



CERTIFICATION TEST REPORT

Report Number. : 11692709-E2V2

Applicant : QUALCOMM TECHNOLOGIES, INC.
5770 MOREHOUSE DRIVE,
SAN DIEGO, CA 92121, USA

FCC ID : J9C2NET2LTE
IC : 2723A-2NET2LTE

Model Number : QCL-HUB-2.0-US

EUT Description : WIRELESS DATA HUB

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

Date Of Issue:
September 15, 2017

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888



NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	08/04/17	Initial Issue	--
V2	09/15/17	Updated Section 2, section 5.3 and Section 8	Eric Yu

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	7
4.1. MEASURING INSTRUMENT CALIBRATION	7
4.2. SAMPLE CALCULATION	7
4.3. MEASUREMENT UNCERTAINTY	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM OUTPUT POWER	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4. SOFTWARE AND FIRMWARE	8
5.5. WORST-CASE CONFIGURATION AND MODE	9
5.6. DESCRIPTION OF TEST SETUP	10
6. TEST AND MEASUREMENT EQUIPMENT	13
7. MEASUREMENT METHODS	14
8. ANTENNA PORT TEST RESULTS	15
8.1. ON TIME AND DUTY CYCLE	15
8.2. 11b MODE IN THE 2.4GHz BAND	17
8.2.1. 6 dB BANDWIDTH	17
8.2.2. 99% BANDWIDTH	20
8.2.3. OUTPUT POWER	24
8.2.4. POWER SPECTRAL DENSITY	26
8.2.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS	29
8.3. 11g MODE IN THE 2.4GHz BAND	35
8.3.1. 6 dB BANDWIDTH	35
8.3.2. 99% BANDWIDTH	38
8.3.3. OUTPUT POWER	42
8.3.4. POWER SPECTRAL DENSITY	44
8.3.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS	47
9. RADIATED TEST RESULTS	53
9.1. LIMITS	53
9.2. TRANSMITTER ABOVE 1 GHz	54

9.2.1.	11b MODE.....	54
9.2.2.	11g MODE.....	64
9.3.	WORST-CASE BELOW 30 MHz.....	74
9.4.	WORST-CASE 30 - 1000 MHz.....	76
10.	AC POWER LINE CONDUCTED EMISSIONS	80
11.	SETUP PHOTOS	83

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: QUALCOMM TECHNOLOGIES, INC.
5770 MOREHOUSE DRIVE,
SAN DIEGO, CA 92121 USA

EUT DESCRIPTION: WIRELESS DATA HUB

SERIAL NUMBER: QUALC001TN10M1RP74, QUALC001TN10M1RN3C

DATE TESTED: JULY 10 to SEPTEMBER 08, 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
UL Verification Services Inc. By:



FRANK IBRAHIM
PROGRAM MANAGER
UL VERIFICATION SERVICES INC.

Prepared By:



TOM CHEN
LABORATORY 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 v04, 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. 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
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

This EUT is a 2net2 device (LTE North American Version AT&T) that has the following radio modules:

- Wistron WWAN module, M14Q2FG.
- Qualcomm Unlicensed Module, QCA WCN 3660.

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 - 2462	802.11b	19.87	97.05
2412 - 2462	802.11g	20.73	118.30

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Monopole antenna with a maximum gain of 3.62 dBi.

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was adb Ver.1.0.26, QRCT Ver.3.0.84.0

5.5. WORST-CASE CONFIGURATION AND MODE

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

Radiated emission below 1 GHz, above 18 GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

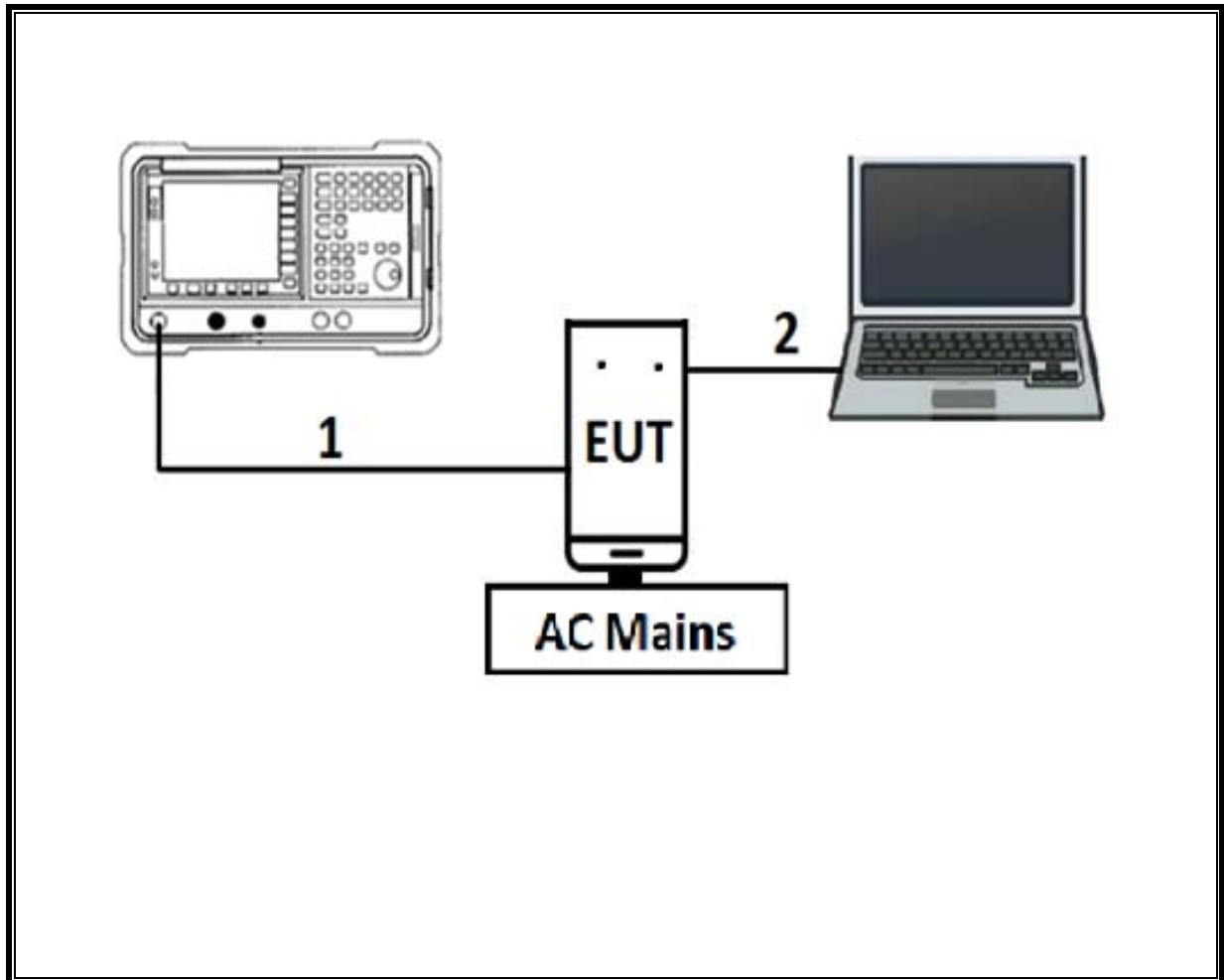
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	HP	PPP012D-S	WCNXF0AAR4QOCS	N/A
Laptop	HP	EliteBook 6930p	2CE00821BZ	N/A

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	RF	Shielded	0.2	To Spectrum Analyzer
2	USB	1	USB	Un-shielded	1m	Laptop to EUT

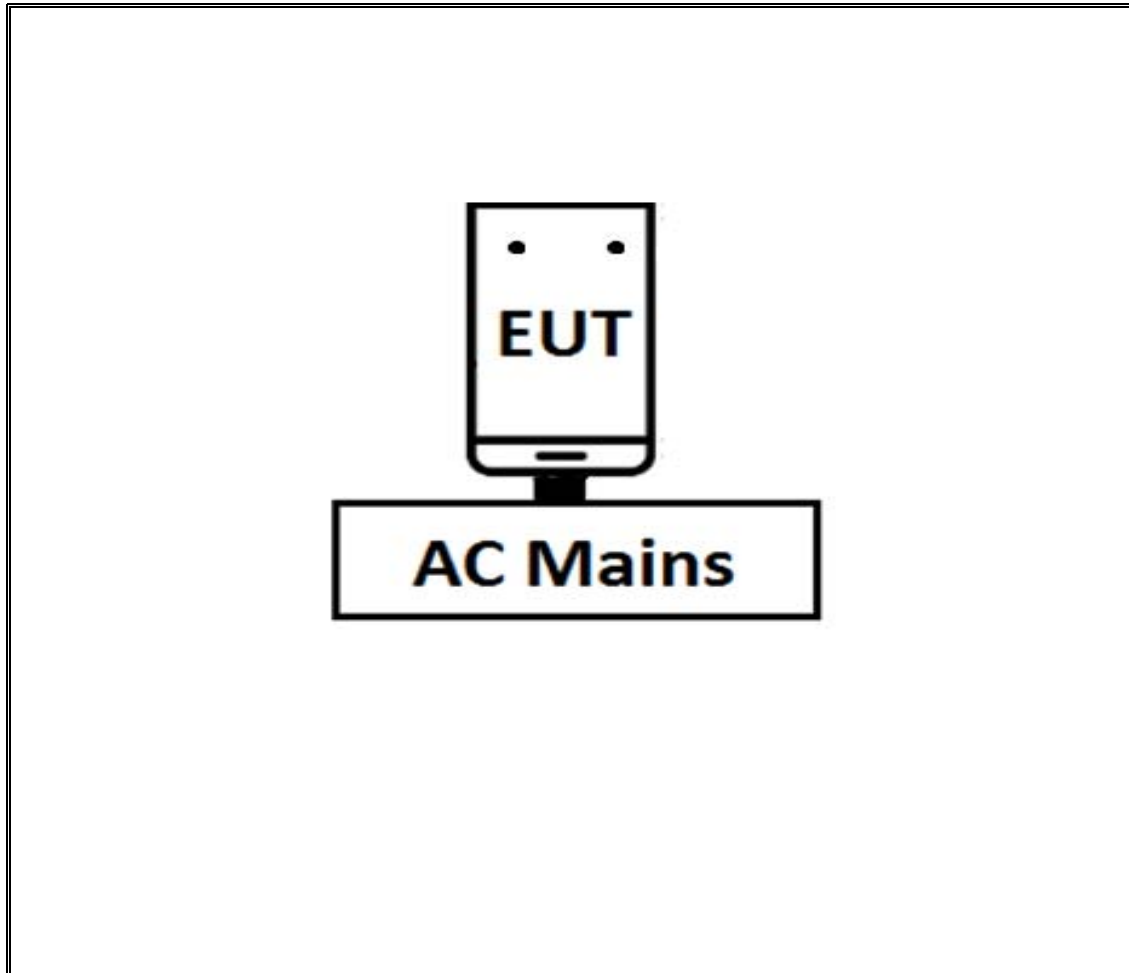
TEST SETUP

CONDUCTED TEST SETUP DIAGRAM



TEST SETUP

RADIATED AND AC LINE CONDUCTED EMISSIONS 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	Asset	Cal Due
Antenna, Broadband Hybrid, 30MHz to 2000MHz w/4dB Pad	Sunol Sciences Corp.	JB3	T477	06/22/2018
Antenna, Active Loop 9kHz-30MHz	ETS-Lindgren	6502	T1683	02/17/2018
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	MITEQ	AFS42-00101800-25-S-42	T1165	08/01/2017
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	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	06/08/2018

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, Apr 26, 2016
Antenna Port Software	UL	UL RF	Ver 6.8, June 08, 2017

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. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

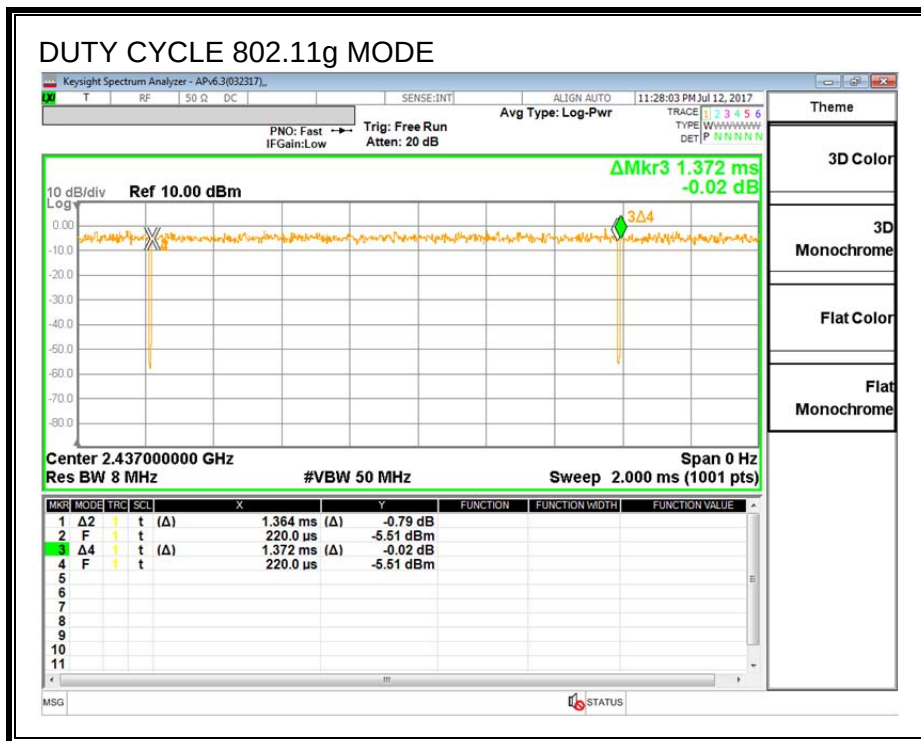
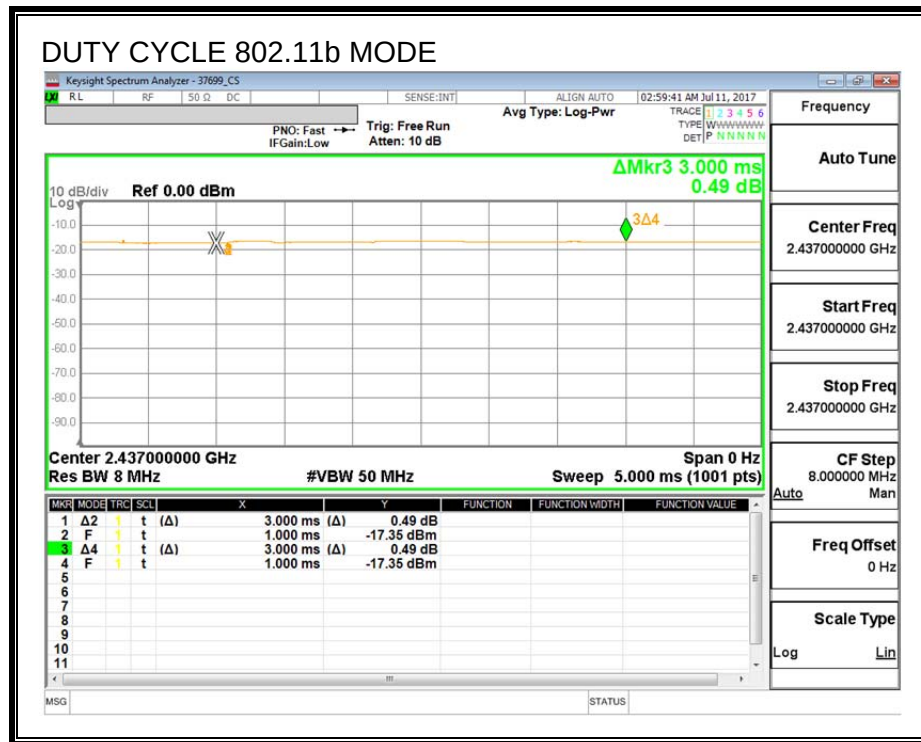
LIMITS

None; for reporting purposes only.

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	3.00	3.00	1.00	100.00%	0.00	0.01
802.11g	1.36	1.37	0.99	99.42%	0.00	0.01

DUTY CYCLE PLOTS



8.2. 11b MODE IN THE 2.4GHz BAND

8.2.1. 6 dB BANDWIDTH

LIMITS

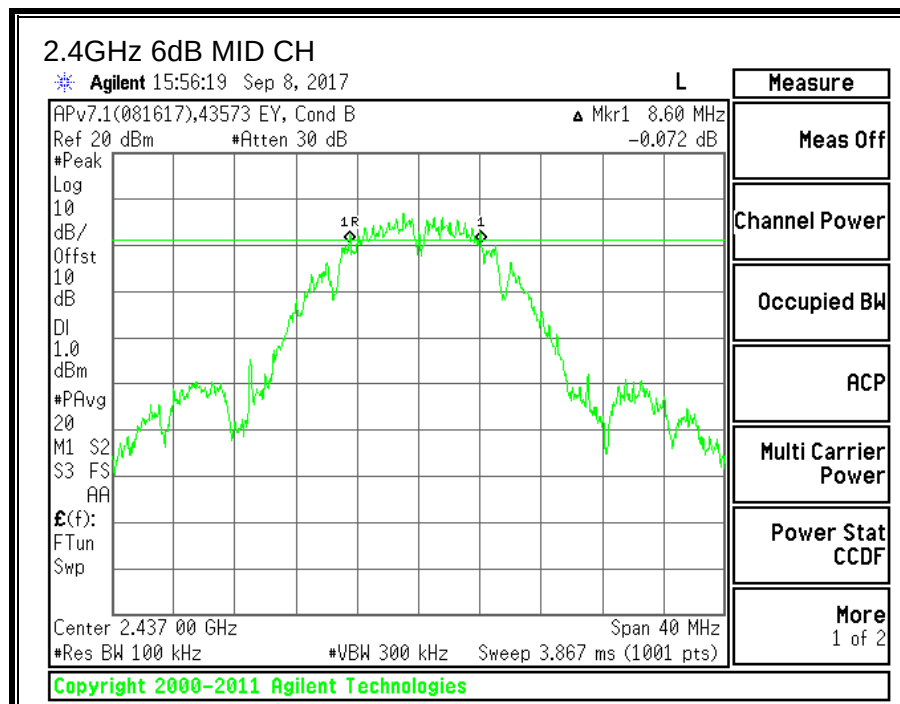
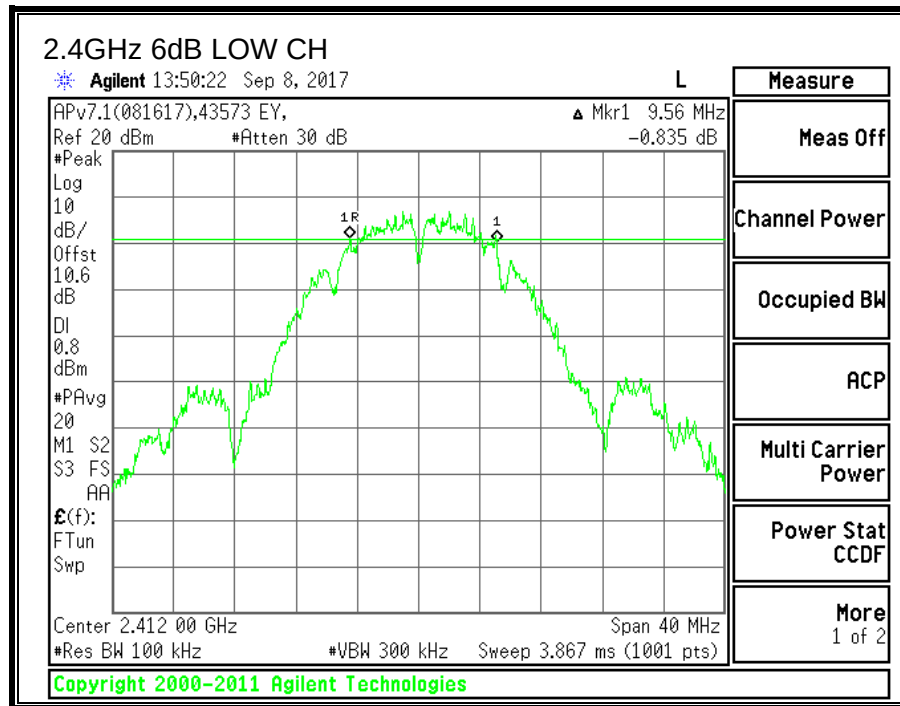
FCC §15.247 (a) (2)

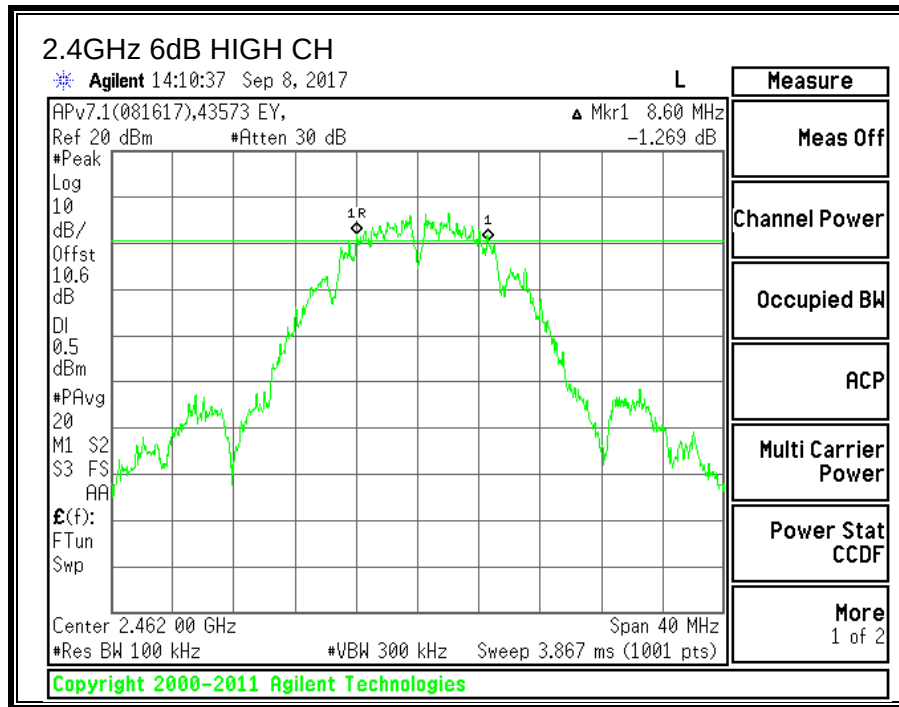
IC RSS-247 (5.2) (a)

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

RESULTS

Channel	Frequency	6 dB BW (MHz)	Minimum Limit (MHz)
Low	2412	9.56	0.5
Middle	2437	8.60	0.5
High	2462	8.60	0.5





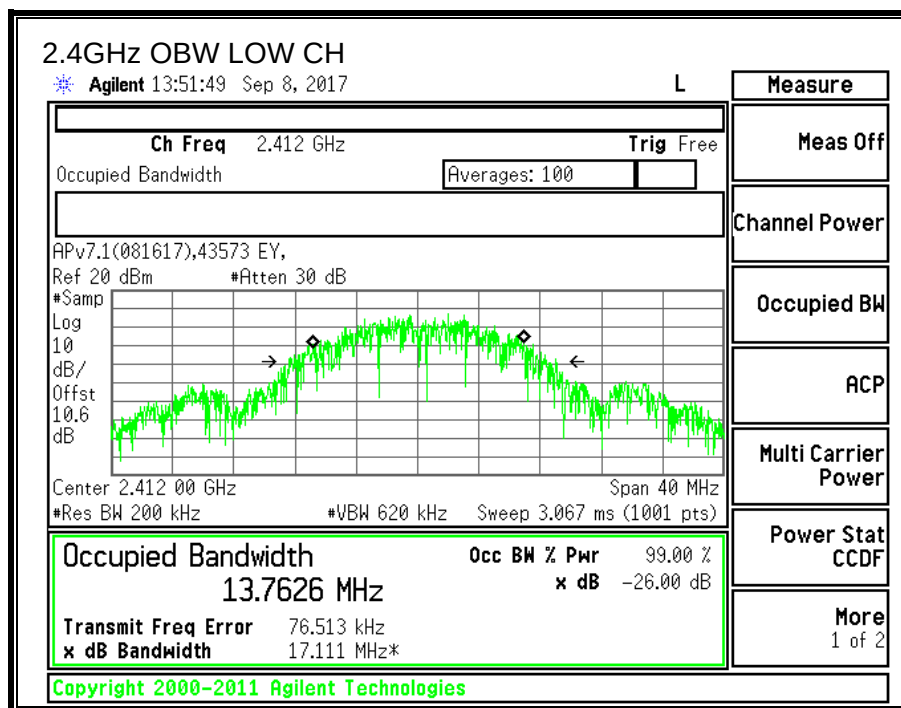
8.2.2. 99% BANDWIDTH

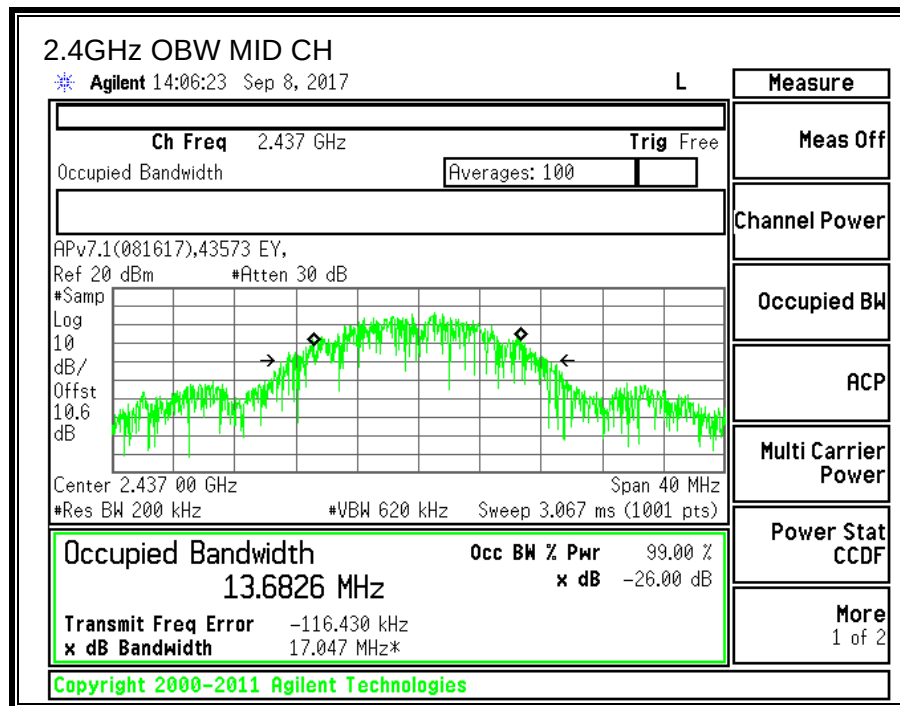
LIMITS

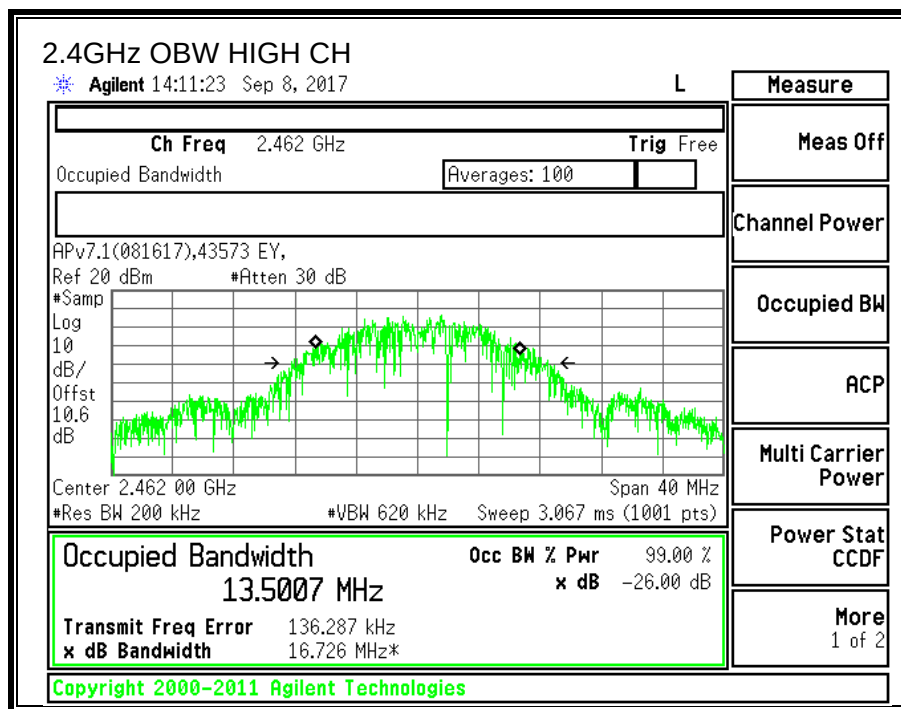
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	13.7626
Middle	2437	13.6826
High	2462	13.5007







8.2.3. OUTPUT POWER

ID:	43573	Date:	09/08/17
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LIMITS

FCC §15.247

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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	3.62	30.00	30	36	30.00
Mid	2437	3.62	30.00	30	36	30.00
High	2462	3.62	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	19.87	19.87	30.00	-10.13
Mid	2437	19.01	19.01	30.00	-10.99
High	2462	18.12	18.12	30.00	-11.88

8.2.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (b)

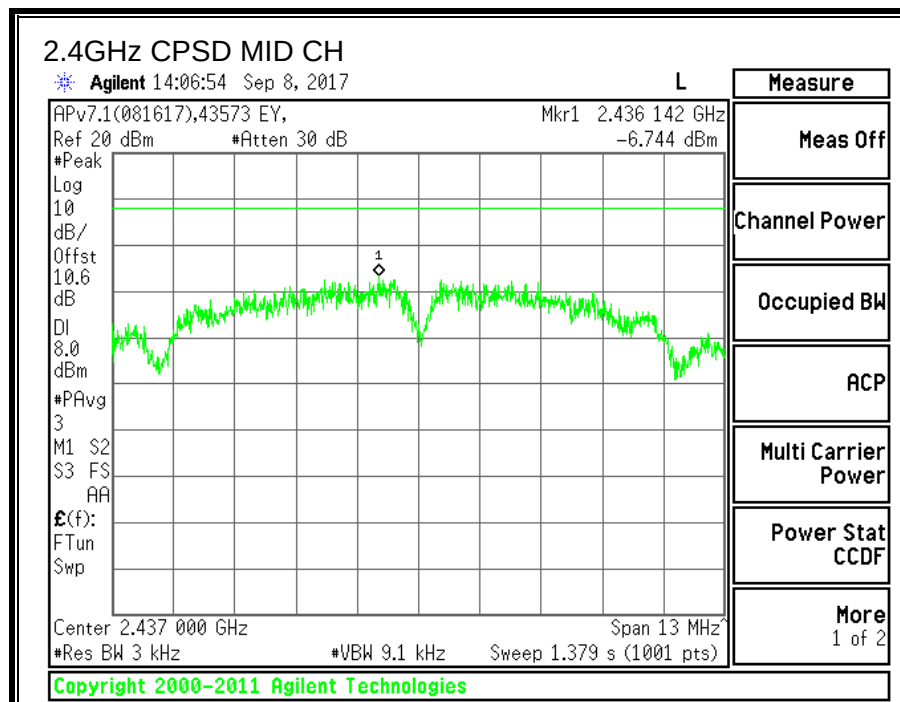
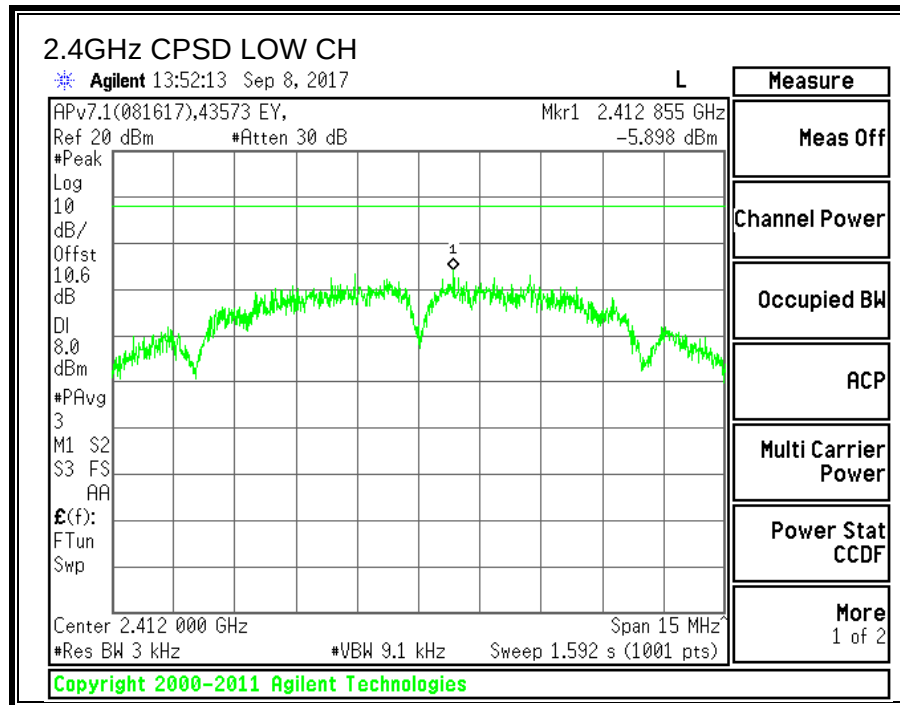
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

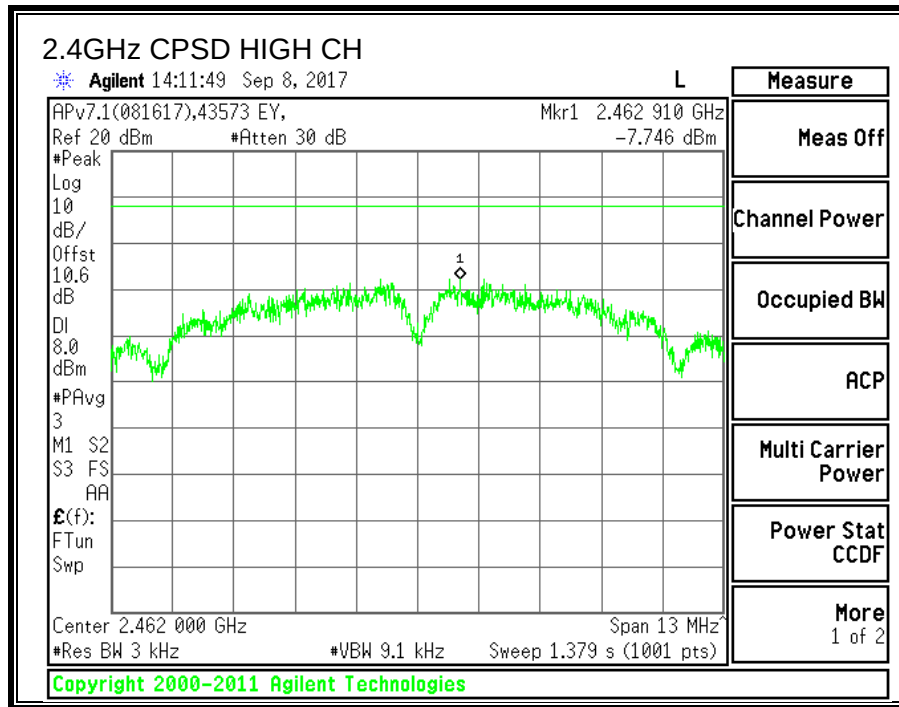
RESULTS

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

Channel	Frequency (MHz)	Meas PSD (dBm/3KHz)	Total Corr'd (dBm/3KHz)	Limit (dBm/3KHz)	Margin dB
Low	2412	-5.898	-5.90	8.0	-13.9
Mid	2437	-6.744	-6.74	8.0	-14.7
High	2462	-7.746	-7.75	8.0	-15.7





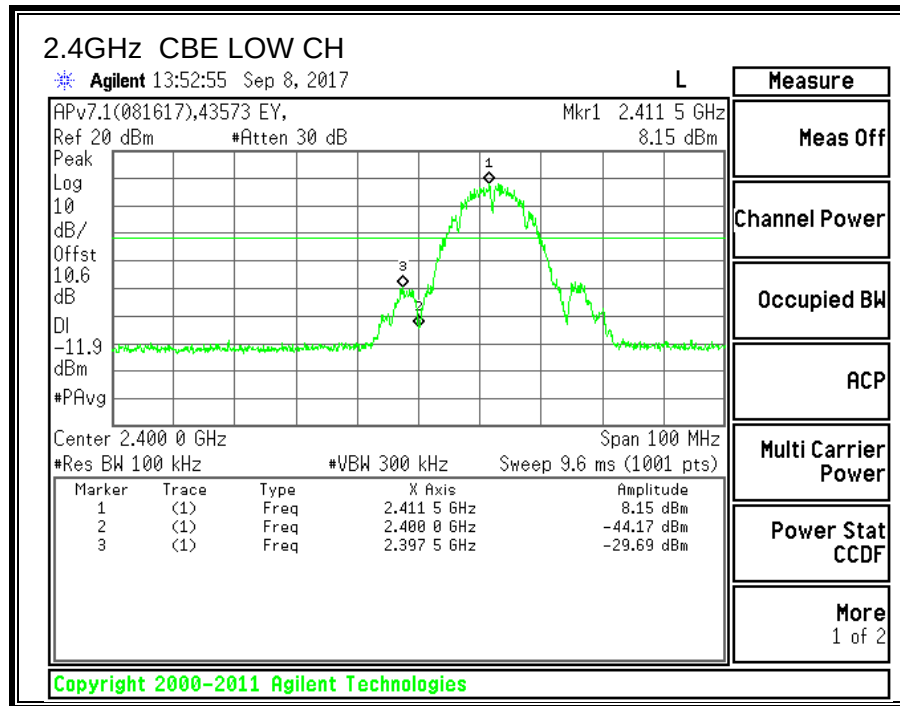
8.2.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

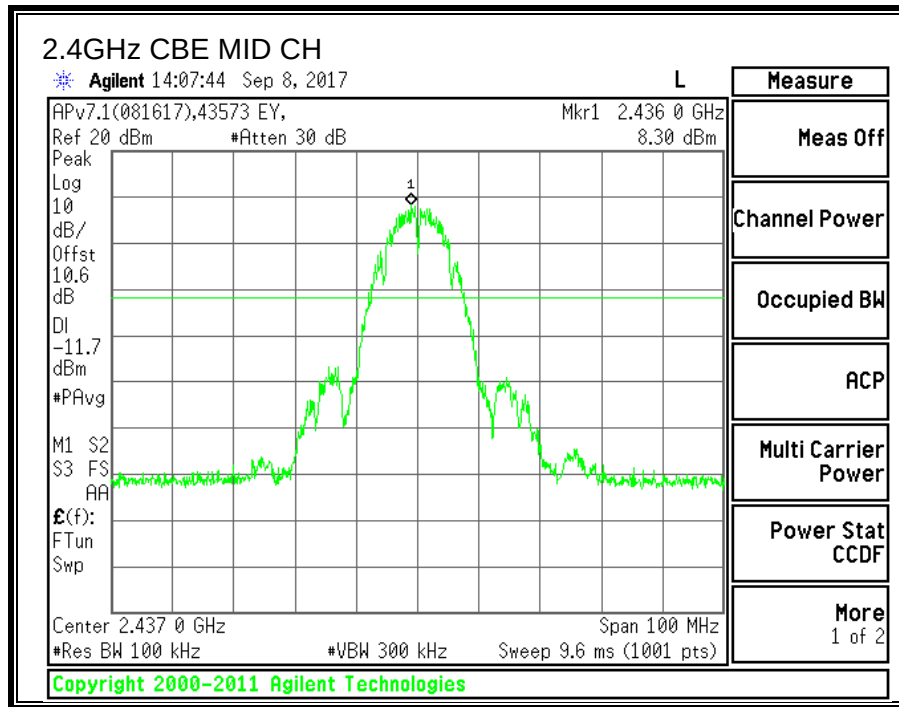
LIMITS

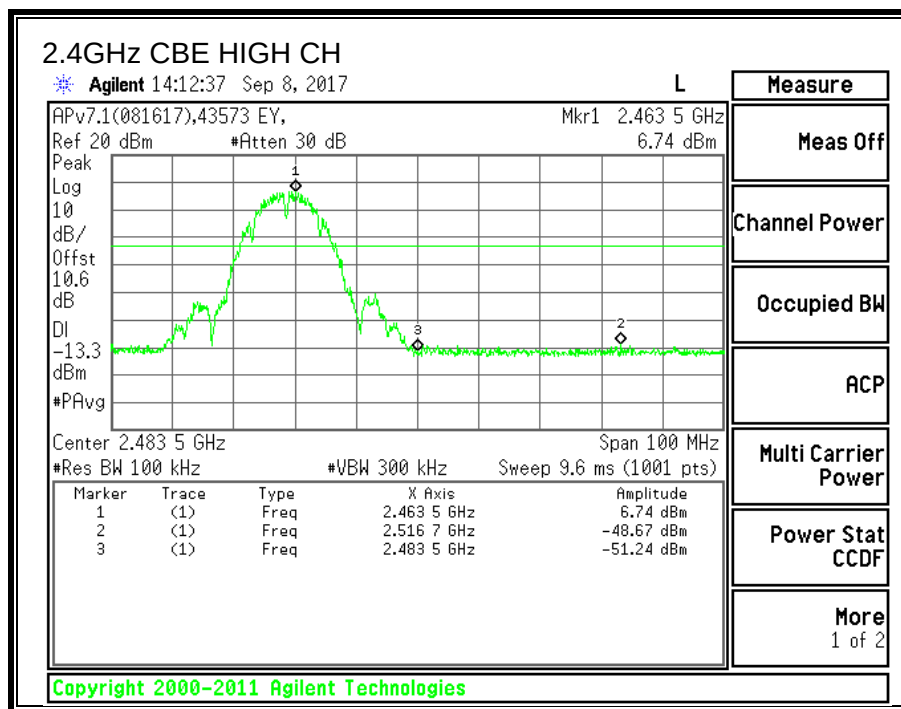
FCC §15.247 (d)

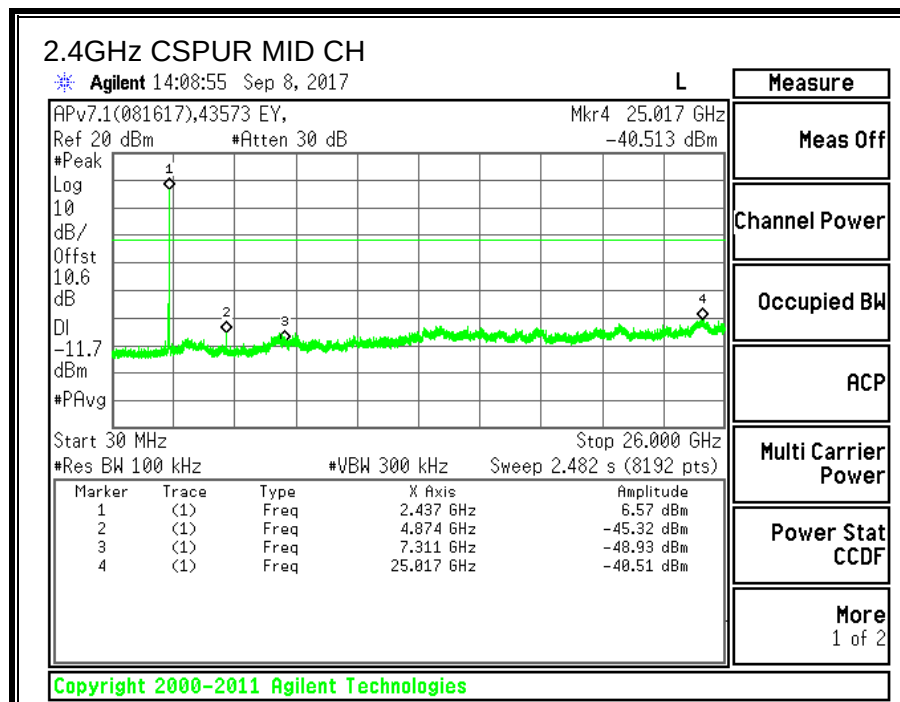
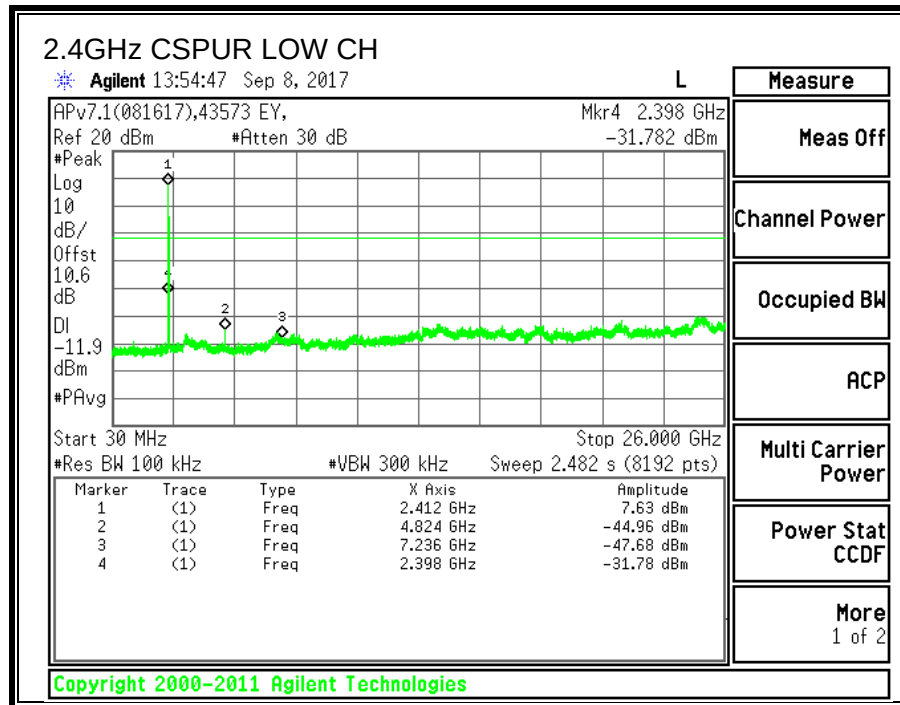
IC RSS-247 (5.5)

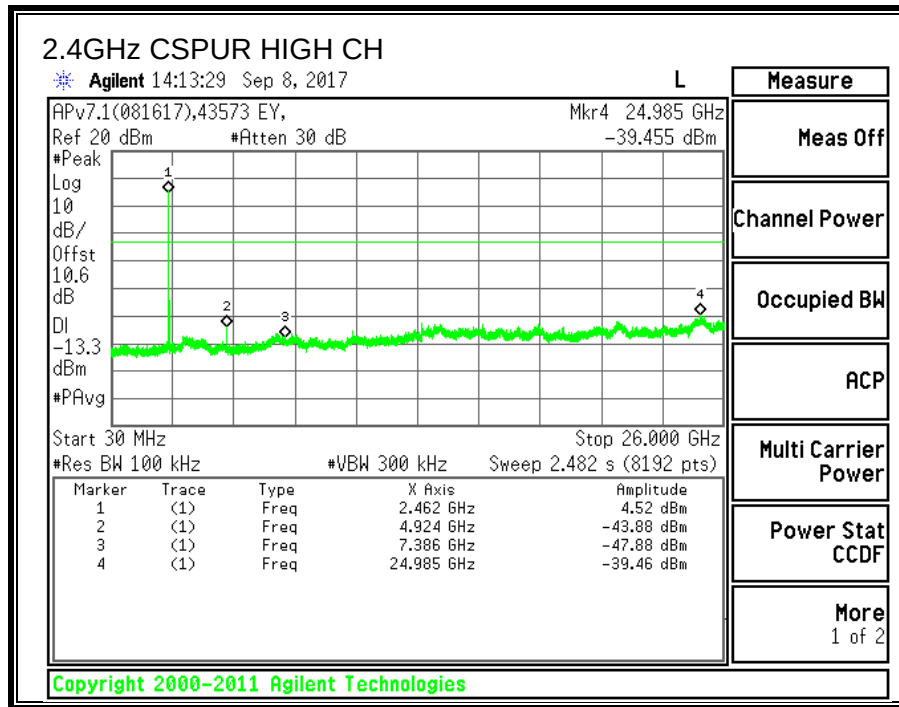
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS









8.3. 11g MODE IN THE 2.4GHz BAND

8.3.1. 6 dB BANDWIDTH

LIMITS

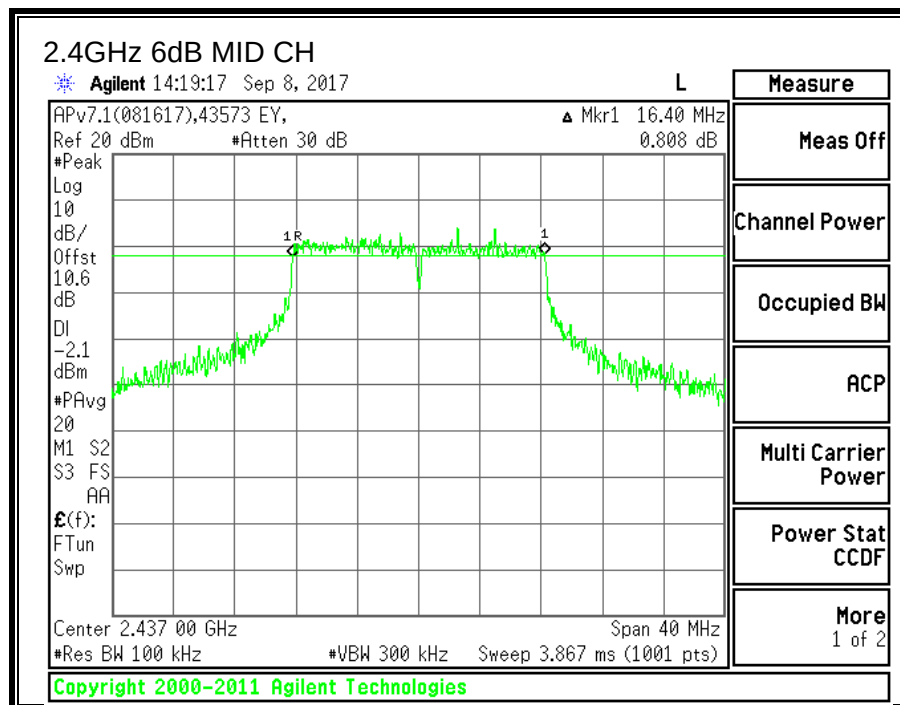
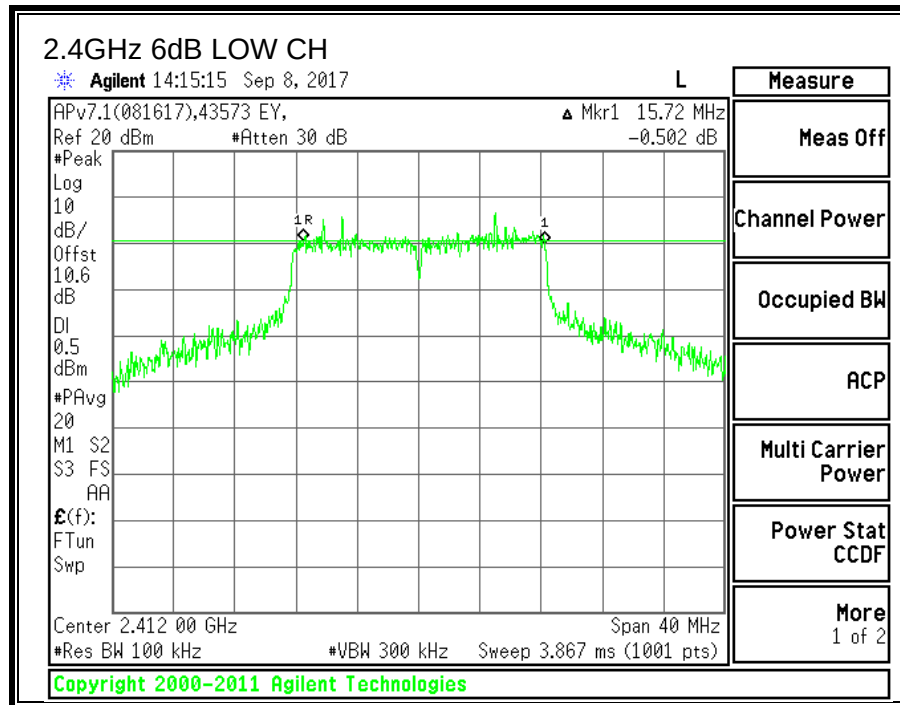
FCC §15.247 (a) (2)

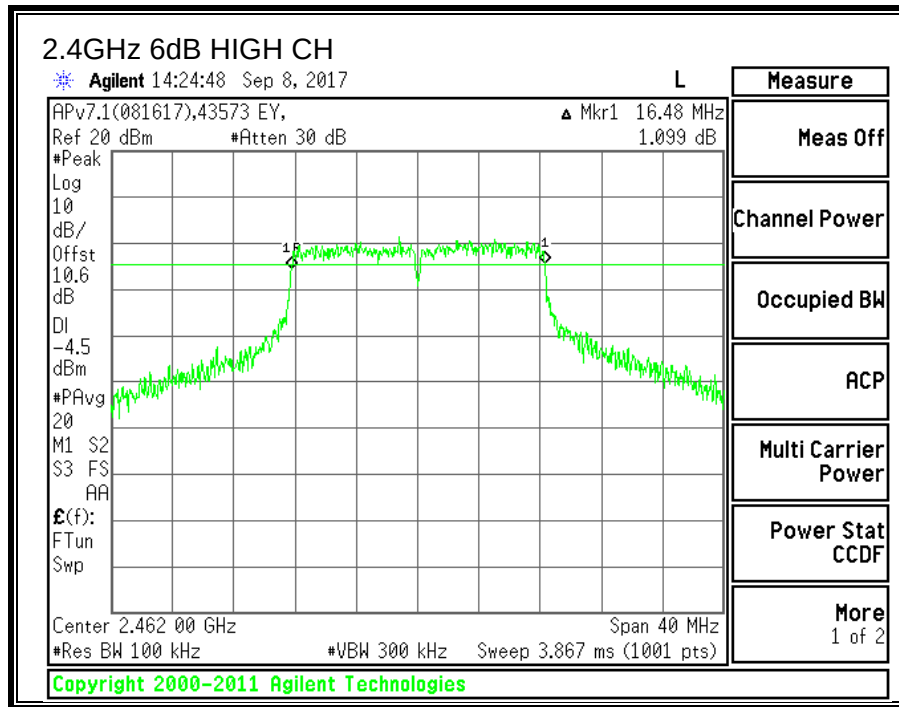
IC RSS-247 (5.2) (a)

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

RESULTS

Channel	Frequency	6 dB BW (MHz)	Minimum Limit (MHz)
Low	2412	15.72	0.5
Mid	2437	16.40	0.5
High	2462	16.48	0.5





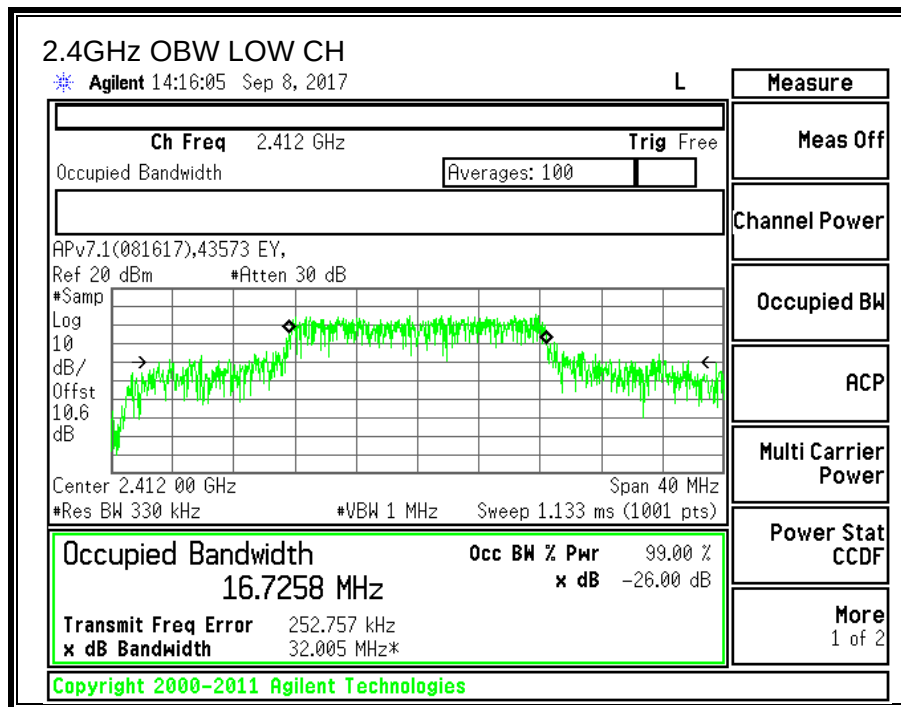
8.3.2. 99% BANDWIDTH

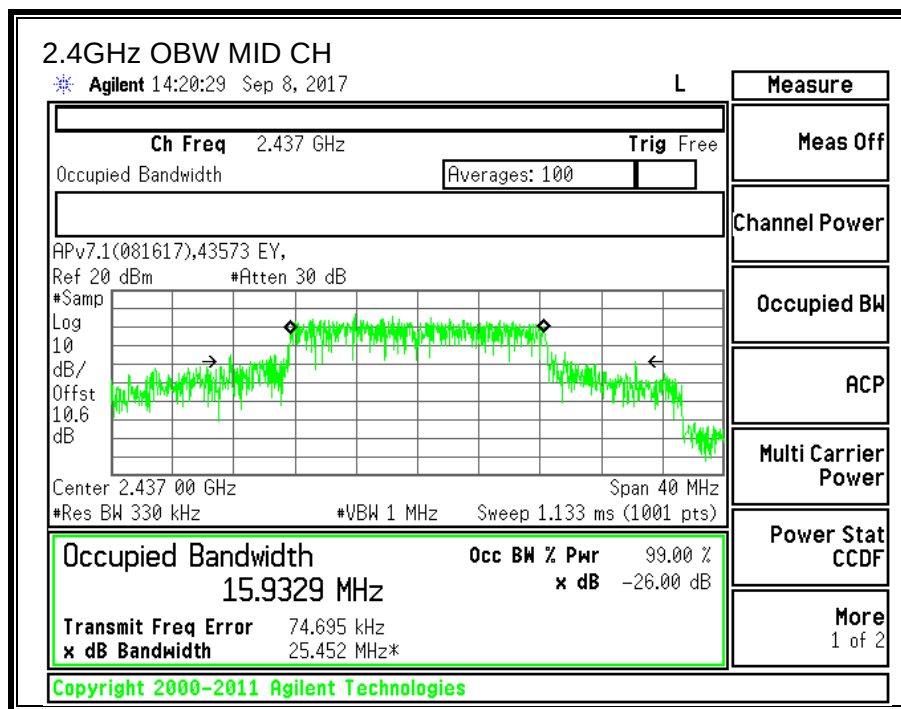
LIMITS

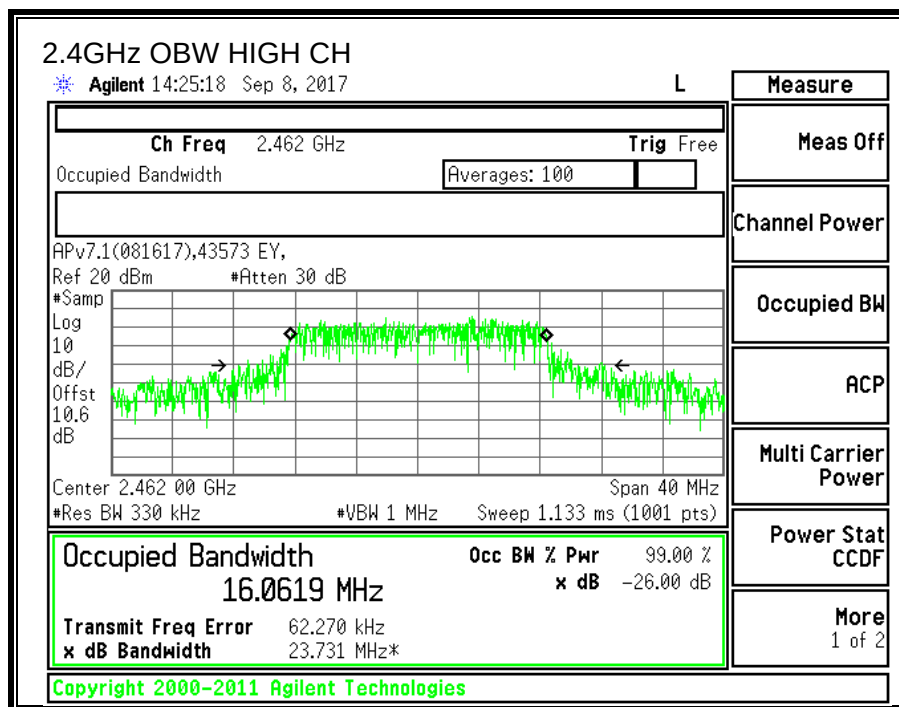
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.7258
Middle	2437	15.9329
High	2462	16.0619







8.3.3. OUTPUT POWER

ID:	43573	Date:	09/08/17
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LIMITS

FCC §15.247

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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
2412	3.62	30.00	30	36	30.00
2437	3.62	30.00	30	36	30.00
2462	3.62	30.00	30	36	30.00

Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
2412	18.35	18.35	30.00	-11.65
2437	20.73	20.73	30.00	-9.27
2462	18.82	18.82	30.00	-11.18

8.3.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (b)

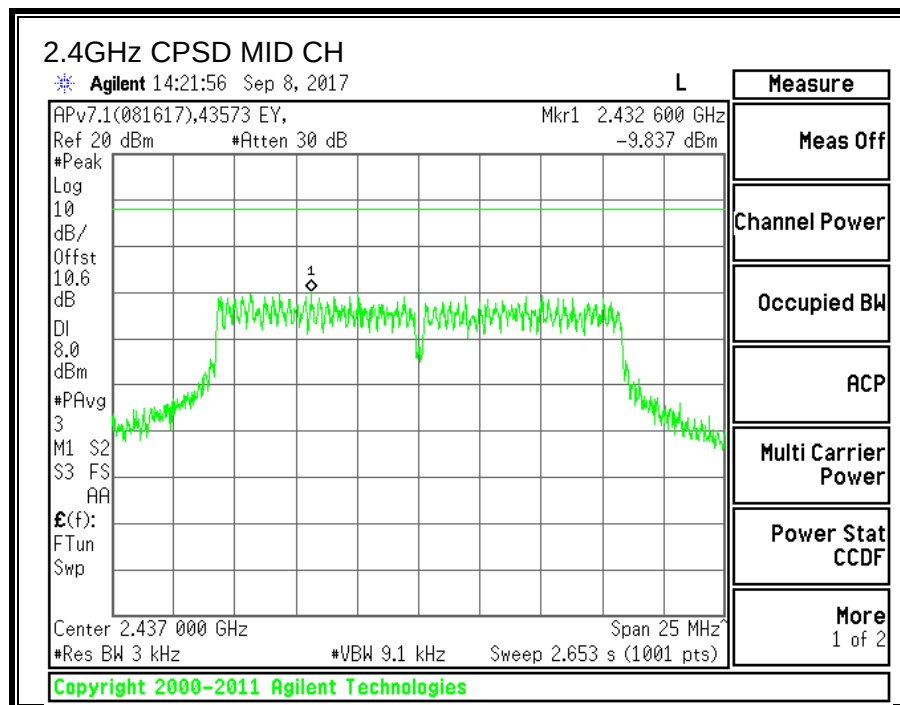
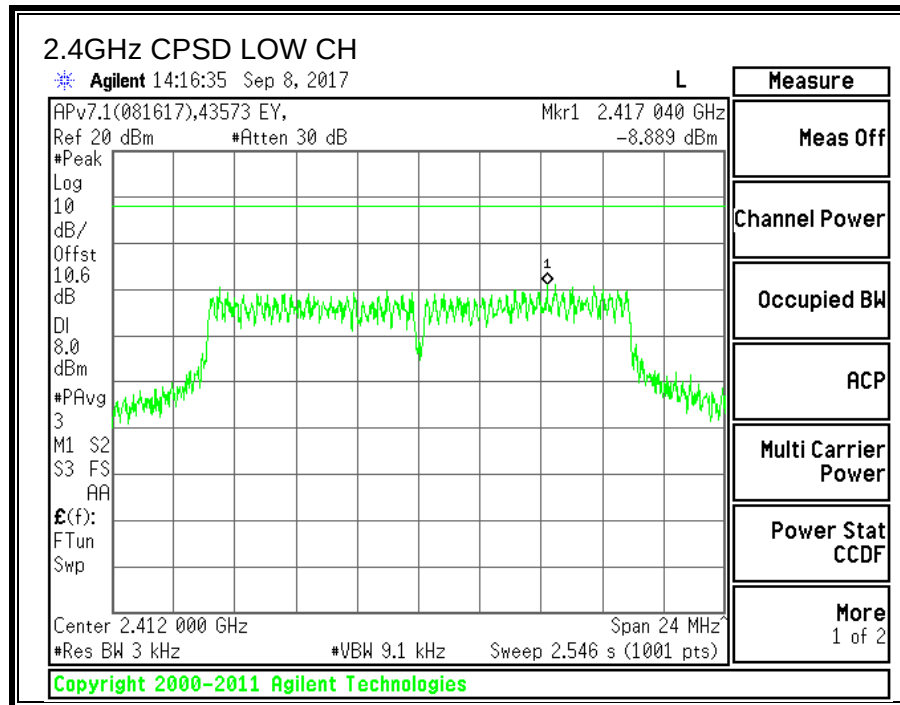
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

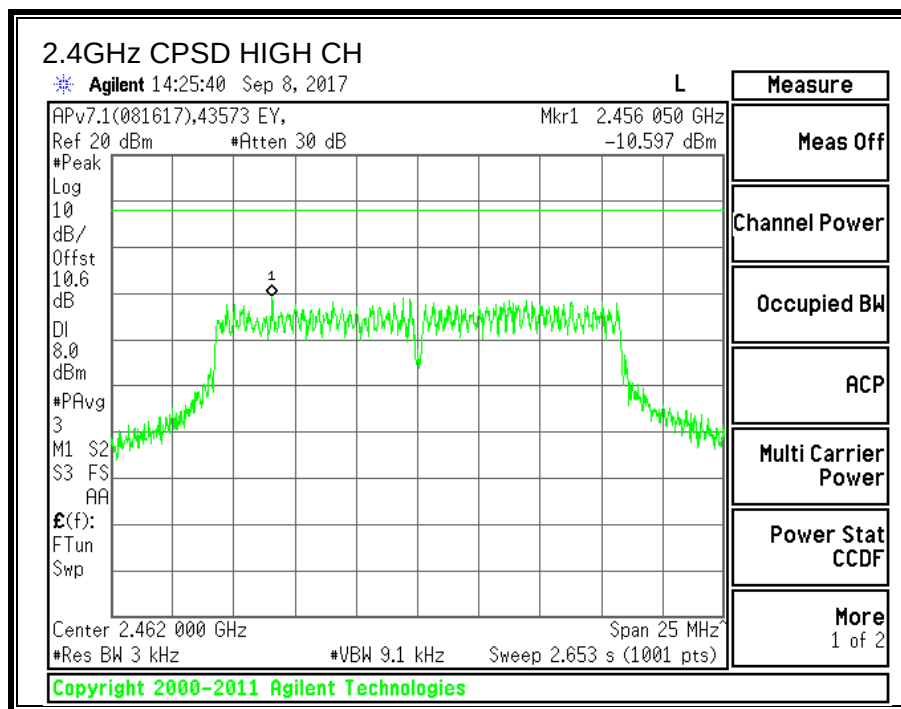
RESULTS

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

Channel	Frequency (MHz)	Meas PSD (dBm/3KHz)	Total Corr'd (dBm/3KHz)	Limit (dBm/3KHz)	Margin dB
Low	2412	-8.889	-8.889	8.0	-16.9
Mid	2437	-9.837	-9.837	8.0	-17.8
High	2462	-10.597	-10.597	8.0	-18.6





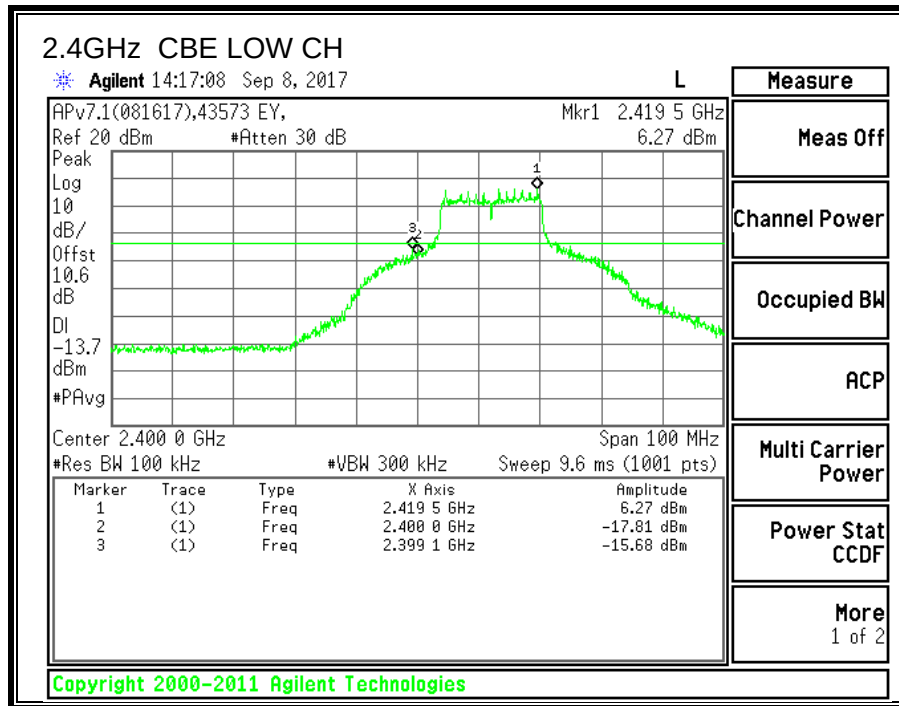
8.3.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

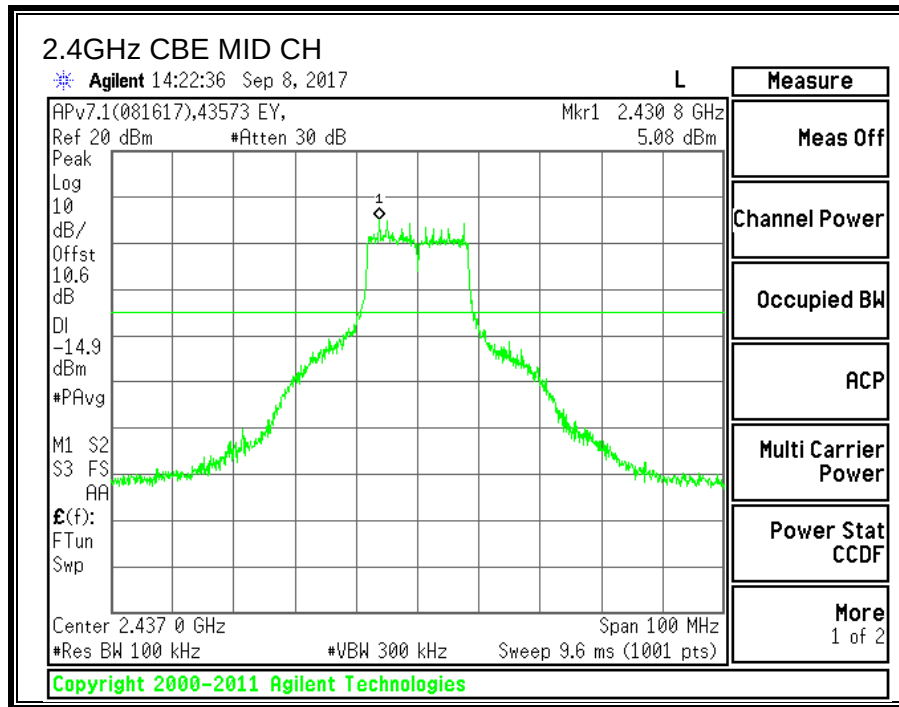
LIMITS

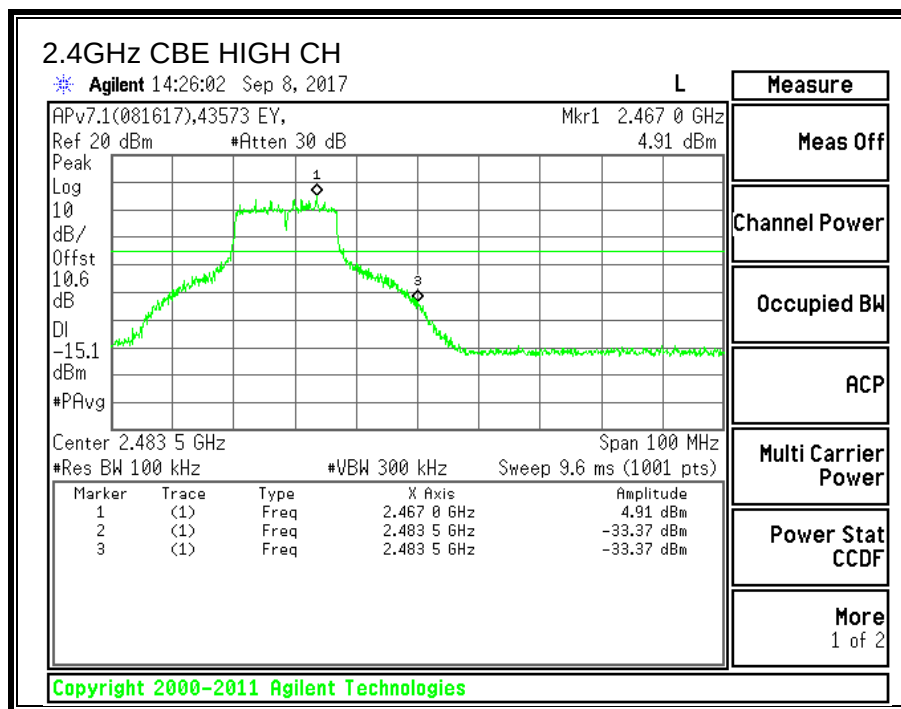
FCC §15.247 (d)

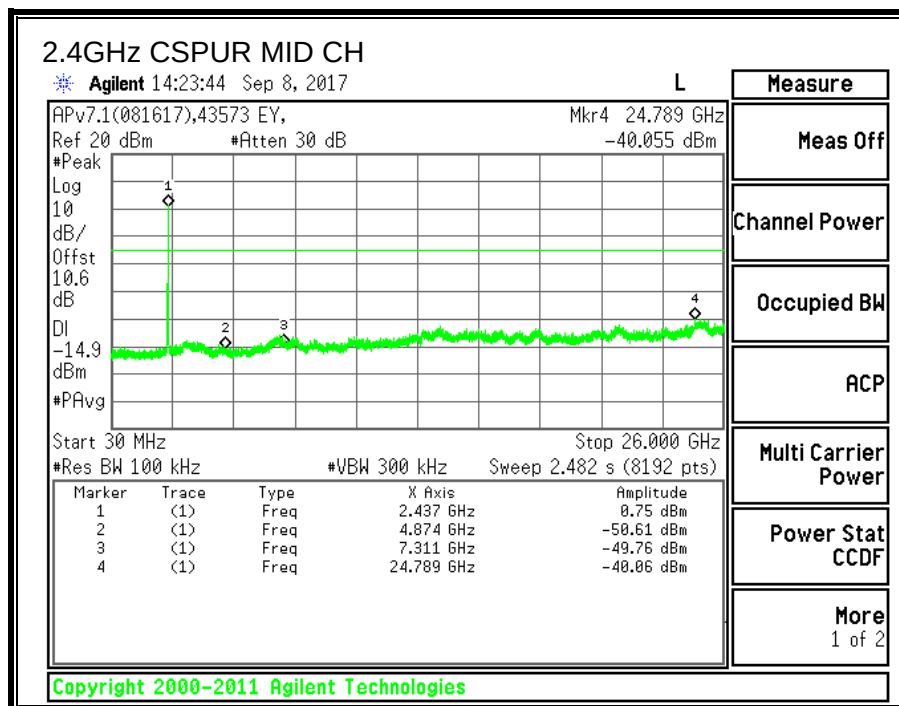
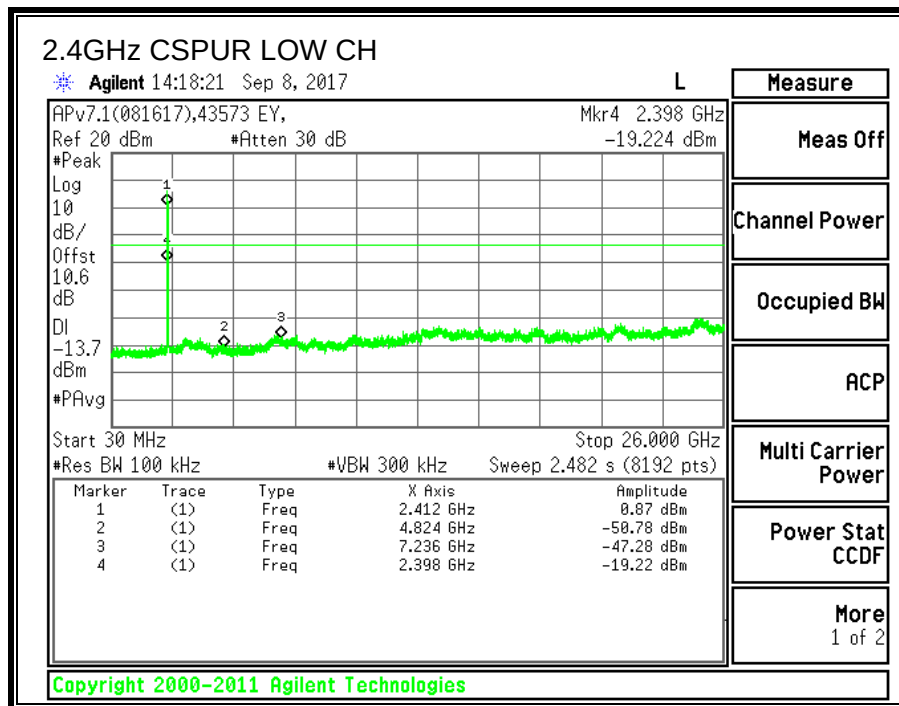
IC RSS-247 (5.5)

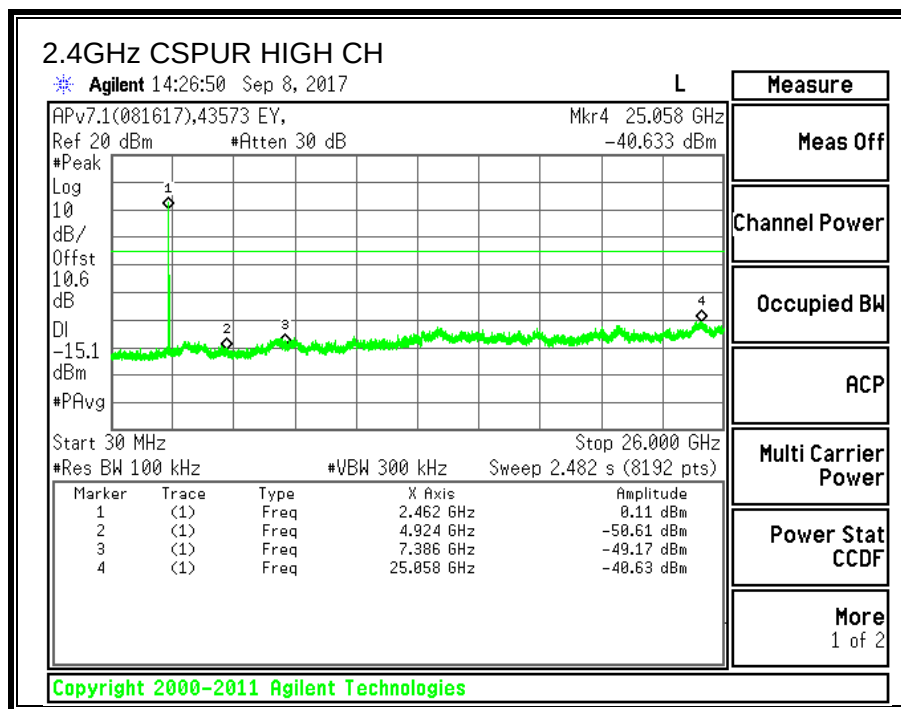
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS









9. RADIATED TEST RESULTS

9.1. LIMITS

LIMITS

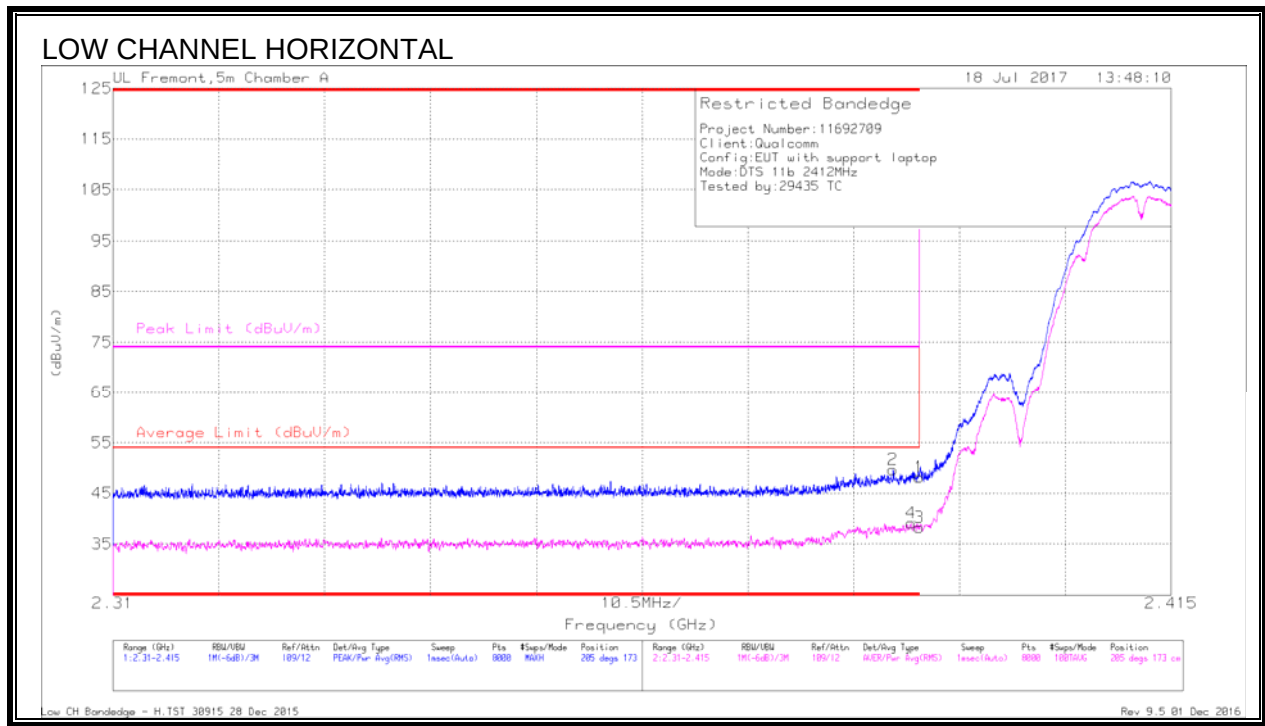
FCC §15.205 and §15.209
IC RSS-GEN, Section 8.9 and 8.10.

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

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. 11b MODE

AUTHORIZED BANDEDGE (LOW CHANNEL, CH 1)



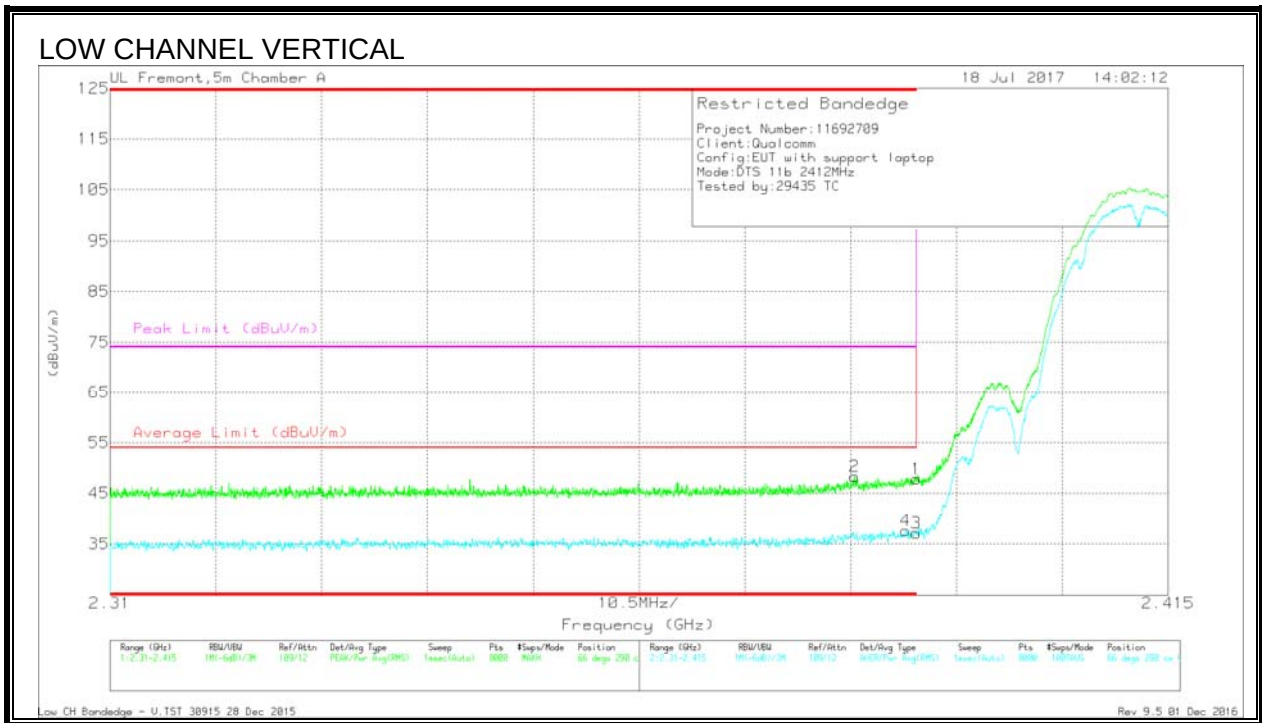
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT862 (dB/m)	Amp/Cbl/Ftr/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	39.57	Pk	31.8	-23.2	48.17	-	-	74	-25.83	205	173	H
2	* 2.387	41.02	Pk	31.8	-23.2	49.62	-	-	74	-24.38	205	173	H
3	* 2.39	29.69	RMS	31.8	-23.2	38.29	54	-15.71	-	-	205	173	H
4	* 2.389	30.53	RMS	31.8	-23.2	39.13	54	-14.87	-	-	205	173	H

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

Pk - Peak detector

RMS - RMS detection



Trace Markers

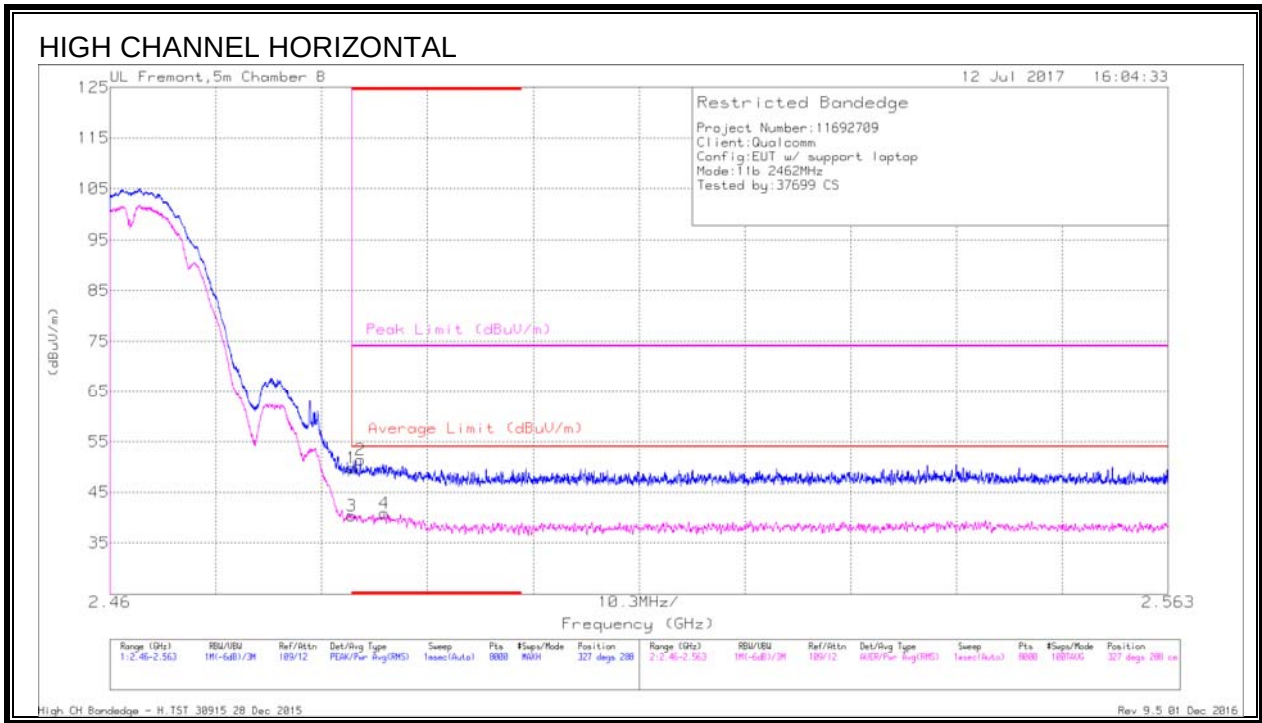
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.16	Pk	31.8	-23.2	47.76	-	-	74	-26.24	66	290	V
2	* 2.384	39.69	Pk	31.8	-23.2	48.29	-	-	74	-25.71	66	290	V
3	* 2.39	28.48	RMS	31.8	-23.2	37.08	54	-16.92	-	-	66	290	V
4	* 2.389	29.03	RMS	31.8	-23.2	37.63	54	-16.37	-	-	66	290	V

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

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEGE (HIGH CHANNEL, CH 11)



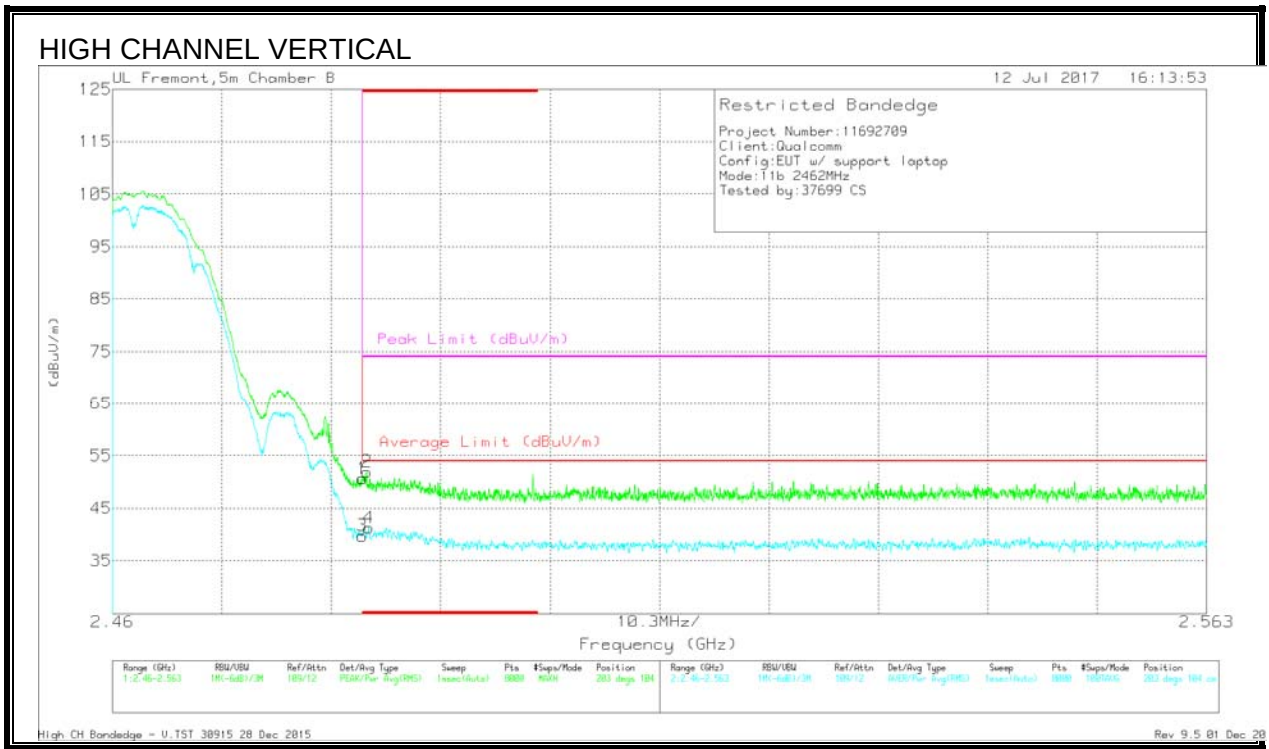
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT863 (dB/m)	Amp/Cbl/Ftr/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	32.5	-20.9	49.78	-	-	74	-24.22	327	288	H
2	* 2.484	39.8	Pk	32.5	-20.9	51.4	-	-	74	-22.6	327	288	H
3	* 2.484	28.79	RMS	32.5	-20.9	40.39	54	-13.61	-	-	327	288	H
4	* 2.487	29.21	RMS	32.5	-20.8	40.91	54	-13.09	-	-	327	288	H

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

Pk - Peak detector

RMS - RMS detection



Trace Markers

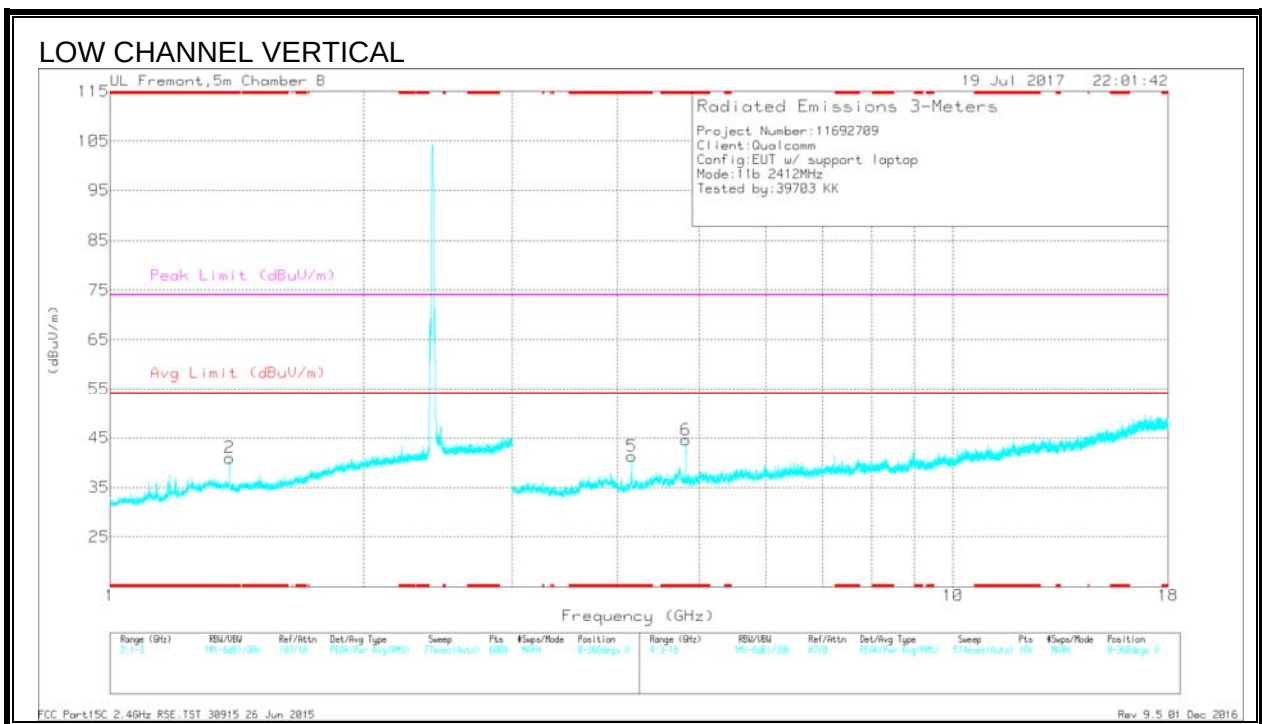
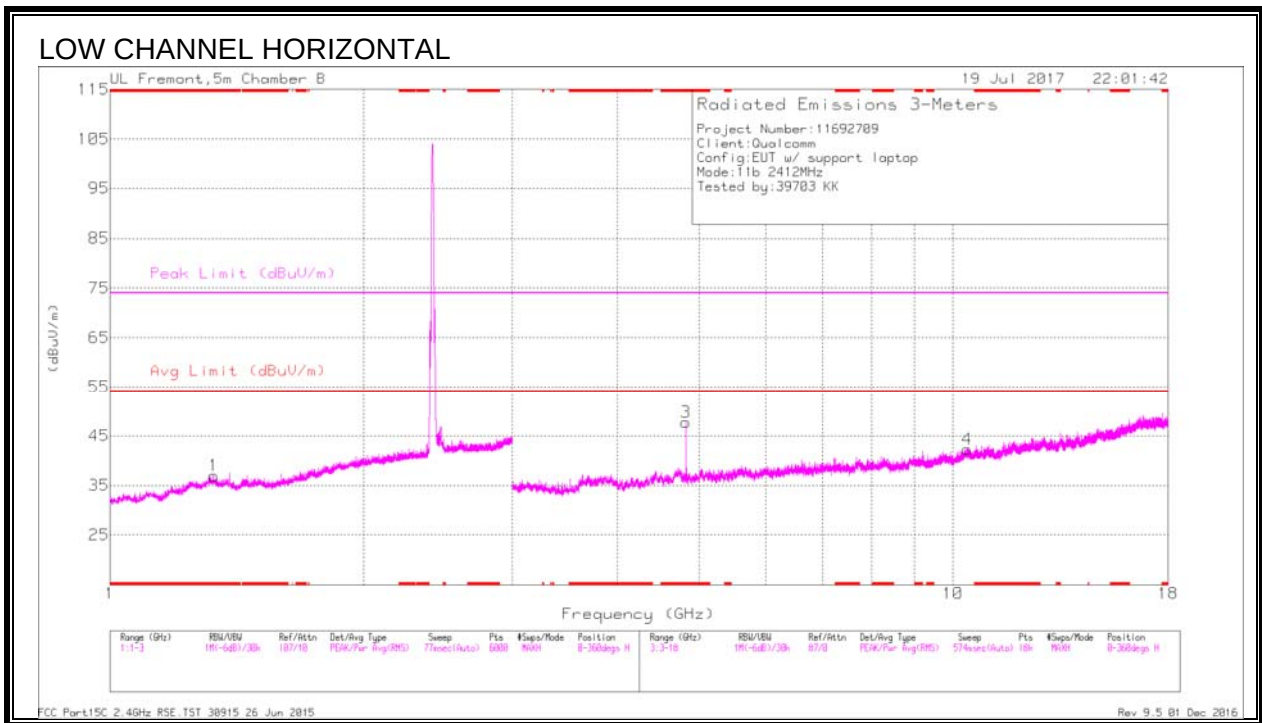
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbi/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.03	Pk	32.5	-20.9	50.63	-	-	74	-23.37	203	104	V
2	* 2.484	40.31	Pk	32.5	-20.9	51.91	-	-	74	-22.09	203	104	V
3	* 2.484	28.09	RMS	32.5	-20.9	39.69	54	-14.31	-	-	203	104	V
4	* 2.484	29.67	RMS	32.5	-20.9	41.27	54	-12.73	-	-	203	104	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)



Radiated Emissions

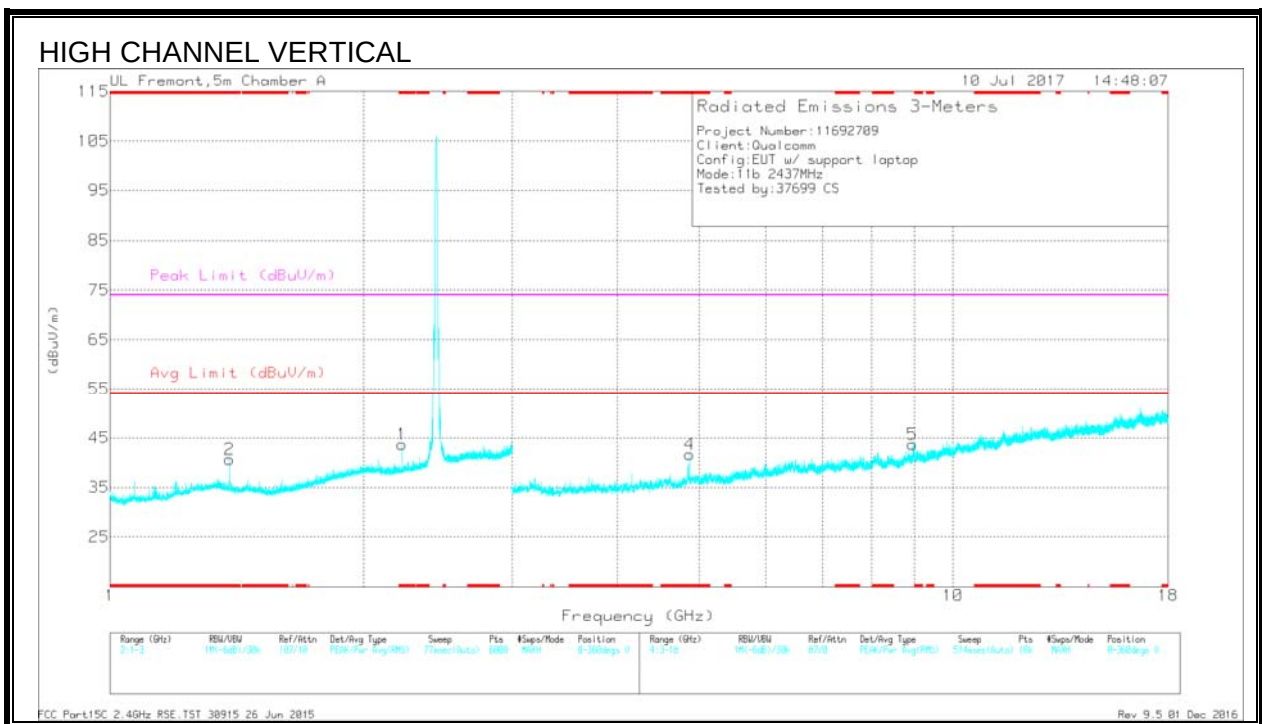
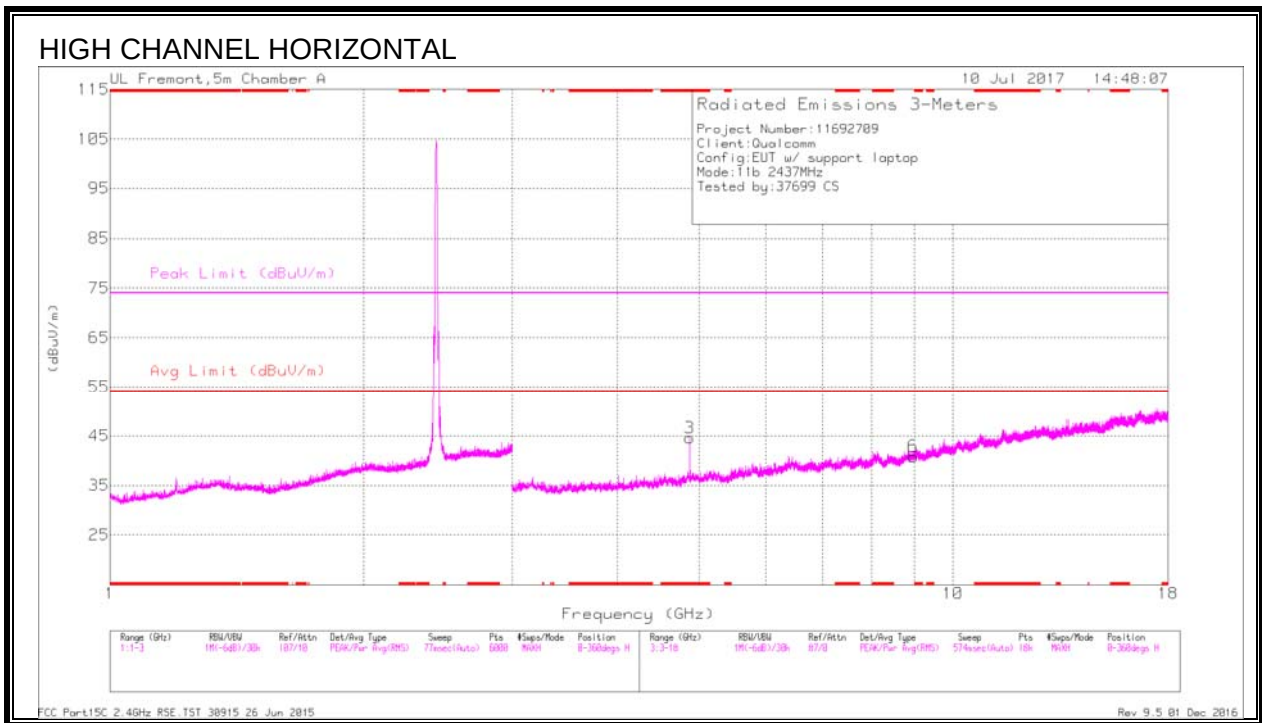
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.327	35.04	PK2	28.9	-21.6	42.34	-	-	74	-31.66	360	101	H
* 1.325	23.58	MAv1	28.9	-21.7	30.78	54	-23.22	-	-	360	101	H
* 1.386	38.77	PK2	28.4	-21.6	45.57	-	-	74	-28.43	119	109	V
* 1.386	30.35	MAv1	28.4	-21.6	37.15	54	-16.85	-	-	119	109	V
* 4.824	45.38	PK2	34.4	-29.4	50.38	-	-	74	-23.62	349	102	H
* 4.824	41.42	MAv1	34.4	-29.5	46.32	54	-7.68	-	-	349	102	H
* 4.158	43.65	PK2	33.4	-29.4	47.65	-	-	74	-26.35	149	134	V
* 4.158	33.6	MAv1	33.4	-29.4	37.6	54	-16.4	-	-	149	134	V
* 4.824	42.23	PK2	34.4	-29.5	47.13	-	-	74	-26.87	262	217	V
* 4.824	37.5	MAv1	34.4	-29.4	42.5	54	-11.5	-	-	262	217	V
10.396	33.73	PK2	37.5	-22.8	48.43	-	-	-	-	260	237	H
10.398	22	MAv1	37.5	-22.8	36.7	-	-	-	-	260	237	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

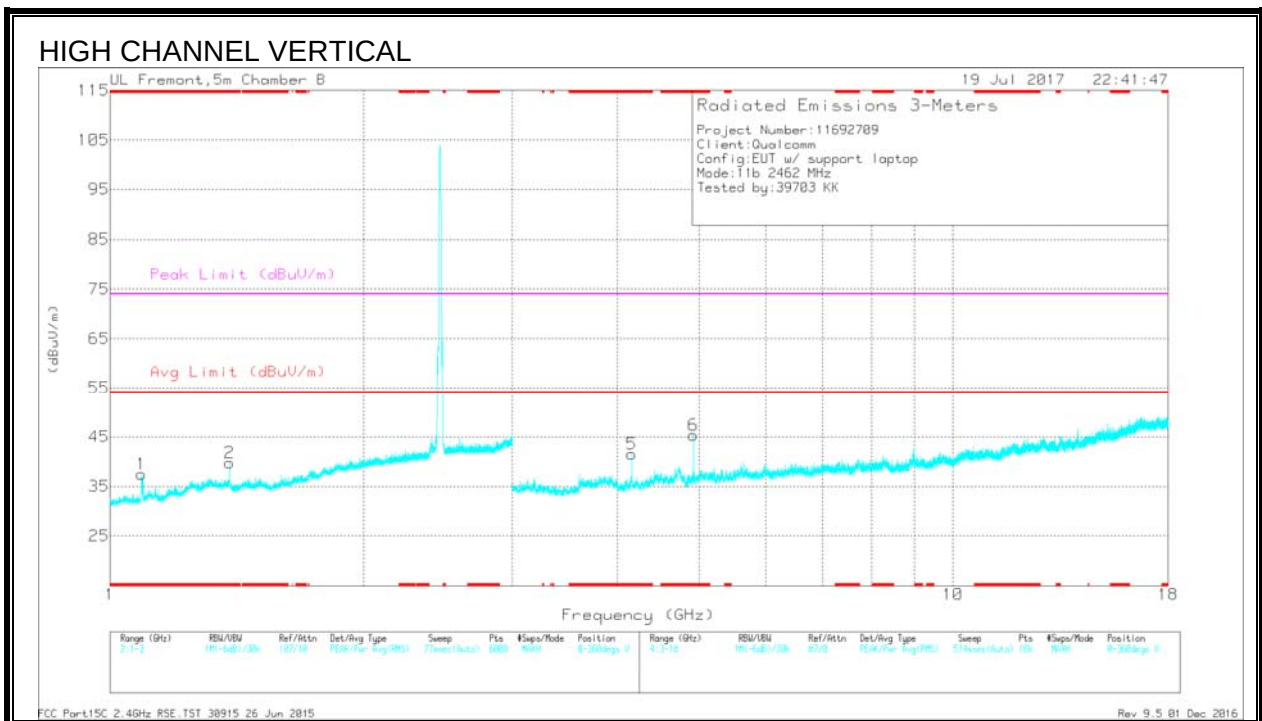
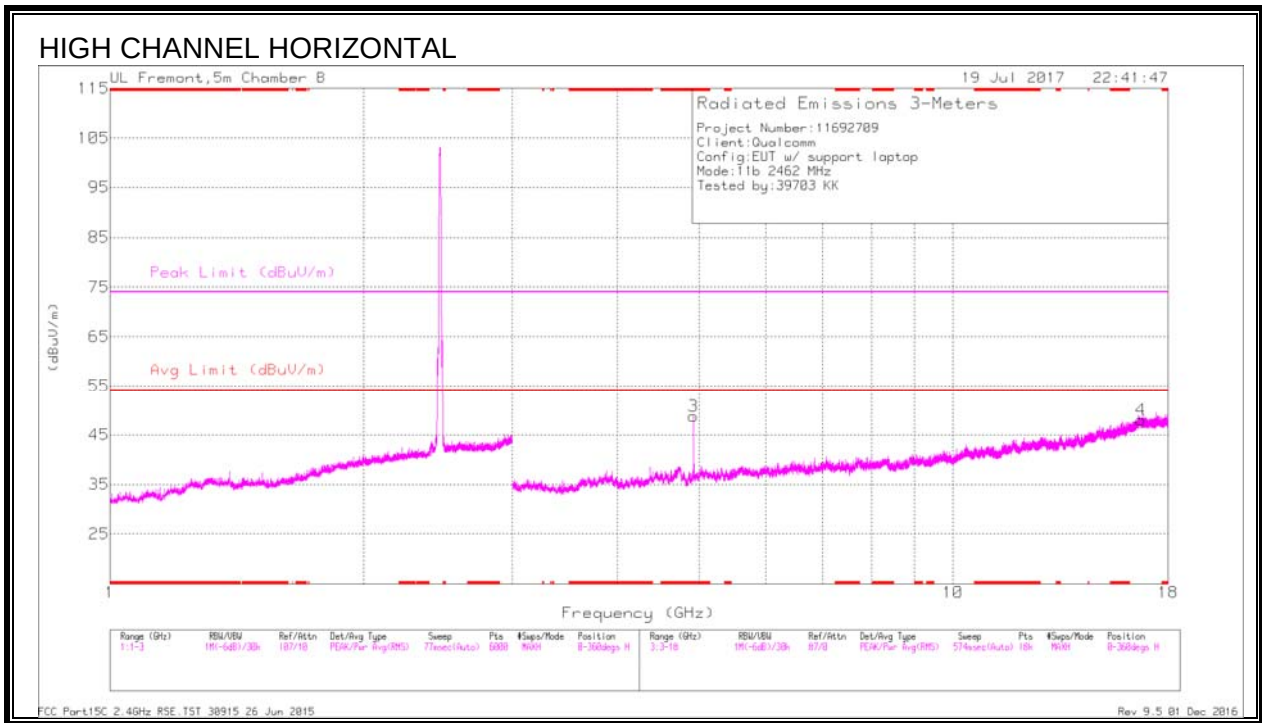
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.22	38.62	PK2	31.3	-23.3	46.62	-	-	74	-27.38	152	241	V
	* 2.22	25.57	MAv1	31.3	-23.3	33.57	54	-20.43	-	-	152	241	V
2	* 1.386	40.41	PK2	28.9	-23.4	45.91	-	-	74	-28.09	191	188	V
	* 1.386	32.76	MAv1	28.9	-23.4	38.26	54	-15.74	-	-	191	188	V
3	* 4.874	42.12	PK2	34.1	-27.2	49.02	-	-	74	-24.98	251	123	H
	* 4.874	37.49	MAv1	34.1	-27.2	44.39	54	-9.61	-	-	251	123	H
4	* 4.874	40.76	PK2	34.1	-27.2	47.66	-	-	74	-26.34	263	122	V
	* 4.874	34.06	MAv1	34.1	-27.2	40.96	54	-13.04	-	-	263	122	V
5	8.955	33.68	PK2	36.2	-22.4	47.48	-	-	-	-	360	101	V
6	8.968	33.72	PK2	36.2	-22.5	47.42	-	-	-	-	360	101	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/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	* 1.09	35.31	PK2	27.5	-23	39.81	-	-	74	-34.19	360	199	V
	* 1.088	23.35	MAv1	27.5	-23	27.85	54	-26.15	-	-	360	199	V
2	* 1.386	39.15	PK2	28.4	-21.6	45.95	-	-	74	-28.05	128	135	V
	* 1.386	31.76	MAv1	28.4	-21.6	38.56	54	-15.44	-	-	128	135	V
3	* 4.924	46.8	PK2	34.4	-30.2	51	-	-	74	-23	2	102	H
	* 4.924	43.5	MAv1	34.4	-30.2	47.7	54	-6.3	-	-	2	102	H
5	* 4.159	44.03	PK2	33.4	-29.4	48.03	-	-	74	-25.97	150	108	V
	* 4.158	33.83	MAv1	33.4	-29.4	37.83	54	-16.17	-	-	150	108	V
6	* 4.924	44.43	PK2	34.4	-30.2	48.63	-	-	74	-25.37	16	106	V
	* 4.924	40.06	MAv1	34.4	-30.2	44.26	54	-9.74	-	-	16	106	V
4	16.707	31	PK2	42.3	-19	54.3	-	-	-	-	2	199	H
	16.709	20.02	MAv1	42.3	-18.9	43.42	-	-	-	-	2	199	H

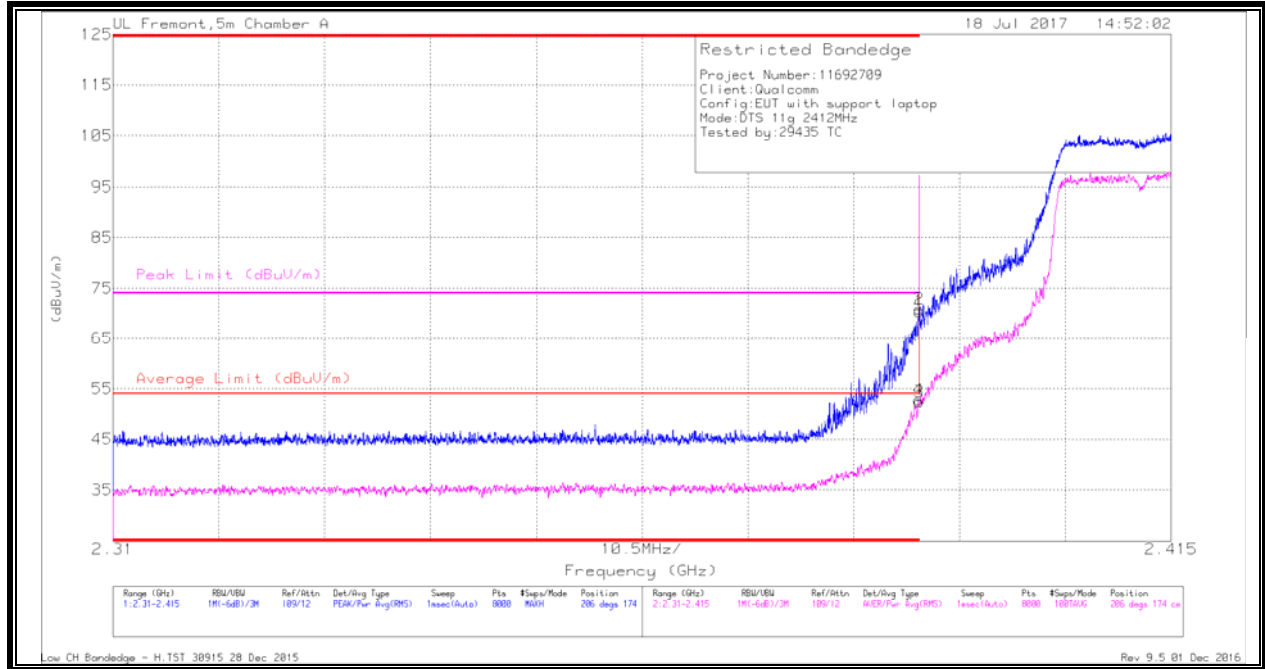
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.2.2. 11g MODE

AUTHORIZED BANDEDGE (LOW CHANNEL, CH 1)



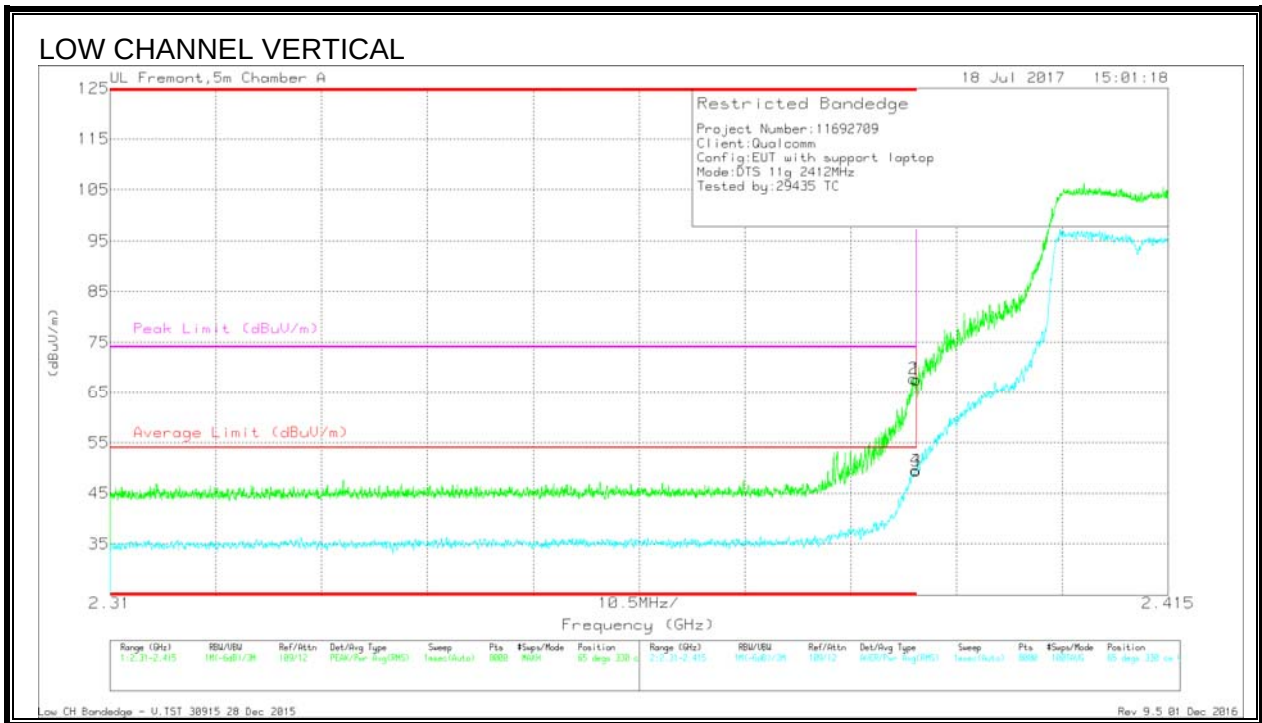
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 2.39	61.87	Pk	31.8	-23.2	70.47	-	-	74	-3.53	206	174	H
2	* 2.39	62.29	Pk	31.8	-23.2	70.89	-	-	74	-3.11	206	174	H
3	* 2.39	43.81	RMS	31.8	-23.2	52.41	54	-1.59	-	-	206	174	H
4	* 2.39	44.2	RMS	31.8	-23.2	52.8	54	-1.2	-	-	206	174	H

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

Pk - Peak detector

RMS - RMS detection



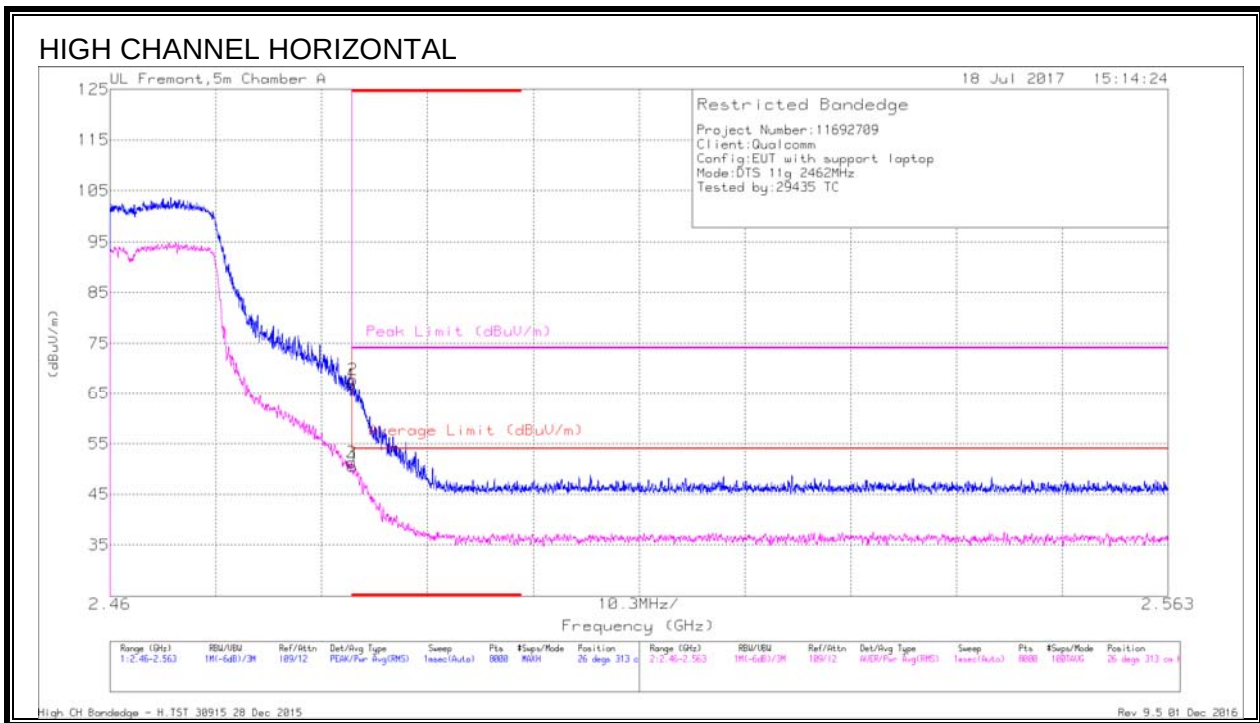
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/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	59.01	Pk	31.8	-23.2	67.61	-	-	74	-6.39	65	330	V
2	* 2.39	59.18	Pk	31.8	-23.2	67.78	-	-	74	-6.22	65	330	V
3	* 2.39	40.79	RMS	31.8	-23.2	49.39	54	-4.61	-	-	65	330	V
4	* 2.39	40.98	RMS	31.8	-23.2	49.58	54	-4.42	-	-	65	330	V

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

Pk - Peak detector

RMS - RMS detection

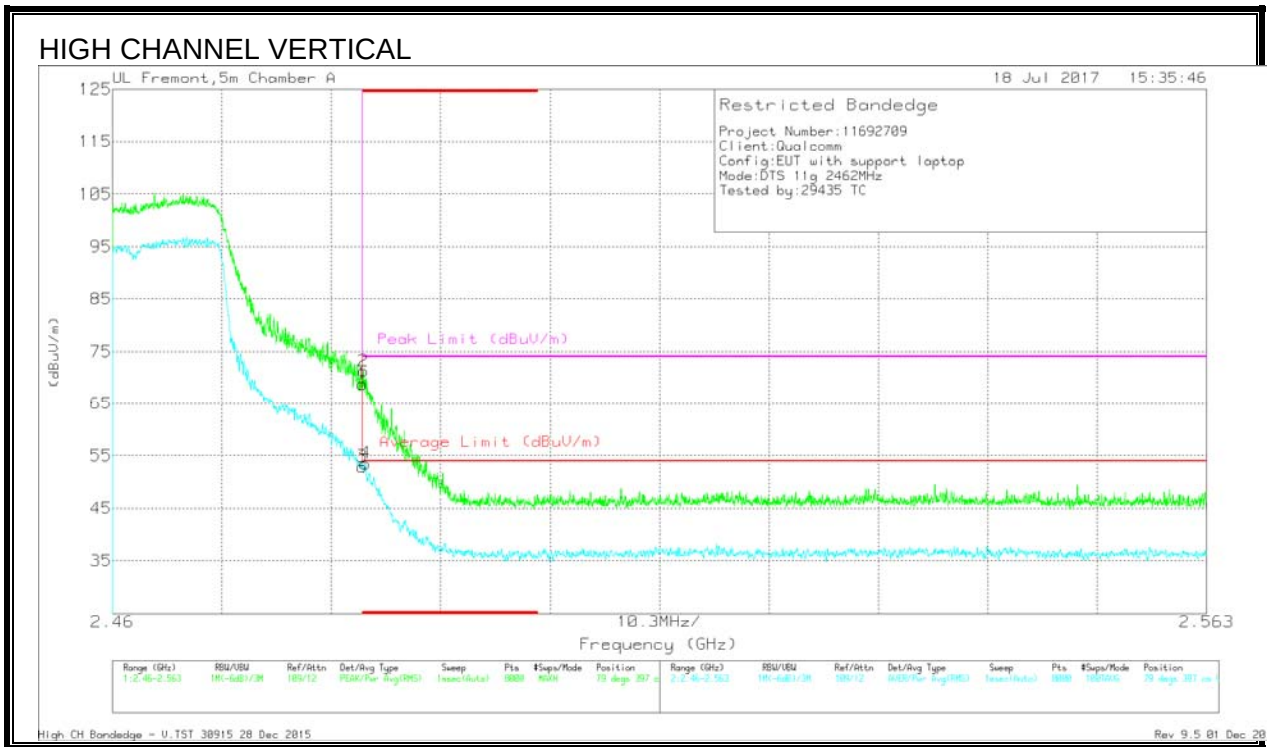
AUTHORIZED BANDEGE (HIGH CHANNEL, CH 11)**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/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	57.62	Pk	32.3	-23.1	66.82	-	-	74	-7.18	26	313	H
2	* 2.484	58.65	Pk	32.3	-23.1	67.85	-	-	74	-6.15	26	313	H
3	* 2.484	42.13	RMS	32.3	-23.1	51.33	54	-2.67	-	-	26	313	H
4	* 2.484	41.31	RMS	32.3	-23.1	50.51	54	-3.49	-	-	26	313	H

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

Pk - Peak detector

RMS - RMS detection



Trace Markers

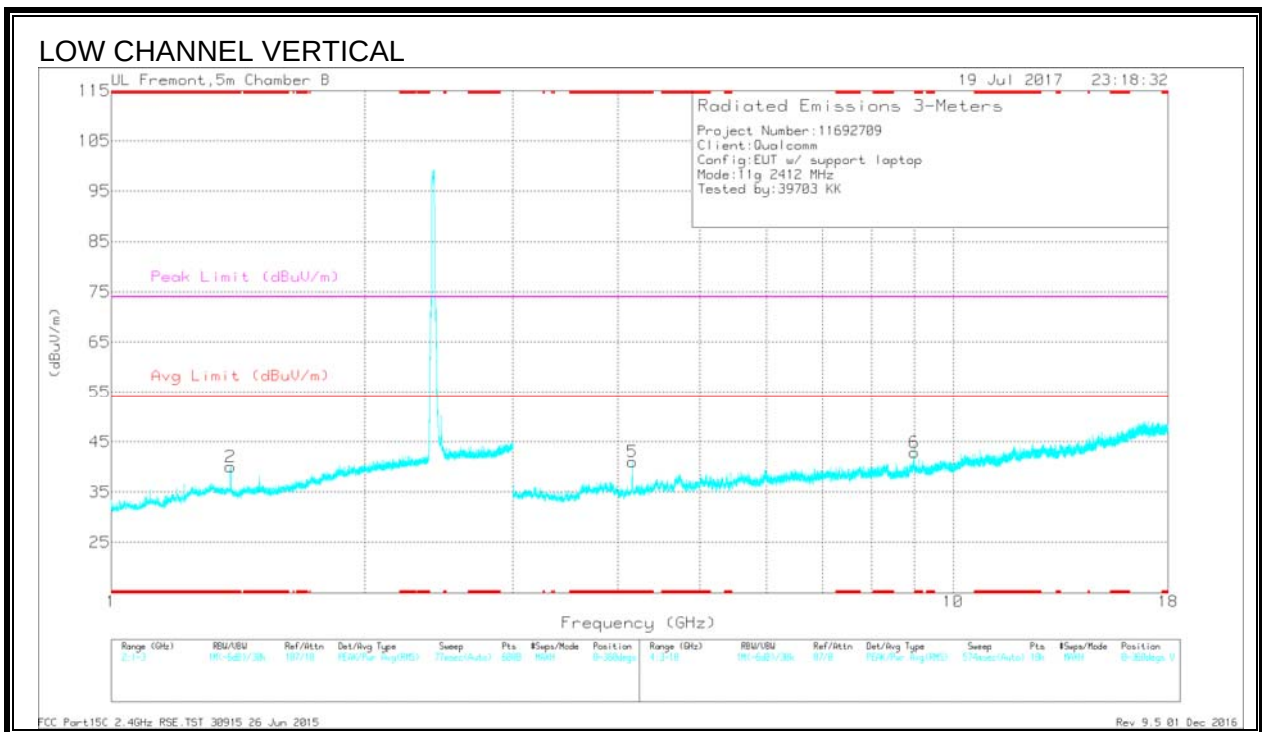
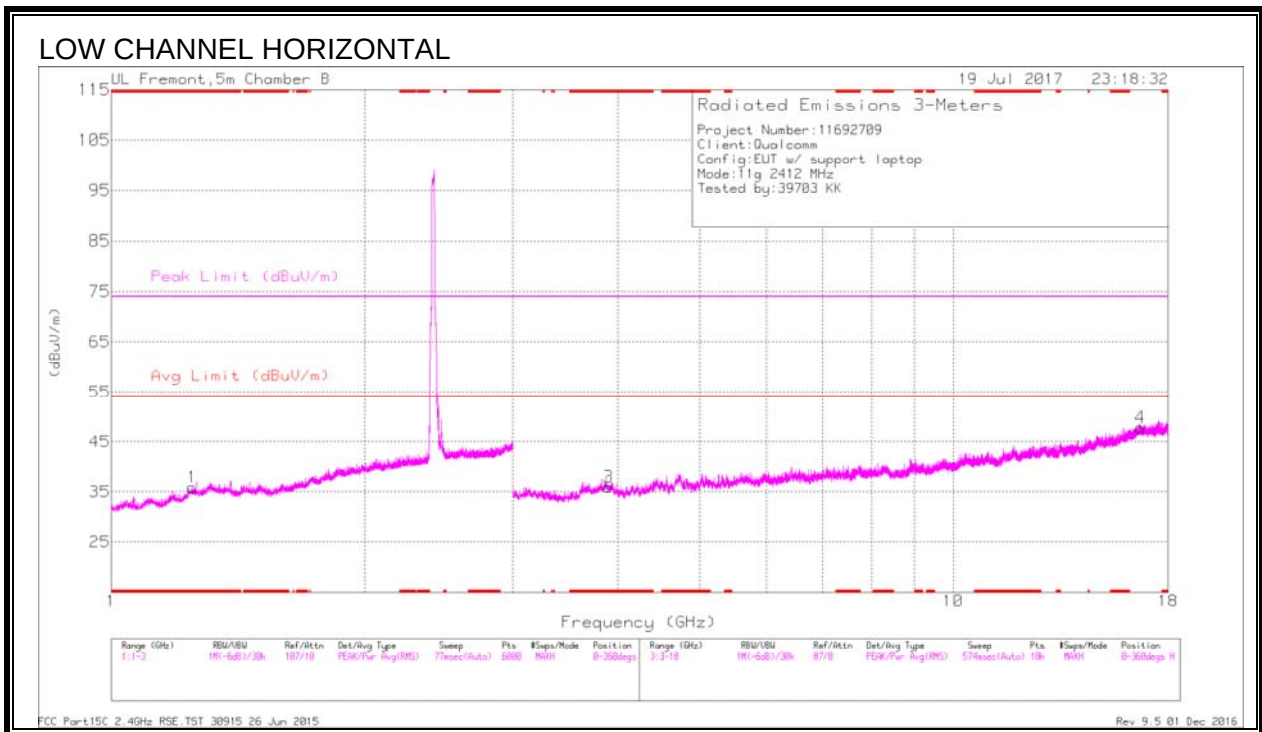
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	59.59	Pk	32.3	-23.1	68.79	-	-	74	-5.21	79	397	V
2	* 2.484	62.12	Pk	32.3	-23.1	71.32	-	-	74	-2.68	79	397	V
3	* 2.484	43.66	RMS	32.3	-23.1	52.86	54	-1.14	-	-	79	397	V
4	* 2.484	44.33	RMS	32.3	-23.1	53.53	54	-.47	-	-	79	397	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)



Radiated Emissions

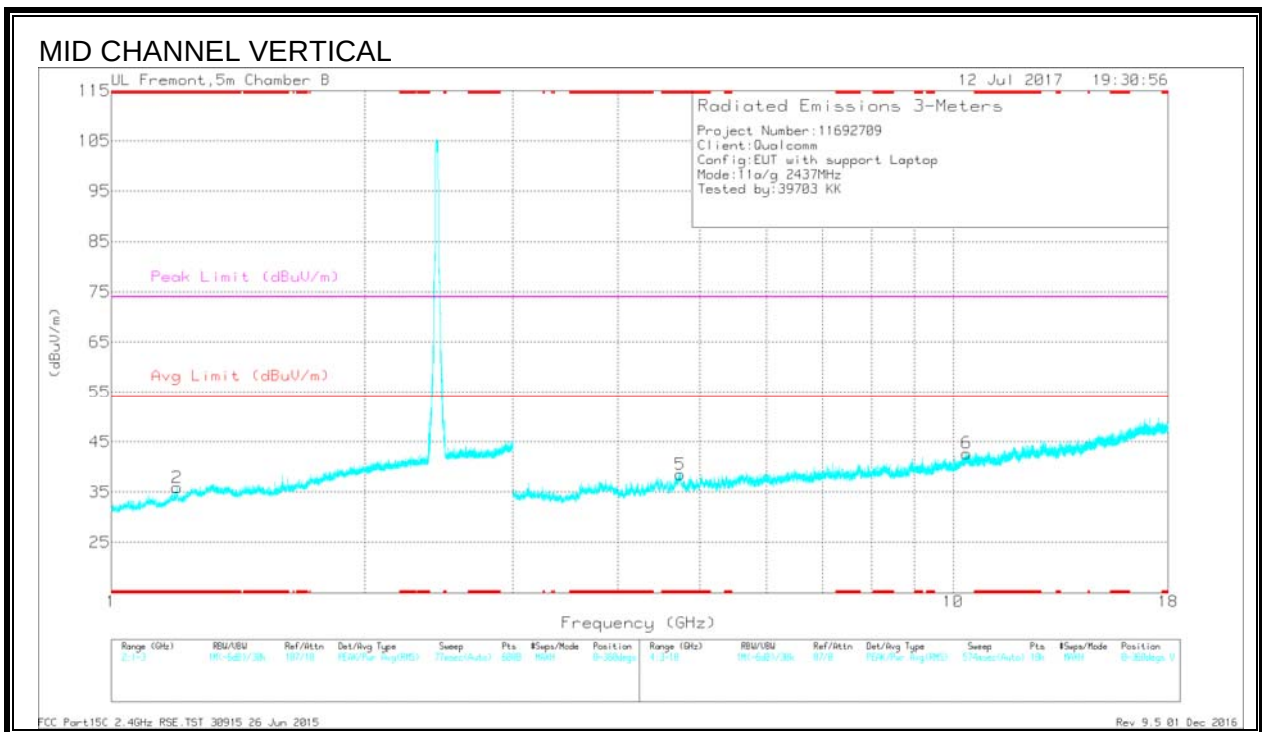
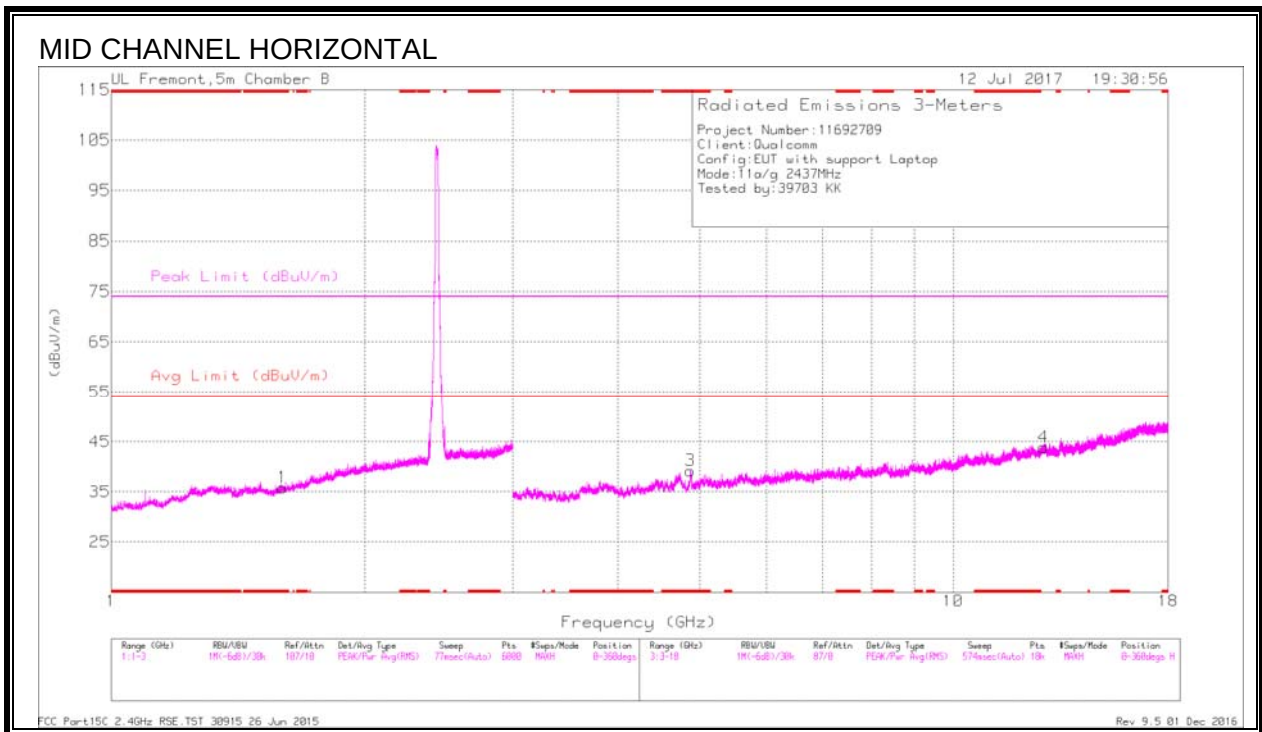
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.25	35.53	PK2	28.8	-22	42.33	-	-	74	-31.67	0	199	H
	* 1.25	24.12	MAv1	28.8	-22	30.92	54	-23.08	-	-	0	199	H
2	* 1.386	38.93	PK2	28.4	-21.6	45.73	-	-	74	-28.27	124	104	V
	* 1.386	30.82	MAv1	28.4	-21.6	37.62	54	-16.38	-	-	124	104	V
3	* 3.895	39	PK2	33.5	-29.7	42.8	-	-	74	-31.2	294	210	H
	* 3.898	27.47	MAv1	33.5	-29.5	31.47	54	-22.53	-	-	294	210	H
5	* 4.158	43.15	PK2	33.4	-29.4	47.15	-	-	74	-26.85	147	117	V
	* 4.158	33.52	MAv1	33.4	-29.4	37.52	54	-16.48	-	-	147	117	V
6	8.994	39.72	PK2	36.2	-24.8	51.12	-	-	-	-	187	102	V
	8.994	25.33	MAv1	36.2	-24.8	36.73	-	-	-	-	187	102	V
4	16.688	20.58	MAv1	42.2	-19.3	43.48	-	-	-	-	294	201	H
	16.689	31.9	PK2	42.2	-19.3	54.8	-	-	-	-	294	201	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

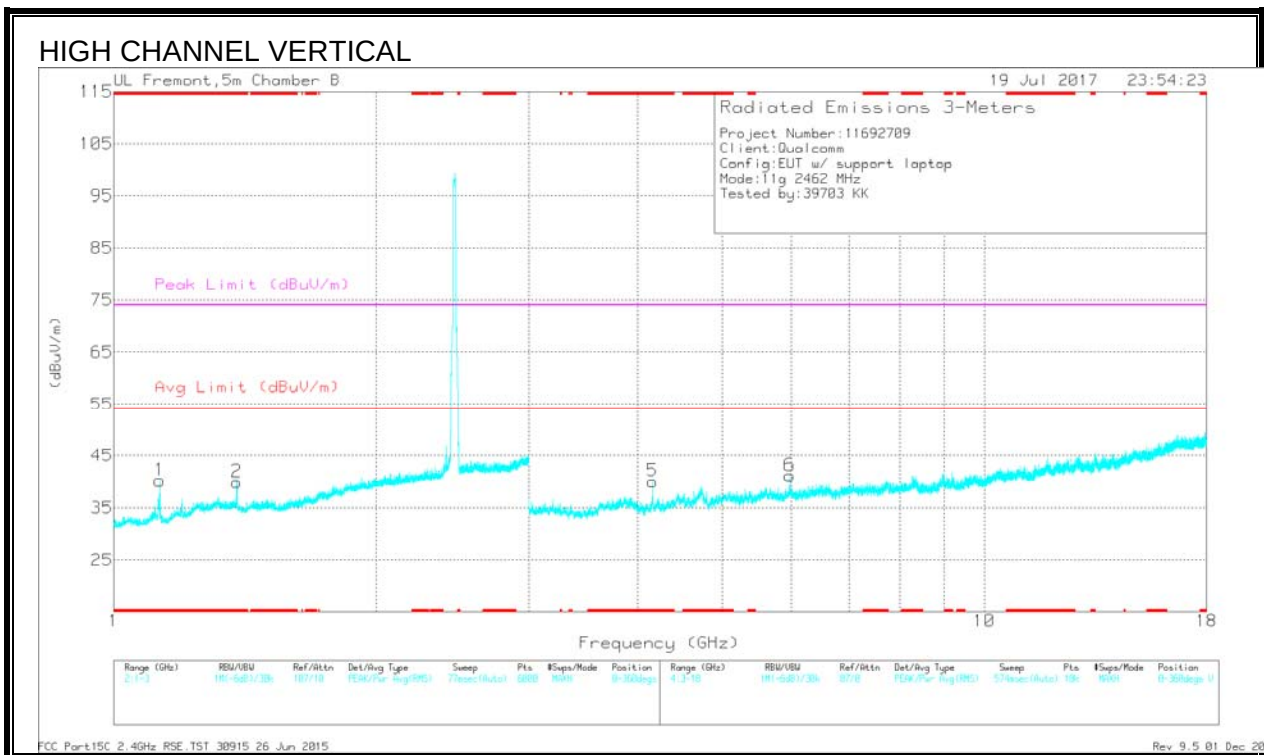
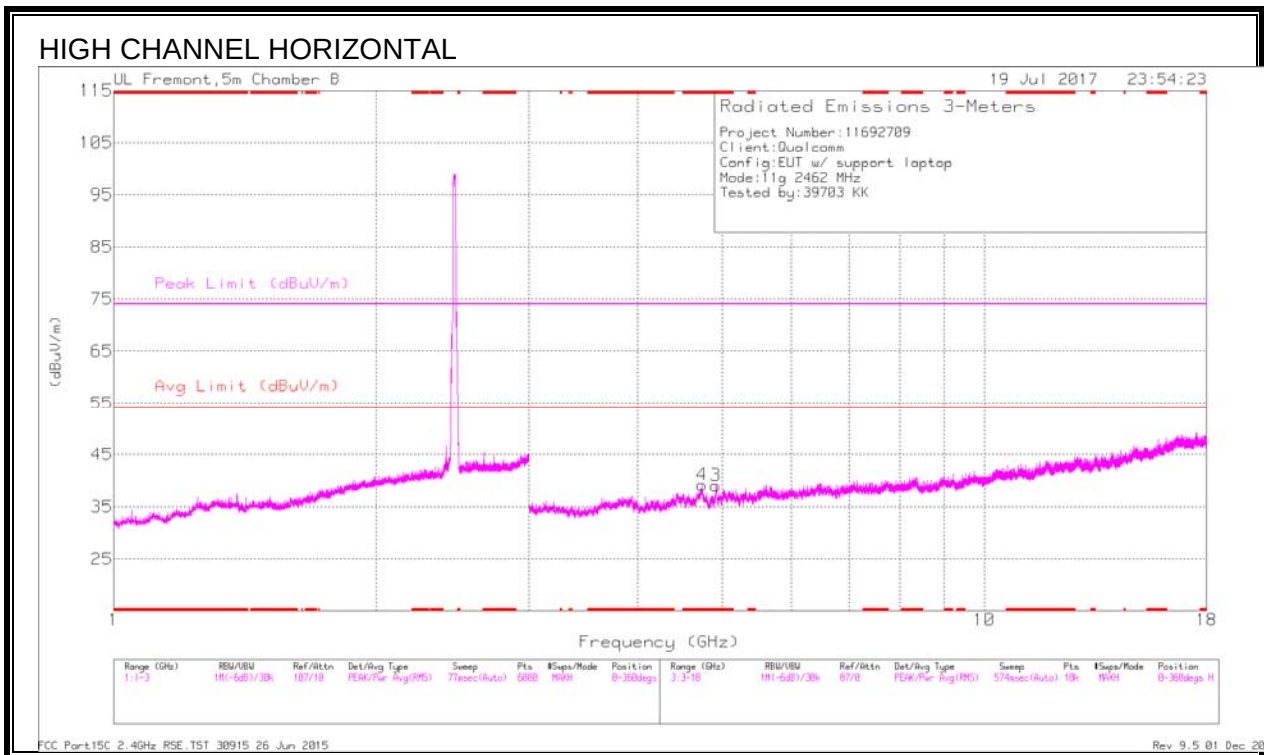
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.598	36.31	PK2	28.3	-21.3	43.31	-	-	74	-30.69	25	383	H
	* 1.598	23.48	MAv1	28.3	-21.2	30.58	54	-23.42	-	-	25	383	H
2	* 1.199	39.4	PK2	28	-22.5	44.9	-	-	74	-29.1	32	392	V
	* 1.196	23.29	MAv1	27.9	-22.3	28.89	54	-25.11	-	-	32	392	V
3	* 4.875	42.98	PK2	34.4	-30.2	47.18	-	-	74	-26.82	293	143	H
	* 4.874	31.68	MAv1	34.4	-30.2	35.88	54	-18.12	-	-	293	143	H
5	* 4.744	38.96	PK2	34.2	-28.4	44.76	-	-	74	-29.24	293	143	H
	* 4.742	28.54	MAv1	34.2	-28.3	34.44	54	-19.56	-	-	293	143	H
6	10.367	33.29	PK2	37.5	-22.6	48.19	-	-	-	-	293	143	V
	10.368	22.52	MAv1	37.5	-22.6	37.42	-	-	-	-	293	143	V
4	12.797	32.44	PK2	39.4	-21.6	50.24	-	-	-	-	293	143	H
	12.797	21.72	MAv1	39.4	-21.6	39.52	-	-	-	-	293	143	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/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	* 1.128	35.29	PK2	27.6	-22.6	40.29	-	-	74	-33.71	360	199	V
	* 1.129	23.51	MAv1	27.6	-22.6	28.51	54	-25.49	-	-	360	199	V
2	* 1.386	38.94	PK2	28.4	-21.6	45.74	-	-	74	-28.26	132	136	V
	* 1.386	31.47	MAv1	28.4	-21.6	38.27	54	-15.73	-	-	132	136	V
3	* 4.915	41.55	PK2	34.4	-30.5	45.45	-	-	74	-28.55	6	103	H
	* 4.915	29.28	MAv1	34.4	-30.5	33.18	54	-20.82	-	-	6	103	H
4	* 4.742	39.43	PK2	34.2	-28.3	45.33	-	-	74	-28.67	99	133	H
	* 4.742	27.81	MAv1	34.2	-28.3	33.71	54	-20.29	-	-	99	133	H
5	* 4.159	43.84	PK2	33.4	-29.4	47.84	-	-	74	-26.16	150	212	V
	* 4.158	33.21	MAv1	33.4	-29.4	37.21	54	-16.79	-	-	150	212	V
6	5.977	39.32	PK2	35.3	-28.3	46.32	-	-	-	-	150	104	V
	5.978	27.39	MAv1	35.3	-28.2	34.49	-	-	-	-	150	104	V

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

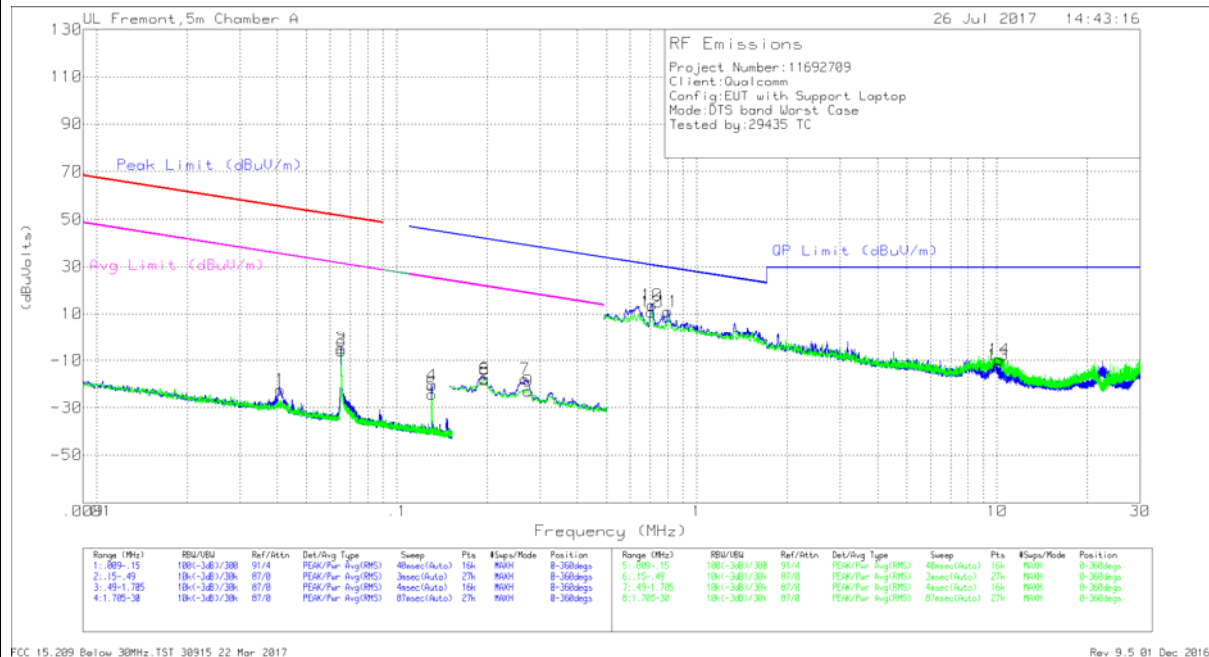
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.3. WORST-CASE BELOW 30 MHz

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL PLOTS



NOTE: KDB 414788 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.04096	44.62	Pk	12.8	.1	-80	-22.48	55.34	-77.82	35.34	-57.82	-	-	-	-	0-360
2	.0653	62.99	Pk	11.9	.1	-80	-5.01	51.29	-56.3	31.29	-36.3	-	-	-	-	0-360
3	.06531	61.95	Pk	11.9	.1	-80	-6.05	51.28	-57.33	31.28	-37.33	-	-	-	-	0-360
5	.13069	43.87	Pk	11.6	.1	-80	-24.43	-	-	-	-	45.3	-69.73	25.3	-49.73	0-360
4	.13082	47.66	Pk	11.6	.1	-80	-20.64	-	-	-	-	45.29	-65.93	25.29	-45.93	0-360
6	.19635	50.71	Pk	11.6	.1	-80	-17.59	-	-	-	-	41.76	-59.35	21.76	-39.35	0-360
8	.19635	50.04	Pk	11.6	.1	-80	-18.26	-	-	-	-	41.76	-60.02	21.76	-40.02	0-360
7	.26754	50.35	Pk	11.6	.1	-80	-17.95	-	-	-	-	39.07	-57.02	19.07	-37.02	0-360
9	.27394	45.33	Pk	11.6	.1	-80	-22.97	-	-	-	-	38.86	-61.83	18.86	-41.83	0-360

Pk - Peak detector

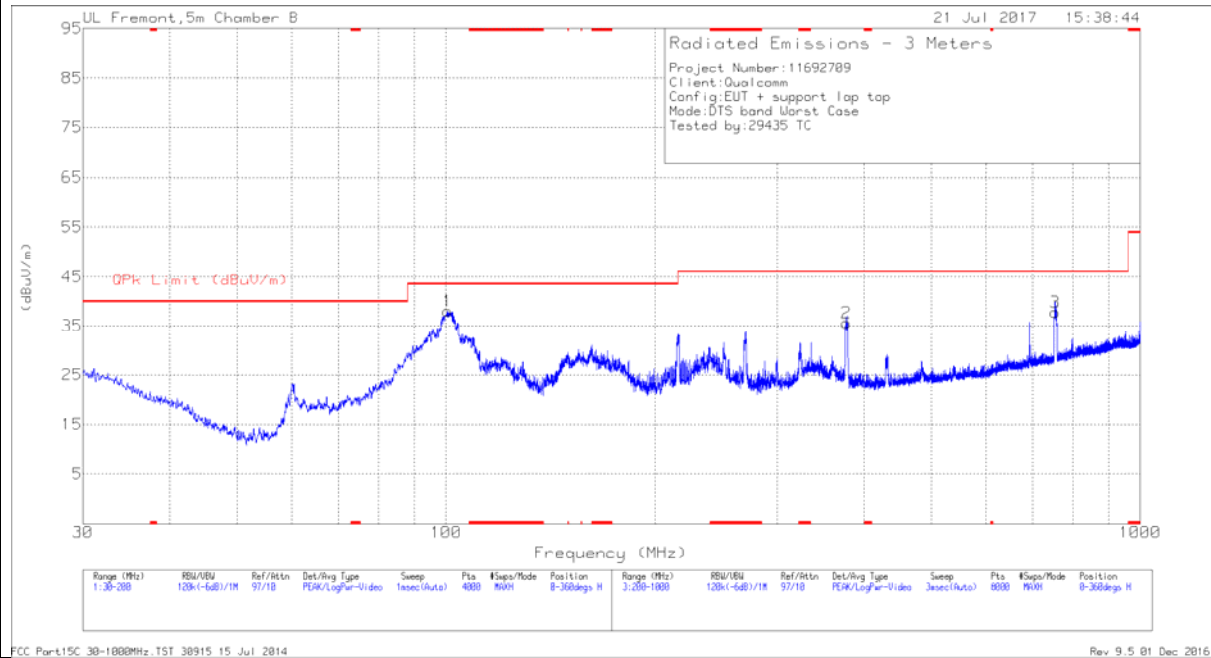
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
12	.70626	38.96	Pk	11.6	.1	-40	10.66	30.63	-19.97	0-360
10	.70759	42.01	Pk	11.6	.1	-40	13.71	30.62	-16.91	0-360
11	.8008	39.32	Pk	11.6	.1	-40	11.02	29.55	-18.53	0-360
13	10.07852	16.62	Pk	10.8	.4	-40	-12.18	29.5	-41.68	0-360
14	10.17598	19.15	Pk	10.8	.4	-40	-9.65	29.5	-39.15	0-360

Pk - Peak detector

9.4. WORST-CASE 30 - 1000 MHz

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

HORIZONTAL PLOT



VERTICAL PLOT



Trace Markers

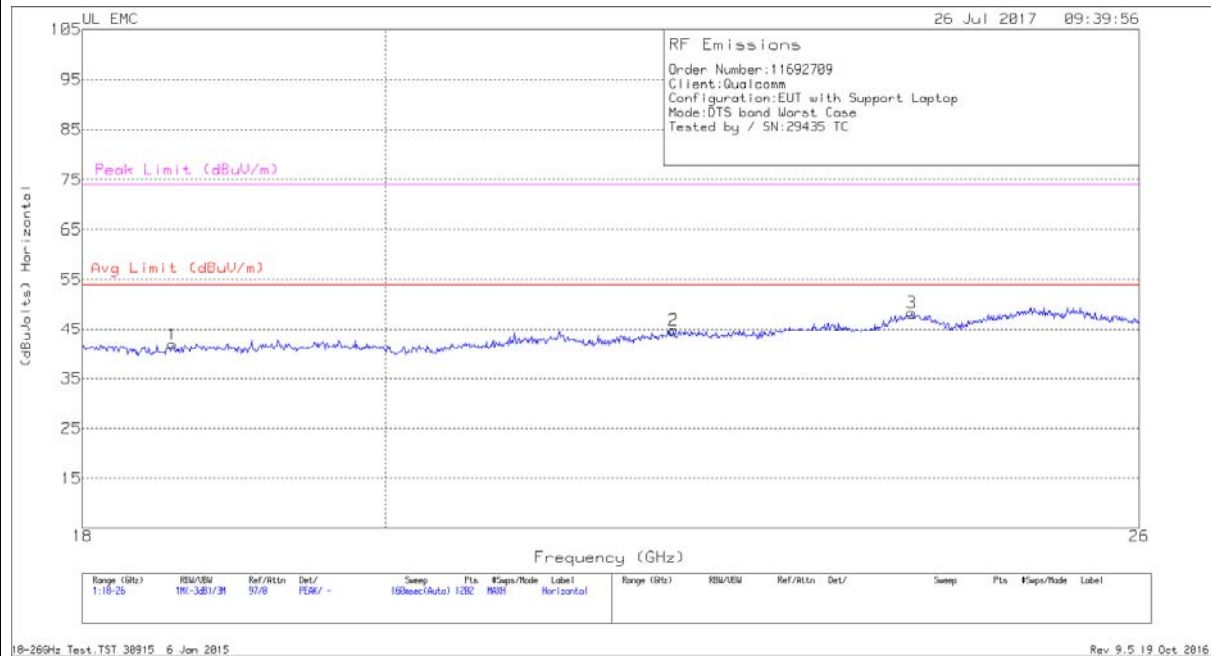
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T899 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	32.8907	37.33	Pk	23.5	-28.8	32.03	40	-7.97	0-360	100	V
5	60.2253	45.5	Pk	11.7	-28.4	28.8	40	-11.2	0-360	100	V
1	100.6471	50.87	Pk	14.5	-27.9	37.47	43.52	-6.05	253	287	H
	100.6471	46.05	Qp	14.5	-27.9	32.65	43.52	-10.87	253	287	H
2	377.6231	42.55	Pk	19	-25.9	35.65	46.02	-10.37	0-360	400	H
6	378.5232	39.94	Pk	19	-25.8	33.14	46.02	-12.88	0-360	300	V
3	753.772	37.79	Pk	24.6	-24.6	37.79	46.02	-8.23	0-360	100	H

Pk - Peak detector

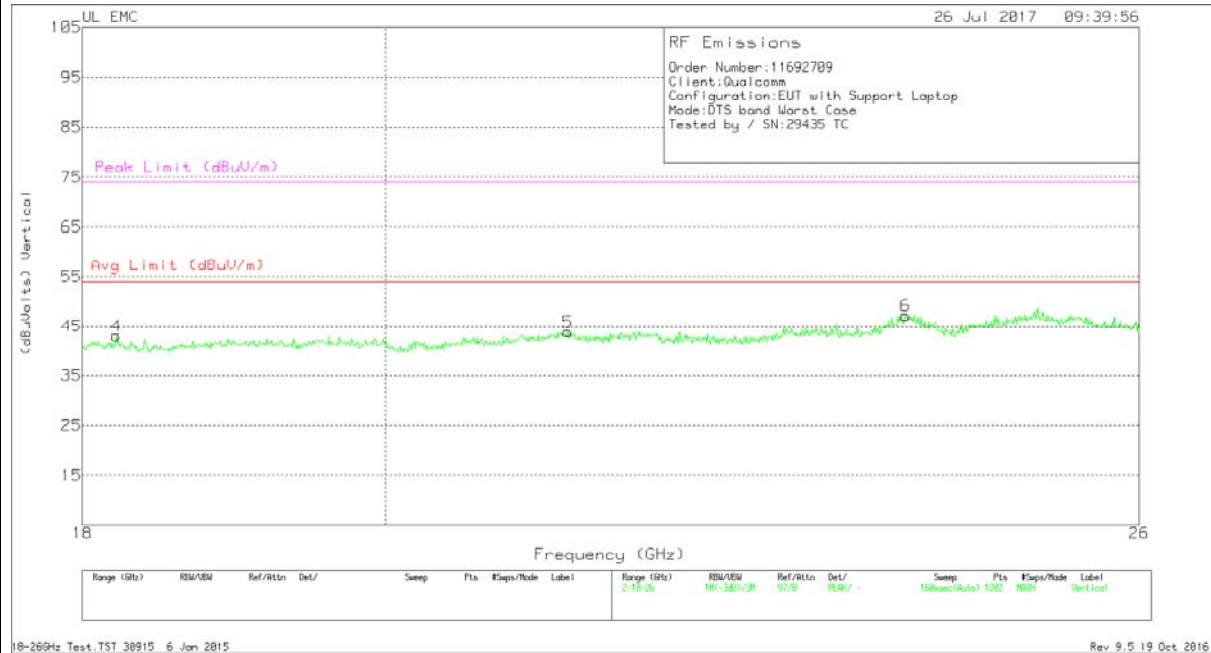
Qp - Quasi-Peak detector

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

HORIZONTAL PLOT



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	18.573	41.13	Pk	32.3	-22.1	-9.5	41.8333	54	-12.1667	74	-32.1667
2	22.11	41.93	Pk	33.4	-21	-9.5	44.83333	54	-9.16667	74	-29.1667
3	24.022	44.13	Pk	33.9	-20.2	-9.5	48.33333	54	-5.66667	74	-25.6667
4	18.213	42.8	Pk	32.2	-22.5	-9.5	43	54	-11	74	-31
5	21.311	41.83	Pk	33	-21.5	-9.5	43.83333	54	-10.16667	74	-30.16667
6	23.968	42.77	Pk	33.9	-20	-9.5	47.16667	54	-6.833333	74	-26.8333

Pk - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

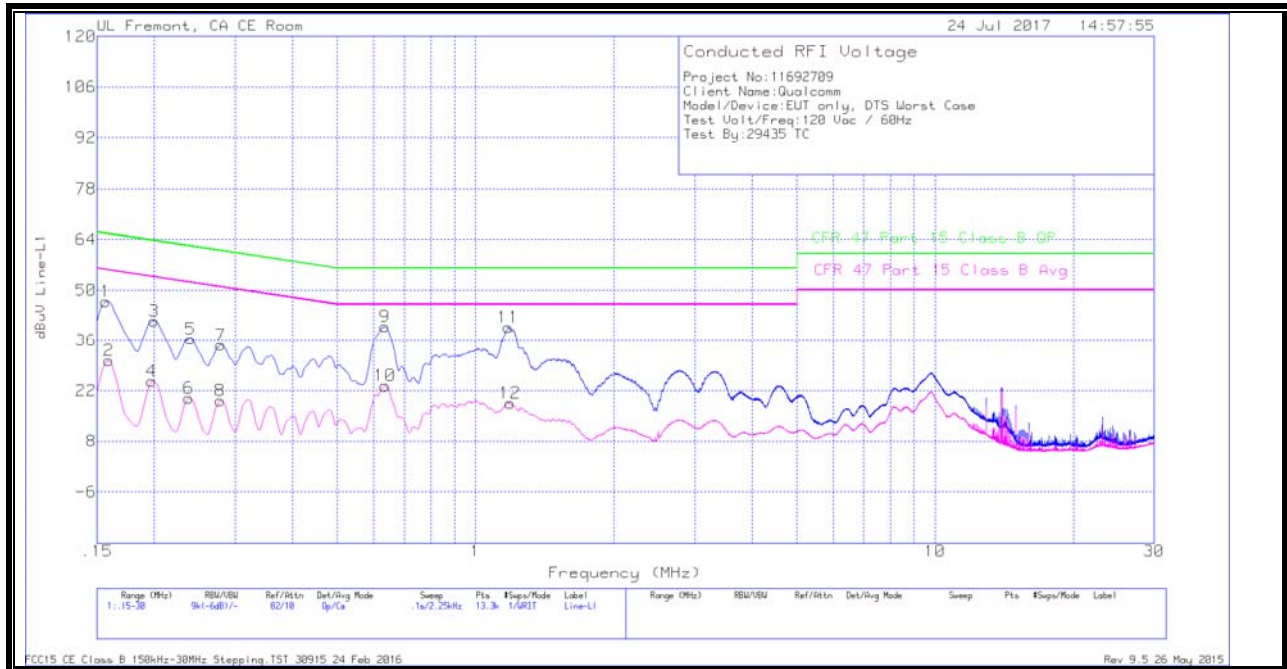
LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

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

*Decreases with the logarithm of the frequency.

LINE 1 RESULTS



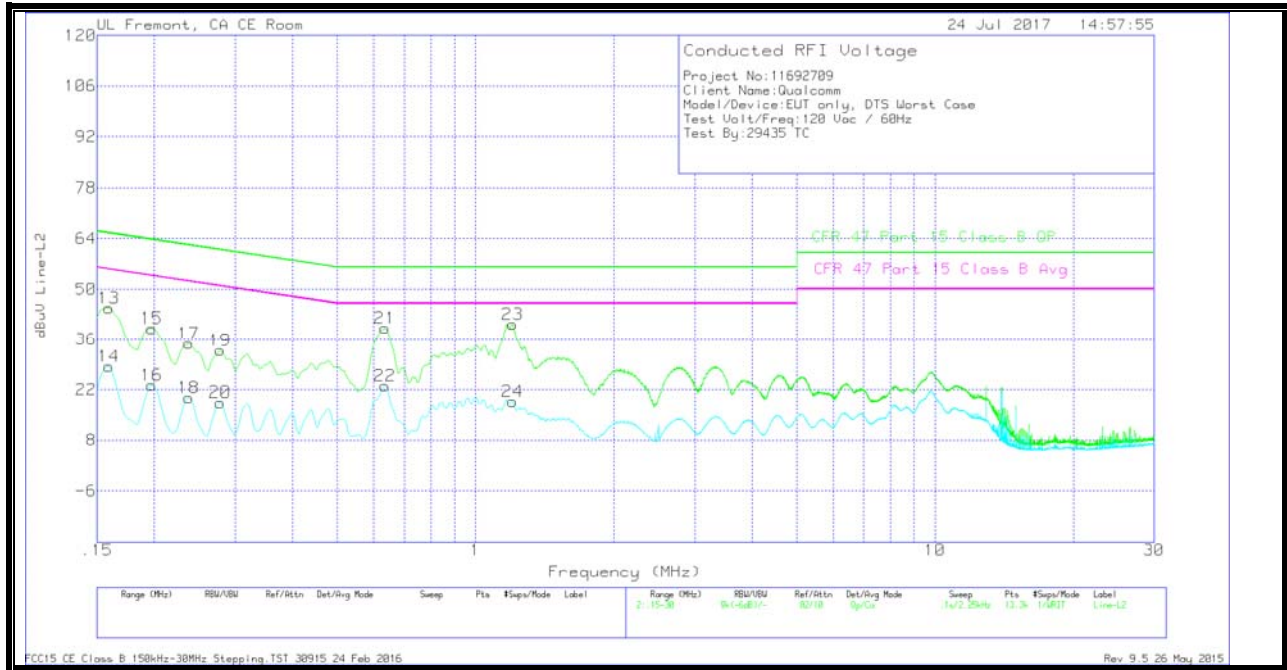
WORST EMISSIONS

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	.15675	36.62	Qp	.1	.1	10.1	46.92	65.63	-18.71	-	-
2	.159	20.03	Ca	.1	.1	10.1	30.33	-	-	55.52	-25.19
3	.1995	31.33	Qp	0	.1	10.1	41.53	63.63	-22.1	-	-
4	.19725	14.37	Ca	0	.1	10.1	24.57	-	-	53.73	-29.16
5	.24	26.26	Qp	0	.1	10.1	36.46	62.1	-25.64	-	-
6	.23775	9.72	Ca	0	.1	10.1	19.92	-	-	52.17	-32.25
7	.27938	24.46	Qp	0	.1	10.1	34.66	60.83	-26.17	-	-
8	.27825	9.02	Ca	0	.1	10.1	19.22	-	-	50.87	-31.65
9	.636	29.79	Qp	0	.1	10.1	39.99	56	-16.01	-	-
10	.636	13.12	Ca	0	.1	10.1	23.32	-	-	46	-22.68
11	1.17825	29.61	Qp	0	.1	10.1	39.81	56	-16.19	-	-
12	1.1895	8.39	Ca	0	.1	10.1	18.59	-	-	46	-27.41

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	.159	34.66	Qp	0	.1	10.1	44.86	65.52	-20.66	-	-
14	.159	18.3	Ca	0	.1	10.1	28.5	-	-	55.52	-27.02
15	.19725	28.93	Qp	0	.1	10.1	39.13	63.73	-24.6	-	-
16	.19725	13.04	Ca	0	.1	10.1	23.24	-	-	53.73	-30.49
17	.23775	24.69	Qp	0	.1	10.1	34.89	62.17	-27.28	-	-
18	.23775	9.51	Ca	0	.1	10.1	19.71	-	-	52.17	-32.46
19	.27825	22.82	Qp	0	.1	10.1	33.02	60.87	-27.85	-	-
20	.27825	8.25	Ca	0	.1	10.1	18.45	-	-	50.87	-32.42
21	.636	29.01	Qp	0	.1	10.1	39.21	56	-16.79	-	-
22	.636	12.84	Ca	0	.1	10.1	23.04	-	-	46	-22.96
23	1.20525	29.99	Qp	0	.1	10.1	40.19	56	-15.81	-	-
24	1.20525	8.52	Ca	0	.1	10.1	18.72	-	-	46	-27.28

Qp - Quasi-Peak detector

Ca - CISPR average detection