



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac, NFC and ANT+

MODEL NUMBER: SM-A800S

FCC ID: A3LSMA800S

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Prepared for

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac, NFC and ANT+
MODEL: SM-A800S
SERIAL NUMBER: 2138045 (Conducted), 2146696 & 2140998 (Radiated)
DATE TESTED: JUNE 9 -19, 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 FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009 for FCC.

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: 2324B-4)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ 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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

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/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac, NFC and ANT+.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	17.5	56.23
2412 - 2462	802.11g	14.5	28.18
2412 - 2462	802.11n HT20	12.5	17.78

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -11.99 dBi.

5.4. 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 X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X 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

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	ETA0U83KWK	DK1FB05HS	N/A
Earphone	Samsung	N/A	N/A	N/A

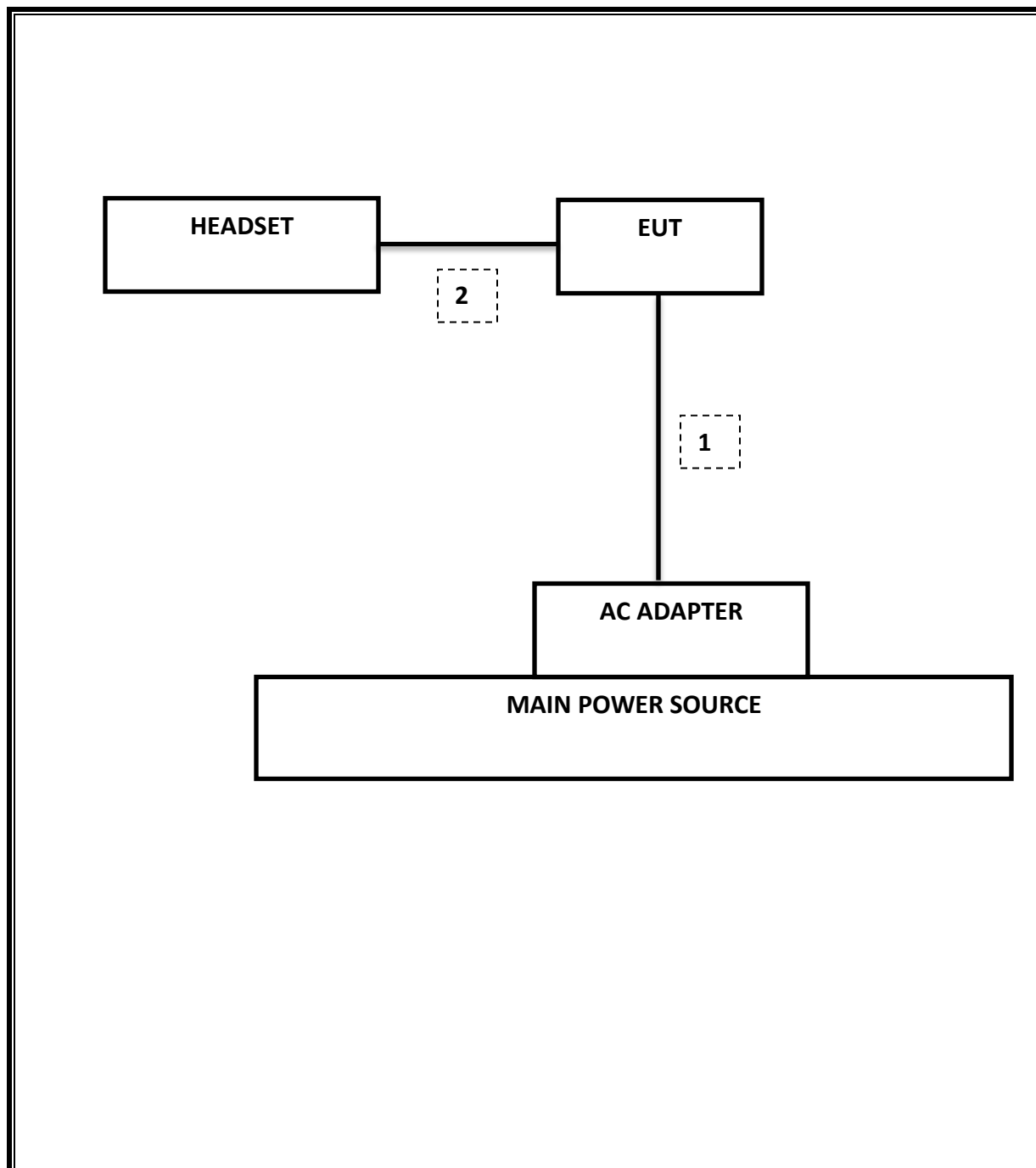
I/O CABLES

I/O Cable List						
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
2	Audio	1	Mini-Jack	Unshielded	1m	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	C00986	04/01/16
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/16
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	03/06/16
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
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 - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/16
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

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. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	Pass	9.06 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-29.47dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	17.5 dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	-12.79 dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	46.35 dBuV(QP)
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	47.58dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. 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

9.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	9.08	0.5
Mid	2437	9.06	0.5
High	2462	9.06	0.5
Worst		9.06	

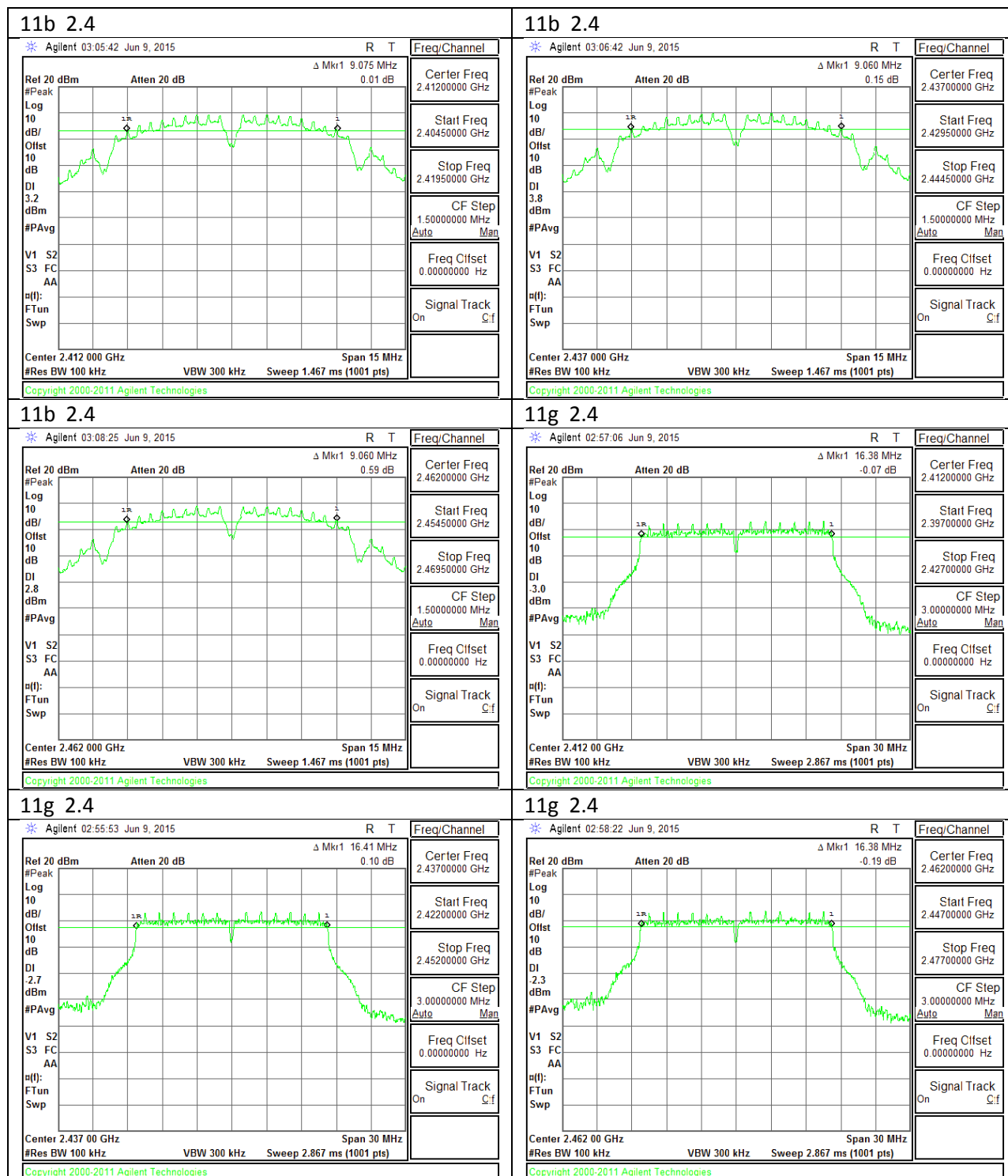
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

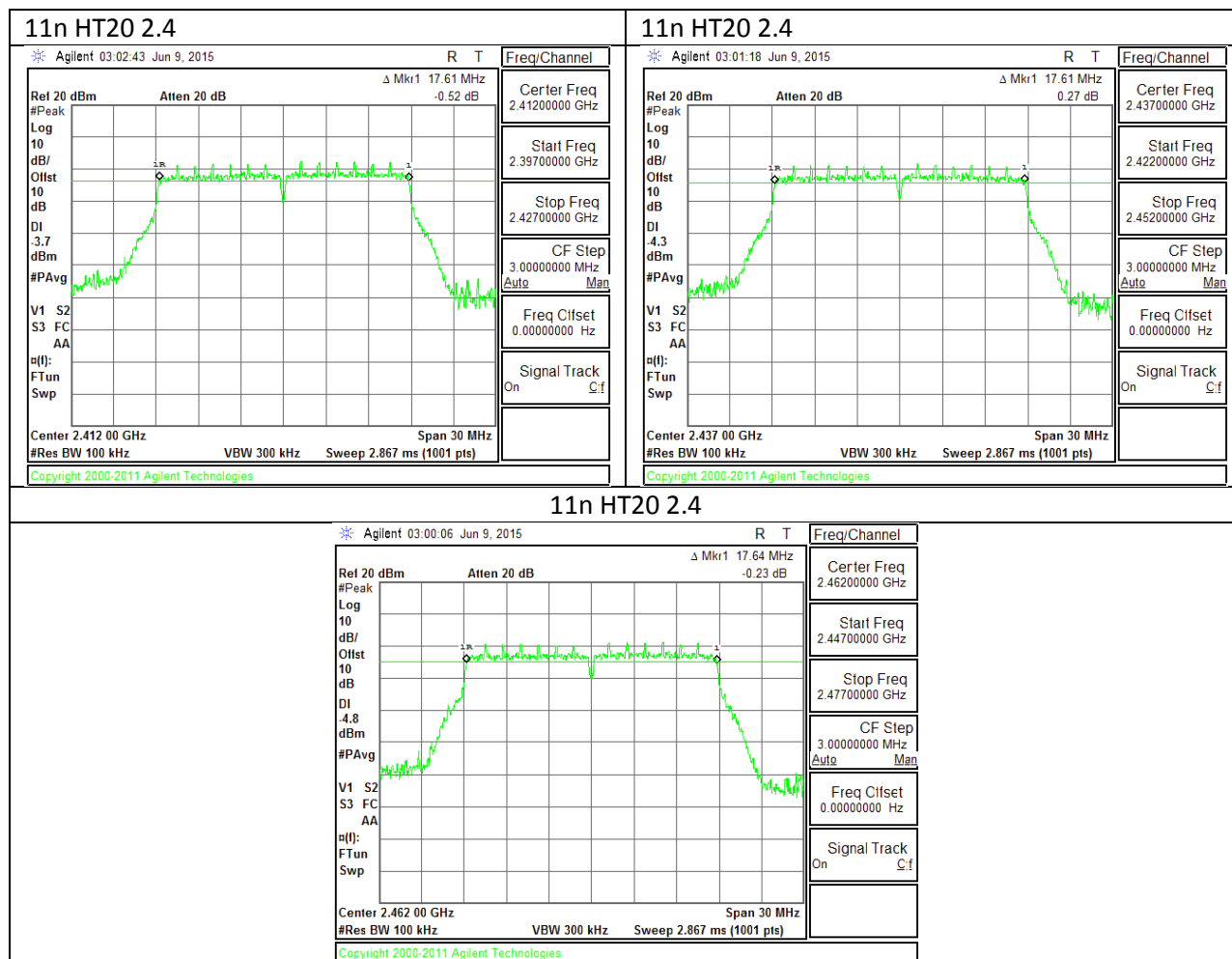
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.38	0.5
Mid	2437	16.41	0.5
High	2462	16.38	0.5
Worst		16.38	

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.61	0.5
Mid	2437	17.61	0.5
High	2462	17.64	0.5
Worst		17.61	

9.1.4. 6 dB BANDWIDTH MID CH PLOTS





9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	12.05
Mid	2437	12.04
High	2462	12.16
Worst		12.16

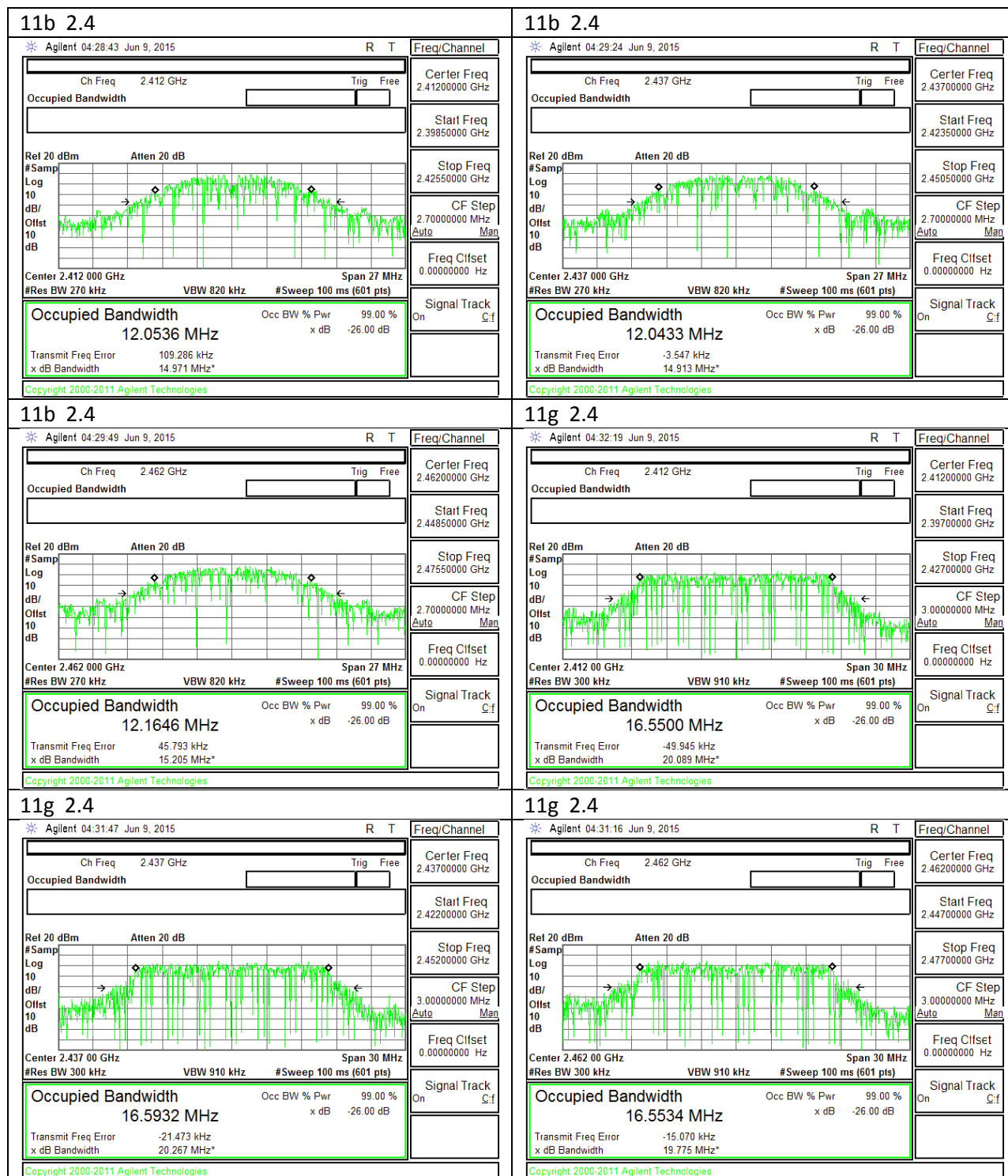
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

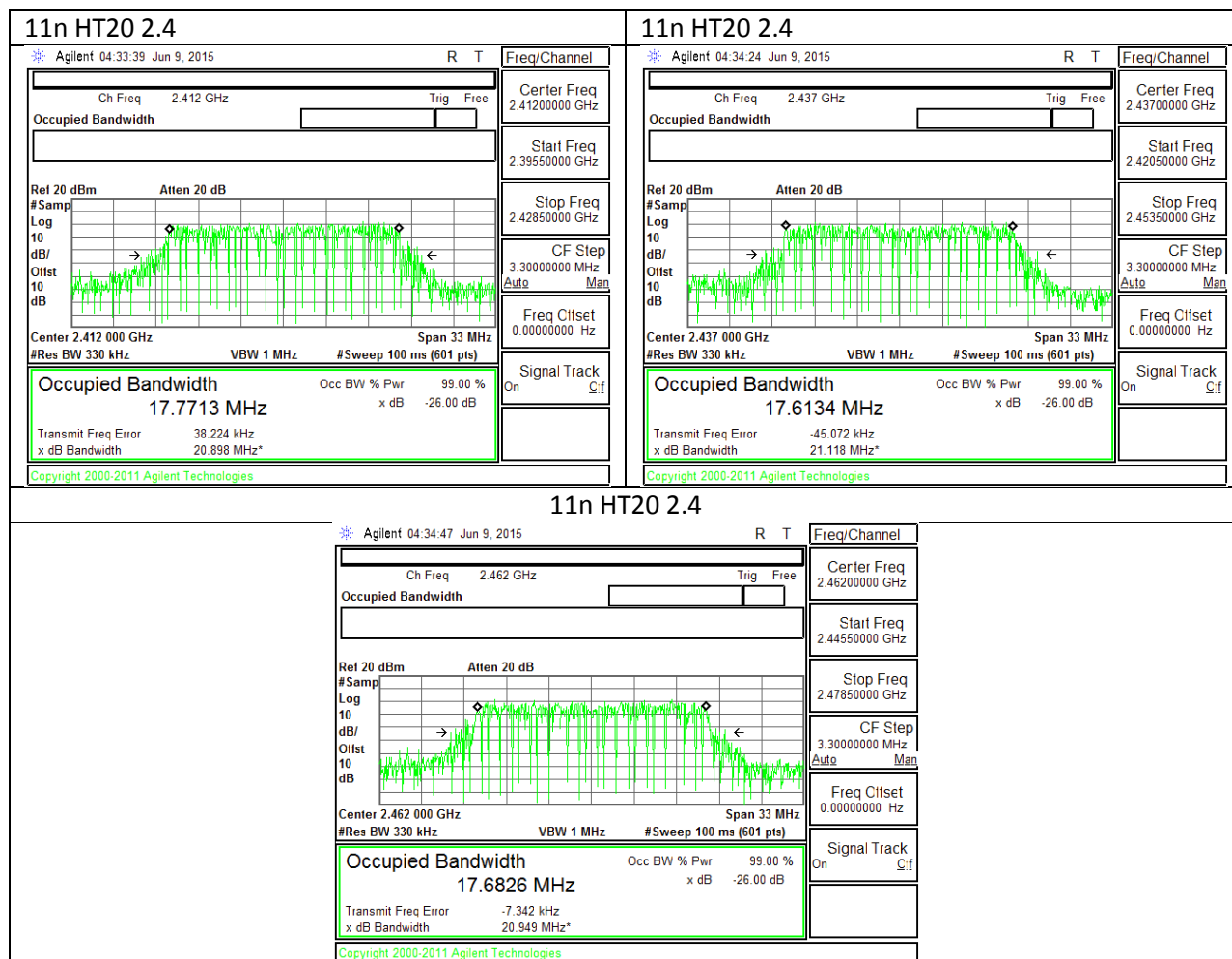
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.55
Mid	2437	16.59
High	2462	16.55
Worst		16.59

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.77
Mid	2437	17.61
High	2462	17.68
Worst		17.77

9.2.4. 99% BANDWIDTH MID CH PLOTS





9.3. OUTPUT POWER

LIMITS

FCC §15.247

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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

9.3.1. 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)
Low	2412	-11.99	30.00	30	36	30.00
Mid	2437	-11.99	30.00	30	36	30.00
High	2462	-11.99	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)
Low	2412	17.30	17.30	30.00	-12.70
Mid	2437	17.50	17.50	30.00	-12.50
High	2462	17.10	17.10	30.00	-12.90
Worst			17.50		

9.3.2. 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)
Low	2412	-11.99	30.00	30	36	30.00
Mid	2437	-11.99	30.00	30	36	30.00
High	2462	-11.99	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)
Low	2412	13.90	13.90	30.00	-16.10
Mid	2437	14.10	14.10	30.00	-15.90
High	2462	14.50	14.50	30.00	-15.50
Worst			14.50		

9.3.3. 802.11n HT20 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)
Low	2412	-11.99	30.00	30	36	30.00
Mid	2437	-11.99	30.00	30	36	30.00
High	2462	-11.99	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)
Low	2412	12.50	12.50	30.00	-17.50
Mid	2437	12.10	12.10	30.00	-17.90
High	2462	12.40	12.40	30.00	-17.60
Worst			12.50		

9.4. PSD

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

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.13	8.0	-21.1
Mid	2437	-12.79	8.0	-20.8
High	2462	-12.98	8.0	-21.0

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

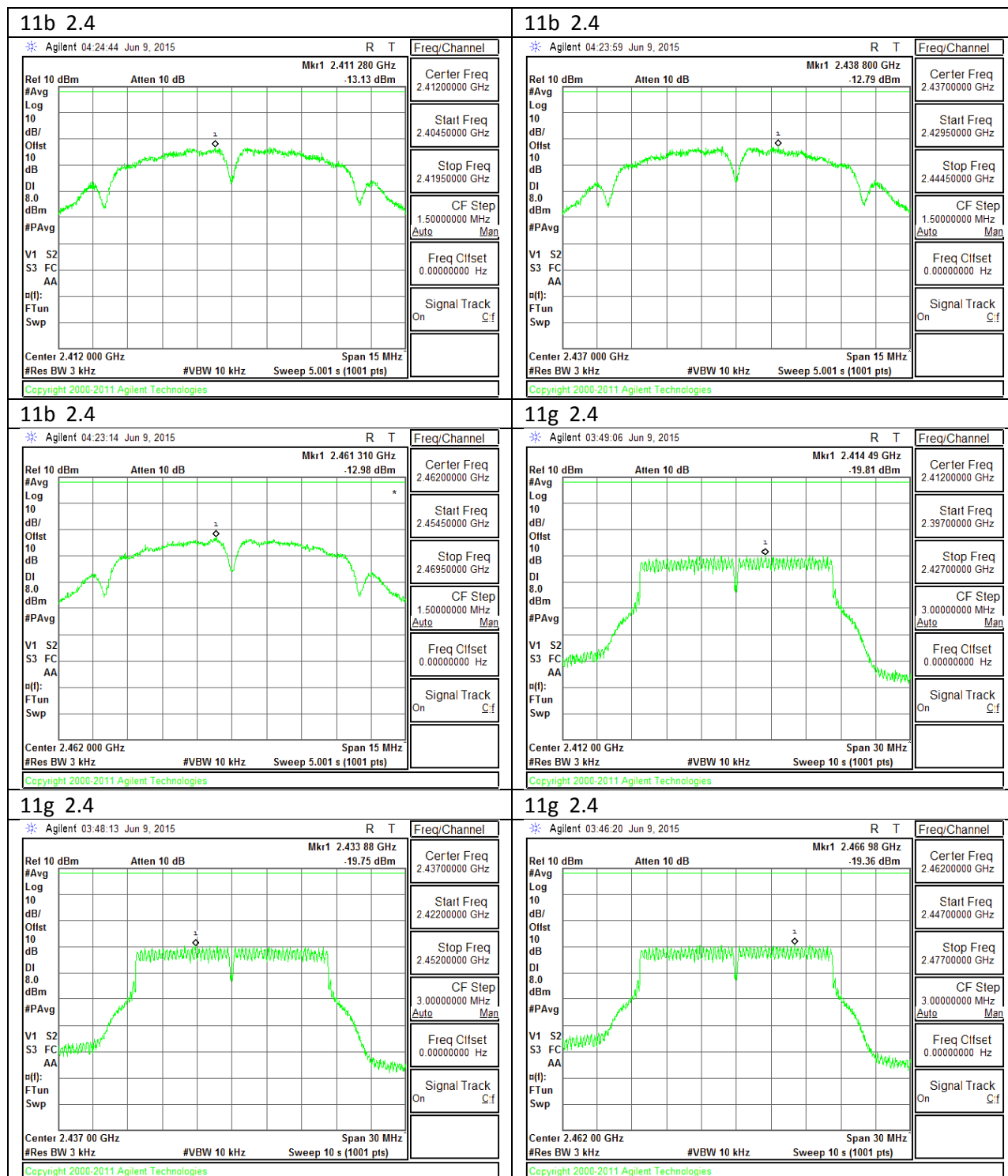
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-19.81	8.0	-27.8
Mid	2437	-19.75	8.0	-27.8
High	2462	-19.36	8.0	-27.4

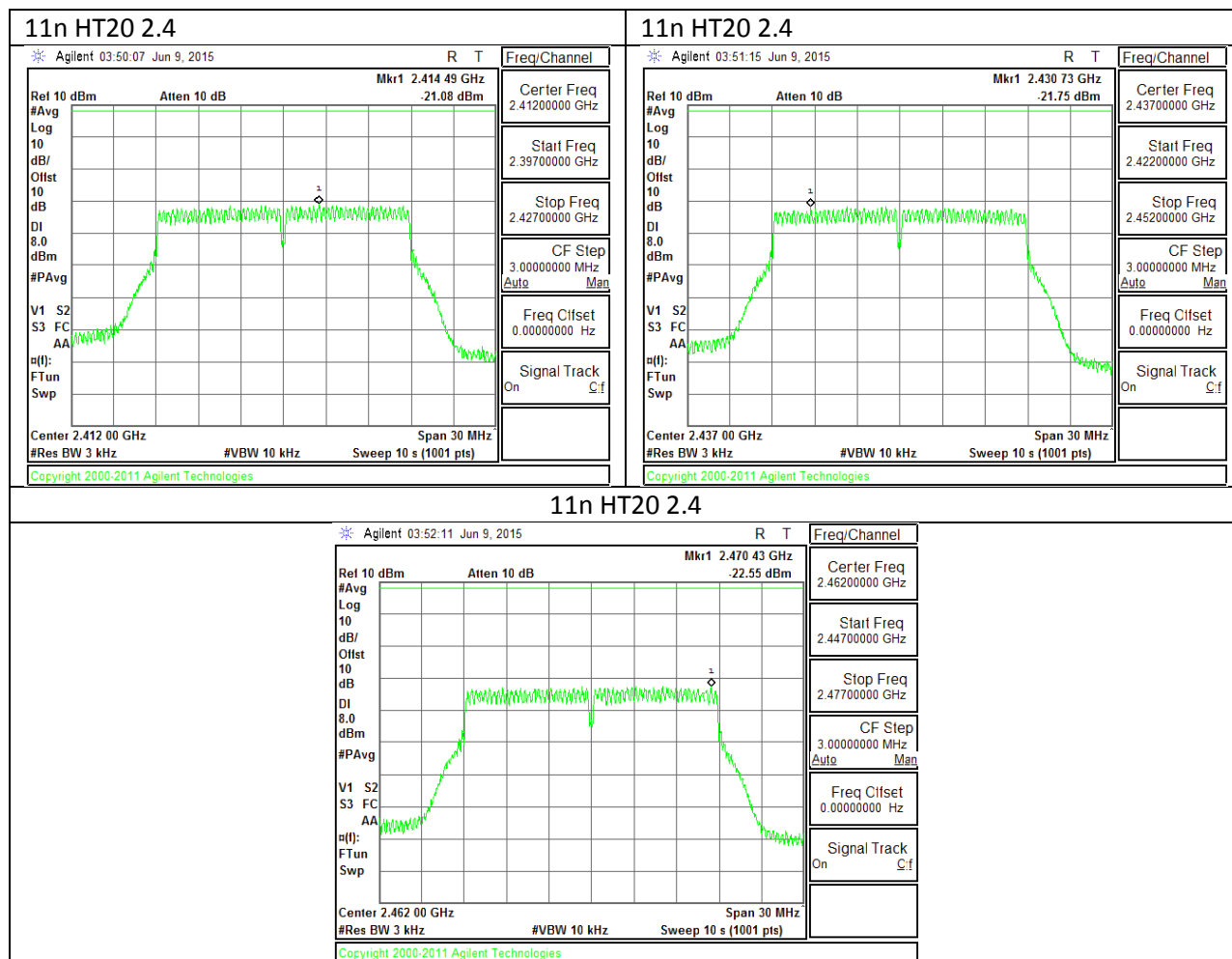
9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-21.08	8.0	-29.1
Mid	2437	-21.75	8.0	-29.8
High	2462	-22.55	8.0	-30.6

9.4.4. PSD Chain 0 MID CH PLOTS





9.5. 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.

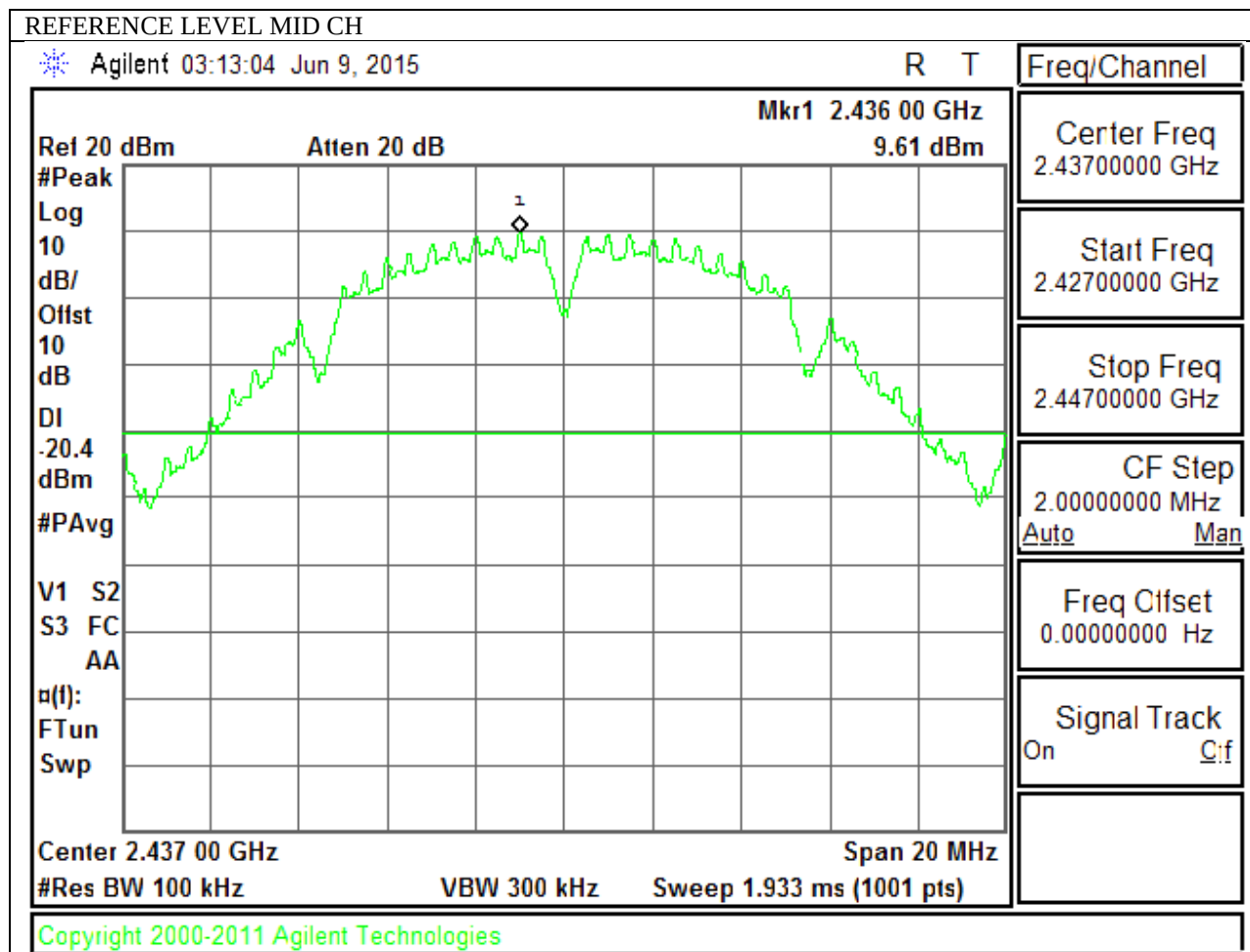
TEST PROCEDURE

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.

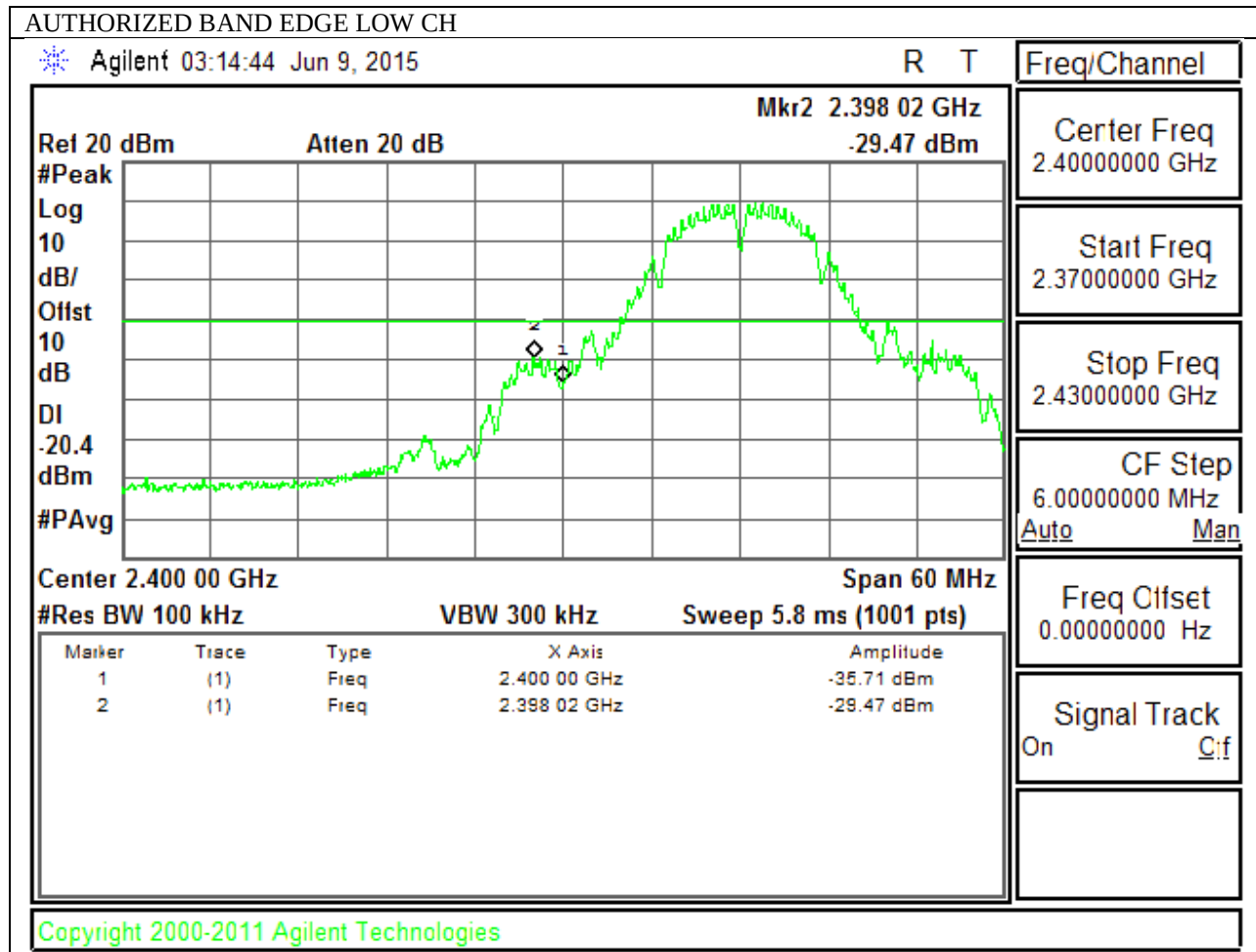
RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

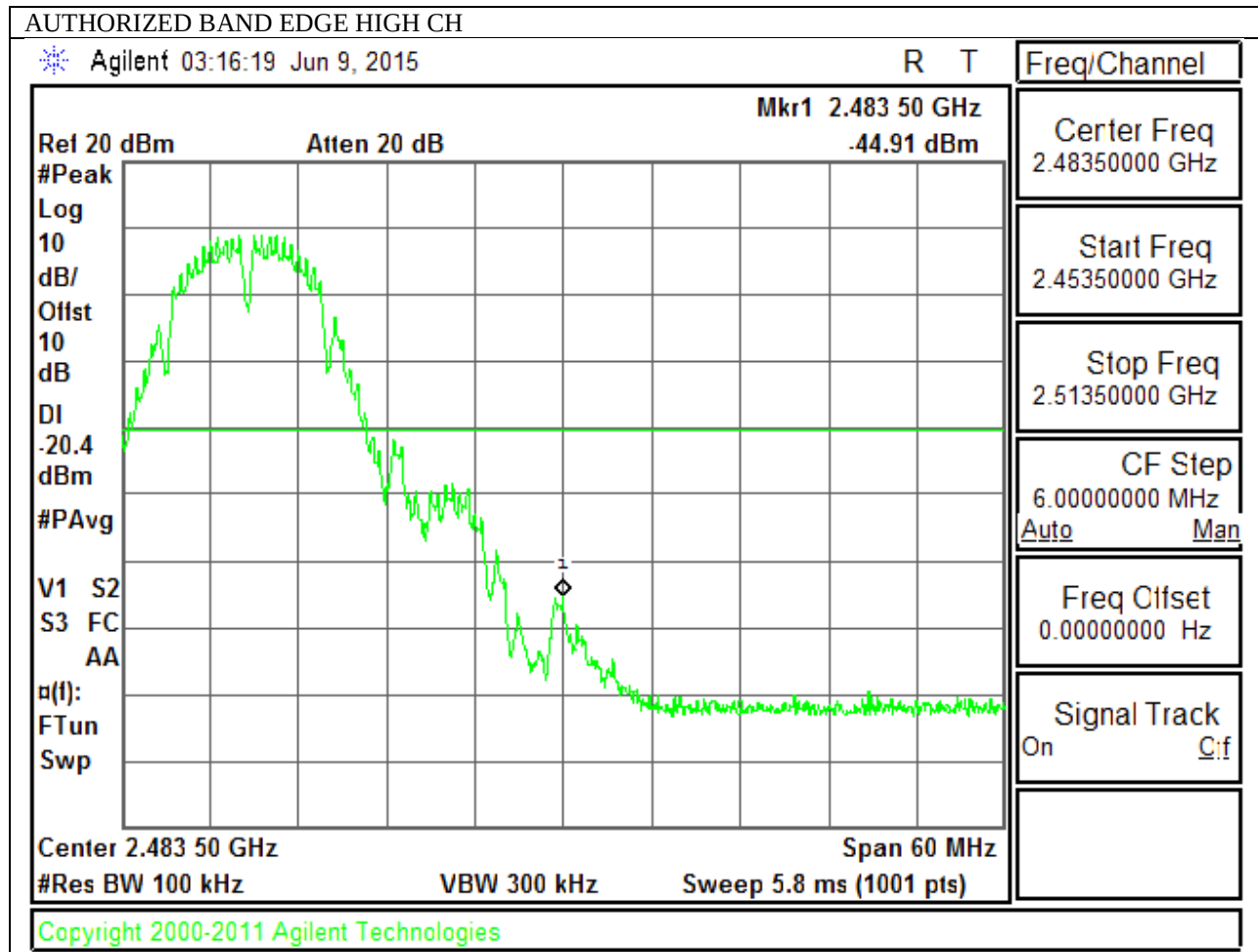
IN-BAND REFERENCE LEVEL



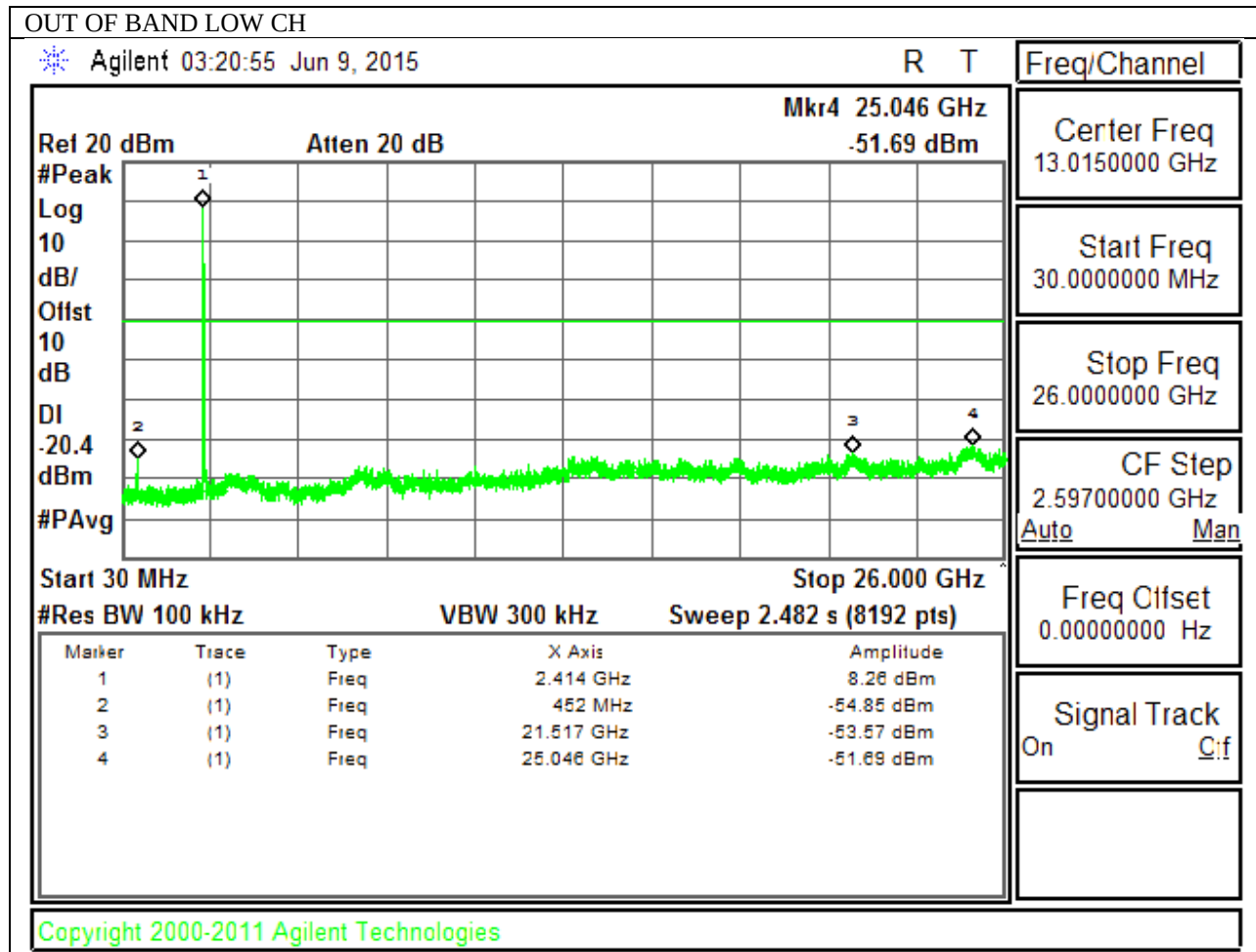
LOW CHANNEL BANDEDGE

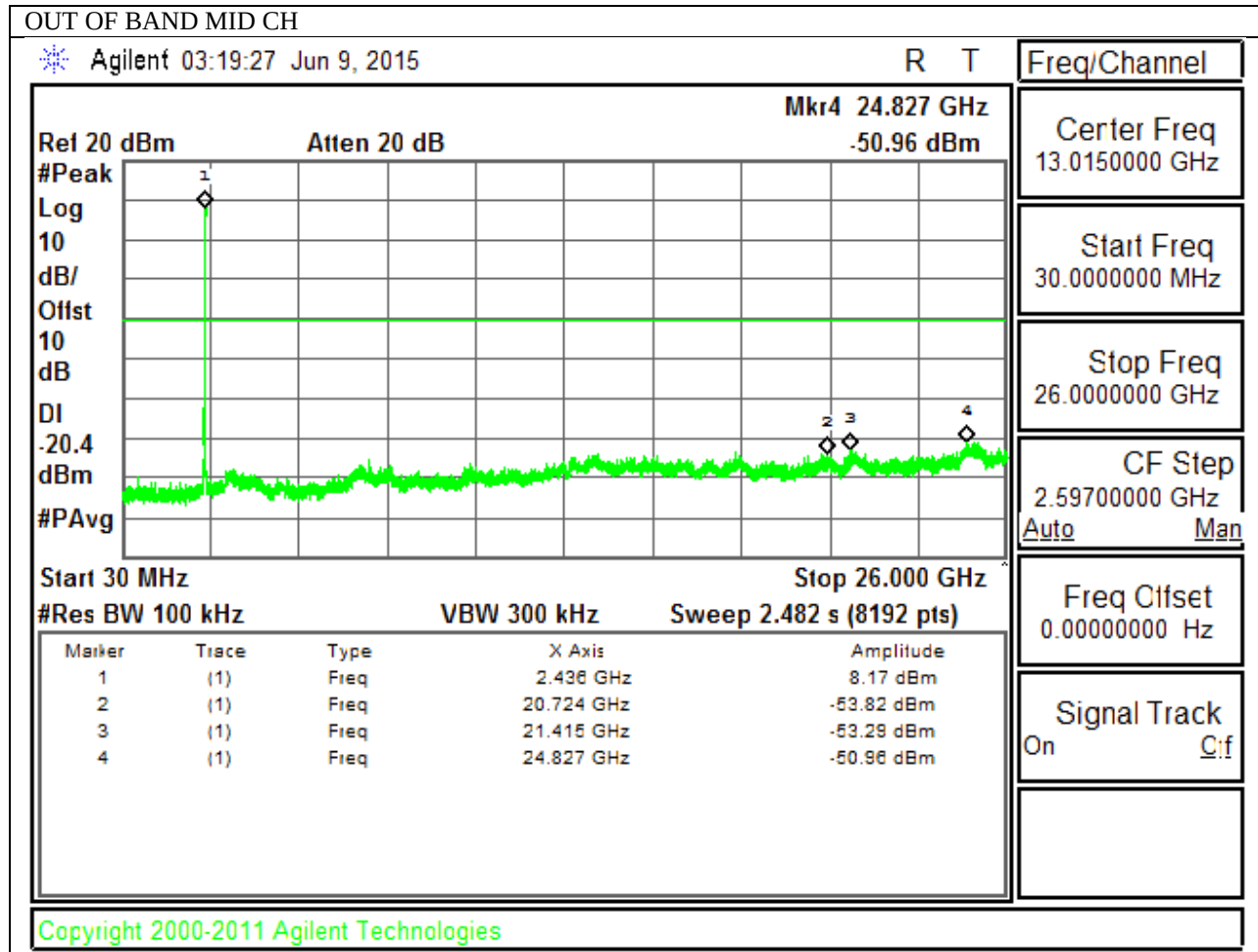


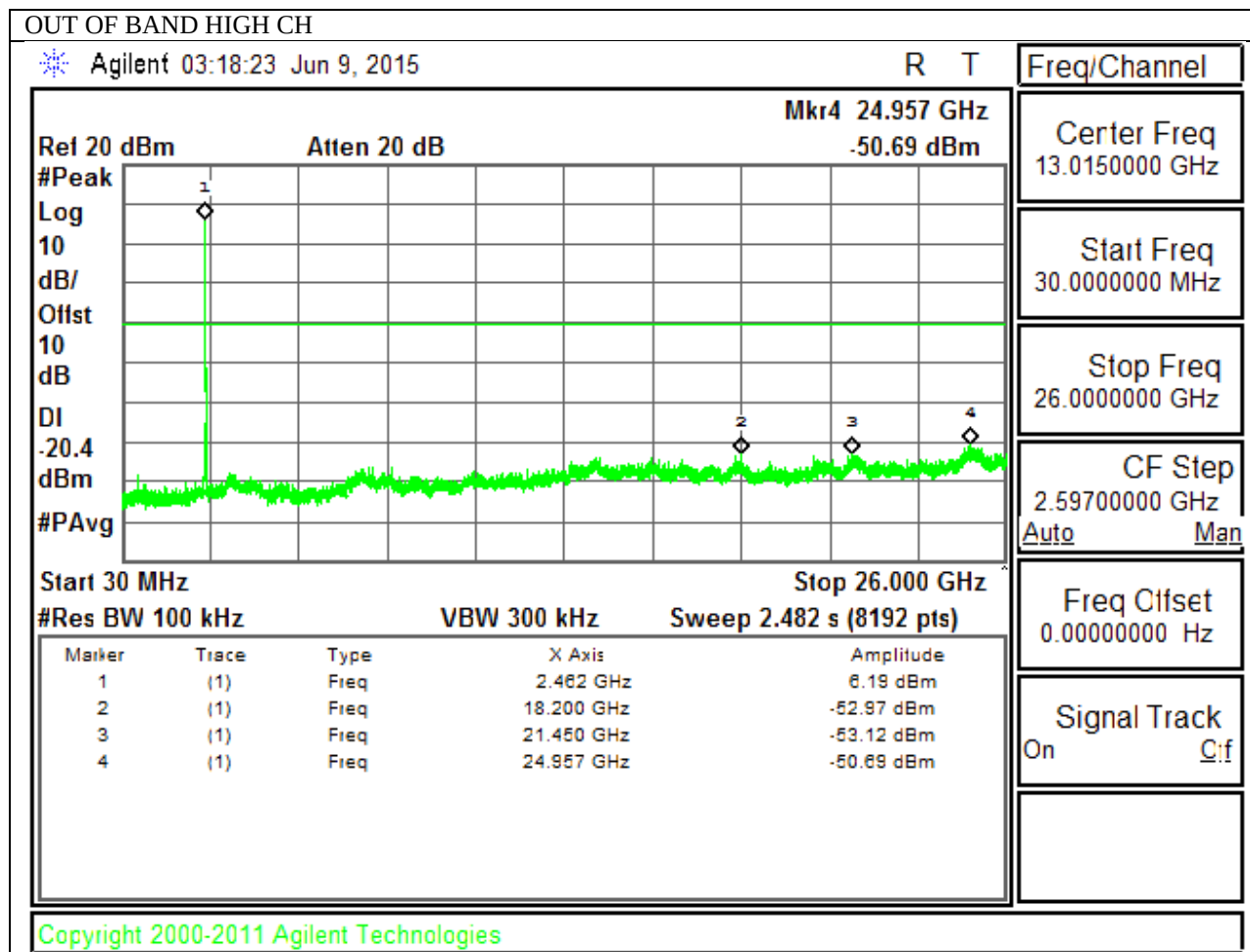
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

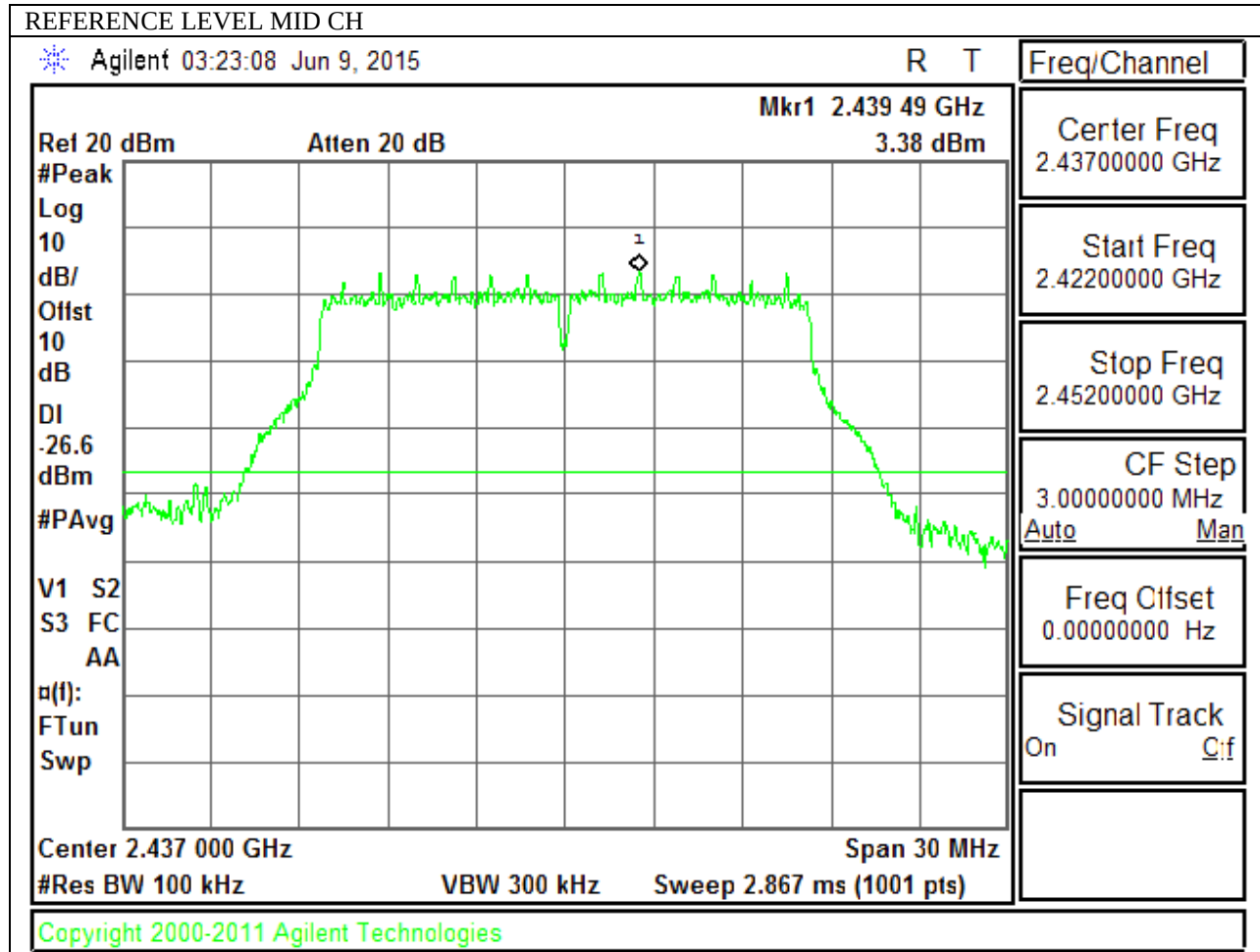




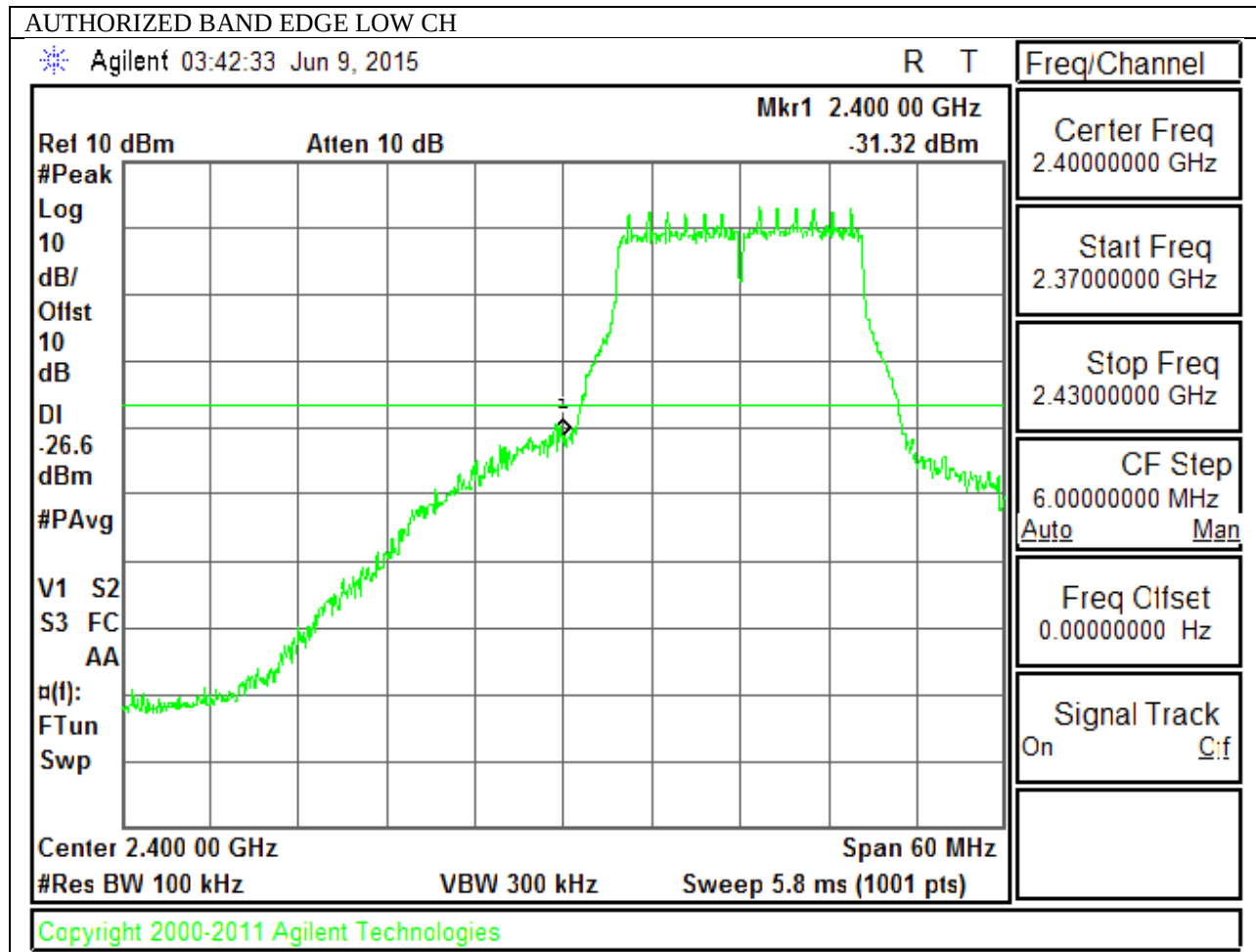


9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

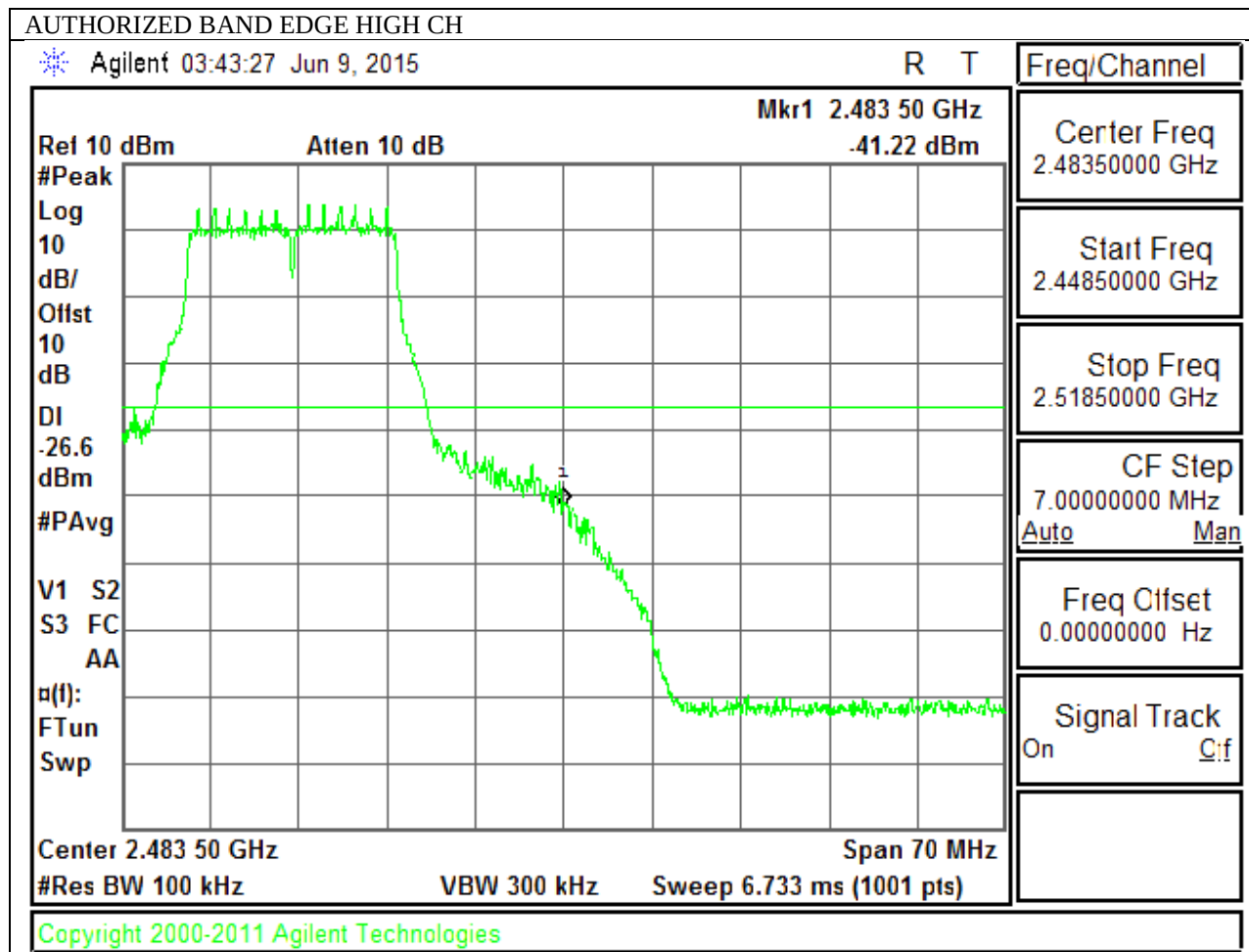
IN-BAND REFERENCE LEVEL



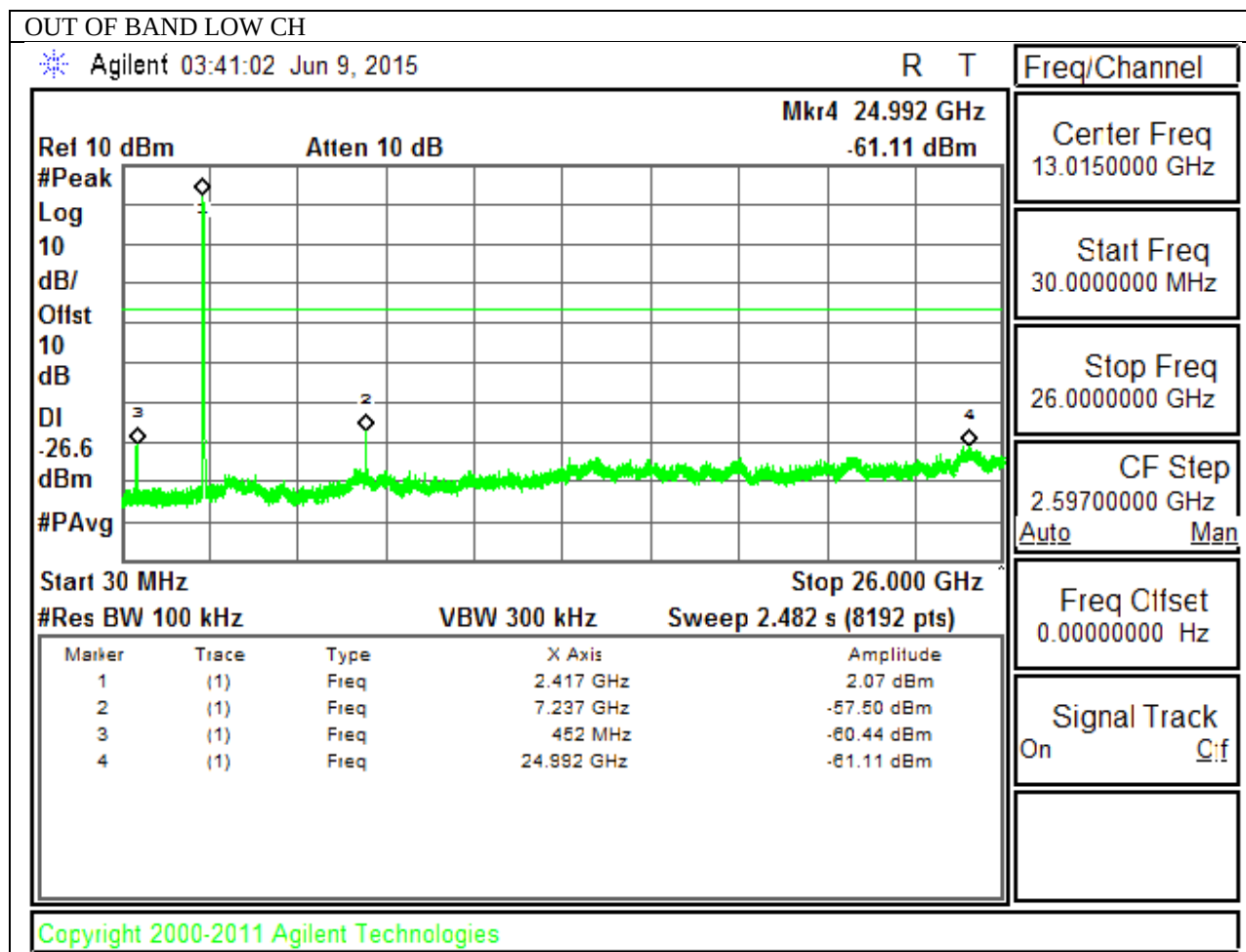
LOW CHANNEL BANDEDGE

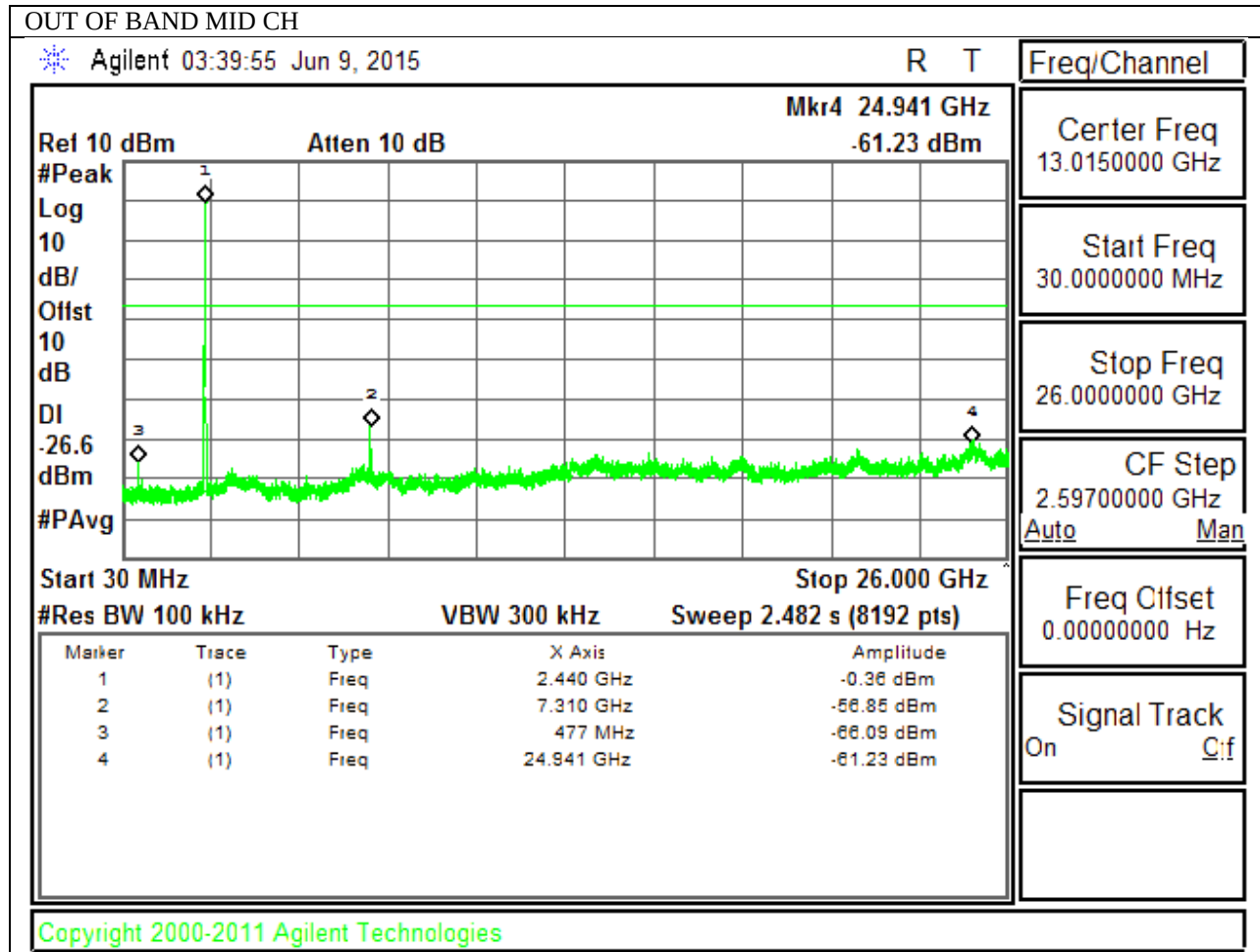


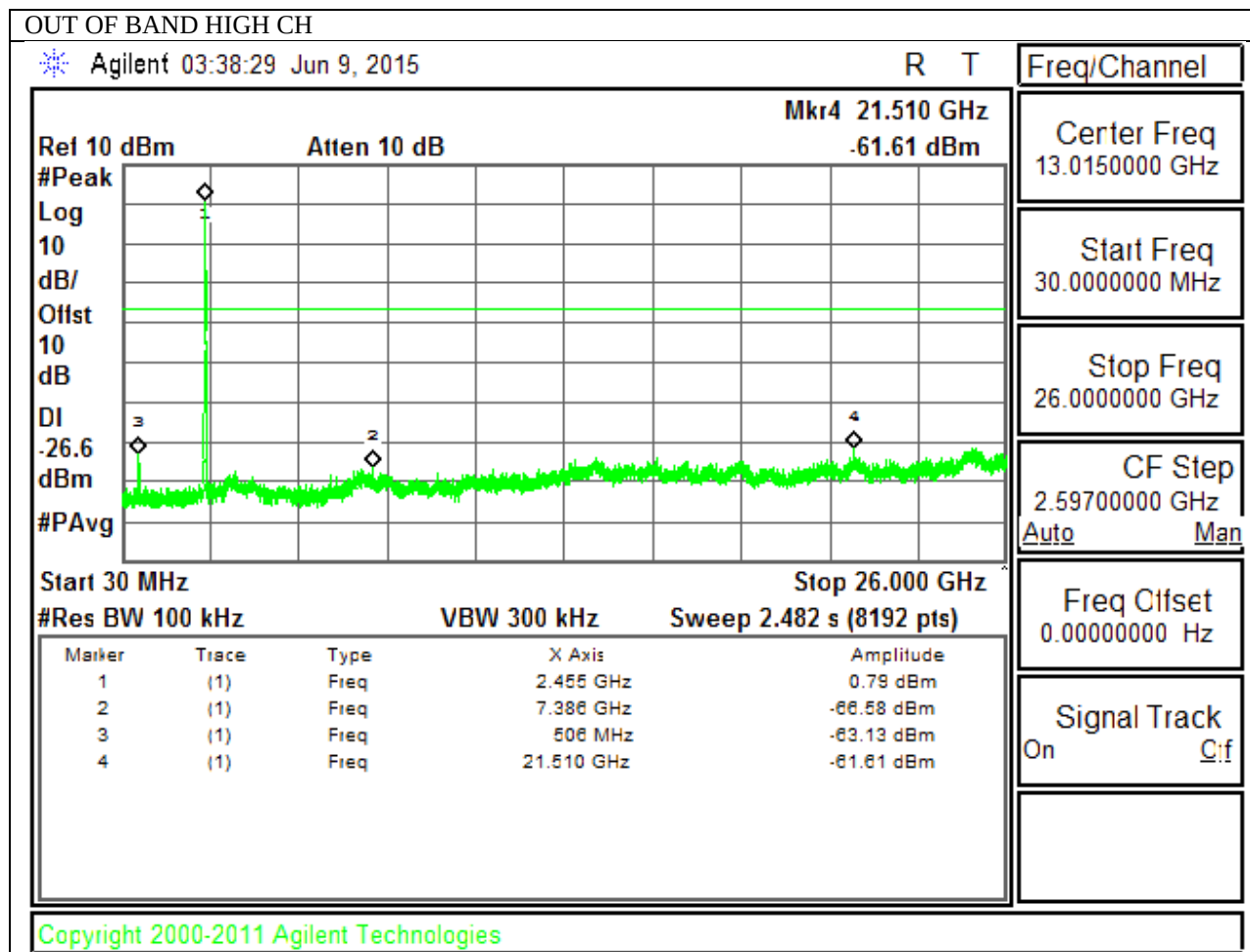
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

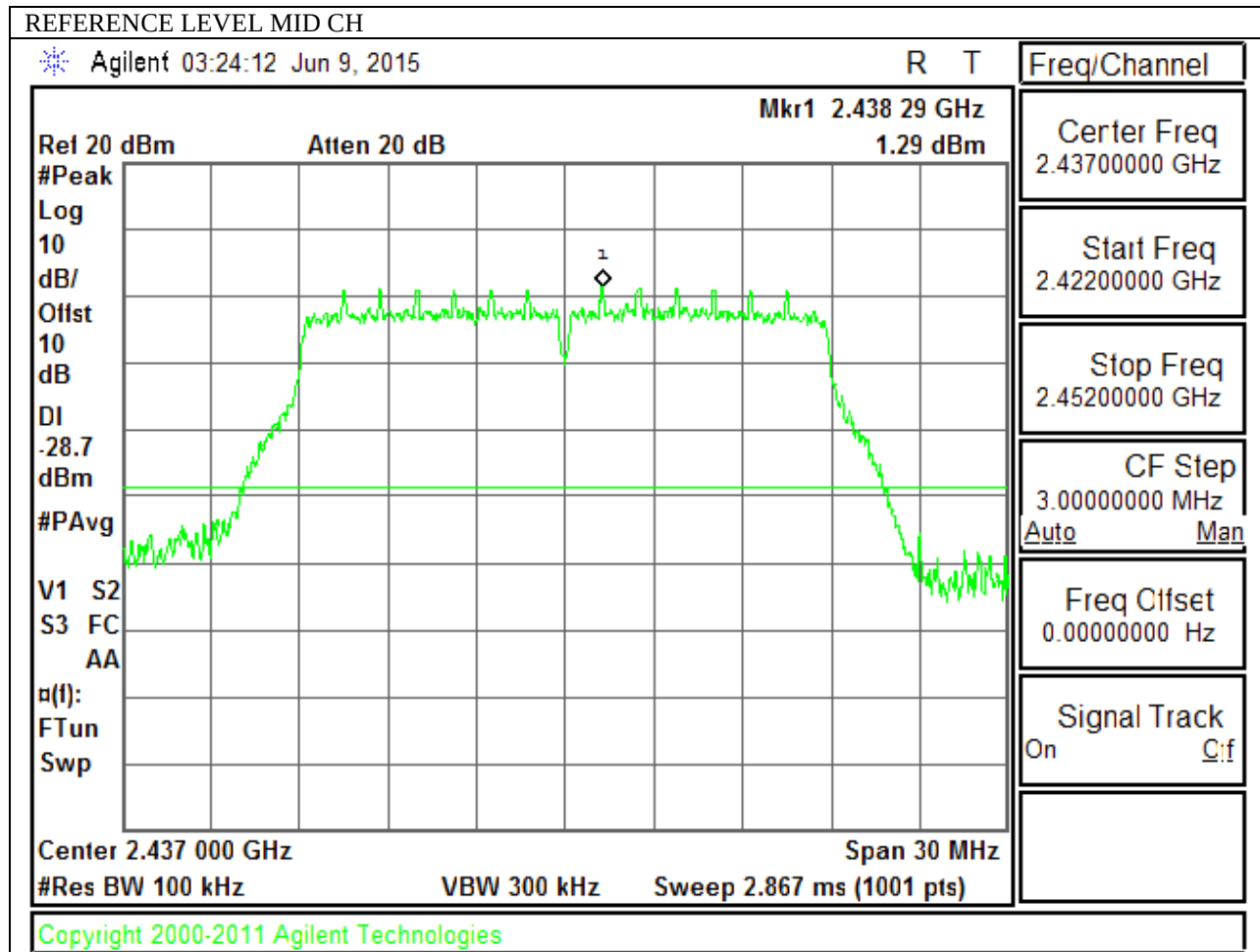




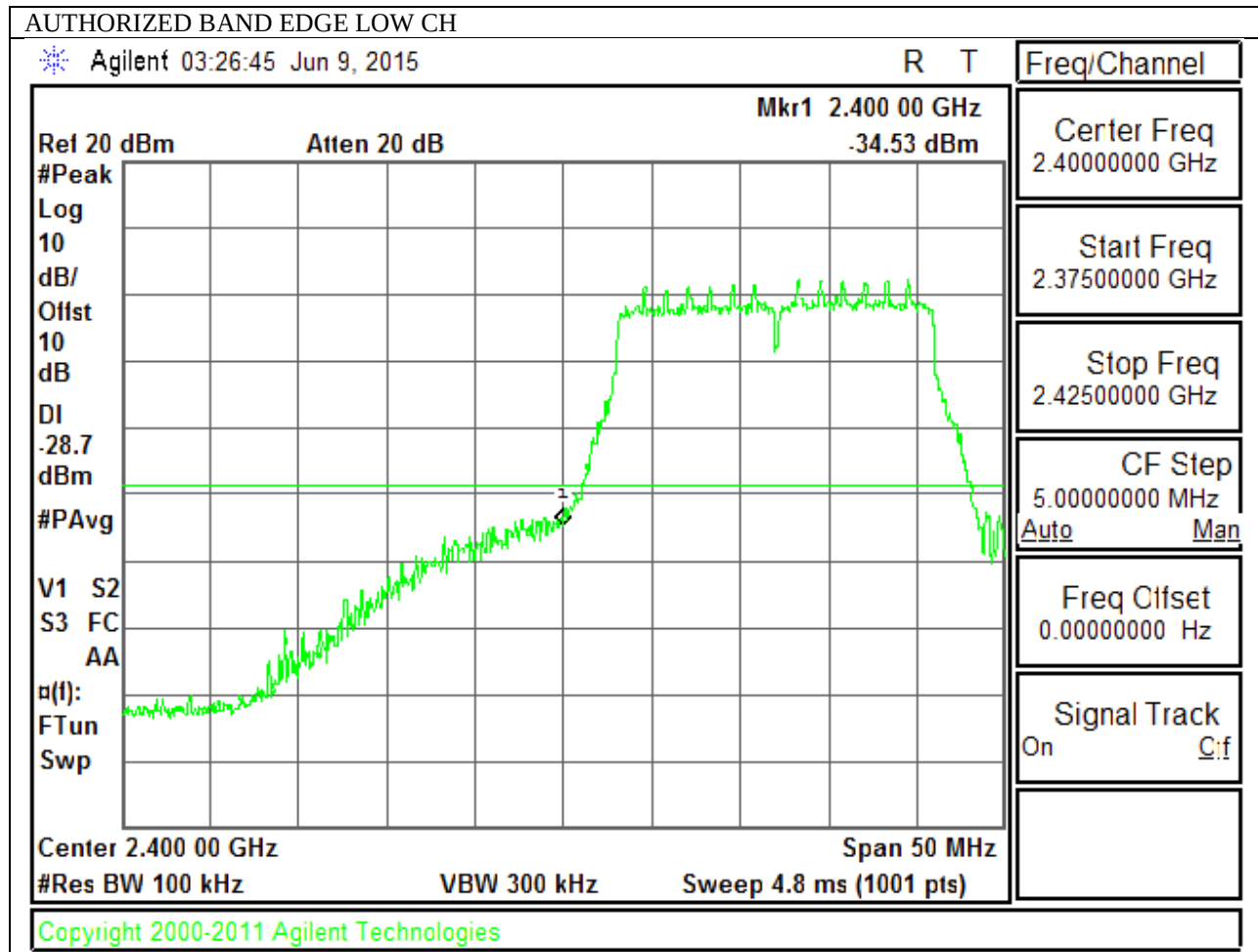


9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

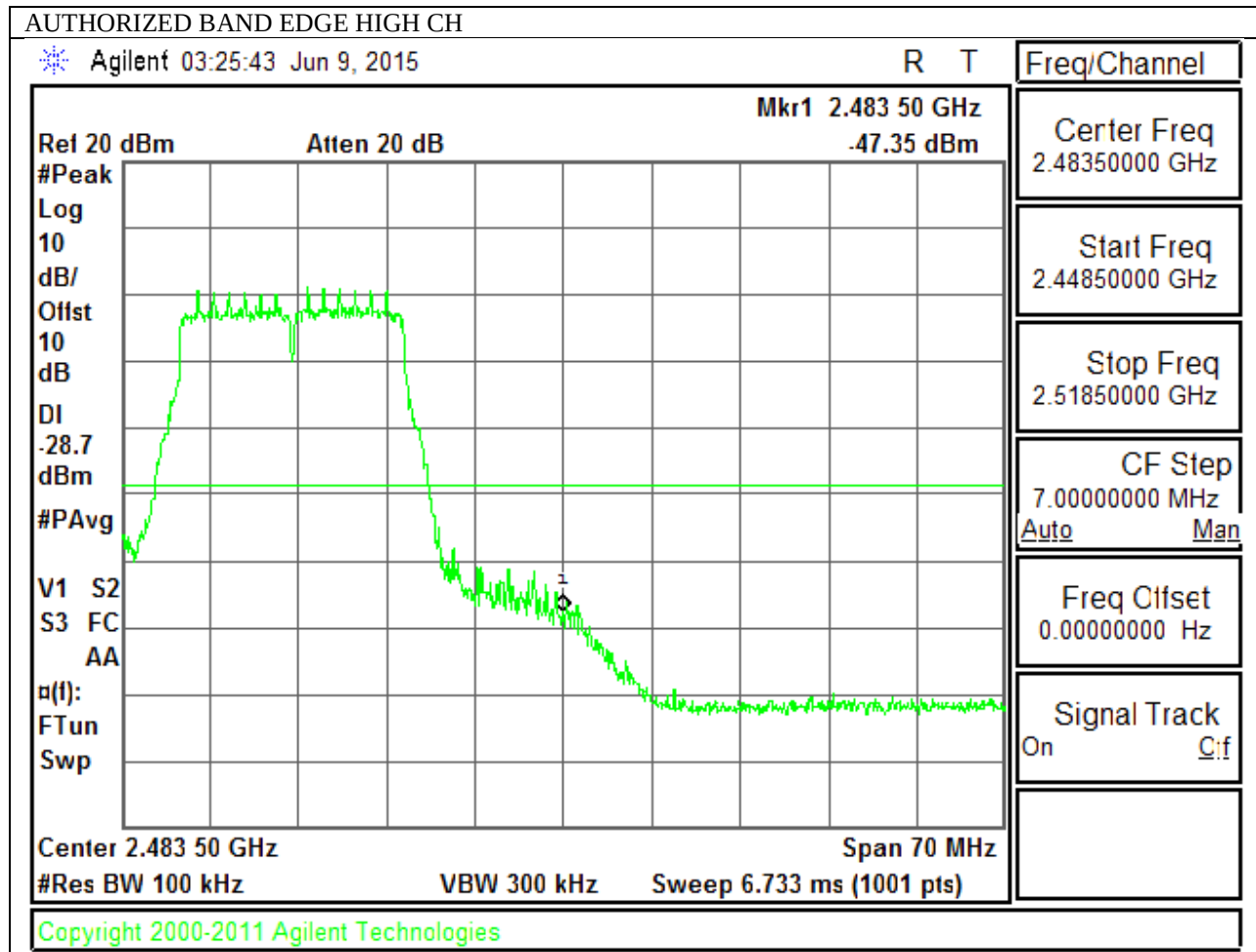
IN-BAND REFERENCE LEVEL



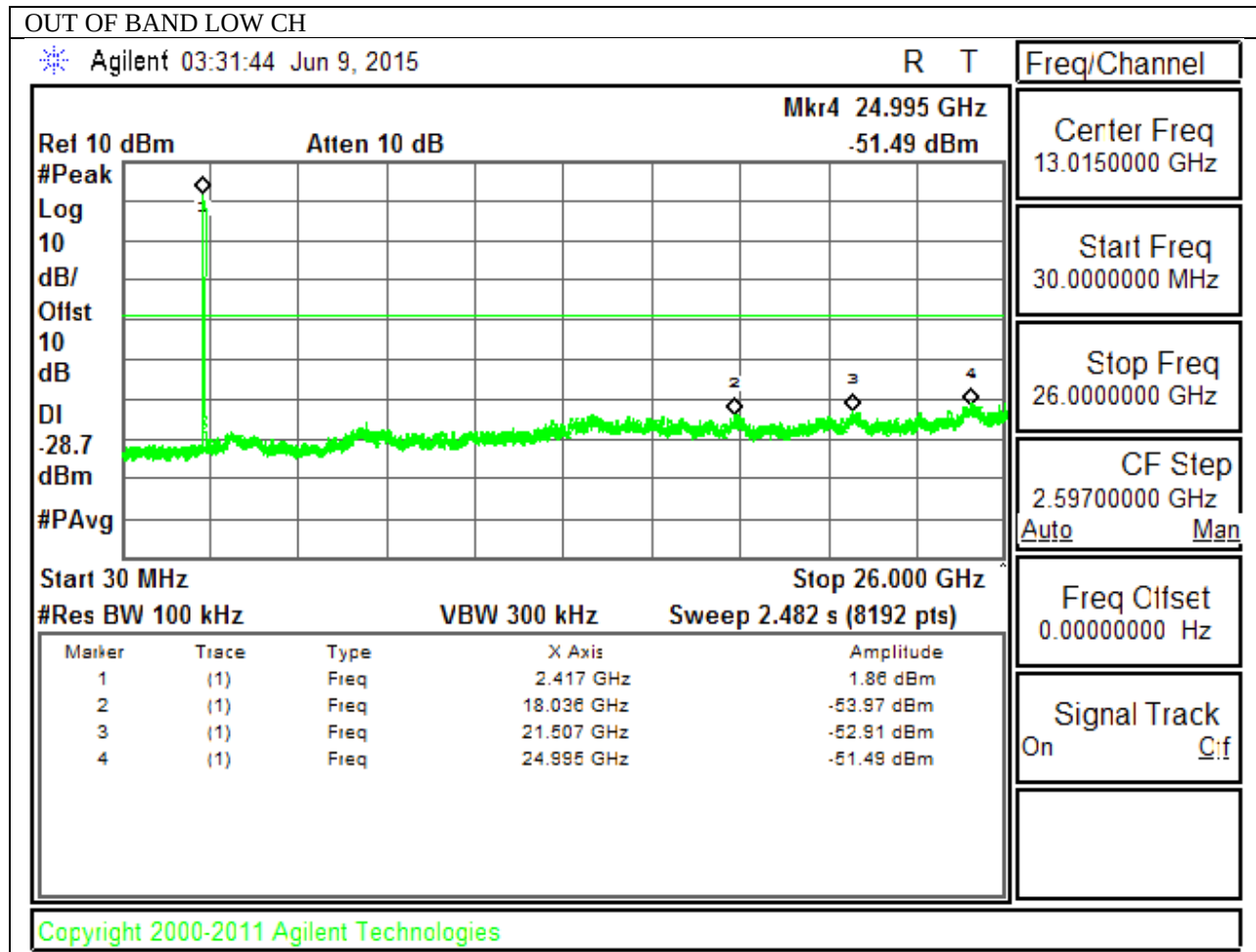
LOW CHANNEL BANDEDGE

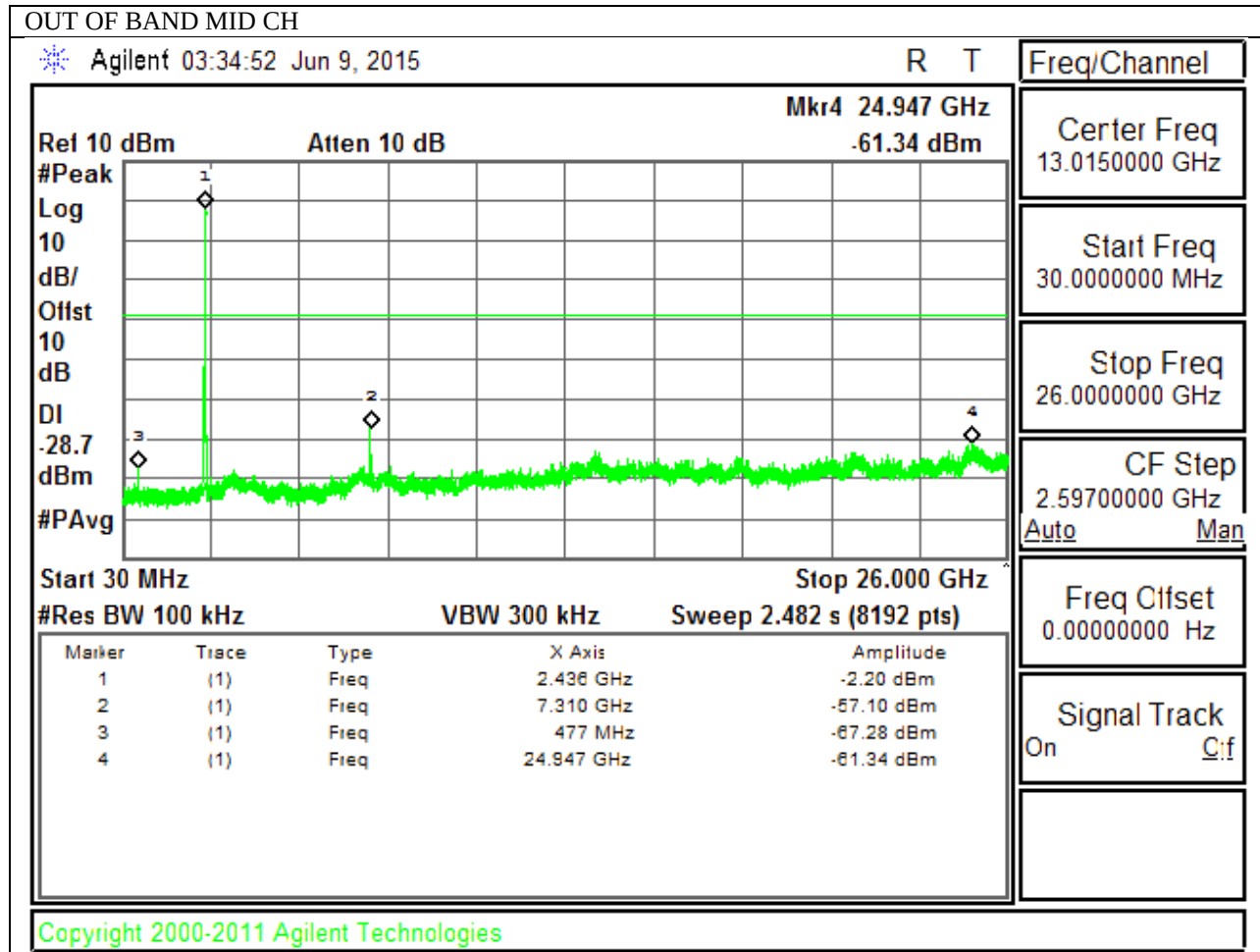


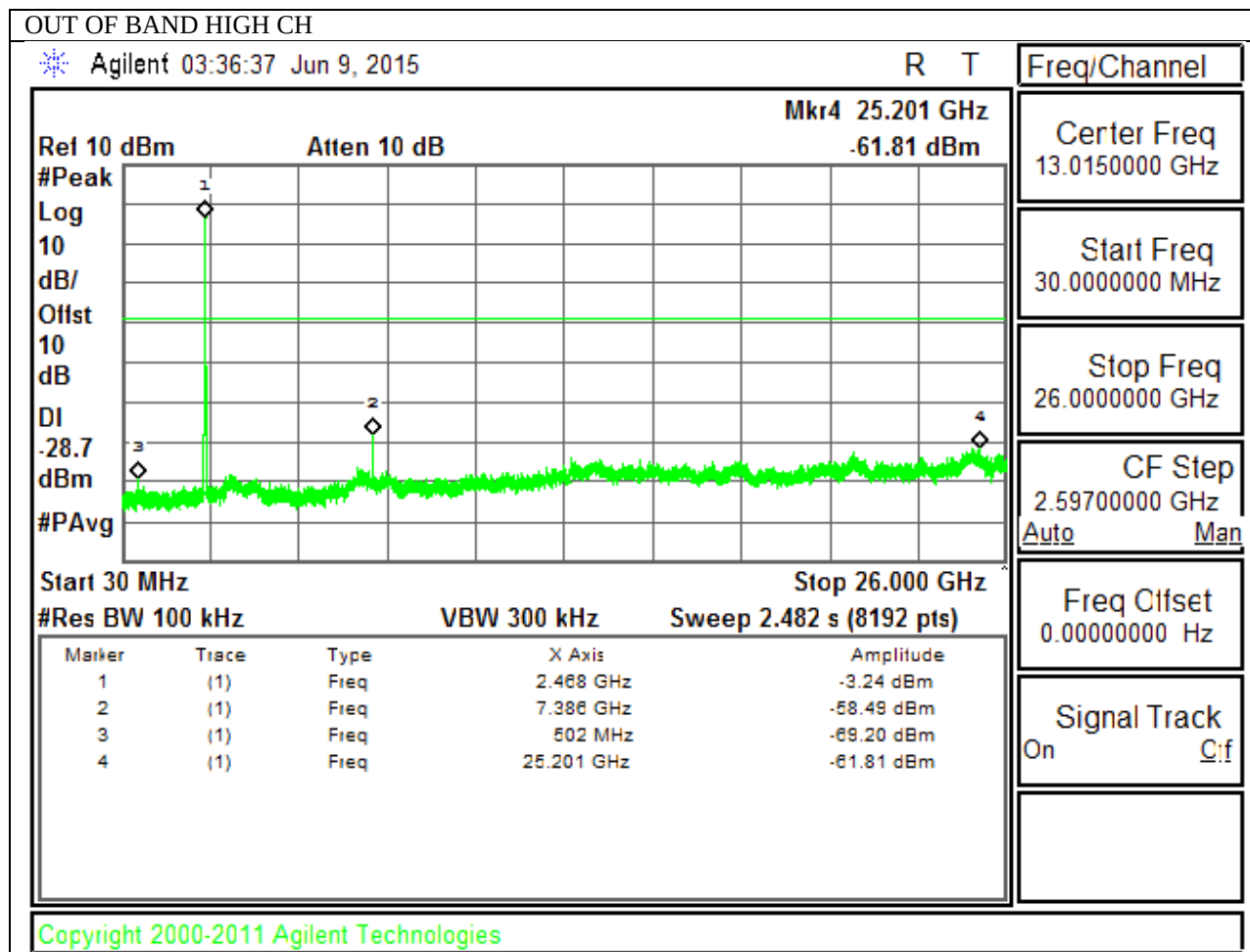
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS







10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V}/\text{m}$) at 3 m	Field Strength Limit (dB $\mu\text{V}/\text{m}$) 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 = 0.31dB; N mode = 0.33dB.

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.

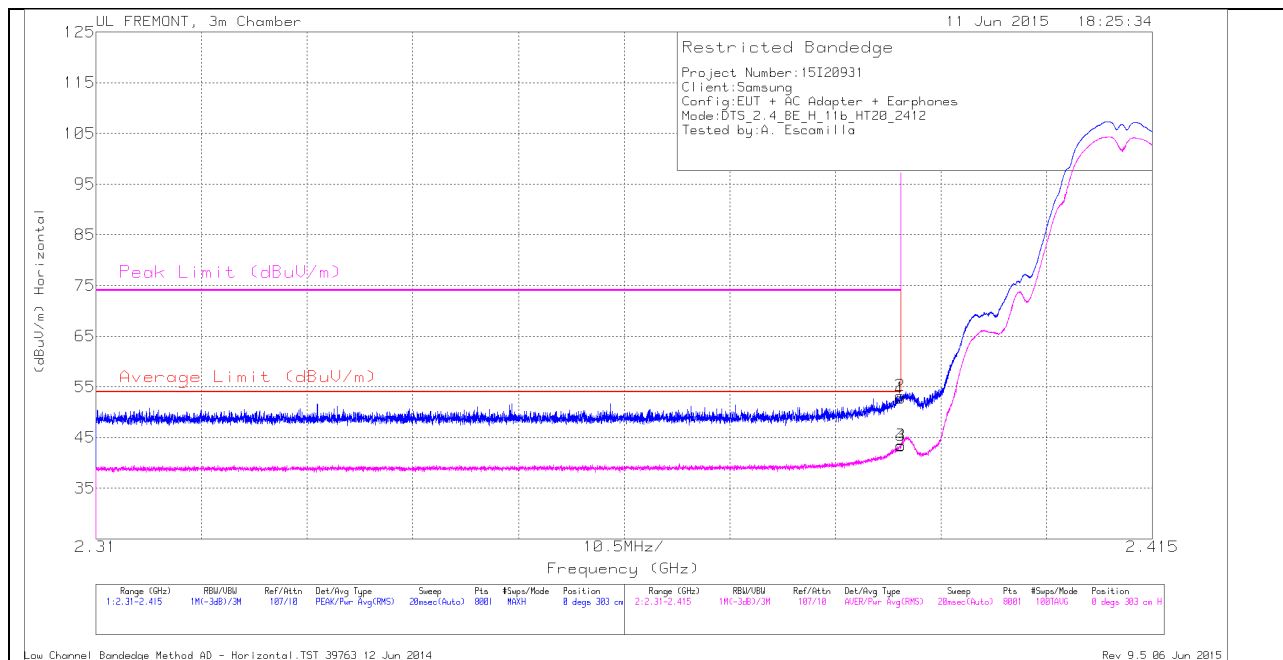
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

10.2. TRANSMITTER ABOVE 1 GHz

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

RESTRICTED BANDEDGE (LOW CHANNEL)

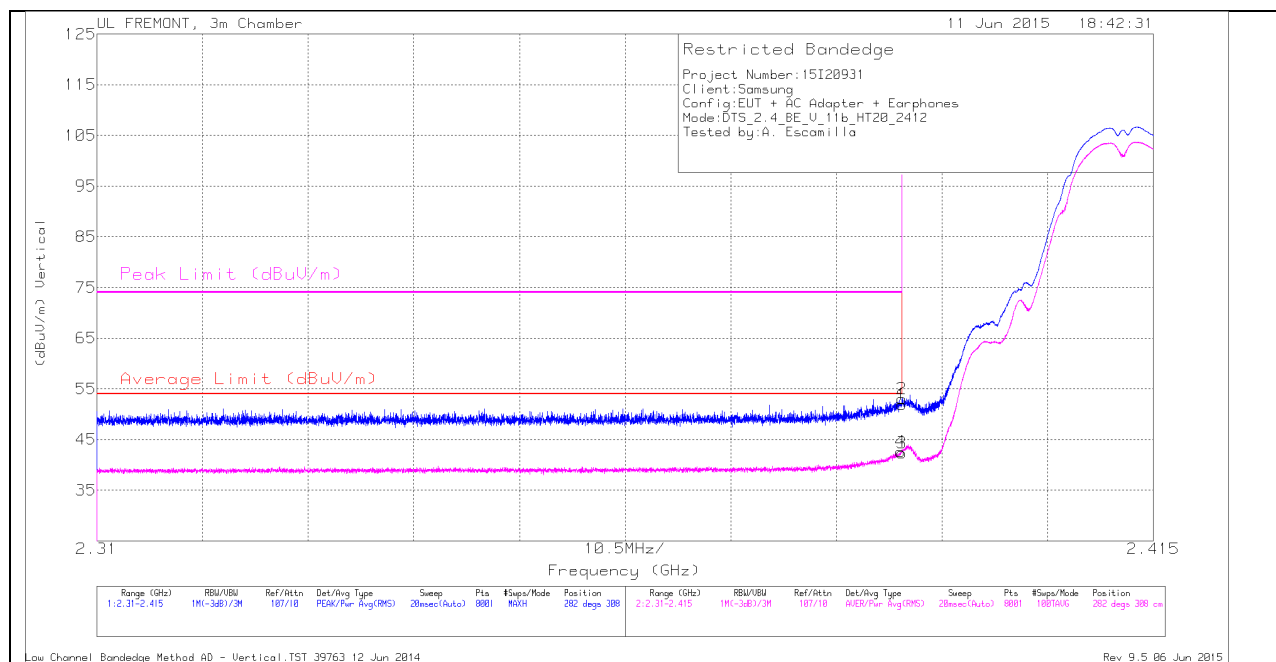
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT119 (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	43.17	Pk	32	-22.4	0	52.77	-	-	74	-21.23	0	303	H
2	2.39	43.67	PK	32	-22.4	0	53.27	-	-	74	-20.73	0	303	H
3	2.39	33.82	RMS	32	-22.4	0	43.42	54	-10.58	-	-	0	303	H
4	2.39	33.79	RMS	32	-22.4	0	43.39	54	-10.61	-	-	0	303	H

VERTICAL PEAK AND AVERAGE PLOT

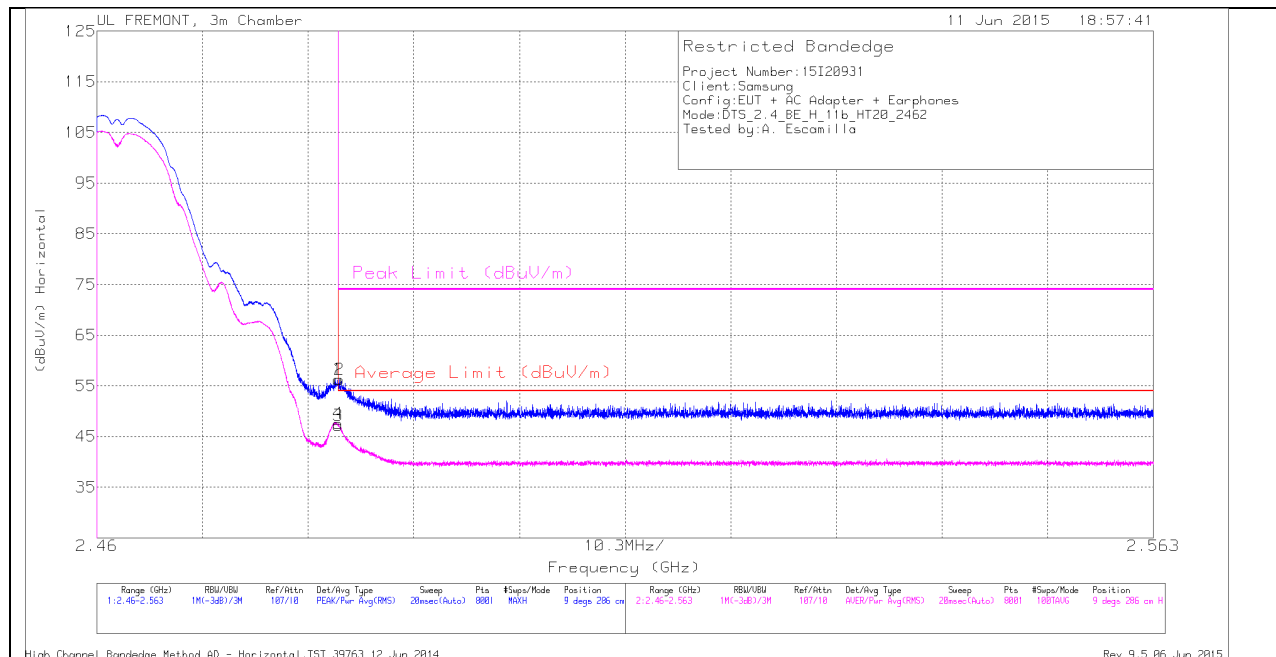


VERTICAL DATA

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	2.39	42.32	Pk	32	-22.4	0	51.92	-	-	74	-22.08	282	308	V
2	2.39	43.37	Pk	32	-22.4	0	52.97	-	-	74	-21.03	282	308	V
3	2.39	32.77	RMS	32	-22.4	0	42.37	54	-11.63	-	-	282	308	V
4	2.39	33.03	RMS	32	-22.4	0	42.63	54	-11.37	-	-	282	308	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

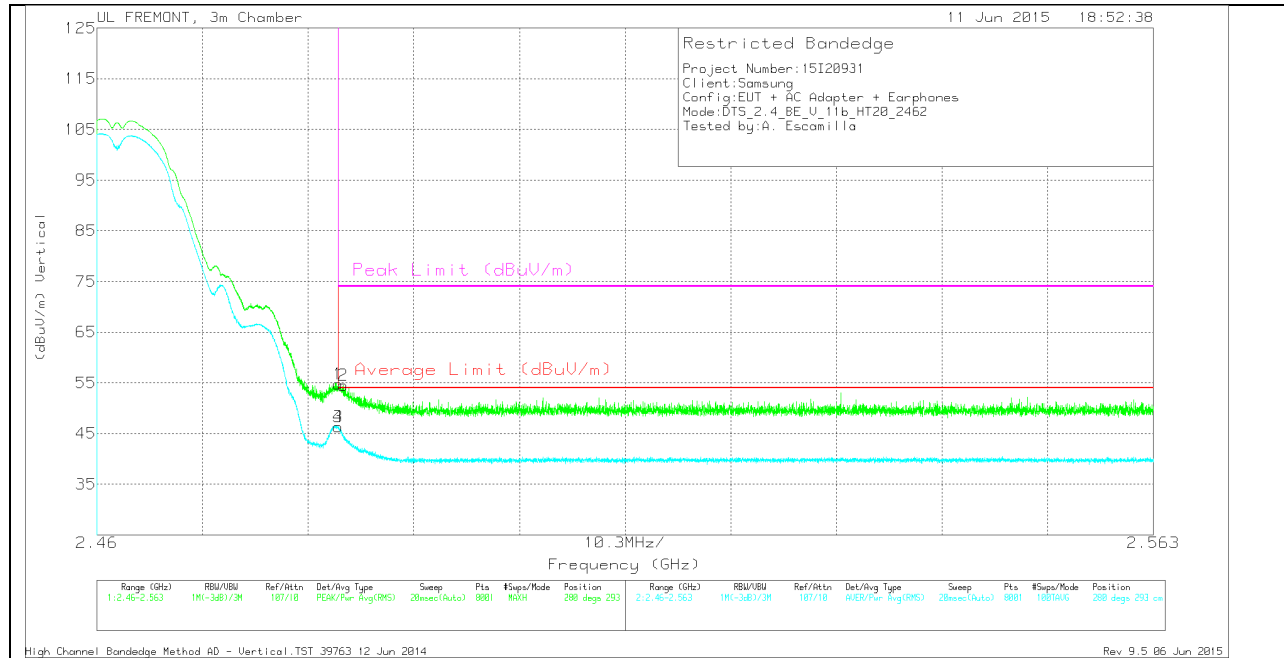
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/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	46.07	Pk	32.3	-22.1	0	56.27	-	-	74	-17.73	9	286	H
2	2.484	46.1	Pk	32.3	-22.1	0	56.3	-	-	74	-17.7	9	286	H
3	2.484	36.96	RMS	32.3	-22.1	0	47.16	54	-6.84	-	-	9	286	H
4	2.484	37.38	RMS	32.3	-22.1	0	47.58	54	-6.42	-	-	9	286	H

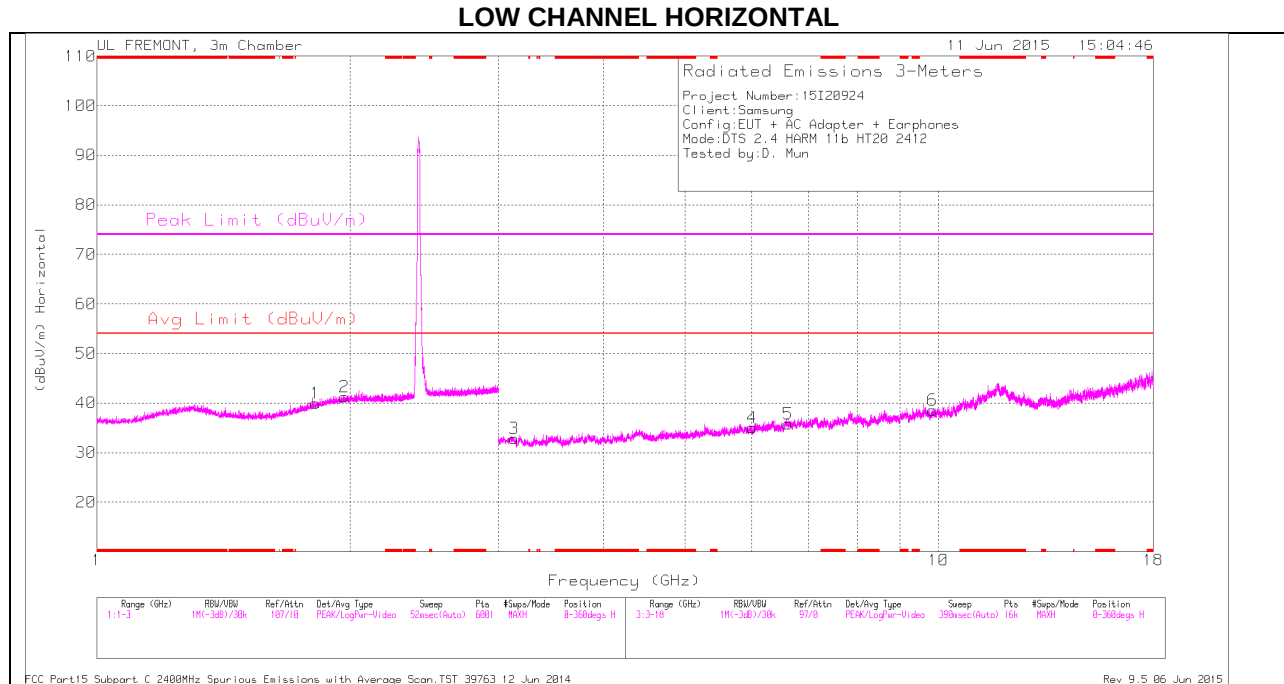
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

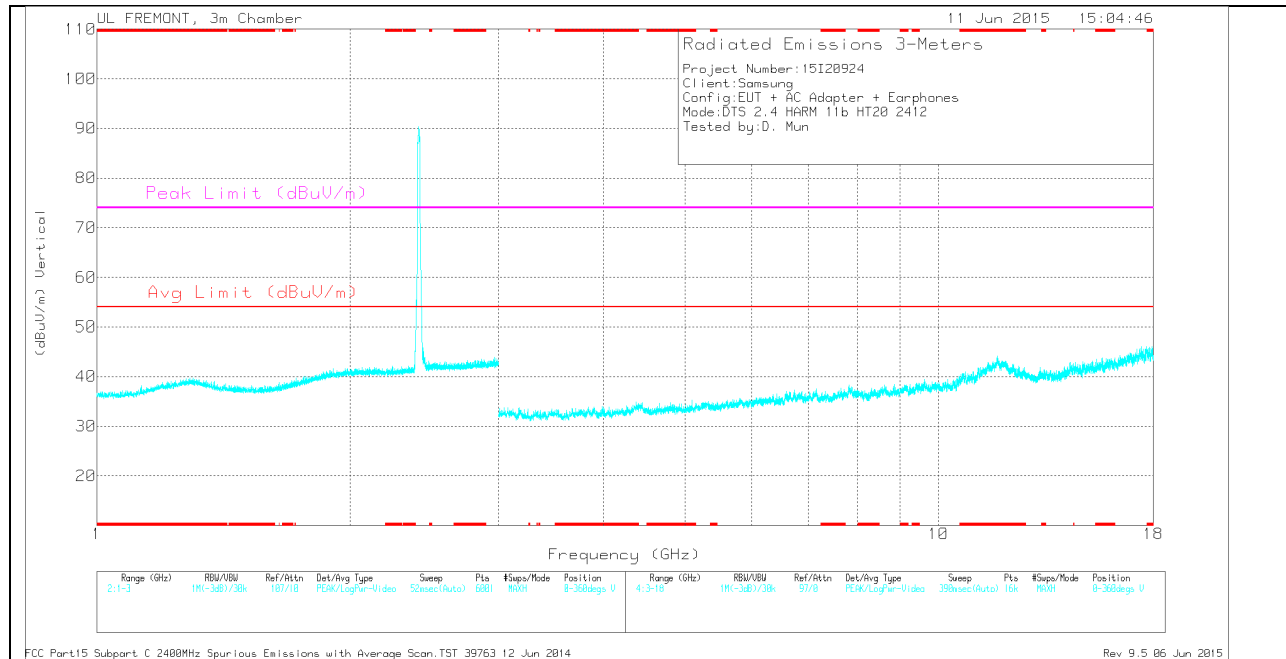
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	44.6	Pk	32.3	-22.1	0	54.8	-	-	74	-19.2	280	293	V
2	2.484	44.32	Pk	32.3	-22.1	0	54.52	-	-	74	-19.48	280	293	V
3	2.484	36.09	RMS	32.3	-22.1	0	46.29	54	-7.71	-	-	280	293	V
4	2.484	36.08	RMS	32.3	-22.1	0	46.28	54	-7.72	-	-	280	293	V

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.

LOW CHANNEL VERTICAL



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/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.817	32.13	Avg	30.4	-22.6	39.93	54	-14.07	-	-	0-360	100	H
2	1.968	32.34	Avg	31.4	-22.5	41.24	54	-12.76	-	-	0-360	100	H
3	3.132	30.53	Avg	32.7	-30.4	32.83	54	-21.17	-	-	0-360	200	H
4	6.013	29.01	Avg	35.2	-29.2	35.01	54	-18.99	-	-	0-360	200	H
5	6.626	28.09	Avg	35.6	-27.9	35.79	54	-18.21	-	-	0-360	200	H
6	9.843	26.09	Avg	36.9	-24.4	38.59	54	-15.41	-	-	0-360	100	H

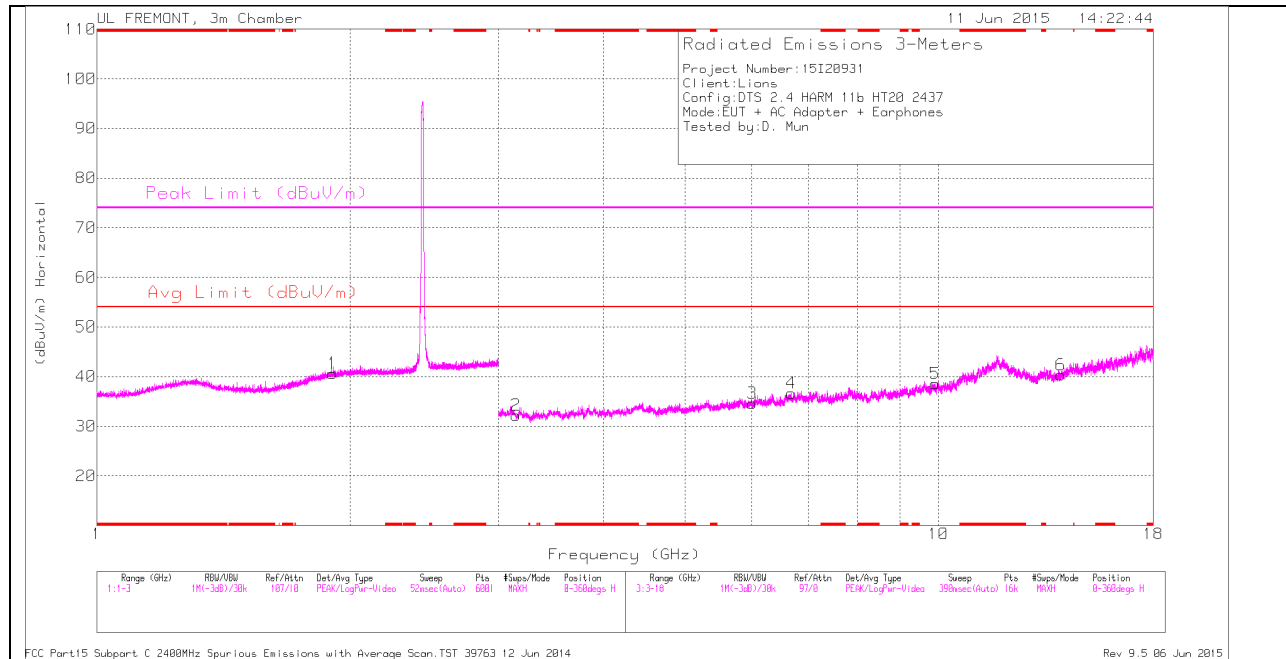
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.819	42.32	PK2	30.4	-22.6	50.12	-	-	74	-23.88	360	100	H
1.97	41.88	PK2	31.4	-22.5	50.78	-	-	74	-23.22	360	100	H
3.131	40.4	PK2	32.7	-30.4	42.7	-	-	74	-31.3	360	200	H
6.012	39.5	PK2	35.2	-29.3	45.4	-	-	74	-28.6	360	200	H
6.627	38.68	PK2	35.6	-27.8	46.48	-	-	74	-27.52	360	200	H
9.842	36.65	PK2	36.9	-24.4	49.15	-	-	74	-24.85	360	100	H

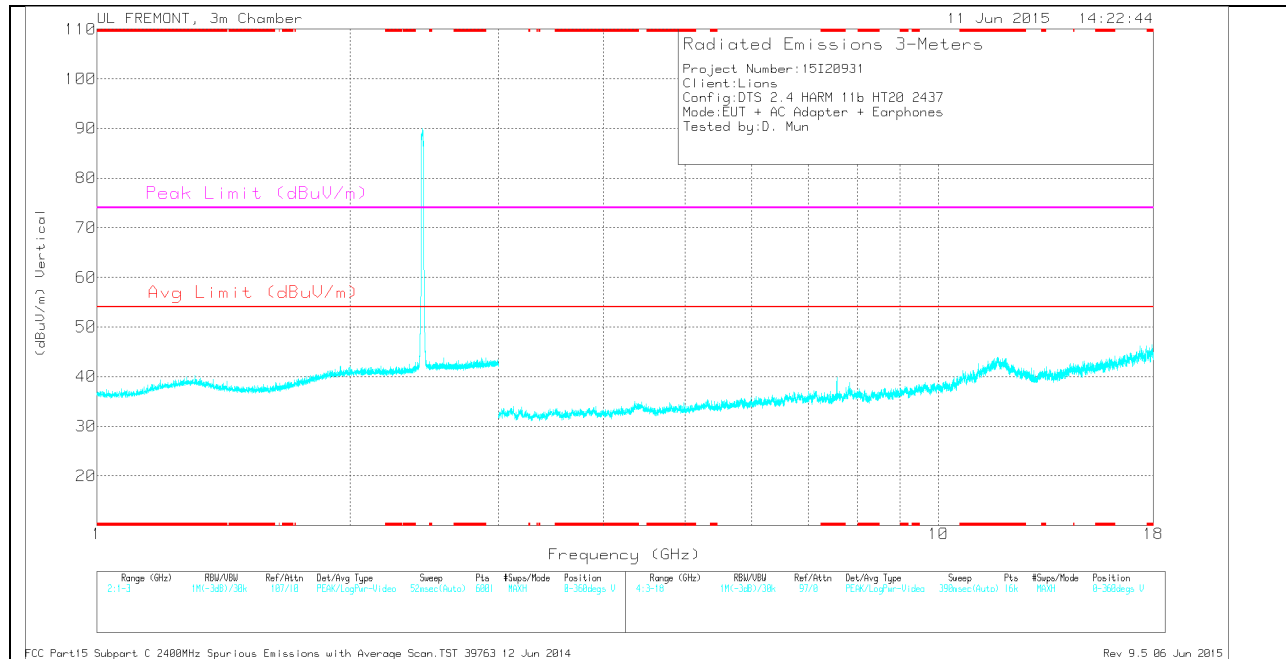
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MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.904	32.16	Avg	31.1	-22.6	40.66	54	-13.34	-	-	0-360	200	H
2	3.148	29.89	Avg	32.7	-30.4	32.19	54	-21.81	-	-	0-360	200	H
3	6.006	28.82	Avg	35.2	-29.4	34.62	54	-19.38	-	-	0-360	200	H
4	6.682	30.21	Avg	35.6	-29.1	36.71	54	-17.29	-	-	0-360	100	H
5	9.909	25.47	Avg	36.9	-23.8	38.57	54	-15.43	-	-	0-360	200	H
6	13.976	28.89	Avg	38.8	-27.3	40.39	54	-13.61	-	-	0-360	100	H

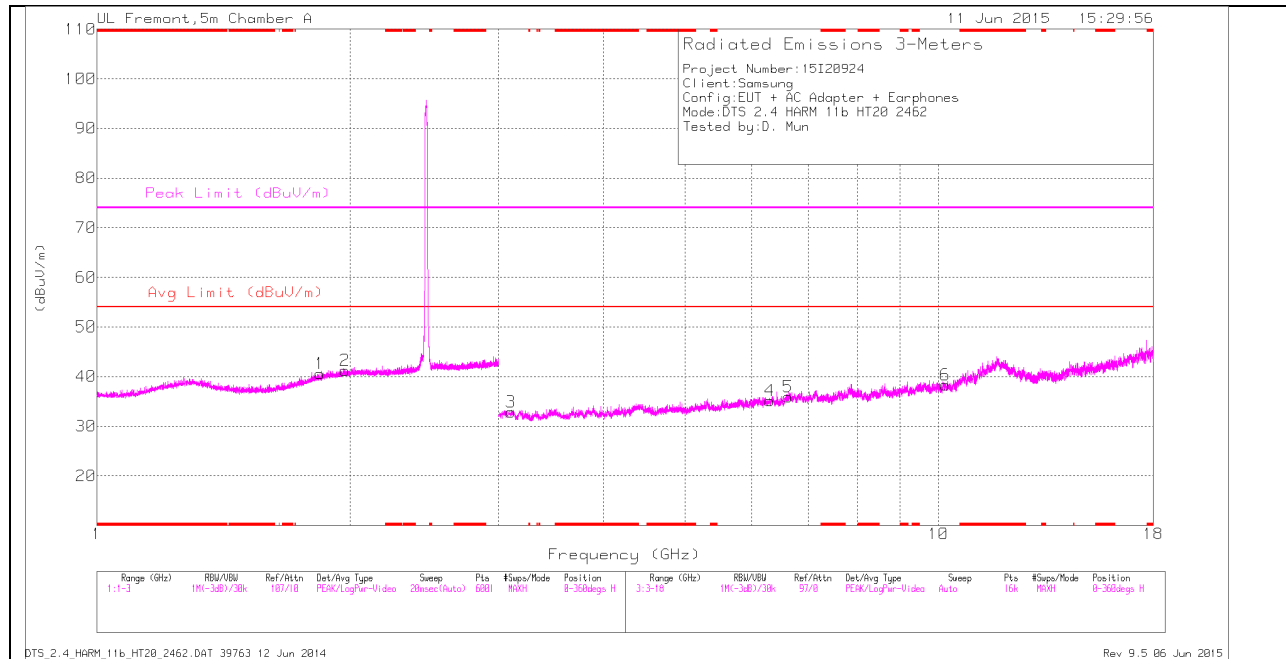
PK - Peak detector

RADIATED EMISSIONS

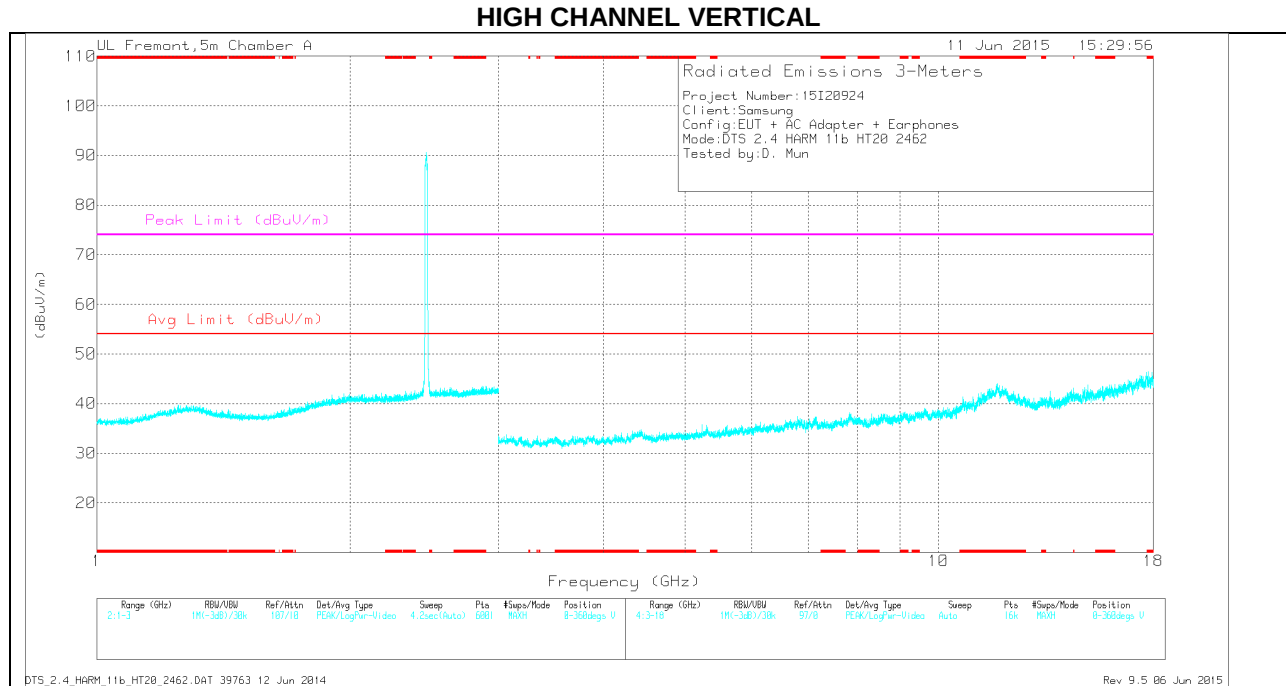
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.904	42.37	PK2	31.1	-22.6	50.87	-	-	74	-23.13	360	200	H
3.147	40.14	PK2	32.7	-30.4	42.44	-	-	74	-31.56	360	200	H
6.006	39.55	PK2	35.2	-29.4	45.35	-	-	74	-28.65	360	200	H
6.683	40.47	PK2	35.6	-29.1	46.97	-	-	74	-27.03	360	100	H
9.908	35.67	PK2	36.9	-23.8	48.77	-	-	74	-25.23	360	200	H
13.975	38.64	PK2	38.8	-27.3	50.14	-	-	74	-23.86	360	100	H

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HIGH 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.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.841	32.58	Avg	30.6	-22.6	40.58	54	-13.42	-	-	0-360	200	H
2	1.972	32.41	Avg	31.4	-22.6	41.21	54	-12.79	-	-	0-360	100	H
3	3.103	30.84	Avg	32.8	-30.8	32.84	54	-21.16	-	-	0-360	200	H
4	6.301	28.68	Avg	35.4	-28.9	35.18	54	-18.82	-	-	0-360	100	H
5	6.631	27.97	Avg	35.6	-27.7	35.87	54	-18.13	-	-	0-360	100	H
6	10.183	24.53	Avg	37	-23.2	38.33	54	-15.67	-	-	0-360	100	H

PK - Peak detector

RADIATED EMISSIONS

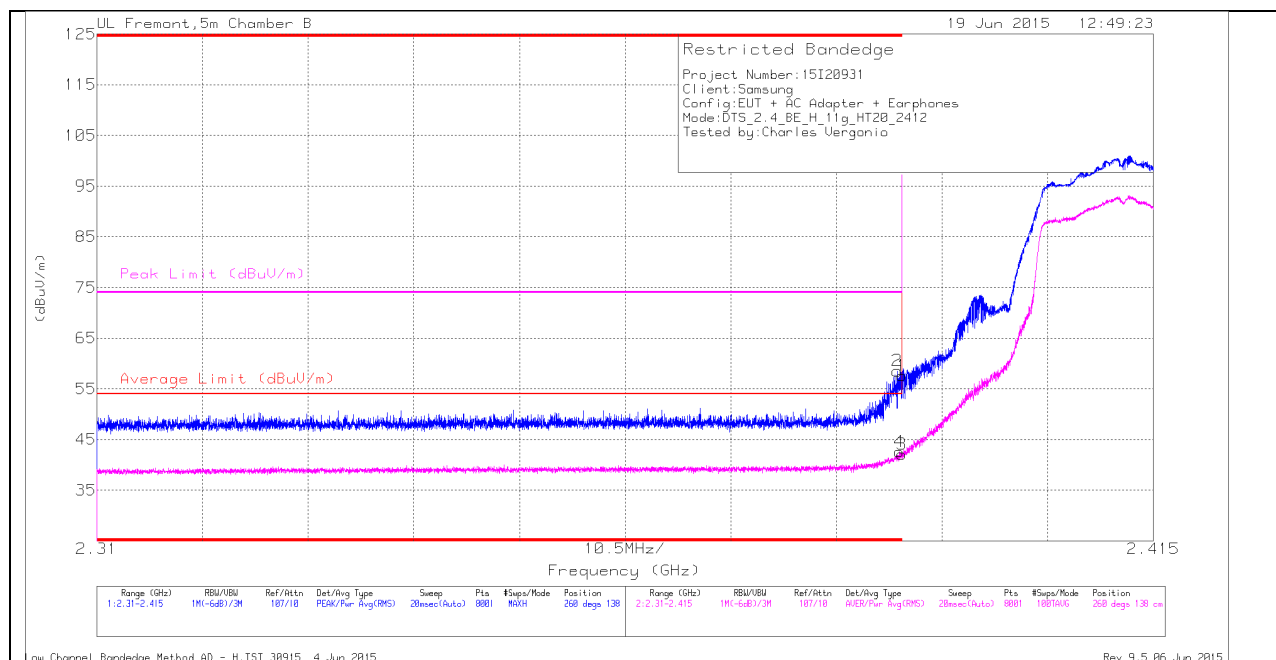
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.841	44.82	PK2	30.6	-22.6	52.82	-	-	74	-21.18	62	201	H
1.842	44.63	PK2	30.6	-22.6	52.63	-	-	74	-21.37	62	201	H
1.88	42.33	PK2	30.9	-22.6	50.63	-	-	74	-23.37	360	200	H
1.881	42.67	PK2	30.9	-22.5	51.07	-	-	74	-22.93	360	100	H
1.971	44.94	PK2	31.4	-22.6	53.74	-	-	74	-20.26	62	100	H
2.02	42.43	PK2	31.5	-22.5	51.43	-	-	74	-22.57	360	200	H
2.065	42.64	PK2	31.5	-22.4	51.74	-	-	74	-22.26	360	200	H
3.094	41.28	PK2	32.8	-30.9	43.18	-	-	74	-30.82	360	100	H

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

RESTRICTED BANDEDGE (LOW CHANNEL)

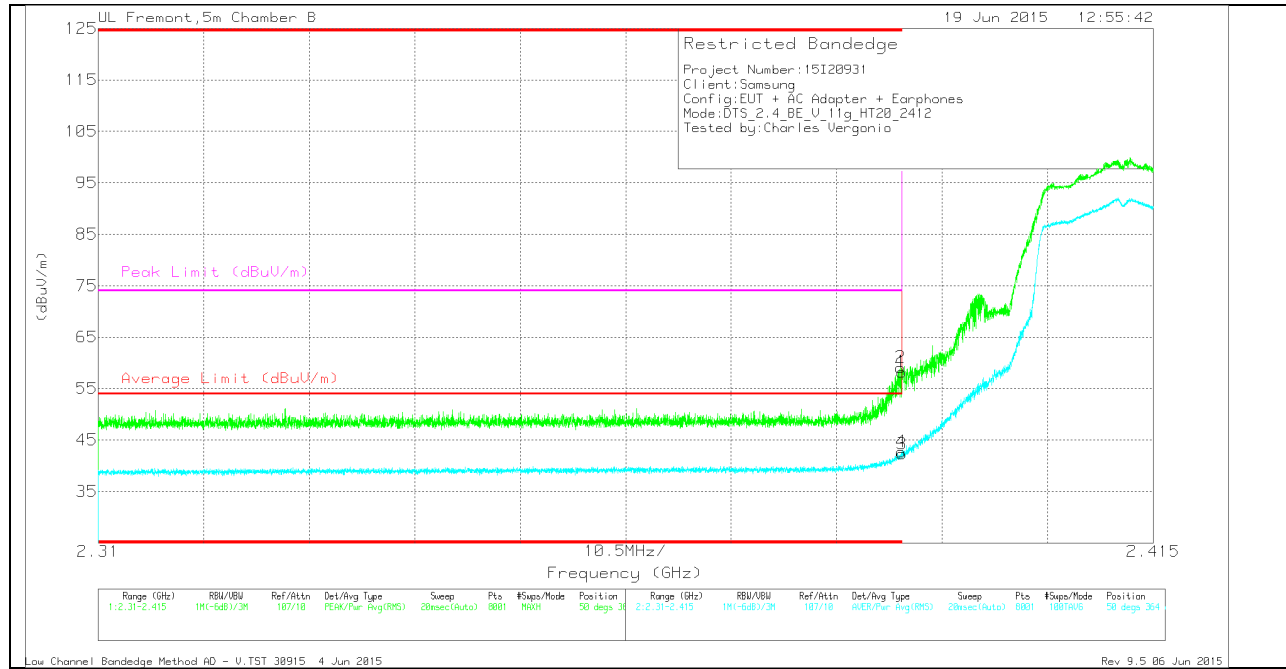
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	47.3	Pk	32	-21.7	0	57.6	-	-	74	-16.4	260	138	H
2	* 2.39	48.25	Pk	32	-21.7	0	58.55	-	-	74	-15.45	260	138	H
3	* 2.39	31.44	RMS	32	-21.7	.31	42.05	54	-11.95	-	-	260	138	H
4	* 2.39	31.95	RMS	32	-21.7	.31	42.56	54	-11.44	-	-	260	138	H

VERTICAL PEAK AND AVERAGE PLOT

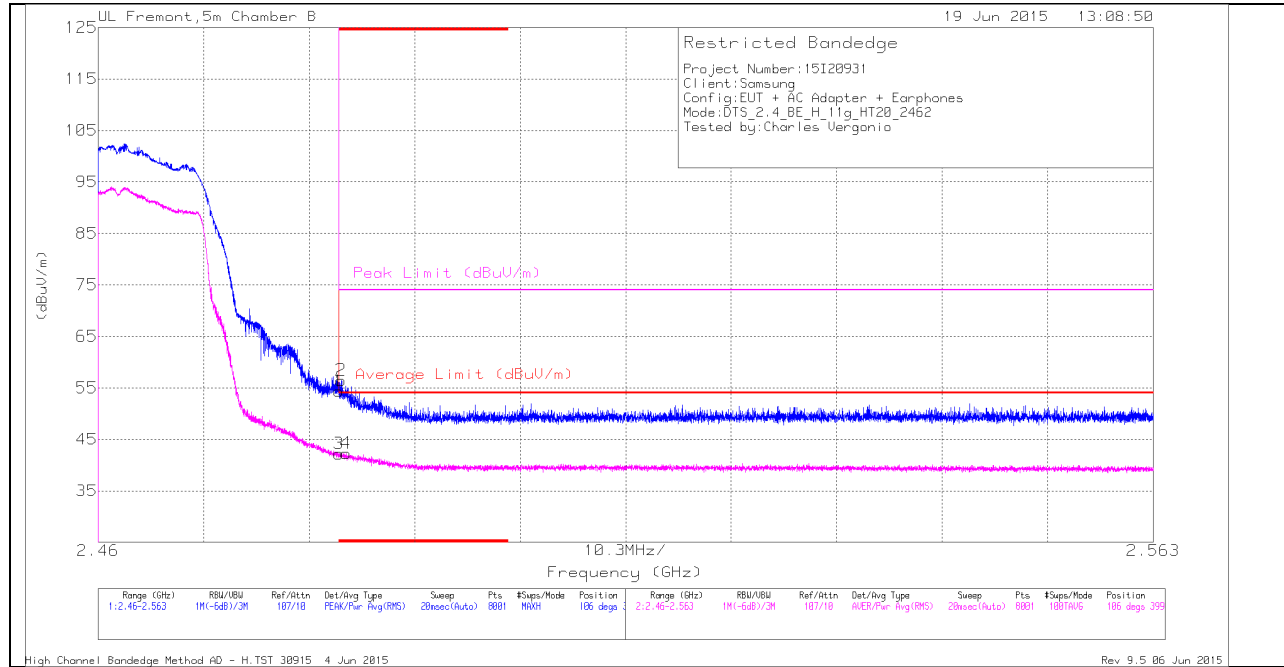


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.39	47.96	Pk	32	-21.7	0	58.26	-	-	74	-15.74	50	364	V
2	* 2.39	48.79	Pk	32	-21.7	0	59.09	-	-	74	-14.91	50	364	V
3	* 2.39	31.7	RMS	32	-21.7	.31	42.31	54	-11.69	-	-	50	364	V
4	* 2.39	32.11	RMS	32	-21.7	.31	42.72	54	-11.8	-	-	50	364	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

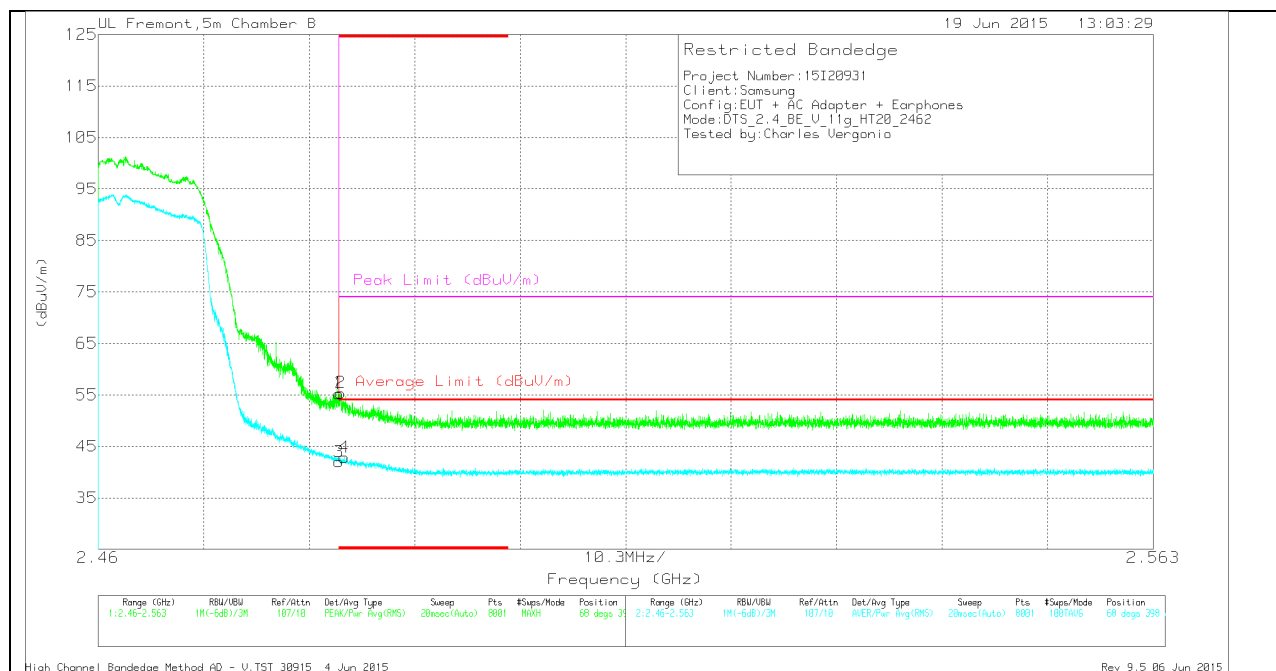
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	43.36	Pk	32.5	-21.5	0	54.36	-	-	74	-19.64	106	399	H
2	* 2.484	45.46	Pk	32.5	-21.5	0	56.46	-	-	74	-17.54	106	399	H
3	* 2.484	30.91	RMS	32.5	-21.5	.31	42.22	54	-11.78	-	-	106	399	H
4	* 2.484	30.99	RMS	32.5	-21.5	.31	42.3	54	-11.7	-	-	106	399	H

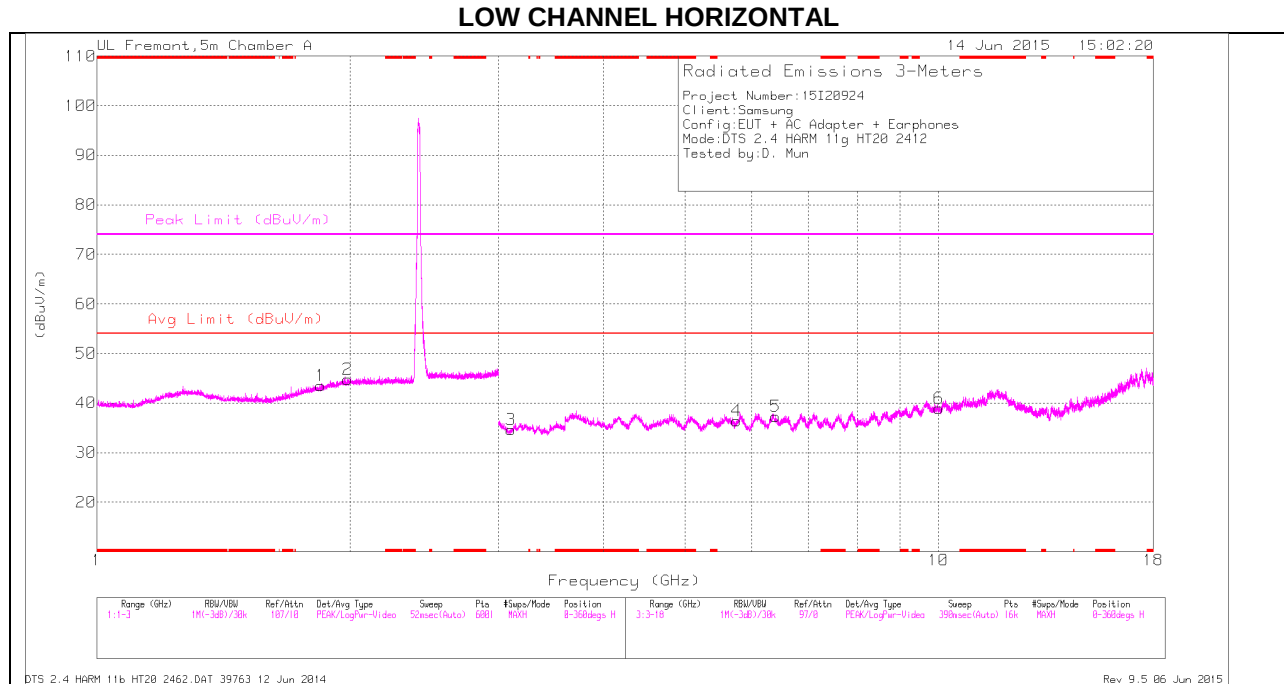
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

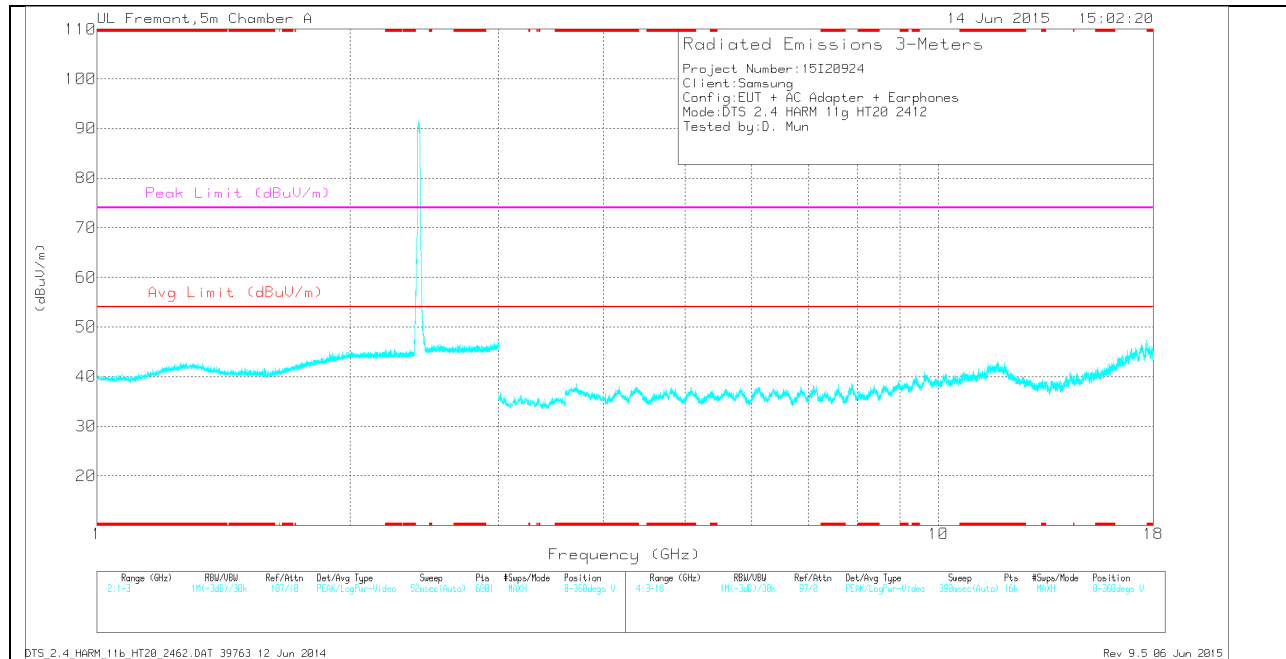
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.26	Pk	32.5	-21.5	0	55.26	-	-	74	-18.74	68	398	V
2	* 2.484	44.39	Pk	32.5	-21.5	0	55.39	-	-	74	-18.61	68	398	V
3	* 2.484	30.68	RMS	32.5	-21.5	.31	41.99	54	-12.01	-	-	68	398	V
4	* 2.484	31.55	RMS	32.5	-21.5	.31	42.86	54	-11.14	-	-	68	398	V

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.

LOW CHANNEL VERTICAL



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/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.843	35.48	Avg	30.6	-22.6	43.48	54	-10.52	-	-	0-360	201	H
2	1.985	35.93	Avg	31.4	-22.5	44.83	54	-9.17	-	-	0-360	201	H
3	3.106	32.62	Avg	32.8	-30.8	34.62	54	-19.38	-	-	0-360	100	H
4	5.754	31.33	Avg	34.8	-29.7	36.43	54	-17.57	-	-	0-360	100	H
5	6.4	30.28	Avg	35.5	-28.5	37.28	54	-16.72	-	-	0-360	100	H
6	10.013	26.21	Avg	36.9	-24.2	38.91	54	-15.09	-	-	0-360	100	H

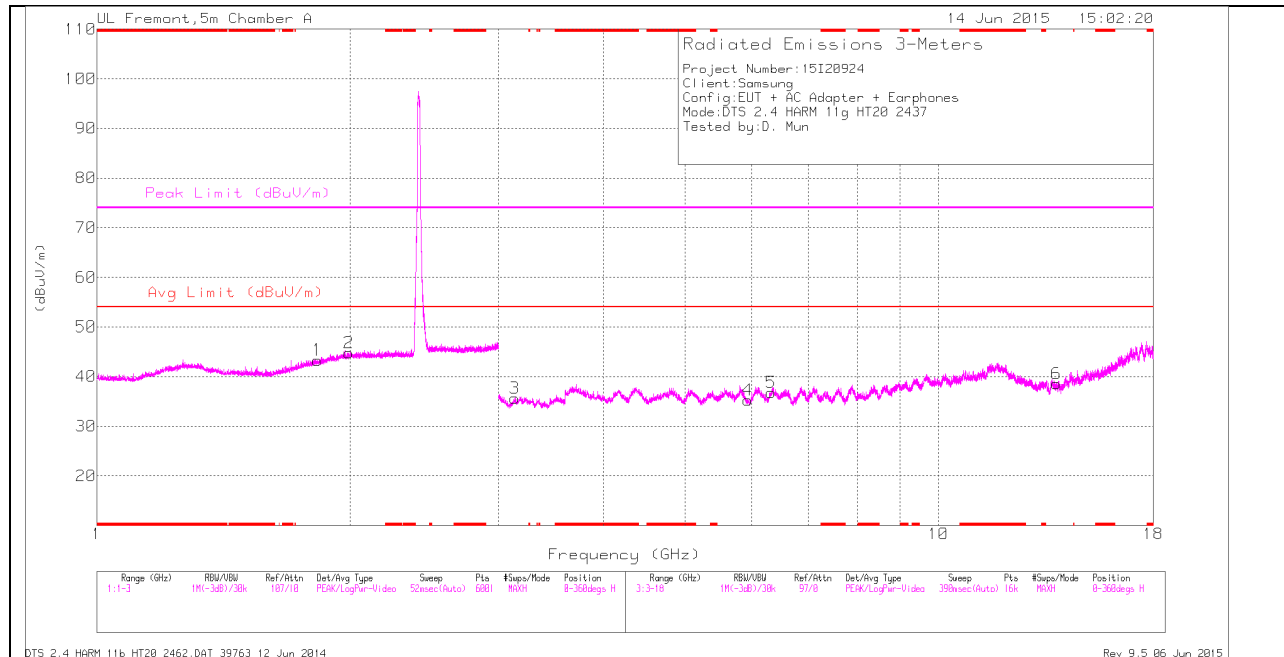
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.842	44.53	PK2	30.6	-22.6	52.53	-	-	74	-21.47	0	202	H
1.984	44.83	PK2	31.4	-22.5	53.73	-	-	74	-20.27	0	202	H
3.105	42.05	PK2	32.8	-30.8	44.05	-	-	74	-29.95	0	100	H
5.753	40.67	PK2	34.8	-29.7	45.77	-	-	74	-28.23	0	100	H
6.402	38.76	PK2	35.5	-28.5	45.76	-	-	74	-28.24	0	100	H
10.011	34.71	PK2	36.9	-24.2	47.41	-	-	74	-26.59	0	100	H

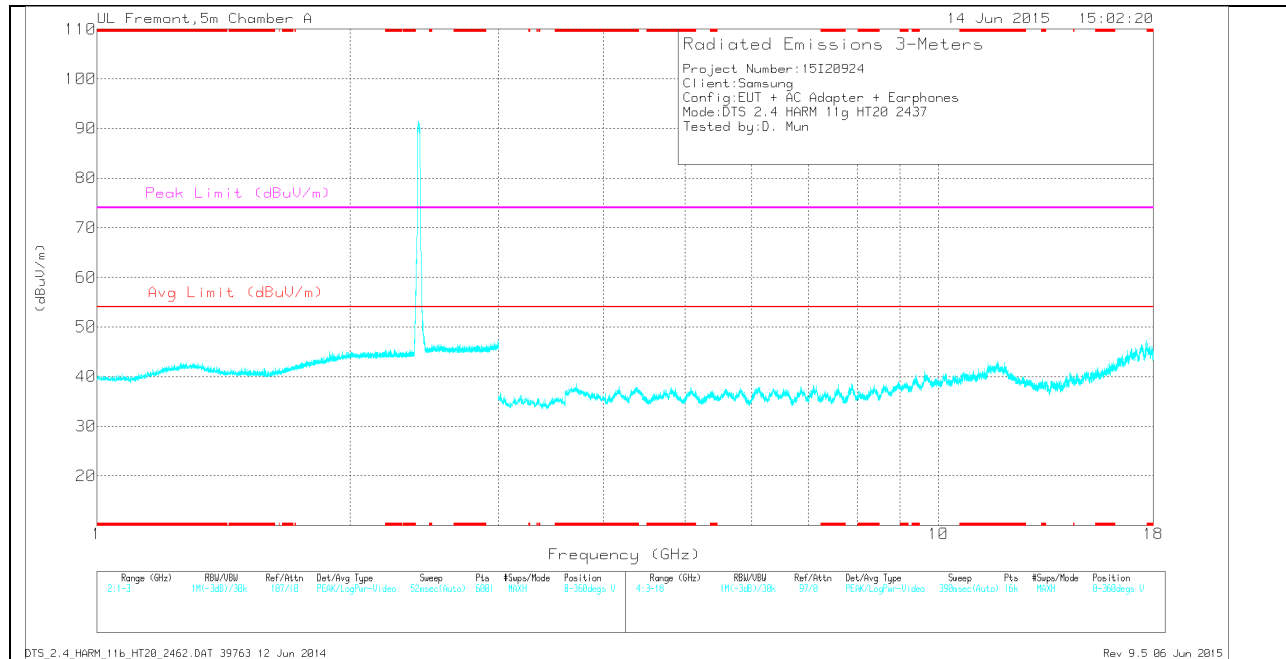
FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

MID 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.

MID CHANNEL VERTICAL



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/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.828	35.43	Avg	30.5	-22.6	43.33	54	-10.67	-	-	0-360	100	H
2	1.993	35.77	Avg	31.5	-22.5	44.77	54	-9.23	-	-	0-360	201	H
3	3.136	33.24	Avg	32.7	-30.3	35.64	54	-18.36	-	-	0-360	201	H
4	5.934	30.03	Avg	35.1	-29.9	35.23	54	-18.77	-	-	0-360	100	H
5	6.321	30.11	Avg	35.4	-28.7	36.81	54	-17.19	-	-	0-360	100	H
6	13.807	26.77	Avg	38.6	-26.8	38.57	54	-15.43	-	-	0-360	100	H

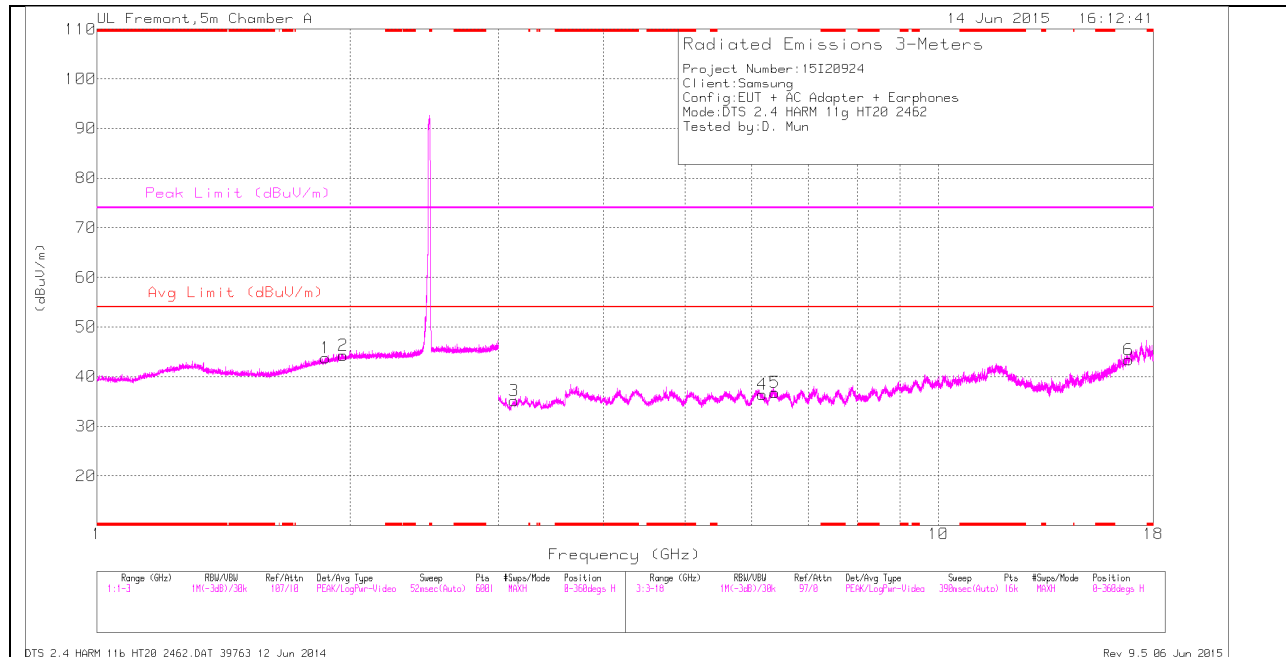
PK - Peak detector

RADIATED EMISSIONS

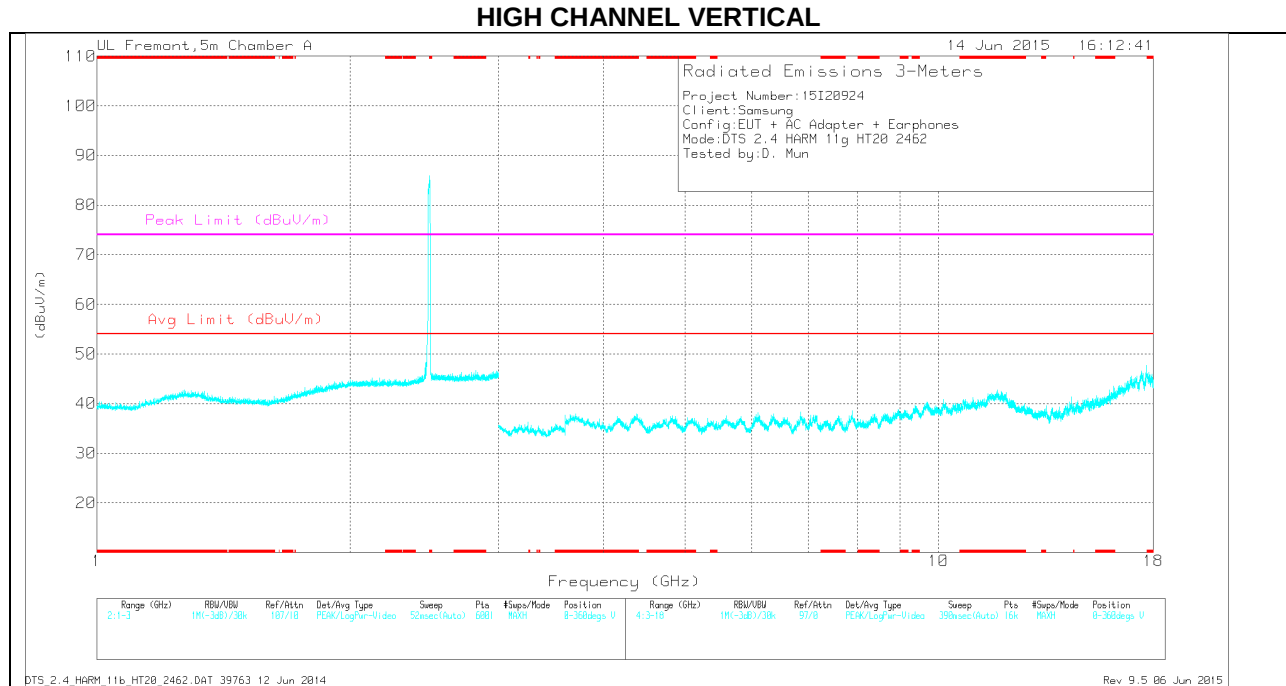
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.828	44.18	PK2	30.5	-22.6	52.08	-	-	74	-21.92	0	100	H
1.984	44.83	PK2	31.4	-22.5	53.73	-	-	74	-20.27	0	202	H
3.105	42.05	PK2	32.8	-30.8	44.05	-	-	74	-29.95	0	100	H
5.753	40.67	PK2	34.8	-29.7	45.77	-	-	74	-28.23	0	100	H
6.321	38.2	PK2	35.4	-28.7	44.9	-	-	74	-29.1	0	100	H
10.011	34.71	PK2	36.9	-24.2	47.41	-	-	74	-26.59	0	100	H
13.805	35	PK2	38.6	-26.8	46.8	-	-	74	-27.2	0	100	H

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HIGH 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.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.87	35.61	Avg	30.8	-22.6	43.81	54	-10.19	-	-	0-360	100	H
2	1.962	35.53	Avg	31.4	-22.6	44.33	54	-9.67	-	-	0-360	100	H
3	3.13	32.8	Avg	32.7	-30.4	35.1	54	-18.9	-	-	0-360	200	H
4	6.173	30.29	Avg	35.3	-29.2	36.39	54	-17.61	-	-	0-360	200	H
5	6.387	29.72	Avg	35.5	-28.4	36.82	54	-17.18	-	-	0-360	200	H
6	16.832	26.13	Avg	41.2	-23.9	43.43	54	-10.57	-	-	0-360	200	H

PK - Peak detector

RADIATED EMISSIONS

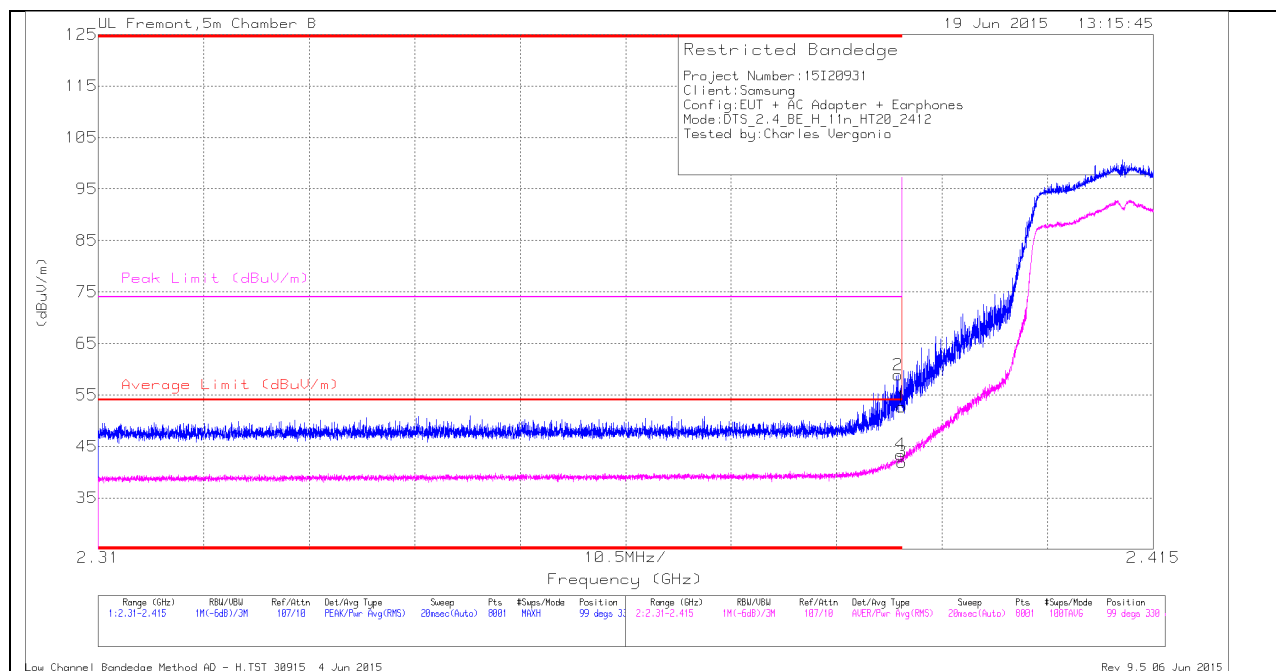
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.871	44.83	PK2	30.8	-22.6	53.03	-	-	74	-20.97	360	100	H
1.964	44.98	PK2	31.4	-22.6	53.78	-	-	74	-20.22	360	100	H
3.128	41.88	PK2	32.7	-30.4	44.18	-	-	74	-29.82	360	201	H
6.175	39.1	PK2	35.3	-29.3	45.1	-	-	74	-28.9	360	201	H
6.386	38.85	PK2	35.5	-28.4	45.95	-	-	74	-28.05	360	201	H
16.833	35.58	PK2	41.2	-23.9	52.88	-	-	74	-21.12	360	201	H

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

RESTRICTED BANDEDGE (LOW CHANNEL)

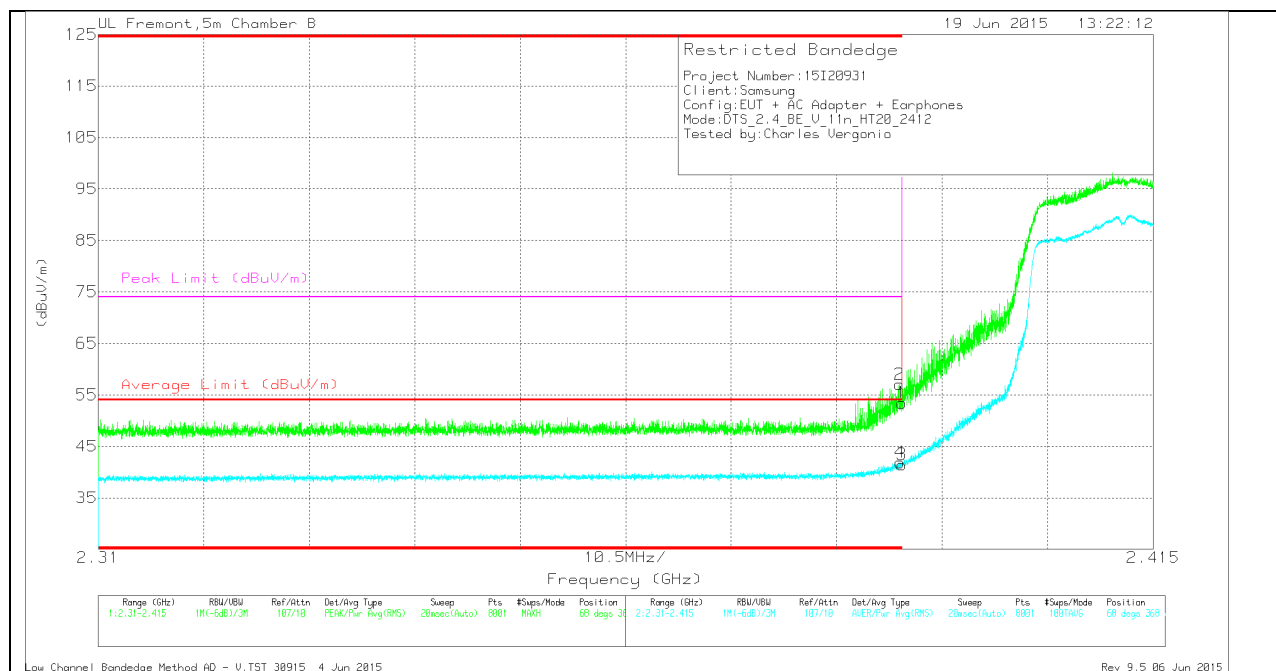
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.39	42.35	PK	32	-21.7	0	52.65	-	-	74	-21.35	99	330	H
2	* 2.39	48.56	PK	32	-21.7	0	58.86	-	-	74	-15.14	99	330	H
3	* 2.39	31.32	RMS	32	-21.7	.33	41.95	54	-12.05	-	-	99	330	H
4	* 2.39	32.79	RMS	32	-21.7	.33	43.42	54	-10.58	-	-	99	330	H

VERTICAL PEAK AND AVERAGE PLOT

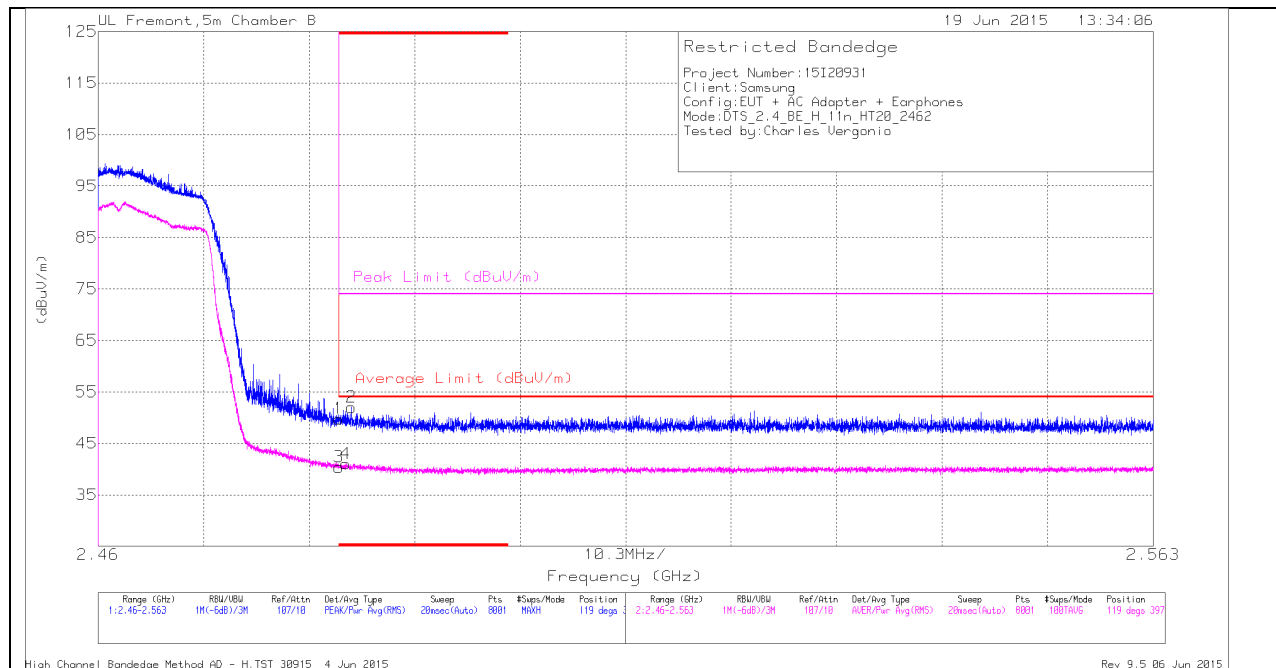


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.39	43.16	Pk	32	-21.7	0	53.46	-	-	74	-20.54	68	368	V
2	* 2.39	46.74	Pk	32	-21.7	0	57.04	-	-	74	-16.96	68	368	V
3	* 2.39	30.83	RMS	32	-21.7	.33	41.46	54	-12.54	-	-	68	368	V
4	* 2.39	31.23	RMS	32	-21.7	.33	41.86	54	-12.14	-	-	68	368	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

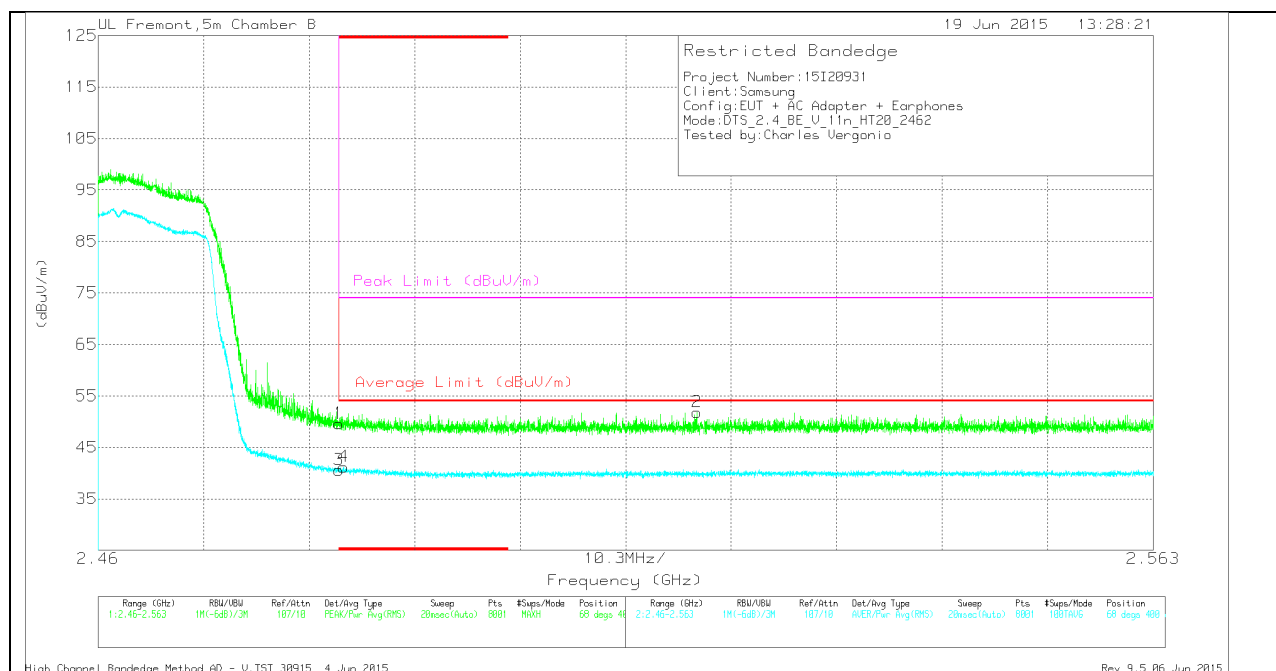
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	38.78	Pk	32.5	-21.5	0	49.78	-	-	74	-24.22	119	397	H
3	* 2.484	29.05	RMS	32.5	-21.5	.33	40.38	54	-13.62	-	-	119	397	H
4	* 2.484	29.7	RMS	32.5	-21.5	.33	41.03	54	-12.97	-	-	119	397	H
2	* 2.485	40.99	Pk	32.5	-21.5	0	51.99	-	-	74	-22.01	119	397	H

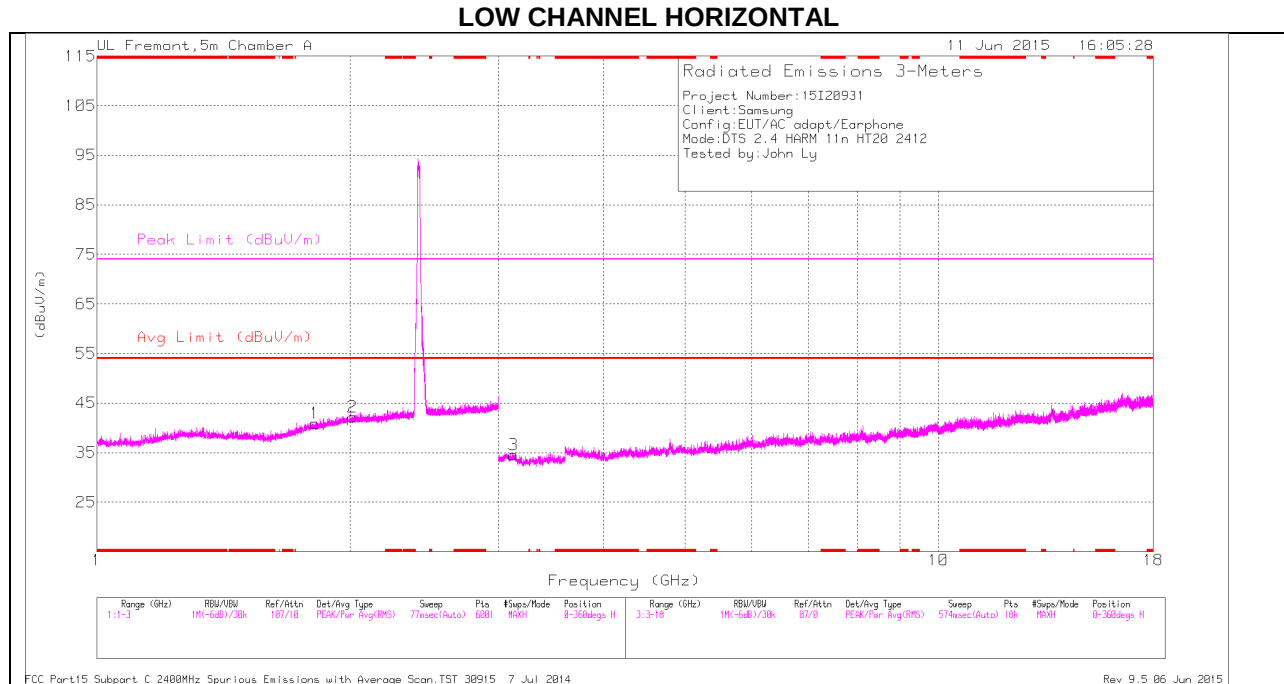
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

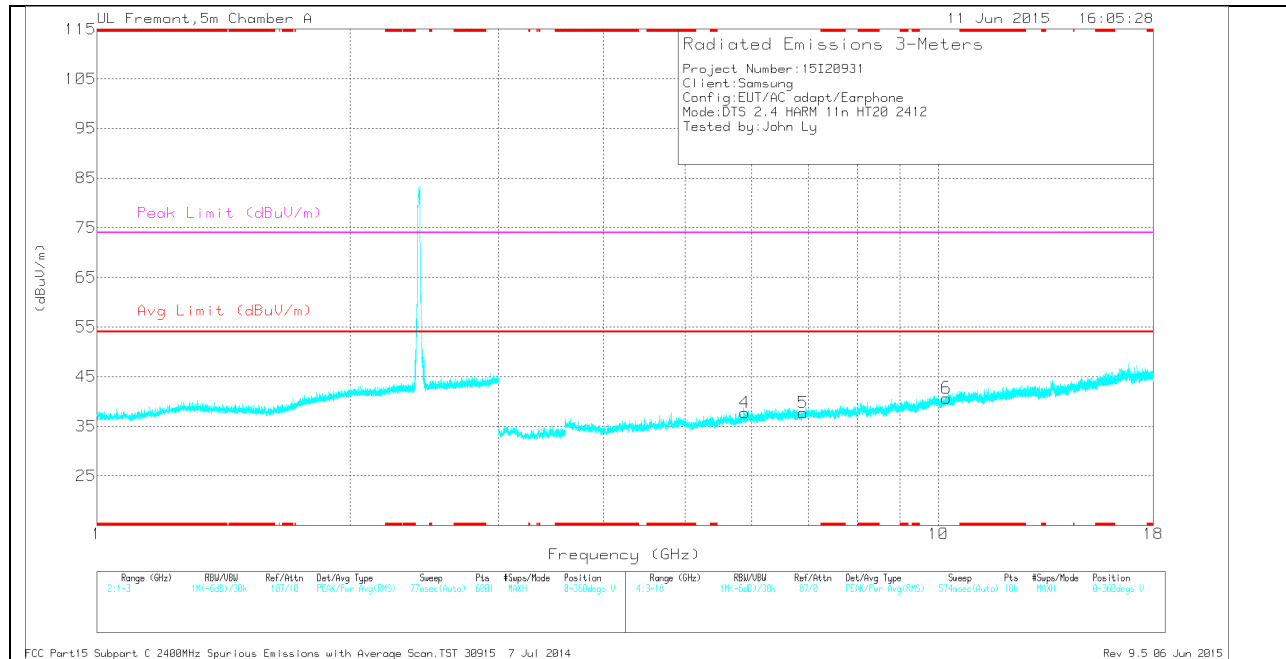
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.64	Pk	32.5	-21.5	0	49.64	-	-	74	-24.36	68	400	V
3	* 2.484	29.29	RMS	32.5	-21.5	.33	40.62	54	-13.38	-	-	68	400	V
4	* 2.484	29.89	RMS	32.5	-21.5	.33	41.22	54	-12.78	-	-	68	400	V
2	2.518	40.65	Pk	32.6	-21.4	0	51.85	-	-	74	-22.15	68	400	V

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.

LOW CHANNEL VERTICAL



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 T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.815	36.29	Pk	30.1	-25.5	40.89	-	-	74	-33.11	0-360	201	H
2	2.014	36.32	Pk	31.2	-25.3	42.22	-	-	74	-31.78	0-360	100	H
3	3.127	33.59	Pk	32.9	-31.9	34.59	-	-	74	-39.41	0-360	100	H
4	5.884	31.68	Pk	35.1	-29.1	37.68	-	-	74	-36.32	0-360	200	V
5	6.911	29.78	Pk	35.6	-27.7	37.68	-	-	74	-36.32	0-360	100	V
6	10.222	27.01	Pk	37.3	-23.6	40.71	-	-	74	-33.29	0-360	100	V

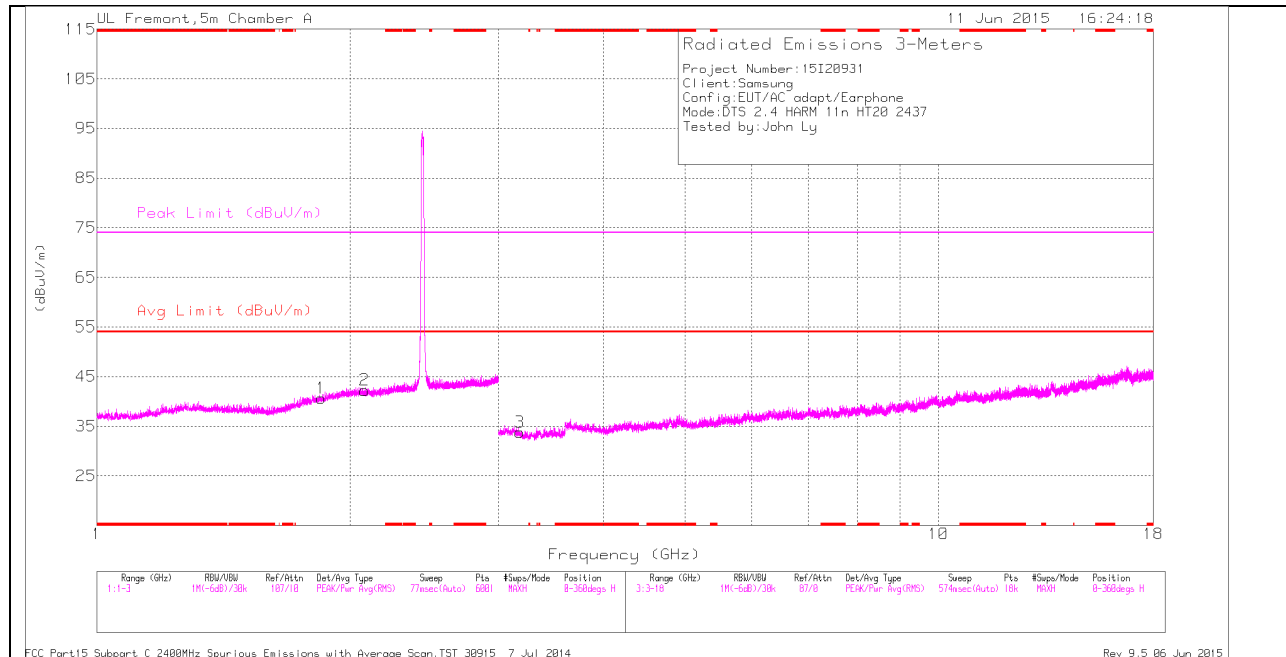
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.816	44.6	PK2	30.1	-25.5	49.2	-	-	74	-24.8	360	202	H
2.016	44.49	PK2	31.2	-25.3	50.39	-	-	74	-23.61	360	100	H
3.127	42.31	PK2	32.9	-31.9	43.31	-	-	74	-30.69	360	100	H
5.883	39.3	PK2	35.1	-29.1	45.3	-	-	74	-28.7	360	201	V
6.909	38.62	PK2	35.6	-27.7	46.52	-	-	74	-27.48	360	100	V
10.221	35.34	PK2	37.3	-23.6	49.04	-	-	74	-24.96	360	100	V

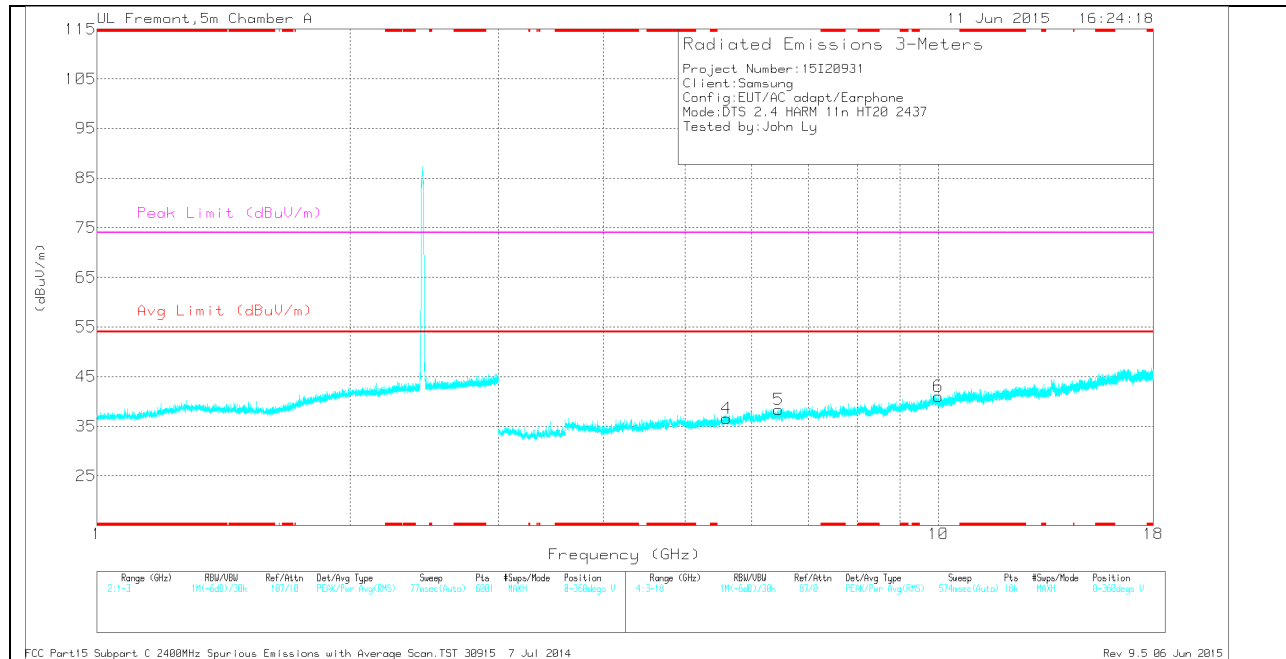
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MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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 T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.846	35.74	Pk	30.4	-25.5	40.64	-	-	74	-33.36	0-360	100	H
2	2.081	36.14	Pk	31.4	-25.3	42.24	-	-	74	-31.76	0-360	100	H
3	3.181	33.9	Pk	32.7	-32.8	33.8	-	-	74	-40.2	0-360	100	H
4	5.6	31.16	Pk	34.5	-29.1	36.56	-	-	74	-37.44	0-360	200	V
5	6.46	31.61	Pk	35.5	-28.8	38.31	-	-	74	-35.69	0-360	100	V
6	9.995	27.85	Pk	37	-23.8	41.05	-	-	74	-32.95	0-360	200	V

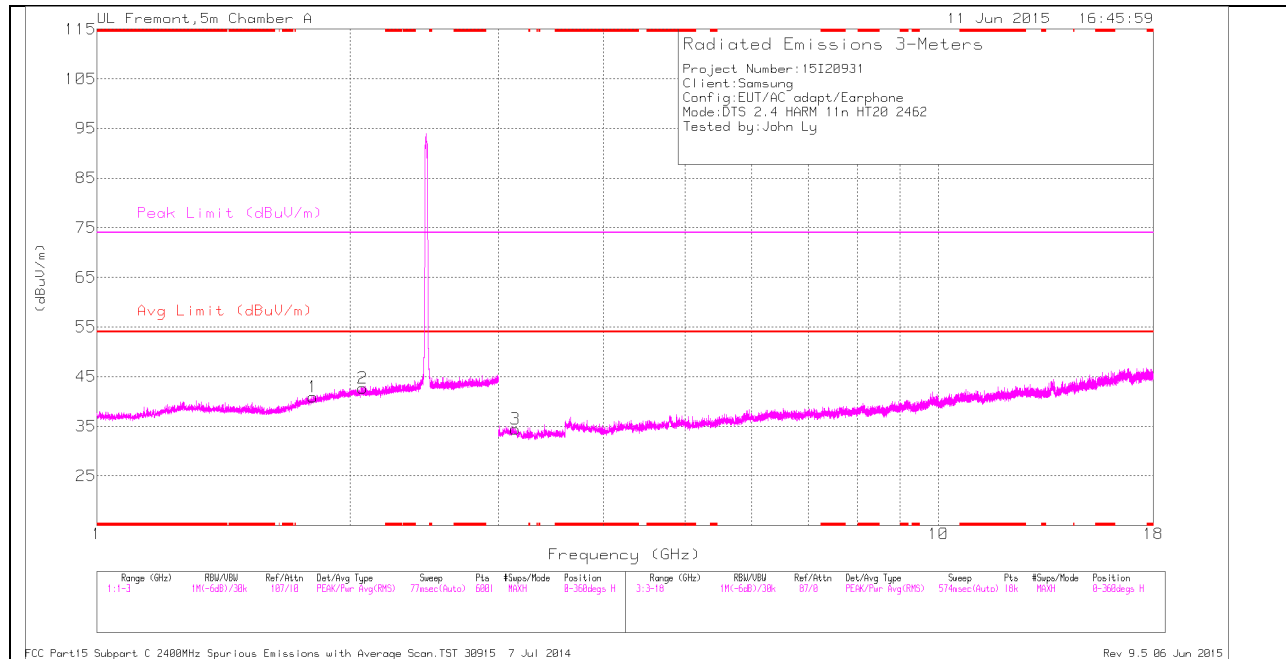
PK - Peak detector

RADIATED EMISSIONS

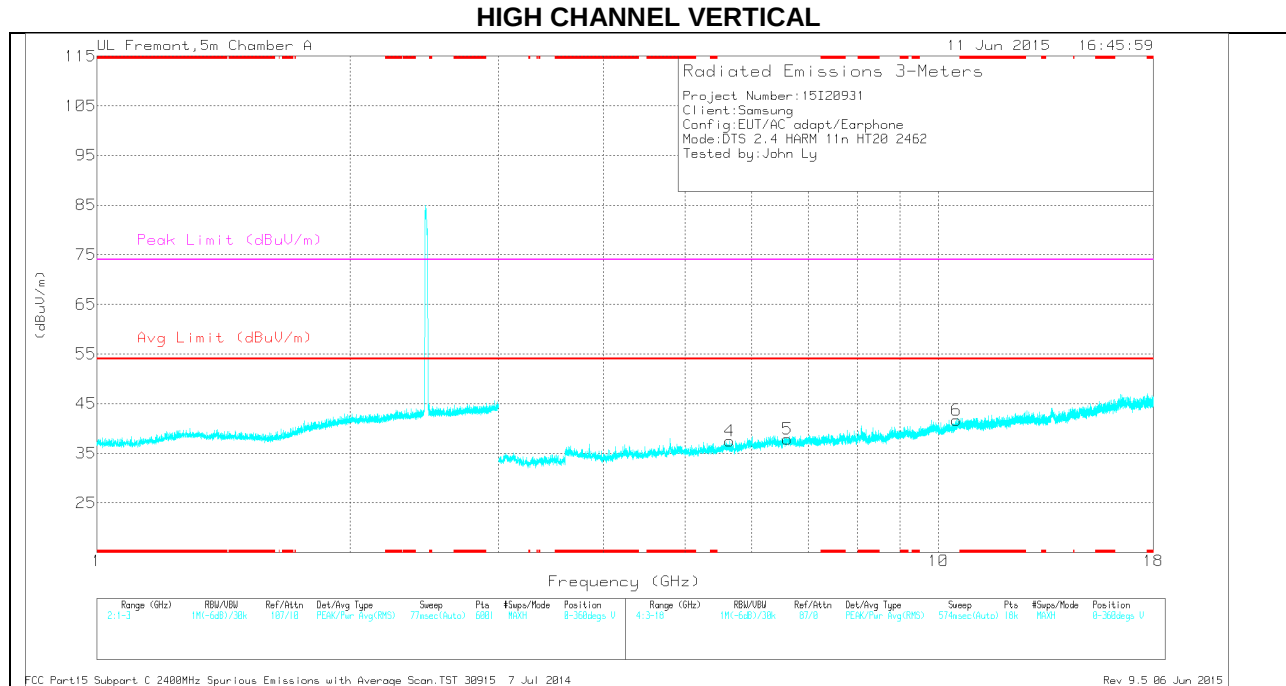
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.846	44.3	PK2	30.4	-25.5	49.2	-	-	74	-24.8	360	100	H
2.082	44.75	PK2	31.4	-25.3	50.85	-	-	74	-23.15	360	100	H
3.182	42.5	PK2	32.7	-32.9	42.3	-	-	74	-31.7	360	100	H
5.601	39.61	PK2	34.5	-29.1	45.01	-	-	74	-28.99	360	201	V
9.995	34.96	PK2	37	-23.8	48.16	-	-	74	-25.84	360	201	V

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HIGH 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.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.807	36.26	Pk	30	-25.4	40.86	-	-	74	-33.14	0-360	201	H
2	2.068	36.73	Pk	31.3	-25.3	42.73	-	-	74	-31.27	0-360	100	H
3	3.142	33.68	Pk	32.8	-32.1	34.38	-	-	74	-39.62	0-360	201	H
4	5.644	32.17	Pk	34.6	-29.3	37.47	-	-	74	-36.53	0-360	200	V
5	6.613	29.8	Pk	35.6	-27.5	37.9	-	-	74	-36.1	0-360	100	V
6	10.509	27.33	Pk	37.5	-23.2	41.63	-	-	74	-32.37	0-360	100	V

PK - Peak detector

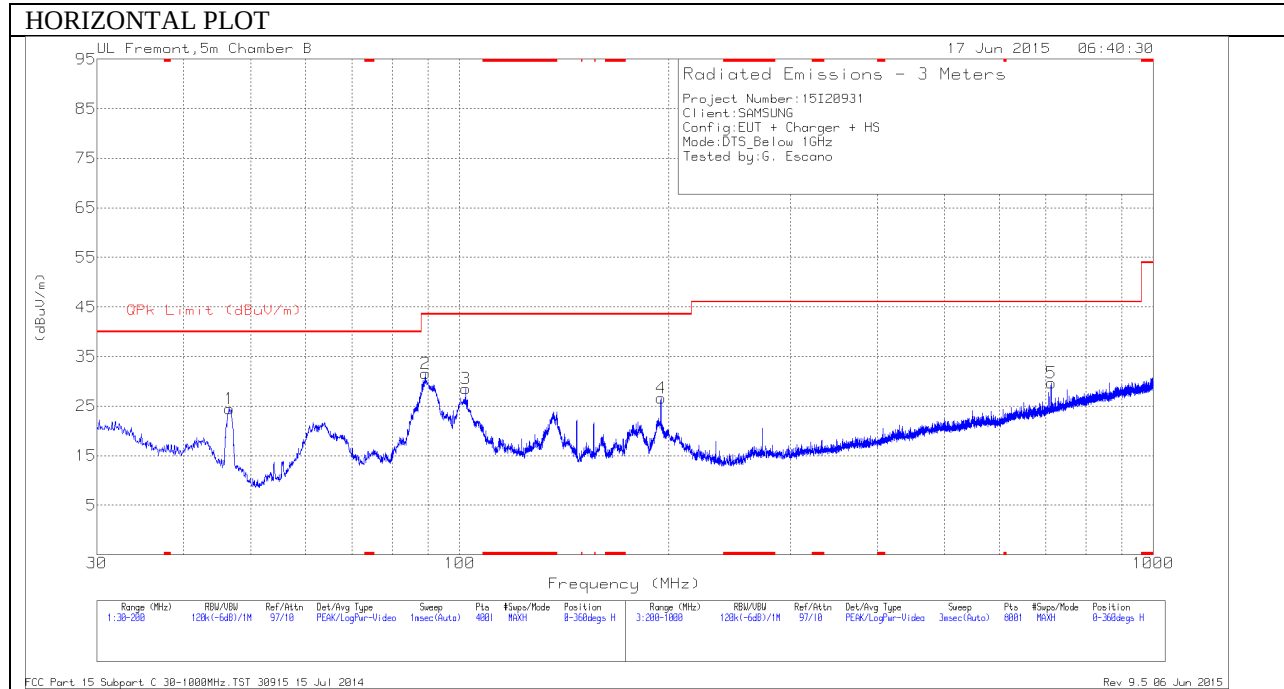
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.809	44.31	PK2	30.1	-25.4	49.01	-	-	74	-24.99	359	202	H
2.067	44.5	PK2	31.3	-25.3	50.5	-	-	74	-23.5	359	100	H
3.142	42.45	PK2	32.8	-32.1	43.15	-	-	74	-30.85	359	202	H
5.646	40.02	PK2	34.6	-29.3	45.32	-	-	74	-28.68	359	202	V
6.613	38.4	PK2	35.6	-27.5	46.5	-	-	74	-27.5	359	100	V
10.509	35.25	PK2	37.5	-23.2	49.55	-	-	74	-24.45	359	100	V

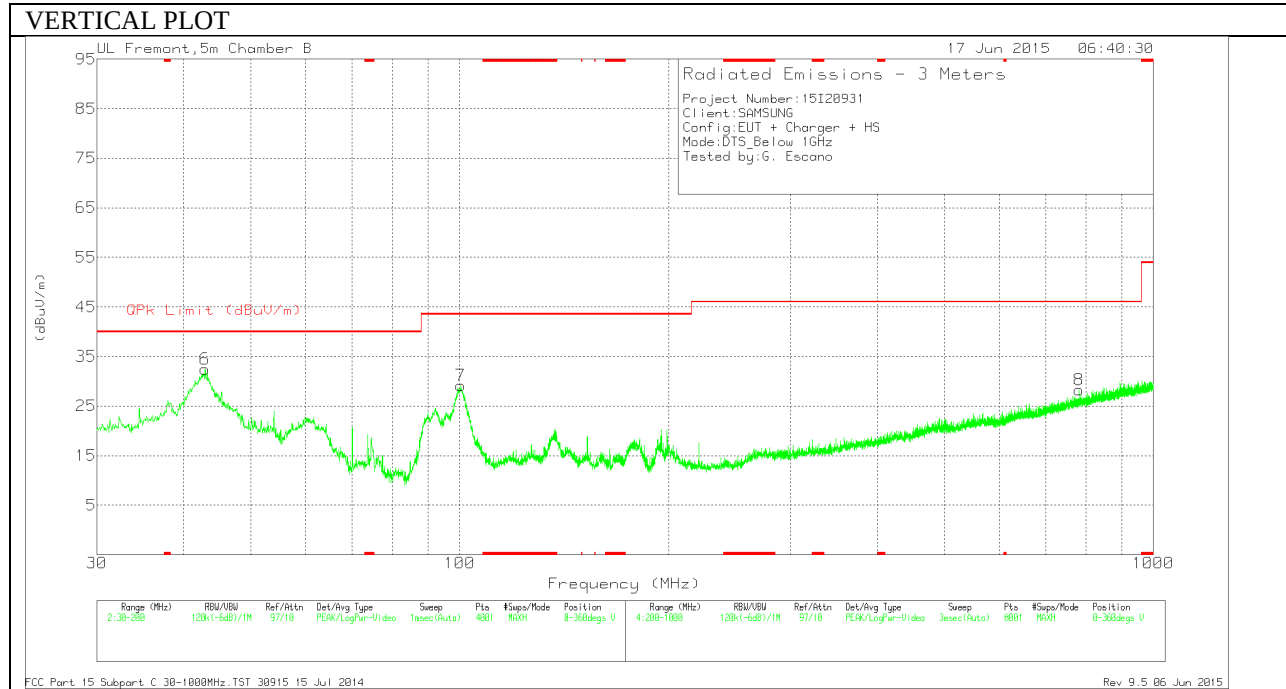
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10.3. WORST-CASE BELOW 1 GHz

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
6	42.9625	49.16	Pk	11.9	-28.6	32.46	40	-7.54	0-360	101	V
1	46.5325	43.31	Pk	9.7	-28.6	24.41	40	-15.59	0-360	299	H
2	89.245	52.1	Pk	7.6	-28.1	31.6	43.52	-11.92	0-360	299	H
7	100.3375	46.88	Pk	10.3	-28	29.18	43.52	-14.34	0-360	101	V
3	102.08	45.68	Pk	10.8	-28	28.48	43.52	-15.04	0-360	299	H
4	195.0275	41.39	Pk	12.1	-26.9	26.59	43.52	-16.93	0-360	199	H
5	713.1	33.6	Pk	20.4	-24.3	29.7	46.02	-16.32	0-360	299	H
8	781.5	30.62	Pk	21.4	-23.7	28.32	46.02	-17.7	0-360	101	V

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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 C63.10.

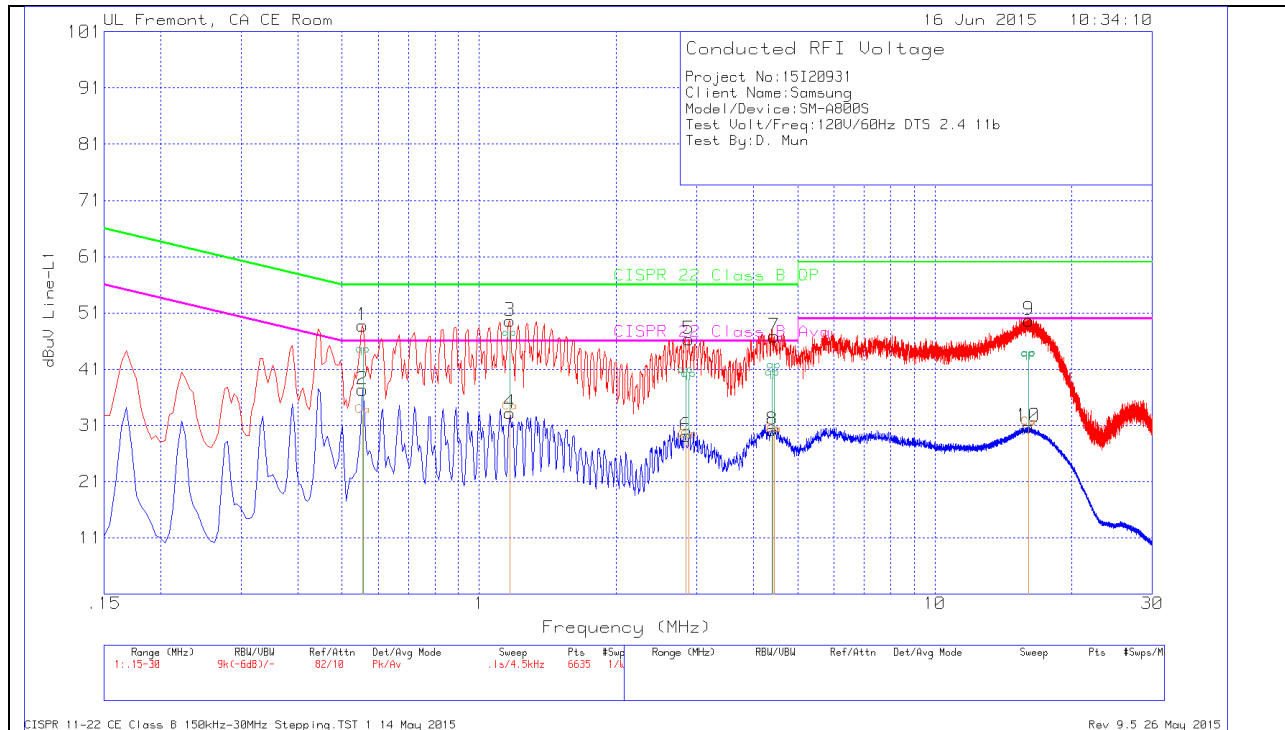
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

Range 1: Line-L1 .15 - 30MHz

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)
.55613	32.43	Ca	.3	0	32.73	-	-	46	-13.27
1.16588	33.01	Ca	.2	.1	33.31	-	-	46	-12.69
2.88578	28.05	Ca	.2	.1	28.35	-	-	46	-17.65
2.84168	27.91	Ca	.2	.1	28.21	-	-	46	-17.79
4.43918	28.91	Ca	.2	.1	29.21	-	-	46	-16.79
4.40138	29.12	Ca	.2	.1	29.42	-	-	46	-16.58
16.0834	30.01	Ca	.3	.2	30.51	-	-	50	-19.49
16.0492	30.08	Ca	.3	.2	30.58	-	-	50	-19.42

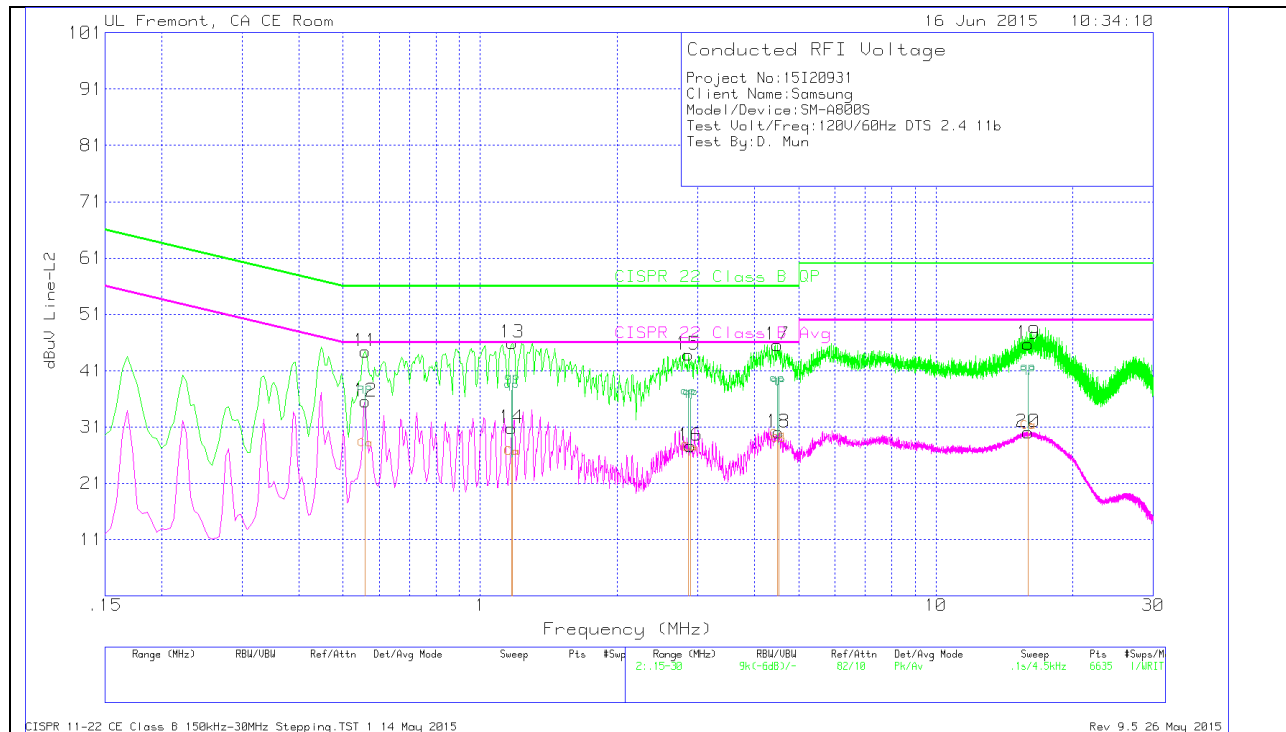
Ca - CISPR average detection

Range 1: Line-L1 .15 - 30MHz

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)
.55613	43.17	Qp	.3	0	43.47	56	-12.53	-	-
1.16588	46.05	Qp	.2	.1	46.35	56	-9.65	-	-
2.88578	38.83	Qp	.2	.1	39.13	56	-16.87	-	-
2.84168	39.58	Qp	.2	.1	39.88	56	-16.12	-	-
4.43918	40.34	Qp	.2	.1	40.64	56	-15.36	-	-
4.40138	39.05	Qp	.2	.1	39.35	56	-16.65	-	-
16.0834	42.29	Qp	.3	.2	42.79	60	-17.21	-	-
16.0492	42.2	Qp	.3	.2	42.7	60	-17.3	-	-

Qp - Quasi-Peak detector

LINE 2 PLOT



LINE 2 RESULTS

Range 2: Line-L2 .15 - 30MHz

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)
.55928	26.73	Ca	.3	0	27.03	-	-	46	-18.97
1.17713	25.26	Ca	.3	0	25.56	-	-	46	-20.44
1.17218	25.12	Ca	.3	.1	25.52	-	-	46	-20.48
2.86463	26.01	Ca	.2	.1	26.31	-	-	46	-19.69
2.89613	25.93	Ca	.2	.1	26.23	-	-	46	-19.77
4.49228	28.31	Ca	.2	.1	28.61	-	-	46	-17.39
4.51568	27.47	Ca	.2	.1	27.77	-	-	46	-18.23
15.9592	29.67	Ca	.3	.2	30.17	-	-	50	-19.83
15.9493	29.73	Ca	.3	.2	30.23	-	-	50	-19.77

Ca - CISPR average detection

Range 2: Line-L2 .15 - 30MHz

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)
.55928	36.69	Qp	.3	0	36.99	56	-19.01	-	-
1.17713	38.49	Qp	.3	0	38.79	56	-17.21	-	-
1.17218	37.07	Qp	.3	.1	37.47	56	-18.53	-	-
2.86463	35.97	Qp	.2	.1	36.27	56	-19.73	-	-
2.89613	35.8	Qp	.2	.1	36.1	56	-19.9	-	-
4.49228	38.28	Qp	.2	.1	38.58	56	-17.42	-	-
4.51568	38.1	Qp	.2	.1	38.4	56	-17.6	-	-
15.9592	39.87	Qp	.3	.2	40.37	60	-19.63	-	-
15.9493	40.13	Qp	.3	.2	40.63	60	-19.37	-	-

Qp - Quasi-Peak detector