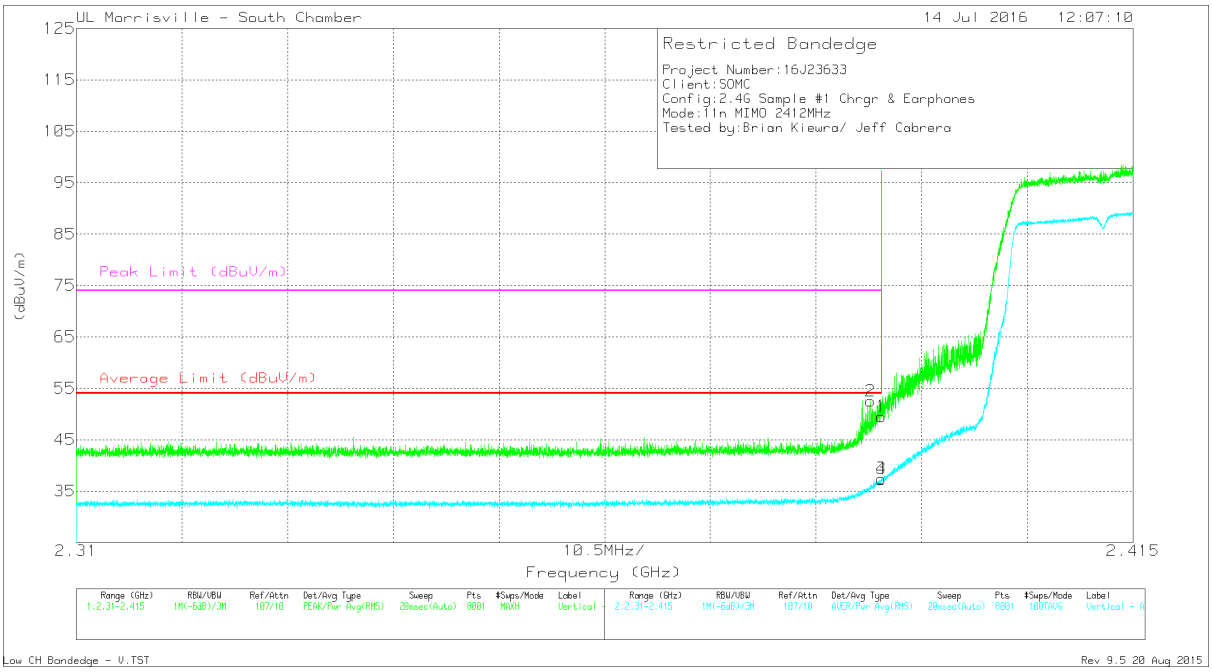

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.52	Pk	32.2	-24.2	0	49.52	-	-	74	-24.48	121	386	V
2	* 2.389	44.41	Pk	32.2	-24.1	0	52.51	-	-	74	-21.49	121	386	V
3	* 2.39	29.32	RMS	32.2	-24.2	.12	37.32	54	-16.68	-	-	121	386	V
4	* 2.39	29.22	RMS	32.2	-24.2	.12	37.22	54	-16.78	-	-	121	386	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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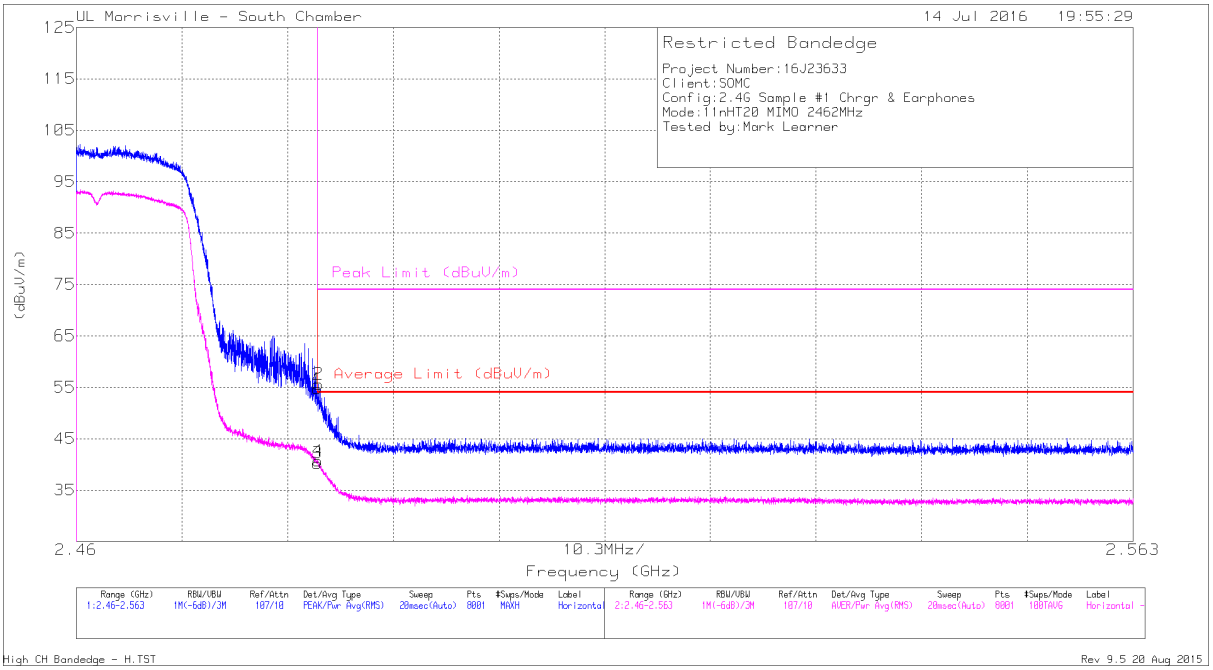
AUTHORIZED BANDEDGE (HIGH CHANNEL CH11)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	47.03	Pk	32.4	-24.7	0	54.73	-	-	74	-19.27	349	361	H
2	* 2.484	47.92	Pk	32.4	-24.7	0	55.62	-	-	74	-18.38	349	361	H
3	* 2.484	32.43	RMS	32.4	-24.7	0	40.13	54	-13.87	-	-	349	361	H
4	* 2.484	32.84	RMS	32.4	-24.7	0	40.54	54	-13.46	-	-	349	361	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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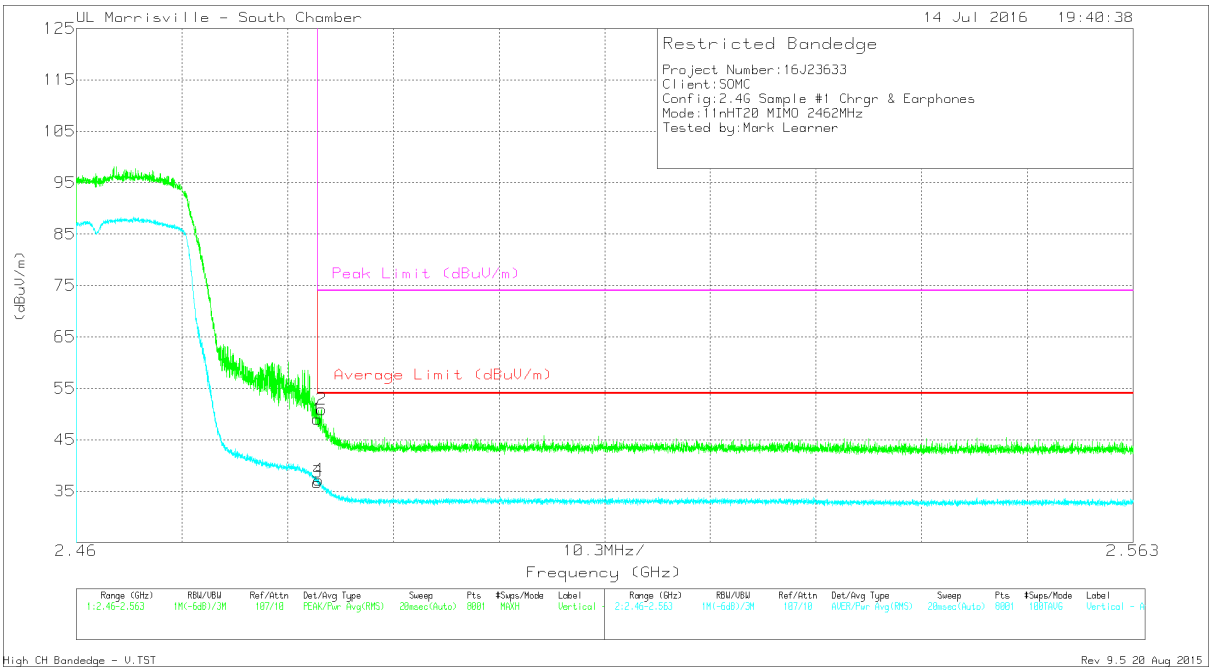

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.28	Pk	32.4	-24.7	0	48.98	-	-	74	-25.02	50	357	V
2	* 2.484	43.2	Pk	32.4	-24.7	0	50.9	-	-	74	-23.1	50	357	V
3	* 2.484	29	RMS	32.4	-24.7	.12	36.70	54	-17.30	-	-	50	357	V
4	* 2.484	29.45	RMS	32.4	-24.7	.12	37.15	54	-16.85	-	-	50	357	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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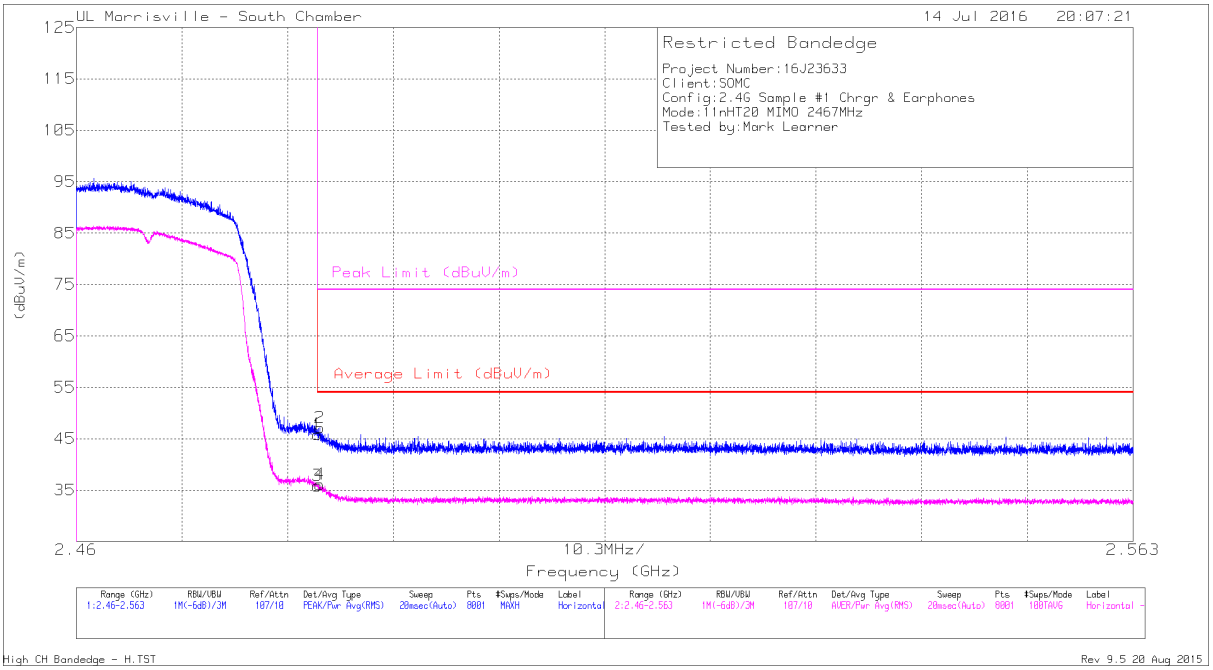
AUTHORIZED BANDEDGE (HIGH CHANNEL CH12)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	38.12	Pk	32.4	-24.7	0	45.82	-	-	74	-28.18	336	360	H
2	* 2.484	39.42	Pk	32.4	-24.7	0	47.12	-	-	74	-26.88	336	360	H
3	* 2.484	28.04	RMS	32.4	-24.7	0	35.74	54	-18.26	-	-	336	360	H
4	* 2.484	28.28	RMS	32.4	-24.7	0	35.98	54	-18.02	-	-	336	360	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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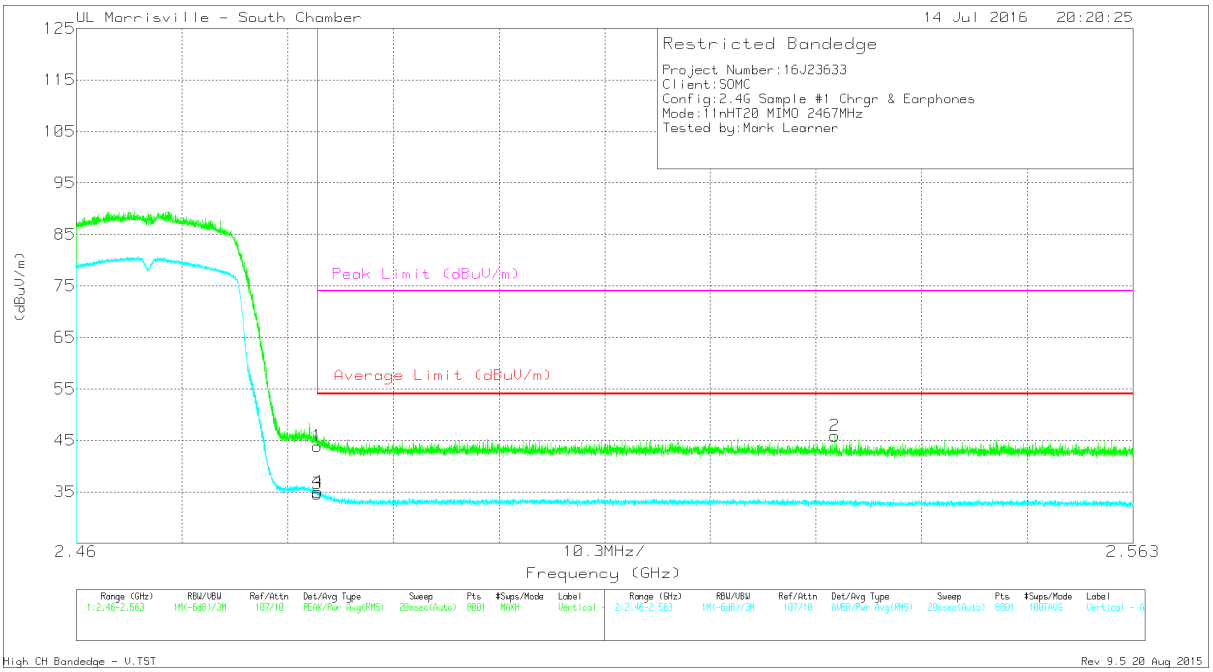

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.2	Pk	32.4	-24.7	0	43.9	-	-	74	-30.1	19	357	V
2	2.534	38.49	Pk	32.4	-25	0	45.89	-	-	74	-28.11	19	357	V
3	* 2.484	26.8	RMS	32.4	-24.7	.12	34.50	54	-19.50	-	-	19	357	V
4	* 2.484	27.2	RMS	32.4	-24.7	.12	34.90	54	-19.10	-	-	19	357	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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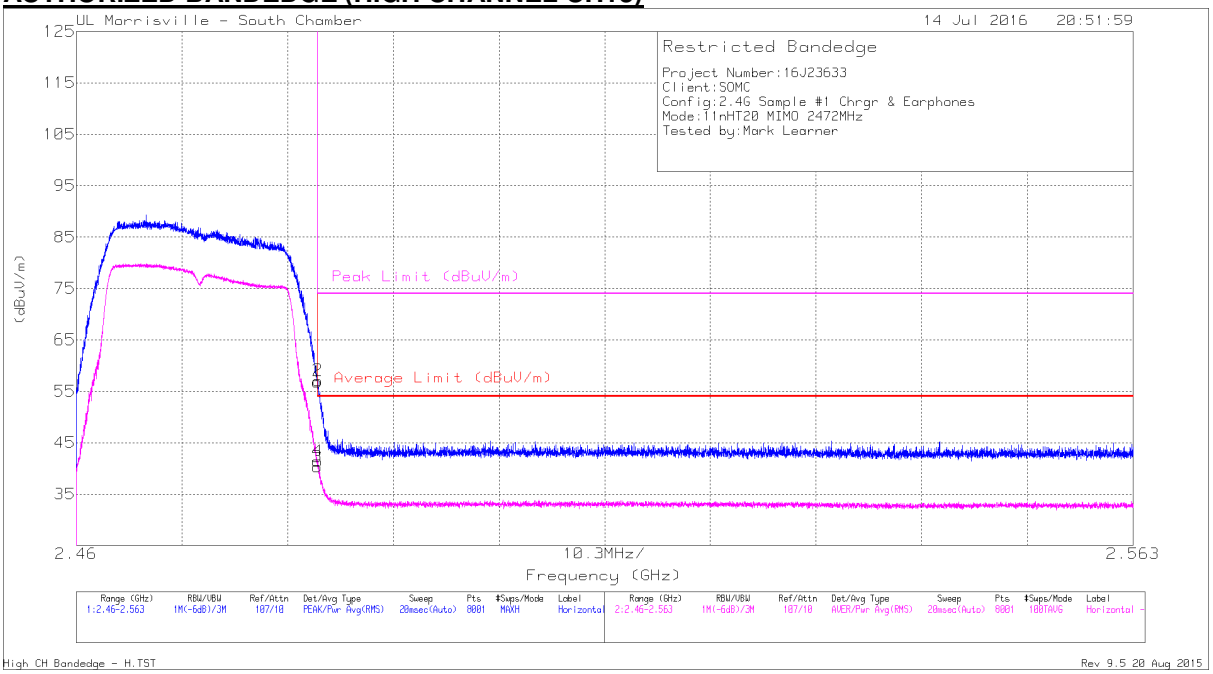
AUTHORIZED BANDEDGE (HIGH CHANNEL CH13)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	49.09	Pk	32.4	-24.7	0	56.79	-	-	74	-17.21	335	396	H
2	* 2.484	49.38	Pk	32.4	-24.7	0	57.08	-	-	74	-16.92	335	396	H
3	* 2.484	32.49	RMS	32.4	-24.7	0	40.19	54	-13.81	-	-	335	396	H
4	* 2.484	33.6	RMS	32.4	-24.7	0	41.30	54	-12.70	-	-	335	396	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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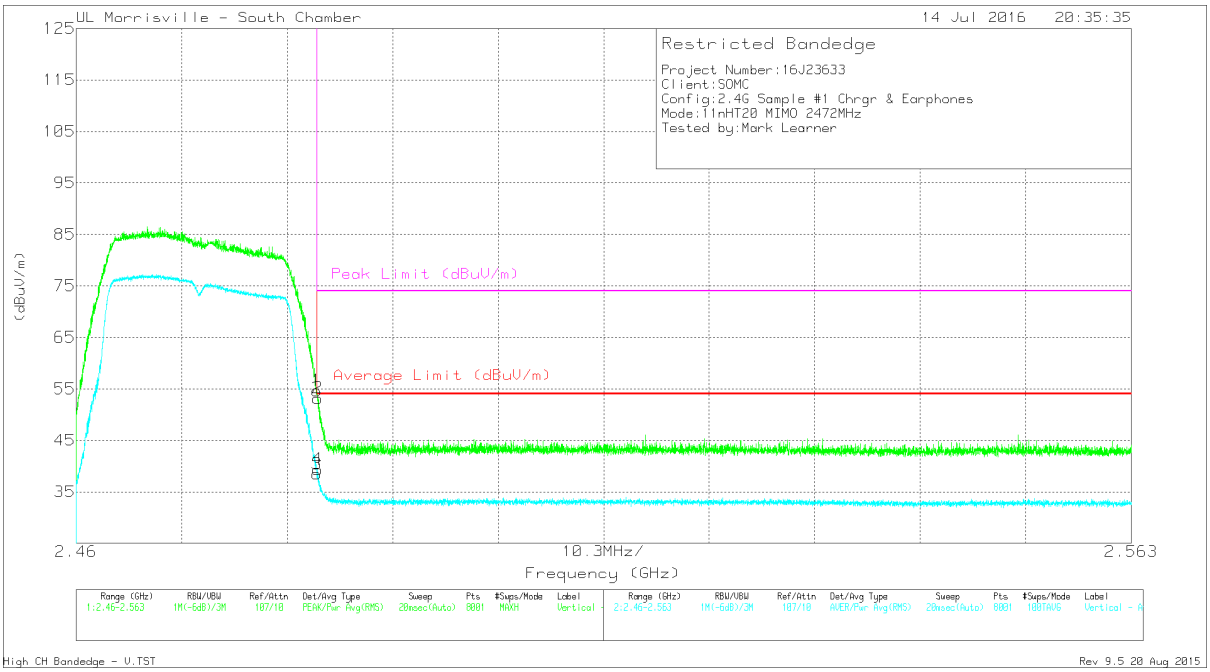

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.97	Pk	32.4	-24.7	0	54.67	-	-	74	-19.33	12	357	V
2	* 2.484	45.49	Pk	32.4	-24.7	0	53.19	-	-	74	-20.81	12	357	V
3	* 2.484	30.65	RMS	32.4	-24.7	.12	38.35	54	-15.65	-	-	12	357	V
4	* 2.484	31.55	RMS	32.4	-24.7	.12	39.25	54	-14.75	-	-	12	357	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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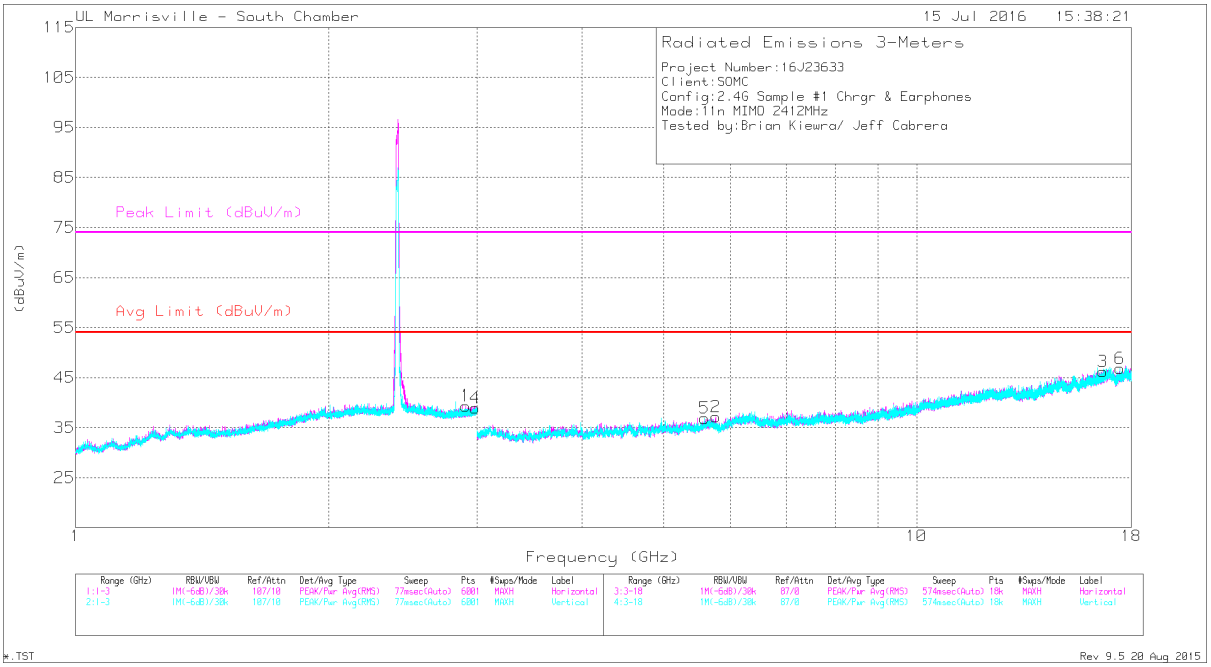
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	2.912	32.86	Pk	32.7	-26.2	0	39.36	-	-	-	-	0-360	199	H
2	5.772	33.57	Pk	34.6	-31	0	37.17	-	-	-	-	0-360	199	H
3	16.645	29.01	Pk	41.5	-24.3	0	46.21	-	-	-	-	0-360	199	H
4	2.985	32.21	Pk	32.8	-26.1	0	38.91	-	-	-	-	0-360	199	V
5	5.597	33.07	Pk	34.6	-30.8	0	36.87	-	-	-	-	0-360	102	V
6	17.439	29.65	Pk	41.2	-24	0	46.85	-	-	-	-	0-360	102	V

Pk - Peak detector
*.TST
Rev 9.5 20 Aug 2015

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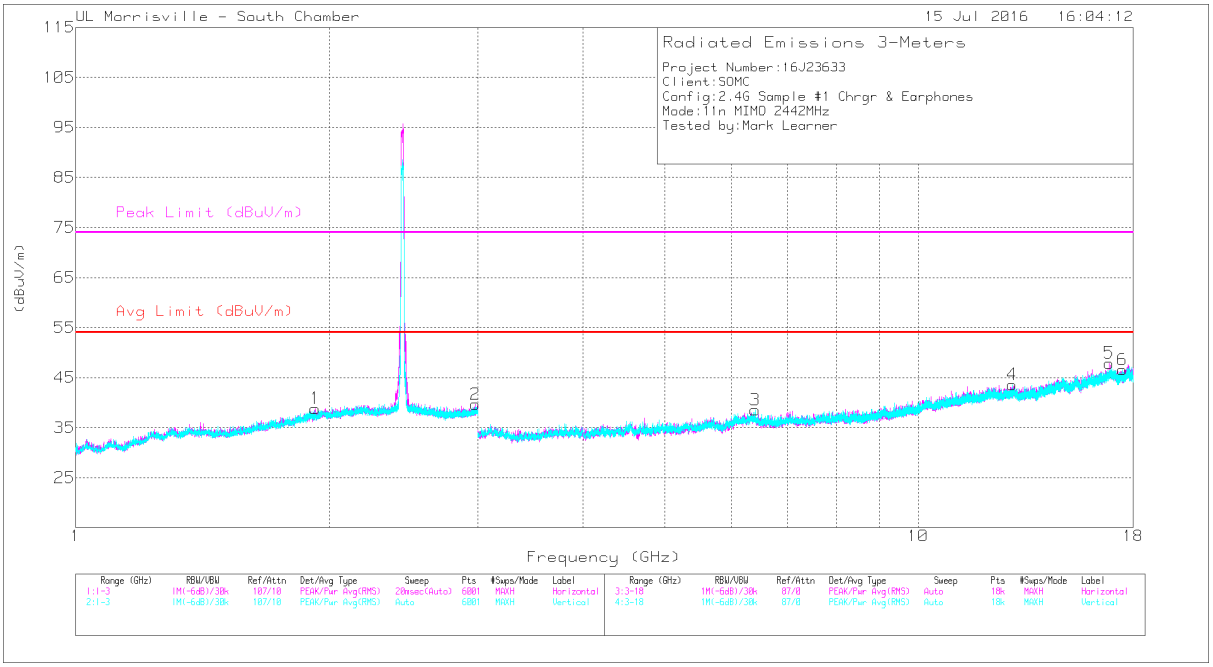
MID CHANNEL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 17.731	35.82	PK2	41.2	-22.6	0	54.42	-	-	74	-19.58	0	200	V
	* 17.733	24.18	MAv1	41.2	-22.6	.12	42.9	54	-11.1	-	-	0	200	V
1	1.924	30.35	Pk	31	-22.5	0	38.85	-	-	-	-	0-360	199	H
2	2.979	33.04	Pk	32.7	-26.1	0	39.64	-	-	-	-	0-360	199	H
3	6.405	32.34	Pk	35.4	-29.2	0	38.54	-	-	-	-	0-360	199	V
4	12.925	29.51	Pk	39.2	-25.1	0	43.61	-	-	-	-	0-360	199	V
5	16.849	30.3	Pk	41.6	-24	0	47.9	-	-	-	-	0-360	102	H

Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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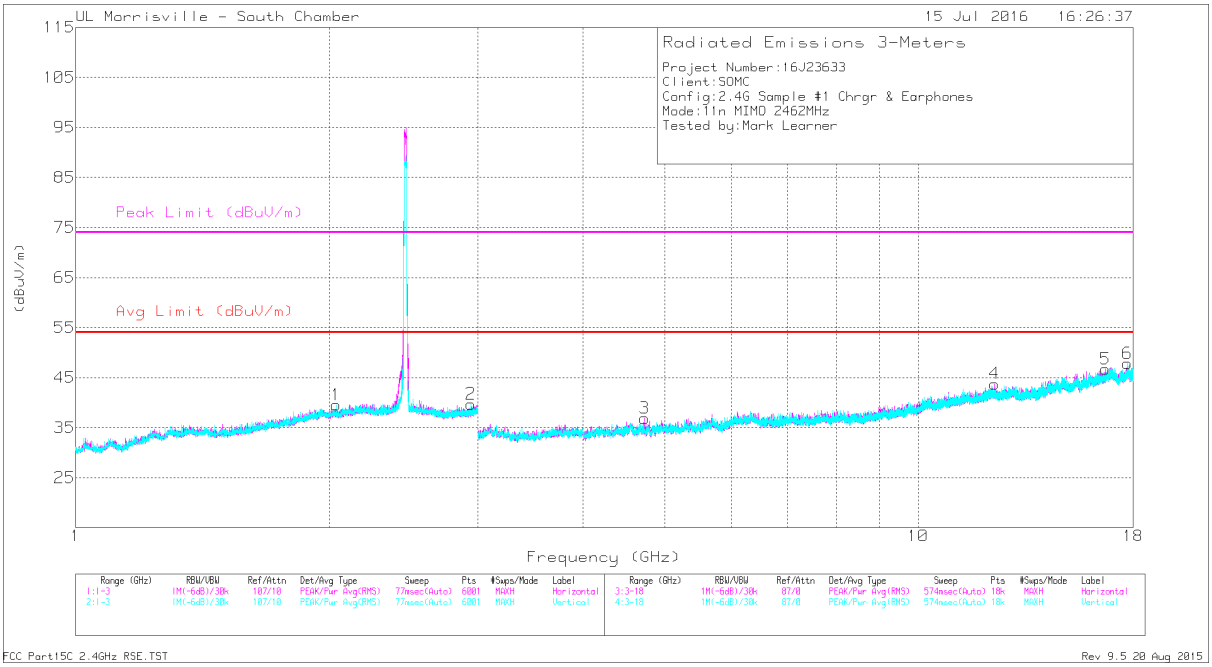
HIGH CHANNEL 11



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 4.731	40.25	PK2	34.1	-32.3	0	42.05	-	-	74	-31.95	0	102	H
	* 4.733	29.17	MAv1	34	-32.3	0	30.87	54	-23.13	-	-	0	102	H
4	* 12.317	34.36	PK2	39	-25.1	0	48.26	-	-	74	-25.74	0	200	H
	* 12.318	23.76	MAv1	39	-25.1	.12	37.66	54	-16.34	-	-	0	200	H
6	* 17.731	35.82	PK2	41.2	-22.6	0	54.42	-	-	74	-19.58	0	200	V
	* 17.733	24.18	MAv1	41.2	-22.6	.12	42.78	54	-11.22	-	-	0	200	V
5	16.677	30.32	Pk	41.5	-25.1	0	46.72	-	-	-	-	0-360	102	H
1	2.038	31.44	Pk	31.1	-23	0	39.54	-	-	-	-	0-360	199	V
2	2.946	33.22	Pk	32.6	-26.1	0	39.72	-	-	-	-	0-360	102	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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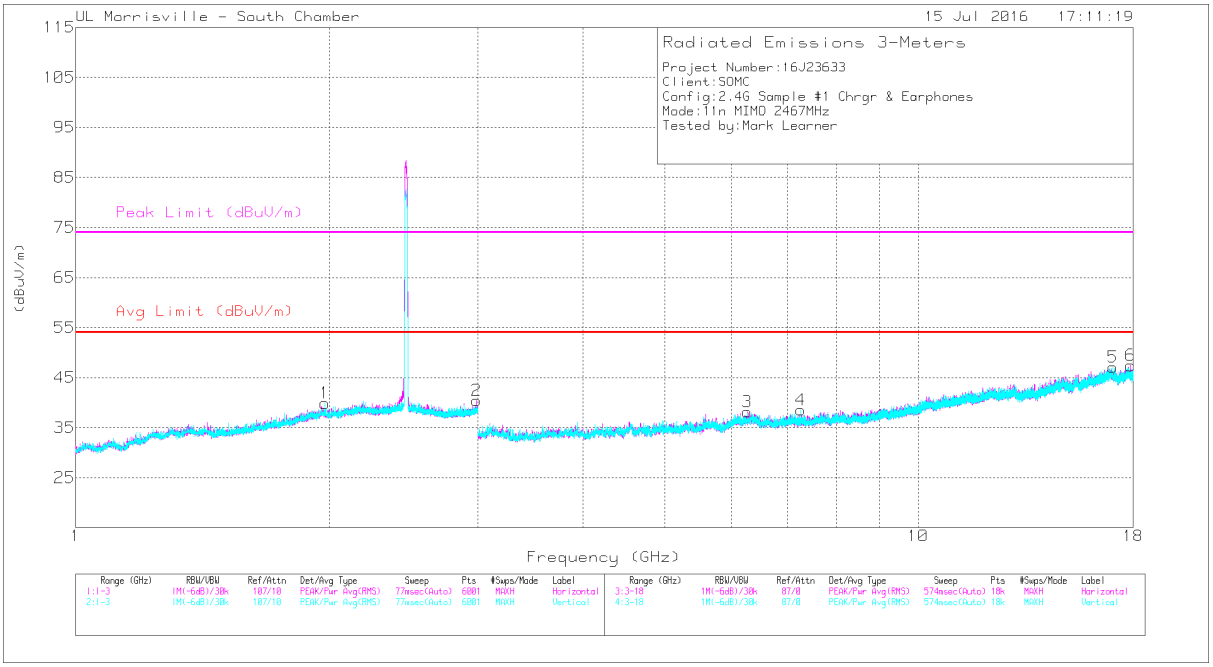
HIGH CHANNEL 12



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 17.879	33.47	PK2	41.2	-22.6	0	52.07	-	-	74	-21.93	0	102	H
	* 17.878	22.86	MAv1	41.2	-22.5	0	41.56	54	-12.44	-	-	0	102	H
4	* 7.258	36.55	PK2	35.5	-28.5	0	43.55	-	-	74	-30.45	0	199	V
	* 7.257	25.18	MAv1	35.5	-28.5	0	32.18	54	-21.82	-	-	0	199	V
2	2.99	33.69	Pk	32.8	-26.1	0	40.39	-	-	-	-	0-360	102	H
3	6.268	31.88	Pk	35.4	-29.1	0	38.18	-	-	-	-	0-360	200	H
1	1.976	31.38	Pk	31.2	-22.7	0	39.88	-	-	-	-	0-360	102	V
5	17.036	30	Pk	41.5	-24.4	0	47.1	-	-	-	-	0-360	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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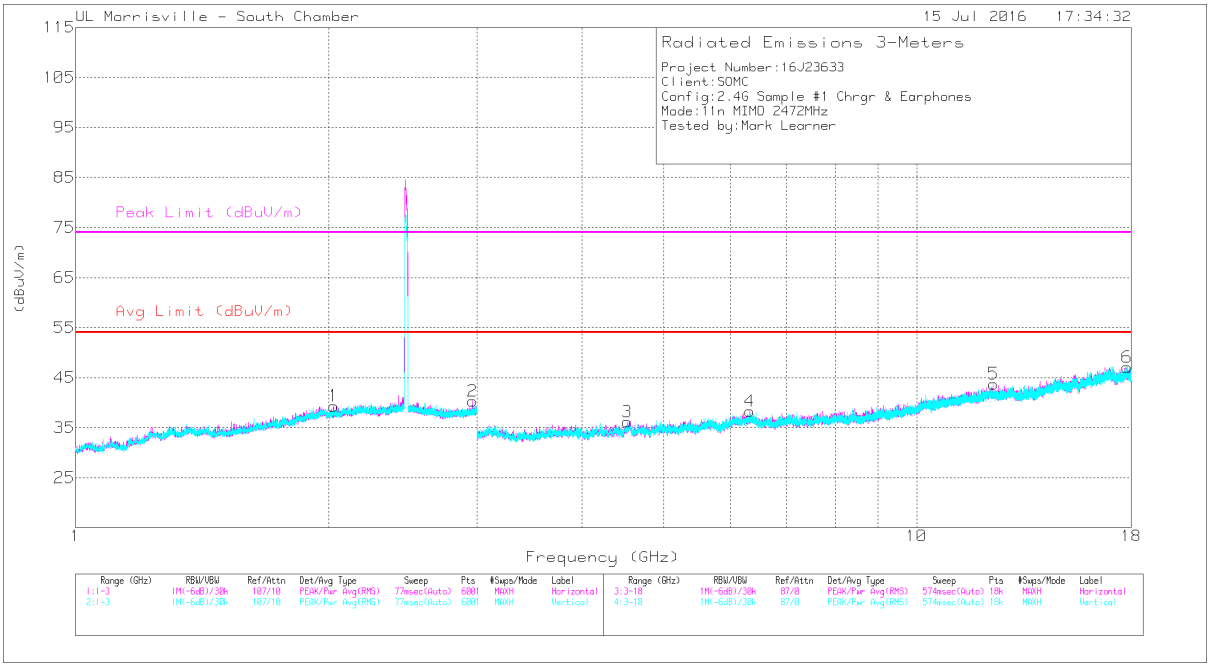
HIGH CHANNEL 13



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0069 (dB/m)	Amp/Cbl/ Fltr/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	* 4.531	40	PK2	33.9	-31.9	0	42	-	-	74	-32	0	198	V
	* 4.531	28.59	MAv1	33.9	-31.9	0	30.59	54	-23.41	-	-	0	198	V
5	* 12.351	35.05	PK2	39	-24.9	0	49.15	-	-	74	-24.85	0	198	V
	* 12.35	23.63	MAv1	39	-24.9	0	37.73	54	-16.27	-	-	0	198	V
6	* 17.797	34.57	PK2	41.2	-22.6	0	53.17	-	-	74	-20.83	0	103	V
	* 17.798	23.51	MAv1	41.2	-22.6	.12	42.11	54	-11.89	-	-	0	103	V
1	2.028	31.15	Pk	31.1	-22.9	0	39.35	-	-	-	-	0-360	199	H
2	2.964	33.68	Pk	32.7	-26.1	0	40.28	-	-	-	-	0-360	199	H
4	6.331	31.6	Pk	35.4	-28.7	0	38.3	-	-	-	-	0-360	102	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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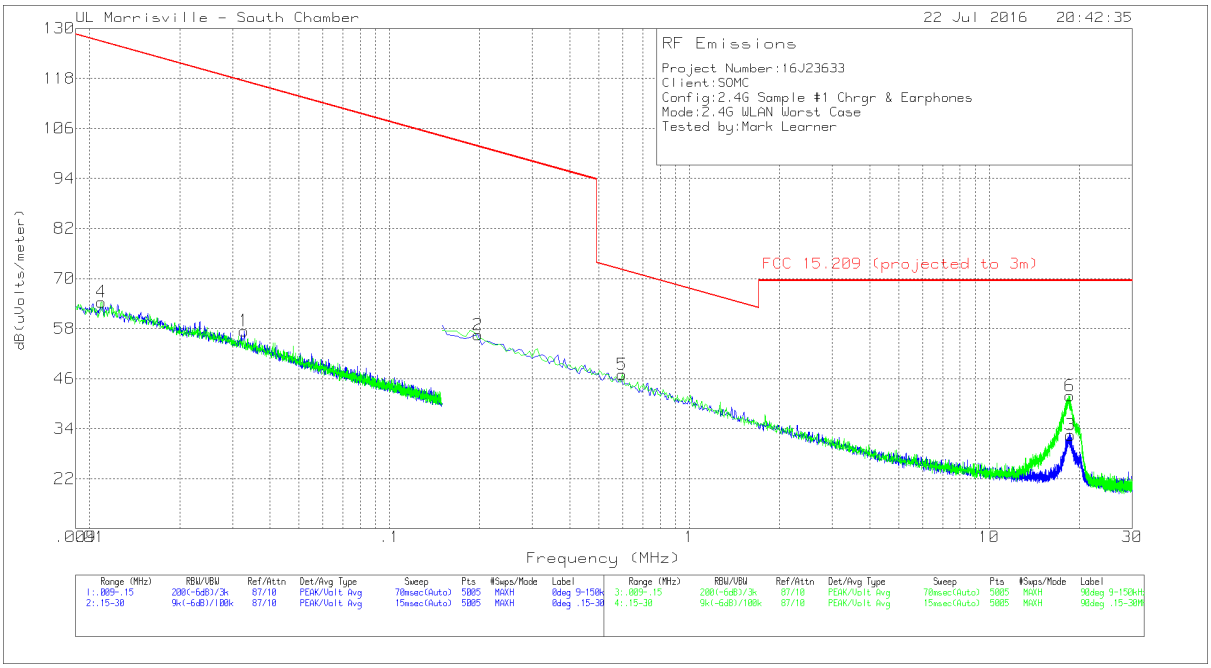
9.3. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 9kHz to 30 MHz (WORST-CASE CONFIGURATION)

Note: All measurements were made at a test distance of 3 m. The limits in the plots and tabular data are the FCC/IC limits extrapolated from the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to the measurement distance to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (specification distance / test distance).

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



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 AF (dB/m)	Cbl (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.209 (projected to 3m)	Margin (dB)	Azimuth (Degs)
1	.03283	43.56	Pk	13.8	.1	57.46	117.28	-59.82	0-360
2	.19772	44.46	Pk	11.9	.1	56.46	101.68	-45.22	0-360
3	18.67133	21.67	Pk	10.1	.7	32.47	69.54	-37.07	0-360
4	.01096	45.69	Pk	18.6	.1	64.39	126.81	-62.42	0-360
5	.59738	35.01	Pk	11.9	.1	47.01	72.08	-25.07	0-360
6	18.58782	31.04	Pk	10.1	.7	41.84	69.54	-27.7	0-360

Pk - Peak detector

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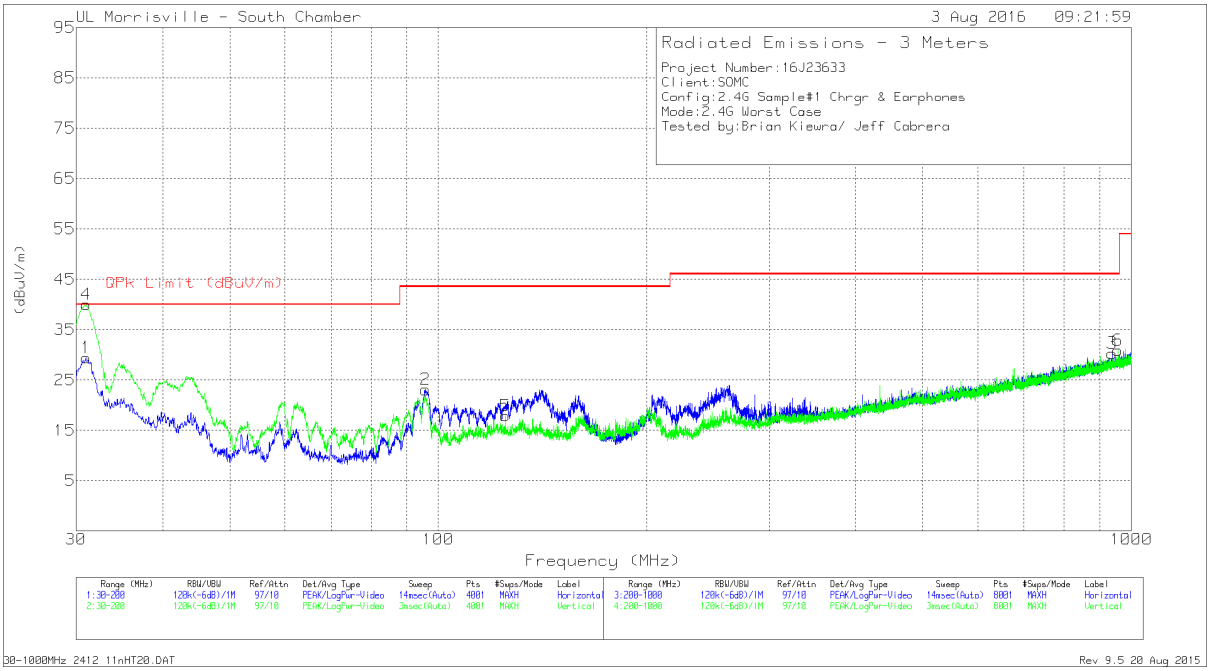
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0074 AF (dB/m)	Amp/Cbl (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	125.0616*	41.39	Pk	18.2	-30.8	0	28.79	43.52	-14.73	262	105	V
	124.9118*	24	Qp	18.2	-30.8	0	11.4	43.52	-32.12	262	105	V
1	31.02	36.02	Pk	25.2	-31.8	0	29.42	40	-10.58	0-360	399	H
2	95.875	41	Pk	13.1	-31	0	23.1	43.52	-20.42	0-360	299	H
3	938.3	29.51	Pk	27.4	-26.6	0	30.31	46.02	-15.71	0-360	299	H
4	31.001	42.11	Qp	25.2	-31.8	0	35.51	40	-4.49	9	105	V
6	956.1	29.77	Pk	27.5	-26.4	0	30.87	46.02	-15.15	0-360	199	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

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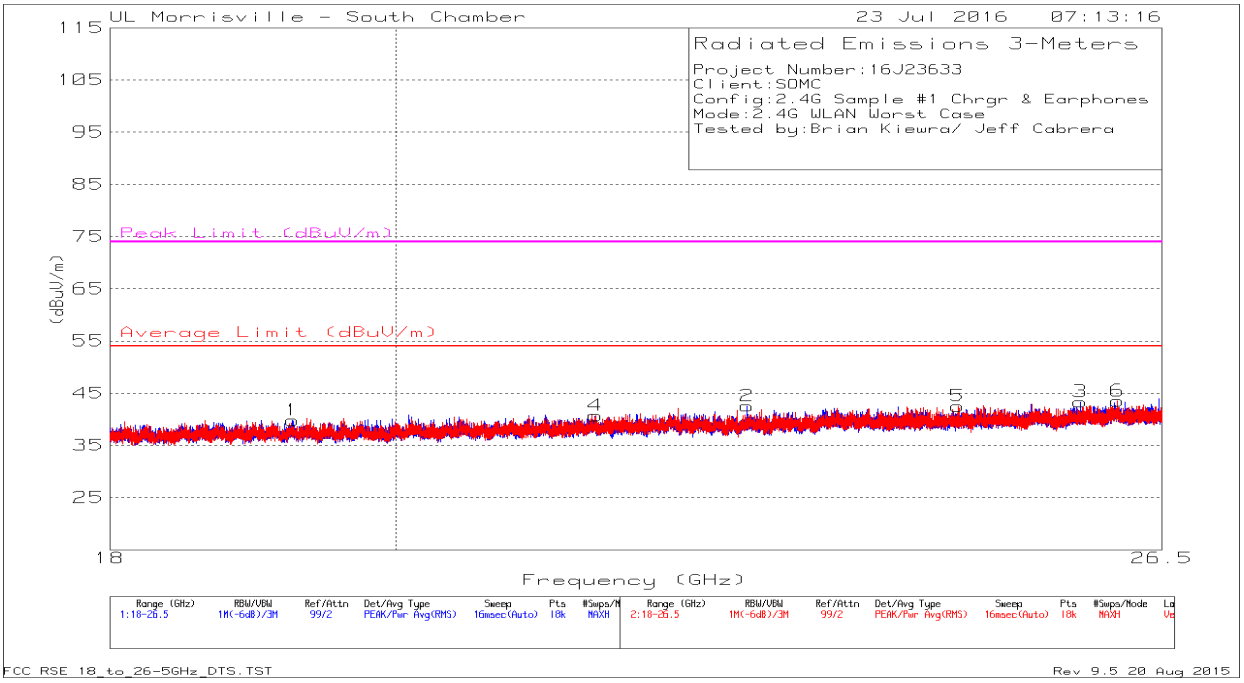
9.4. WORST-CASE ABOVE 18GHz

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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0076 (dB/m)	Amp/Cbl (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 19.25	48.27	PK2	33	-40.5	0	40.77	54	-13.23	74	-33.23	154	201	H
	* 19.25	36.32	MAv1	33	-40.5	0	28.82	54	-25.18	74	-45.18	154	201	H
2	* 22.755	47.4	PK2	34.1	-39.5	0	42	54	-12	74	-32	15	248	H
	* 22.754	35.86	MAv1	34.1	-39.5	0	30.46	54	-23.54	74	-43.54	15	248	H
3	25.719	46.35	Pk	34.9	-37.9	0	43.35	54	-10.65	74	-30.65	0-360	102	H
4	21.519	47.09	Pk	33.6	-40	0	40.69	54	-13.31	74	-33.31	0-360	101	V
5	24.586	46.51	Pk	34.6	-38.6	0	42.51	54	-11.49	74	-31.49	0-360	201	V
6	26.074	46.01	Pk	35	-37.5	0	43.51	54	-10.49	74	-30.49	0-360	201	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

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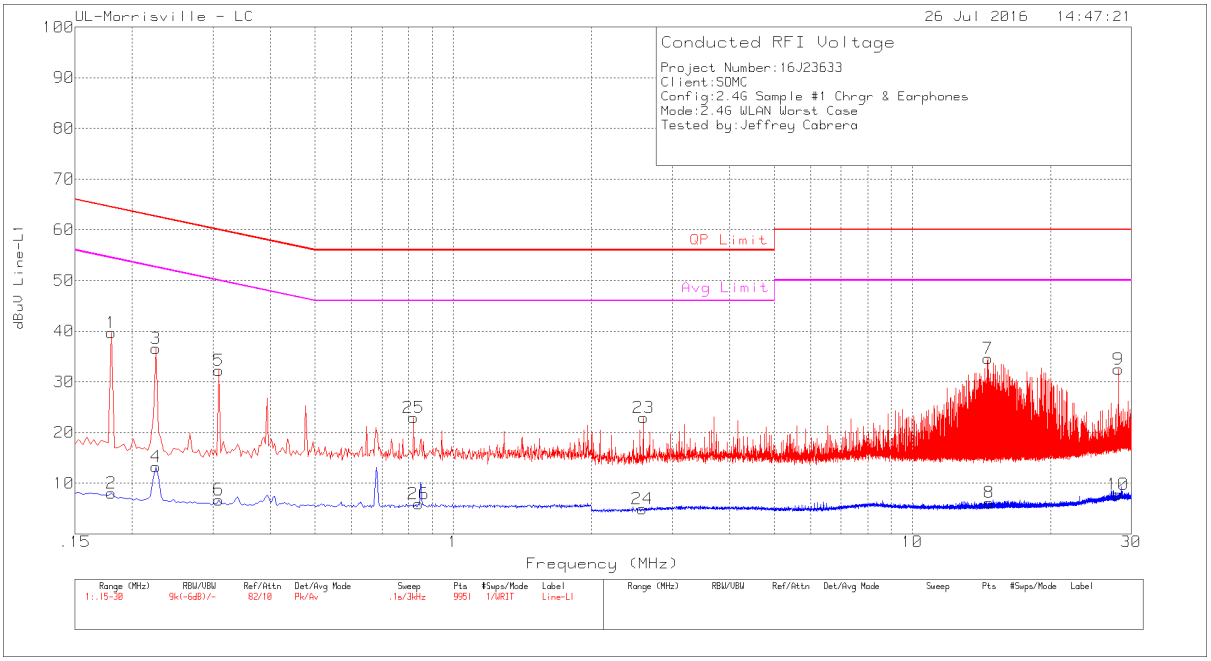
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF [dB]	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.18	29.5	Pk	.2	10	39.7	64.49	-24.79	-	-
2	.18	-2.21	Av	.2	10	7.99	-	-	54.49	-46.5
3	.225	26.44	Pk	.1	10	36.54	62.63	-26.09	-	-
4	.225	3.19	Av	.1	10	13.29	-	-	52.63	-39.34
5	.309	22.19	Pk	.1	10	32.29	60	-27.71	-	-
6	.309	-3.37	Av	.1	10	6.73	-	-	50	-43.27
7	14.634	24	Pk	.2	10.4	34.6	60	-25.4	-	-
8	14.718	-4.42	Av	.2	10.4	6.18	-	-	50	-43.82
9	28.11	21.34	Pk	.4	10.7	32.44	60	-27.56	-	-
10	28.095	-3.33	Av	.4	10.7	7.77	-	-	50	-42.23
23	2.595	12.74	Pk	.1	10.1	22.94	56	-33.06	-	-
24	2.583	-5.22	Av	.1	10.1	4.98	-	-	46	-41.02
25	.819	12.96	Pk	0	10	22.96	56	-33.04	-	-
26	.84	-4.11	Av	0	10	5.89	-	-	46	-40.11

Pk - Peak detector
Av - Average detection

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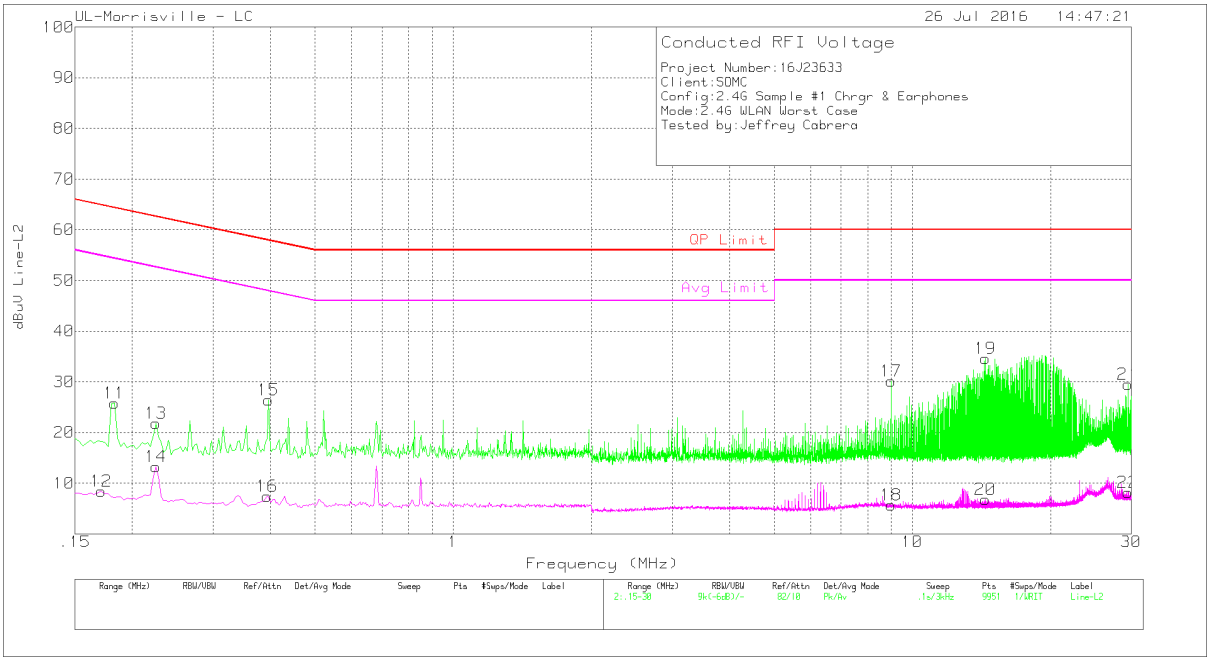
LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF [dB]	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
11	.183	15.64	Pk	.2	10	25.84	64.35	-38.51	-	-
12	.171	-1.85	Av	.2	10	8.35	-	-	54.91	-46.56
13	.225	11.69	Pk	.1	10	21.79	62.63	-40.84	-	-
14	.225	3.15	Av	.1	10	13.25	-	-	52.63	-39.38
15	.396	16.29	Pk	.1	10	26.39	57.94	-31.55	-	-
16	.393	-2.7	Av	.1	10	7.4	-	-	48	-40.6
17	9.006	19.69	Pk	.1	10.3	30.09	60	-29.91	-	-
18	8.985	-4.68	Av	.1	10.3	5.72	-	-	50	-44.28
19	14.433	24.05	Pk	.1	10.4	34.55	60	-25.45	-	-
20	14.433	-3.7	Av	.1	10.4	6.8	-	-	50	-43.2
21	29.475	18.36	Pk	.4	10.7	29.46	60	-30.54	-	-
22	29.475	-2.99	Av	.4	10.7	8.11	-	-	50	-41.89

Pk - Peak detector
Av - Average detection

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