



FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/CDMA/LTE + BLUETOOTH, DTS/UNII a/b/g/n/ac, ANT+ & NFC

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Revision History

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONY MOBILE COMMUNICATIONS, INC.
EUT DESCRIPTION: GSM/WCDMA/CDMA/LTE + BLUETOOTH, DTS/UNII a/b/g/n/ac, ANT+ & NFC
SERIAL NUMBER: CB5A24QGLY (Conducted), CB5A24QGLV (Radiated)
DATE TESTED: MARCH 31 – APRIL 3, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	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.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC KDB 662911.

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
<input type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 2324B-4)
<input type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 2324B-5)
<input checked="" type="checkbox"/> Chamber C(IC: 2324B-3)	<input type="checkbox"/> Chamber F(IC: 2324B-6)
	<input checked="" type="checkbox"/> Chamber G(IC: 2324B-7)
	<input type="checkbox"/> Chamber H(IC: 2324B-8)

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:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/CDMA/LTE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC.

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
2412 - 2462	802.11b	17.7	58.88
2467	802.11b	17.18	52.24
2672	802.11b	13.31	21.43
2412 - 2462	802.11g	20.73	118.30
2467	802.11g	14.43	27.73
2672	802.11g	6.74	4.72
2412 - 2462	802.11n HT20	20.43	110.41
2467	802.11n HT20	11.15	13.03
2472	802.11n HT20	6.28	4.25

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna for the 802.11b/g, 802.11n HT20 modes with maximum peak gains as described below:

Frequency (MHz)	Antenna Gain (dBi)	
	Core0	Core1
2.402	-0.7	-0.3
2.441	-1.2	0
2.480	-1.8	0.6

5.4. List of test reduction and modes covering other modes:

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

5.5. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SONY	EP880	3514W 01 S08328	N/A

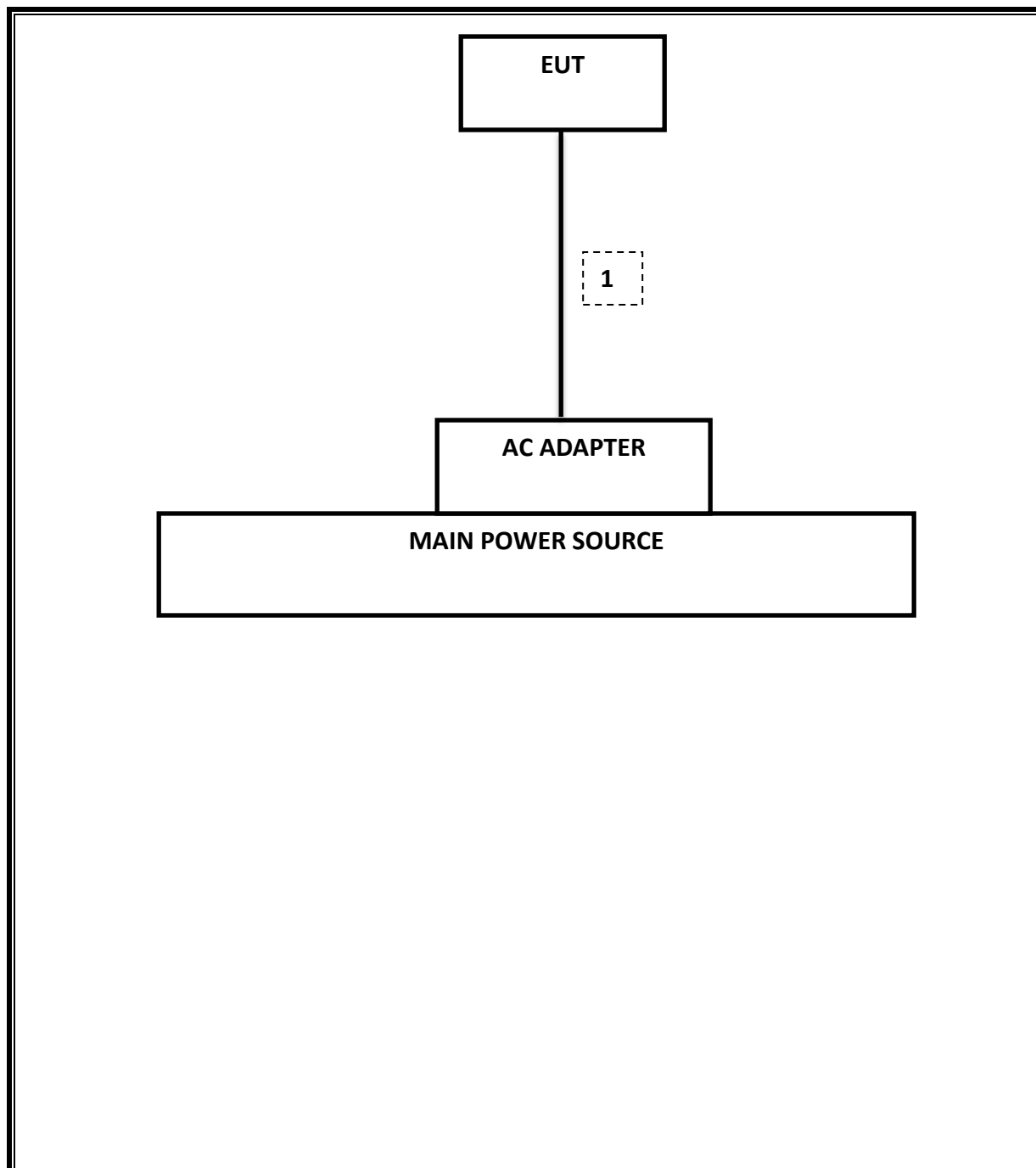
I/O CABLES

Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini USB	Shielded	1.2m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	106	08/06/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	100773	08/15/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 18GHz	EMCO	3115	C00783	10/25/15
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	12/08/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 26GHz - 40GHz	Miteq	NSP4000-SP2	86	04/07/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 18GHz	Miteq	AFS42-00101800-25-S-42	1818466	05/09/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02:Measurement Procedure AVGPM-G is used for power and AVGPS-3 is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

Band edge emissions within Restricted Bands are measured using RMS with duty cycle factor offset method.

8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

8.1. 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/T Minimum VBW (kHz)
802.11b	4.42	4.4	0.997	99.7%	0.00	0.010
802.11g	3.13	3.1	0.994	99.4%	0.00	0.010
802.11n HT20	1.48	1.5	0.986	98.6%	0.00	0.010

9. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	8.01 MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-34.77 dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	20.73 dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-6.77 dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	65.28 dBuV (PK)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	53.75 dBuV/m

10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

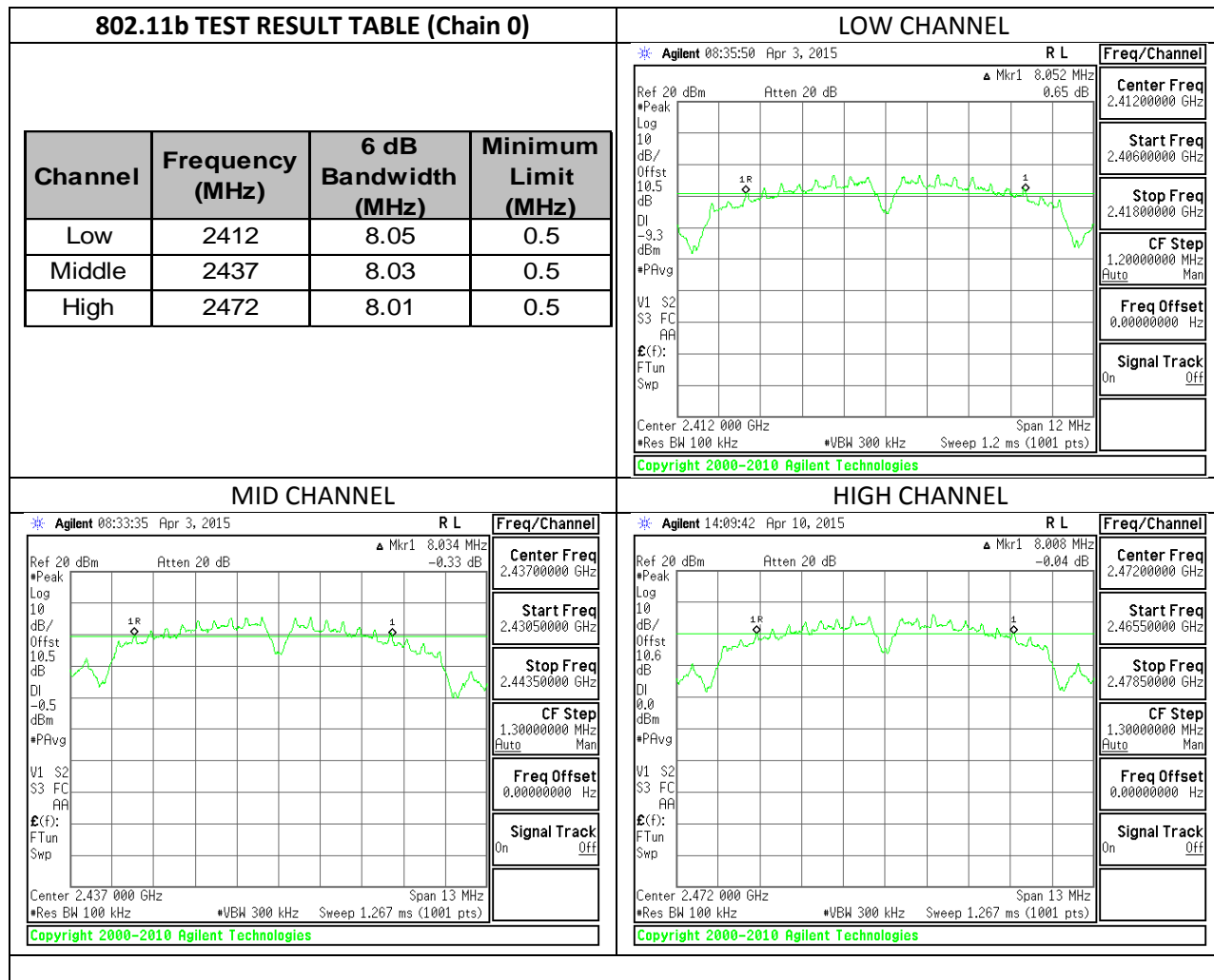
The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r02: The transmitter output is connected to a spectrum analyzer with the RBW set to 100 kHz, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

RESULTS

10.1.1. 6 dB BANDWIDTH PLOTS AND TABLE

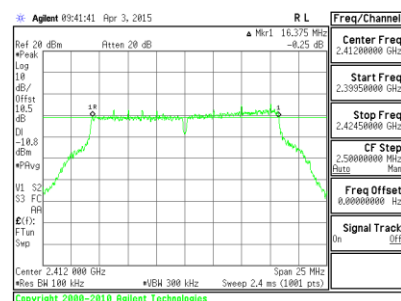


802.11g HT20 TEST RESULT TABLE

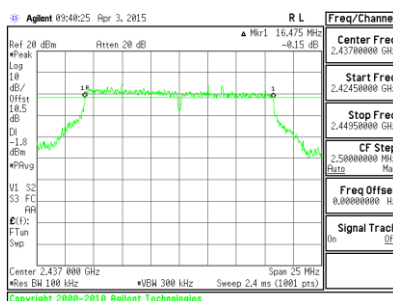
Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
2412	16.38	15.77	0.5
2437	16.48	16.33	0.5
2472	16.43	15.74	0.5

CHAIN 0

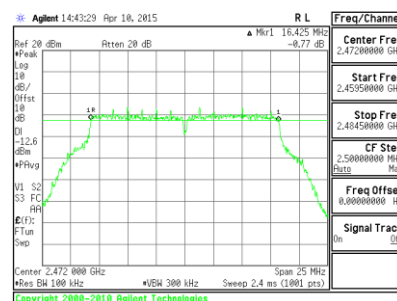
LOW CHANNEL



MID CHANNEL

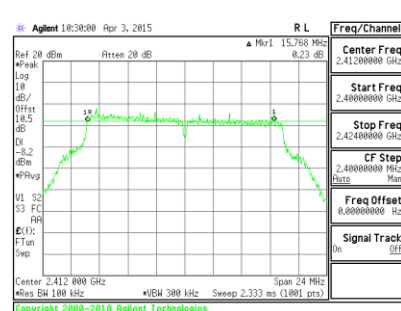


HIGH CHANNEL

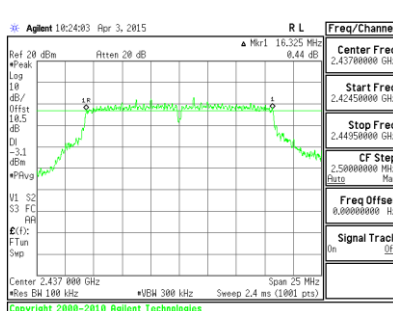


CHAIN 1

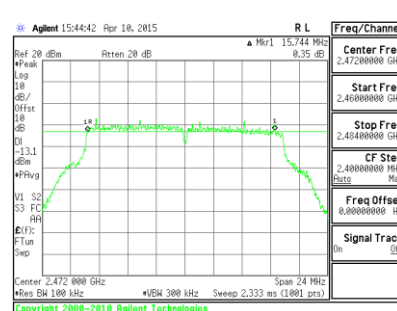
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



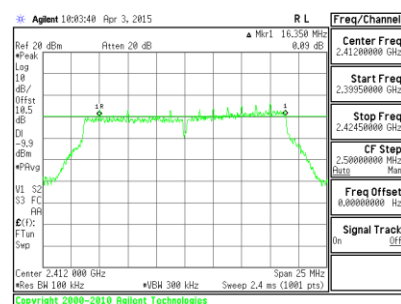
NOTE:

802.11n HT20 TEST RESULT TABLE

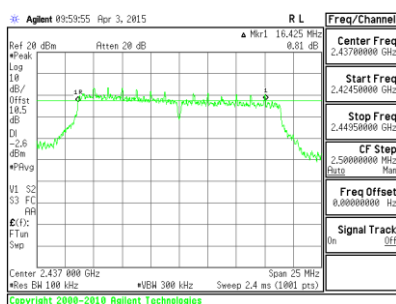
Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
2412	16.35	16.74	0.5
2437	16.43	17.58	0.5
2472	17.63	16.98	0.5

CHAIN 0

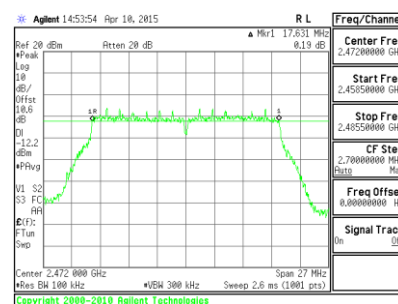
LOW CHANNEL



MID CHANNEL

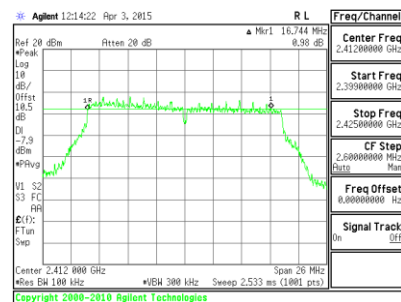


HIGH CHANNEL

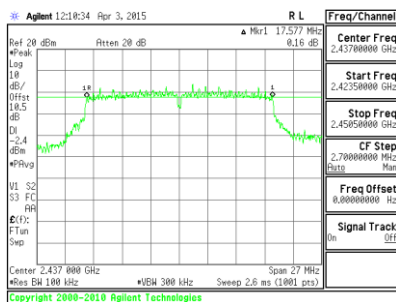


CHAIN 1

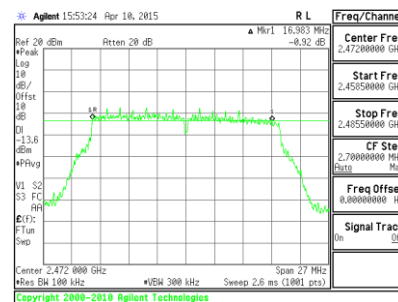
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



NOTE:

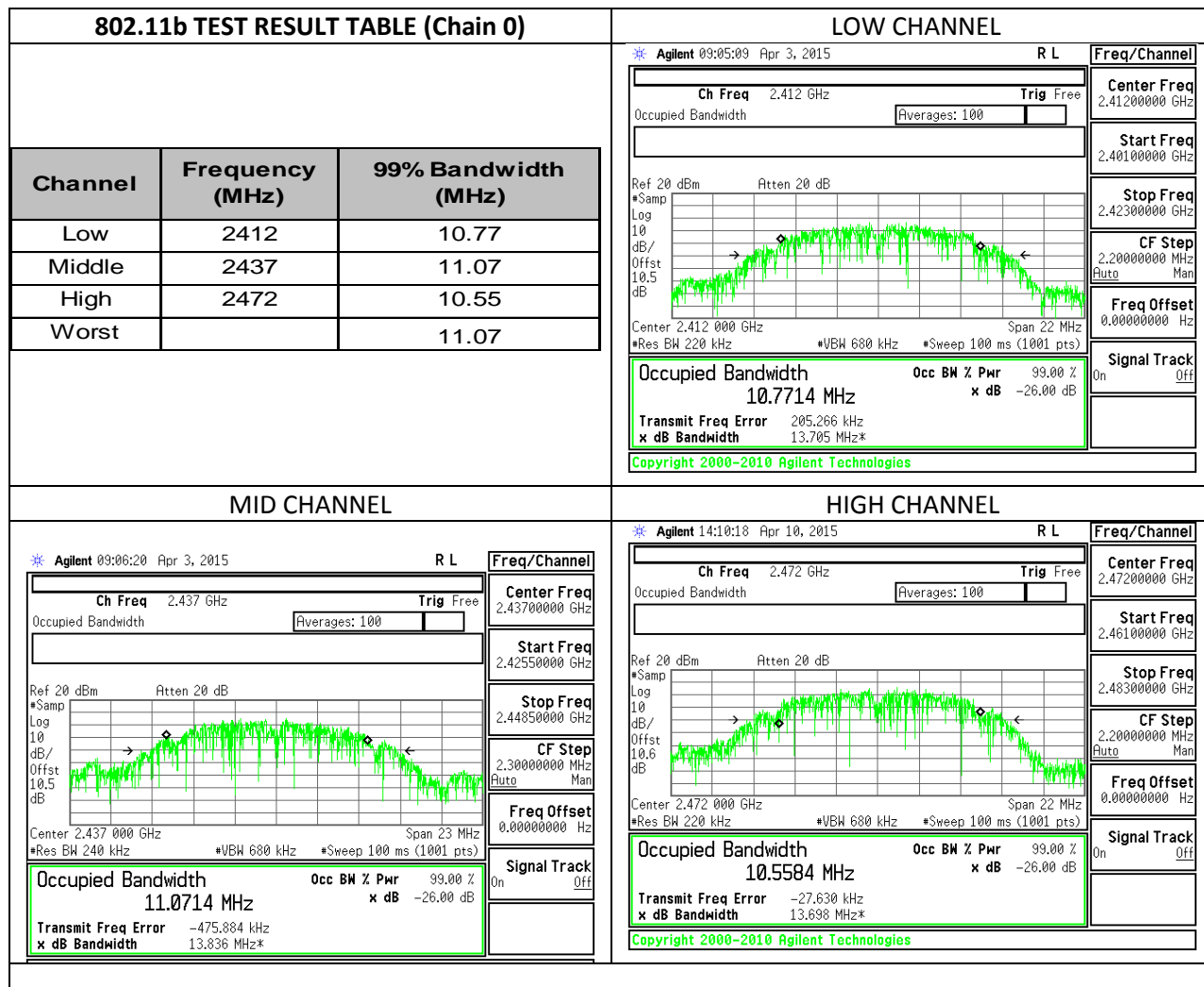
10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

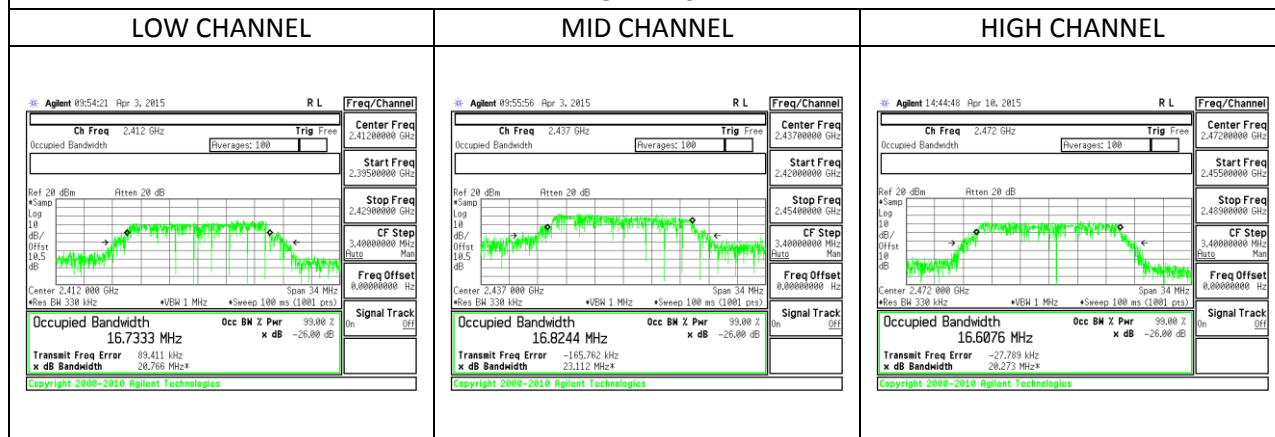
10.2.1. 99% BANDWIDTH PLOTS AND TABLE



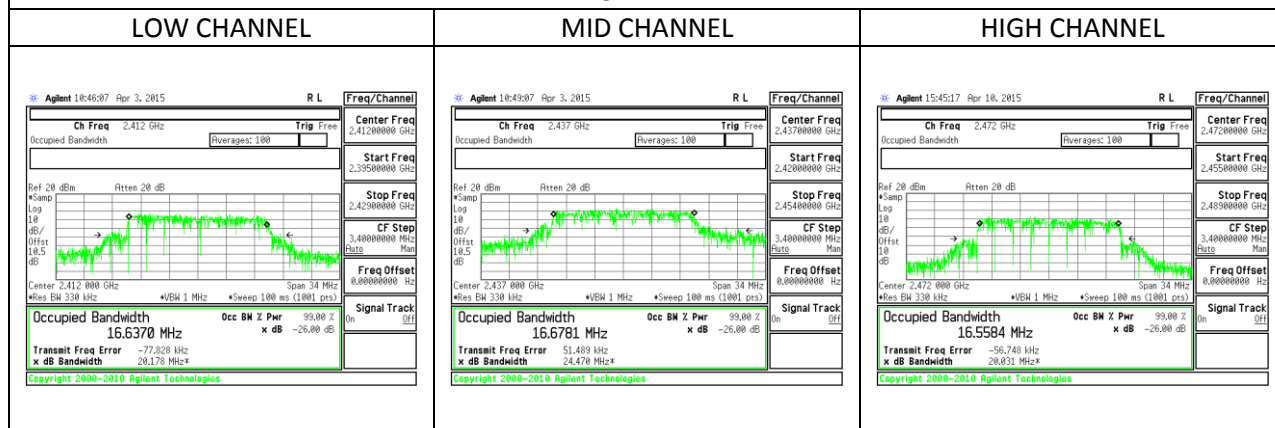
802.11g HT20 TEST RESULT TABLE

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	16.73	16.63
Mid	2437	16.82	16.67
High	2472	16.60	16.55

CHAIN 0



CHAIN 1

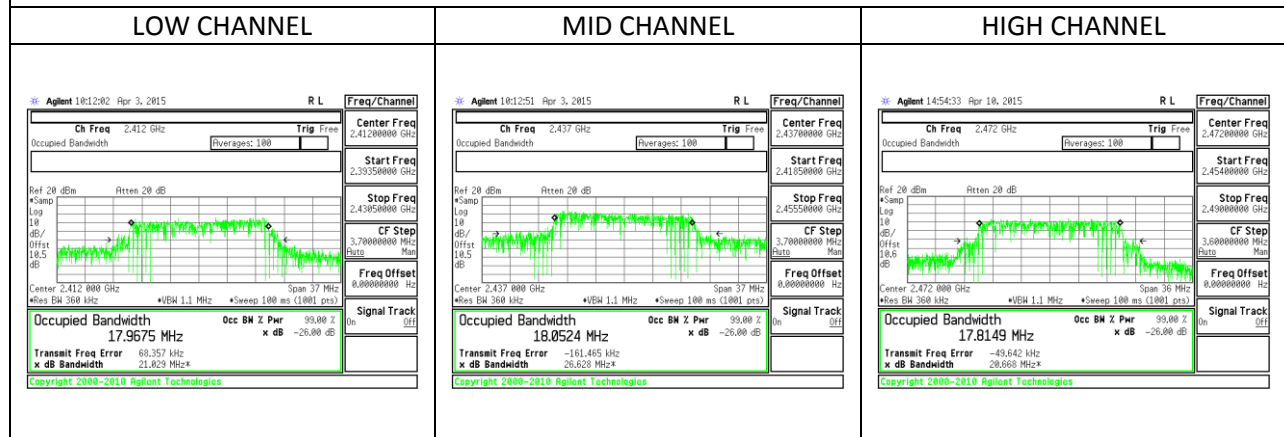


NOTE:

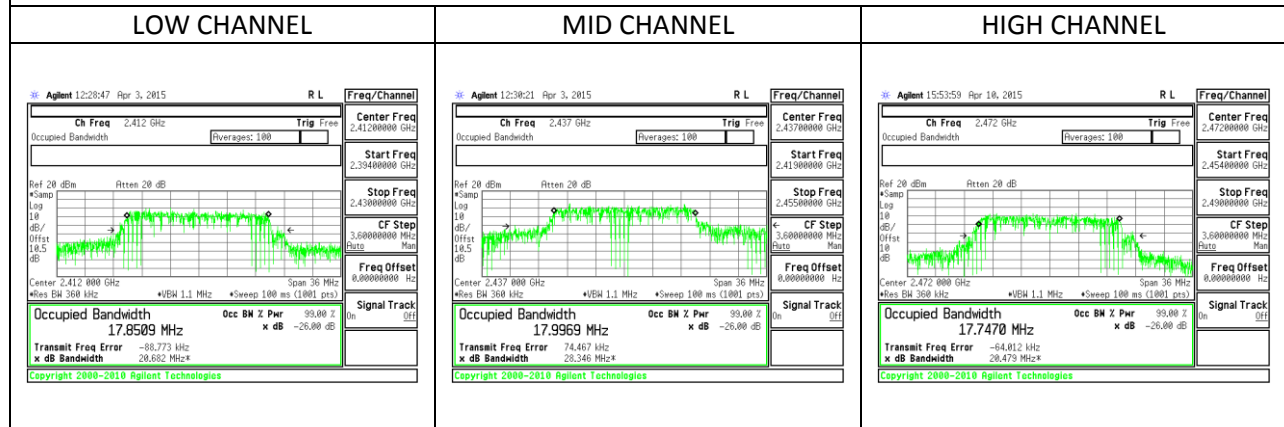
802.11n HT20 TEST RESULT TABLE

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	17.96	17.85
Mid	2437	18.05	17.99
High	2472	17.81	17.74

CHAIN 0



CHAIN 1



NOTE:

10.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

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

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.2 dB (including 10 dB pad and 0.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

DIRECTIONAL ANTENNA GAIN

For Power: The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

2.4GHz

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-0.70	0.60	0.00

For PSD: The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

2.4GHz

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
-0.70	0.60	2.98

RESULTS

10.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	0.00	30.00	30	36	30.00
6	2437	0.00	30.00	30	36	30.00
11	2462	0.00	30.00	30	36	30.00
12	2467	0.00	30.00	30	36	30.00
13	2472	0.00	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	11.90	11.90	30.00	-18.10
6	2437	17.70	17.70	30.00	-12.30
11	2462	12.80	12.80	30.00	-17.20
12	2467	17.18	17.18	30.00	-12.82
13	2472	13.31	13.31	30.00	-16.69
Worst			17.70		

10.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	0.00	30.00	30	36	30.00
6	2437	0.00	30.00	30	36	30.00
11	2462	0.00	30.00	30	36	30.00
12	2467	0.00	30.00	30	36	30.00
13	2472	0.00	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi n (dB)
1	2412	11.60	11.70	14.66	30.00	-15.34
6	2437	18.10	17.30	20.73	30.00	-9.27
11	2462	12.80	12.70	15.76	30.00	-14.24
12	2467	11.53	11.30	14.43	30.00	-15.57
13	2472	4.21	3.18	6.74	30.00	-23.26

10.3.3. 802.11n MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	0.00	30.00	30	36	30.00
6	2437	0.00	30.00	30	36	30.00
11	2462	0.00	30.00	30	36	30.00
12	2467	0.00	30.00	30	36	30.00
13	2472	0.00	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi n (dB)
1	2412	12.00	12.00	15.01	30.00	-14.99
6	2437	17.80	17.00	20.43	30.00	-9.57
11	2462	12.90	13.10	16.01	30.00	-13.99
12	2467	8.72	7.47	11.15	30.00	-18.85
13	2472	3.87	2.58	6.28	30.00	-23.72

10.4. POWER SPECTRAL DENSITY

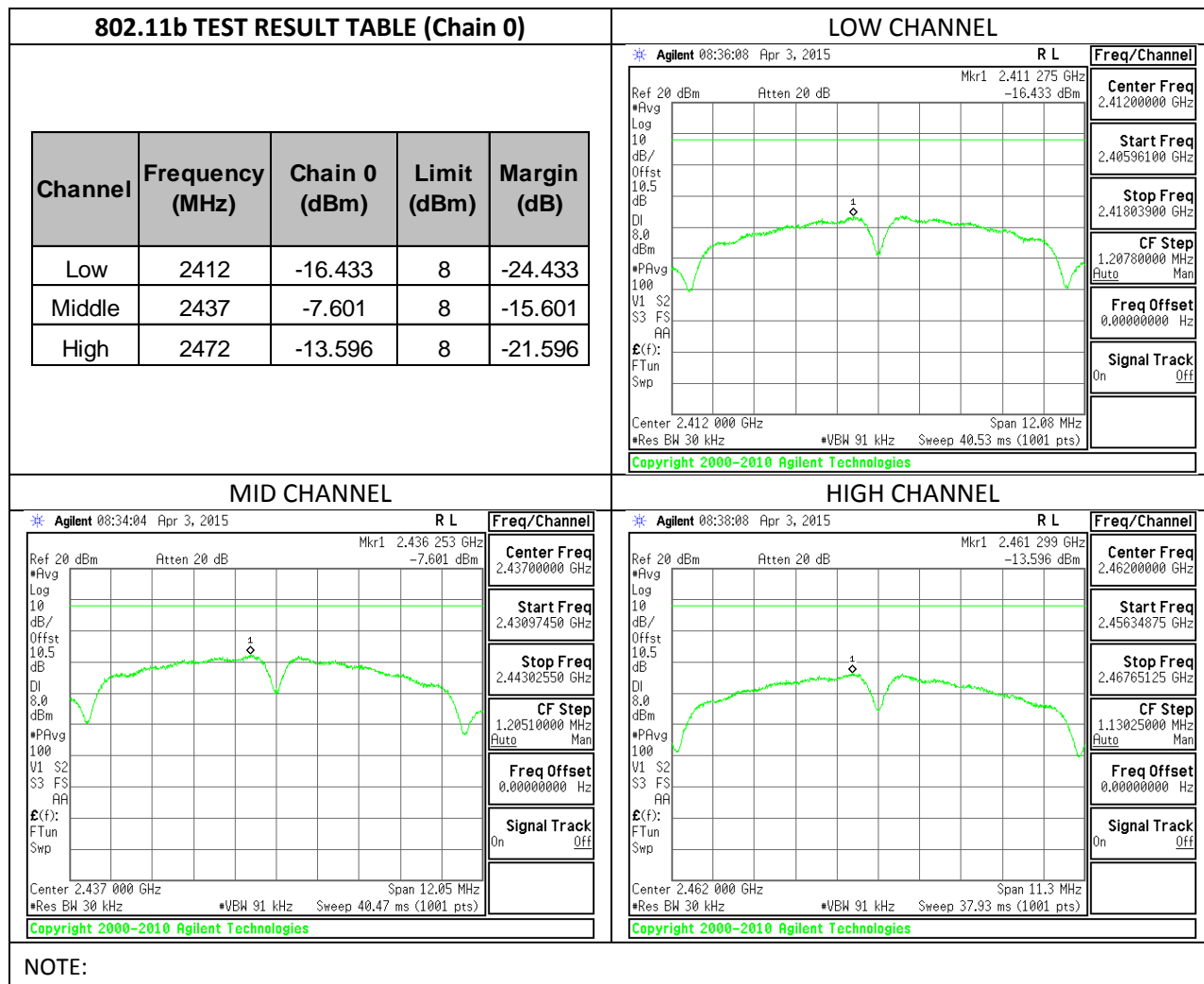
LIMITS

FCC §15.247

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

10.4.1. POWER SPECTRAL DENSITY PLOTS AND TABLE



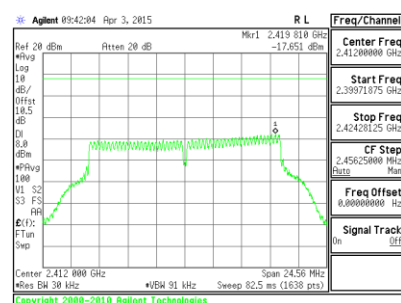
802.11g HT20 TEST RESULT TABLE

PSD Results

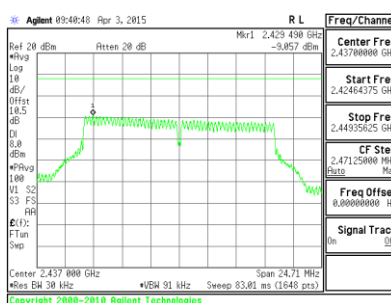
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-17.65	-15.32	-13.32	8.0	-21.3
Mid	2437	-9.06	-10.65	-6.77	8.0	-14.8
High	2472	-19.45	-20.70	-17.02	8.0	-25.0

CHAIN 0

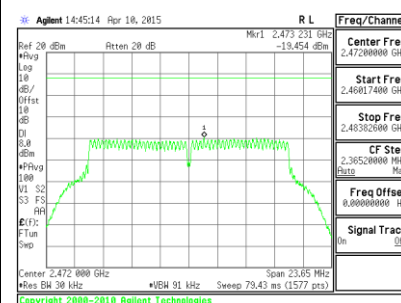
LOW CHANNEL



MID CHANNEL

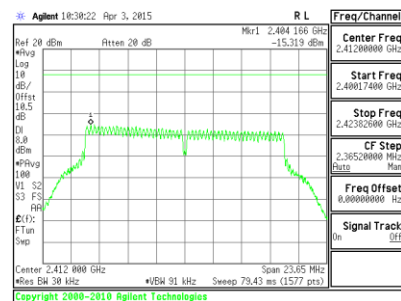


HIGH CHANNEL

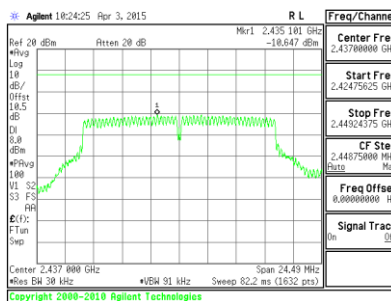


CHAIN 1

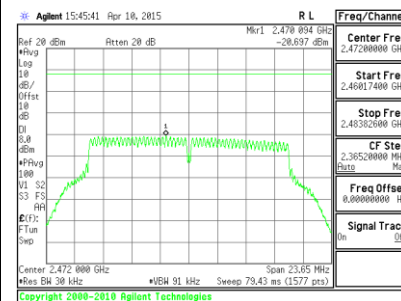
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



NOTE:

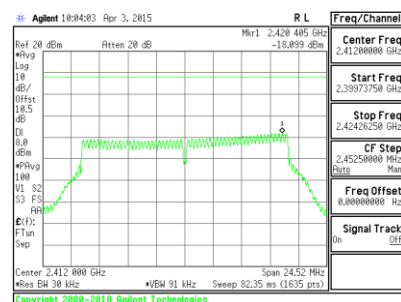
802.11n HT20 TEST RESULT TABLE

PSD Results

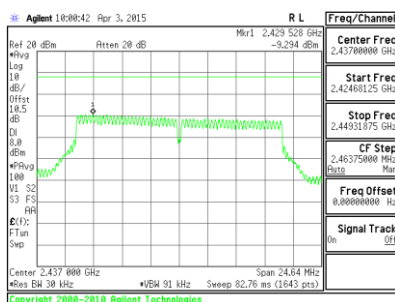
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-18.10	-15.84	-13.81	8.0	-21.8
Mid	2437	-9.29	-11.12	-7.10	8.0	-15.1
High	2472	-20.37	-21.35	-17.82	8.0	-25.8

CHAIN 0

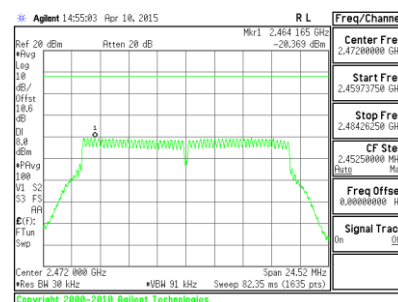
LOW CHANNEL



MID CHANNEL

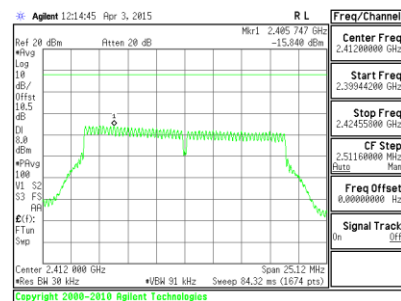


HIGH CHANNEL

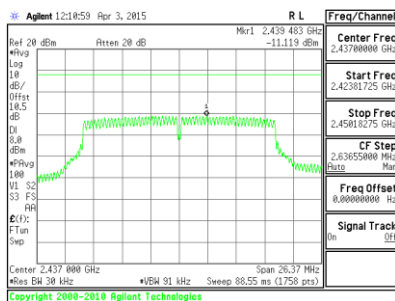


CHAIN 1

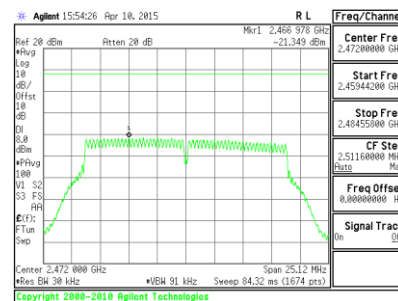
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



NOTE:

10.5. CONDUCTED SPURIOUS AND OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

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

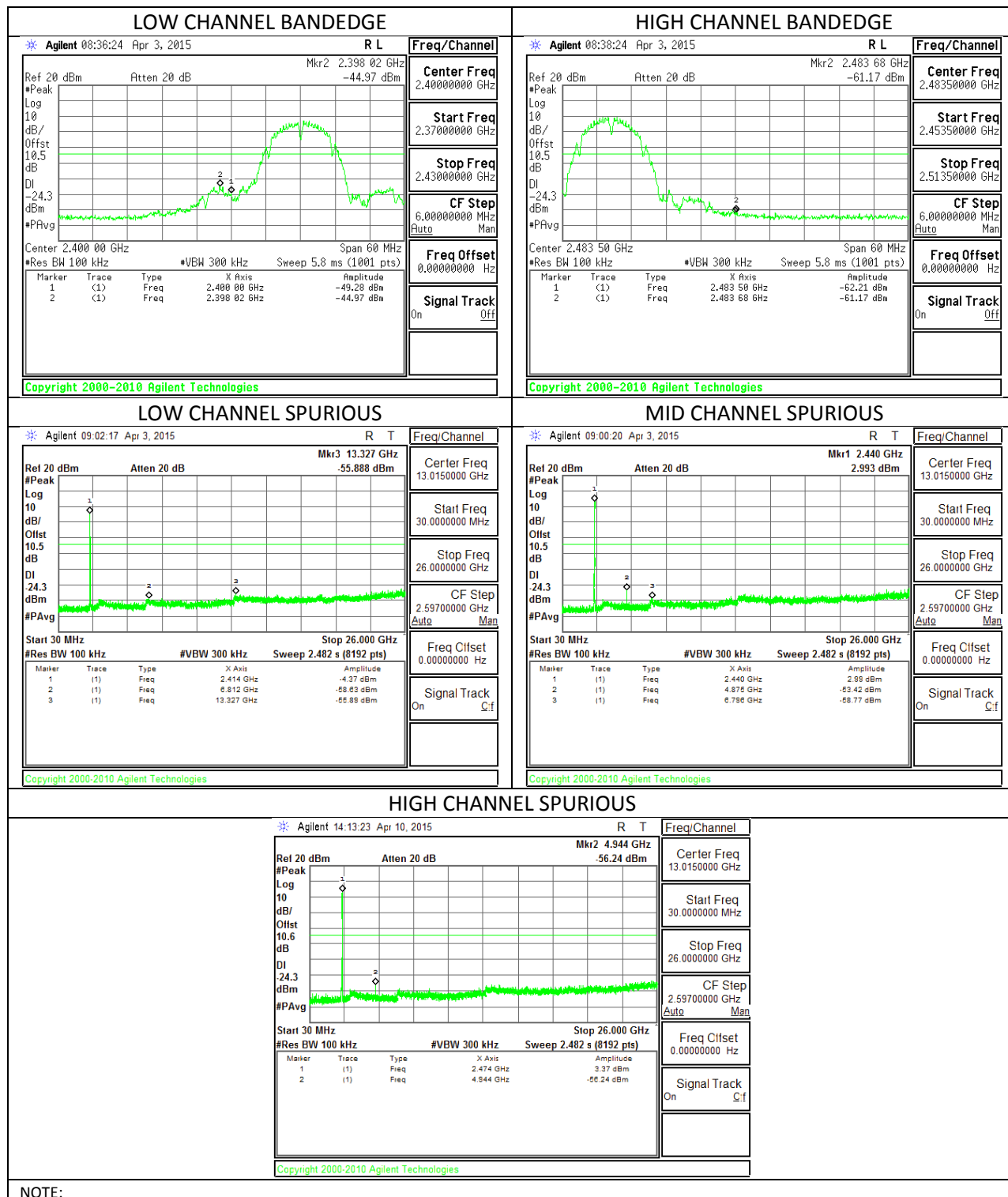
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

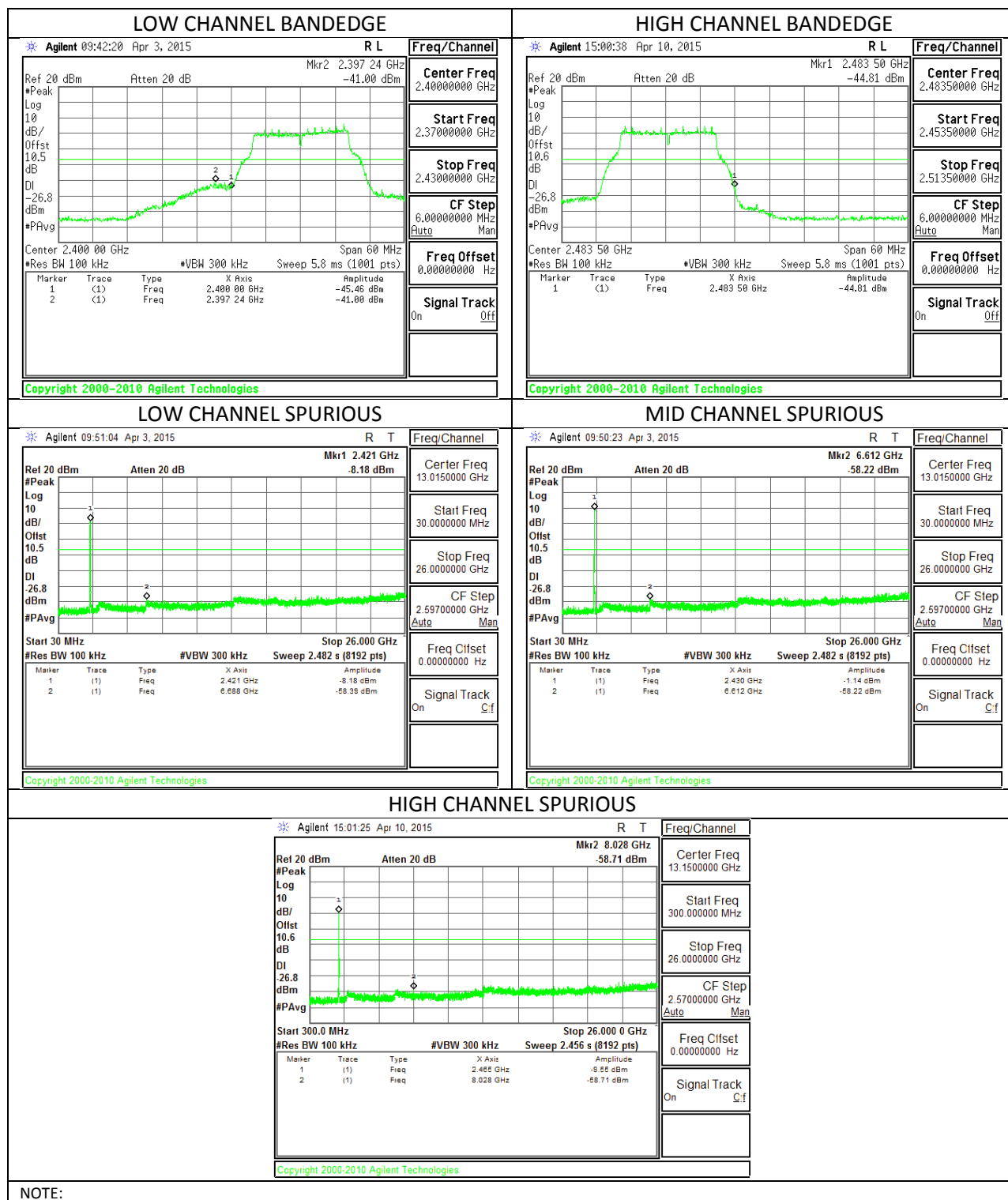
10.5.1. BANDEDGE AND SPURIOUS EMISSIONS PLOTS

802.11b Mode – Chain 0

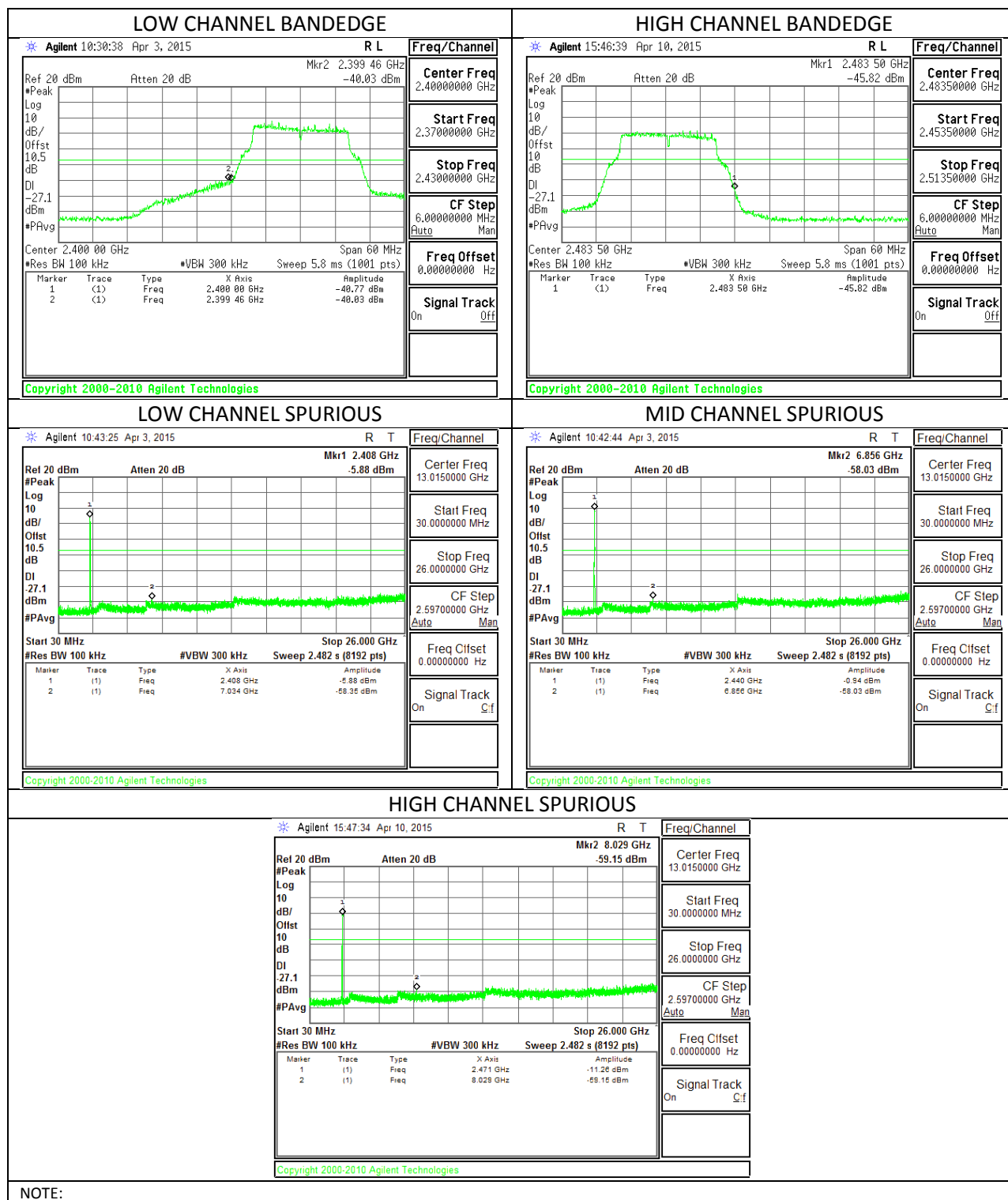


NOTE:

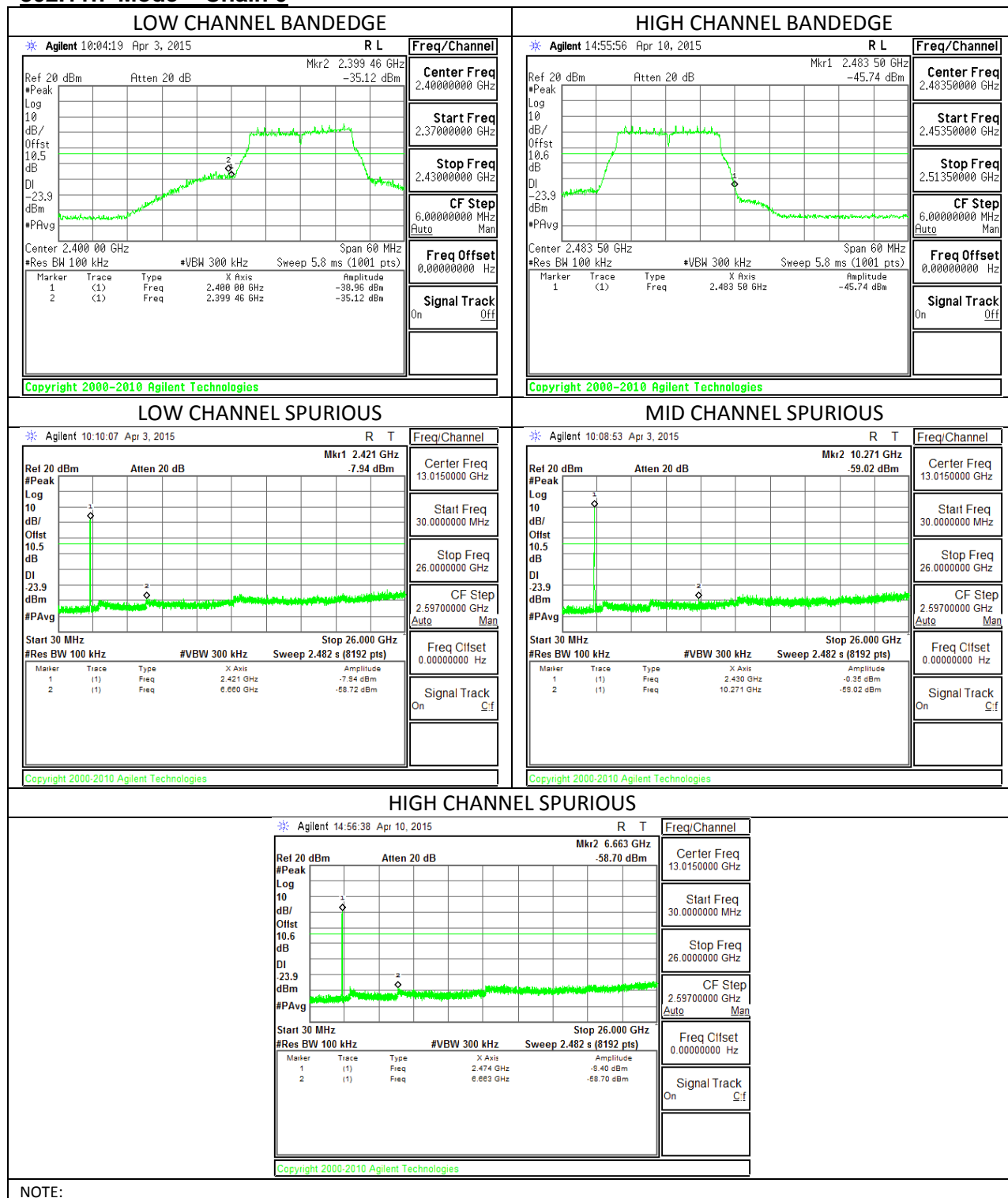
802.11g Mode – Chain 0



802.11g Mode – Chain 1

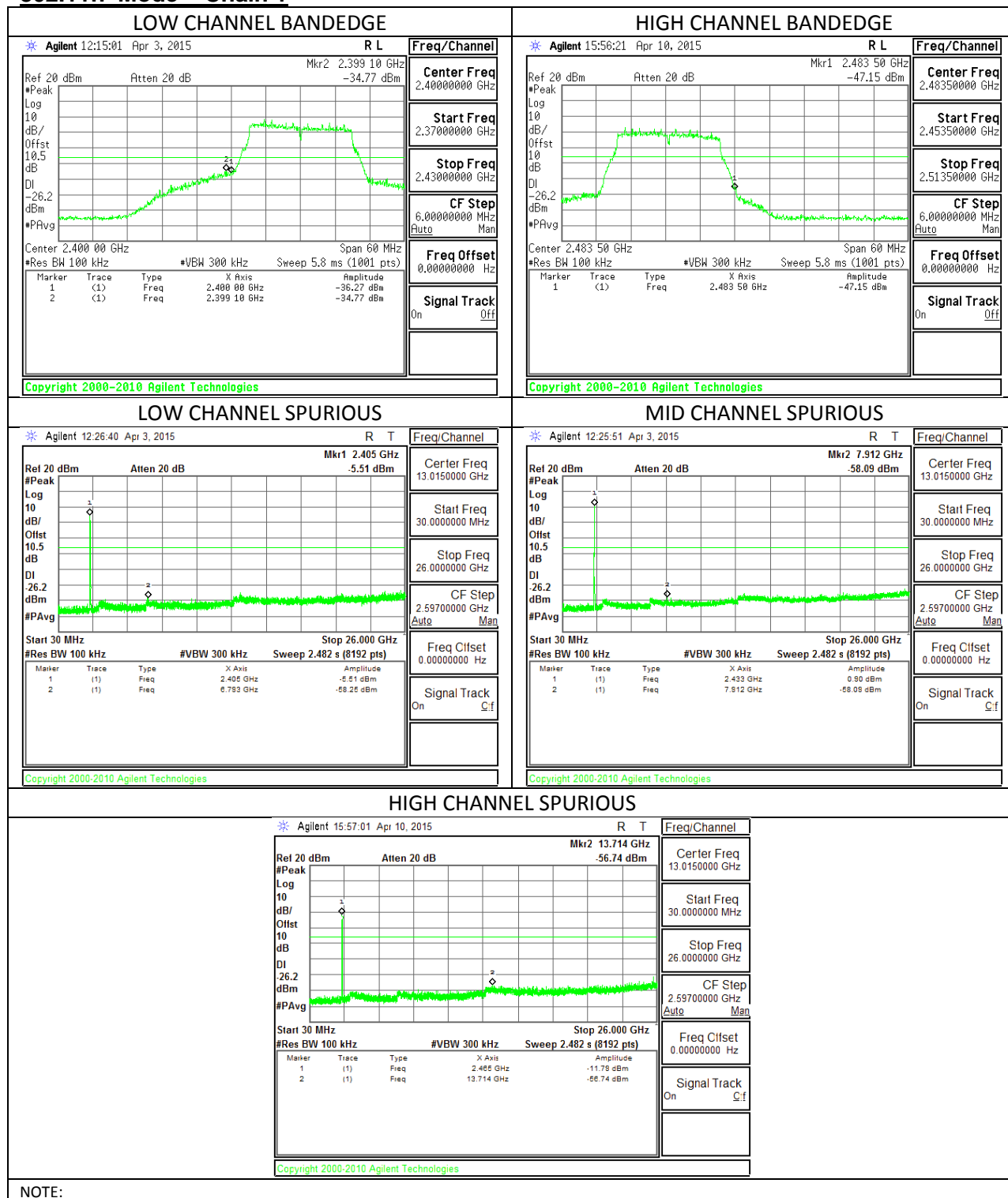


802.11n Mode – Chain 0



NOTE:

802.11n Mode – Chain 1



NOTE:

11. RADIATED TEST RESULTS

11.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (μ V/m) at 3 m	Field Strength Limit (dB μ V/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. The antenna to EUT distance is 3 meters.

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 measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor = $10\log(1/x)$ For this sample B mode = 0dB (duty cycle >98%); G mode = 0 dB; N mode = 0dB.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

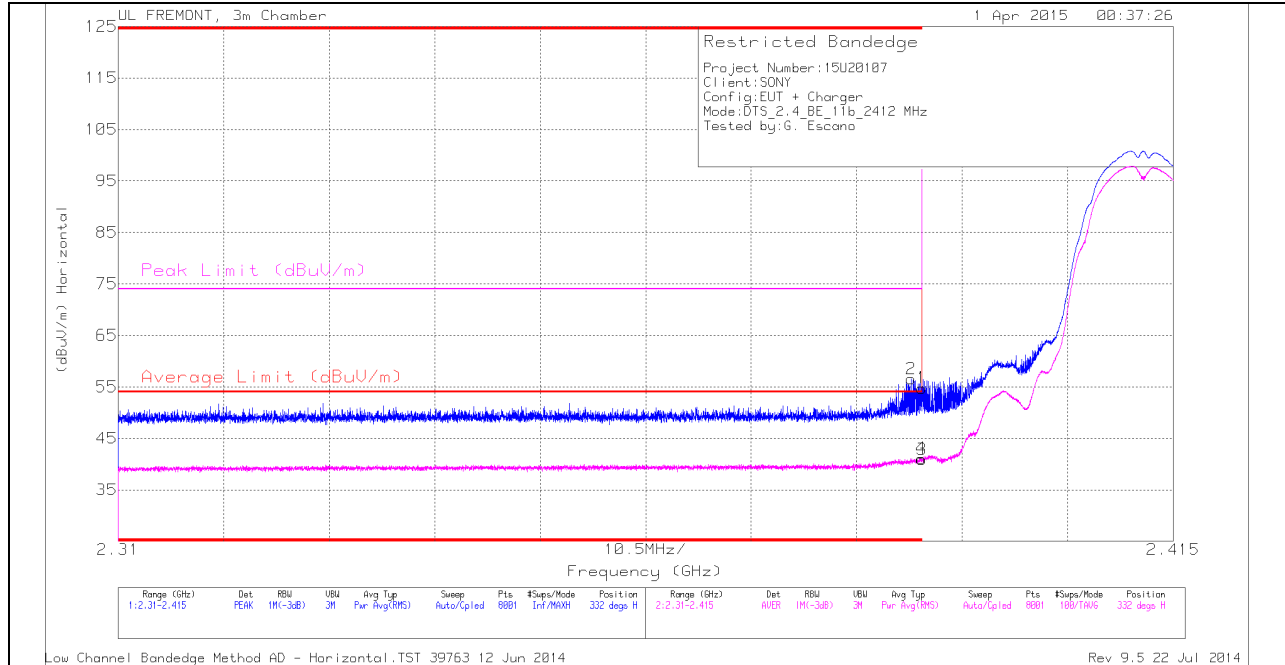
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

11.2. TRANSMITTER ABOVE 1 GHz

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

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

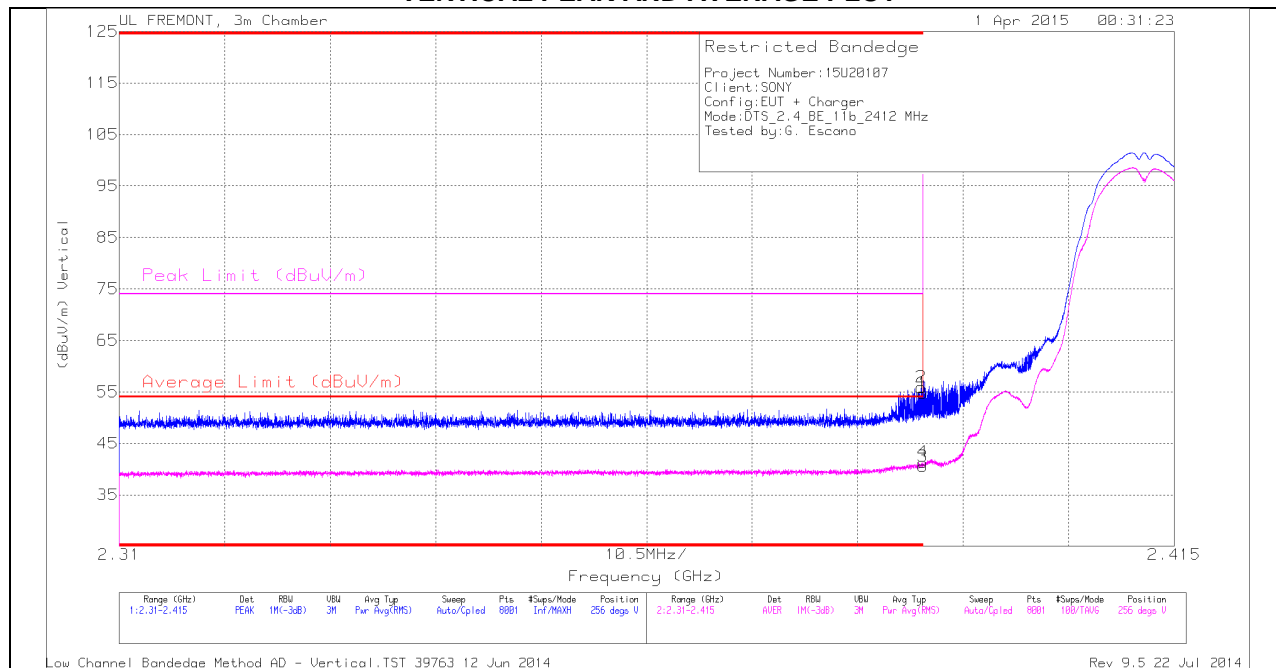
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.389	47.64	PK	32	-23.1	0	56.54	-	-	74	-17.46	332	379	H
1	* 2.39	45.89	PK	32	-23.1	0	54.79	-	-	74	-19.21	332	379	H
3	* 2.39	32.02	RMS	32	-23.1	0	40.92	54	-13.08	-	-	332	379	H
4	* 2.39	32.18	RMS	32	-23.1	0	41.08	54	-12.92	-	-	332	379	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.81	PK	32	-23.1	0	54.71	-	-	74	-19.29	256	385	V
2	* 2.39	46.99	PK	32	-23.1	0	55.89	-	-	74	-18.11	256	385	V
3	* 2.39	31.65	RMS	32	-23.1	0	40.55	54	-13.45	-	-	256	385	V
4	* 2.39	32.44	RMS	32	-23.1	0	41.34	54	-12.66	-	-	256	385	V

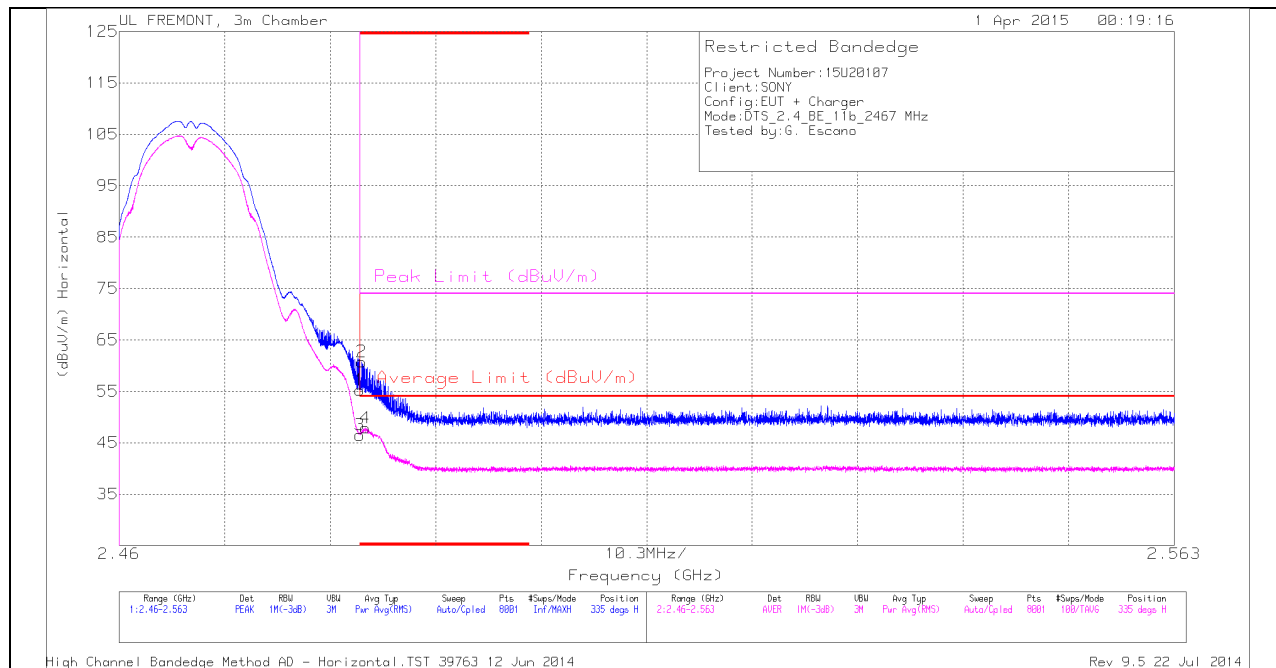
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL 12)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

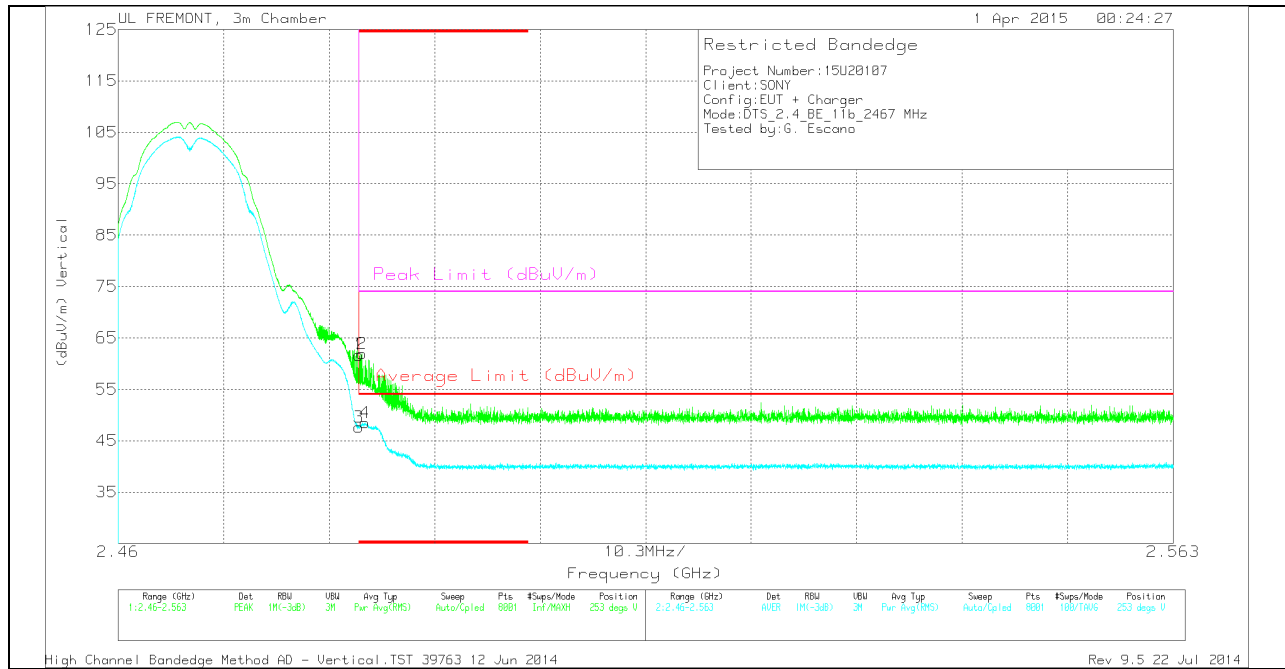
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.73	PK	32.3	-22.8	0	55.23	-	-	74	-18.77	335	290	H
2	* 2.484	51.23	PK	32.3	-22.8	0	60.73	-	-	74	-13.27	335	290	H
3	* 2.484	36.99	RMS	32.3	-22.8	0	46.49	54	-7.51	-	-	335	290	H
4	* 2.484	38.35	RMS	32.3	-22.8	0	47.85	54	-6.15	-	-	335	290	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	52.15	PK	32.3	-22.8	0	61.65	-	-	74	-12.35	253	294	V
2	* 2.484	52.44	PK	32.3	-22.8	0	61.94	-	-	74	-12.06	253	294	V
3	* 2.484	38.12	RMS	32.3	-22.8	0	47.62	54	-6.38	-	-	253	294	V
4	* 2.484	39	RMS	32.3	-22.8	0	48.5	54	-5.5	-	-	253	294	V

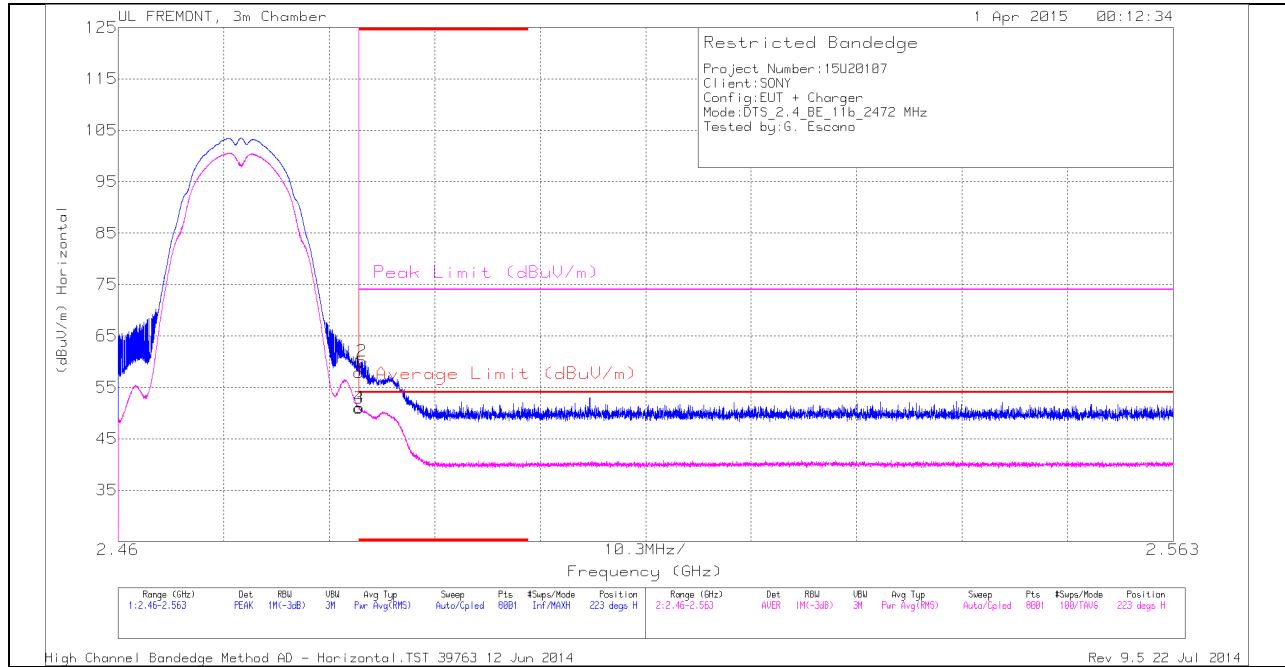
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL 13)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

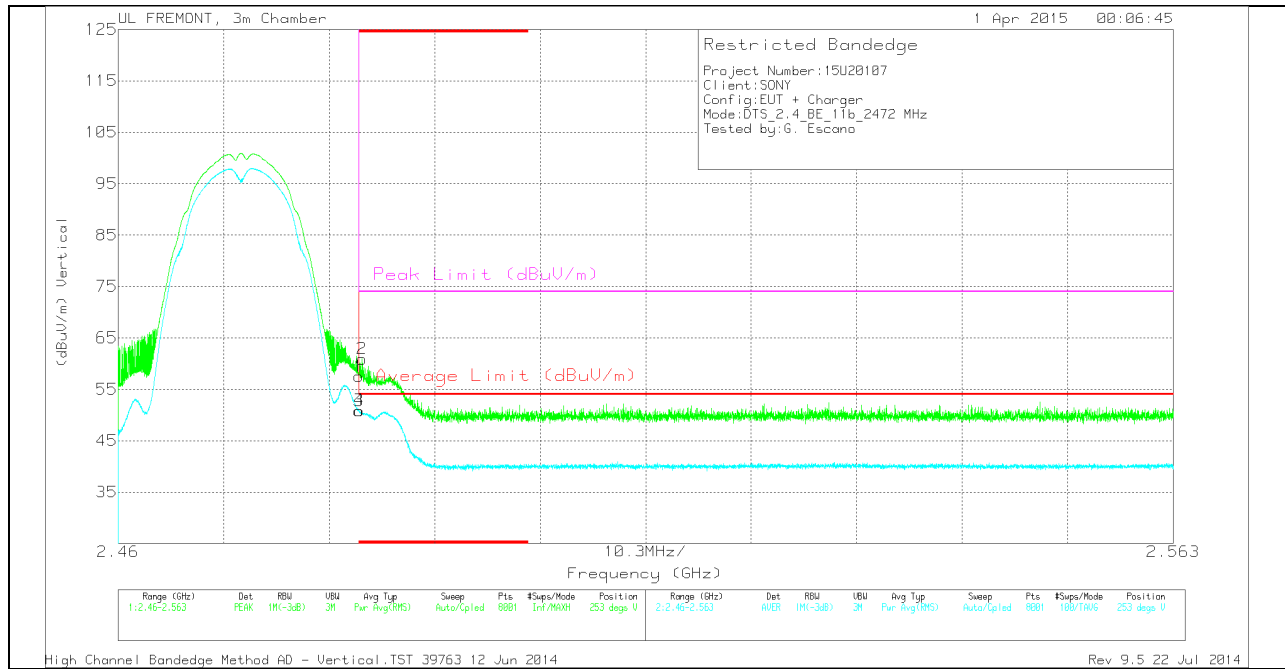
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.38	PK	32.3	-22.8	0	57.88	-	-	74	-16.12	223	352	H
2	* 2.484	50.58	PK	32.3	-22.8	0	60.08	-	-	74	-13.92	223	352	H
3	* 2.484	41.44	RMS	32.3	-22.8	0	50.94	54	-3.06	-	-	223	352	H
4	* 2.484	41.56	RMS	32.3	-22.8	0	51.06	54	-2.94	-	-	223	352	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.02	PK	32.3	-22.8	0	57.52	-	-	74	-16.48	253	354	V
2	* 2.484	51.41	PK	32.3	-22.8	0	60.91	-	-	74	-13.09	253	354	V
3	* 2.484	41.36	RMS	32.3	-22.8	0	50.86	54	-3.14	-	-	253	354	V
4	* 2.484	41.38	RMS	32.3	-22.8	0	50.88	54	-3.12	-	-	253	354	V

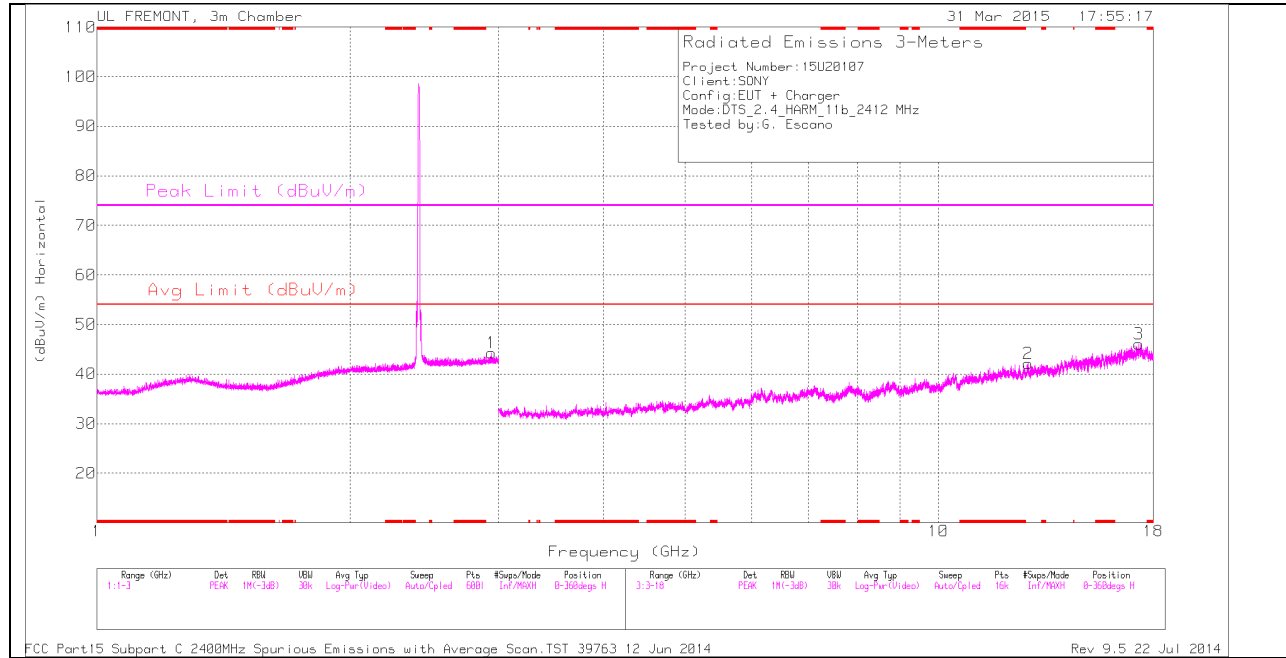
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

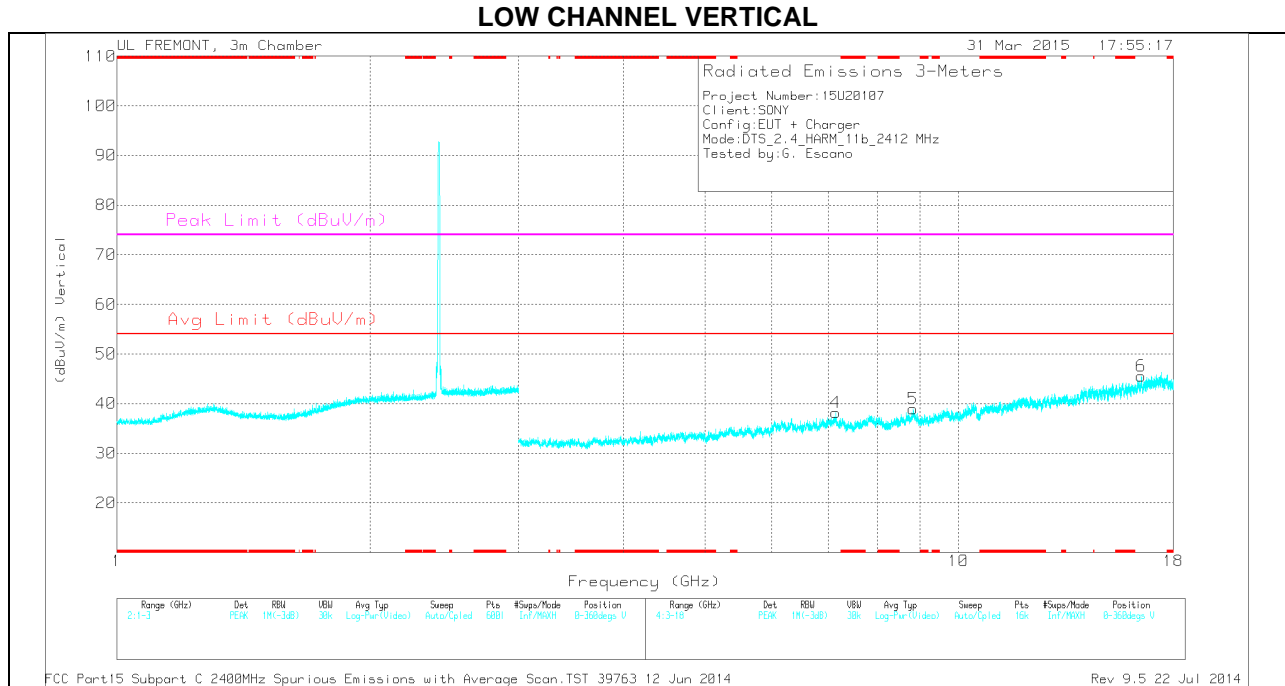
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



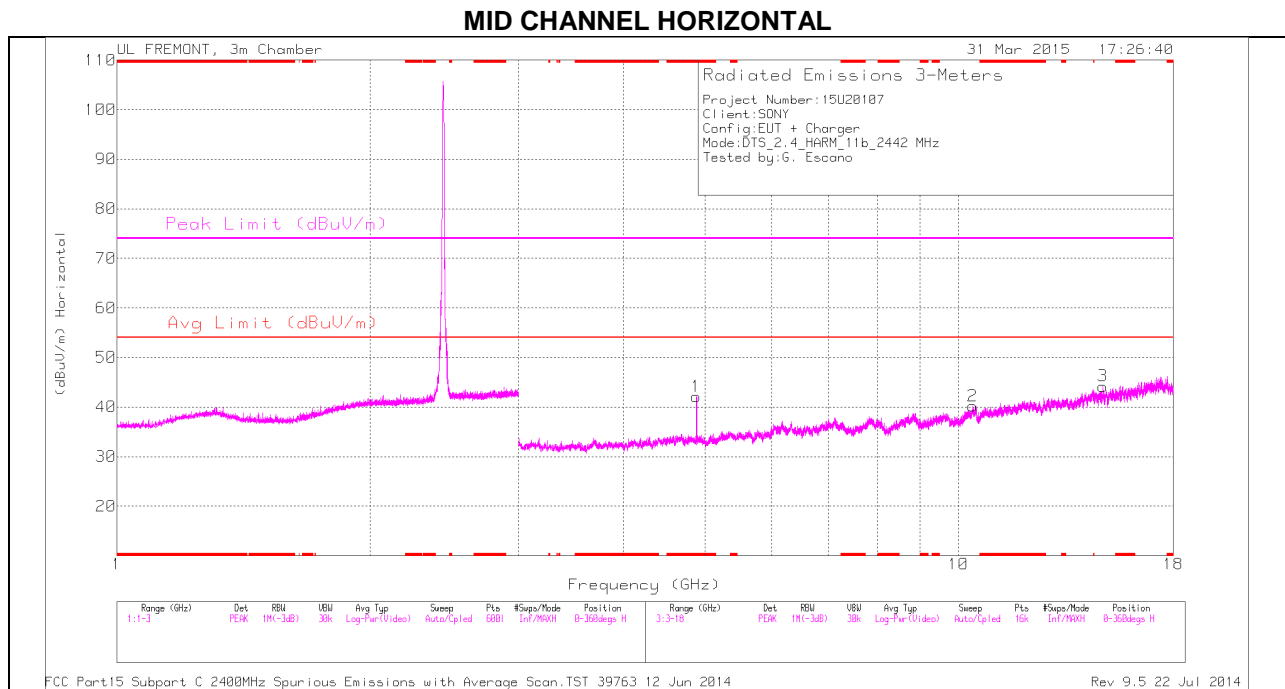
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

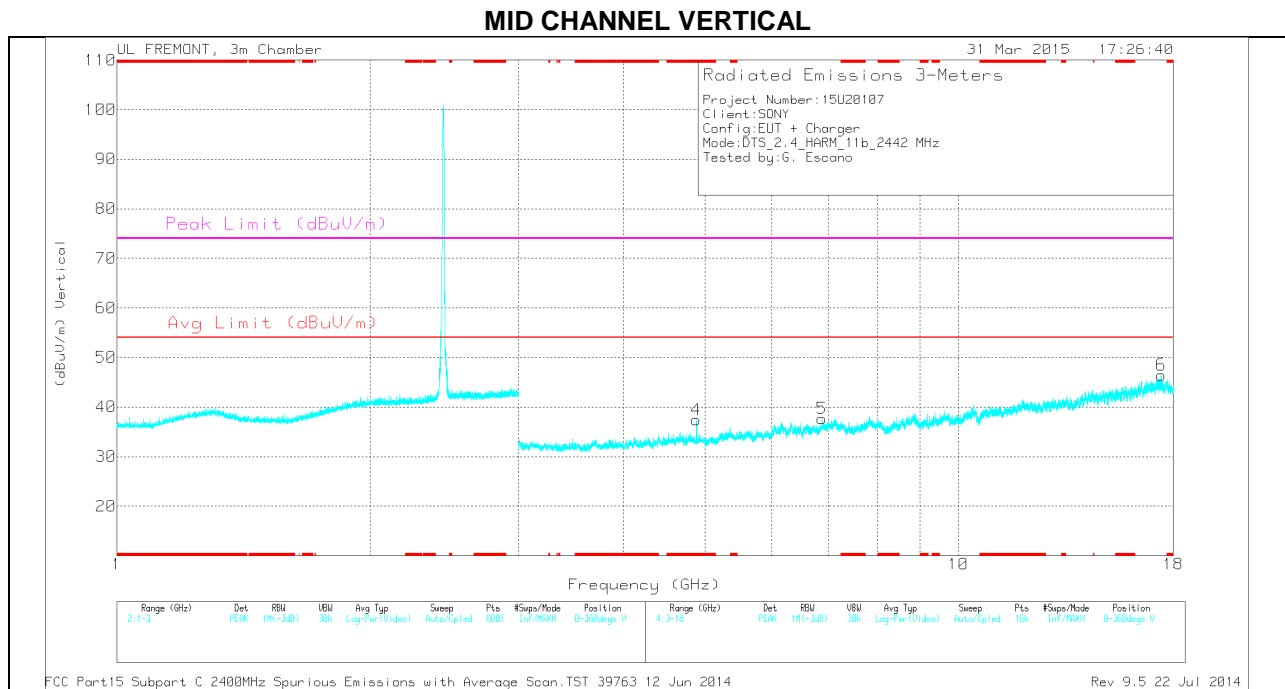
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.946	34.22	PK	32.7	-22.6	0	44.32	-	-	-	-	0-360	200	H
4	7.148	30.59	PK	35.6	-28	0	38.19	-	-	-	-	0-360	200	V
5	8.833	29.55	PK	35.9	-26.5	0	38.95	-	-	-	-	0-360	200	V
2	12.772	29.77	PK	39.1	-26.7	0	42.17	-	-	-	-	0-360	100	H
6	16.494	28.52	PK	40.9	-23.9	0	45.52	-	-	-	-	0-360	200	V
3	17.303	28.12	PK	41.4	-23.5	0	46.02	-	-	-	-	0-360	200	H

PK - Peak detector



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.883	38.21	PK	34	-30.1	0	42.11	-	-	74	-31.89	0-360	200	H
4	* 4.883	33.52	PK	34	-30.1	0	37.42	-	-	74	-36.58	0-360	200	V
5	6.884	30.66	PK	35.6	-28.6	0	37.66	-	-	-	-	0-360	200	V
2	10.406	28.05	PK	37.3	-25.1	0	40.25	-	-	-	-	0-360	200	H
3	14.855	31.12	PK	39.8	-26.7	0	44.22	-	-	-	-	0-360	100	H
6	17.414	27.2	PK	41.4	-22.1	0	46.5	-	-	-	-	0-360	100	V

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

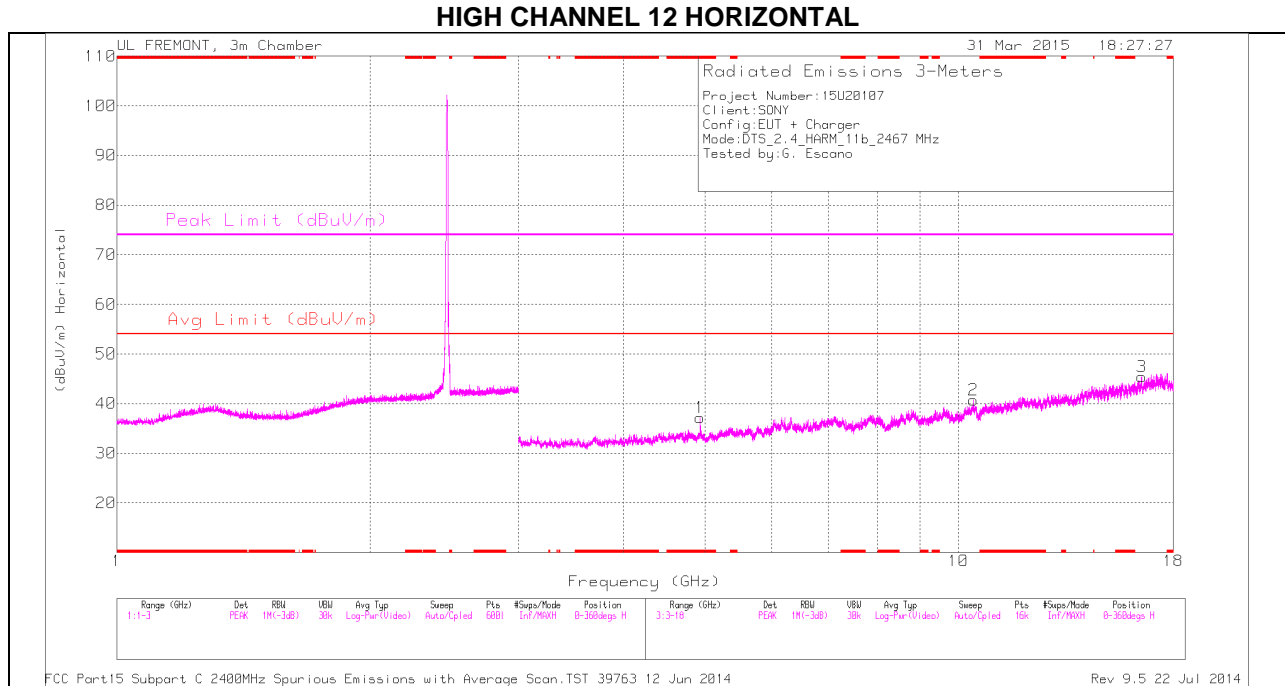
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.884	45.34	PK2	34	-30.1	0	49.24	-	-	74	-24.76	304	337	H
* 4.884	39.94	MAV1	34	-30.1	0	43.84	54	-10.16	-	-	304	337	H
* 4.884	42.6	PK2	34	-30.1	0	46.5	-	-	74	-27.5	322	206	V
* 4.884	34.74	MAV1	34	-30.1	0	38.64	54	-15.36	-	-	322	206	V

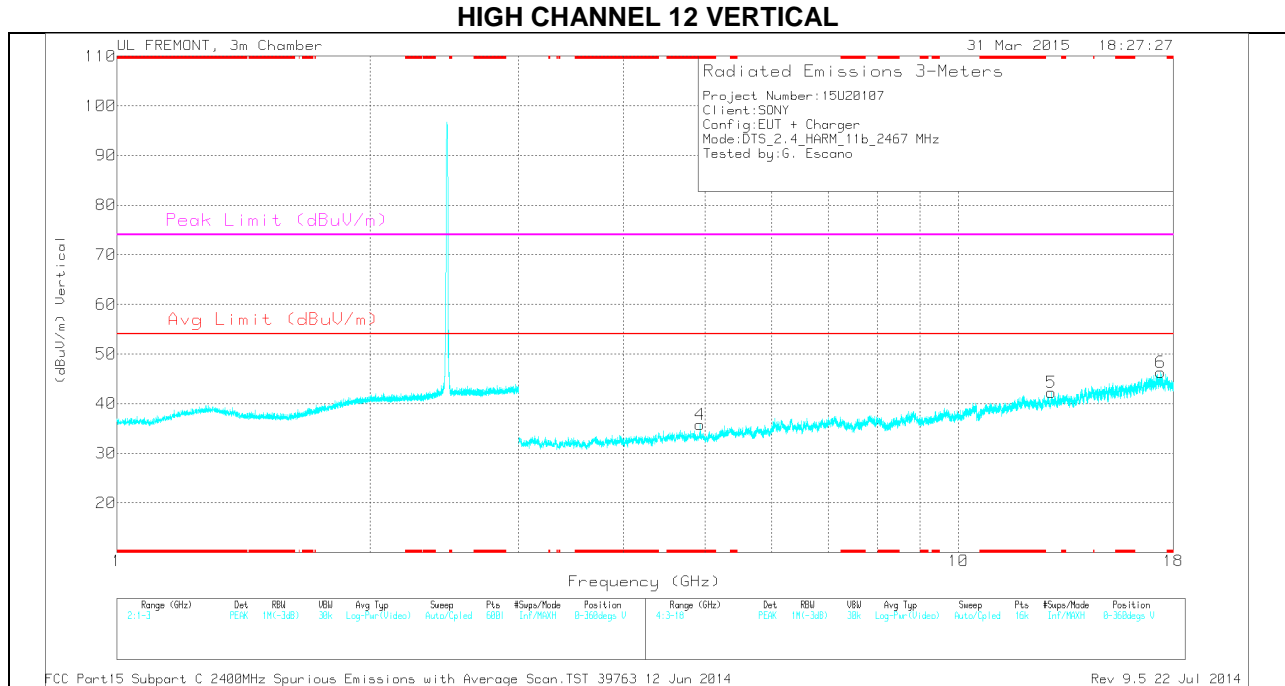
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.934	34	PK	34	-30.8	0	37.2	-	-	74	-36.8	0-360	200	H
4	* 4.934	32.61	PK	34	-30.8	0	35.81	-	-	74	-38.19	0-360	200	V
2	10.414	28.48	PK	37.3	-25.1	0	40.68	-	-	-	-	0-360	100	H
5	12.894	30.11	PK	39.1	-27	0	42.21	-	-	-	-	0-360	100	V
3	16.509	28.45	PK	41	-24	0	45.45	-	-	-	-	0-360	200	H
6	17.393	27.1	PK	41.4	-22.2	0	46.3	-	-	-	-	0-360	200	V

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

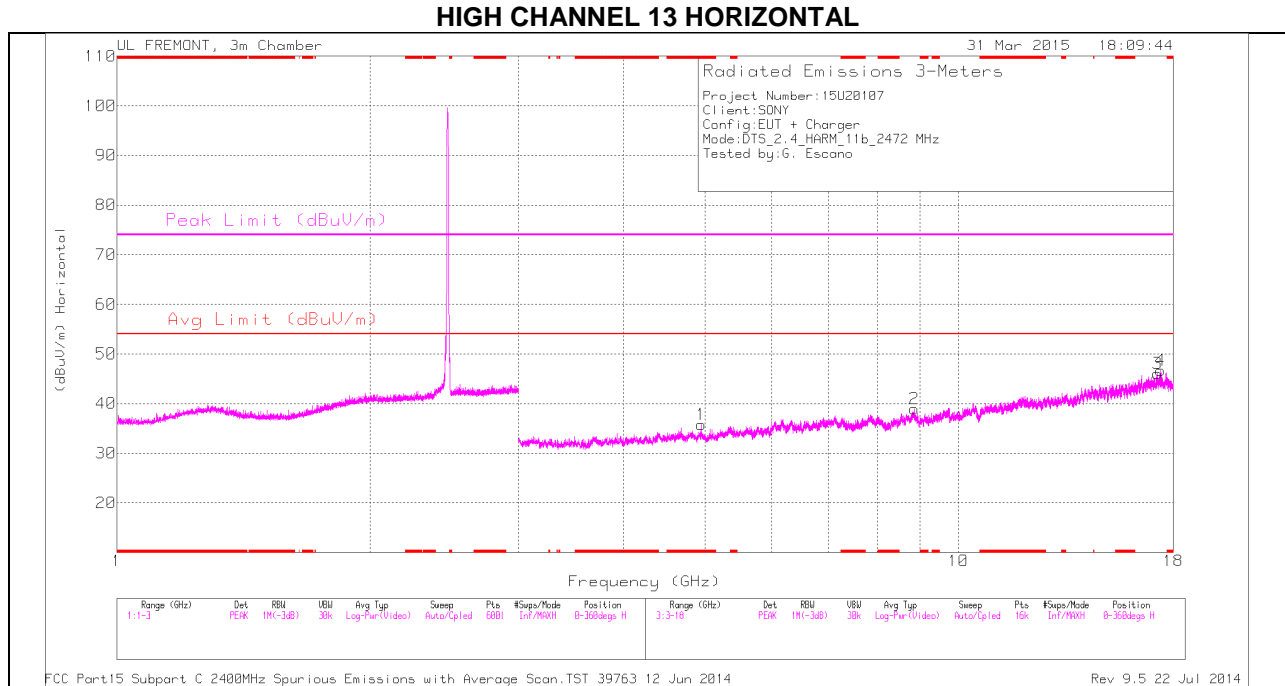
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.934	43.6	PK2	34	-30.8	0	46.8	-	-	74	-27.2	305	333	H
* 4.934	35.7	MAV1	34	-30.8	0	38.9	54	-15.1	-	-	305	333	H
* 4.934	42.38	PK2	34	-30.8	0	45.58	-	-	74	-28.42	319	200	V
* 4.934	32.09	MAV1	34	-30.8	0	35.29	54	-18.71	-	-	319	200	V

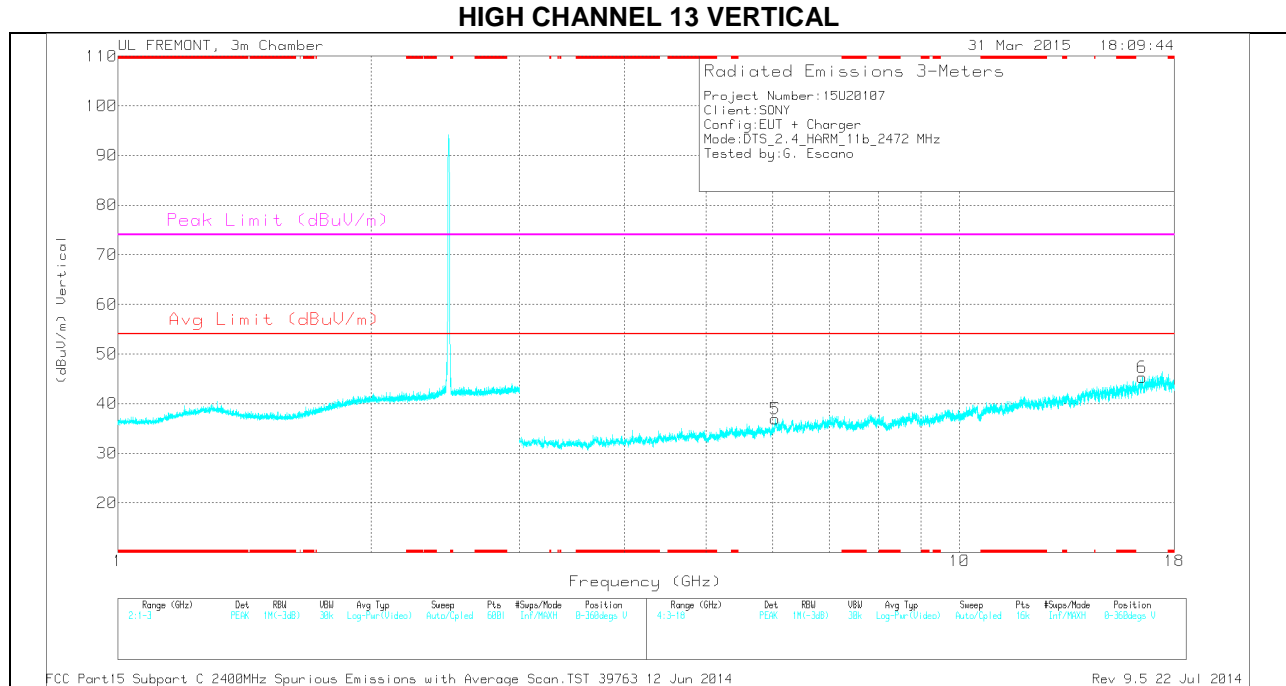
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.943	32.63	PK	34	-30.8	0	35.83	-	-	74	-38.17	0-360	200	H
6	16.497	28.35	PK	40.9	-23.9	0	45.35	-	-	-	-	0-360	100	V
3	17.23	28.39	PK	41.3	-23.6	0	46.09	-	-	-	-	0-360	100	H
4	17.387	28.09	PK	41.4	-22.8	0	46.69	-	-	-	-	0-360	100	H
5	6.037	31.24	PK	35.2	-29.5	0	36.94	-	-	-	-	0-360	100	V
2	8.855	29.73	PK	35.9	-26.7	0	38.93	-	-	-	-	0-360	100	H

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.944	42.07	PK2	34	-30.9	0	45.17	-	-	74	-28.83	317	332	H
* 4.944	31.43	MAV1	34	-30.9	0	34.53	54	-19.47	-	-	317	332	H

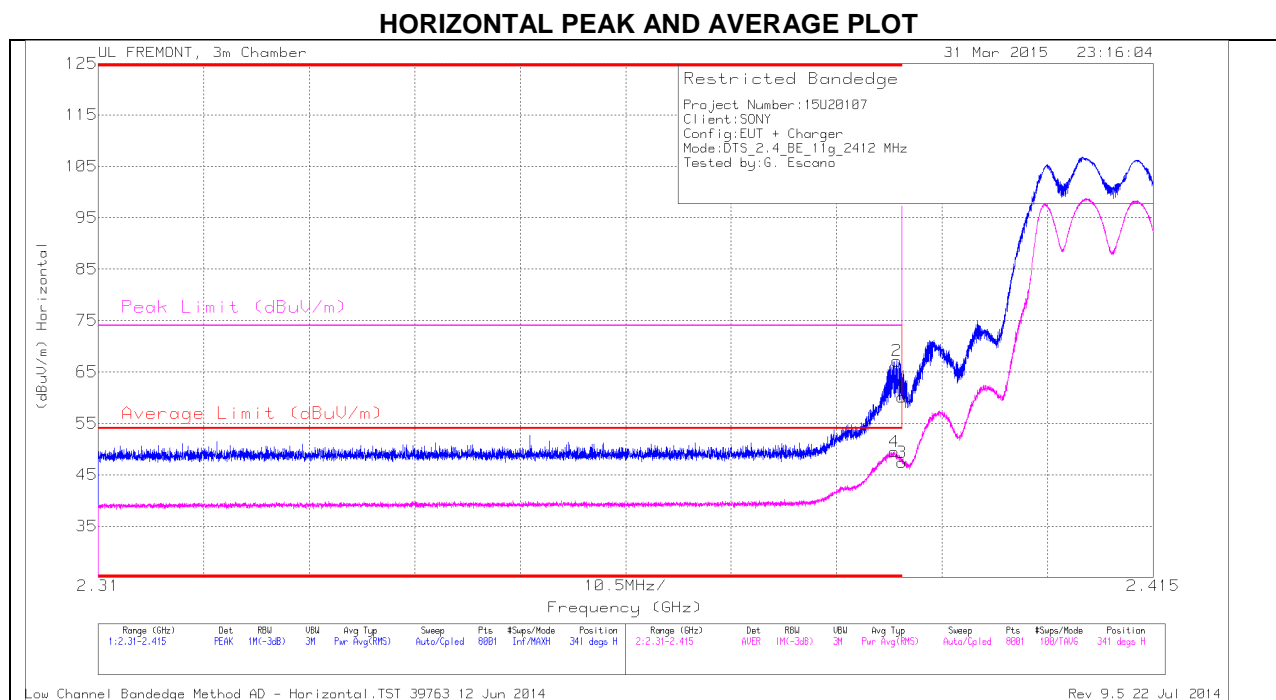
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

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

RESTRICTED BANDEDGE (LOW CHANNEL)

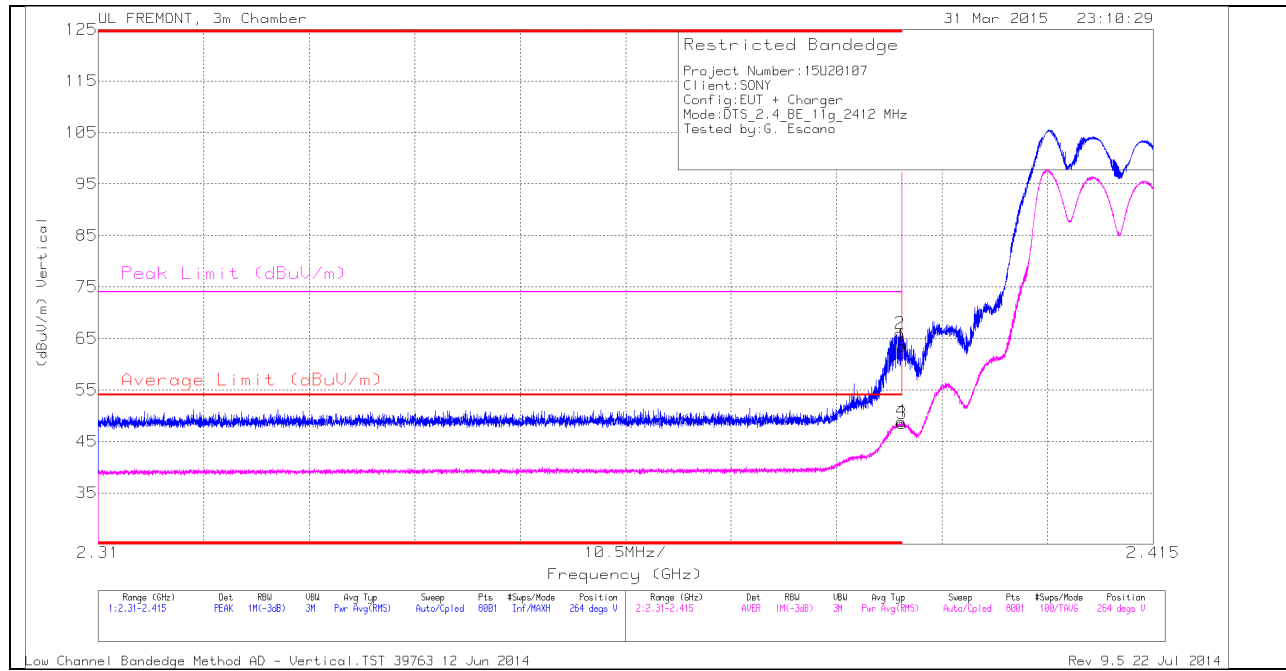


HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.389	58.24	PK	32	-23.1	0	67.14	-	-	74	-6.86	341	307	H
4	* 2.389	40.57	RMS	32	-23.1	0	49.47	54	-4.53	-	-	341	307	H
1	* 2.39	51.2	PK	32	-23.1	0	60.1	-	-	74	-13.9	341	307	H
3	* 2.39	38.5	RMS	32	-23.1	0	47.4	54	-6.6	-	-	341	307	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

VERTICAL PEAK AND AVERAGE PLOT



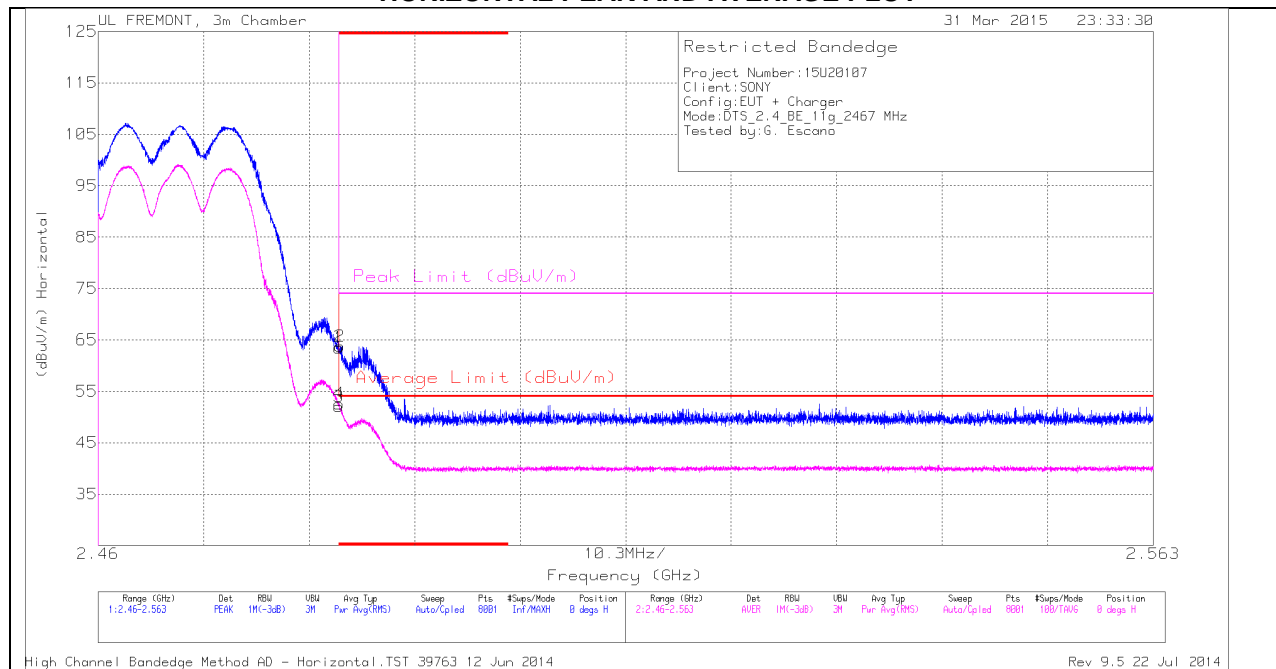
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.66	PK	32	-23.1	0	63.56	-	-	74	-10.44	264	307	V
2	* 2.39	57.08	PK	32	-23.1	0	65.98	-	-	74	-8.02	264	307	V
3	* 2.39	39.61	RMS	32	-23.1	0	48.51	54	-5.49	-	-	264	307	V
4	* 2.39	40.01	RMS	32	-23.1	0	48.91	54	-5.09	-	-	264	307	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

AUTHORIZED BANDEDGE (HIGH CHANNEL 12)

HORIZONTAL PEAK AND AVERAGE PLOT

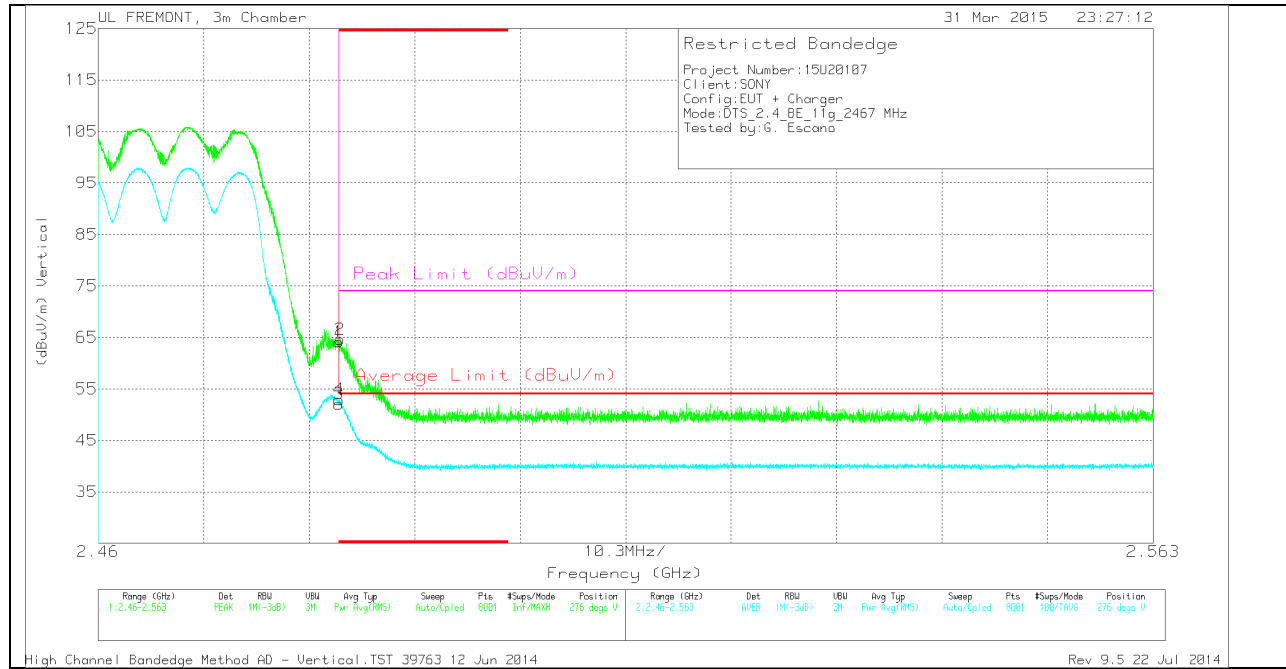


HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.97	PK	32.3	-22.8	0	63.47	-	-	74	-10.53	0	284	H
2	* 2.484	54.27	PK	32.3	-22.8	0	63.77	-	-	74	-10.23	0	284	H
3	* 2.484	42.54	RMS	32.3	-22.8	0	52.04	54	-1.96	-	-	0	284	H
4	* 2.484	43.09	RMS	32.3	-22.8	0	52.59	54	-1.41	-	-	0	284	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

VERTICAL PEAK AND AVERAGE PLOT



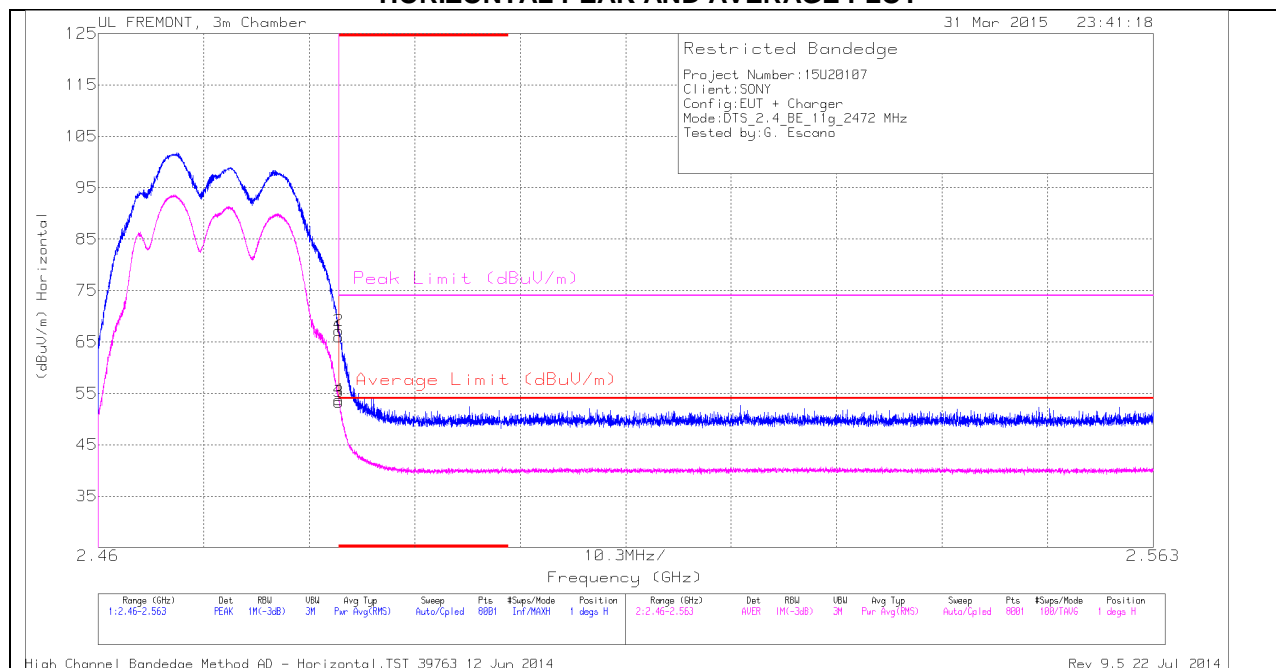
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	54.64	PK	32.3	-22.8	0	64.14	-	-	74	-9.86	276	296	V
2	* 2.484	55.1	PK	32.3	-22.8	0	64.6	-	-	74	-9.4	276	296	V
3	* 2.484	42.59	RMS	32.3	-22.8	0	52.09	54	-1.91	-	-	276	296	V
4	* 2.484	43.41	RMS	32.3	-22.8	0	52.91	54	-1.09	-	-	276	296	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

AUTHORIZED BANDEDGE (HIGH CHANNEL 13)

HORIZONTAL PEAK AND AVERAGE PLOT

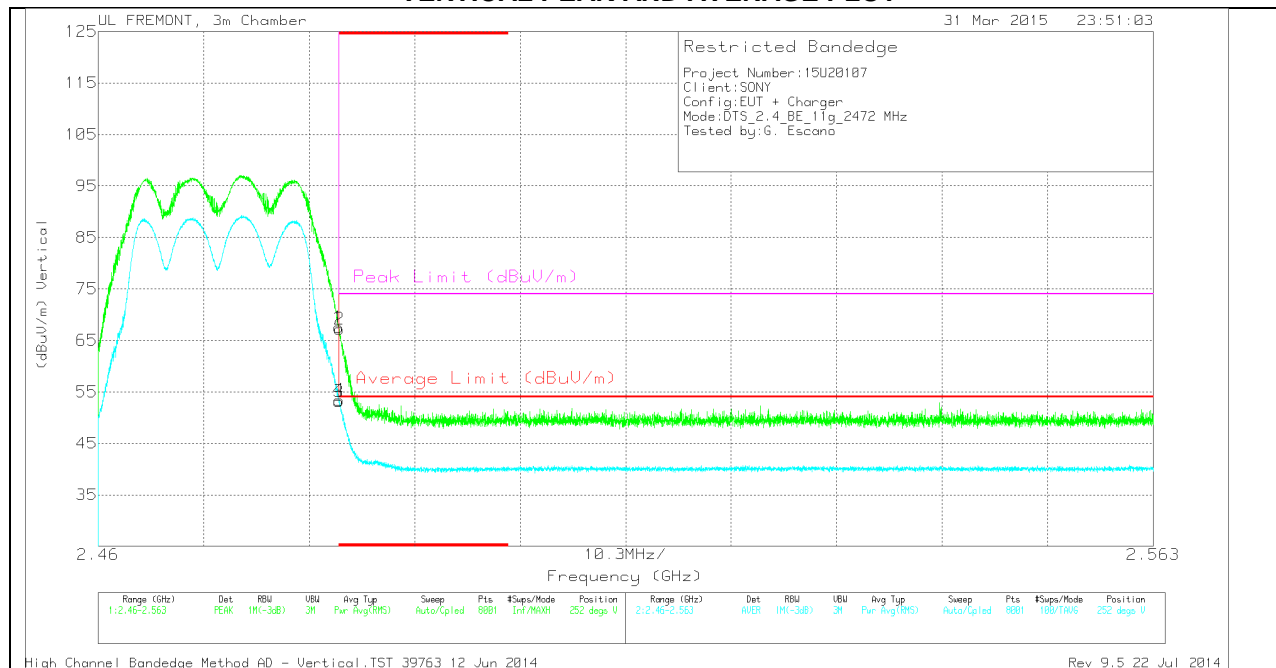


HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.5	PK	32.3	-22.8	0	66	-	-	74	-8	1	292	H
2	* 2.484	57.69	PK	32.3	-22.8	0	67.19	-	-	74	-6.81	1	292	H
3	* 2.484	43.83	RMS	32.3	-22.8	0	53.33	54	-67	-	-	1	292	H
4	* 2.484	44.25	RMS	32.3	-22.8	0	53.75	54	-25	-	-	1	292	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

VERTICAL PEAK AND AVERAGE PLOT



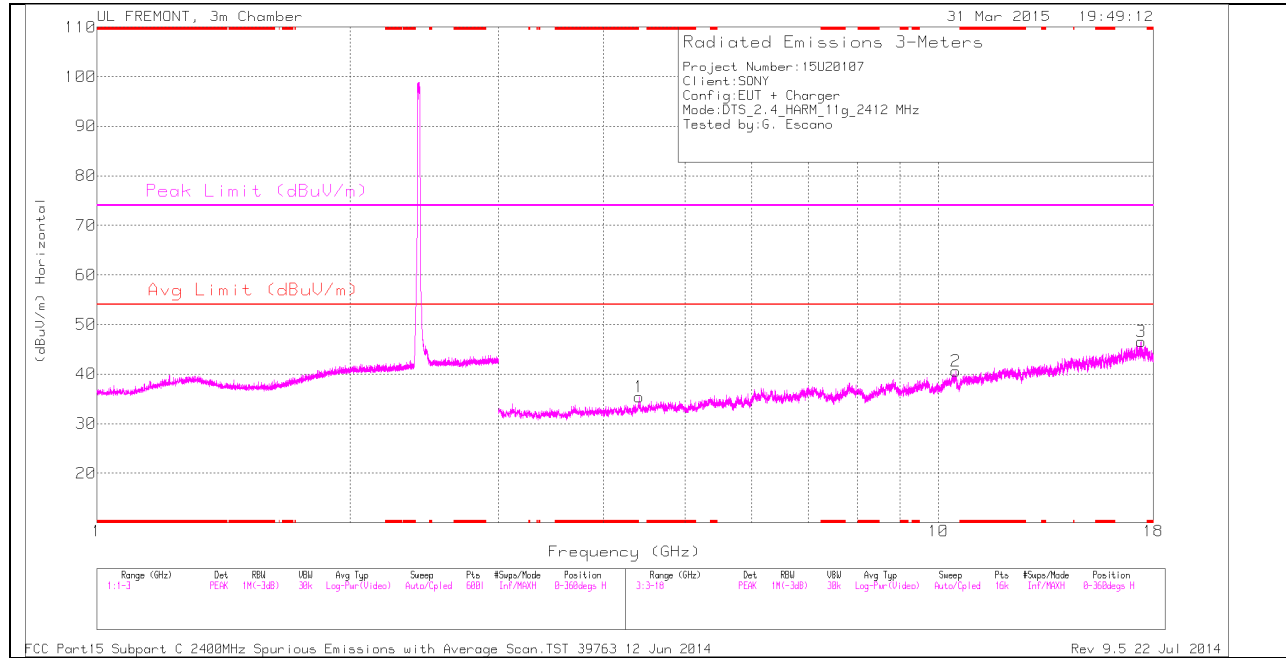
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	58.06	PK	32.3	-22.8	0	67.56	-	-	74	-6.44	252	353	V
2	* 2.484	57.71	PK	32.3	-22.8	0	67.21	-	-	74	-6.79	252	353	V
3	* 2.484	43.65	RMS	32.3	-22.8	0	53.15	54	-85	-	-	252	353	V
4	* 2.484	43.91	RMS	32.3	-22.8	0	53.41	54	-59	-	-	252	353	V

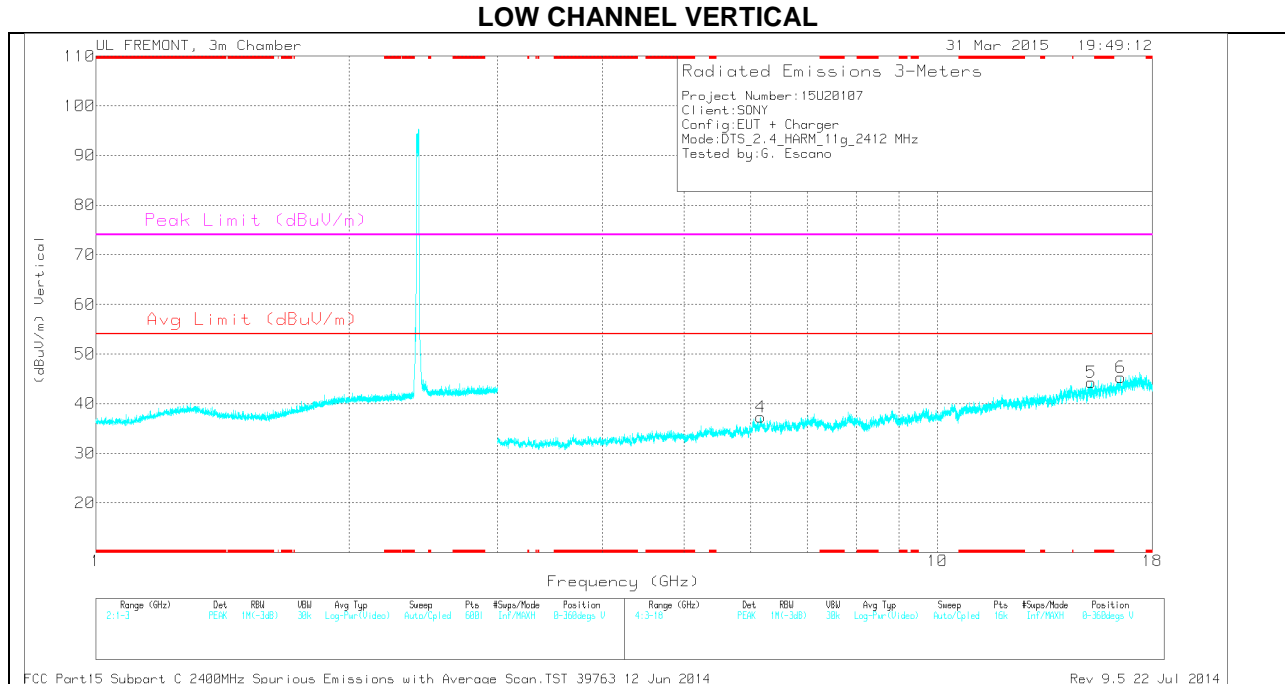
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



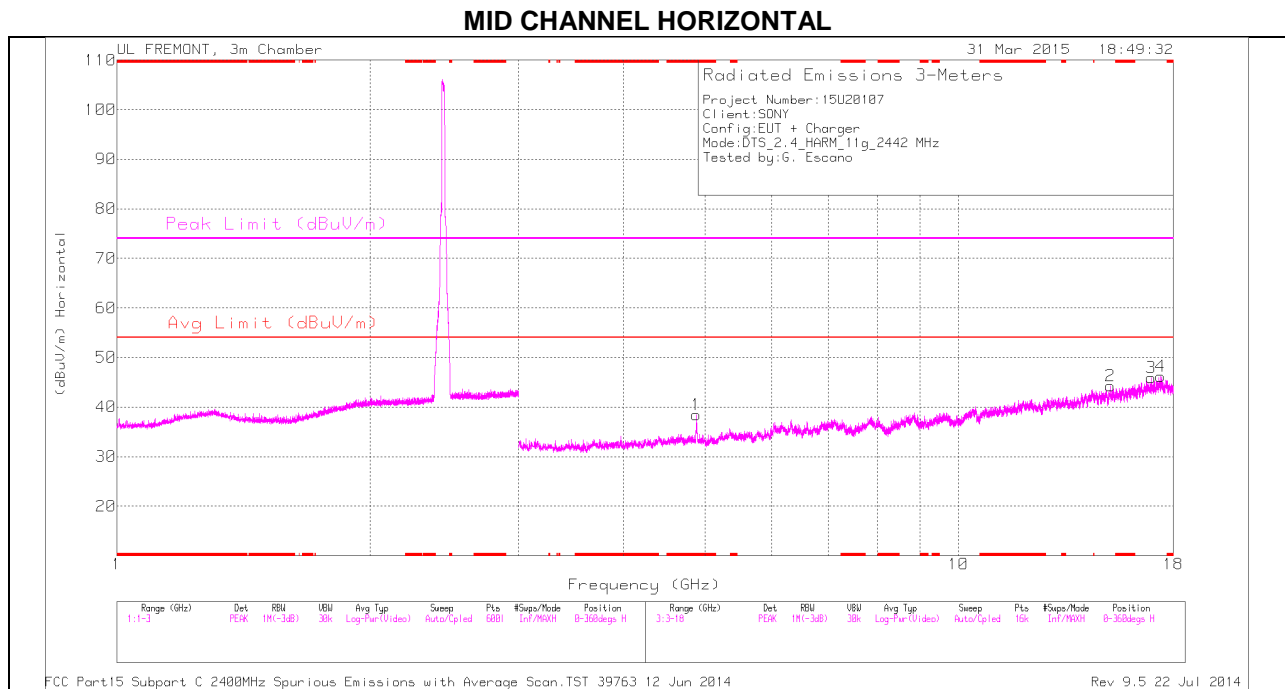
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

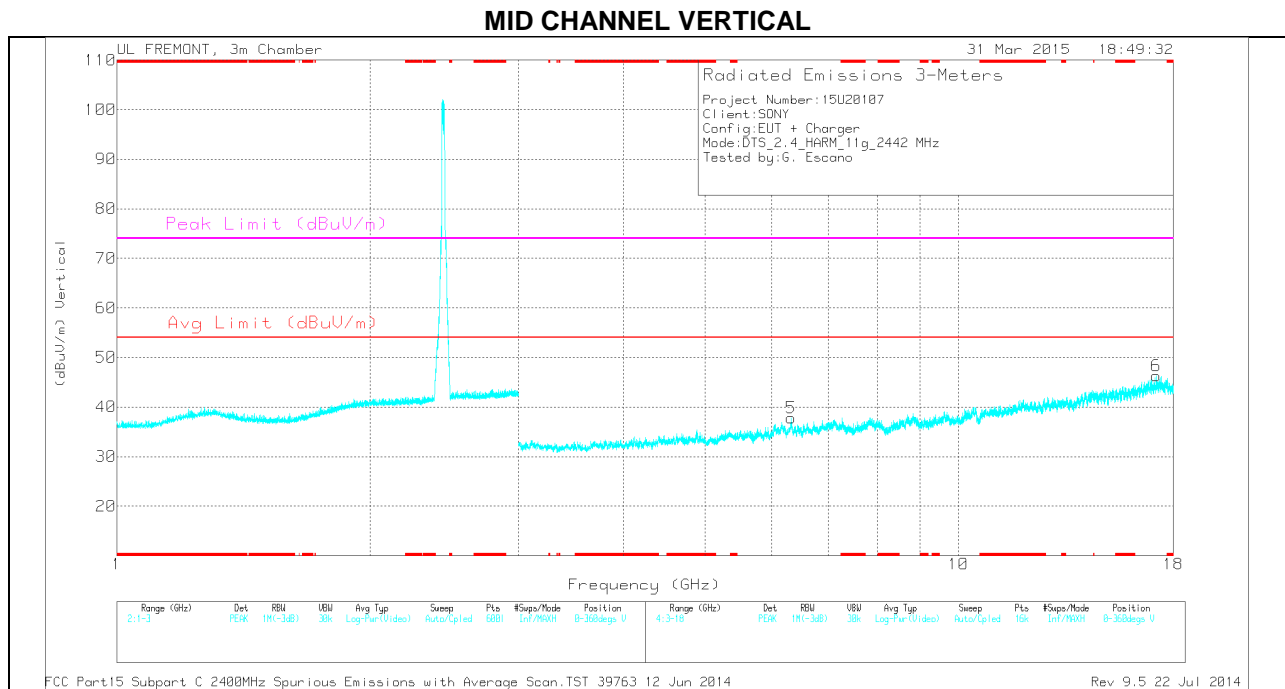
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	4.409	31.88	PK	33.7	-30.2	0	35.38	-	-	-	-	0-360	100	H
4	6.168	31.68	PK	35.3	-29.7	0	37.28	-	-	-	-	0-360	200	V
2	10.484	28.49	PK	37.4	-25.3	0	40.59	-	-	-	-	0-360	200	H
5	15.242	30.73	PK	39.9	-26.4	0	44.23	-	-	-	-	0-360	200	V
6	16.504	28.14	PK	41	-23.9	0	45.24	-	-	-	-	0-360	200	V
3	17.412	27.13	PK	41.4	-22	0	46.53	-	-	-	-	0-360	200	H

PK - Peak detector



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.881	34.68	PK	34	-30.2	0	38.48	-	-	74	-35.52	0-360	200	H
5	6.331	31.47	PK	35.4	-29.1	0	37.77	-	-	-	-	0-360	200	V
2	15.146	30.83	PK	39.9	-26.4	0	44.33	-	-	-	-	0-360	100	H
3	16.957	28	PK	41.3	-23.4	0	45.9	-	-	-	-	0-360	200	H
6	17.182	28.43	PK	41.3	-23.4	0	46.33	-	-	-	-	0-360	100	V
4	17.393	27.12	PK	41.4	-22.3	0	46.22	-	-	-	-	0-360	100	H

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

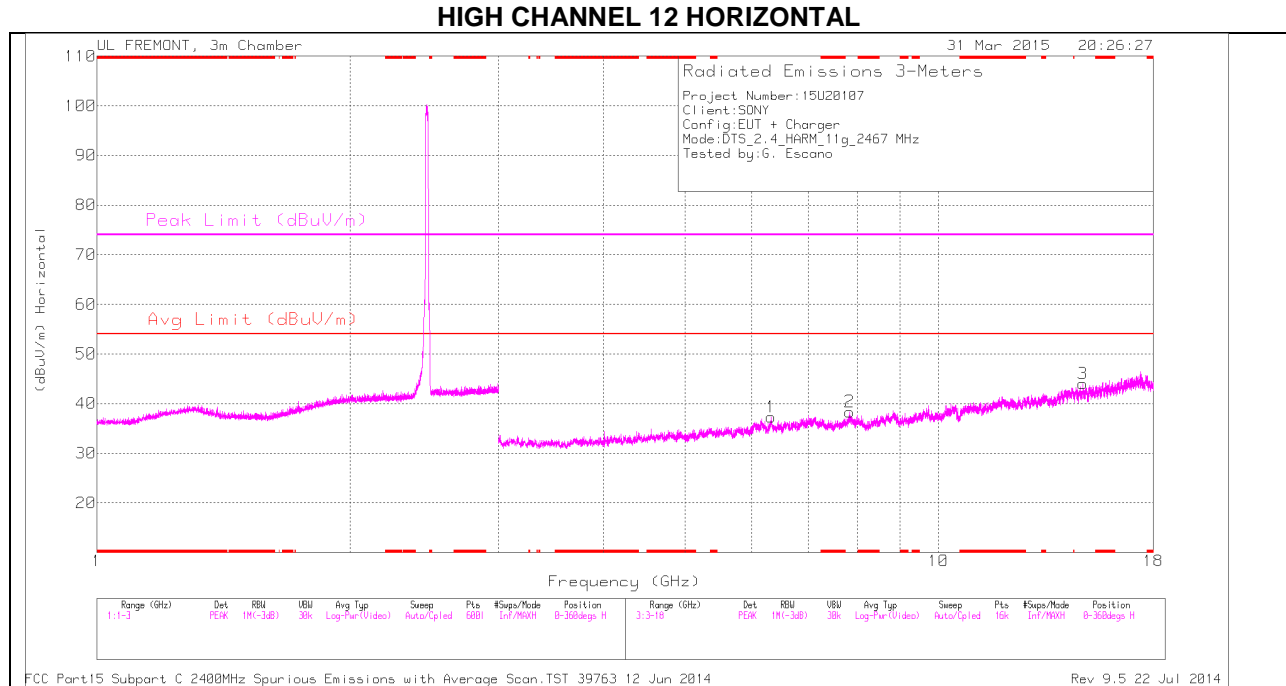
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.883	45.57	PK2	34	-30.1	0	49.47	-	-	74	-24.53	296	340	H
* 4.883	32.94	MAV1	34	-30.1	0	36.84	54	-17.16	-	-	296	340	H

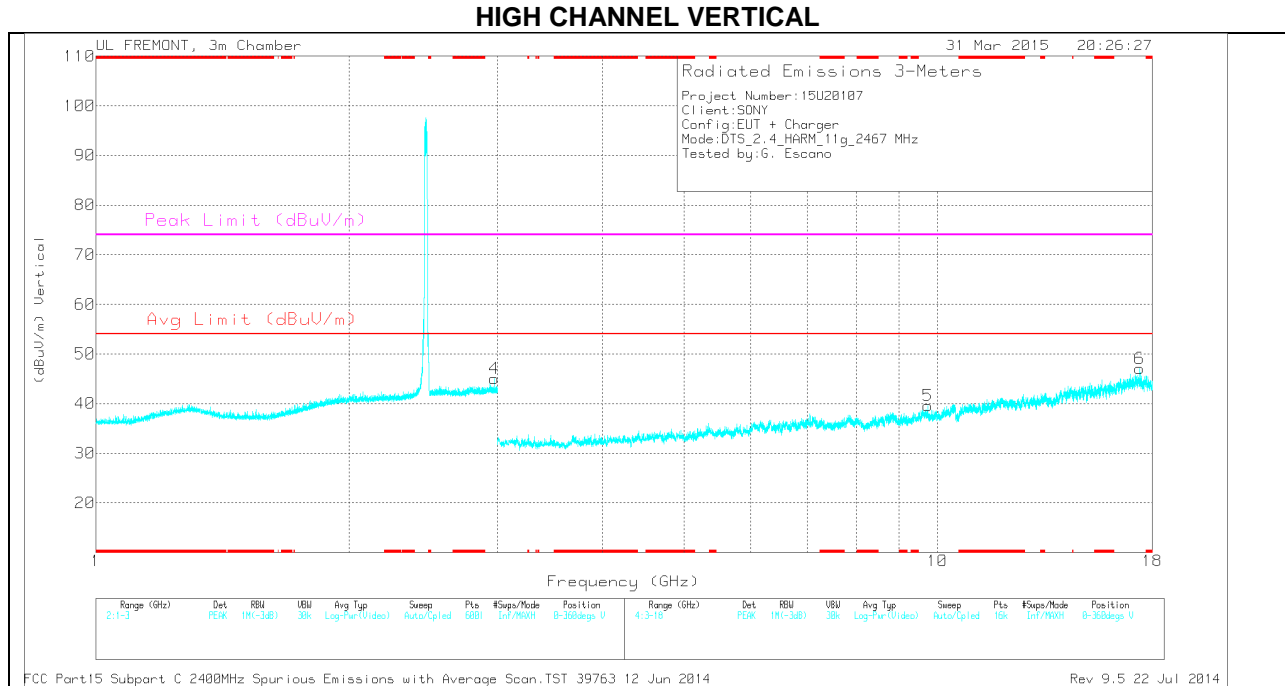
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



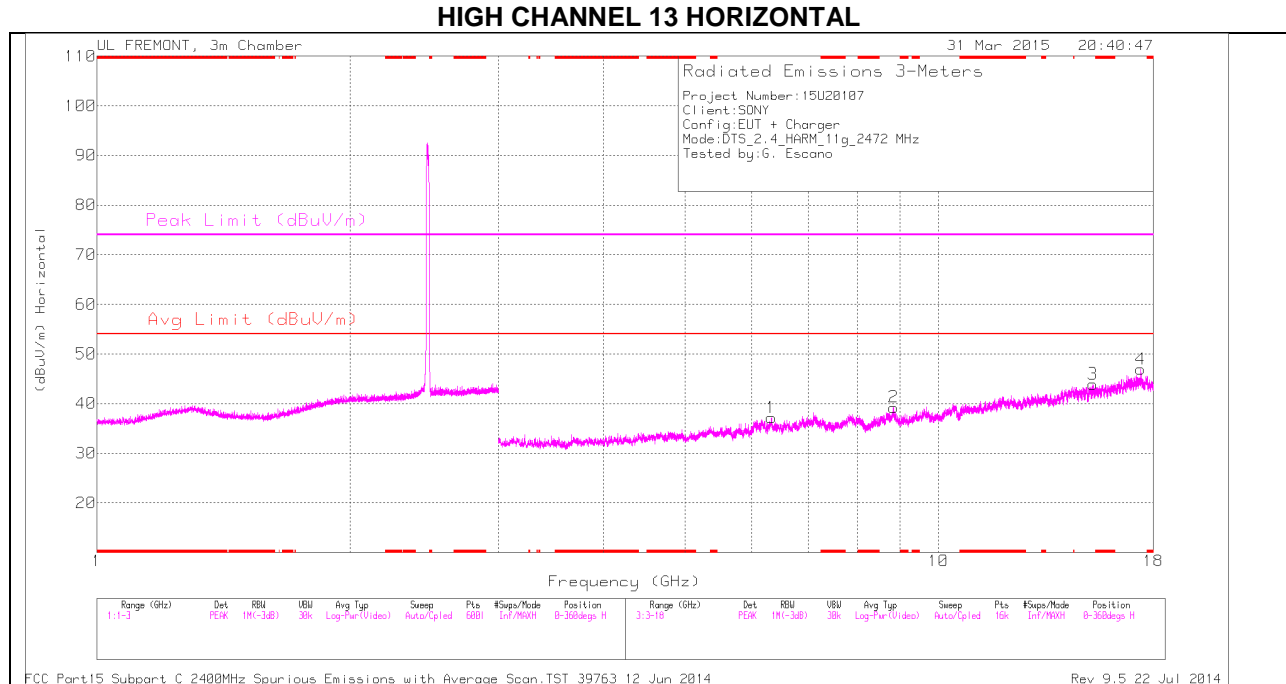
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

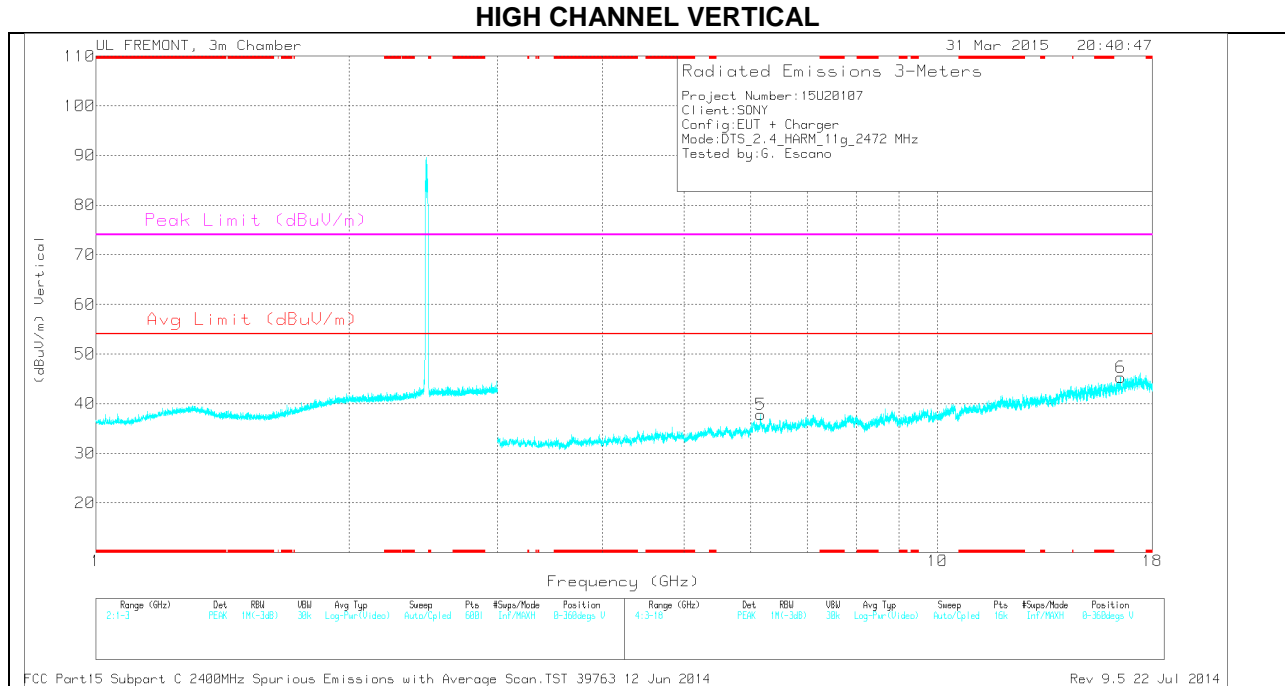
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.976	34.9	PK	32.7	-22.5	0	45.1	-	-	-	-	0-360	100	V
1	6.322	31.17	PK	35.4	-29.3	0	37.27	-	-	-	-	0-360	200	H
2	7.838	30.08	PK	35.8	-27.5	0	38.38	-	-	-	-	0-360	100	H
5	9.734	28.21	PK	36.9	-25.5	0	39.61	-	-	-	-	0-360	100	V
3	14.835	31.02	PK	39.8	-26.8	0	44.02	-	-	-	-	0-360	200	H
6	17.39	28.15	PK	41.4	-22.5	0	47.05	-	-	-	-	0-360	100	V

PK - Peak detector



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

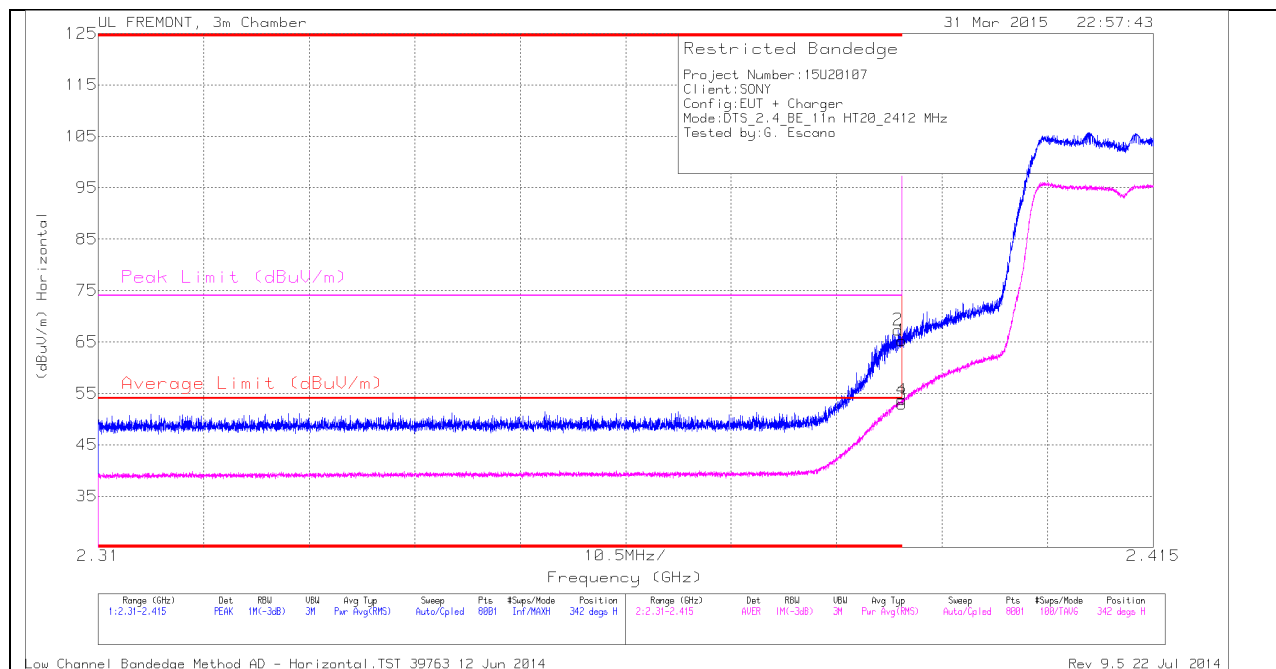
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	6.16	32.17	PK	35.3	-29.7	0	37.77	-	-	-	-	0-360	200	V
1	6.332	30.89	PK	35.4	-29.1	0	37.19	-	-	-	-	0-360	100	H
2	8.846	29.87	PK	35.9	-26.5	0	39.27	-	-	-	-	0-360	100	H
3	15.249	30.26	PK	39.9	-26.2	0	43.96	-	-	-	-	0-360	100	H
6	16.503	28.24	PK	41	-23.9	0	45.34	-	-	-	-	0-360	100	V
4	17.393	27.69	PK	41.4	-22.2	0	46.89	-	-	-	-	0-360	100	H

PK - Peak detector

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

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

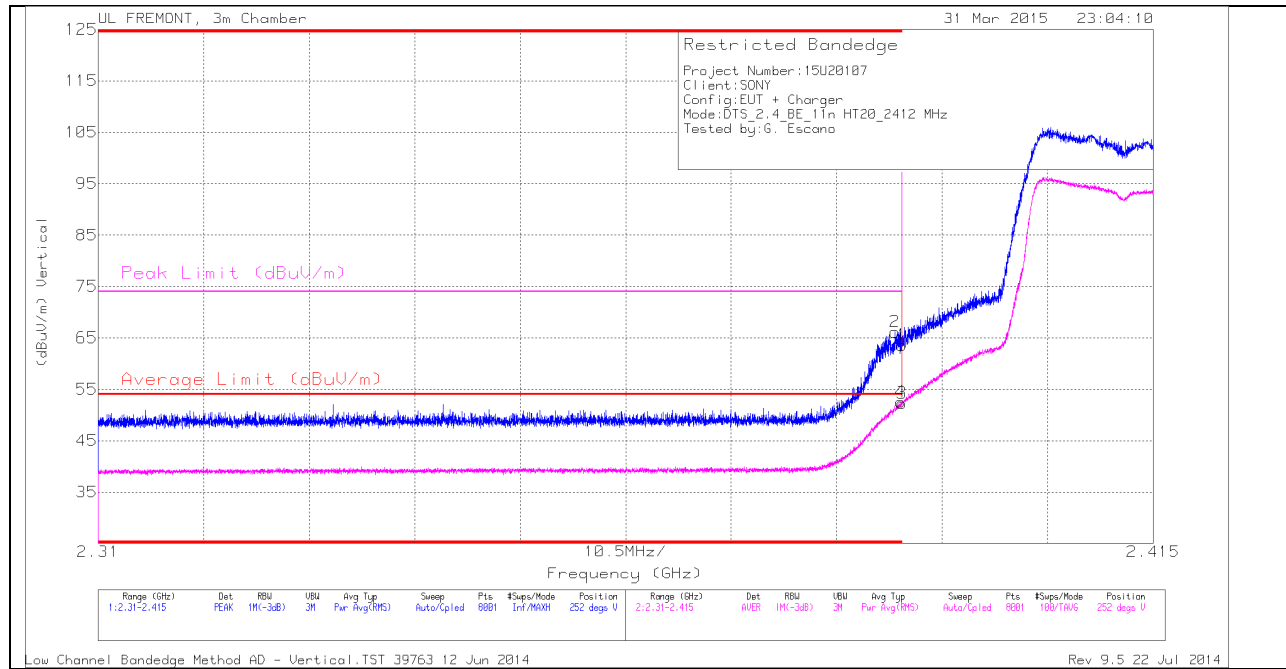
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	56.38	PK	32	-23.1	0	65.28	-	-	74	-8.72	342	297	H
2	* 2.39	58.44	PK	32	-23.1	0	67.34	-	-	74	-6.66	342	297	H
3	* 2.39	44.04	RMS	32	-23.1	0	52.94	54	-1.06	-	-	342	297	H
4	* 2.39	44.83	RMS	32	-23.1	0	53.73	54	-.27	-	-	342	297	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.389	57.26	PK	32	-23.1	0	66.16	-	-	74	-7.84	252	307	V
1	* 2.39	54.69	PK	32	-23.1	0	63.59	-	-	74	-10.41	252	307	V
3	* 2.39	43.42	RMS	32	-23.1	0	52.32	54	-1.68	-	-	252	307	V
4	* 2.39	43.66	RMS	32	-23.1	0	52.56	54	-1.44	-	-	252	307	V

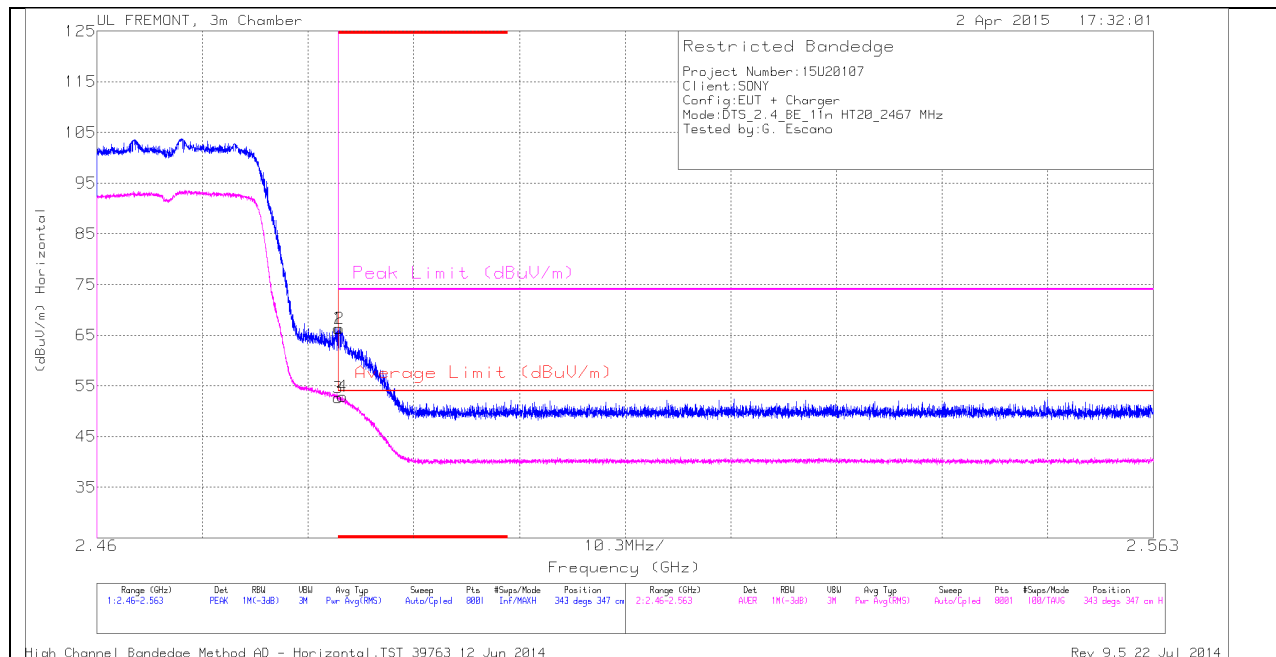
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL 12)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

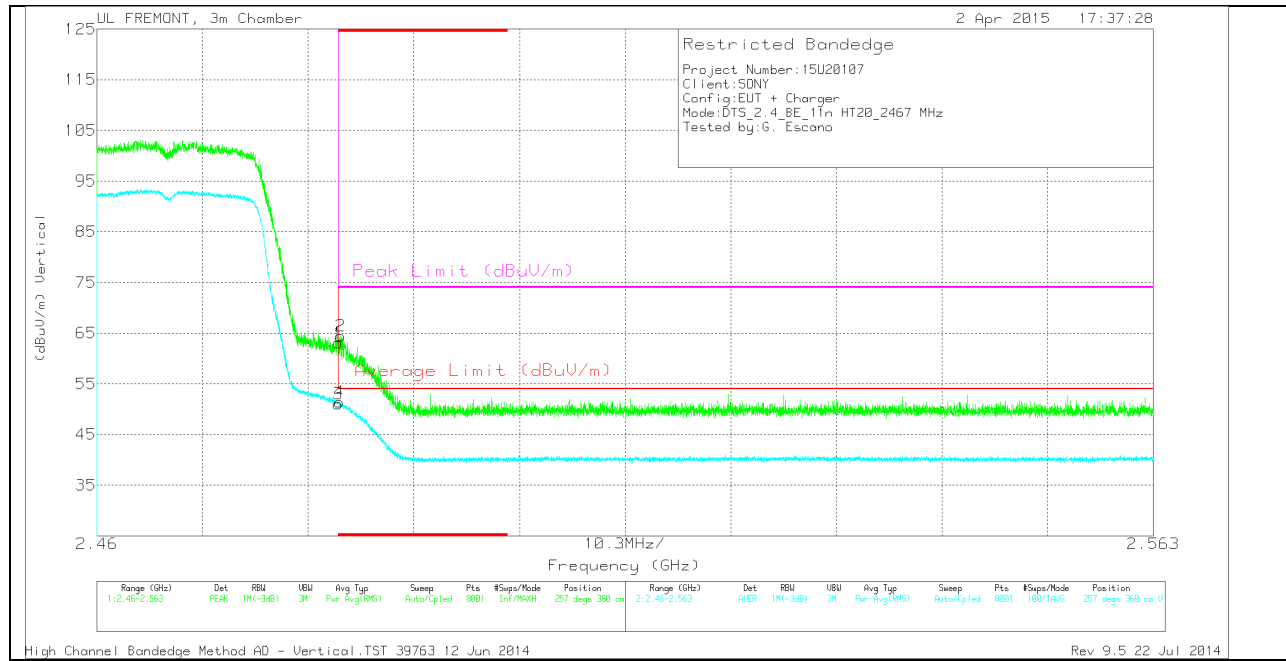
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.77	PK	32.3	-22.8	0	66.27	-	-	74	-7.73	343	347	H
2	* 2.484	56.8	PK	32.3	-22.8	0	66.3	-	-	74	-7.7	343	347	H
3	* 2.484	43.16	RMS	32.3	-22.8	0	52.66	54	-1.34	-	-	343	347	H
4	* 2.484	43.44	RMS	32.3	-22.8	0	52.94	54	-1.06	-	-	343	347	H

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.56	PK	32.3	-22.8	0	63.06	-	-	74	-10.94	257	360	V
2	* 2.484	54.94	PK	32.3	-22.8	0	64.44	-	-	74	-9.56	257	360	V
3	* 2.484	41.55	RMS	32.3	-22.8	0	51.05	54	-2.95	-	-	257	360	V
4	* 2.484	41.95	RMS	32.3	-22.8	0	51.45	54	-2.55	-	-	257	360	V

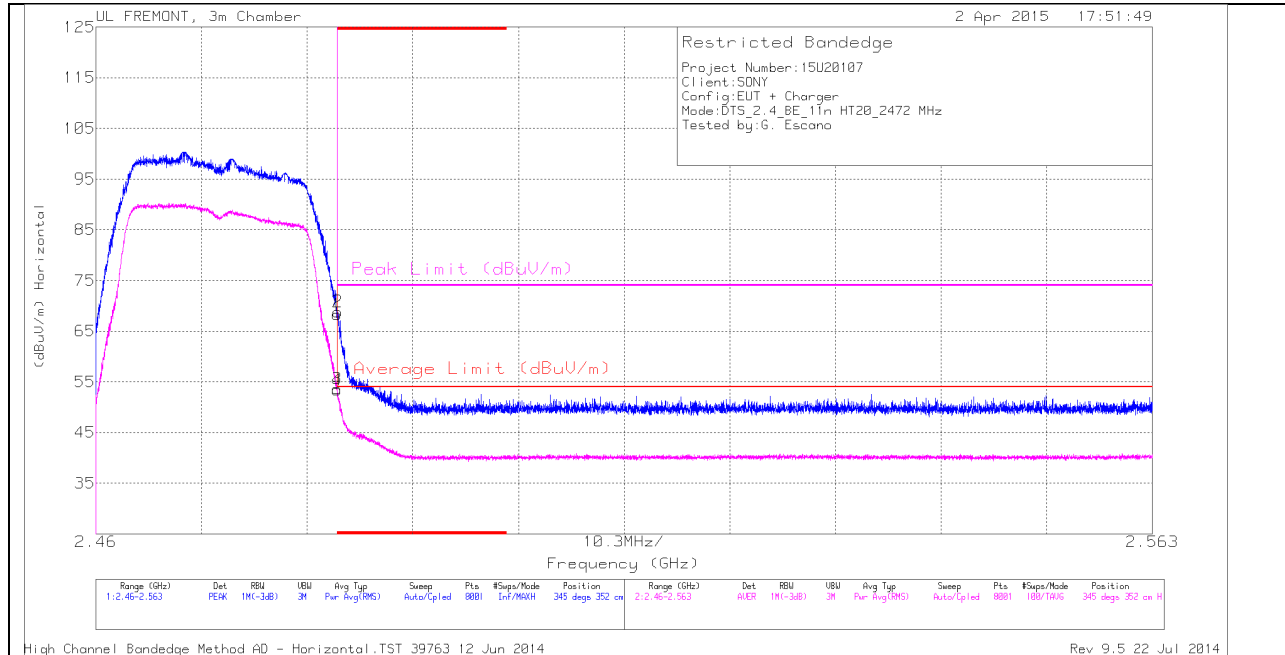
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL 13)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

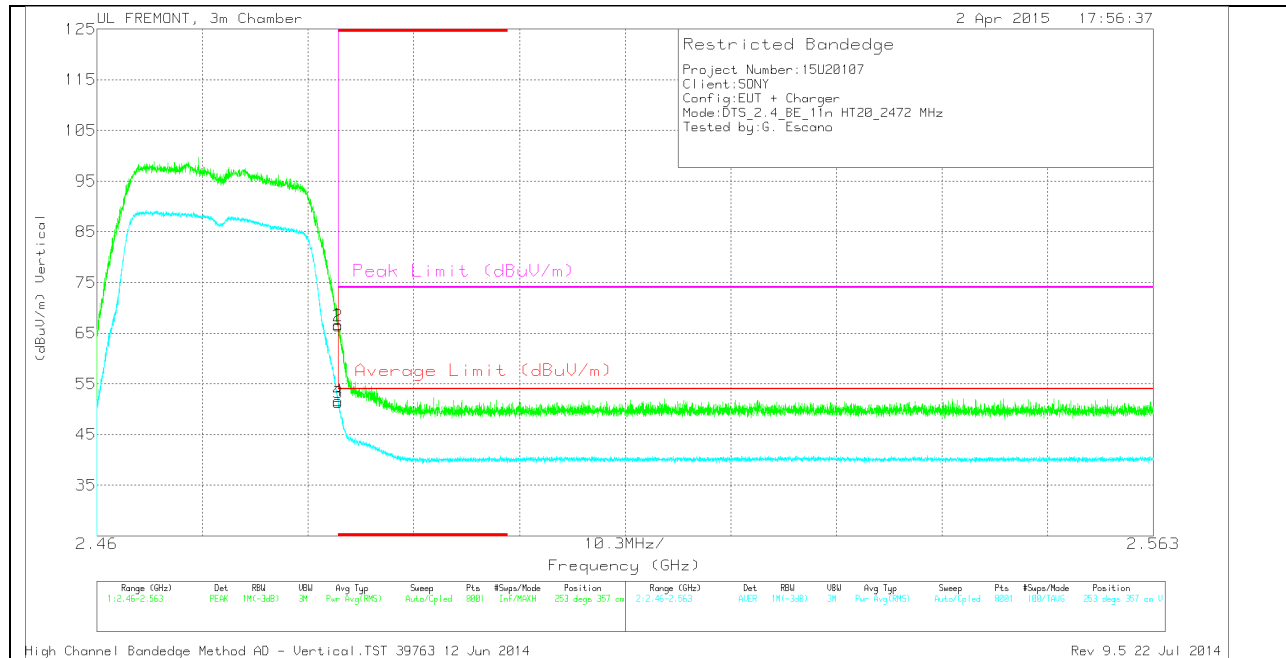
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	58.85	PK	32.3	-22.8	0	68.35	-	-	74	-5.65	345	352	H
2	* 2.484	59.35	PK	32.3	-22.8	0	68.85	-	-	74	-5.15	345	352	H
3	* 2.484	44.15	RMS	32.3	-22.8	0	53.65	54	-35	-	-	345	352	H
4	* 2.484	43.88	RMS	32.3	-22.8	0	53.38	54	-62	-	-	345	352	H

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

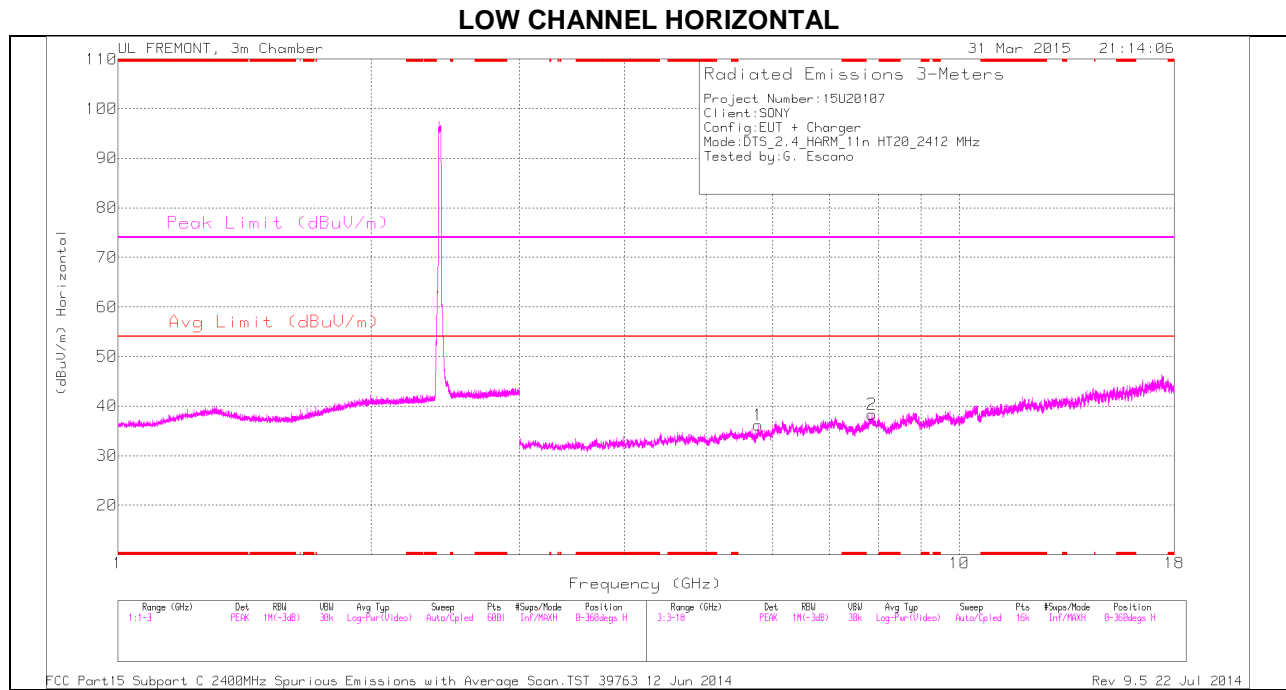
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	57.19	PK	32.3	-22.8	0	66.69	-	-	74	-7.31	253	357	V
2	* 2.484	56.9	PK	32.3	-22.8	0	66.4	-	-	74	-7.6	253	357	V
3	* 2.484	41.81	RMS	32.3	-22.8	0	51.31	54	-2.69	-	-	253	357	V
4	* 2.484	42.2	RMS	32.3	-22.8	0	51.7	54	-2.3	-	-	253	357	V

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

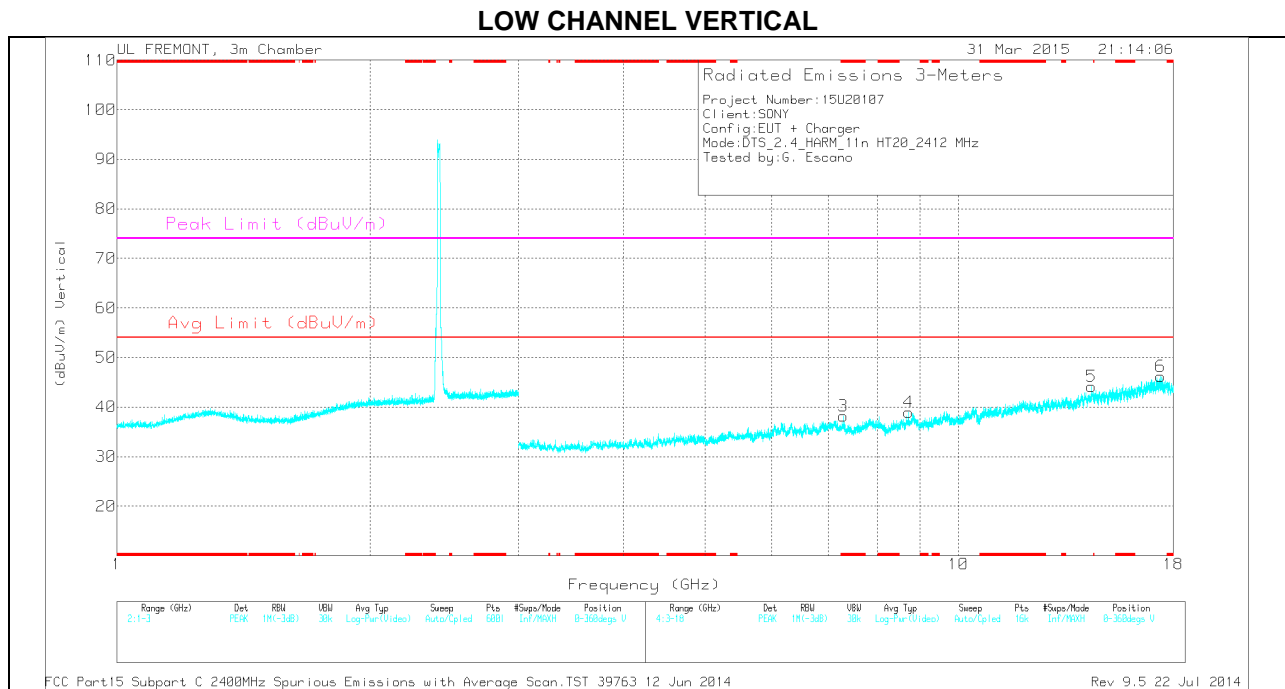
PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 7.294	31.44	PK	35.6	-28.9	0	38.14	-	-	74	-35.86	0-360	100	V
1	5.764	31.8	PK	34.8	-30.4	0	36.2	-	-	-	-	0-360	100	H
2	7.865	29.58	PK	35.8	-27.1	0	38.28	-	-	-	-	0-360	100	H
4	8.73	30.55	PK	35.9	-27.5	0	38.95	-	-	-	-	0-360	200	V
5	14.401	30.63	PK	39.6	-26.1	0	44.13	-	-	-	-	0-360	200	V
6	17.393	27.09	PK	41.4	-22.3	0	46.19	-	-	-	-	0-360	200	V

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

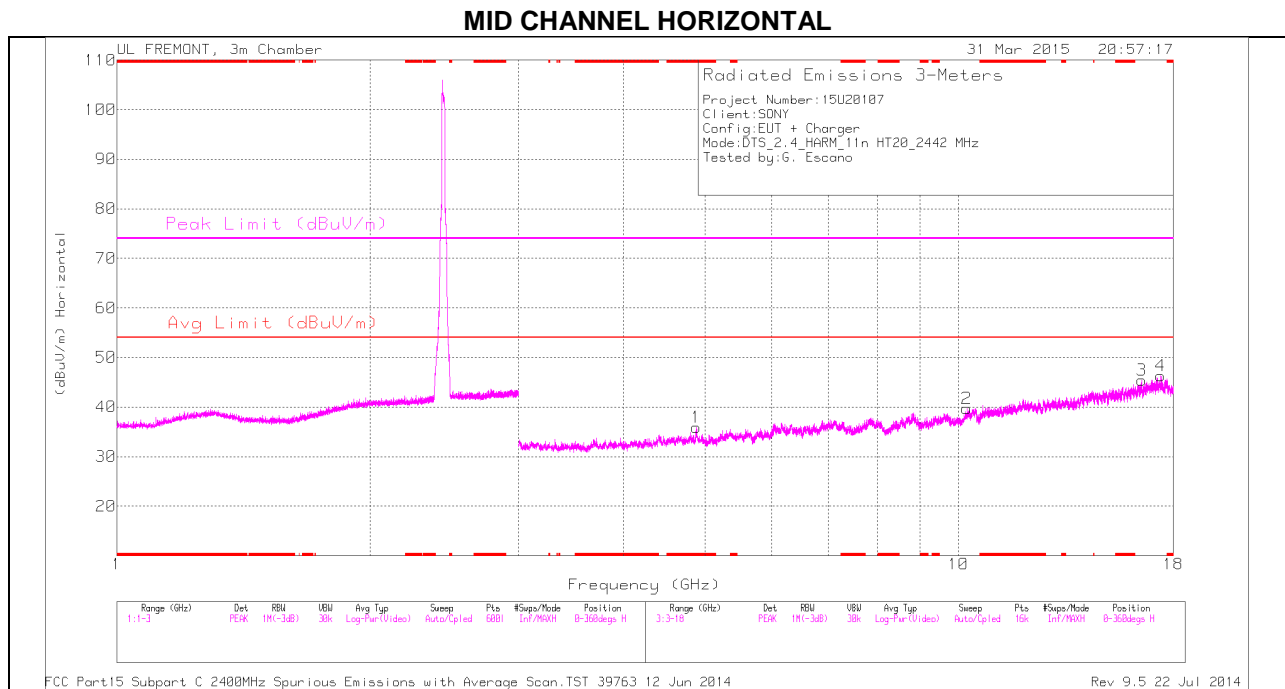
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.295	39.14	PK2	35.6	-28.8	0	45.94	-	-	74	-28.06	228	105	V
* 7.296	27.26	MAV1	35.6	-28.8	0	34.06	54	-19.94	-	-	228	105	V

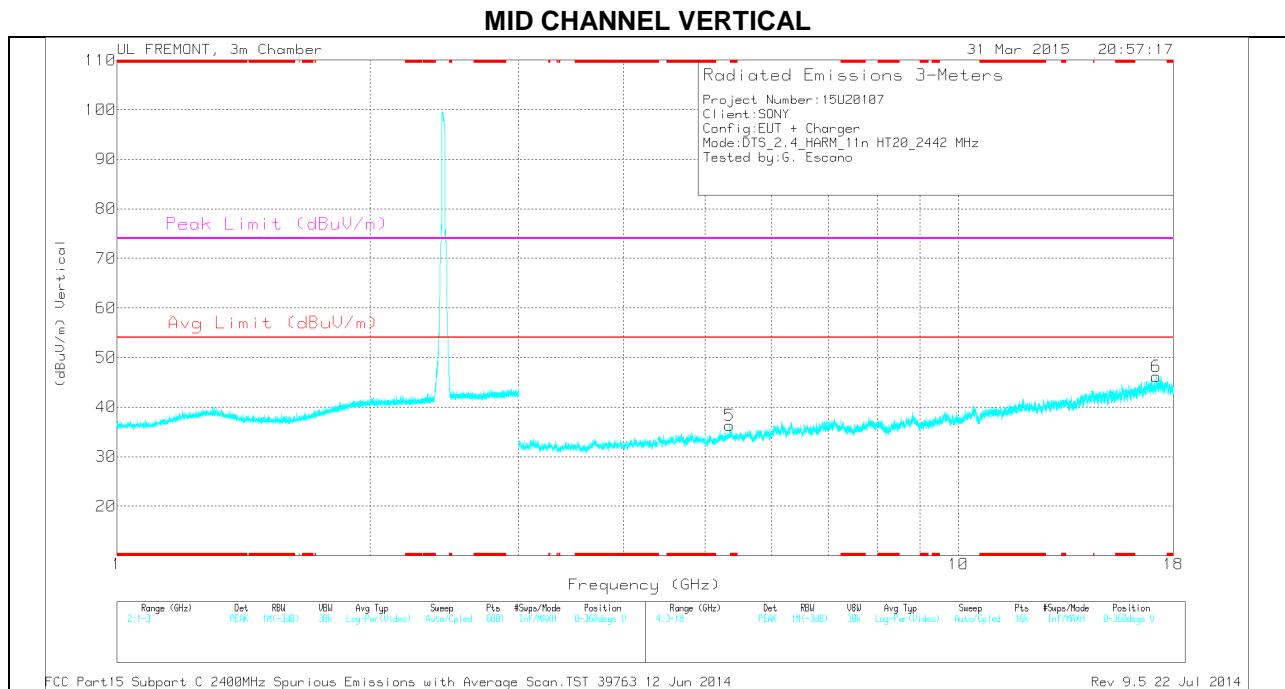
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.883	31.96	PK	34	-30.1	0	35.86	-	-	74	-38.14	0-360	200	H
2	10.23	27.98	PK	37	-25.3	0	39.68	-	-	-	-	0-360	100	H
3	16.518	28.8	PK	41	-24.4	0	45.4	-	-	-	-	0-360	100	H
6	17.184	28.14	PK	41.3	-23.2	0	46.24	-	-	-	-	0-360	100	V
4	17.393	27.08	PK	41.4	-22.2	0	46.28	-	-	-	-	0-360	100	H
5	5.347	31.82	PK	34.5	-30	0	36.32	-	-	-	-	0-360	100	V

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

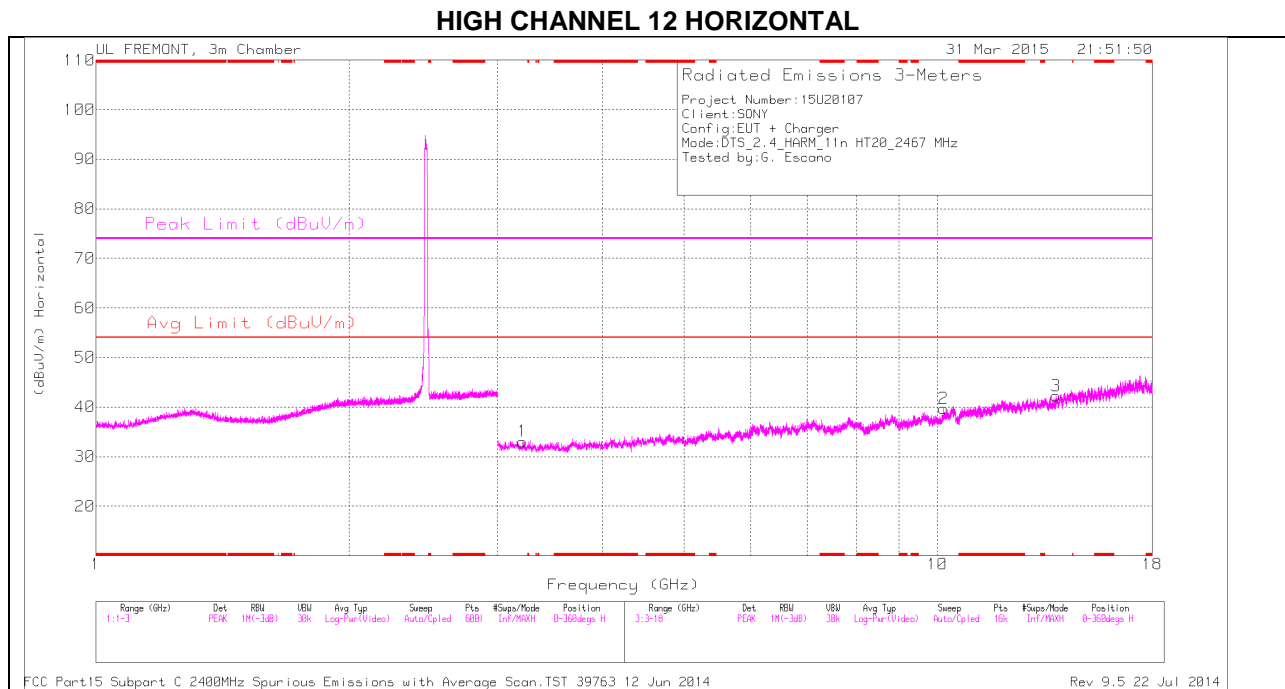
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.883	43.85	PK2	34	-30.1	0	47.75	-	-	74	-26.25	307	340	H
* 4.881	31.4	MAV1	34	-30.2	0	35.2	54	-18.8	-	-	307	340	H

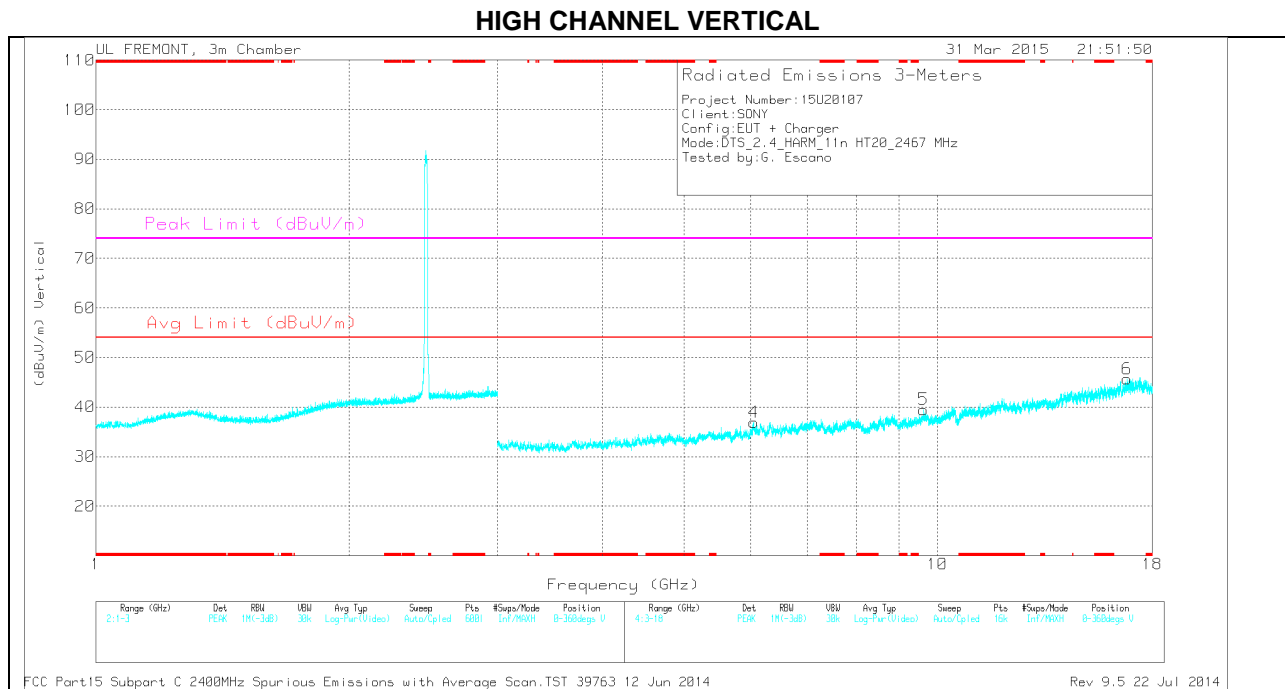
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



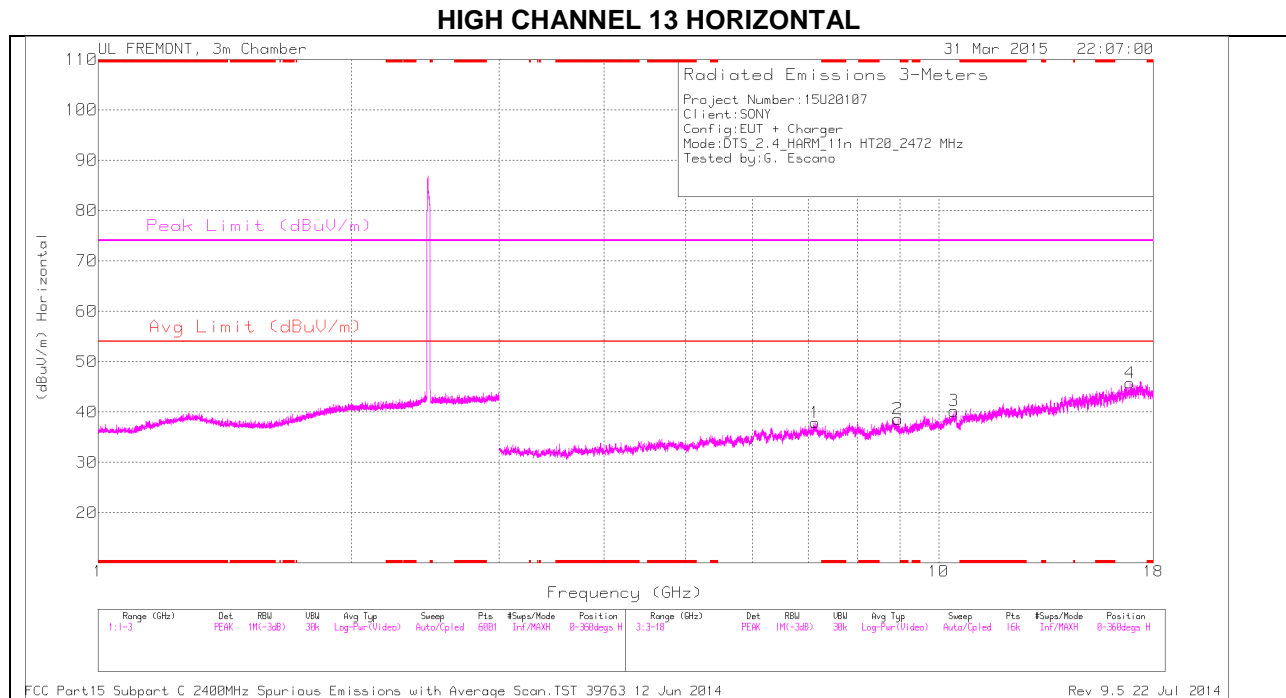
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

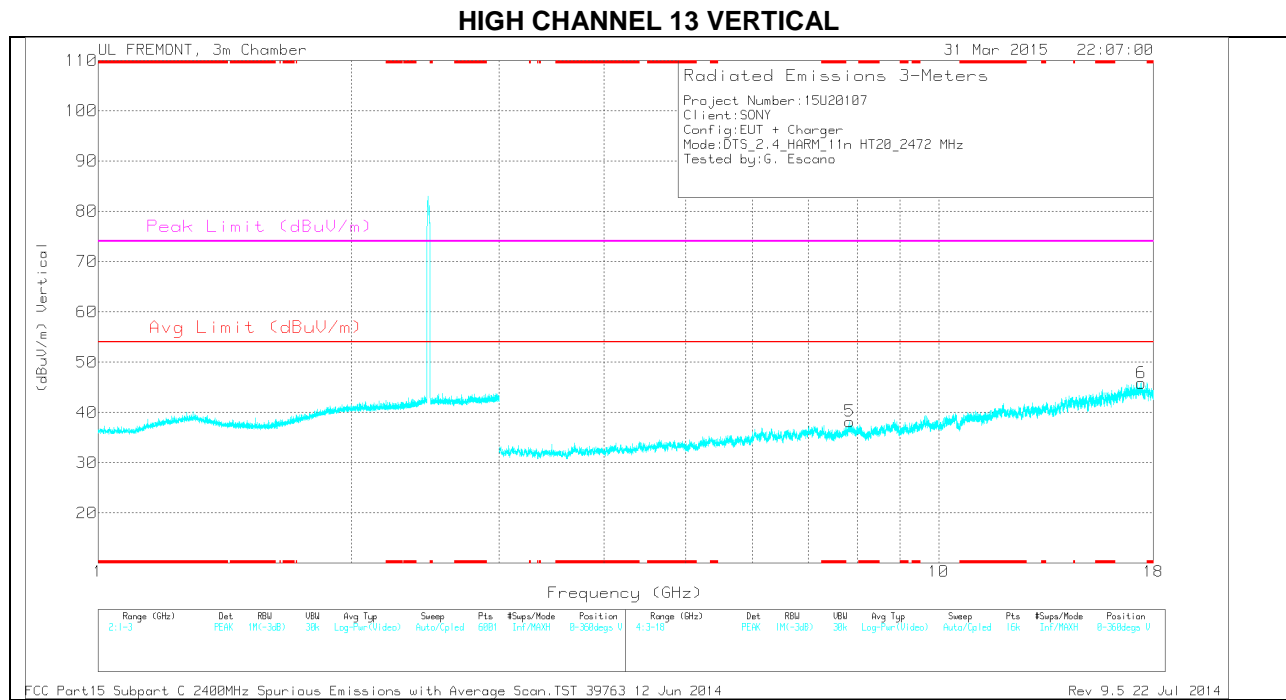
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.212	31.75	PK	32.6	-31.3	0	33.05	-	-	-	-	0-360	200	H
4	6.048	31.01	PK	35.2	-29.3	0	36.91	-	-	-	-	0-360	100	V
5	9.616	28.02	PK	36.7	-25.2	0	39.52	-	-	-	-	0-360	100	V
2	10.161	27.73	PK	37	-25	0	39.73	-	-	-	-	0-360	100	H
3	13.828	30.56	PK	38.7	-27	0	42.26	-	-	-	-	0-360	100	H
6	16.794	28.77	PK	41.2	-24.3	0	45.67	-	-	-	-	0-360	200	V

PK - Peak detector



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

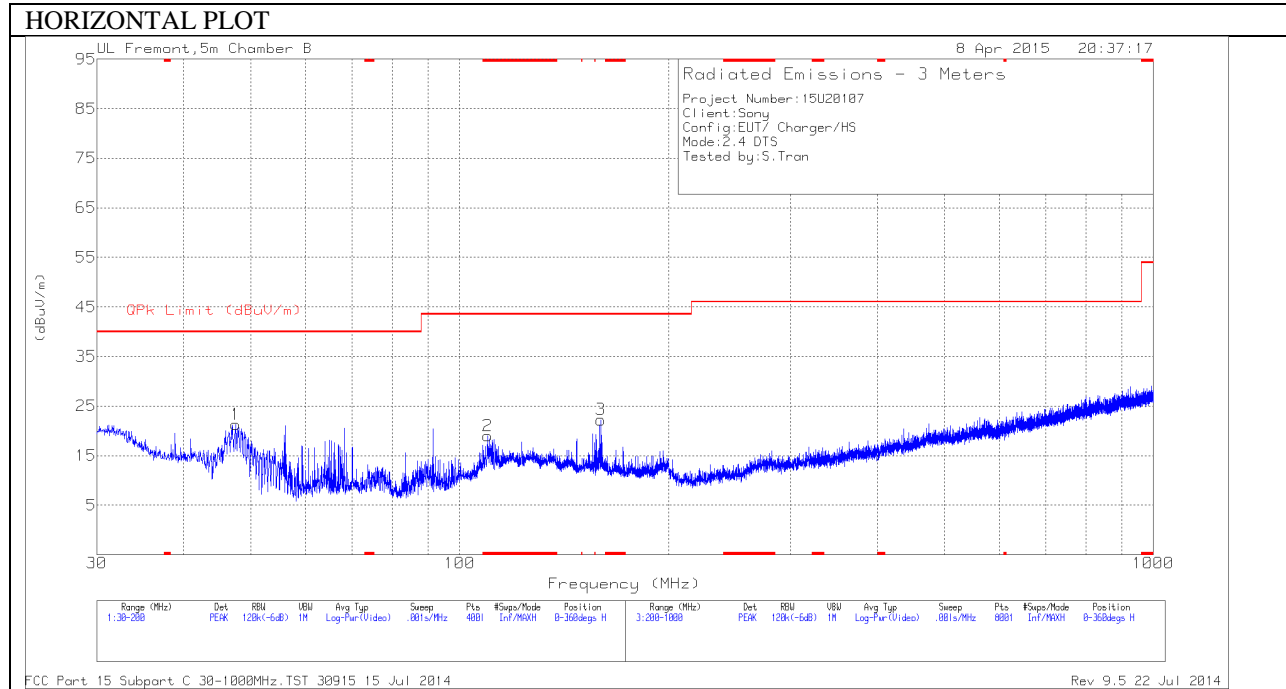
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.131	30.28	PK	35.6	-28	0	37.88	-	-	-	-	0-360	100	H
5	7.833	30.01	PK	35.8	-27.6	0	38.21	-	-	-	-	0-360	100	V
2	8.942	29.3	PK	36	-26.7	0	38.6	-	-	-	-	0-360	100	H
3	10.425	28.12	PK	37.3	-25.2	0	40.22	-	-	-	-	0-360	200	H
4	16.897	27.94	PK	41.1	-23.3	0	45.74	-	-	-	-	0-360	200	H
6	17.419	26.56	PK	41.4	-22.1	0	45.86	-	-	-	-	0-360	200	V

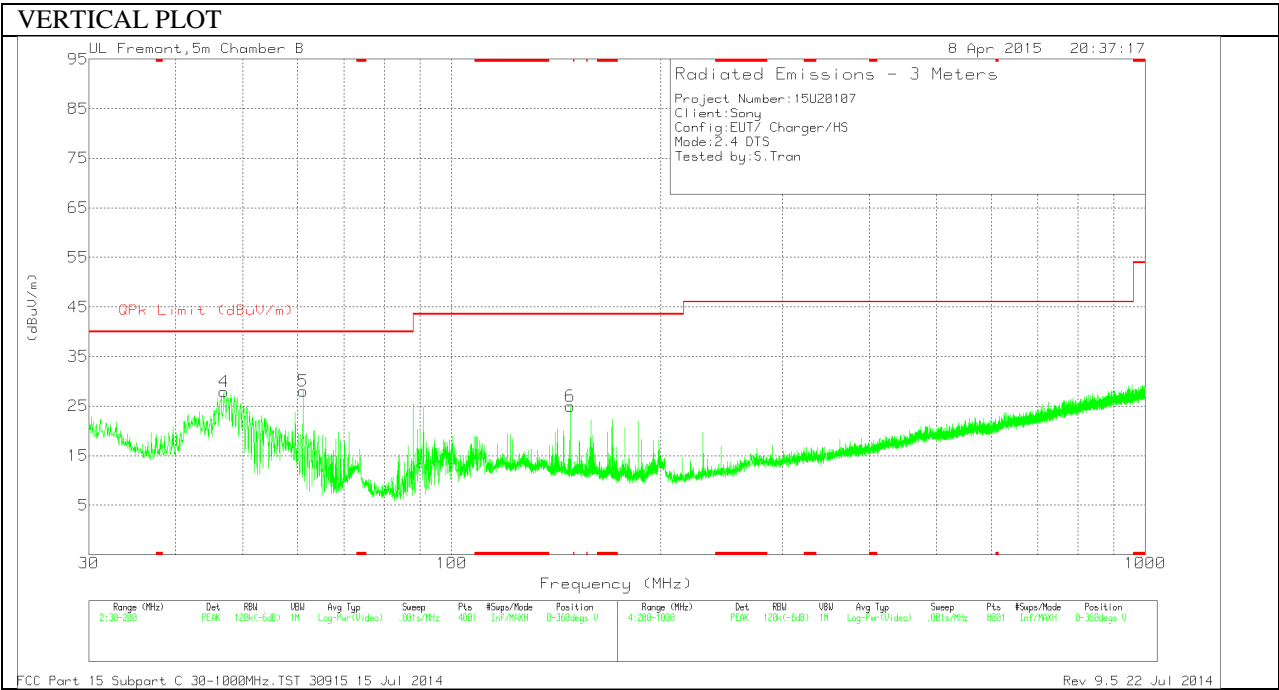
PK - Peak detector

11.3. WORST-CASE BELOW 1 GHz

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



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



Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 109.6875	34.4	PK	12.6	-28	19	43.52	-24.52	0-360	300	H
4	46.9575	47	PK	9.5	-28.6	27.9	40	-12.1	0-360	101	V
1	47.5525	40.74	PK	9.2	-28.7	21.24	40	-18.76	0-360	400	H
5	61.025	48.91	PK	7.6	-28.5	28.01	40	-11.99	0-360	101	V
6	148.15	39.83	PK	12.6	-27.5	24.93	43.52	-18.59	0-360	101	V
3	159.9225	37.34	PK	12.2	-27.3	22.24	43.52	-21.28	0-360	300	H

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

12. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4 2009.

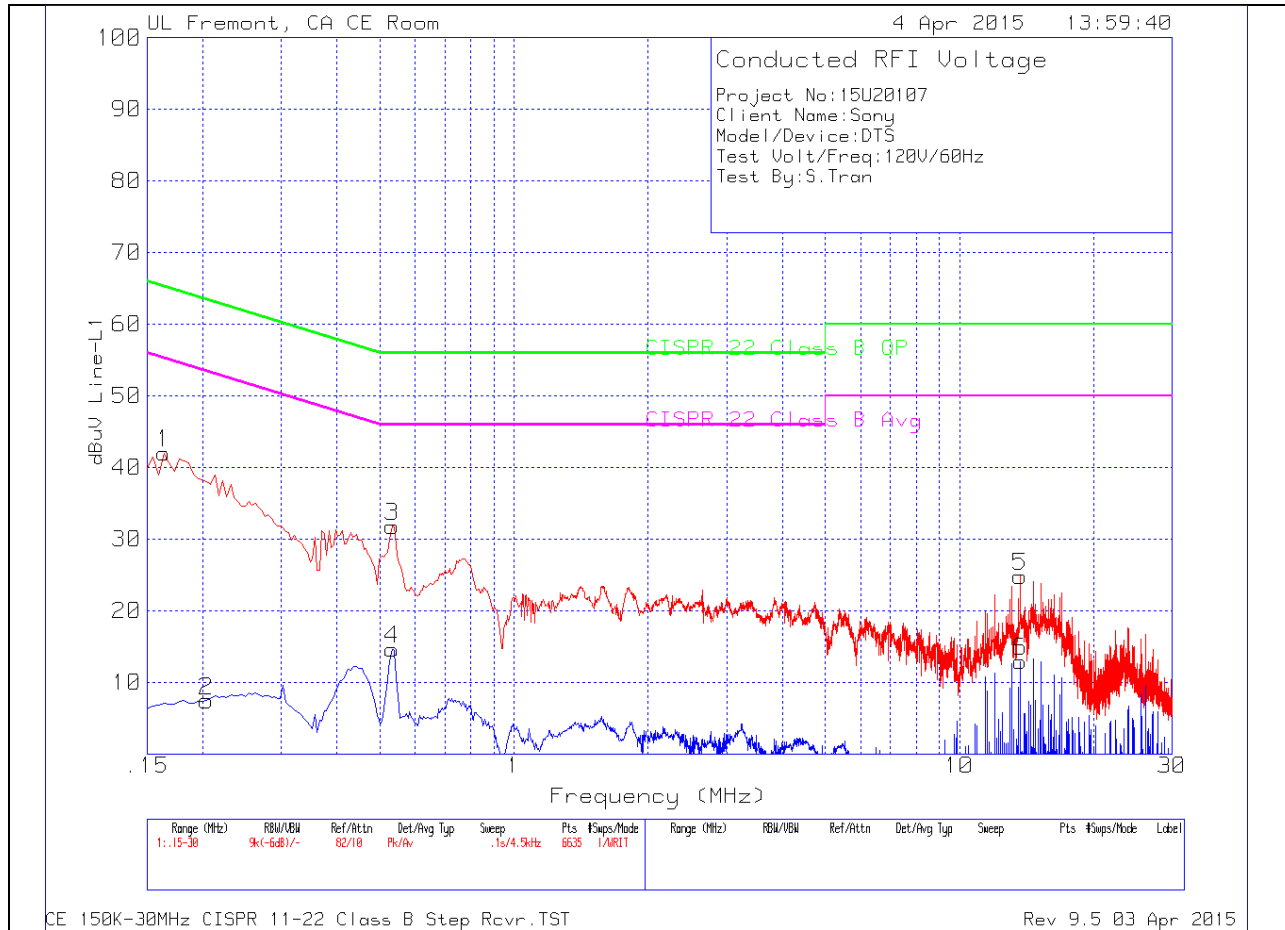
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

Line-L1 .15 - 30MHz

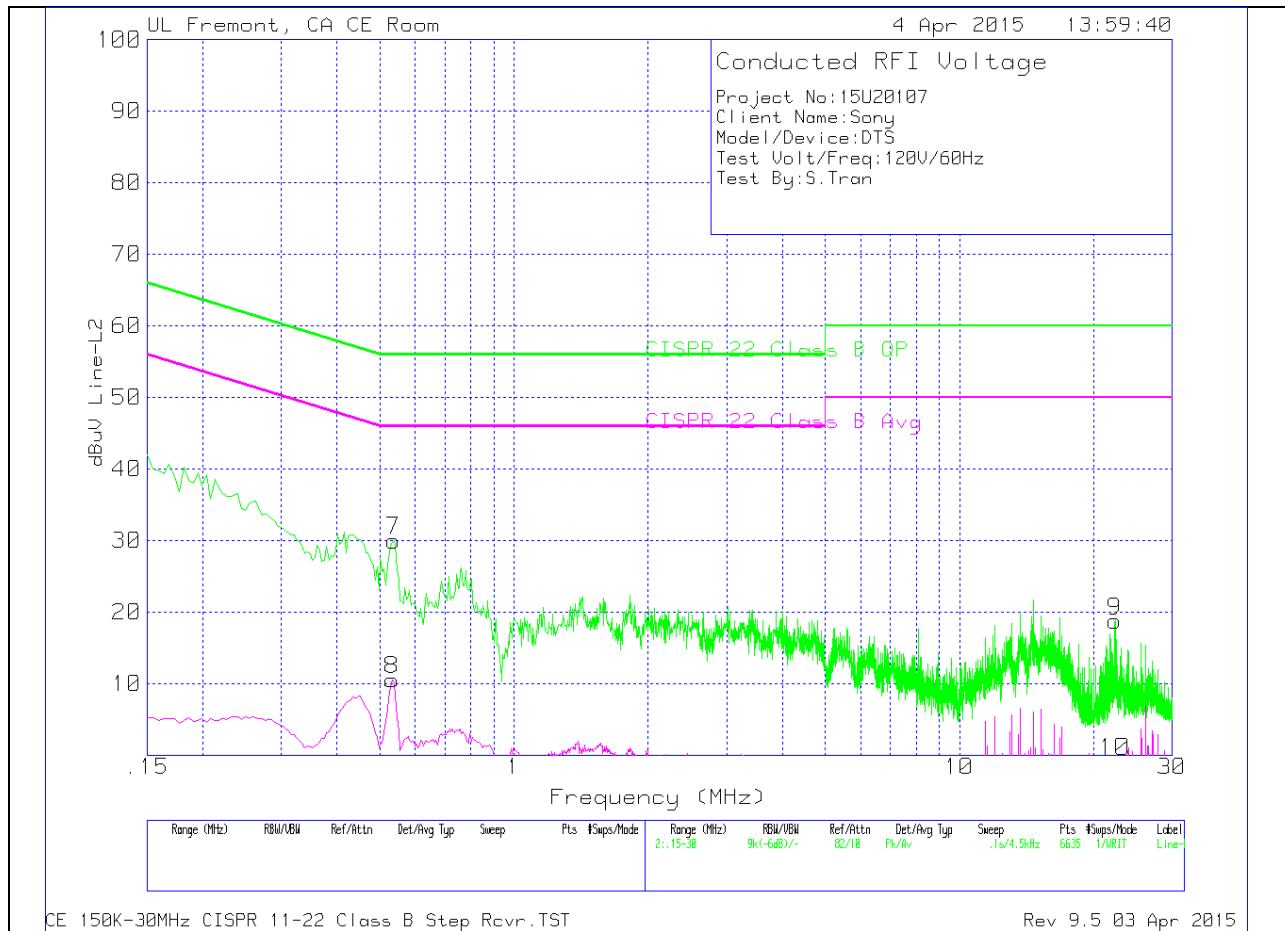
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.1635	40.85	Pk	1.2	0	42.05	65.28	-23.23		
2	.204	6.56	Av	.9	0	7.46			53.45	-45.99
3	.5325	31.49	Pk	.3	0	31.79	56	-24.21		
4	.5325	14.33	Av	.3	0	14.63			46	-31.37
5	13.695	24.42	Pk	.2	.2	24.82	60	-35.18		
6	13.6995	12.56	Av	.2	.2	12.96			50	-37.04

Pk - Peak detector

Av - Average detection

LINE 2 PLOT



LINE 2 RESULTS

Line-L2 .15 - 30MHz

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
7	.537	29.7	Pk	.3	0	30	56	-26		
8	.5325	10.24	Av	.3	0	10.54			46	-35.46
9	22.344	18.28	Pk	.3	.2	18.78	60	-41.22		
10	22.344	-1.32	Av	.3	.2	-.82			50	-50.82

Av - Average detection