



**FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 1**

CERTIFICATION TEST REPORT

FOR

APPLE WATCH

MODEL NUMBER: A1757, A1816

**FCC ID: BCG-E3104
IC: 579C-E3104**

REPORT NUMBER: 16U23781-E3V3

ISSUE DATE: AUGUST 31, 2016

Prepared for
**APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.**

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	8/15/2016	Initial Issue	Chin Pang
V2	8/26/2016	Revised report to address TCB's questions	Tina Chu
V3	8/31/2016	Revised Section 5.5	Tina Chu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: APPLE WATCH

MODEL: A1757, A1816

SERIAL NUMBER: (FH7RN04SHDN9) RADIATED &
(FH7RW064H8YF) CONDUCTED

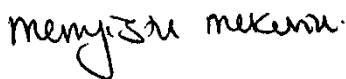
DATE TESTED: JULY 02 – AUGUST 3, 2016

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

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

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

Approved & Released For
UL Verification Services Inc. By:



MENGISTU MEKURIA
PROJECT LEADER
UL VERIFICATION SERVICES INC.

Prepared By:



TRI PHAM
EMC 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 v03r05, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 1.

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☐ Chamber B	☐ Chamber E
☐ Chamber C	☒ Chamber F
	☐ Chamber G
	☒ Chamber H

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an Apple Watch with WLAN, Bluetooth and NFC support and GPS Radio.

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 1TX	23.44	220.80
2412 - 2472	802.11g 1TX	Covered by HT20 1TX	
2412 - 2472	802.11n HT20 1TX	25.18	329.61

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain (dBi)
	Antenna 1
2.4	-10.70

5.4. SOFTWARE AND FIRMWARE

Software and Firmware: The software installed in the EUT during testing was 14S310

5.5. WORST-CASE CONFIGURATION AND MODE

EUT has 3 types of enclosures and various kinds of metallic and non-metallic wristbands. There are 2 types of metallic bands; Metal Links, and Metal Mesh. The worst-case configuration was investigated within these combinations charging with/without wireless charger by AC/DC adapter and it was determined that EUT with ceramic enclosure and wristband charging with wireless charger by AC/DC adapter was the worst-case; therefore, all final radiated testing was performed with this configuration. There is no significant difference among various kinds of wristbands.

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

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0

802.11g and 802.11n HT20 1TX have the same target power and use the same modulation (OFDM). Therefore, 802.11g 1TX is covered by 802.11n HT20 1TX.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop AC/DC adapter	Lenovo	92P1160	11S92P1160Z1ZBGH798B12	N/A
Laptop	Lenovo	7659	L3-AL664 08/03	N/A
Wireless Charger	Apple	A1768	DLC616200ZYHE1Y835	BCGA1768
AC/DC adapter	Apple	A1385	D293154U2DTDHLHCW	N/A
Test jig	Apple	-	604-07510-09	N/A

I/O CABLES (CONDUCTED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Antenna	1	SMA	Un-Shielded	0.2	To spectrum Analyzer
2	USB	1	USB to mini USB	Shielded	1	To laptop and fixture

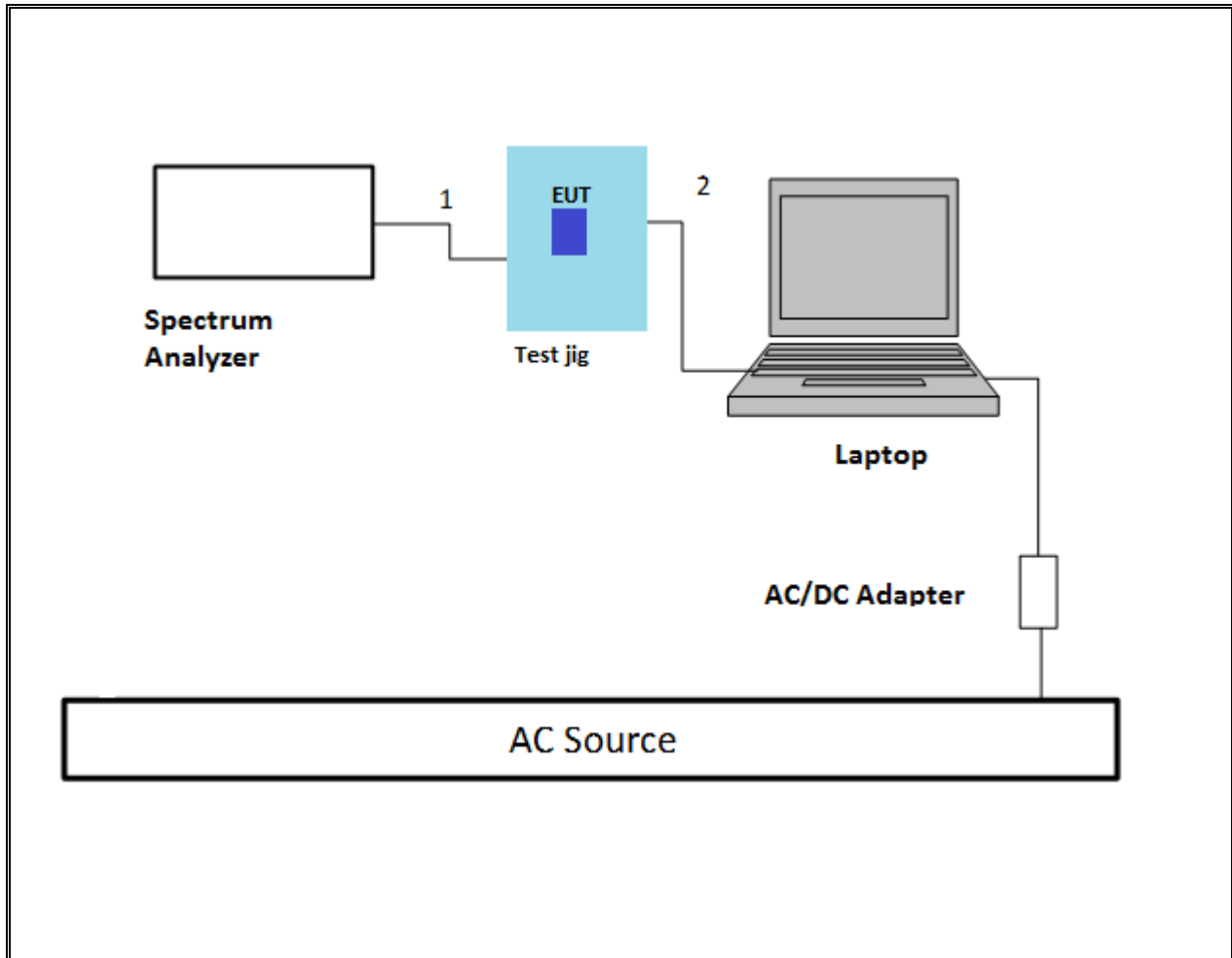
I/O CABLES (BELOW AND ABOVE 1G RADIATED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Un-Shielded	2	To AC/DC adapter

TEST SETUP- CONDUCTED PORT

The EUT was placed in a test jig and test jig connected to a host Laptop via USB cable adapter and spectrum analyzer to antenna port. Test software exercised the EUT.

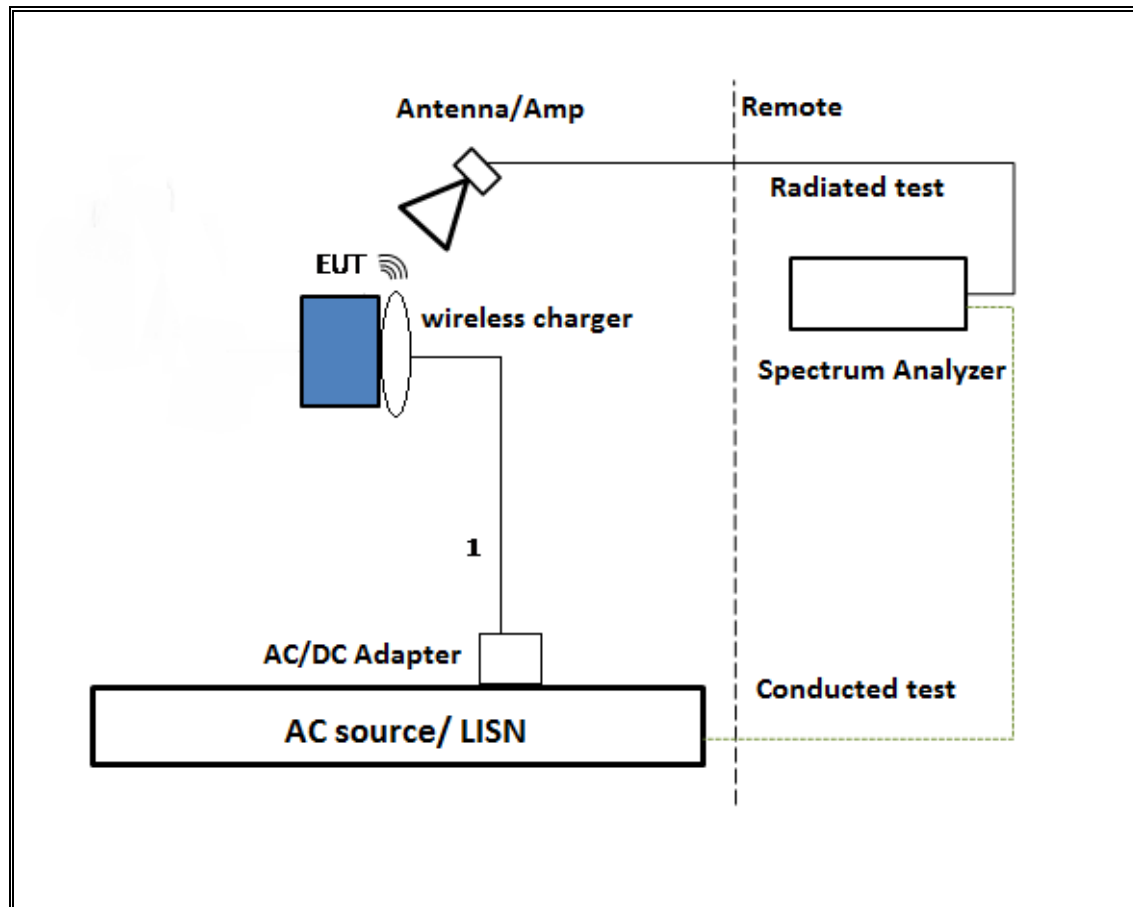
SETUP DIAGRAM



TEST SETUP- BELOW AND ABOVE 1GHZ TESTS

EUT was powered by battery and charged by AC/DC adapter via USB cable with wireless charger. Test software exercised the EUT.

SETUP DIAGRAM



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	T Number	Cal Due
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T120	4/5/2017
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	T122	1/29/2017
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T173	6/17/2017
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	T341	10/14/2016
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T862	4/18/2017
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	T899	5/26/2017
Amplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	T491	5/31/2017
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T834	6/17/2017
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	T905	6/21/2017
**Power Meter, P-series single channel	Agilent	N1911A	T1271	7/8/2017
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Agilent	N1921A	T1228	6/20/2017
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826	T447	6/16/2017
Spectrum Analyzer, 40 GHz	Agilent	8564E	T106	8/13/2016
**Amplifier, 1 to 26.5GHz, 23.5dB Gain minimum	Keysight	8449B	T402	7/5/2017
UL SOFTWARE				
* Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015	
* Conducted Software	UL	UL EMC	Ver 4.0, January 11, 2016	

Note: * indicates automation software version used in the compliance certification testing

** Equipment was used after calibration.

7. MEASUREMENT METHODS

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

Output Power: KDB 558074 D01 v03r05, Section 9.1.2.

Power Spectral Density: KDB 558074 D01 v03r05, Section 10.2.

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.

8. ANTENNA PORT TEST RESULTS

ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

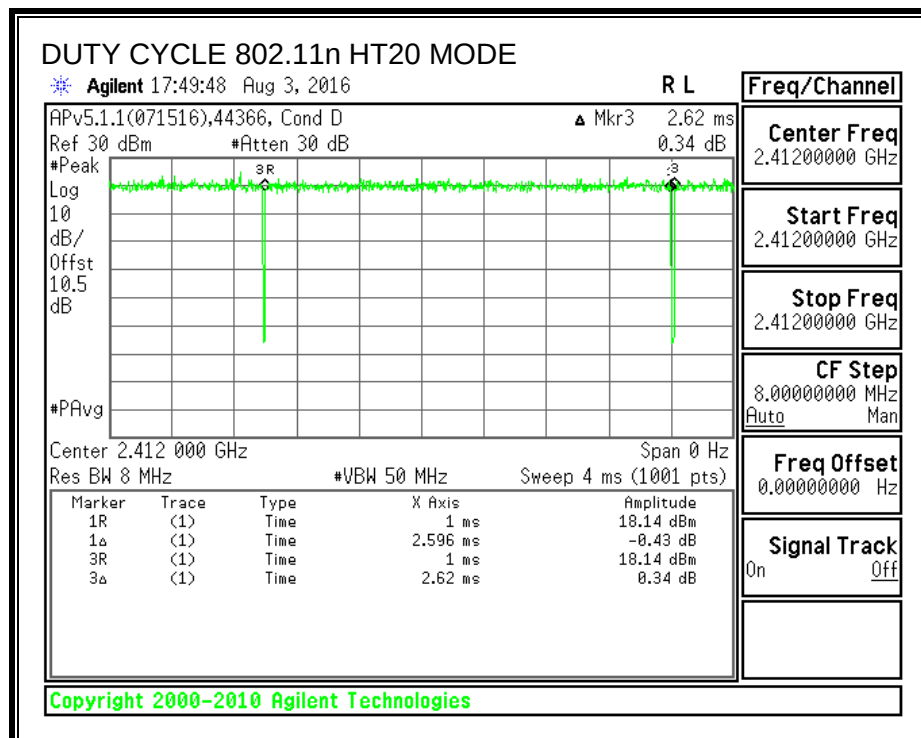
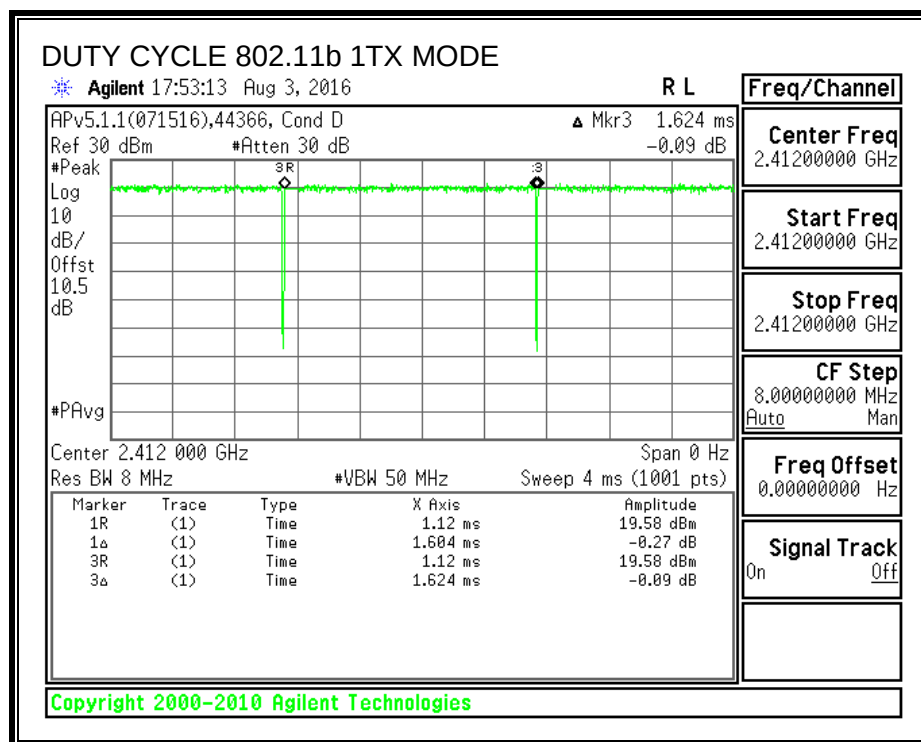
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b 1TX	1.604	1.624	0.988	98.77%	0.00	0.010
802.11n HT20	2.596	2.620	0.991	99.08%	0.00	0.010

DUTY CYCLE PLOTS



8.1. 802.11b SISO MODE IN THE 2.4 GHz BAND

8.1.1. 6 dB BANDWIDTH

LIMITS

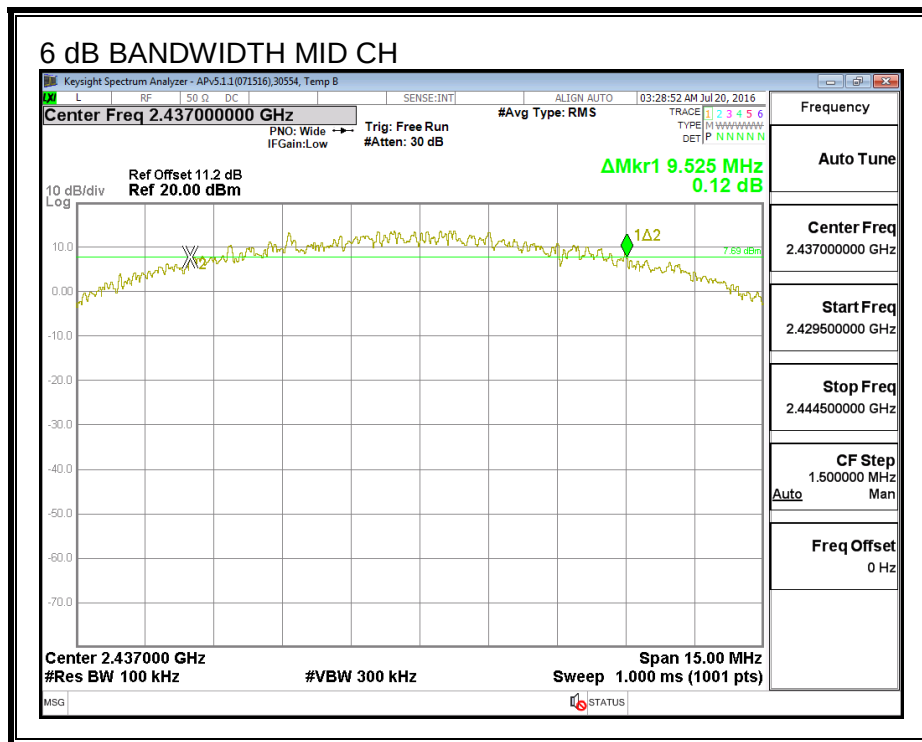
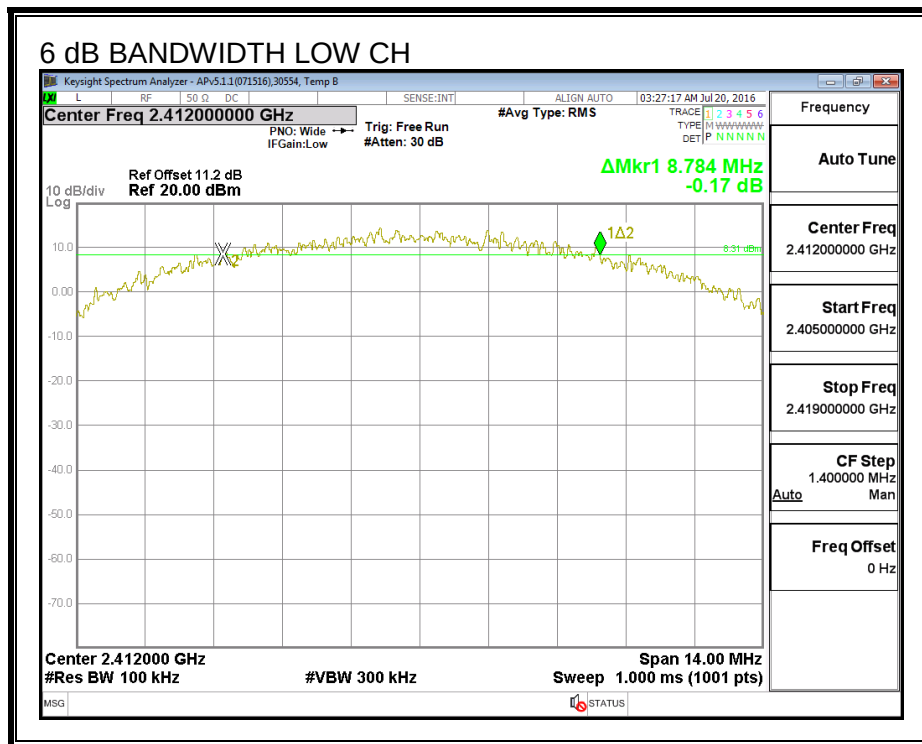
IC RSS-247 (5.2) (1)

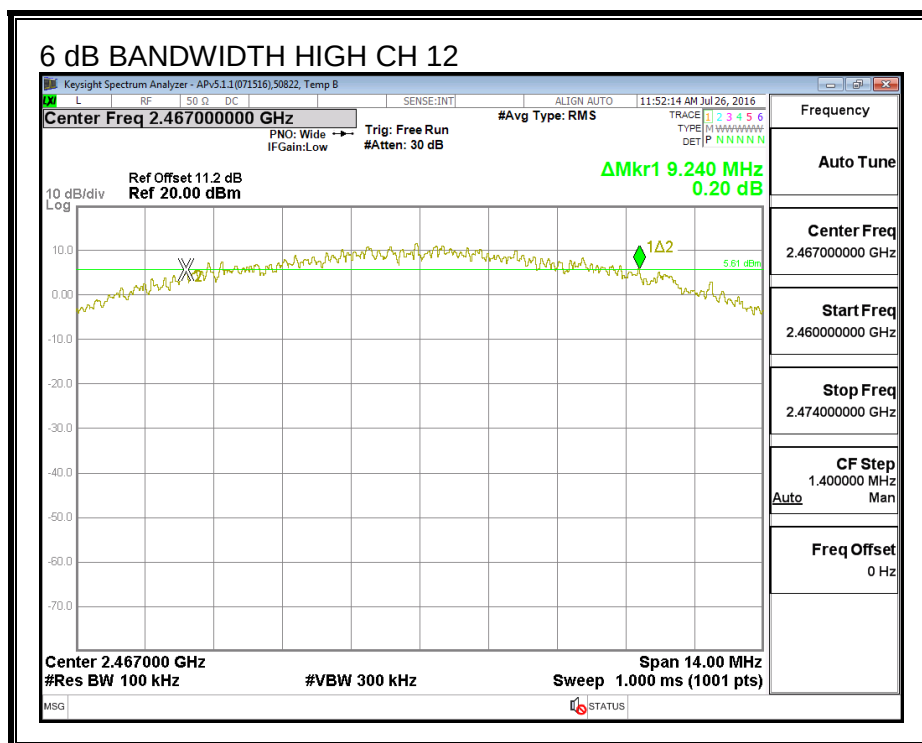
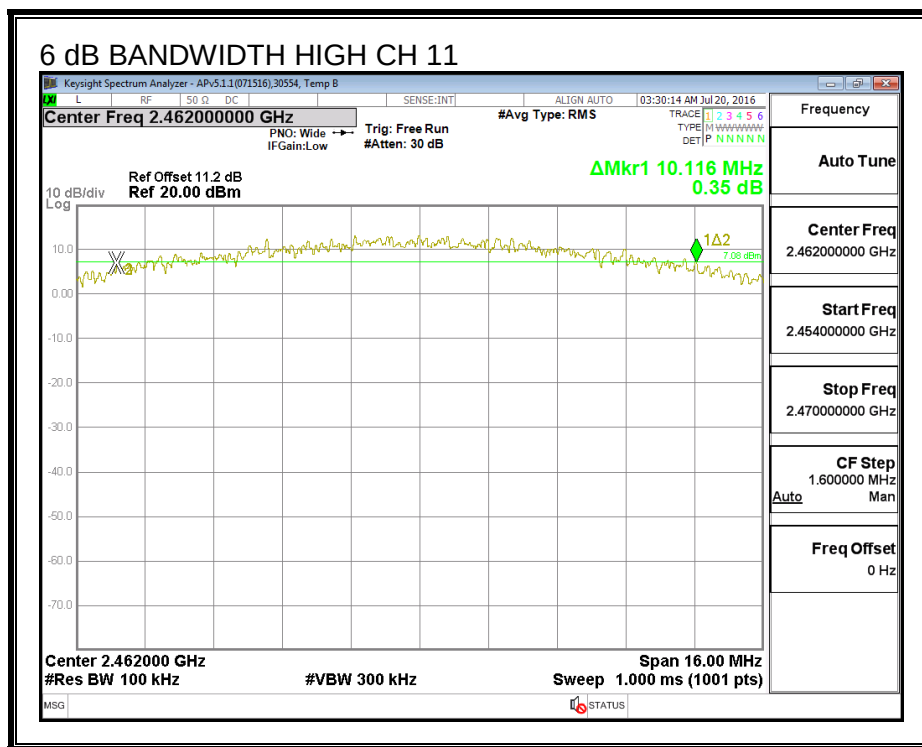
The minimum 6 dB bandwidth shall be at least 500 kHz.

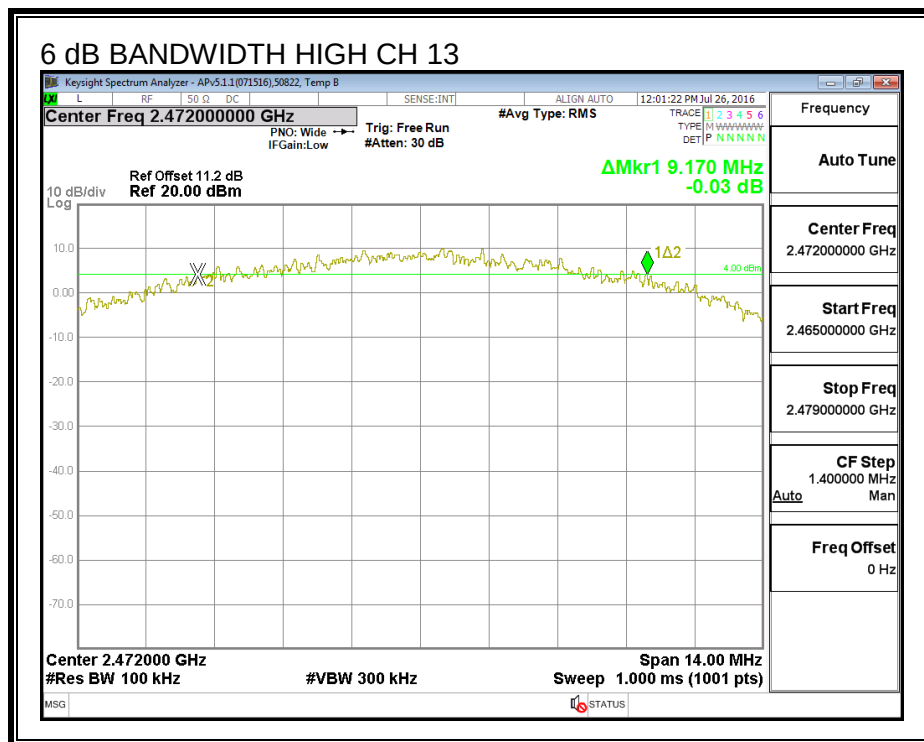
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	8.784	0.5
Mid	2437	9.525	0.5
High_11	2462	10.116	0.5
High_12	2467	9.240	0.5
High_13	2472	9.170	0.5

6 dB BANDWIDTH







8.1.2. 99% BANDWIDTH

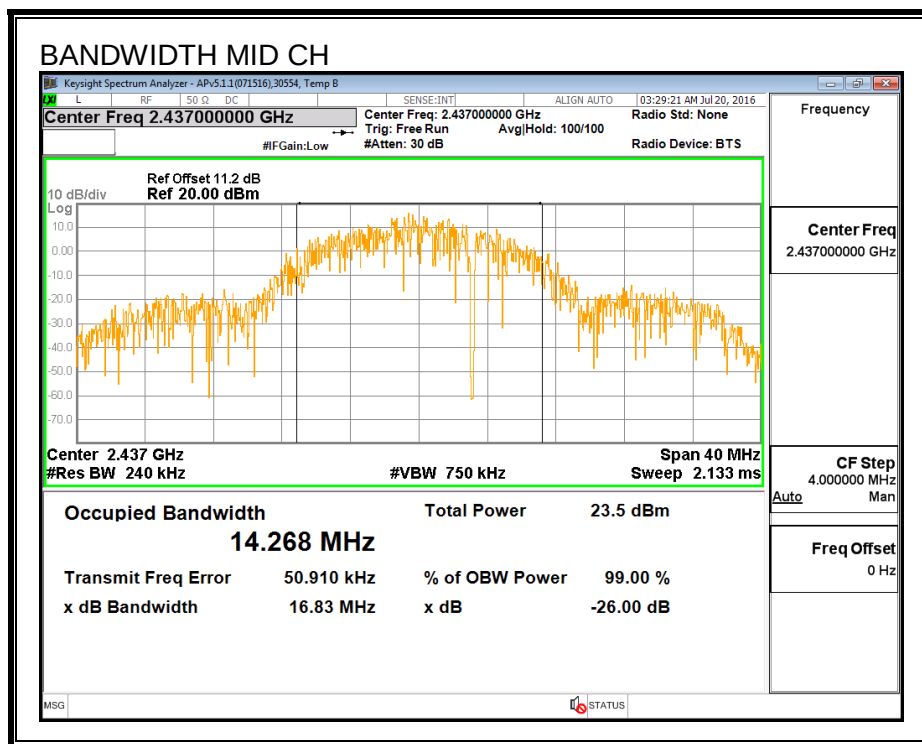
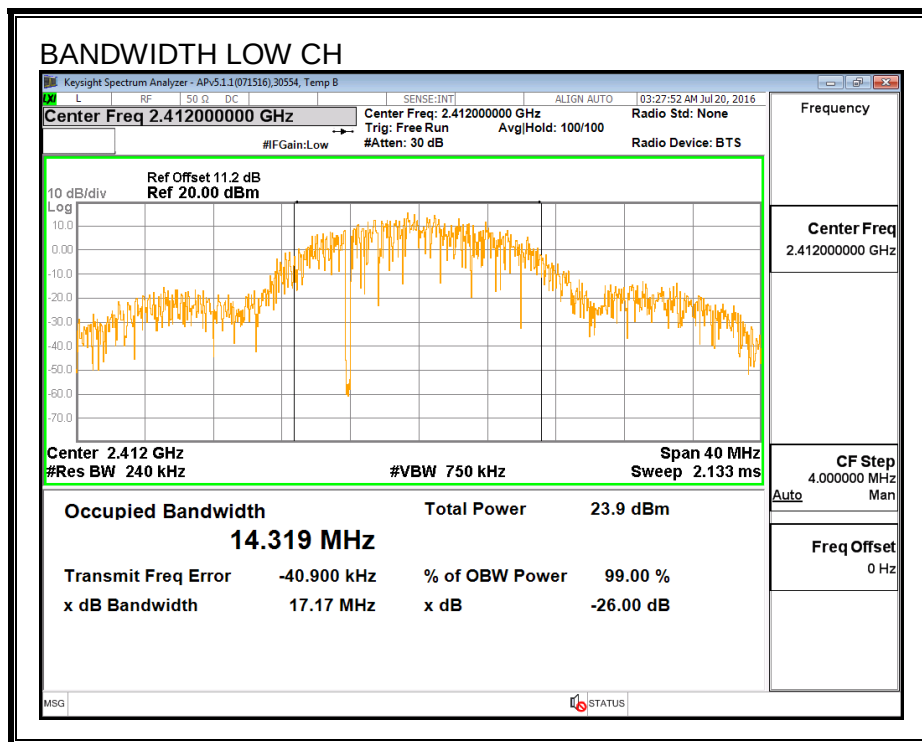
LIMITS

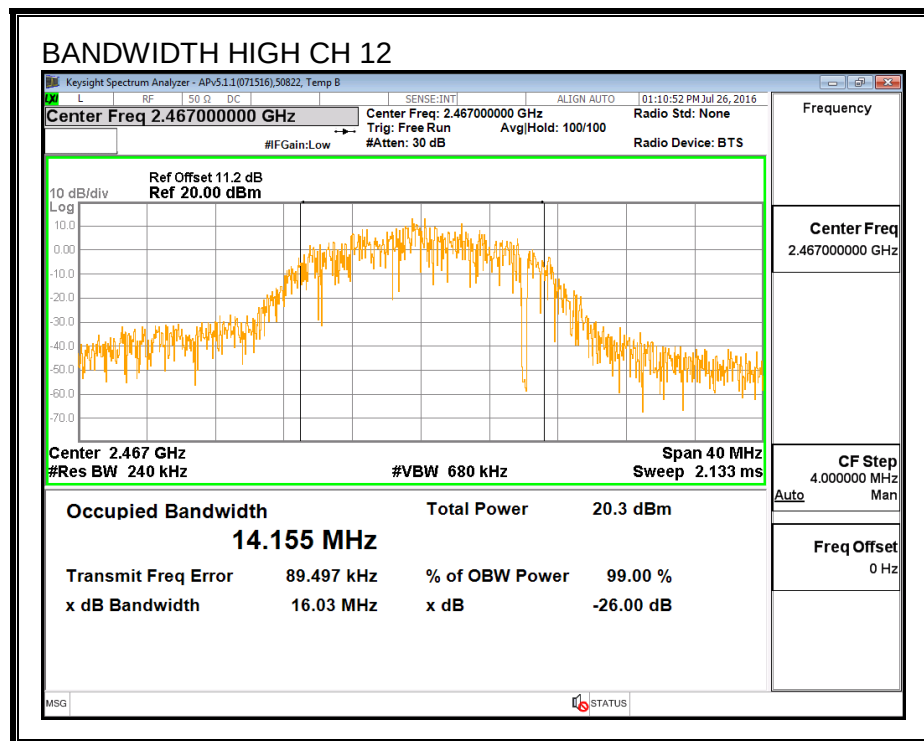
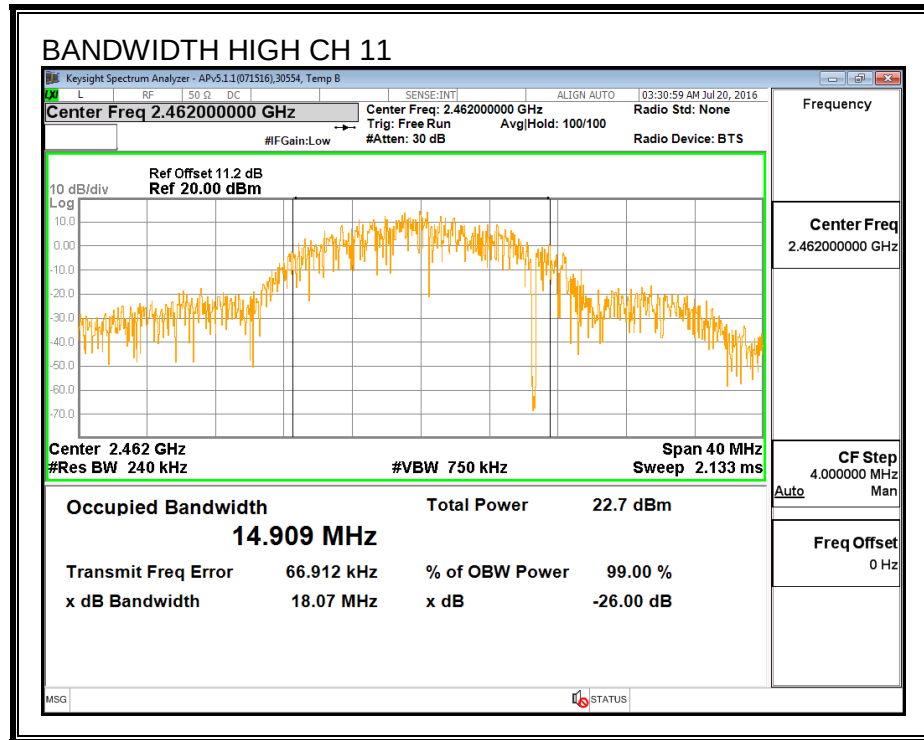
None; for reporting purposes only.

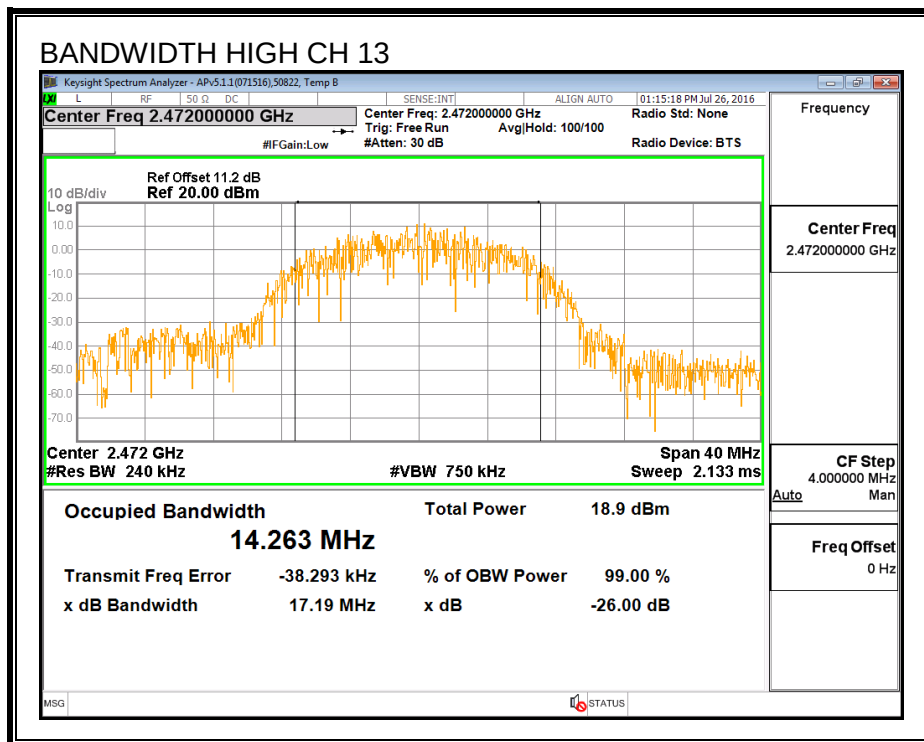
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	14.319
Mid	2437	14.268
High_11	2462	14.909
High_12	2467	14.155
High_13	2472	14.263

99% BANDWIDTH







8.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

ID:	30554	Date:	7/23/16
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Channel	Frequency (MHz)	Power (dBm)
Low	2412	19.43
Mid	2437	20.48
High_11	2462	20.37
High_12	2467	20.47
High_13	2472	18.87

8.1.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 (5.4) (4)

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.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

ID:	30554	Date:	7/23/16
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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)
Low	2412	-10.70	30.00	30	36	30.00
Mid	2437	-10.70	30.00	30	36	30.00
High_11	2462	-10.70	30.00	30	36	30.00
High_12	2467	-10.70	30.00	30	36	30.00
High_13	2472	-10.70	30.00	30	36	30.00

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

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	21.94	21.94	30.00	-8.06
Mid	2437	23.41	23.41	30.00	-6.59
High_11	2462	23.36	23.36	30.00	-6.64
High_12	2467	23.44	23.44	30.00	-6.56
High_13	2472	21.43	21.43	30.00	-8.57

8.1.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (2)

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.

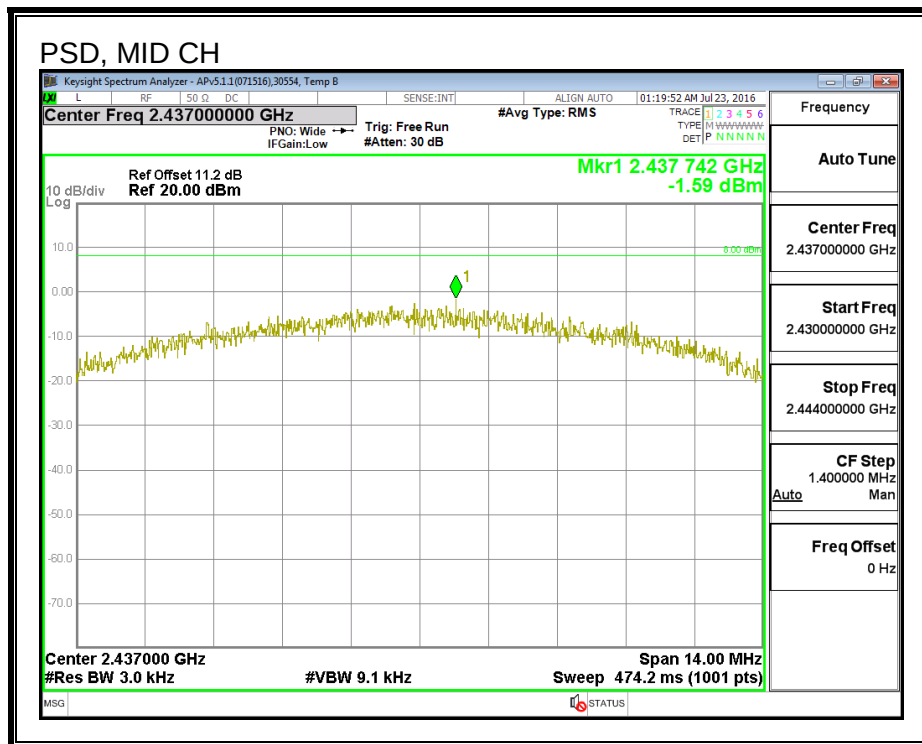
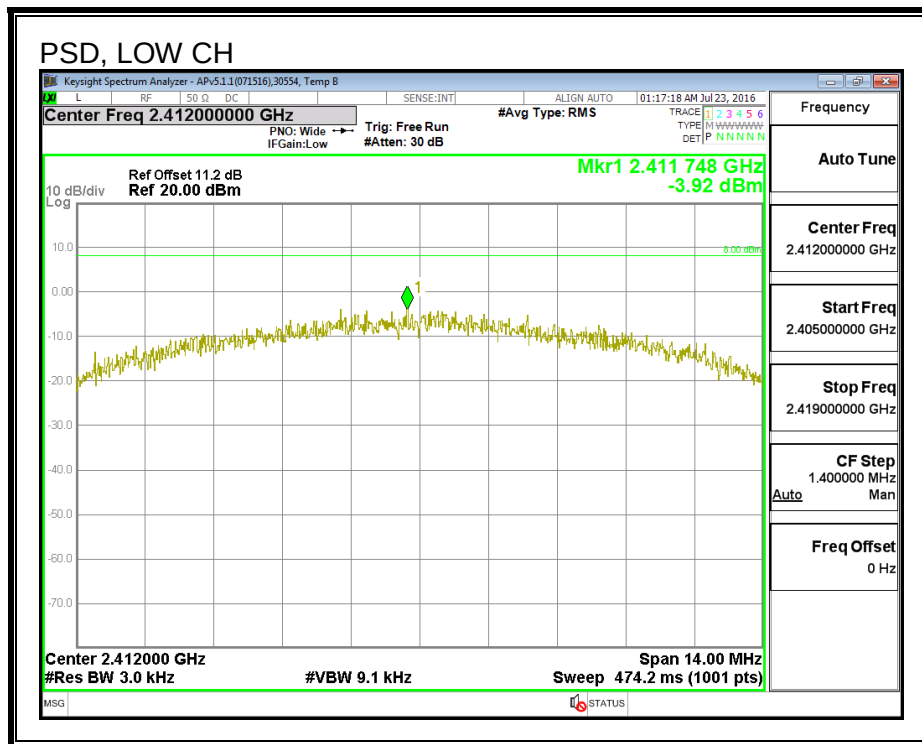
RESULTS

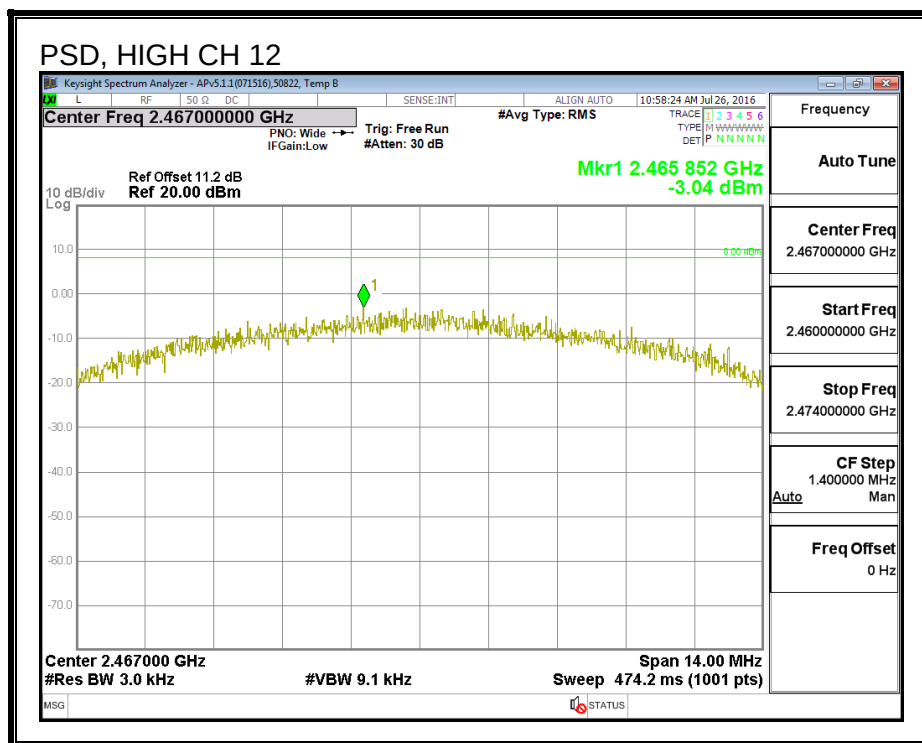
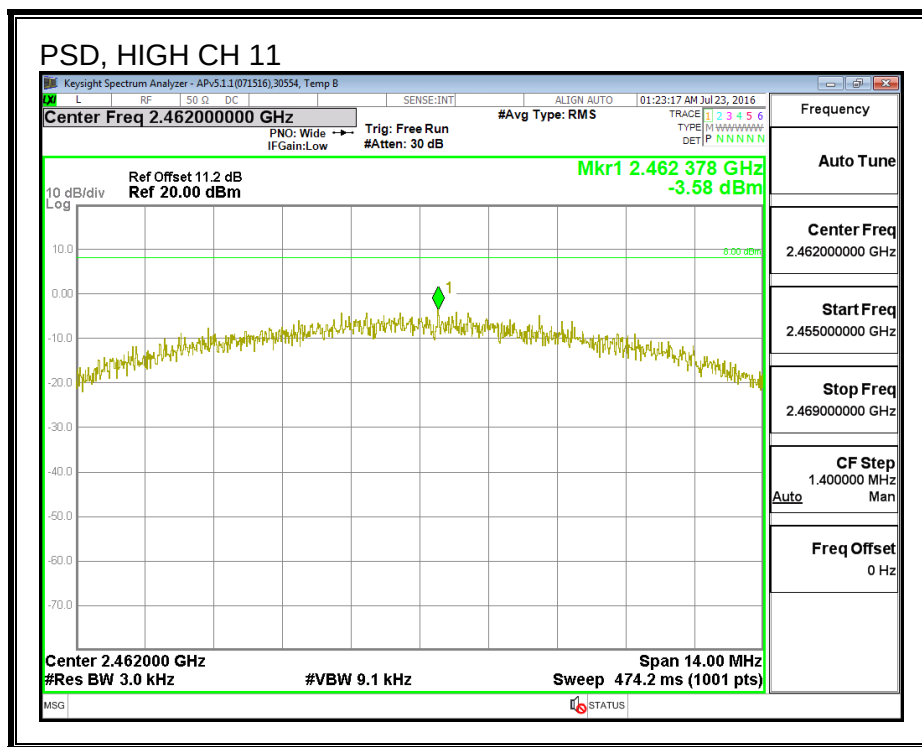
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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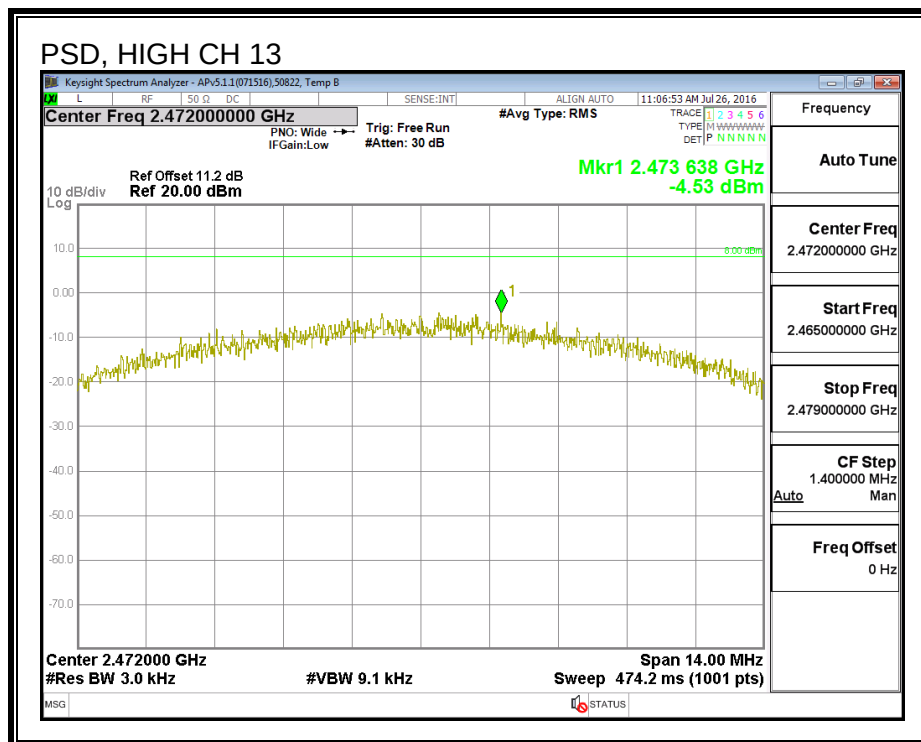
PSD Results

Channel	Frequency (MHz)	Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-3.92	-3.92	8.0	-11.9
Mid	2437	-1.59	-1.59	8.0	-9.6
High_11	2462	-3.58	-3.58	8.0	-11.6
High_12	2467	-3.04	-3.04	8.0	-11.0
High_13	2472	-4.53	-4.53	8.0	-12.5

PSD







8.1.6. OUT-OF-BAND EMISSIONS

LIMITS

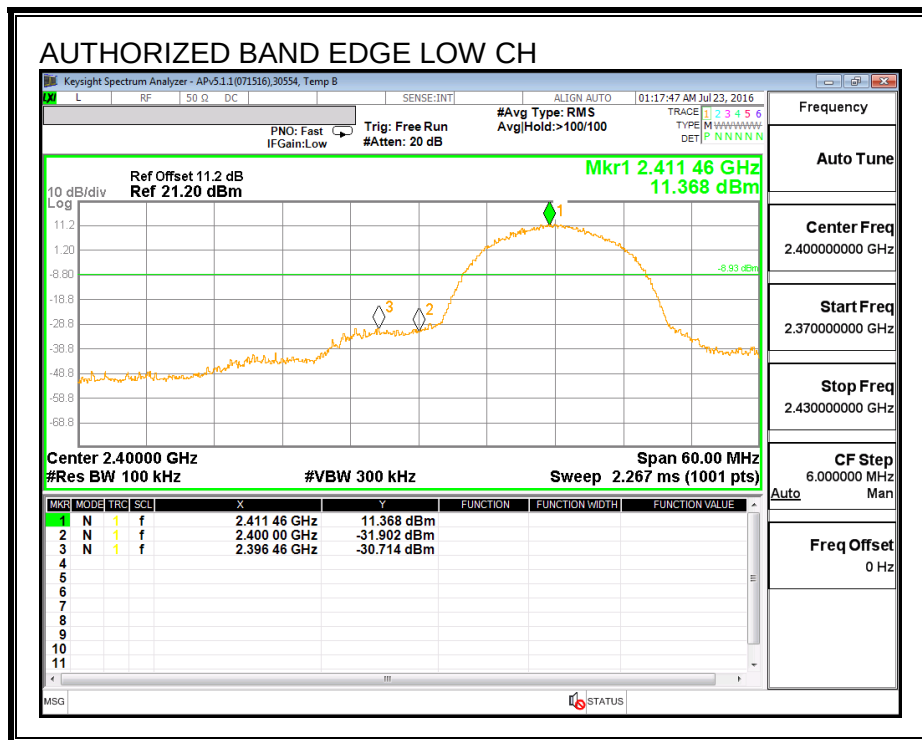
FCC §15.247 (d)

IC RSS-247 (5.5)

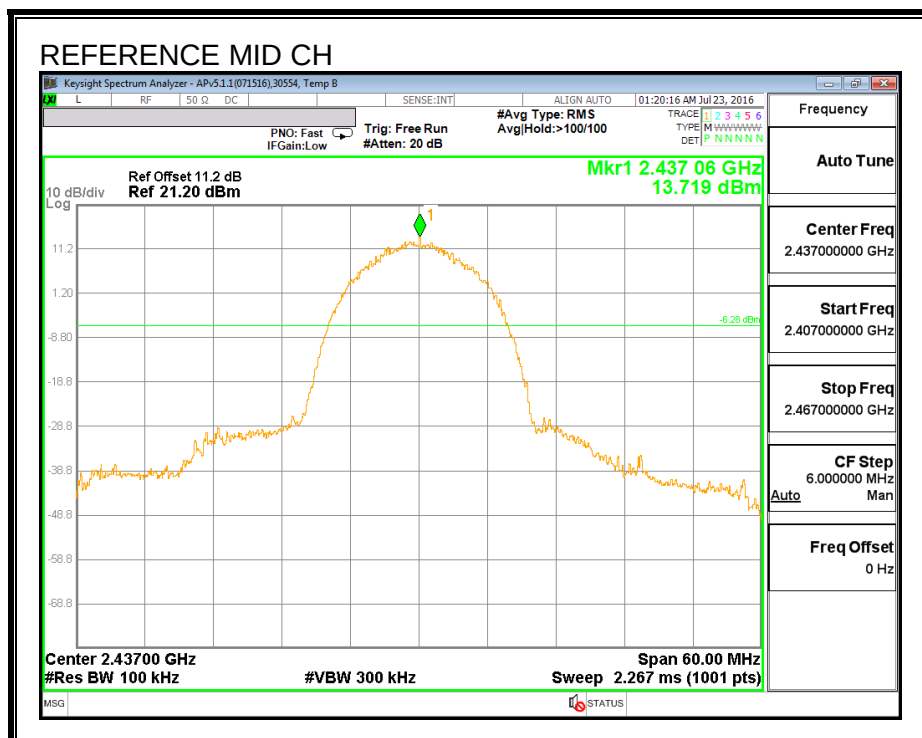
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

RESULTS

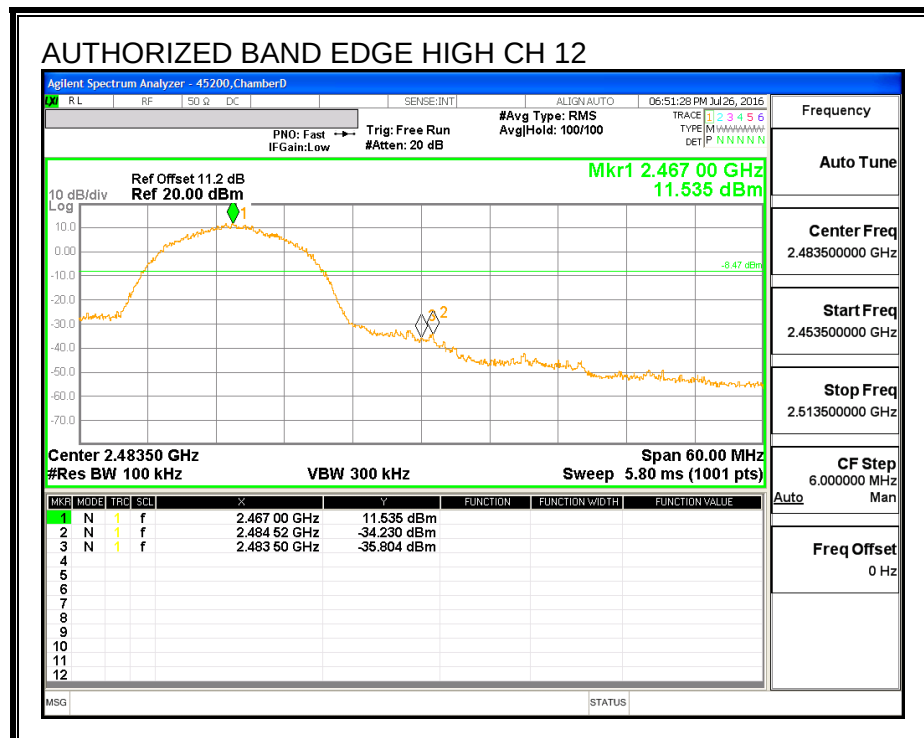
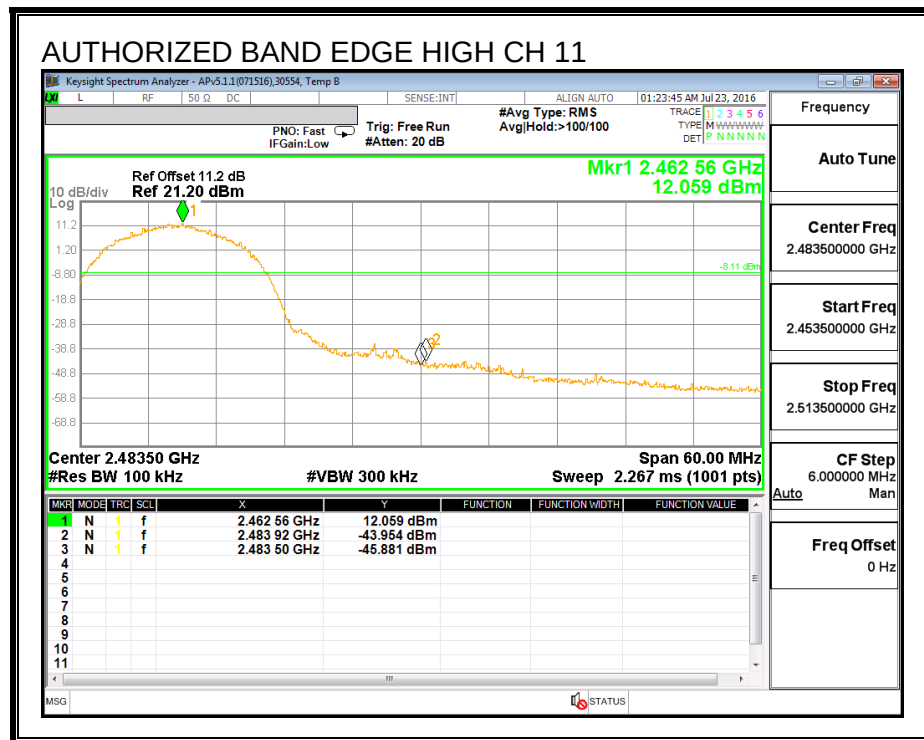
LOW CHANNEL BANDEDGE

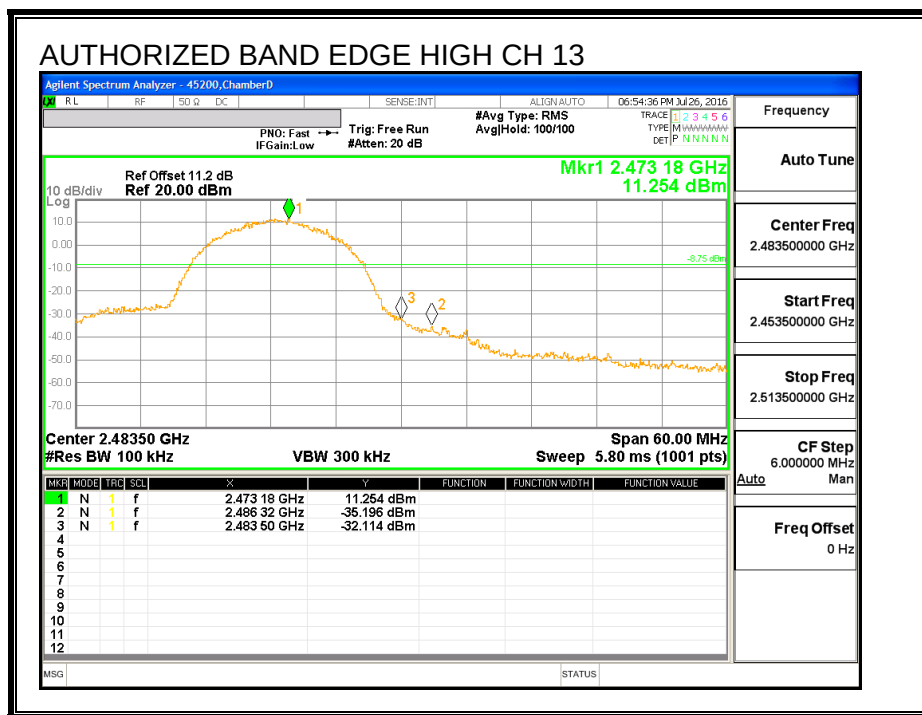


MID CHANNEL REFERENCE

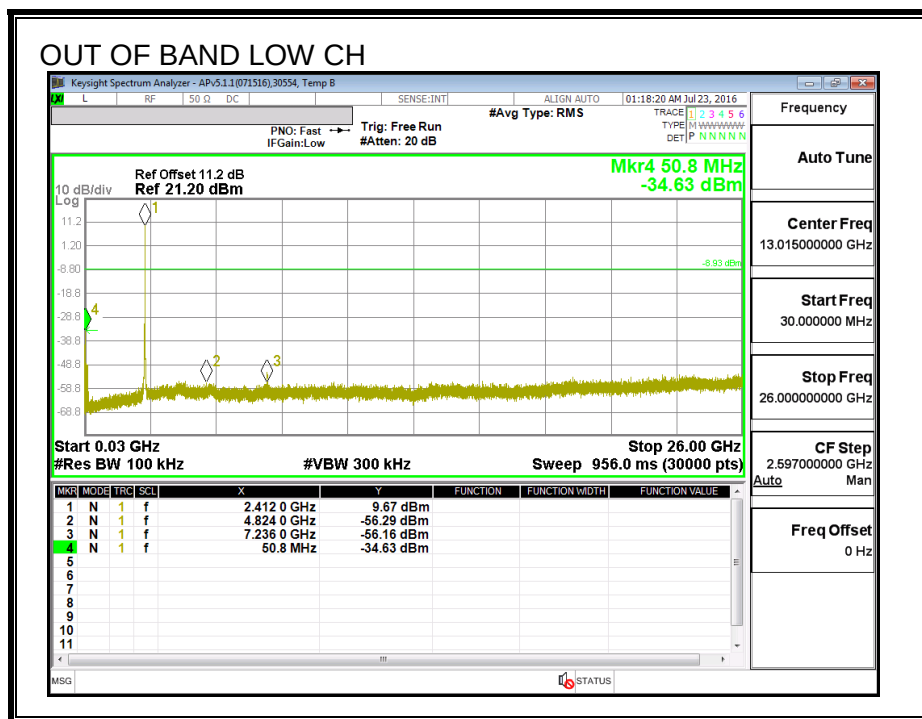


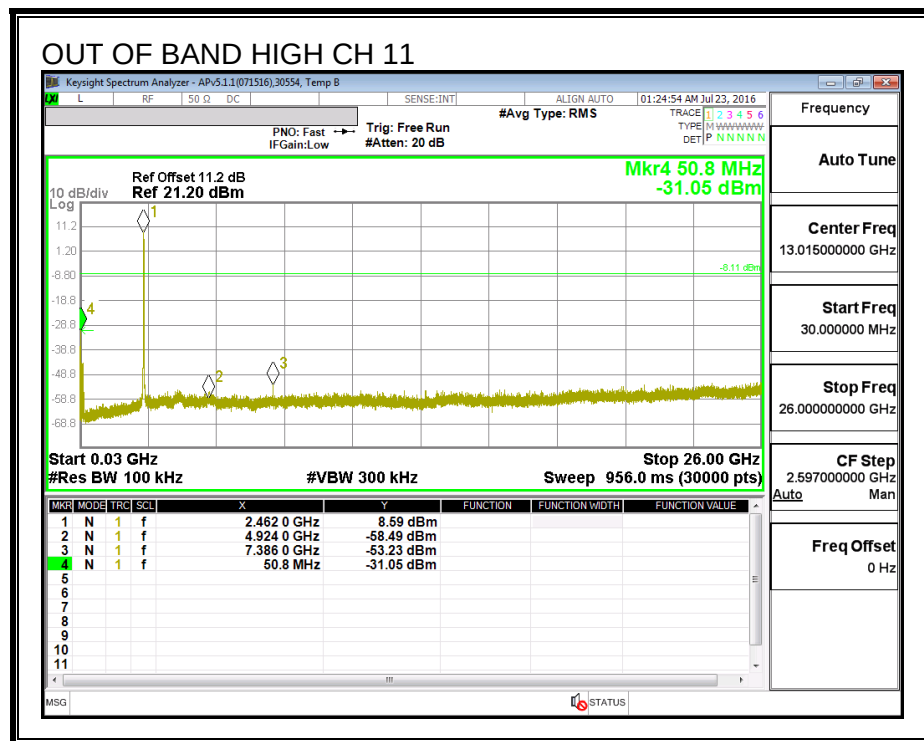
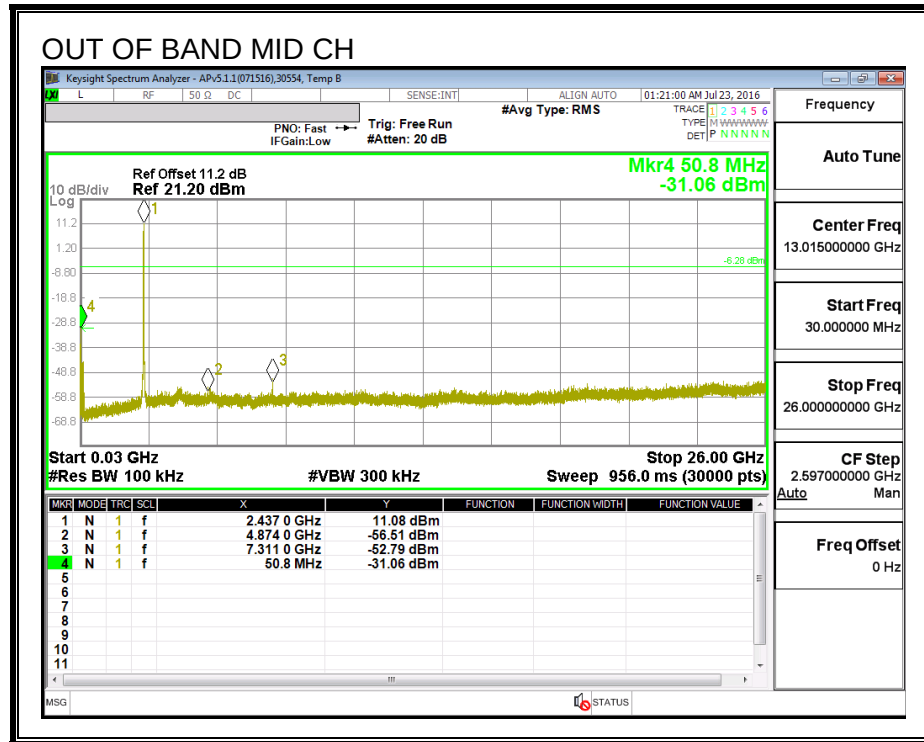
HIGH CHANNEL BANDEDGE

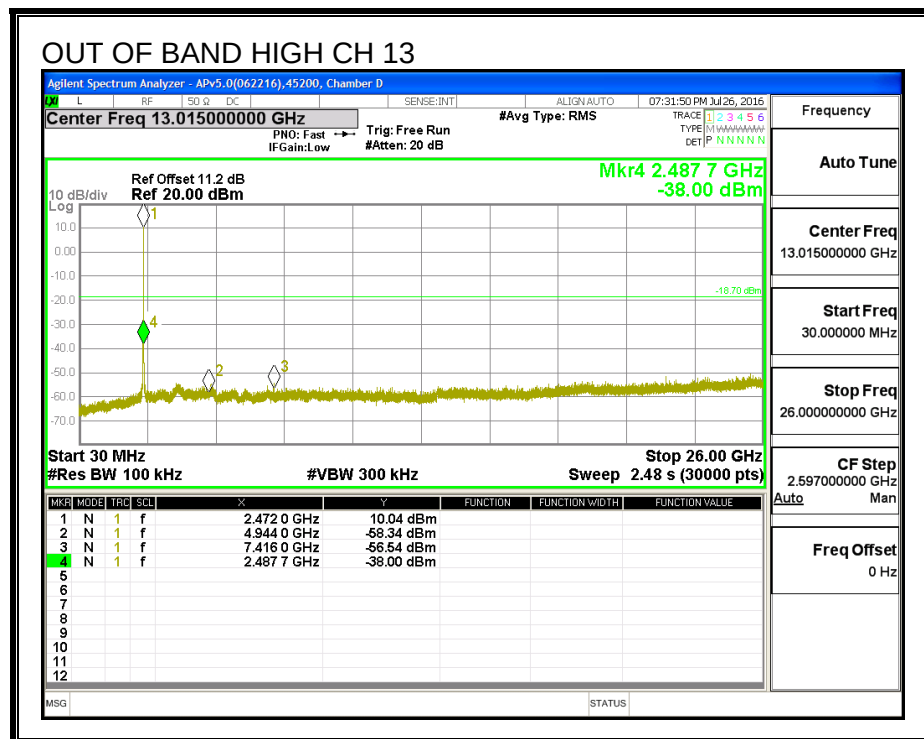
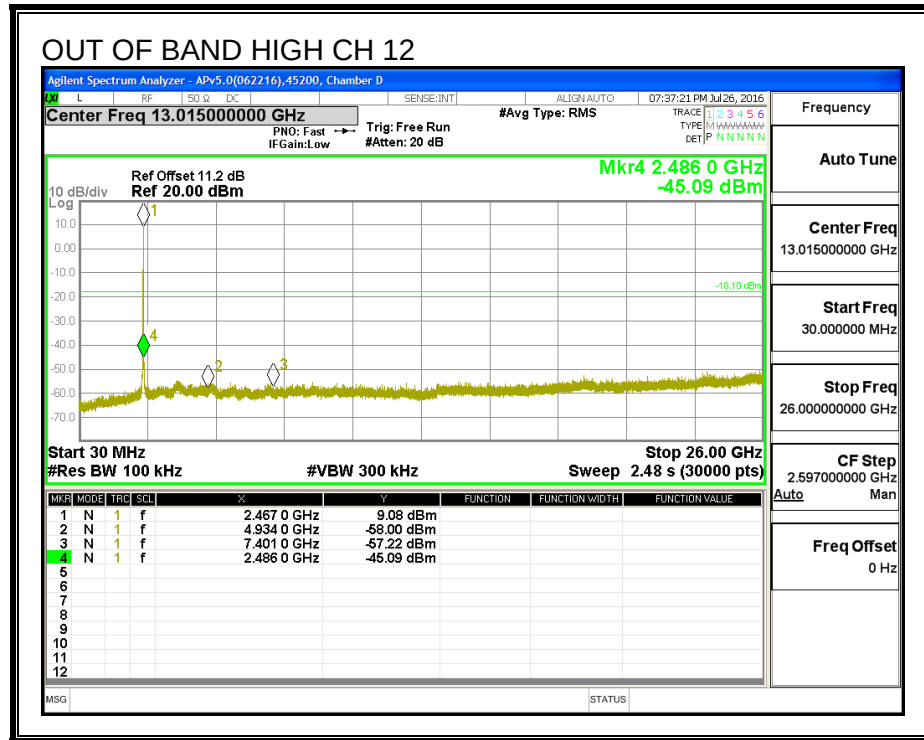




OUT-OF-BAND EMISSIONS







8.2. 802.11g SISO MODE IN THE 2.4 GHz BAND

Note: Covered by 802.11n HT20 SISO MODE.

8.3. 802.11n HT20 SISO MODE IN THE 2.4 GHz BAND

8.3.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

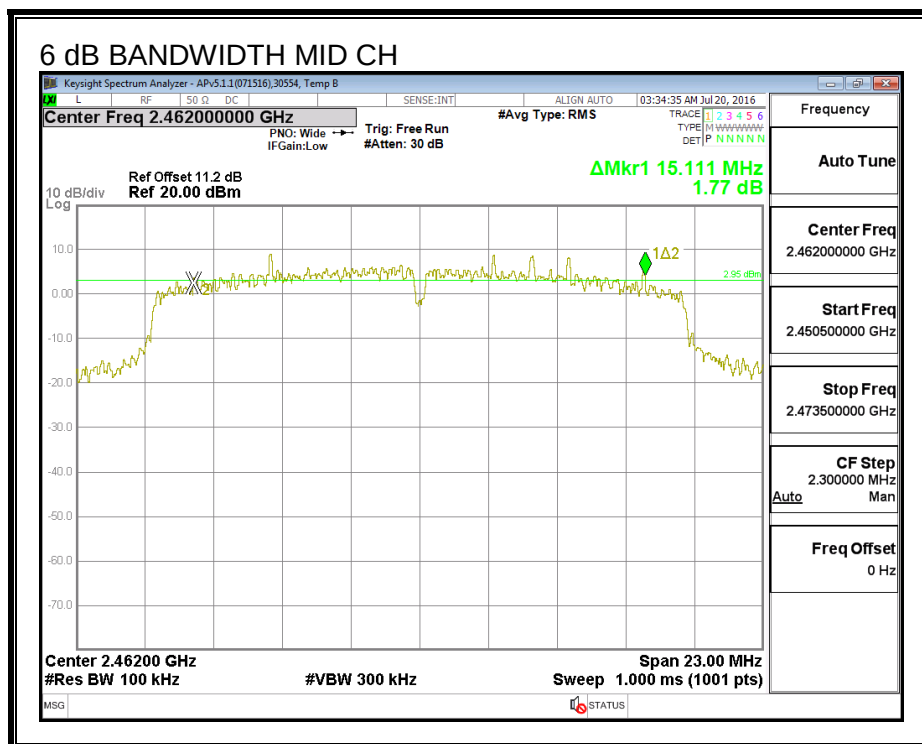
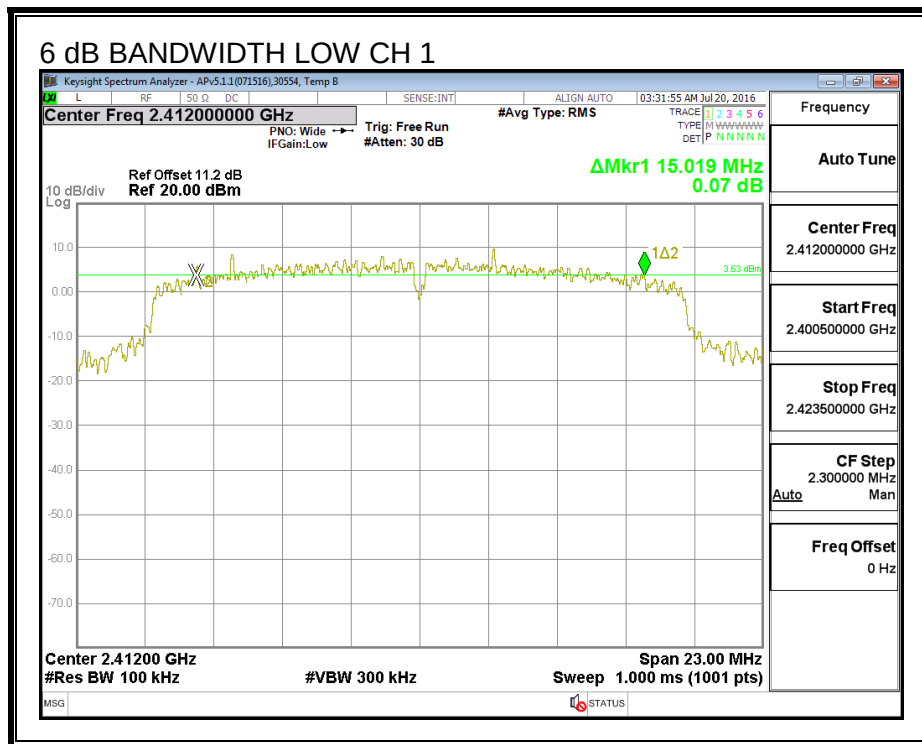
IC RSS-247 (5.2) (1)

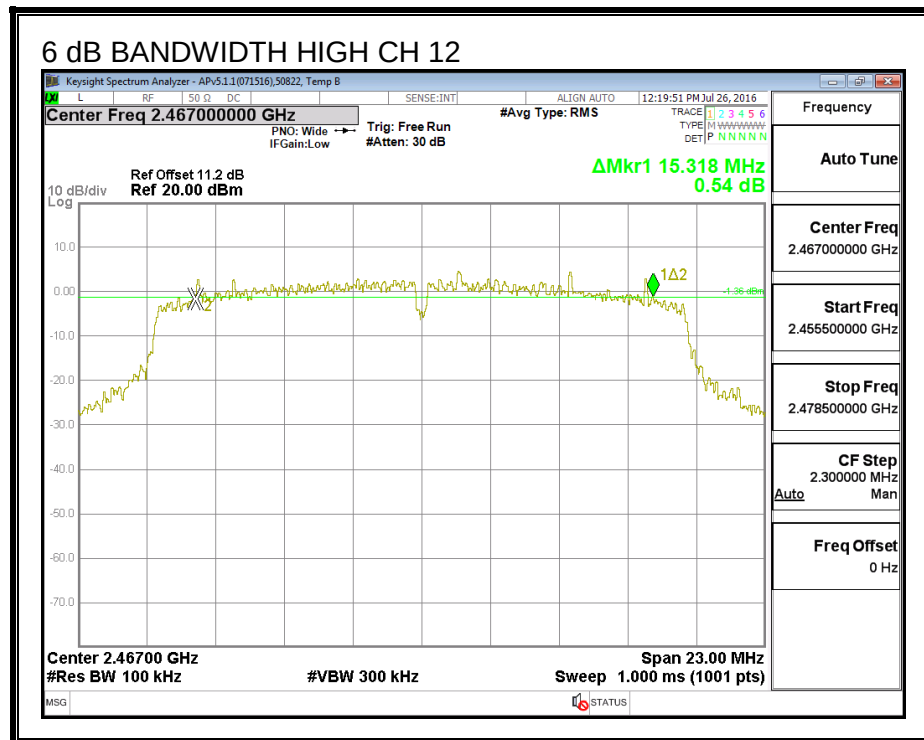
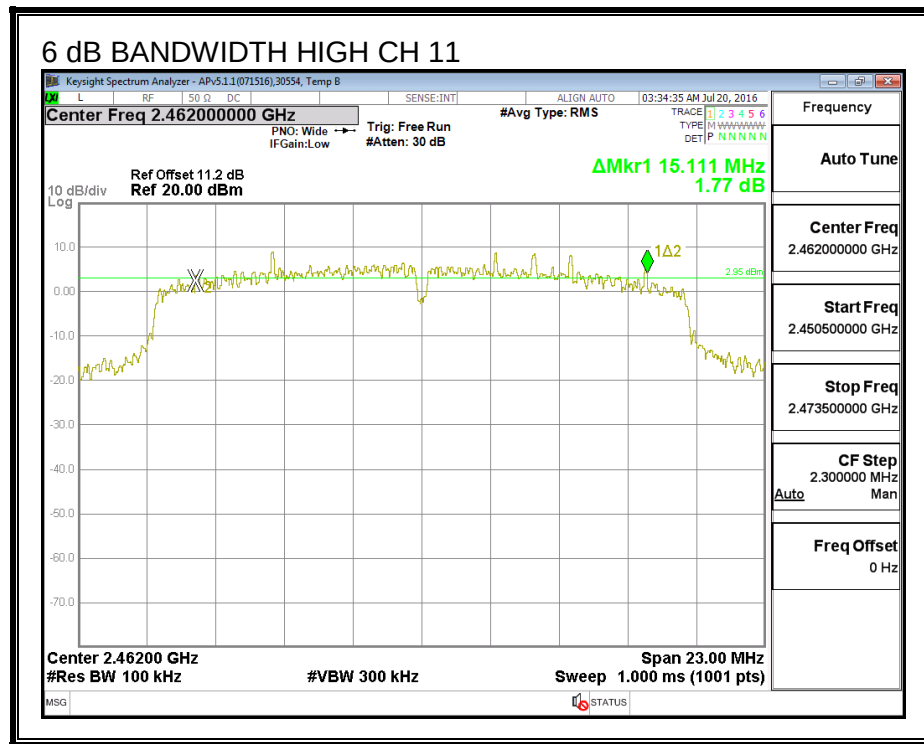
The minimum 6 dB bandwidth shall be at least 500 kHz.

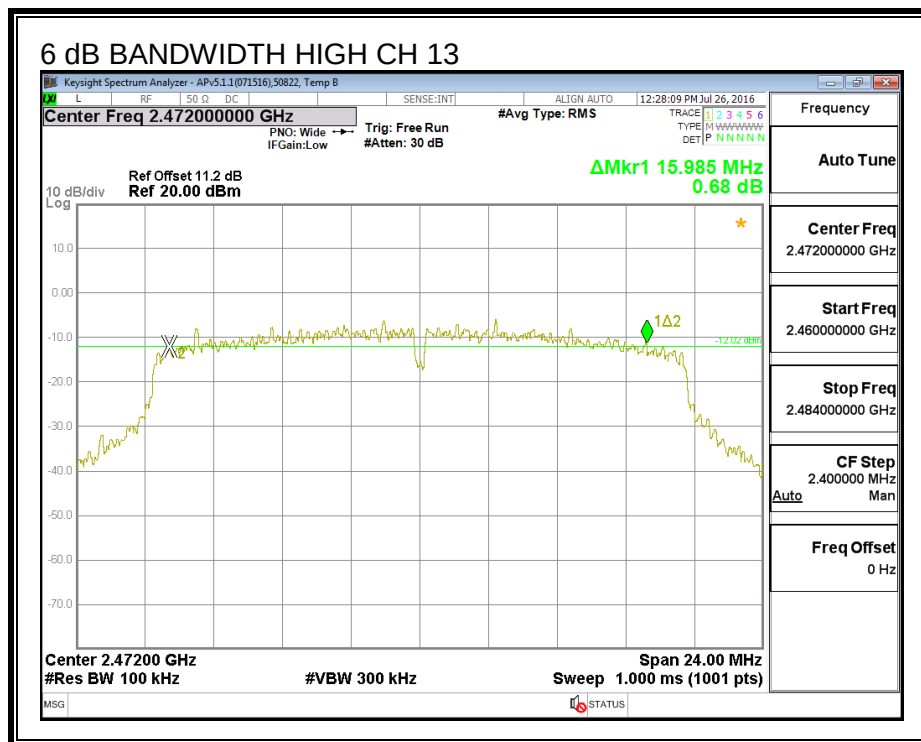
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low_1	2412	15.019	0.5
Mid_6	2437	15.111	0.5
High_11	2462	15.111	0.5
High_12	2467	15.318	0.5
High_13	2472	15.985	0.5

6 dB BANDWIDTH







8.3.2. 99% BANDWIDTH

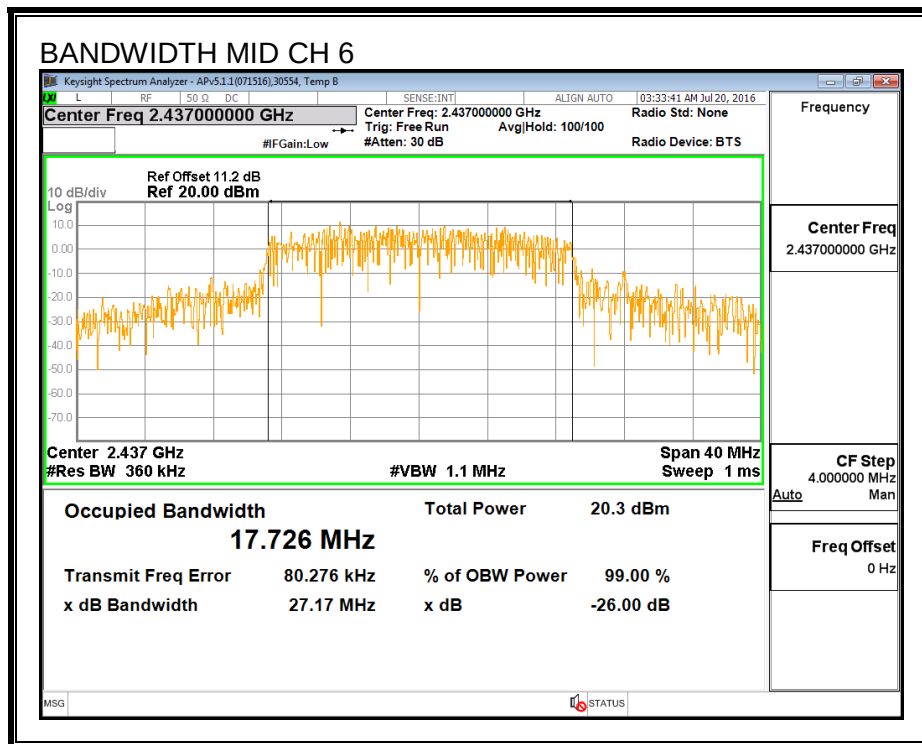
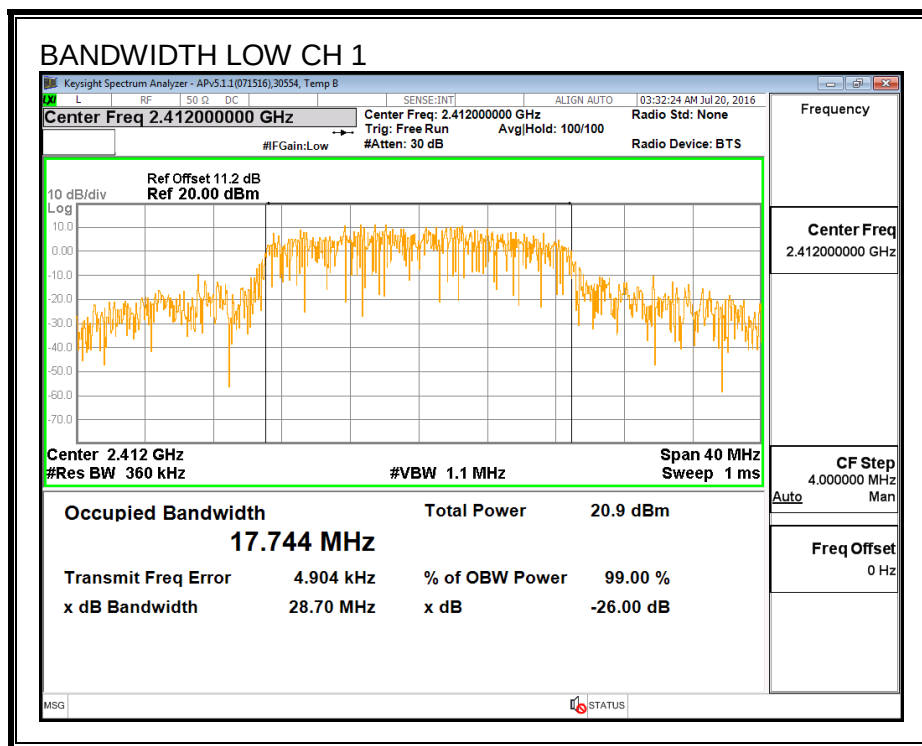
LIMITS

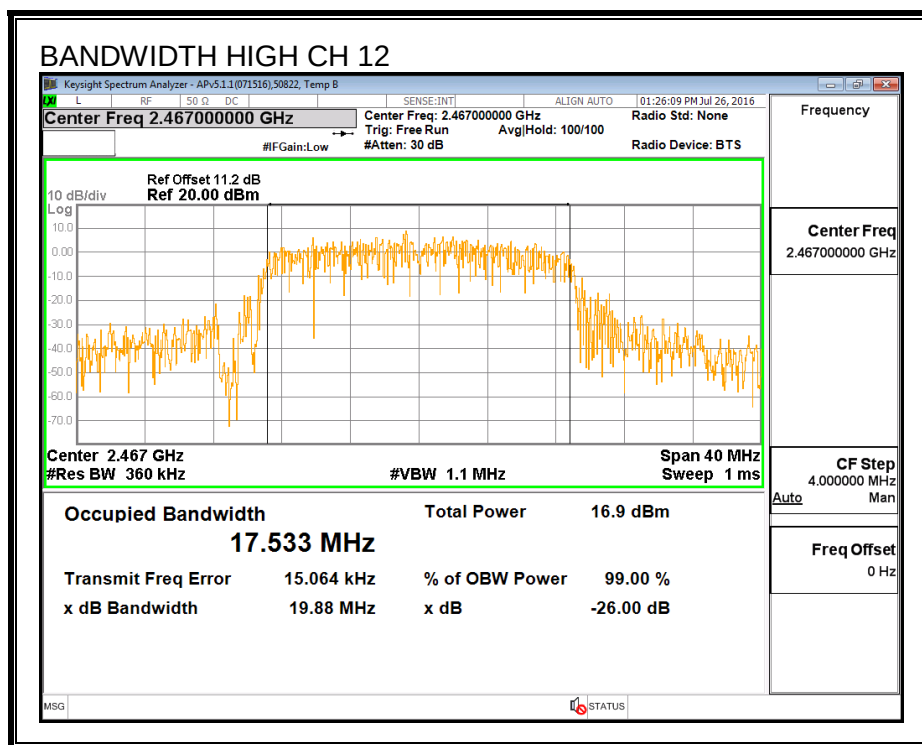
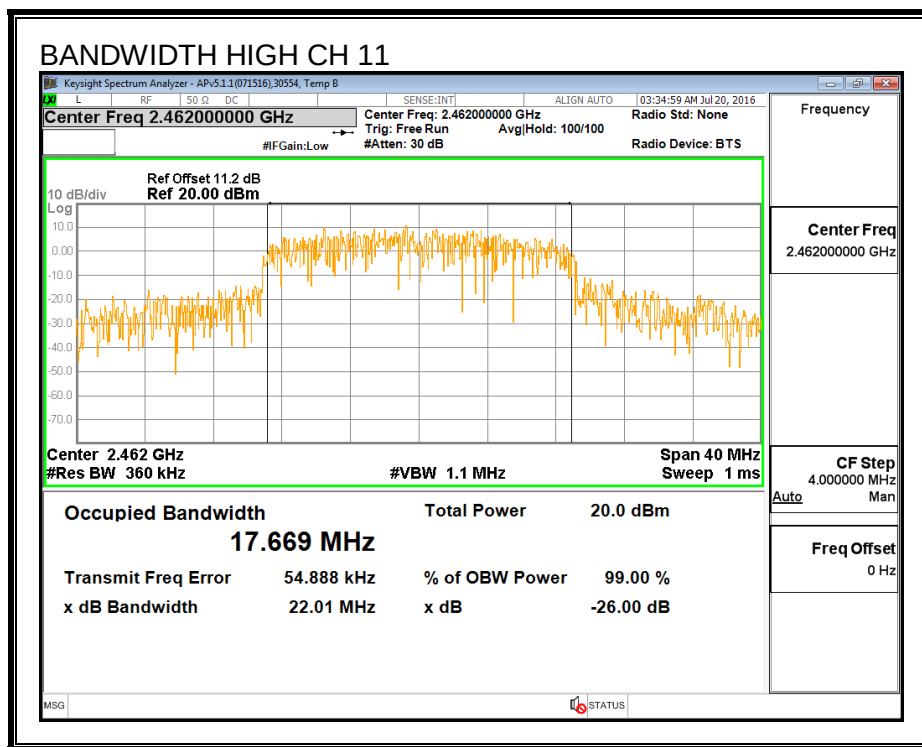
None; for reporting purposes only.

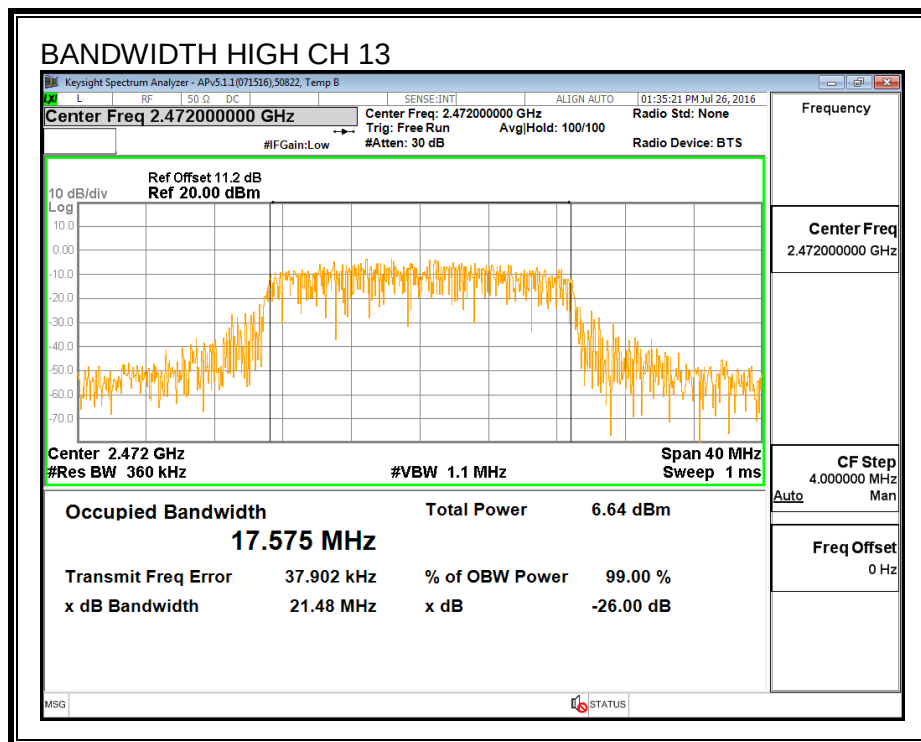
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low_1	2412	17.744
Mid_6	2437	17.726
High_11	2462	17.669
High_12	2467	17.533
High_13	2472	17.575

99% BANDWIDTH







8.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

ID:	30554	Date:	7/23/16
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Channel	Frequency (MHz)	Power (dBm)
Low_1	2412	18.94
Mid_6	2437	20.28
High_11	2462	18.85
High_12	2467	16.41
High_13	2472	5.89

8.3.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 (5.4) (4)

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.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

ID:	30554	Date:	7/23/16
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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)
Low_1	2412	-10.70	30.00	30	36	30.00
Mid_6	2437	-10.70	30.00	30	36	30.00
High_11	2462	-10.70	30.00	30	36	30.00
High_12	2467	-10.70	30.00	30	36	30.00
High_13	2472	-10.70	30.00	30	36	30.00

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

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low_1	2412	23.23	23.23	30.00	-6.77
Mid_6	2437	25.18	25.18	30.00	-4.82
High_11	2462	23.37	23.37	30.00	-6.63
High_12	2467	21.09	21.09	30.00	-8.91
High_13	2472	11.68	11.68	30.00	-18.32

8.3.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (2)

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.

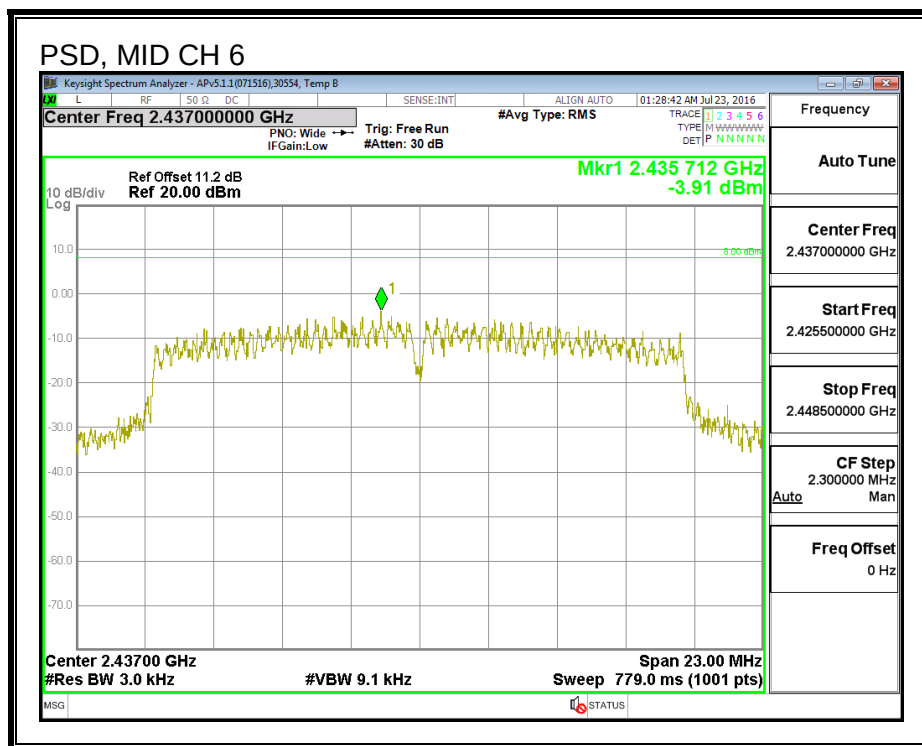
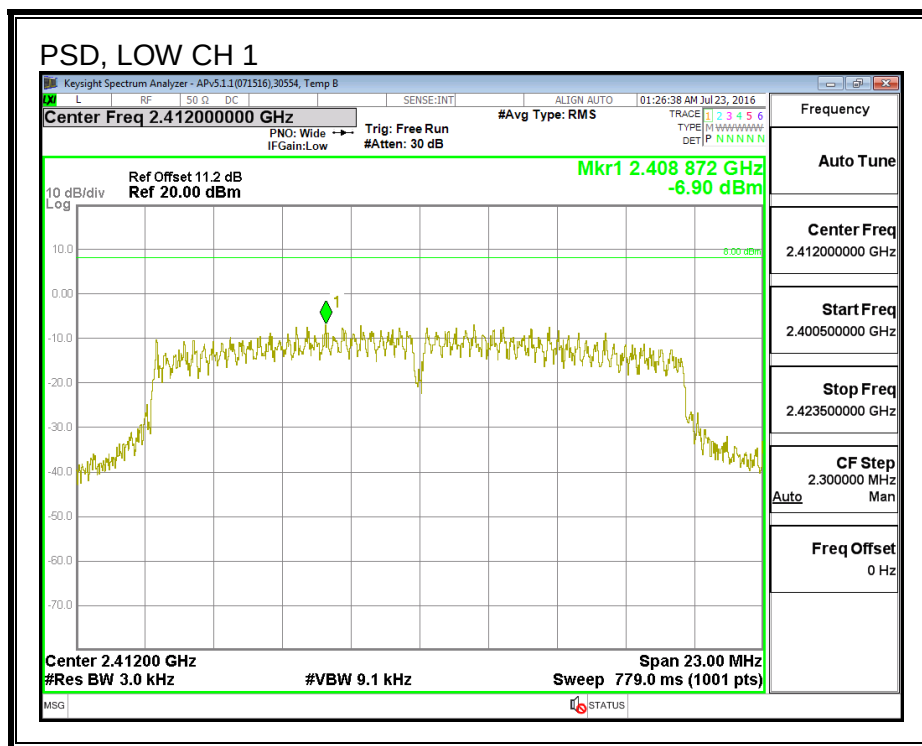
RESULTS

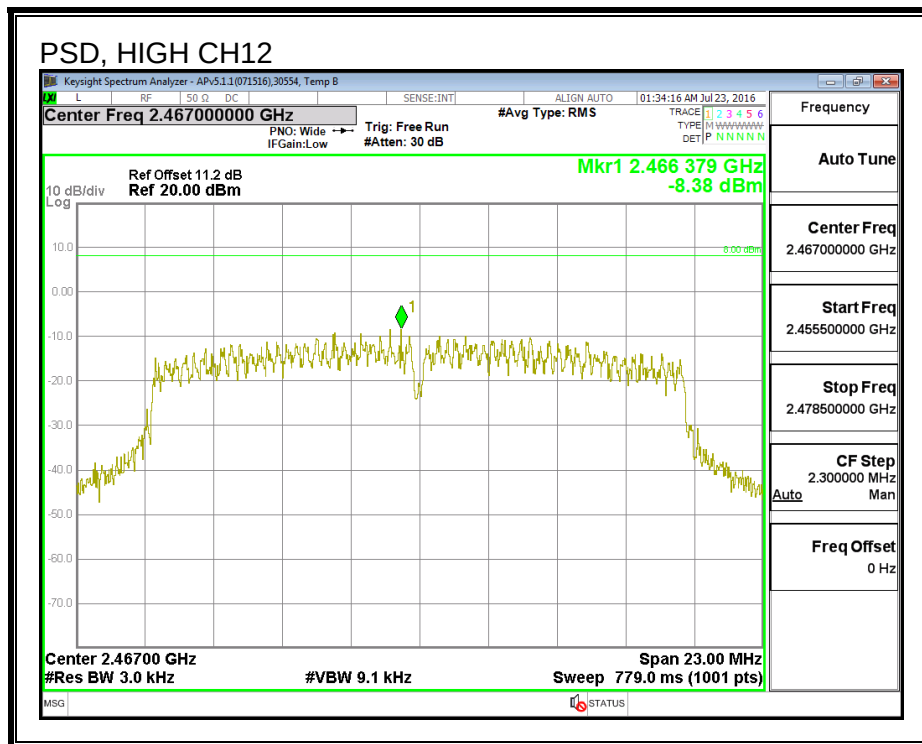
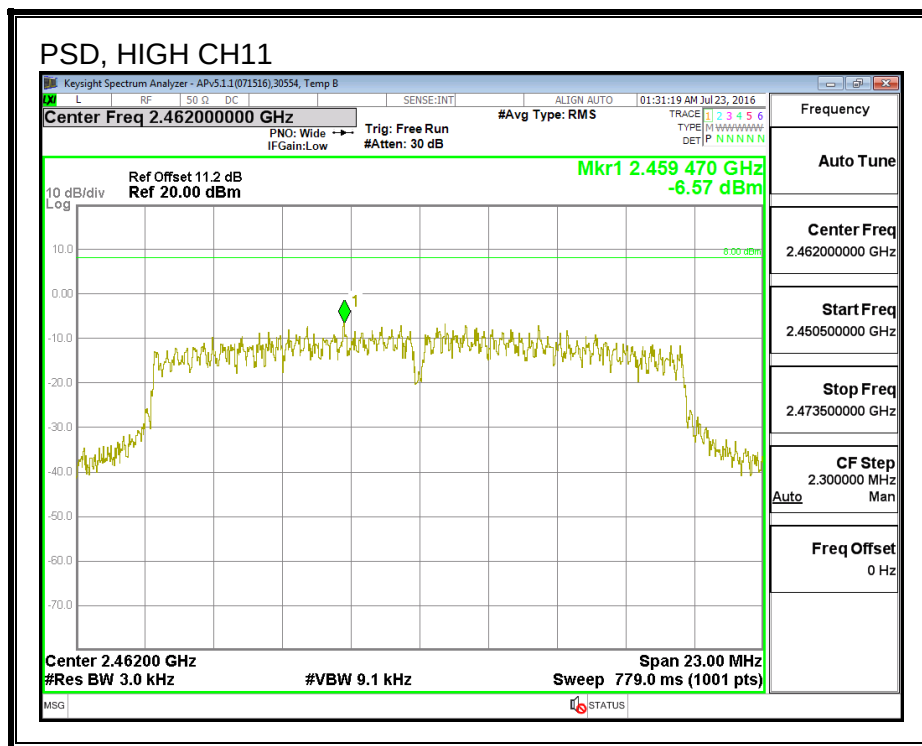
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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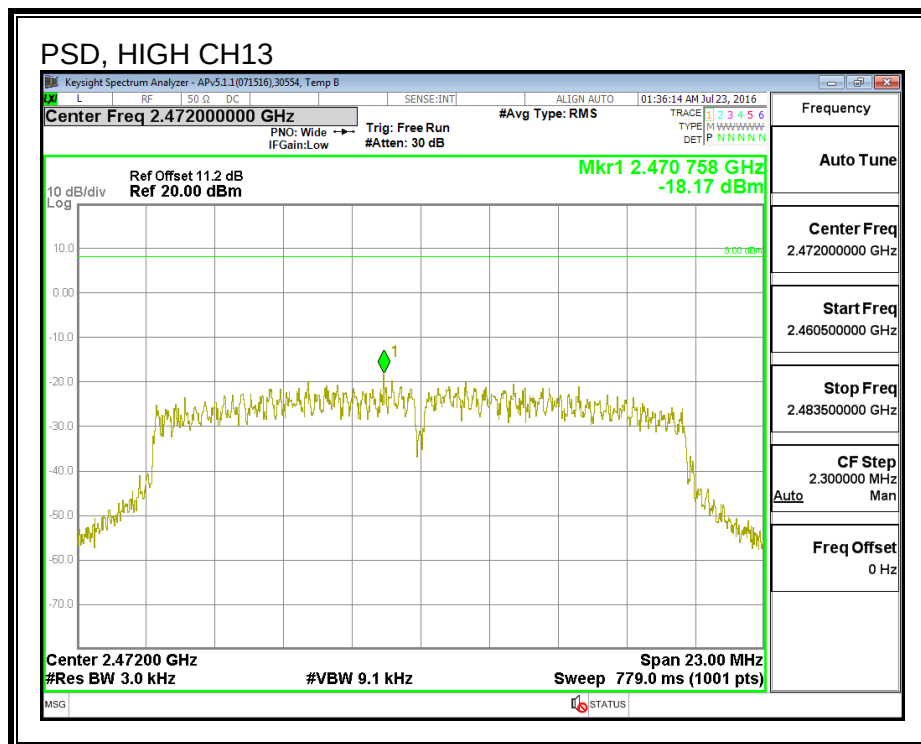
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low_1	2412	-6.90	-6.90	8.0	-14.9
Mid_6	2437	-3.91	-3.91	8.0	-11.9
High_11	2462	-6.57	-6.57	8.0	-14.6
High_12	2467	-8.38	-8.38	8.0	-16.4
High_13	2472	-18.17	-18.17	8.0	-26.2

PSD







8.3.6. OUT-OF-BAND EMISSIONS

LIMITS

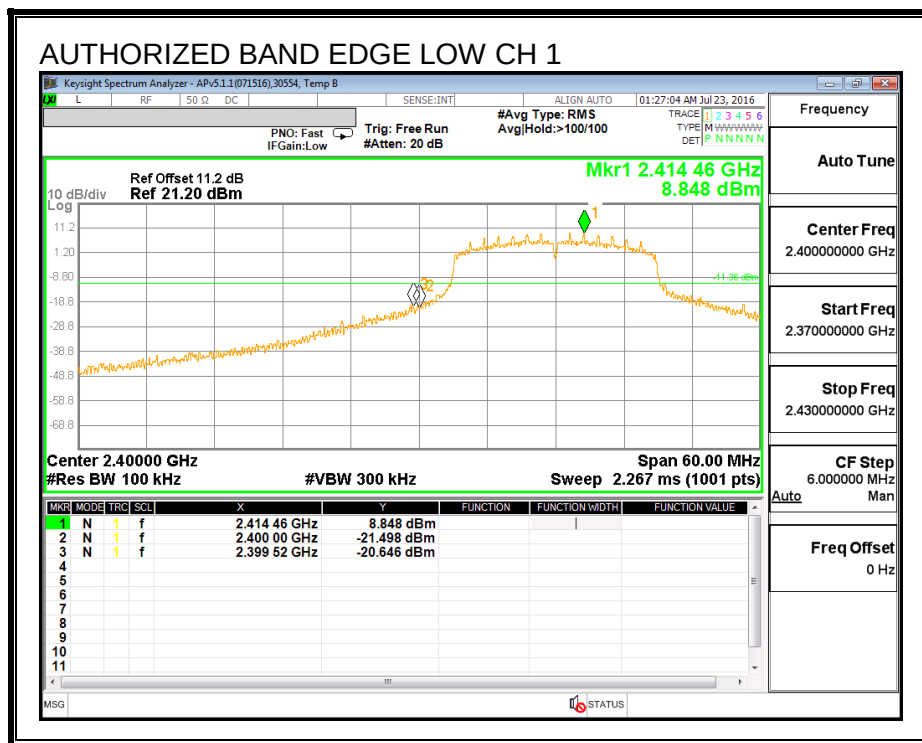
FCC §15.247 (d)

IC RSS-247 (5.5)

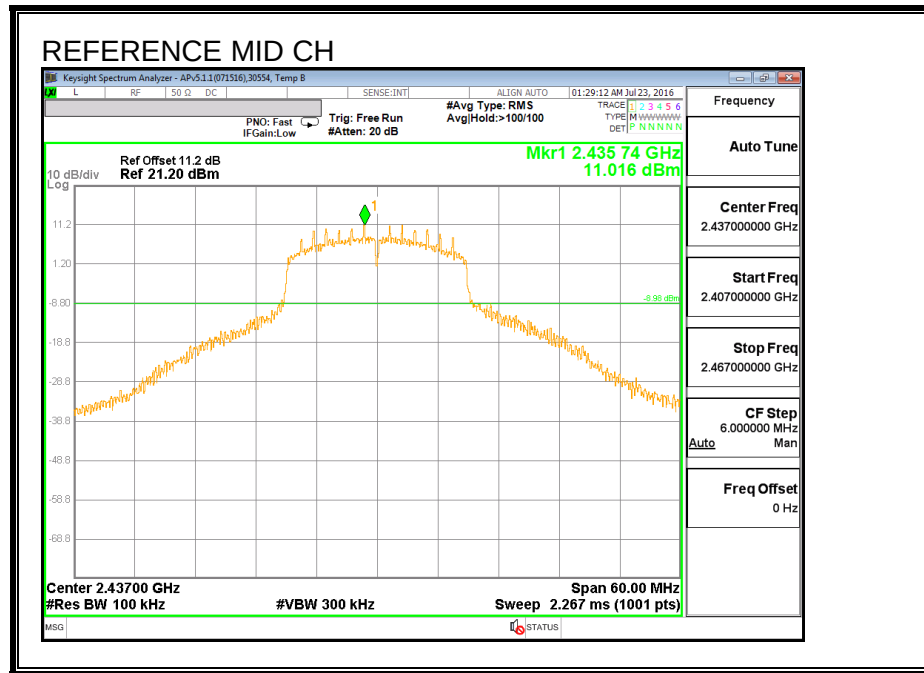
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

RESULTS

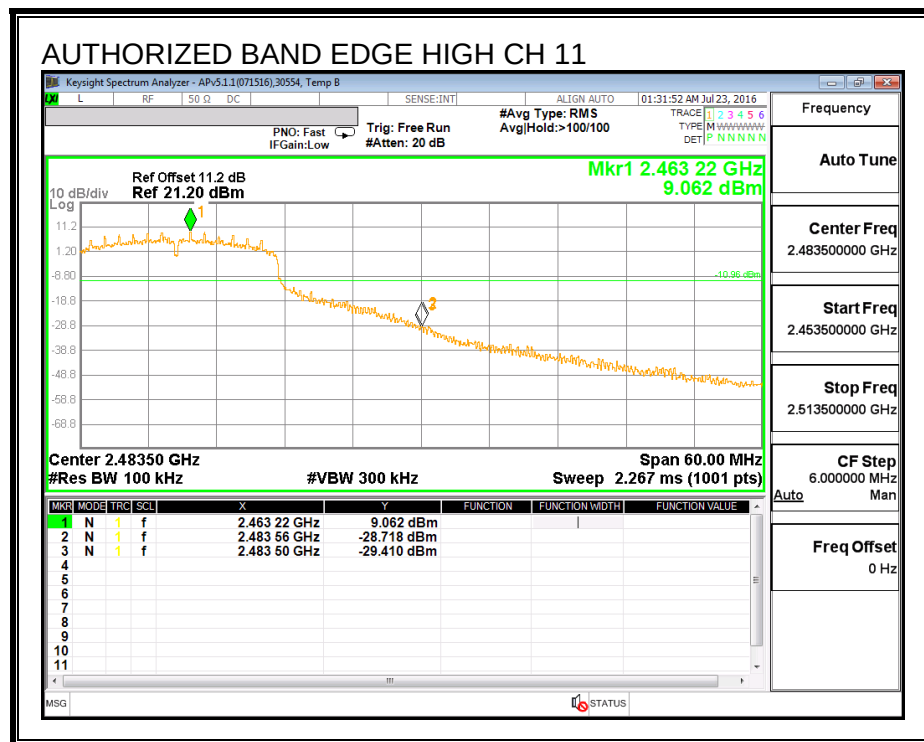
LOW CHANNEL BANDEDGE

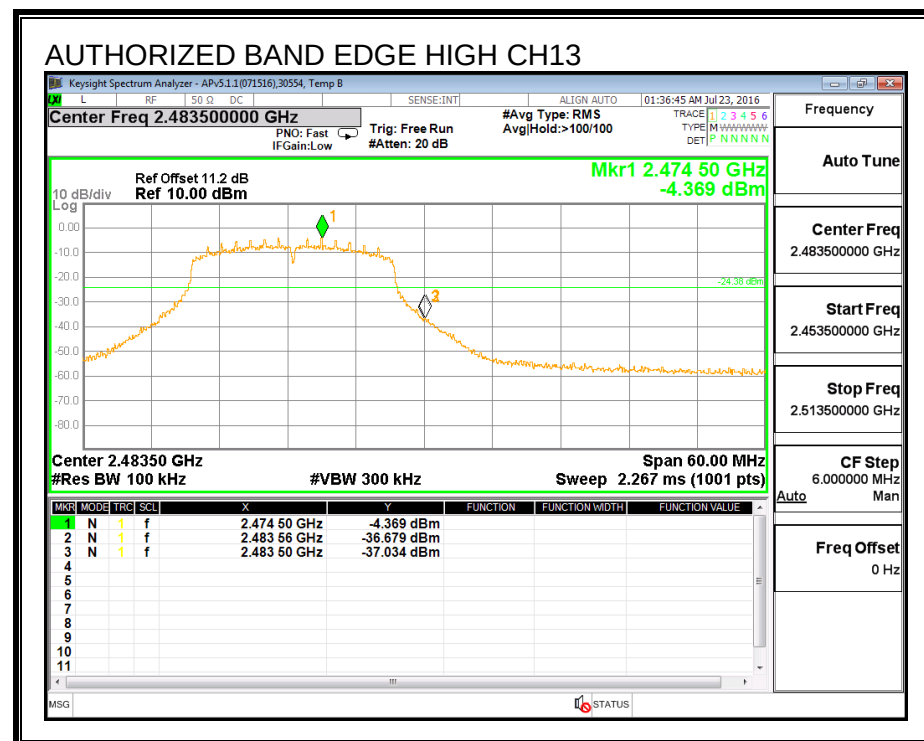
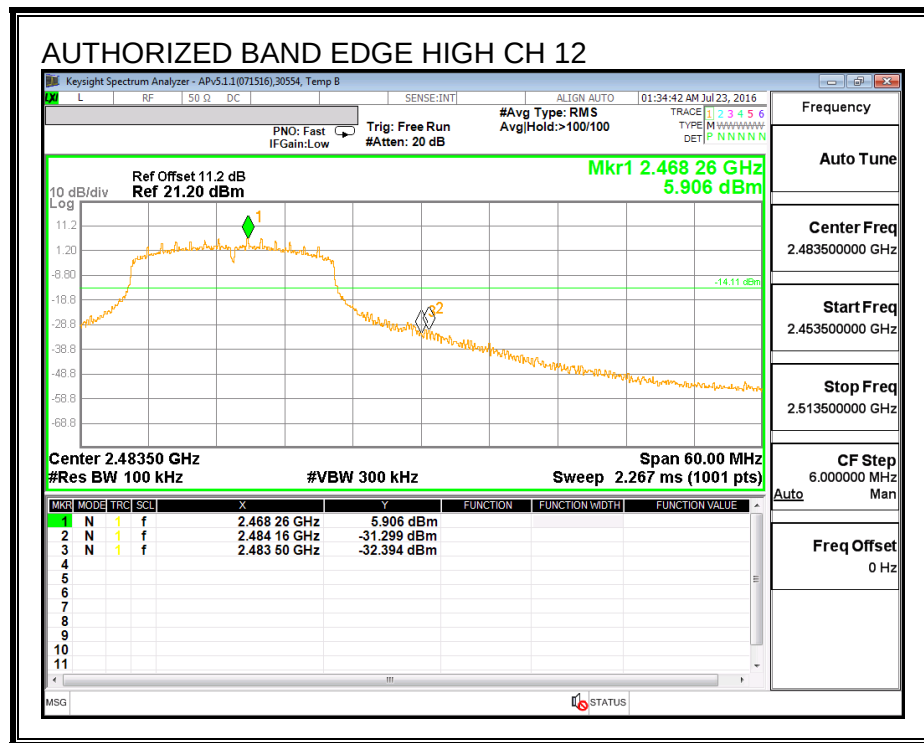


MID CHANNEL REFERENCE

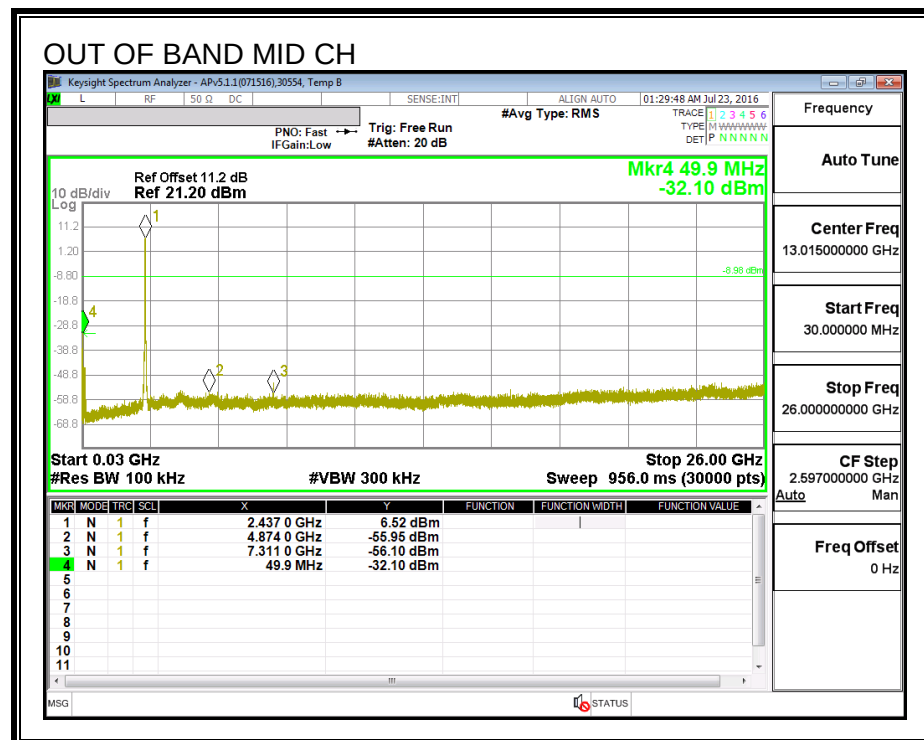
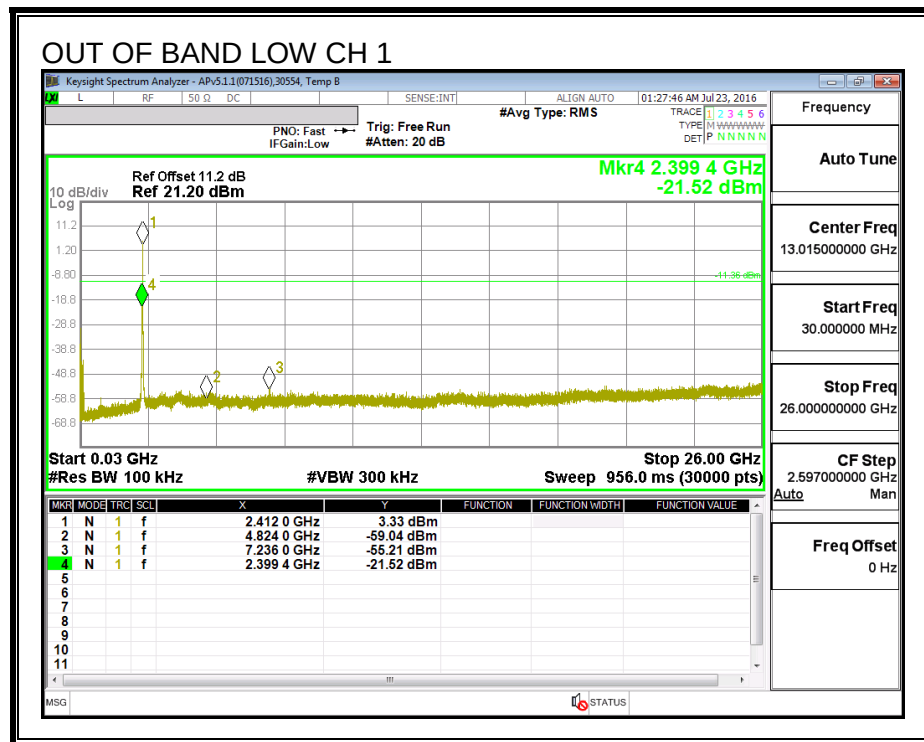


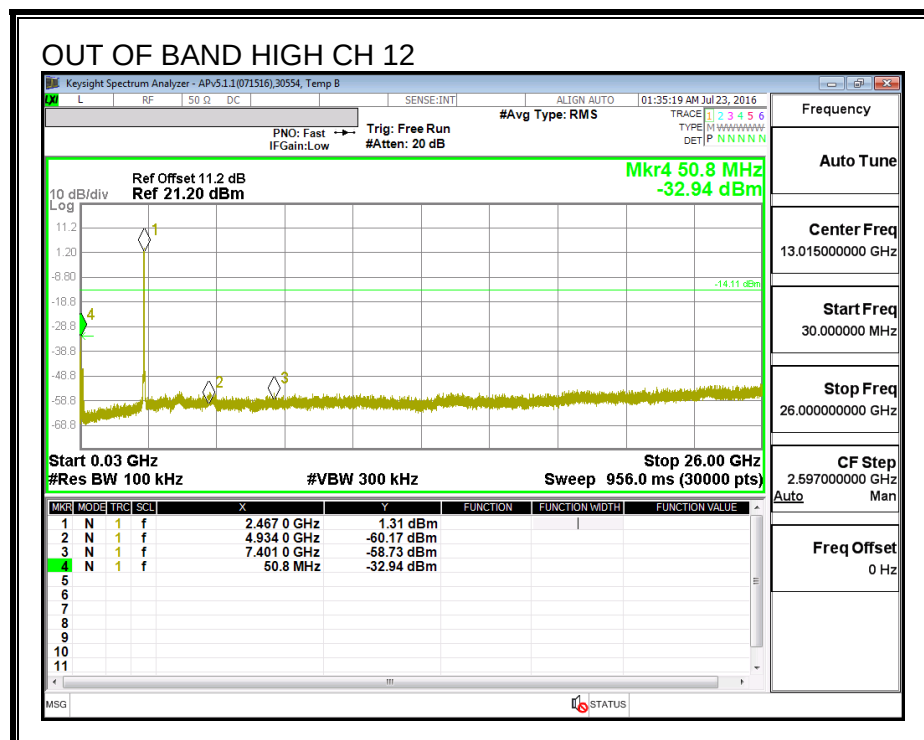
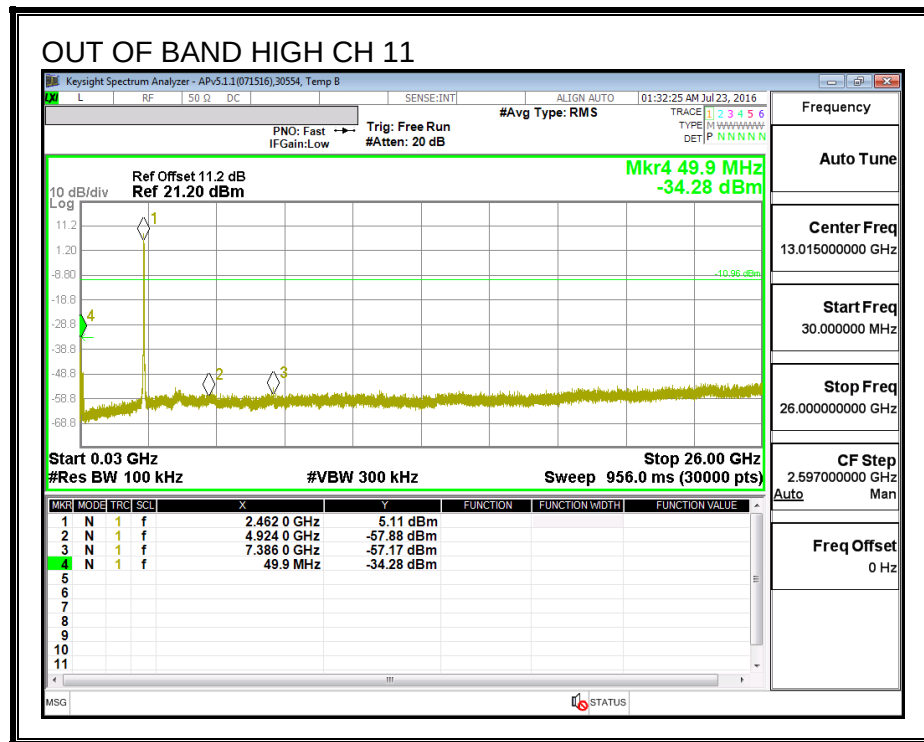
HIGH CHANNEL BANDEDGE

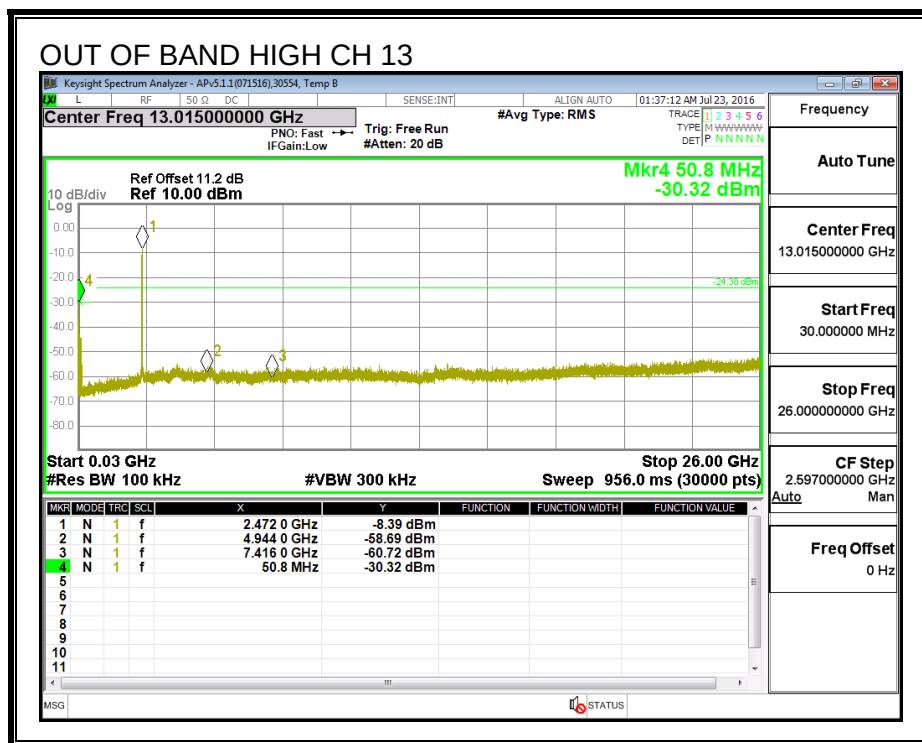




OUT-OF-BAND EMISSIONS







9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

For 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.

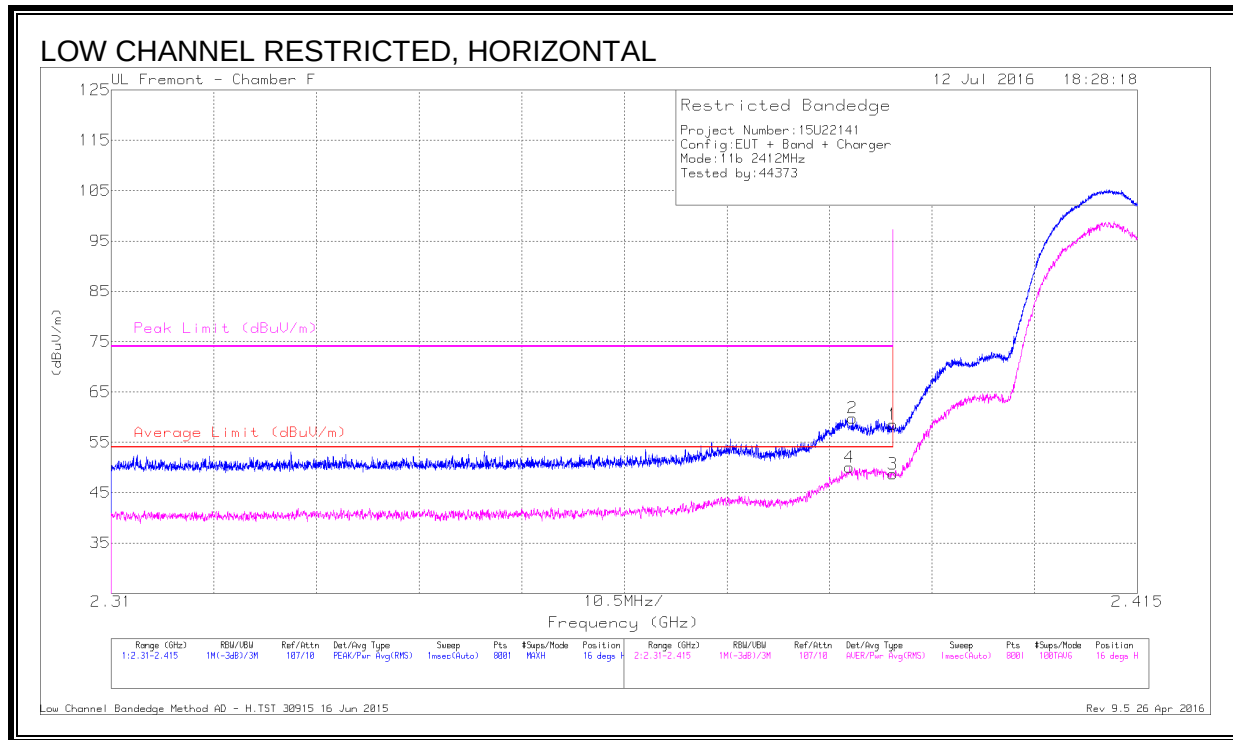
For 2.4 GHz band, the spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. 802.11b 1Tx MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, CH 1)



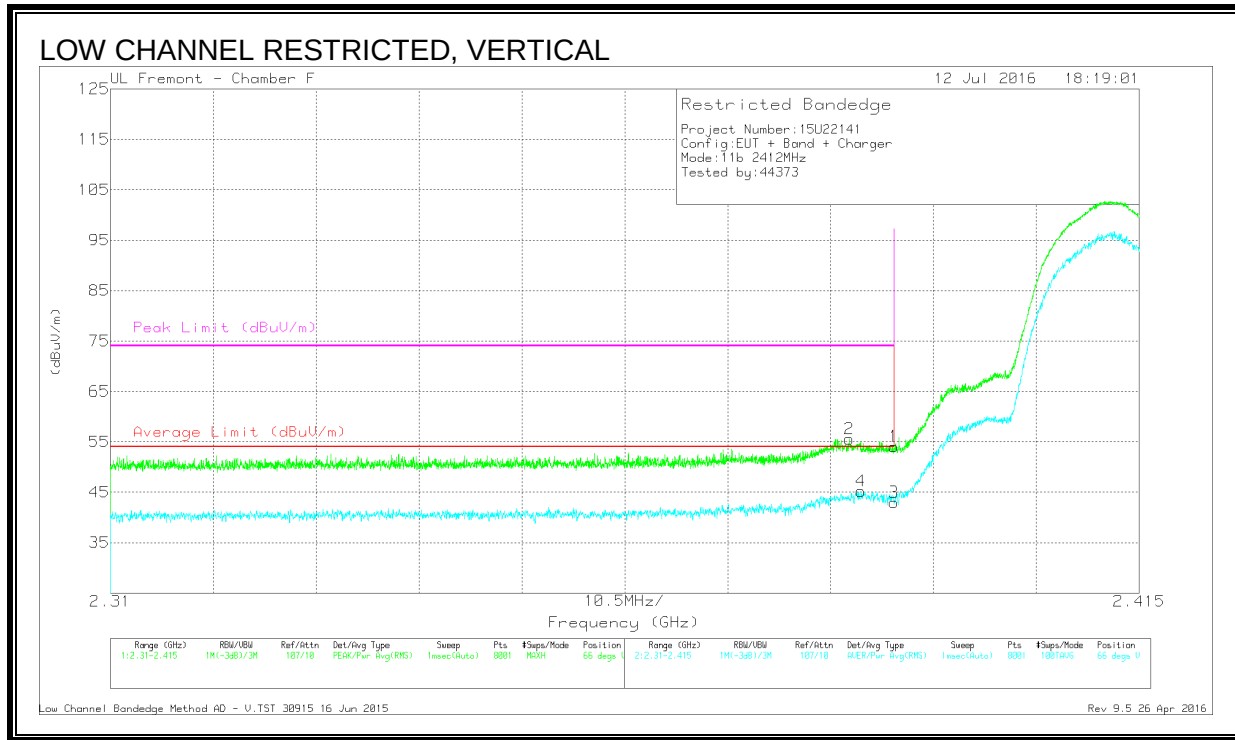
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filt/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	47.36	Pk	32.1	-20.9	58.56	-	-	74	-15.44	16	146	H
2	* 2.386	48.62	Pk	32.1	-20.9	59.82	-	-	74	-14.18	16	146	H
3	* 2.39	37.52	RMS	32.1	-20.9	48.72	54	-5.28	-	-	16	146	H
4	* 2.386	38.85	RMS	32.1	-20.9	50.05	54	-3.95	-	-	16	146	H

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

Pk - Peak detector

RMS - RMS detection



DATA

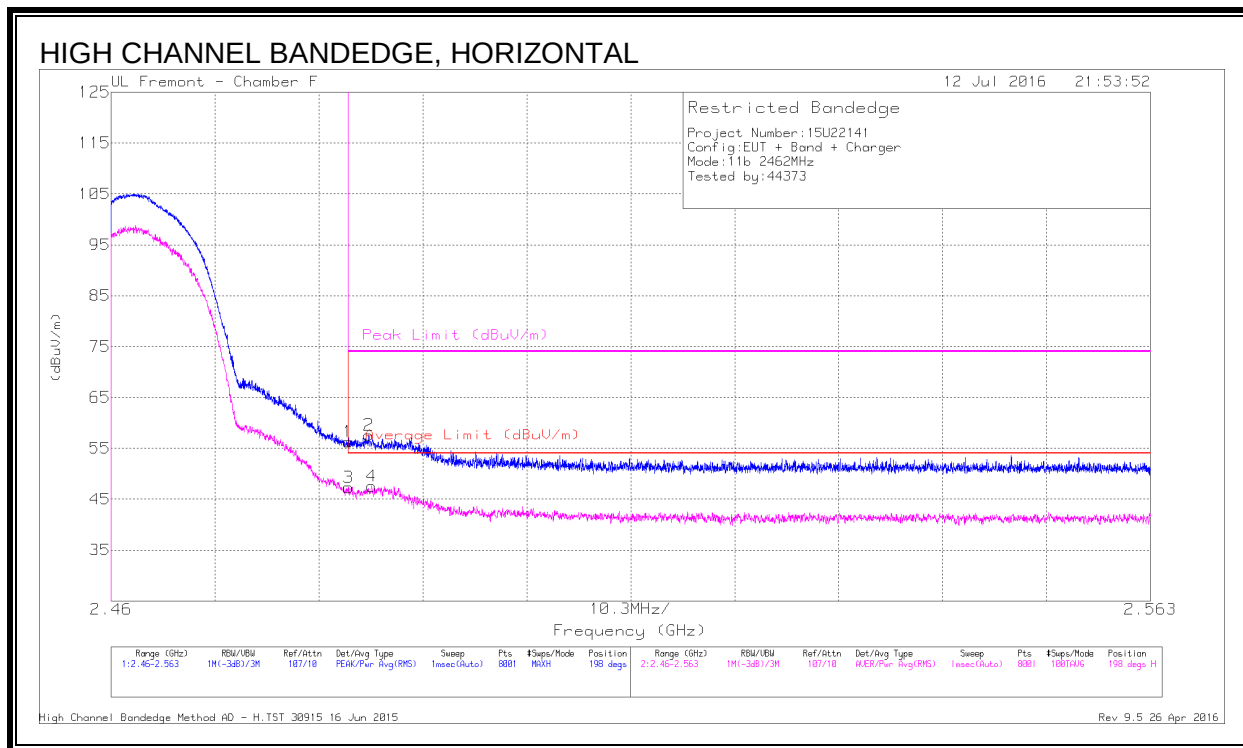
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cb/Filt/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.86	Pk	32.1	-20.9	54.06	-	-	74	-19.94	66	320	V
2	* 2.385	44.38	Pk	32.1	-20.9	55.58	-	-	74	-18.42	66	320	V
3	* 2.39	31.78	RMS	32.1	-20.9	42.98	54	-11.02	-	-	66	320	V
4	* 2.387	34.03	RMS	32.1	-20.9	45.23	54	-8.77	-	-	66	320	V

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

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEGE (HIGH CHANNEL, CH 11)



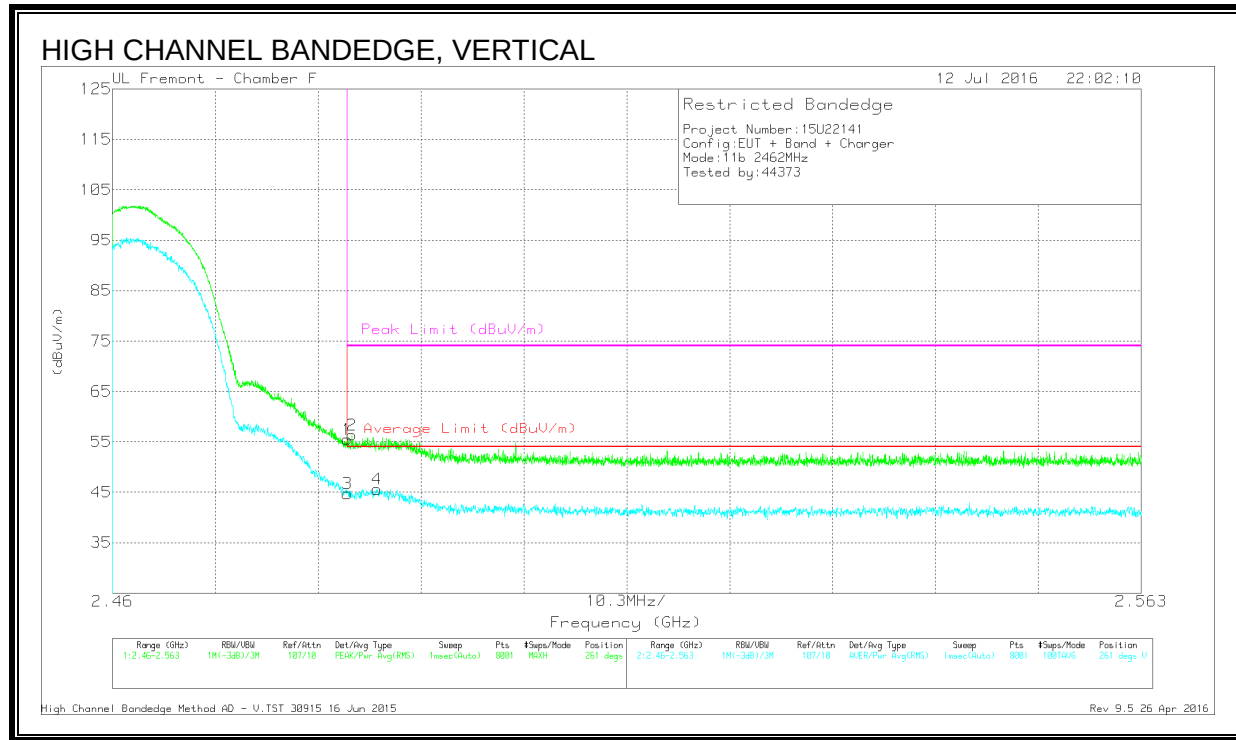
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filt/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.99	Pk	32.3	-21	56.29	-	-	74	-17.71	198	210	H
2	* 2.486	46.19	Pk	32.3	-20.9	57.59	-	-	74	-16.41	198	210	H
3	* 2.484	36.01	RMS	32.3	-21	47.31	54	-6.69	-	-	198	210	H
4	* 2.486	36.15	RMS	32.3	-20.9	47.55	54	-6.45	-	-	198	210	H

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

Pk - Peak detector

RMS - RMS detection



DATA

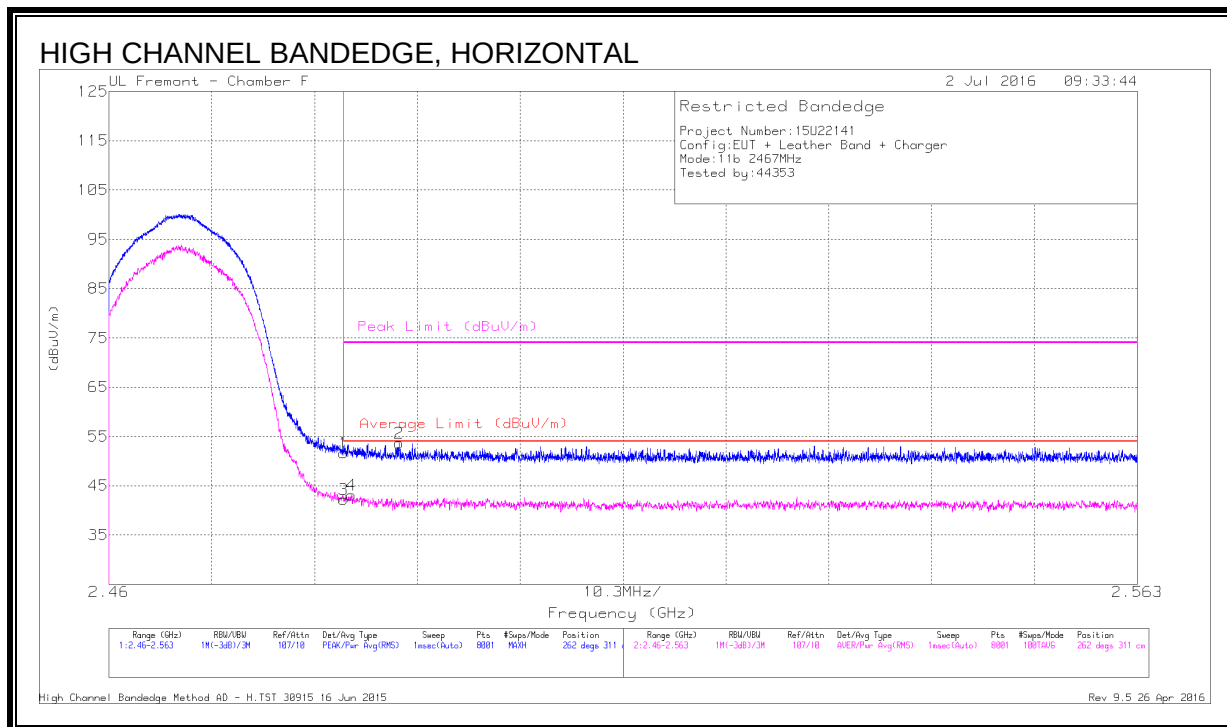
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.18	Pk	32.3	-21	55.48	-	-	74	-18.52	261	354	V
2	* 2.484	45.05	Pk	32.3	-21	56.35	-	-	74	-17.65	261	354	V
3	* 2.484	33.46	RMS	32.3	-21	44.76	54	-9.24	-	-	261	354	V
4	* 2.486	34.22	RMS	32.3	-20.9	45.62	54	-8.38	-	-	261	354	V

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

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 12)



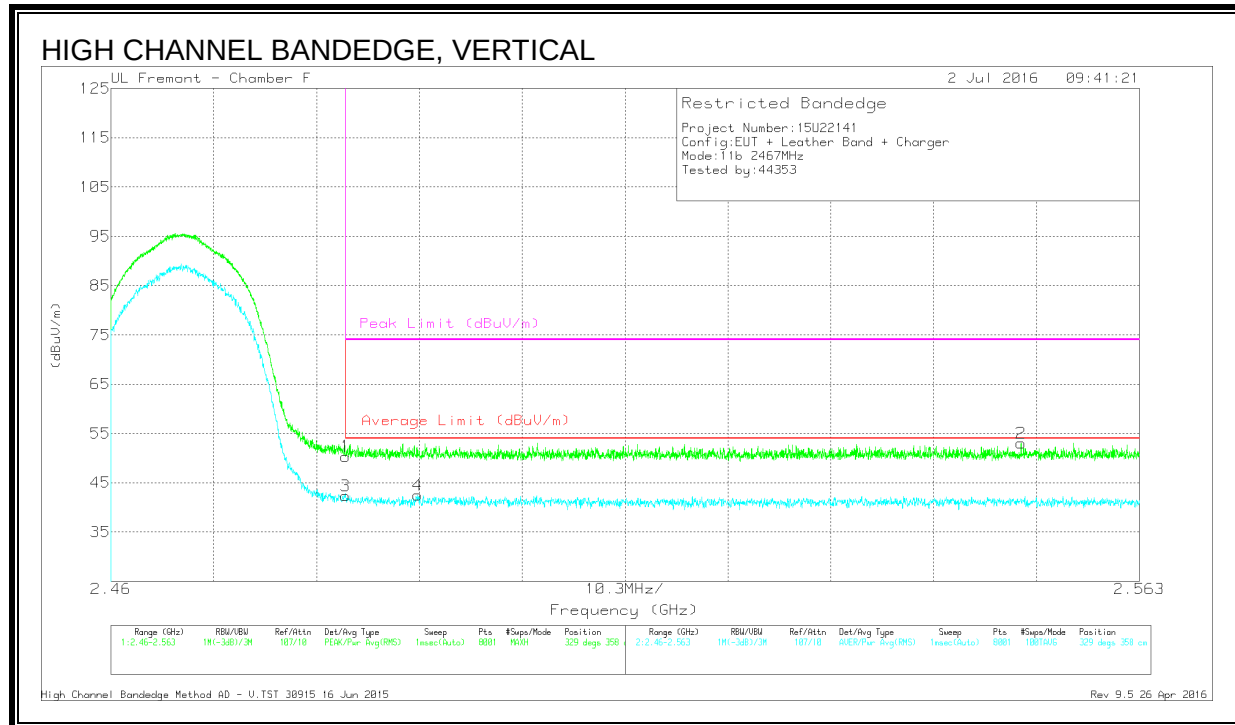
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT344 (dB/m)	Amp/Cbl/Fitr/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.4	Pk	32.3	-21	51.7	-	-	74	-22.3	262	311	H
2	* 2.489	42.24	Pk	32.3	-20.9	53.64	-	-	74	-20.36	262	311	H
3	* 2.484	30.87	RMS	32.3	-21	42.17	54	-11.83	-	-	262	311	H
4	* 2.484	31.78	RMS	32.3	-21	43.08	54	-10.92	-	-	262	311	H

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

Pk - Peak detector

RMS - RMS detection



DATA

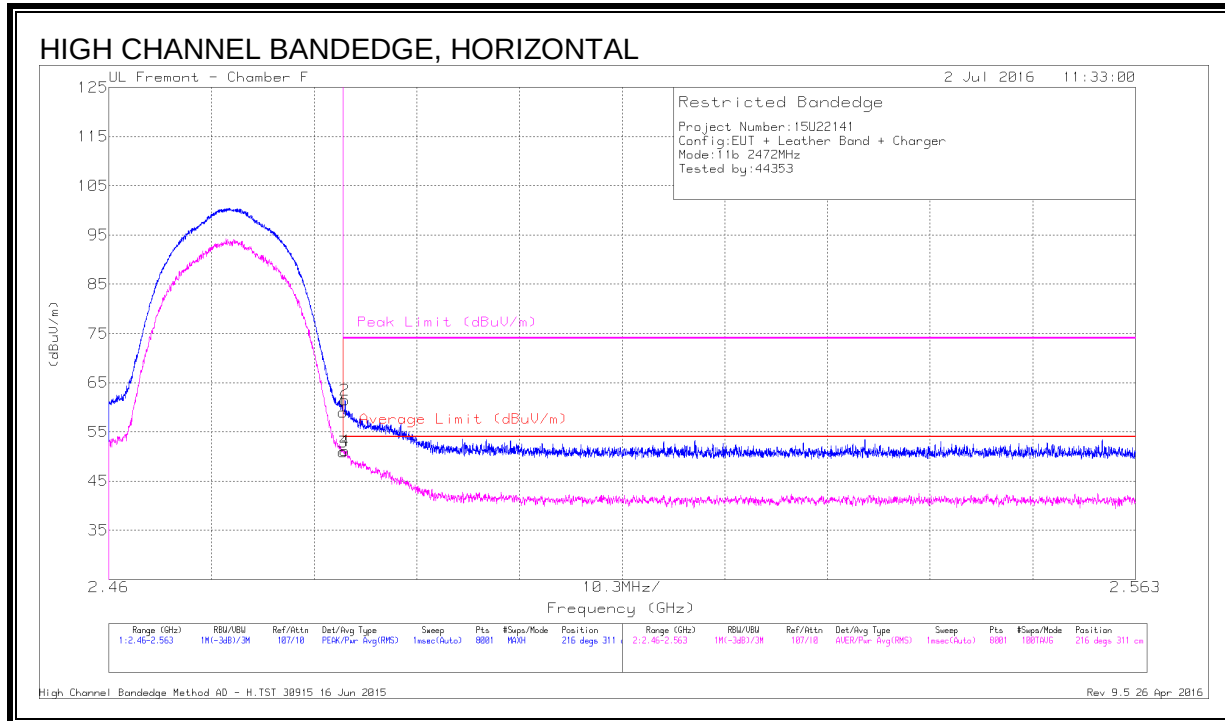
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT344 (dB/m)	Amp/Cb/Fltr/Psd (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.05	Pk	32.3	-21	50.35	-	-	74	-23.65	329	358	V
2	2.551	41.66	Pk	32.2	-20.8	53.06	-	-	74	-20.94	329	358	V
3	* 2.484	31.06	RMS	32.3	-21	42.36	54	-11.64	-	-	329	358	V
4	* 2.491	31.07	RMS	32.3	-20.9	42.47	54	-11.53	-	-	329	358	V

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

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 13)



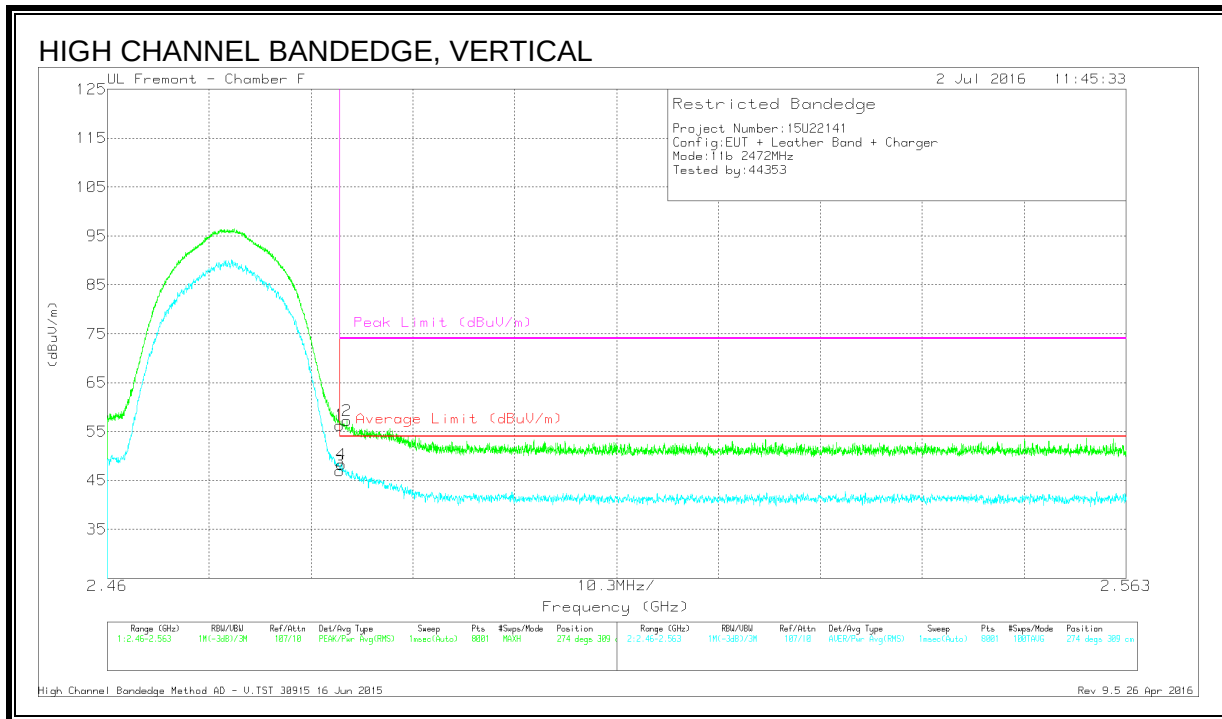
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filt/Pa d (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	47.67	Pk	32.3	-21	58.97	-	-	74	-15.03	216	311	H
2	* 2.484	50.17	Pk	32.3	-21	61.47	-	-	74	-12.53	216	311	H
3	* 2.484	39.65	RMS	32.3	-21	50.95	54	-3.05	-	-	216	311	H
4	* 2.484	39.82	RMS	32.3	-21	51.12	54	-2.88	-	-	216	311	H

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

Pk - Peak detector

RMS - RMS detection



DATA

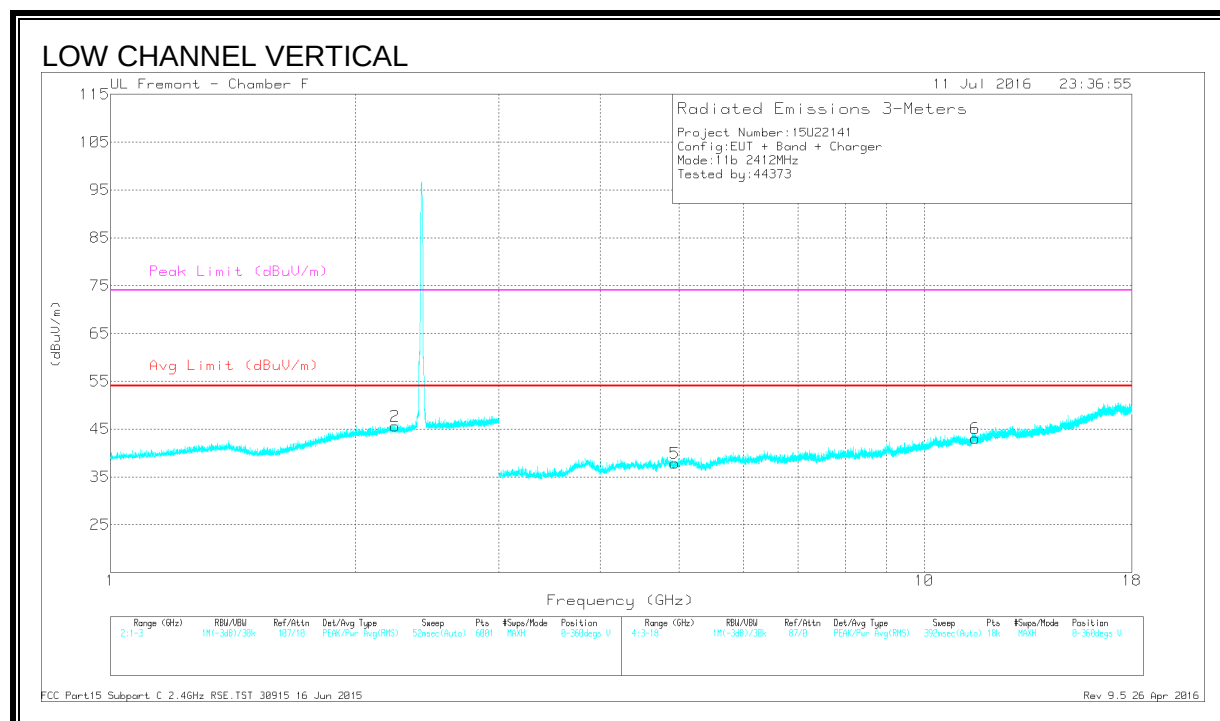
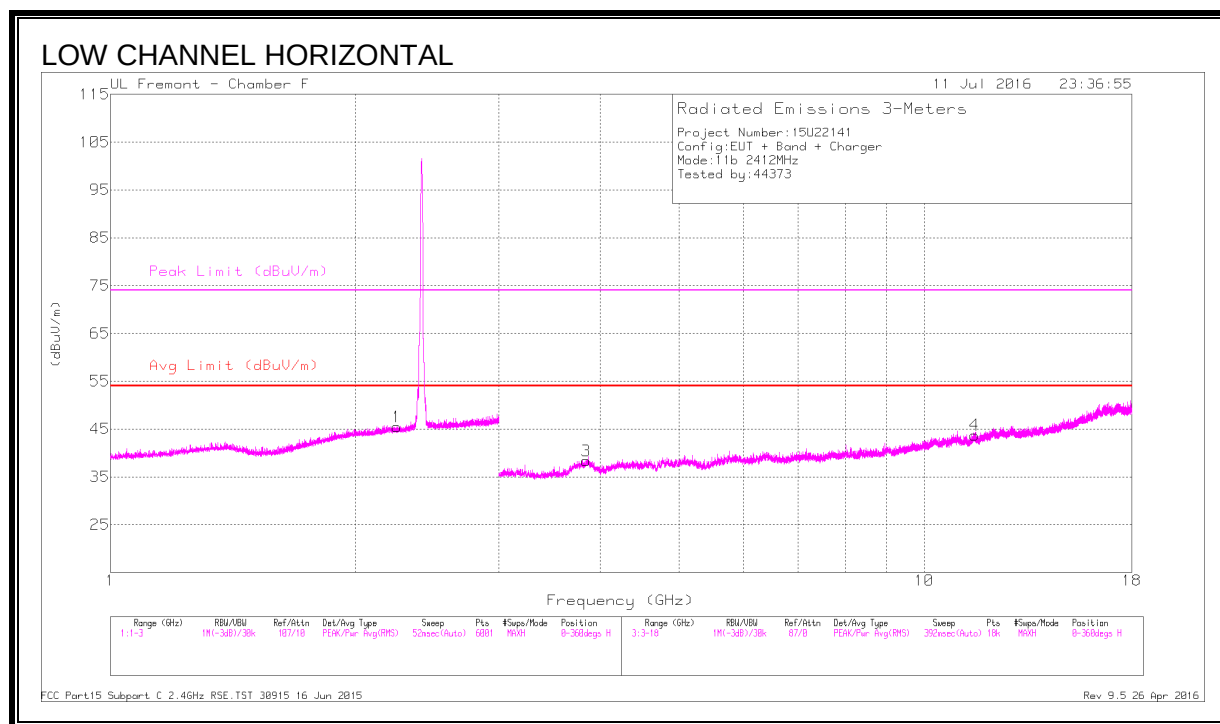
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.01	Pk	32.3	-21	56.31	-	-	74	-17.69	274	309	V
2	* 2.484	45.98	Pk	32.3	-21	57.28	-	-	74	-16.72	274	309	V
3	* 2.484	35.63	RMS	32.3	-21	46.93	54	-7.07	-	-	274	309	V
4	* 2.484	36.98	RMS	32.3	-21	48.28	54	-5.72	-	-	274	309	V

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

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL, CH 1



DATA

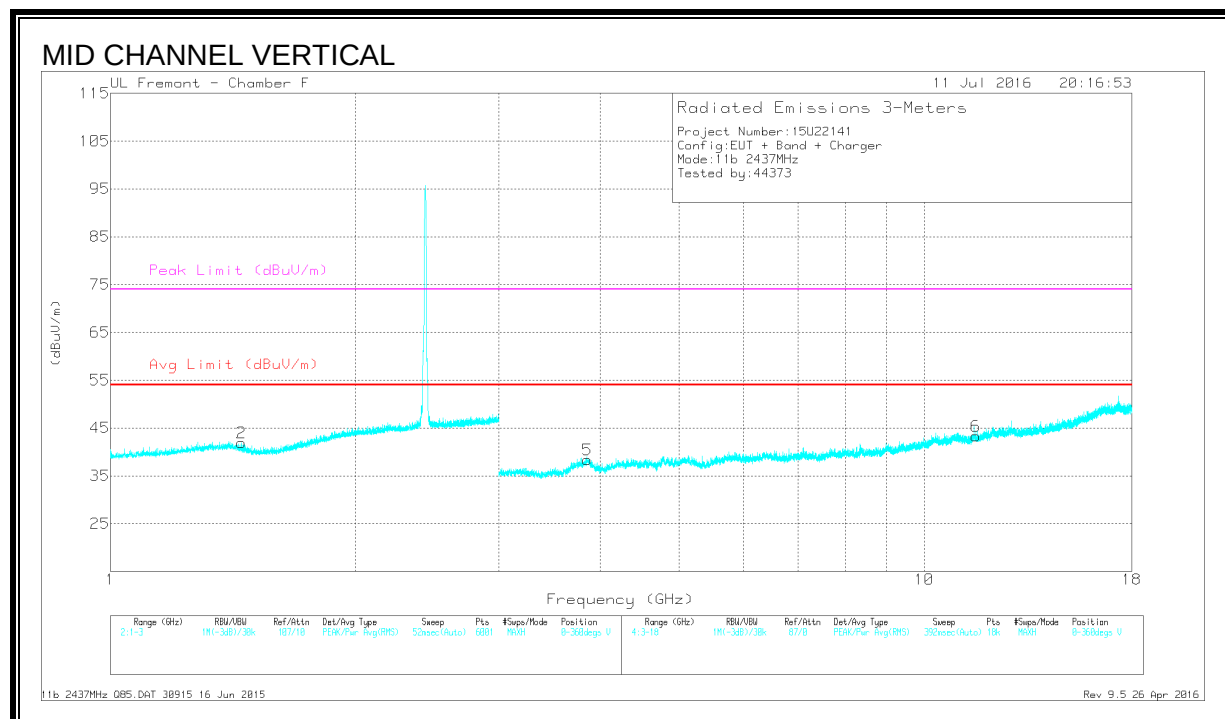
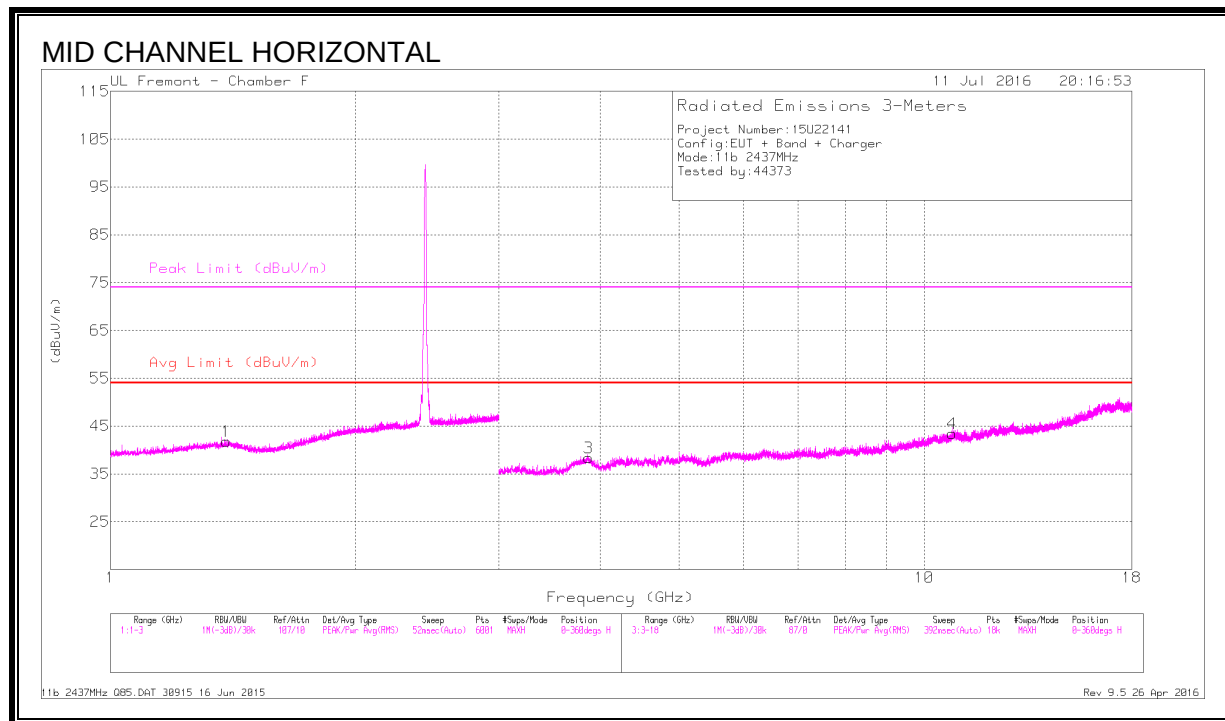
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.247	41.65	PK2	31.8	-21	52.45	-	-	74	-21.55	87	339	H
	* 2.246	30.3	MAv1	31.8	-21	41.1	54	-12.9	-	-	87	339	H
2	* 2.236	41.65	PK2	31.8	-21	52.45	-	-	74	-21.55	259	373	V
	* 2.236	30.29	MAv1	31.8	-21	41.09	54	-12.91	-	-	259	373	V
3	* 3.846	38.65	PK2	33.4	-28.2	43.85	-	-	74	-30.15	183	125	H
	* 3.846	27.65	MAv1	33.4	-28.2	32.85	54	-21.15	-	-	183	125	H
4	* 11.534	33.36	PK2	38.1	-21.2	50.26	-	-	74	-23.74	91	286	H
	* 11.532	22.84	MAv1	38.1	-21.2	39.74	54	-14.26	-	-	91	286	H
5	* 4.934	38.35	PK2	34.1	-28.5	43.95	-	-	74	-30.05	70	106	V
	* 4.936	27.38	MAv1	34.1	-28.5	32.98	54	-21.02	-	-	70	106	V
6	* 11.555	33.47	PK2	38.1	-21.4	50.17	-	-	74	-23.83	96	223	V
	* 11.553	23.33	MAv1	38.1	-21.4	40.03	54	-13.97	-	-	96	223	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



DATA

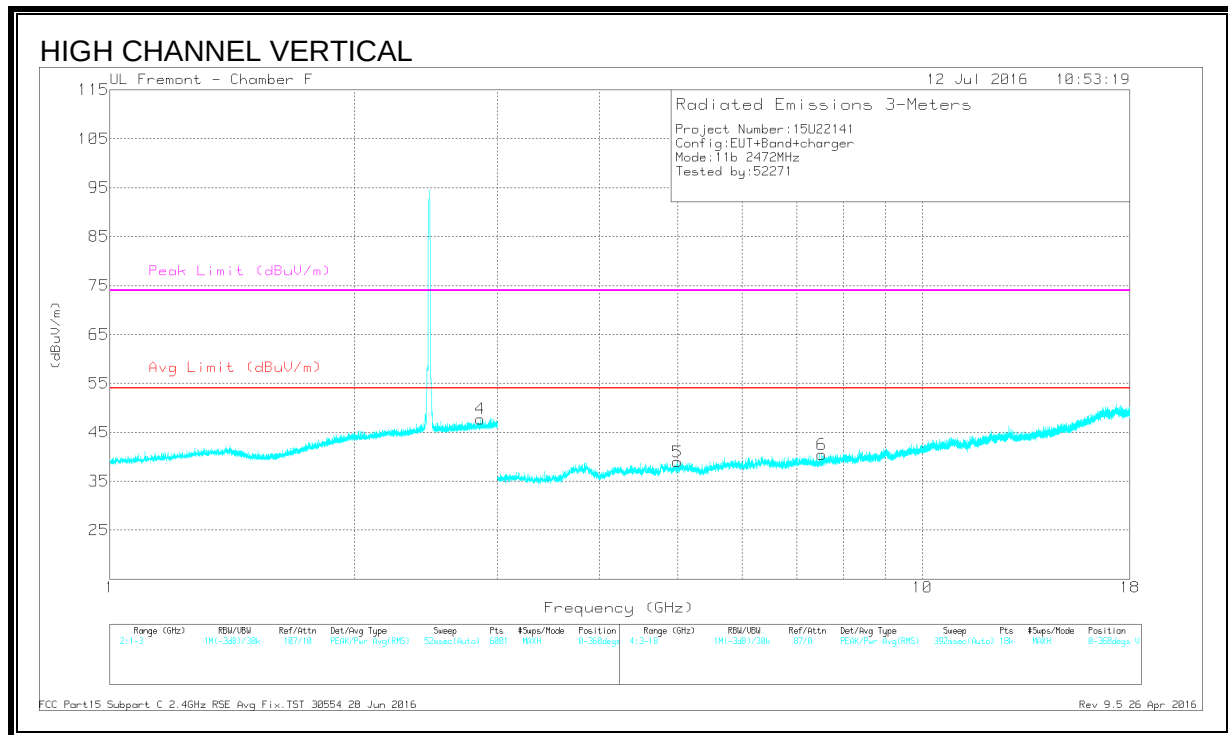
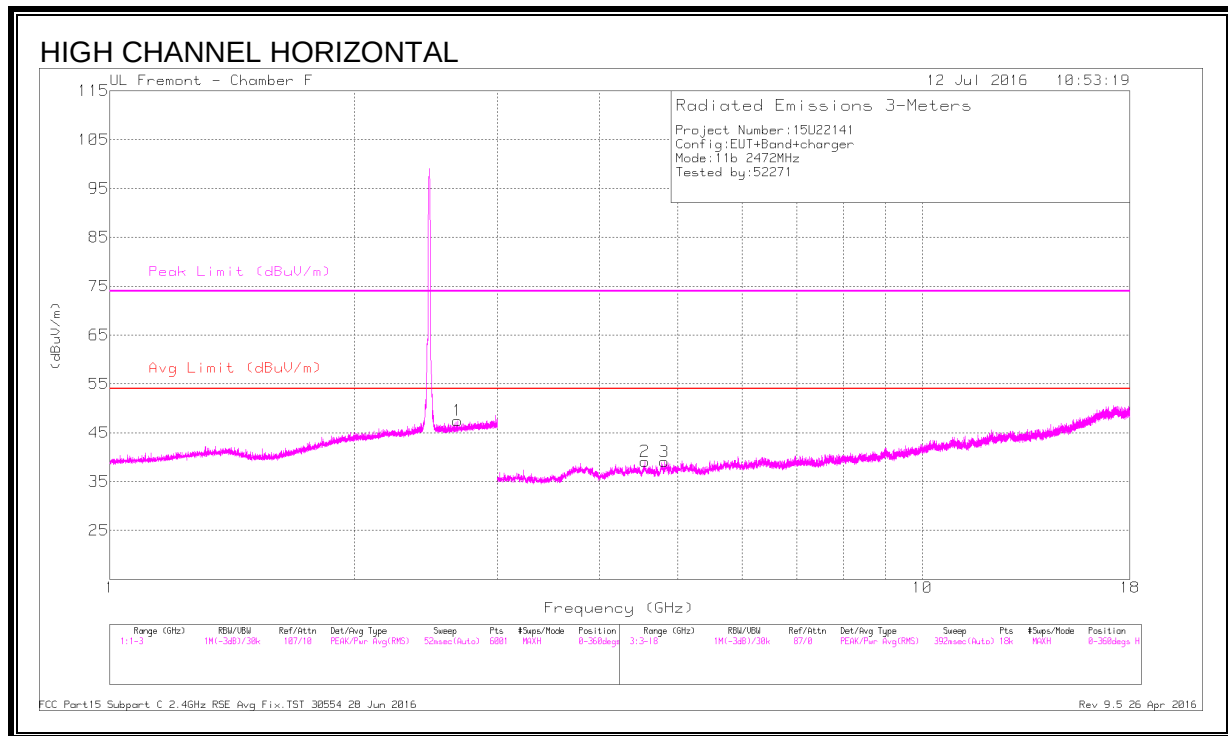
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.387	42.25	PK2	29.3	-22.1	49.45	-	-	74	-24.55	24	233	H
	* 1.389	30.44	MAv1	29.3	-22.1	37.64	54	-16.36	-	-	24	233	H
2	* 1.452	41.49	PK2	28.6	-22	48.09	-	-	74	-25.91	222	191	V
	* 1.455	30.59	MAv1	28.6	-22	37.19	54	-16.81	-	-	222	191	V
3	* 3.868	38.52	PK2	33.4	-28.3	43.62	-	-	74	-30.38	236	191	H
	* 3.87	28.32	MAv1	33.4	-28.3	33.42	54	-20.58	-	-	236	191	H
4	* 10.844	33.36	PK2	37.8	-21.6	49.56	-	-	74	-24.44	178	138	H
	* 10.846	23.7	MAv1	37.8	-21.6	39.9	54	-14.1	-	-	178	138	H
5	* 3.85	38.16	PK2	33.4	-28.2	43.36	-	-	74	-30.64	111	153	V
	* 3.854	28.33	MAv1	33.4	-28.2	33.53	54	-20.47	-	-	111	153	V
6	* 11.52	34.78	PK2	38.1	-21	51.88	-	-	74	-22.12	94	244	V
	* 11.52	22.72	MAv1	38.1	-21	39.82	54	-14.18	-	-	94	244	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 13



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cb/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	* 2.679	41.5	PK2	32.3	-20.6	53.2	-	-	74	-20.8	20	270	H
	* 2.677	30.83	MAv1	32.3	-20.6	42.53	54	-11.47	-	-	20	270	H
4	* 2.854	41.8	PK2	32.6	-20.3	54.1	-	-	74	-19.9	120	180	V
	* 2.856	30.73	MAv1	32.6	-20.3	43.03	54	-10.97	-	-	120	180	V
2	* 4.554	37.9	PK2	34.1	-27.8	44.2	-	-	74	-29.8	35	328	H
	* 4.556	27.73	MAv1	34.1	-27.8	34.03	54	-19.97	-	-	35	328	H
3	* 4.813	37.27	PK2	34	-27.4	43.87	-	-	74	-30.13	270	230	H
	* 4.811	27	MAv1	34	-27.5	33.5	54	-20.5	-	-	270	230	H
5	* 4.995	38.7	PK2	34.2	-28.8	44.1	-	-	74	-29.9	95	111	V
	* 4.995	28.31	MAv1	34.2	-28.8	33.71	54	-20.29	-	-	95	111	V
6	* 7.513	36.13	PK2	35.6	-25.6	46.13	-	-	74	-27.87	178	100	V
	* 7.513	25.82	MAv1	35.6	-25.6	35.82	54	-18.18	-	-	178	100	V

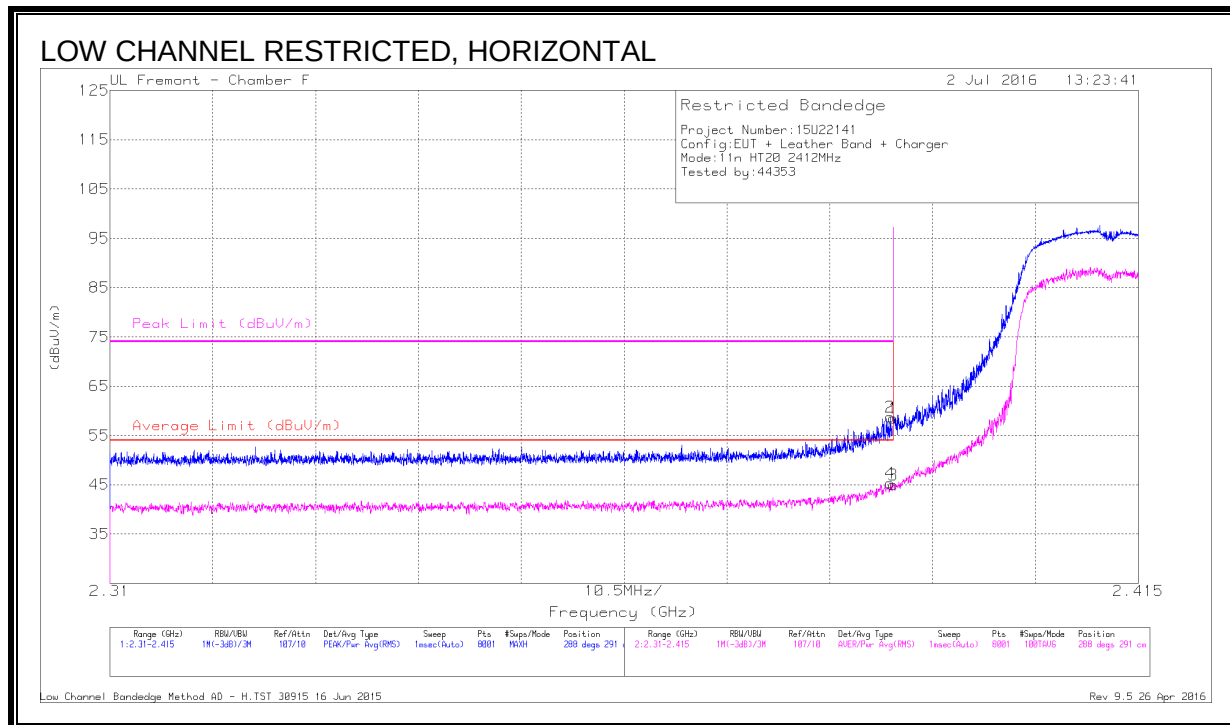
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.2.2. 802.11HT20 1Tx MODE IN THE 2.4 GHz

RESTRICTED BANDEDGE (LOW CHANNEL, CH 1)



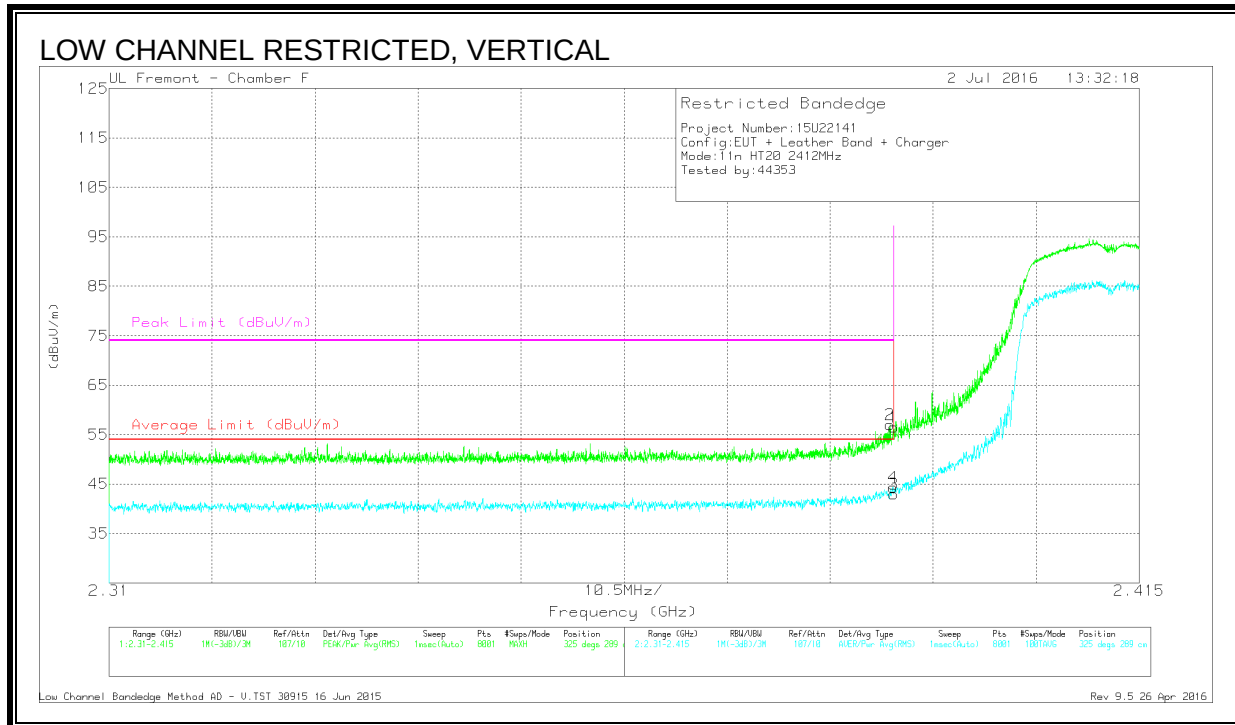
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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	47.25	Pk	32.1	-20.9	58.45	-	-	74	-15.55	288	291	H
2	* 2.39	47.59	Pk	32.1	-20.9	58.79	-	-	74	-15.21	288	291	H
3	* 2.39	33.77	RMS	32.1	-20.9	44.97	54	-9.03	-	-	288	291	H
4	* 2.39	34.08	RMS	32.1	-20.9	45.28	54	-8.72	-	-	288	291	H

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

Pk - Peak detector

RMS - RMS detection



DATA

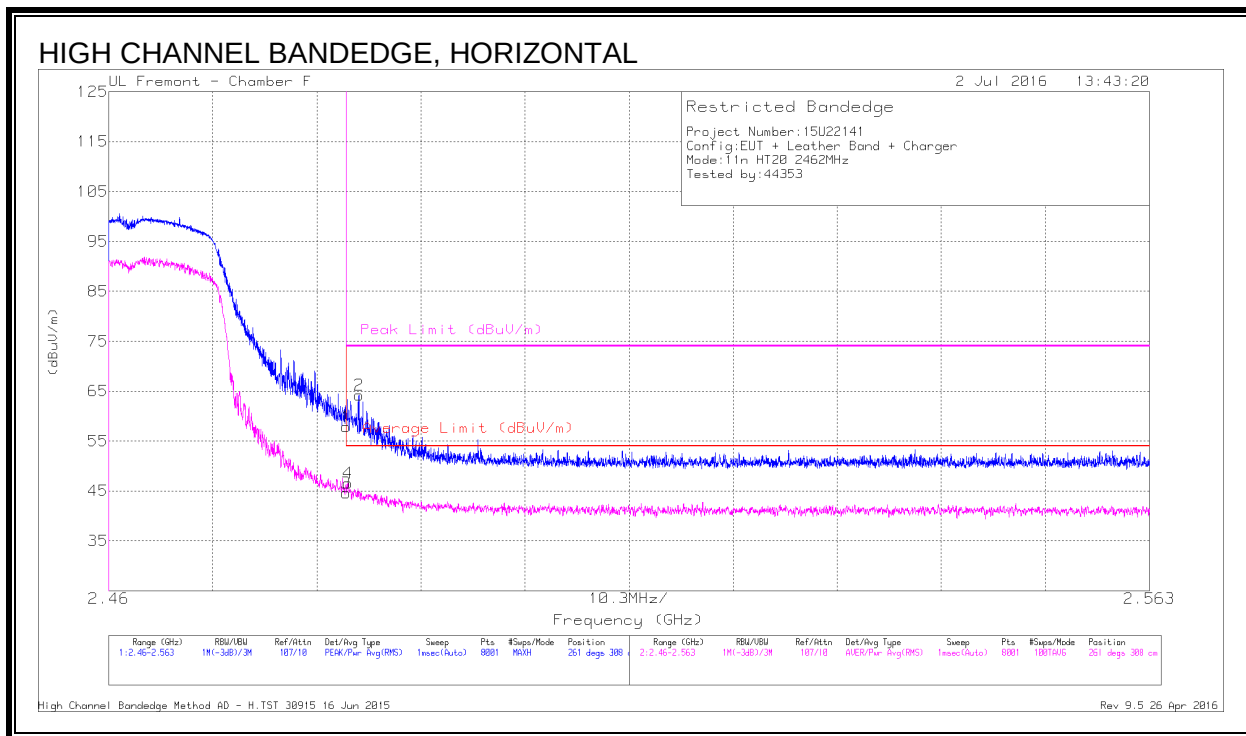
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT344 (dB/m)	Amp/Cb I/Filt/Pd (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.32	PK	32.1	-20.9	56.52	-	-	74	-17.48	325	289	V
2	* 2.39	45.75	PK	32.1	-20.9	56.95	-	-	74	-17.05	325	289	V
3	* 2.39	31.78	RMS	32.1	-20.9	42.98	54	-11.02	-	-	325	289	V
4	* 2.39	33.16	RMS	32.1	-20.9	44.36	54	-9.64	-	-	325	289	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 11)



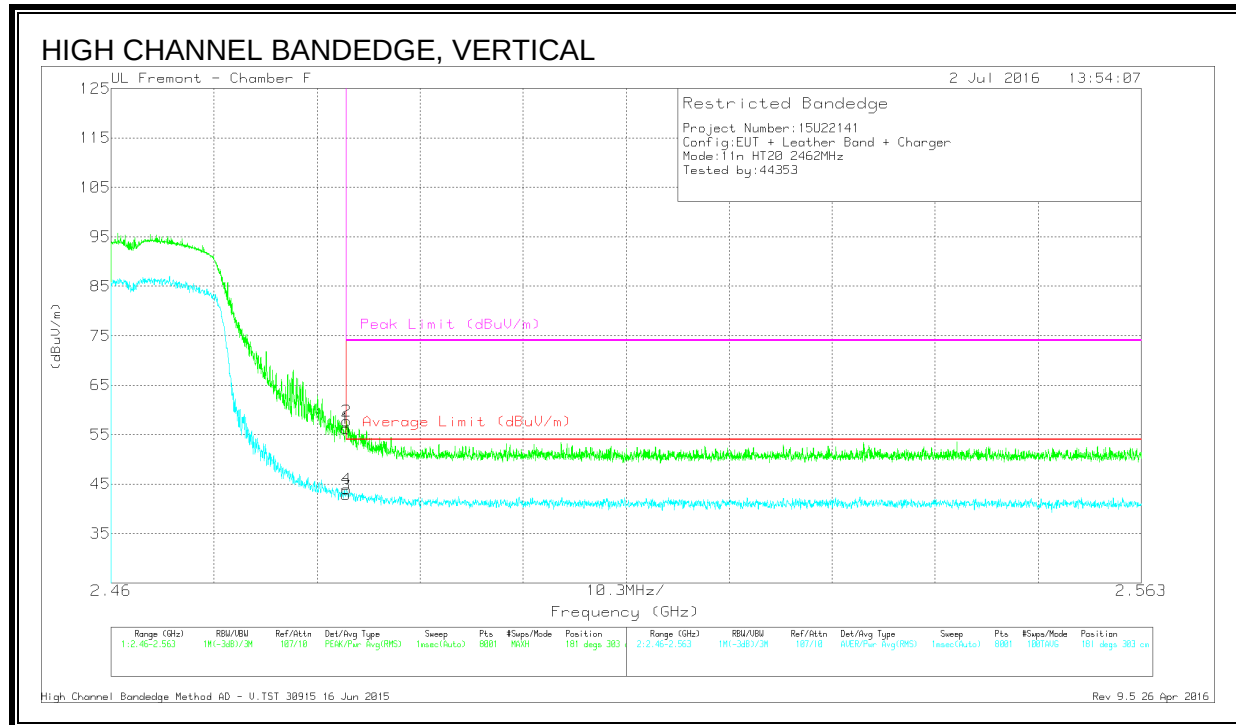
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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.53	Pk	32.3	-21	57.83	-	-	74	-16.17	261	308	H
2	* 2.485	52.85	Pk	32.3	-20.9	64.25	-	-	74	-9.75	261	308	H
3	* 2.484	33.29	RMS	32.3	-21	44.59	54	-9.41	-	-	261	308	H
4	* 2.484	35.25	RMS	32.3	-21	46.55	54	-7.45	-	-	261	308	H

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

Pk - Peak detector

RMS - RMS detection



DATA

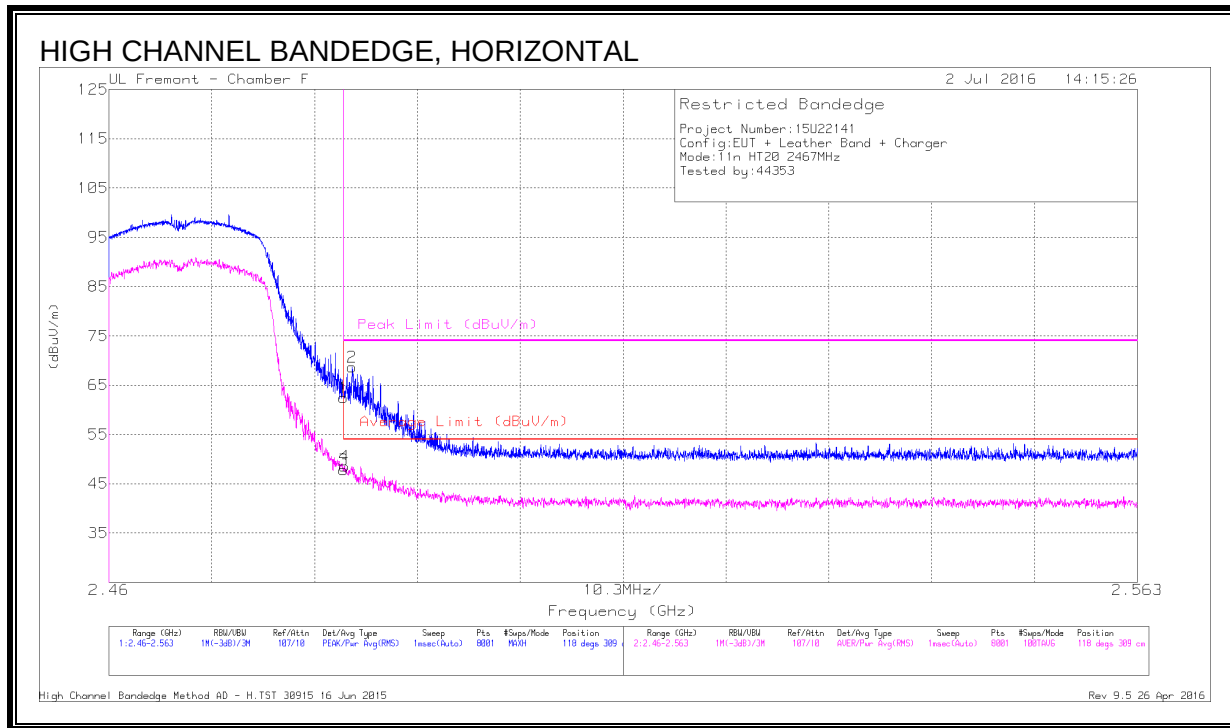
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl /Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45	Pk	32.3	-21	56.3	-	-	74	-17.7	181	303	V
2	* 2.484	46.45	Pk	32.3	-21	57.75	-	-	74	-16.25	181	303	V
3	* 2.484	31.51	RMS	32.3	-21	42.81	54	-11.19	-	-	181	303	V
4	* 2.484	32.64	RMS	32.3	-21	43.94	54	-10.06	-	-	181	303	V

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

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL, CH 12)



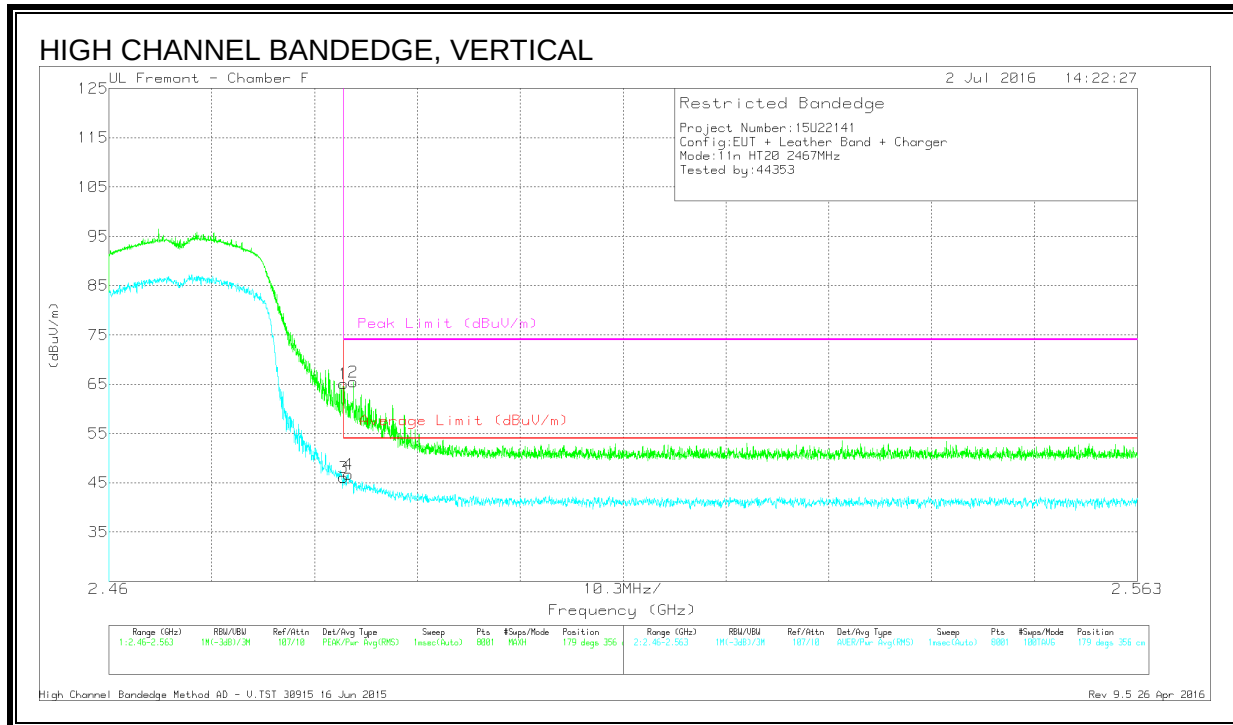
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/F ltr/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	51.15	Pk	32.3	-21	62.45	-	-	74	-11.55	118	309	H
2	* 2.484	57.33	Pk	32.3	-21	68.63	-	-	74	-5.37	118	309	H
3	* 2.484	36.49	RMS	32.3	-21	47.79	54	-6.21	-	-	118	309	H
4	* 2.484	37.25	RMS	32.3	-21	48.55	54	-5.45	-	-	118	309	H

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

Pk - Peak detector

RMS - RMS detection



DATA

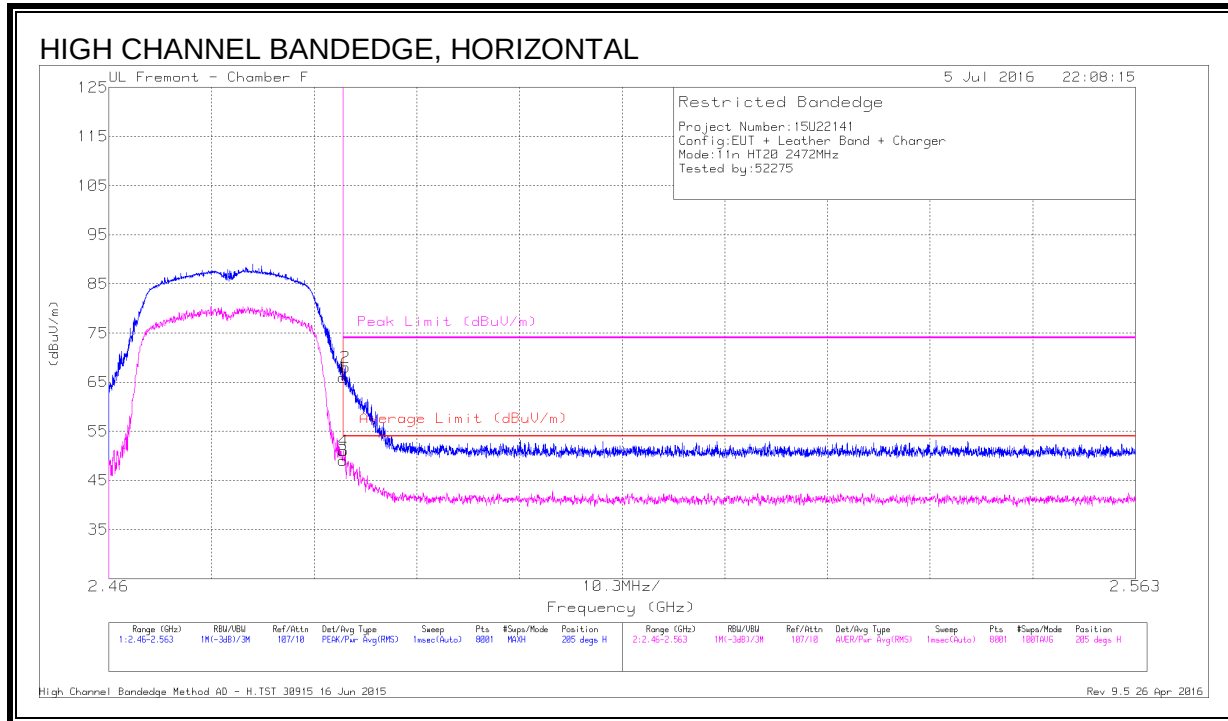
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.78	Pk	32.3	-21	65.08	-	-	74	-8.92	179	356	V
2	* 2.484	54.08	Pk	32.3	-20.9	65.48	-	-	74	-8.52	179	356	V
3	* 2.484	34.77	RMS	32.3	-21	46.07	54	-7.93	-	-	179	356	V
4	* 2.484	35.44	RMS	32.3	-21	46.74	54	-7.26	-	-	179	356	V

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

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEGE (HIGH CHANNEL, CH 13)



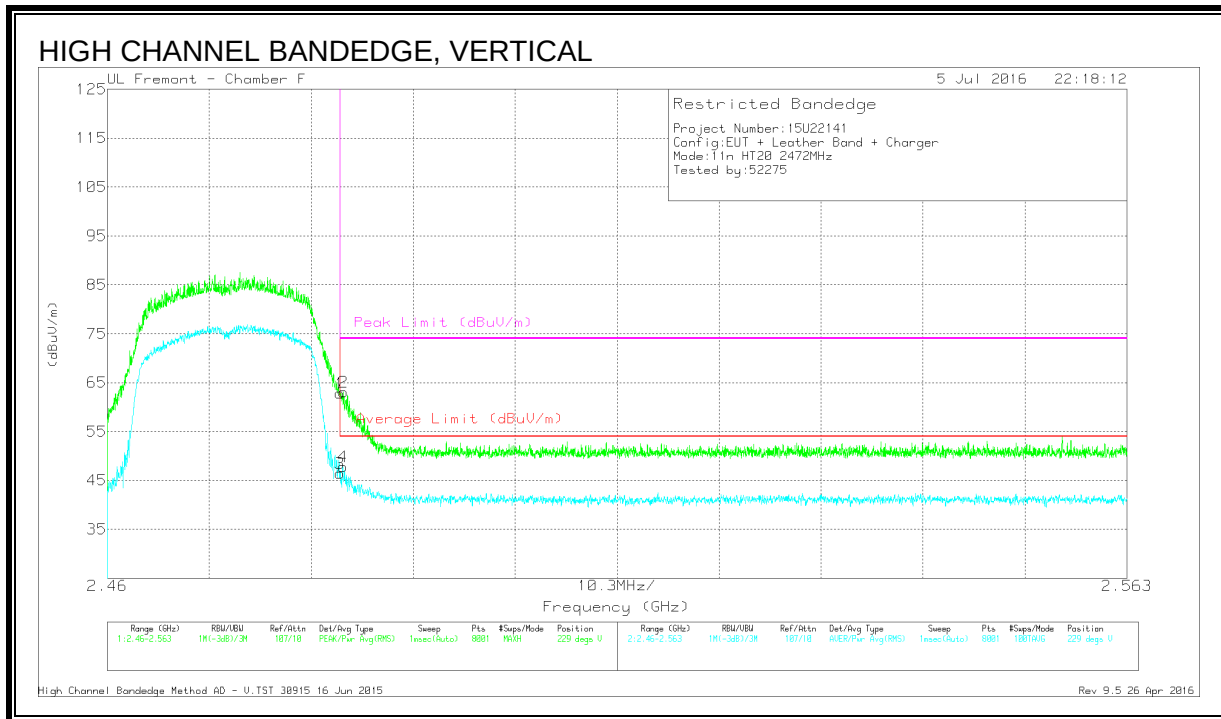
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	54.63	Pk	32.3	-21	65.93	-	-	74	-8.07	205	141	H
2	* 2.484	56.77	Pk	32.3	-21	68.07	-	-	74	-5.93	205	141	H
3	* 2.484	37.74	RMS	32.3	-21	49.04	54	-4.96	-	-	205	141	H
4	* 2.484	39.75	RMS	32.3	-21	51.05	54	-2.95	-	-	205	141	H

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

Pk - Peak detector

RMS - RMS detection



DATA

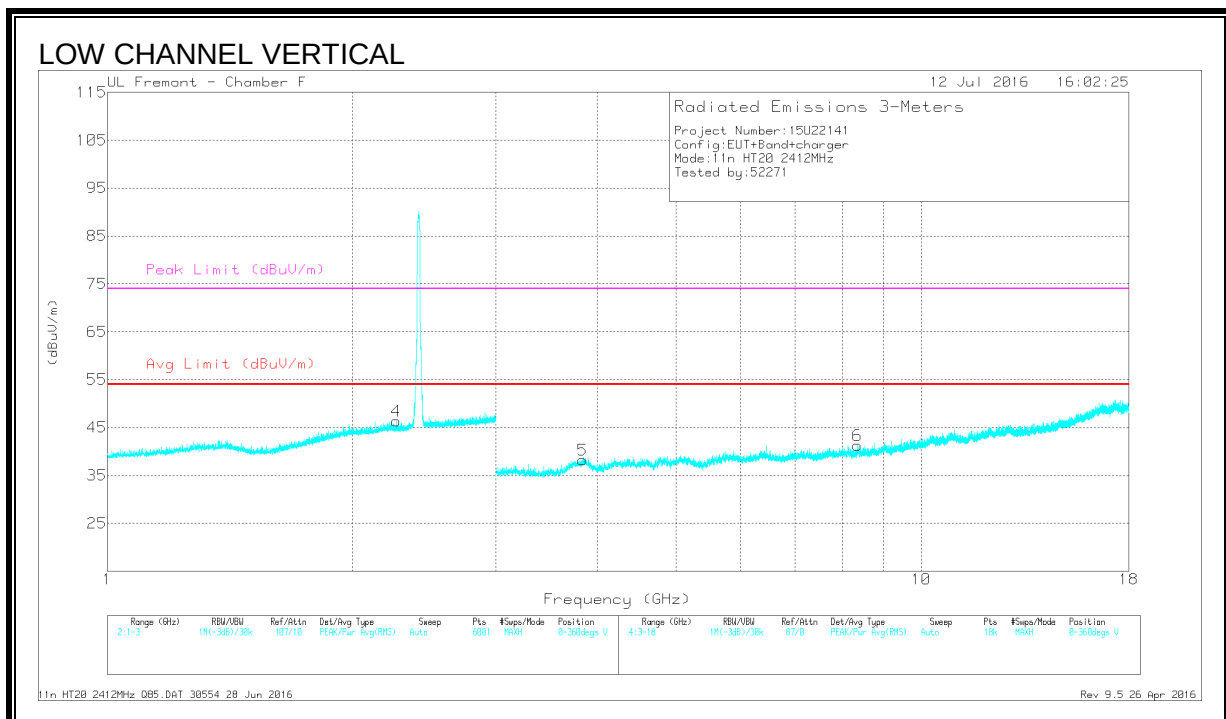
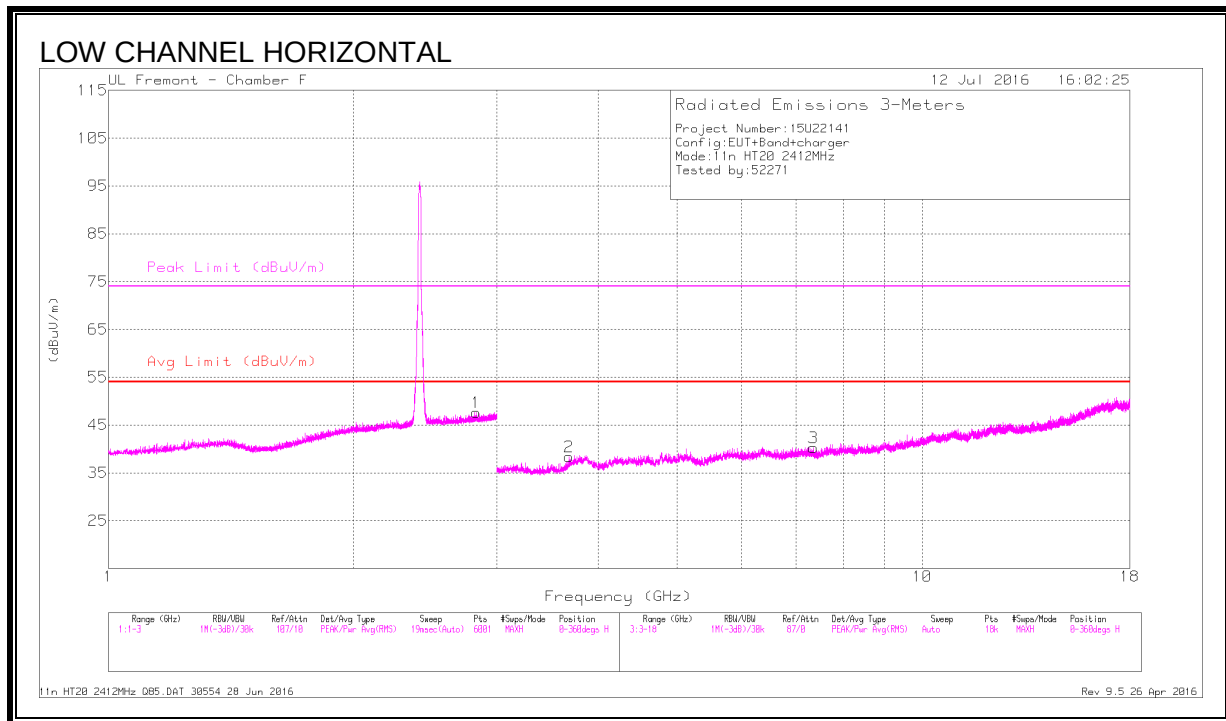
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	51.51	Pk	32.3	-21	62.81	-	-	74	-11.19	229	307	V
2	* 2.484	51.82	Pk	32.3	-21	63.12	-	-	74	-10.88	229	307	V
3	* 2.484	35.19	RMS	32.3	-21	46.49	54	-7.51	-	-	229	307	V
4	* 2.484	36.52	RMS	32.3	-21	47.82	54	-6.18	-	-	229	307	V

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

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL, CH 1



DATA

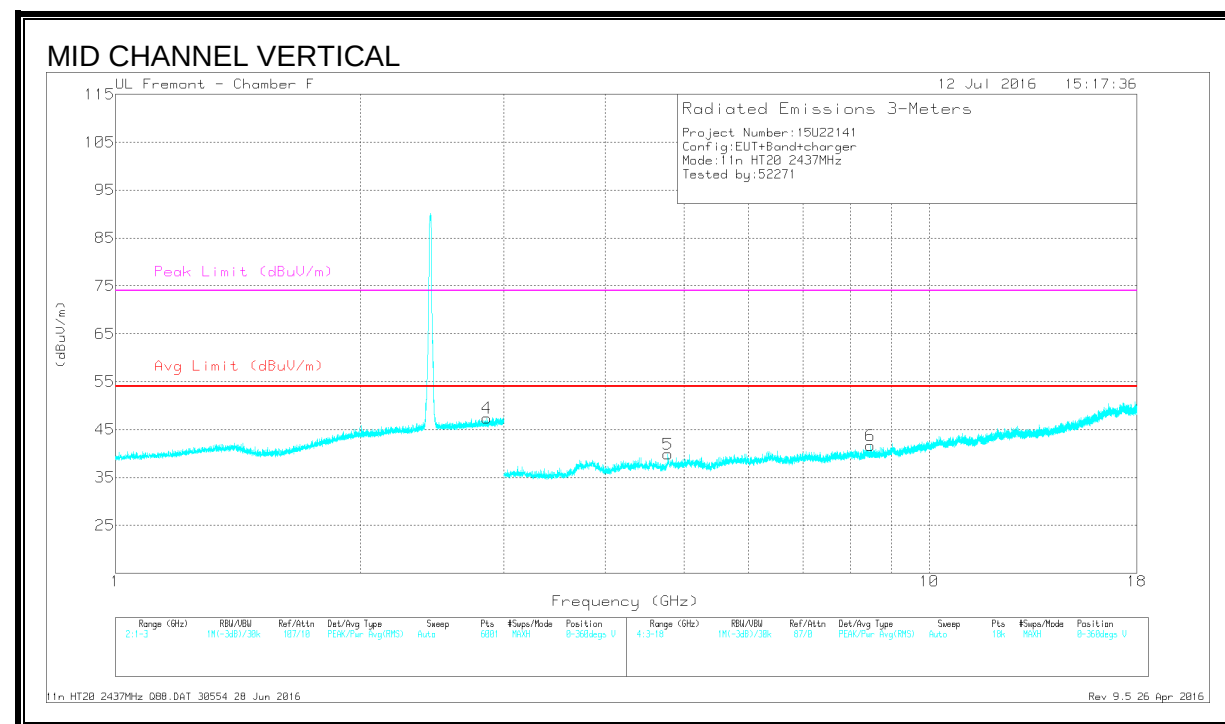
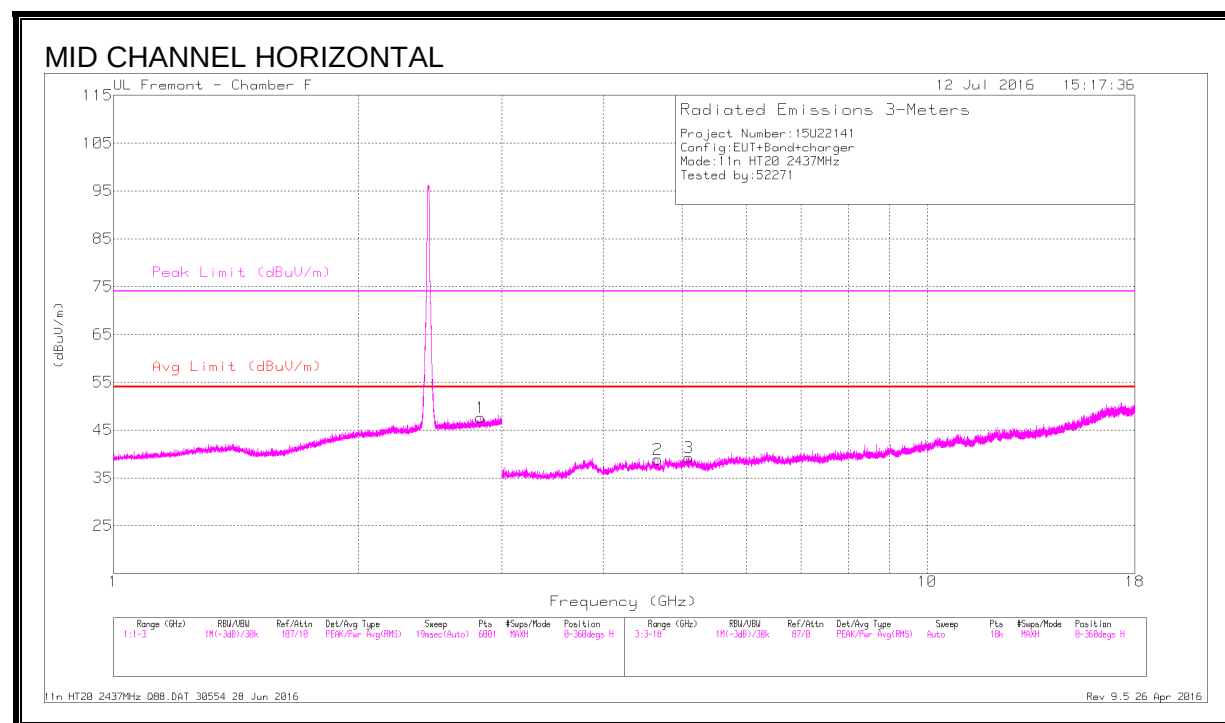
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cb/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.831	41.46	PK2	32.5	-20.4	53.56	-	-	74	-20.44	342	260	H
	* 2.831	30.29	MAv1	32.5	-20.4	42.39	54	-11.61	-	-	342	260	H
4	* 2.267	42.05	PK2	31.7	-21	52.75	-	-	74	-21.25	71	164	V
	* 2.266	30.36	MAv1	31.8	-21	41.16	54	-12.84	-	-	71	164	V
2	* 3.68	38.89	PK2	33.3	-29.3	42.89	-	-	74	-31.11	210	151	H
	* 3.679	28.12	MAv1	33.3	-29.3	32.12	54	-21.88	-	-	210	151	H
3	* 7.348	36.15	PK2	35.6	-25.9	45.85	-	-	74	-28.15	294	224	H
	* 7.348	25.59	MAv1	35.6	-25.9	35.29	54	-18.71	-	-	294	224	H
5	* 3.839	38.02	PK2	33.4	-28.3	43.12	-	-	74	-30.88	66	353	V
	* 3.839	27.43	MAv1	33.4	-28.3	32.53	54	-21.47	-	-	66	353	V
6	* 8.354	35.05	PK2	35.7	-24.2	46.55	-	-	74	-27.45	338	241	V
	* 8.355	24.7	MAv1	35.7	-24.2	36.2	54	-17.8	-	-	338	241	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



DATA

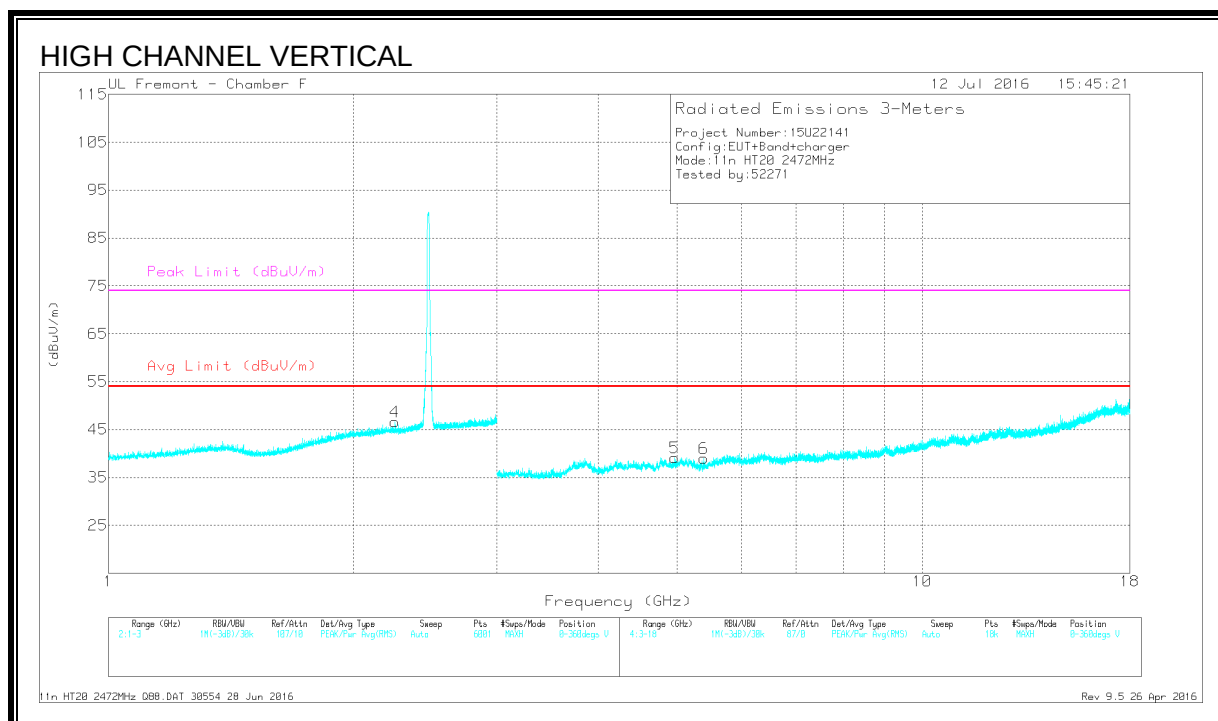
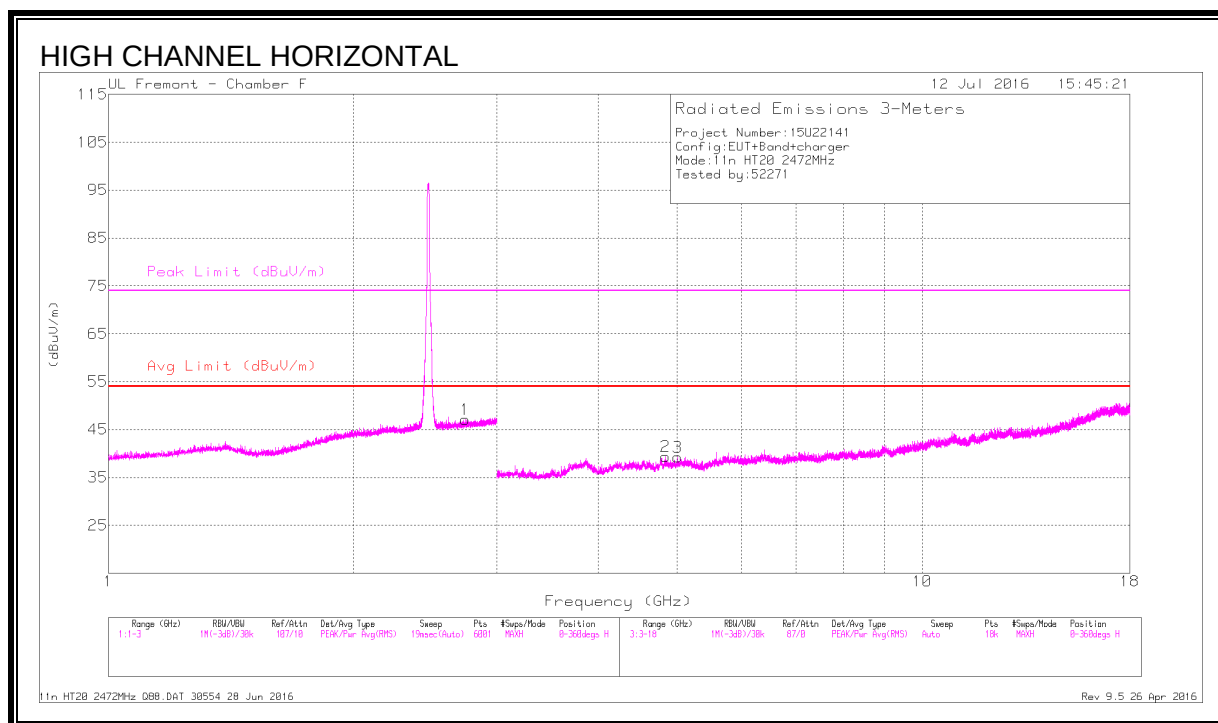
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.829	41.2	PK2	32.5	-20.3	53.4	-	-	74	-20.6	274	363	H
	* 2.827	30.18	MAv1	32.5	-20.3	42.38	54	-11.62	-	-	274	363	H
4	* 2.861	41.46	PK2	32.6	-20.3	53.76	-	-	74	-20.24	2	123	V
	* 2.859	30.28	MAv1	32.6	-20.2	42.68	54	-11.32	-	-	2	123	V
2	* 4.662	38.41	PK2	34.2	-28.9	43.71	-	-	74	-30.29	249	336	H
	* 4.661	27.86	MAv1	34.2	-28.9	33.16	54	-20.84	-	-	249	336	H
3	* 5.096	37.59	PK2	34.1	-27.3	44.39	-	-	74	-29.61	2	152	H
	* 5.096	26.35	MAv1	34.1	-27.3	33.15	54	-20.85	-	-	2	152	H
5	* 4.778	38.21	PK2	34	-27.8	44.41	-	-	74	-29.59	49	222	V
	* 4.776	27.77	MAv1	34	-27.8	33.97	54	-20.03	-	-	49	222	V
6	* 8.467	35.18	PK2	35.7	-24.6	46.28	-	-	74	-27.72	191	347	V
	* 8.467	24.63	MAv1	35.7	-24.6	35.73	54	-18.27	-	-	191	347	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 13



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cb/Fitr/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	* 2.746	41.2	PK2	32.4	-20.6	53	-	-	74	-21	334	300	H
	* 2.745	30.32	MAv1	32.4	-20.6	42.12	54	-11.88	-	-	334	300	H
4	* 2.251	41.79	PK2	31.8	-21	52.59	-	-	74	-21.41	309	374	V
	* 2.248	30.43	MAv1	31.8	-21	41.23	54	-12.77	-	-	309	374	V
2	* 4.843	37.56	PK2	34	-27.1	44.46	-	-	74	-29.54	354	121	H
	* 4.842	26.42	MAv1	34	-27.1	33.32	54	-20.68	-	-	354	121	H
3	* 5.003	38.38	PK2	34.2	-28.8	43.78	-	-	74	-30.22	139	365	H
	* 5.004	27.82	MAv1	34.2	-28.8	33.22	54	-20.78	-	-	139	365	H
5	* 4.963	38.76	PK2	34.2	-28.5	44.46	-	-	74	-29.54	243	194	V
	* 4.963	27.67	MAv1	34.2	-28.5	33.37	54	-20.63	-	-	243	194	V
6	* 5.388	37.56	PK2	34.5	-28	44.06	-	-	74	-29.94	238	104	V
	* 5.391	26.73	MAv1	34.5	-28	33.23	54	-20.77	-	-	238	104	V

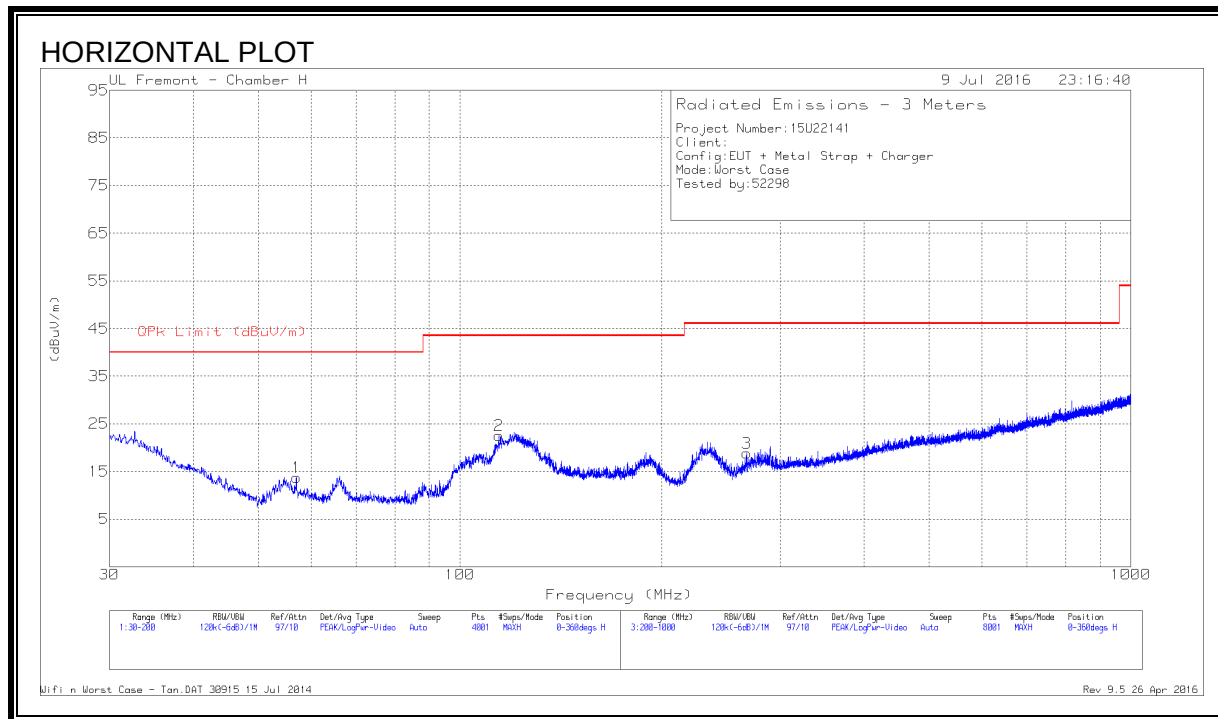
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

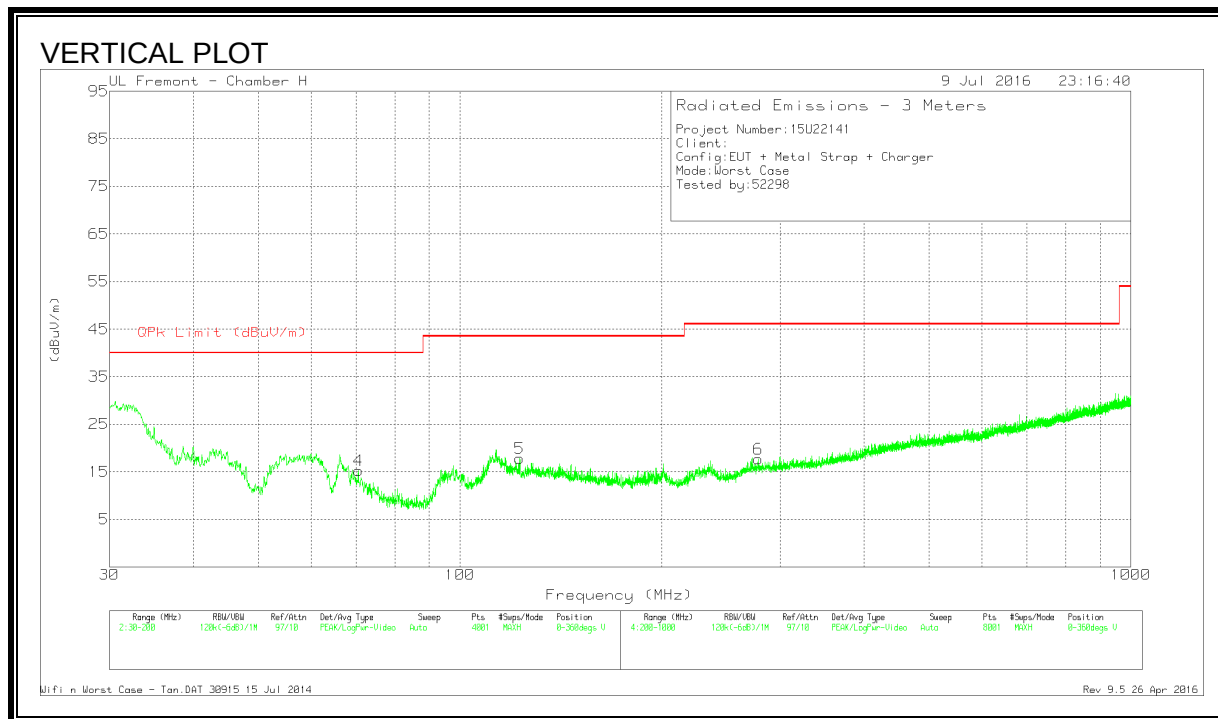
MAv1 - KDB558074 Option 1 Maximum RMS Average

9.3. WORST-CASE BELOW 1 GHz

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



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



DATA

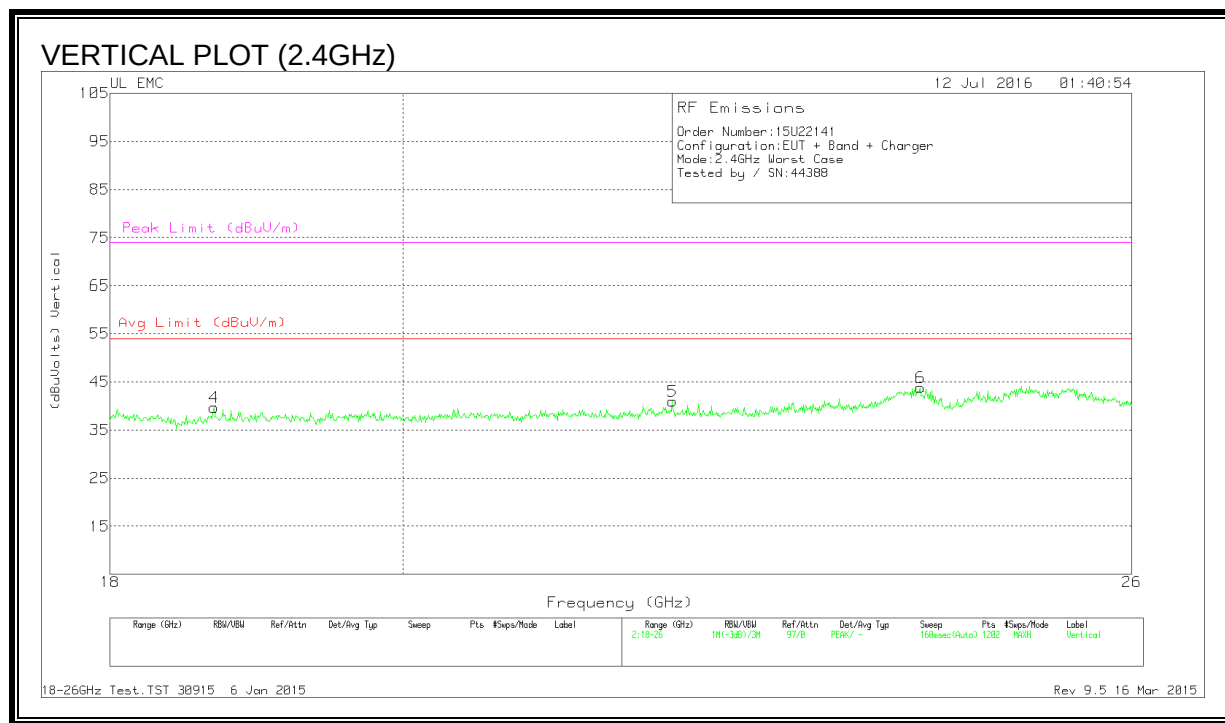
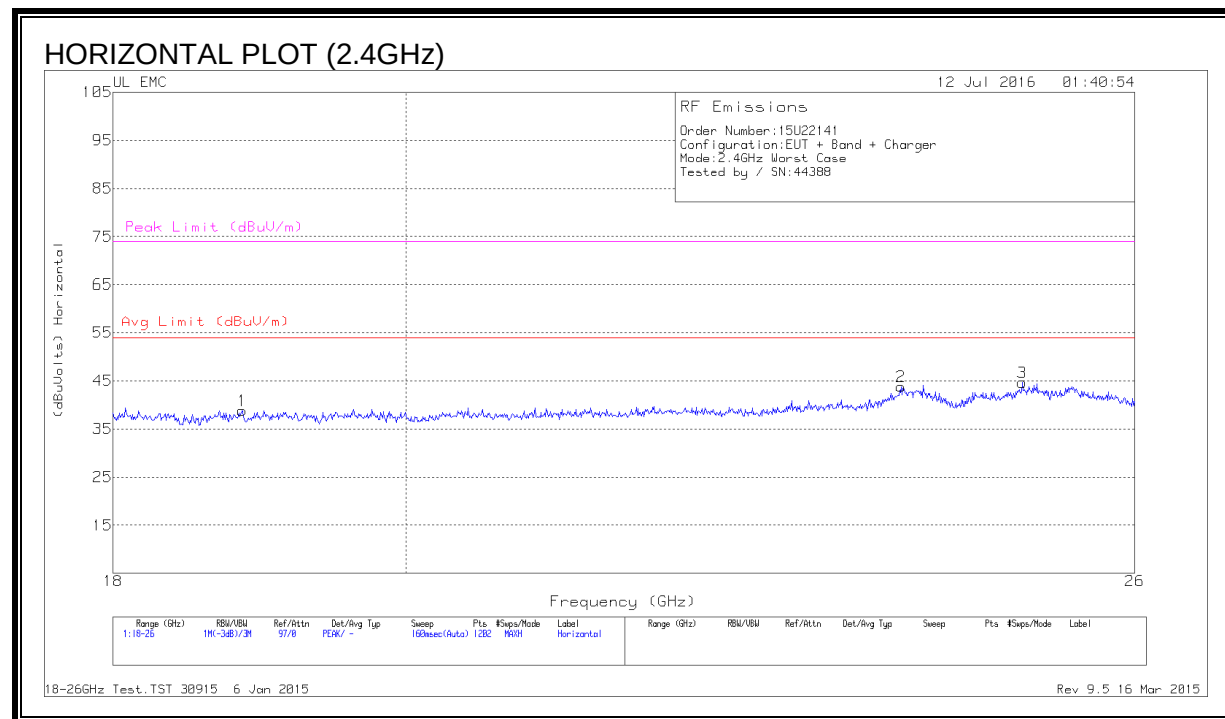
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T900 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 114.32	35.79	Pk	17.1	-30.3	22.59	43.52	-20.93	0-360	300	H
5	* 122.7775	30.3	Pk	17.8	-30.3	17.8	43.52	-25.72	0-360	100	V
3	* 267.4	31.09	Pk	16.9	-29.1	18.89	46.02	-27.13	0-360	100	H
6	* 278.6	29.4	Pk	17.3	-29	17.7	46.02	-28.32	0-360	100	V
1	57.03	33.58	Pk	11.1	-30.9	13.78	40	-26.22	0-360	400	H
4	70.545	33.87	Pk	12.2	-30.8	15.27	40	-24.73	0-360	100	V

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

Pk - Peak detector

9.4. WORST-CASE 18 to 26 GHz

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



HORIZONTAL & VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T449 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.856	40.93	Pk	32.5	-25.1	-9.5	38.83	54	-15.17	74	-35.167
2	23.902	43.23	Pk	34	-23.9	-9.5	43.83	54	-10.167	74	-30.17
3	24.968	44.17	Pk	34.2	-24.2	-9.5	44.67	54	-9.33	74	-29.3
4	18.686	41.17	Pk	32.4	-24.4	-9.5	39.67	54	-14.33	74	-34.33
5	22.037	42.1	Pk	33.5	-25.1	-9.5	41	54	-13	74	-33
6	24.095	43.63	Pk	34	-24.3	-9.5	43.83	54	-10.17	74	-30.17

Pk - Peak detector

10. 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.

RESULTS

EUT is powered by battery. AC line conducted emission is not applicable.