



CERTIFICATION TEST REPORT

Report Number. : 11708541-E2V2

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

Model : A1863, A1907

FCC ID : BCG-E3159A

IC : 579C-E3159A

EUT Description : SMARTPHONE

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

Date Of Issue:
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	8/23/2017	Initial Issue	Chin Pang
V2	8/25/2017	TCB Questions	F. Guarnero

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: SMARTPHONE

MODEL: A1863, A1907

SERIAL NUMBER: C7CTW01UJ8V9

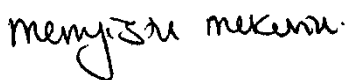
DATE TESTED: APRIL 12, 20917 – JULY 14, 2017

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

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

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

Approved & Released For
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TEST 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
Occupied Channel Bandwidth	±0.39 %

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The equipment under test is a mobile phone with GSM, GPRS, EGPRS, UMTS, LTE, TD-SCDMA and CDMA technologies. It also supports IEEE 802.11a/b/g/n/ac, Bluetooth®, GPS and NFC. The device has a built-in inductive charging receiver which is not user accessible. The rechargeable battery is not user accessible.

5.2. DIFFERENCE IN MODEL NUMBER

Model A1863 and A1907 are identical. Two model numbers are allocated for marketing and logistic purpose only.

5.3. MAXIMUM OUTPUT POWER

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

Antenna	Configuration	Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
UAT 1	Pmax	2402 - 2480	BLE 1M	20.30	107.15
	Plow			10.22	10.52
	Pmax		BLE 2M	19.95	98.86
	Plow			9.90	9.77
LAT 3	Pmax	2402 - 2480	BLE 1M	20.10	102.33
	Plow			10.02	10.05
	Pmax		BLE 2M	20.12	102.80
	Plow			9.81	9.57

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain (dBi)	
2.4	UAT 1 Primary	LAT 3 Diversity
	-2.54	-1.30

5.5. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was version 15.1.40.176.

5.6. WORST-CASE CONFIGURATION AND MODE

Radiated band edge, harmonic, and spurious emissions from 1GHz to 18GHz were performed with the EUT was set to transmit at highest power on Low/Middle/High channels.

Radiated emissions below 30MHz, below 1GHz, above 18GHz and power line conducted emissions were performed with the EUT transmits at the channel with the highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations, X (Flatbed), Y (Landscape), and Z (Portrait), on both primary and diversity antennas. In addition, the EUT was also investigated with and without AC/DC charger, headphones & laptop. It was determined that X (Flatbed) orientation was the worst-case orientation for both antennas UAT 1 and LAT 3 without AC/DC charger, headphones, or laptop; therefore, all final radiated testing was performed with EUT only in X-orientation for 1 - 18GHz and 18 – 26GHz. And for 30-1000MHz EUT was tested with AC/DC charger.

Worst-case data rate as provided by the client and baseline scan was:

BLE: 1Mbps

BLE 1M mode has been verified to have the highest power.

There are two vendors of the WiFi/Bluetooth radio modules: variant 1 and variant 2. The Wi-Fi/Bluetooth radio modules have the same mechanical outline (e.g., the same package dimension and pin-out layout), use the same on-board antenna matching circuit, have an identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances.

Baseline testing was performed on the two variants to determine the worst case on all conducted power and radiated emissions.

For simultaneous transmission of multiple channels from the same antenna LAT 3 in the 2.4GHz BLE and 5GHz bands, tests were conducted for various configurations having the highest power. No noticeable new emission was found.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop AC/DC adapter	Liteon Technology	PA-1450-BA1	B123	NA
Laptop AC/DC adapter	DeLL	LA65NSO-00	CN-ODF263-71615-6BG-2981	NA
Laptop	DELL	Latitude 3540	6LN6802	NA
Laptop	Apple	MackBook Air 4	NA	NA
Dongle	N/A	N/A	HDG1409226823	NA

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	Shielded	1	N/A
3	AC	1	AC	Un-shielded	3	N/A

I/O CABLES (RADIATED ABOVE 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
NA						

I/O CABLES (AC POWER CONDUCTED TEST AND BELOW 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	3	N/A

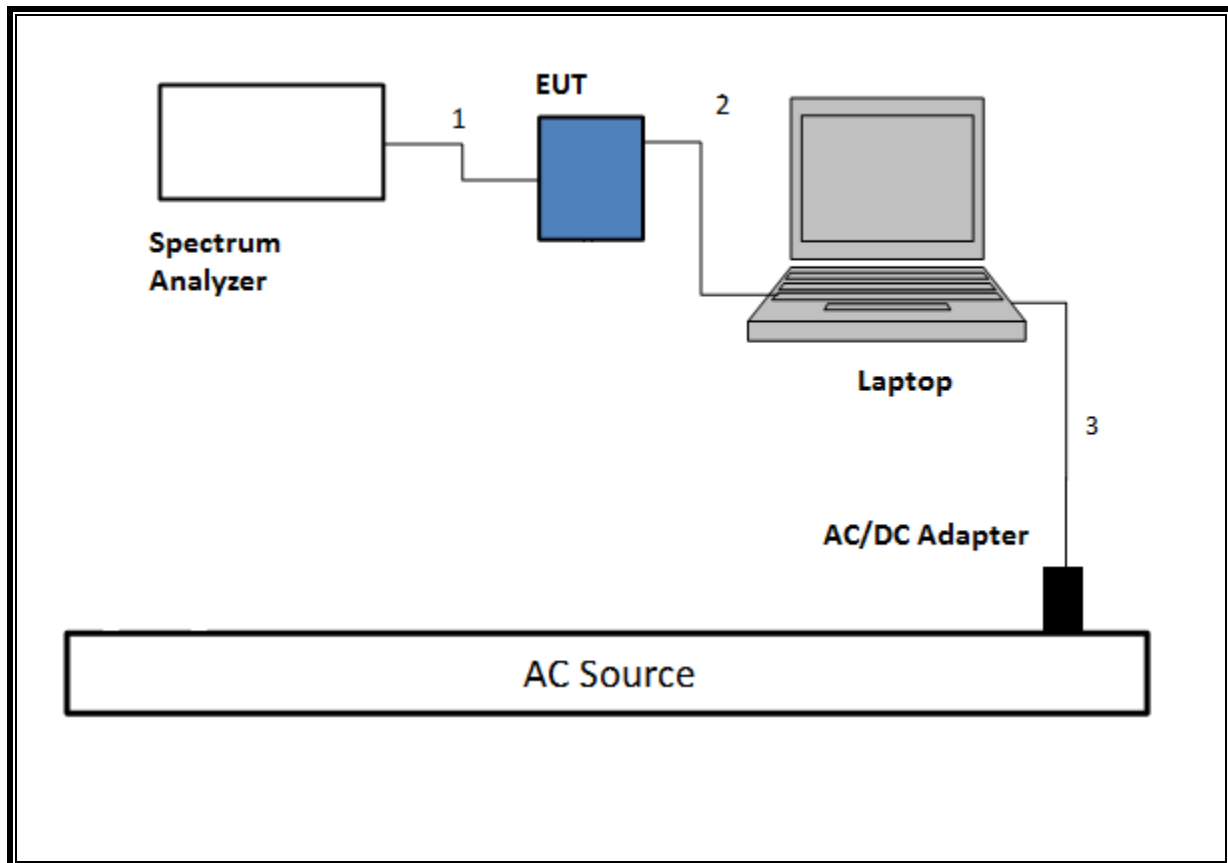
I/O CABLES (AC LINE CONDUCTED: LAPTOP CONFIGUARTION)

I/O Cable List						
Cable No	Port	# of identical	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	3	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

The EUT was powered by AC cord. Test software exercised the radio card.

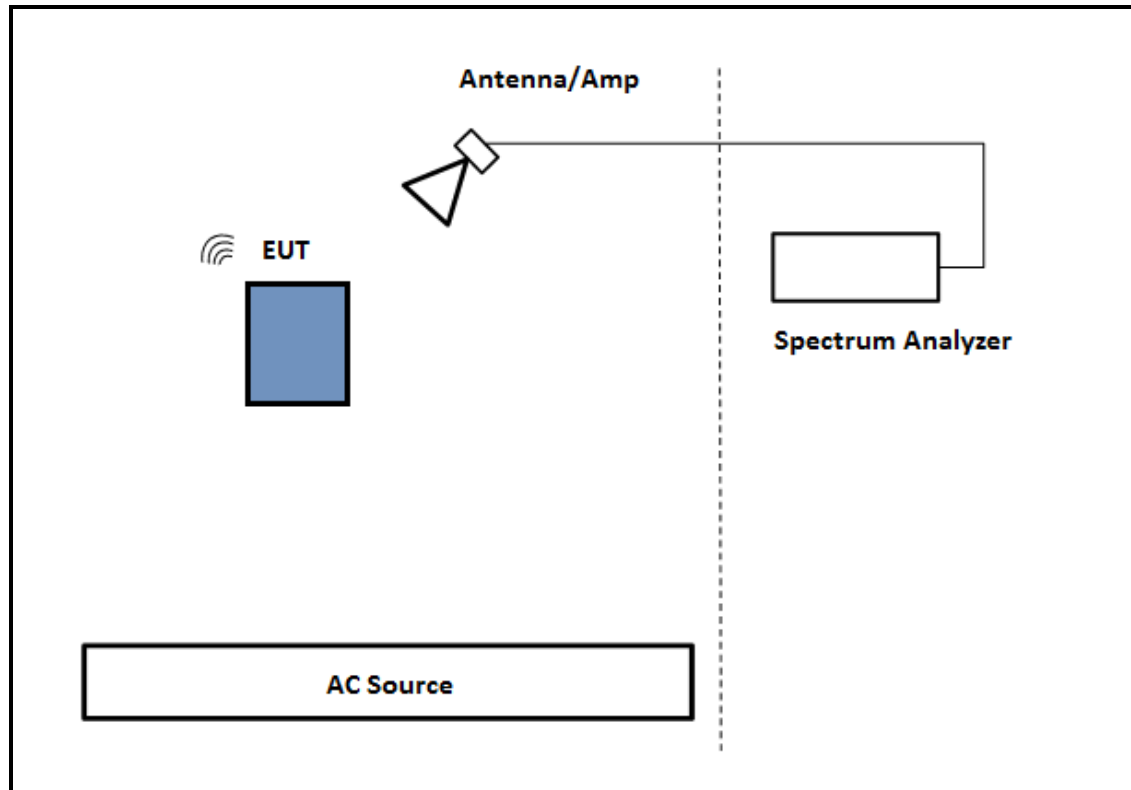
SETUP DIAGRAM



TEST SETUP- RADIATED-ABOVE 1 GHZ

The EUT was powered by AC cord. Test software exercised the EUT.

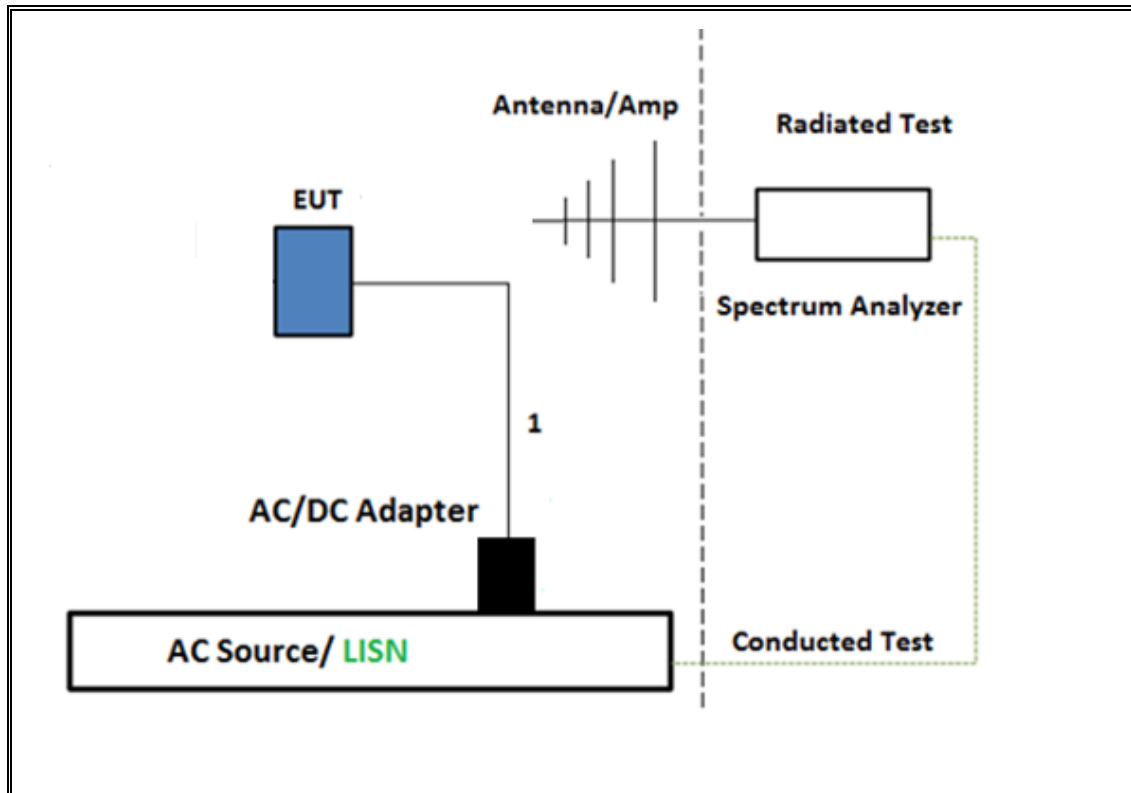
SETUP DIAGRAM



TEST SETUP- BELOW 1GHZ & AC LINE CONDUCTED TESTS

The EUT was powered by AC cord. Test software exercised the EUT.

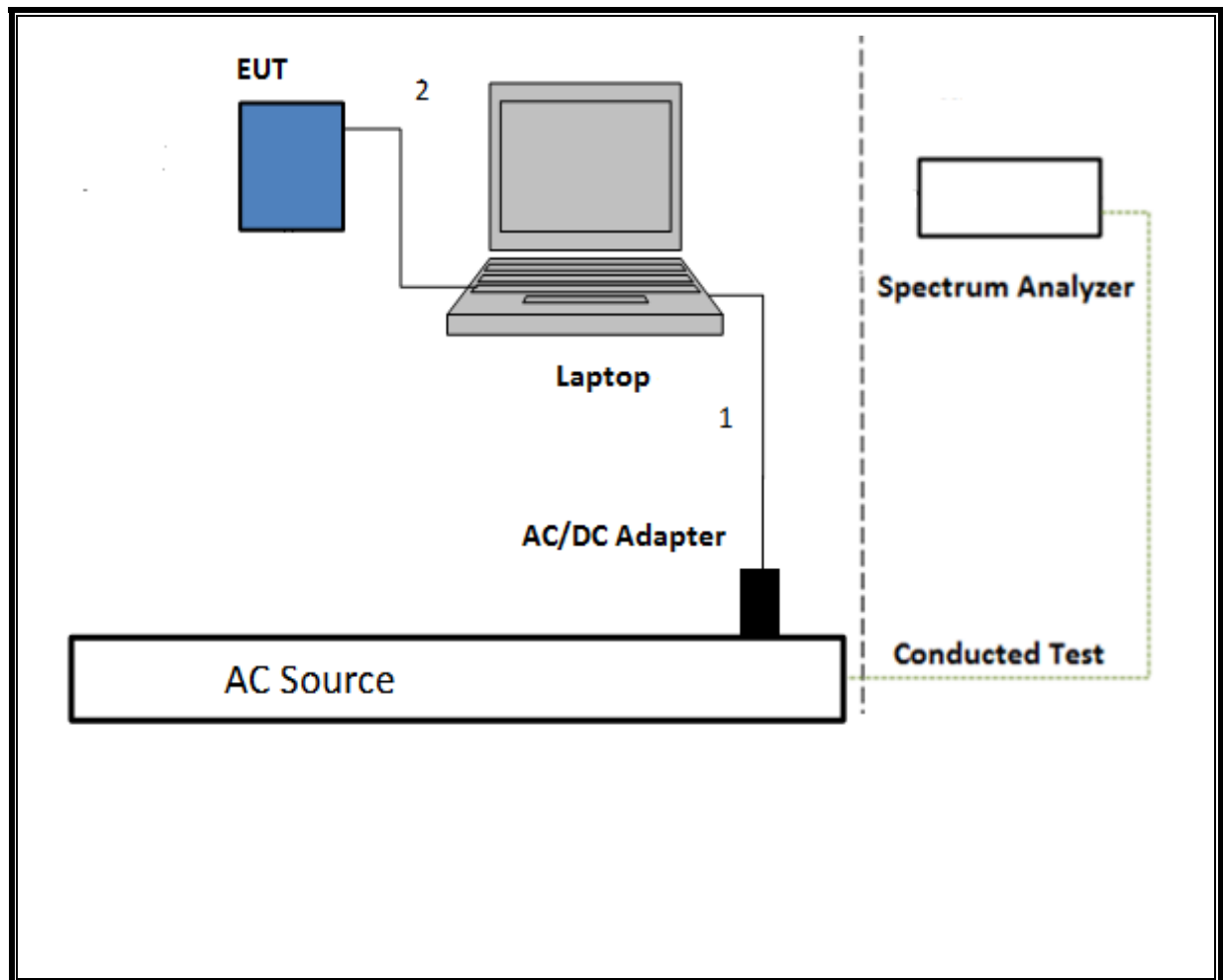
SETUP DIAGRAM



TEST SETUP- AC LINE EUT WITH LAPTOP CONDUCTED TESTS

The EUT was tested connected to a host Laptop via USB cable adapter and spectrum analyzer to antenna port. 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	Asset	Cal Due
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T863	6/9/2018
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB1	T243	10/11/2017
Amplifier, 1 to 18GHz	Miteq	AFS42-00101800-25-S-42	T741	11/29/2017
*Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T285	6/20/2017
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T345	4/14/2018
Amplifier, 1 to 18GHz	Miteq	AFS42-00101800-25-S-42	T491	5/31/2017
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A-544	T341	10/25/2017
Spectrum Analyzer, PSA, 3Hz to 44GHz	Agilent (Keysight) Technologies	E4446A	T177	03/20/2018
Power Meter, P-series single channel	Keysight	N1912A	T1273	07/08/2017
Power Sensor	Keysight	N1921A	T750	10/1/2017
*Antenna Horn, 18 to 26GHz	ARA	MWH-1826	T447	6/16/2017
Spectrum Analyzer, 40GHz	Agilent	8564E	T106	9/7/2017
Pre-Amp 18-26GHz	Agilent Technology	8449B	T404	7/5/2017
AC Line Conducted				
EMI Test Receiver 9KHz-7GHz	Rohde & Schwarz	ESCI7	T1436	1/06/2018
*LISN for Conducted Emissions CISPR-16	Fischer	50/250-25-2-01	T1310	06/08/2017
Power Cable, Line Conducted Emissions	UL	PG1	T861	9/1/2017
UL AUTOMATION SOFTWARE				
Radiated Software	UL	UL EMC	Ver 9.5, April 26, 2016	
Conducted Software	UL	UL EMC	Ver 5.4, October 13, 2016	
AC Line Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015	

NOTE: *testing is completed before equipment calibration expiration date.

7. ANTENNA PORT TEST RESULTS

7.1. MEASUREMENT METHODS

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

Output Power: KDB 558074 D01 v04, Section 9.1.2.

Power Spectral Density: KDB 558074 D01 v04, Section 10.2.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v04, Section 11.0.

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

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

Conducted line emissions: C63.10, Clause 6.2

ON TIME, DUTY CYCLE

LIMITS

None; for reporting purposes only.

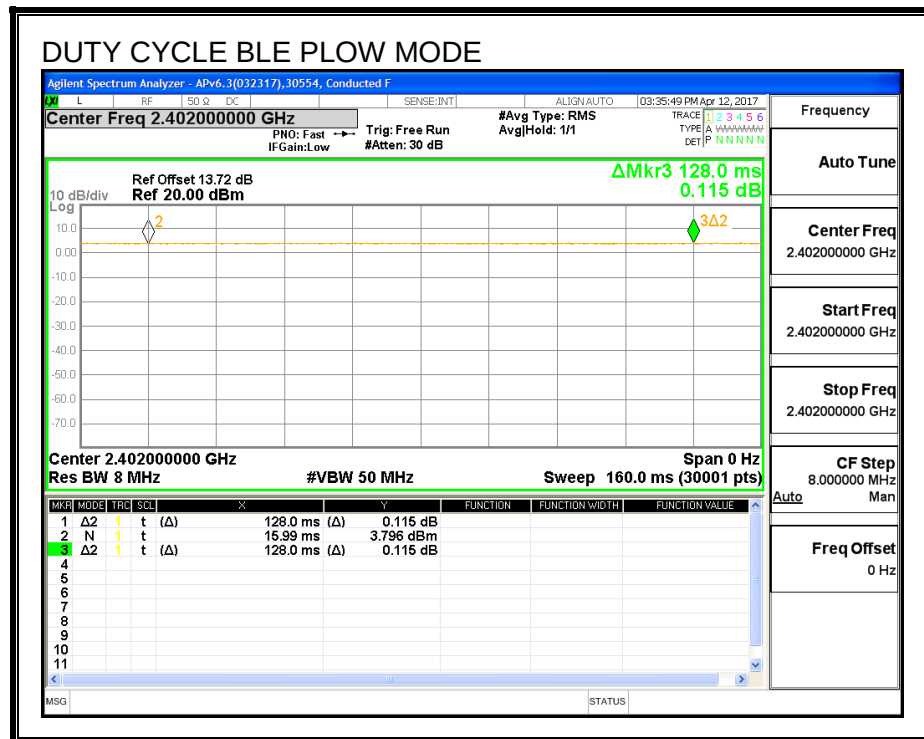
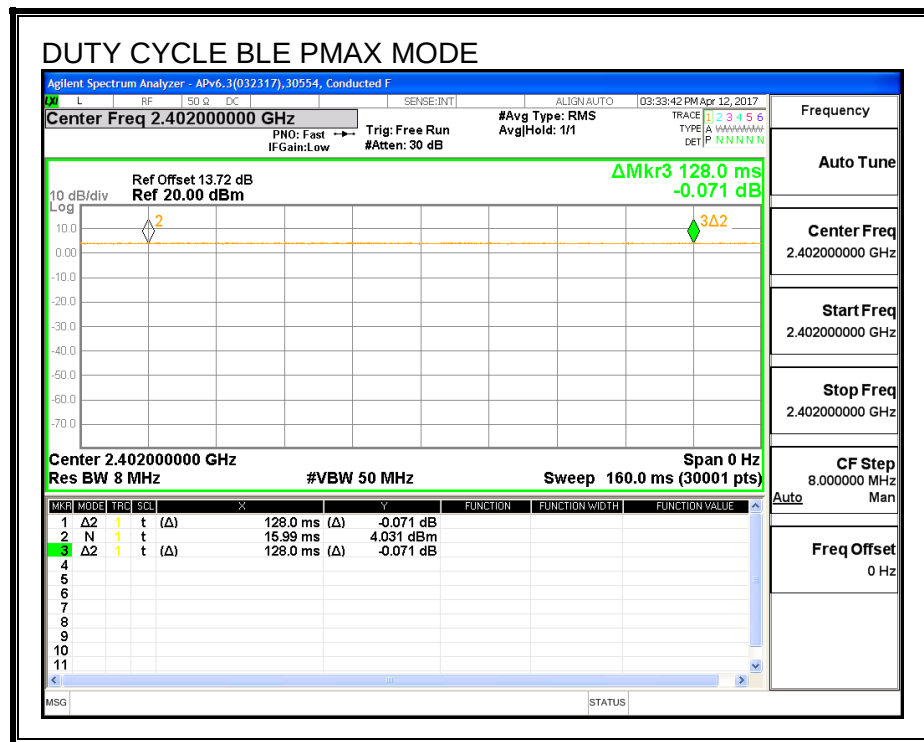
PROCEDURE

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)
BLE Pmax	128	128	1.0	100	0.0	0.10
BLE Plow	128	128	1.0	100	0.0	0.10

DUTY CYCLE PLOTS



7.2. UAT 1 BLE 1M PMAX

7.2.1. 6 dB BANDWIDTH

LIMITS

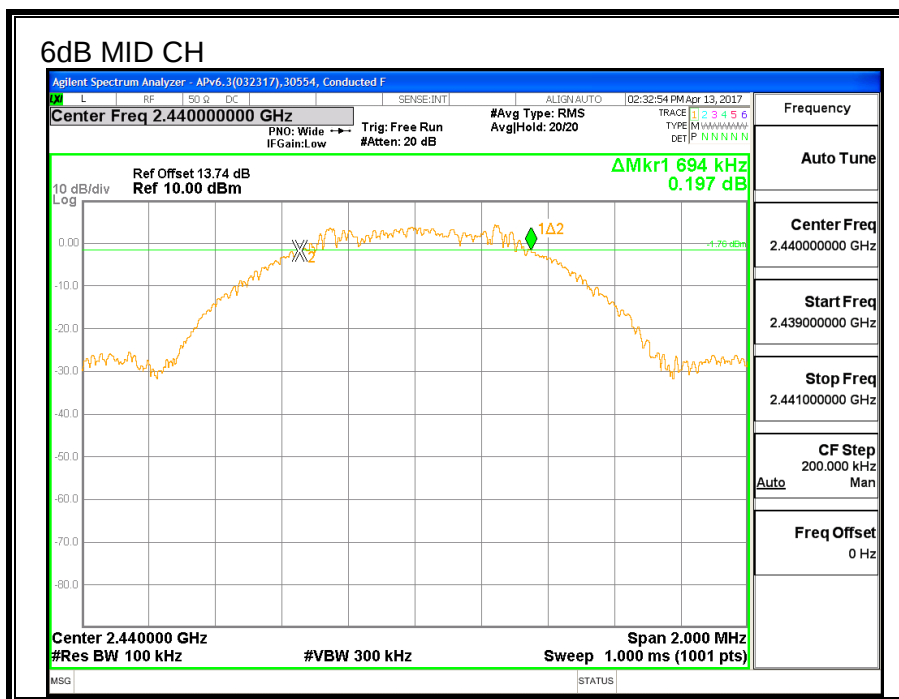
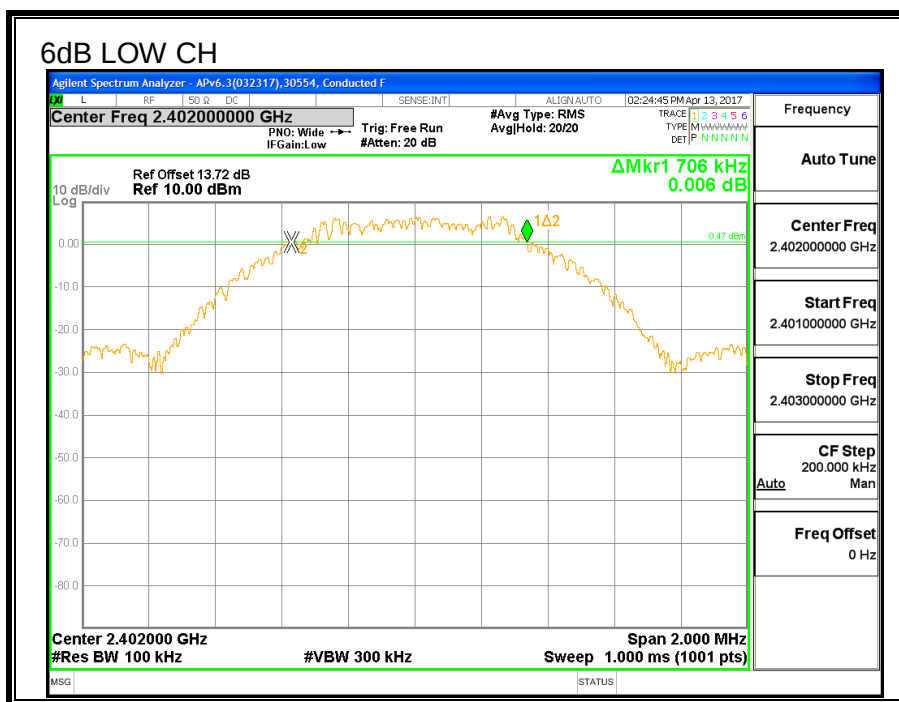
FCC §15.247 (a) (2)

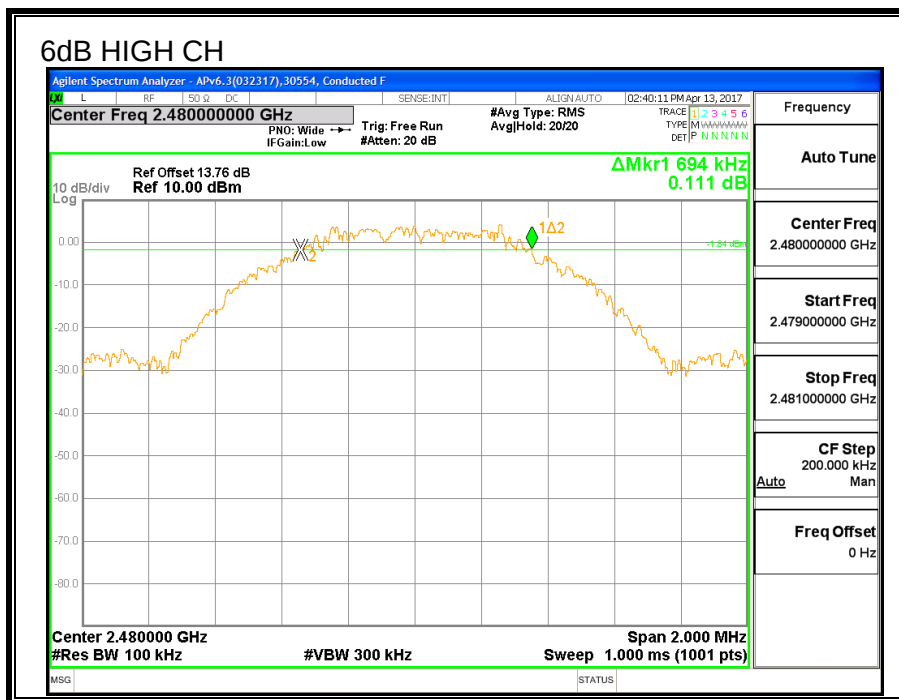
IC RSS-247 (5.2) (a)

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

RESULTS

Channel	Frequency	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.706	0.5
Middle	2440	0.694	0.5
High	2480	0.694	0.5





7.2.2. 99% BANDWIDTH

LIMITS

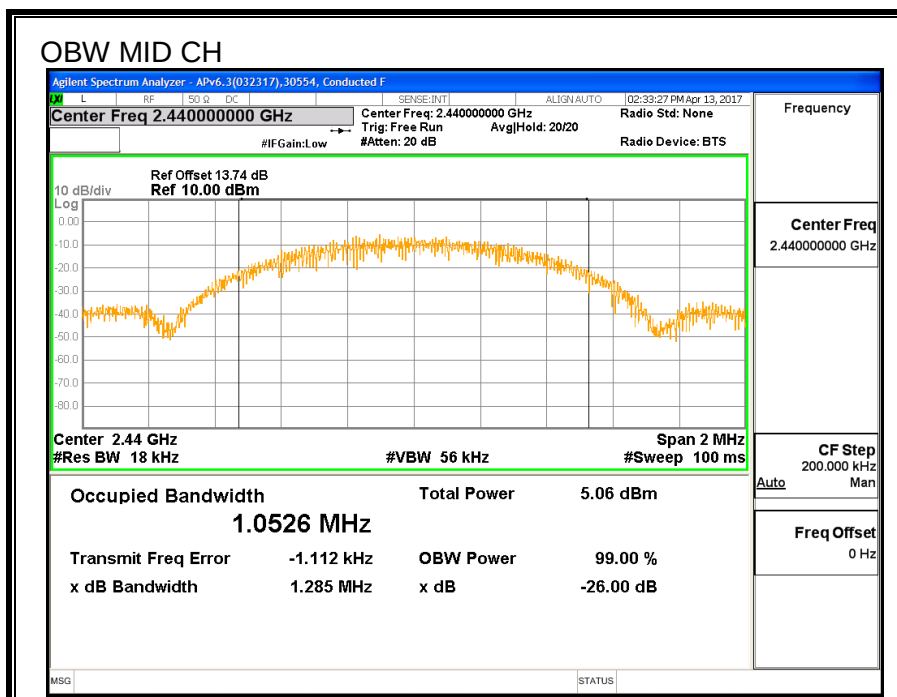
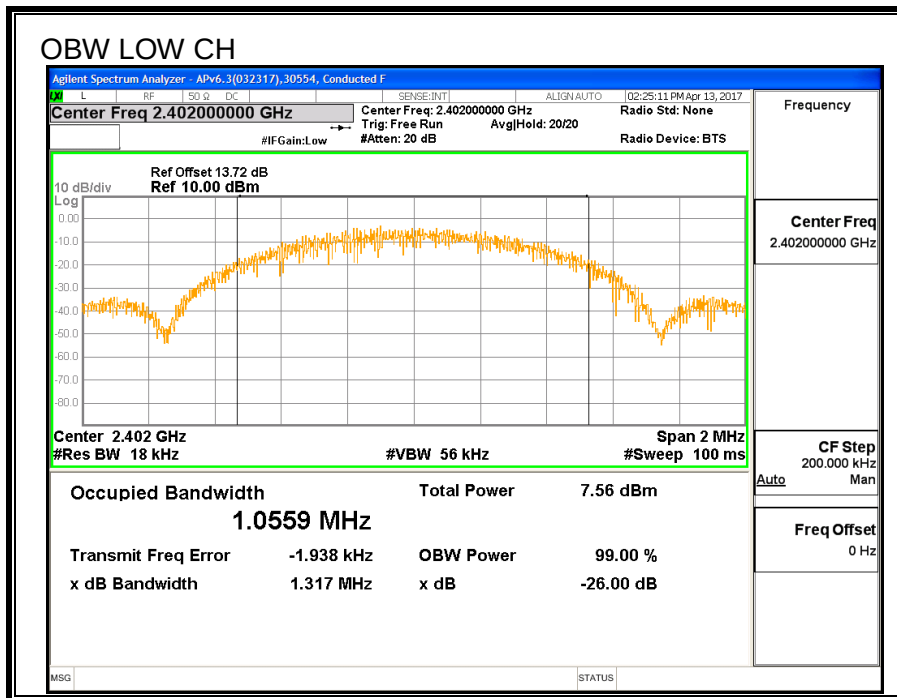
None; for reporting purposes only.

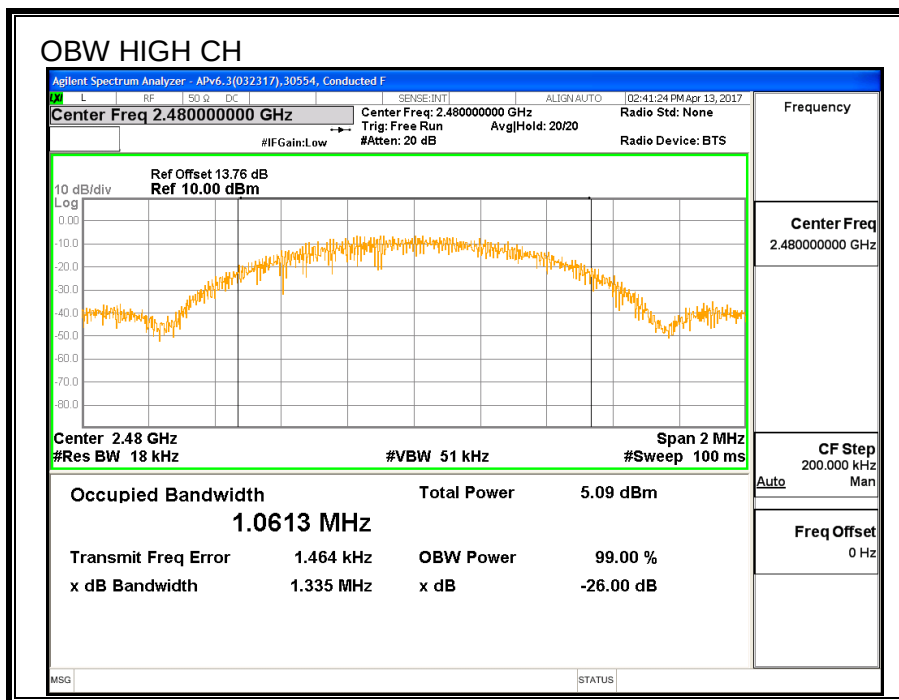
Test Procedure

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0559
Middle	2440	1.0526
High	2480	1.0613





7.2.3. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	19.25
Middle	2440	19.87
High	2480	19.65

7.2.4. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	19.62	30	-10.38
Middle	2440	20.30	30	-9.7
High	2480	19.95	30	-10.05

7.2.5. POWER SPECTRAL DENSITY

LIMITS

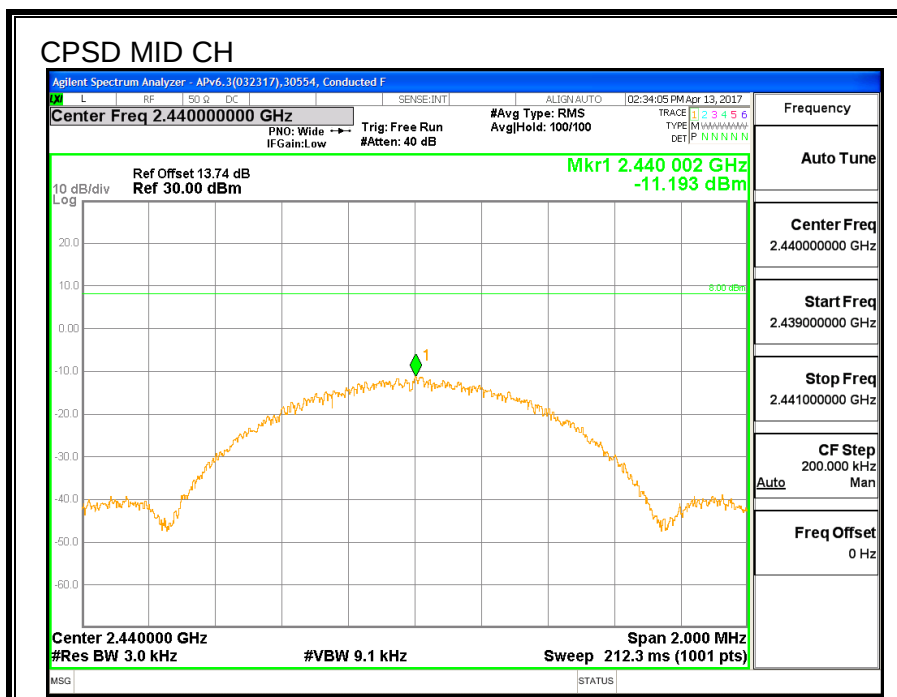
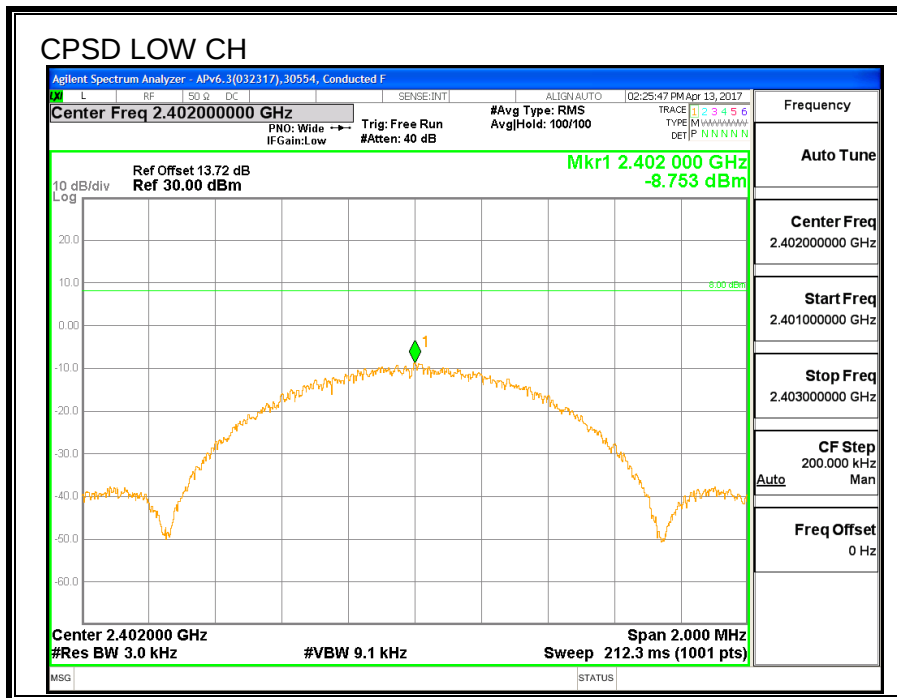
FCC §15.247 (e)

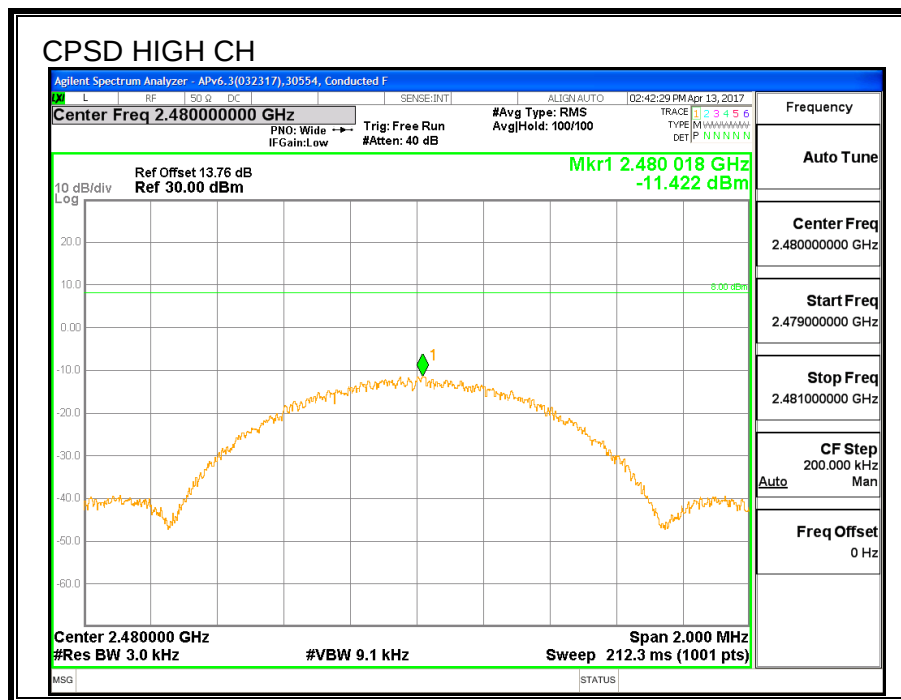
IC RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-8.753	8	-16.753
Middle	2440	-11.193	8	-19.193
High	2480	-11.42	8	-19.420





7.2.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

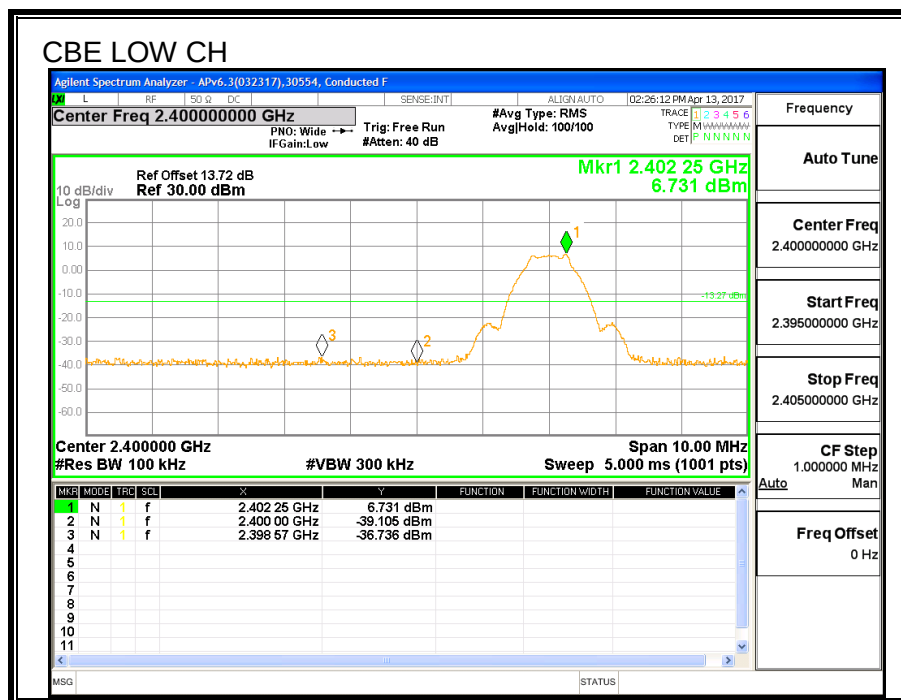
LIMITS

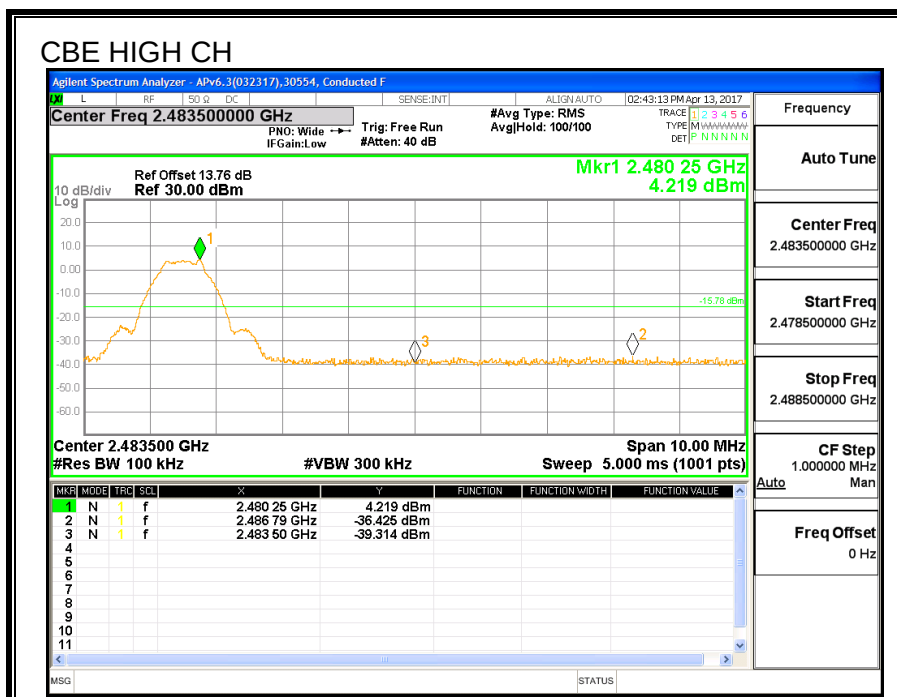
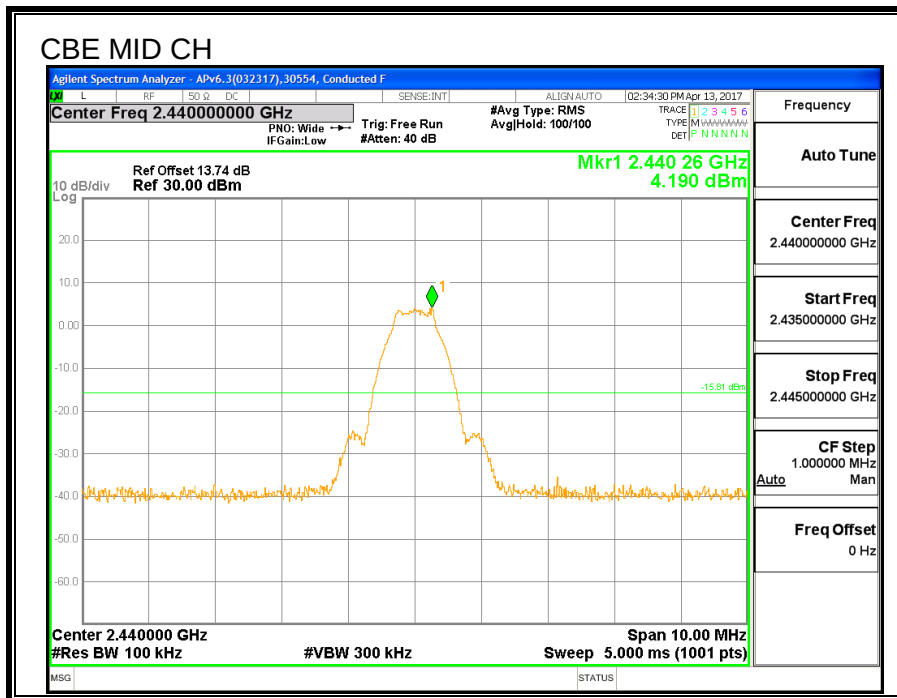
FCC §15.247 (d)

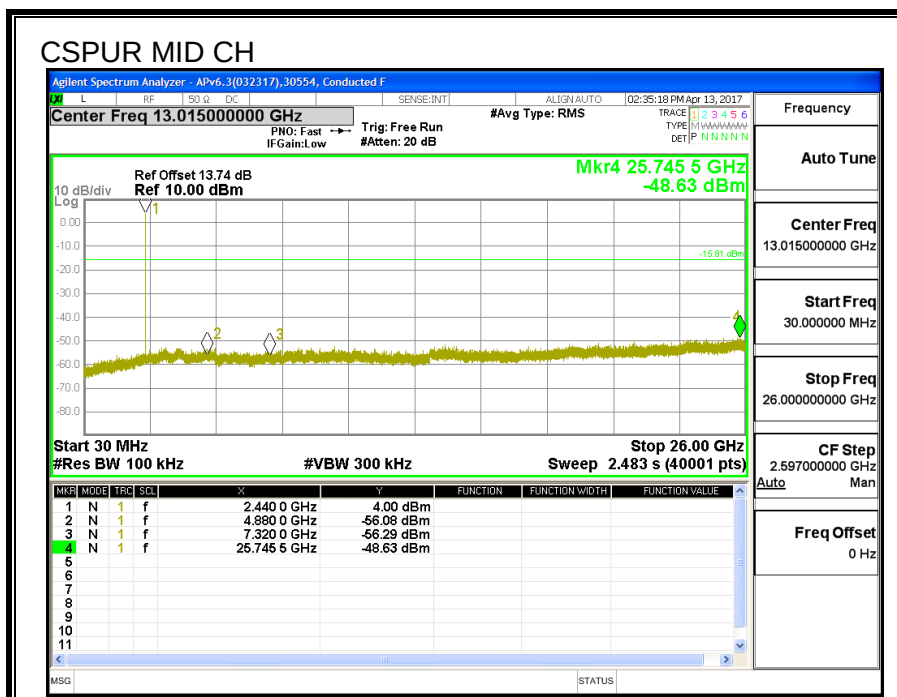
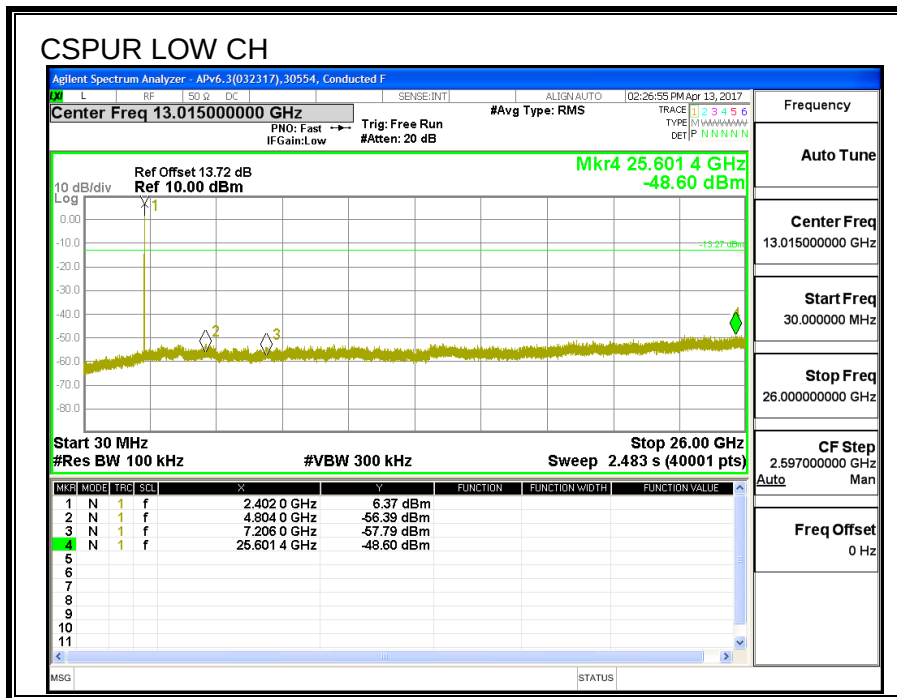
IC RSS-247 (5.5)

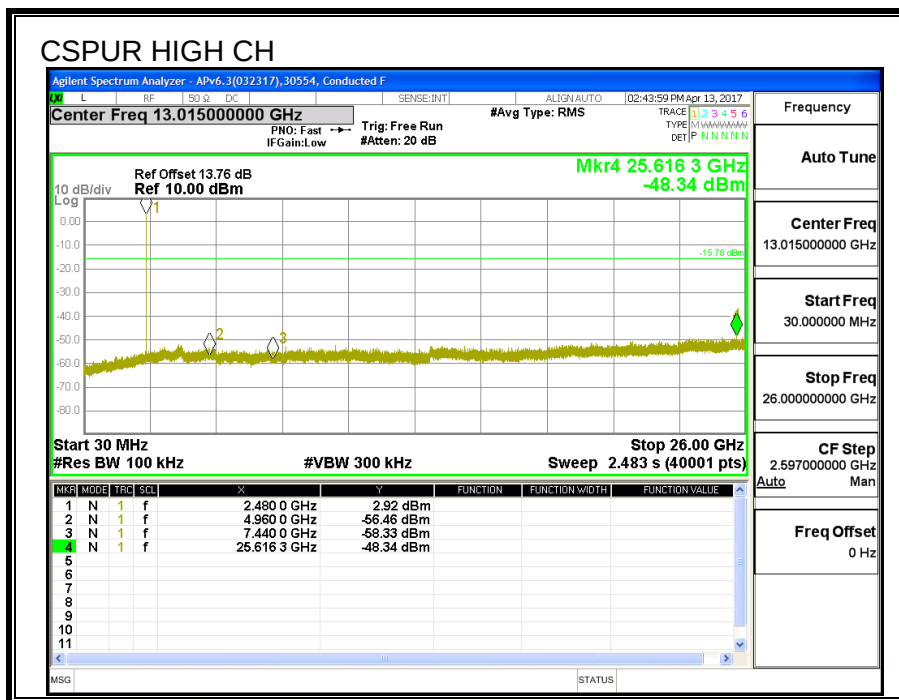
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS









7.3. UAT 1 BLE 1M PLOW

7.3.1. 6 dB BANDWIDTH

LIMITS

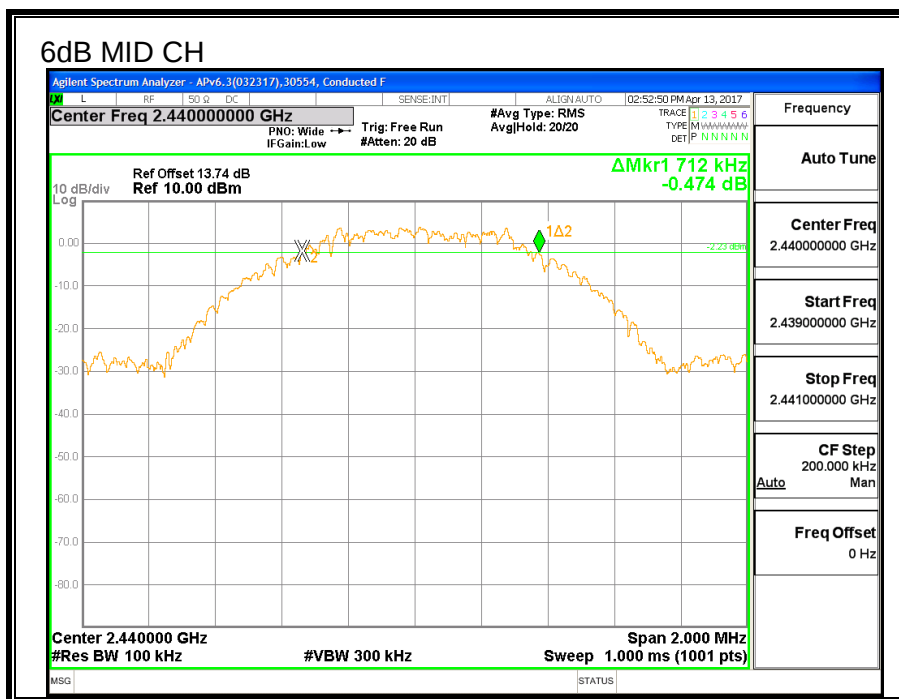
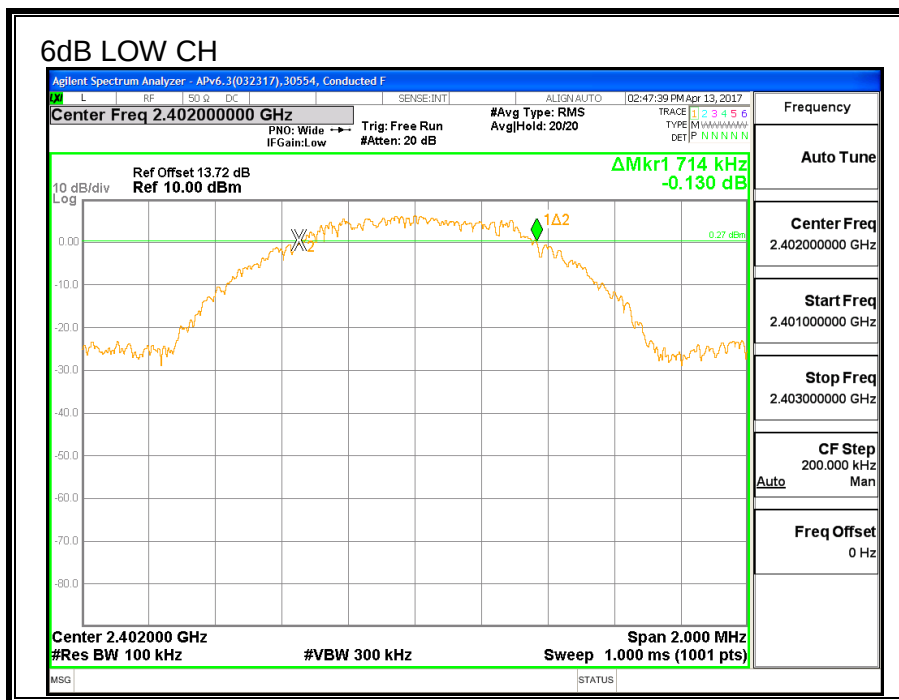
FCC §15.247 (a) (2)

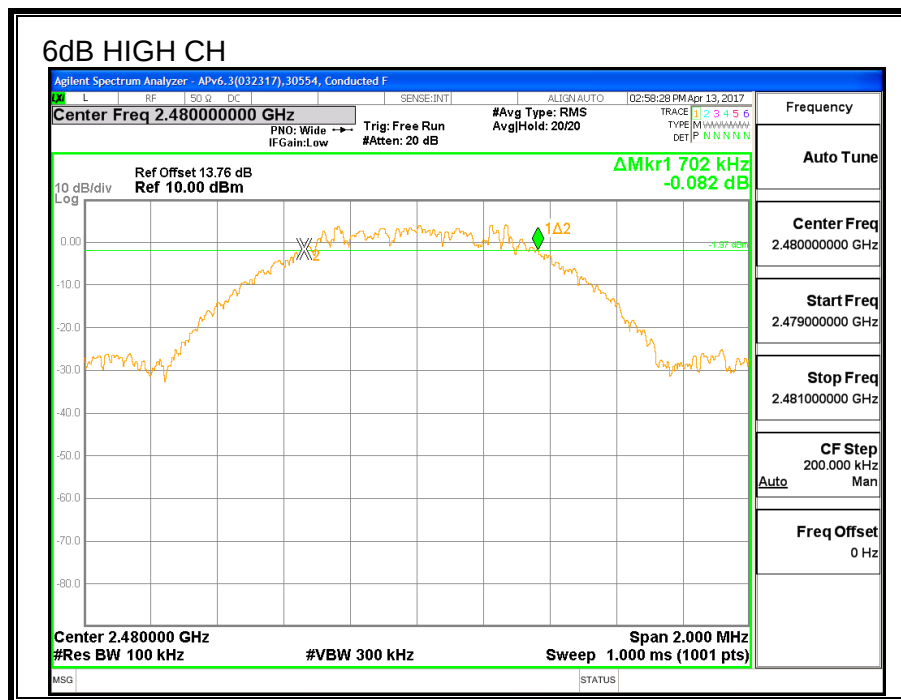
IC RSS-247 (5.2) (a)

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

RESULTS

Channel	Frequency	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.714	0.5
Middle	2440	0.712	0.5
High	2480	0.702	0.5





7.3.2. 99% BANDWIDTH

LIMITS

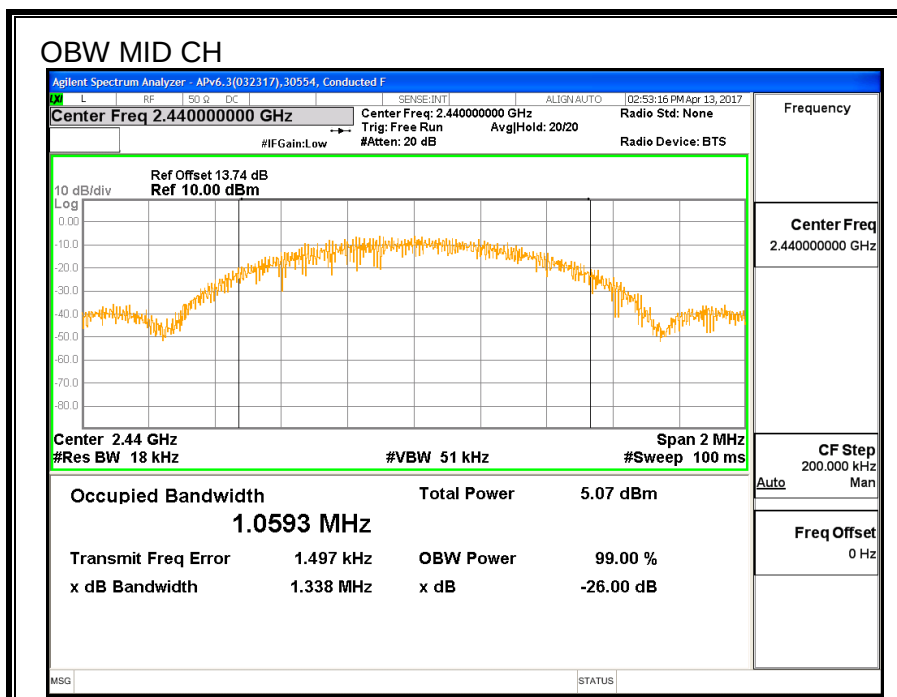
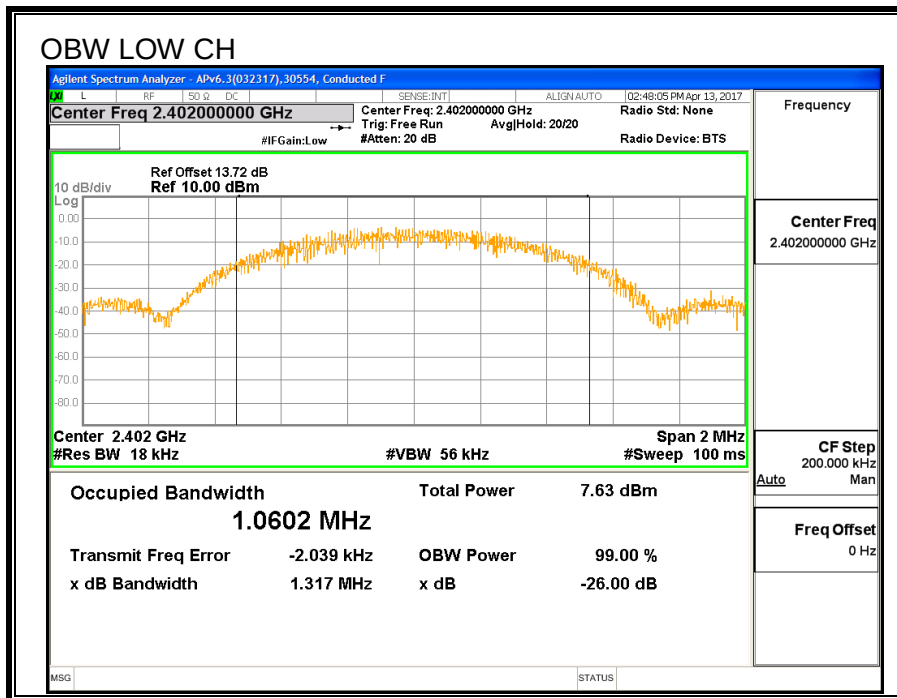
None; for reporting purposes only.

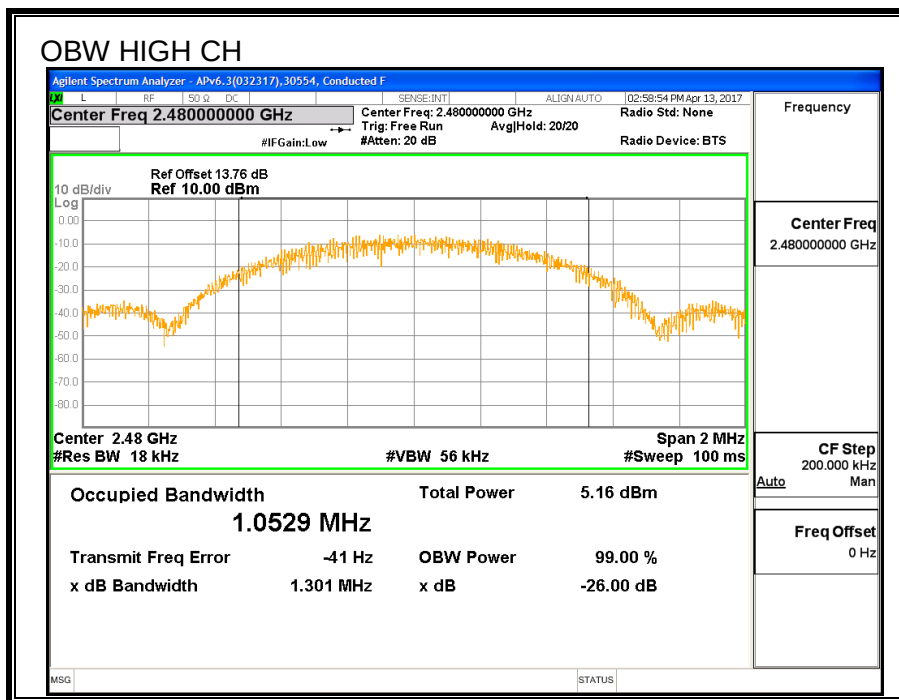
Test Procedure

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0602
Middle	2440	1.0593
High	2480	1.0529





7.3.3. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	9.10
Middle	2440	9.90
High	2480	9.87

7.3.4. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.41	30	-20.59
Middle	2440	10.22	30	-19.78
High	2480	10.25	30	-19.75

7.3.5. POWER SPECTRAL DENSITY

LIMITS

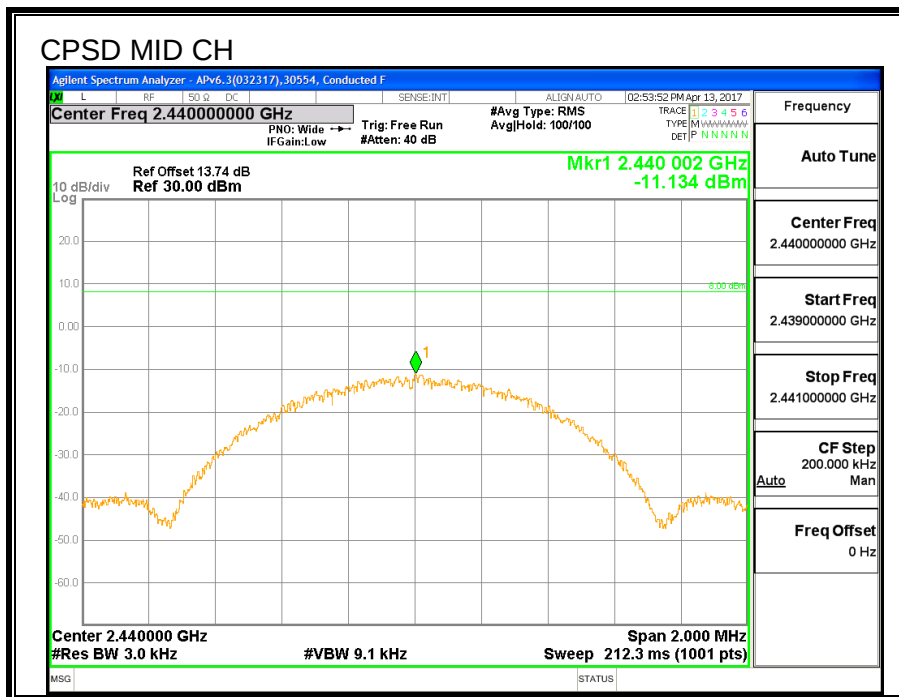
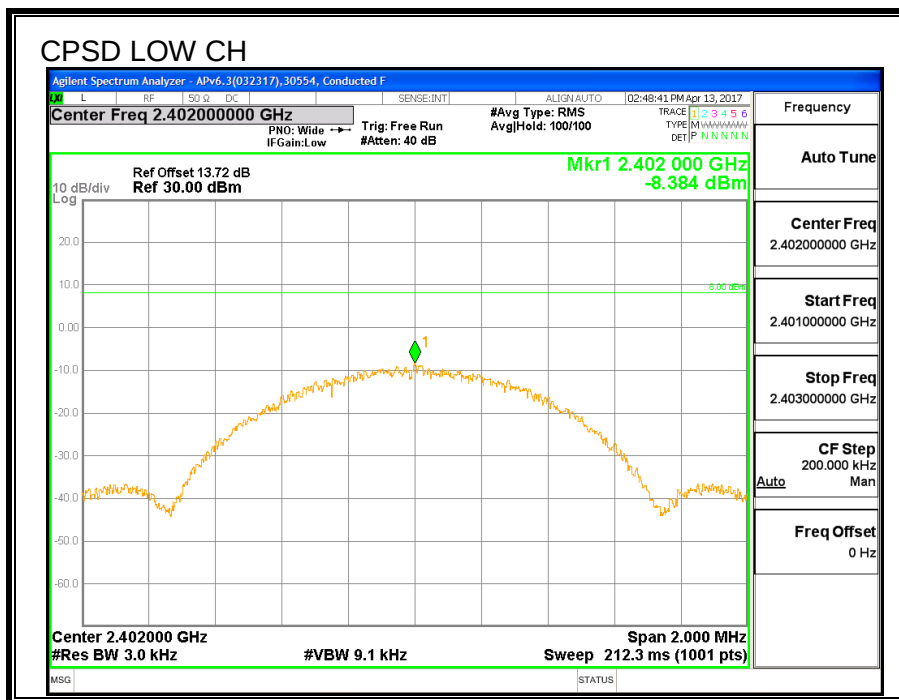
FCC §15.247 (e)

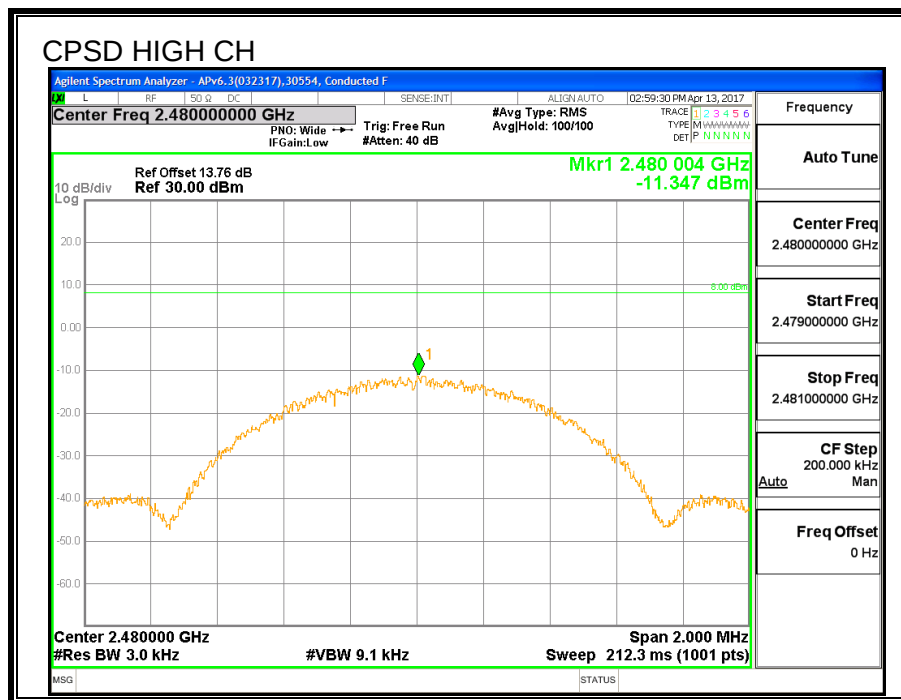
IC RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-8.384	8	-16.384
Middle	2440	-11.134	8	-19.134
High	2480	-11.347	8	-19.347





7.3.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

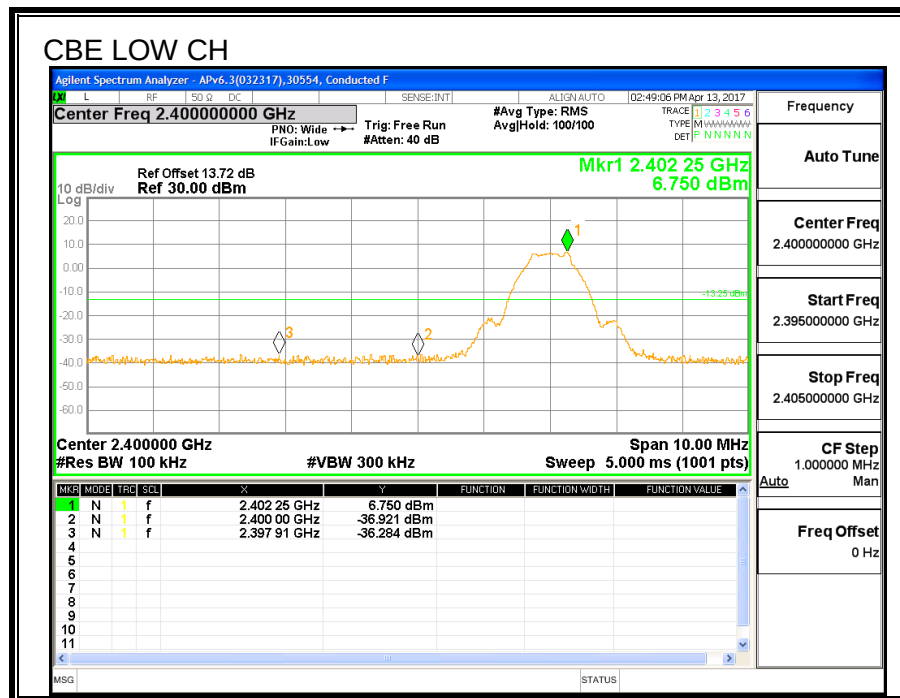
LIMITS

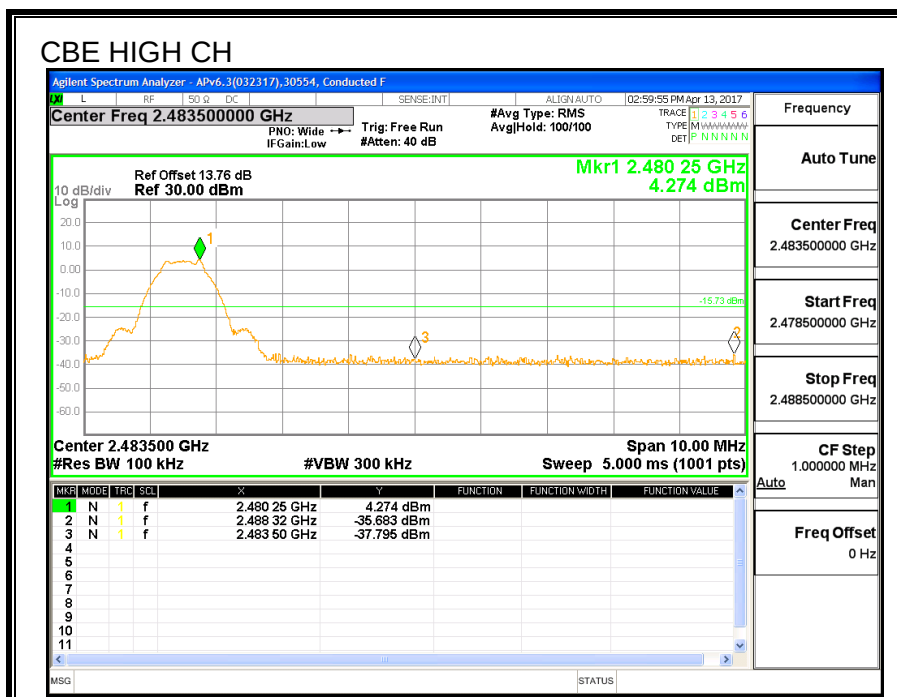
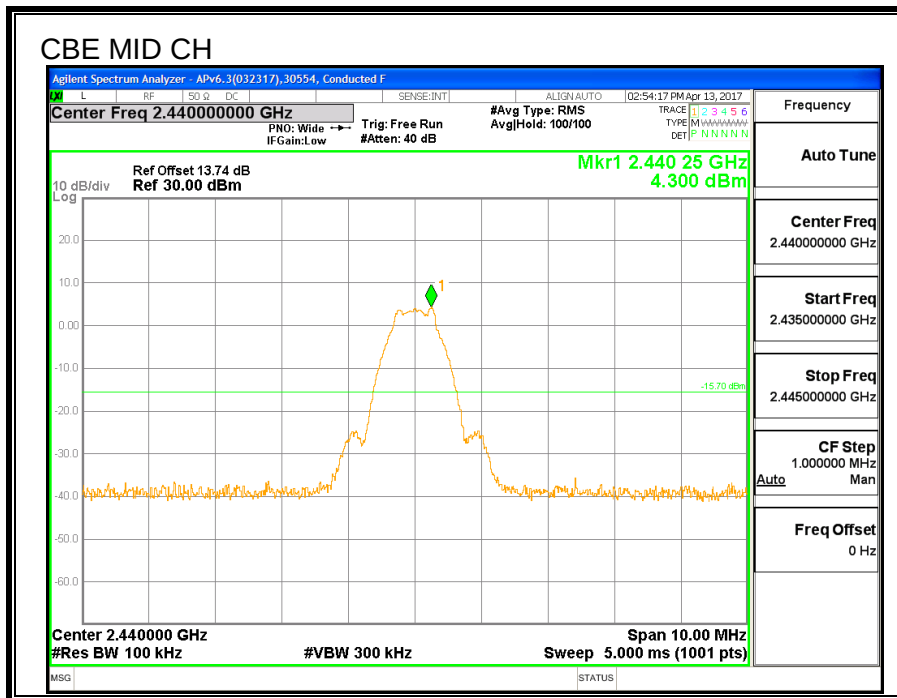
FCC §15.247 (d)

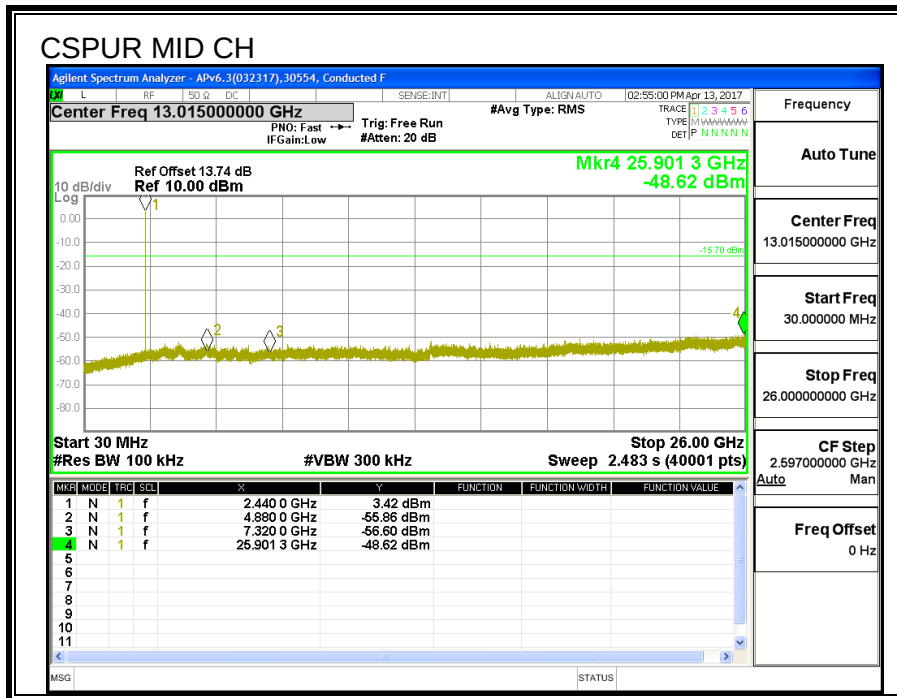
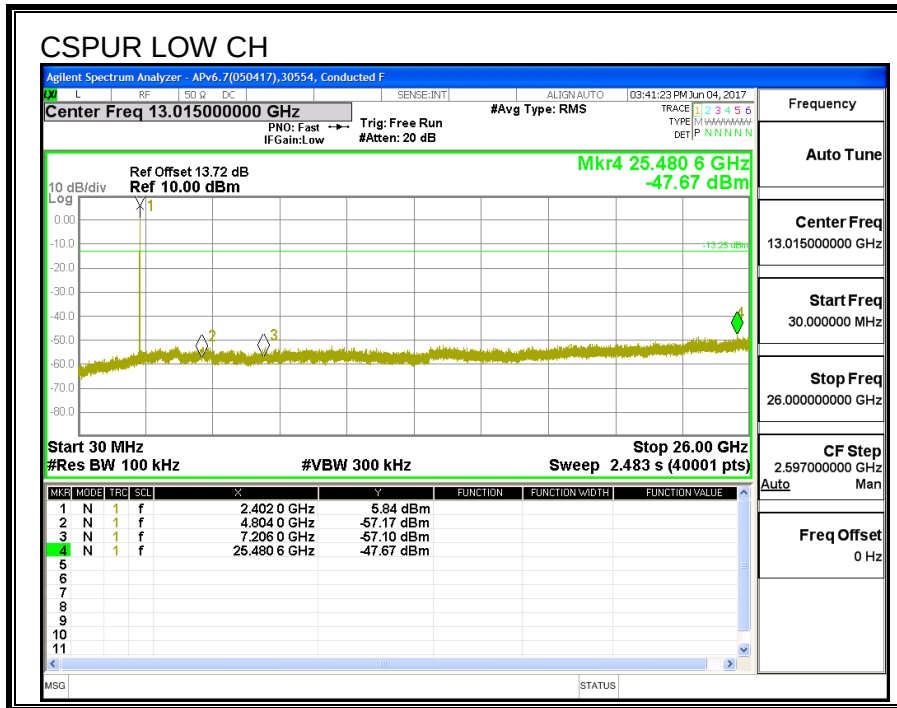
IC RSS-247 (5.5)

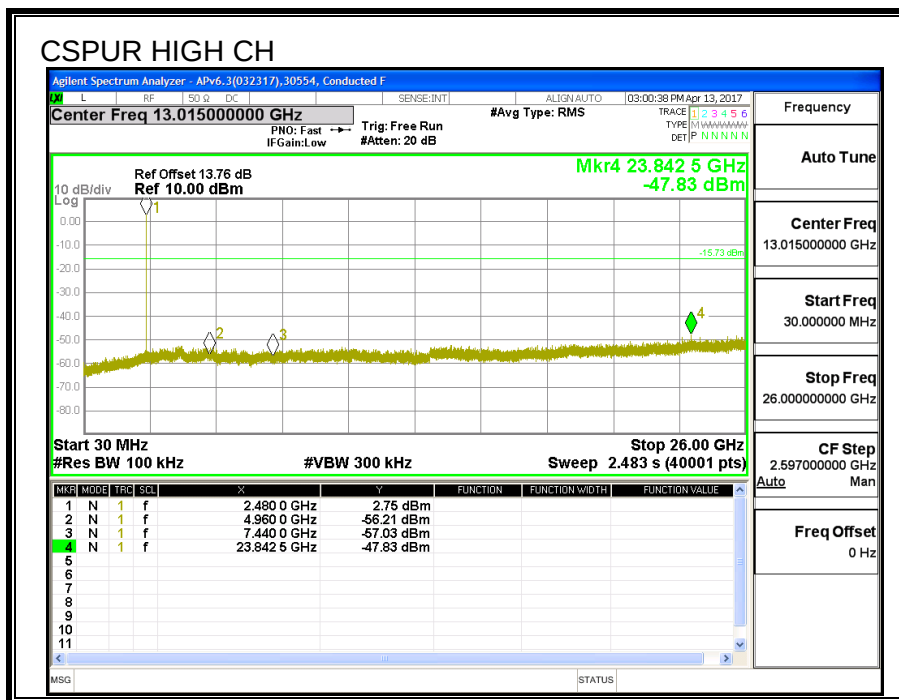
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS









7.4. UAT 1 BLE 2M PMAX

7.4.1. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	19.11
Middle	2440	19.5
High	2480	19.40

7.4.2. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a broadband Peak/average RF power meter

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	19.34	30	-10.66
Middle	2440	19.95	30	-10.05
High	2480	19.75	30	-10.25

7.5. UAT 1 BLE 2M PLOW

7.5.1. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	8.92
Middle	2440	9.69
High	2480	9.57

7.5.2. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a broadband Peak/average RF power meter

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.16	30	-20.84
Middle	2440	9.90	30	-20.1
High	2480	9.88	30	-20.12

7.6. LAT 3 1M PMAX

7.6.1. 6 dB BANDWIDTH

LIMITS

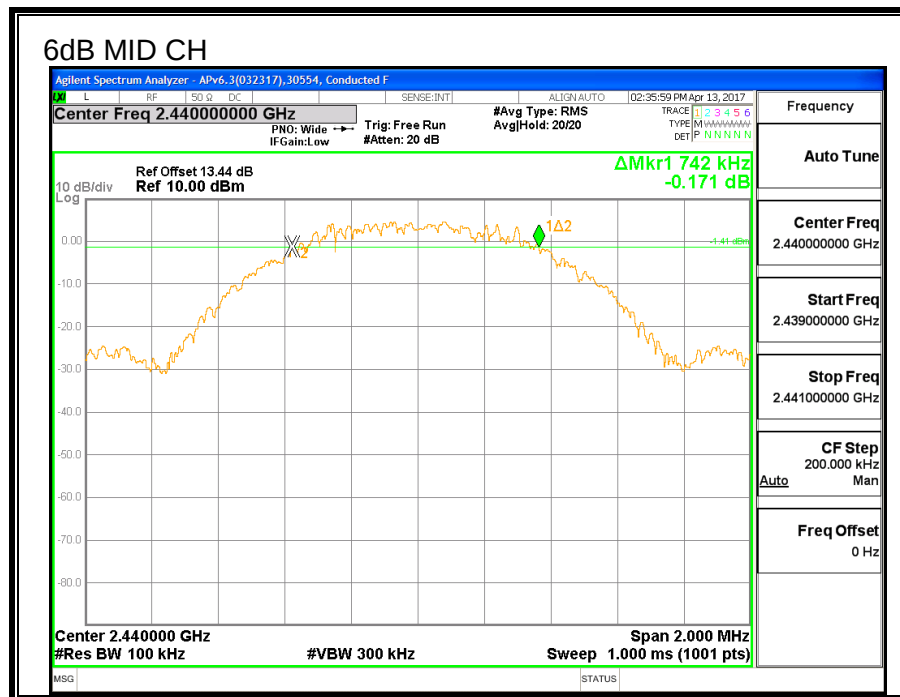
FCC §15.247 (a) (2)

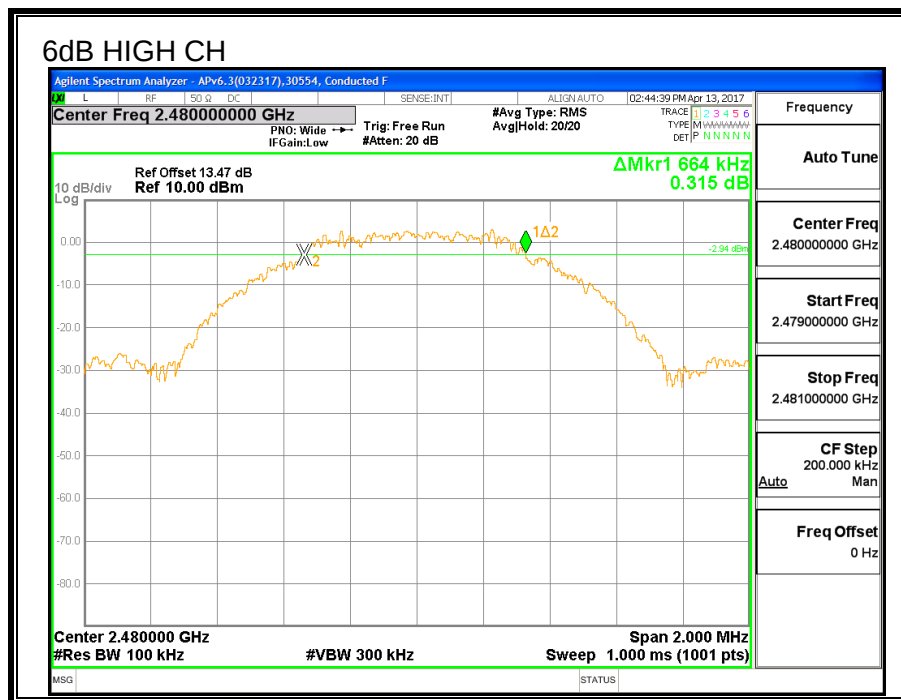
IC RSS-247 (5.2) (a)

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

RESULTS

Channel	Frequency	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.740	0.5
Middle	2440	0.742	0.5
High	2480	0.664	0.5





7.6.2. 99% BANDWIDTH

LIMITS

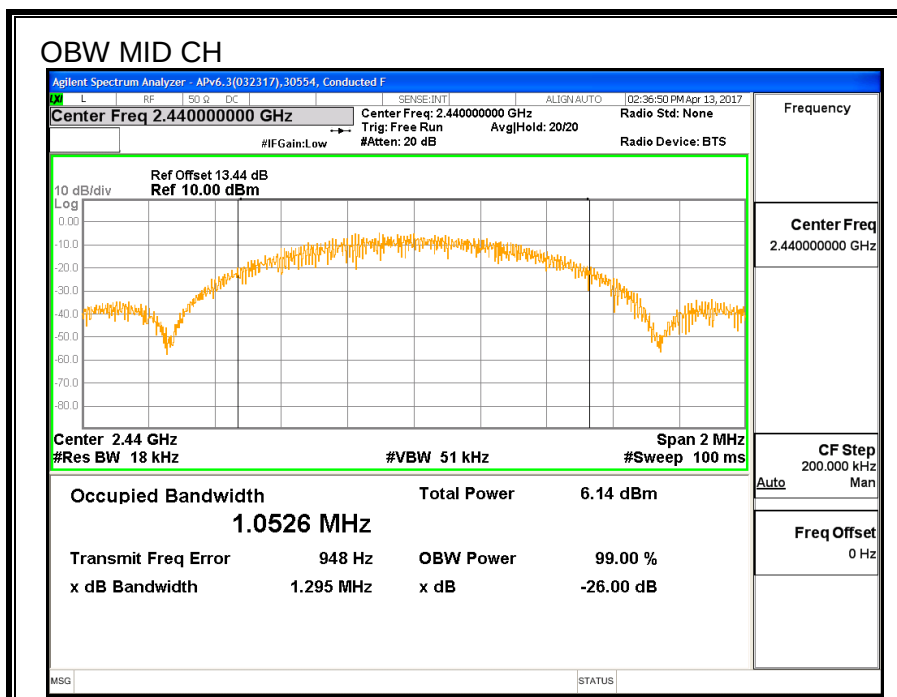
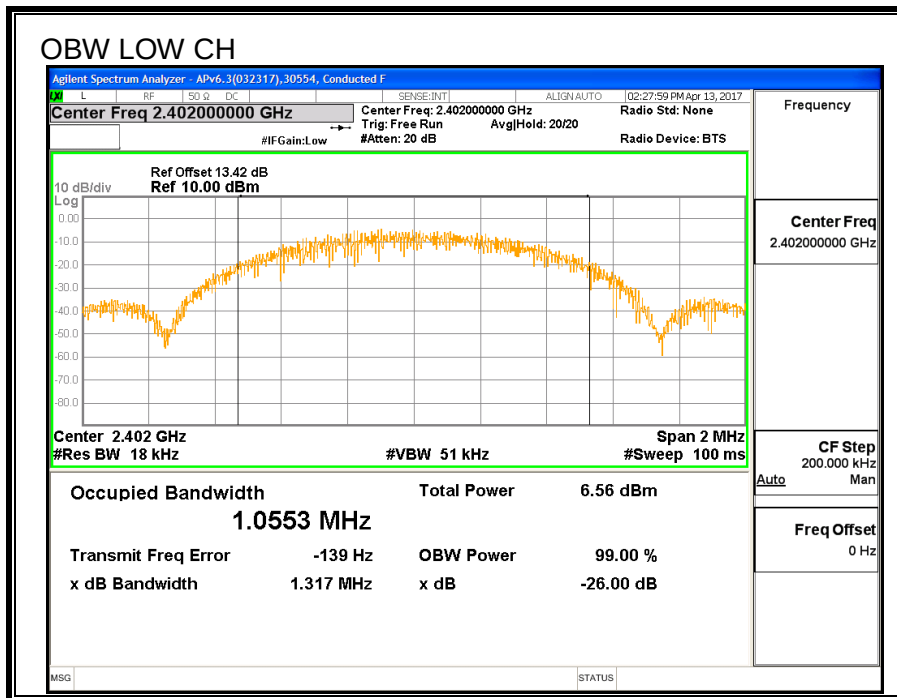
None; for reporting purposes only.

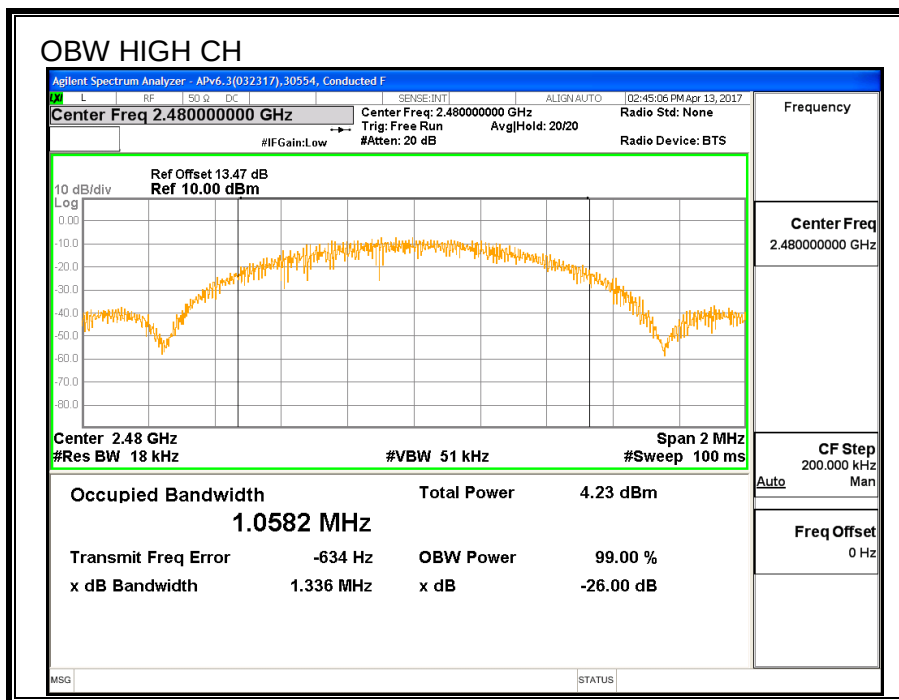
Test Procedure

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0553
Middle	2440	1.0526
High	2480	1.0582





7.6.3. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	19.72
Middle	2440	19.80
High	2480	19.64

7.6.4. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	20.09	30	-9.91
Middle	2440	20.10	30	-9.9
High	2480	19.89	30	-10.11

7.6.5. POWER SPECTRAL DENSITY

LIMITS

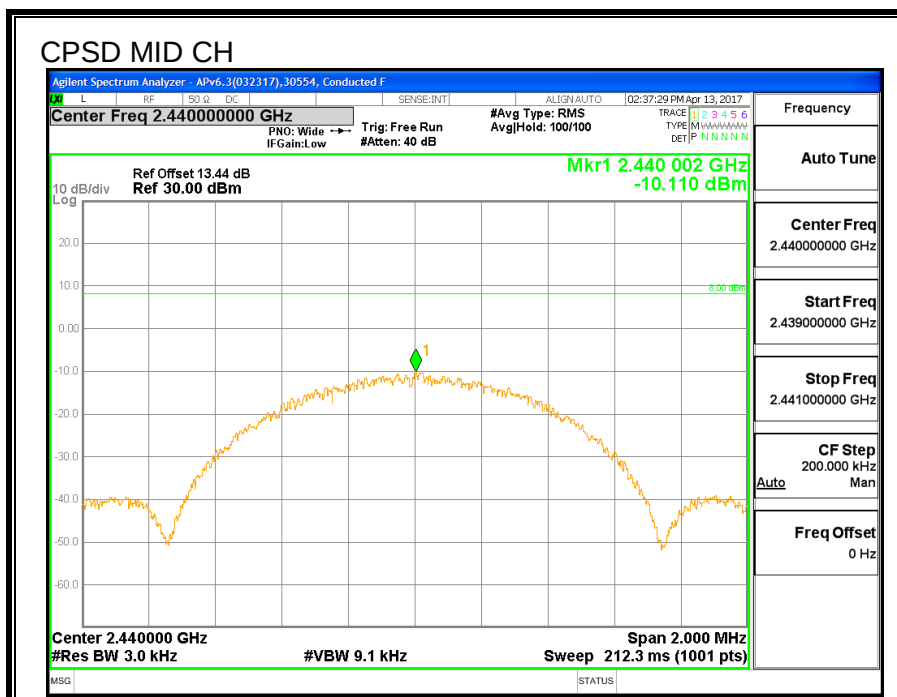
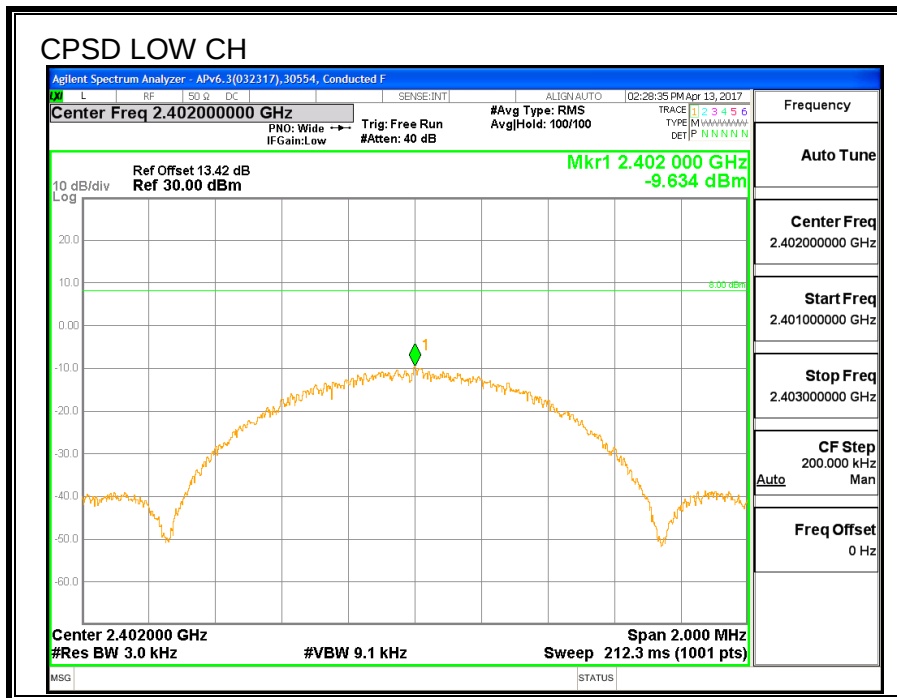
FCC §15.247 (e)

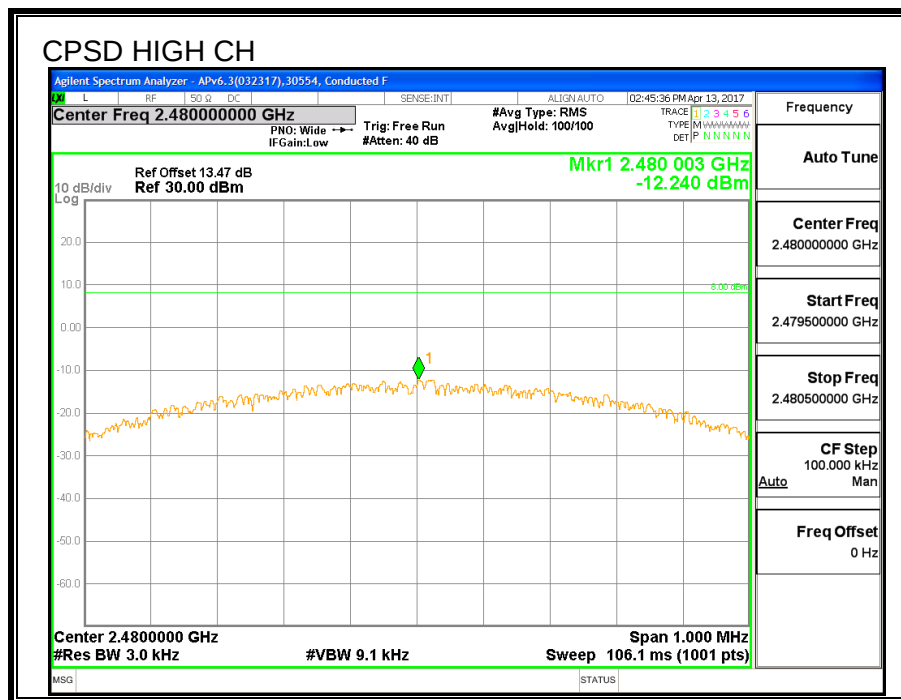
IC RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-9.634	8	-17.634
Middle	2440	-10.110	8	-18.110
High	2480	-12.240	8	-20.240





7.6.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

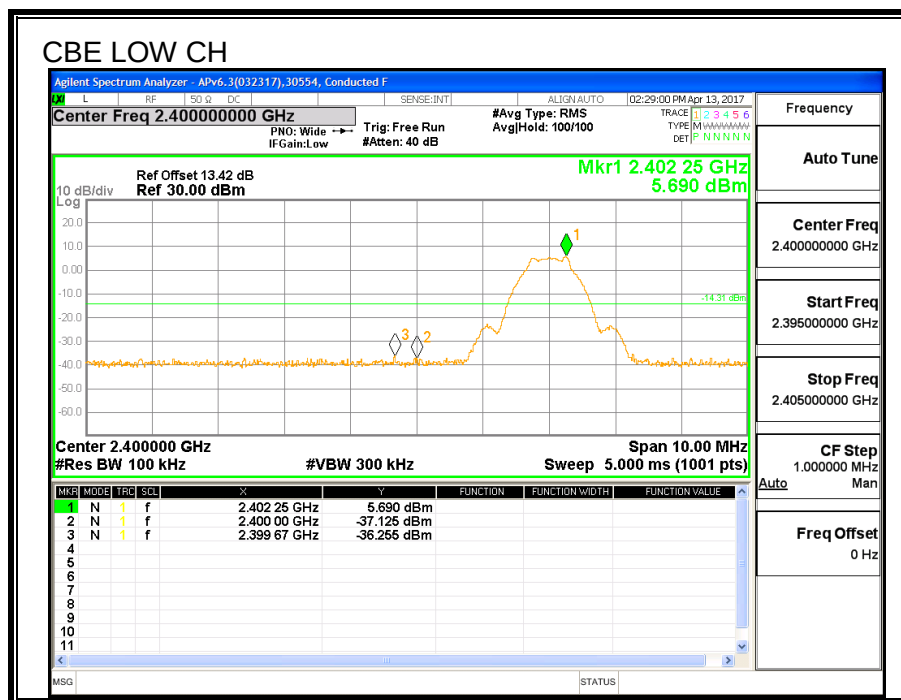
LIMITS

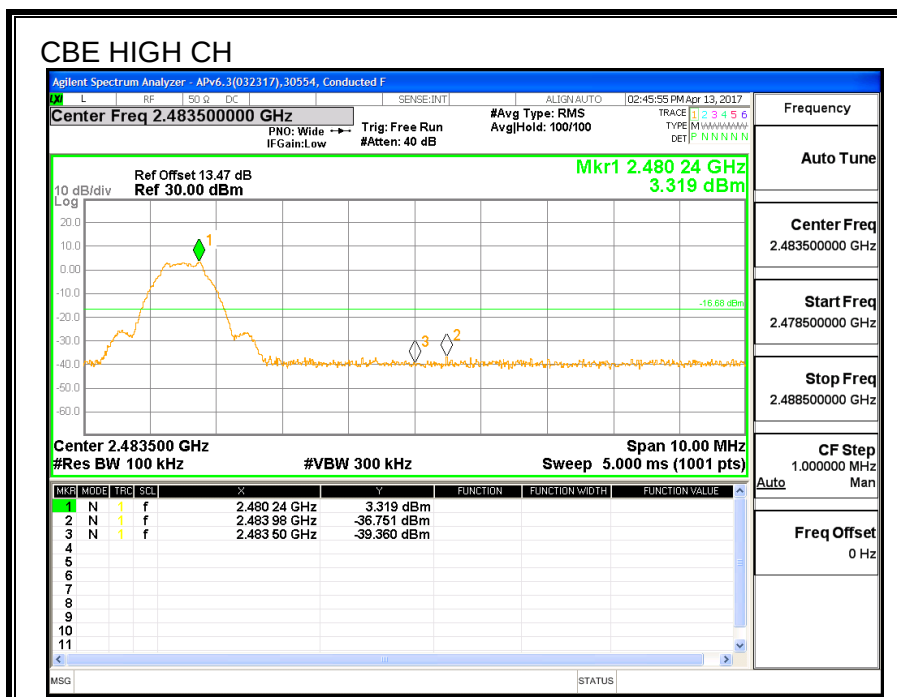
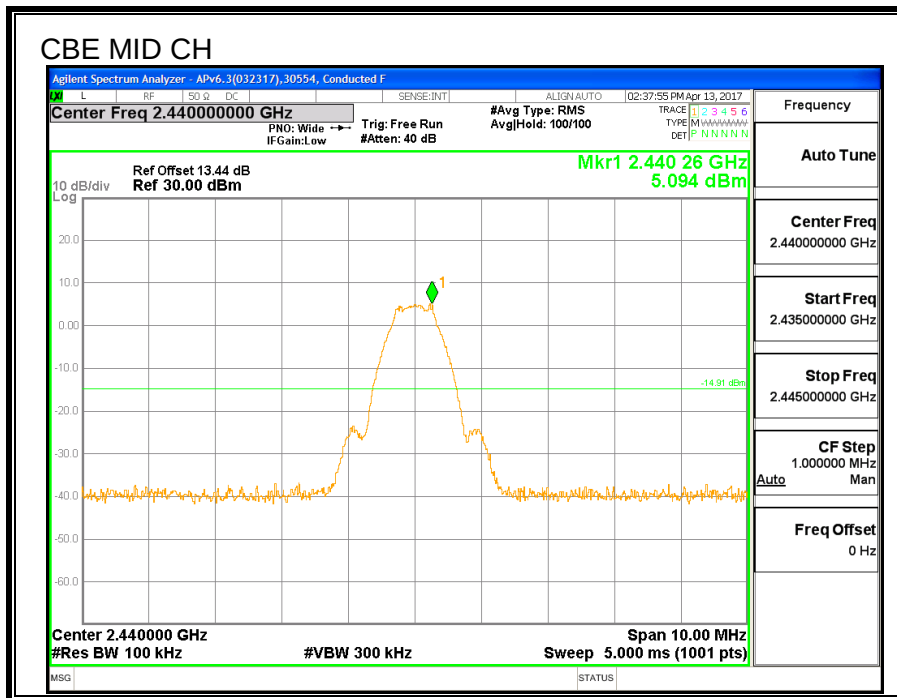
FCC §15.247 (d)

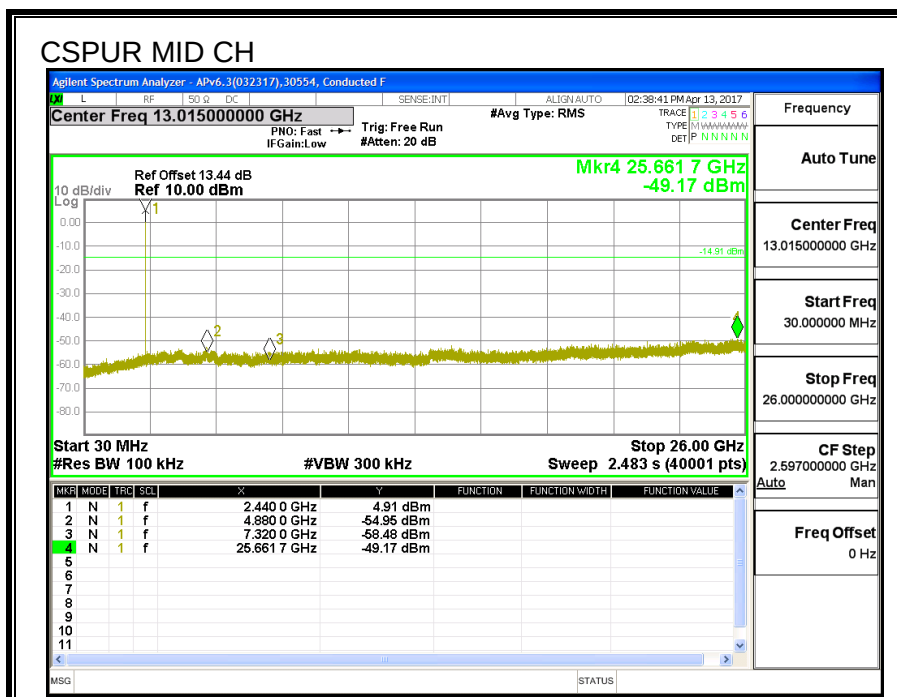
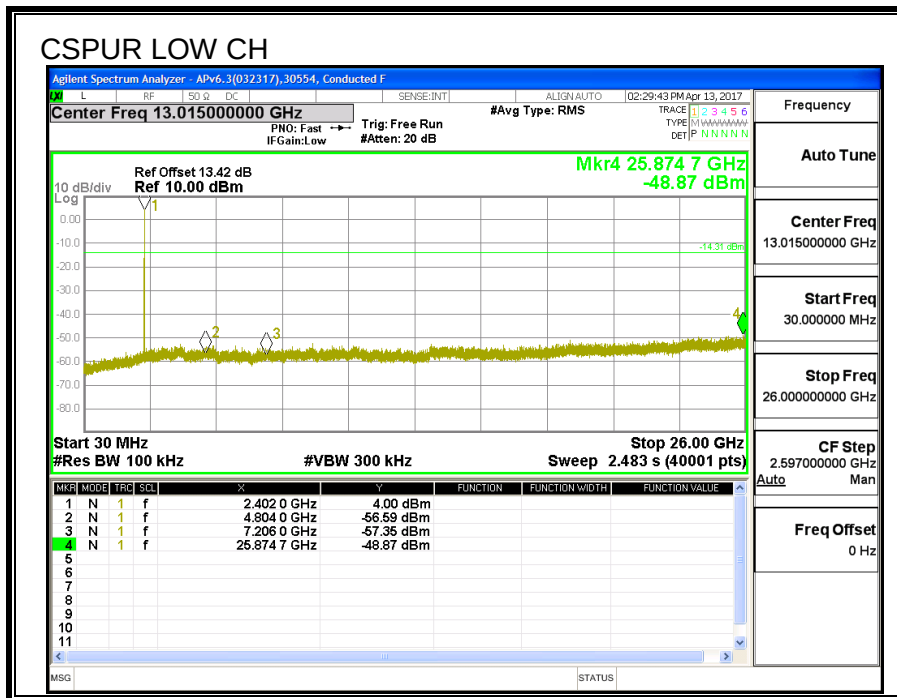
IC RSS-247 (5.5)

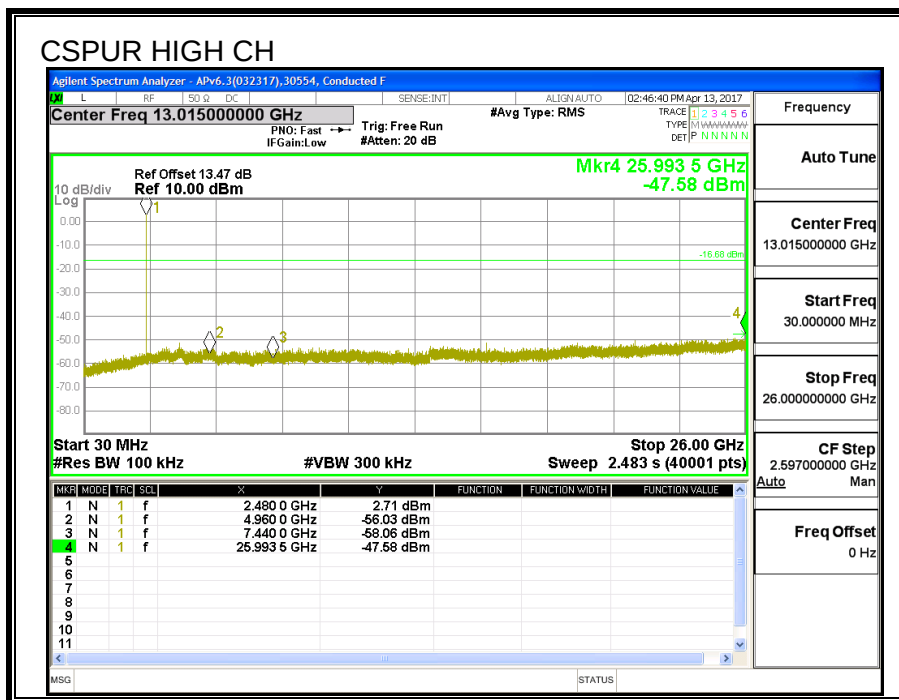
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS









7.7. LAT 3 1M PLOW

7.7.1. 6 dB BANDWIDTH

LIMITS

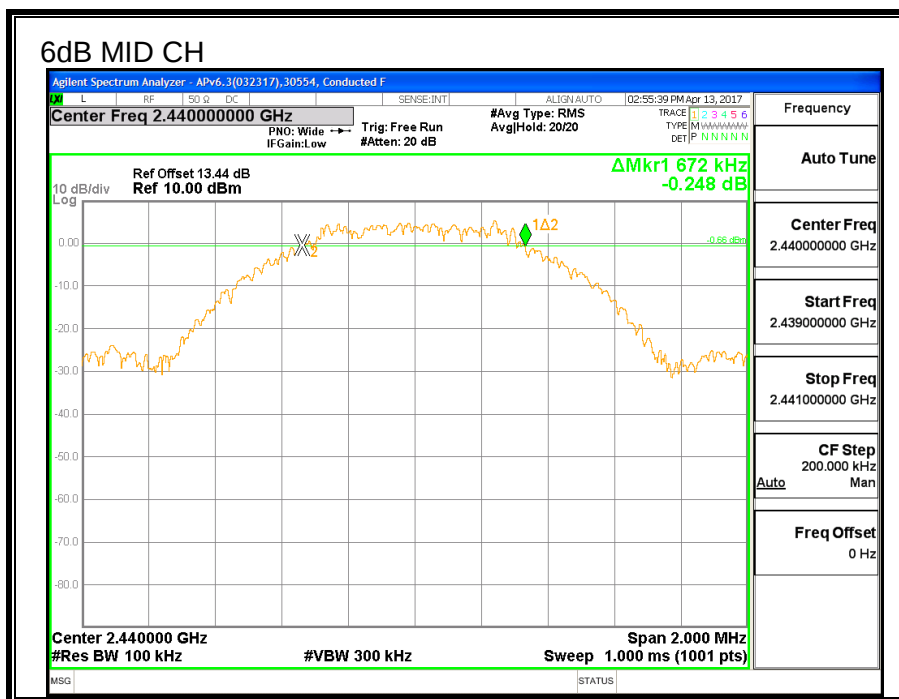
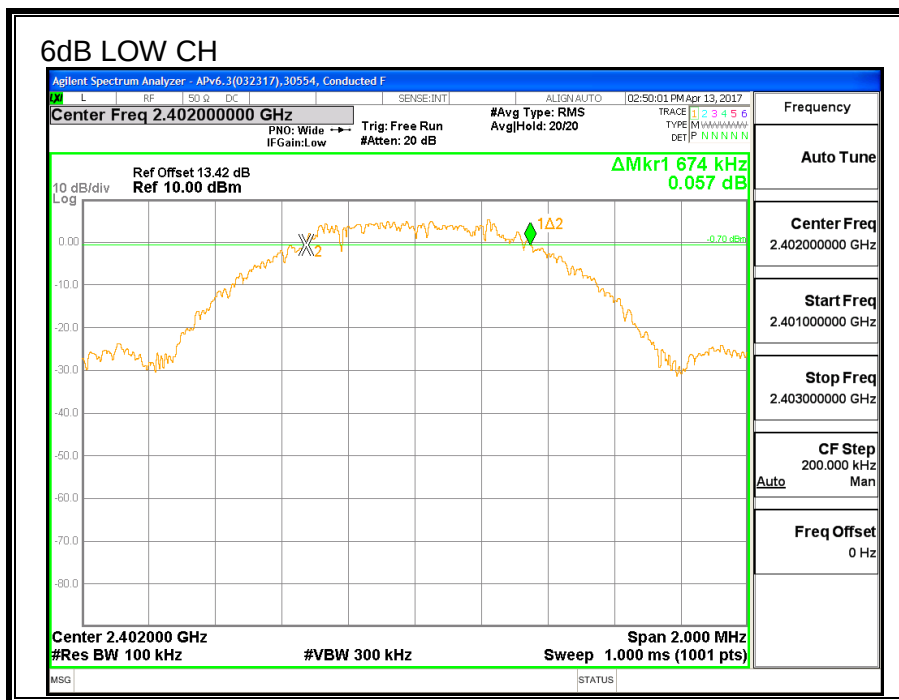
FCC §15.247 (a) (2)

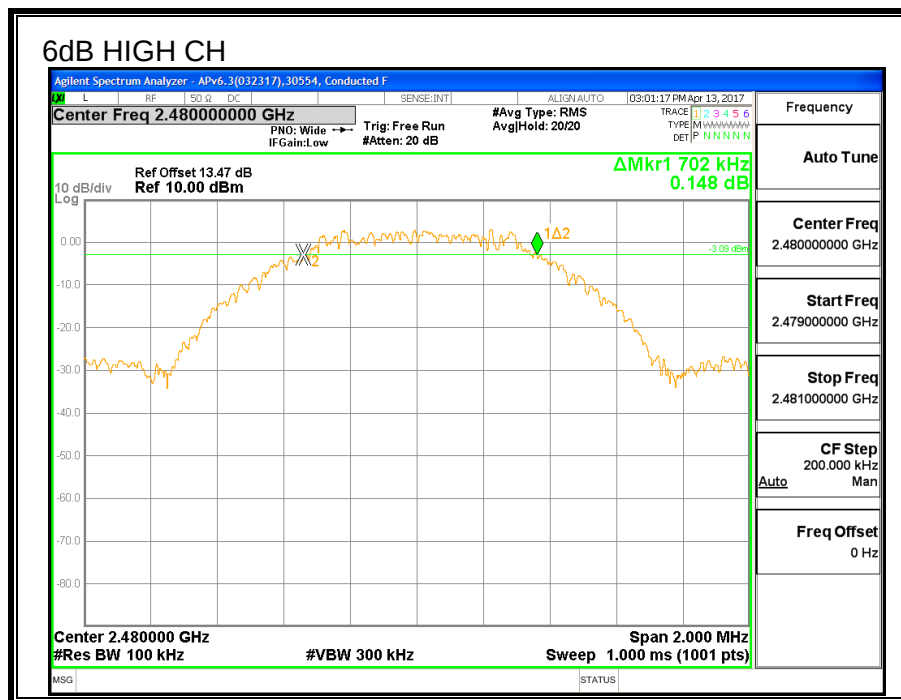
IC RSS-247 (5.2) (a)

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

RESULTS

Channel	Frequency	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.674	0.5
Middle	2440	0.672	0.5
High	2480	0.702	0.5





7.7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

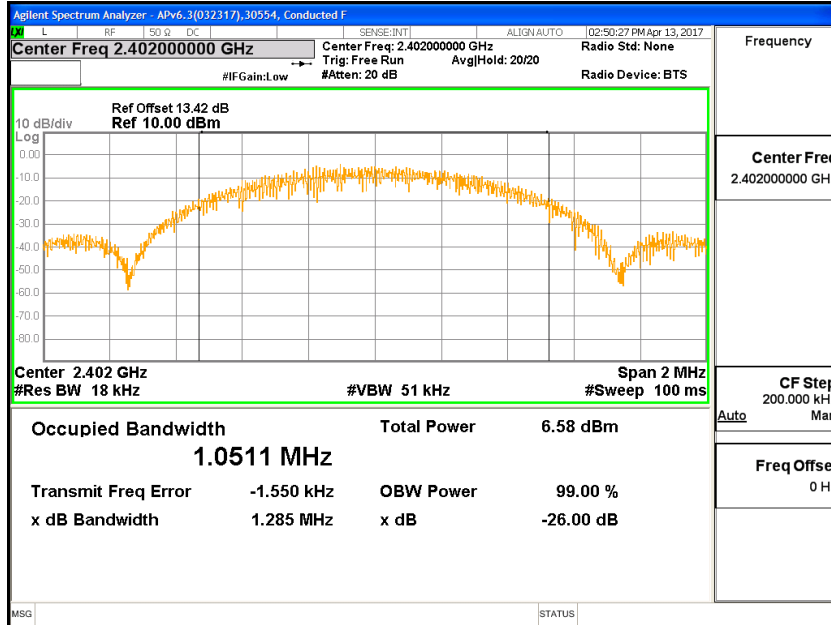
Test Procedure

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

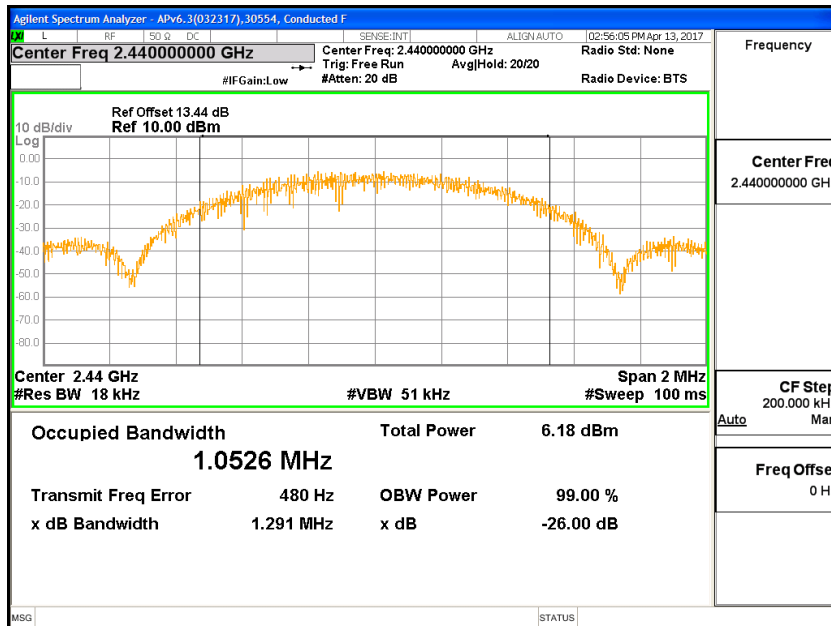
RESULTS

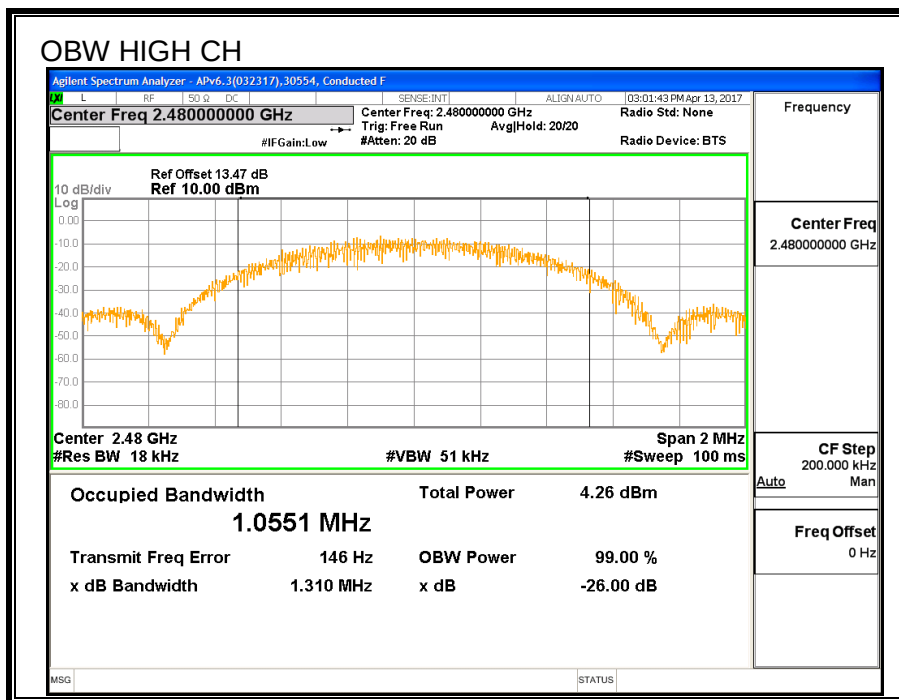
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0511
Middle	2440	1.0526
High	2480	1.0551

OBW LOW CH



OBW MID CH





7.7.3. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	9.61
Middle	2440	9.75
High	2480	9.53

7.7.4. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.91	30	-20.09
Middle	2440	10.02	30	-19.98
High	2480	9.82	30	-20.18

7.7.5. POWER SPECTRAL DENSITY

LIMITS

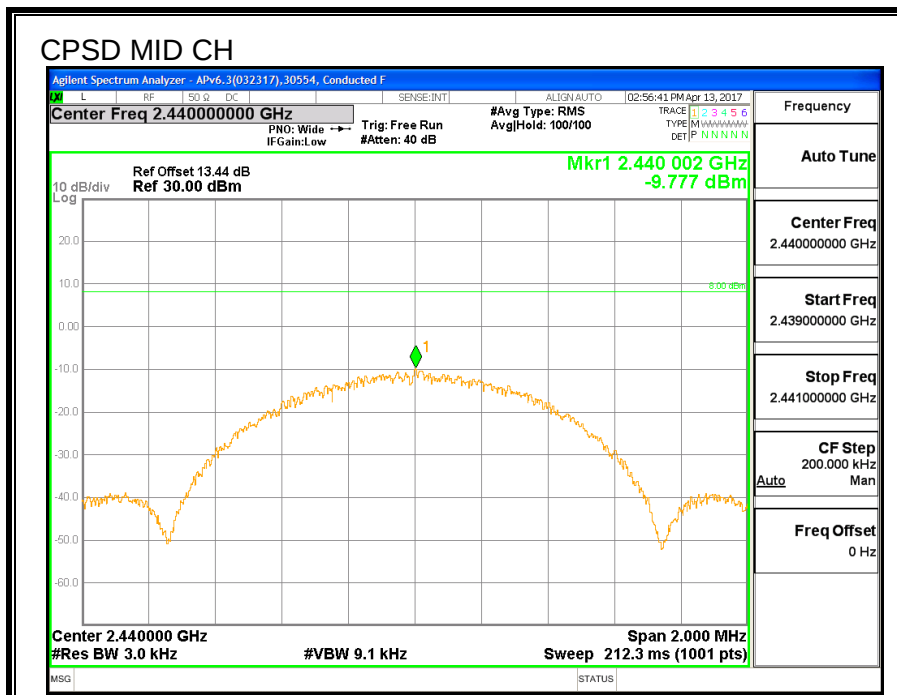
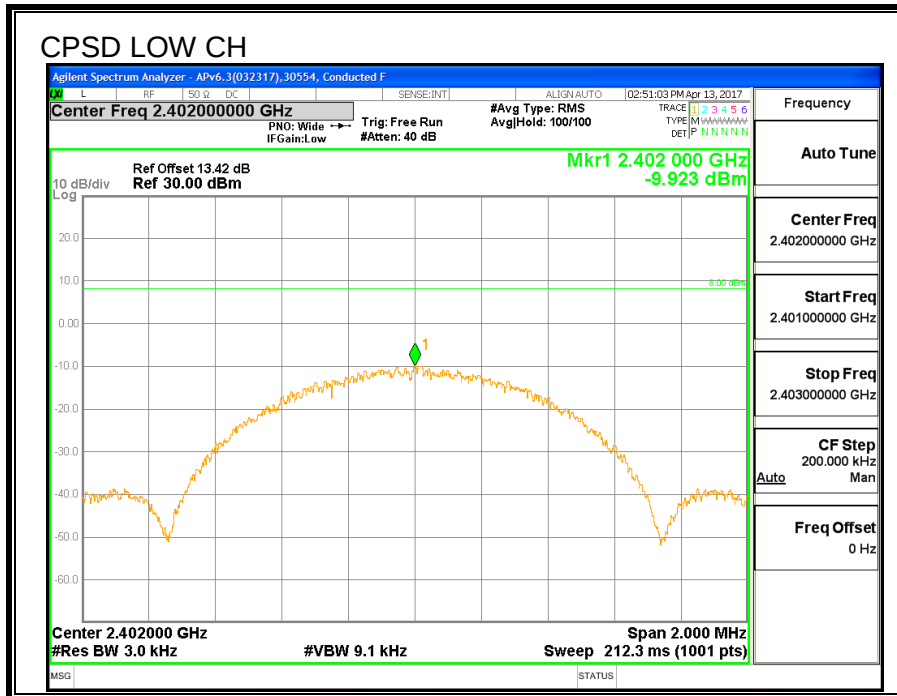
FCC §15.247 (e)

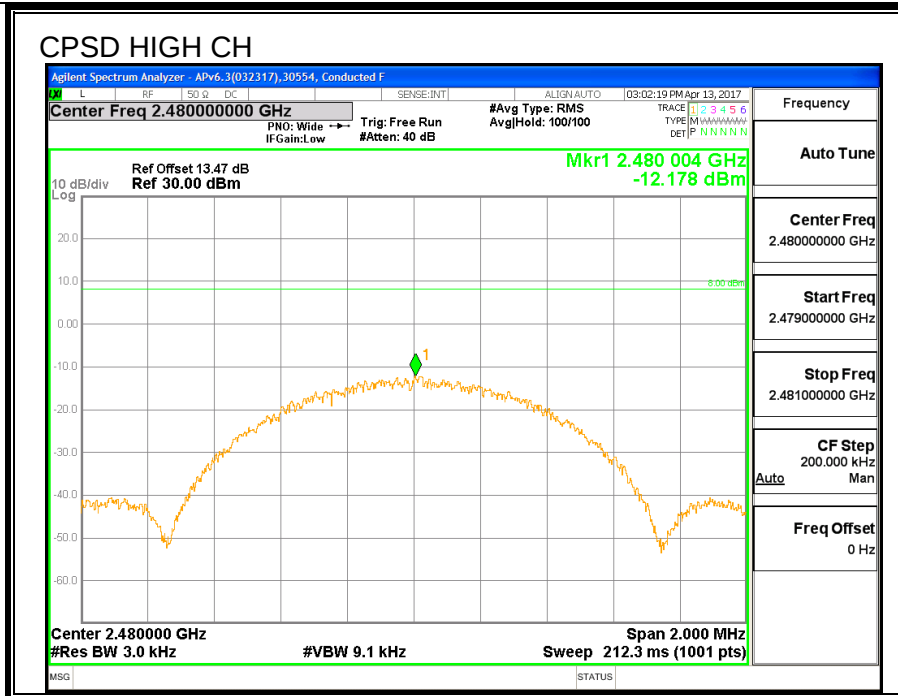
IC RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-9.923	8	-17.923
Middle	2440	-9.777	8	-17.777
High	2480	-12.178	8	-20.178





7.7.6. CONDUCTED BANEDGE AND SPURIOUS EMISSIONS

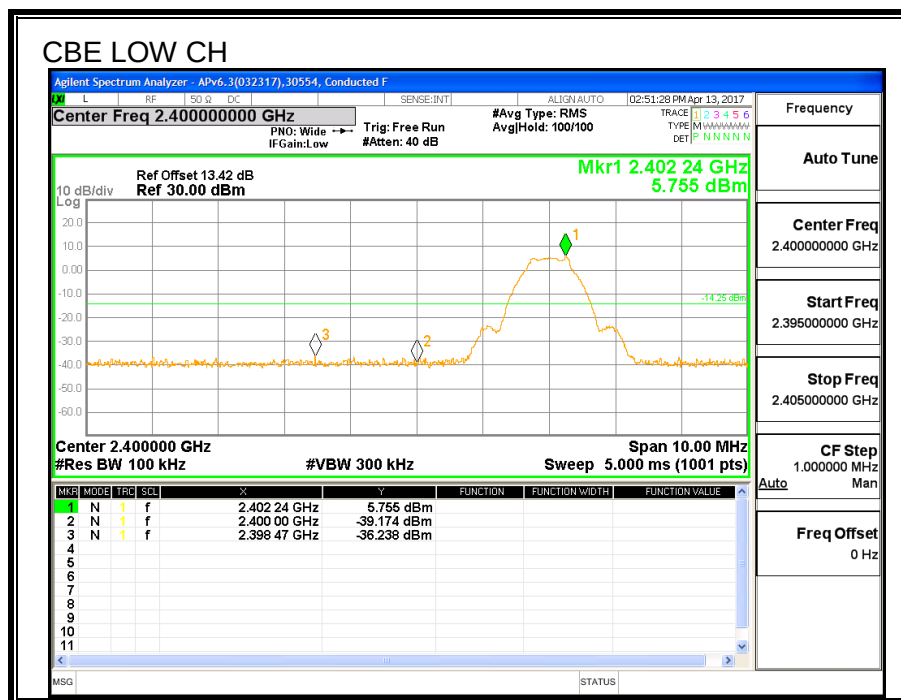
LIMITS

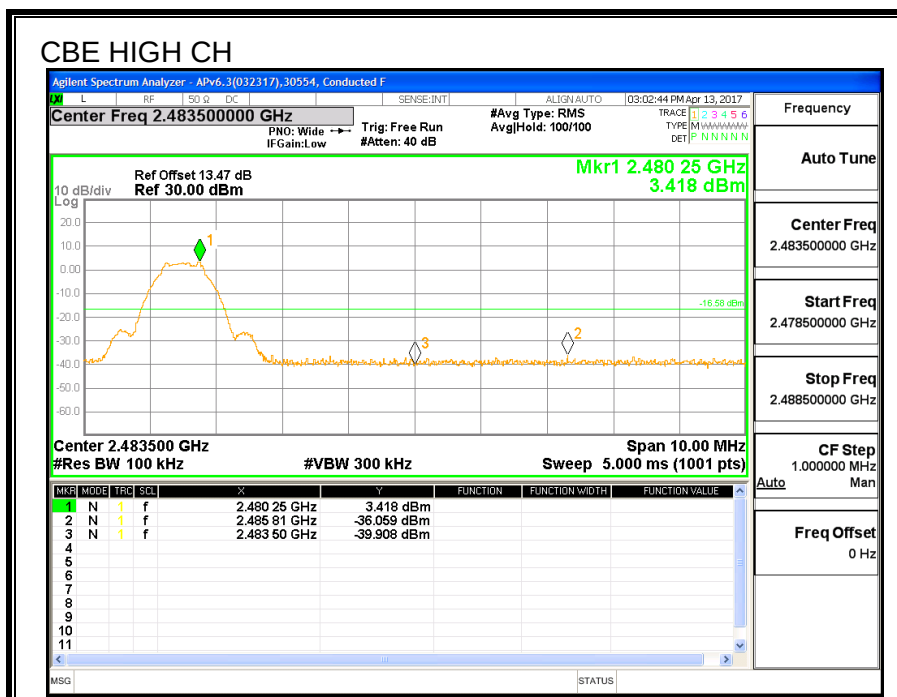
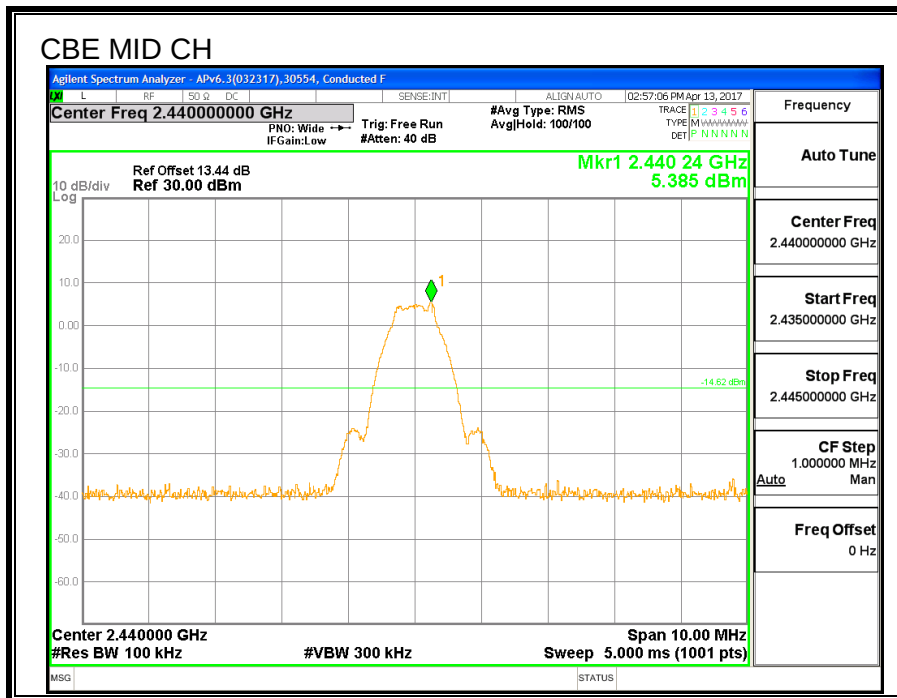
FCC §15.247 (d)

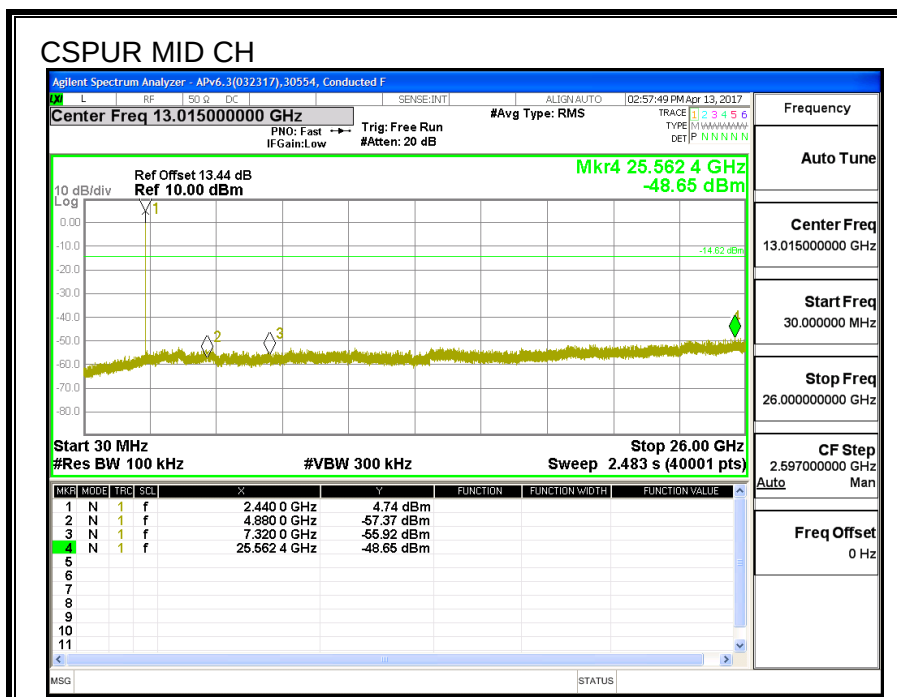
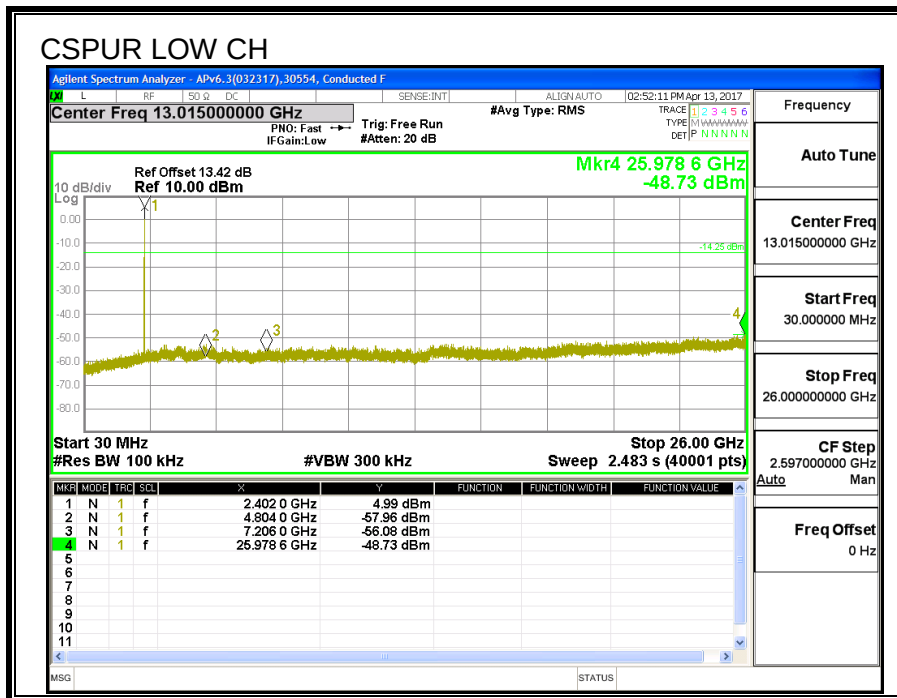
IC RSS-247 (5.5)

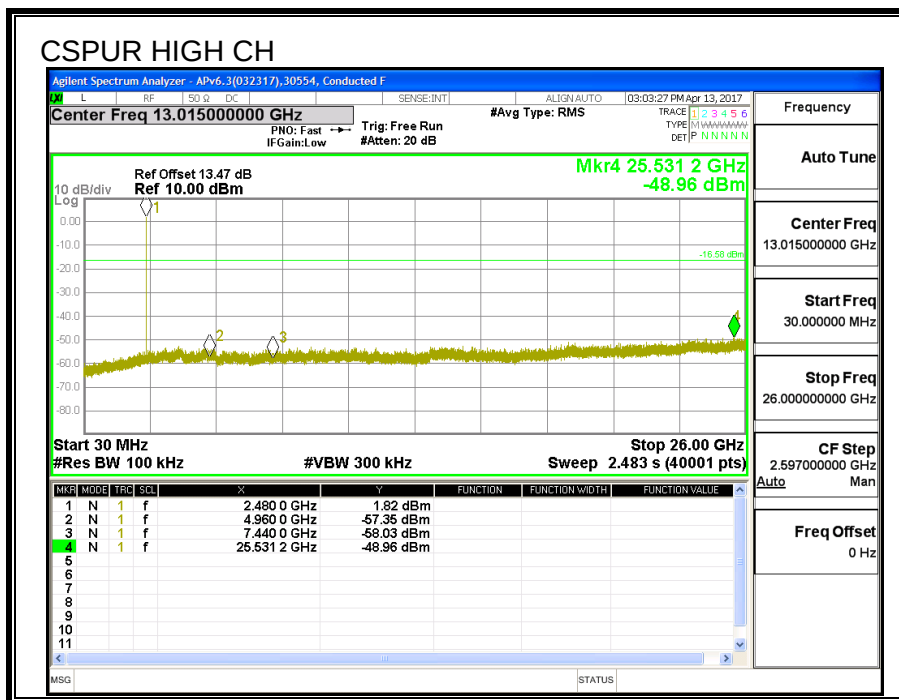
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS









7.8. LAT 3 BLE 2M PMAX

7.8.1. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	19.45
Middle	2440	19.59
High	2480	19.32

7.8.2. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a broadband Peak/average RF power meter

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	20.12	30	-9.88
Middle	2440	19.85	30	-10.15
High	2480	19.62	30	-10.38

7.9. LAT 3 BLE 2M PLOW

7.9.1. AVERAGE POWER

ID:	44366	Date:	7/14/2017
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LIMITS

None; for reporting purposes only.

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

RESULTS

Channel	Frequency (MHz)	AV Power (MHz)
Low	2402	9.38
Middle	2440	9.51
High	2480	9.32

7.9.2. OUTPUT POWER

ID:	44366	Date:	7/14/2017
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LIMITS

FCC §15.247 (b)

IC RSS-247 (5.4) (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a broadband Peak/average RF power meter

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.65	30	-20.35
Middle	2440	9.81	30	-20.19
High	2480	9.53	30	-20.47

8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.8.

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.

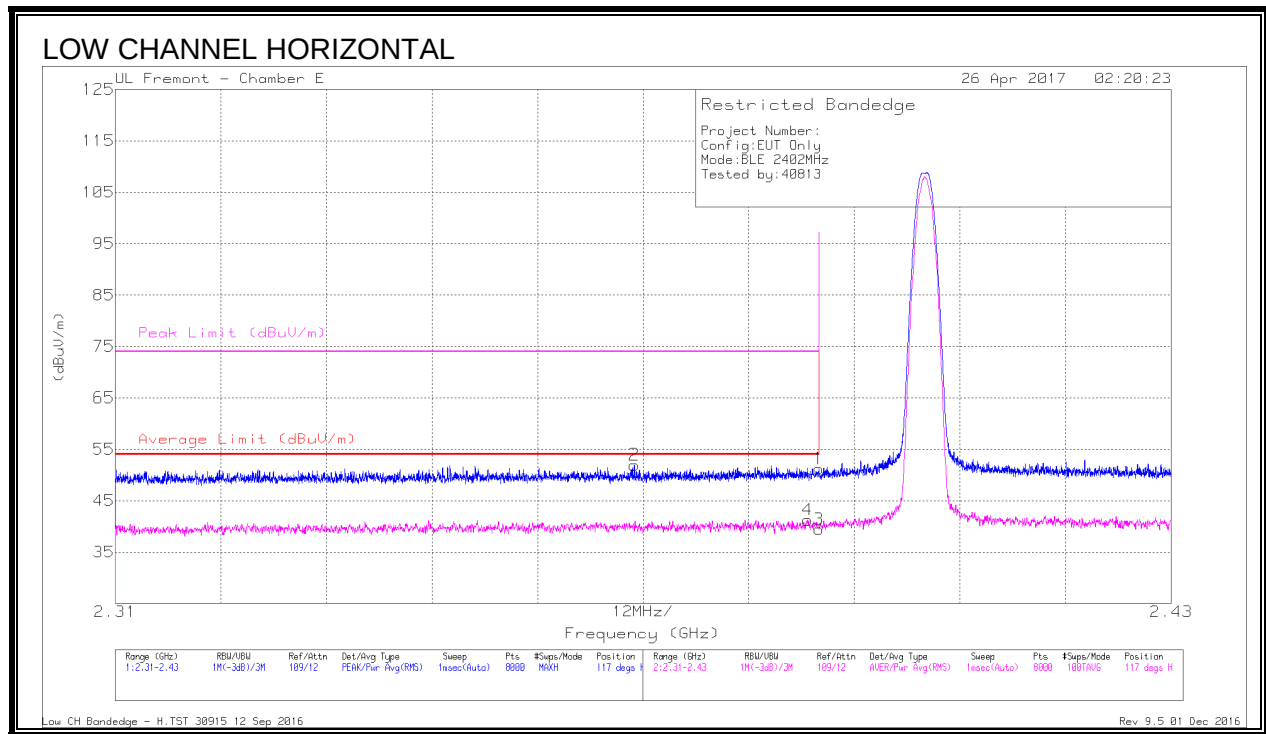
For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

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.

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.

8.2. UAT 1 PMAX

8.2.1. RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.93	Pk	32	-19.7	51.23	-	-	74	-22.77	117	101	H
2	* 2.369	39.75	Pk	32	-19.8	51.95	-	-	74	-22.05	117	101	H
3	* 2.39	27.12	RMS	32	-19.7	39.42	54	-14.58	-	-	117	101	H
4	* 2.389	28.94	RMS	32	-19.7	41.24	54	-12.76	-	-	117	101	H

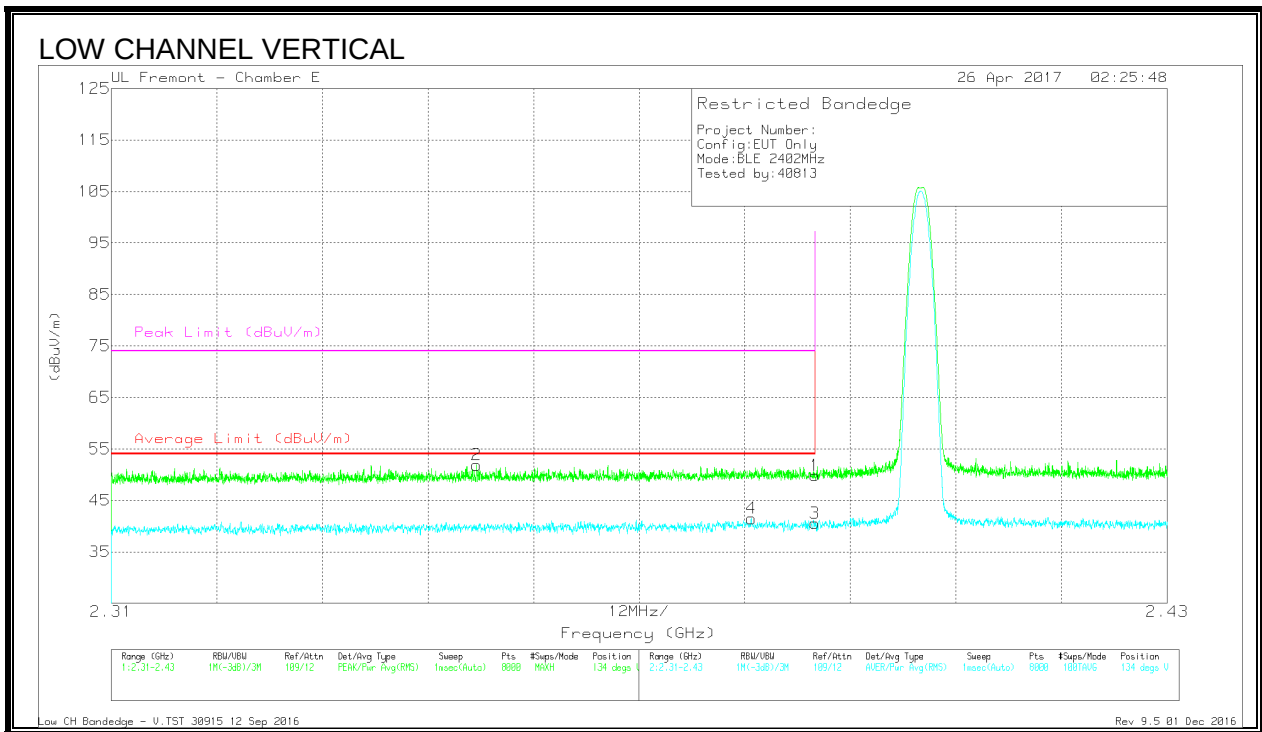
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.54	Pk	32	-19.7	49.84	-	-	74	-24.16	134	382	V
2	* 2.352	39.77	Pk	31.9	-19.8	51.87	-	-	74	-22.13	134	382	V
3	* 2.39	28.23	RMS	32	-19.7	40.53	54	-13.47	-	-	134	382	V
4	* 2.383	28.99	RMS	32	-19.5	41.49	54	-12.51	-	-	134	382	V

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

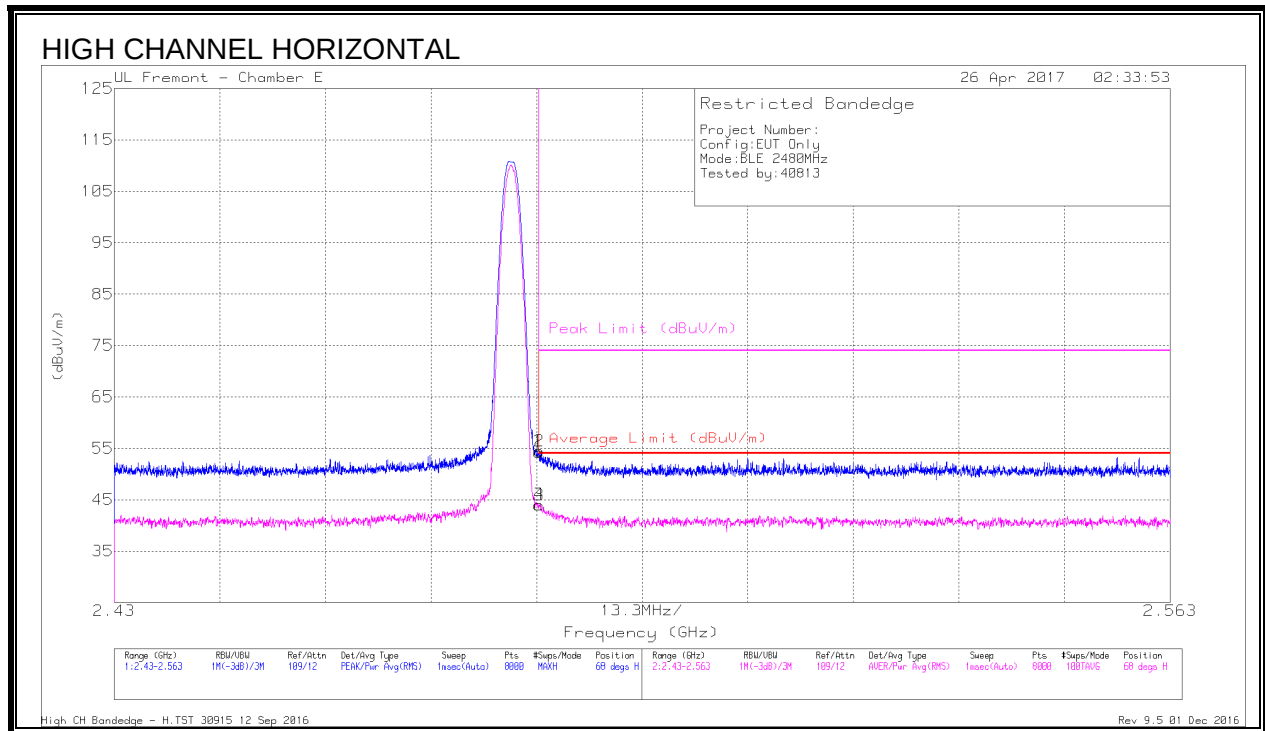
Pk - Peak detector

RMS - RMS detection

Low CH Bandedge - V.TST 30915 12 Sep 2016

Rev 9.5 01 Dec 2016

8.2.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Ch/Fi tr/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	41.46	Pk	32.5	-19.7	54.26	-	-	74	-19.74	68	108	H
2	* 2.484	41.68	Pk	32.5	-19.7	54.48	-	-	74	-19.52	68	108	H
3	* 2.484	31.19	RMS	32.5	-19.7	43.99	54	-10.01	-	-	68	108	H
4	* 2.484	31.23	RMS	32.5	-19.7	44.03	54	-9.97	-	-	68	108	H

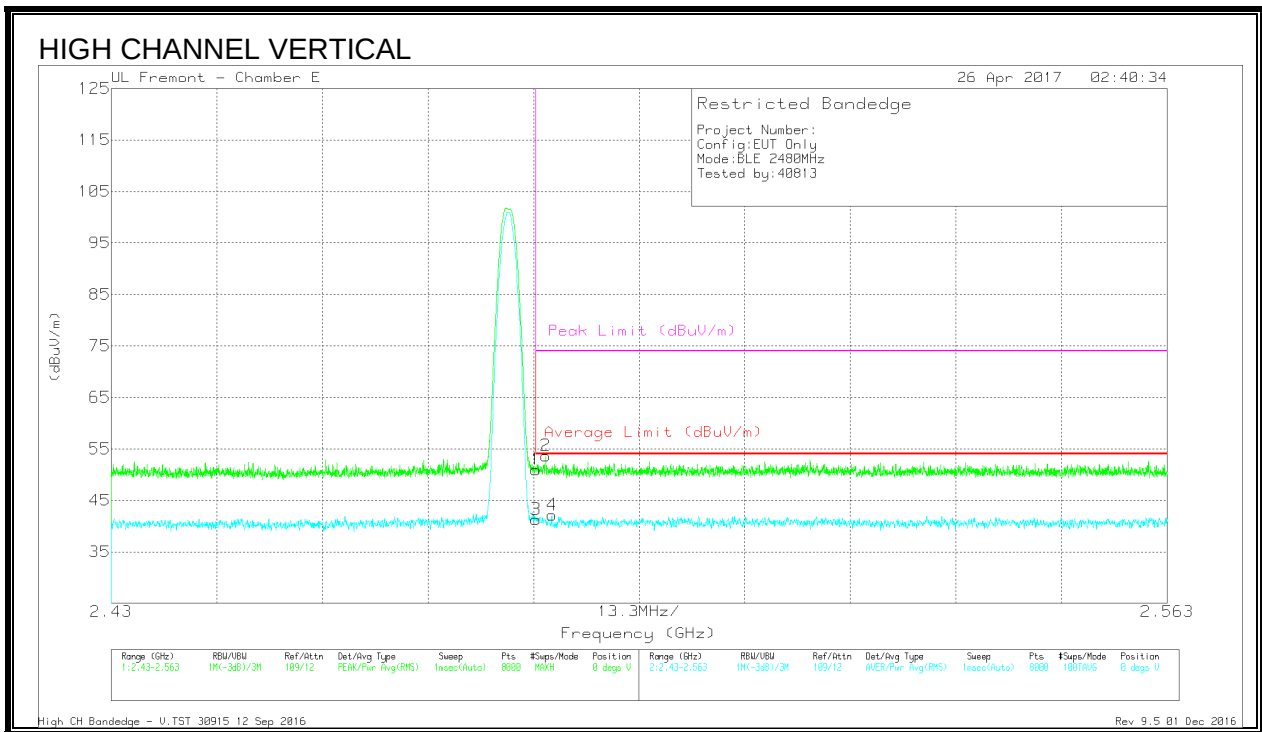
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/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	38.19	Pk	32.5	-19.7	50.99	-	-	74	-23.01	0	309	V
2	* 2.485	40.89	Pk	32.5	-19.7	53.69	-	-	74	-20.31	0	309	V
3	* 2.484	28.51	RMS	32.5	-19.7	41.31	54	-12.69	-	-	0	309	V
4	* 2.486	29.36	RMS	32.5	-19.7	42.16	54	-11.84	-	-	0	309	V

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

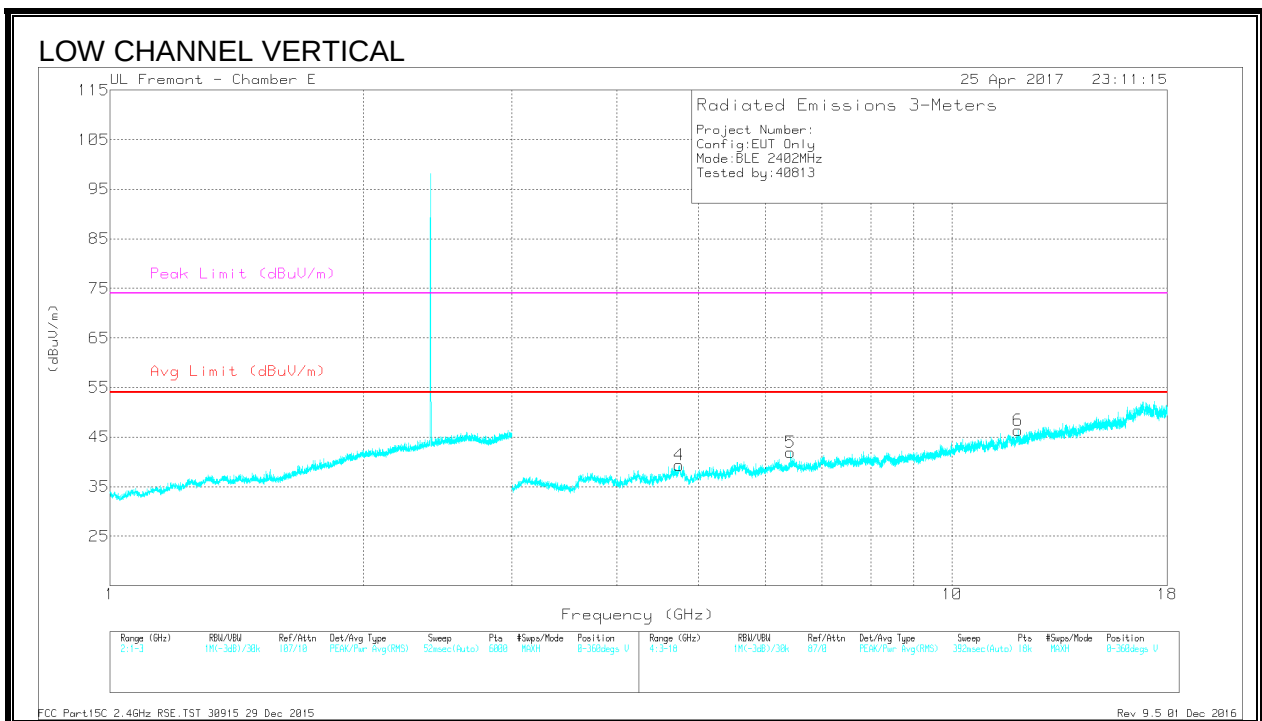
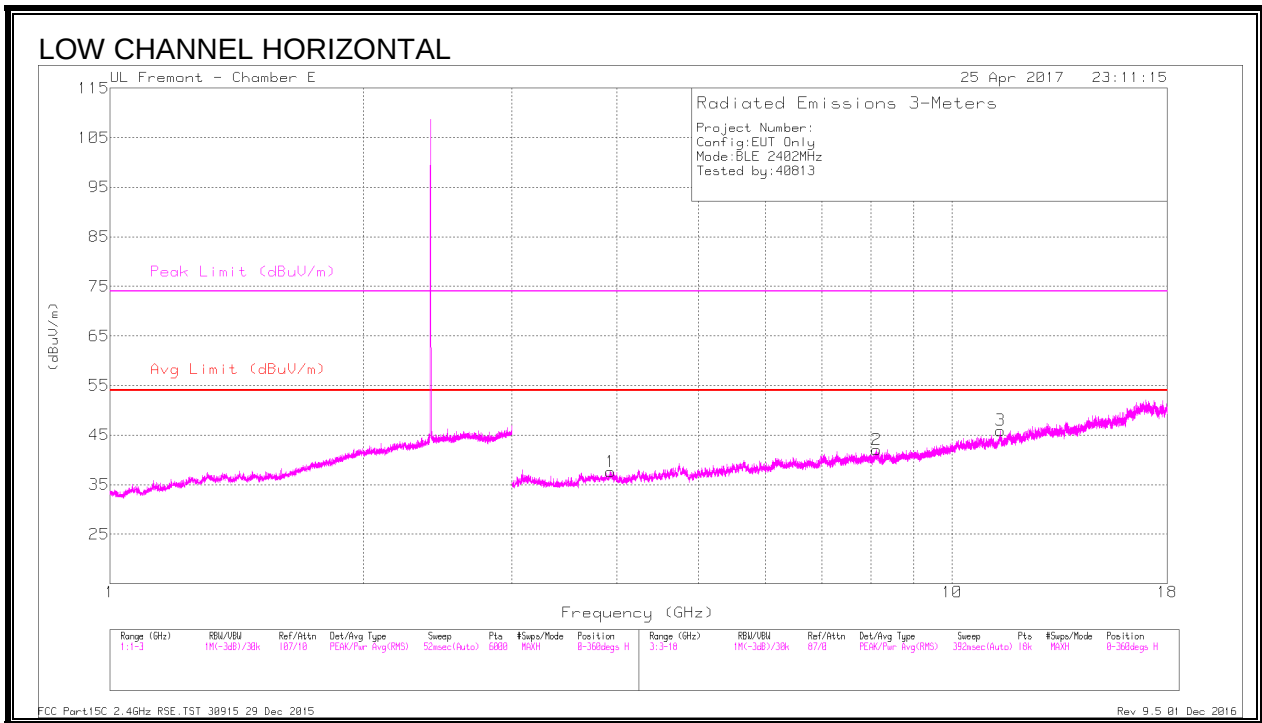
Pk - Peak detector

RMS - RMS detection

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8.2.3. HARMONICS AND SPURIOUS EMISSIONS



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/ 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	* 3.93	40.87	PK2	33.4	-29.4	44.87	-	-	74	-29.13	274	220	H
	* 3.931	29.47	MAv1	33.4	-29.3	33.57	54	-20.43	-	-	274	220	H
2	* 8.129	37.84	PK2	36	-25.7	48.14	-	-	74	-25.86	4	221	H
	* 8.129	26.38	MAv1	36	-25.7	36.68	54	-17.32	-	-	4	221	H
3	* 11.403	35.69	PK2	38	-21.6	52.09	-	-	74	-21.91	24	212	H
	* 11.402	24.32	MAv1	38	-21.7	40.62	54	-13.38	-	-	24	212	H
4	* 4.739	40.07	PK2	34.3	-28.9	45.47	-	-	74	-28.53	163	115	V
	* 4.739	28.97	MAv1	34.3	-28.9	34.37	54	-19.63	-	-	163	115	V
6	* 11.977	36.61	PK2	38.8	-22.4	53.01	-	-	74	-20.99	2	128	V
	* 11.978	24.95	MAv1	38.8	-22.5	41.25	54	-12.75	-	-	2	128	V
5	6.421	40.18	PK2	35.6	-28.4	47.38	-	-	-	-	127	121	V

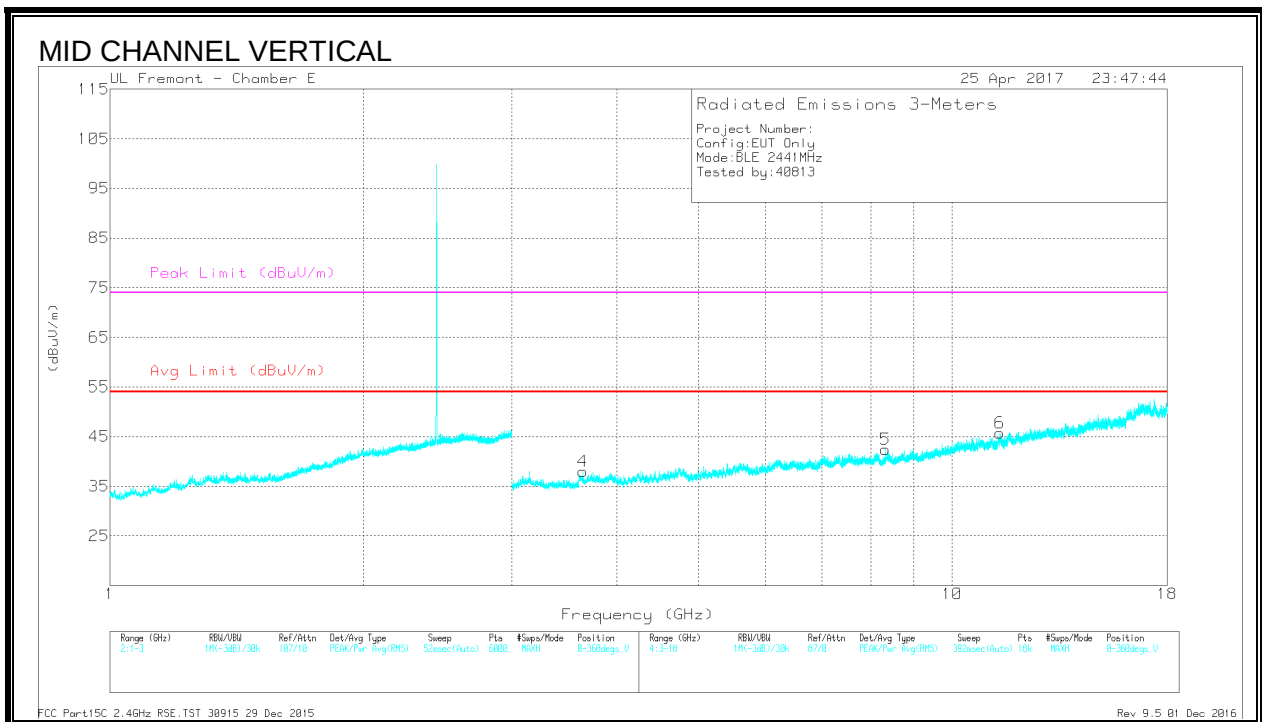
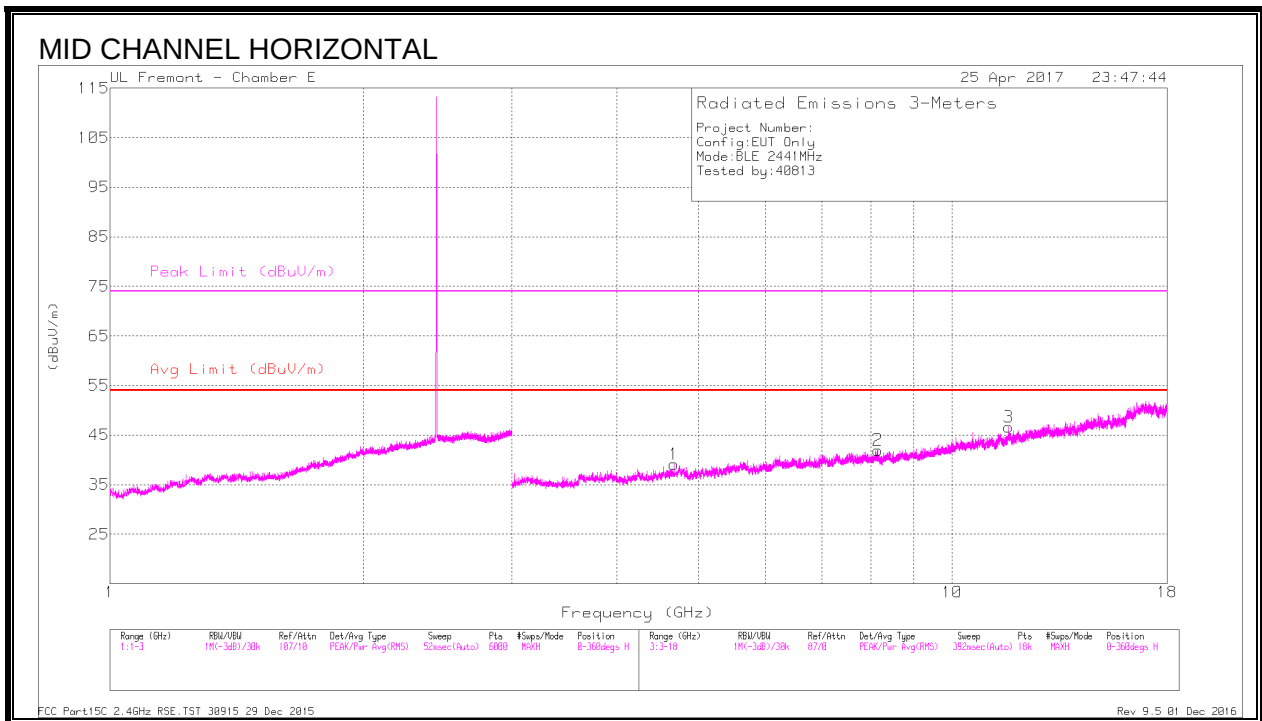
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/ 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	* 4.676	41.12	PK2	34.3	-30.1	45.32	-	-	74	-28.68	112	218	H
	* 4.676	29.78	MAv1	34.3	-30.1	33.98	54	-20.02	-	-	112	218	H
2	* 8.153	37.71	PK2	36	-25.2	48.51	-	-	74	-25.49	226	266	H
	* 8.154	25.96	MAv1	36	-25.3	36.66	54	-17.34	-	-	226	266	H
3	* 11.674	36.23	PK2	38.3	-22.1	52.43	-	-	74	-21.57	310	358	H
	* 11.671	24.88	MAv1	38.3	-22.1	41.08	54	-12.92	-	-	310	358	H
4	* 3.641	41.78	PK2	33.1	-30.2	44.68	-	-	74	-29.32	268	115	V
	* 3.642	29.52	MAv1	33.1	-30.2	32.42	54	-21.58	-	-	268	115	V
5	* 8.337	38.3	PK2	36.1	-26.5	47.9	-	-	74	-26.1	204	121	V
	* 8.335	27.05	MAv1	36.1	-26.5	36.65	54	-17.35	-	-	204	121	V
6	* 11.394	36.53	PK2	38	-21.8	52.73	-	-	74	-21.27	344	134	V
	* 11.395	24.45	MAv1	38	-21.7	40.75	54	-13.25	-	-	344	134	V

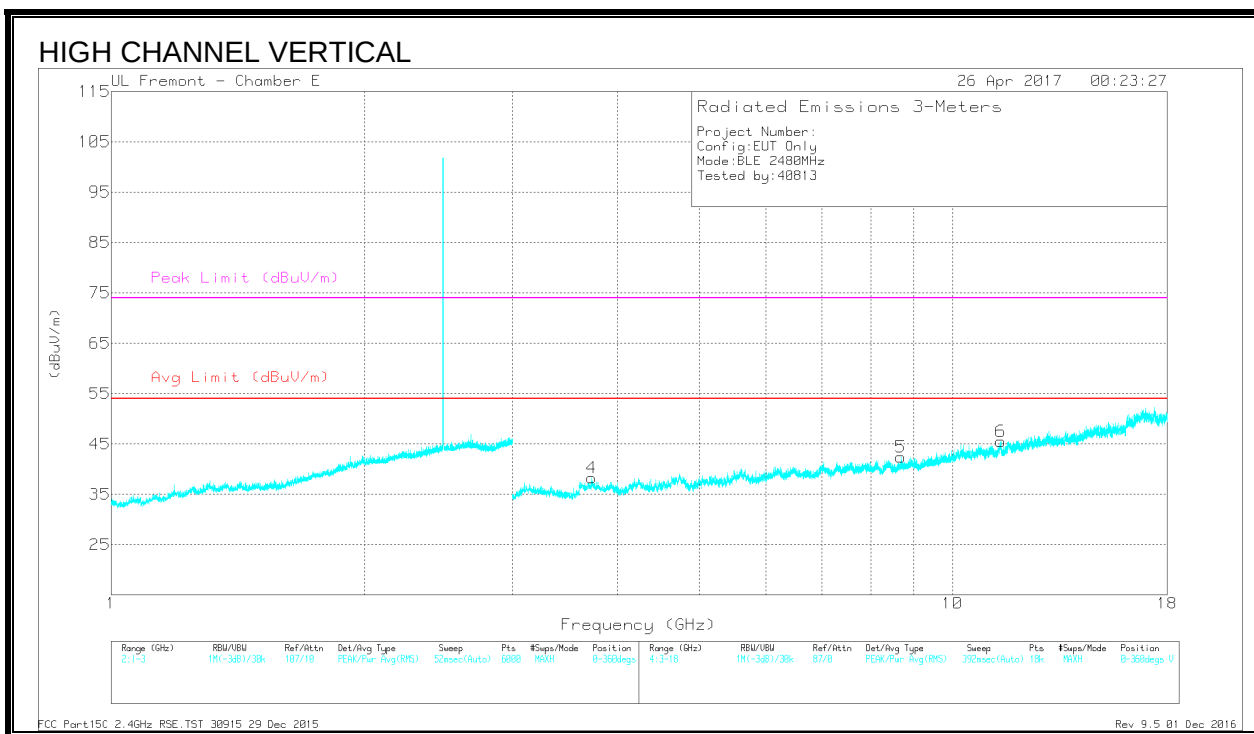
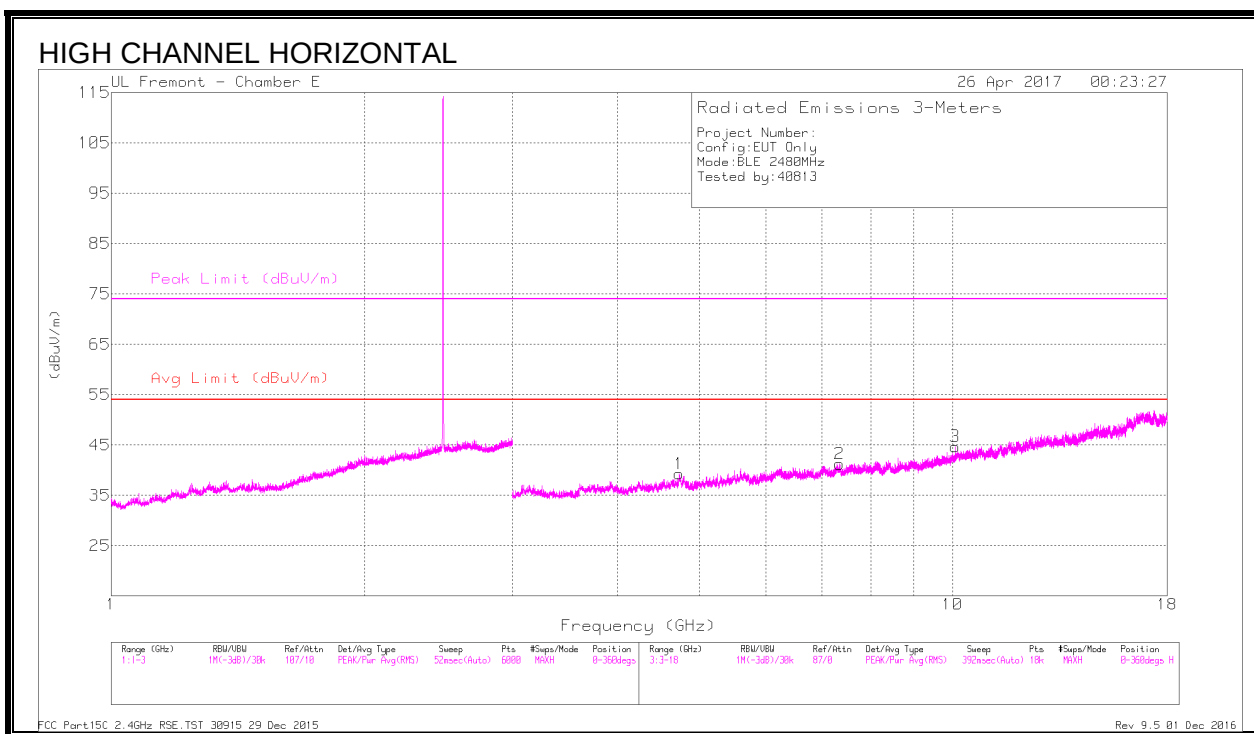
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/ 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	* 4.733	40.91	PK2	34.3	-29.1	46.11	-	-	74	-27.89	33	336	H
	* 4.734	28.99	MAv1	34.3	-29.1	34.19	54	-19.81	-	-	33	336	H
2	* 7.344	38.59	PK2	35.9	-26.6	47.89	-	-	74	-26.11	19	349	H
	* 7.343	26.96	MAv1	35.9	-26.6	36.26	54	-17.74	-	-	19	349	H
4	* 3.723	41.84	PK2	33.4	-30.1	45.14	-	-	74	-28.86	25	243	V
	* 3.723	30.13	MAv1	33.4	-30.1	33.43	54	-20.57	-	-	25	243	V
6	* 11.417	35.92	PK2	38	-22	51.92	-	-	74	-22.08	102	163	V
	* 11.416	24.35	MAv1	38	-22	40.35	54	-13.65	-	-	102	163	V
5	8.681	36.97	PK2	36.1	-24.8	48.27	-	-	-	-	60	239	V
3	10.077	36.62	PK2	37.3	-23.9	50.02	-	-	-	-	294	267	H

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

PK2 - KDB558074 Method: Maximum Peak

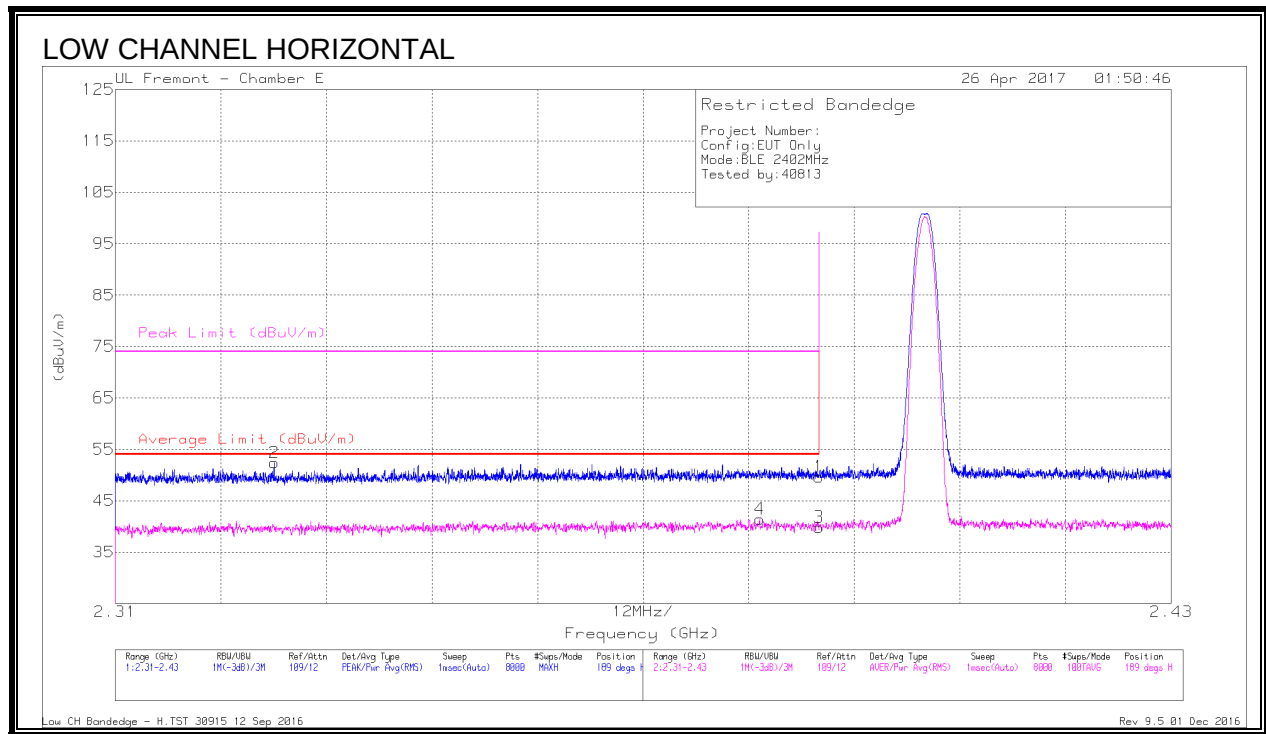
MAv1 - KDB558074 Option 1 Maximum RMS Average

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8.3. UAT 1 PLOW

8.3.1. RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/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	37.36	Pk	32	-19.7	49.66	-	-	74	-24.34	189	117	H
2	* 2.328	40.38	Pk	31.8	-19.8	52.38	-	-	74	-21.62	189	117	H
3	* 2.39	27.54	RMS	32	-19.7	39.84	54	-14.16	-	-	189	117	H
4	* 2.383	28.94	RMS	32	-19.5	41.44	54	-12.56	-	-	189	117	H

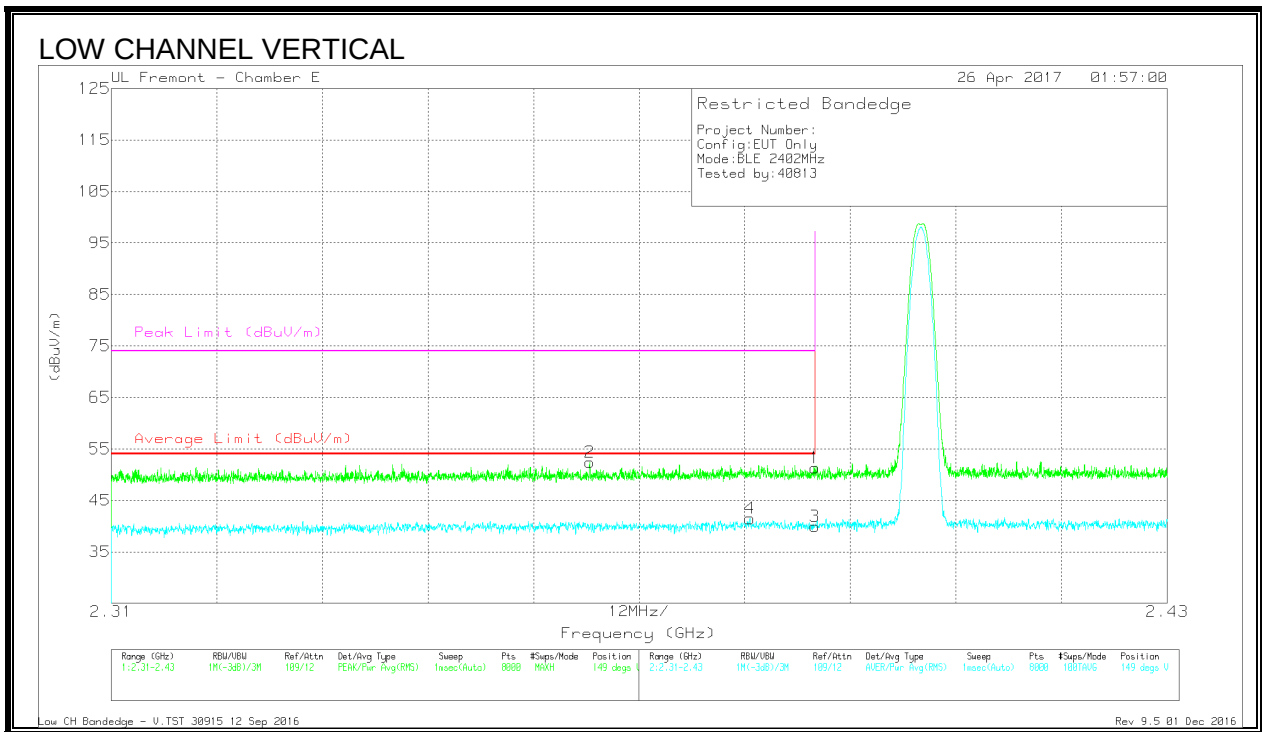
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtz/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.02	Pk	32	-19.7	51.32	-	-	74	-22.68	149	382	V
2	* 2.364	40.19	Pk	31.9	-19.7	52.39	-	-	74	-21.61	149	382	V
3	* 2.39	27.64	RMS	32	-19.7	39.94	54	-14.06	-	-	149	382	V
4	* 2.383	28.99	RMS	32	-19.5	41.49	54	-12.51	-	-	149	382	V

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

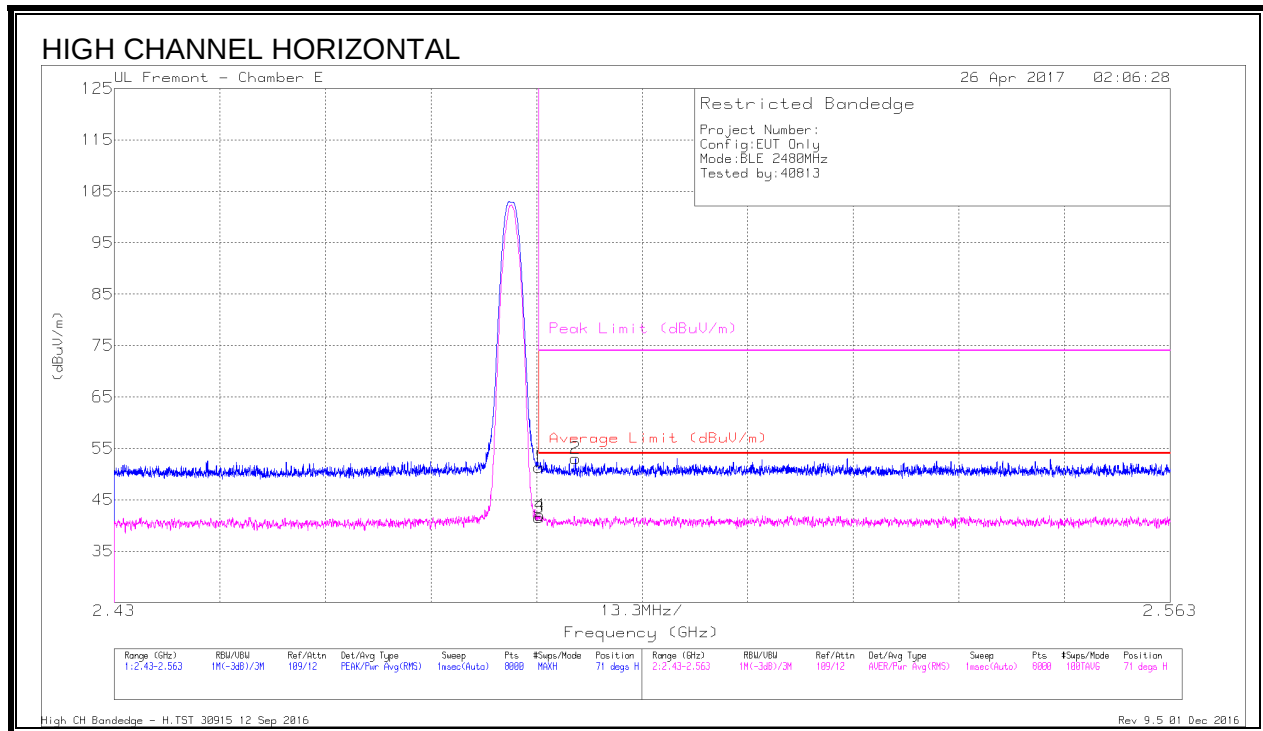
Pk - Peak detector

RMS - RMS detection

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8.3.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/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	38.52	Pk	32.5	-19.7	51.32	-	-	74	-22.68	71	107	H
2	* 2.488	40.36	Pk	32.6	-19.9	53.06	-	-	74	-20.94	71	107	H
3	* 2.484	28.7	RMS	32.5	-19.7	41.5	54	-12.5	-	-	71	107	H
4	* 2.484	29.18	RMS	32.5	-19.7	41.98	54	-12.02	-	-	71	107	H

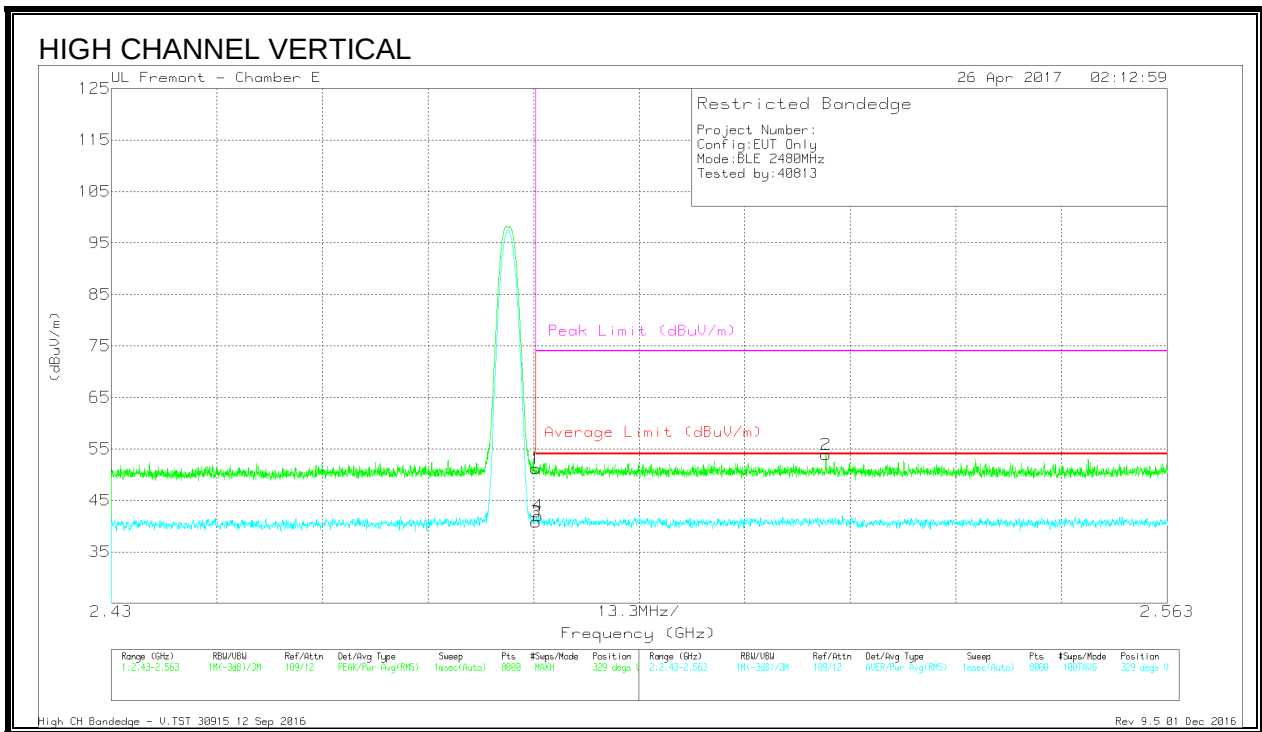
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/FI tr/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	38.37	Pk	32.5	-19.7	51.17	-	-	74	-22.83	329	402	V
3	* 2.484	28.01	RMS	32.5	-19.7	40.81	54	-13.19	-	-	329	402	V
4	* 2.484	29.19	RMS	32.5	-19.7	41.99	54	-12.01	-	-	329	402	V
2	2.52	40.98	Pk	32.6	-19.7	53.88	-	-	74	-20.12	329	402	V

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

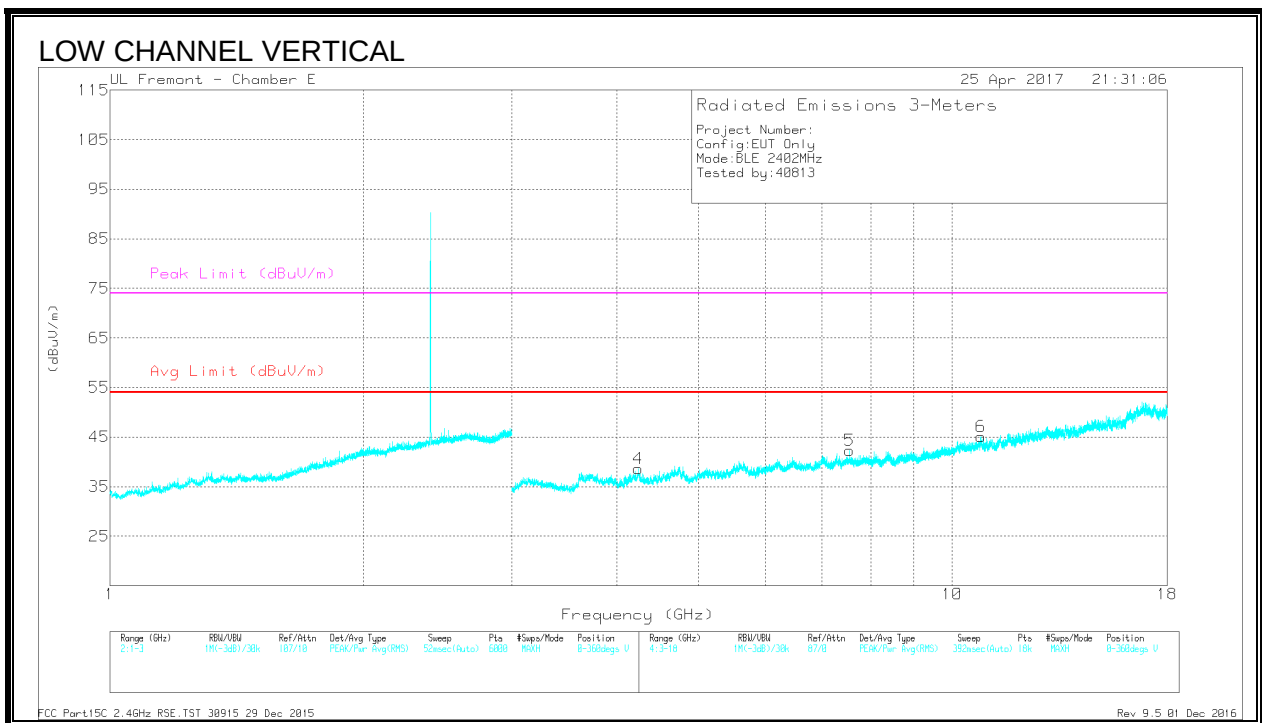
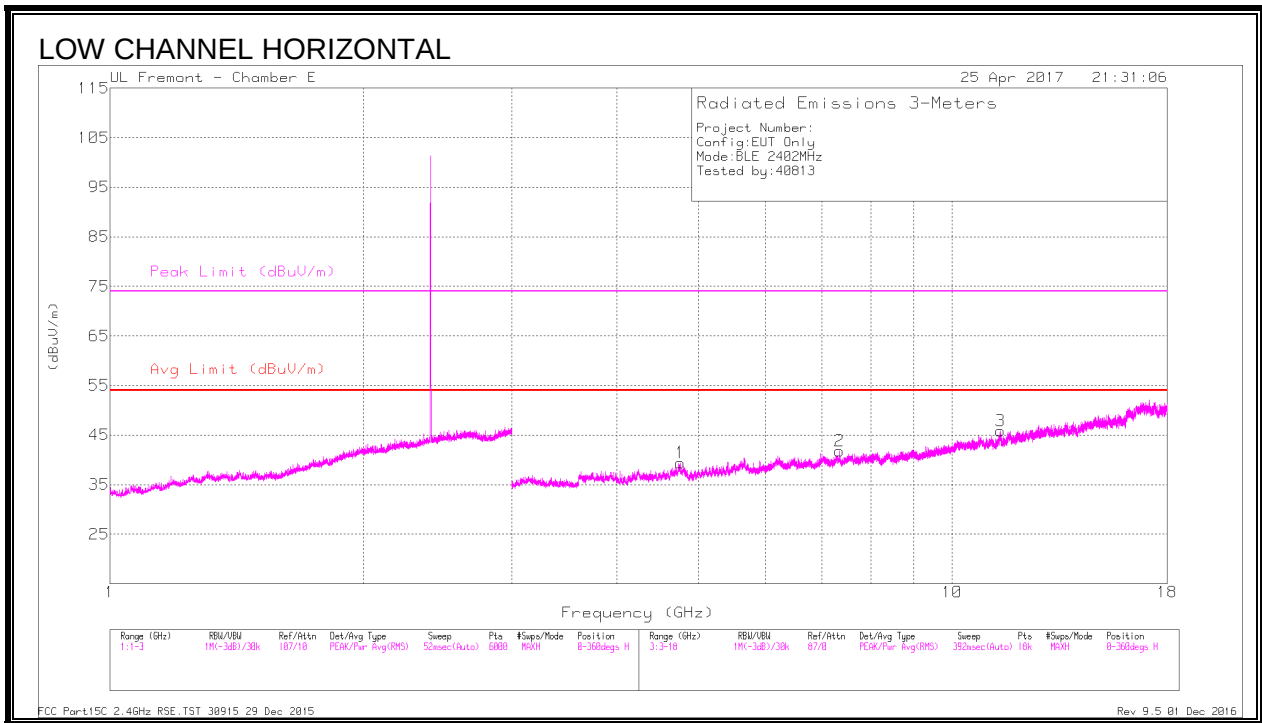
Pk - Peak detector

RMS - RMS detection

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8.3.3. HARMONICS AND SPURIOUS EMISSIONS



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/ 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	* 4.755	40.52	PK2	34.3	-29.1	45.72	-	-	74	-28.28	38	129	H
	* 4.755	28.83	MAv1	34.3	-29.1	34.03	54	-19.97	-	-	38	129	H
2	* 7.345	38.24	PK2	35.9	-26.6	47.54	-	-	74	-26.46	58	226	H
	* 7.346	27.49	MAv1	35.9	-26.7	36.69	54	-17.31	-	-	58	226	H
3	* 11.42	35.95	PK2	38	-22.2	51.75	-	-	74	-22.25	347	117	H
	* 11.419	24.36	MAv1	38	-22.1	40.26	54	-13.74	-	-	347	117	H
4	* 4.239	41.04	PK2	33.5	-28.7	45.84	-	-	74	-28.16	25	132	V
	* 4.238	28.86	MAv1	33.5	-28.7	33.66	54	-20.34	-	-	25	132	V
5	* 7.552	37.73	PK2	36.1	-26.1	47.73	-	-	74	-26.27	48	137	V
	* 7.551	27.1	MAv1	36.1	-26.1	37.1	54	-16.9	-	-	48	137	V
6	* 10.812	36.33	PK2	37.6	-22.7	51.23	-	-	74	-22.77	135	269	V
	* 10.812	24.99	MAv1	37.6	-22.8	39.79	54	-14.21	-	-	135	269	V

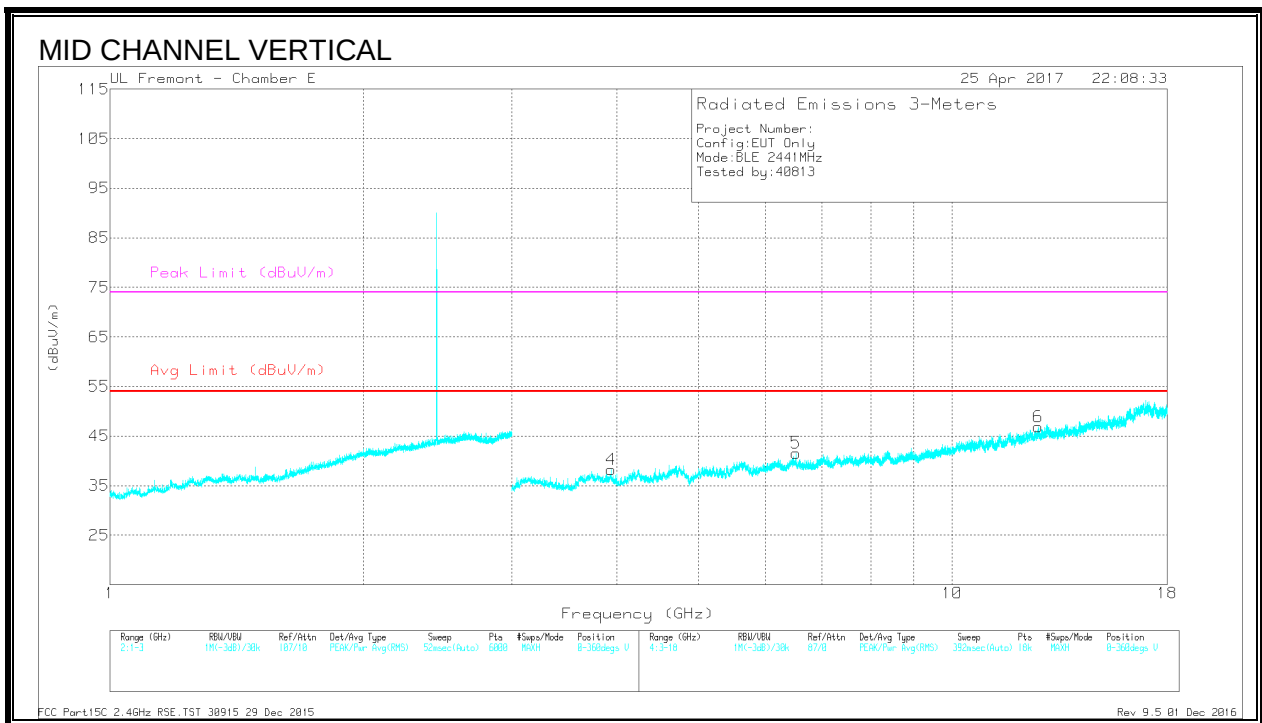
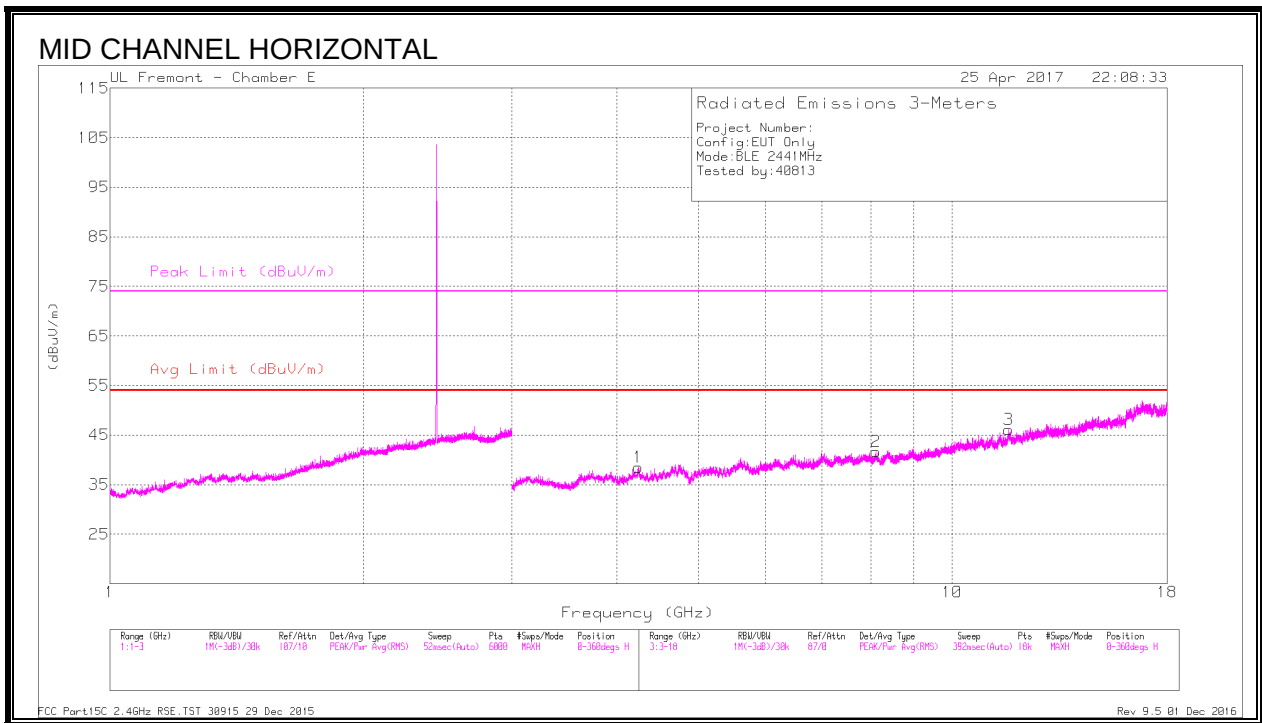
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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MID Radiated Data Goes Here

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/ 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	* 4.235	41.03	PK2	33.5	-28.7	45.83	-	-	74	-28.17	62	130	H
	* 4.235	29.6	MAv1	33.5	-28.7	34.4	54	-19.6	-	-	62	130	H
2	* 8.116	38.13	PK2	36	-25.5	48.63	-	-	74	-25.37	87	125	H
	* 8.114	26.76	MAv1	36	-25.5	37.26	54	-16.74	-	-	87	125	H
3	* 11.67	36.85	PK2	38.3	-22.1	53.05	-	-	74	-20.95	79	153	H
	* 11.668	25.72	MAv1	38.3	-22	42.02	54	-11.98	-	-	79	153	H
4	* 3.936	41.49	PK2	33.4	-29.3	45.59	-	-	74	-28.41	90	227	V
	* 3.936	29.97	MAv1	33.4	-29.3	34.07	54	-19.93	-	-	90	227	V
6	* 12.653	37.56	PK2	39.6	-24.1	53.06	-	-	74	-20.94	231	201	V
	* 12.651	26.08	MAv1	39.6	-24.1	41.58	54	-12.42	-	-	231	201	V
5	6.519	40.8	PK2	35.7	-28	48.5	-	-	-	-	76	220	V

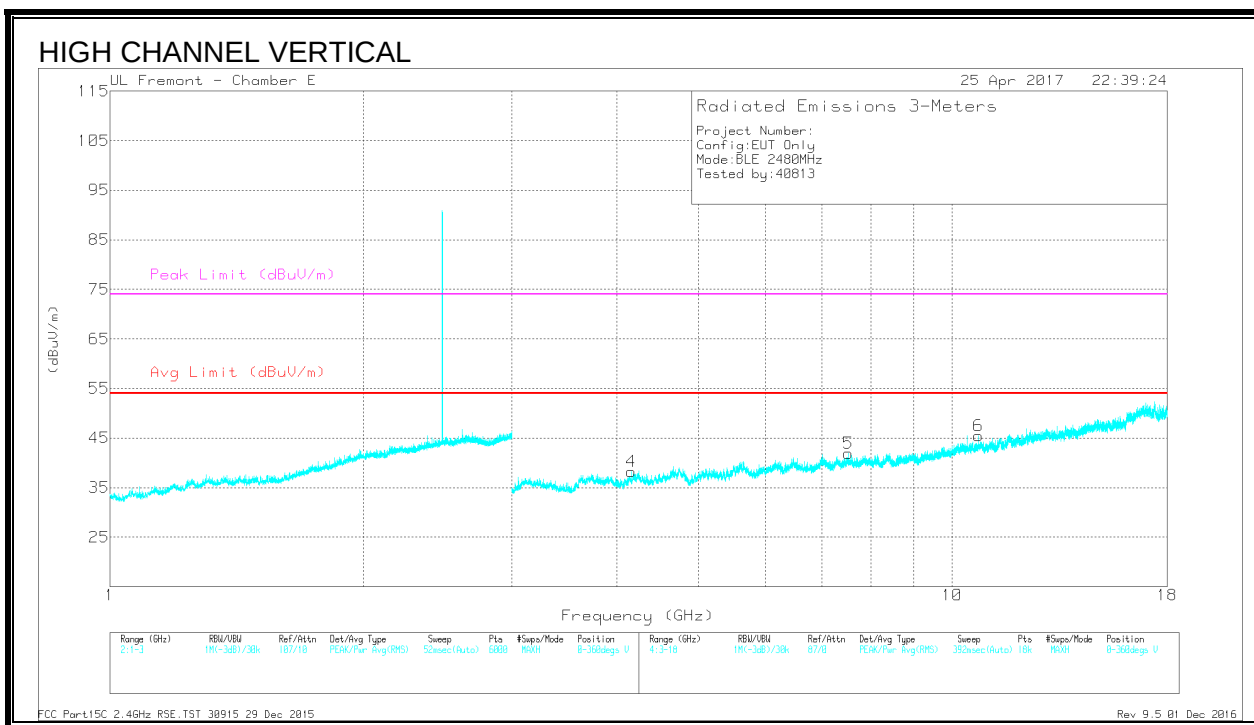
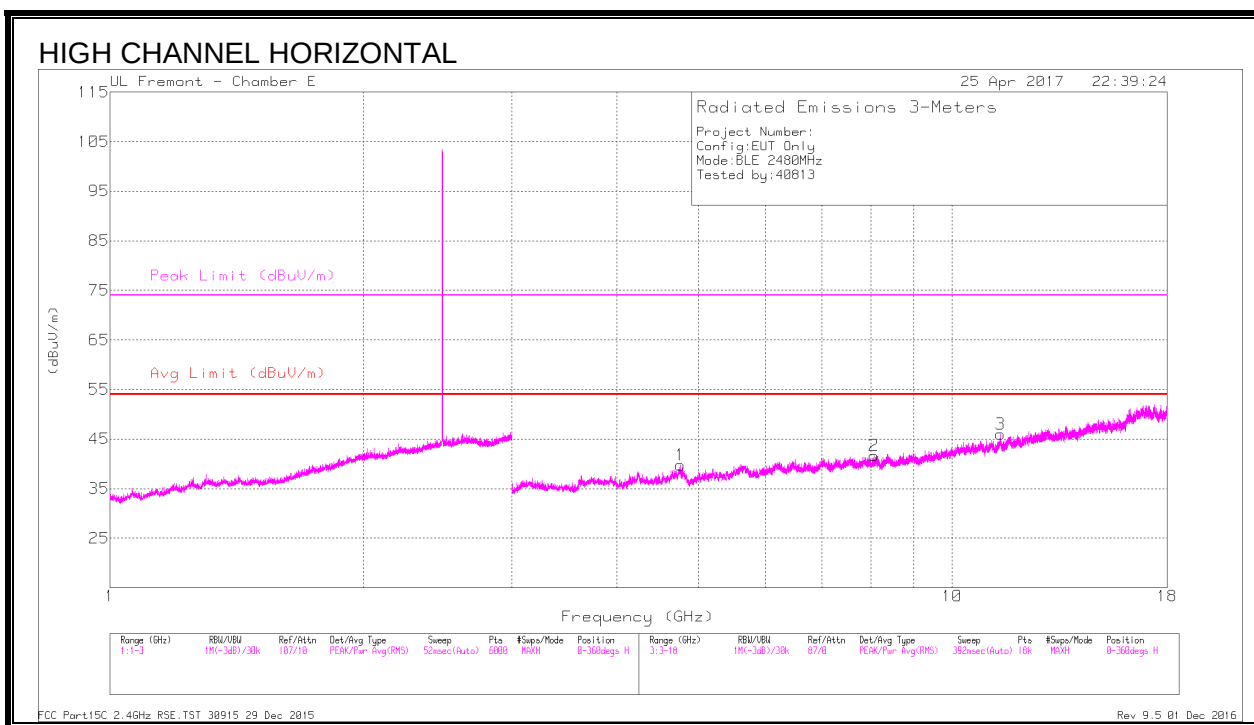
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/ 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	* 4.754	40.42	PK2	34.3	-29	45.72	-	-	74	-28.28	53	128	H
	* 4.755	28.8	MAv1	34.3	-29.1	34	54	-20	-	-	53	128	H
2	* 8.081	38.62	PK2	36	-26.4	48.22	-	-	74	-25.78	282	235	H
	* 8.081	26.7	MAv1	36	-26.4	36.3	54	-17.7	-	-	282	235	H
3	* 11.401	36.1	PK2	38	-21.6	52.5	-	-	74	-21.5	27	124	H
	* 11.4	24.36	MAv1	38	-21.6	40.76	54	-13.24	-	-	27	124	H
4	* 4.158	42.17	PK2	33.5	-30.5	45.17	-	-	74	-28.83	34	217	V
	* 4.157	30.43	MAv1	33.5	-30.5	33.43	54	-20.57	-	-	34	217	V
5	* 7.528	38.11	PK2	36.1	-26.4	47.81	-	-	74	-26.19	57	225	V
	* 7.528	27.07	MAv1	36.1	-26.4	36.77	54	-17.23	-	-	57	225	V
6	* 10.744	36.99	PK2	37.6	-23.3	51.29	-	-	74	-22.71	45	227	V
	* 10.747	25.6	MAv1	37.6	-23.4	39.8	54	-14.2	-	-	45	227	V

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

PK2 - KDB558074 Method: Maximum Peak

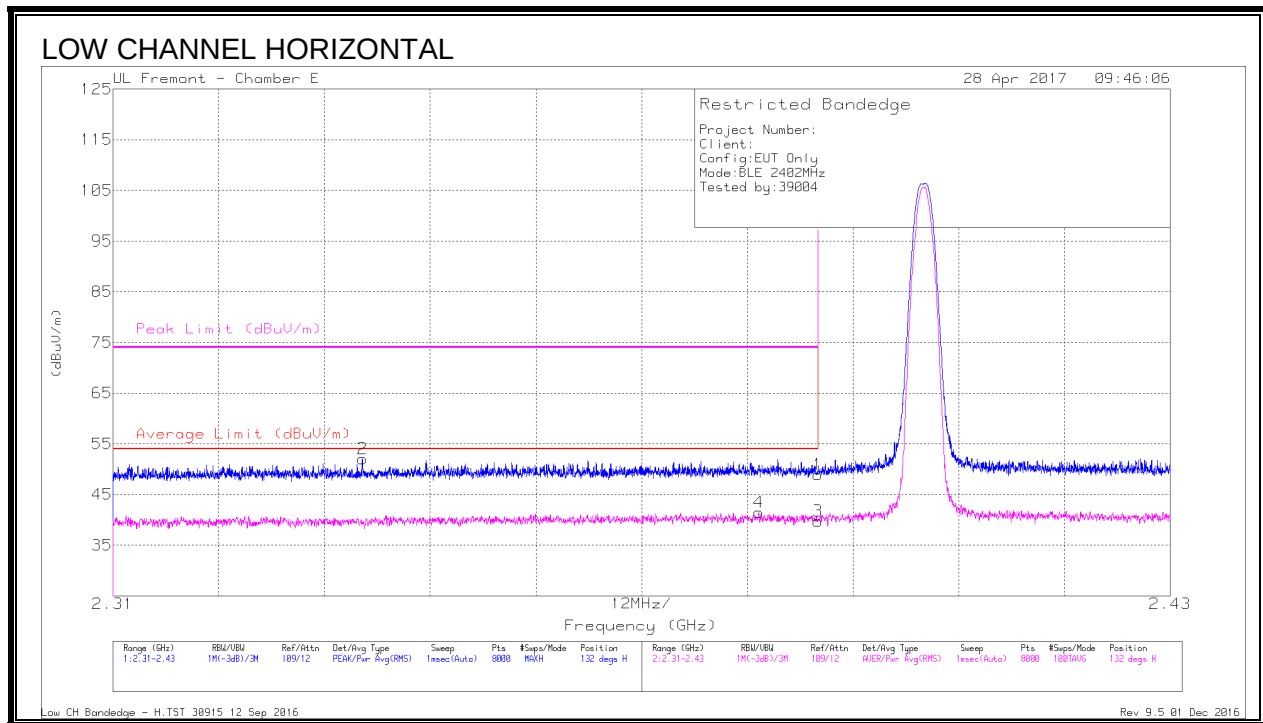
MAv1 - KDB558074 Option 1 Maximum RMS Average

FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015

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8.4. LAT 3 PMAX

8.4.1. RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Ch/Fl tr/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	36.65	Pk	32	-19.7	48.95	-	-	74	-25.05	132	171	H
2	* 2.338	40.06	Pk	31.8	-19.8	52.06	-	-	74	-21.94	132	171	H
3	* 2.39	27.45	RMS	32	-19.7	39.75	54	-14.25	-	-	132	171	H
4	* 2.383	28.98	RMS	32	-19.5	41.48	54	-12.52	-	-	132	171	H

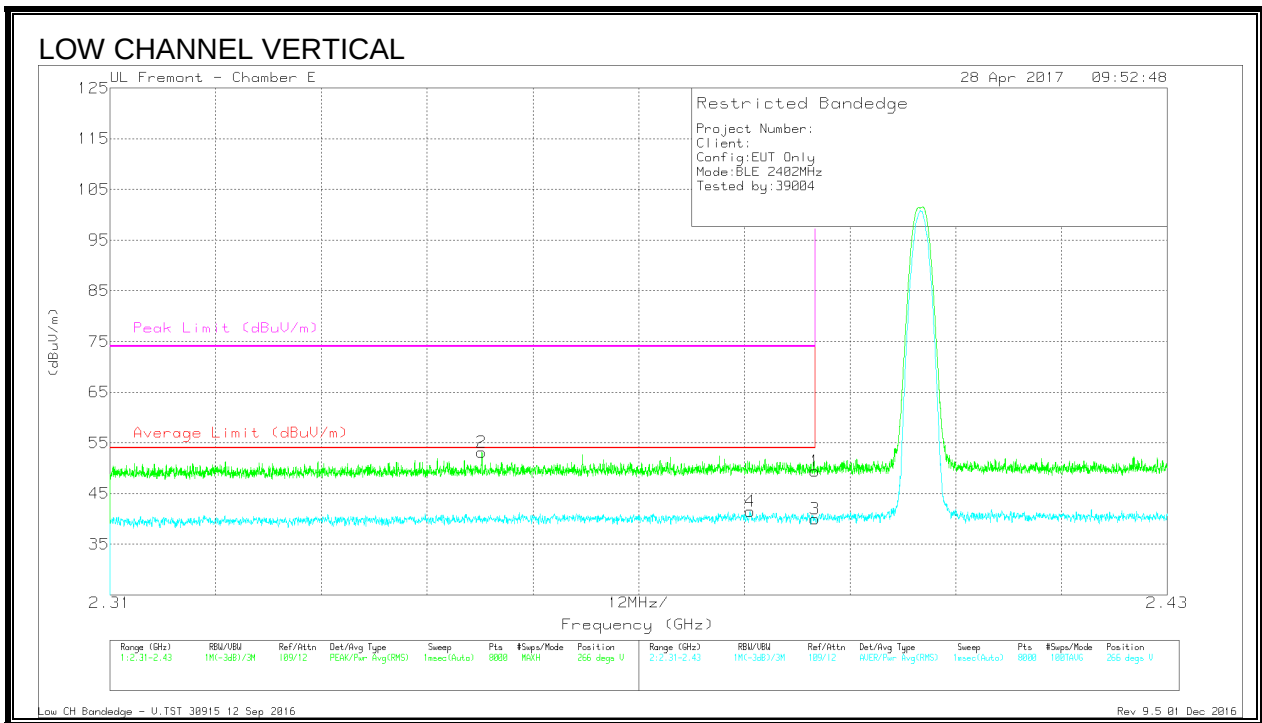
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.07	Pk	32	-19.7	49.37	-	-	74	-24.63	266	170	V
2	* 2.352	40.95	Pk	31.9	-19.7	53.15	-	-	74	-20.85	266	170	V
3	* 2.39	27.66	RMS	32	-19.7	39.96	54	-14.04	-	-	266	170	V
4	* 2.383	28.96	RMS	32	-19.5	41.46	54	-12.54	-	-	266	170	V

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

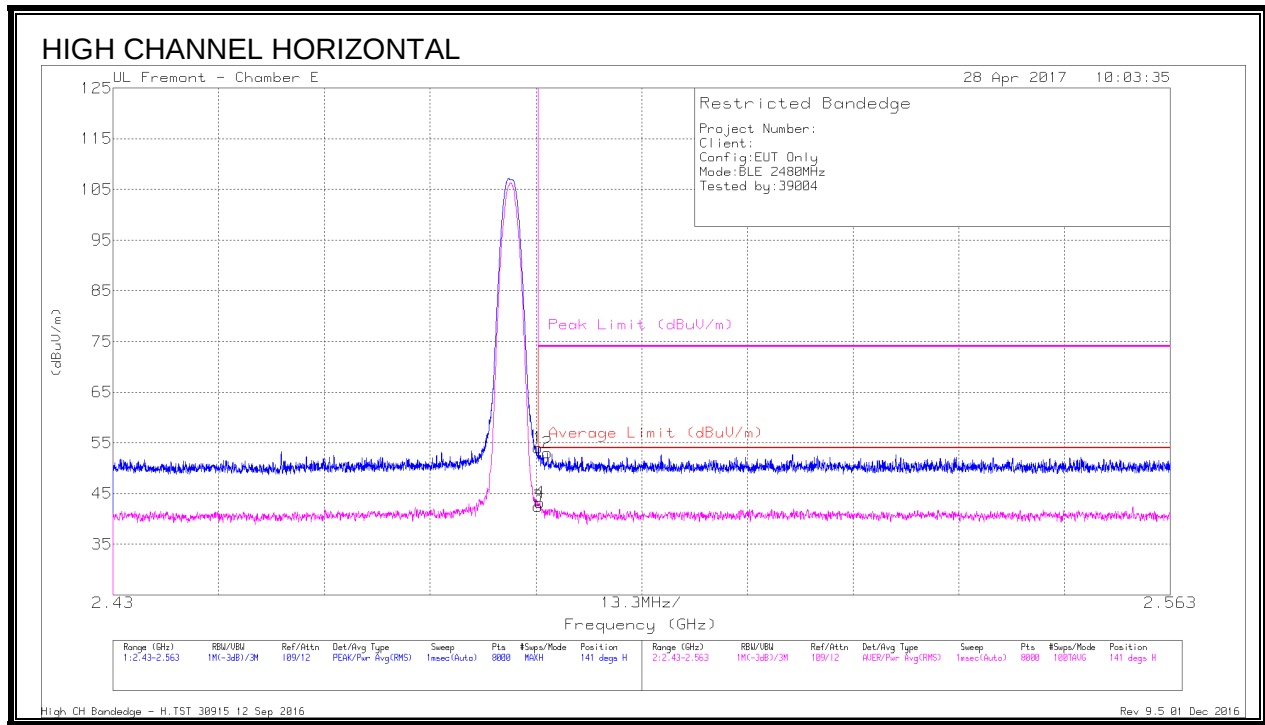
Pk - Peak detector

RMS - RMS detection

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8.4.2. AUTHORIZED BANDEGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	41.26	Pk	32.5	-19.7	54.06	-	-	74	-19.94	141	115	H
2	* 2.485	40.22	Pk	32.5	-19.7	53.02	-	-	74	-20.98	141	115	H
3	* 2.484	29.67	RMS	32.5	-19.7	42.47	54	-11.53	-	-	141	115	H
4	* 2.484	30.47	RMS	32.5	-19.7	43.27	54	-10.73	-	-	141	115	H

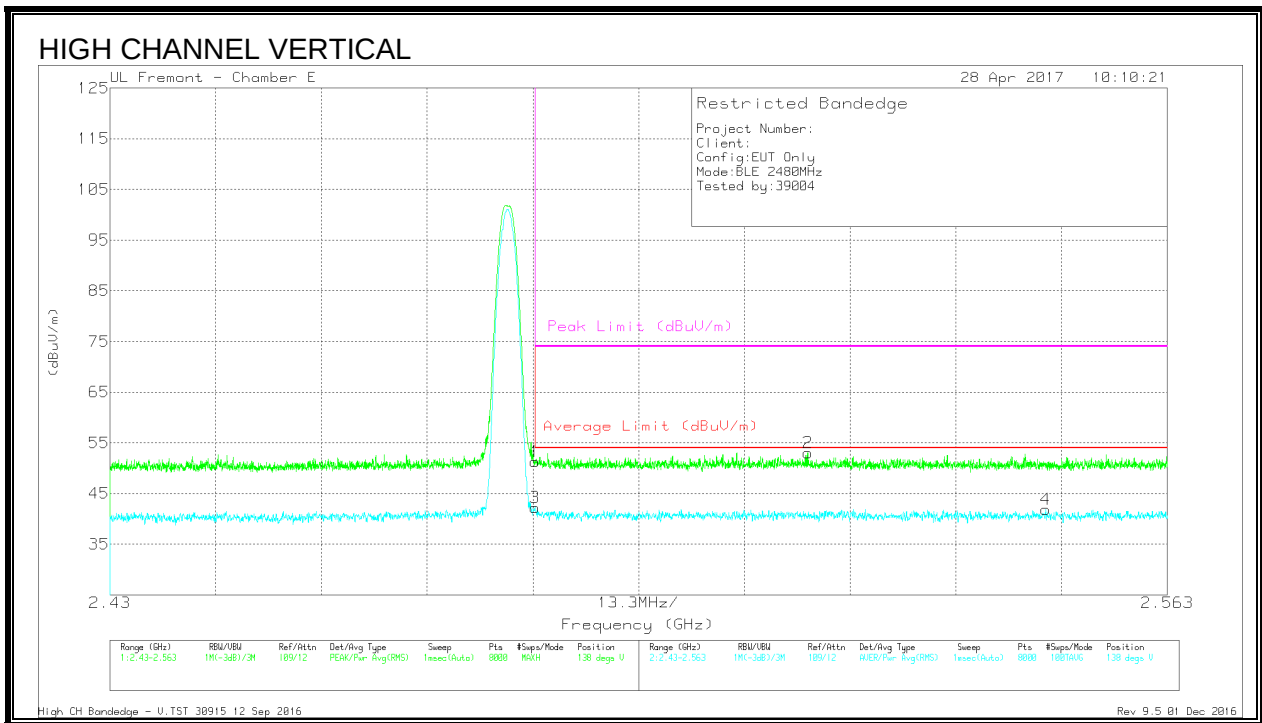
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	38.44	Pk	32.5	-19.7	51.24	-	-	74	-22.76	138	266	V
3	* 2.484	29.41	RMS	32.5	-19.7	42.21	54	-11.79	-	-	138	266	V
2	2.518	40.2	Pk	32.6	-19.8	53	-	-	74	-21	138	266	V
4	2.548	29.26	RMS	32.5	-19.9	41.86	54	-12.14	-	-	138	266	V

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

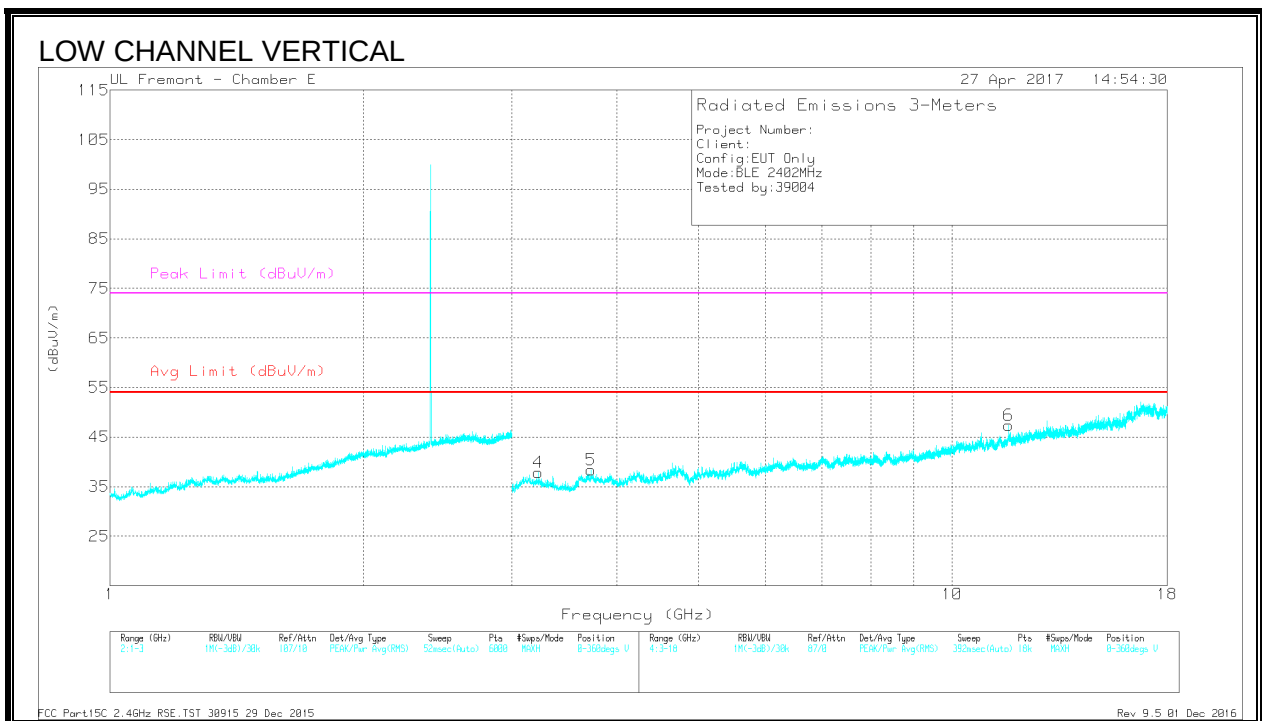
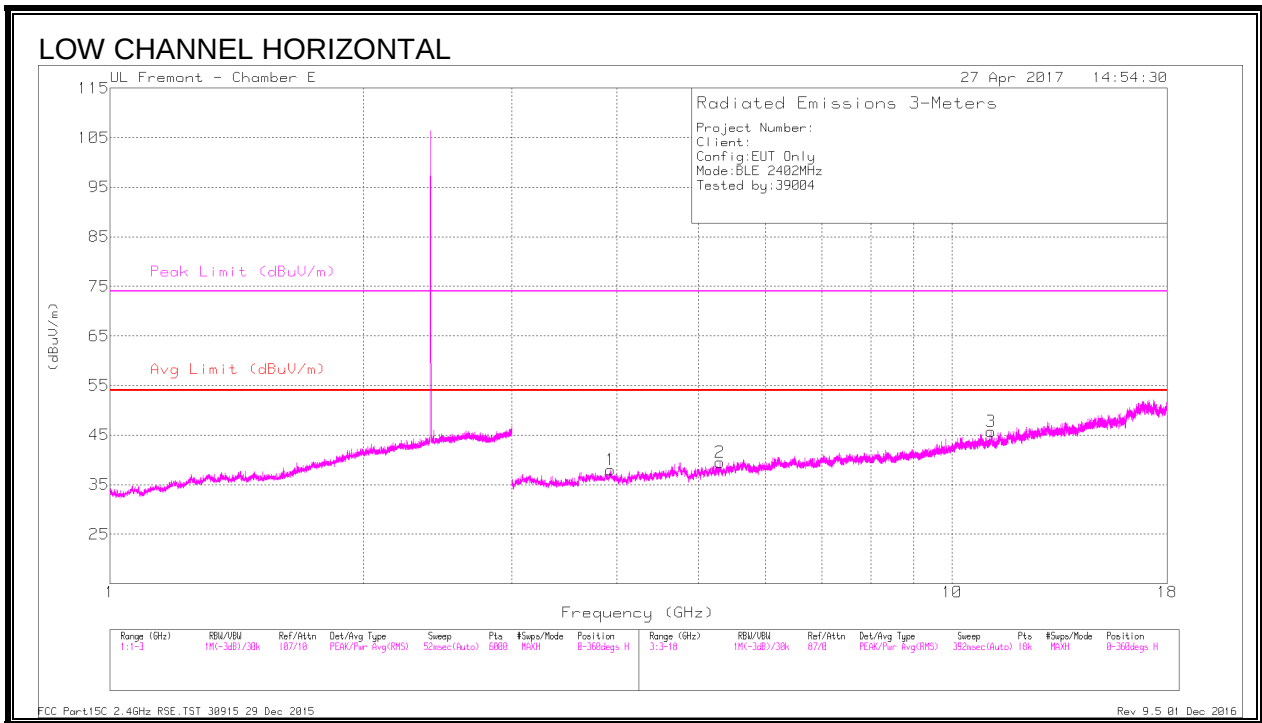
Pk - Peak detector

RMS - RMS detection

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8.4.3. HARMONICS AND SPURIOUS EMISSIONS



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/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	* 3.928	40.02	PKFH	33.4	-29.5	43.92	-	-	74	-30.08	330	156	H
	* 3.929	28.38	VA1T	33.4	-29.5	32.28	54	-21.72	-	-	330	156	H
3	* 11.122	35.88	PKFH	37.7	-22.7	50.88	-	-	74	-23.12	295	138	H
	* 11.123	23.86	VA1T	37.7	-22.7	38.86	54	-15.14	-	-	295	138	H
5	* 3.726	41.68	PKFH	33.4	-30	45.08	-	-	74	-28.92	308	116	V
	* 3.727	29.28	VA1T	33.4	-29.9	32.78	54	-21.22	-	-	308	116	V
6	* 11.672	36.33	PKFH	38.3	-22.1	52.53	-	-	74	-21.47	276	212	V
	* 11.669	23.79	VA1T	38.3	-22.1	39.99	54	-14.01	-	-	276	212	V
4	3.225	40.66	PKFH	33.1	-30.8	42.96	-	-	-	-	220	112	V
2	5.299	40.03	PKFH	34.8	-29.8	45.03	-	-	-	-	249	126	H

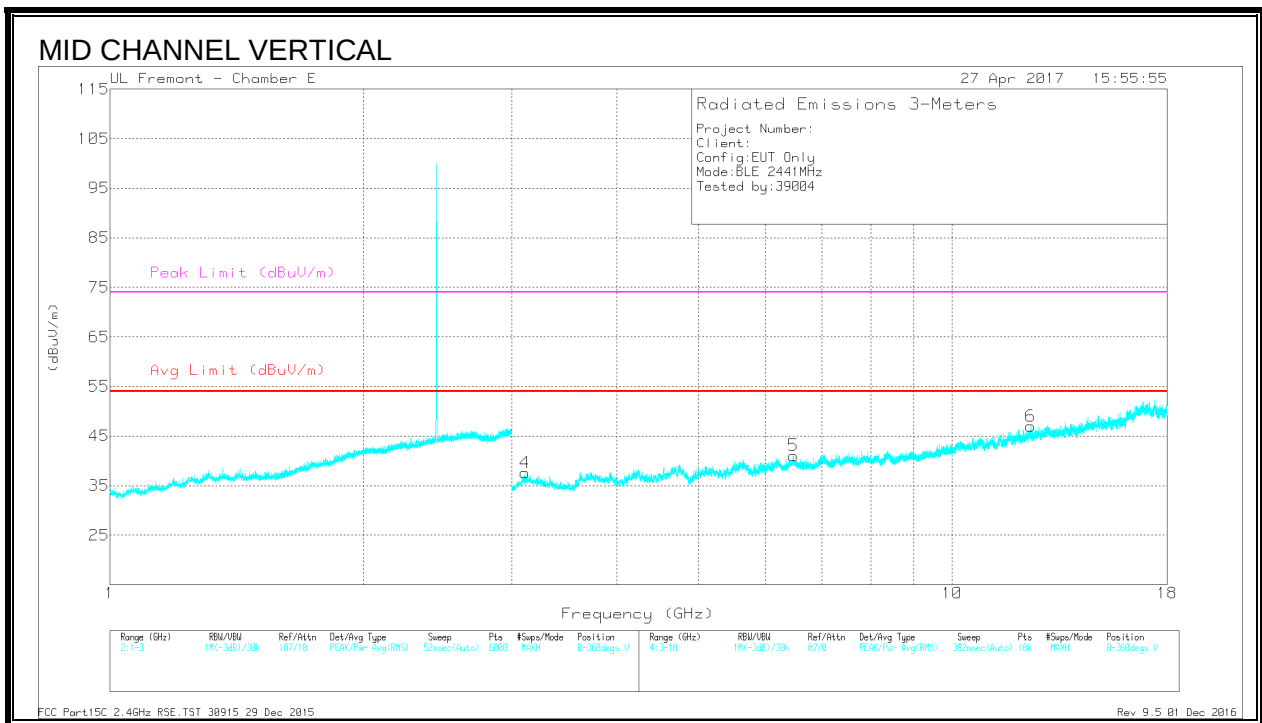
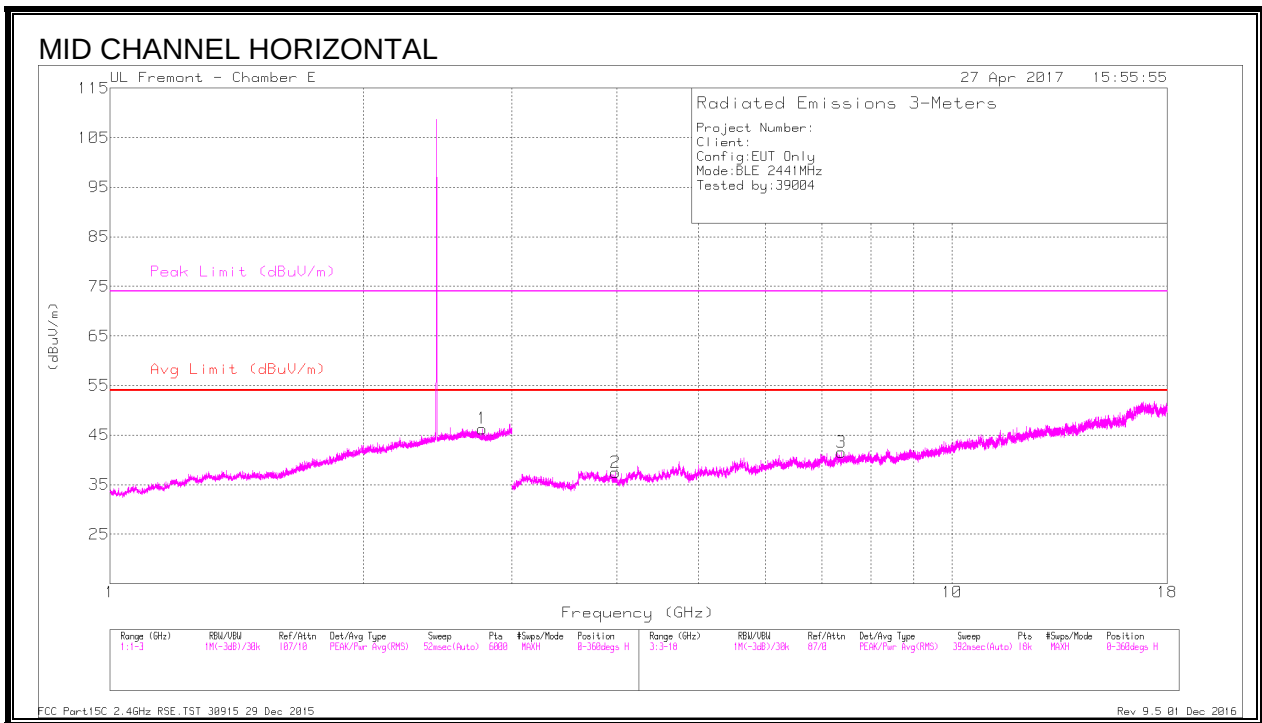
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/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	* 2.765	37.09	PKFH	32.3	-19.7	49.69	-	-	74	-24.31	45	156	H
	* 2.764	25.32	VA1T	32.3	-19.6	38.02	54	-15.98	-	-	45	156	H
2	* 3.982	39.65	PKFH	33.3	-29.4	43.55	-	-	74	-30.45	51	118	H
	* 3.985	27.7	VA1T	33.3	-29.3	31.7	54	-22.3	-	-	51	118	H
3	* 7.381	38.48	PKFH	35.9	-27.6	46.78	-	-	74	-27.22	66	130	H
	* 7.383	26.18	VA1T	35.9	-27.6	34.48	54	-19.52	-	-	66	130	H
6	* 12.386	35.75	PKFH	39.2	-23.3	51.65	-	-	74	-22.35	100	236	V
	* 12.384	24.06	VA1T	39.2	-23.4	39.86	54	-14.14	-	-	100	236	V
4	3.111	39.64	PKFH	33.2	-30	42.84	-	-	-	-	105	123	V
5	6.481	38.8	PKFH	35.7	-27.4	47.1	-	-	-	-	110	177	V

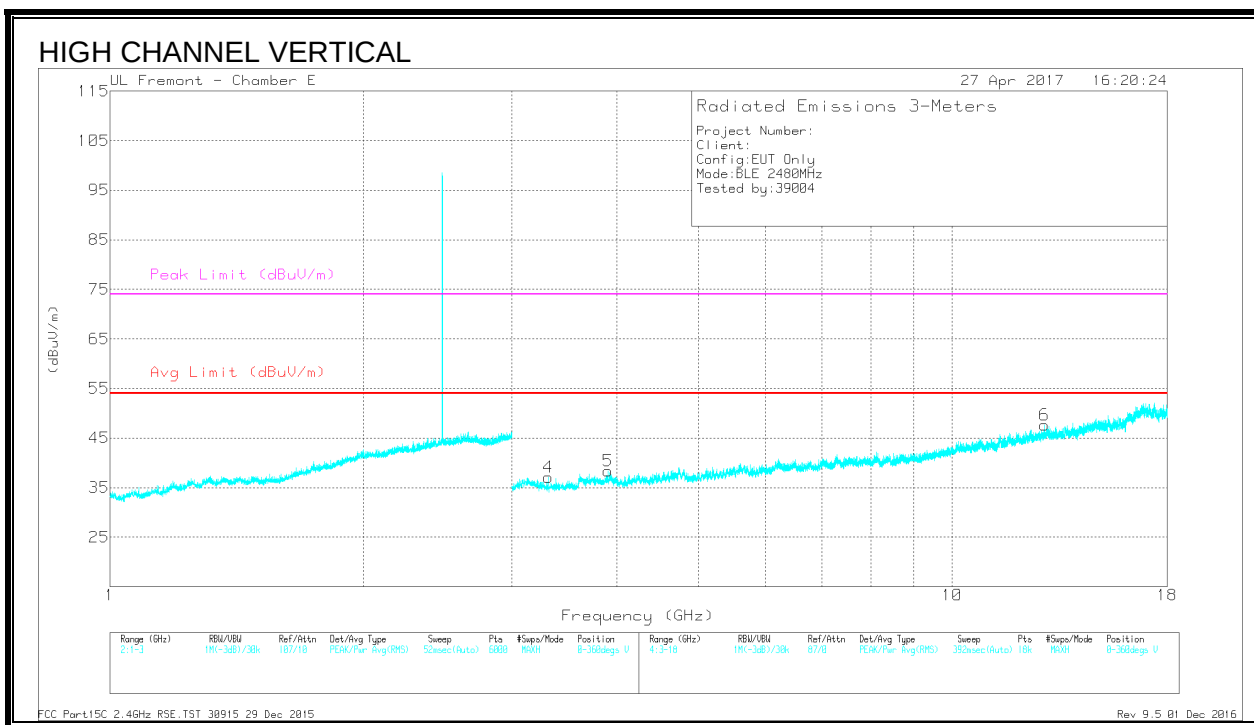
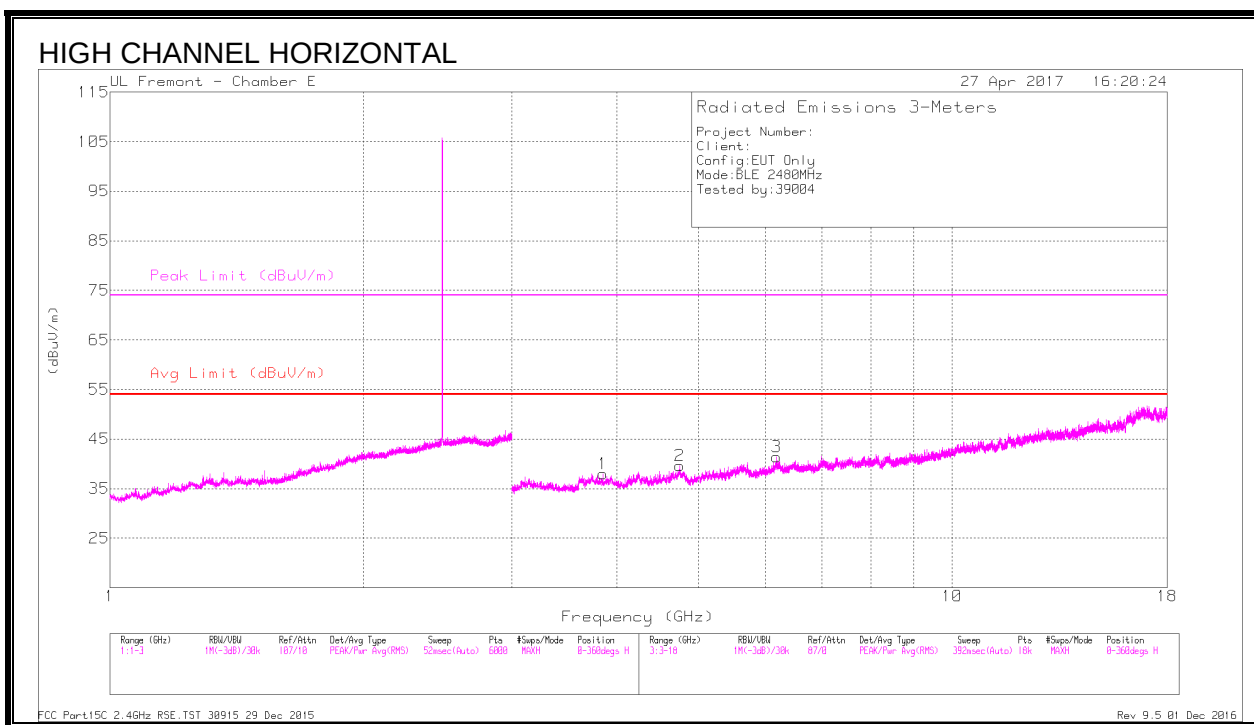
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/FI tr/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	* 3.846	41.74	PKFH	33.4	-31.1	44.04	-	-	74	-29.96	101	187	H
	* 3.847	29.39	VA1T	33.4	-31.1	31.69	54	-22.31	-	-	101	187	H
2	* 4.748	39.75	PKFH	34.3	-29	45.05	-	-	74	-28.95	77	235	H
	* 4.745	27.93	VA1T	34.3	-29.1	33.13	54	-20.87	-	-	77	235	H
5	* 3.9	40.59	PKFH	33.4	-30.2	43.79	-	-	74	-30.21	121	198	V
	* 3.901	28.85	VA1T	33.4	-30.2	32.05	54	-21.95	-	-	121	198	V
4	3.313	40.13	PKFH	32.7	-31	41.83	-	-	-	-	150	177	V
3	6.183	37.95	PKFH	35.7	-27.5	46.15	-	-	-	-	133	245	H
6	12.87	36.36	PKFH	39.9	-24.3	51.96	-	-	-	-	154	211	V

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

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

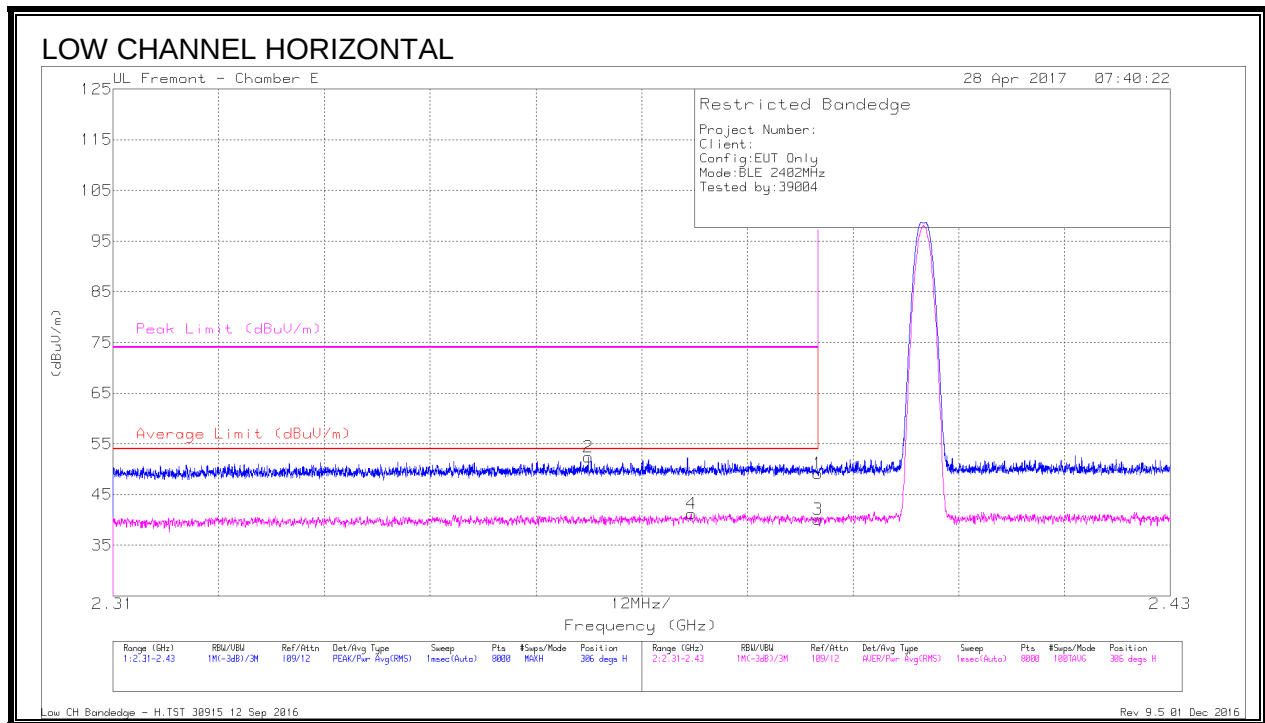
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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8.5. LAT 3 PLOW

8.5.1. RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.92	Pk	32	-19.7	49.22	-	-	74	-24.78	306	101	H
2	* 2.364	40.2	Pk	31.9	-19.7	52.4	-	-	74	-21.6	306	101	H
3	* 2.39	27.84	RMS	32	-19.7	40.14	54	-13.86	-	-	306	101	H
4	* 2.376	29.07	RMS	32	-19.8	41.27	54	-12.73	-	-	306	101	H

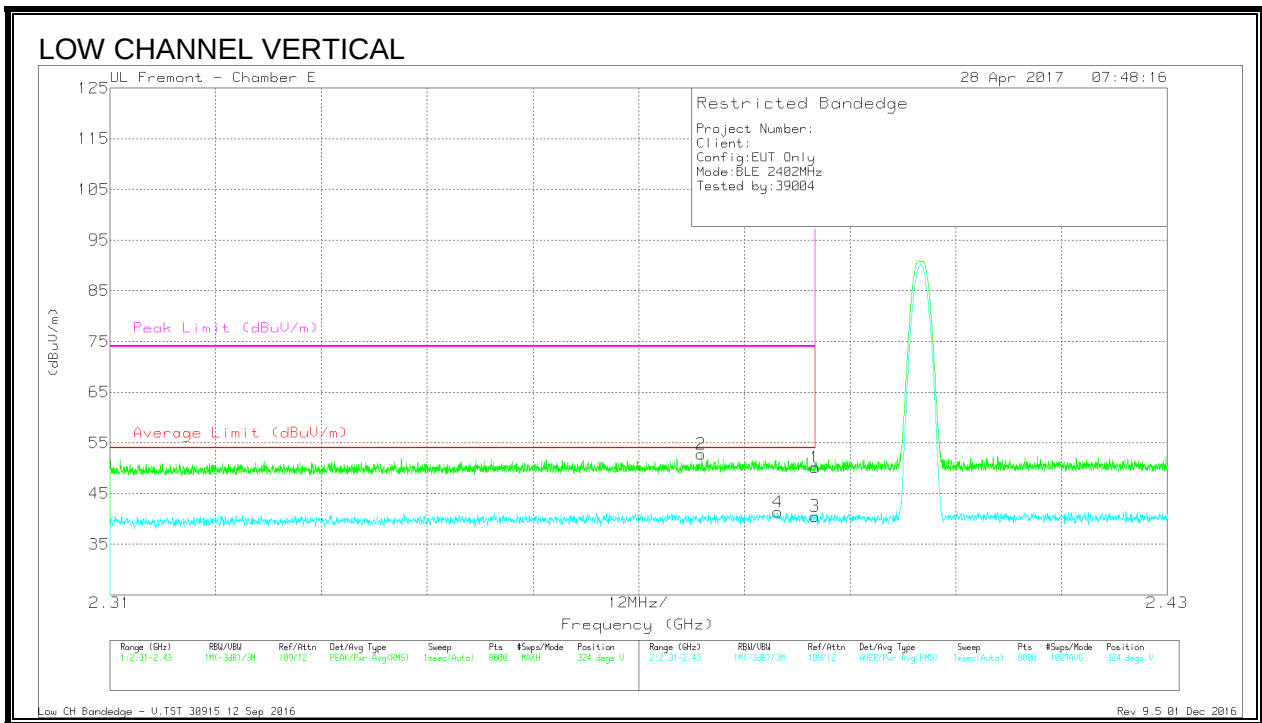
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.82	Pk	32	-19.7	50.12	-	-	74	-23.88	324	119	V
2	* 2.377	40.45	Pk	32	-19.7	52.75	-	-	74	-21.25	324	119	V
3	* 2.39	28.24	RMS	32	-19.7	40.54	54	-13.46	-	-	324	119	V
4	* 2.386	28.9	RMS	32	-19.6	41.3	54	-12.7	-	-	324	119	V

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

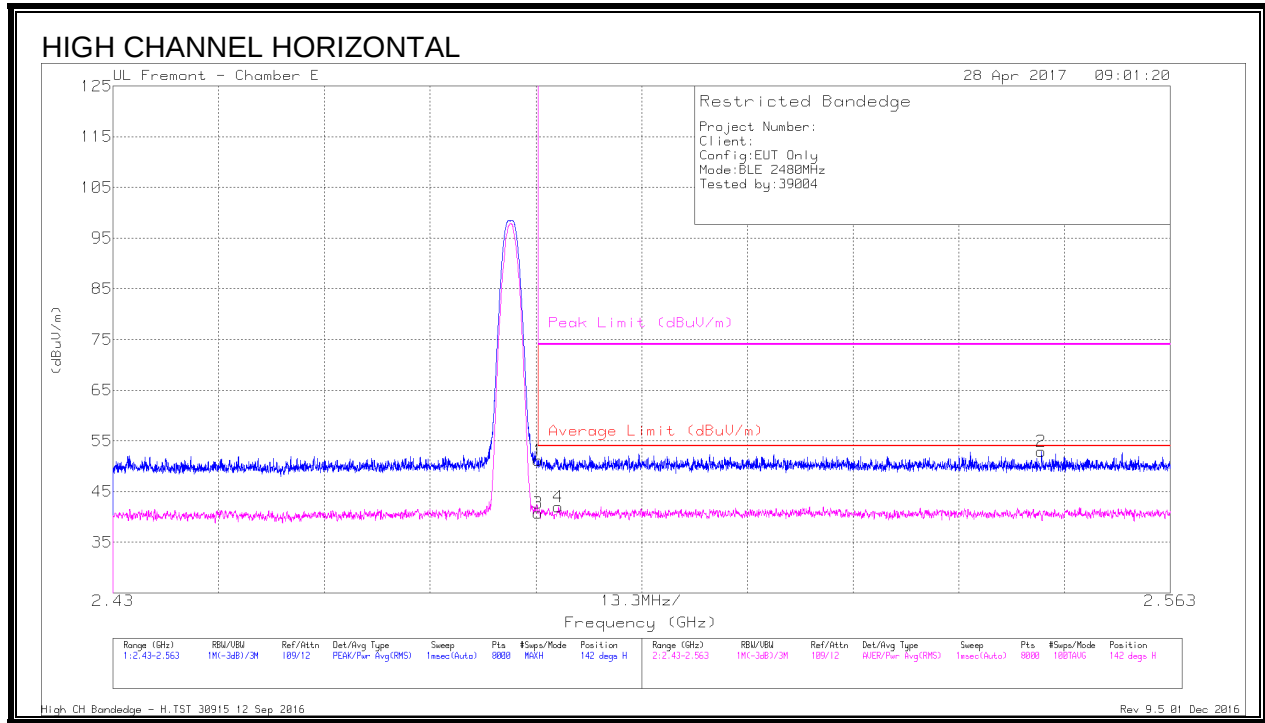
Pk - Peak detector

RMS - RMS detection

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8.5.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	38.38	Pk	32.5	-19.7	51.18	-	-	74	-22.82	142	116	H
3	* 2.484	27.93	RMS	32.5	-19.7	40.73	54	-13.27	-	-	142	116	H
4	* 2.486	29.29	RMS	32.5	-19.8	41.99	54	-12.01	-	-	142	116	H
2	2.547	40.35	Pk	32.5	-19.9	52.95	-	-	74	-21.05	142	116	H

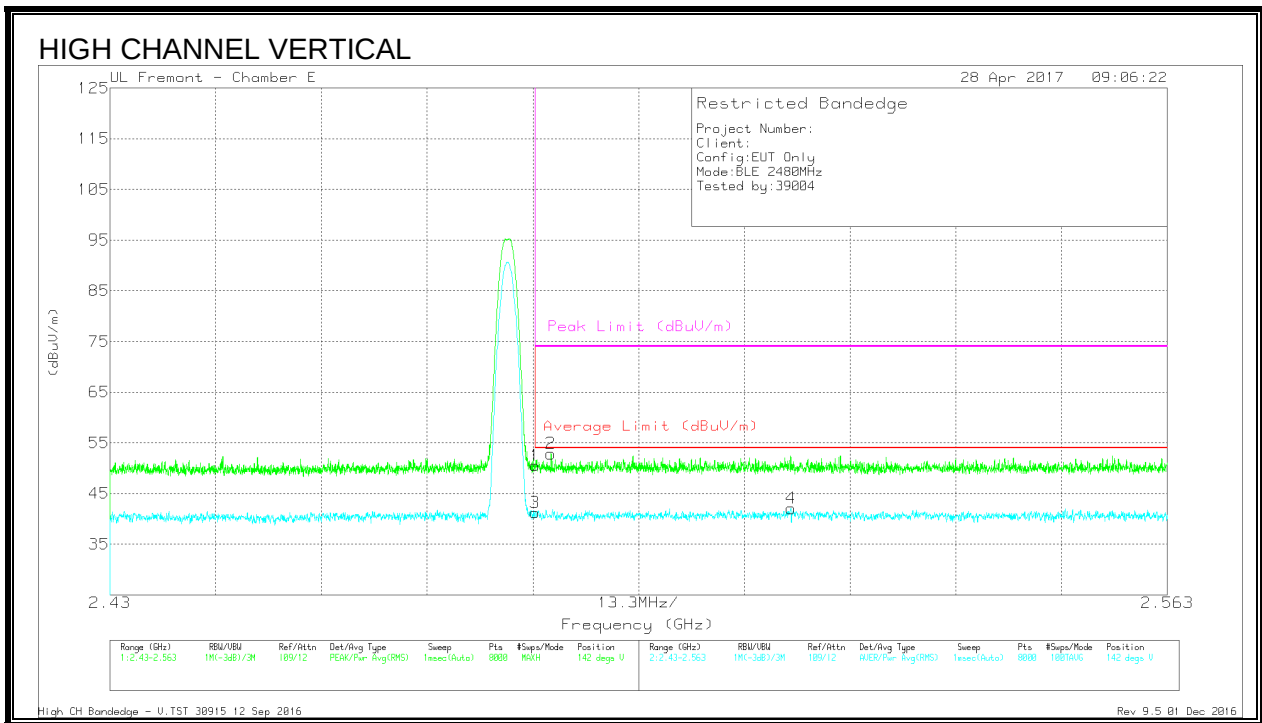
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	37.79	Pk	32.5	-19.7	50.59	-	-	74	-23.41	142	116	V
2	* 2.485	40.04	Pk	32.5	-19.7	52.84	-	-	74	-21.16	142	116	V
3	* 2.484	28.4	RMS	32.5	-19.7	41.2	54	-12.8	-	-	142	116	V
4	2.516	29.14	RMS	32.6	-19.7	42.04	54	-11.96	-	-	142	116	V

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

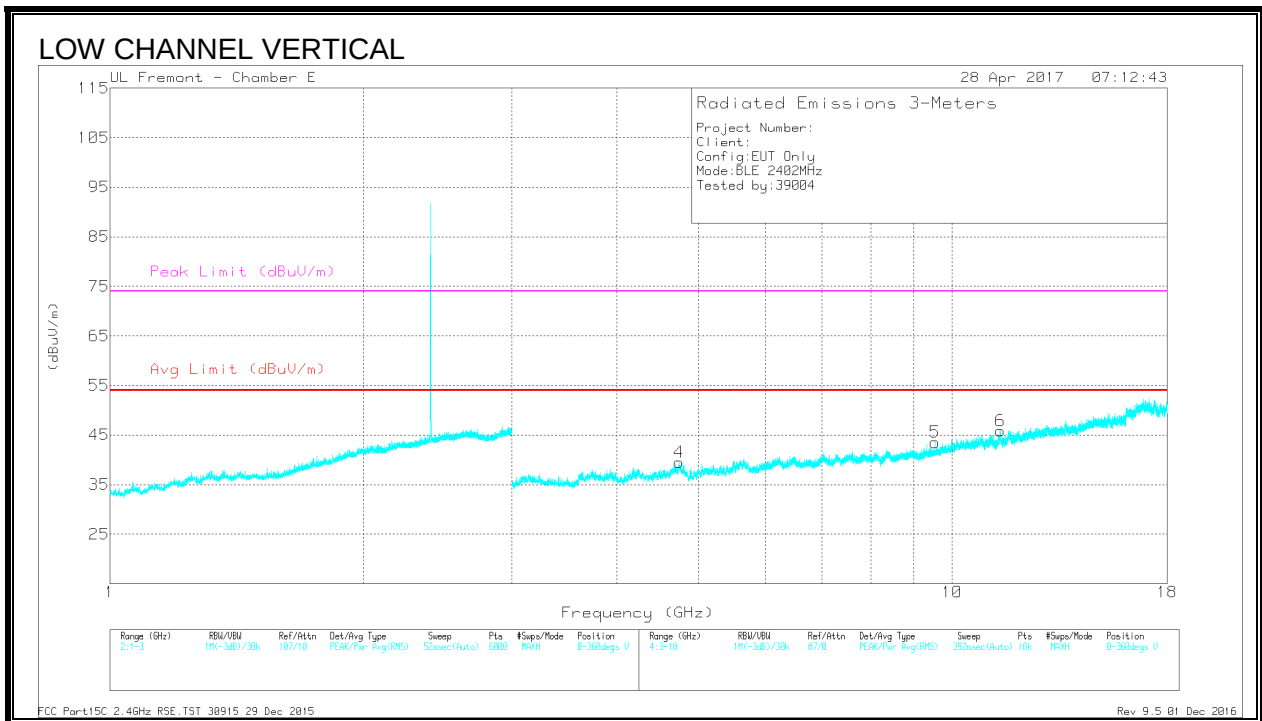
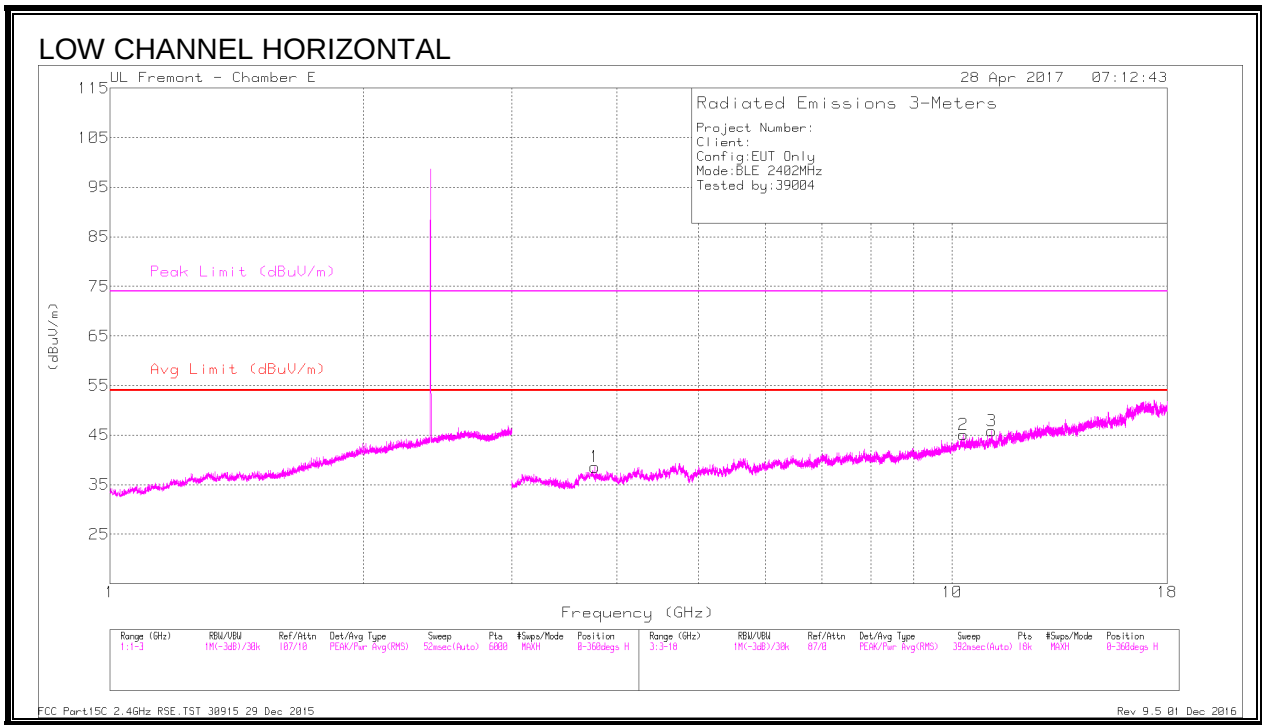
Pk - Peak detector

RMS - RMS detection

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8.5.3. HARMONICS AND SPURIOUS EMISSIONS



DATA

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	* 3.762	40.81	PKFH	33.4	-30.2	44.01	-	-	74	-29.99	102	144	H
	* 3.763	28.92	VA1T	33.4	-30.2	32.12	54	-21.88	-	-	102	144	H
3	* 11.146	35.09	PKFH	37.8	-22.5	50.39	-	-	74	-23.61	120	178	H
	* 11.147	23.65	VA1T	37.8	-22.5	38.95	54	-15.05	-	-	120	178	H
4	* 4.74	39.95	PKFH	34.3	-28.9	45.35	-	-	74	-28.65	133	115	V
	* 4.738	28.03	VA1T	34.3	-28.9	33.43	54	-20.57	-	-	133	115	V
6	* 11.417	34.83	PKFH	38	-22	50.83	-	-	74	-23.17	98	215	V
	* 11.414	23.08	VA1T	38	-21.9	39.18	54	-14.82	-	-	98	215	V
5	9.537	36.61	PKFH	36.6	-24.7	48.51	-	-	-	-	46	100	V
2	10.316	36.13	PKFH	37.3	-23.3	50.13	-	-	-	-	56	188	H

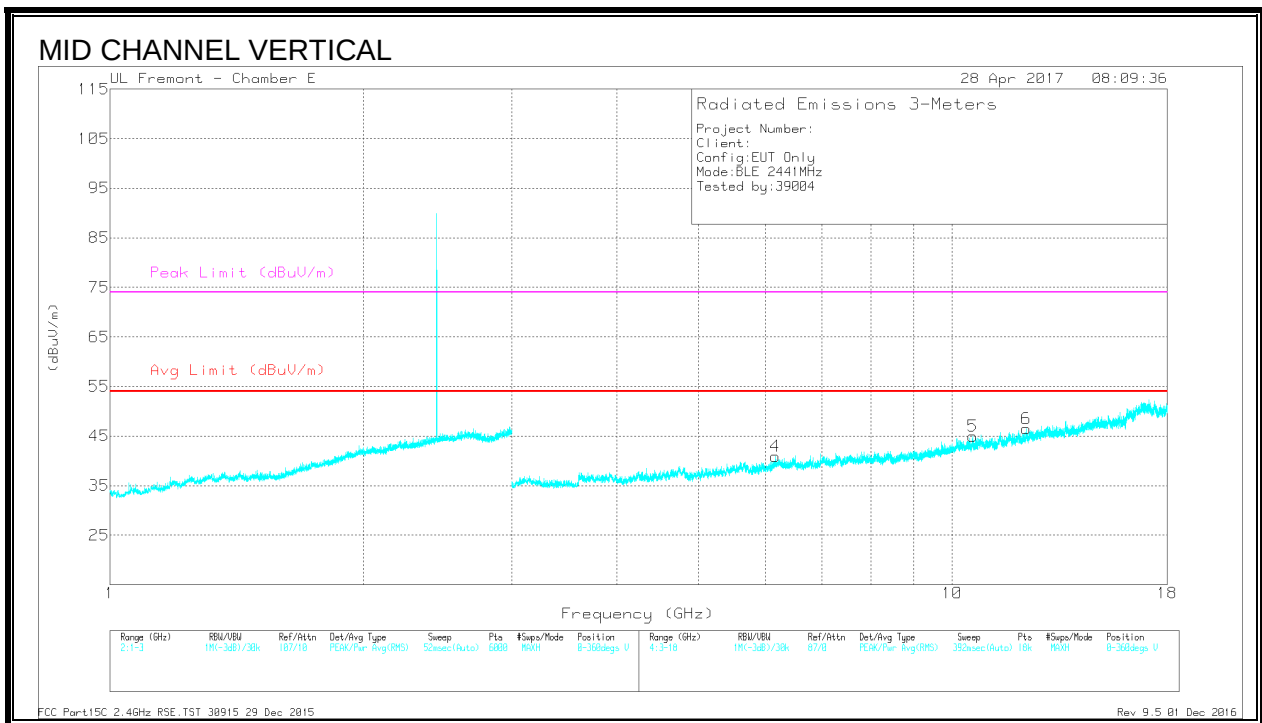
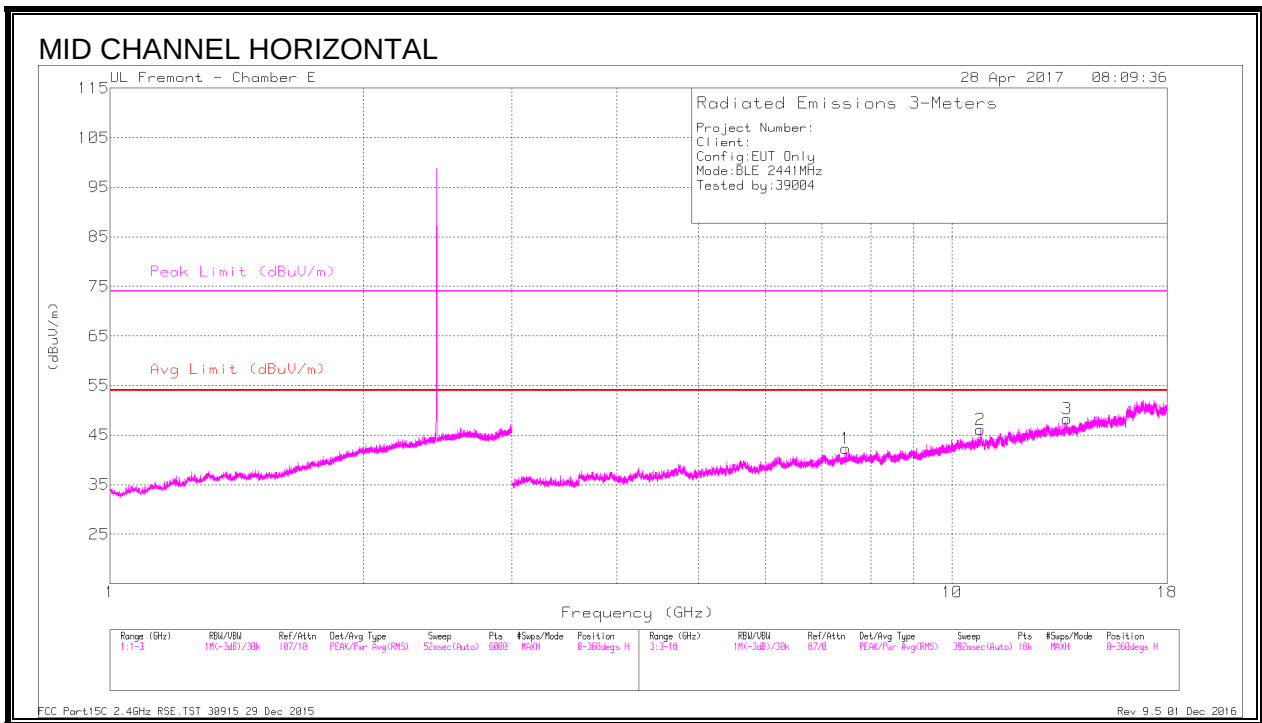
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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DATA

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	* 7.481	37.55	PKFH	36	-26.9	46.65	-	-	74	-27.35	310	138	H
	* 7.482	25.79	VA1T	36	-26.9	34.89	54	-19.11	-	-	310	138	H
2	* 10.8	36.14	PKFH	37.6	-23.1	50.64	-	-	74	-23.36	296	112	H
	* 10.799	24.2	VA1T	37.6	-23.2	38.6	54	-15.4	-	-	296	112	H
6	* 12.253	36.02	PKFH	39.2	-23.3	51.92	-	-	74	-22.08	278	155	V
	* 12.254	24.15	VA1T	39.2	-23.3	40.05	54	-13.95	-	-	278	155	V
4	6.167	38.66	PKFH	35.7	-28	46.36	-	-	-	-	243	135	V
5	10.579	35.52	PKFH	37.6	-22.8	50.32	-	-	-	-	210	126	V
3	13.68	36.48	PKFH	39.3	-23	52.78	-	-	-	-	250	215	H

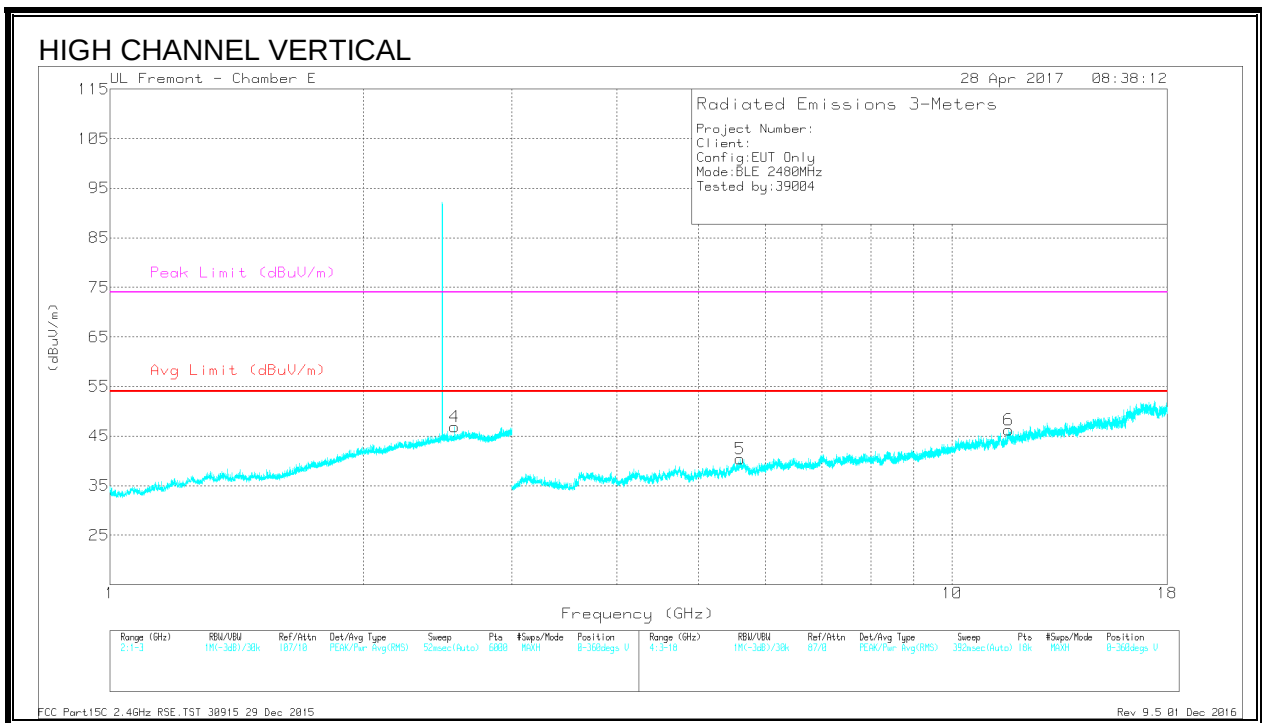
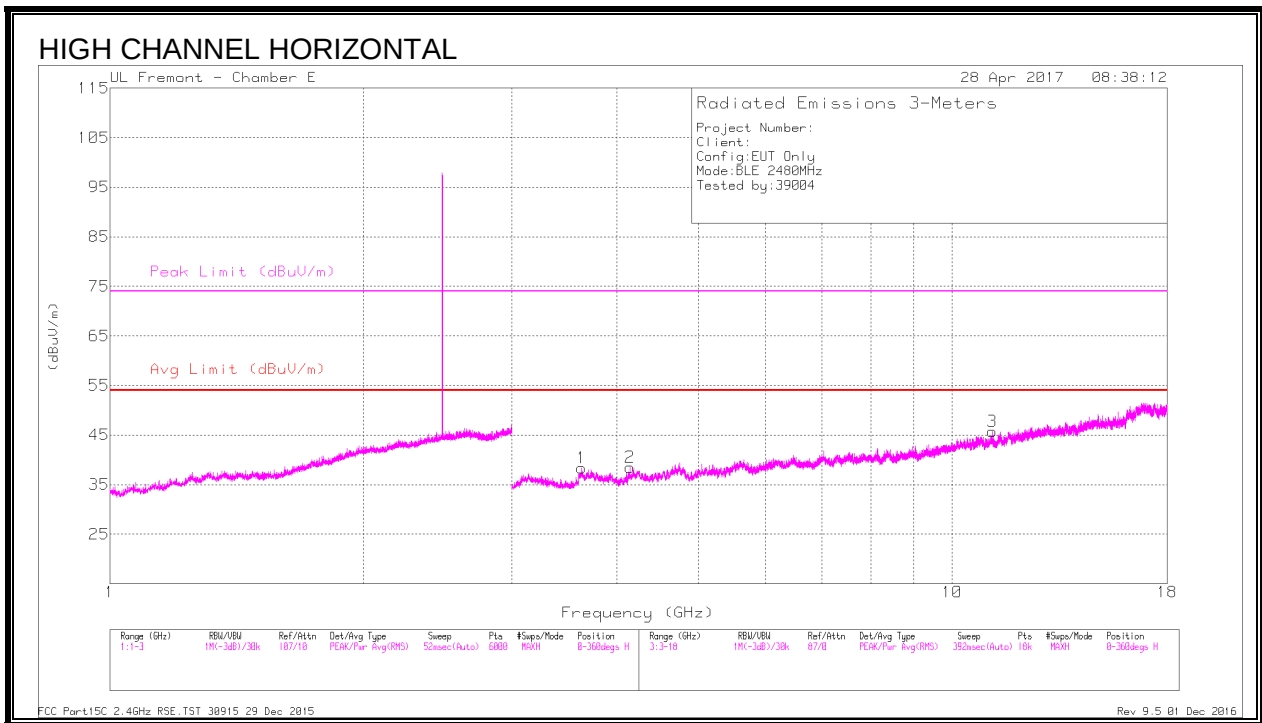
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015

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DATA

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	* 3.63	40.5	PKFH	33.1	-30.2	43.4	-	-	74	-30.6	330	144	H
	* 3.63	28.64	VA1T	33.1	-30.2	31.54	54	-22.46	-	-	330	144	H
2	* 4.145	40.14	PKFH	33.5	-30.5	43.14	-	-	74	-30.86	311	224	H
	* 4.147	28.83	VA1T	33.5	-30.6	31.73	54	-22.27	-	-	311	224	H
3	* 11.154	35.34	PKFH	37.8	-22.7	50.44	-	-	74	-23.56	255	122	H
	* 11.156	23.74	VA1T	37.8	-22.8	38.74	54	-15.26	-	-	255	122	H
6	* 11.669	35.34	PKFH	38.3	-22.1	51.54	-	-	74	-22.46	249	170	V
	* 11.667	23.74	VA1T	38.3	-22.1	39.94	54	-14.06	-	-	249	170	V
4	2.564	37.09	PKFH	32.5	-19.8	49.79	-	-	-	-	242	139	V
5	5.596	40	PKFH	35.4	-29.3	46.1	-	-	-	-	237	104	V

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

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak

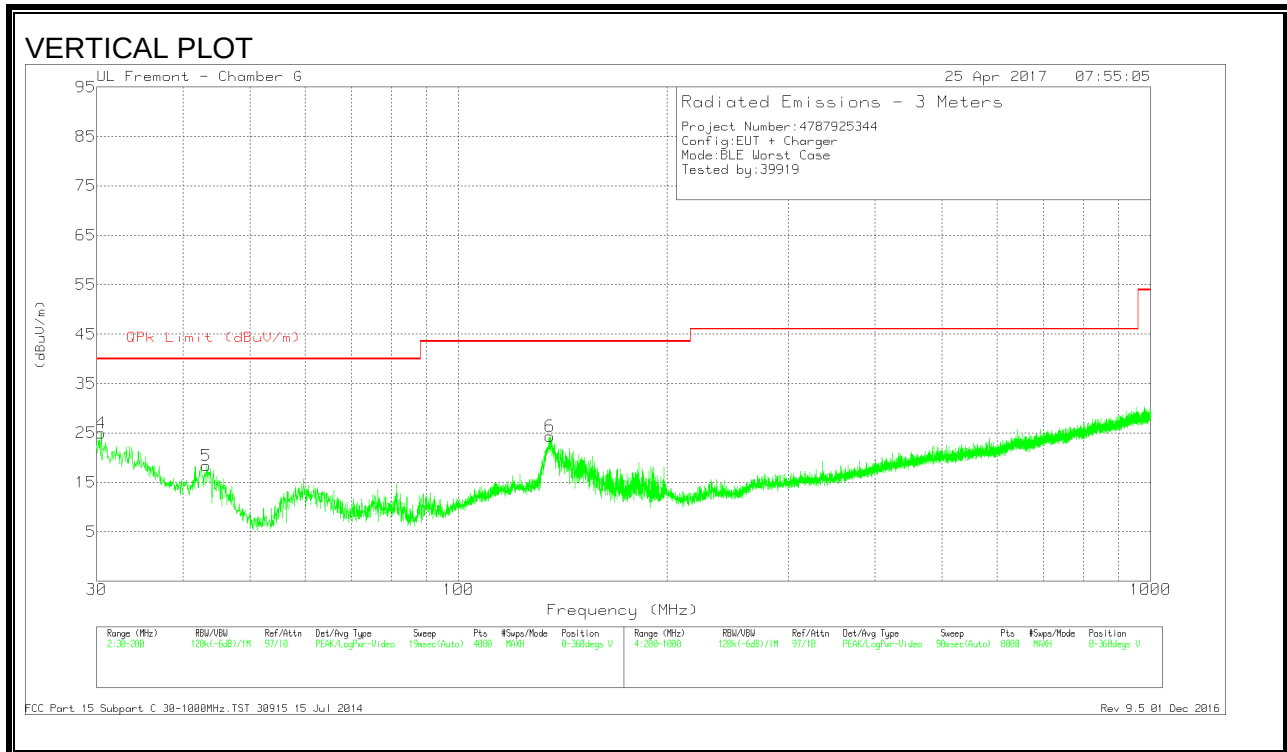
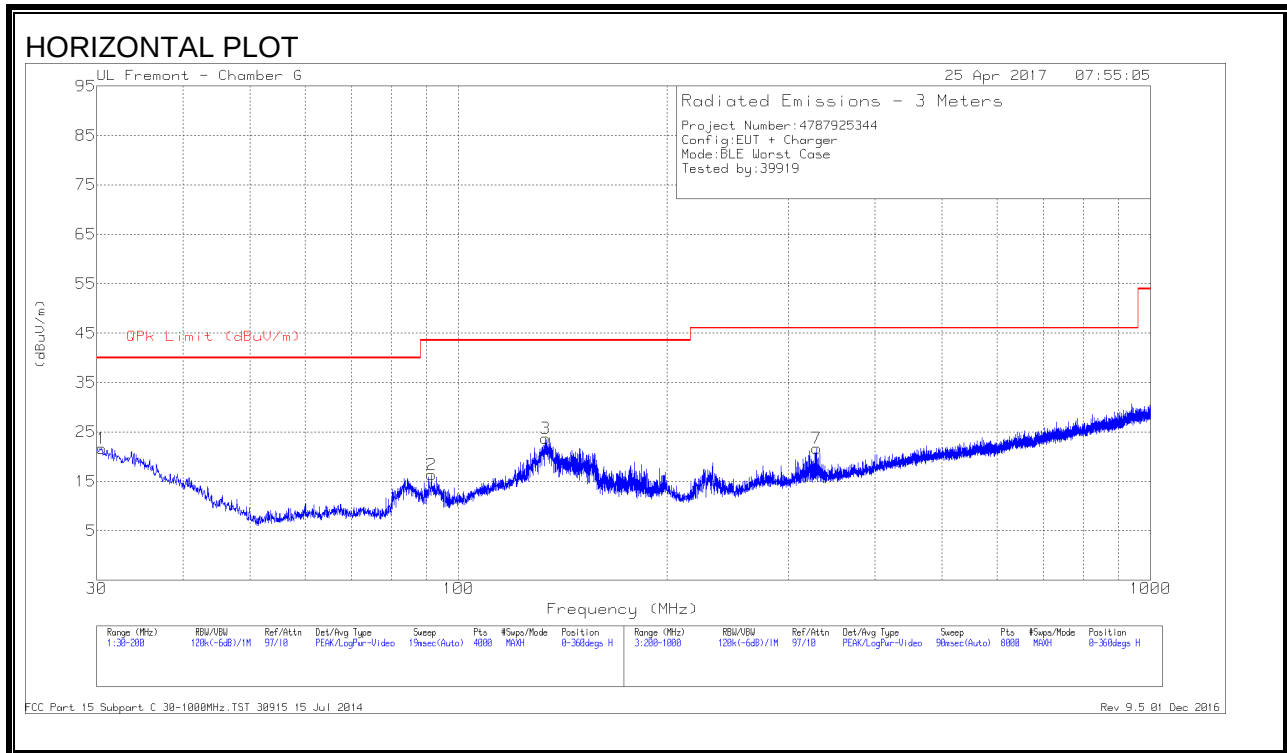
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016

8.6. WORST-CASE BELOW 1 GHz

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



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
3	* 133.6843	36.19	Pk	17.7	-30.2	23.69	43.52	-19.83	0-360	200	H
6	* 135.4698	36.88	Pk	17.7	-30.2	24.38	43.52	-19.14	0-360	100	V
7	* 329.0168	32.71	Pk	17.8	-28.8	21.71	46.02	-24.31	0-360	101	H
4	30.4251	30.94	Pk	25.3	-31.3	24.94	40	-15.06	0-360	100	V
1	30.4676	27.66	Pk	25.3	-31.3	21.66	40	-18.34	0-360	200	H
5	43.2209	33.65	Pk	15.8	-31.1	18.35	40	-21.65	0-360	100	V
2	91.3859	34.89	Pk	11.9	-30.5	16.29	43.52	-27.23	0-360	300	H

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

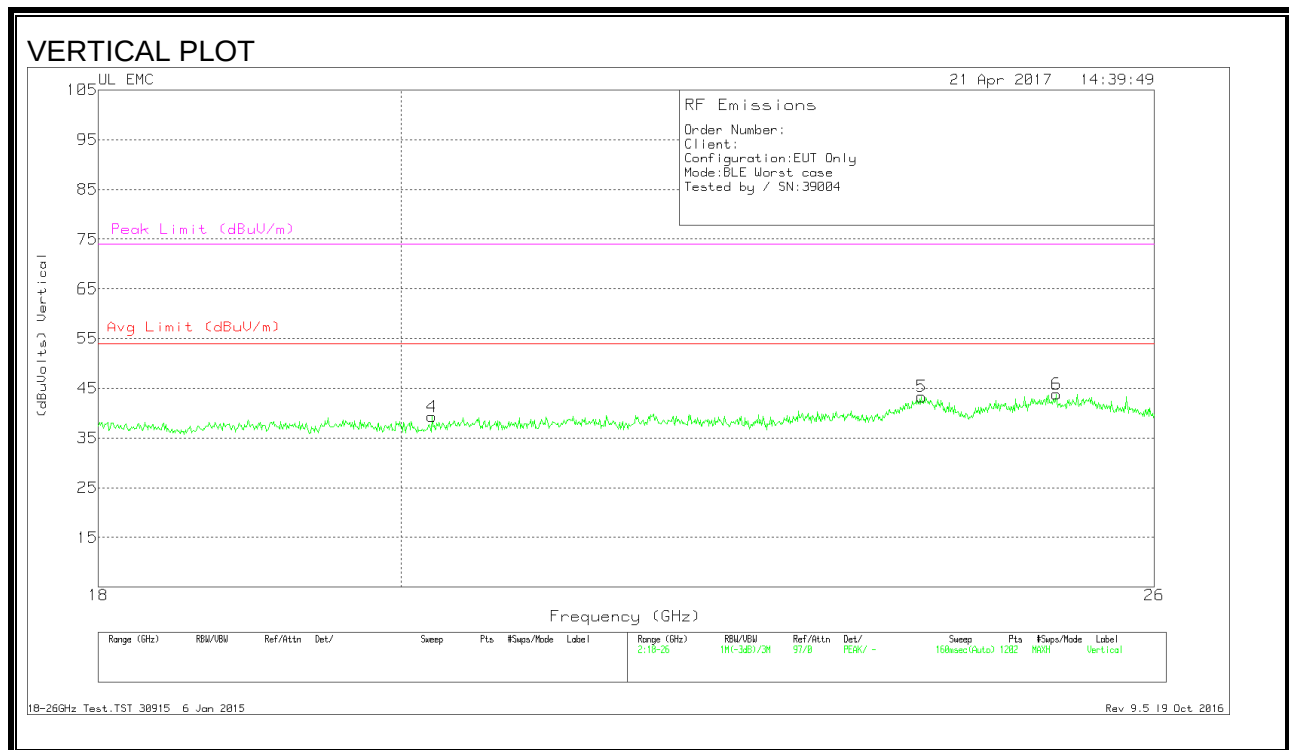
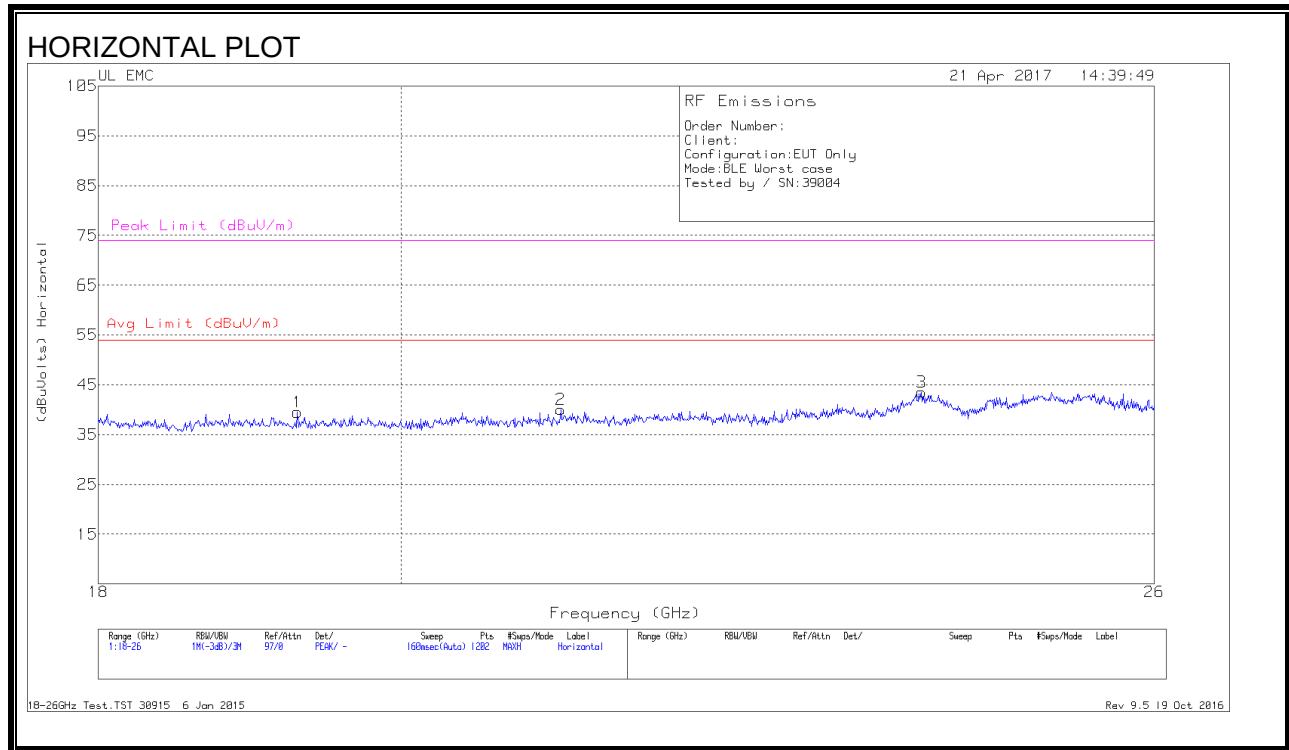
Pk - Peak detector

FCC Part 15 Subpart C 30-1000MHz.TST 30915 15 Jul 2014

Rev 9.5 01 Dec 2016

8.7. WORST-CASE ABOVE 18 GHz

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



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	19.292	41.1	Pk	32.7	-24.8	-9.5	39.5	54	-14.5	74	-34.5
2	21.144	41.9	Pk	33.1	-25.5	-9.5	40	54	-14	74	-34
3	23.975	43.2	Pk	34	-24.2	-9.5	43.5	54	-10.5	74	-30.5
4	20.218	41.33	Pk	32.8	-25.3	-9.5	39.33	54	-14.66	74	-34.66
5	23.975	43.03	Pk	34	-24.2	-9.5	43.33	54	-10.66	74	-30.66
6	25.127	43.63	Pk	34.3	-24.6	-9.5	43.83	54	-10.16	74	-30.16

Pk - Peak detector

18-26GHz Test.TST 30915 6 Jan 2015

Rev 9.5 19 Oct 2016

8.8. 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.

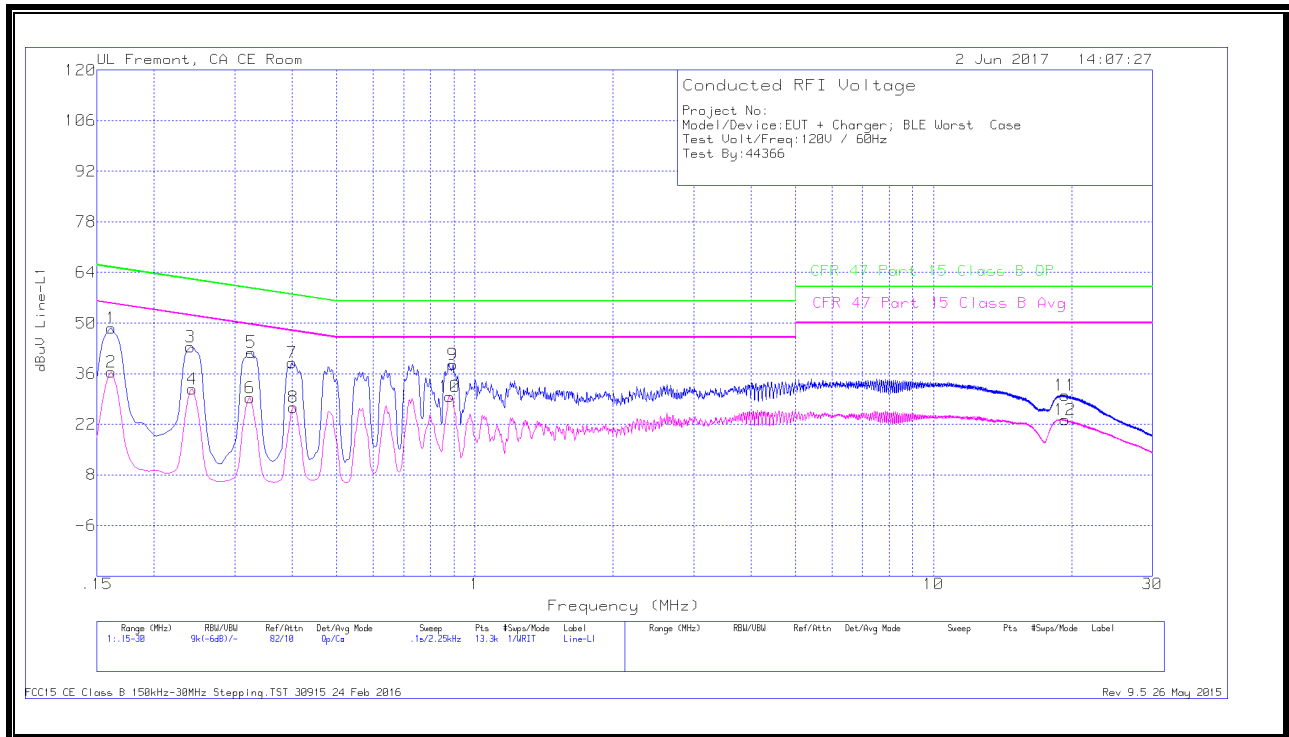
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

8.9. EUT POWERED BY AC/DC ADAPTER VIA USB CABLE

LINE 1 RESULTS



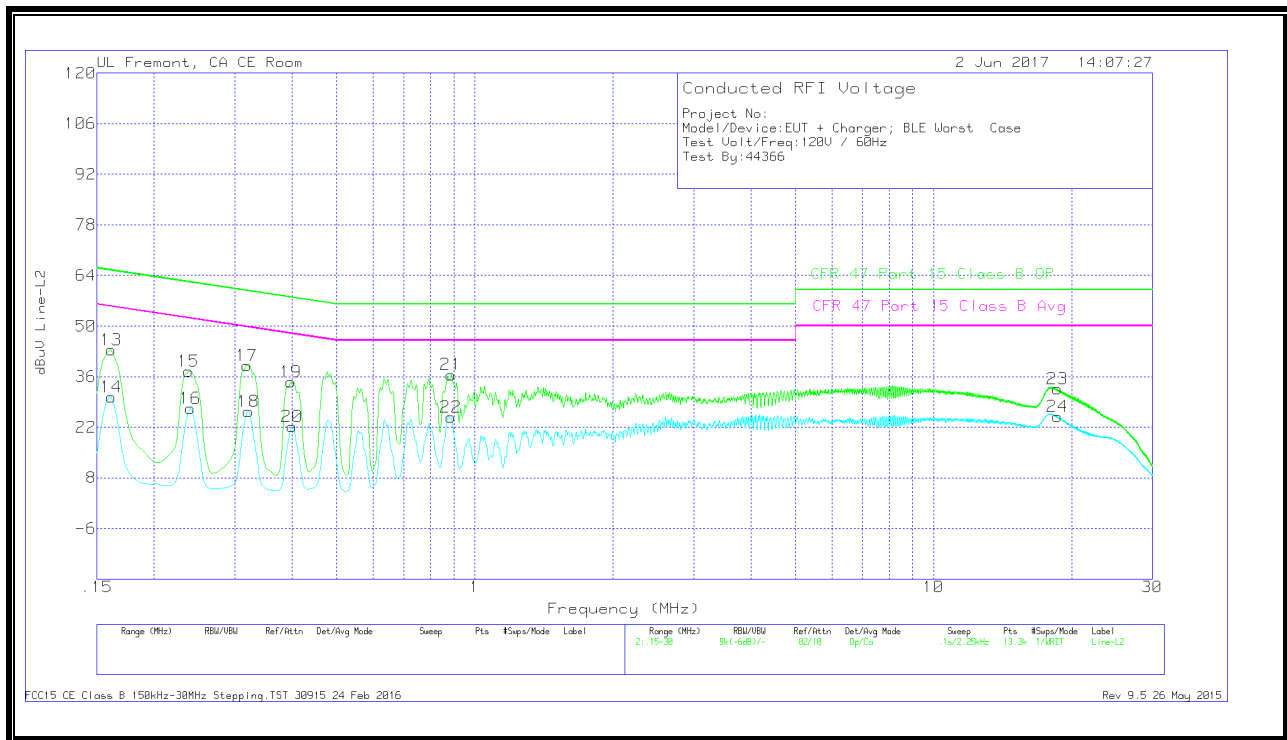
WORST EMISSIONS

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	.16125	38.39	Qp	0	.1	10.1	48.59	65.4	-16.81	-	-
2	.16125	26.19	Ca	0	.1	10.1	36.39	-	-	55.4	-19.01
3	.24	33.24	Qp	0	.1	10.1	43.44	62.1	-18.66	-	-
4	.24225	21.54	Ca	0	.1	10.1	31.74	-	-	52.02	-20.28
5	.3255	31.71	Qp	0	.1	10.1	41.91	59.57	-17.66	-	-
6	.32325	19.07	Ca	0	.1	10.1	29.27	-	-	49.62	-20.35
7	.39975	28.86	Qp	0	.1	10.1	39.06	57.86	-18.8	-	-
8	.402	16.46	Ca	0	.1	10.1	26.66	-	-	47.81	-21.15
9	.89475	28.25	Qp	0	.1	10.1	38.45	56	-17.55	-	-
10	.88125	19.47	Ca	0	.1	10.1	29.67	-	-	46	-16.33
11	19.3538	19.43	Qp	0	.3	10.3	30.03	60	-29.97	-	-
12	19.3515	12.68	Ca	0	.3	10.3	23.28	-	-	50	-26.72

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

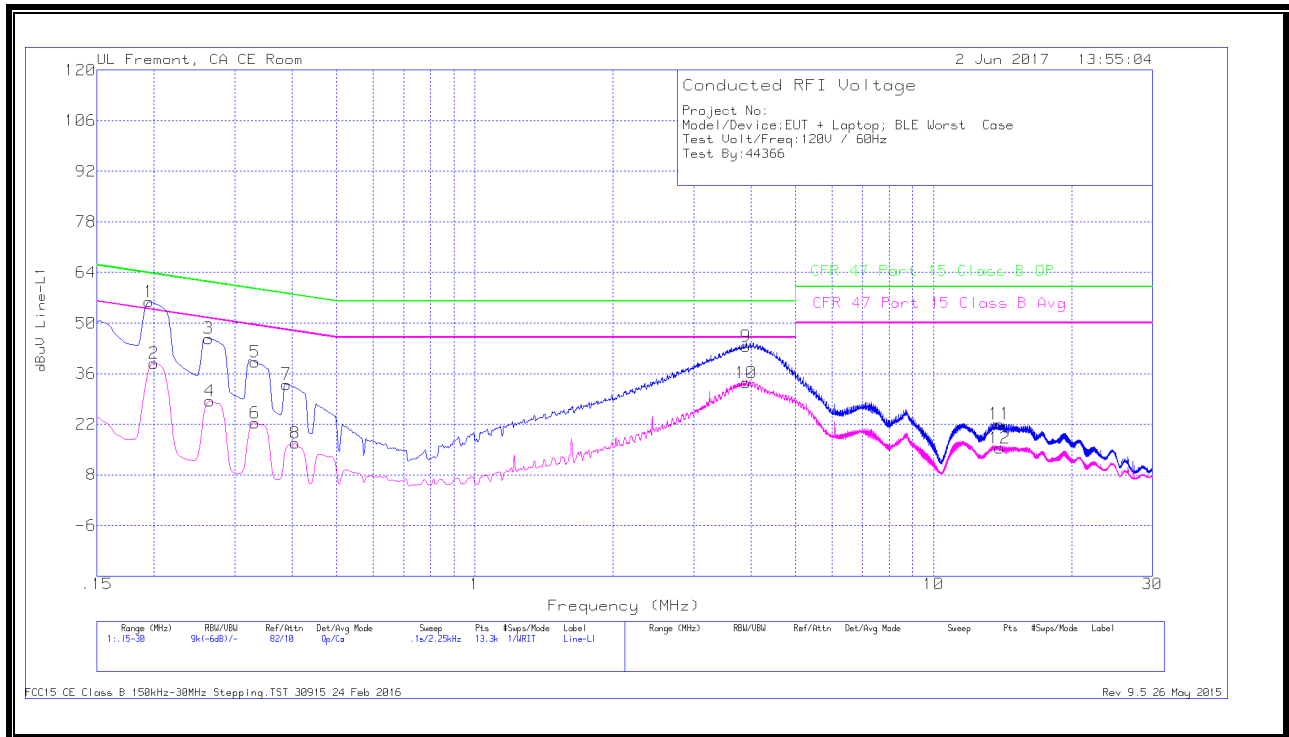
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.16125	33.22	Qp	0	.1	10.1	43.42	65.4	-21.98	-	-
14	.16125	20.18	Ca	0	.1	10.1	30.38	-	-	55.4	-25.02
15	.23775	27.27	Qp	0	.1	10.1	37.47	62.17	-24.7	-	-
16	.24	17.06	Ca	0	.1	10.1	27.26	-	-	52.1	-24.84
17	.31875	28.87	Qp	0	.1	10.1	39.07	59.74	-20.67	-	-
18	.321	16.13	Ca	0	.1	10.1	26.33	-	-	49.68	-23.35
19	.3975	24.36	Qp	0	.1	10.1	34.56	57.91	-23.35	-	-
20	.39975	11.96	Ca	0	.1	10.1	22.16	-	-	47.86	-25.7
21	.888	26.33	Qp	0	.1	10.1	36.53	56	-19.47	-	-
22	.888	14.63	Ca	0	.1	10.1	24.83	-	-	46	-21.17
23	18.6405	21.99	Qp	0	.3	10.3	32.59	60	-27.41	-	-
24	18.618	14.32	Ca	0	.3	10.3	24.92	-	-	50	-25.08

Qp - Quasi-Peak detector

Ca - CISPR average detection

8.10. EUT POWERED BY HOST PC VIA USB CABLE

LINE 1 RESULTS



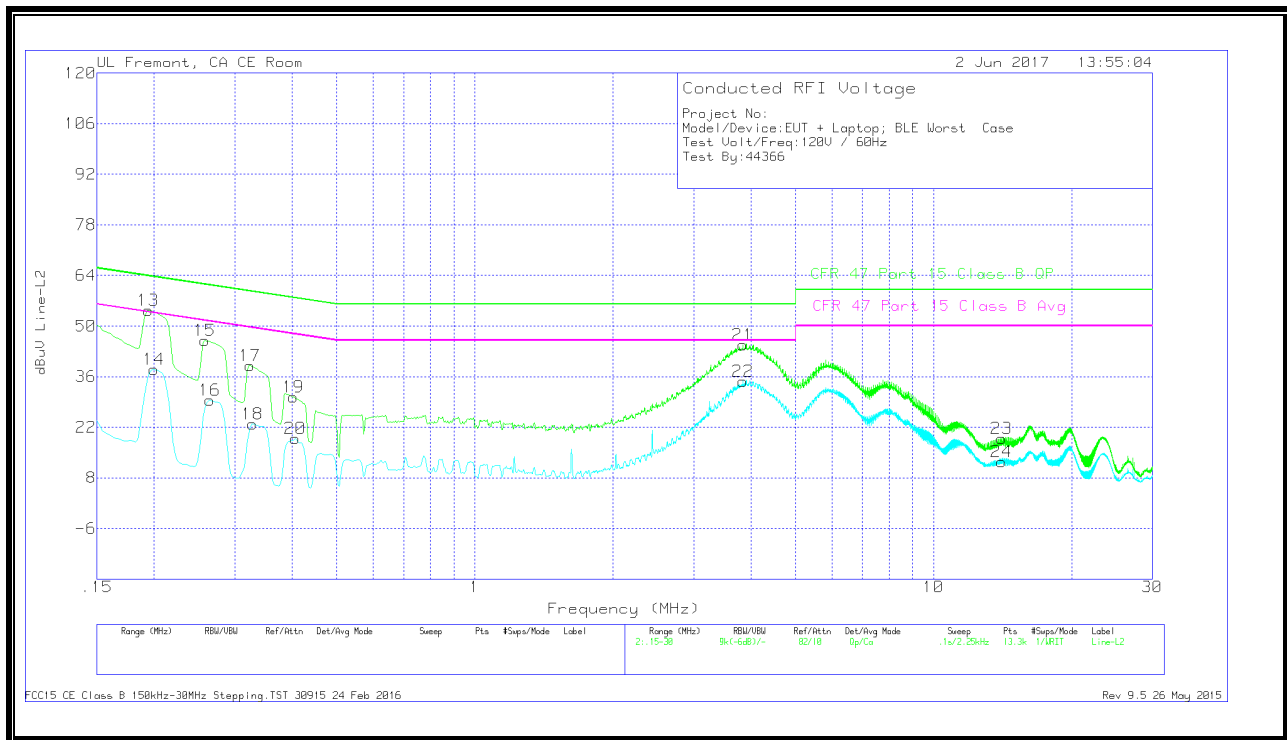
WORST EMISSIONS

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	.195	45.63	Qp	0	.1	10.1	55.83	63.82	-7.99	-	-
2	.1995	28.65	Ca	0	.1	10.1	38.85	-	-	53.63	-14.78
3	.2625	35.54	Qp	0	.1	10.1	45.74	61.35	-15.61	-	-
4	.26475	18.19	Ca	0	.1	10.1	28.39	-	-	51.28	-22.89
5	.33225	29.05	Qp	0	.1	10.1	39.25	59.39	-20.14	-	-
6	.33225	12.13	Ca	0	.1	10.1	22.33	-	-	49.39	-27.06
7	.3885	22.85	Qp	0	.1	10.1	33.05	58.1	-25.05	-	-
8	.4065	6.62	Ca	0	.1	10.1	16.82	-	-	47.72	-30.9
9	3.89625	33.4	Qp	0	.1	10.1	43.6	56	-12.4	-	-
10	3.89625	23.3	Ca	0	.1	10.1	33.5	-	-	46	-12.5
11	13.9425	11.6	Qp	.1	.2	10.2	22.1	60	-37.9	-	-
12	13.9313	4.86	Ca	.1	.2	10.2	15.36	-	-	50	-34.64

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

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	.19388	44.28	Qp	0	0	10.1	54.38	63.87	-9.49	-	-
14	.1995	27.85	Ca	0	.1	10.1	38.05	-	-	53.63	-15.58
15	.258	35.87	Qp	0	.1	10.1	46.07	61.5	-15.43	-	-
16	.26475	19.26	Ca	0	.1	10.1	29.46	-	-	51.28	-21.82
17	.32325	28.85	Qp	0	.1	10.1	39.05	59.62	-20.57	-	-
18	.32775	12.74	Ca	0	.1	10.1	22.94	-	-	49.51	-26.57
19	.402	20.15	Qp	0	.1	10.1	30.35	57.81	-27.46	-	-
20	.4065	8.69	Ca	0	.1	10.1	18.89	-	-	47.72	-28.83
21	3.84	34.63	Qp	0	.1	10.1	44.83	56	-11.17	-	-
22	3.84	24.49	Ca	0	.1	10.1	34.69	-	-	46	-11.31
23	14.0775	8.32	Qp	.1	.2	10.2	18.82	60	-41.18	-	-
24	14.0764	1.88	Ca	.1	.2	10.2	12.38	-	-	50	-37.62

Qp - Quasi-Peak detector

Ca - CISPR average detection