



**FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8**

CERTIFICATION TEST REPORT

FOR

GSM/CDMA/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac and NFC

MODEL NUMBER: LG-VS985, VS985, LGVS985, AS985, LG-AS985 & LGAS985

FCC ID: ZNFVS985

IC: 2703C-VS985

REPORT NUMBER: 14U17502-4

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.

EUT DESCRIPTION: GSM/CDMA/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac and NFC.

MODEL: LG-VS985, VS985, LGVS985, AS985, LG-AS985 & LGAS985

SERIAL NUMBER: 14ZMN (Conducted), 14ZK7 (Radiated)

DATE TESTED: APRIL 14 – MAY 6, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	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, RSS-GEN Issue 3, and RSS-210 Issue 8.

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 GSM/CDMA/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac and 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	18.53	71.29
2412 - 2462	802.11g	19.51	89.33
2412 - 2462	802.11n HT20	18.68	73.79

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.74 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-04WT2	TA350000050	N/A
Earphone	LG	N/A	N/A	N/A
WPC Cover	LG	N/A	N/A	N/A
WPC Charger	LG	WPC-300	304HYBF00069	BEJWCP300

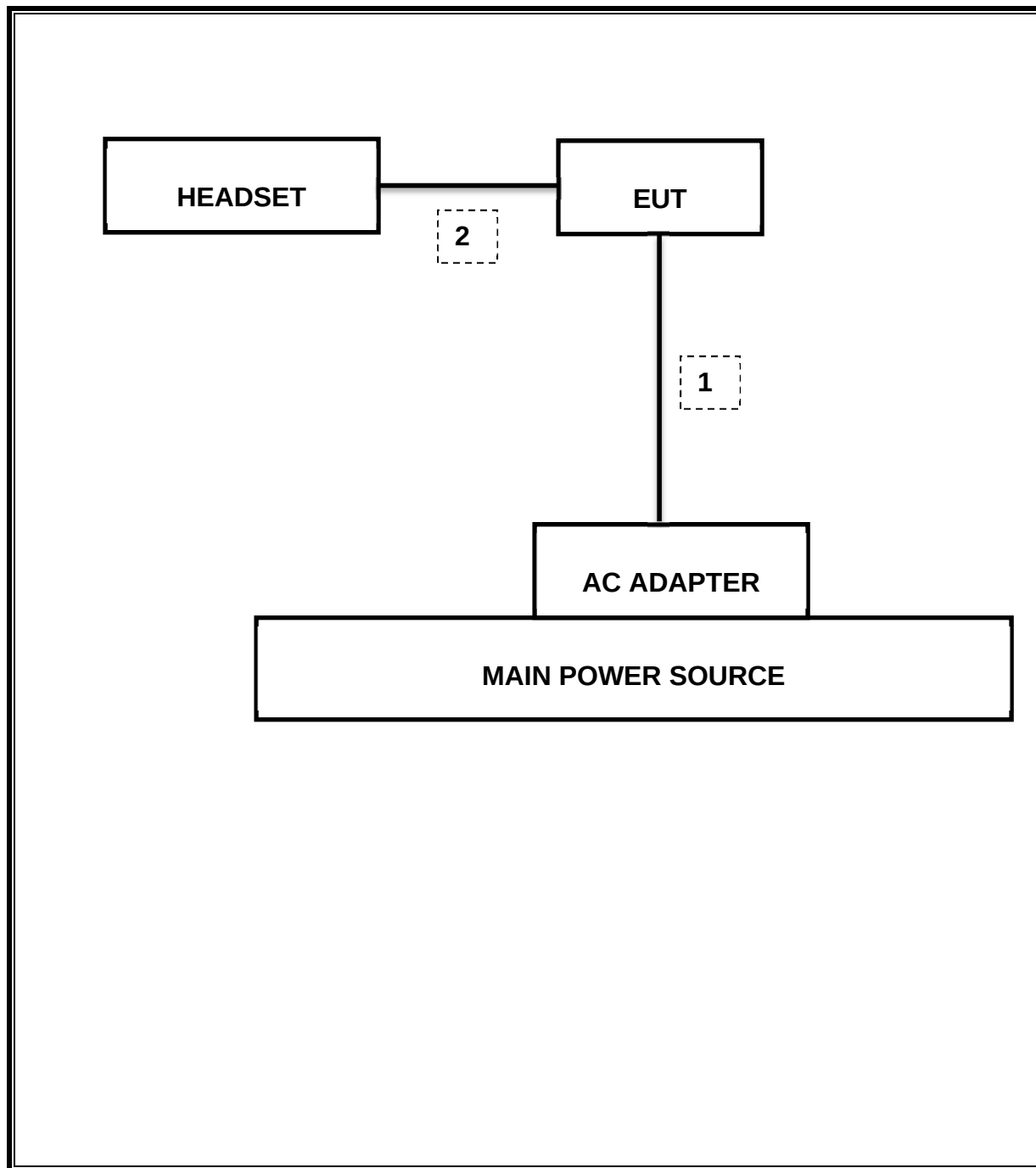
I/O CABLES

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	06/28/14
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	8.58MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-35.27dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	19.51dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-5.87dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	54dBuV/m
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	44.28dBuV/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	8.58	0.5
Mid	2437	8.58	0.5
High	2462	9.98	0.5
Worst		8.58	

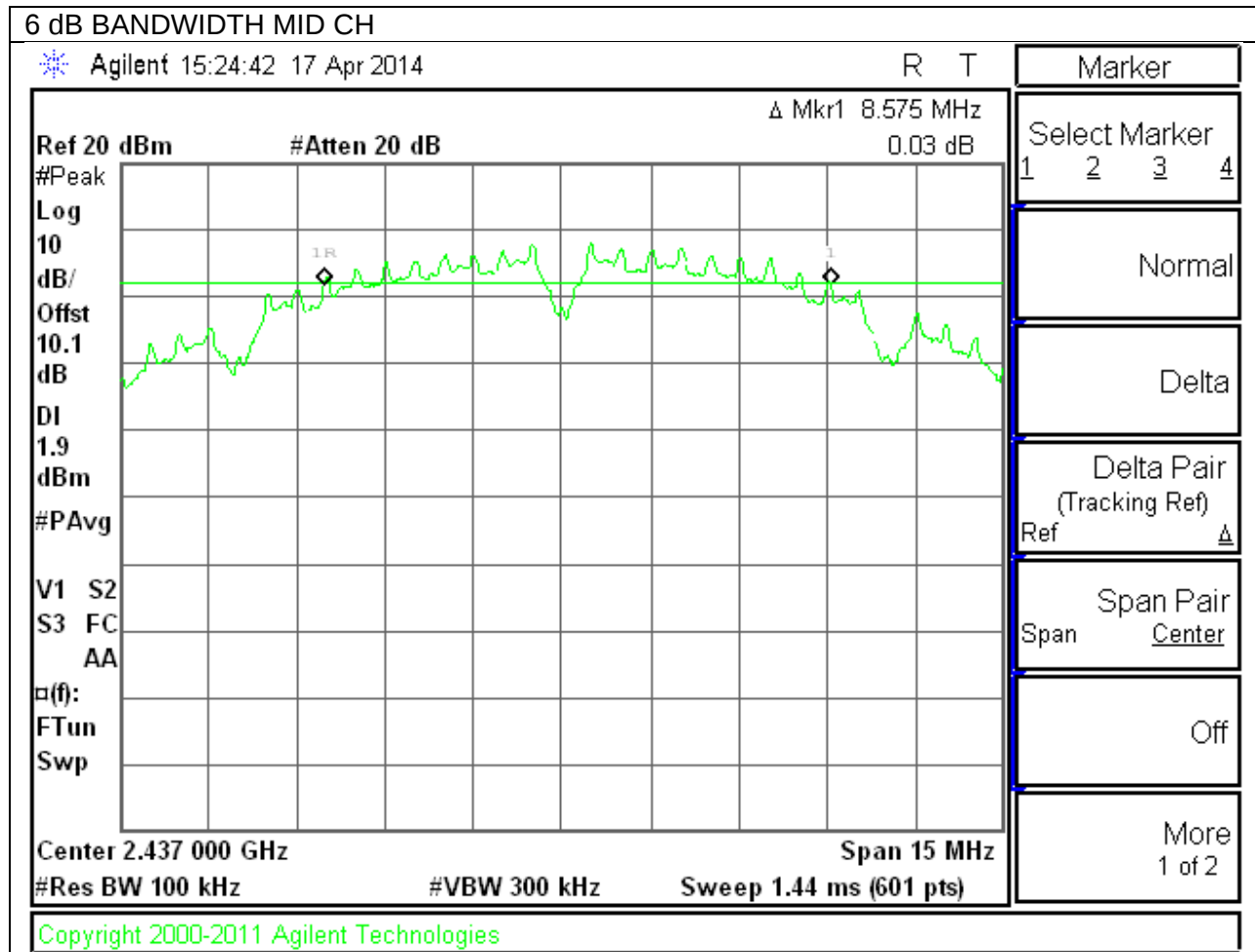
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.38	0.5
Mid	2437	16.42	0.5
High	2462	16.54	0.5
Worst		16.38	

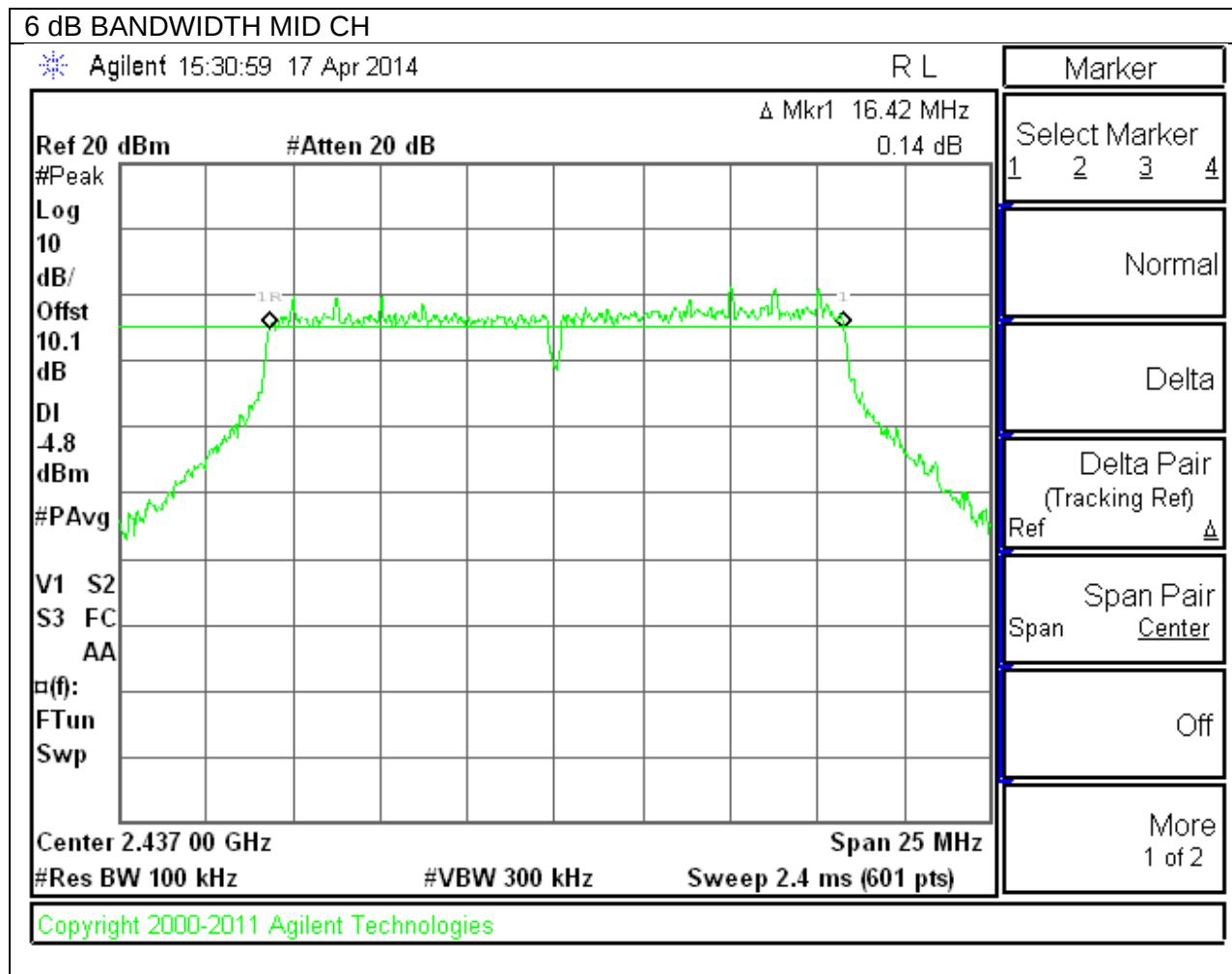
9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.58	0.5
Mid	2437	17.58	0.5
High	2462	17.67	0.5
Worst		17.58	

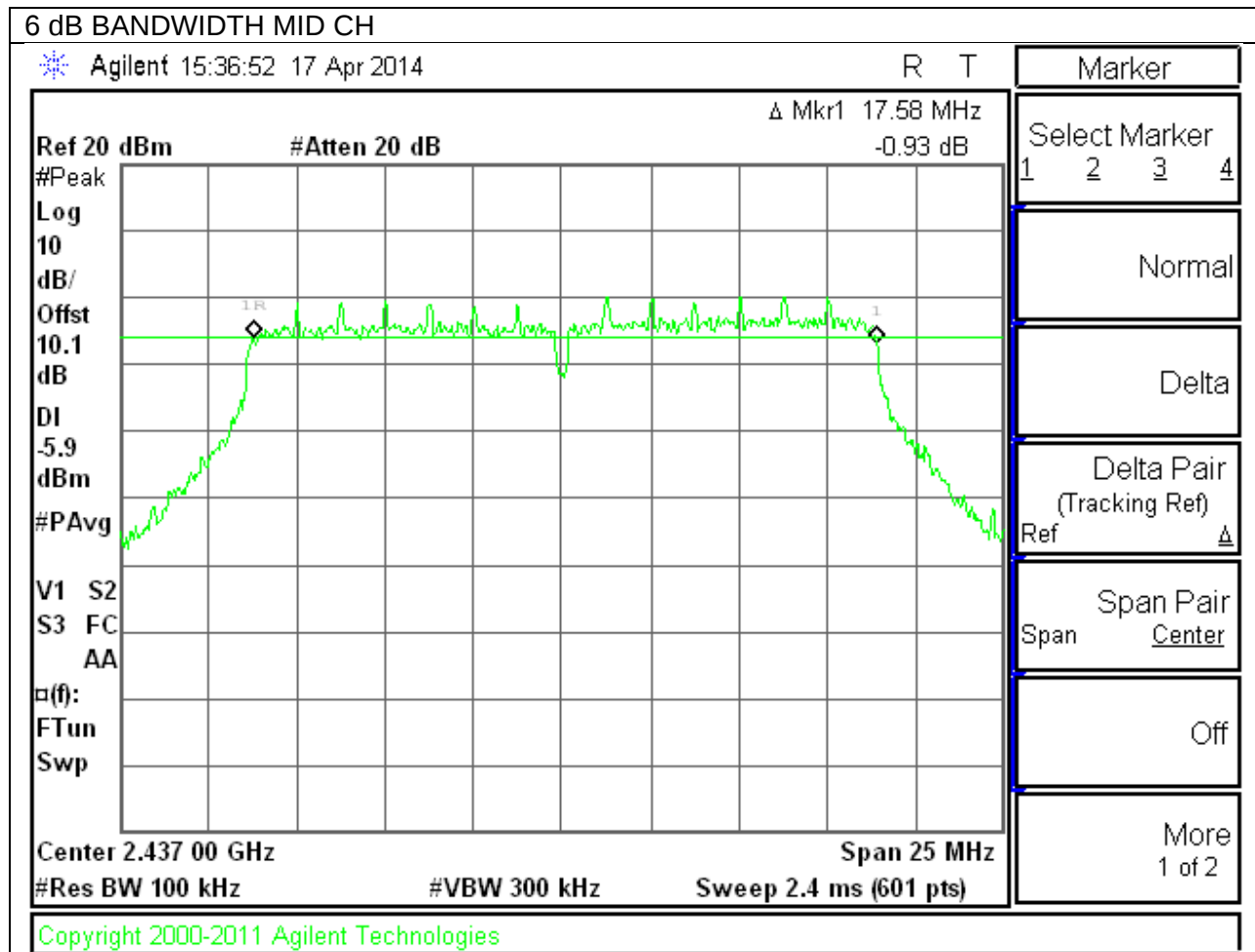
802.11b 6 dB BANDWIDTH



802.11g 6 dB BANDWIDTH



802.11n 6 dB BANDWIDTH



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	13.16
Mid	2437	13.32
High	2462	13.46
Worst		13.46

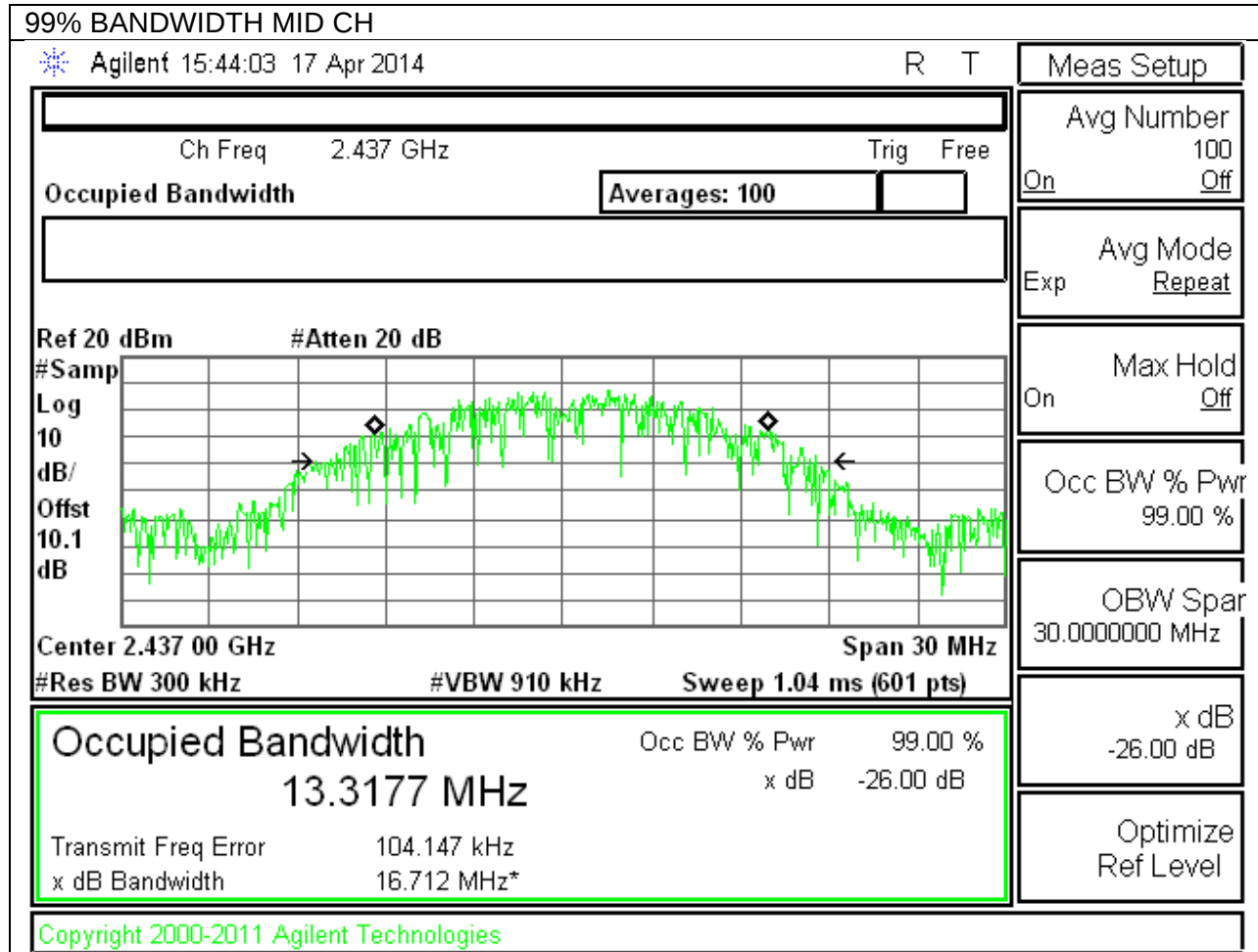
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.47
Mid	2437	16.43
High	2462	16.40
Worst		16.47

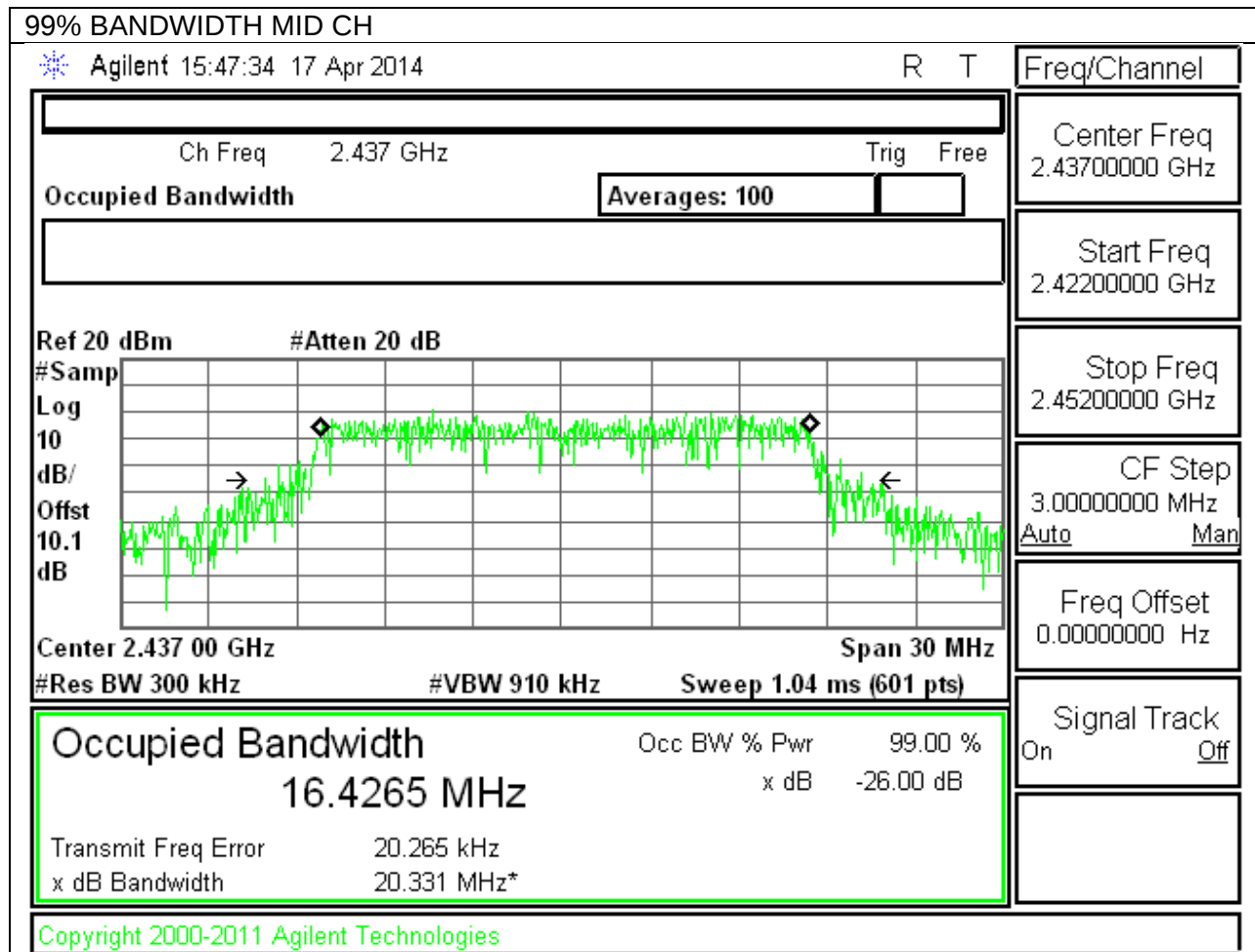
9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.54
Mid	2437	17.58
High	2462	17.53
Worst		17.58

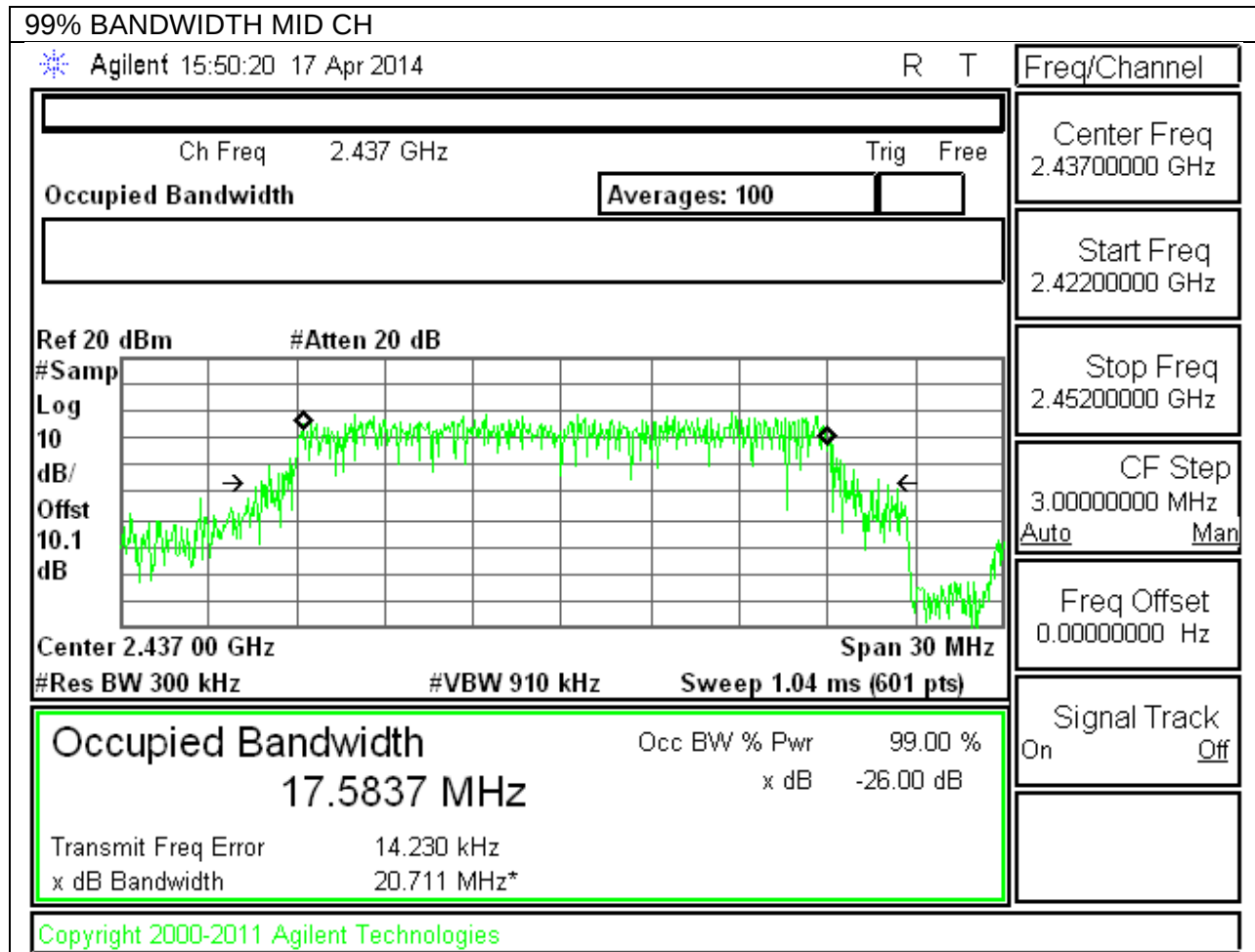
802.11b 99% BANDWIDTH



802.11g 99% BANDWIDTH



802.11n 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 0.2 dB (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	15.80
Mid	2437	15.80
High	2462	16.00
Worst		16.000

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	11.80
Mid	2437	12.00
High	2462	12.00
Worst		12.000

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	11.10
Mid	2437	10.90
High	2462	11.20
Worst		11.200

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	-1.74	30.00	30	36	30.00
Mid	2437	-1.74	30.00	30	36	30.00
High	2462	-1.74	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	18.50	18.50	30.00	-11.50
Mid	2437	18.31	18.31	30.00	-11.69
High	2462	18.53	18.53	30.00	-11.47
Worst			18.53		

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	-1.74	30.00	30	36	30.00
Mid	2437	-1.74	30.00	30	36	30.00
High	2462	-1.74	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	19.51	19.51	30.00	-10.49
Mid	2437	19.50	19.50	30.00	-10.50
High	2462	19.43	19.43	30.00	-10.57
Worst			19.51		

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

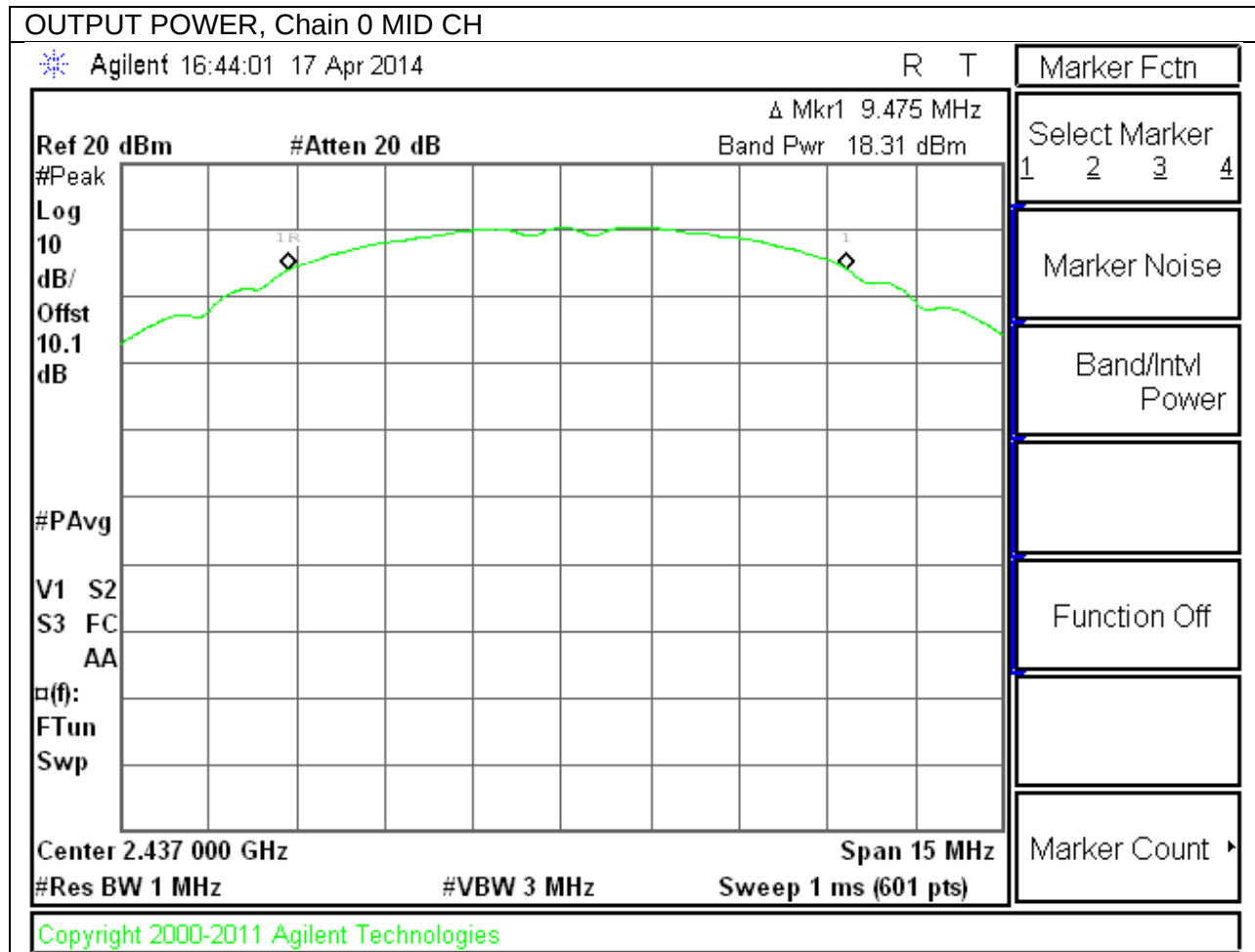
Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.74	30.00	30	36	30.00
Mid	2437	-1.74	30.00	30	36	30.00
High	2462	-1.74	30.00	30	36	30.00

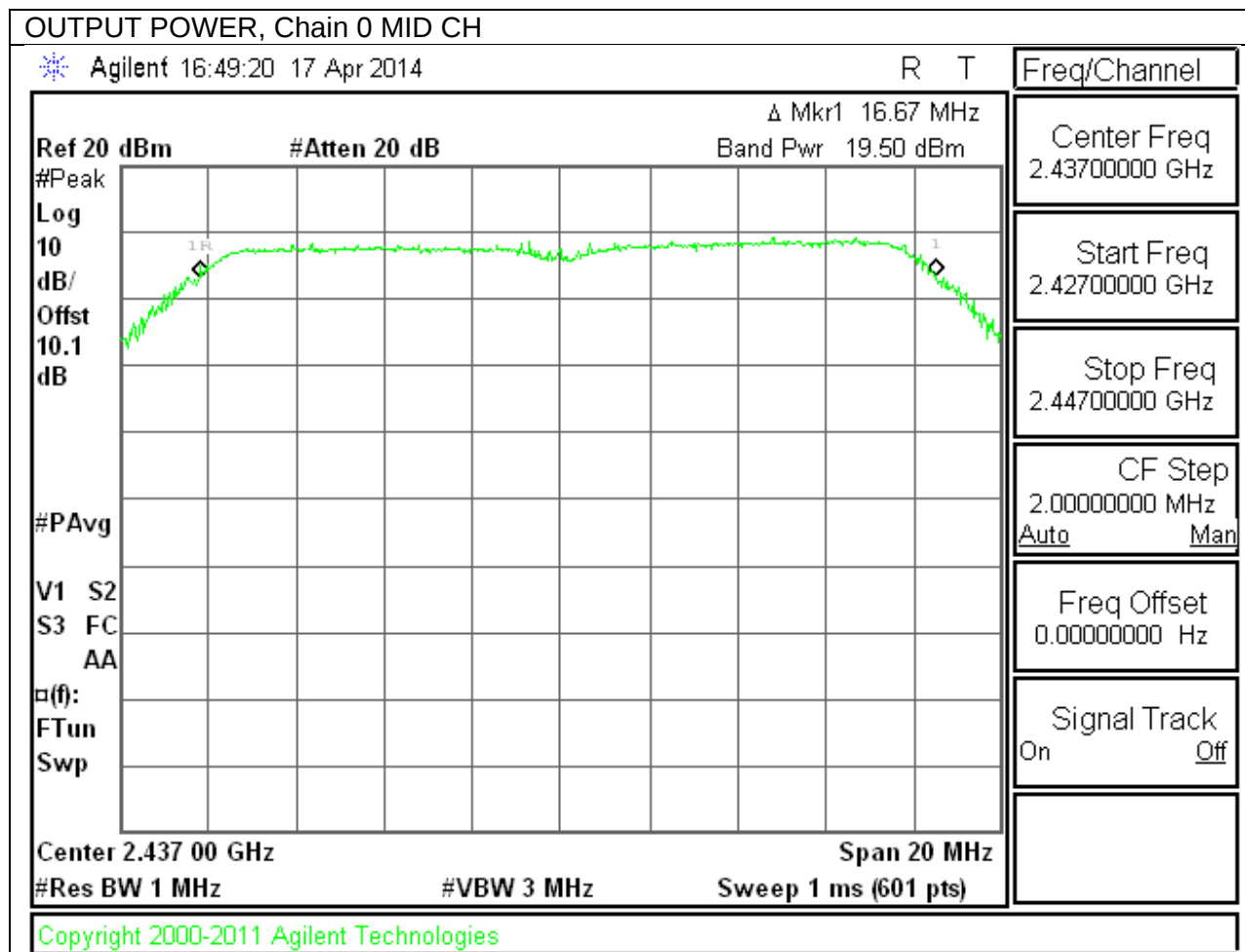
Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	18.68	18.68	30.00	-11.32
Mid	2437	18.49	18.49	30.00	-11.51
High	2462	18.61	18.61	30.00	-11.39
Worst			18.68		

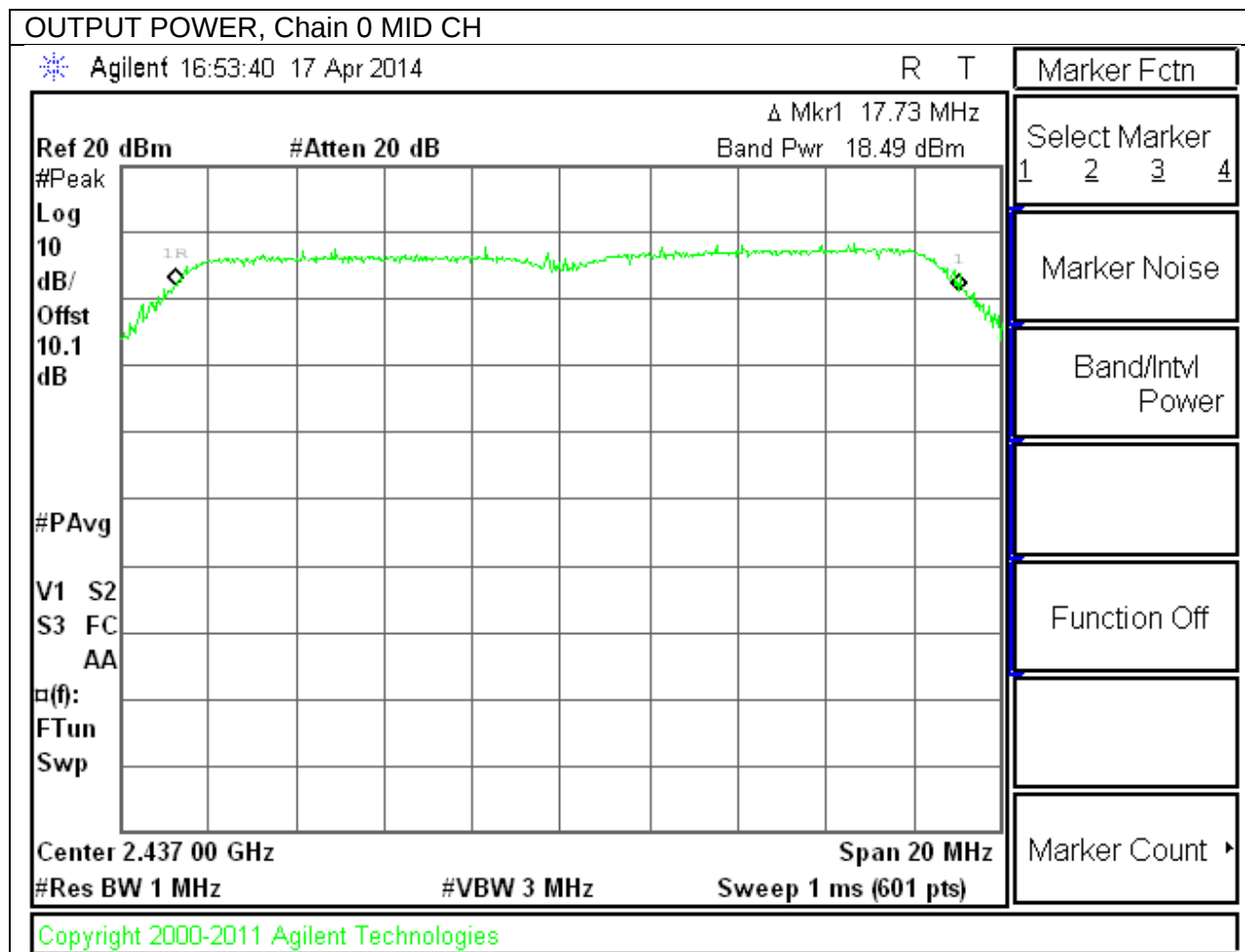
802.11b OUTPUT POWER, Chain 0



802.11g OUTPUT POWER, Chain 0



802.11n 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	-5.87	8.0	-13.9
Mid	2437	-6.80	8.0	-14.8
High	2462	-6.94	8.0	-14.9

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

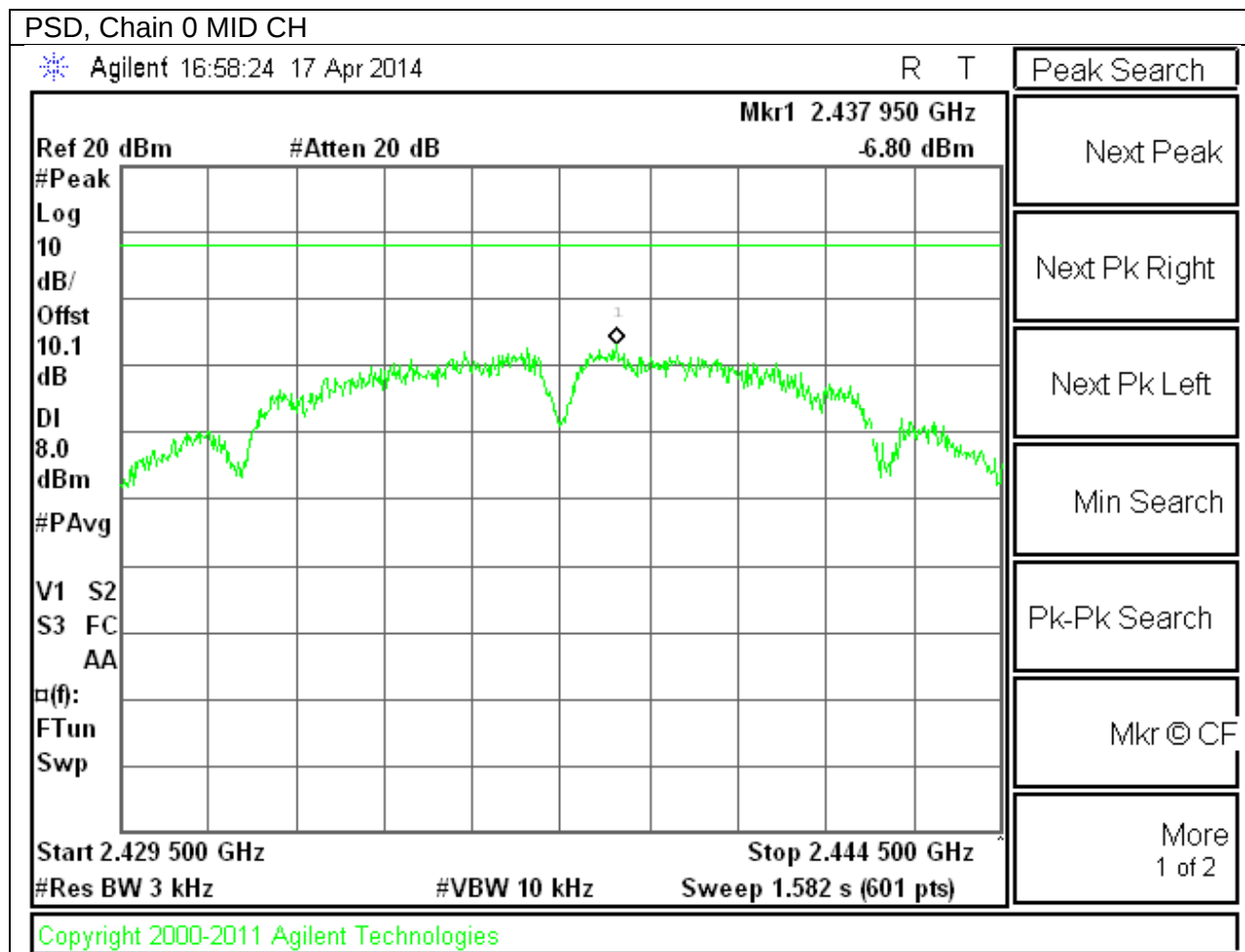
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-12.44	8.0	-20.4
Mid	2437	-13.16	8.0	-21.2
High	2462	-13.82	8.0	-21.8

9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

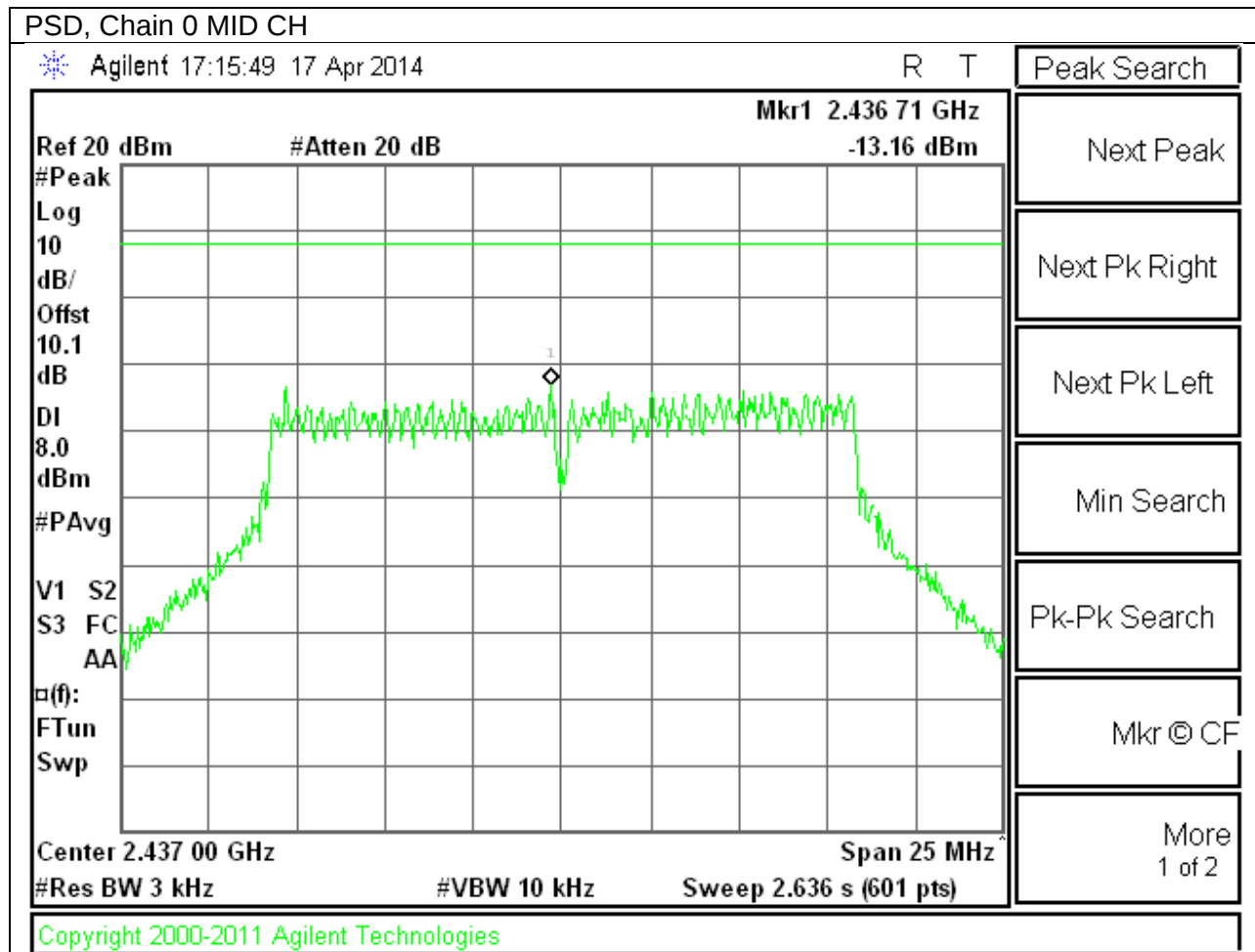
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-14.53	8.0	-22.5
Mid	2437	-15.02	8.0	-23.0
High	2462	-14.91	8.0	-22.9

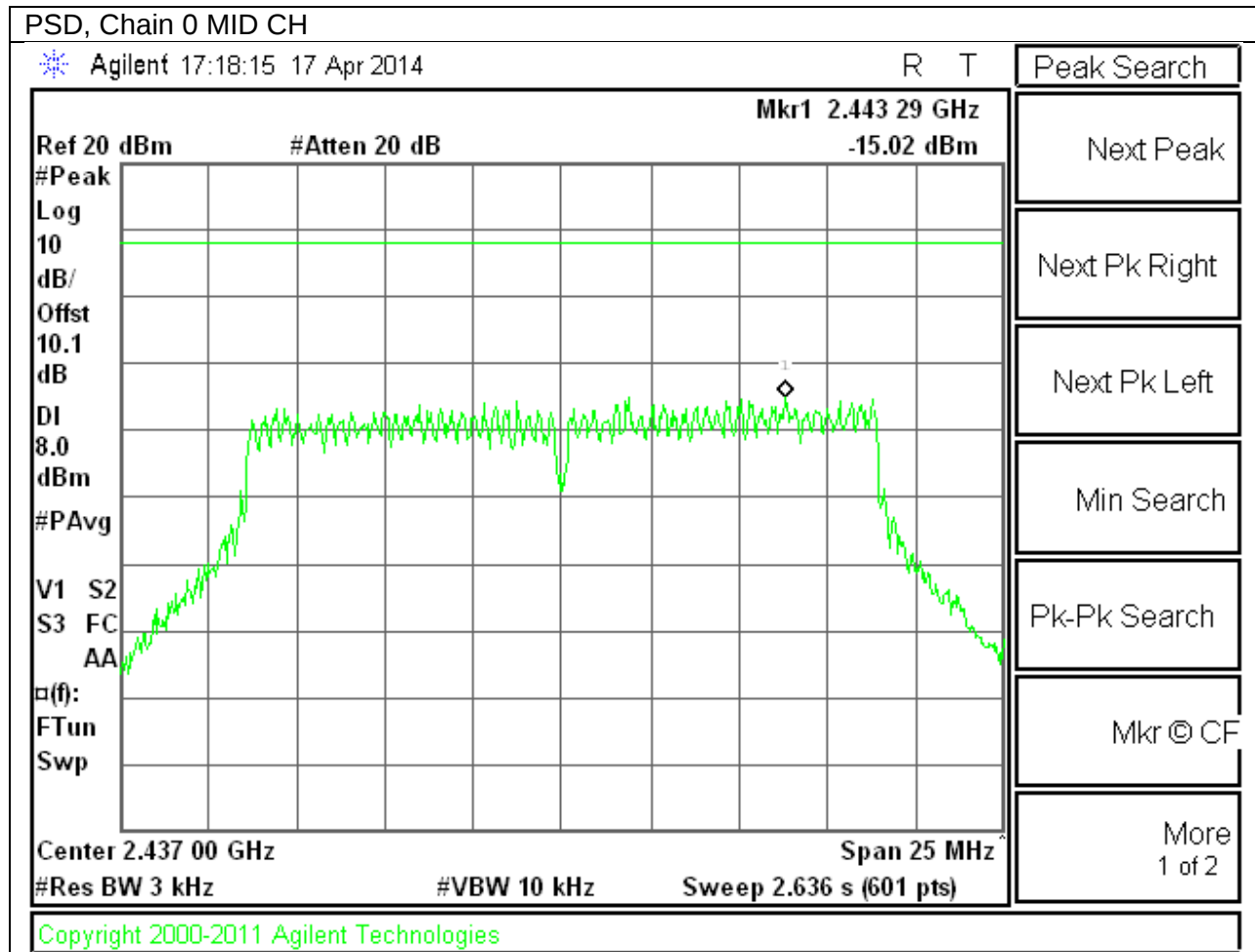
802.11b PSD, Chain 0



802.11g PSD, Chain 0



802.11n 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.

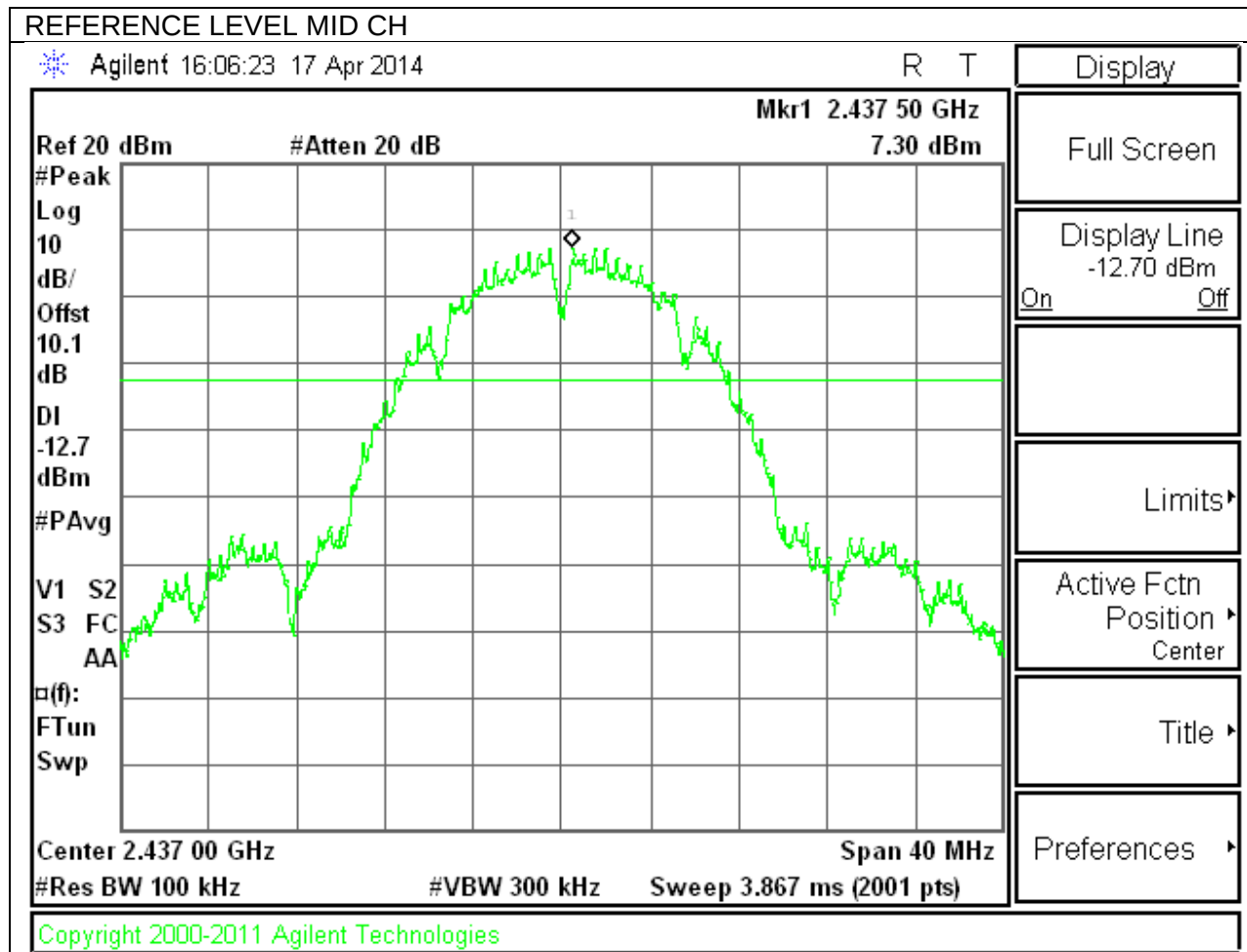
TEST PROCEDURE

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.

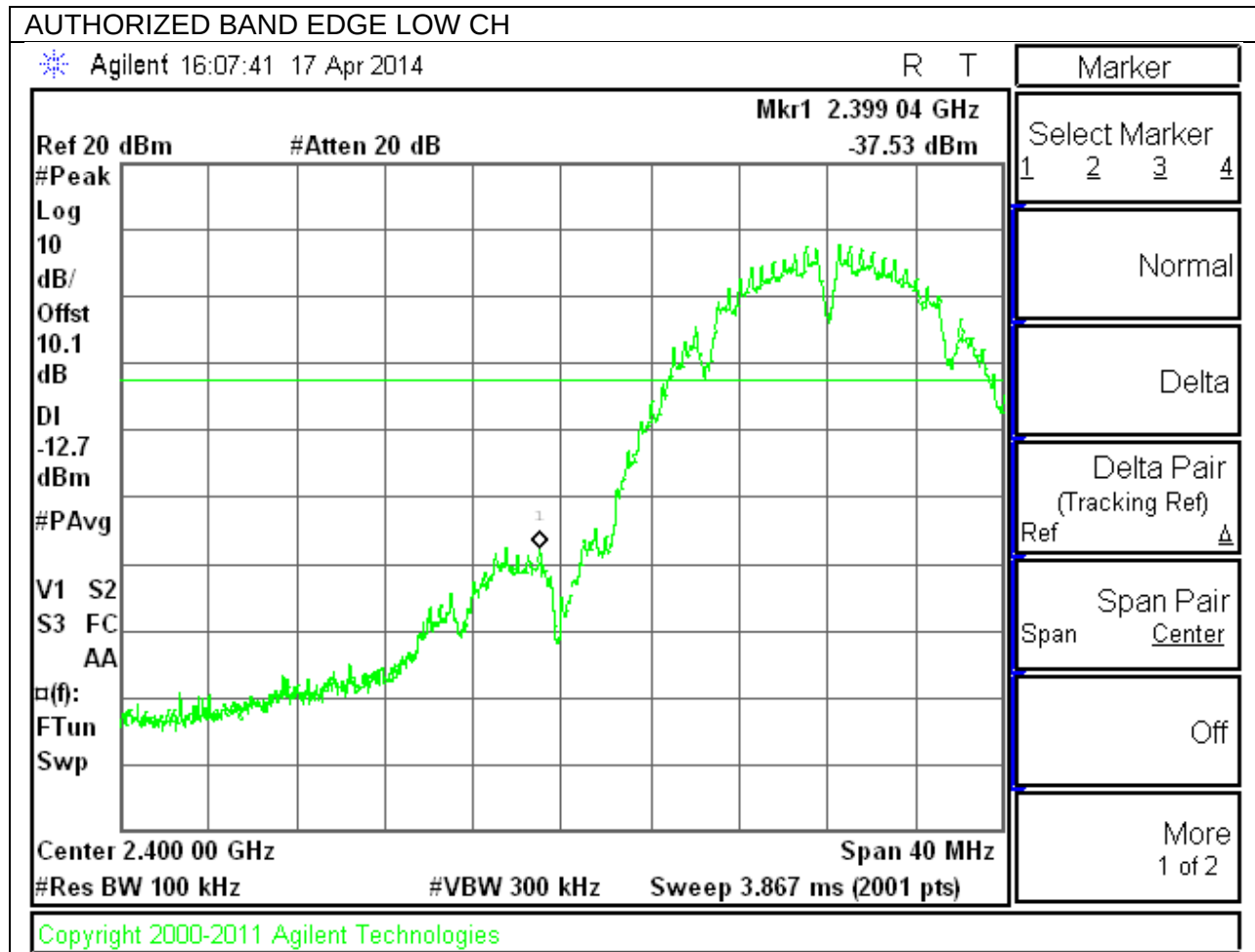
RESULTS

9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

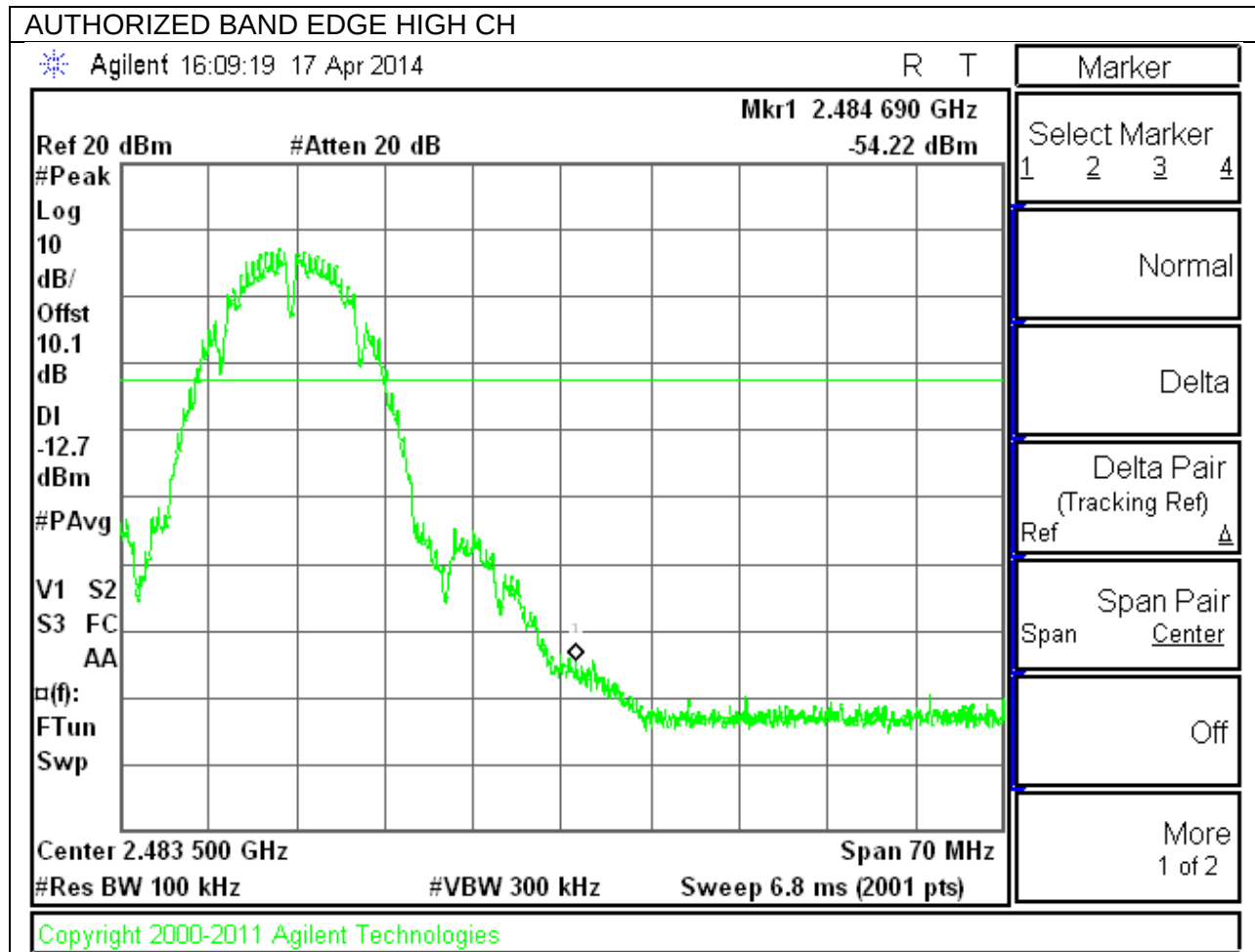
IN-BAND REFERENCE LEVEL



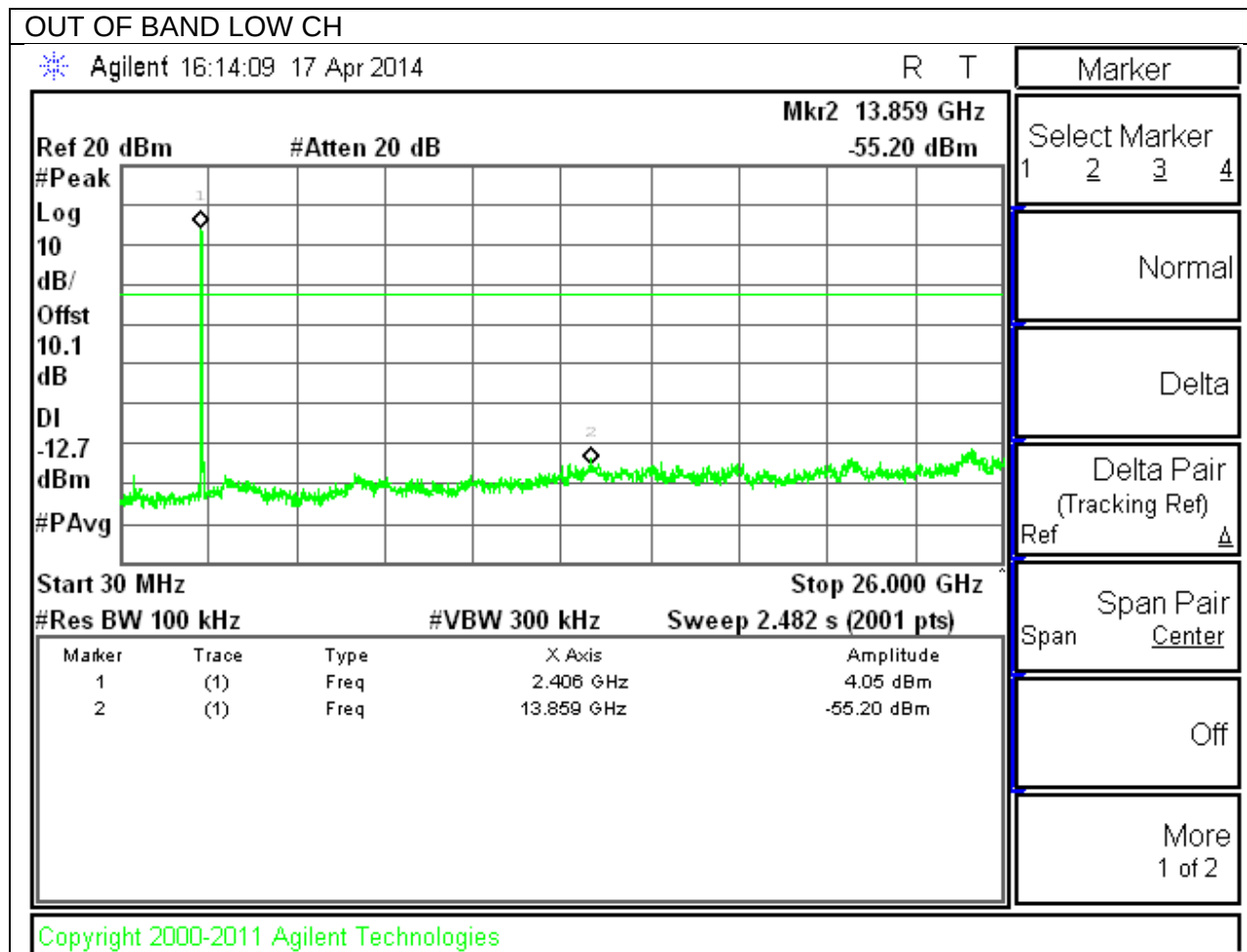
LOW CHANNEL BANDEDGE

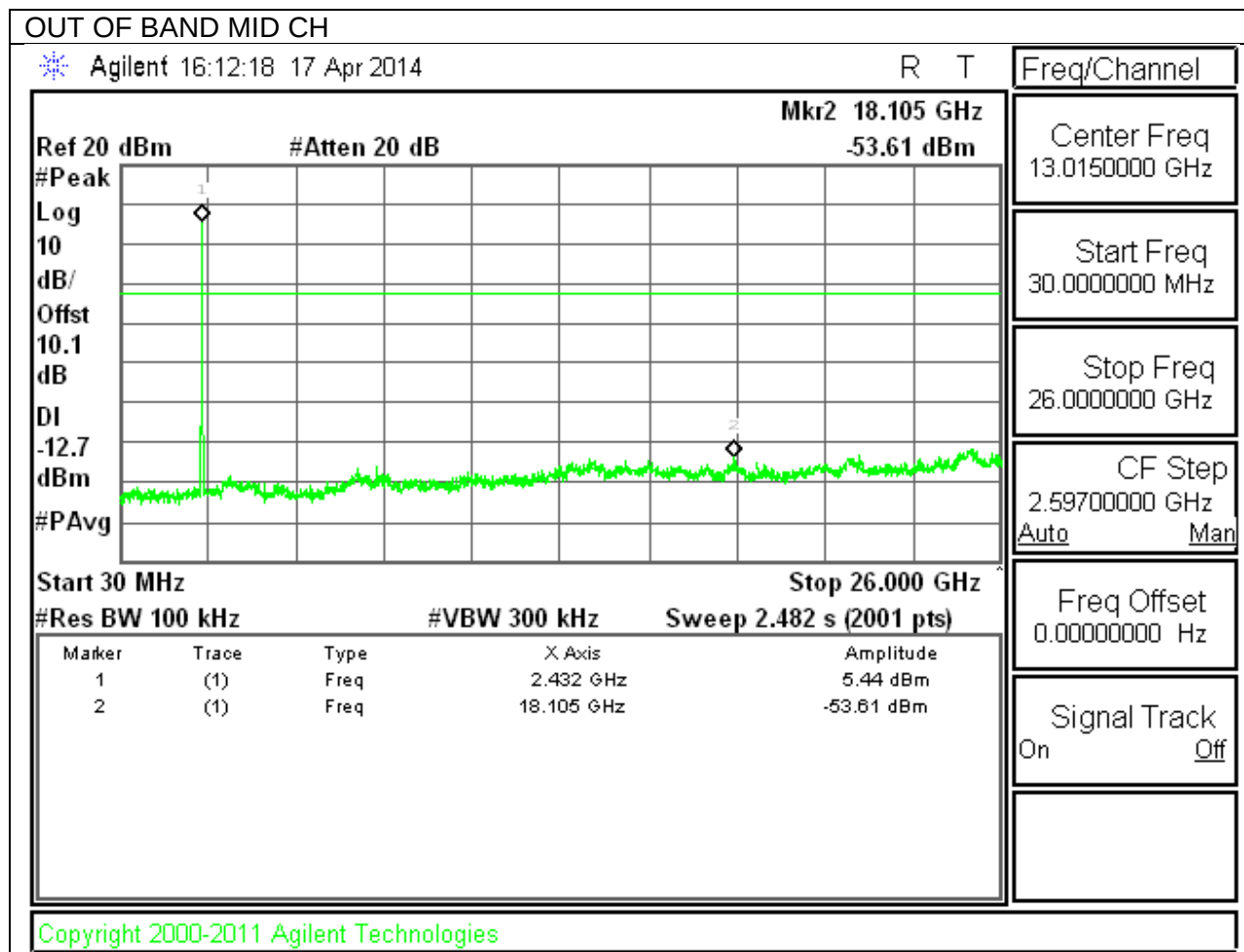


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



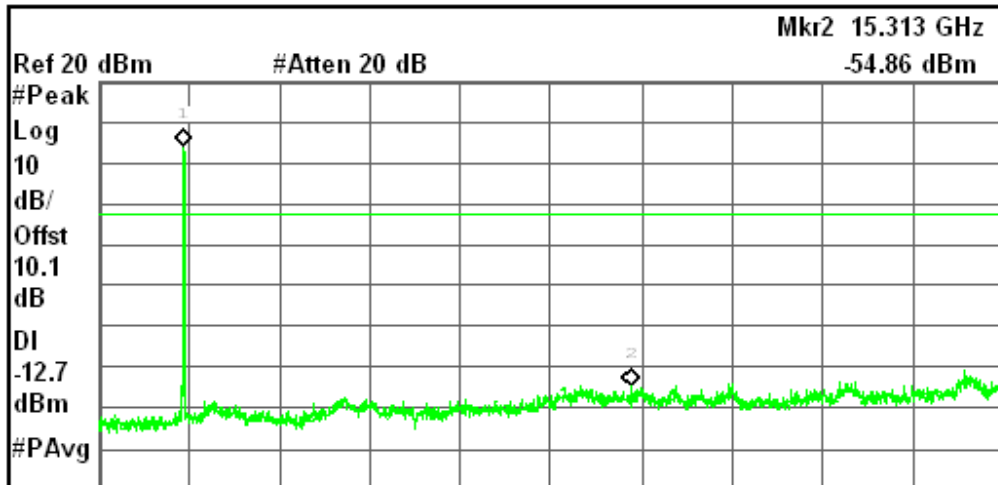


OUT OF BAND HIGH CH

Agilent 16:10:48 17 Apr 2014

R T

Marker



Select Marker
1 2 3 4

Normal

Delta

Delta Pair
(Tracking Ref)
Ref Δ

Span Pair
Span Center

Off

More
1 of 2

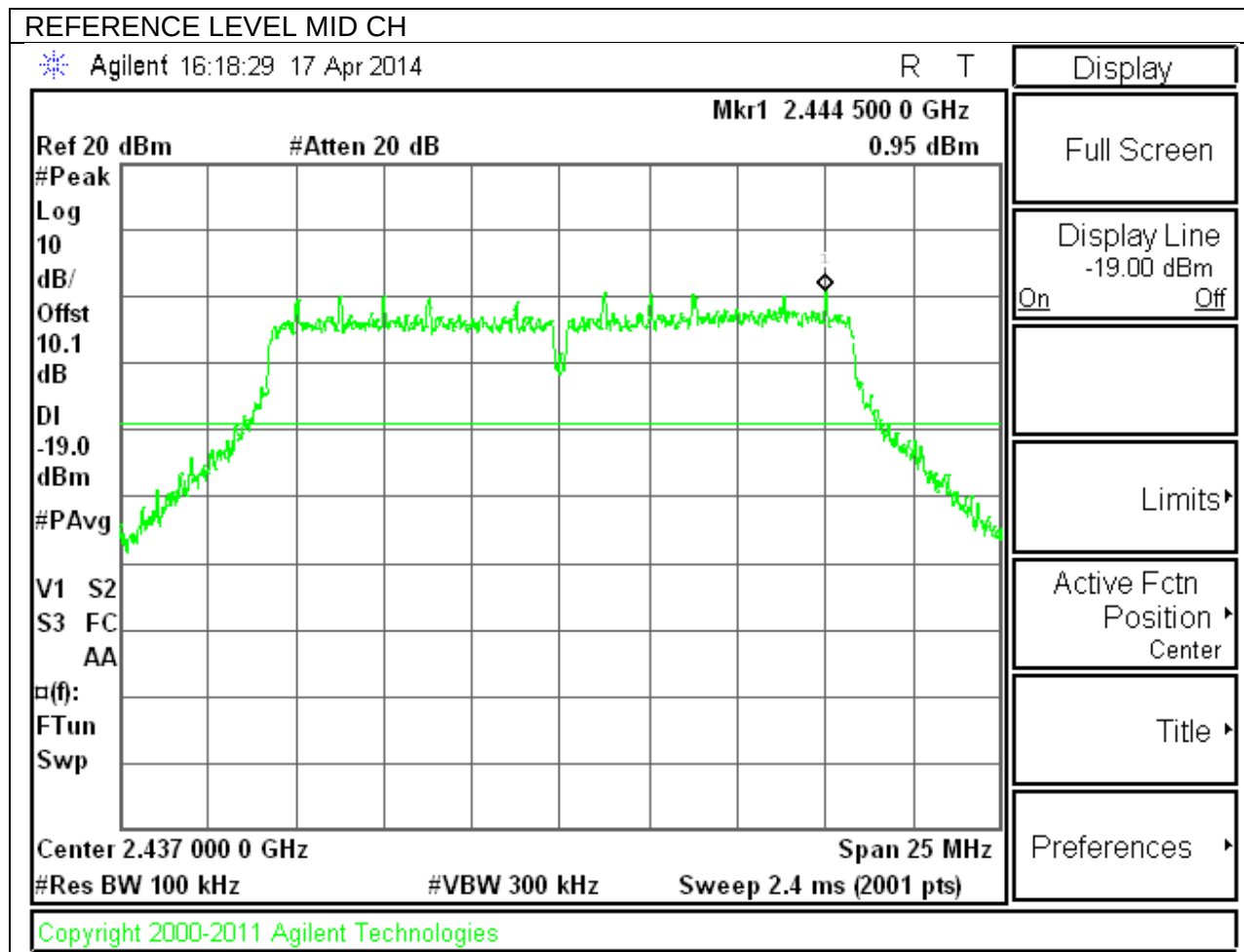
Start 30 MHz Stop 26.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.458 GHz	4.34 dBm
2	(1)	Freq	15.313 GHz	-54.86 dBm

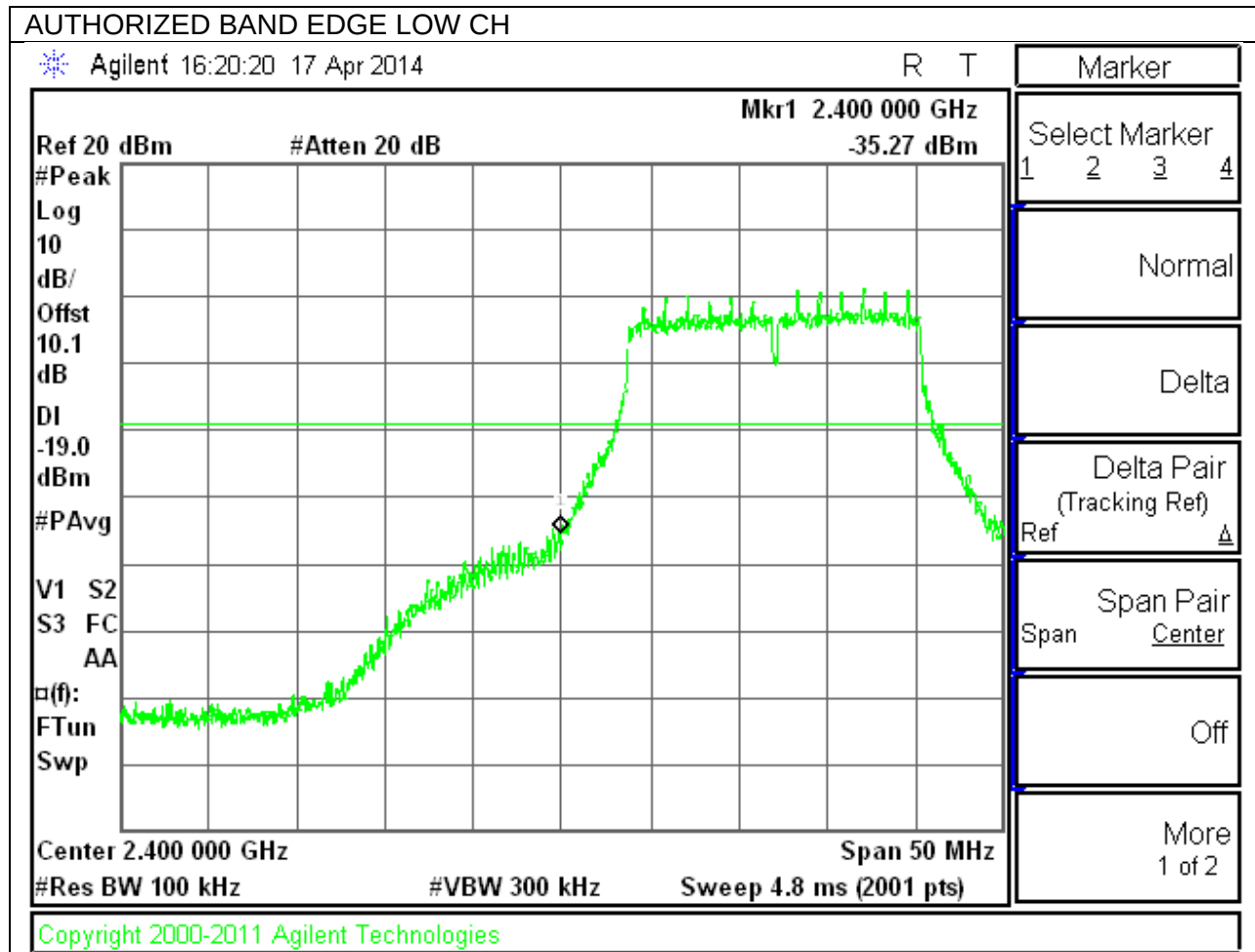
Copyright 2000-2011 Agilent Technologies

9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

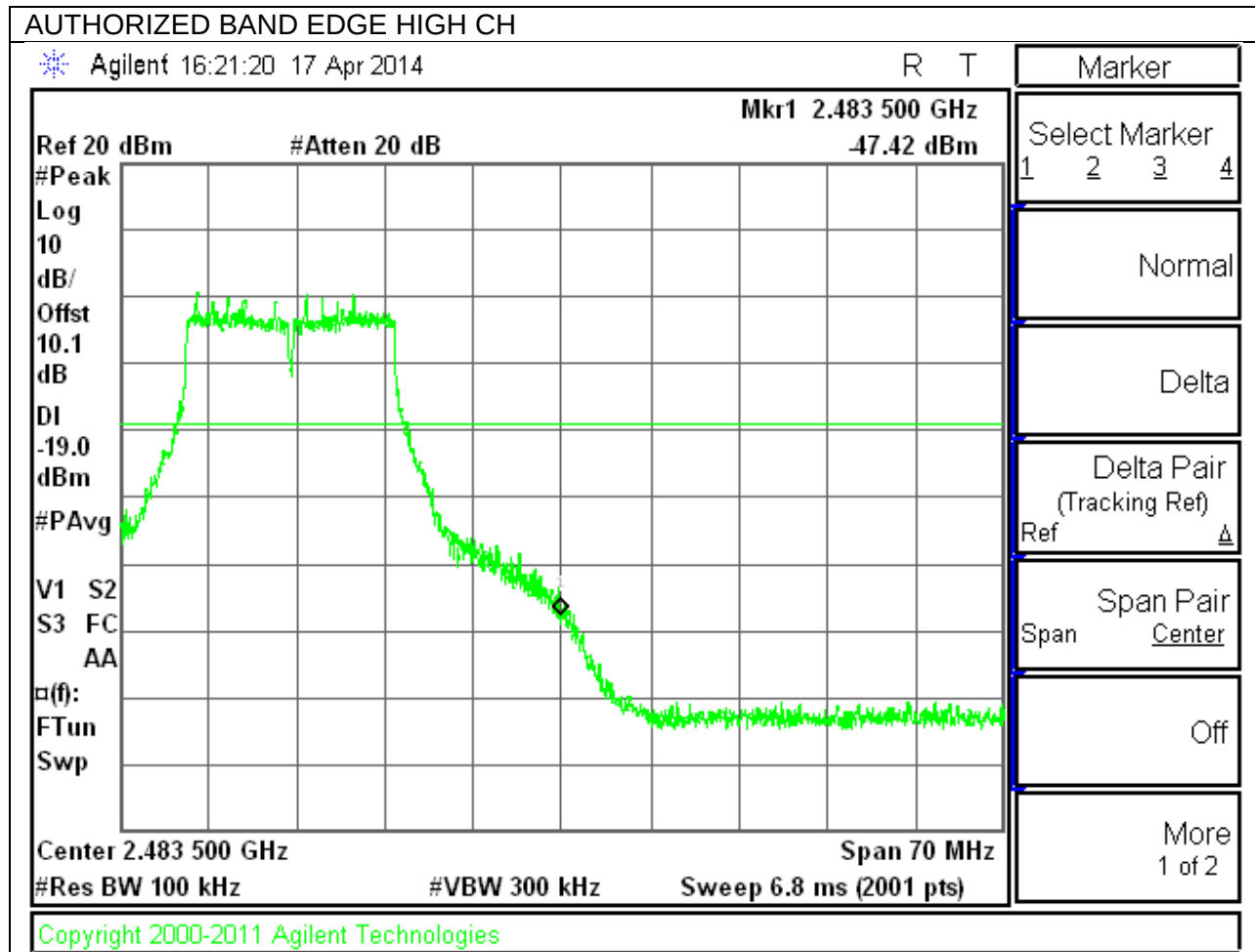
IN-BAND REFERENCE LEVEL



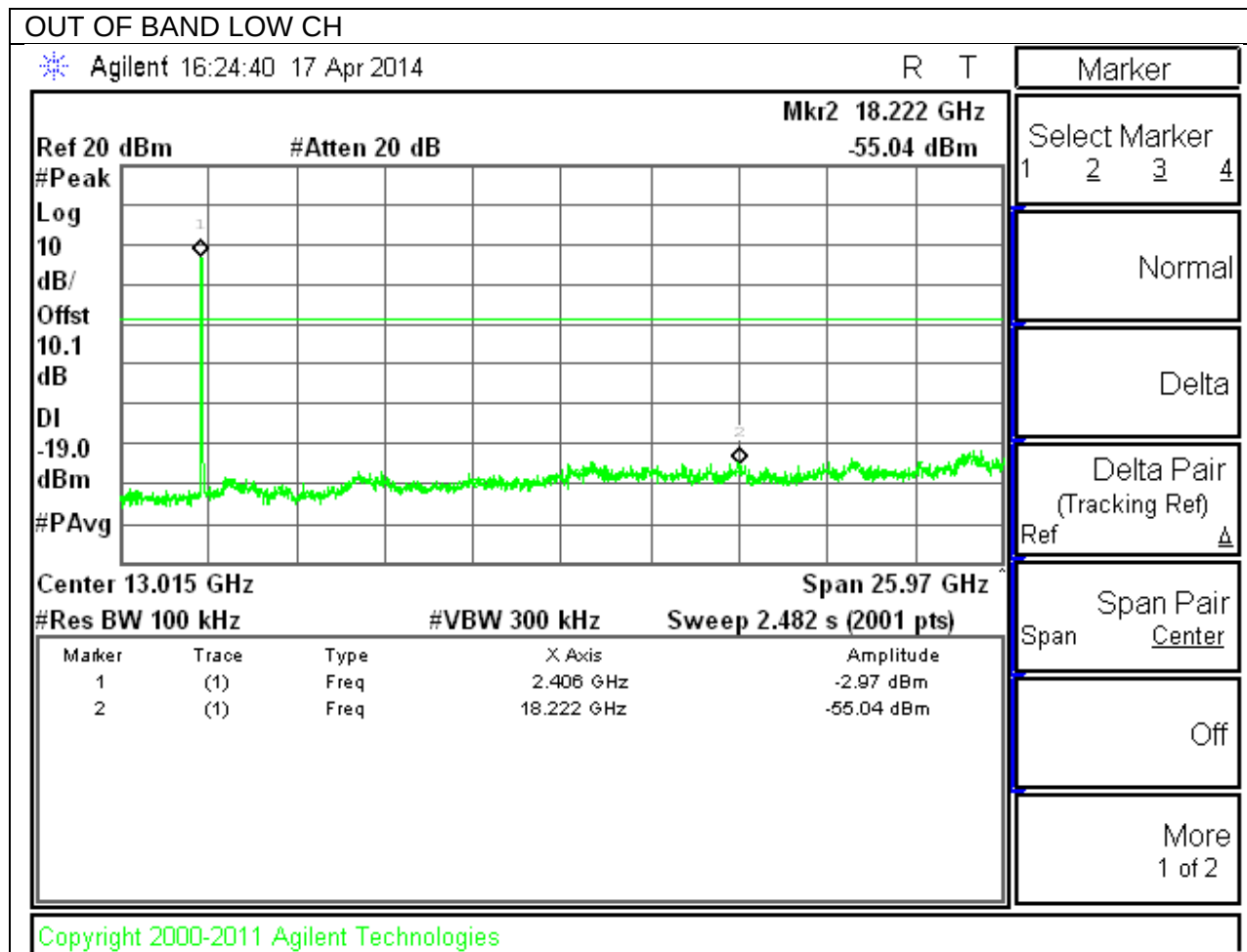
LOW CHANNEL BANDEDGE

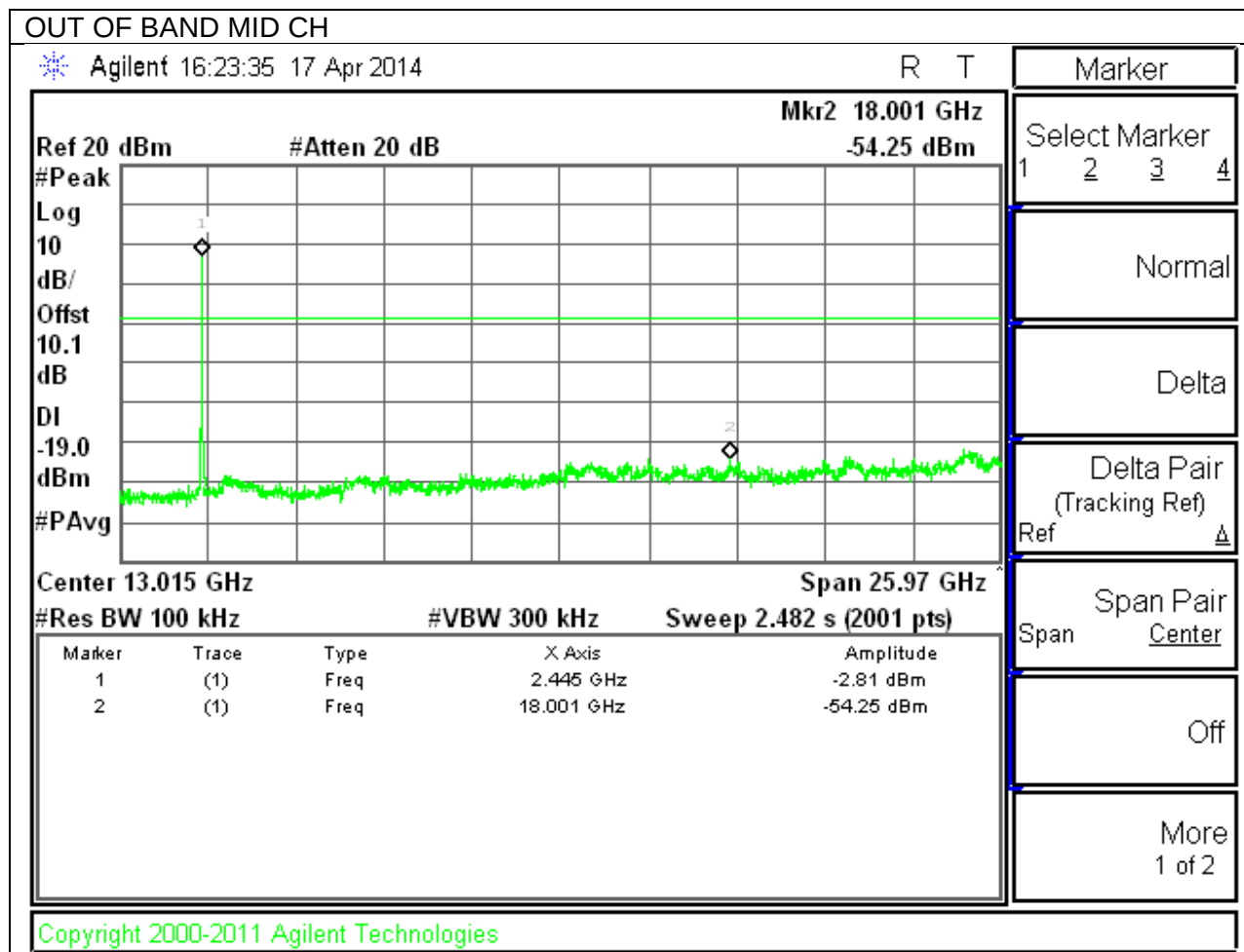


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



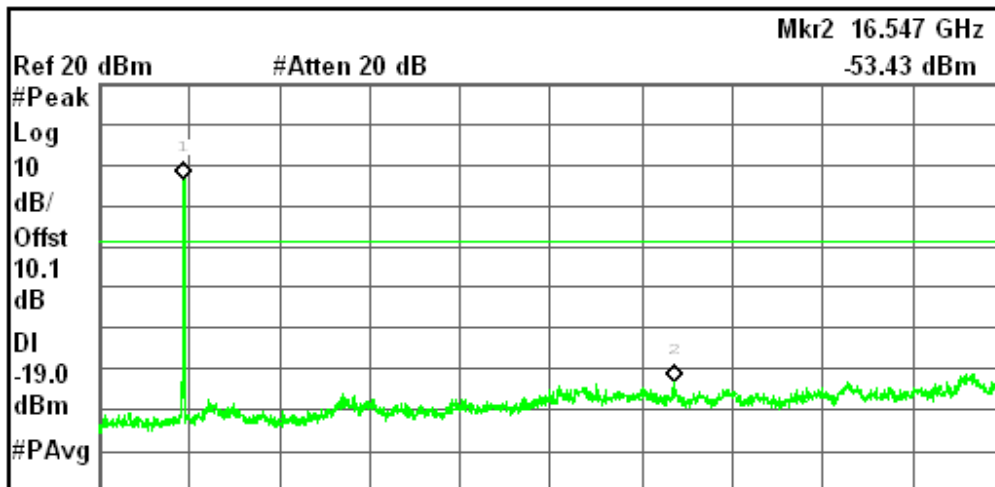


OUT OF BAND HIGH CH

Agilent 16:22:40 17 Apr 2014

R T

Marker



Select Marker
1 2 3 4

Normal

Delta

Delta Pair
(Tracking Ref)
Ref Δ

Span Pair
Span Center

Off

More
1 of 2

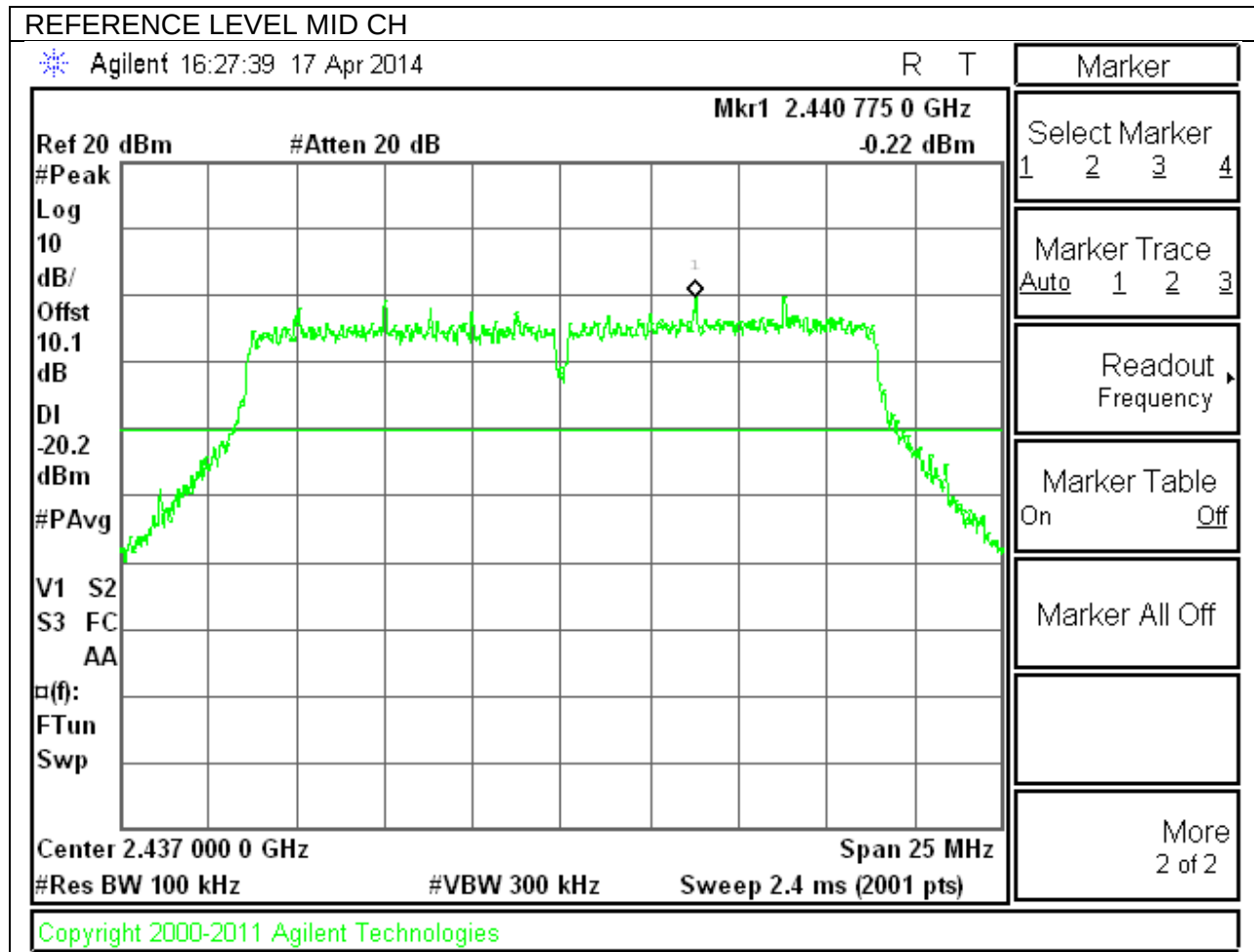
Start 30 MHz Stop 26.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.458 GHz	-3.26 dBm
2	(1)	Freq	16.547 GHz	-53.43 dBm

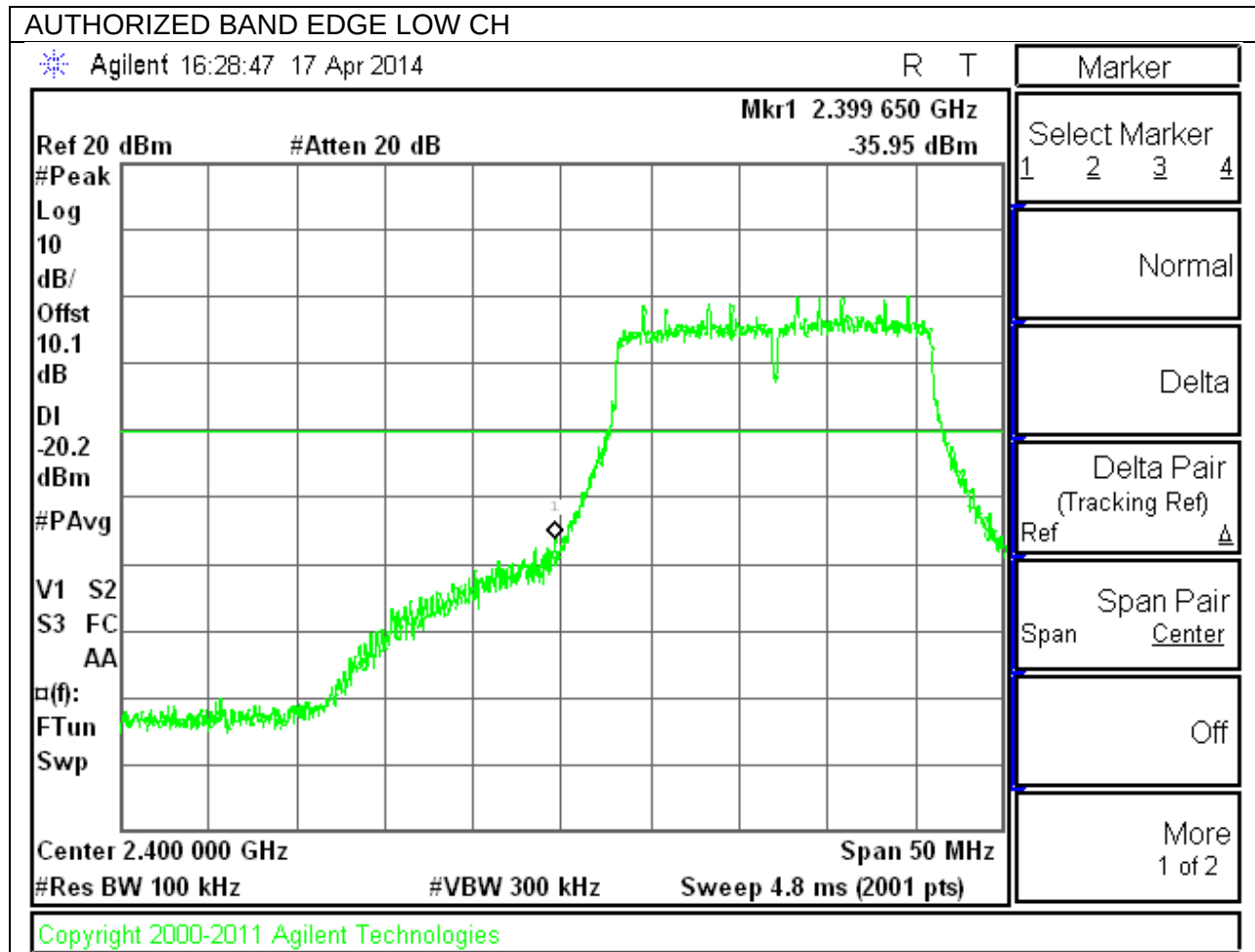
Copyright 2000-2011 Agilent Technologies

9.6.3. 802.11n MODE IN THE 2.4 GHz BAND

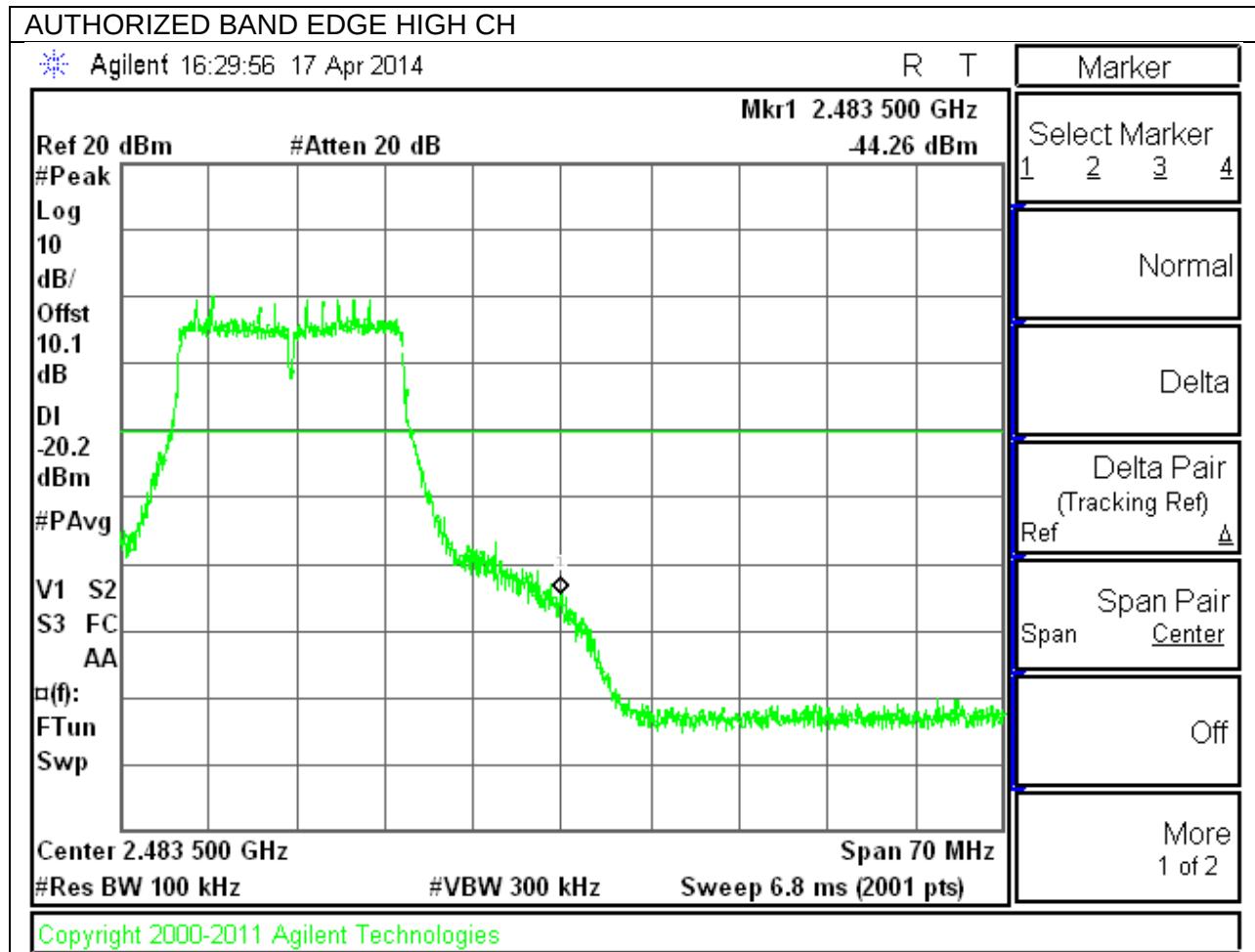
IN-BAND REFERENCE LEVEL



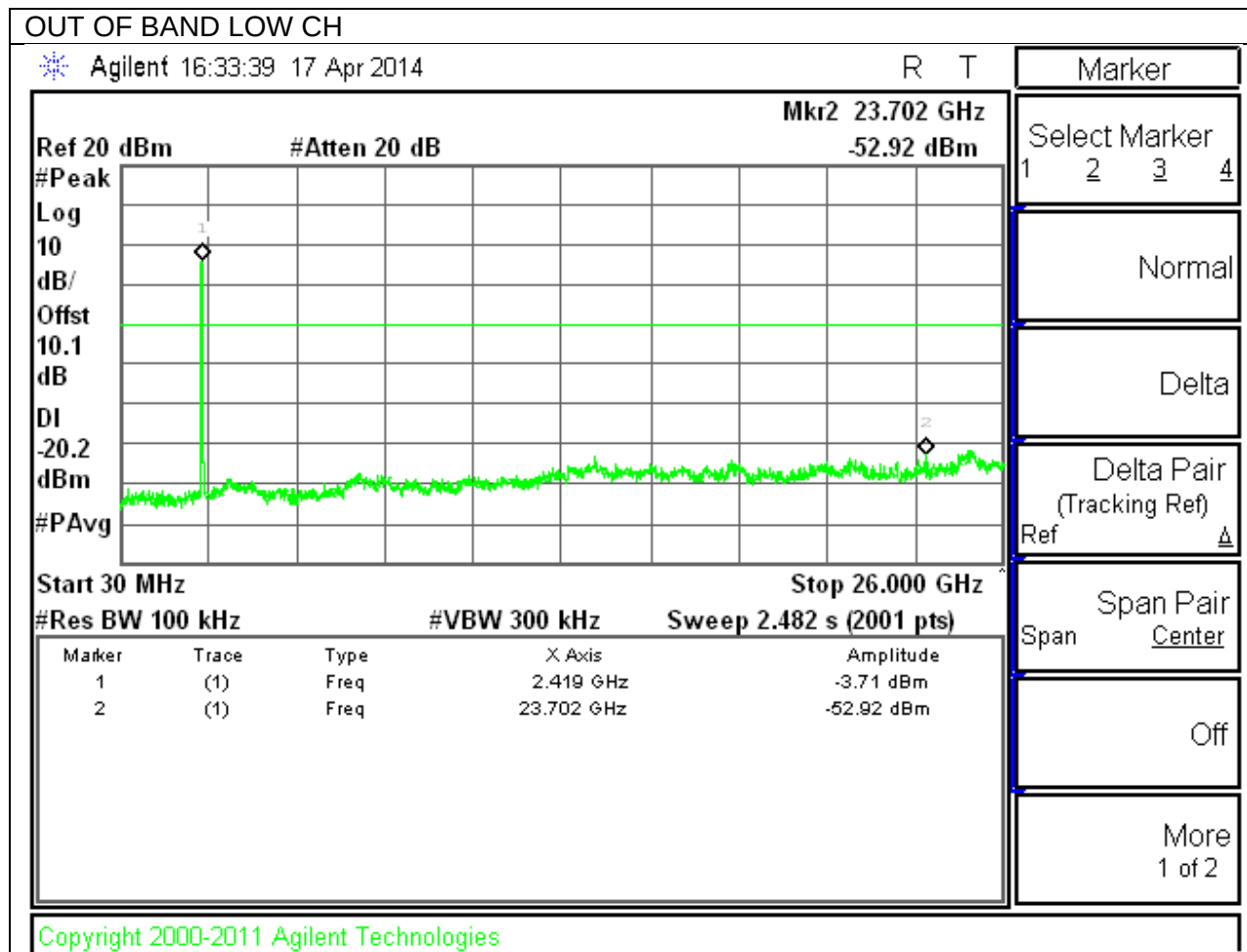
LOW CHANNEL BANDEDGE

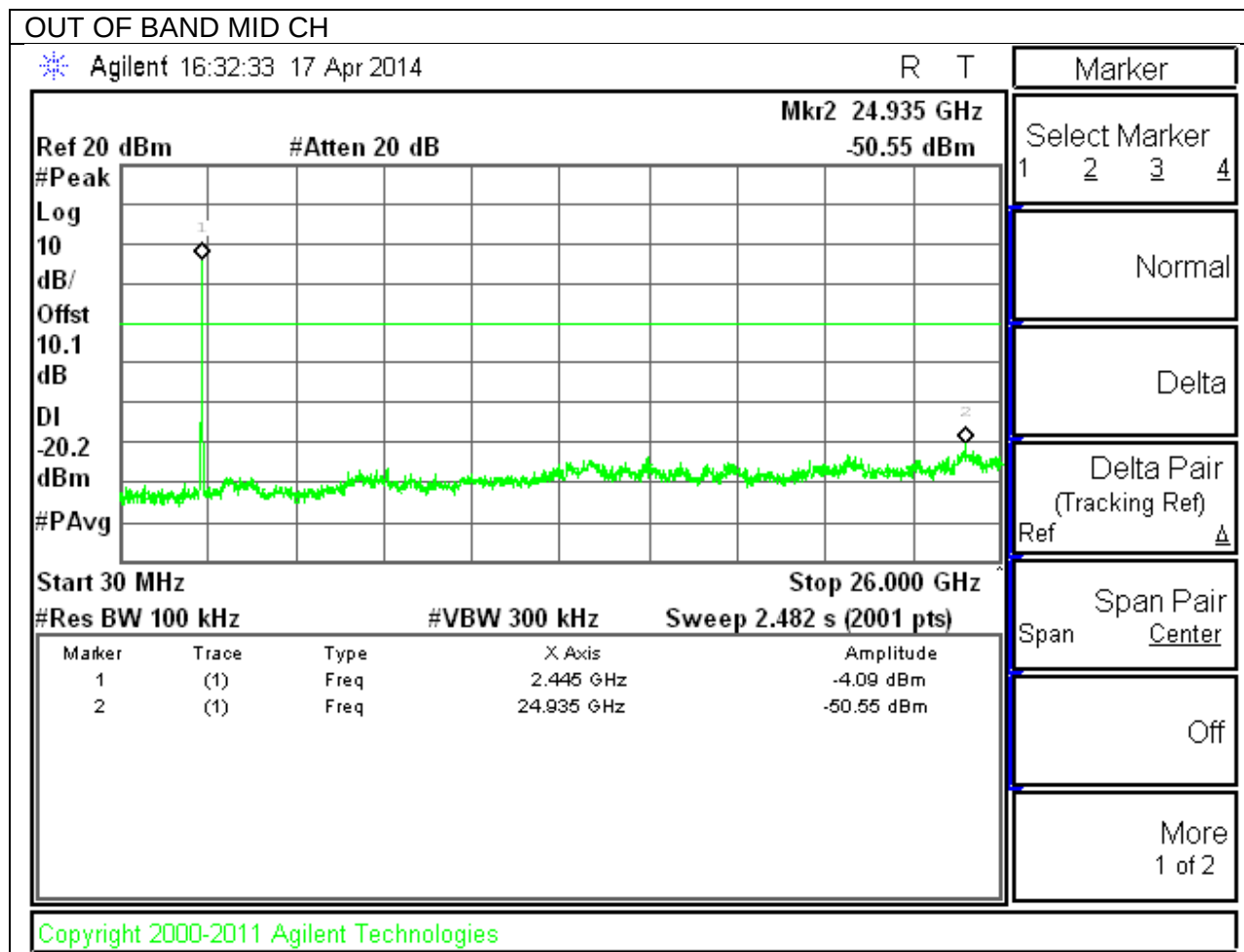


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



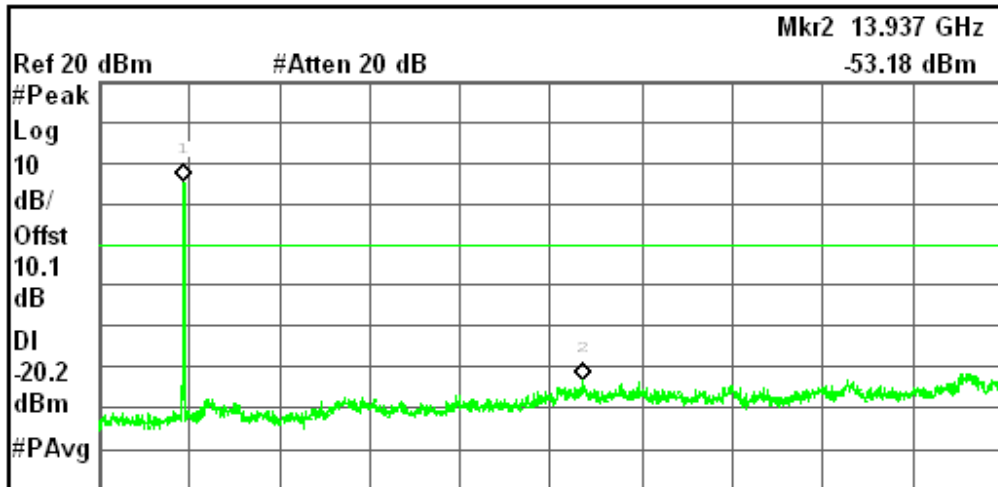


OUT OF BAND HIGH CH

Agilent 16:31:01 17 Apr 2014

R T

Marker



Select Marker
1 2 3 4

Normal

Delta

Delta Pair
(Tracking Ref)
Ref Δ

Span Pair
Span Center

Off

More
1 of 2

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	-4.27 dBm
2	(1)	Freq	13.937 GHz	-53.18 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 ($\mu\text{V/m}$) 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 = 0.2dB; N mode = 0.22dB.

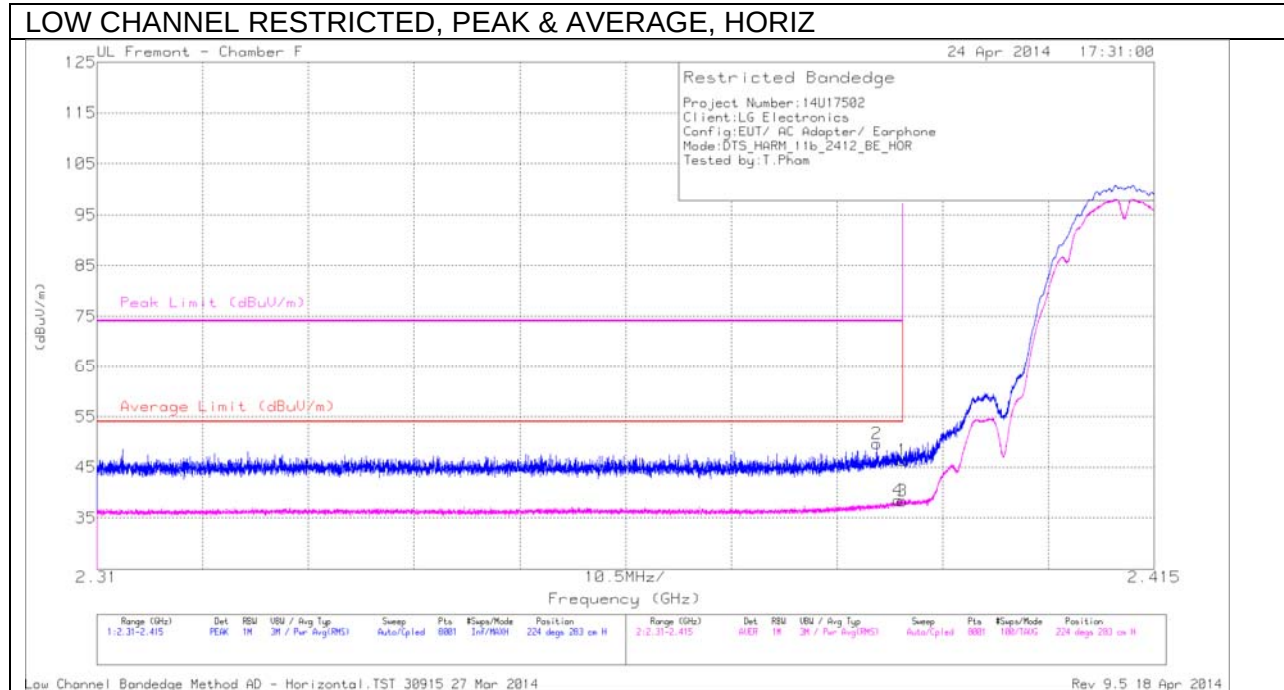
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

Duty cycle plots

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



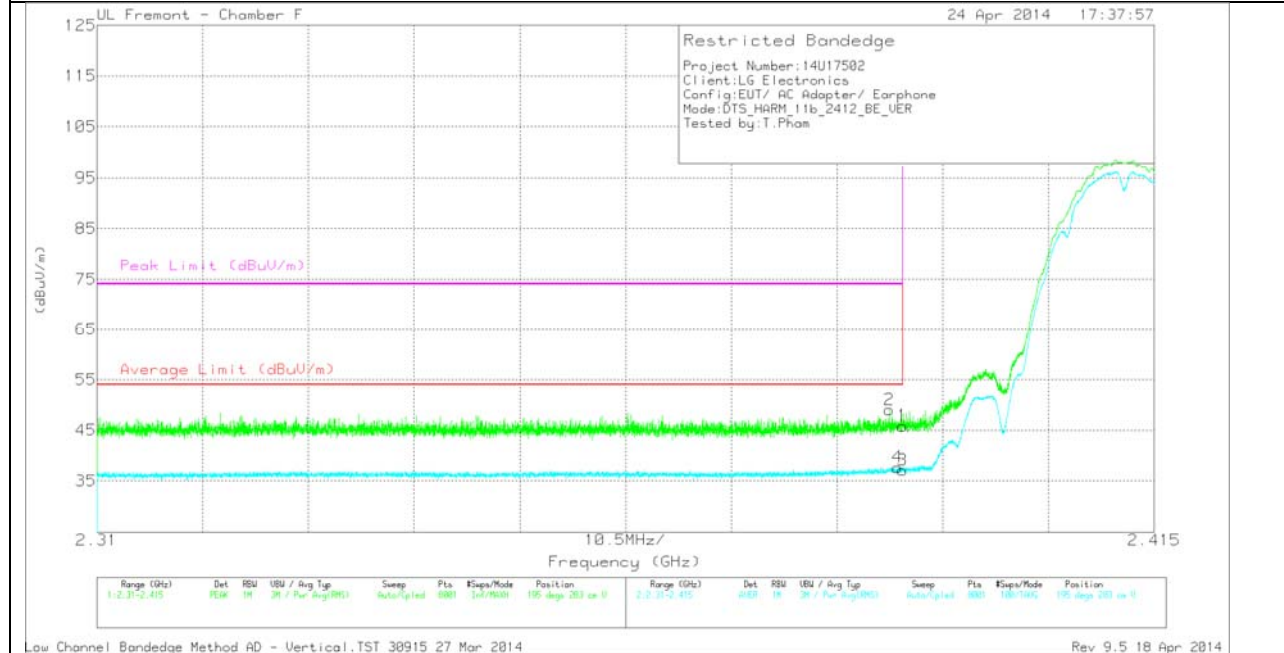
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.98	PK	32.2	-23.8	46.38	-	-	74	-27.62	224	283	H
2	* 2.387	41.3	PK	32.2	-23.8	49.7	-	-	74	-24.3	224	283	H
3	* 2.39	29.95	RMS	32.2	-23.8	38.35	54	-15.65	-	-	224	283	H
4	* 2.39	30.09	RMS	32.2	-23.8	38.49	54	-15.51	-	-	224	283	H

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

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



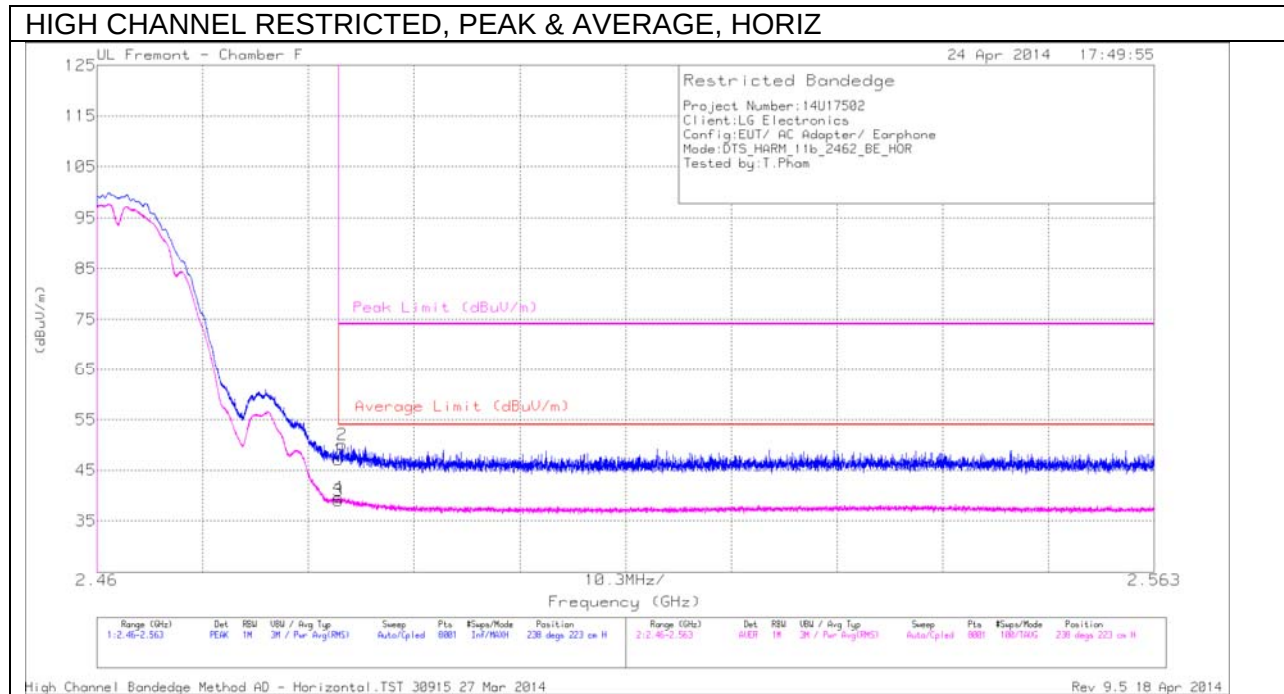
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.48	PK	32.2	-23.8	45.88	-	-	74	-28.12	195	283	V
2	* 2.389	40.66	PK	32.2	-23.8	49.06	-	-	74	-24.94	195	283	V
3	* 2.39	28.72	RMS	32.2	-23.8	37.12	54	-16.88	-	-	195	283	V
4	* 2.389	29.29	RMS	32.2	-23.8	37.69	54	-16.31	-	-	195	283	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)



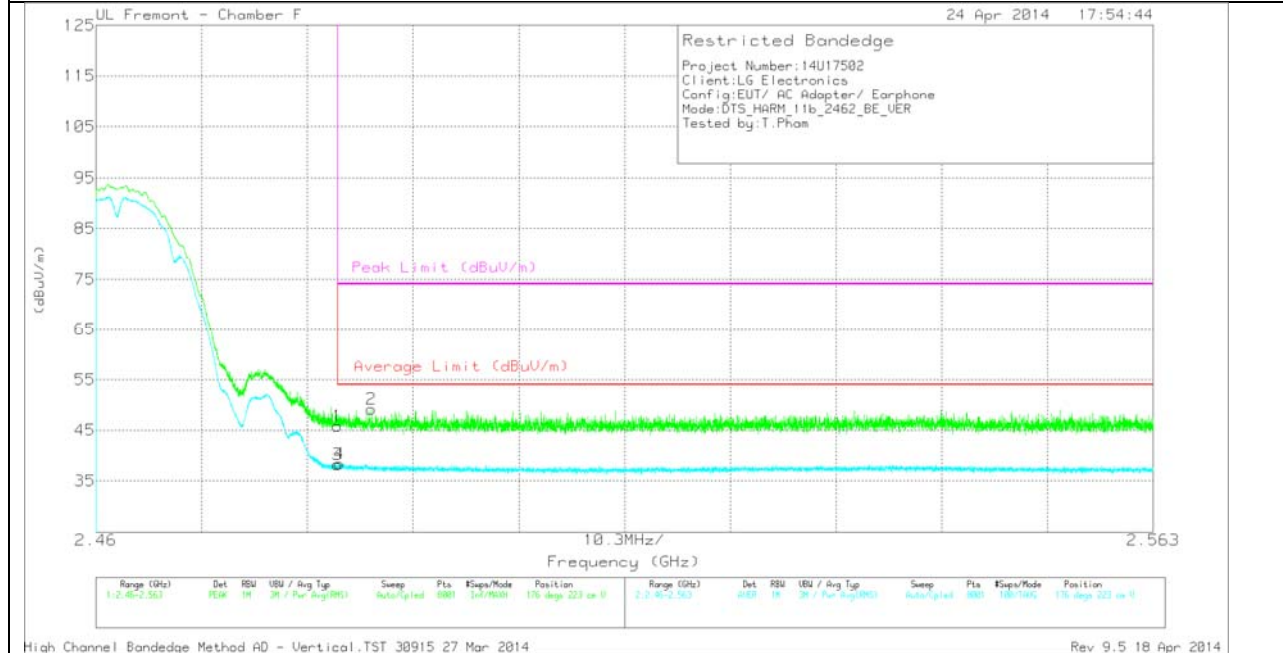
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	37.51	PK	32.6	-23	47.11	-	-	74	-26.89	238	223	H
2	* 2.484	40.47	PK	32.6	-23	50.07	-	-	74	-23.93	238	223	H
3	* 2.484	29.36	RMS	32.6	-23	38.96	54	-15.04	-	-	238	223	H
4	* 2.484	30.05	RMS	32.6	-23	39.65	54	-14.35	-	-	238	223	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	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.21	PK	32.6	-23	45.81	-	-	74	-28.19	176	223	V
2	* 2.487	39.32	PK	32.6	-22.8	49.12	-	-	74	-24.88	176	223	V
3	* 2.484	28.67	RMS	32.6	-23	38.27	54	-15.73	-	-	176	223	V
4	* 2.484	28.8	RMS	32.6	-23	38.4	54	-15.6	-	-	176	223	V

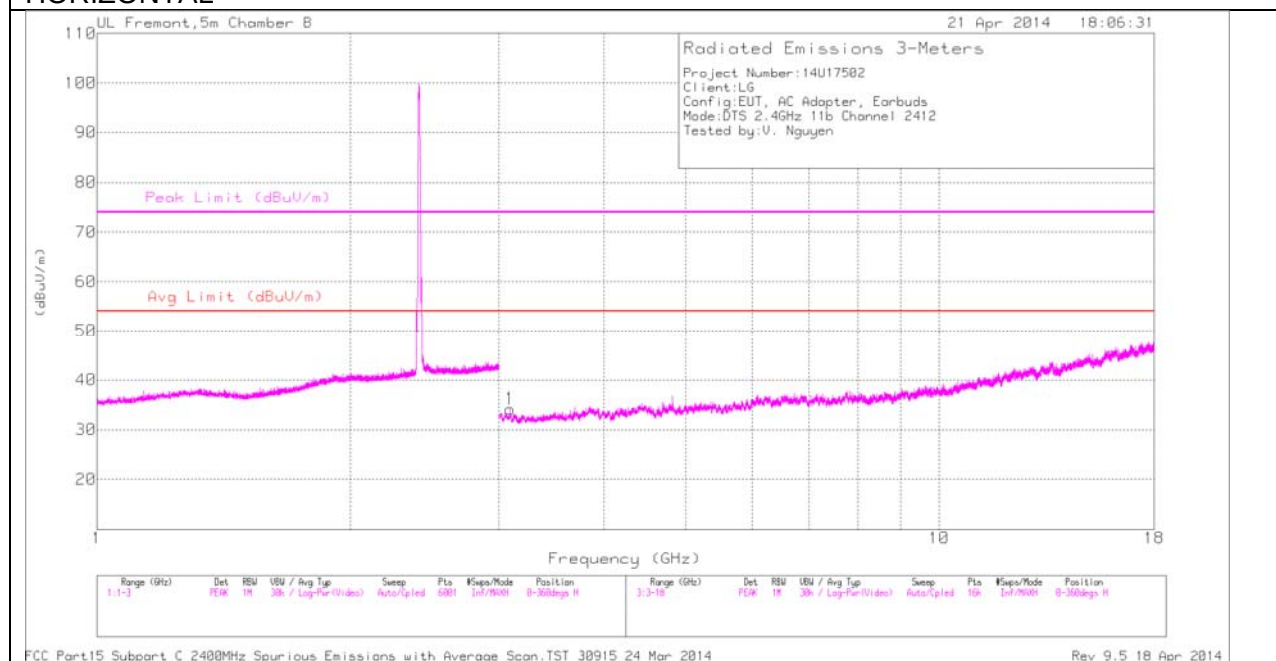
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

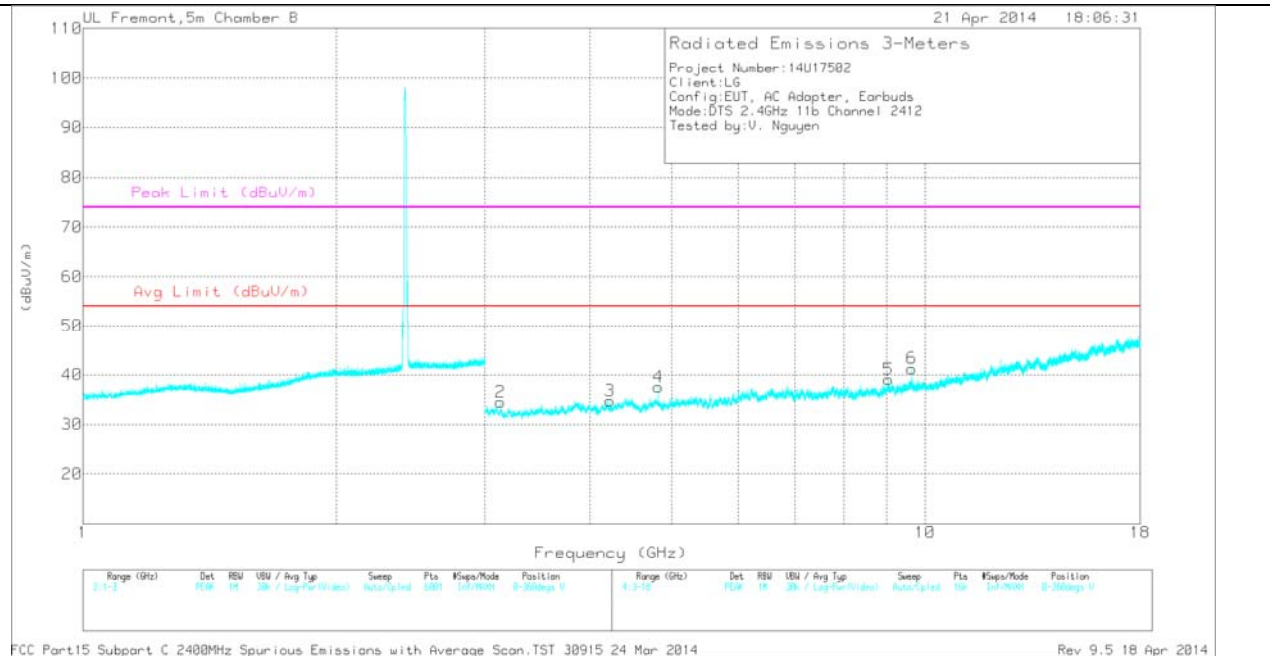
HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.221	31.36	PK	33.6	-30.2	34.76	54	-19.24	74	-39.24	0-360	99	V
4	* 4.824	32.65	PK	34.2	-29.3	37.55	54	-16.45	74	-36.45	0-360	202	V
5	* 9.039	27.54	PK	36.2	-24.7	39.04	54	-14.96	74	-34.96	0-360	202	V
1	3.096	32.79	PK	32.9	-31.5	34.19	54	-19.81	74	-39.81	0-360	99	H
2	3.13	33.1	PK	32.8	-31.4	34.5	54	-19.5	74	-39.5	0-360	99	V
6	9.647	28.6	PK	36.8	-24.1	41.3	54	-12.7	74	-32.7	0-360	202	V

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

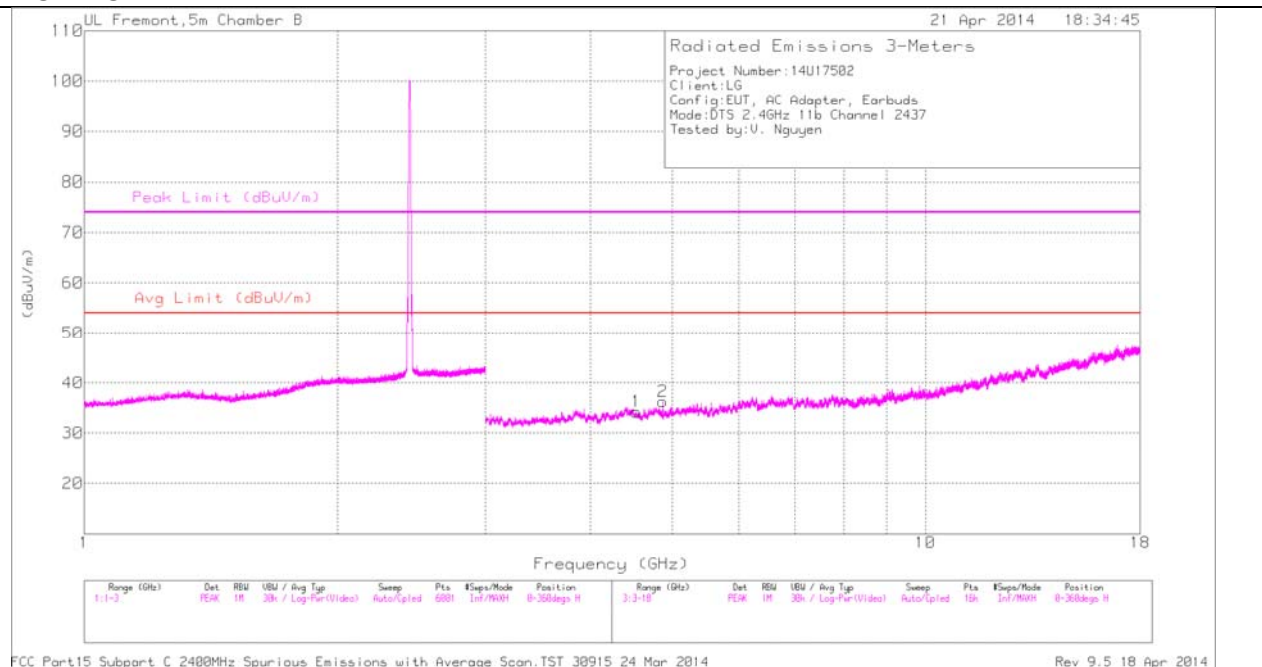
PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.824	41.76	PK2	34.2	-29.3	46.66	54	-7.34	74	-27.34	229	400	V
* 4.824	34.3	MAv1	34.2	-29.3	39.2	54	-14.8	74	-34.80	229	400	V

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

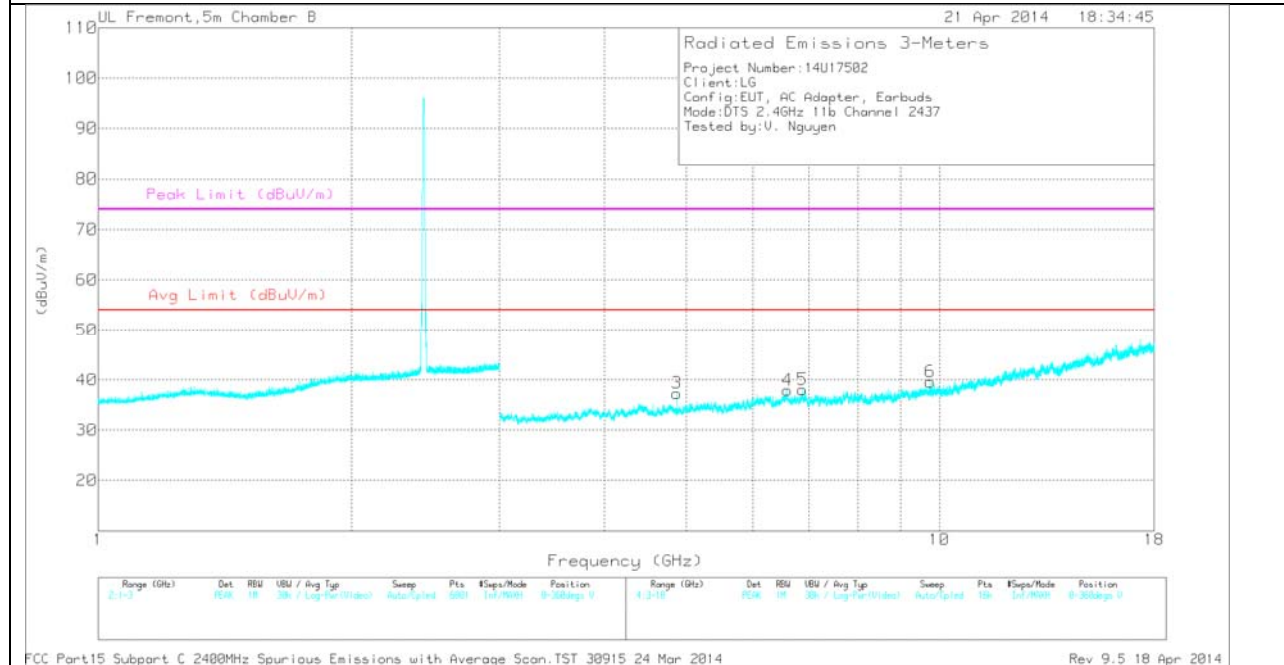
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.533	29.74	PK	34.1	-29.6	34.24	54	-19.76	74	-39.76	0-360	202	H
2	* 4.874	32.68	PK	34.2	-30.6	36.28	54	-17.72	74	-37.72	0-360	202	H
3	* 4.874	33.74	PK	34.2	-30.6	37.34	54	-16.66	74	-36.66	0-360	99	V
4	6.598	29.63	PK	35.8	-27.5	37.93	54	-16.07	74	-36.07	0-360	99	V
5	6.873	29.86	PK	35.6	-27.4	38.06	54	-15.94	74	-35.94	0-360	202	V
6	9.747	26.9	PK	36.9	-24.2	39.6	54	-14.4	74	-34.4	0-360	202	V

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

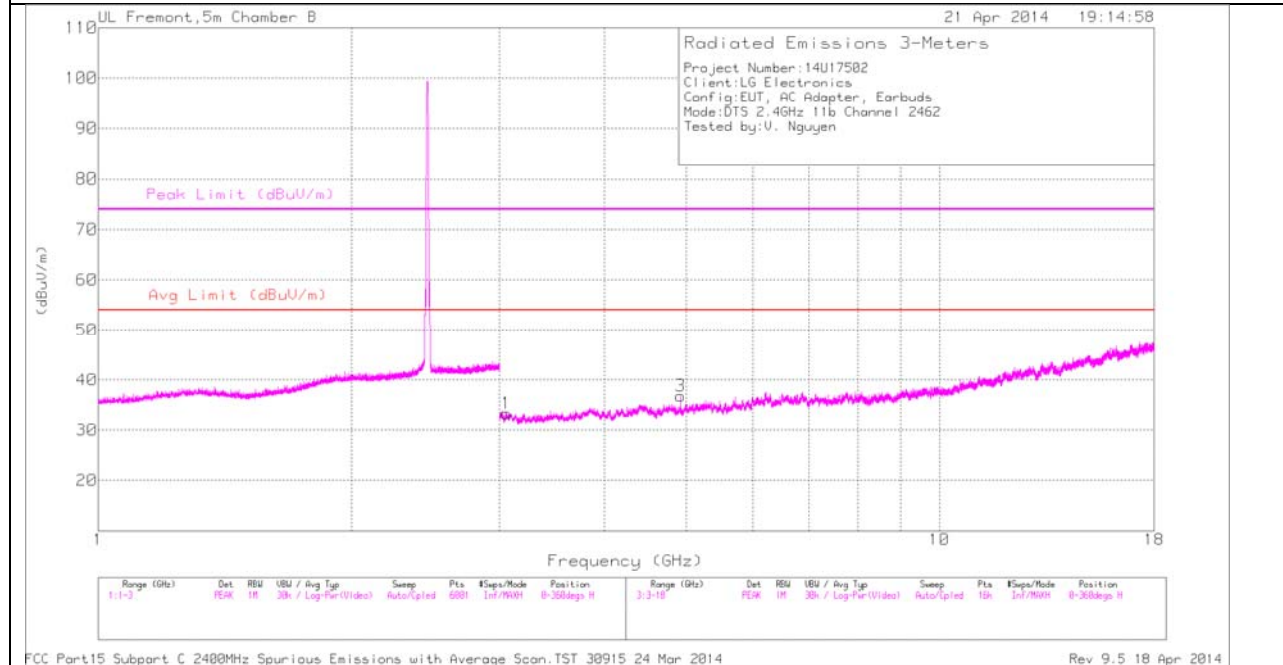
PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	41.56	PK2	34.2	-30.6	45.16	54	-8.84	74	-28.84	58	400	H
* 4.874	29.99	MAv1	34.2	-30.6	33.59	54	-20.41	74	-40.41	58	400	H
* 4.874	43.43	PK2	34.2	-30.6	47.03	54	-6.97	74	-26.97	224	388	V
* 4.874	36.41	MAv1	34.2	-30.6	40.01	54	-13.99	74	-33.99	224	388	V

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

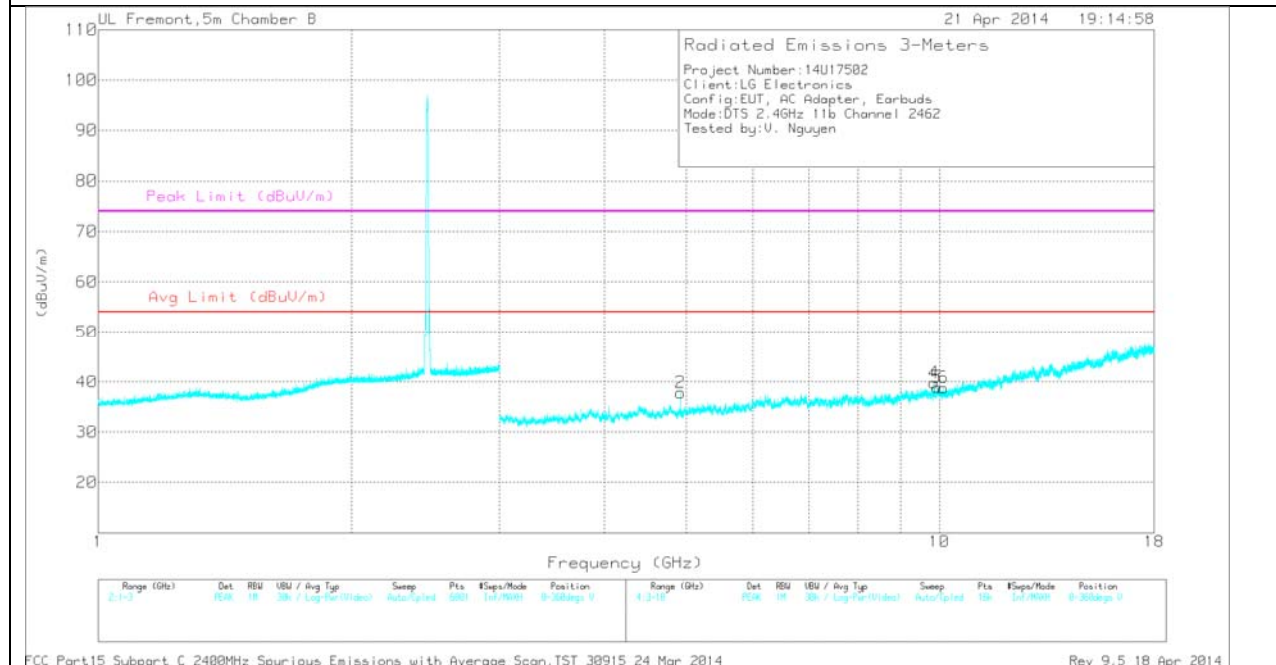
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.925	33.31	PK	34.2	-30.7	36.81	54	-17.19	74	-37.19	0-360	99	H
2	* 4.924	34.35	PK	34.2	-30.7	37.85	54	-16.15	74	-36.15	0-360	202	V
1	3.059	32.33	PK	32.8	-31.8	33.33	54	-20.67	74	-40.67	0-360	202	H
4	9.848	26.9	PK	37	-24.1	39.8	54	-14.2	74	-34.2	0-360	202	V
5	9.937	25.82	PK	37	-23.9	38.92	54	-15.08	74	-35.08	0-360	99	V
6	10.104	25.44	PK	37.1	-23.7	38.84	54	-15.16	74	-35.16	0-360	99	V

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

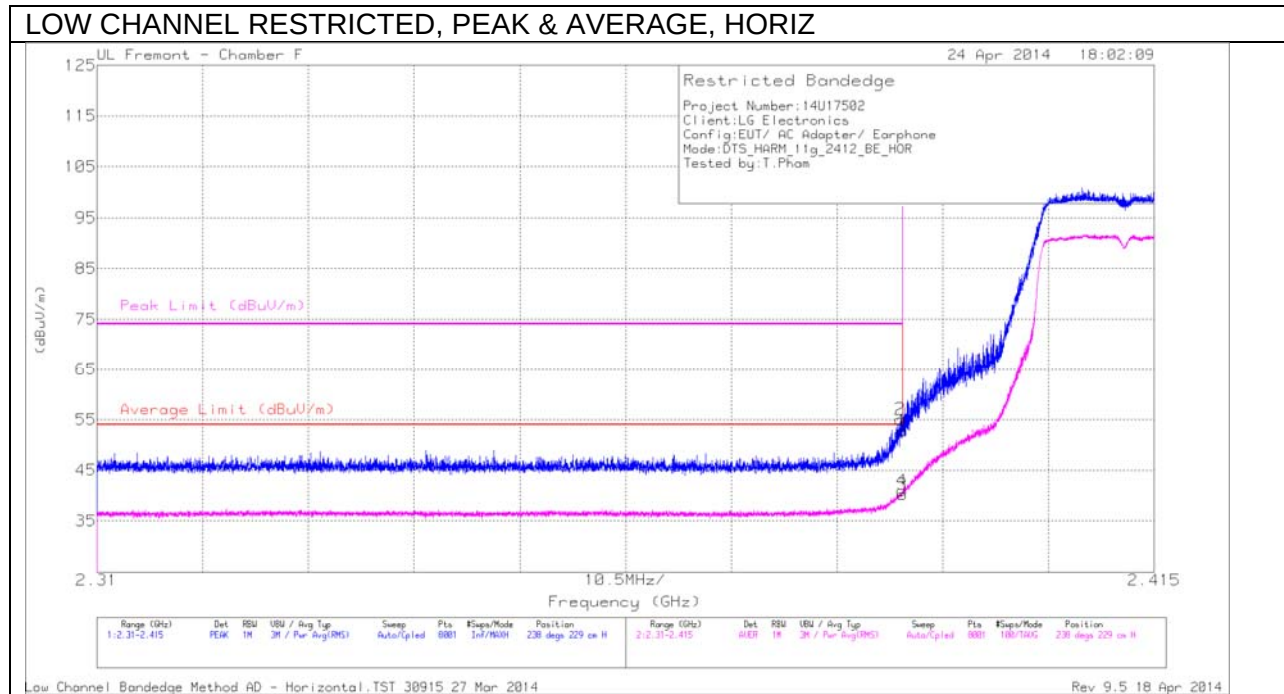
PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.924	44.12	PK2	34.2	-30.7	47.62	54	-6.38	74	-26.38	235	267	V
* 4.924	37.81	MAv1	34.2	-30.7	41.31	54	-12.69	74	-32.69	235	267	V
* 4.924	42.72	PK2	34.2	-30.7	46.22	54	-7.78	74	-27.78	252	215	H
* 4.924	34.68	MAv1	34.2	-30.7	38.18	54	-15.82	74	-35.82	252	215	H

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

PK2 - KDB558074 Method: Maximum Peak

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



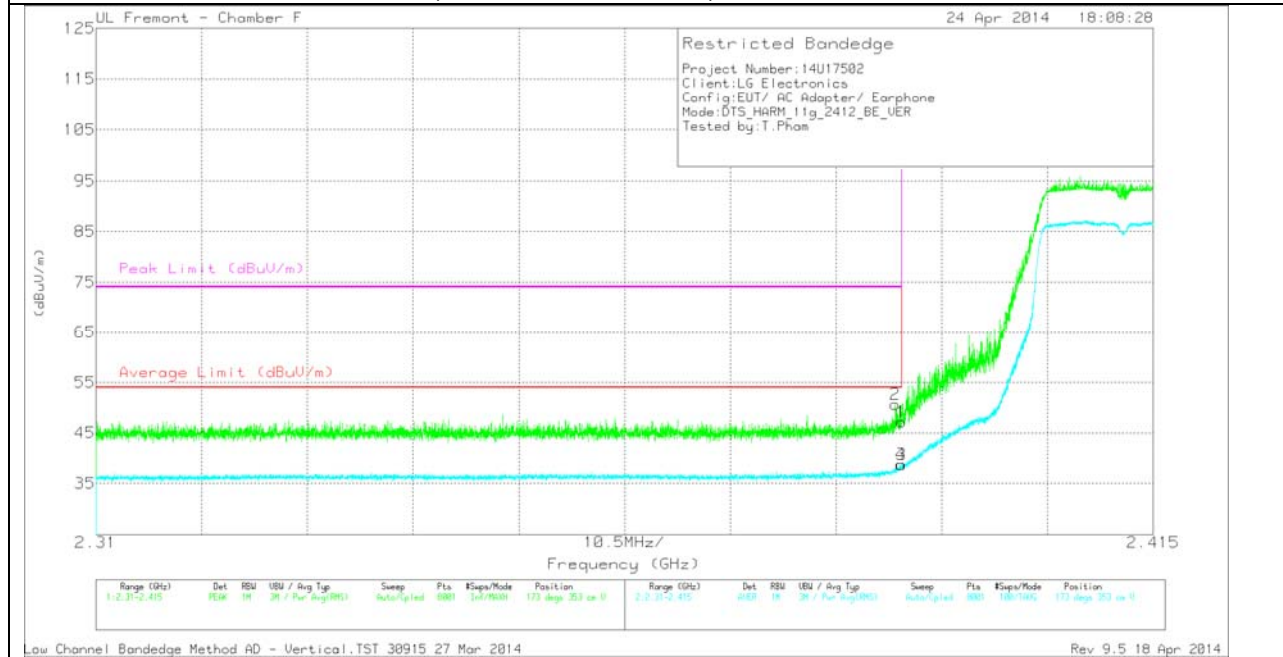
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.43	PK	32.2	-23.8	52.83	-	-	74	-21.17	238	229	H
2	* 2.39	46.67	PK	32.2	-23.8	55.07	-	-	74	-18.93	238	229	H
3	* 2.39	31.83	RMS	32.2	-23.8	40.23	54	-13.77	-	-	238	229	H
4	* 2.39	32.61	RMS	32.2	-23.8	41.01	54	-12.99	-	-	238	229	H

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

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



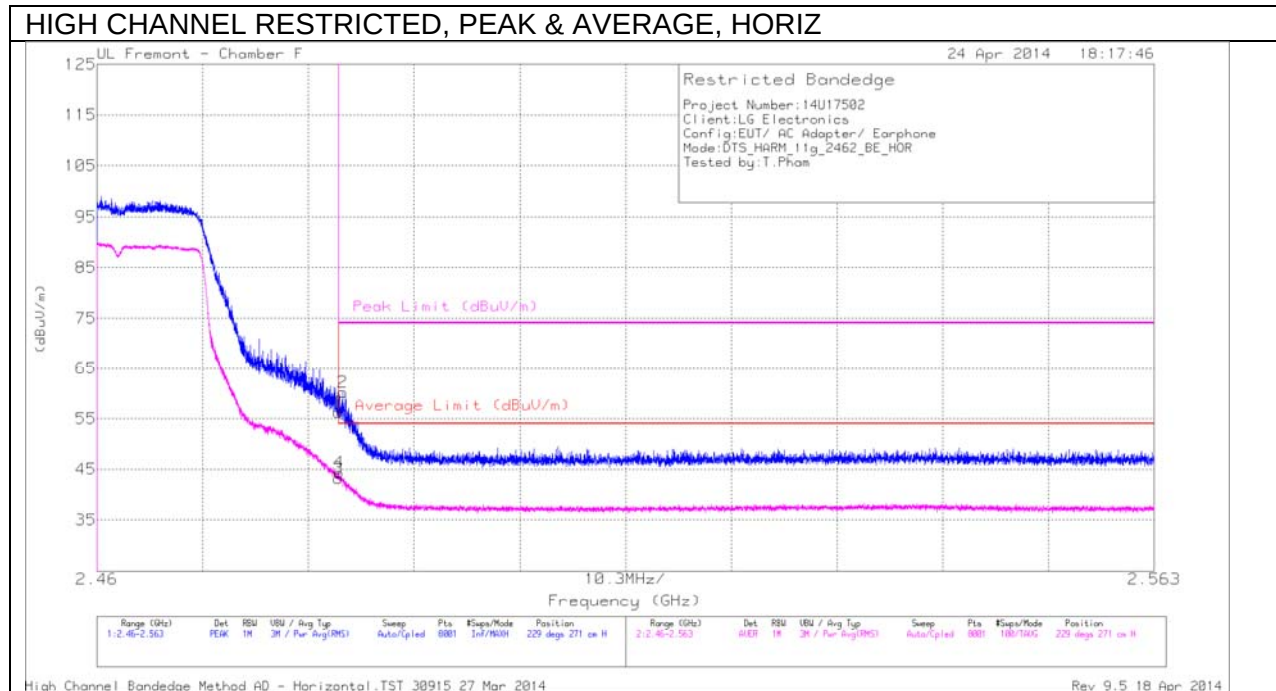
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.77	PK	32.2	-23.8	47.17	-	-	74	-26.83	173	353	V
2	* 2.389	42.22	PK	32.2	-23.8	50.62	-	-	74	-23.38	173	353	V
3	* 2.39	30.39	RMS	32.2	-23.8	38.79	54	-15.21	-	-	173	353	V
4	* 2.39	30.34	RMS	32.2	-23.8	38.74	54	-15.26	-	-	173	353	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

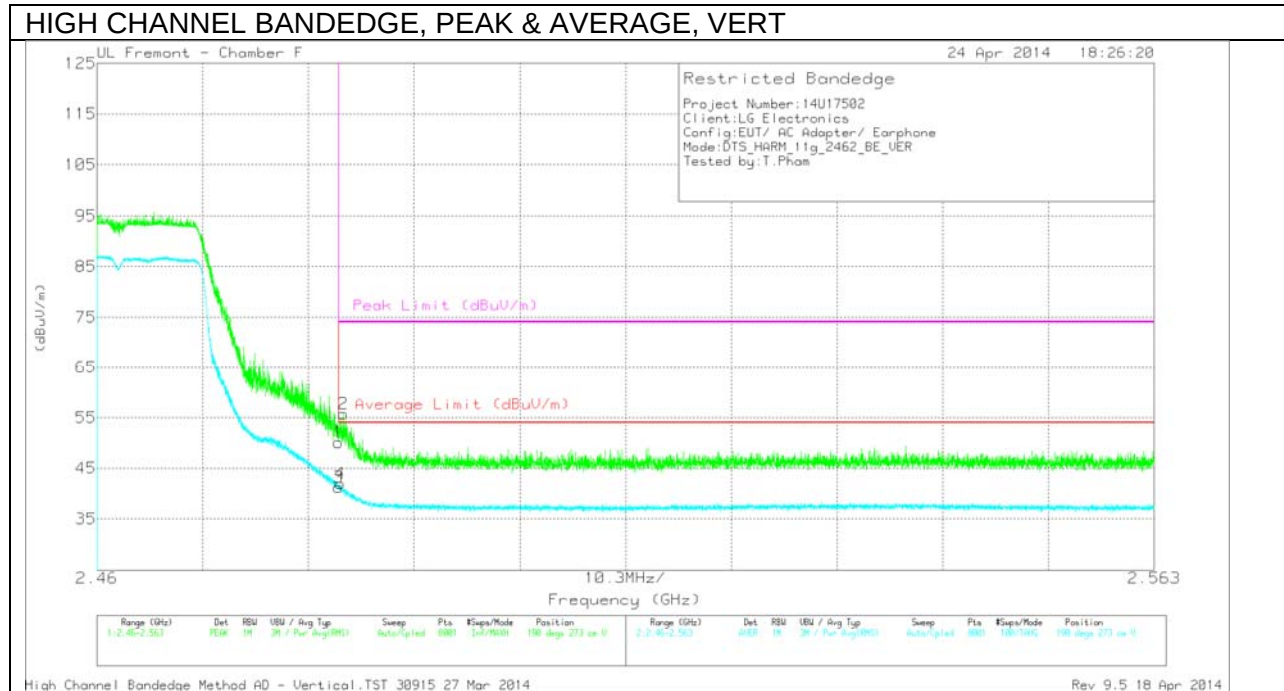


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.66	PK	32.6	-23	56.26	-	-	74	-17.74	229	271	H
2	* 2.484	50.58	PK	32.6	-23	60.18	-	-	74	-13.82	229	271	H
3	* 2.484	33.59	RMS	32.6	-23	43.19	54	-10.81	-	-	229	271	H
4	* 2.484	34.68	RMS	32.6	-23	44.28	54	-9.72	-	-	229	271	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 T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.51	PK	32.6	-23	50.11	-	-	74	-23.89	190	273	V
2	* 2.484	46.13	PK	32.6	-23	55.73	-	-	74	-18.27	190	273	V
3	* 2.484	31.65	RMS	32.6	-23	41.25	54	-12.75	-	-	190	273	V
4	* 2.484	32.34	RMS	32.6	-23	41.94	54	-12.06	-	-	190	273	V

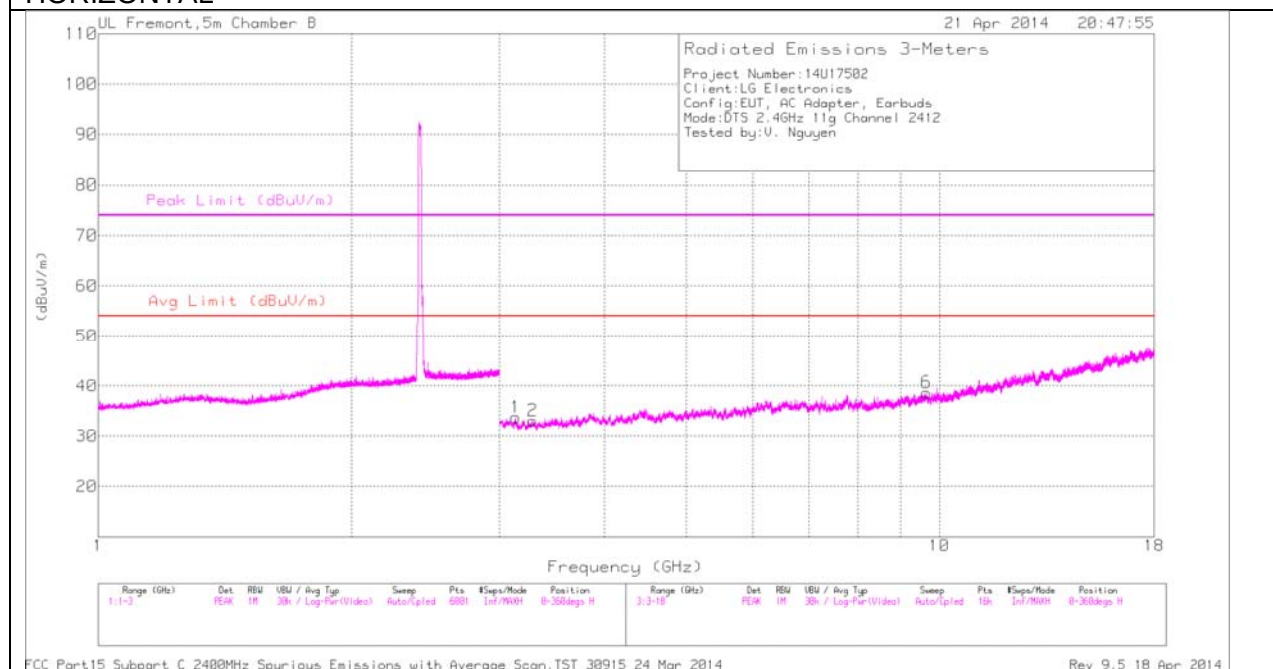
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

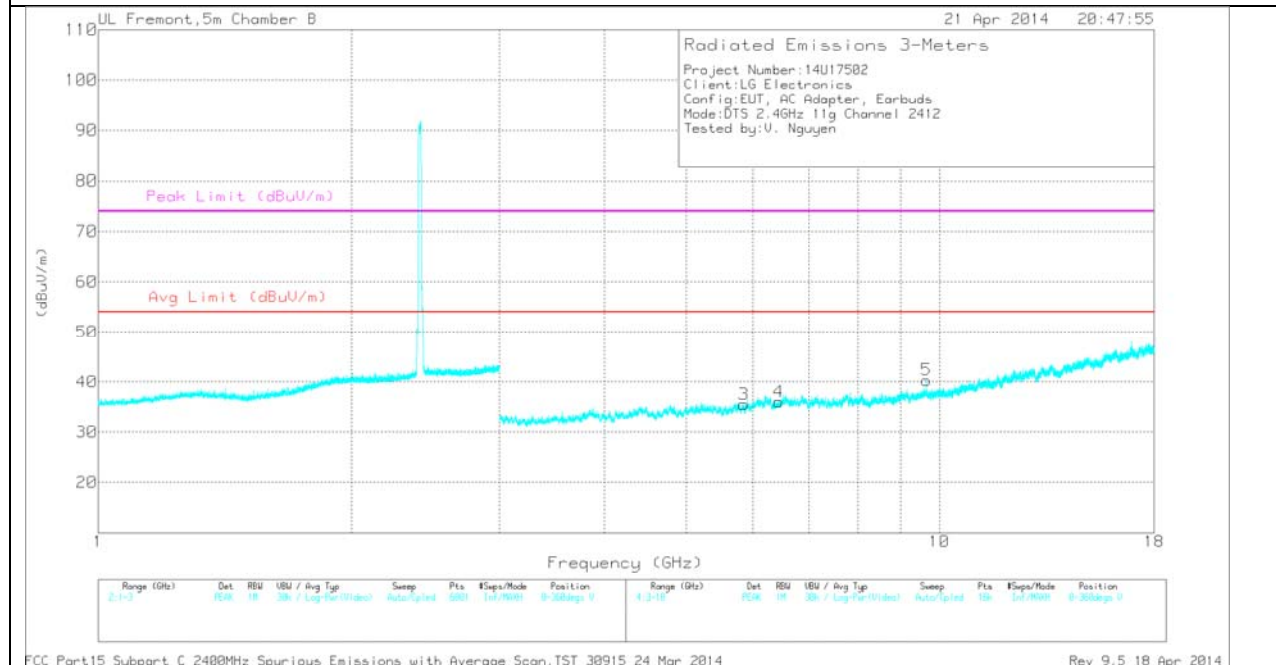
HARMONICS AND SPURIOUS EMISSIONS

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

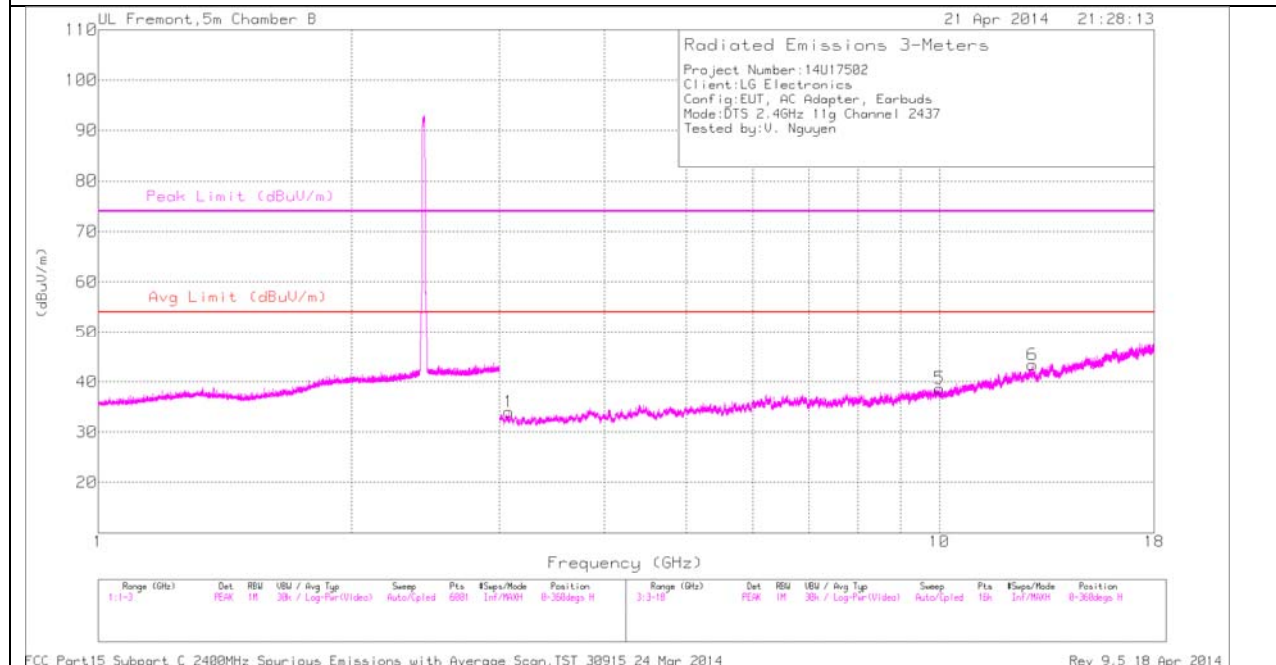
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.135	32.34	PK	32.8	-31.4	33.74	54	-20.26	74	-40.26	0-360	99	H
2	3.284	31.48	PK	32.8	-31.2	33.08	54	-20.92	74	-40.92	0-360	99	H
3	5.855	29.8	PK	34.8	-29.1	35.5	54	-18.5	74	-38.5	0-360	99	V
4	6.437	29.34	PK	35.6	-28.9	36.04	54	-17.96	74	-37.96	0-360	202	V
5	9.647	27.64	PK	36.8	-24.1	40.34	54	-13.66	74	-33.66	0-360	202	V
6	9.653	25.89	PK	36.8	-24	38.69	54	-15.31	74	-35.31	0-360	201	H

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.649	36.41	PK2	36.8	-24.1	49.11	54	-4.89	74	-24.89	33	118	V
9.648	25.54	MAv1	36.8	-24.1	38.24	54	-15.76	74	-35.76	33	118	V

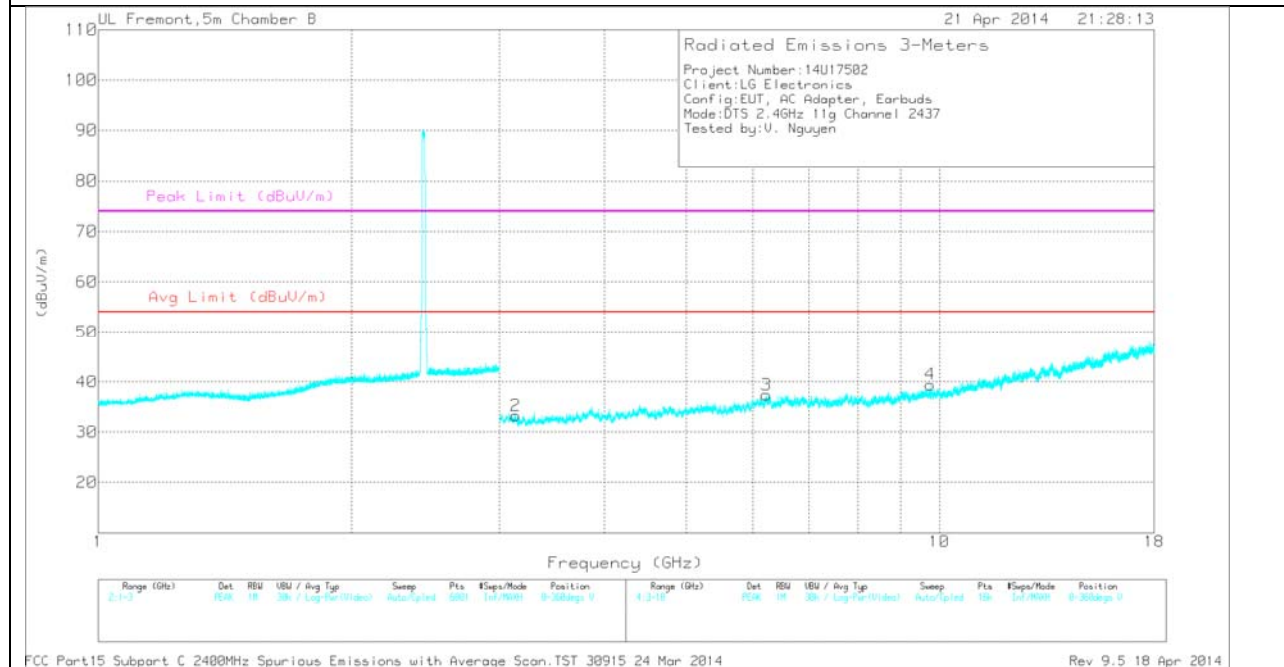
PK2 - KDB558074 Method: Maximum Peak

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

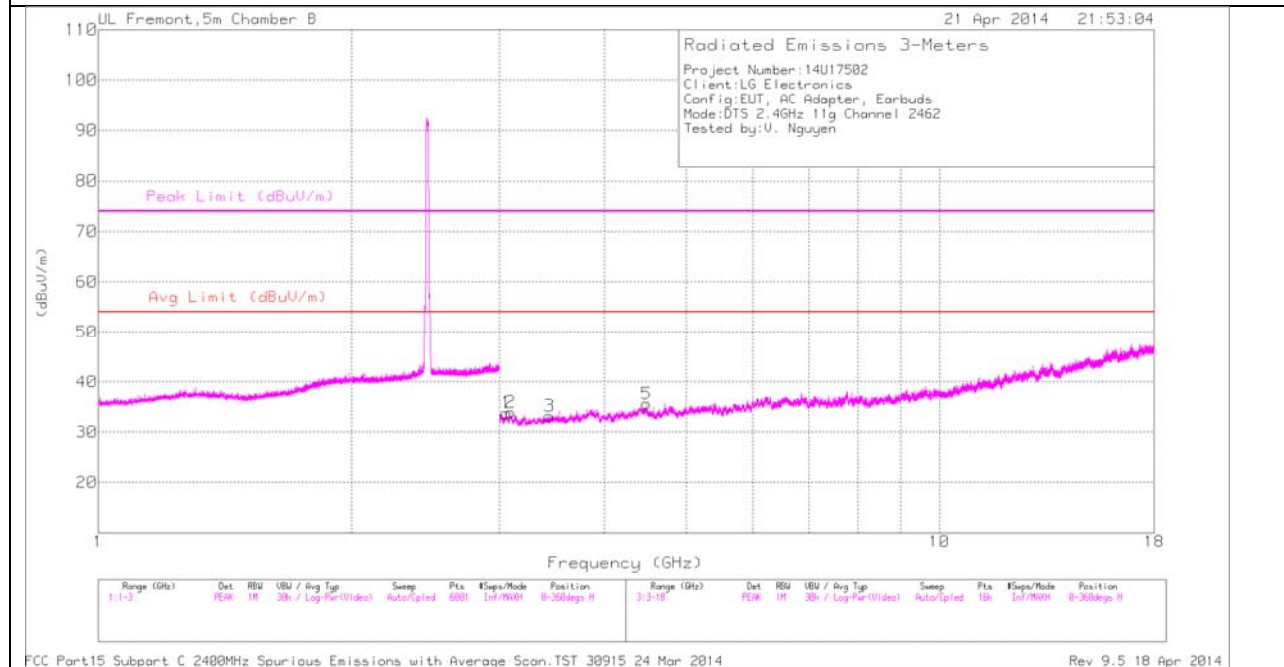
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.079	32.82	PK	32.9	-31.7	34.02	54	-19.98	74	-39.98	0-360	201	H
2	3.136	31.86	PK	32.8	-31.4	33.26	54	-20.74	74	-40.74	0-360	202	V
3	6.229	29.88	PK	35.4	-27.9	37.38	54	-16.62	74	-36.62	0-360	202	V
4	9.748	26.76	PK	36.9	-24.2	39.46	54	-14.54	74	-34.54	0-360	202	V
5	10.004	25.8	PK	37	-24.1	38.7	54	-15.3	74	-35.3	0-360	99	H
6	12.899	25.3	PK	39.2	-21.1	43.4	54	-10.6	74	-30.6	0-360	201	H

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.748	35.8	PK2	36.9	-24.2	48.5	54	-5.5	74	-25.5	40	194	V
9.748	25.89	MAv1	36.9	-24.2	38.59	54	-15.41	74	-35.41	40	194	V

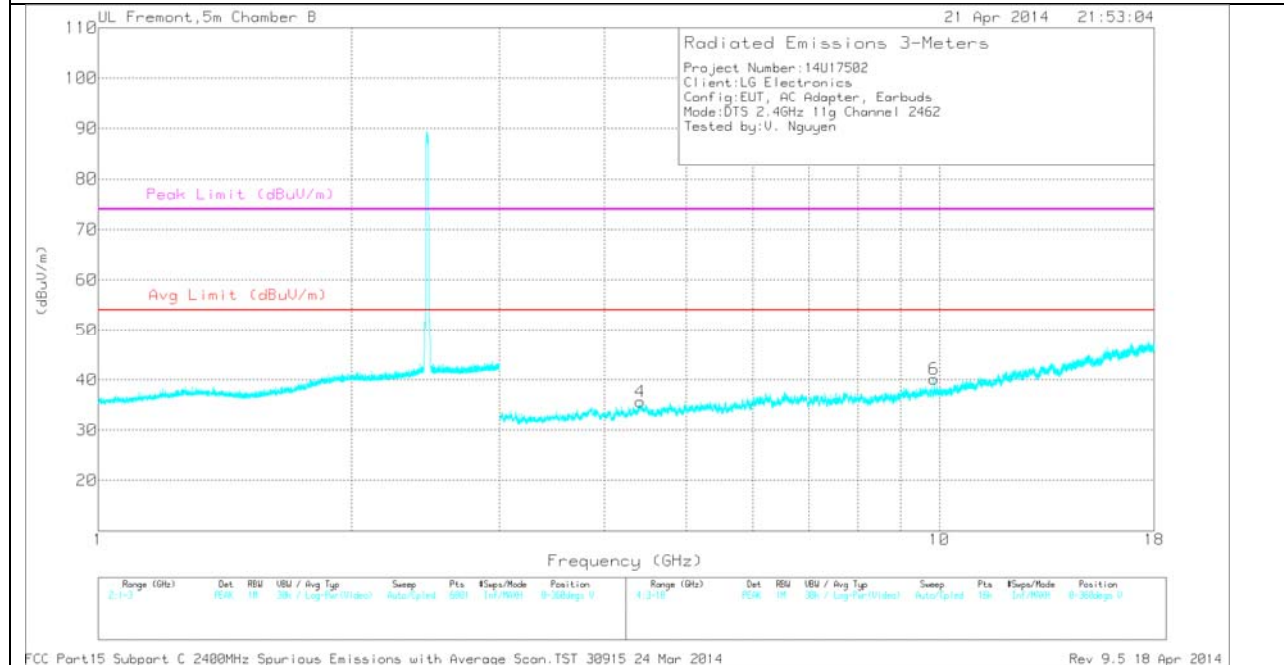
PK2 - KDB558074 Method: Maximum Peak

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

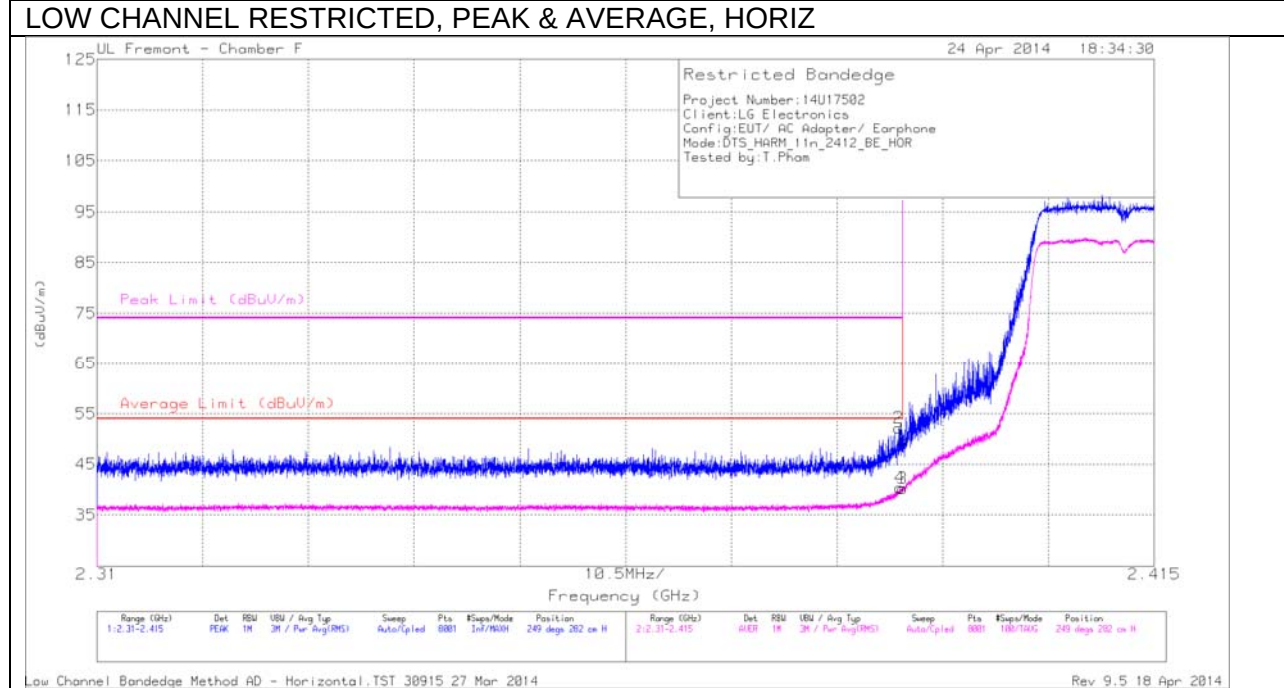
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.054	32.83	PK	32.8	-31.8	33.83	54	-20.17	74	-40.17	0-360	202	H
2	3.096	32.56	PK	32.9	-31.5	33.96	54	-20.04	74	-40.04	0-360	202	H
3	3.439	31.5	PK	32.8	-31.1	33.2	54	-20.8	74	-40.8	0-360	202	H
4	4.413	31.43	PK	33.8	-29.6	35.63	54	-18.37	74	-38.37	0-360	99	V
5	4.484	30.86	PK	34	-29.2	35.66	54	-18.34	74	-38.34	0-360	202	H
6	9.847	27.22	PK	37	-24.1	40.12	54	-13.88	74	-33.88	0-360	202	V

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.848	36.35	PK2	37	-24.1	49.25	54	-4.75	74	-24.75	44	201	V
9.848	26.48	MAv1	37	-24.1	39.38	54	-14.62	74	-34.62	44	201	V

PK2 - KDB558074 Method: Maximum Peak

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

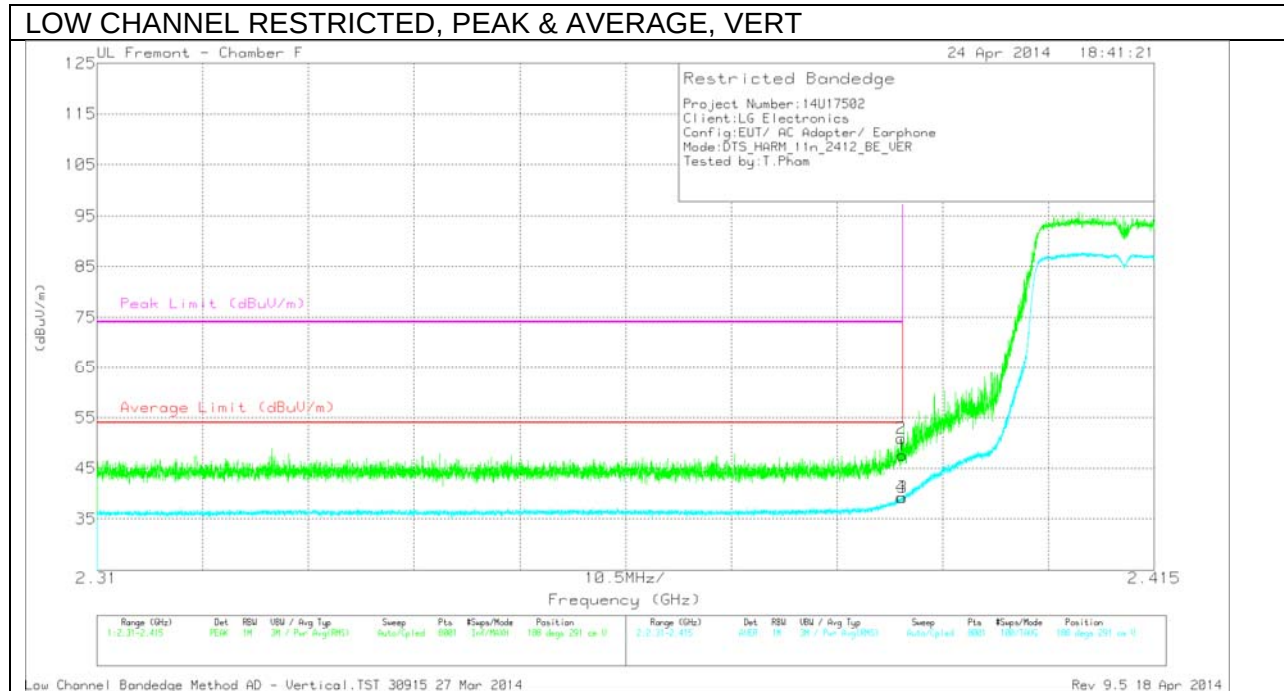


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.39	PK	32.2	-23.8	49.79	-	-	74	-24.21	249	282	H
2	* 2.39	43.8	PK	32.2	-23.8	52.2	-	-	74	-21.8	249	282	H
3	* 2.39	31.85	RMS	32.2	-23.8	40.25	54	-13.75	-	-	249	282	H
4	* 2.39	31.91	RMS	32.2	-23.8	40.31	54	-13.69	-	-	249	282	H

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

PK - Peak detector

RMS - RMS detection



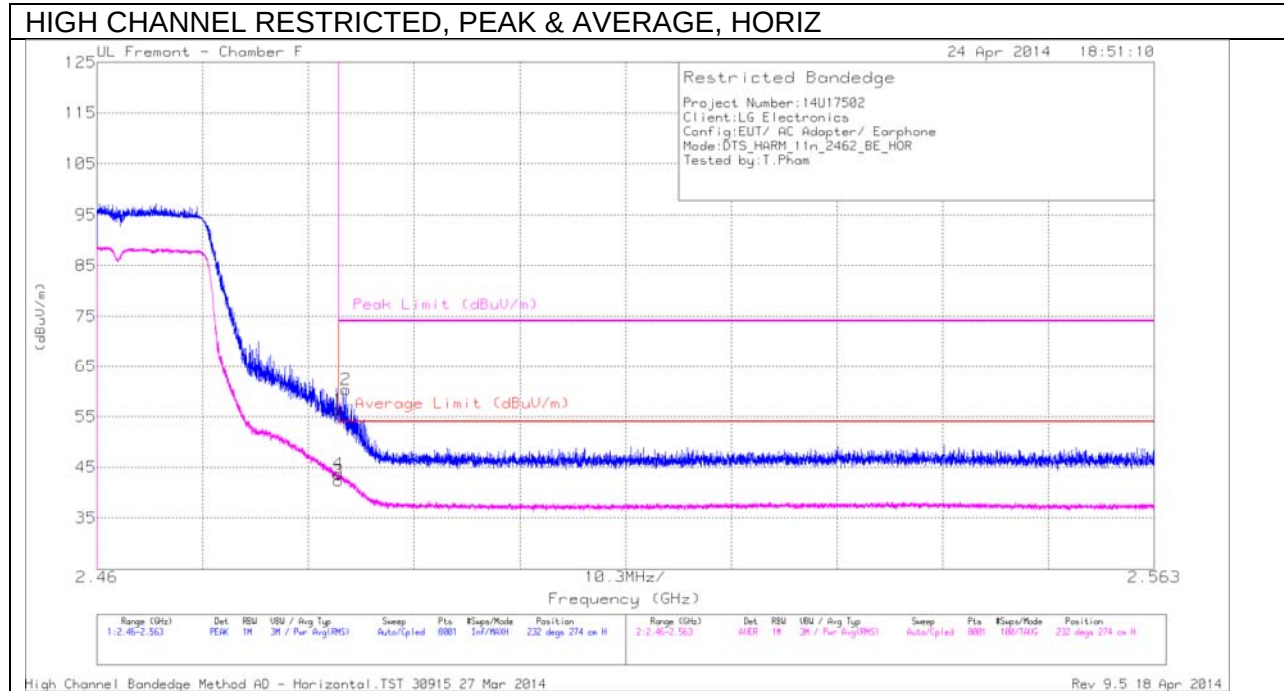
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.15	PK	32.2	-23.8	47.55	-	-	74	-26.45	188	291	V
2	* 2.39	42.5	PK	32.2	-23.8	50.9	-	-	74	-23.1	188	291	V
3	* 2.39	30.89	RMS	32.2	-23.8	39.29	54	-14.71	-	-	188	291	V
4	* 2.39	30.89	RMS	32.2	-23.8	39.29	54	-14.71	-	-	188	291	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)



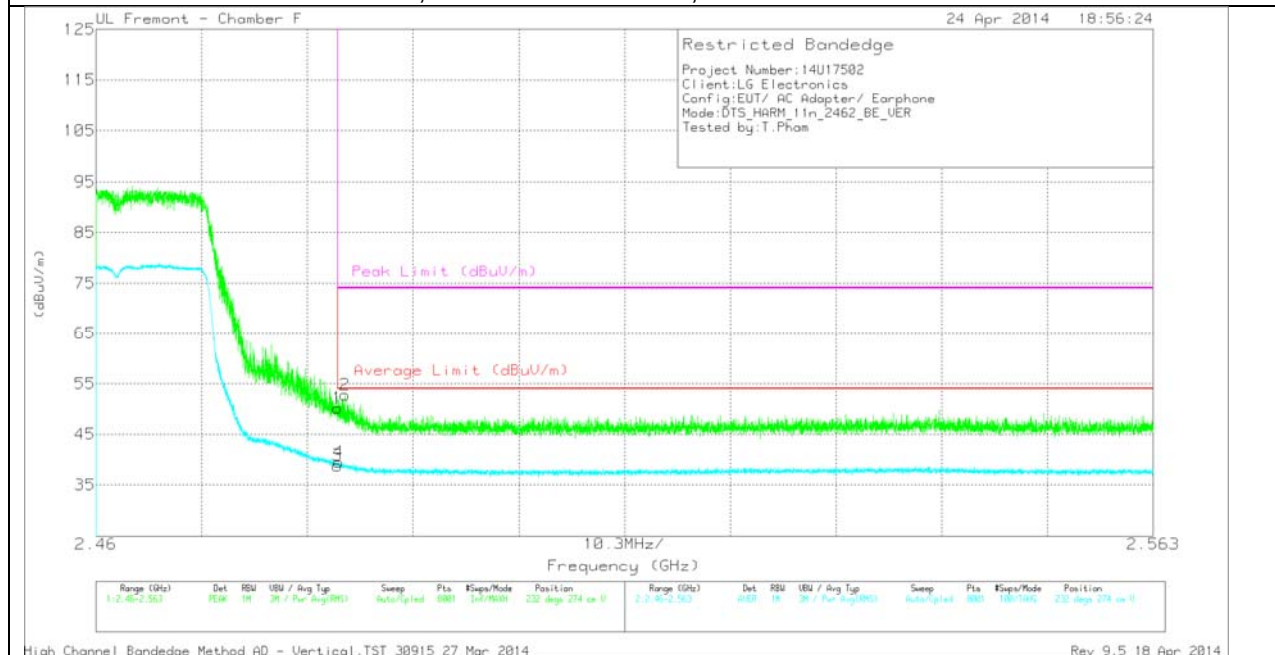
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.83	PK	32.6	-23	56.43	-	-	74	-17.57	232	274	H
2	* 2.484	50.63	PK	32.6	-22.9	60.33	-	-	74	-13.67	232	274	H
3	* 2.484	32.72	RMS	32.6	-23	42.32	54	-11.68	-	-	232	274	H
4	* 2.484	34.13	RMS	32.6	-23	43.73	54	-10.27	-	-	232	274	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	AF T120 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.57	PK	32.6	-23	50.17	-	-	74	-23.83	232	274	V
2	* 2.484	43.12	PK	32.6	-22.9	52.82	-	-	74	-21.18	232	274	V
3	* 2.484	29.21	RMS	32.6	-23	38.81	54	-15.19	-	-	232	274	V
4	* 2.484	29.93	RMS	32.6	-23	39.53	54	-14.47	-	-	232	274	V

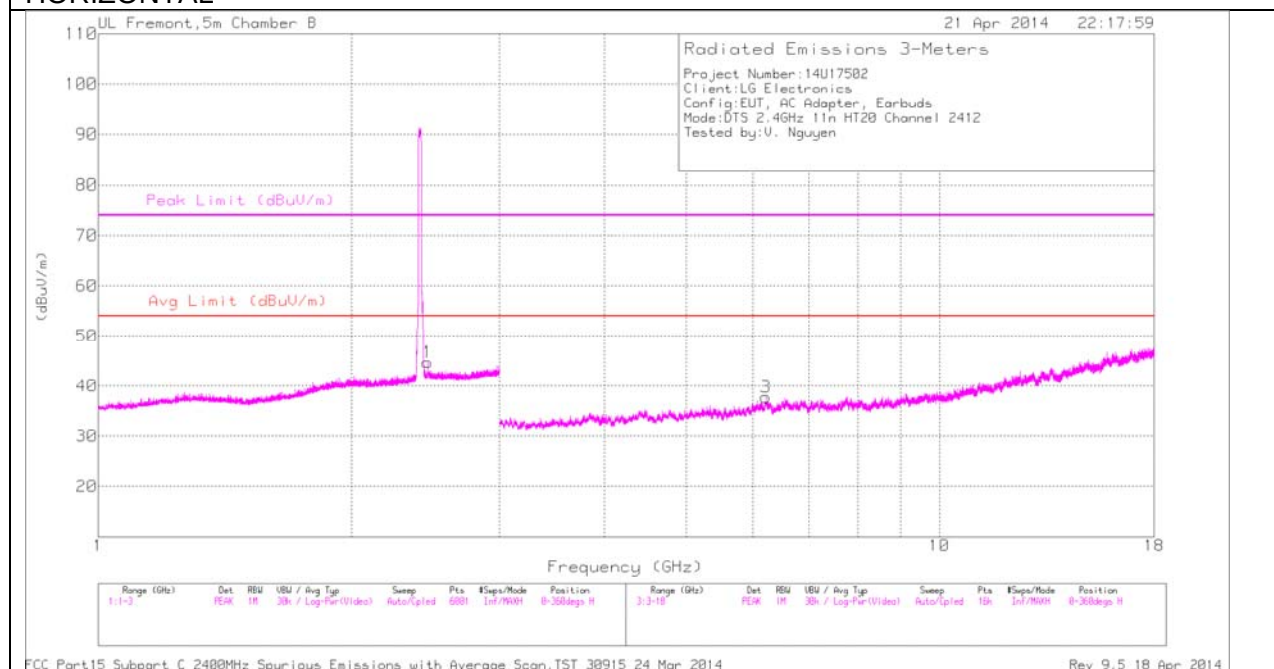
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

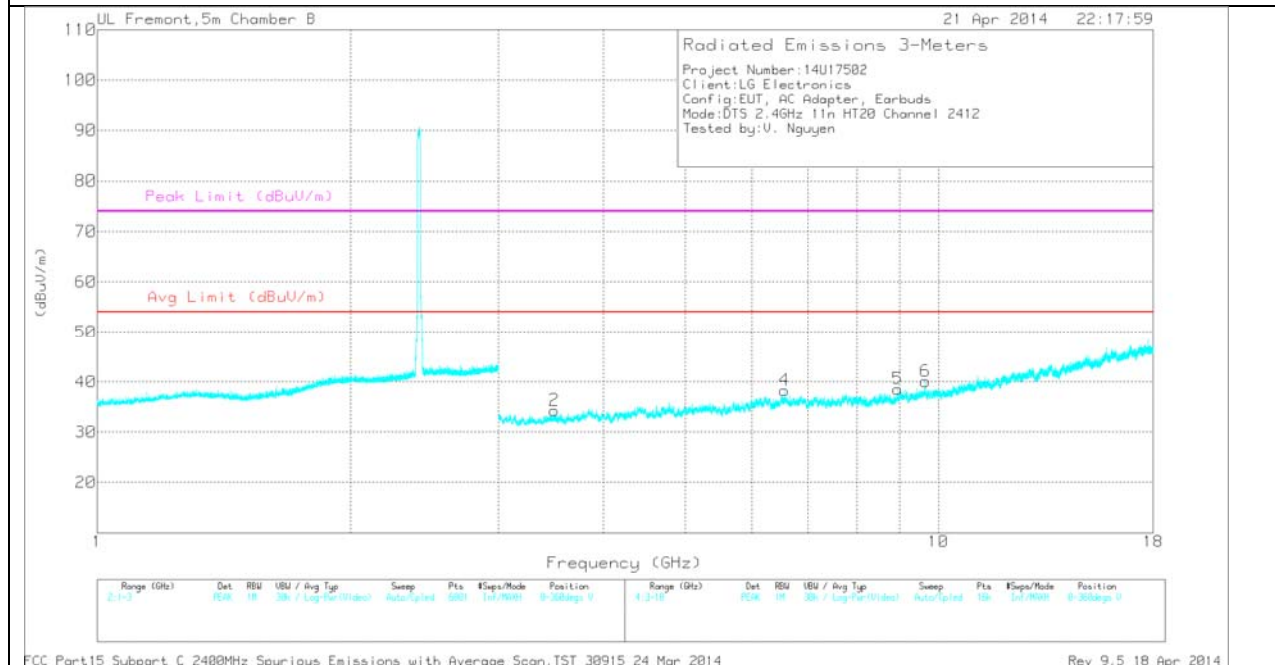
HARMONICS AND SPURIOUS EMISSIONS

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

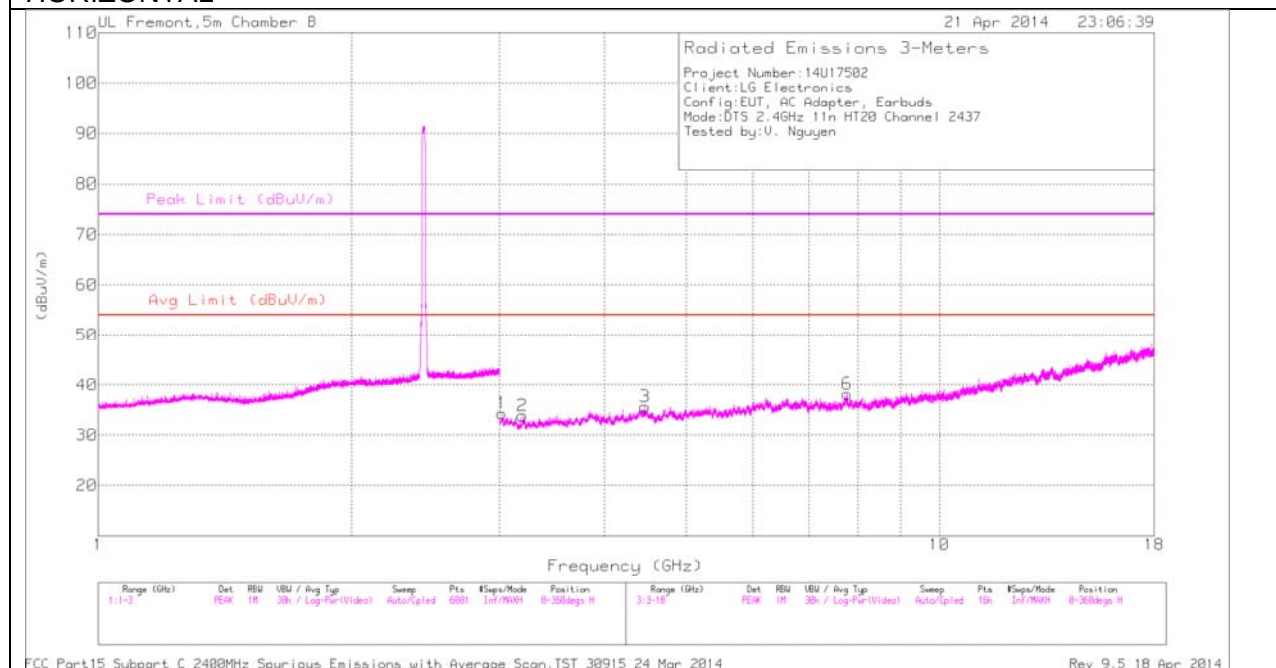
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.463	35.19	PK	32.3	-22.8	44.69	-	-	-	-	0-360	99	H
2	3.497	32.83	PK	32.8	-31.3	34.33	-	-	-	-	0-360	202	V
3	6.218	30.14	PK	35.4	-27.8	37.74	-	-	-	-	0-360	202	H
4	6.559	29.83	PK	35.7	-27.2	38.33	-	-	-	-	0-360	99	V
5	8.942	27.89	PK	36.1	-25.4	38.59	-	-	-	-	0-360	202	V
6	9.647	27.4	PK	36.8	-24.1	40.1	-	-	-	-	0-360	202	V

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.464	45.68	PK2	32.3	-22.8	55.18			74	-18.82	268	279	H
2.464	34.83	MAV1	32.3	-22.8	44.33	54	-9.67	74	-29.67	268	279	H

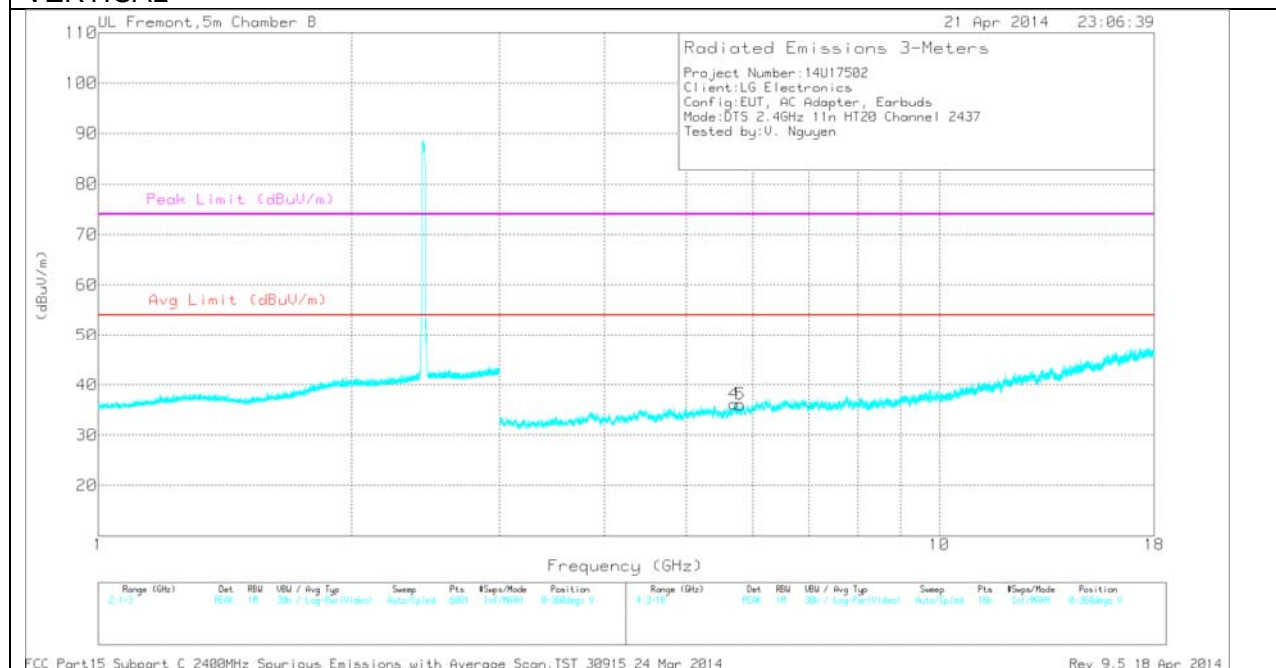
PK2 - KDB558074 Method: Maximum Peak

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.

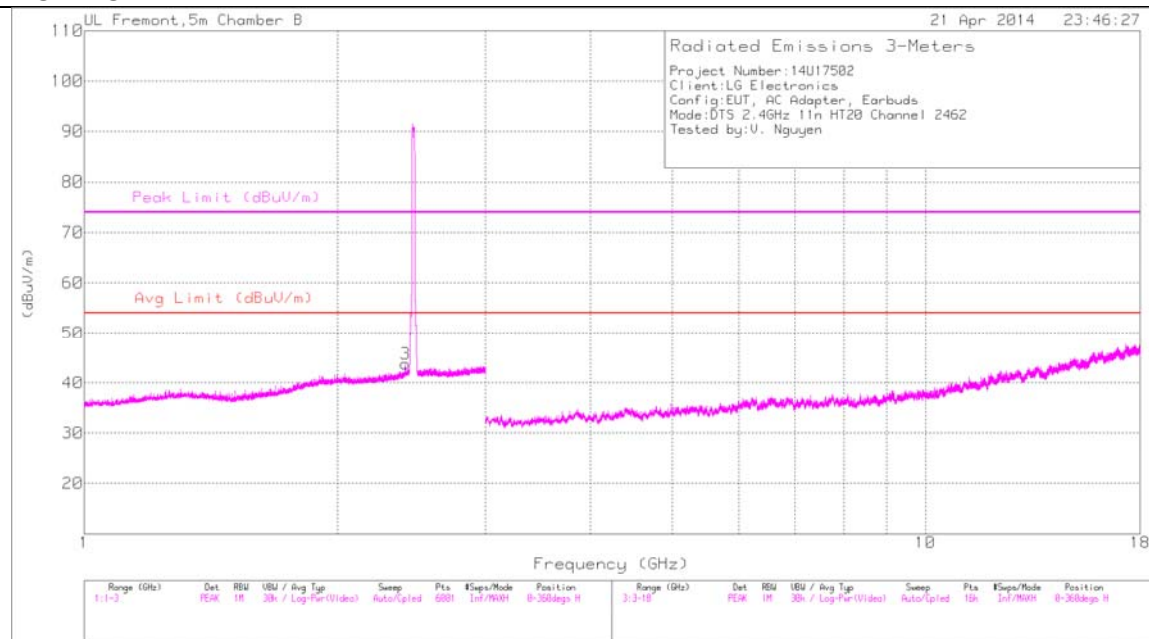
MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.021	32.92	PK	32.8	-31.4	34.32	54	-19.68	74	-39.68	0-360	201	H
2	3.194	32.37	PK	32.8	-31.3	33.87	54	-20.13	74	-40.13	0-360	99	H
3	4.467	30.77	PK	33.9	-29	35.67	54	-18.33	74	-38.33	0-360	201	H
4	5.705	30.62	PK	34.5	-28.9	36.22	54	-17.78	74	-37.78	0-360	99	V
5	5.798	31.01	PK	34.7	-29.6	36.11	54	-17.89	74	-37.89	0-360	202	V
6	7.773	28.48	PK	35.7	-26	38.18	54	-15.82	74	-35.82	0-360	99	H

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
7.783	38.24	PK2	35.7	-26.2	47.74	54	-6.26	74	-26.26	209	159	H
7.765	25.93	MAv1	35.7	-26	35.63	54	-18.37	74	-38.37	209	159	H

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL HORIZONTAL

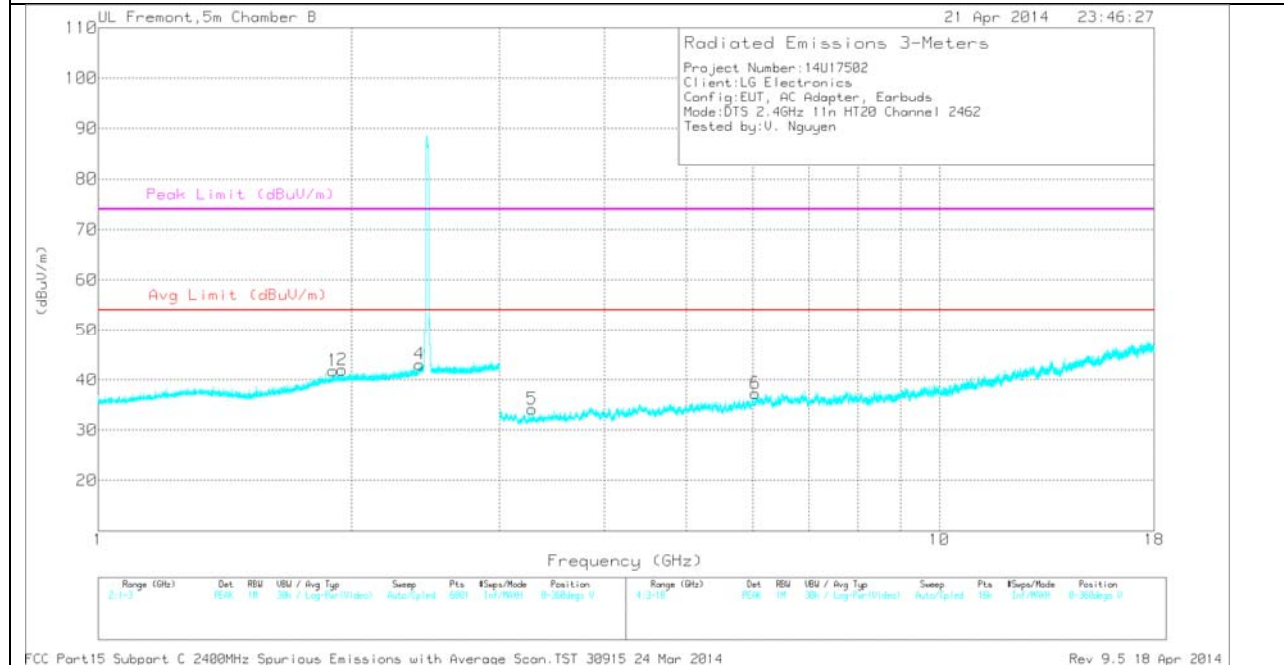


FCC Part15 Subpart C 2400MHz Spurious Emissions with Average Scan.TST 30915 24 Mar 2014

Rev 9.5 18 Apr 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.

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

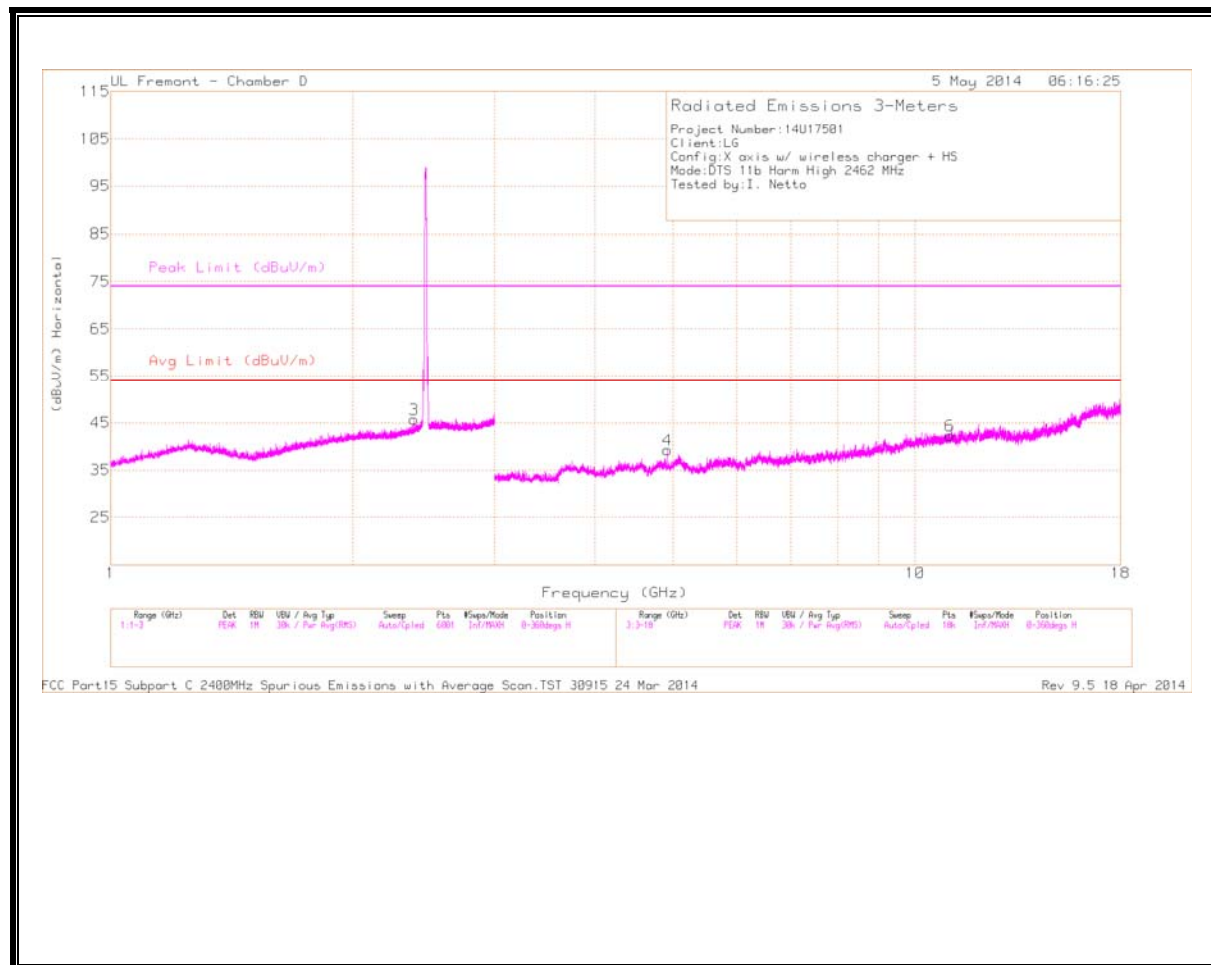
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.902	34.31	PK	31.1	-23.6	41.81	54	-12.19	74	-32.19	0-360	99	V
2	1.95	34.38	PK	31.2	-23.6	41.98	54	-12.02	74	-32.02	0-360	99	V
3	2.41	34.36	PK	32.2	-22.8	43.76	54	-10.24	74	-30.24	0-360	99	H
4	2.411	33.69	PK	32.2	-22.8	43.09	54	-10.91	74	-30.91	0-360	202	V
5	3.28	32.71	PK	32.8	-31.3	34.21	54	-19.79	74	-39.79	0-360	99	V
6	6.042	31.02	PK	35.3	-29	37.32	54	-16.68	74	-36.68	0-360	202	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.41	44.67	PK1	32.2	-22.8	54.07			74	-19.93	271	225	H
2.41	33.85	AD1	32.2	-22.8	43.25	54	-10.75	74	-30.75	271	225	H

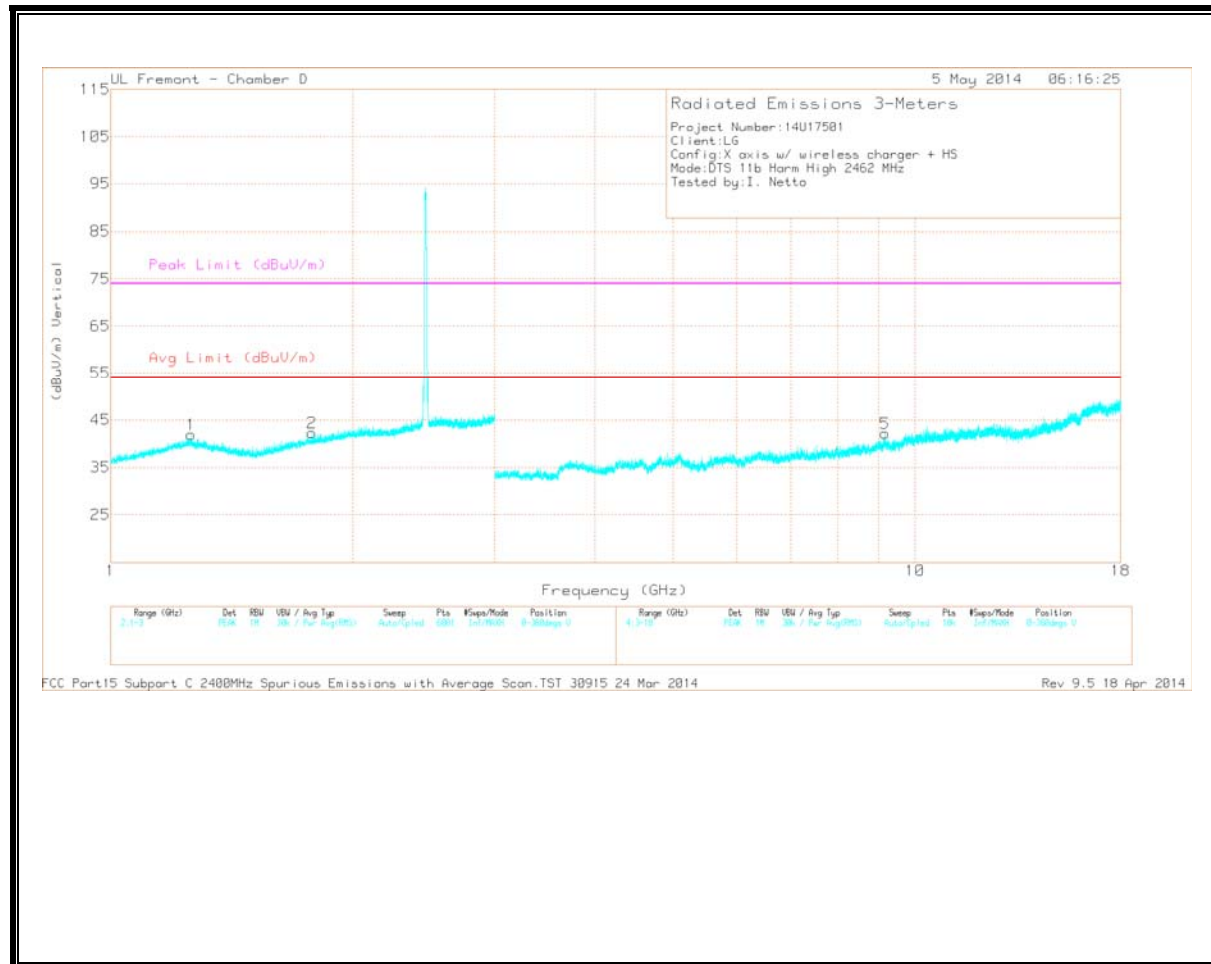
PK1 - KDB789033 Method: Peak

WORST CASE HARMONICS AND SPURIOUS EMISSIONS WITH WPC CHARGER AND COVER

HORIZONTAL



VERTICAL



CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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	* 2.381	34.98	PK	31.4	-20.7	0	45.68	-	-	74	-28.32	0-360	219	H
1	* 1.26	34.4	PK	29.5	-22	0	41.9	-	-	74	-32.1	0-360	100	V
4	* 4.924	33.5	PK	33.5	-27.8	0	39.2	-	-	74	-34.8	0-360	100	H
6	* 11.046	26.4	PK	37.5	-21.6	0	42.3	-	-	74	-31.7	0-360	201	H
5	* 9.175	27.6	PK	35.9	-21.3	0	42.2	-	-	74	-31.8	0-360	201	V
2	1.778	34.13	PK	29.5	-21.3	0	42.33	-	-	-	-	0-360	200	V

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

PK - Peak detector

Radiated Emissions

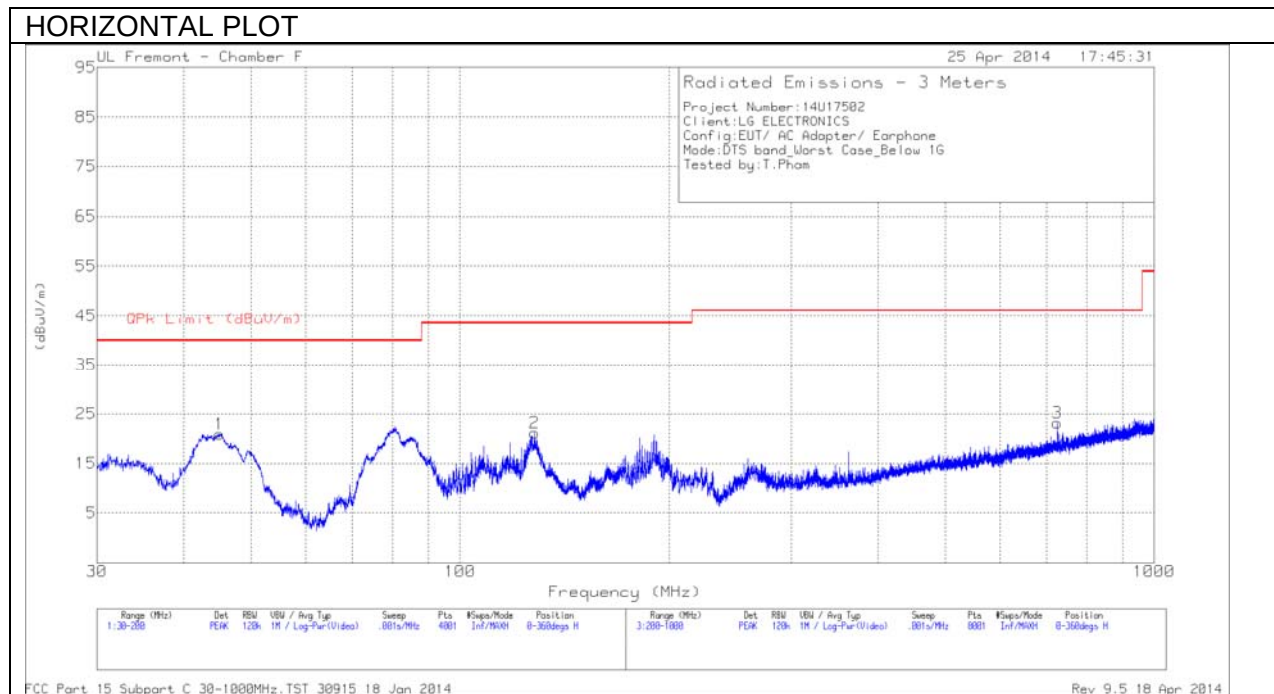
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.381	42.06	PK2	31.4	-20.7	0	52.76	-	-	74	-21.24	360	100	H
* 1.261	41.58	PK2	29.5	-22	0	49.08	-	-	74	-24.92	360	100	V
* 11.048	35.84	PK2	37.5	-21.6	0	51.74	-	-	74	-22.26	360	100	H
* 4.924	38.88	PK2	33.5	-27.8	0	44.58	-	-	74	-29.42	44	119	H
* 4.924	29.79	MAV1	33.5	-27.8	.22	35.59	54	-18.41	-	-	44	119	H
* 9.176	34.65	PK2	35.9	-21.3	0	49.25	-	-	74	-24.75	360	100	V
1.779	42.1	PK2	29.5	-21.3	0	50.3	-	-	-	-	360	100	V

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

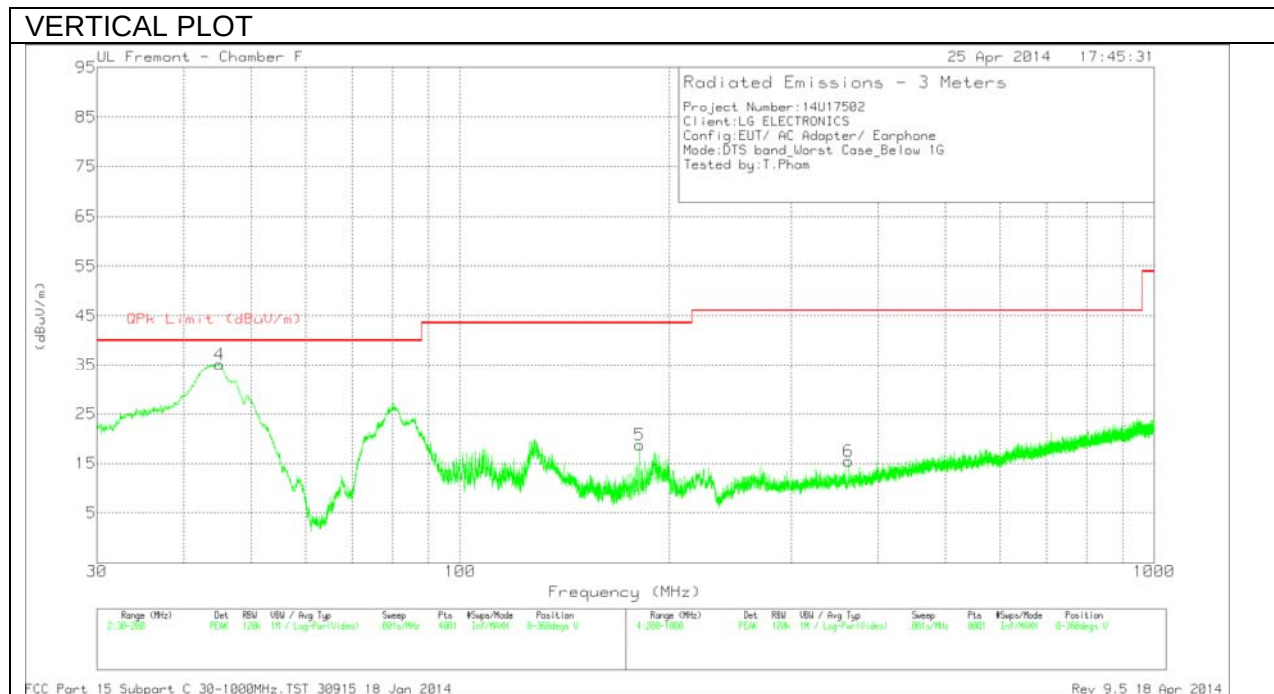
PK2 - KDB558074 Method: Maximum Peak

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	Hybrid	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	45.0025	41.7	PK	10.5	-31.3	20.9	40	-19.1	0-360	401	H
2	* 128.005	38.7	PK	13.7	-31.2	21.2	43.52	-22.32	0-360	200	H
4	45.045	55.88	PK	10.5	-31.3	35.08	40	-4.92	0-360	100	V
5	181.385	38.87	PK	11.2	-31.3	18.77	43.52	-24.75	0-360	100	V
3	725.6	32.07	PK	20.4	-29.3	23.17	46.02	-22.85	0-360	100	H
6	362.8	31.01	PK	14.7	-30.3	15.41	46.02	-30.61	0-360	200	V

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

PK - Peak detector

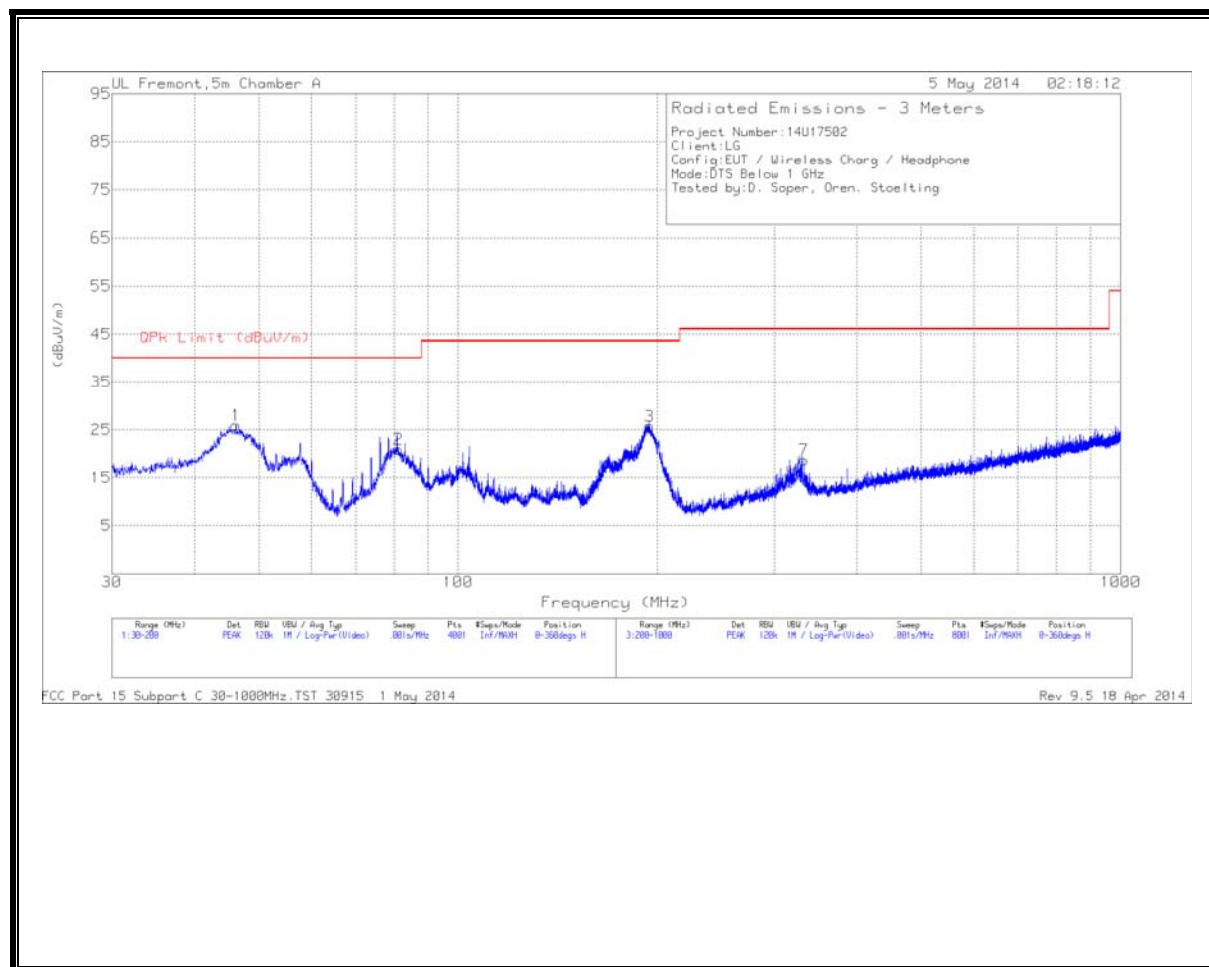
Frequency (MHz)	Meter Reading (dBuV)	Det	Hybrid	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
44.9306	53.16	QP	10.5	-31.4	32.26	40	-7.74	157	103	V

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

QP - Quasi-Peak detector

WORST CASE HARMONICS AND SPURIOUS EMISSIONS WITH WPC CHARGER AND COVER

HORIZONTAL



UL Fremont, 5m Chamber A

5 May 2014 02:18:12

Radiated Emissions - 3 Meters

Project Number: 14U17502
 Client: LG
 Config: EUT / Wireless Chrg / Headphone
 Mode: OTS Below 1 GHz
 Tested by: D. Soper, Oren. Stoelting

OPK Limit (dBuV/m)

4

5

6

1000

Frequency (MHz)

Range (MHz)	Det	RES	UBW / Avg Type	Sweep	Pls	#Seps/Mode	Position
2-30-250	PEAK	120k	1M / Log-Pwr (V/dBm)	Sweep	1000	1000	0-3000pts V

Range (MHz)	Det	RES	UBW / Avg Type	Sweep	Pls	#Seps/Mode	Position
4-200-1000	PEAK	120k	1M / Log-Pwr (V/dBm)	Sweep	1000	1000	0-3000pts V

FCC Part 15 Subpart C 30-1000MHz.TST 30915 1 May 2014

Rev 9.5 18 Apr 2014

CHANNEL DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AFT130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
7	* 332.5	33.92	PK	14	-29.2	18.72	46.02	-27.3	0-360	101	H
8	* 401.7	28.98	PK	15.7	-29	15.68	46.02	-30.34	0-360	101	V
1	46.1925	47.23	PK	9.8	-31.1	25.93	40	-14.07	0-360	400	H
4	46.6175	54.72	PK	9.6	-31	33.32	40	-6.68	0-360	101	V
2	81.2125	44.03	PK	7.5	-30.6	20.93	40	-19.07	0-360	200	H
5	101.655	37.89	PK	10.7	-30.4	18.19	43.52	-25.33	0-360	101	V
6	147.3	33.21	PK	12.7	-30.1	15.81	43.52	-27.71	0-360	101	V
3	194.4538	43.77	PK	11.8	-29.8	25.77	43.52	-17.75	0-360	100	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

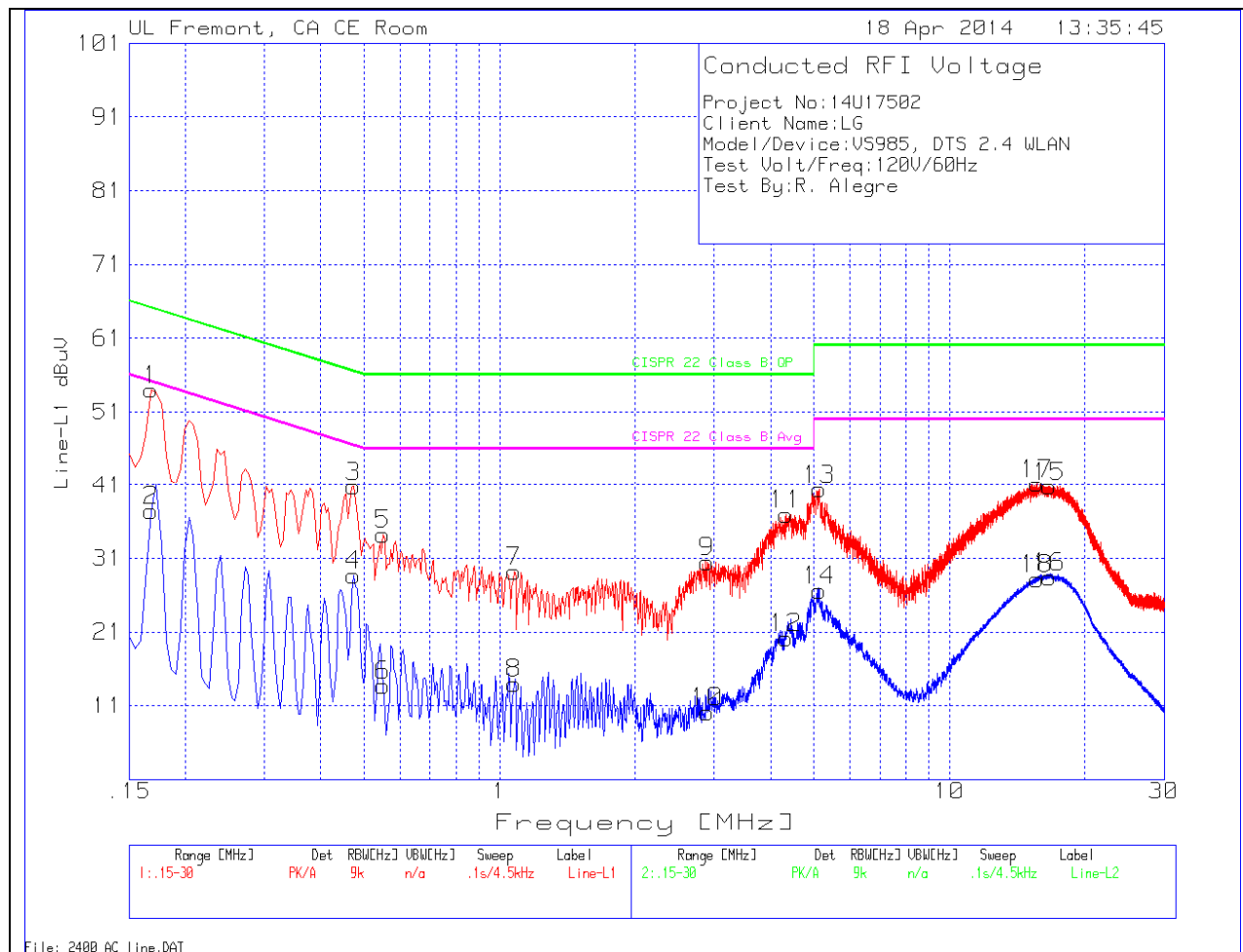
Line 1 0.15 – 30MHz

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	.168	52.8	PK	1.2	0	54	65.1	-11.1	-	-
2	.168	36.23	Av	1.2	0	37.43	-	-	55.1	-17.67
3	.474	40.44	PK	.4	0	40.84	56.4	-15.56	-	-
4	.474	28.27	Av	.4	0	28.67	-	-	46.4	-17.73
5	.5505	33.9	PK	.3	0	34.2	56	-21.8	-	-
6	.5505	13.37	Av	.3	0	13.67	-	-	46	-32.33
7	1.077	29.02	PK	.2	0	29.22	56	-26.78	-	-
8	1.077	13.75	Av	.2	0	13.95	-	-	46	-32.05
9	2.8995	30.2	PK	.2	.1	30.5	56	-25.5	-	-
10	2.8995	9.77	Av	.2	.1	10.07	-	-	46	-35.93
11	4.326	36.62	PK	.2	.1	36.92	56	-19.08	-	-
12	4.326	19.92	Av	.2	.1	20.22	-	-	46	-25.78
13	5.1315	40.09	PK	.2	.1	40.39	60	-19.61	-	-
14	5.1315	26.29	Av	.2	.1	26.59	-	-	50	-23.41
17	15.657	40.63	PK	.3	.2	41.13	60	-18.87	-	-
18	15.657	27.63	Av	.3	.2	28.13	-	-	50	-21.87
15	16.71	40.33	PK	.3	.2	40.83	60	-19.17	-	-
16	16.71	27.97	Av	.3	.2	28.47	-	-	50	-21.53

Line 2 0.15 – 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)
19	.1545	46.29	PK	1.4	0	47.69	65.8	-18.11	-	-
20	.1545	33.37	Av	1.4	0	34.77	-	-	55.8	-21.03
21	.1815	43.77	PK	1.2	0	44.97	64.4	-19.43	-	-
22	.1815	27.84	Av	1.2	0	29.04	-	-	54.4	-25.36
23	.4335	38.34	PK	.4	0	38.74	57.2	-18.46	-	-
24	.4335	25.47	Av	.4	0	25.87	-	-	47.2	-21.33
25	.4875	37.33	PK	.4	0	37.73	56.2	-18.47	-	-
26	.4875	22.12	Av	.4	0	22.52	-	-	46.2	-23.68
27	.528	35.15	PK	.3	0	35.45	56	-20.55	-	-
28	.528	23.02	Av	.3	0	23.32	-	-	46	-22.68
29	.7125	32.8	PK	.3	0	33.1	56	-22.9	-	-
30	.7125	15.47	Av	.3	0	15.77	-	-	46	-30.23
31	1.6125	30.97	PK	.2	.1	31.27	56	-24.73	-	-
32	1.6125	14.37	Av	.2	.1	14.67	-	-	46	-31.33
33	2.6925	28.89	PK	.2	.1	29.19	56	-26.81	-	-
34	2.6925	9.4	Av	.2	.1	9.7	-	-	46	-36.3
35	3.8985	31.05	PK	.2	.1	31.35	56	-24.65	-	-
36	3.8985	12.84	Av	.2	.1	13.14	-	-	46	-32.86
37	4.308	32.24	PK	.2	.1	32.54	56	-23.46	-	-
38	4.308	15.41	Av	.2	.1	15.71	-	-	46	-30.29
39	4.9245	36.39	PK	.2	.1	36.69	56	-19.31	-	-
40	4.9245	20.59	Av	.2	.1	20.89	-	-	46	-25.11
41	5.064	36.1	PK	.2	.1	36.4	60	-23.6	-	-
42	5.064	20.34	Av	.2	.1	20.64	-	-	50	-29.36
43	16.2375	42.43	PK	.3	.2	42.93	60	-17.07	-	-
44	16.2375	27.91	Av	.3	.2	28.41	-	-	50	-21.59
45	16.9485	42.62	PK	.3	.2	43.12	60	-16.88	-	-
46	16.9485	27.95	Av	.3	.2	28.45	-	-	50	-21.55

LINE 1 RESULTS



LINE 2 RESULTS

