



CERTIFICATION TEST REPORT

Report Number : 11735596-E3V2

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

Model : 1807

FCC ID : C3K1807

IC : 3048A-1807

EUT Description : PORTABLE COMPUTING DEVICE

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

Date Of Issue:
October 02, 2017

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	08/23/17	Initial Release	---
V2	10/02/17	- Updated all chain 0 references to Path A and chain 1 references to path B - Updated section 5.5	C. Susa

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: PORTABLE COMPUTING DEVICE

MODEL: 1807

SERIAL NUMBER: RADIATED: 032012672953
CONDUCTED: 031936672953

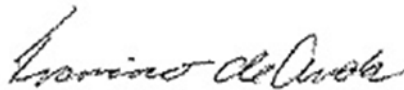
DATE TESTED: AUGUST 04 – AUGUST 14, 2017

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

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

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

Approved & Released For
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FRANCISCO DE ANDA
WiSE Program Manager
UL VERIFICATION SERVICES INC.

Prepared By:



ERIC YU
WiSE LAB ENGINEER
UL VERIFICATION SERVICES INC.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB 558074 D01 v4, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☐ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 22541-1)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 22541-2)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 22541-3)
	☐ Chamber G(IC: 22541-4)
	☐ Chamber H(IC: 22541-5)

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

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

Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

Parameter	Uncertainty
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2472	802.11b 2TX	19.98	99.54
2412 - 2472	802.11g 2TX	23.15	206.54
2412 - 2472	802.11n HT20 2TX CDD	23.34	215.77

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2472	802.11b 2TX	16.64	46.13
2412 - 2472	802.11g 2TX	16.90	48.98
2412 - 2472	802.11n HT20 2TX	16.80	47.86

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain (dBi)	
	Path A	Path B
2.4	2.40	0.20

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 14.2.201.159

The test utility software used during testing was Wifi tool v2.0.0.77

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated bandedge, harmonics, and spurious emissions from 1 GHz to 18GHz were performed. The EUT was set to transmit at the Low/Middle/High channels.

Radiated emission below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT was 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 Z orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in Z orientation.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

For MIMO modes, the 2TX emission testing was considered as a worst case scenario and was performed at power levels, per transmit chain, greater than or equal to the maximum power in any 1TX mode.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

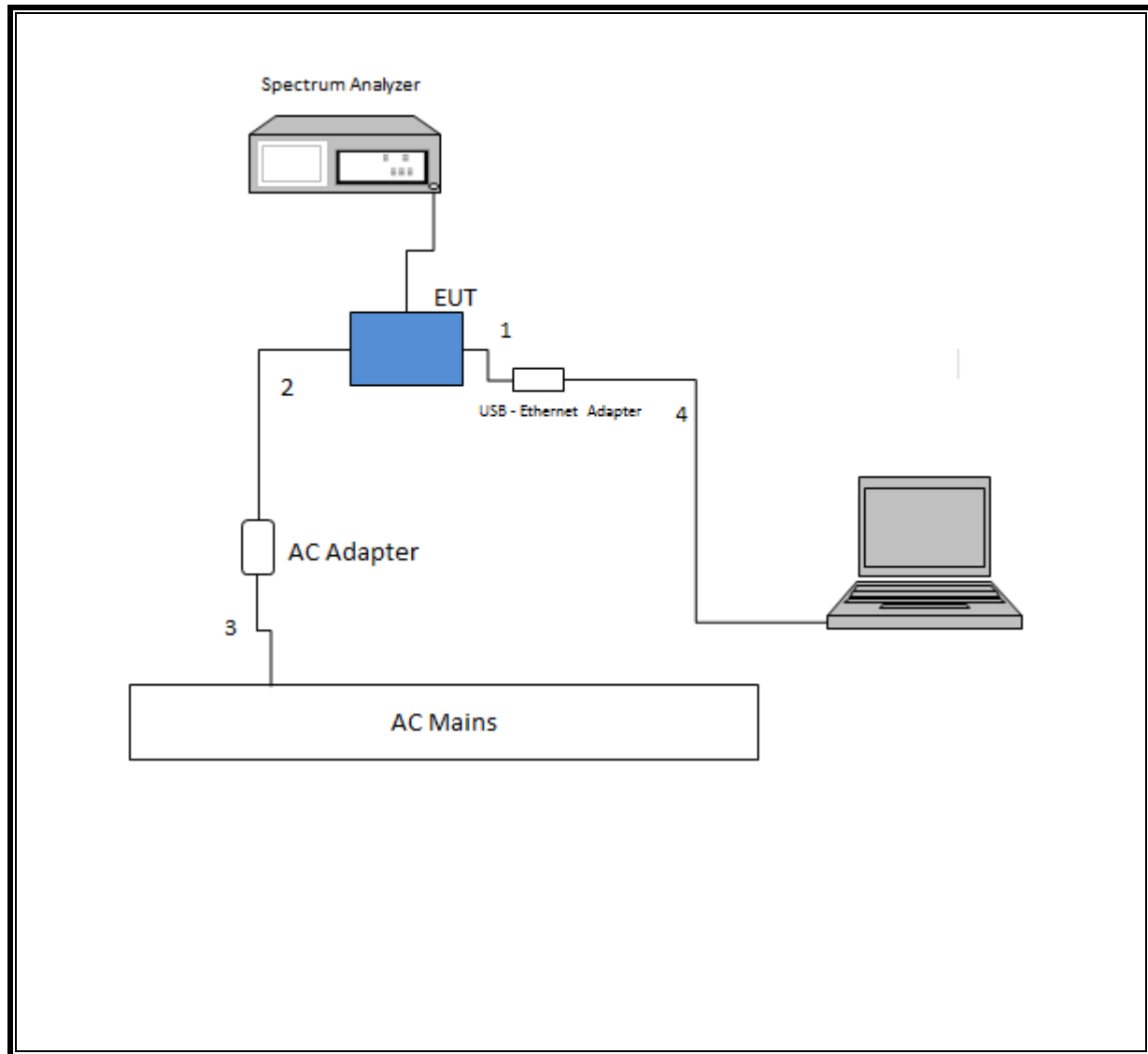
I/O CABLES

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

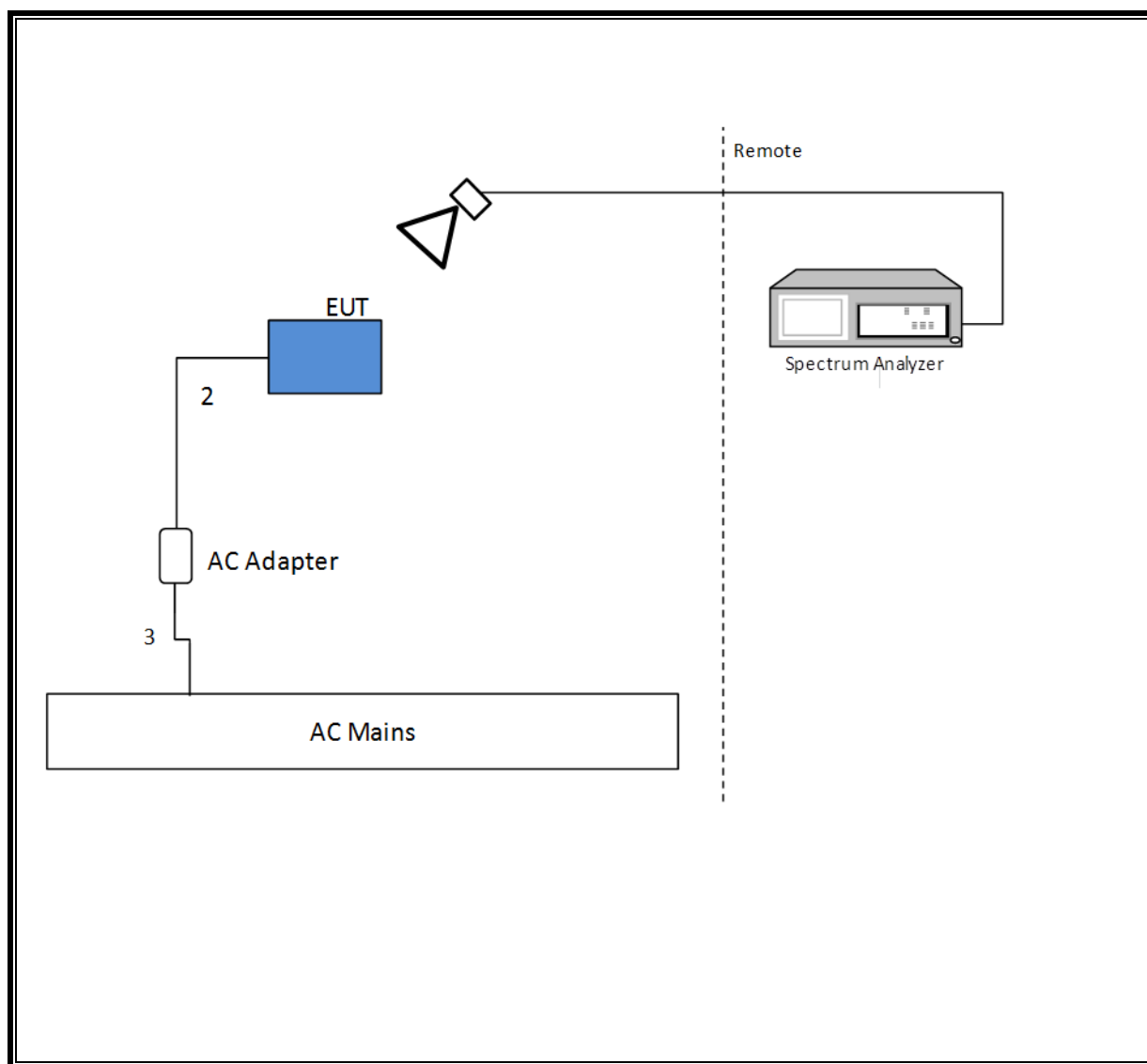
TEST SETUP

The EUT was tested connected to a host Laptop via RJ45/USB cable and AC adapter for antenna port. For radiated and AC line, tests were performed with EUT connected to AC adapter. Laptop was used to program settings then removed from setup.. Test software exercised the radio card.

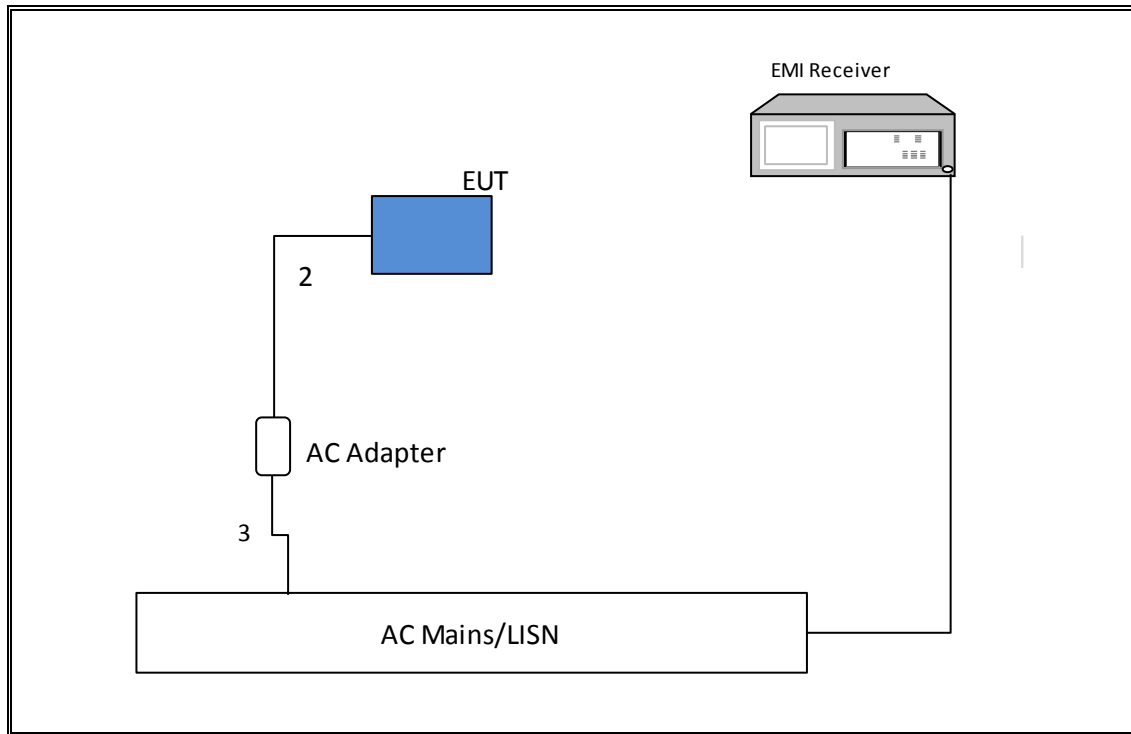
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



SETUP DIAGRAM FOR AC LINE CONDUCTED TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Broadband Hybrid, 30MHz to 2000MHz w/4dB Pad	Sunol Sciences Corp.	JB3	T477	06/22/2018
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T712	01/30/2018
Antenna, Horn 18-26.5GHz	ARA	MWH-1826/B	T449	06/12/2018
Power Meter, P-series single channel	Agilent (Keysight) Technologies	N1911A	T1264	07/08/2018
Power Sensor, P – series, 50MHz to 18GHz, Wideband	Agilent (Keysight) Technologies	N1921A	T413	06/20/2018
Amplifier, 1-26.5GHz	Agilent (Keysight) Technologies	8449B	T404	07/05/2018
Amplifier, 10kHz-1GHz	Agilent (Keysight) Technologies	8447D	T15	08/26/2017
Amplifier, 1-8 GHz	MITEQ	AMF-4D-01000800-30-29P	T1170	04/28/2018
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Agilent (Keysight) Technologies	E4440A	T199	07/22/2018
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Agilent (Keysight) Technologies	E4440A	T908	04/13/2018
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T907	01/23/2018
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Agilent (Keysight) Technologies	E9030A	T905	01/11/2018
LISN	FISCHER	FCC-LISN-50/250-25-2-01	T1310	01/17/2018

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

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

7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v04, Section 6.

6 dB BW: KDB 558074 D01 v04, Section 8.1.

99% BW: ANSI C63.10-2013, Section 6.9.3.

Output Power: KDB 558074 D01 v04, Section 9.2.3.2.

Power Spectral Density: KDB 558074 D01 v04, Section 10.3.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v04, Section 11.1 (b).

Out-of-band emissions in restricted bands: KDB 558074 D01 v04, Section 12.1.

Band-edge: KDB 558074 D01 v04, Section 12.1.

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

8. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	Occupied Band width (6dB)	>500KHz	Conducted	Pass
2.1051, 15.247 (d)	Band Edge / Conducted Spurious Emission	-30dBc		Pass
15.247 (b) (3)	TX conducted output power	<30dBm		Pass
15.247 (e)	PSD	<8dBm/3kHz		Pass
15.207 (a)	AC Power Line conducted emissions	Section 10		Pass
15.205, 15.209, 15.247(d)	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass
		< 74dBuV/m		

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

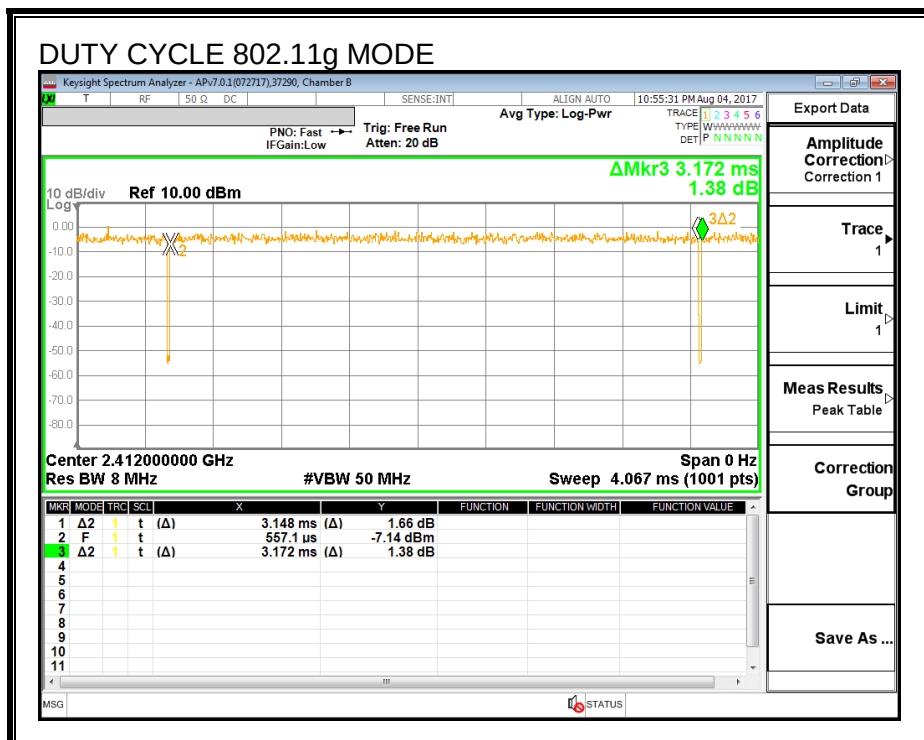
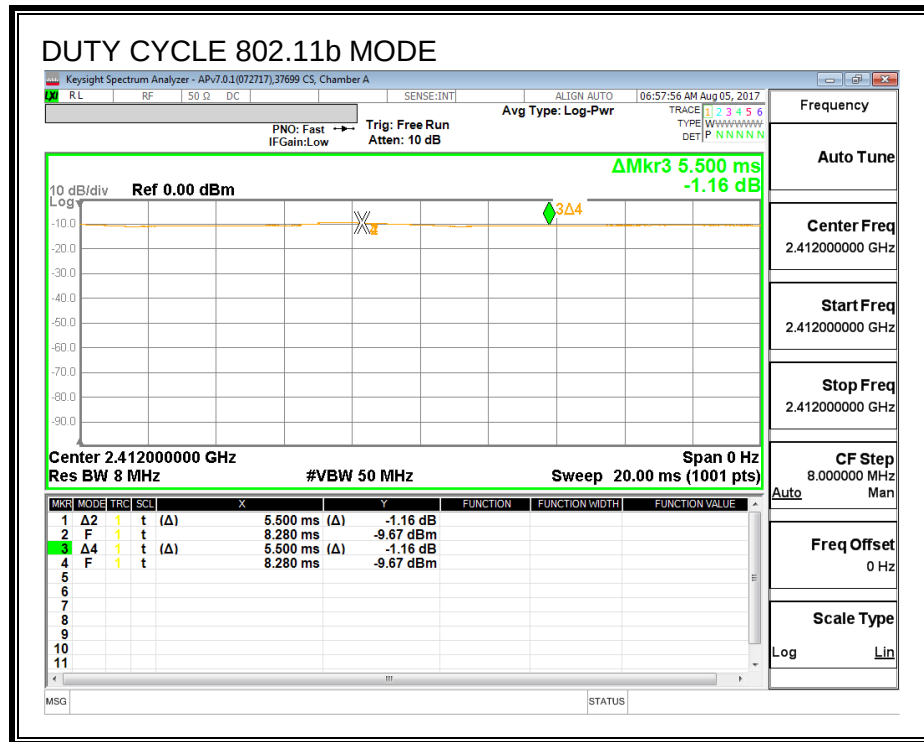
PROCEDURE

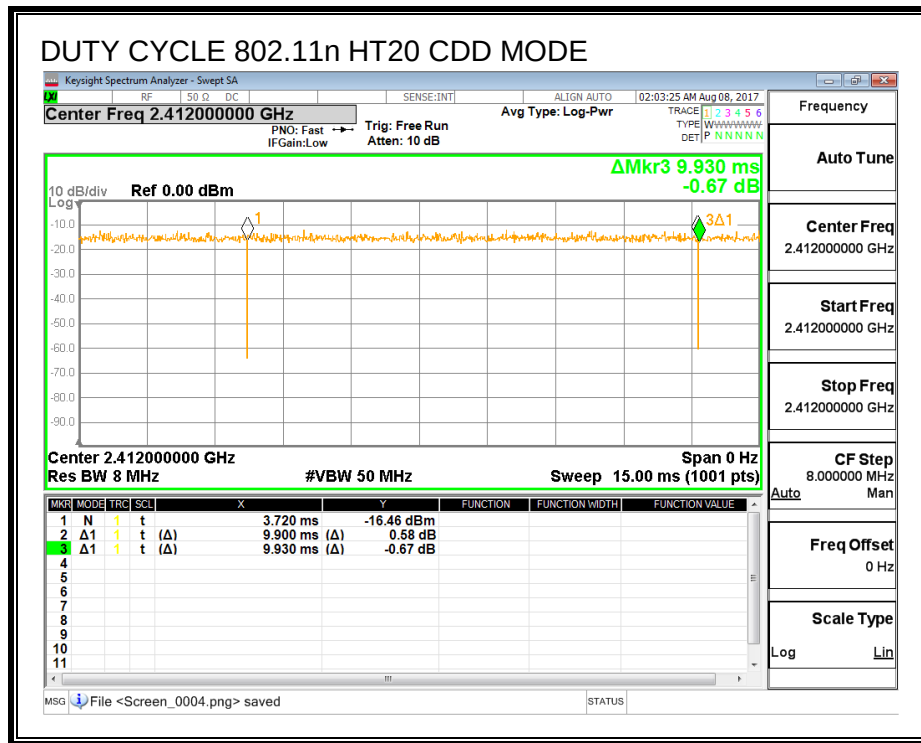
KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11b	5.50	5.50	1.000	100.00%	0.00	0.01
802.11g	3.15	3.17	0.992	99.24%	0.00	0.01
802.11n HT20 CDD	9.90	9.93	0.997	99.70%	0.00	0.01

DUTY CYCLE PLOTS





9.2. 11b 2TX MIMO MODE IN THE 2.4GHz BAND

9.2.1. 6 dB BANDWIDTH

LIMITS

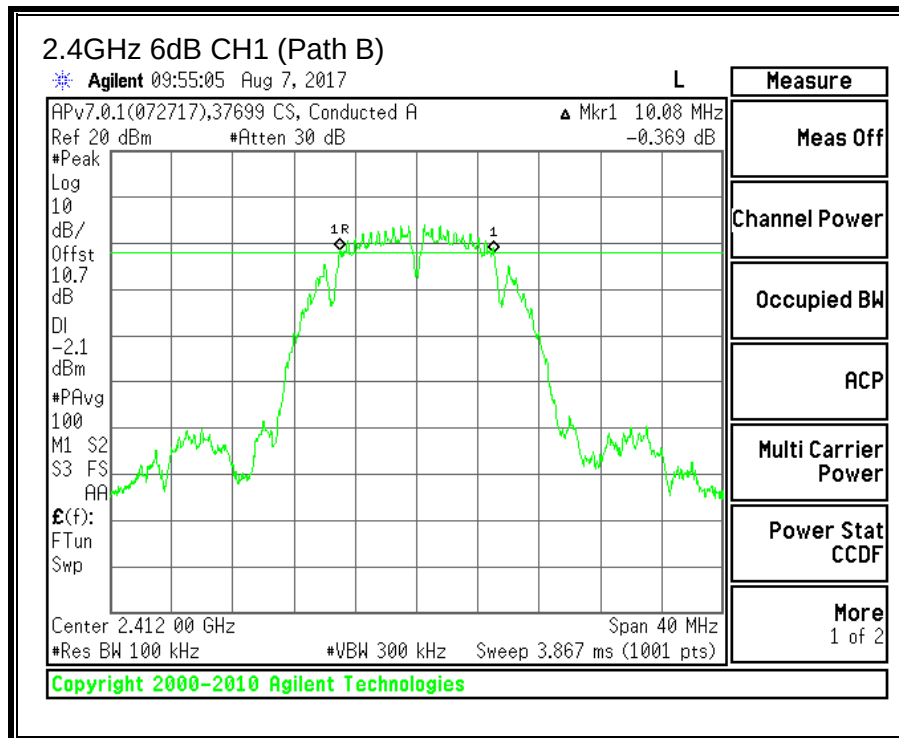
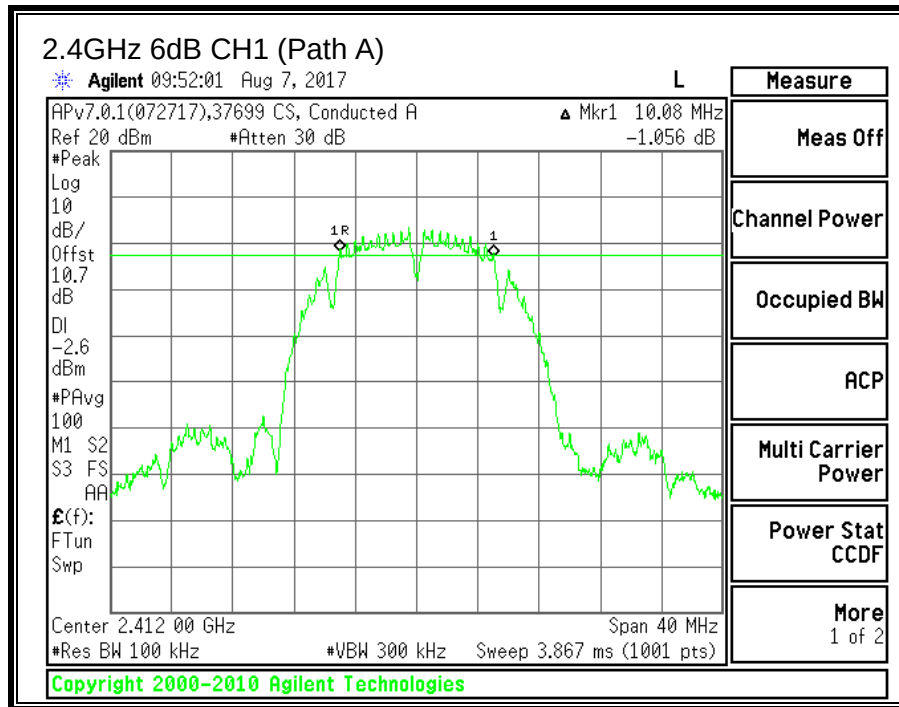
FCC §15.247 (a) (2)

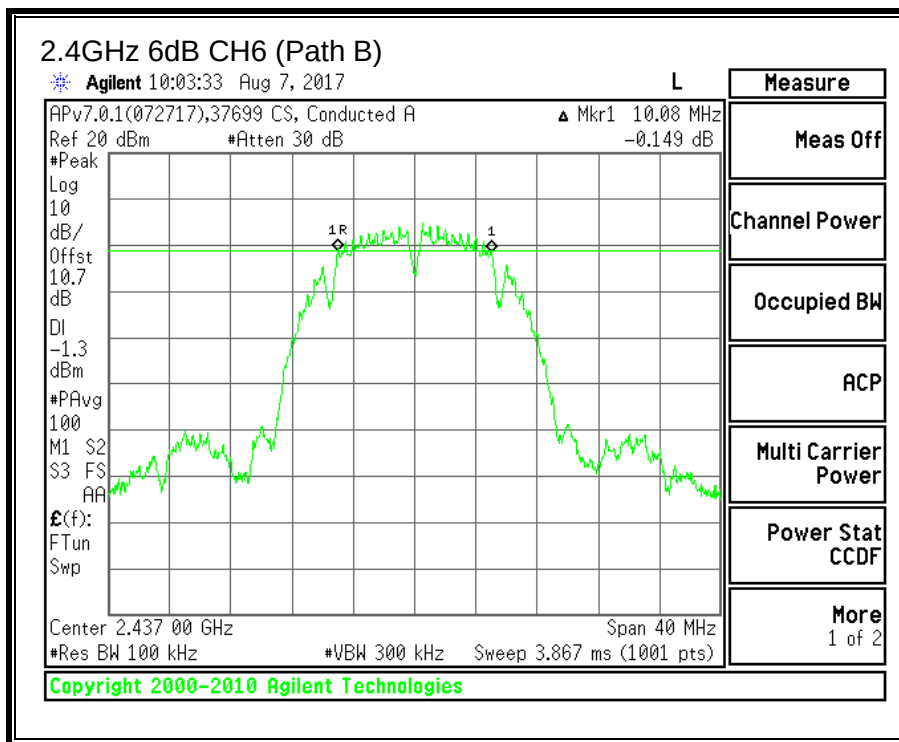
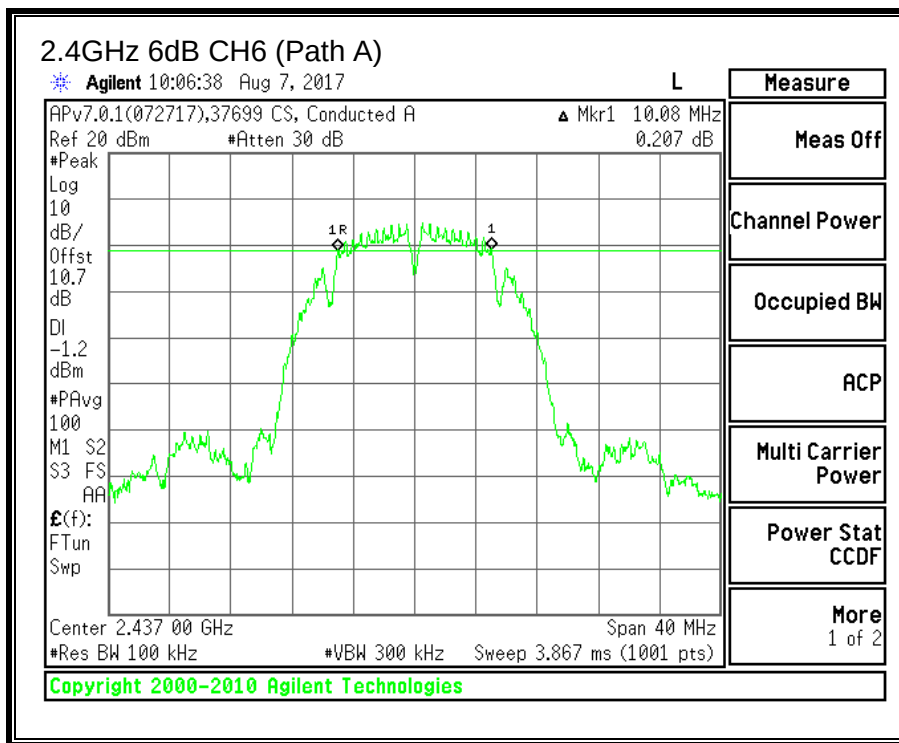
IC RSS-247 (5.2) (a)

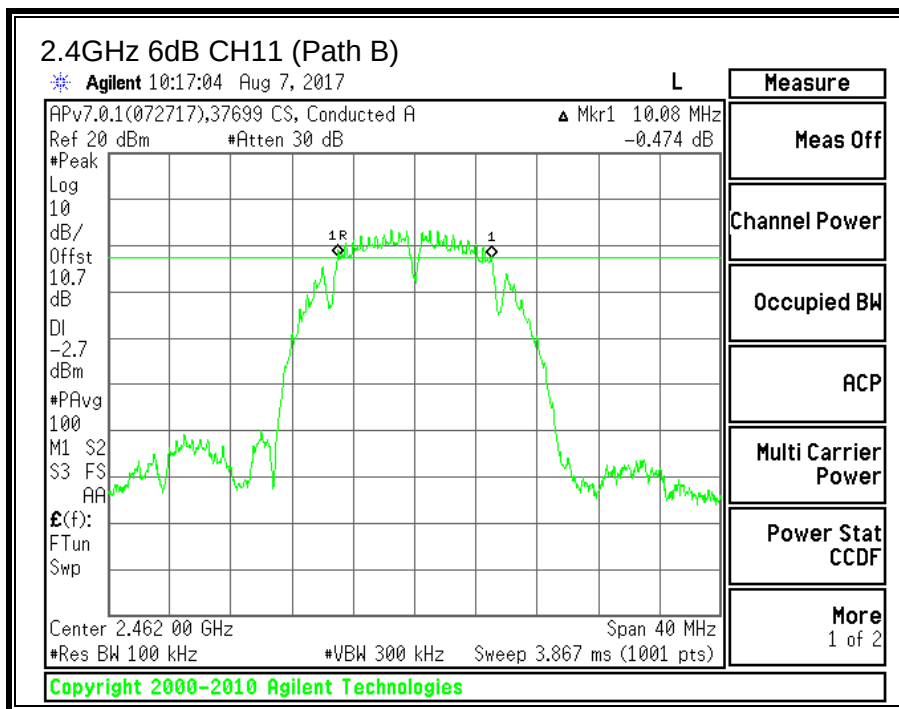
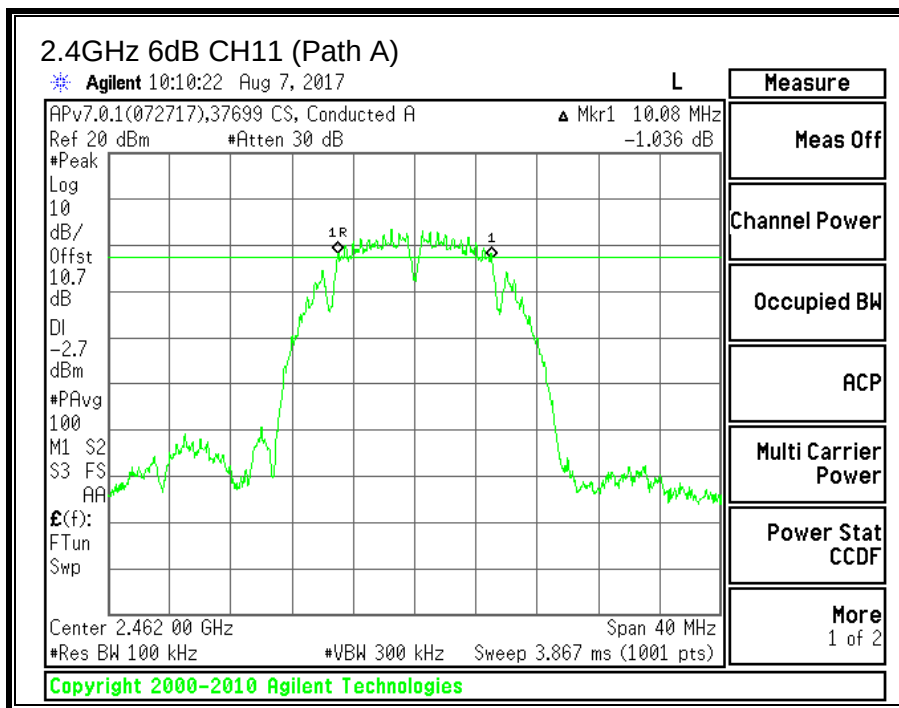
The minimum 6 dB bandwidth shall be at least 500 kHz.

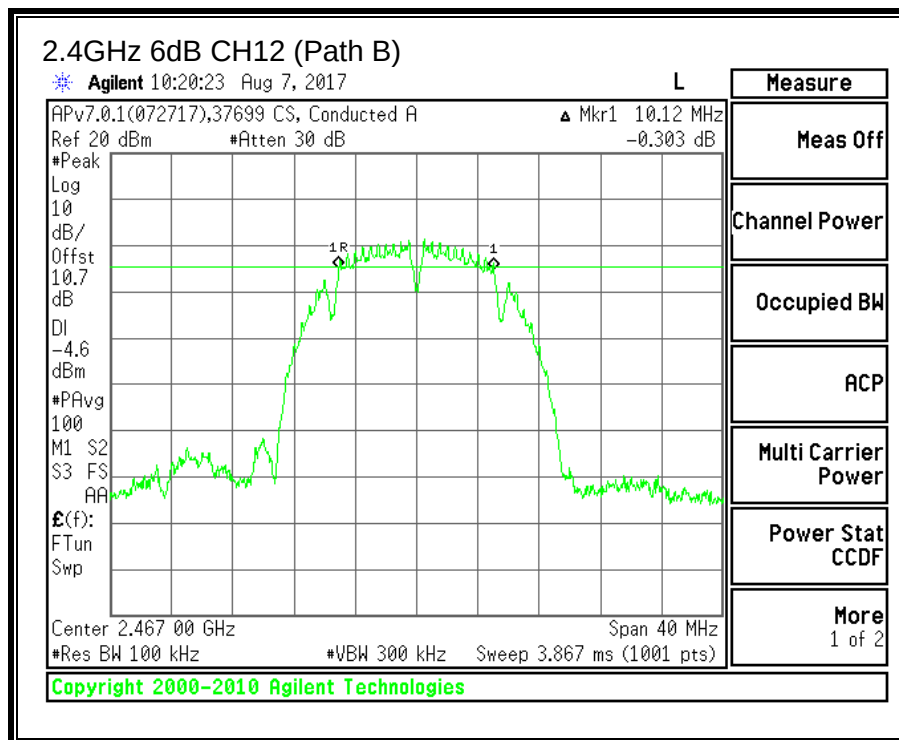
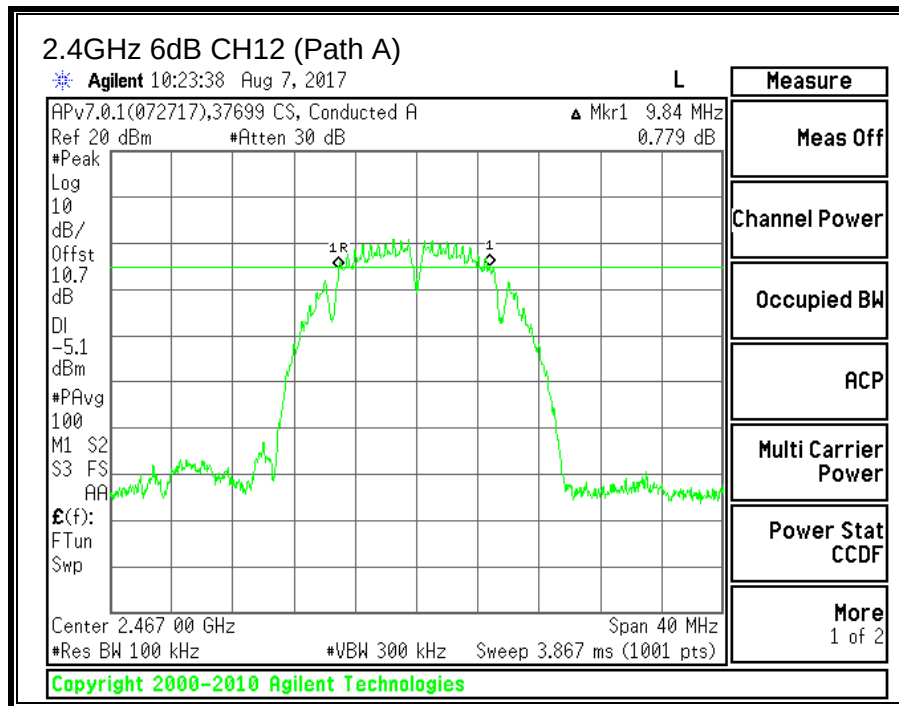
RESULTS

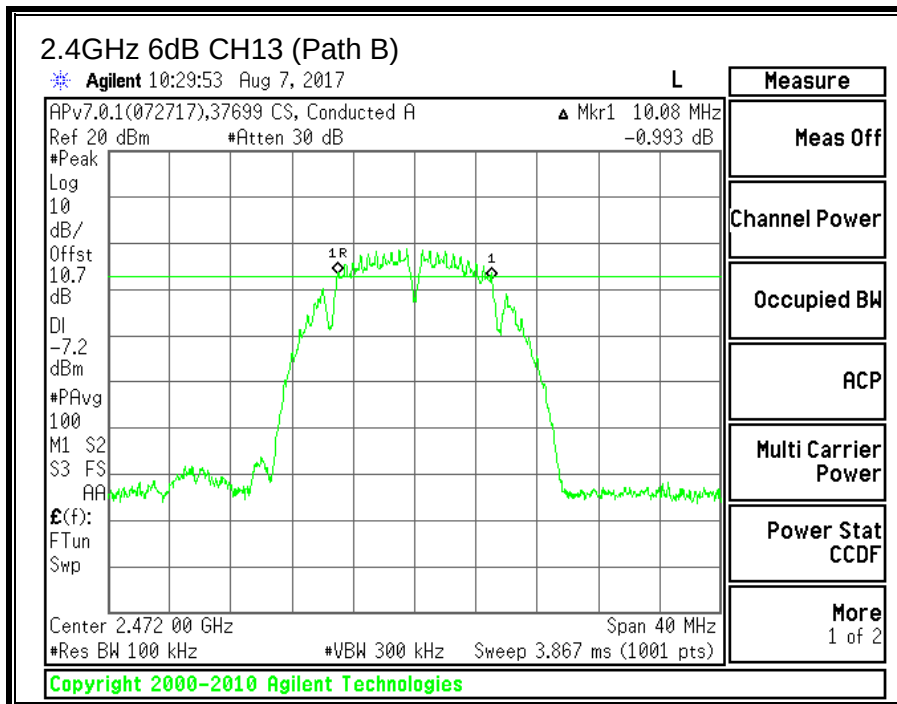
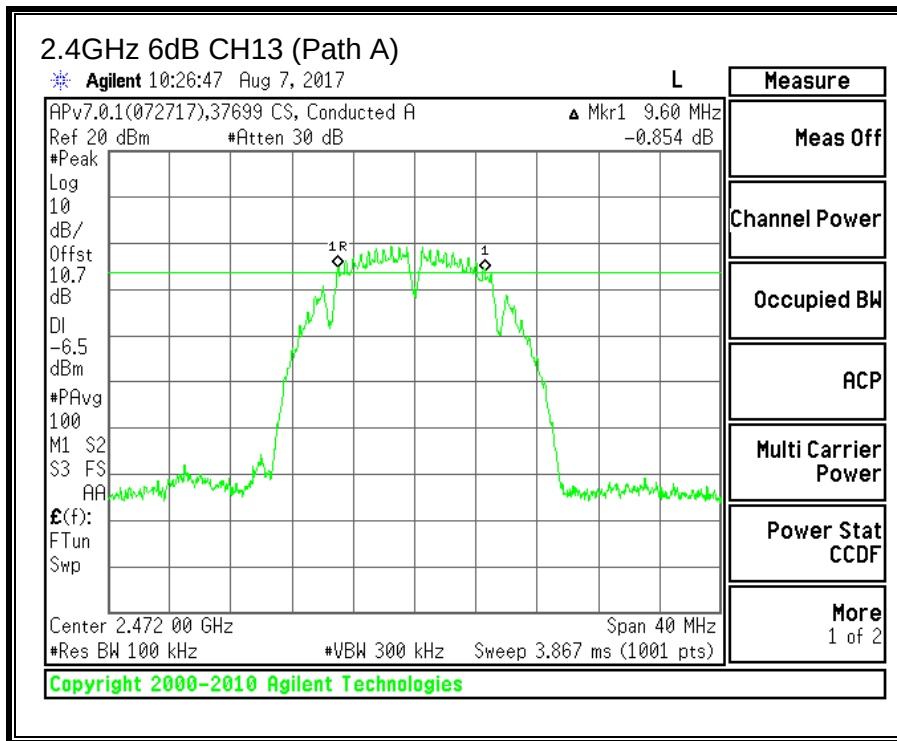
Channel	Frequency (MHz)	6 dB BW Path A (MHz)	6 dB BW Path B (MHz)	Minimum Limit (MHz)
CH1	2412	10.08	10.08	0.5
CH6	2437	10.08	10.08	0.5
CH11	2462	10.08	10.08	0.5
CH12	2467	9.84	10.12	0.5
CH13	2472	9.60	10.08	0.5











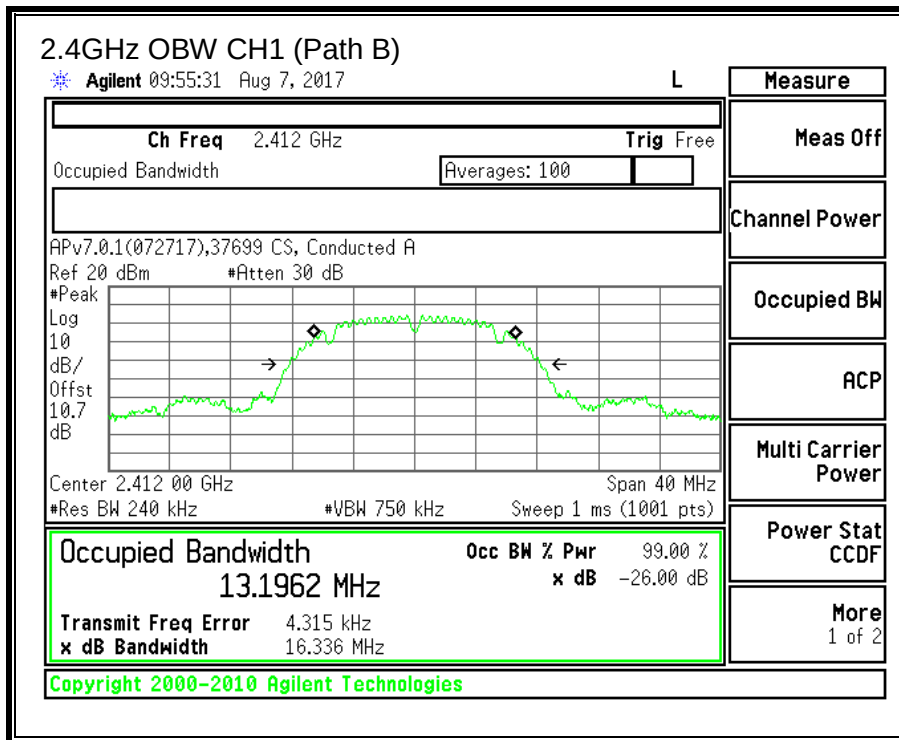
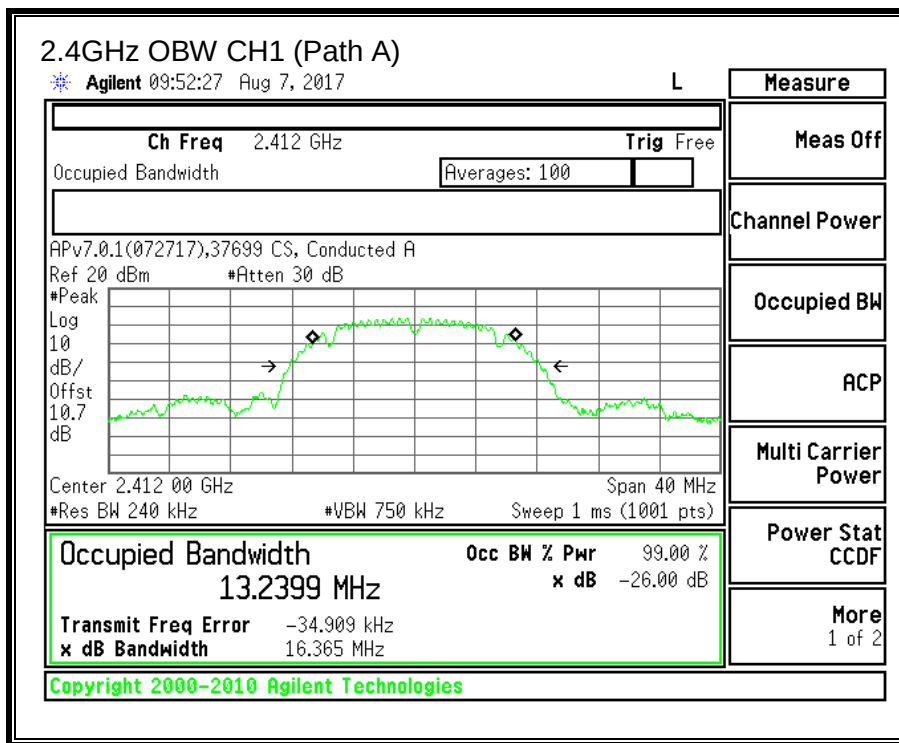
9.2.2. 99% BANDWIDTH

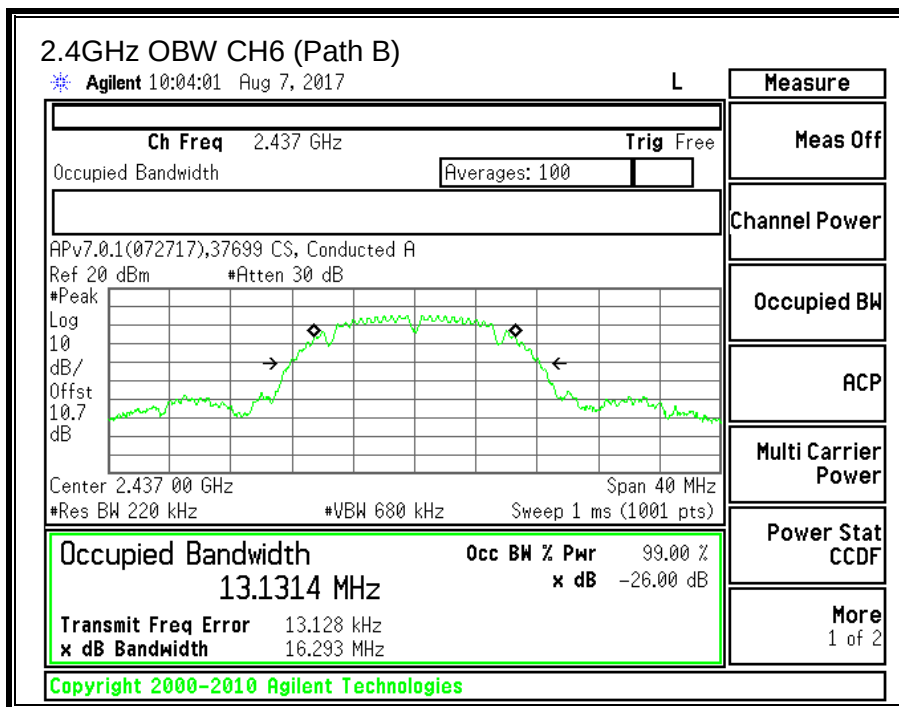
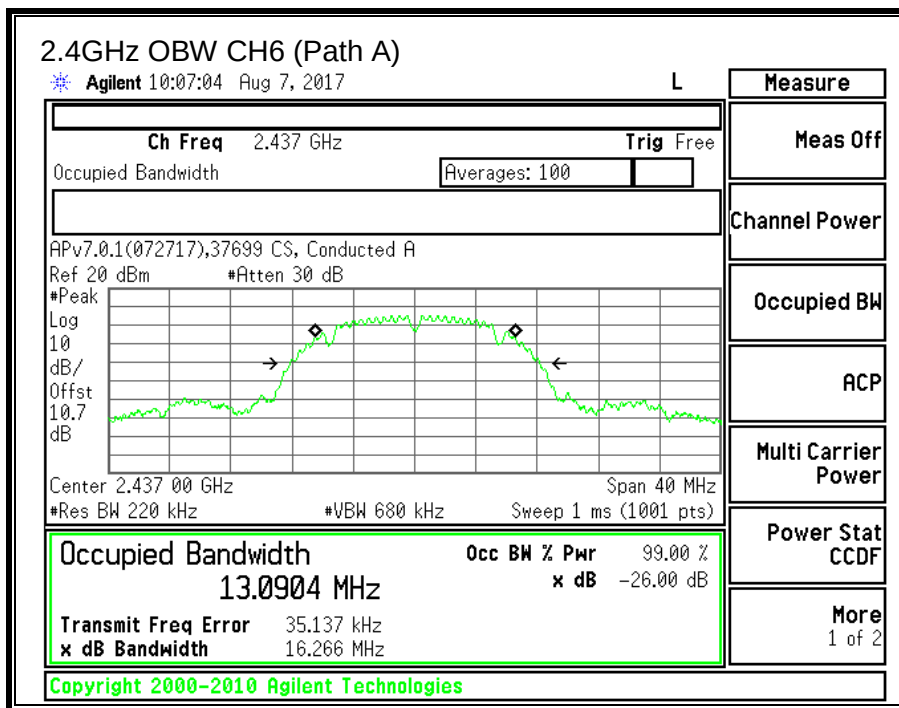
LIMITS

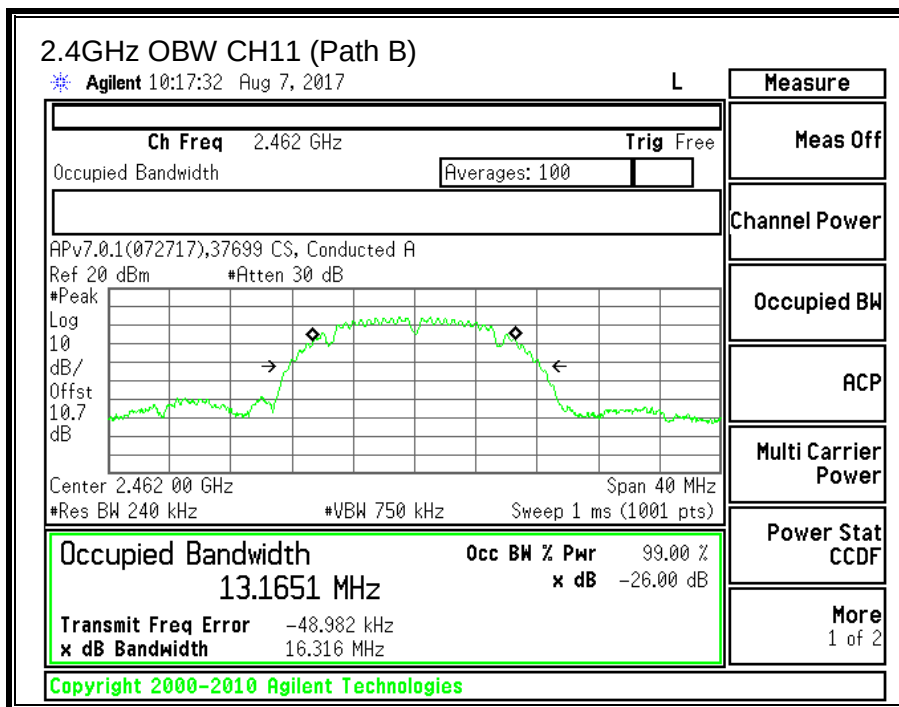
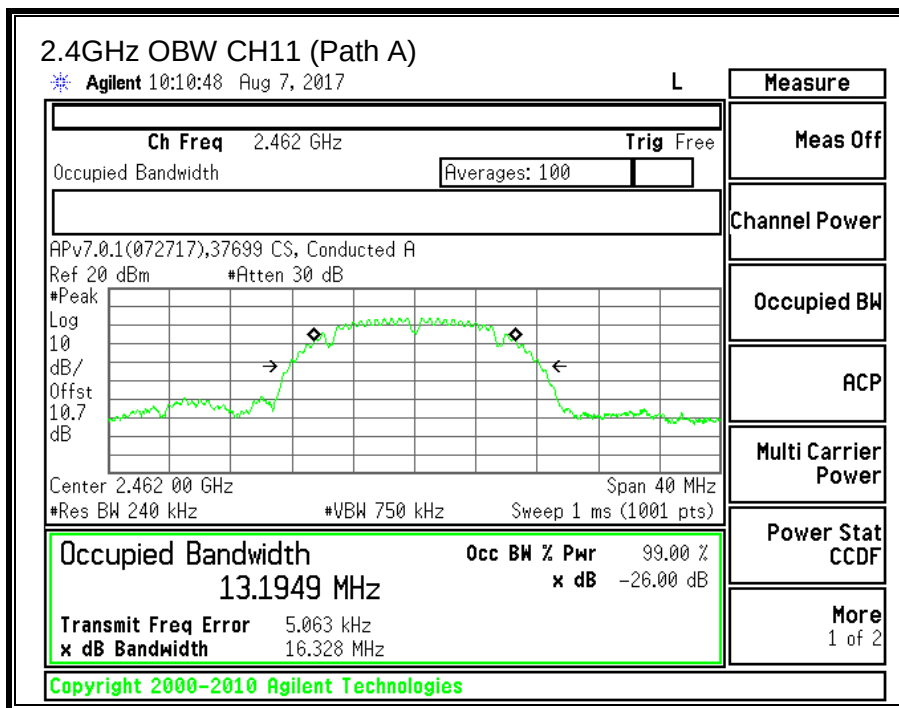
None; for reporting purposes only.

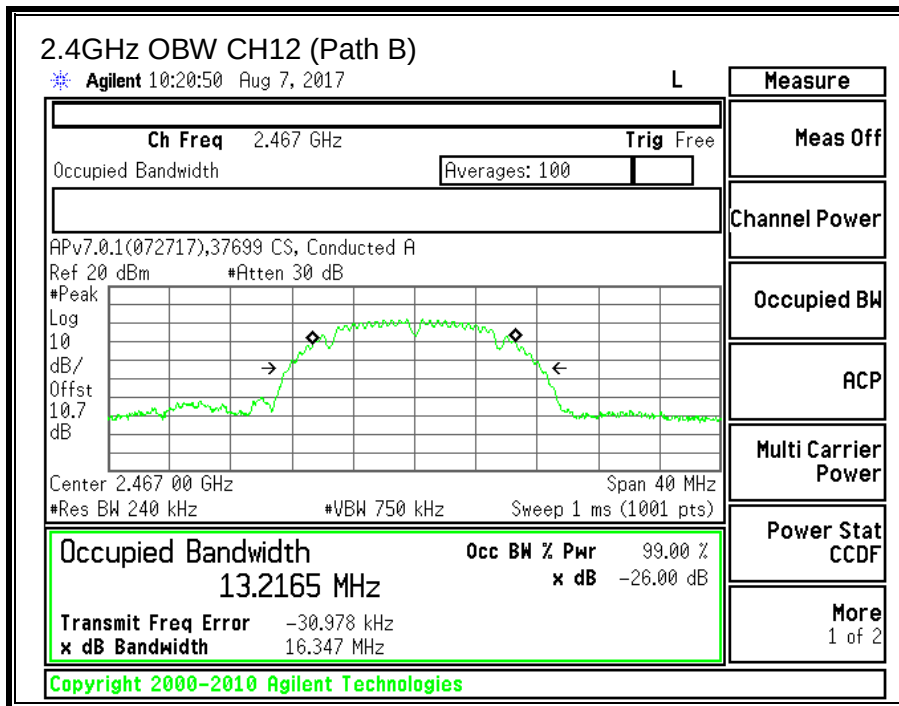
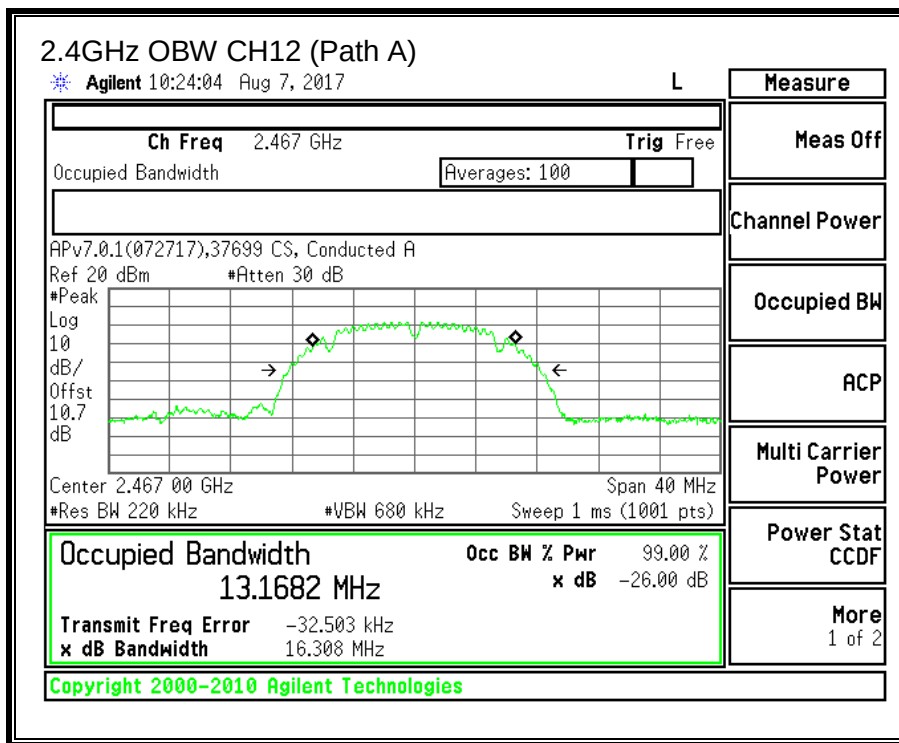
RESULTS

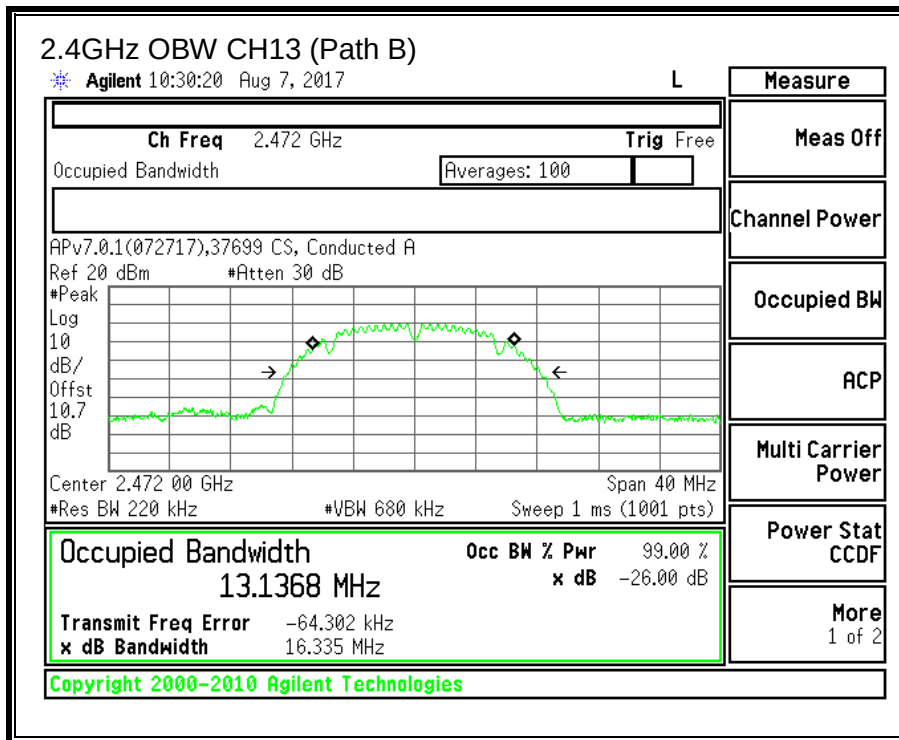
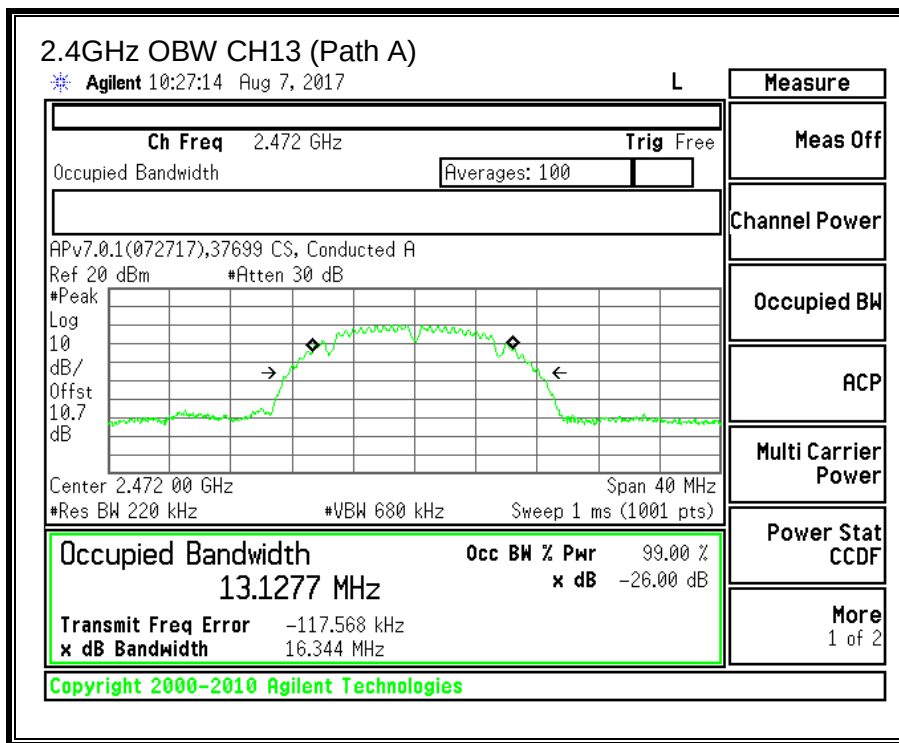
Channel	Frequency (MHz)	99% Bandwidth Path A (MHz)	99% Bandwidth Path B (MHz)
CH1	2412	13.2399	13.1962
CH6	2437	13.0904	13.1314
CH11	2462	13.1949	13.1651
CH12	2467	13.1682	13.2165
CH13	2472	13.1277	13.1368











9.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

ID:	37699	Date:	08/04/17
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Channel	Frequency (MHz)	Path A Power (dBm)	Path B Power (dBm)	Total Power (dBm)
Low	2412	12.67	12.97	15.83
Mid	2437	14.01	13.22	16.64
High_11	2462	12.12	12.71	15.44
High_12	2467	10.11	10.33	13.23
High_13	2472	8.86	8.25	11.58

9.2.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

IC RSS-247 (5.4) (d)

For systems using digital modulation in the 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 PROCEDURE

KDB 558074 D01 v04 Section 9.2.3.2

DIRECTIONAL ANTENNA GAIN

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

Path A Antenna Gain (dBi)	Path B Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.40	0.20	1.44

RESULTS

ID:	37699	Date:	08/04/17
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Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
CH1	2412	1.44	30.00	30	36	30.00
CH6	2437	1.44	30.00	30	36	30.00
CH11	2462	1.44	30.00	30	36	30.00
CH12	2467	1.44	30.00	30	36	30.00
CH13	2472	1.44	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Path A Meas Power (dBm)	Path B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
CH1	2412	15.67	16.15	18.93	30.00	-11.07
CH6	2437	16.87	17.07	19.98	30.00	-10.02
CH11	2462	15.25	15.67	18.48	30.00	-11.52
CH12	2467	12.97	13.44	16.22	30.00	-13.78
CH13	2472	11.36	11.32	14.35	30.00	-15.65

9.2.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

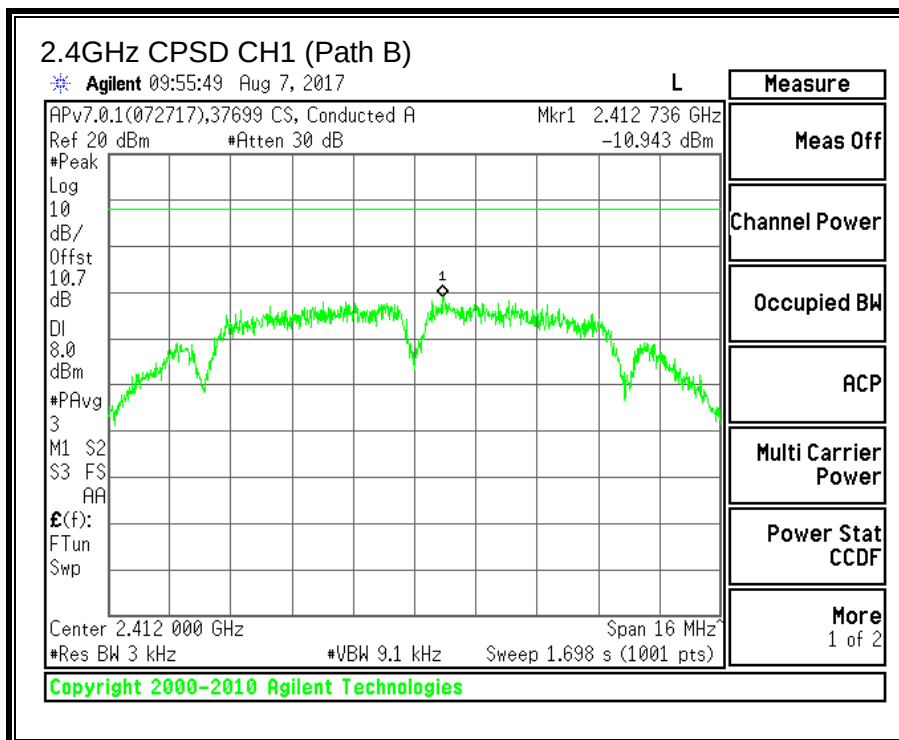
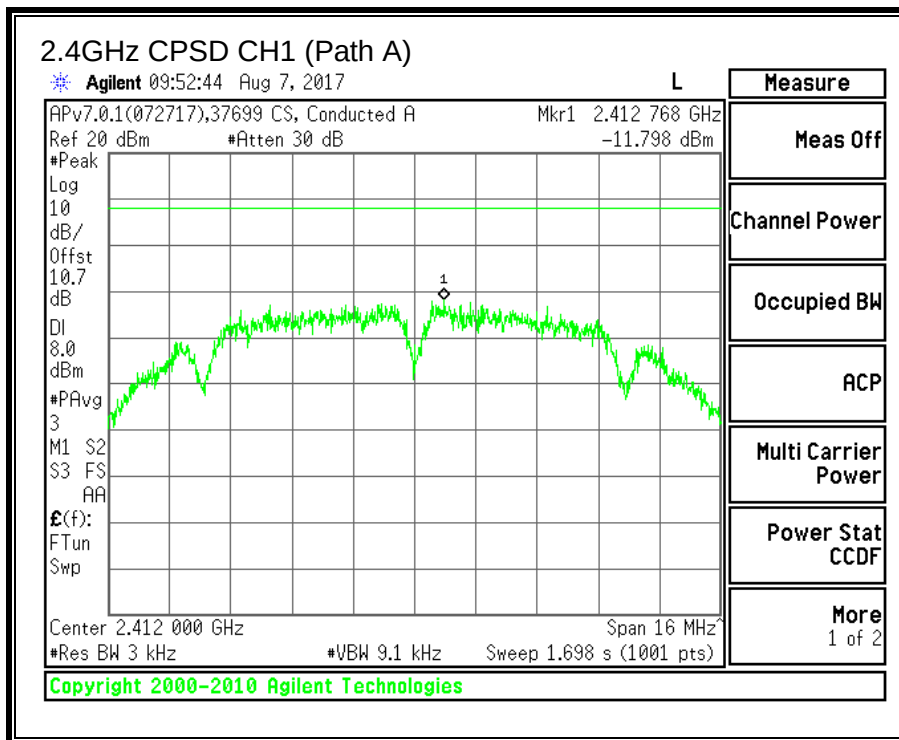
IC RSS-247 (5.2) (b)

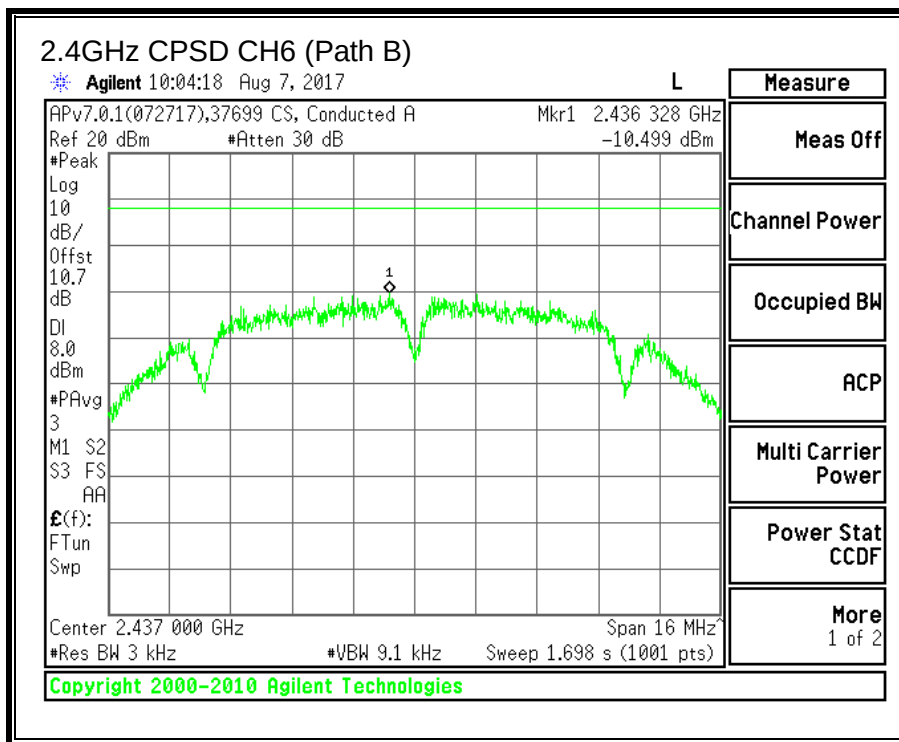
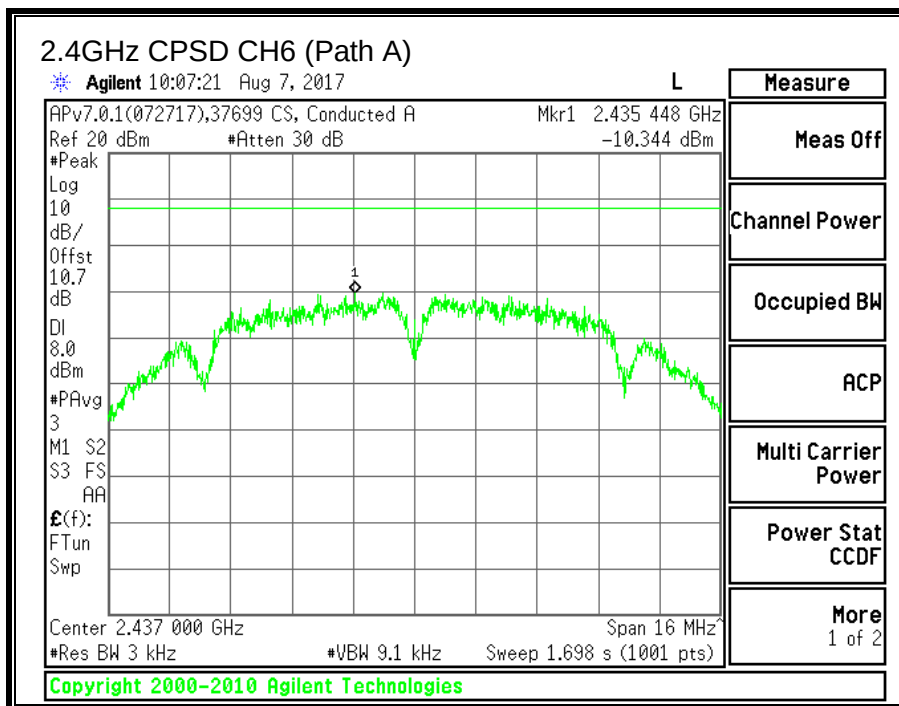
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

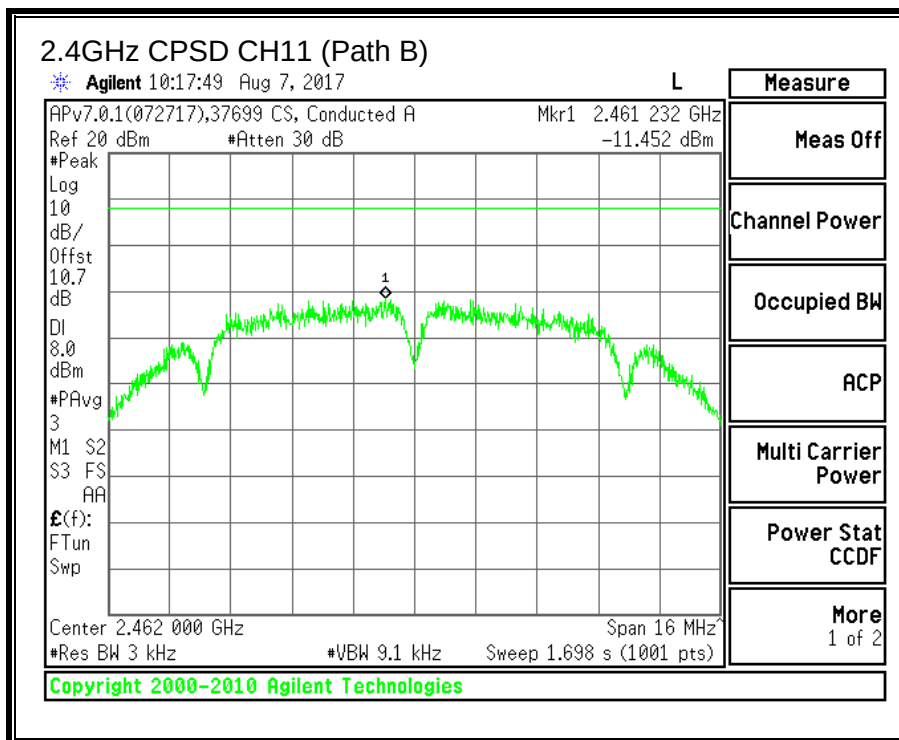
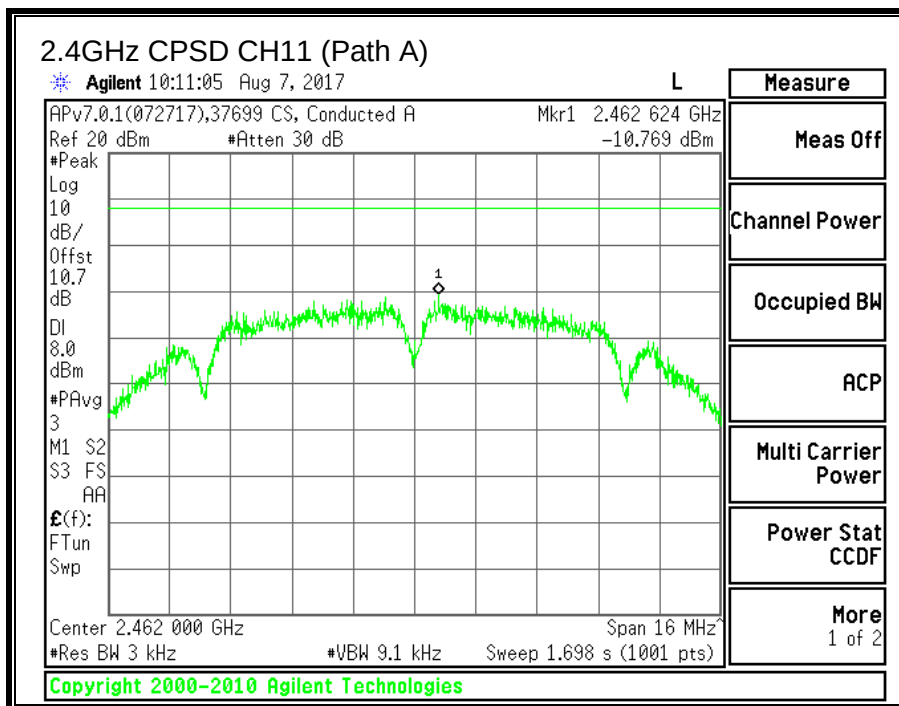
RESULTS

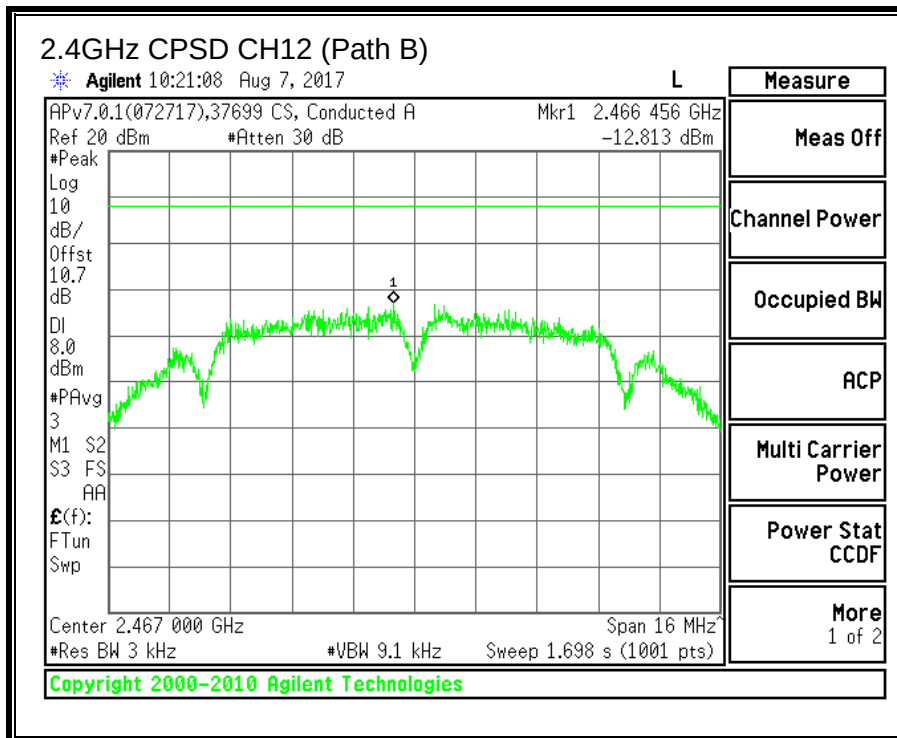
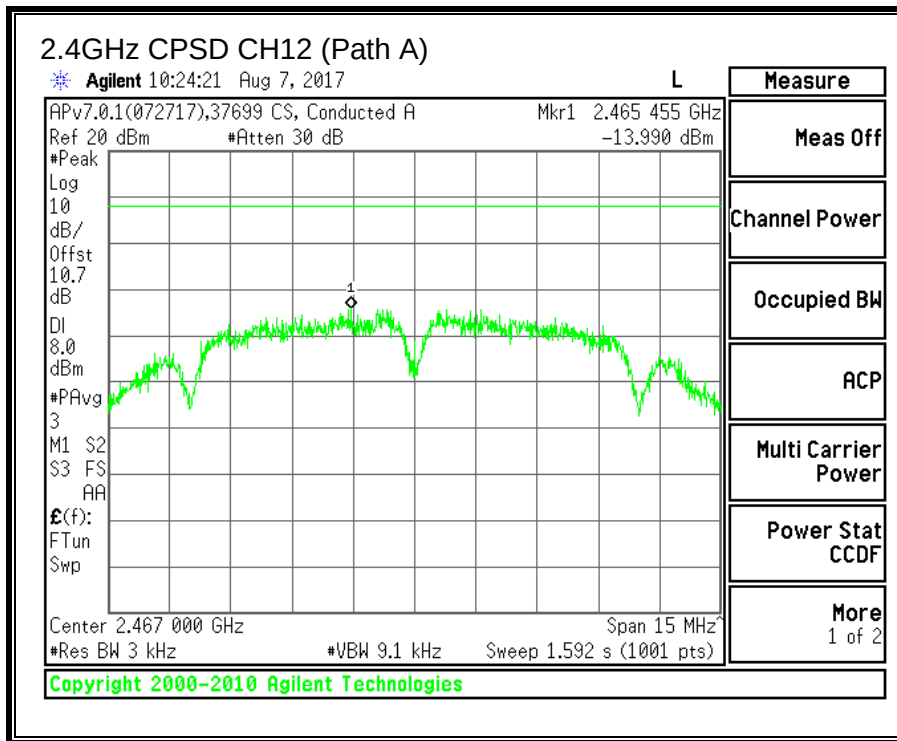
PSD Results

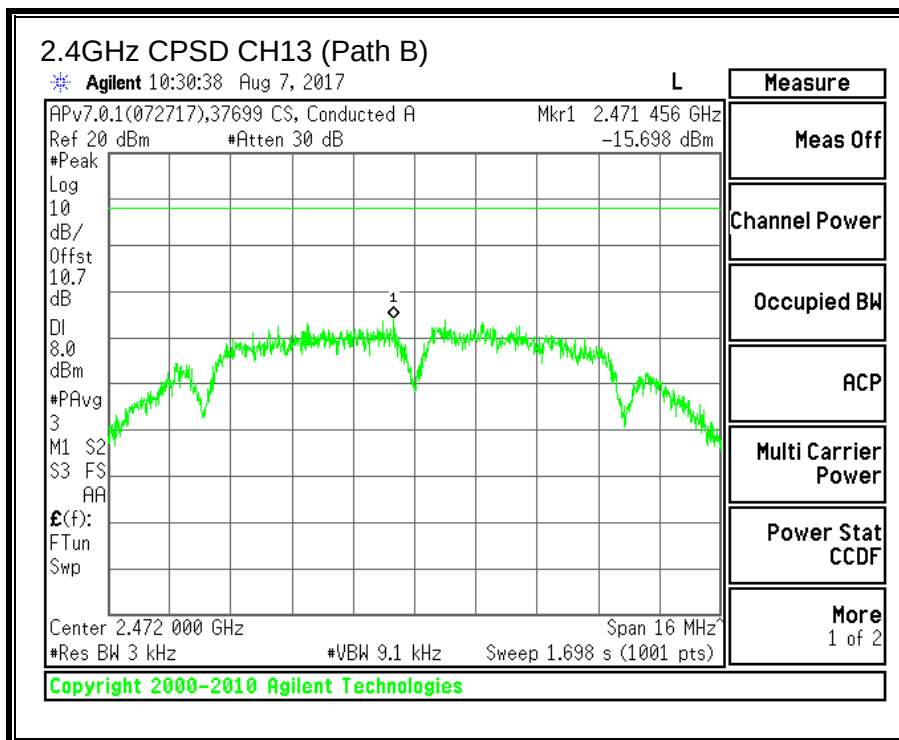
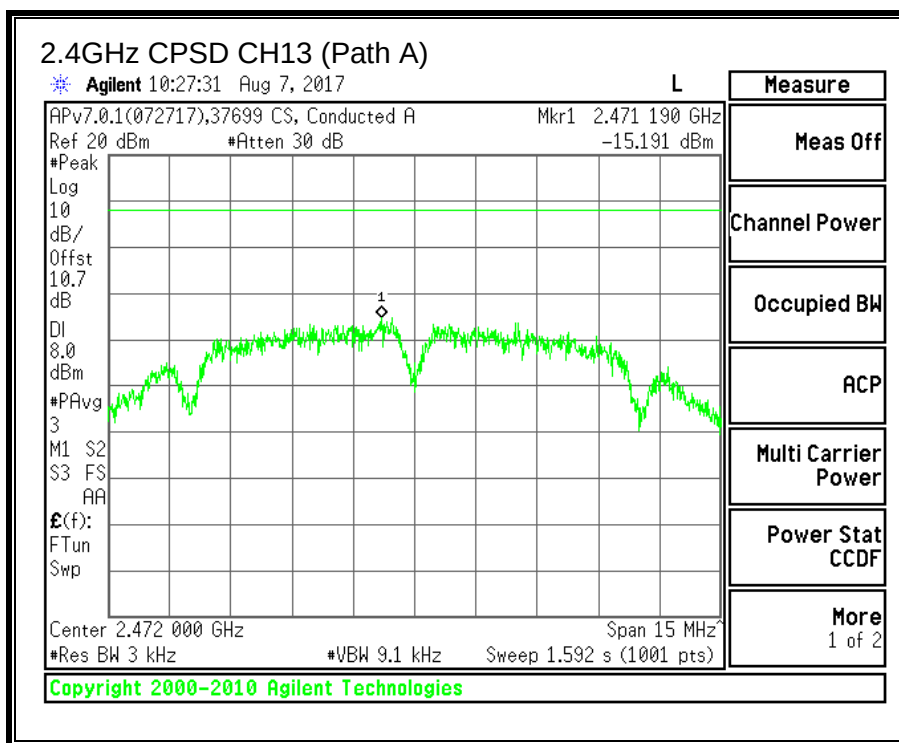
Channel	Frequency (MHz)	Path A Meas (dBm/3kHz)	Path B Meas (dBm/3kHz)	Total Corr'd PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
CH1	2412	-11.80	-10.94	-8.34	8.0	-16.3
CH6	2437	-10.34	-10.50	-7.41	8.0	-15.4
CH11	2462	-10.77	-11.45	-8.09	8.0	-16.1
CH12	2467	-13.99	-12.81	-10.35	8.0	-18.4
CH13	2472	-15.19	-15.70	-12.43	8.0	-20.4











9.2.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

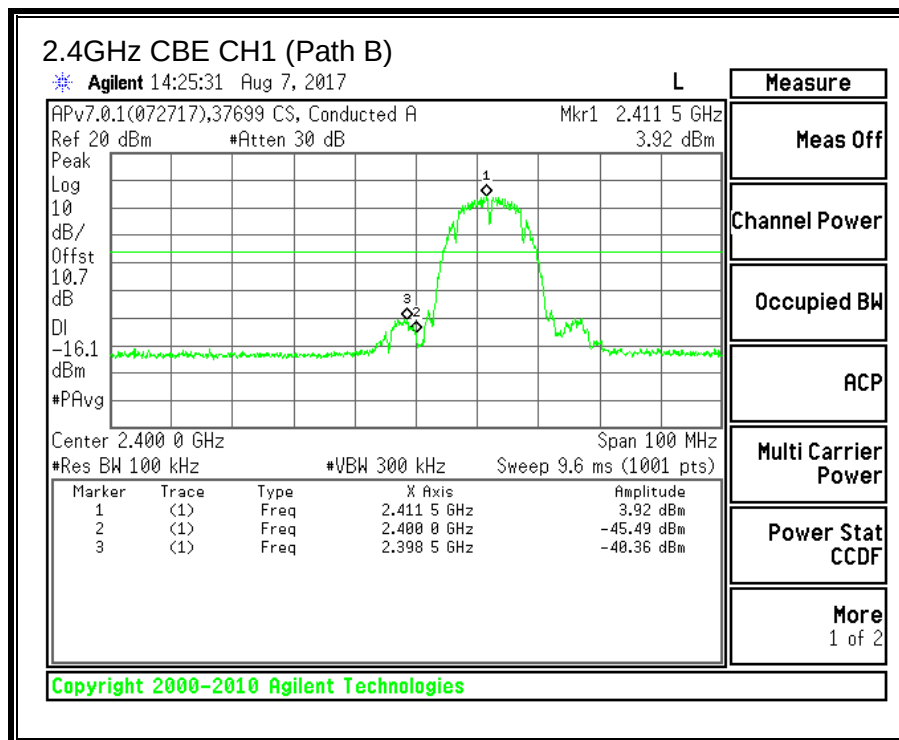
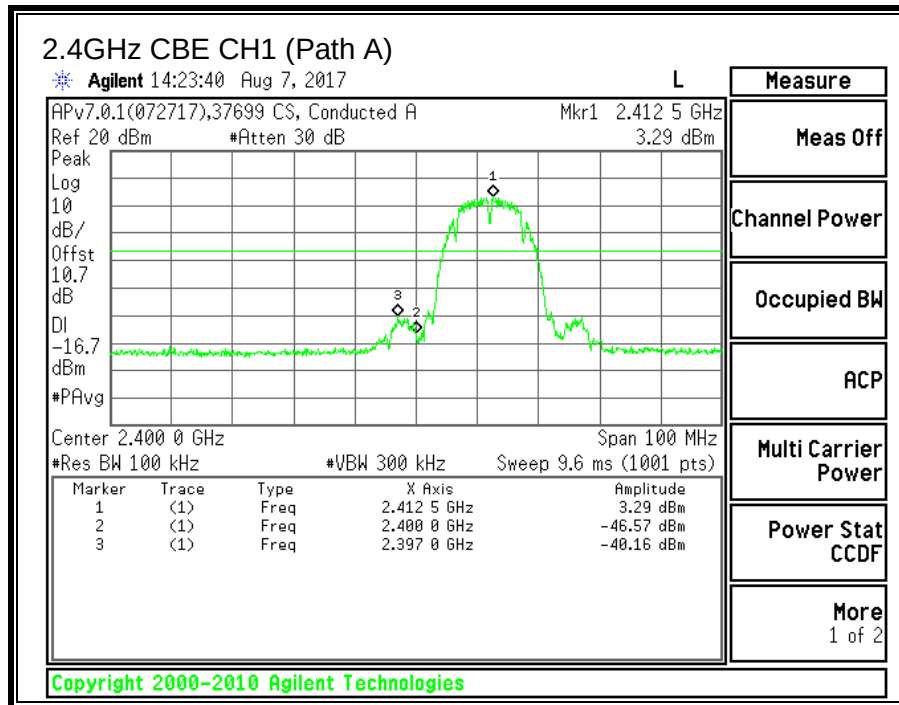
LIMITS

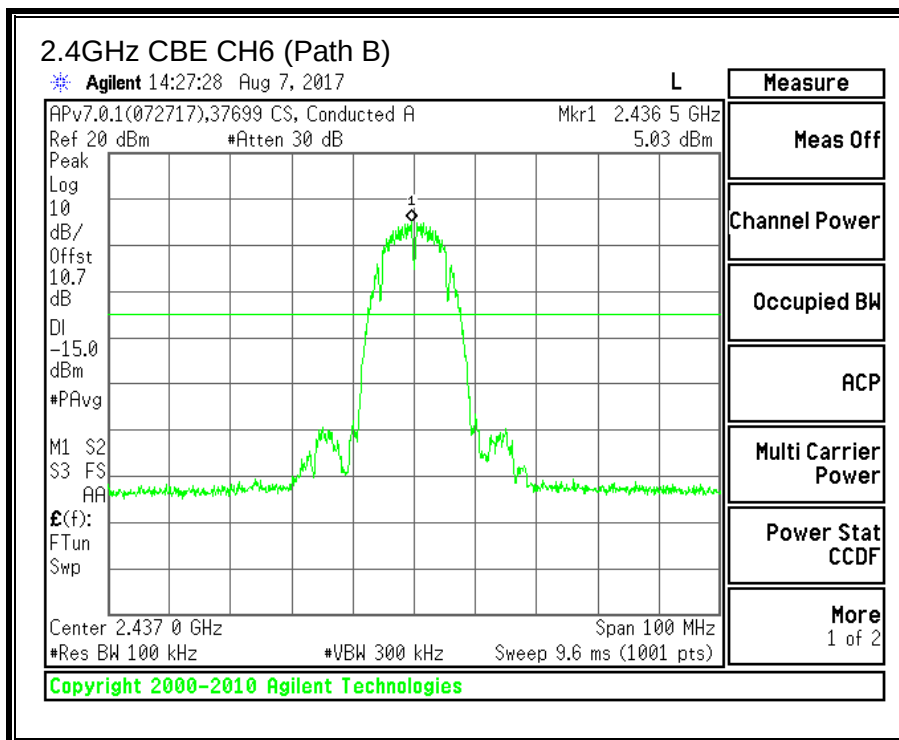
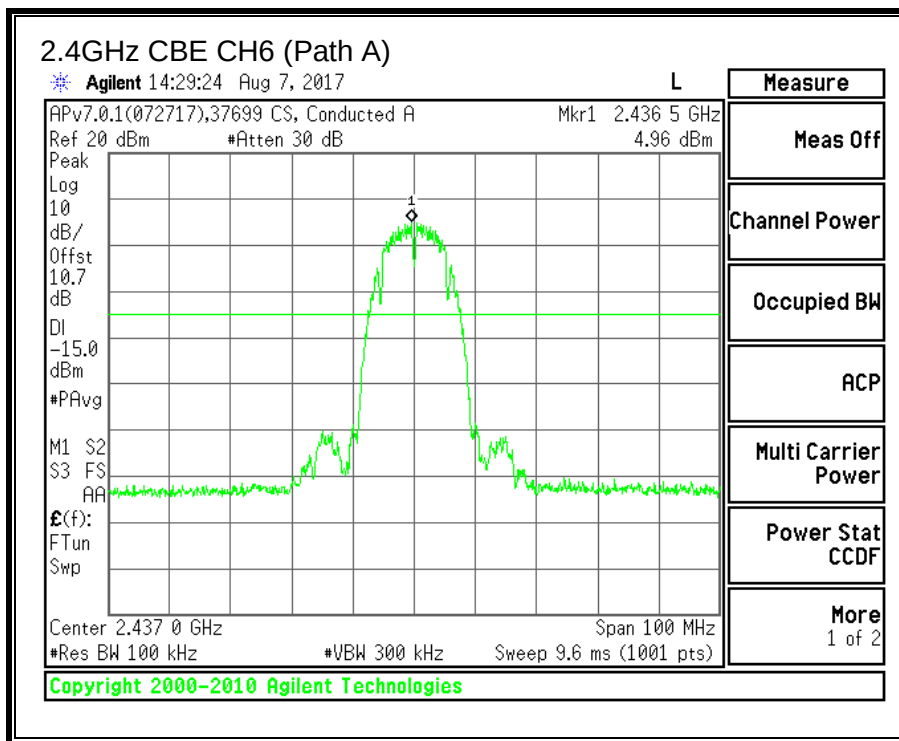
FCC §15.247 (d)

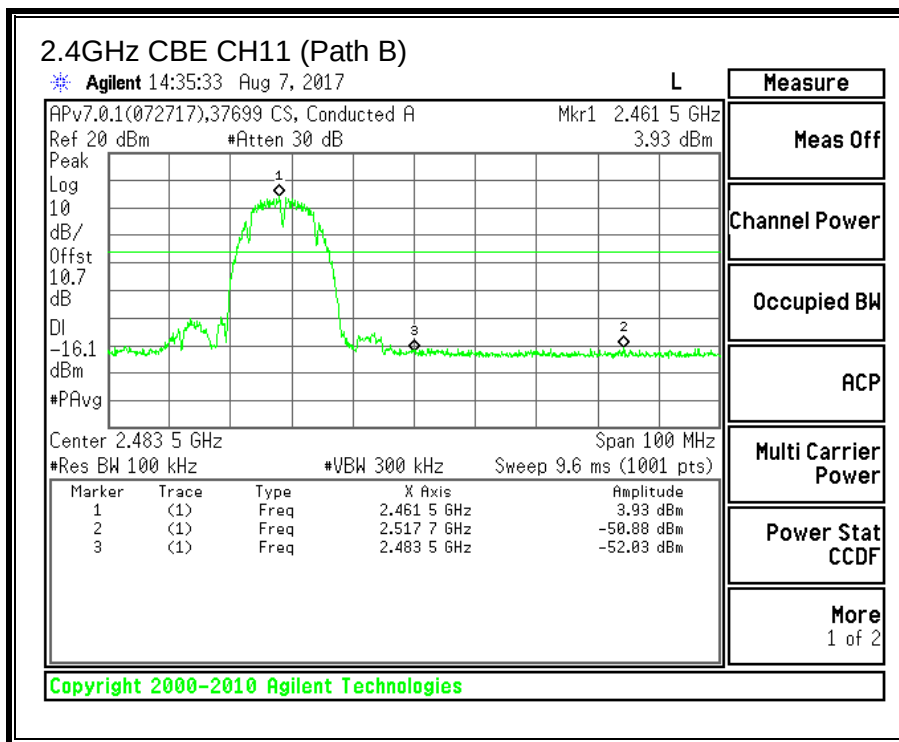
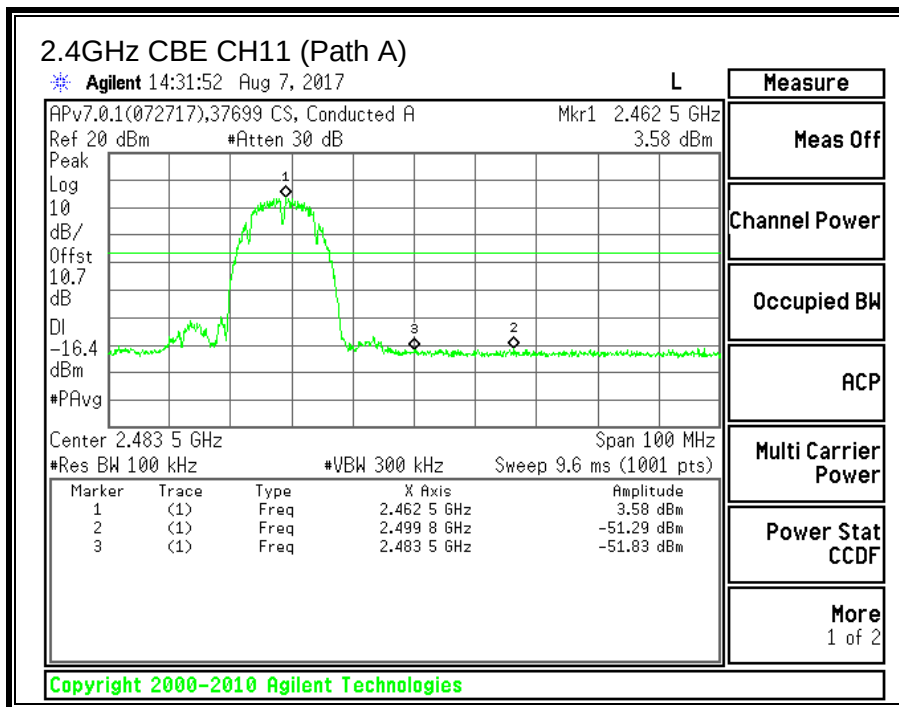
IC RSS-247 5.5

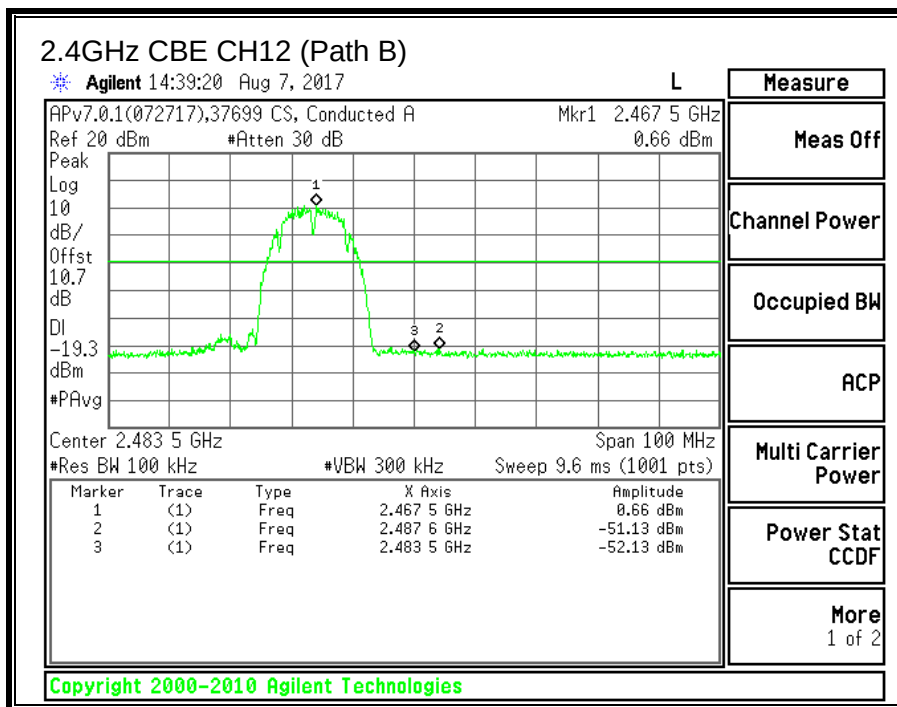
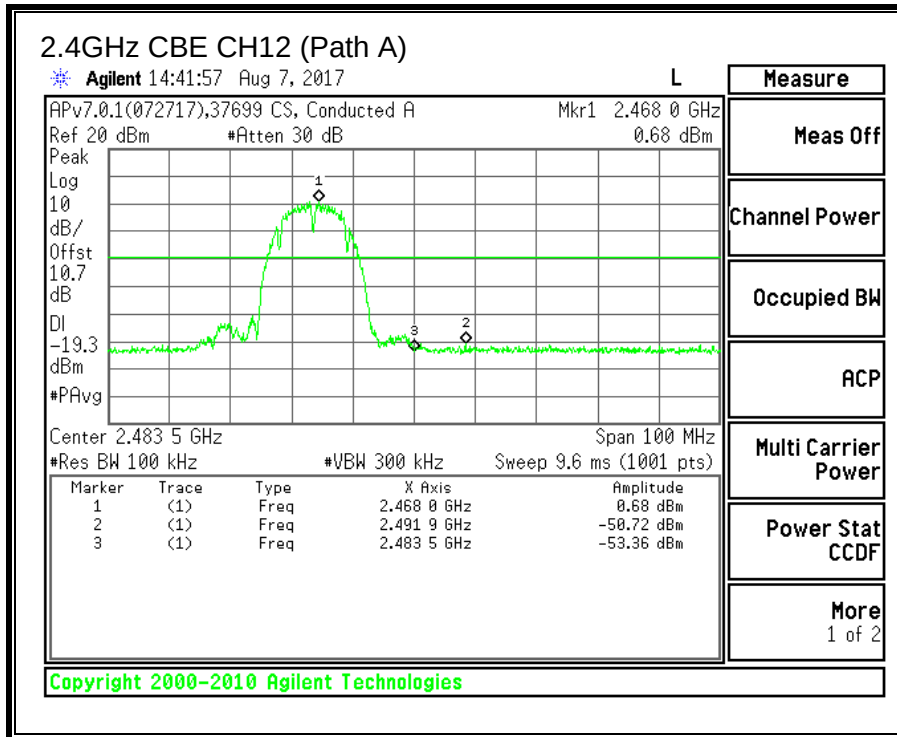
Output power was measured based on the use of Peak measurement, therefore the required attenuation is 20 dB.

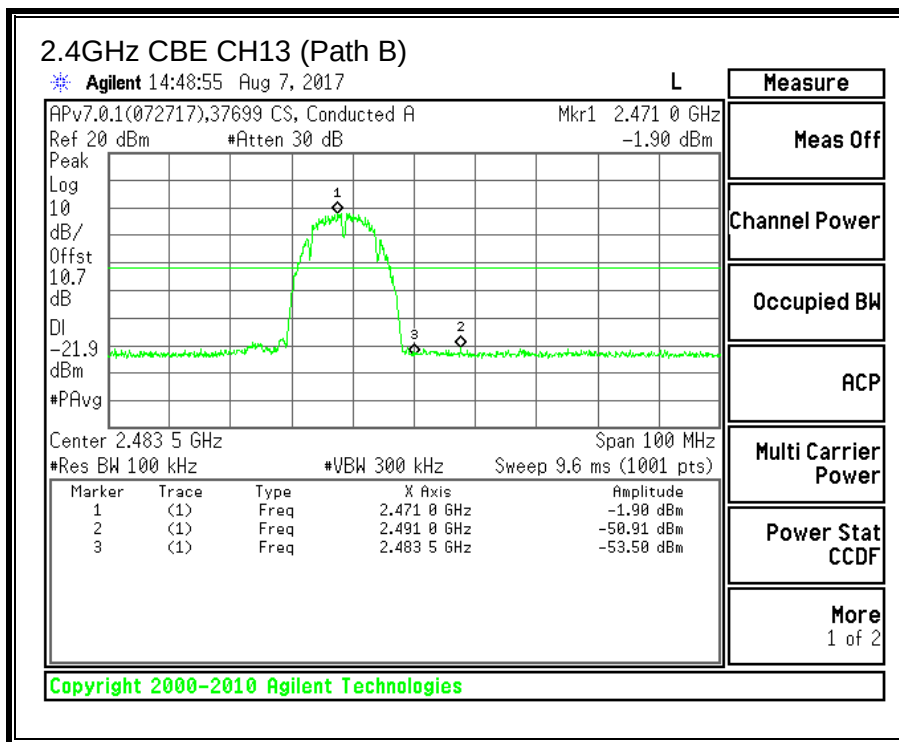
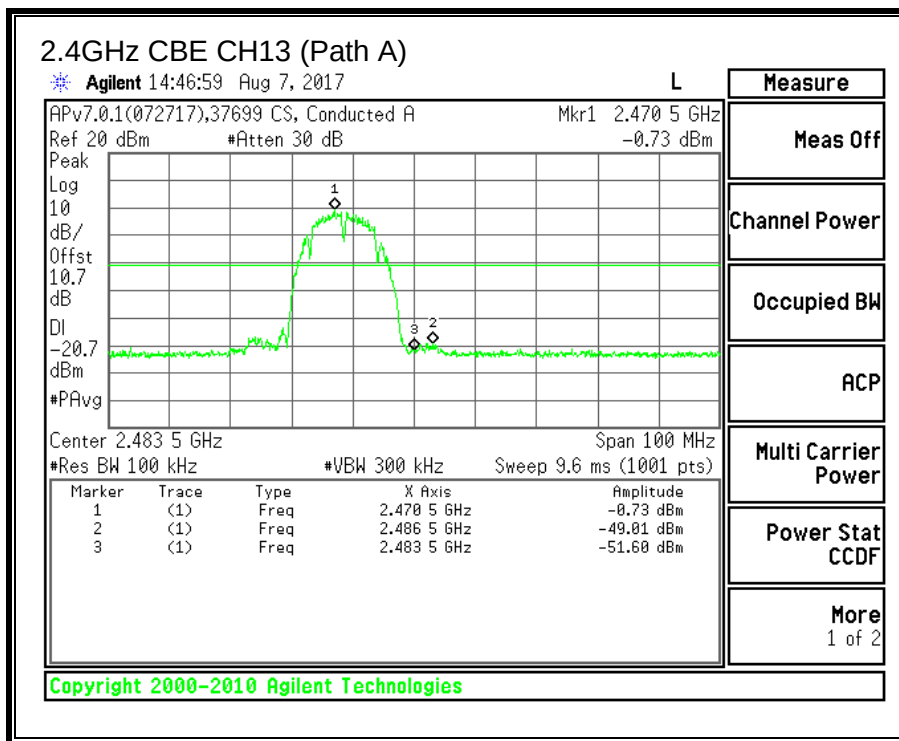
RESULTS

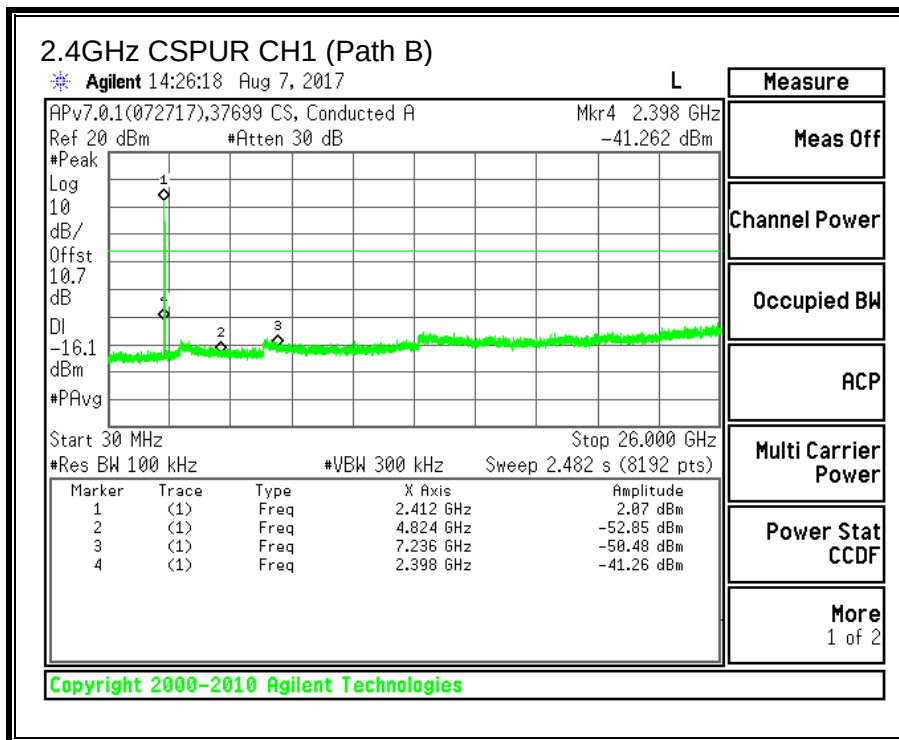
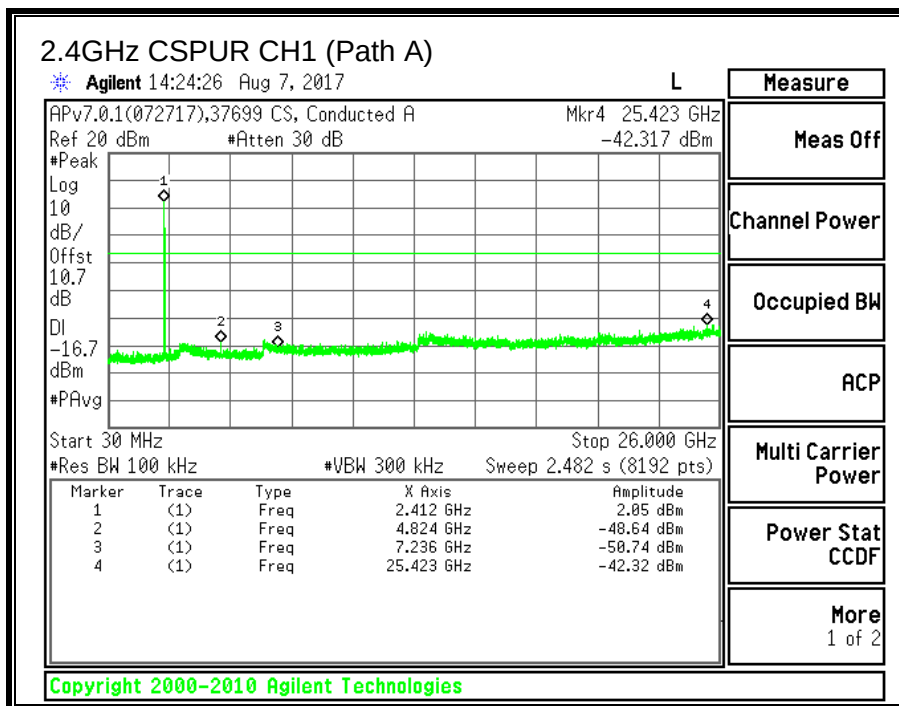


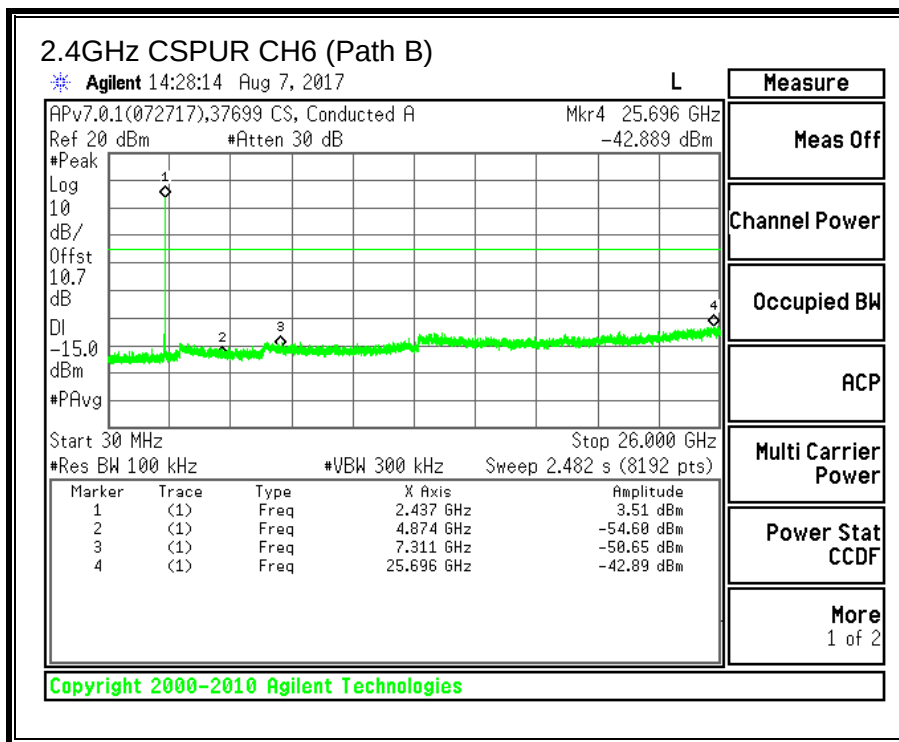
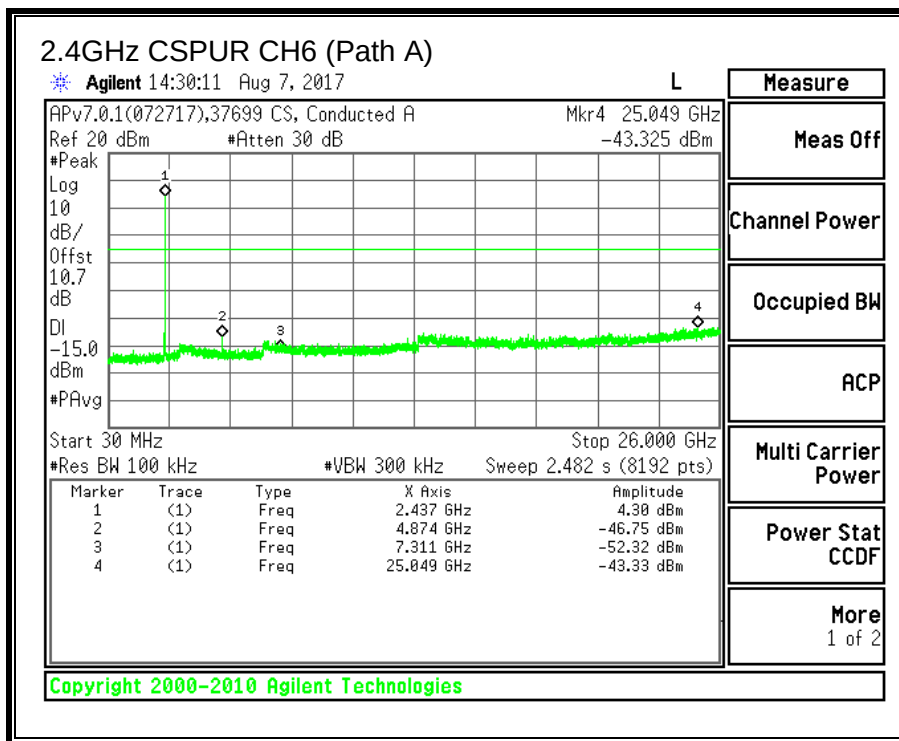


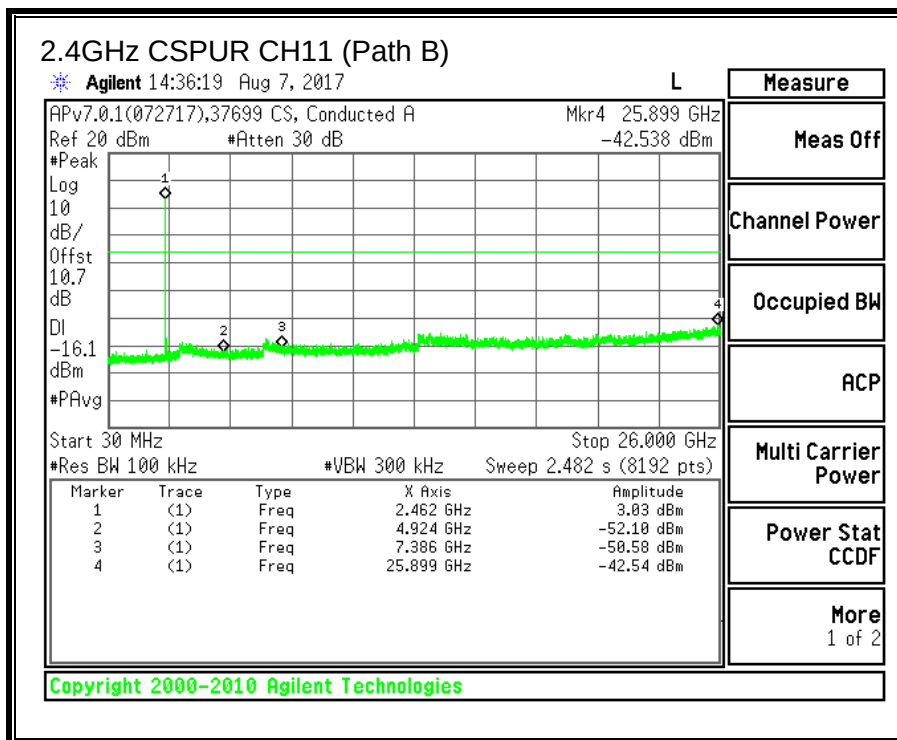
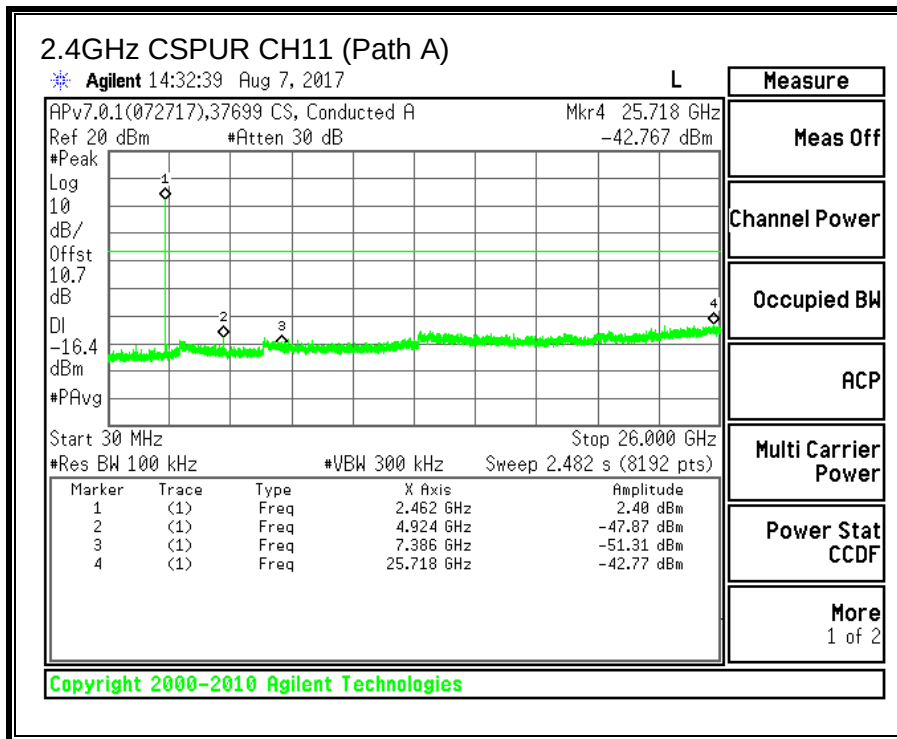


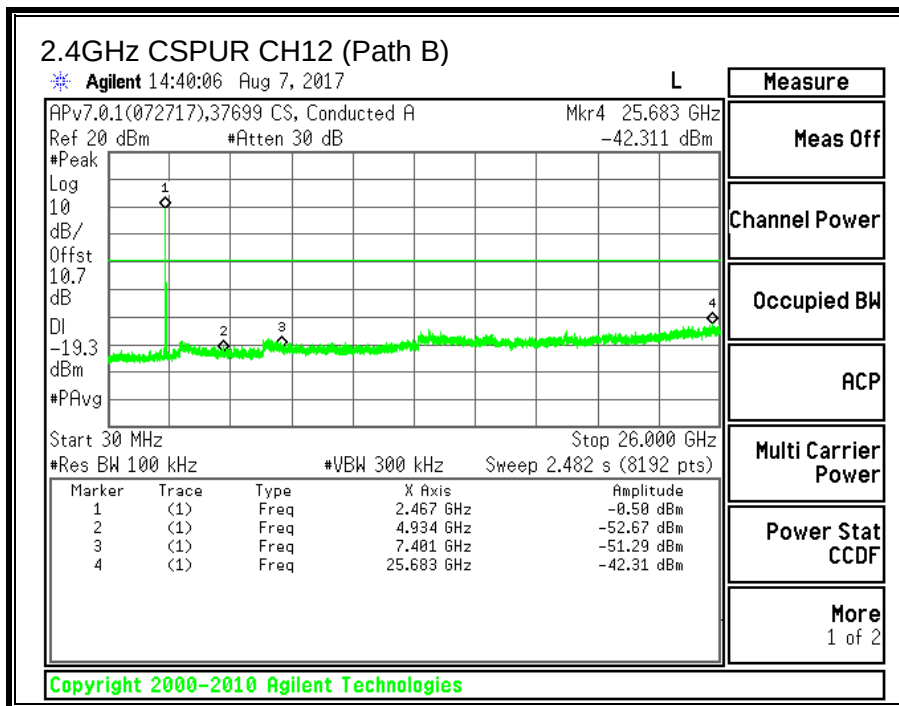
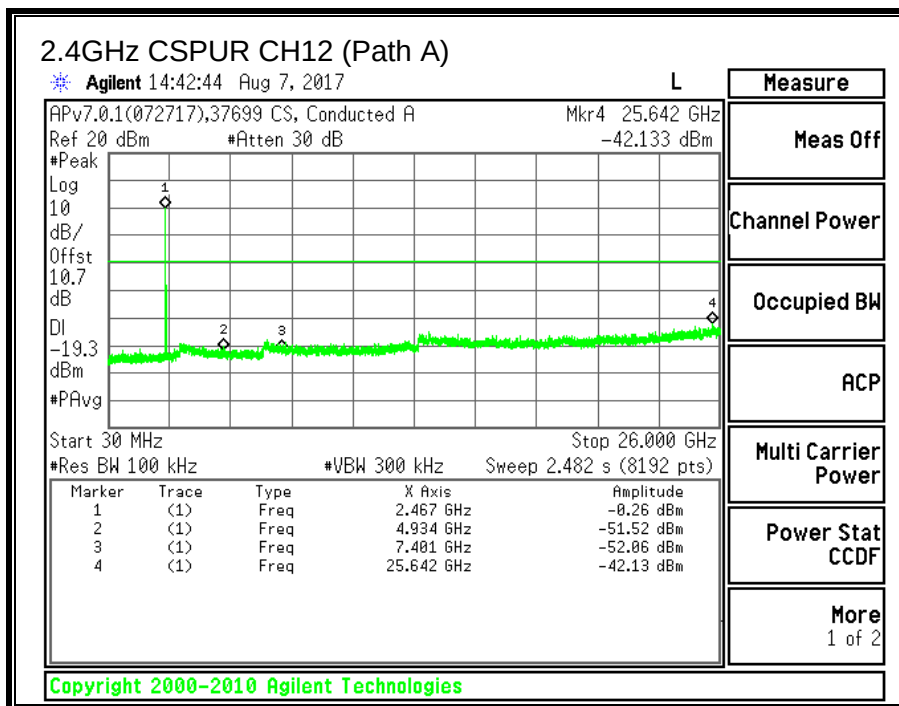


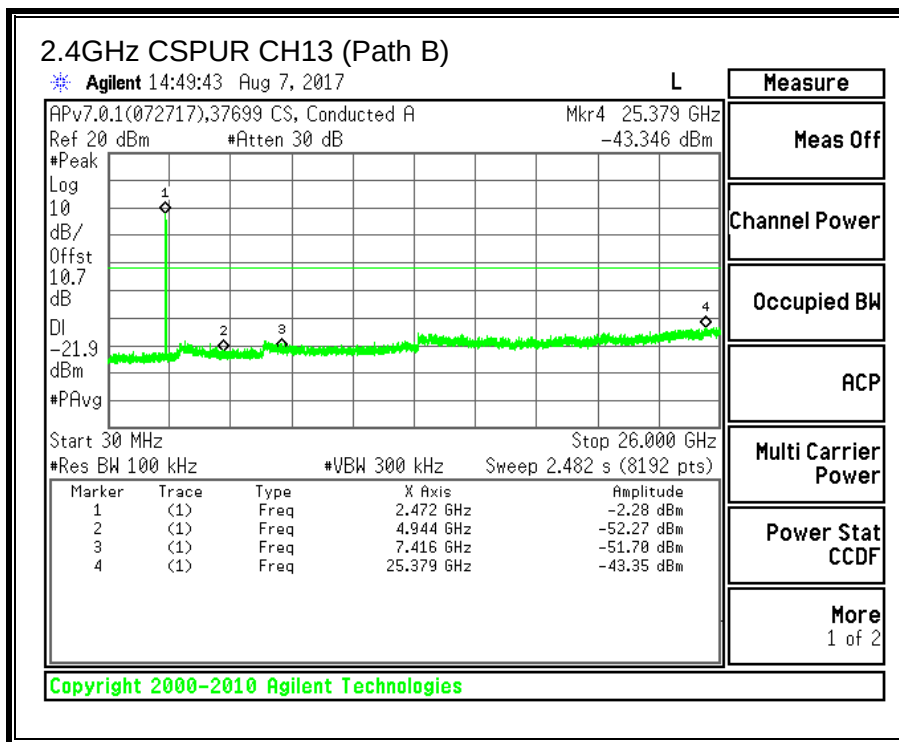
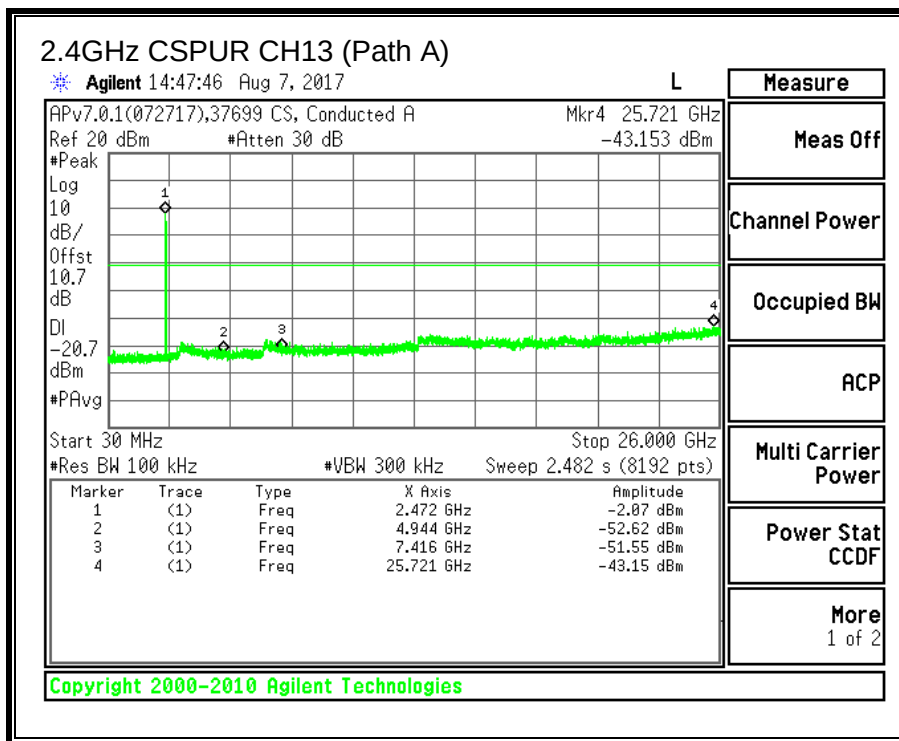












9.3. 11g 2TX CDD MIMO MODE IN THE 2.4GHz BAND

9.3.1. 6 dB BANDWIDTH

LIMITS

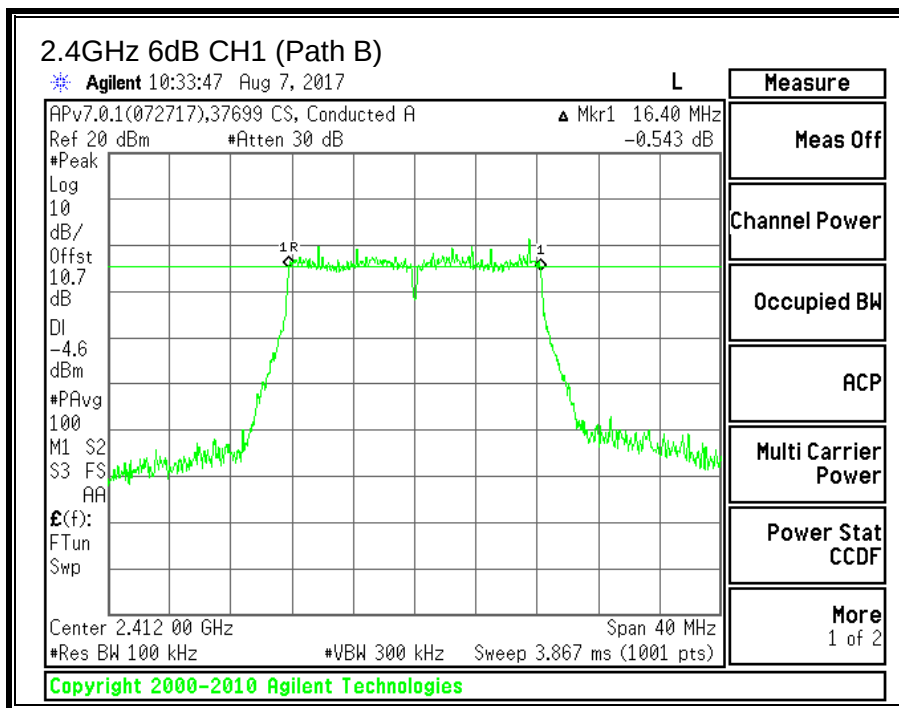
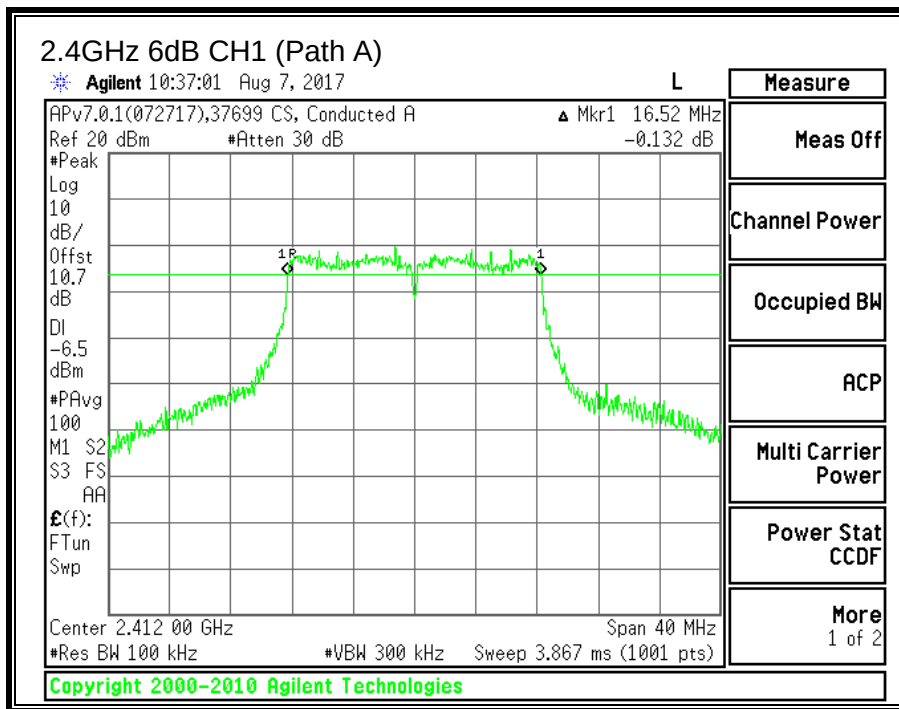
FCC §15.247 (a) (2)

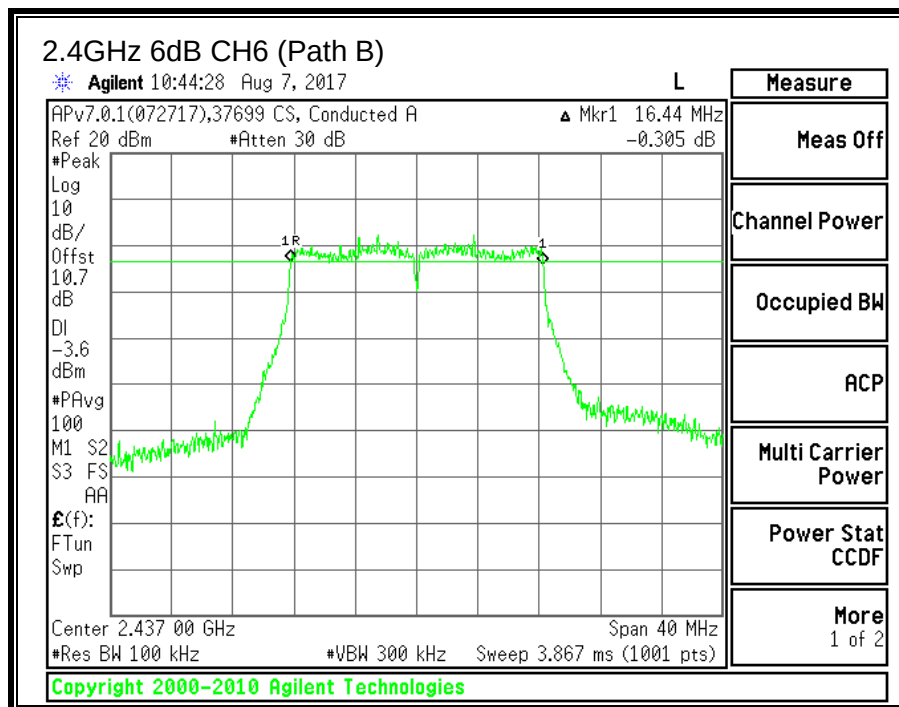
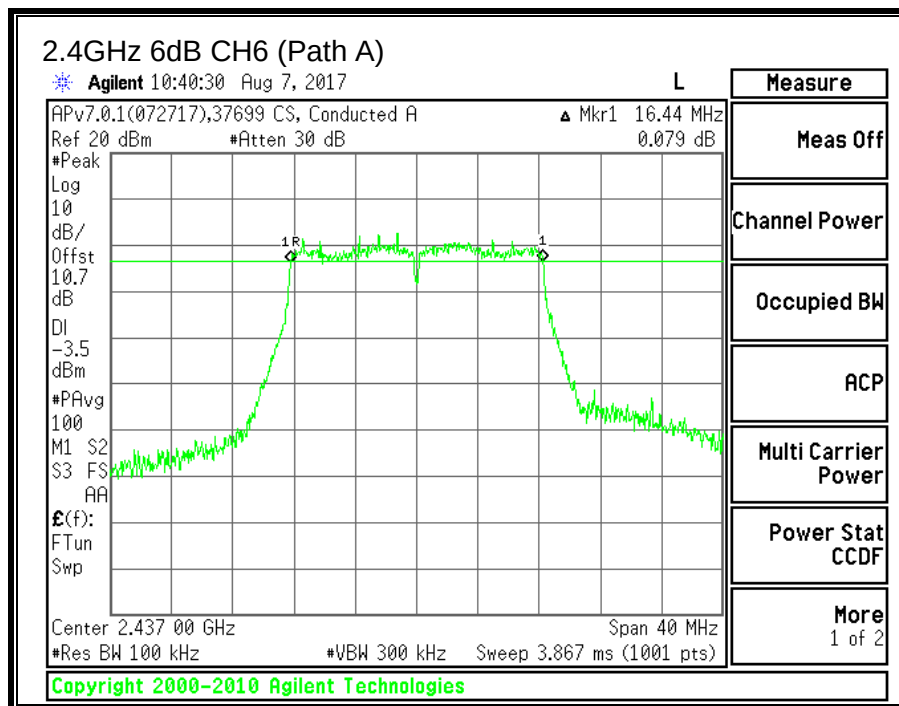
IC RSS-247 (5.2) (a)

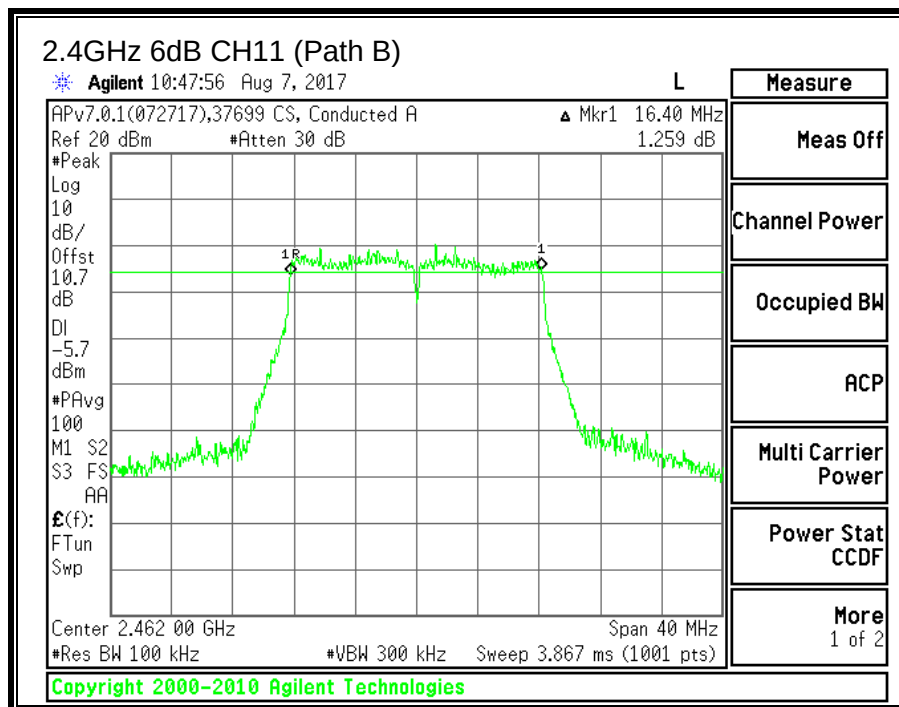
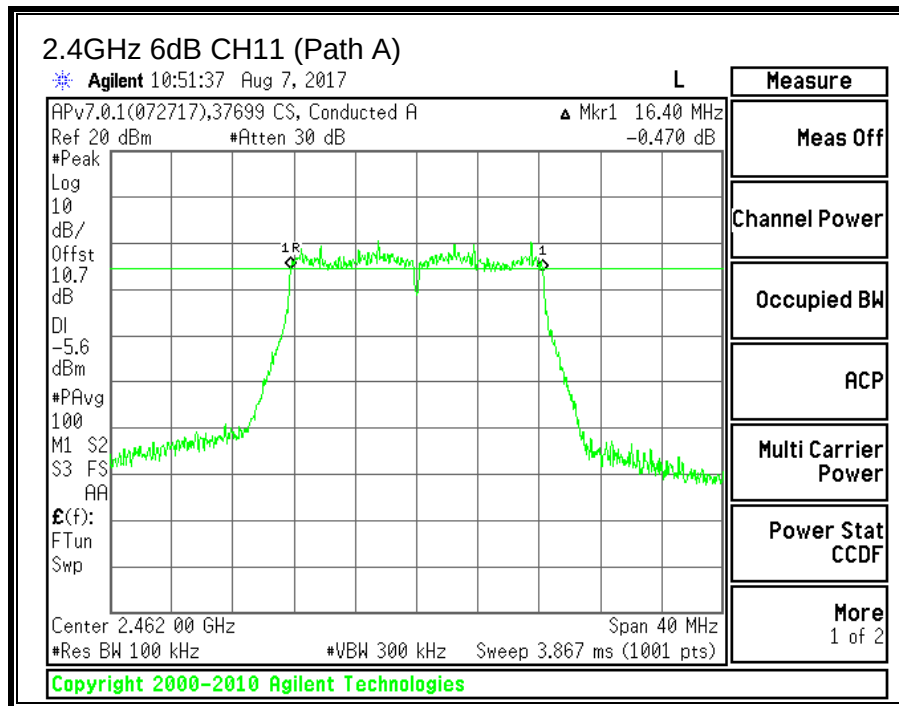
The minimum 6 dB bandwidth shall be at least 500 kHz.

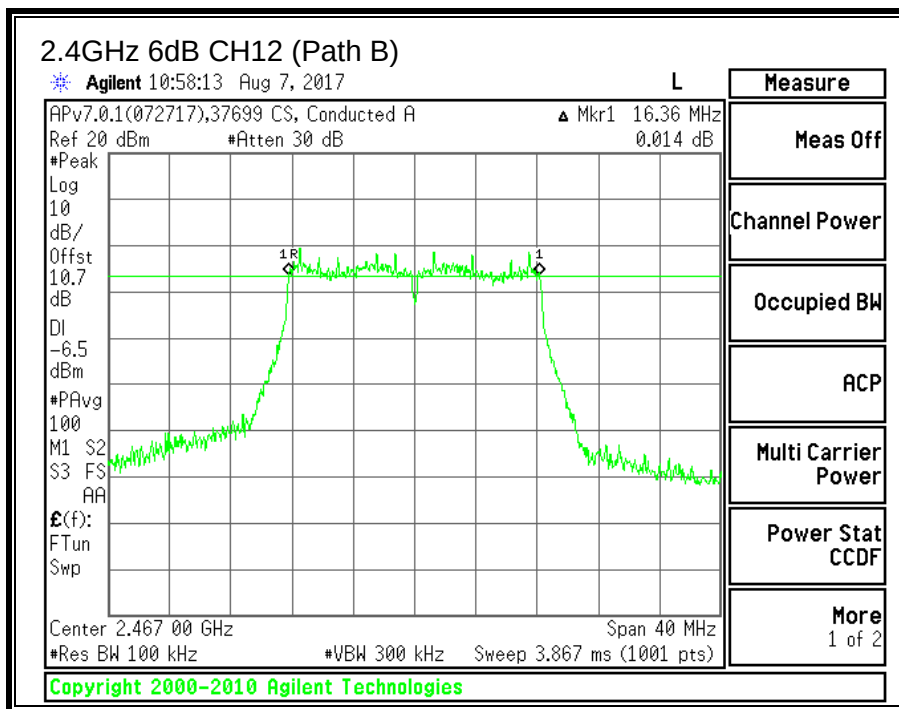
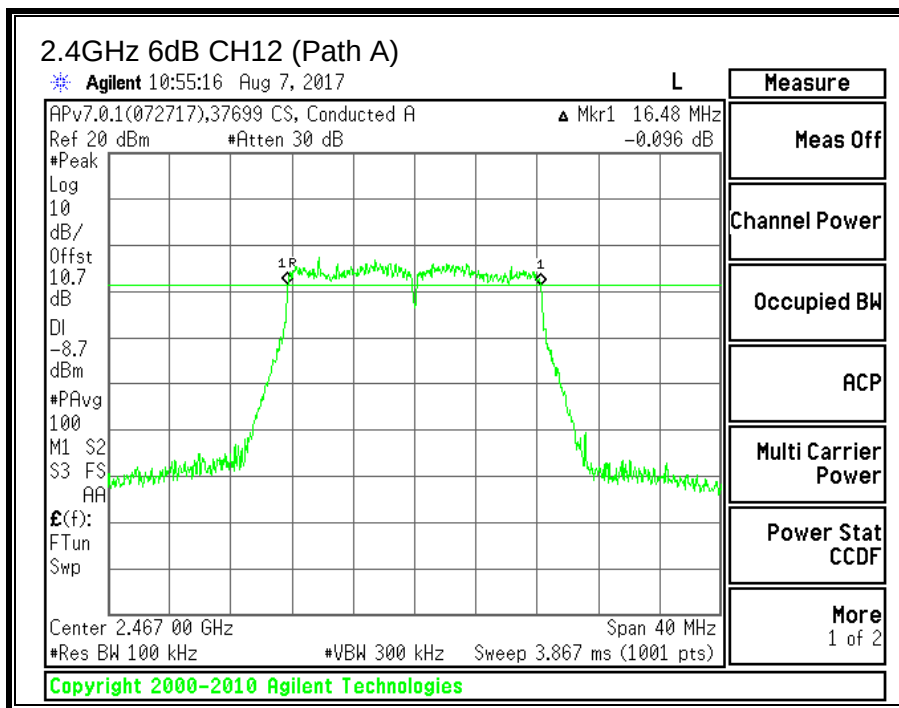
RESULTS

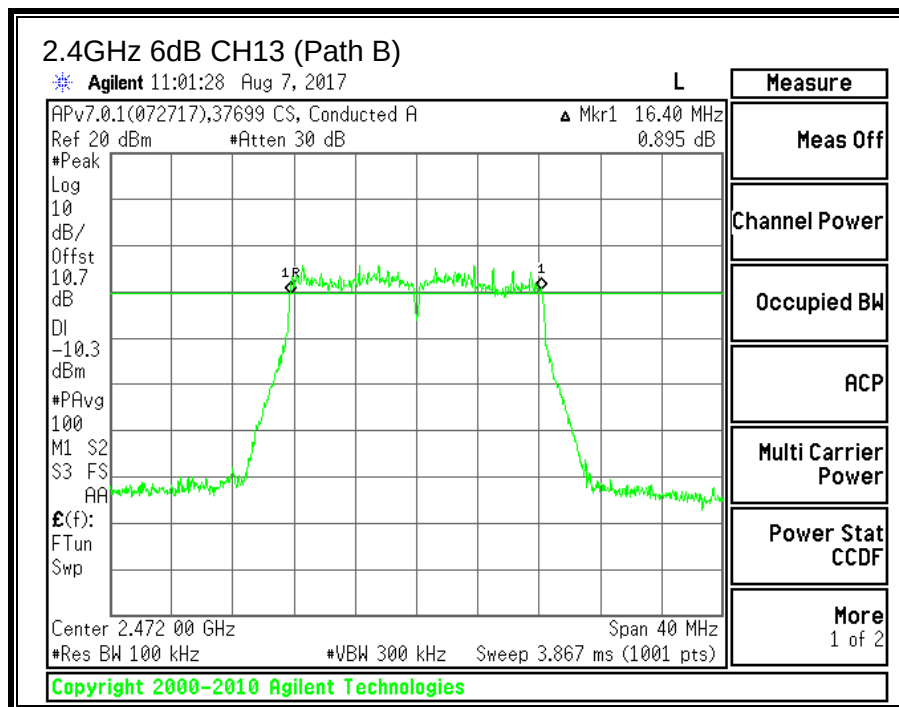
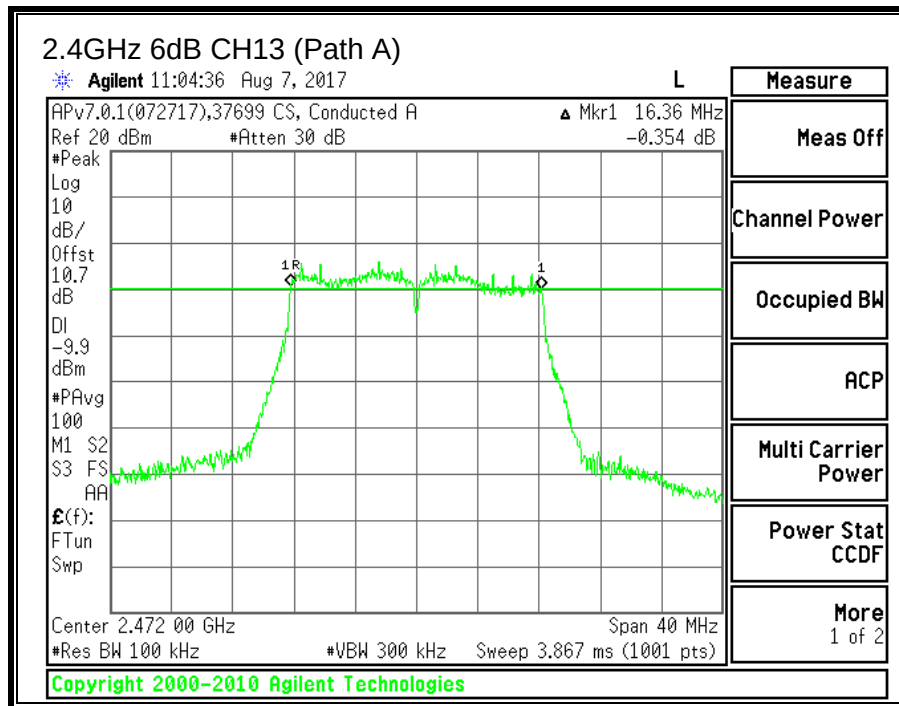
Channel	Frequency	6 dB BW Path A (MHz)	6 dB BW Path B (MHz)	Minimum Limit (MHz)
CH1	2412	16.52	16.40	0.5
CH6	2437	16.44	16.44	0.5
CH11	2462	16.40	16.40	0.5
CH12	2467	16.48	16.36	0.5
CH13	2472	16.36	16.40	0.5











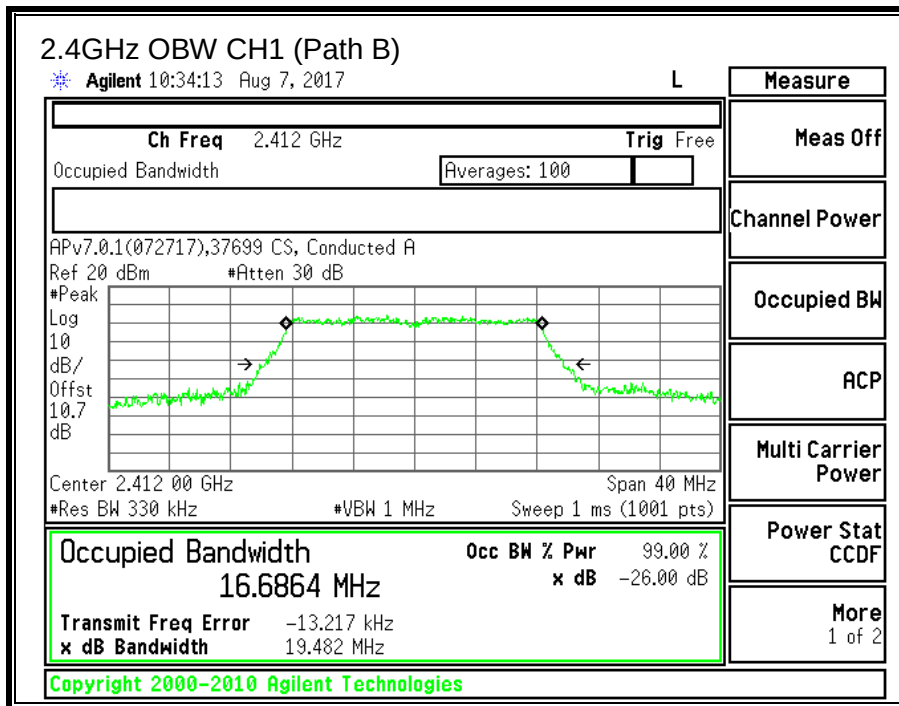
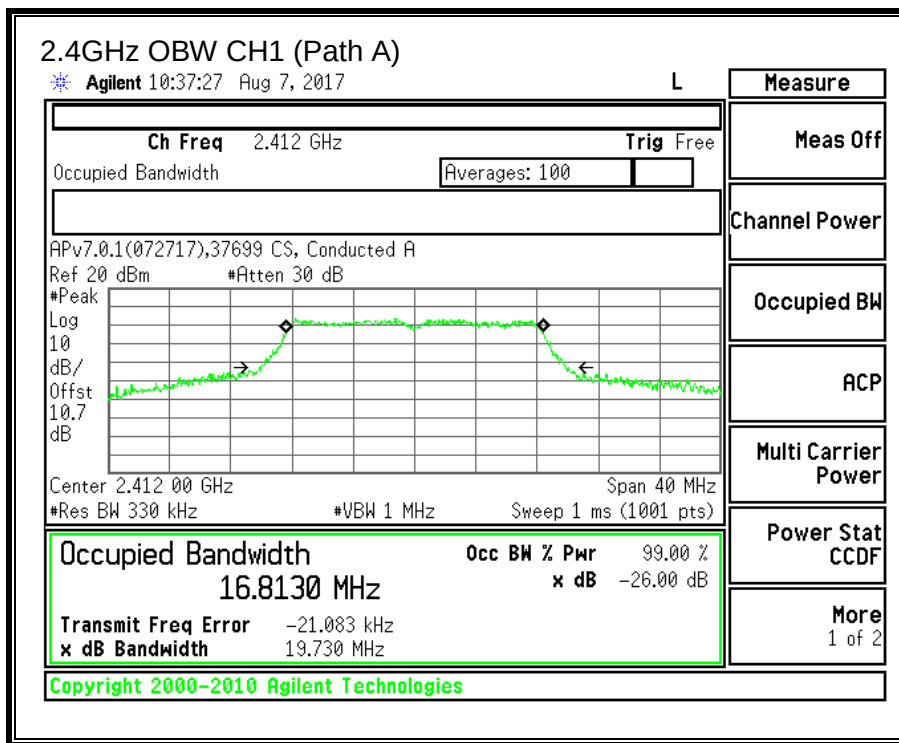
9.3.2. 99% BANDWIDTH

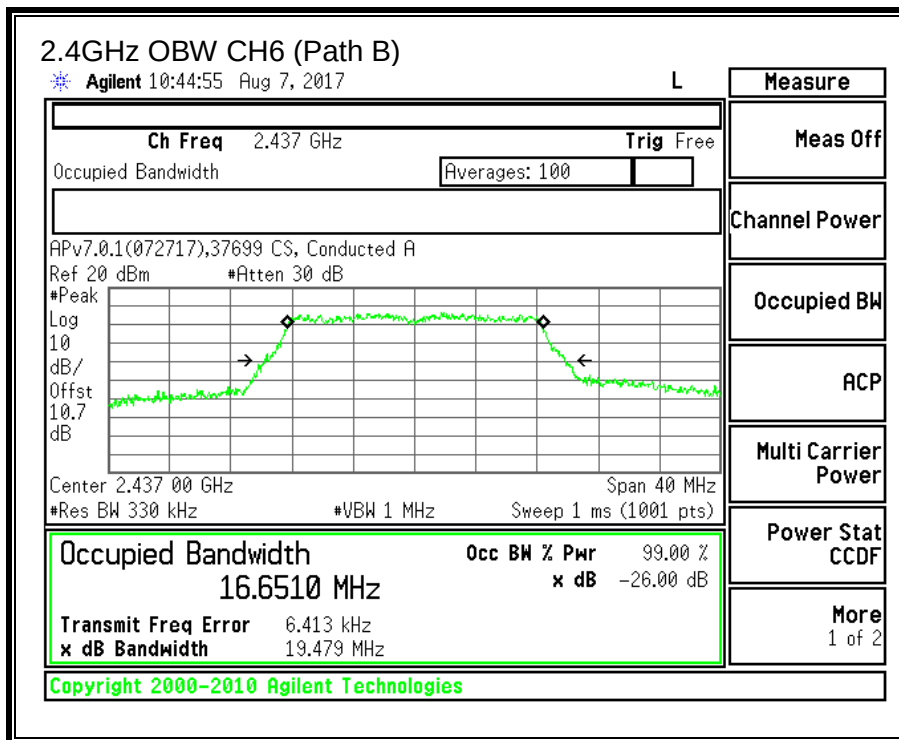
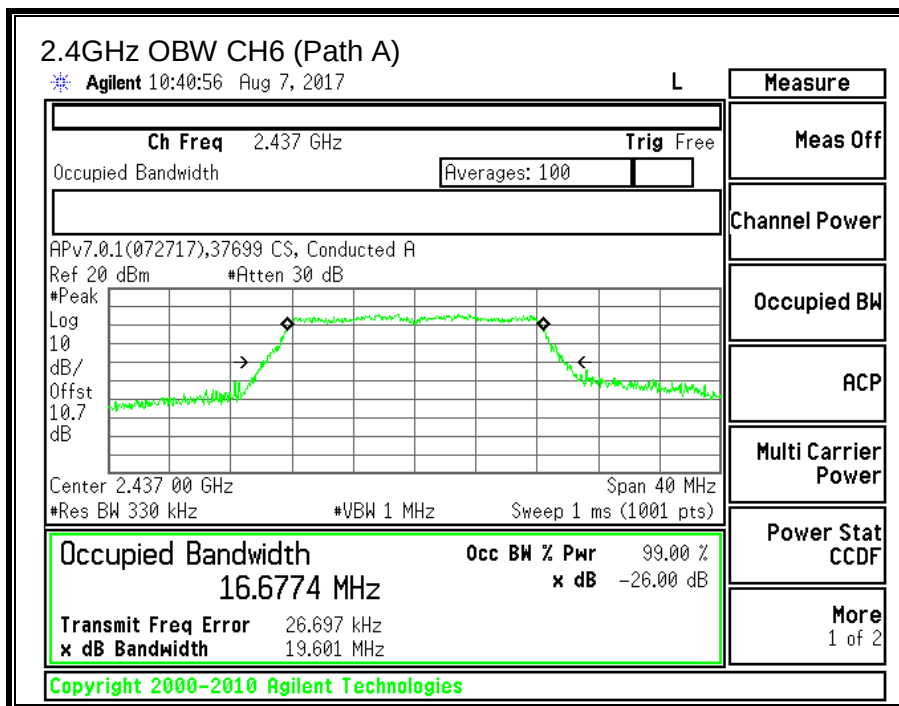
LIMITS

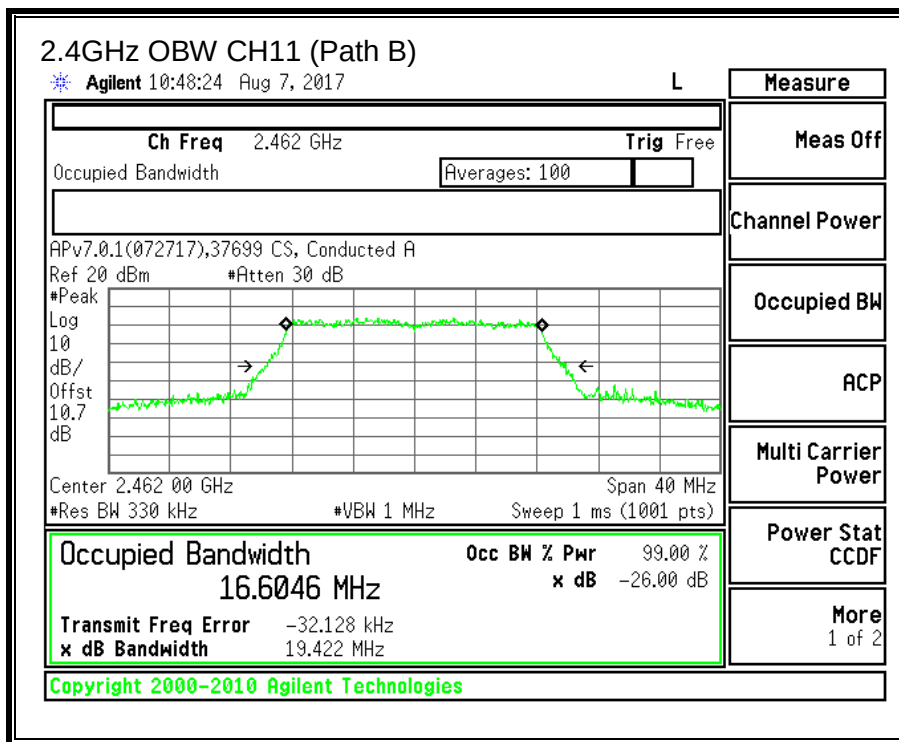
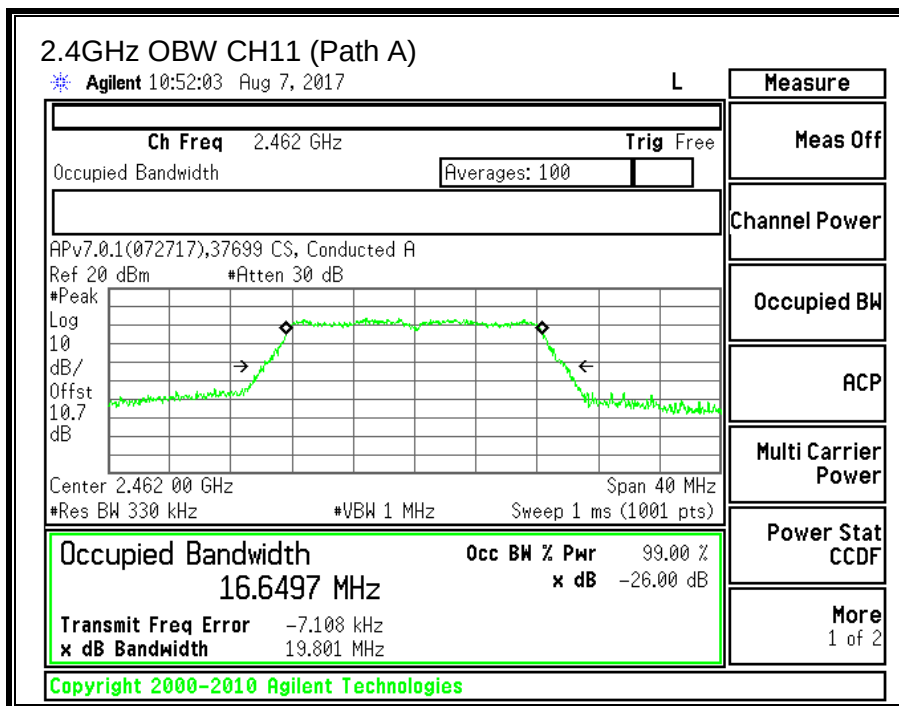
None; for reporting purposes only.

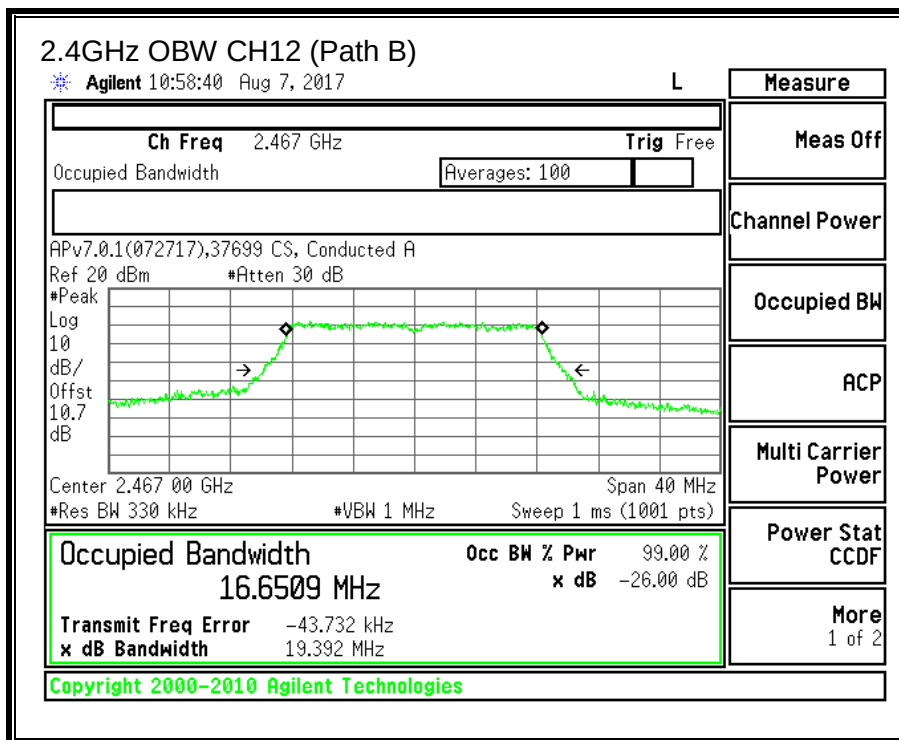
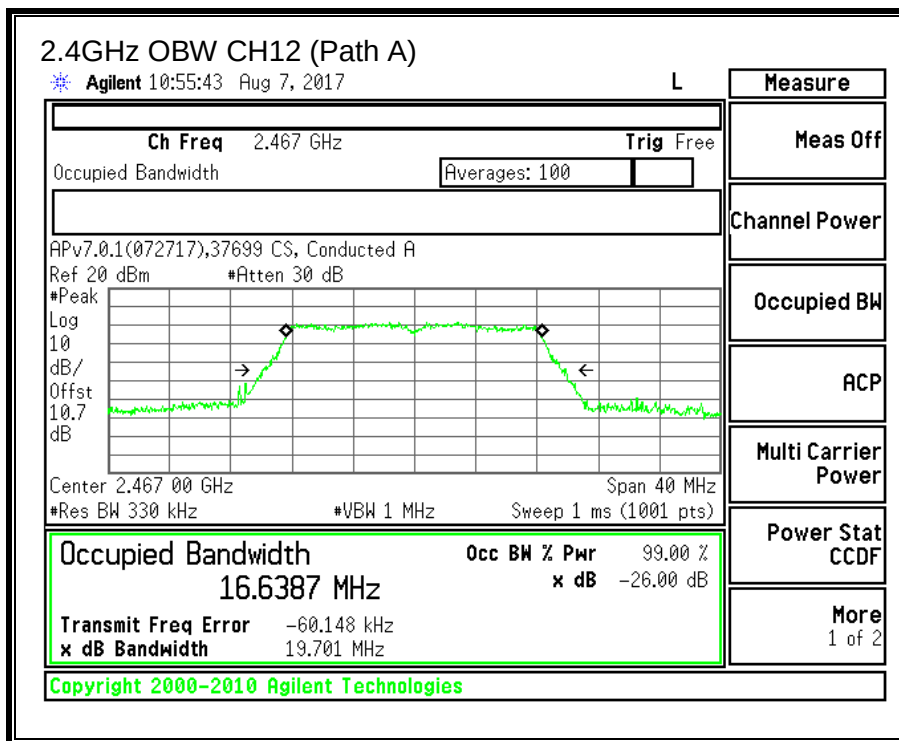
RESULTS

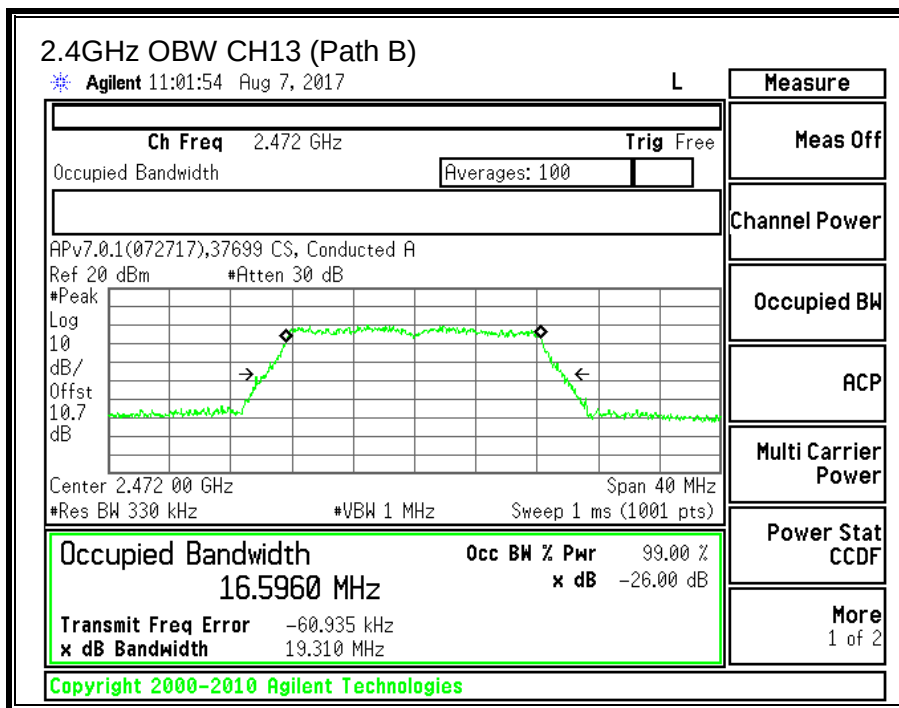
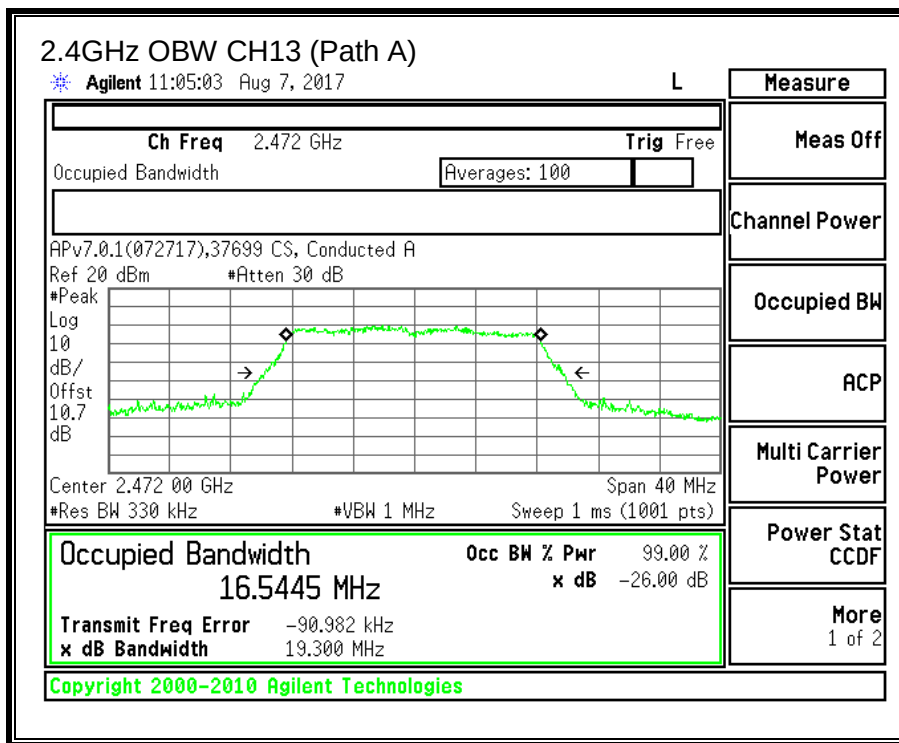
Channel	Frequency (MHz)	99% Bandwidth Path A (MHz)	99% Bandwidth Path B (MHz)
CH1	2412	16.8130	16.6864
CH6	2437	16.6774	16.6510
CH11	2462	16.6497	16.6046
CH12	2467	16.6387	16.6509
CH13	2472	16.5445	16.5960











9.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

ID:	37699	Date:	08/04/17
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Channel	Frequency (MHz)	Path A Power (dBm)	Path B Power (dBm)	Total Power (dBm)
Low	2412	11.61	11.87	14.75
Mid	2437	13.81	13.96	16.90
High_11	2462	11.67	11.21	14.46
High_12	2467	9.44	9.61	12.54
High_13	2472	7.31	7.48	10.41

9.3.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

IC RSS-247 (5.4) (d)

For systems using digital modulation in the 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 PROCEDURE

KDB 558074 D01 v04Section 9.2.3.2

DIRECTIONAL ANTENNA GAIN

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

Path A Antenna Gain (dBi)	Path B Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.40	0.20	1.44

RESULTS

ID:	37699	Date:	08/04/17
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Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
CH1	2412	1.44	30.00	30	36	30.00
CH6	2437	1.44	30.00	30	36	30.00
CH11	2462	1.44	30.00	30	36	30.00
CH12	2467	1.44	30.00	30	36	30.00
CH13	2472	1.44	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Path A Meas Power (dBm)	Path B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
CH1	2412	18.72	19.43	22.10	30.00	-7.90
CH6	2437	19.59	20.62	23.15	30.00	-6.85
CH11	2462	18.85	18.78	21.83	30.00	-8.17
CH12	2467	15.96	16.21	19.10	30.00	-10.90
CH13	2472	14.05	13.87	16.97	30.00	-13.03

9.3.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

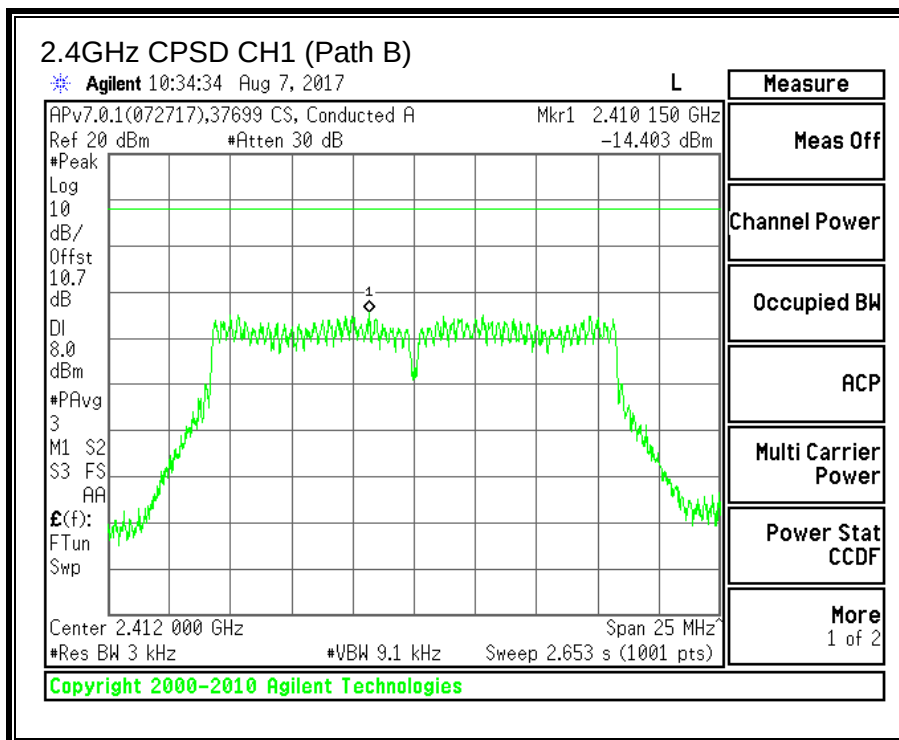
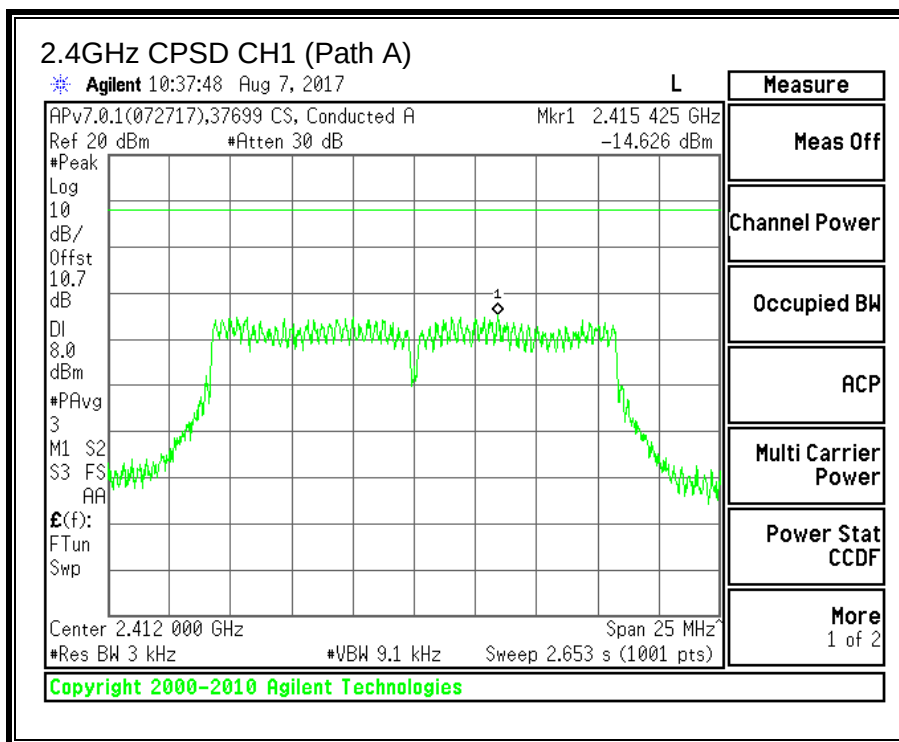
IC RSS-247 (5.2) (b)

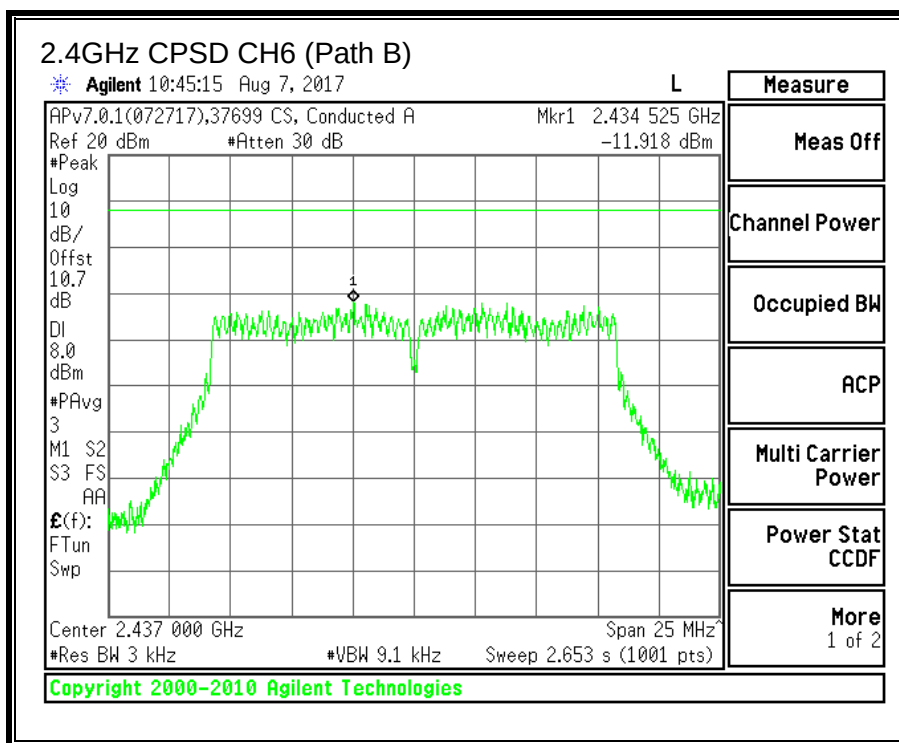
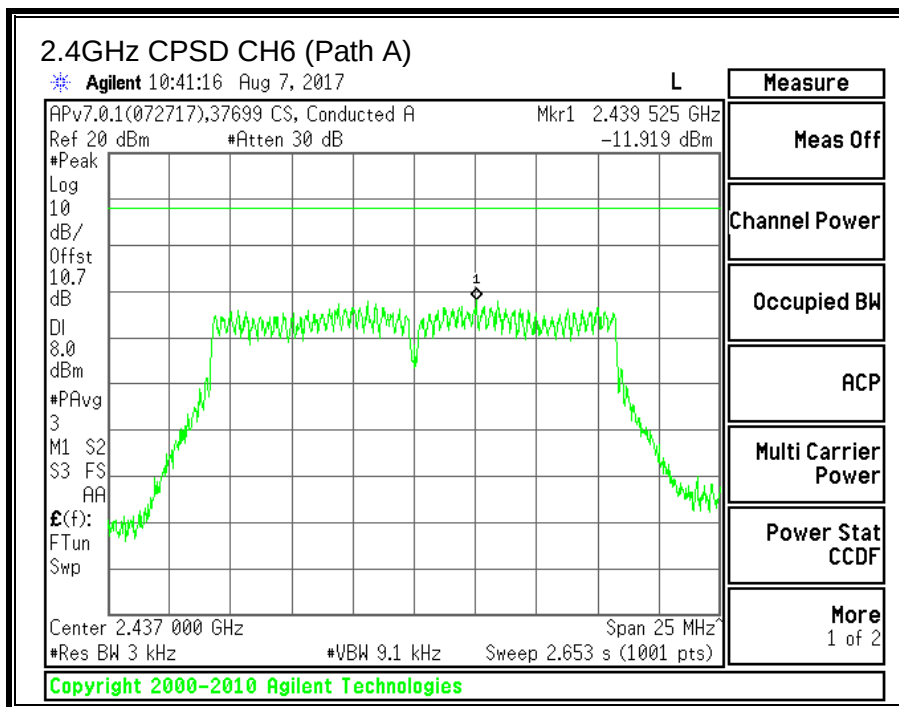
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

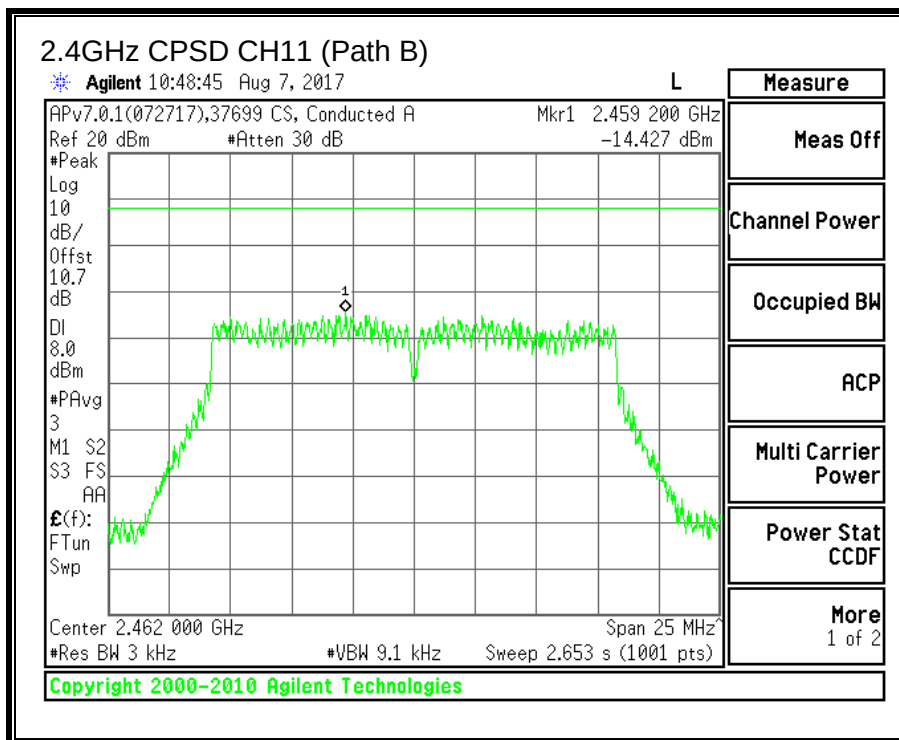
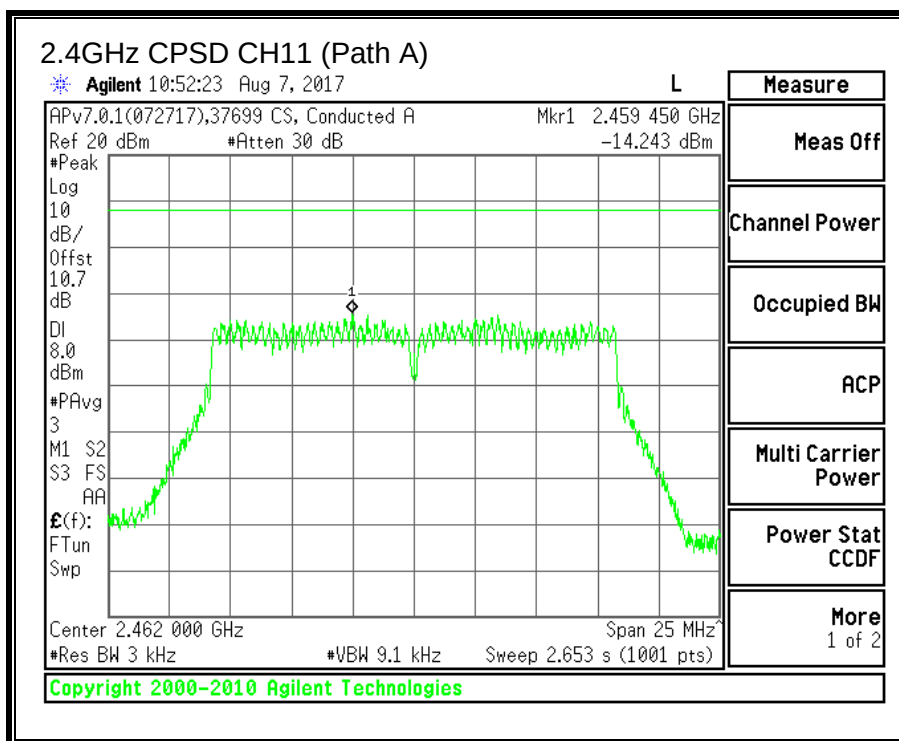
RESULTS

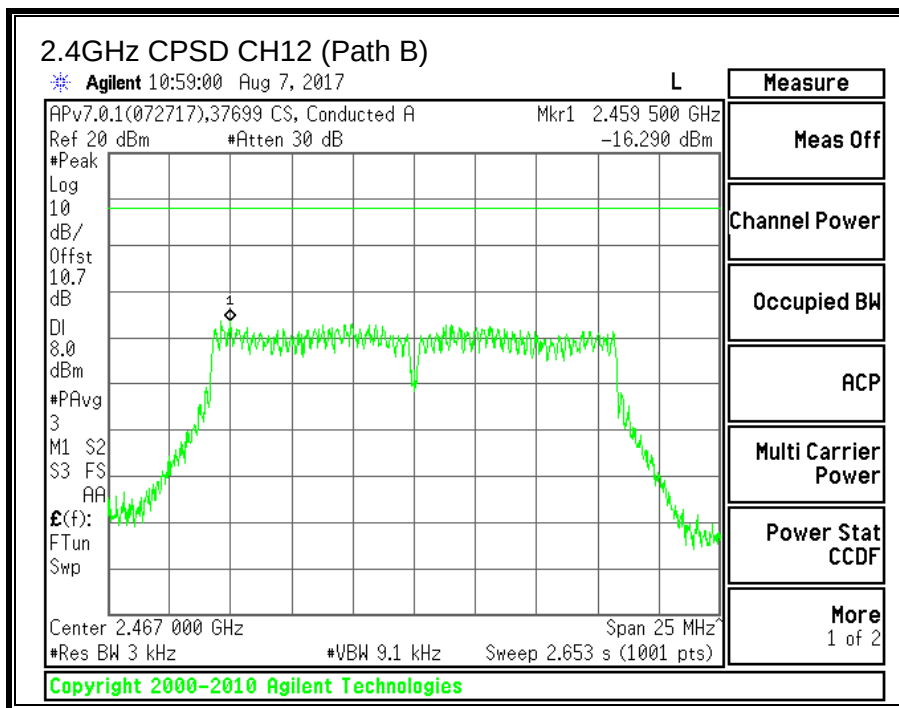
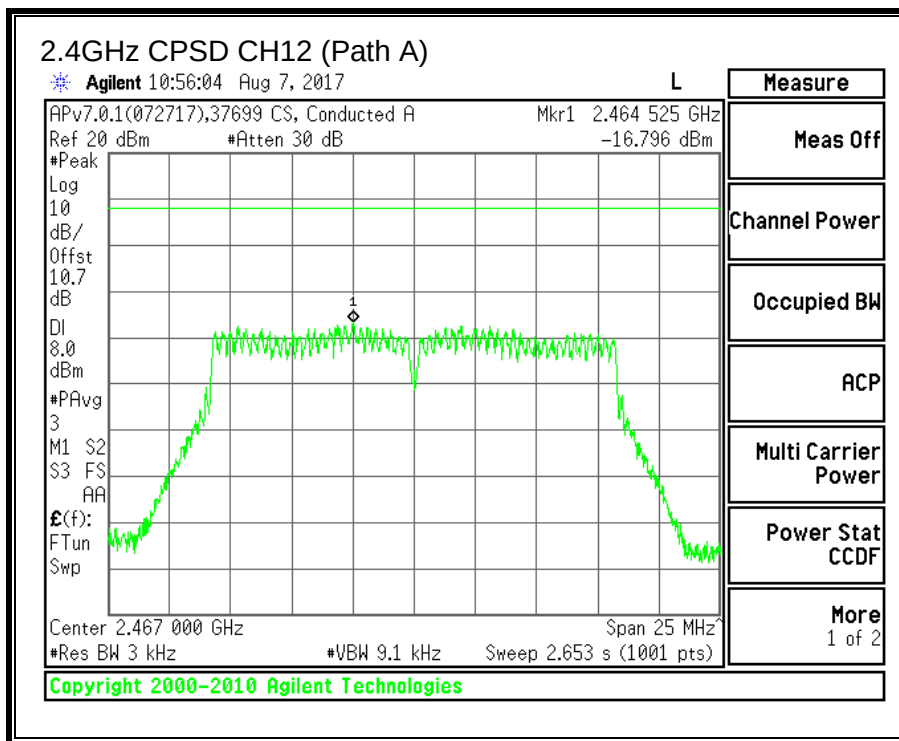
PSD Results

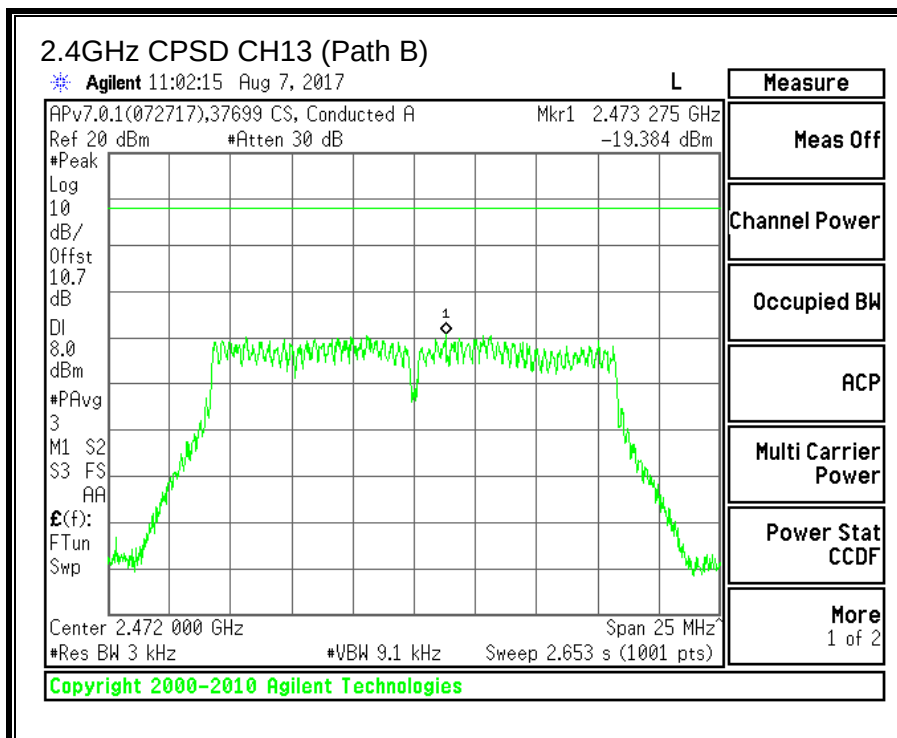
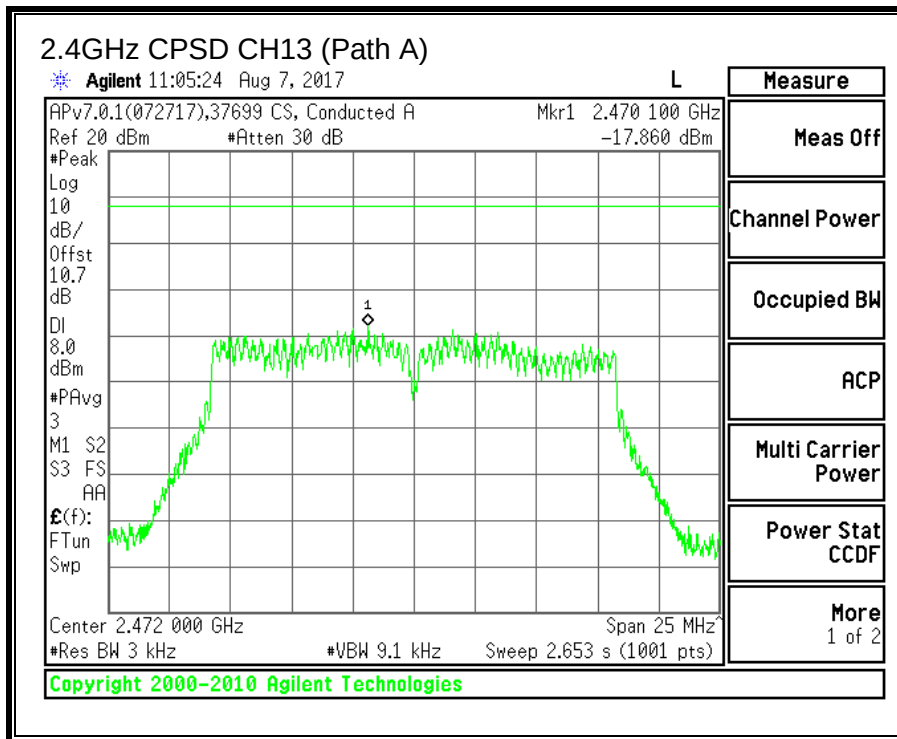
Channel	Frequency (MHz)	Path A Meas (dBm/3kHz)	Path B Meas (dBm/3kHz)	Total Corr'd PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
CH1	2412	-14.63	-14.40	-11.50	8.0	-19.5
CH6	2437	-11.92	-11.92	-8.91	8.0	-16.9
CH11	2462	-14.24	-14.43	-11.32	8.0	-19.3
CH12	2467	-16.80	-16.29	-13.53	8.0	-21.5
CH13	2472	-17.86	-19.38	-15.55	8.0	-23.5











9.3.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

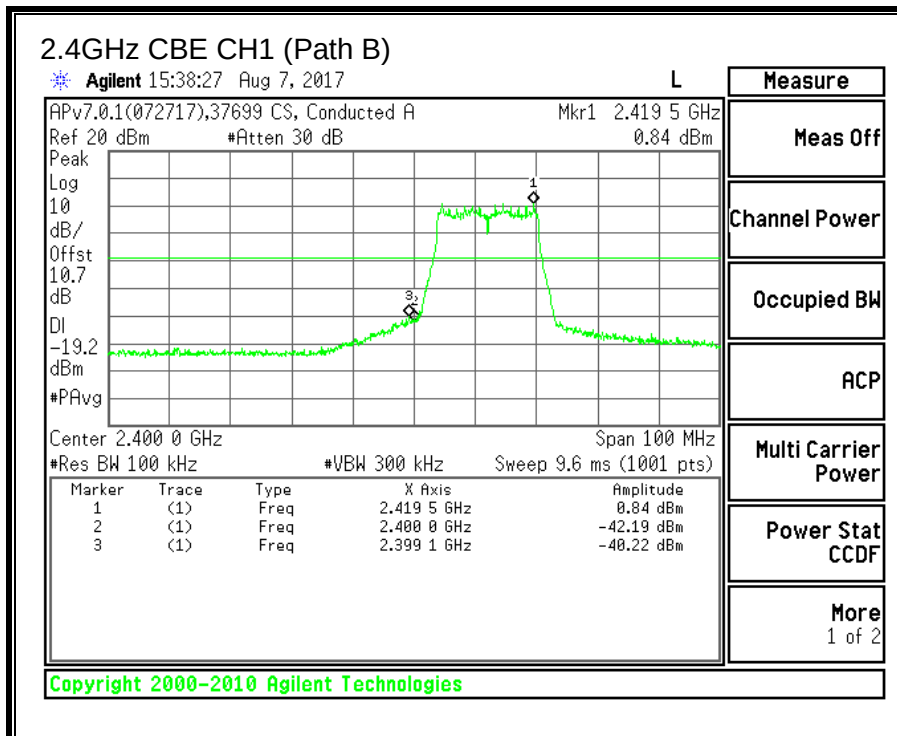
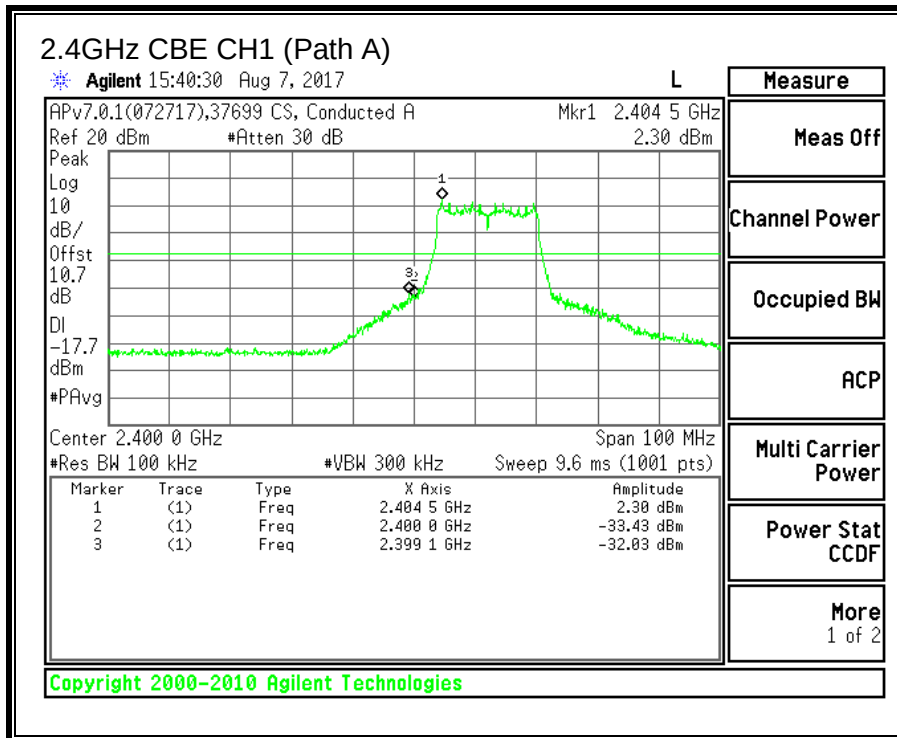
LIMITS

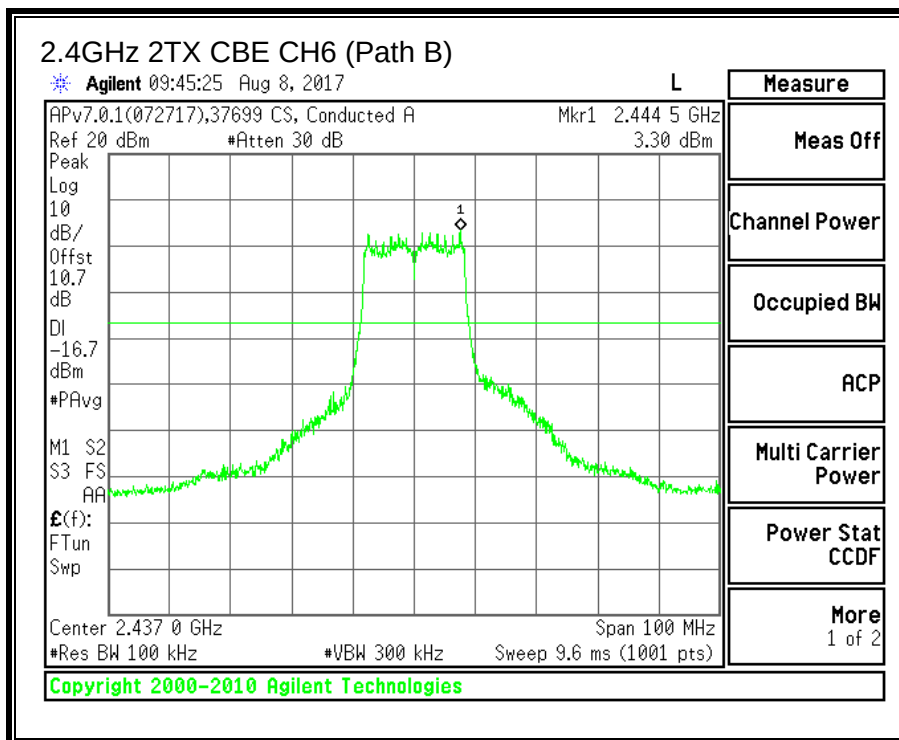
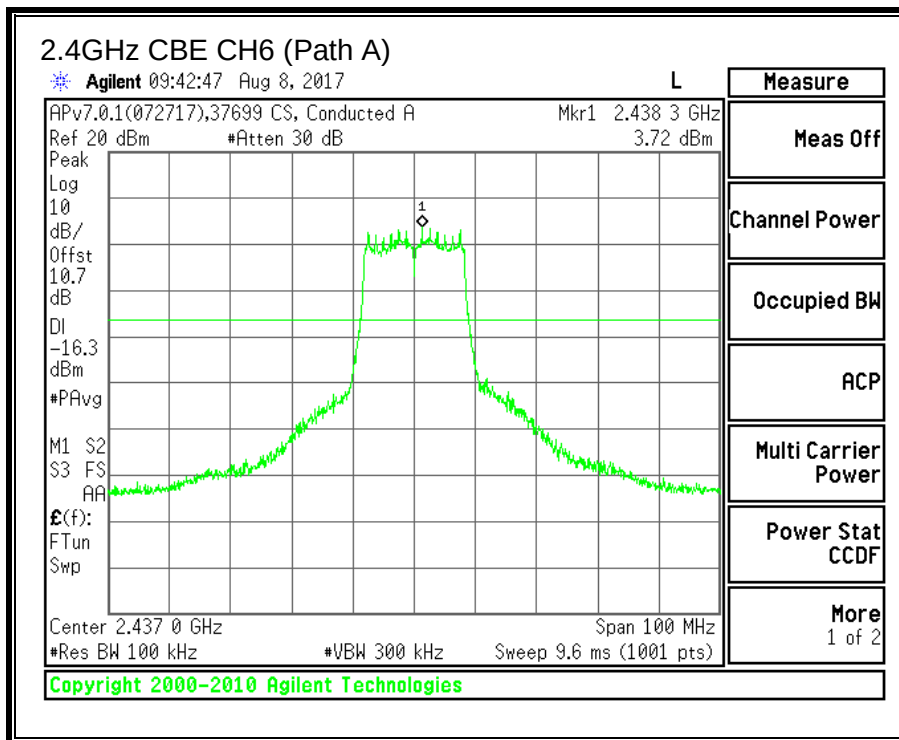
FCC §15.247 (d)

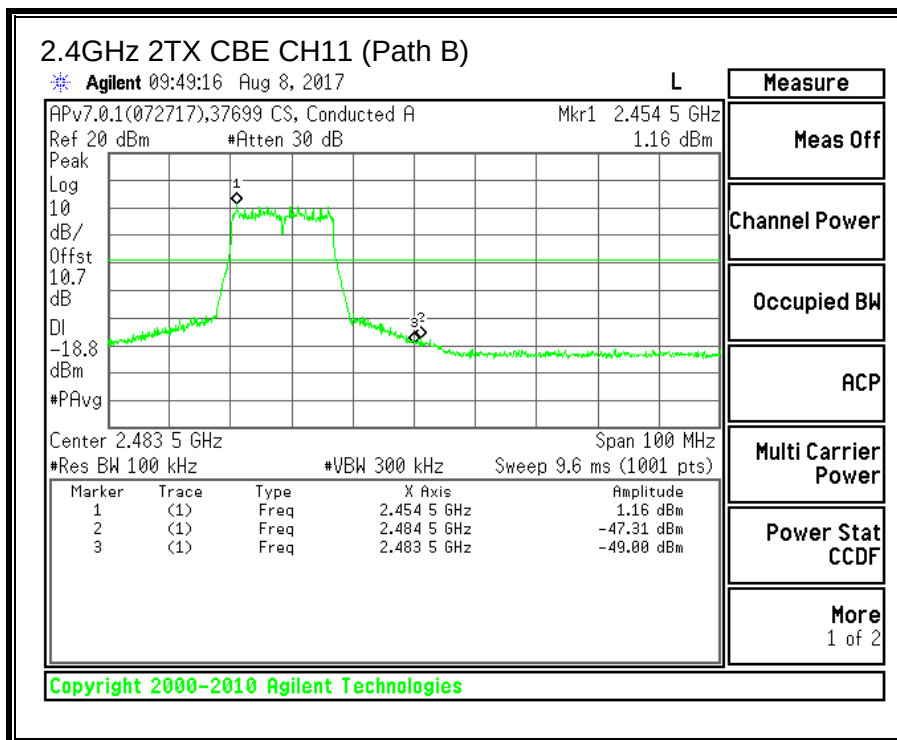
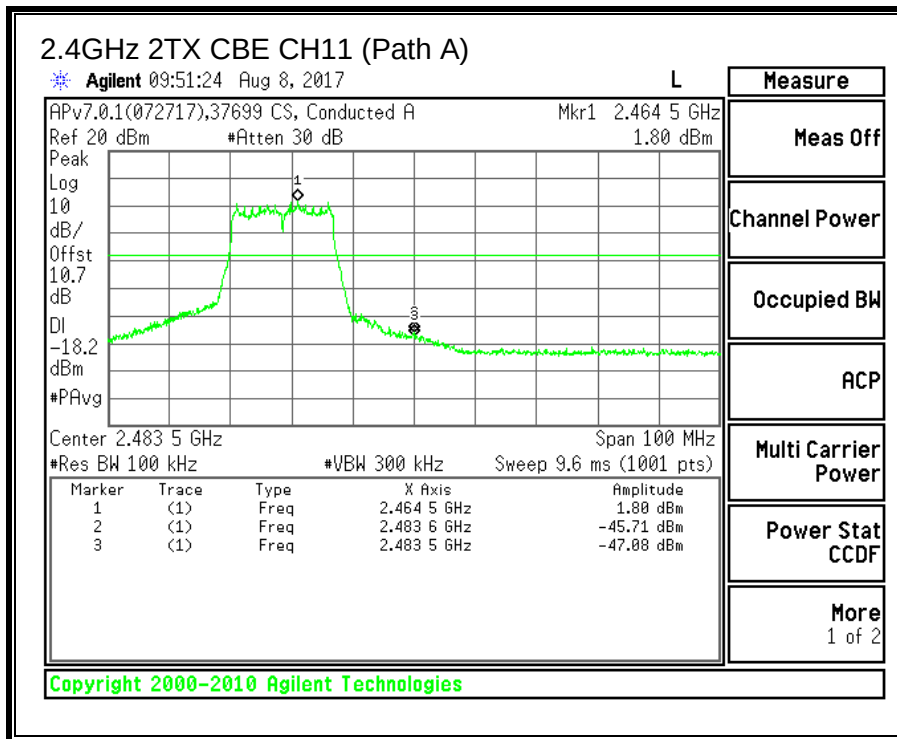
IC RSS-247 5.5

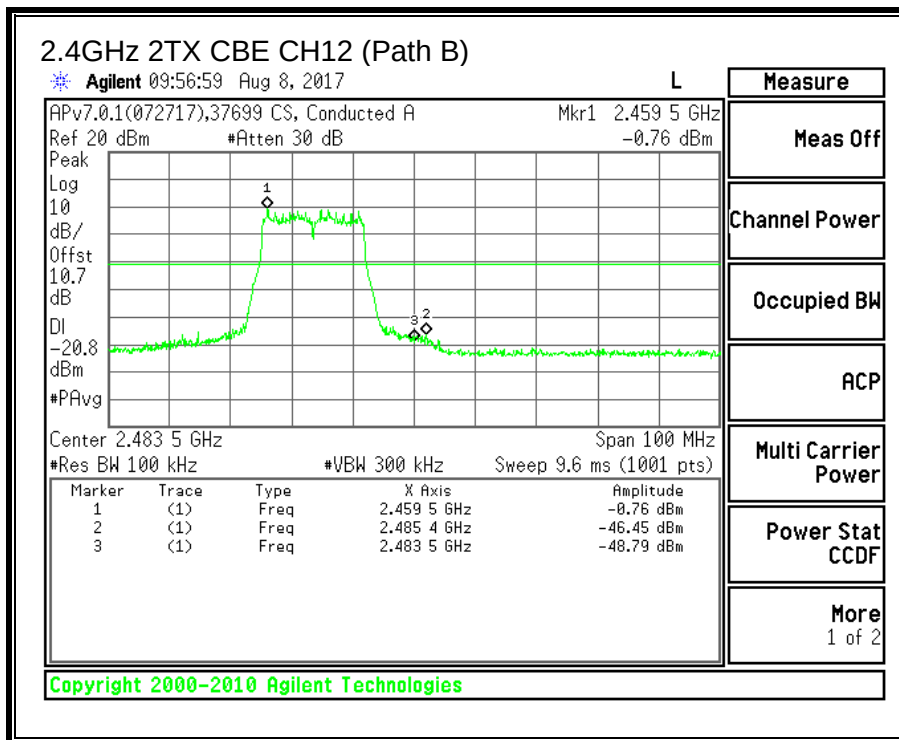
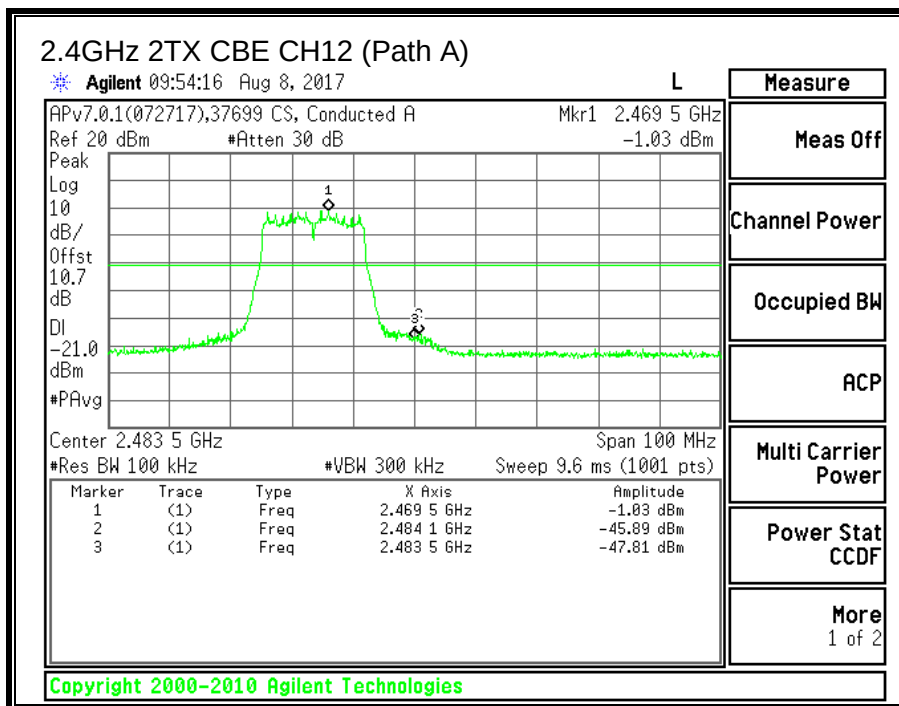
Output power was measured based on the use of peak measurement, therefore the required attenuation is 20 dB.

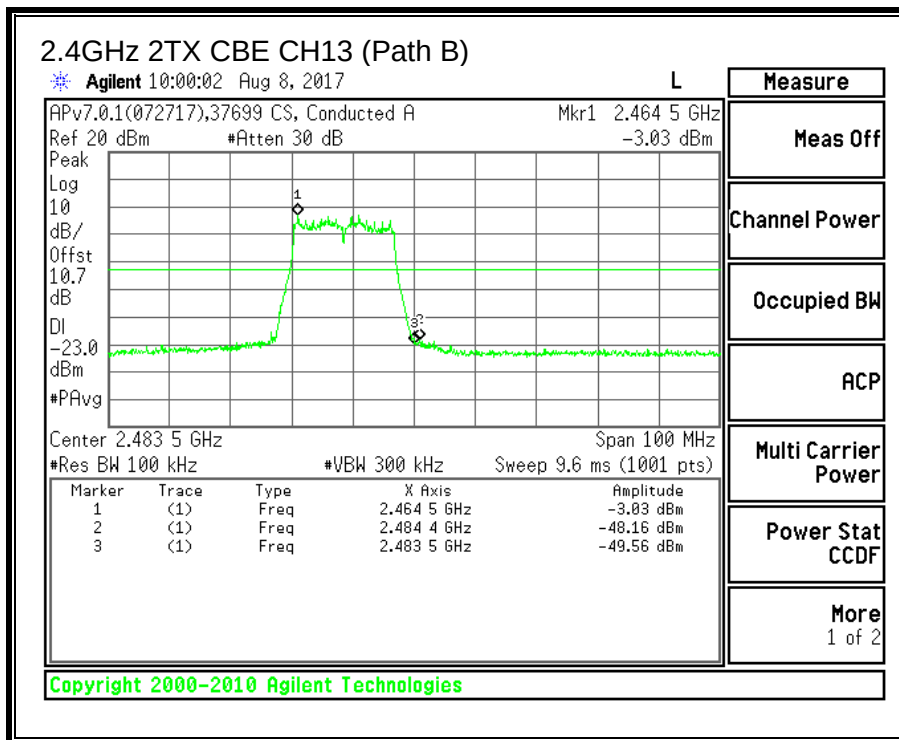
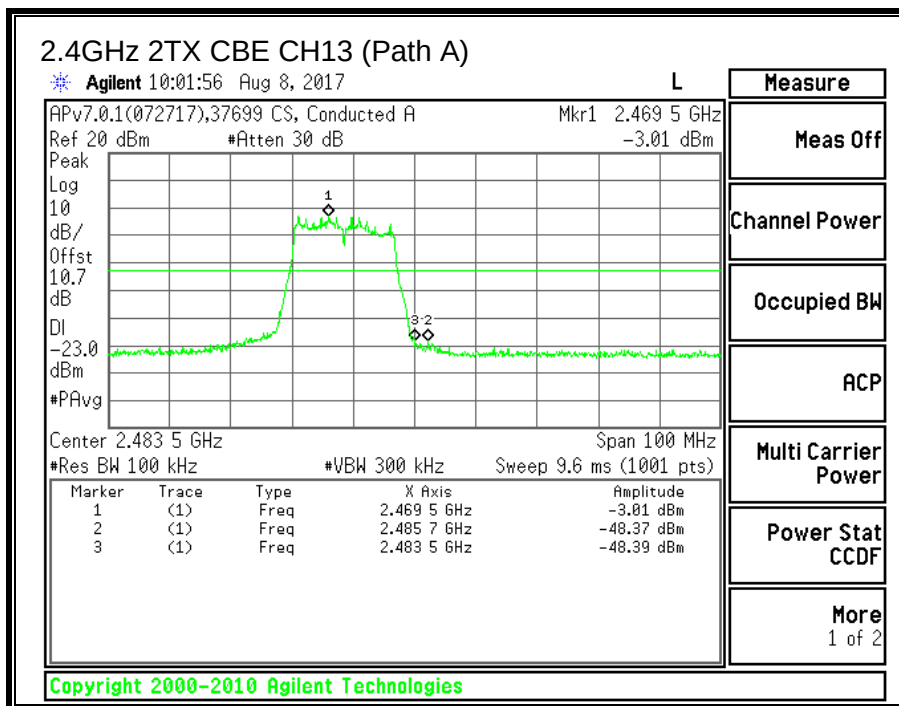
RESULTS

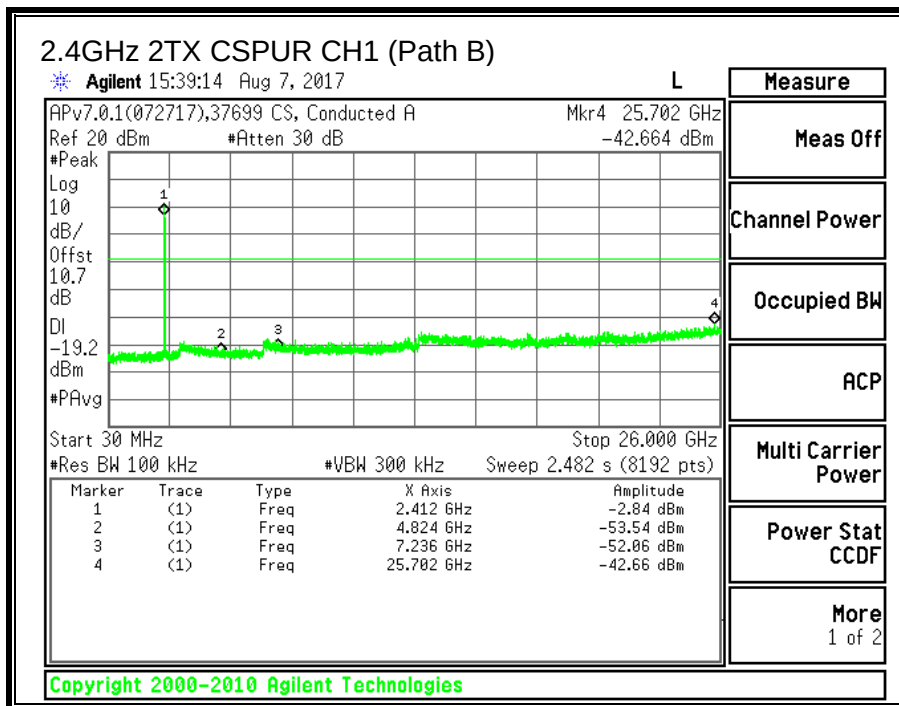
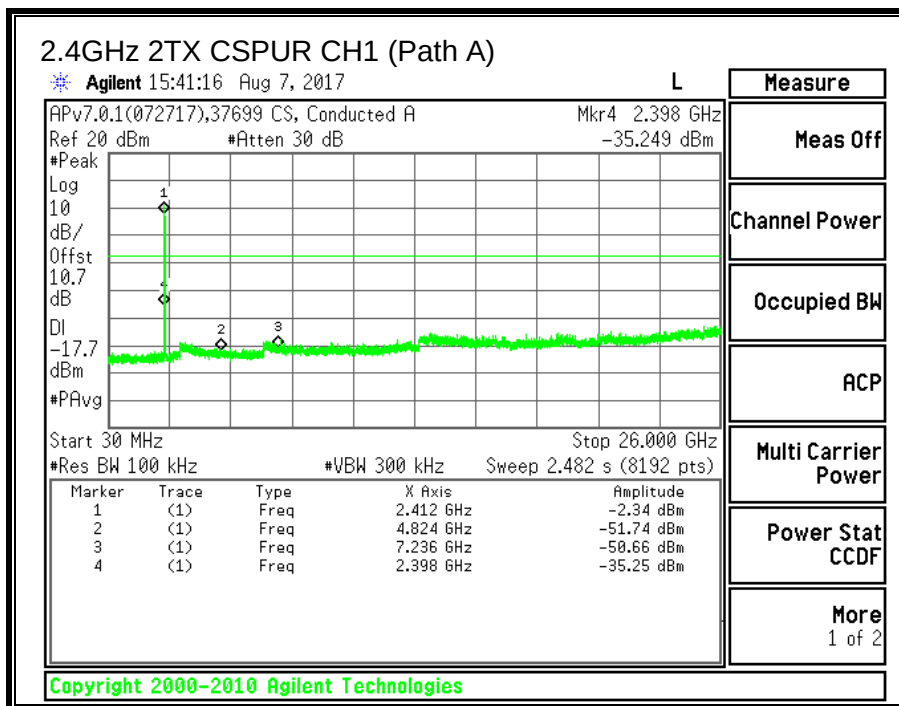


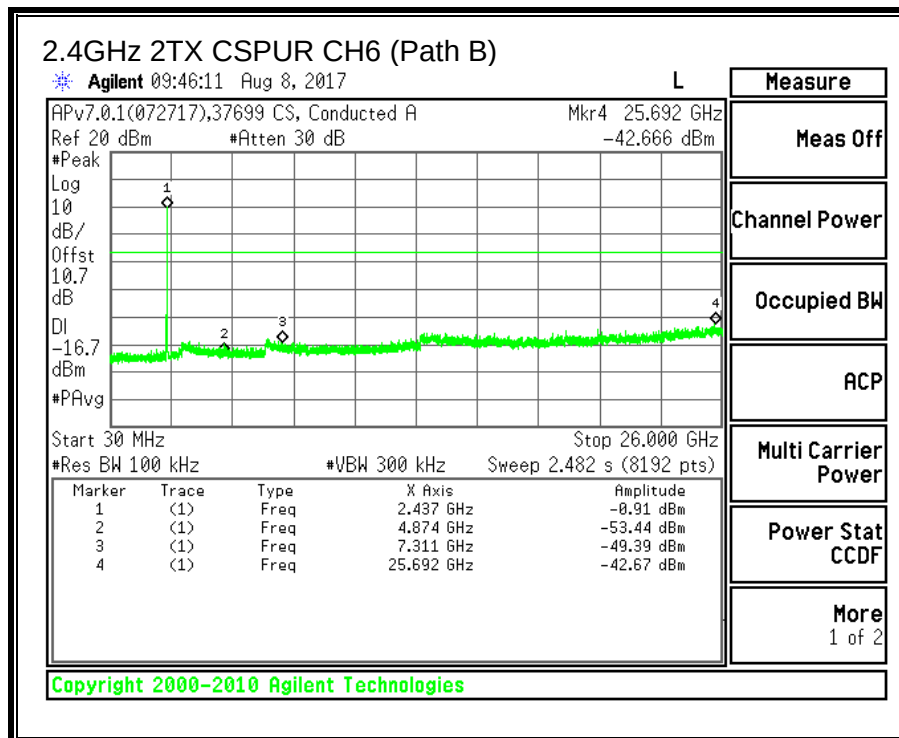
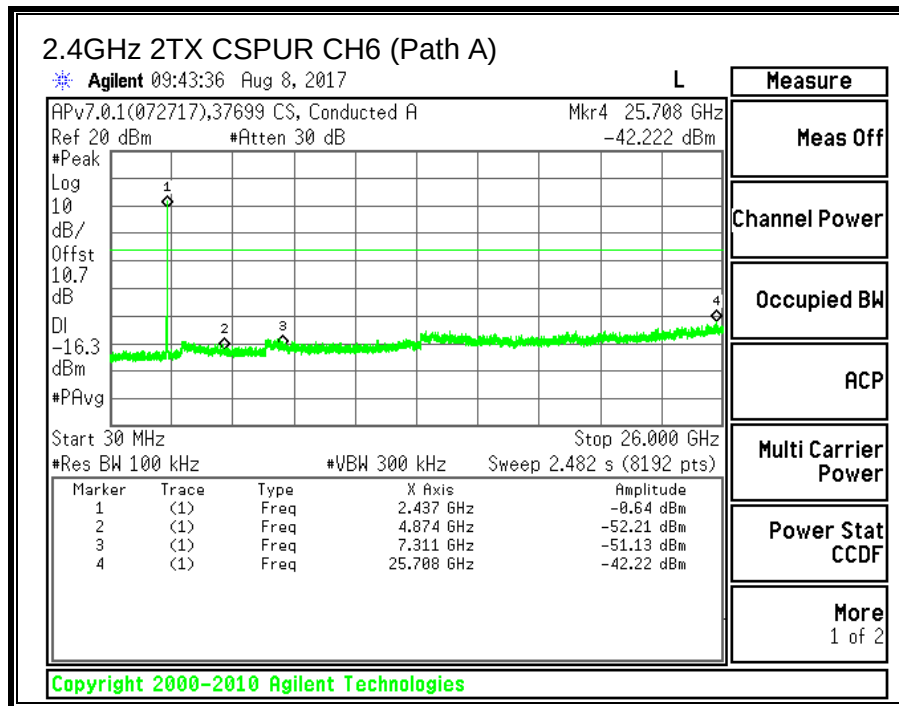


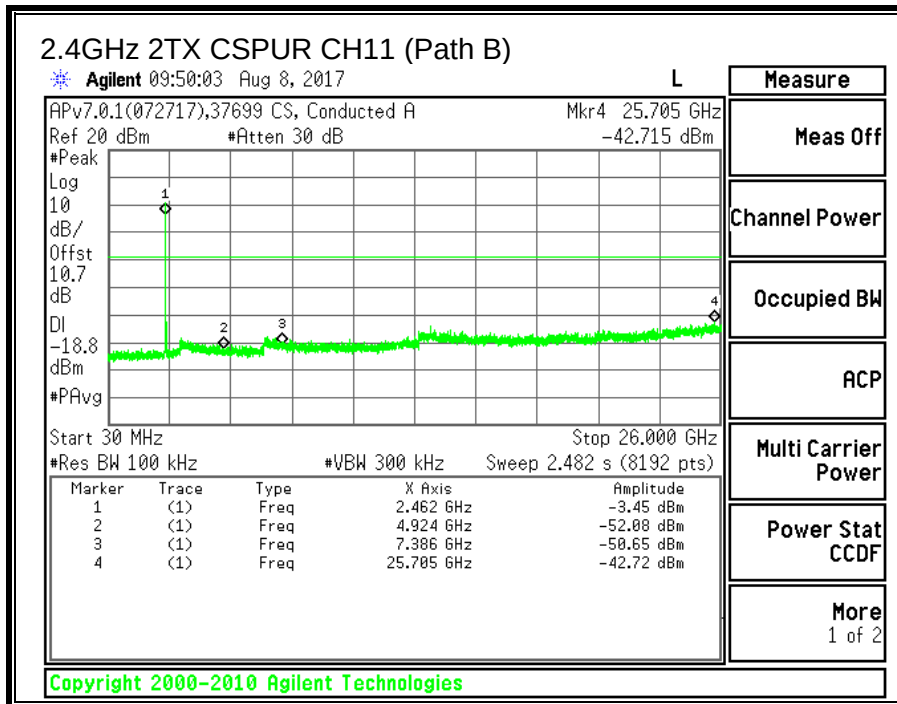
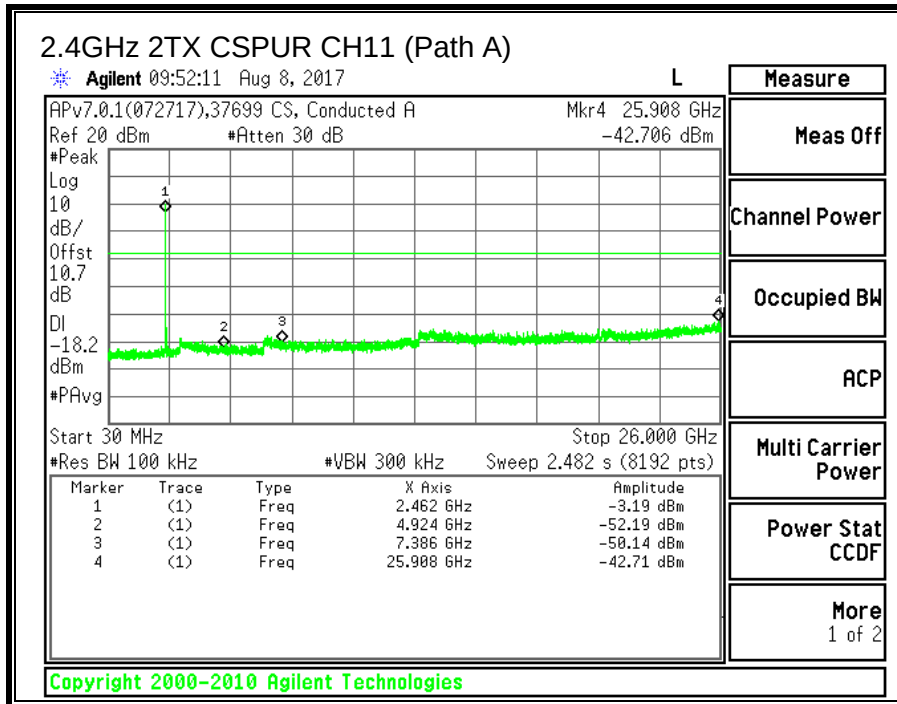


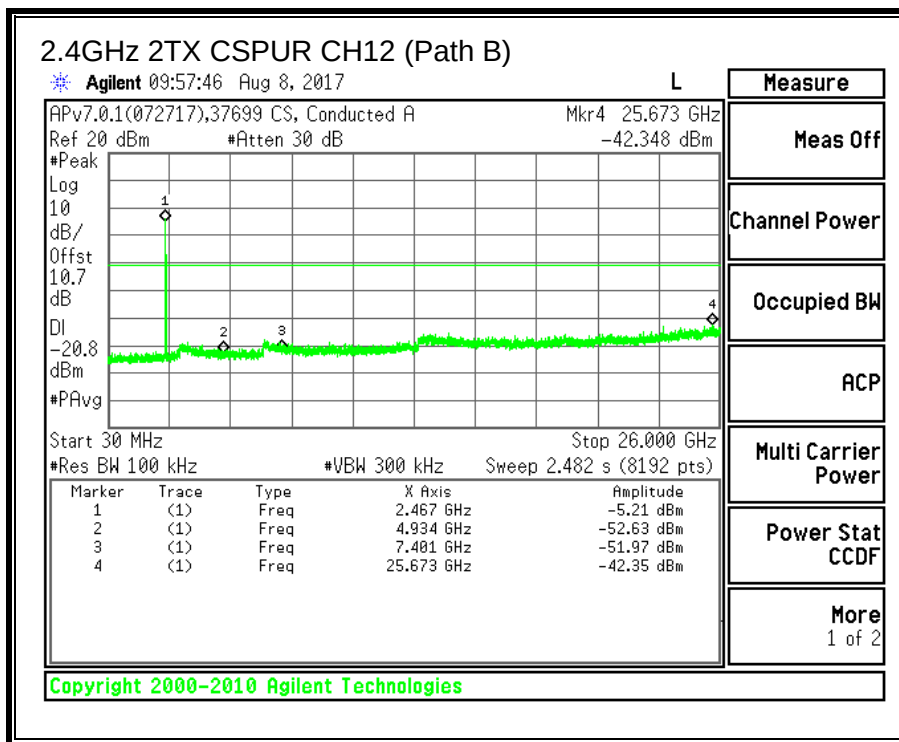
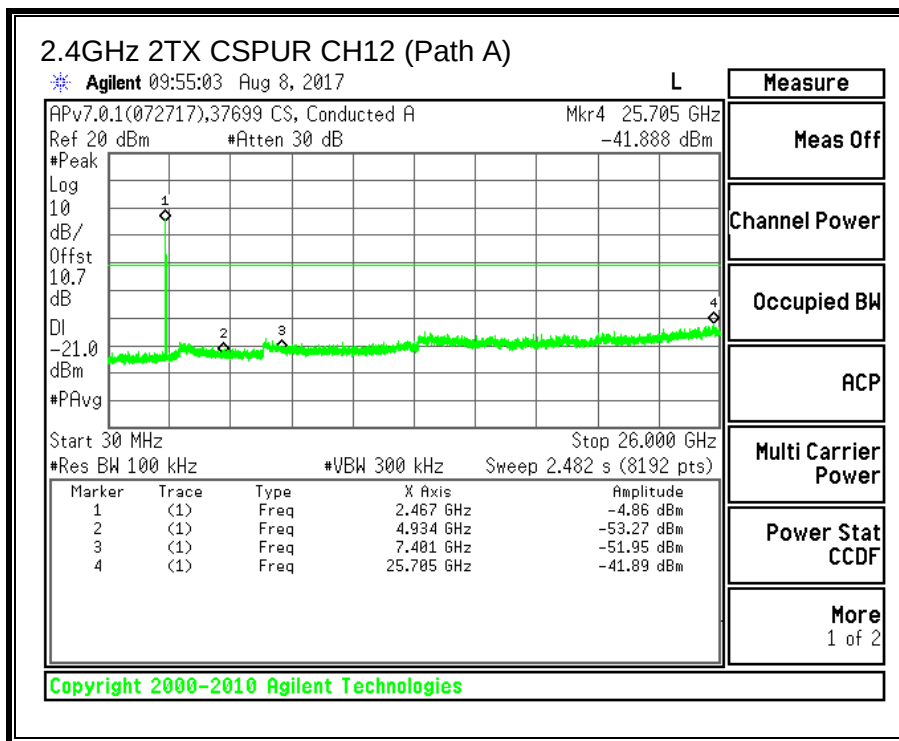


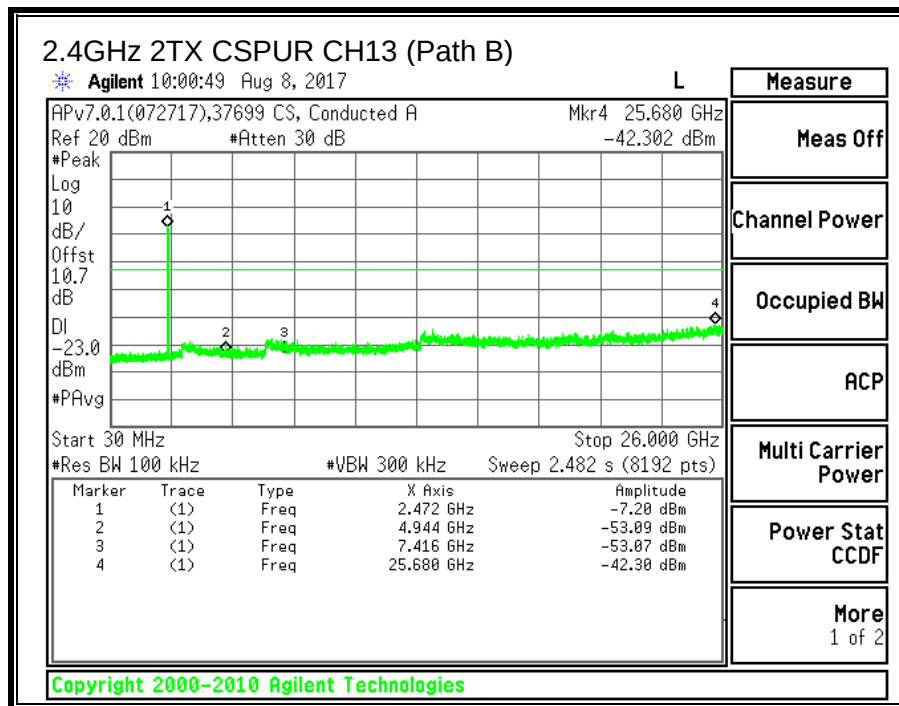
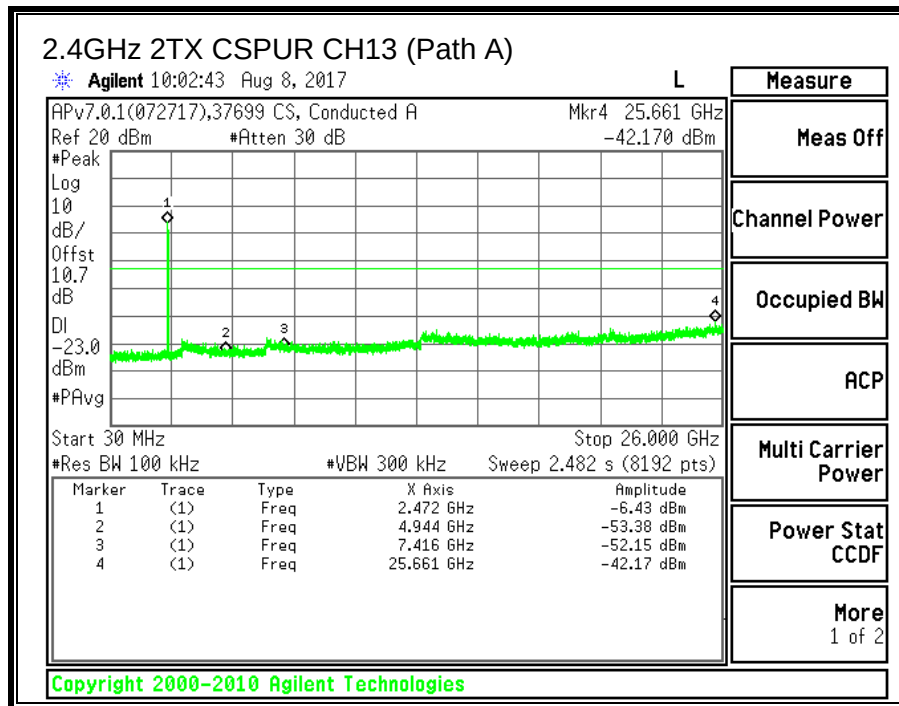












9.4. 11n HT20 2TX CDD MIMO MODE IN THE 2.4GHz BAND

9.4.1. 6 dB BANDWIDTH

LIMITS

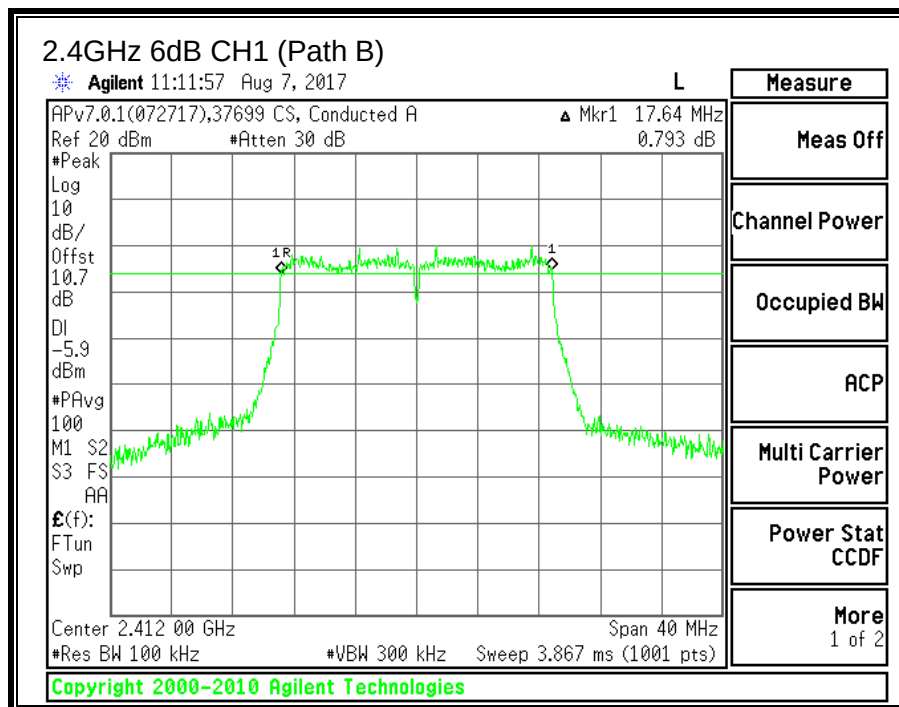
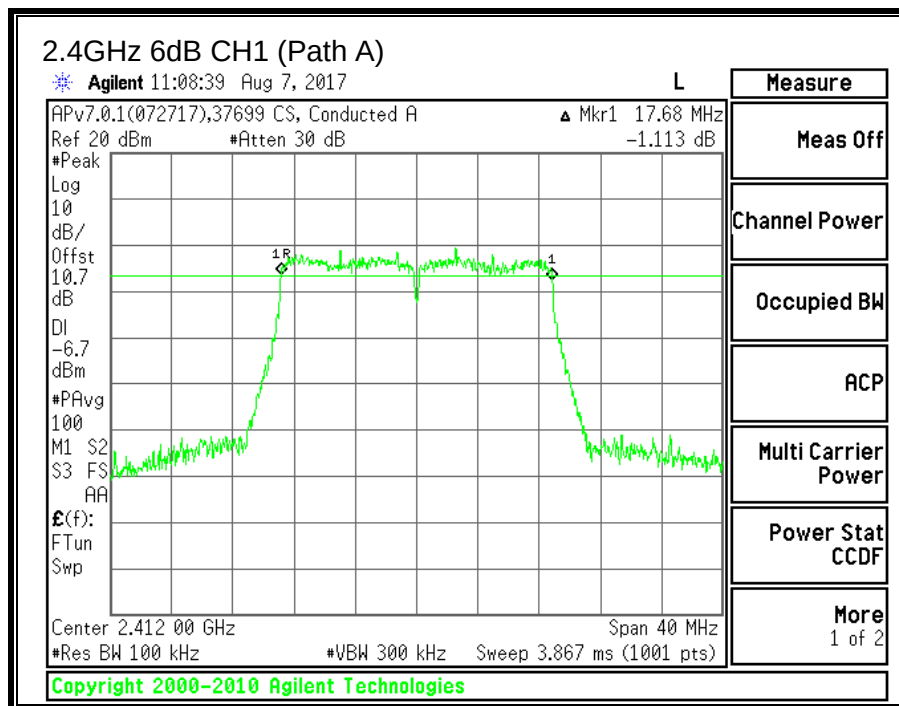
FCC §15.247 (a) (2)

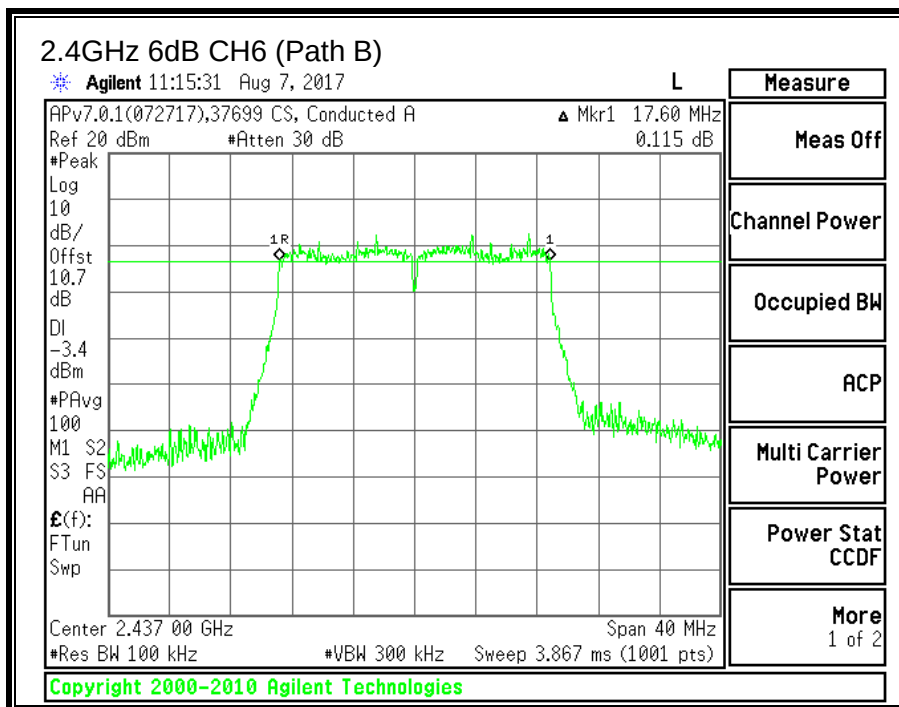
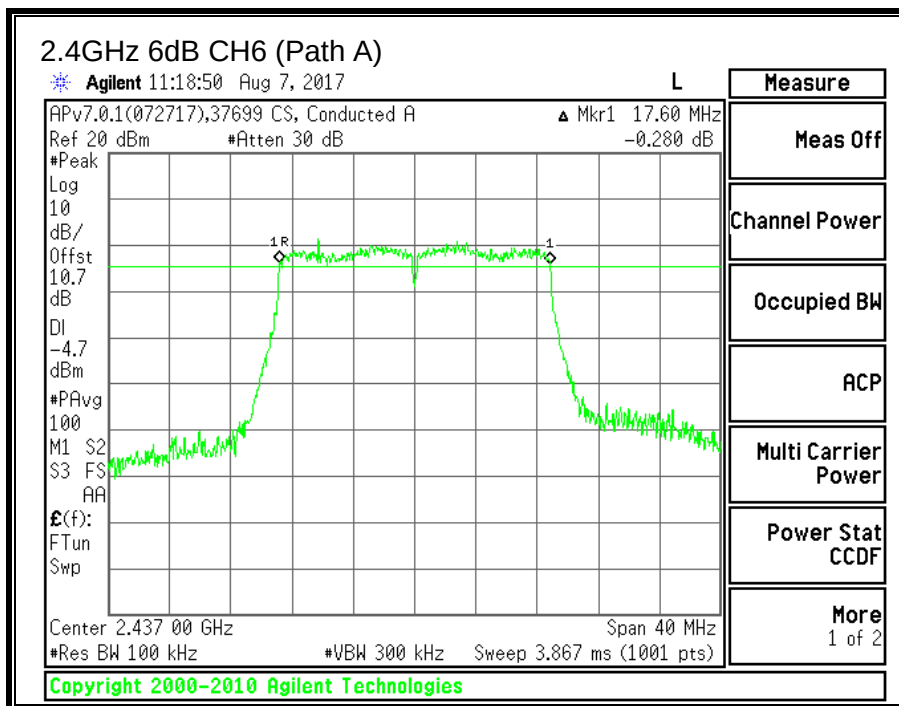
IC RSS-247 (5.2) (a)

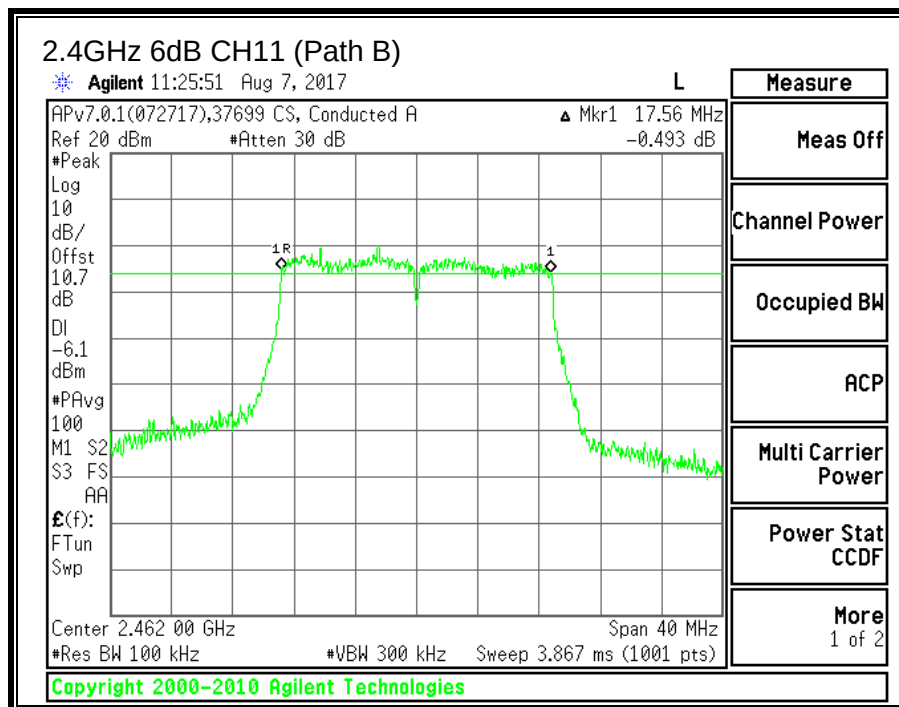
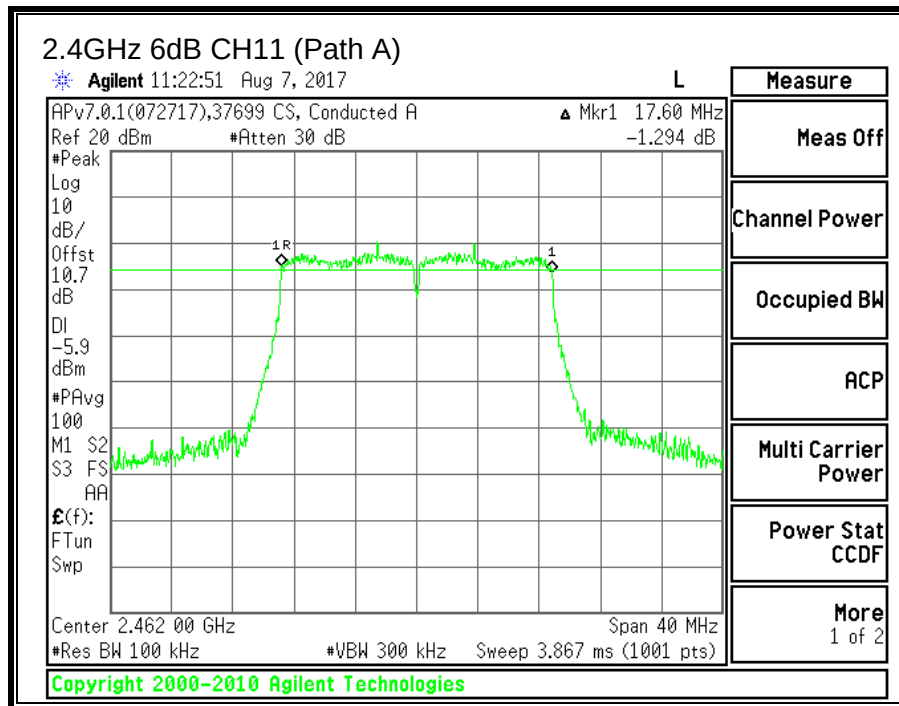
The minimum 6 dB bandwidth shall be at least 500 kHz.

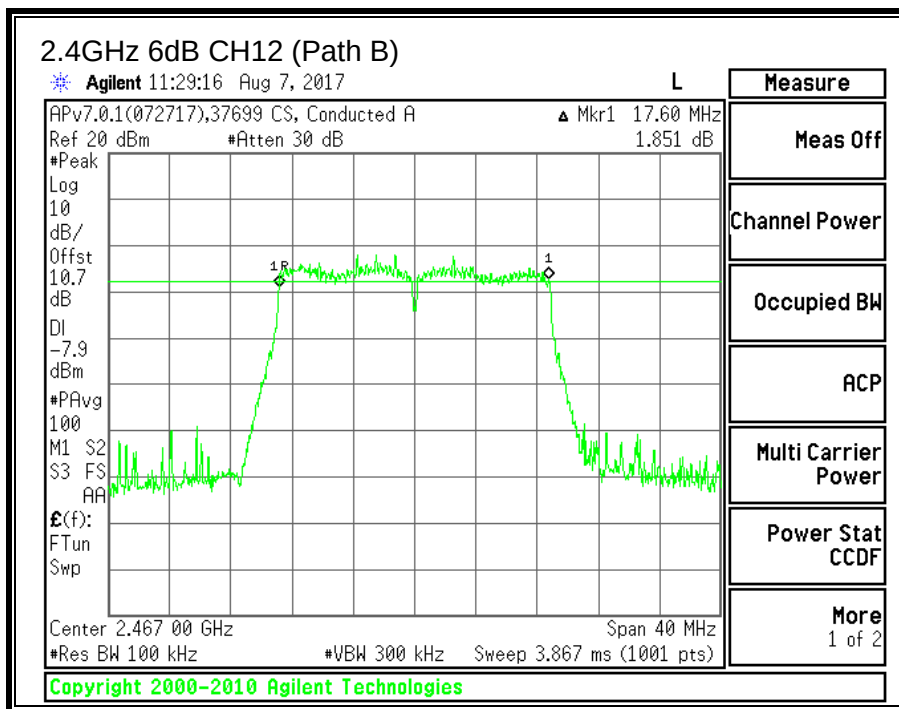
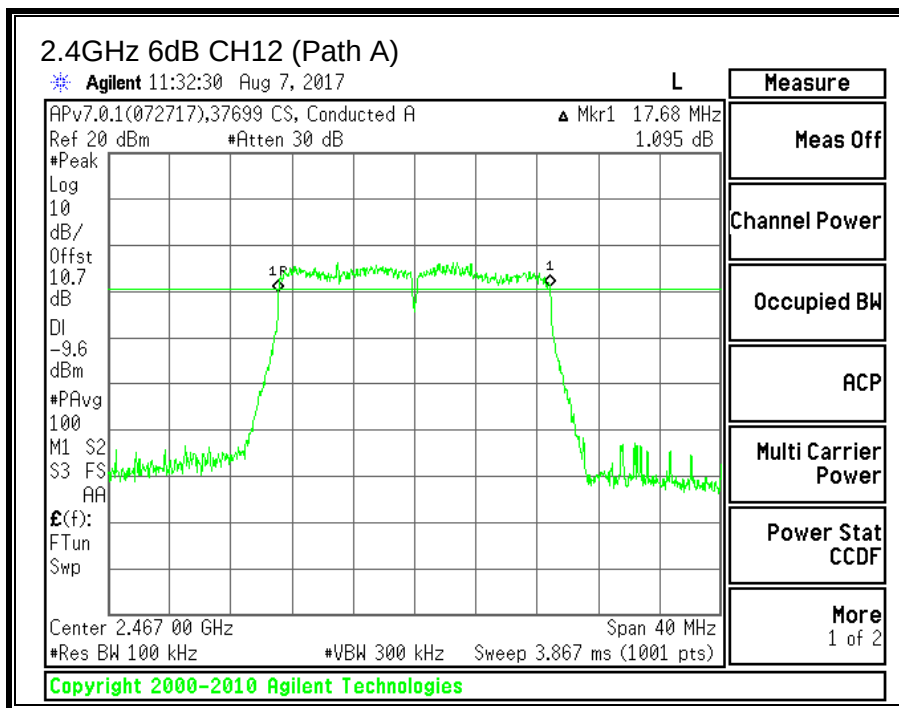
RESULTS

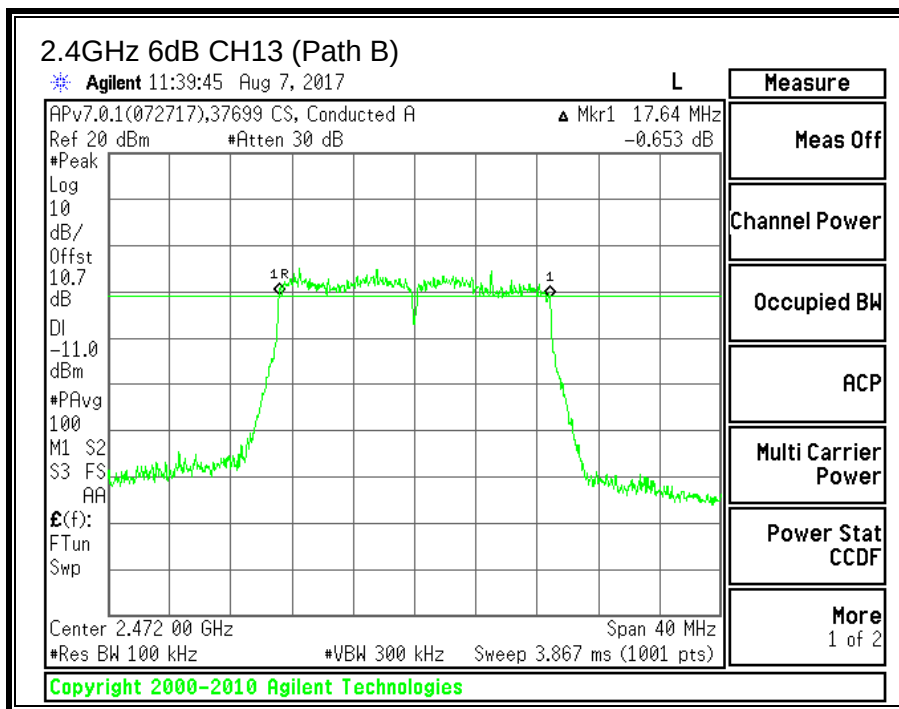
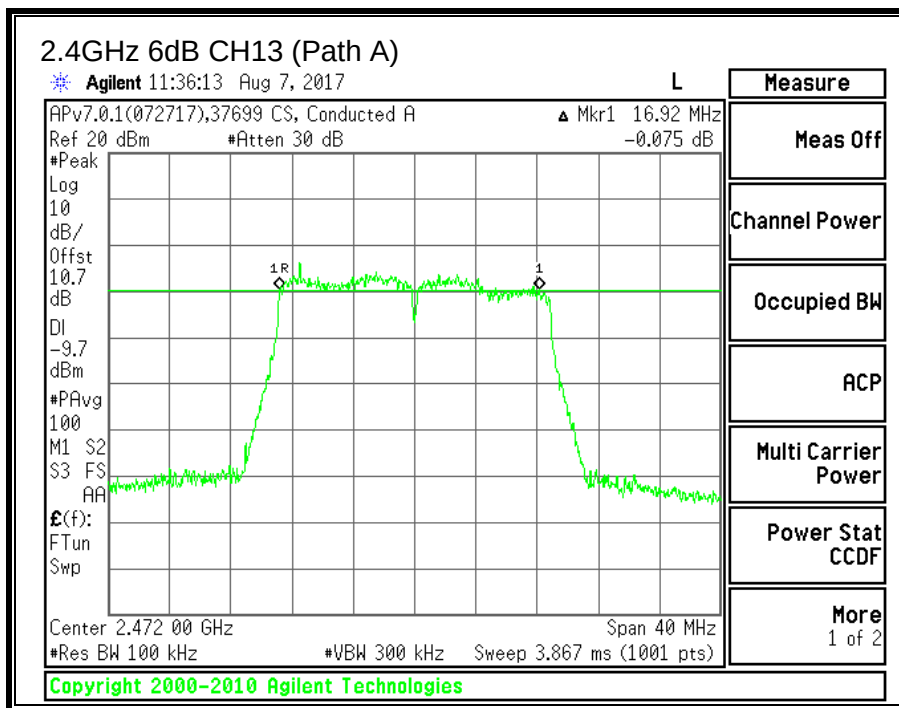
Channel	Frequency	6 dB BW Path A (MHz)	6 dB BW Path B (MHz)	Minimum Limit (MHz)
CH1	2412	17.68	17.64	0.5
CH6	2437	17.60	17.60	0.5
CH11	2462	17.60	17.56	0.5
CH12	2467	17.68	17.60	0.5
CH13	2472	16.92	17.64	0.5











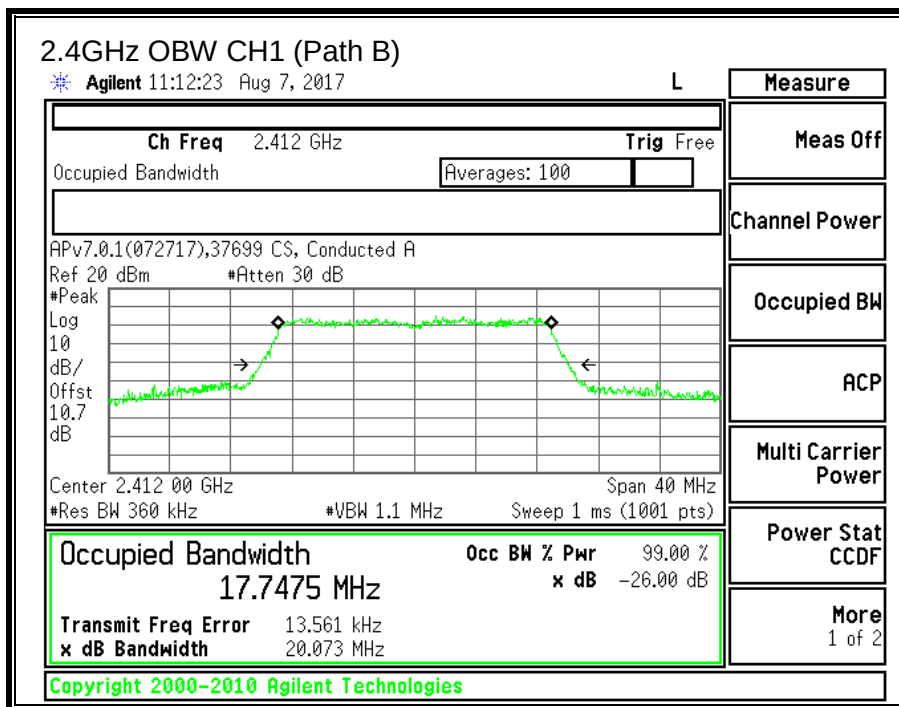
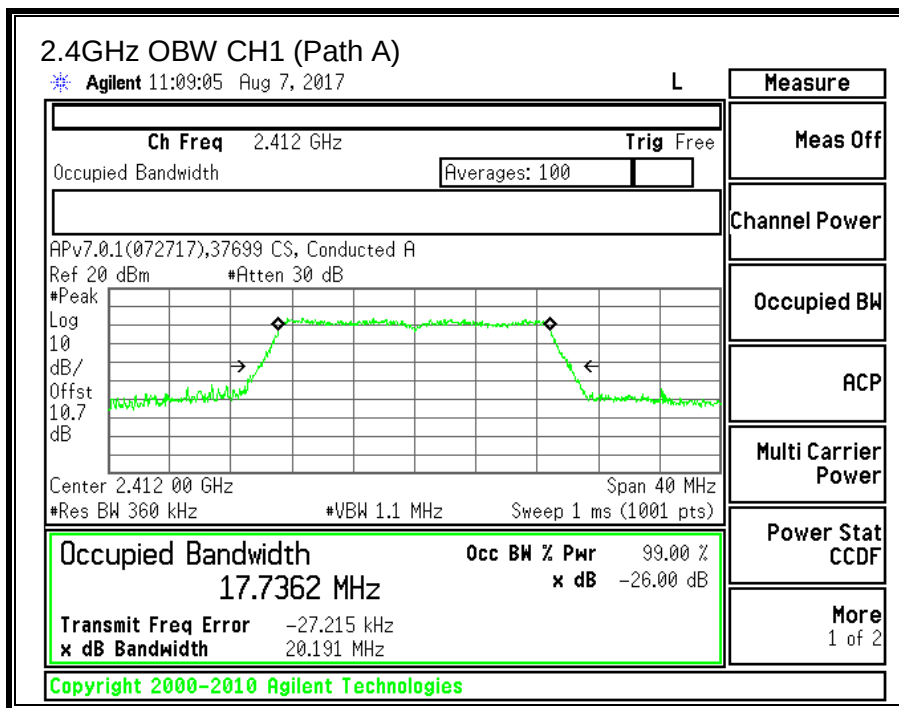
9.4.2. 99% BANDWIDTH

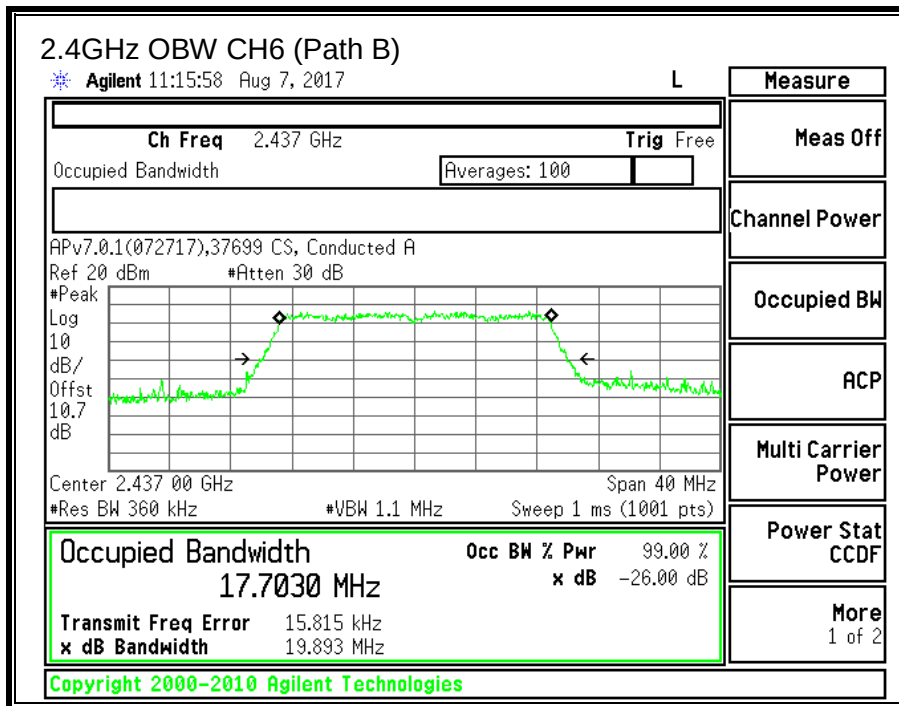
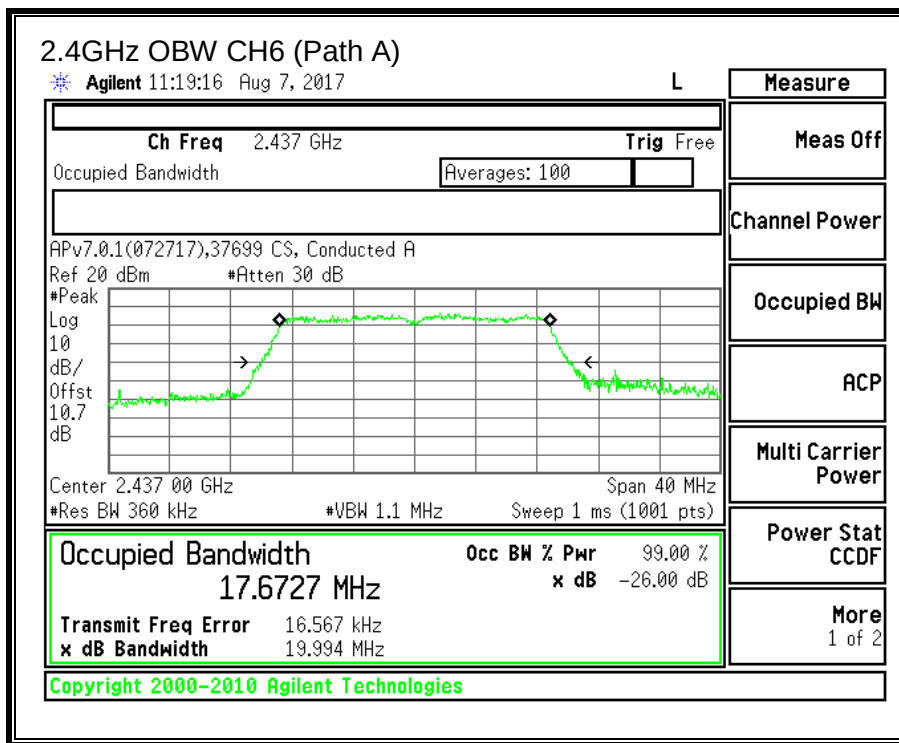
LIMITS

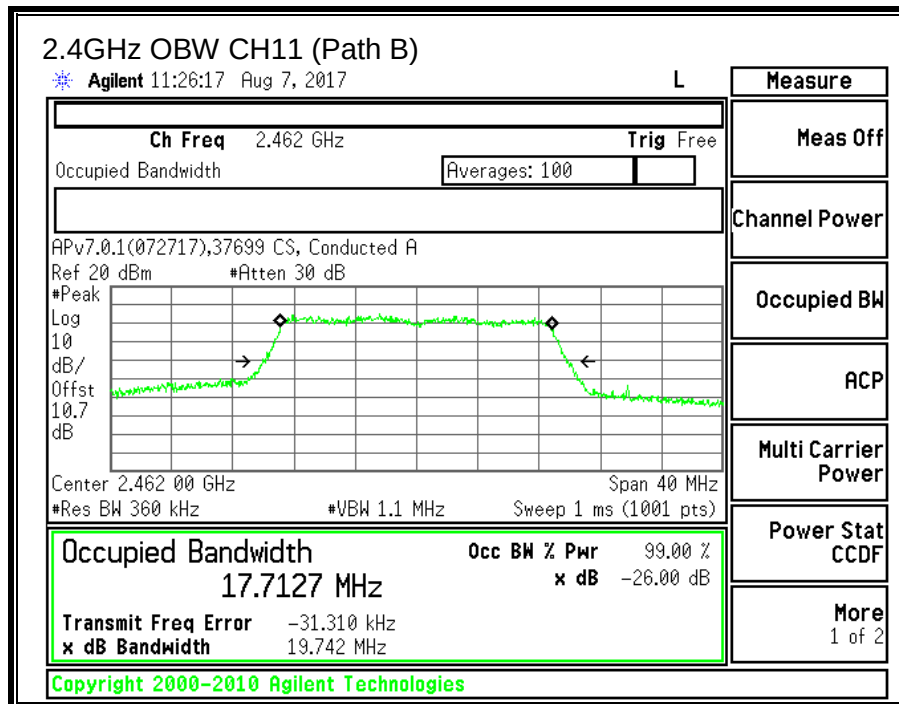
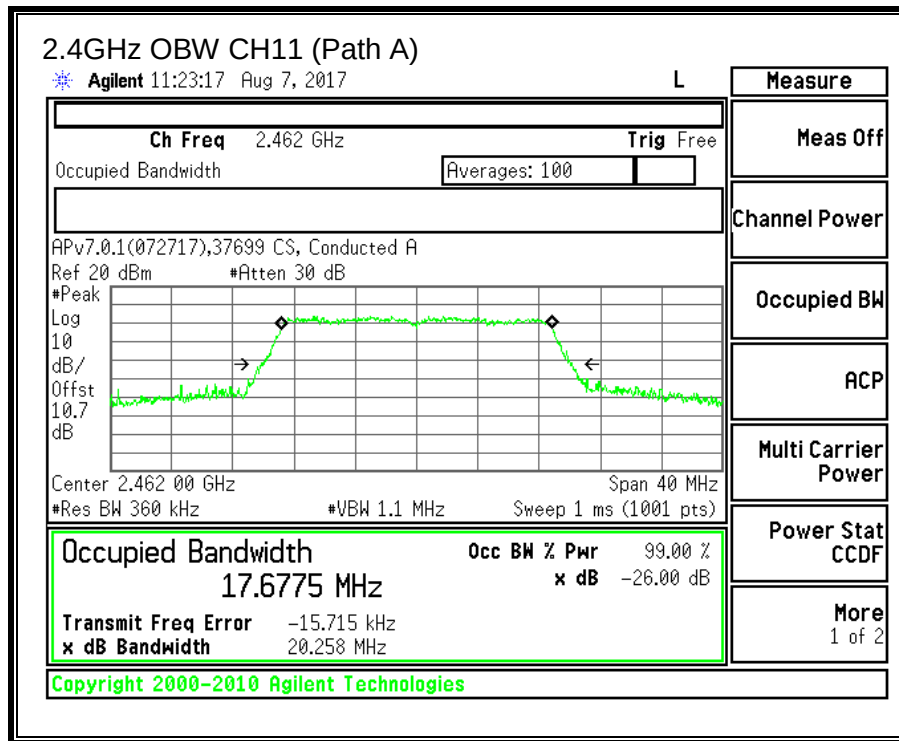
None; for reporting purposes only.

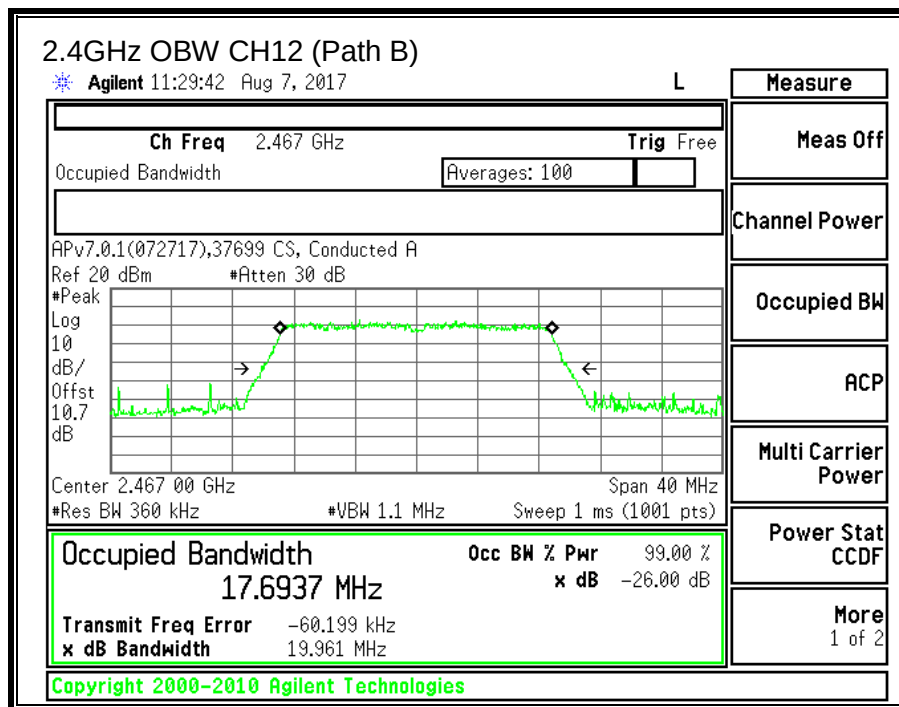
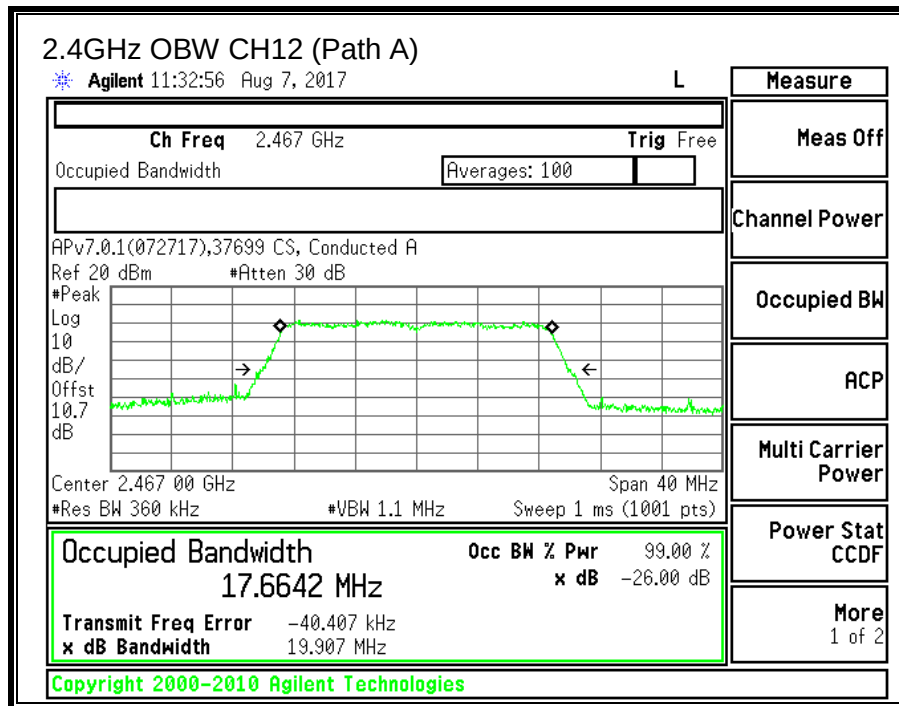
RESULTS

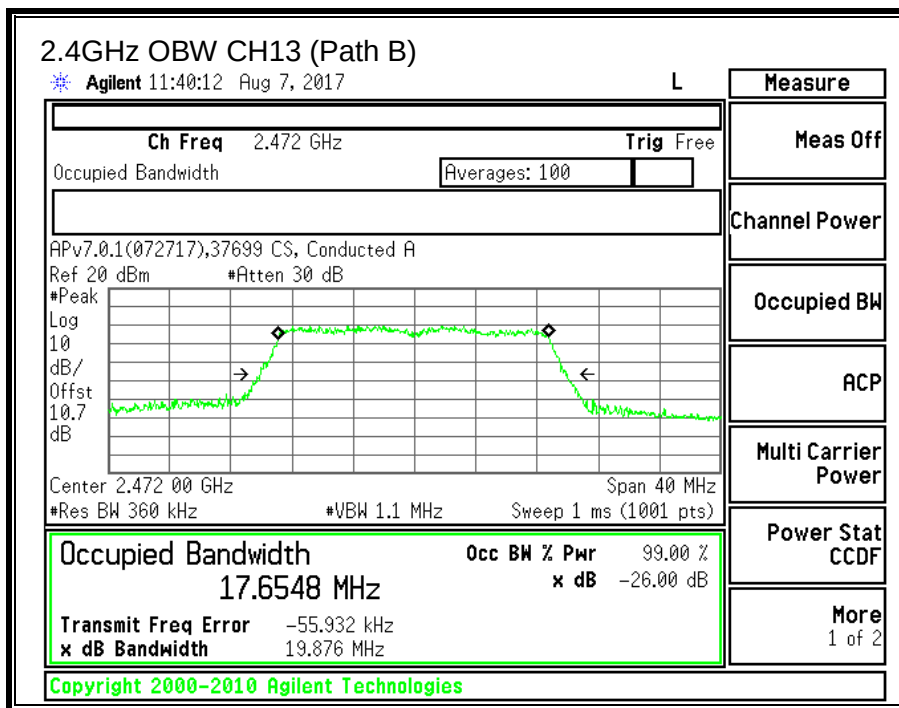
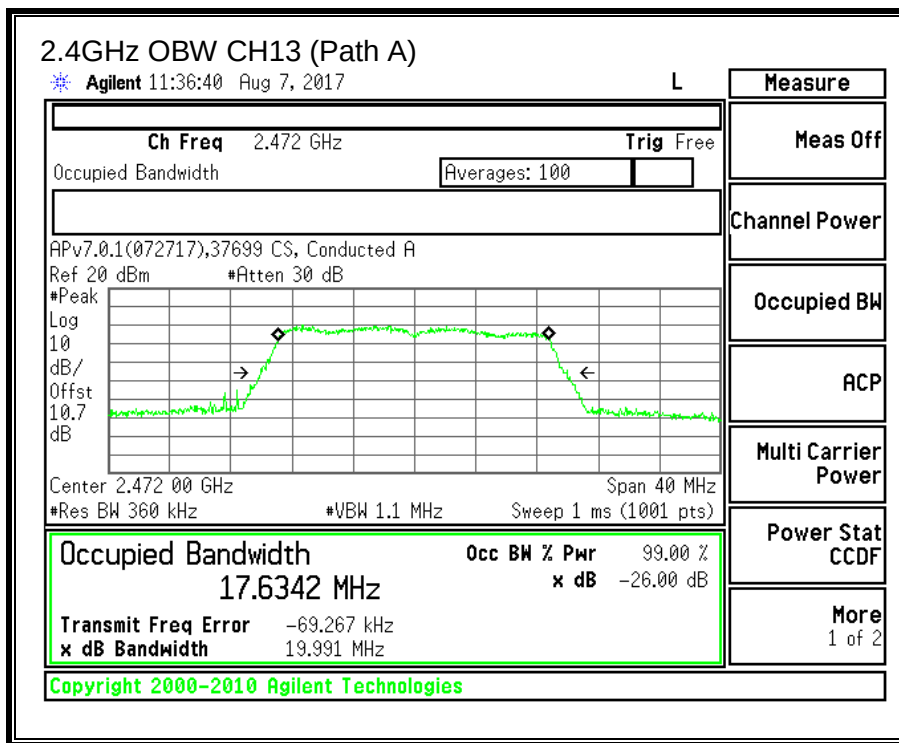
Channel	Frequency (MHz)	99% Bandwidth Path A (MHz)	99% Bandwidth Path B (MHz)
CH1	2412	17.7361	17.7475
CH6	2437	17.6727	17.7030
CH11	2462	17.6775	17.7127
CH12	2467	17.6642	17.6937
CH13	2472	17.6342	17.6548











9.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

ID:	37699	Date:	08/04/17
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Channel	Frequency (MHz)	Path A Power (dBm)	Path B Power (dBm)	Total Power (dBm)
Low	2412	11.67	11.74	14.72
Mid	2437	13.91	13.67	16.80
High_11	2462	11.81	11.53	14.68
High_12	2467	9.71	9.57	12.65
High_13	2472	7.26	7.20	10.24

9.4.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

IC RSS-247 (5.4) (d)

For systems using digital modulation in the 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 PROCEDURE

KDB 558074 D01 v04Section 9.2.3.2

DIRECTIONAL ANTENNA GAIN

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

Path A Antenna Gain (dBi)	Path B Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.40	0.20	1.44

RESULTS

ID:	37699	Date:	08/04/17
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Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
CH1	2412	1.44	30.00	30	36	30.00
CH6	2437	1.44	30.00	30	36	30.00
CH11	2462	1.44	30.00	30	36	30.00
CH12	2467	1.44	30.00	30	36	30.00
CH13	2472	1.44	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Path A Meas Power (dBm)	Path B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
CH1	2412	17.78	18.55	21.19	30.00	-8.81
CH6	2437	20.45	20.21	23.34	30.00	-6.66
CH11	2462	17.93	18.39	21.18	30.00	-8.82
CH12	2467	15.97	16.11	19.05	30.00	-10.95
CH13	2472	13.89	14.02	16.97	30.00	-13.03

9.4.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

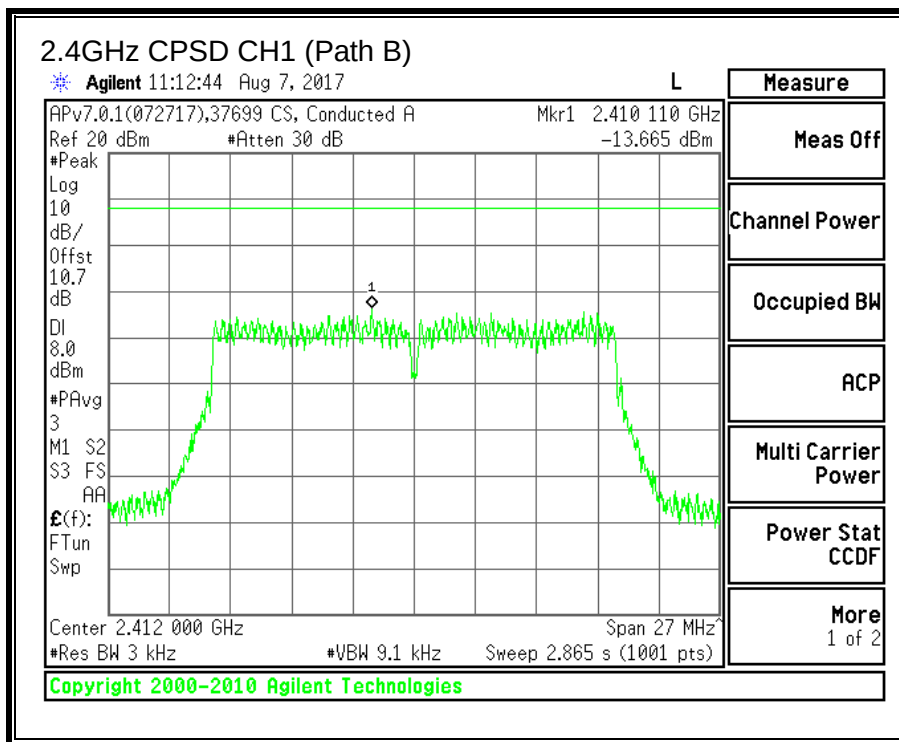
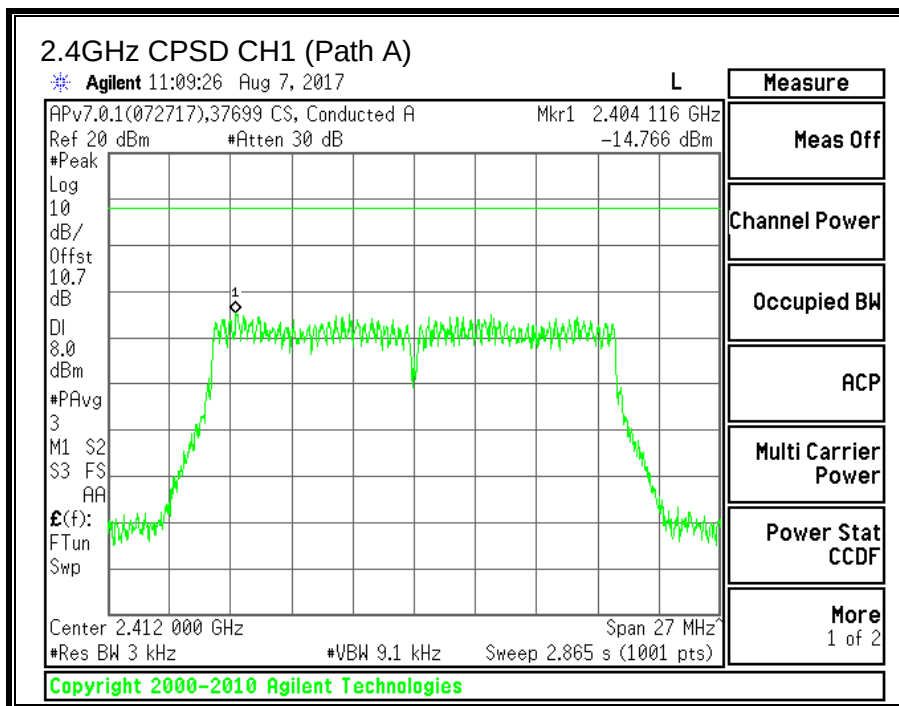
IC RSS-247 (5.2) (b)

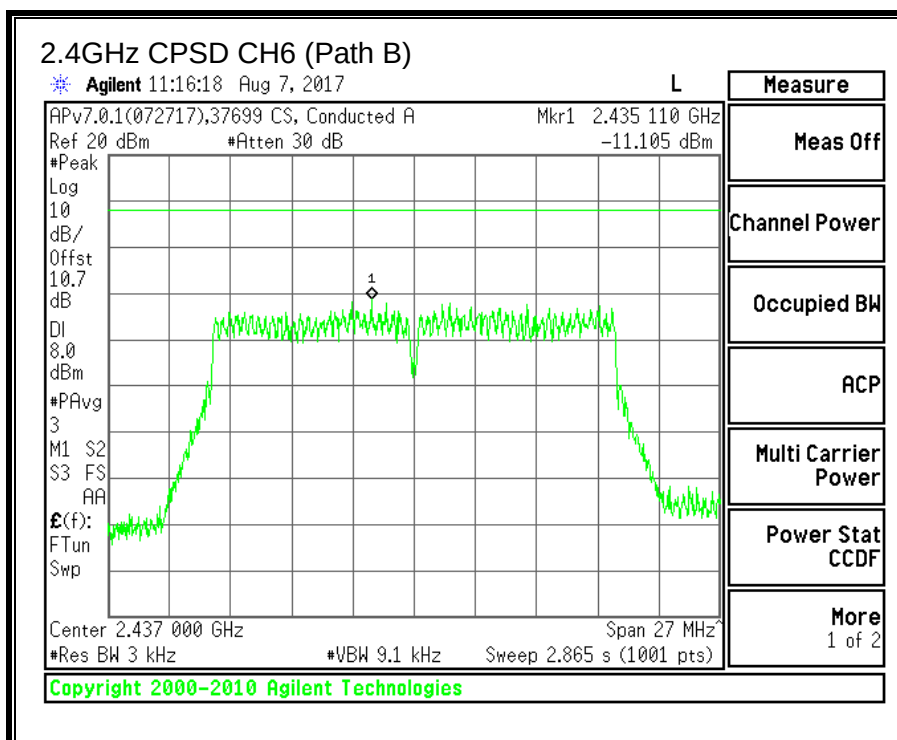
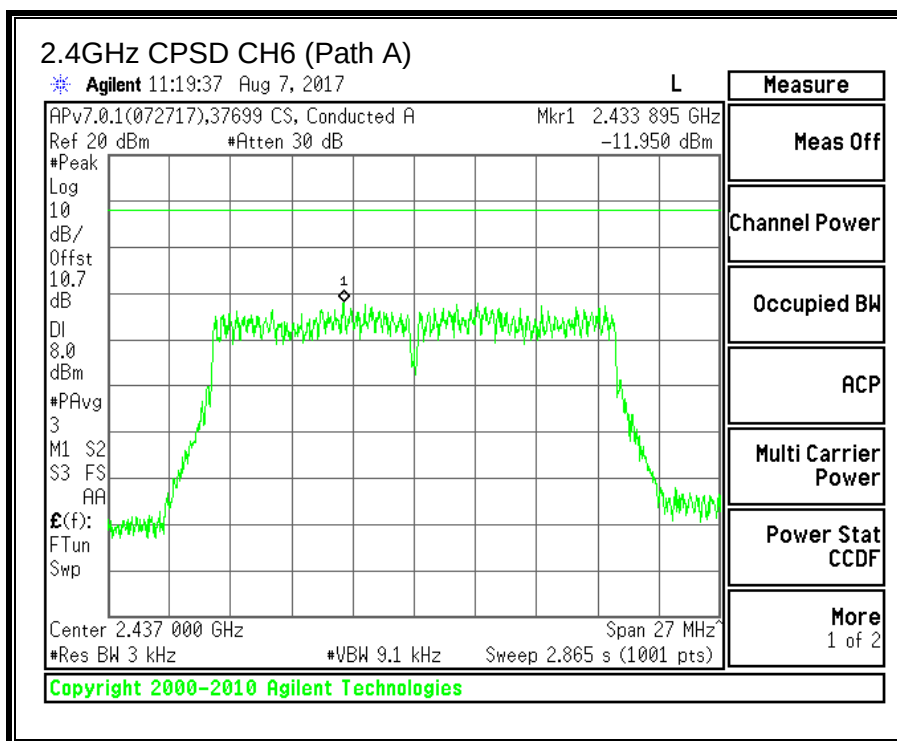
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

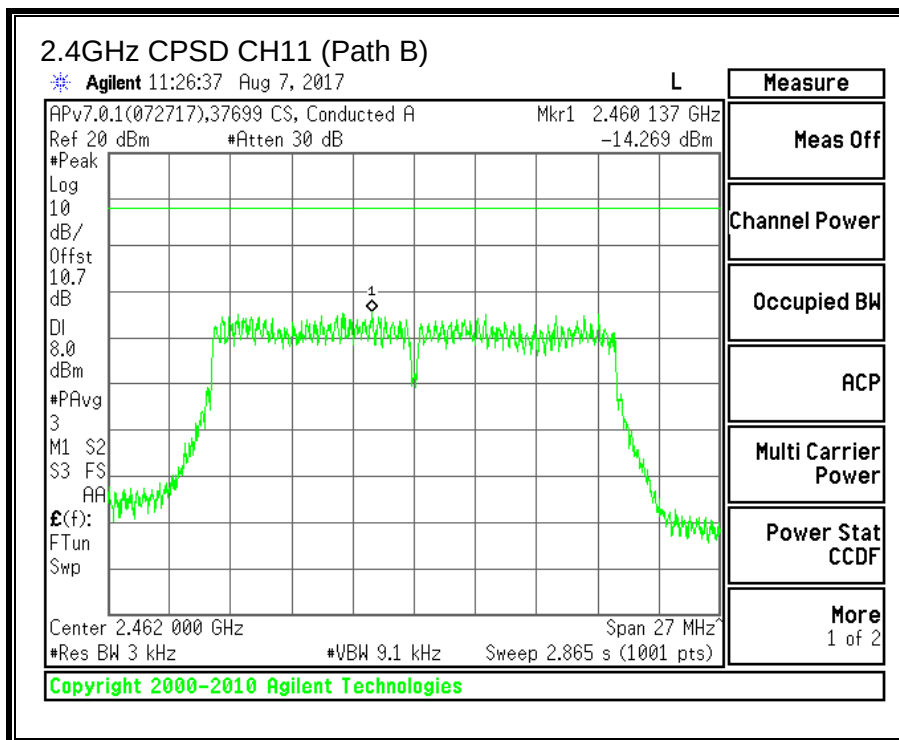
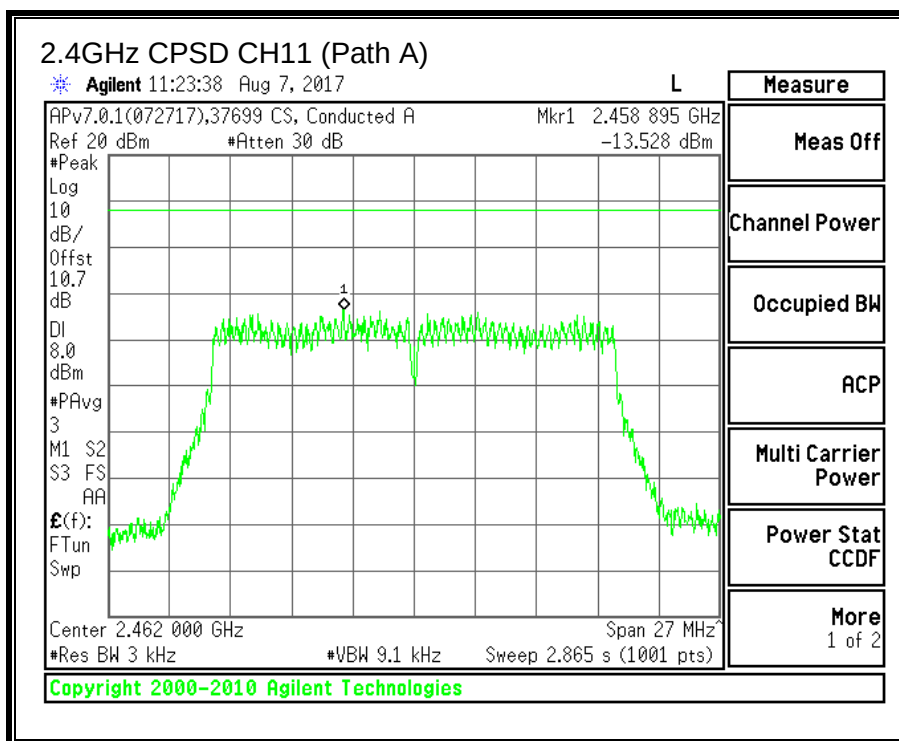
RESULTS

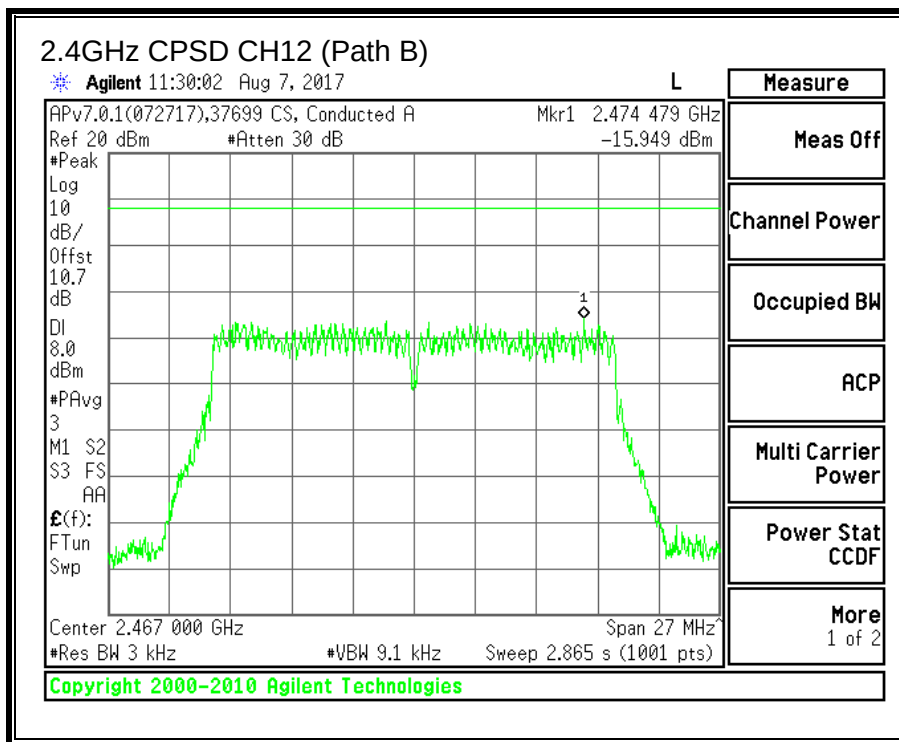
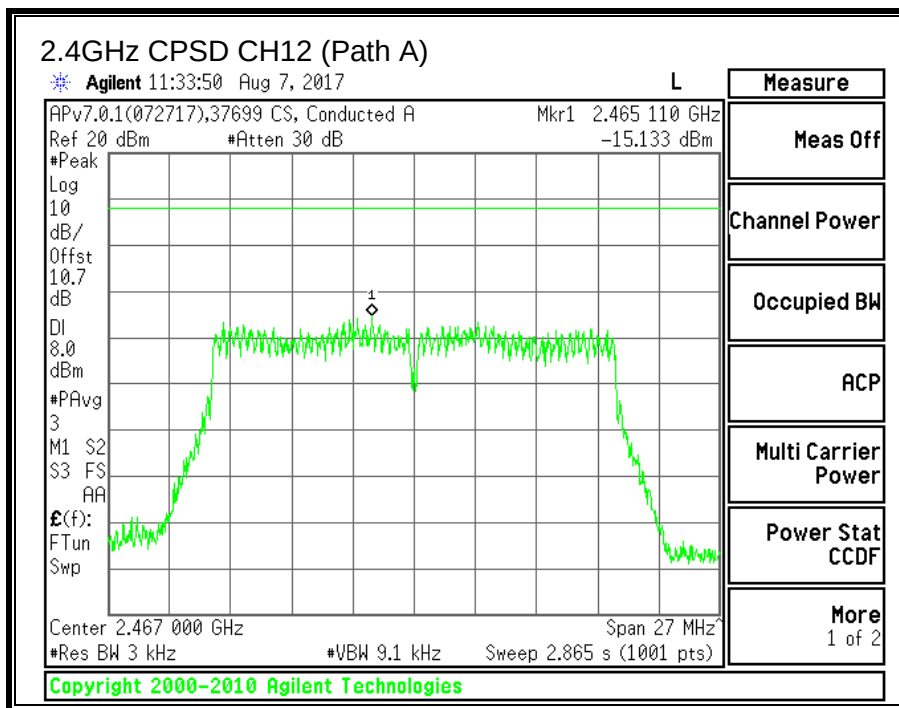
PSD Results

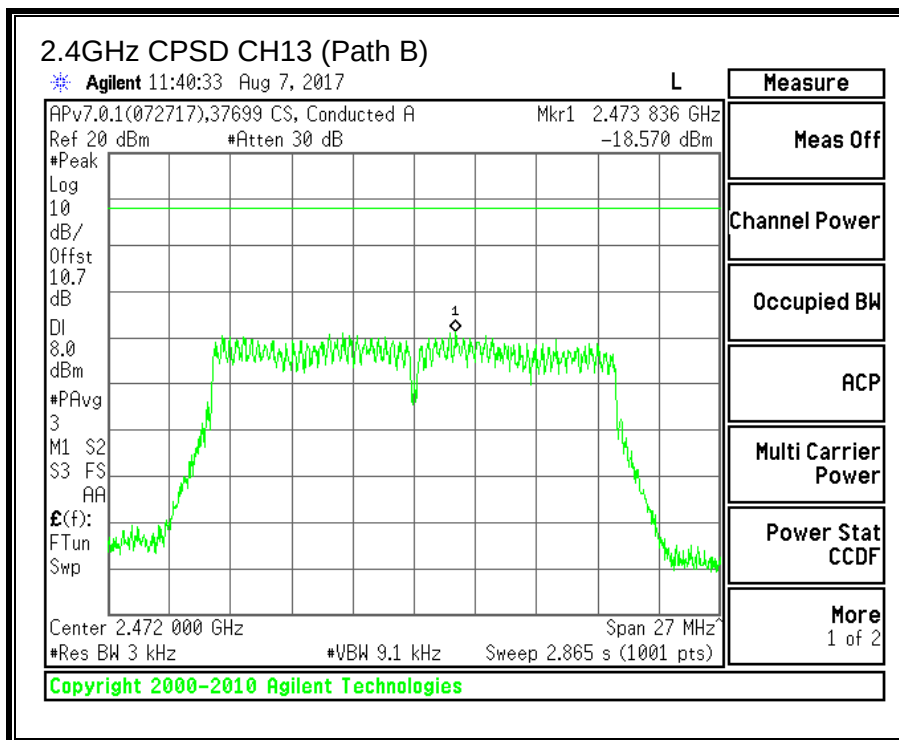
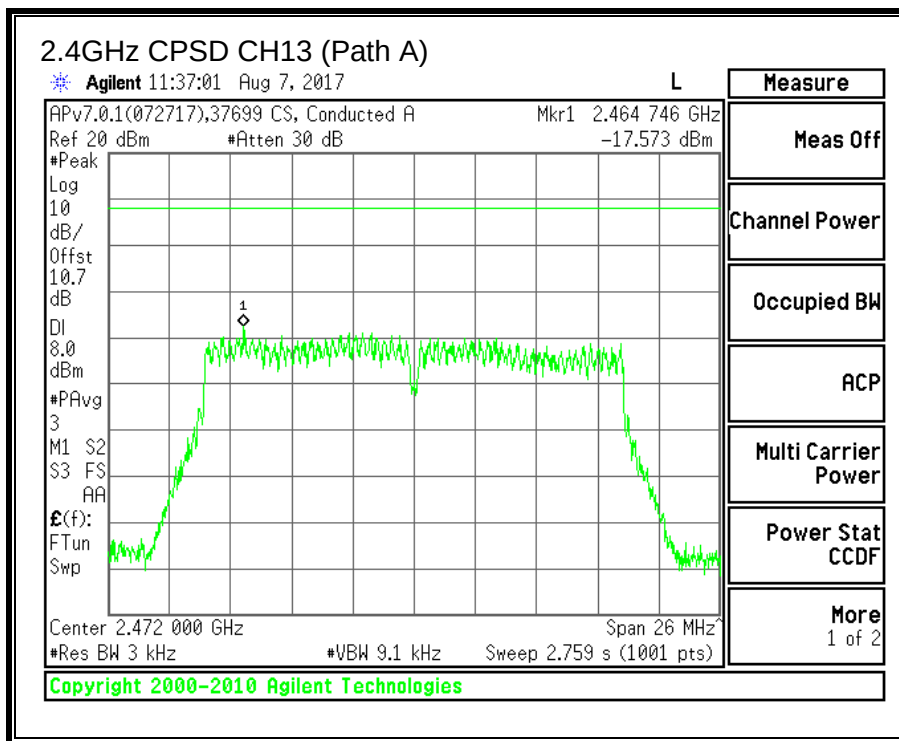
Channel	Frequency (MHz)	Path A Meas (dBm/3kHz)	Path B Meas (dBm/3kHz)	Total Corr'd PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
CH1	2412	-14.77	-13.66	-11.17	8.0	-19.2
CH6	2437	-11.95	-11.11	-8.50	8.0	-16.5
CH11	2462	-13.53	-14.27	-10.87	8.0	-18.9
CH12	2467	-15.13	-15.95	-12.51	8.0	-20.5
CH13	2472	-17.57	-18.57	-15.03	8.0	-23.0











9.4.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

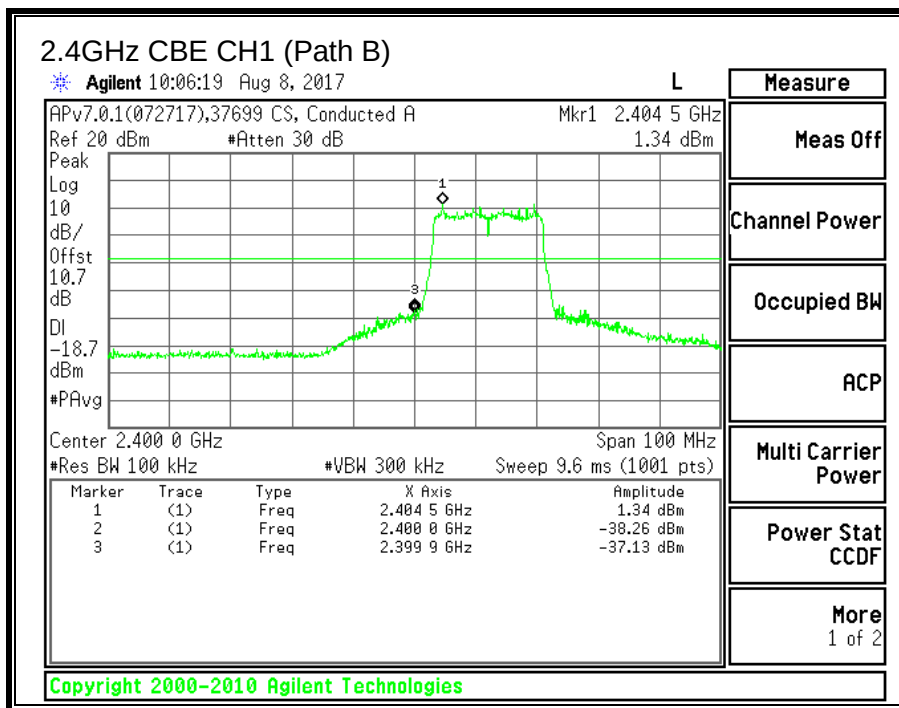
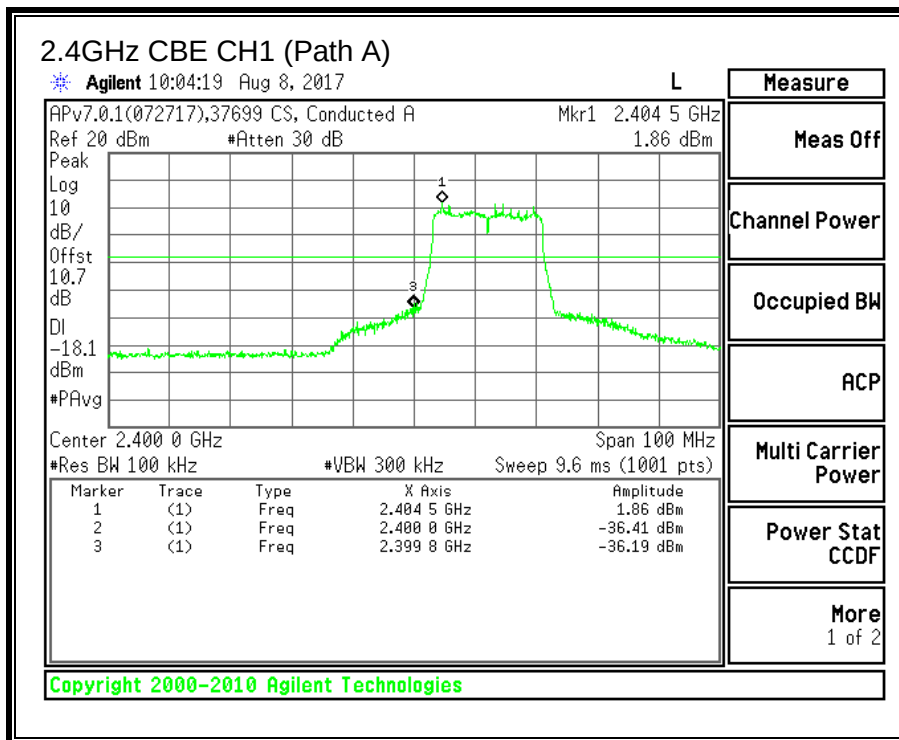
LIMITS

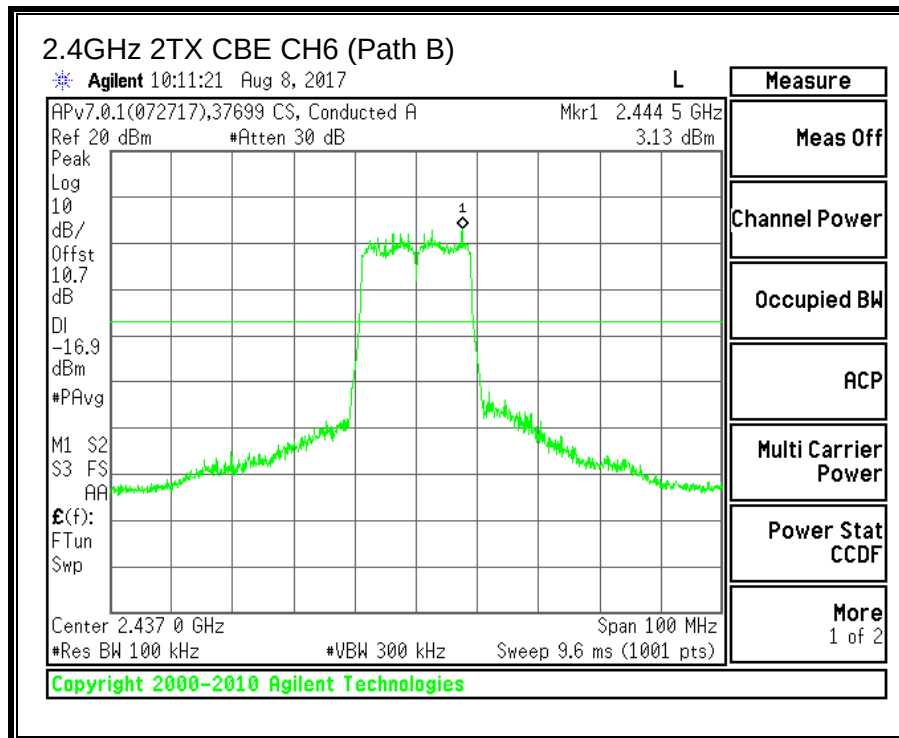
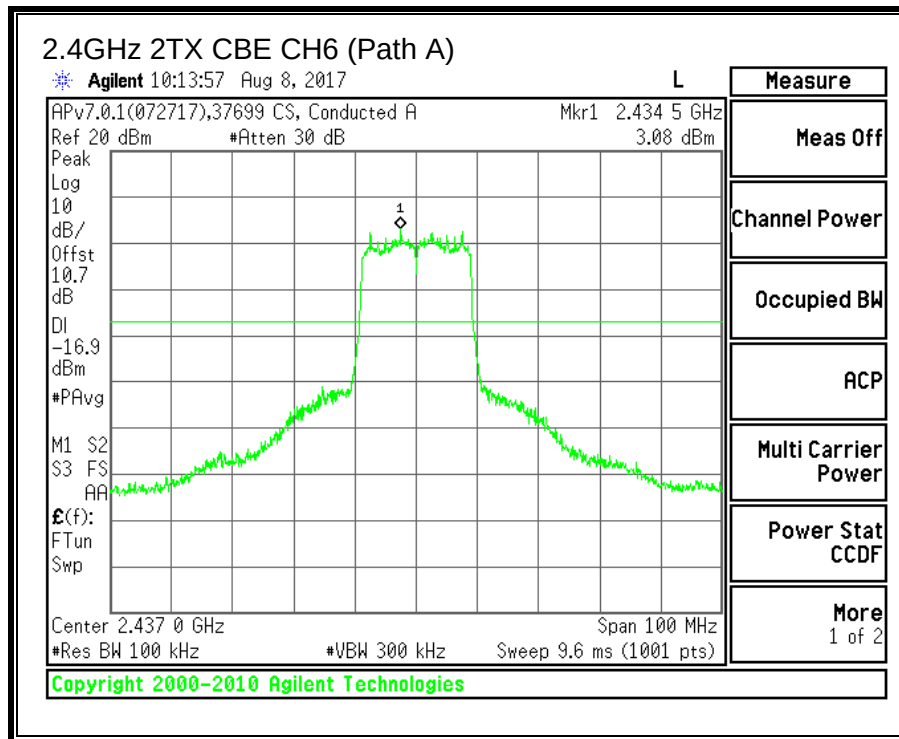
FCC §15.247 (d)

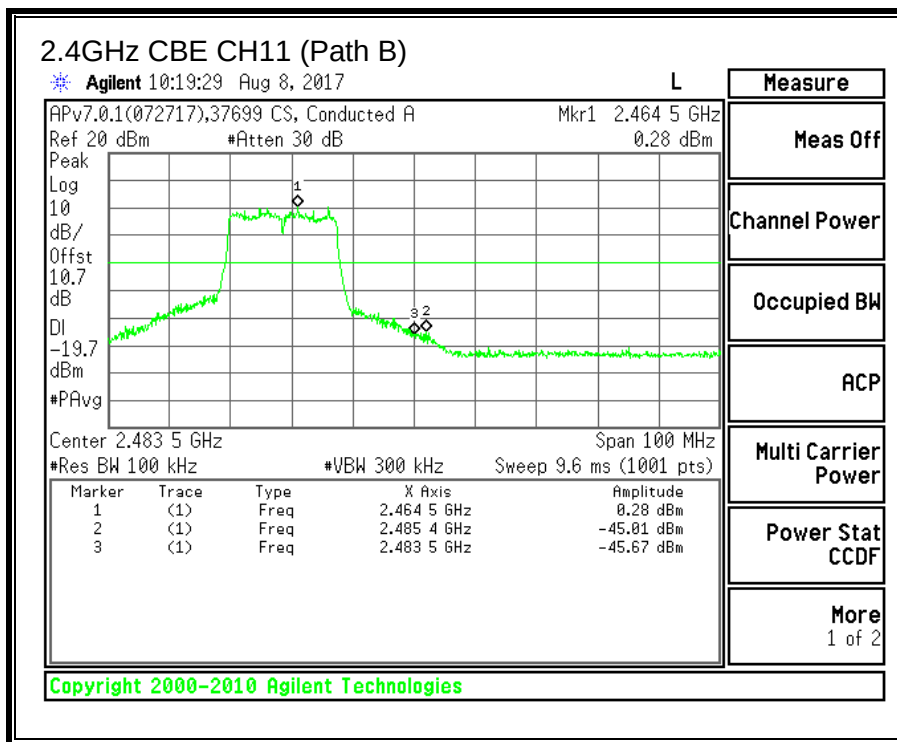
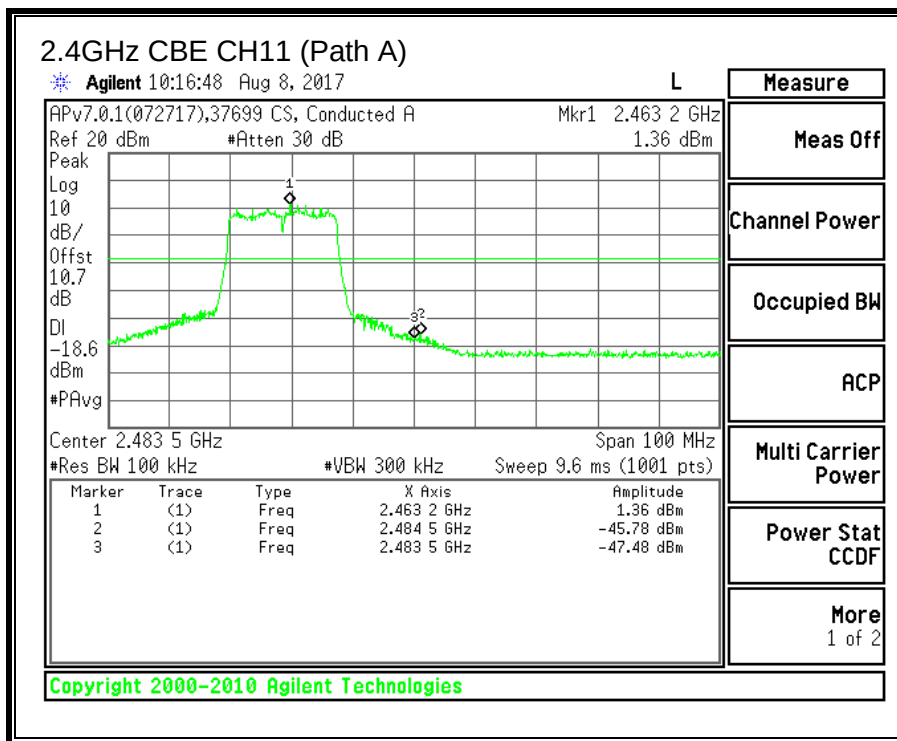
IC RSS-247 5.5

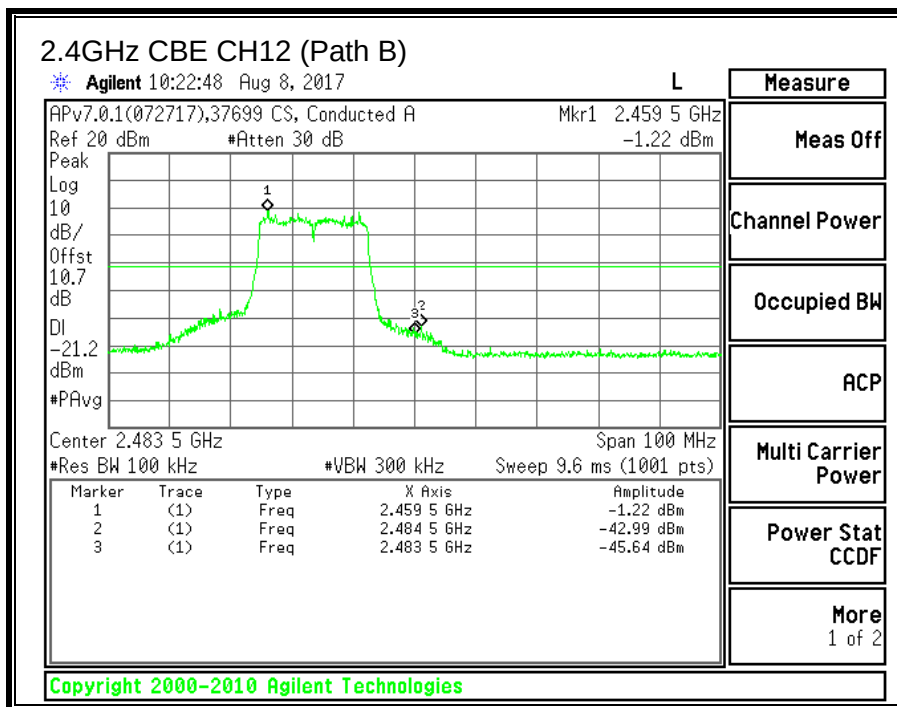
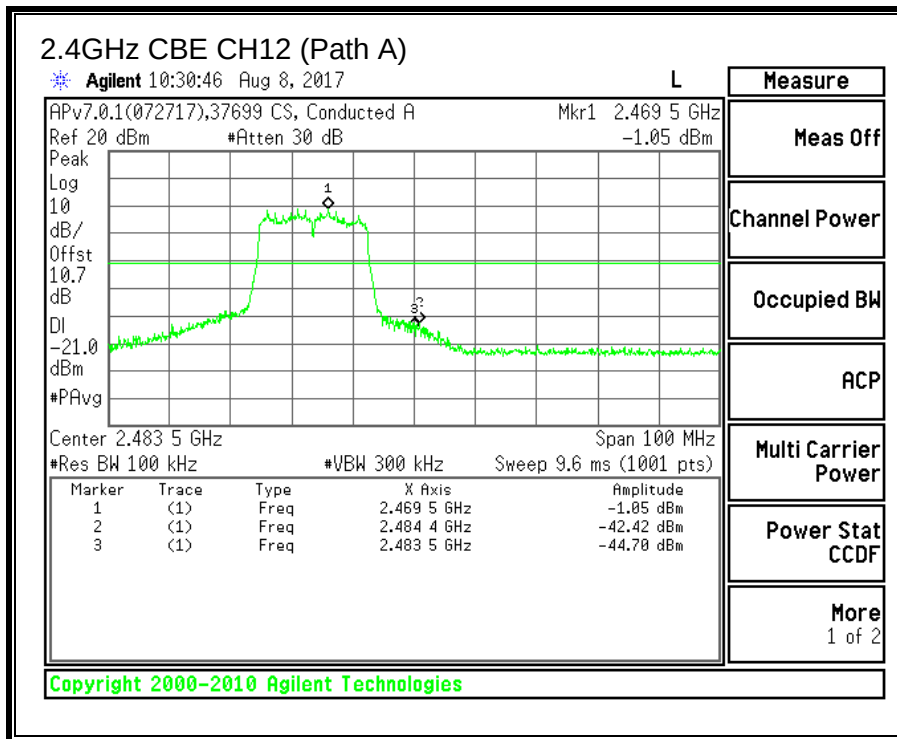
Output power was measured based on the use of peak measurement, therefore the required attenuation is 20 dB.

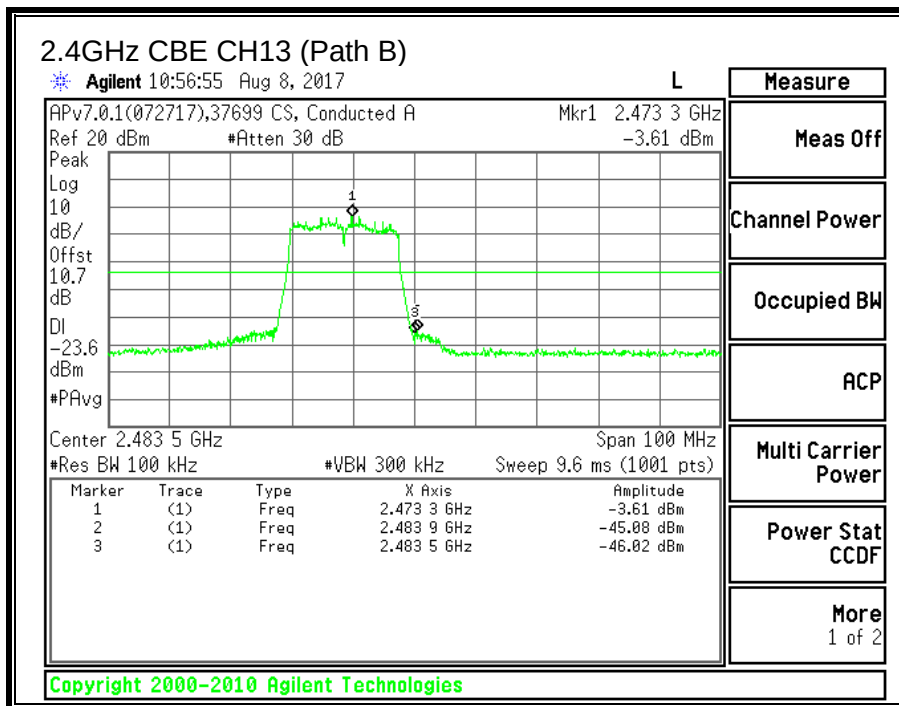
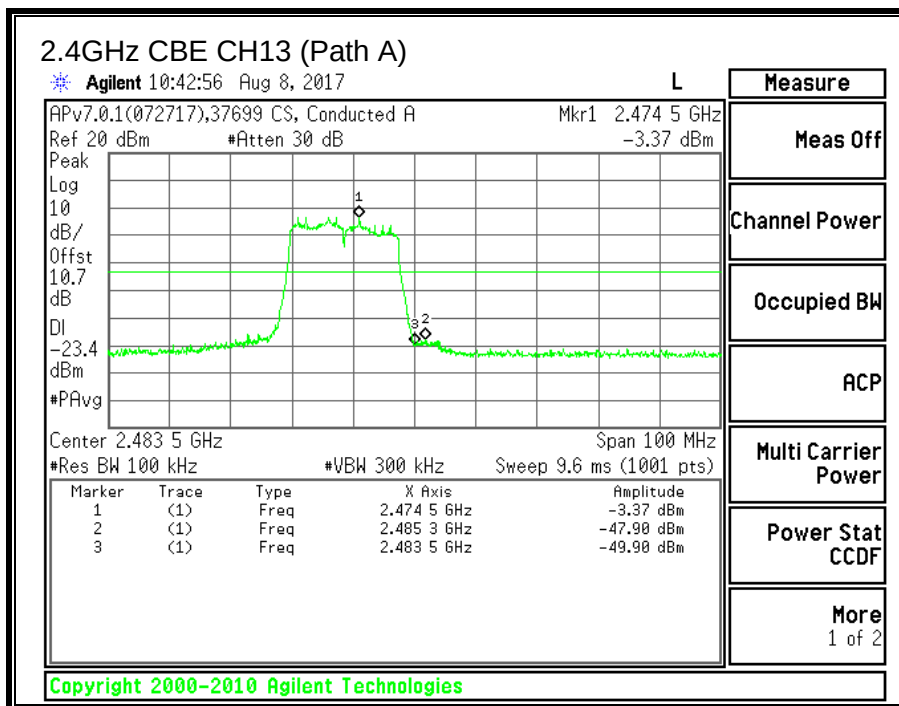
RESULTS

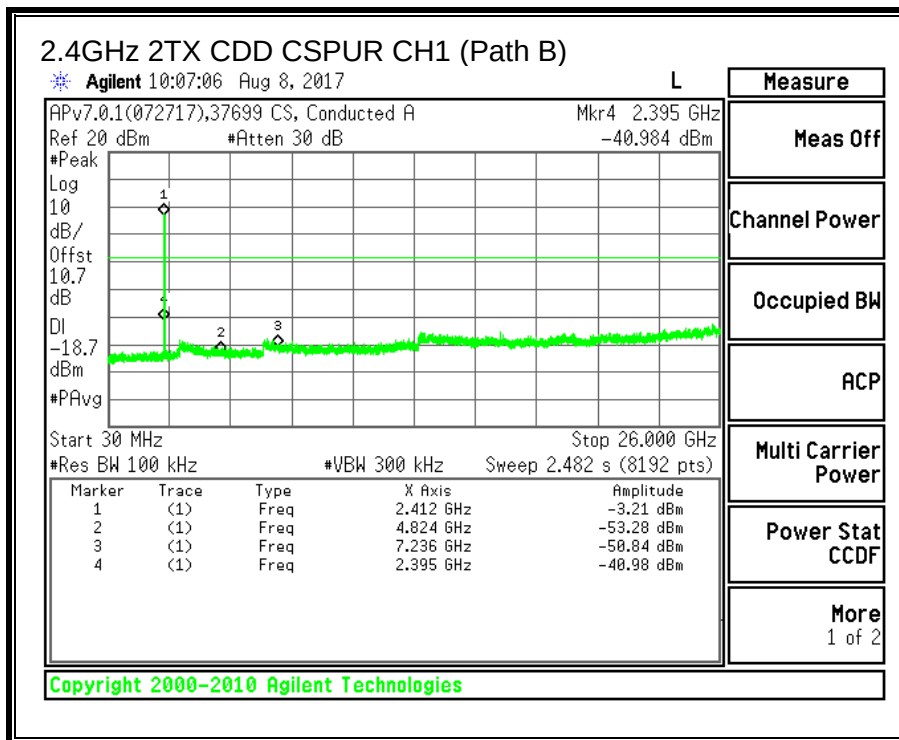
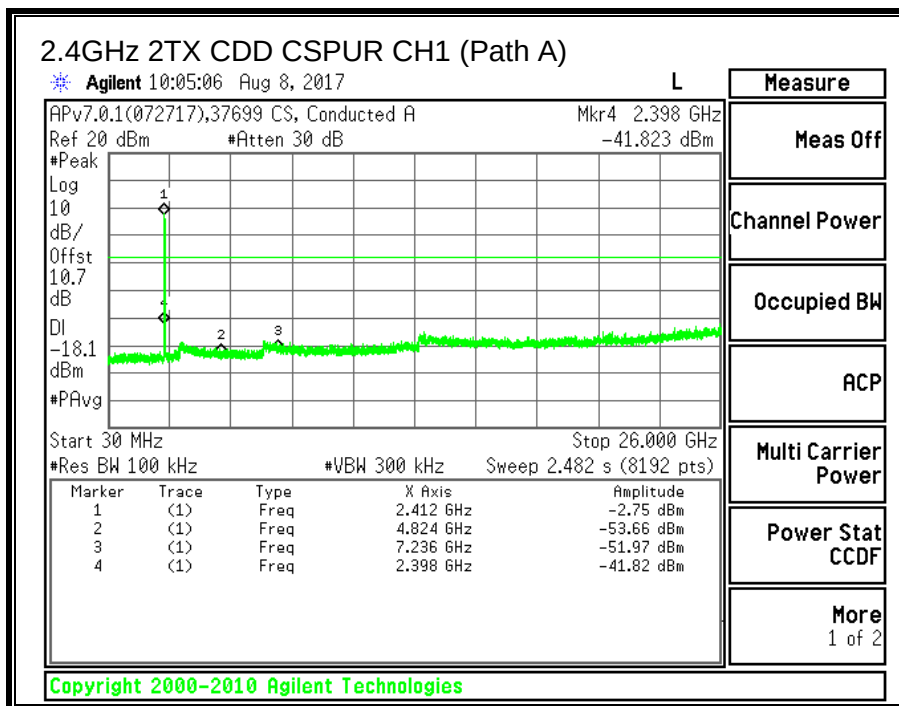


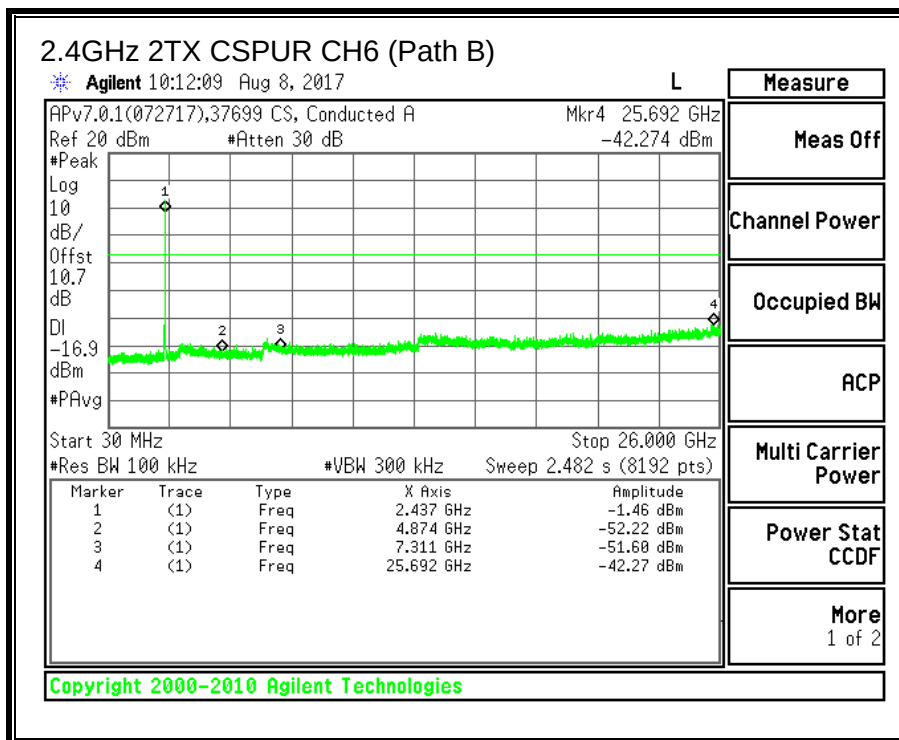
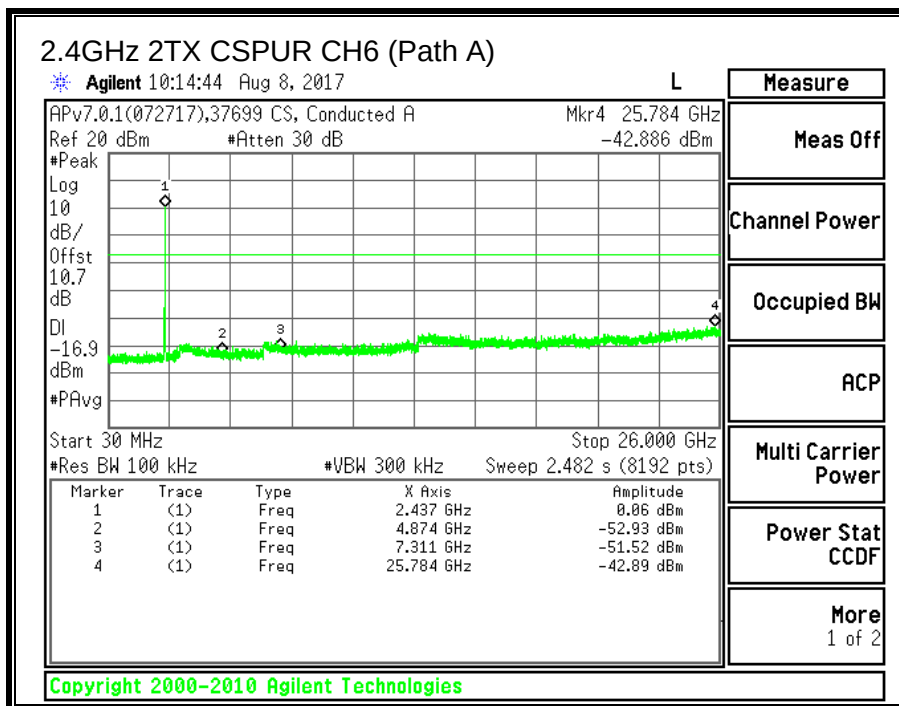


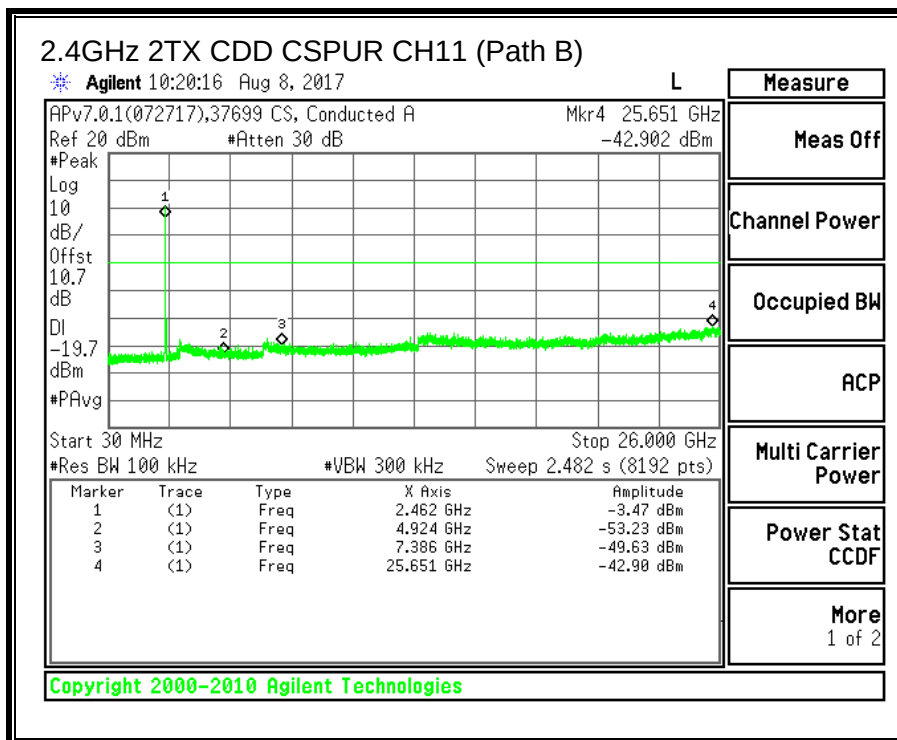
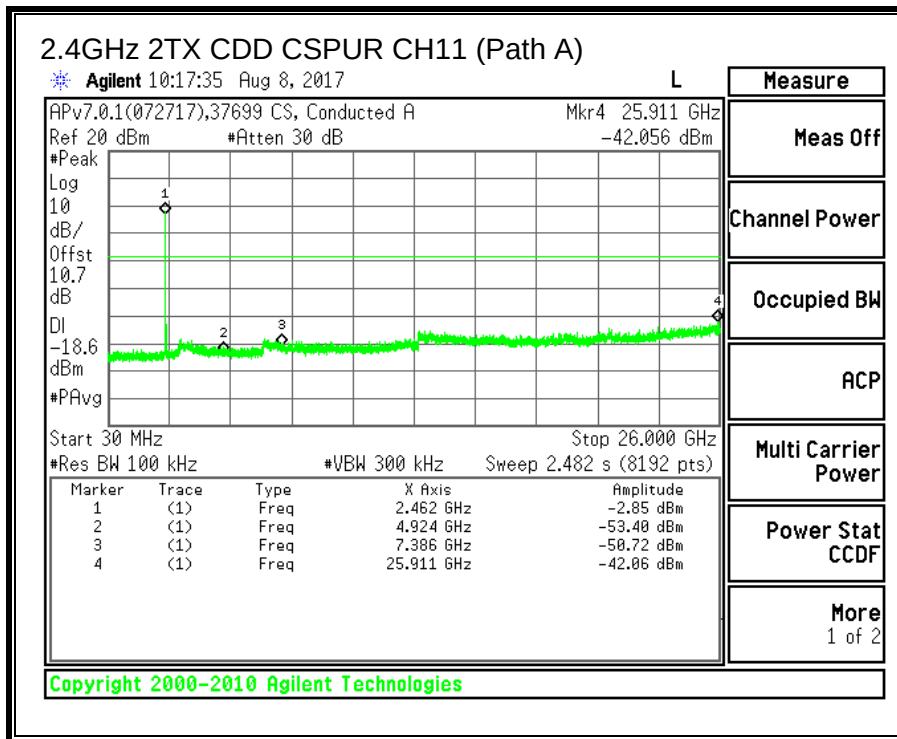


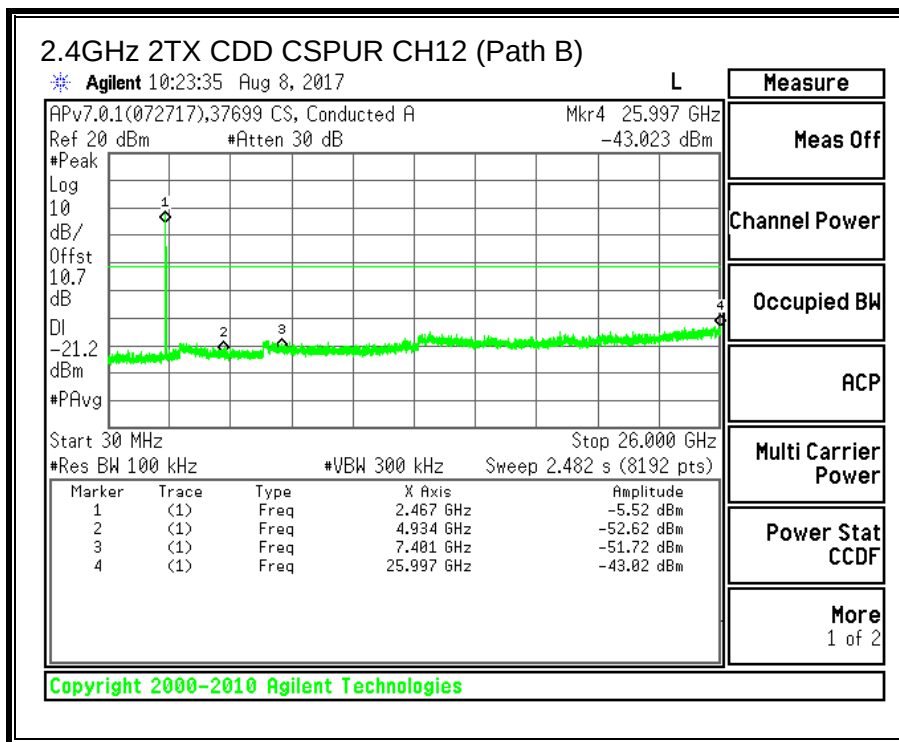
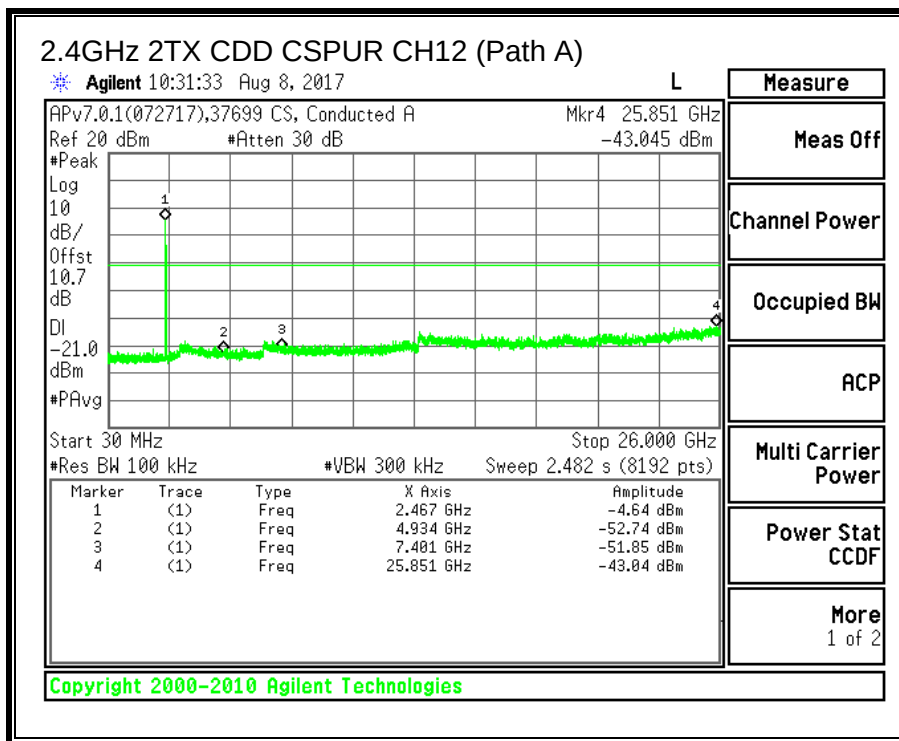


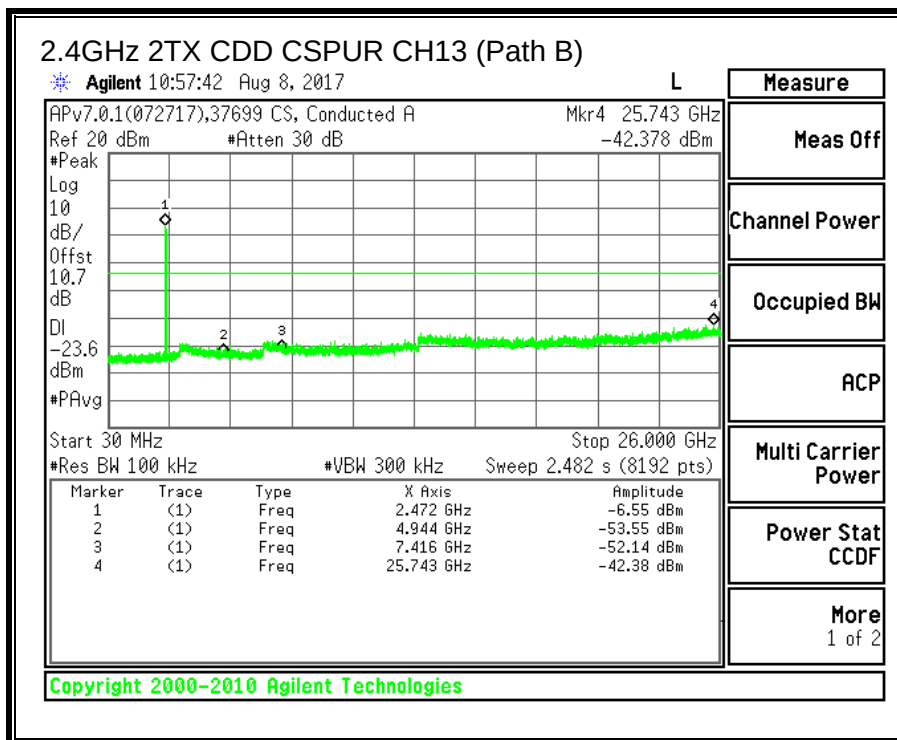
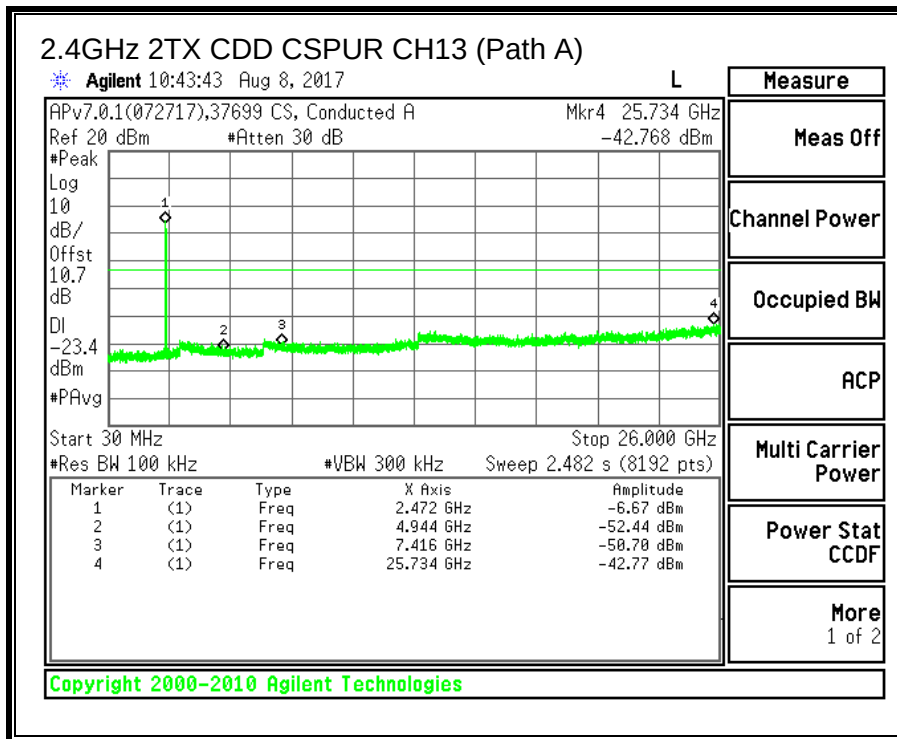












10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
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 measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

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

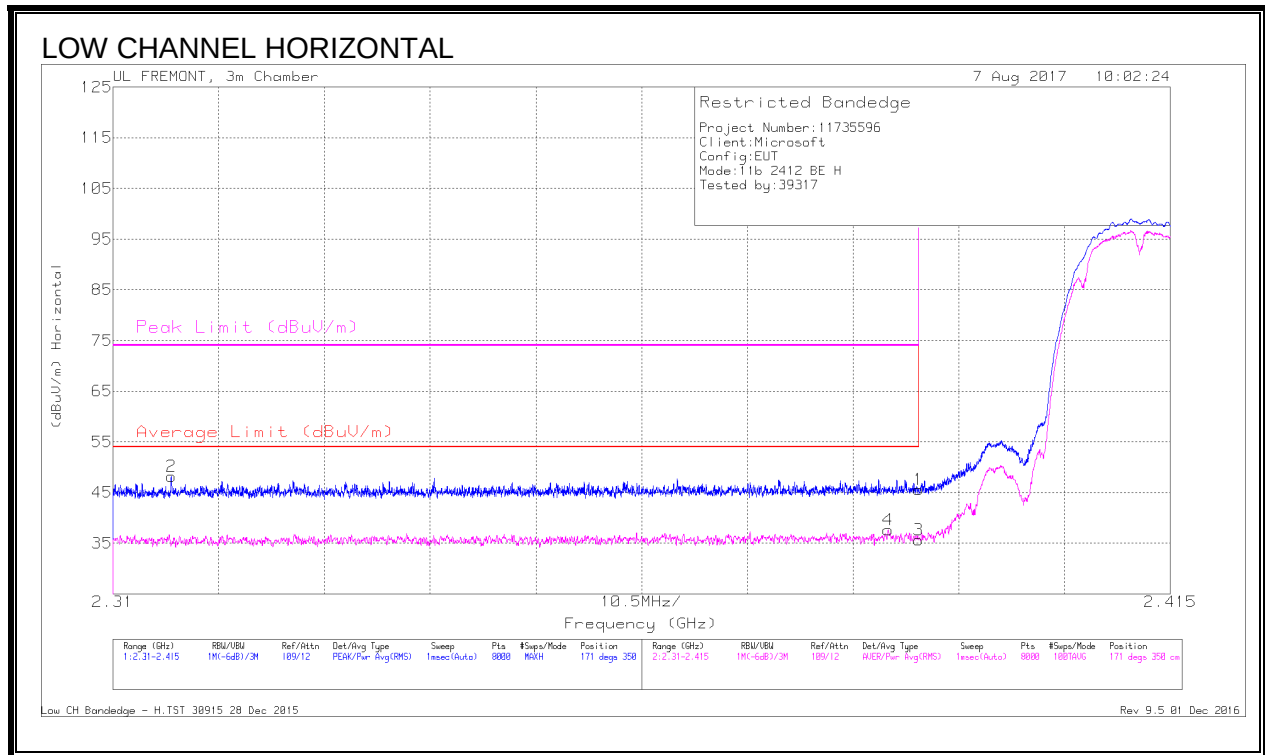
The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

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

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1 11b MIMO MODE IN THE 2.4GHz BAND

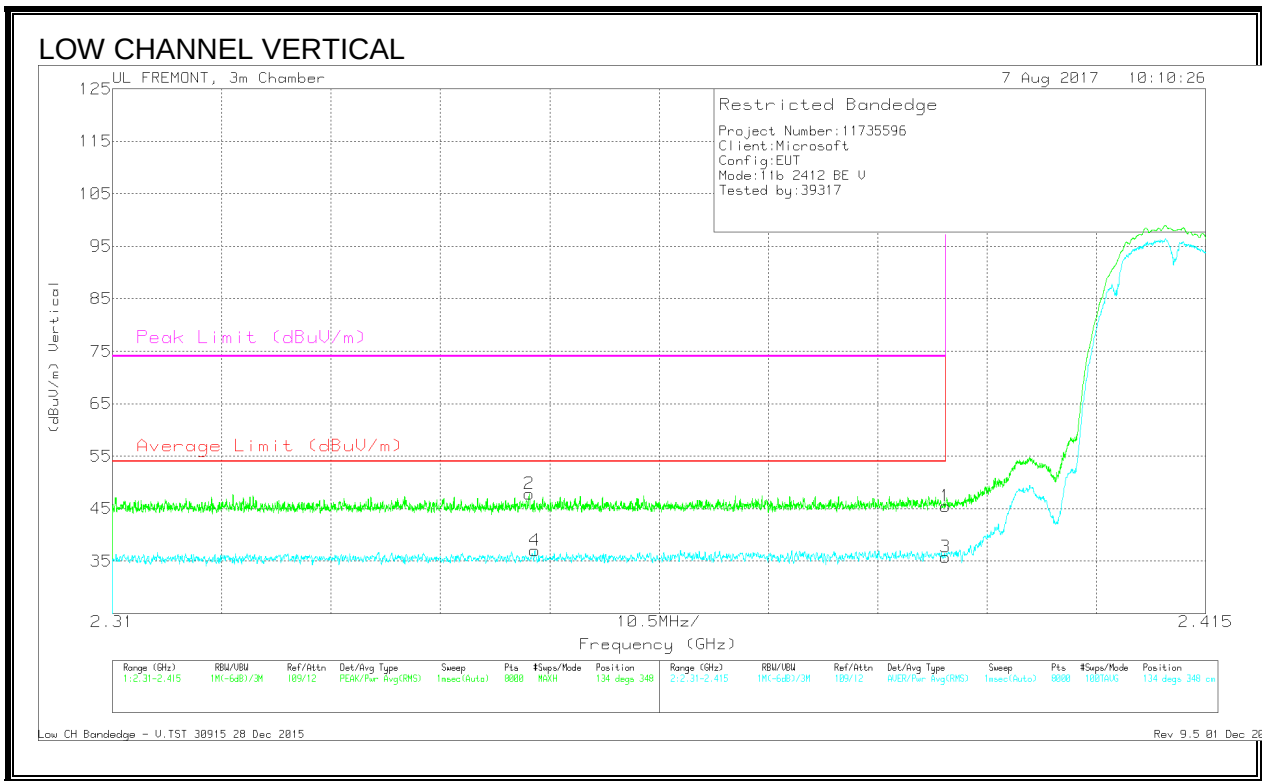
BANDEDGE (LOW CHANNEL, CH 1)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT712 (dB/m)	Amp/Cb/Fltr/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.316	38.8	Pk	31.8	-22.4	48.2	-	-	74	-25.8	171	350	H
4	2.387	28.14	RMS	31.9	-22.4	37.64	54	-16.36	-	-	171	350	H
1	2.39	36.31	Pk	31.9	-22.6	45.61	-	-	74	-28.39	171	350	H
3	2.39	26.36	RMS	31.9	-22.6	35.66	54	-18.34	-	-	171	350	H

Pk - Peak detector
RMS - RMS detection



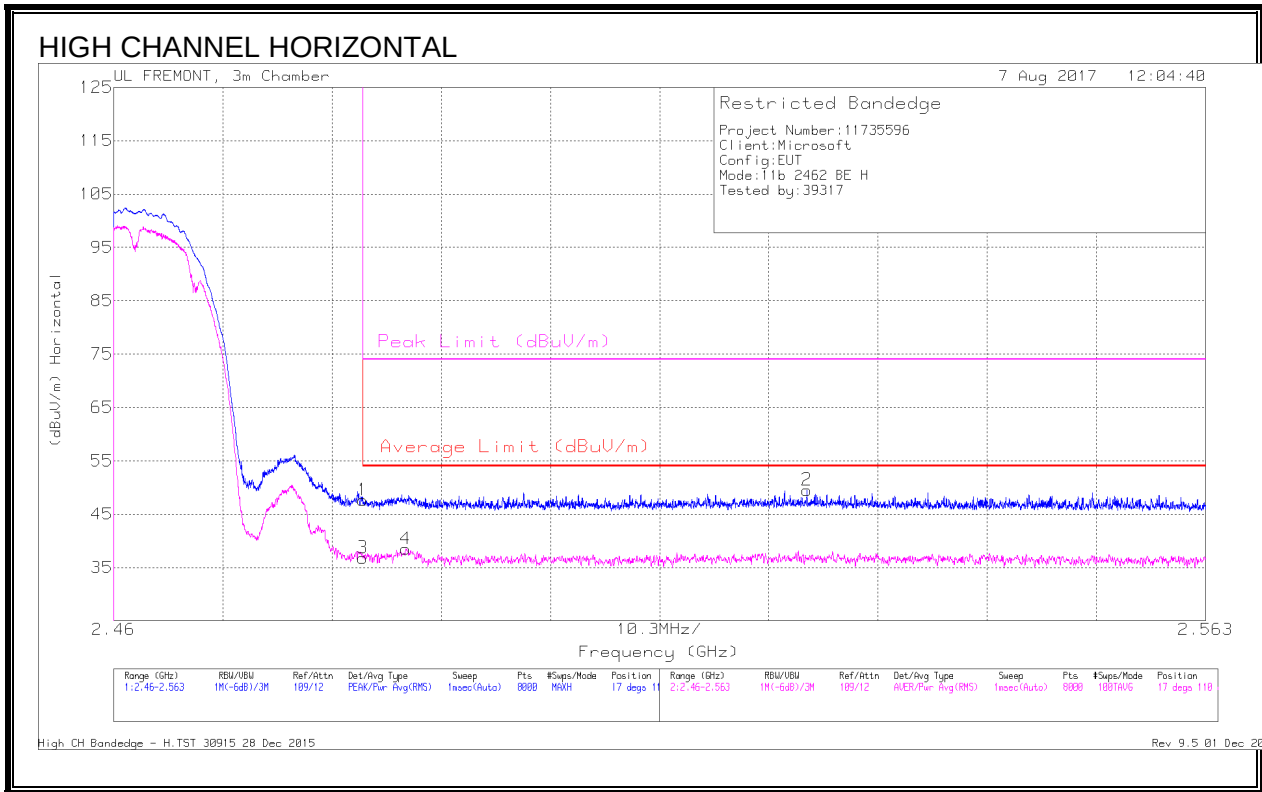
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.35	38.66	Pk	31.8	-22.6	47.86	-	-	74	-26.14	134	348	V
4	2.351	27.73	RMS	31.9	-22.6	37.03	54	-16.97	-	-	134	348	V
1	2.39	36.14	Pk	31.9	-22.6	45.44	-	-	74	-28.56	134	348	V
3	2.39	26.43	RMS	31.9	-22.6	35.73	54	-18.27	-	-	134	348	V

Pk - Peak detector

RMS - RMS detection

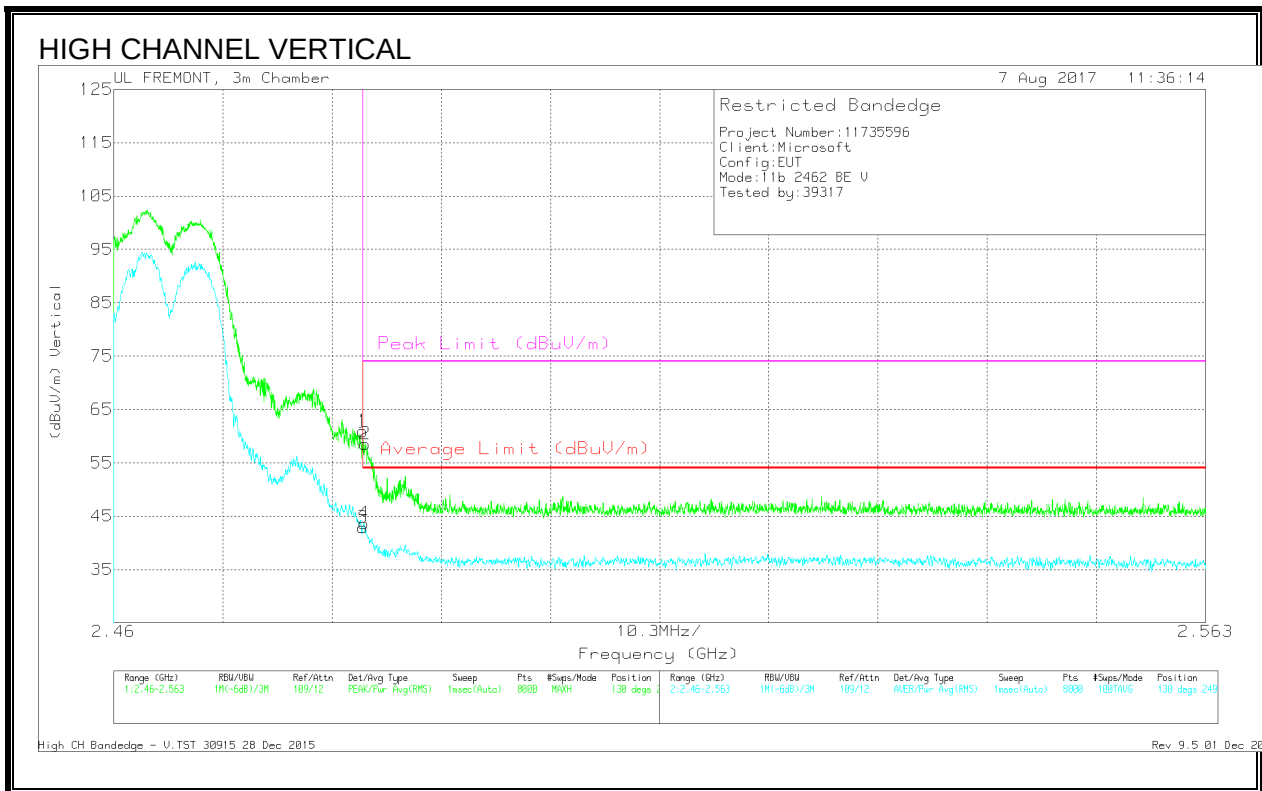
BANDEDGE (HIGH CHANNEL, CH 11)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	37.92	Pk	32.4	-22.7	47.62	-	-	74	-26.38	17	110	H
3	2.484	27.09	RMS	32.4	-22.7	36.79	54	-17.21	-	-	17	110	H
4	2.488	28.56	RMS	32.4	-22.5	38.46	54	-15.54	-	-	17	110	H
2	2.525	39.3	Pk	32.4	-22.2	49.5	-	-	74	-24.5	17	110	H

Pk - Peak detector

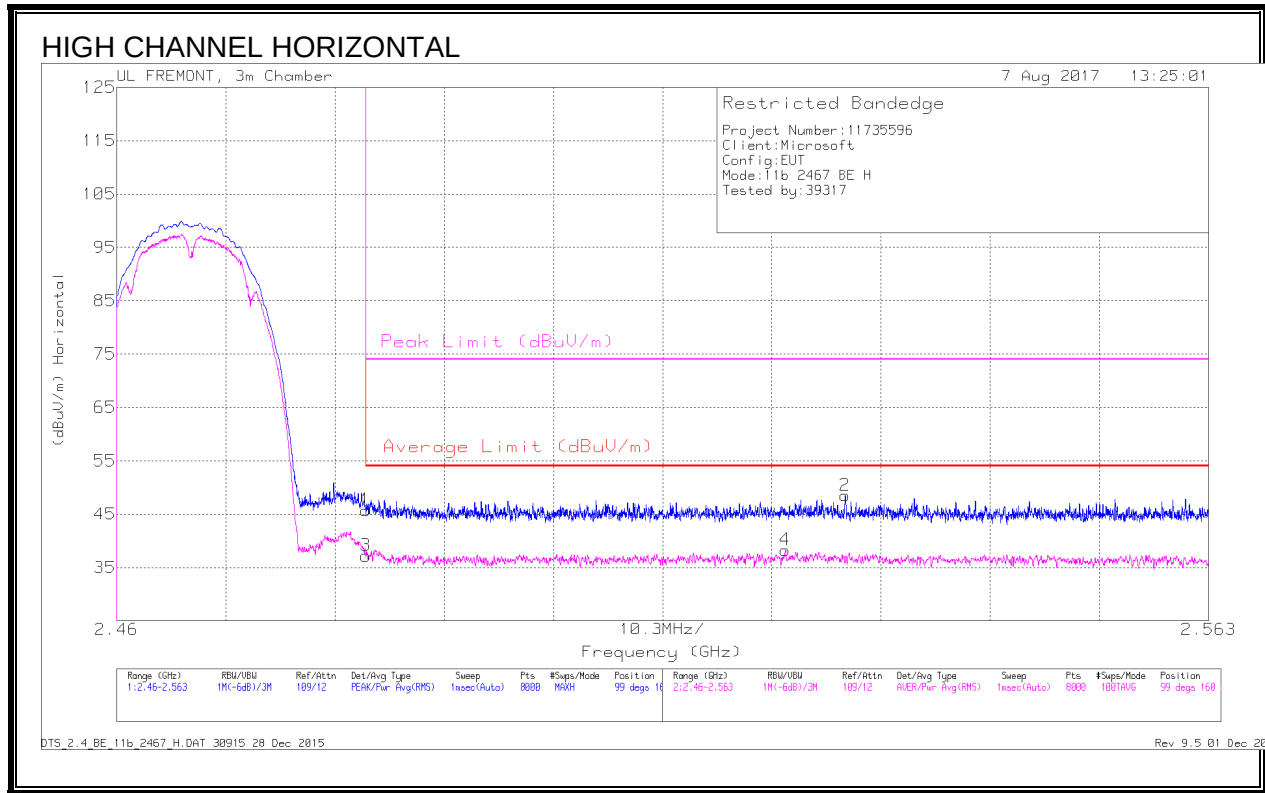


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	51.21	Pk	32.4	-22.7	60.91	-	-	74	-13.09	130	249	V
2	2.484	48.83	Pk	32.4	-22.7	58.53	-	-	74	-15.47	130	249	V
3	2.484	33.18	RMS	32.4	-22.7	42.88	54	-11.12	-	-	130	249	V
4	2.484	33.93	RMS	32.4	-22.7	43.63	54	-10.37	-	-	130	249	V

Pk - Peak detector
RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 12)

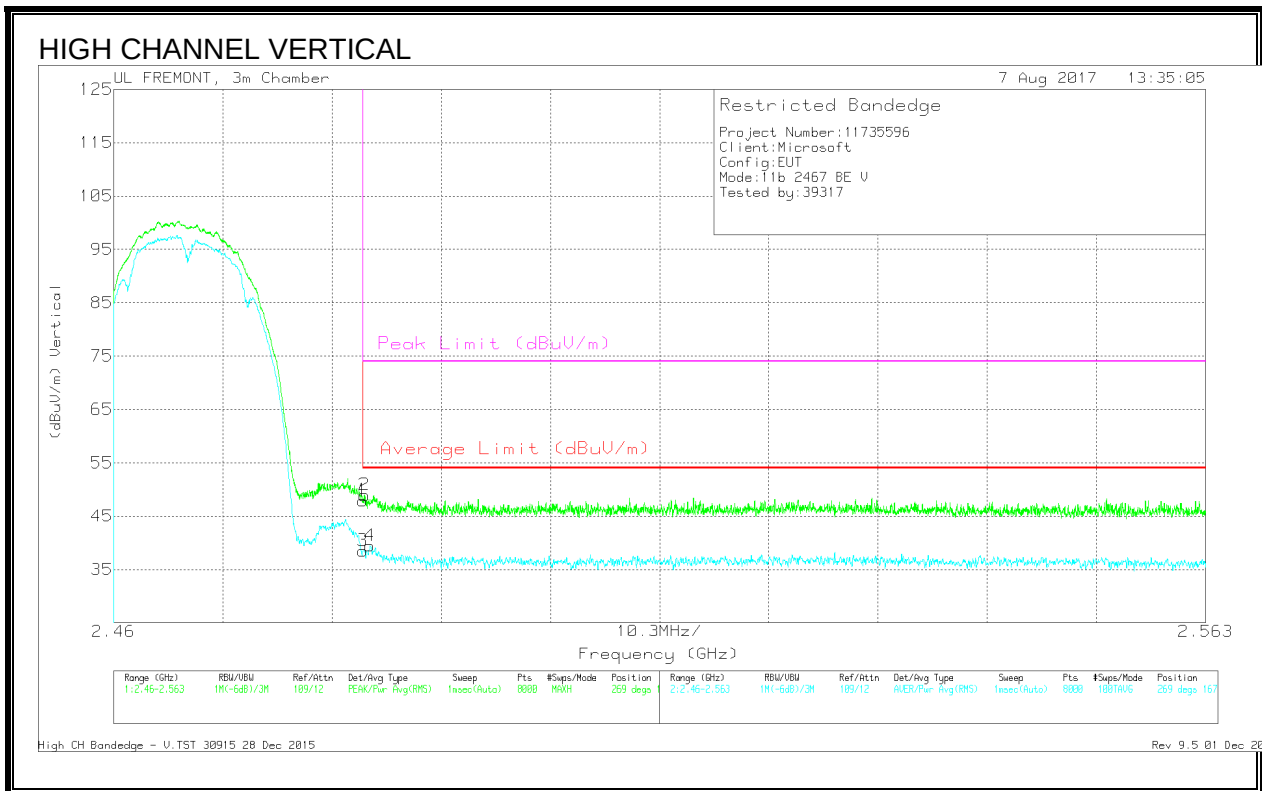


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	36.01	Pk	32.4	-22.7	45.71	-	-	74	-28.29	99	160	H
3	2.484	27.51	RMS	32.4	-22.7	37.21	54	-16.79	-	-	99	160	H
4	2.523	28.17	RMS	32.4	-22.3	38.27	54	-15.73	-	-	99	160	H
2	2.529	38.48	Pk	32.4	-22.4	48.48	-	-	74	-25.52	99	160	H

Pk - Peak detector

RMS - RMS detection

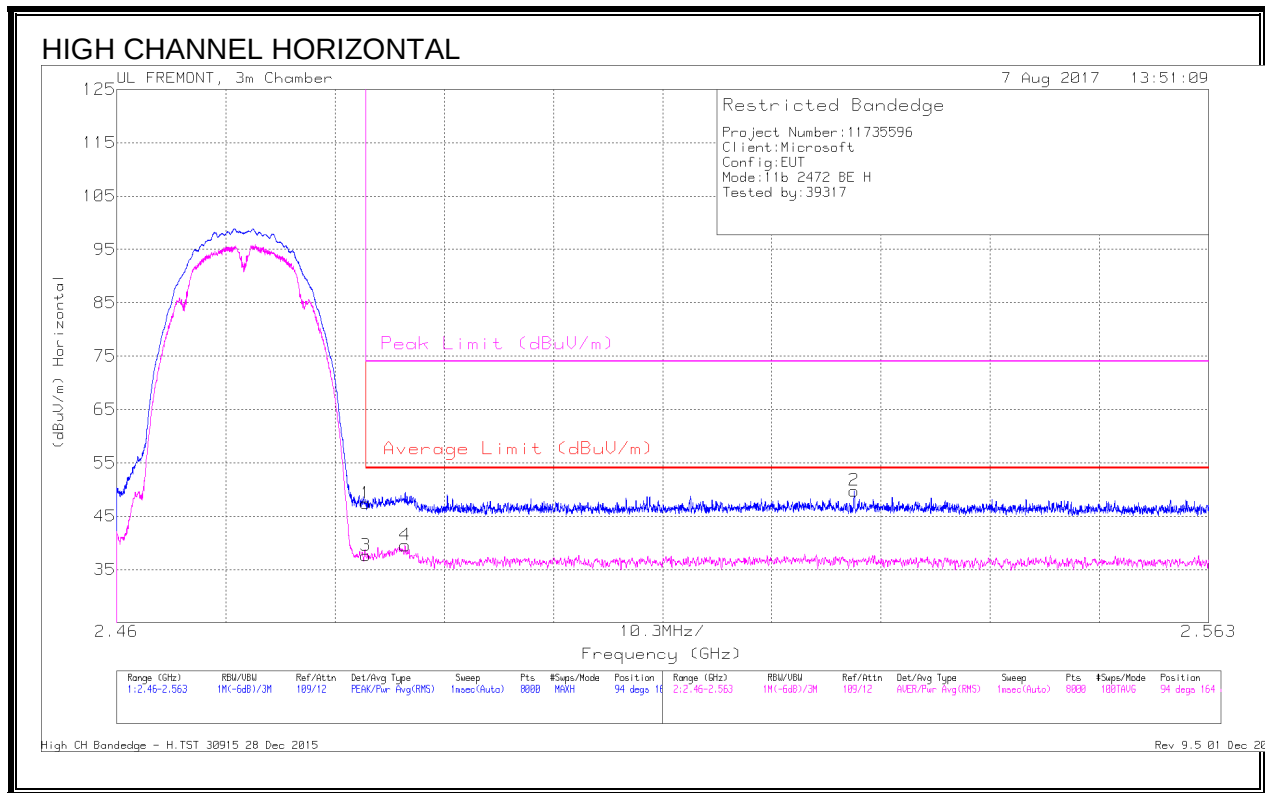


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	38.21	Pk	32.4	-22.7	47.91	-	-	74	-26.09	269	167	V
2	2.484	39.24	Pk	32.4	-22.7	48.94	-	-	74	-25.06	269	167	V
3	2.484	28.8	RMS	32.4	-22.7	38.5	54	-15.5	-	-	269	167	V
4	2.484	29.73	RMS	32.4	-22.7	39.43	54	-14.57	-	-	269	167	V

Pk - Peak detector
RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 13)

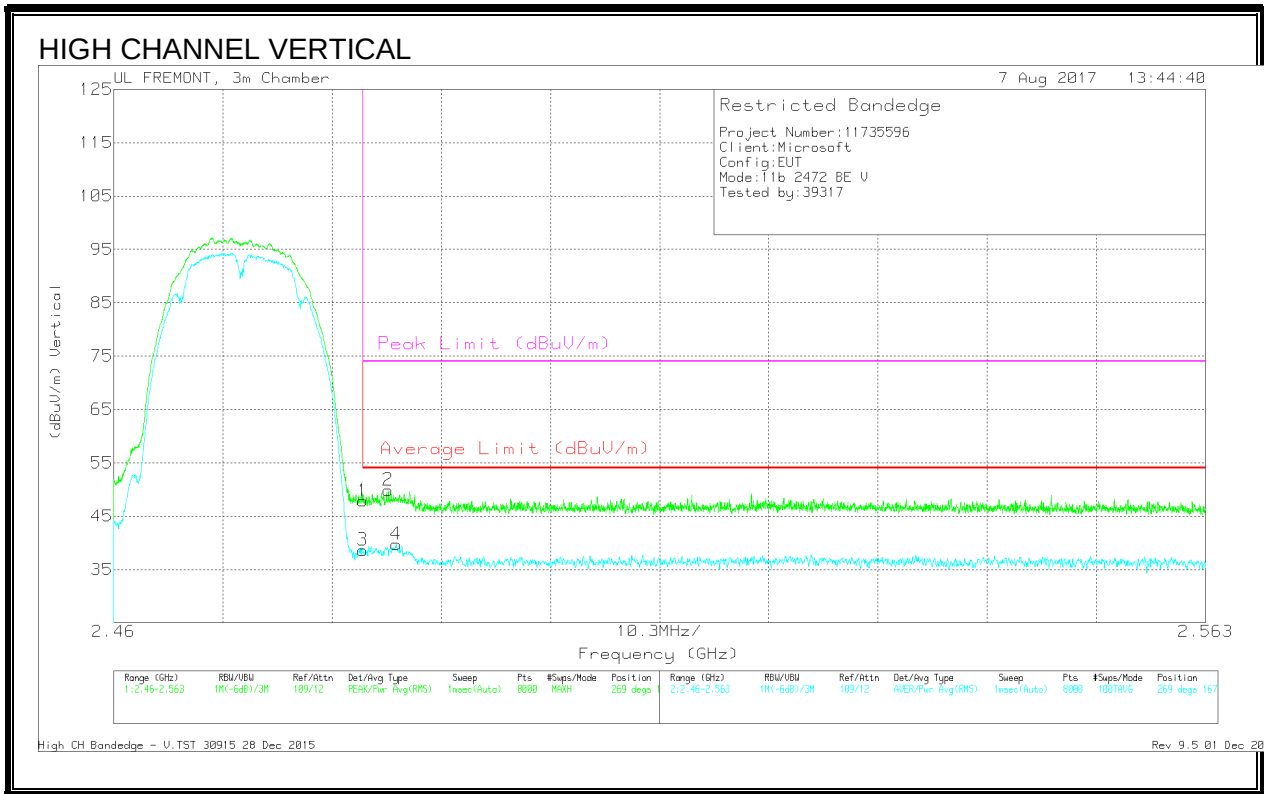


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	37.67	Pk	32.4	-22.7	47.37	-	-	74	-26.63	94	164	H
3	2.484	27.9	RMS	32.4	-22.7	37.6	54	-16.4	-	-	94	164	H
4	2.487	29.73	RMS	32.4	-22.6	39.53	54	-14.47	-	-	94	164	H
2	2.53	39.77	Pk	32.4	-22.4	49.77	-	-	74	-24.23	94	164	H

Pk - Peak detector

RMS - RMS detection

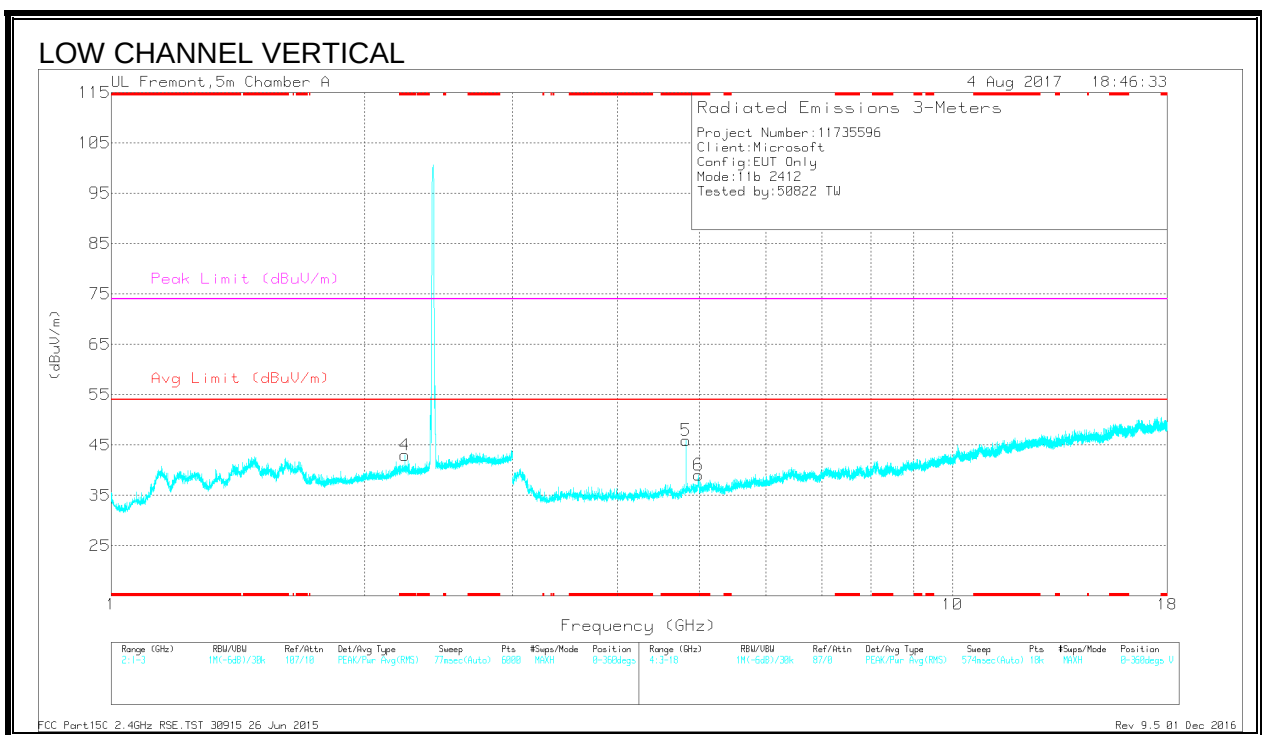
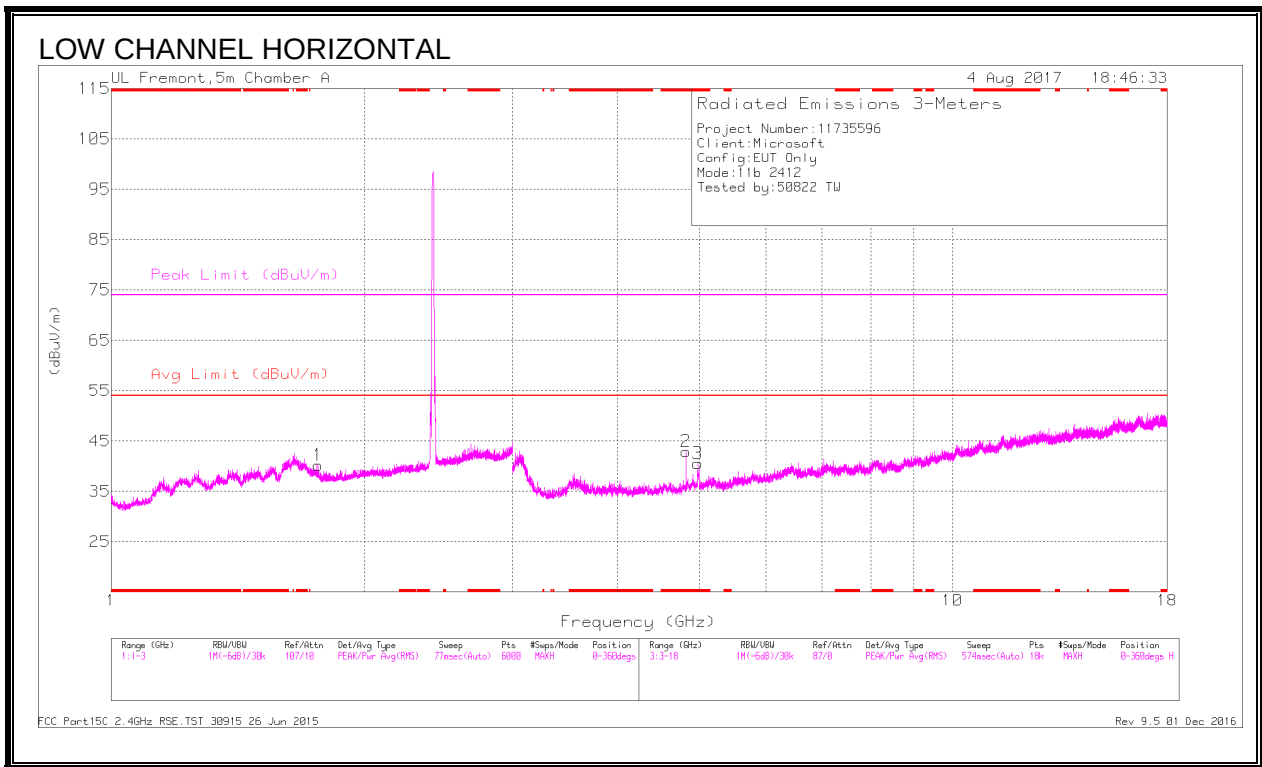


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	38.18	Pk	32.4	-22.7	47.88	-	-	74	-26.12	269	167	V
3	2.484	28.93	RMS	32.4	-22.7	38.63	54	-15.37	-	-	269	167	V
2	2.486	40.17	Pk	32.4	-22.7	49.87	-	-	74	-24.13	269	167	V
4	2.487	29.92	RMS	32.4	-22.6	39.72	54	-14.28	-	-	269	167	V

Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, CH 1)



Radiated Emissions

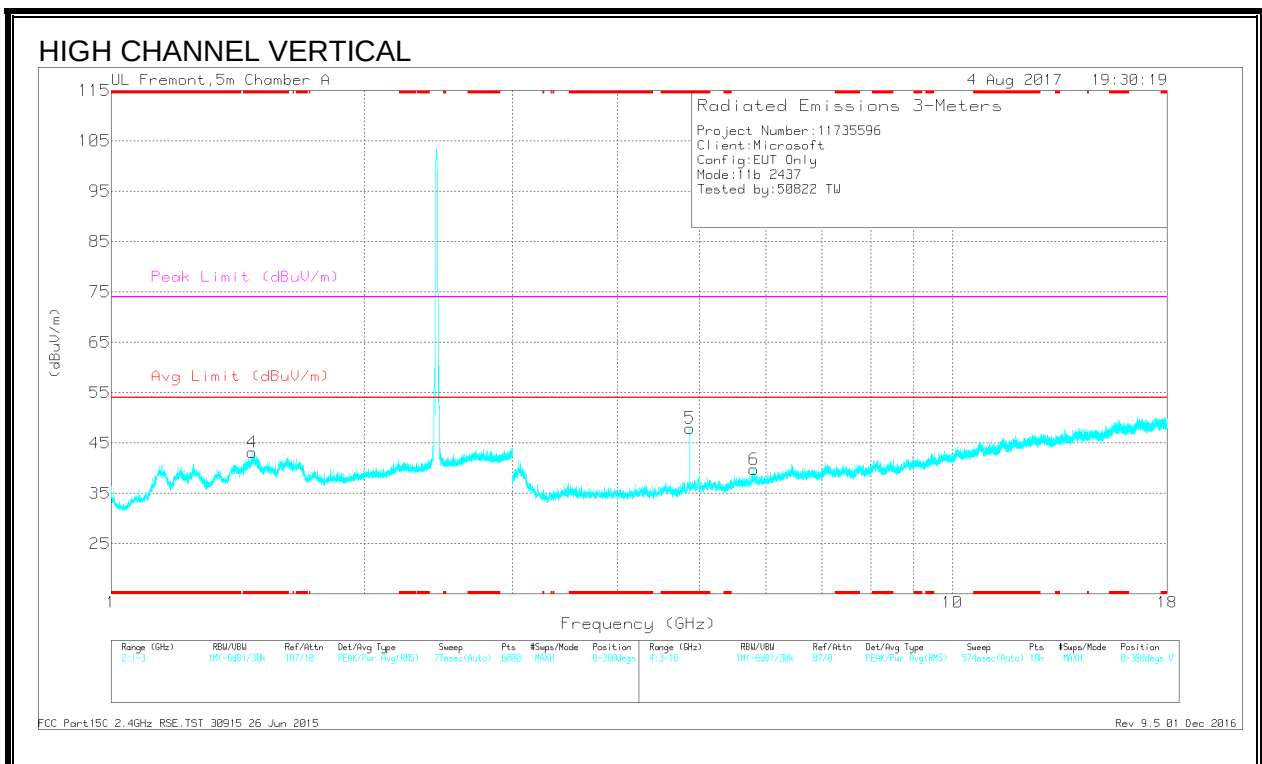
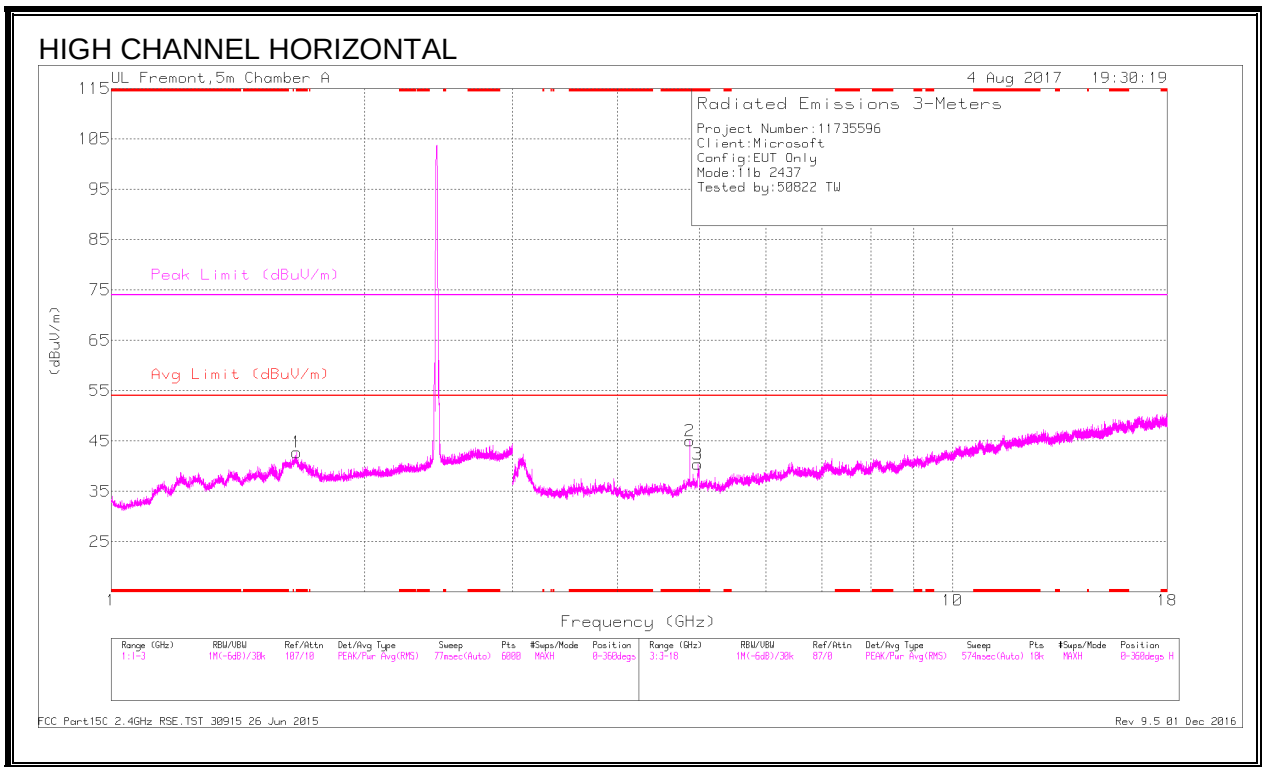
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.234	37.27	PK2	31.4	-23.4	45.27	-	-	74	-28.73	274	204	V
	* 2.236	25.62	MAv1	31.4	-23.4	33.62	54	-20.38	-	-	274	204	V
2	* 4.824	41.03	PK2	34.2	-27.3	47.93	-	-	74	-26.07	56	293	H
	* 4.824	36.57	MAv1	34.2	-27.3	43.47	54	-10.53	-	-	56	293	H
3	* 4.981	42.76	PK2	34.3	-28	49.06	-	-	74	-24.94	316	111	H
	* 4.98	28.69	MAv1	34.3	-28	34.99	54	-19.01	-	-	316	111	H
5	* 4.824	42.64	PK2	34.2	-27.3	49.54	-	-	74	-24.46	312	138	V
	* 4.824	38.61	MAv1	34.2	-27.3	45.51	54	-8.49	-	-	312	138	V
6	* 4.99	41.36	PK2	34.3	-28.1	47.56	-	-	74	-26.44	177	155	V
	* 4.993	27.03	MAv1	34.3	-28.1	33.23	54	-20.77	-	-	177	155	V
1	1.76	36.02	PK2	29.9	-23.3	42.62	-	-	-	-	279	199	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, CH 6)



Radiated Emissions

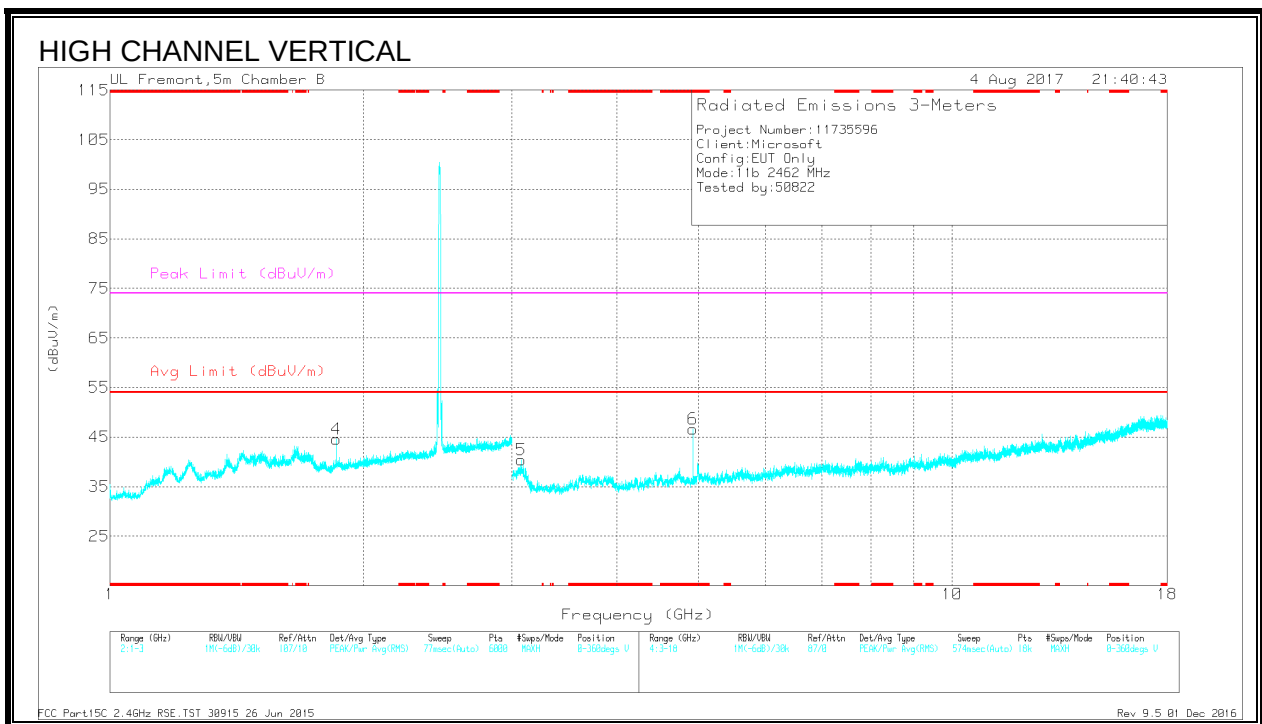
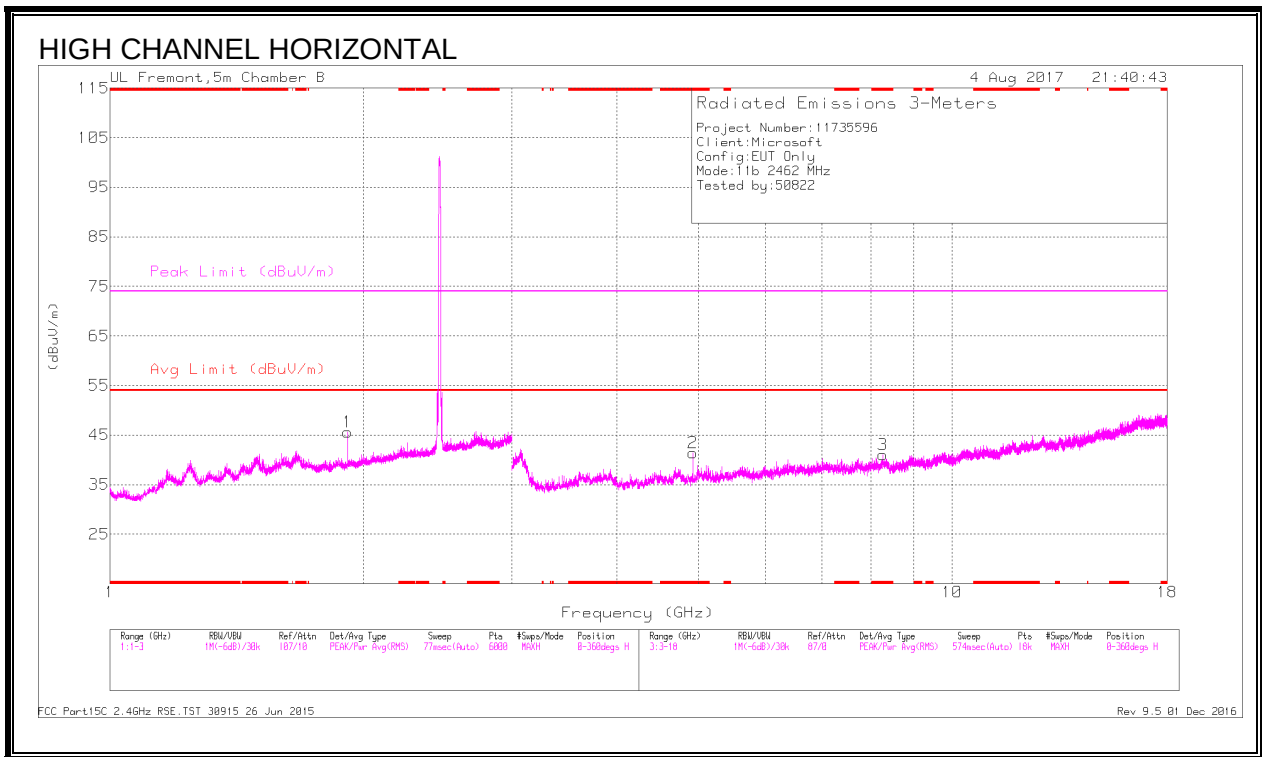
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cb/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.661	42.92	PK2	28.6	-23.3	48.22	-	-	74	-25.78	18	199	H
	* 1.664	30.78	MAv1	28.6	-23.3	36.08	54	-17.92	-	-	18	199	H
4	* 1.471	44.47	PK2	28.6	-23.2	49.87	-	-	74	-24.13	293	102	V
	* 1.472	32.94	MAv1	28.6	-23.2	38.34	54	-15.66	-	-	293	102	V
2	* 4.874	42.01	PK2	34.1	-27.2	48.91	-	-	74	-25.09	54	133	H
	* 4.874	36.88	MAv1	34.1	-27.2	43.78	54	-10.22	-	-	54	133	H
3	* 4.981	42.62	PK2	34.3	-28	48.92	-	-	74	-25.08	335	102	H
	* 4.981	28.03	MAv1	34.3	-28	34.33	54	-19.67	-	-	335	102	H
5	* 4.874	44.63	PK2	34.1	-27.2	51.53	-	-	74	-22.47	317	123	V
	* 4.874	41.47	MAv1	34.1	-27.2	48.37	54	-5.63	-	-	317	123	V
6	5.807	36.08	PK2	35.1	-25.6	45.58	-	-	-	-	87	200	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, CH 11)



Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.924	41.85	PK2	34.4	-30.2	46.05	-	-	74	-27.95	117	257	H
	* 4.924	34.67	MAv1	34.4	-30.2	38.87	54	-15.13	-	-	117	257	H
3	* 8.278	35.68	PK2	36.1	-25.4	46.38	-	-	74	-27.62	132	104	H
	* 8.279	24.36	MAv1	36.1	-25.4	35.06	54	-18.94	-	-	132	104	H
6	* 4.924	45.84	PK2	34.4	-30.2	50.04	-	-	74	-23.96	50	128	V
	* 4.924	42.26	MAv1	34.4	-30.2	46.46	54	-7.54	-	-	50	128	V
4	1.857	36.92	PK2	30.8	-21	46.72	-	-	-	-	340	103	V
1	1.915	35.85	PK2	31	-21	45.85	-	-	-	-	7	229	H
5	3.077	43.33	PK2	33.1	-31	45.43	-	-	-	-	180	199	V

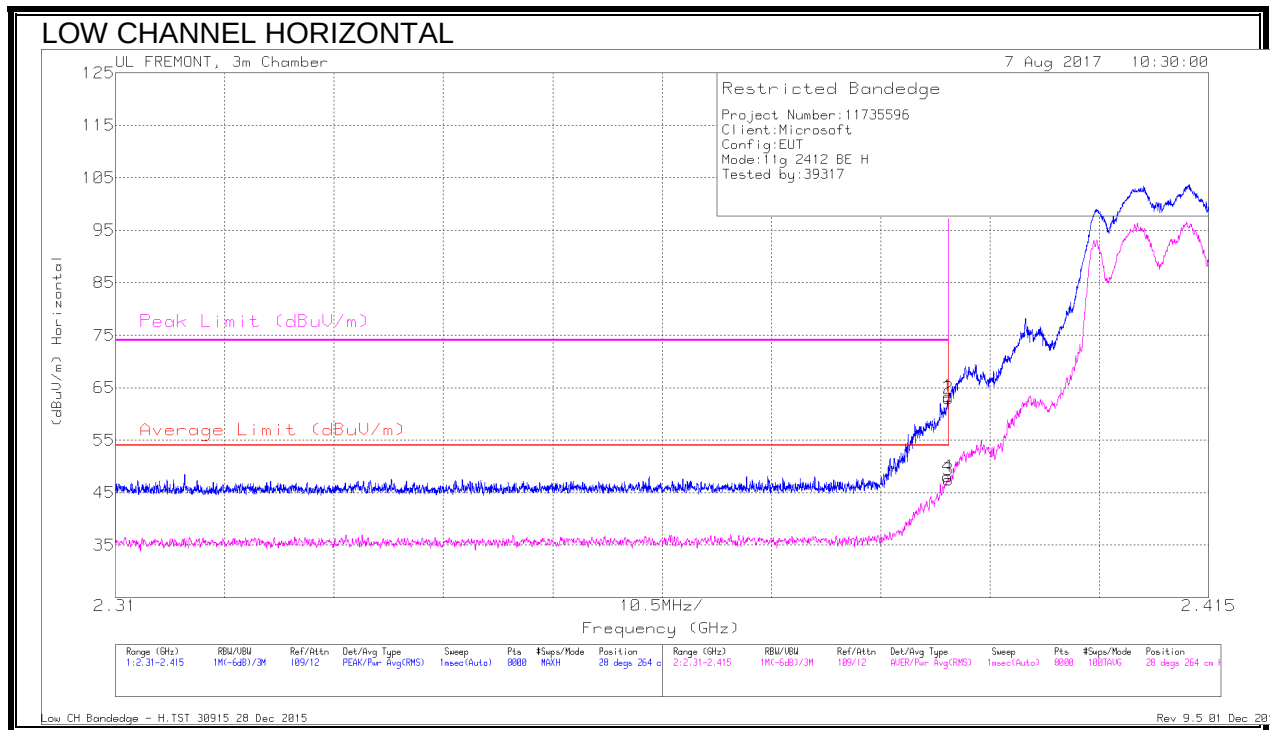
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2.2 11g MIMO MODE IN THE 2.4GHz BAND

BANDEDGE (LOW CHANNEL, CH 1)

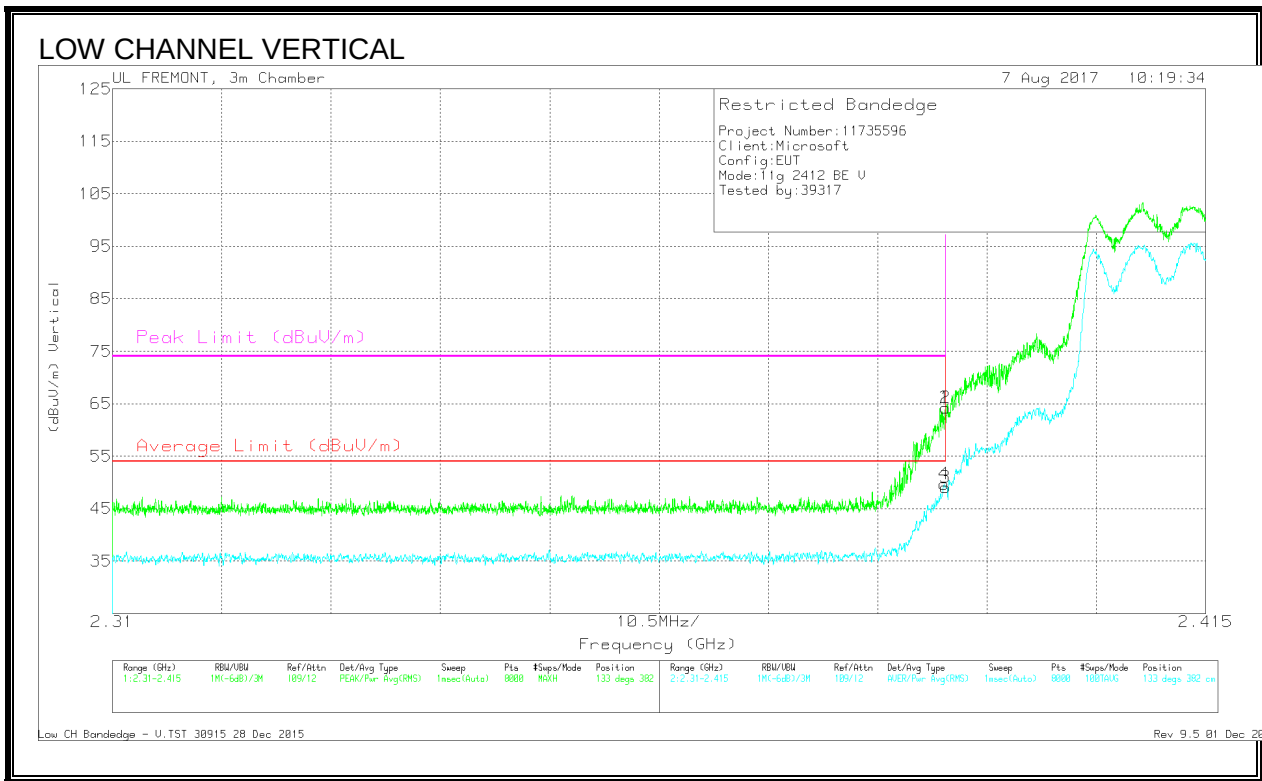


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtz/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	54	Pk	31.9	-22.6	63.3	-	-	74	-10.7	28	264	H
2	2.39	53.66	Pk	31.9	-22.6	62.96	-	-	74	-11.04	28	264	H
3	2.39	38.08	RMS	31.9	-22.6	47.38	54	-6.62	-	-	28	264	H
4	2.39	38.77	RMS	31.9	-22.6	48.07	54	-5.93	-	-	28	264	H

Pk - Peak detector

RMS - RMS detection



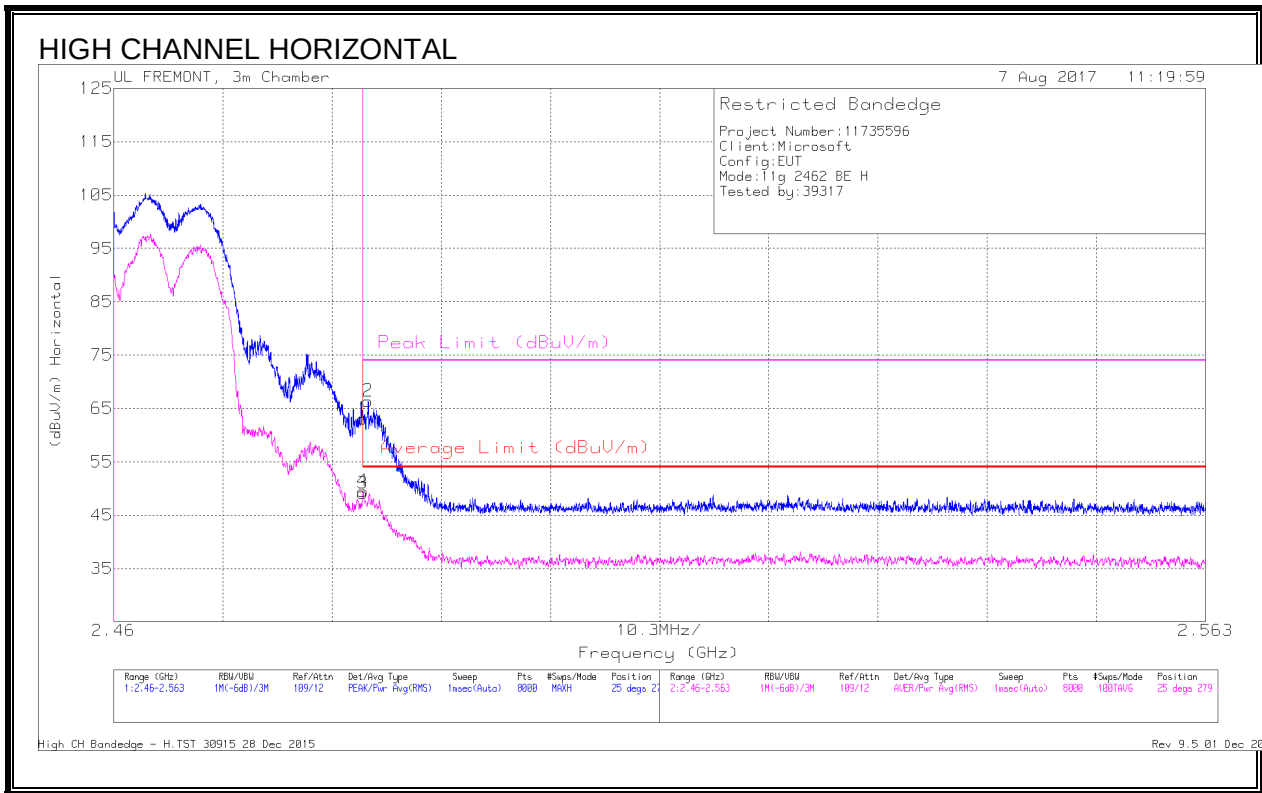
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	54.93	Pk	31.9	-22.6	64.23	-	-	74	-9.77	133	382	V
2	2.39	54.89	Pk	31.9	-22.6	64.19	-	-	74	-9.81	133	382	V
3	2.39	39.76	RMS	31.9	-22.6	49.06	54	-4.94	-	-	133	382	V
4	2.39	40.24	RMS	31.9	-22.5	49.64	54	-4.36	-	-	133	382	V

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

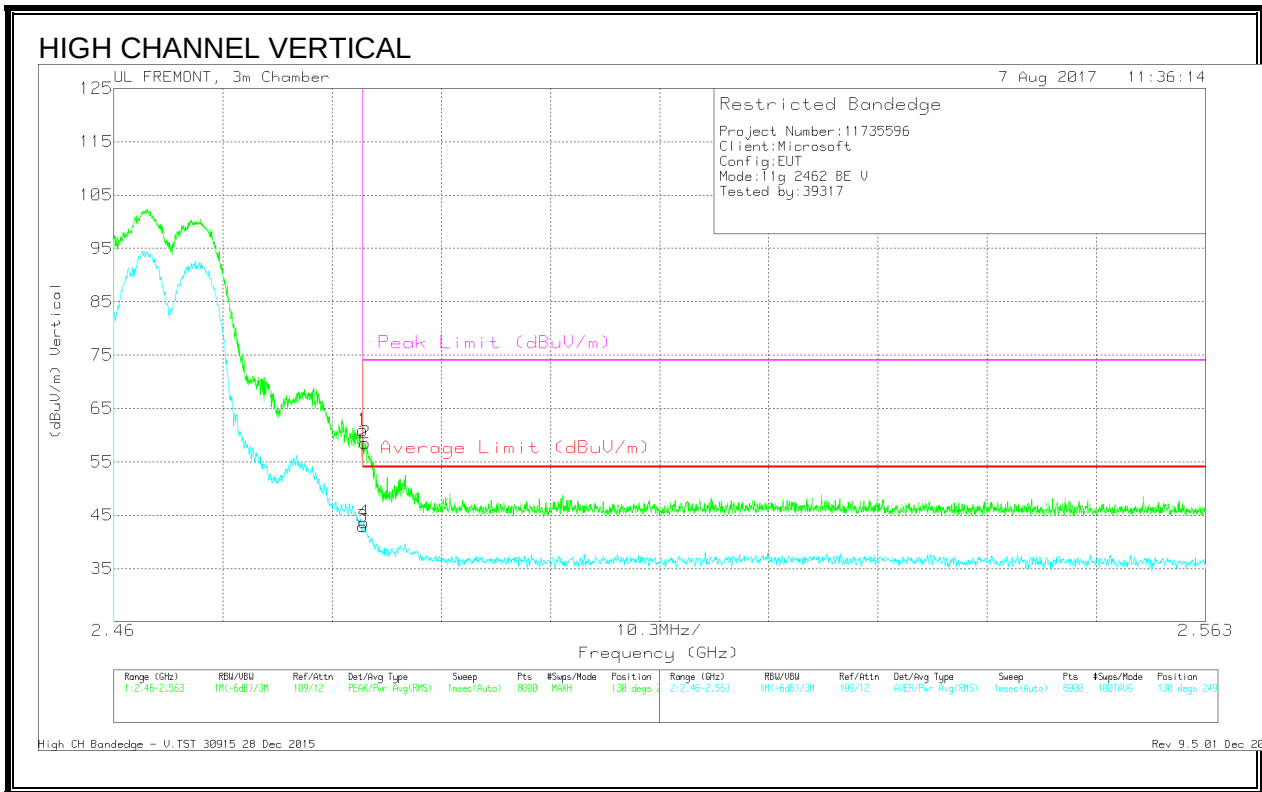


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	53.37	Pk	32.4	-22.7	63.07	-	-	74	-10.93	25	279	H
2	2.484	56.66	Pk	32.4	-22.7	66.36	-	-	74	-7.64	25	279	H
3	2.484	39.38	RMS	32.4	-22.7	49.08	54	-4.92	-	-	25	279	H
4	2.484	39.8	RMS	32.4	-22.7	49.5	54	-4.5	-	-	25	279	H

Pk - Peak detector

RMS - RMS detection



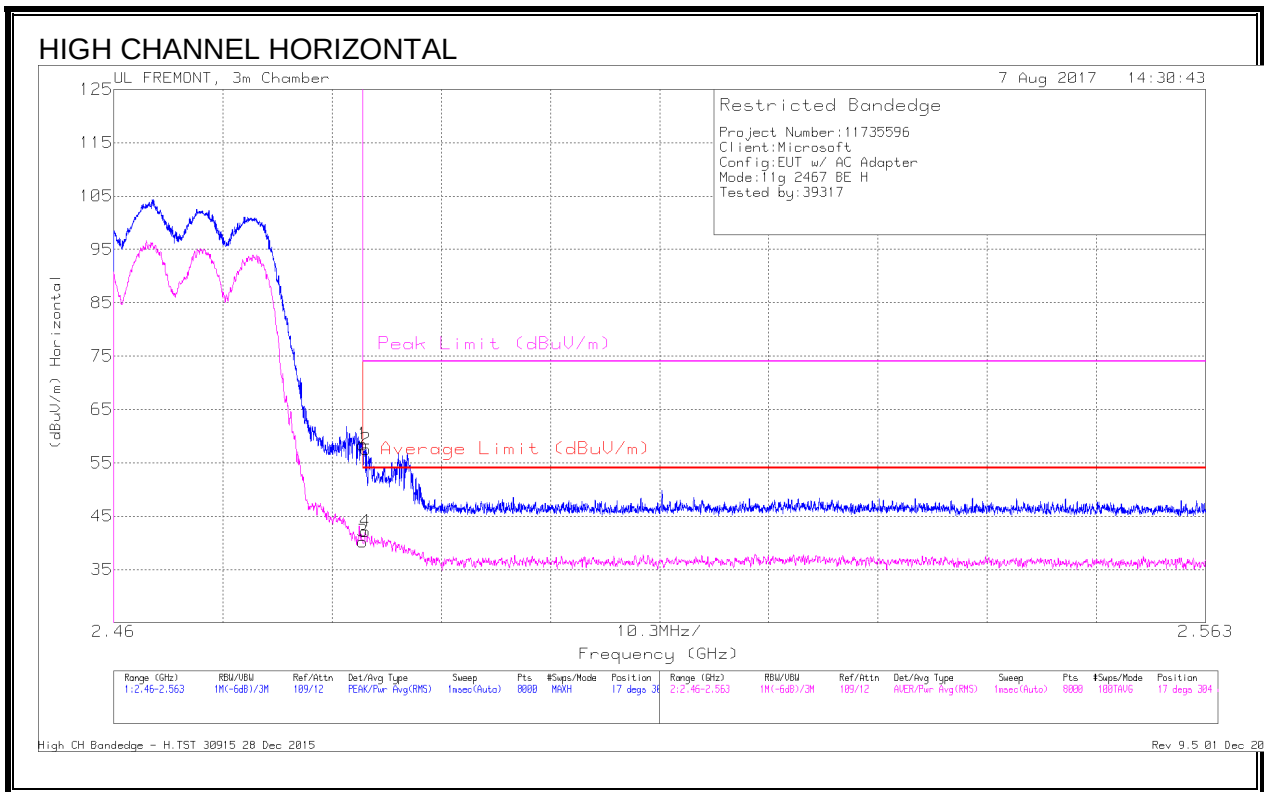
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	51.21	Pk	32.4	-22.7	60.91	-	-	74	-13.09	130	249	V
2	2.484	48.83	Pk	32.4	-22.7	58.53	-	-	74	-15.47	130	249	V
3	2.484	33.18	RMS	32.4	-22.7	42.88	54	-11.12	-	-	130	249	V
4	2.484	33.93	RMS	32.4	-22.7	43.63	54	-10.37	-	-	130	249	V

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 12)

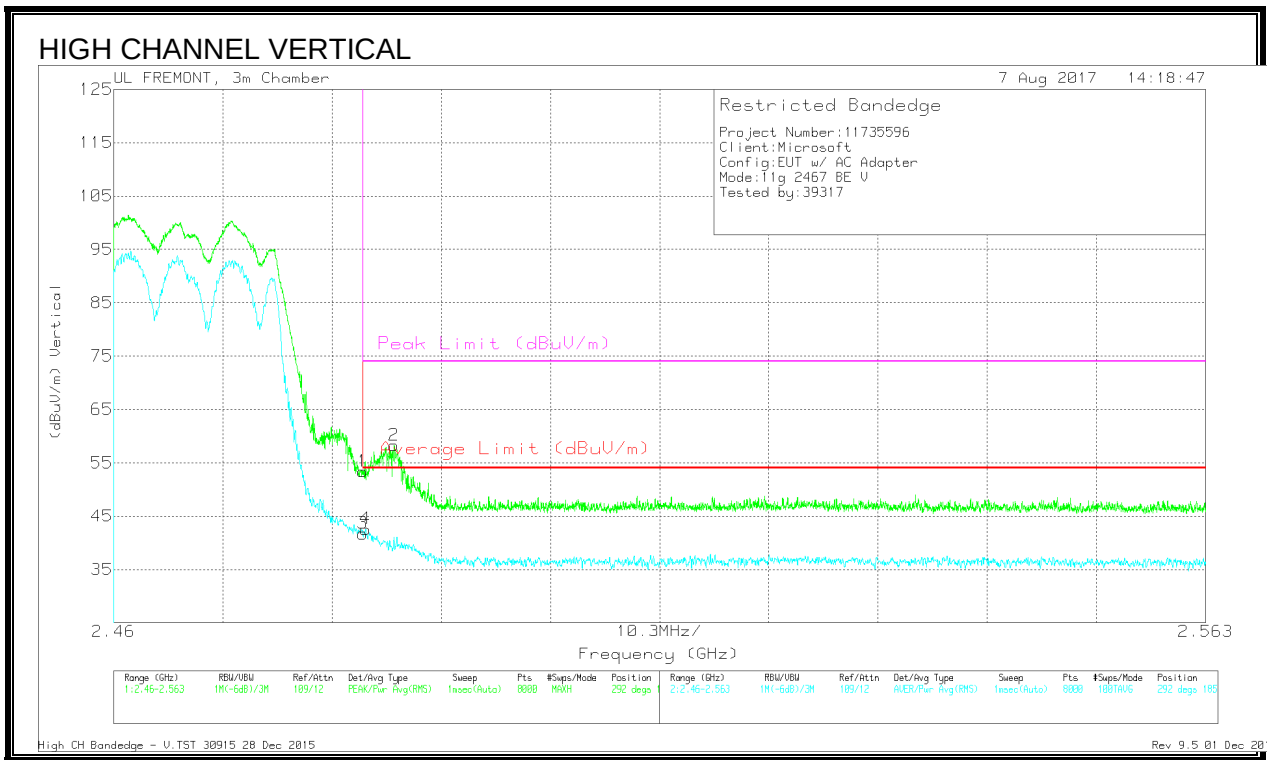


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtz/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	48.76	Pk	32.4	-22.7	58.46	-	-	74	-15.54	17	304	H
2	2.484	47.8	Pk	32.4	-22.7	57.5	-	-	74	-16.5	17	304	H
3	2.484	30.55	RMS	32.4	-22.7	40.25	54	-13.75	-	-	17	304	H
4	2.484	32.45	RMS	32.4	-22.7	42.15	54	-11.85	-	-	17	304	H

Pk - Peak detector

RMS - RMS detection

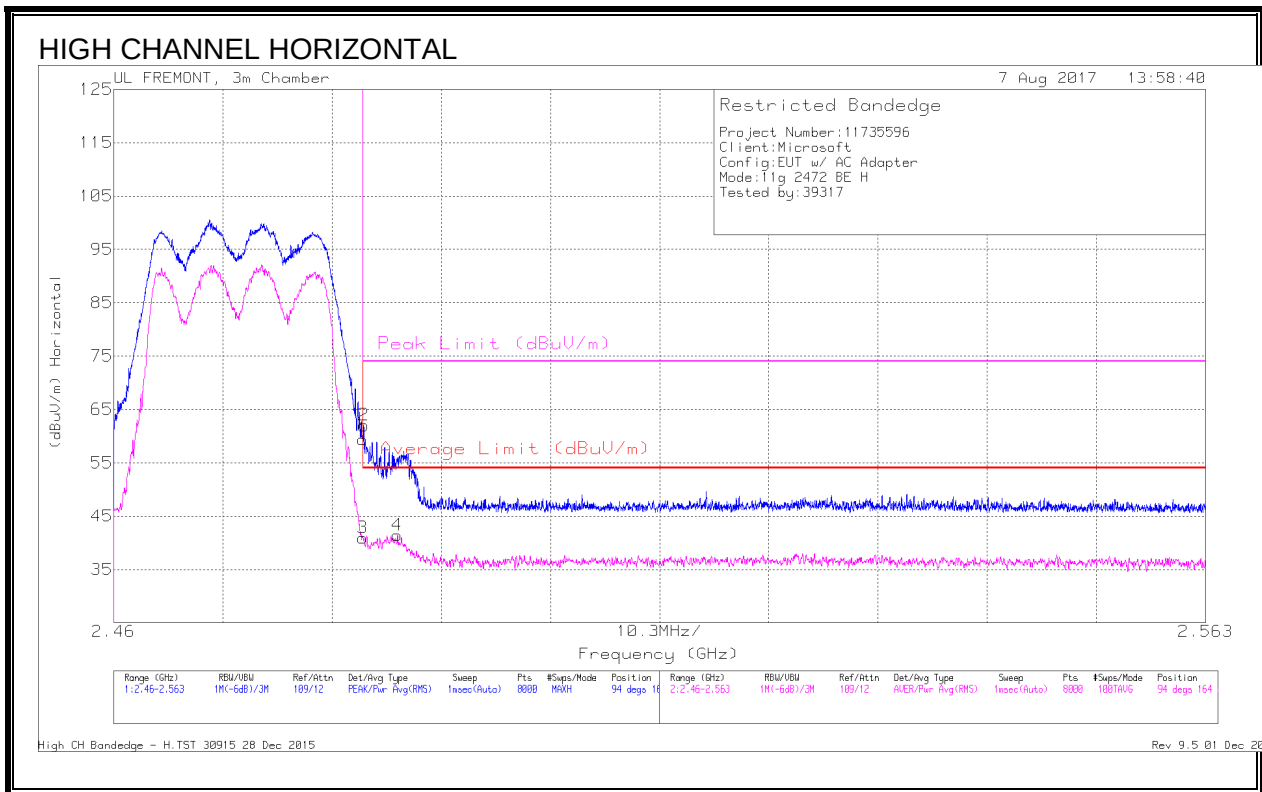


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	43.69	Pk	32.4	-22.7	53.39	-	-	74	-20.61	292	185	V
3	2.484	32.02	RMS	32.4	-22.7	41.72	54	-12.28	-	-	292	185	V
4	2.484	32.86	RMS	32.4	-22.7	42.56	54	-11.44	-	-	292	185	V
2	2.486	48.46	Pk	32.4	-22.6	58.26	-	-	74	-15.74	292	185	V

Pk - Peak detector
RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 13)

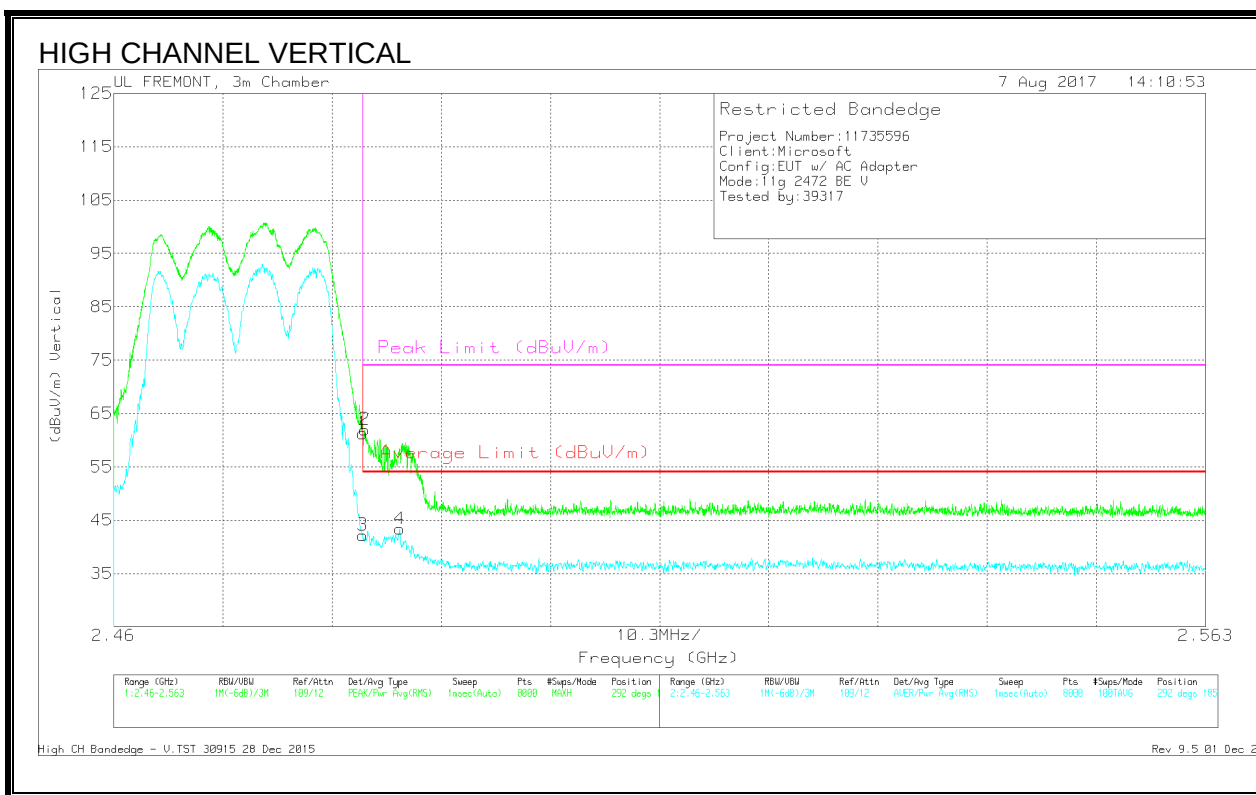


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	49.69	Pk	32.4	-22.7	59.39	-	-	74	-14.61	94	164	H
2	2.484	52.32	Pk	32.4	-22.7	62.02	-	-	74	-11.98	94	164	H
3	2.484	31.23	RMS	32.4	-22.7	40.93	54	-13.07	-	-	94	164	H
4	2.487	31.62	RMS	32.4	-22.6	41.42	54	-12.58	-	-	94	164	H

Pk - Peak detector

RMS - RMS detection

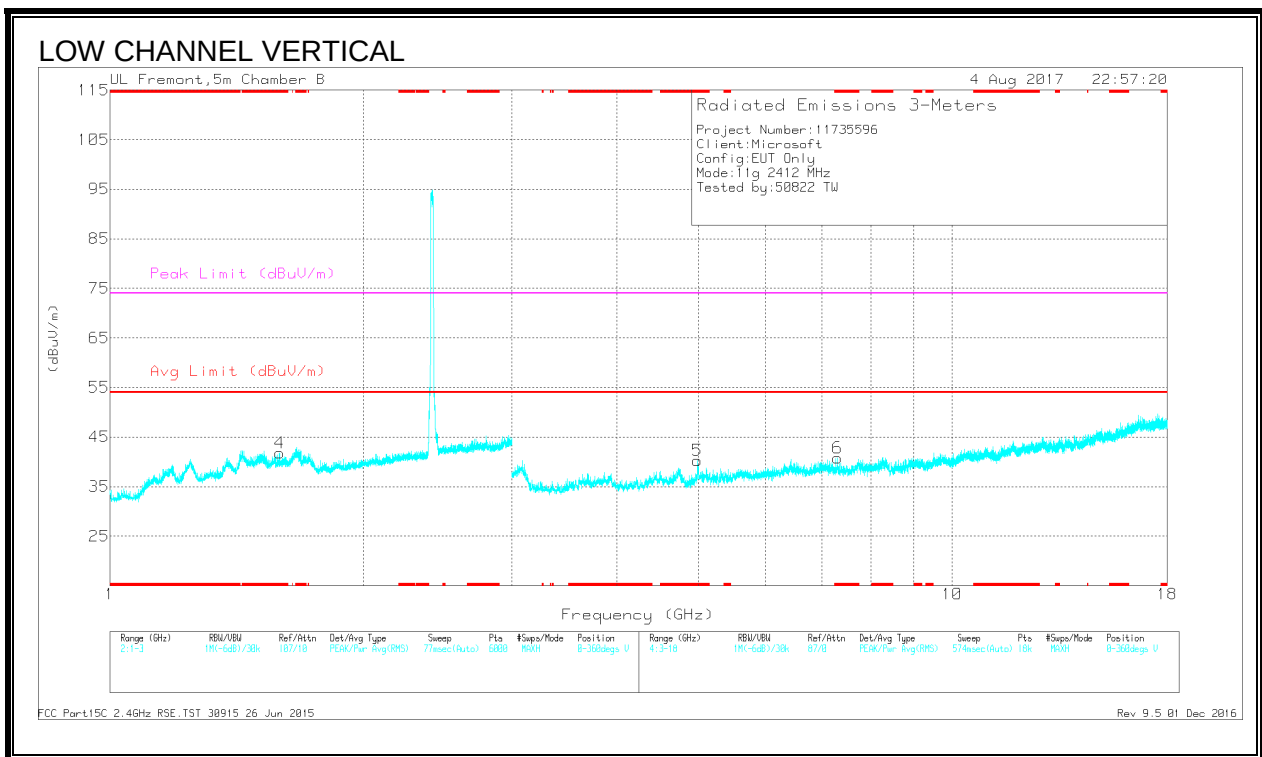
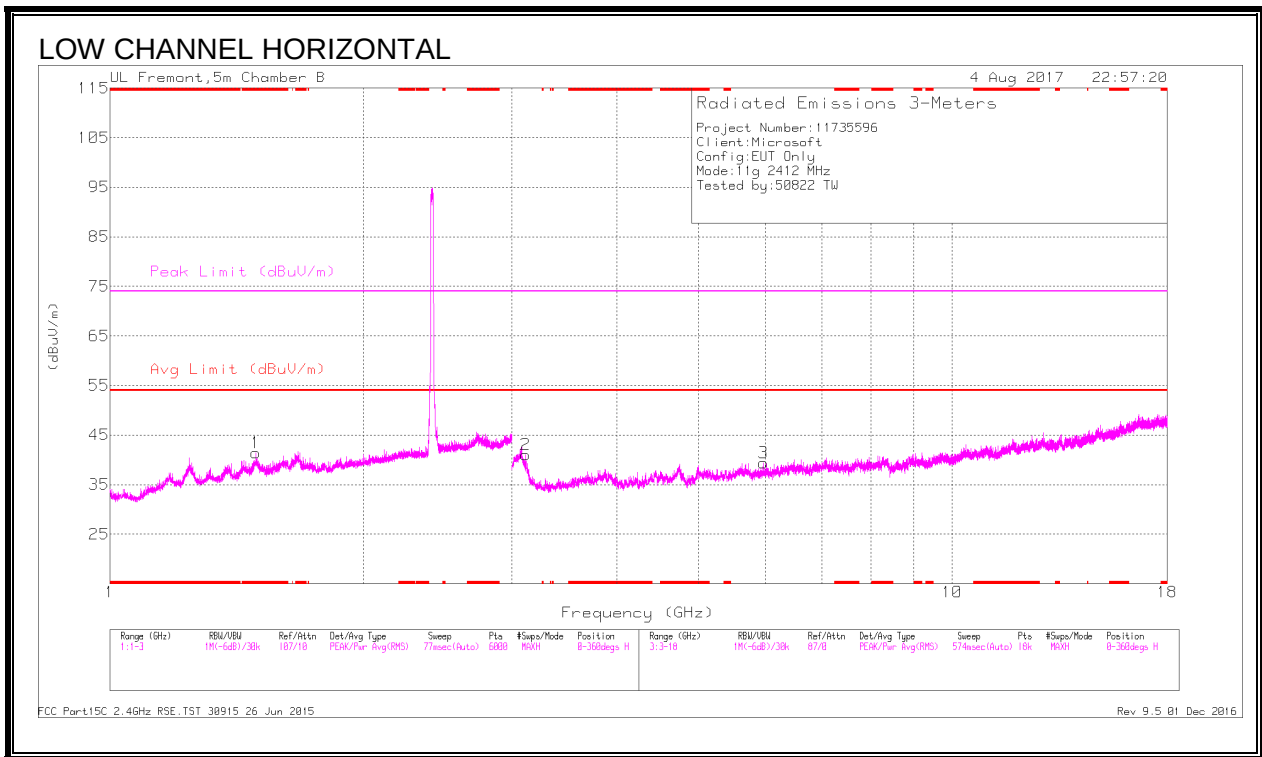


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Filtz/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	51.58	Pk	32.4	-22.7	61.28	-	-	74	-12.72	292	185	V
2	2.484	52.26	Pk	32.4	-22.7	61.96	-	-	74	-12.04	292	185	V
3	2.484	32.46	RMS	32.4	-22.7	42.16	54	-11.84	-	-	292	185	V
4	2.487	33.54	RMS	32.4	-22.6	43.34	54	-10.66	-	-	292	185	V

Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, CH 1)



Radiated Emissions

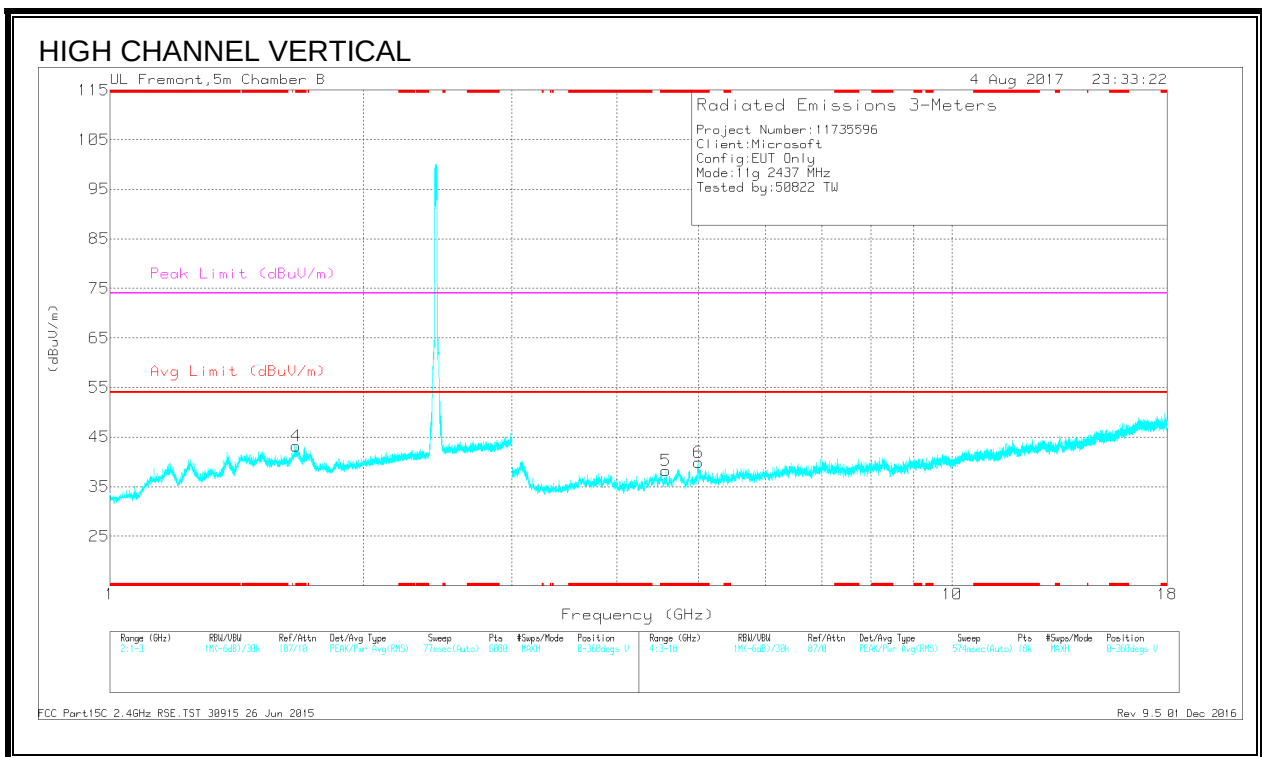
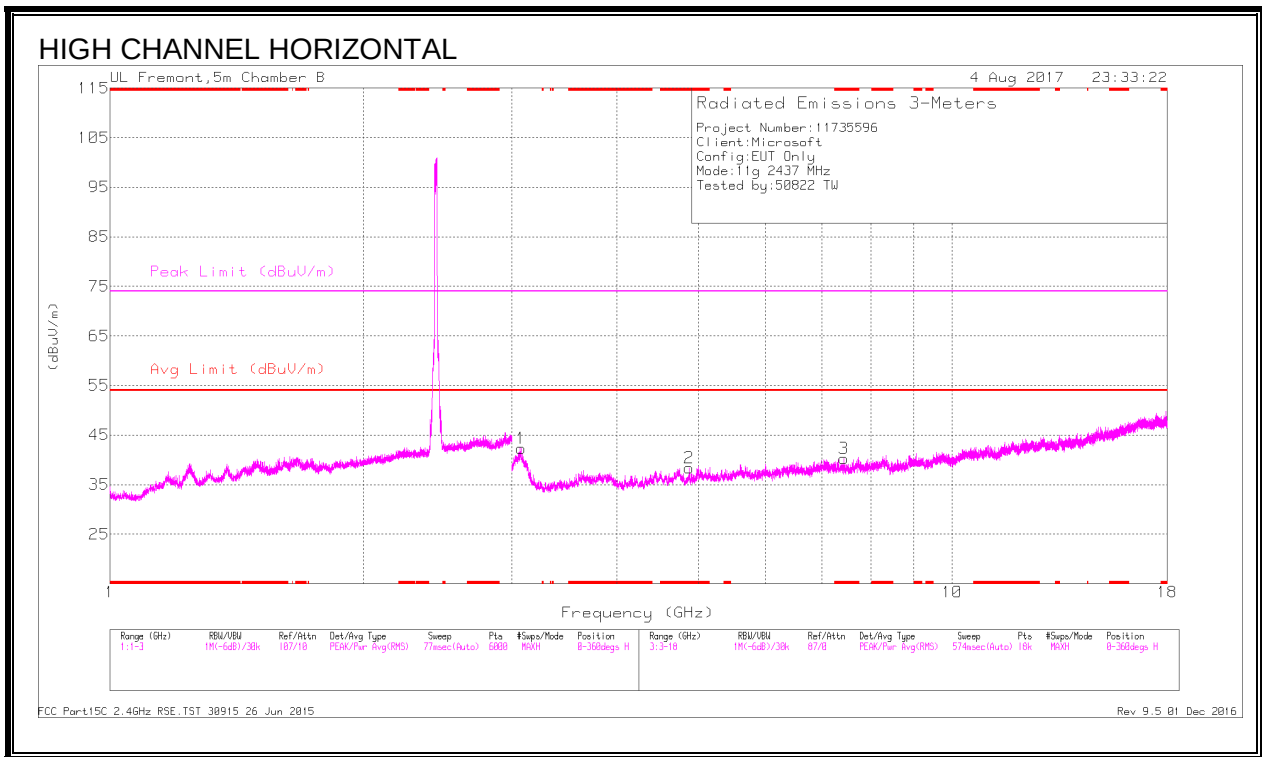
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.491	35.4	PK2	28.2	-21.2	42.4	-	-	74	-31.6	182	101	H
	* 1.492	23.99	MAv1	28.2	-21.3	30.89	54	-23.11	-	-	182	101	H
4	* 1.591	38.1	PK2	28.2	-21.2	45.1	-	-	74	-28.9	55	200	V
	* 1.591	26.56	MAv1	28.2	-21.2	33.56	54	-20.44	-	-	55	200	V
5	* 4.984	42.98	PK2	34.4	-29.4	47.98	-	-	74	-26.02	27	199	V
	* 4.982	29.38	MAv1	34.4	-29.3	34.48	54	-19.52	-	-	27	199	V
6	* 7.311	38.58	PK2	35.9	-27.1	47.38	-	-	74	-26.62	84	199	V
	* 7.309	26.47	MAv1	35.9	-27.1	35.27	54	-18.73	-	-	84	199	V
2	3.117	46.11	PK2	33.2	-30.6	48.71	-	-	-	-	173	104	H
3	5.964	38.34	PK2	35.3	-28.3	45.34	-	-	-	-	220	199	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, CH 6)



Radiated Emissions

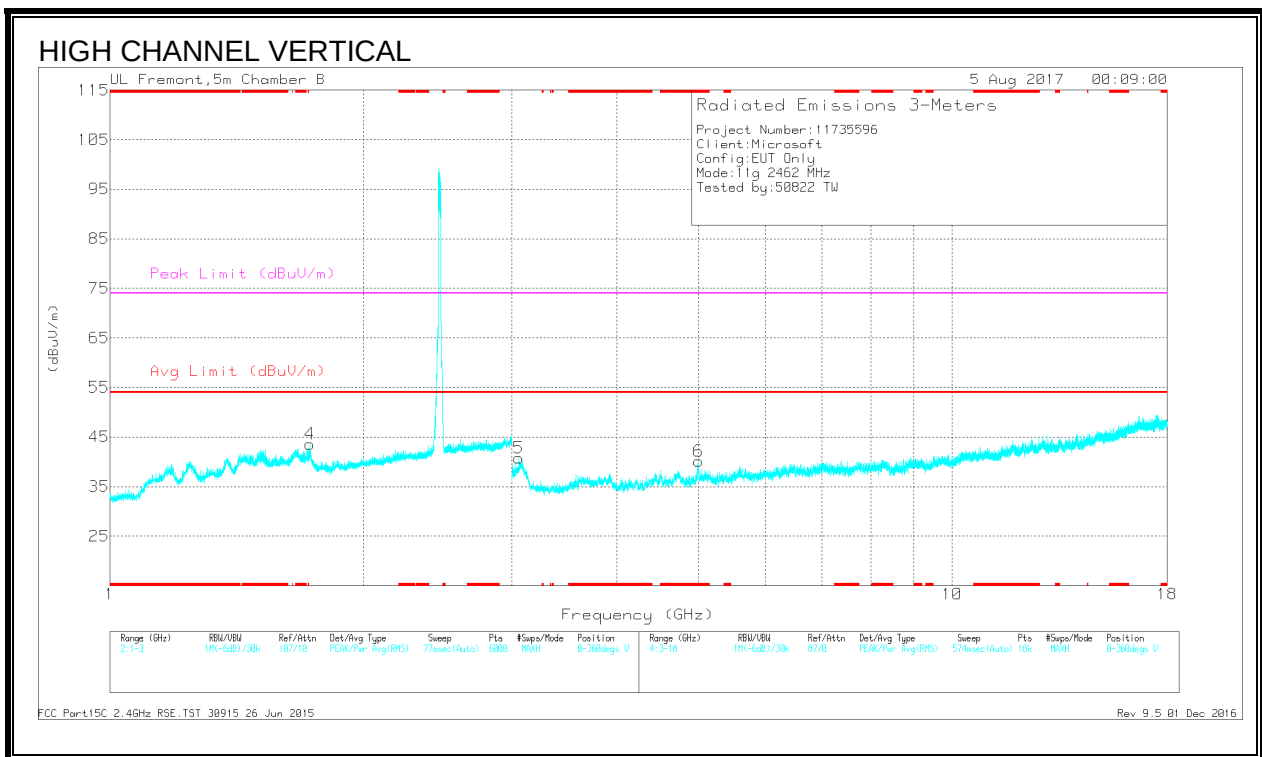
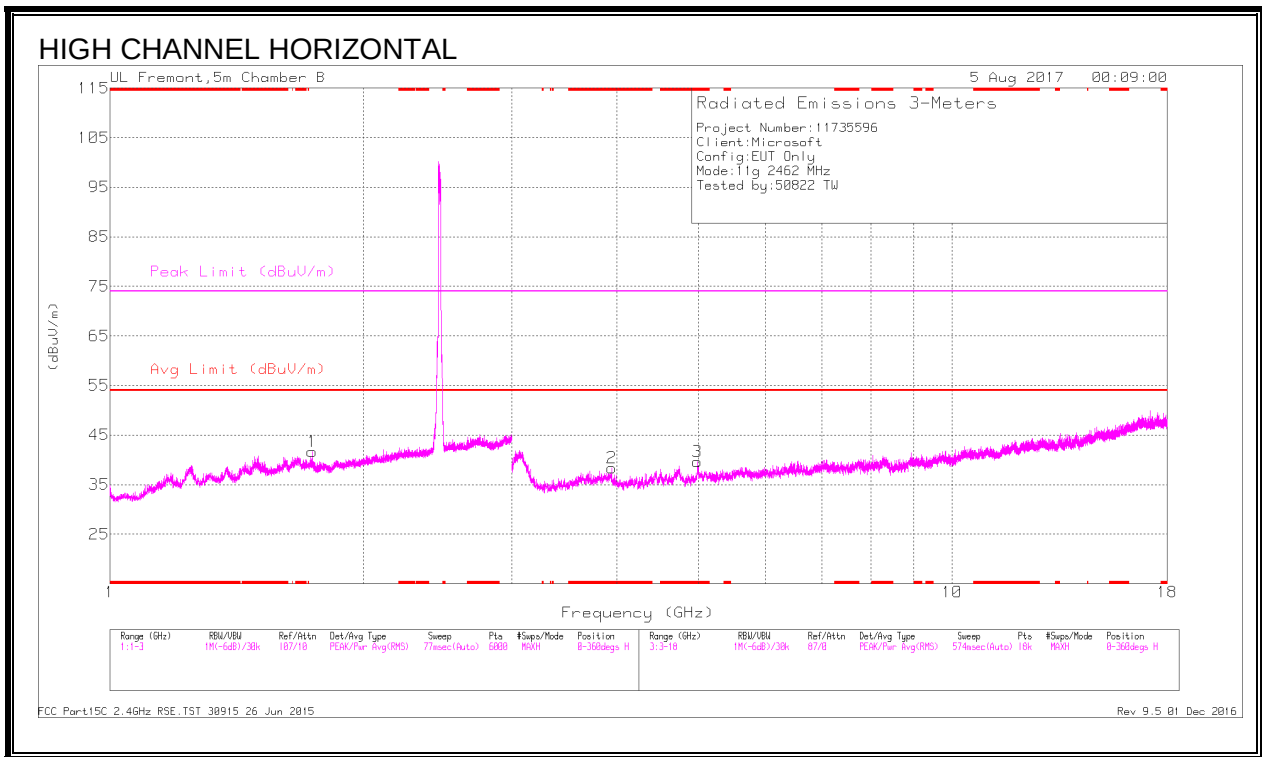
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 1.664	39.18	PK2	28.7	-21.1	46.78	-	-	74	-27.22	127	100	V
	* 1.664	27.74	MAv1	28.7	-21.1	35.34	54	-18.66	-	-	127	100	V
2	* 4.875	41.17	PK2	34.4	-30.2	45.37	-	-	74	-28.63	205	199	H
	* 4.875	29.22	MAv1	34.4	-30.2	33.42	54	-20.58	-	-	205	199	H
3	* 7.432	35.58	PK2	35.9	-26.5	44.98	-	-	74	-29.02	299	104	H
	* 7.432	25.22	MAv1	35.9	-26.5	34.62	54	-19.38	-	-	299	104	H
5	* 4.569	39.93	PK2	34.2	-30.1	44.03	-	-	74	-29.97	360	200	V
	* 4.569	28.55	MAv1	34.2	-30.1	32.65	54	-21.35	-	-	360	200	V
6	* 4.998	40.72	PK2	34.4	-28.9	46.22	-	-	74	-27.78	303	104	V
	* 4.997	27.52	MAv1	34.4	-29.1	32.82	54	-21.18	-	-	303	104	V
1	3.077	43.47	PK2	33.1	-31	45.57	-	-	-	-	31	199	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, CH 11)



Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.941	40.24	PK2	33.5	-29.7	44.04	-	-	74	-29.96	82	100	H
	* 3.942	28.72	MAv1	33.5	-29.7	32.52	54	-21.48	-	-	82	100	H
3	* 4.98	41.38	PK2	34.4	-29.1	46.68	-	-	74	-27.32	344	100	H
	* 4.982	27.96	MAv1	34.4	-29.3	33.06	54	-20.94	-	-	344	100	H
6	* 5	41.6	PK2	34.4	-28.7	47.3	-	-	74	-26.7	314	100	V
	* 5	27.82	MAv1	34.4	-28.7	33.52	54	-20.48	-	-	314	100	V
4	1.725	40.69	PK2	29.4	-20.8	49.29	-	-	-	-	215	100	V
1	1.737	38.83	PK2	29.5	-20.9	47.43	-	-	-	-	25	100	H
5	3.06	45.42	PK2	33	-31	47.42	-	-	-	-	66	100	V

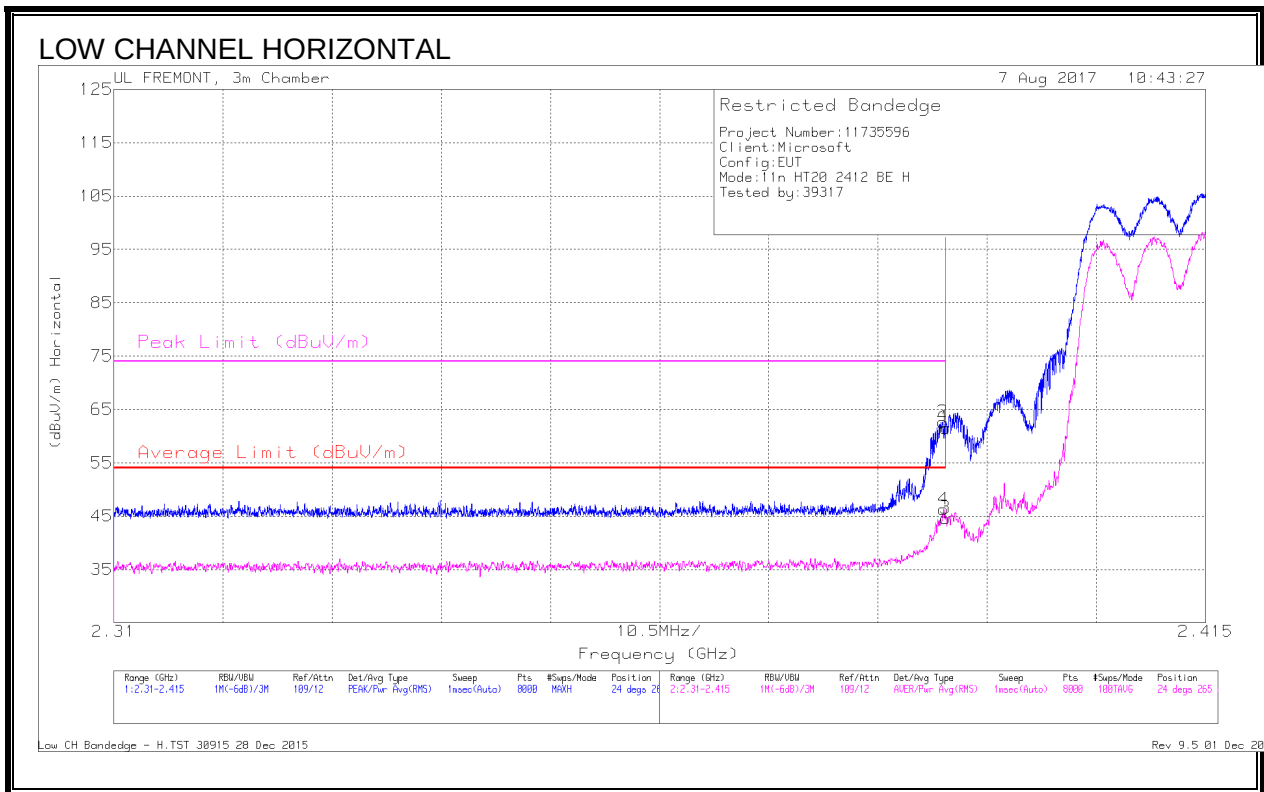
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2.3 11n-HT20 MIMO MODE IN THE 2.4GHz BAND

BANDEDGE (LOW CHANNEL, CH 1)

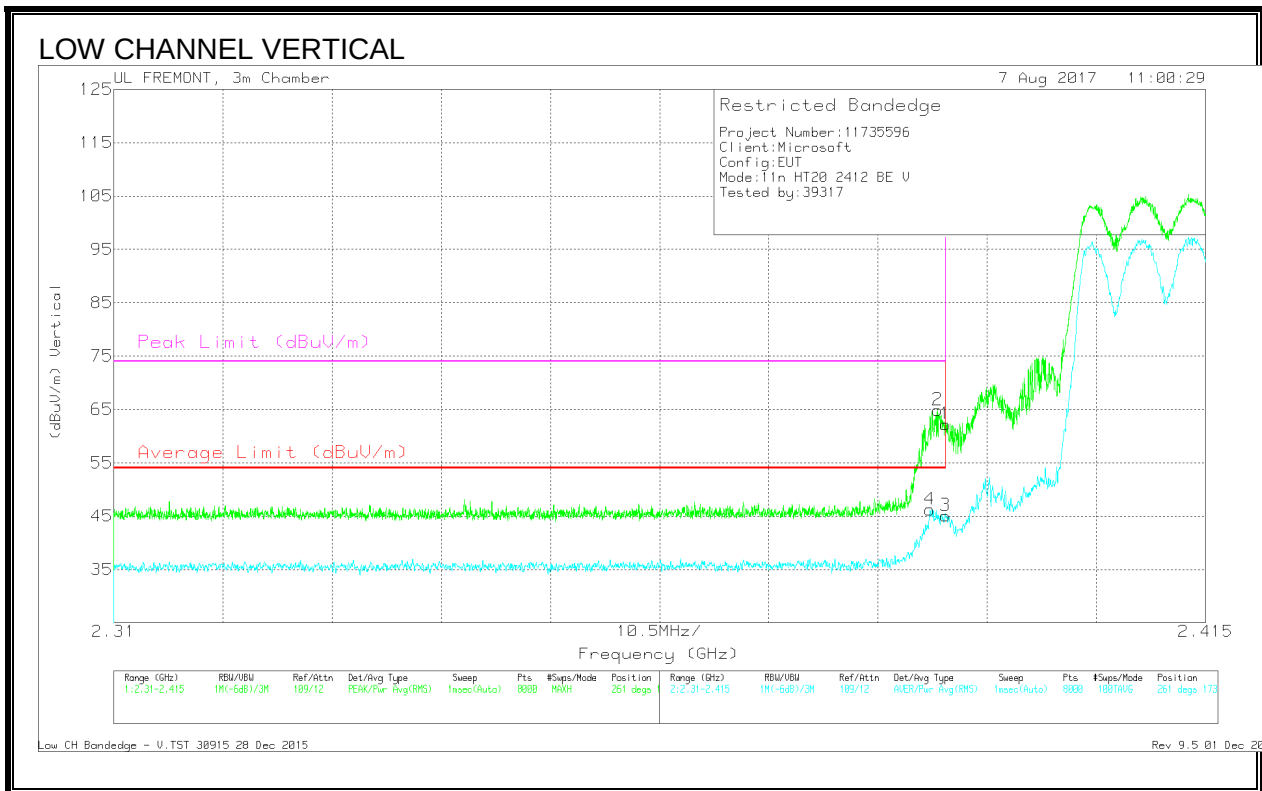


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	52.21	Pk	31.9	-22.6	61.51	-	-	74	-12.49	24	265	H
2	2.39	53.23	Pk	31.9	-22.5	62.63	-	-	74	-11.37	24	265	H
3	2.39	35.33	RMS	31.9	-22.6	44.63	54	-9.37	-	-	24	265	H
4	2.39	36.87	RMS	31.9	-22.5	46.27	54	-7.73	-	-	24	265	H

Pk - Peak detector

RMS - RMS detection



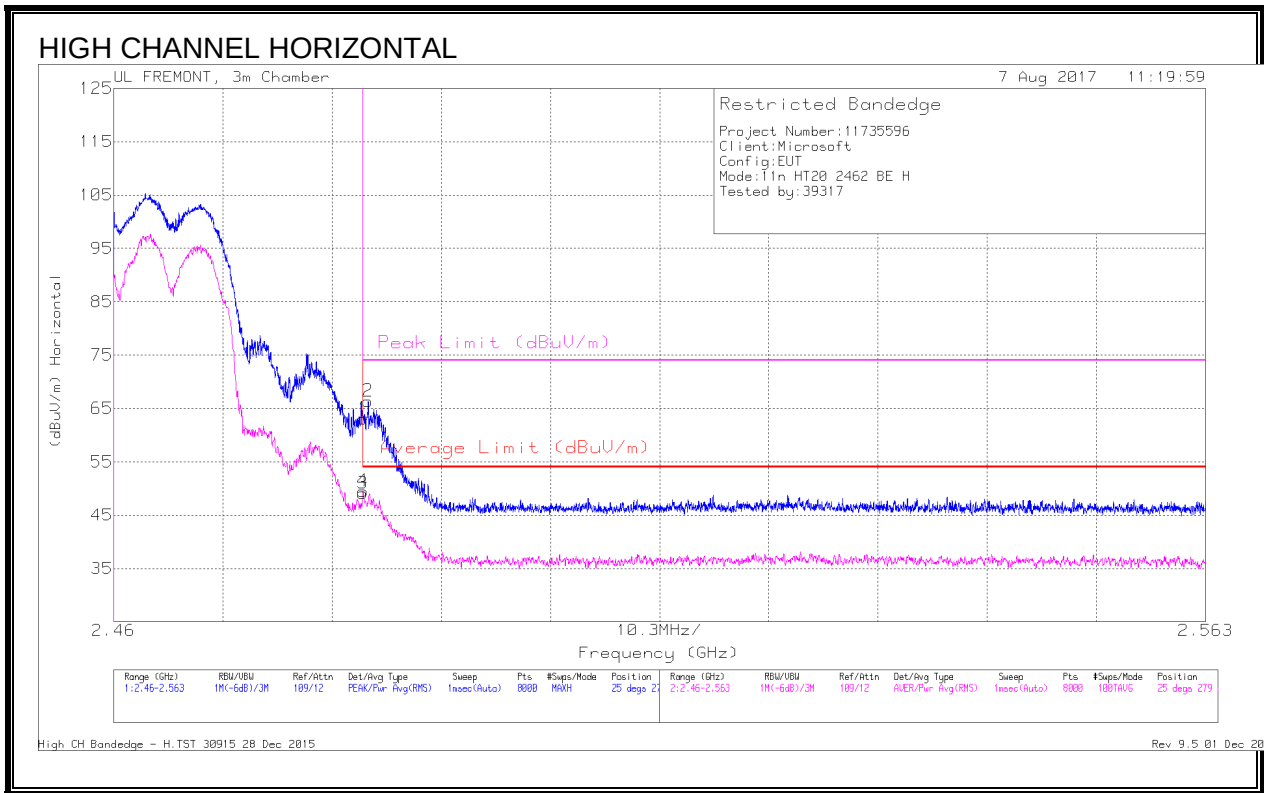
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.388	36.84	RMS	31.9	-22.5	46.24	54	-7.76	-	-	261	173	V
2	2.389	55.5	Pk	31.9	-22.5	64.9	-	-	74	-9.1	261	173	V
1	2.39	52.93	Pk	31.9	-22.6	62.23	-	-	74	-11.77	261	173	V
3	2.39	35.81	RMS	31.9	-22.6	45.11	54	-8.89	-	-	261	173	V

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

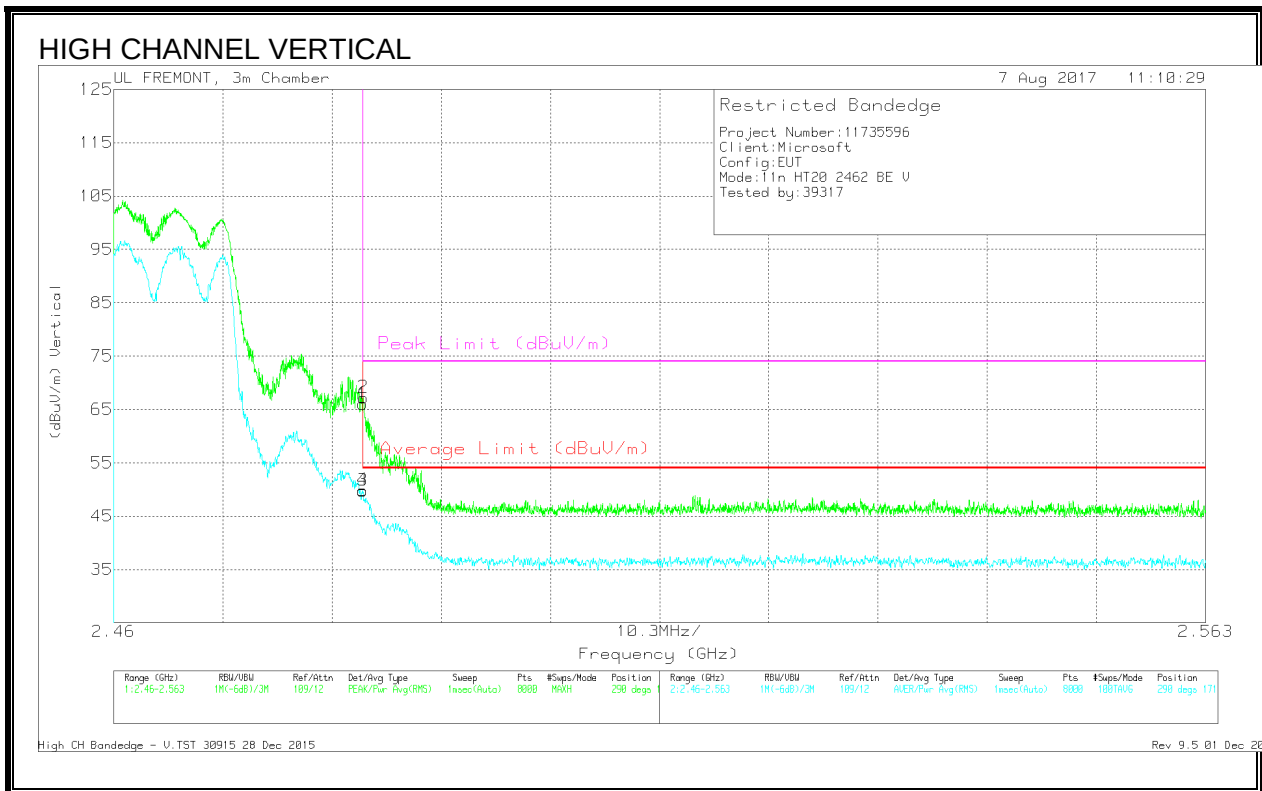


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	53.37	Pk	32.4	-22.7	63.07	-	-	74	-10.93	25	279	H
2	2.484	56.66	Pk	32.4	-22.7	66.36	-	-	74	-7.64	25	279	H
3	2.484	39.38	RMS	32.4	-22.7	49.08	54	-4.92	-	-	25	279	H
4	2.484	39.8	RMS	32.4	-22.7	49.5	54	-4.5	-	-	25	279	H

Pk - Peak detector

RMS - RMS detection

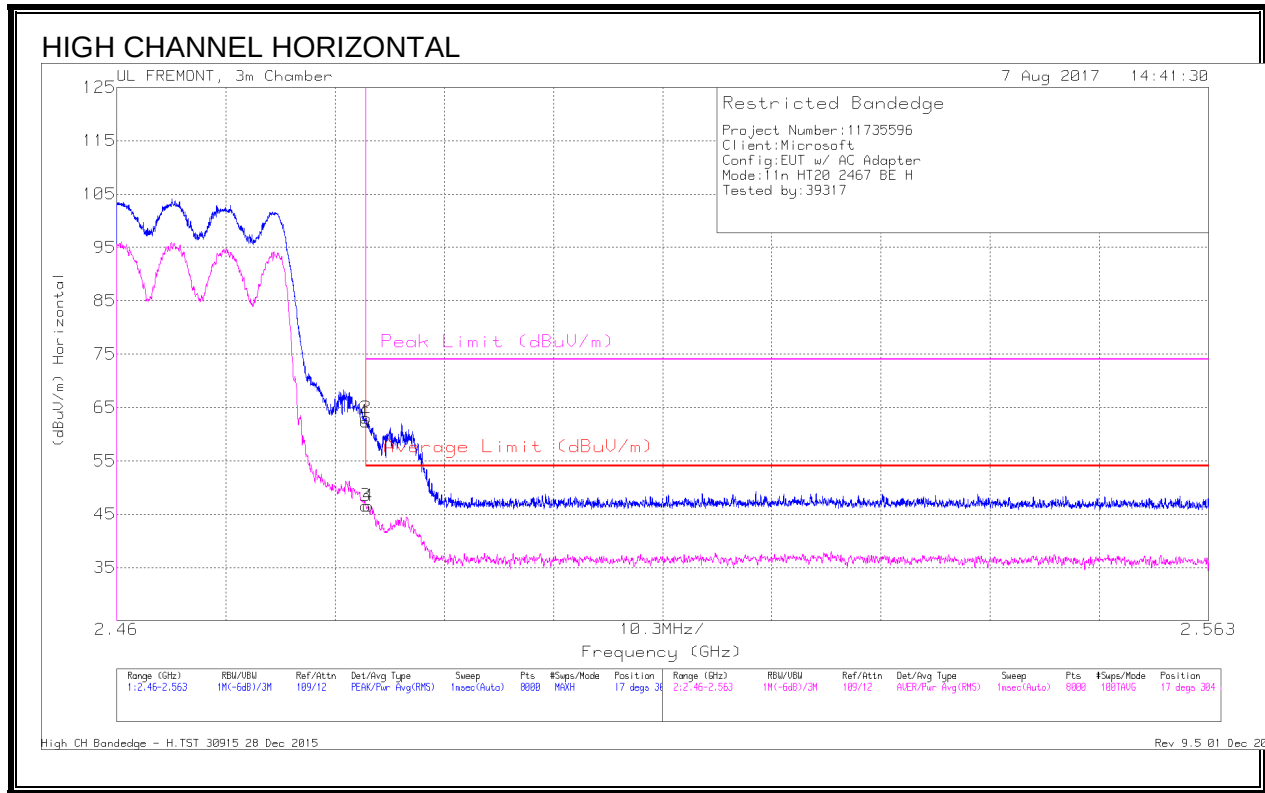


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	56.35	Pk	32.4	-22.7	66.05	-	-	74	-7.95	290	171	V
2	2.484	57.52	Pk	32.4	-22.7	67.22	-	-	74	-6.78	290	171	V
3	2.484	40.07	RMS	32.4	-22.7	49.77	54	-4.23	-	-	290	171	V
4	2.484	40.16	RMS	32.4	-22.7	49.86	54	-4.14	-	-	290	171	V

Pk - Peak detector
RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 12)

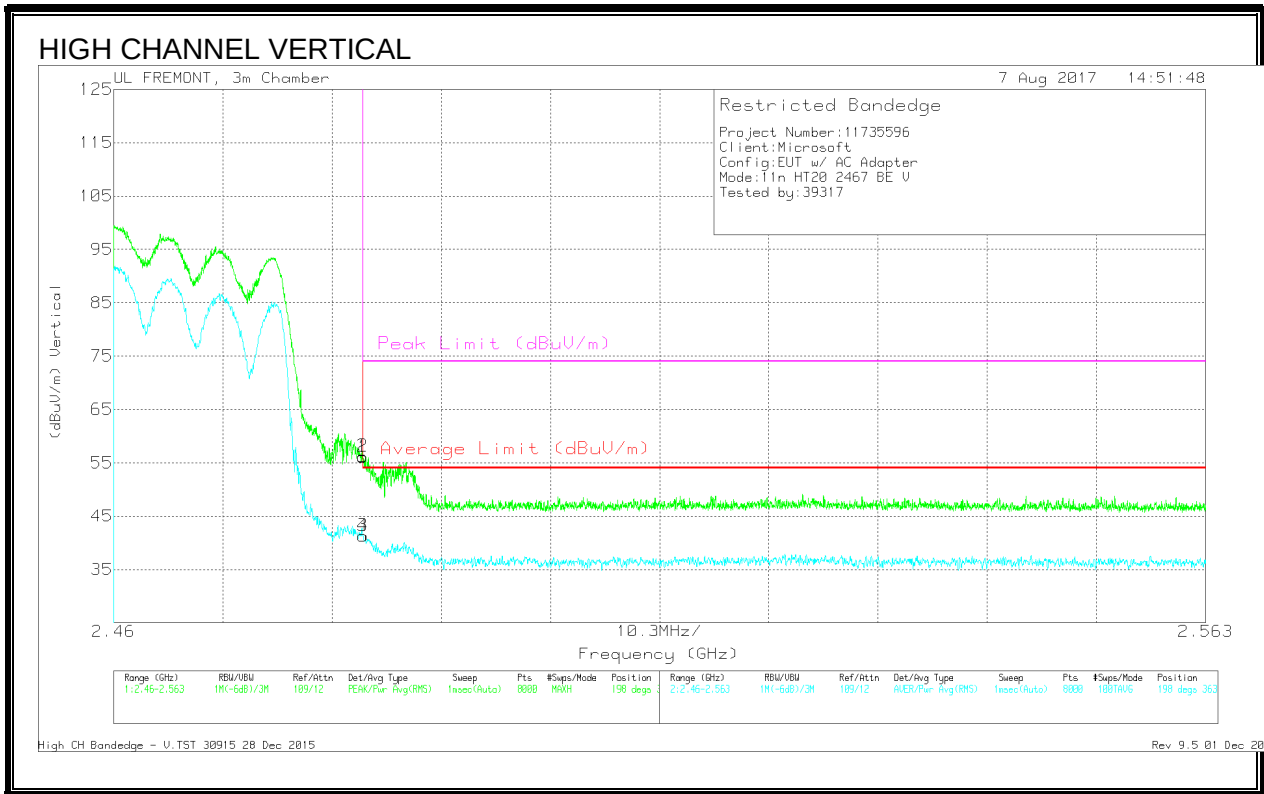


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	52.66	Pk	32.4	-22.7	62.36	-	-	74	-11.64	17	304	H
2	2.484	53.34	Pk	32.4	-22.7	63.04	-	-	74	-10.96	17	304	H
3	2.484	36.88	RMS	32.4	-22.7	46.58	54	-7.42	-	-	17	304	H
4	2.484	36.83	RMS	32.4	-22.7	46.53	54	-7.47	-	-	17	304	H

Pk - Peak detector

RMS - RMS detection

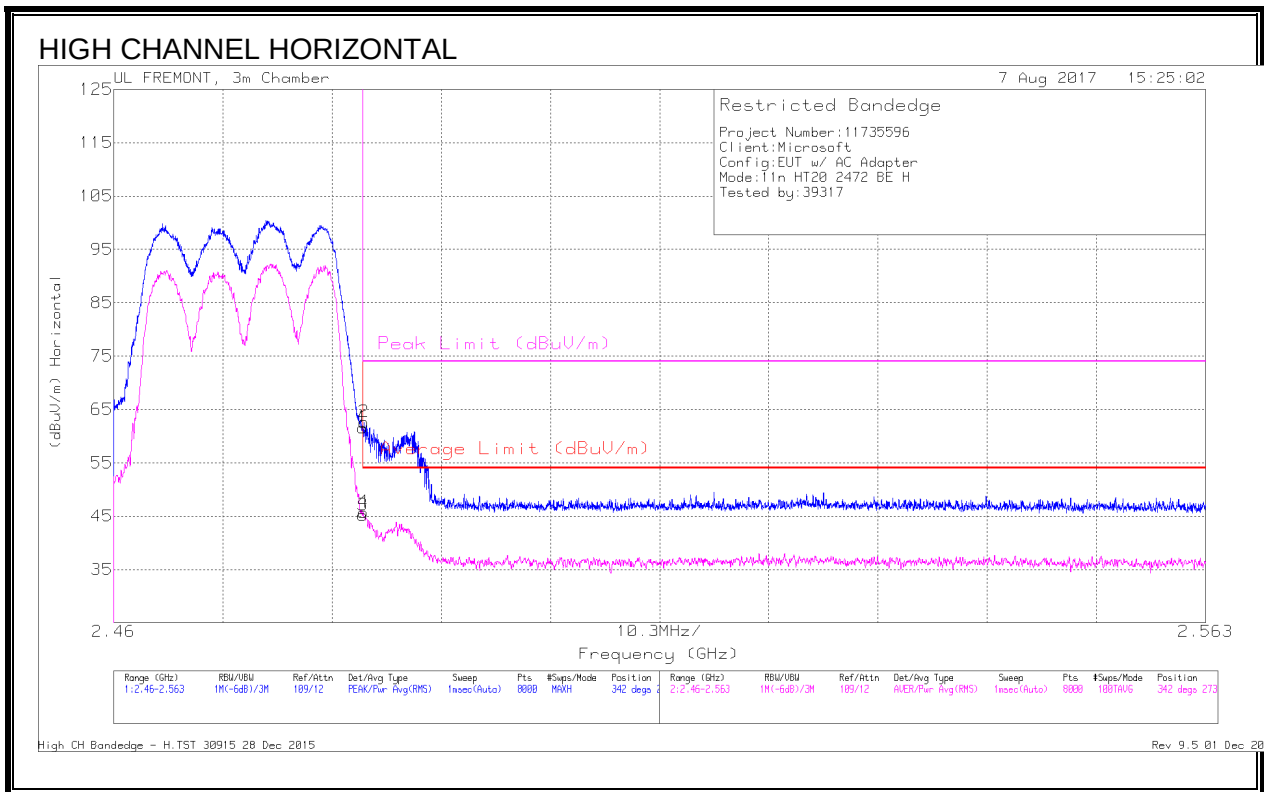


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	46.39	Pk	32.4	-22.7	56.09	-	-	74	-17.91	198	363	V
2	2.484	46.51	Pk	32.4	-22.7	56.21	-	-	74	-17.79	198	363	V
3	2.484	31.63	RMS	32.4	-22.7	41.33	54	-12.67	-	-	198	363	V
4	2.484	31.59	RMS	32.4	-22.7	41.29	54	-12.71	-	-	198	363	V

Pk - Peak detector
RMS - RMS detection

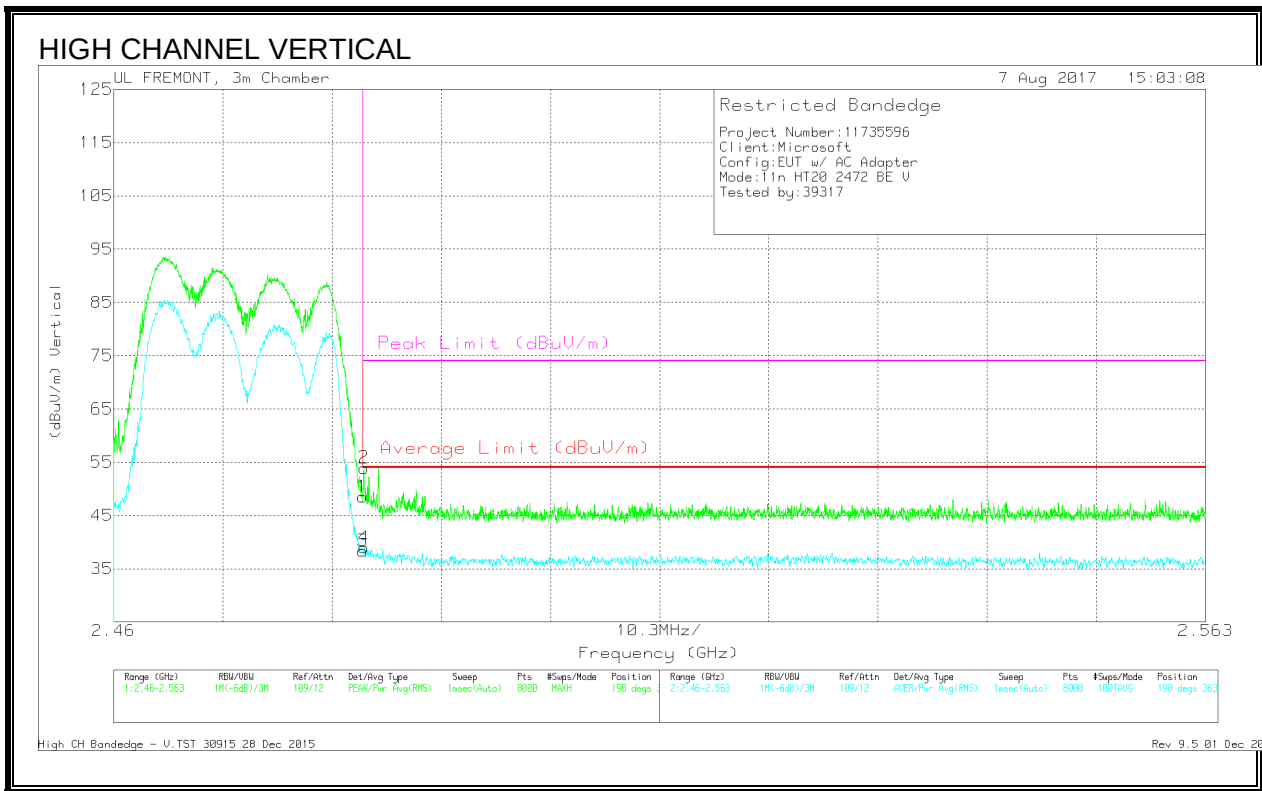
BANDEDGE (HIGH CHANNEL, CH 13)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	51.93	Pk	32.4	-22.7	61.63	-	-	74	-12.37	342	273	H
2	2.484	52.91	Pk	32.4	-22.7	62.61	-	-	74	-11.39	342	273	H
3	2.484	35.5	RMS	32.4	-22.7	45.2	54	-8.8	-	-	342	273	H
4	2.484	36.02	RMS	32.4	-22.7	45.72	54	-8.28	-	-	342	273	H

Pk - Peak detector
RMS - RMS detection

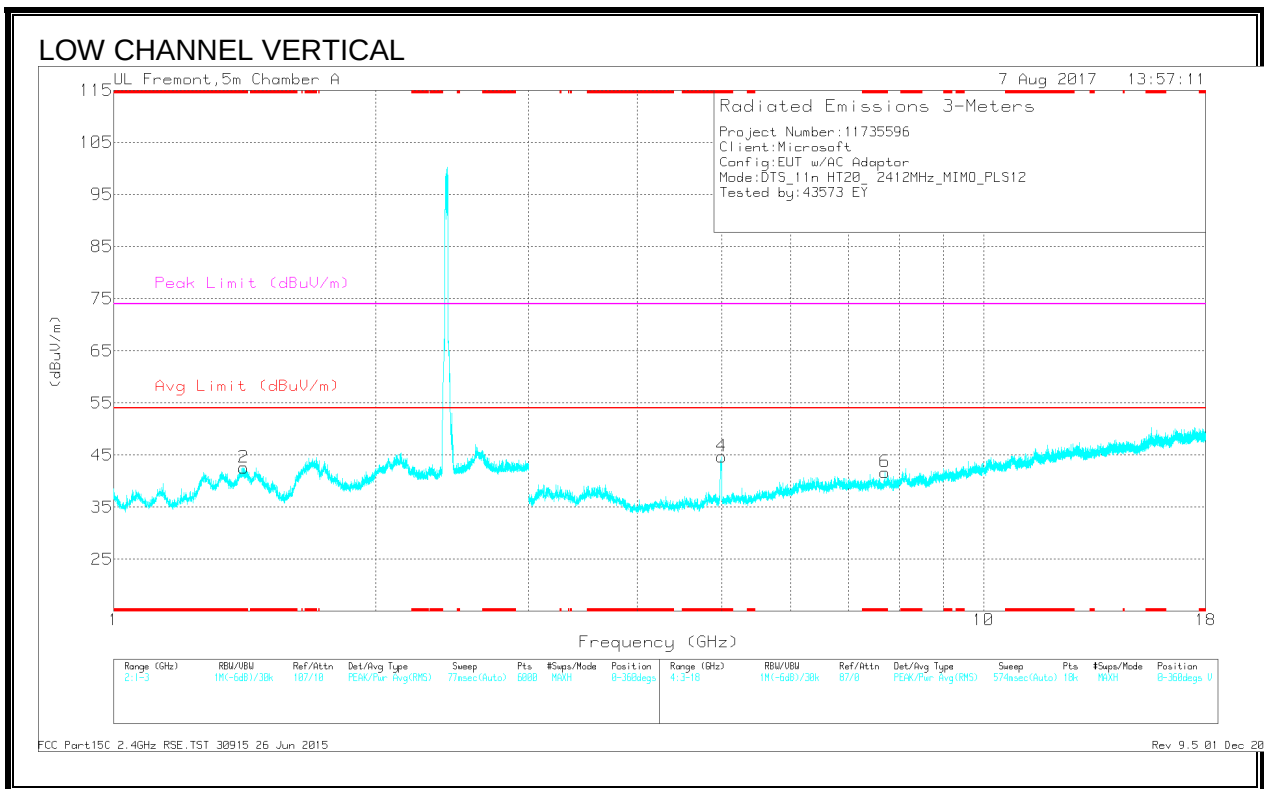
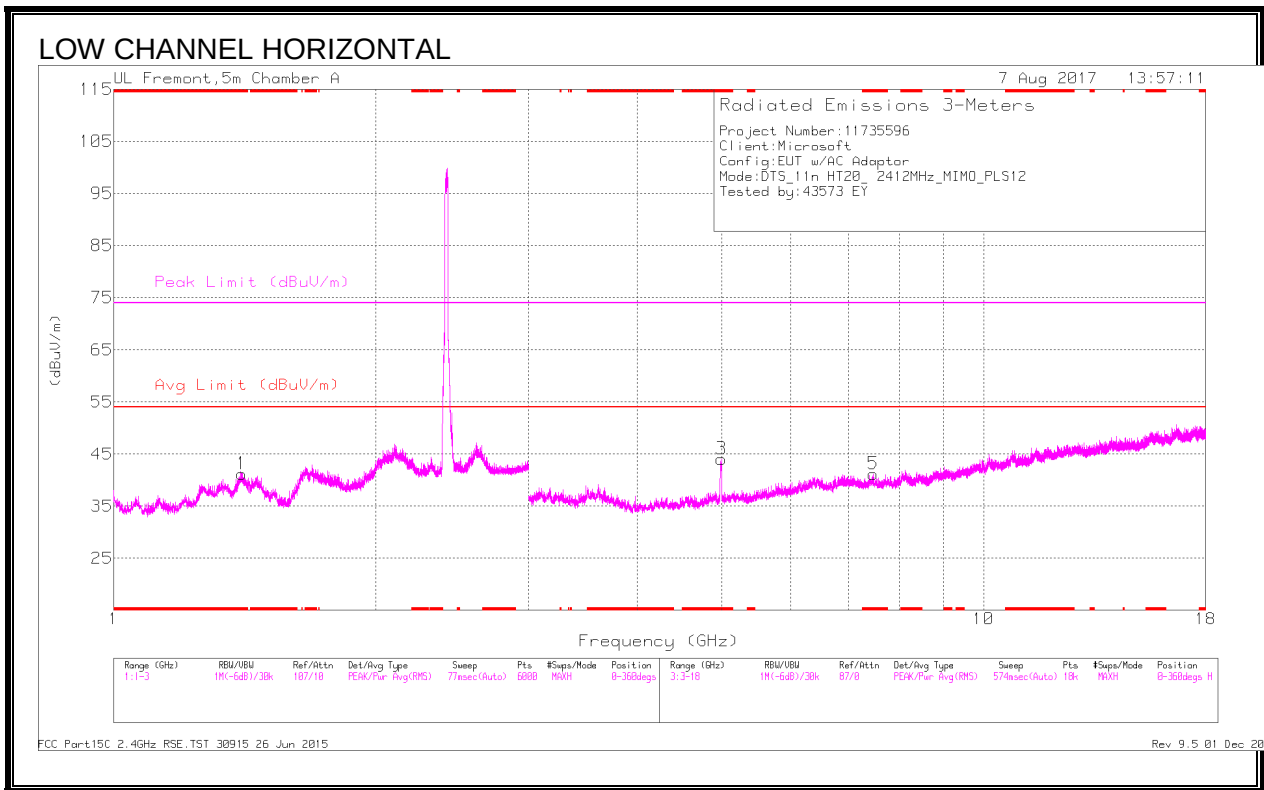


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	38.77	Pk	32.4	-22.7	48.47	-	-	74	-25.53	198	363	V
2	2.484	44.22	Pk	32.4	-22.7	53.92	-	-	74	-20.08	198	363	V
3	2.484	28.65	RMS	32.4	-22.7	38.35	54	-15.65	-	-	198	363	V
4	2.484	29.27	RMS	32.4	-22.7	38.97	54	-15.03	-	-	198	363	V

Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, CH 1)



Radiated Emissions

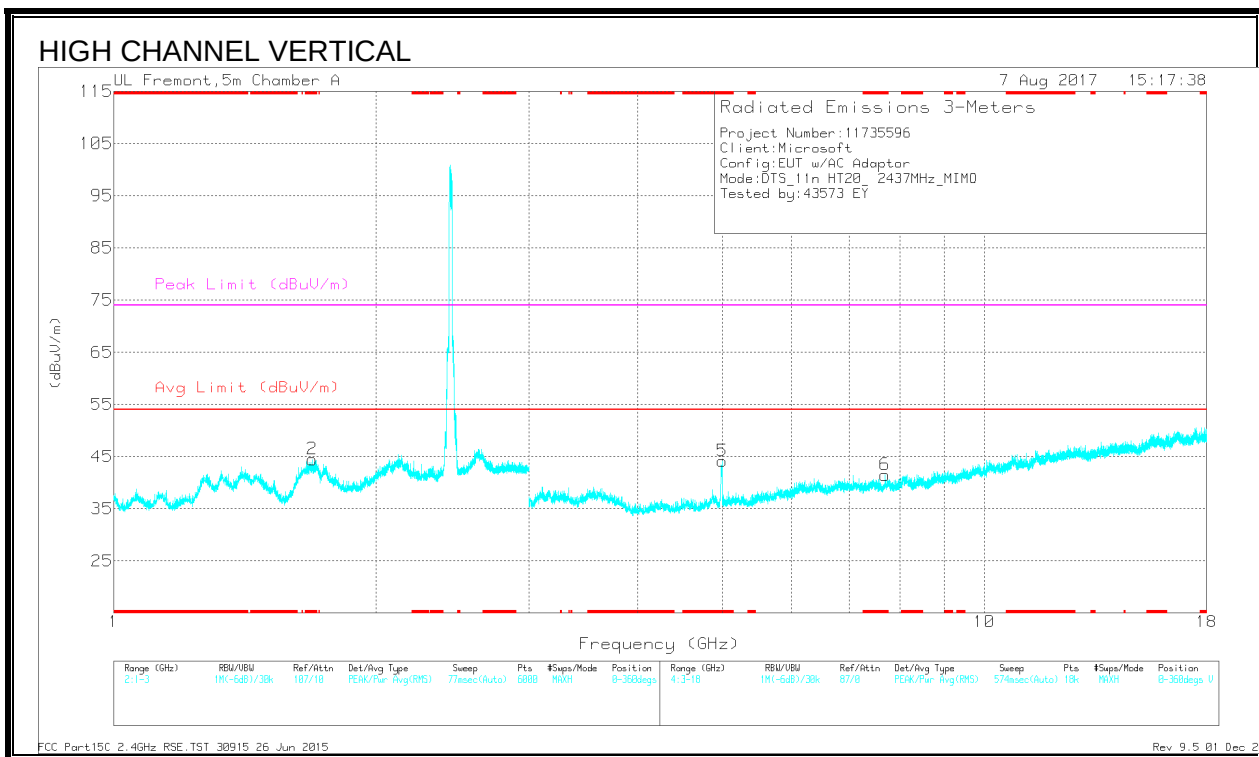
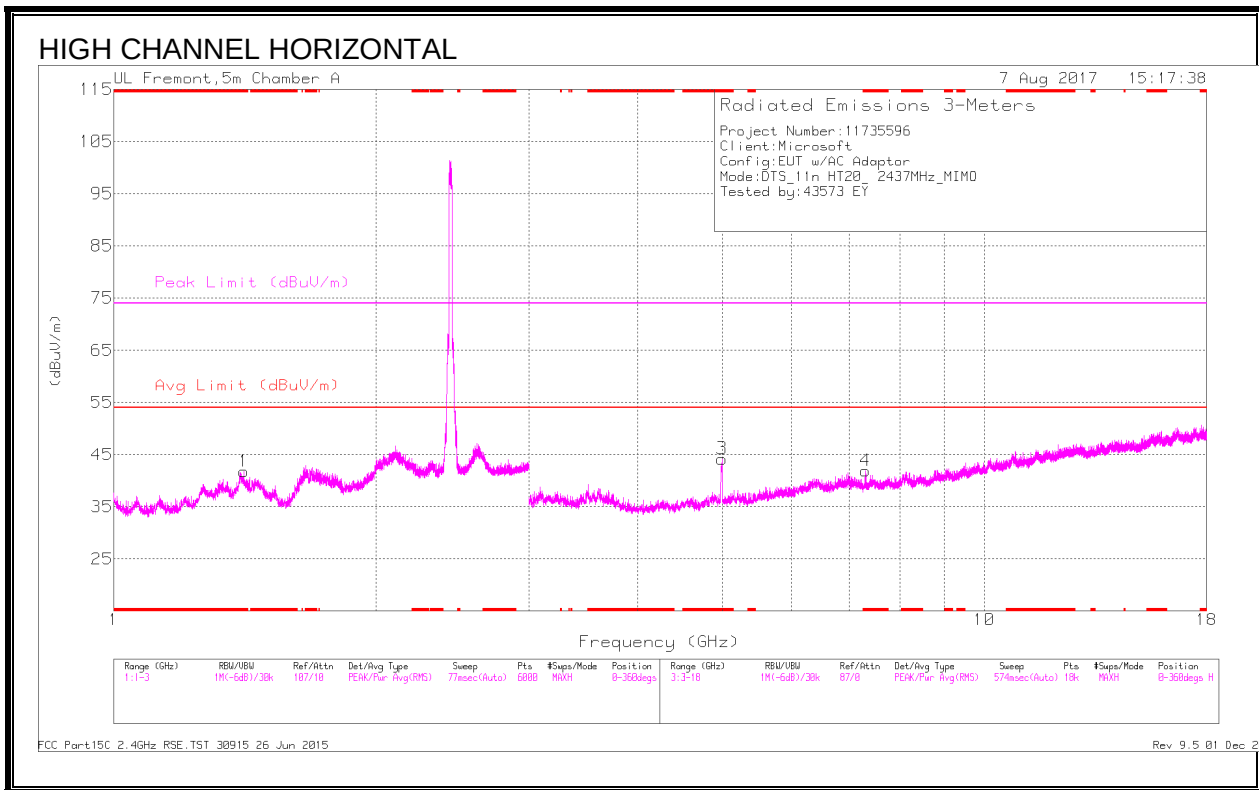
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.402	43.9	PK2	28.6	-23.3	49.2	-	-	74	-24.8	173	202	H
	* 1.401	32.35	MAv1	28.6	-23.3	37.65	54	-16.35	-	-	173	202	H
2	* 1.412	44.78	PK2	28.6	-23.3	50.08	-	-	74	-23.92	199	158	V
	* 1.411	33.13	MAv1	28.6	-23.3	38.43	54	-15.57	-	-	199	158	V
3	* 4.997	45.45	PK2	34.3	-28.2	51.55	-	-	74	-22.45	328	107	H
	* 4.997	31.77	MAv1	34.3	-28.2	37.87	54	-16.13	-	-	328	107	H
5	* 7.473	33.3	PK2	35.7	-22.2	46.8	-	-	74	-27.2	221	223	H
	* 7.471	21.66	MAv1	35.7	-22.2	35.16	54	-18.84	-	-	221	223	H
4	* 4.983	45.08	PK2	34.3	-28	51.38	-	-	74	-22.62	100	234	V
	* 4.984	31.15	MAv1	34.3	-28	37.45	54	-16.55	-	-	100	234	V
6	* 7.696	35.01	PK2	35.7	-23.1	47.61	-	-	74	-26.39	113	136	V
	* 7.704	22.34	MAv1	35.7	-22.9	35.14	54	-18.86	-	-	113	136	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, CH 6)



Radiated Emissions

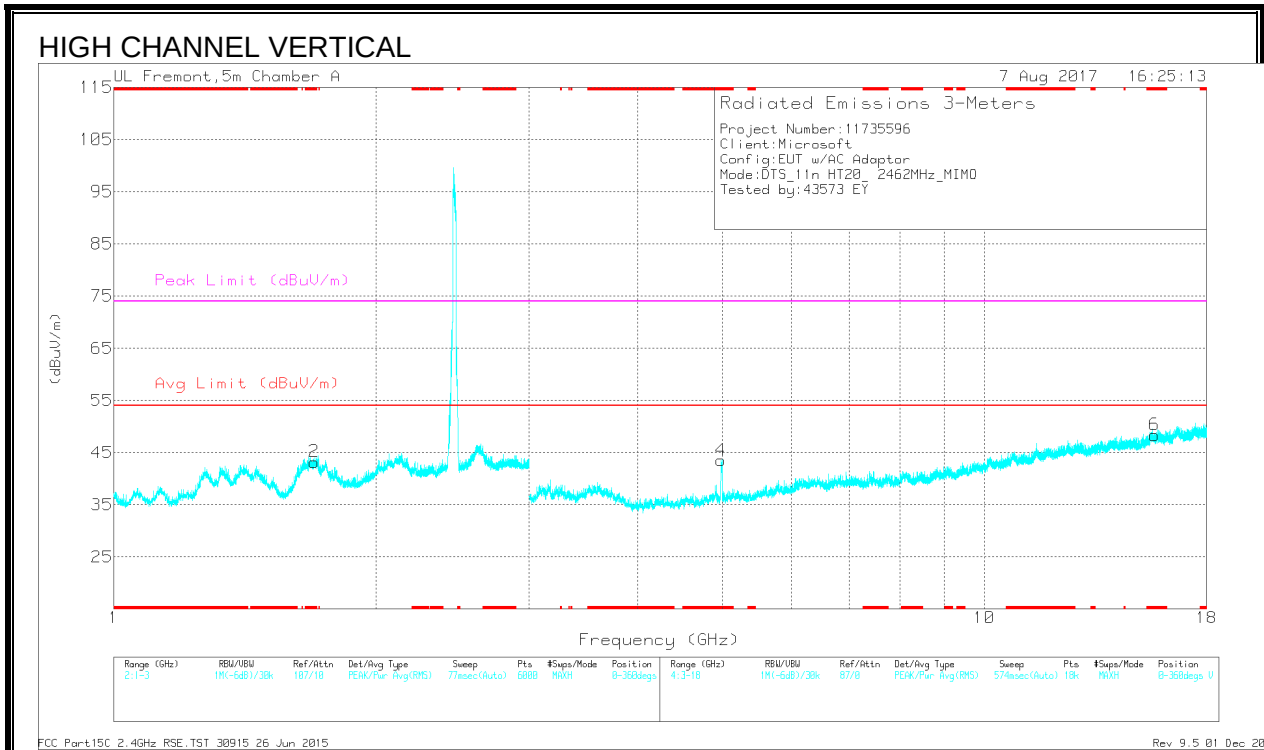
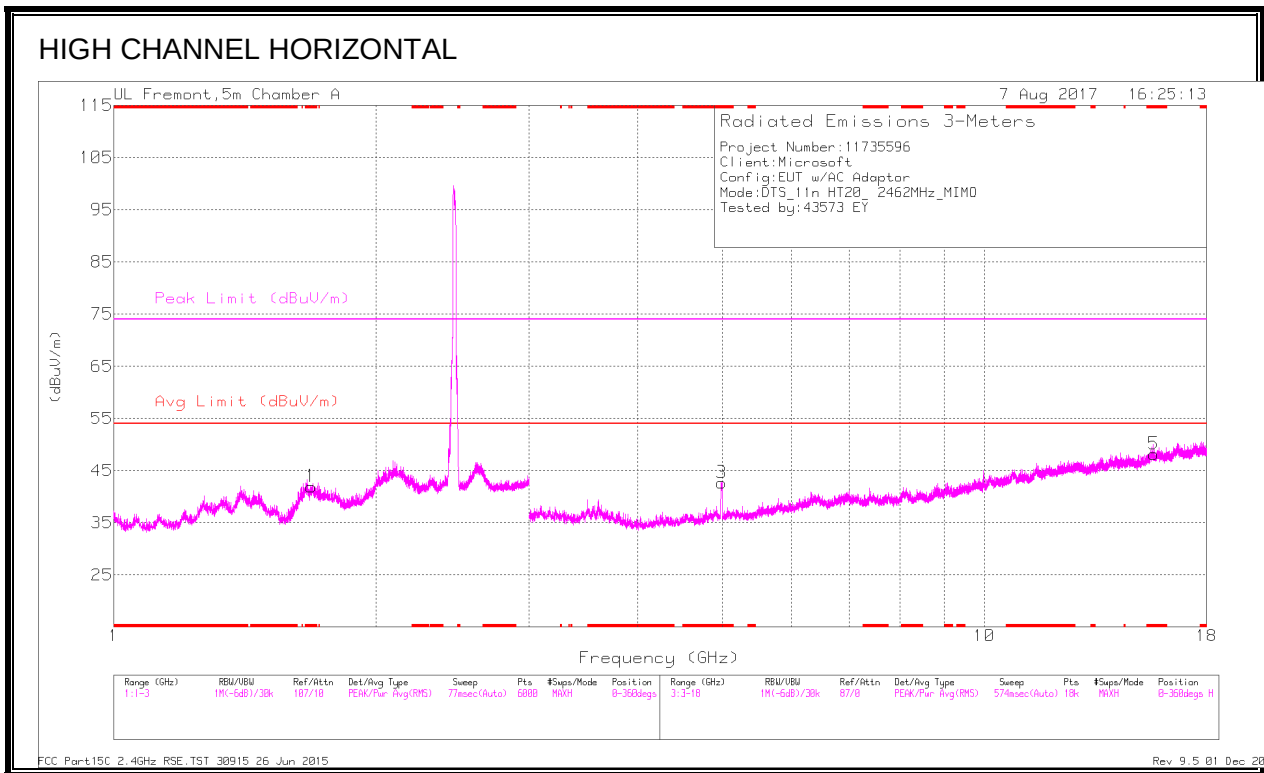
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.41	43.86	PK2	28.6	-23.3	49.16	-	-	74	-24.84	176	253	H
	* 1.409	31.54	MAv1	28.6	-23.3	36.84	54	-17.16	-	-	176	253	H
2	* 1.69	45.61	PK2	28.9	-23.3	51.21	-	-	74	-22.79	206	288	V
	* 1.689	34.53	MAv1	28.9	-23.3	40.13	54	-13.87	-	-	206	288	V
3	* 4.999	46.23	PK2	34.3	-28.2	52.33	-	-	74	-21.67	331	101	H
	* 4.997	31.9	MAv1	34.3	-28.2	38	54	-16	-	-	331	101	H
4	* 7.309	36.74	PK2	35.7	-24.1	48.34	-	-	74	-25.66	102	197	H
	* 7.305	24.02	MAv1	35.7	-24	35.72	54	-18.28	-	-	102	197	H
5	* 4.986	45.01	PK2	34.3	-28.1	51.21	-	-	74	-22.79	97	217	V
	* 4.985	30.96	MAv1	34.3	-28	37.26	54	-16.74	-	-	97	217	V
6	* 7.694	33.64	PK2	35.7	-23.1	46.24	-	-	74	-27.76	163	191	V
	* 7.691	22.24	MAv1	35.7	-23.1	34.84	54	-19.16	-	-	163	191	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, CH 11)



Radiated Emissions Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.686	45.33	PK2	28.8	-23.3	50.83	-	-	74	-23.17	186	243	H
	* 1.691	33.72	MAv1	28.9	-23.3	39.32	54	-14.68	-	-	186	243	H
2	* 1.699	46.14	PK2	29	-23.3	51.84	-	-	74	-22.16	211	169	V
	* 1.695	34.25	MAv1	28.9	-23.2	39.95	54	-14.05	-	-	211	169	V
3	* 4.992	44.86	PK2	34.3	-28.1	51.06	-	-	74	-22.94	327	106	H
	* 4.995	31.17	MAv1	34.3	-28.1	37.37	54	-16.63	-	-	327	106	H
5	* 15.659	32.64	PK2	40.1	-17.9	54.84	-	-	74	-19.16	146	224	H
	* 15.659	21.13	MAv1	40.1	-17.9	43.33	54	-10.67	-	-	146	224	H
4	* 4.98	44.8	PK2	34.3	-28	51.1	-	-	74	-22.9	108	201	V
	* 4.983	30.84	MAv1	34.3	-28	37.14	54	-16.86	-	-	108	201	V
6	* 15.68	33.17	PK2	40.1	-18.1	55.17	-	-	74	-18.83	109	234	V
	* 15.679	21.28	MAv1	40.1	-18.1	43.28	54	-10.72	-	-	109	234	V

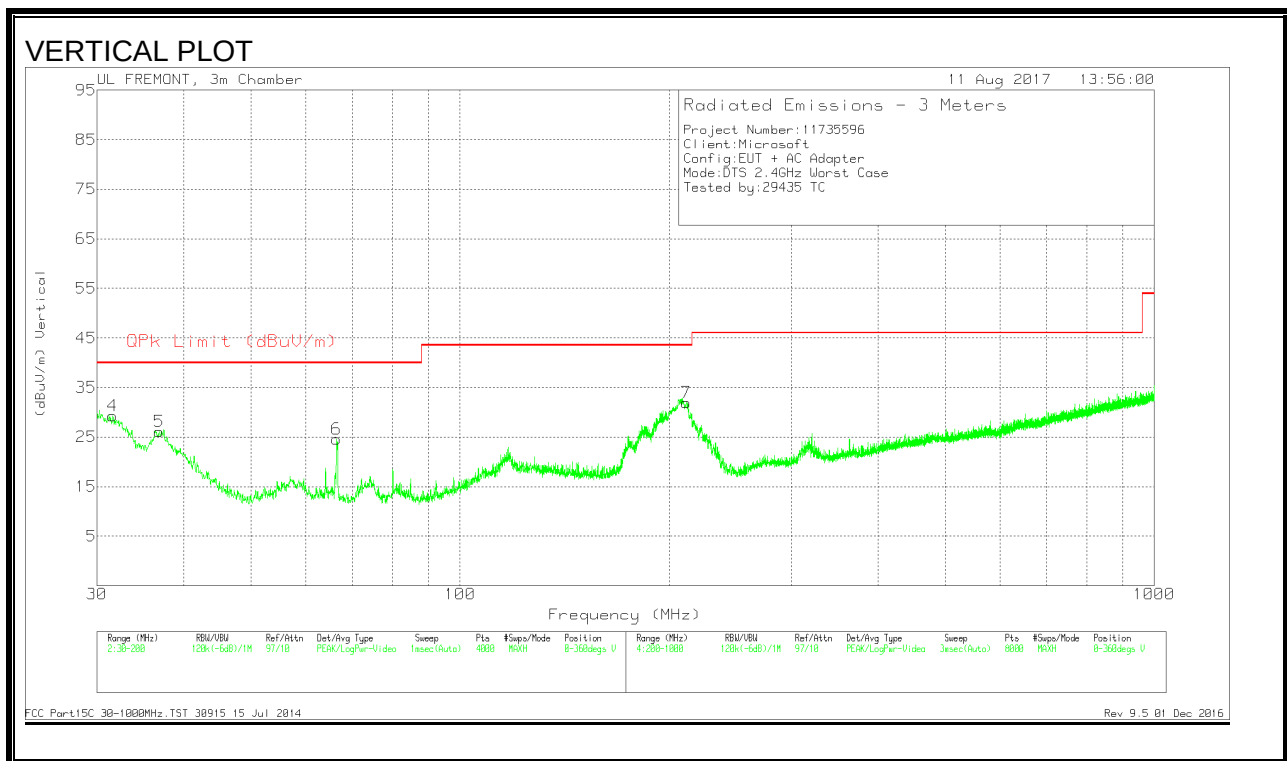
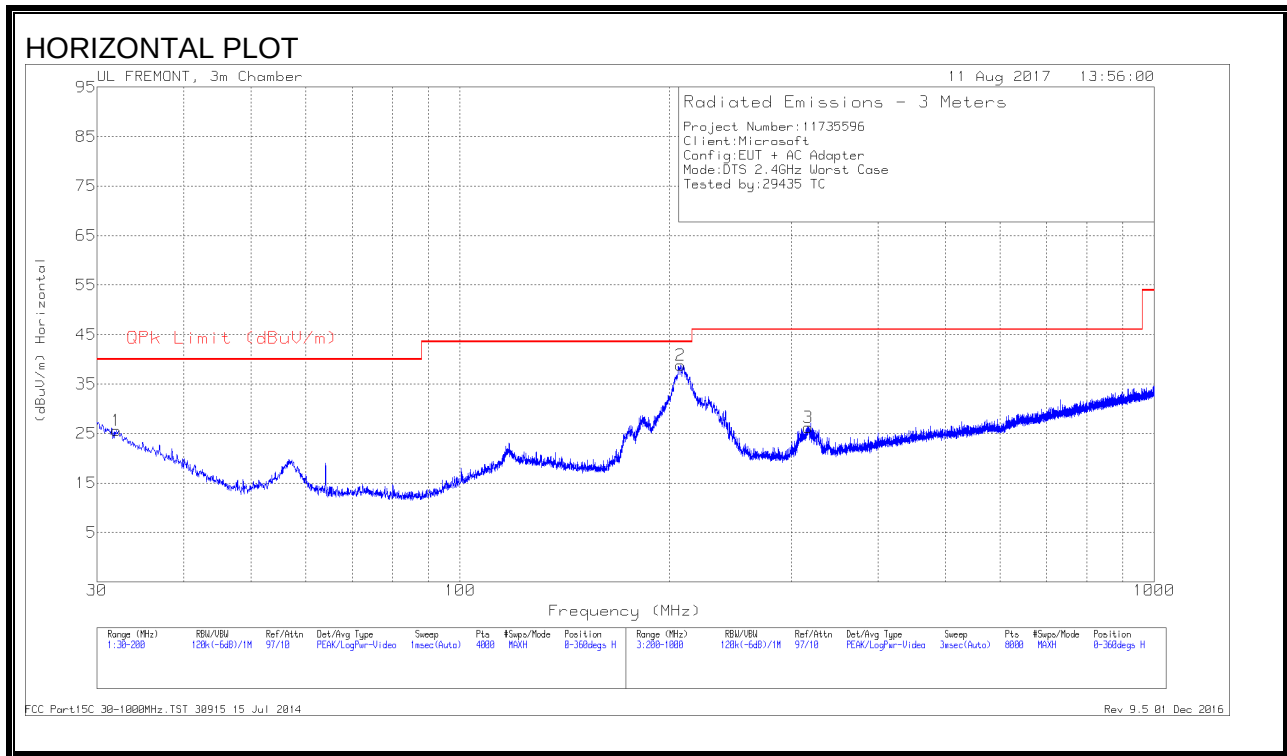
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.3 WORST-CASE BELOW 1 GHz

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



Radiated Emissions

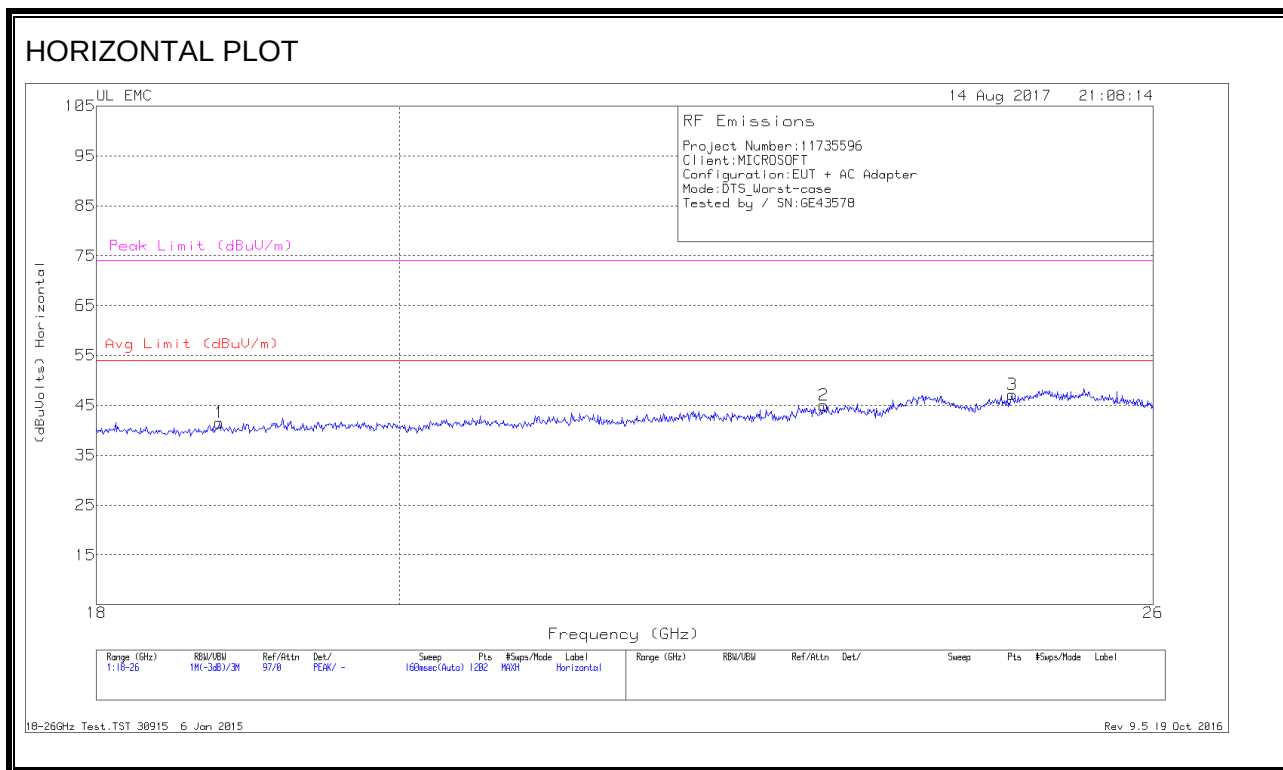
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	31.6154	32.42	Pk	24.1	-27.2	29.32	40	-10.68	0-360	100	V
1	31.998	28.85	Pk	23.9	-27.2	25.55	40	-14.45	0-360	400	H
5	36.8443	32.98	Pk	20.3	-27.2	26.08	40	-13.92	0-360	100	V
6	66.4319	39.26	Pk	12	-26.7	24.56	40	-15.44	0-360	100	V
2	208.1141	49.41	Pk	14.8	-25	39.21	43.52	-4.31	215	160	H
		45.31	Qp	14.8	-25	35.11	43.52	-8.41	215	160	H
7	211.8015	42.5	Pk	14.4	-24.9	32	43.52	-11.52	0-360	200	V
3	317.3152	32.68	Pk	17.8	-24.2	26.28	46.02	-19.74	0-360	100	H

Pk - Peak detector

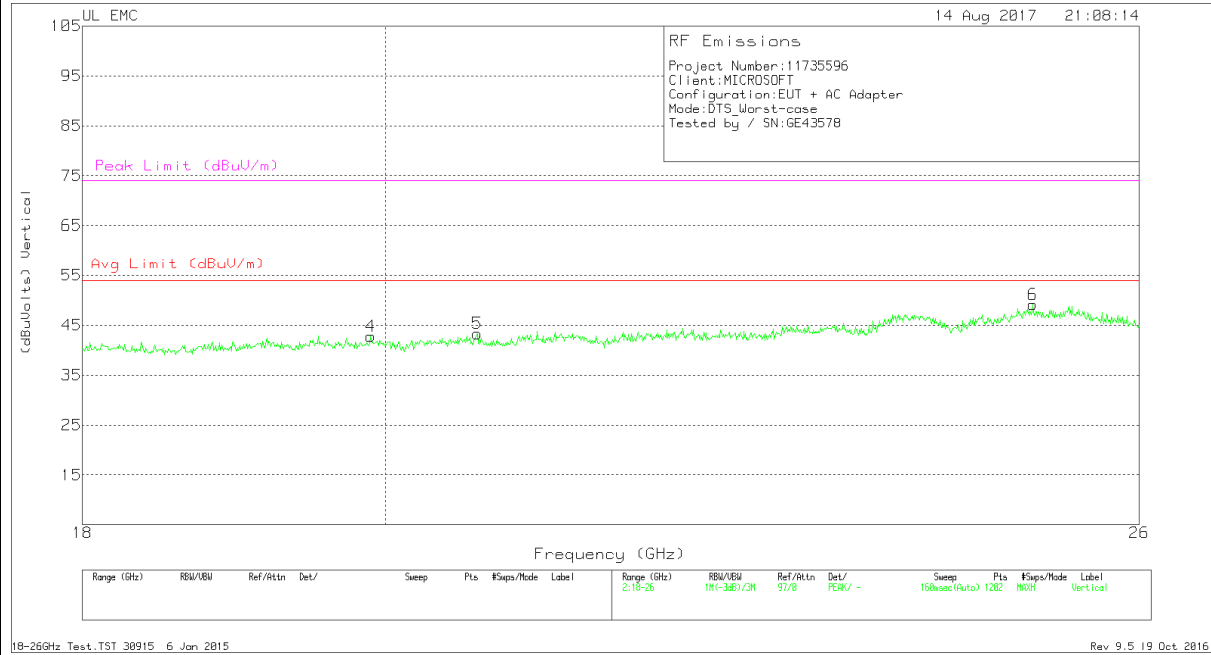
Qp - Quasi-Peak detector

10.5. WORST-CASE 18 to 26 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)



VERTICAL PLOT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T449 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.786	40.7	Pk	32.3	-22	-9.5	41.5	54	-12.5	74	-32.5
2	23.182	41.7	Pk	33.6	-20.8	-9.5	45	54	-9	74	-29
3	24.754	42.77	Pk	34.1	-20.2	-9.5	47.17	54	-6.83	74	-26.83
4	19.898	41.53	Pk	32.7	-21.9	-9.5	42.83	54	-11.17	74	-31.17
5	20.651	41.63	Pk	33	-21.8	-9.5	43.33	54	-10.67	74	-30.67
6	25.054	44.67	Pk	34.4	-20.4	-9.5	49.17	54	-4.83	74	-24.83

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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

*Decreases with the logarithm of the frequency.

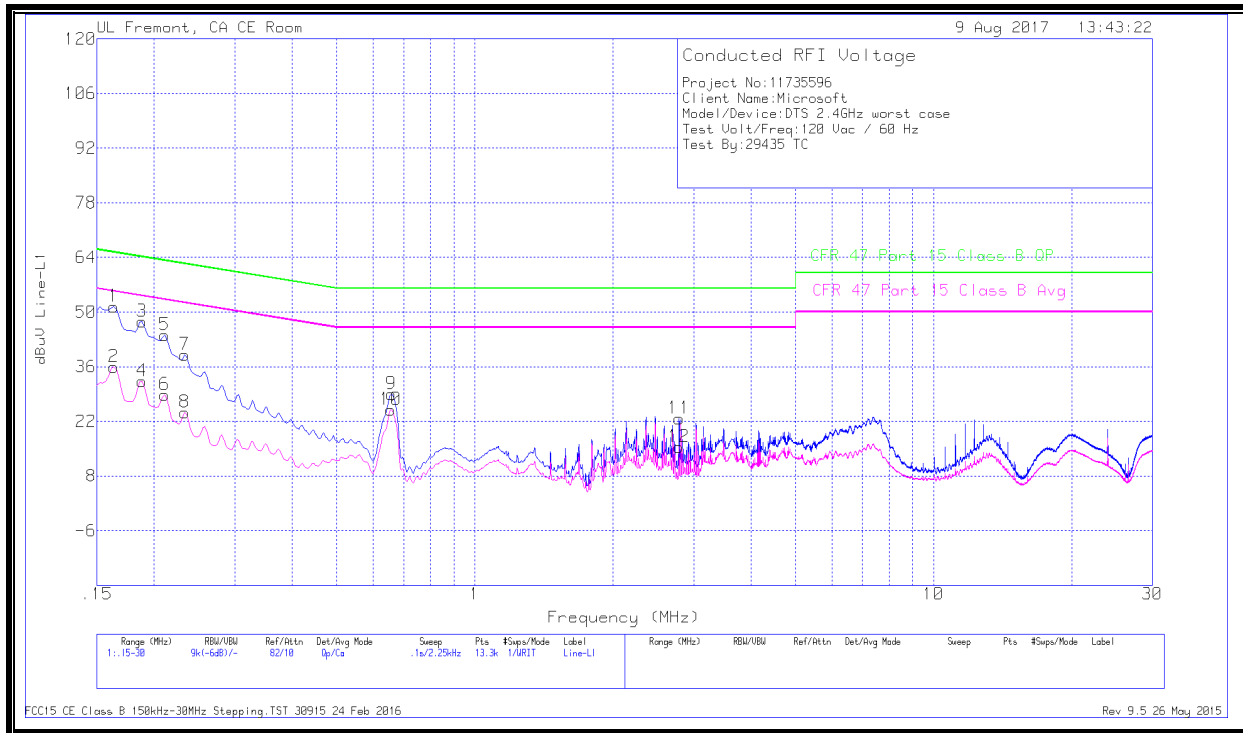
TEST PROCEDURE

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

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

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

LINE 1 RESULTS



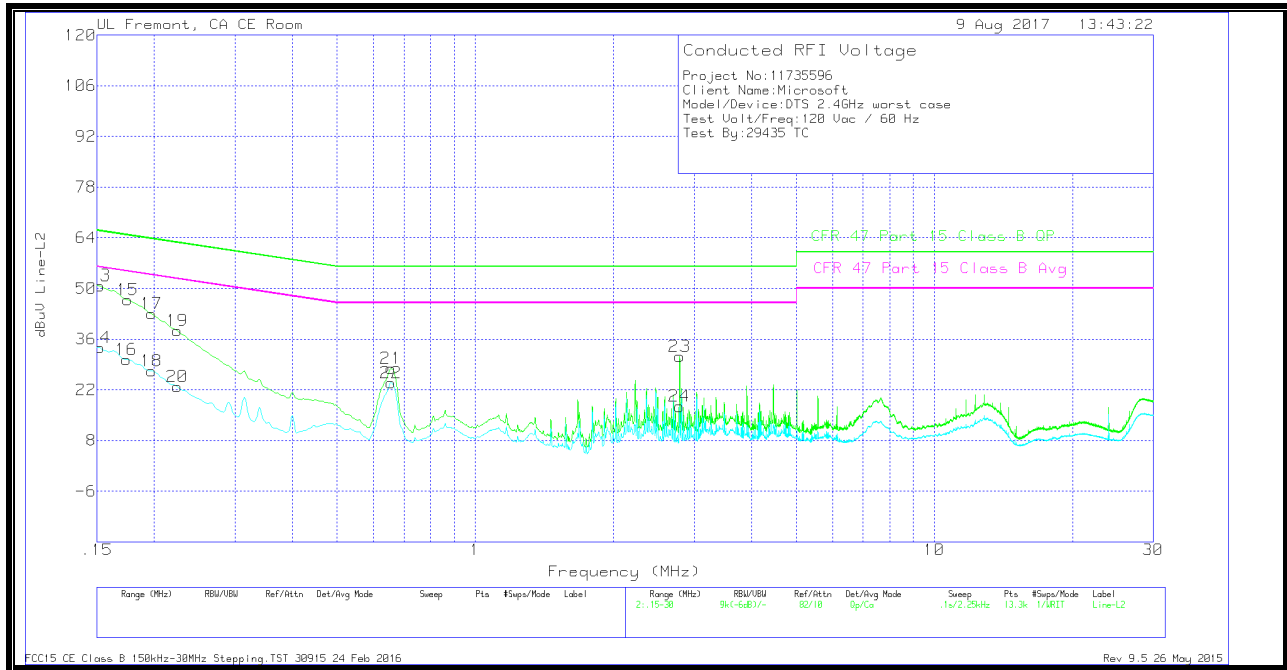
WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.1635	41.07	Qp	.1	.1	10.1	51.37	65.28	-13.91	-	-
2	.1635	25.68	Ca	.1	.1	10.1	35.98	-	-	55.28	-19.3
3	.18825	37.44	Qp	0	.1	10.1	47.64	64.11	-16.47	-	-
4	.18825	22	Ca	0	.1	10.1	32.2	-	-	54.11	-21.91
5	.21075	34.02	Qp	0	0	10.1	44.12	63.18	-19.06	-	-
6	.21075	18.75	Ca	0	0	10.1	28.85	-	-	53.18	-24.33
7	.23325	28.79	Qp	0	.1	10.1	38.99	62.33	-23.34	-	-
8	.23325	14.02	Ca	0	.1	10.1	24.22	-	-	52.33	-28.11
9	.6585	18.77	Qp	0	.1	10.1	28.97	56	-27.03	-	-
10	.65625	14.78	Ca	0	.1	10.1	24.98	-	-	46	-21.02
11	2.78925	12.56	Qp	0	.1	10.1	22.76	56	-33.24	-	-
12	2.787	5.26	Ca	0	.1	10.1	15.46	-	-	46	-30.54

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.15225	40.68	Qp	0	0	10.1	50.78	65.88	-15.1	-	-
14	.15225	23.5	Ca	0	0	10.1	33.6	-	-	55.88	-22.28
15	.17475	36.66	Qp	0	.1	10.1	46.86	64.73	-17.87	-	-
16	.17363	20.11	Ca	0	.1	10.1	30.31	-	-	54.78	-24.47
17	.19725	32.79	Qp	0	.1	10.1	42.99	63.73	-20.74	-	-
18	.19725	17.09	Ca	0	.1	10.1	27.29	-	-	53.73	-26.44
19	.22425	28.08	Qp	0	.1	10.1	38.28	62.66	-24.38	-	-
20	.22425	12.74	Ca	0	.1	10.1	22.94	-	-	52.66	-29.72
21	.65625	17.66	Qp	0	.1	10.1	27.86	56	-28.14	-	-
22	.65625	13.79	Ca	0	.1	10.1	23.99	-	-	46	-22.01
23	2.78925	21.02	Qp	0	.1	10.1	31.22	56	-24.78	-	-
24	2.787	7.21	Ca	0	.1	10.1	17.41	-	-	46	-28.59

Qp - Quasi-Peak detector

Ca - CISPR average detection