FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

HP Wireless Streaming Connector

Model: HSTND-C008

Trade Name: hp

Issued to

GOOD WAY TECHNOLOGY CO., LTD.
3F, No. 135, Ln.235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan

Issued by

Compliance Certification Services Inc.
No.81-1, Lane 210, Bade 2nd Rd., LujhuTownship,
TaoyuanCounty 33841, Taiwan, R.O.C.
TEL: 886-3-324-0332
FAX: 886-3-324-5235
http://www.ccsrf.com
service@ccsrf.com

Testing Laboratory
0363

Note: *This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NIST or any government agencies. The test results in the report only apply to the tested sample.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		September 2, 2014		Initial Issue	ALL	Landy Huang

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION 4
2. EUT DESCRIPTION 5
3. TEST METHODOLOGY 6
3.1 EUT CONFIGURATION 6
3.2 EUT EXERCISE 6
3.3 GENERAL TEST PROCEDURES 6
3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS 7
3.5 DESCRIPTION OF TEST MODES 8
4. INSTRUMENT CALIBRATION 9
4.1 MEASURING INSTRUMENT CALIBRATION 9
4.2 MEASUREMENT EQUIPMENT USED 9
4.3 MEASUREMENT UNCERTAINTY 10
5. FACILITIES AND ACCREDITATIONS 11
5.1 FACILTIES 11
5.2 EQUIPMENT 11
5.3 TABLE OF ACCREDITATIONS AND LISTINGS 12
6. SETUP OF EQUIPMENT UNDER TEST 13
6.1 SETUP CONFIGURATION OF EUT 13
6.2 SUPPORT EQUIPMENT 13
7. FCC PART 15.247 REQUIREMENTS 14
7.1 6DB BANDWIDTH 14
7.2 PEAK POWER 25
7.3 AVERAGE POWER 27
7.4 BAND EDGES MEASUREMENT 29
7.5 PEAK POWER SPECTRAL DENSITY 53
7.6 SPURIOUS EMISSIONS 64
7.7 POWERLINE CONDUCTED EMISSIONS 91
8. APPENDIX IPHOTOGRAPHS OF TEST SETUP 94
APPENDIX 1: PHOTOGRAPHS OF EUT 98

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

1. TEST RESULT CERTIFICATION

Applicant:	**GOOD WAY TECHNOLOGY CO., LTD.** 3F, No. 135, Ln.235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan
Manufacturer:	**GOOD WAY TECHNOLOGY CO., LTD.** 3F, No. 135, Ln.235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan
Equipment Under Test:	HP Wireless Streaming Connector
Trade Name:	hp
Model:	HSTND-C008
Date of Test:	August 14 ~ September 1, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart C	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

Approved ***by:***

Bill Cheng
Section Manager

Reviewed by:

Angel Hu
Section Manager

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

2. EUT DESCRIPTION

Product	HP Wireless Streaming Connector		
Trade Name	hp		
Model Number	HSTND-C008		
Model Discrepancy	N/A		
EUT Power Rating	5VDC From PC		
RF Module Manufacturer	Realtek	**Model**	RTL8192DU
Operating Frequency Range	IEEE 802.11 b/g/HT20 mode: 2412 ~ 2462 MHz IEEE 802.11 HT40 mode: 2422 ~ 2452 MHz		
Transmit Power	IEEE 802.11b mode: 19.32dBm (0.0855W) IEEE 802.11g mode: 22.14dBm (0.1637W) IEEE 802.11n HT20 mode: 20.73dBm(0.1184W) IEEE 802.11n HT40 mode: 21.36dBm (0.1367W)		
Modulation Technique	IEEE 802.11b mode: DSSS (11, 5.5, 2, 1 Mbps) IEEE 802.11g mode: OFDM (54, 48, 36, 24, 18, 12, 11, 9, 6 Mbps) IEEE 802.11n HT20 mode: OFDM (6.5, 13, 19.5, 26, 39, 52, 58.5, 65, 78, 104, 117, 130 Mbps) IEEE 802.11n HT40 mode: OFDM (13.5, 27, 40.5, 54, 81, 108, 121.5, 135, 162, 216, 243, 270 Mbps)		
Antenna Specification	Chain 0: PCB Antenna / Gain: 5.3dBi (For IEEE 802.11b/g) Chain 1: PCB Antenna / Gain: 5.2dBi(For IEEE 802.11b/g) MIMO: $10\log[(10^{5.3/20}+10^{5.2/20})^2/2]=8.26$) (For IEEE 802.11n)		

Remark:

1. The sample selected for test was production product and was provided by manufacturer.
*2. This submittal(s) (test report) is intended for FCC ID: **SW8-WD9012R1** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 Part 2, Part 15.207, 15.209 and 15.247.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	([2])
13.36 - 13.41	322 - 335.4		

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

3.5 DESCRIPTION OF TEST MODES

The EUT is a 2Tx2R MIMO transmitter.

The EUT (model: HSTND-C008) had been tested under operating condition and had been reported as worst case on this test report.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

The worst case data rate is determined as the data rate with highest output power.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode.

The field strength of spurious emission was measured in the following position: EUT stand-up position (Y axis), lie-down position (X, Z axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

IEEE 802.11b:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate was chosen for full testing.

IEEE 802.11g:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate was chosen for full testing.

IEEE 802.11n HT20:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT40:

Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 13.5Mbps data rate were chosen for full testing.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY48250064	01/01/2015
Spectrum Analyzer	Agilent	N9010A	MY52220817	03/20/2015
Spectrum Analyzer	R&S	FSL	100837	11/11/2014
Power meter	Anritsu	ML2495A	1033009	09/29/2014
Power Sensor	Anritsu	MA2411B	0917221	09/29/2014

3MSemi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY48250064	01/01/2015
Spectrum Analyzer	R&S	FSL	100837	11/11/2014
Pre-Amplifier	HP	8447D	2944A06530	05/02/2015
Pre-Amplifier	EMEC	EM01M26G	060570	07/28/2015
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	06/12/2015
Pre-Amplifier	Agilent	8449B	3008A01738	08/11/2015
EMI Test Receiver	SCHAFFNER	SCR 3501	430	03/30/2015
Loop Antenna	EMCO	6502	8905-2356	08/20/2014
Bilog Antenna	TESEQ	CBL 6112D	35378	09/11/2014
Horn Antenna	EMCO	3115	00022250	08/05/2015
Horn Antenna	EMCO	3116	00026370	12/29/2014
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Test S/W	EZ-EMC			

NOTE: *1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.*
2. N.C.R = No Calibration Request.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Powerline Conducted Emissions Test Site#3				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESCI	101300	09/06/2014
LISN	R&S	ENV216	100069	06/09/2015
LISN	FCC	FCC-LISN-50/250-16-2-07	06013	11/20/2014
ISN	TESEQ	ISN-T8	30842	07/30/2015
Current Probe	FCC	F-35	506	07/13/2015
ISN	FCC	FCC-TLISN-T2-02	20587	07/28/2015
Test S/W	EZ-EMC			

NOTE: *1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.*
2. N.C.R = No Calibration Request.

4.3 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
Powerline Conducted Emission #3	±2.1876
3M Semi Anechoic Chamber / 30MHz ~ 200MHz	±3.5921
3M Semi Anechoic Chamber / 200MHz ~ 1GHz	±3.5657
3M Semi Anechoic Chamber / 1 ~ 8GHz	±2.5873
3M Semi Anechoic Chamber / 8 ~ 18GHz	±2.6646
3M Semi Anechoic Chamber / 18 ~ 26GHz	±2.9617
3M Semi Anechoic Chamber / 26 ~ 40GHz	±3.4250

Remark: *This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence levelusing a coverage factor of k=2.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILTIES

All measurement facilities used to collect the measurement data are located at

☐No. 163-1, Jhongsheng Rd., Sindien District, Taipei City23151, Taiwan

☐No 11, Wugong 6th Rd, Wugu District, New Taipei City 24891, Taiwan (R.O.C)

Tel: 886-2-2299-9720 / Fax:886-2-2298-4045

☒No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township,Taoyuan County 33841,Taiwan, R.O.C.

Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	CFR 47, FCC Part15/18, CISPR 22, EN 55022, ICES-003, AS/NZS CISPR 22, VCCI V-3, EN 55011, CISPR 11, IEC/EN 61000-4-2/3/4/5/6/8/11, EN 61000-6-1/2/3/4, EN 55024, CISPR 24, AS/NZS CISPR 24, AS/NZS 61000.6.2, EN 55014-1/-2, ETSI EN 300 386 v1.3.2/v1.3.3, IEC/EN 61000-3-2, AS/NZS 61000.3.2, IEC/EN 61000-3-3, AS/NZS 61000.3.3	ACCREDITED TESTING CERT #0824.01
USA	FCC MRA	3 meter Open Area Test Sites to perform FCC Part 15/18 measurements	TW1026
Japan	VCCI	3/10 meter Open Area Test Sites and conducted test sites to perform radiated/conducted measurements	VCCI R-2882/2541/2798/725/1868 C-402/747/912 T-1930/1646
Taiwan	TAF	EN 55014-1, CISPR 14, CNS 13781-1, EN 55013, CISPR 13, CNS 13439, EN 55011, CISPR 11, CNS 13803, PLMN09, IS2045-0, LP0002 FCC Part 27/90, Part 15B/C/D/E, RSS-192/193/210/310 ETSI EN 300 328/ 300 220-1/ 300 220-2/ 301 893/ 301 489-01/ 301 489-03/ 301 489-07 / 301 489-17/ 300 440-1/ 300 440-2 AS/NZS 4268, AS/NZS 4771 CISPR 22, EN 55022, CNS 13438, AS/NZS CISPR 22, VCCI, IEC/EN 61000-4-2/3/4/5/6/8/11, CNS 14676-2/3/4/5/6/8, CNS 14934-2/3, CNS 13783-1, CNS 13439, CNS 13803	ilac-MRA TAF Testing Laboratory 0363
Taiwan	BSMI	CNS 13438, CNS 13783-1, CNS 13439, CNS 14115	SL2-IS-E-0014 / IN-E-0014 /A1-E-0014 /R1-E-0014 /R2-E-0014 /L1-E-0014
Canada	Industry Canada	RSS-Gen Issue 3	Canada IC 2324C-5

Note:*No part of this report may be used to claim or imply product endorsement by A2LA, TAF or other government agency.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

For Radiated Emission (Below 1GHz) and Power line conducted emission measurement:							
No.	**Device Type**	**Model**	**Series No.**	**FCC ID**	**Brand**	**Data Cable**	**Power Cord**
1	Monitor	CNC2150001	N/A	FCC DoC	hp	Shielded,1.2m	N/A
2	Adapter (For Monitor)	TPC-DA52	N/A	FCC DOC	hp	N/A	AC I/P: Unshielded,1.8m DC O/P: Shielded,1.8m with two cores

For Radiated Emission (Above 1GHz) and Conducted emission measurement:							
No.	**Device Type**	**Model**	**Series No.**	**FCC ID**	**Brand**	**Data Cable**	**Power Cord**
1	Test Jig	N/A	N/A	N/A	N/A	Unshielded,0.5m	N/A
2	Notebook PC	ThinkPad T430u	PB-VZLGG 12/09	FCC DOC	LENOVO	USB Cable: Unshielded,1.0m	AC I/P: Unshielded,1.8m DC O/P: Unshielded,1.8m with a core

Remark: *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

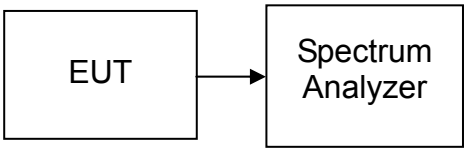
7. FCC PART 15.247 REQUIREMENTS

7.1 6dB BANDWIDTH

LIMIT

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz,2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST CONFIGURATION



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span = 40MHz or 80MHz, Sweep = auto.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

TEST RESULTS

No non-compliance noted

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST DATA

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Bandwidth(MHz)	Limit (kHz)	Result
Low	2412	10.065	>500	PASS
Mid	2437	10.055		PASS
High	2462	10.065		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth(MHz)	Limit (kHz)	Result
Low	2412	16.545	>500	PASS
Mid	2437	16.545		PASS
High	2462	16.555		PASS

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Bandwidth(MHz)		Limit (kHz)	Result
		Chain 0	Chain 1		
Low	2412	17.725	17.760	>500	PASS
Mid	2437	17.690	17.770		PASS
High	2462	17.680	17.770		PASS

Test mode: IEEE 802.11n HT40 mode

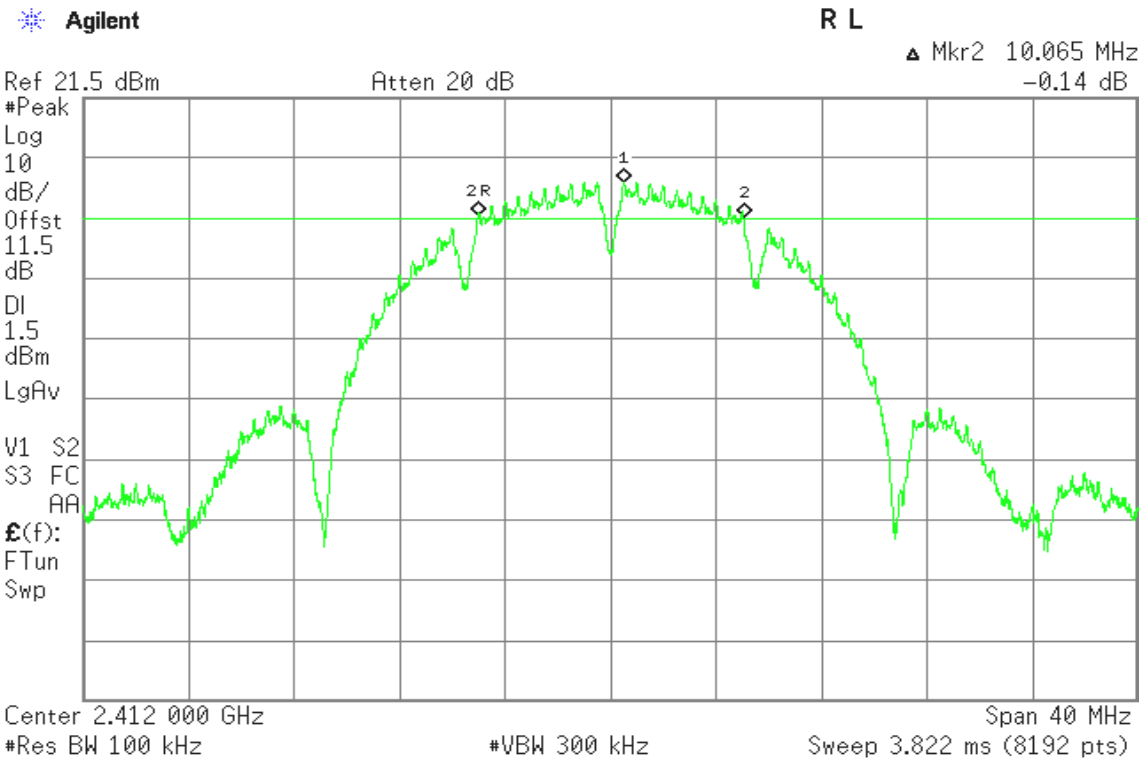
Channel	Frequency (MHz)	Bandwidth(MHz)		Limit (kHz)	Result
		Chain 0	Chain 1		
Low	2422	36.400	36.395	>500	PASS
Mid	2437	36.425	36.435		PASS
High	2452	36.425	36.395		PASS

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

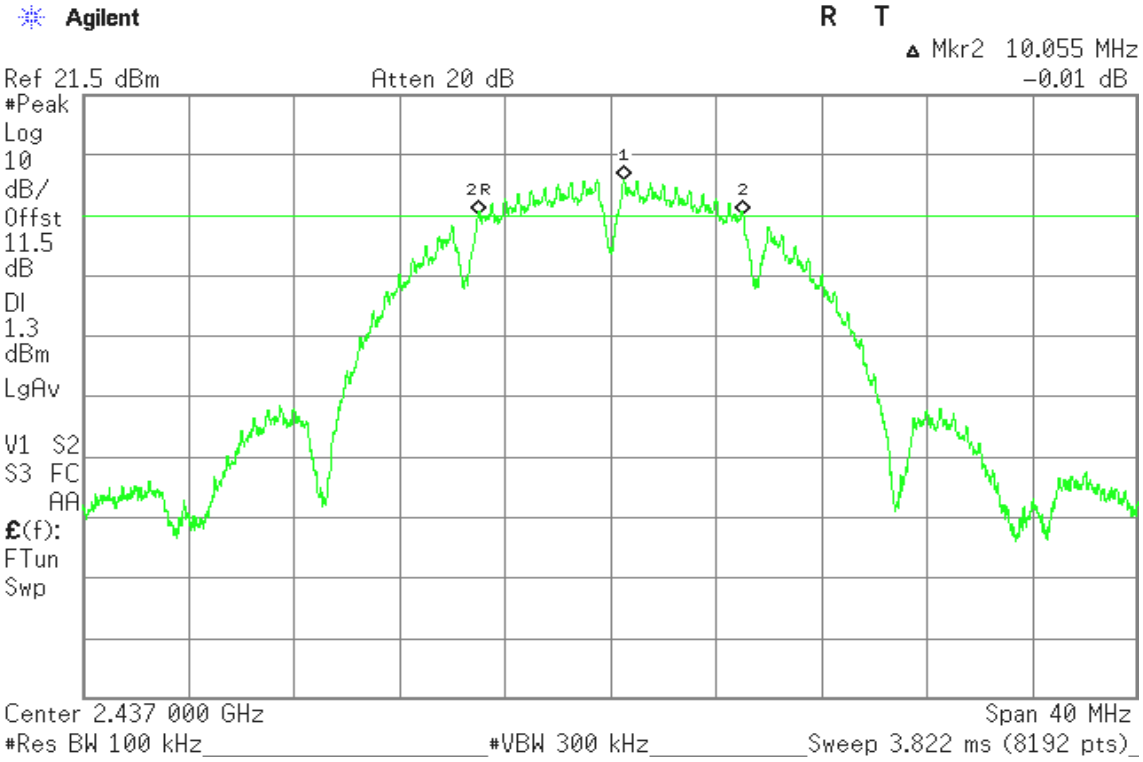
Test Plot

IEEE 802.11b mode

6dB Bandwidth (CH Low)

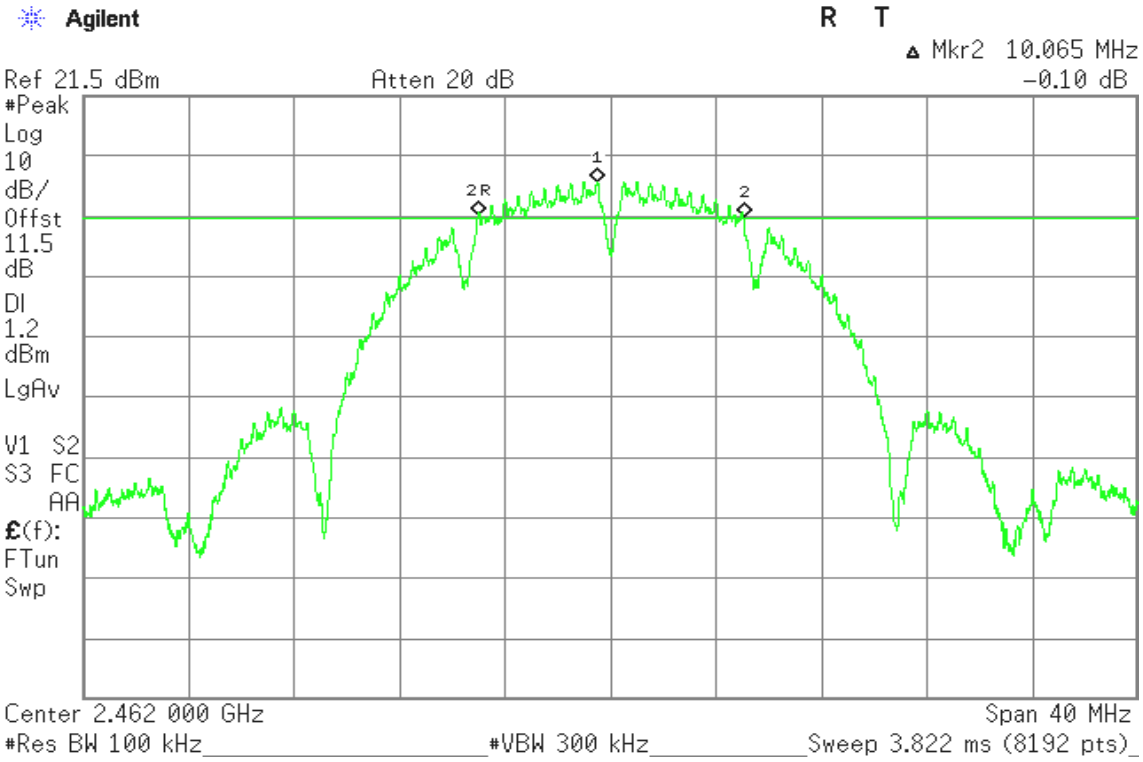


6dB Bandwidth (CH Mid)



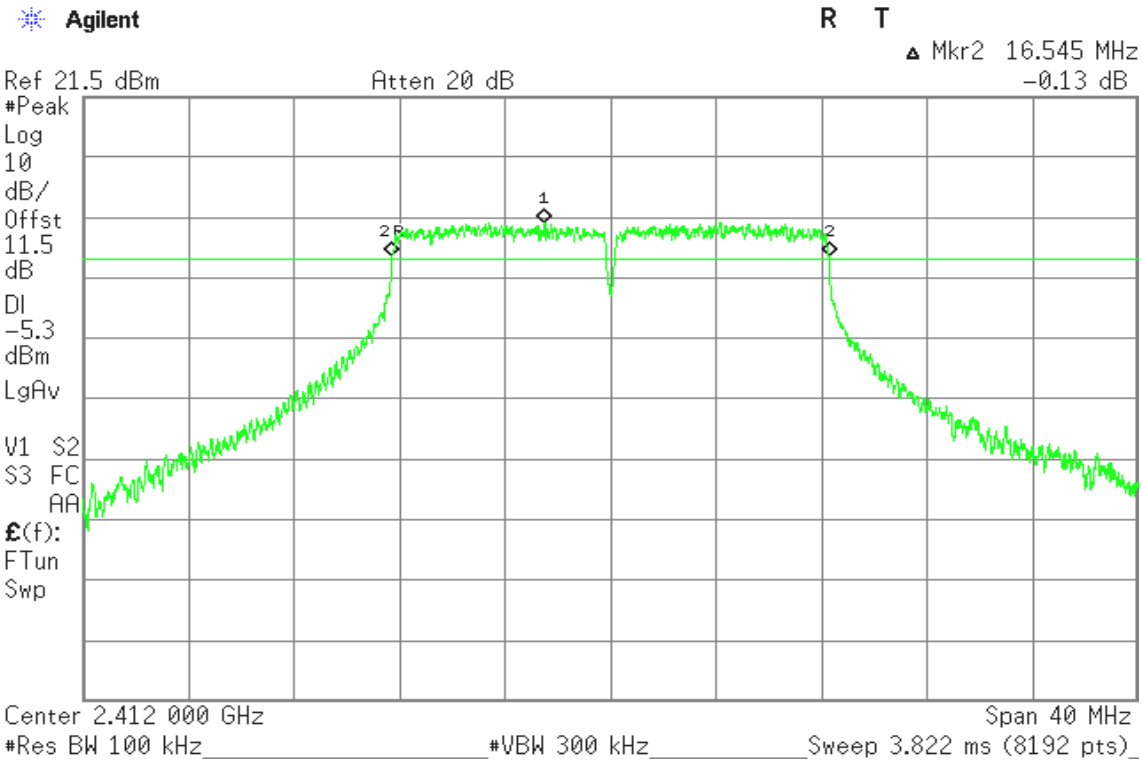
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH High)



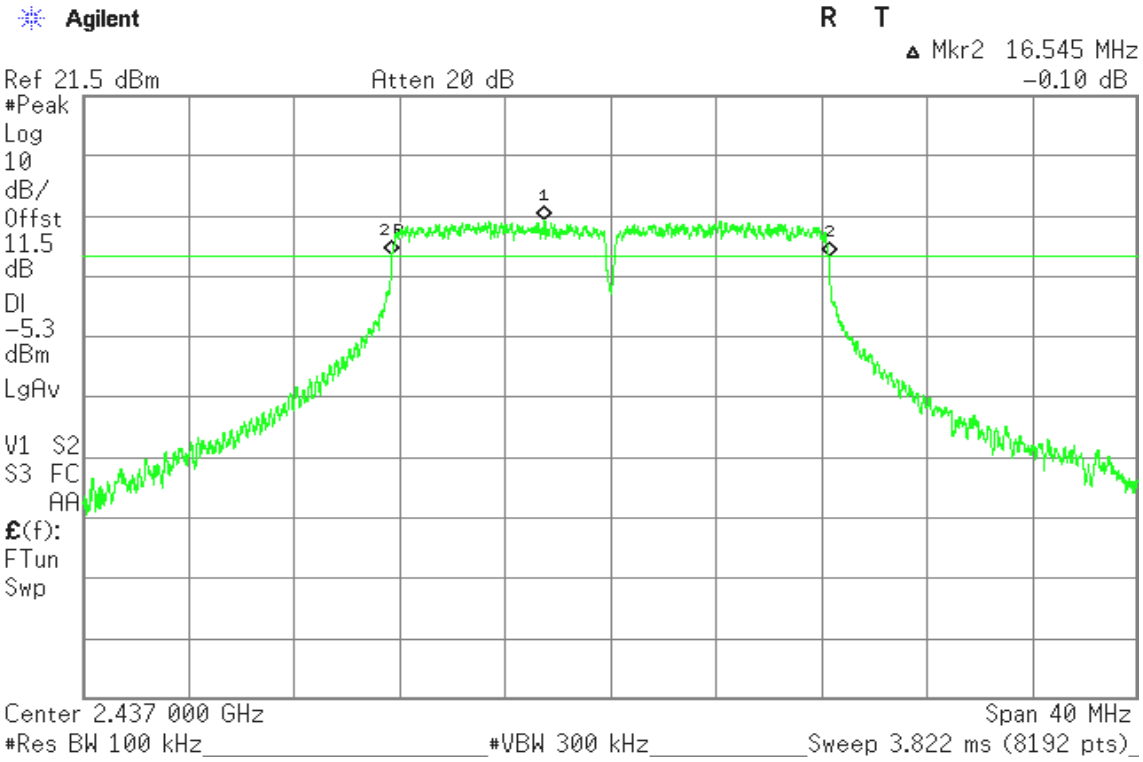
IEEE 802.11g mode

6dB Bandwidth (CH Low)

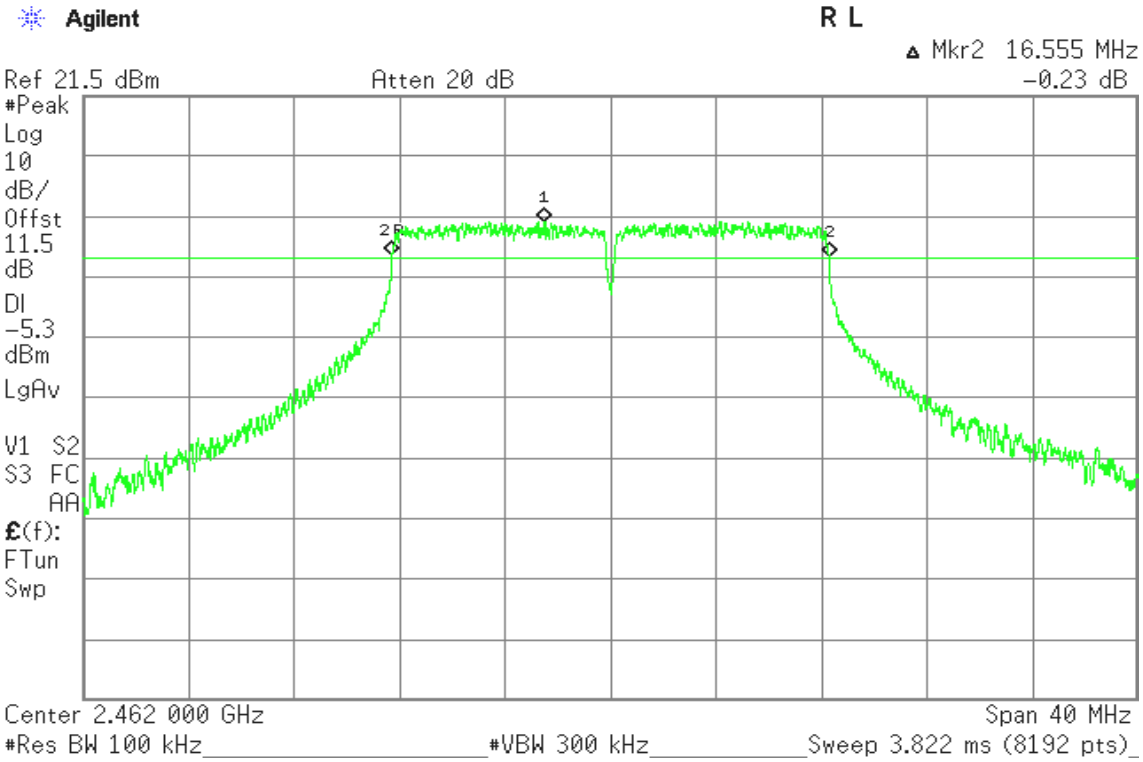


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH Mid)



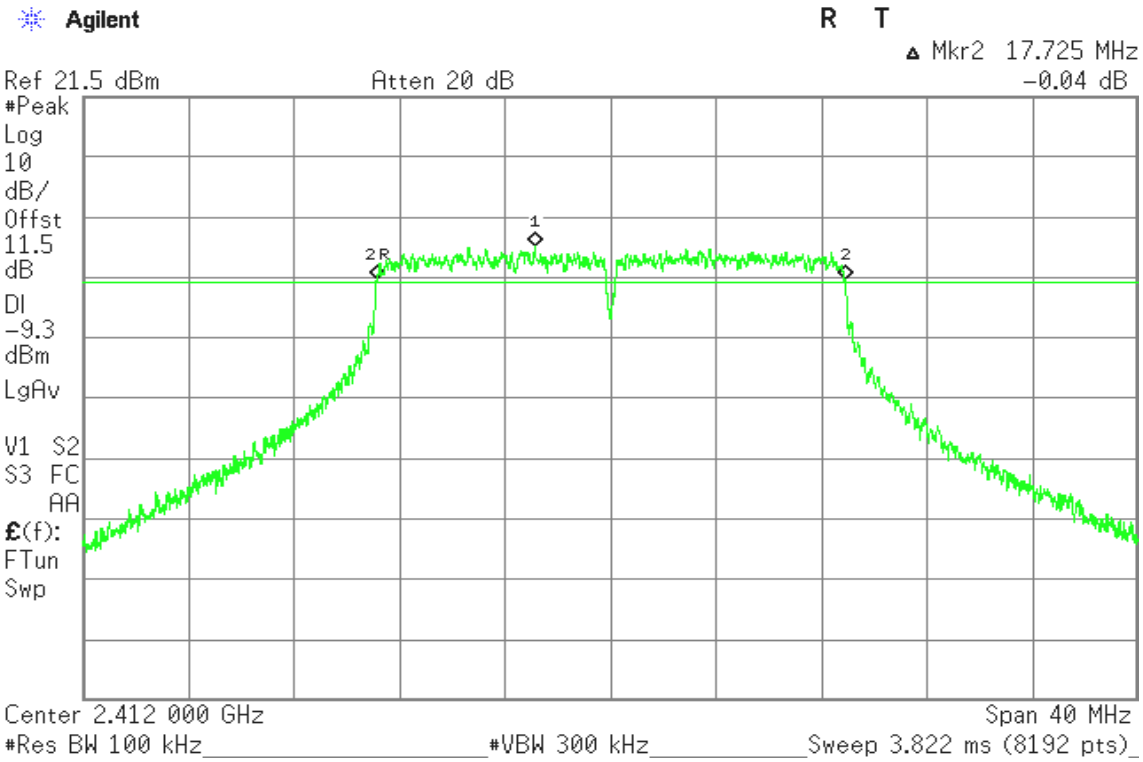
6dB Bandwidth (CH High)



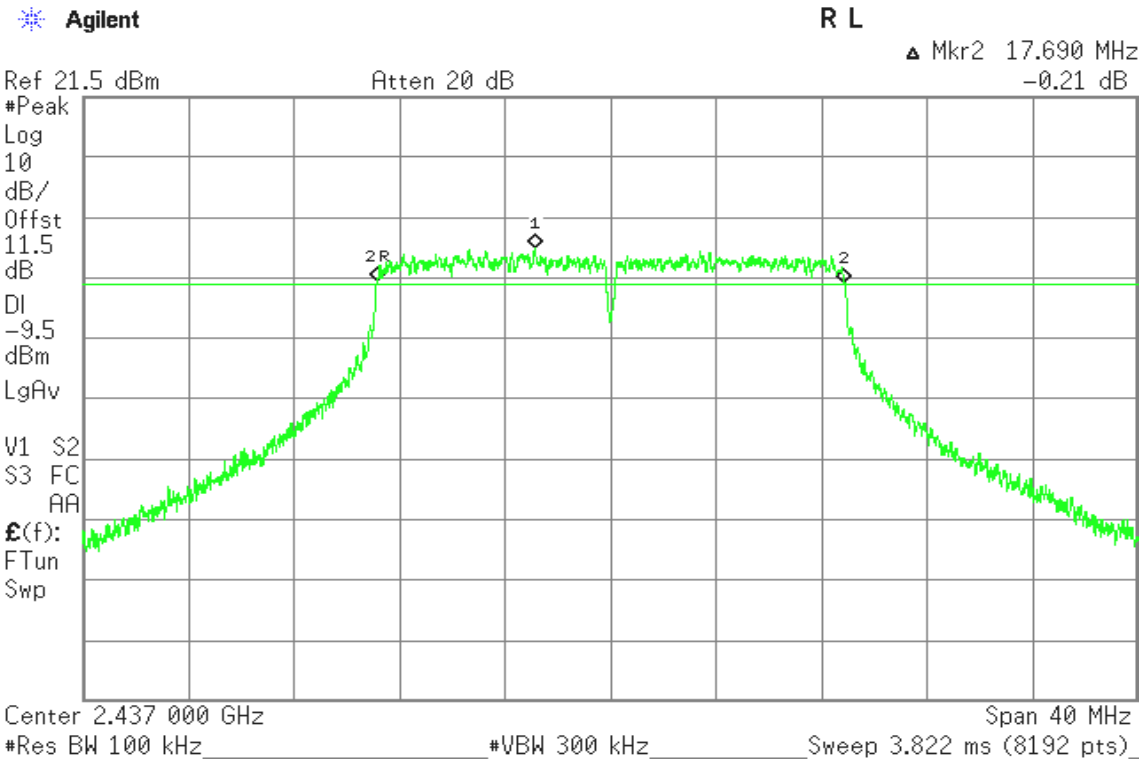
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 mode / Chain 0

6dB Bandwidth (CH Low)

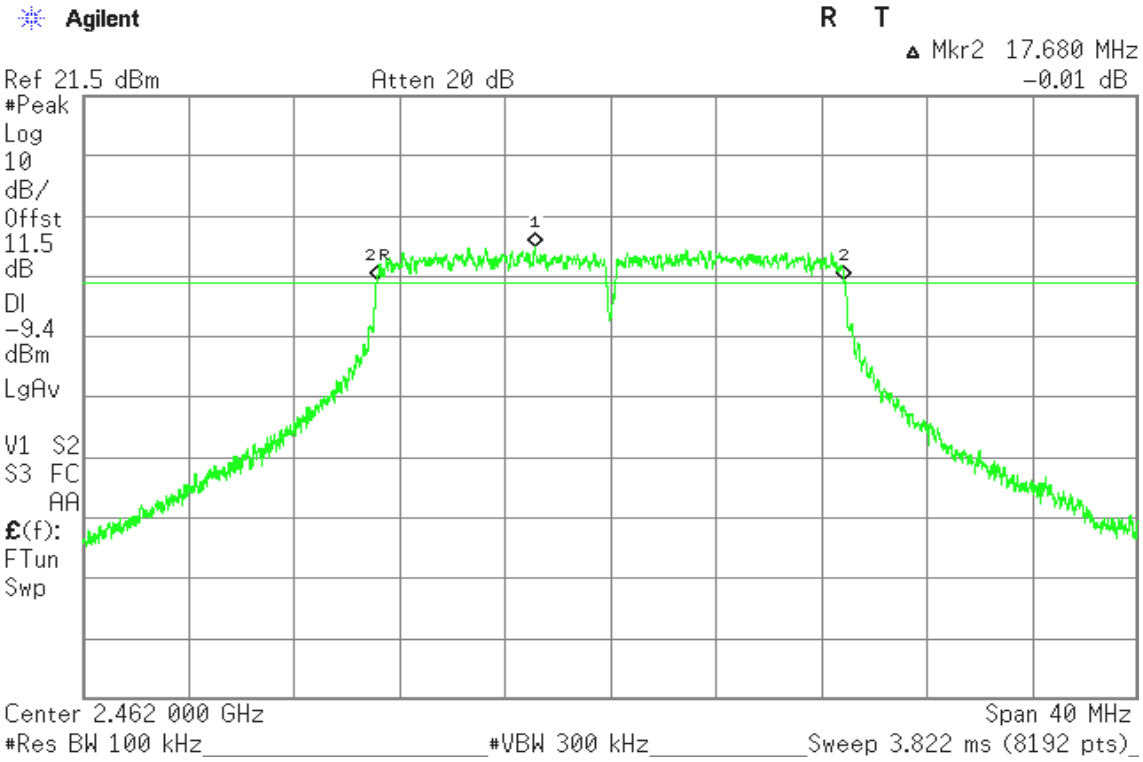


6dB Bandwidth (CH Mid)



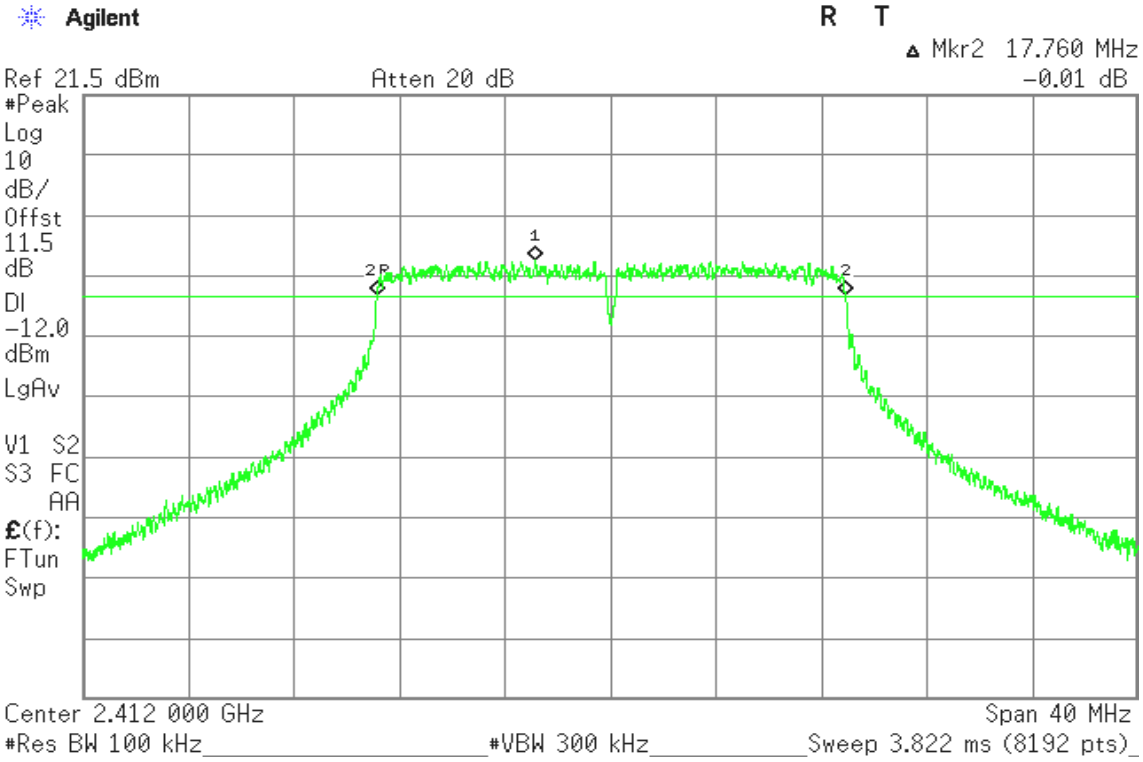
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH High)



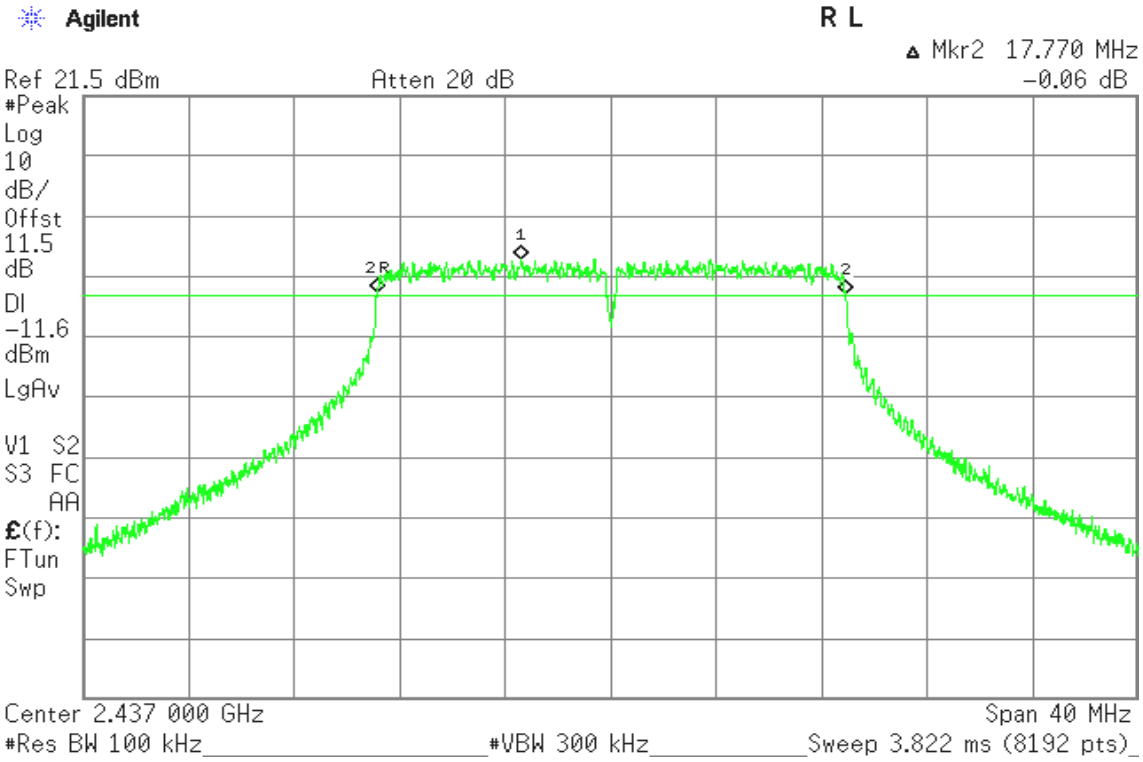
IEEE 802.11n HT20 mode / Chain 1

6dB Bandwidth (CH Low)

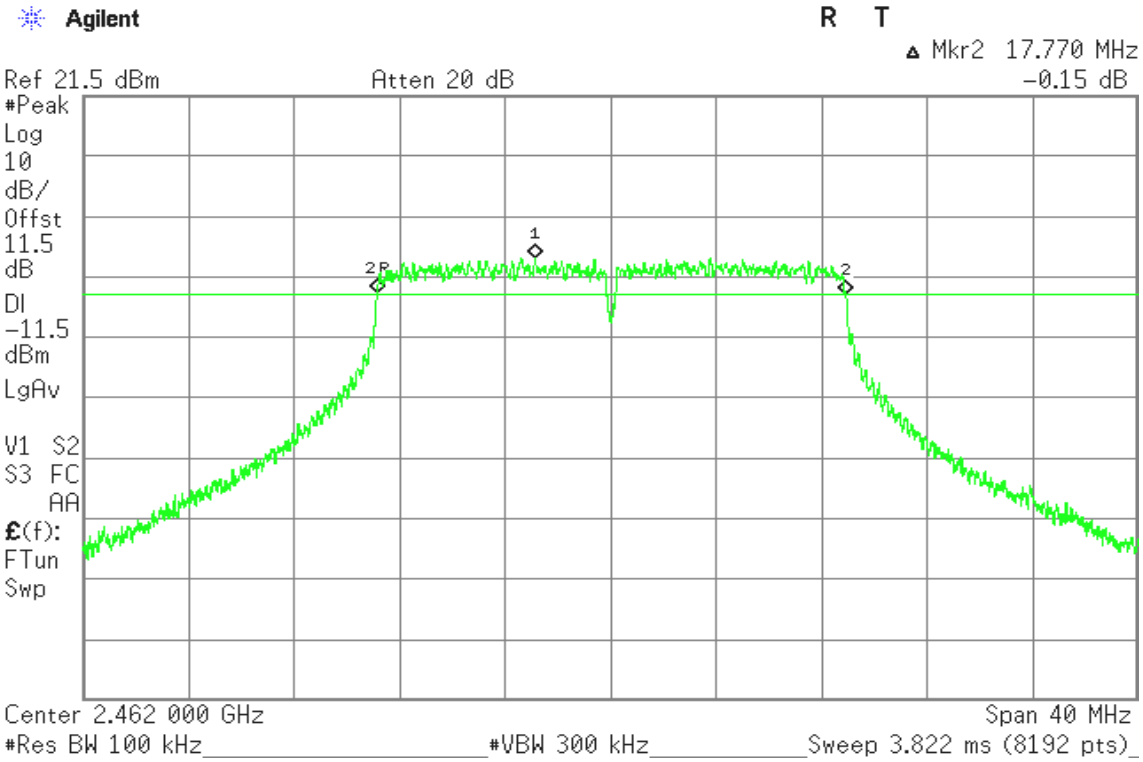


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH Mid)



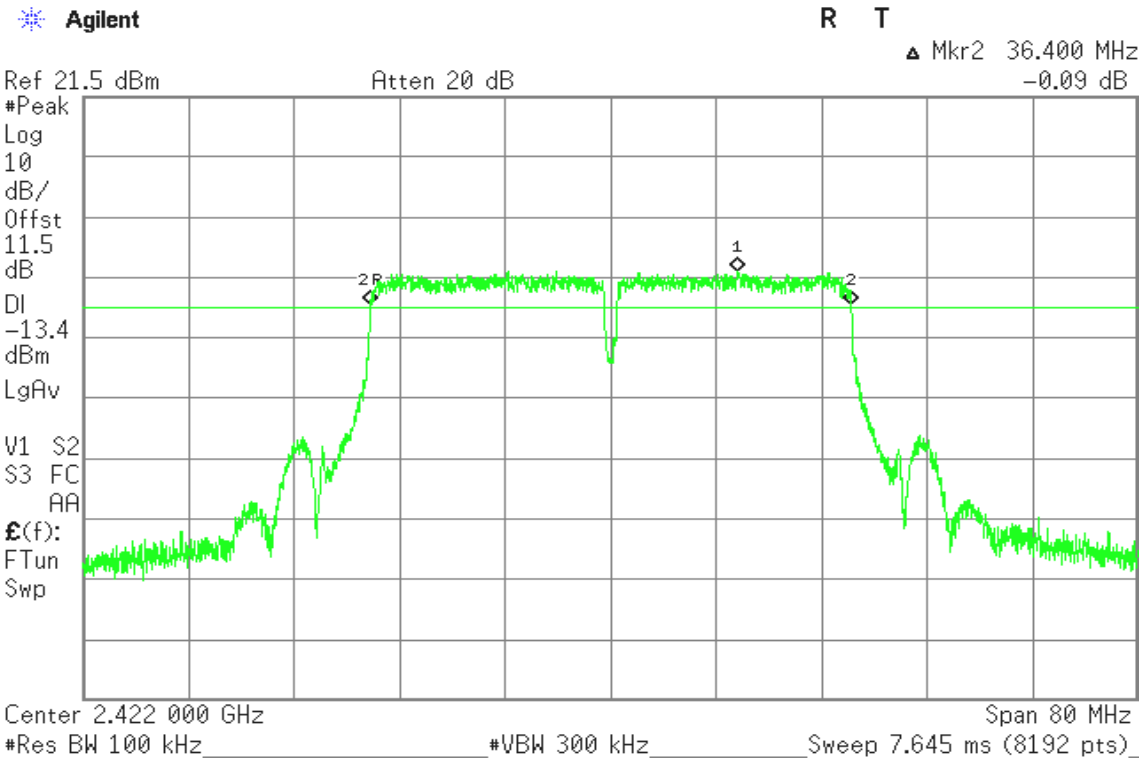
6dB Bandwidth (CH High)



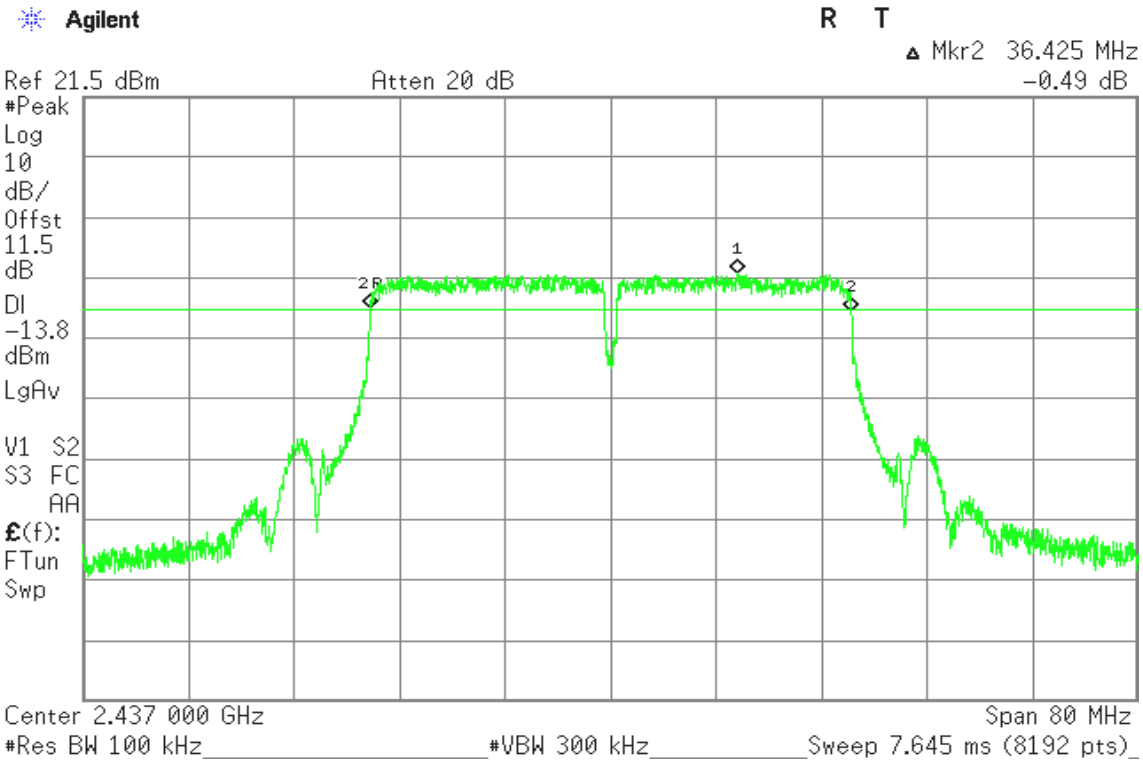
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 mode / Chain 0

6dB Bandwidth (CH Low)

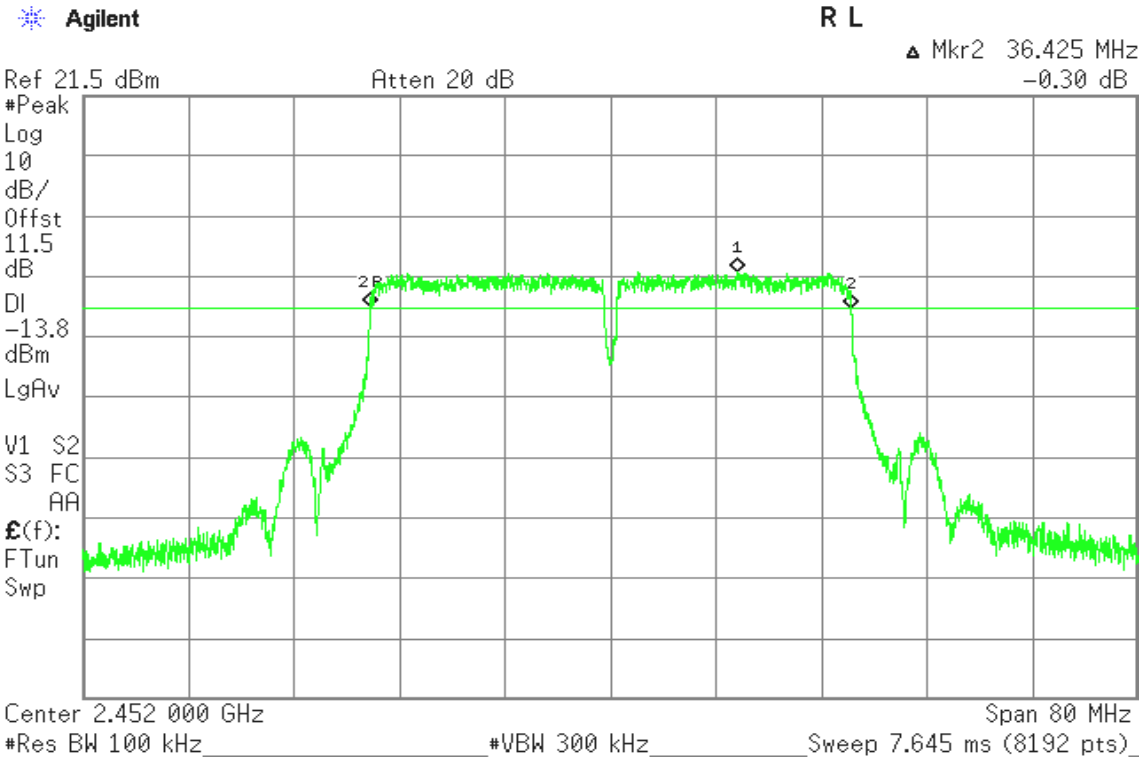


6dB Bandwidth (CH Mid)



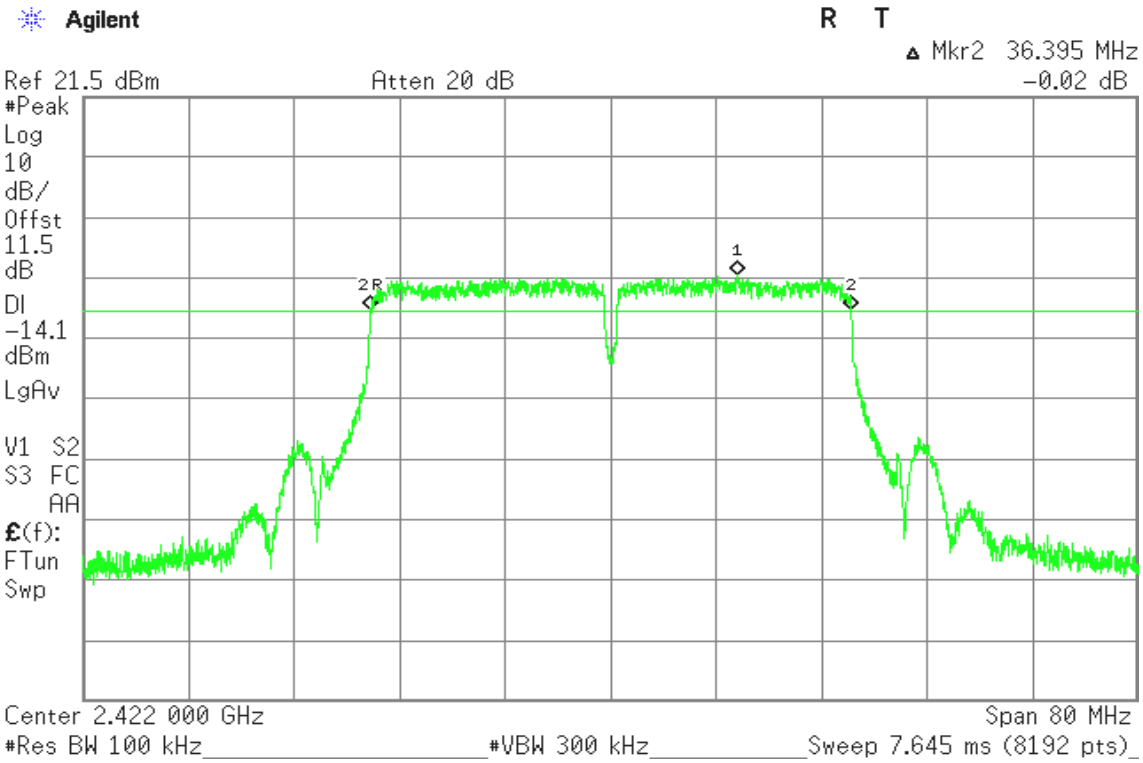
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH High)



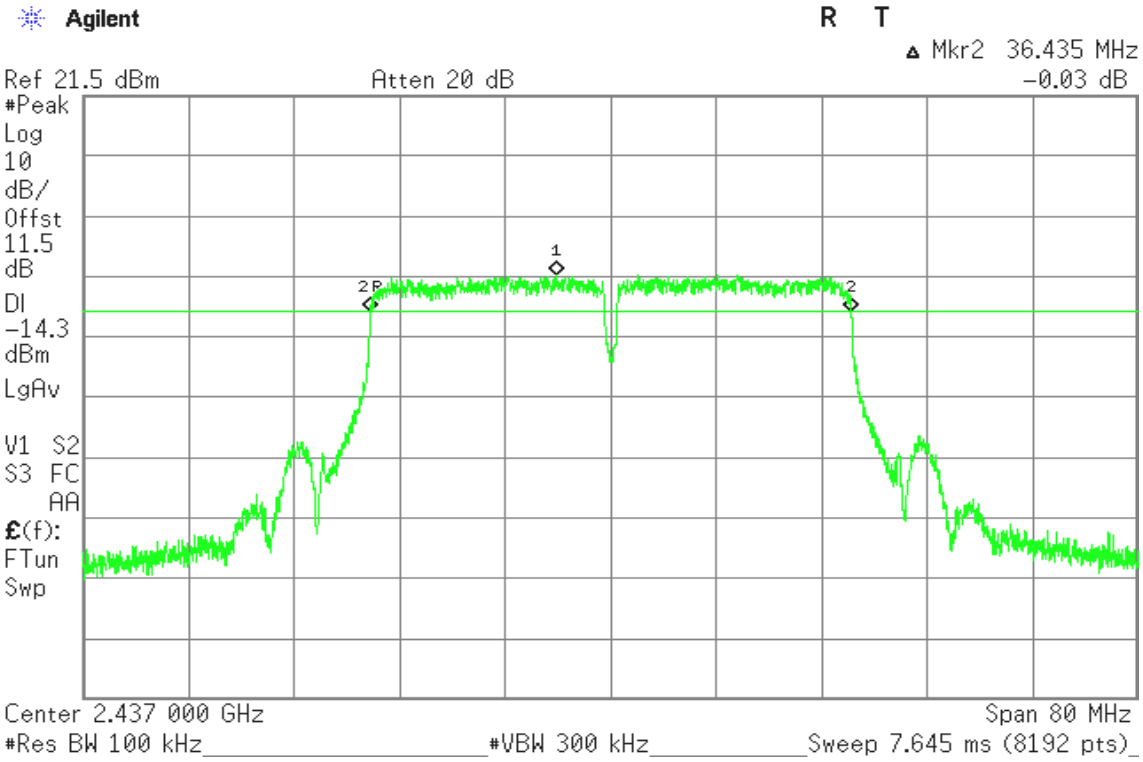
IEEE 802.11n HT40 mode / Chain 1

6dB Bandwidth (CH Low)

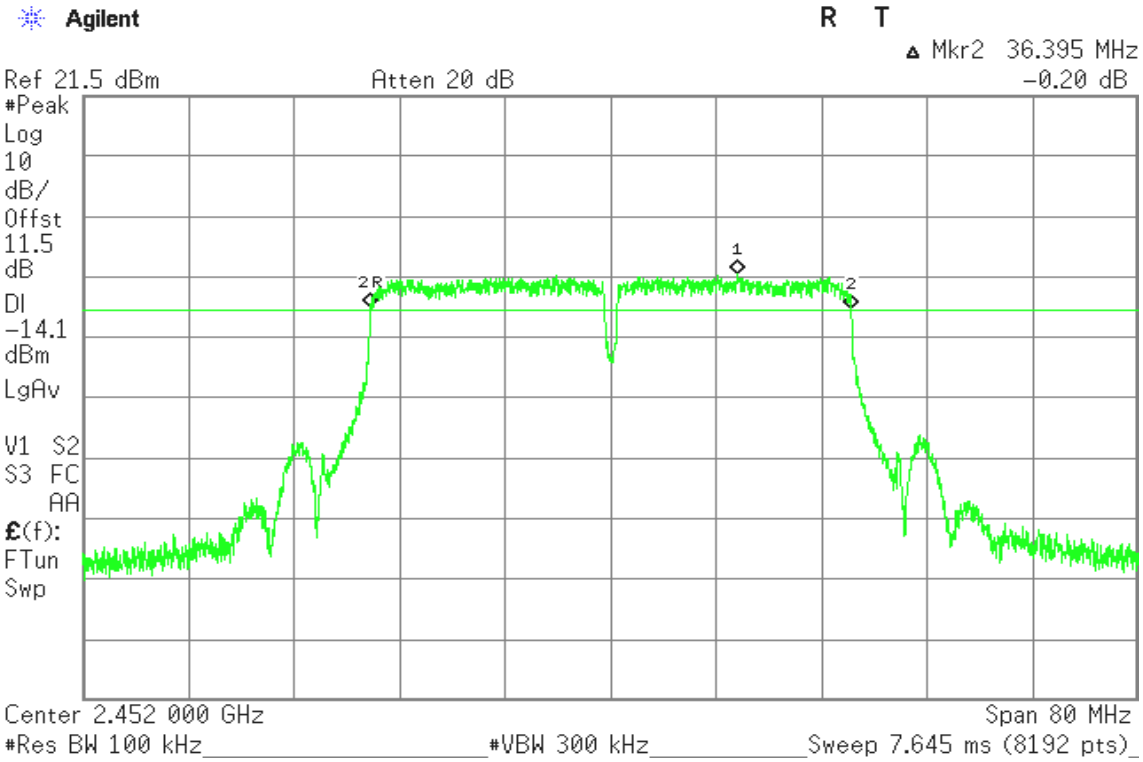


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2 PEAK POWER

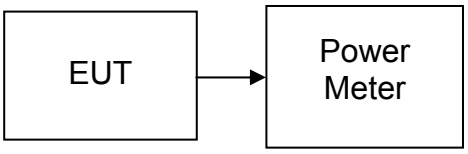
LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.

2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST CONFIGURATION



TEST PROCEDURE

Per KDB 558074 v03r02

The transmitter output is connected to the Power Meter. The Power Meter is set to the peak power detection.

TEST RESULTS

No non-compliance noted

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST DATA

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Test Result
Low	2412	19.30	0.0851	1	PASS
Mid	2437	19.32	0.0855		PASS
High	2462	19.31	0.0853		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Test Result
Low	2412	22.13	0.1633	1	PASS
Mid	2437	22.14	0.1637		PASS
High	2462	22.13	0.1633		PASS

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)			Limit (W)	Result
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total		
Low	2412	17.86	17.15	20.53	0.0611	0.0519	0.1130	0.5943	PASS
Mid	2437	17.97	17.46	20.73	0.0627	0.0557	0.1184		PASS
High	2462	18.12	17.06	20.63	0.0649	0.0508	0.1157		PASS

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)			Limit (W)	Result
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total		
Low	2422	18.32	17.43	20.91	0.0679	0.0553	0.1233	0.5943	PASS
Mid	2437	18.40	17.73	21.09	0.0692	0.0593	0.1285		PASS
High	2452	18.57	18.11	21.36	0.0719	0.0647	0.1367		PASS

Remark:

1. Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000) + Chain 1 (10^(Output Power /10)/1000))
2. The maximum antenna gain is 8.26dBi; therefore the reduction due to antenna gain is 2.26dBi, so the limit is 27.74dBm(0.5943W).

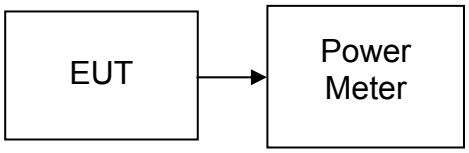
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.3 AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST CONFIGURATION



TEST PROCEDURE

Per KDB 558074 v03r02

The transmitter output is connected to the Power Meter. The Power Meter is set to the average power detection.

TEST RESULTS

No non-compliance noted

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST DATA

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)
Low	2412	17.31	0.0538
Mid	2437	17.35	0.0543
High	2462	17.32	0.0540

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)
Low	2412	15.12	0.0325
Mid	2437	15.16	0.0328
High	2462	15.15	0.0327

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
Low	2412	10.56	9.78	13.20	0.0114	0.0095	0.0209
Mid	2437	10.57	10.05	13.33	0.0114	0.0101	0.0215
High	2462	10.43	9.73	13.10	0.0110	0.0094	0.0204

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
Low	2412	10.80	9.97	13.42	0.0120	0.0099	0.0220
Mid	2437	10.85	10.21	13.55	0.0122	0.0105	0.0227
High	2462	10.86	10.38	13.64	0.0122	0.0109	0.0231

Remark: Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000) + Chain 1 (10^(Output Power /10)/1000))

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

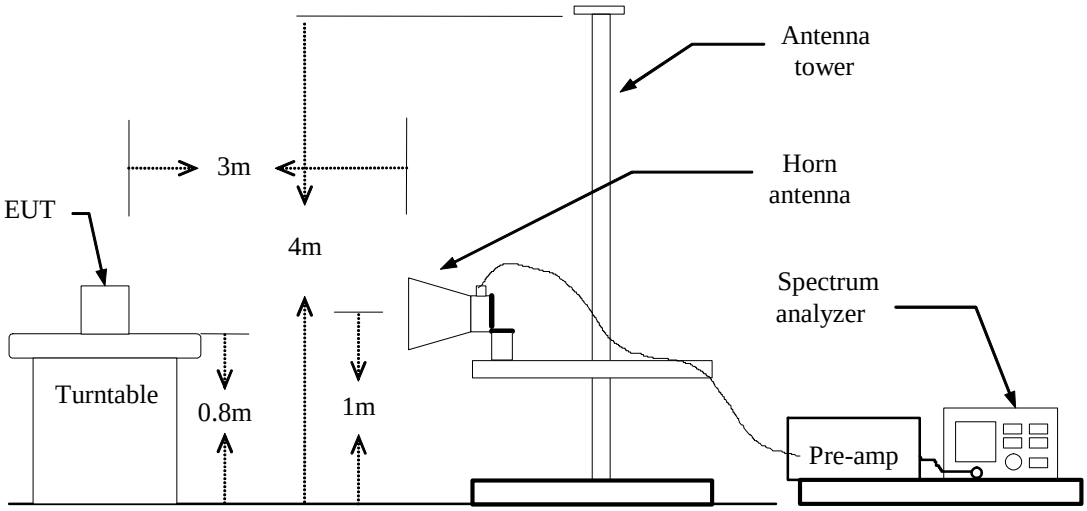
7.4 BAND EDGES MEASUREMENT

LIMIT

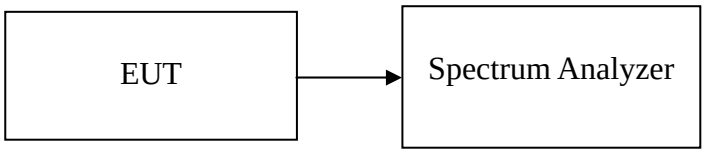
According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiatedmeasurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a)(see Section15.205(c)).

Test Configuration

For Radiated



For Conducted



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
   (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=300Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

For Conducted

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

TEST RESULTS

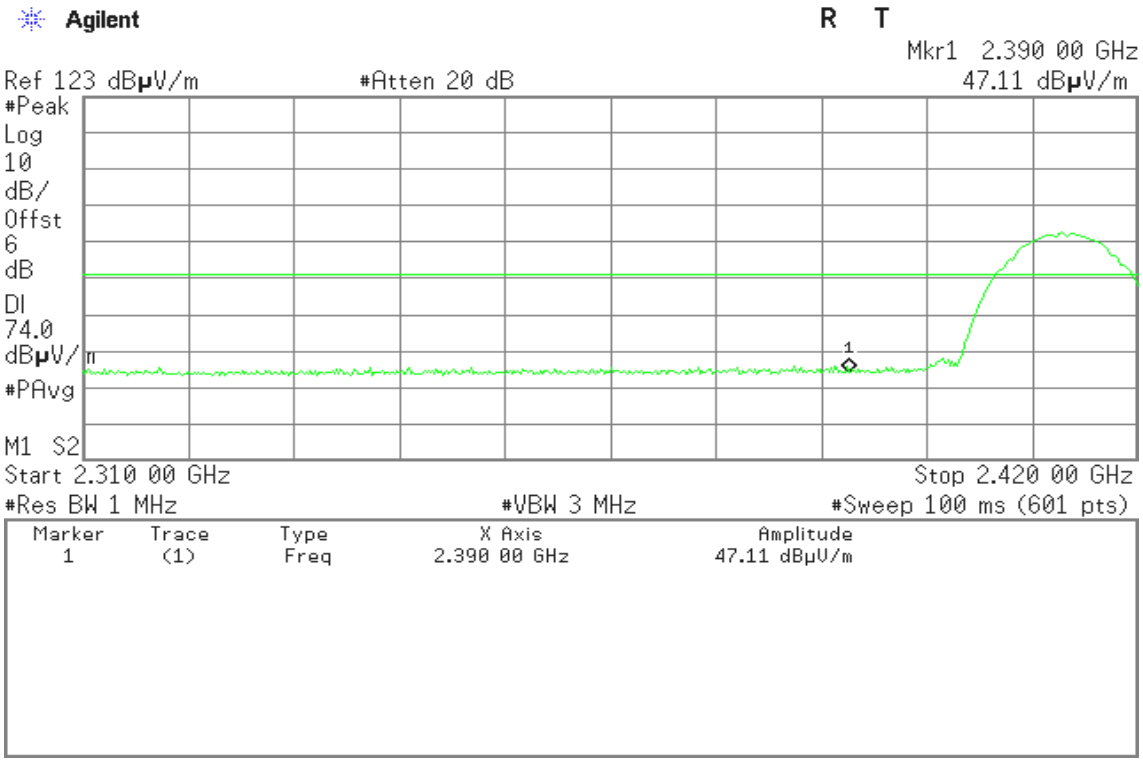
Refer to attach spectrum analyzer data chart.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

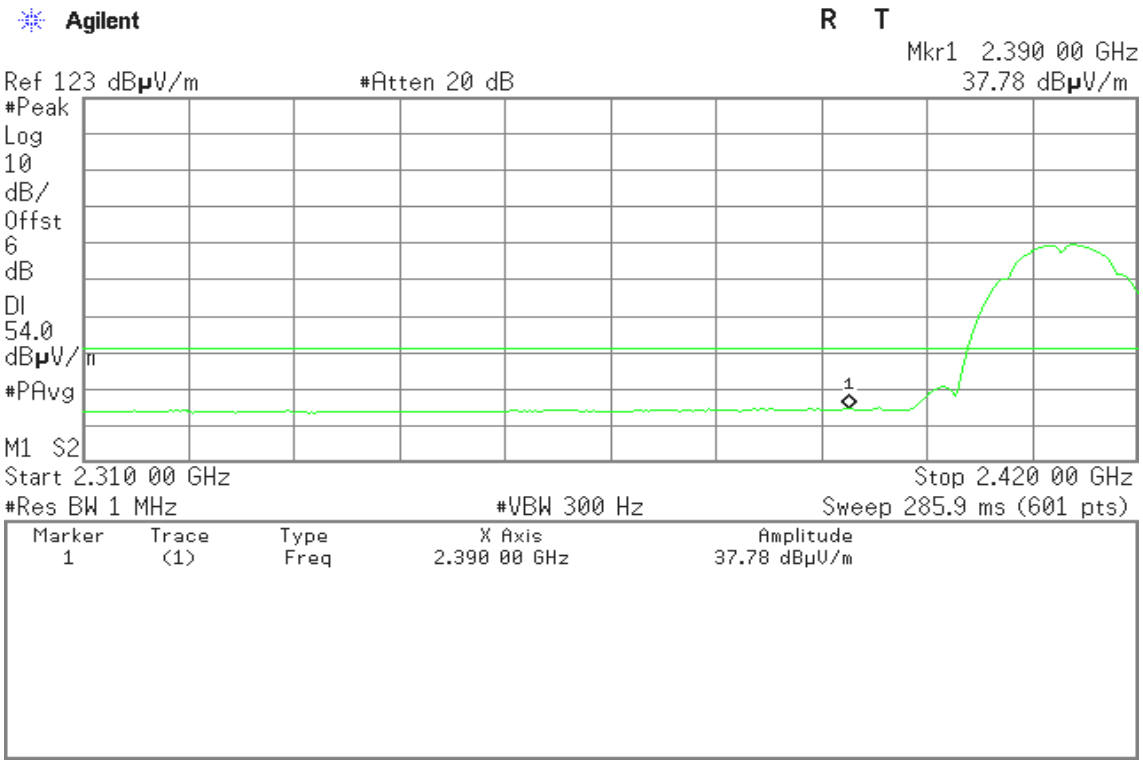
Test Plot

Band Edges (IEEE 802.11b mode/ CH Low)

Detector mode: Peak **Polarity: Vertical**

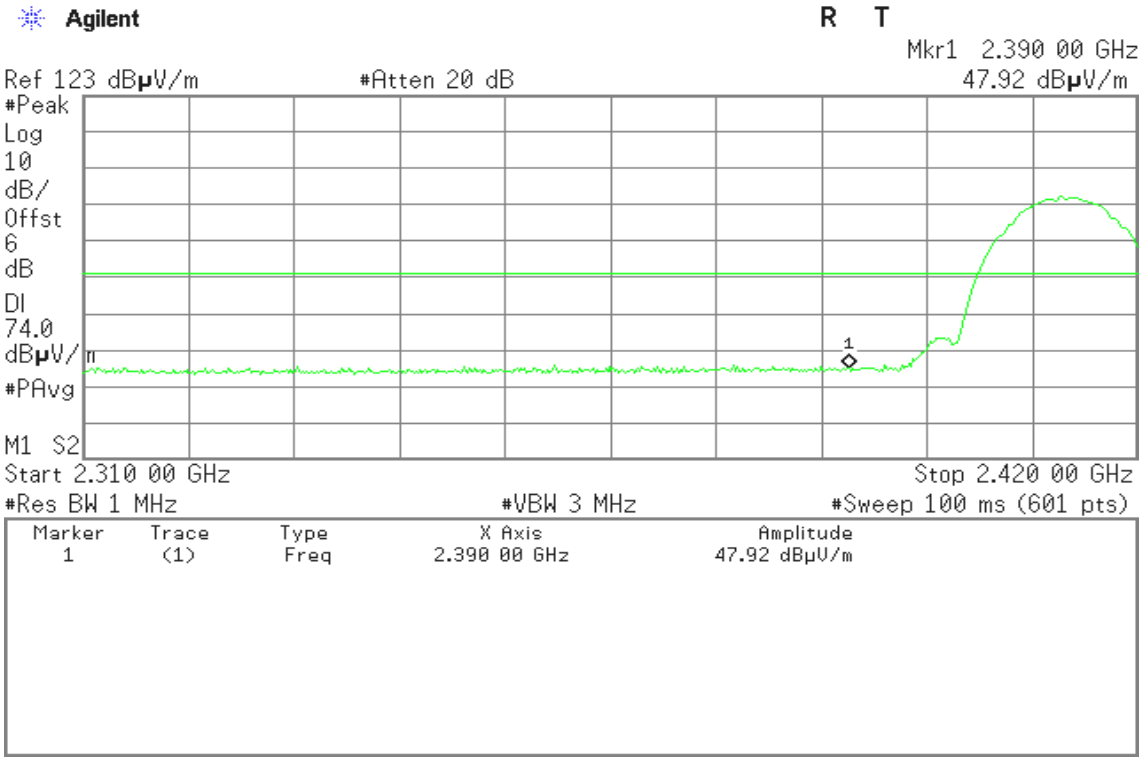


Detector mode: Average **Polarity: Vertical**

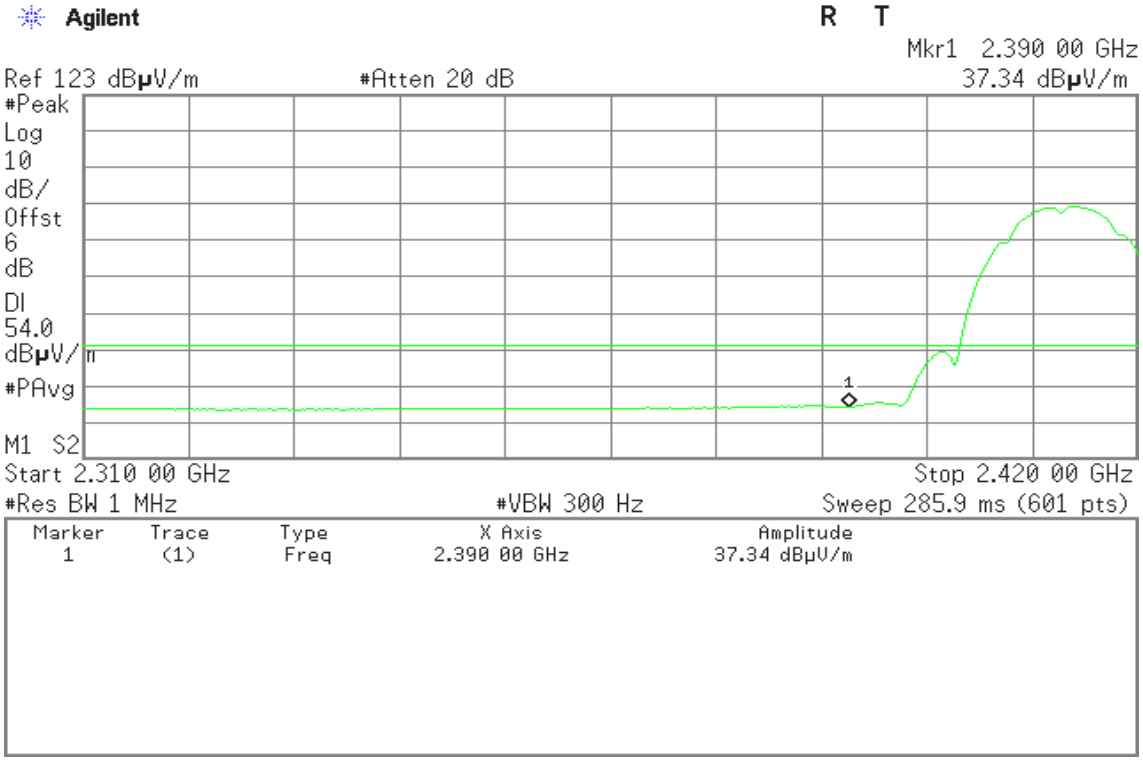


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



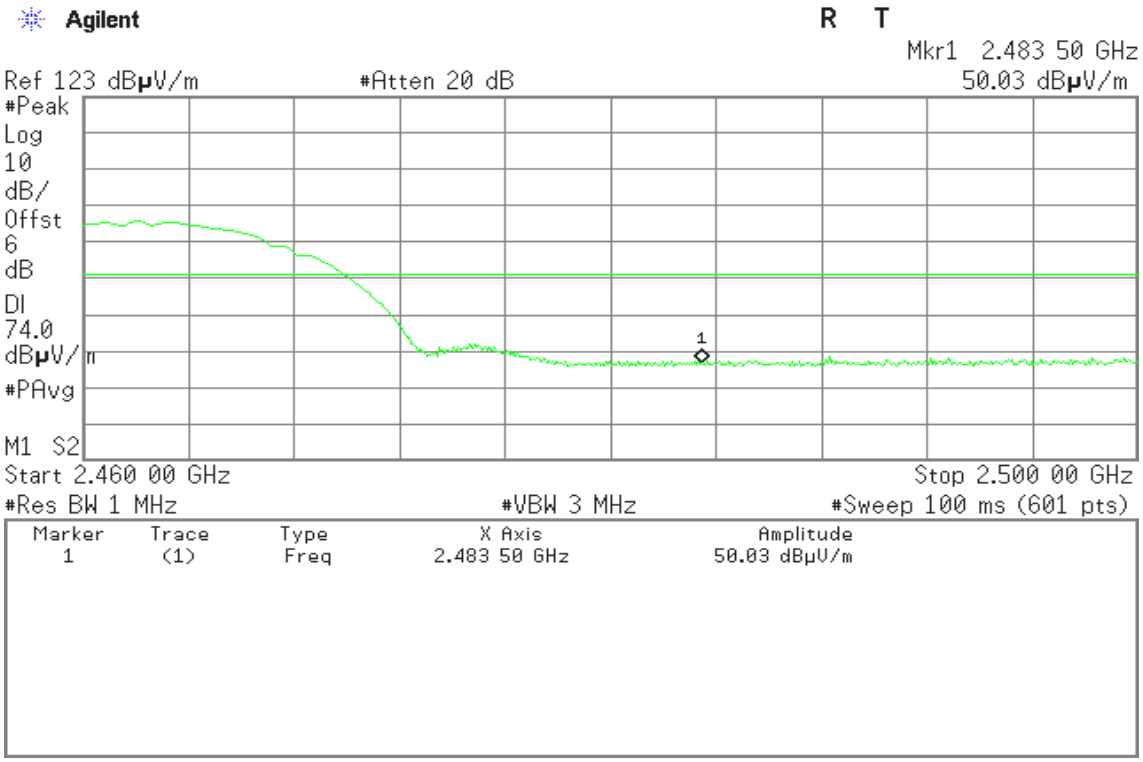
Detector mode: Average **Polarity: Horizontal**



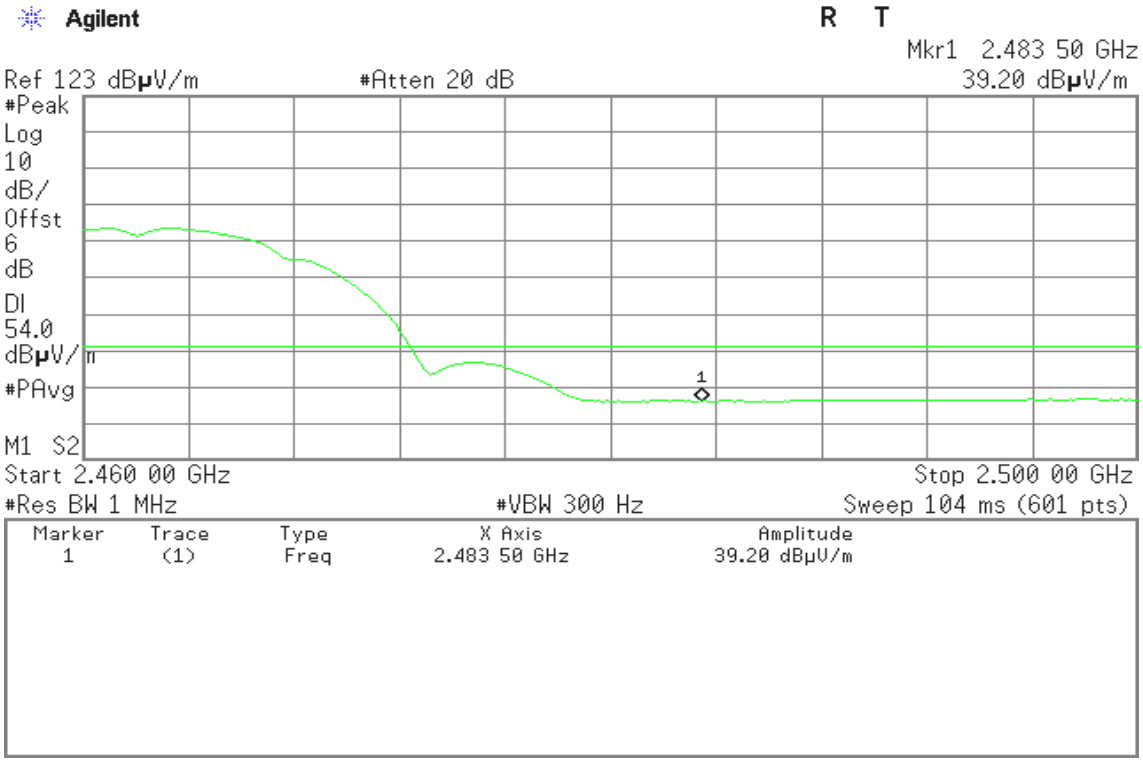
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11b mode / CH High)

Detector mode: Peak **Polarity: Vertical**

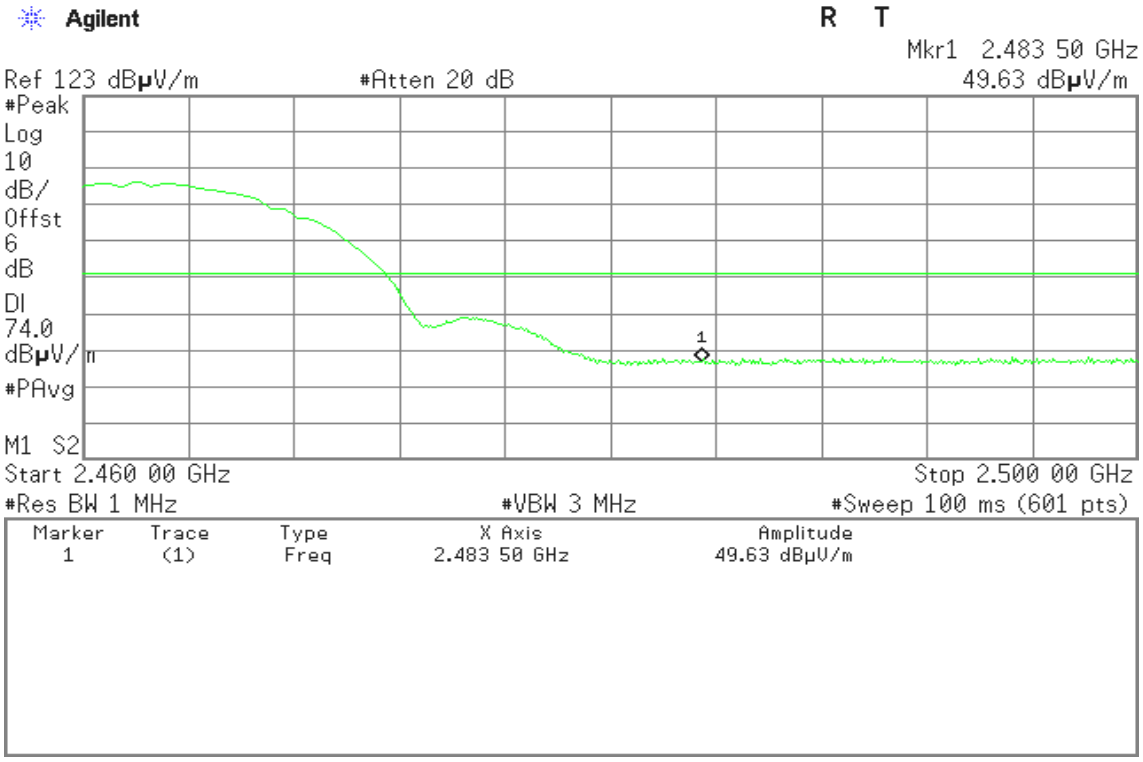


Detector mode: Average **Polarity: Vertical**

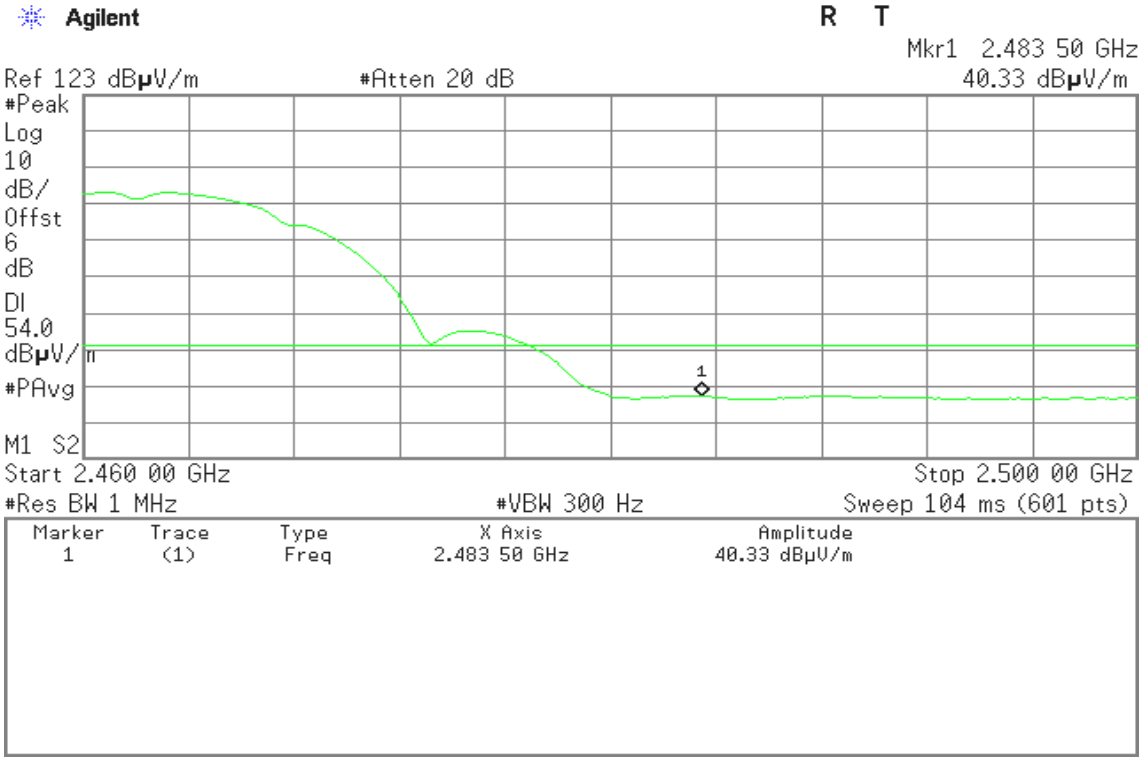


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



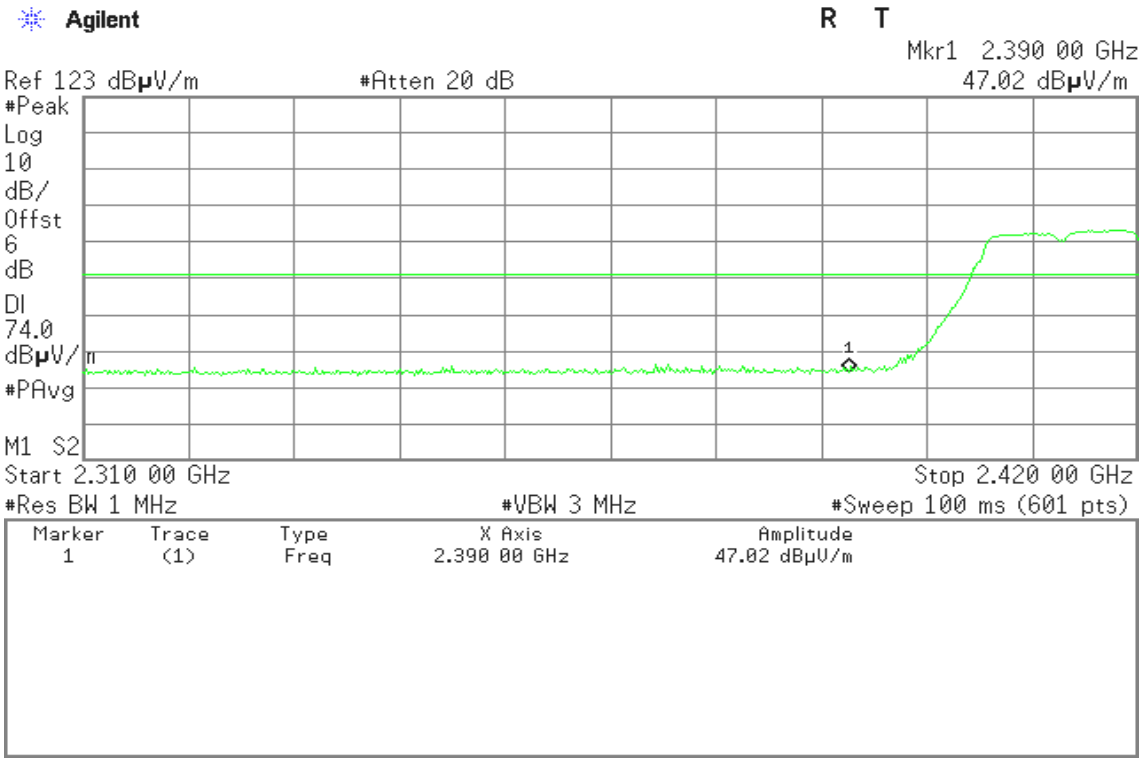
Detector mode: Average **Polarity: Horizontal**



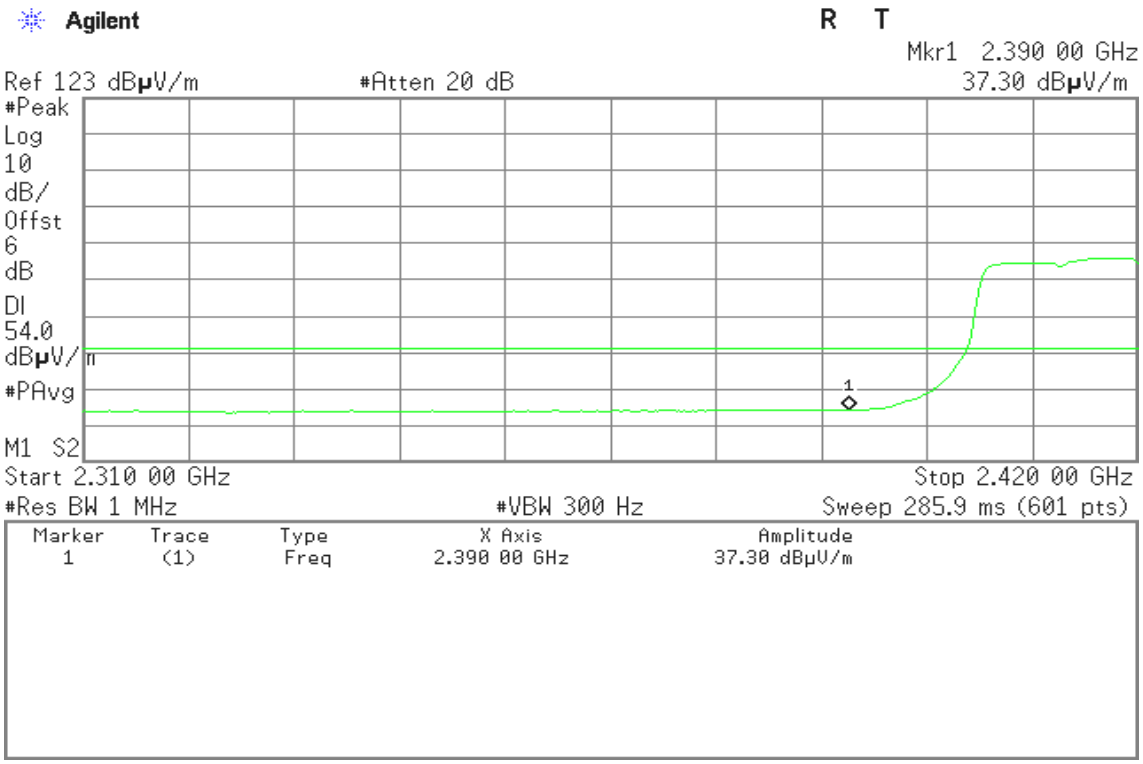
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11g mode / CH Low)

Detector mode: Peak **Polarity: Vertical**

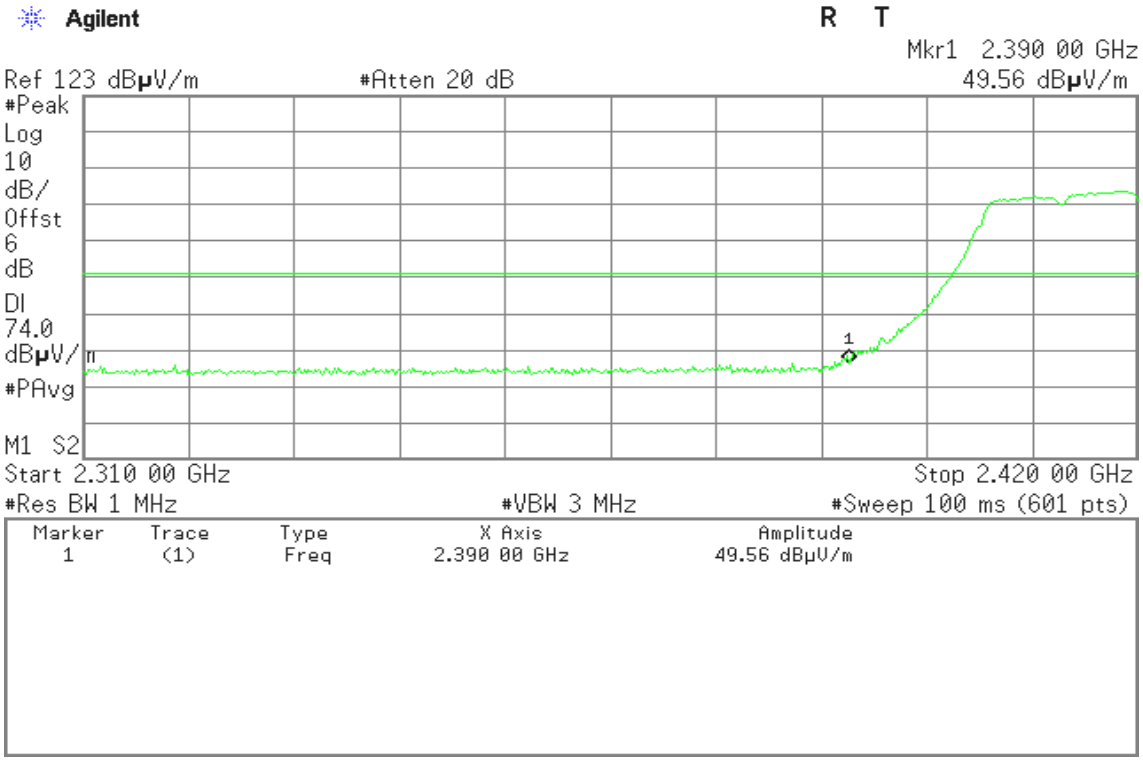


Detector mode: Average **Polarity: Vertical**

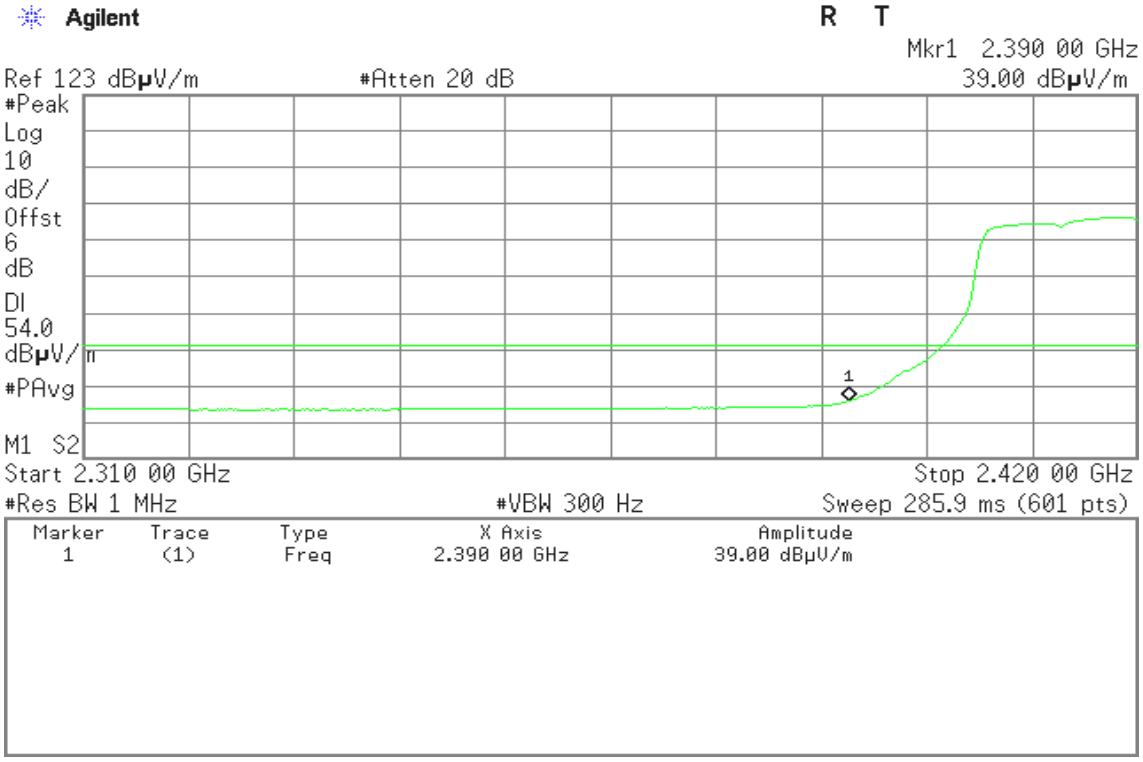


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



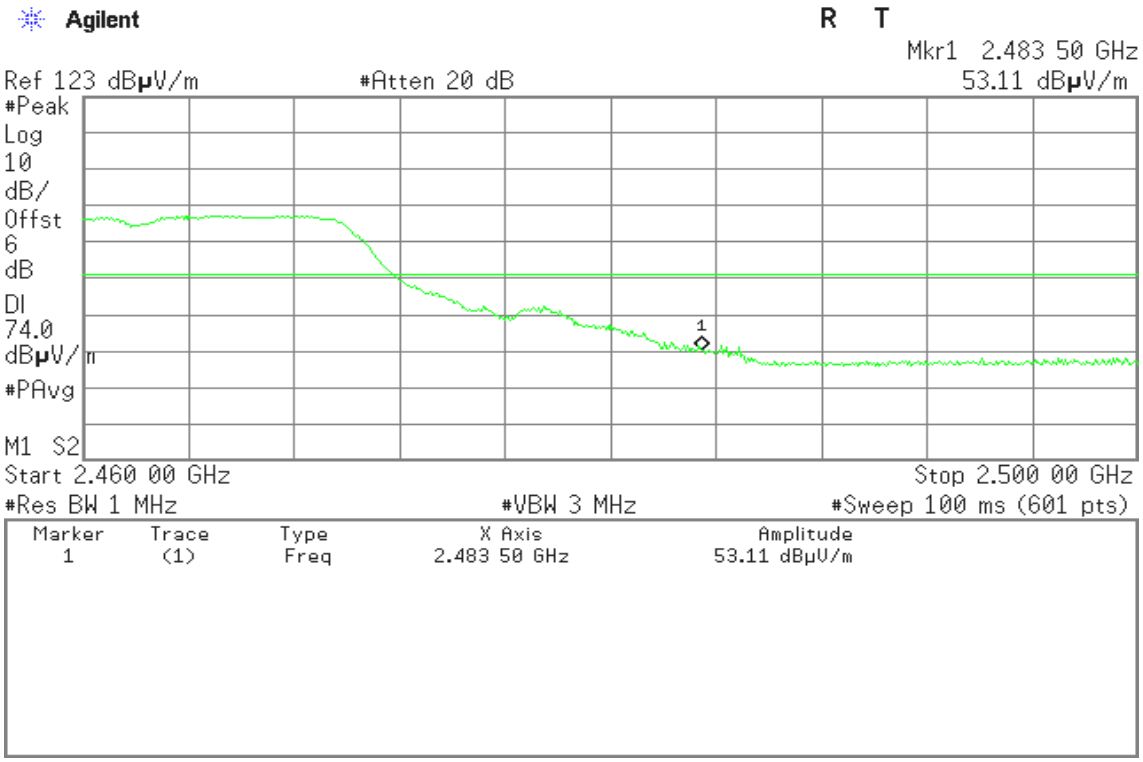
Detector mode: Average **Polarity: Horizontal**



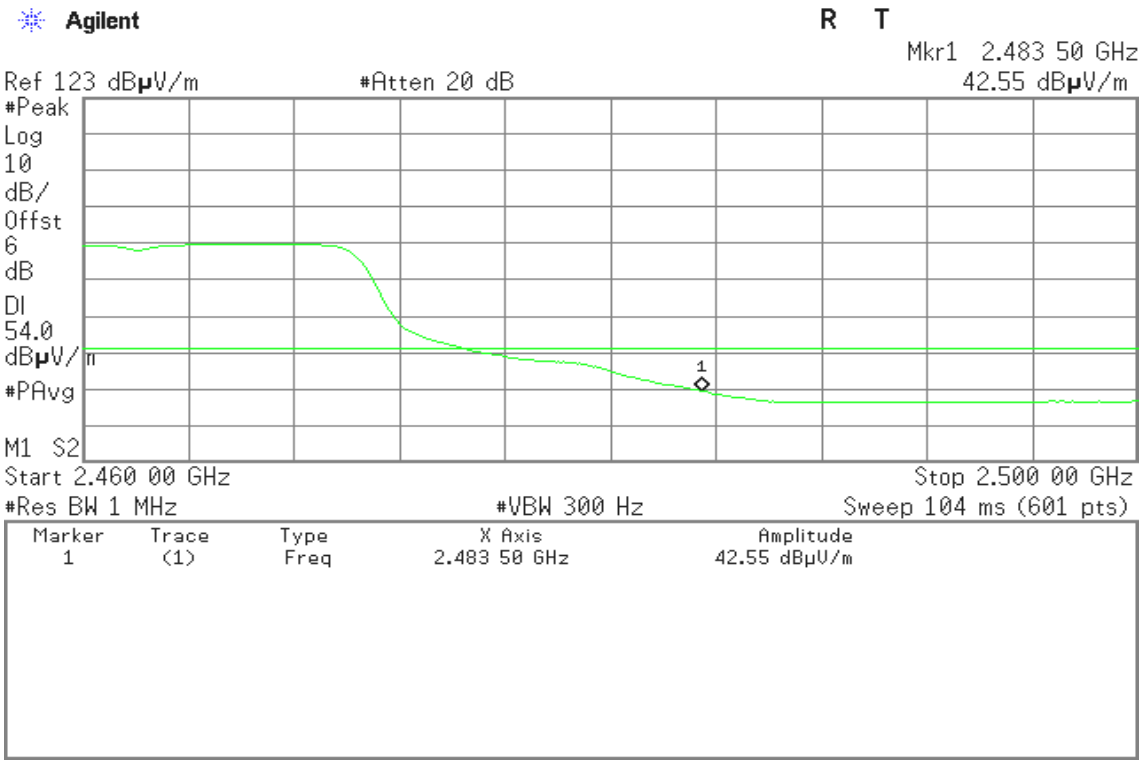
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11g mode / CH High)

Detector mode: Peak **Polarity: Vertical**

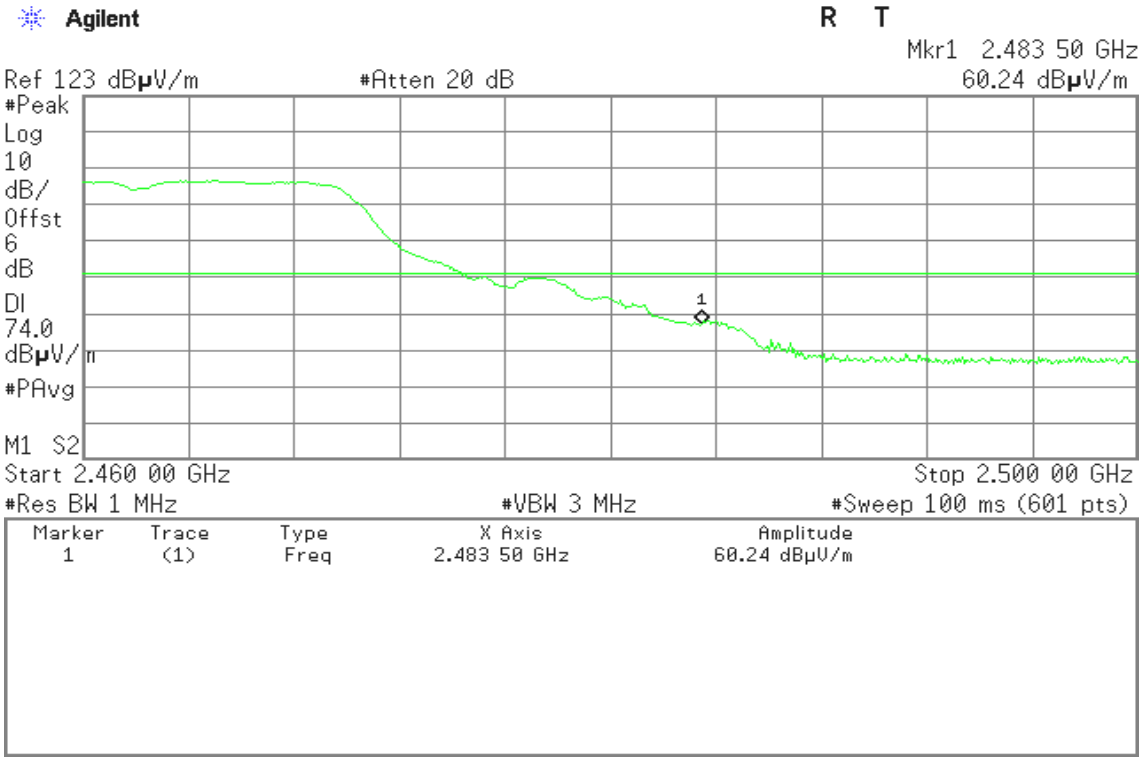


Detector mode: Average **Polarity: Vertical**

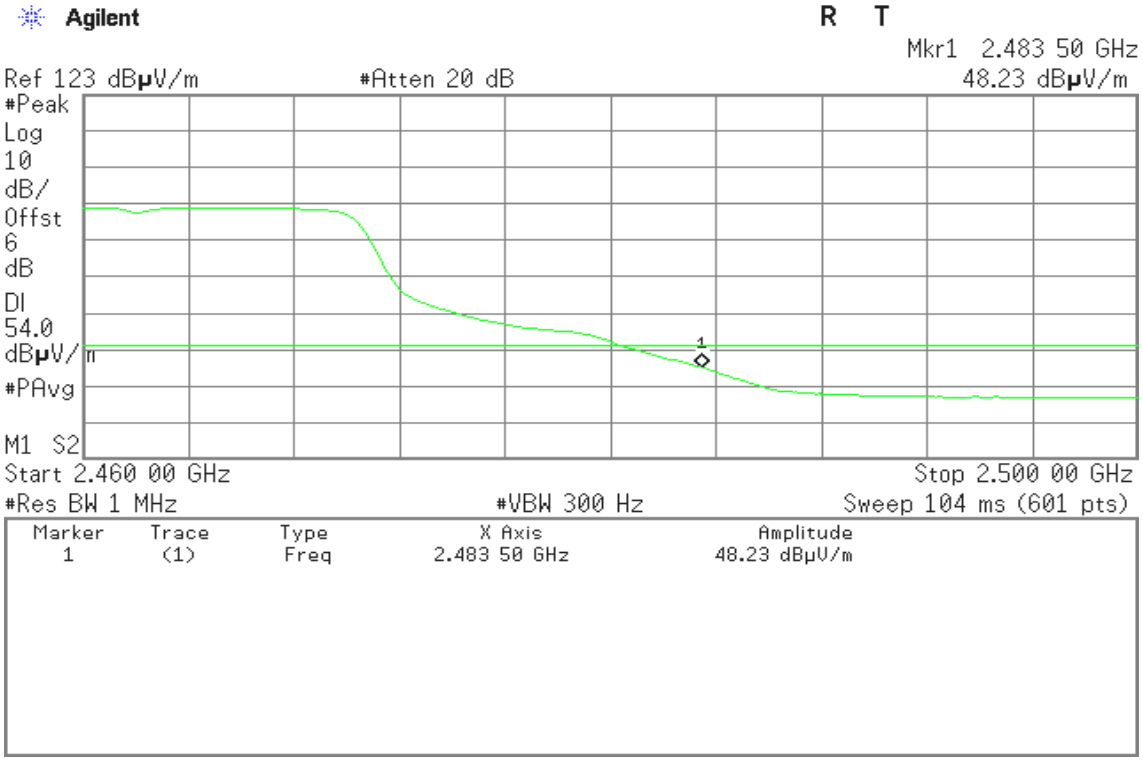


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



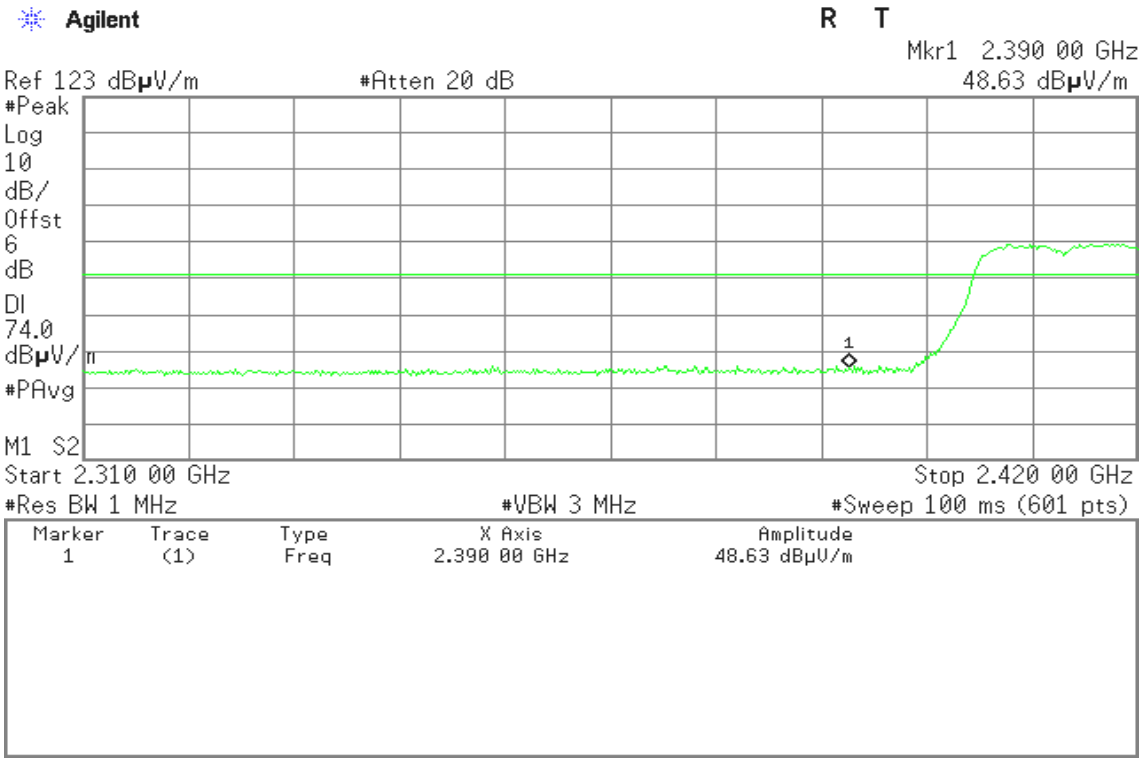
Detector mode: Average **Polarity: Horizontal**



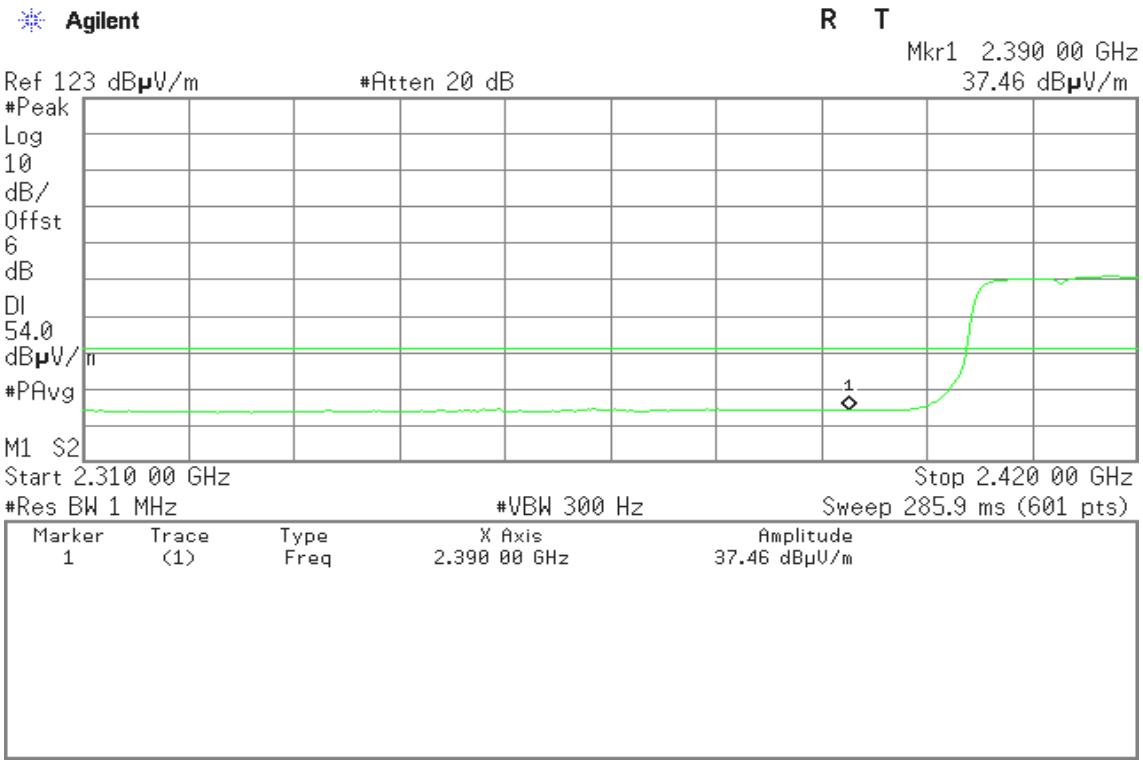
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11n HT20 mode / CH Low)

Detector mode: Peak **Polarity: Vertical**

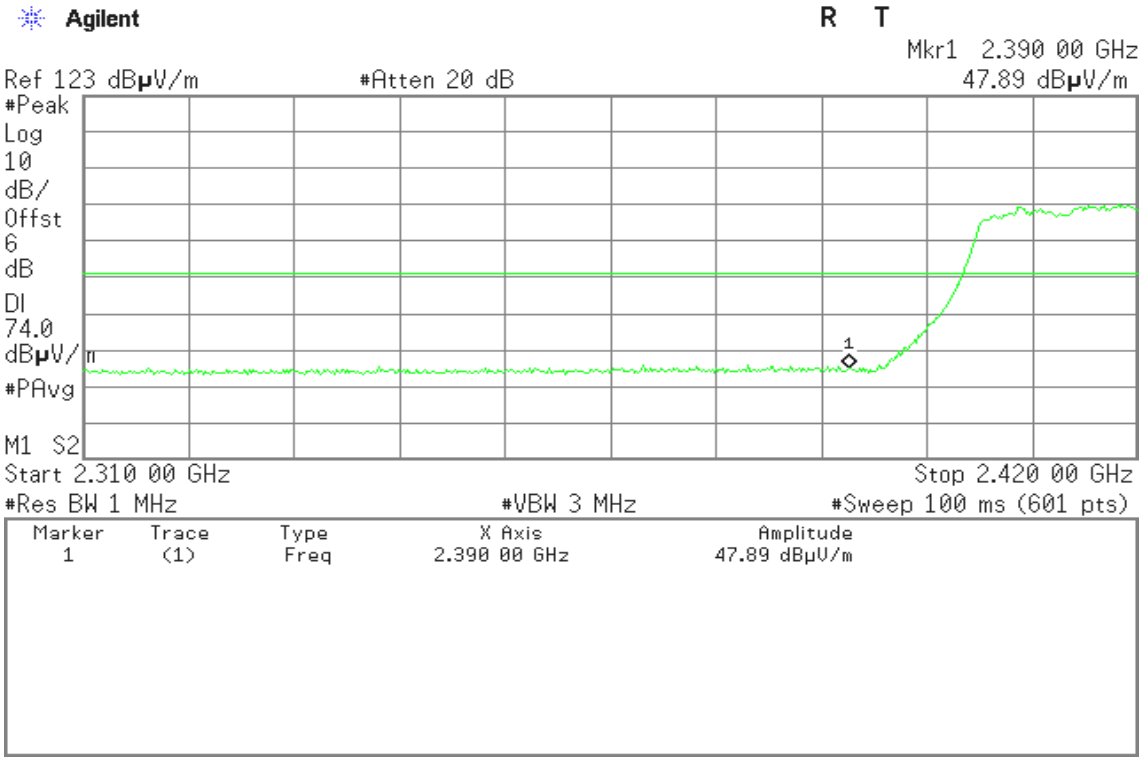


Detector mode: Average **Polarity: Vertical**

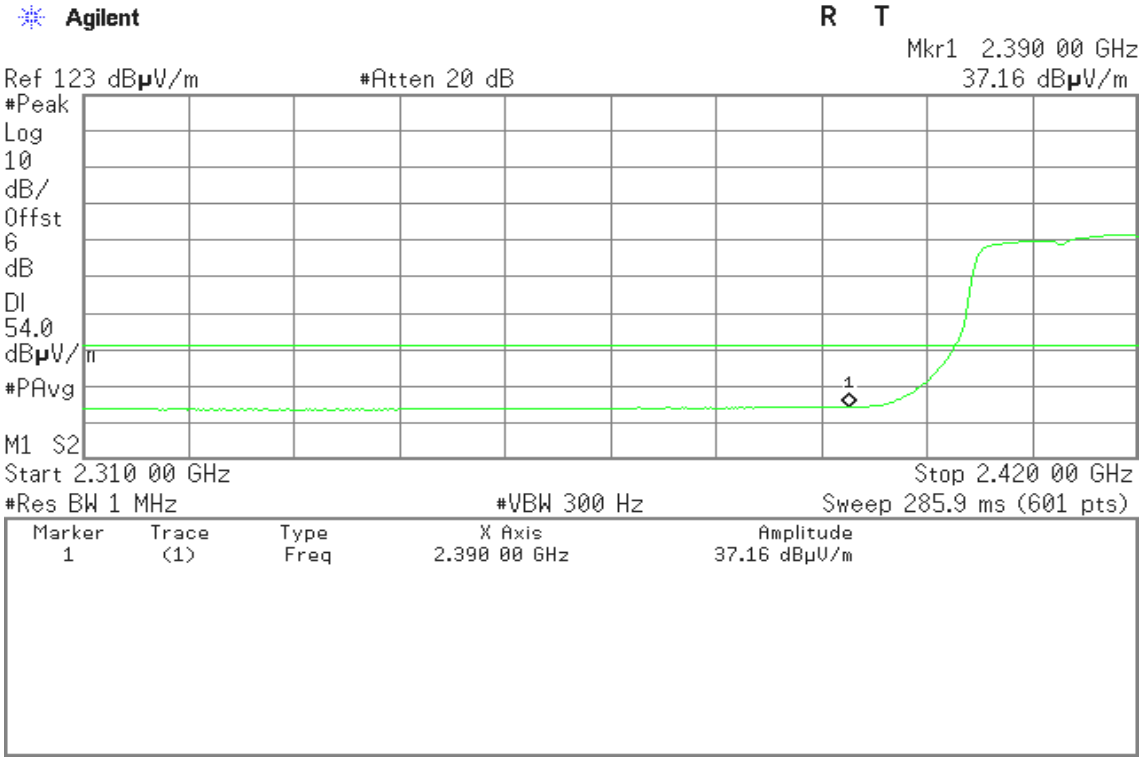


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



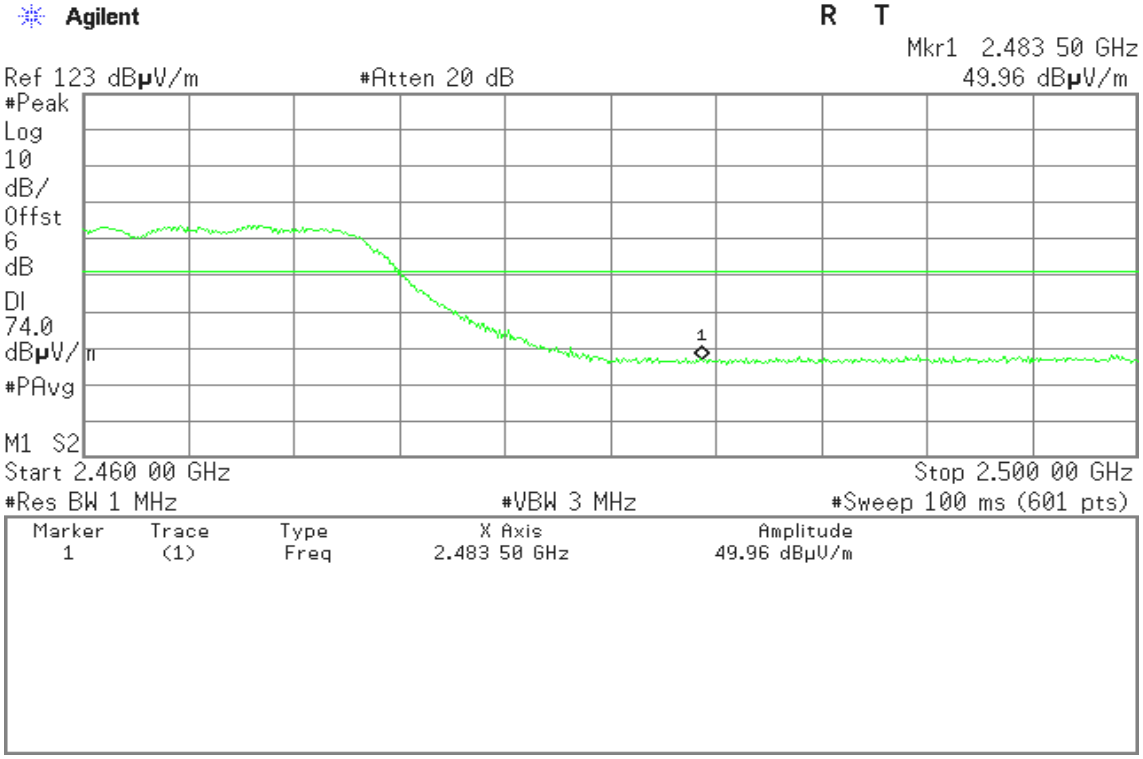
Detector mode: Average **Polarity: Horizontal**



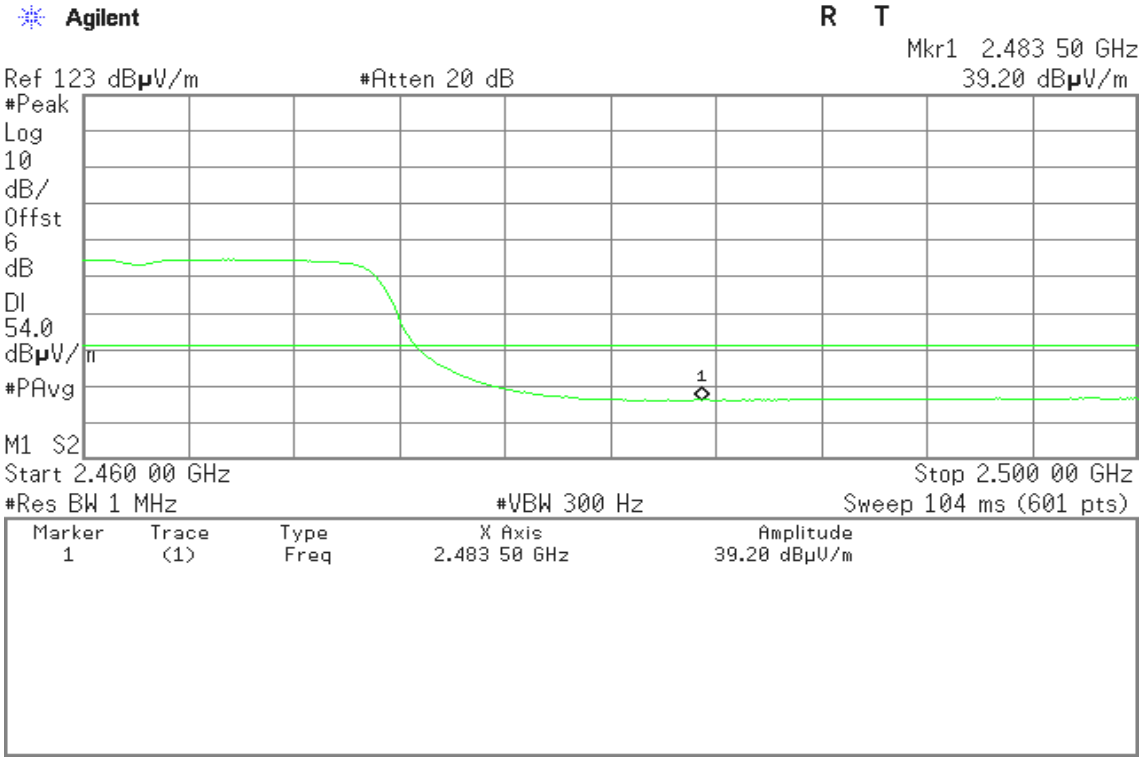
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11n HT20 mode / CH High)

Detector mode: Peak **Polarity: Vertical**

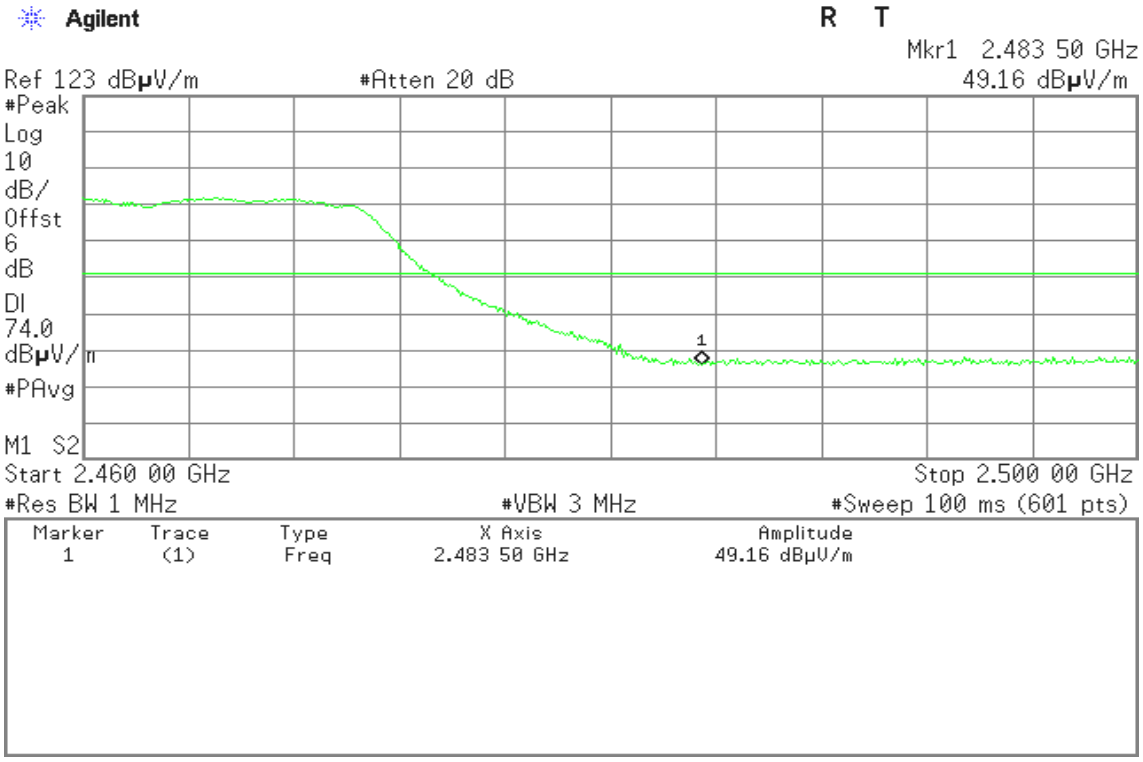


Detector mode: Average **Polarity: Vertical**

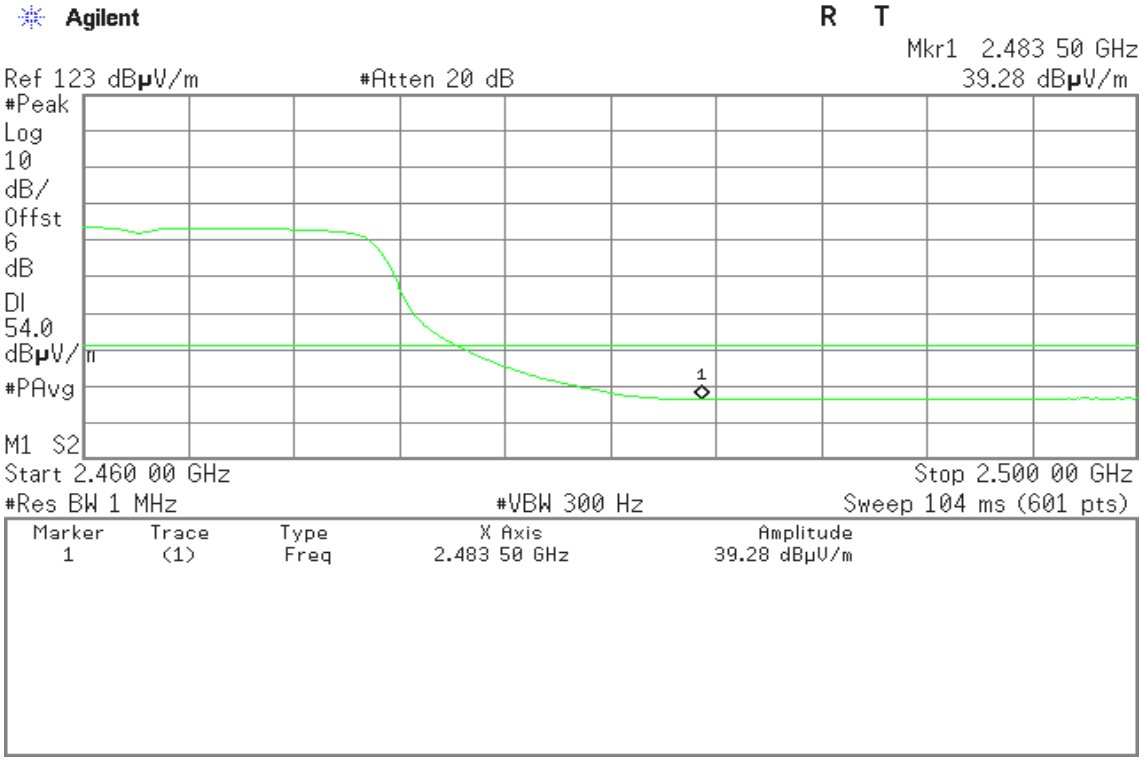


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



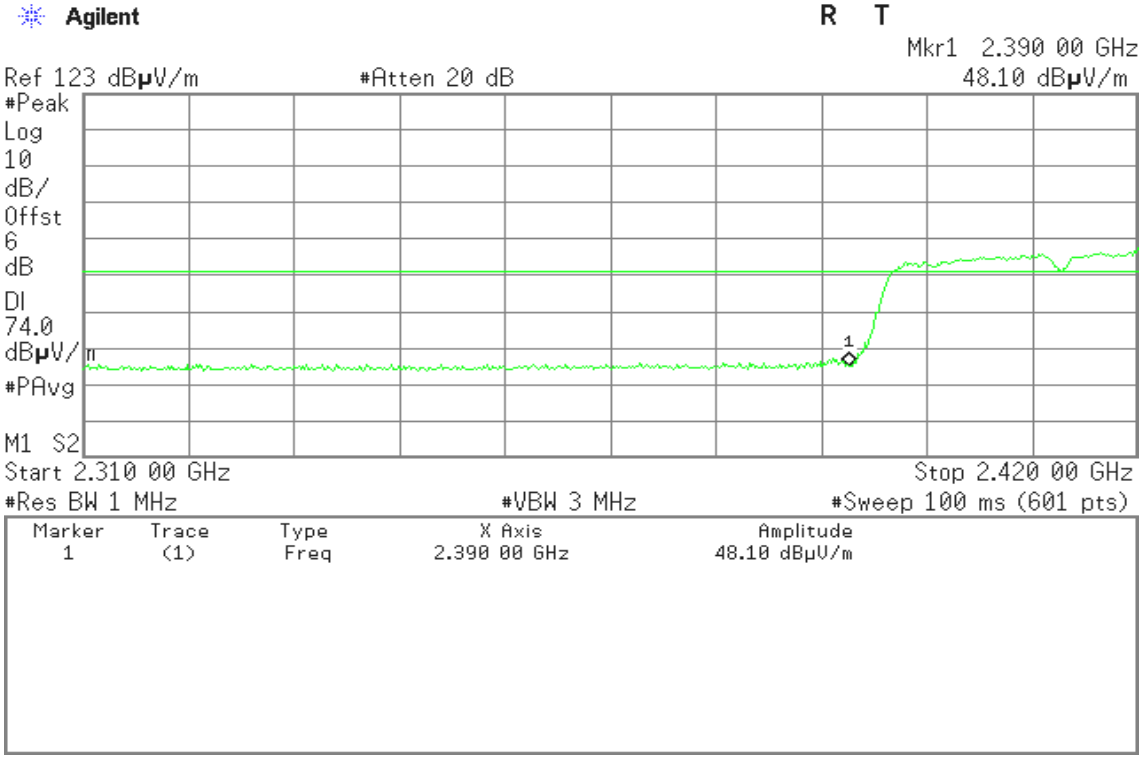
Detector mode: Average **Polarity: Horizontal**



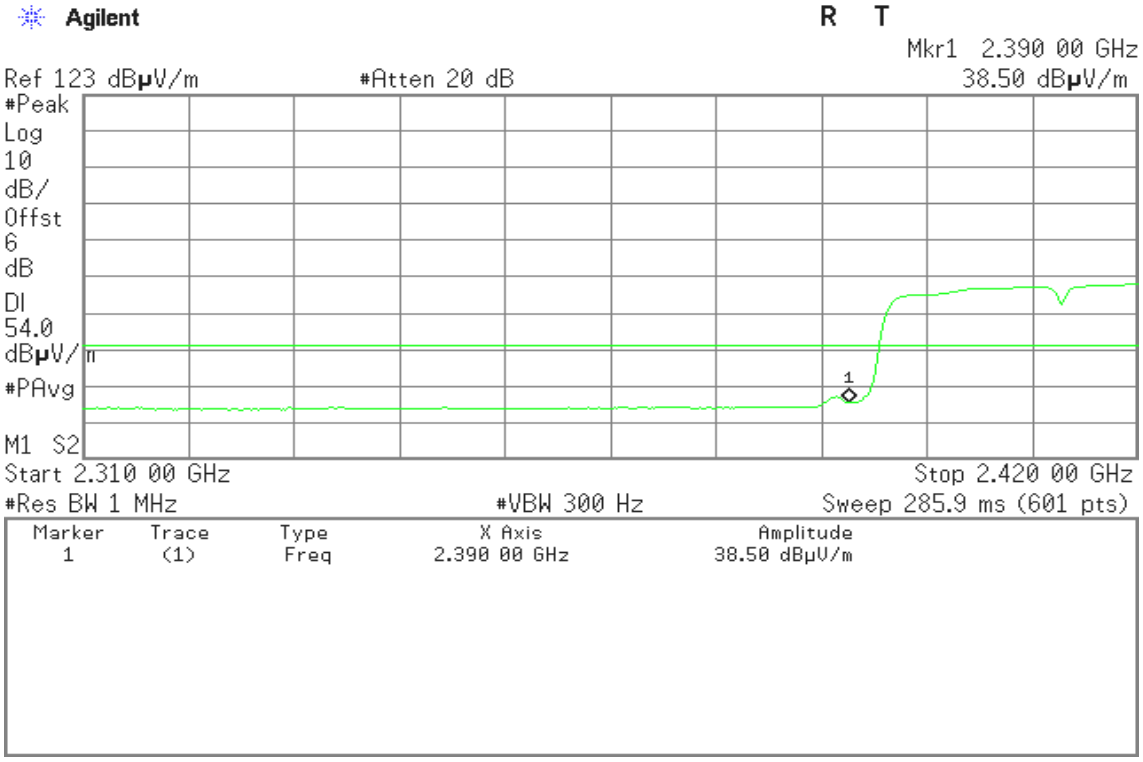
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11n HT40 mode / CH Low)

Detector mode: Peak **Polarity: Vertical**

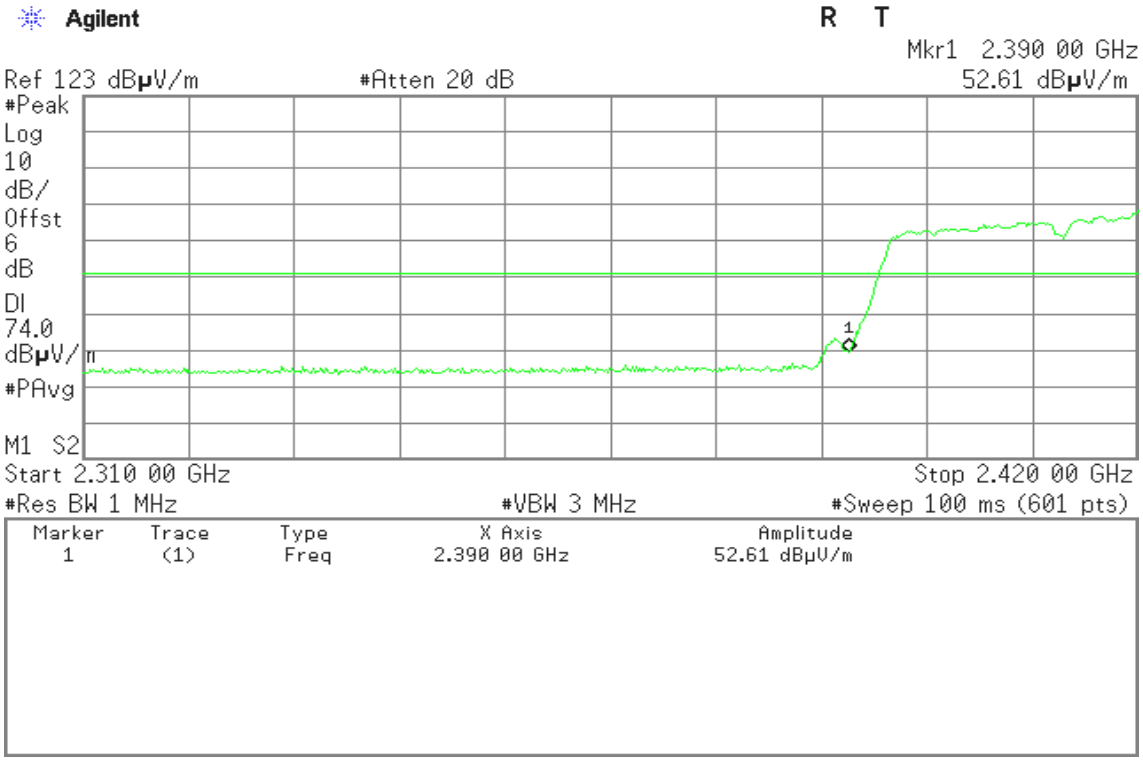


Detector mode: Average **Polarity: Vertical**

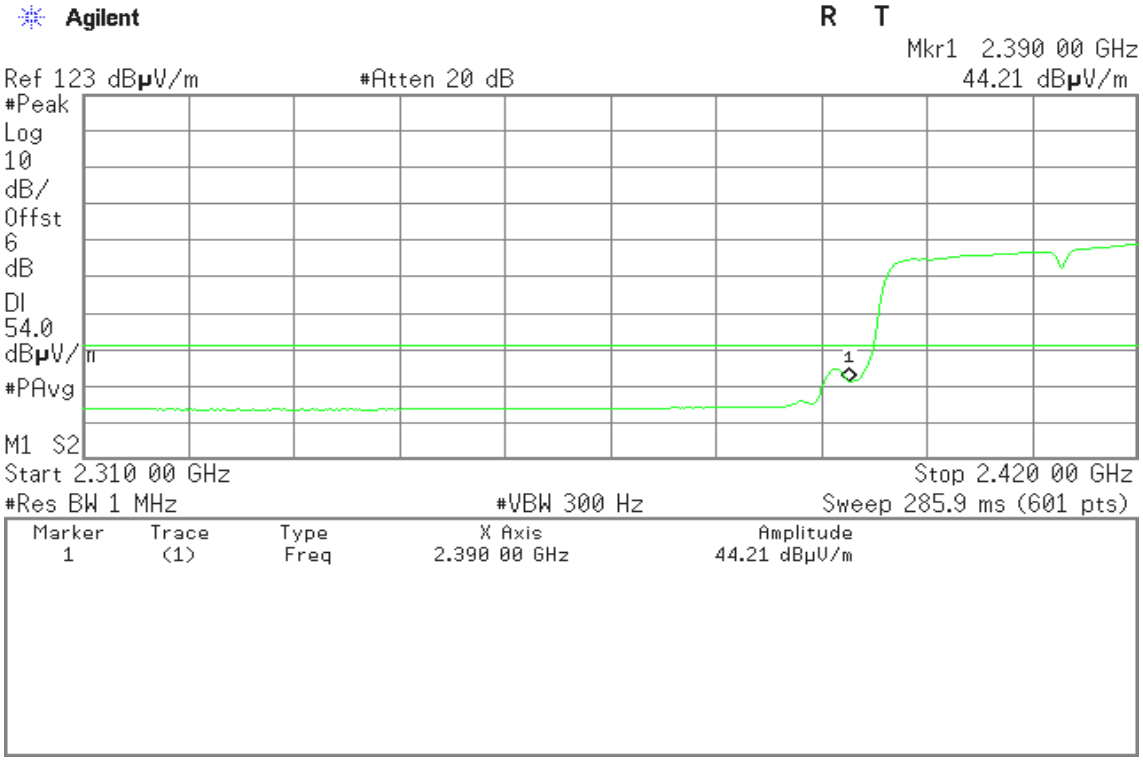


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



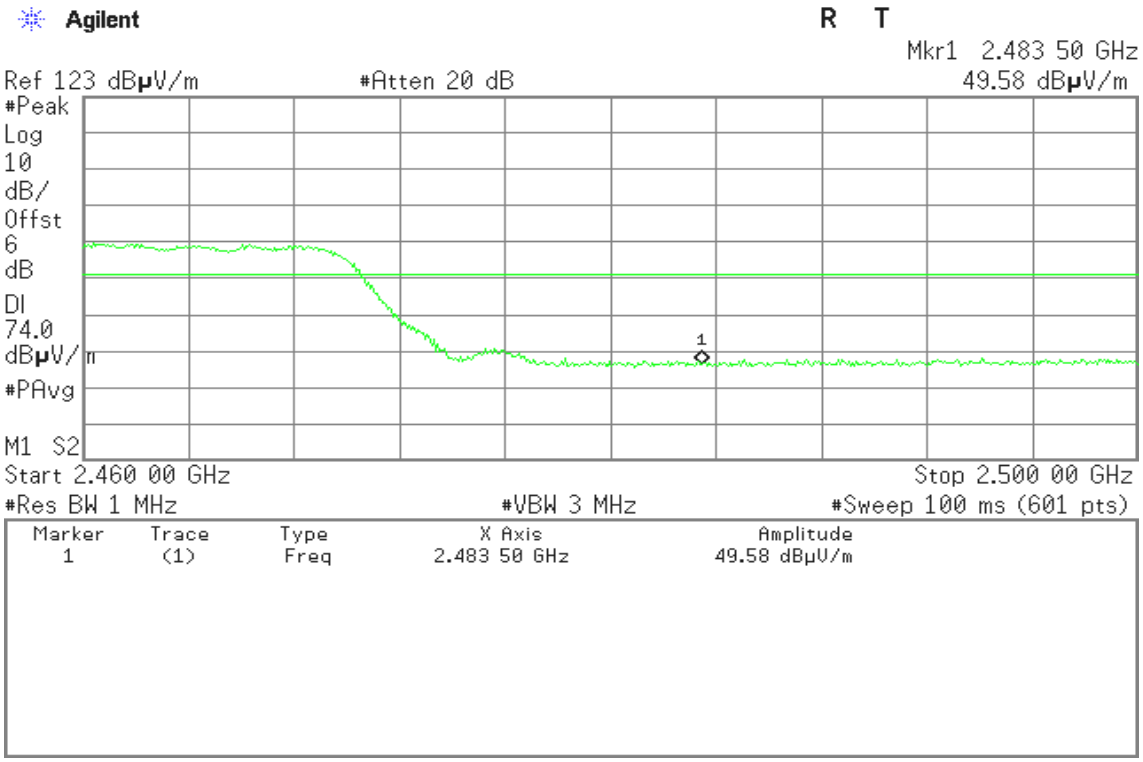
Detector mode: Average **Polarity: Horizontal**



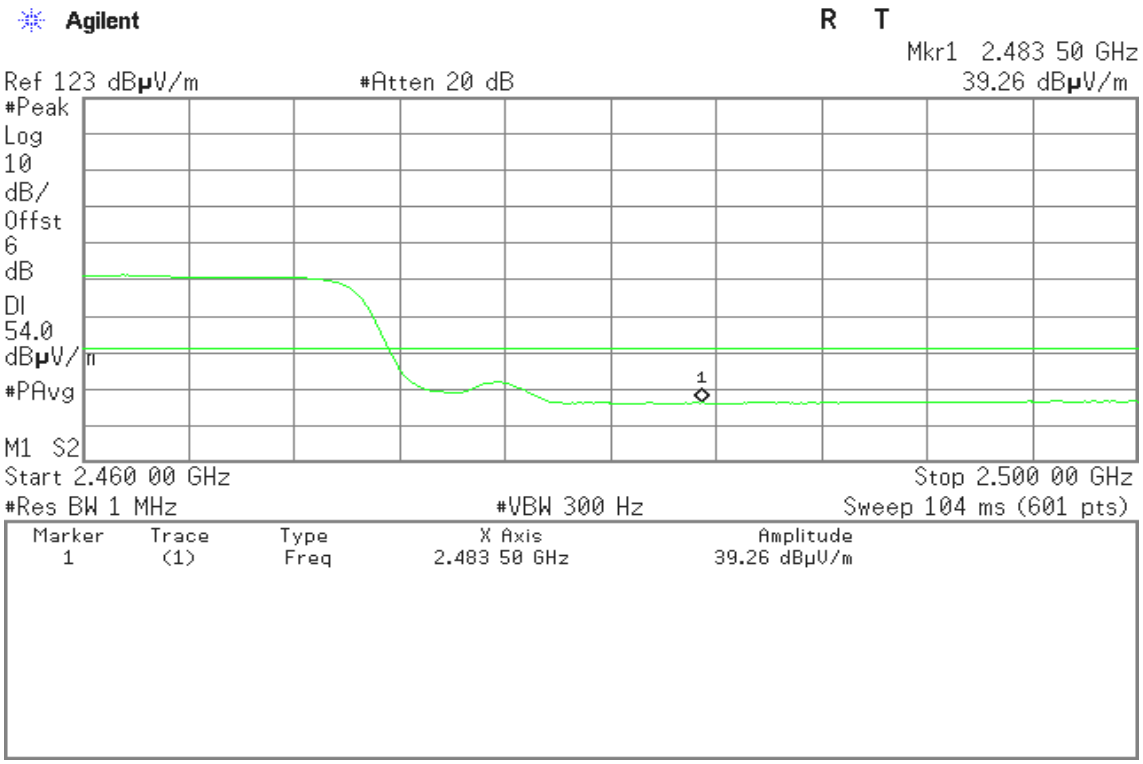
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Band Edges (IEEE 802.11n HT40 mode / CH High)

Detector mode: Peak **Polarity: Vertical**

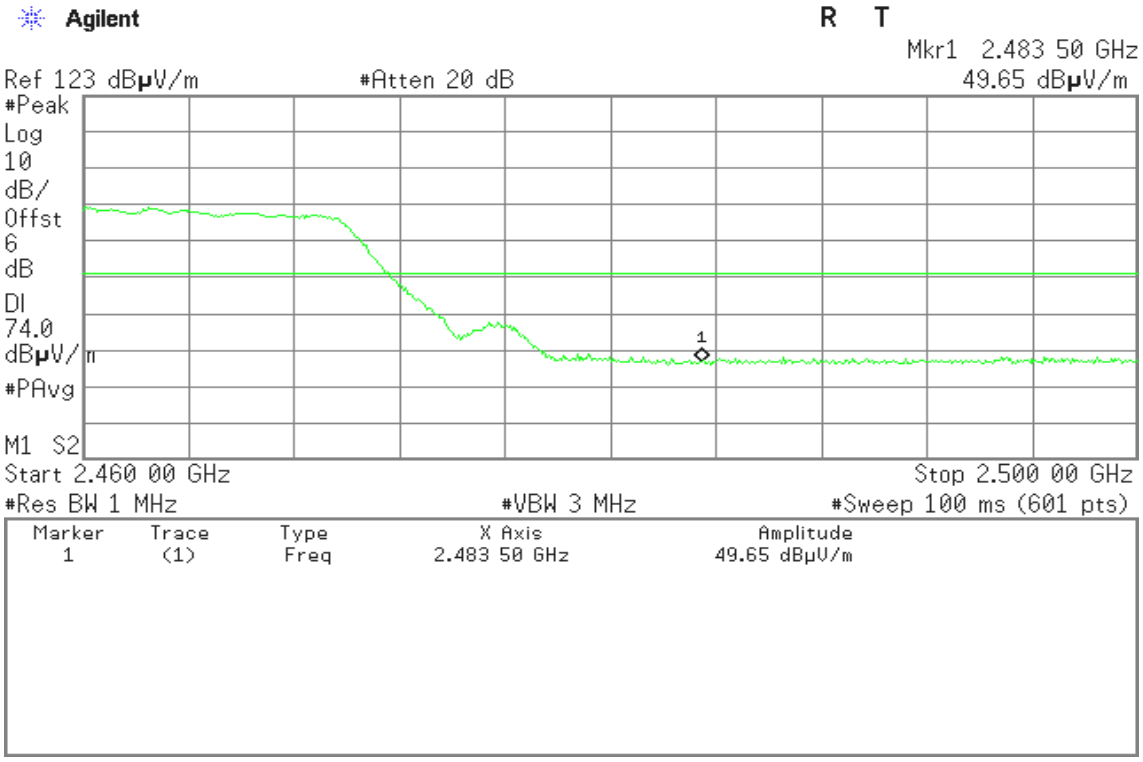


Detector mode: Average **Polarity: Vertical**

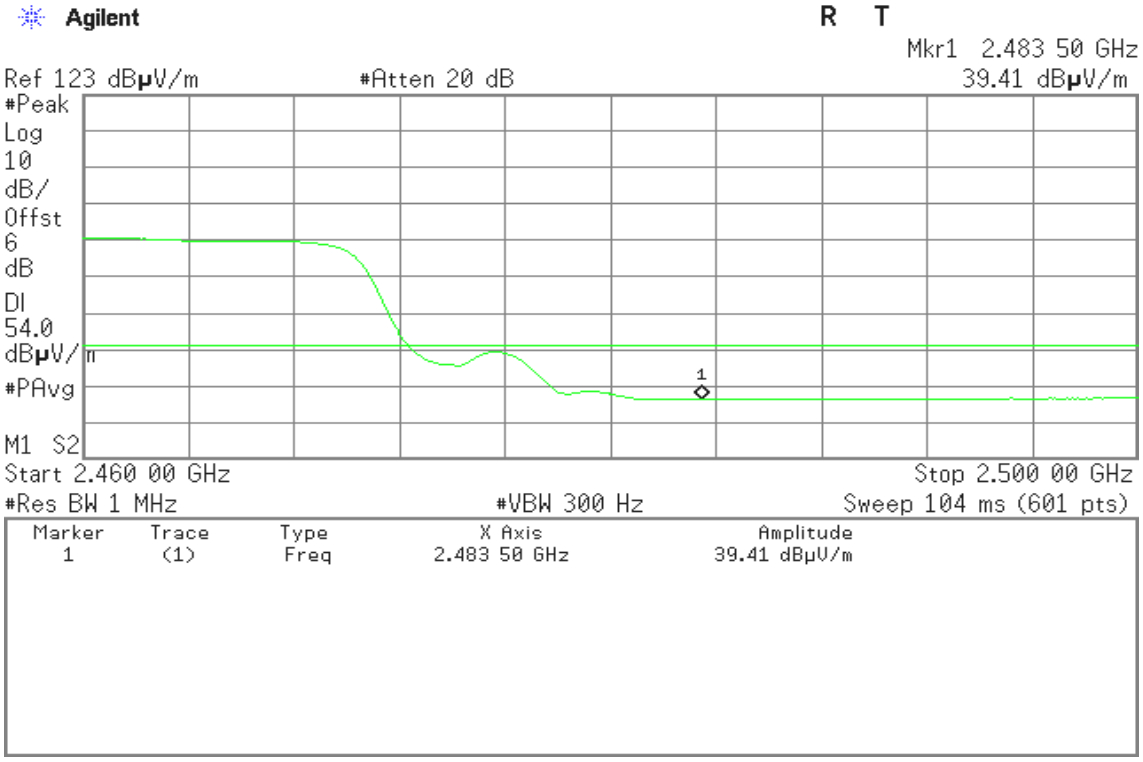


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**

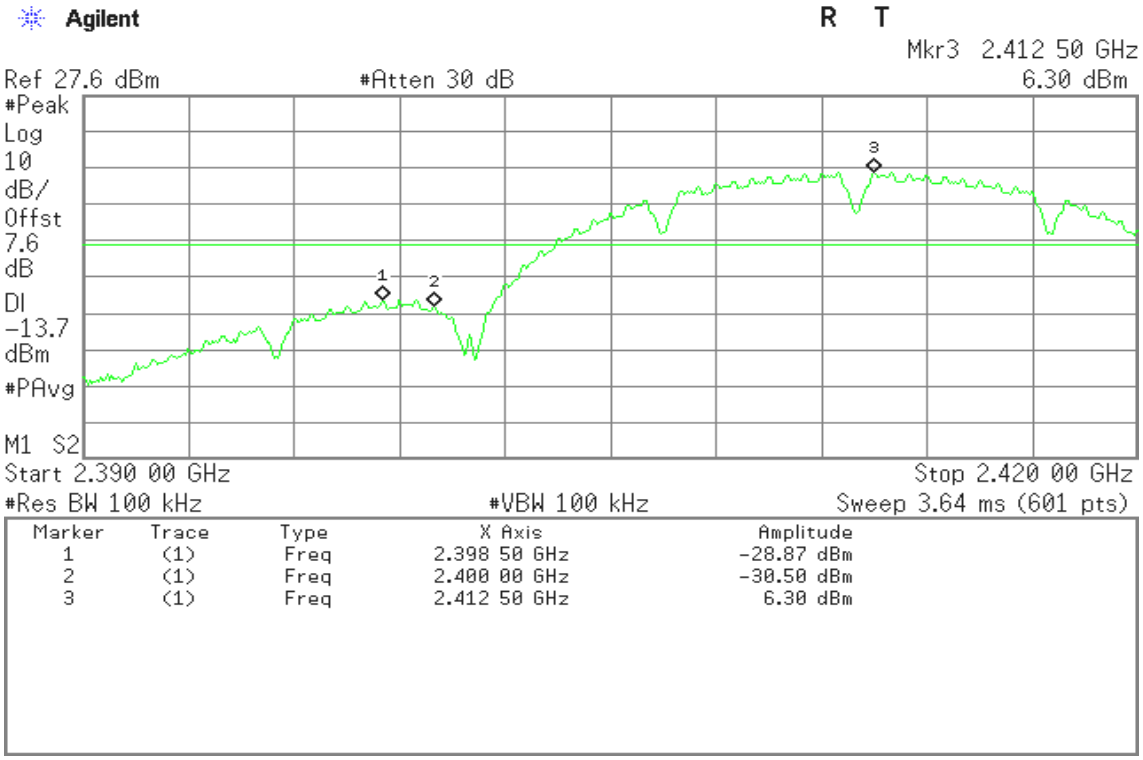


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

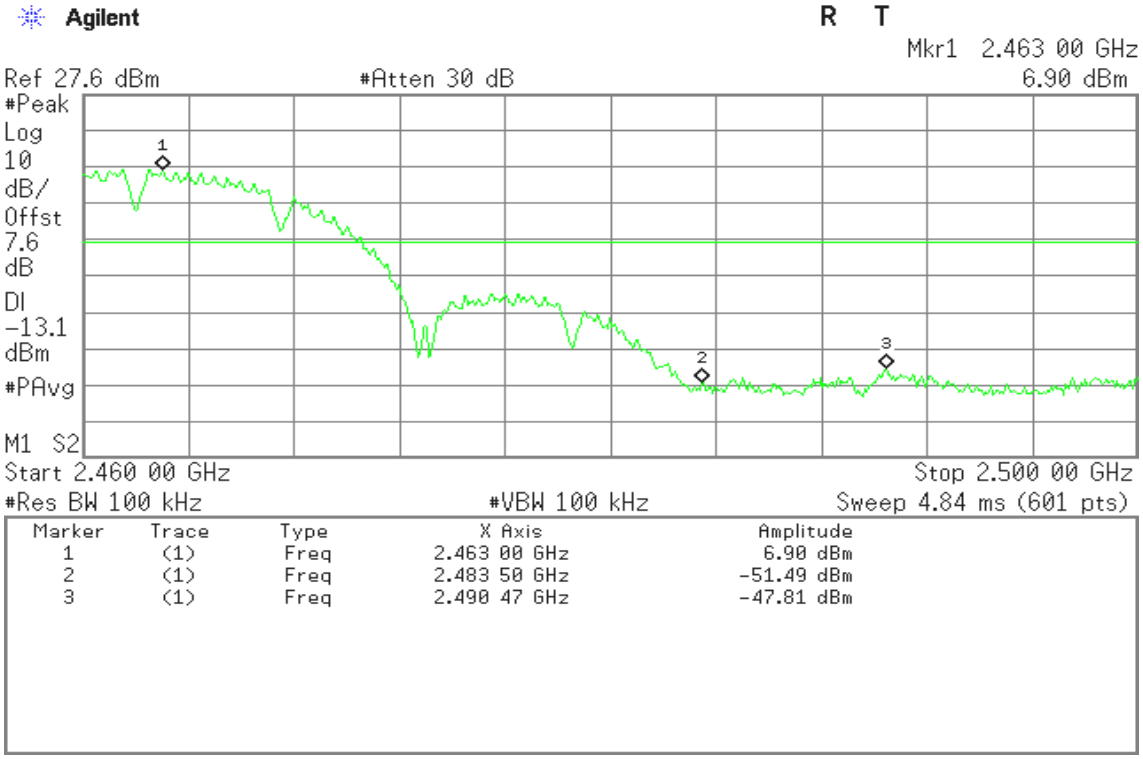
Conducted band-edge

IEEE 802.11b mode

CH Low



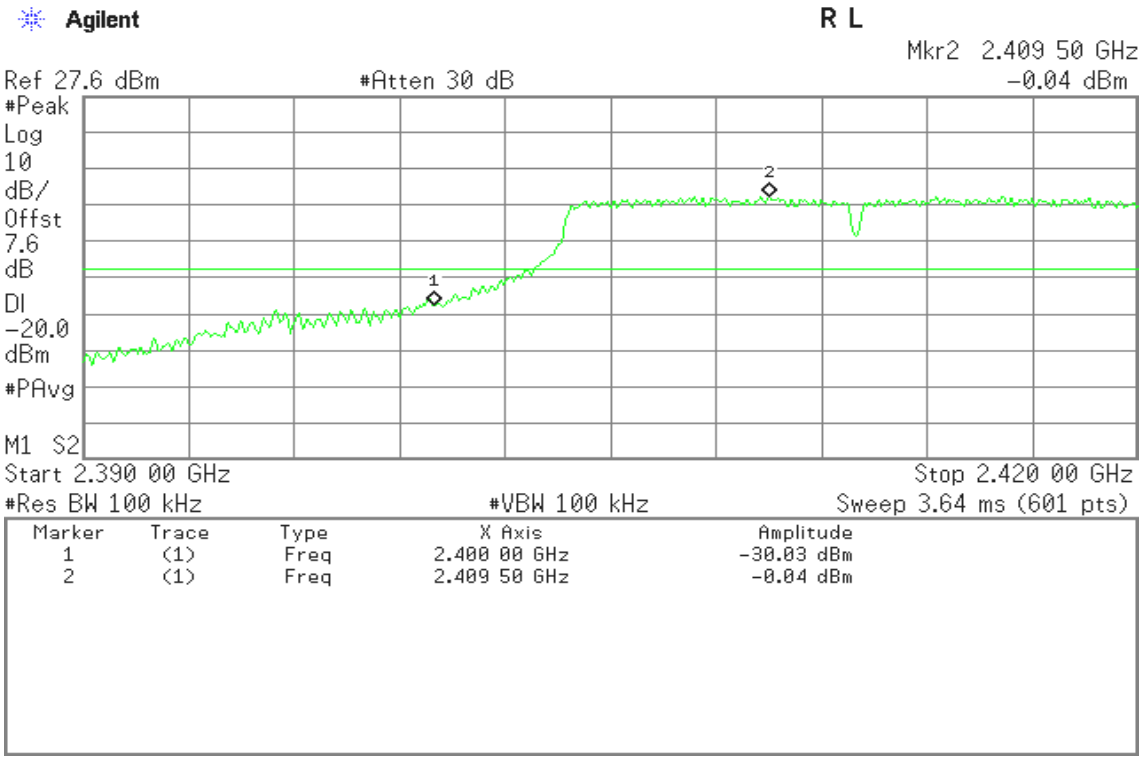
CH High



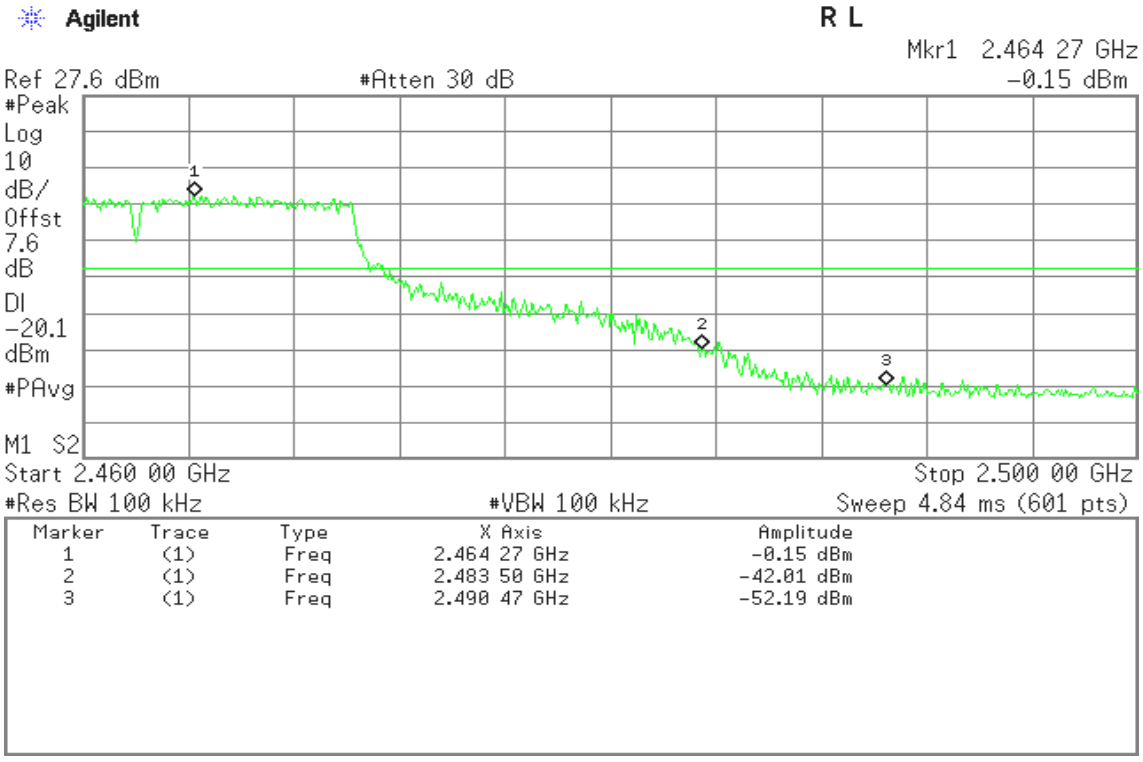
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11g mode

CH Low



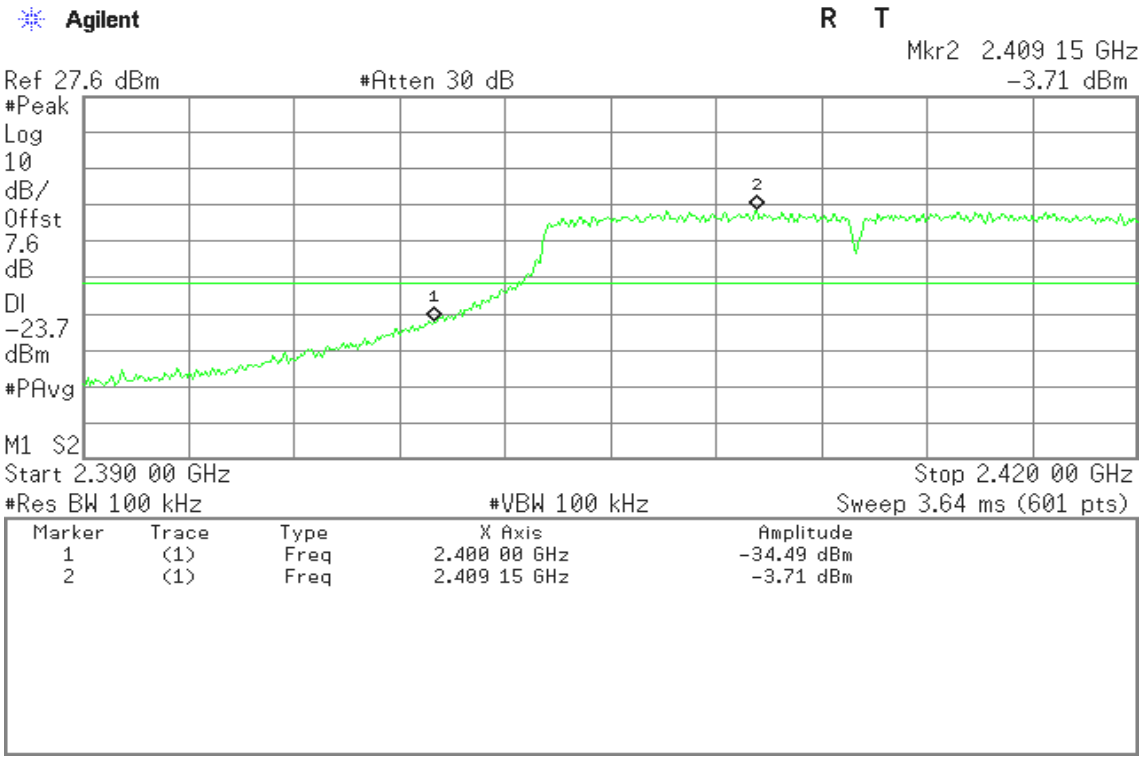
CH High



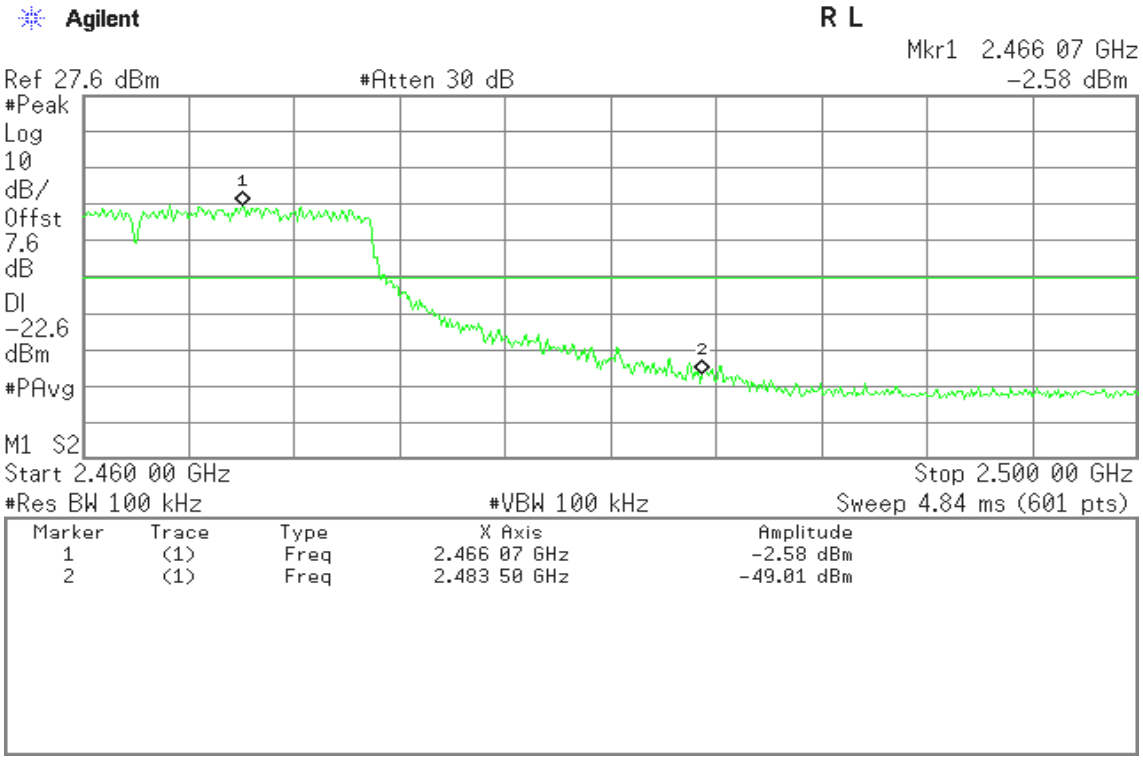
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 mode / Chain 0

CH Low



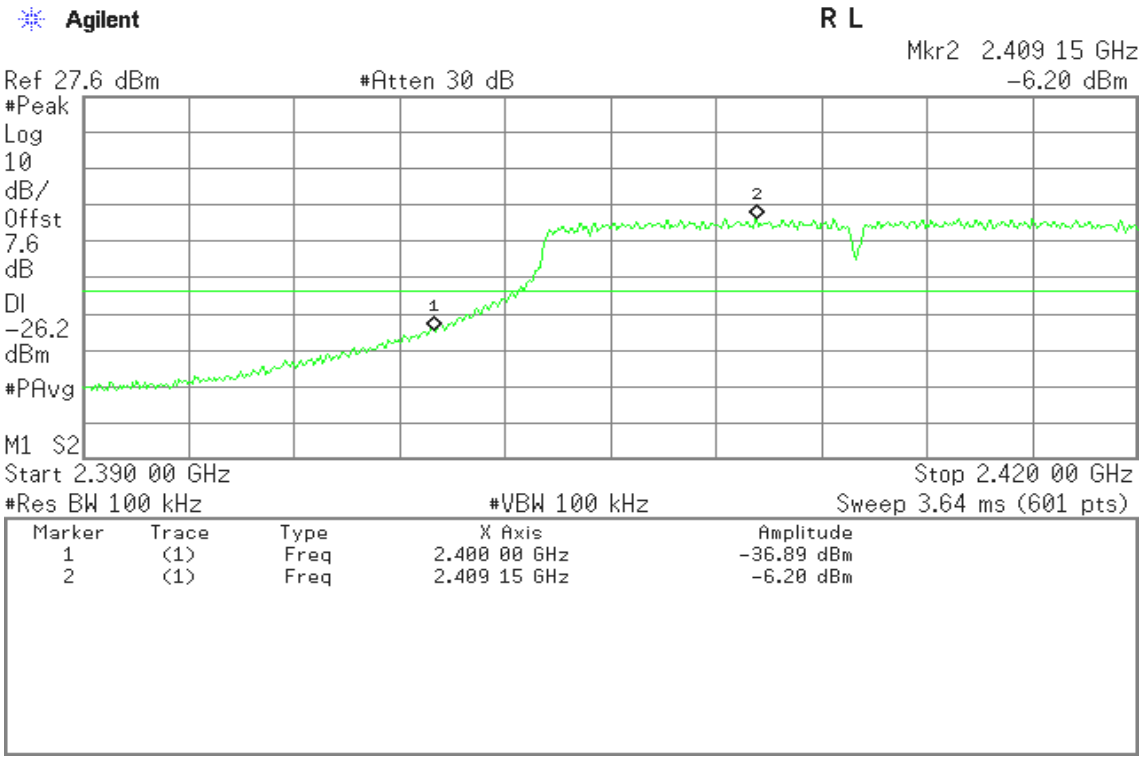
CH High



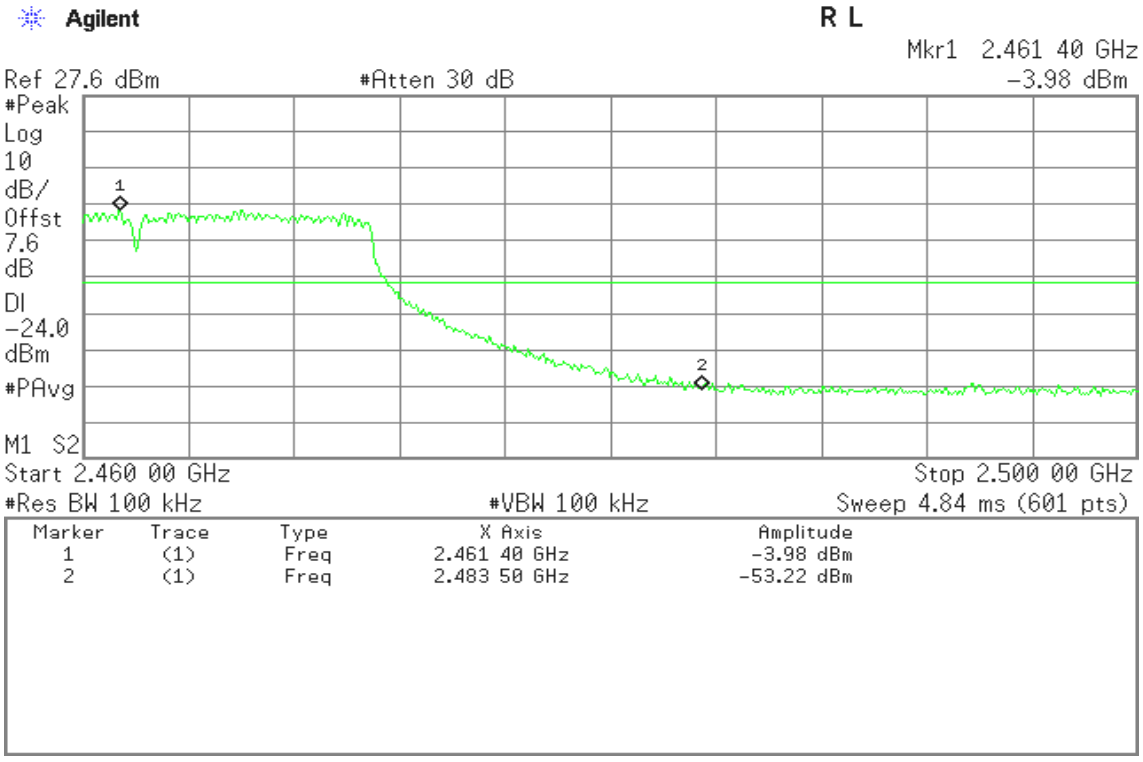
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 mode / Chain 1

CH Low



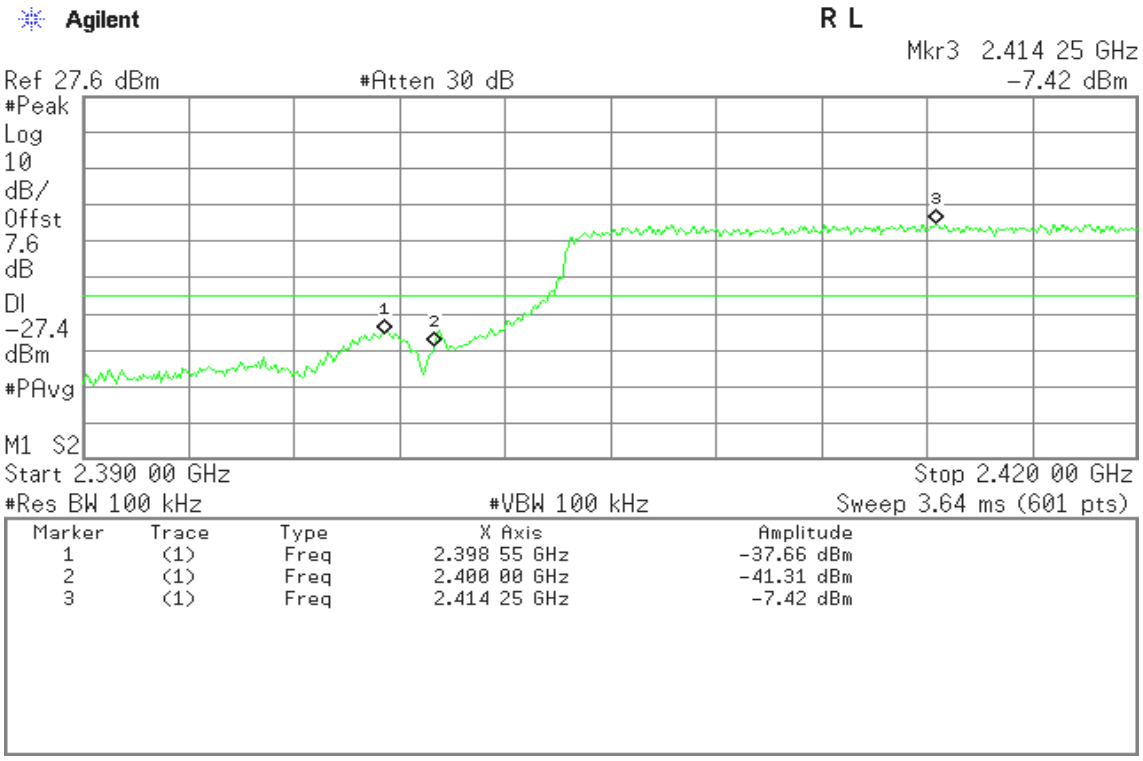
CH High



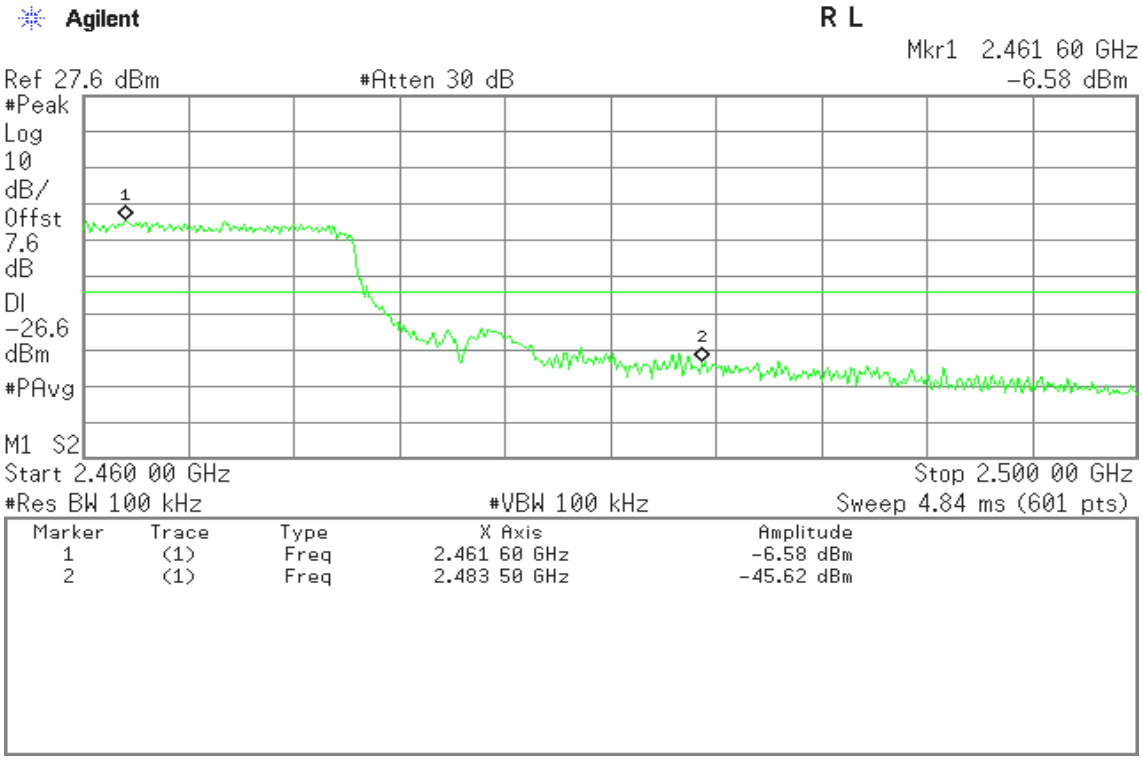
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 mode / Chain 0

CH Low



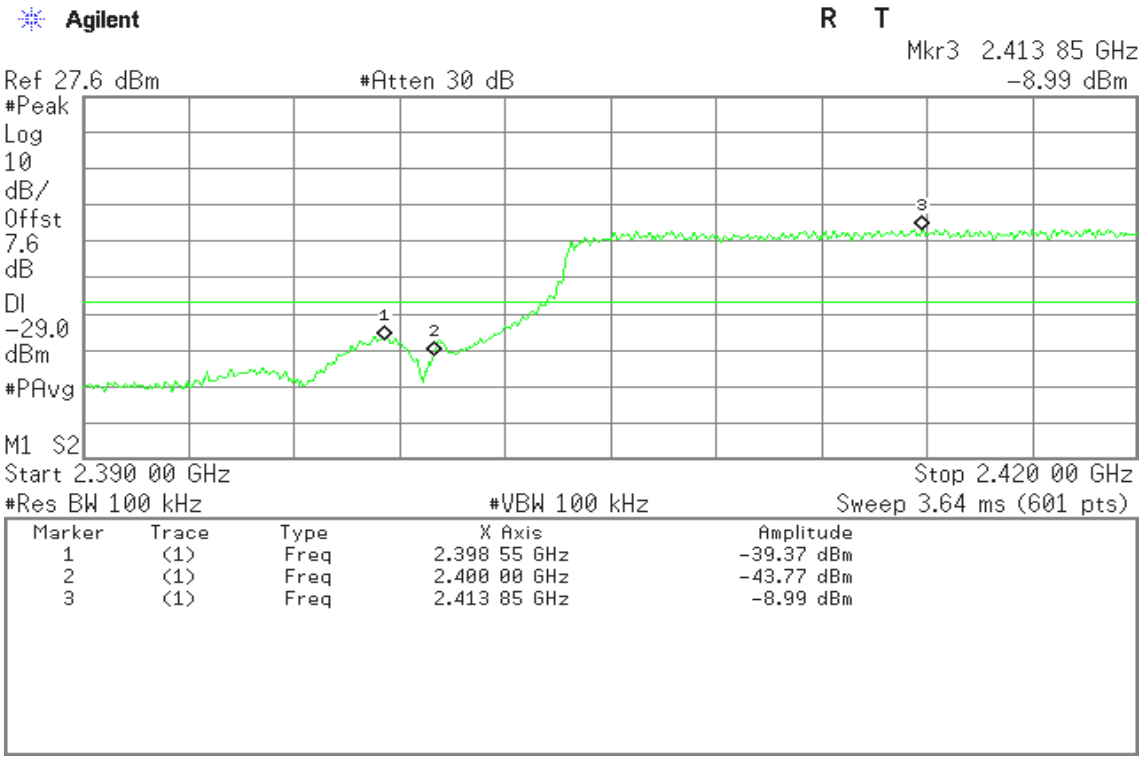
CH High



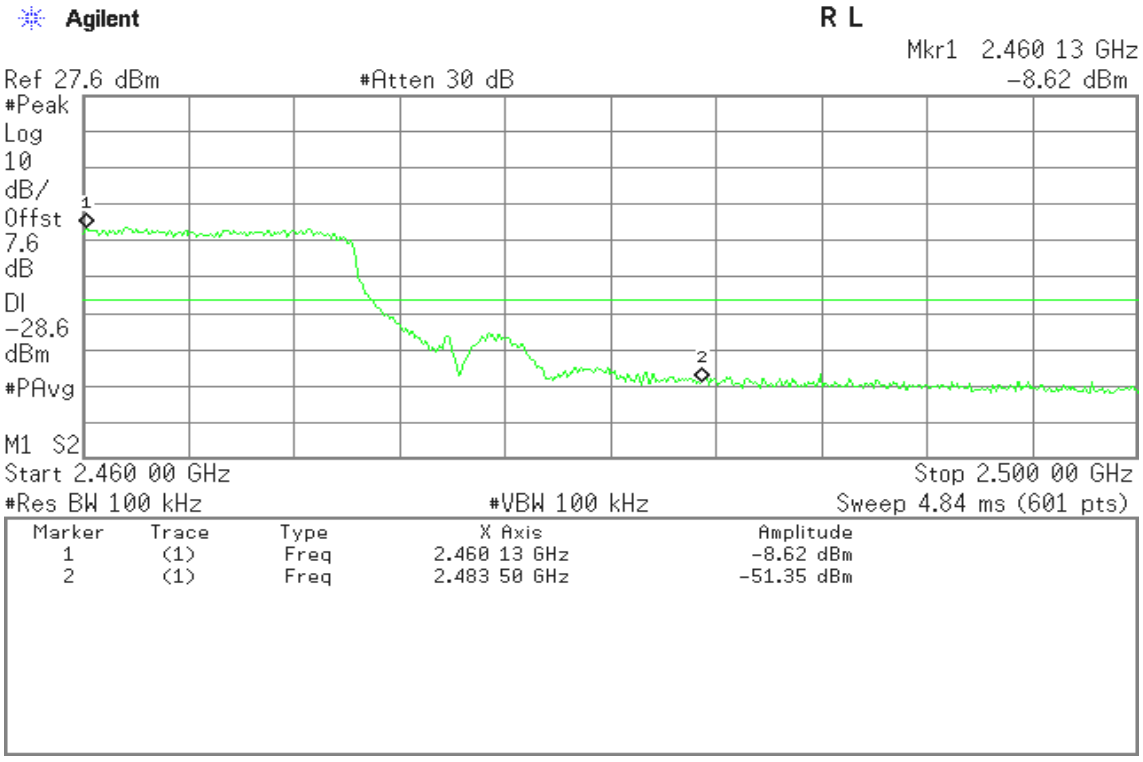
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 mode / Chain 1

CH Low



CH High



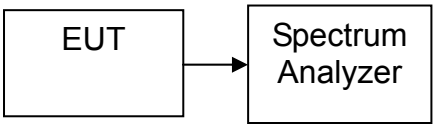
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.5 PEAK POWER SPECTRAL DENSITY

LIMIT

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentionalradiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval ofcontinuous transmission.
2. According to §15.247(f), the digital modulation operation of thehybrid system, with the frequency hopping turned off, shall comply with the power density requirementsof paragraph (d) of this section.

TEST CONFIGURATION



TEST PROCEDURE

Per KDB 558074 v03r02

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat

TEST RESULTS

No non-compliance noted

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST DATA

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-12.56	8.00	PASS
Mid	2437	-12.64		
High	2462	-12.60		

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-13.74	8.00	PASS
Mid	2437	-13.57		
High	2462	-13.65		

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	PPSD(dBm)			Limit (dBm)	Result
		Chain 0	Chain 1	Total		
Low	2412	-17.45	-19.84	-15.47	5.74	PASS
Mid	2437	-17.88	-19.42	-15.57		PASS
High	2462	-18.18	-19.58	-15.81		PASS

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	PPSD(dBm)			Limit (dBm)	Result
		Chain 0	Chain 1	Total		
Low	2422	-20.16	-21.47	-17.76	5.74	PASS
Mid	2437	-20.37	-21.02	-17.67		PASS
High	2452	-20.07	-20.91	-17.46		PASS

Remark:

*1.Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10))*

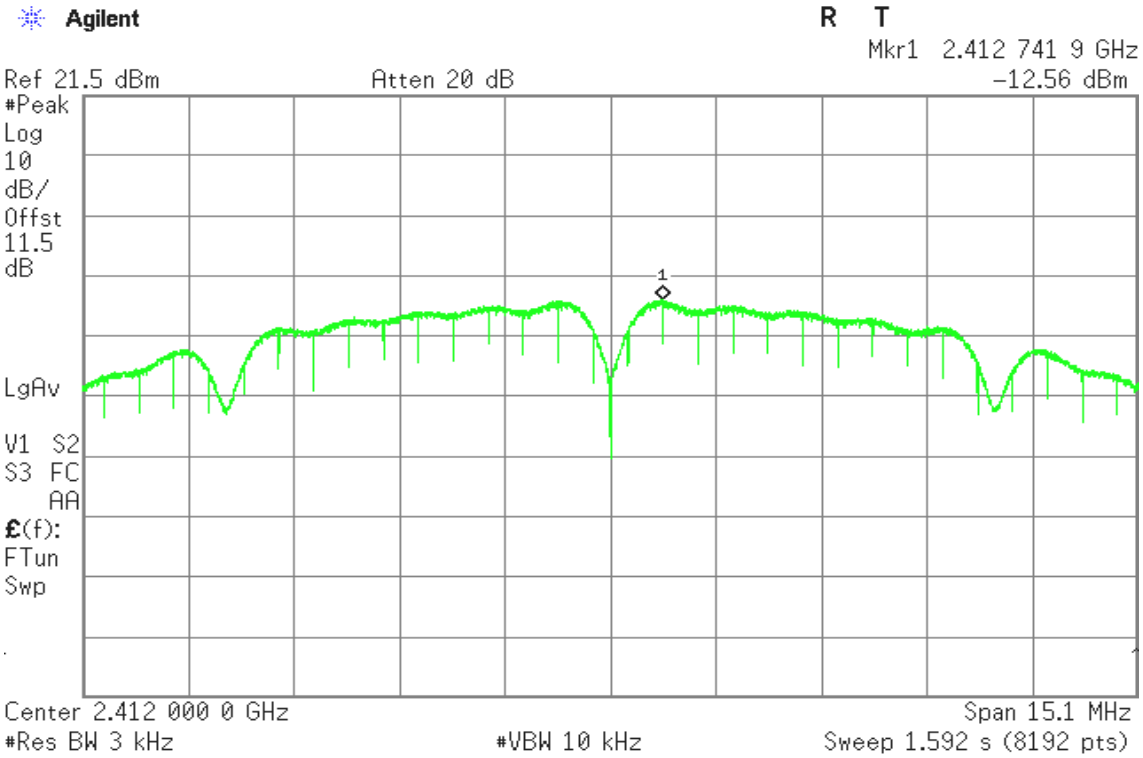
2. The maximum antenna gain is 8.26dBi; therefore the reduction due to antenna gain is 2.26dBi, so the limit is 5.74dBm

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

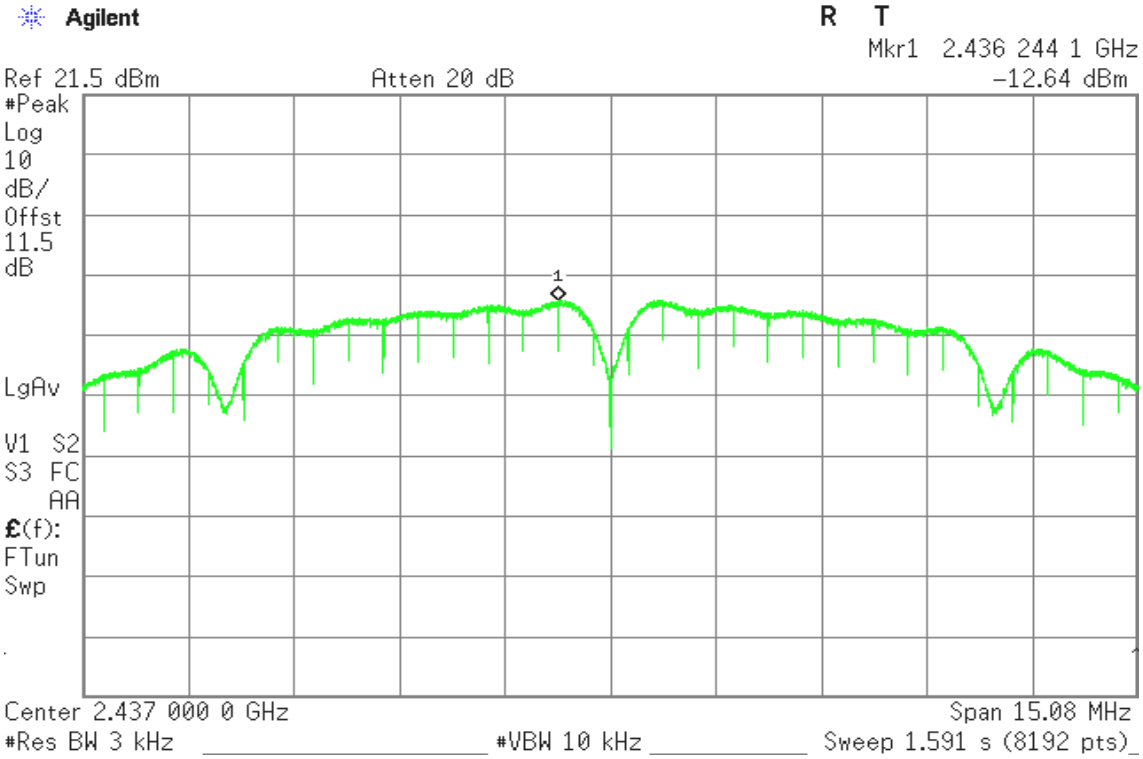
Test Plot

IEEE 802.11b mode

PPSD (CH Low)

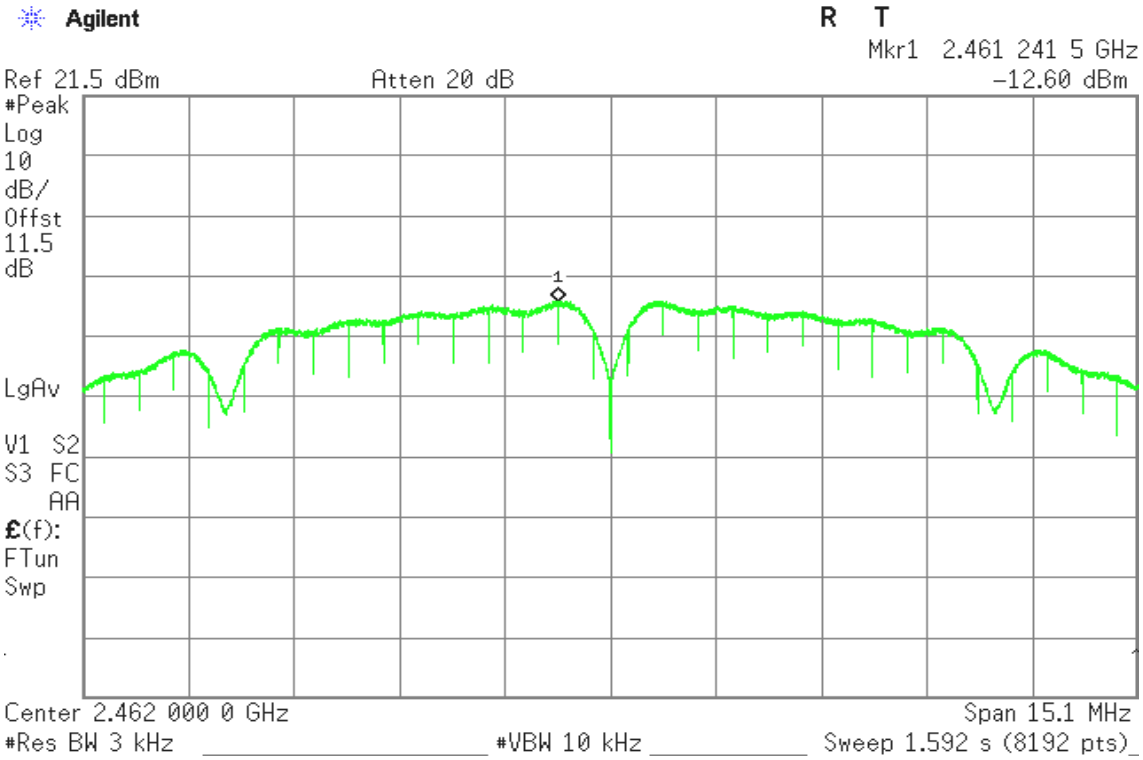


PPSD (CH Mid)



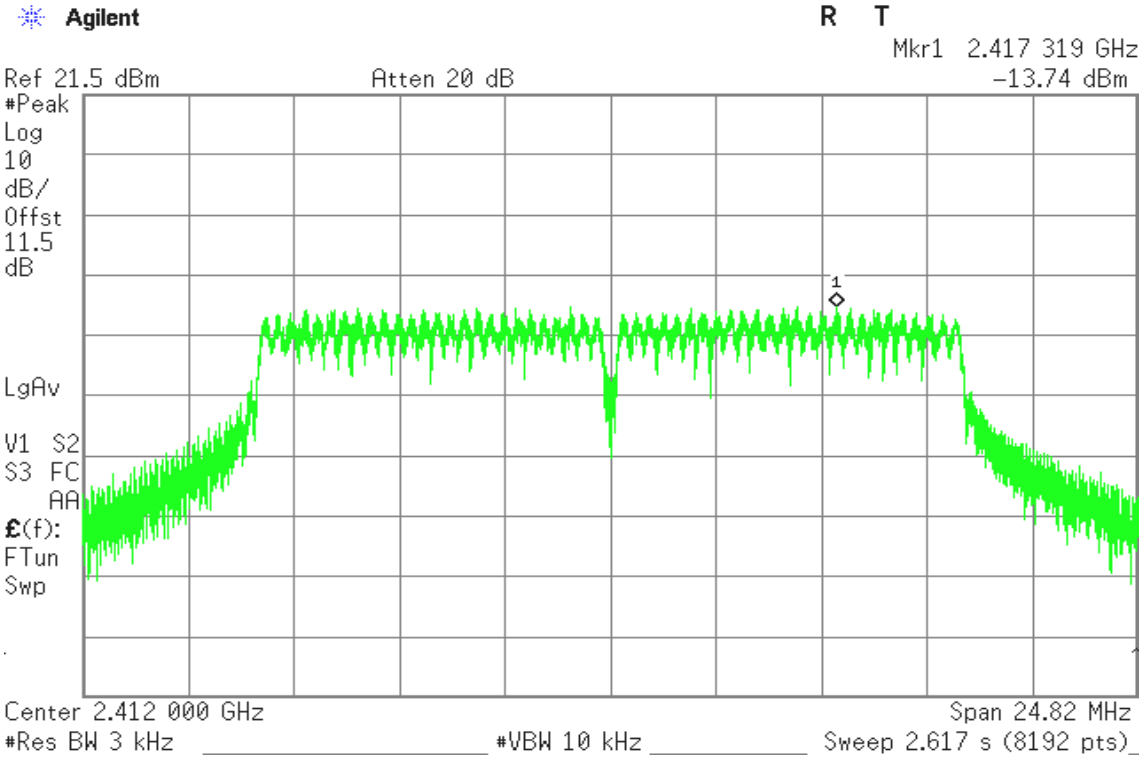
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

PPSD (CH High)



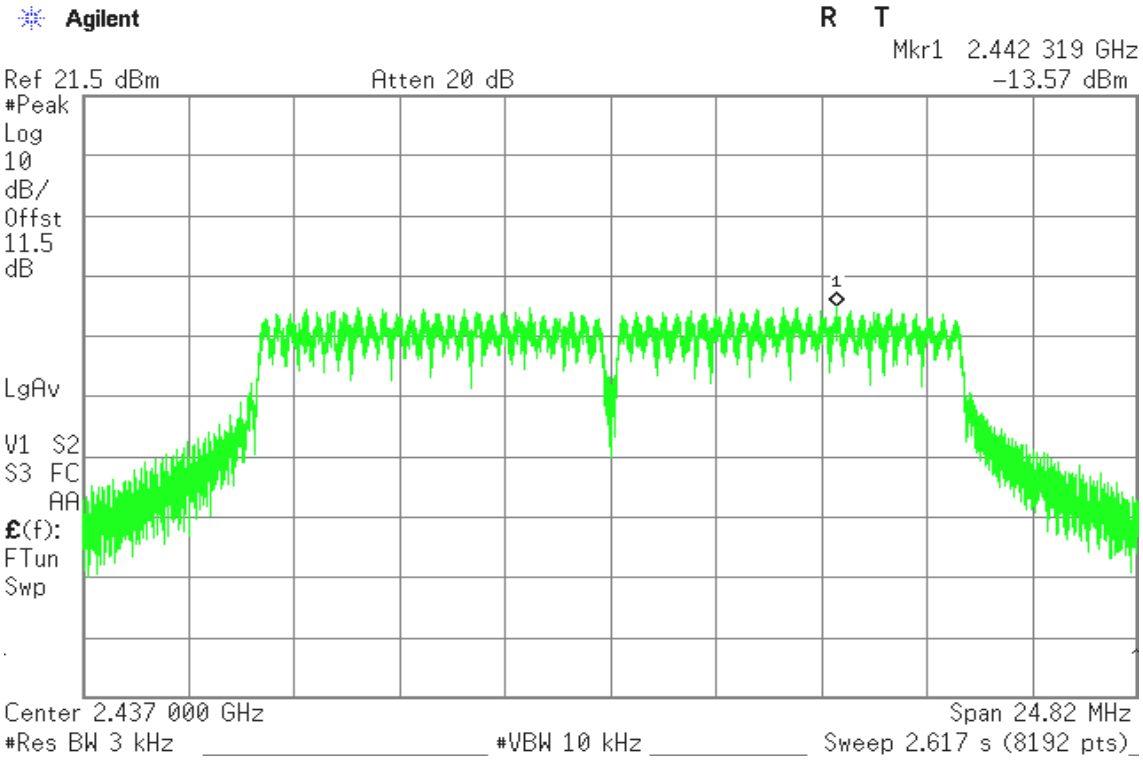
IEEE 802.11g mode

PPSD (CH Low)

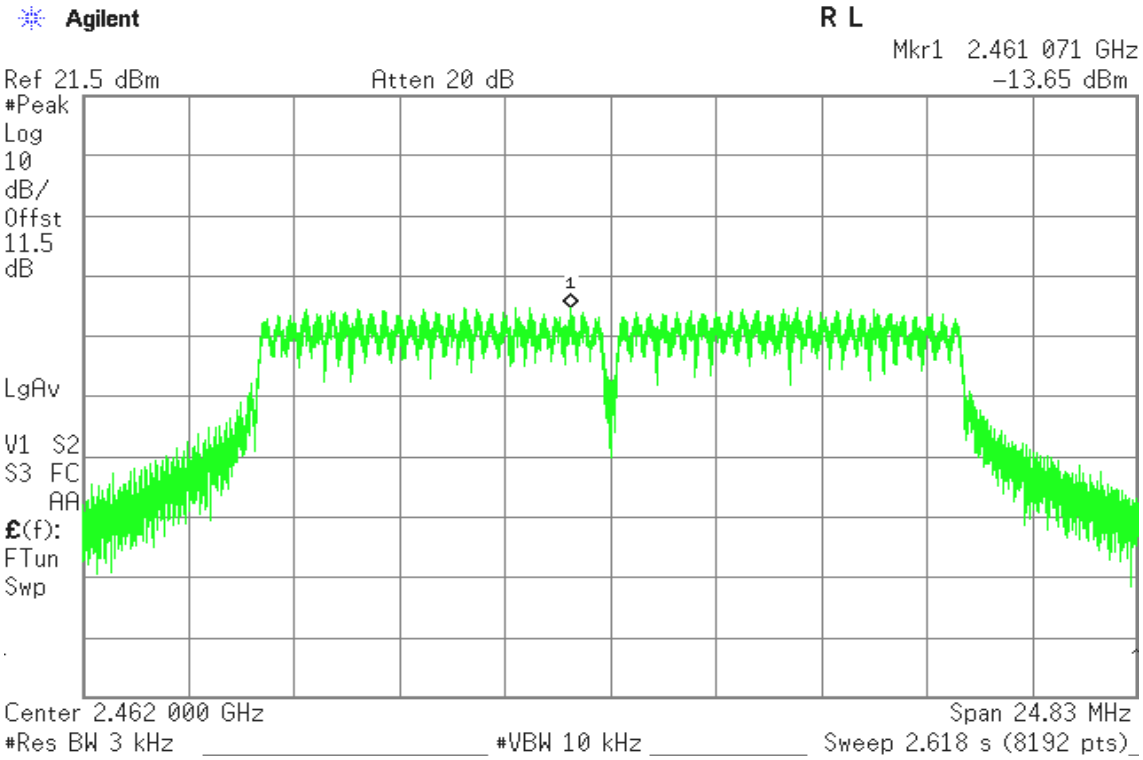


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

PPSD (CH Mid)



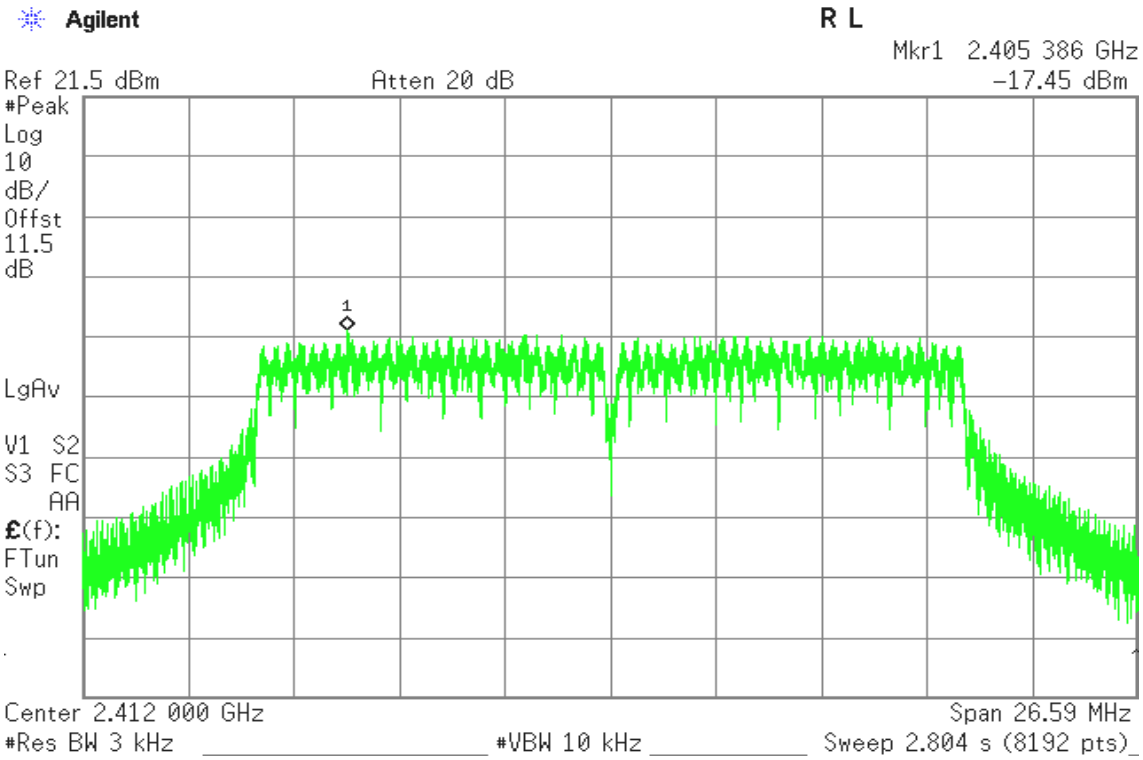
PPSD (CH High)



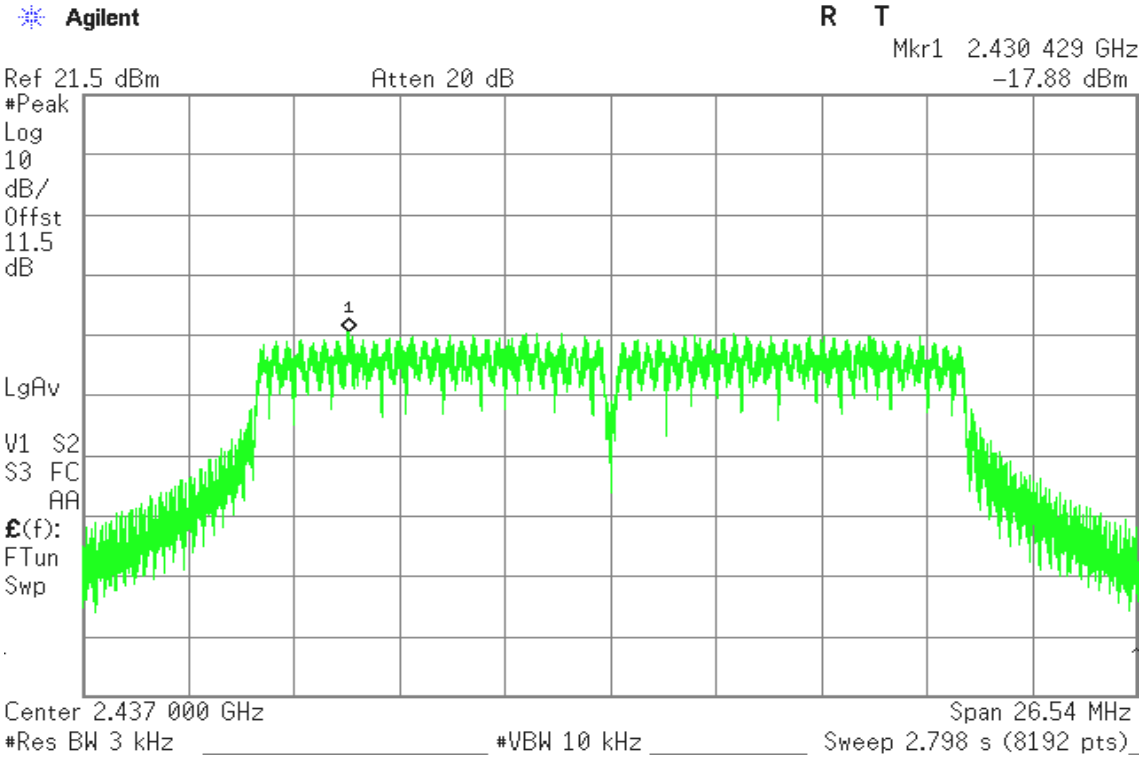
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 mode / Chain 0

PPSD (CH Low)

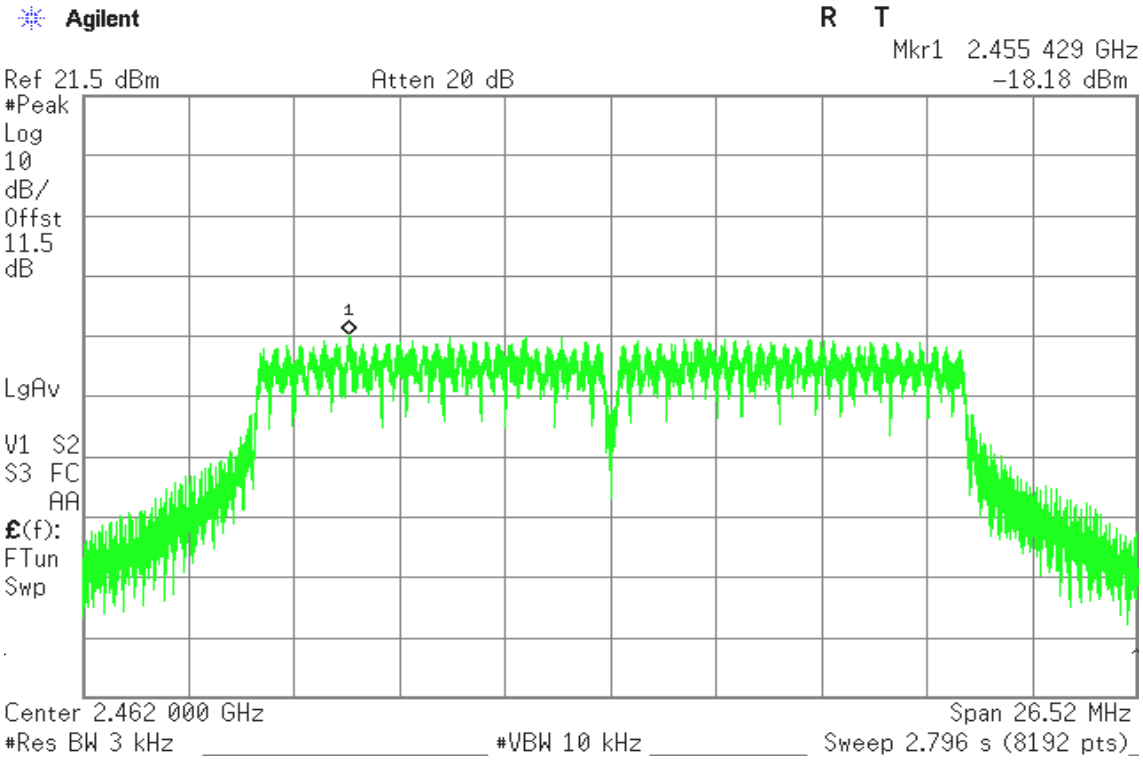


PPSD (CH Mid)



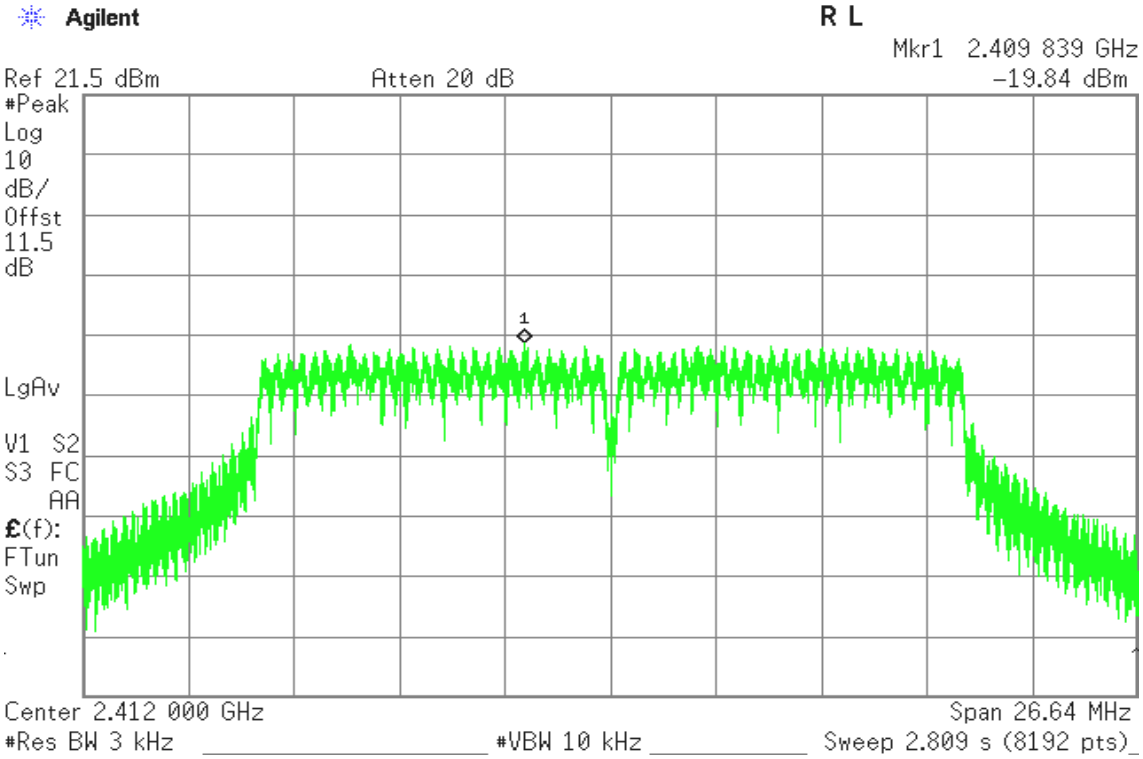
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

PPSD (CH High)



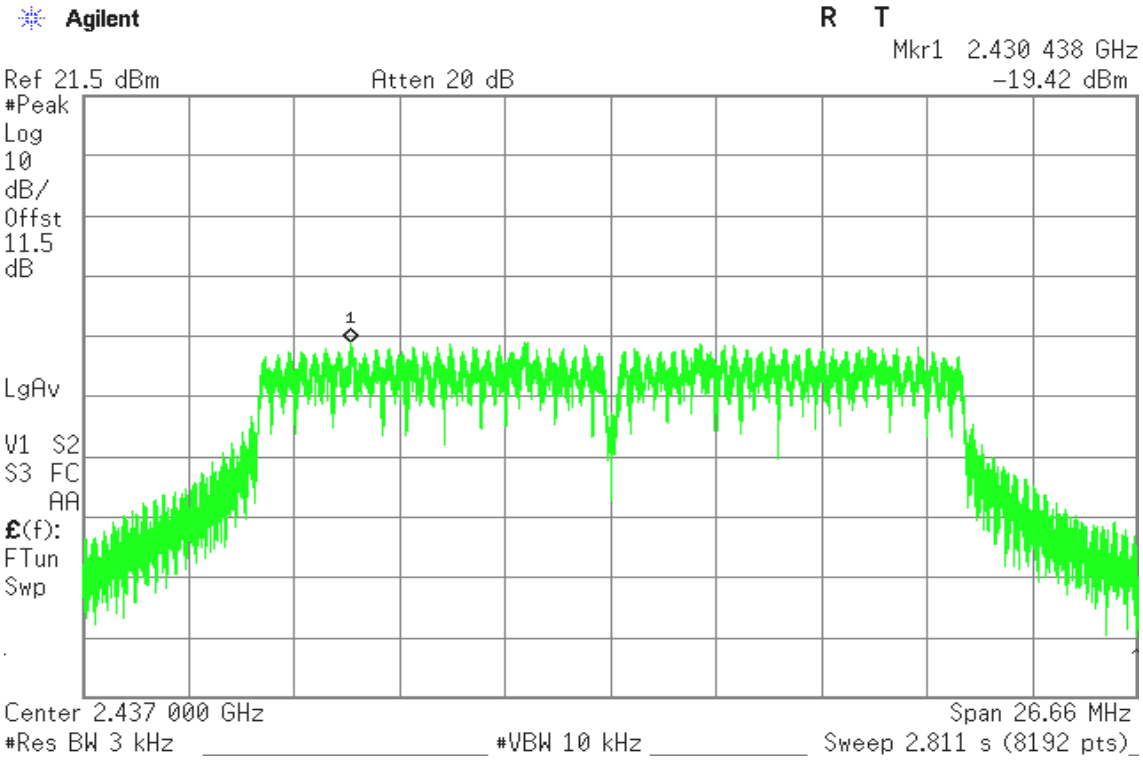
IEEE 802.11n HT20 mode / Chain 1

PPSD (CH Low)

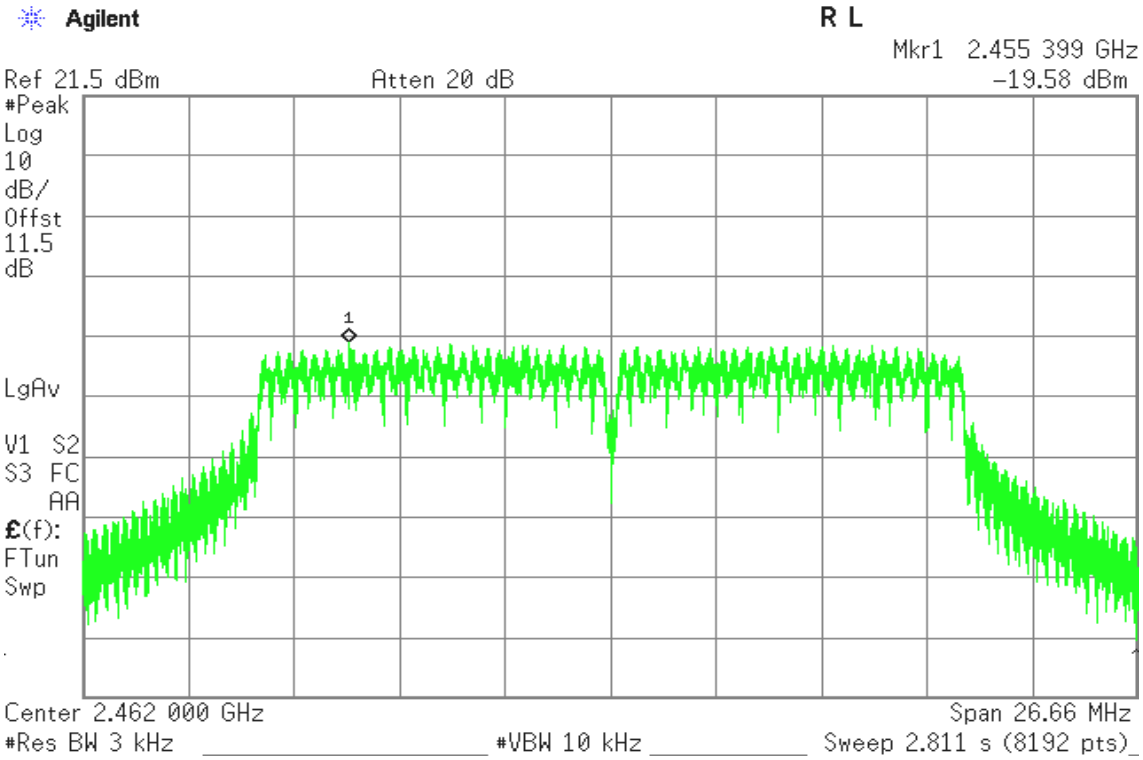


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

PPSD (CH Mid)



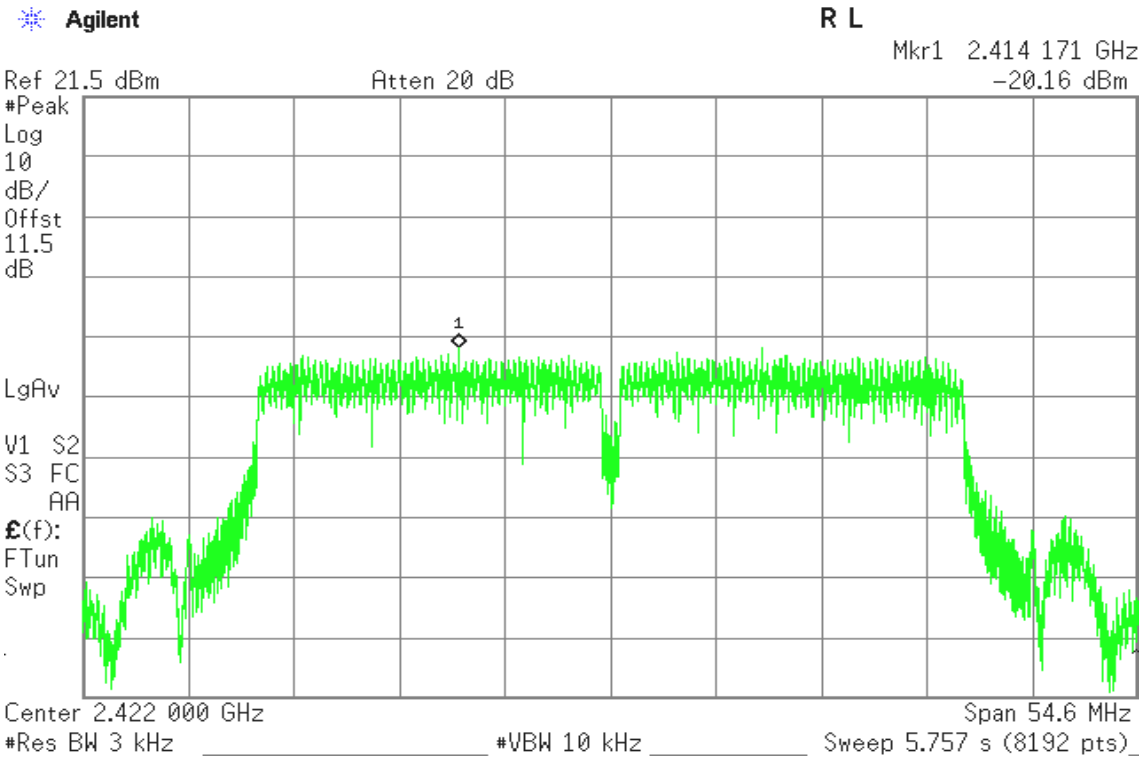
PPSD (CH High)



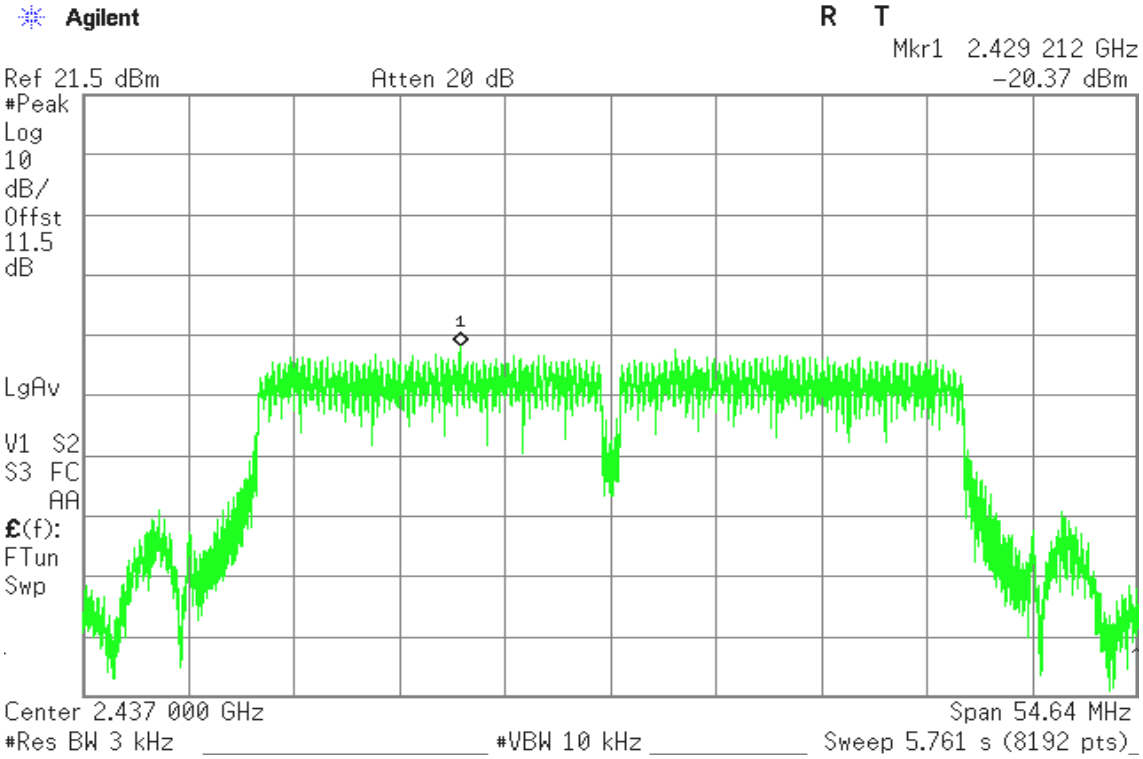
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 mode / Chain 0

PPSD (CH Low)

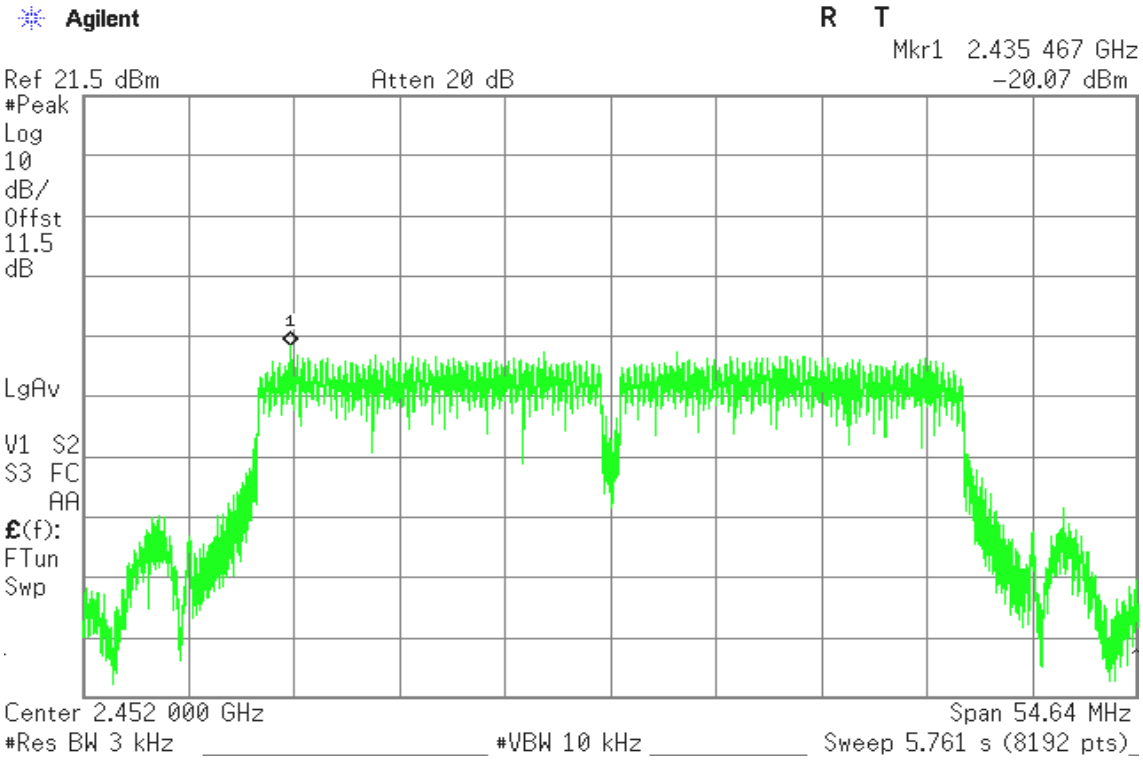


PPSD (CH Mid)



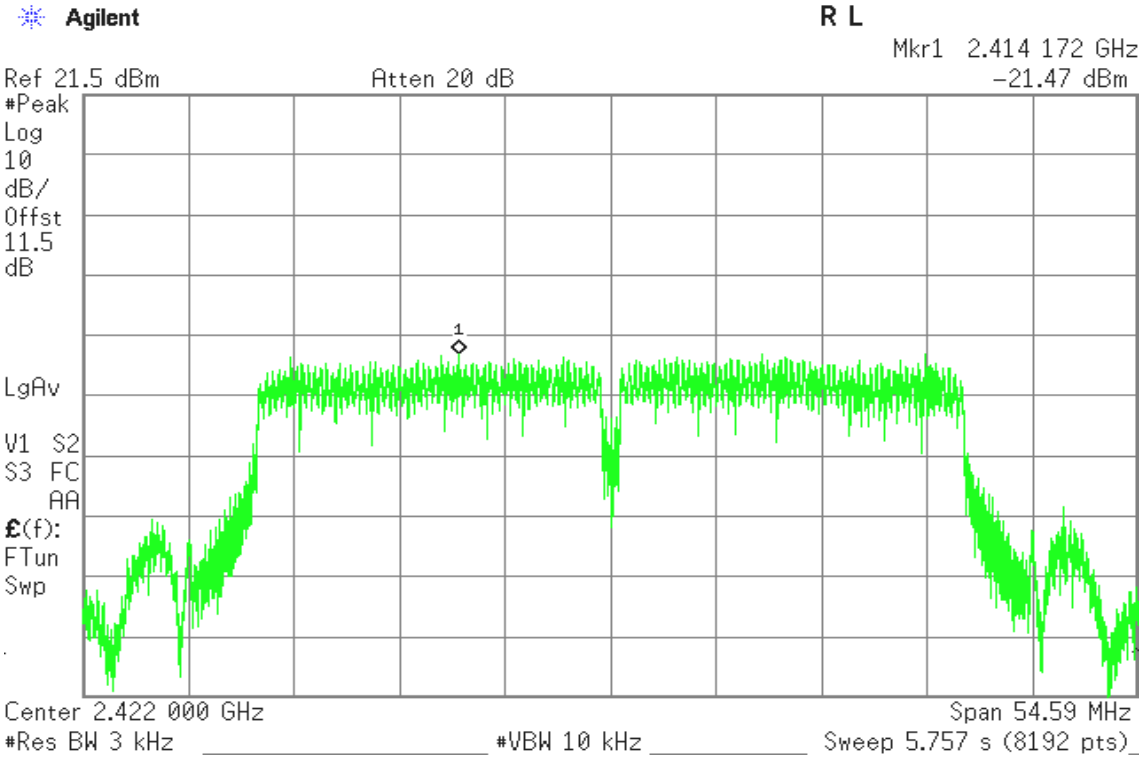
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

PPSD (CH High)



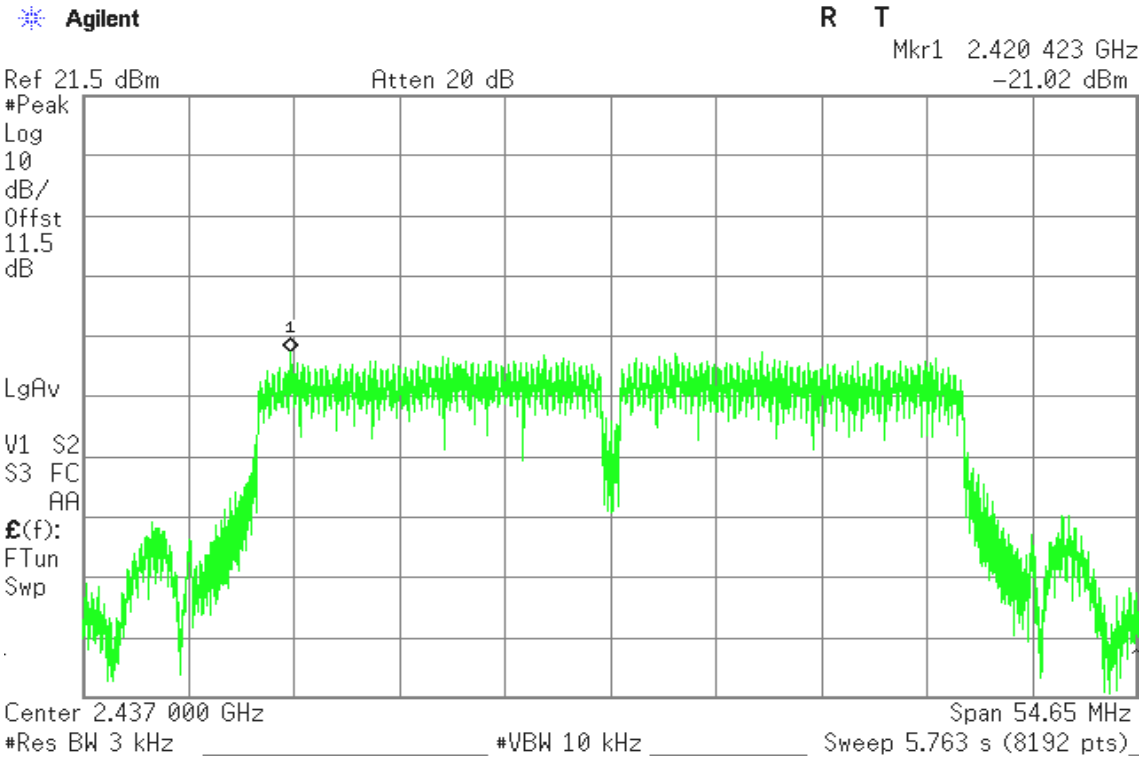
IEEE 802.11n HT40 mode / Chain 1

PPSD (CH Low)

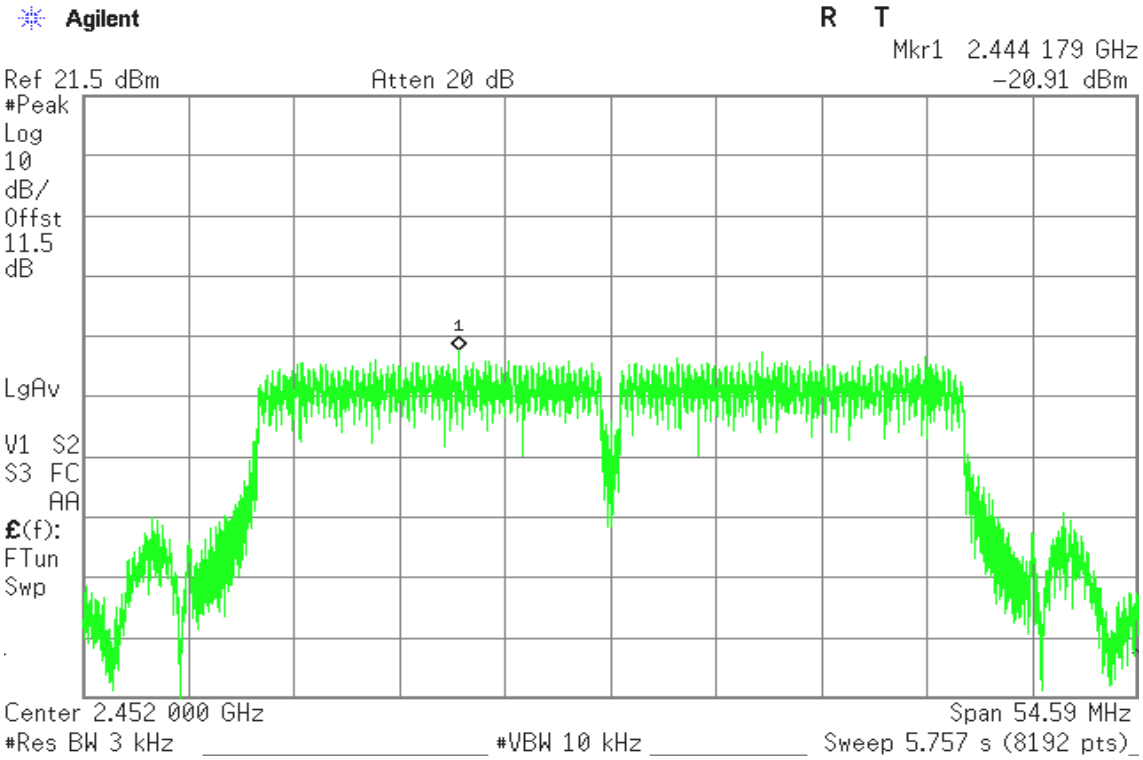


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

PPSD (CH Mid)



PPSD (CH High)



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

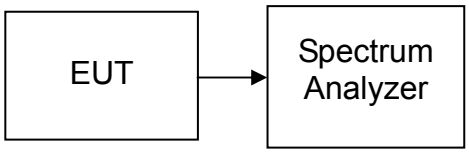
7.6 SPURIOUS EMISSIONS

7.6.1 CONDUCTED MEASUREMENT

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiatedmeasurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a)(see Section15.205(c)).

TEST CONFIGURATION



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. Set the spectrum analyzer in the following setting as:

RBW=100kHz / VBW=300kHz

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted.

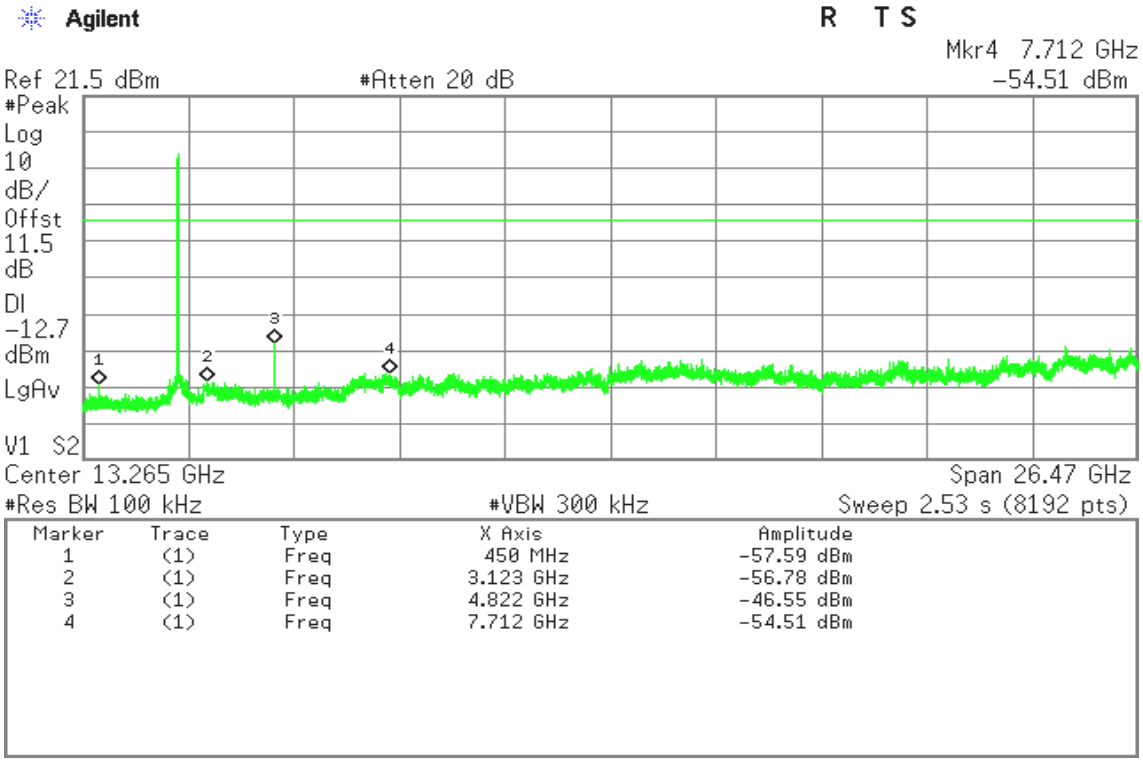
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Plot

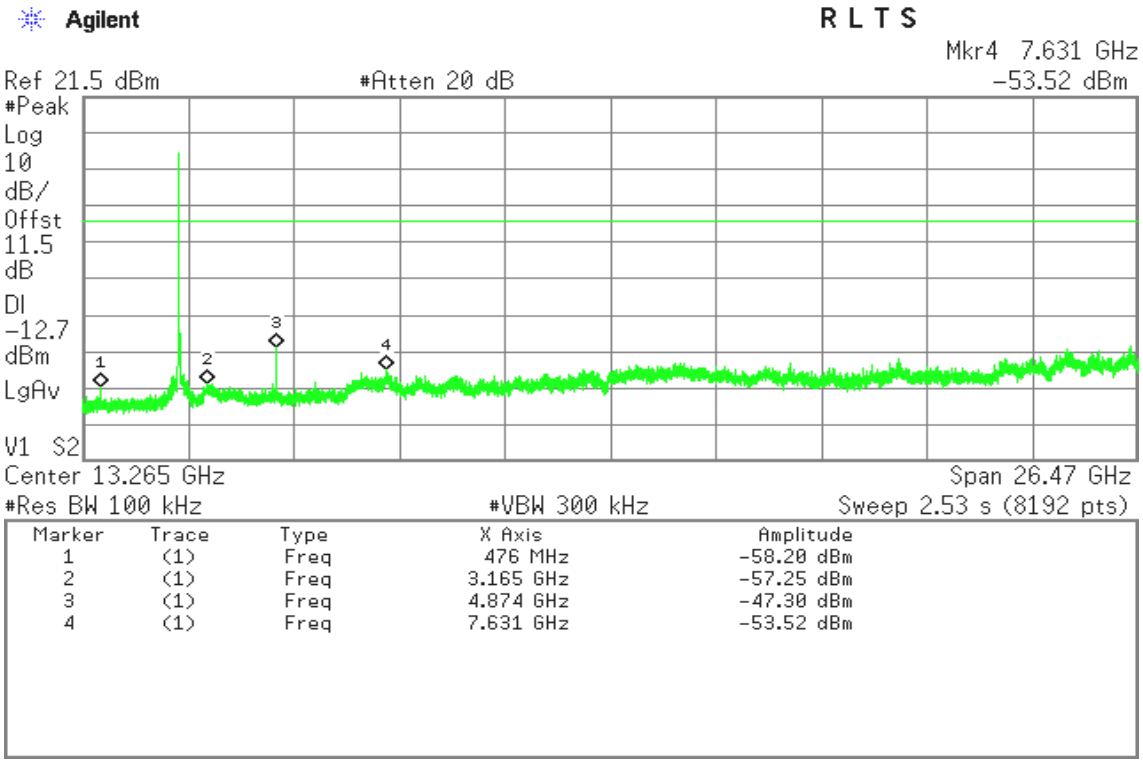
Spurious Emissions

IEEE 802.11b mode

CH Low

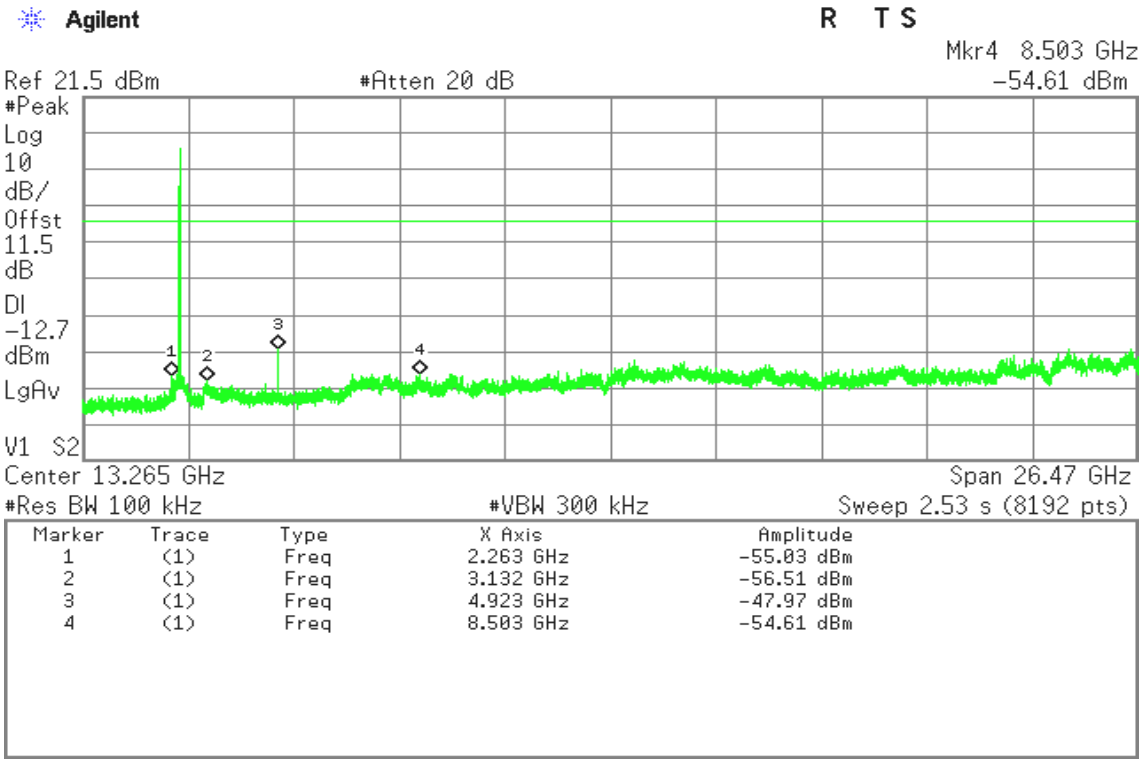


CH Mid



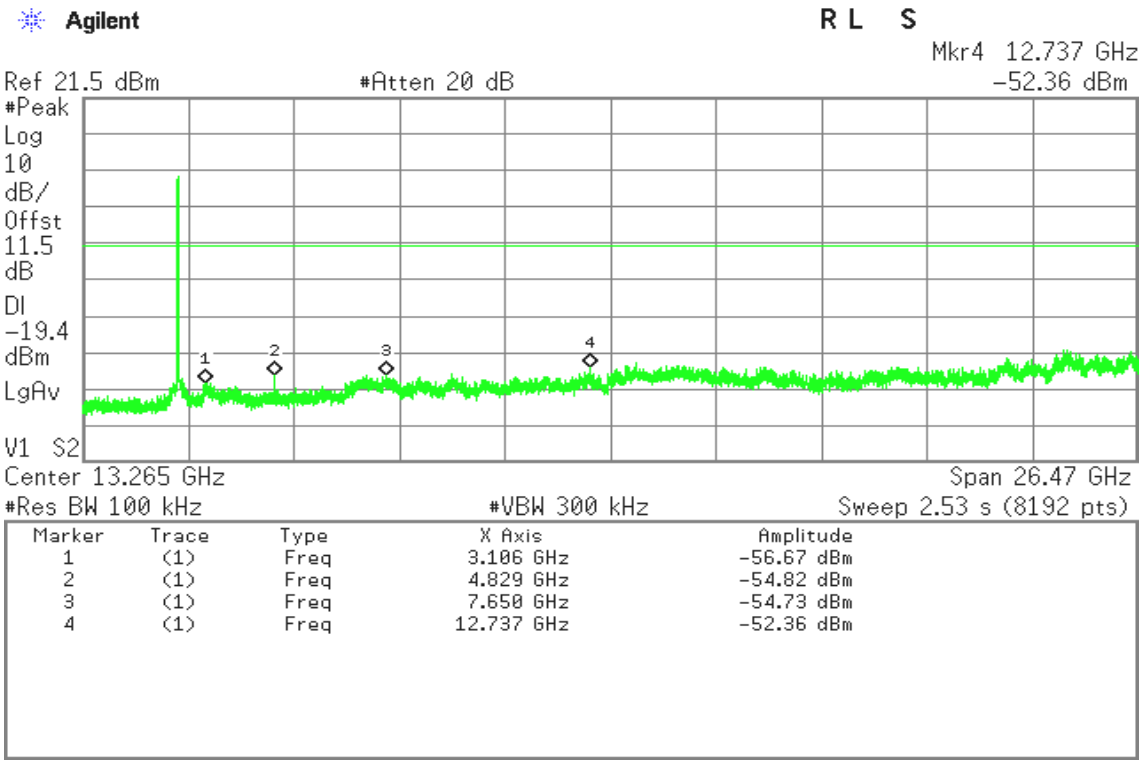
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High



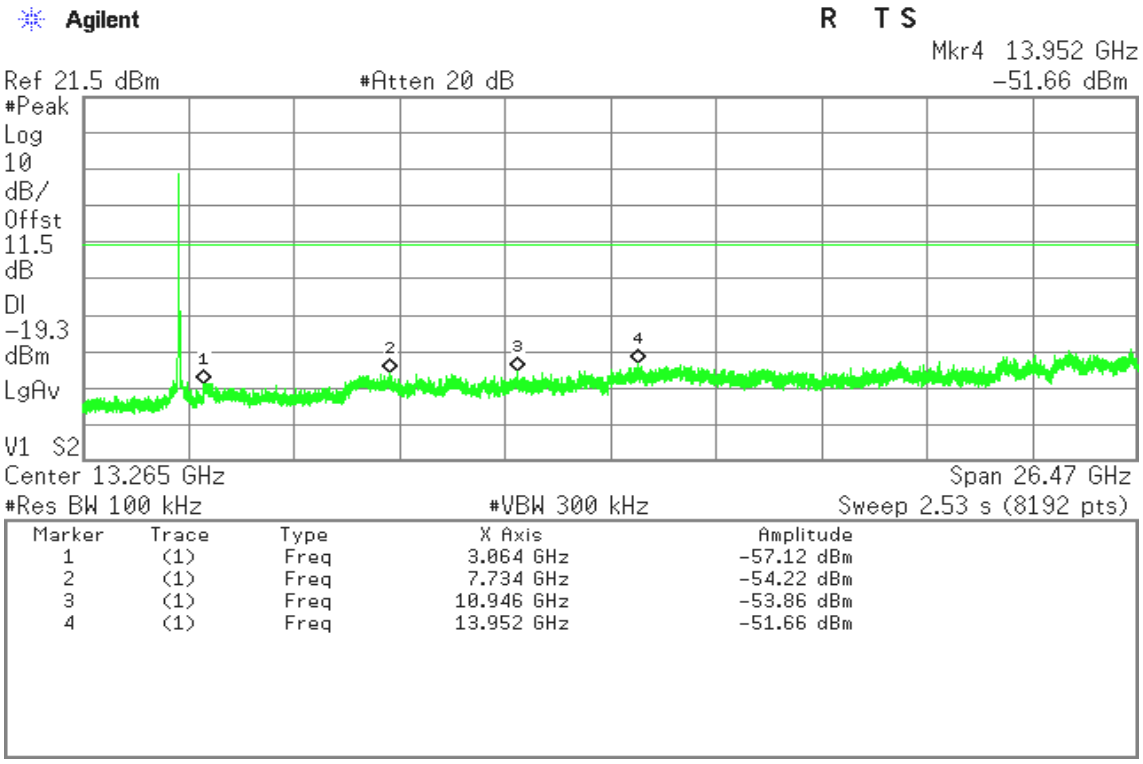
IEEE 802.11g mode

CH Low

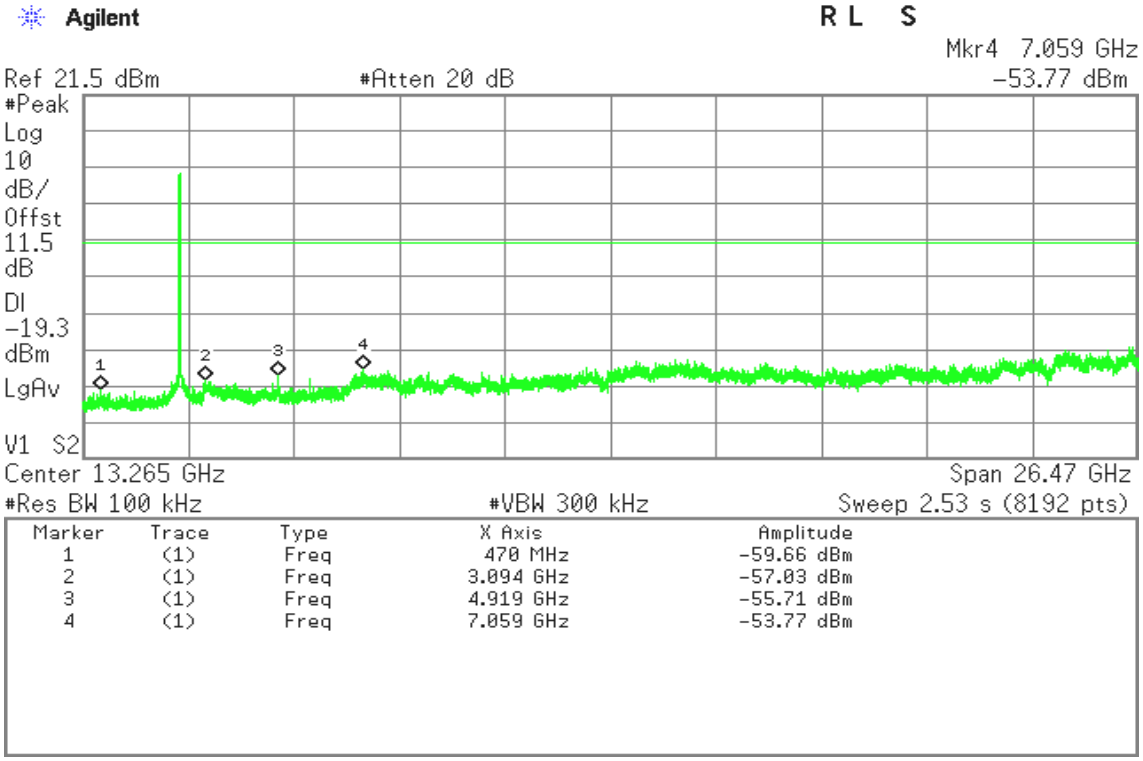


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid



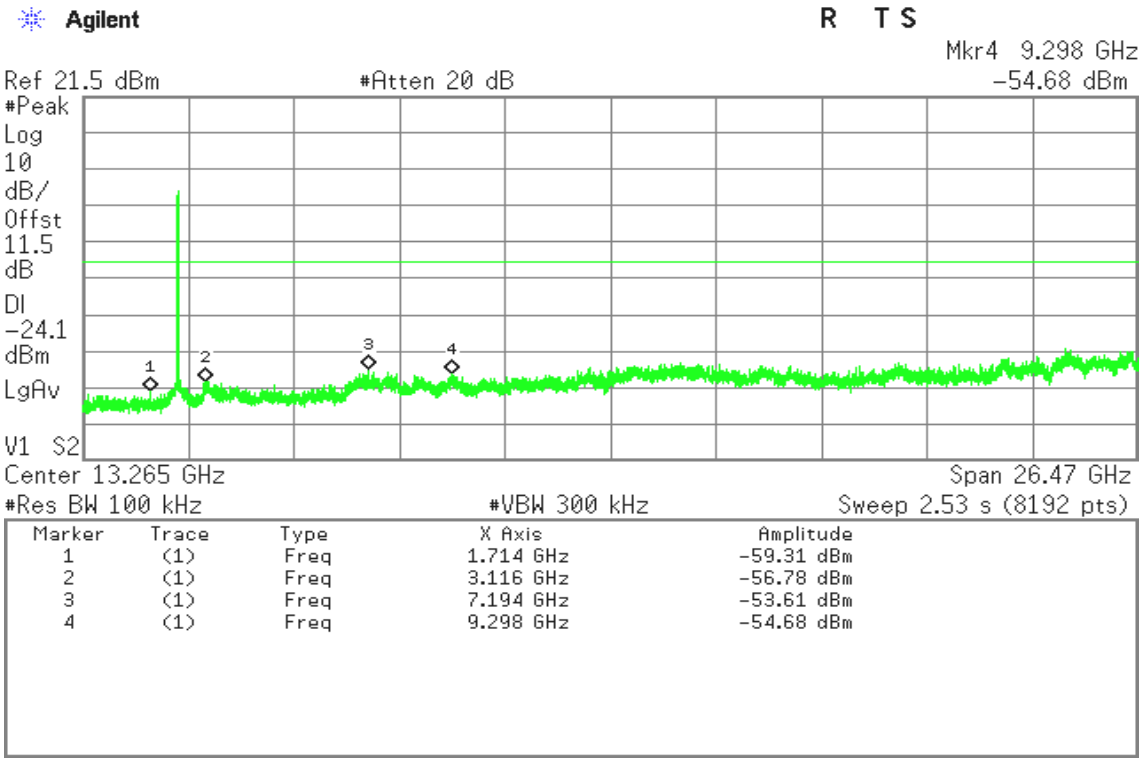
CH High



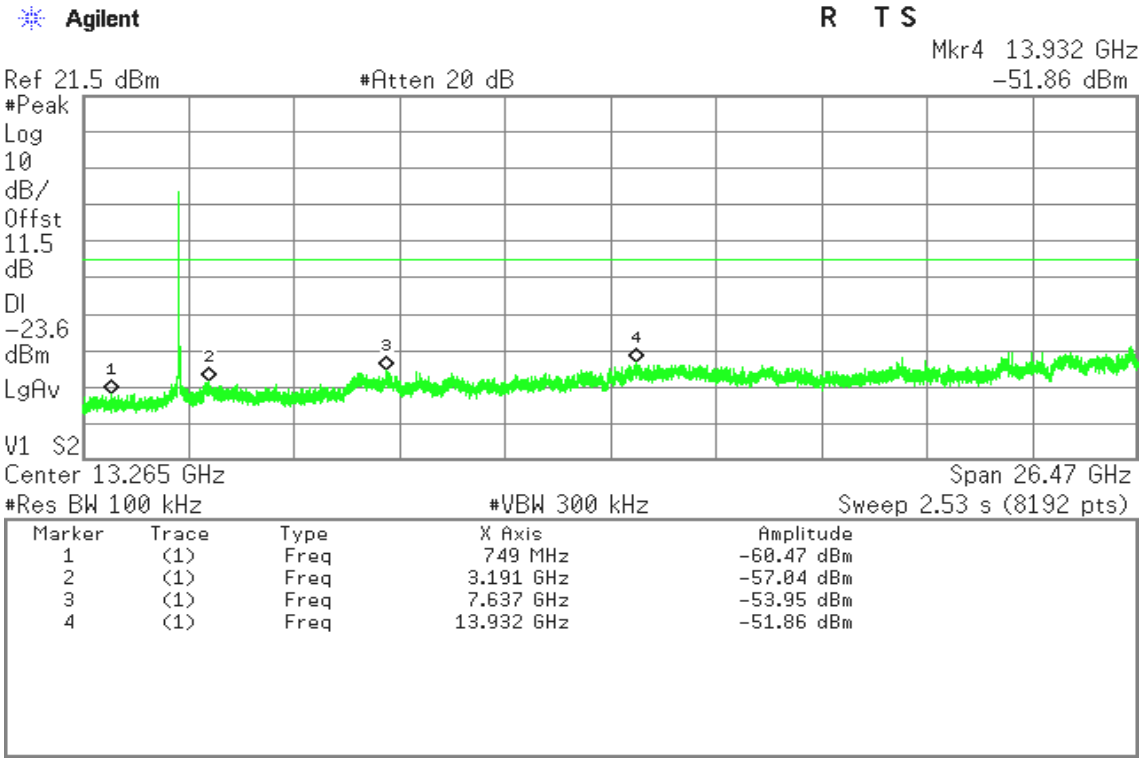
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 mode / Chain 0

CH Low

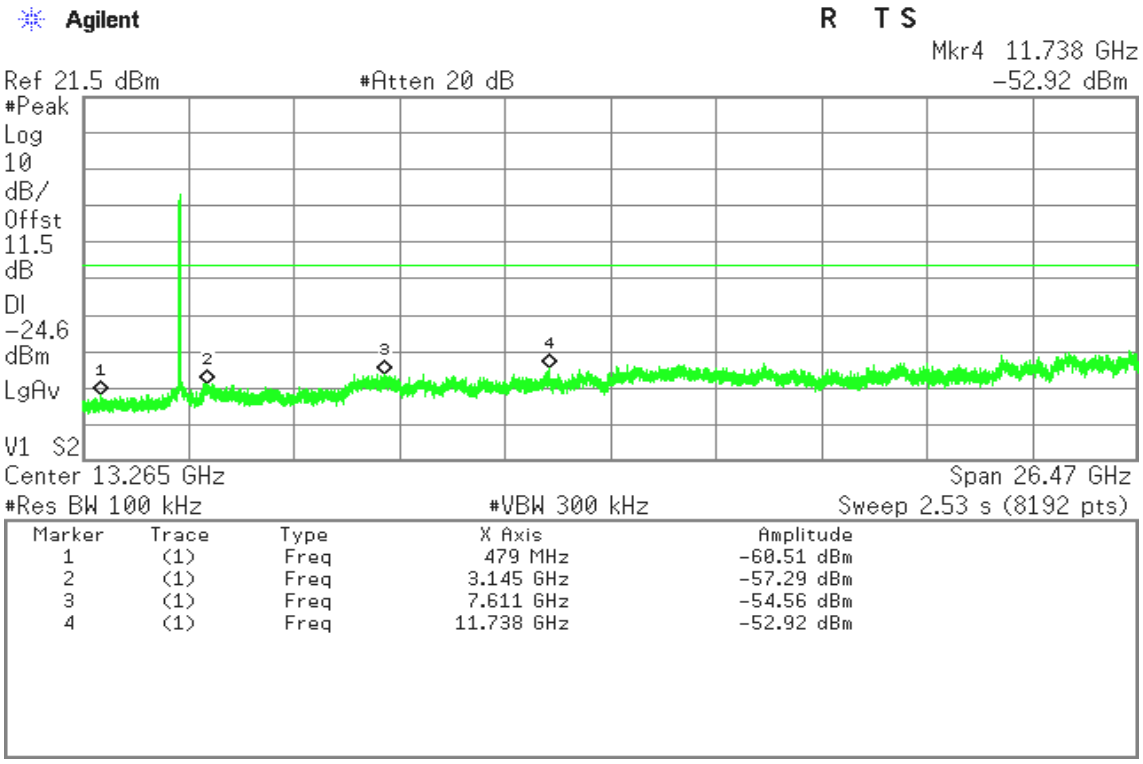


CH Mid



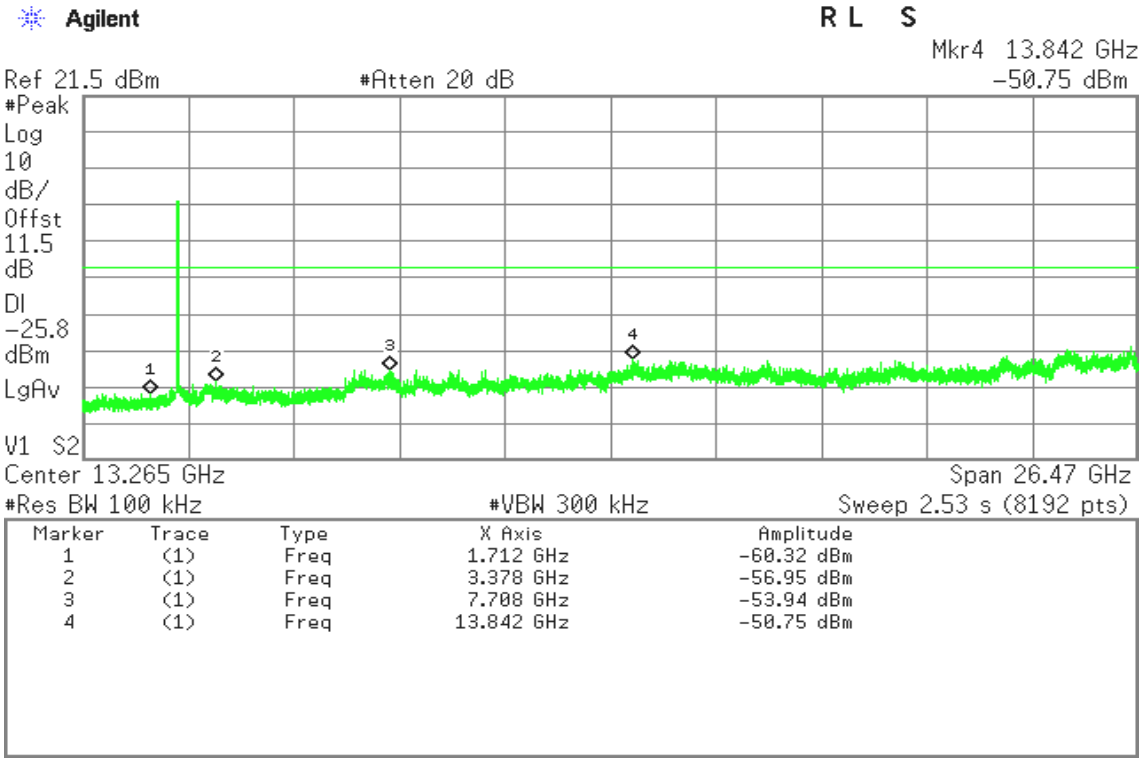
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High



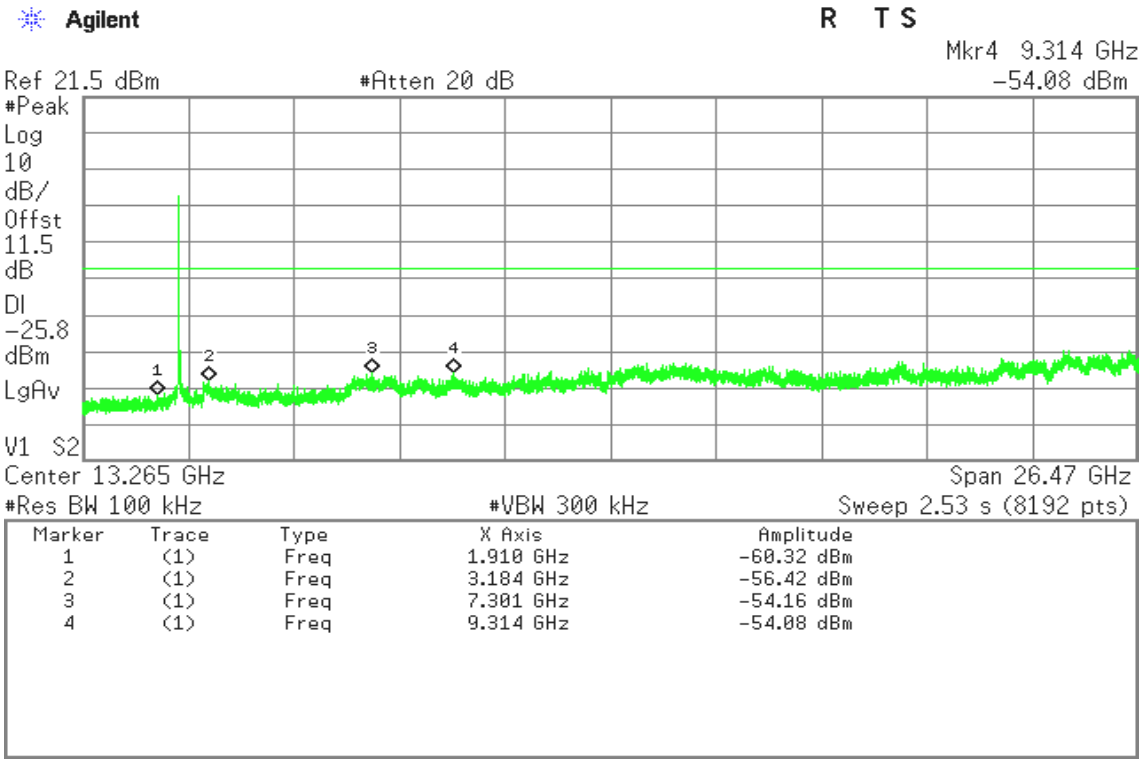
IEEE 802.11n HT20 mode / Chain 1

CH Low

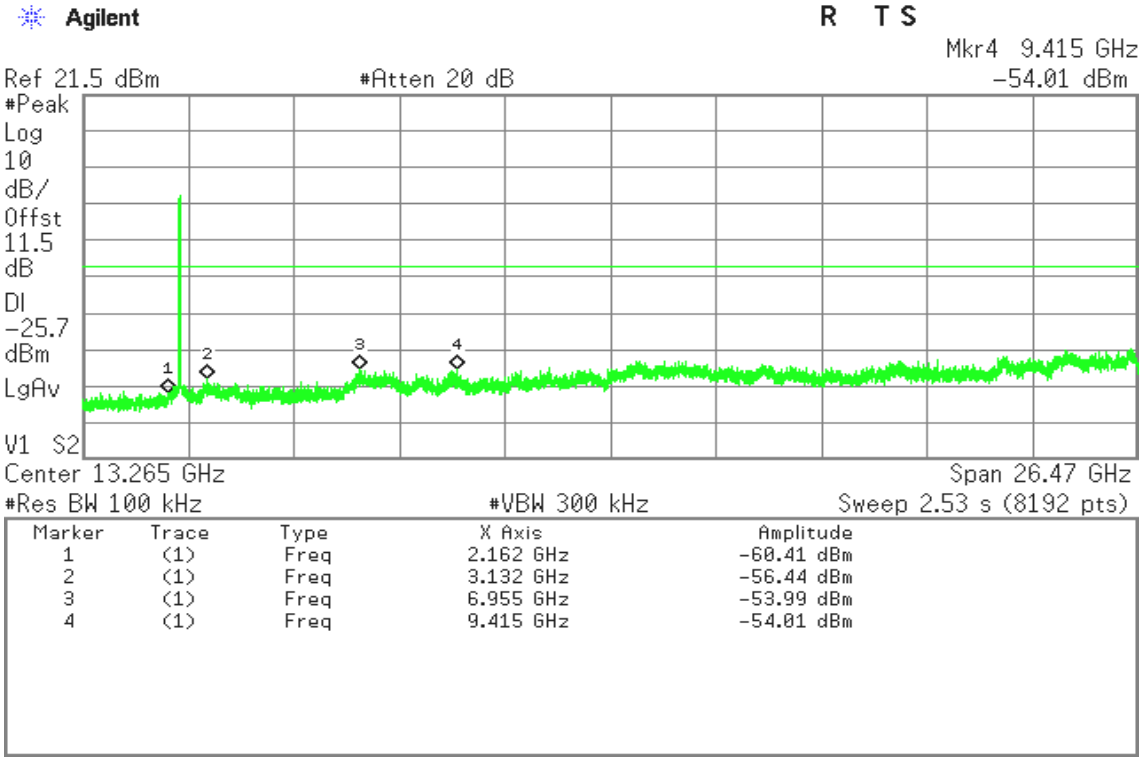


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid



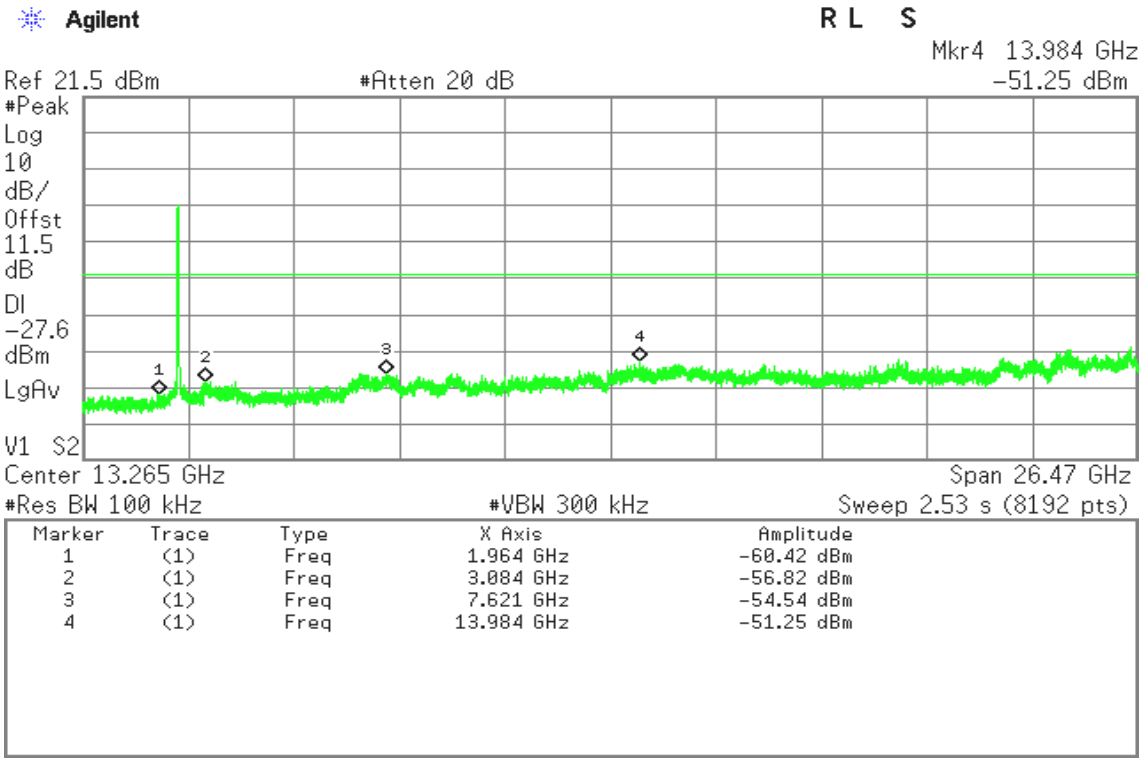
CH High



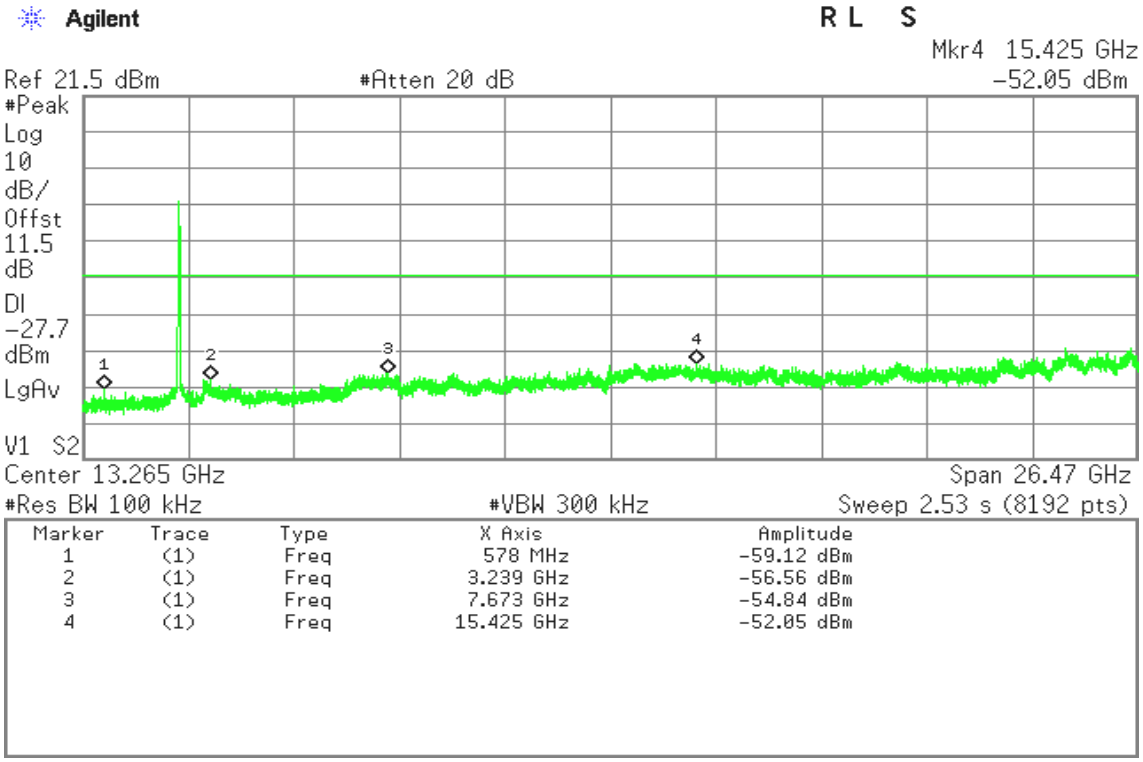
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 mode / Chain 0

CH Low

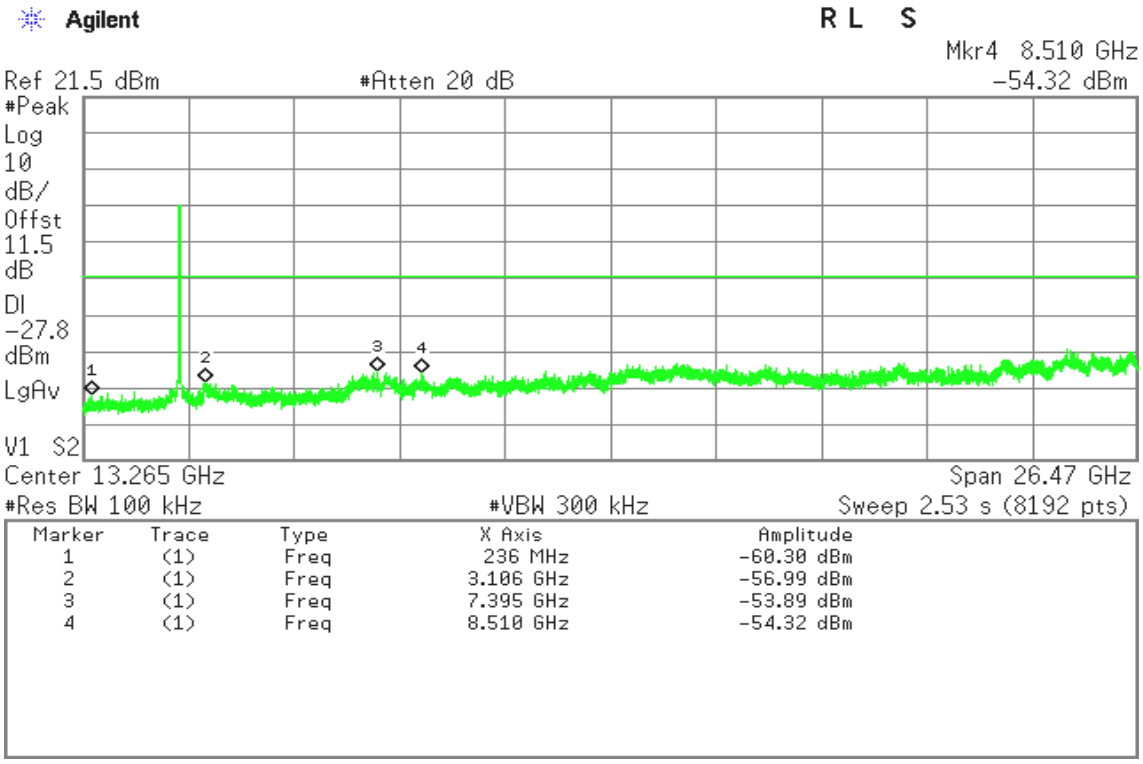


CH Mid



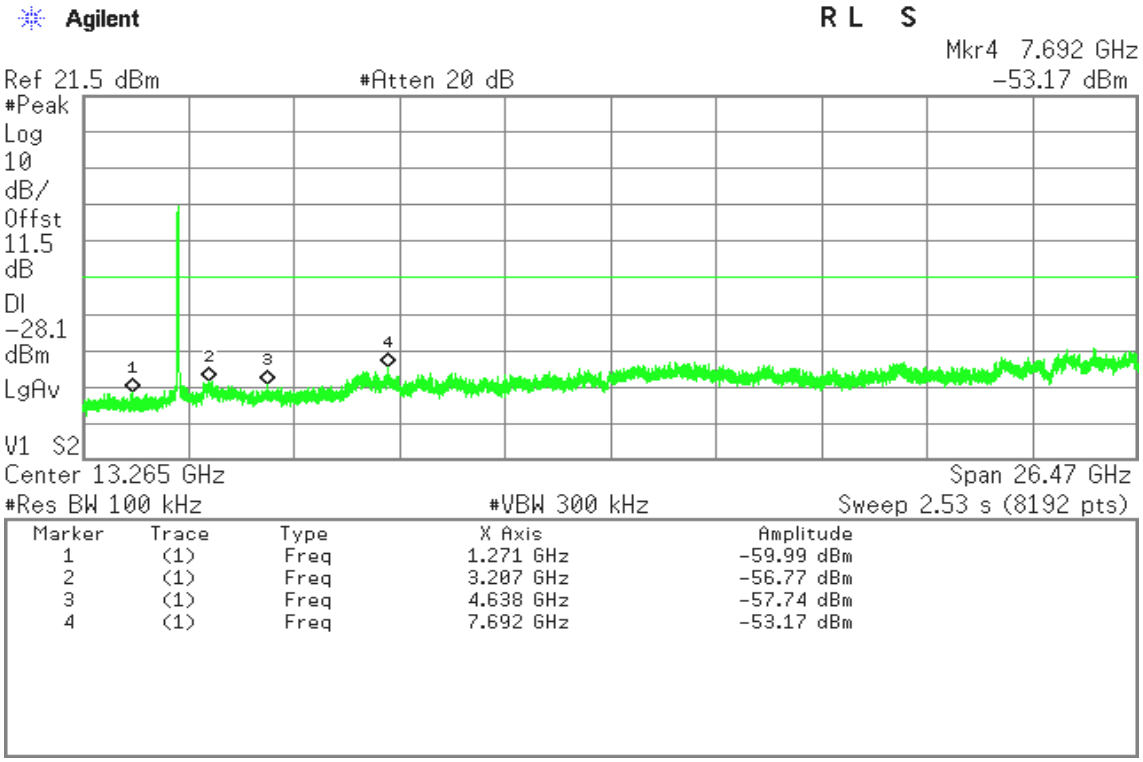
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High



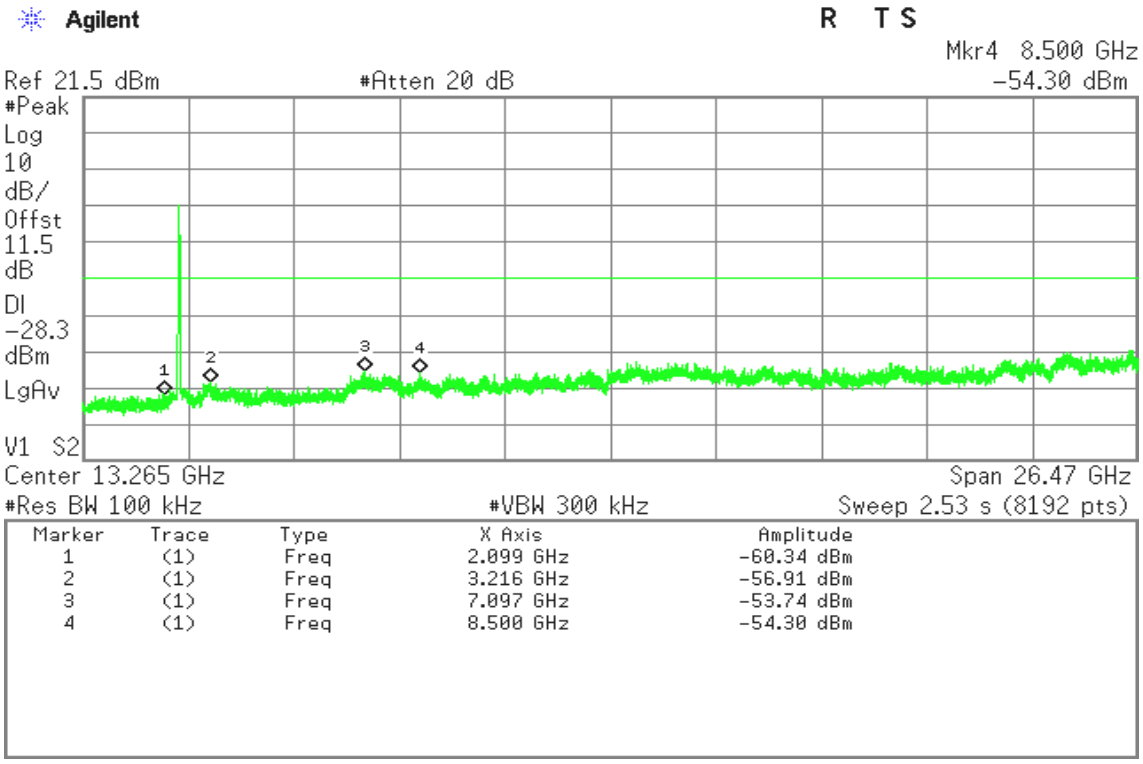
IEEE 802.11n HT40 mode / Chain 1

CH Low

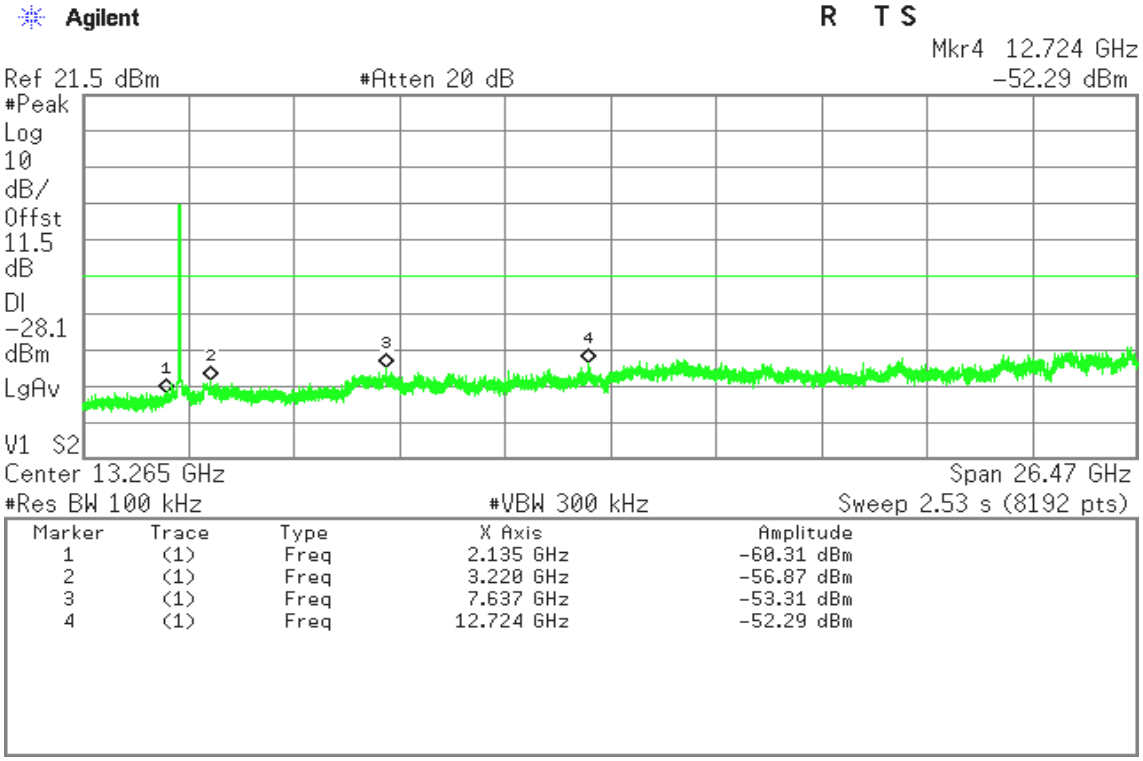


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid



CH High



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.6.2 RADIATED EMISSIONS

LIMIT

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

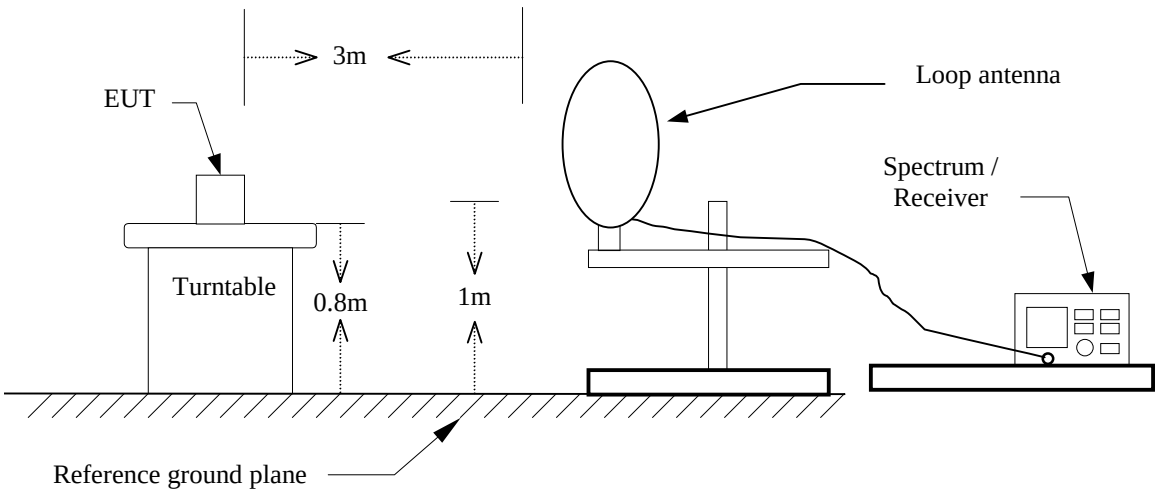
2. In the above emission table, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
0.009 - 0.490	2400/F(kHz) +80	20LOG((2400/F(kHz))+80)
0.490 - 1.705	24000/F(kHz) +40	20LOG((24000/F(kHz))+40)
1.705 – 30.0	30	69.54
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

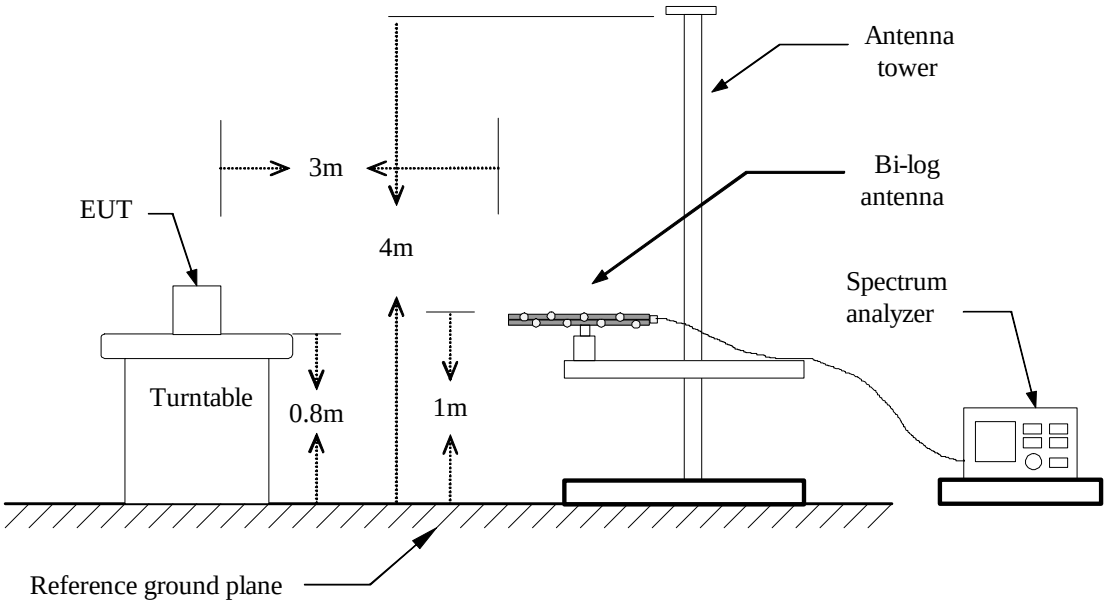
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST CONFIGURATION

9kHz ~ 30MHz

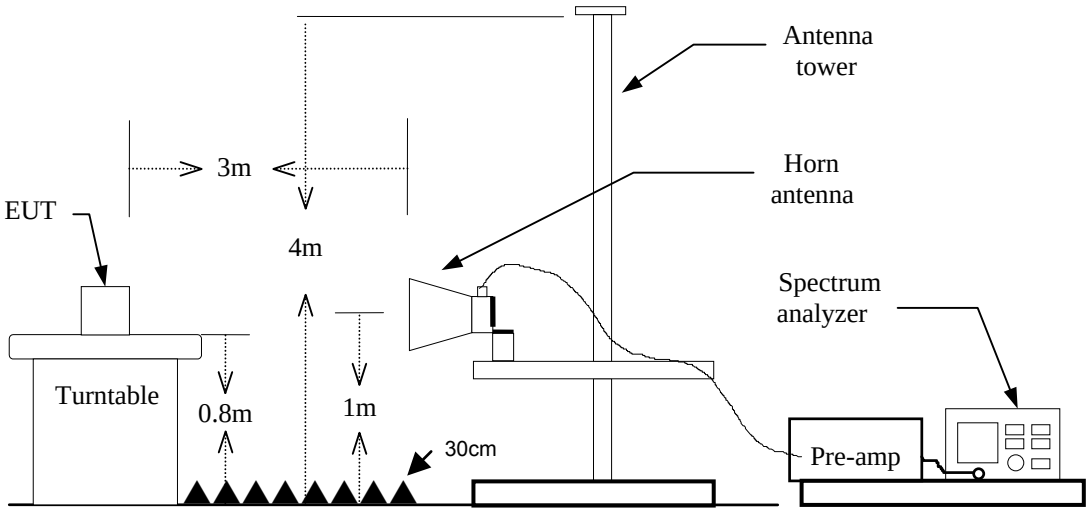


30MHz ~ 1GHz



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 30MHz

   RBW=10kHz / VBW=30kHz / Sweep=AUTO

   30 ~ 1000MHz:

   RBW=100kHz / VBW=300KHz / Sweep=AUTO

   Above 1GHz:

   a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
   b) AVERAGE: RBW=1MHz / VBW=300Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

DATA SAMPLE

Below 1 GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol. (H/V)	Remark
x.xx	43.20	-20.71	22.49	40.00	-17.51	V	QP

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m) = Antenna factor – Amplifier gain + Cable loss
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Q.P. = Quasi-Peak

Above 1 GHz

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
x.xx	45.25	6.91	52.16	74.00	-21.84	H	peak
x.xx	32.33	6.91	39.24	54.00	-14.76	H	AVG

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

TEST RESULTS

No non-compliance noted.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST DATA

Below 1GHz

Operation Mode:	Normal Link	**Test Date:**	2014/8/29
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol. (H/V)	Remark
154.1599	38.50	-16.39	22.11	43.50	-21.39	V	QP
312.2699	39.50	-12.04	27.46	46.00	-18.54	V	QP
445.1600	45.60	-10.03	35.57	46.00	-10.43	V	QP
532.4600	41.90	-8.64	33.26	46.00	-12.74	V	QP
722.5800	46.80	-6.62	40.18	46.00	-5.82	V	QP
742.9500	47.20	-6.17	41.03	46.00	-4.97	V	QP
151.2500	43.30	-16.24	27.06	43.50	-16.44	H	QP
445.1600	45.20	-10.03	35.17	46.00	-10.83	H	QP
535.3700	40.20	-8.58	31.62	46.00	-14.38	H	QP
586.7800	29.80	-8.02	21.78	46.00	-24.22	H	QP
719.6700	40.50	-6.68	33.82	46.00	-12.18	H	QP
898.1500	29.40	-3.97	25.43	46.00	-20.57	H	QP

Remark:

1. *No emission found between lowest internal used / generated frequency to 30 MHz. (9kHz ~ 30MHz)*
2. *Measuring frequencies from 9 kHz to the 1GHz.*
3. *Radiated emissions measured in the measured frequency range were made with an instrument using peak detector or quasi-peak detector mode.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Above 1 GHz

Operation Mode:	TX / IEEE 802.11b / CH Low	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1536.000	52.15	-5.09	47.06	74.00	-26.94	V	peak
1984.000	50.23	-1.55	48.68	74.00	-25.32	V	peak
2898.000	48.52	-0.69	47.83	74.00	-26.17	V	peak
3760.000	41.31	3.20	44.51	74.00	-29.49	V	peak
4915.000	38.49	4.51	43.00	74.00	-31.00	V	peak
7235.000	40.12	10.21	50.33	74.00	-23.67	V	peak
1096.000	53.03	-10.29	42.74	74.00	-31.26	H	peak
1538.000	54.73	-9.21	45.52	74.00	-28.48	H	peak
2654.000	49.97	-3.37	46.60	74.00	-27.40	H	peak
3760.000	40.45	4.57	45.02	74.00	-28.98	H	peak
4825.000	45.83	5.88	51.71	74.00	-22.29	H	peak
7235.000	41.87	10.96	52.83	74.00	-21.17	H	peak
7235.000	37.77	10.96	48.73	54.00	-5.27	H	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode: TX / IEEE 802.11b / CH Mid **Test Date:** 2014/8/14

Temperature: 26°C **Tested by:** Francis Lee

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1296.000	53.77	-8.61	45.16	74.00	-28.84	V	peak
2220.000	50.80	-1.37	49.43	74.00	-24.57	V	peak
2874.000	48.86	-1.03	47.83	74.00	-26.17	V	peak
3665.000	39.89	2.63	42.52	74.00	-31.48	V	peak
5195.000	39.24	5.48	44.72	74.00	-29.28	V	peak
7530.000	39.07	11.65	50.72	74.00	-23.28	V	peak
1538.000	55.67	-9.21	46.46	74.00	-27.54	H	peak
2180.000	49.57	-3.60	45.97	74.00	-28.03	H	peak
2854.000	48.67	-2.07	46.60	74.00	-27.40	H	peak
3910.000	40.73	5.18	45.91	74.00	-28.09	H	peak
4875.000	45.31	6.73	52.04	74.00	-21.96	H	peak
4875.000	44.79	6.73	51.52	54.00	-2.48	H	AVG
7310.000	39.20	11.77	50.97	74.00	-23.03	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode: TX / IEEE 802.11b / CH High **Test Date:** 2014/8/14

Temperature: 26°C **Tested by:** Francis Lee

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1538.000	51.90	-5.08	46.82	74.00	-27.18	V	peak
2172.000	51.41	-1.96	49.45	74.00	-24.55	V	peak
2762.000	48.76	-1.86	46.90	74.00	-27.10	V	peak
4010.000	39.56	3.45	43.01	74.00	-30.99	V	peak
4995.000	38.78	5.27	44.05	74.00	-29.95	V	peak
7385.000	39.87	11.18	51.05	74.00	-22.95	V	peak
1100.000	52.14	-10.26	41.88	74.00	-32.12	H	peak
1536.000	54.80	-9.20	45.60	74.00	-28.40	H	peak
2814.000	48.22	-2.37	45.85	74.00	-28.15	H	peak
3660.000	41.30	3.93	45.23	74.00	-28.77	H	peak
4925.000	47.42	7.26	54.68	74.00	-19.32	H	peak
4925.000	45.19	7.26	52.45	54.00	-1.55	H	AVG
7385.000	41.34	11.39	52.73	74.00	-21.27	H	peak
7385.000	38.12	11.39	49.51	54.00	-4.49	H	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode: TX / IEEE 802.11g / CH Low **Test Date:** 2014/8/14

Temperature: 26°C **Tested by:** Francis Lee

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1538.000	53.04	-5.08	47.96	74.00	-26.04	V	peak
1972.000	49.86	-1.74	48.12	74.00	-25.88	V	peak
2930.000	49.62	-0.85	48.77	74.00	-25.23	V	peak
3780.000	39.90	3.45	43.35	74.00	-30.65	V	peak
5570.000	38.70	6.01	44.71	74.00	-29.29	V	peak
7230.000	41.05	10.19	51.24	74.00	-22.76	V	peak
1538.000	54.48	-9.21	45.27	74.00	-28.73	H	peak
2140.000	50.08	-3.69	46.39	74.00	-27.61	H	peak
2852.000	48.52	-2.09	46.43	74.00	-27.57	H	peak
3765.000	40.25	4.63	44.88	74.00	-29.12	H	peak
4825.000	42.54	5.88	48.42	74.00	-25.58	H	peak
7235.000	43.33	10.96	54.29	74.00	-19.71	H	peak
7235.000	35.54	10.96	46.50	54.00	-7.50	H	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** 2014/8/14

Temperature: 26°C **Tested by:** Francis Lee

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1538.000	52.68	-5.08	47.60	74.00	-26.40	V	peak
2004.000	49.39	-1.39	48.00	74.00	-26.00	V	peak
2890.000	48.06	-0.80	47.26	74.00	-26.74	V	peak
3800.000	40.49	3.69	44.18	74.00	-29.82	V	peak
5500.000	38.62	6.23	44.85	74.00	-29.15	V	peak
7575.000	38.17	11.82	49.99	74.00	-24.01	V	peak
1536.000	55.02	-9.20	45.82	74.00	-28.18	H	peak
2168.000	49.76	-3.63	46.13	74.00	-27.87	H	peak
2826.000	48.80	-2.28	46.52	74.00	-27.48	H	peak
3590.000	40.57	3.93	44.50	74.00	-29.50	H	peak
4880.000	45.57	6.81	52.38	74.00	-21.62	H	peak
4880.000	35.73	6.81	42.54	54.00	-11.46	H	AVG
7305.000	39.92	11.79	51.71	74.00	-22.29	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode: TX / IEEE 802.11g / CH High **Test Date:** 2014/8/14

Temperature: 26°C **Tested by:** Francis Lee

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1538.000	52.37	-5.08	47.29	74.00	-26.71	V	peak
1928.000	51.00	-2.44	48.56	74.00	-25.44	V	peak
2858.000	48.85	-1.26	47.59	74.00	-26.41	V	peak
3740.000	40.32	2.96	43.28	74.00	-30.72	V	peak
5330.000	39.11	5.58	44.69	74.00	-29.31	V	peak
7385.000	40.28	11.18	51.46	74.00	-22.54	V	peak
1538.000	55.24	-9.21	46.03	74.00	-27.97	H	peak
2162.000	49.39	-3.64	45.75	74.00	-28.25	H	peak
2836.000	49.08	-2.21	46.87	74.00	-27.13	H	peak
3875.000	40.19	5.19	45.38	74.00	-28.62	H	peak
4925.000	48.00	7.26	55.26	74.00	-18.74	H	peak
4925.000	37.69	7.26	44.95	54.00	-9.05	H	AVG
7390.000	45.34	11.36	56.70	74.00	-17.30	H	peak
7390.000	34.62	11.36	45.98	54.00	-8.02	H	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode:	TX / IEEE 802.11n HT20 mode / CH Low	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	55 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1538.000	52.67	-5.08	47.59	74.00	-26.41	V	peak
1952.000	50.15	-2.06	48.09	74.00	-25.91	V	peak
2764.000	48.52	-1.87	46.65	74.00	-27.35	V	peak
3805.000	39.40	3.58	42.98	74.00	-31.02	V	peak
5440.000	37.94	6.33	44.27	74.00	-29.73	V	peak
7550.000	39.13	11.72	50.85	74.00	-23.15	V	peak
1536.000	55.16	-9.20	45.96	74.00	-28.04	H	peak
2138.000	50.08	-3.70	46.38	74.00	-27.62	H	peak
2754.000	48.53	-2.89	45.64	74.00	-28.36	H	peak
4280.000	39.24	7.32	46.56	74.00	-27.44	H	peak
5575.000	38.41	9.11	47.52	74.00	-26.48	H	peak
7375.000	39.10	11.44	50.54	74.00	-23.46	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode:	TX / IEEE 802.11n HT20 mode / CH Mid	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1300.000	53.85	-8.62	45.23	74.00	-28.77	V	peak
1970.000	52.13	-1.77	50.36	74.00	-23.64	V	peak
2186.000	52.37	-1.64	50.73	74.00	-23.27	V	peak
2644.000	50.06	-1.86	48.20	74.00	-25.80	V	peak
3635.000	40.79	2.77	43.56	74.00	-30.44	V	peak
5330.000	38.57	5.58	44.15	74.00	-29.85	V	peak
7475.000	38.02	11.48	49.50	74.00	-24.50	V	peak
1538.000	55.26	-9.21	46.05	74.00	-27.95	H	peak
2208.000	50.28	-3.78	46.50	74.00	-27.50	H	peak
2880.000	48.66	-1.88	46.78	74.00	-27.22	H	peak
4255.000	39.83	6.90	46.73	74.00	-27.27	H	peak
5615.000	38.41	9.03	47.44	74.00	-26.56	H	peak
7275.000	37.65	11.49	49.14	74.00	-24.86	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode:	TX / IEEE 802.11n HT20 mode / CH High	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1536.000	52.30	-5.09	47.21	74.00	-26.79	V	peak
1962.000	51.52	-1.90	49.62	74.00	-24.38	V	peak
2912.000	48.87	-0.74	48.13	74.00	-25.87	V	peak
3770.000	39.99	3.32	43.31	74.00	-30.69	V	peak
6565.000	39.47	6.91	46.38	74.00	-27.62	V	peak
7560.000	38.38	11.76	50.14	74.00	-23.86	V	peak
1538.000	55.10	-9.21	45.89	74.00	-28.11	H	peak
2196.000	50.40	-3.57	46.83	74.00	-27.17	H	peak
2728.000	49.19	-3.12	46.07	74.00	-27.93	H	peak
3880.000	41.20	5.20	46.40	74.00	-27.60	H	peak
5565.000	37.73	9.08	46.81	74.00	-27.19	H	peak
7225.000	37.98	10.82	48.80	74.00	-25.20	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode:	TX / IEEE 802.11n HT40 mode / CH Low	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1536.000	52.20	-5.09	47.11	74.00	-26.89	V	peak
2152.000	53.41	-2.41	51.00	74.00	-23.00	V	peak
2952.000	50.53	-0.99	49.54	74.00	-24.46	V	peak
4130.000	40.42	2.93	43.35	74.00	-30.65	V	peak
5485.000	38.34	6.25	44.59	74.00	-29.41	V	peak
7620.000	38.22	11.68	49.90	74.00	-24.10	V	peak
1536.000	54.72	-9.20	45.52	74.00	-28.48	H	peak
2168.000	50.09	-3.63	46.46	74.00	-27.54	H	peak
2782.000	49.00	-2.64	46.36	74.00	-27.64	H	peak
4295.000	38.64	7.58	46.22	74.00	-27.78	H	peak
5570.000	38.09	9.10	47.19	74.00	-26.81	H	peak
7140.000	39.52	10.41	49.93	74.00	-24.07	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode:	TX / IEEE 802.11n HT40 mode / CH Mid	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1252.000	54.42	-8.53	45.89	74.00	-28.11	V	peak
1968.000	53.42	-1.81	51.61	74.00	-22.39	V	peak
2760.000	49.36	-1.85	47.51	74.00	-26.49	V	peak
3725.000	41.09	2.78	43.87	74.00	-30.13	V	peak
5490.000	38.34	6.25	44.59	74.00	-29.41	V	peak
7605.000	37.92	11.85	49.77	74.00	-24.23	V	peak
1536.000	55.24	-9.20	46.04	74.00	-27.96	H	peak
2200.000	50.04	-3.56	46.48	74.00	-27.52	H	peak
2930.000	49.14	-1.41	47.73	74.00	-26.27	H	peak
3615.000	41.03	4.10	45.13	74.00	-28.87	H	peak
5330.000	39.82	7.50	47.32	74.00	-26.68	H	peak
7280.000	38.63	11.55	50.18	74.00	-23.82	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Operation Mode:	TX / IEEE 802.11n HT40 mode / CH High	**Test Date:**	2014/8/14
Temperature:	26°C	**Tested by:**	Francis Lee
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq. (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. Pol H/V	Remark
1538.000	51.95	-5.08	46.87	74.00	-27.13	V	peak
2196.000	50.63	-1.42	49.21	74.00	-24.79	V	peak
2864.000	49.27	-1.18	48.09	74.00	-25.91	V	peak
4160.000	41.31	2.75	44.06	74.00	-29.94	V	peak
6210.000	40.05	6.38	46.43	74.00	-27.57	V	peak
7375.000	38.83	11.10	49.93	74.00	-24.07	V	peak
1538.000	55.01	-9.21	45.80	74.00	-28.20	H	peak
2170.000	49.70	-3.63	46.07	74.00	-27.93	H	peak
2696.000	49.57	-3.37	46.20	74.00	-27.80	H	peak
3875.000	40.17	5.19	45.36	74.00	-28.64	H	peak
5600.000	38.93	9.20	48.13	74.00	-25.87	H	peak
7240.000	38.12	11.02	49.14	74.00	-24.86	H	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limitor as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.7 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that isconducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms lineimpedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be basedon the measurement of the radio frequency voltage between each power line and ground at the powerterminal. The lower limit applies at the boundary between the frequency ranges.

FrequencyRange (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

***** *Decreases with the logarithm of the frequency.*

TEST CONFIGURATION

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

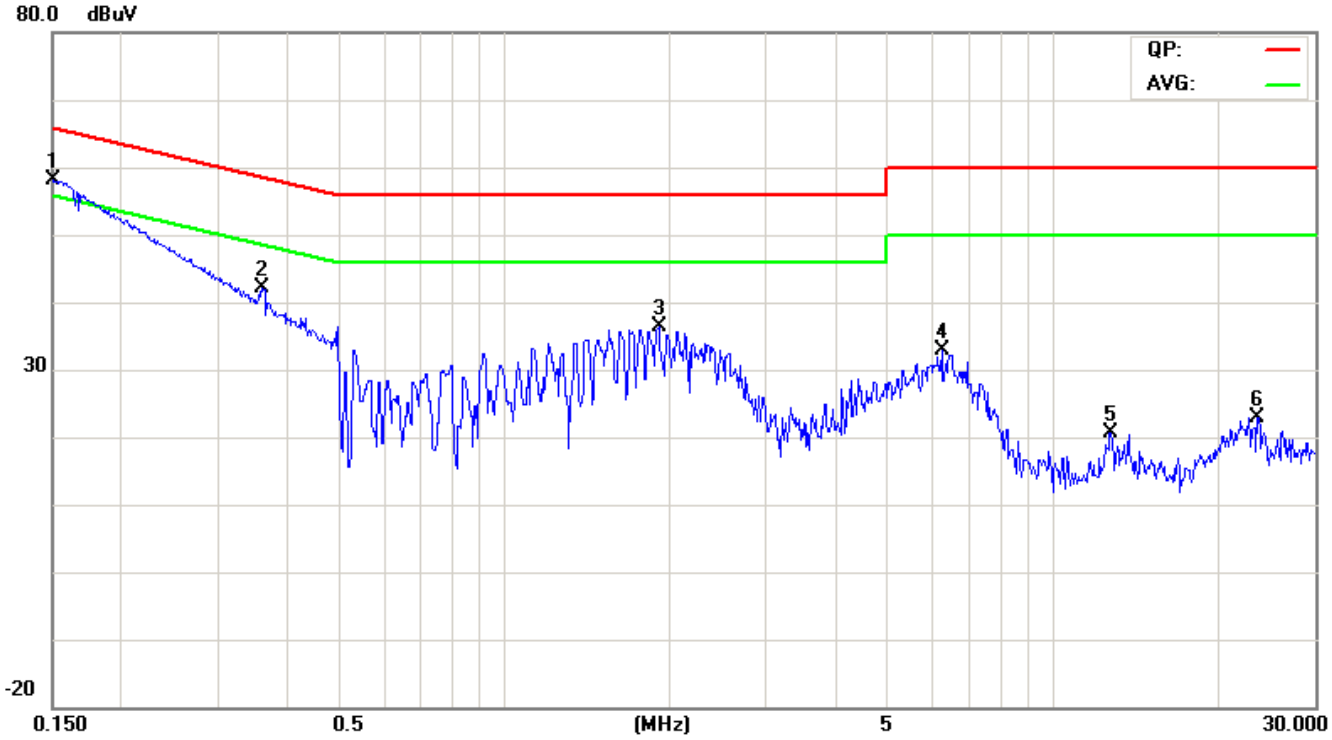
TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TEST DATA

Test Mode	Normal Link	**6dBBandwidth**	9 kHz
Environmental Conditions	25°C, 57% RH	**Test Date:**	2014/9/1
Tested By	Francis Lee	**Line**	L1

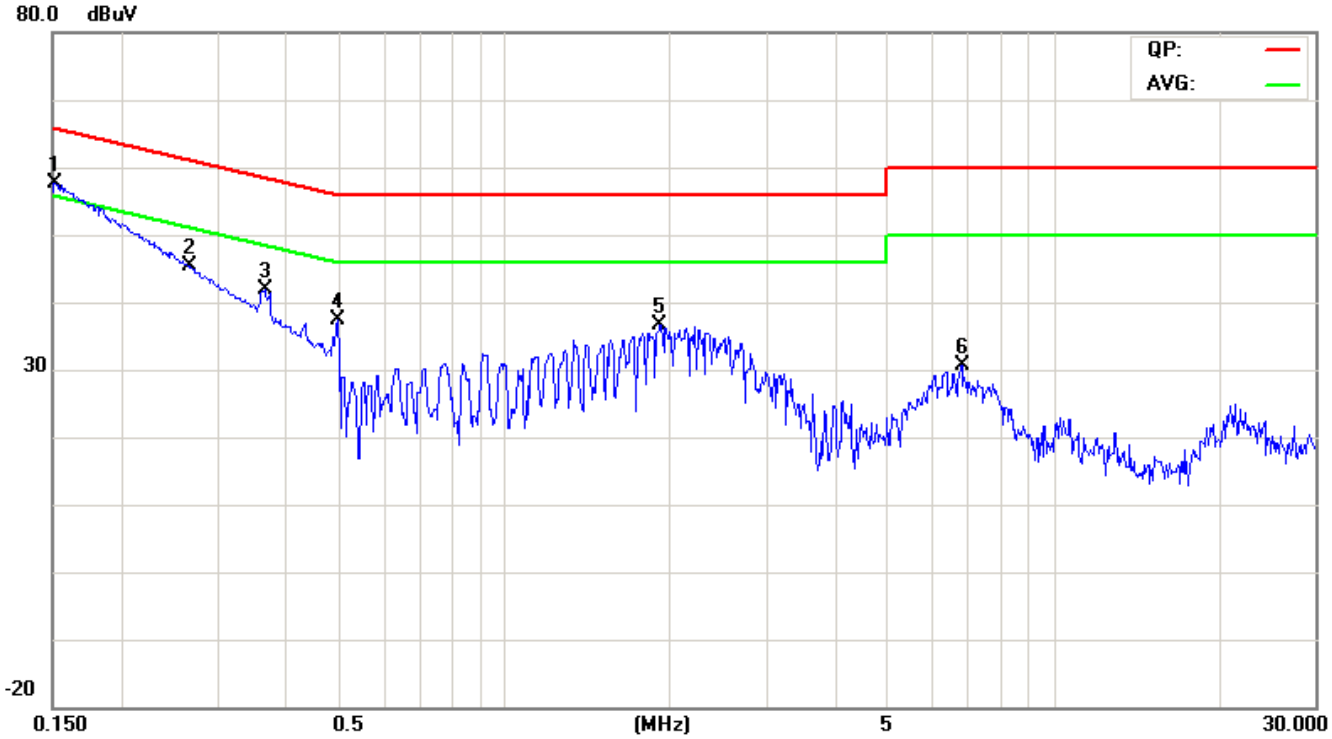


NO.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	(Pass/Fail)
1*	0.1520	40.67	15.19	9.79	50.46	24.98	65.88	55.89	-15.42	-30.91	Pass
2	0.3605	24.19	15.53	9.74	33.93	25.27	58.72	48.72	-24.79	-23.45	Pass
3	1.9017	24.57	14.77	9.79	34.36	24.56	56.00	46.00	-21.64	-21.44	Pass
4	6.2451	17.29	8.61	9.93	27.22	18.54	60.00	50.00	-32.78	-31.46	Pass
5	12.6611	3.91	-2.26	10.01	13.92	7.75	60.00	50.00	-46.08	-42.25	Pass
6	23.4806	6.66	0.52	10.09	16.75	10.61	60.00	50.00	-43.25	-39.39	Pass

REMARKS:L1 = Line One (Live Line)

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode	Normal Link	**6dBBandwidth**	9 kHz
Environmental Conditions	25°C, 57% RH	**Test Date:**	2014/9/1
Tested By	Francis Lee	**Line**	L2



NO.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	(Pass/Fail)
1*	0.1504	41.09	16.39	9.77	50.86	26.16	65.97	55.98	-15.11	-29.82	Pass
2	0.2686	28.14	5.70	9.71	37.85	15.41	61.16	51.16	-23.31	-35.75	Pass
3	0.3598	25.13	17.05	9.72	34.85	26.77	58.73	48.73	-23.88	-21.96	Pass
4	0.4957	23.27	19.47	9.73	33.00	29.20	56.07	46.07	-23.07	-16.87	Pass
5	1.9071	24.72	15.45	9.77	34.49	25.22	56.00	46.00	-21.51	-20.78	Pass
6	6.8122	14.84	7.78	9.93	24.77	17.71	60.00	50.00	-35.23	-32.29	Pass

REMARKS:L2 = Line Two (Neutral Line)

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

8. APPENDIX I: PHOTOGRAPHS OF TEST SETUP

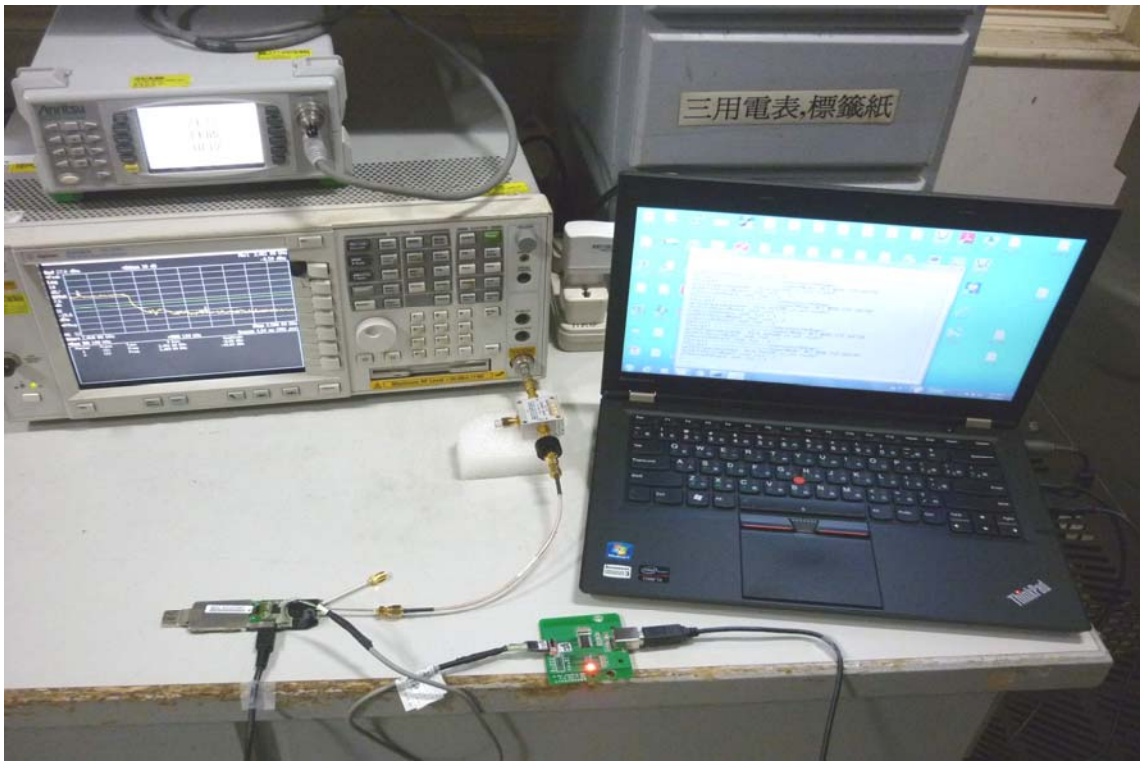
Radiated Emission Set up Photos
Below 1GHz

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Above 1GHz

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Conducted Emission Setup Photos



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Powerline Conducted EmissionsSetup Photos

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

APPENDIX II: PHOTOGRAPHS OF EUT

Refer toT140813D03 Photographs.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.