



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

CDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + NFC

MODEL NUMBER: LG-VS880, VS880, LGVS880

FCC ID: ZNFVS880

REPORT NUMBER: 14U17222-4

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Prepared for

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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION.....	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION	6
4.2. SAMPLE CALCULATION.....	6
4.3. MEASUREMENT UNCERTAINTY	6
5. EQUIPMENT UNDER TEST	7
5.1. DESCRIPTION OF EUT.....	7
5.2. MAXIMUM OUTPUT POWER.....	7
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	7
5.4. WORST-CASE CONFIGURATION AND MODE.....	8
5.5. DESCRIPTION OF TEST SETUP.....	9
6. TEST AND MEASUREMENT EQUIPMENT	11
7. MEASUREMENT METHODS.....	12
8. SUMMARY TABLE	13
9. ANTENNA PORT TEST RESULTS	14
9.1. 6 dB BANDWIDTH	14
9.1.1. 802.11b MODE IN THE 2.4 GHz BAND.....	15
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND.....	15
9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND.....	15
9.1.4. 802.11a MODE IN THE 5.8 GHz BAND.....	15
9.1.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND.....	16
9.1.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND.....	16
9.2. 99% BANDWIDTH.....	23
9.2.1. 802.11b MODE IN THE 2.4 GHz BAND.....	23
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND.....	23
9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND.....	23
9.2.4. 802.11a MODE IN THE 5.8 GHz BAND.....	23
9.2.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND.....	24
9.2.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND.....	24
9.3. AVERAGE POWER.....	31
9.3.1. 802.11b MODE IN THE 2.4 GHz BAND.....	32
9.3.2. 802.11g MODE IN THE 2.4 GHz BAND.....	32
9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND.....	32
9.3.4. 802.11a MODE IN THE 5.8 GHz BAND.....	32
9.3.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND.....	32

9.3.6.	802.11n HT40 MODE IN THE 5.8 GHz BAND	33
9.4.	OUTPUT POWER	34
9.4.1.	802.11b MODE IN THE 2.4 GHz BAND	35
9.4.2.	802.11g MODE IN THE 2.4 GHz BAND	35
9.4.3.	802.11n HT20 MODE IN THE 2.4 GHz BAND	36
9.4.4.	802.11a MODE IN THE 5.8 GHz BAND	36
9.4.5.	802.11n HT20 MODE IN THE 5.8 GHz BAND	37
9.4.6.	802.11n HT40 MODE IN THE 5.8 GHz BAND	37
9.5.	PSD	44
9.5.1.	802.11b MODE IN THE 2.4 GHz BAND	44
9.5.2.	802.11g MODE IN THE 2.4 GHz BAND	44
9.5.3.	802.11n HT20 MODE IN THE 2.4 GHz BAND	44
9.5.4.	802.11a MODE IN THE 5.8 GHz BAND	45
9.5.5.	802.11n HT20 MODE IN THE 5.8 GHz BAND	45
9.5.6.	802.11n HT40 MODE IN THE 5.8 GHz BAND	45
9.6.	OUT-OF-BAND EMISSIONS	52
9.6.1.	802.11b MODE IN THE 2.4 GHz BAND	53
9.6.2.	802.11g MODE IN THE 2.4 GHz BAND	59
9.6.3.	802.11n MODE IN THE 2.4 GHz BAND	65
9.6.4.	802.11a MODE IN THE 5.8 GHz BAND	71
9.6.5.	802.11n MODE IN THE 5.8 GHz BAND	77
9.6.6.	802.11n HT40 MODE IN THE 5.8 GHz BAND	83
10.	RADIATED TEST RESULTS	88
10.1.	LIMITS AND PROCEDURE	88
10.2.	TRANSMITTER ABOVE 1 GHz	89
10.2.1.	TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND	89
10.2.2.	TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND	102
10.2.3.	TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND	115
10.2.1.	TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND	128
10.2.1.	TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND	137
10.2.1.	TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND	146
10.3.	WORST-CASE BELOW 1 GHz	152
11.	AC POWER LINE CONDUCTED EMISSIONS	155
12.	SETUP PHOTOS	159

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION: CDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + NFC
MODEL: LG-VS880, VS880, LGVS880
SERIAL NUMBER: 1838501 (Conducted), 1838500 (Radiated)
DATE TESTED: MARCH 21-27, 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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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 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
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 CDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + 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	18.87	77.09
2412 - 2462	802.11g	22.59	181.55
2412 - 2462	802.11n HT20	20.22	105.20
5745-5825	802.11a	19.56	90.36
5745-5825	802.11n HT20	18.88	77.27
5755-5795	802.11n HT40	18.63	72.95

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -6.9dBi for 2.4 and -4.27dBi for 5GHz

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	LG Electronics	MCS-01WD	DB3Y0094683	N/A
Earphone	LG Electronics	N/A	N/A	N/A

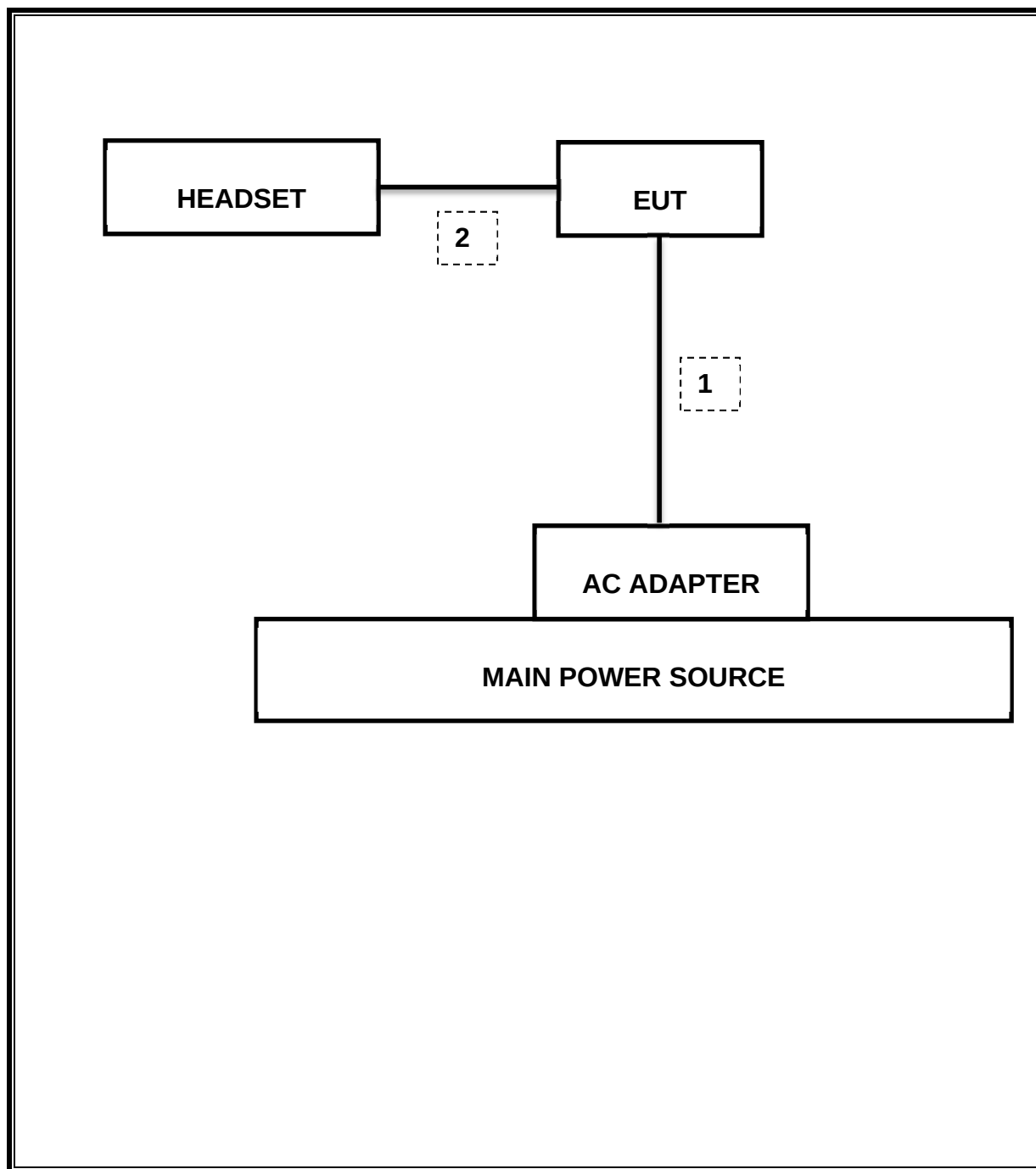
I/O CABLES

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	12/20/14
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	C00986	04/01/14
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	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/14
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/14
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	05/23/14
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/14
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/14

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r01:Measurement Procedure PK2 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	9.14MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-34.26dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	22.59dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-4.82dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	52.54dBuV/m
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	48.45dBuV/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 v03r01: 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	9.56	0.5
Mid	2437	9.54	0.5
High	2462	9.14	0.5
Worst		9.14	

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	15.35	0.5
Mid	2437	15.20	0.5
High	2462	15.20	0.5
Worst		15.20	

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	15.15	0.5
Mid	2437	15.20	0.5
High	2462	15.15	0.5
Worst		15.15	

9.1.4. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	15.570	0.5
Mid	5785	15.330	0.5
High	5825	15.180	0.5
Worst		15.180	

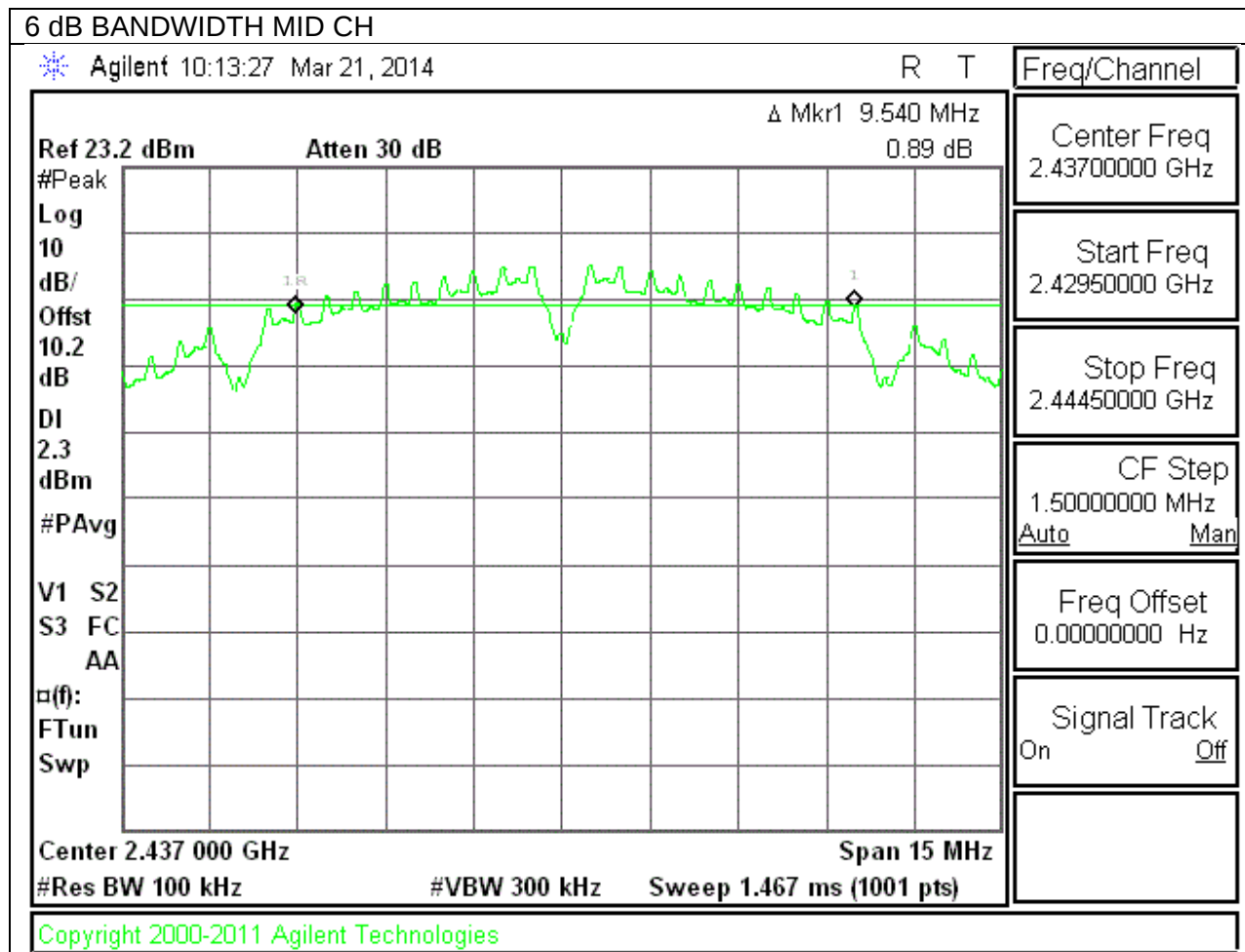
9.1.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.830	0.5
Mid	5785	16.920	0.5
High	5825	16.950	0.5
Worst		16.830	

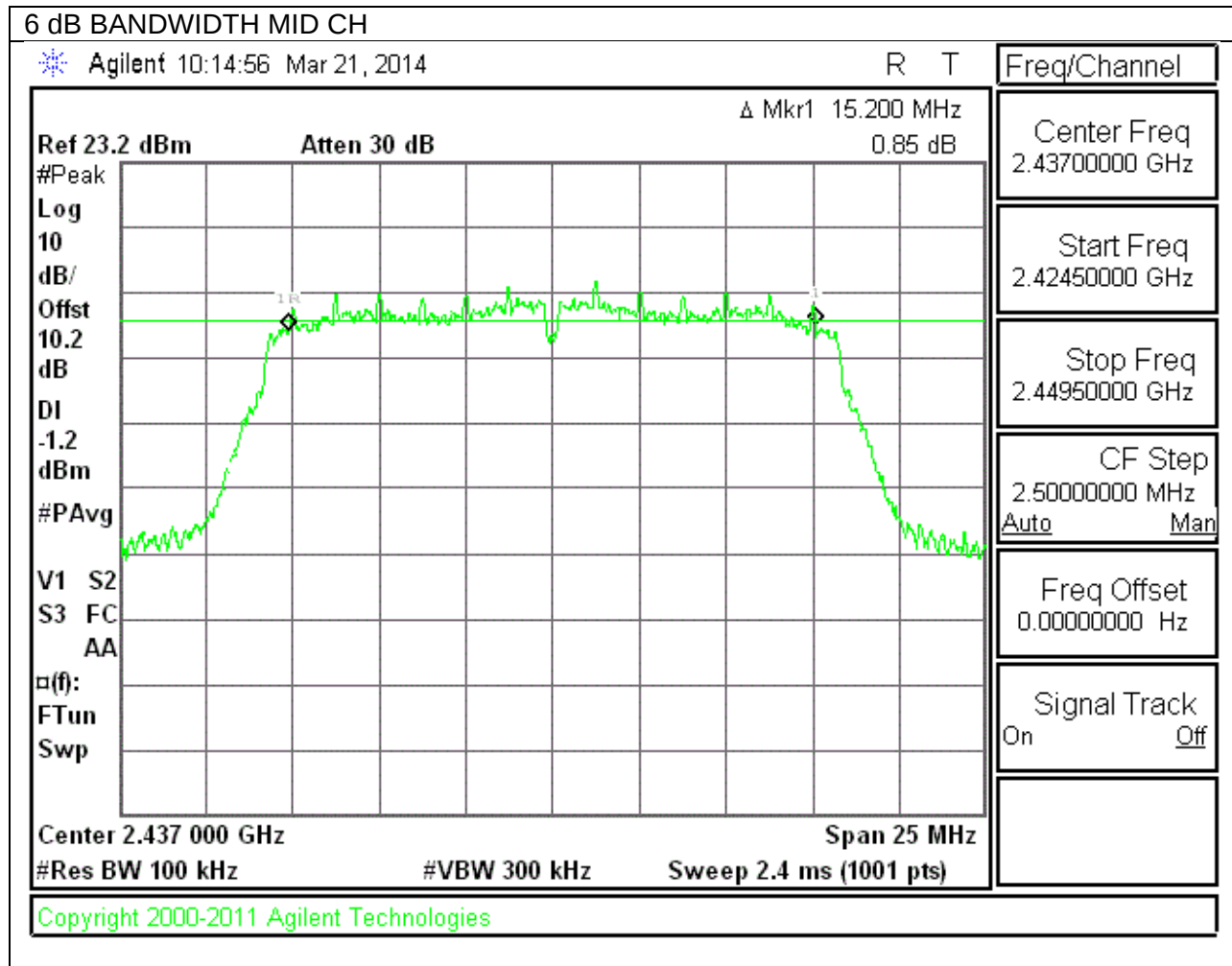
9.1.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.3	0.5
High	5795	35.3	0.5
Worst		35.3	0.5

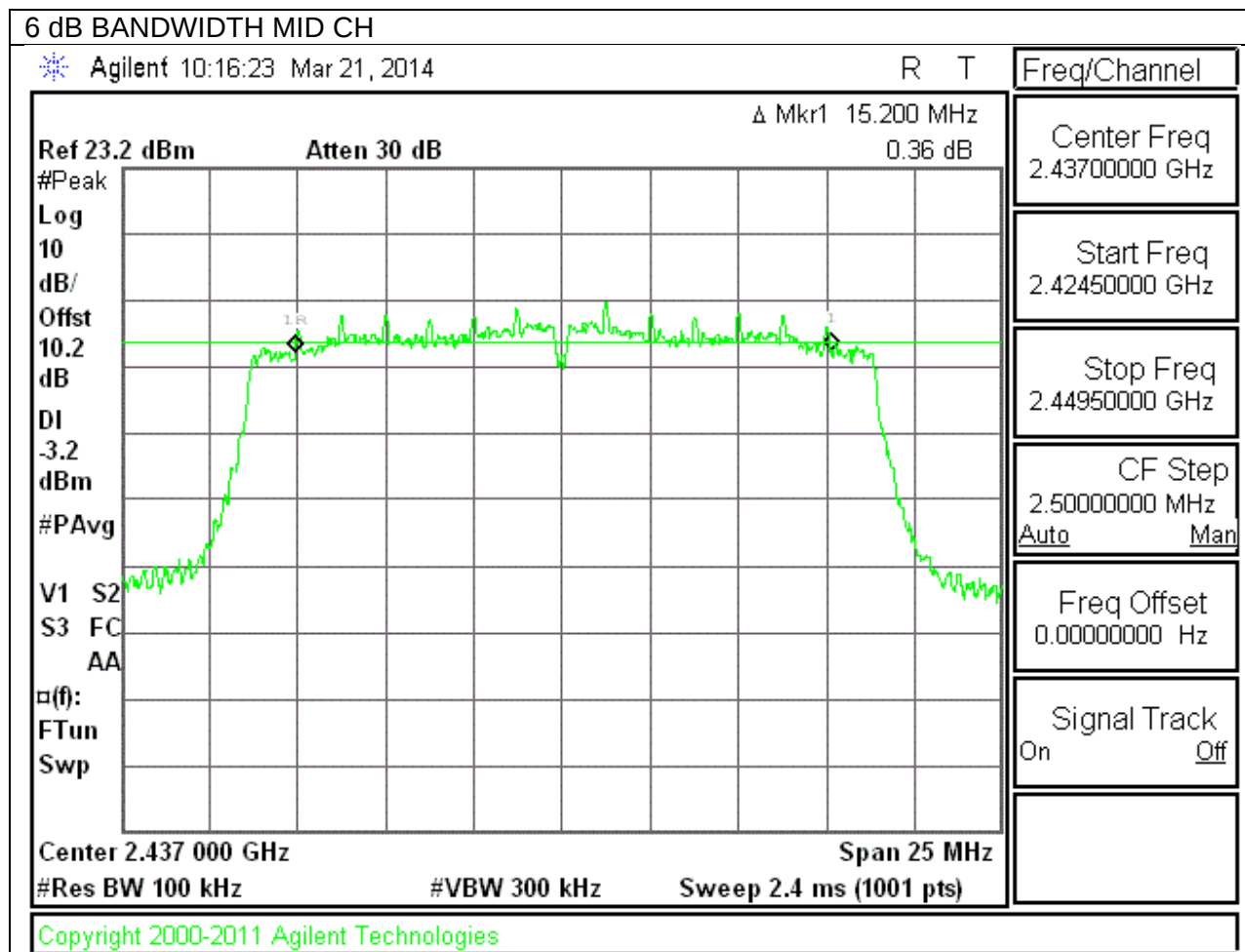
802.11b 6 dB BANDWIDTH



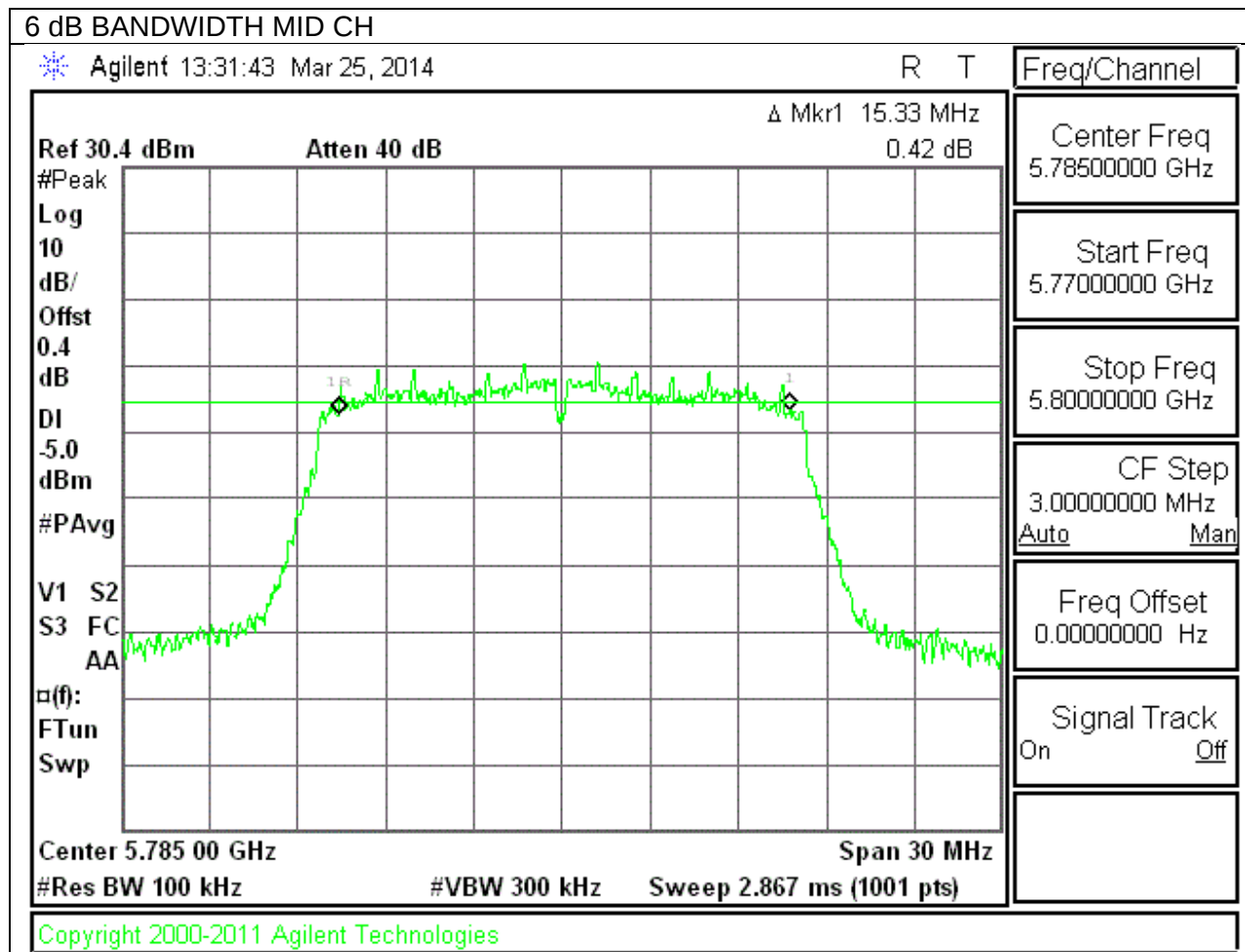
802.11g 6 dB BANDWIDTH



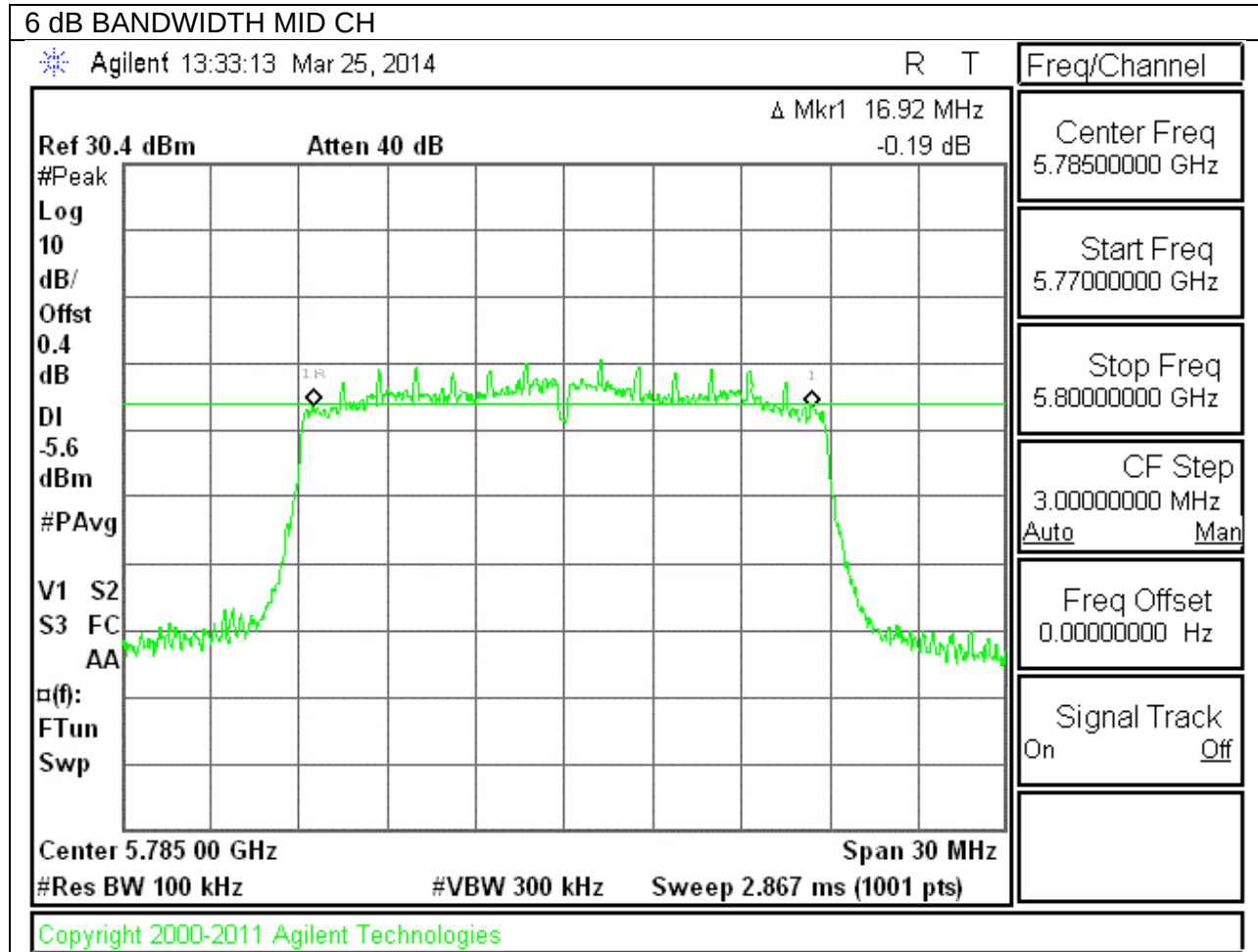
802.11n 6 dB BANDWIDTH



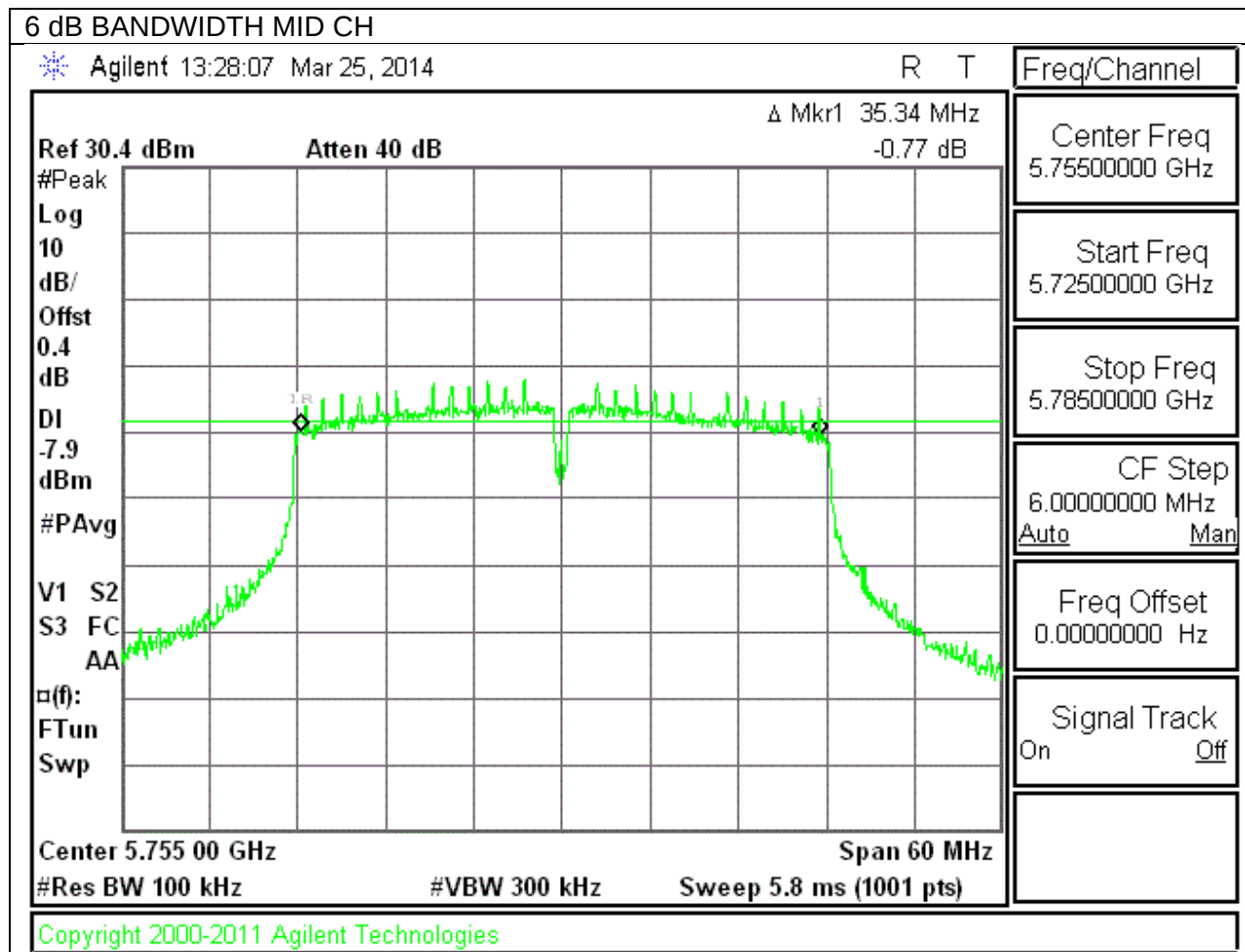
802.11a 6 dB BANDWIDTH 5.8GHz



802.11n HT20 6 dB BANDWIDTH 5.8GHz



802.11n HT40 6 dB BANDWIDTH 5.8GHz



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	14.00
Mid	2437	13.98
High	2462	14.02
Worst		14.02

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.34
Mid	2437	16.34
High	2462	16.32
Worst		16.34

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.49
Mid	2437	17.52
High	2462	17.50
Worst		17.52

9.2.4. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.168
Mid	5785	16.174
High	5825	16.363
Worst		16.363

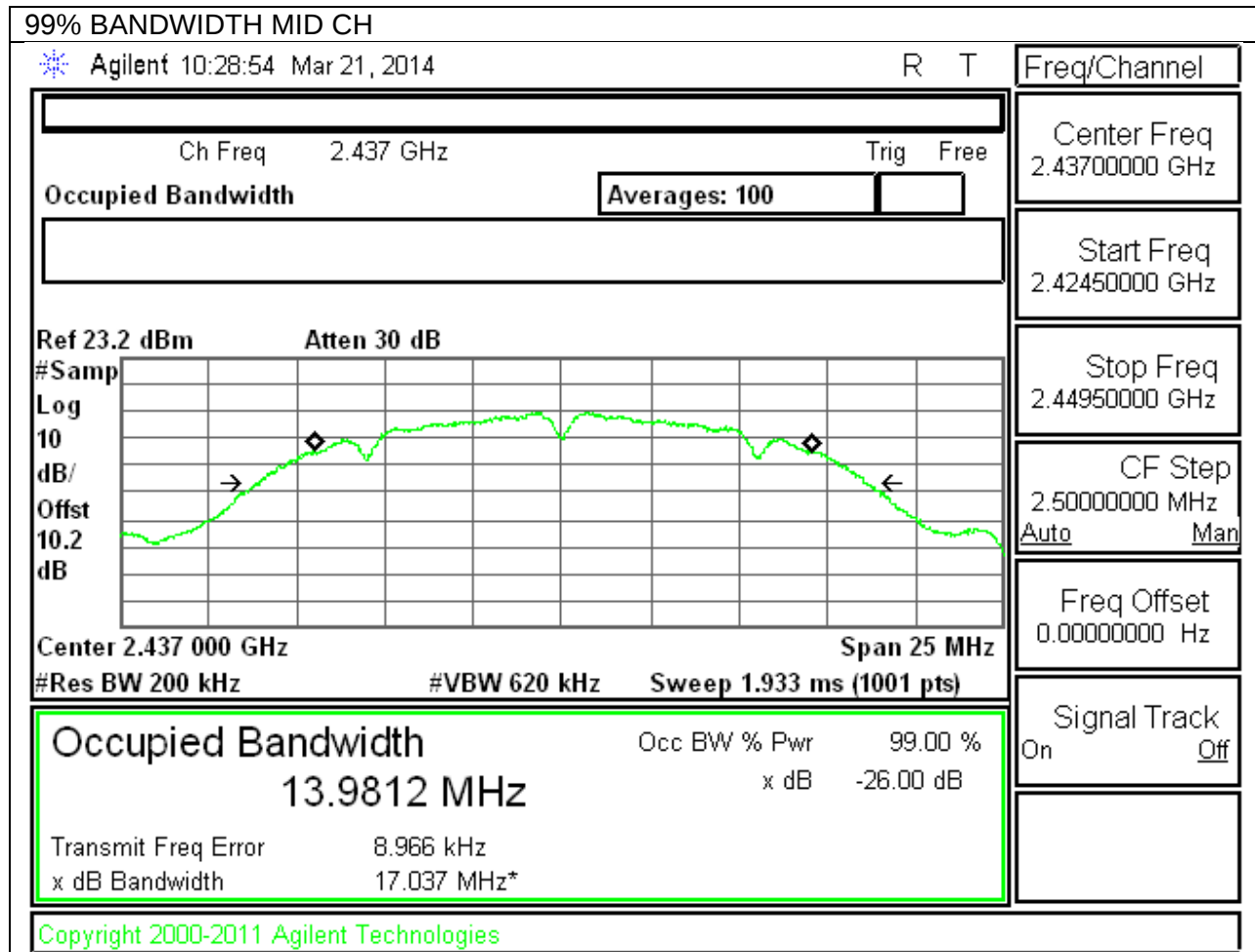
9.2.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.278
Mid	5785	17.382
High	5825	17.405
Worst		17.405

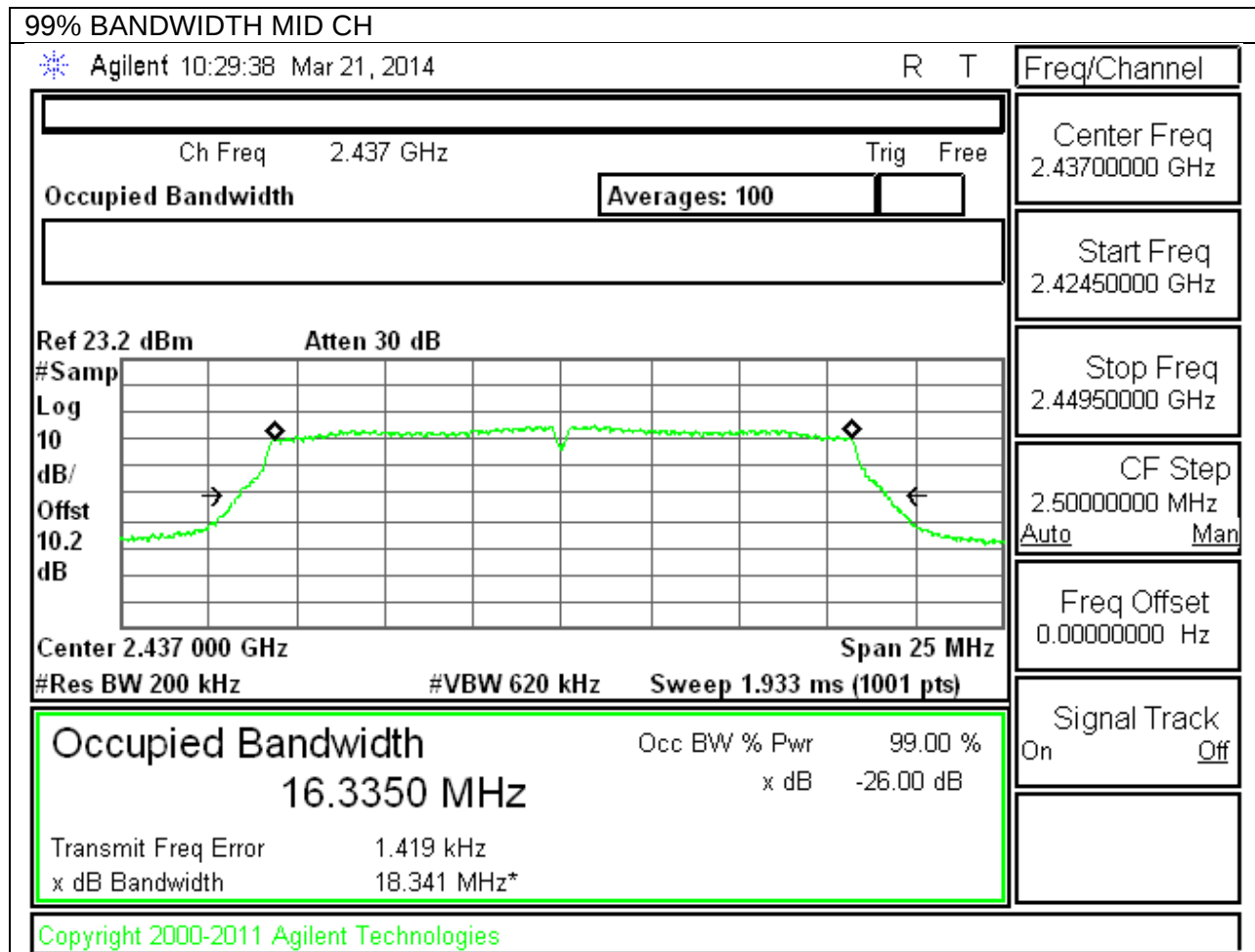
9.2.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	35.3
High	5795	35.4
Worst		35.4

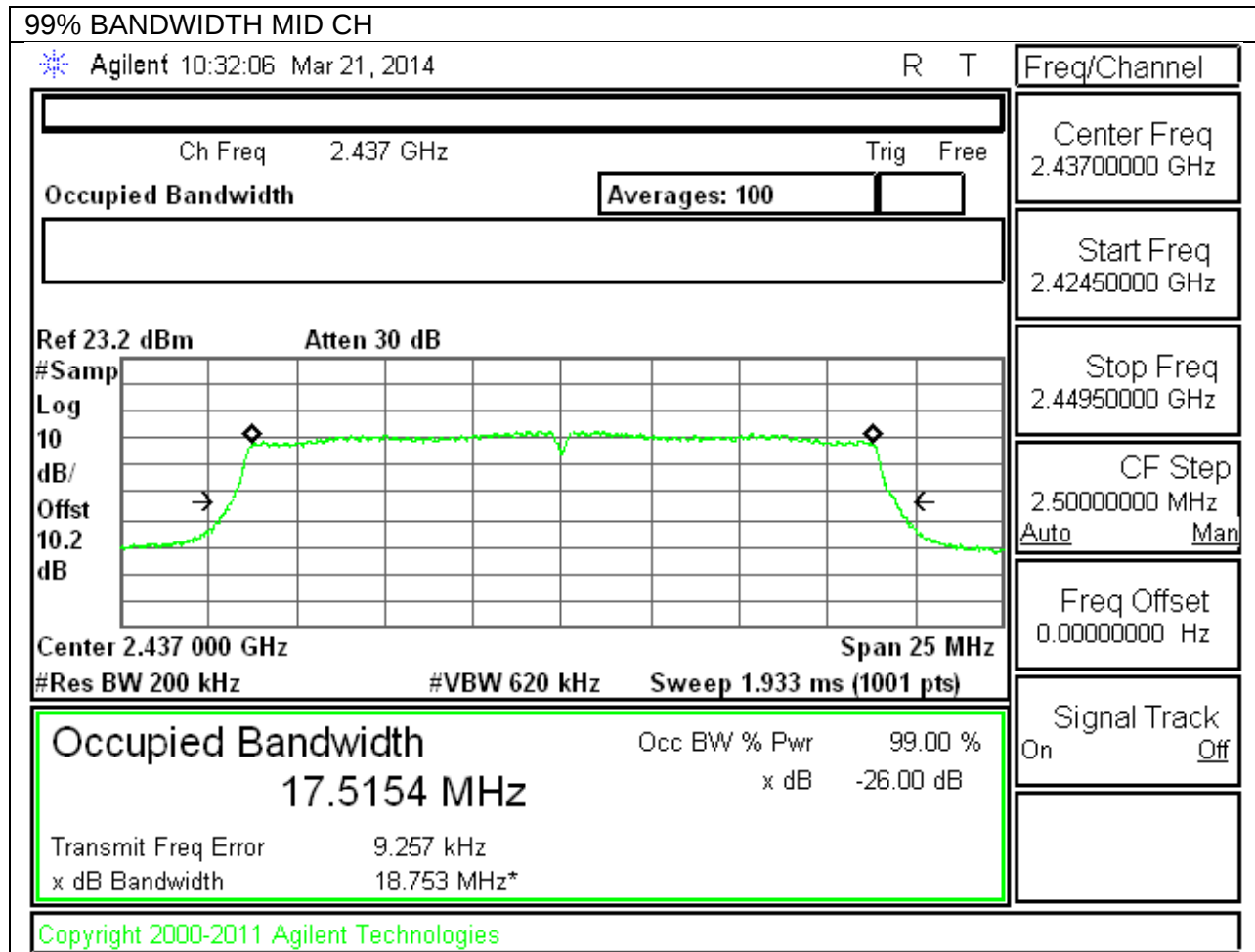
802.11b 99% BANDWIDTH



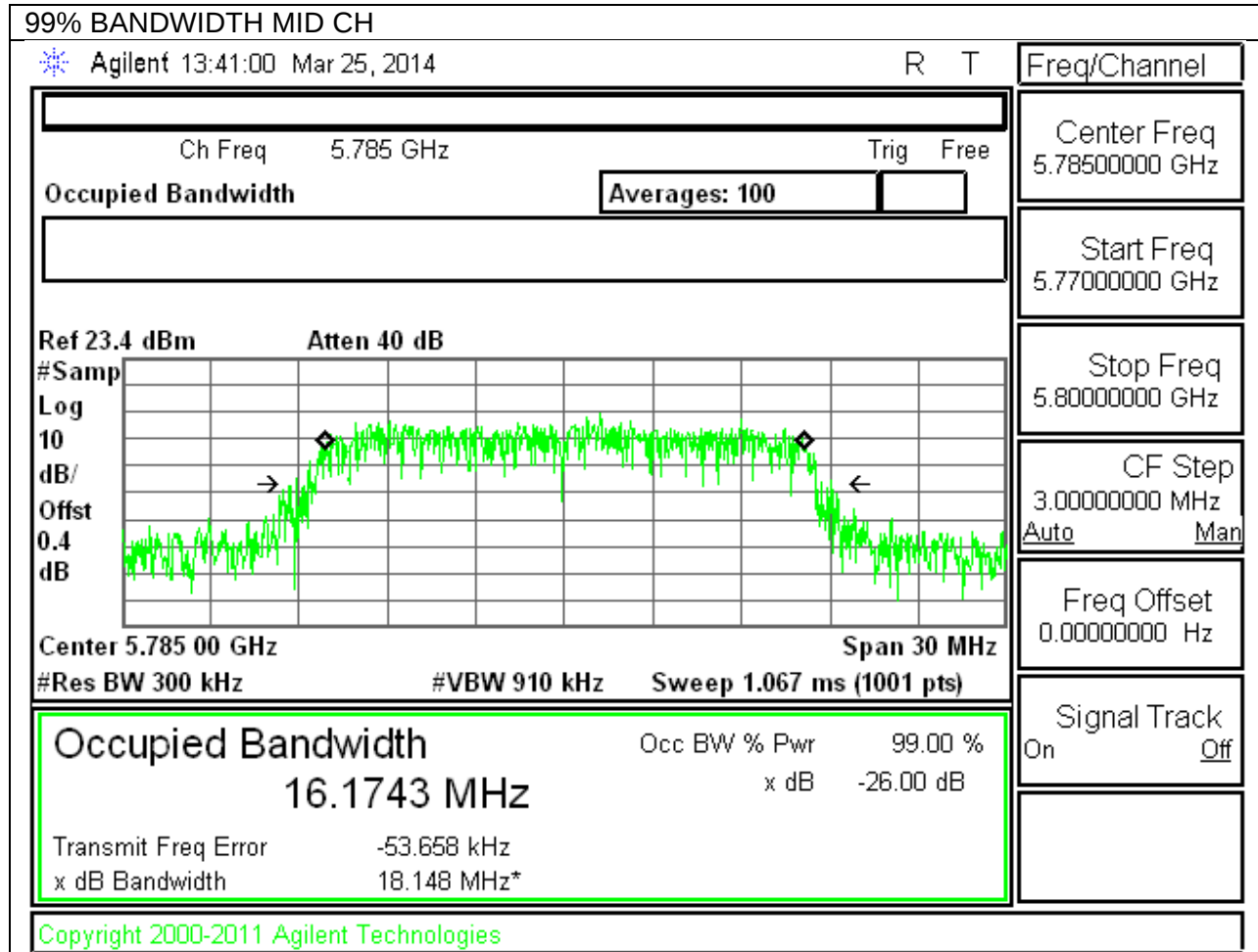
802.11g 99% BANDWIDTH



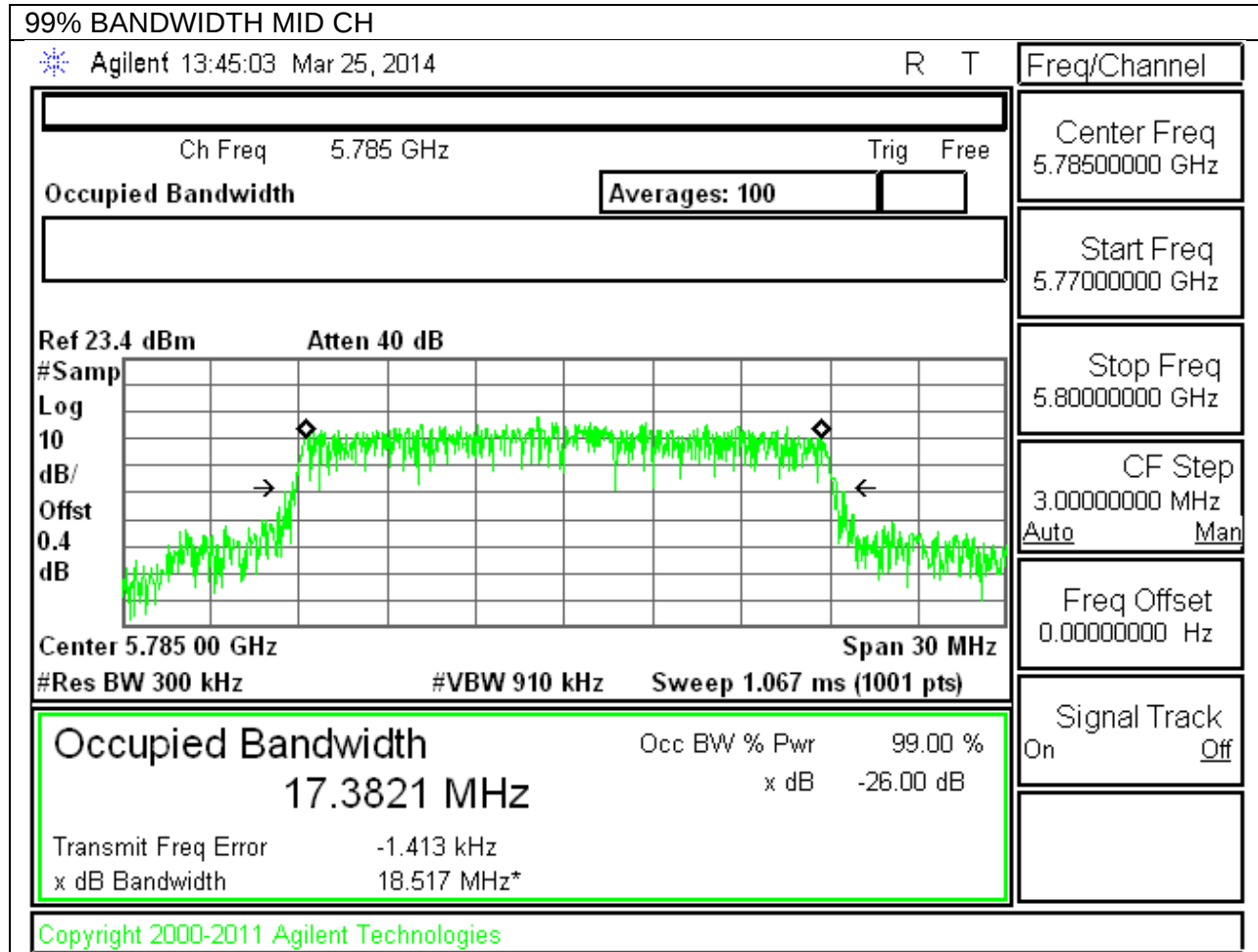
802.11n 99% BANDWIDTH



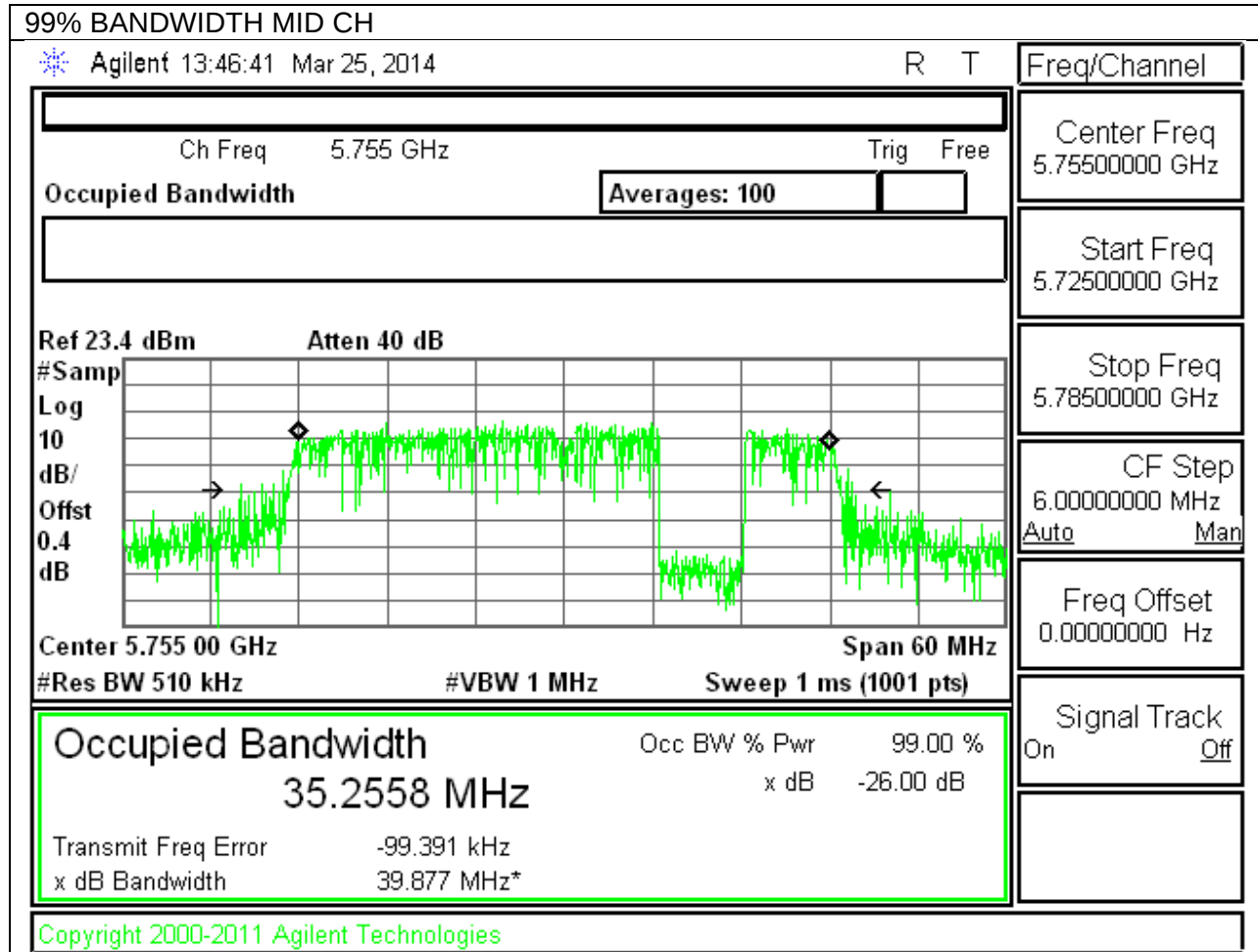
802.11a 5.8GHz 99% BANDWIDTH



802.11n HT20 5.8GHz 99% BANDWIDTH



802.11n HT40 5.8GHz 99% BANDWIDTH



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

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	16.20
Mid	2437	16.40
High	2462	16.20
Worst		16.400

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	14.50
Mid	2437	14.50
High	2462	14.30
Worst		14.500

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	12.20
Mid	2437	12.30
High	2462	12.10
Worst		12.300

9.3.4. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	10.700
Mid	5785	10.300
High	5825	10.200
Worst		10.700

9.3.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	10.500
Mid	5785	10.200
High	5825	10.000
Worst		10.500

9.3.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	10.2
High	5795	10.0
Worst		10.2

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	-6.90	30.00	30	36	30.00
Mid	2437	-6.90	30.00	30	36	30.00
High	2462	-6.90	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	18.87	18.87	30.00	-11.13
Mid	2437	18.87	18.87	30.00	-11.13
High	2462	18.66	18.66	30.00	-11.34
Worst			18.87		

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	-6.90	30.00	30	36	30.00
Mid	2437	-6.90	30.00	30	36	30.00
High	2462	-6.90	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	22.52	22.52	30.00	-7.48
Mid	2437	22.59	22.59	30.00	-7.41
High	2462	22.33	22.33	30.00	-7.67
Worst			22.59		

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	-6.90	30.00	30	36	30.00
Mid	2437	-6.90	30.00	30	36	30.00
High	2462	-6.90	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	20.00	20.00	30.00	-10.00
Mid	2437	20.22	20.22	30.00	-9.78
High	2462	19.93	19.93	30.00	-10.07
Worst			20.22		

9.4.4. 802.11a MODE IN THE 5.8 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	5745	-4.27	30.00	30	36	30.00
Mid	5785	-4.27	30.00	30	36	30.00
High	5825	-4.27	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	5745	19.56	19.56	30.00	-10.44
Mid	5785	18.49	18.49	30.00	-11.51
High	5825	18.25	18.25	30.00	-11.75
Worst			19.56		

9.4.5. 802.11n HT20 MODE IN THE 5.8 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	5745	-4.27	30.00	30	36	30.00
Mid	5785	-4.27	30.00	30	36	30.00
High	5825	-4.27	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	5745	18.88	18.88	30.00	-11.12
Mid	5785	18.46	18.46	30.00	-11.54
High	5825	18.35	18.35	30.00	-11.65
Worst			18.88		

9.4.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

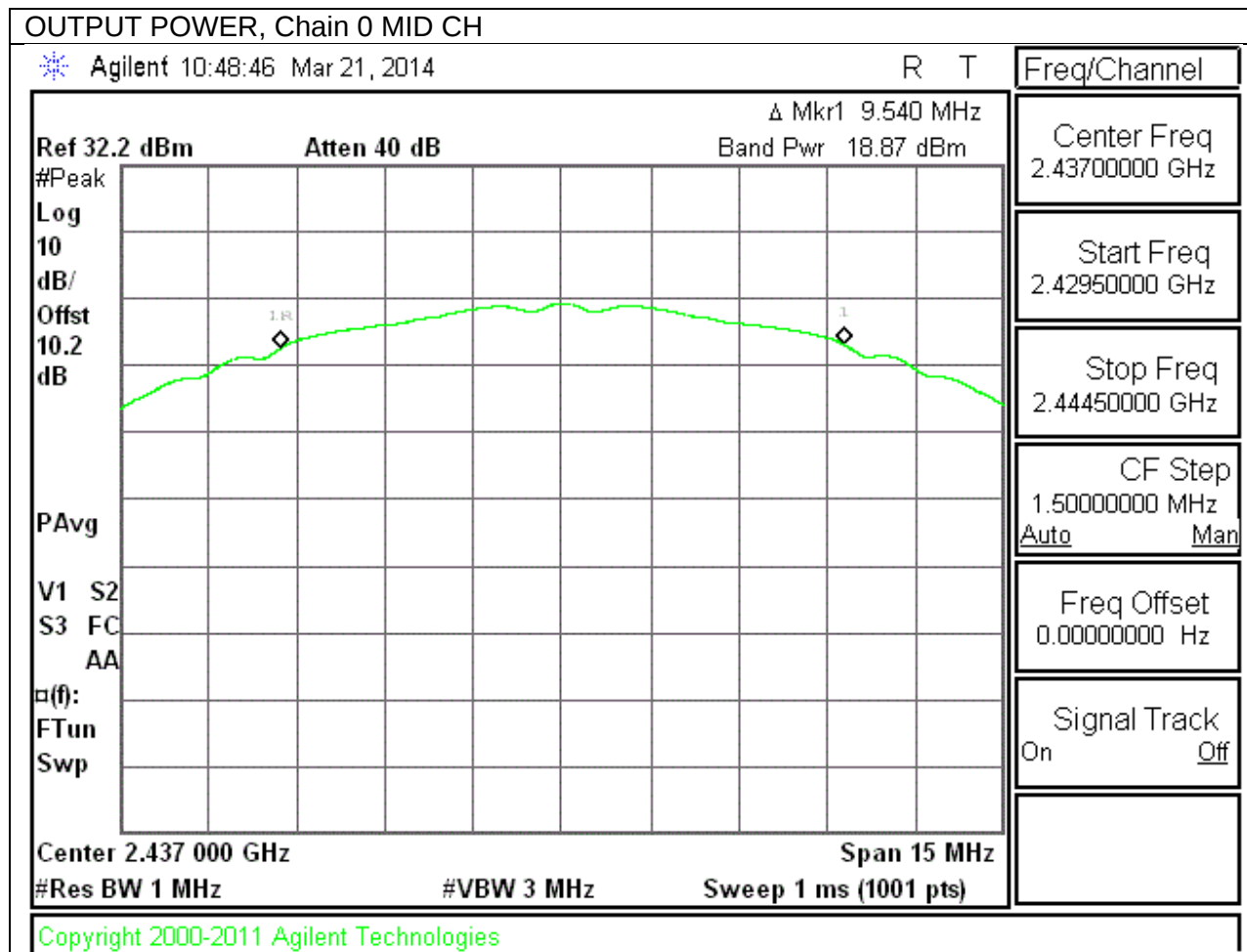
Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5755	-4.27	30.00	30	36	30.00
High	5795	-4.27	30.00	30	36	30.00

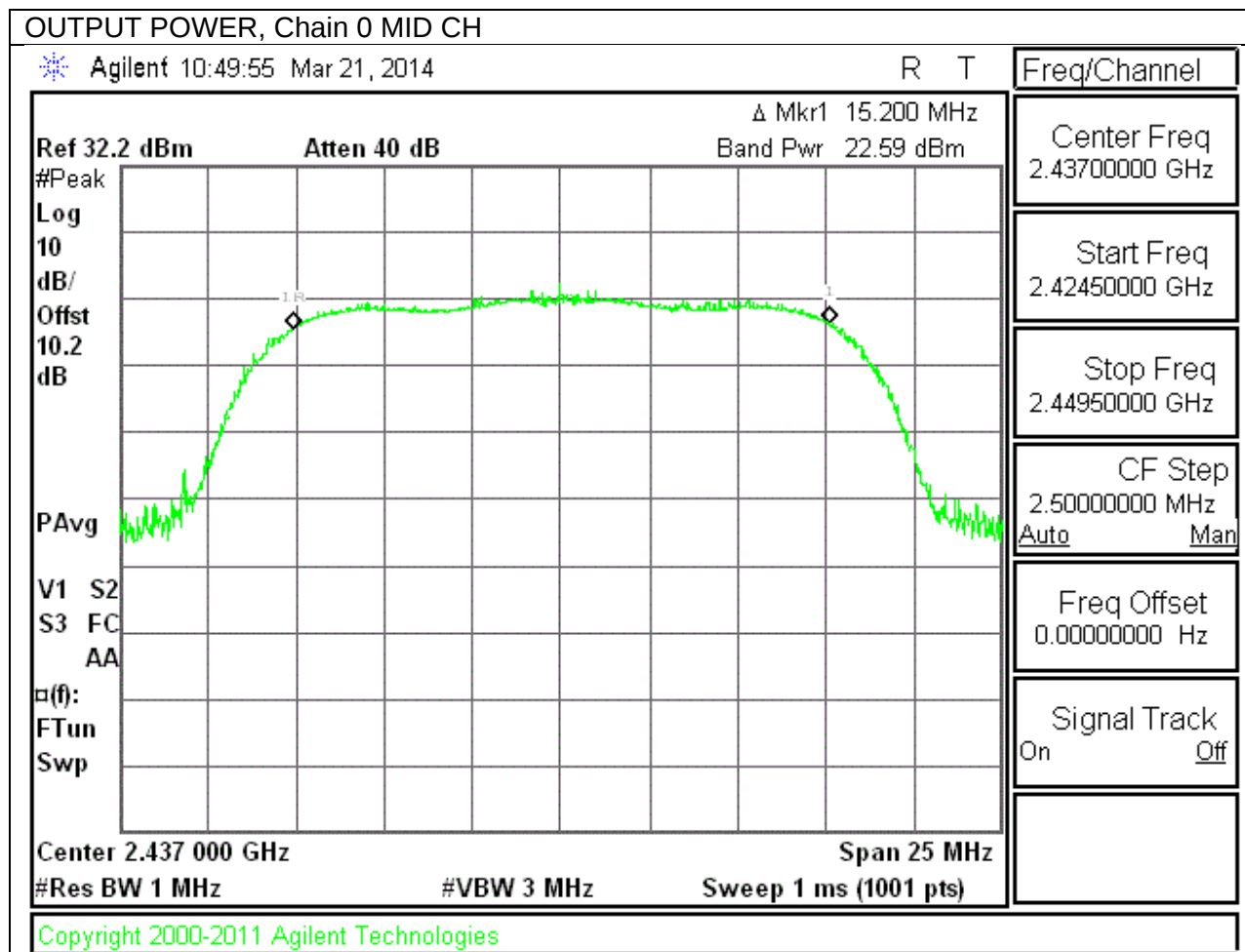
Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	5755	18.63	18.63	30.00	-11.37
High	5795	18.16	18.16	30.00	-11.84
Worst			18.63		

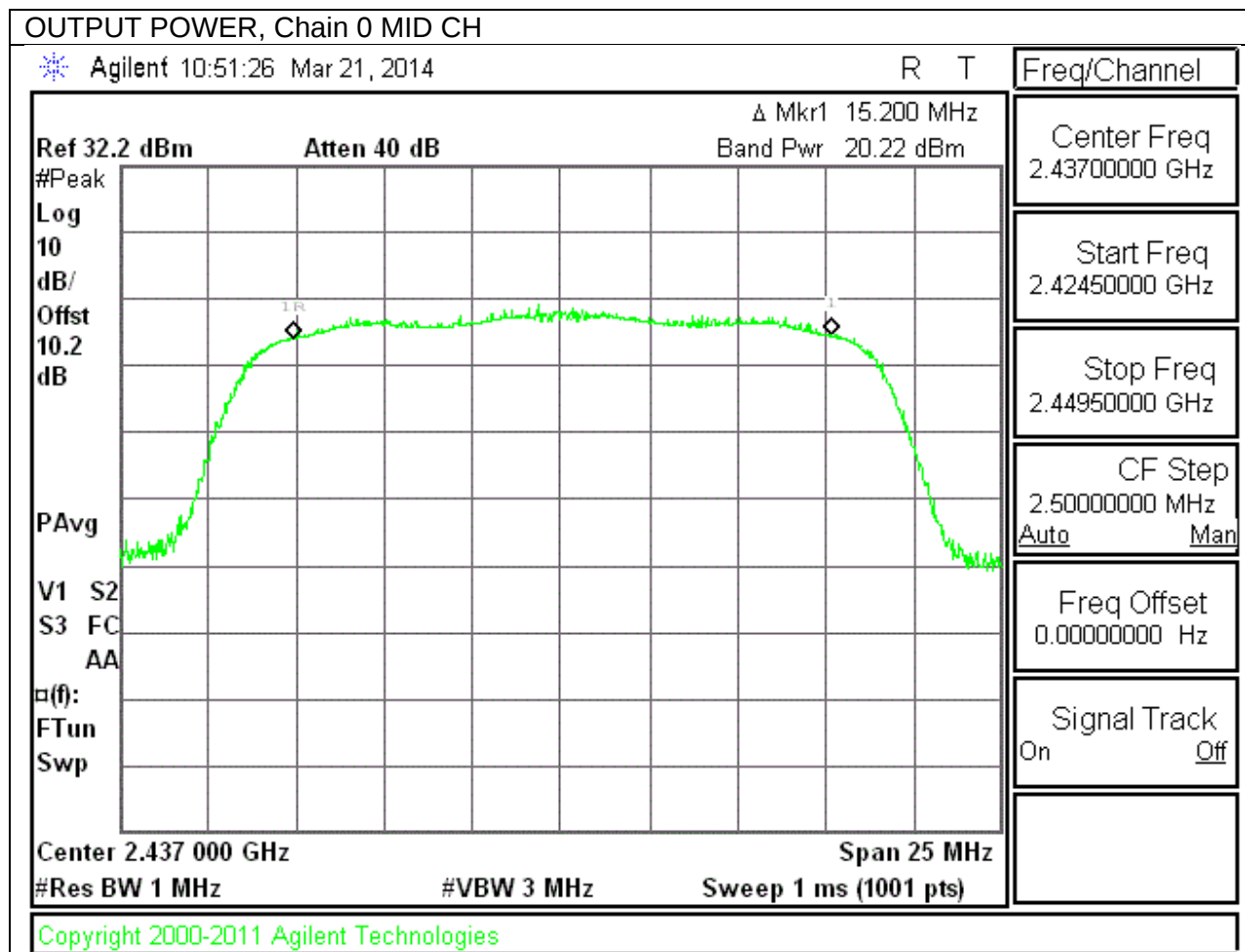
802.11b OUTPUT POWER, Chain 0



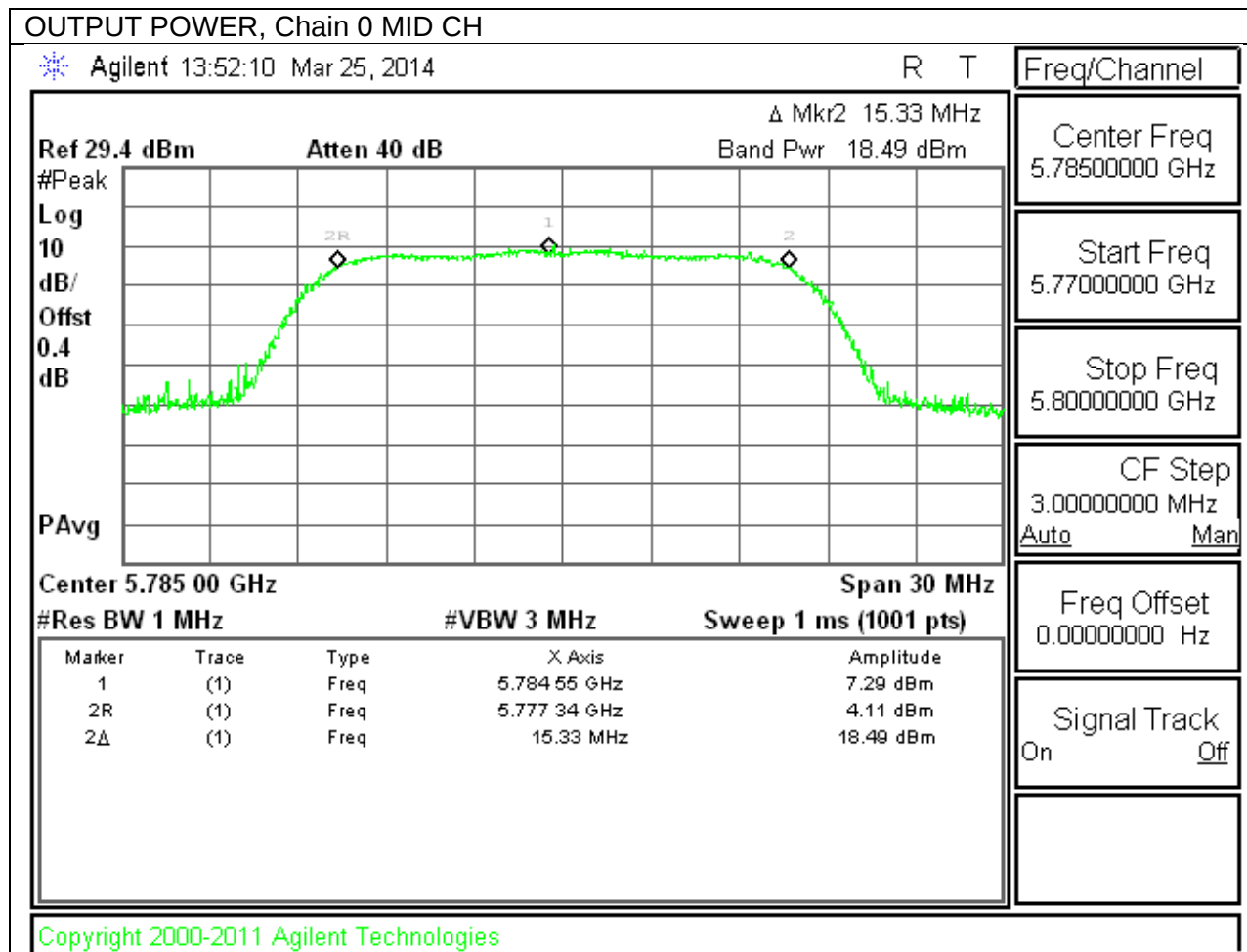
802.11g OUTPUT POWER, Chain 0



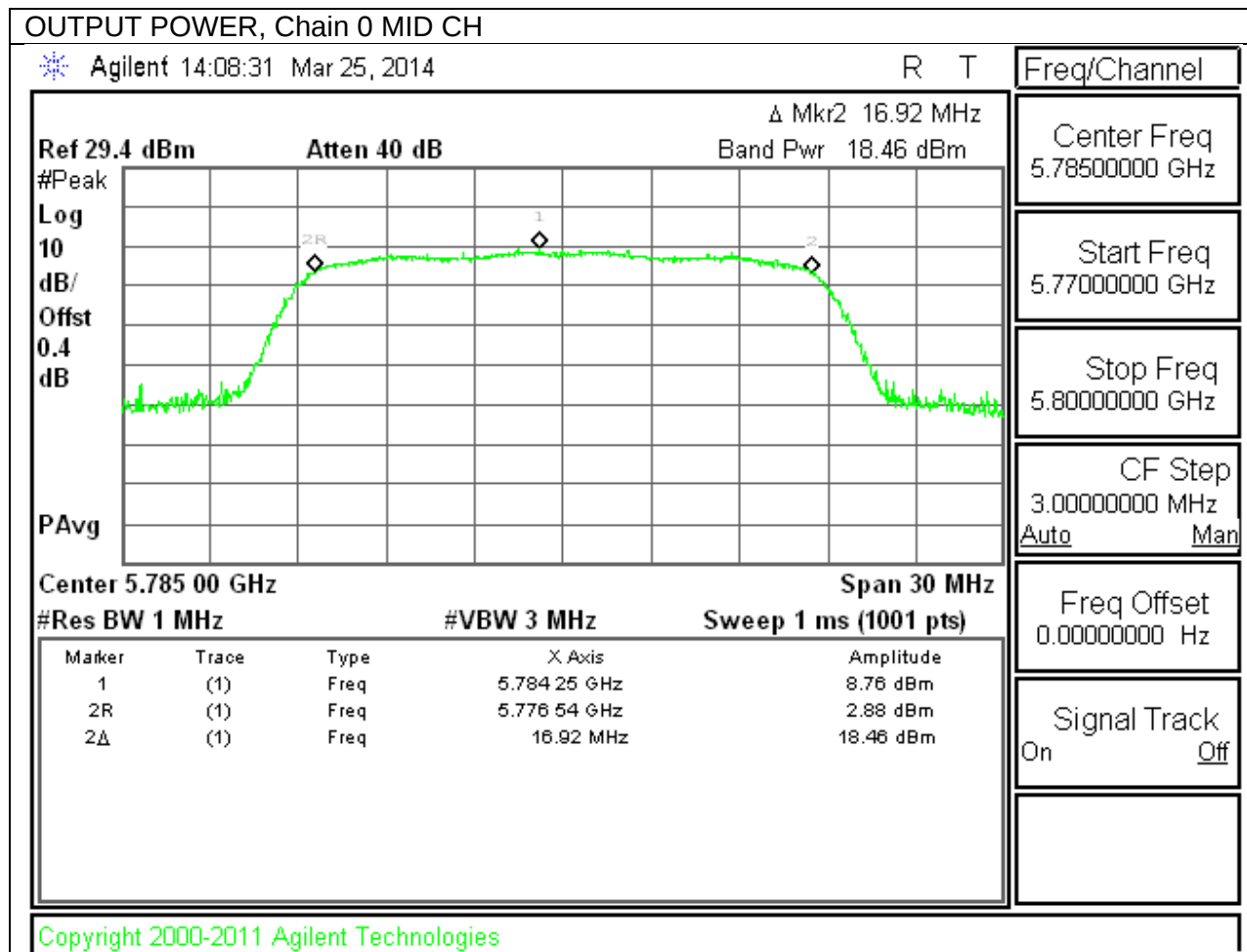
802.11n OUTPUT POWER, Chain 0



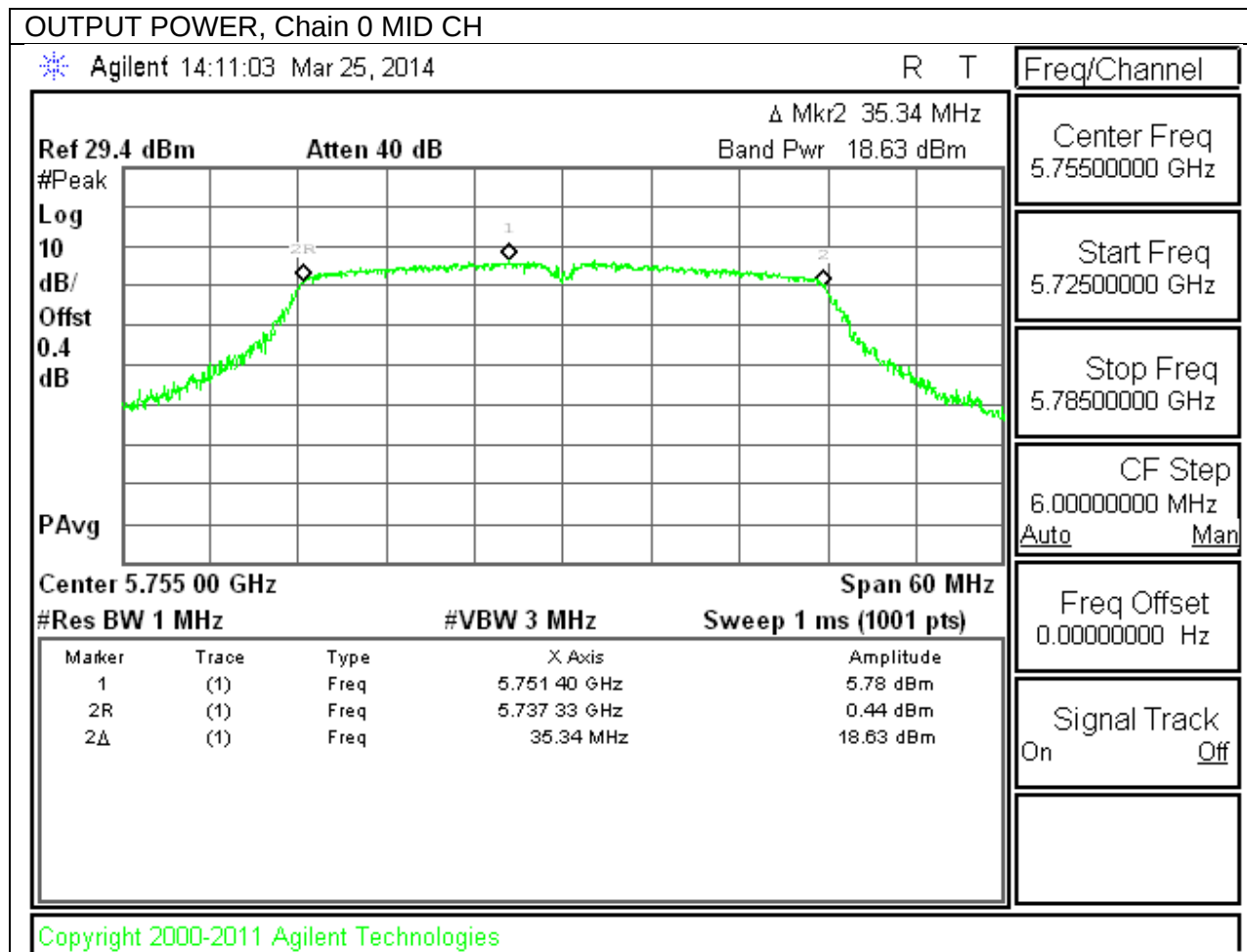
802.11a 5.8 GHz OUTPUT POWER, Chain 0



802.11n HT20 5.8 GHz OUTPUT POWER, Chain 0



802.11n HT40 5.8 GHz OUTPUT POWER, Chain 0



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	-5.94	8.0	-13.9
Mid	2437	-5.94	8.0	-13.9
High	2462	-4.82	8.0	-12.8

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	-9.58	8.0	-17.6
Mid	2437	-9.88	8.0	-17.9
High	2462	-9.49	8.0	-17.5

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	-11.95	8.0	-20.0
Mid	2437	-11.45	8.0	-19.5
High	2462	-12.15	8.0	-20.2

9.5.4. 802.11a MODE IN THE 5.8 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-13.12	8.0	-21.1
Mid	5785	-13.02	8.0	-21.0
High	5825	-13.68	8.0	-21.7

9.5.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

PSD Results

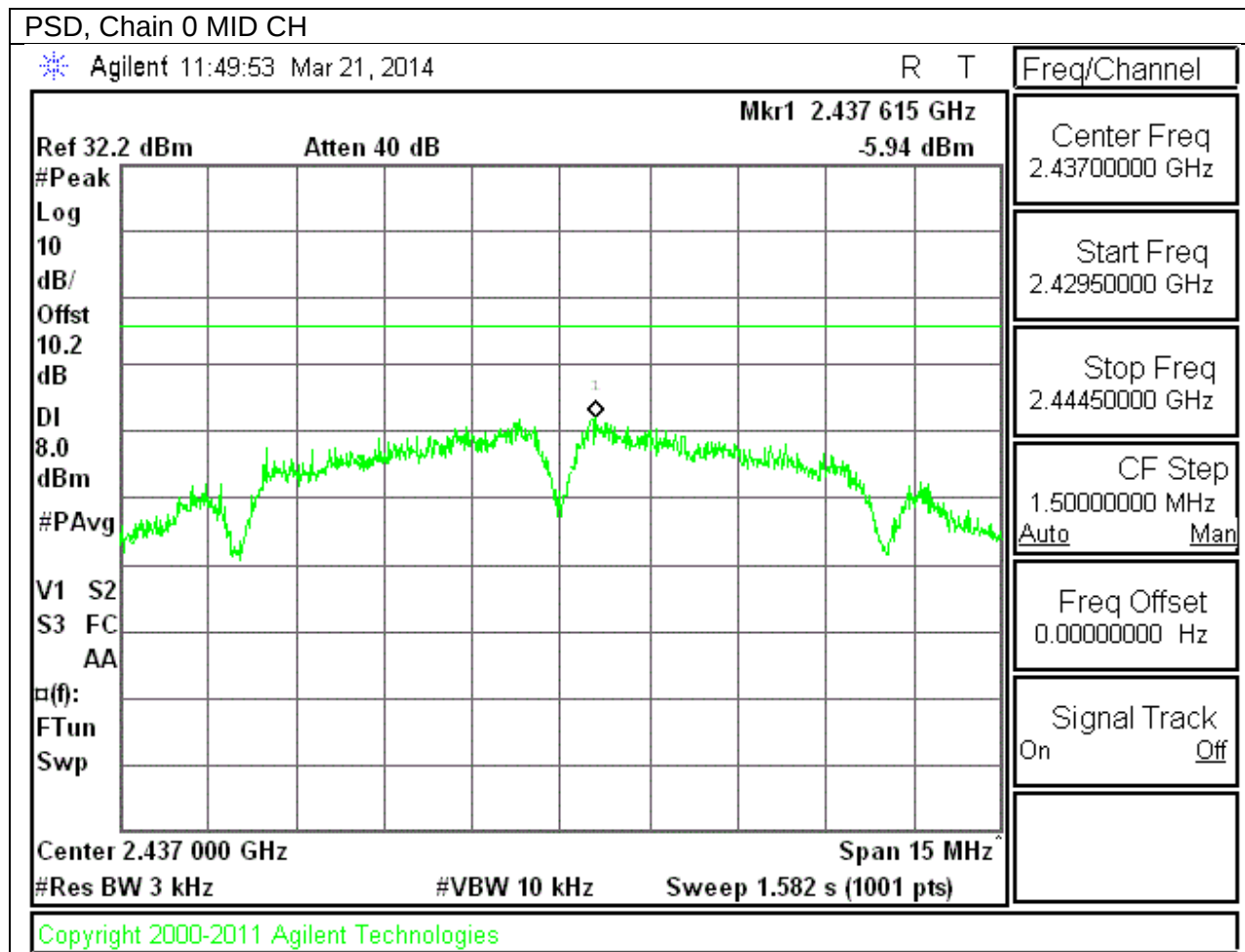
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-14.16	8.0	-22.2
Mid	5785	-13.62	8.0	-21.6
High	5825	-14.53	8.0	-22.5

9.5.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

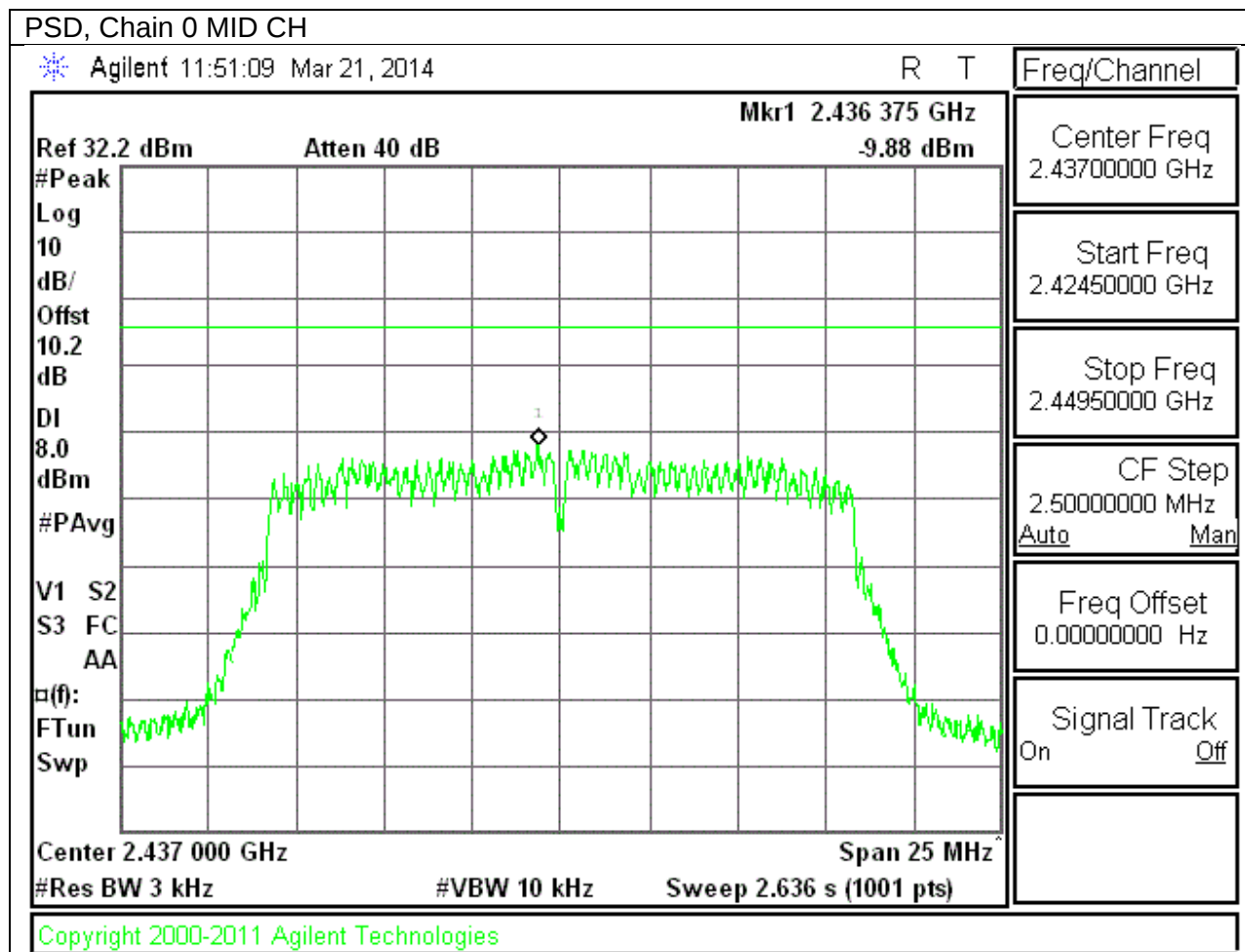
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-15.33	8.0	-23.3
High	5795	-16.81	8.0	-24.8

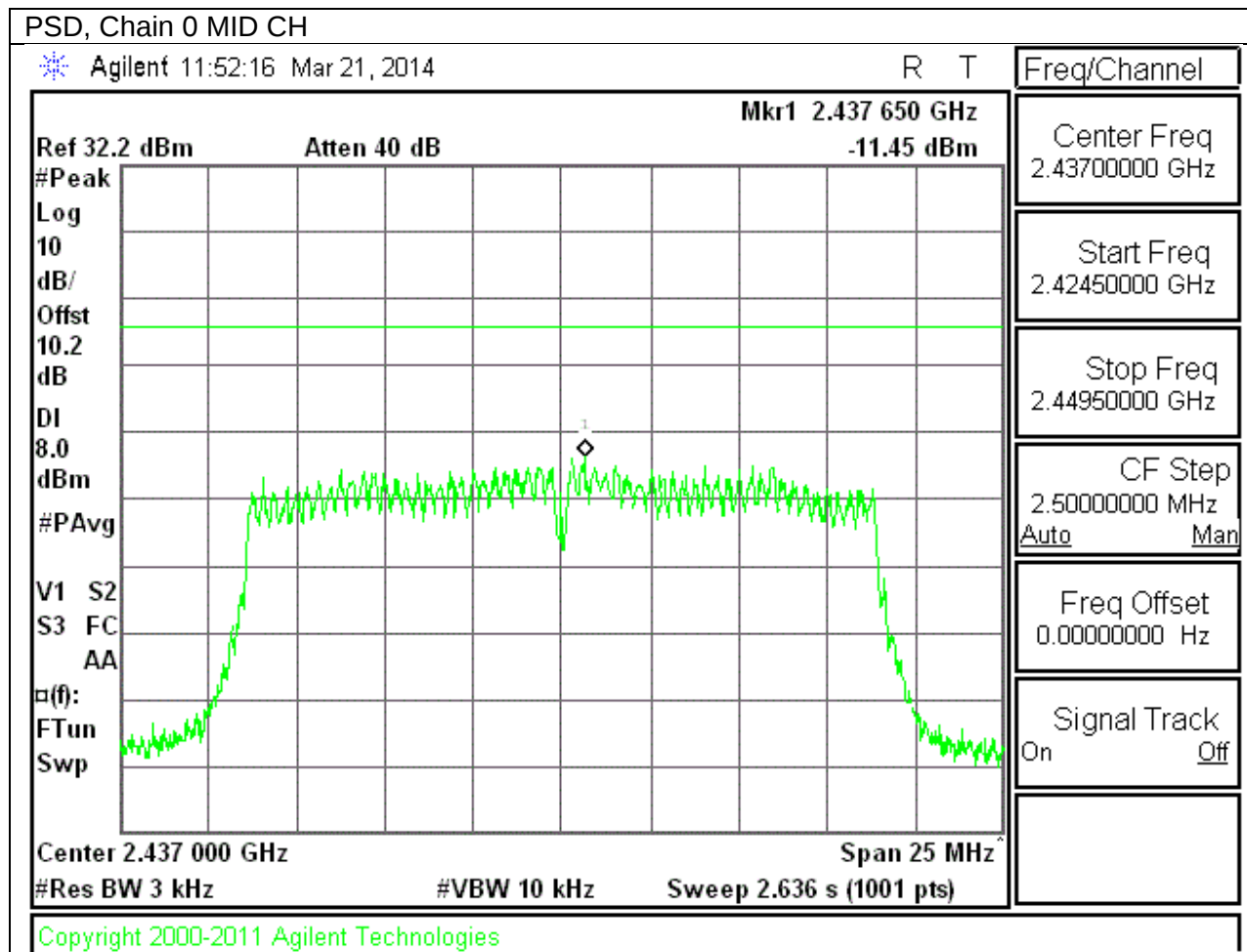
802.11b PSD, Chain 0



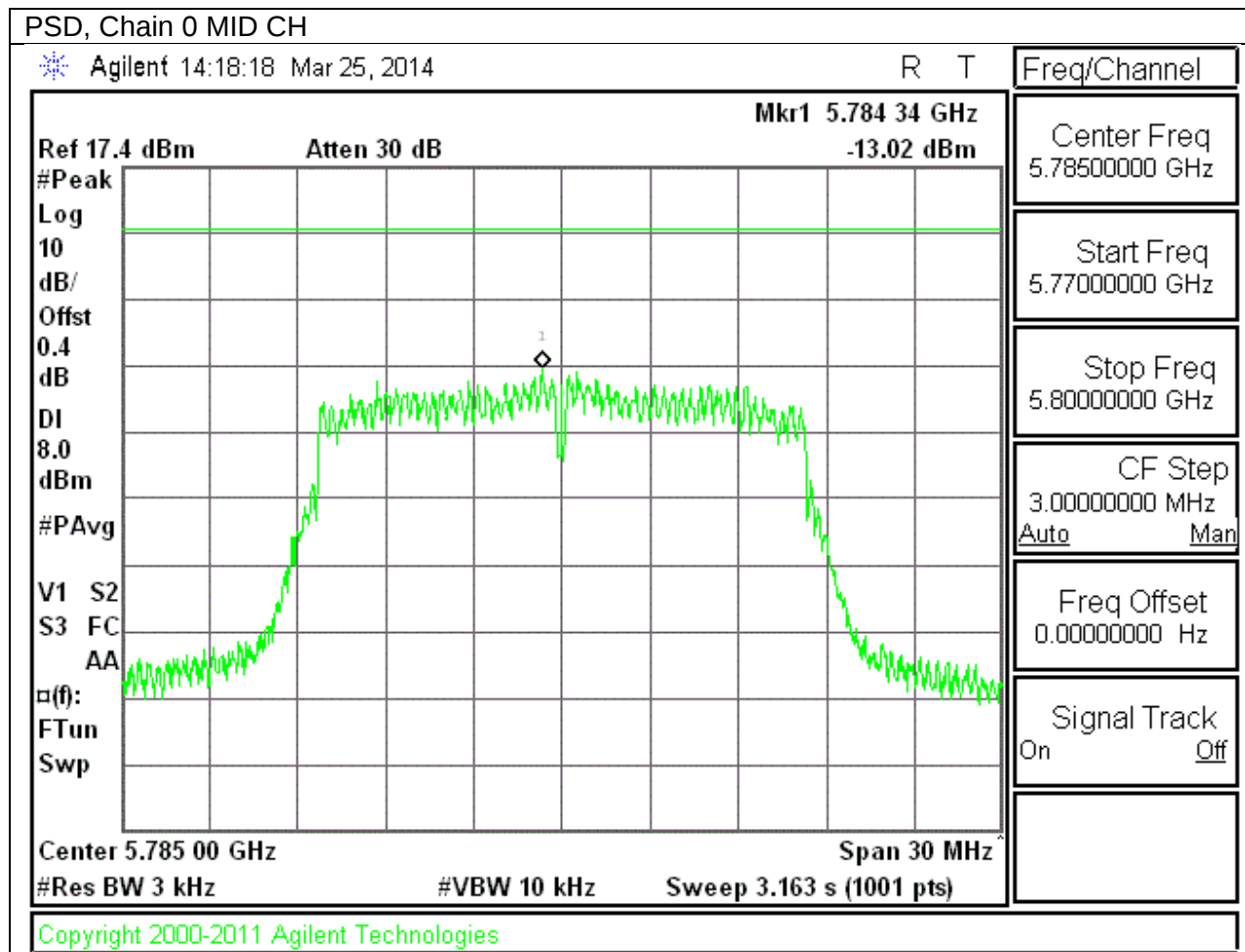
802.11g PSD, Chain 0



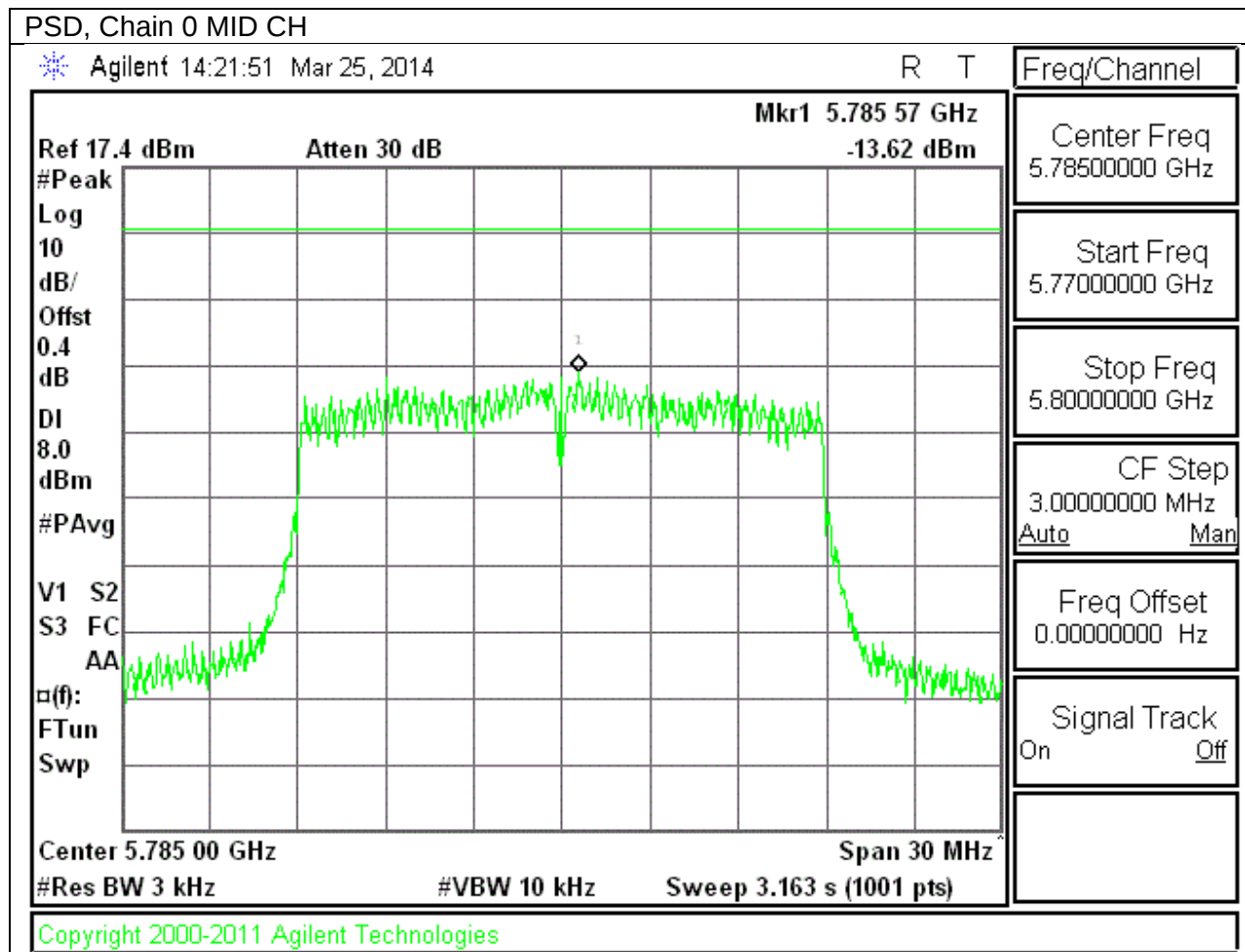
802.11n PSD, Chain 0



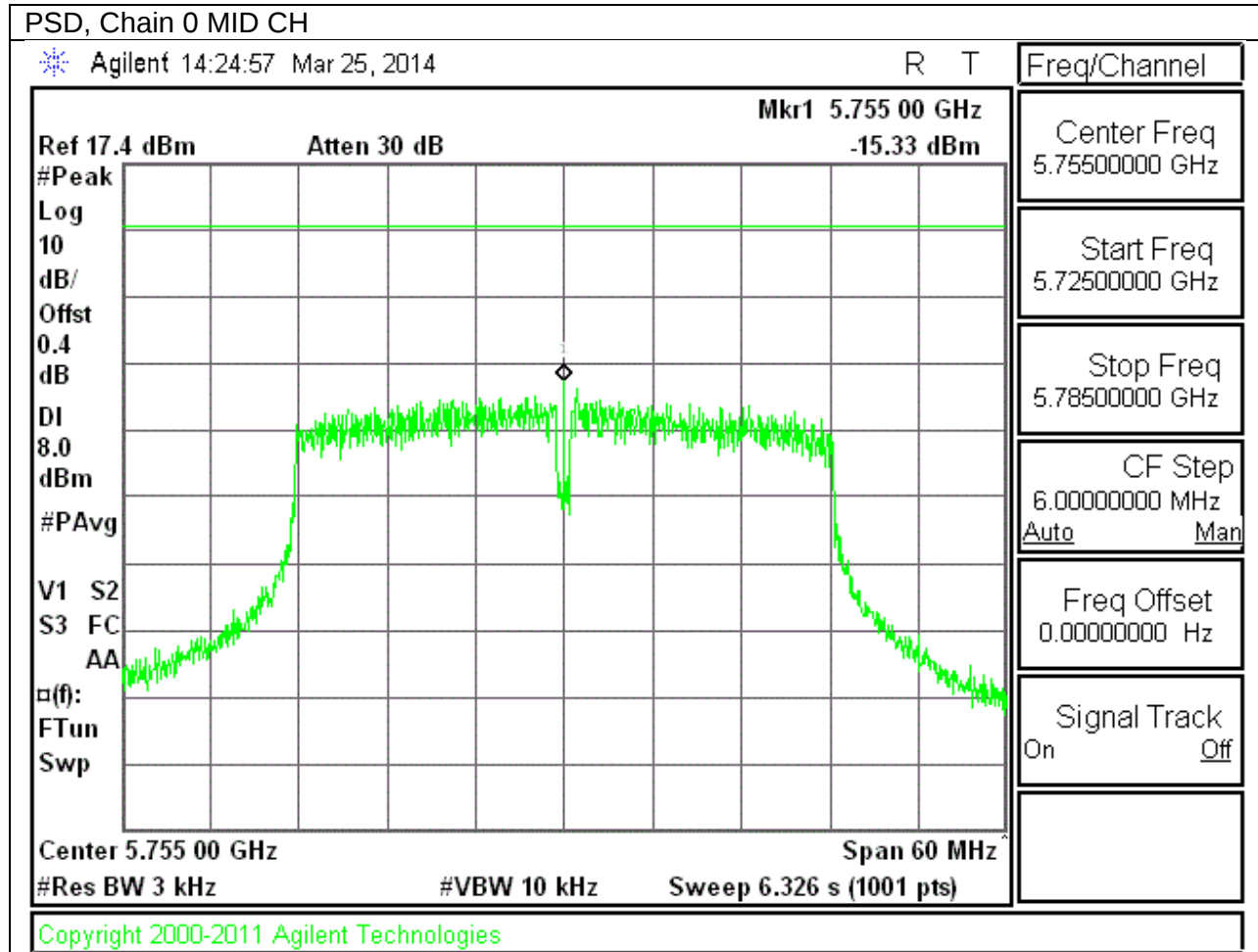
802.11a 5.8GHz PSD, Chain 0



802.11n HT20 5.8GHz PSD, Chain 0



802.11n HT40 5.8GHz PSD, Chain 0



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.

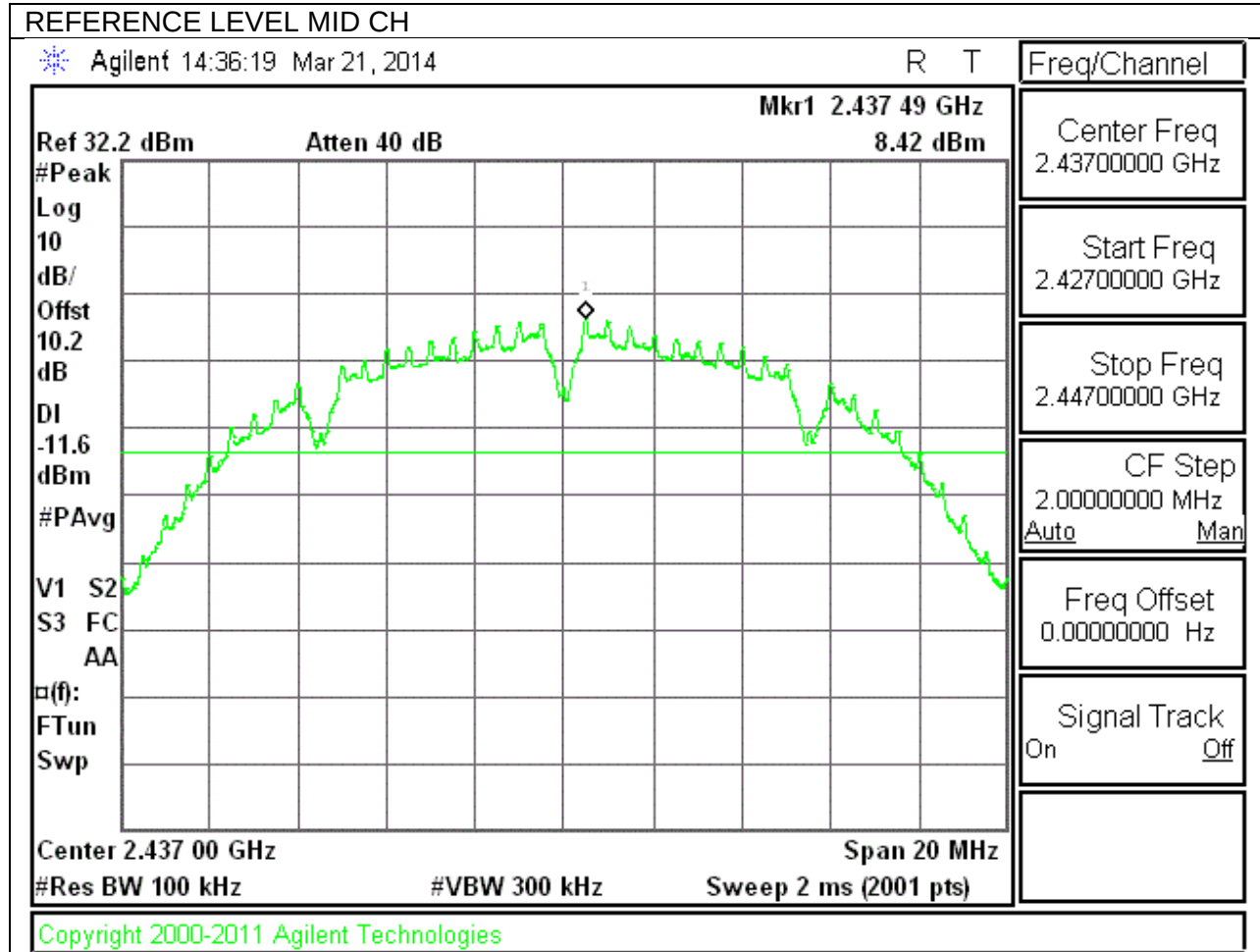
TEST PROCEDURE

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.

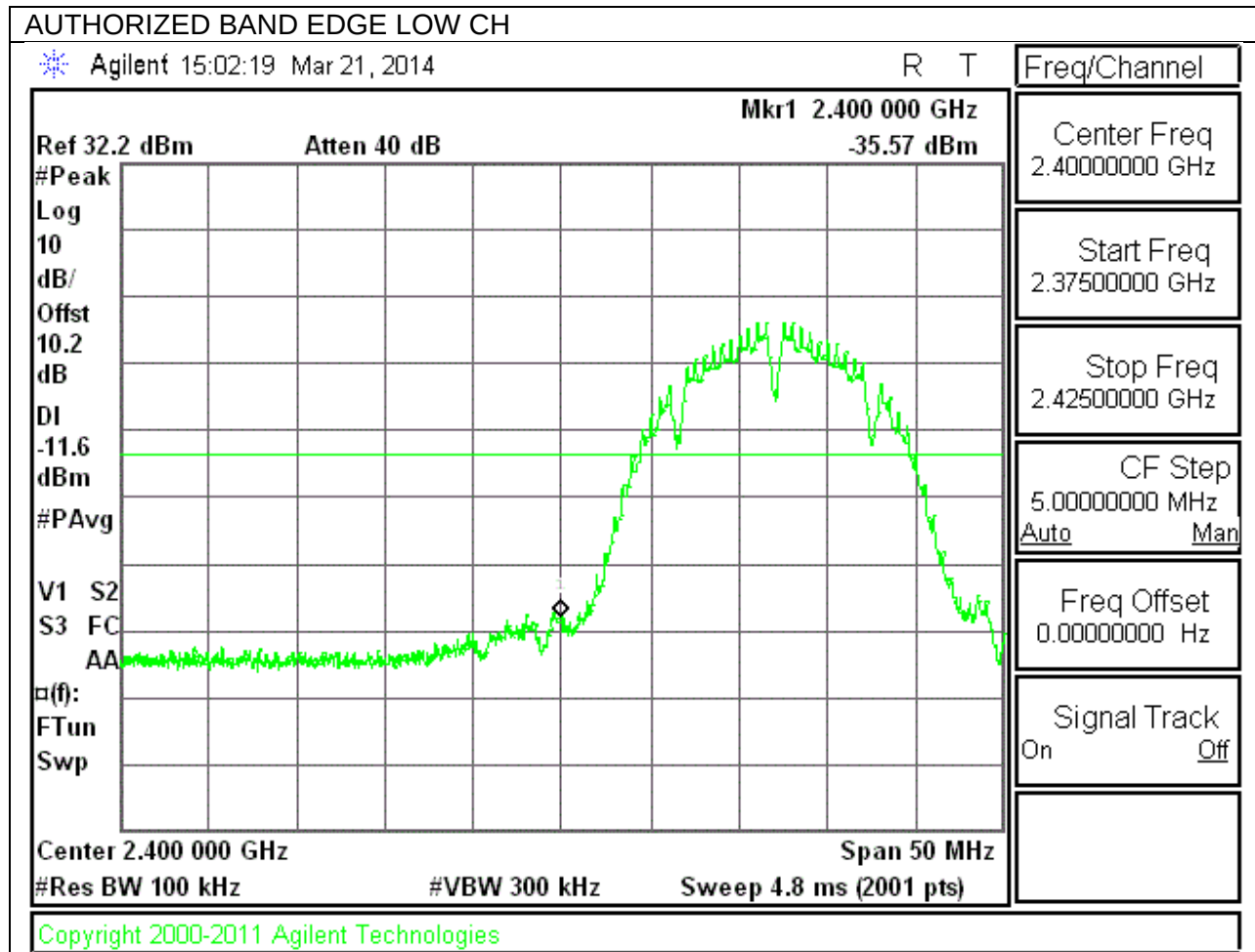
RESULTS

9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

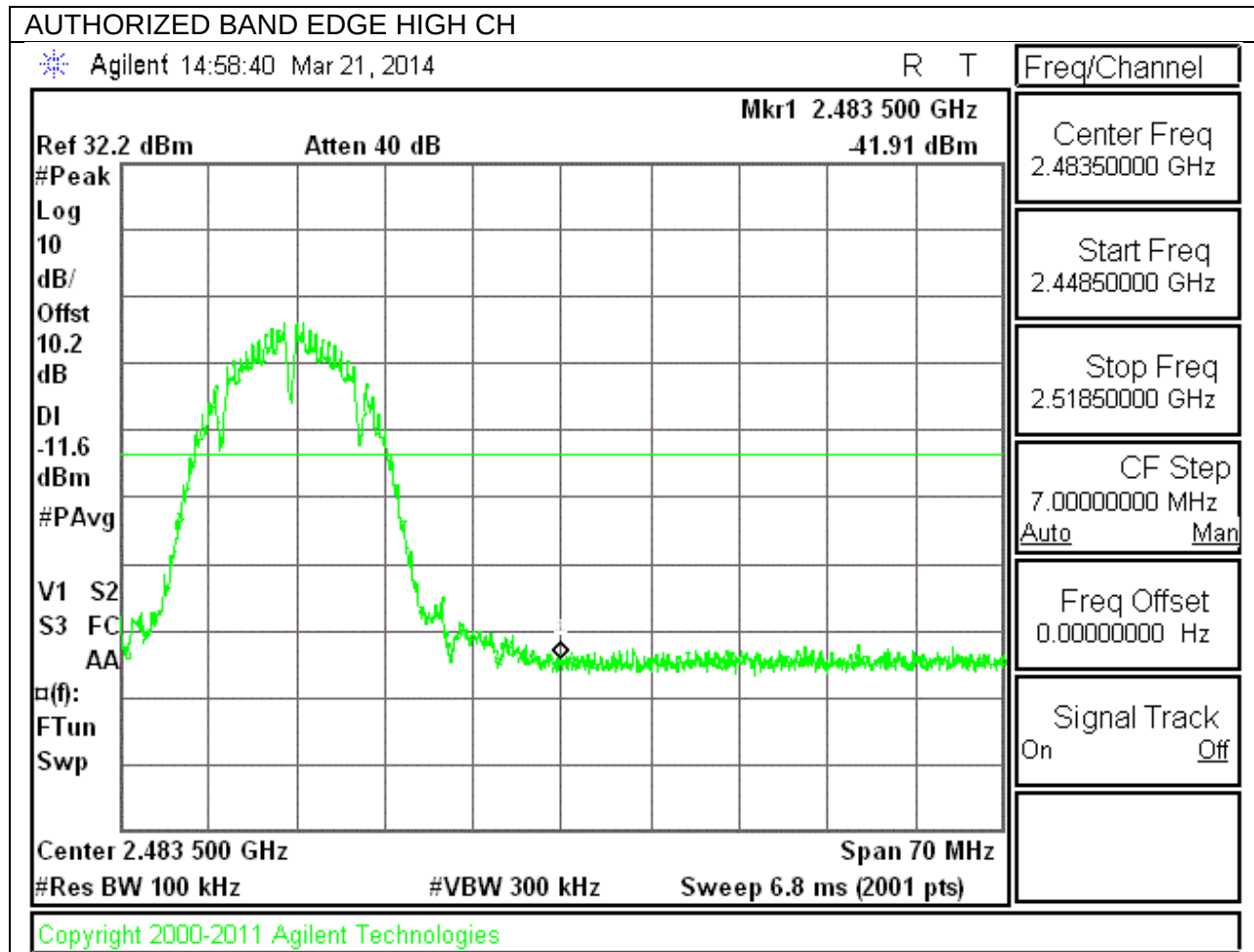
IN-BAND REFERENCE LEVEL



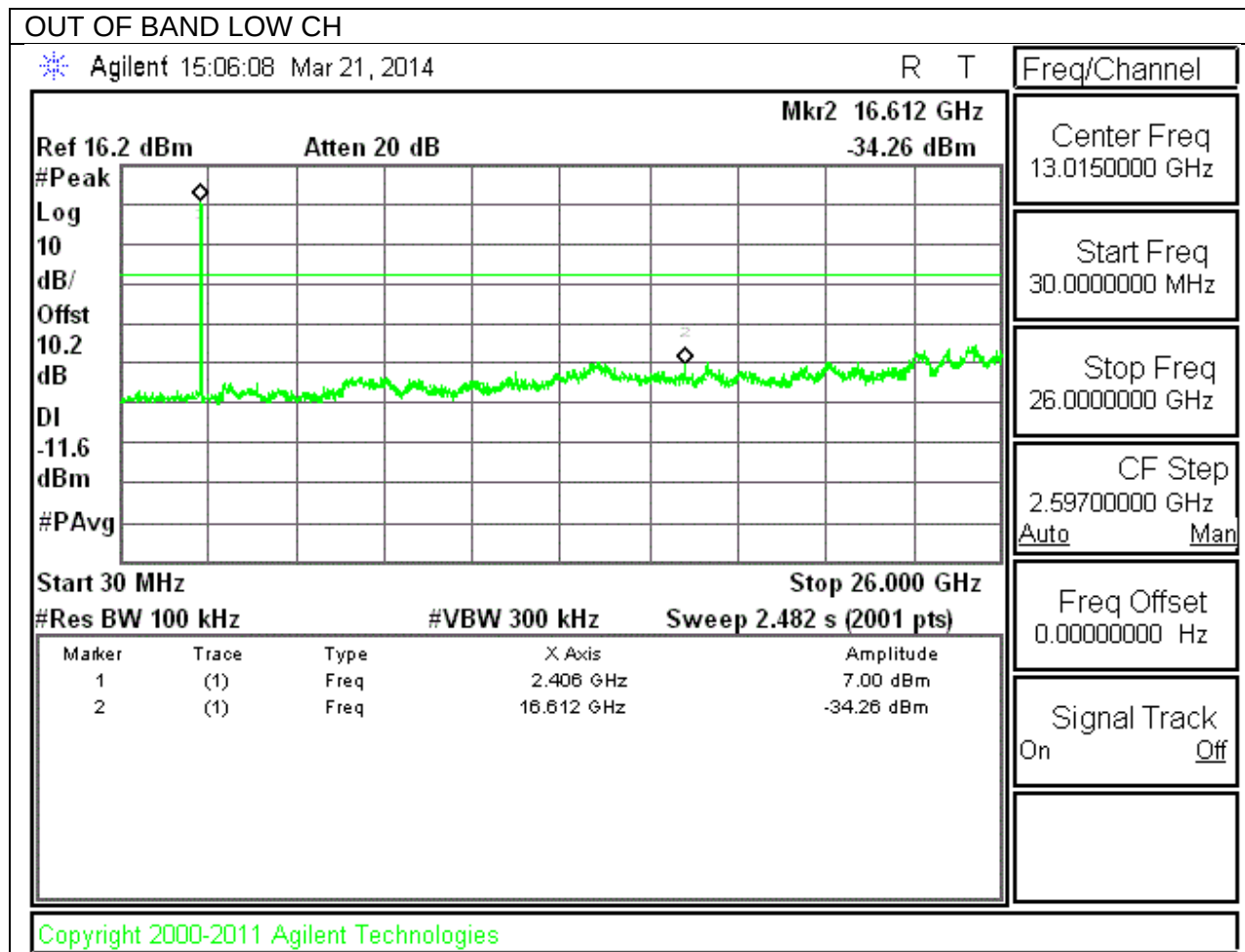
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

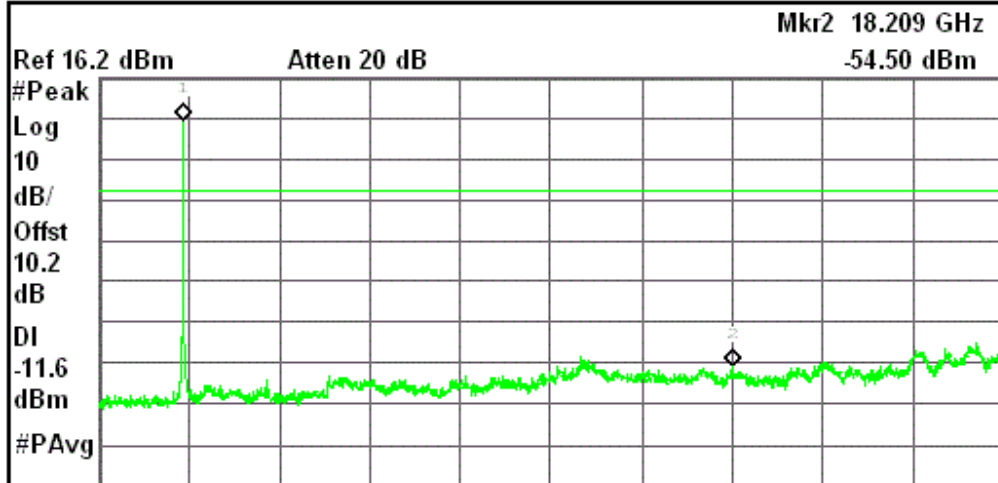


OUT OF BAND MID CH

Agilent 15:07:48 Mar 21, 2014

R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 30 MHz Stop 26.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.432 GHz	5.91 dBm
2	(1)	Freq	18.209 GHz	-54.50 dBm

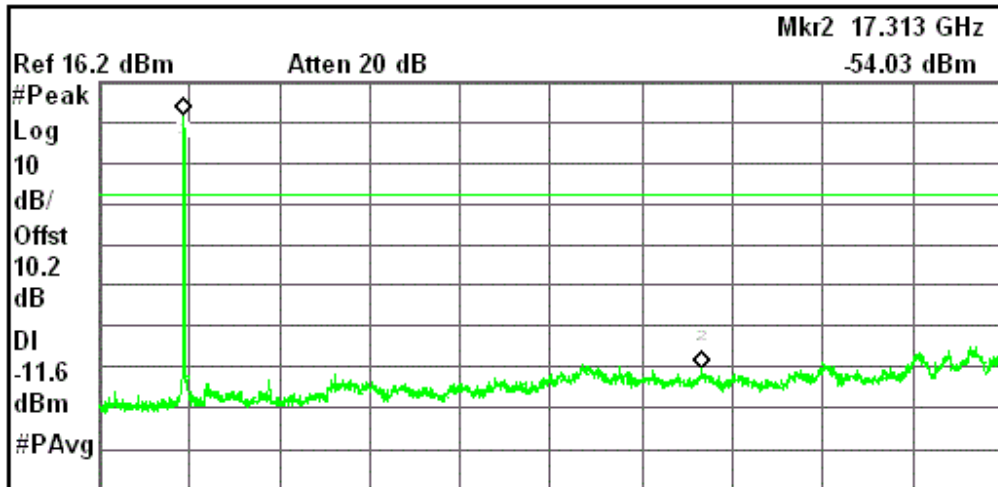
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OUT OF BAND HIGH CH

Agilent 15:08:41 Mar 21, 2014

R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

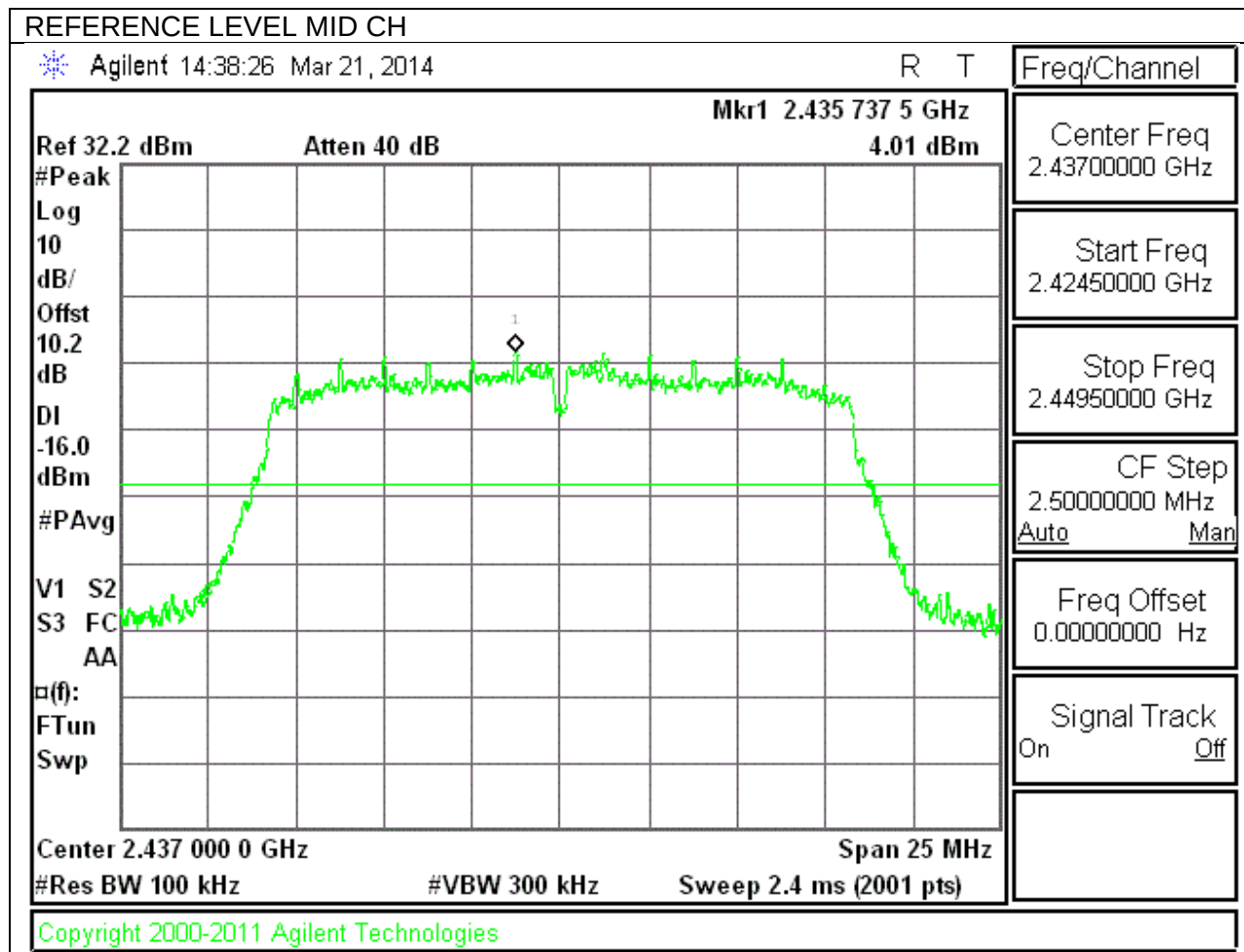
Start 30 MHz Stop 26.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.458 GHz	8.21 dBm
2	(1)	Freq	17.313 GHz	-54.03 dBm

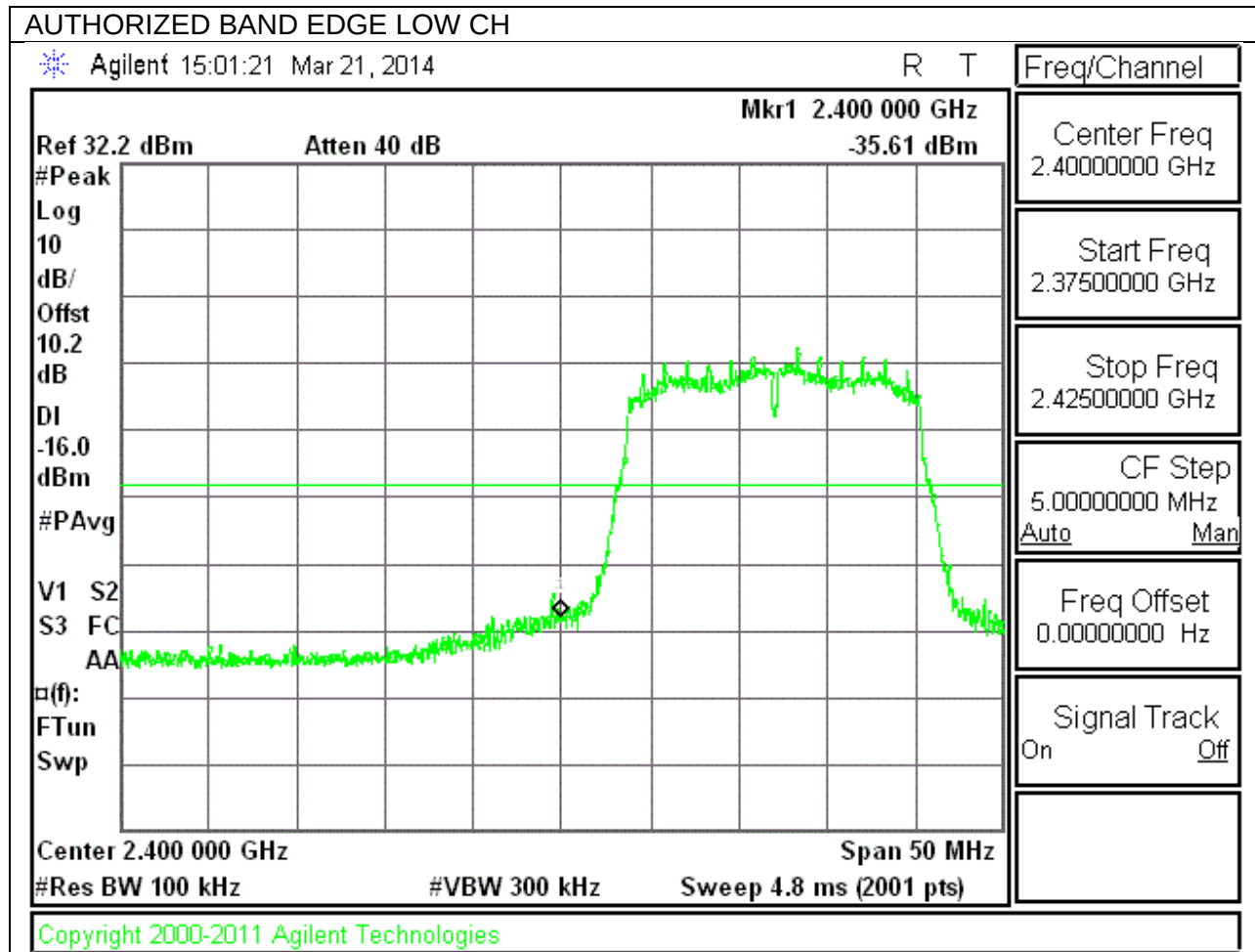
Copyright 2000-2011 Agilent Technologies

9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

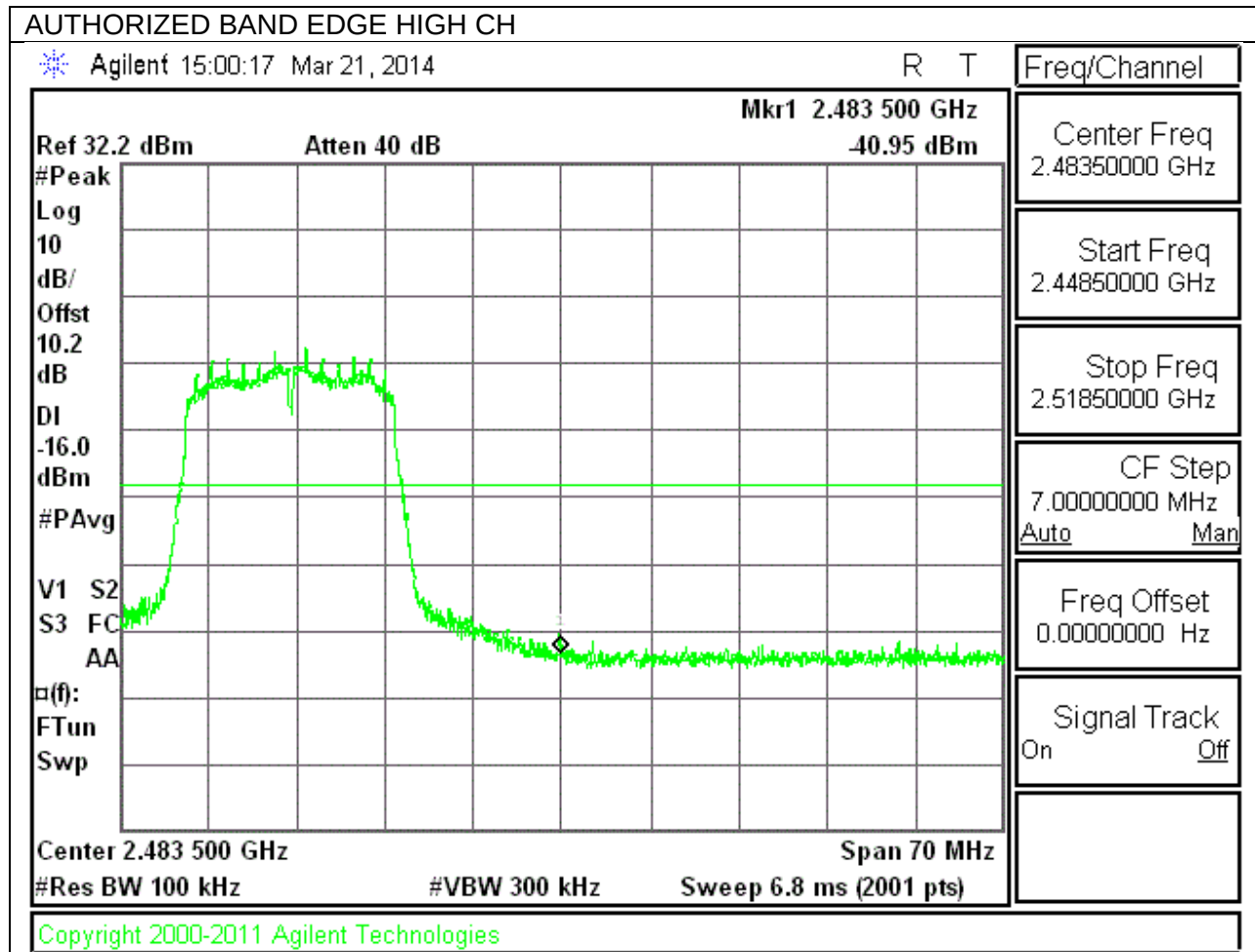
IN-BAND REFERENCE LEVEL



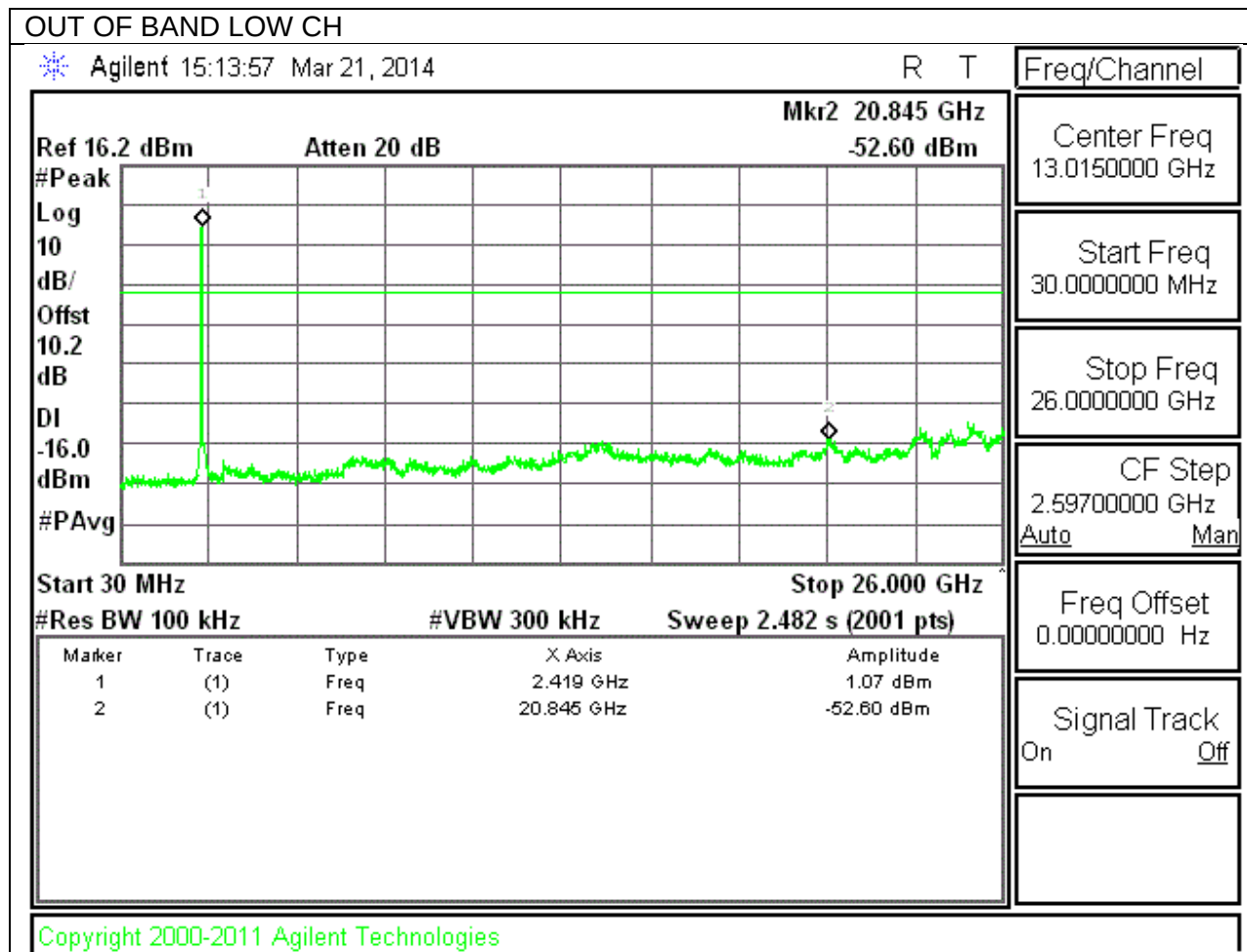
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

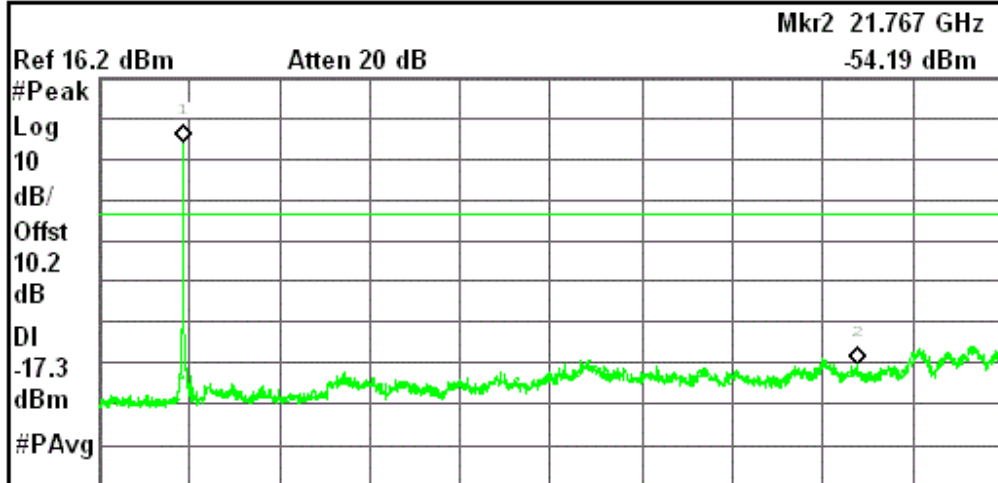


OUT OF BAND MID CH

Agilent 15:19:22 Mar 21, 2014

R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 30 MHz Stop 26.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (2001 pts)

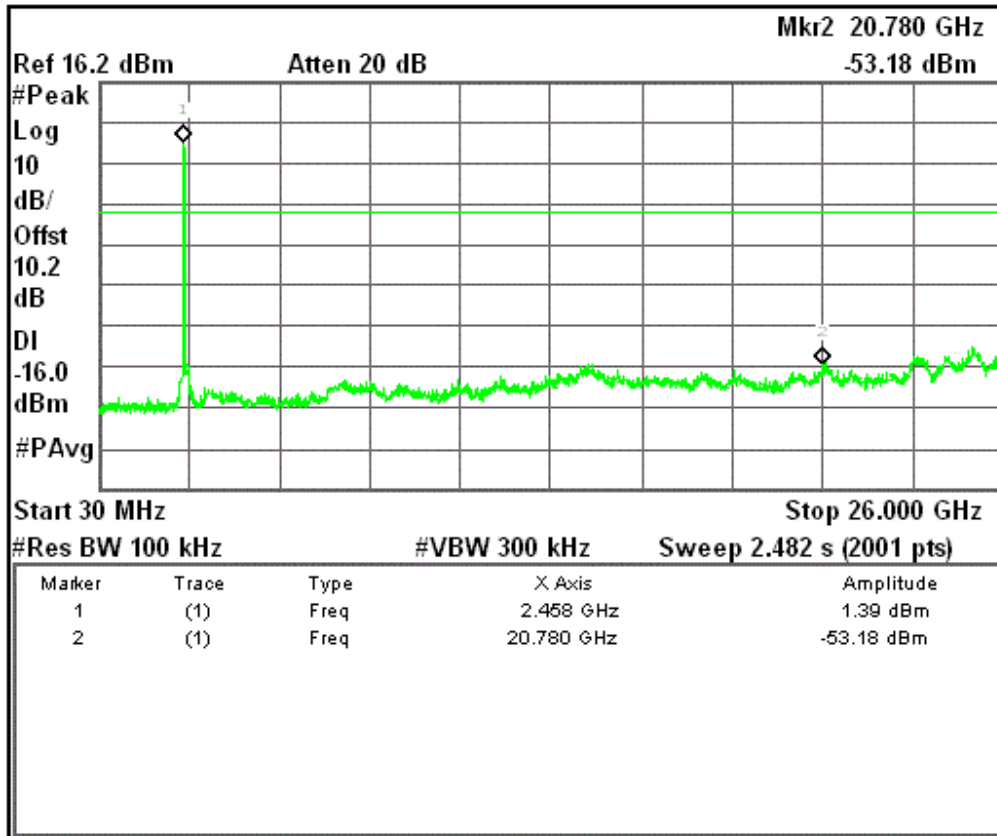
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.432 GHz	0.62 dBm
2	(1)	Freq	21.767 GHz	-54.19 dBm

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OUT OF BAND HIGH CH

Agilent 15:14:35 Mar 21, 2014

R T



Freq/Channel

Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

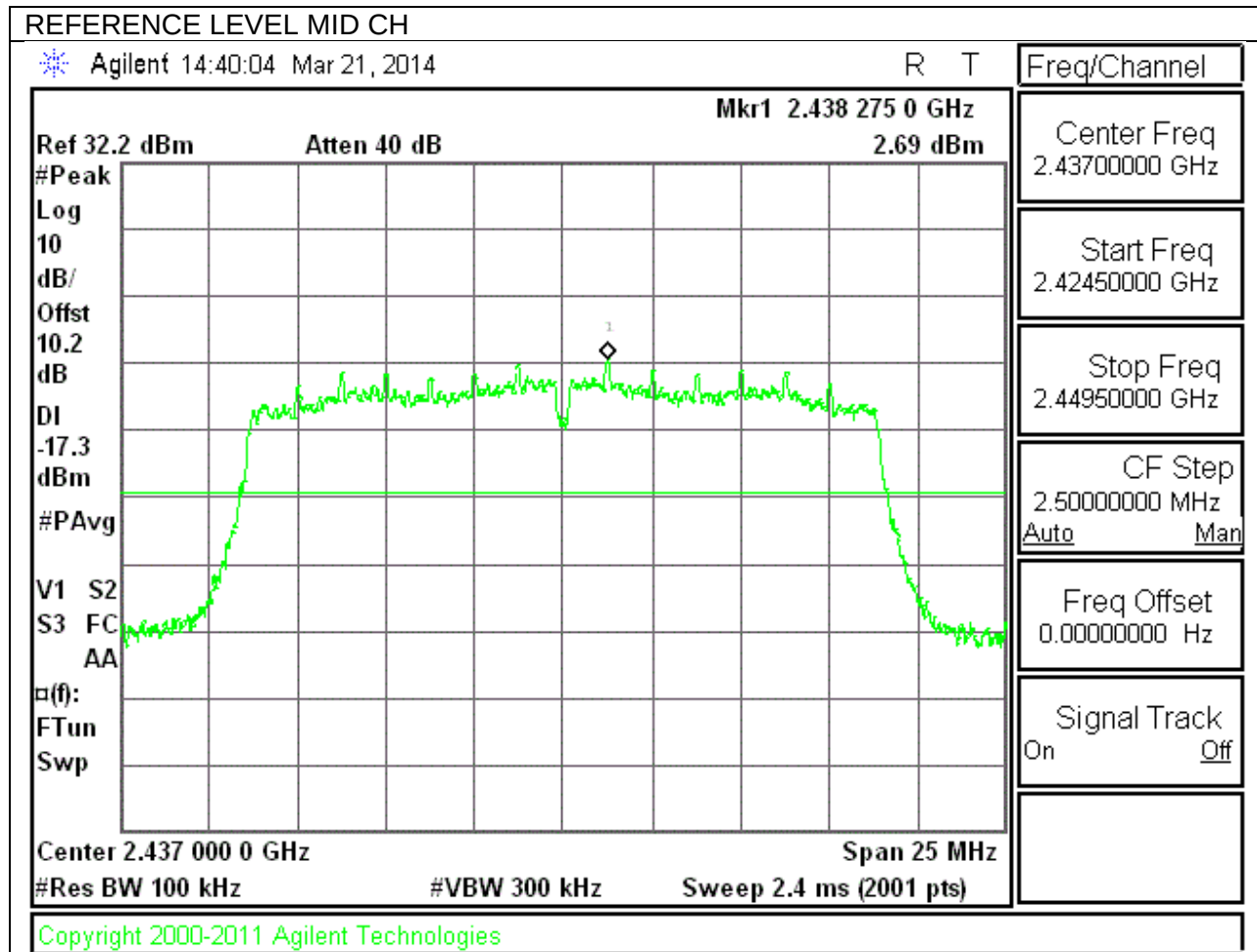
Freq Offset
0.0000000 Hz

Signal Track
On Off

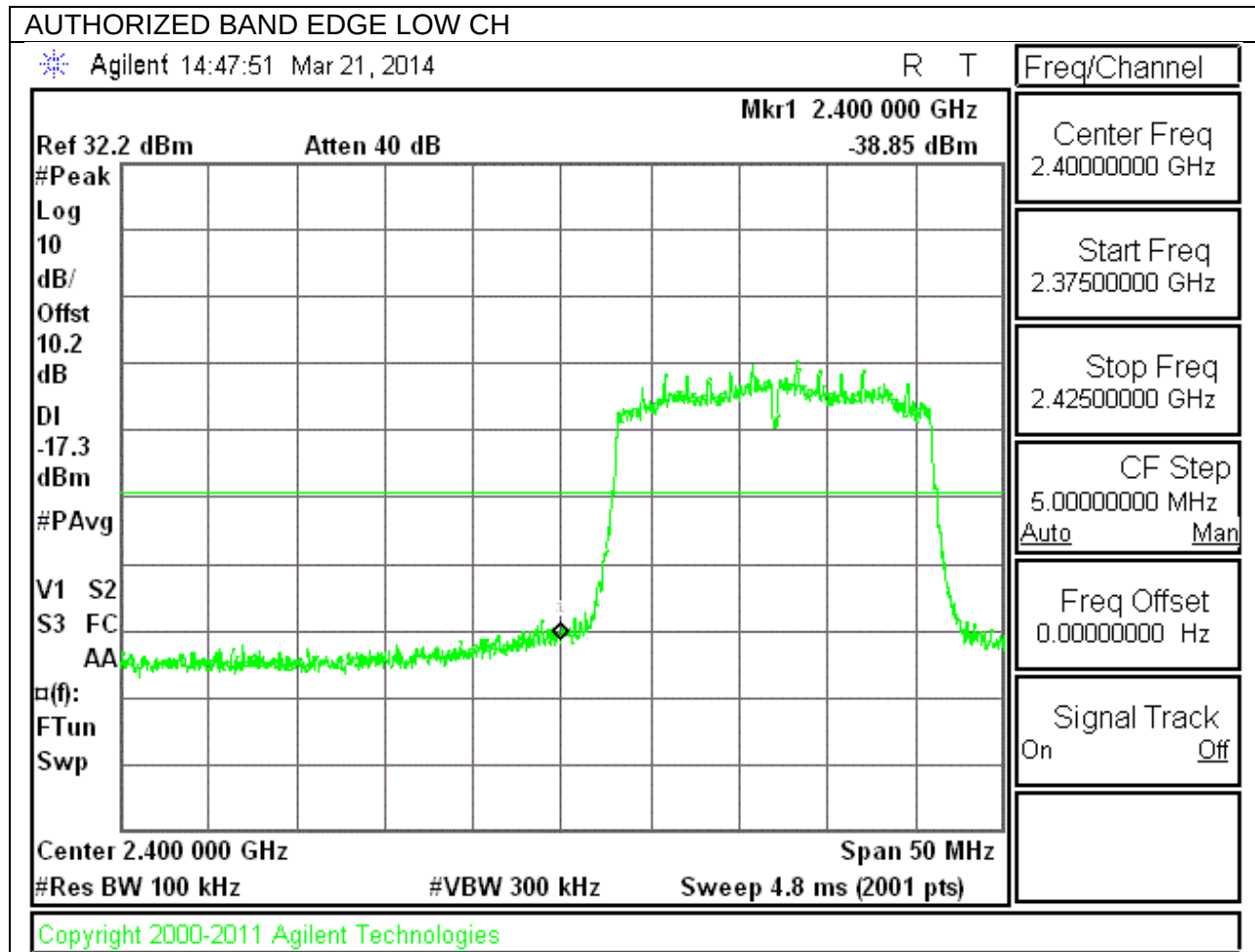
Copyright 2000-2011 Agilent Technologies

9.6.3. 802.11n MODE IN THE 2.4 GHz BAND

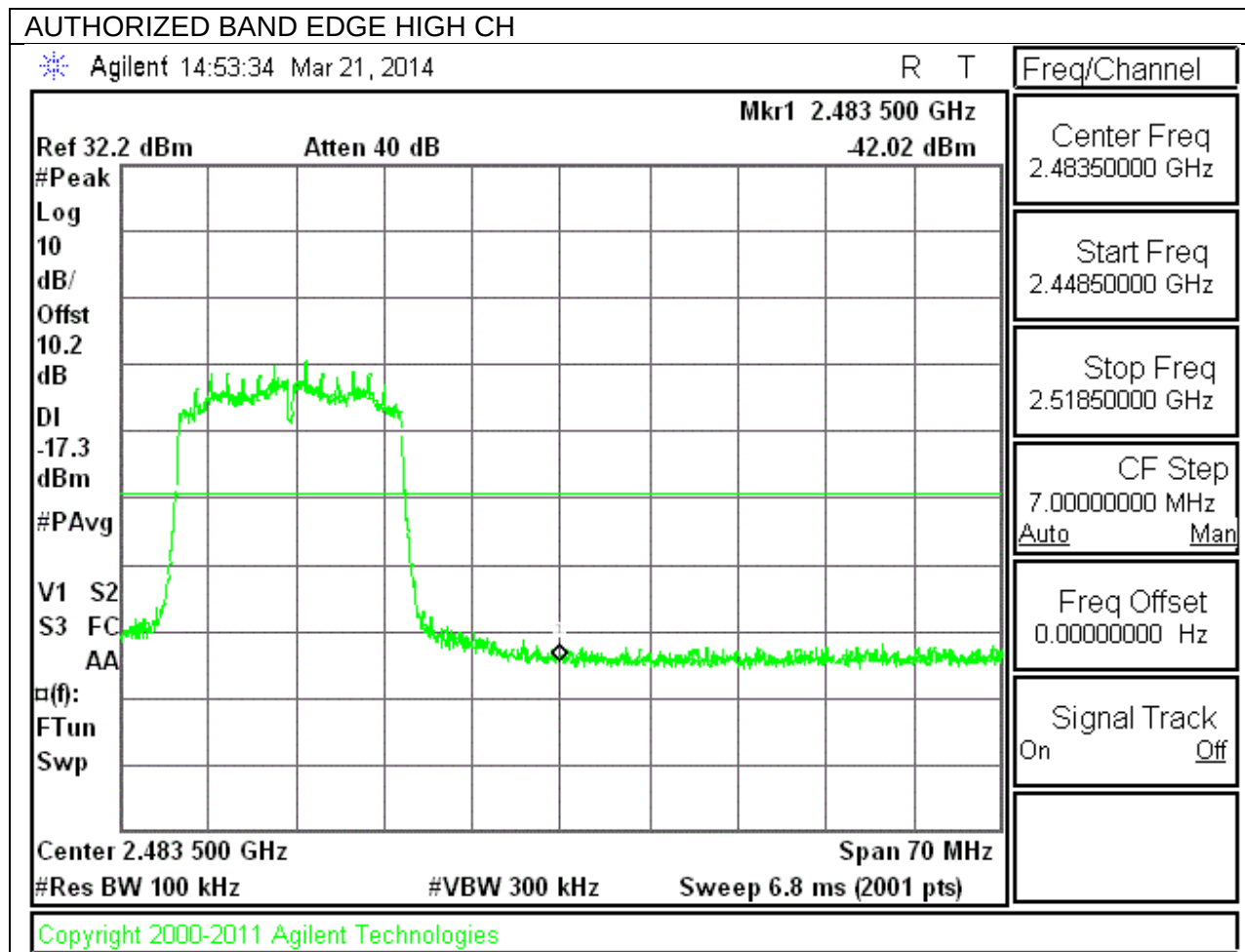
IN-BAND REFERENCE LEVEL



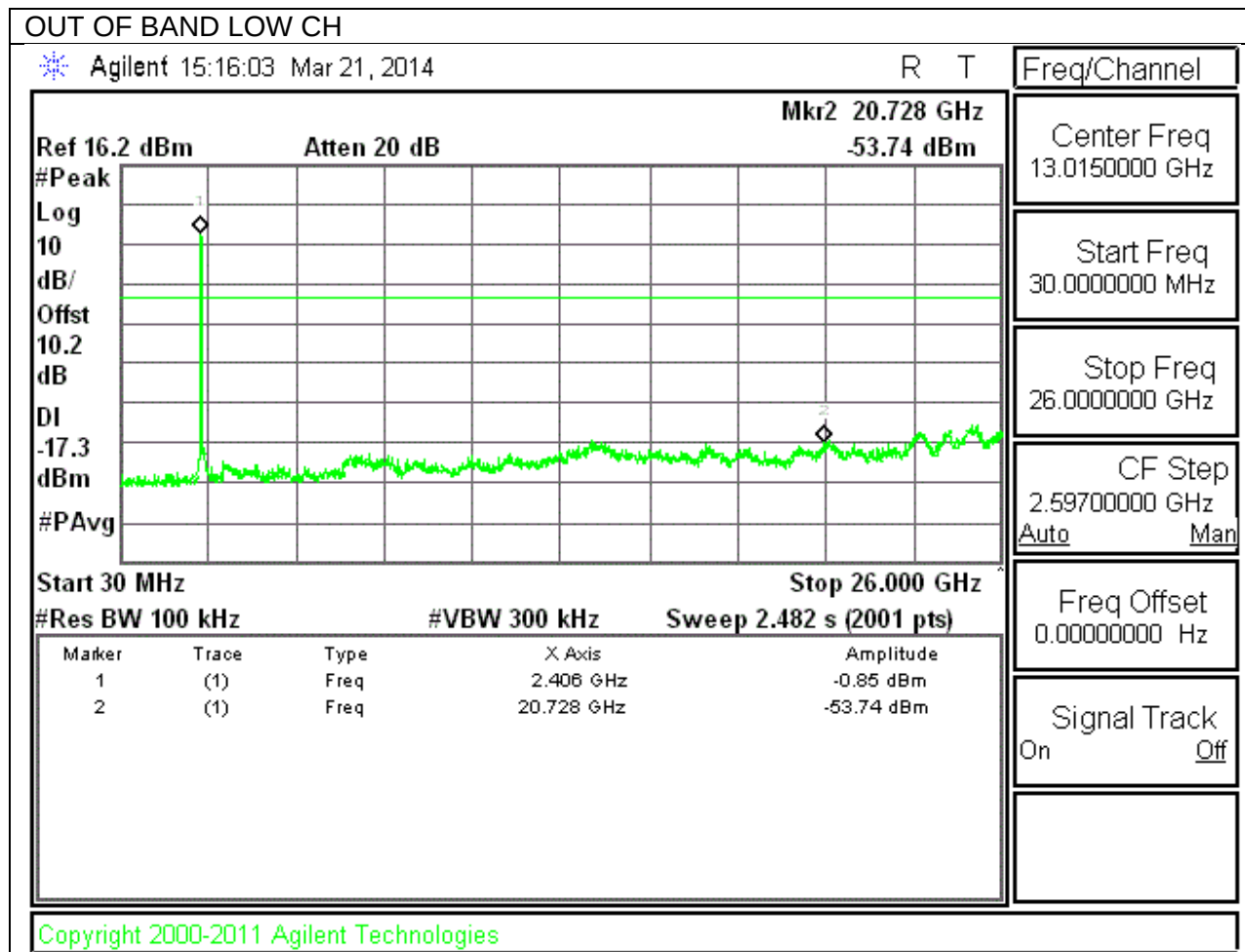
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

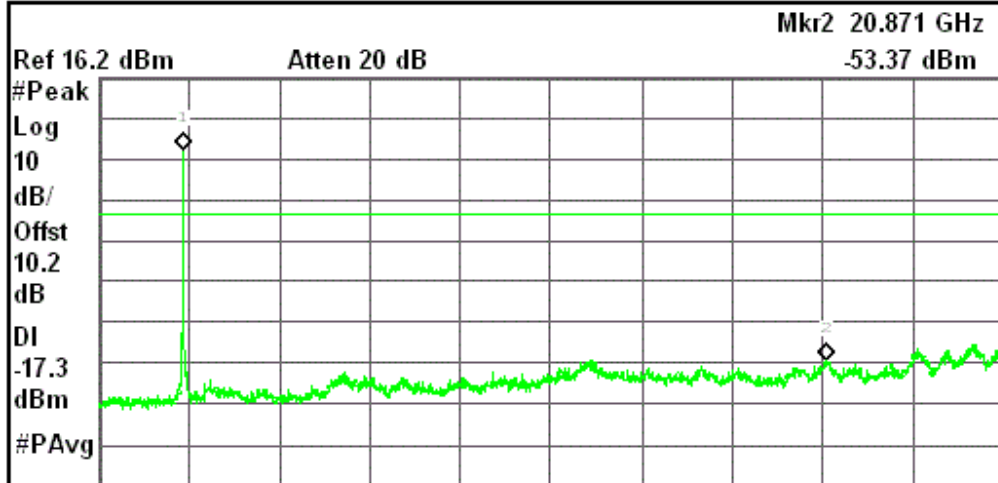


OUT OF BAND MID CH

Agilent 15:16:54 Mar 21, 2014

R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

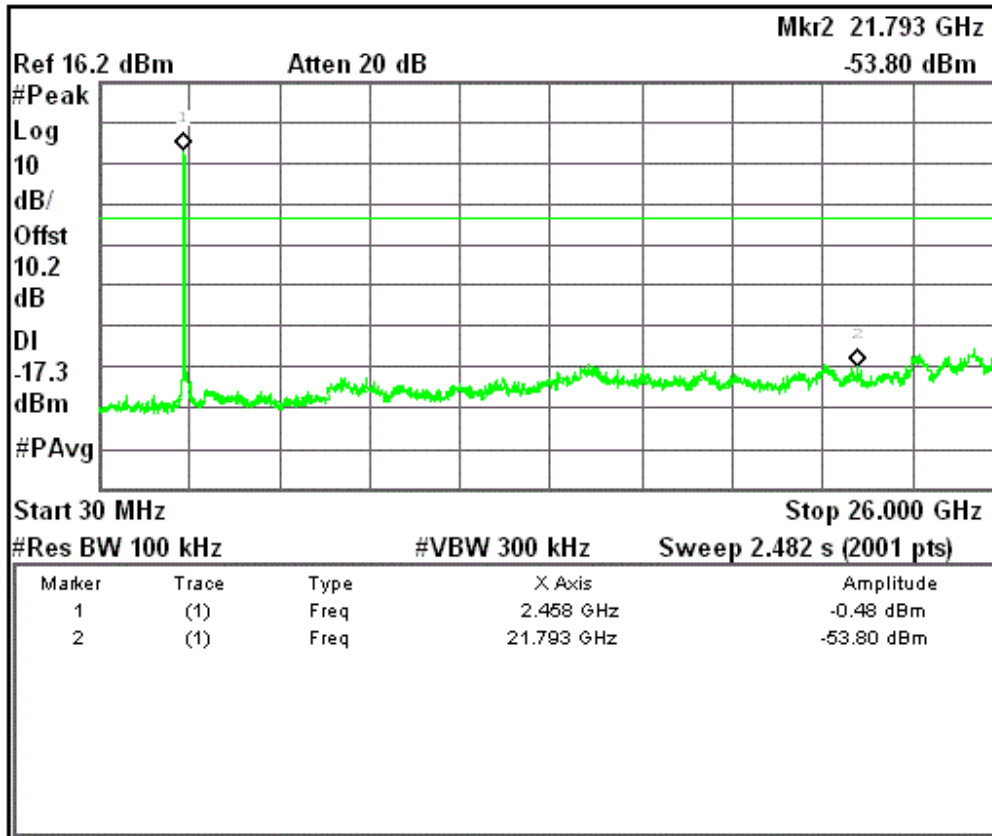
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.432 GHz	-1.46 dBm
2	(1)	Freq	20.871 GHz	-53.37 dBm

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OUT OF BAND HIGH CH

Agilent 15:17:35 Mar 21, 2014

R T



Freq/Channel

Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

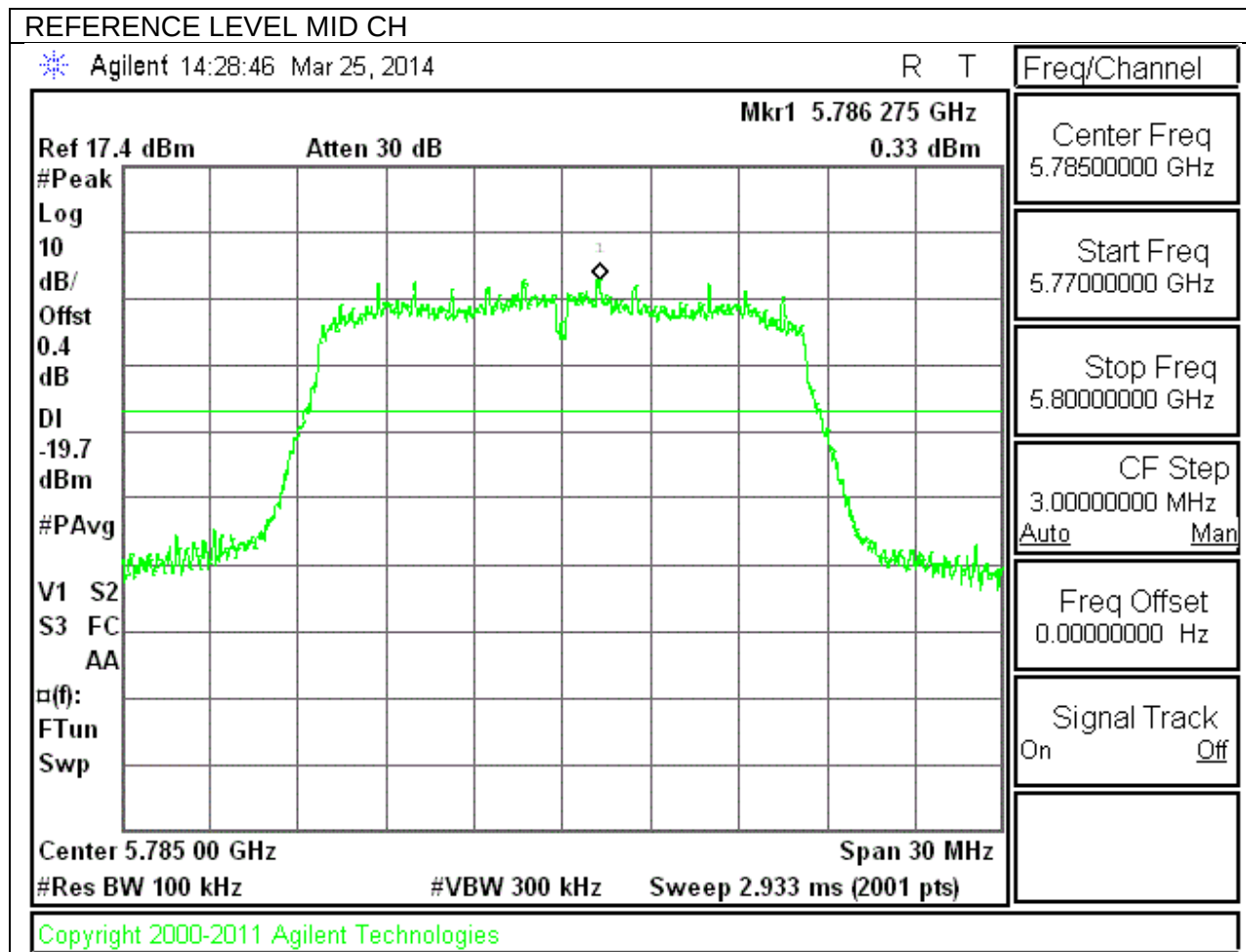
Freq Offset
0.00000000 Hz

Signal Track
On Off

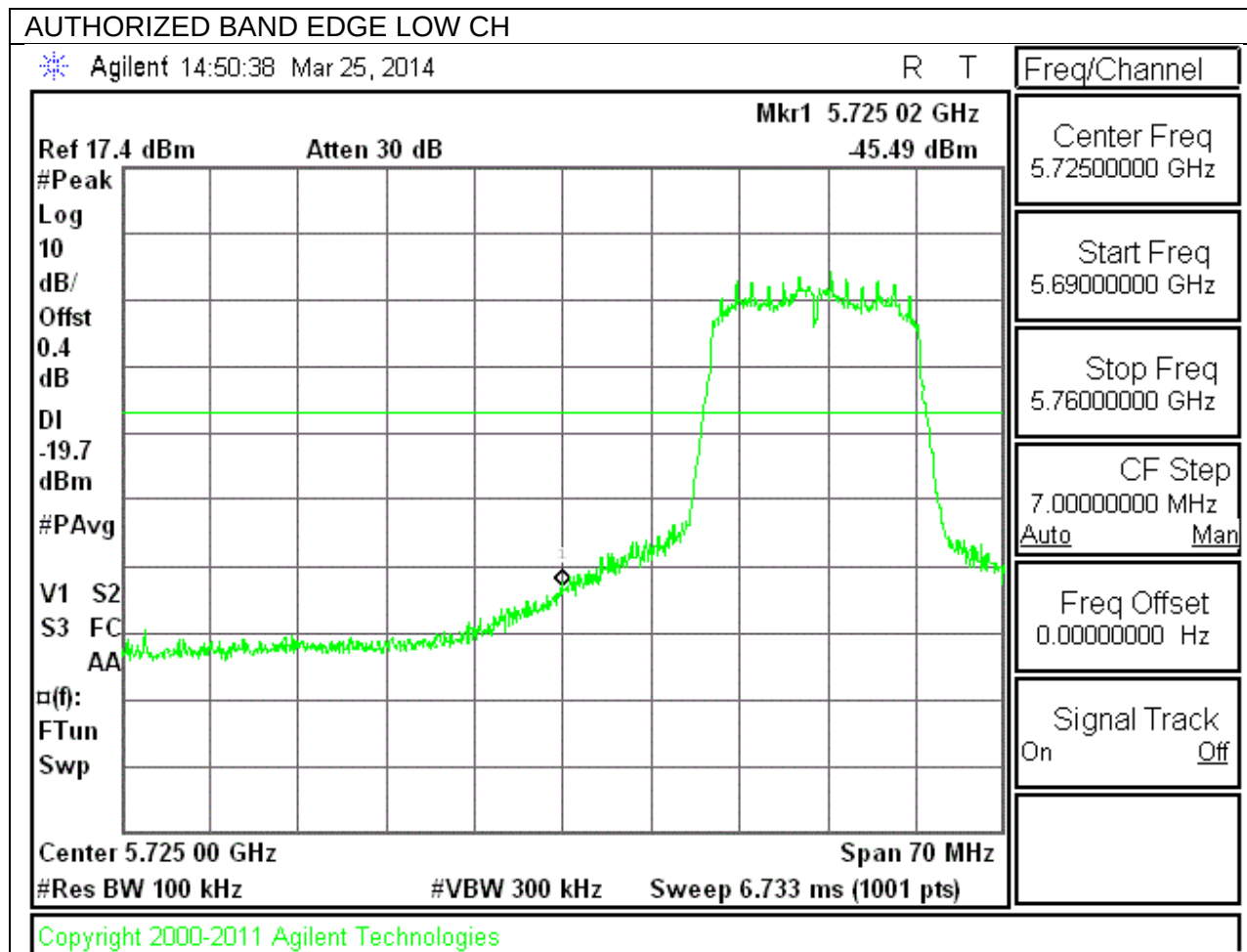
Copyright 2000-2011 Agilent Technologies

9.6.4. 802.11a MODE IN THE 5.8 GHz BAND

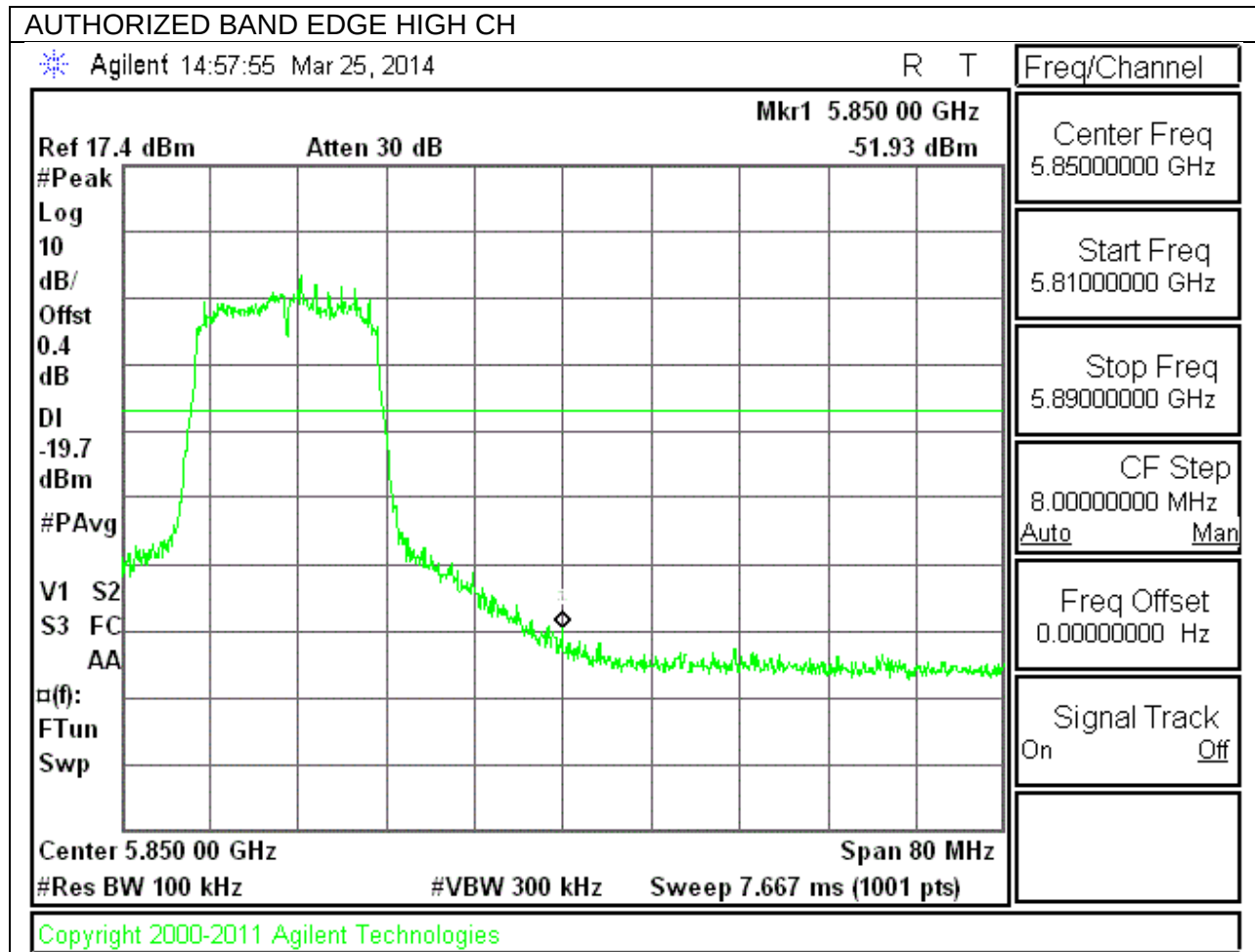
IN-BAND REFERENCE LEVEL



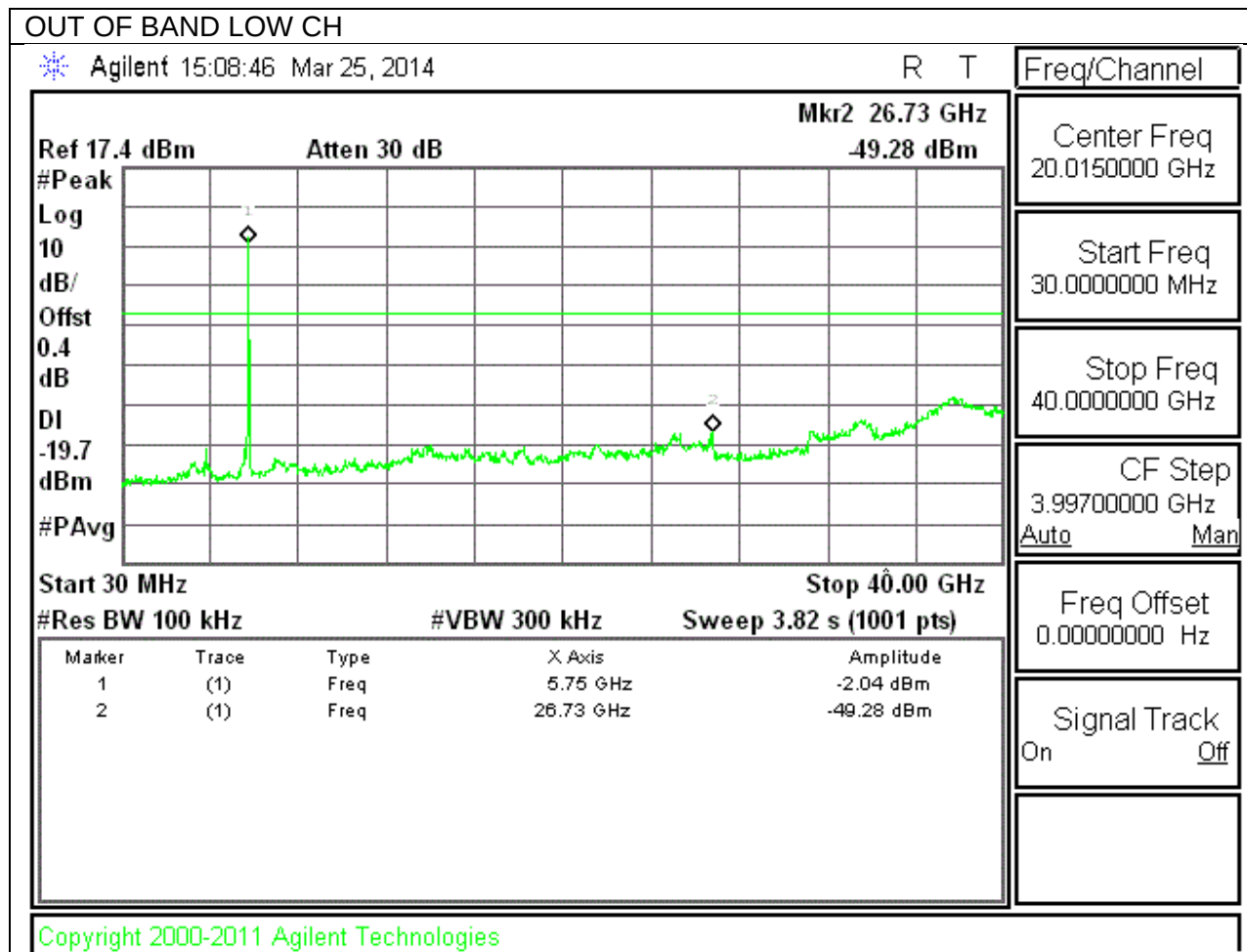
LOW CHANNEL BANDEDGE

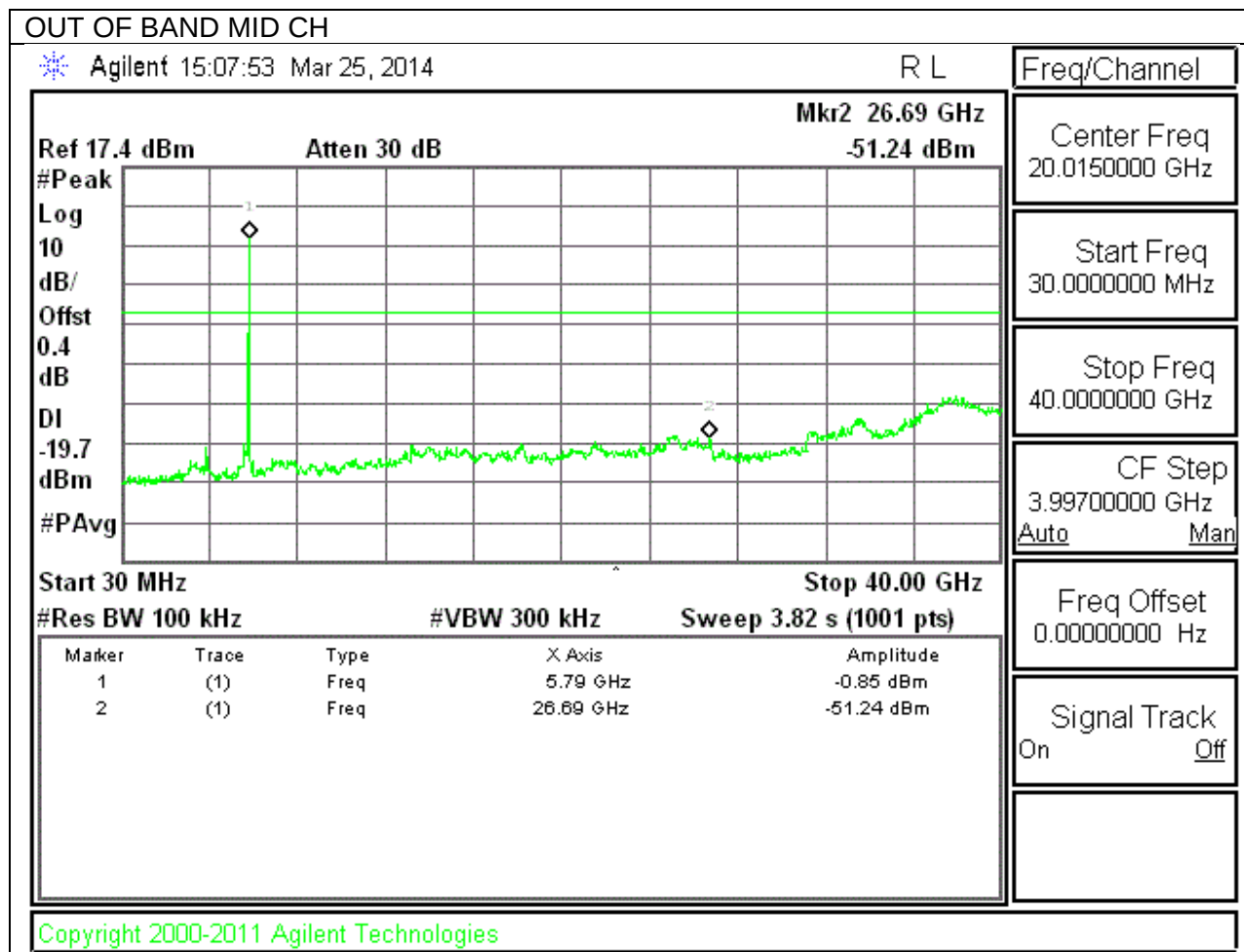


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS





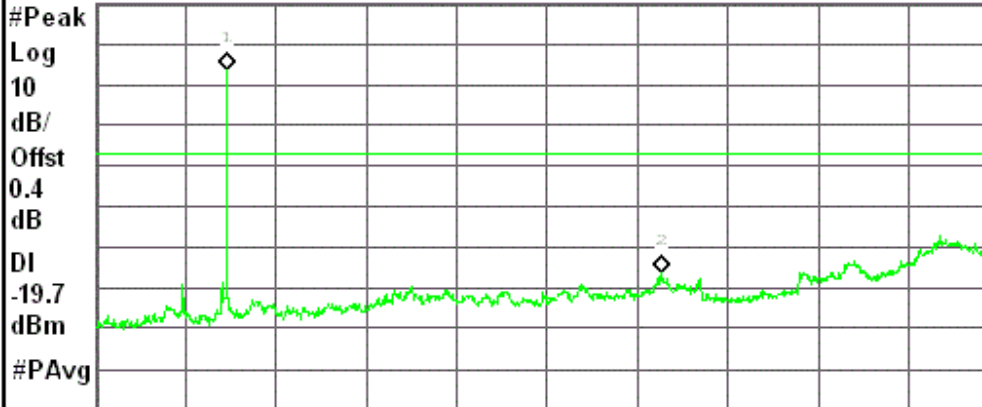
OUT OF BAND HIGH CH

Agilent 15:07:19 Mar 25, 2014

R T

Freq/Channel

Ref 17.4 dBm Atten 30 dB Mkr2 25.01 GHz -49.02 dBm



Center Freq
20.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
40.0000000 GHz

CF Step
3.99700000 GHz
Auto Man

Freq Offset
0.0000000 Hz

Signal Track
On Off

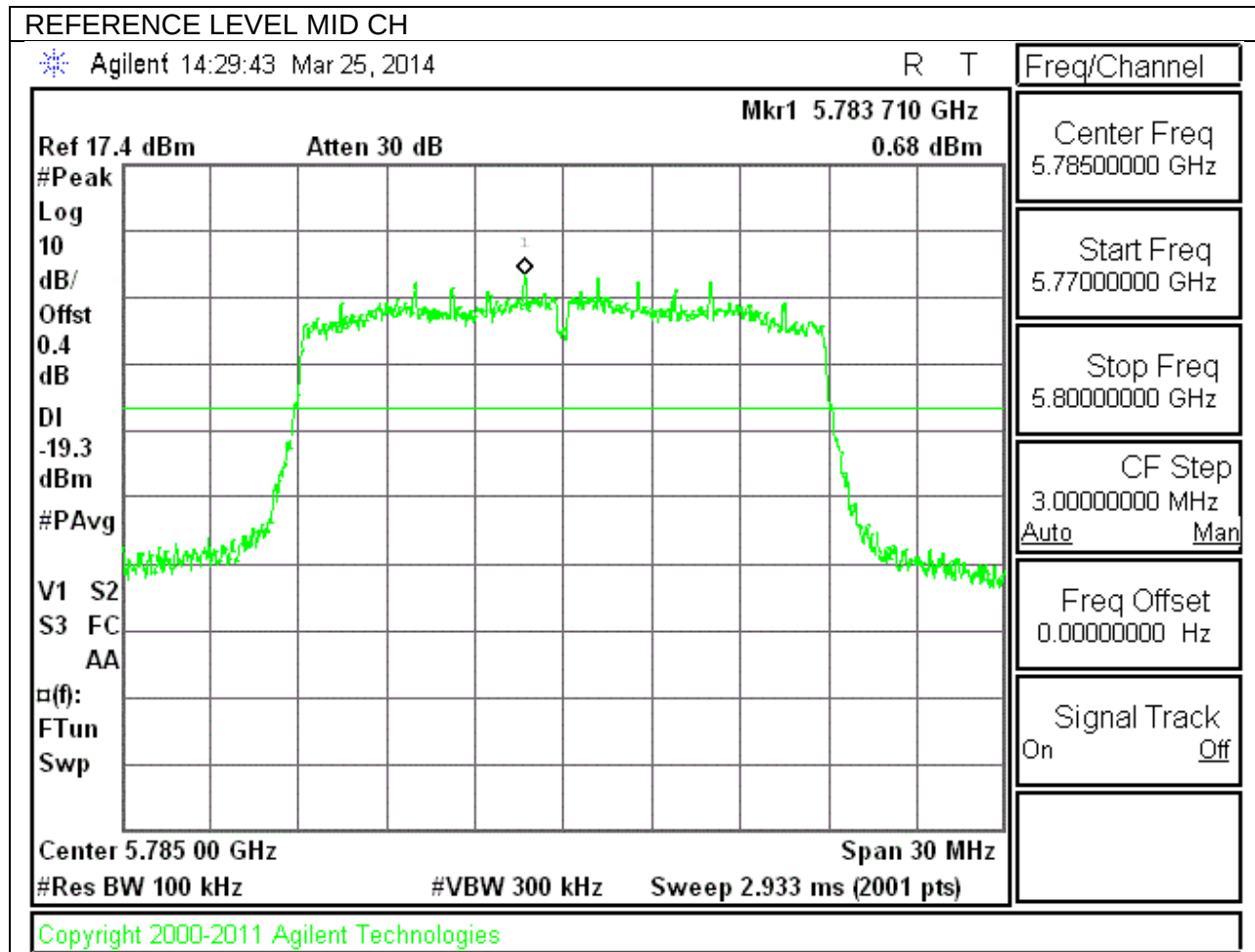
Start 30 MHz Stop 40.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 3.82 s (1001 pts)

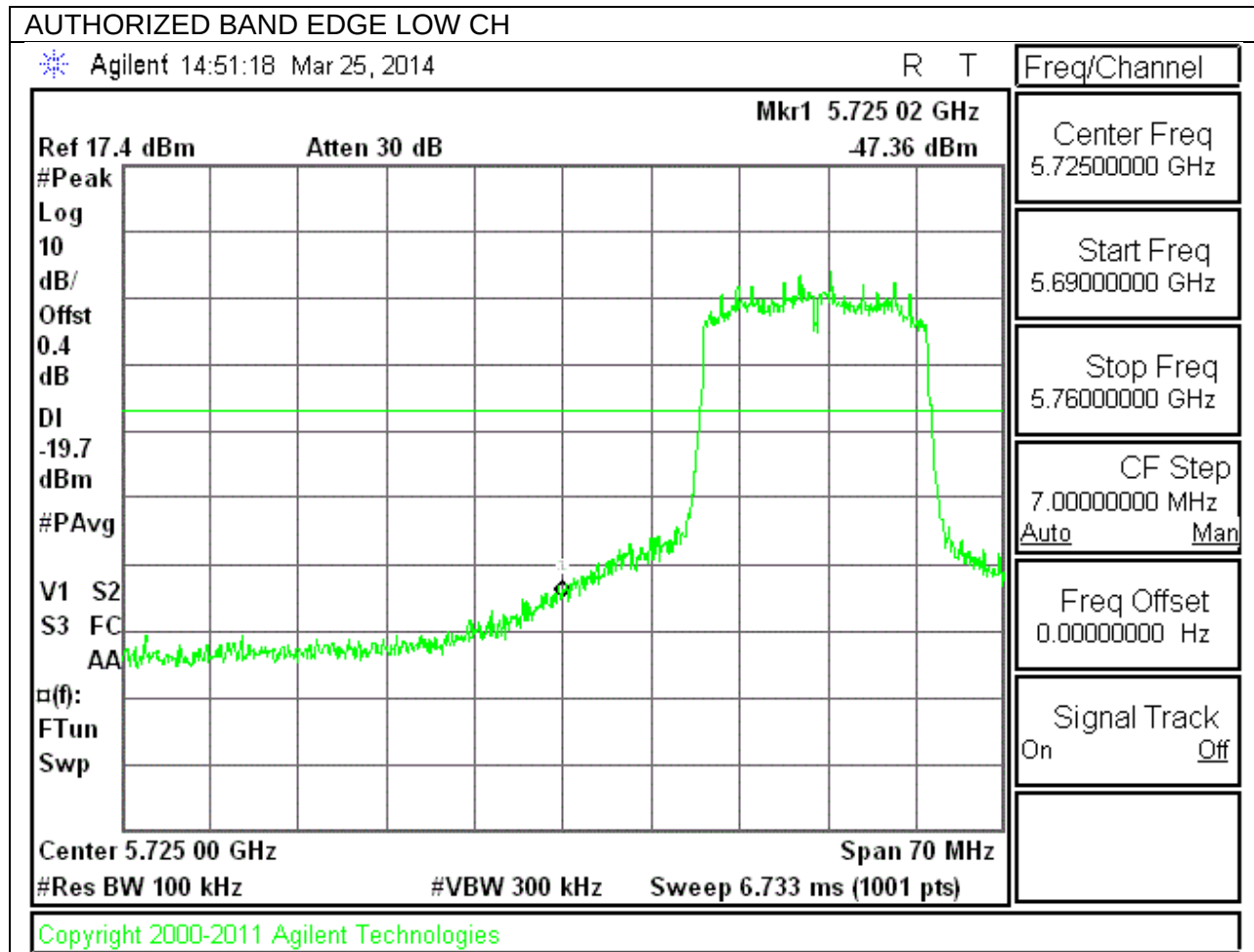
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.83 GHz	0.94 dBm
2	(1)	Freq	25.01 GHz	-49.02 dBm

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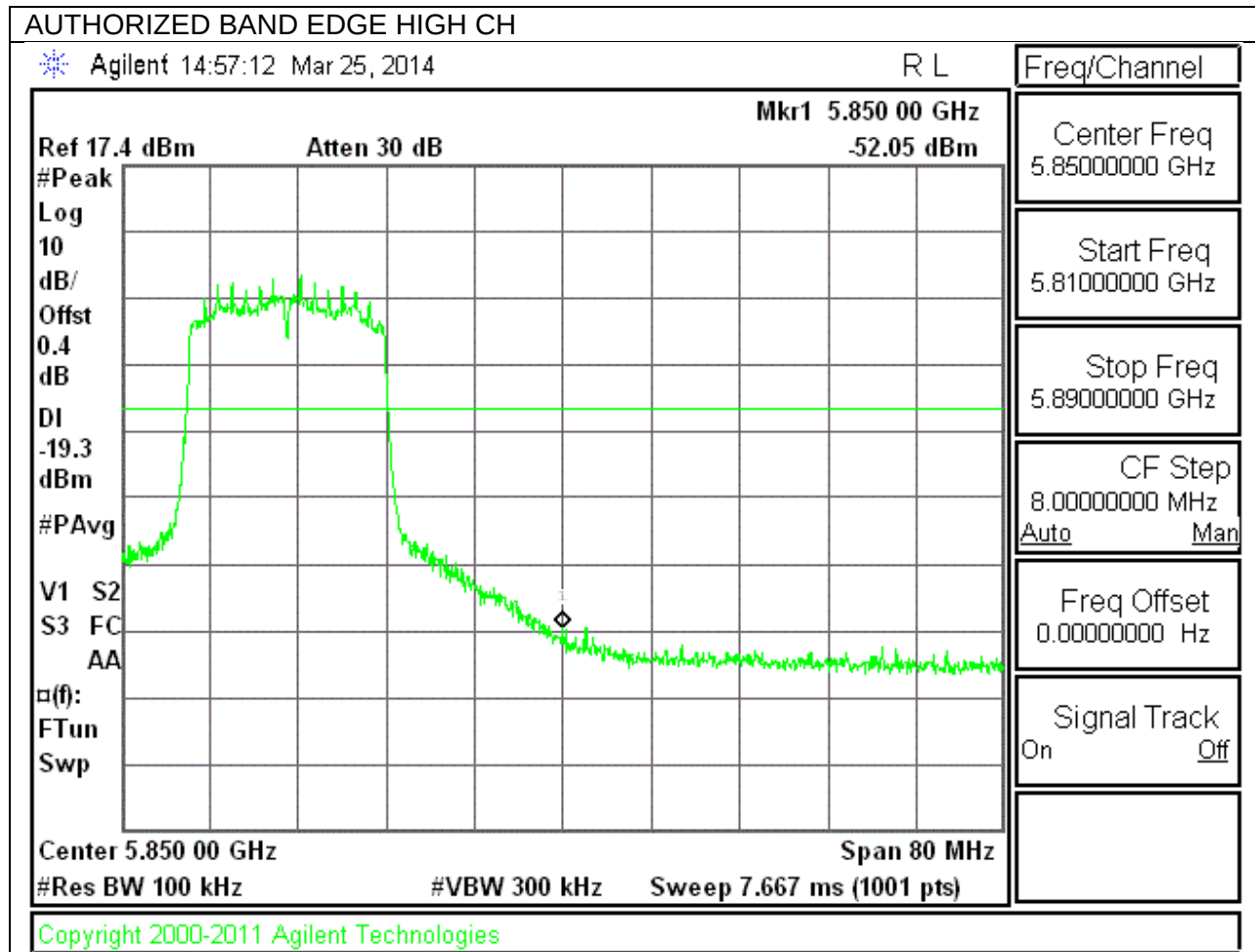
9.6.5. 802.11n MODE IN THE 5.8 GHz BAND

IN-BAND REFERENCE LEVEL

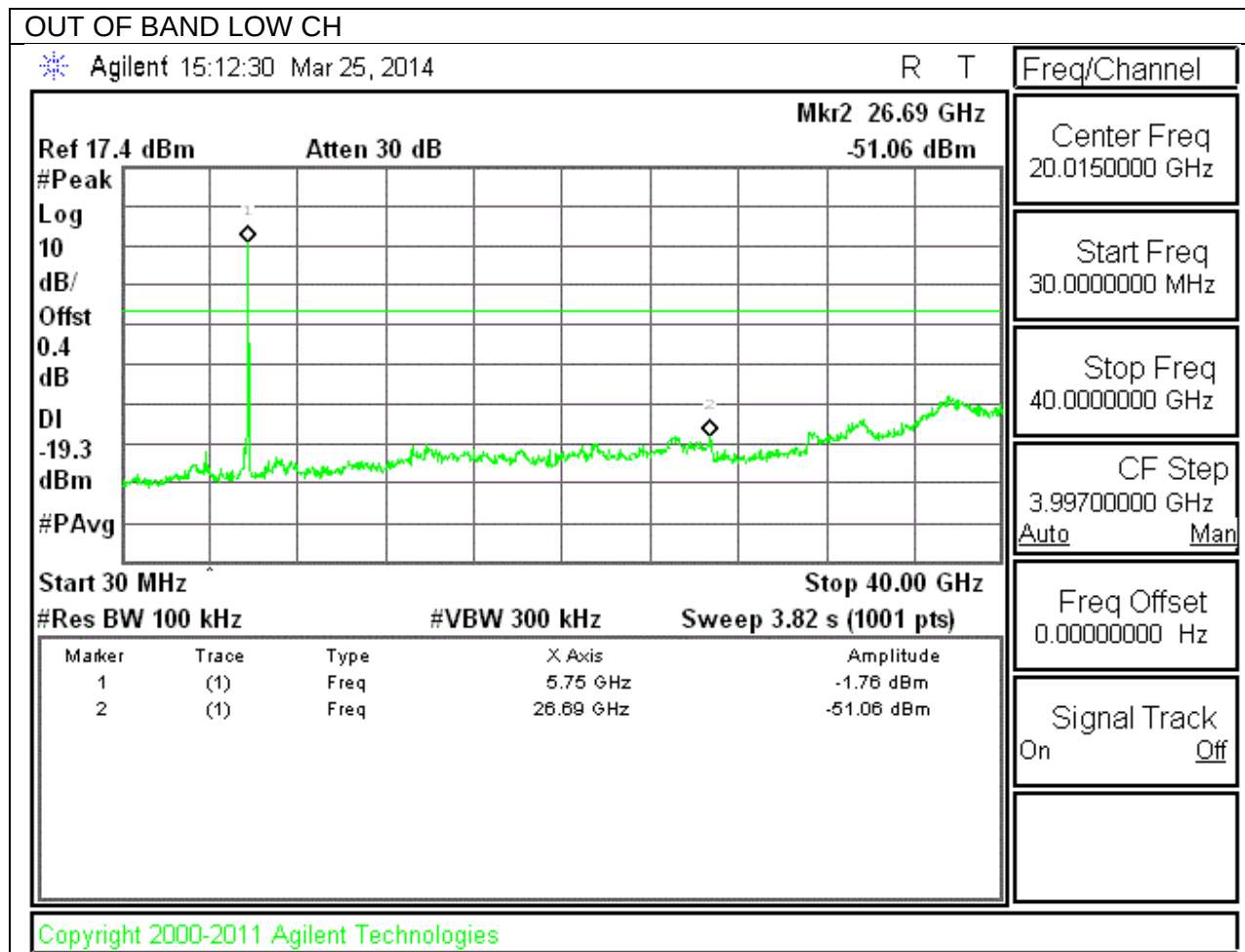




HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



OUT OF BAND MID CH

Agilent 15:12:04 Mar 25, 2014

R T

Freq/Channel

Ref 17.4 dBm

Atten 30 dB

Mkr2 26.73 GHz

-50.08 dBm

#Peak

Log

10

dB/

Offst

0.4

dB

DI

-19.3

dBm

#PAvg

Start 30 MHz

#Res BW 100 kHz

#VBW 300 kHz

Stop 40.00 GHz

Sweep 3.82 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.79 GHz	-2.53 dBm
2	(1)	Freq	26.73 GHz	-50.08 dBm

Center Freq
20.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
40.0000000 GHz

CF Step
3.99700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

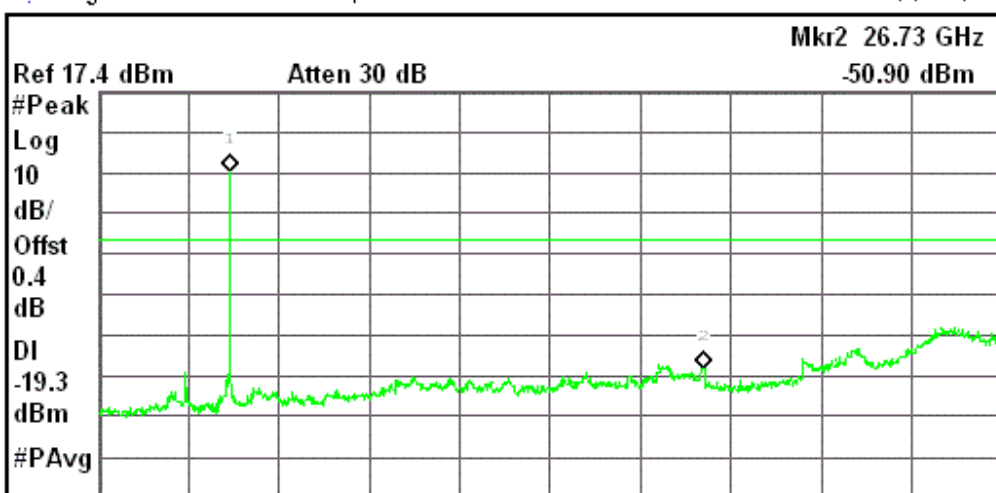
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OUT OF BAND HIGH CH

Agilent 15:11:33 Mar 25, 2014

R T

Freq/Channel



Center Freq
20.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
40.0000000 GHz

CF Step
3.99700000 GHz
Auto Man

Freq Offset
0.0000000 Hz

Signal Track
On Off

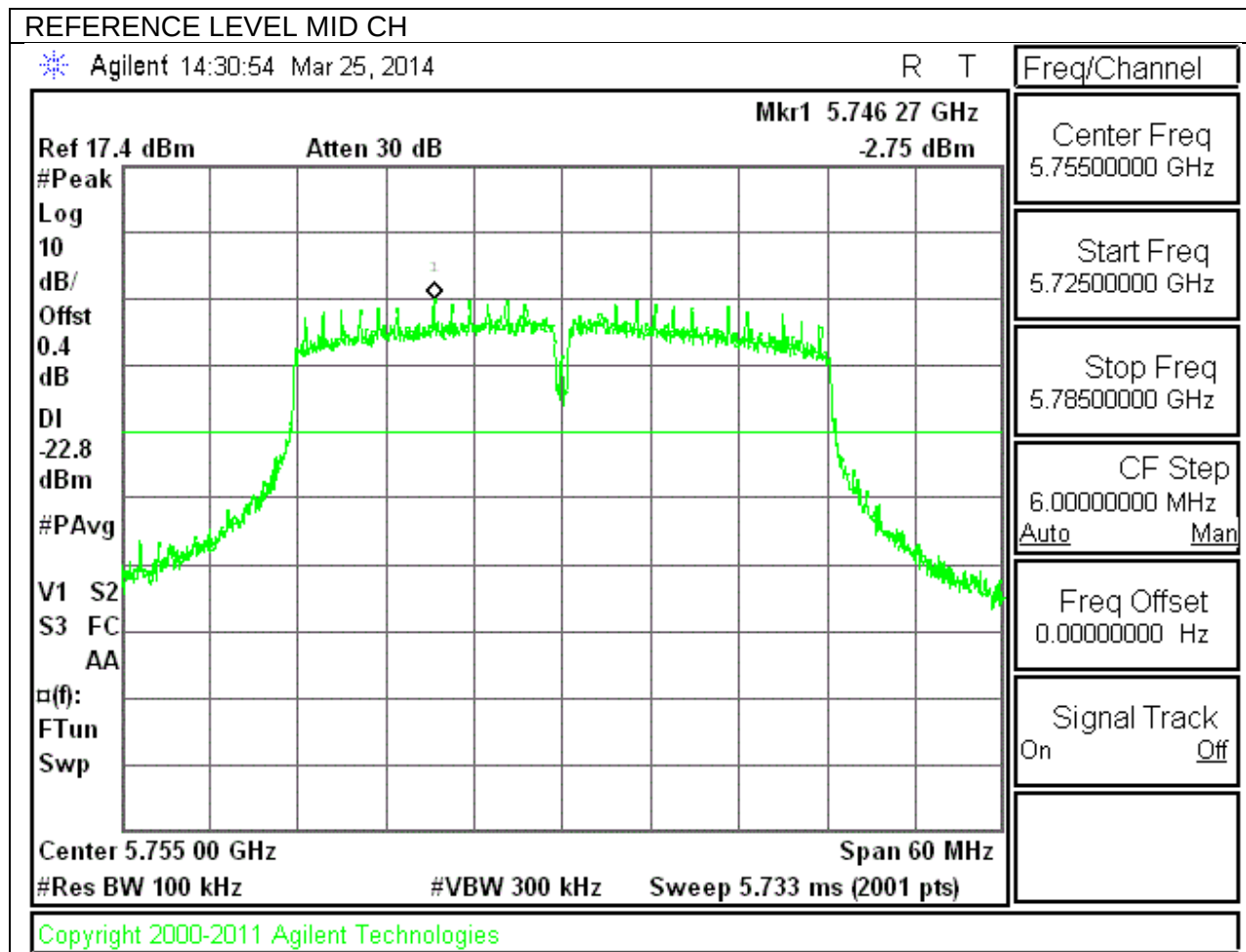
Start 30 MHz Stop 40.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 3.82 s (1001 pts)

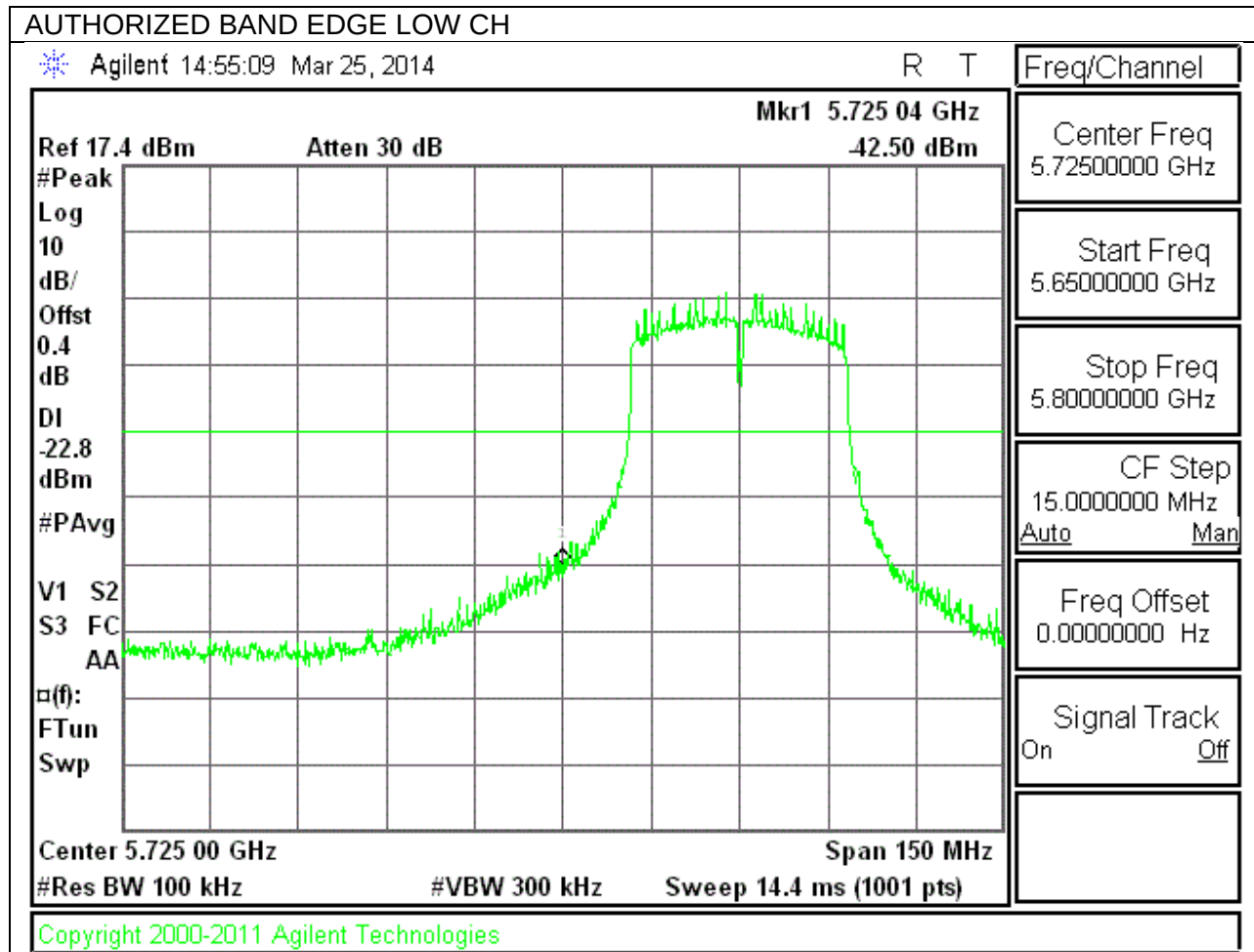
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.83 GHz	-2.46 dBm
2	(1)	Freq	26.73 GHz	-50.90 dBm

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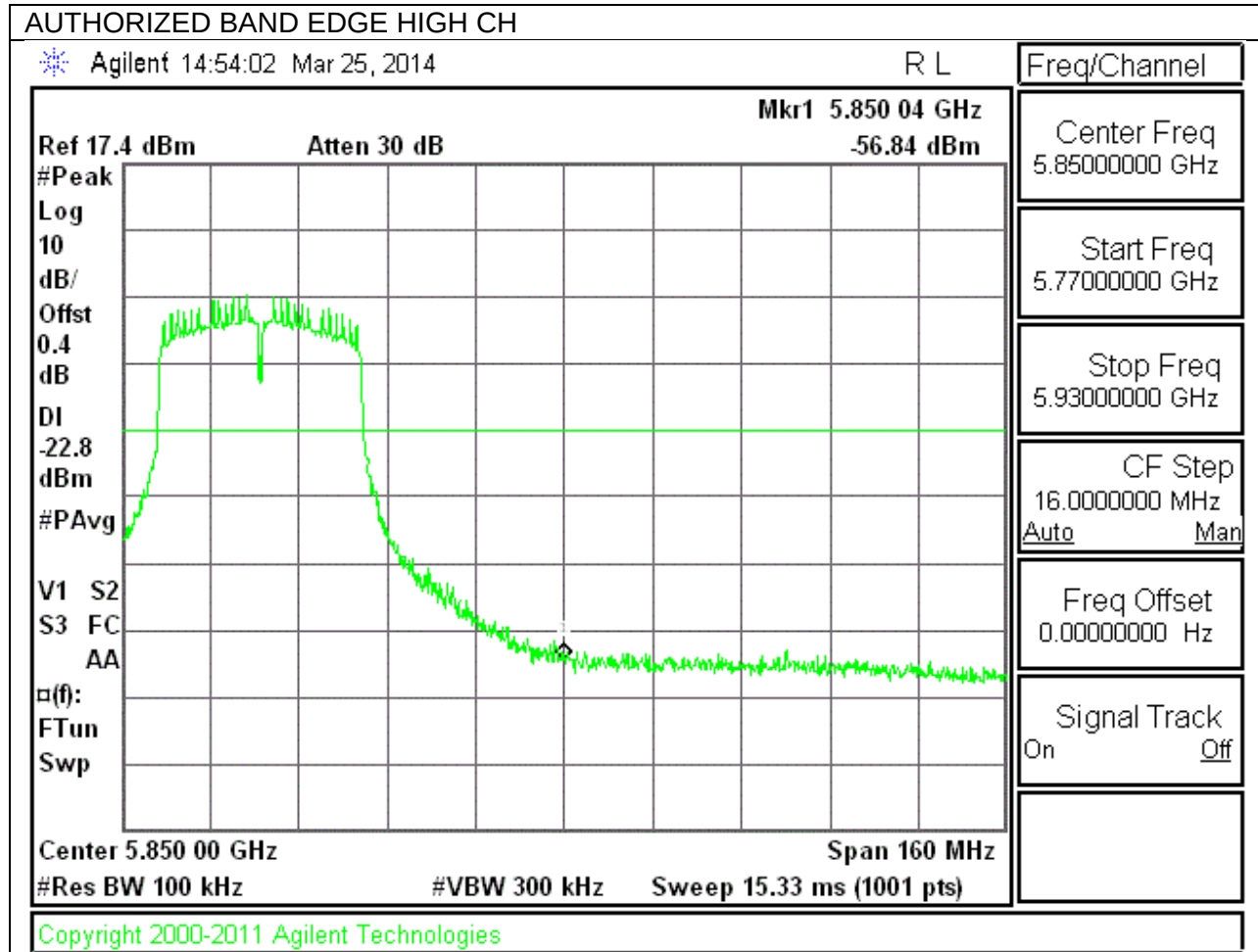
9.6.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

IN-BAND REFERENCE LEVEL

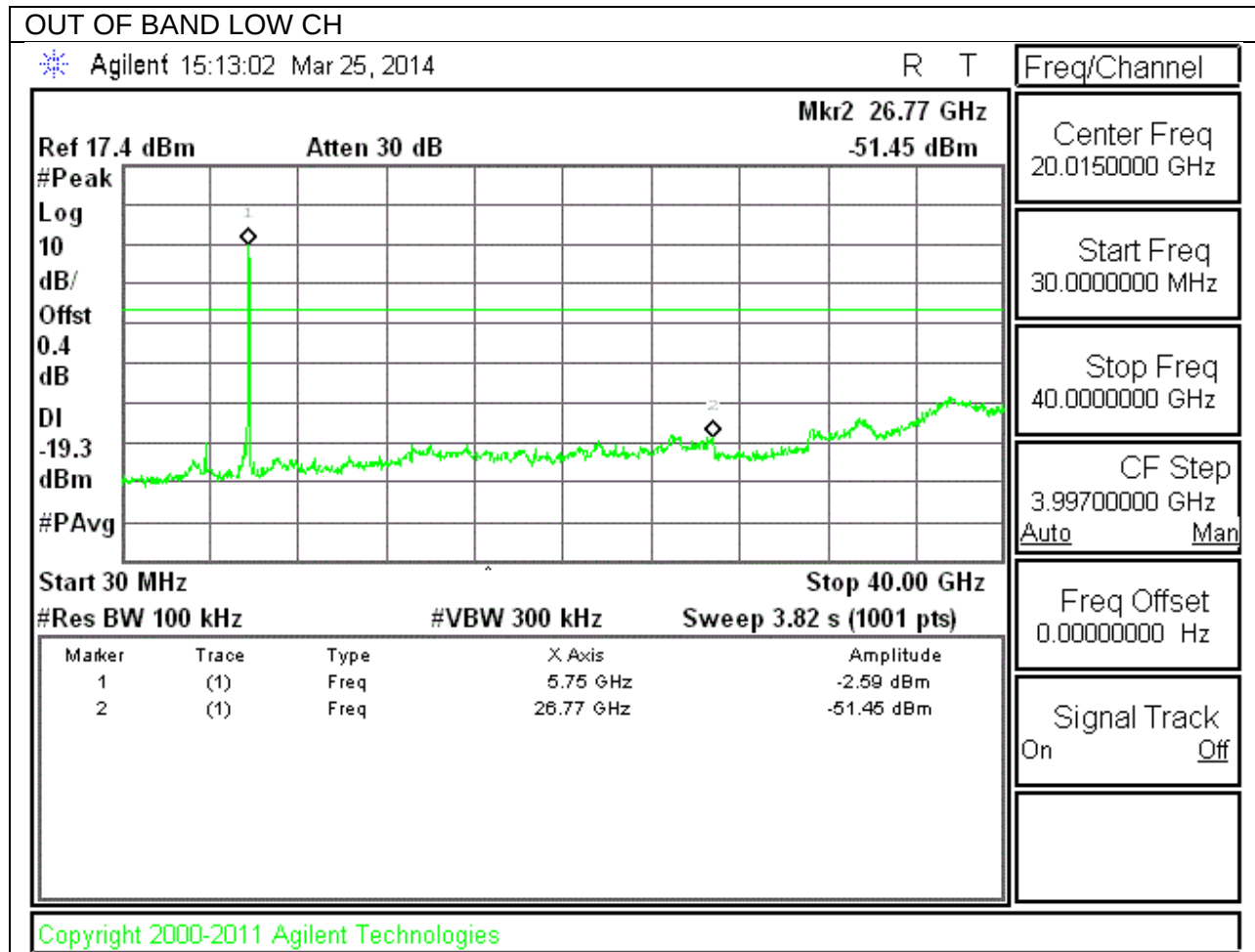




HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

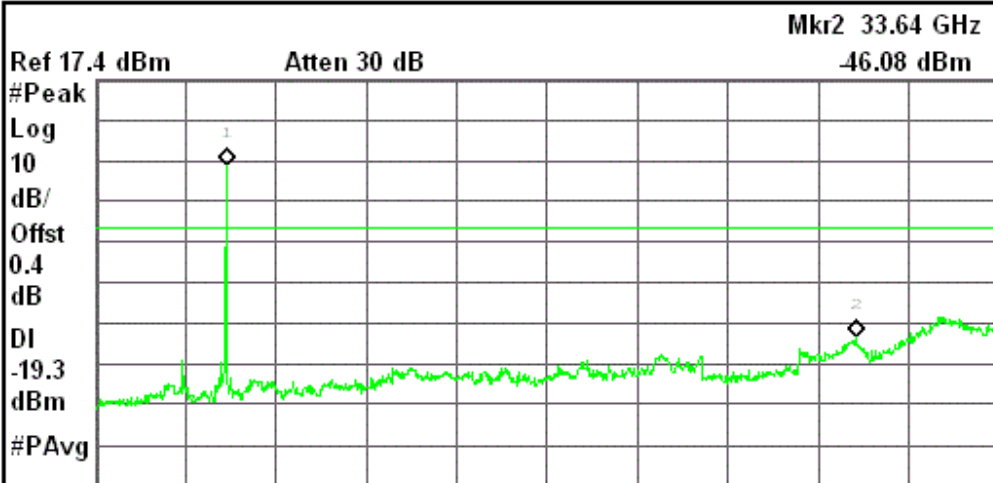


OUT OF BAND HIGH CH

Agilent 15:13:34 Mar 25, 2014

R T

Freq/Channel



Center Freq
20.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
40.0000000 GHz

CF Step
3.99700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 30 MHz Stop 40.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 3.82 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.79 GHz	-3.52 dBm
2	(1)	Freq	33.64 GHz	-46.08 dBm

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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 (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. 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.

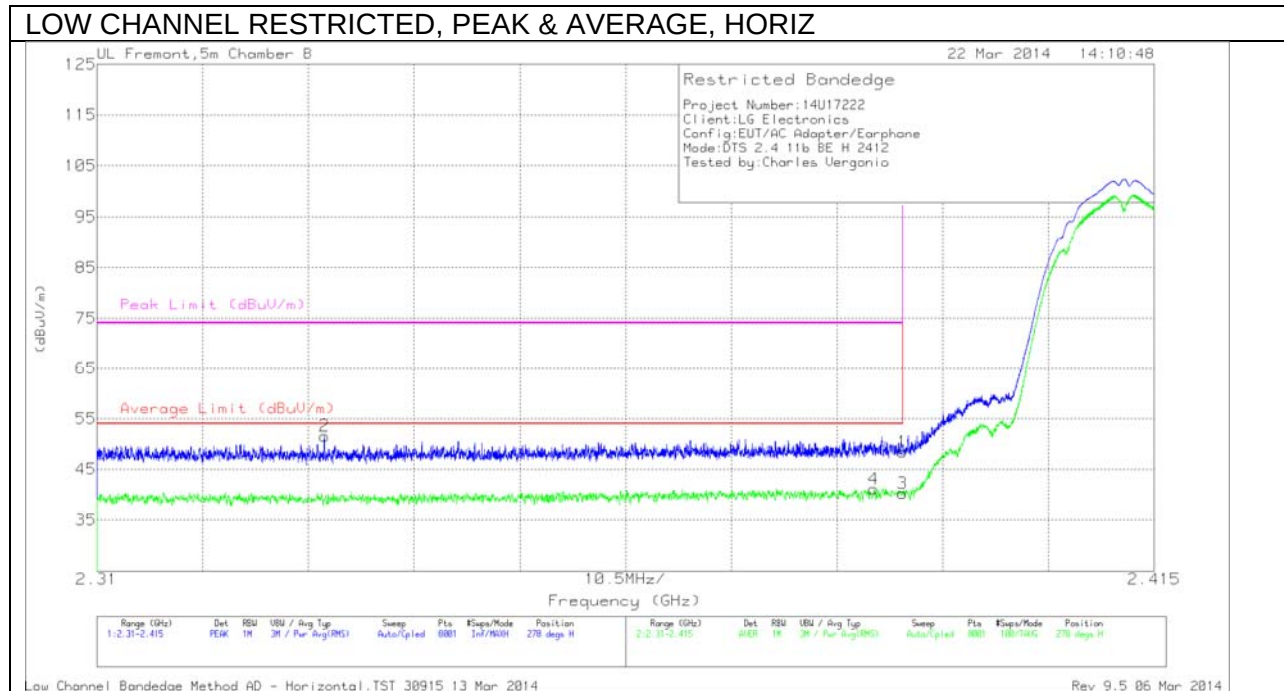
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor= $10\log(1/x)$ For this sample B mode = 0dB (duty cycle >98%); G mode = 0.21dB; N mode = 0.22dB; A mode = 0dB; N mode HT40= 0.42dB.

The spectrum from 1GHz 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)



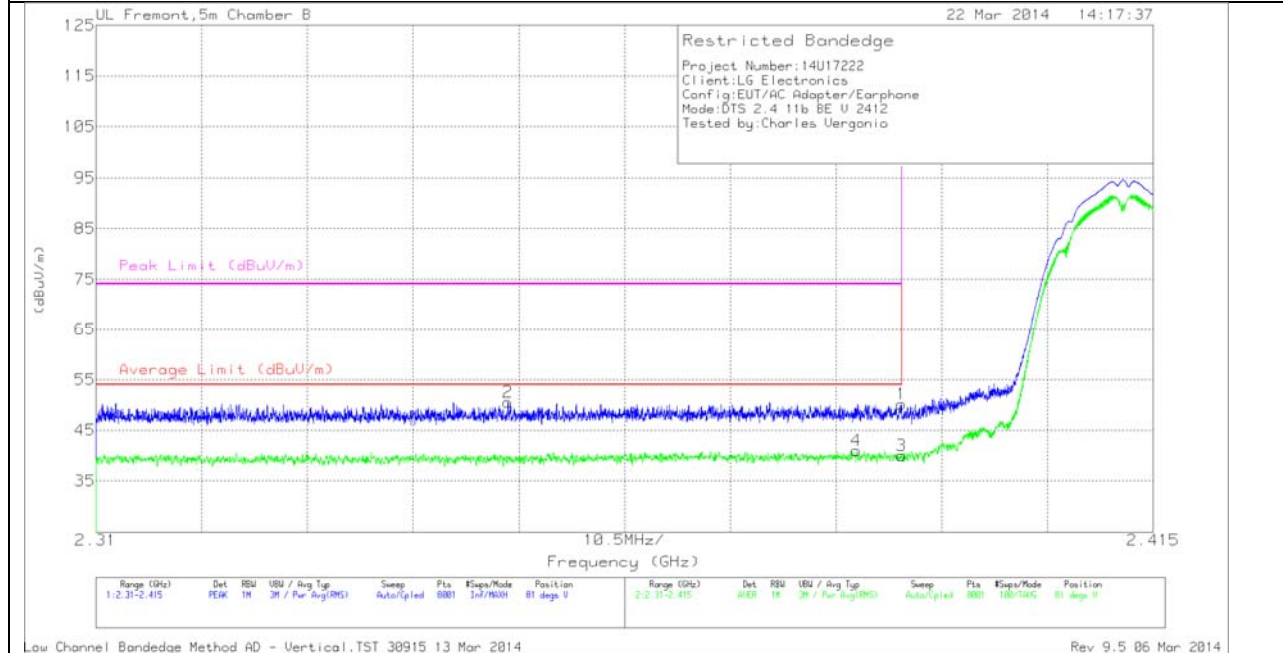
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.23	PK	32.1	-22.9	0	48.43	-	-	74	-25.57	278	229	H
2	* 2.333	42.89	PK	31.8	-23.1	0	51.59	-	-	74	-22.41	278	229	H
3	* 2.39	31	RMS	32.1	-22.9	0	40.2	54	-13.8	-	-	278	229	H
4	* 2.387	31.96	RMS	32.1	-22.9	0	41.16	54	-12.84	-	-	278	229	H

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

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT

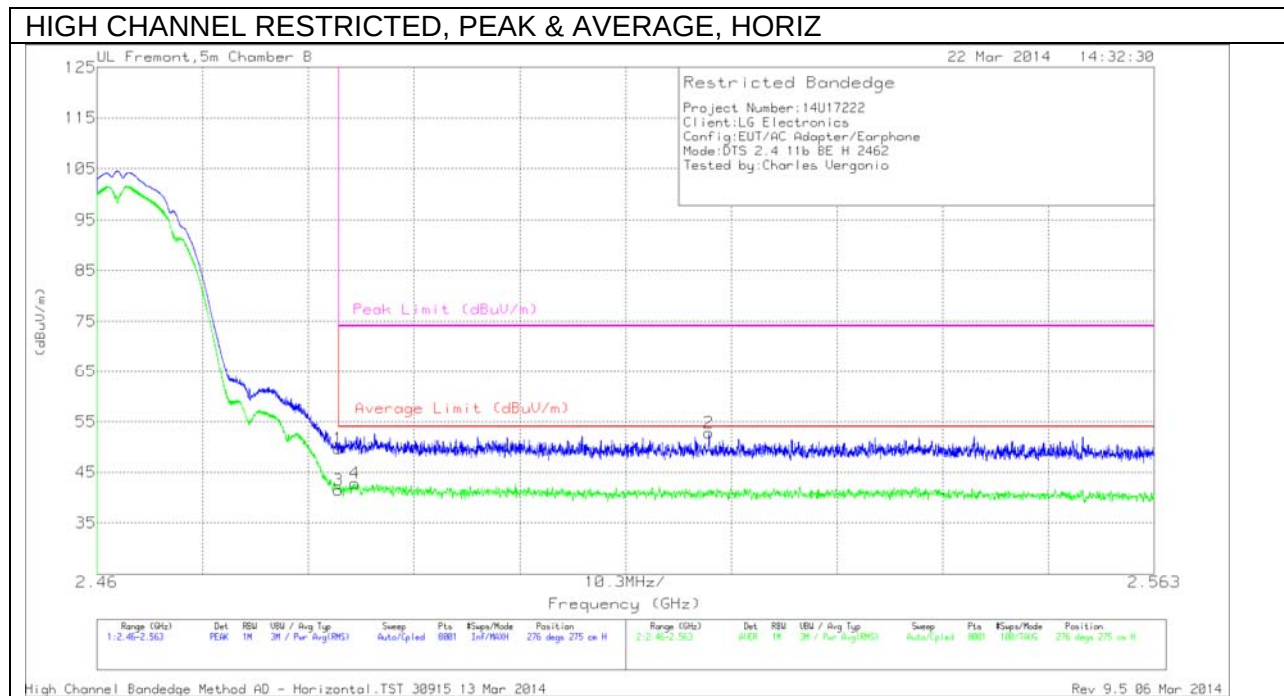


* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

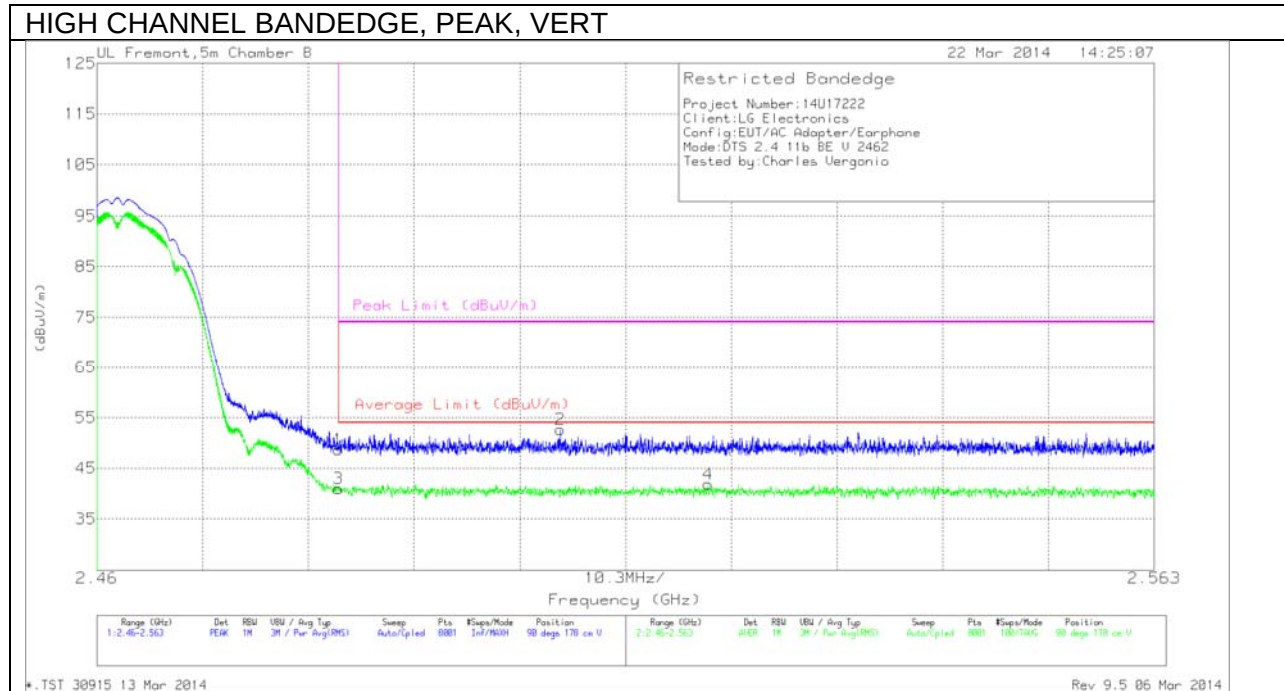


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.83	PK	32.4	-22.6	49.63	-	-	74	-24.37	276	275	H
3	* 2.484	31.73	RMS	32.4	-22.6	41.53	54	-12.47	-	-	276	275	H
4	* 2.485	33.04	RMS	32.4	-22.6	42.84	54	-11.16	-	-	276	275	H
2	2.52	43.04	PK	32.5	-22.8	52.74	-	-	74	-21.26	276	275	H

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

PK - Peak detector

RMS - RMS detection



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.92	PK	32.4	-22.6	48.72	-	-	74	-25.28	90	178	V
3	* 2.484	31.22	RMS	32.4	-22.6	41.02	54	-12.98	-	-	90	178	V
2	2.505	43.04	PK	32.4	-22.8	52.64	-	-	74	-21.36	90	178	V
4	2.52	32.12	RMS	32.5	-22.8	41.82	54	-12.18	-	-	90	178	V

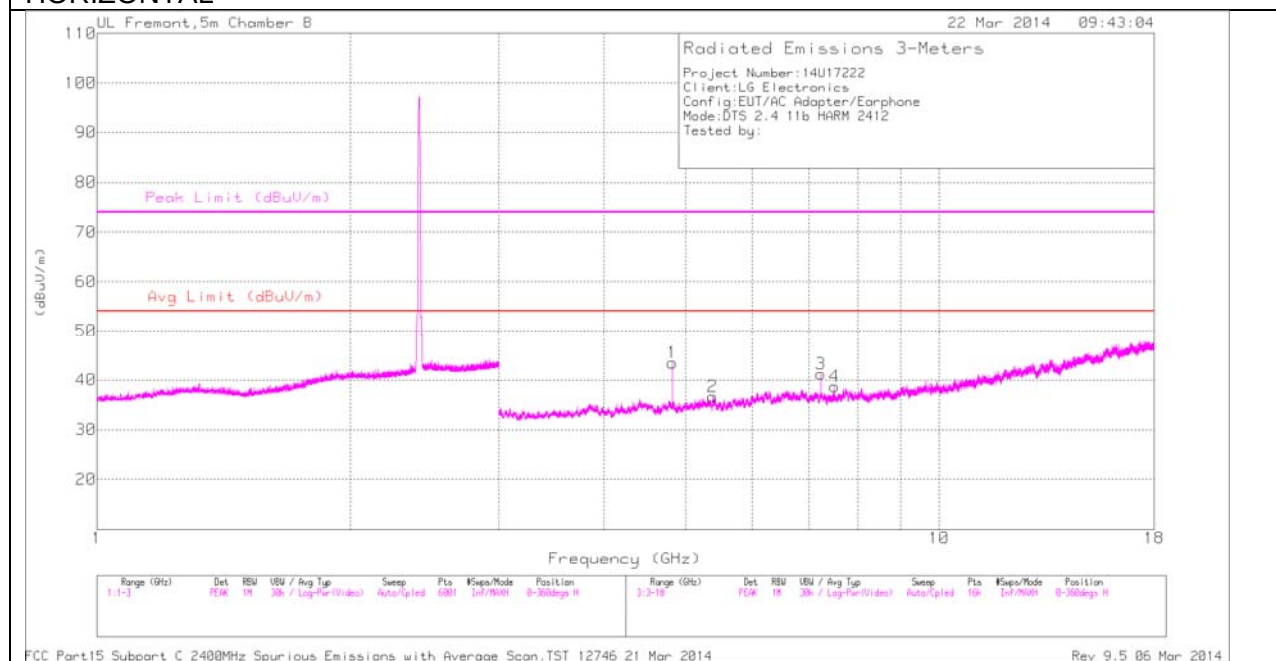
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

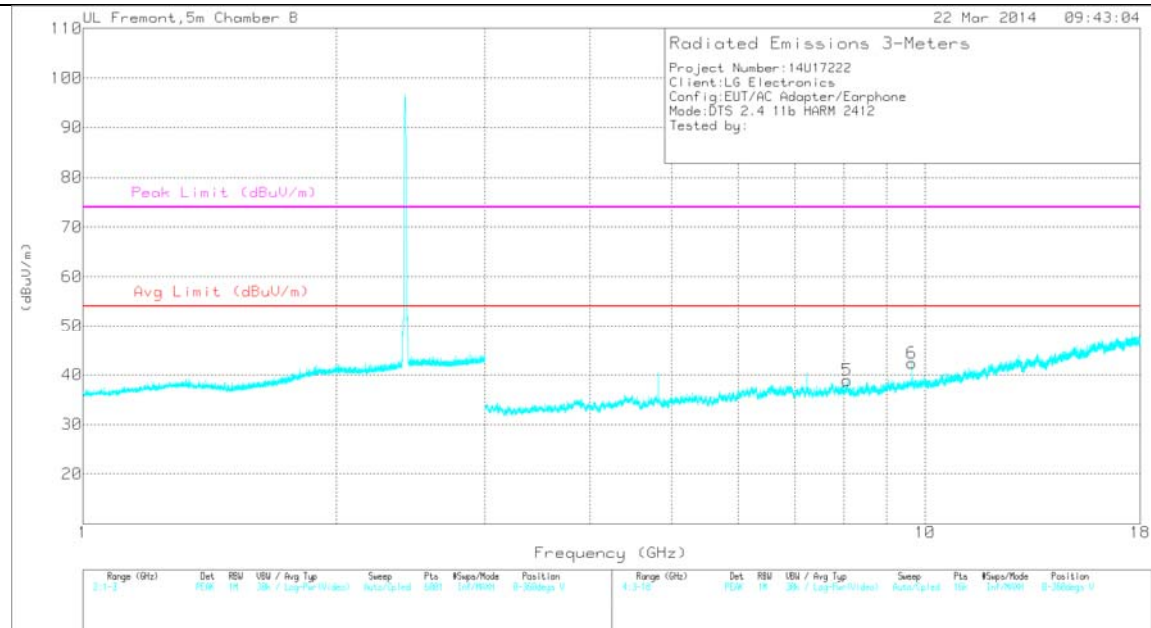
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



FCC Part15 Subpart C 2400MHz Spurious Emissions with Average Scan.TST 12746 21 Mar 2014

Rev 9.5 06 Mar 2014

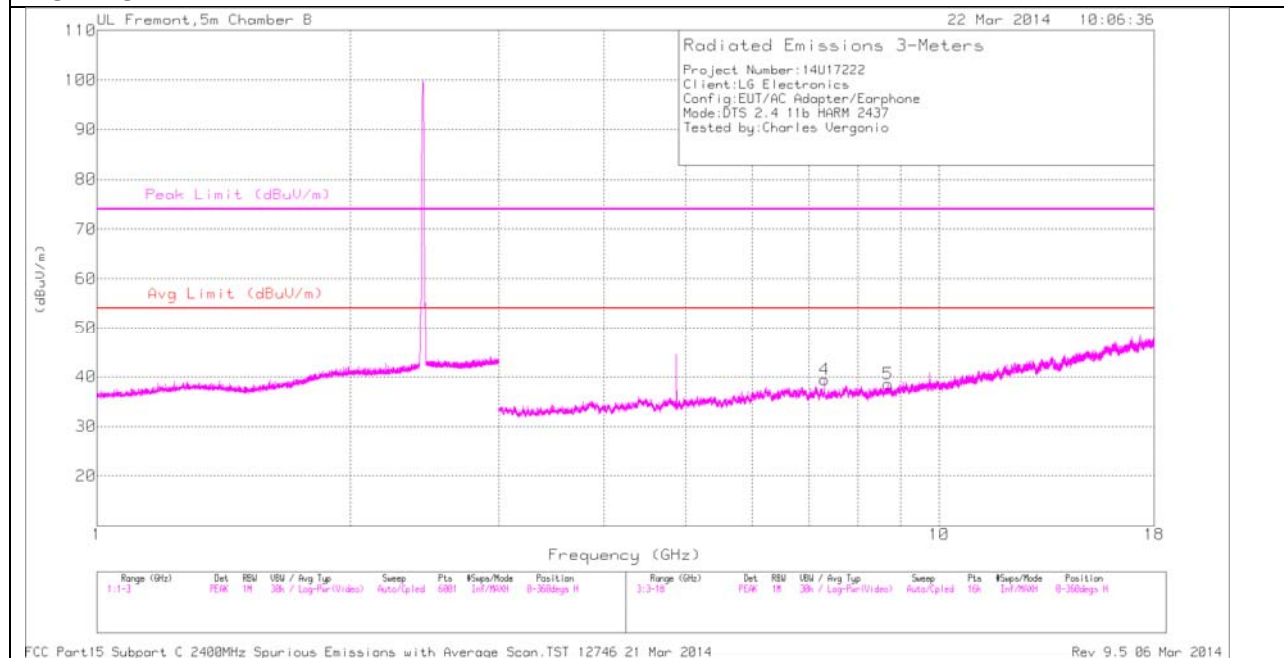
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.823	39.07	PK2	34.2	-29.3	43.97	54	-10.03	74	-30.03	55	284	H
* 4.824	29.32	MAv1	34.2	-29.3	34.22	54	-19.78	74	-39.78	55	284	H
* 5.38	38.88	PK2	34.5	-28.6	44.78	54	-9.22	74	-29.22	55	284	H
* 7.514	36.95	PK2	35.6	-26.8	45.75	54	-8.25	74	-28.25	55	284	H
* 8.084	36.07	PK2	35.7	-25.8	45.97	54	-8.03	74	-28.03	55	284	V
7.237	38	PK2	35.6	-27.4	46.2	54	-7.8	74	-27.8	55	284	H
9.648	36.83	PK2	36.8	-24.1	49.53	54	-4.47	74	-24.47	55	284	V
9.648	28.13	MAv1	36.8	-24.1	40.83	54	-13.17	74	-33.17	55	284	V

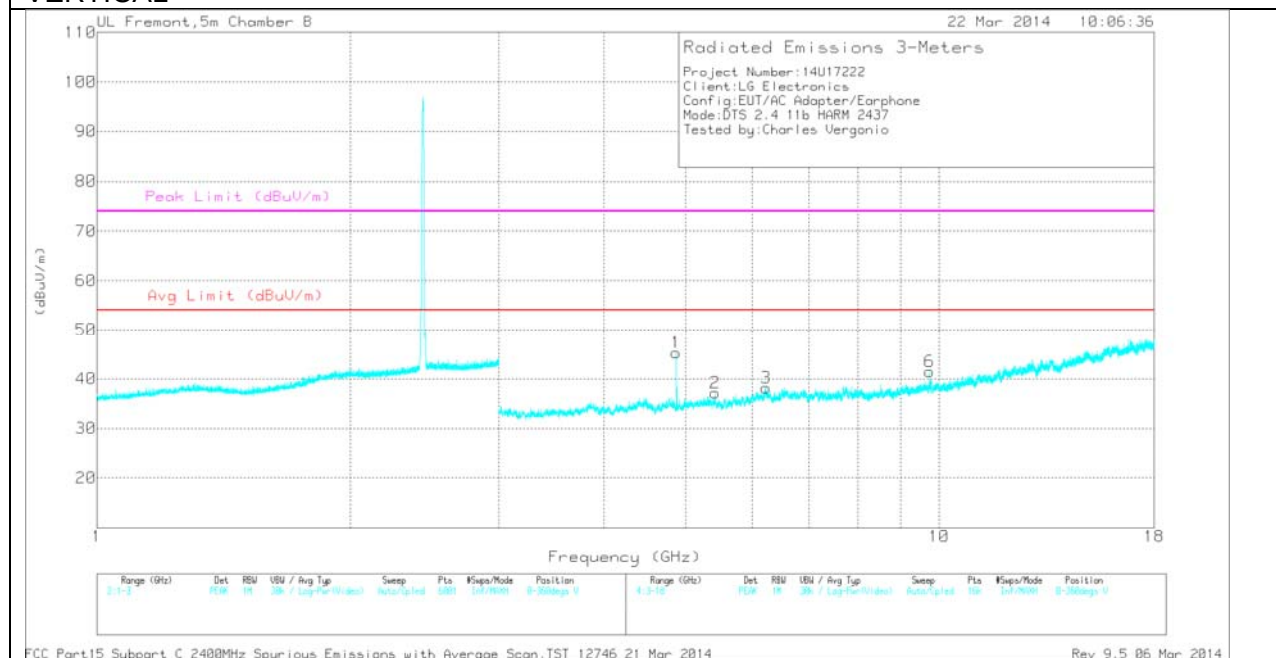
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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



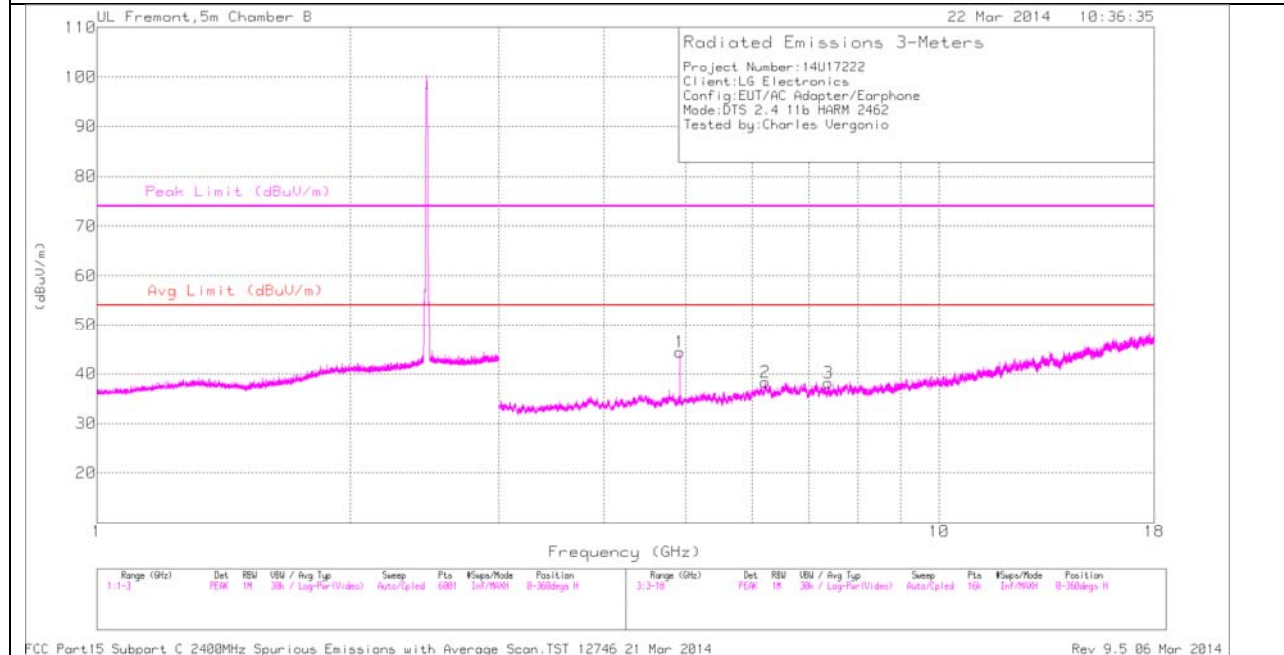
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 7.311	38.1	PK2	35.6	-27.7	46	54	-8	74	-28	1	100	H
* 5.415	39.06	PK2	34.5	-29.1	44.46	54	-9.54	74	-29.54	1	100	V
* 4.874	44.33	PK2	34.2	-30.6	47.93	54	-6.07	74	-26.07	1	363	V
* 4.875	29.9	MAv1	34.2	-30.6	33.5	54	-20.5	74	-40.5	1	363	V
6.233	39.09	PK2	35.4	-28	46.49	54	-7.51	74	-27.51	1	100	V
8.69	35.87	PK2	35.9	-25.5	46.27	54	-7.73	74	-27.73	1	100	H
9.748	25.21	MAv1	36.9	-24.2	37.91	54	-16.09	74	-36.09	314	287	V
9.749	34.47	PK2	36.9	-24.2	47.17	54	-6.83	74	-26.83	314	287	V

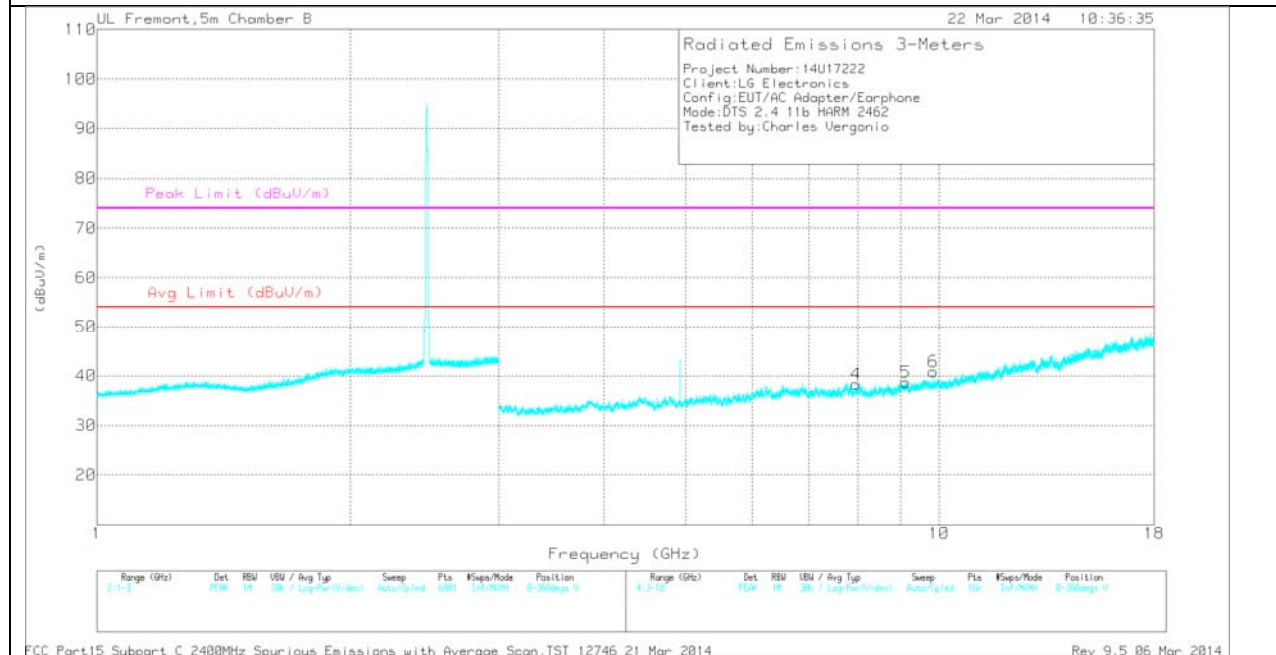
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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.

HIGH CHANNEL VERTICAL



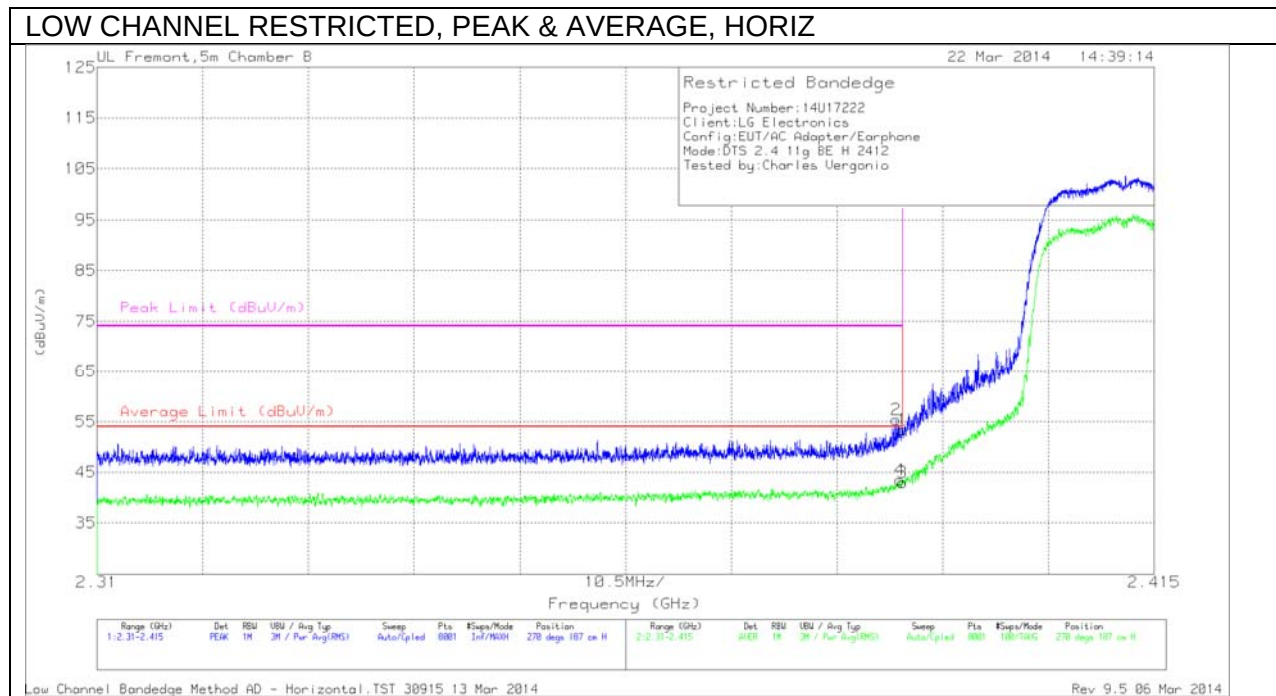
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 7.387	37.97	PK2	35.6	-27.4	46.17	54	-7.83	74	-27.83	359	100	H
* 4.924	44.15	PK2	34.2	-30.7	47.65	54	-6.35	74	-26.35	143	254	H
* 4.924	34.48	MAv1	34.2	-30.7	37.98	54	-16.02	74	-36.02	143	254	H
* 9.125	34.86	PK2	36.3	-24.9	46.26	54	-7.74	74	-27.74	359	100	V
6.216	38.84	PK2	35.4	-27.7	46.54	54	-7.46	74	-27.46	359	100	H
7.967	37.84	PK2	35.7	-27.4	46.14	54	-7.86	74	-27.86	359	100	V
9.849	35.2	PK2	37	-24.1	48.1	54	-5.9	74	-25.9	359	100	V

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

10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



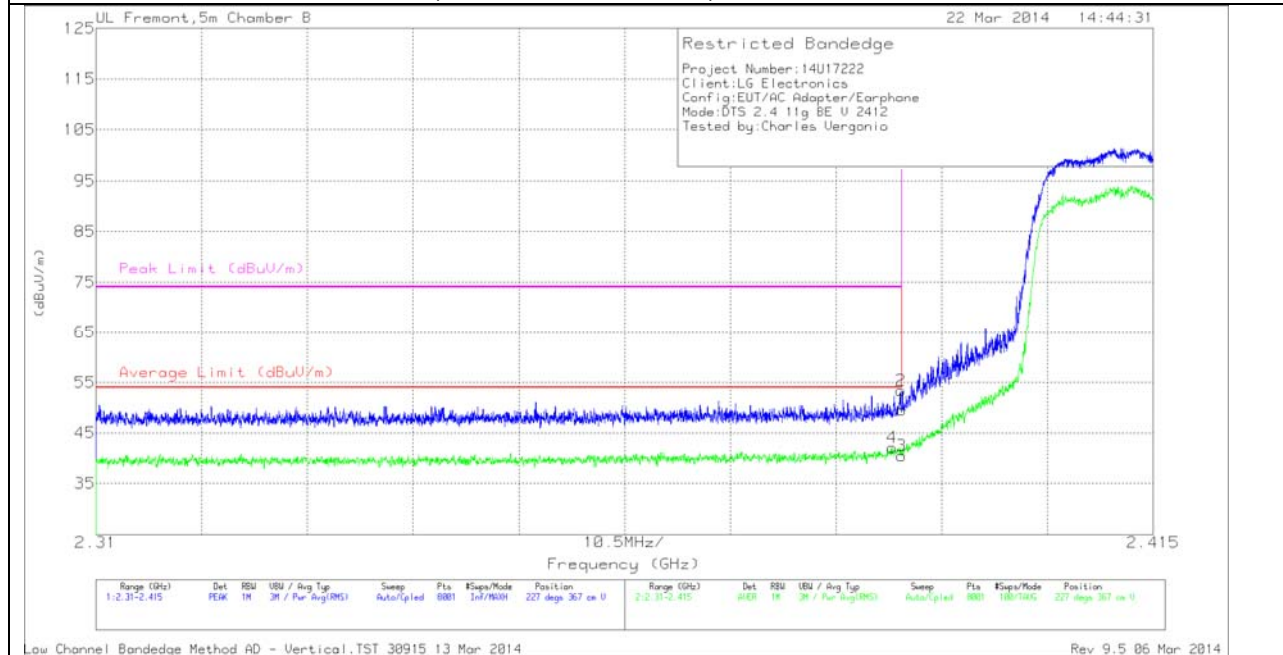
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.18	PK	32.1	-22.9	0	53.38	-	-	74	-20.62	270	187	H
2	* 2.389	46.16	PK	32.1	-22.9	0	55.36	-	-	74	-18.64	270	187	H
3	* 2.39	33.53	RMS	32.1	-22.9	.2	42.93	54	-11.07	-	-	270	187	H
4	* 2.39	34.08	RMS	32.1	-22.9	.2	43.48	54	-10.52	-	-	270	187	H

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

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



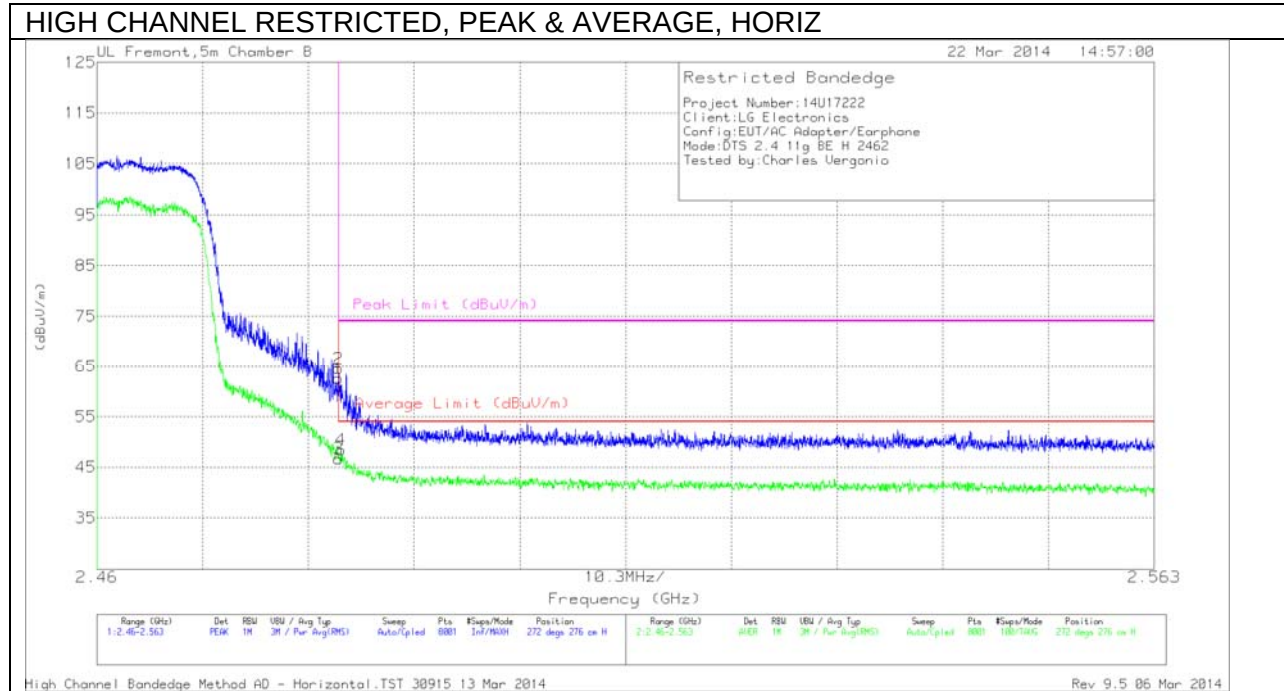
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.41	PK	32.1	-22.9	0	49.61	-	-	74	-24.39	227	367	V
2	* 2.39	44.16	PK	32.1	-22.9	0	53.36	-	-	74	-20.64	227	367	V
3	* 2.39	31.05	RMS	32.1	-22.9	.2	40.45	54	-13.55	-	-	227	367	V
4	* 2.389	32.66	RMS	32.1	-22.9	.2	42.06	54	-11.94	-	-	227	367	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

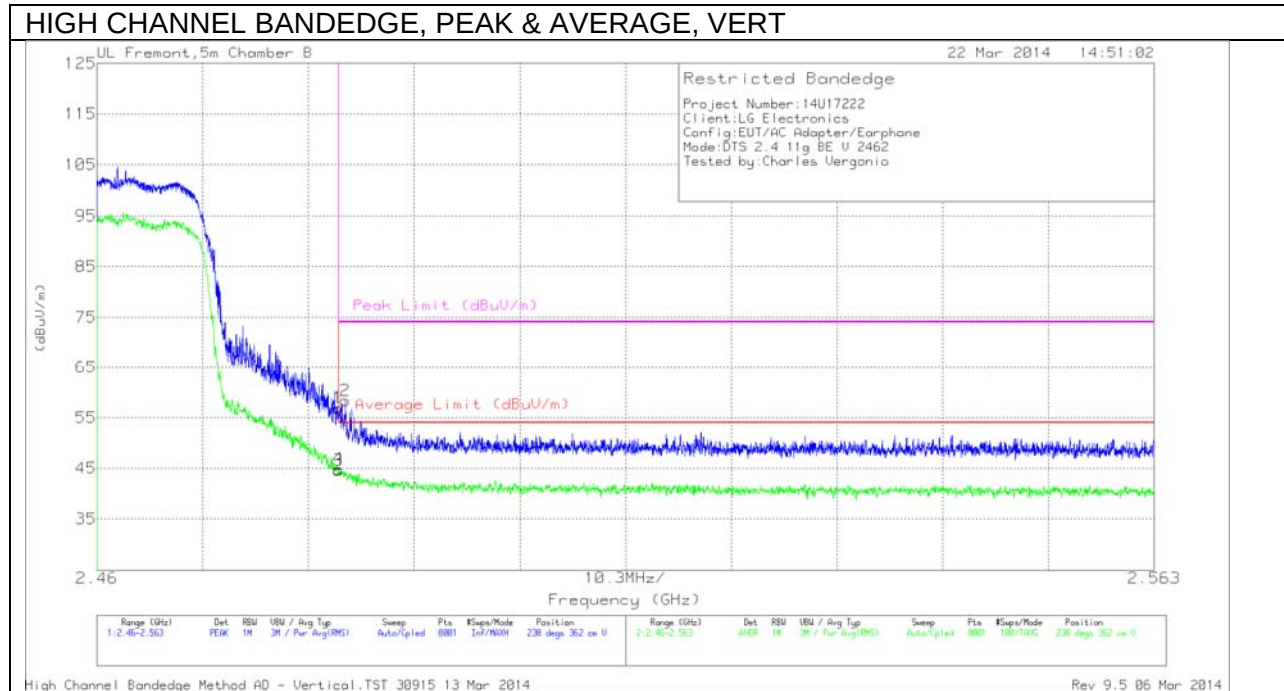


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	52.79	PK	32.4	-22.6	0	62.59	-	-	74	-11.41	272	276	H
2	* 2.484	54.77	PK	32.4	-22.6	0	64.57	-	-	74	-9.43	272	276	H
3	* 2.484	36.67	RMS	32.4	-22.6	.2	46.67	54	-7.33	-	-	272	276	H
4	* 2.484	38.45	RMS	32.4	-22.6	.2	48.45	54	-5.55	-	-	272	276	H

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

PK - Peak detector

RMS - RMS detection



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (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	47.13	PK	32.4	-22.6	0	56.93	-	-	74	-17.07	238	362	V
2	* 2.484	48.53	PK	32.4	-22.6	0	58.33	-	-	74	-15.67	238	362	V
3	* 2.484	34.61	RMS	32.4	-22.6	.2	44.61	54	-9.39	-	-	238	362	V
4	* 2.484	34.89	RMS	32.4	-22.6	.2	44.89	54	-9.11	-	-	238	362	V

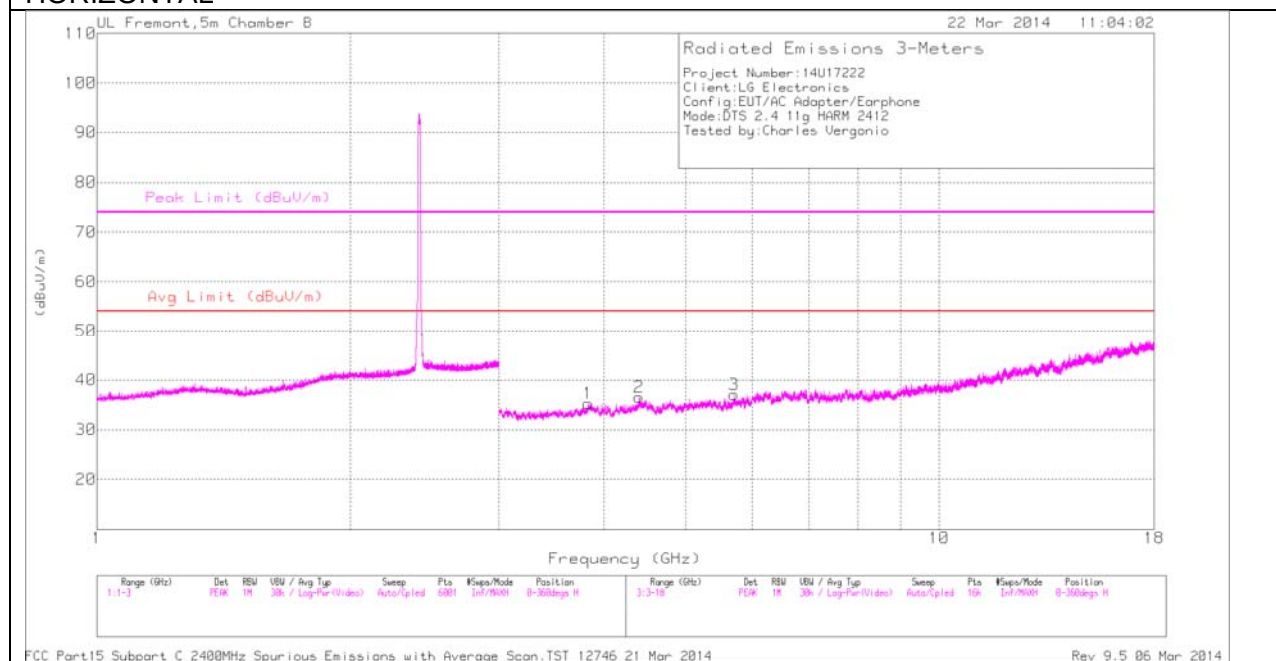
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

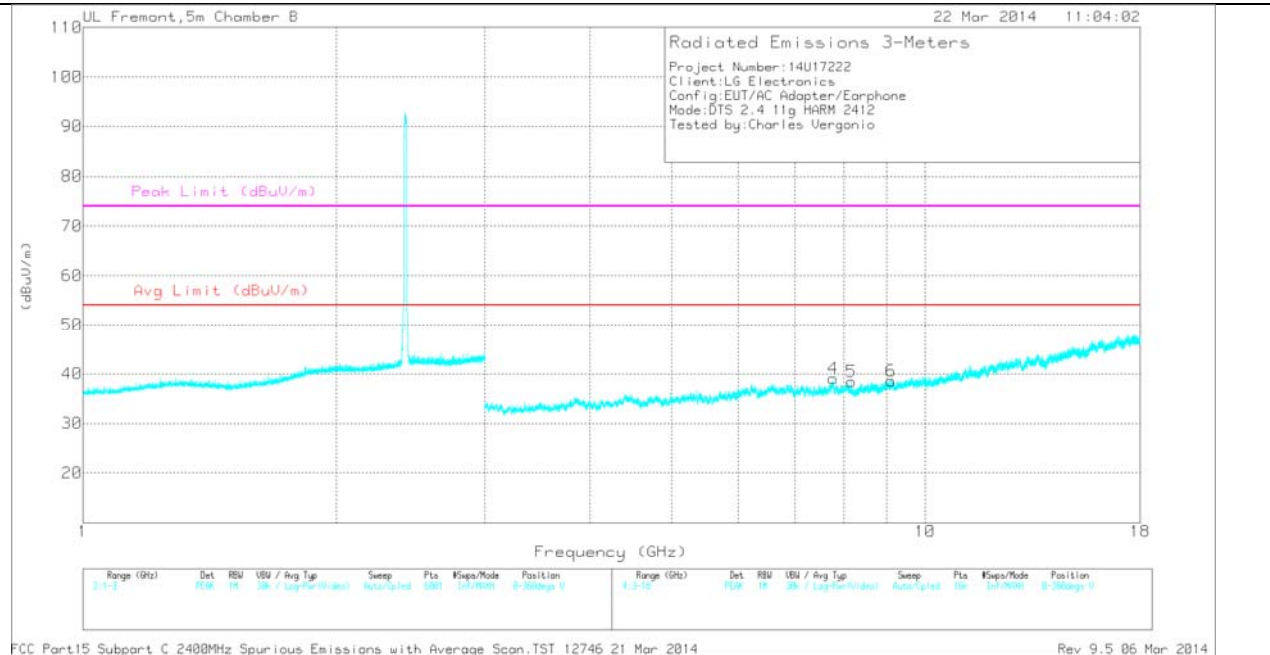
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

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.

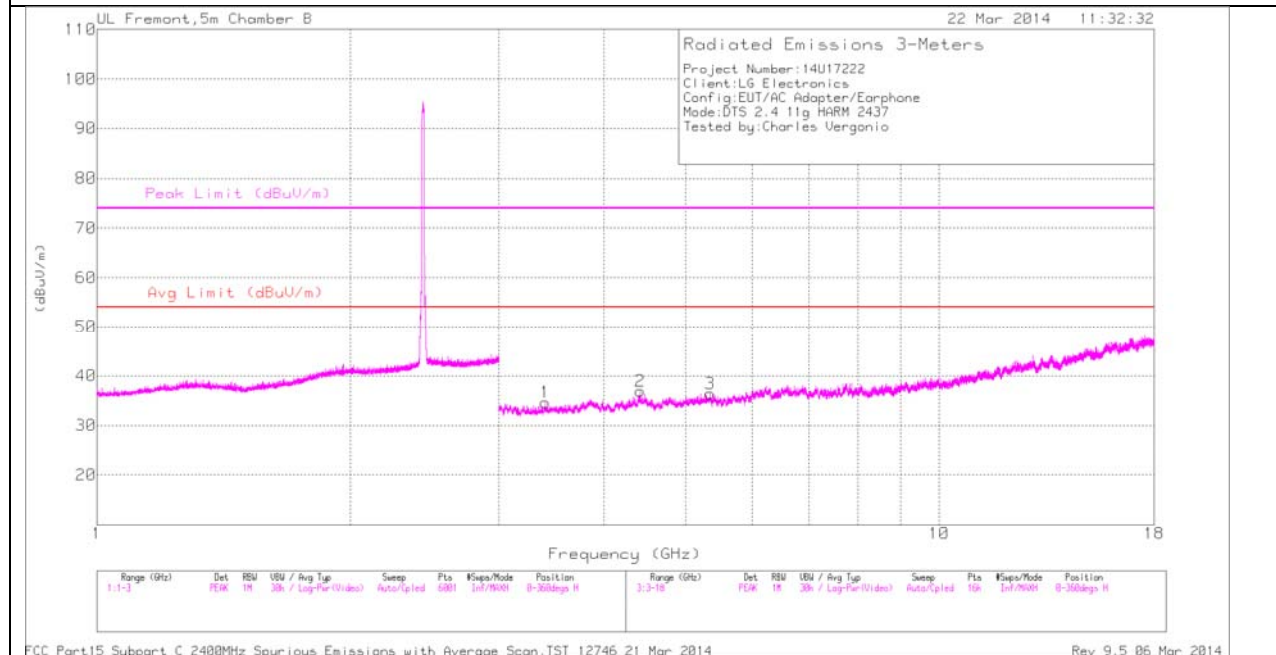
LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 3.831	40.8	PK2	33.7	-30.3	44.2	54	-9.8	74	-29.8	2	100	H
* 8.171	36.53	PK2	35.7	-26.8	45.43	54	-8.57	74	-28.57	2	100	V
* 9.105	35.08	PK2	36.3	-25.1	46.28	54	-7.72	74	-27.72	2	100	V
4.4	39.48	PK2	33.8	-29.8	43.48	54	-10.52	74	-30.52	2	100	H
5.703	39.84	PK2	34.5	-28.9	45.44	54	-8.56	74	-28.56	2	100	H
7.779	36.26	PK2	35.7	-26	45.96	54	-8.04	74	-28.04	2	100	V

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

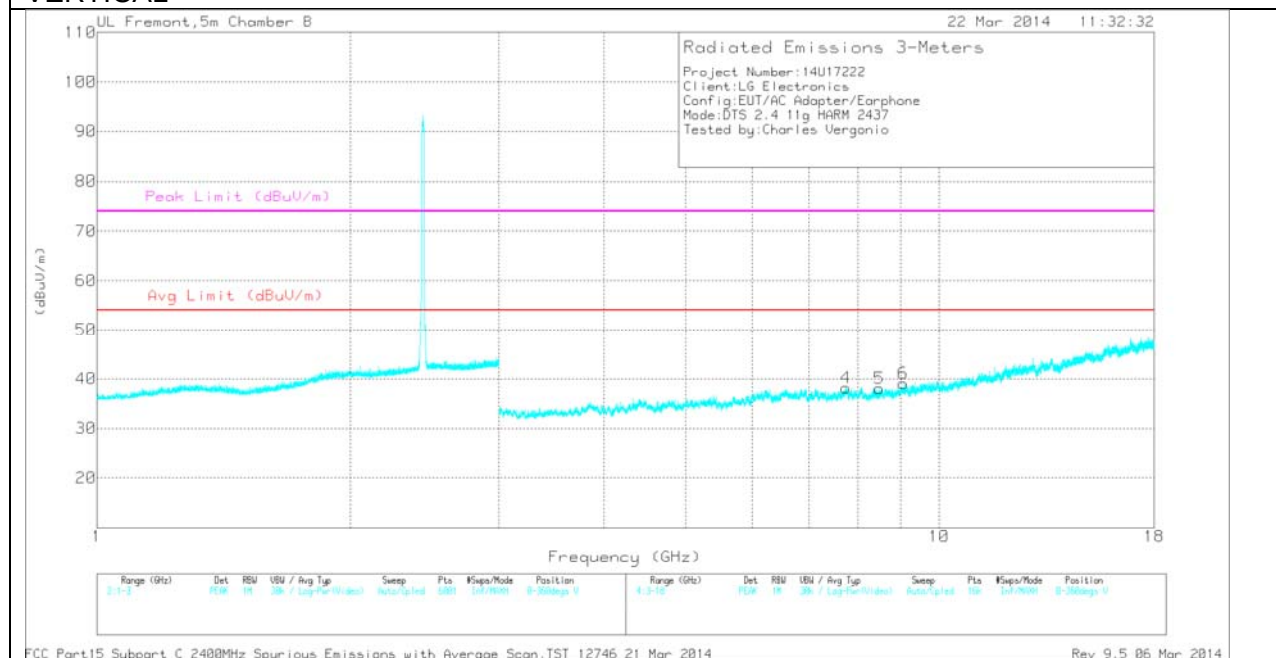
PK2 - KDB558074 Method: Maximum Peak

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

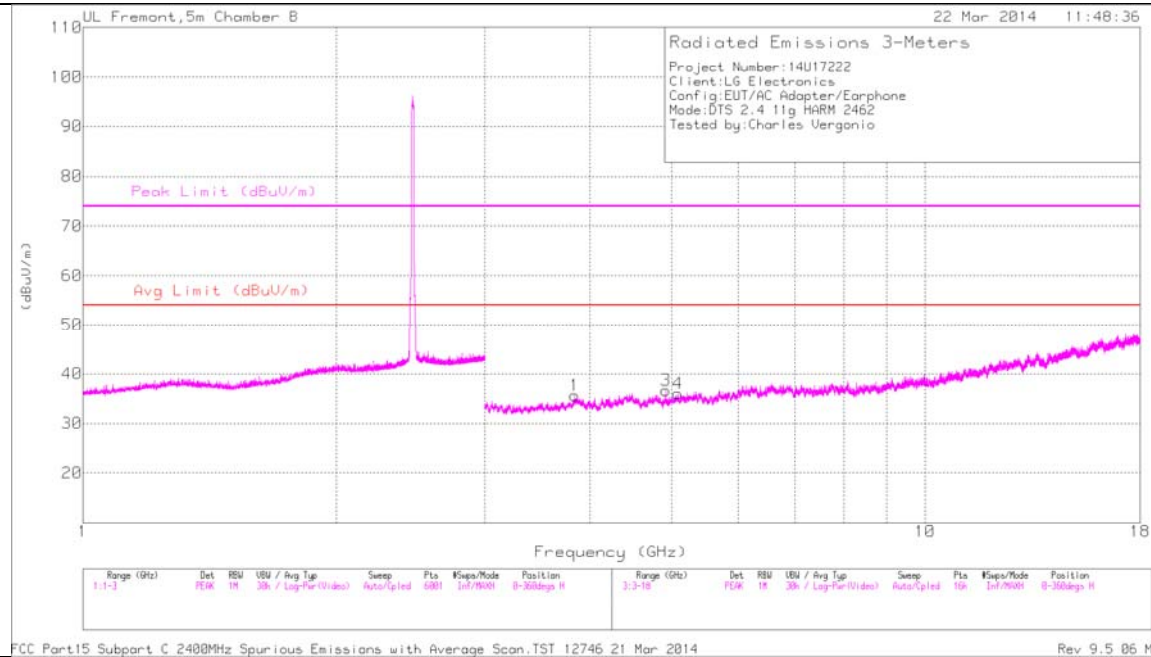
Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 7.748	37.08	PK2	35.7	-26	46.78	54	-7.22	74	-27.22	1	100	V
* 8.488	36.65	PK2	35.8	-26.3	46.15	54	-7.85	74	-27.85	1	100	V
* 9.057	34.57	PK2	36.2	-24.6	46.17	54	-7.83	74	-27.83	1	100	V
3.406	41.52	PK2	32.8	-31.2	43.12	54	-10.88	74	-30.88	1	100	H
4.414	40.08	PK2	33.8	-29.5	44.38	54	-9.62	74	-29.62	1	100	H
5.345	38.57	PK2	34.5	-28.7	44.37	54	-9.63	74	-29.63	1	100	H

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

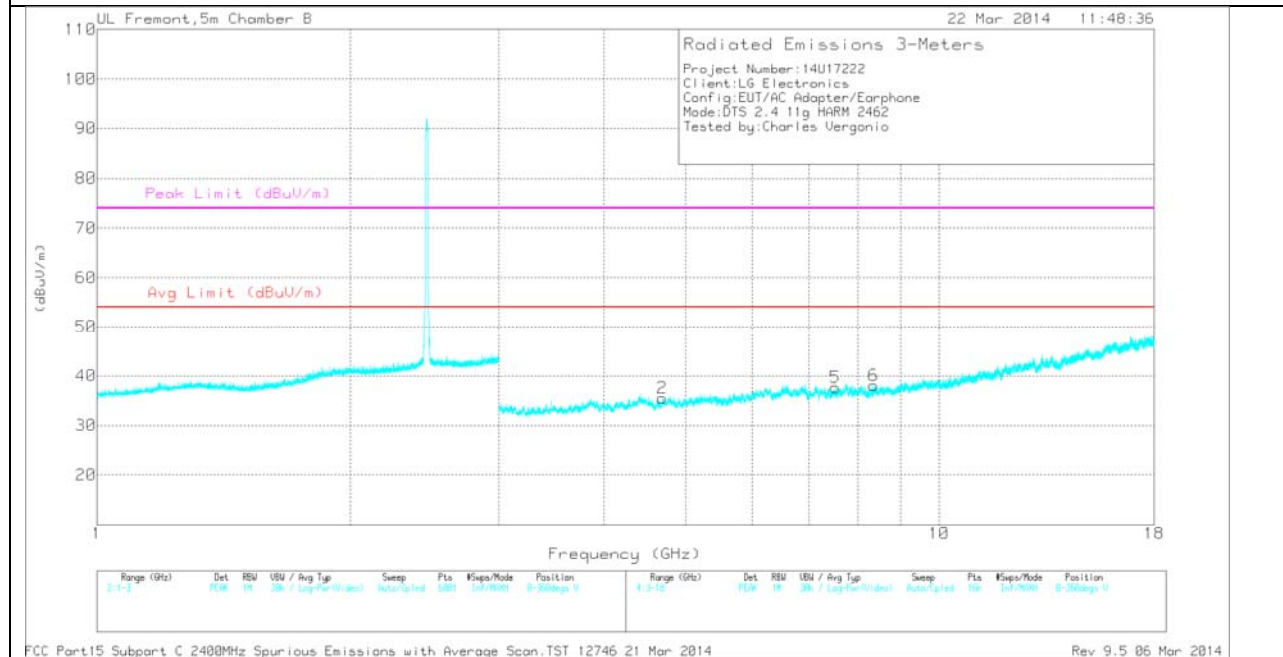
PK - Peak detector

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.

HIGH CHANNEL VERTICAL



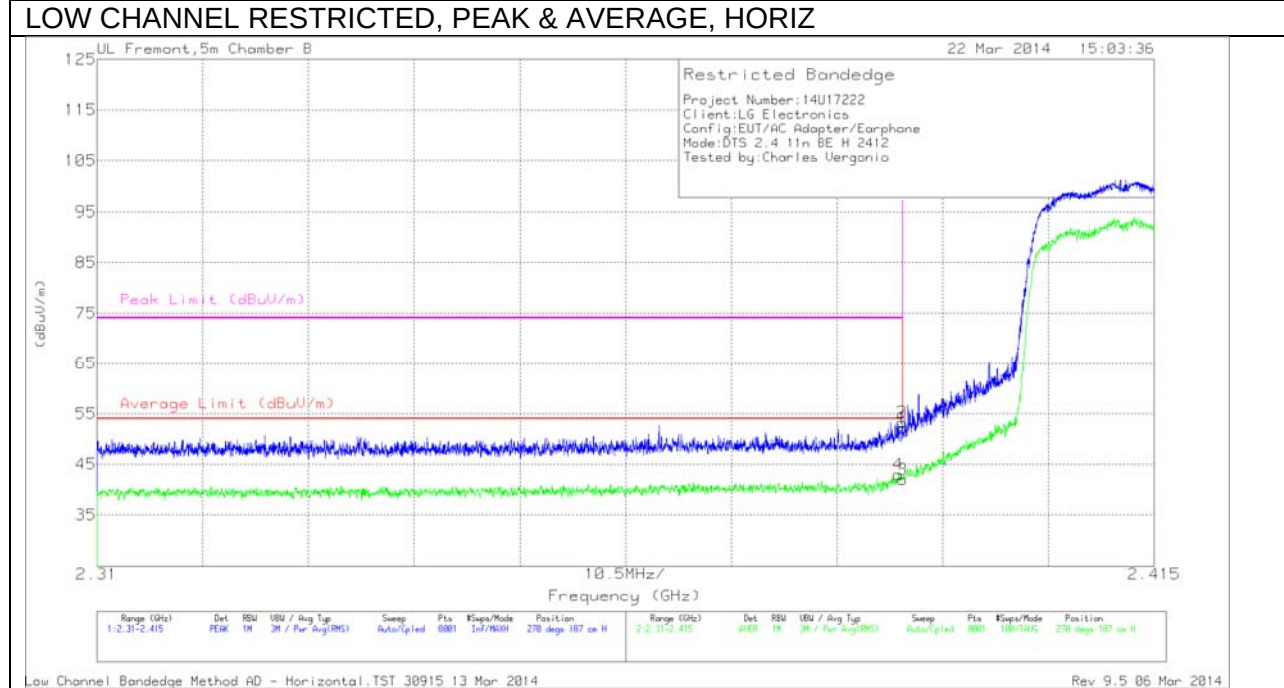
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.836	40.88	PK2	33.7	-30.2	0	44.38	54	-9.62	74	-29.62	1	100	H
* 4.924	41.24	PK2	34.2	-30.7	0	44.74	54	-9.26	74	-29.26	1	100	H
* 5.087	38.89	PK2	34.2	-28.5	0	44.59	54	-9.41	74	-29.41	1	100	H
* 4.693	39.91	PK2	34.2	-30	0	44.11	54	-9.89	74	-29.89	1	100	V
* 7.532	38.28	PK2	35.6	-27.2	0	46.68	54	-7.32	74	-27.32	1	100	V
* 8.354	35.5	PK2	35.7	-25.6	0	45.6	54	-8.4	74	-28.4	1	100	V

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

10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

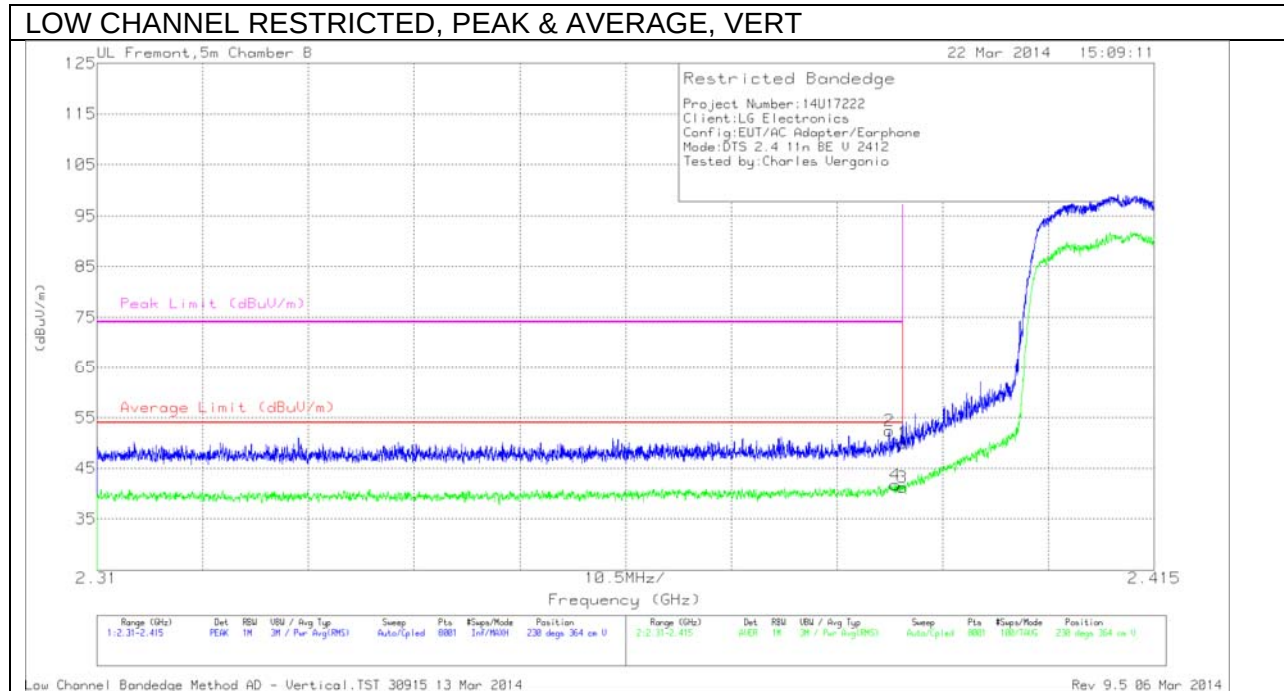


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.97	PK	32.1	-22.9	0	52.17	-	-	74	-21.83	270	187	H
2	* 2.39	44.09	PK	32.1	-22.9	0	53.29	-	-	74	-20.71	270	187	H
3	* 2.39	32.54	RMS	32.1	-22.9	.2	41.94	54	-12.06	-	-	270	187	H
4	* 2.39	33.54	RMS	32.1	-22.9	.2	42.94	54	-11.06	-	-	270	187	H

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

PK - Peak detector

RMS - RMS detection



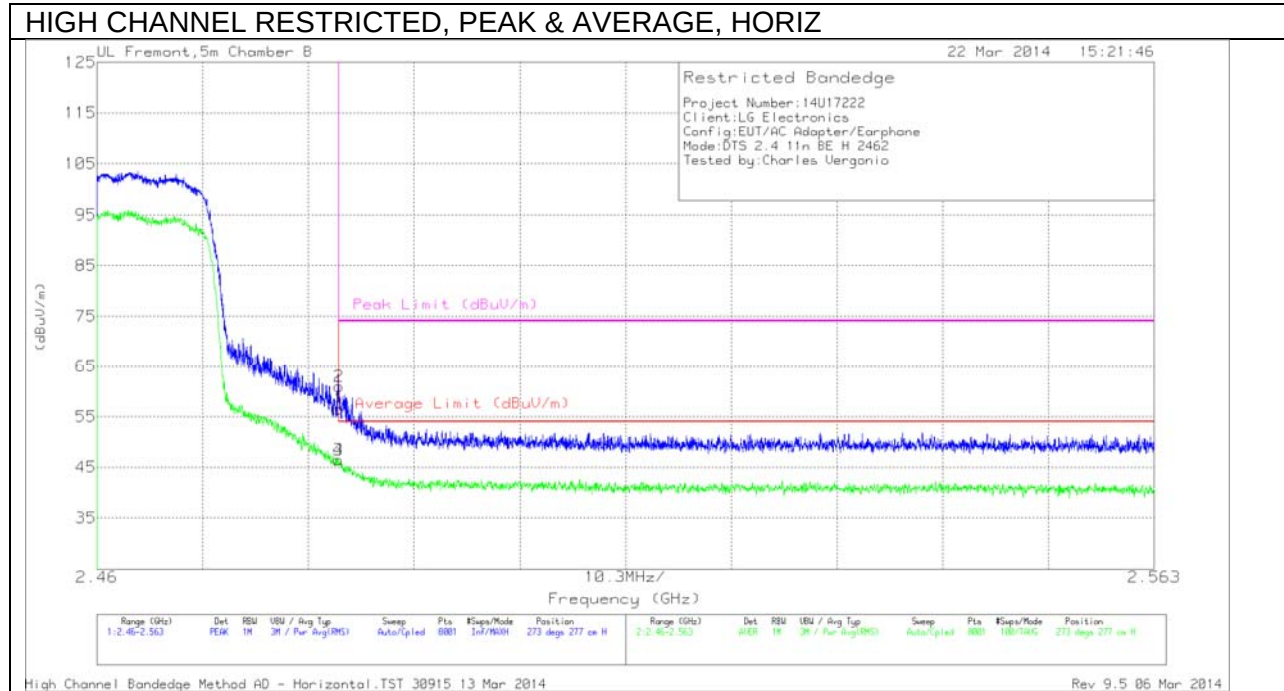
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.77	PK	32.1	-22.9	0	49.97	-	-	74	-24.03	230	364	V
2	* 2.389	43.24	PK	32.1	-22.9	0	52.44	-	-	74	-21.56	230	364	V
3	* 2.39	31.82	RMS	32.1	-22.9	.2	41.22	54	-12.78	-	-	230	364	V
4	* 2.389	32.34	RMS	32.1	-22.9	.2	41.74	54	-12.26	-	-	230	364	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)



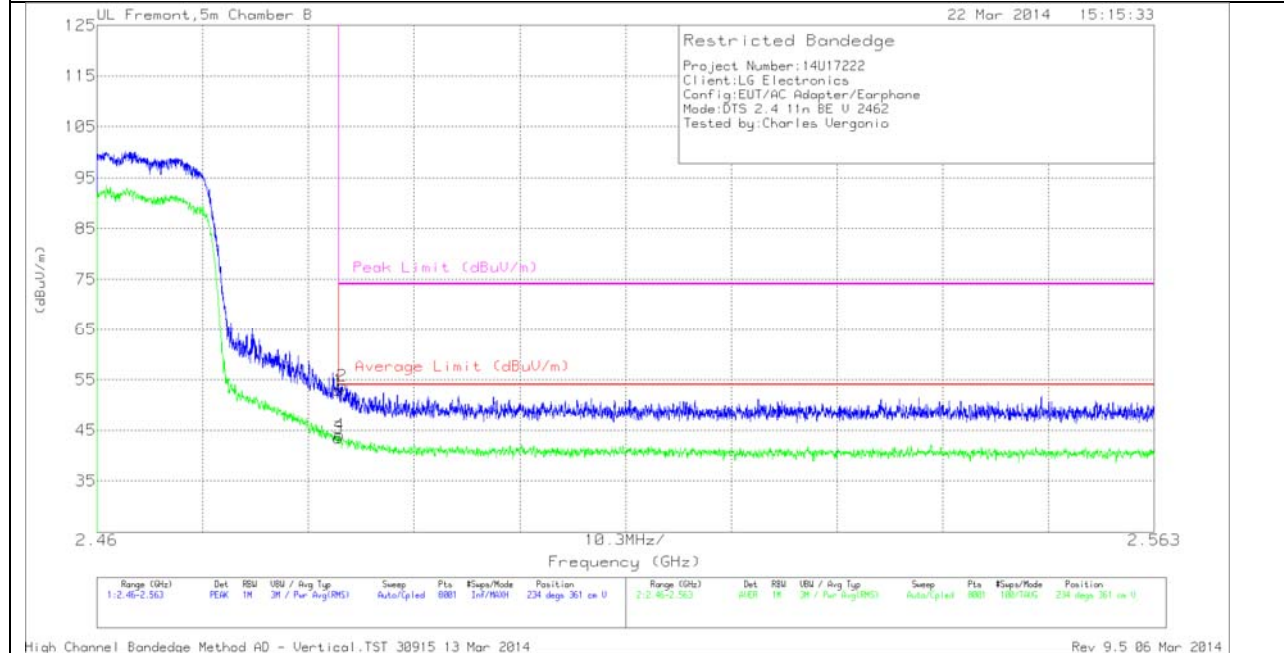
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.65	PK	32.4	-22.6	0	56.45	-	-	74	-17.55	273	277	H
2	* 2.484	51.16	PK	32.4	-22.6	0	60.96	-	-	74	-13.04	273	277	H
3	* 2.484	36.43	RMS	32.4	-22.6	.2	46.43	54	-7.57	-	-	273	277	H
4	* 2.484	36.43	RMS	32.4	-22.6	.2	46.43	54	-7.57	-	-	273	277	H

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

PK - Peak detector

RMS - RMS detection

HIGH CHANNEL BANDEDGE, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (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	43.1	PK	32.4	-22.6	0	52.9	-	-	74	-21.1	234	361	V
2	* 2.484	43.96	PK	32.4	-22.6	0	53.76	-	-	74	-20.24	234	361	V
3	* 2.484	33.41	RMS	32.4	-22.6	.2	43.41	54	-10.59	-	-	234	361	V
4	* 2.484	34.05	RMS	32.4	-22.6	.2	44.05	54	-9.95	-	-	234	361	V

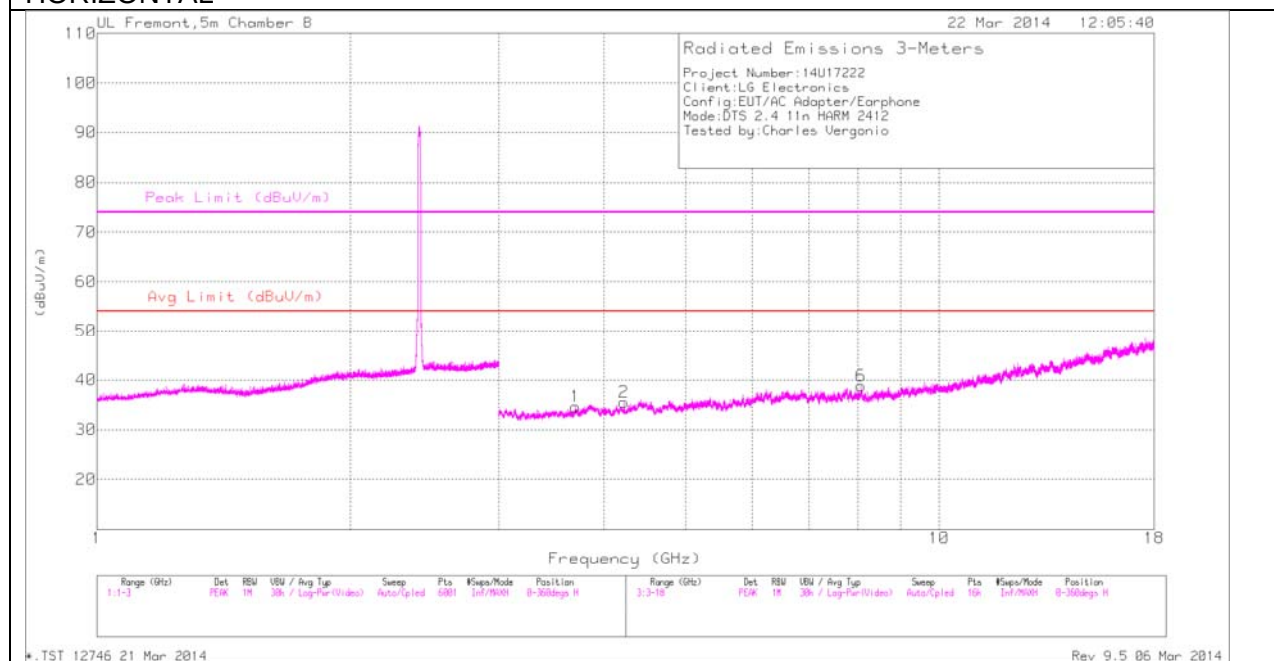
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

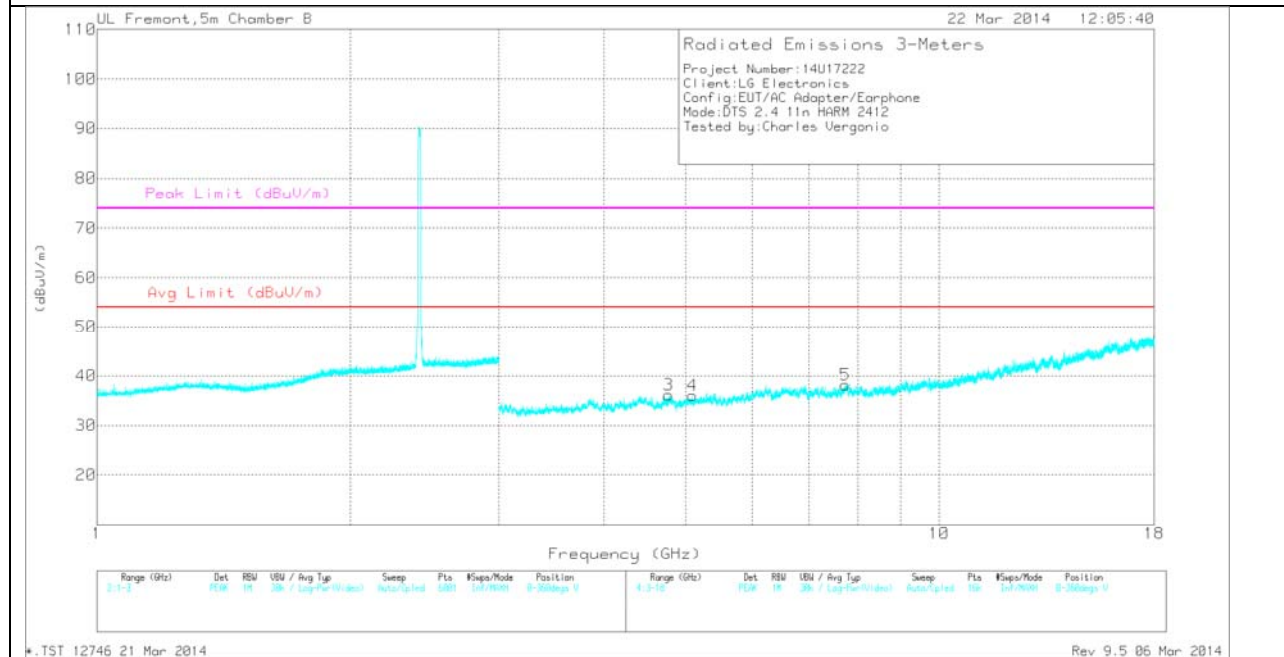
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



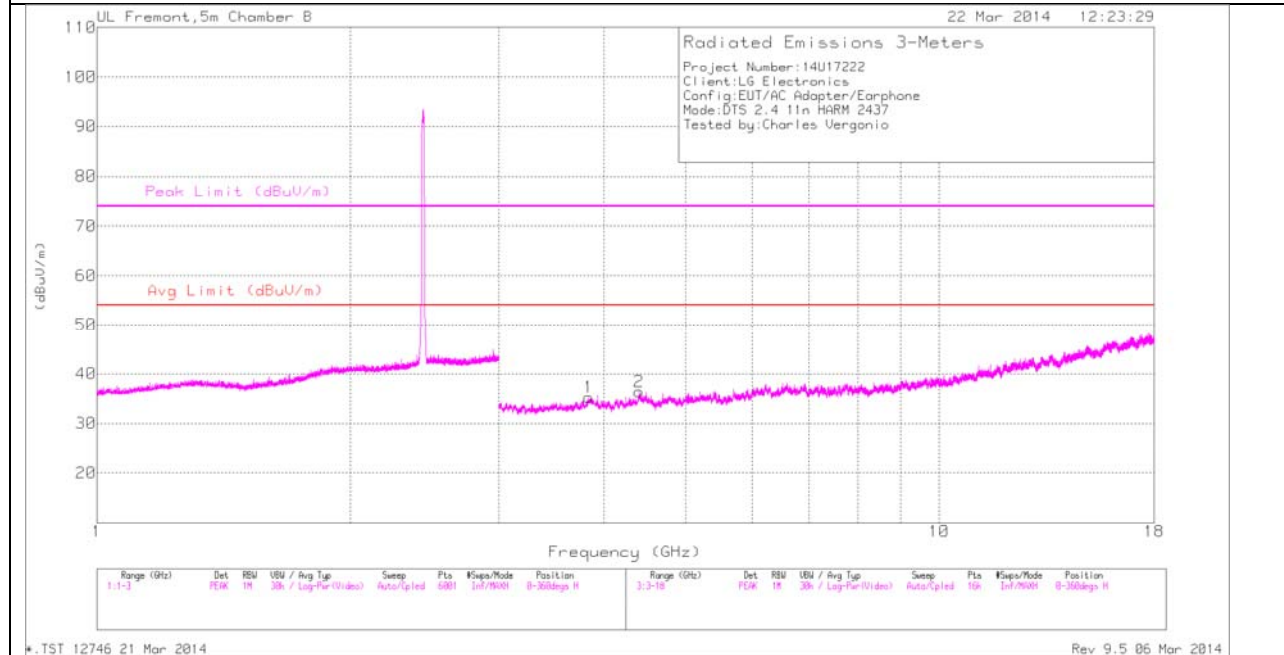
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 3.701	40.19	PK2	33.3	-31.2	42.29	54	-11.71	74	-31.71	1	100	H
* 4.224	40.14	PK2	33.6	-30.3	43.44	54	-10.56	74	-30.56	1	100	H
* 8.082	36.95	PK2	35.7	-25.9	46.75	54	-7.25	74	-27.25	1	100	H
* 4.775	39.95	PK2	34.2	-29.3	44.85	54	-9.15	74	-29.15	1	100	V
* 5.089	38.84	PK2	34.2	-28.5	44.54	54	-9.46	74	-29.46	1	100	V
* 7.737	36.58	PK2	35.7	-26	46.28	54	-7.72	74	-27.72	1	100	V

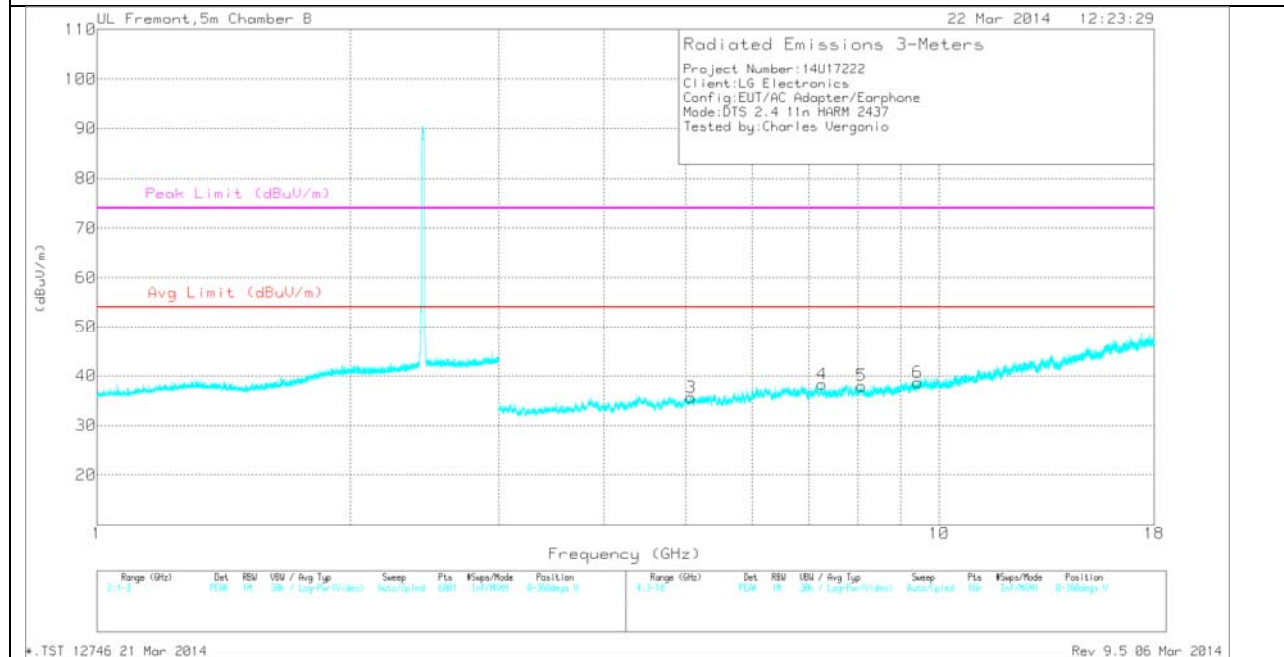
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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



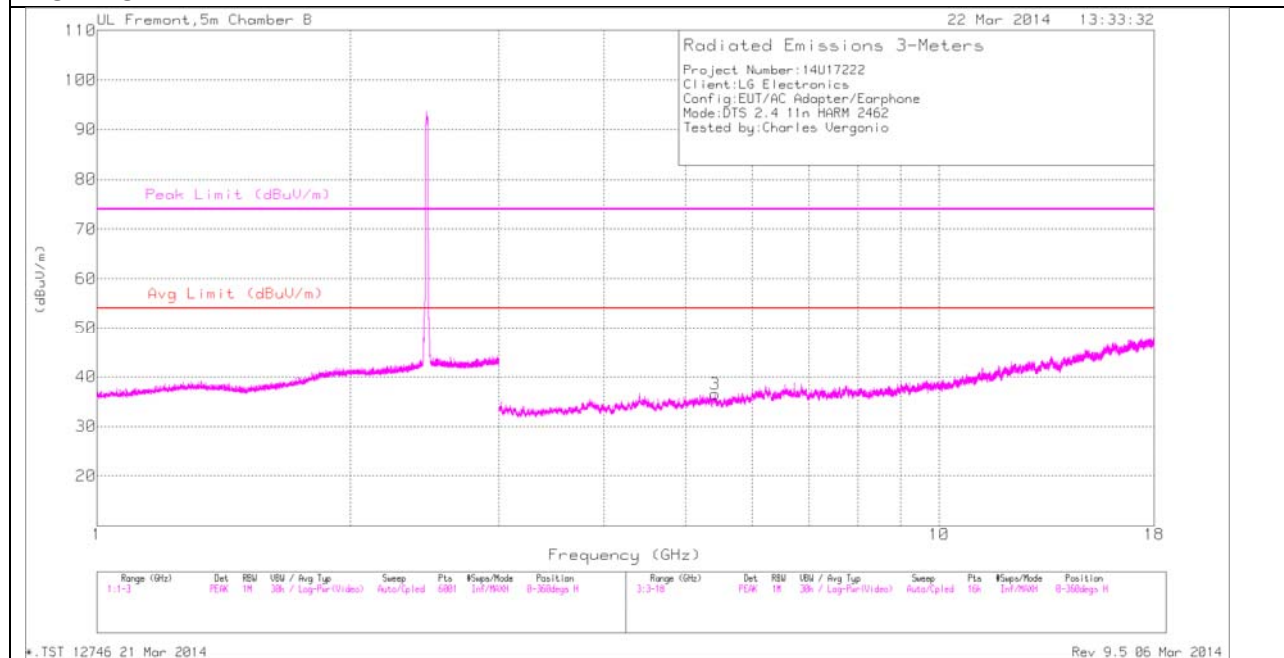
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 3.832	40.11	PK2	33.7	-30.3	43.51	54	-10.49	74	-30.49	1	100	H
* 5.078	38.44	PK2	34.2	-28.7	43.94	54	-10.06	74	-30.06	1	100	V
* 7.256	38.18	PK2	35.6	-27.3	46.48	54	-7.52	74	-27.52	1	100	V
* 8.086	36.13	PK2	35.7	-25.8	46.03	54	-7.97	74	-27.97	1	100	V
* 9.422	35.62	PK2	36.5	-25	47.12	54	-6.88	74	-26.88	1	100	V
4.402	40.77	PK2	33.8	-29.8	44.77	54	-9.23	74	-29.23	1	100	H

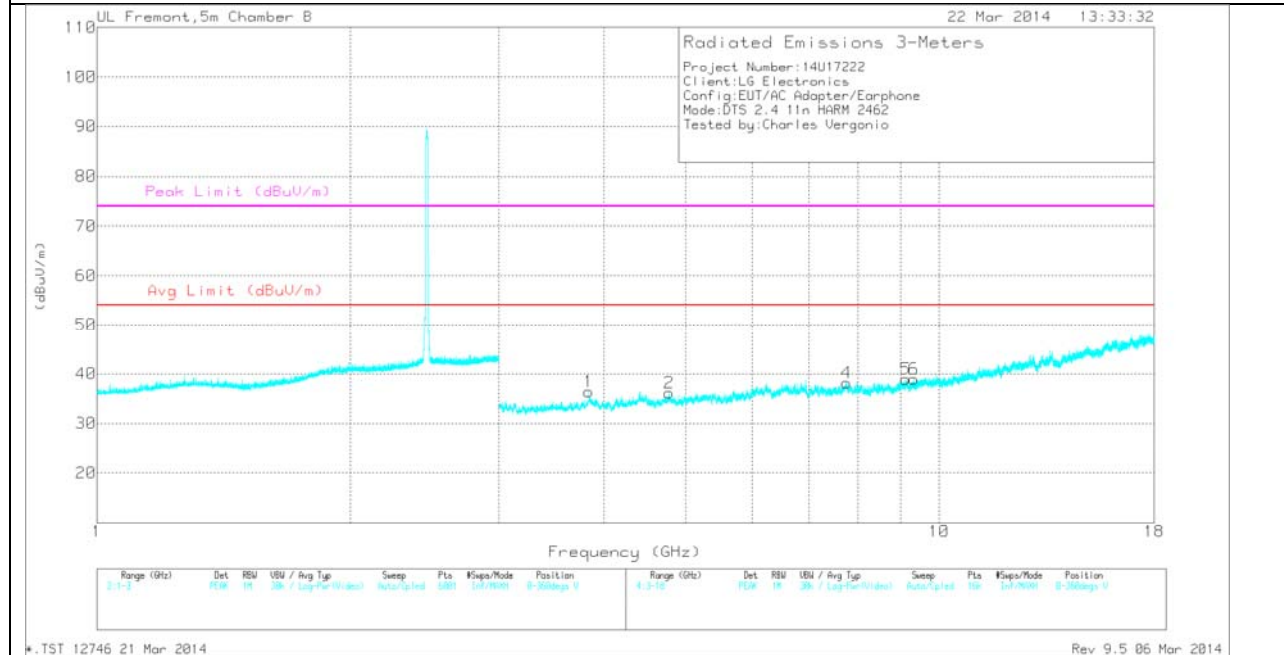
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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.

HIGH 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.

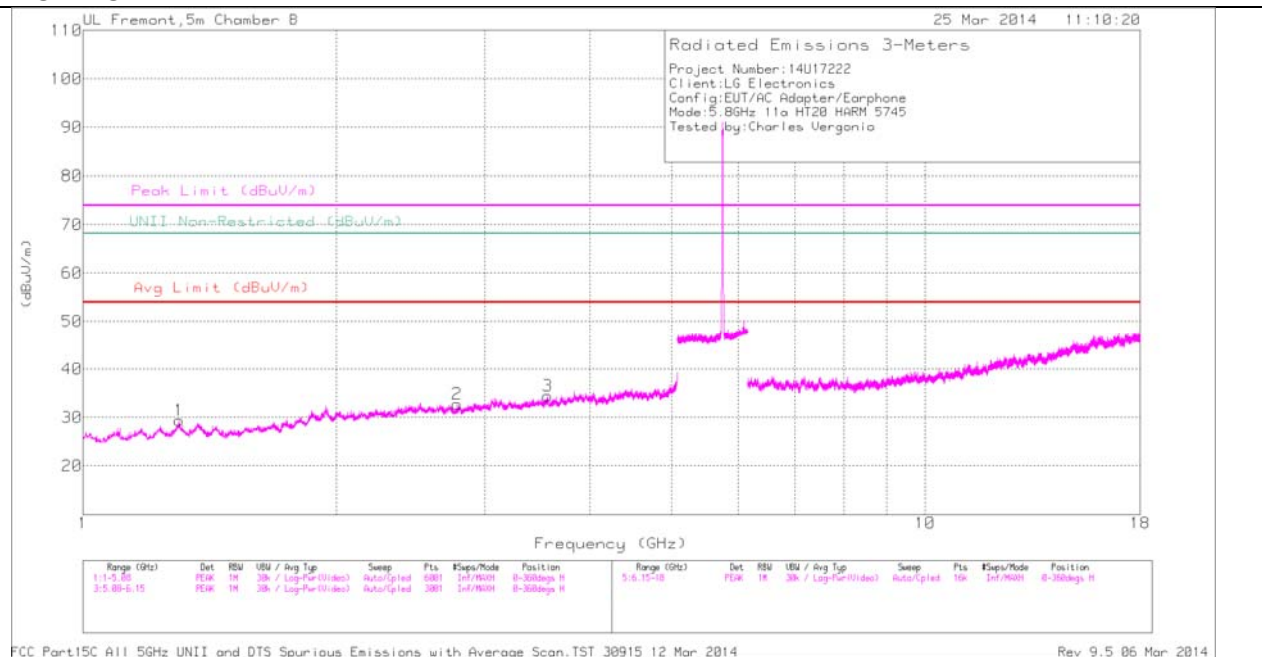
HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 5.414	38.84	PK2	34.5	-29.1	44.24	54	-9.76	74	-29.76	1	100	H
* 3.837	40.09	PK2	33.7	-30.2	43.59	54	-10.41	74	-30.41	1	100	V
* 4.775	39.14	PK2	34.2	-29.2	44.14	54	-9.86	74	-29.86	1	100	V
* 9.126	35.14	PK2	36.3	-24.9	46.54	54	-7.46	74	-27.46	1	100	V
* 9.324	35.25	PK2	36.4	-24.6	47.05	54	-6.95	74	-26.95	1	100	V
7.759	37.37	PK2	35.7	-26.1	46.97	54	-7.03	74	-27.03	1	100	V

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

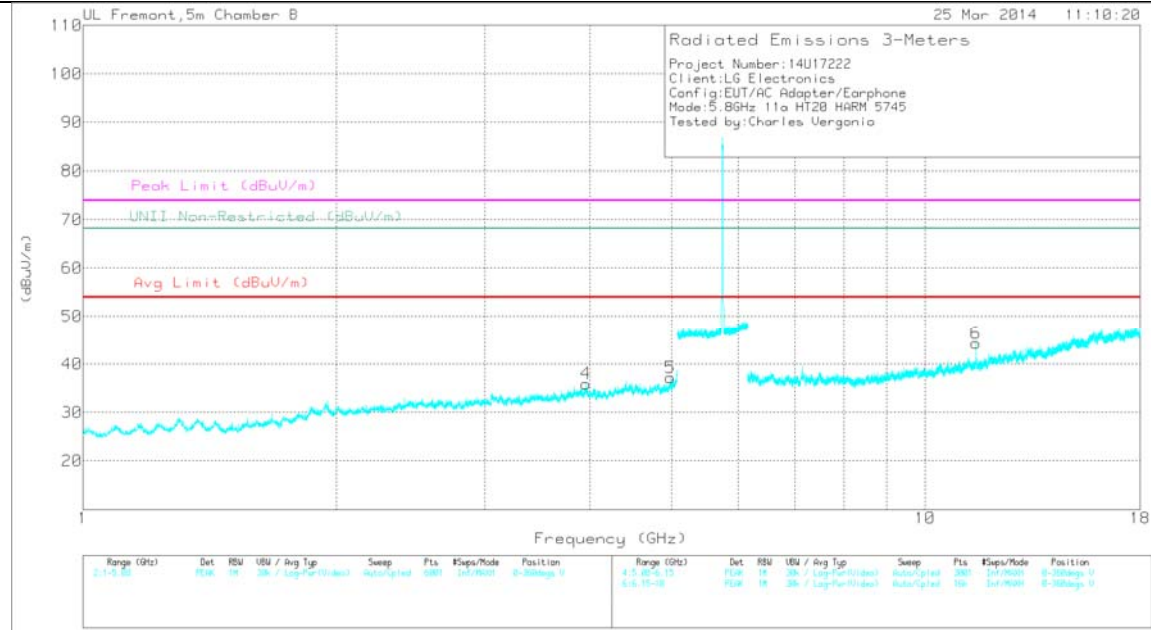
10.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



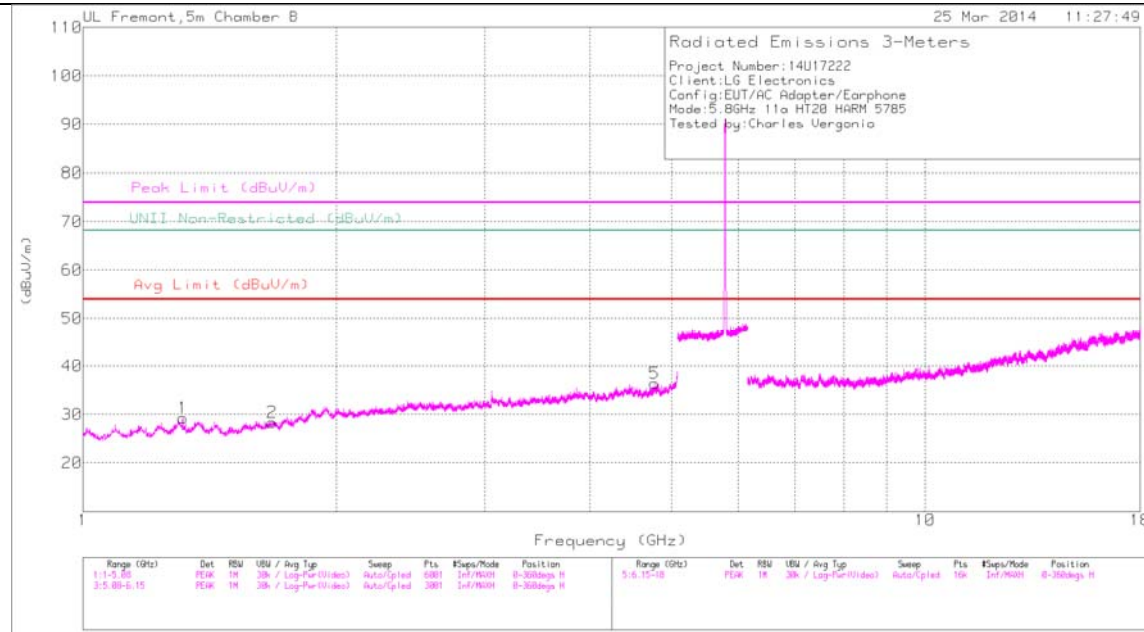
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.299	43.19	PK2	28.9	-34.2	37.89	54	-16.11	74	-36.11	-	-	1	202	H
* 2.78	40.88	PK2	32.3	-32.6	40.58	54	-13.42	74	-33.42	-	-	1	202	H
* 3.563	40.78	PK2	33	-31.7	42.08	54	-11.92	74	-31.92	-	-	1	202	H
* 3.954	40.09	PK2	33.7	-30	43.79	54	-10.21	74	-30.21	-	-	1	202	V
* 4.98	40.19	PK2	34.2	-28.3	46.09	54	-7.91	74	-27.91	-	-	1	202	V
* 11.492	38.66	PK2	38	-23	53.66	54	-.34	74	-20.34	-	-	226	109	V
* 11.49	28.6	MAV1	38	-23	43.8	54	-10.2	74	-30.2	-	-	226	109	V

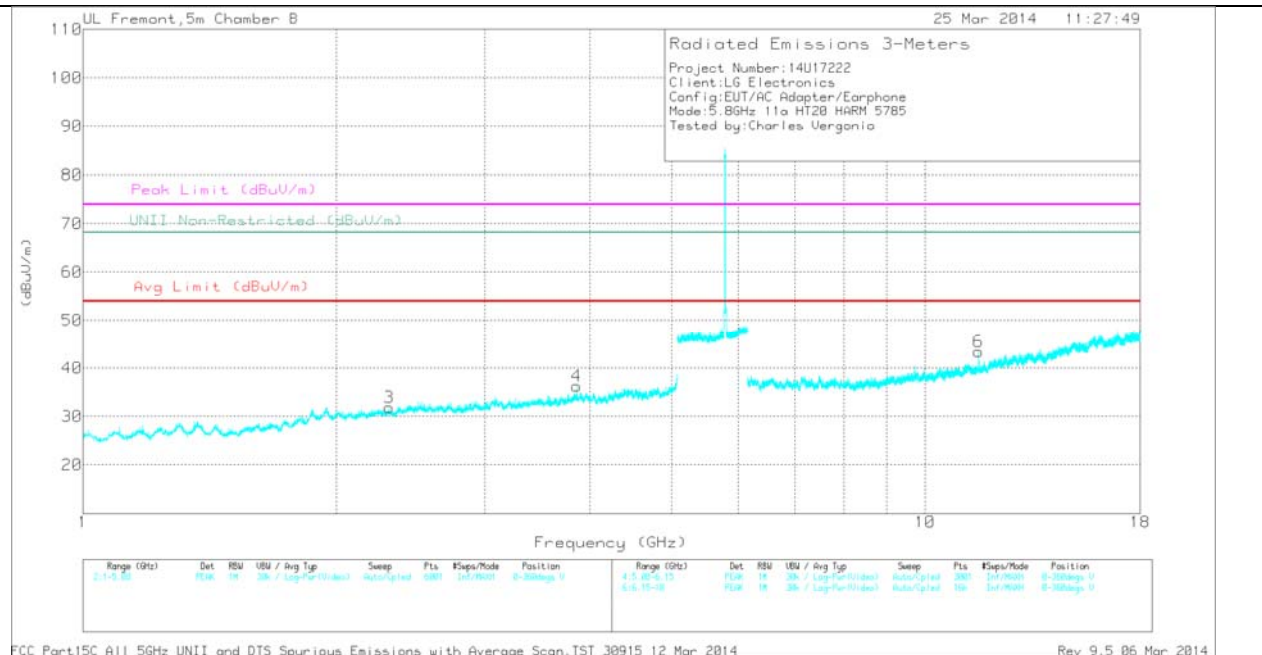
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



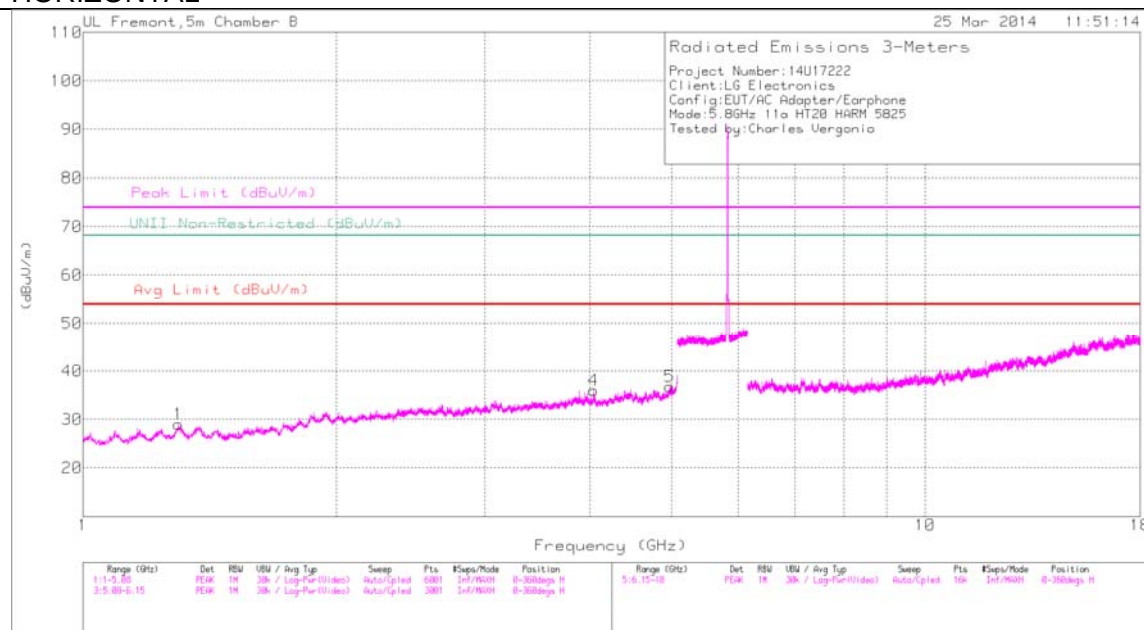
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.313	42.72	PK2	28.8	-34.1	37.42	54	-16.58	74	-36.58	-	-	360	100	H
* 1.676	41.48	PK2	28.9	-33.3	37.08	54	-16.92	74	-36.92	-	-	360	100	H
* 4.774	40.9	PK2	34.2	-29.1	46	54	-8	74	-28	-	-	360	100	H
* 2.31	41.67	PK2	31.7	-33	40.37	54	-13.63	74	-33.63	-	-	360	100	V
* 3.857	41.94	PK2	33.7	-31.4	44.24	54	-9.76	74	-29.76	-	-	360	100	V
* 11.572	38.51	PK2	38.1	-22.7	53.91	54	-.09	74	-20.09	-	-	227	100	V
* 11.571	27.47	MAV1	38.1	-22.7	43.07	54	-10.93	74	-30.93	-	-	227	100	V

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

HIGH CHANNEL HORIZONTAL

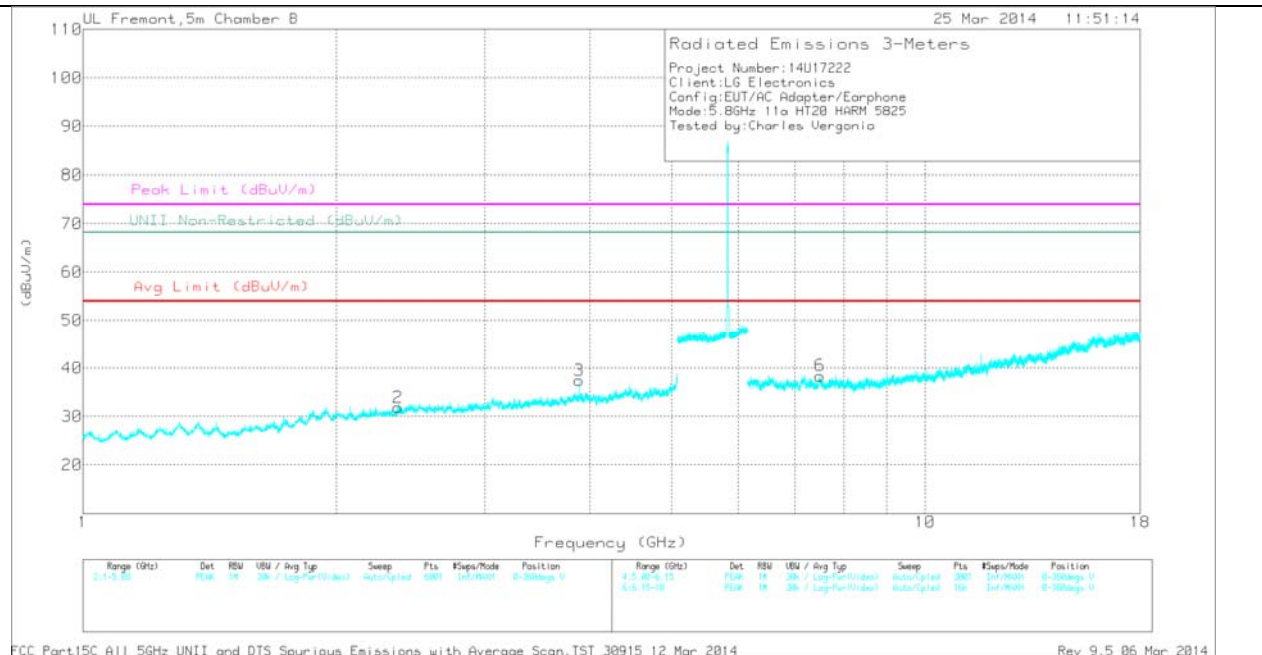


FCC Part 15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 12 Mar 2014

Rev 9.5 06 Mar 2014

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

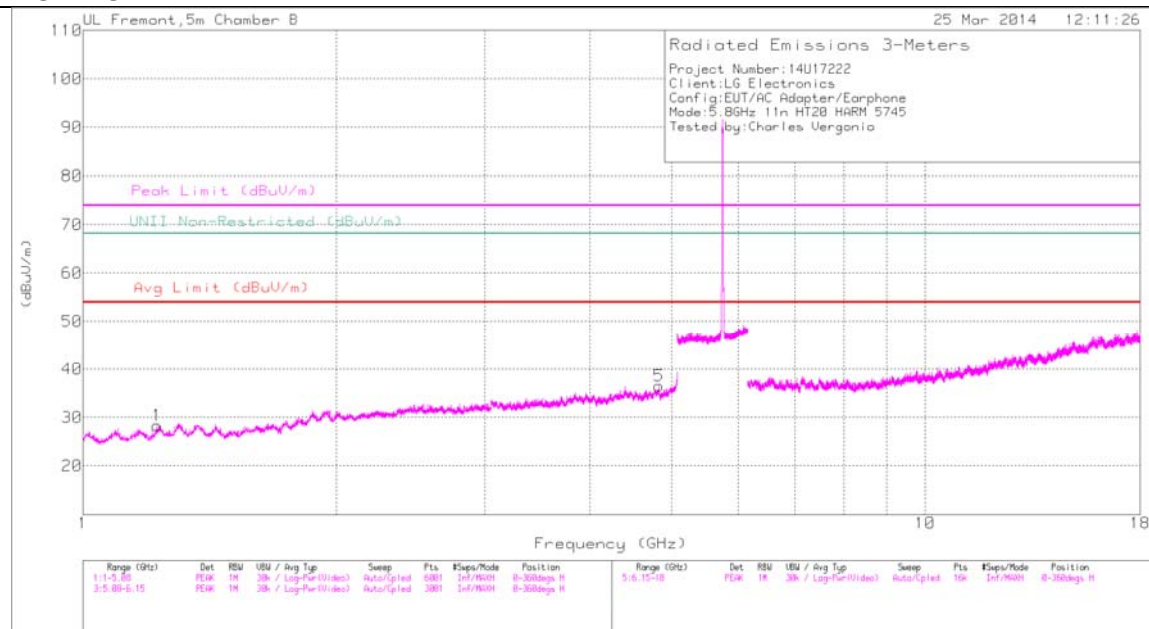
HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.298	43.11	PK2	28.8	-34.3	37.61	54	-16.39	74	-36.39	-	-	360	100	H
* 4.038	39.96	PK2	33.6	-29.9	43.66	54	-10.34	74	-30.34	-	-	360	100	H
* 4.975	40.18	PK2	34.2	-28.4	45.98	54	-8.02	74	-28.02	-	-	360	100	H
* 2.365	41.97	PK2	32	-32.7	41.27	54	-12.73	74	-32.73	-	-	360	100	V
* 3.883	42.52	PK2	33.8	-31.7	44.62	54	-9.38	74	-29.38	-	-	360	100	V
* 7.498	37.06	PK2	35.6	-25.9	46.76	54	-7.24	74	-27.24	-	-	360	100	V

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

10.2.1. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL

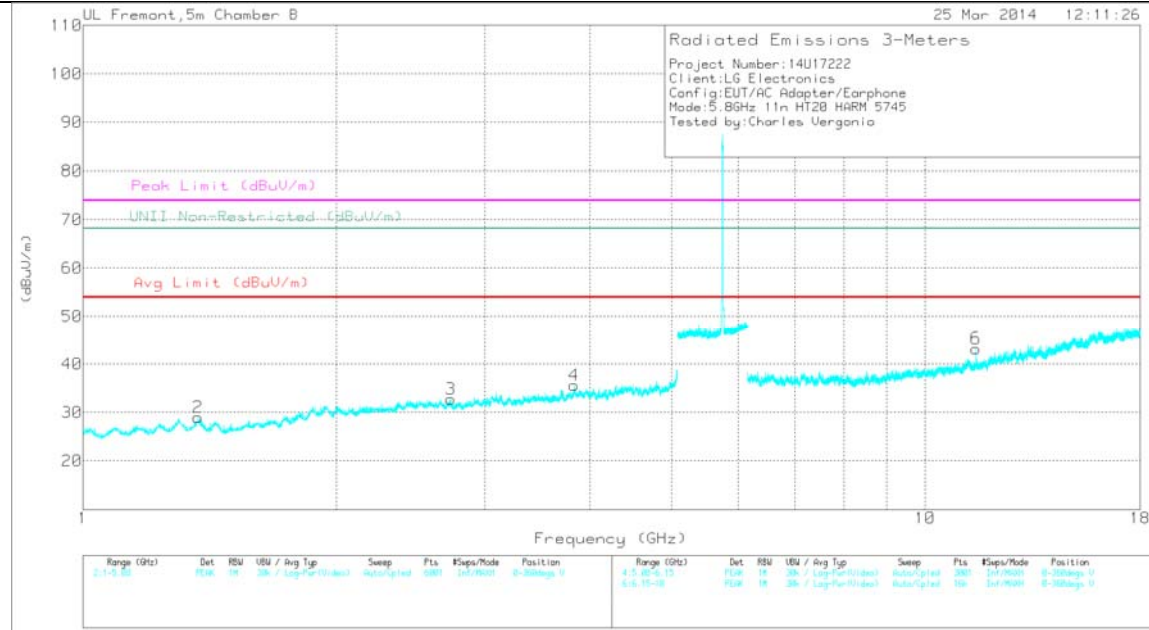


FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 12 Mar 2014

Rev 9.5 06 Mar 2014

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 12 Mar 2014 Rev 9.5 06 Mar 2014

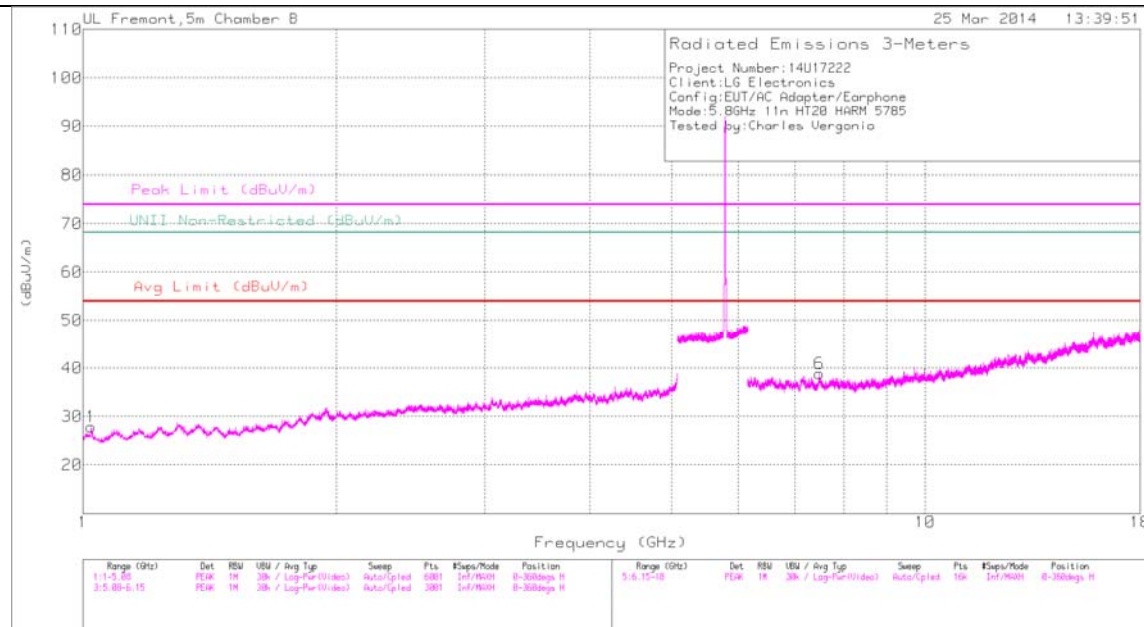
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.223	42.75	PK2	28.3	-34.7	36.35	54	-17.65	74	-37.65	-	-	359	100	H
* 4.826	40.85	PK2	34.2	-29.9	45.15	54	-8.85	74	-28.85	-	-	359	100	H
* 1.37	42.78	PK2	28.6	-33.8	37.58	54	-16.42	74	-36.42	-	-	359	100	V
* 2.734	41.31	PK2	32.2	-32	41.51	54	-12.49	74	-32.49	-	-	359	100	V
* 3.83	41.64	PK2	33.7	-31	44.34	54	-9.66	74	-29.66	-	-	359	100	V
* 11.485	34.18	PK2	38	-23	49.18	54	-4.82	74	-24.82	-	-	265	202	V
* 11.488	24.12	MAV1	38	-23	39.32	54	-14.68	74	-34.68	-	-	265	202	V

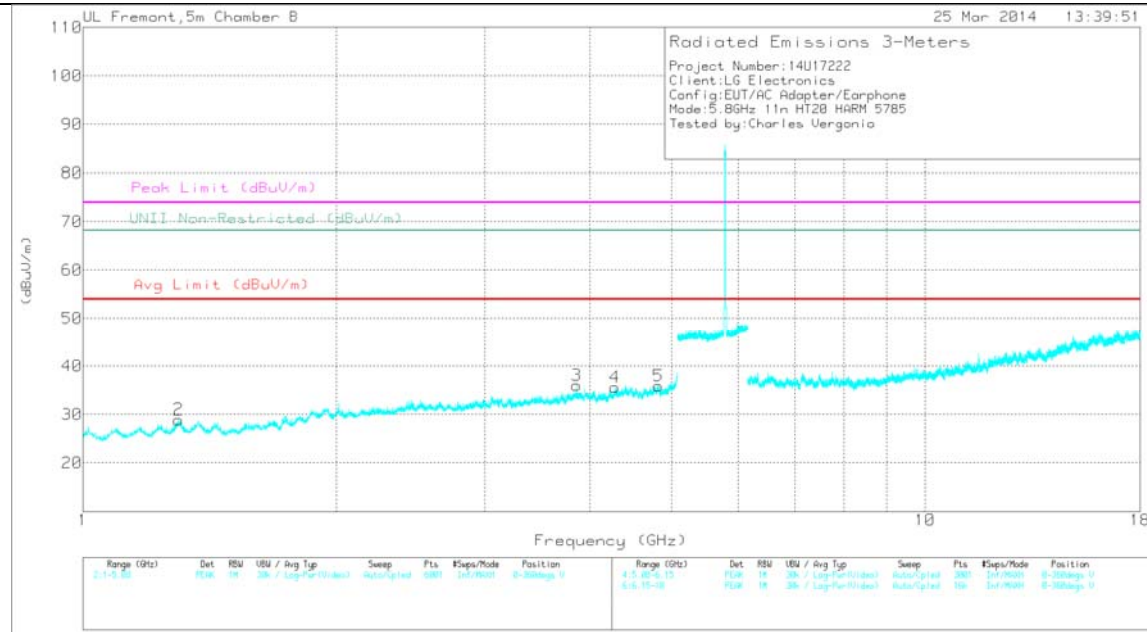
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



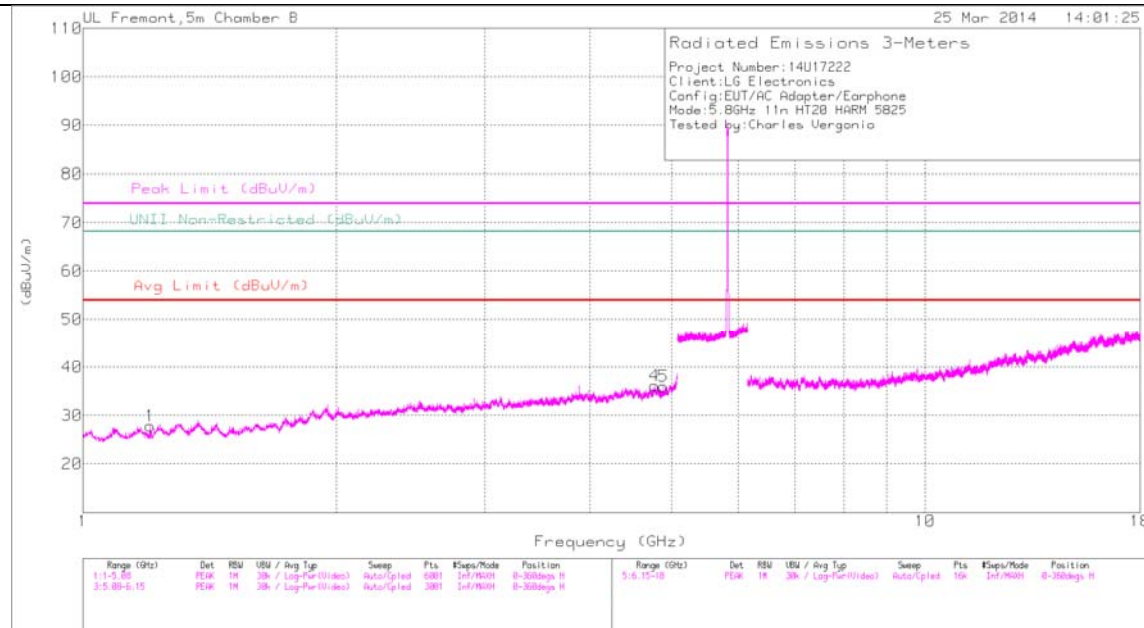
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.022	43.86	PK2	27.1	-34.7	36.26	54	-17.74	74	-37.74	-	-	360	100	H
* 1.299	43.37	PK2	28.8	-34.2	37.97	54	-16.03	74	-36.03	-	-	360	100	V
* 3.857	41.73	PK2	33.7	-31.4	44.03	54	-9.97	74	-29.97	-	-	360	100	V
* 4.282	40.35	PK2	33.7	-30.1	43.95	54	-10.05	74	-30.05	-	-	360	100	V
* 4.823	41.14	PK2	34.2	-29.8	45.54	54	-8.46	74	-28.46	-	-	360	100	V
* 7.488	37.59	PK2	35.6	-25.8	47.39	54	-6.61	74	-26.61	-	-	360	100	H

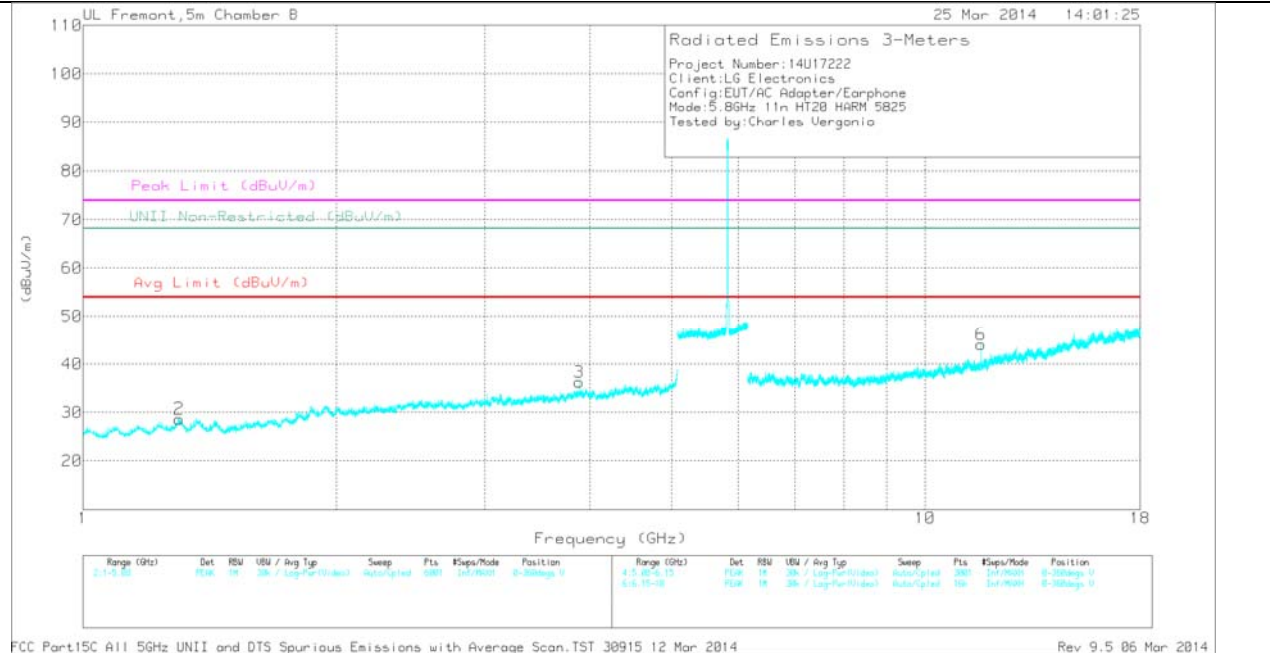
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

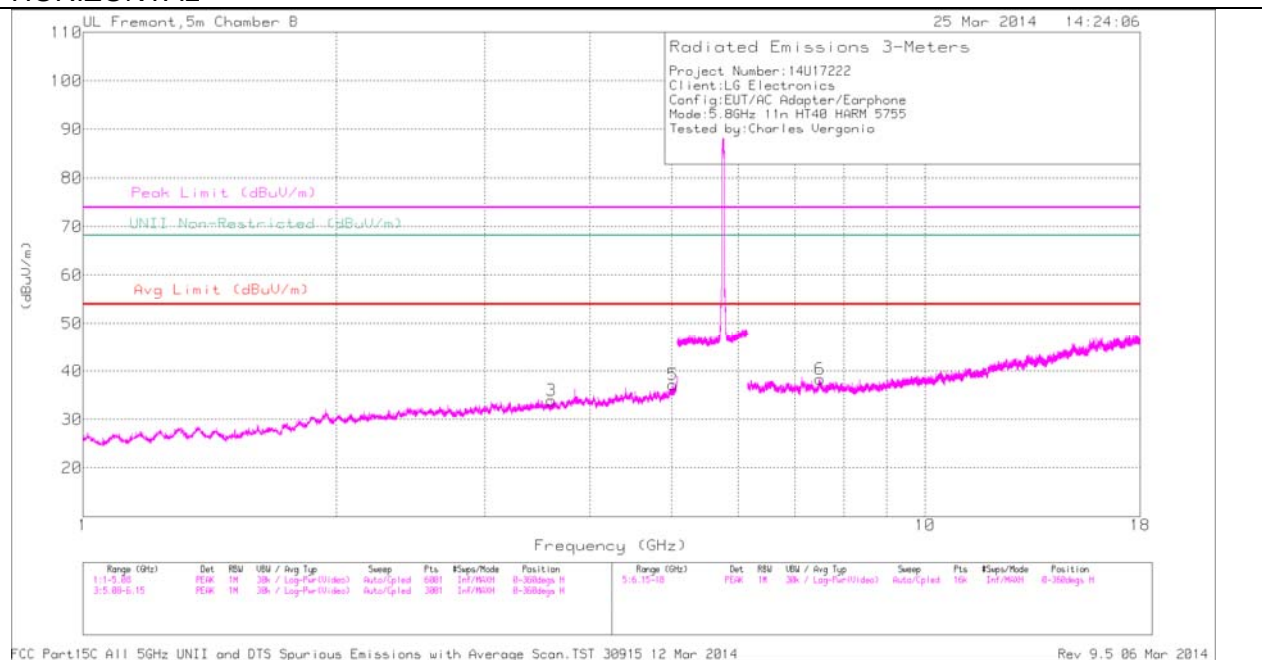
HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.2	41.97	PK2	28.2	-34.8	35.37	54	-18.63	74	-38.63	-	-	360	100	H
* 4.77	40.56	PK2	34.2	-29.2	45.56	54	-8.44	74	-28.44	-	-	360	100	H
* 4.889	40.16	PK2	34.2	-29.6	44.76	54	-9.24	74	-29.24	-	-	360	100	H
* 1.3	42.93	PK2	28.9	-34.2	37.63	54	-16.37	74	-36.37	-	-	360	100	V
* 3.884	42.02	PK2	33.8	-31.7	44.12	54	-9.88	74	-29.88	-	-	360	100	V
* 11.652	38.33	PK2	38.2	-23.1	53.43	54	-.57	74	-20.57	-	-	209	386	V
* 11.652	27.26	MAV1	38.2	-23.1	42.56	54	-11.44	74	-31.44	-	-	209	386	V

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

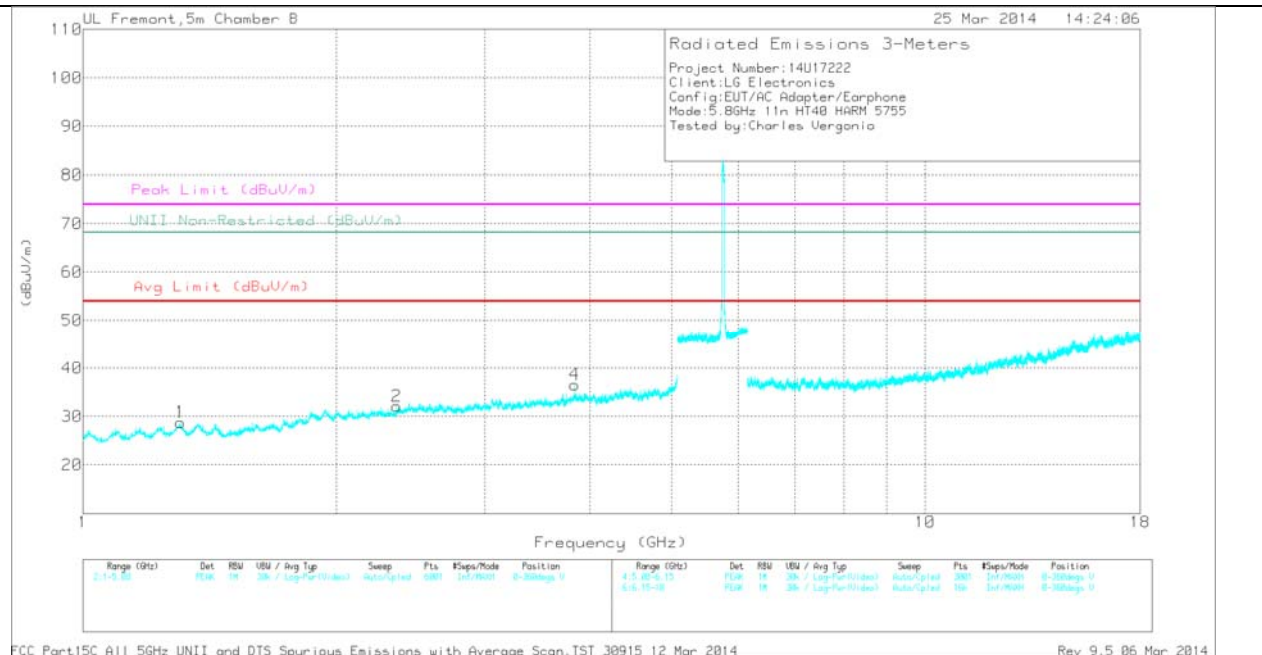
10.2.1. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



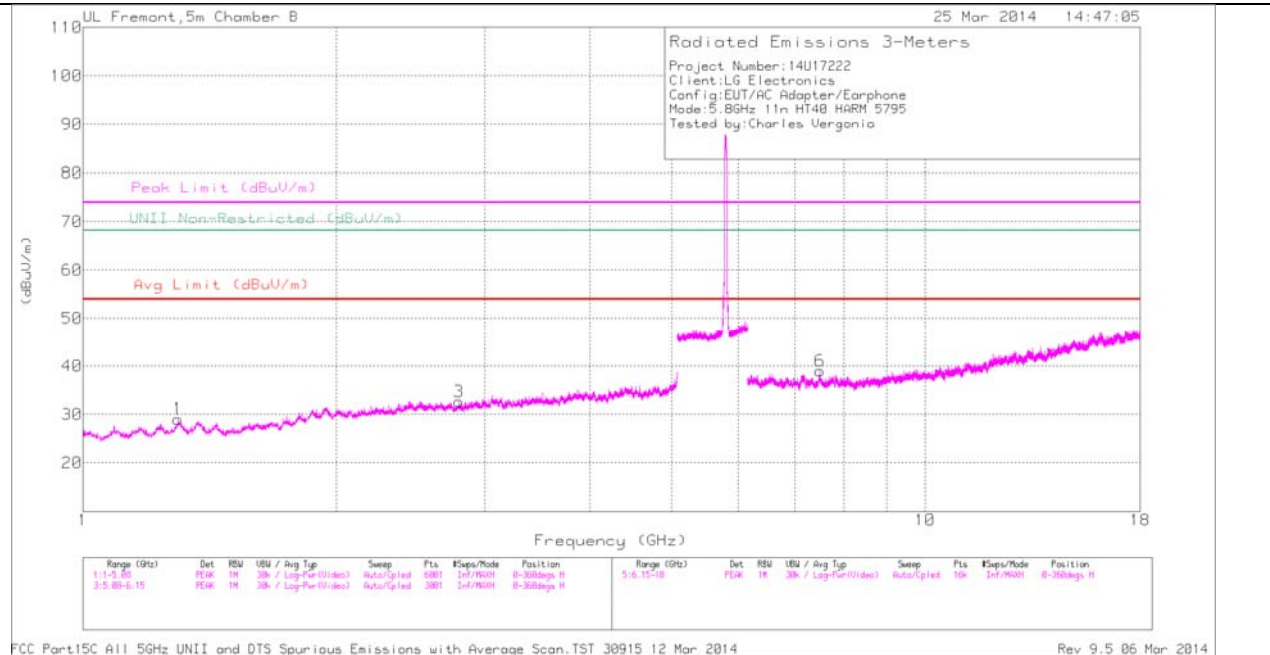
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.599	40.9	PK2	33.1	-31.5	42.5	54	-11.5	74	-31.5	-	-	360	100	H
* 5.016	40.4	PK2	34.2	-28.8	45.8	54	-8.2	74	-28.2	-	-	360	100	H
* 1.307	42.93	PK2	28.8	-34.1	37.63	54	-16.37	74	-36.37	-	-	360	100	V
* 2.358	41.45	PK2	31.9	-32.9	40.45	54	-13.55	74	-33.55	-	-	360	100	V
* 3.837	41.39	PK2	33.7	-31.1	43.99	54	-10.01	74	-30.01	-	-	360	100	V
* 7.499	37.43	PK2	35.6	-25.9	47.13	54	-6.87	74	-26.87	-	-	360	100	H

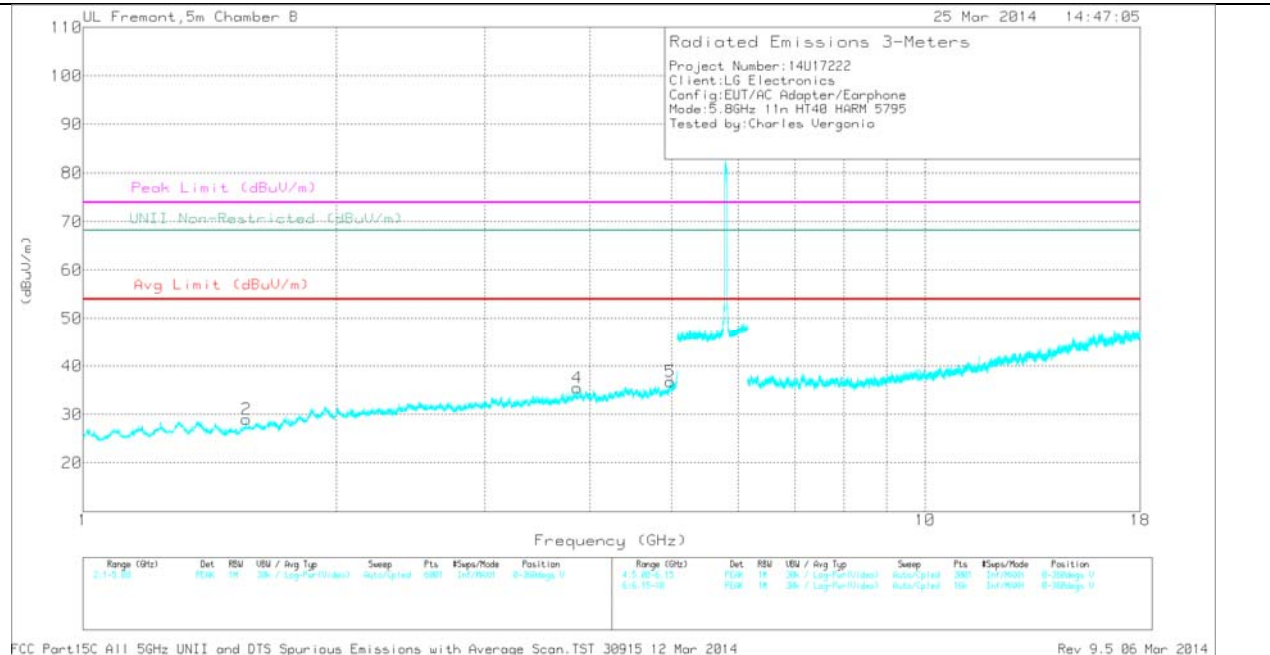
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

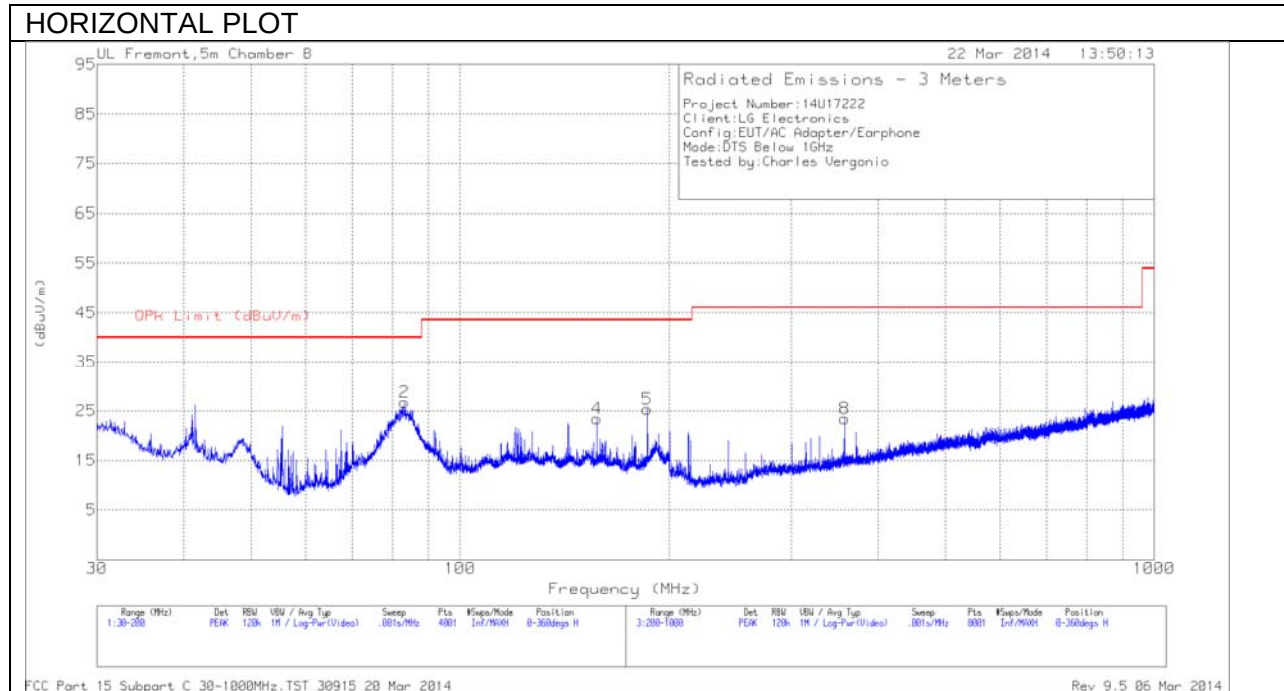
HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.297	43	PK2	28.8	-34.3	37.5	54	-16.5	74	-36.5	-	-	360	100	H
* 2.796	40.97	PK2	32.3	-32.4	40.87	54	-13.13	74	-33.13	-	-	360	100	H
* 1.565	42	PK2	28.3	-33.6	36.7	54	-17.3	74	-37.3	-	-	360	100	V
* 3.864	41.32	PK2	33.7	-31.5	43.52	54	-10.48	74	-30.48	-	-	360	100	V
* 4.985	39.67	PK2	34.2	-28.3	45.57	54	-8.43	74	-28.43	-	-	360	100	V
* 7.496	36.86	PK2	35.6	-25.8	46.66	54	-7.34	74	-27.34	-	-	360	100	H

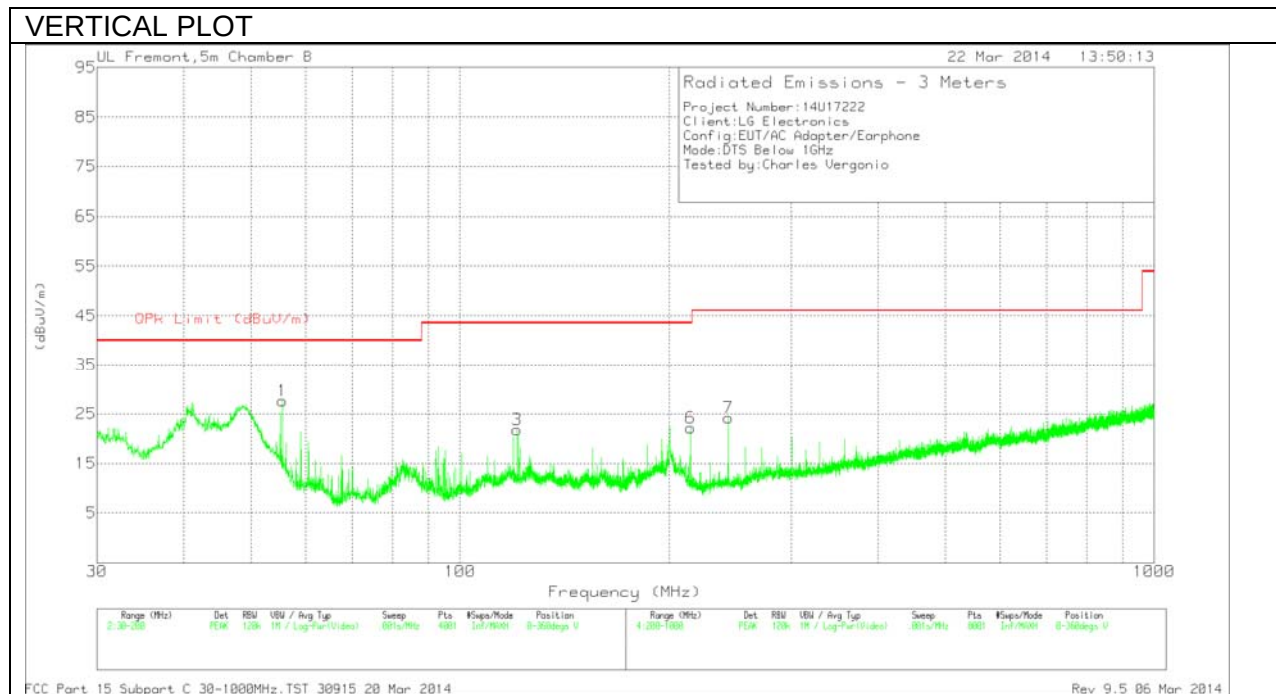
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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 T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 120.865	35.8	PK	13.8	-27.8	21.8	43.52	-21.72	0-360	101	V
7	* 243.4	39.21	PK	11.5	-26.5	24.21	46.02	-21.81	0-360	200	V
1	55.5	49.18	PK	7	-28.6	27.58	40	-12.42	0-360	101	V
2	83.1675	47.54	PK	7.5	-28.3	26.74	40	-13.26	0-360	400	H
4	157.5	38.58	PK	12.3	-27.4	23.48	43.52	-20.04	0-360	100	H
5	186.145	41.18	PK	11.3	-27.1	25.38	43.52	-18.14	0-360	100	H
6	214.8	38.57	PK	10.4	-26.8	22.17	43.52	-21.35	0-360	200	V
8	357.9	34.6	PK	14.7	-25.8	23.5	46.02	-22.52	0-360	200	H

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

PK - Peak detector

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-L1 .15 - 30MHz

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	.4245	52.14	PK	.4	0	52.54	57.4	-4.86	-	-
2	.4245	32.04	Av	.4	0	32.44	-	-	47.4	-14.96
3	.888	48.07	PK	.3	0	48.37	56	-7.63	-	-
4	.888	35.1	Av	.3	0	35.4	-	-	46	-10.6
5	2.094	47.33	PK	.2	.1	47.63	56	-8.37	-	-
6	2.094	30.55	Av	.2	.1	30.85	-	-	46	-15.15
7	18.5685	43.03	PK	.3	.2	43.53	60	-16.47	-	-
8	18.5685	17.26	Av	.3	.2	17.76	-	-	50	-32.24

Line-L2 .15 - 30MHz

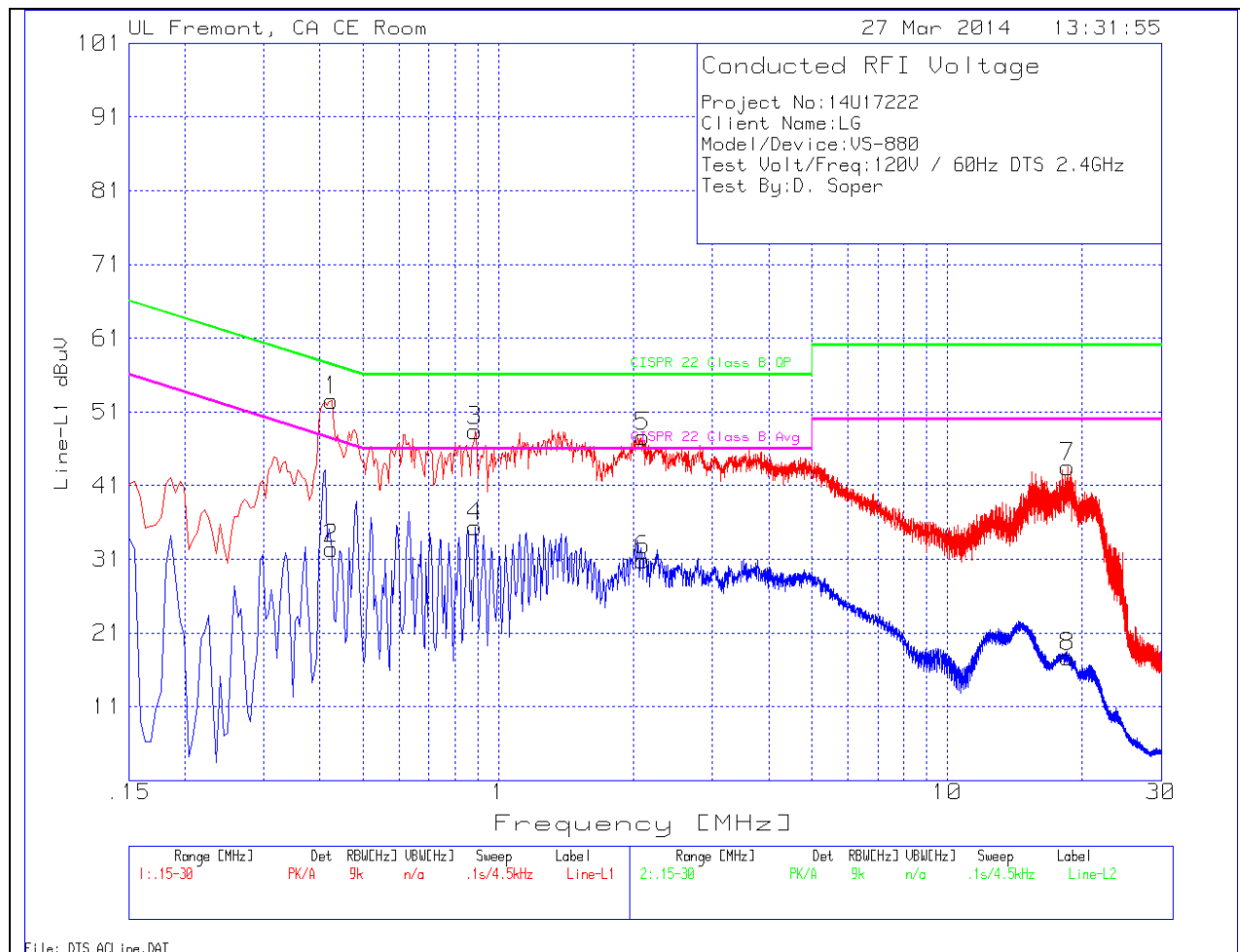
Trace Markers

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)
9	.1725	40.12	PK	1.2	0	41.32	64.8	-23.48	-	-
10	.1725	18.78	Av	1.2	0	19.98	-	-	54.8	-34.82
11	.42	49.12	PK	.4	0	49.52	57.4	-7.88	-	-
12	.42	35.72	Av	.4	0	36.12	-	-	47.4	-11.28
13	1.4325	43.78	PK	.2	.1	44.08	56	-11.92	-	-
14	1.4325	27.83	Av	.2	.1	28.13	-	-	46	-17.87
15	12.012	34.62	PK	.2	.2	35.02	60	-24.98	-	-
16	12.012	12.5	Av	.2	.2	12.9	-	-	50	-37.1

PK - Peak detector

Av - average detection

LINE 1 RESULTS



LINE 2 RESULTS

