



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + Bluetooth, WLAN 2.4GHz b/g/n, ANT+ & NFC

MODEL NUMBER: SM-G5308W; SM-G5306W

FCC ID: A3LSMG5308W

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NVLAP LAB CODE 200065-0

Revision History

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Rev.	Date	Revisions	Revised By
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A	9/11/14	Updated summary power table	P. Zhang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone + Bluetooth, WLAN 2.4GHz b/g/n, ANT+ & NFC
MODEL: SM-G5308W; SM-G5306W
SERIAL NUMBER: FL313-A (Radiated); FL313-D (Conducted)
DATE TESTED: August 4 – 14, 2014

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.

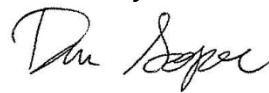
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. 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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UL Verification Services Inc.

2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

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

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

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)

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

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 26000 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 + Bluetooth, WLAN 2.4GHz b/g/n, ANT+ & NFC.

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	20.23	105.44
2412 - 2462	802.11g	21.35	136.46
2412 - 2462	802.11n HT20	20.34	108.14

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -3 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

802.11a mode: 6 Mbps

802.11n HT20mode: MCS0

802.11n HT40mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	SM-G5308W	ETA0U93CBC	N/A
Earphone	Samsung	SM-G5308W	N/A	N/A

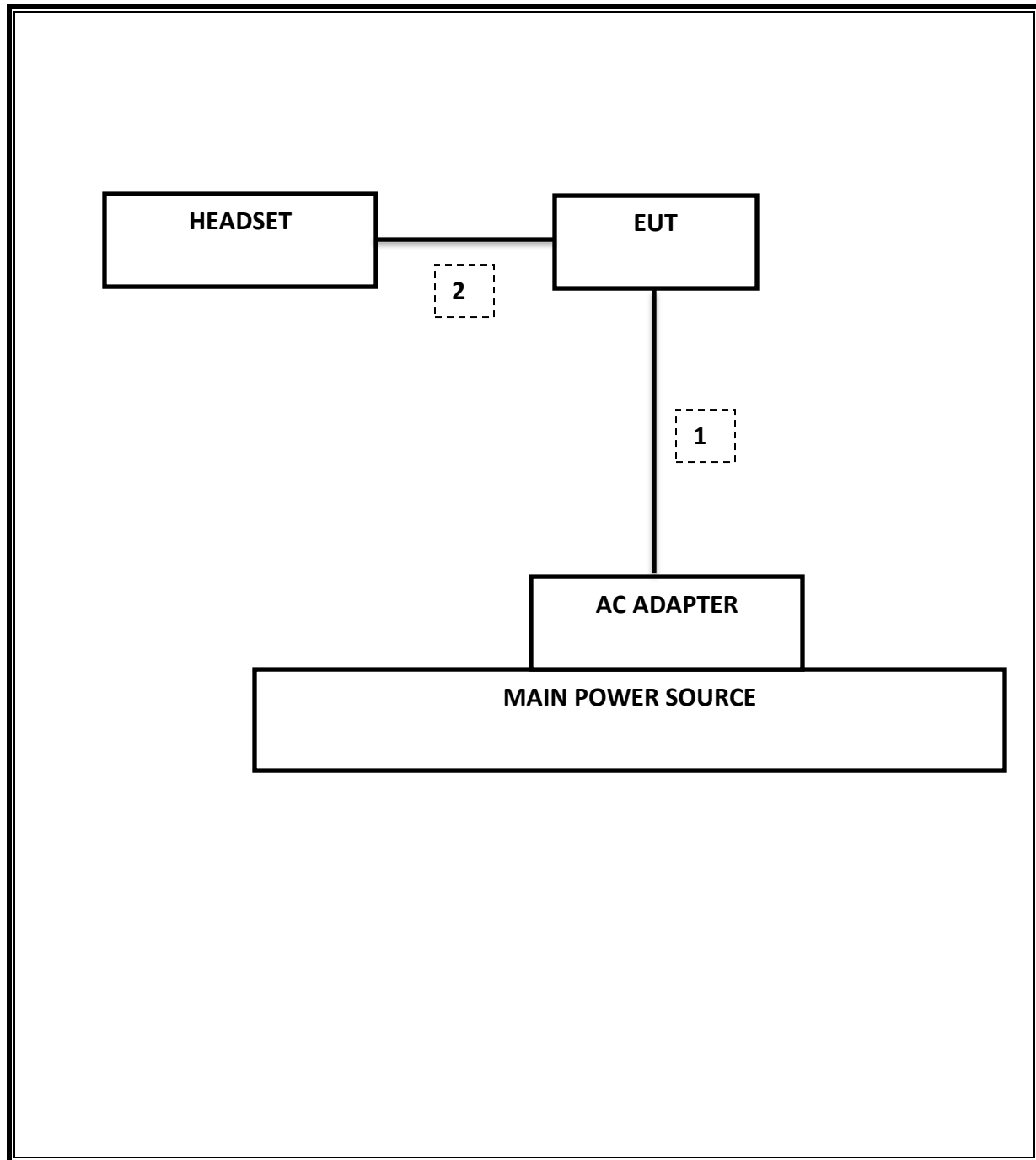
I/O CABLES

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	12/20/14
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/14
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
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	08/20/14
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

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure PKPM-1 is used for power and PKPSD 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-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	7.98MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-14.18dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	21.35dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-4.93dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	43.01dBuV
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	53.23dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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 100KHz, 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	8.02	0.5
Mid	2437	7.98	0.5
High	2462	8.02	0.5
Worst		7.98	

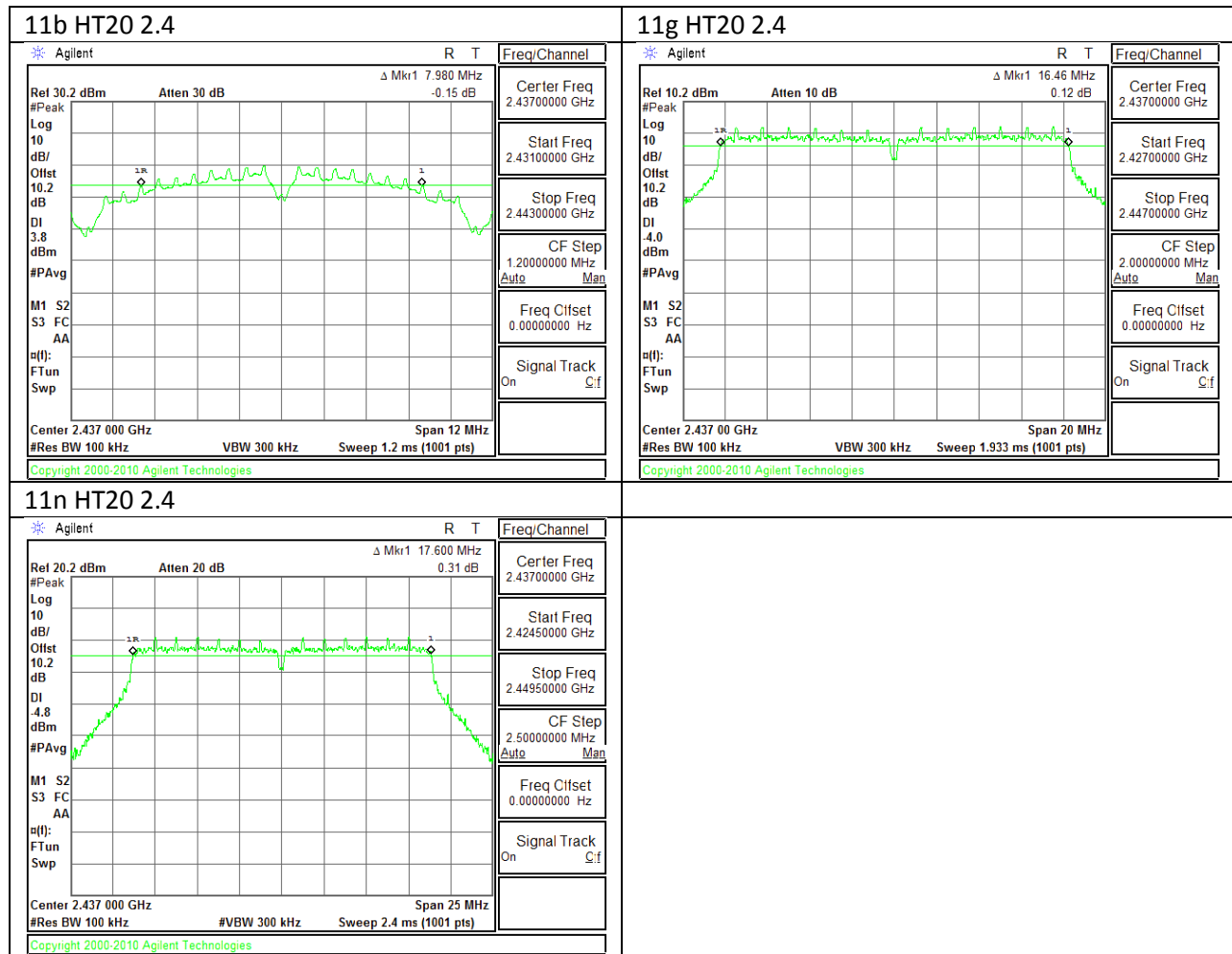
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.44	0.5
Mid	2437	16.46	0.5
High	2462	16.44	0.5
Worst		16.44	

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	17.60	0.5
Mid	2437	17.60	0.5
High	2462	17.65	0.5
Worst		17.60	

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	12.20
Mid	2437	12.10
High	2462	12.00
Worst		12.20

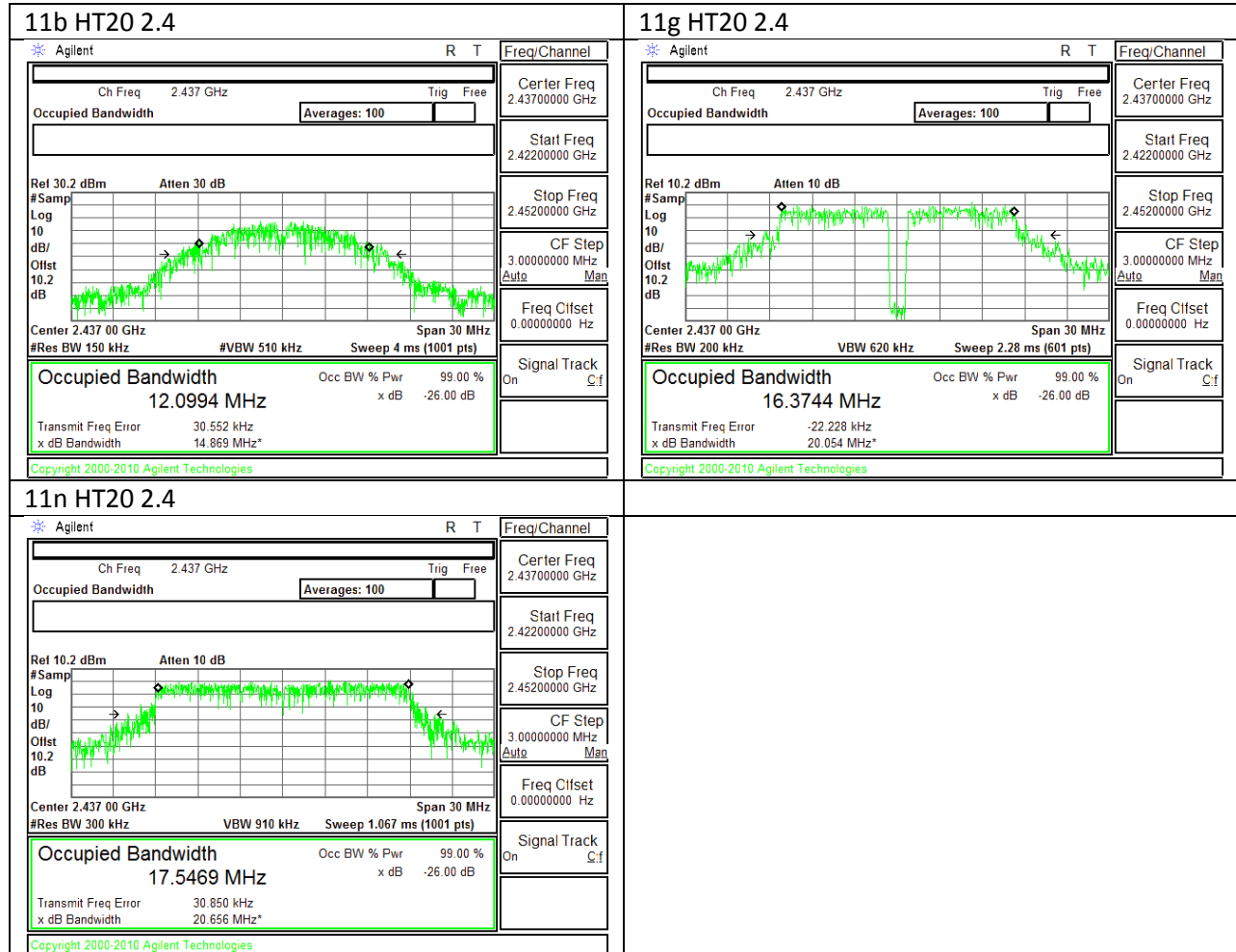
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.38
Mid	2437	16.37
High	2462	16.35
Worst		16.38

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.66
Mid	2437	17.55
High	2462	17.54
Worst		17.66

9.2.4. 99% BANDWIDTH MID CH PLOTS



9.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.32 dB (including 0.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	17.30
Mid	2437	17.50
High	2462	17.00
Worst		17.500

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	13.20
Mid	2437	13.30
High	2462	13.50
Worst		13.500

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	12.40
Mid	2437	12.30
High	2462	12.50
Worst		12.500

9.4. 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

9.4.1. 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	-3.00	30.00	30	36	30.00
Mid	2437	-3.00	30.00	30	36	30.00
High	2462	-3.00	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)
Low	2412	20.23	20.23	30.00	-9.77
Mid	2437	19.84	19.84	30.00	-10.16
High	2462	19.25	19.25	30.00	-10.75
Worst			20.23		

9.4.2. 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	-3.00	30.00	30	36	30.00
Mid	2437	-3.00	30.00	30	36	30.00
High	2462	-3.00	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)
Low	2412	21.30	21.30	30.00	-8.70
Mid	2437	21.35	21.35	30.00	-8.65
High	2462	21.21	21.21	30.00	-8.79
Worst			21.35		

9.4.3. 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	-3.00	30.00	30	36	30.00
Mid	2437	-3.00	30.00	30	36	30.00
High	2462	-3.00	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)
Low	2412	20.19	20.19	30.00	-9.81
Mid	2437	20.34	20.34	30.00	-9.66
High	2462	20.13	20.13	30.00	-9.87
Worst			20.34		

9.5. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2

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

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-4.93	8.0	-12.9
Mid	2437	-4.95	8.0	-13.0
High	2462	-5.22	8.0	-13.2

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

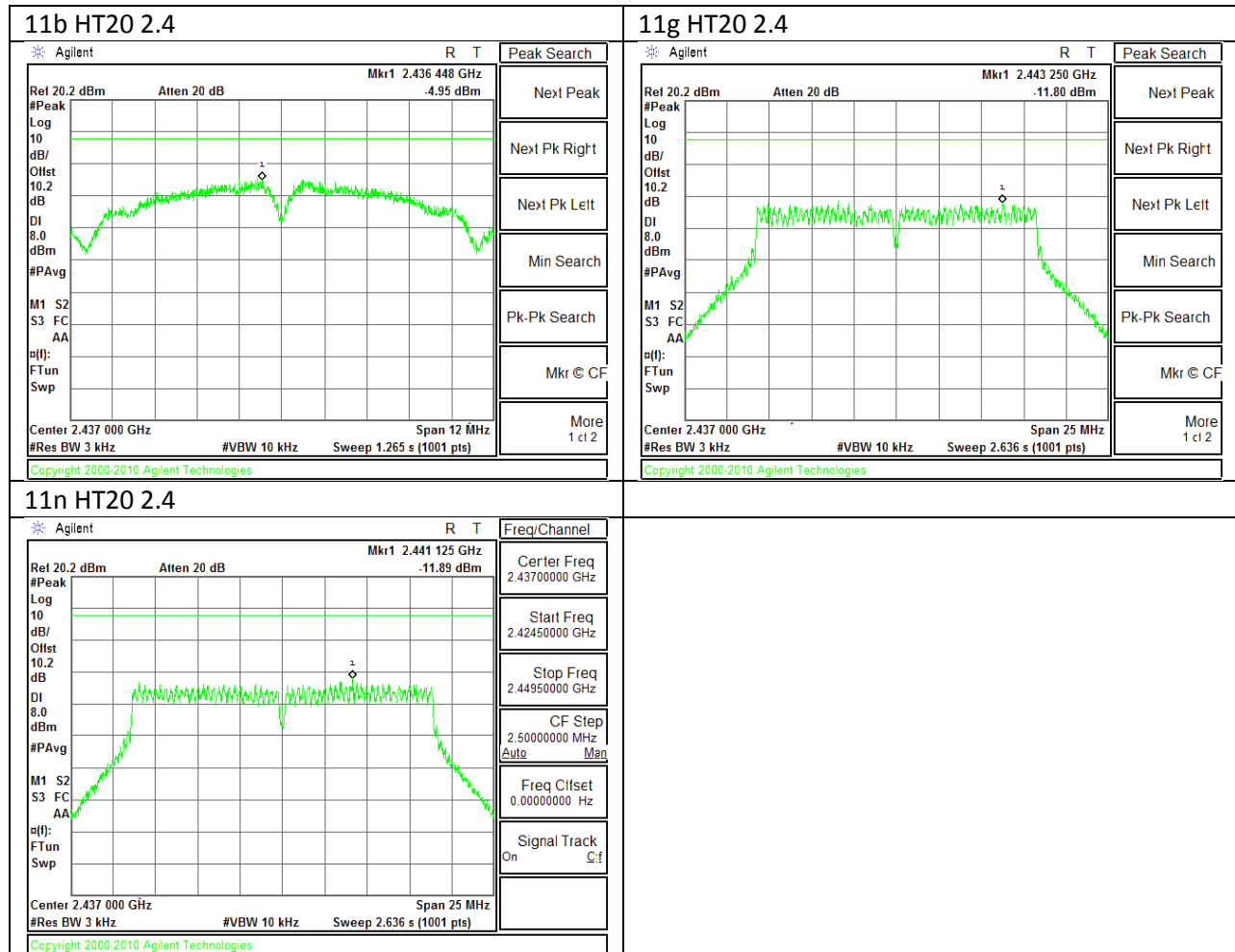
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-11.49	8.0	-19.5
Mid	2437	-11.80	8.0	-19.8
High	2462	-11.42	8.0	-19.4

9.5.3. 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	-11.49	8.0	-19.5
Mid	2437	-11.89	8.0	-19.9
High	2462	-11.51	8.0	-19.5

9.5.4. PSD Chain 0 MID CH PLOTS



9.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

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

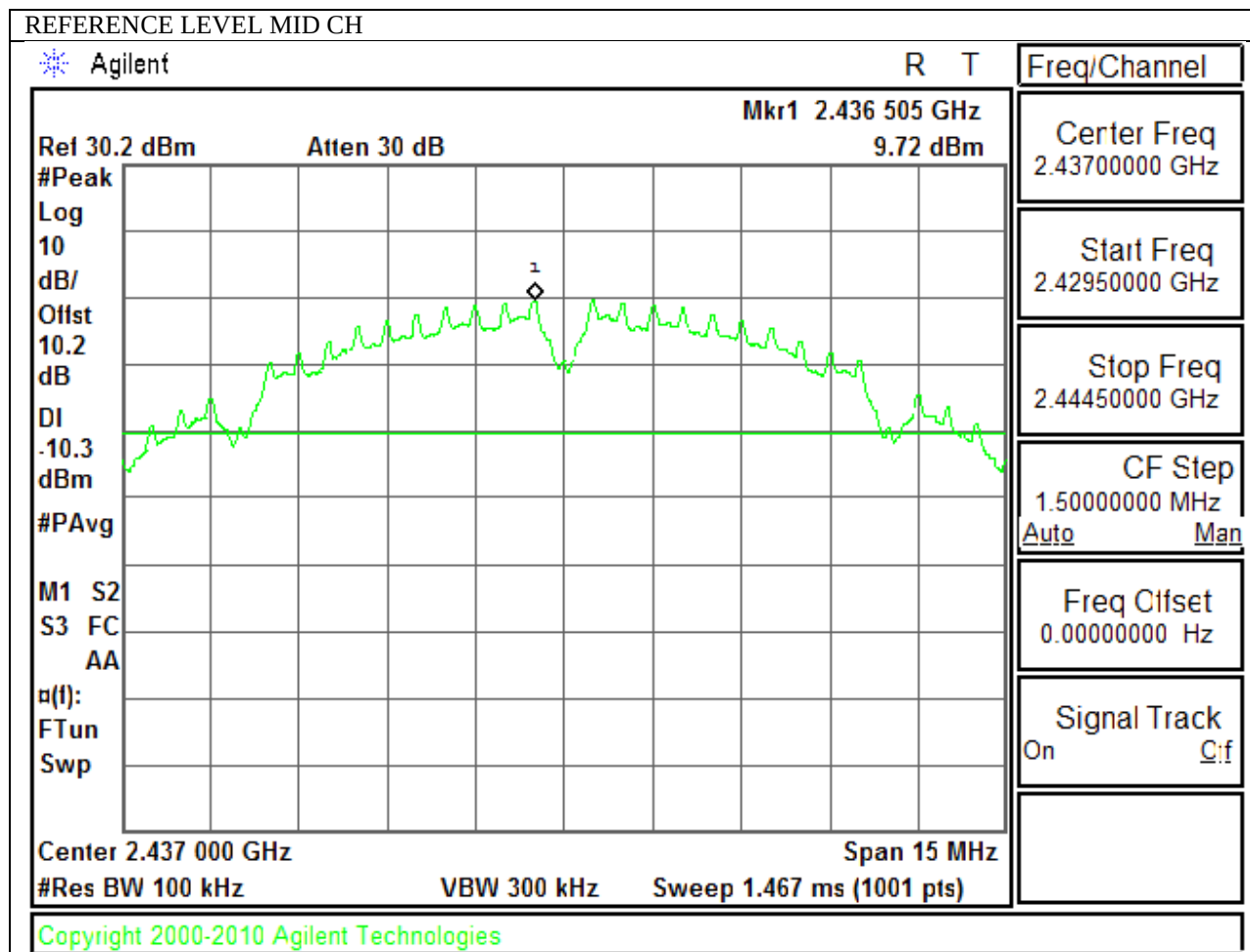
TEST PROCEDURE

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

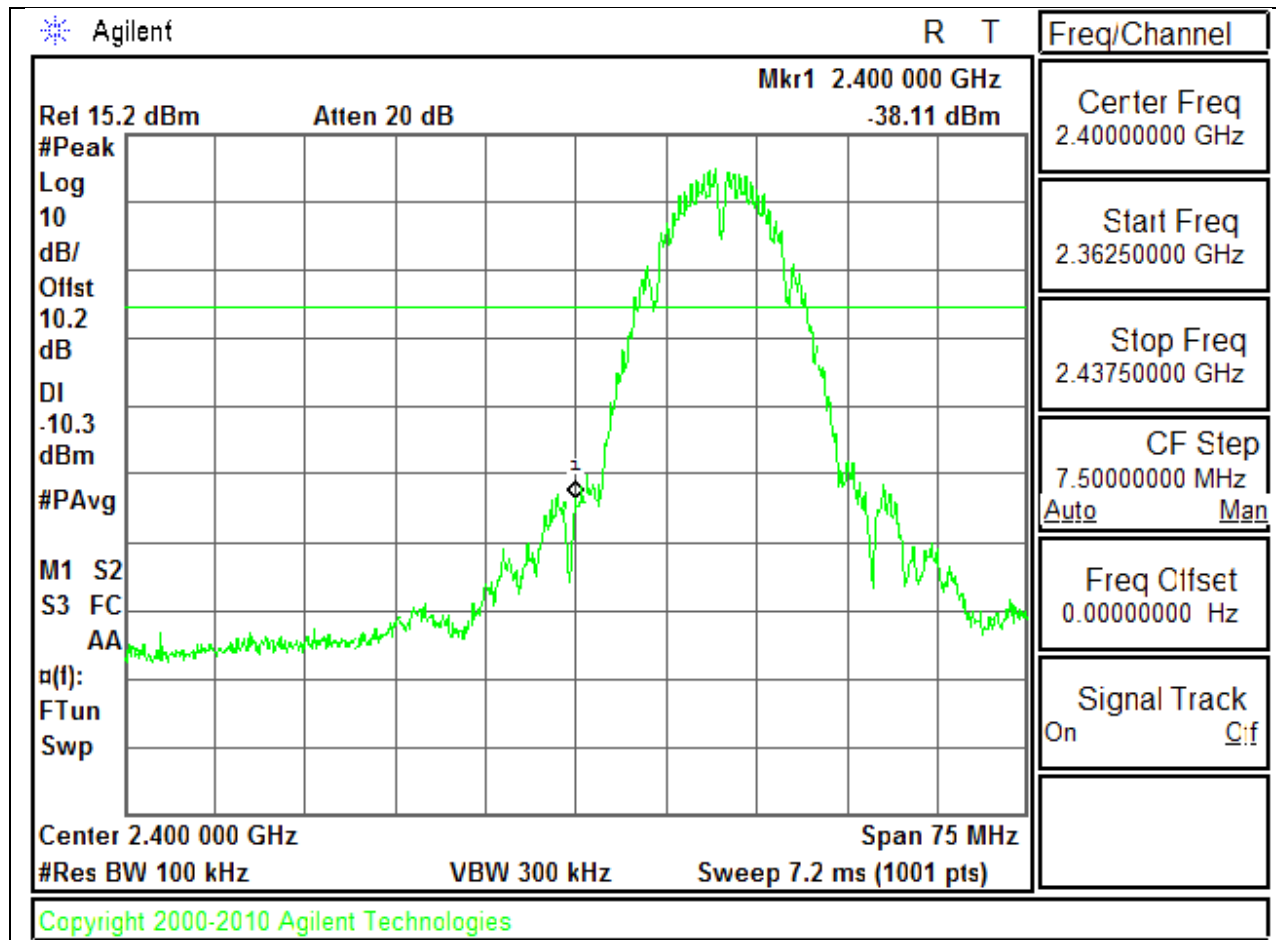
9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL



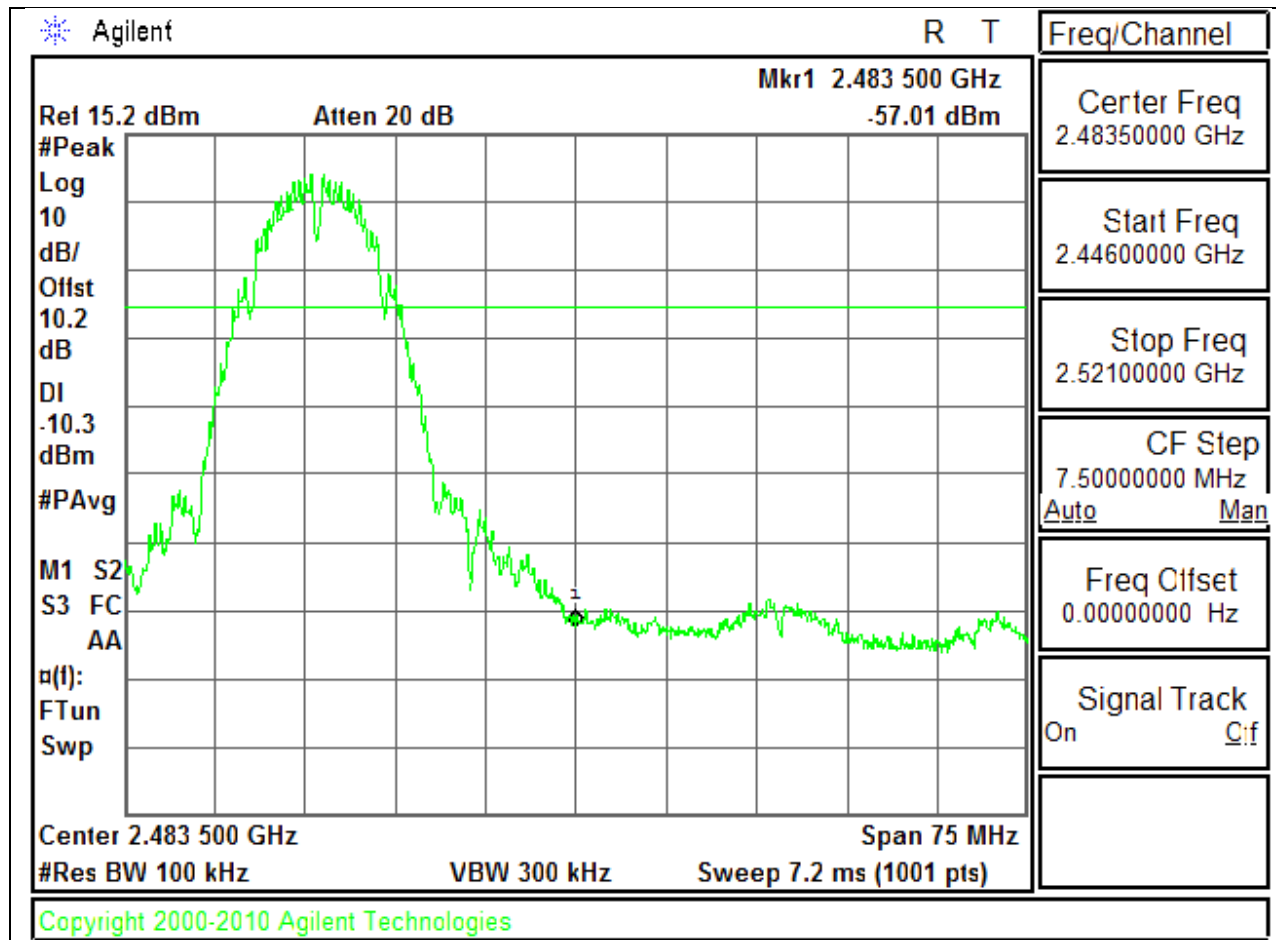
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



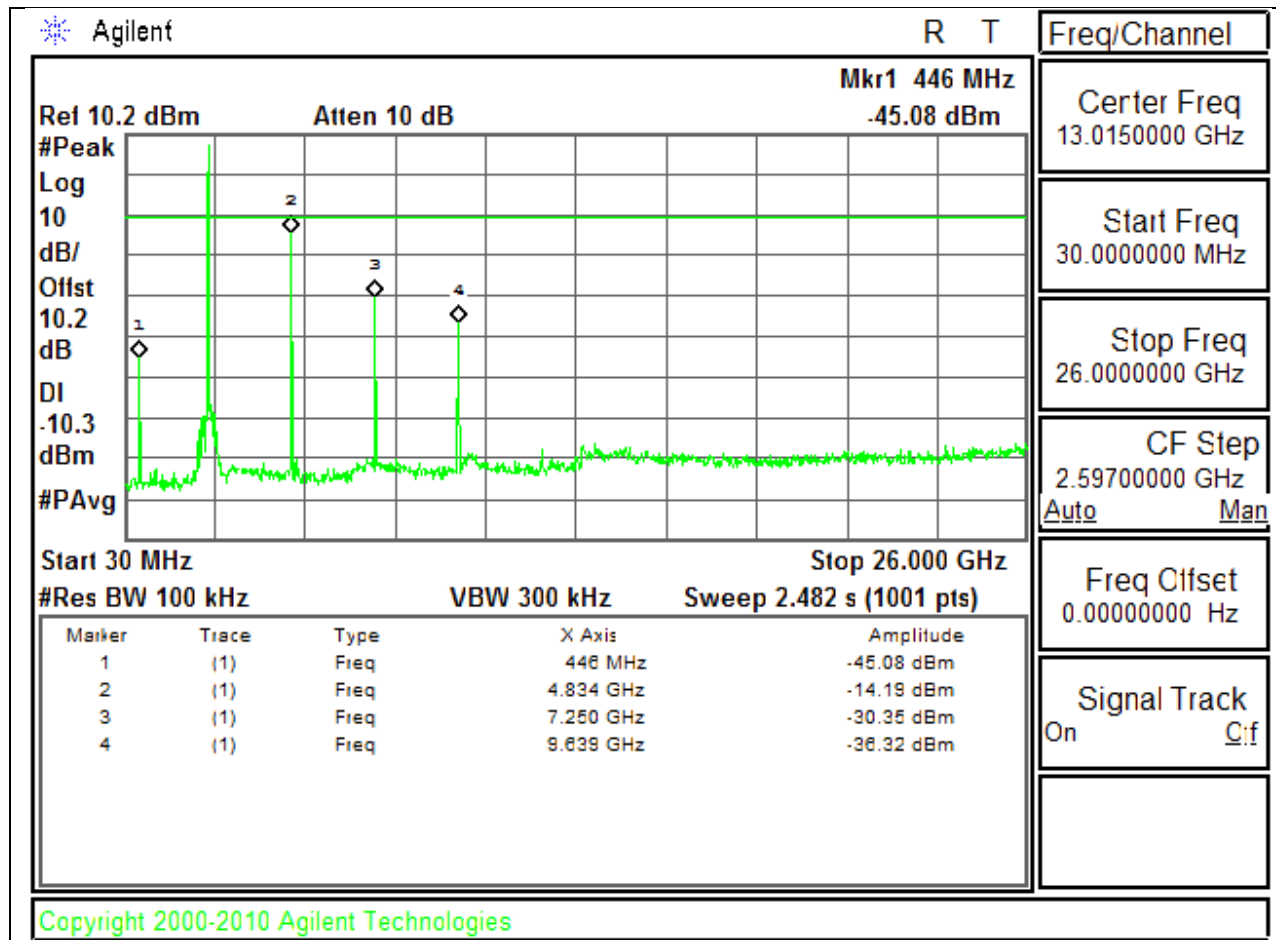
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

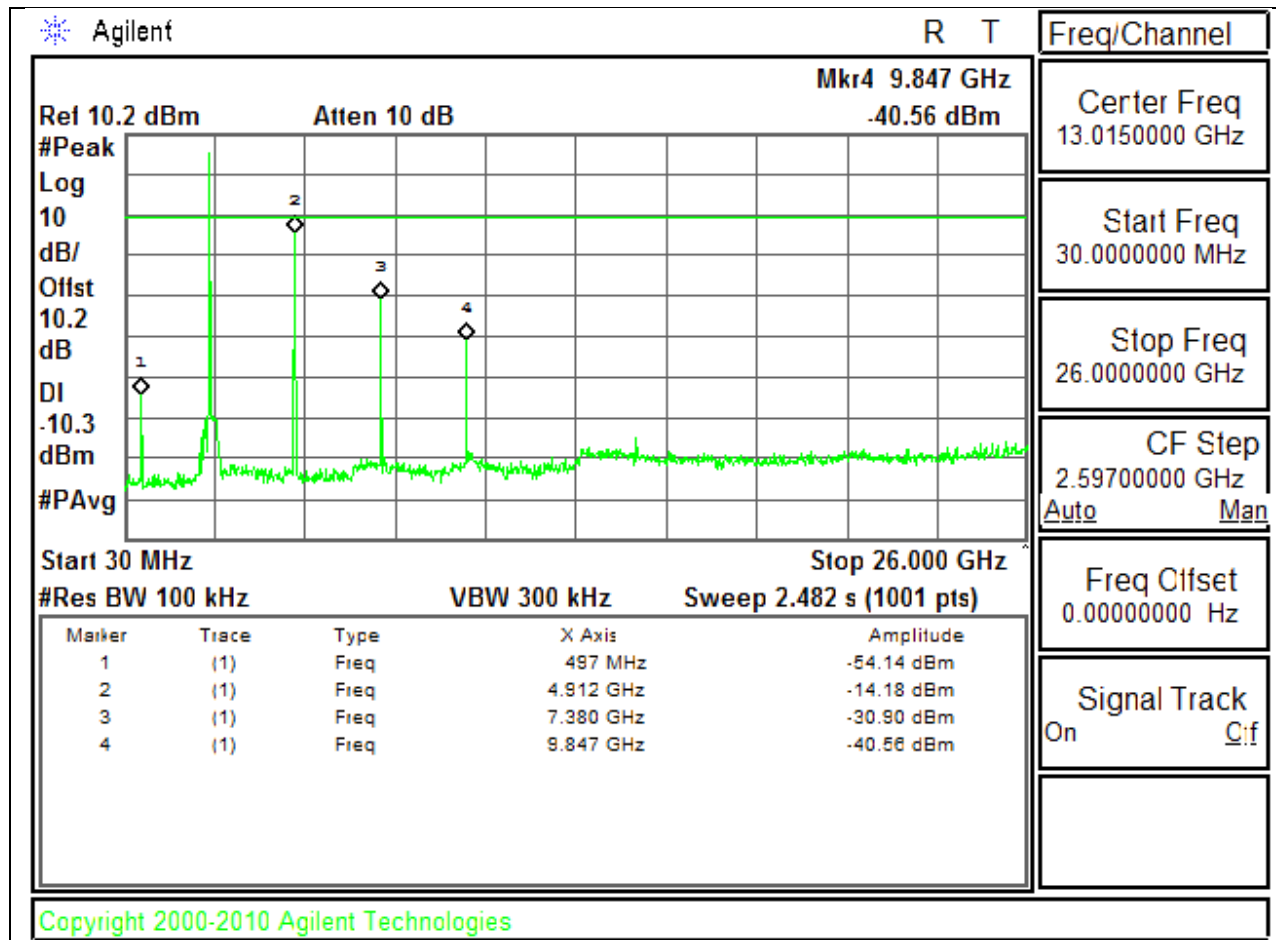


OUT-OF-BAND EMISSIONS

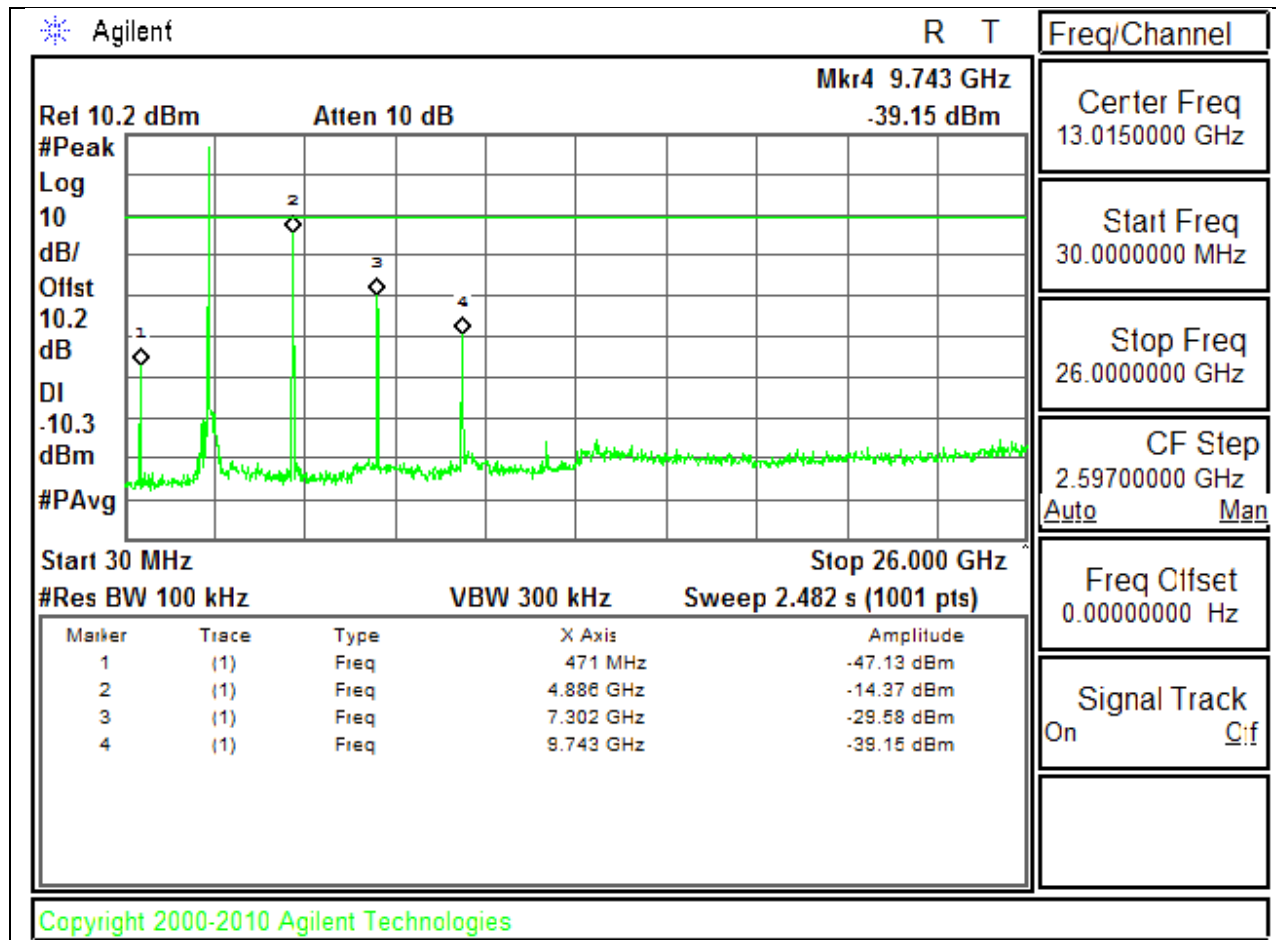
OUT OF BAND LOW CH



OUT OF BAND MID CH

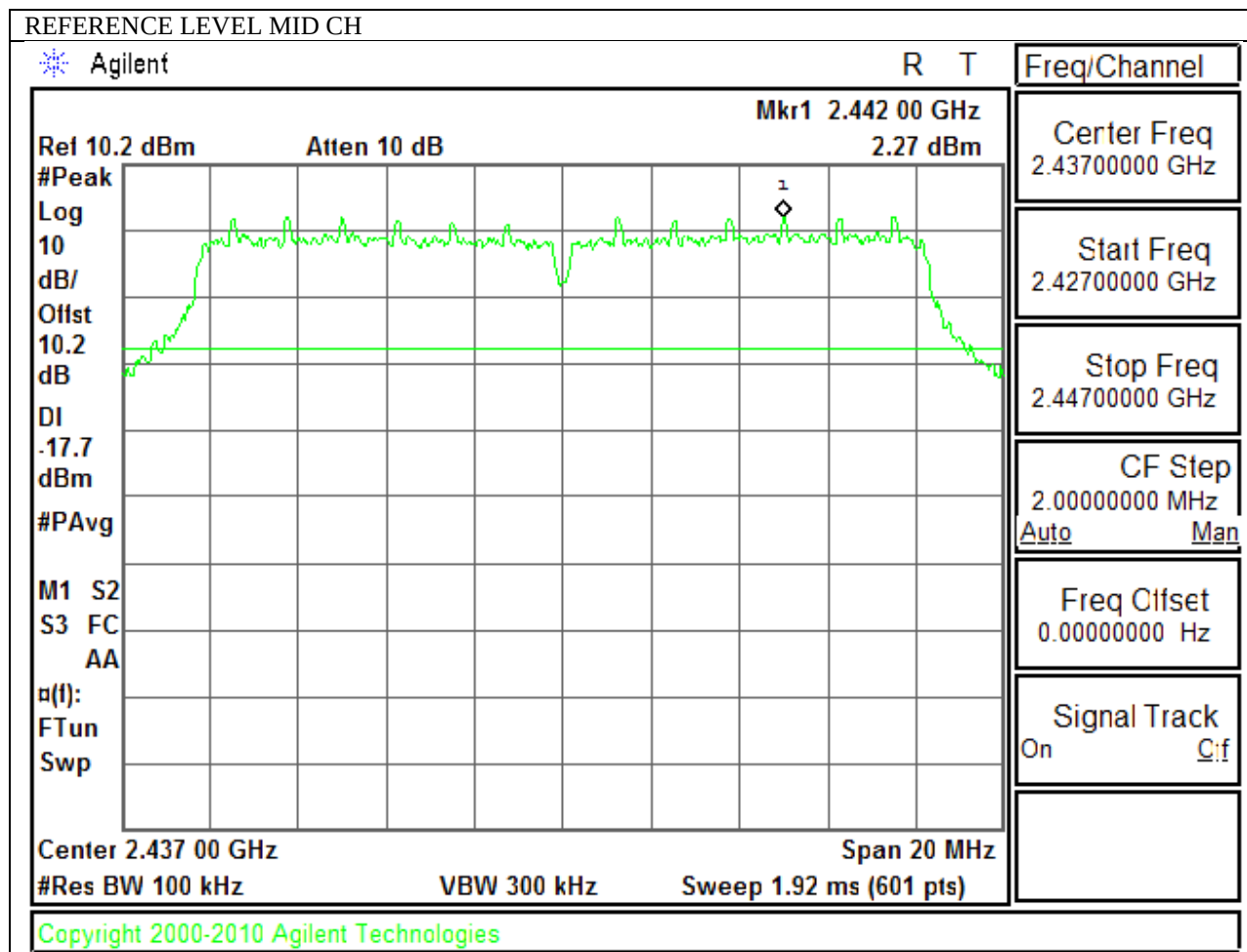


OUT OF BAND HIGH CH

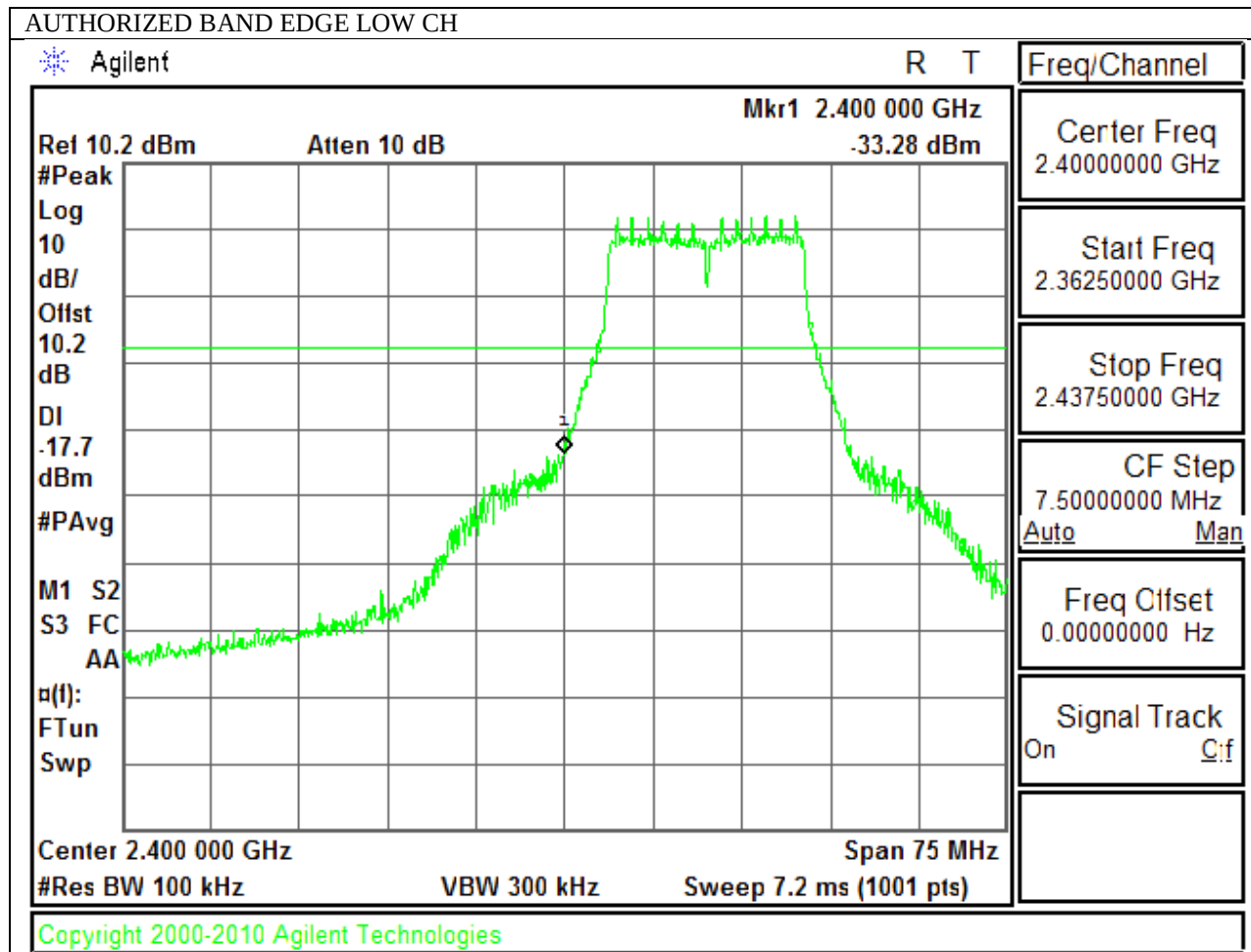


9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

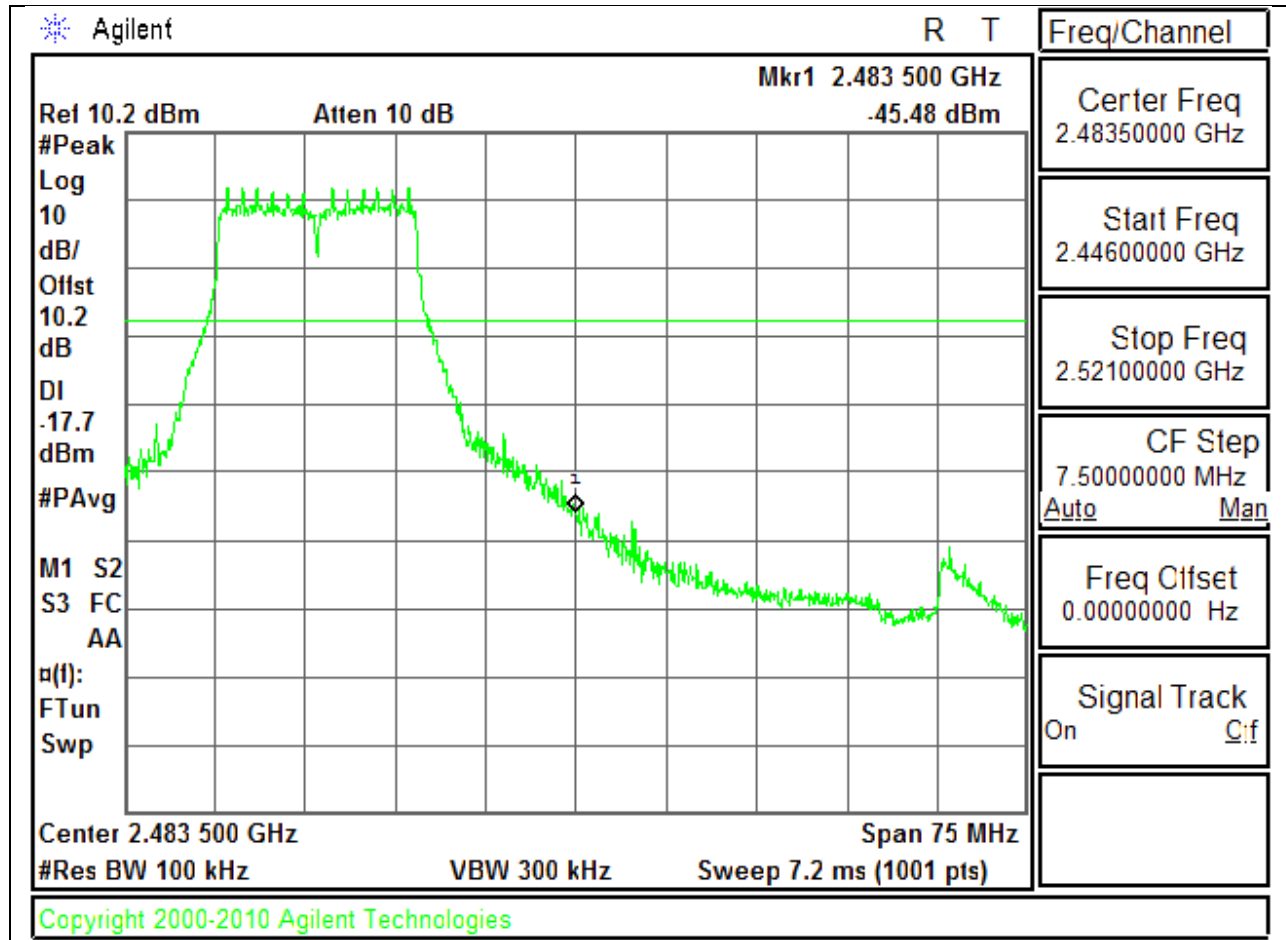


LOW CHANNEL BANDEDGE

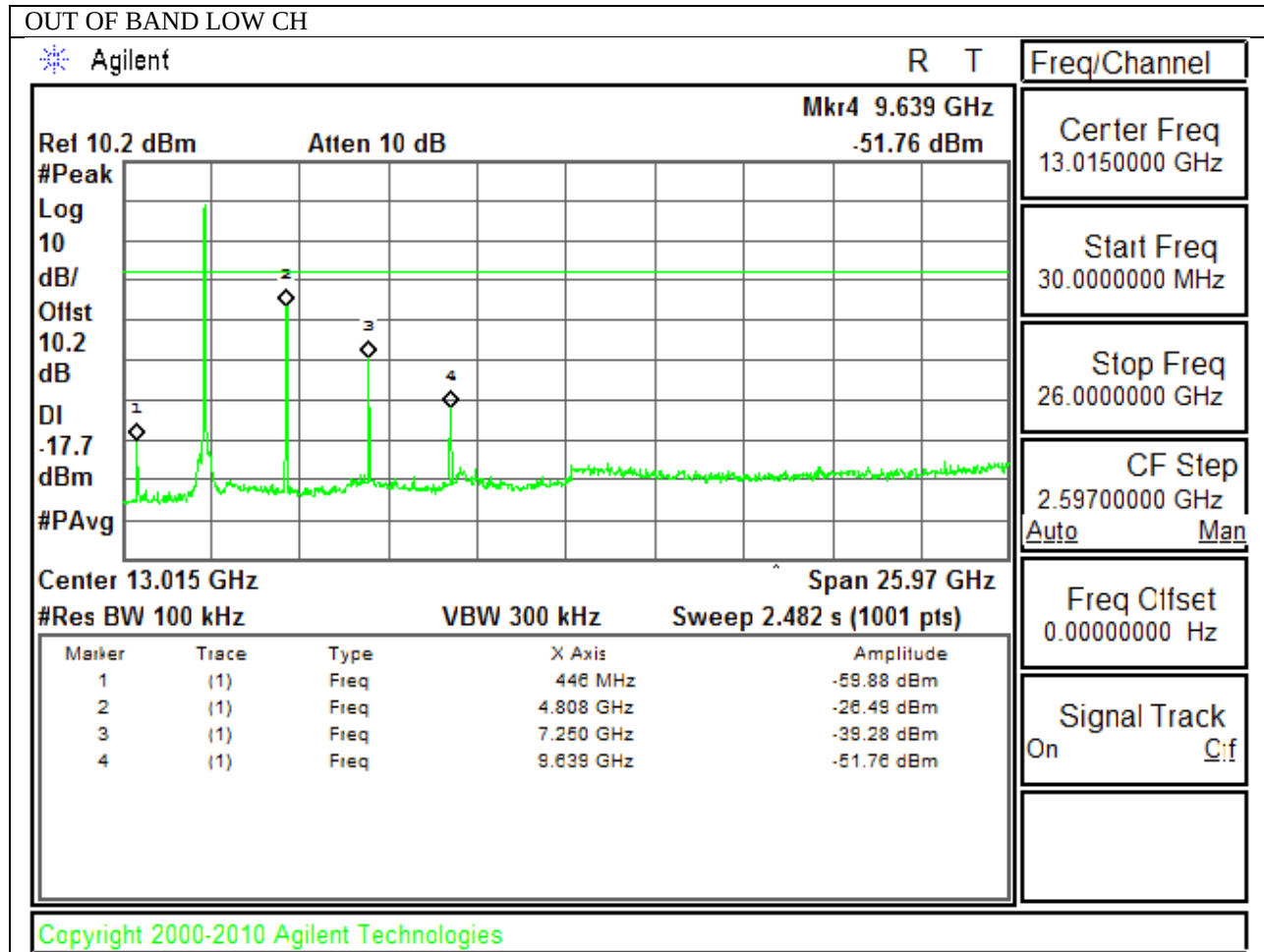


HIGH CHANNEL BANDEDGE

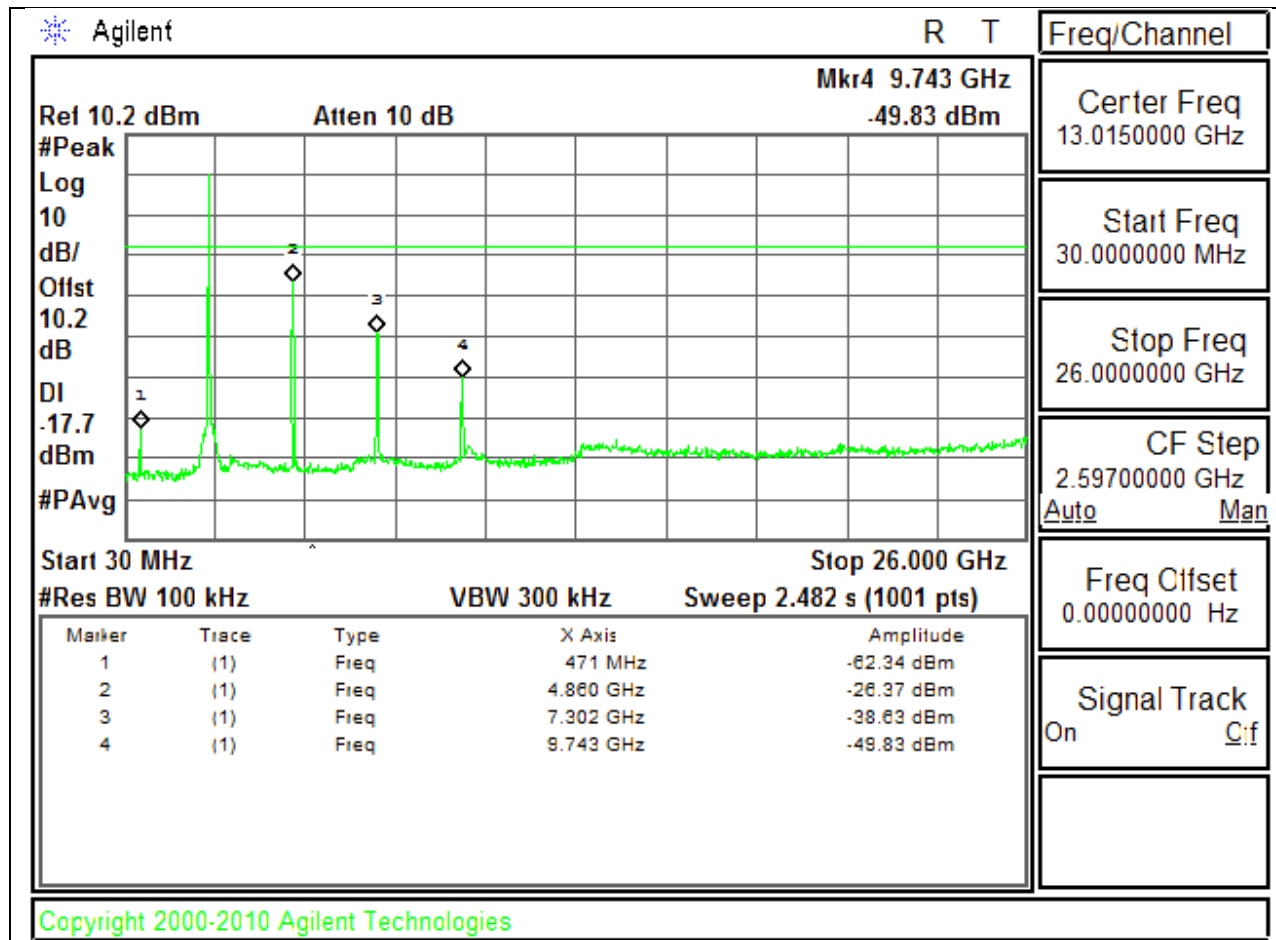
AUTHORIZED BAND EDGE HIGH CH

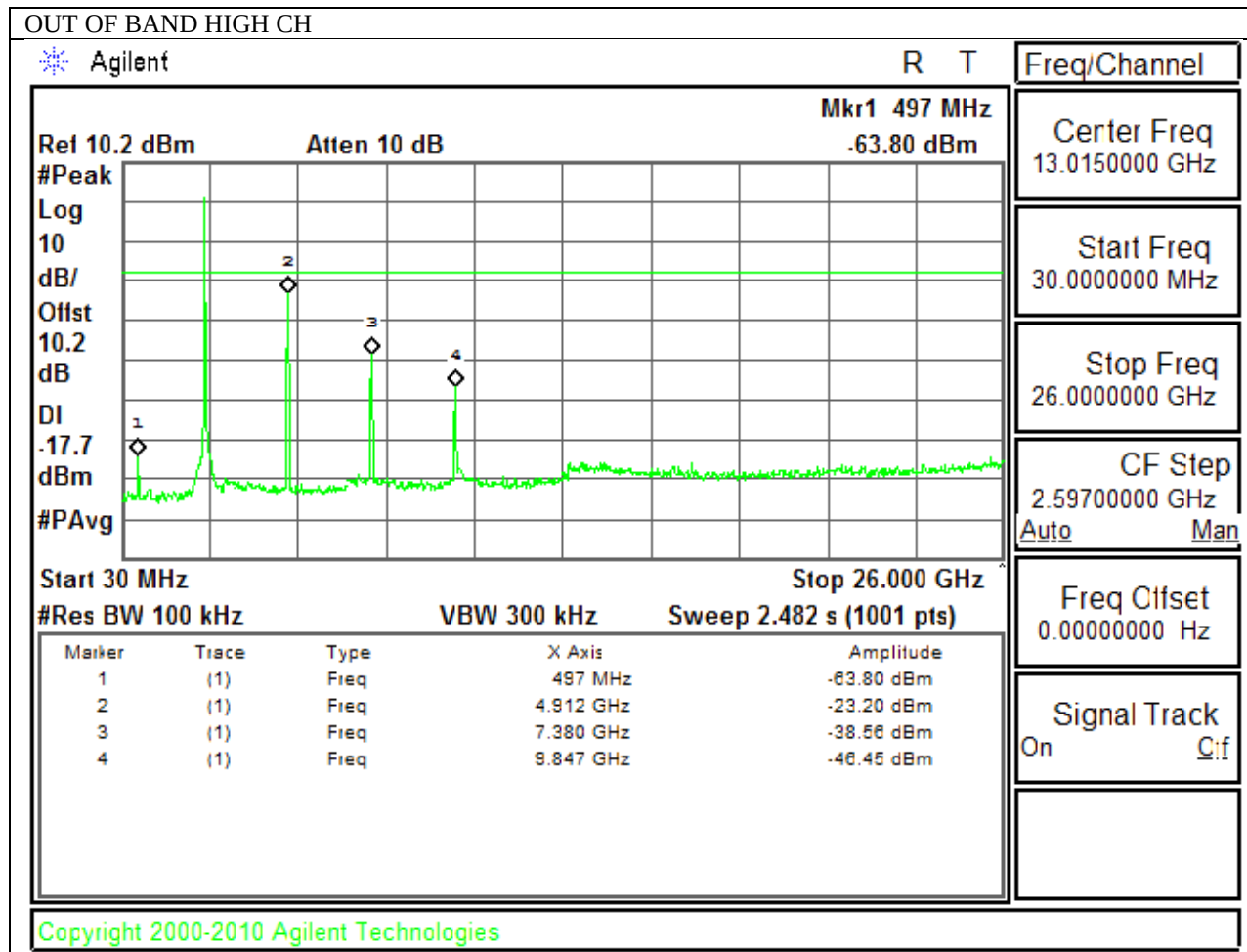


OUT-OF-BAND EMISSIONS



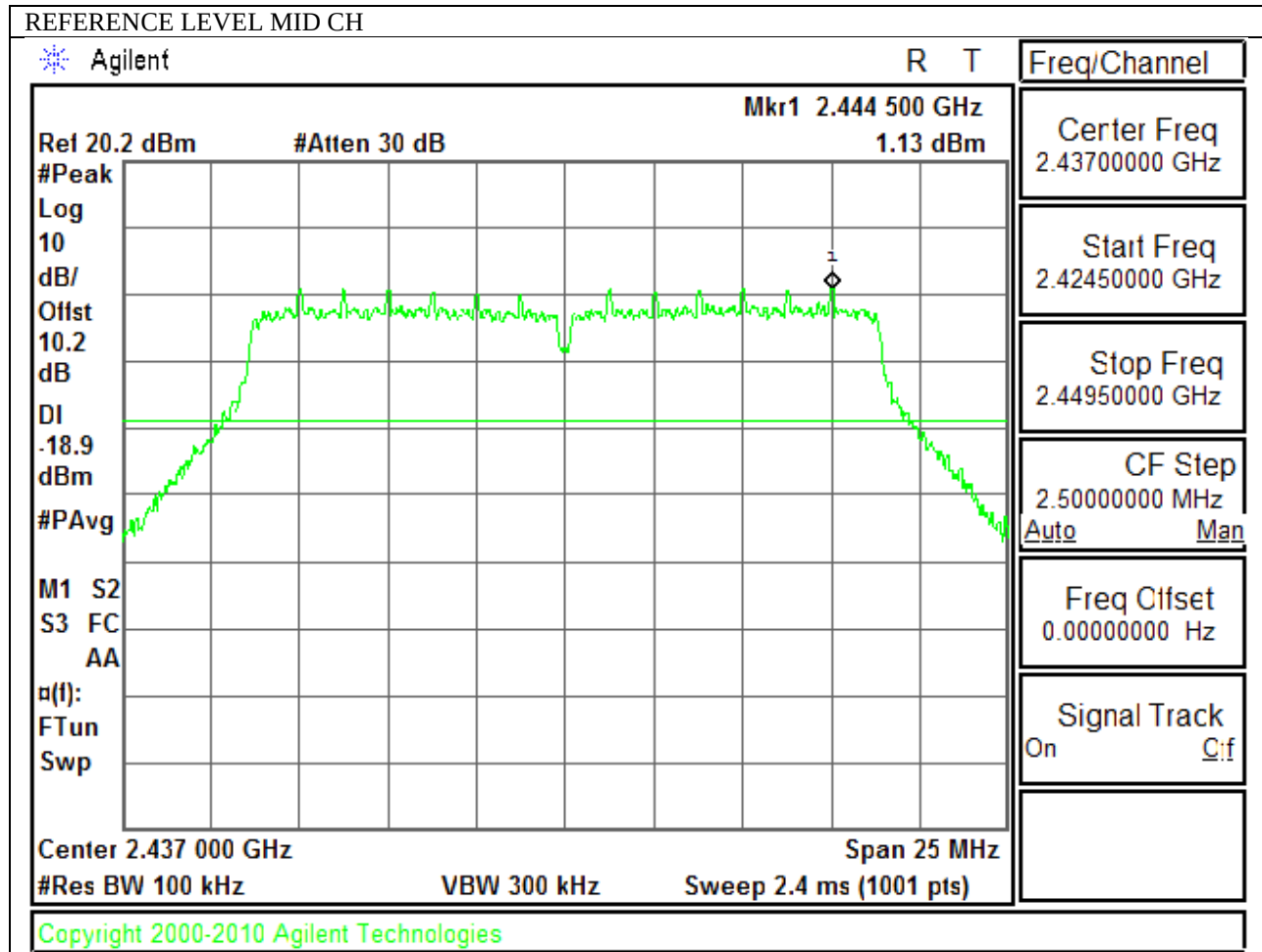
OUT OF BAND MID CH



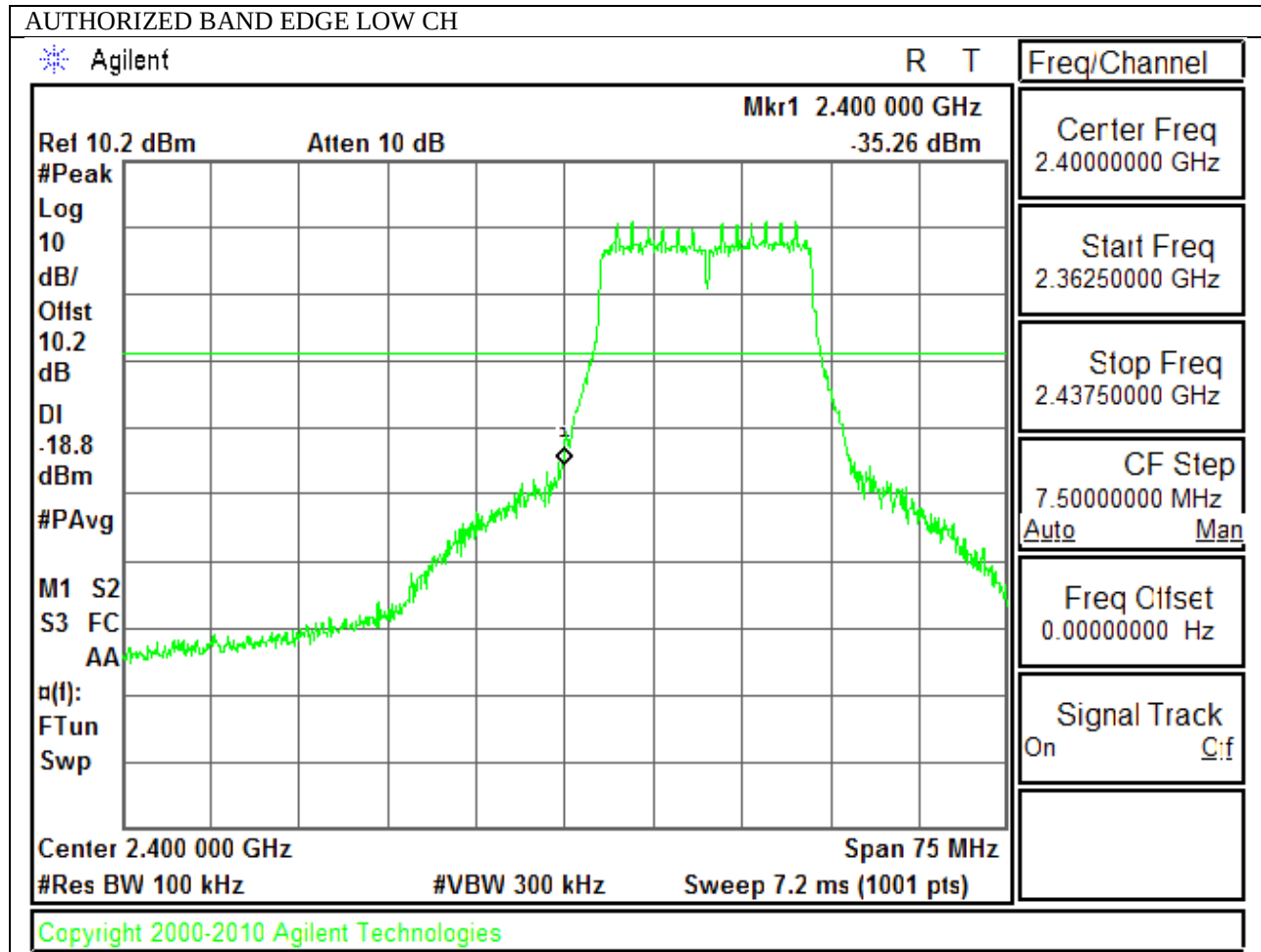


9.6.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

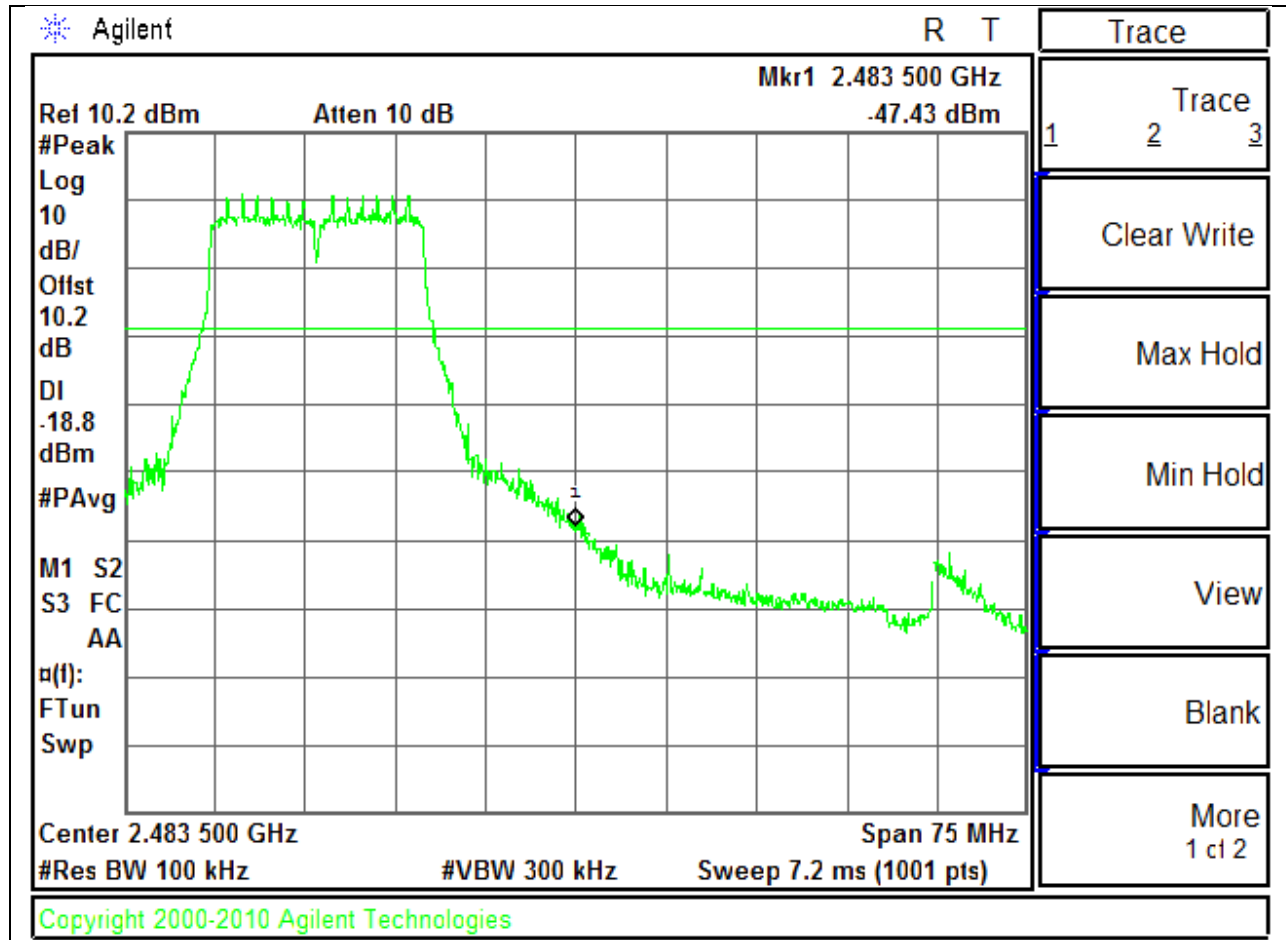


LOW CHANNEL BANDEDGE

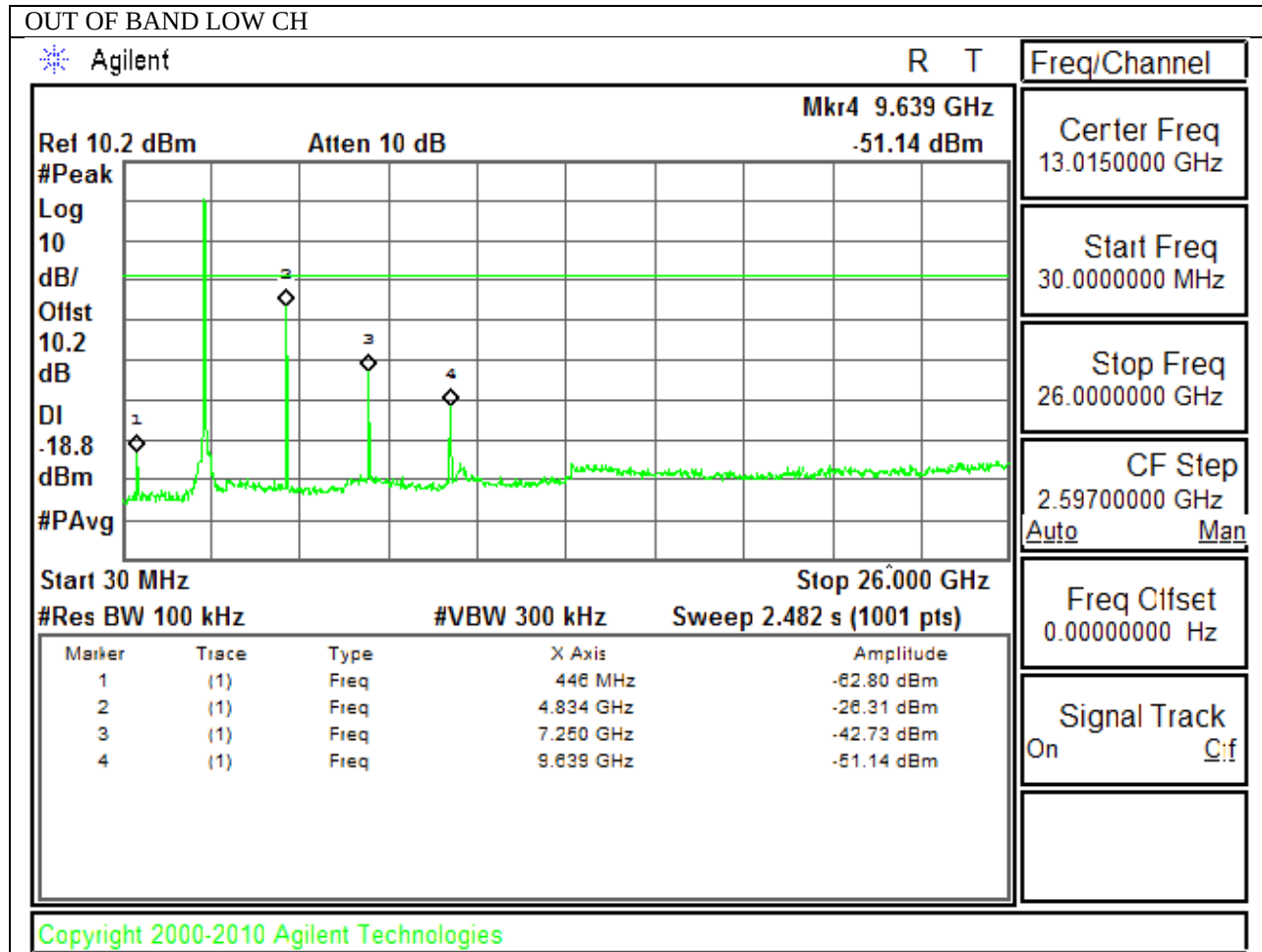


HIGH CHANNEL BANDEDGE

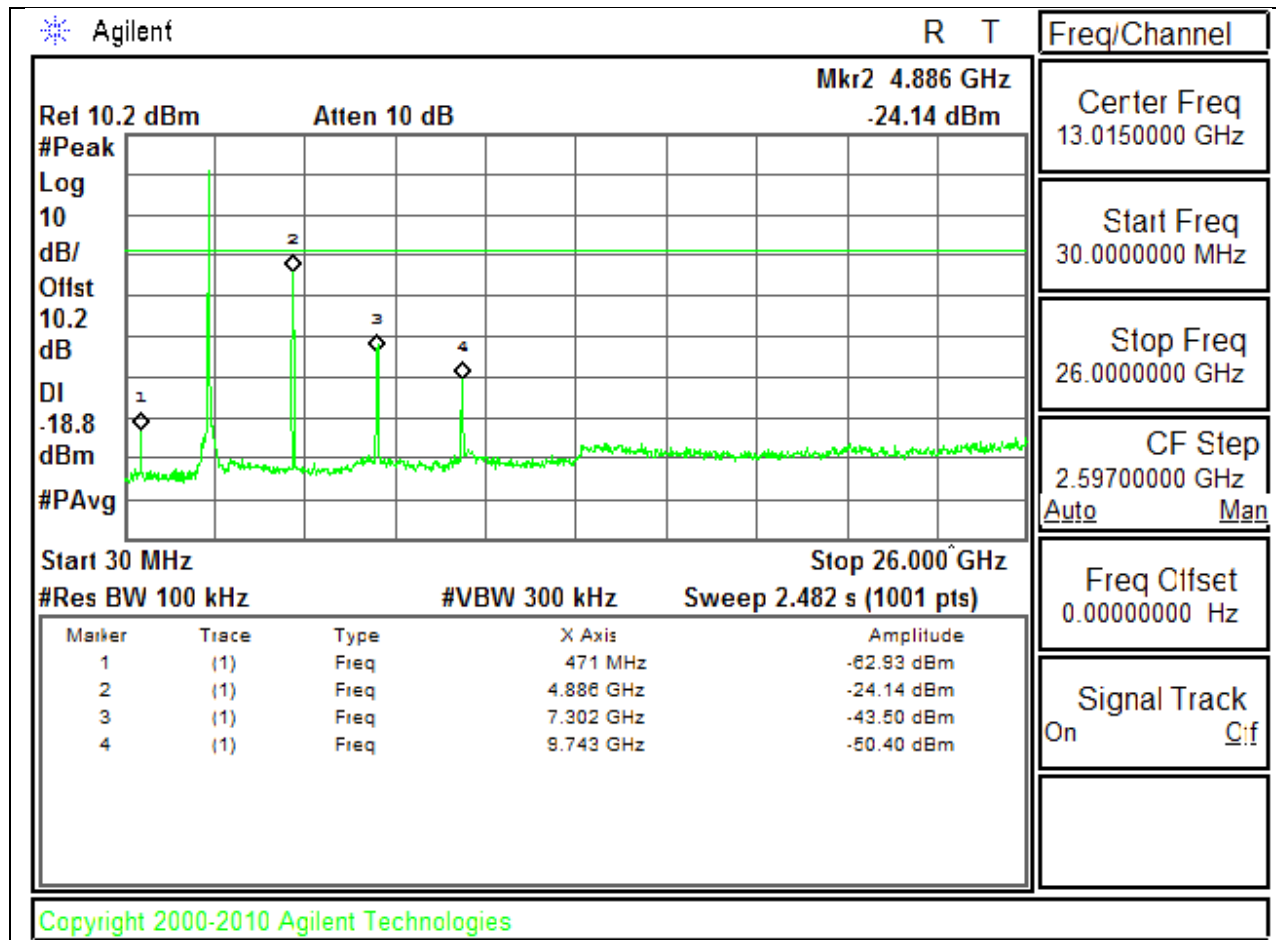
AUTHORIZED BAND EDGE HIGH CH

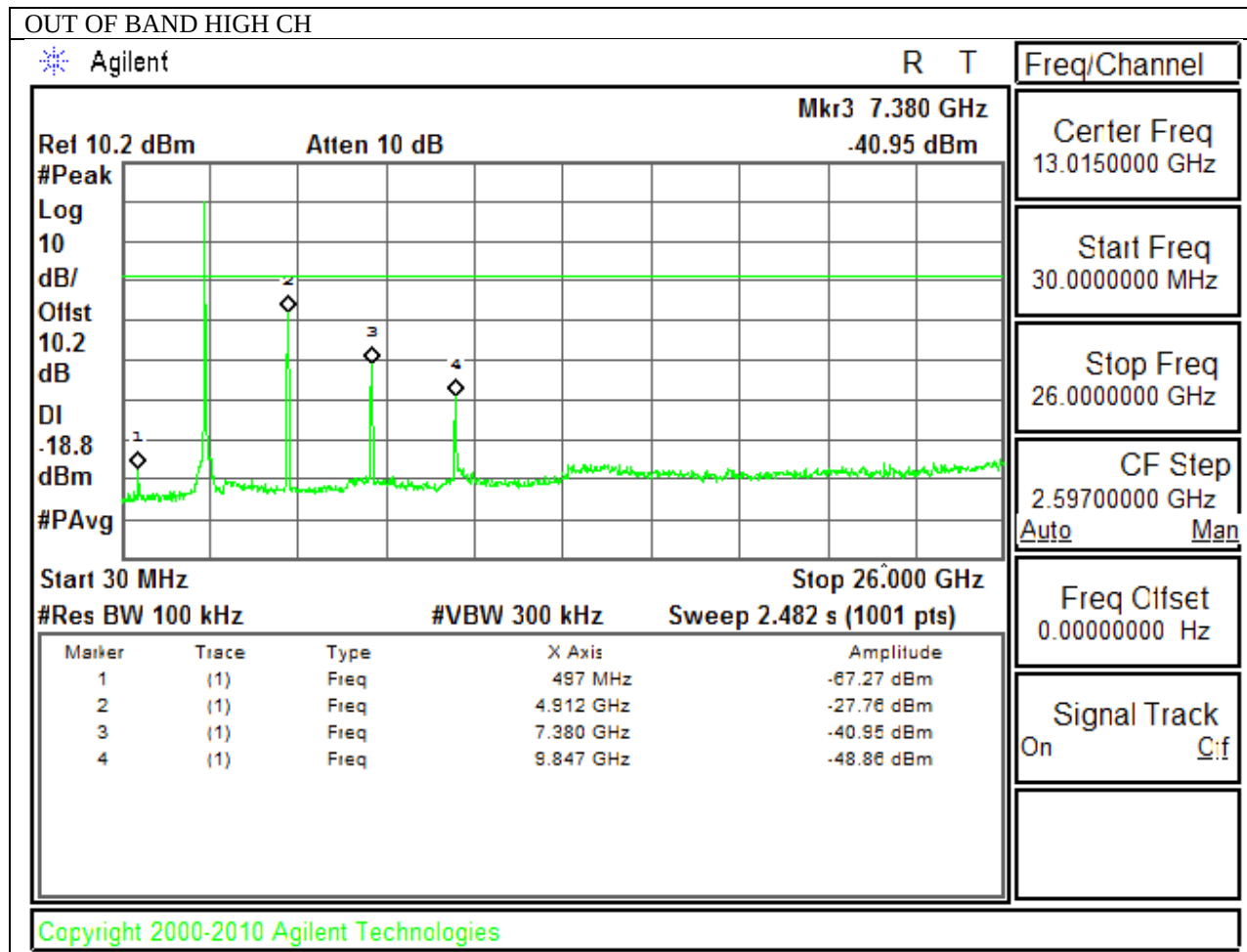


OUT-OF-BAND EMISSIONS



OUT OF BAND MID CH





10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V/m}$) at 3 m	Field Strength Limit (dB $\mu\text{V/m}$) 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 = 0.21dB; N mode = 0.22dB.

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.

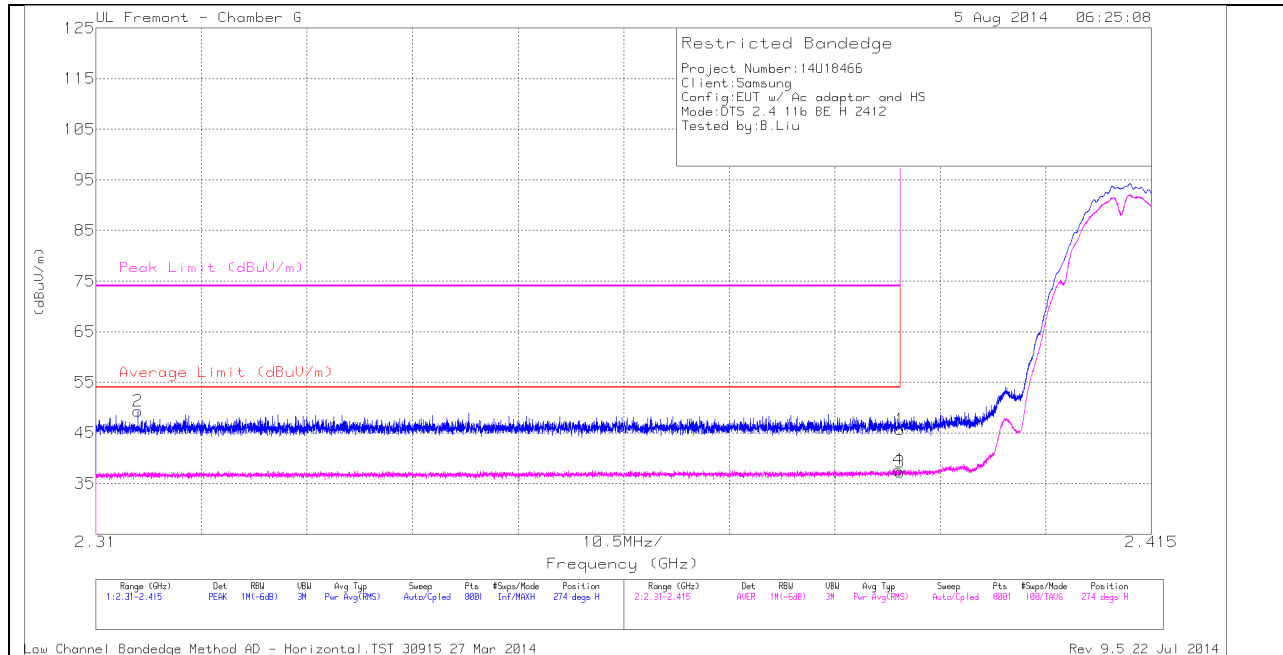
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters

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

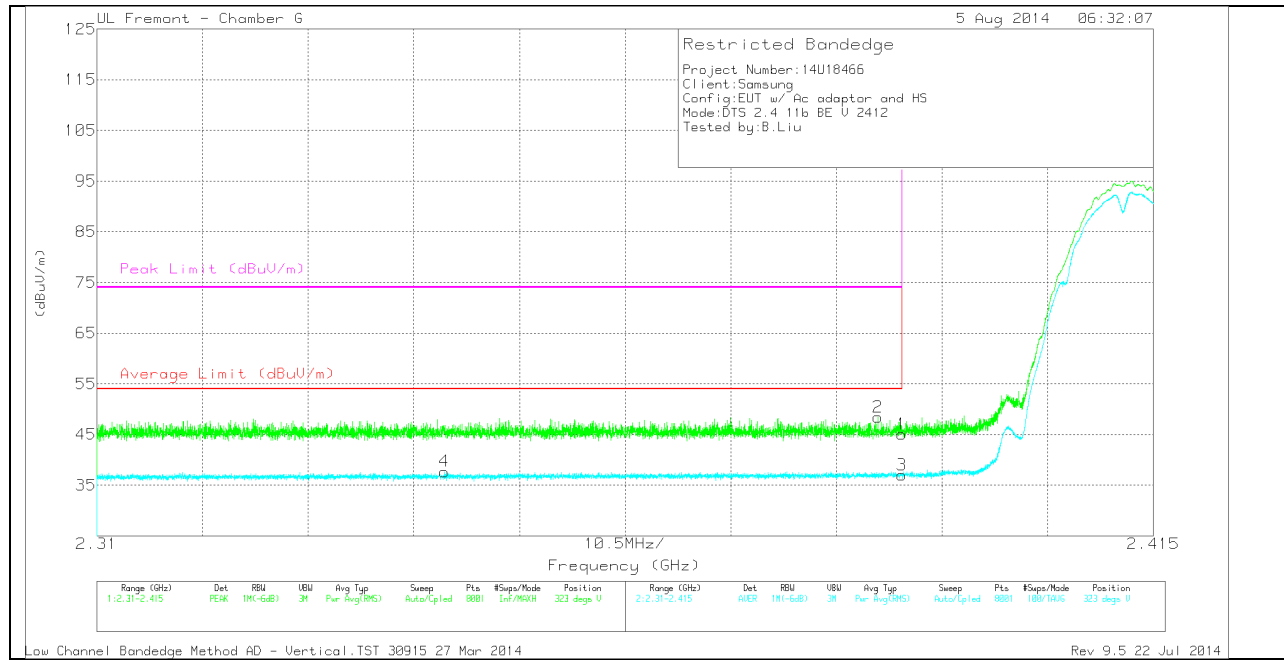
RESTRICTED BANDEDGE (LOW CHANNEL) HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	38.83	PK	31.8	-24.9	0	45.73	-	-	74	-28.27	274	229	H
2	* 2.314	42.73	PK	31.6	-25	0	49.33	-	-	74	-24.67	274	229	H
3	* 2.39	30.32	RMS	31.8	-24.9	0	37.27	54	-16.73	-	-	274	229	H
4	* 2.39	30.74	RMS	31.8	-24.9	0	37.69	54	-16.31	-	-	274	229	H

VERTICAL PEAK AND AVERAGE PLOT

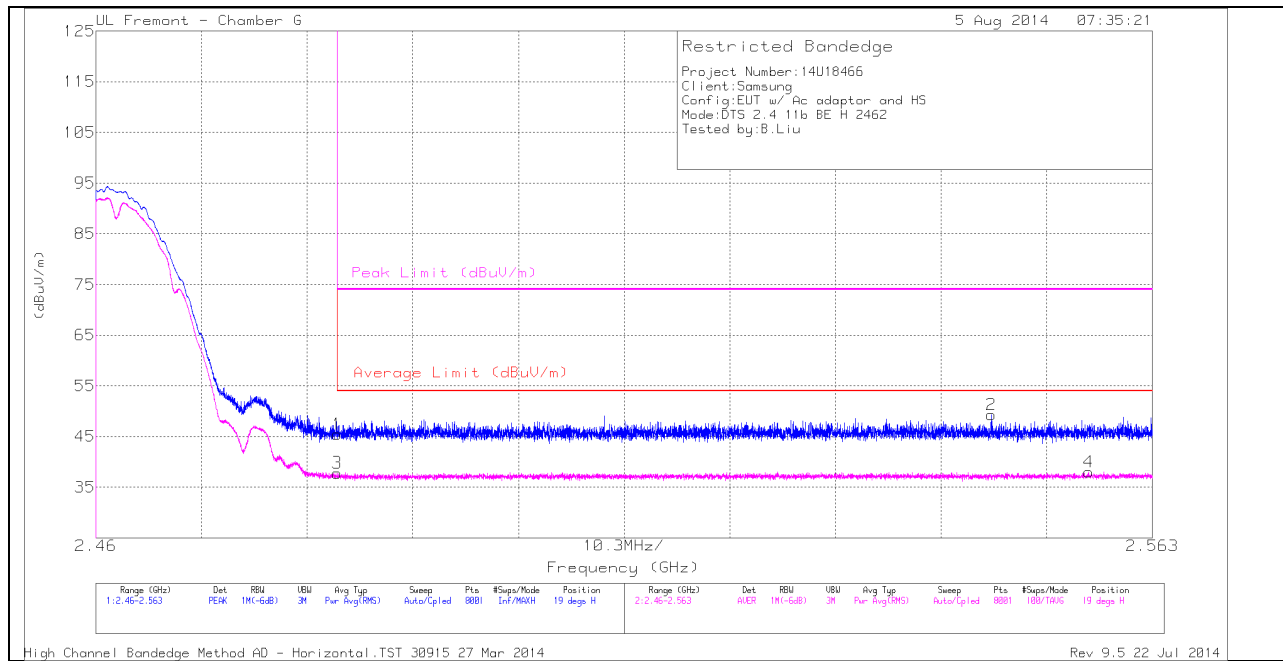


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	38.15	PK	31.8	-24.9	0	45.05	-	-	74	-28.95	323	355	V
2	* 2.388	41.54	PK	31.8	-24.9	0	48.44	-	-	74	-25.56	323	355	V
3	* 2.39	30.09	RMS	31.8	-24.9	0	37.04	54	-16.96	-	-	323	355	V
4	* 2.345	30.94	RMS	31.7	-25	0	37.69	54	-16.31	-	-	323	355	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

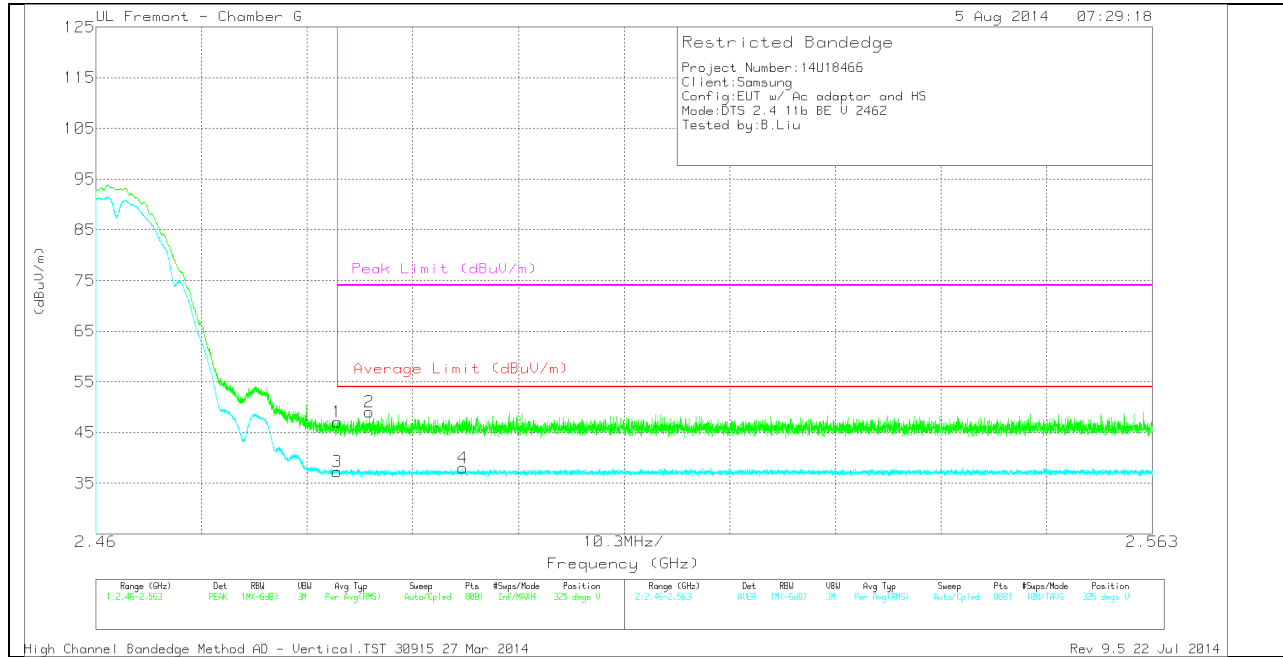
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 2.484	38.36	PK	32	-24.9	0	45.46	-	-	74	-28.54	19	336	H
3	* 2.484	30.66	RMS	32	-24.9	0	37.81	54	-16.19	-	-	19	336	H
2	2.547	42.17	PK	32	-24.9	0	49.27	-	-	74	-24.73	19	336	H
4	2.557	30.87	RMS	32	-24.9	0	38.02	54	-15.98	-	-	19	336	H

VERTICAL PEAK AND AVERAGE PLOT

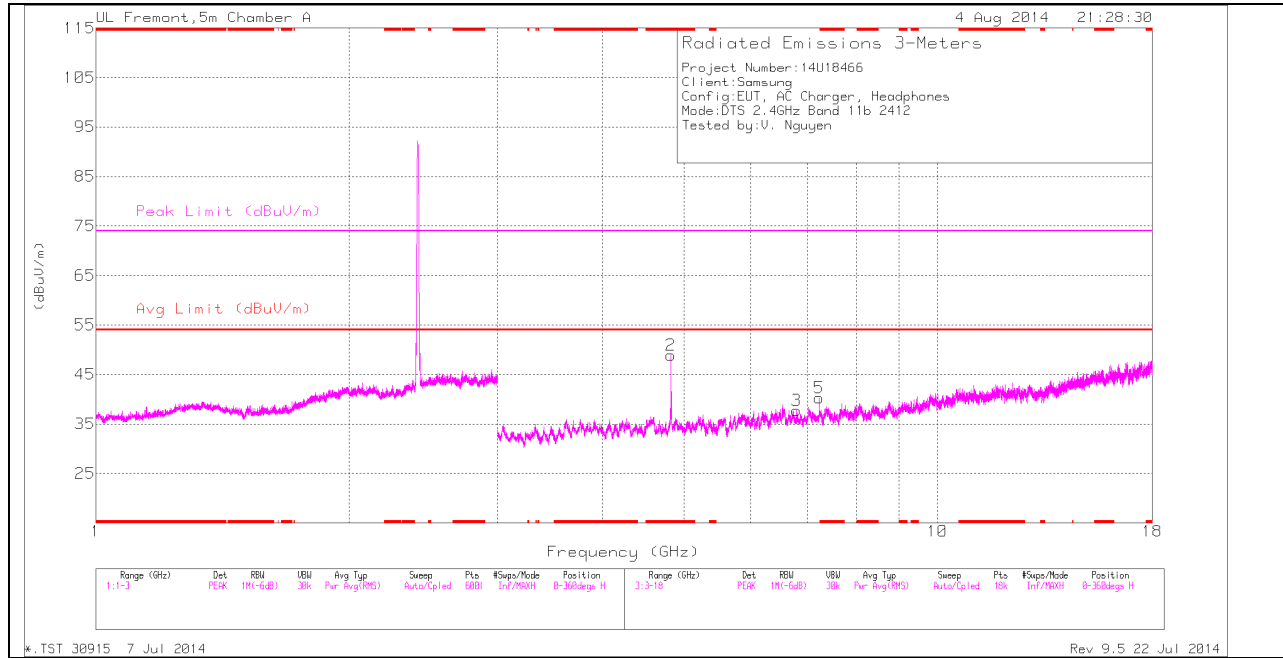


VERTICAL DATA

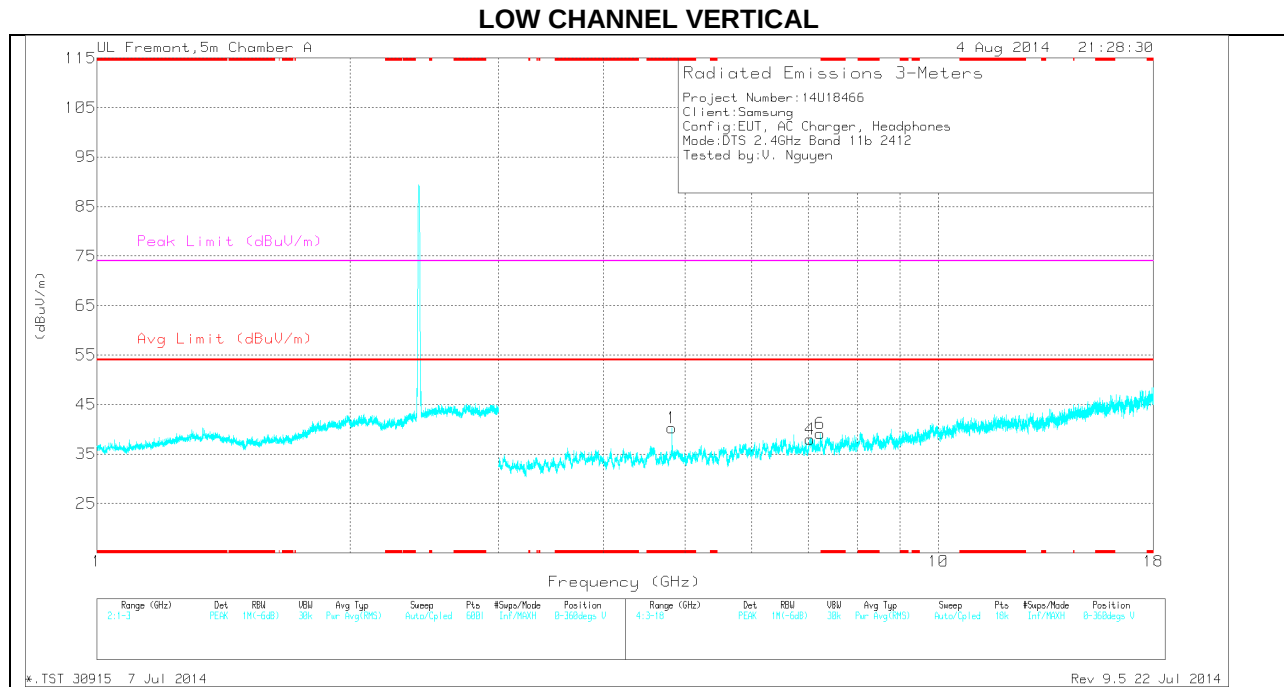
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.94	PK	32	-24.9	0	47.04	-	-	74	-26.96	325	340	V
2	* 2.487	41.91	PK	32	-24.9	0	49.01	-	-	74	-24.99	325	340	V
3	* 2.484	30.1	RMS	32	-24.9	0	37.25	54	-16.75	-	-	325	340	V
4	* 2.496	30.8	RMS	32	-24.9	0	37.95	54	-16.05	-	-	325	340	V

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

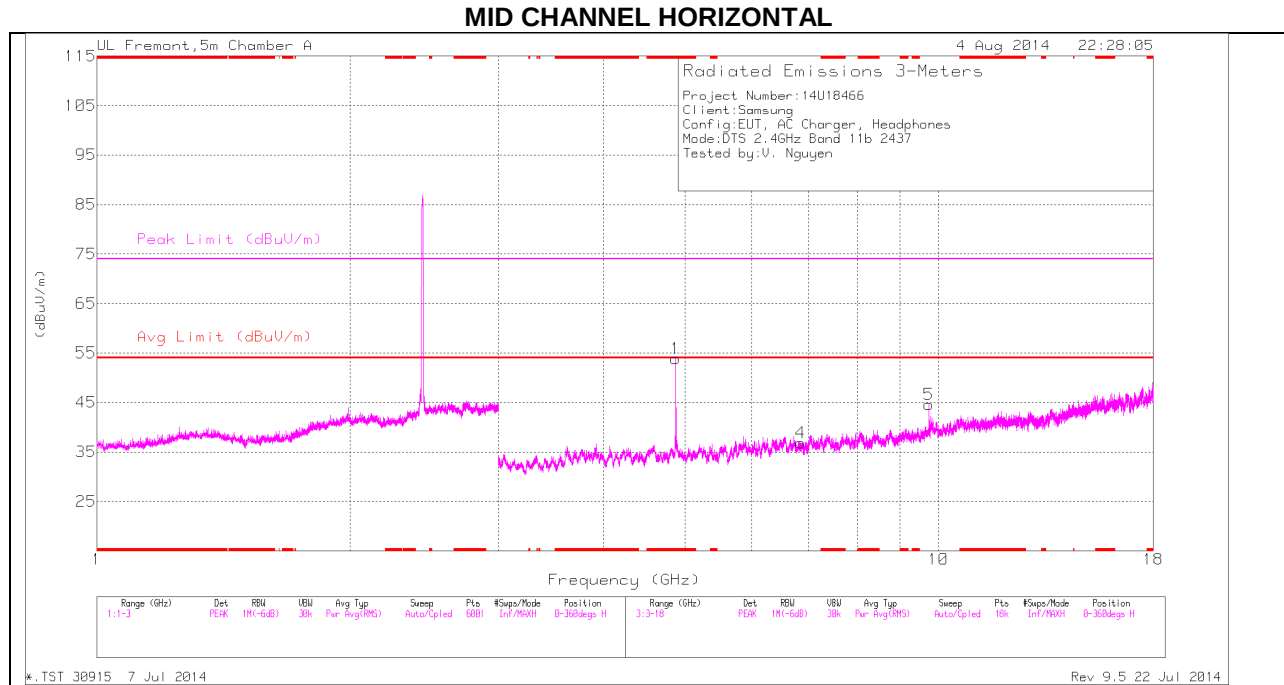
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/CbI/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.824	44.27	PK	34	-29.4	0	48.87	-	-	74	-25.13	0-360	201	H
1	* 4.824	35.63	PK	34	-29.4	0	40.23	-	-	74	-33.77	0-360	100	V
3	6.806	30.45	PK	35.3	-28	0	37.75	-	-	-	-	0-360	100	H
4	7.033	28.62	PK	35.3	-25.9	0	38.02	-	-	-	-	0-360	201	V
5	7.236	31.22	PK	35.2	-26.1	0	40.32	-	-	-	-	0-360	100	H
6	7.236	30.03	PK	35.2	-26.1	0	39.13	-	-	-	-	0-360	100	V

PK - Peak detector

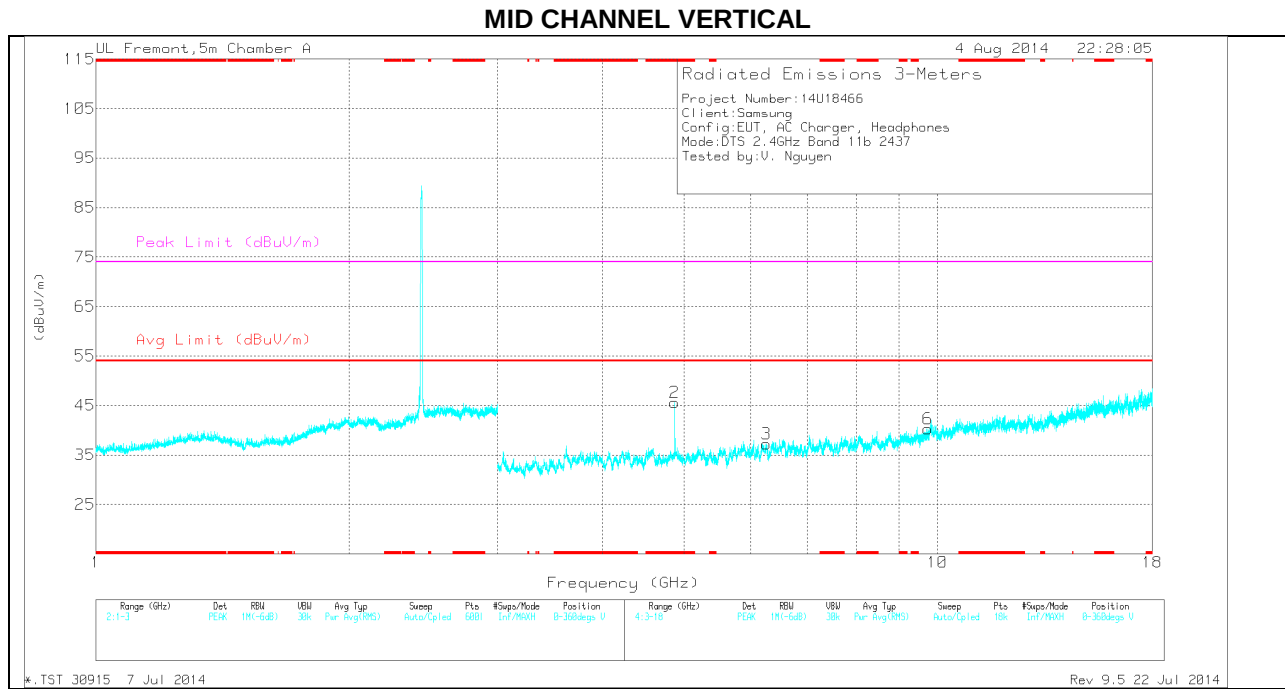
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/CbI/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
* 4.824	49.25	PK2	34	-29.5	0	53.75	-	-	74	-20.25	228	165	H
* 4.824	45.42	MAV1	34	-29.5	0	49.92	54	-4.08	-	-	228	165	H
* 4.824	42.35	PK2	34	-29.4	0	46.95	-	-	74	-27.05	319	100	V
* 4.824	34.82	MAV1	34	-29.5	0	39.32	54	-14.68	-	-	319	100	V

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



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

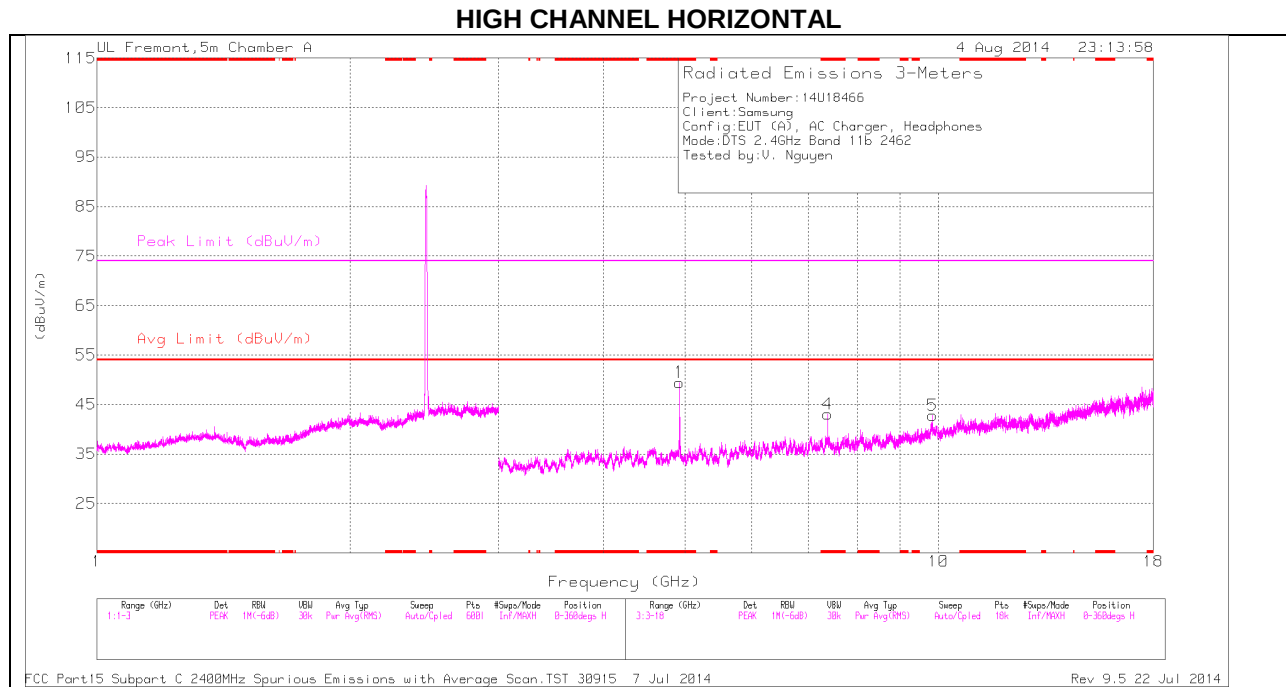
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb1/F1tr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.874	48.19	PK	34	-28.3	0	53.89	-	-	74	-20.11	0-360	201	H
2	* 4.874	39.91	PK	34	-28.3	0	45.61	-	-	74	-28.39	0-360	100	V
3	6.259	29.48	PK	35.4	-27.6	0	37.28	-	-	-	-	0-360	201	V
4	6.855	29.32	PK	35.3	-27.8	0	36.82	-	-	-	-	0-360	100	H
5	9.747	32.13	PK	36.9	-24.5	0	44.53	-	-	-	-	0-360	201	H
6	9.748	27.91	PK	36.9	-24.5	0	40.31	-	-	-	-	0-360	201	V

PK - Peak detector

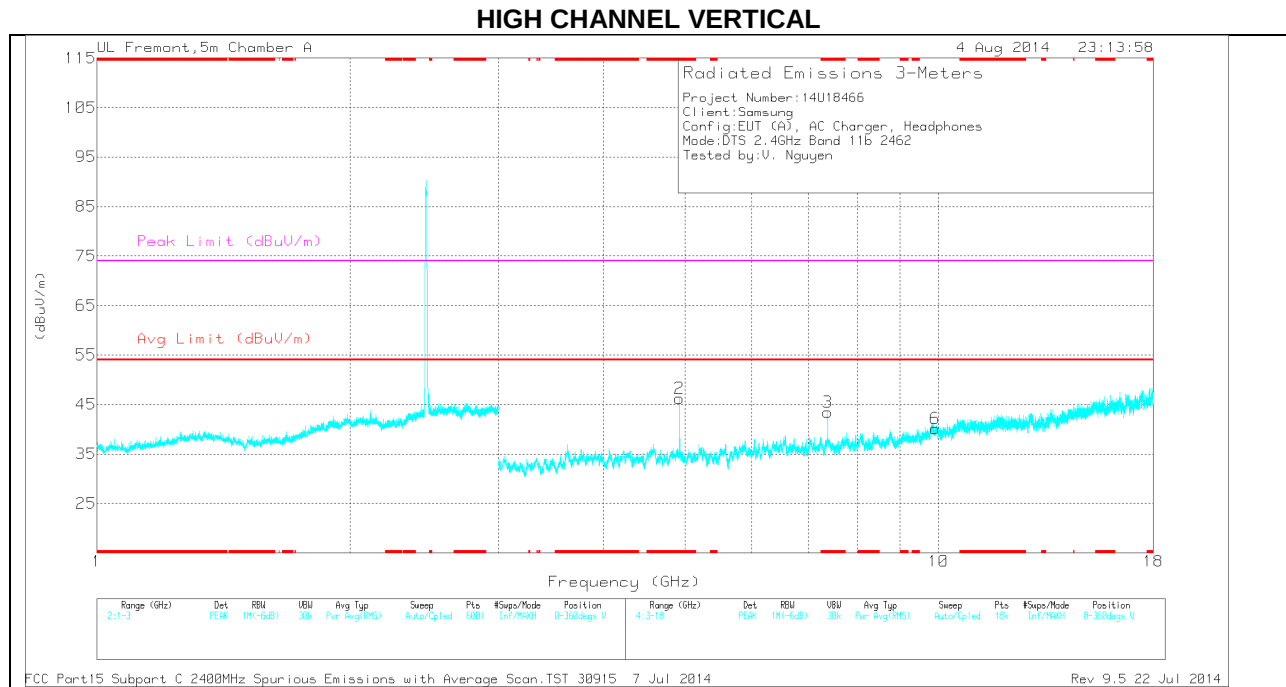
RADIATED EMISSIONS

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb1/ F1tr/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
* 4.874	50.12	PK2	34	-28.3	0	55.82	-	-	74	-18.18	230	158	H
* 4.874	47.53	MAV1	34	-28.3	0	53.23	54	-.77	-	-	230	158	H
* 4.874	43.74	PK2	34	-28.3	0	49.44	-	-	74	-24.56	206	280	V
* 4.874	39.22	MAV1	34	-28.3	0	44.92	54	-9.08	-	-	206	280	V

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



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/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	* 4.924	44.57	PK	33.9	-29	0	49.47	-	-	74	-24.53	0-360	100	H
2	* 4.924	41.28	PK	33.9	-29	0	46.18	-	-	74	-27.82	0-360	201	V
4	* 7.385	32.04	PK	35.3	-24.3	0	43.04	-	-	74	-30.96	0-360	100	H
3	* 7.386	32.39	PK	35.3	-24.2	0	43.49	-	-	74	-30.51	0-360	100	V
5	9.847	28.25	PK	37	-22.4	0	42.85	-	-	-	-	0-360	201	H
6	9.907	26.18	PK	37	-23	0	40.18	-	-	-	-	0-360	100	V

PK - Peak detector

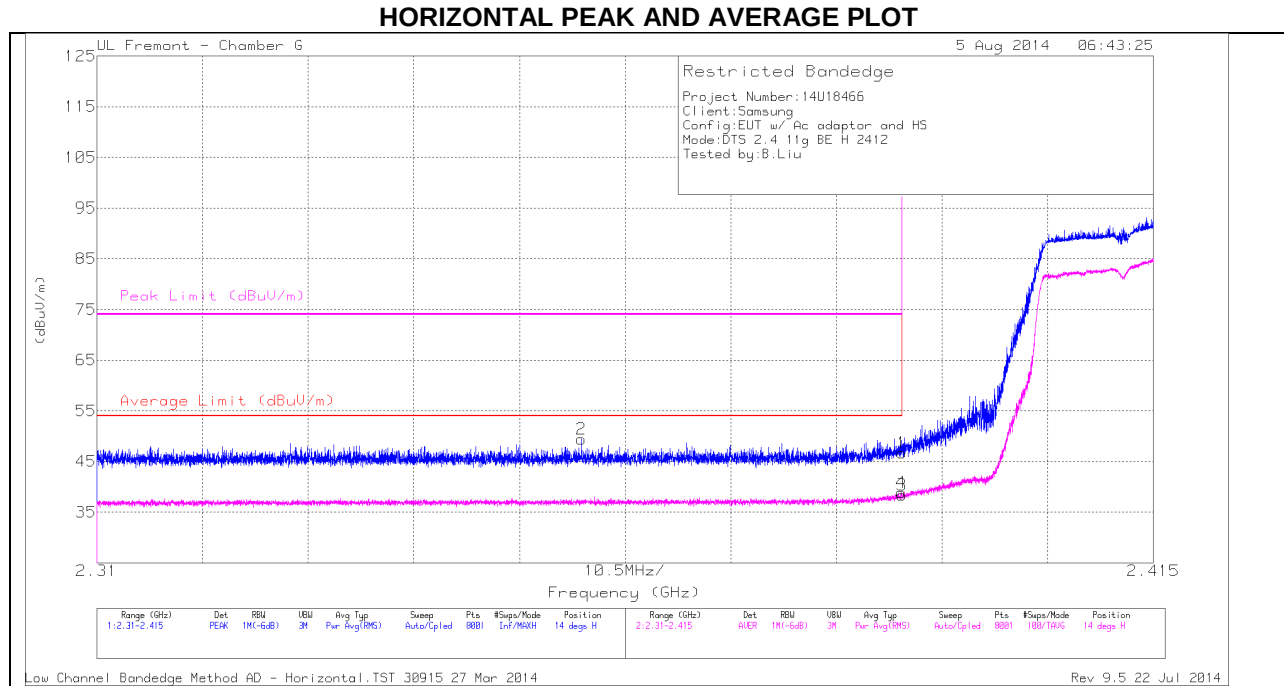
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 4.924	50.65	PK2	33.9	-29	0	55.55	-	-	74	-18.45	256	116	H
* 4.924	46.49	MAV1	33.9	-29	0	51.39	54	-2.61	-	-	256	116	H
* 7.384	42.8	PK2	35.3	-24.3	0	53.8	-	-	74	-20.2	218	115	H
* 7.385	33.27	MAV1	35.3	-24.3	0	44.27	54	-9.73	-	-	218	115	H
* 4.924	46.8	PK2	33.9	-29	0	51.7	-	-	74	-22.3	37	271	V
* 4.924	39.77	MAV1	33.9	-29	0	44.67	54	-9.33	-	-	37	271	V
* 7.385	43.21	PK2	35.3	-24.3	0	54.21	-	-	74	-19.79	7	100	V
* 7.385	32.7	MAV1	35.3	-24.3	0	43.7	54	-10.3	-	-	7	100	V

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

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

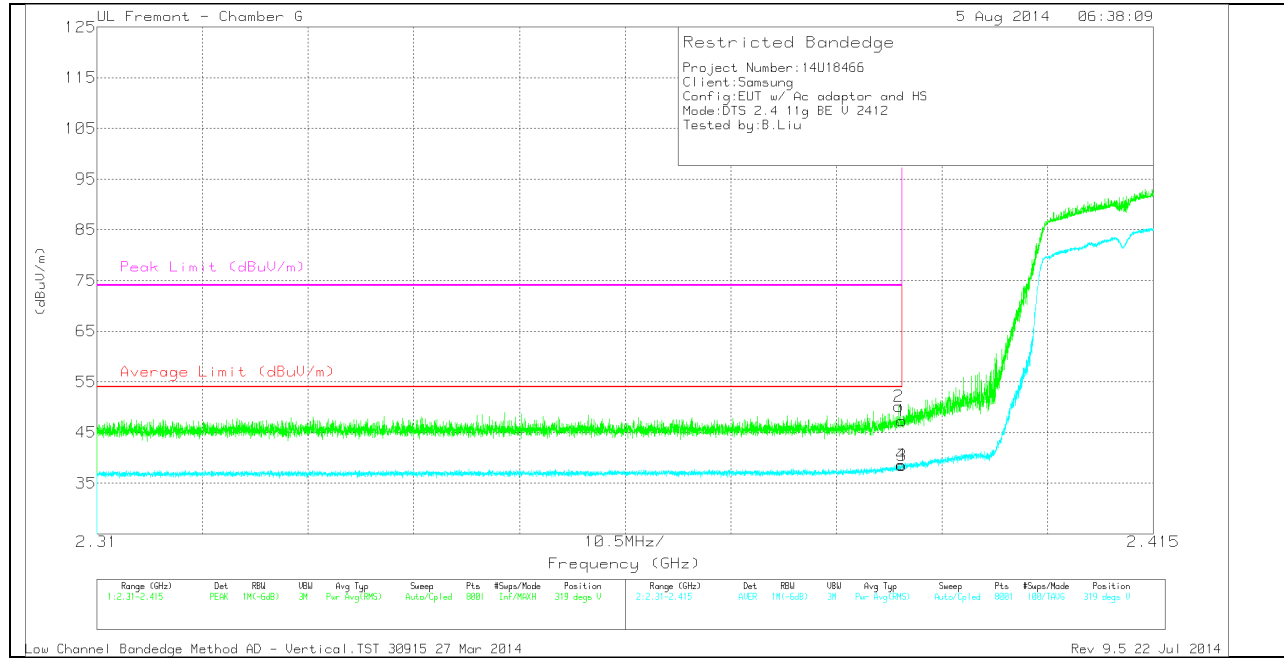
RESTRICTED BANDEDGE (LOW CHANNEL)



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	39.75	PK	31.8	-24.9	0	46.65	-	-	74	-27.35	14	351	H
2	* 2.358	42.69	PK	31.7	-25	0	49.39	-	-	74	-24.61	14	351	H
3	* 2.39	31.21	RMS	31.8	-24.9	.21	38.32	54	-15.68	-	-	14	351	H
4	* 2.39	31.72	RMS	31.8	-24.9	.21	38.83	54	-15.17	-	-	14	351	H

VERTICAL PEAK AND AVERAGE PLOT

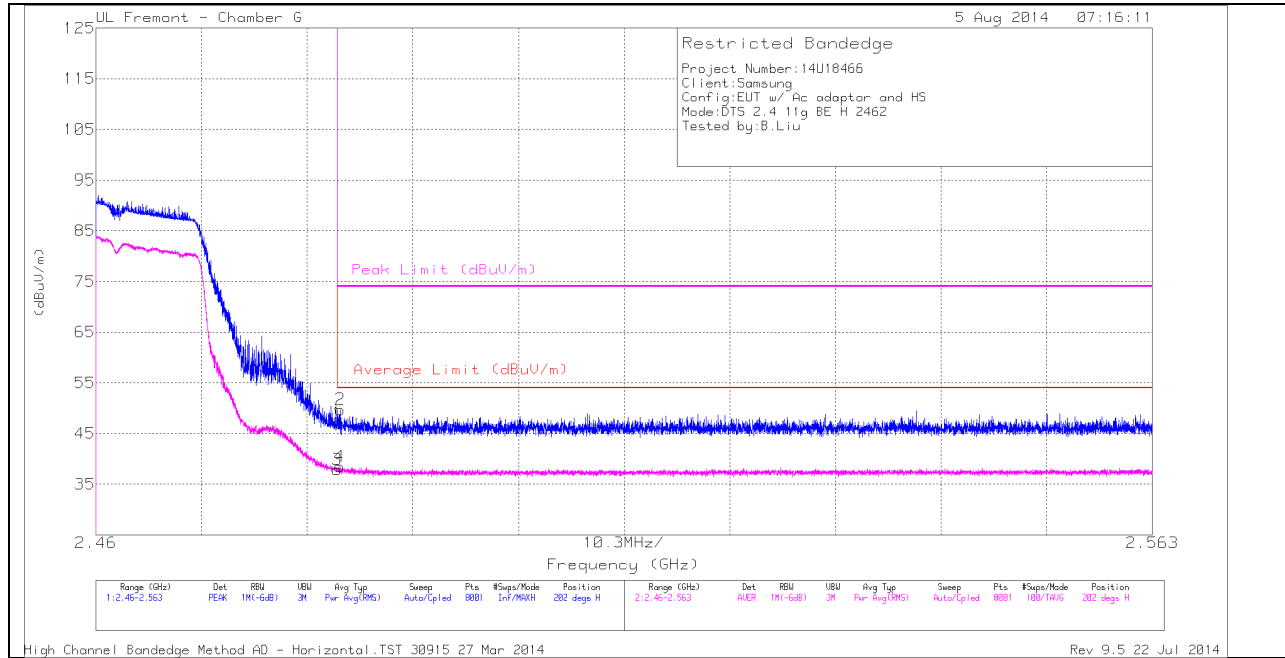


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	40.46	PK	31.8	-24.9	0	47.36	-	-	74	-26.64	319	361	V
2	* 2.39	43.32	PK	31.8	-24.9	0	50.22	-	-	74	-23.78	319	361	V
3	* 2.39	31.44	RMS	31.8	-24.9	.21	38.55	54	-15.45	-	-	319	361	V
4	* 2.39	31.52	RMS	31.8	-24.9	.21	38.63	54	-15.37	-	-	319	361	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

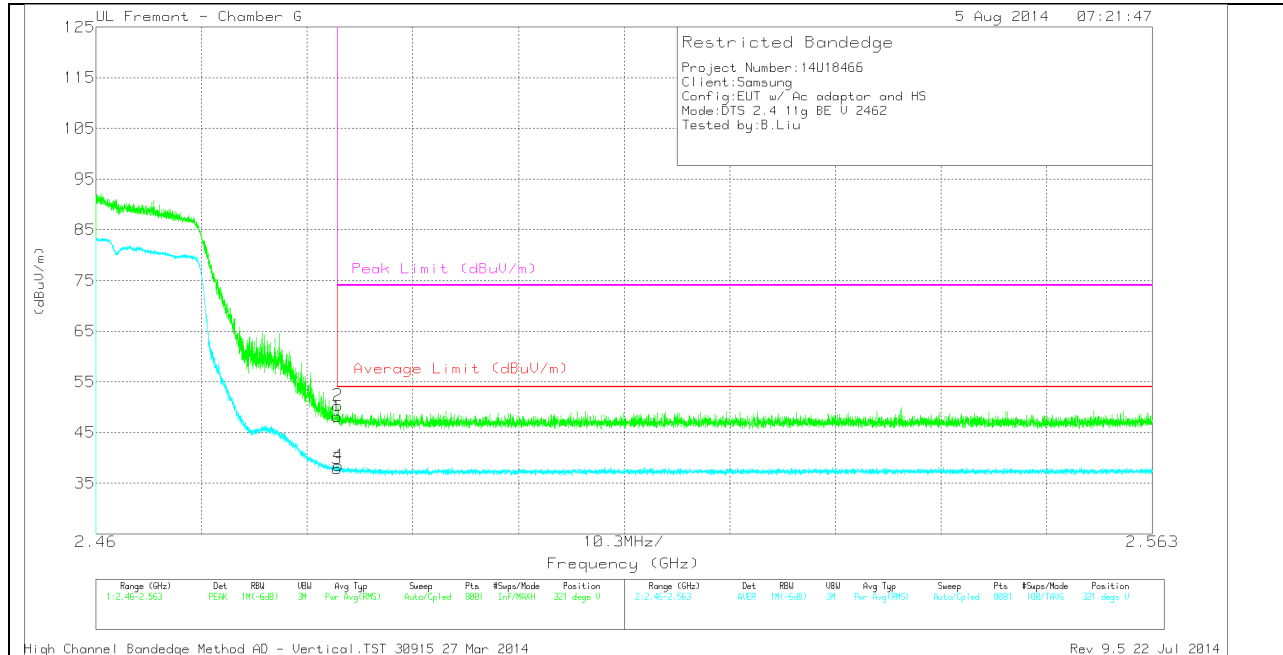
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 2.484	39.98	PK	32	-24.9	0	47.08	-	-	74	-26.92	202	344	H
2	* 2.484	42.63	PK	32	-24.9	0	49.73	-	-	74	-24.27	202	344	H
3	* 2.484	30.58	RMS	32	-24.9	.21	37.89	54	-16.11	-	-	202	344	H
4	* 2.484	31.13	RMS	32	-24.9	.21	38.44	54	-15.56	-	-	202	344	H

VERTICAL PEAK AND AVERAGE PLOT

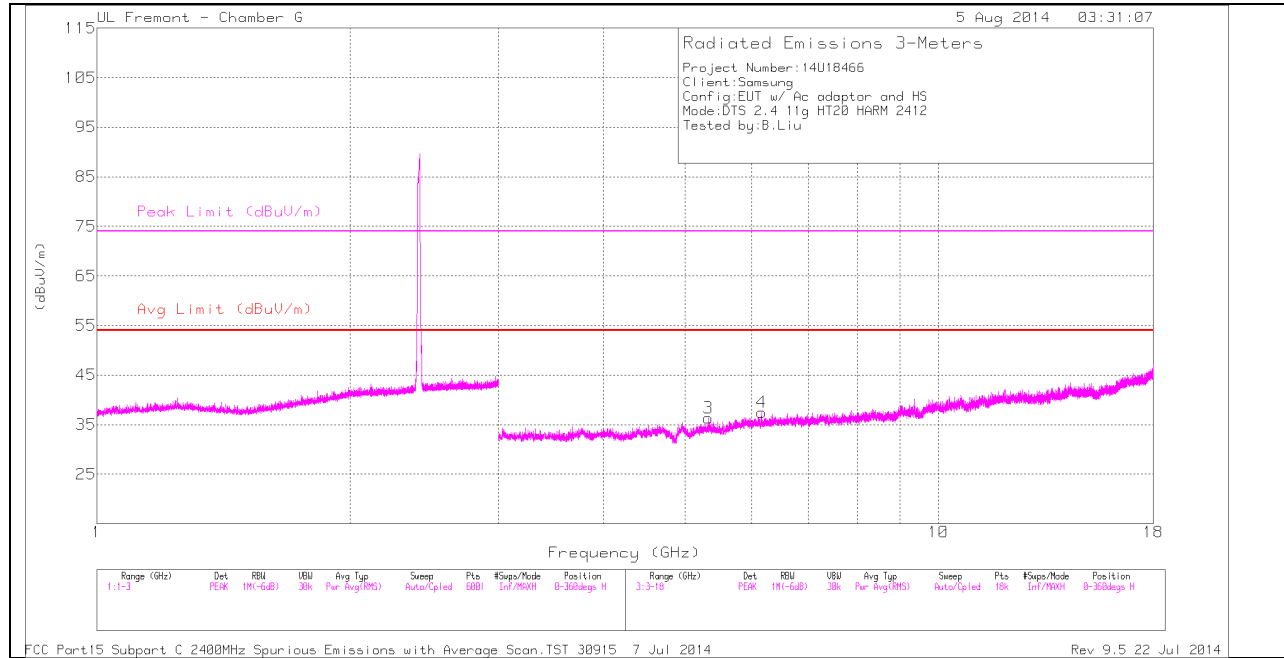


VERTICAL DATA

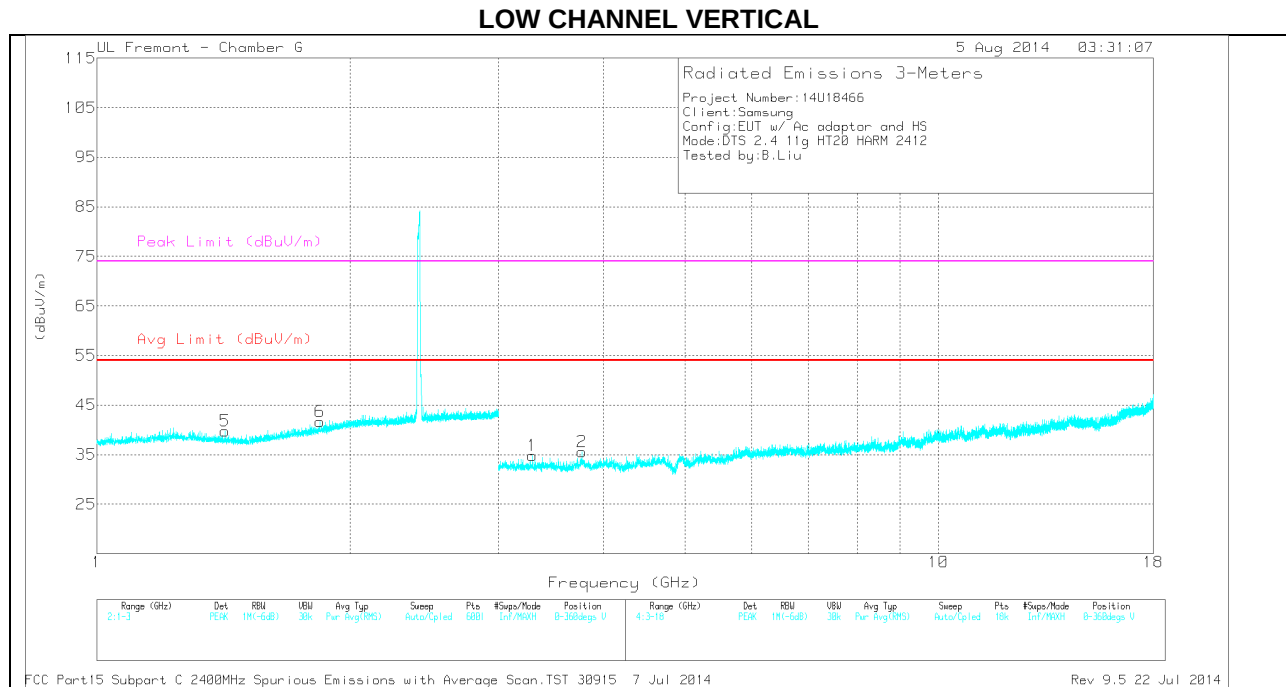
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.05	PK	32	-24.9	0	48.15	-	-	74	-25.85	321	347	V
2	* 2.484	43.25	PK	32	-24.9	0	50.35	-	-	74	-23.65	321	347	V
3	* 2.484	30.6	RMS	32	-24.9	.21	37.91	54	-16.09	-	-	321	347	V
4	* 2.484	31.16	RMS	32	-24.9	.21	38.47	54	-15.53	-	-	321	347	V

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 T862 (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
5	* 1.42	37.12	PK	28.3	-25.7	0	39.72	-	-	74	-34.28	0-360	201	V
2	* 3.77	35.17	PK	32.9	-32.5	0	35.57	-	-	74	-38.43	0-360	201	V
6	1.84	36.89	PK	30.2	-25.4	0	41.69	-	-	-	-	0-360	101	V
1	3.29	35.49	PK	33	-33.7	0	34.79	-	-	-	-	0-360	201	V
3	5.326	34.28	PK	34.6	-32.6	0	36.28	-	-	-	-	0-360	201	H
4	6.165	35.13	PK	35.5	-33.2	0	37.43	-	-	-	-	0-360	101	H

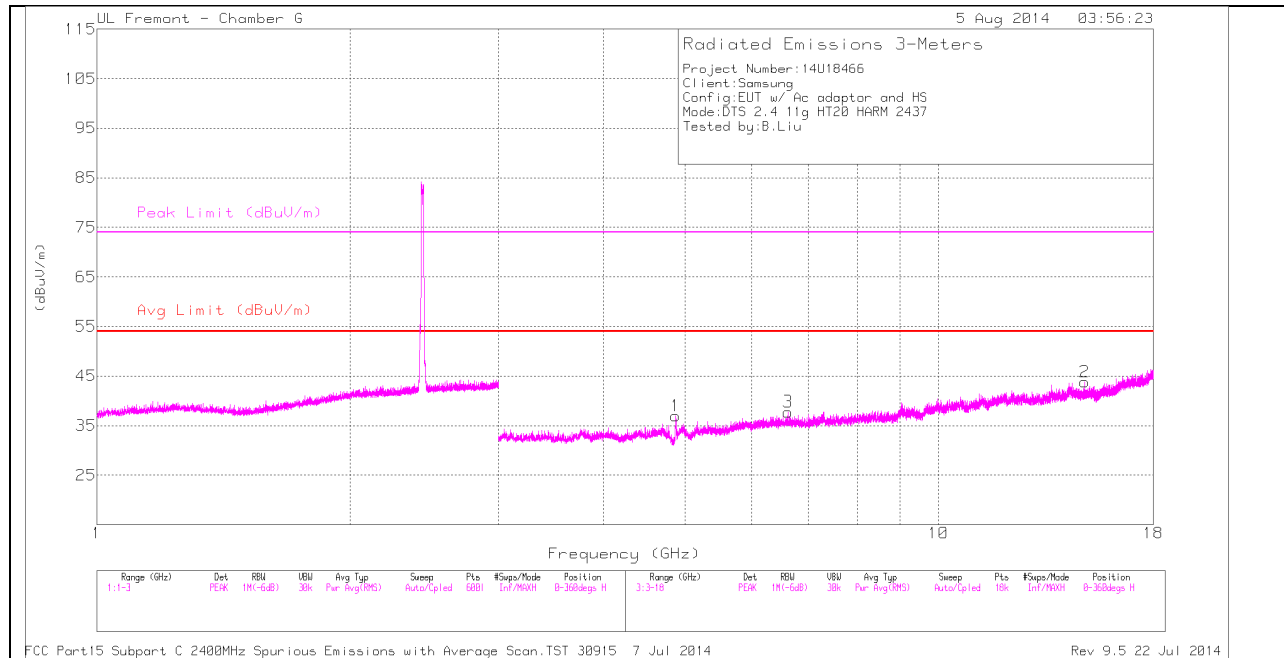
PK - Peak detector

RADIATED EMISSIONS

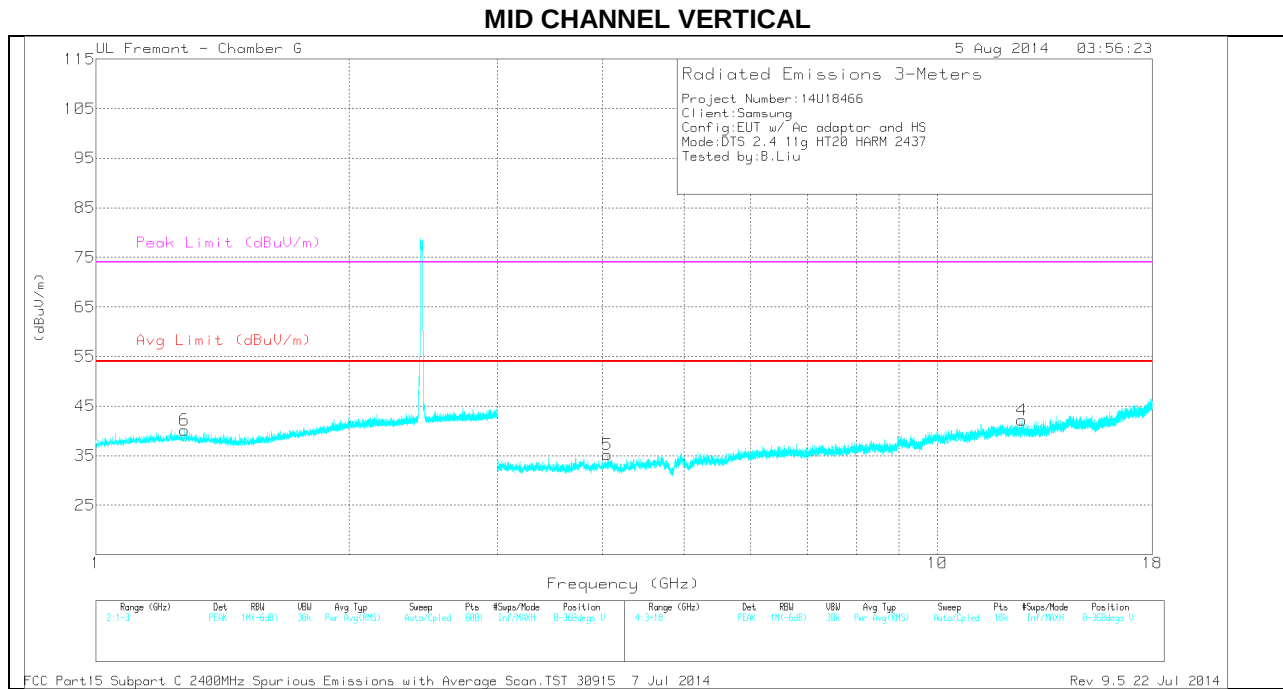
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.42	43.53	PK2	28.3	-25.7	0	46.13	-	-	74	-27.87	1	202	V
* 3.768	41.58	PK2	32.9	-32.5	0	41.98	-	-	74	-32.02	1	202	V
1.842	43.91	PK2	30.2	-25.4	0	48.71	-	-	-	-	1	102	V
3.291	42.31	PK2	33	-33.7	0	41.61	-	-	-	-	1	202	V
5.327	41.23	PK2	34.6	-32.6	0	43.23	-	-	-	-	1	202	H
6.167	41.65	PK2	35.5	-33.2	0	43.95	-	-	-	-	1	102	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.



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 T862 (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
6	* 1.274	37.12	PK	29.1	-26.1	0	40.12	-	-	74	-33.88	0-360	101	V
1	* 4.874	36	PK	34.1	-33.1	0	37	-	-	74	-37	0-360	201	H
4	* 12.595	29.61	PK	39	-26.4	0	42.21	-	-	74	-31.79	0-360	101	V
5	* 4.054	34.61	PK	33.4	-32.8	0	35.21	-	-	74	-38.79	0-360	101	V
3	6.621	33.59	PK	35.6	-31.4	0	37.79	-	-	-	-	0-360	201	H
2	14.926	31.8	PK	39.9	-27.9	0	43.8	-	-	-	-	0-360	100	H

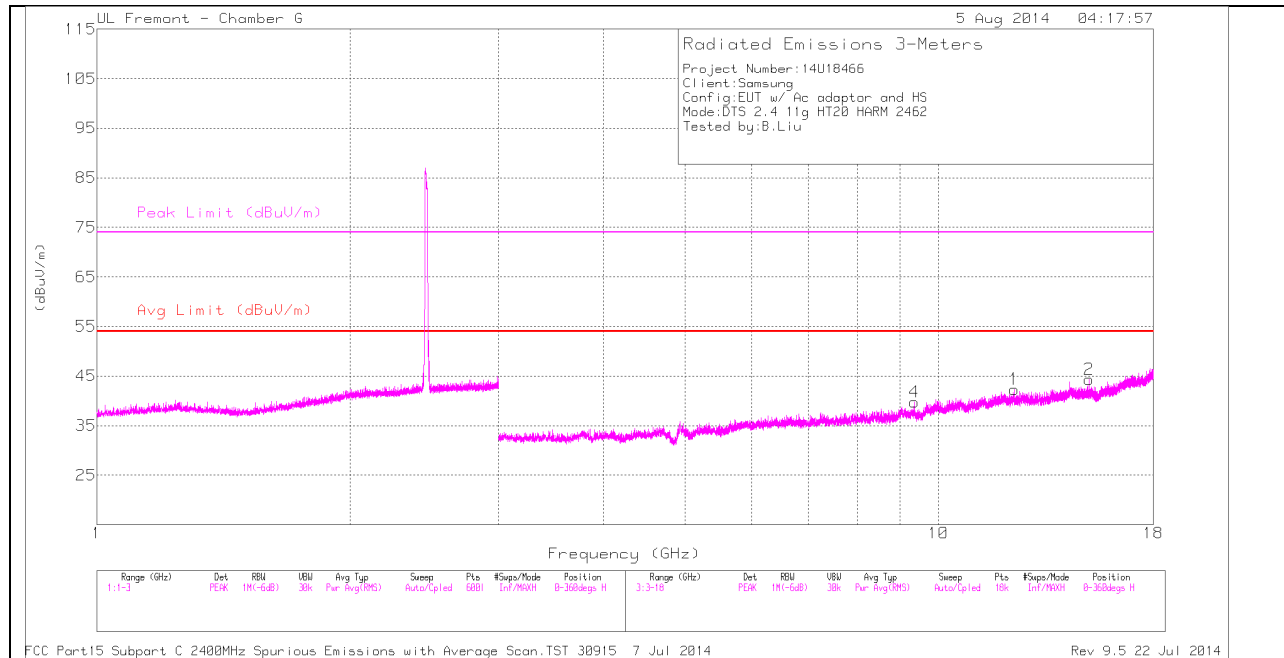
PK - Peak detector

RADIATED EMISSIONS

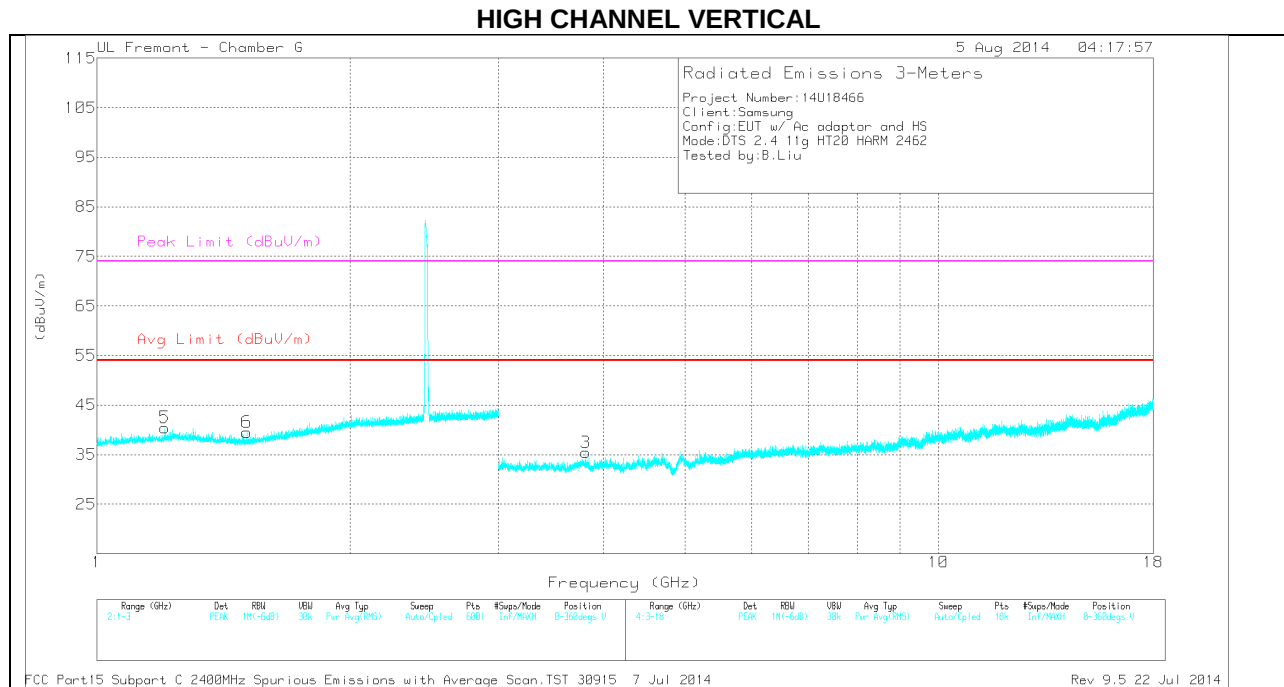
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.274	43.63	PK2	29.1	-26.1	0	46.63	-	-	74	-27.37	2	102	V
* 4.872	39.83	PK2	34.1	-33.1	0	40.83	-	-	74	-33.17	2	202	H
* 12.594	36.47	PK2	39	-26.4	0	49.07	-	-	74	-24.93	2	102	V
* 4.054	41.41	PK2	33.4	-32.8	0	42.01	-	-	74	-31.99	2	102	V
6.621	40.25	PK2	35.6	-31.4	0	44.45	-	-	-	-	2	202	H
14.925	37.29	PK2	39.9	-27.9	0	49.29	-	-	-	-	2	101	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 T862 (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
5	* 1.205	37.56	PK	29	-26.1	0	40.46	-	-	74	-33.54	0-360	201	V
6	* 1.507	37.27	PK	27.9	-25.6	0	39.57	-	-	74	-34.43	0-360	201	V
1	* 12.298	30.16	PK	38.8	-26.6	0	42.36	-	-	74	-31.64	0-360	201	H
4	* 9.363	31.54	PK	36.6	-28.4	0	39.74	-	-	74	-34.26	0-360	100	H
3	* 3.807	35.61	PK	33	-33.2	0	35.41	-	-	74	-38.59	0-360	101	V
2	15.091	32.12	PK	39.8	-27.6	0	44.32	-	-	-	-	0-360	201	H

PK - Peak detector

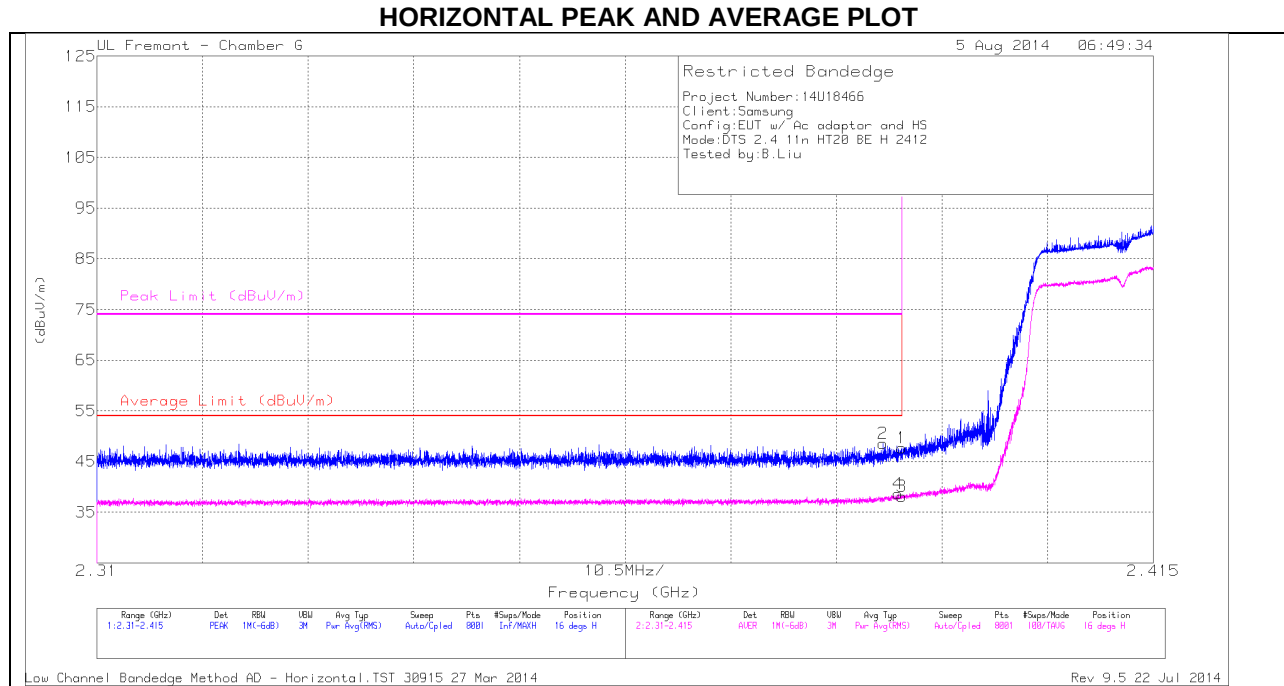
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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
* 1.204	44.24	PK2	29	-26	0	47.24	-	-	74	-26.76	0	202	V
* 1.508	44.58	PK2	28	-25.6	0	46.98	-	-	74	-27.02	0	202	V
* 12.298	36.65	PK2	38.8	-26.6	0	48.85	-	-	74	-25.15	0	202	H
* 9.361	37.94	PK2	36.6	-28.5	0	46.04	-	-	74	-27.96	0	102	H
* 3.806	42.17	PK2	33	-33.2	0	41.97	-	-	74	-32.03	0	102	V
15.092	37.42	PK2	39.8	-27.7	0	49.52	-	-	-	-	0	202	H

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

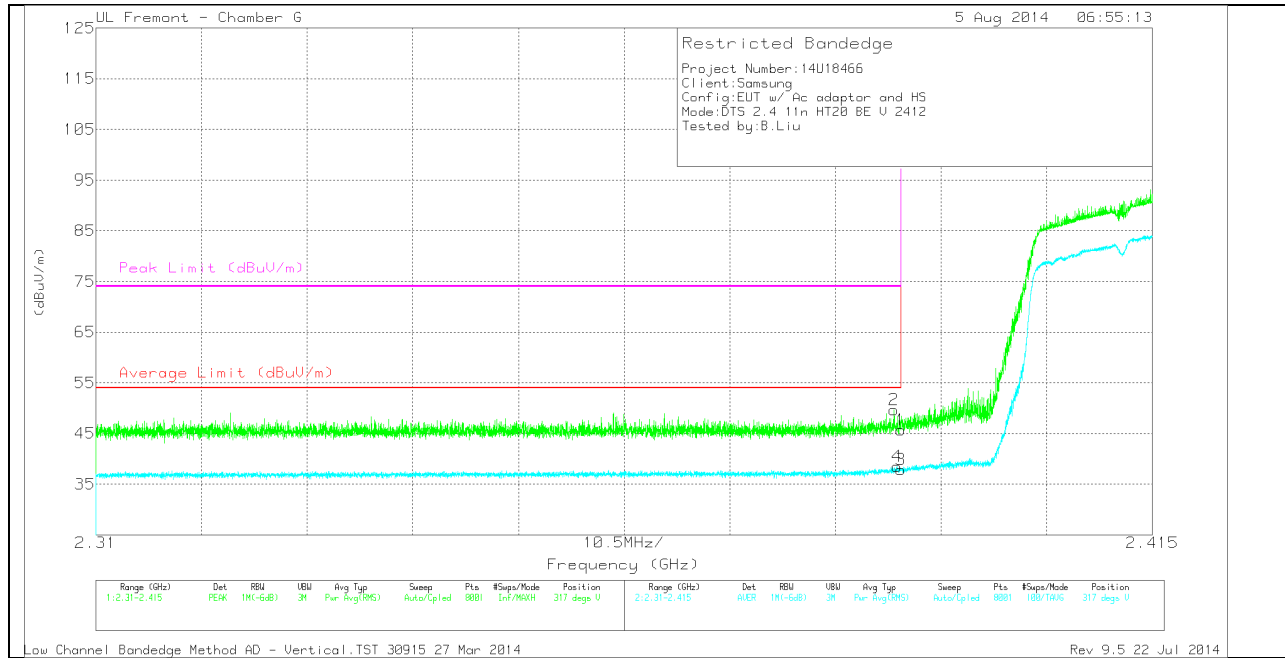
RESTRICTED BANDEDGE (LOW CHANNEL)



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	40.81	PK	31.8	-24.9	0	47.71	-	-	74	-26.29	16	358	H
2	* 2.388	41.68	PK	31.8	-24.9	0	48.58	-	-	74	-25.42	16	358	H
3	* 2.39	30.97	RMS	31.8	-24.9	.22	38.09	54	-15.91	-	-	16	358	H
4	* 2.39	31.48	RMS	31.8	-24.9	.22	38.6	54	-15.4	-	-	16	358	H

VERTICAL PEAK AND AVERAGE PLOT

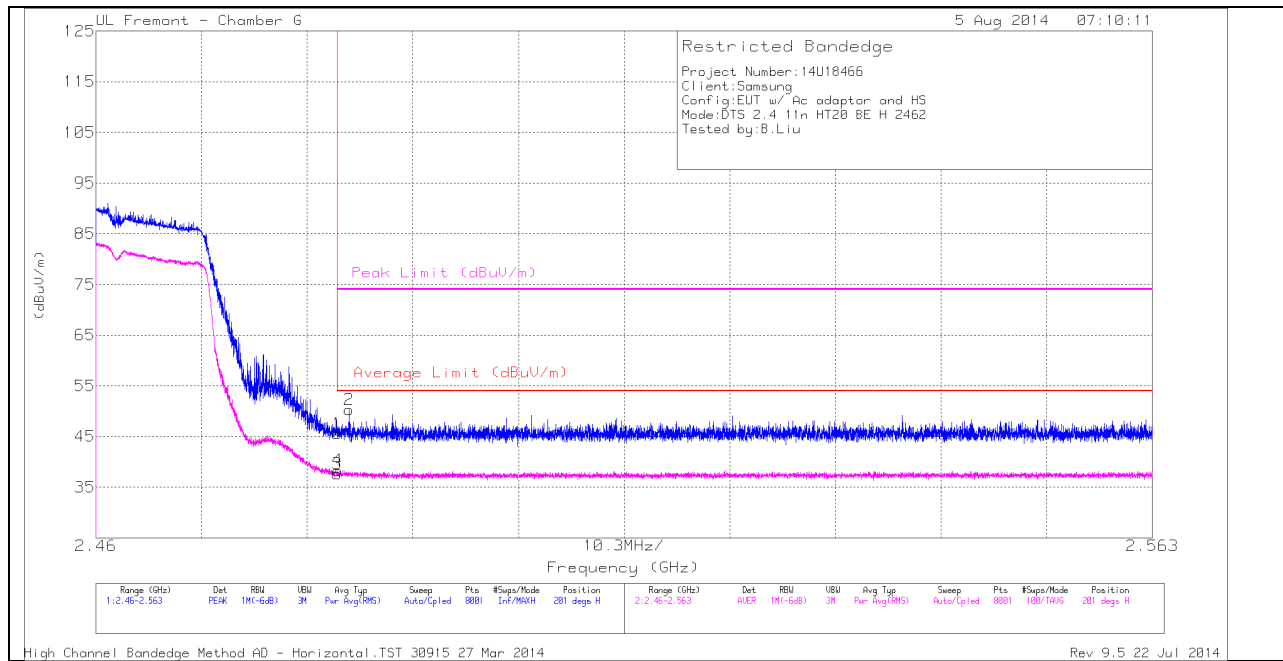


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	38.77	PK	31.8	-24.9	0	45.67	-	-	74	-28.33	317	358	V
2	* 2.389	42.8	PK	31.8	-24.9	0	49.7	-	-	74	-24.3	317	358	V
3	* 2.39	30.72	RMS	31.8	-24.9	.22	37.84	54	-16.16	-	-	317	358	V
4	* 2.39	31.33	RMS	31.8	-24.9	.22	38.45	54	-15.55	-	-	317	358	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

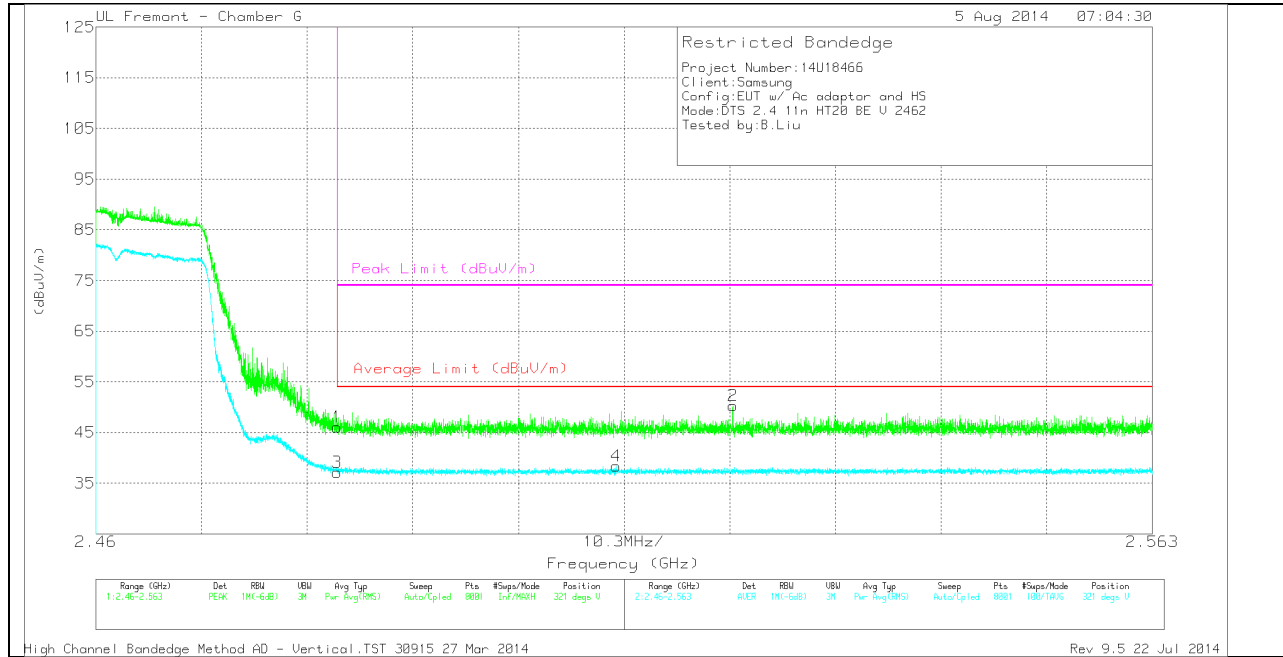
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 2.484	38.48	PK	32	-24.9	0	45.58	-	-	74	-28.42	201	343	H
2	* 2.485	43.17	PK	32	-24.9	0	50.27	-	-	74	-23.73	201	343	H
3	* 2.484	30.3	RMS	32	-24.9	.22	37.62	54	-16.38	-	-	201	343	H
4	* 2.484	30.99	RMS	32	-24.9	.22	38.31	54	-15.69	-	-	201	343	H

VERTICAL PEAK AND AVERAGE PLOT

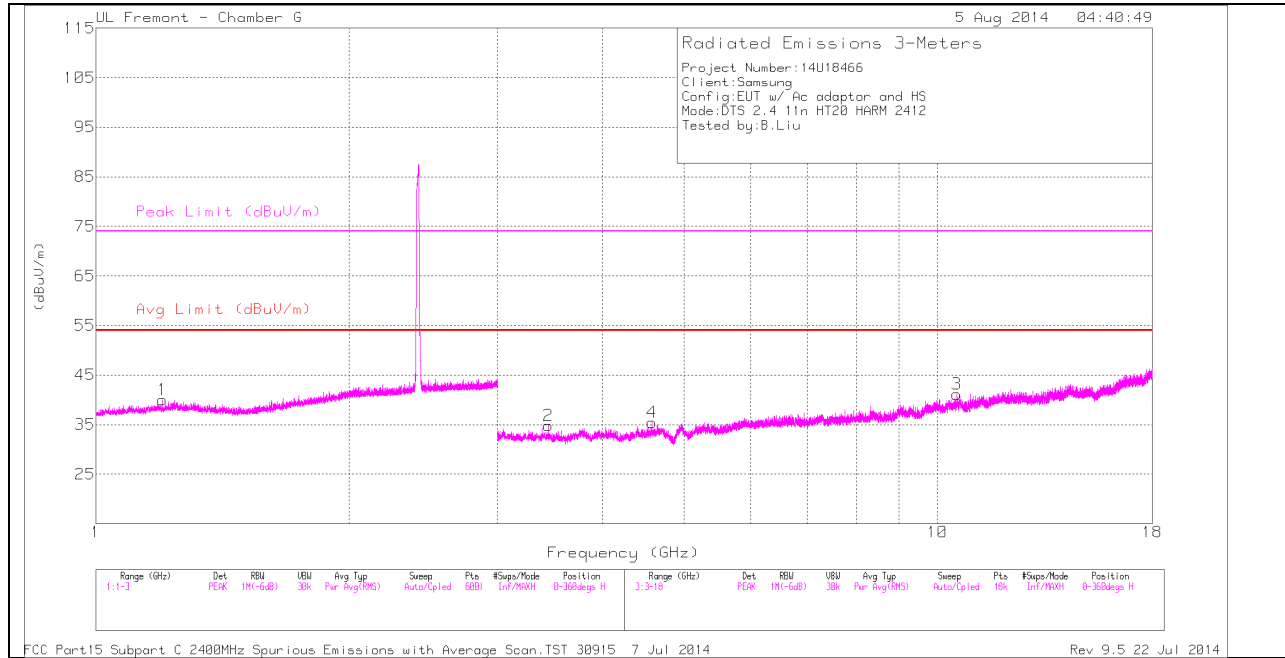


VERTICAL DATA

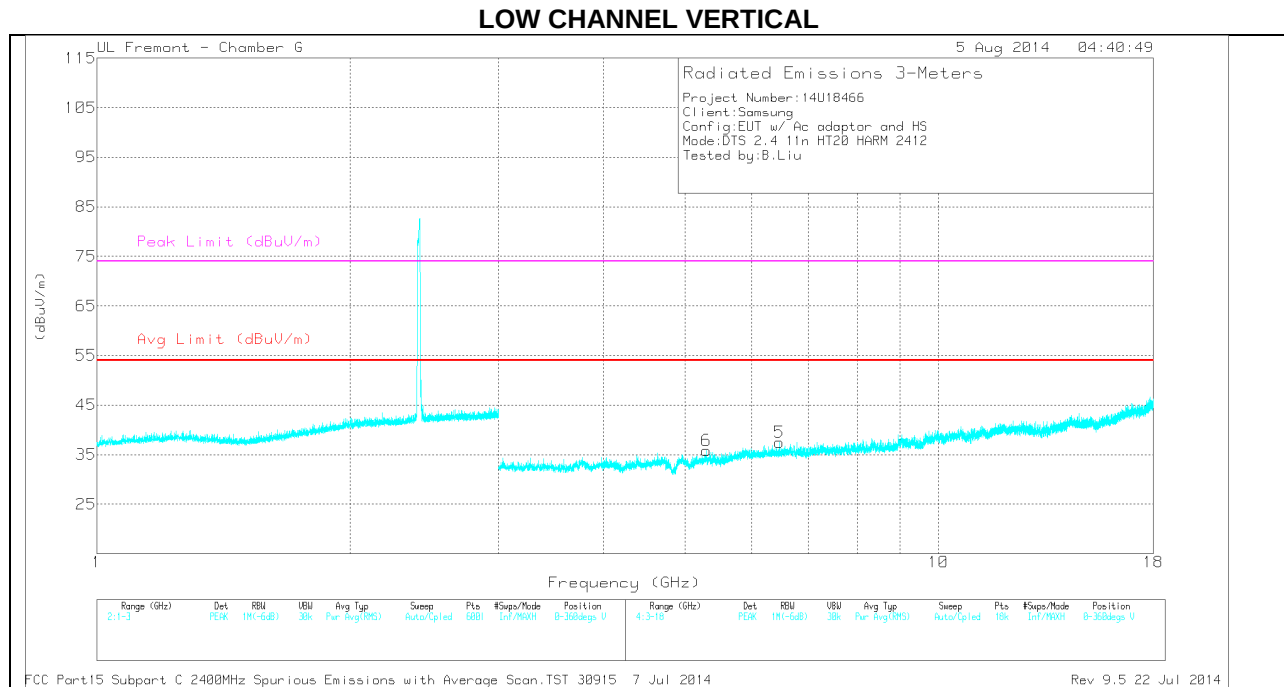
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.97	PK	32	-24.9	0	46.07	-	-	74	-27.93	321	338	V
3	* 2.484	29.76	RMS	32	-24.9	.22	37.08	54	-16.92	-	-	321	338	V
4	2.511	31	RMS	32	-24.9	.22	38.32	54	-15.68	-	-	321	338	V
2	2.522	43.14	PK	32	-24.9	0	50.24	-	-	74	-23.76	321	338	V

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 T862 (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	* 1.2	37.01	PK	29	-26	0	40.01	-	-	74	-33.99	0-360	100	H
4	* 4.577	34.7	PK	33.8	-33.1	0	35.4	-	-	74	-38.6	0-360	201	H
2	3.449	35.04	PK	32.8	-33	0	34.84	-	-	-	-	0-360	201	H
6	5.296	34.37	PK	34.5	-33	0	35.87	-	-	-	-	0-360	201	V
5	6.473	34.91	PK	35.6	-33	0	37.51	-	-	-	-	0-360	201	V
3	10.549	30.4	PK	37.6	-26.9	0	41.1	-	-	-	-	0-360	101	H

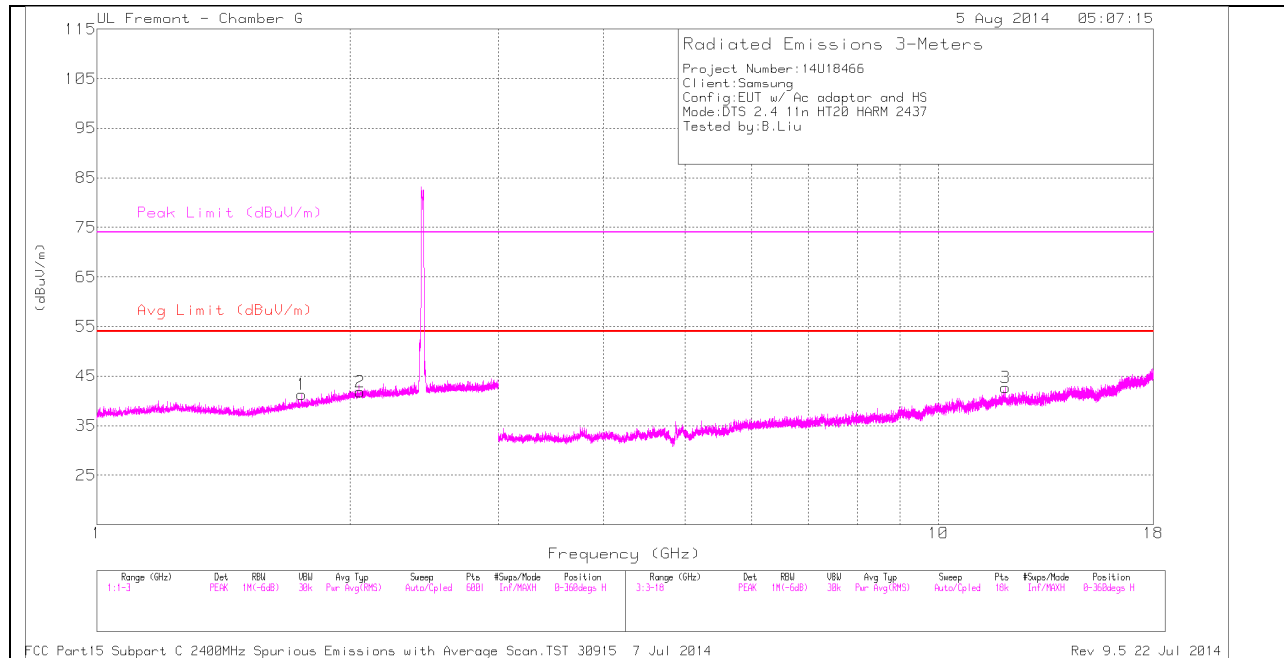
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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
* 1.199	43.86	PK2	29	-26	0	46.86	-	-	74	-27.14	0	100	H
* 4.578	41.5	PK2	33.8	-33.1	0	42.2	-	-	74	-31.8	0	202	H
3.45	41.88	PK2	32.8	-33	0	41.68	-	-	-	-	0	202	H
5.295	40.81	PK2	34.5	-33.1	0	42.21	-	-	-	-	0	202	V
6.473	42.03	PK2	35.6	-33	0	44.63	-	-	-	-	0	202	V
10.547	37.18	PK2	37.6	-26.9	0	47.88	-	-	-	-	0	102	H

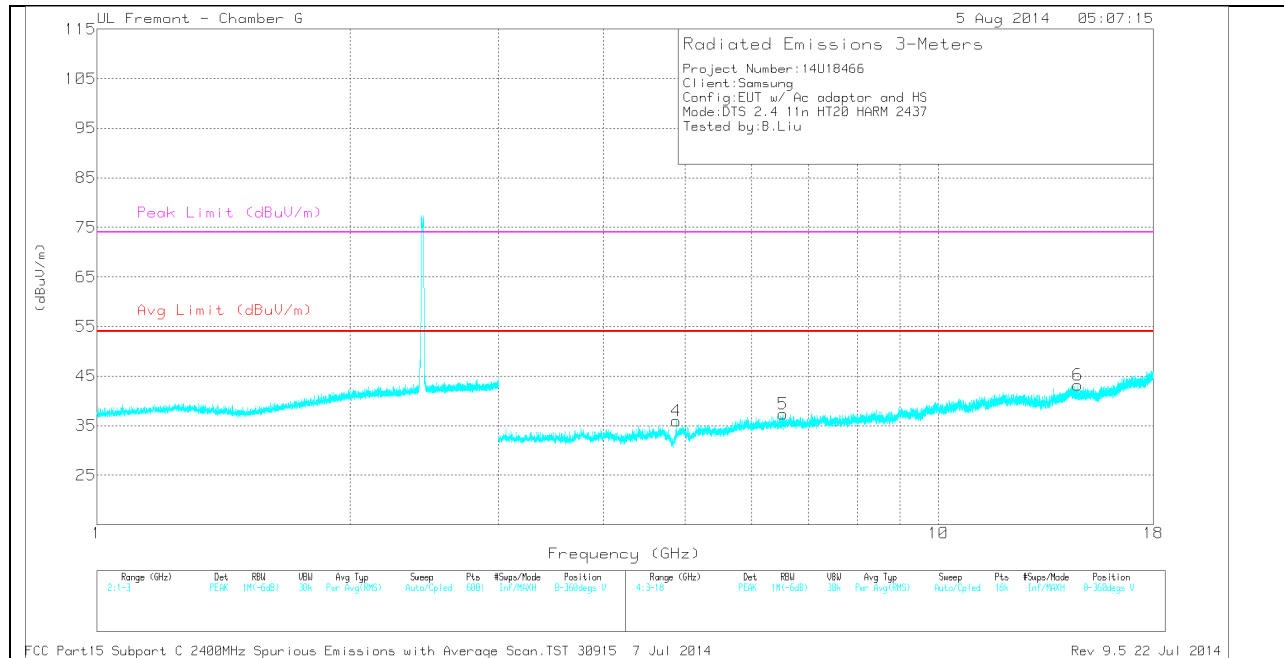
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MID CHANNEL HORIZONTAL



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 T862 (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
3	* 12.014	30.21	PK	38.8	-26.3	0	42.71	-	-	74	-31.29	0-360	100	H
4	* 4.877	34.93	PK	34.1	-33.1	0	35.93	-	-	74	-38.07	0-360	101	V
1	1.752	37.09	PK	29.6	-25.4	0	41.29	-	-	-	-	0-360	101	H
2	2.054	35.7	PK	31.3	-25.2	0	41.8	-	-	-	-	0-360	201	H
5	6.531	34.15	PK	35.6	-32.4	0	37.35	-	-	-	-	0-360	201	V
6	14.641	31.31	PK	40	-28.1	0	43.21	-	-	-	-	0-360	101	V

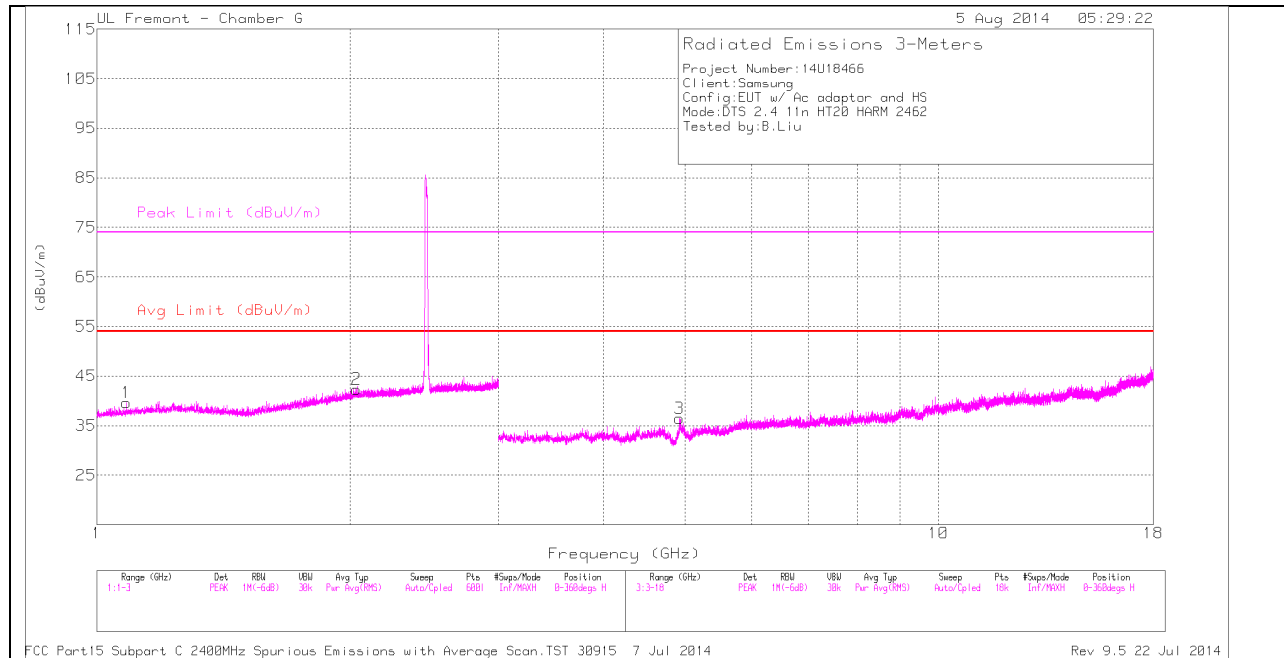
PK - Peak detector

RADIATED EMISSIONS

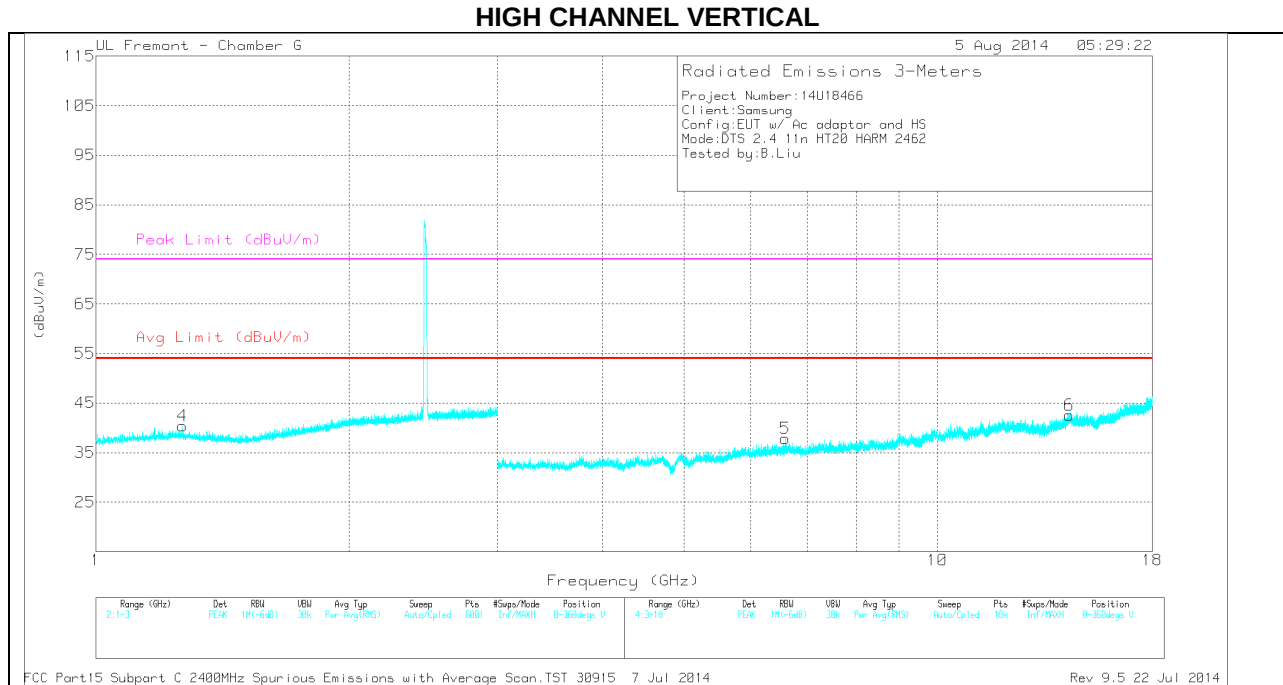
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.015	36.33	PK2	38.8	-26.3	0	48.83	-	-	74	-25.17	0	101	H
* 4.878	39.91	PK2	34.1	-33	0	41.01	-	-	74	-32.99	0	101	V
1.754	43.61	PK2	29.6	-25.4	0	47.81	-	-	-	-	0	101	H
2.052	43.34	PK2	31.3	-25.2	0	49.44	-	-	-	-	0	202	H
6.531	40.92	PK2	35.6	-32.4	0	44.12	-	-	-	-	0	202	V
14.643	37.57	PK2	40	-28.1	0	49.47	-	-	-	-	0	102	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 T862 (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	* 1.084	37.37	PK	28.4	-26.1	0	39.67	-	-	74	-34.33	0-360	201	H
4	* 1.268	37.37	PK	29.1	-26.1	0	40.37	-	-	74	-33.63	0-360	101	V
3	* 4.925	35.51	PK	34.1	-33.1	0	36.51	-	-	74	-37.49	0-360	201	H
2	2.034	36.26	PK	31.3	-25.2	0	42.36	-	-	-	-	0-360	102	H
5	6.589	33.72	PK	35.6	-31.5	0	37.82	-	-	-	-	0-360	101	V
6	14.339	29.99	PK	39.9	-27.3	0	42.59	-	-	-	-	0-360	101	V

PK - Peak detector

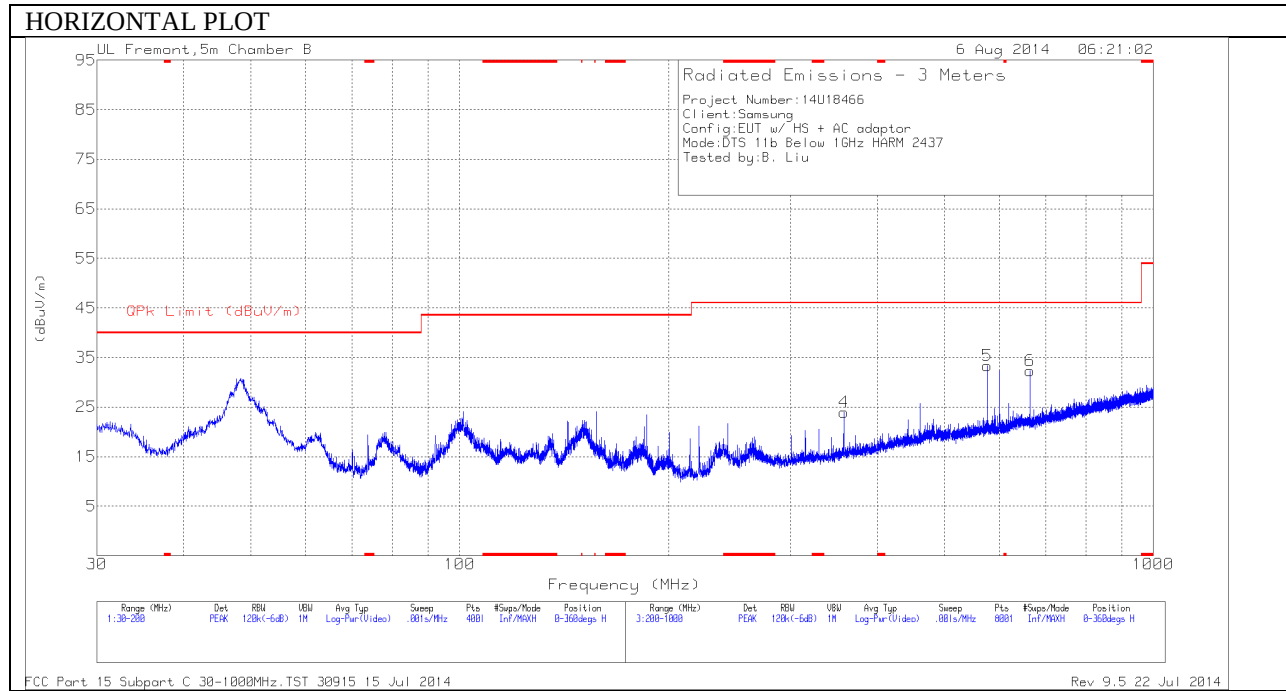
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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
* 1.083	44.22	PK2	28.4	-26.1	0	46.52	-	-	74	-27.48	0	202	H
* 1.27	43.57	PK2	29.1	-26.1	0	46.57	-	-	74	-27.43	0	102	V
* 4.923	41.25	PK2	34.1	-33.1	0	42.25	-	-	74	-31.75	0	202	H
2.033	43.57	PK2	31.3	-25.2	0	49.67	-	-	-	-	0	103	H
6.589	40.27	PK2	35.6	-31.5	0	44.37	-	-	-	-	0	102	V
14.34	37.16	PK2	39.9	-27.4	0	49.66	-	-	-	-	0	102	V

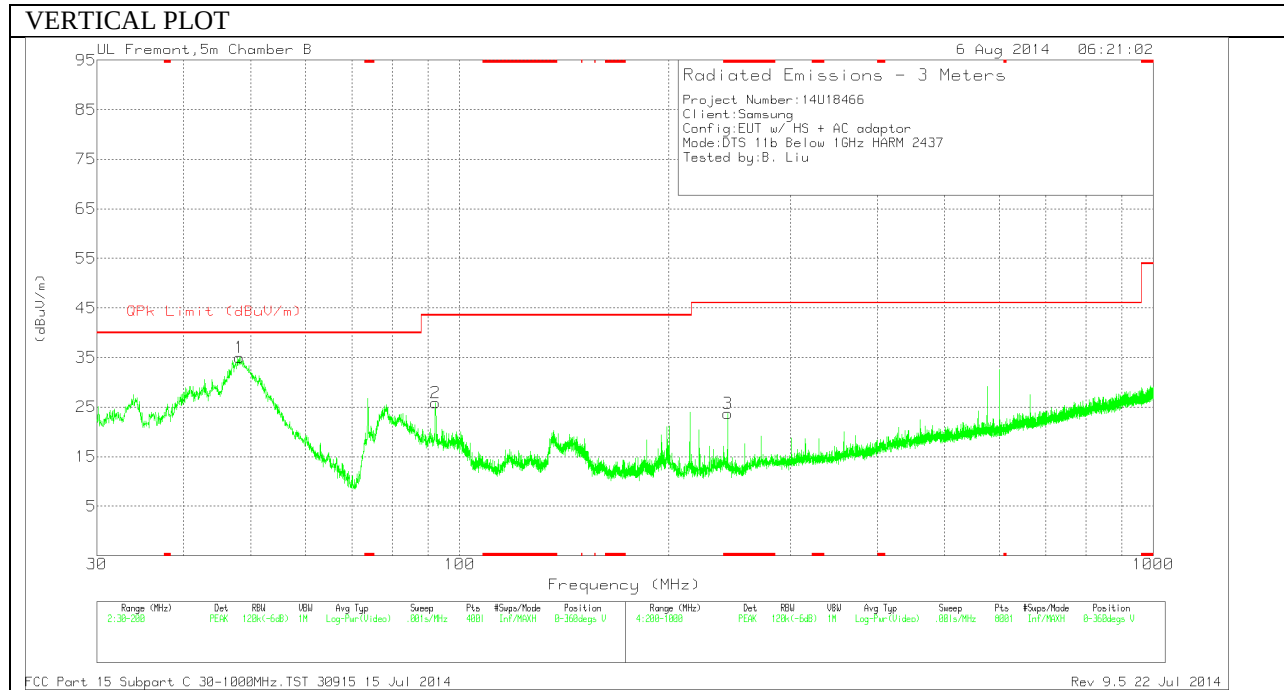
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10.3. WORST-CASE BELOW 1 GHz

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
3	* 243.4	38.43	PK	11.7	-26.4	23.73	46.02	-22.29	0-360	200	V
1	48.19	54.84	PK	8.7	-28.5	35.04	40	-4.96	0-360	101	V
2	92.305	45.74	PK	8.2	-28.1	25.84	43.52	-17.68	0-360	101	V
4	358	35.18	PK	14.6	-25.8	23.98	46.02	-22.04	0-360	300	H
5	576	40.19	PK	18.6	-25.5	33.29	46.02	-12.73	0-360	400	H
6	664.1	37.68	PK	19.6	-24.9	32.38	46.02	-13.64	0-360	101	H

11. 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.

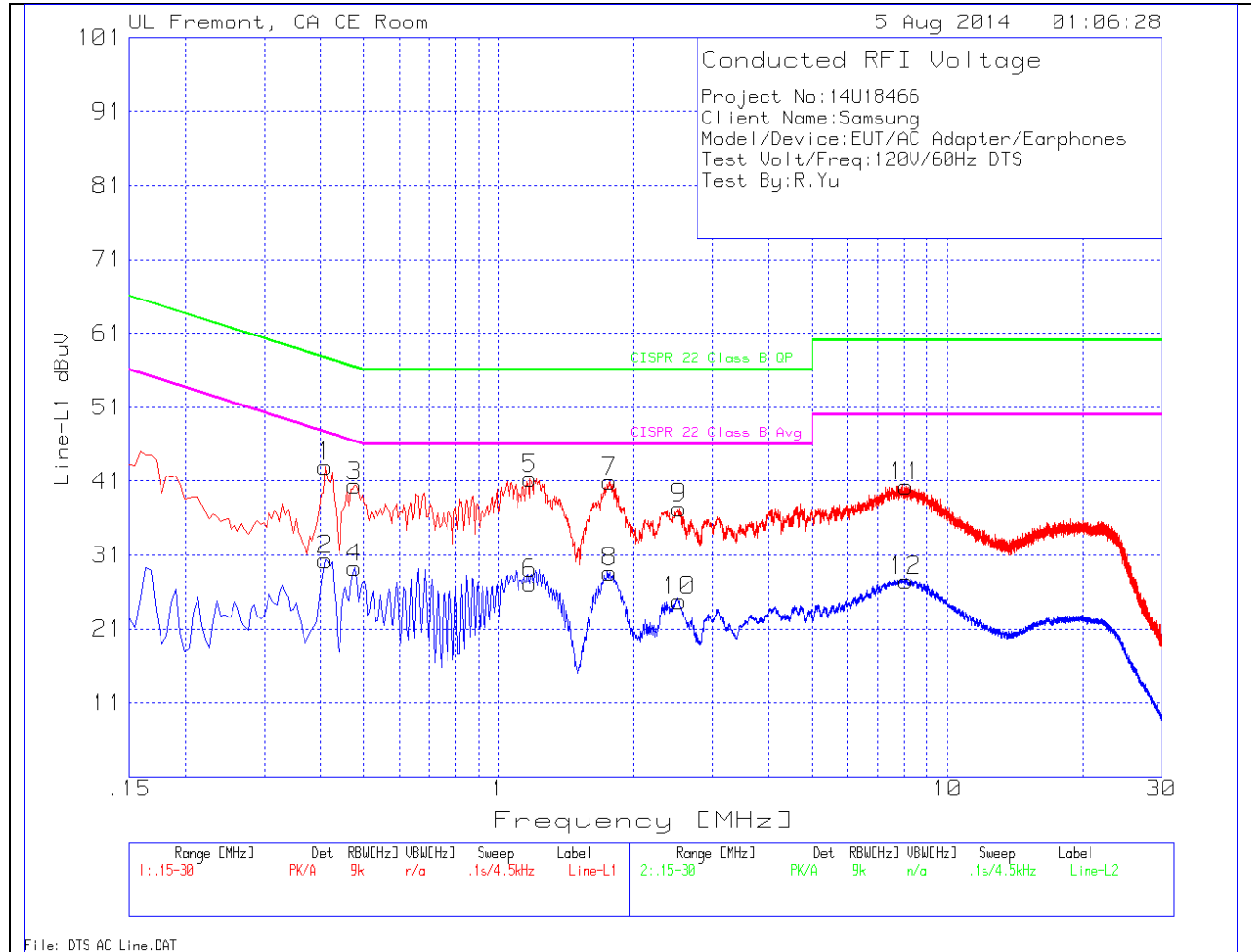
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT

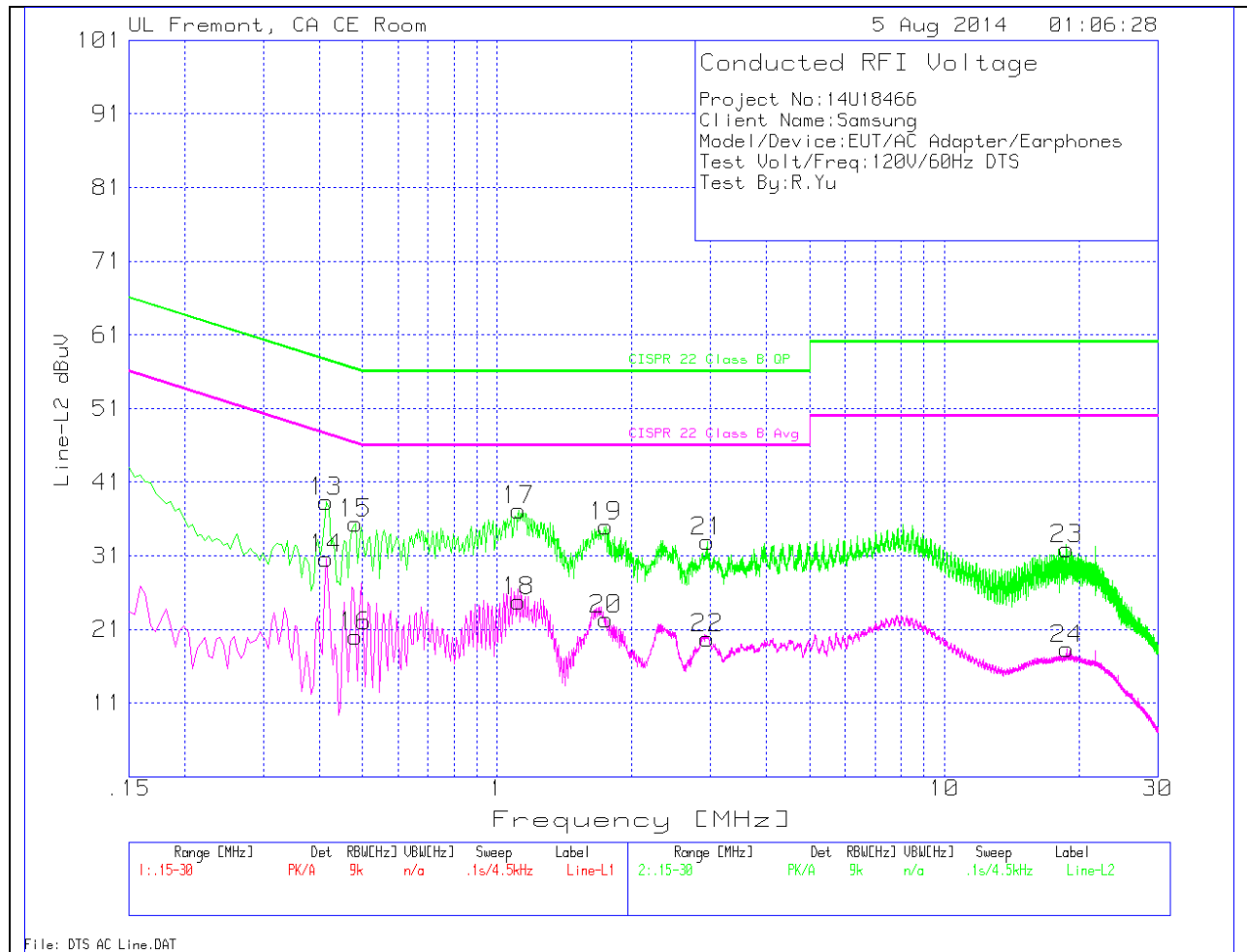


LINE 1 RESULTS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.411	42.61	PK	.4	0	43.01	57.6	-14.59	-	-
2	.411	29.91	Av	.4	0	30.31	-	-	47.6	-17.29
3	.4785	39.94	PK	.4	0	40.34	56.4	-16.06	-	-
4	.4785	28.86	Av	.4	0	29.26	-	-	46.4	-17.14
5	1.176	41.07	PK	.2	0	41.27	56	-14.73	-	-
6	1.176	26.97	Av	.2	0	27.17	-	-	46	-18.83
7	1.7655	40.62	PK	.2	.1	40.92	56	-15.08	-	-
8	1.7655	28.43	Av	.2	.1	28.73	-	-	46	-17.27
9	2.5215	37.01	PK	.2	.1	37.31	56	-18.69	-	-
10	2.5215	24.55	Av	.2	.1	24.85	-	-	46	-21.15
11	8.088	40.02	PK	.2	.1	40.32	60	-19.68	-	-
12	8.088	27.21	Av	.2	.1	27.51	-	-	50	-22.49

LINE 2 PLOT



LINE 2 RESULTS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
13	.4155	37.93	PK	.4	0	38.33	57.5	-19.17	-	-
14	.4155	30.25	Av	.4	0	30.65	-	-	47.5	-16.85
15	.483	34.99	PK	.4	0	35.39	56.3	-20.91	-	-
16	.483	19.62	Av	.4	0	20.02	-	-	46.3	-26.28
17	1.1175	36.87	PK	.3	0	37.17	56	-18.83	-	-
18	1.1175	24.48	Av	.3	0	24.78	-	-	46	-21.22
19	1.7475	34.66	PK	.2	.1	34.96	56	-21.04	-	-
20	1.7475	22.03	Av	.2	.1	22.33	-	-	46	-23.67
21	2.9535	32.59	PK	.2	.1	32.89	56	-23.11	-	-
22	2.9535	19.5	Av	.2	.1	19.8	-	-	46	-26.2
23	18.753	31.36	PK	.3	.2	31.86	60	-28.14	-	-
24	18.753	17.8	Av	.3	.2	18.3	-	-	50	-31.7