FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Product Name: Touchstone Wireless Telephony Gateway
Brand Name: ARRIS
Model No.: TG1682G
Series Model: N/A
FCC ID: UIDTG1682
Test Report Number:
C140220R01-RPW

Issued for

ARRIS Group, Inc.
3871 Lakefield Drive Suite 300 Suwanee, GA 30024, U.S.A

Issued by

Compliance Certification Services Inc.
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ACCREDITED
TESTING CERT #2541.01

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1. TEST RESULT CERTIFICATION

Product Name:	Touchstone Wireless Telephony Gateway
Trade Name:	ARRIS
Model Name.:	TG1682G
Series Model:	N/A
Applicant Discrepancy:	Initial
Device Category:	Mobile Device
Date of Test:	December 2, 2013~December,29 2013 and March 20, 2014~ March 26, 2014
Applicant:	**ARRIS Group, Inc.** 3871 Lakefield Drive Suite 300 Suwanee, GA 30024, U.S.A
Manufacturer:	**ARRIS Group, Inc.** 3871 Lakefield Drive Suite 300 Suwanee, GA 30024, U.S.A
Application Type:	Certification

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart C	No non-compliance noted
Canada RSS-210：issue 8	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: 2009 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:

Jeff fang

Jeff.Fang
RF Manager
Compliance Certification Service Inc.

Tested by:

Blent.Wang

Blent.Wang
Test Engineer
Compliance Certification Service Inc.

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2. EUT DESCRIPTION

Product Name:	Touchstone Wireless Telephony Gateway
Brand Name:	ARRIS
Model Name:	TG1682G
Series Model:	N/A
Model Discrepancy:	N/A
Power Adapter Power Rating :	Input: AC ~115V 60Hz 0.7A
Frequency Range:	2.4G:2412MHz-2462MHz 5 G:5725MHz-5850MHz
Transmit Power:	IEEE 802.11b mode: 29.87 dBm IEEE 802.11g mode: 29.82 dBm draft 802.11n Standard-20 MHz Channel mode: 29.50 dBm draft 802.11n Wide-40 MHz Channel mode: 28.19 dBm IEEE 802.11a mode: 28.94 dBm draft 802.11an Standard-20 MHz Channel mode:27.56 dBm draft 802.11an Wide-40 MHz Channel mode: 27.39 dBm draft 802.11ac Standard-20 MHz Channel mode:27.67 dBm draft 802.11ac Wide-40 MHz Channel mode: 27.39 dBm draft 802.11ac Wide-80 MHz Channel mode: 25.86 dBm
Modulation Technique:	802.11b mode: DSSS (1,2,5.5 and 11 Mbps) 802.11g mode: DSSS /OFDM (6,9,12,18,24,36,48 and 54 Mbps) 802.11n Standard-20 MHz Channel mode: OFDM (6.5,13,19.5,26,39,52,58.5 and 65 Mbps) 802.11n Wide-40 MHz Channel mode: OFDM (13.5,27,40.5,54,81,108,121.5 and 135 Mbps) 802.11a mode: OFDM (6,9,12,18,24,36,48 and 54 Mbps) 802.11an Standard-20 MHz Channel mode: OFDM (6.5,13,19.5,26,39,52,58.5 and 65 Mbps) 802.11an Wide-40 MHz Channel mode: OFDM (13.5,27,40.5,54,81,108,121.5 and 135 Mbps) 802.11ac Standard-20 MHz Channel mode: OFDM (MCS0,MCS1,MCS2,MCS3,MCS4,MCS5,MCS6,MCS7,MCS8 and MCS9) 802.11ac Wide-40 MHz Channel mode: OFDM (MCS0,MCS1,MCS2,MCS3,MCS4,MCS5,MCS6,MCS7,MCS8 and MCS9) 802.11ac Wide-80 MHz Channel mode: OFDM (MCS0,MCS1,MCS2,MCS3,MCS4,MCS5,MCS6,MCS7,MCS8 and MCS9)
Number of Channels:	IEEE 802.11b/g/n HT20 mode: 11 Channels IEEE 802.11n HT40 mode: 7 Channels IEEE 802.11a mode: 5 Channels draft 802.11an 20MHz/ac 20MHz mode: 5 Channels draft 802.11an 40MHz/ac 40MHz mode: 3 Channels draft 802.11ac Wide-80 MHz Channel mode: 1 Channel
Antenna Specification:	Dipole antennas for 2.4GHz Gain 3.20 dBi and Dipole antennas for 5 GHz Gain 5.20 dBi

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Remark:

1.The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

2.This submittal(s) (test report) is intended for ***FCC ID: UIDTG1682*** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

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3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 2009and FCC CFR 47 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 2009 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 2009.

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3.4. FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

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 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

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

[2] Above 38.6

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.

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3.5. DESCRIPTION OF TEST MODES

The EUT transmitting and receiving with three antennas simultaneously working at a/b/g/n/c mode, so 3x3 configuration was used for all testing in this report.

The worst-case data rates are determined to be as follows for each mode based on investigation by measuring the average power, peak power and PPSD across all data rates, bandwidths, and modulations.

The worst-case data rates:
IEEE802.11b mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 11Mbps data rate was chosen for full testing.

IEEE802.11g mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 54Mbps data rate was chosen for full testing.

EEE802.11a mode:

Channel low (5745MHz),

Channel mid (5785MHz)

Channel high (5825MHz) with 54Mbps data rate was chosen for full testing.

Draft 802.11gn Standard-20 MHz Channel mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 65Mbps data rate was chosen for full testing.

Draft 802.11gn Wide-40 MHz Channel mode:

Channel Low (2422MHz)

Channel Mid (2437MHz)

Channel High (2452MHz) with 135Mbps data rate was chosen for full testing.

Draft 802.11an Standard -20 MHz Channel mode:

Channel low (5745MHz),

Channel mid (5785MHz)

Channel high (5825MHz) with MCS9 data rate was chosen for full testing.

Draft 802.11an Wide-40 MHz Channel mode:

Channel Low (5755MHz),

Channel High (5795MHz) with MCS9 data rate was chosen for full testing.

Draft 802.11ac Wide-80 MHz Channel mode:

Channel mid (5775MHz) with MCS9 data rate was chosen for full testing.

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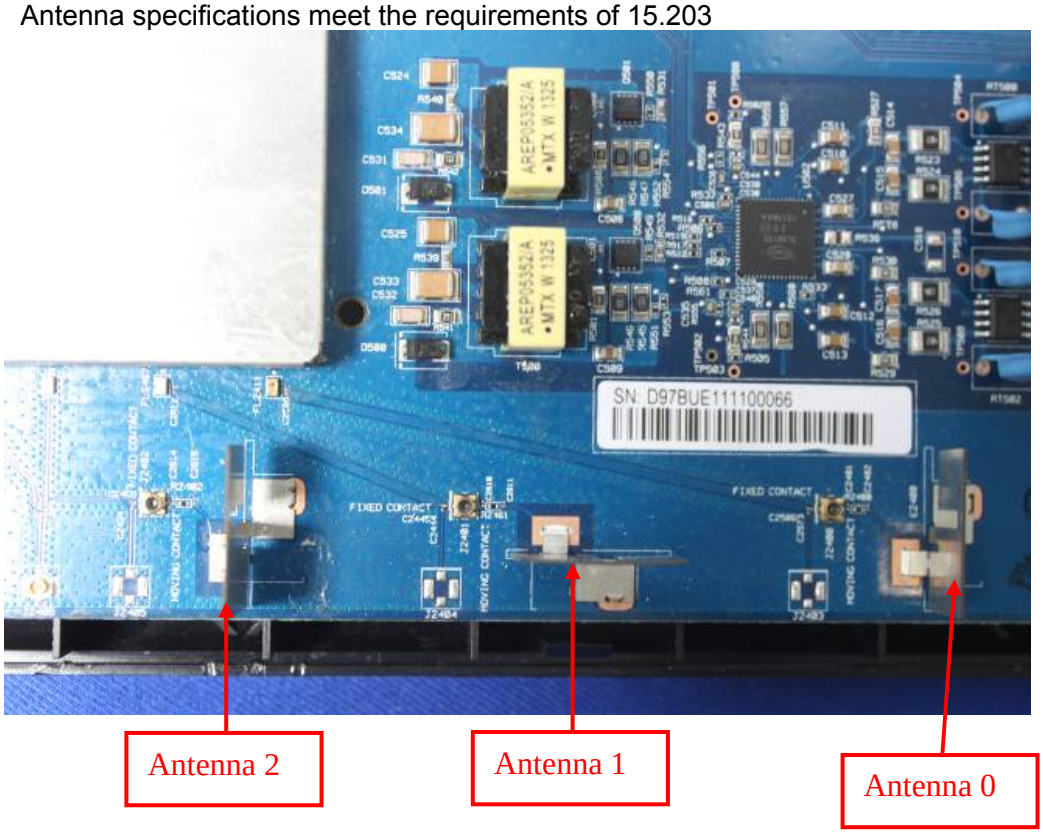
3.6.ANTENNA DESCRIPTION

Antenna specifications meet the requirements of 15.203



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.

Equipment Used for Emissions Measurement

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-4-16
Detector negative	Agilent	8473B	MY42240176	2014-5-12
OSCILLOSCOPE	Agilent	DSO6104A	MY44002585	2015-3-16
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	2015-3-17
EPM-P Series Power Meter	Agilent	E4416A	GB41292714	2015-3-17
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	N.C.R
DC POWER SUPPLY	GW instek	GPS-3303C	E903131	N.C.R
Temp. / Humidity Chamber	Kingson	THS-M1	242	2014-3-12
Test Software	EZ-EMC			

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977 Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-11-13
EMI Test Receiver	R&S	ESCI	101378	2015-1-22
Pre-Amplfier	MINI	ZFL-1000VH2	d041703	2015-1-22
Pre-Amplfier	Miteq	JS41-00101800-32-10P	1675713	2015-1-22
Bilog Antenna	Sunol	JB1	A062604	2015-3-6
Horn-antenna	SCHWARZBECK	BBHA9120D	D:266	2015-3-7
Turn Table	CT	CT123	4165	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R
Controller	CT	CT1OO	95637	N.C.R
Test Software	EZ-EMC			

Conducted Emission				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI TEST RECEIVER	R&S	ESCI	100781	2015-3-16
V (V-LISN)	SCHWARZBECK	NNLK 8129	8129-143	N.C.R
LISN (EUT)	FCC	FCC-LISN-50/250-50-2-02	05012	2015-3-16
Pulse LIMITER	R&S	ESH3-Z2	100524	2014-9-25
Test Software	EZ-EMC			

Remark: *The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

Expanded Uncertainty (95% CONFIDENCE INTERVAL): K=2

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5. FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at
CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone

Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 2009 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.”

5.3. LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.

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5.4.TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC Part 15/18 (using ANSI C63.4 :2009); VCCI V3; CNS 13438; CNS 13439; CNS 13803; CISPR 11; EN 55011; CISPR 13; EN 55013; CISPR 22:2005; CISPR 22:1997 +A1 :2000+A2 :2002; EN 55022:2006; EN55022 :1998 +A1 :2001+A2 :2003; EN 61000-6-3 (excluding discontinuous interference); EN 61000-6-4; AS/NZS CISPR 22; CAN/CSA-CEI/IEC CISPR 22; EN 61000-3-2; EN 61000-3-3; EN550024; EN 61000-4-2; EN 61000-4-3; EN61000-4-4; EN 61000-4-5; EN 61000-4-6; IEC 61000-4-8; EN 61000-4-11; IEC61000-3-2; IEC61000-3-3; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-8; IEC 61000-4-11; EN 300 220-3; EN 300 328; EN 300 330-2; EN 300 440-1; EN 300-440-2; EN 300 893; EN 301 489-01; EN 301 489-3; EN 301 489-07; EN 301 489-17; 47 CFR FCC Part 15, 22, 24	ACCREDITED TESTING CERT #2541.01
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	93105, 90471
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	VCCI R-1600 C-1707 G-216

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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

No.	Device Type	Brand	Model	Series No.	FCC ID
1.	Notebook	DELL	E5430	CN8YYW1	N/A

Remark:

2. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
3. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

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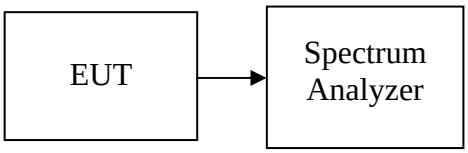
4. FCC PART 15.247 REQUIREMENTS

4.1.6DB 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 6dB bandwidth shall be at least 500 kHz.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the selected span. The VBW is set to 3 times the RBW. The sweep time is occupied.

TEST RESULTS

No non-compliance noted

Test Data

IEEE 802.11b mode /Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.146	>500	PASS
Mid	2437	10.108		PASS
High	2462	10.097		PASS

IEEE 802.11b mode /Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	9.638	>500	PASS
Mid	2437	10.199		PASS
High	2462	10.100		PASS

IEEE 802.11b mode /Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.086	>500	PASS
Mid	2437	10.114		PASS
High	2462	10.094		PASS

IEEE 802.11g mode /Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.770	>500	PASS
Mid	2437	16.429		PASS
High	2462	16.449		PASS

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IEEE 802.11g mode /Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.352	>500	PASS
Mid	2437	16.383		PASS
High	2462	16.352		PASS

IEEE 802.11g mode /Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.379	>500	PASS
Mid	2437	16.386		PASS
High	2462	16.397		PASS

draft 802.11n Standard-20 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.415	>500	PASS
Mid	2437	17.613		PASS
High	2462	17.616		PASS

draft 802.11n Standard-20 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.351	>500	PASS
Mid	2437	17.614		PASS
High	2462	17.222		PASS

draft 802.11n Standard-20 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.603	>500	PASS
Mid	2437	17.639		PASS
High	2462	17.609		PASS

draft 802.11n wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.754	>500	PASS
Mid	2437	36.119		PASS
High	2452	35.792		PASS

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draft 802.11n wide-40 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.305	>500	PASS
Mid	2437	35.843		PASS
High	2452	35.799		PASS

draft 802.11n wide-40 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.949	>500	PASS
Mid	2437	36.423		PASS
High	2452	36.397		PASS

IEEE 802.11a mode /Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)	Limit (kHz)	Result
Low	5745	16.388	>500	PASS
Mid	5785	16.398		PASS
High	5825	16.466		PASS

IEEE 802.11a mode /Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	16.568	>500	PASS
Mid	5785	16.537		PASS
High	5825	16.554		PASS

IEEE 802.11a mode /Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	16.571	>500	PASS
Mid	5785	16.582		PASS
High	5825	16.447		PASS

draft 802.11n Standard-20 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.799	>500	PASS
Mid	5785	17.794		PASS
High	5825	17.543		PASS

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draft 802.11n Standard-20 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.787	>500	PASS
Mid	5785	17.776		PASS
High	5825	17.780		PASS

draft 802.11n Standard-20 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.642	>500	PASS
Mid	5785	17.575		PASS
High	5825	17.599		PASS

draft 802.11n Wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.350	>500	PASS
Mid	5795	36.500		PASS

draft 802.11n Wide-40 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.355	>500	PASS
Mid	5795	36.375		PASS

draft 802.11n Wide-40 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.488	>500	PASS
Mid	5795	36.546		PASS

draft 802.11ac Standard-20 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.632	>500	PASS
Mid	5785	17.672		PASS
High	5825	17.721		PASS

draft 802.11ac Standard-20 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.606	>500	PASS
Mid	5785	17.758		PASS
High	5825	17.651		PASS

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draft 802.11ac Standard-20 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.615	>500	PASS
Mid	5785	17.710		PASS
High	5825	17.643		PASS

draft 802.11ac Wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.348	>500	PASS
Mid	5795	36.347		PASS

draft 802.11ac Wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.343	>500	PASS
Mid	5795	36.393		PASS

draft 802.11ac Wide-40 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.414	>500	PASS
Mid	5795	36.416		PASS

draft 802.11ac Wide-80 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Mid	5775	76.532	>500	PASS

draft 802.11ac Wide-80 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Mid	5775	76.506	>500	PASS

draft 802.11ac Wide-80 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Mid	5775	74.097	>500	PASS

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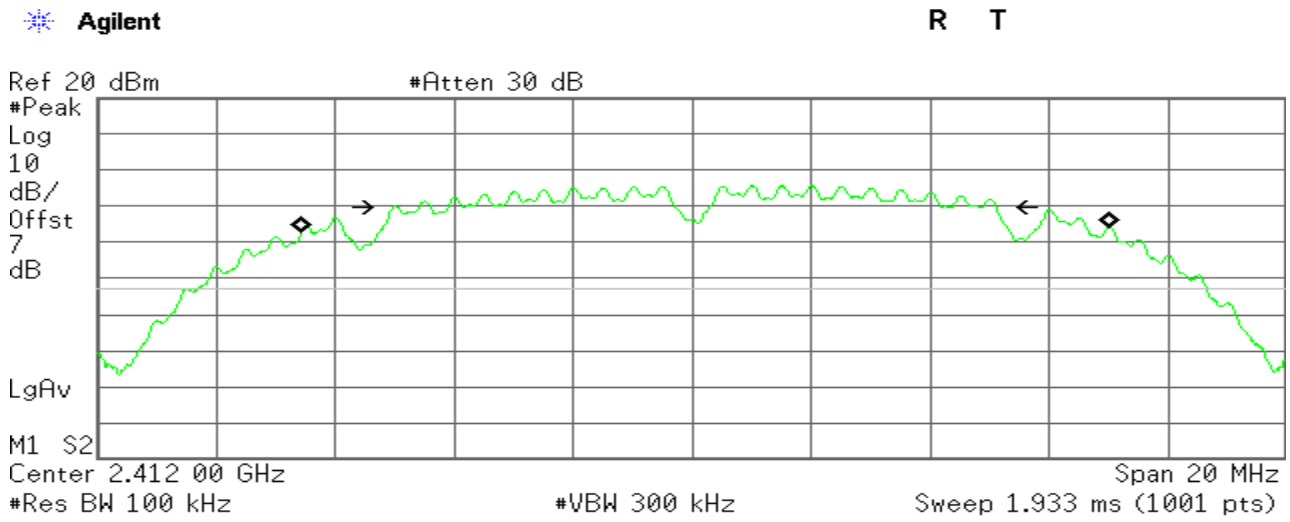
Test Plot

IEEE 802.11b MODE /Chain 0

6dB Bandwidth (CH Low)

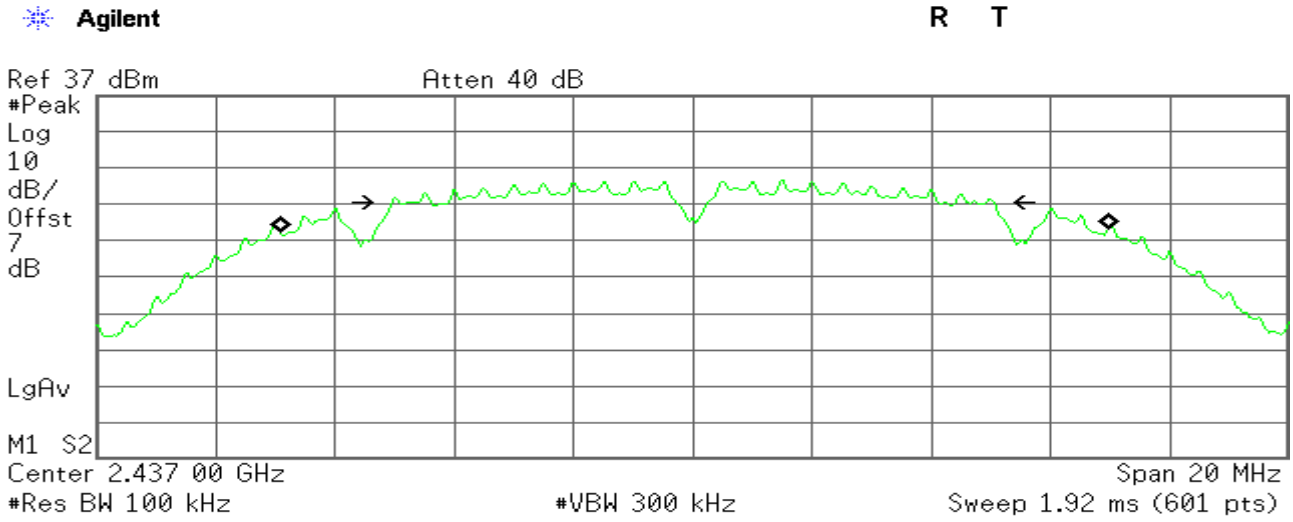


Occupied Bandwidth
13.6007 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 228.016 kHz
x dB Bandwidth 10.146 MHz

6dB Bandwidth (CH Mid)



Occupied Bandwidth
13.8821 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 28.839 kHz
x dB Bandwidth 10.108 MHz

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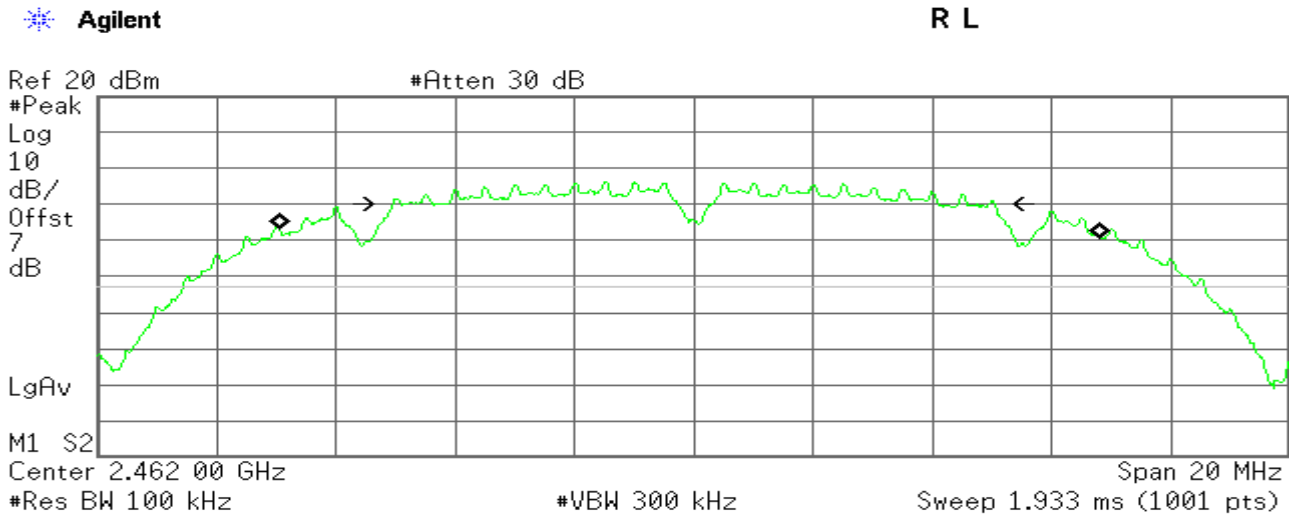
6dB Bandwidth (CH High)



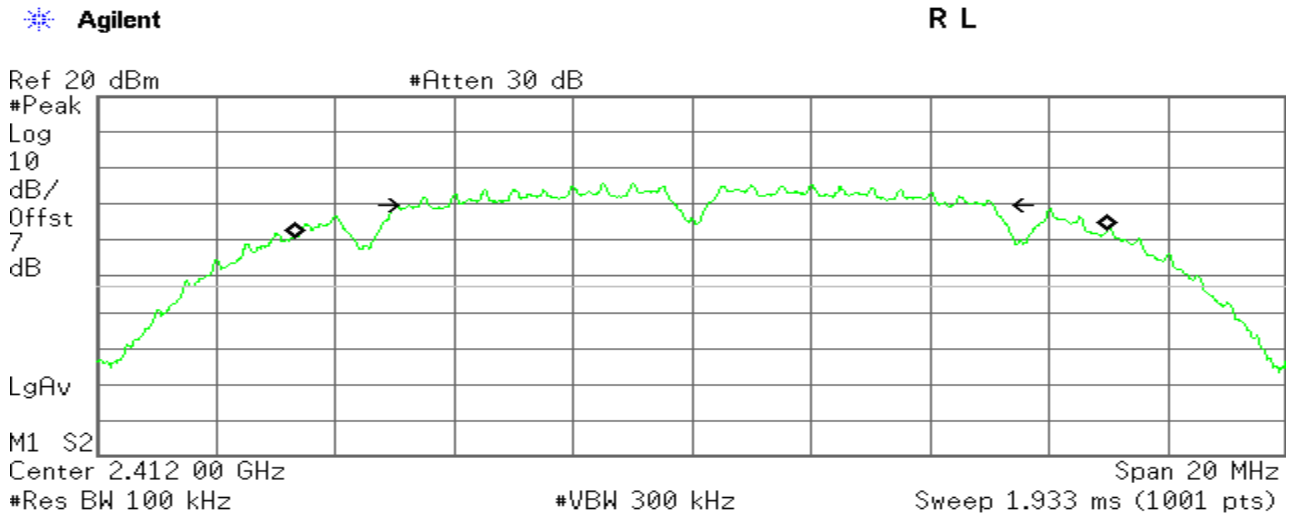
Occupied Bandwidth
13.7641 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -62.237 kHz
x dB Bandwidth 10.097 MHz

IEEE 802.11b MODE /Chain 1

6dB Bandwidth (CH Low)



Occupied Bandwidth
13.6733 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 146.251 kHz
x dB Bandwidth 9.638 MHz

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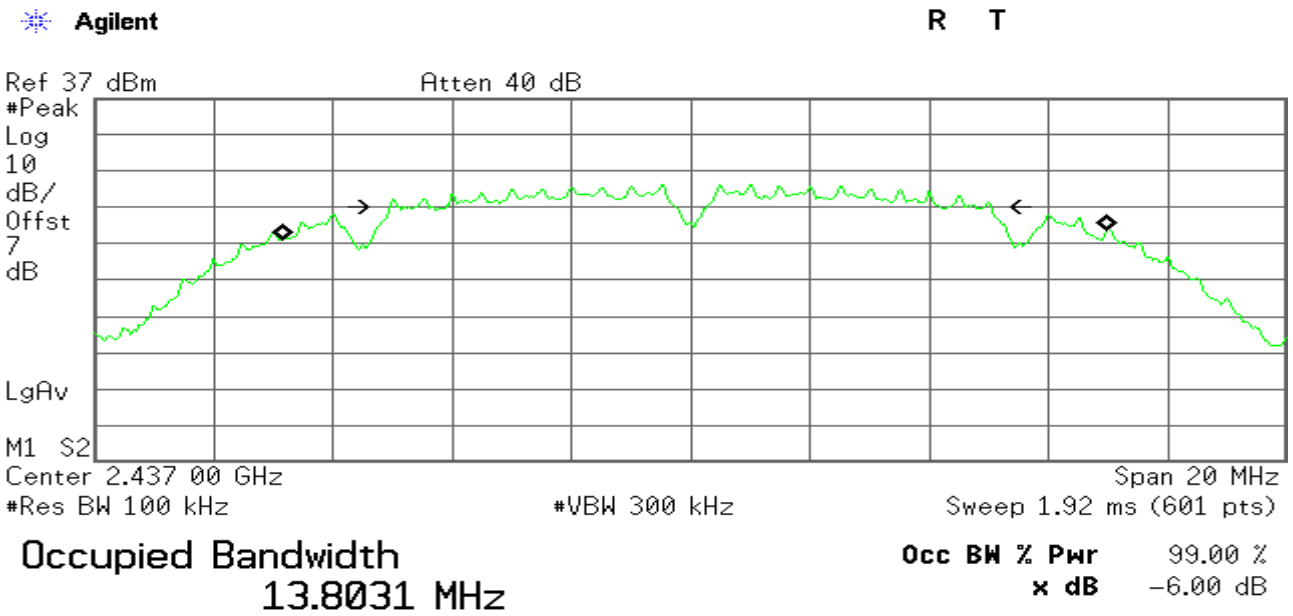
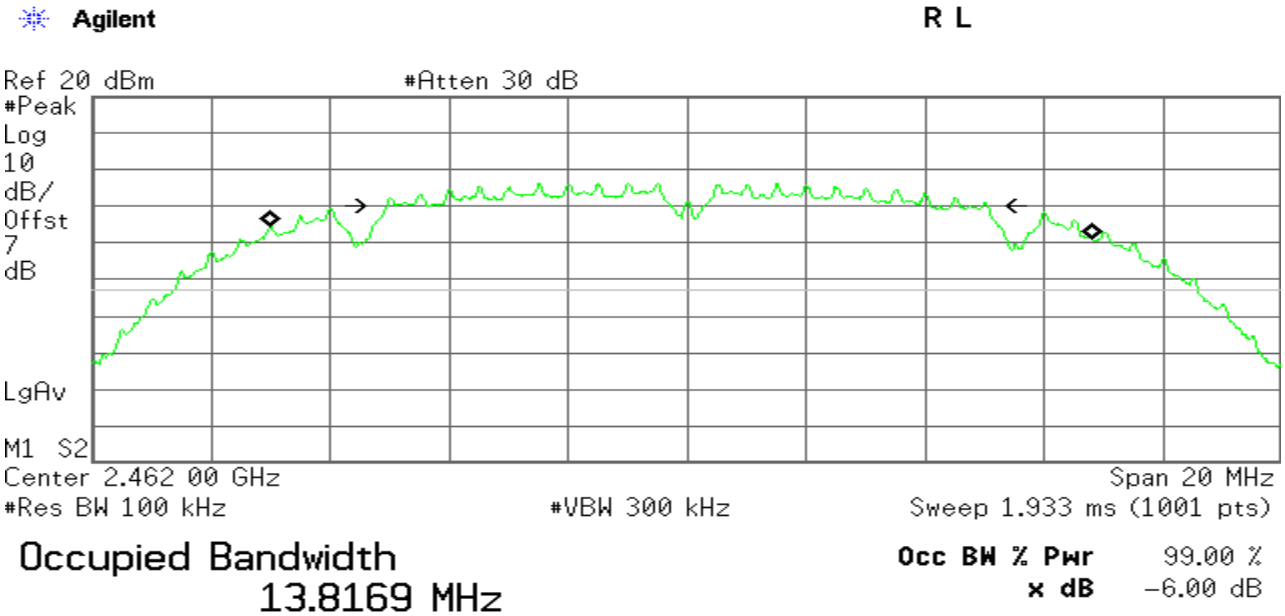
6dB Bandwidth (CH Mid)



Transmit Freq Error 64.584 kHz
x dB Bandwidth 10.099 MHz

6dB Bandwidth (CH High)



Transmit Freq Error -92.927 kHz
x dB Bandwidth 10.100 MHz

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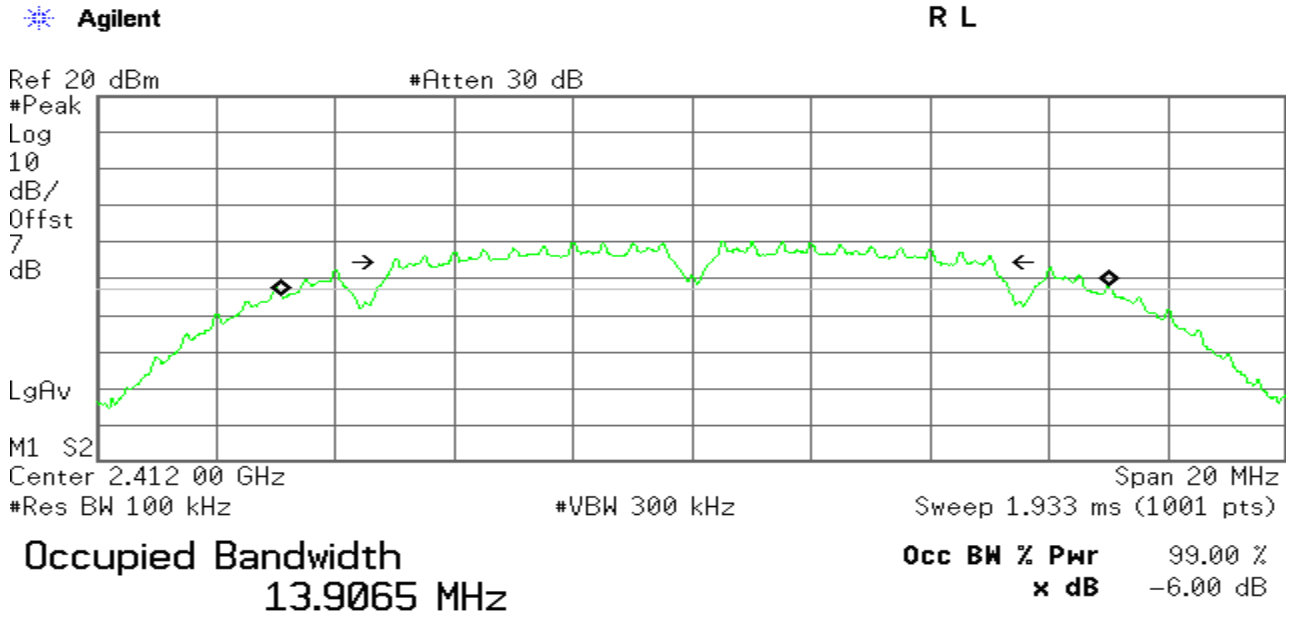
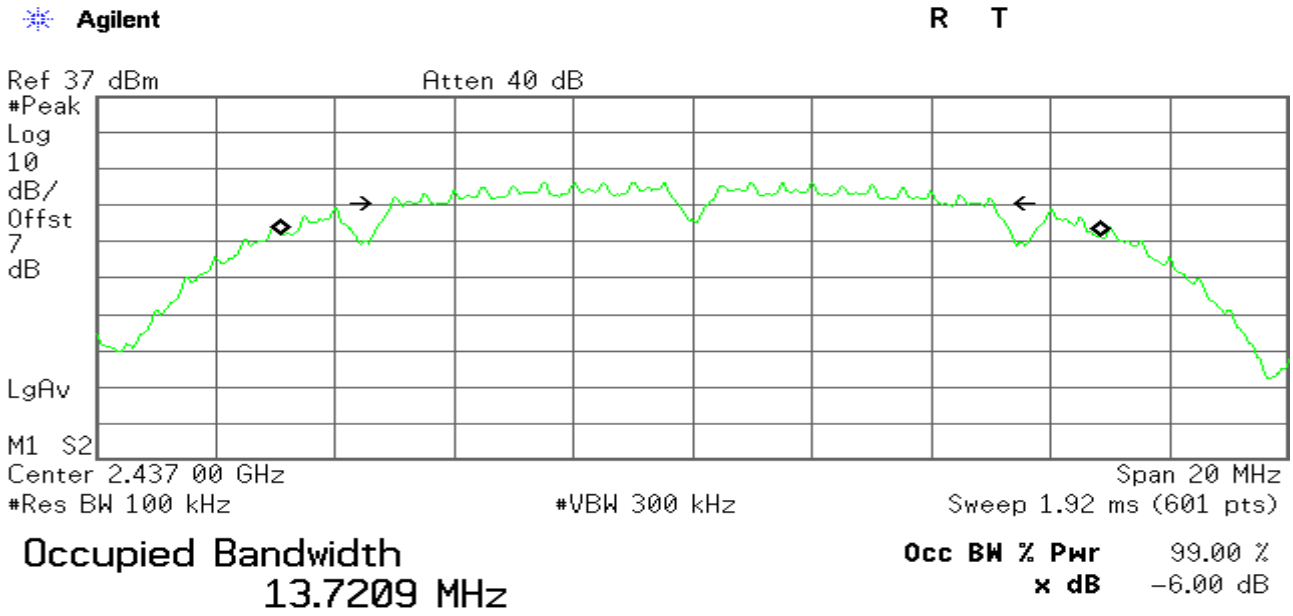
IEEE 802.11b MODE /Chain 2

6dB Bandwidth (CH Low)



Transmit Freq Error 61.402 kHz
x dB Bandwidth 10.086 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error -23.526 kHz
x dB Bandwidth 10.114 MHz

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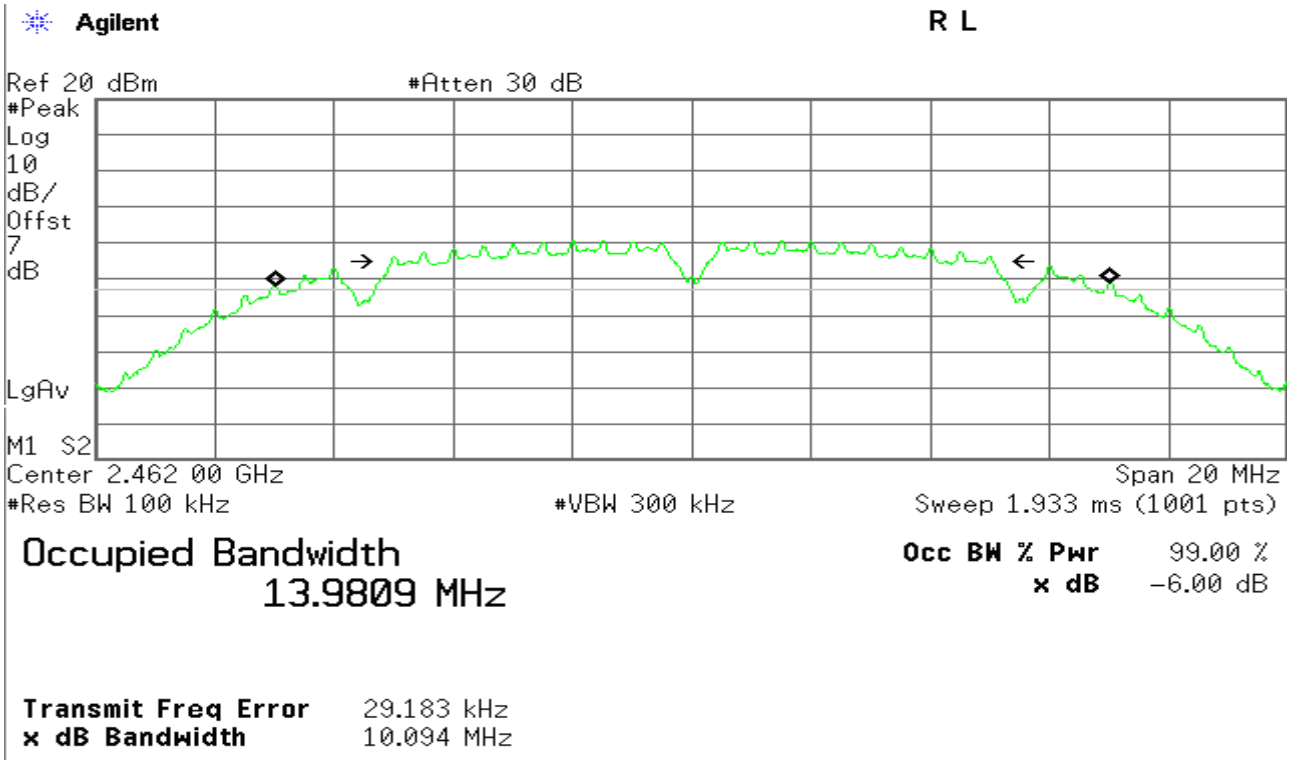
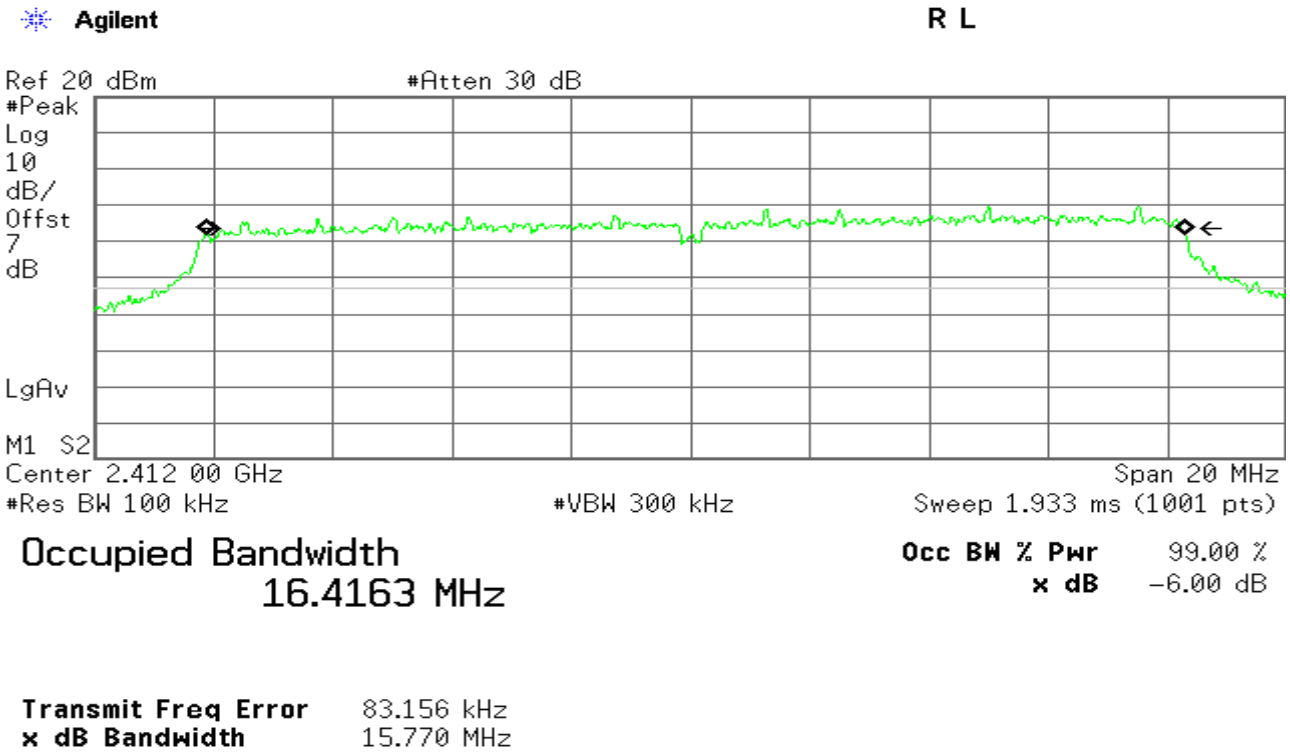
6dB Bandwidth (CH High)



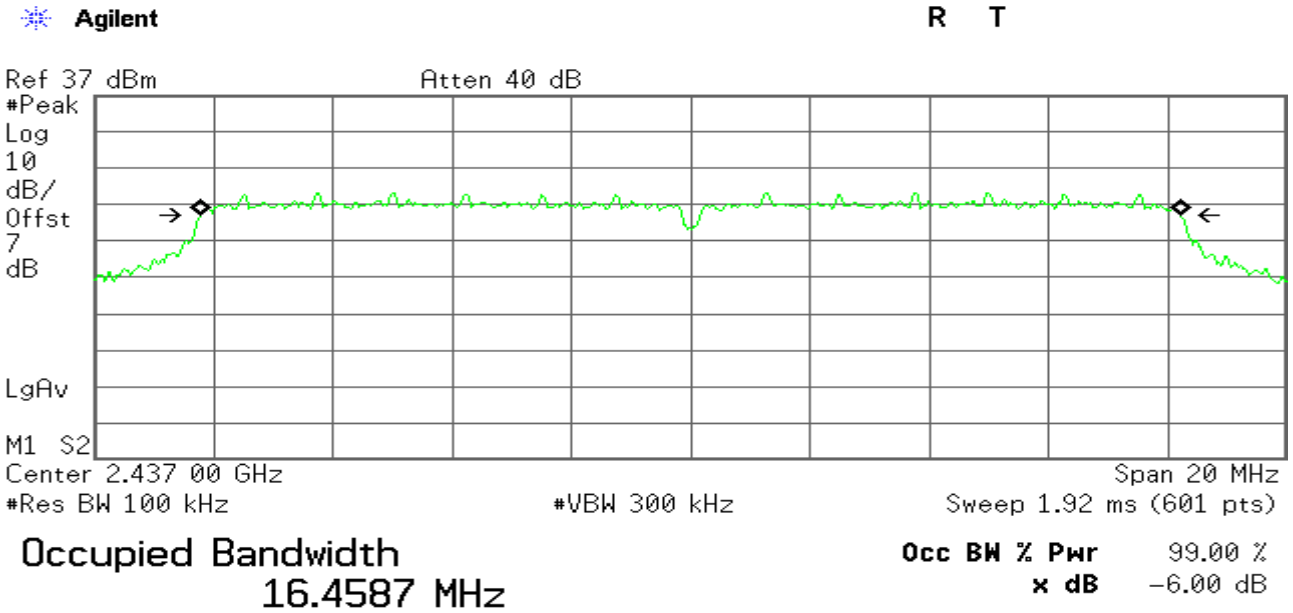
IEEE 802.11g MODE /Chain 0

6dB Bandwidth (CH Low)

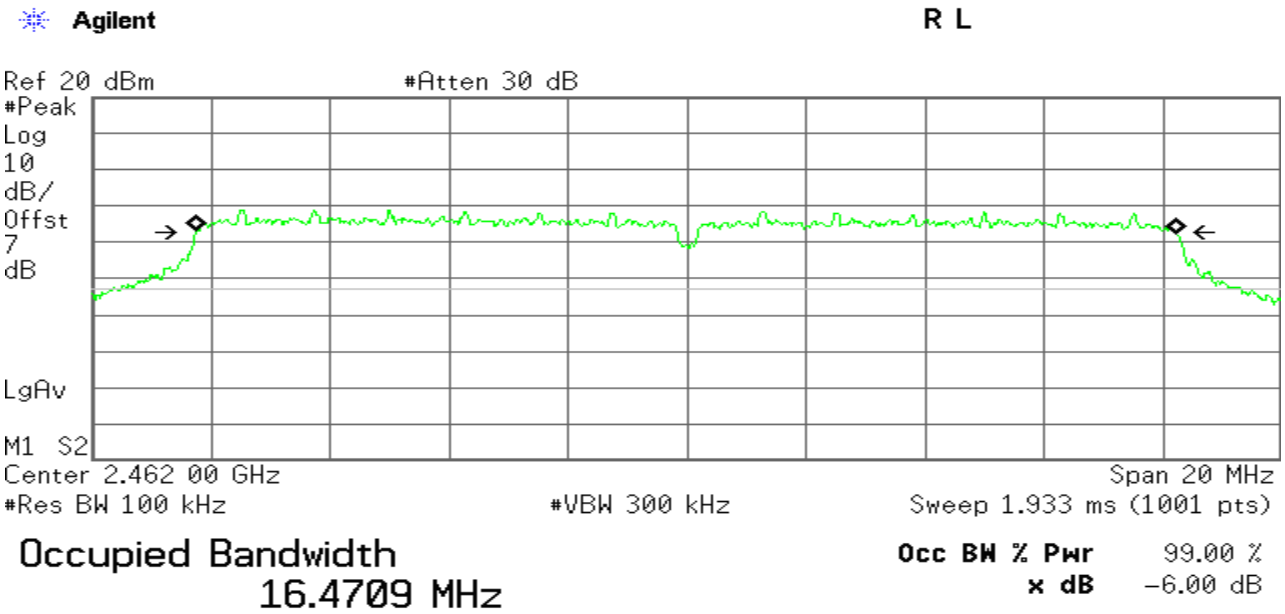


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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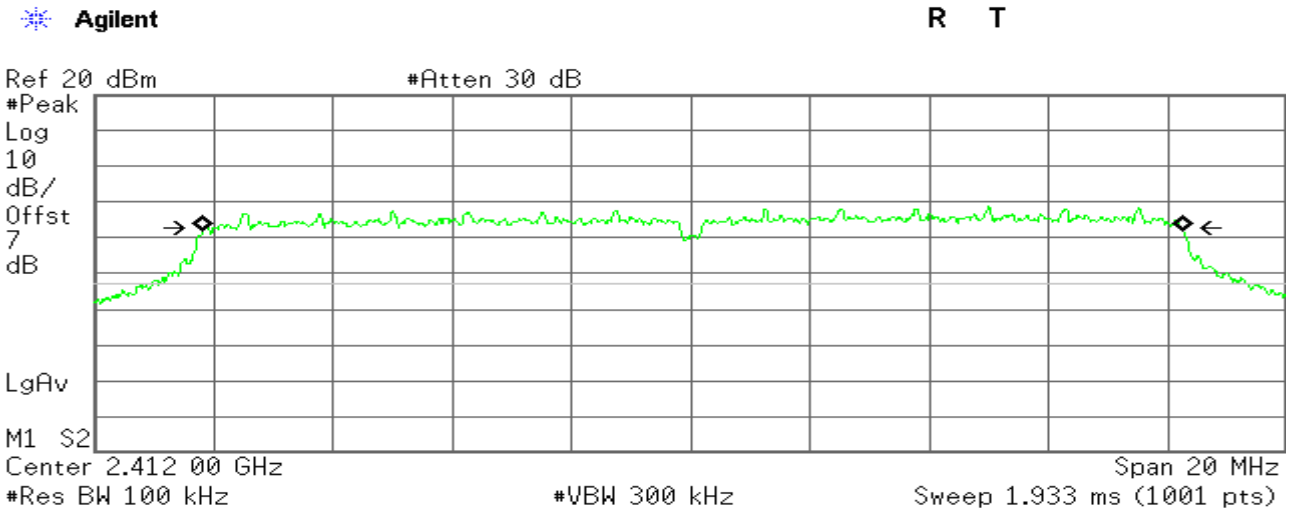
IEEE 802.11g MODE /Chain 1

6dB Bandwidth (CH Low)

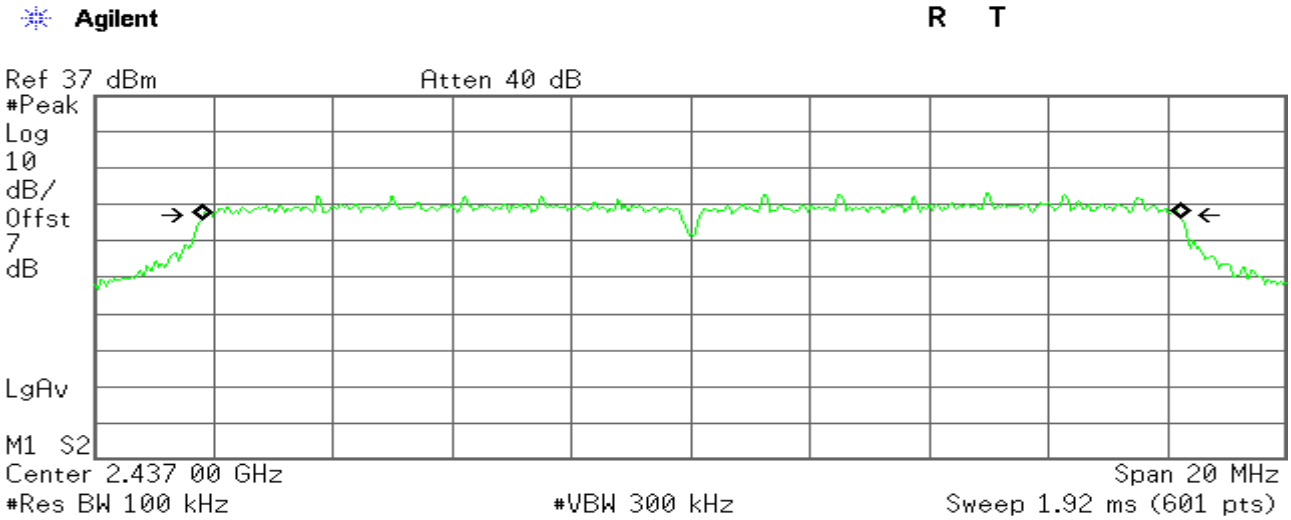


Occupied Bandwidth
16.4290 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 39.680 kHz
x dB Bandwidth 16.352 MHz

6dB Bandwidth (CH Mid)



Occupied Bandwidth
16.4391 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 7.386 kHz
x dB Bandwidth 16.383 MHz

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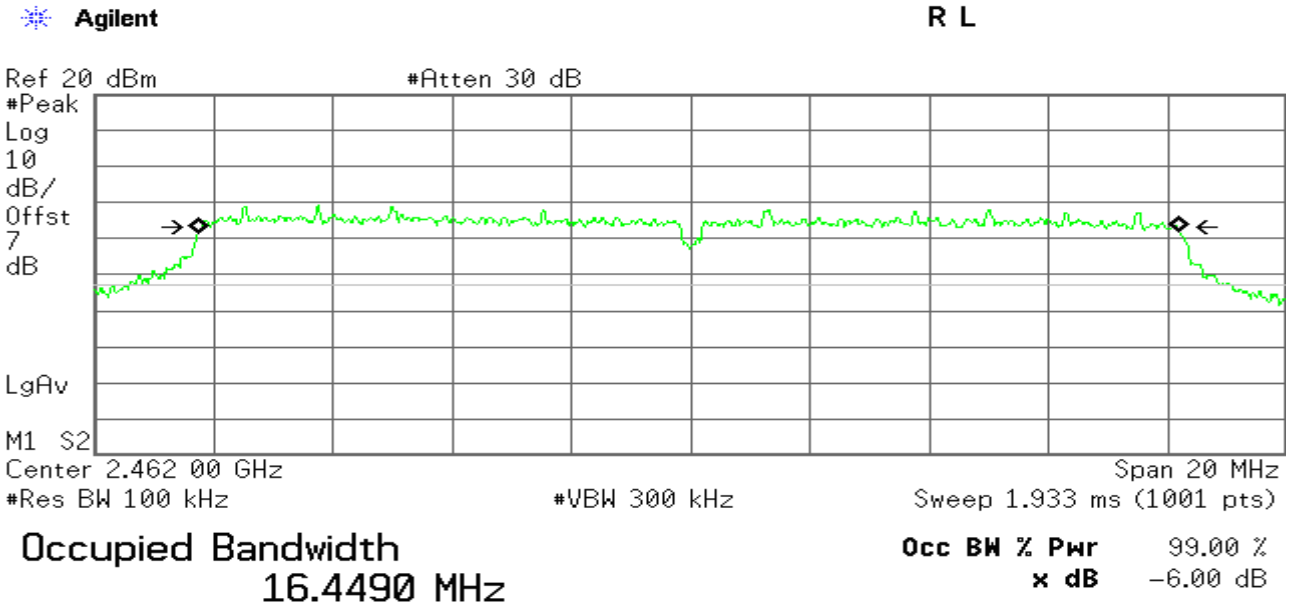
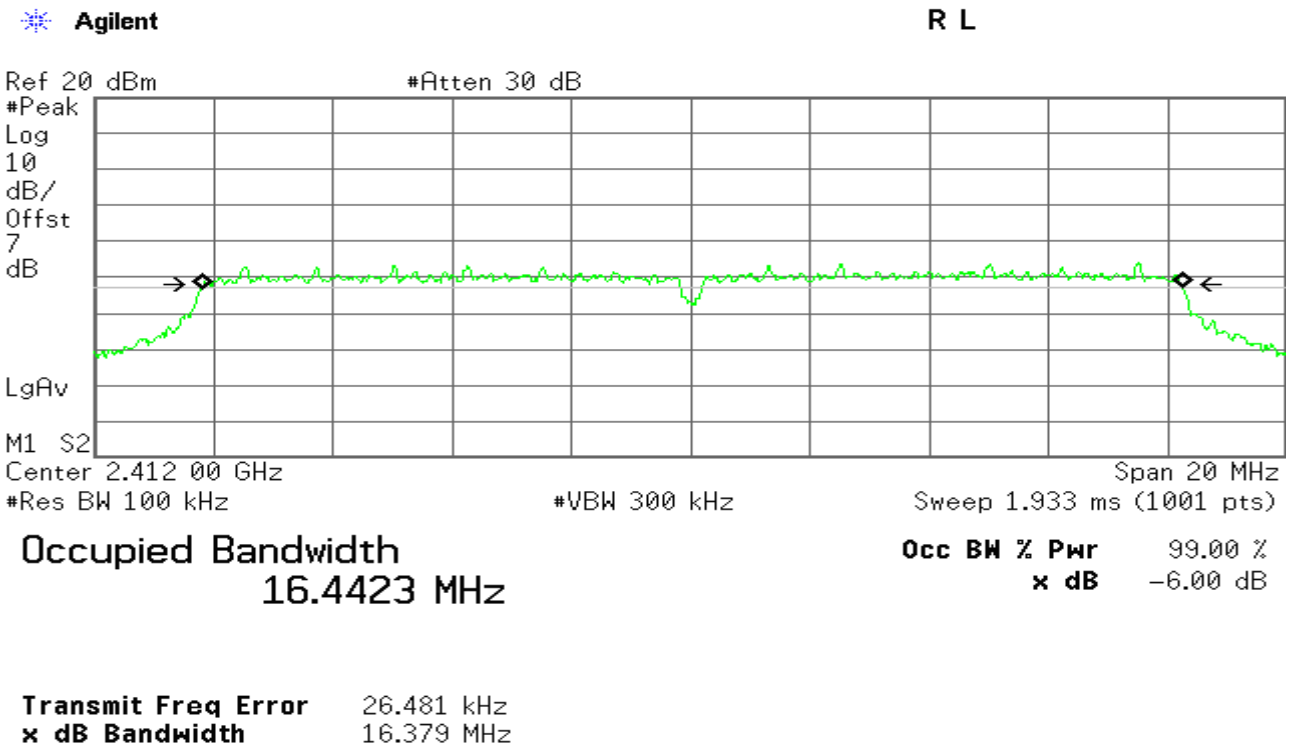
6dB Bandwidth (CH High)



IEEE 802.11g MODE /Chain 2

6dB Bandwidth (CH Low)



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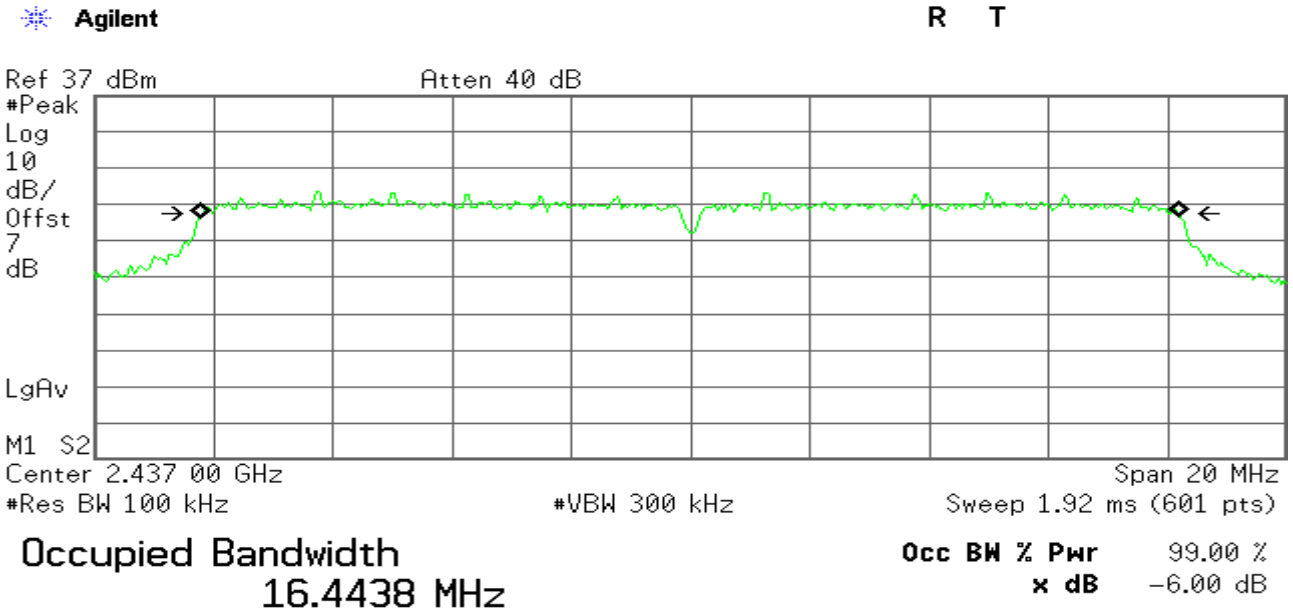
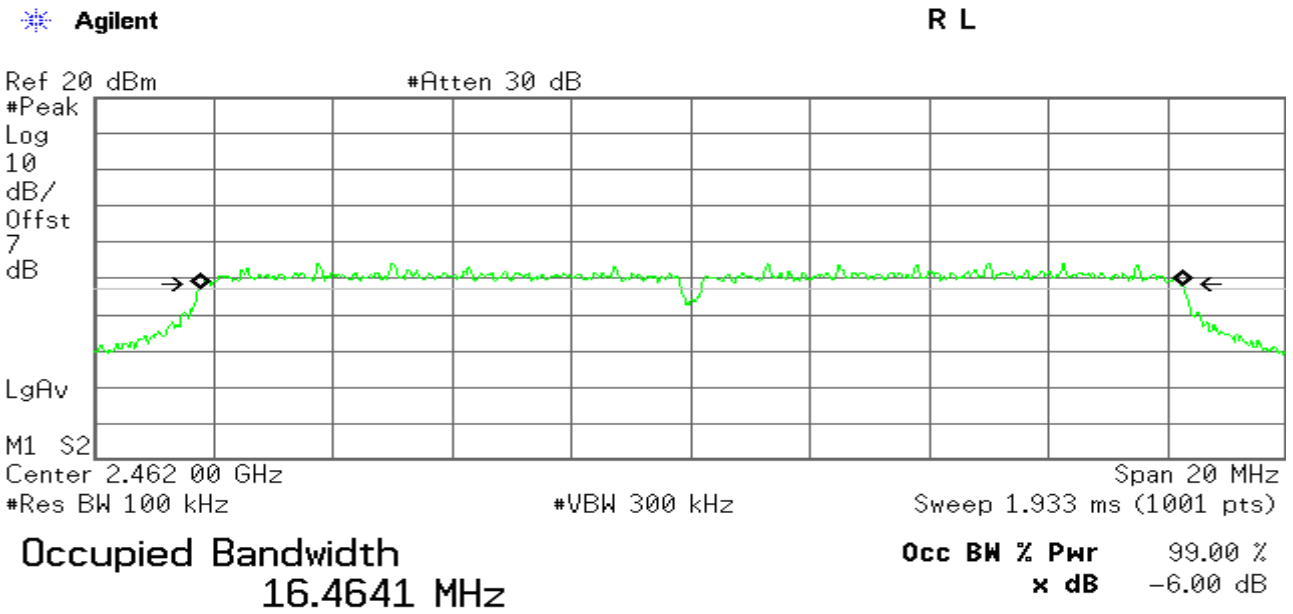
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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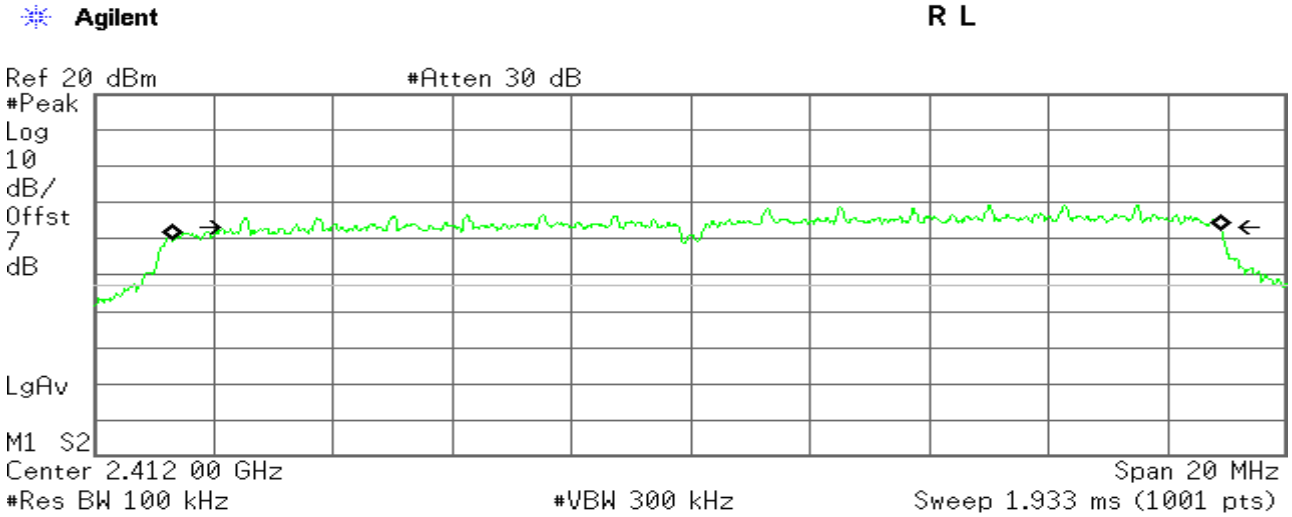
draft 802.11n Standard-20 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)

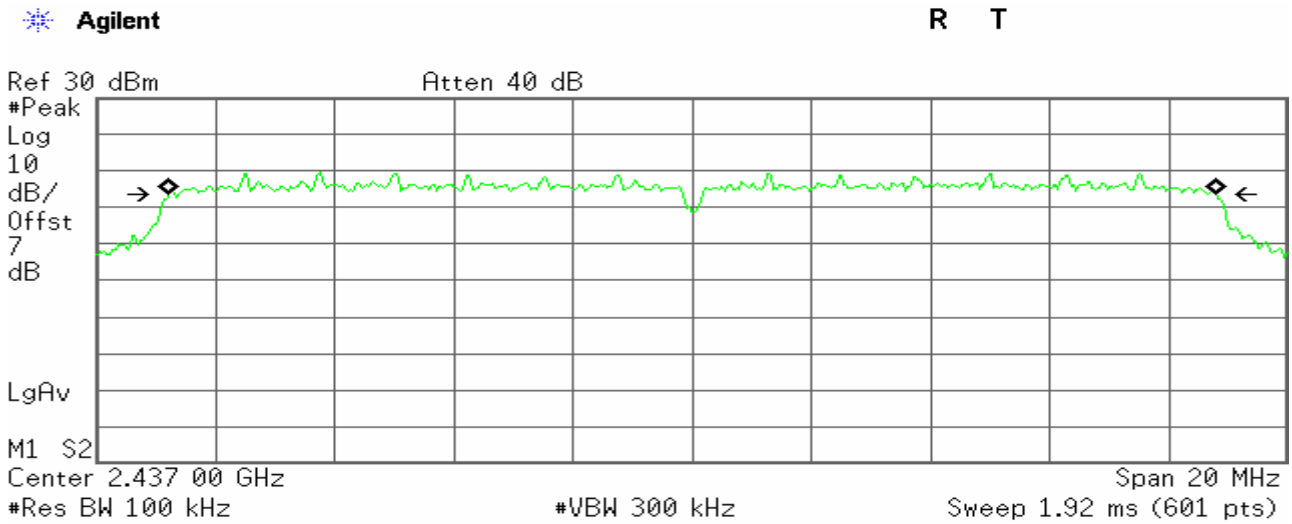


Occupied Bandwidth
17.5670 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 94.008 kHz
x dB Bandwidth 16.415 MHz

6dB Bandwidth (CH Mid)



Occupied Bandwidth
17.6047 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 7.036 kHz
x dB Bandwidth 17.613 MHz

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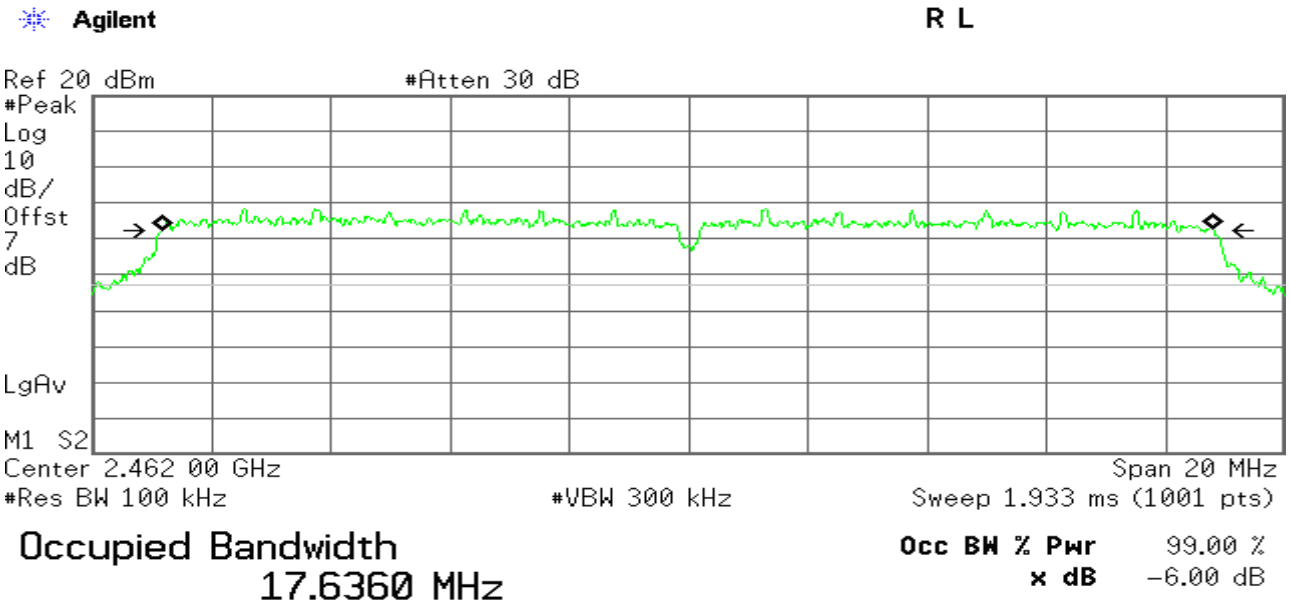
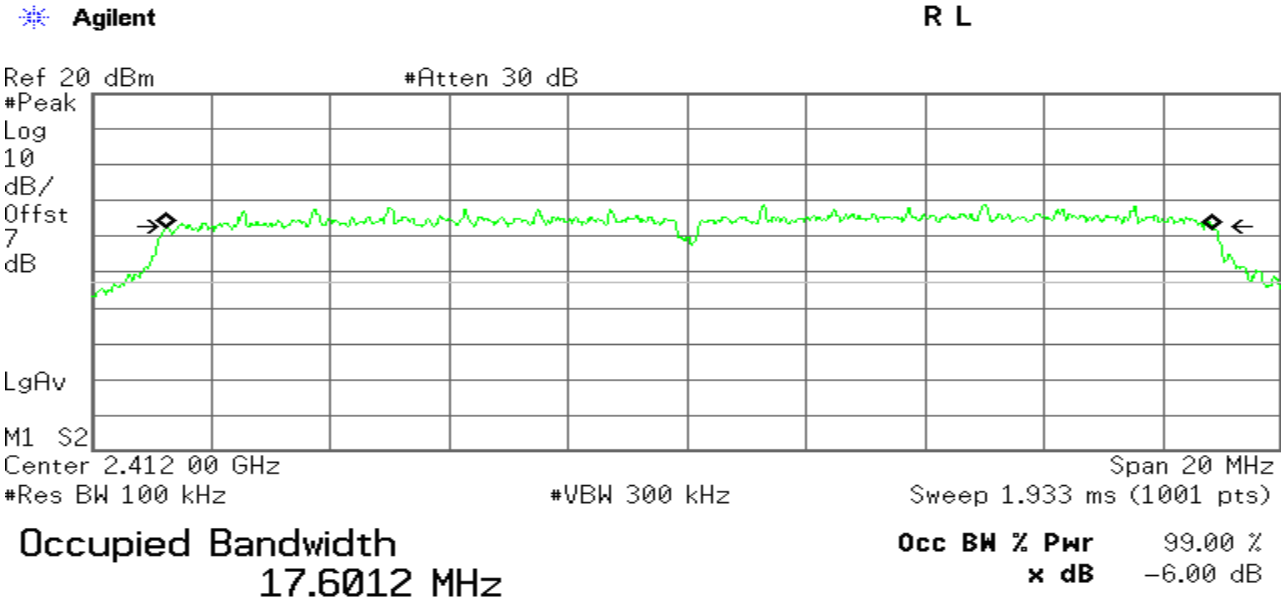
6dB Bandwidth (CH High)



draft 802.11n Standard-20 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)



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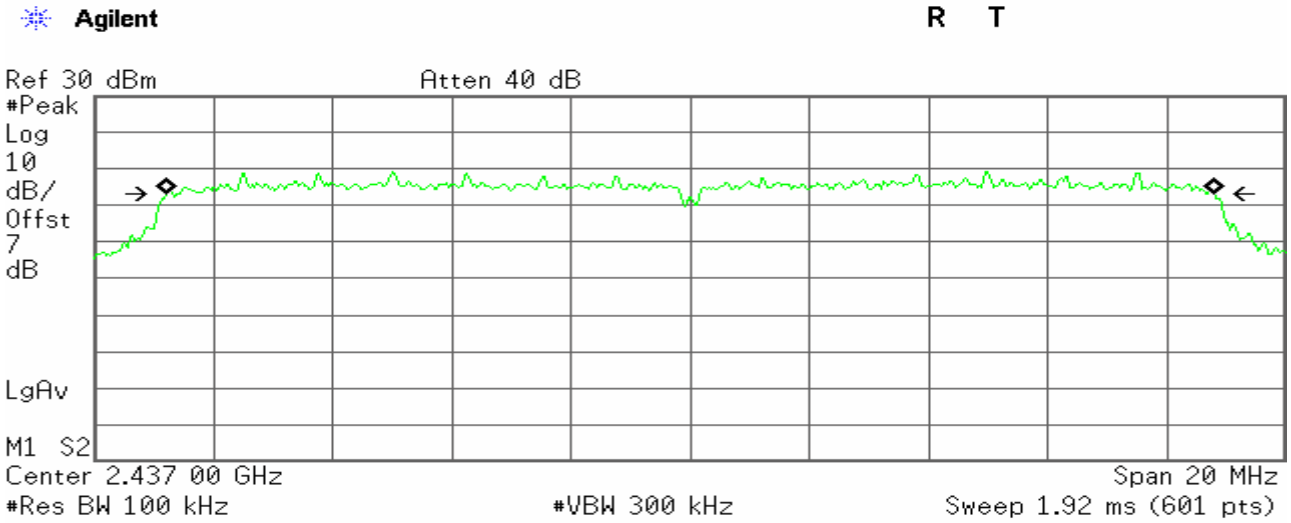
6dB Bandwidth (CH Mid)

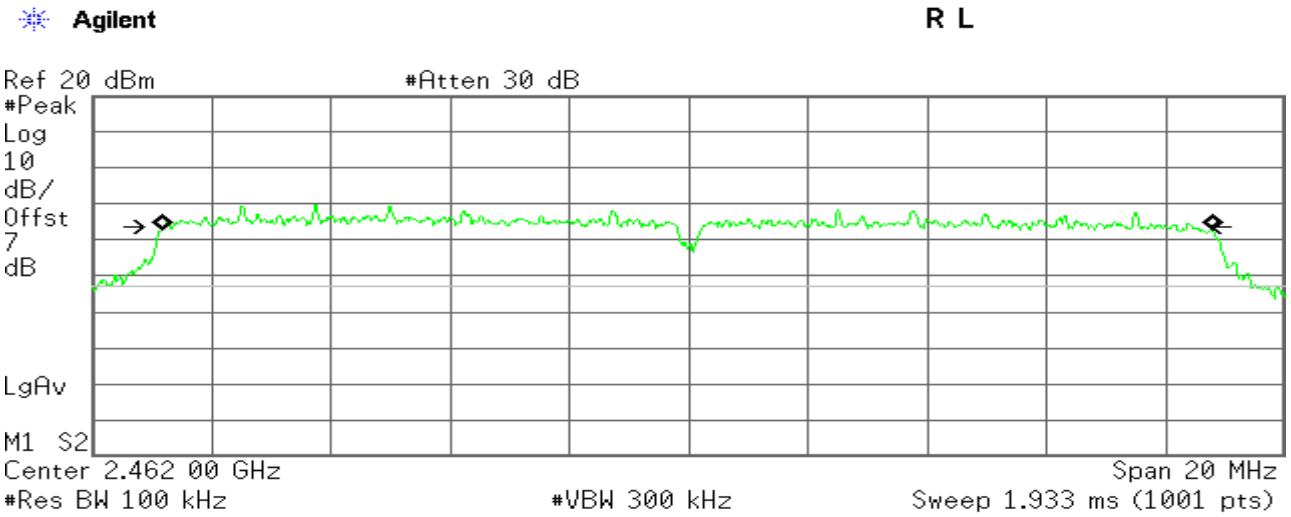


Occupied Bandwidth
17.6078 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 11.742 kHz
x dB Bandwidth 17.614 MHz

6dB Bandwidth (CH High)



Occupied Bandwidth
17.6214 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -27.992 kHz
x dB Bandwidth 17.222 MHz

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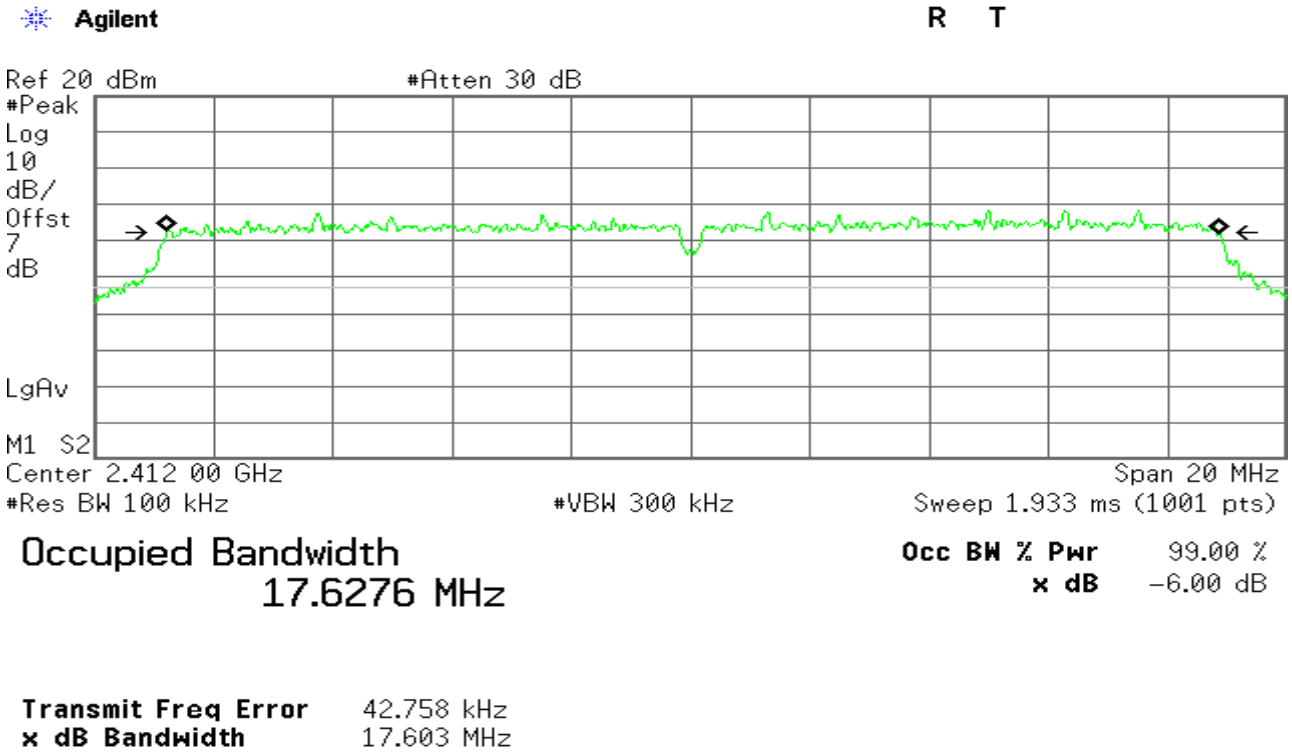
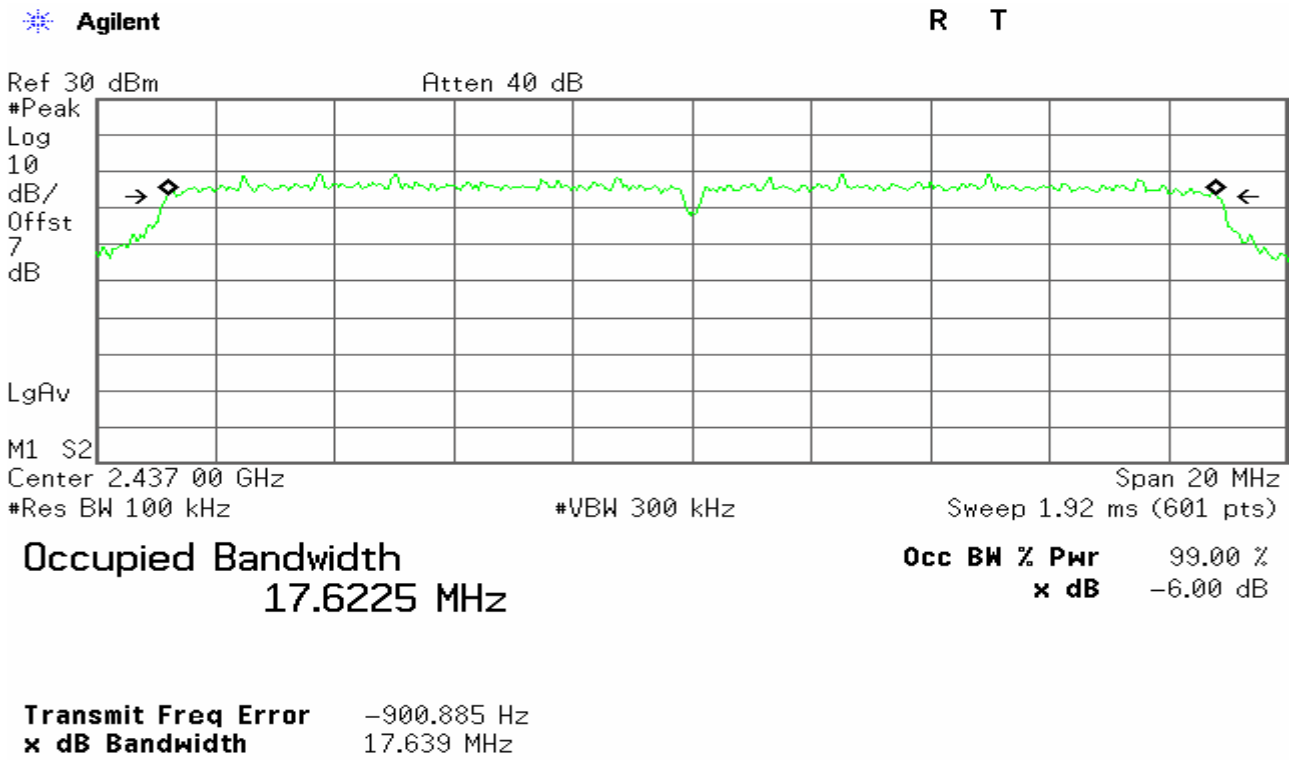
draft 802.11n Standard-20 MHz Channel mode / Chain 2

6dB Bandwidth (CH Low)

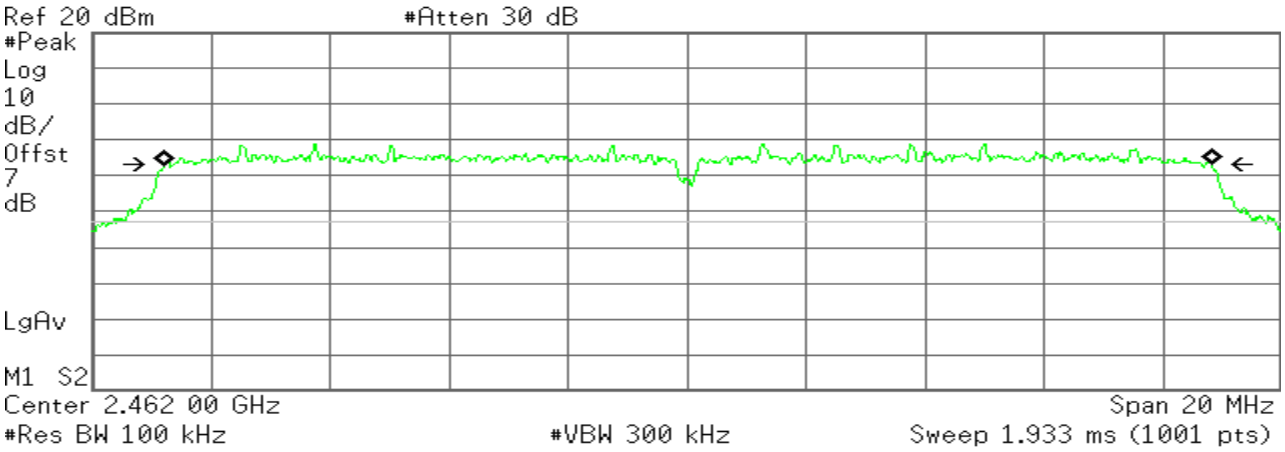


6dB Bandwidth (CH Mid)



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

6dB Bandwidth (CH High)



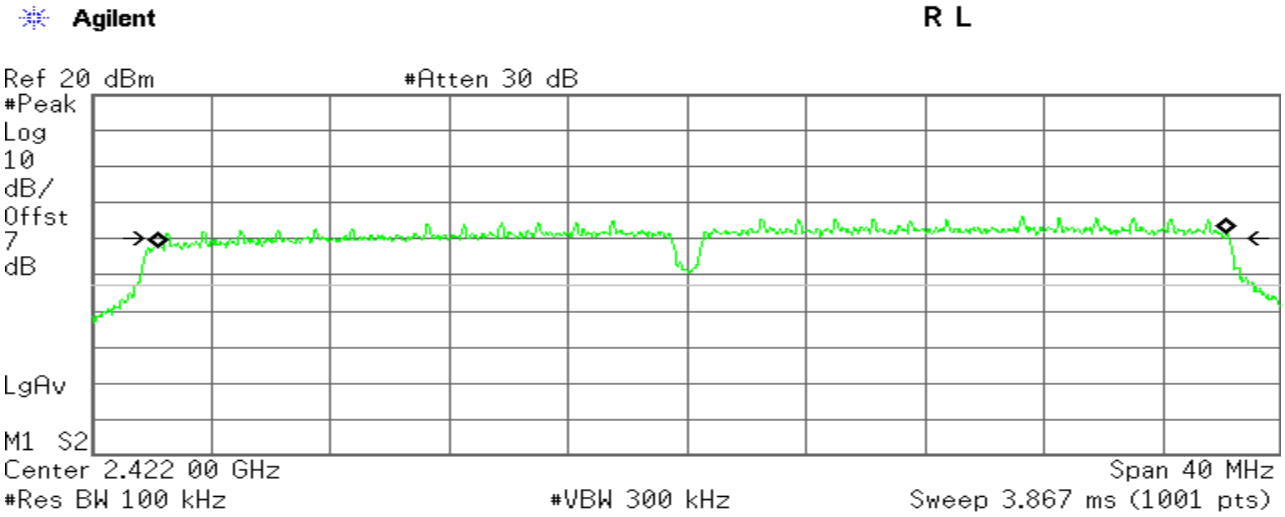
Occupied Bandwidth
17.6148 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 14.775 kHz
x dB Bandwidth 17.609 MHz

draft 802.11n Standard-40 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)



Occupied Bandwidth
35.9393 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 160.884 kHz
x dB Bandwidth 35.754 MHz

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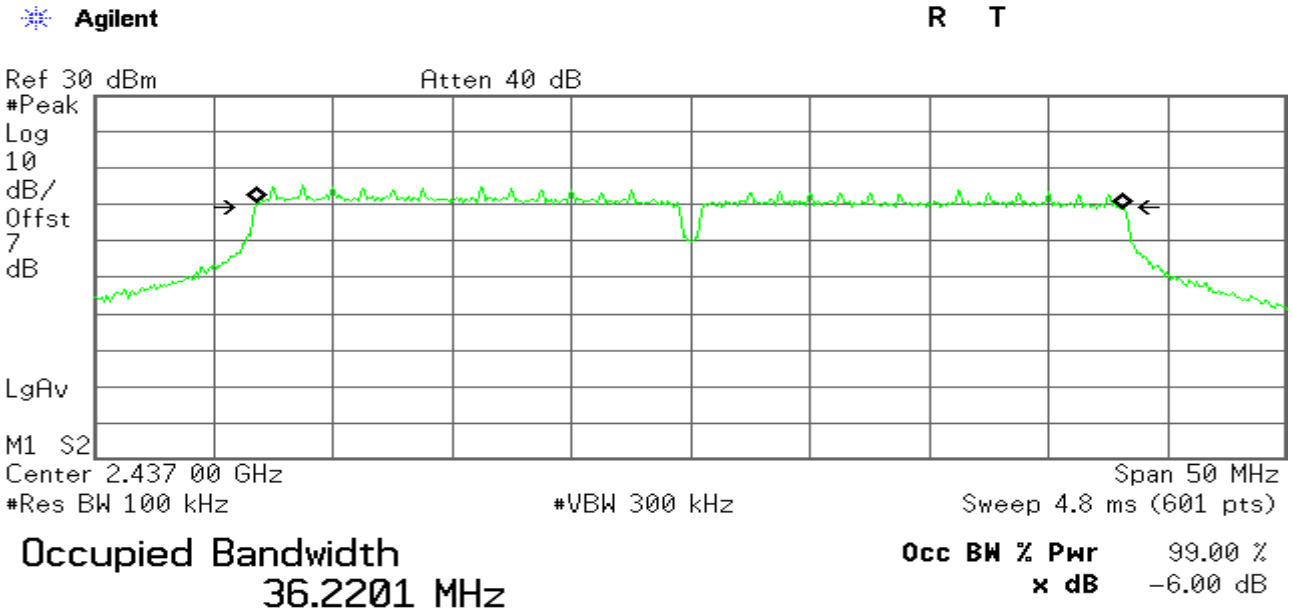
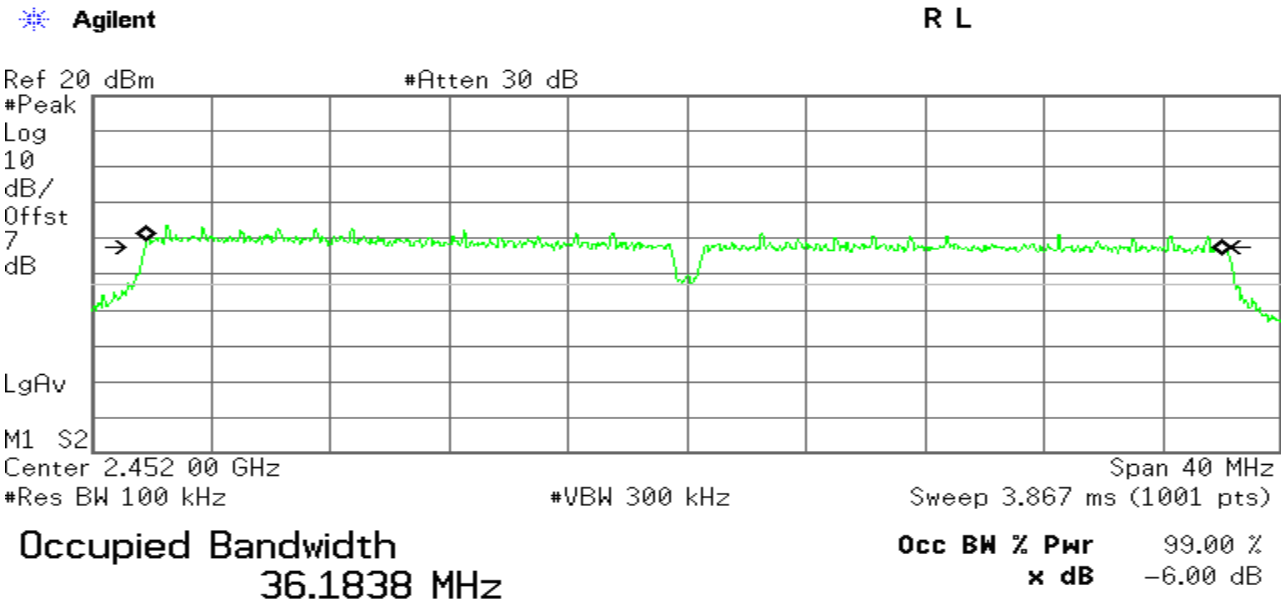
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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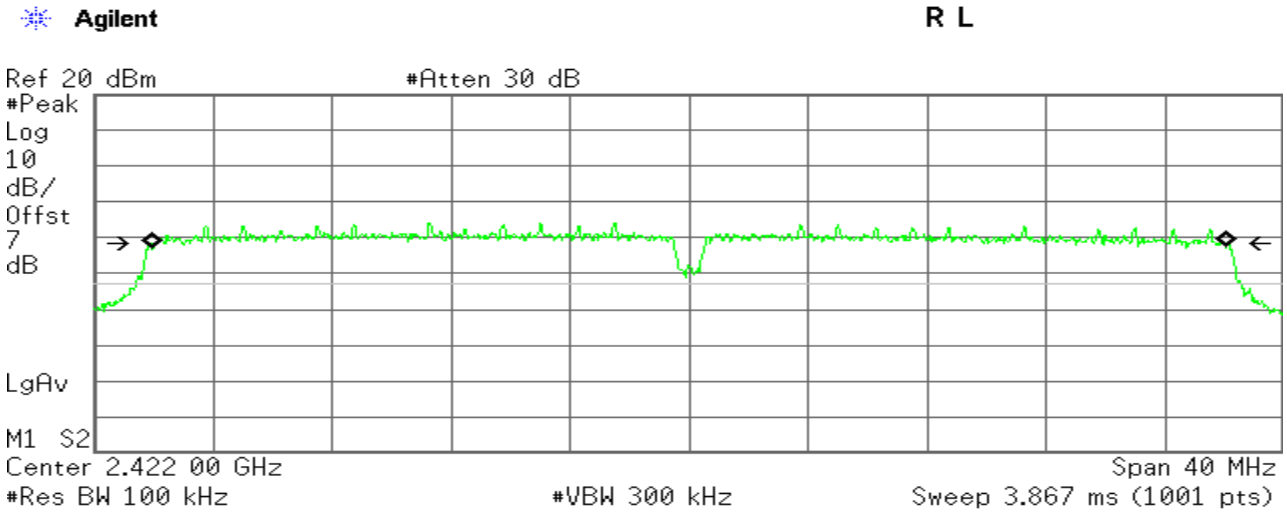
draft 802.11n Standard-40 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)

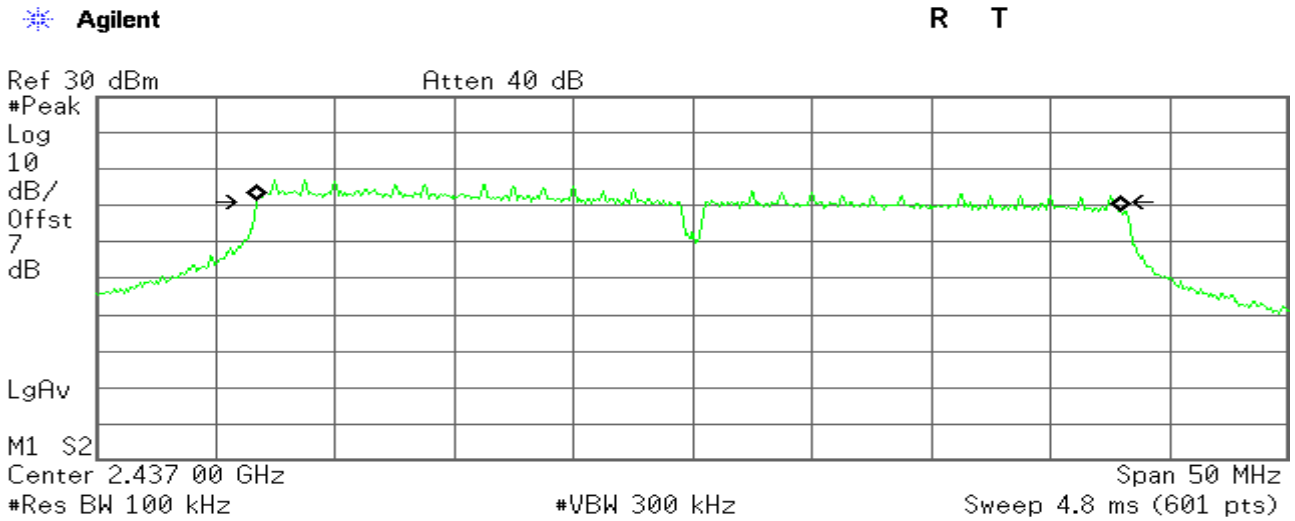


Occupied Bandwidth
36.0602 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -4.952 kHz
x dB Bandwidth 36.305 MHz

6dB Bandwidth (CH Mid)



Occupied Bandwidth
36.1713 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -138.804 kHz
x dB Bandwidth 35.843 MHz

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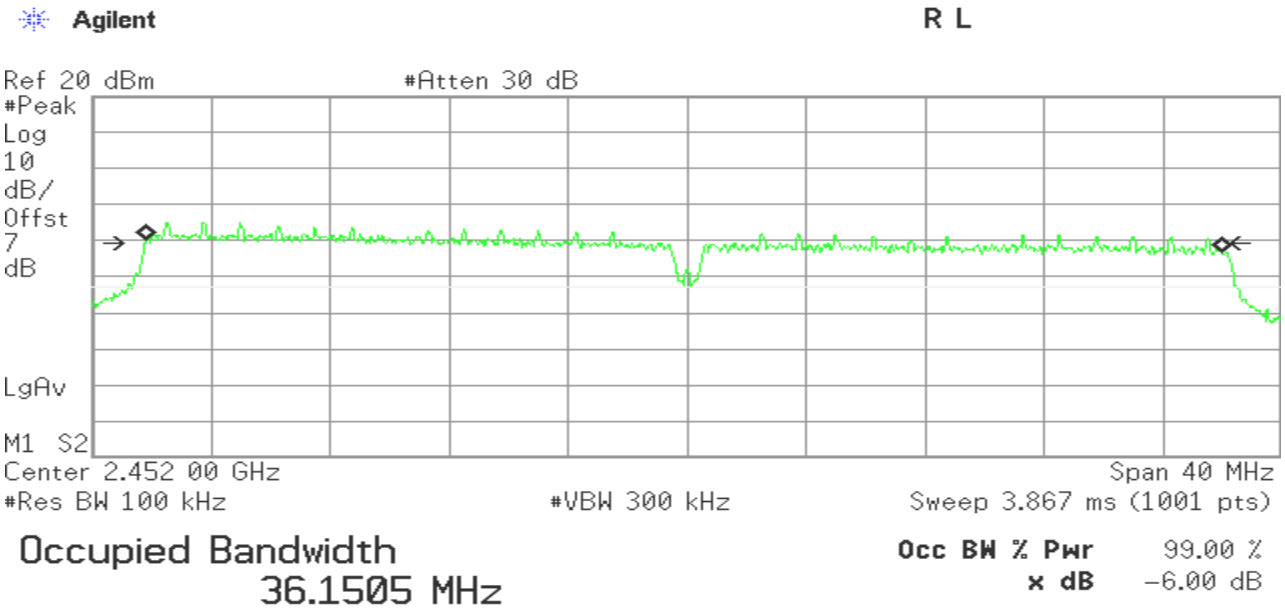
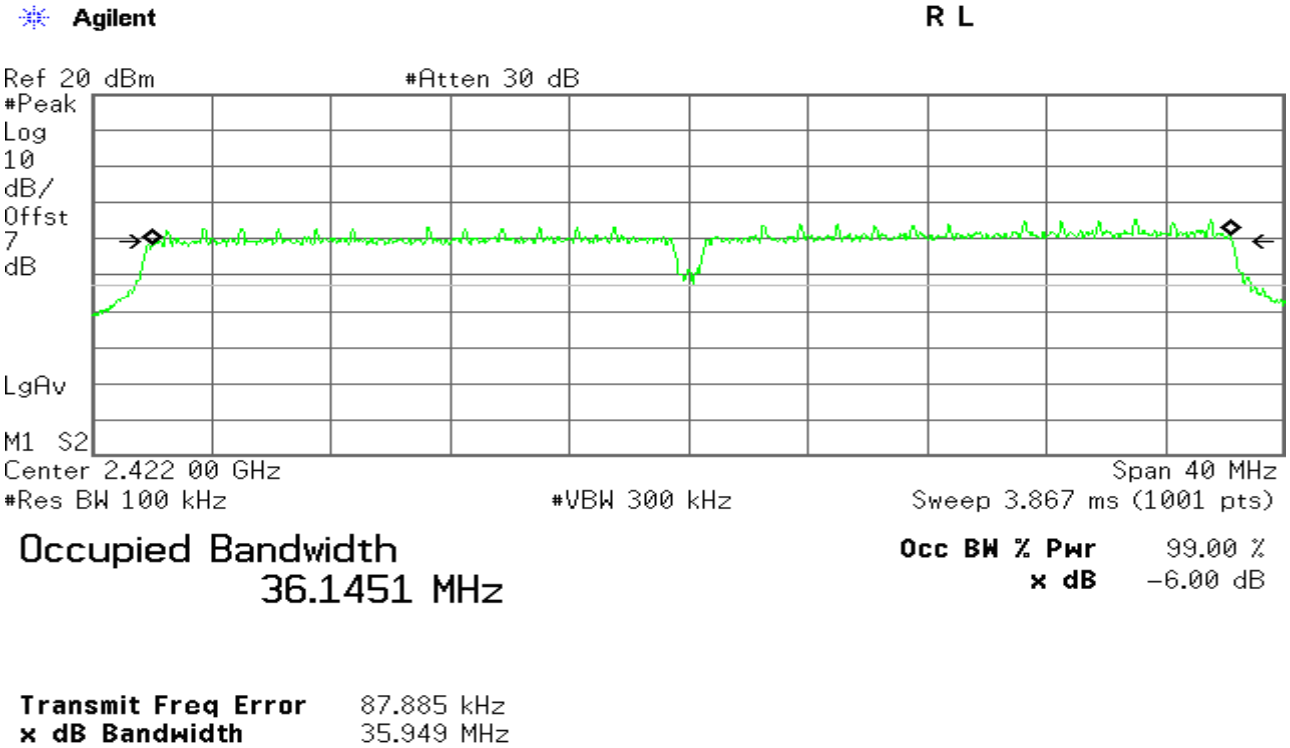
6dB Bandwidth (CH High)



draft 802.11n Standard-40 MHz Channel mode / Chain 2

6dB Bandwidth (CH Low)



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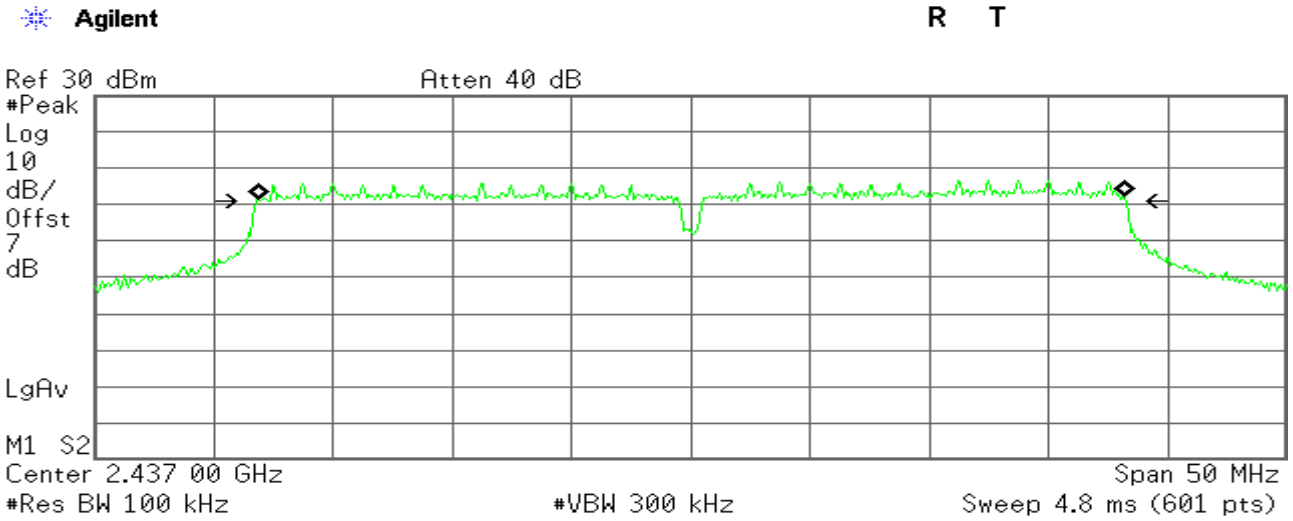
6dB Bandwidth (CH Mid)

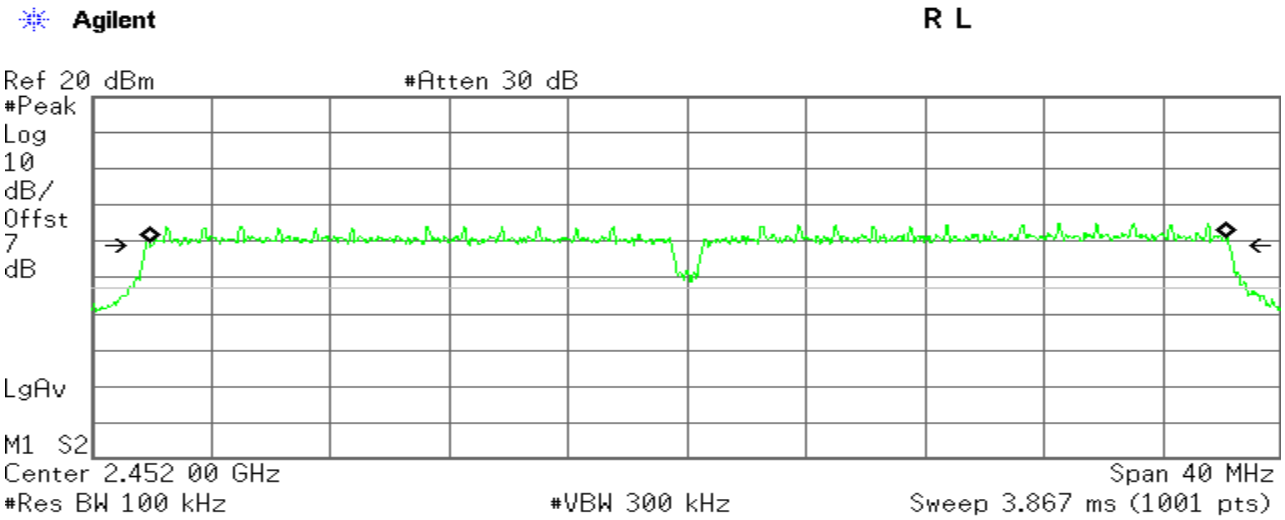


Occupied Bandwidth
36.2418 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 27.791 kHz
x dB Bandwidth 36.423 MHz

6dB Bandwidth (CH High)



Occupied Bandwidth
36.1872 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 32.861 kHz
x dB Bandwidth 36.397 MHz

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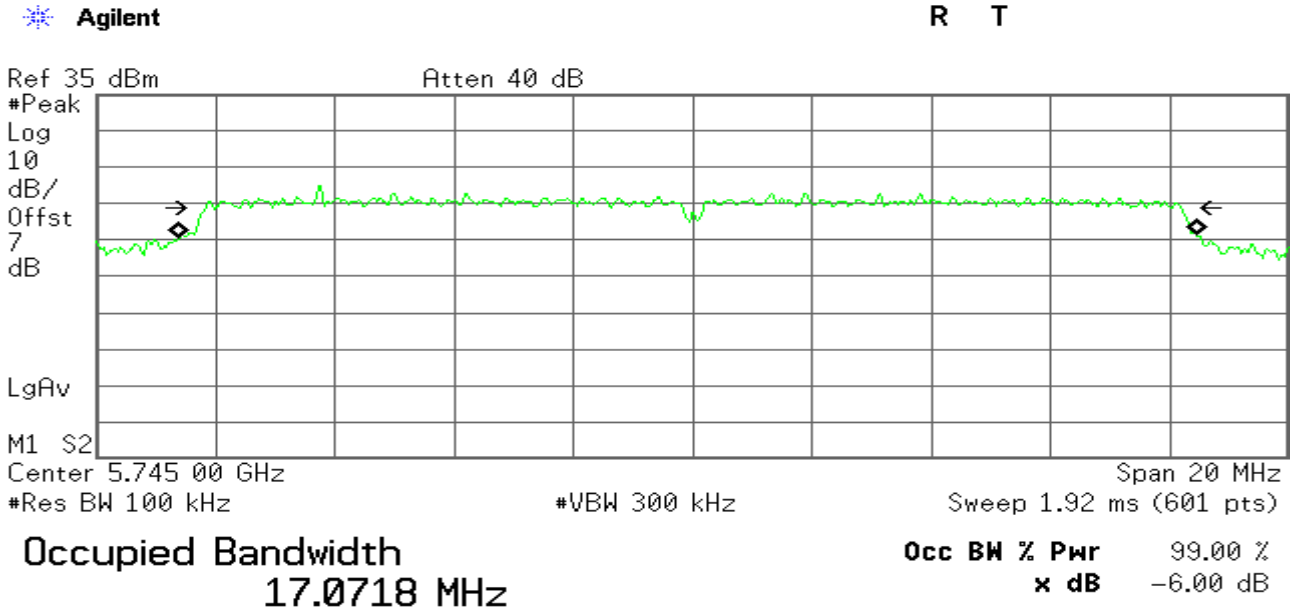
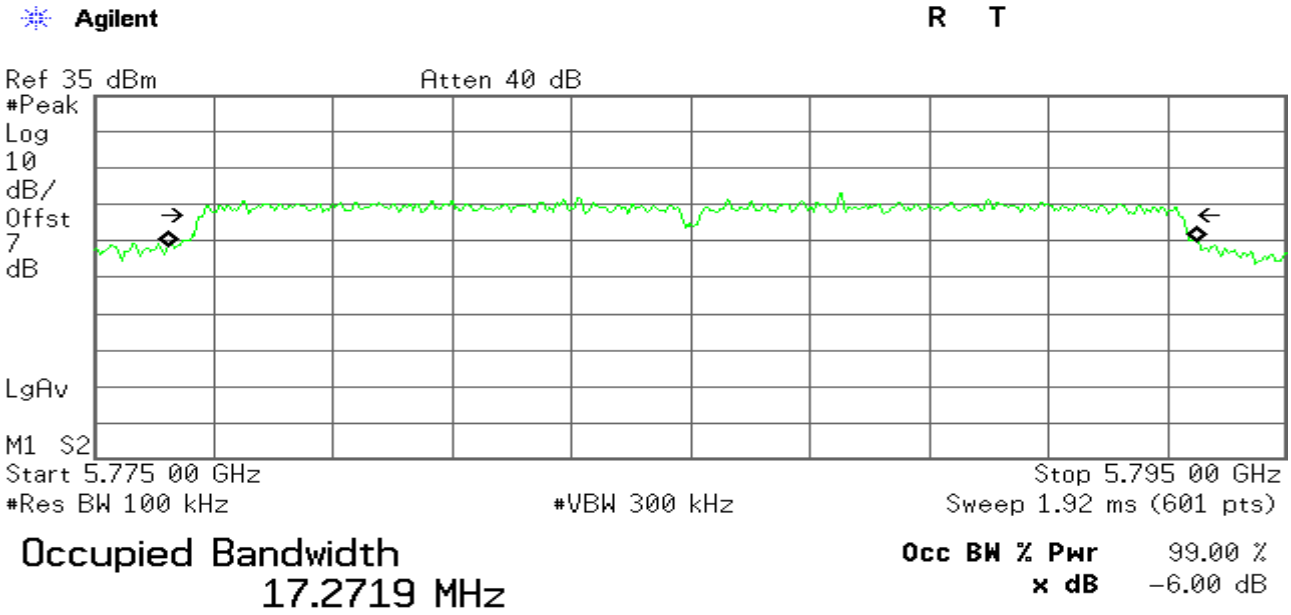
IEEE 802.11a mode /Chain 0

6dB Bandwidth (CH Low)



Transmit Freq Error -82.893 kHz
x dB Bandwidth 16.388 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error -141.405 kHz
x dB Bandwidth 16.398 MHz

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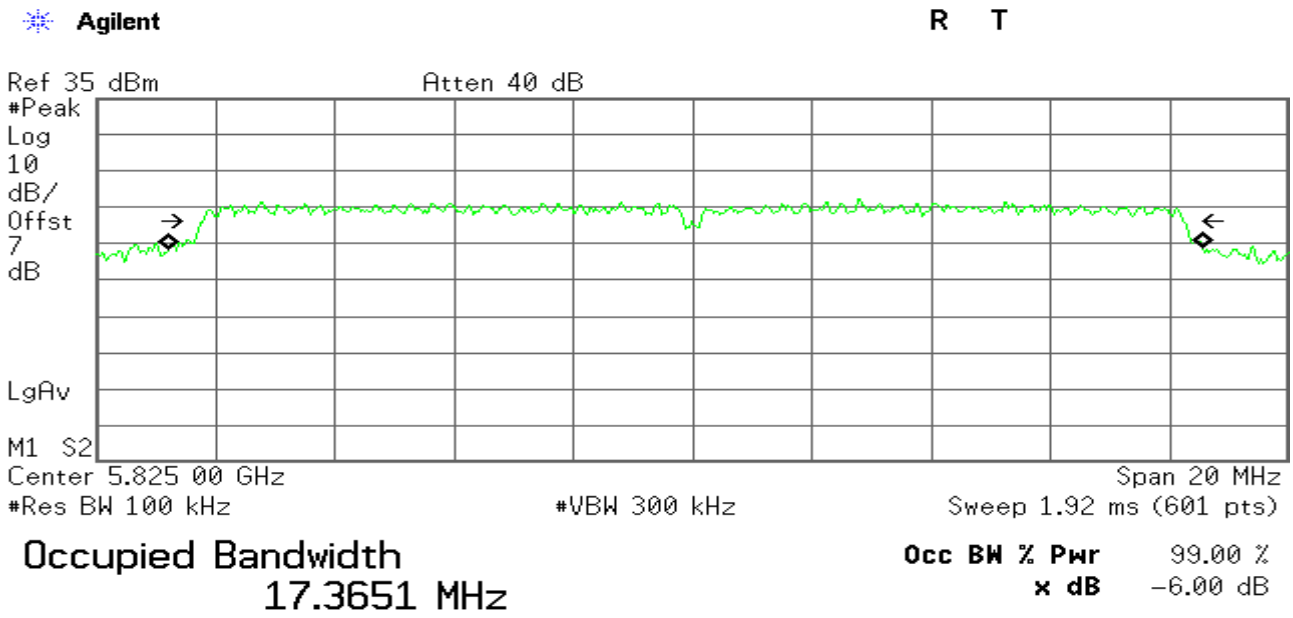
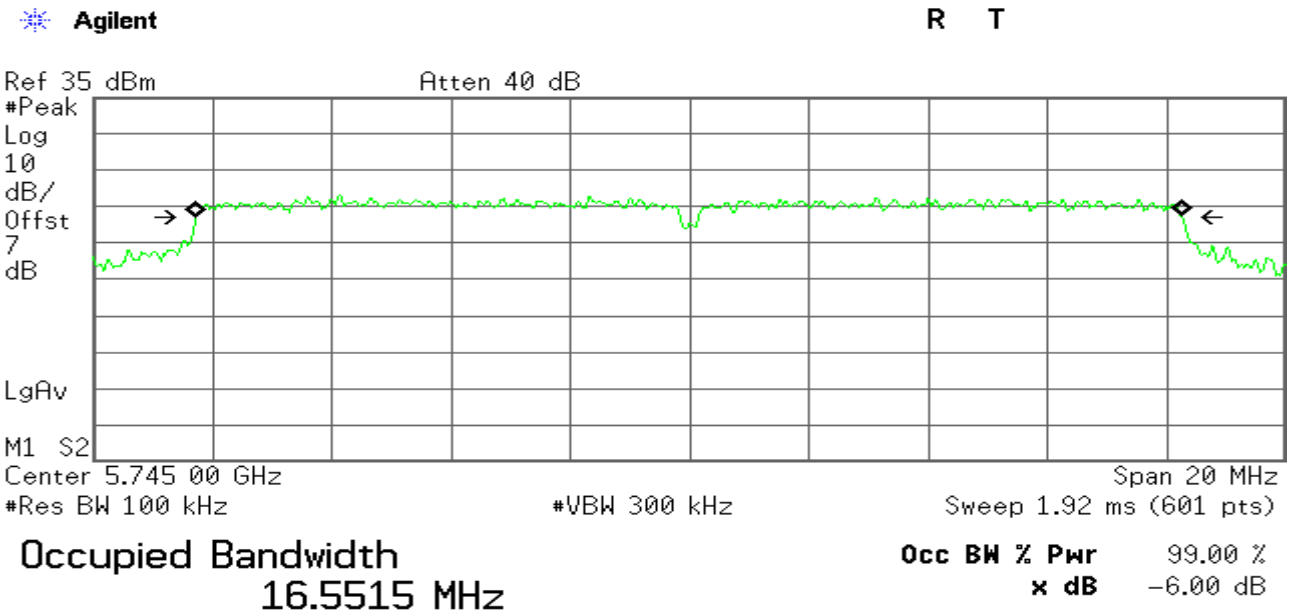
6dB Bandwidth (CH High)



Transmit Freq Error -114.571 kHz
x dB Bandwidth 16.466 MHz

IEEE 802.11a mode /Chain 1

6dB Bandwidth (CH Low)



Transmit Freq Error -10.961 kHz
x dB Bandwidth 16.568 MHz

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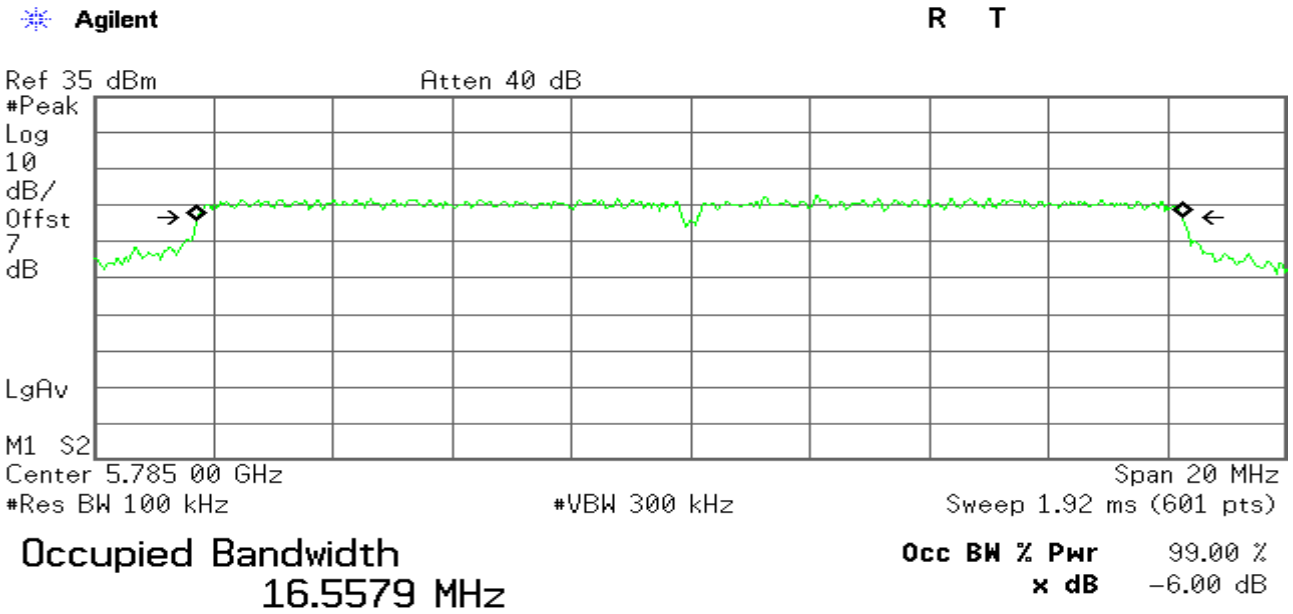
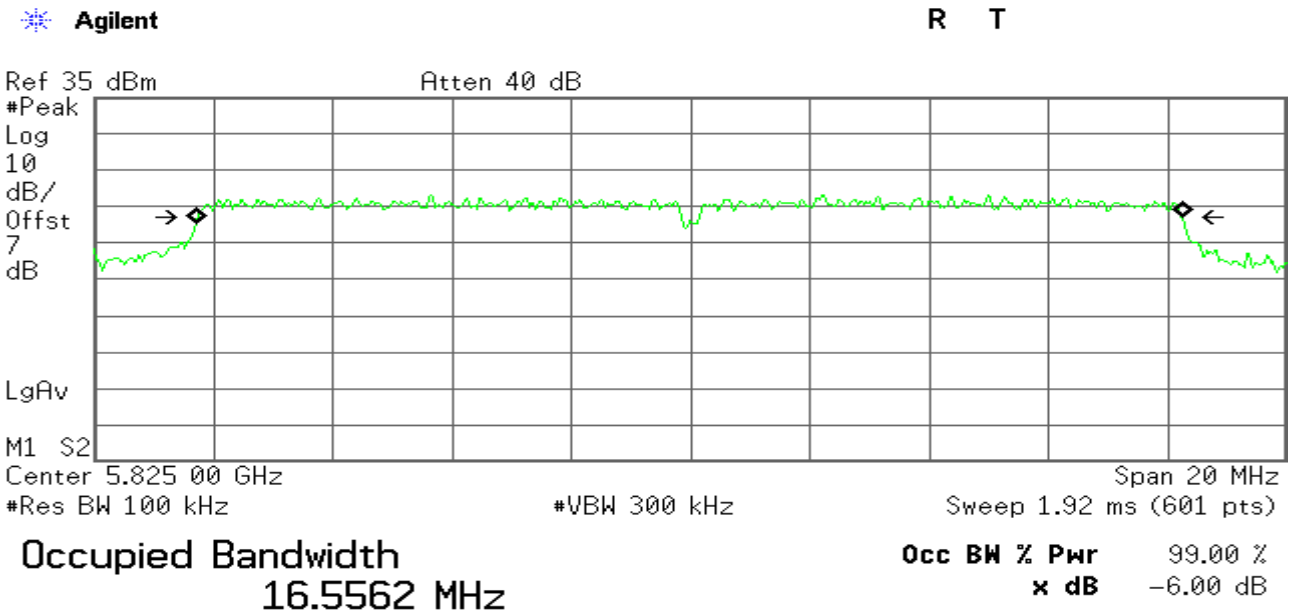
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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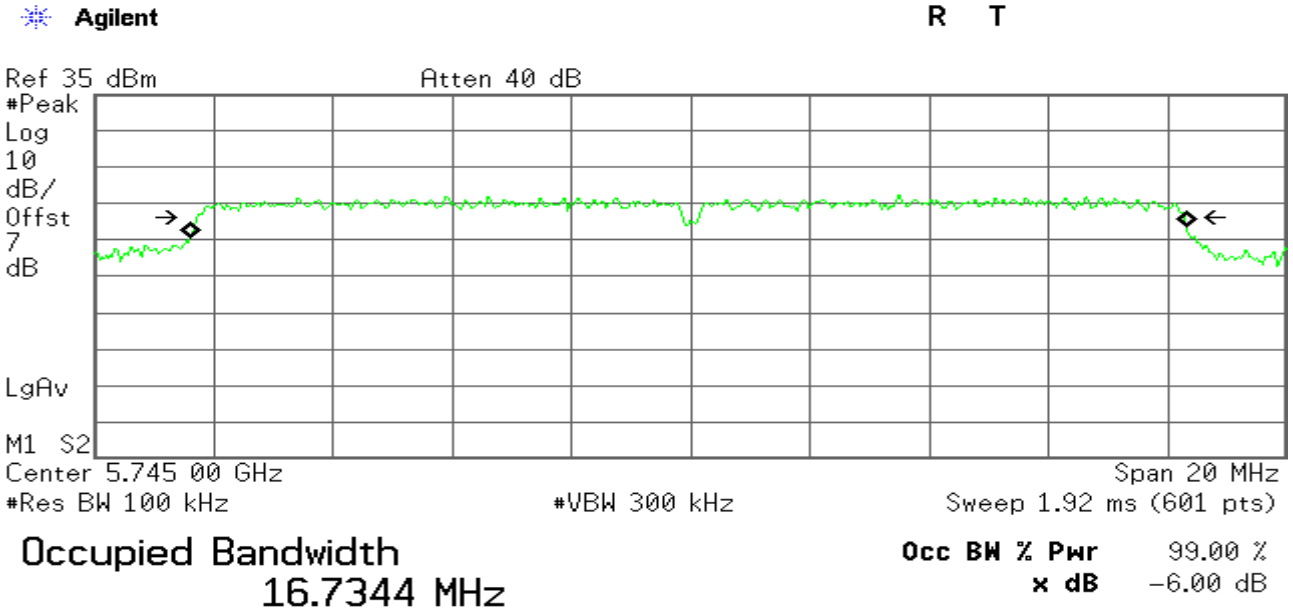
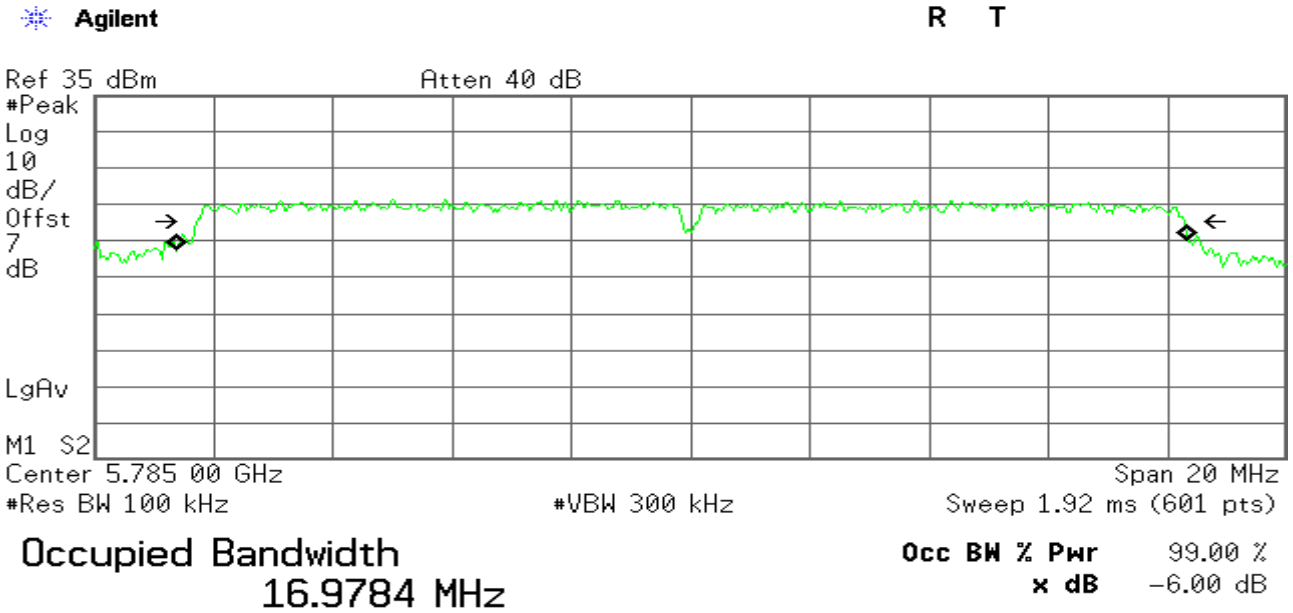
IEEE 802.11a mode /Chain 2

6dB Bandwidth (CH Low)



Transmit Freq Error -46.054 kHz
x dB Bandwidth 16.571 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error -140.277 kHz
x dB Bandwidth 16.582 MHz

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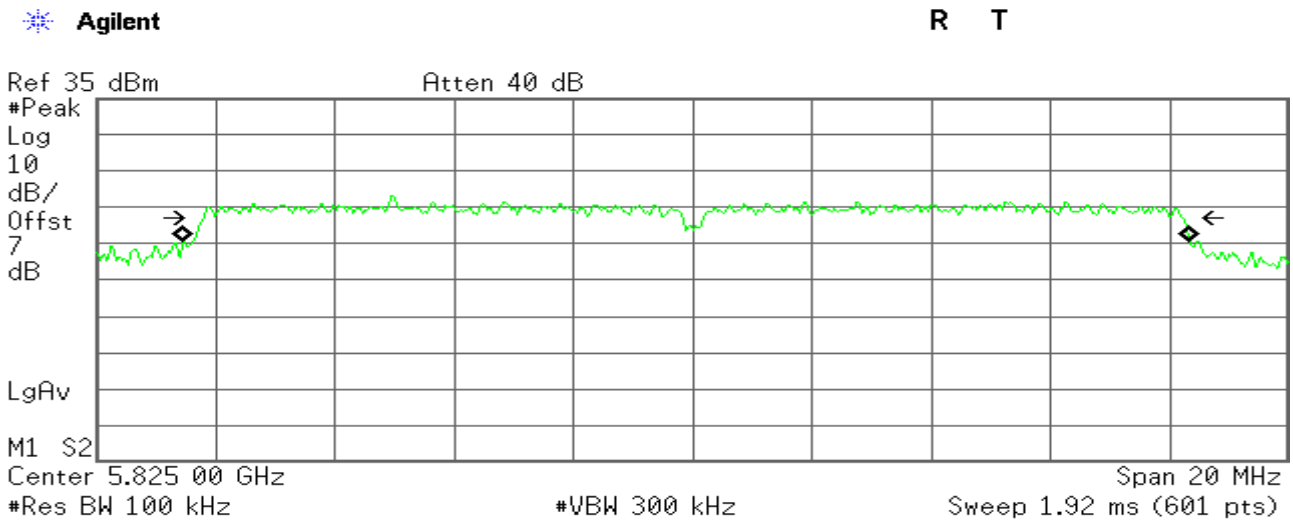
6dB Bandwidth (CH High)



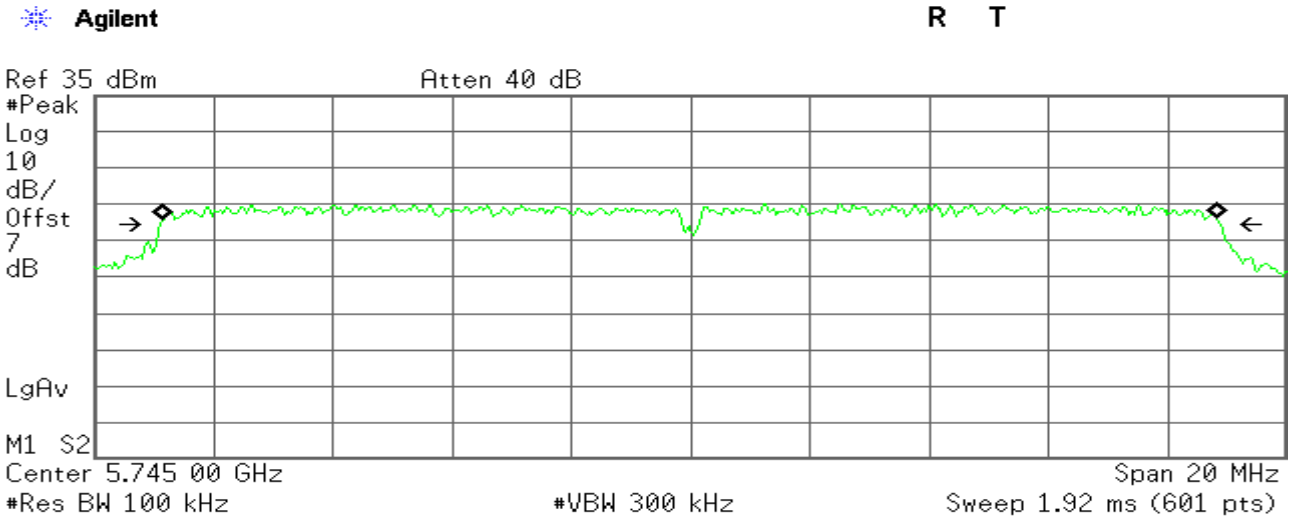
Occupied Bandwidth
16.9134 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -107.892 kHz
x dB Bandwidth 16.447 MHz

draft 802.11n Standard-20 MHz Channel mode /Chain 0

6dB Bandwidth (CH Low)



Occupied Bandwidth
17.6888 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -9.904 kHz
x dB Bandwidth 17.799 MHz

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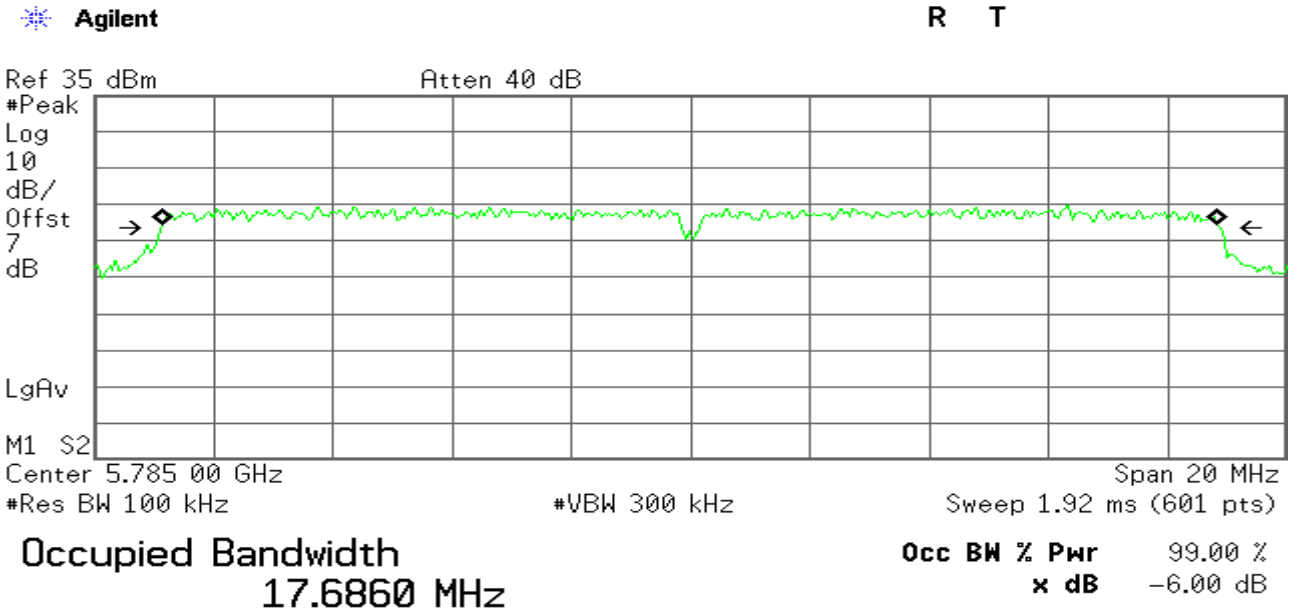
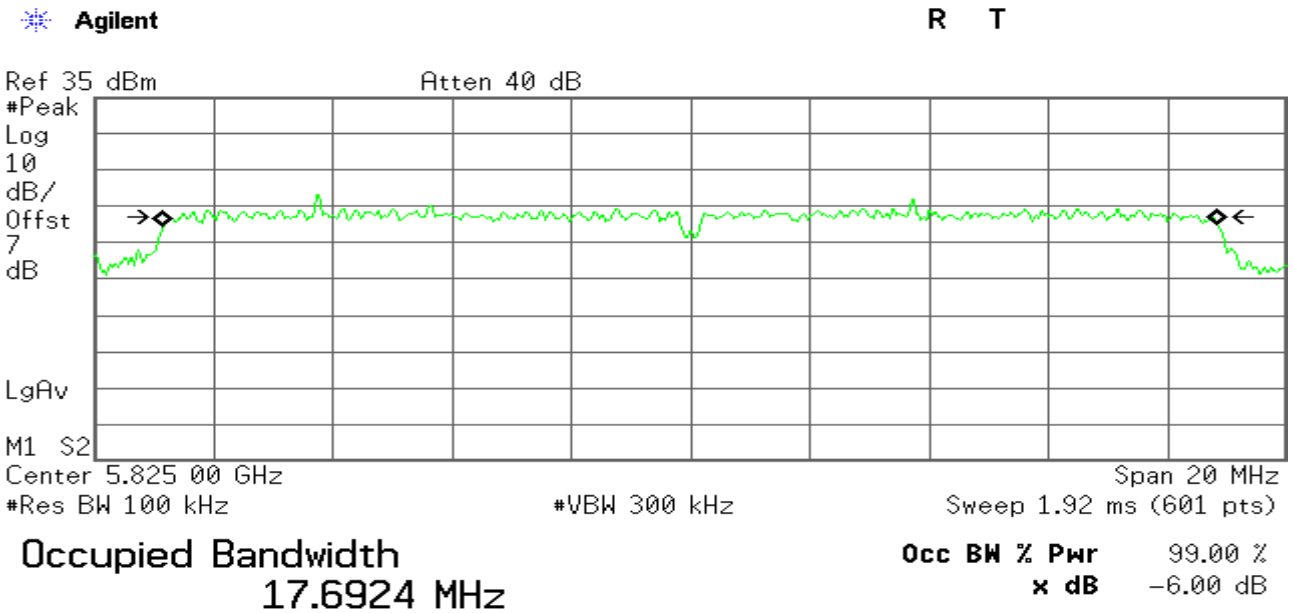
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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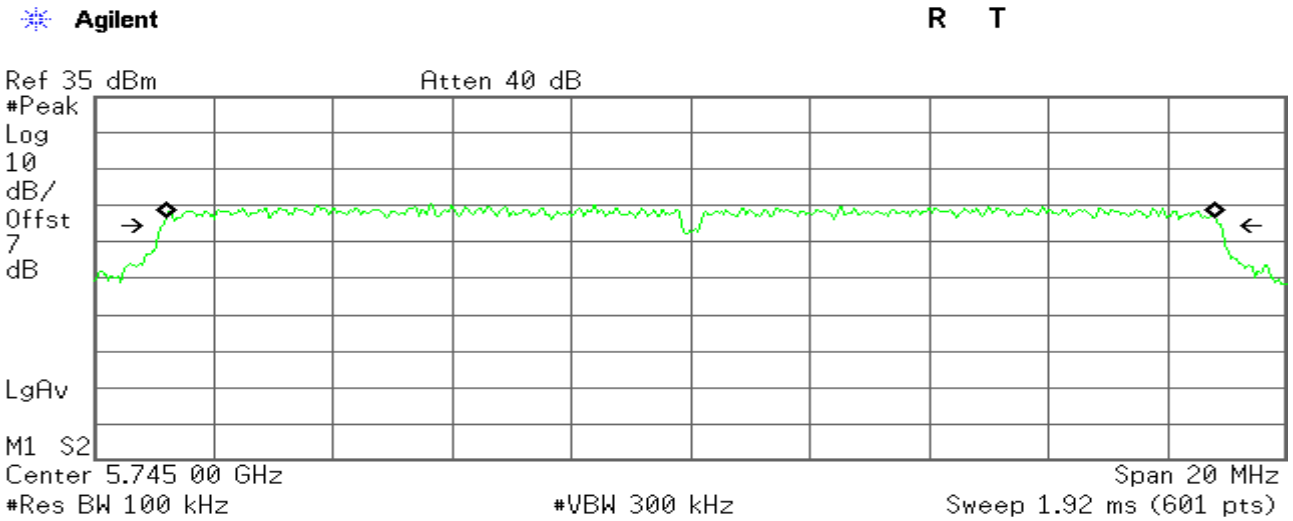
draft 802.11n Standard-20 MHz Channel mode /Chain 1

6dB Bandwidth (CH Low)

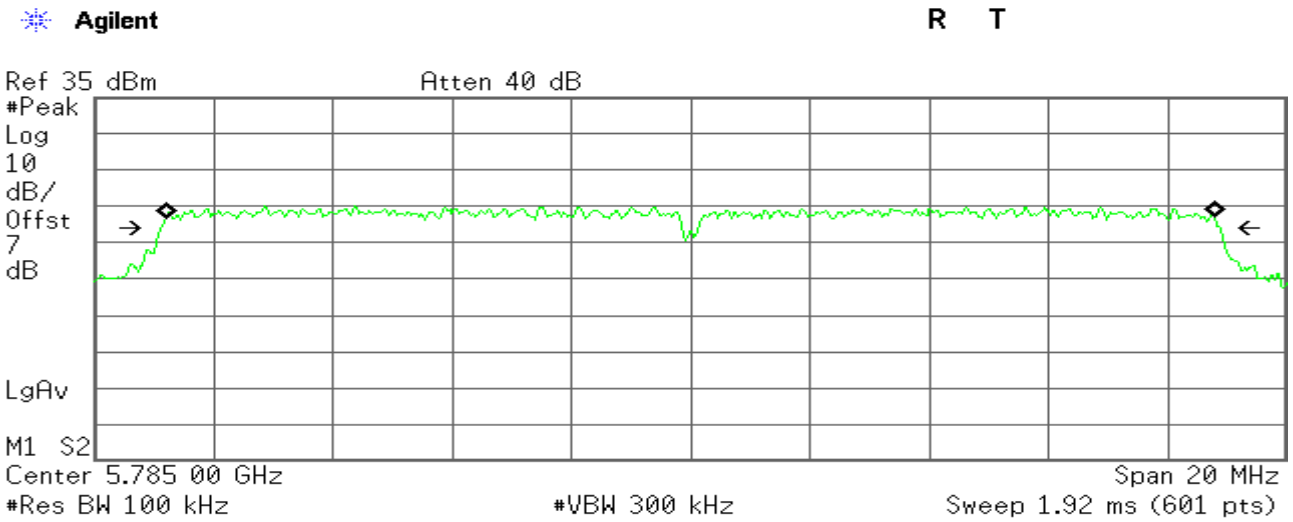


Occupied Bandwidth
17.6248 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 1.963 kHz
x dB Bandwidth 17.787 MHz

6dB Bandwidth (CH Mid)



Occupied Bandwidth
17.6075 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -10.450 kHz
x dB Bandwidth 17.776 MHz

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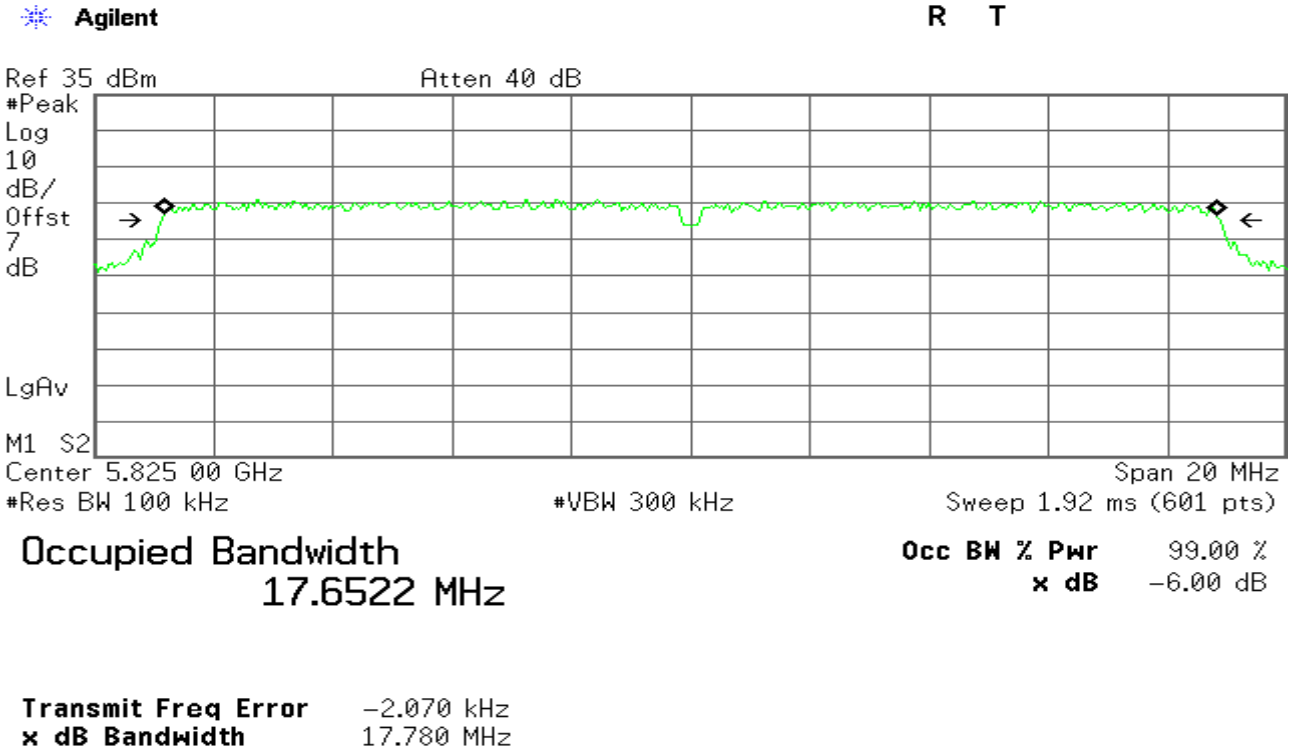
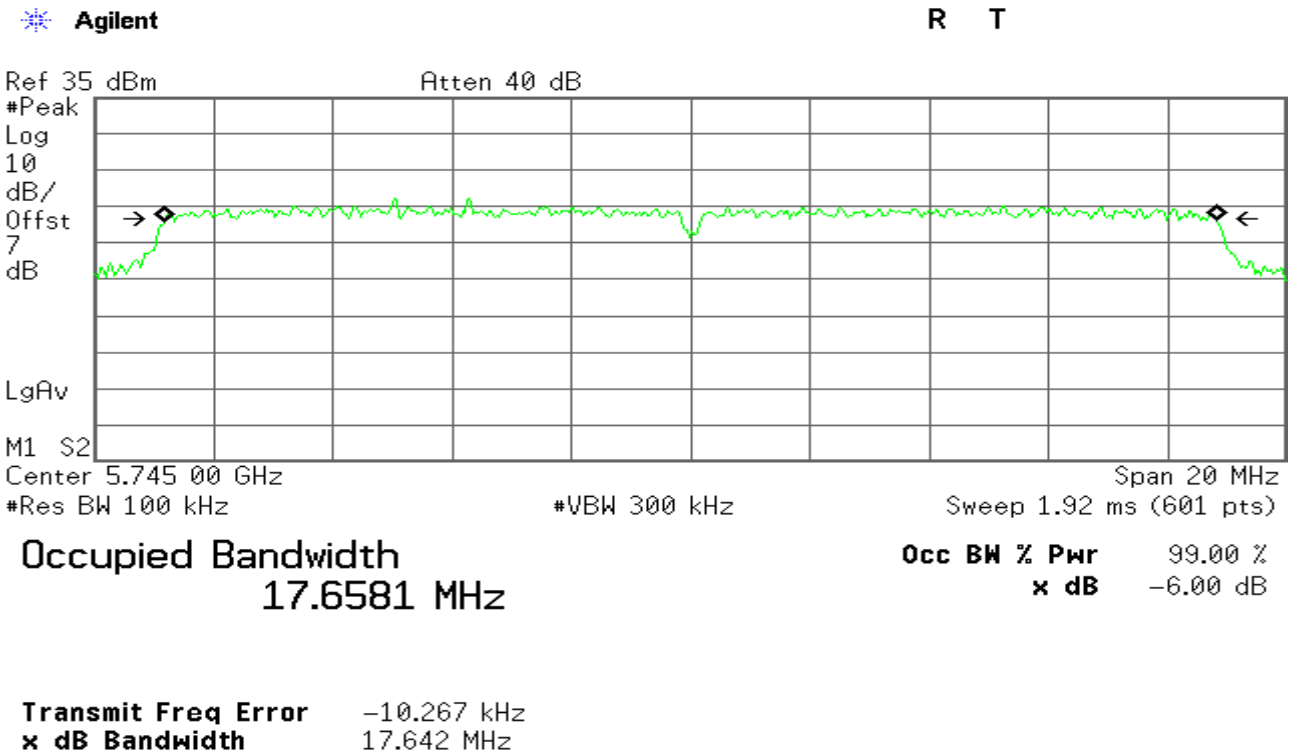
6dB Bandwidth (CH High)



draft 802.11n Standard-20 MHz Channel mode /Chain 2

6dB Bandwidth (CH Low)



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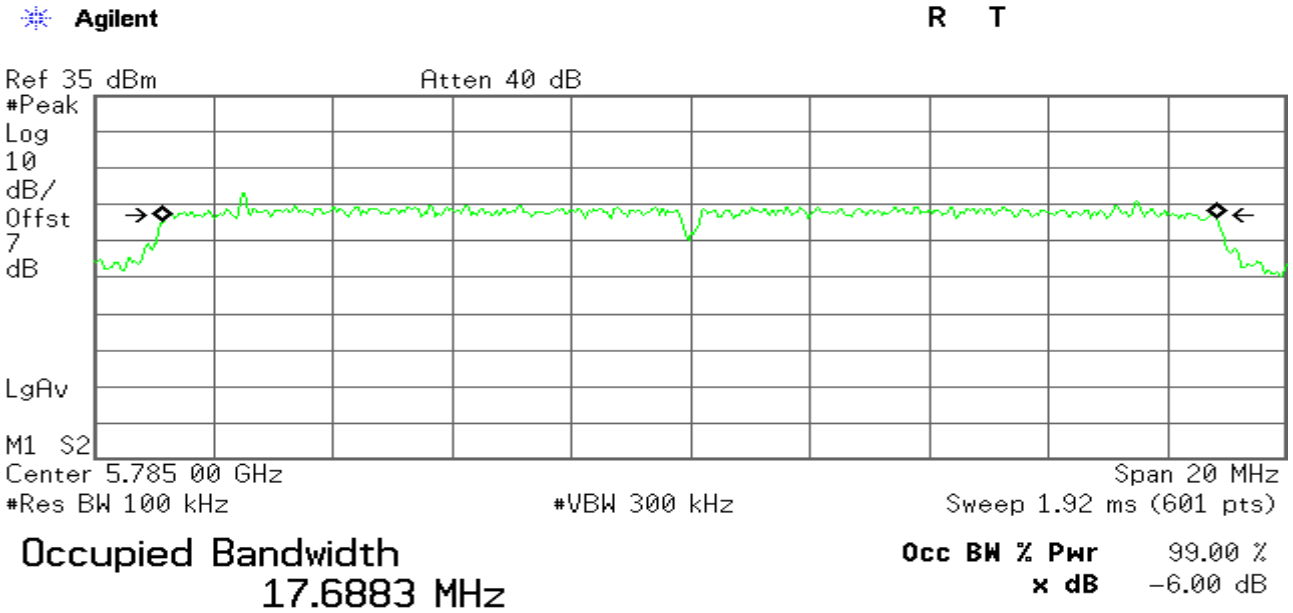
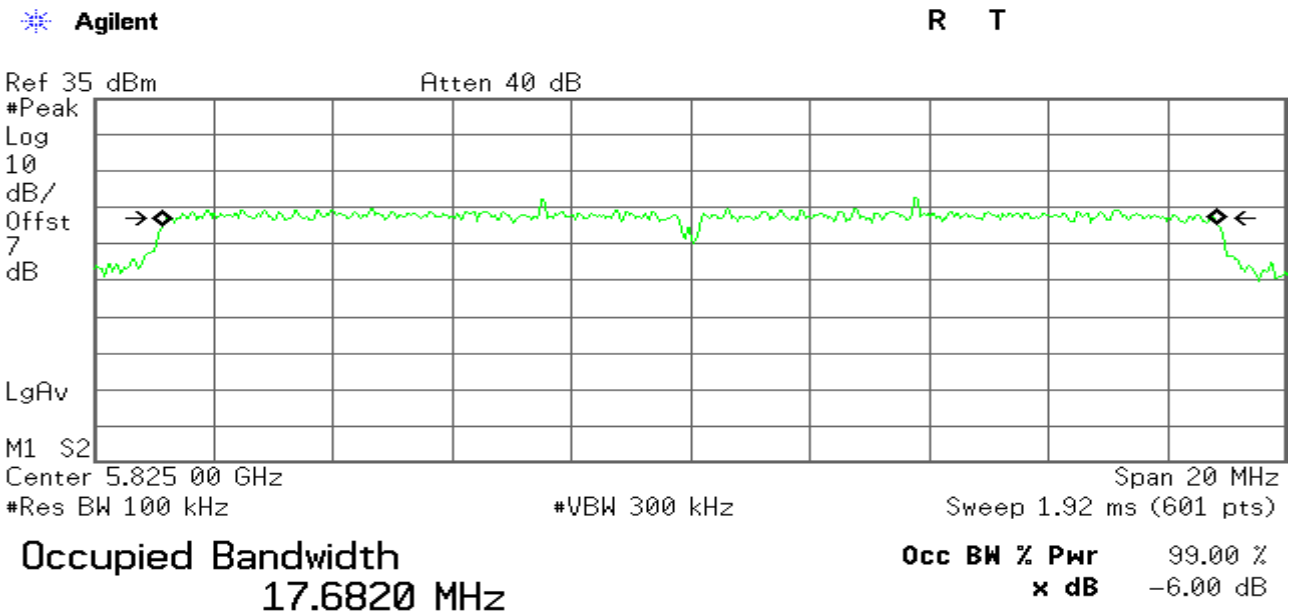
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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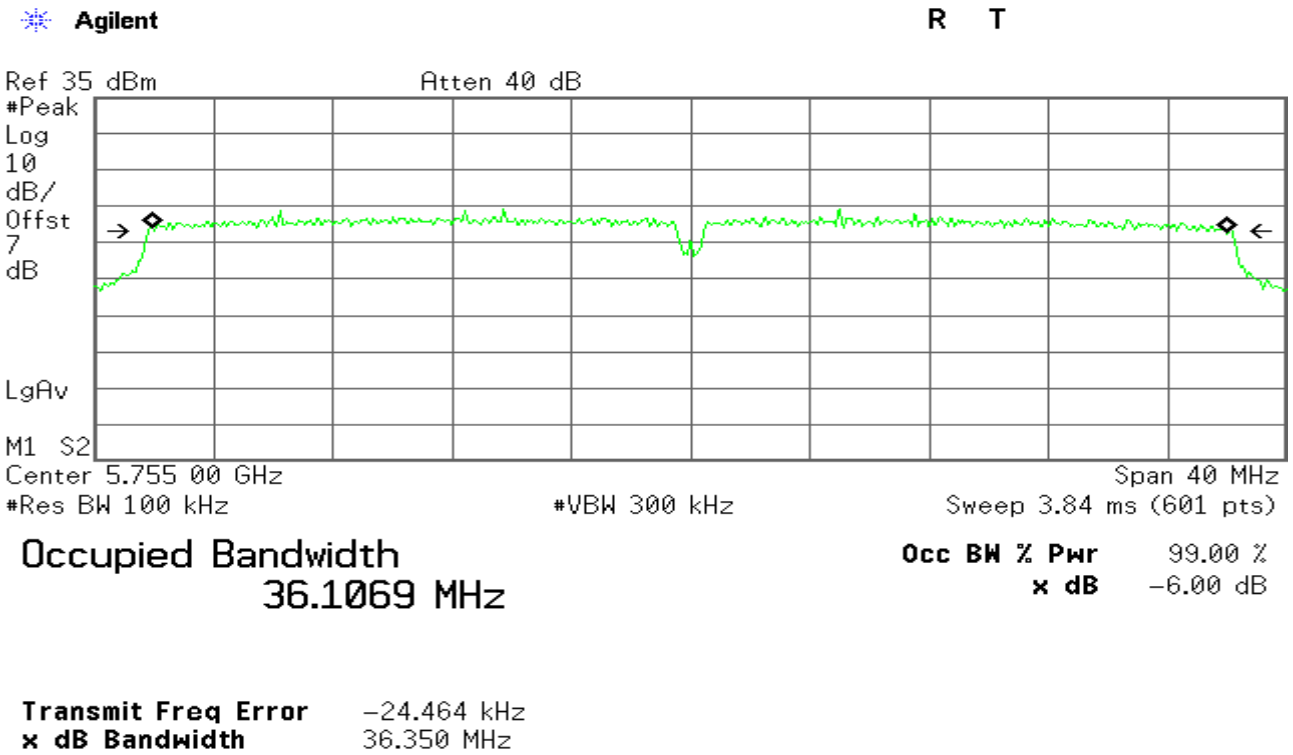
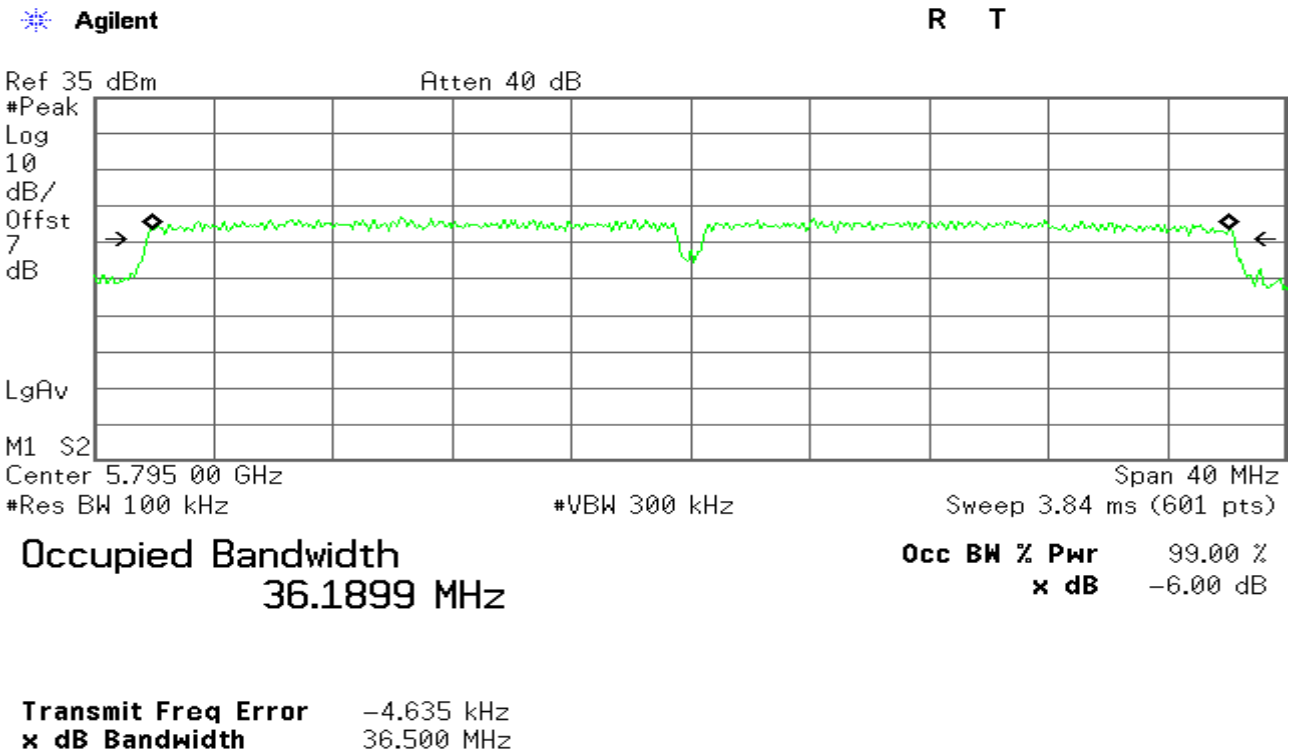
draft 802.11n Wide-40 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)



6dB Bandwidth (CH High)



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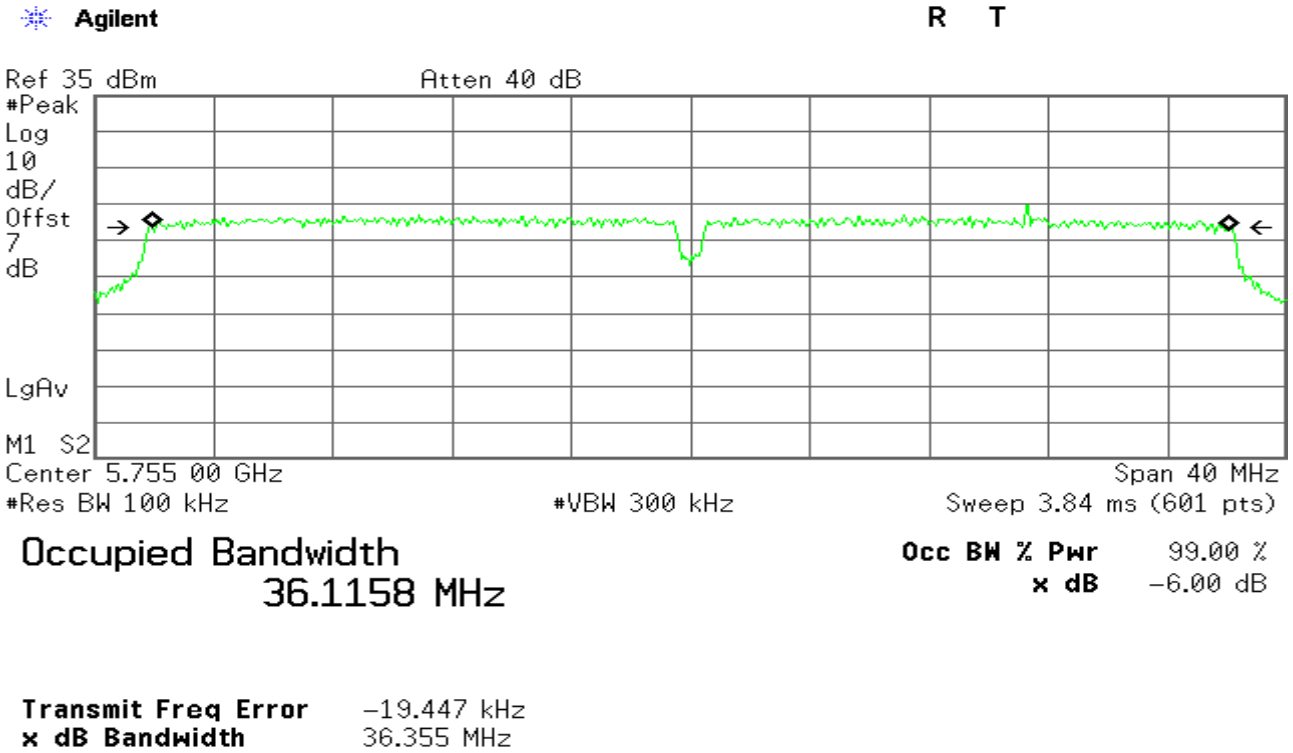
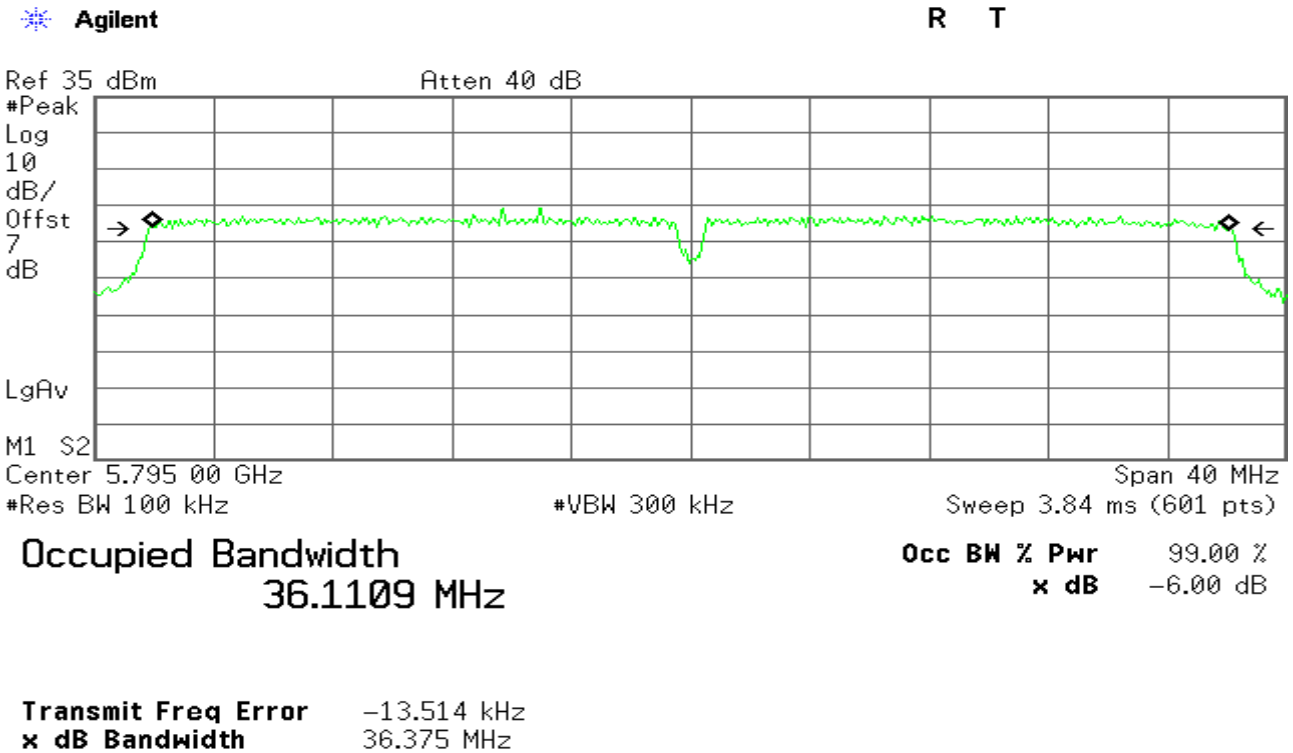
draft 802.11n Wide-40 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)



6dB Bandwidth (CH High)



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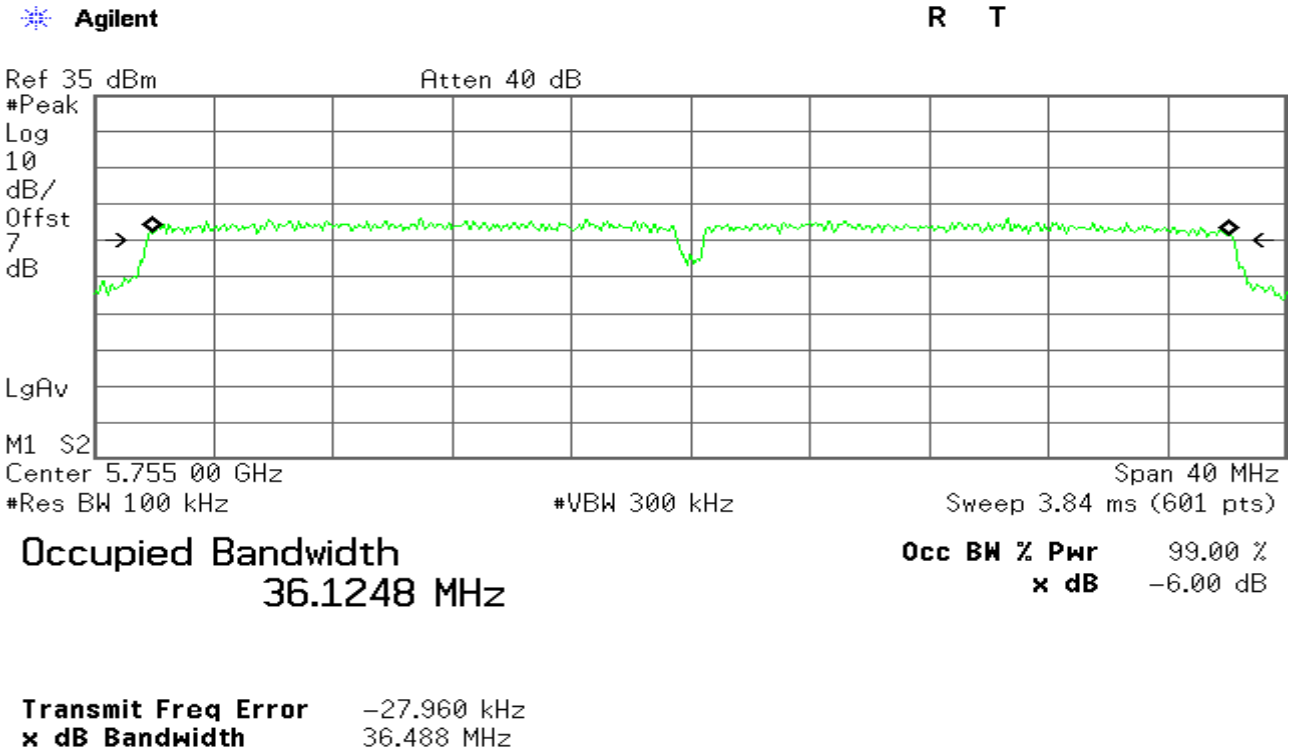
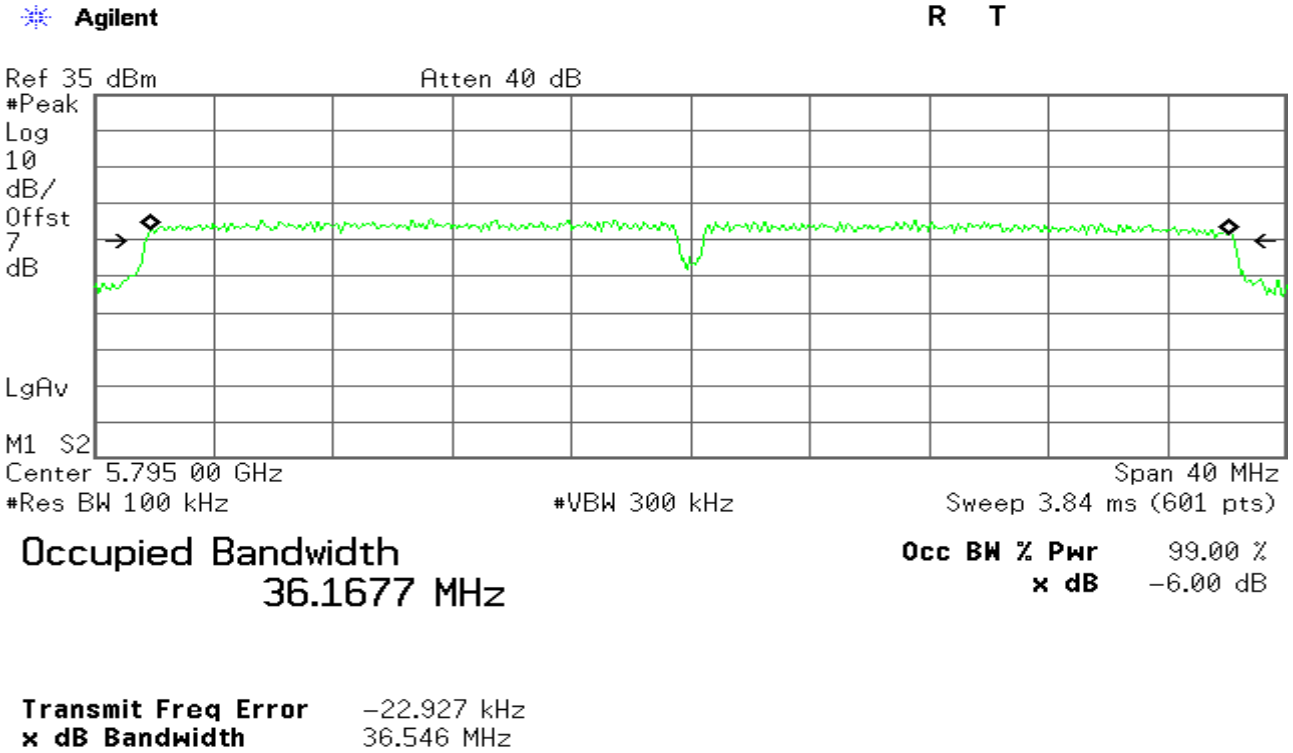
draft 802.11n Wide-40 MHz Channel mode / Chain 2

6dB Bandwidth (CH Low)



6dB Bandwidth (CH High)



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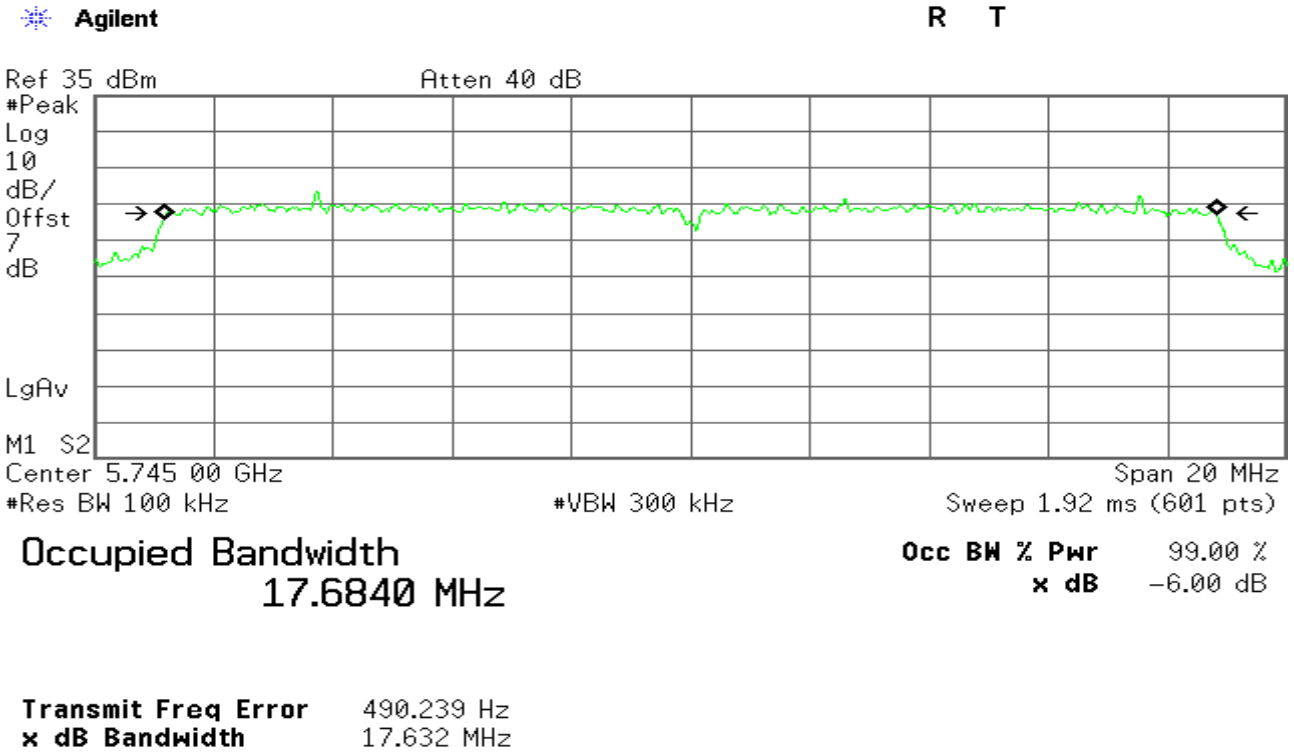
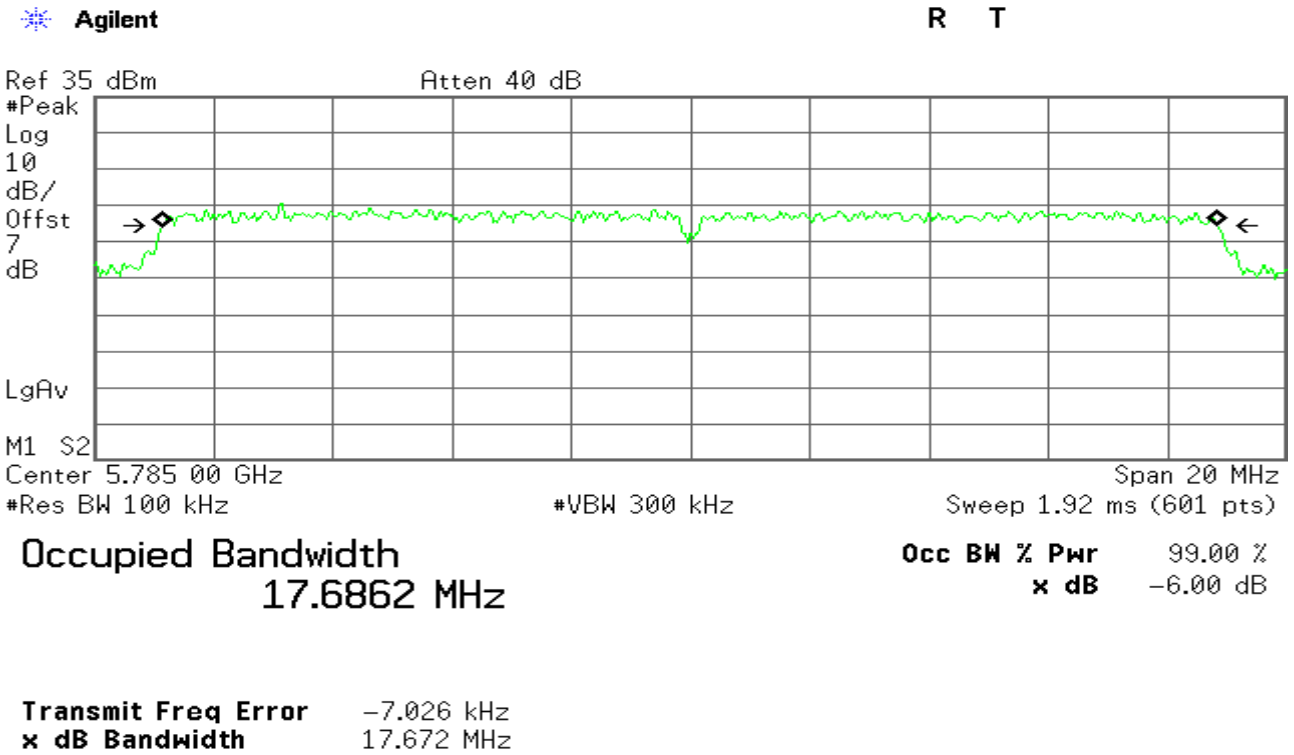
draft 802.11ac Standard-20 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



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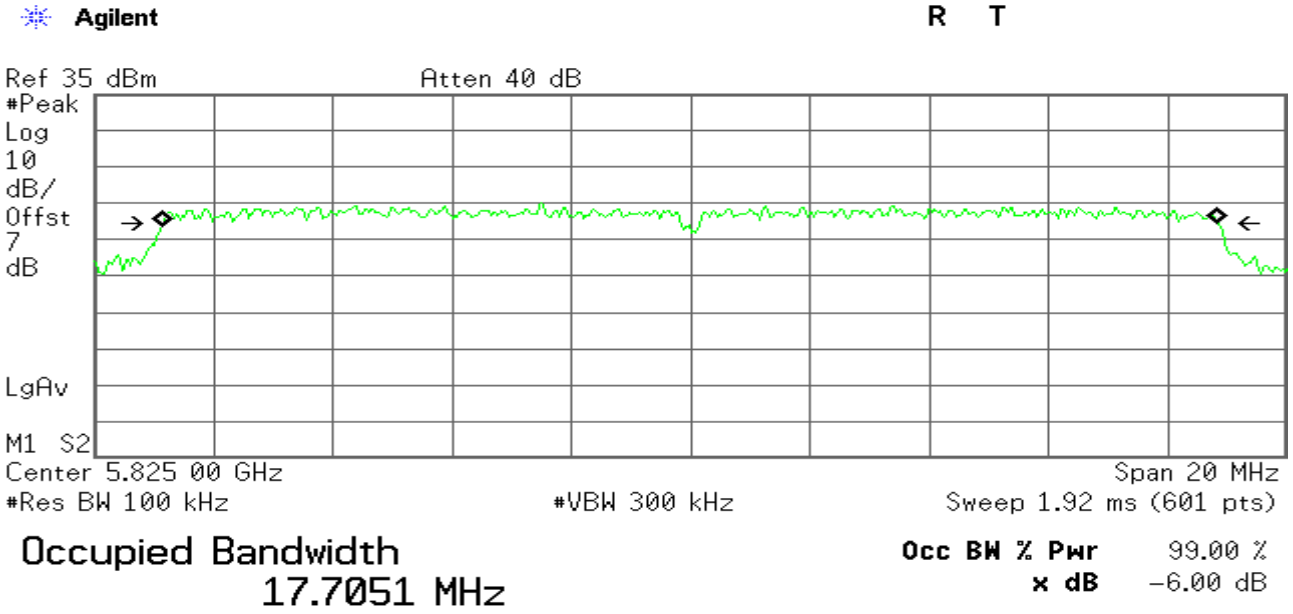
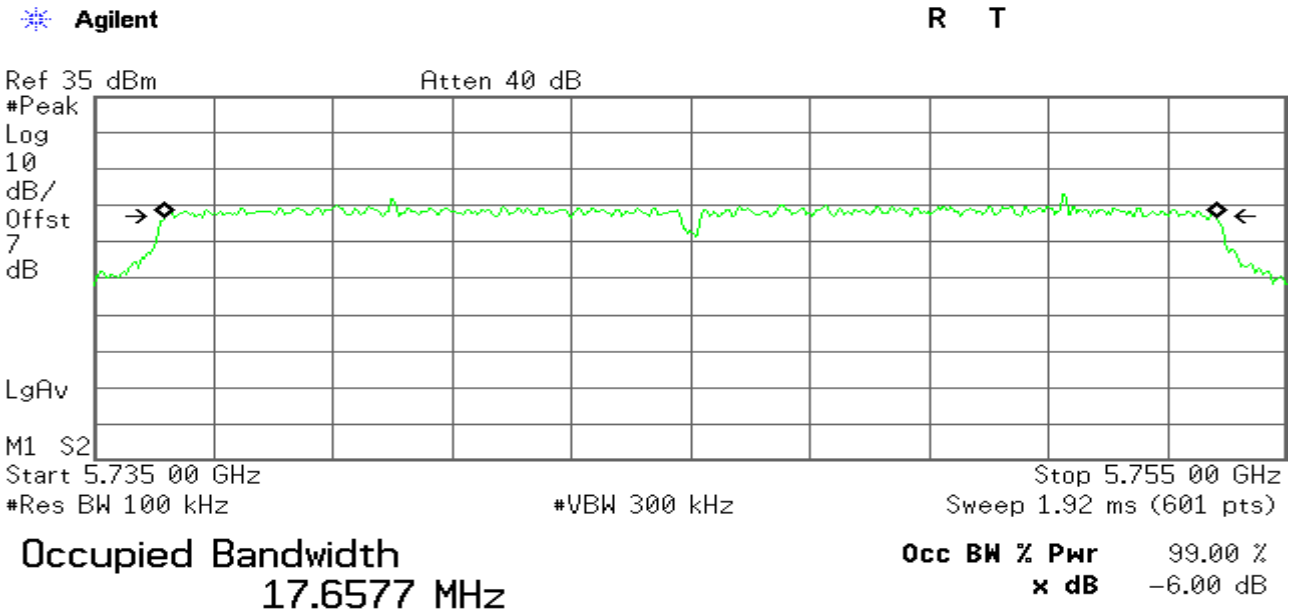
6dB Bandwidth (CH High)



draft 802.11ac Standard-20 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)



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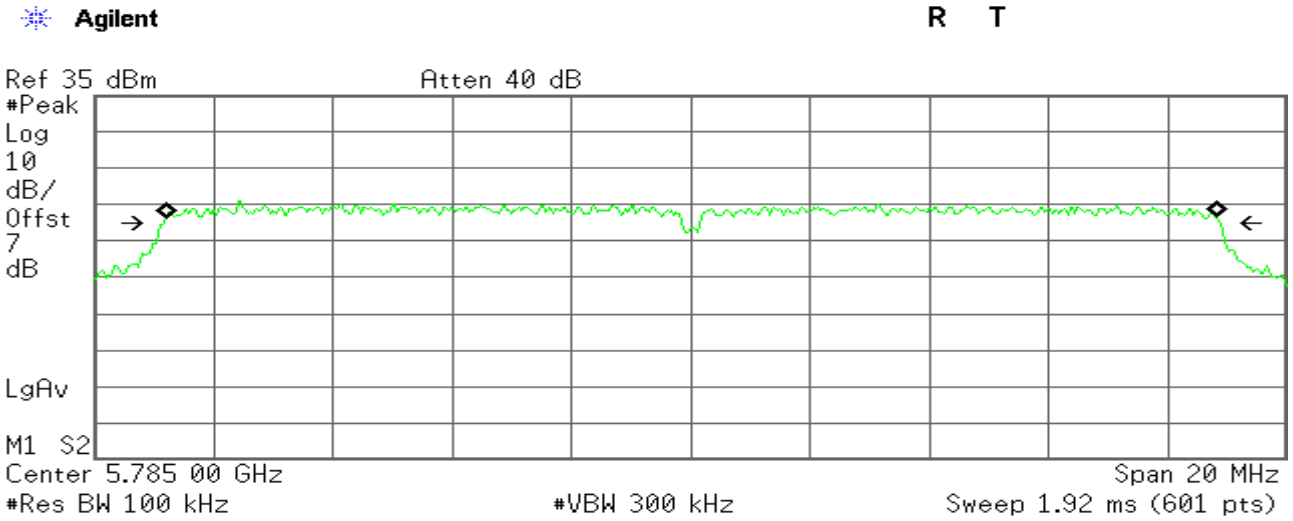
6dB Bandwidth (CH Mid)

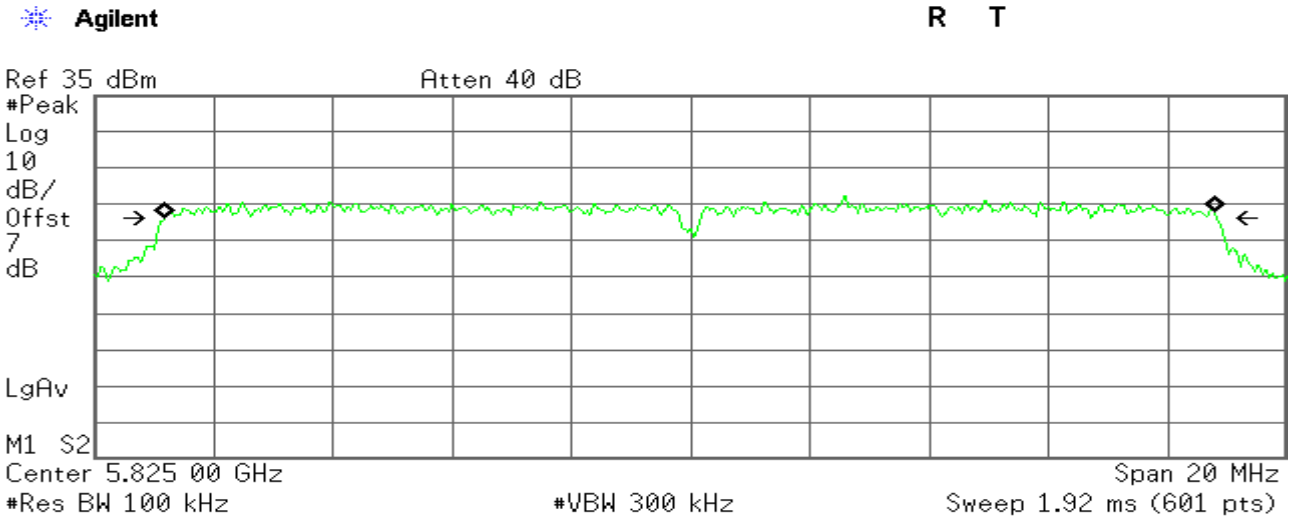


Occupied Bandwidth
17.6326 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 840.950 Hz
x dB Bandwidth 17.758 MHz

6dB Bandwidth (CH High)



Occupied Bandwidth
17.6303 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -8.988 kHz
x dB Bandwidth 17.651 MHz

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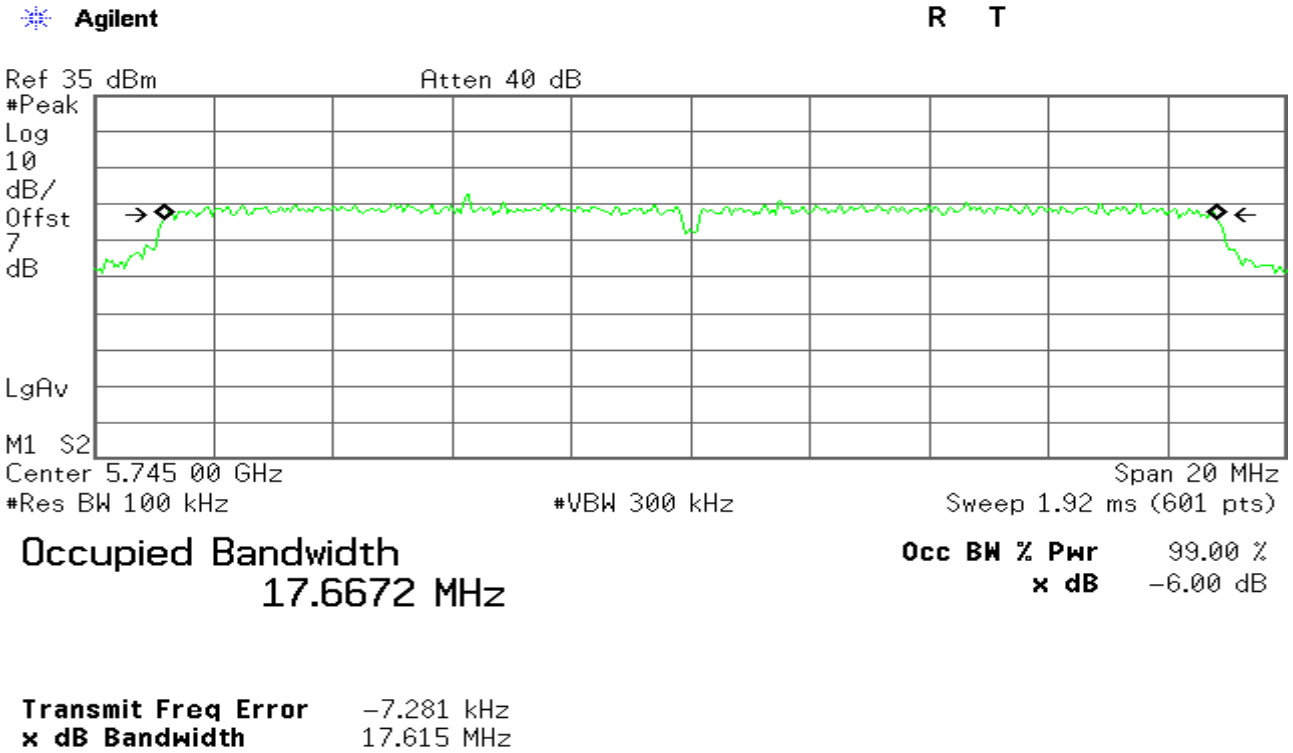
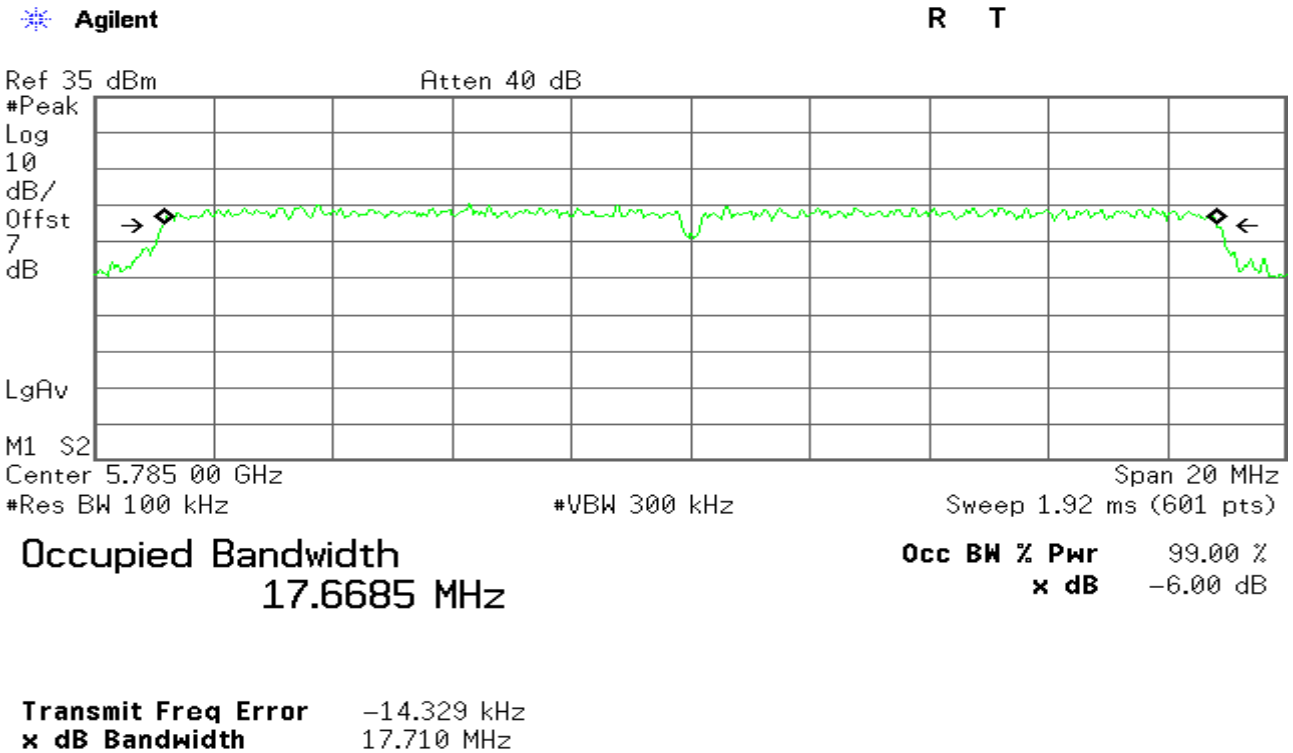
draft 802.11ac Standard-20 MHz Channel mode / Chain 2

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



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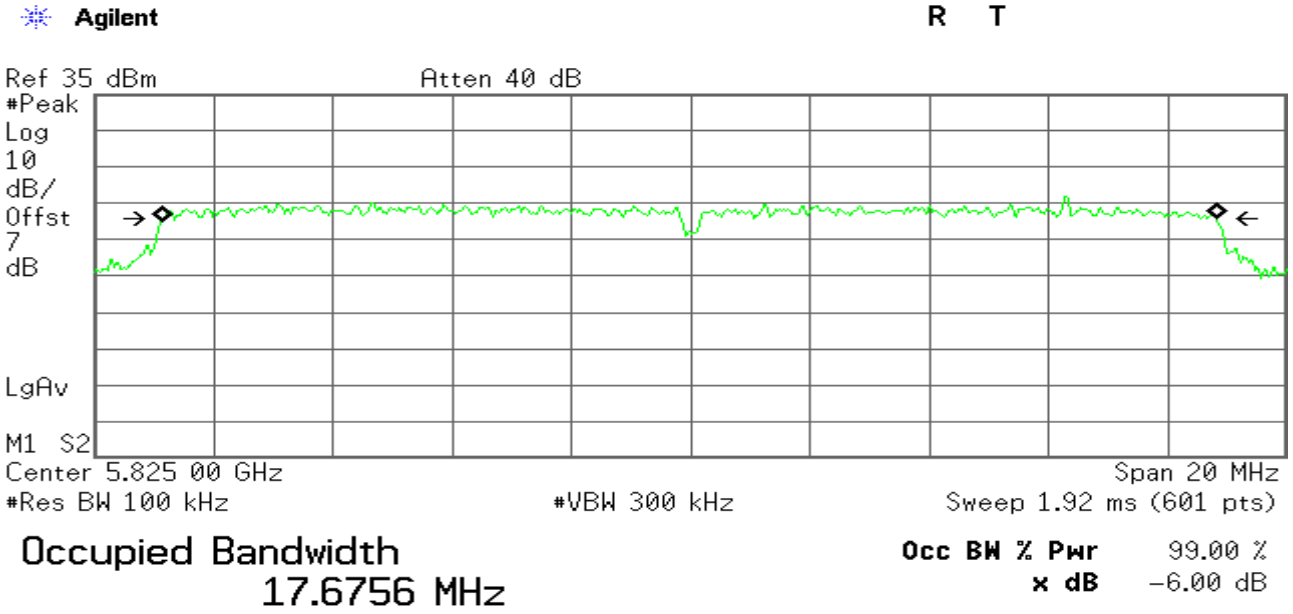
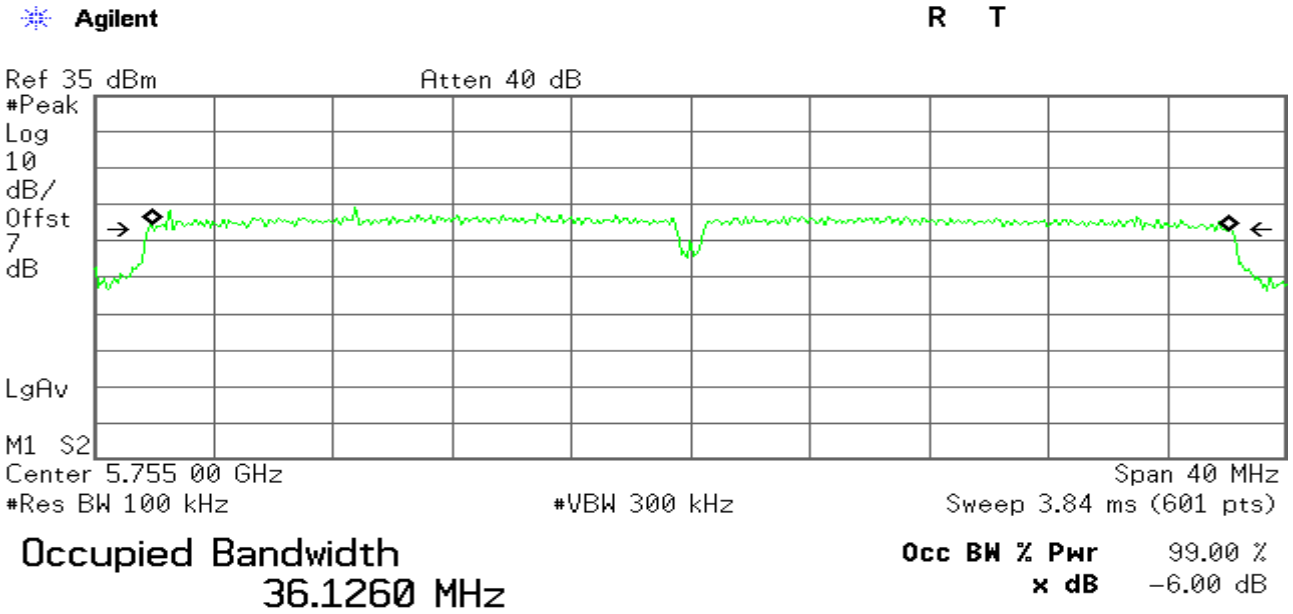
6dB Bandwidth (CH High)



draft 802.11ac Wide-40 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)



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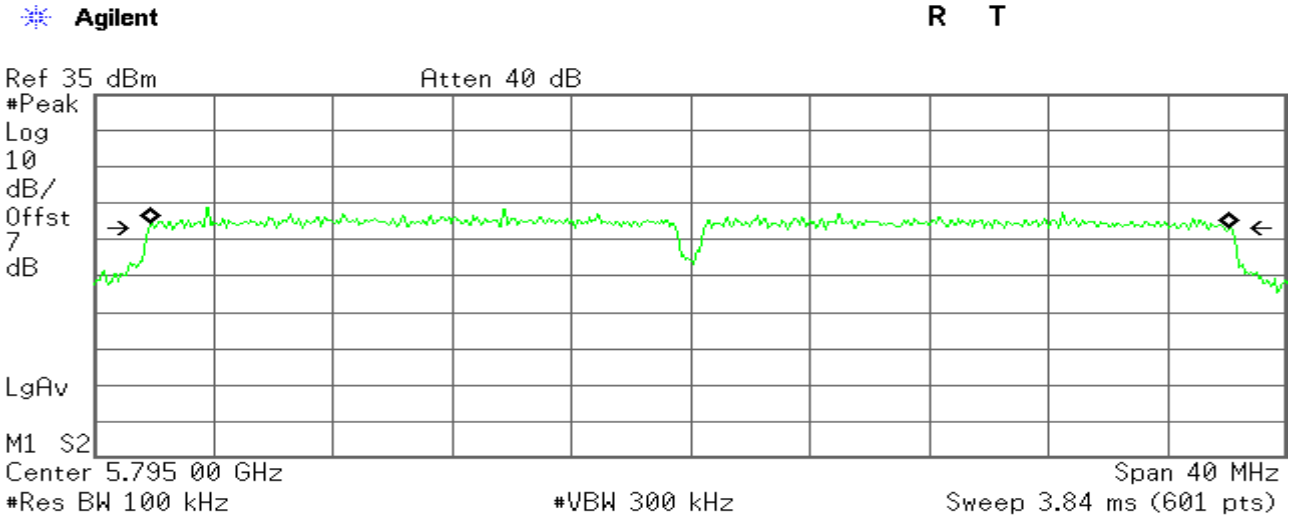
6dB Bandwidth (CH High)



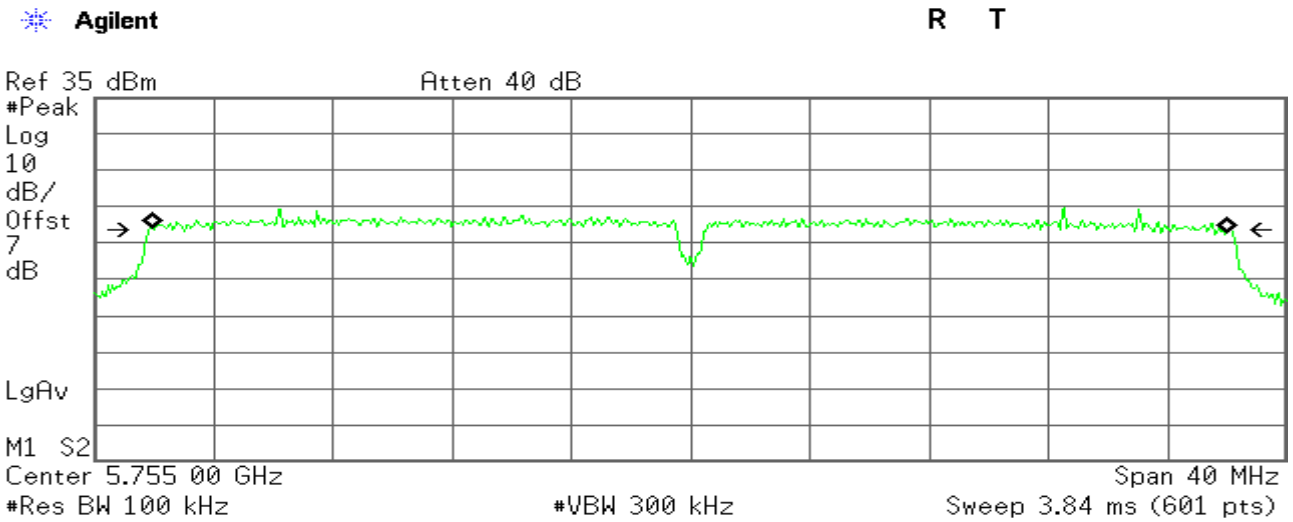
Occupied Bandwidth
36.1655 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -24.555 kHz
x dB Bandwidth 36.347 MHz

draft 802.11ac Wide-40 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)



Occupied Bandwidth
36.0853 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -25.290 kHz
x dB Bandwidth 36.343 MHz

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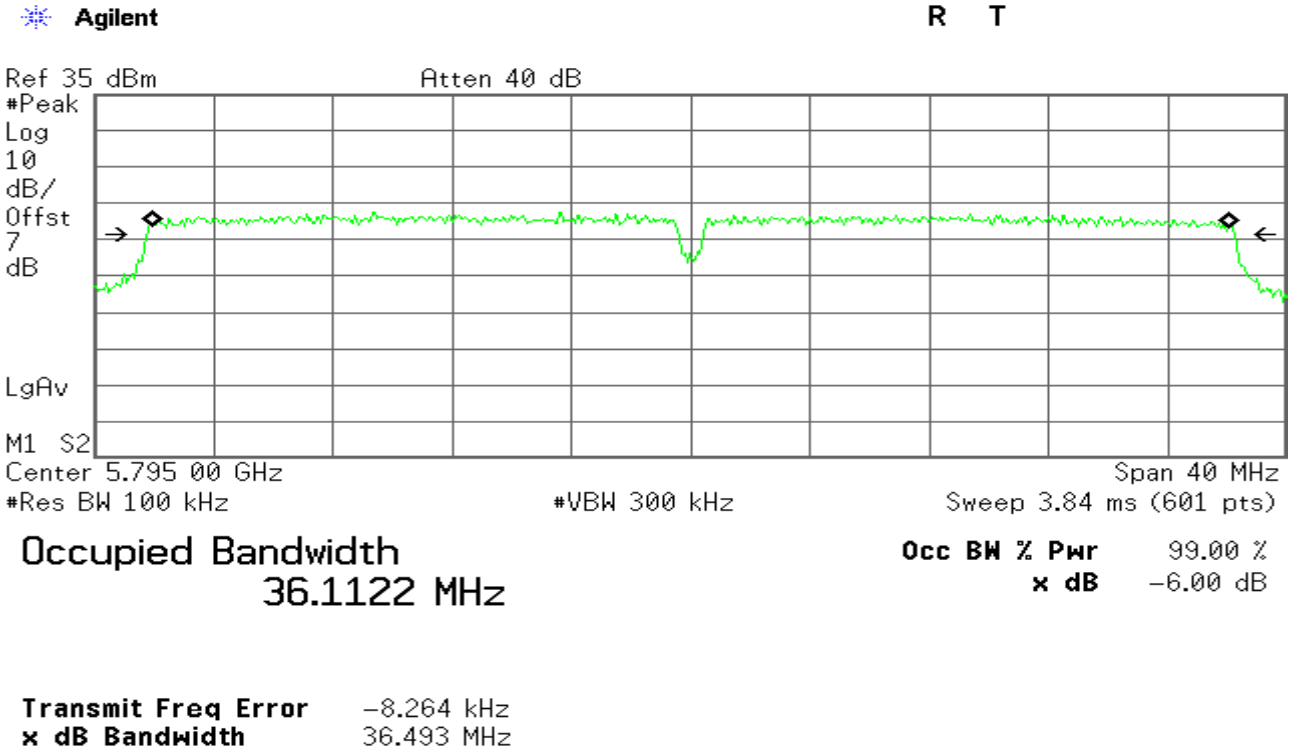
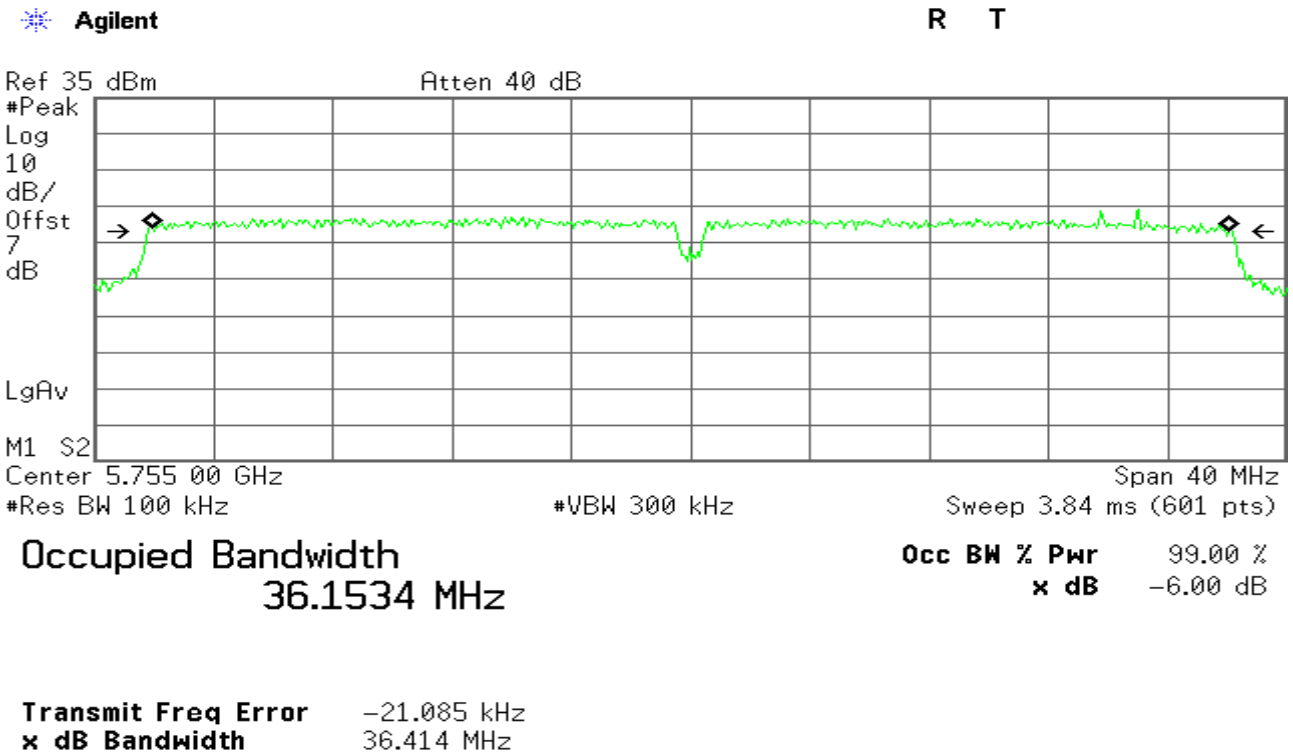
6dB Bandwidth (CH High)



draft 802.11ac Wide-40 MHz Channel mode / Chain 2

6dB Bandwidth (CH Low)



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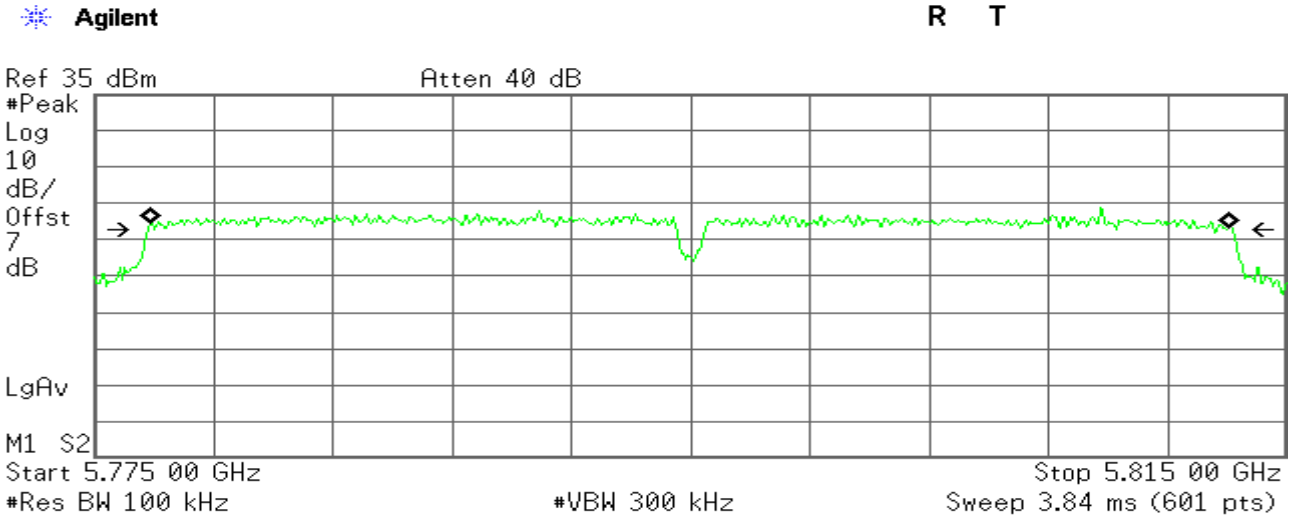
6dB Bandwidth (CH High)



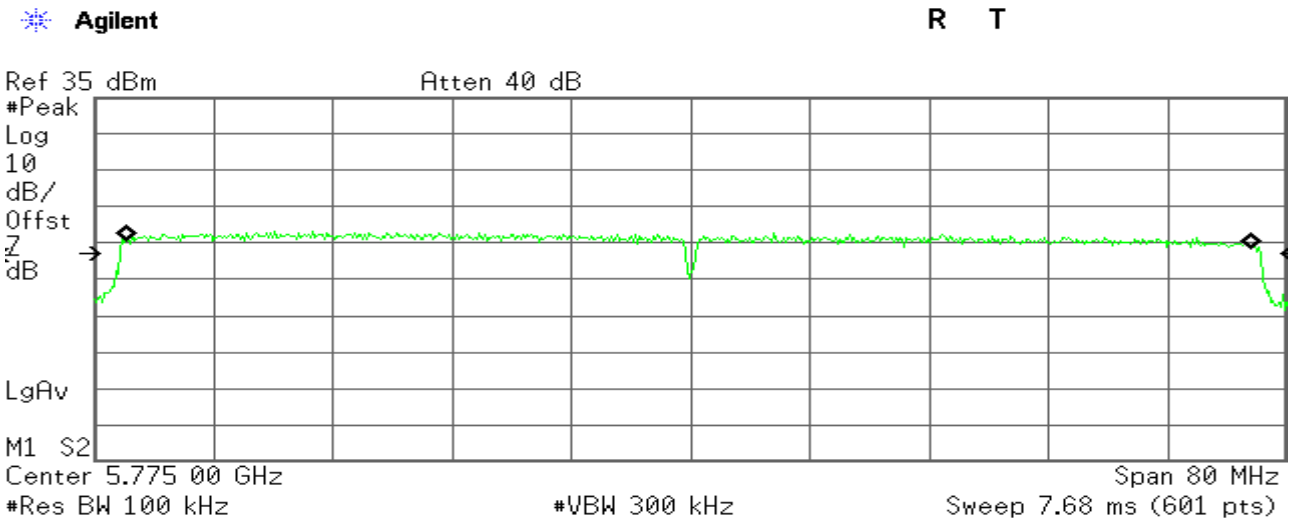
Occupied Bandwidth
36.1717 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -19.079 kHz
x dB Bandwidth 36.416 MHz

draft 802.11ac Wide-80 MHz Channel mode / Chain 0

6dB Bandwidth



Occupied Bandwidth
75.5226 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -121.584 kHz
x dB Bandwidth 76.532 MHz

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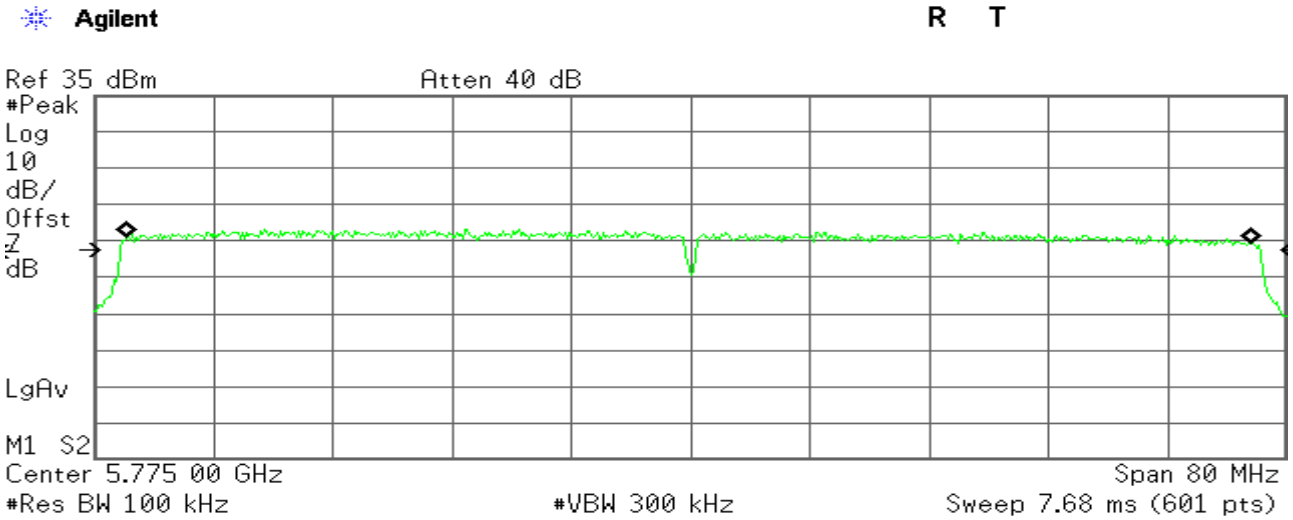
draft 802.11ac Wide-80 MHz Channel mode / Chain 1

6dB Bandwidth



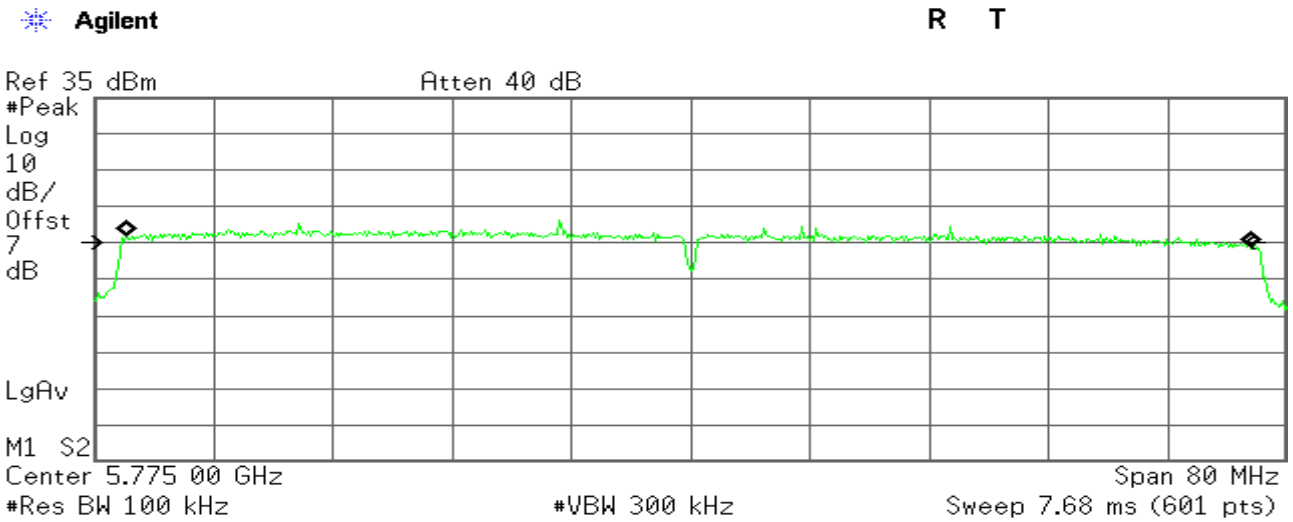
Occupied Bandwidth
75.4416 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -96.273 kHz
x dB Bandwidth 76.506 MHz

draft 802.11ac Wide-80 MHz Channel mode / Chain 2

6dB Bandwidth



Occupied Bandwidth
75.4114 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -140.568 kHz
x dB Bandwidth 74.097 MHz

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4.2. PEAK POWER

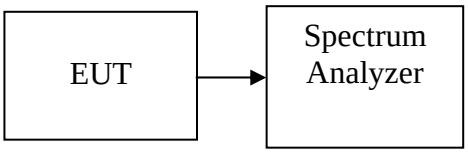
LIMIT

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

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

1. Set the RBW = 1 MHz.
2. Set the VBW ≥ 3 RBW
3. Set the span ≥ 1.5 x DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

TEST RESULTS

No non-compliance noted

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Test Data

Test mode: 802.11b mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	2412	22.60	22.90	22.13	27.33	30.00
Mid	2437	25.36	25.12	24.80	29.87	30.00
High	2462	22.62	23.18	22.45	27.53	30.00

Test mode: 802.11g mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	2412	17.91	17.48	17.33	22.35	30.00
Mid	2437	25.12	24.82	25.20	29.82	30.00
High	2462	17.73	17.58	17.24	22.29	30.00

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	2412	18.12	17.87	16.95	22.45	30.00
Mid	2437	24.82	24.68	24.67	29.50	30.00
High	2462	17.92	17.67	17.33	22.42	30.00

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	2422	16.8	15.54	16.23	20.99	30.00
Mid	2437	23.75	23.64	22.81	28.19	30.00
High	2452	14.65	14.72	16.46	20.13	30.00

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5745	23.77	24.86	23.80	28.94	30.00
Mid	5785	23.06	24.64	23.24	28.48	30.00
High	5825	22.81	24.65	23.28	28.42	30.00

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Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5745	22.57	22.90	22.88	27.56	30.00
Mid	5785	22.06	22.72	22.40	27.17	30.00
High	5825	21.66	23.21	22.25	27.19	30.00

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5755	22.52	22.71	22.63	27.39	30.00
High	5795	22.12	22.83	22.40	27.23	30.00

Test mode: draft 802.11ac Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5745	22.82	23.00	22.86	27.67	30.00
Mid	5785	22.29	22.82	22.42	27.29	30.00
High	5825	21.88	23.28	22.29	27.30	30.00

Test mode: draft 802.11ac Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5755	22.55	22.69	22.63	27.39	30.00
High	5795	22.09	22.86	22.43	27.24	30.00

Test mode: draft 802.11ac Wide-80 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Mid	5775	21.07	21.17	21.01	25.86	30.00

Remark: *Total Output Power (dBm) = 10*LOG(10^(Chain 0 Output Power / 10)+10^(Chain 1 Output Power /10) +10^(Chain 2 Output Power /10)))*

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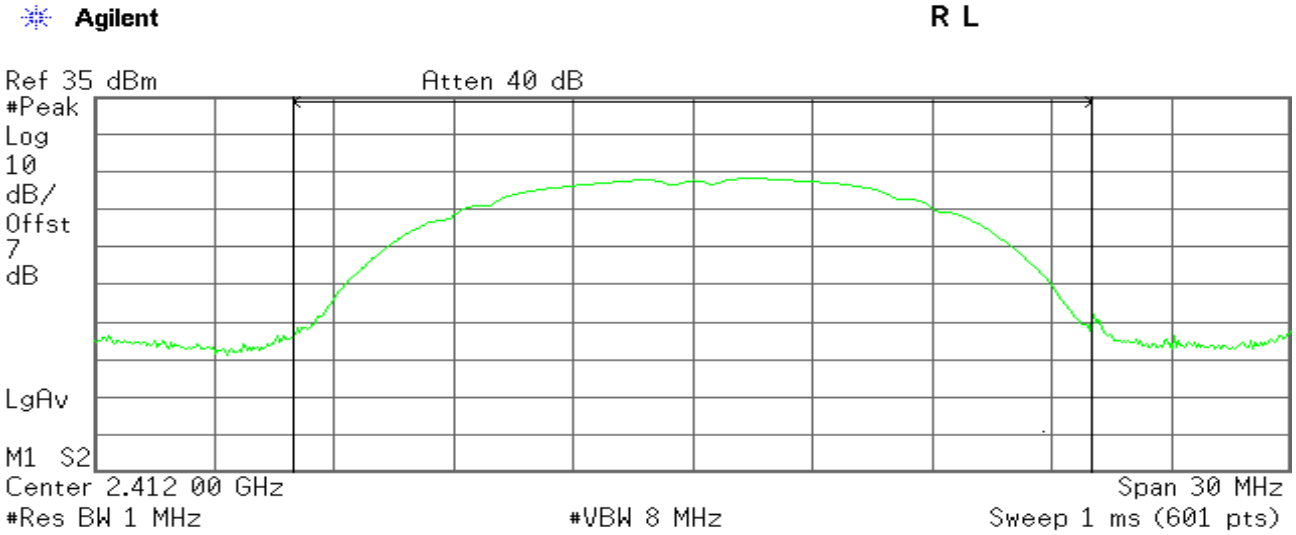
Test Plot

IEEE 802.11b mode/ Chain 0

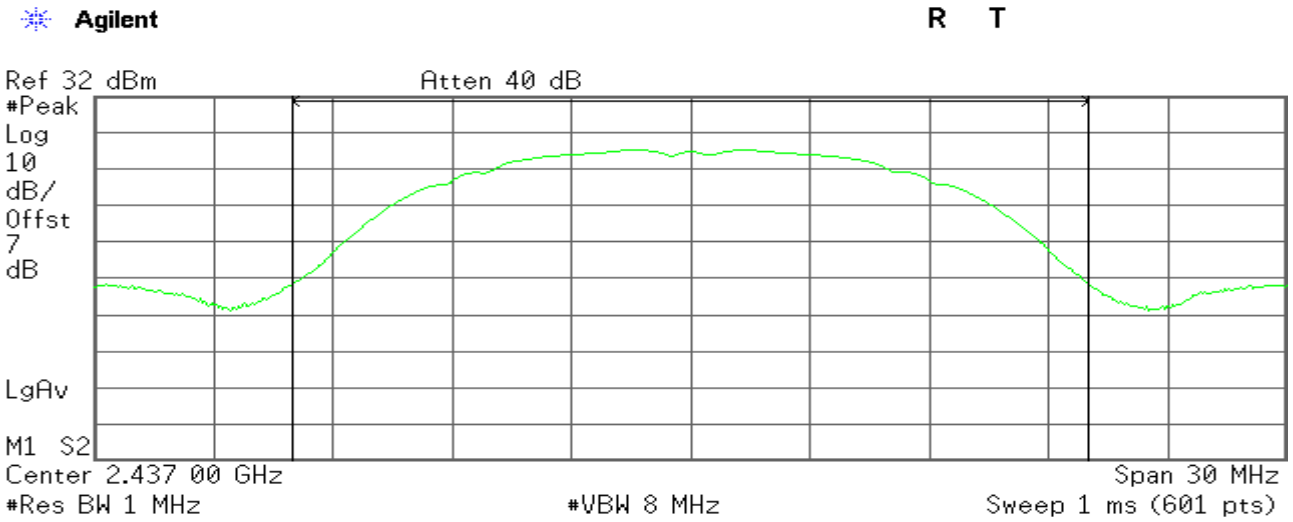
Peak Power (CH Low)



Channel Power 22.60 dBm /20.0000 MHz

Power Spectral Density 8.59 dBm/MHz

Peak Power (CH Mid)



Channel Power 25.36 dBm /20.0000 MHz

Power Spectral Density 12.51 dBm/MHz

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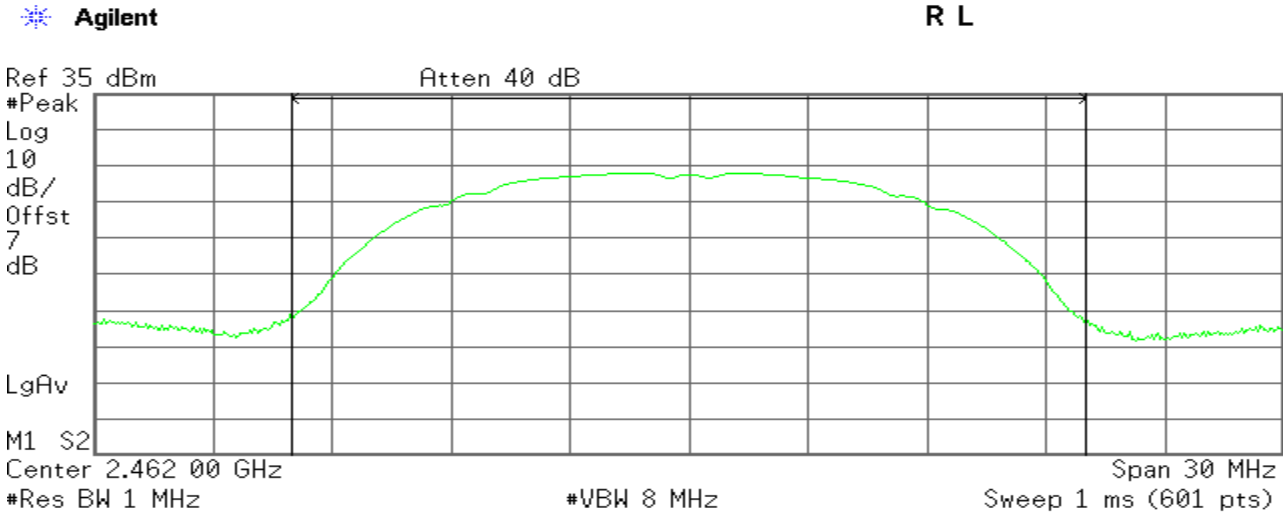
Peak Power (CH High)

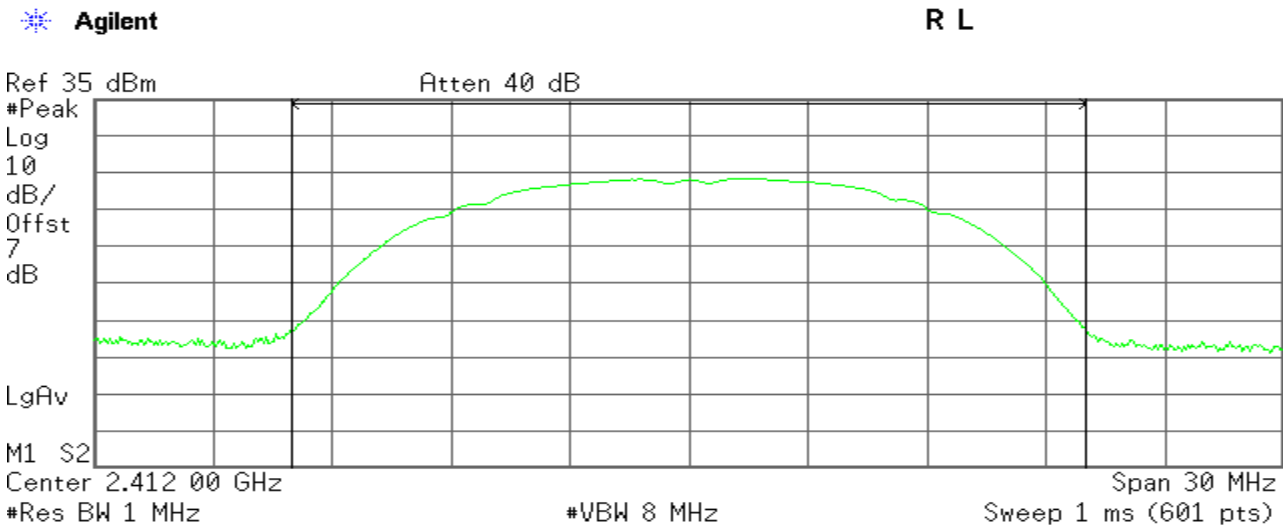


Channel Power 22.62 dBm /20.0000 MHz

Power Spectral Density 8.61 dBm/MHz

IEEE 802.11b mode/ Chain 1

Peak Power (CH Low)



Channel Power 22.90 dBm /20.0000 MHz

Power Spectral Density 8.89 dBm/MHz

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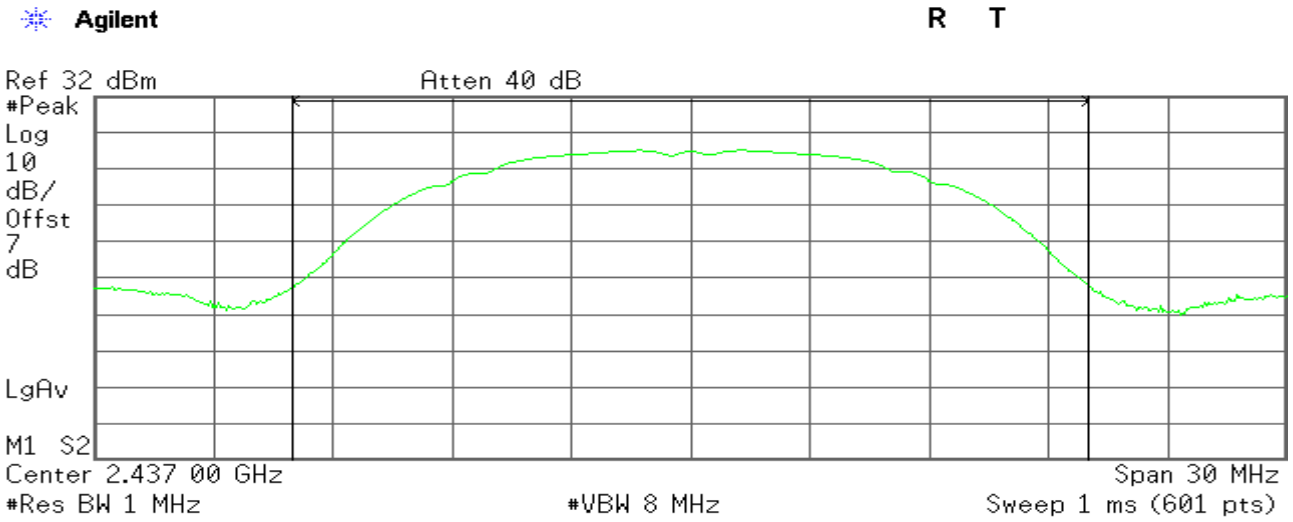
Peak Power (CH Mid)



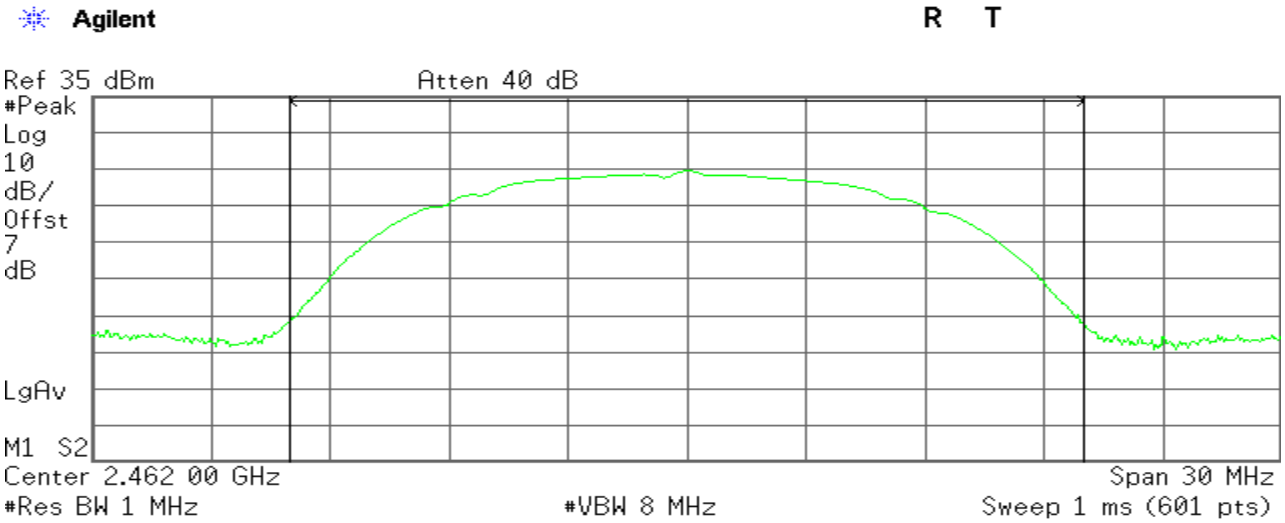
Channel Power

25.12 dBm /20.0000 MHz

Power Spectral Density

12.22 dBm/MHz

Peak Power (CH High)



Channel Power

23.18 dBm /20.0000 MHz

Power Spectral Density

9.17 dBm/MHz

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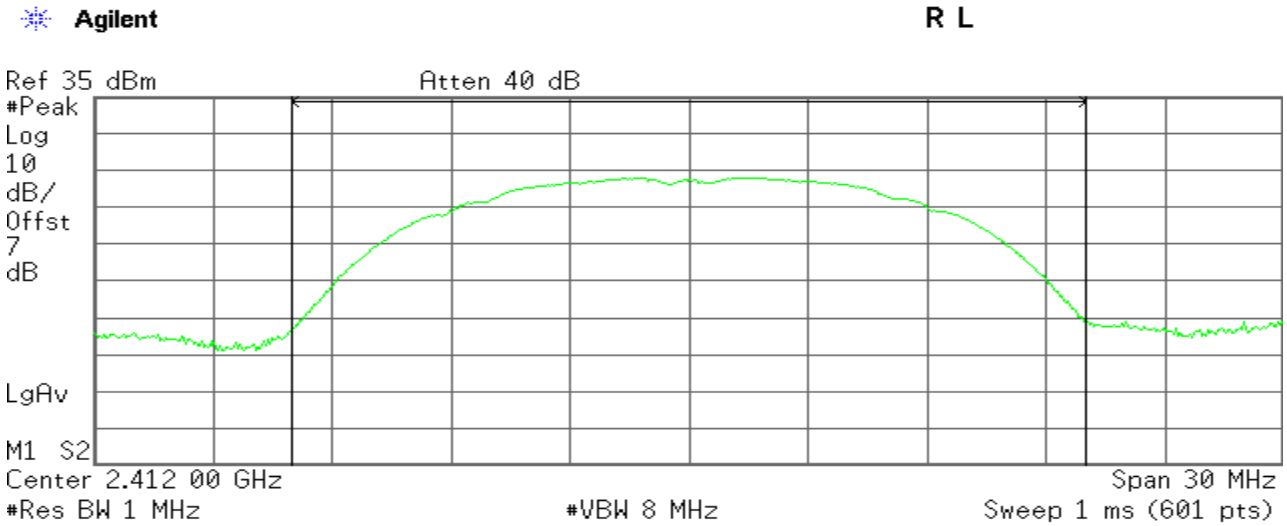
IEEE 802.11b mode/ Chain 2

Peak Power (CH Low)



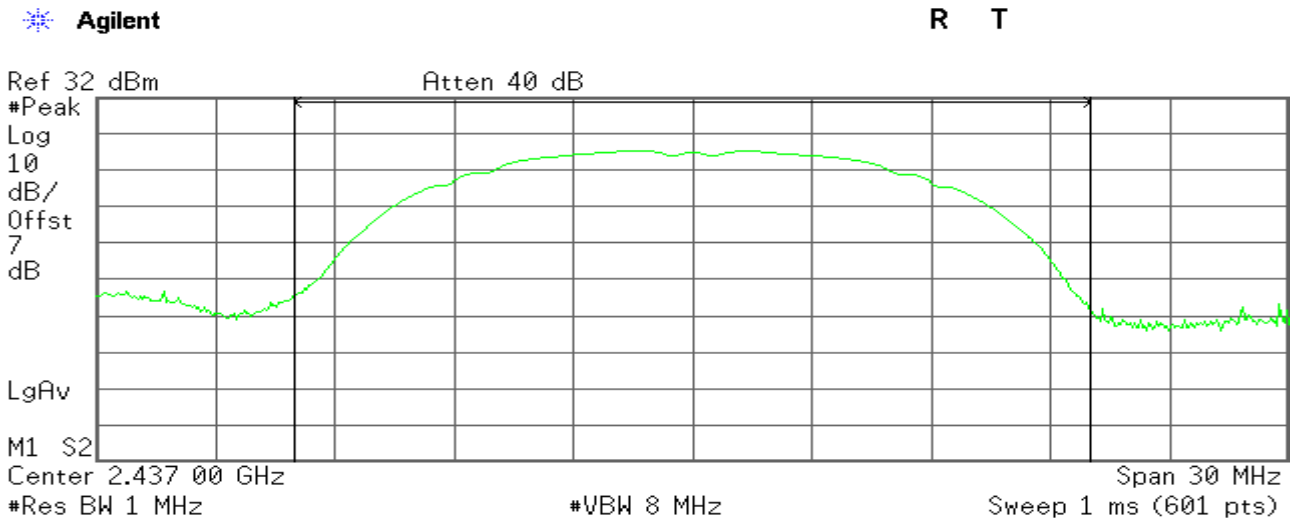
Channel Power

22.13 dBm /20.0000 MHz

Power Spectral Density

8.12 dBm/MHz

Peak Power (CH Mid)



Channel Power

24.80 dBm /20.0000 MHz

Power Spectral Density

12.01 dBm/MHz

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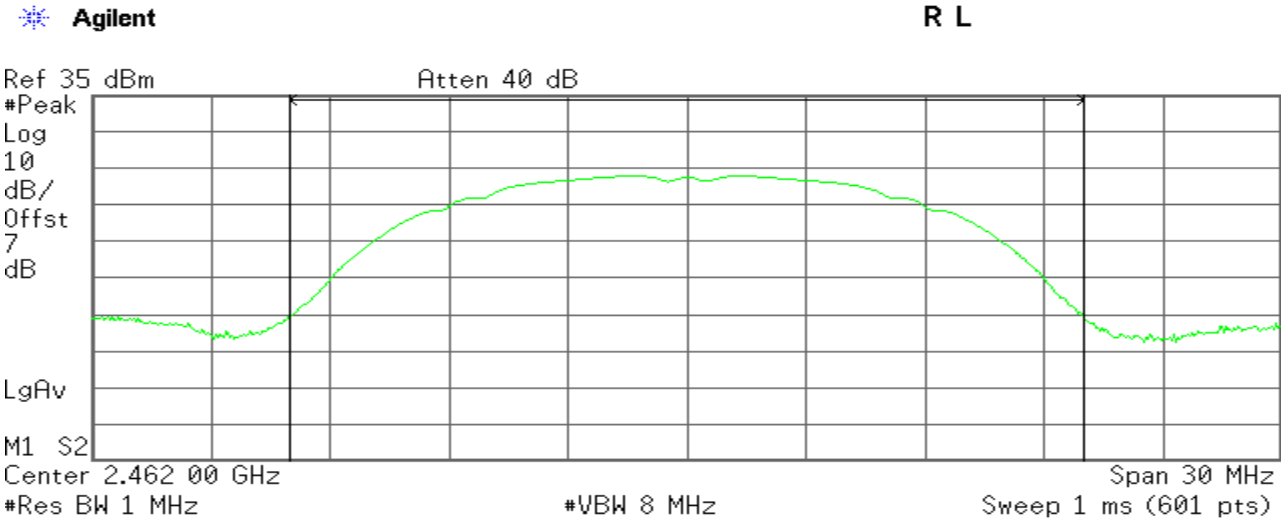
Peak Power (CH High)

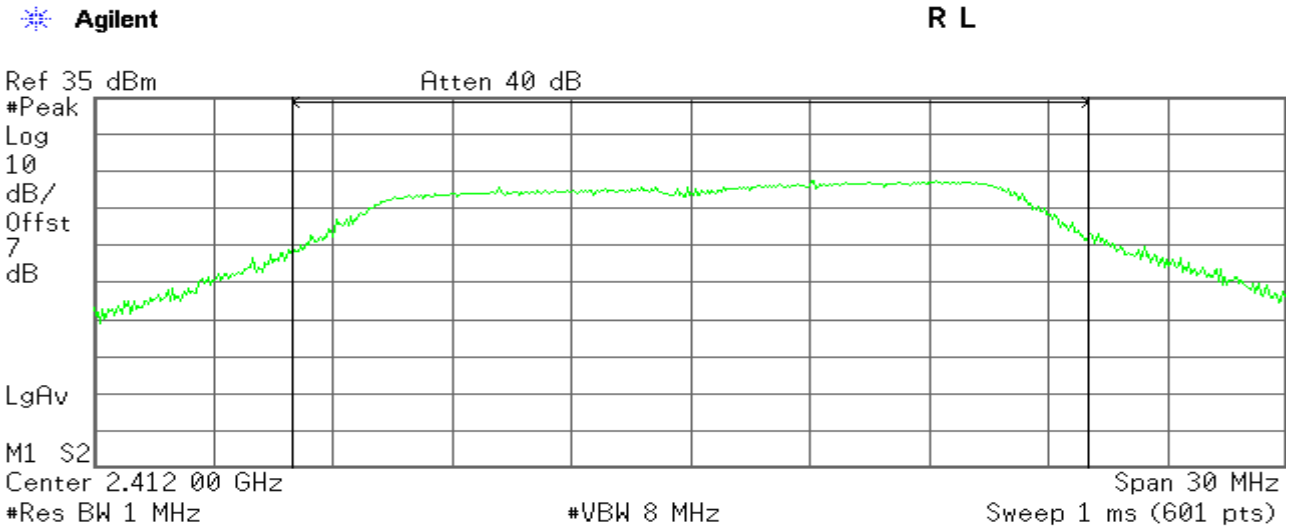


Channel Power 22.45 dBm /20.0000 MHz

Power Spectral Density 8.44 dBm/MHz

IEEE 802.11g mode /Chain 0

Peak Power (CH Low)



Channel Power 17.91 dBm /20.0000 MHz

Power Spectral Density 4.90 dBm/MHz

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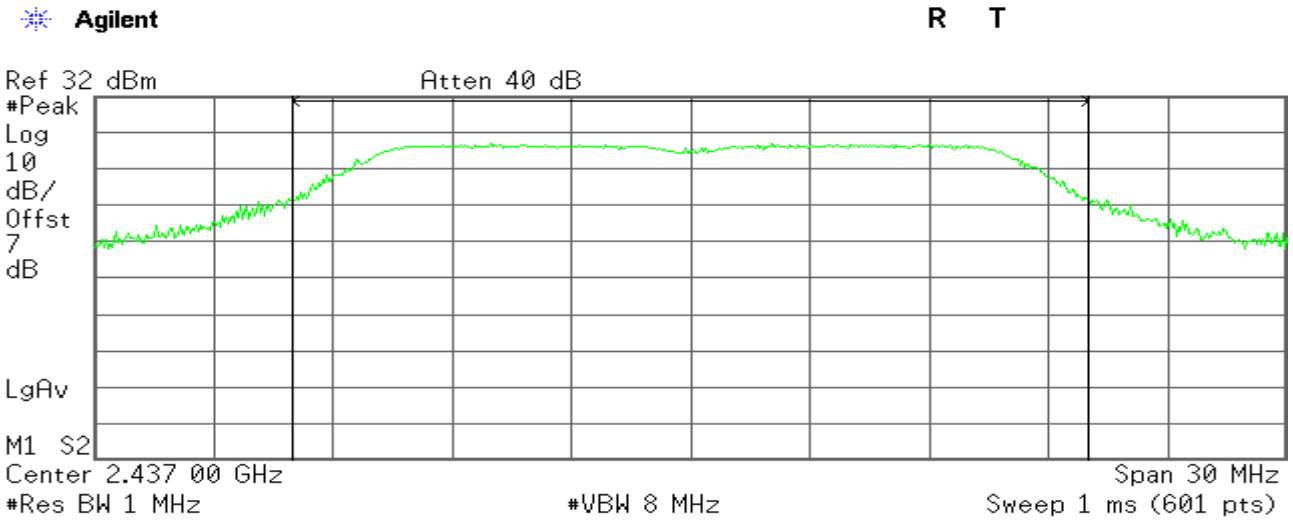
Peak Power (CH Mid)



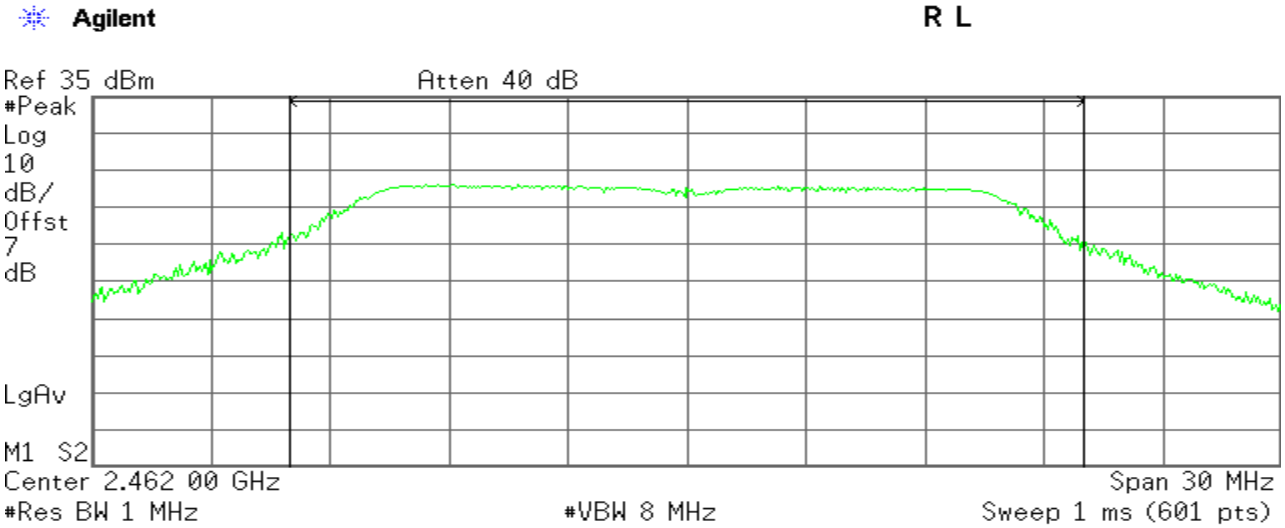
Channel Power

25.12 dBm /20.0000 MHz

Power Spectral Density

12.12 dBm/MHz

Peak Power (CH High)



Channel Power

17.73 dBm /20.0000 MHz

Power Spectral Density

4.72 dBm/MHz

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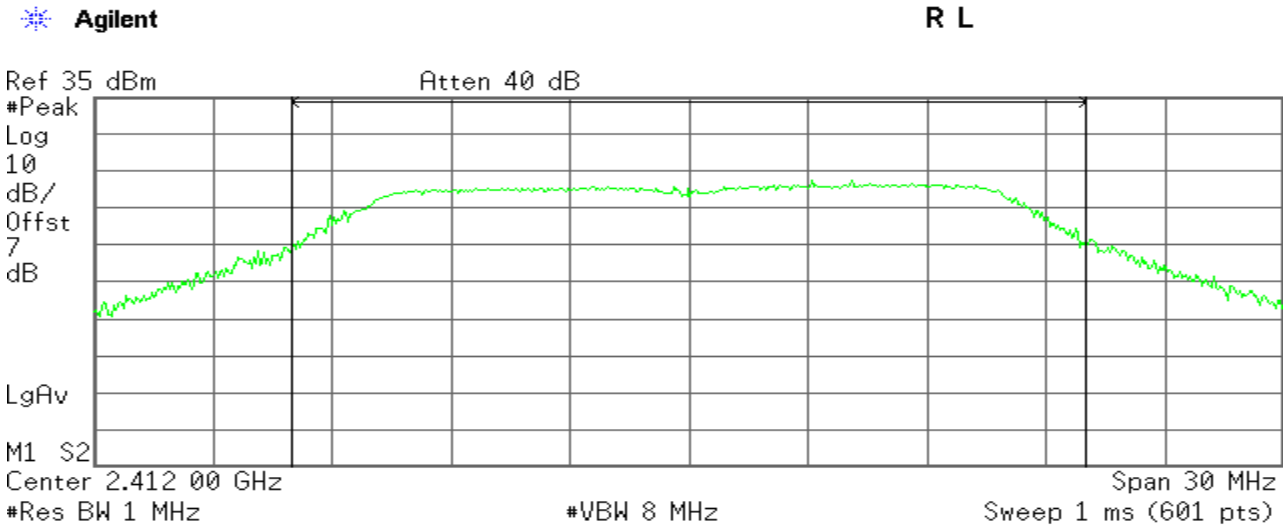
IEEE 802.11g mode /Chain 1

Peak Power (CH Low)



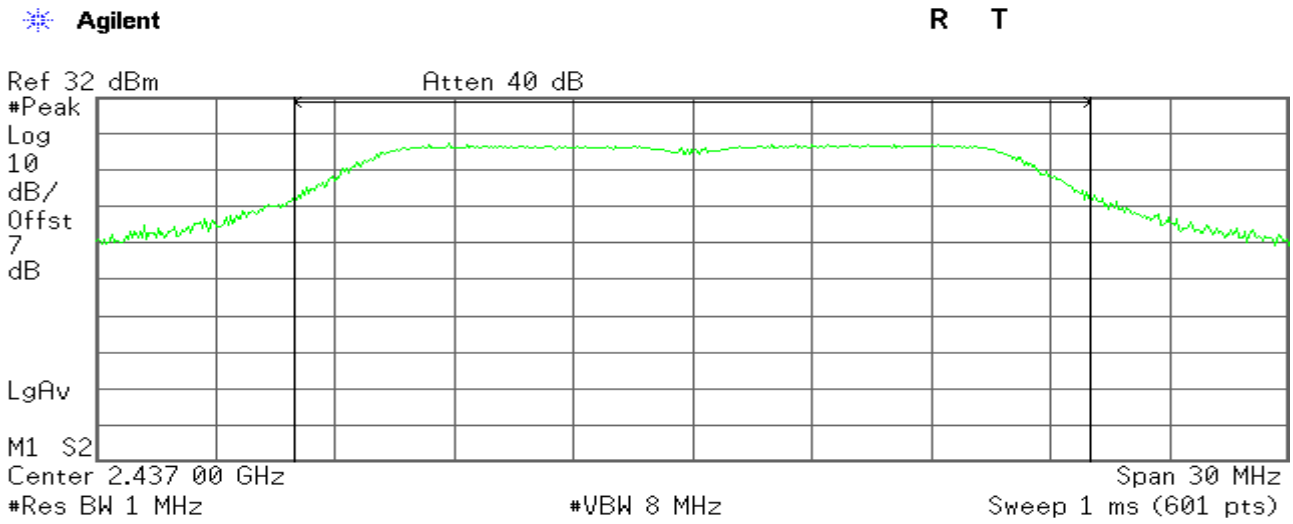
Channel Power

17.48 dBm /20.0000 MHz

Power Spectral Density

4.47 dBm/MHz

Peak Power (CH Mid)



Channel Power

24.82 dBm /20.0000 MHz

Power Spectral Density

12.16 dBm/MHz

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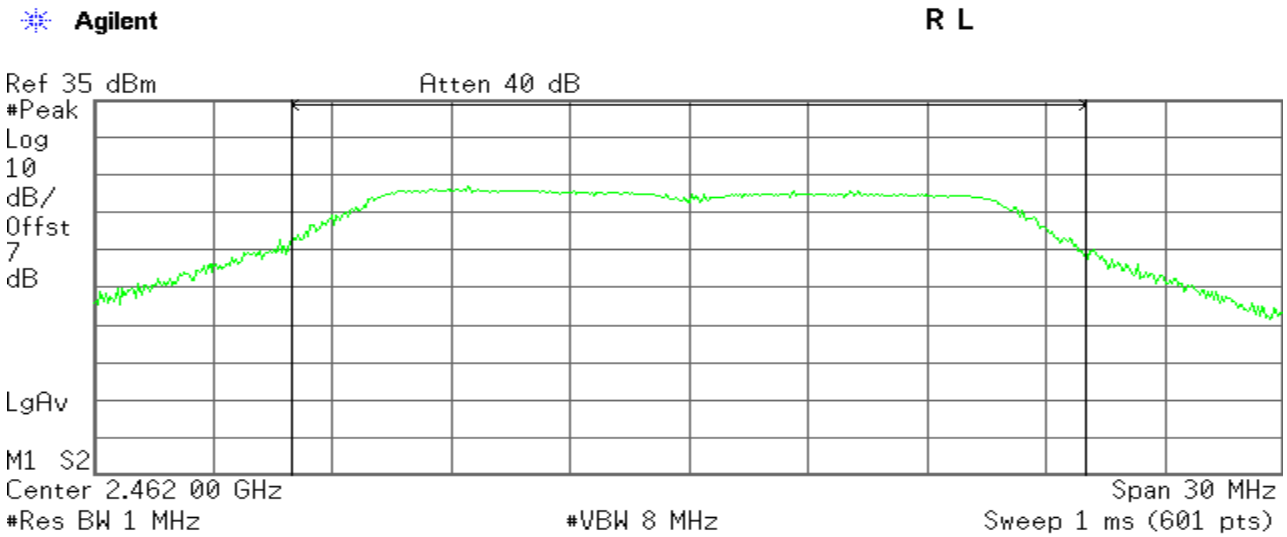
Peak Power (CH High)

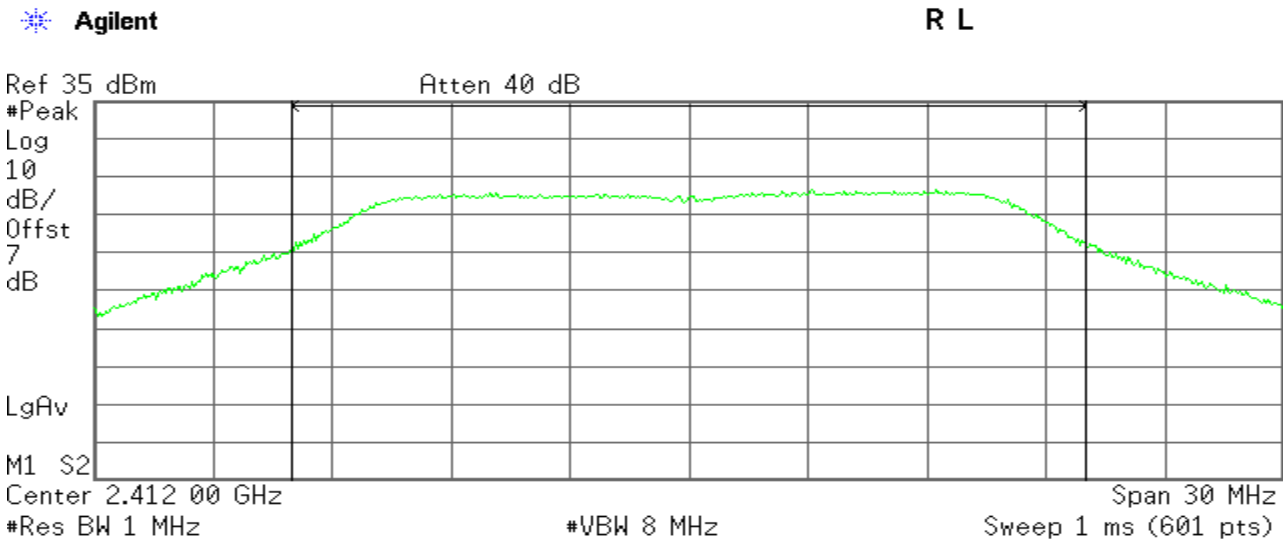


Channel Power 17.58 dBm /20.0000 MHz

Power Spectral Density 4.57 dBm/MHz

IEEE 802.11g mode /Chain 2

Peak Power (CH Low)



Channel Power 17.33 dBm /20.0000 MHz

Power Spectral Density 4.32 dBm/MHz

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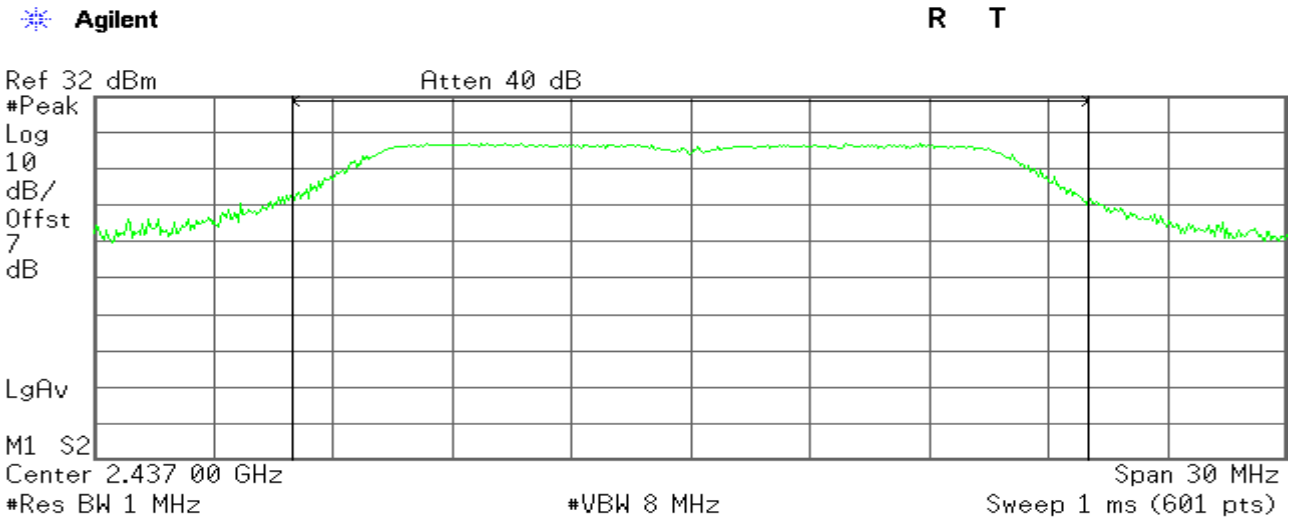
Peak Power (CH Mid)



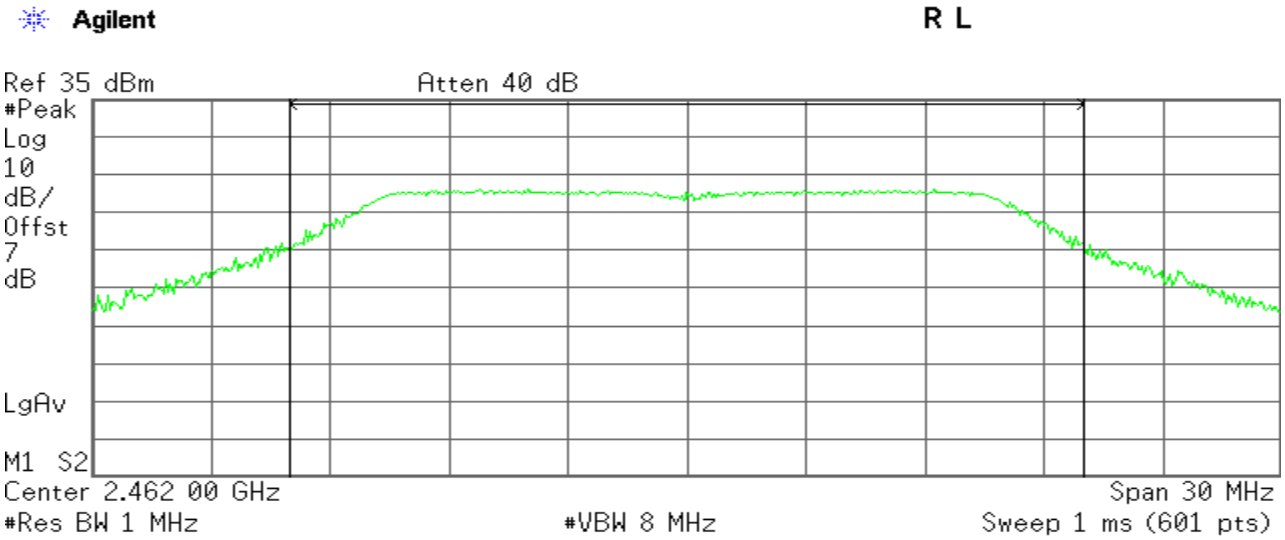
Channel Power

25.20 dBm /20.0000 MHz

Power Spectral Density

12.24 dBm/MHz

Peak Power (CH High)



Channel Power

17.24 dBm /20.0000 MHz

Power Spectral Density

4.23 dBm/MHz

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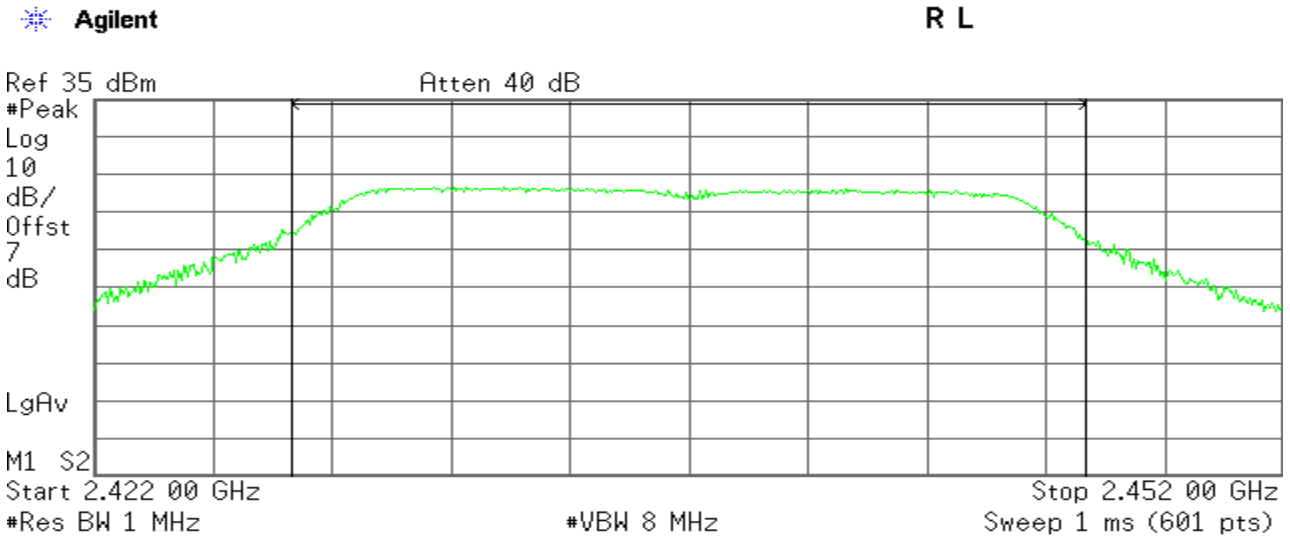
draft 802.11n Standard-20 MHz Channel mode / Chain 0

Peak Power (CH Low)



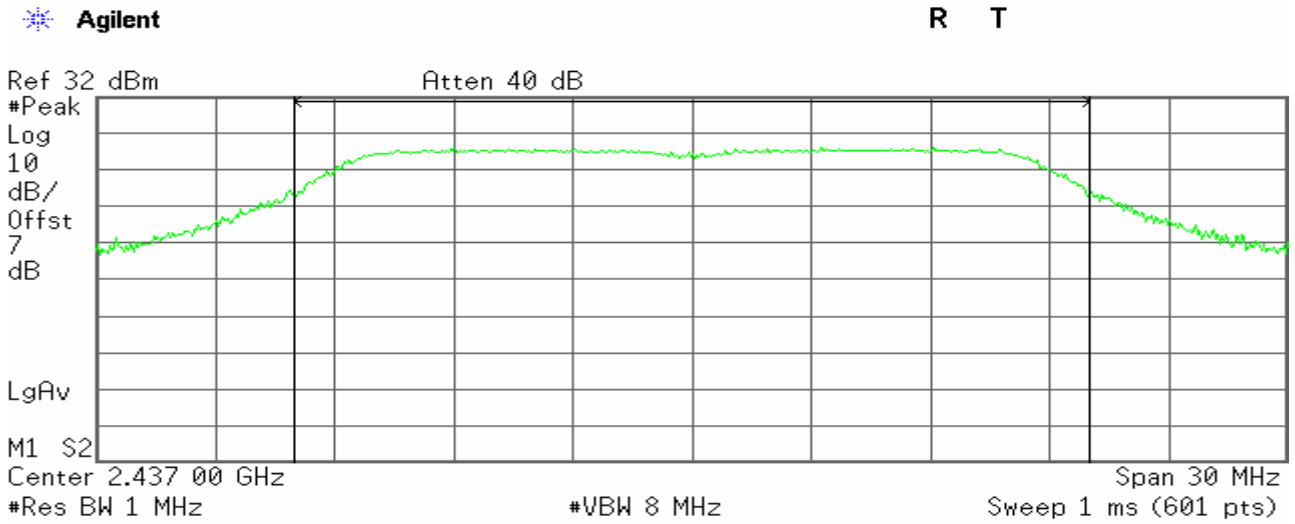
Channel Power

18.12 dBm /20.0000 MHz

Power Spectral Density

5.11 dBm/MHz

Peak Power (CH Mid)



Channel Power

24.82 dBm /20.0000 MHz

Power Spectral Density

11.81 dBm/MHz

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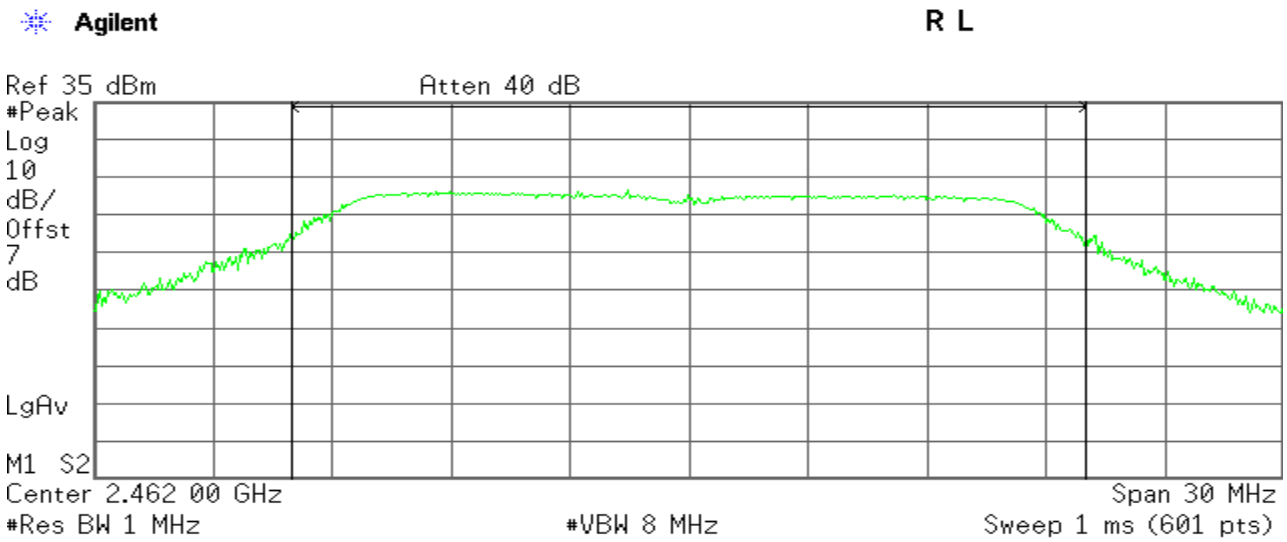
Peak Power (CH High)

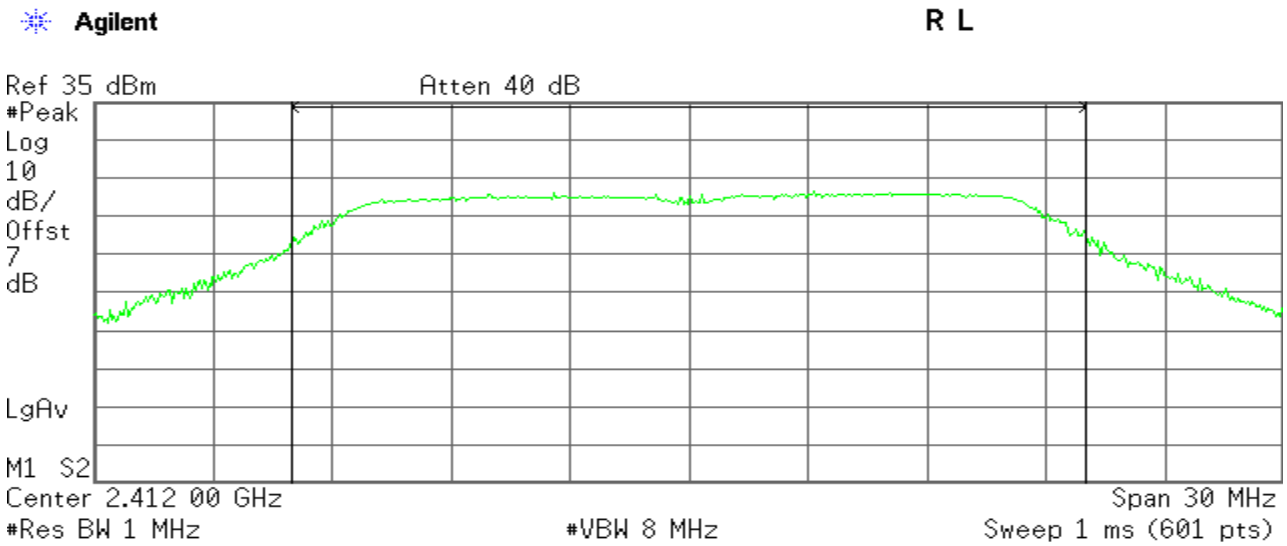


Channel Power 17.92 dBm /20.0000 MHz

Power Spectral Density 4.91 dBm/MHz

draft 802.11n Standard-20 MHz Channel mode / Chain 1

Peak Power (CH Low)



Channel Power 17.87 dBm /20.0000 MHz

Power Spectral Density 4.86 dBm/MHz

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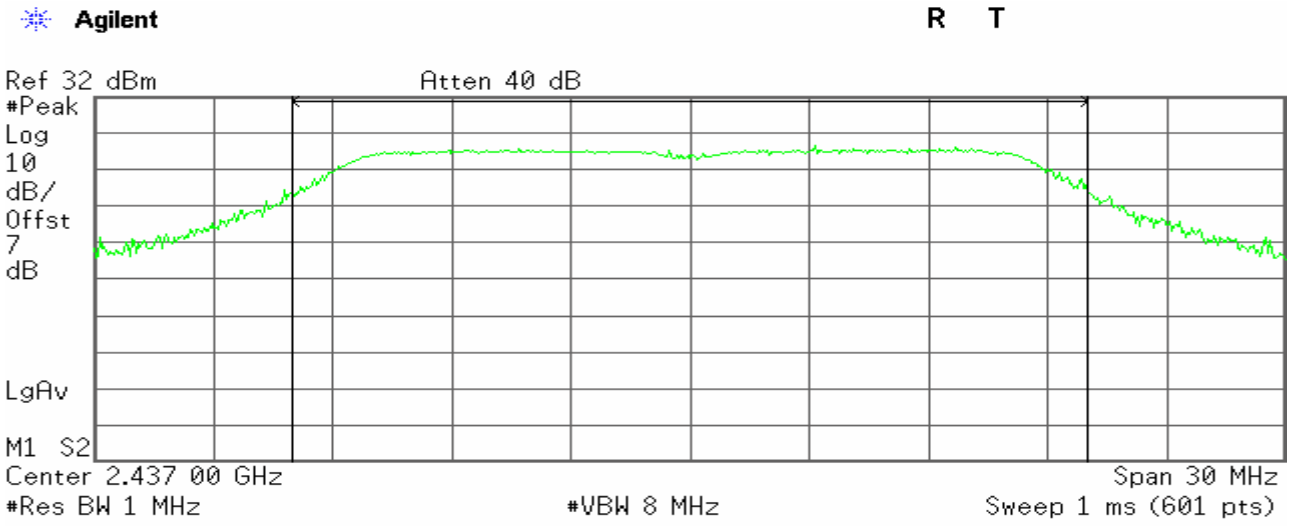
Peak Power (CH Mid)



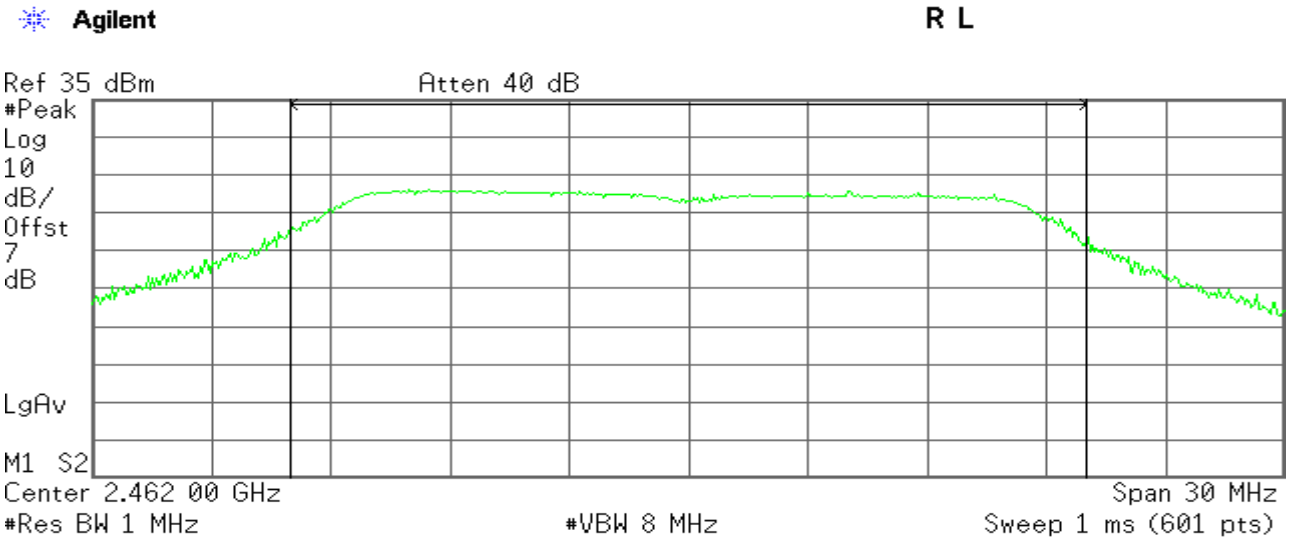
Channel Power

24.68 dBm /20.0000 MHz

Power Spectral Density

11.67 dBm/MHz

Peak Power (CH High)



Channel Power

17.67 dBm /20.0000 MHz

Power Spectral Density

4.66 dBm/MHz

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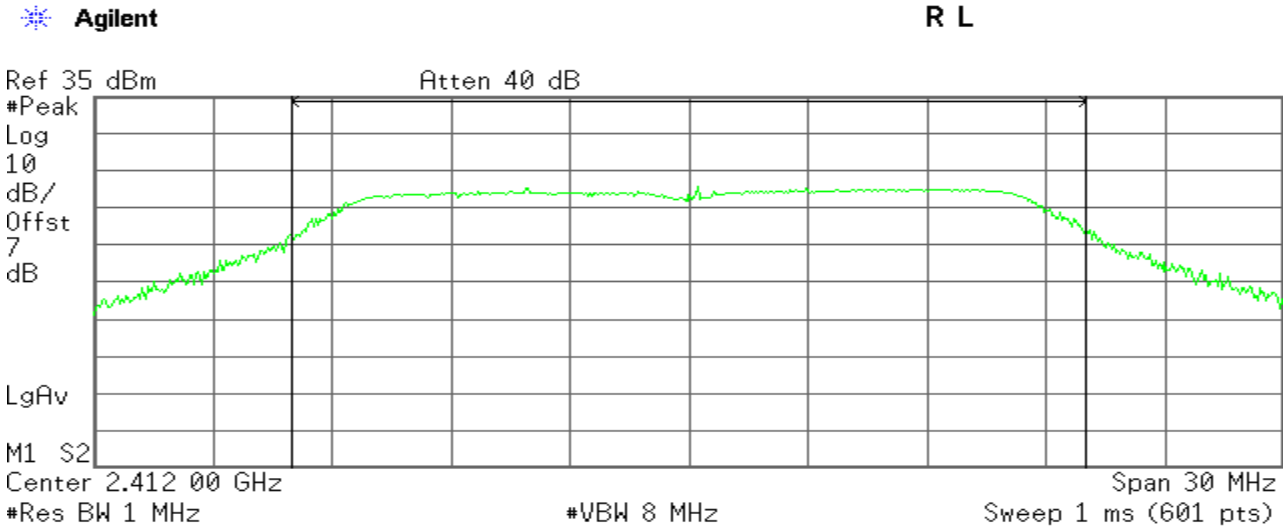
draft 802.11n Standard-20 MHz Channel mode / Chain 2

Peak Power (CH Low)



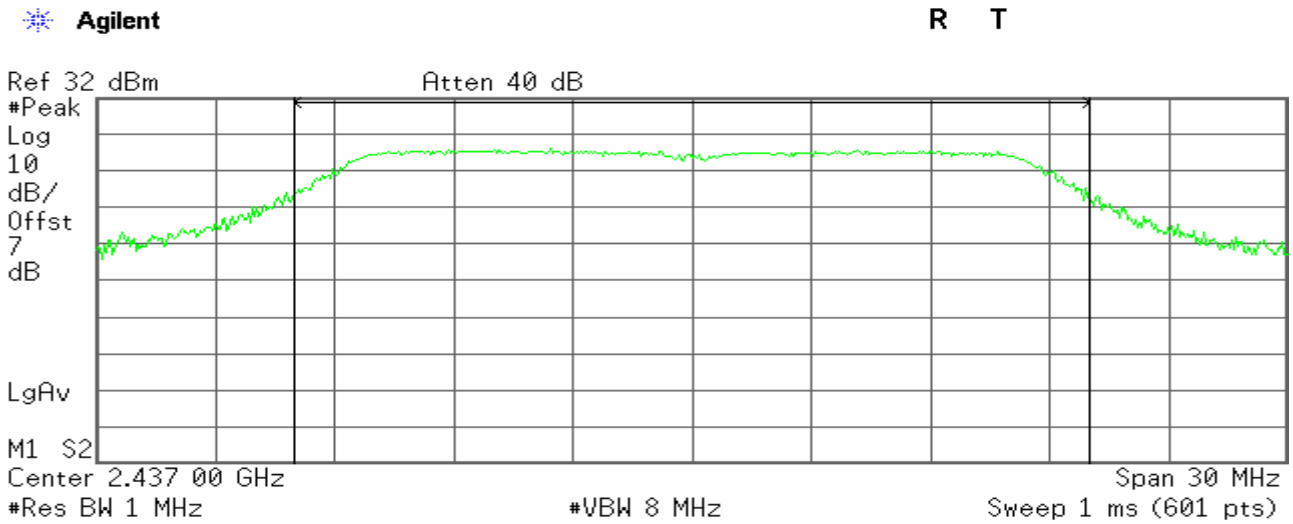
Channel Power

16.95 dBm /20.0000 MHz

Power Spectral Density

3.94 dBm/MHz

Peak Power (CH Mid)



Channel Power

24.67 dBm /20.0000 MHz

Power Spectral Density

11.66 dBm/MHz

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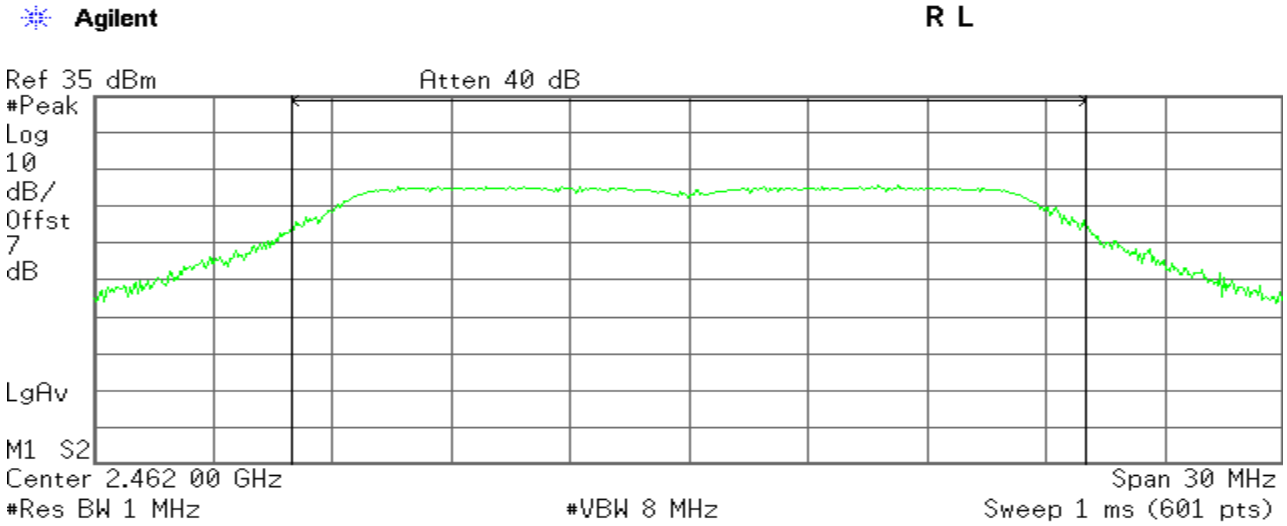
Peak Power (CH High)

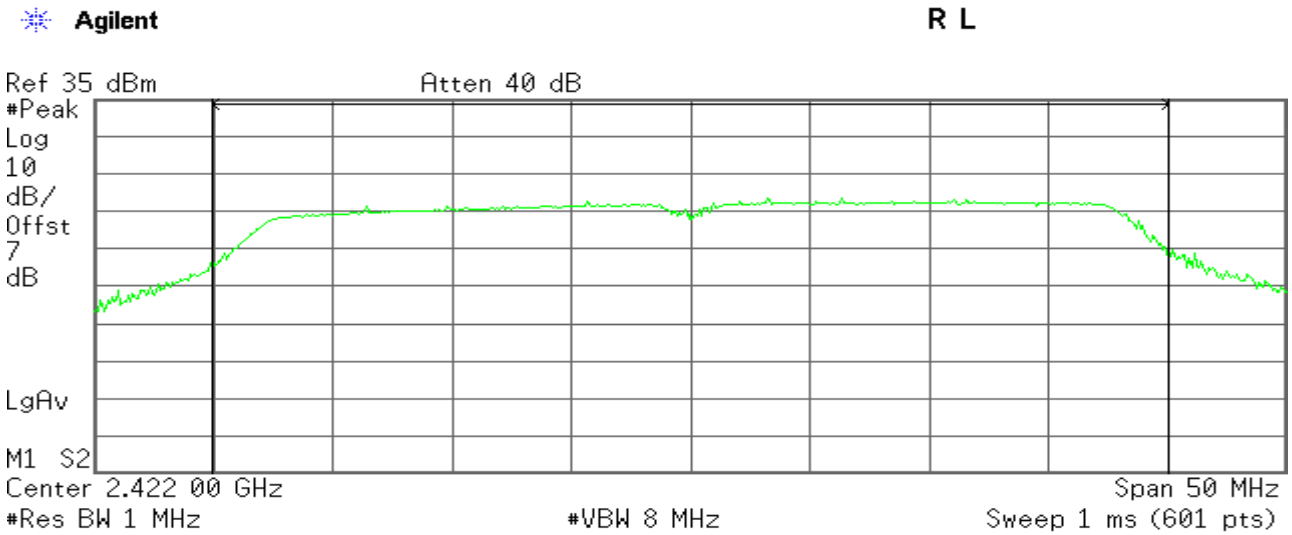


Channel Power 17.33 dBm /20.0000 MHz

Power Spectral Density 4.32 dBm/MHz

draft 802.11n wide-40 MHz Channel mode / Chain 0

Peak Power (CH Low)



Channel Power 16.80 dBm /40.0000 MHz

Power Spectral Density 0.78 dBm/MHz

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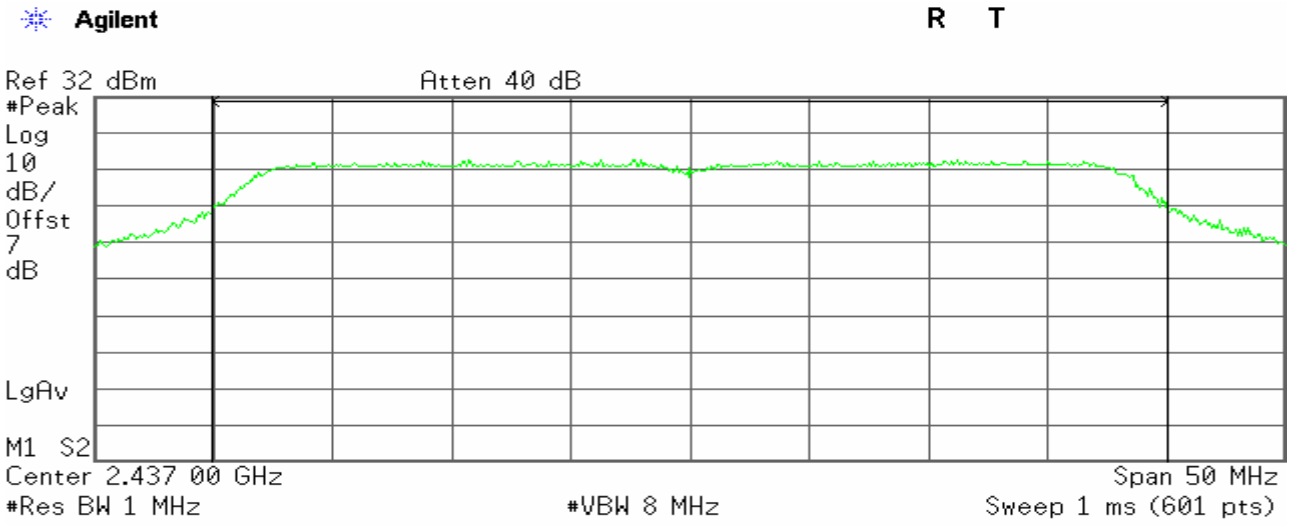
Peak Power (CH Mid)



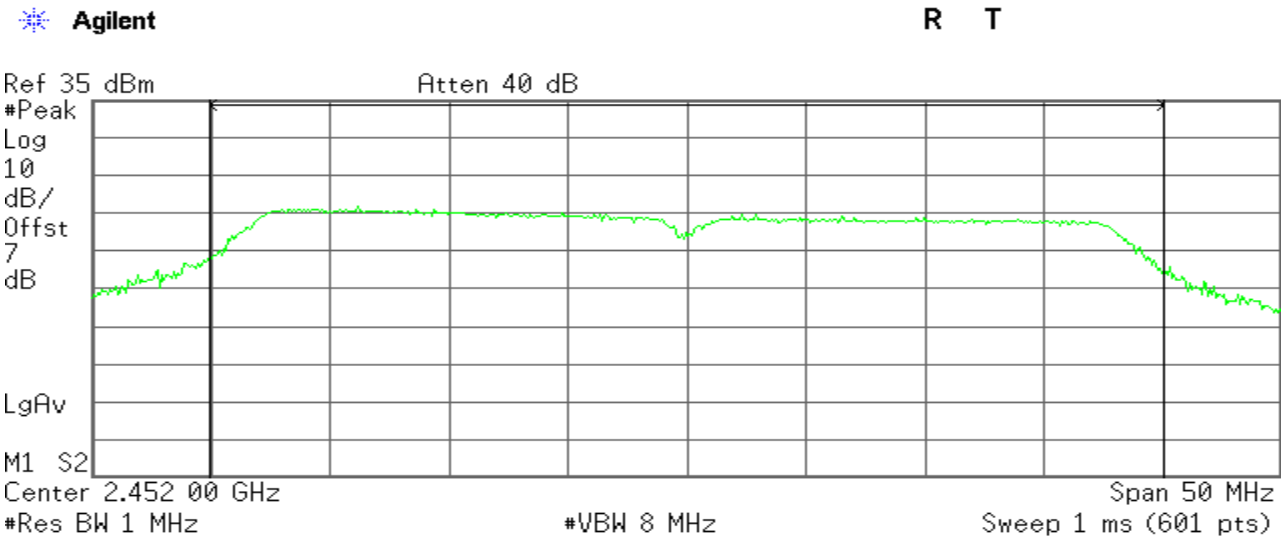
Channel Power

23.75 dBm /40.0000 MHz

Power Spectral Density

7.73 dBm/MHz

Peak Power (CH High)



Channel Power

14.65 dBm /40.0000 MHz

Power Spectral Density

-1.37 dBm/MHz

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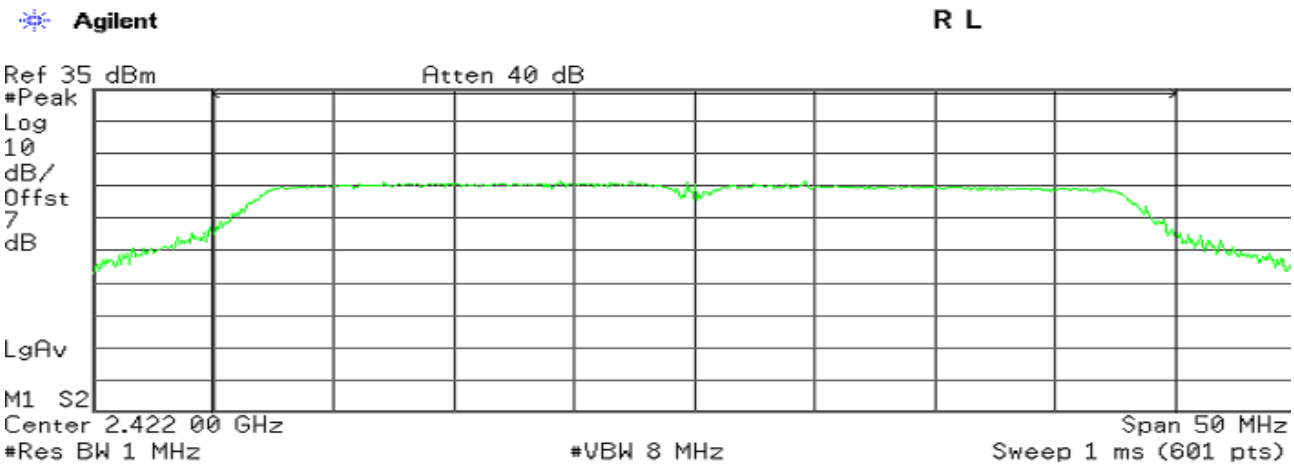
draft 802.11n wide-40 MHz Channel mode / Chain 1

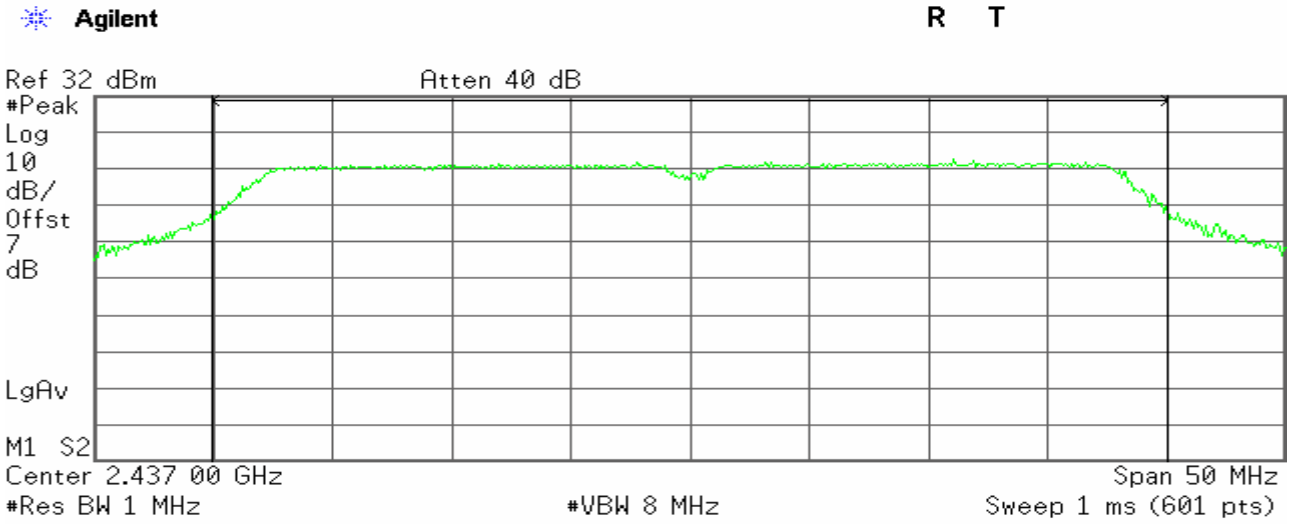
Peak Power (CH Low)



Channel Power 15.54 dBm /40.0000 MHz

Power Spectral Density −0.48 dBm/MHz

Peak Power (CH Mid)



Channel Power 23.64 dBm /40.0000 MHz

Power Spectral Density 7.62 dBm/MHz

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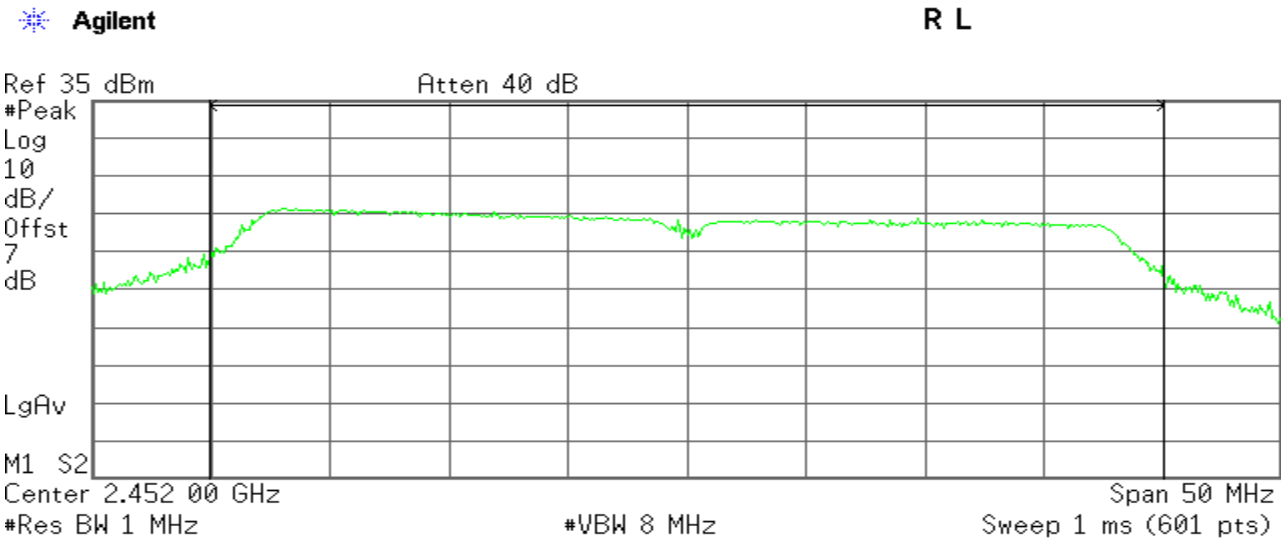
Peak Power (CH High)



Channel Power

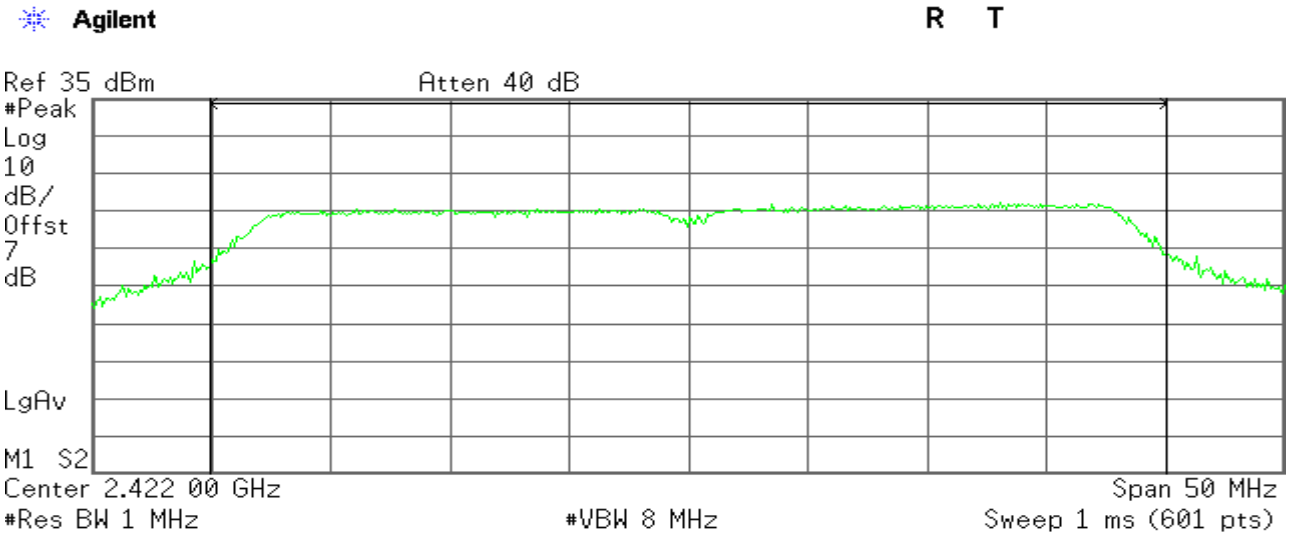
14.72 dBm /40.0000 MHz

Power Spectral Density

-1.30 dBm/MHz

draft 802.11n wide-40 MHz Channel mode / Chain 2

Peak Power (CH Low)



Channel Power

16.23 dBm /40.0000 MHz

Power Spectral Density

0.21 dBm/MHz

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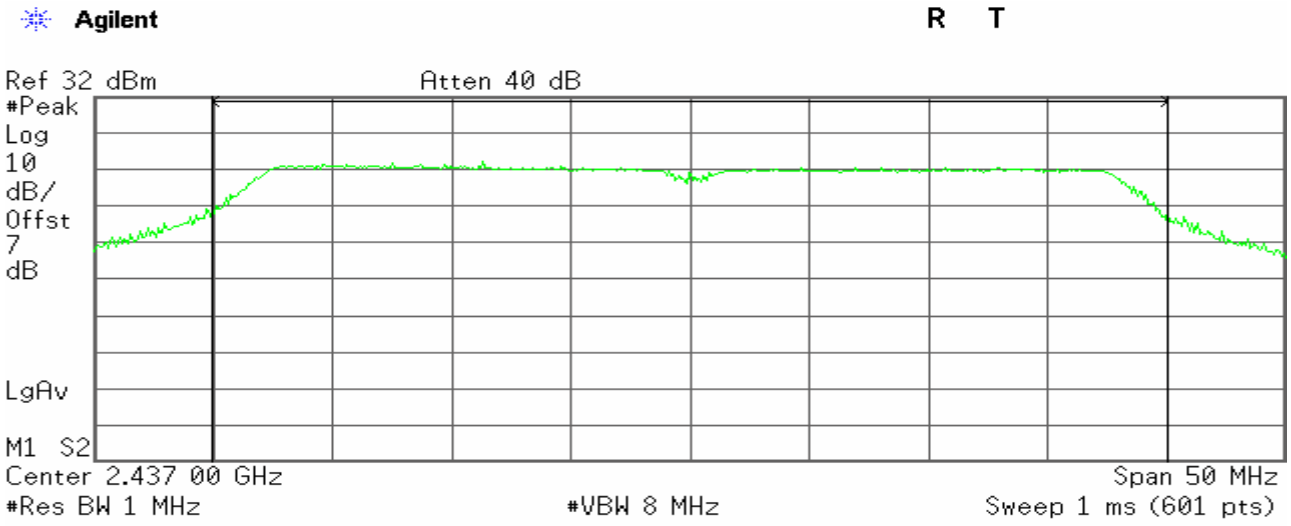
Peak Power (CH Mid)



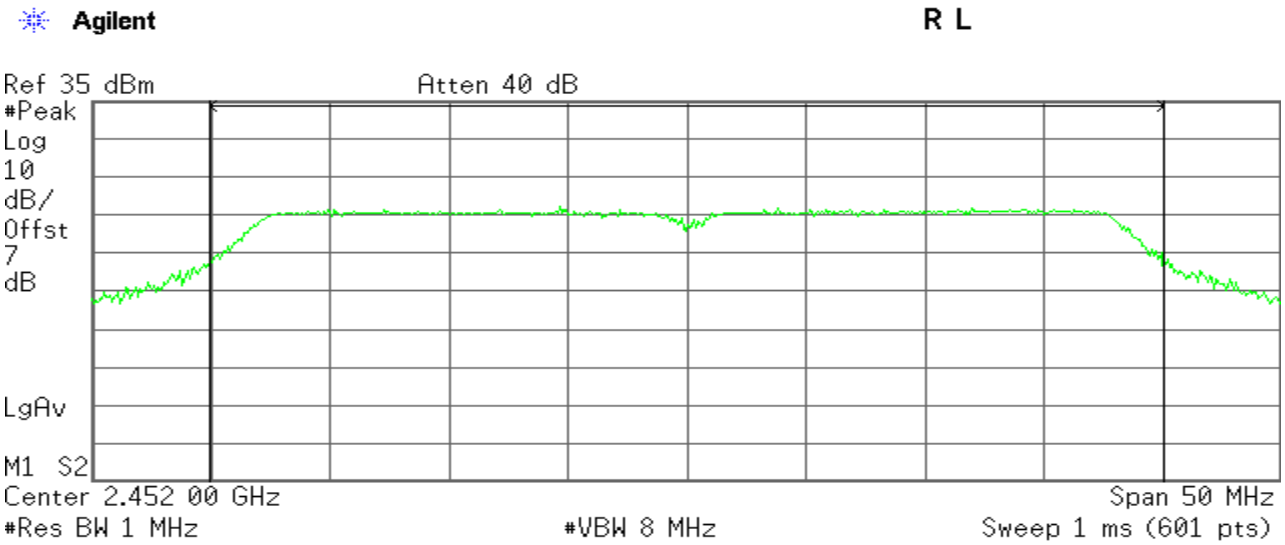
Channel Power

22.81 dBm /40.0000 MHz

Power Spectral Density

6.70 dBm/MHz

Peak Power (CH High)



Channel Power

16.46 dBm /40.0000 MHz

Power Spectral Density

0.44 dBm/MHz

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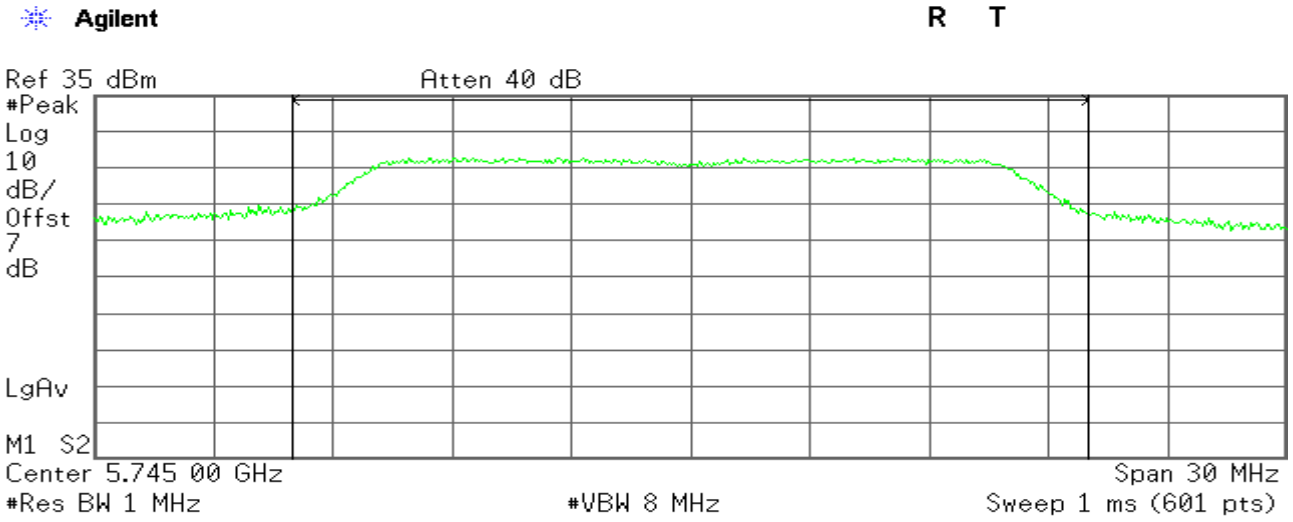
IEEE 802.11a mode/chain 0

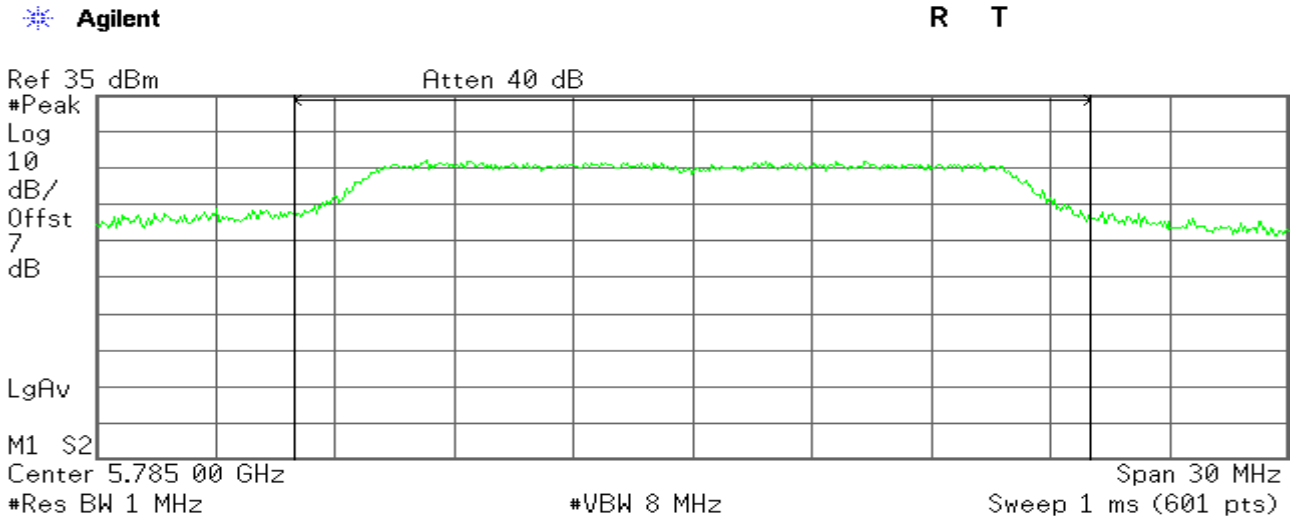
CH Low



Channel Power 23.77 dBm /20.0000 MHz

Power Spectral Density -49.24 dBm/Hz

CH Mid

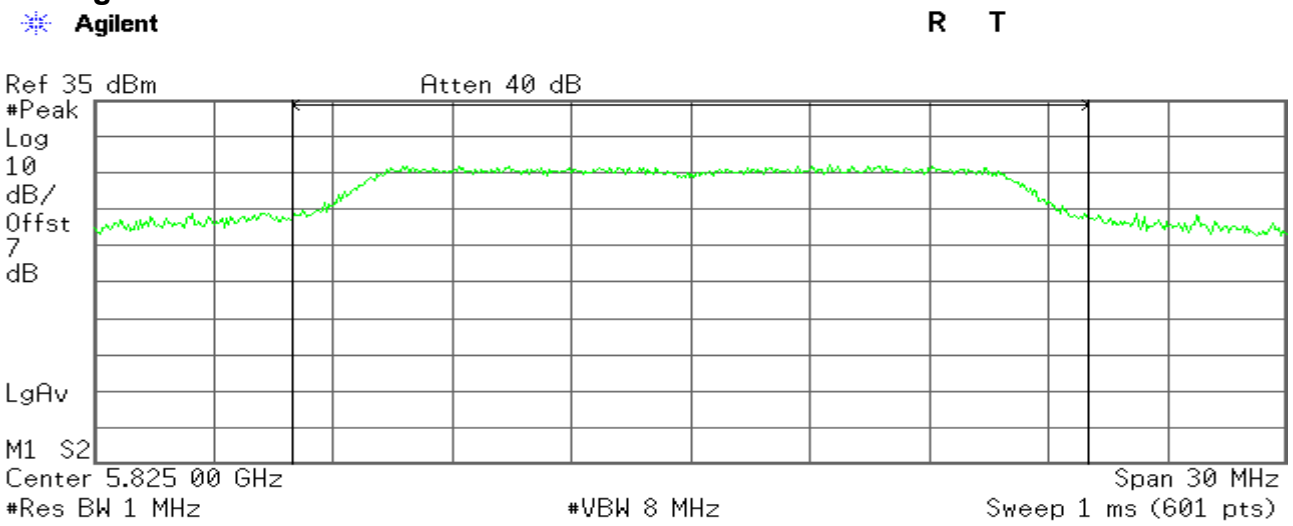


Channel Power 23.06 dBm /20.0000 MHz

Power Spectral Density -49.95 dBm/Hz

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

CH High

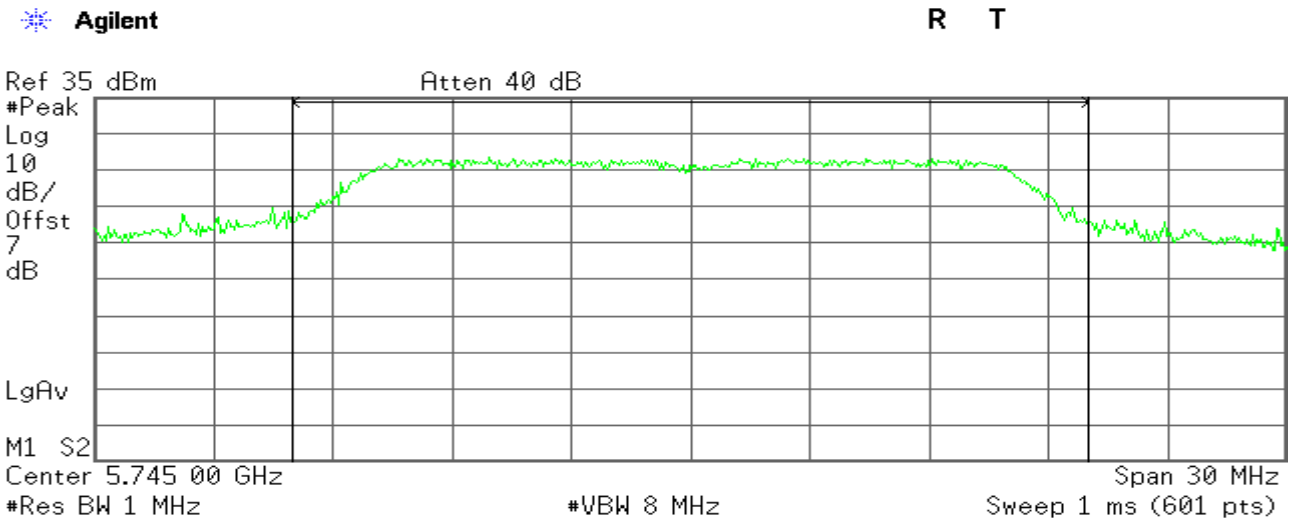


Channel Power 22.81 dBm /20.0000 MHz

Power Spectral Density -50.20 dBm/Hz

IEEE 802.11a mode/chain 1

CH Low

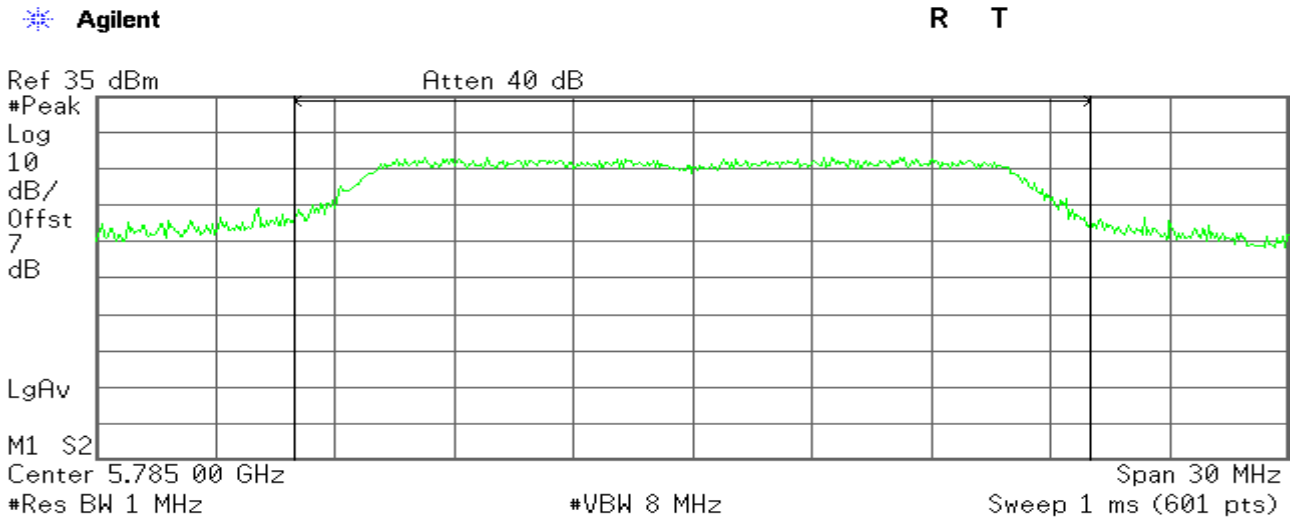


Channel Power 24.86 dBm /20.0000 MHz

Power Spectral Density -48.15 dBm/Hz

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

CH Mid



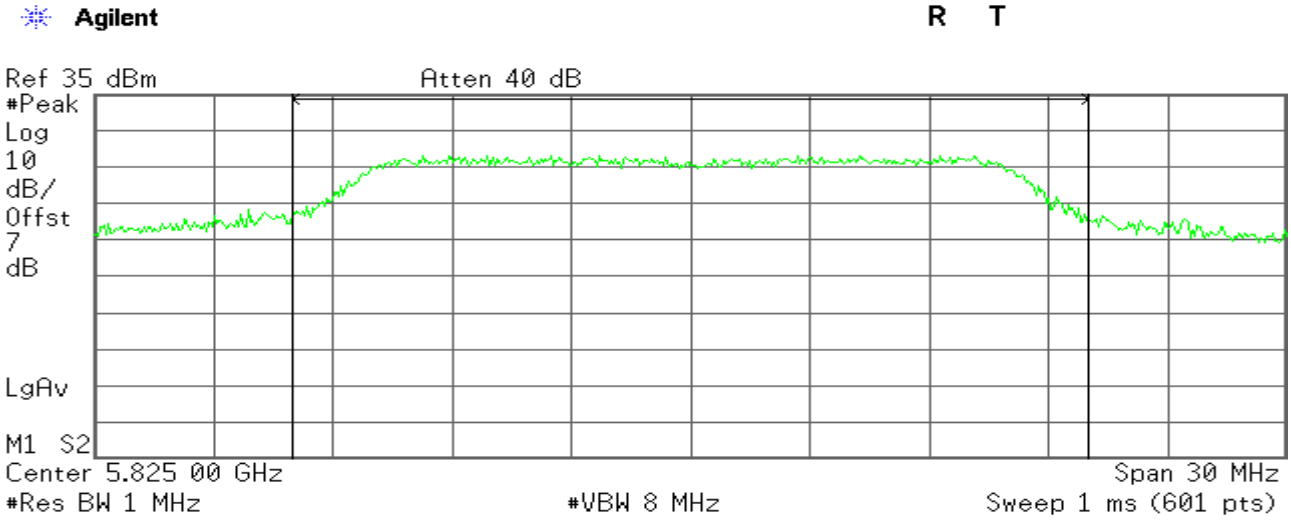
Channel Power

24.64 dBm /20.0000 MHz

Power Spectral Density

-48.37 dBm/Hz

CH High



Channel Power

24.65 dBm /20.0000 MHz

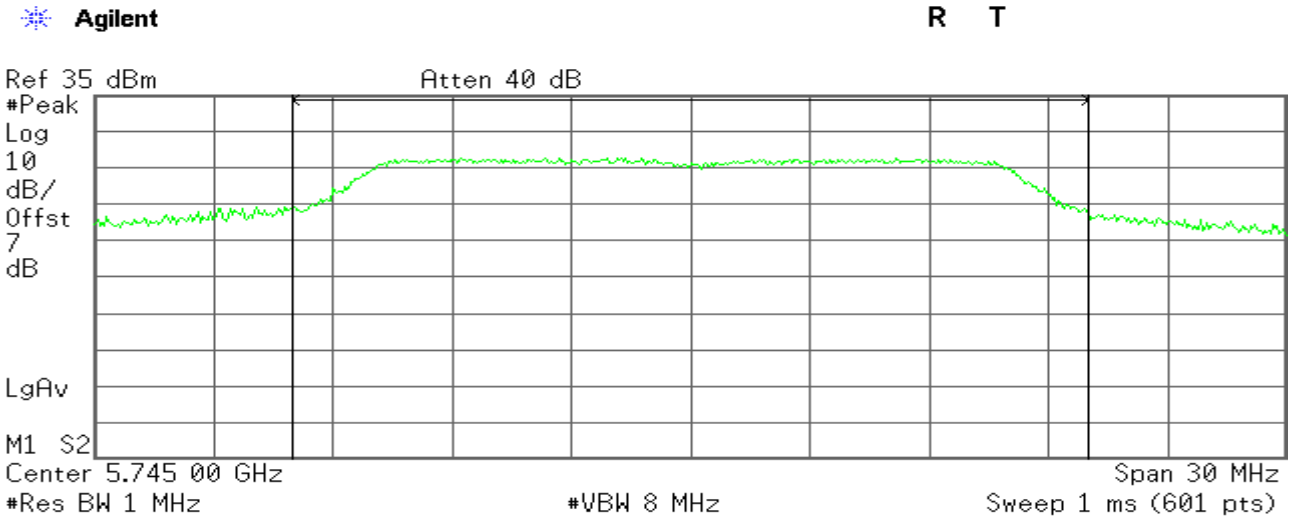
Power Spectral Density

-48.36 dBm/Hz

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

IEEE 802.11a mode/chain 2

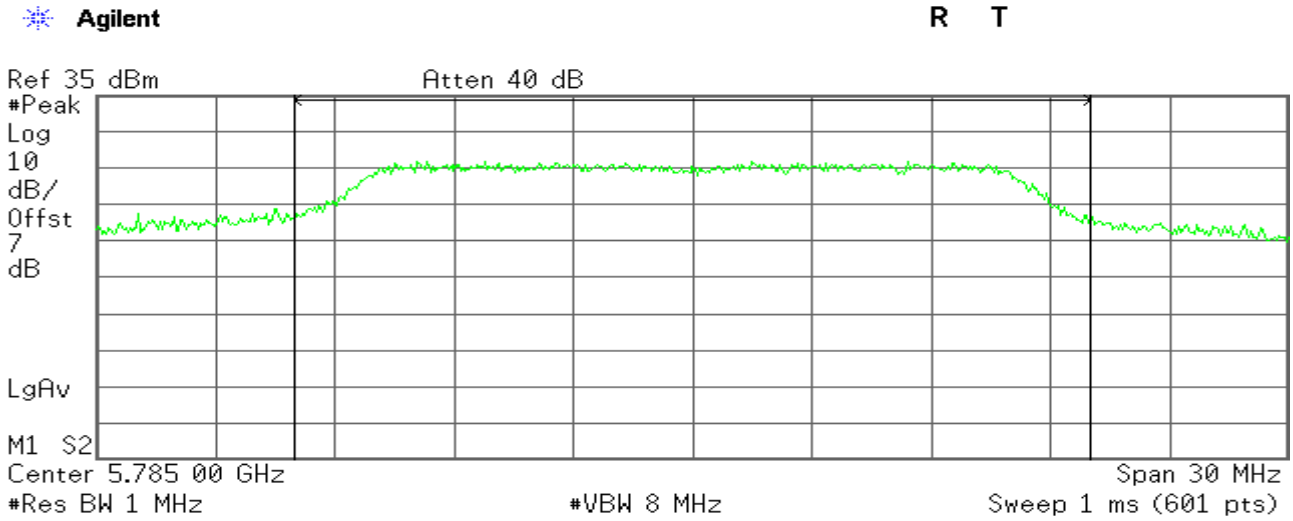
CH Low



Channel Power 23.80 dBm /20.0000 MHz

Power Spectral Density -49.21 dBm/Hz

CH Mid

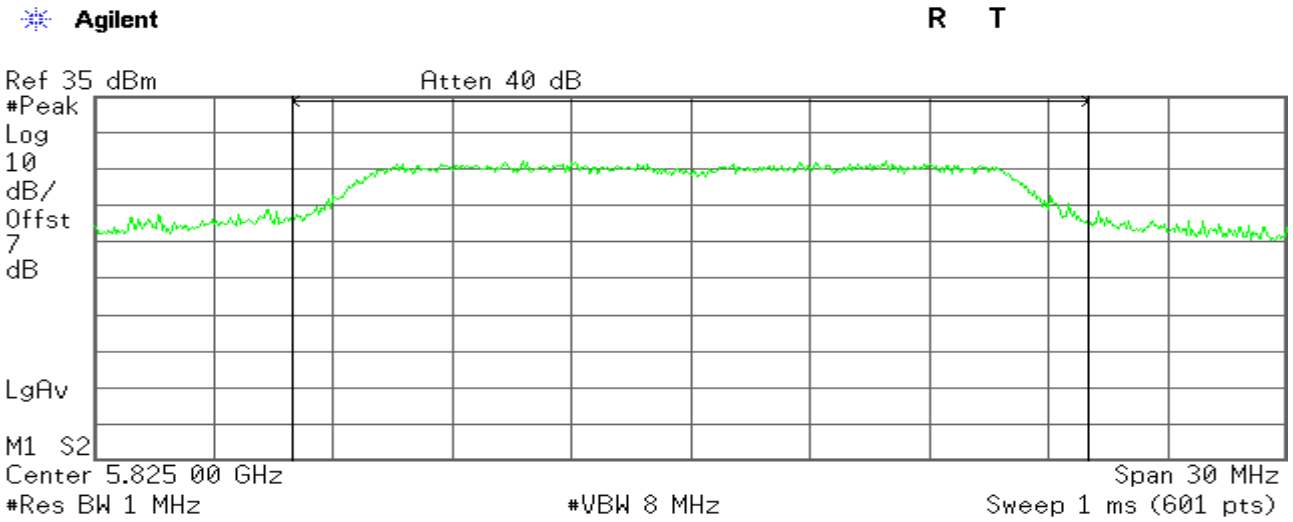


Channel Power 23.24 dBm /20.0000 MHz

Power Spectral Density -49.77 dBm/Hz

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

CH High

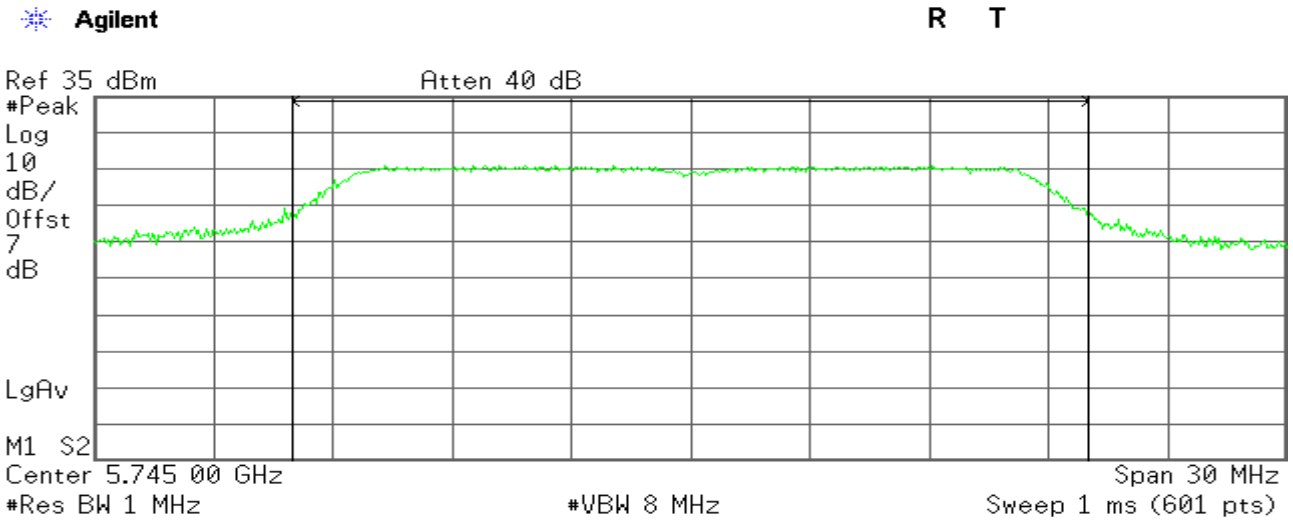


Channel Power 23.28 dBm /20.0000 MHz

Power Spectral Density -49.73 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 0

CH Low

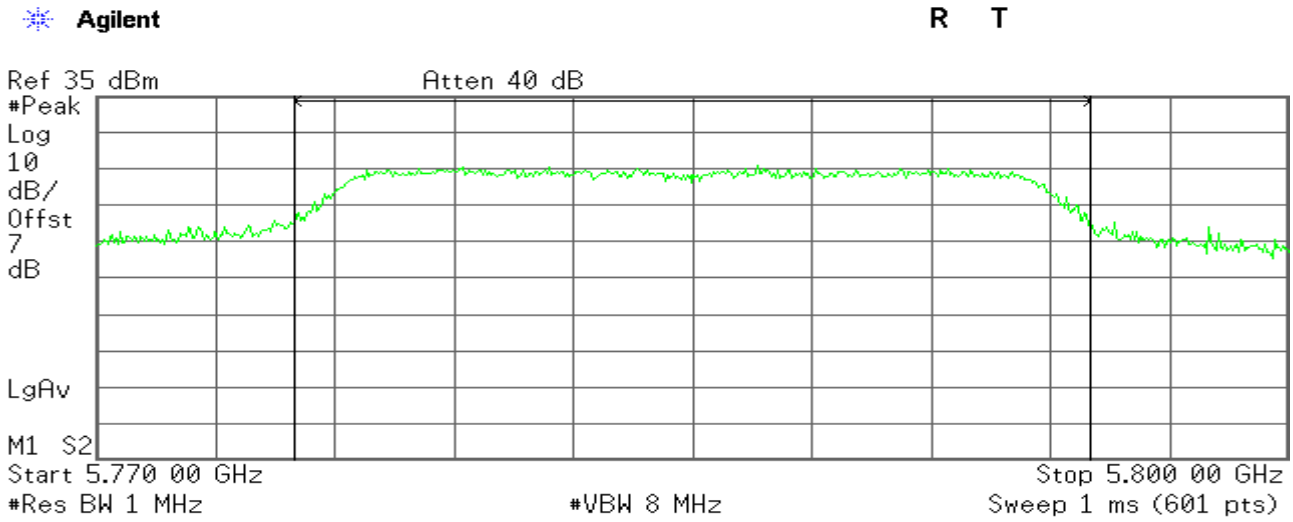


Channel Power 22.57 dBm /20.0000 MHz

Power Spectral Density -50.44 dBm/Hz

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

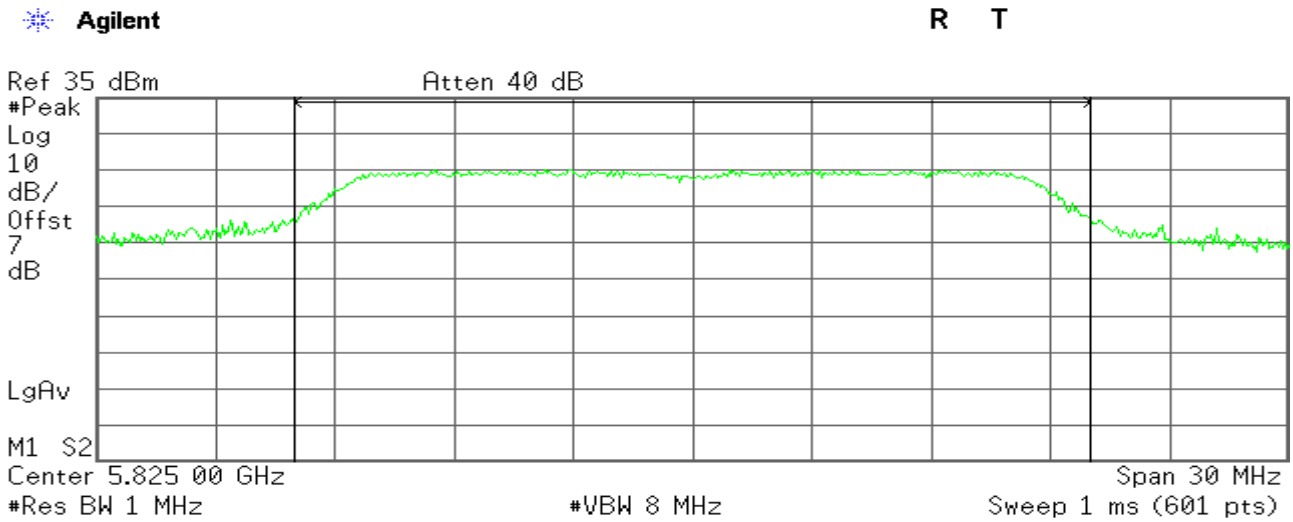
CH Mid



Channel Power 22.06 dBm /20.0000 MHz

Power Spectral Density -50.95 dBm/Hz

CH High



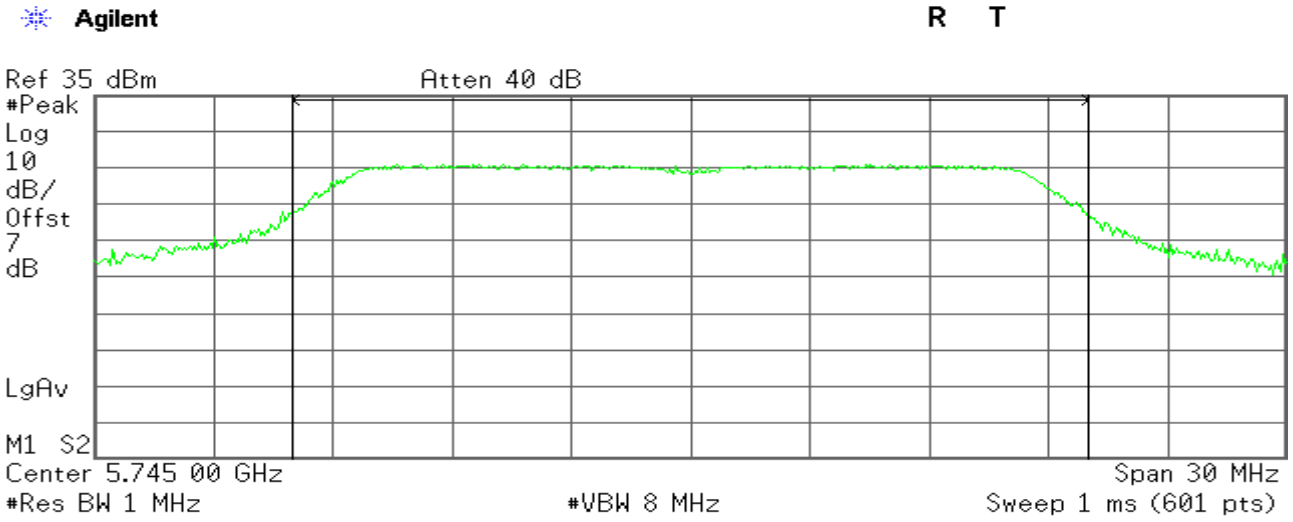
Channel Power 21.66 dBm /20.0000 MHz

Power Spectral Density -51.35 dBm/Hz

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

draft 802.11n Standard-20 MHz Channel mode / Chain 1

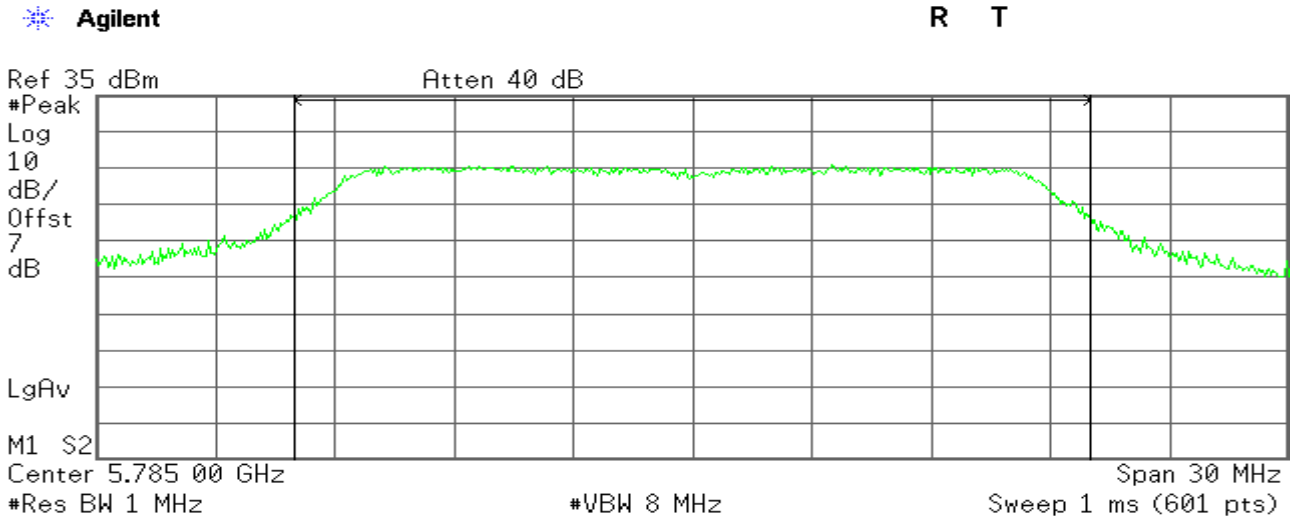
CH Low



Channel Power 22.90 dBm /20.0000 MHz

Power Spectral Density -50.11 dBm/Hz

CH Mid

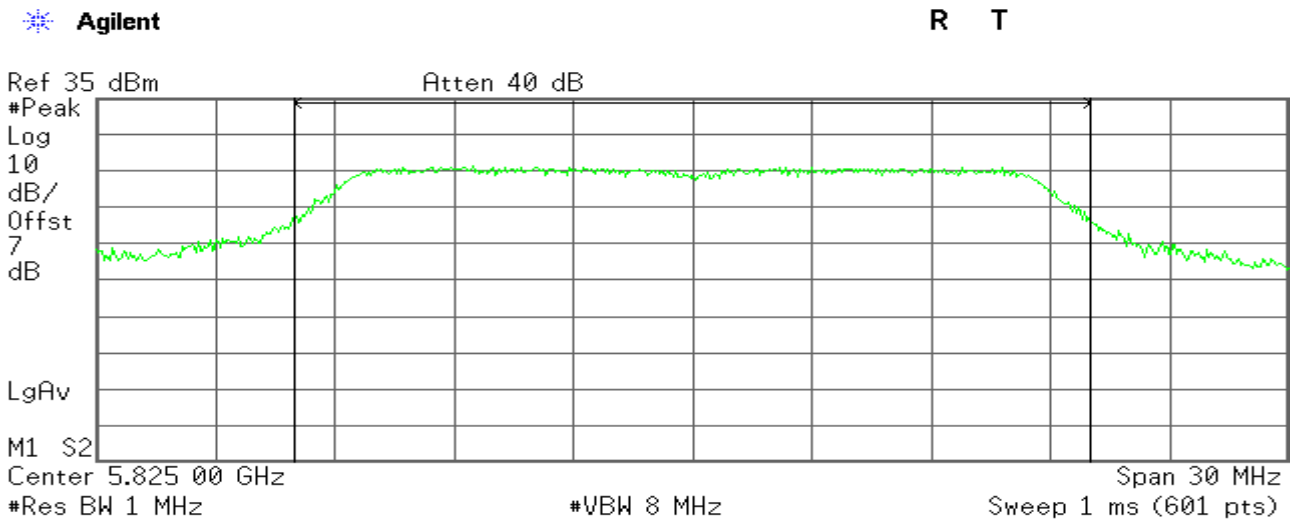


Channel Power 22.72 dBm /20.0000 MHz

Power Spectral Density -50.29 dBm/Hz

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

CH High



Channel Power

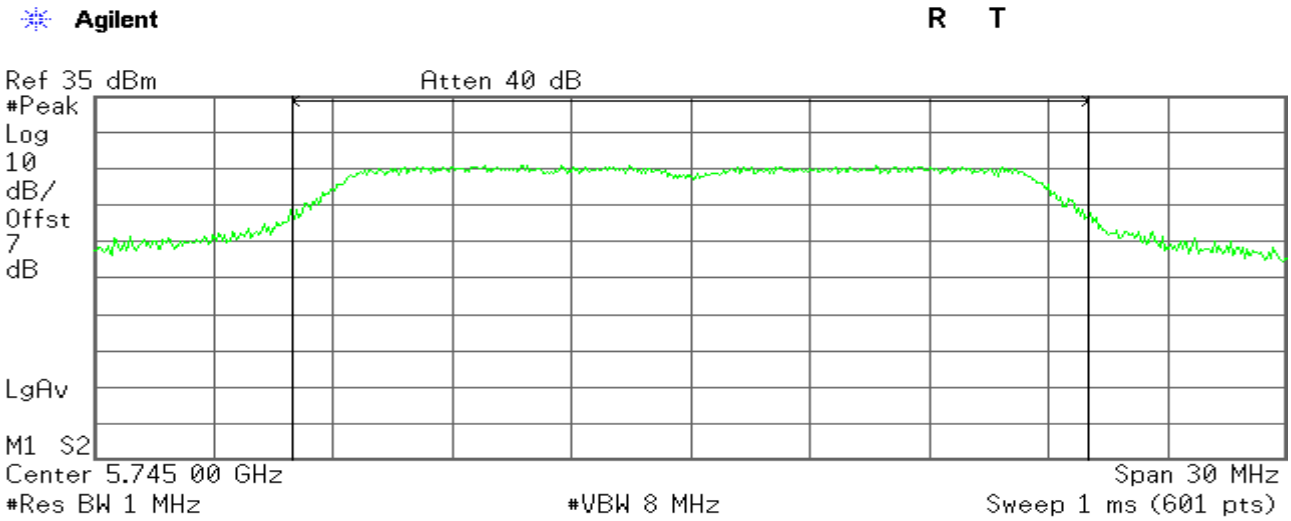
23.21 dBm /20.0000 MHz

Power Spectral Density

-49.80 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 2

CH Low



Channel Power

22.88 dBm /20.0000 MHz

Power Spectral Density

-50.13 dBm/Hz

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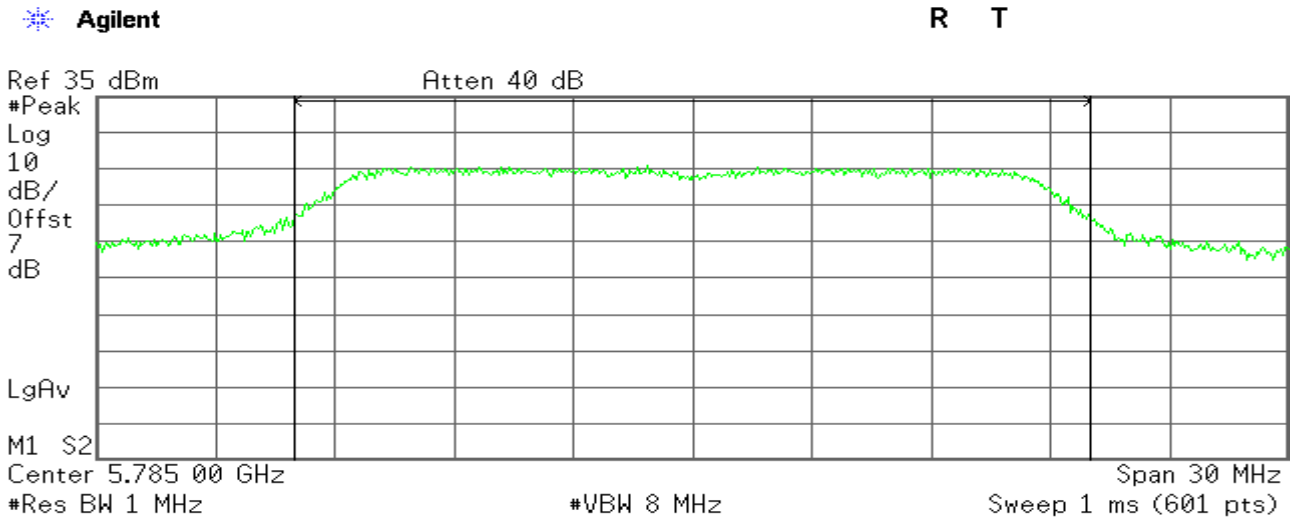
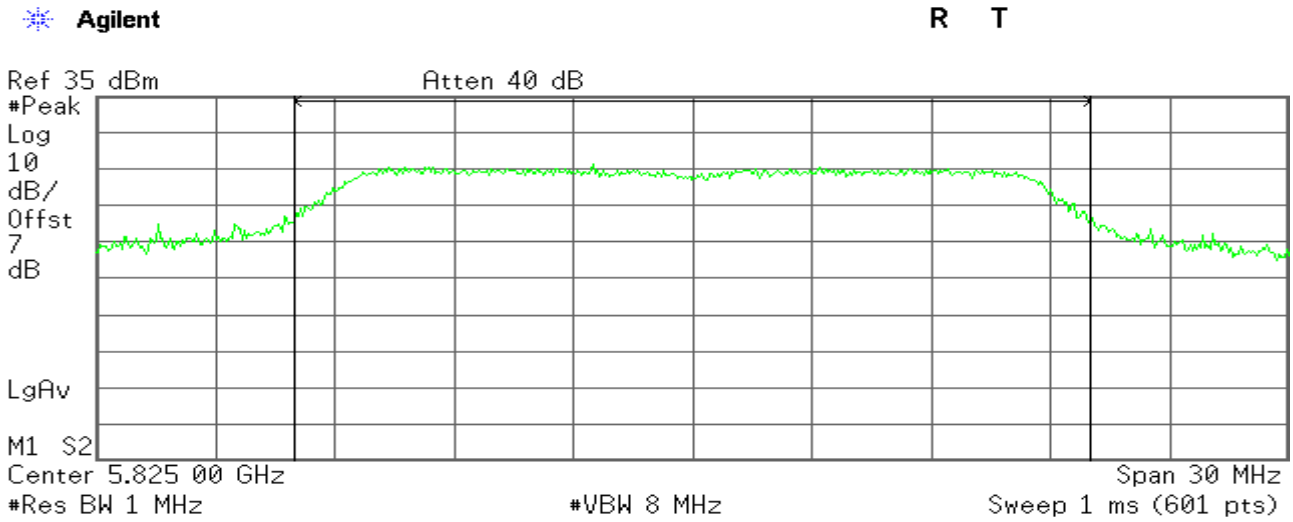
CH Mid



Channel Power 22.40 dBm /20.0000 MHz

Power Spectral Density -50.61 dBm/Hz

CH High



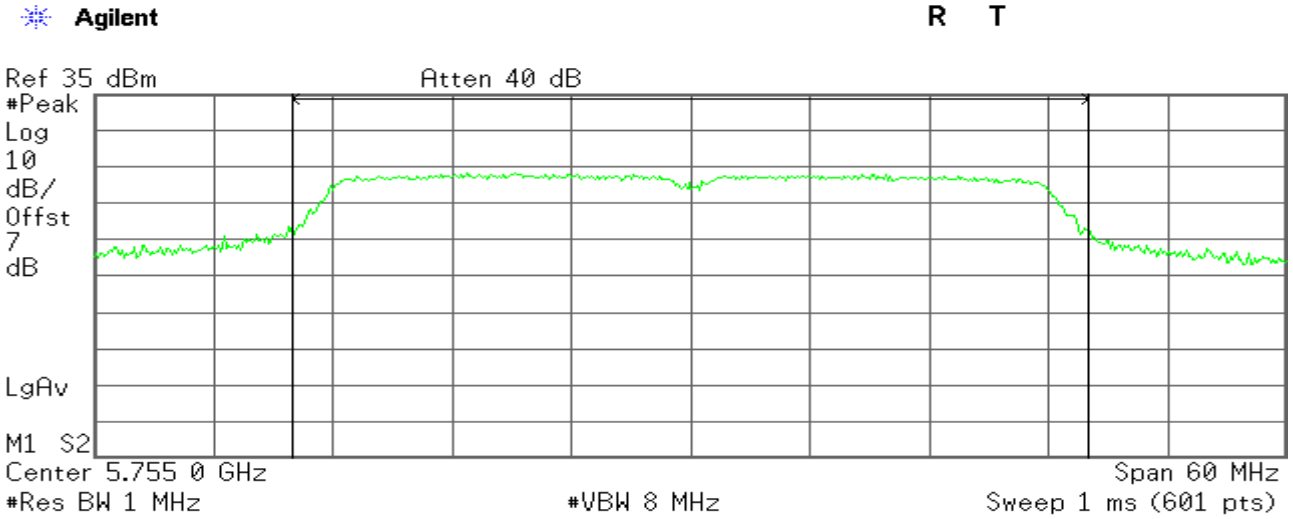
Channel Power 22.25 dBm /20.0000 MHz

Power Spectral Density -50.76 dBm/Hz

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

draft 802.11n Wide-40 MHz Channel mode / Chain 0

CH Low



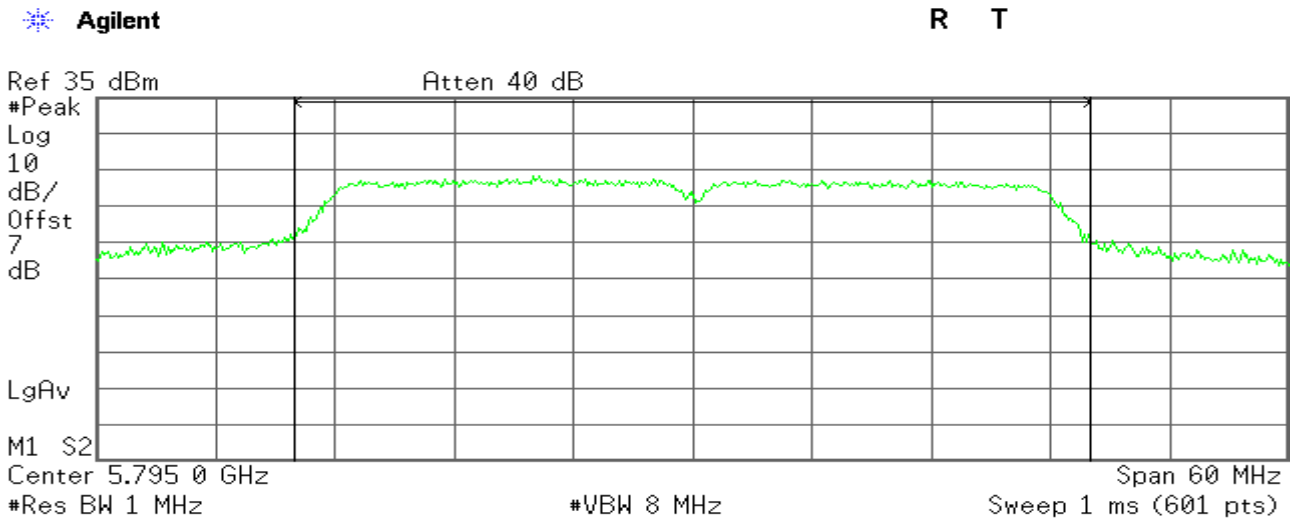
Channel Power

22.52 dBm /40.0000 MHz

Power Spectral Density

-53.50 dBm/Hz

CH High



Channel Power

22.12 dBm /40.0000 MHz

Power Spectral Density

-53.90 dBm/Hz

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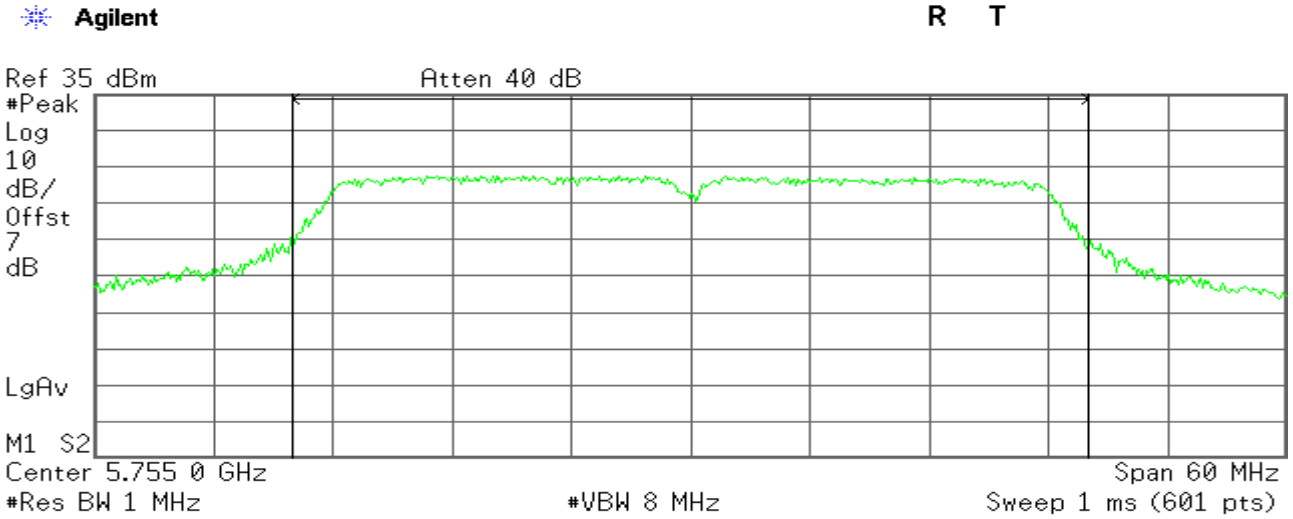
draft 802.11n Wide-40 MHz Channel mode / Chain 1

CH Low



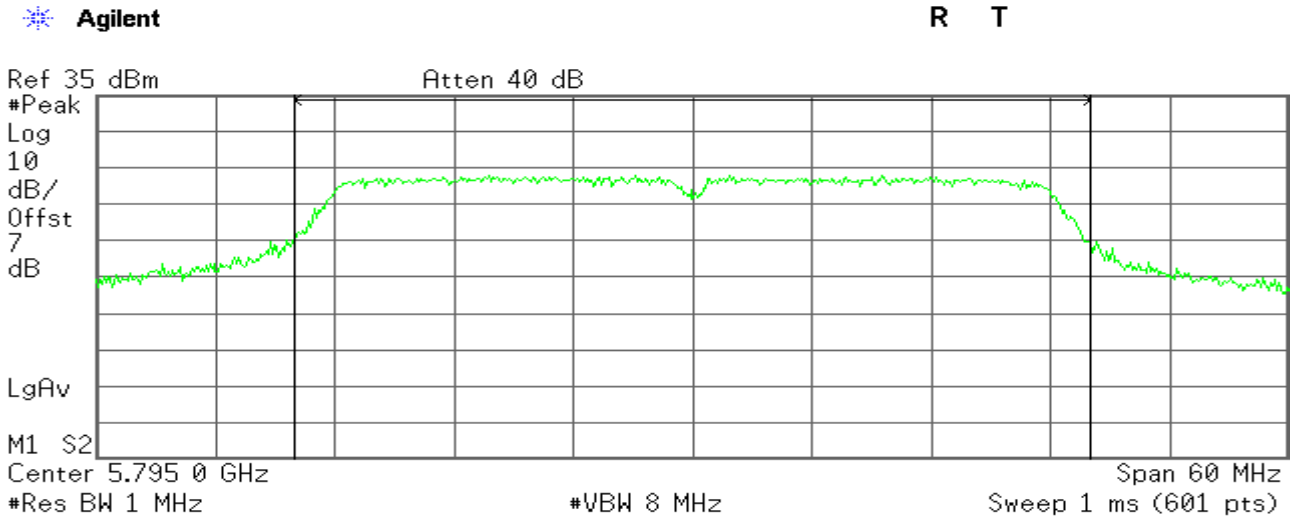
Channel Power

22.71 dBm /40.0000 MHz

Power Spectral Density

-53.31 dBm/Hz

CH High



Channel Power

22.83 dBm /40.0000 MHz

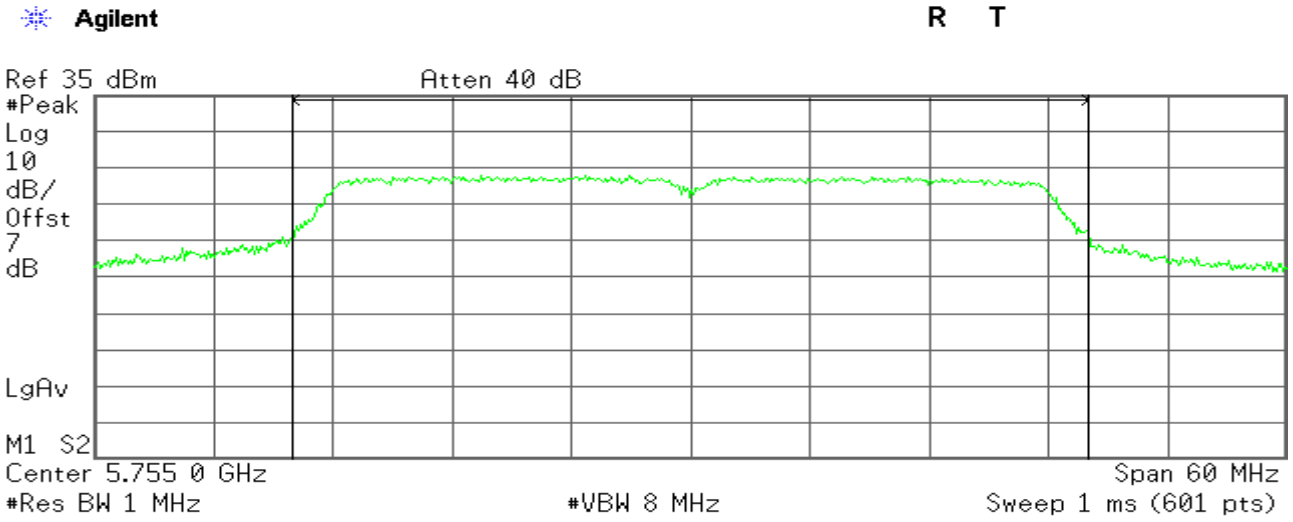
Power Spectral Density

-53.19 dBm/Hz

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

draft 802.11n Wide-40 MHz Channel mode / Chain 2

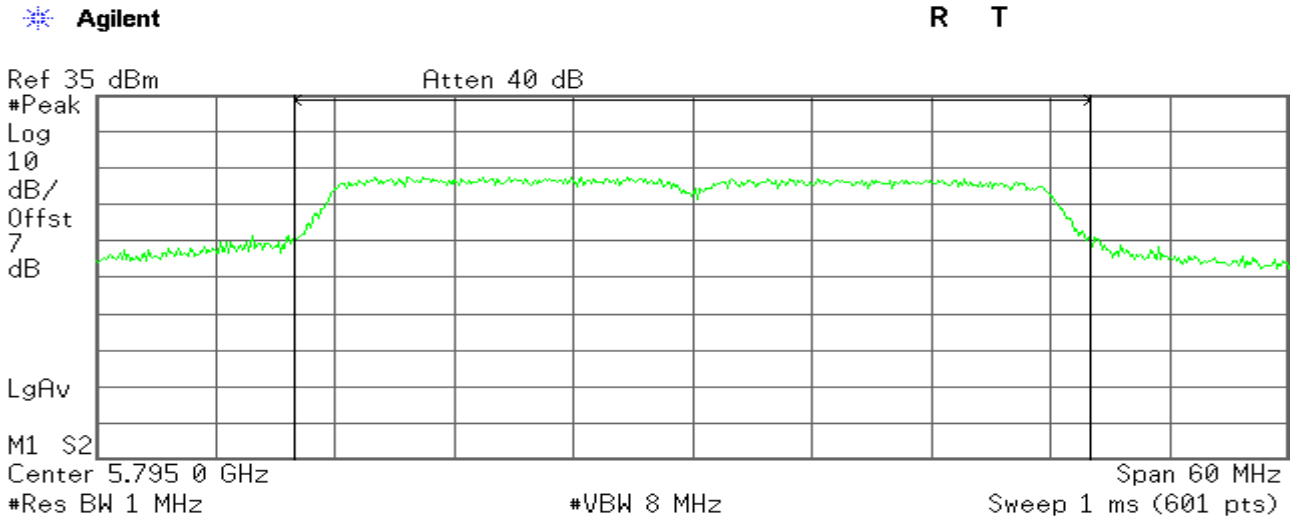
CH Low



Channel Power 22.63 dBm /40.0000 MHz

Power Spectral Density -53.39 dBm/Hz

CH High



Channel Power 22.40 dBm /40.0000 MHz

Power Spectral Density -53.62 dBm/Hz

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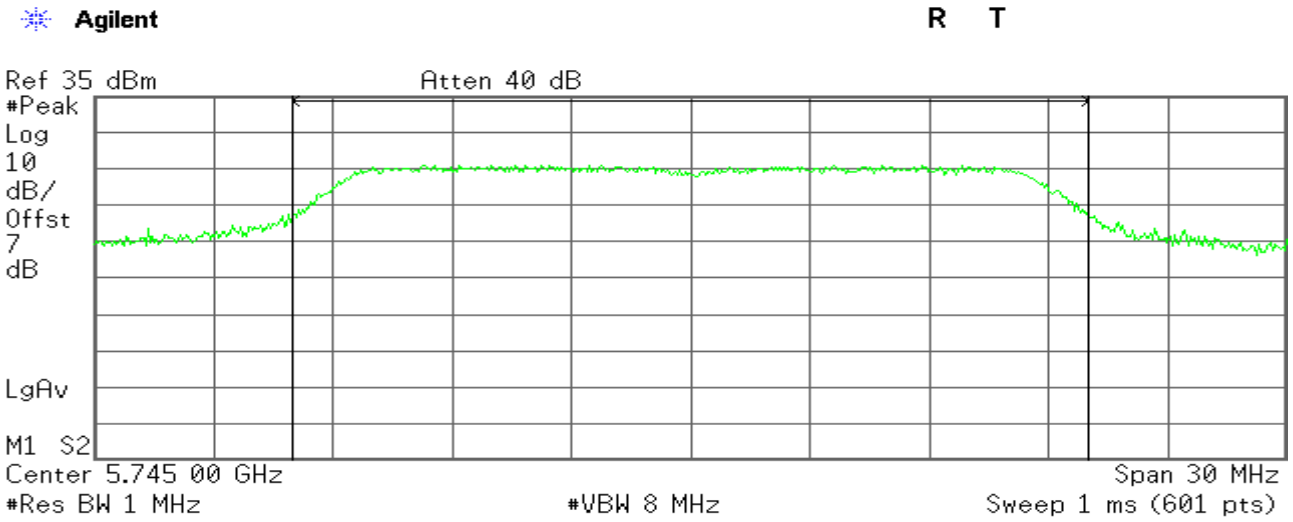
draft 802.11ac Standard-20 MHz Channel mode / Chain 0

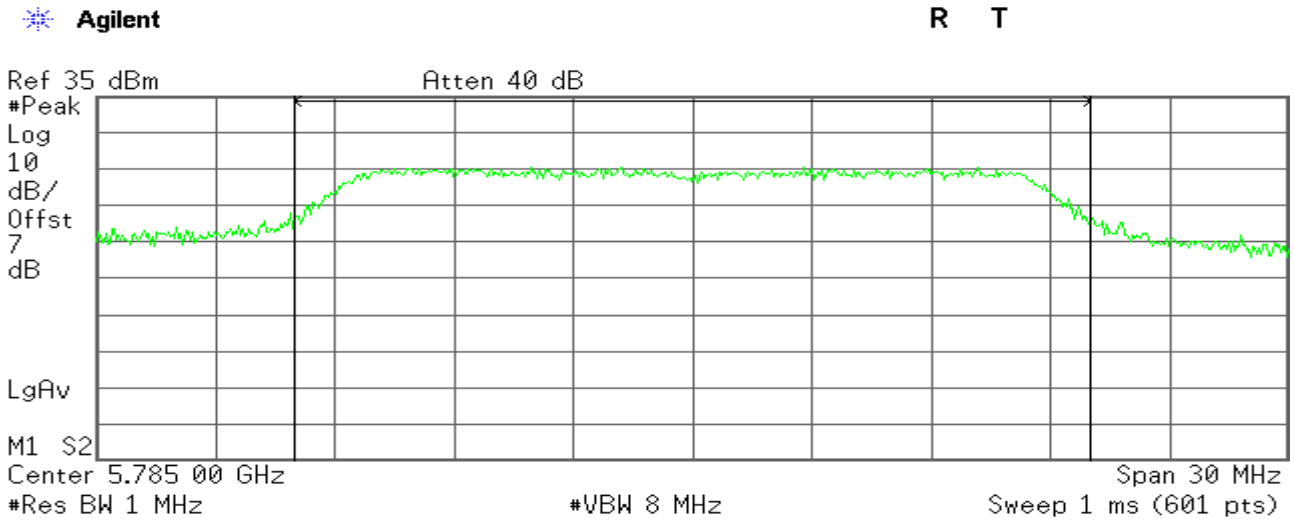
CH Low



Channel Power 22.82 dBm /20.0000 MHz

Power Spectral Density -50.19 dBm/Hz

CH Mid

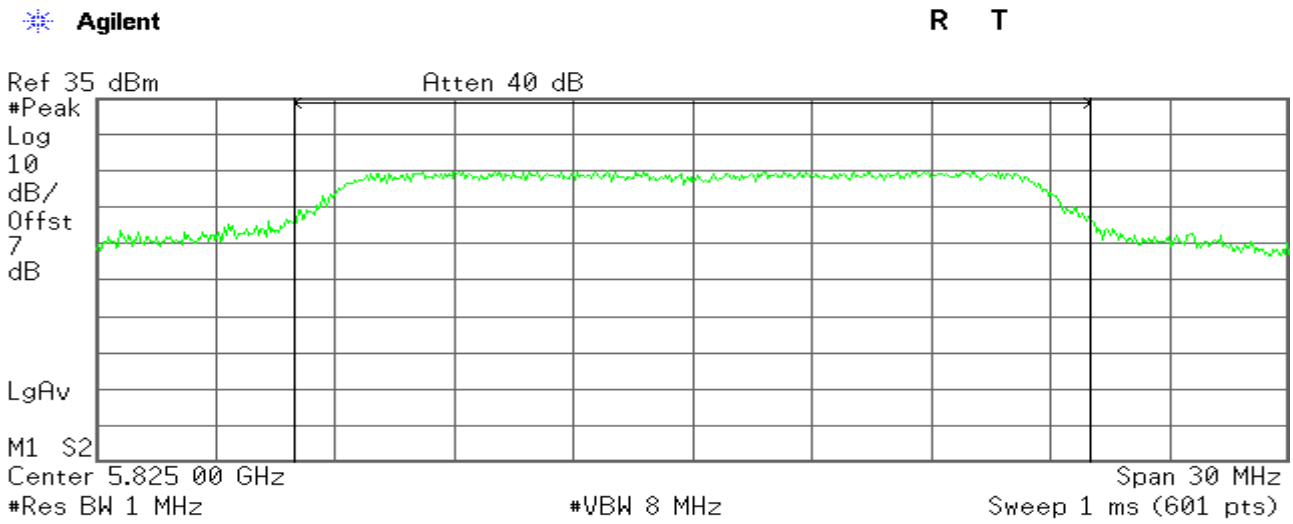


Channel Power 22.29 dBm /20.0000 MHz

Power Spectral Density -50.72 dBm/Hz

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

CH High



Channel Power

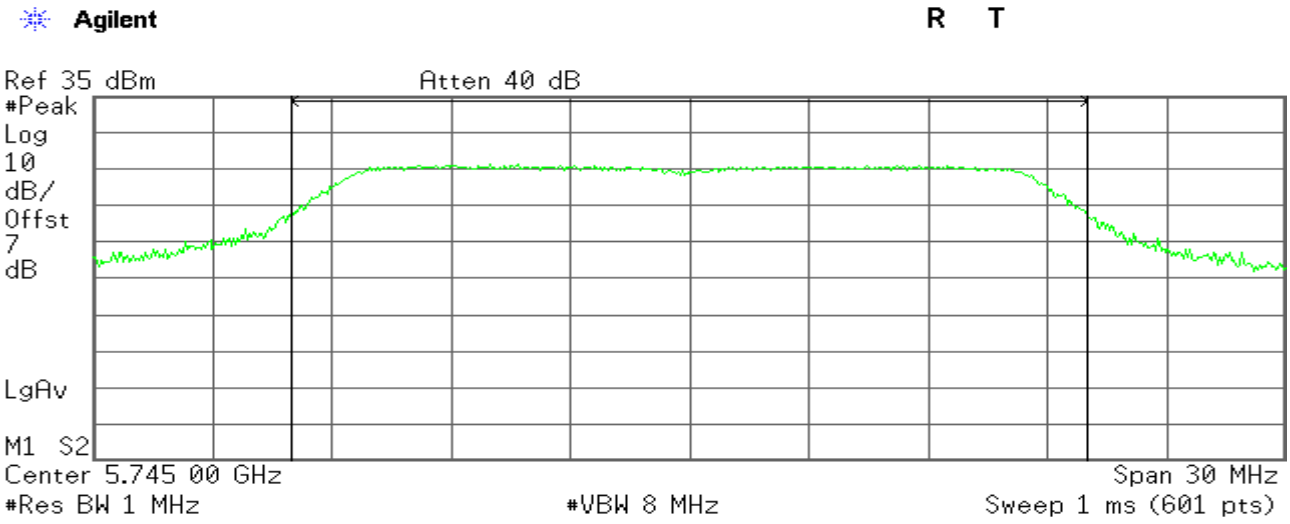
21.88 dBm /20.0000 MHz

Power Spectral Density

-51.13 dBm/Hz

draft 802.11ac Standard-20 MHz Channel mode / Chain 1

CH Low



Channel Power

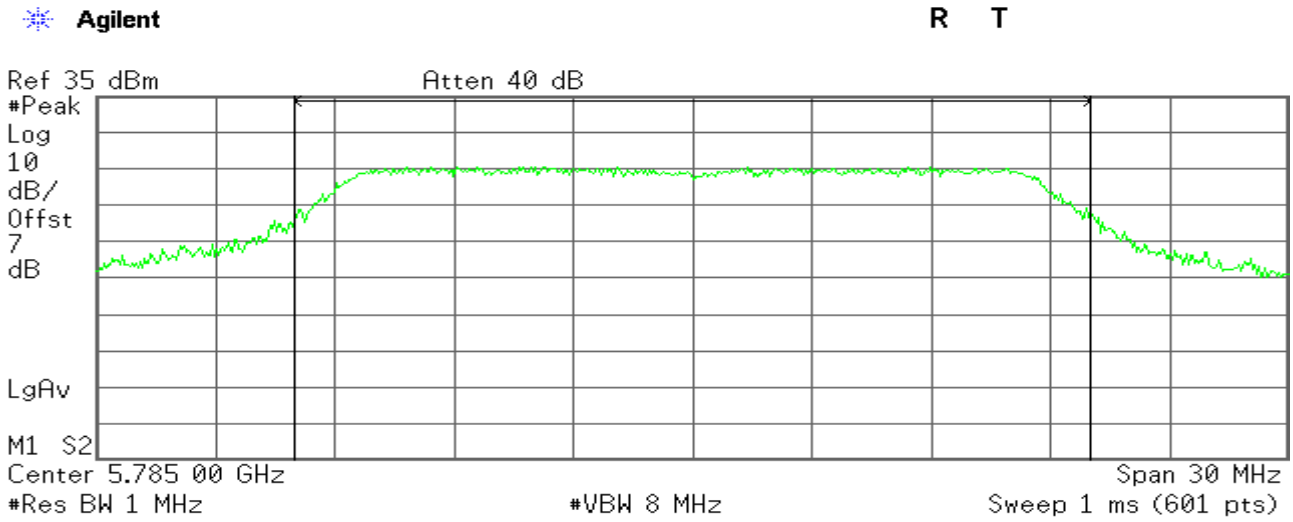
23.00 dBm /20.0000 MHz

Power Spectral Density

-50.01 dBm/Hz

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

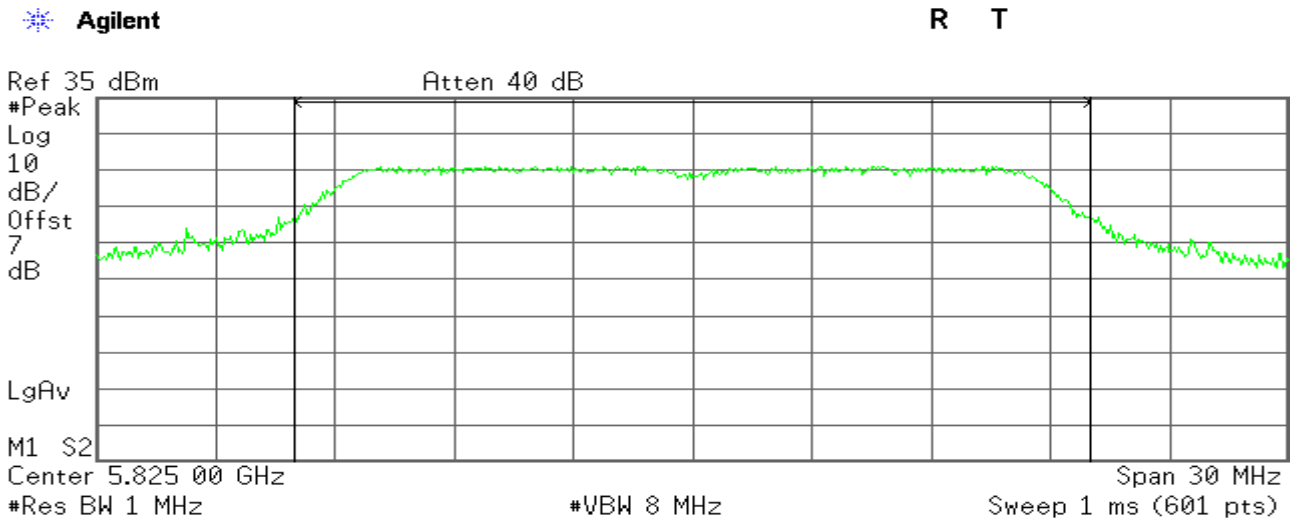
CH Mid



Channel Power 22.82 dBm /20.0000 MHz

Power Spectral Density -50.19 dBm/Hz

CH High



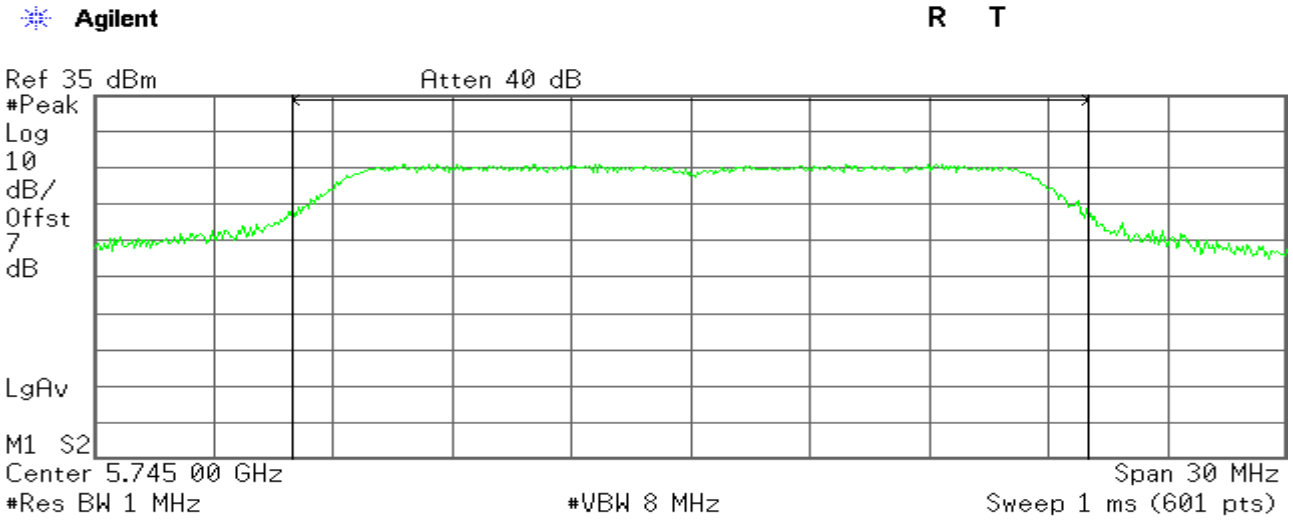
Channel Power 23.28 dBm /20.0000 MHz

Power Spectral Density -49.73 dBm/Hz

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

draft 802.11ac Standard-20 MHz Channel mode / Chain 2

CH Low



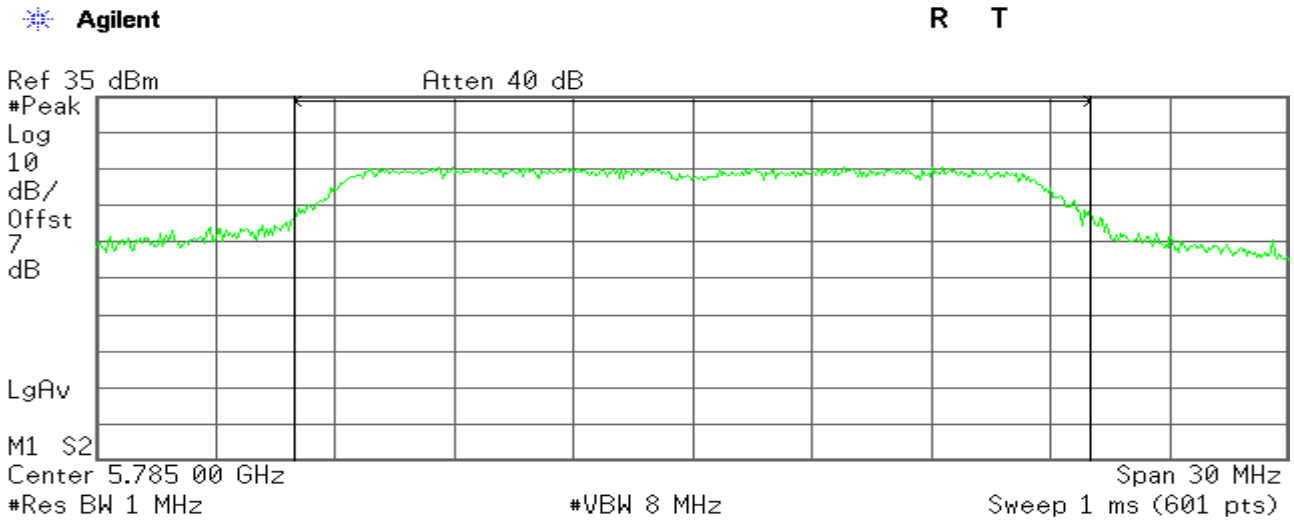
Channel Power

22.86 dBm /20.0000 MHz

Power Spectral Density

-50.15 dBm/Hz

CH Mid



Channel Power

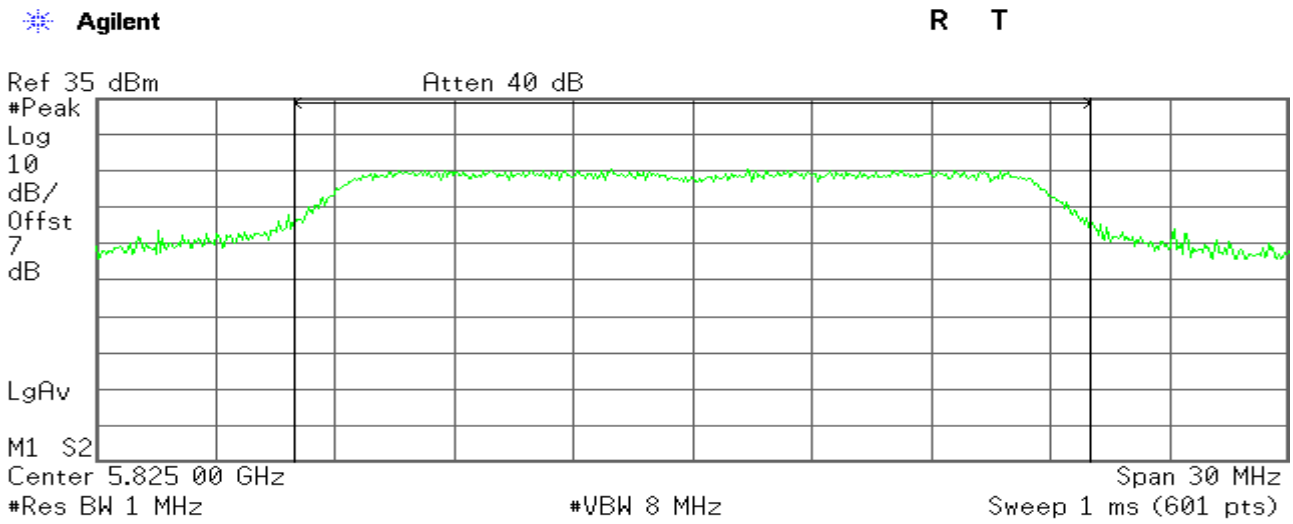
22.42 dBm /20.0000 MHz

Power Spectral Density

-50.59 dBm/Hz

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

CH High



Channel Power

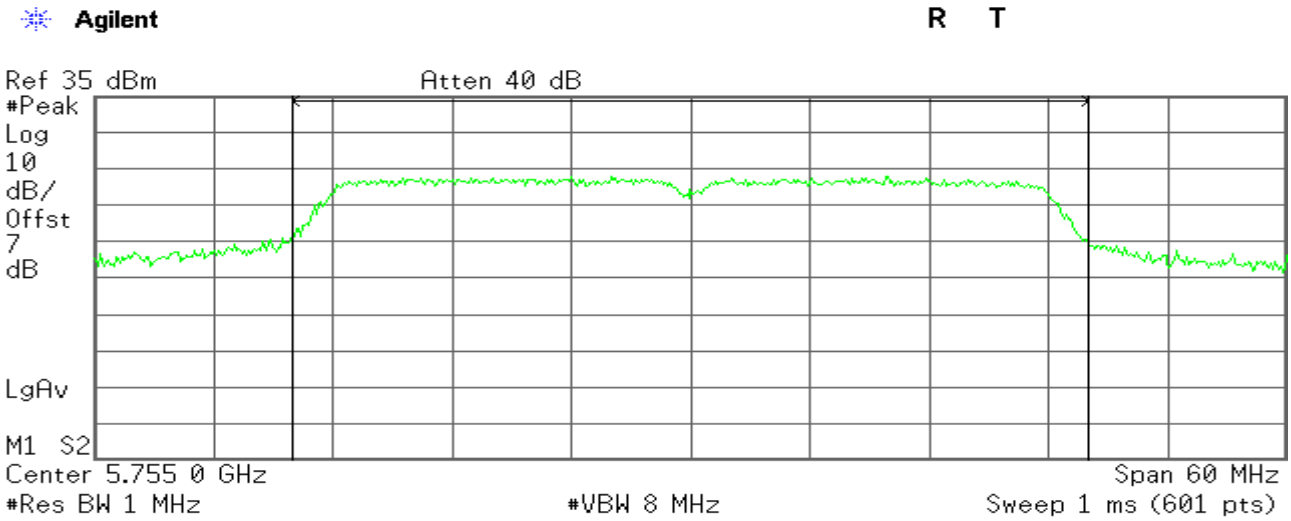
22.29 dBm /20.0000 MHz

Power Spectral Density

-50.72 dBm/Hz

draft 802.11ac Wide-40 MHz Channel mode / Chain 0

CH Low



Channel Power

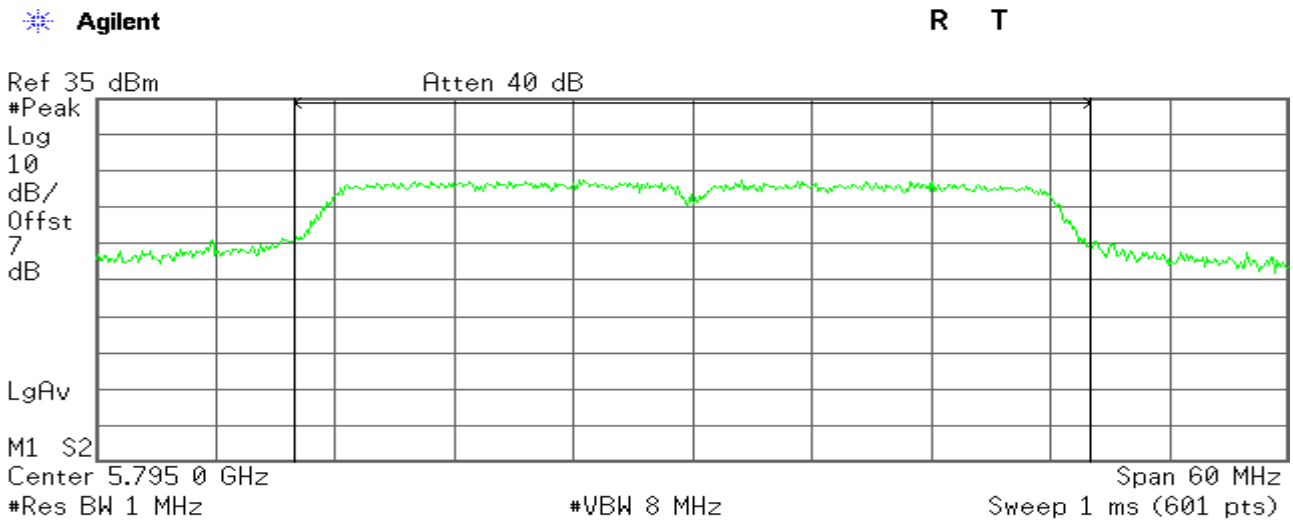
22.55 dBm /40.0000 MHz

Power Spectral Density

-53.47 dBm/Hz

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

CH High



Channel Power

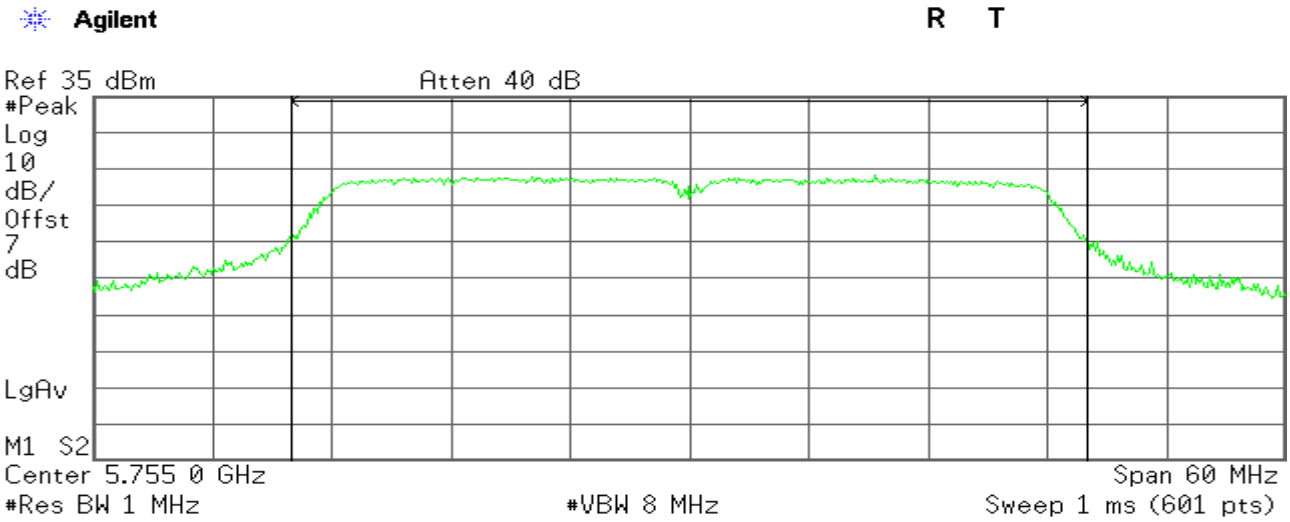
22.09 dBm /40.0000 MHz

Power Spectral Density

-53.93 dBm/Hz

draft 802.11ac Wide-40 MHz Channel mode / Chain 1

CH Low



Channel Power

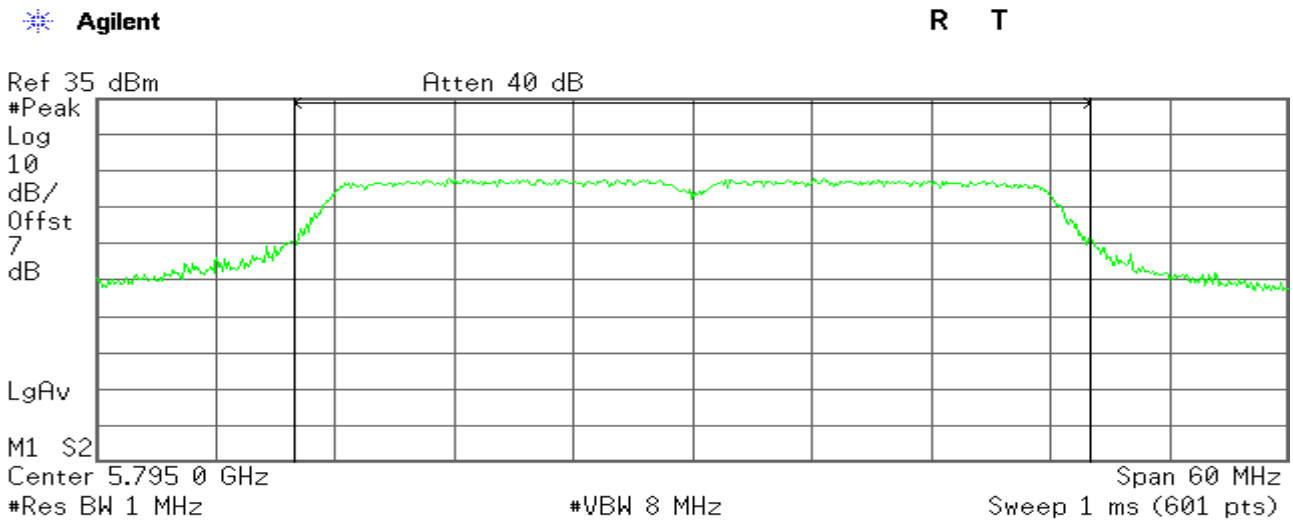
22.69 dBm /40.0000 MHz

Power Spectral Density

-53.33 dBm/Hz

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

CH High



Channel Power

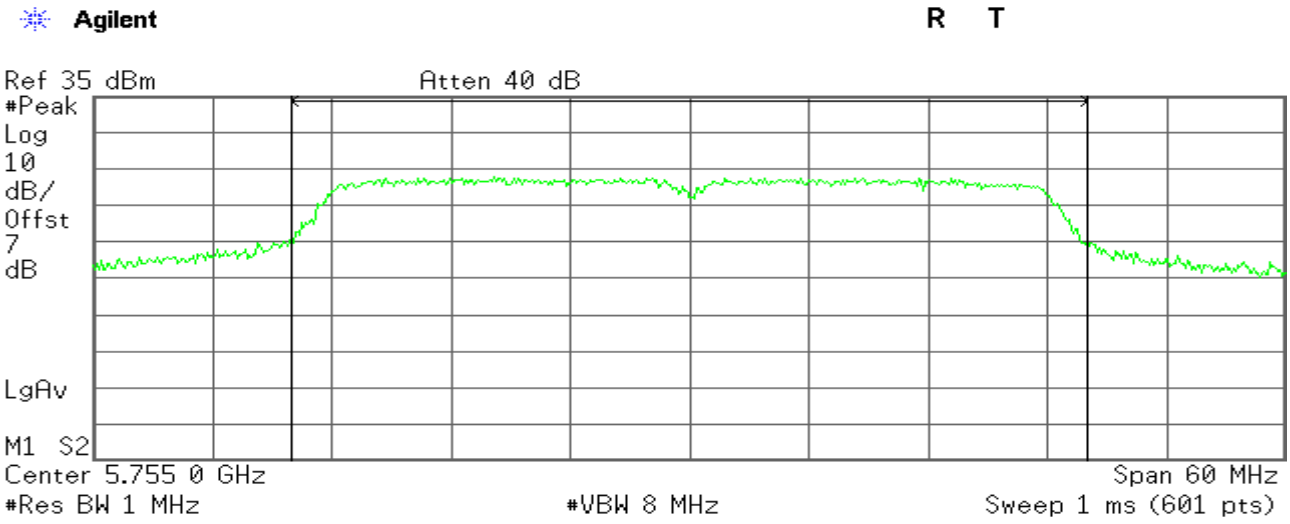
22.86 dBm /40.0000 MHz

Power Spectral Density

-53.16 dBm/Hz

draft 802.11ac Wide-40 MHz Channel mode / Chain 2

CH Low



Channel Power

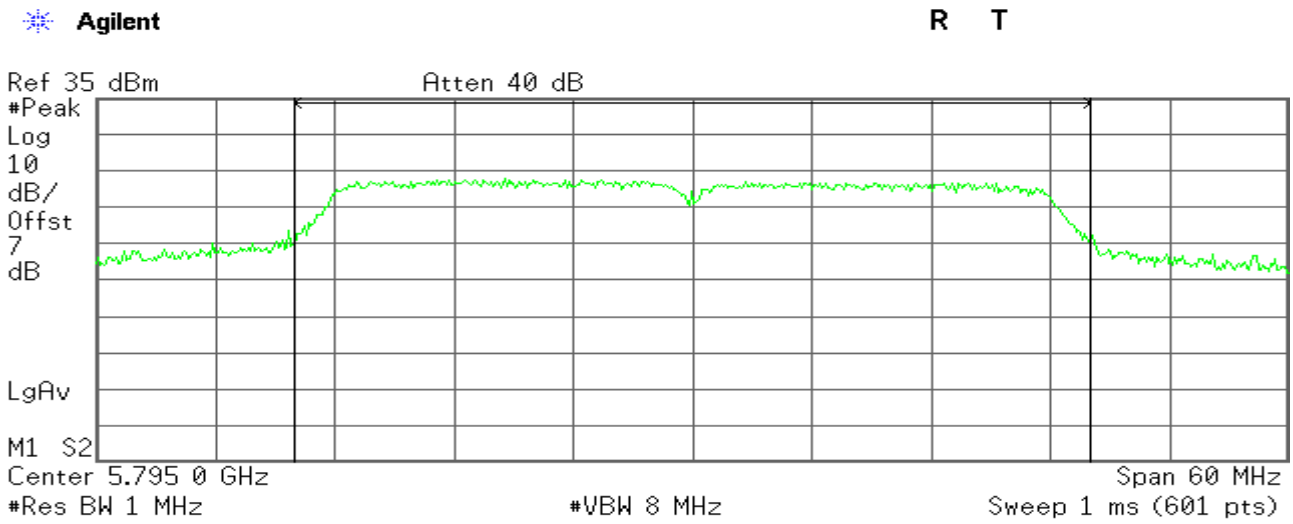
22.63 dBm /40.0000 MHz

Power Spectral Density

-53.39 dBm/Hz

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

CH High



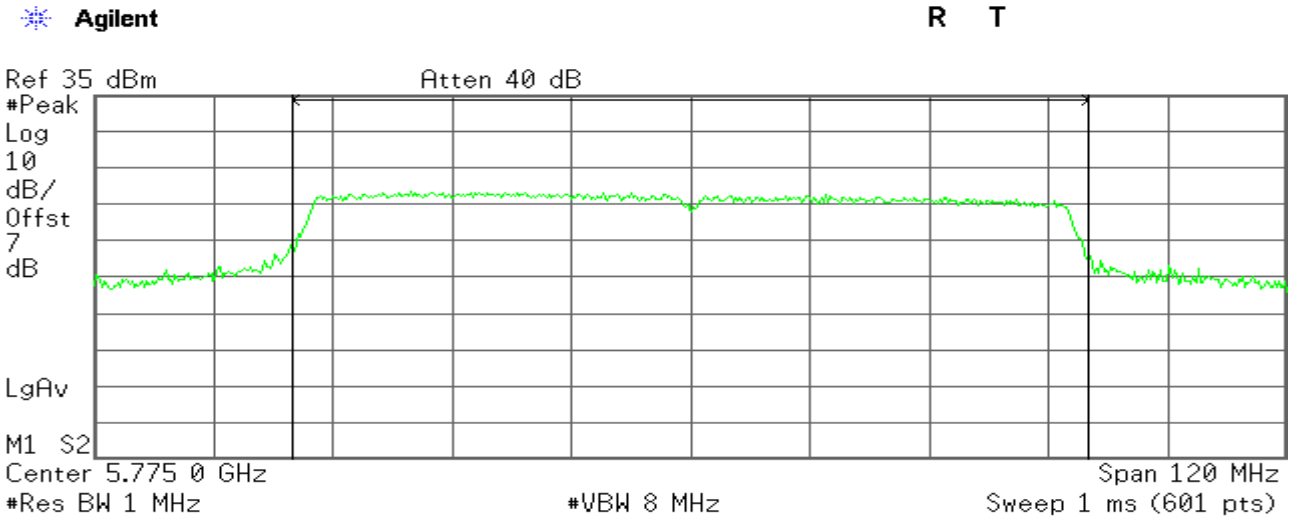
Channel Power

22.43 dBm /40.0000 MHz

Power Spectral Density

-53.59 dBm/Hz

draft 802.11ac Wide-80 MHz Channel mode / Chain 0



Channel Power

21.07 dBm /80.0000 MHz

Power Spectral Density

-57.97 dBm/Hz

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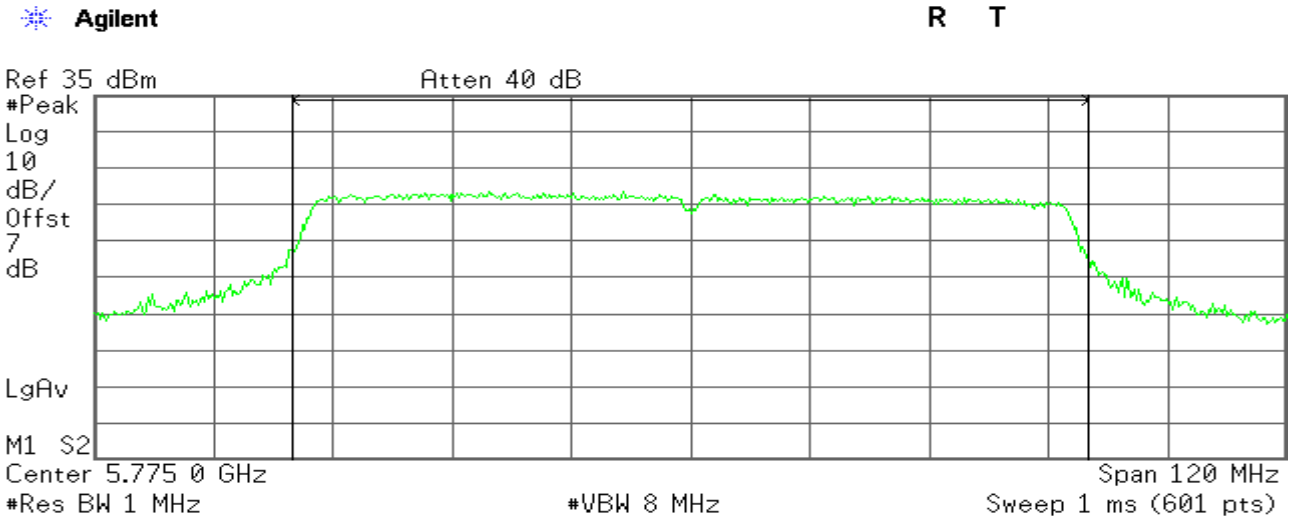
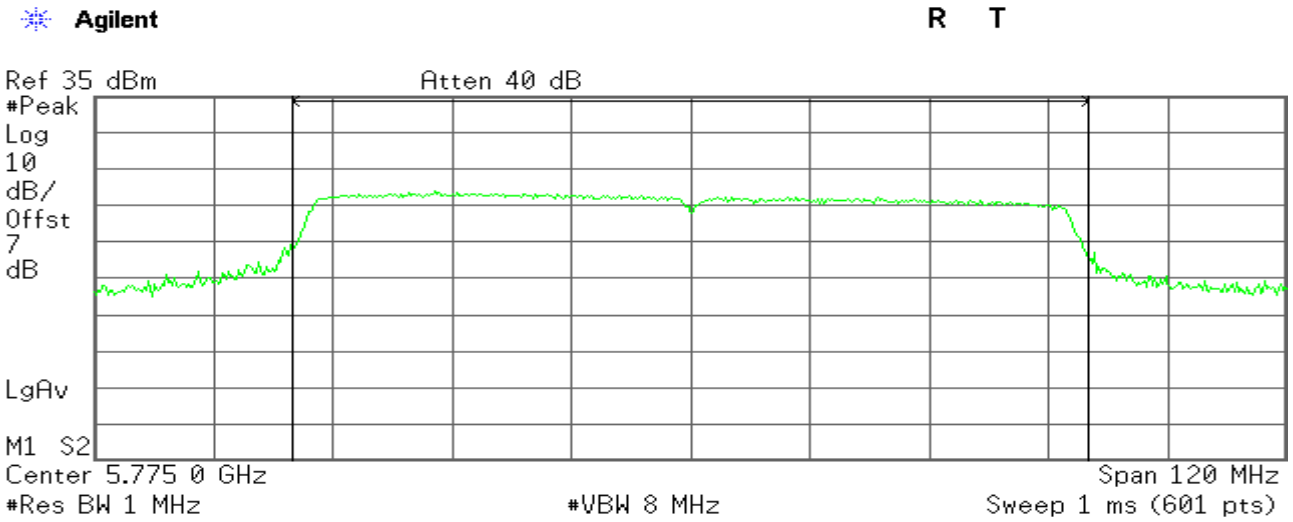
draft 802.11ac Wide-80 MHz Channel mode / Chain 1



Channel Power 21.17 dBm /80.0000 MHz

Power Spectral Density -57.86 dBm/Hz

draft 802.11ac Wide-80 MHz Channel mode / Chain 2



Channel Power 21.01 dBm /80.0000 MHz

Power Spectral Density -58.02 dBm/Hz

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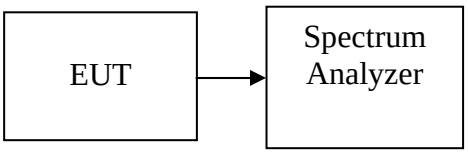
4.3.PEAK POWER SPECTRAL DENSITY

LIMIT

1.According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

2.According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

1.Place the EUT on the table and set it in transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

2.Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 1.5 times the DTS bandwidth, Sweep = auto

3.Record the max reading.

4.Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

No non-compliance noted

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Test Data

Test mode: 802.11b mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	2412	-5.60	-4.87	-5.14	-0.42	8.00	PASS
Mid	2437	-0.52	-1.68	-0.32	3.97	8.00	PASS
High	2462	-4.30	-5.72	-4.08	0.13	8.00	PASS

Test mode: 802.11g mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	2412	-8.60	-10.42	-11.91	-5.33	8.00	PASS
Mid	2437	-4.05	-4.59	-4.06	0.55	8.00	PASS
High	2462	-10.48	-10.50	-11.31	-5.98	8.00	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	2412	-9.00	-11.67	-11.22	-5.69	8.00	PASS
Mid	2437	-5.05	-4.94	-5.16	-0.28	8.00	PASS
High	2462	-12.18	-11.51	-12.26	-7.20	8.00	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	2422	-14.39	-16.41	-15.76	-10.67	8.00	PASS
Mid	2437	-8.23	-8.43	-9.70	-3.97	8.00	PASS
High	2452	-15.91	-15.41	-15.64	-10.88	8.00	PASS

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	5745	-4.13	-4.39	-4.89	0.31	8.00	PASS
Mid	5785	-6.56	-4.86	-5.93	-0.95	8.00	PASS
High	5825	-6.34	-3.71	-4.98	-0.11	8.00	PASS

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Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	5745	-6.31	-6.76	-6.53	-1.76	8.00	PASS
Mid	5785	-7.56	-6.94	-6.28	-2.12	8.00	PASS
High	5825	-8.12	-6.43	-7.97	-2.67	8.00	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	5755	-10.62	-7.33	-9.31	-4.10	8.00	PASS
Mid	5795	-11.08	-9.85	-10.42	-5.65	8.00	PASS

Test mode: draft 802.11ac Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	5745	-5.20	-6.88	-7.78	-1.71	8.00	PASS
Mid	5785	-7.44	-6.62	-7.17	-2.29	8.00	PASS
High	5825	-8.02	-6.96	-7.55	-2.72	8.00	PASS

Test mode: draft 802.11ac Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Low	5755	-10.56	-9.61	-10.33	-5.38	8.00	PASS
Mid	5795	-10.98	-9.23	-10.56	-5.42	8.00	PASS

Test mode: draft 802.11ac Wide-80 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
Mid	5775	-13.90	-7.66	-13.83	-5.96	8.00	PASS

Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)+10^(Chain 2 PPSD /10)))*

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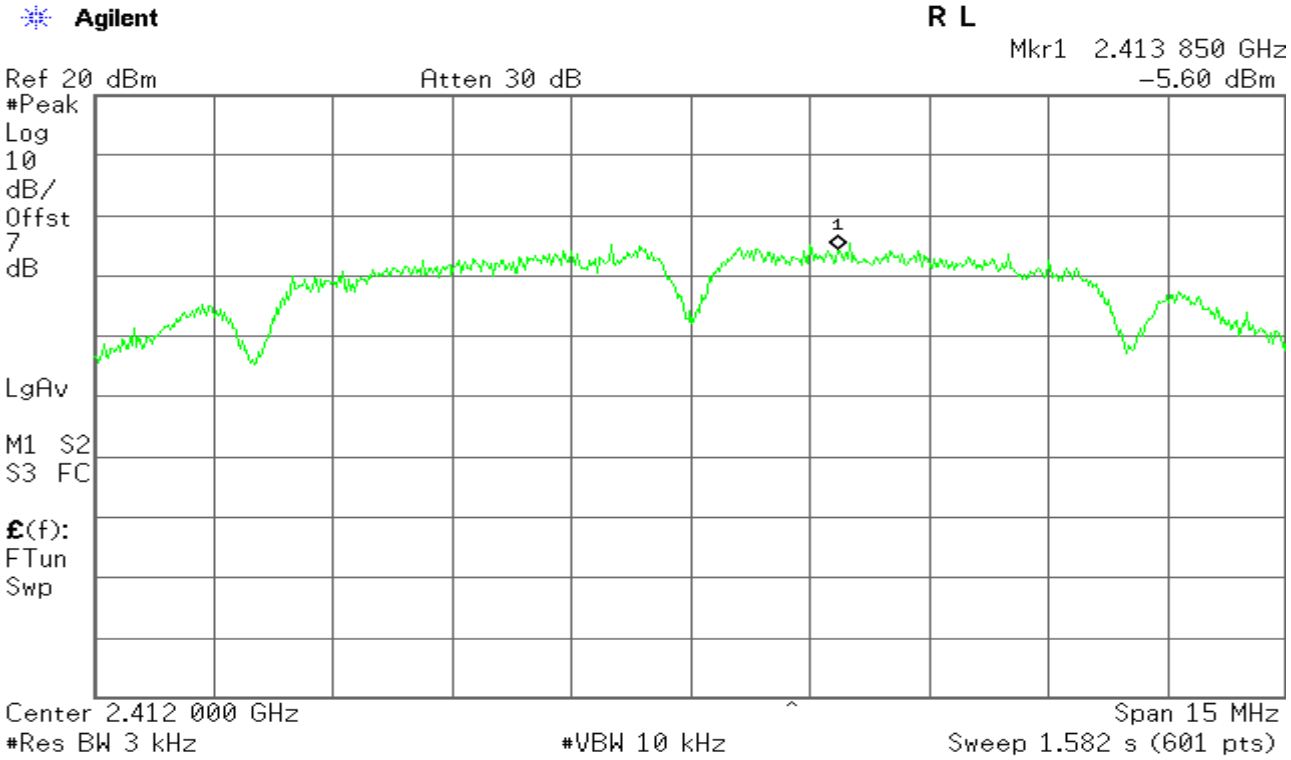
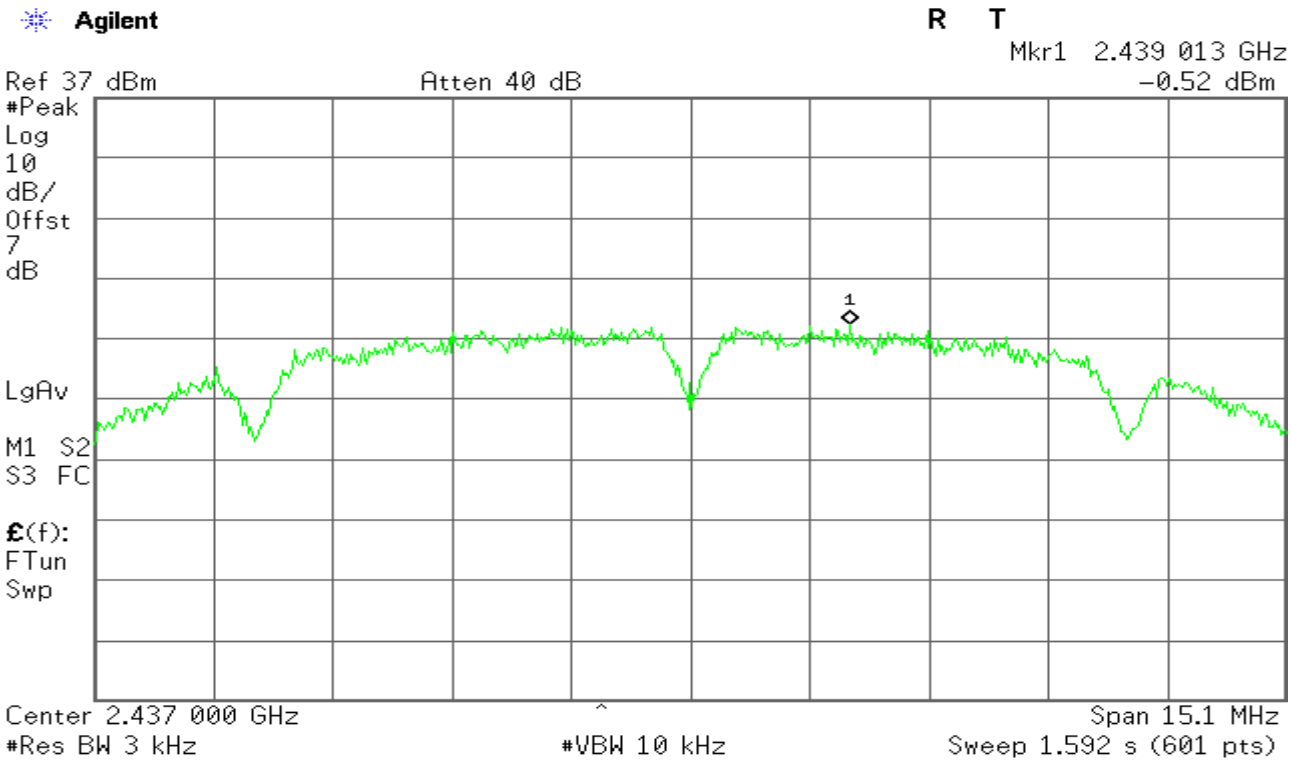
Test Plot

IEEE 802.11b mode/Chain 0

PPSD (CH Low)



PPSD (CH Mid)



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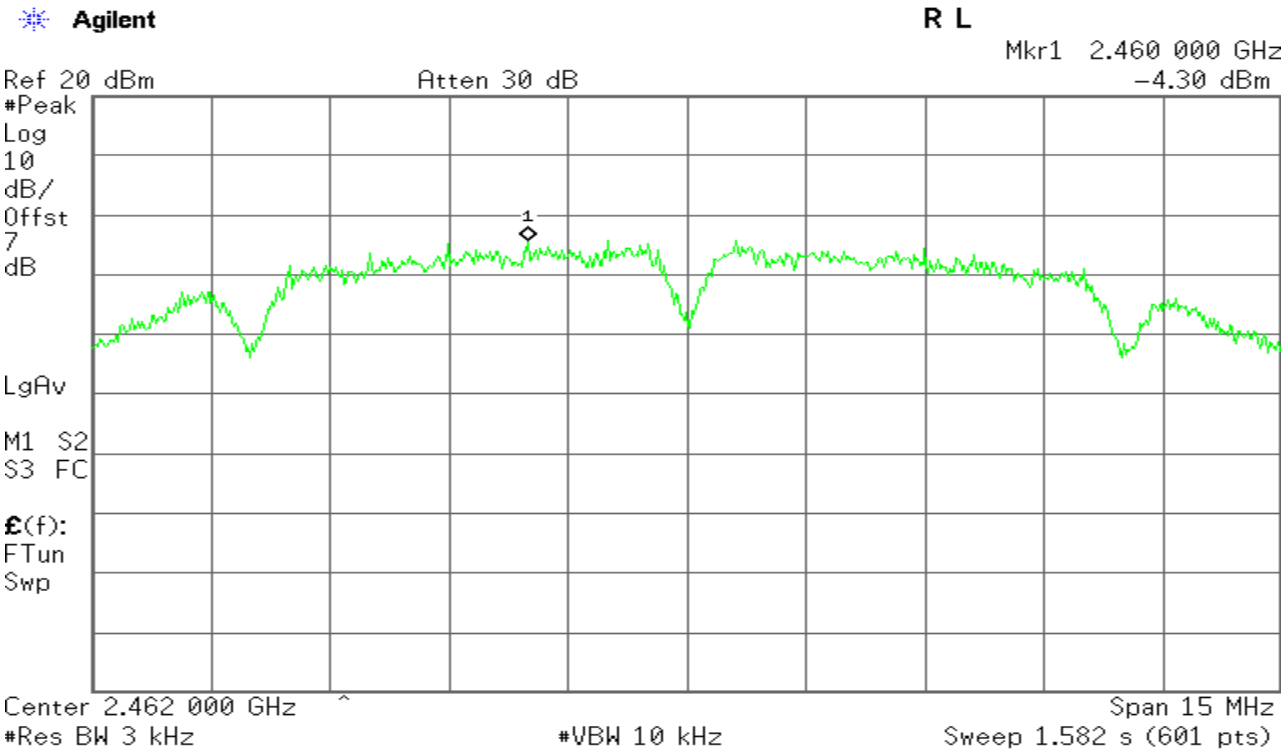
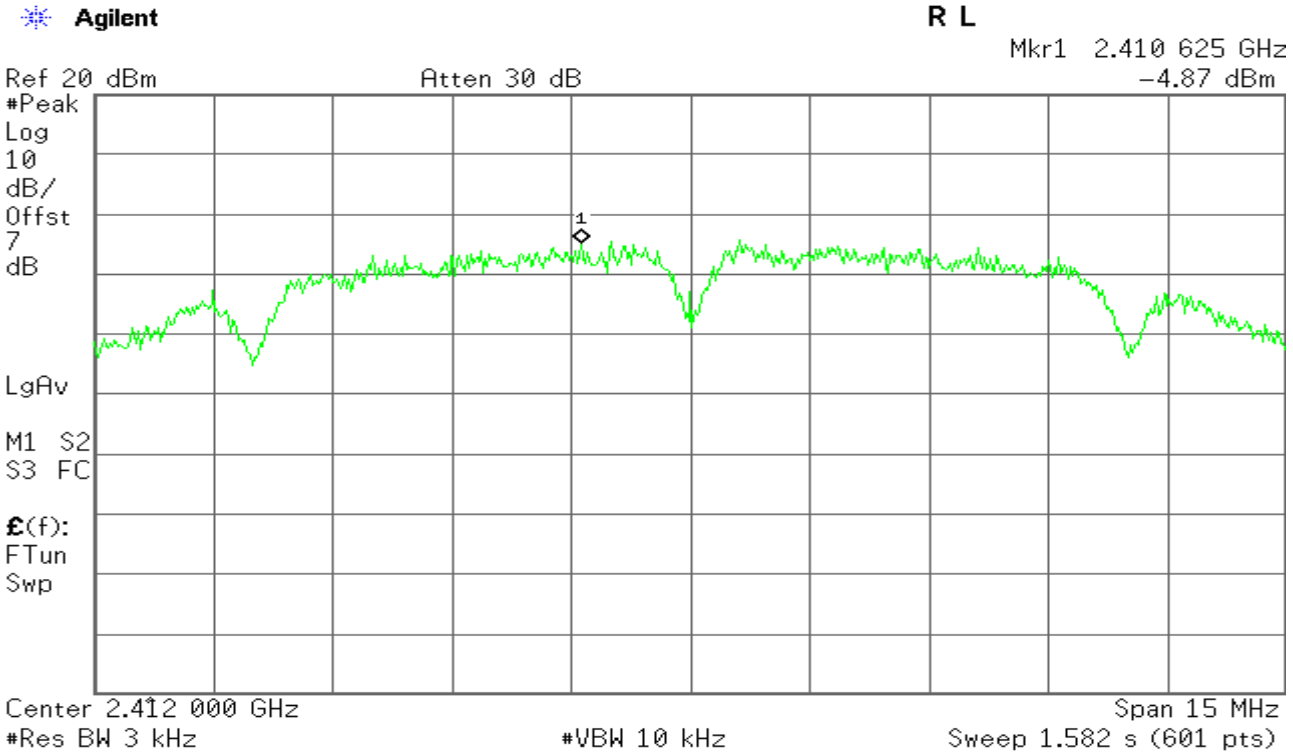
PPSD (CH High)



IEEE 802.11b mode/Chain 1

PPSD (CH Low)



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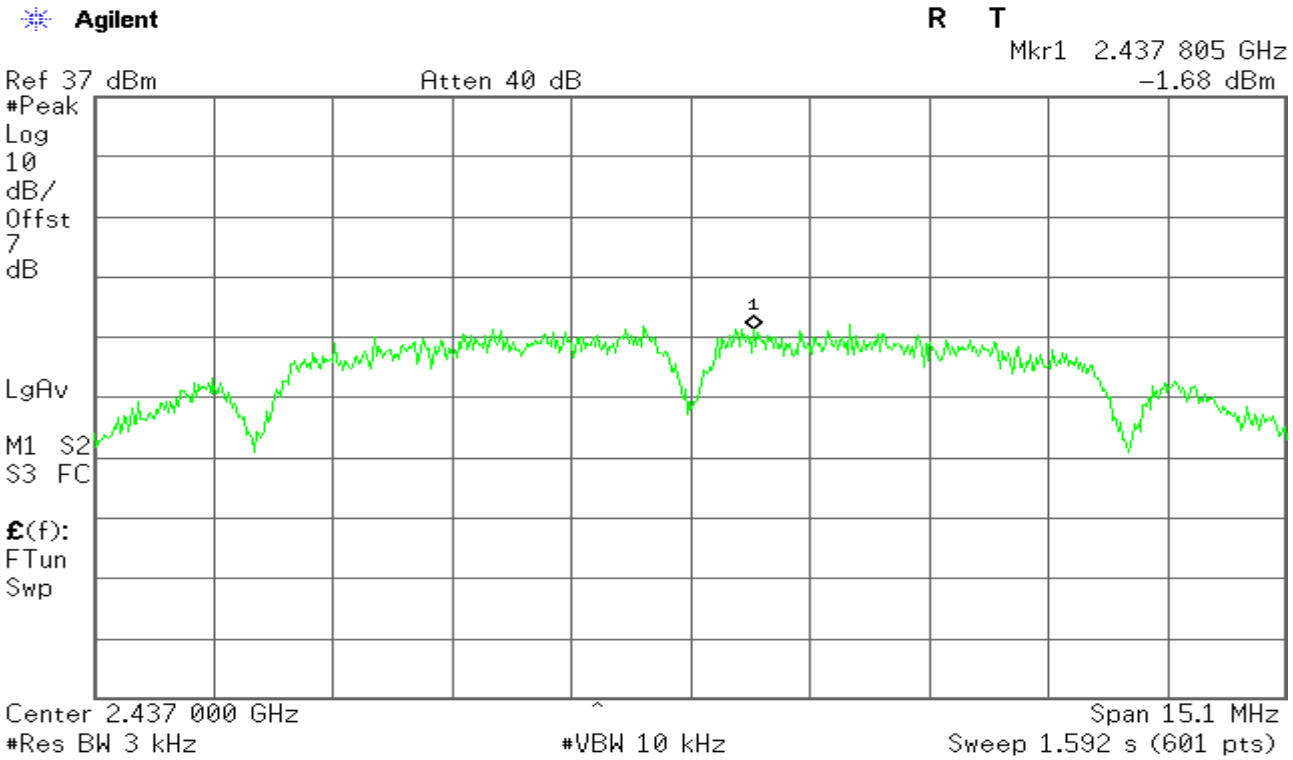
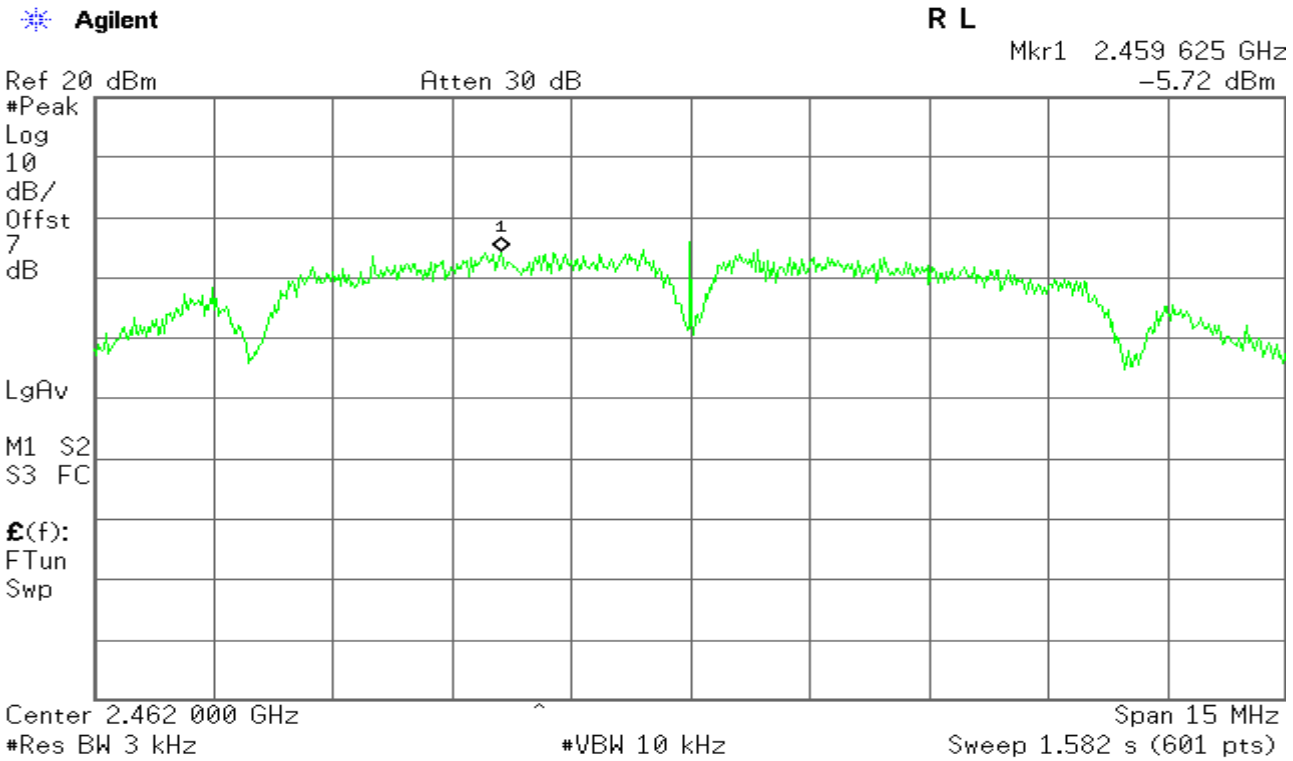
PPSD (CH Mid)



PPSD (CH High)



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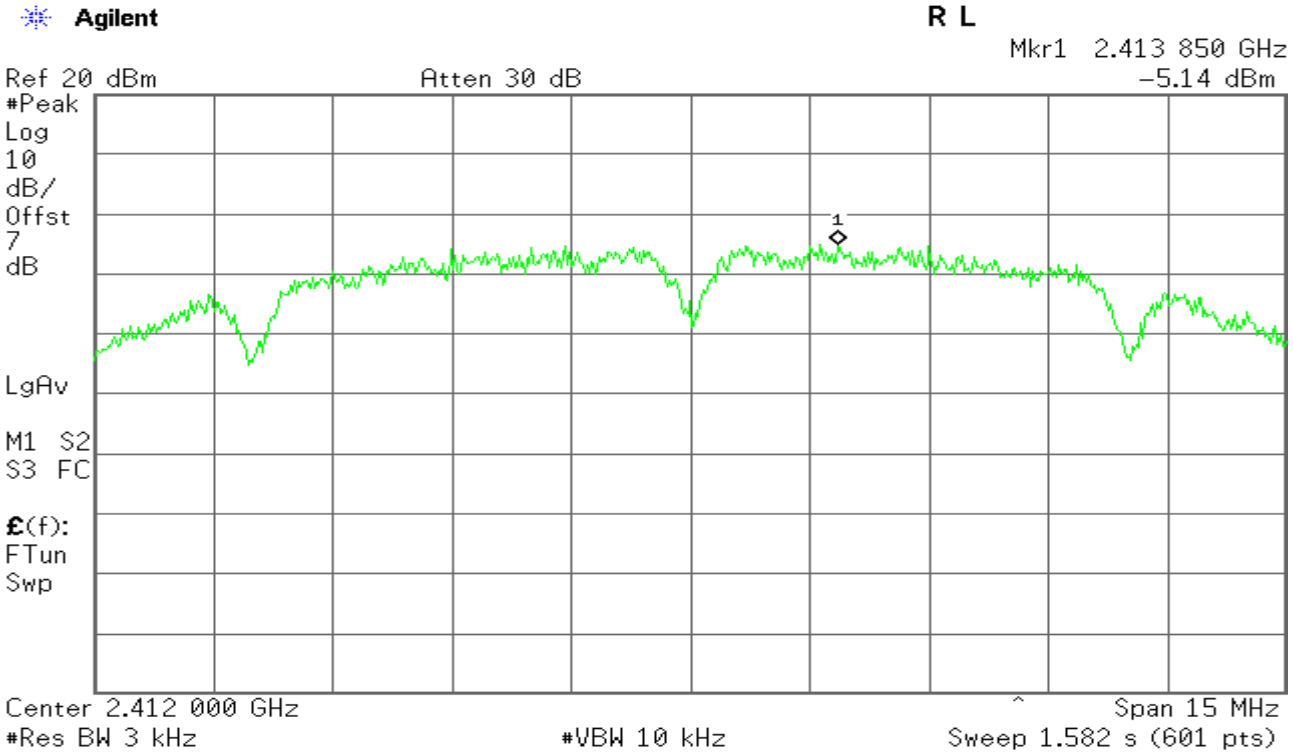
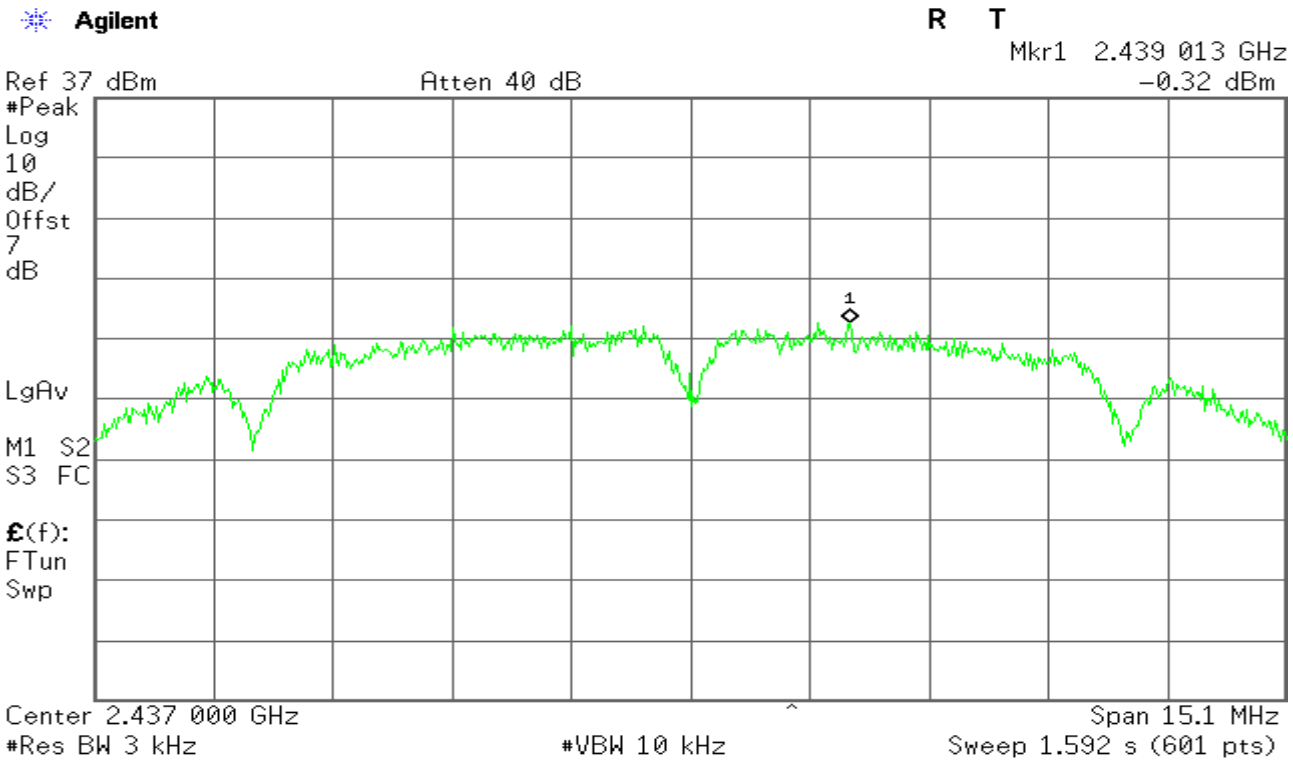
IEEE 802.11b mode/Chain 2

PPSD (CH Low)



PPSD (CH Mid)



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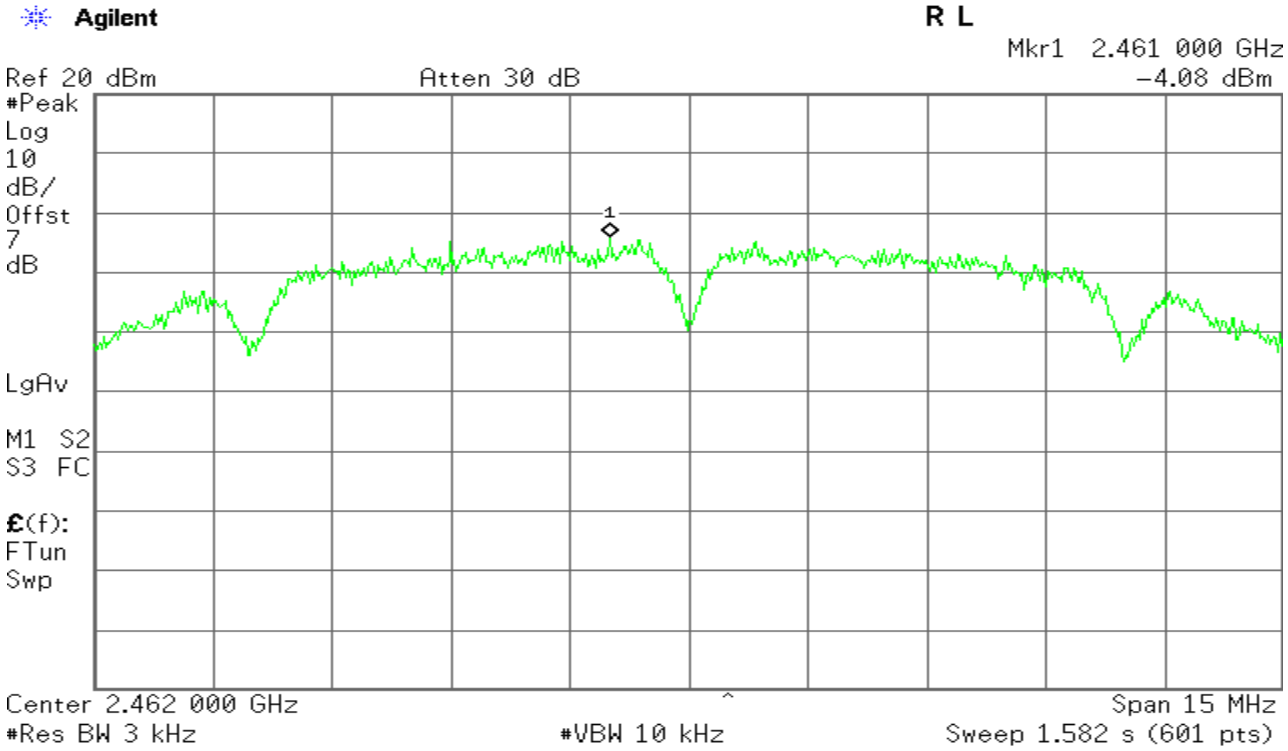
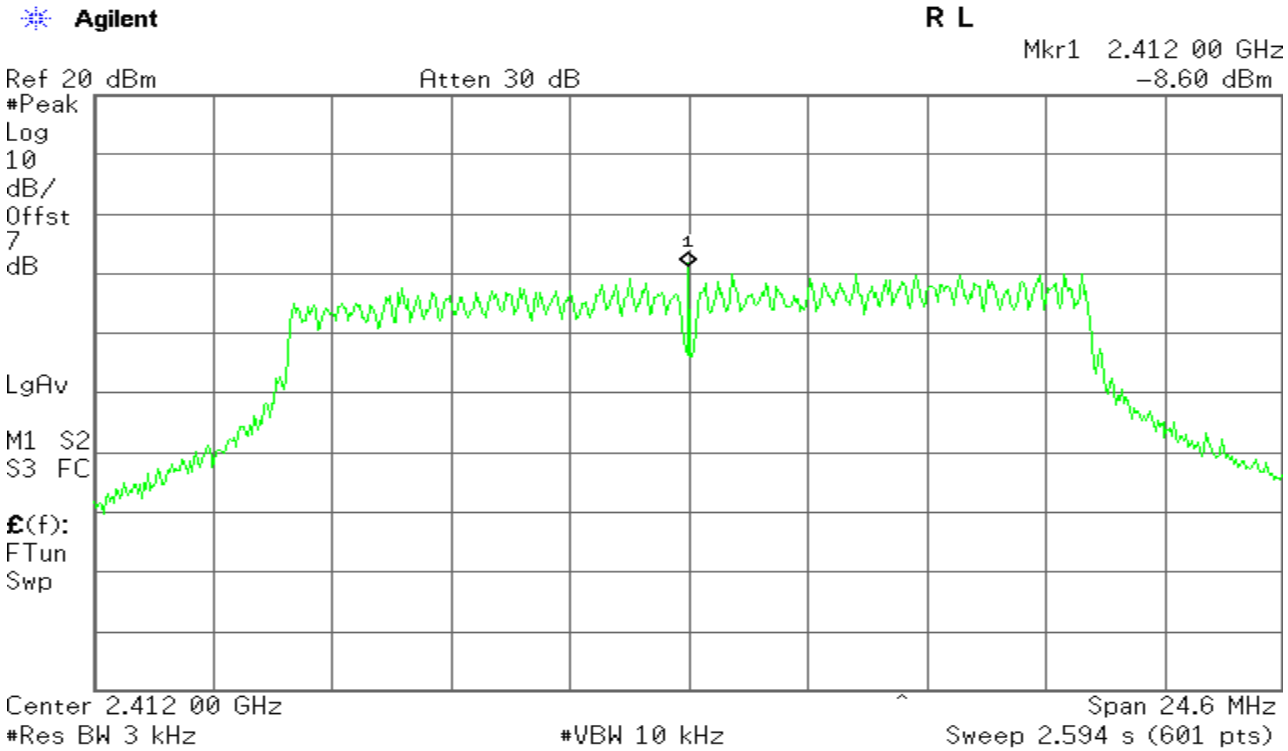
PPSD (CH High)



IEEE 802.11g mode/Chain 0

PPSD (CH Low)



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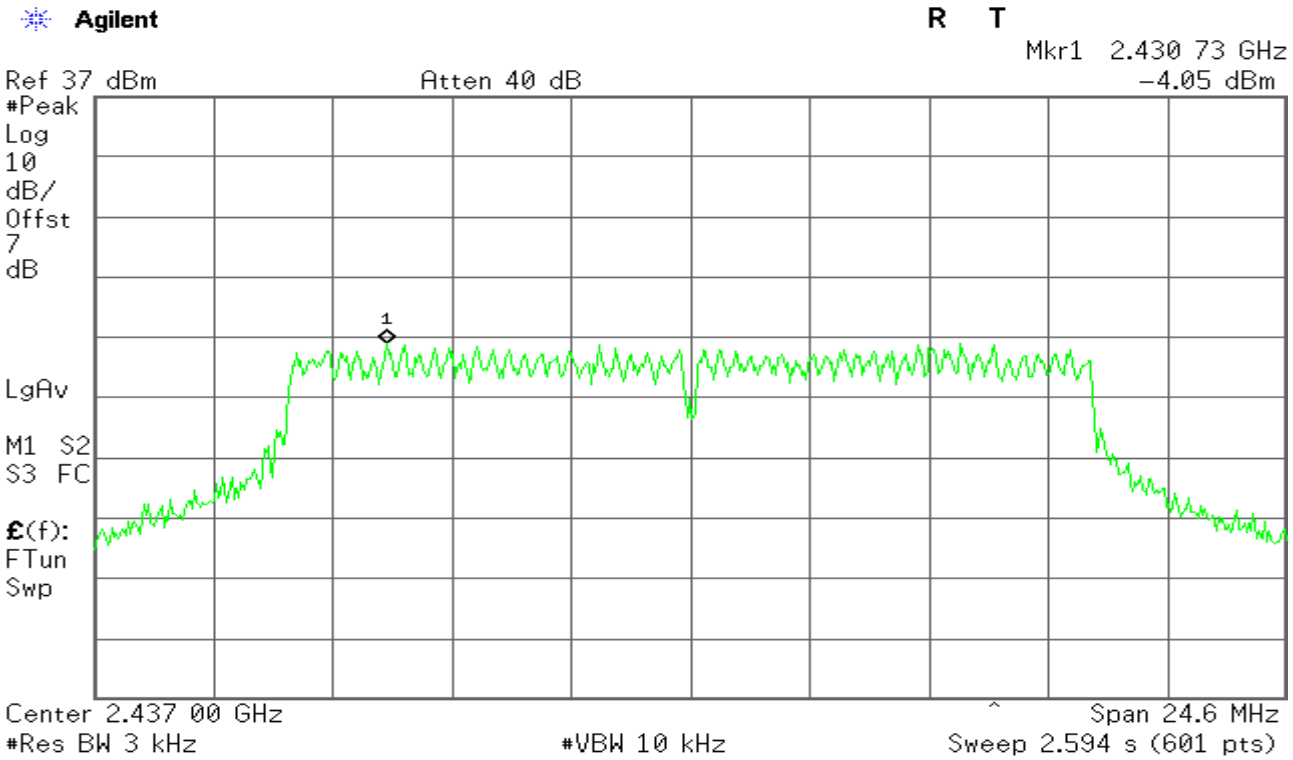
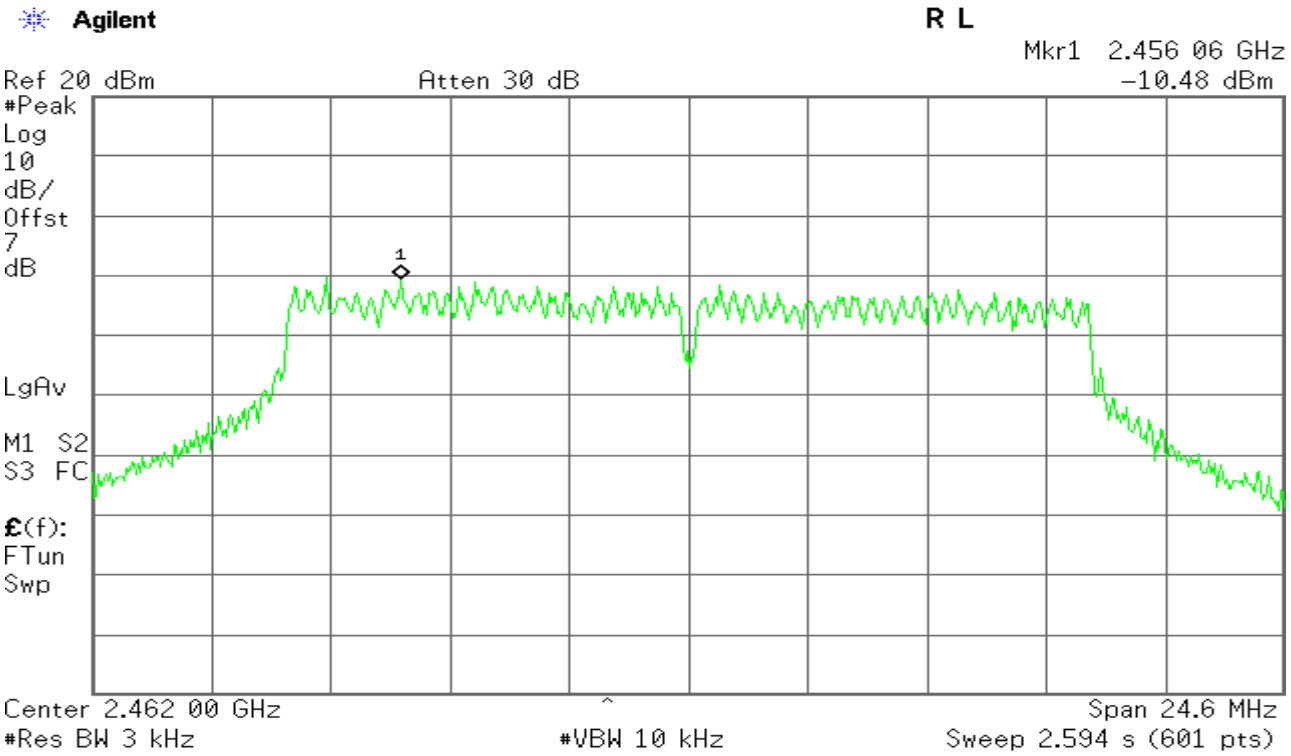
PPSD (CH Mid)



PPSD (CH High)



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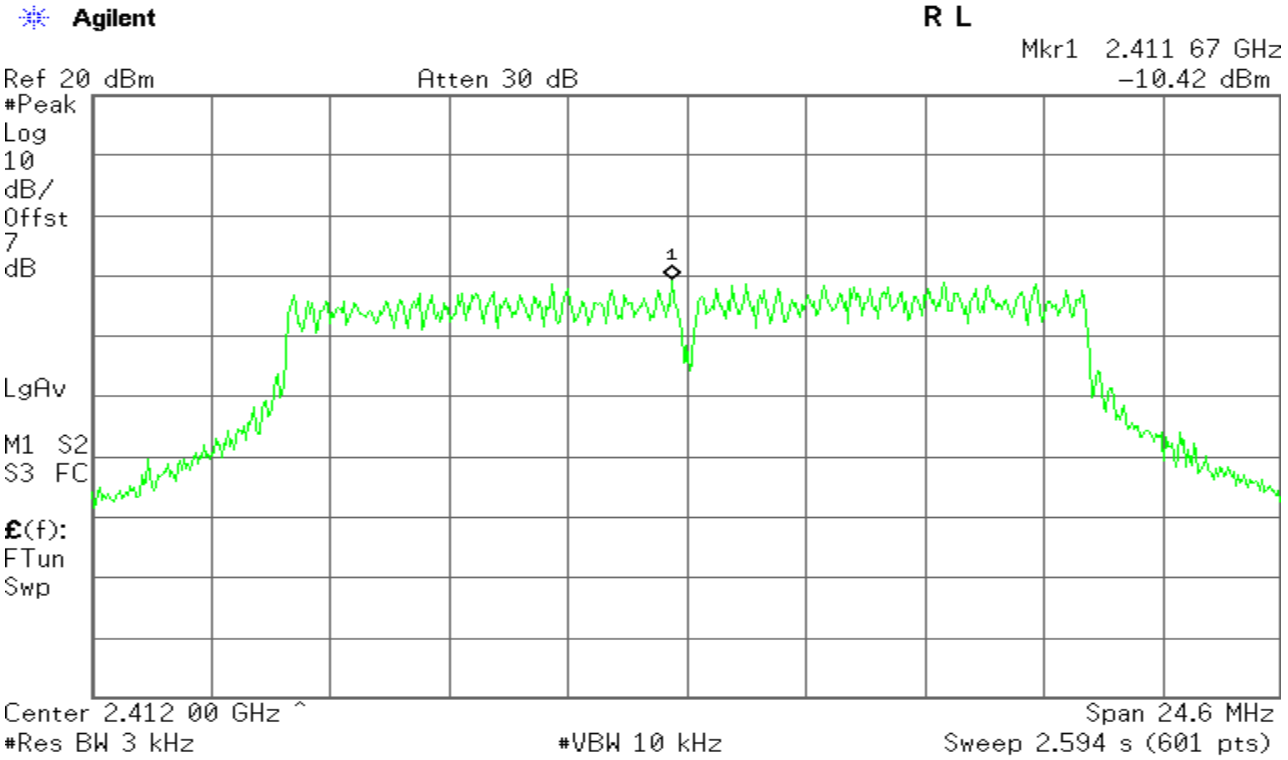
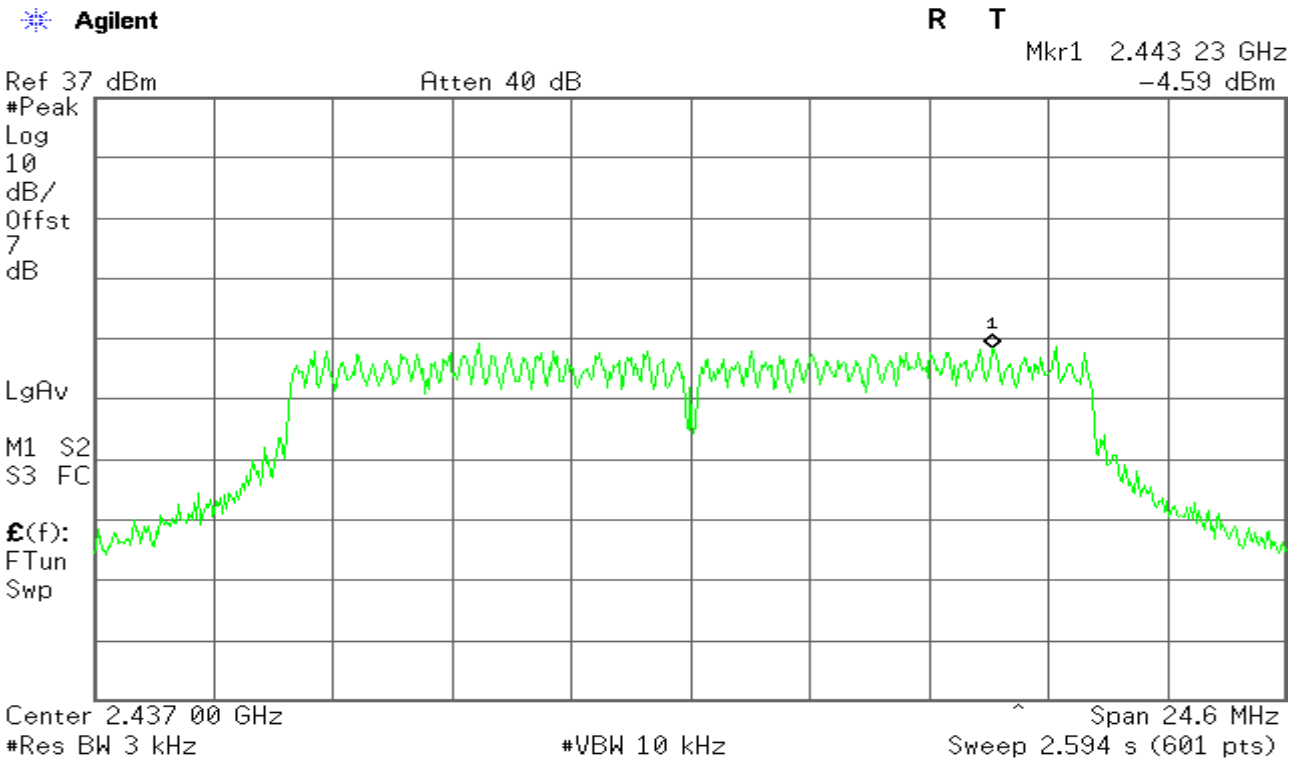
IEEE 802.11g mode/Chain 1

PPSD (CH Low)



PPSD (CH Mid)



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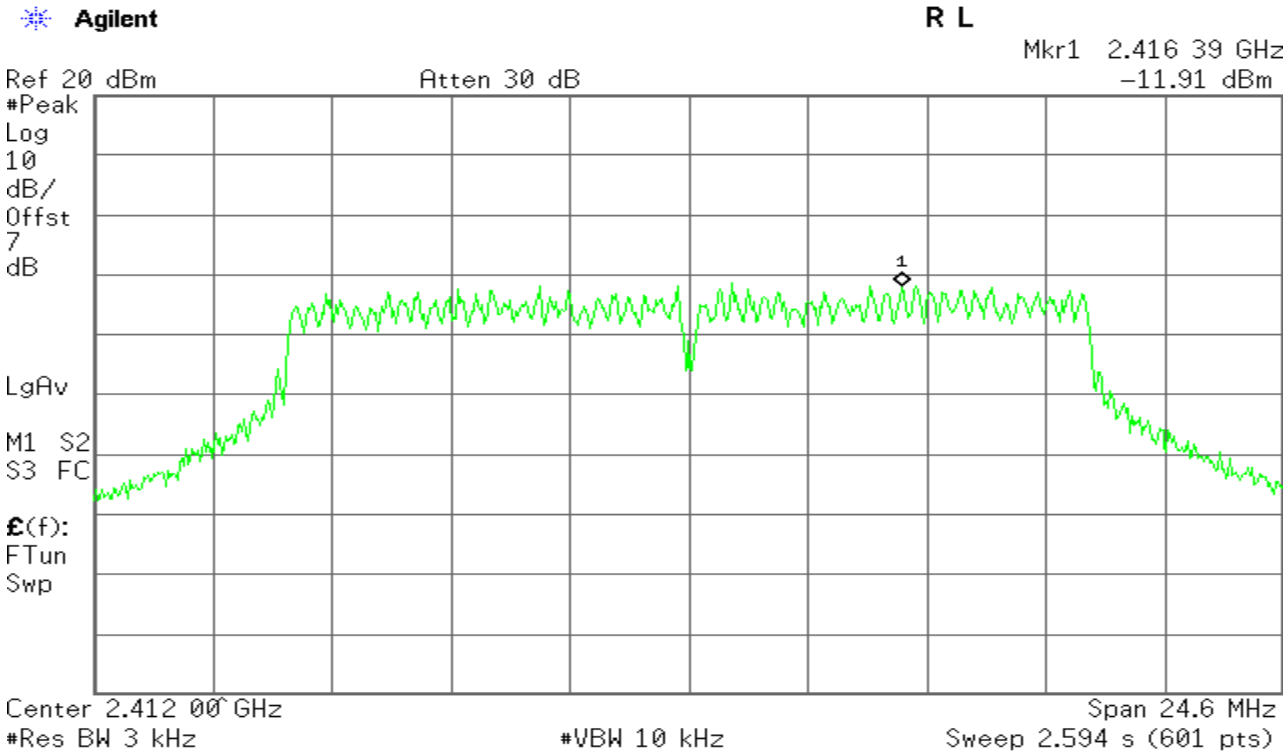
PPSD (CH High)

IEEE 802.11g mode/Chain 2

PPSD (CH Low)



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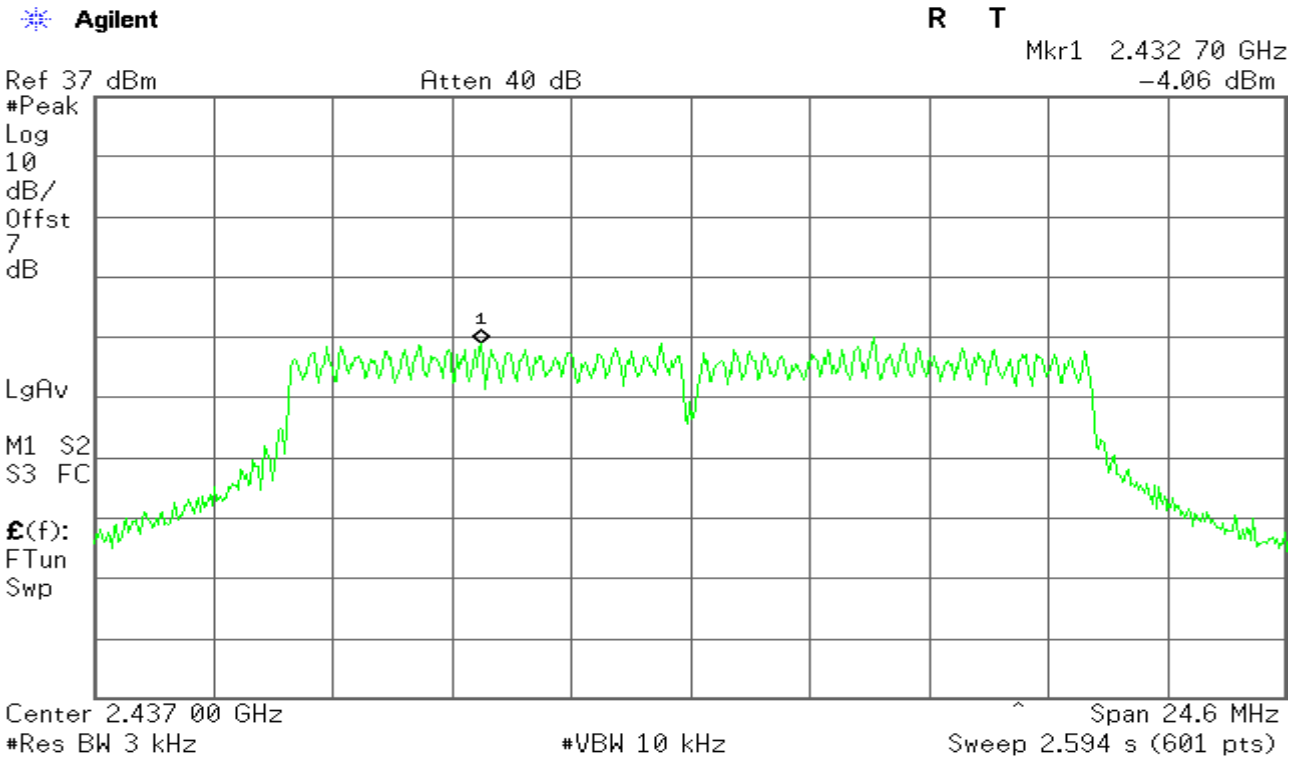
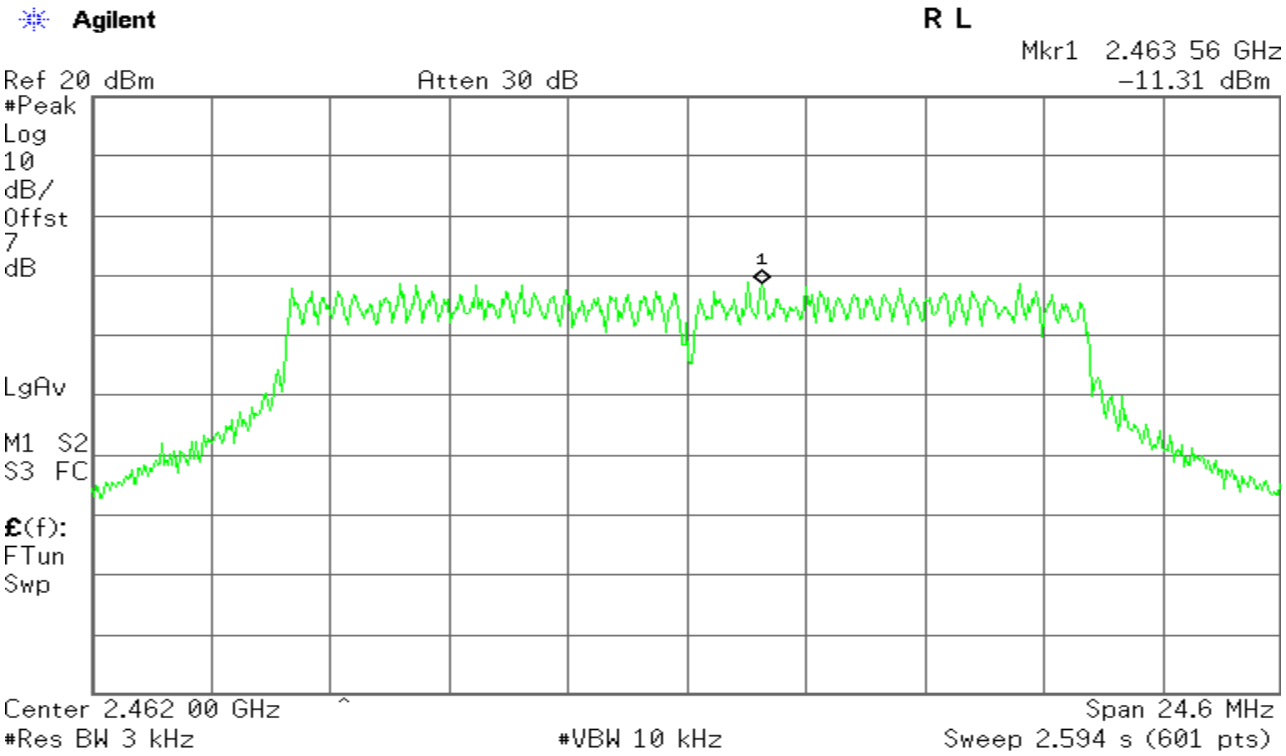
PPSD (CH Mid)



PPSD (CH High)



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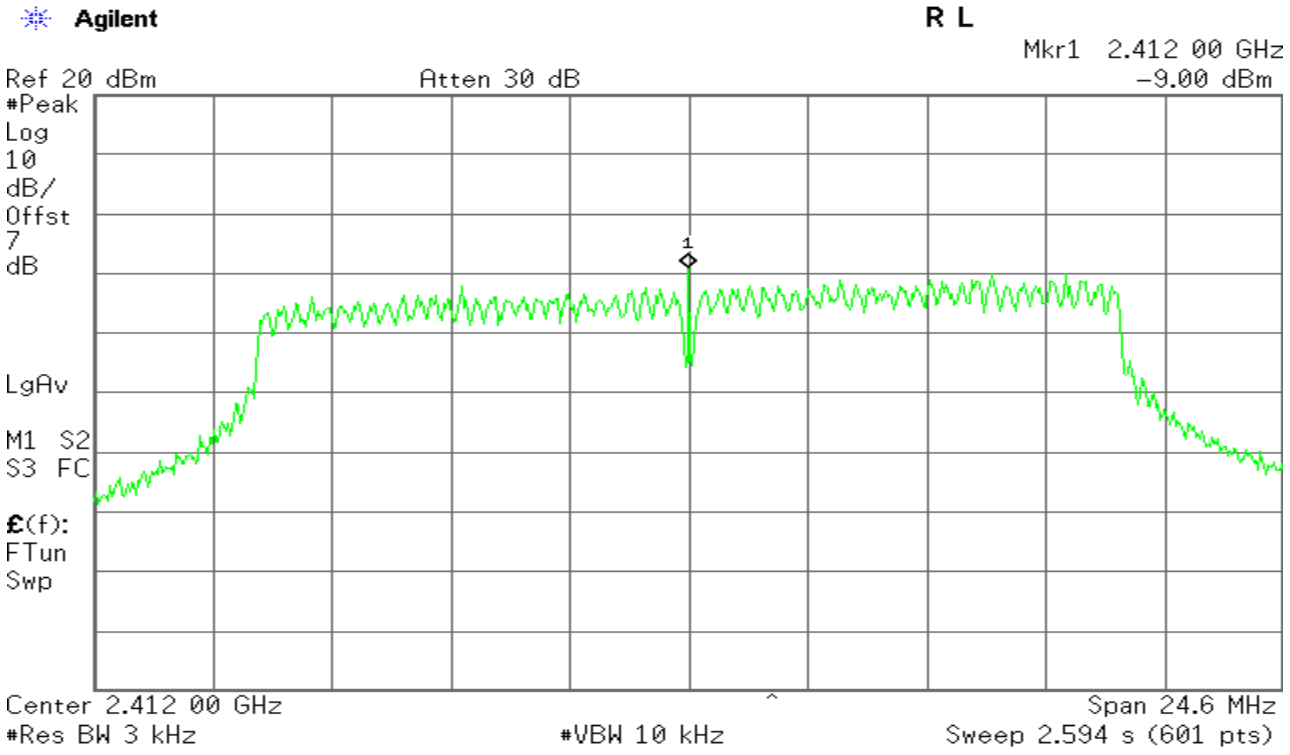
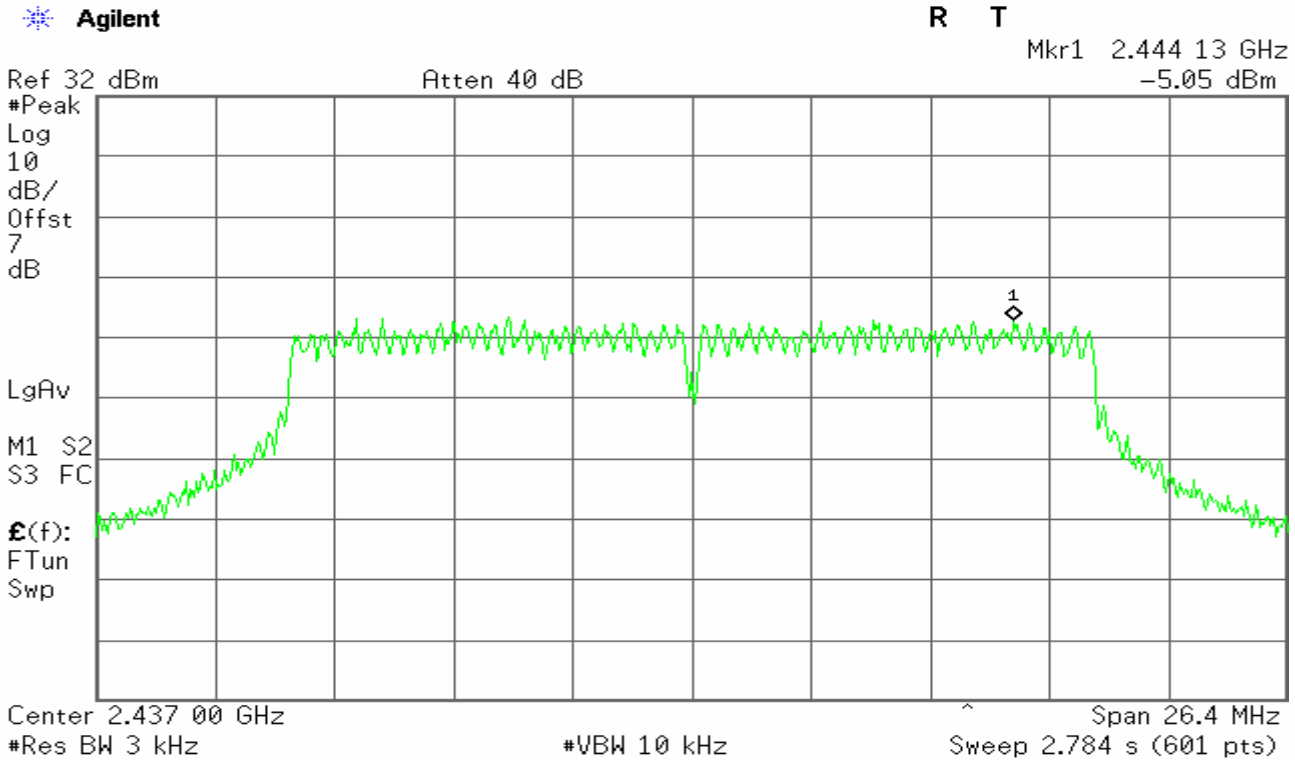
draft 802.11n Standard-20 MHz Channel mode / Chain 0

PPSD (CH Low)



PPSD (CH Mid)



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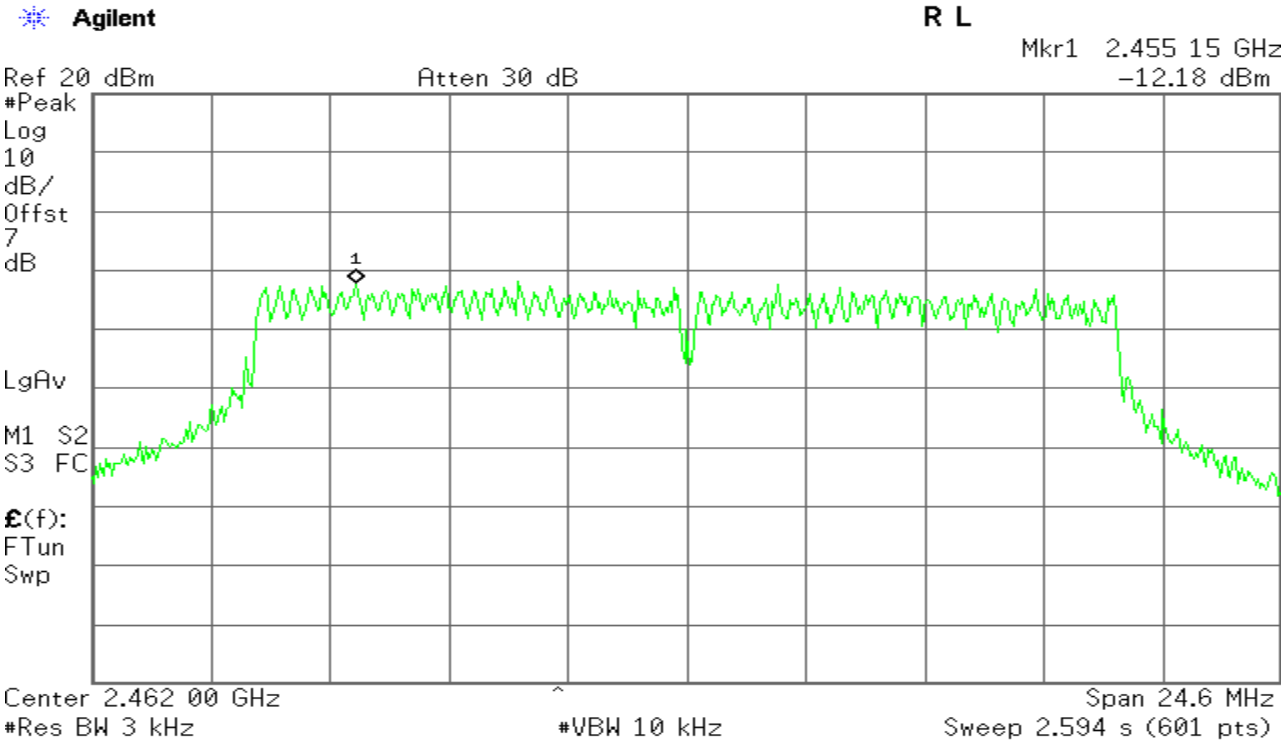
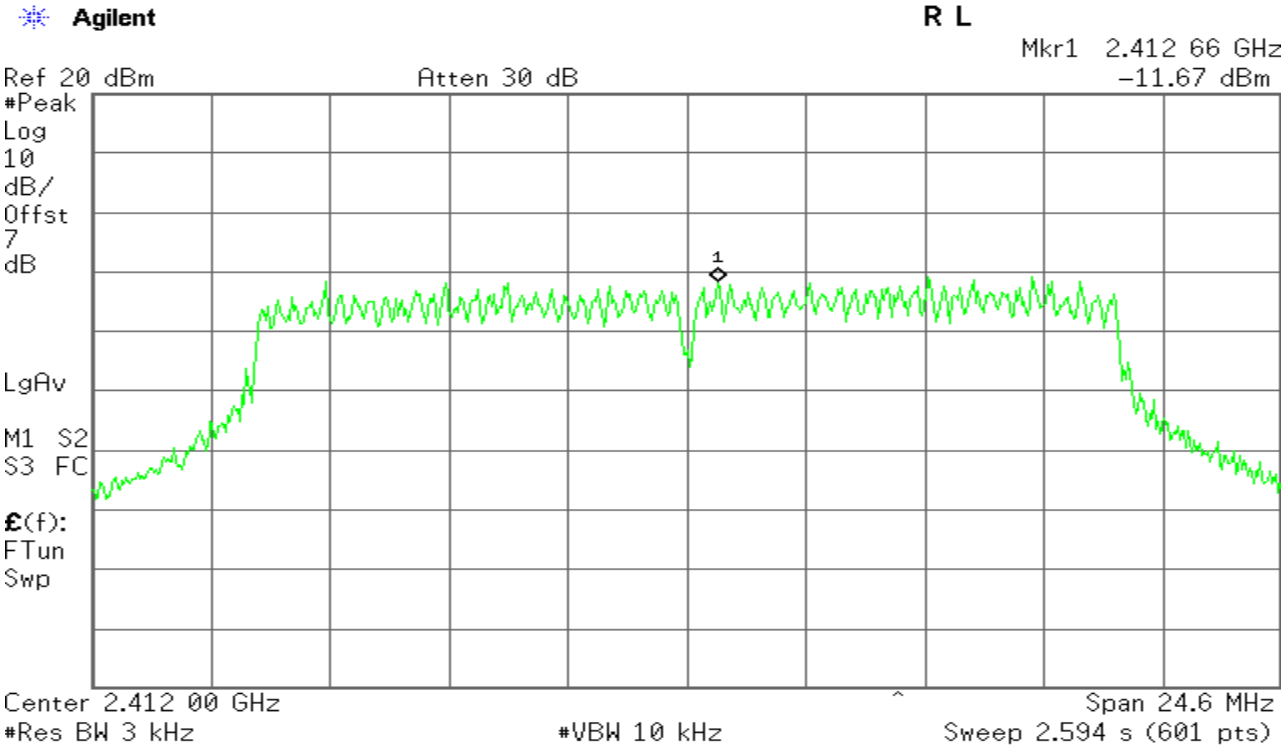
PPSD (CH High)



draft 802.11n Standard-20 MHz Channel mode / Chain 1

PPSD (CH Low)



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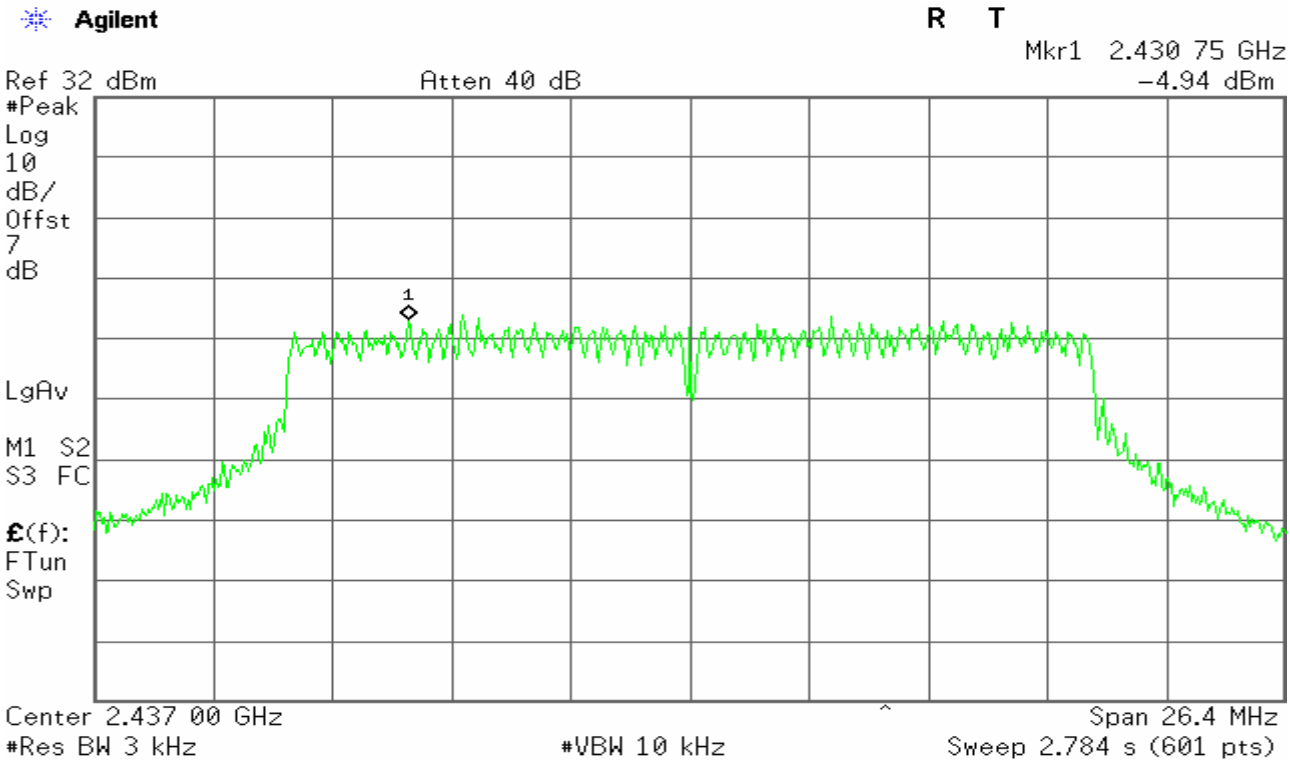
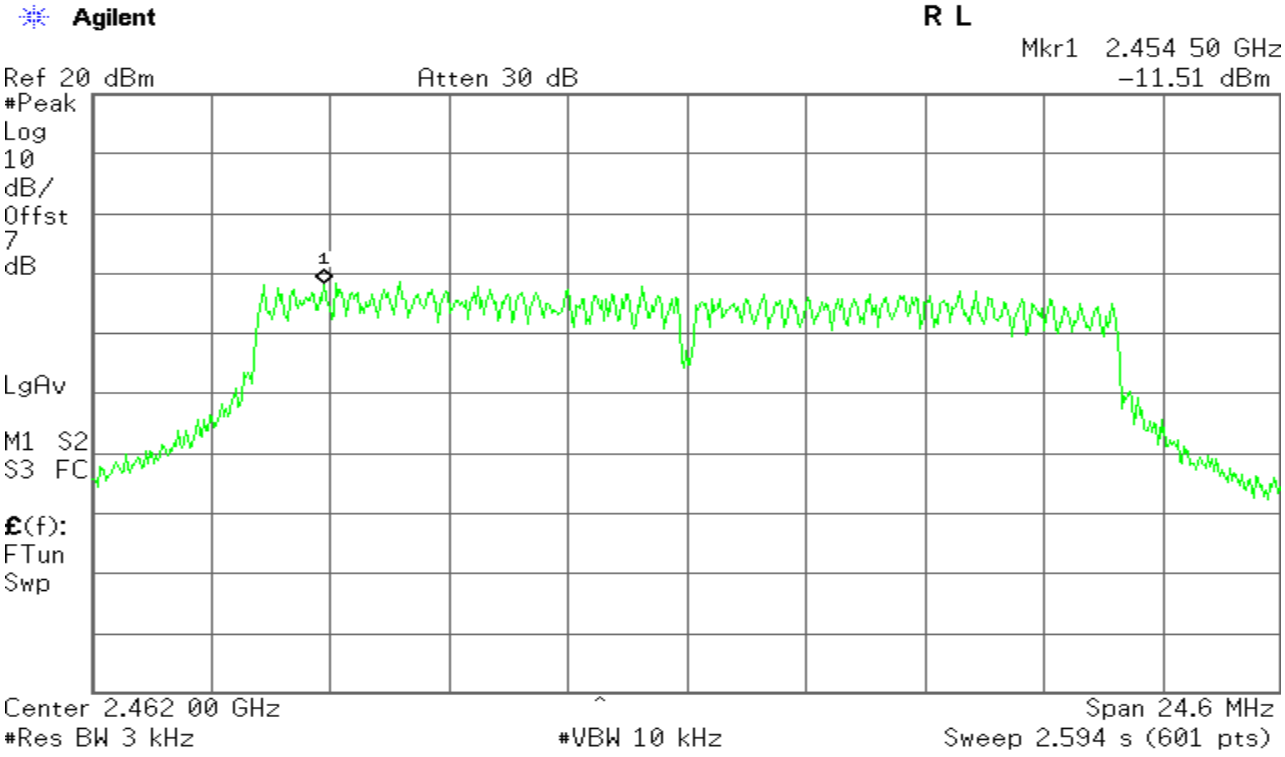
PPSD (CH Mid)



PPSD (CH High)



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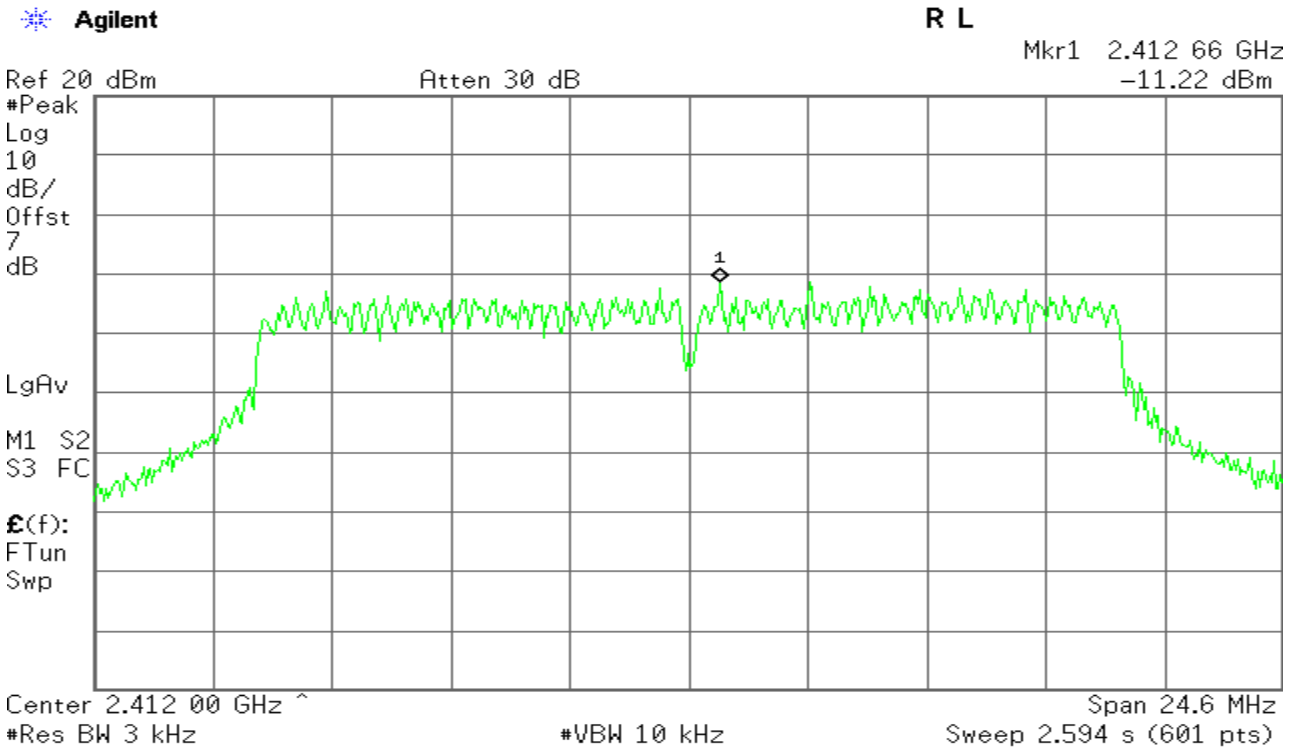
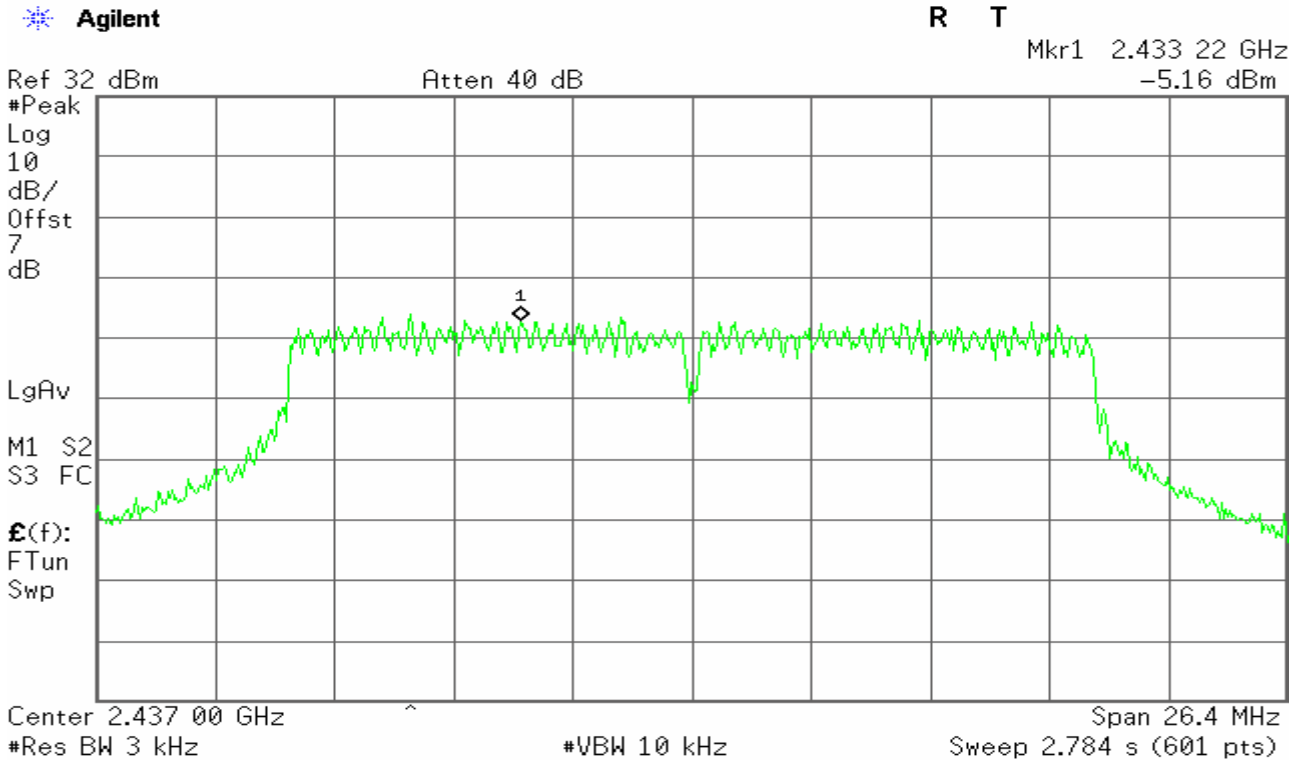
draft 802.11n Standard-20 MHz Channel mode / Chain 2

PPSD (CH Low)



PPSD (CH Mid)



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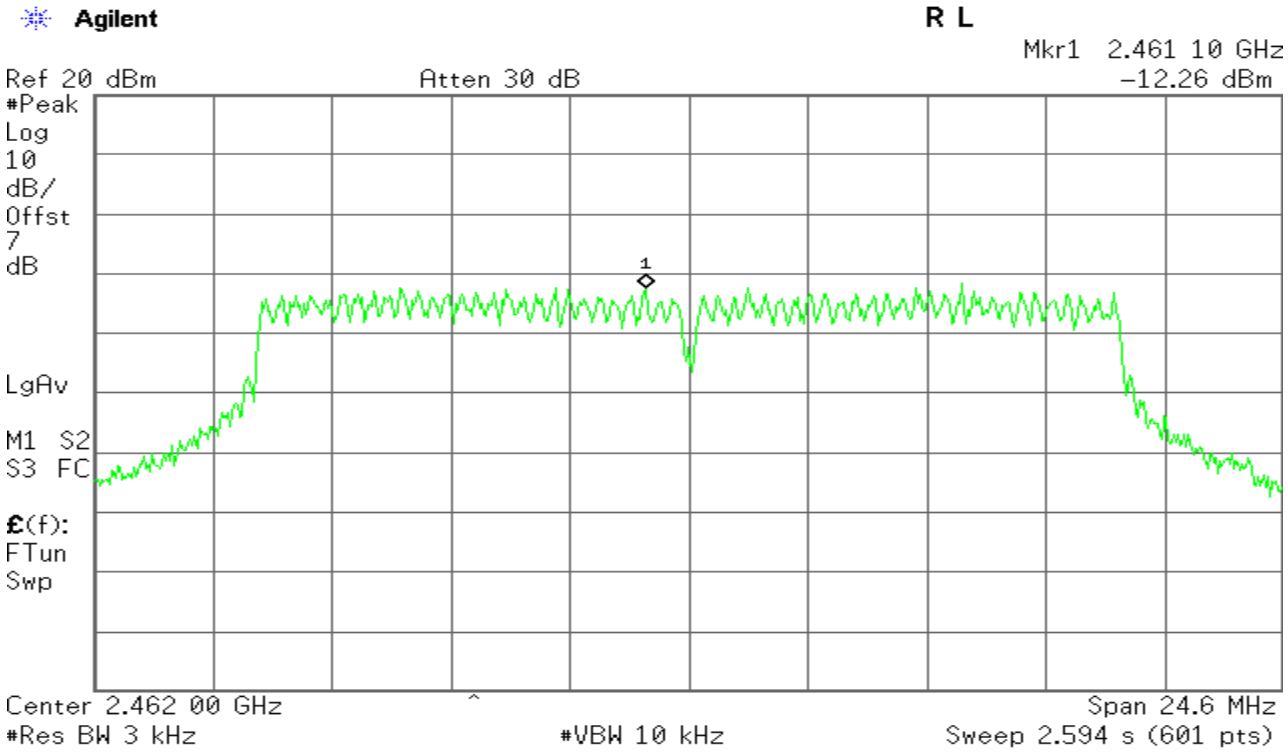
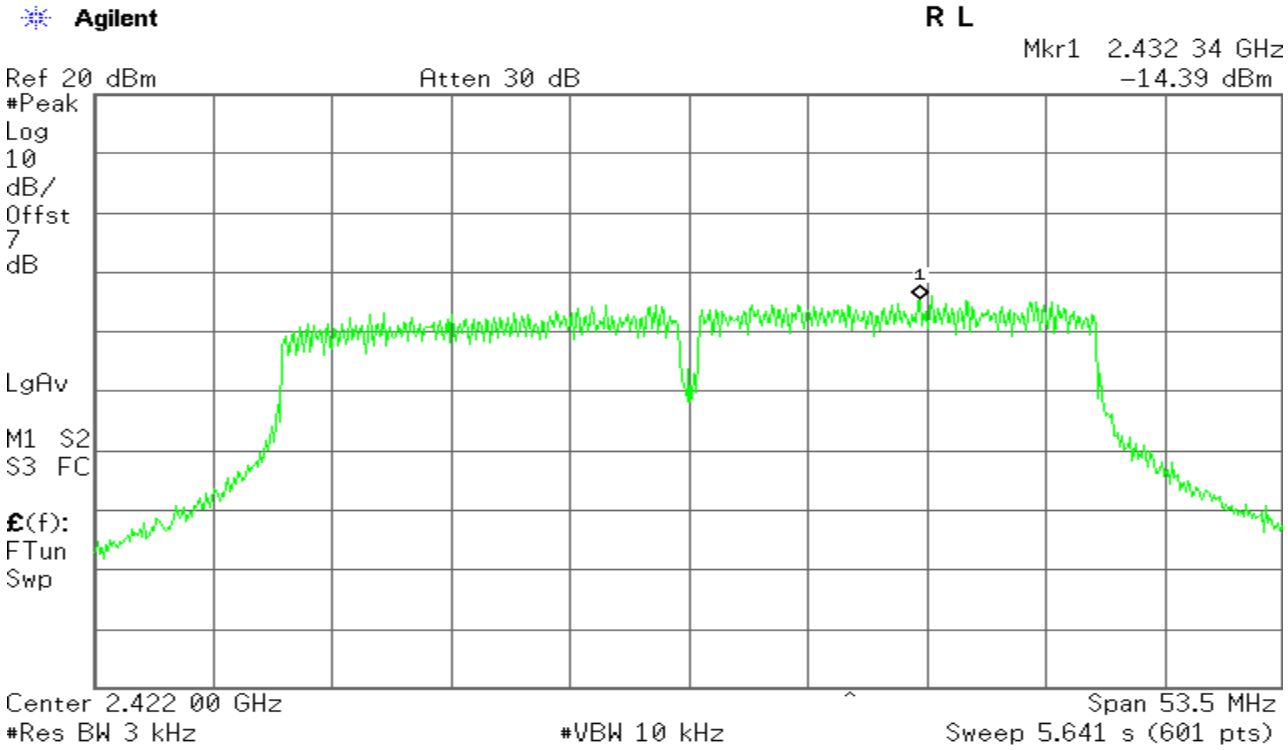
PPSD (CH High)



draft 802.11n wide-40 MHz Channel mode / Chain 0

PPSD (CH Low)



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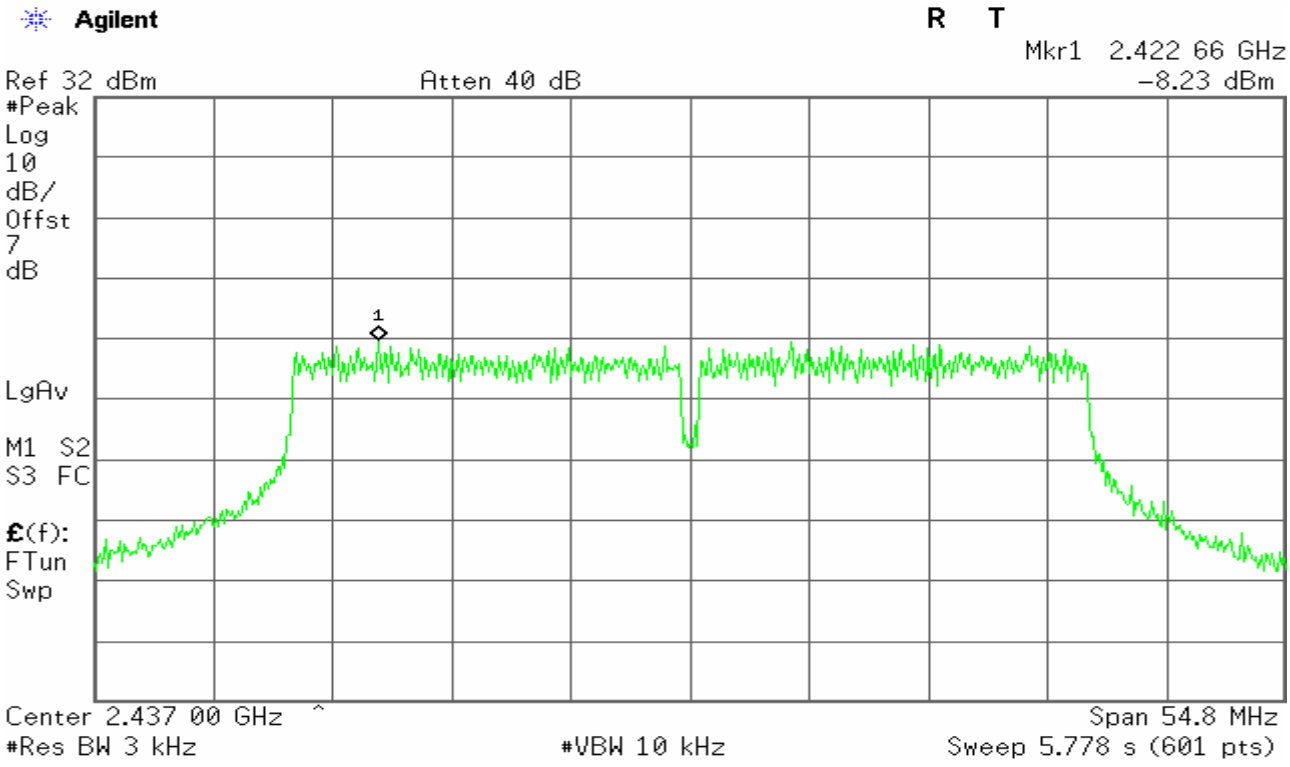
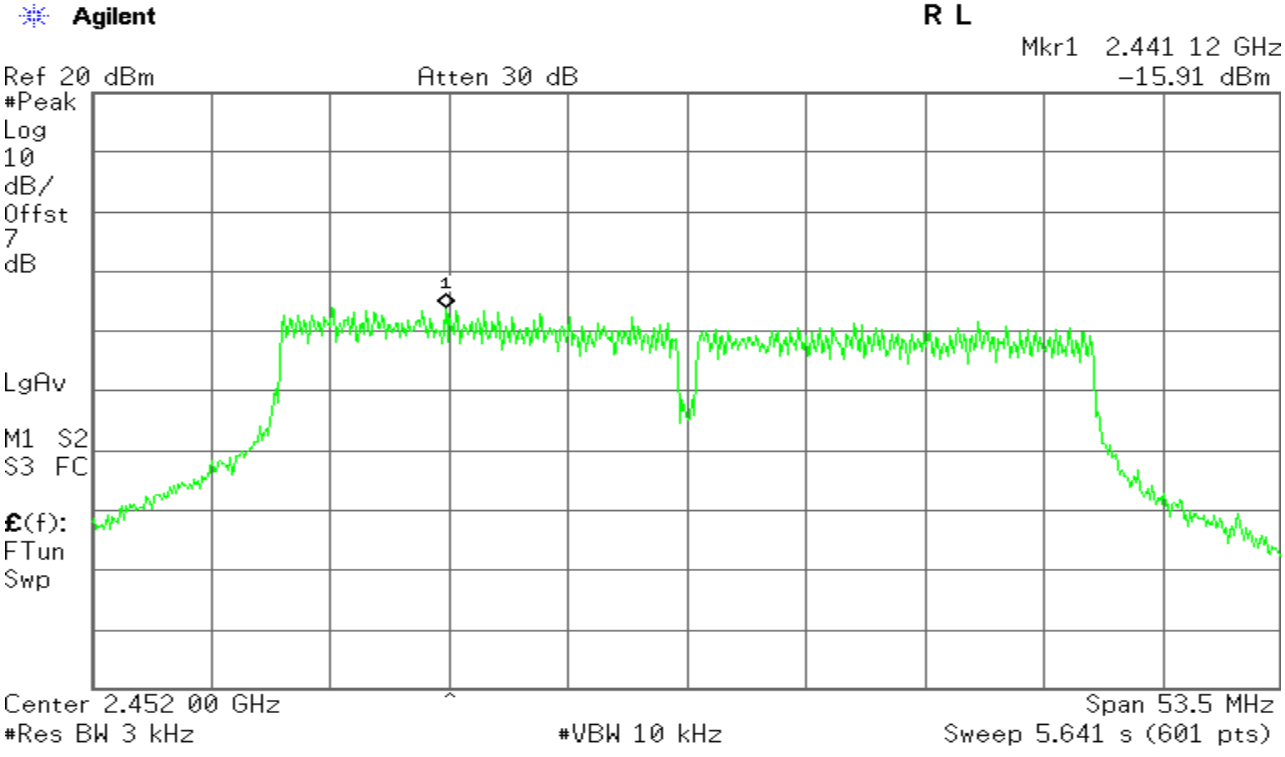
PPSD (CH Mid)



PPSD (CH High)



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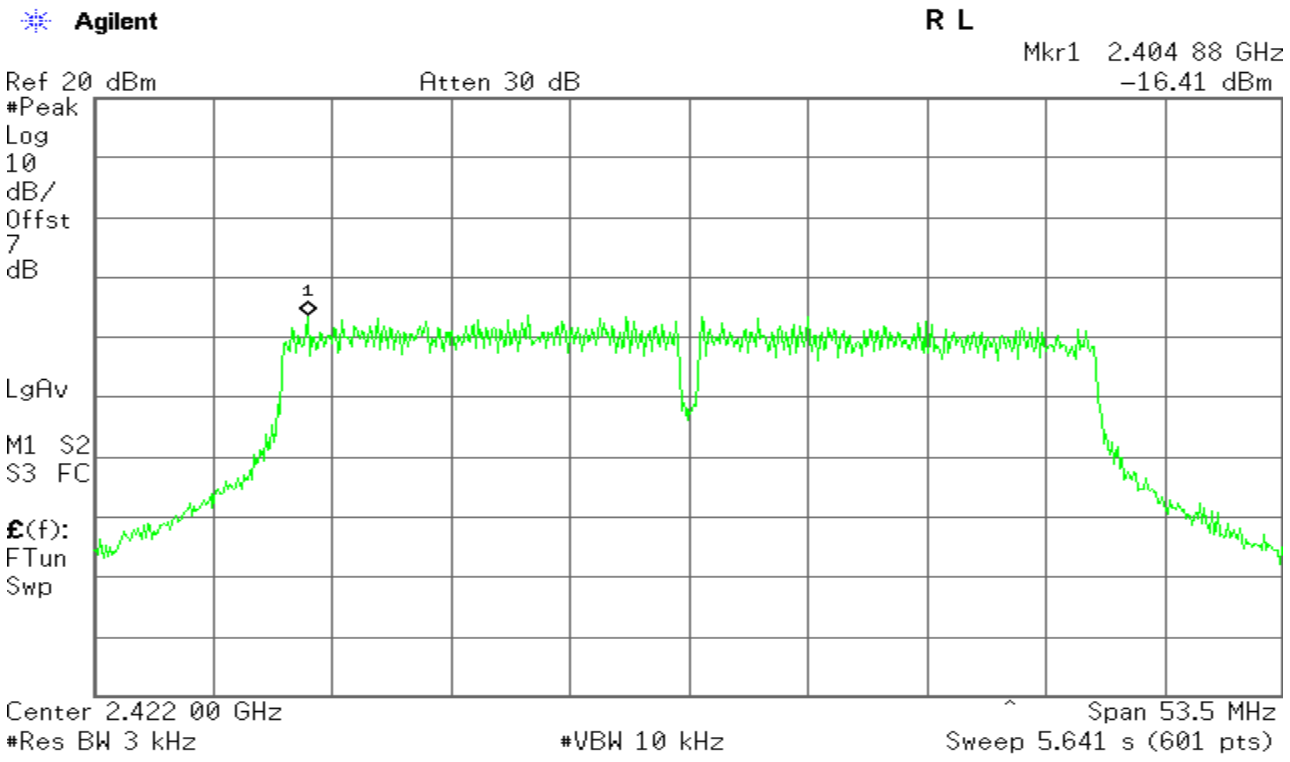
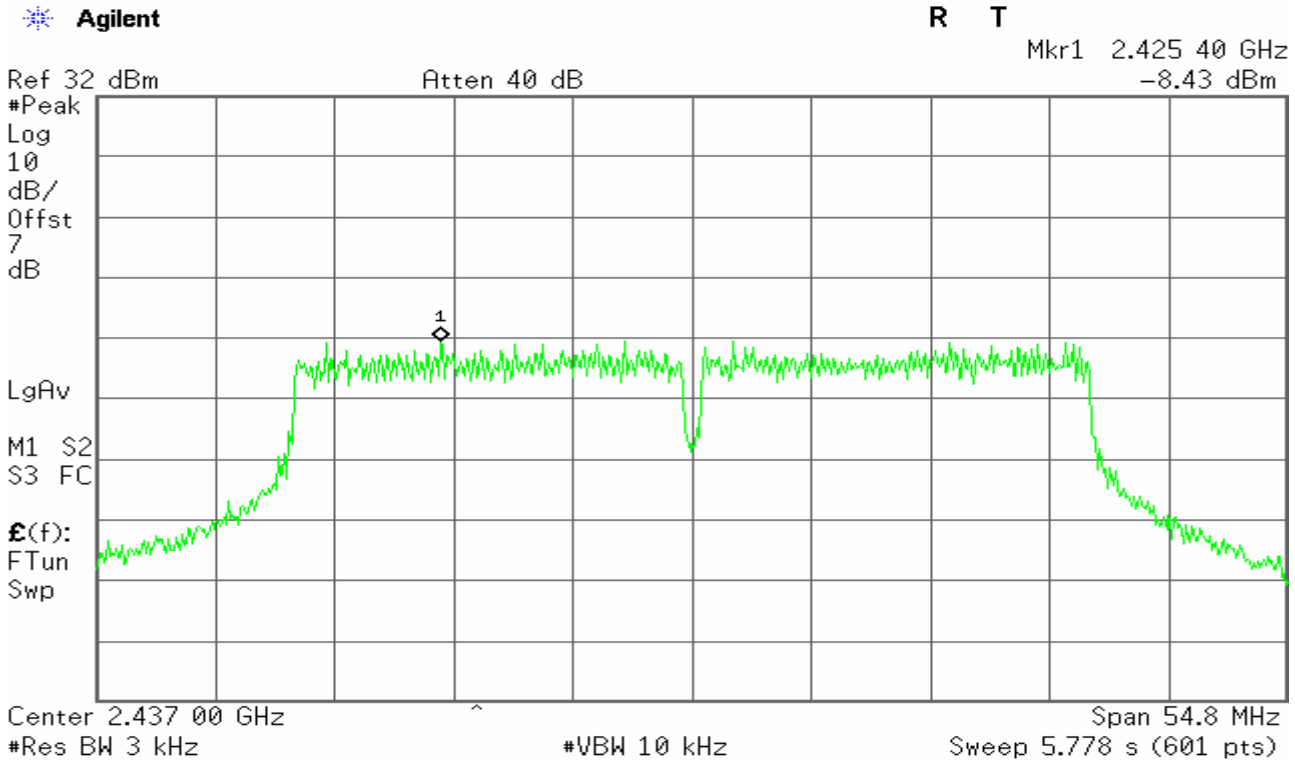
draft 802.11n wide-40 MHz Channel mode / Chain 1

PPSD (CH Low)



PPSD (CH Mid)



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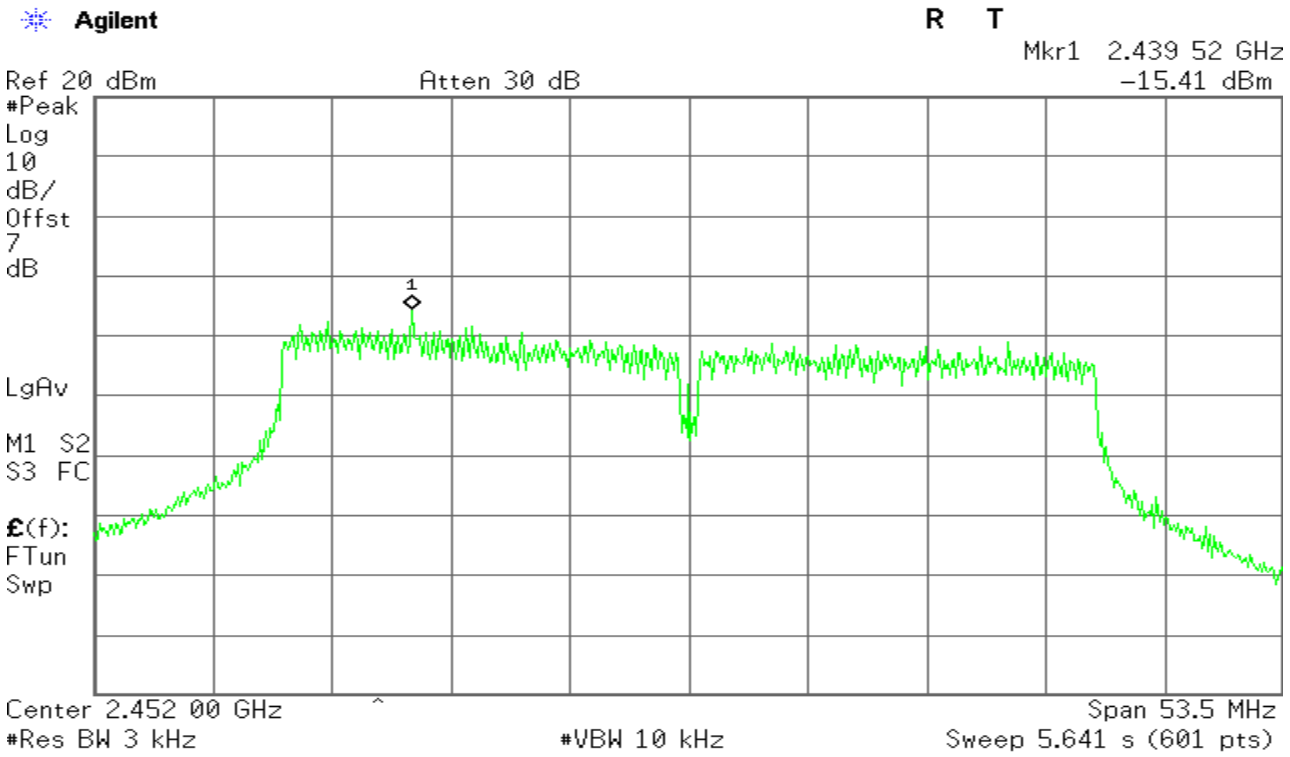
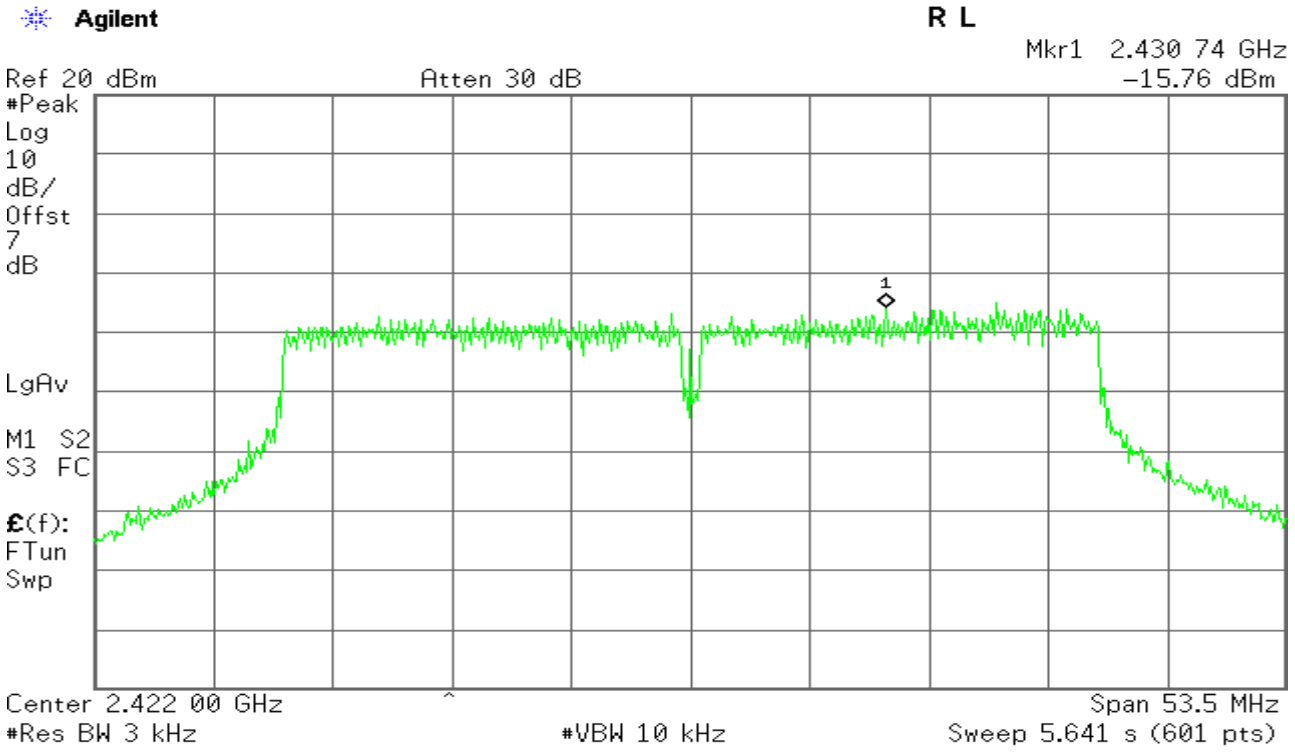
PPSD (CH High)



draft 802.11n wide-40 MHz Channel mode / Chain 2

PPSD (CH Low)



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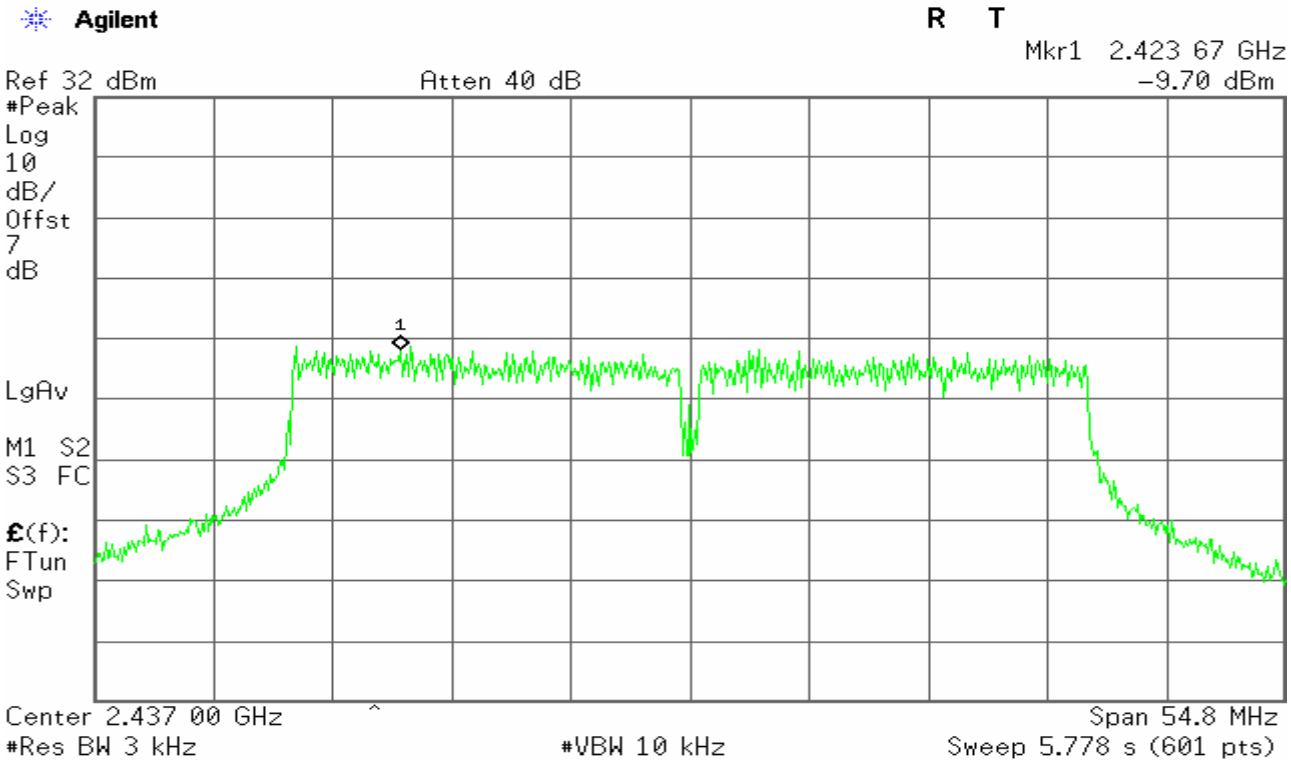
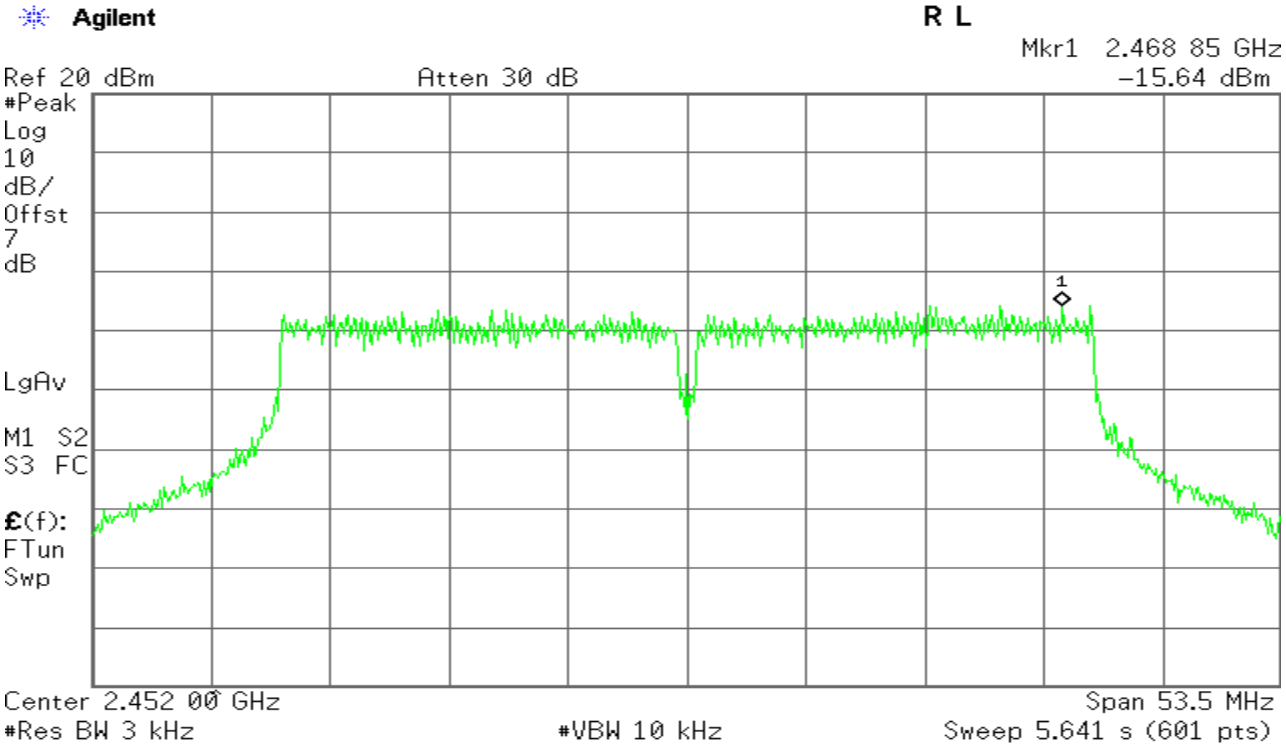
PPSD (CH Mid)



PPSD (CH High)



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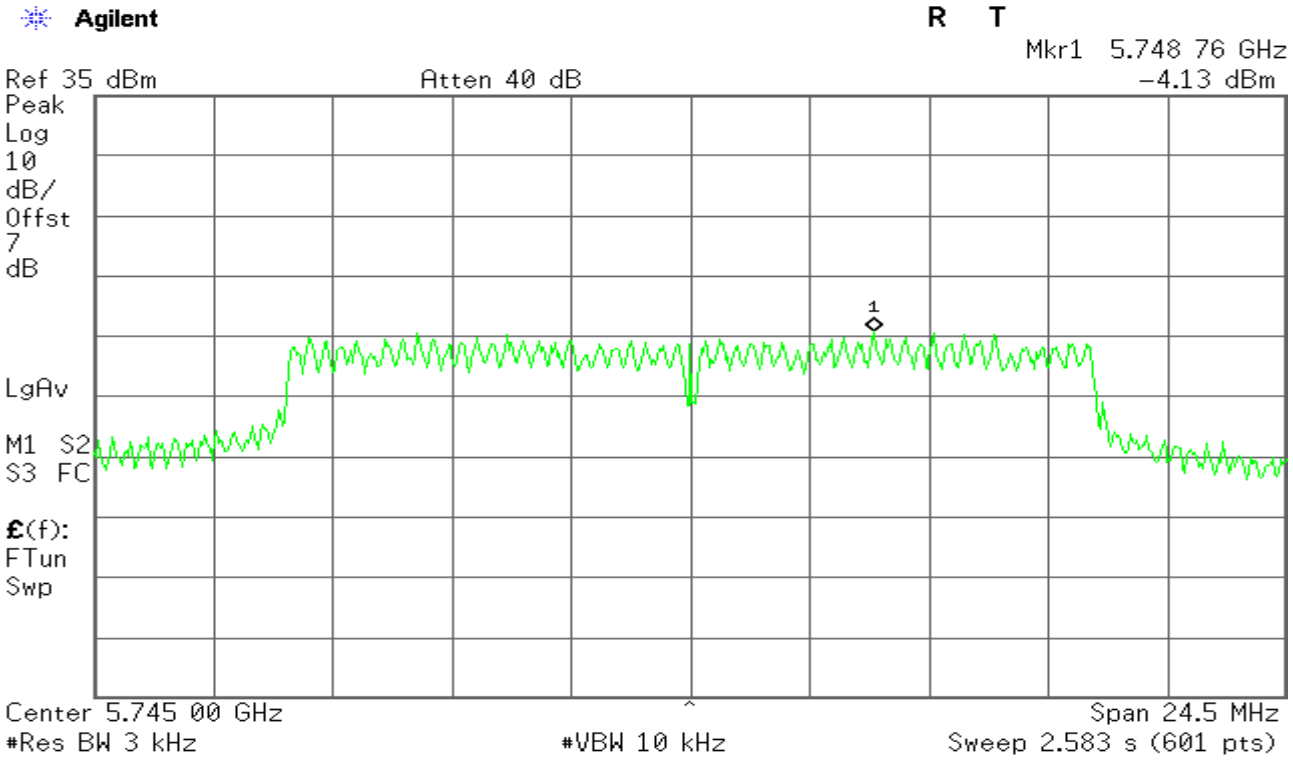
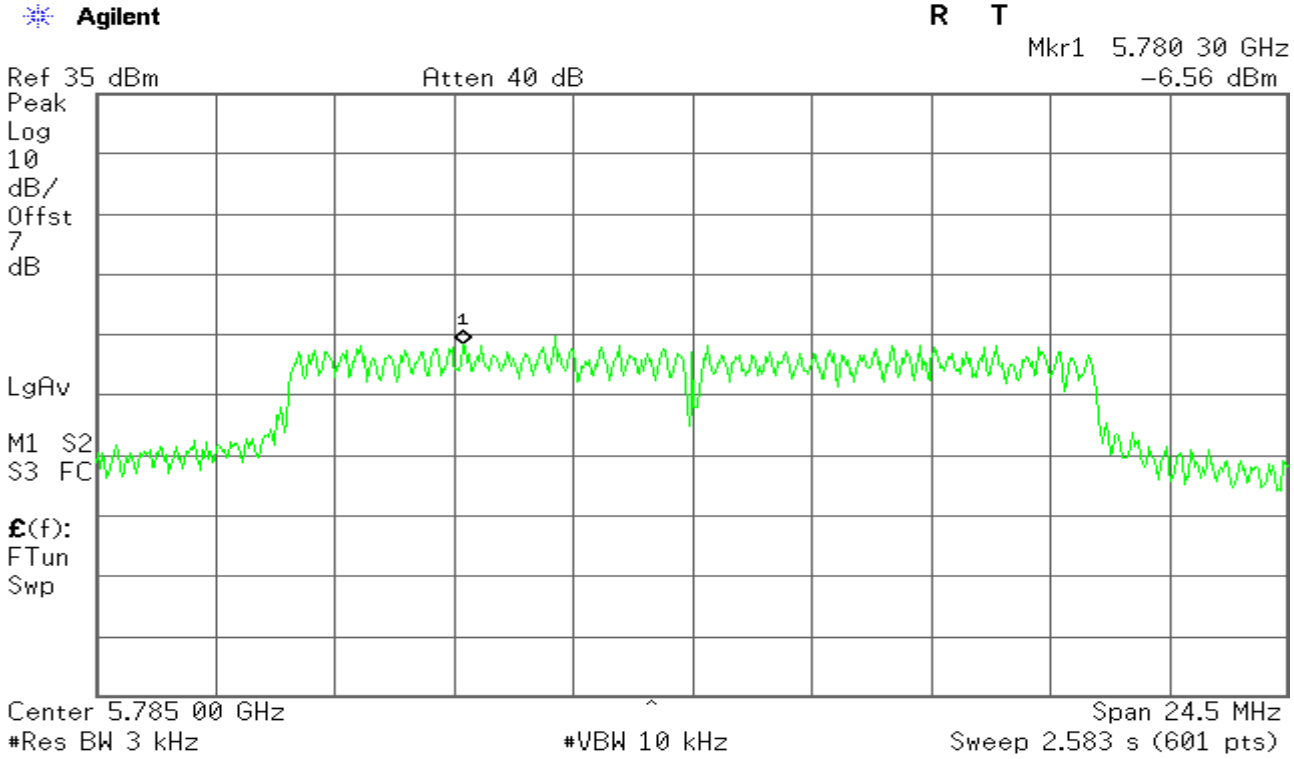
IEEE 802.11a mode/chain 0

CH Low



CH Mid



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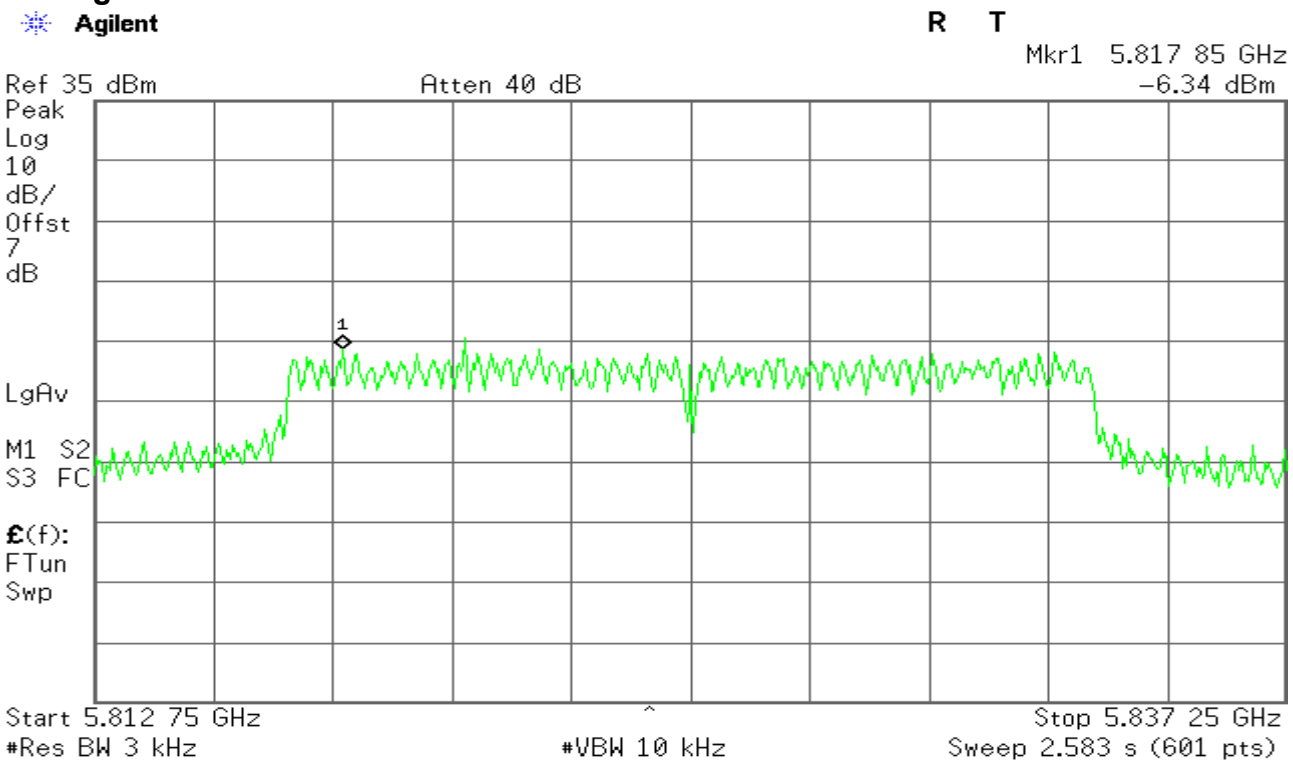
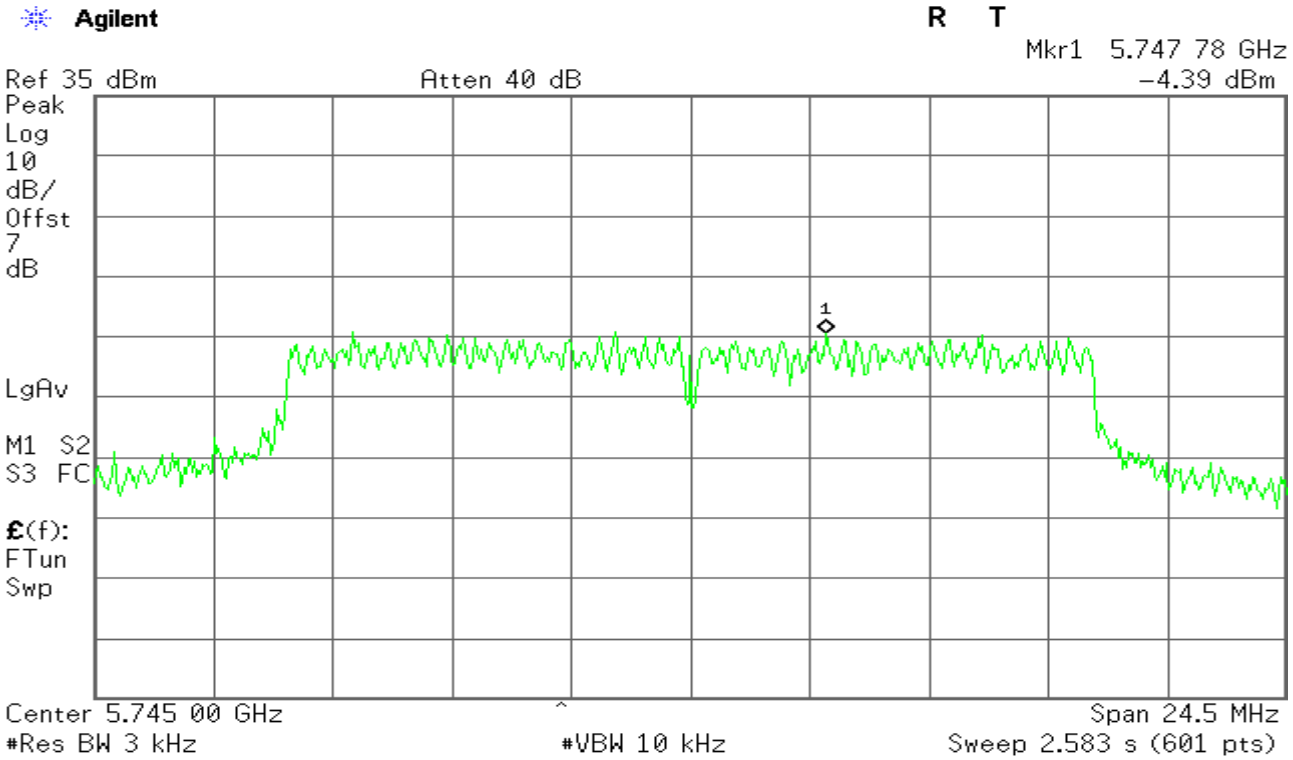
CH High



<u>IEEE 802.11a mode/chain 1</u>

CH Low



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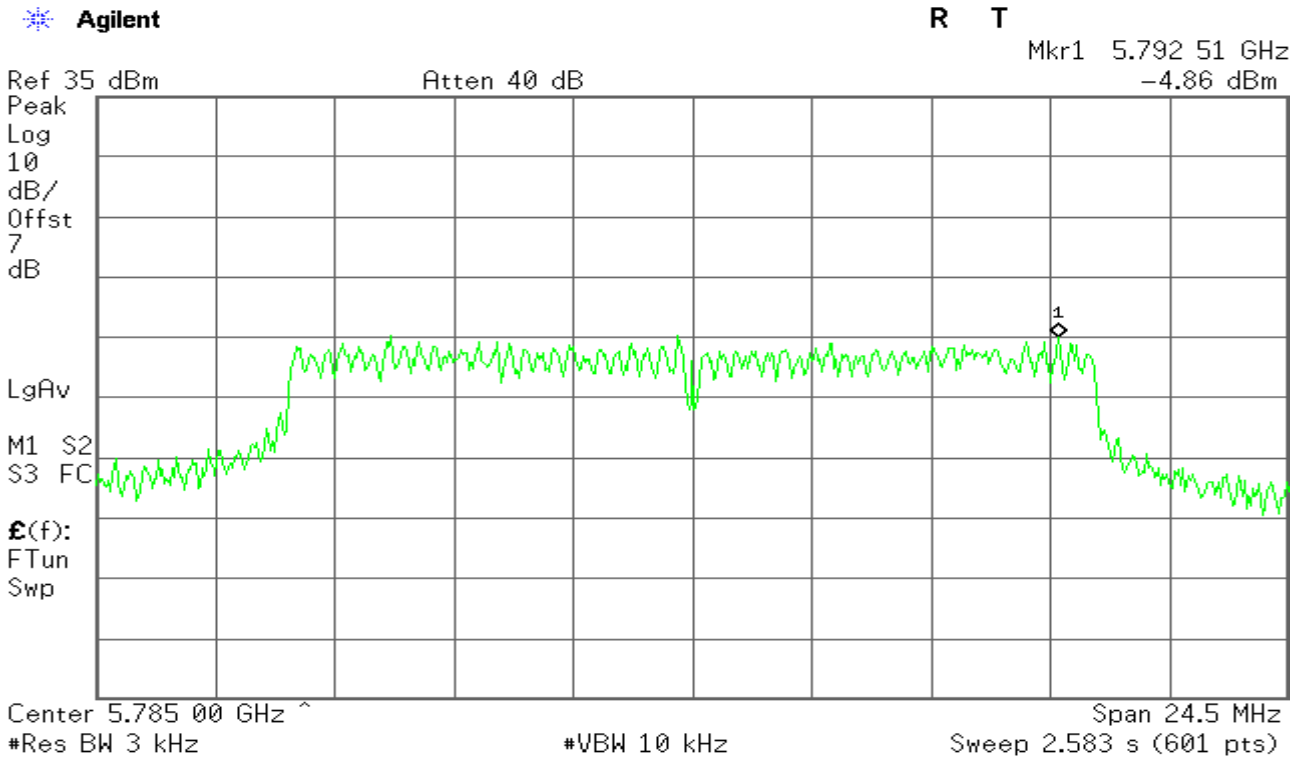
CH Mid



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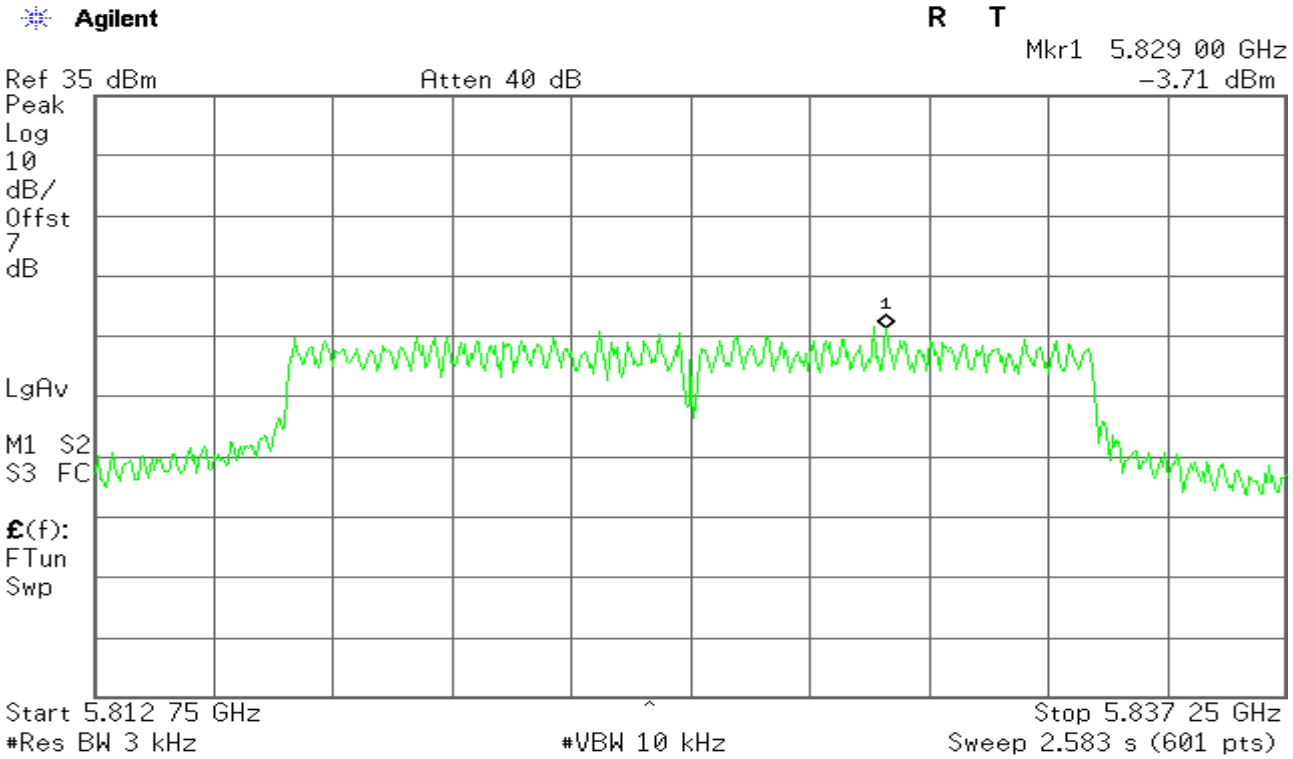

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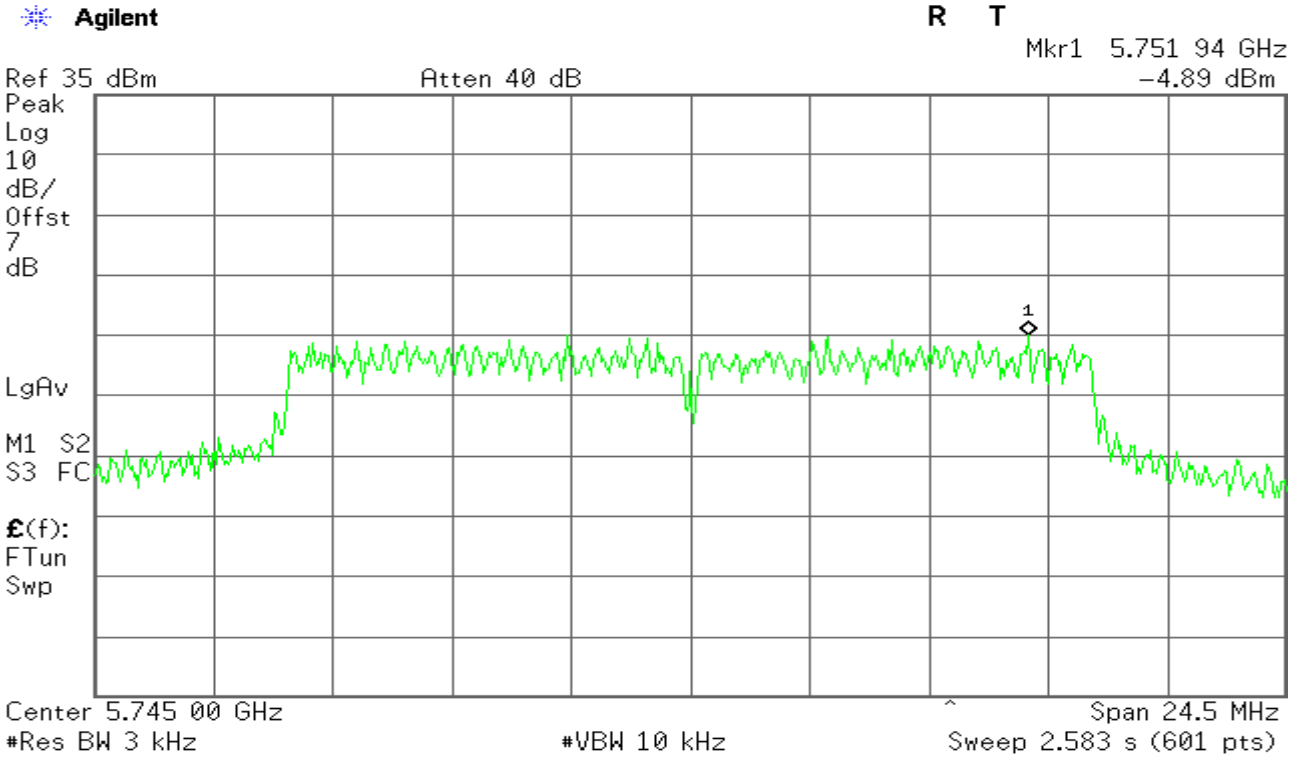
IEEE 802.11a mode/chain 2

CH Low



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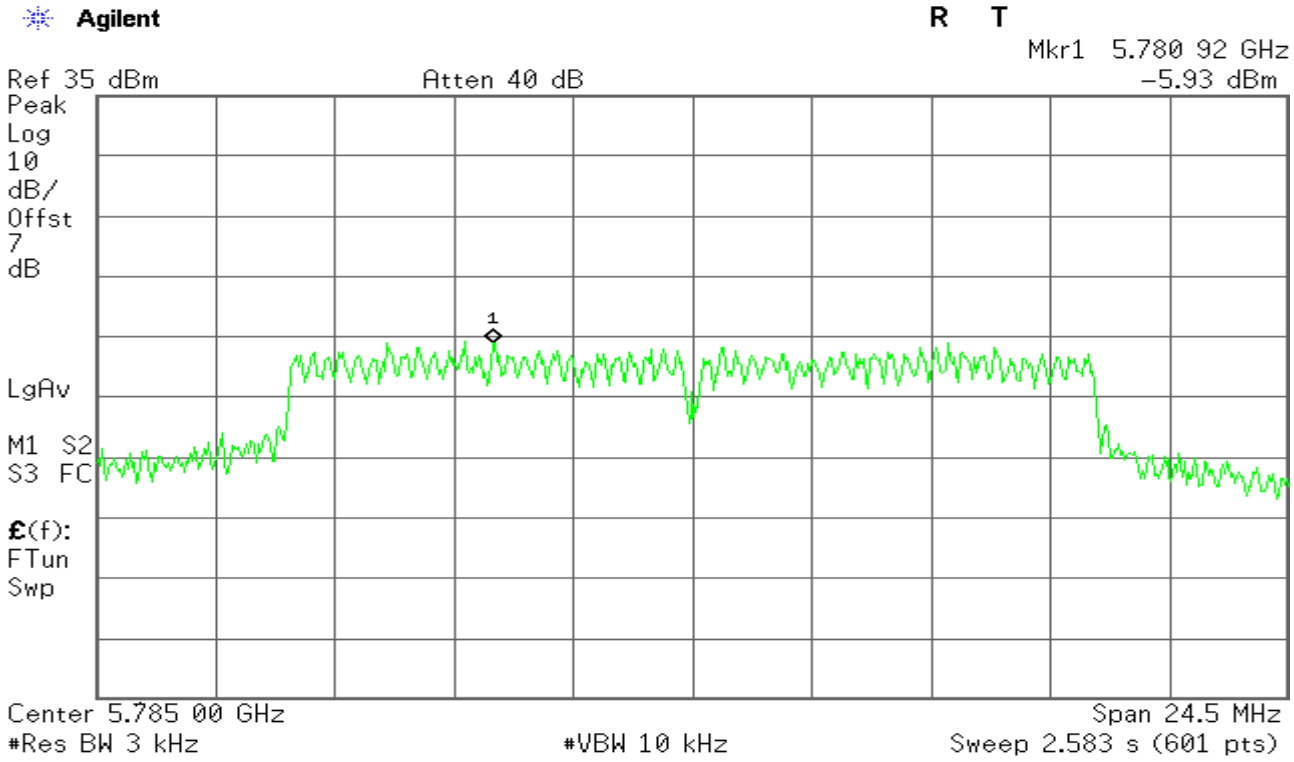

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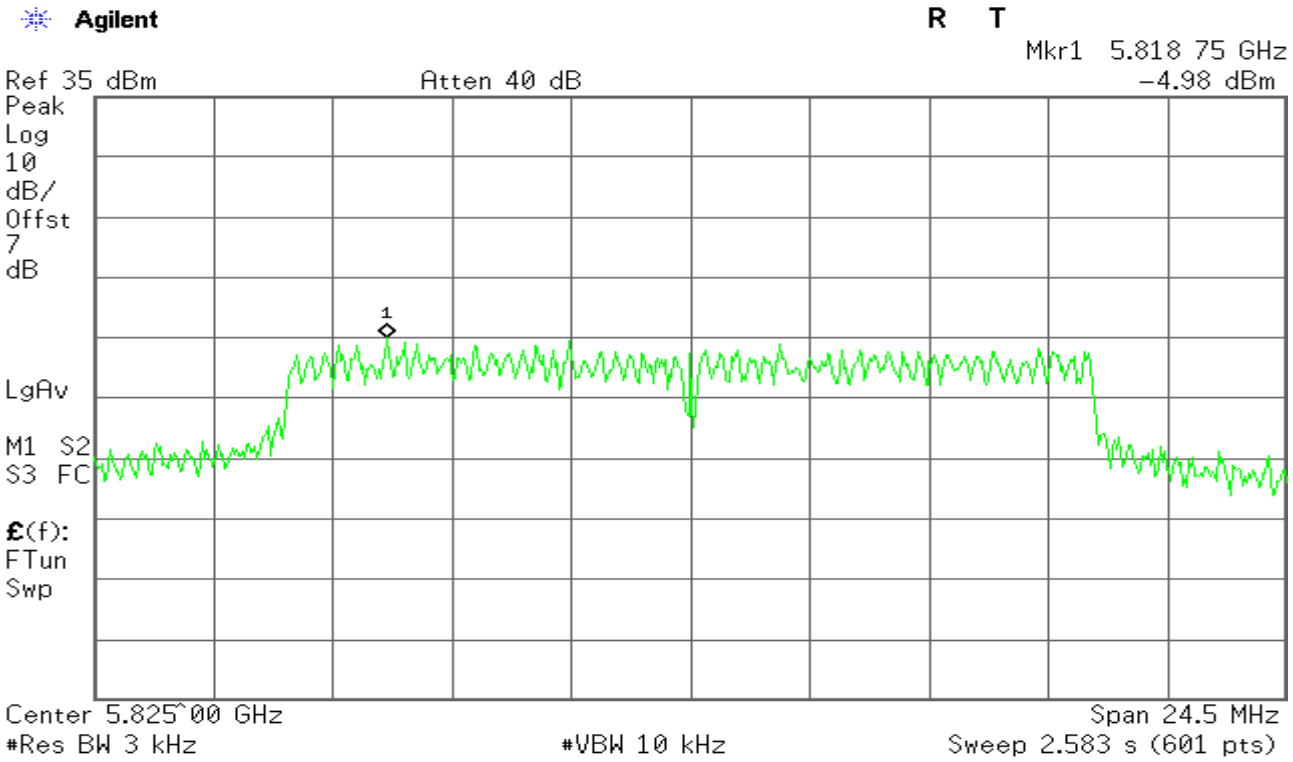
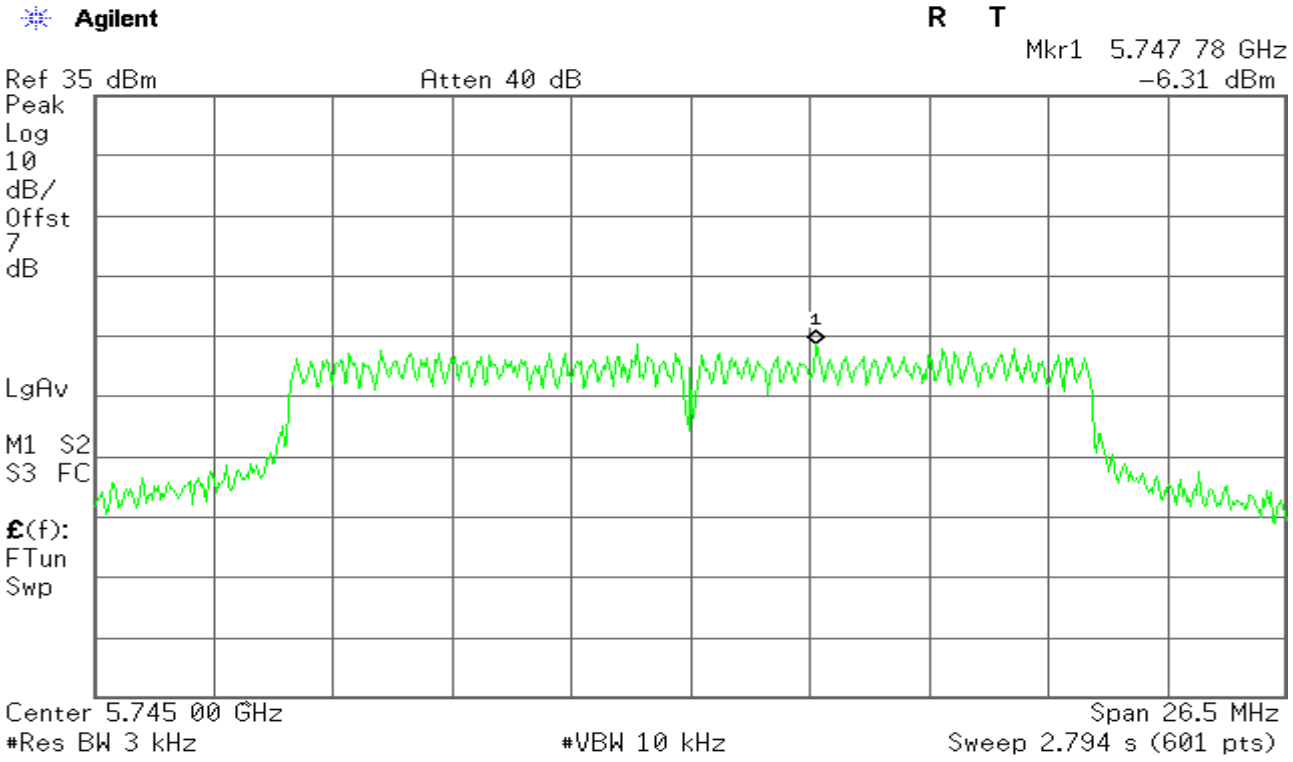
CH High



draft 802.11n Standard-20 MHz Channel mode / Chain 0

CH Low



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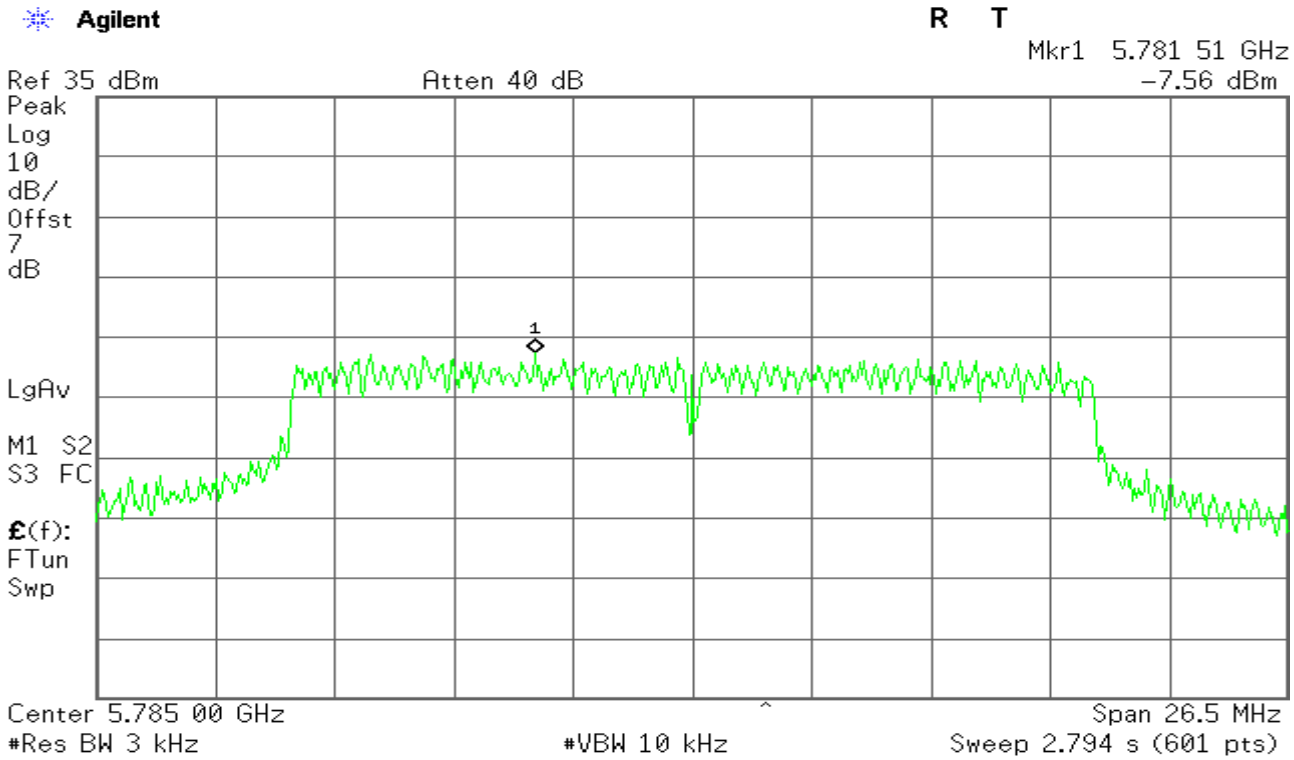

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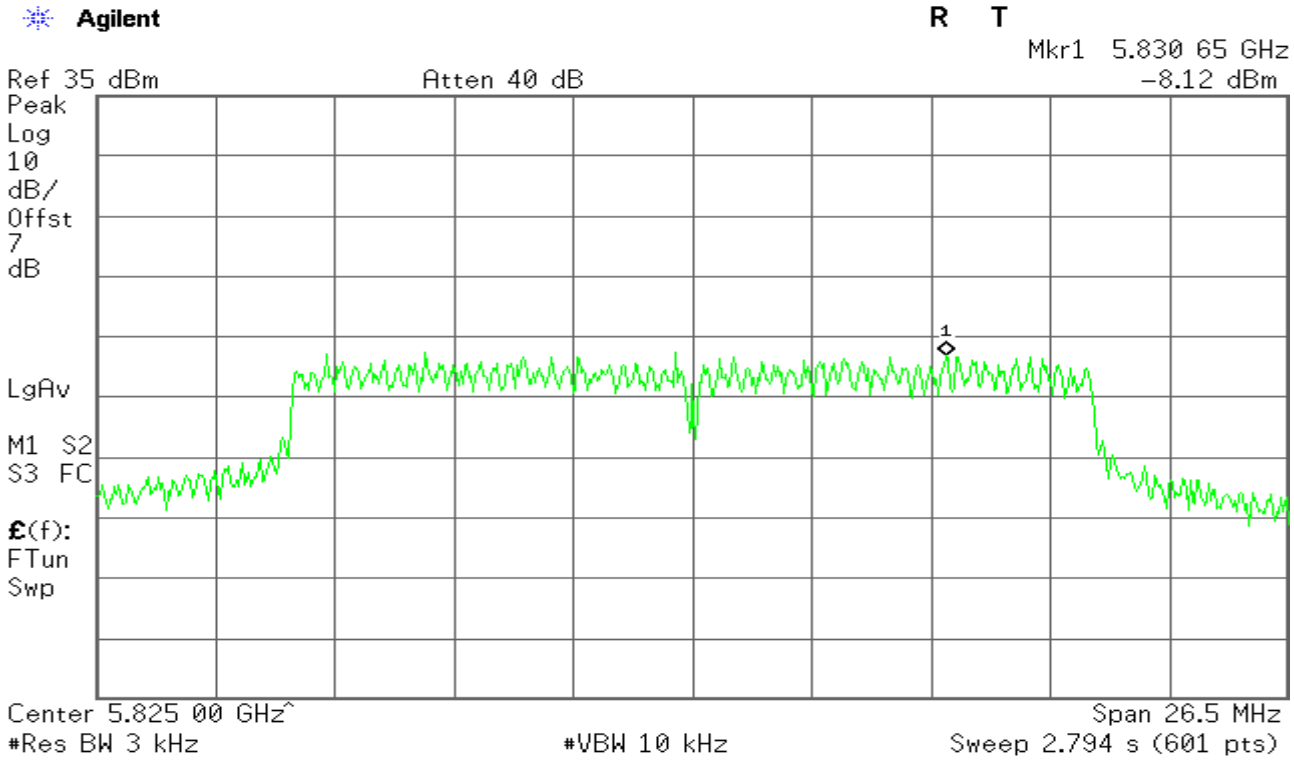

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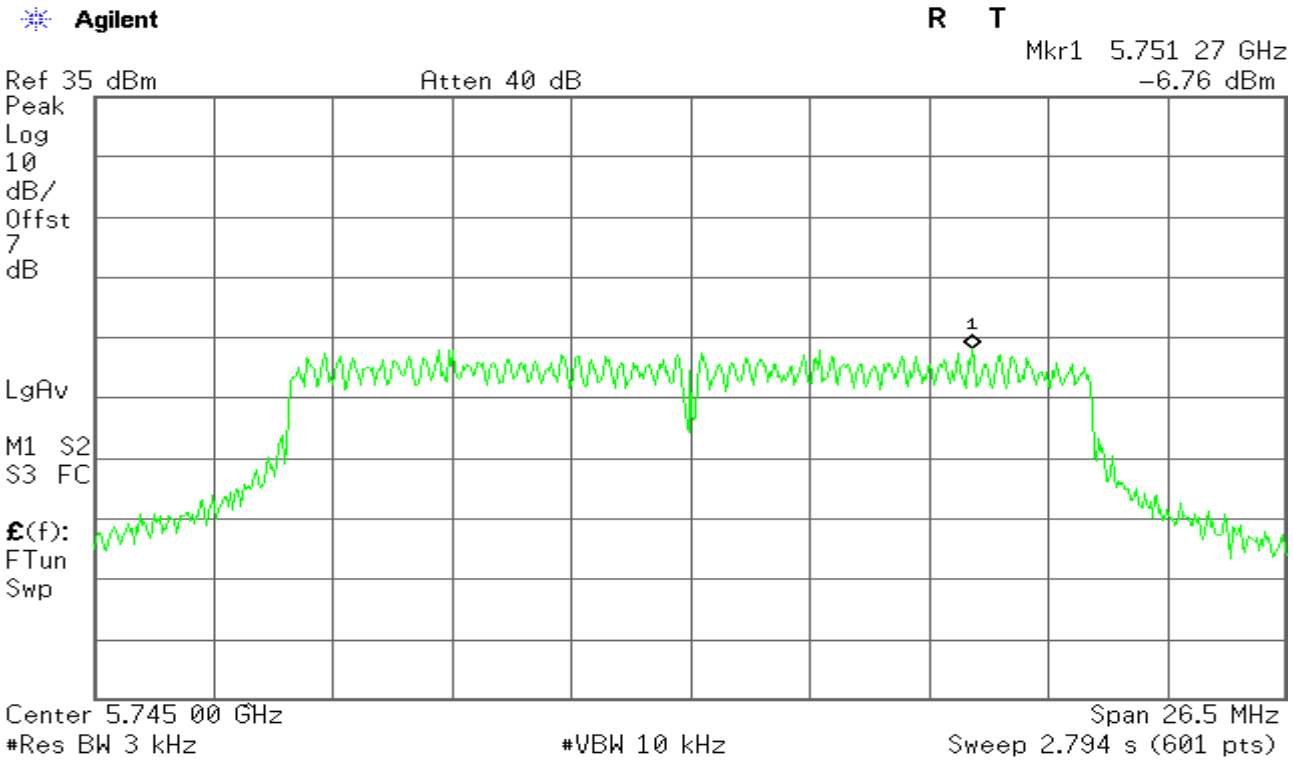
draft 802.11n Standard-20 MHz Channel mode / Chain 1

CH Low



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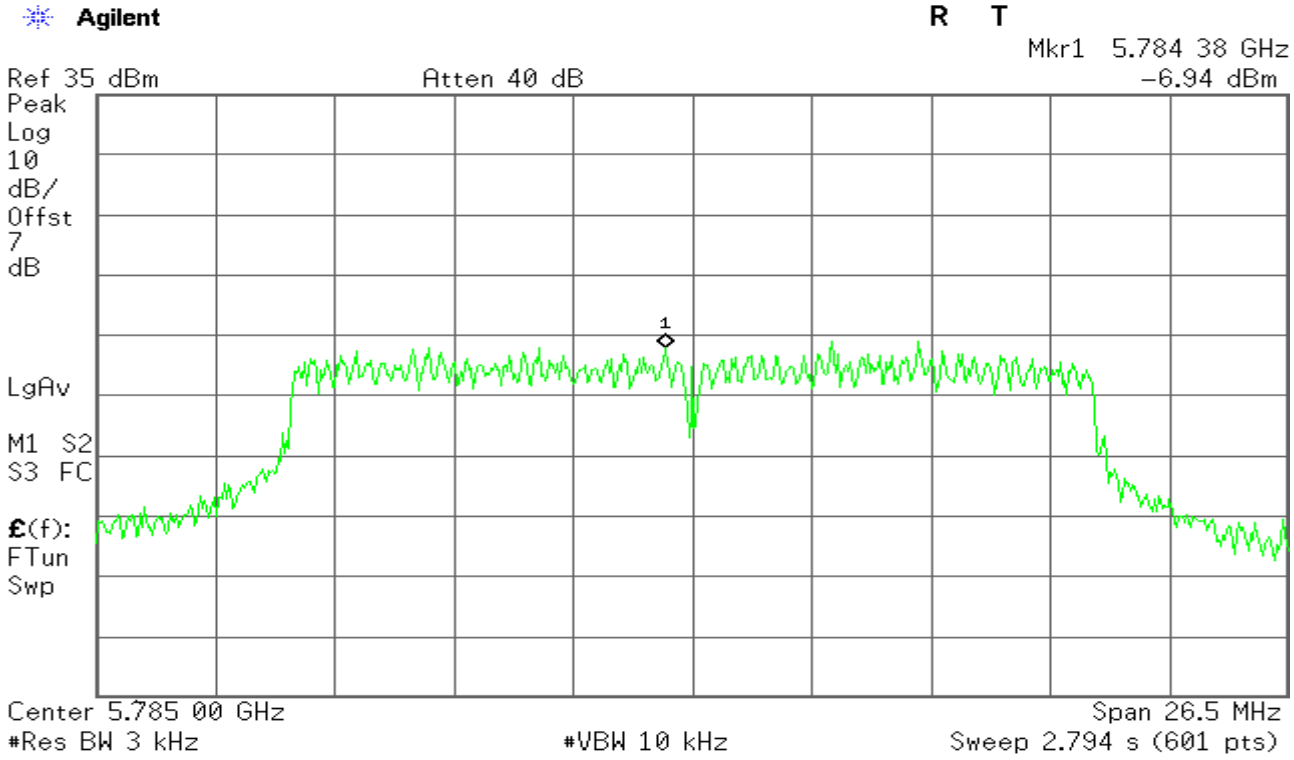

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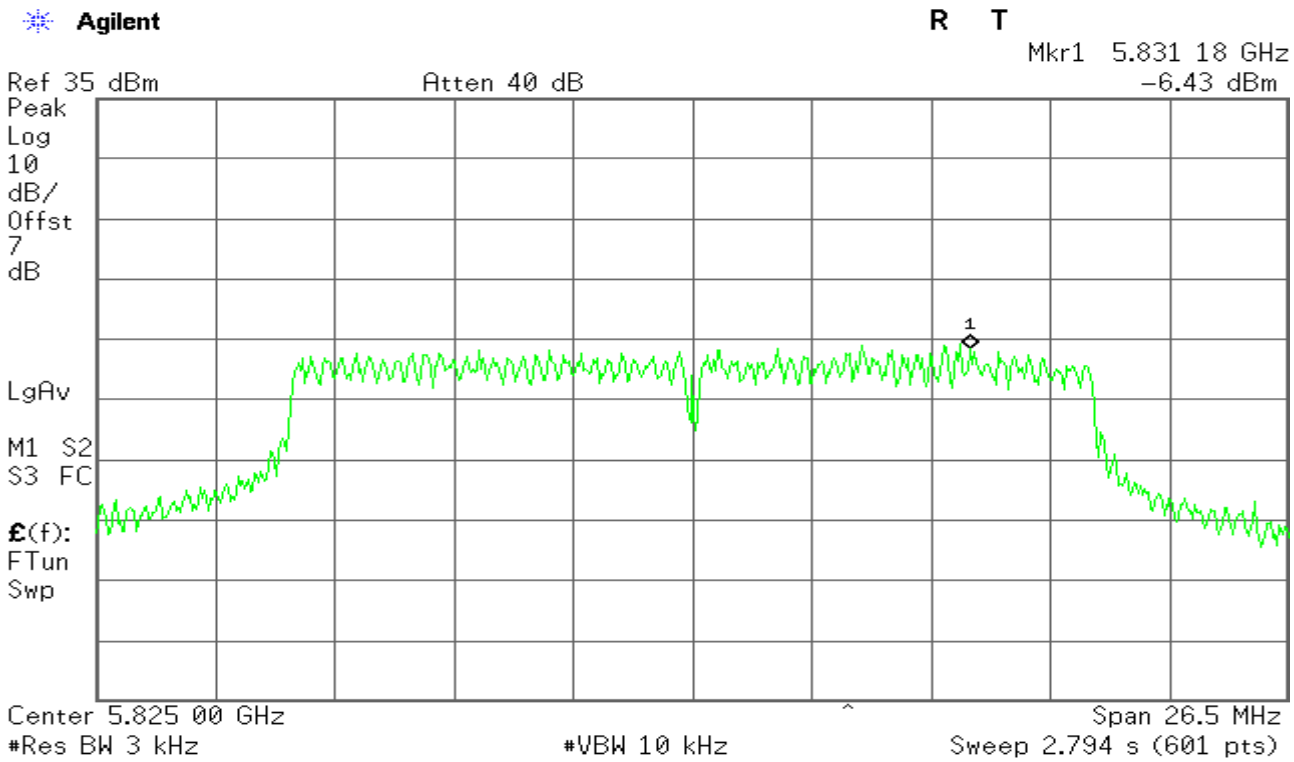
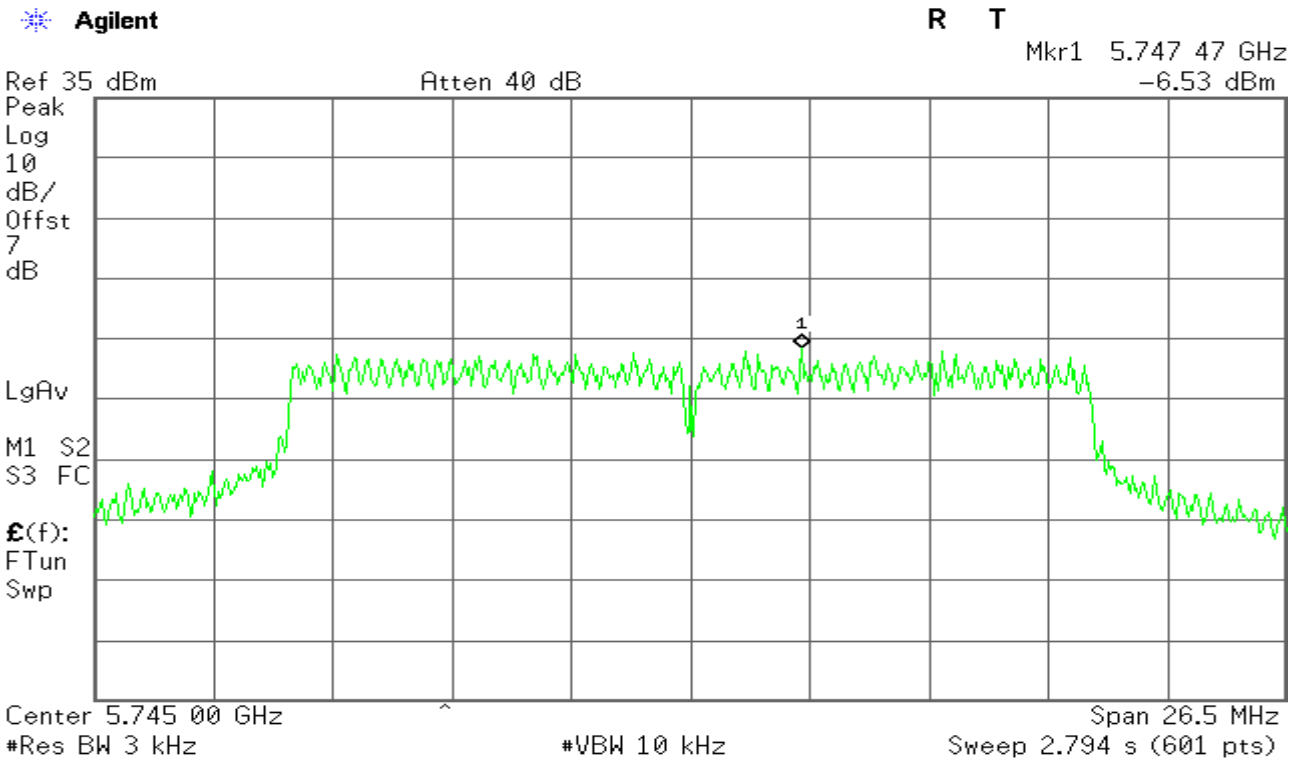
CH High



draft 802.11n Standard-20 MHz Channel mode / Chain 2

CH Low



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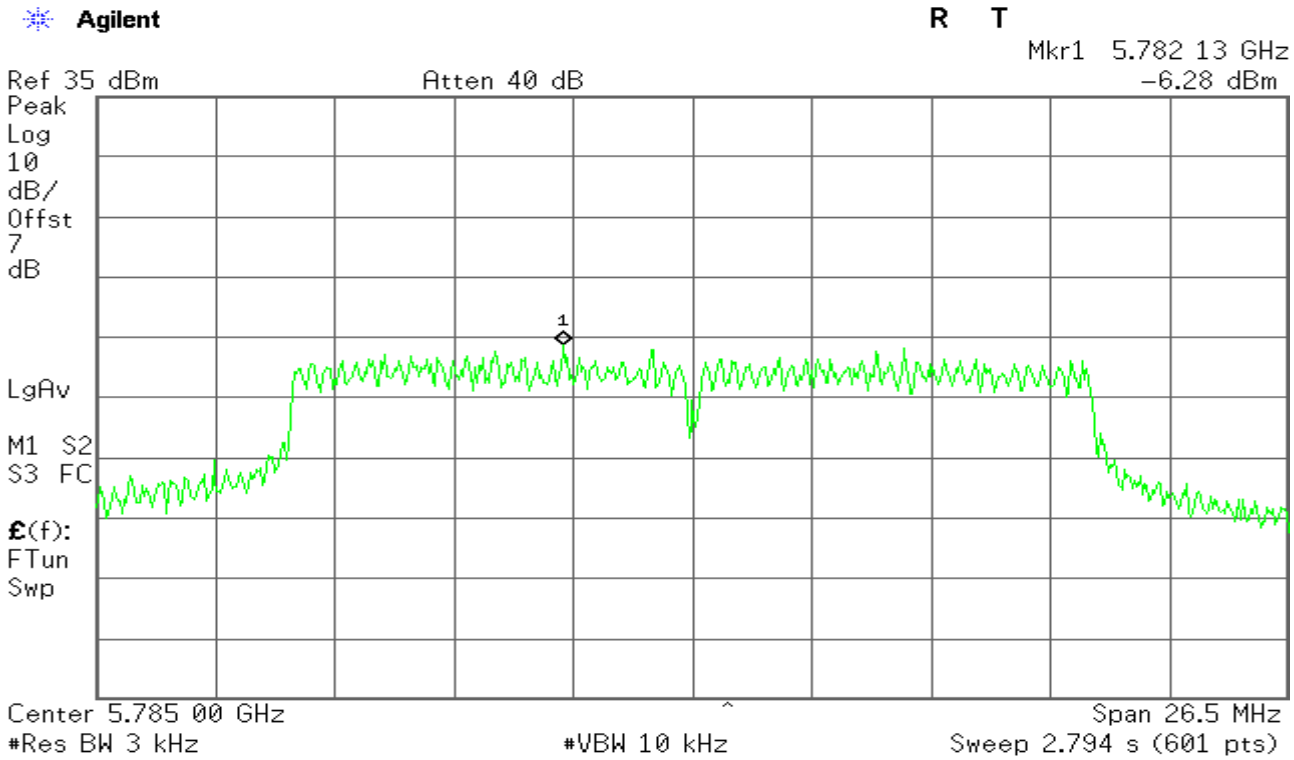

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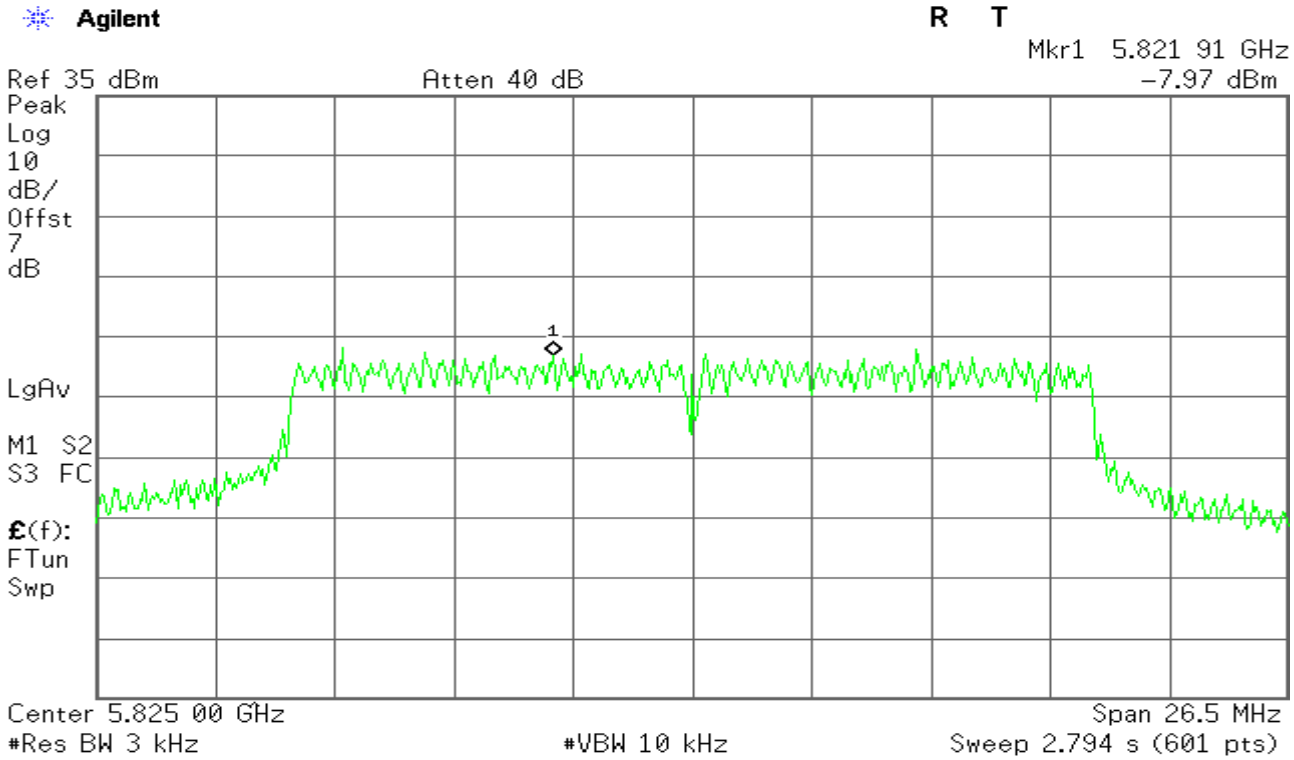

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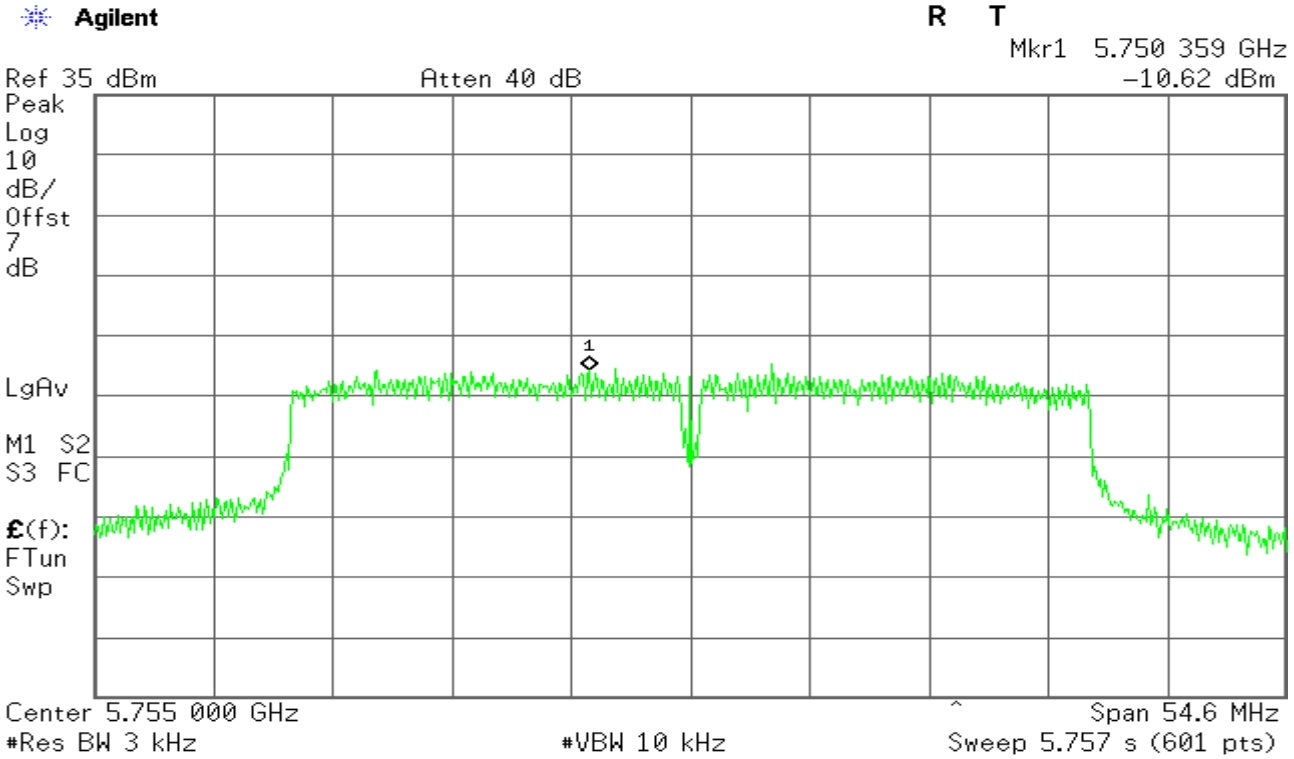
draft 802.11n Wide-40 MHz Channel mode / Chain 0

CH Low



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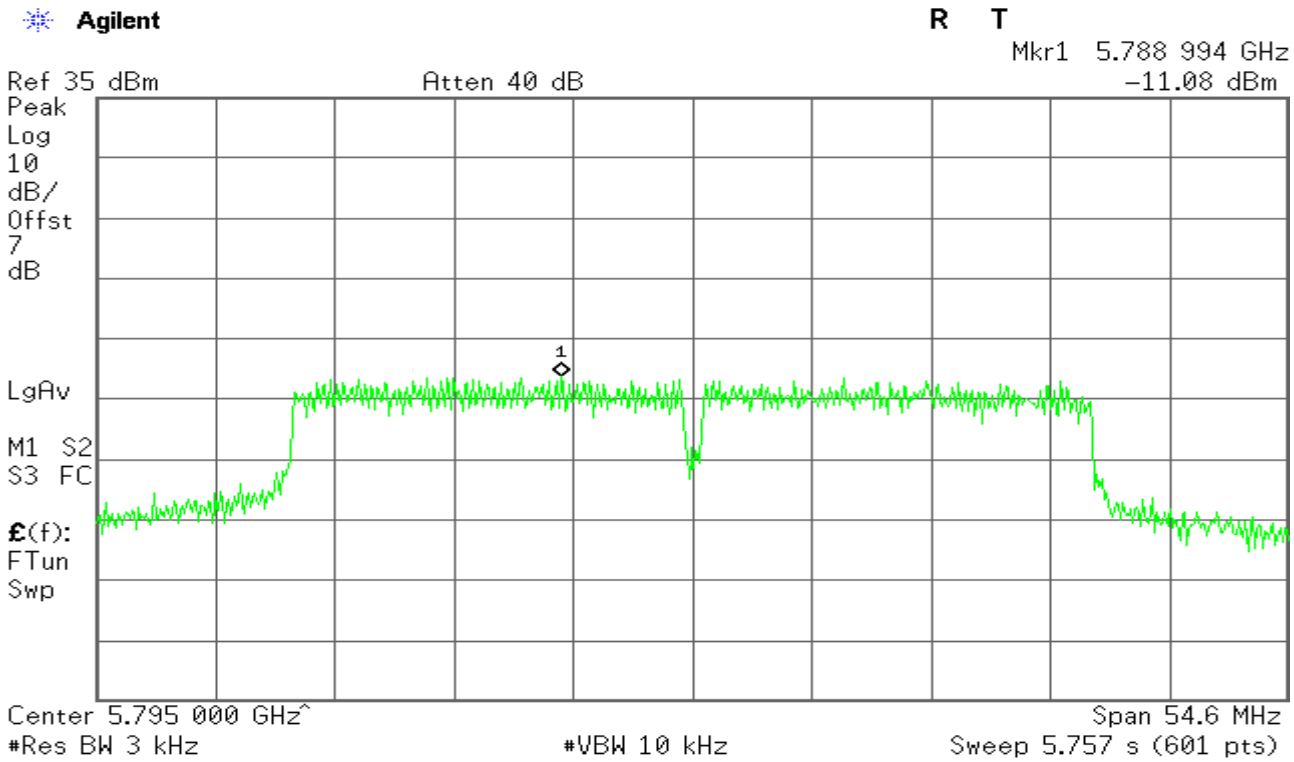

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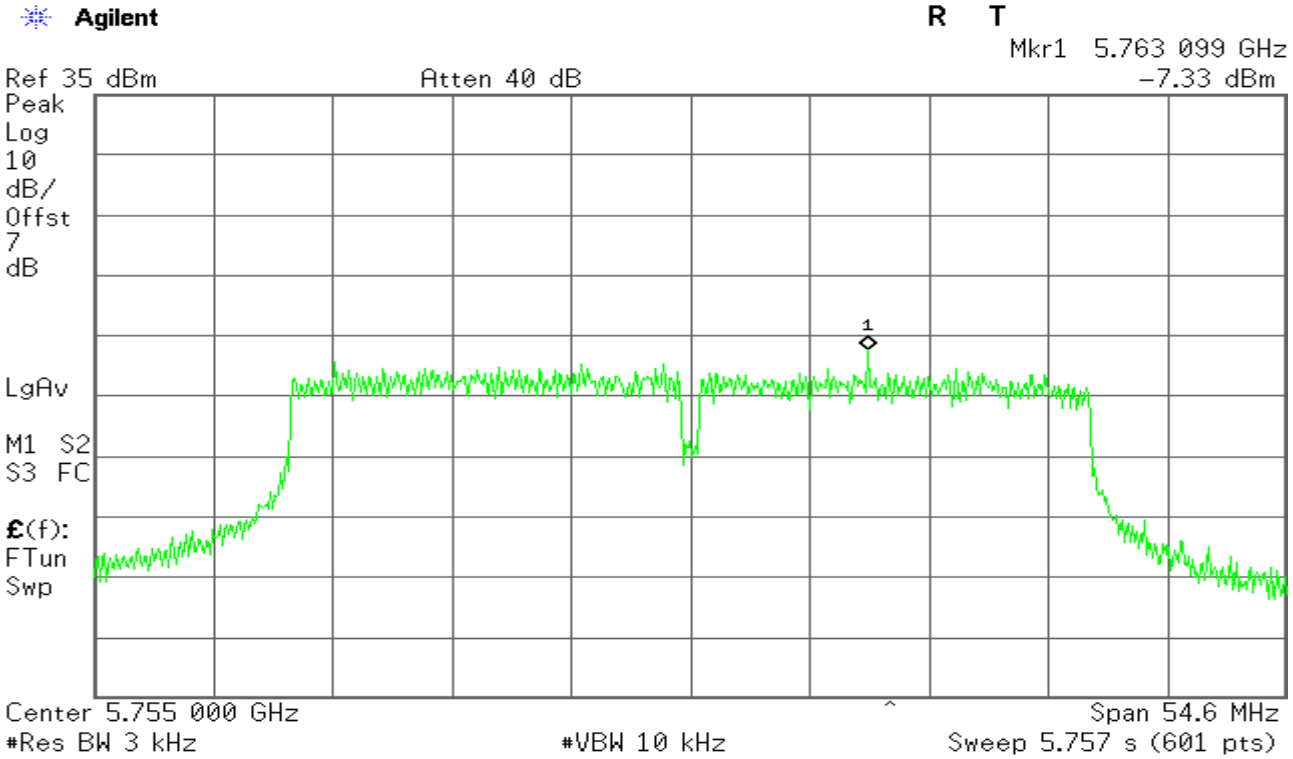
draft 802.11n Wide-40 MHz Channel mode / Chain 1

CH Low



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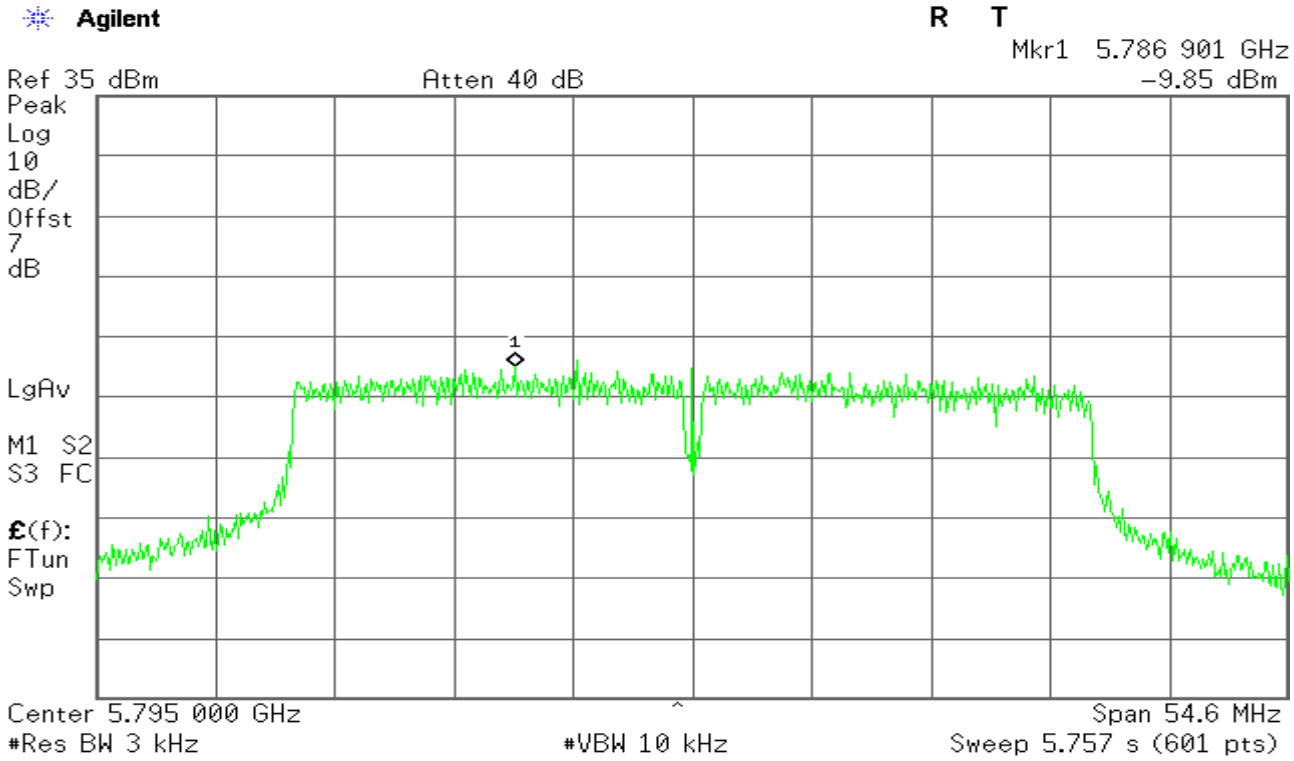

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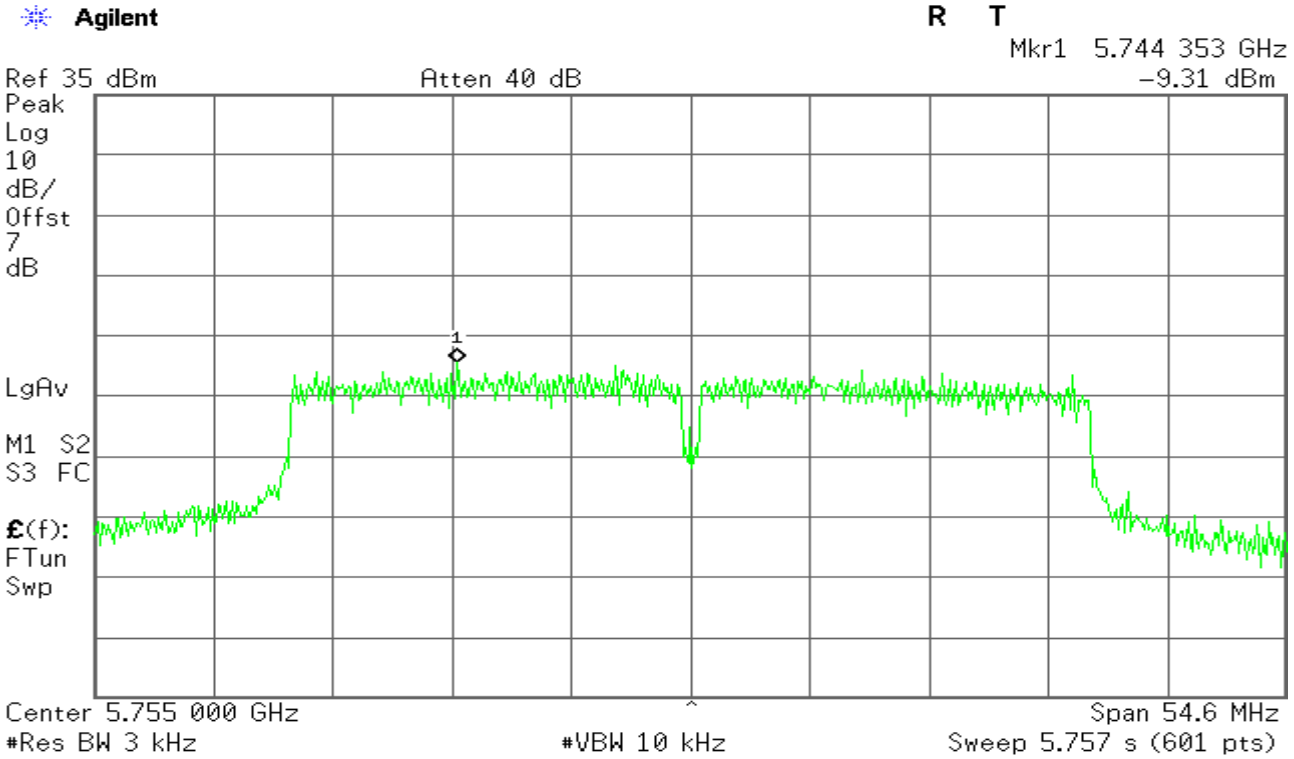
draft 802.11n Wide-40 MHz Channel mode / Chain 2

CH Low



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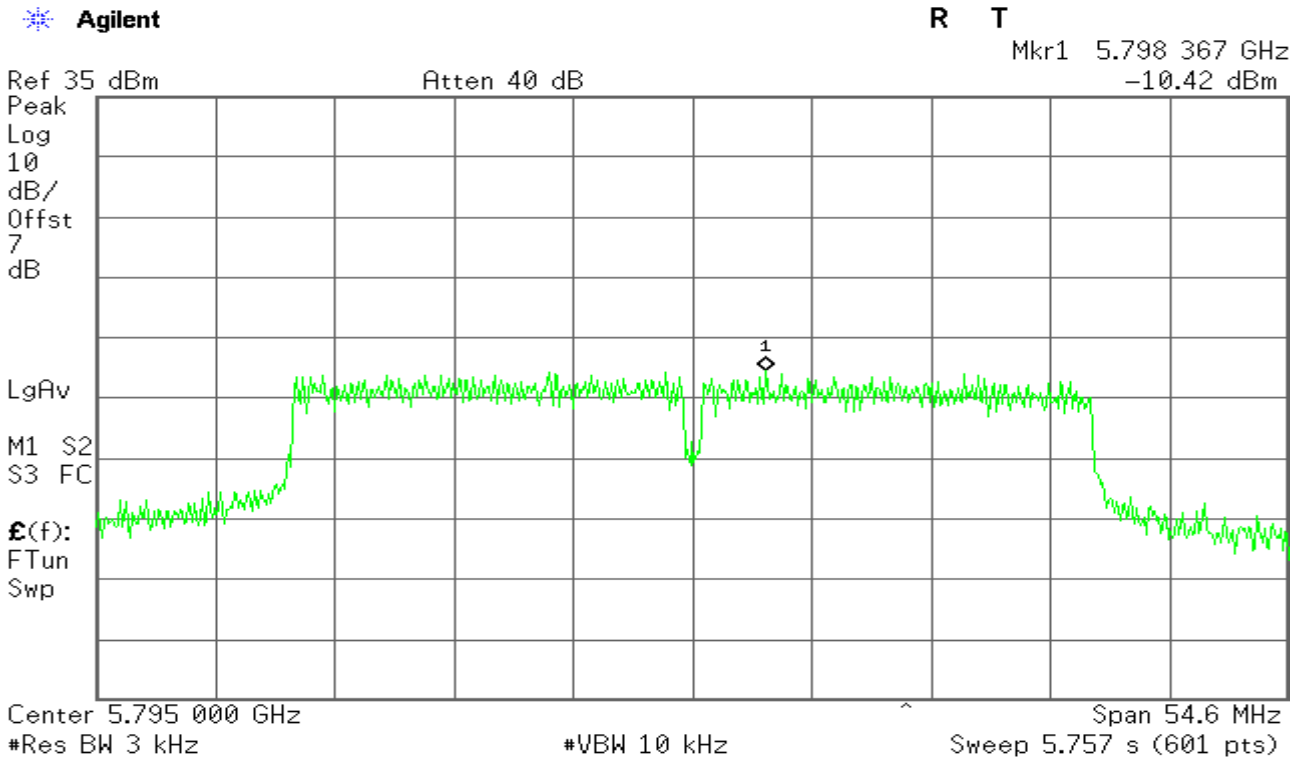

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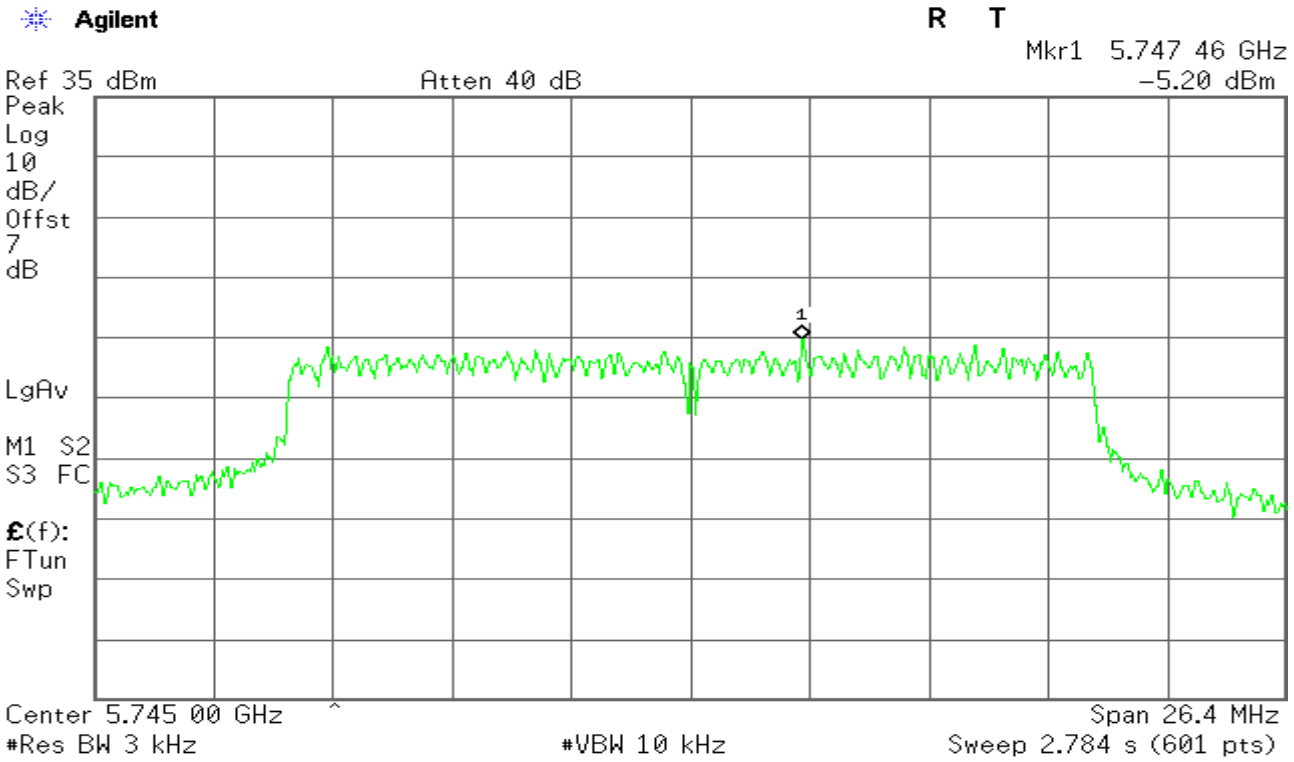
draft 802.11ac Standard-20 MHz Channel mode / Chain 0

CH Low



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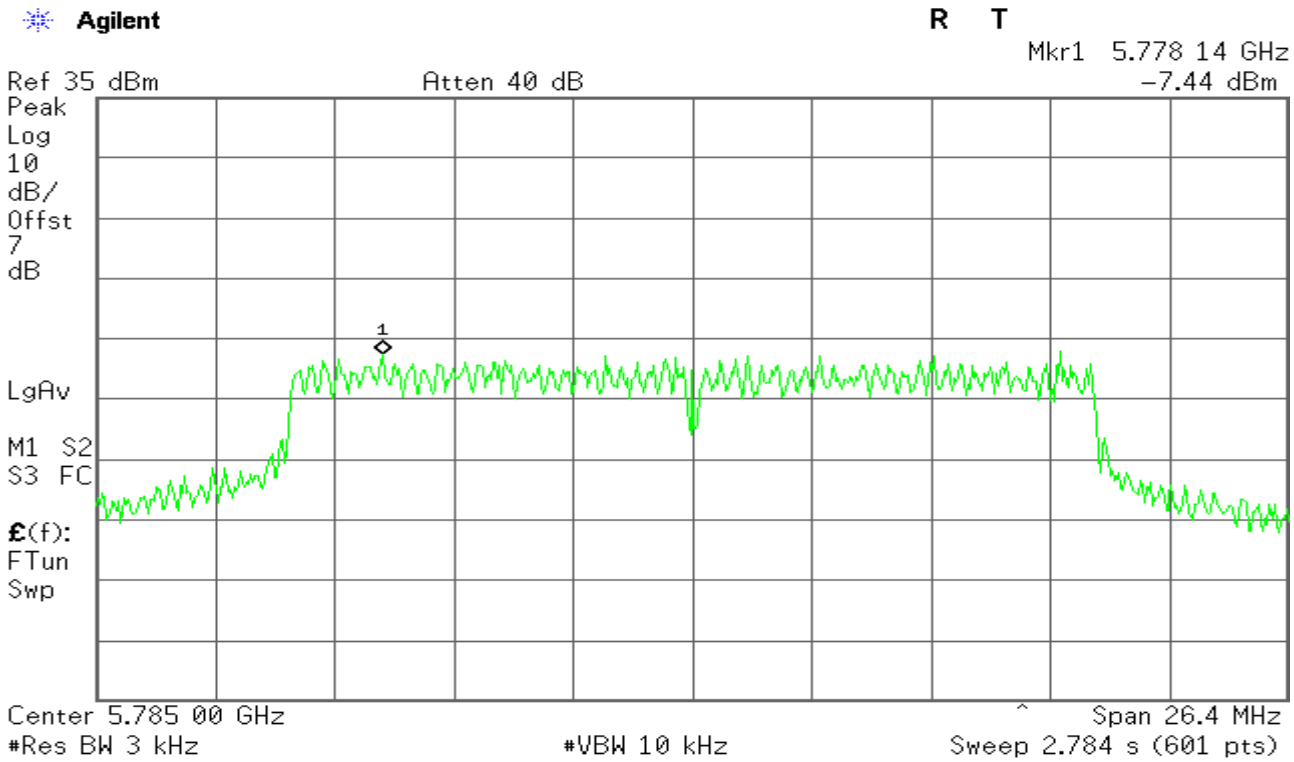

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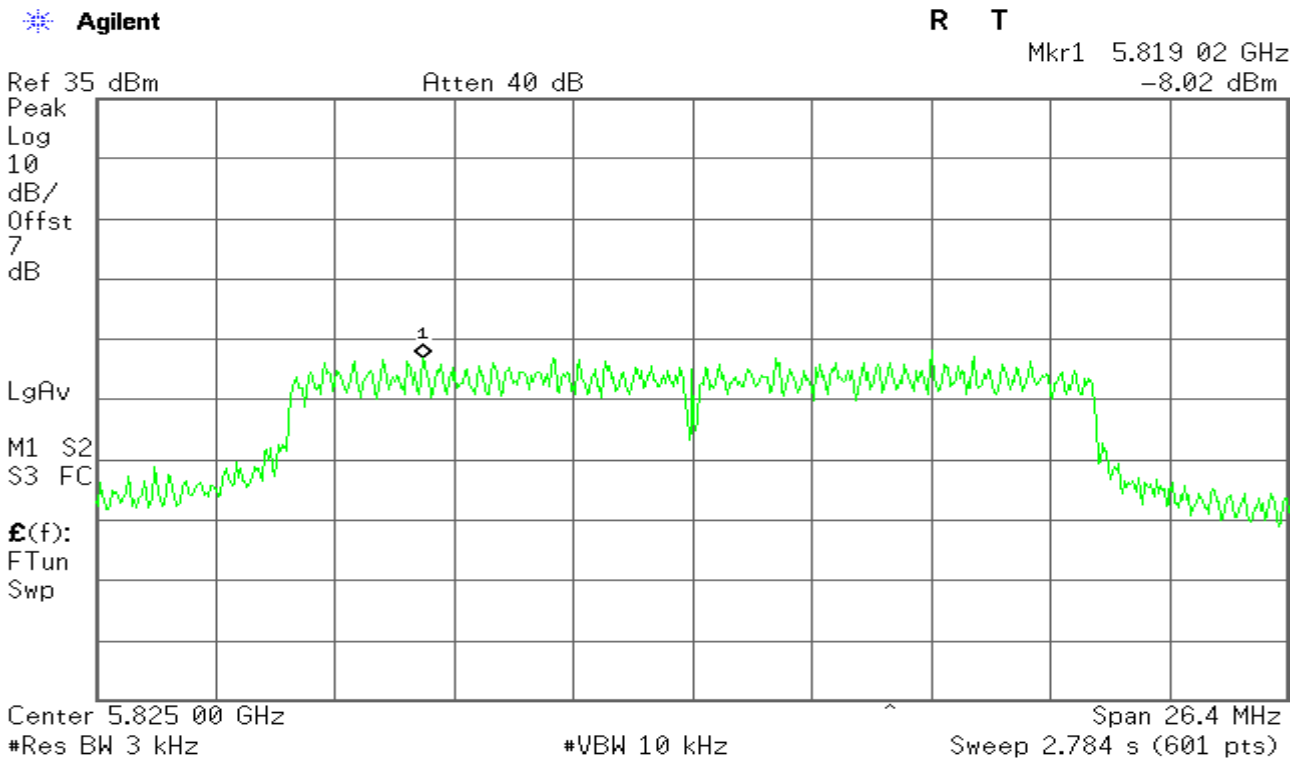
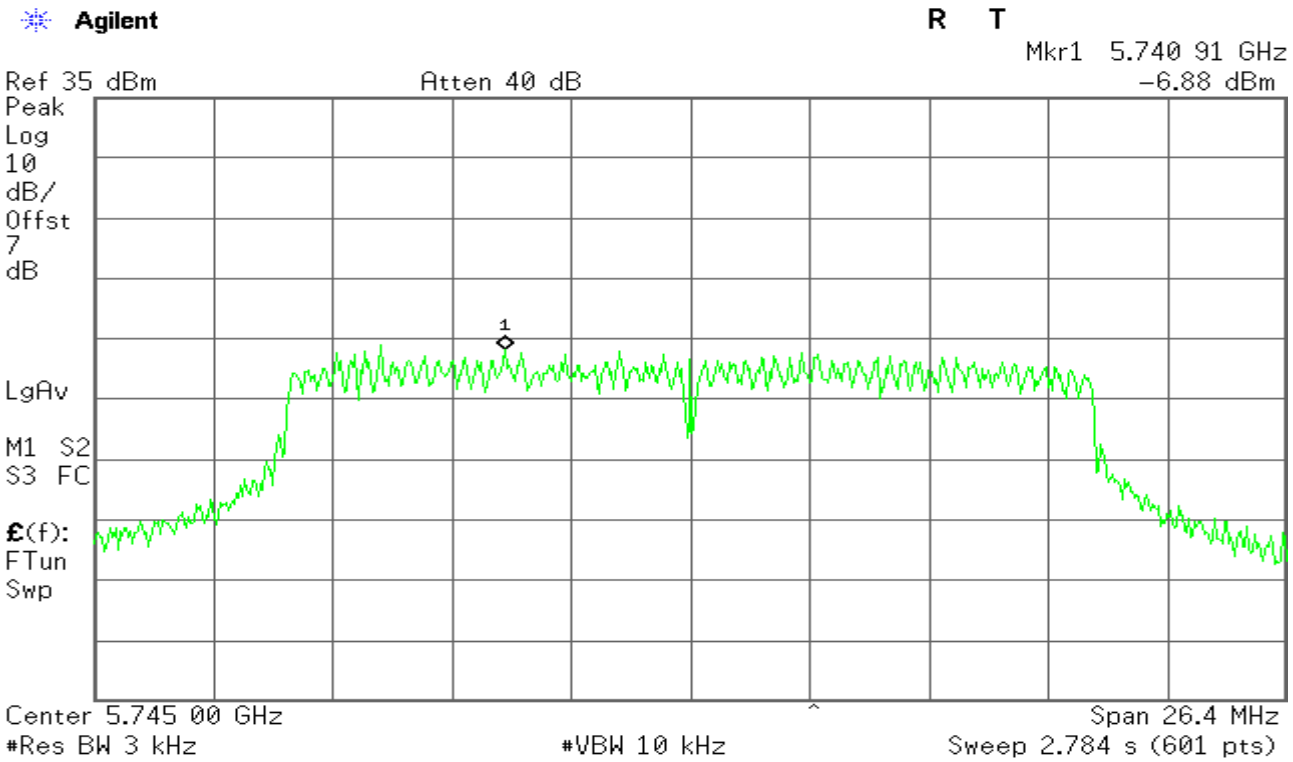
CH High



draft 802.11ac Standard-20 MHz Channel mode / Chain 1

CH Low



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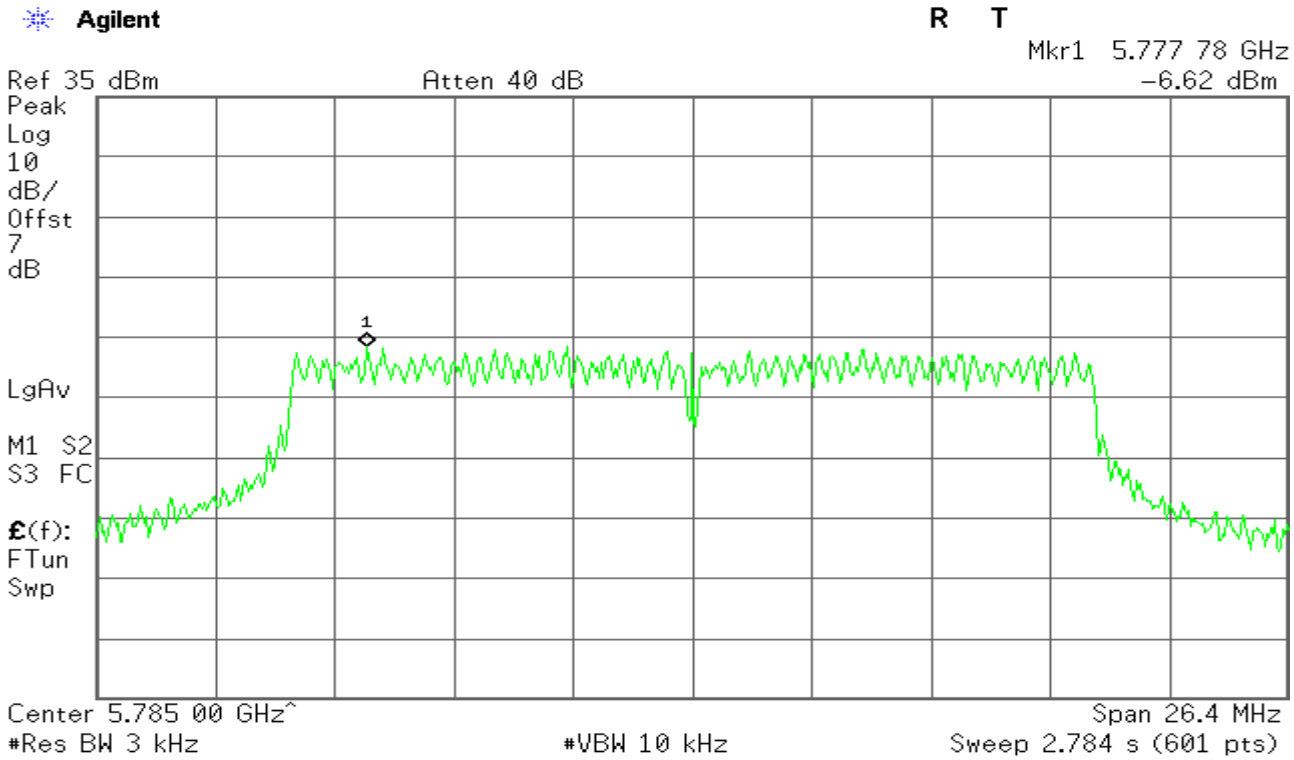
CH Mid



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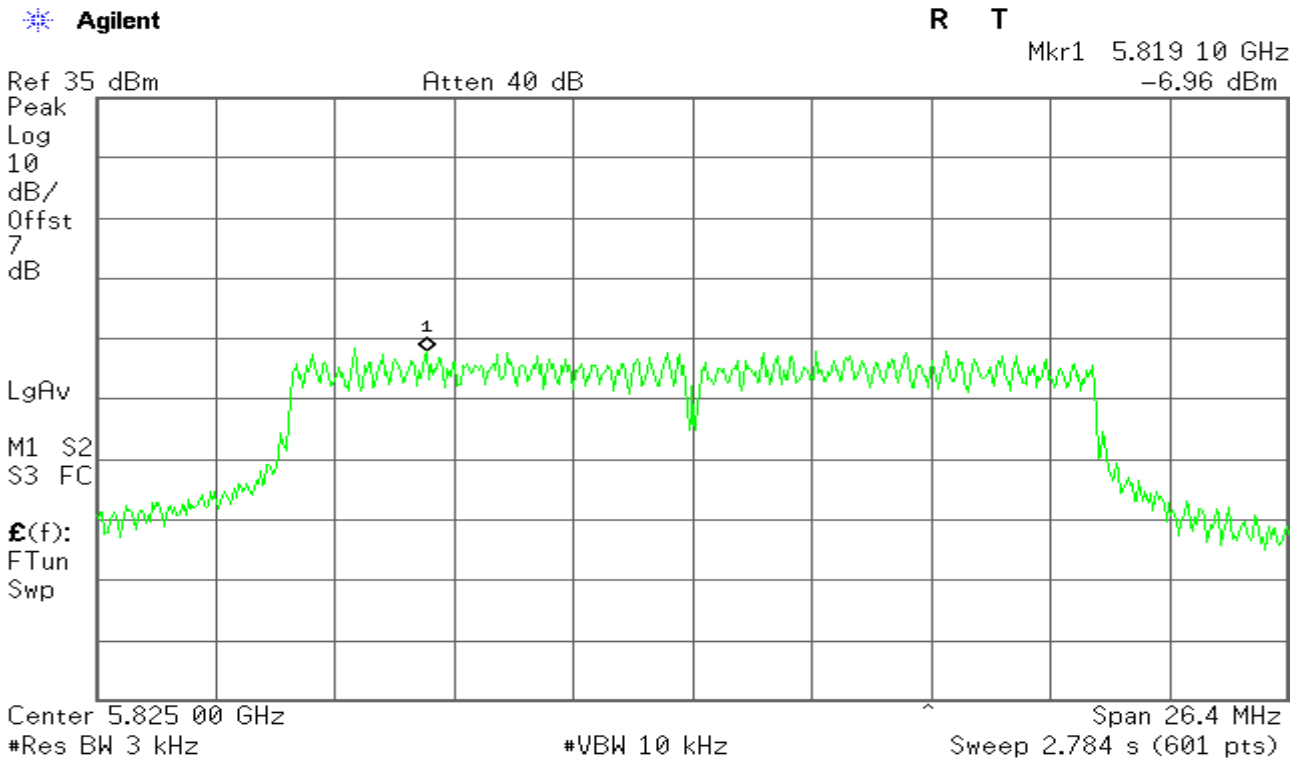

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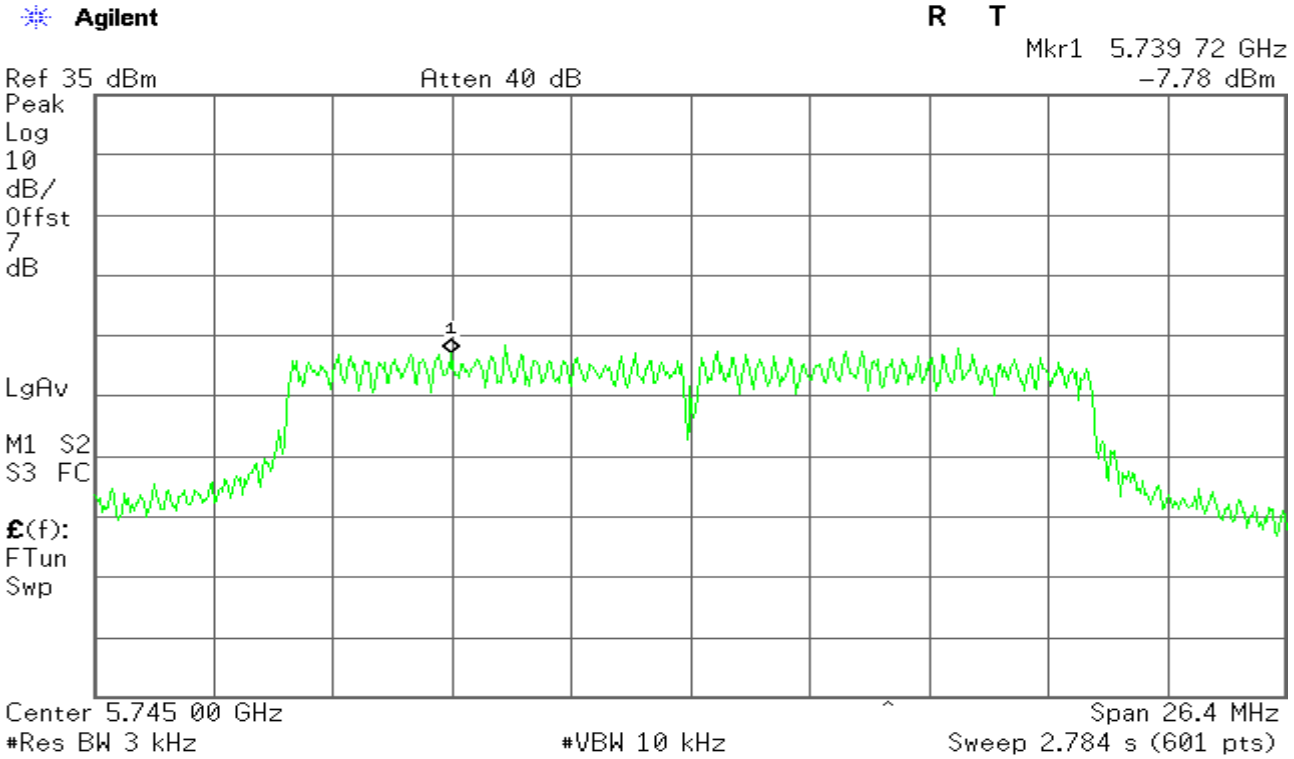
draft 802.11ac Standard-20 MHz Channel mode / Chain 2

CH Low



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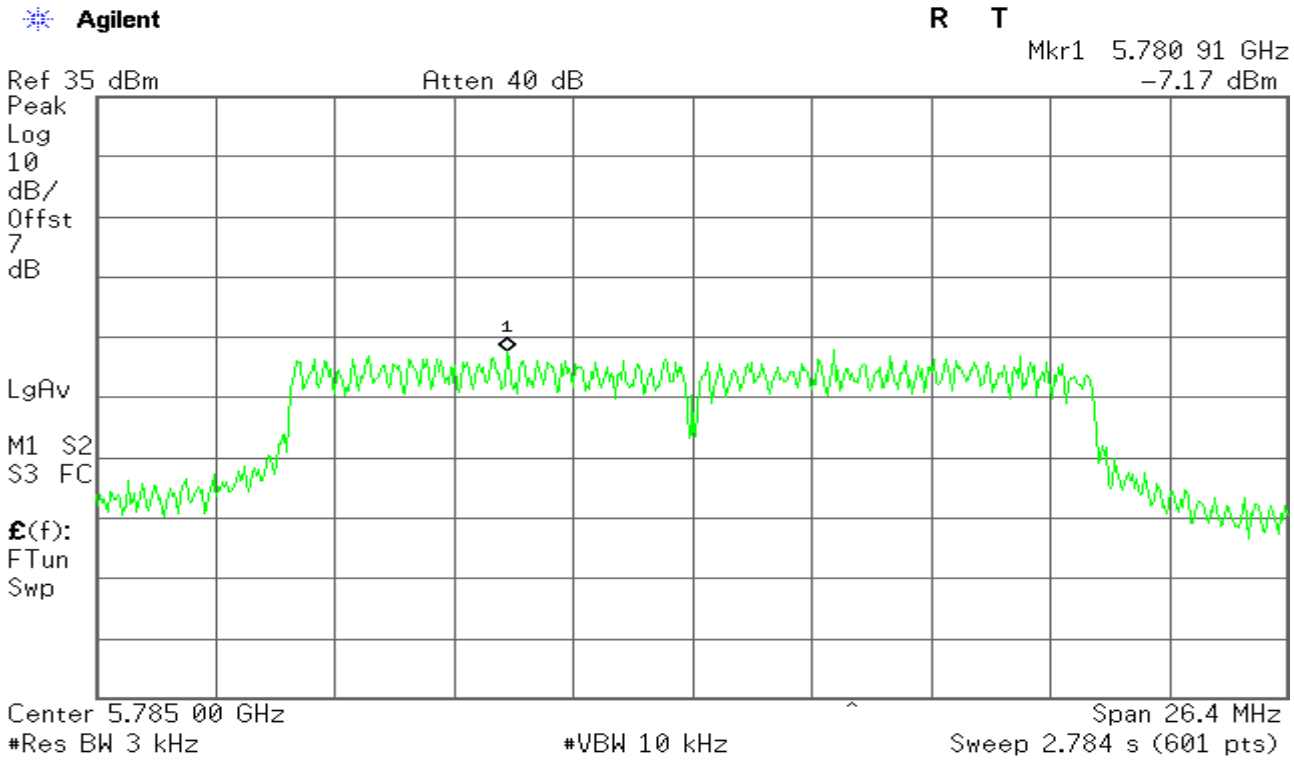

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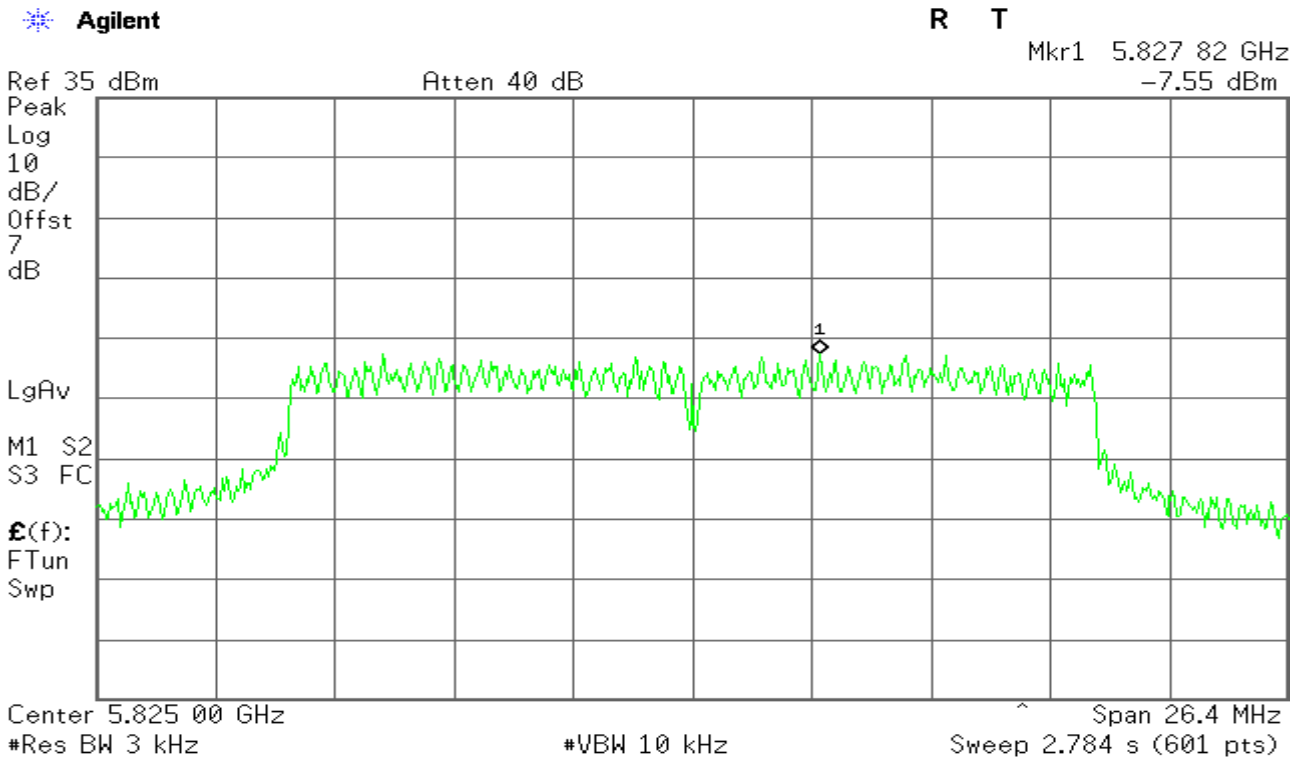
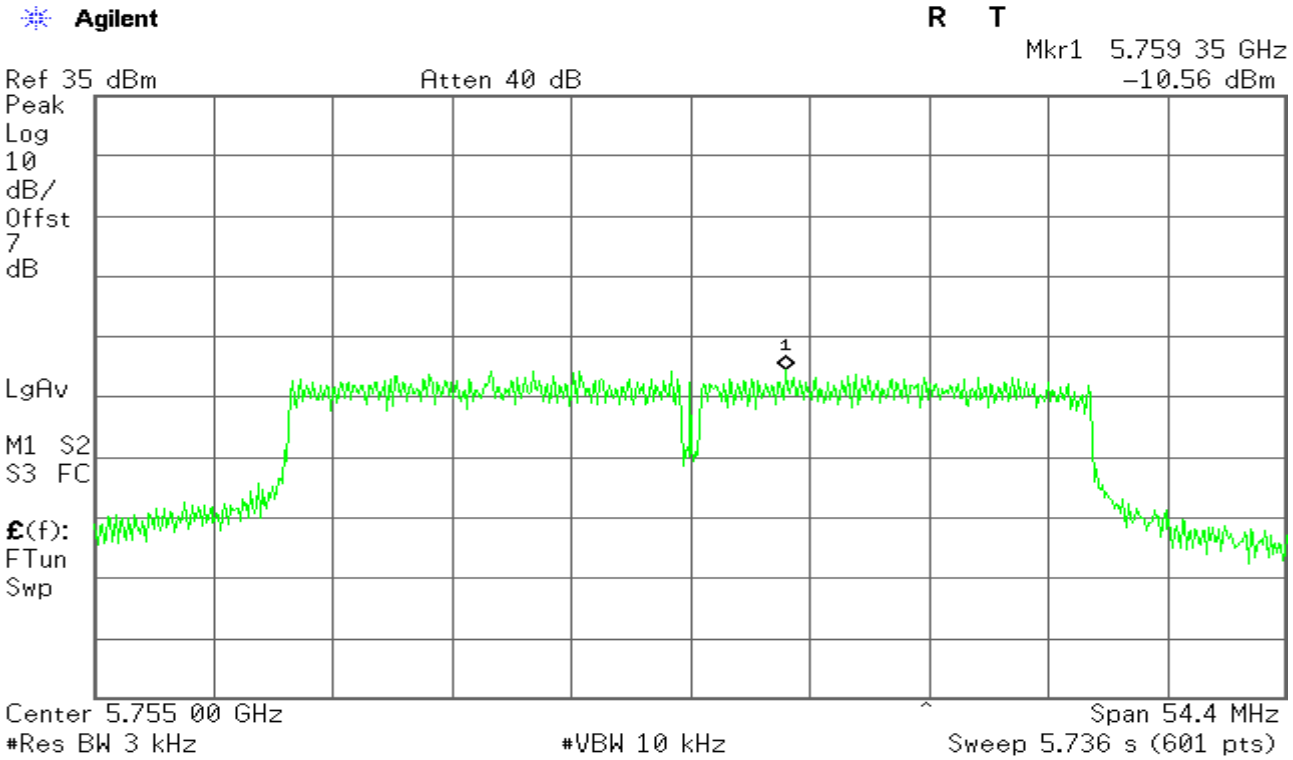
CH High



draft 802.11ac Wide-40 MHz Channel mode / Chain 0

CH Low



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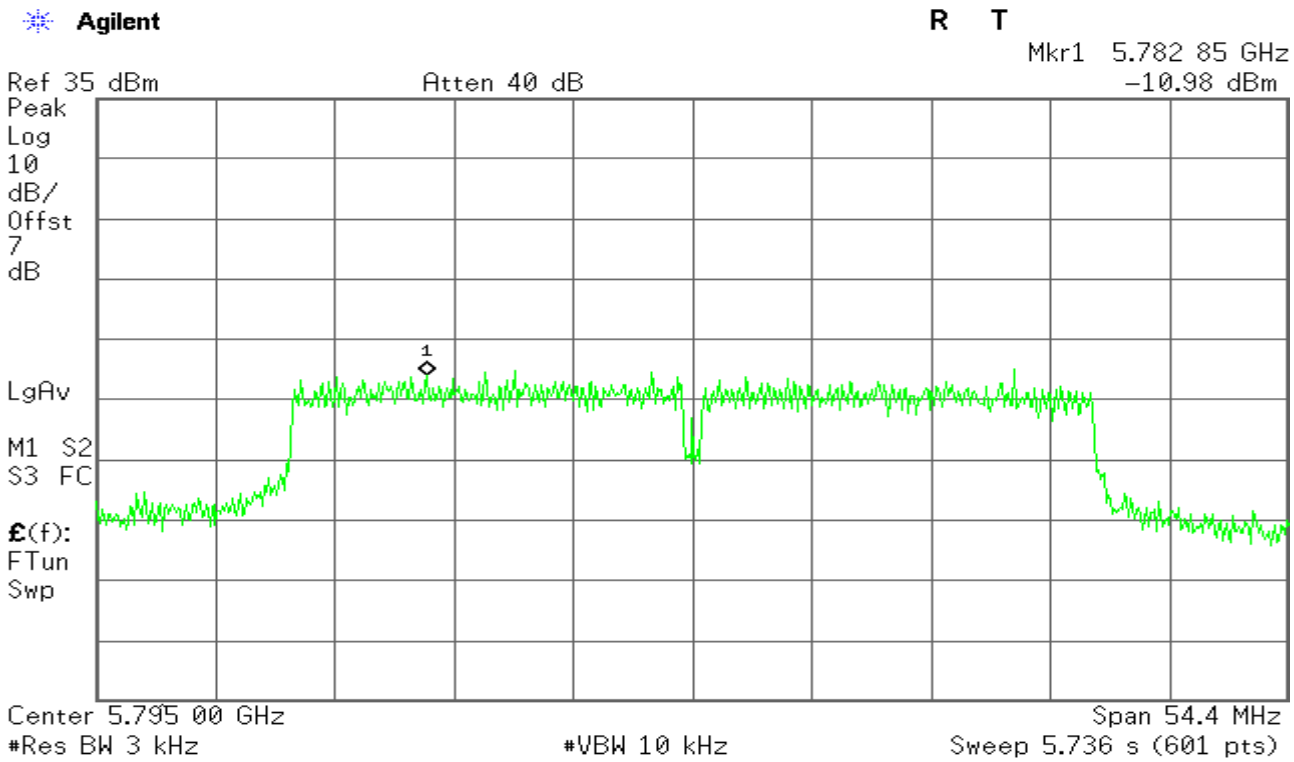
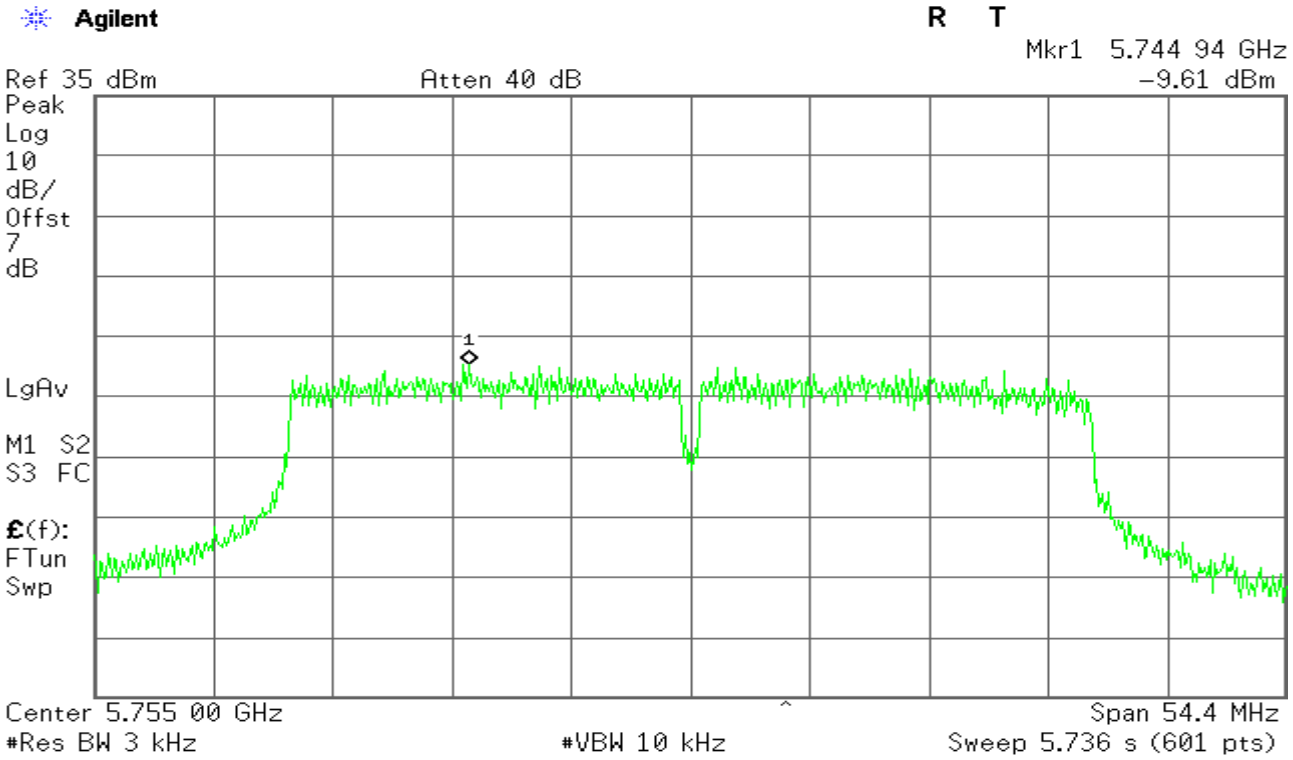
CH High



draft 802.11ac Wide-40 MHz Channel mode / Chain 1

CH Low



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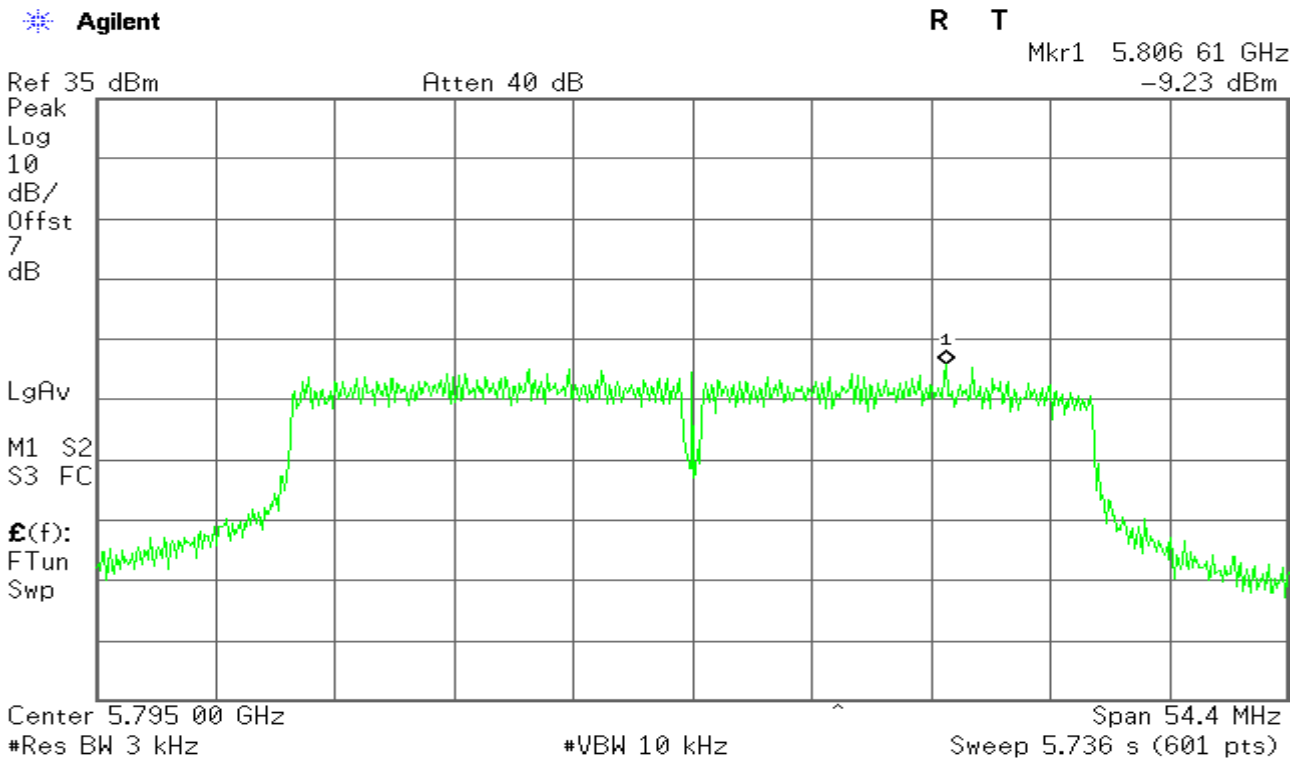
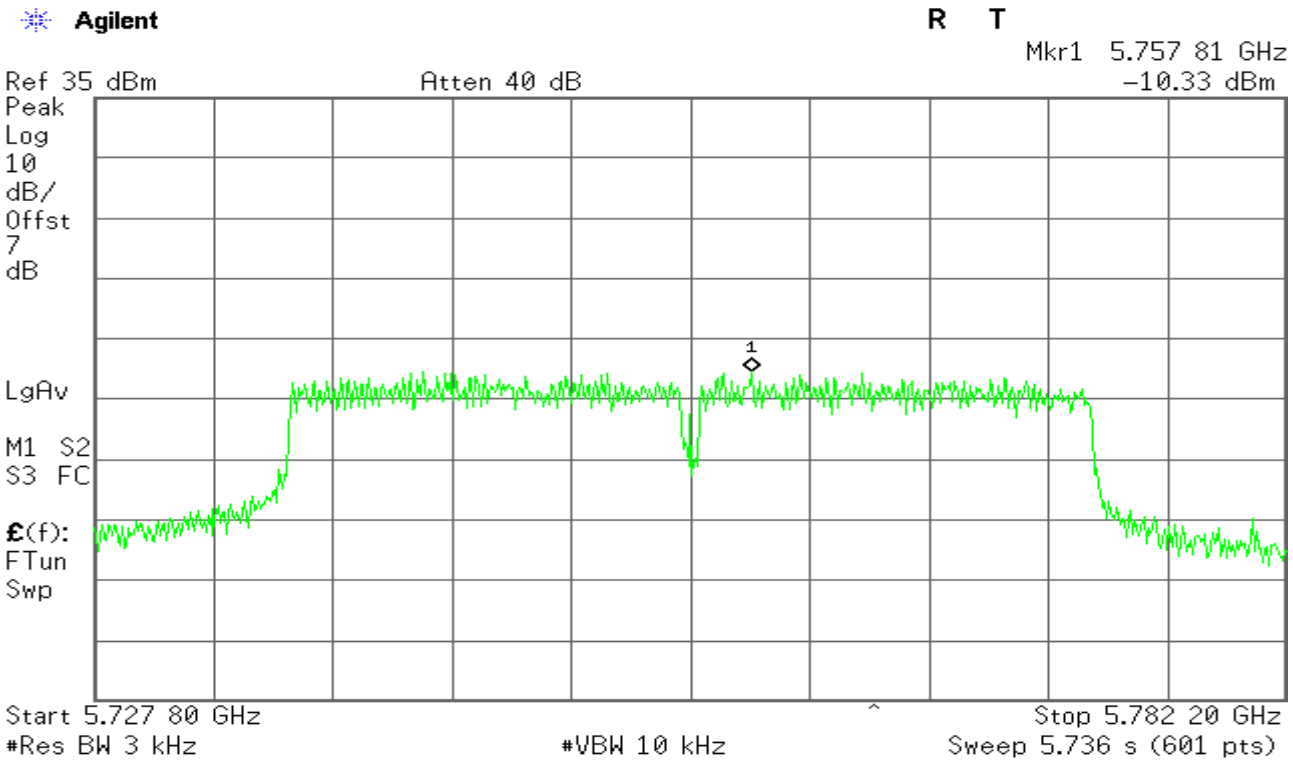
CH High



draft 802.11ac Wide-40 MHz Channel mode / Chain 2

CH Low



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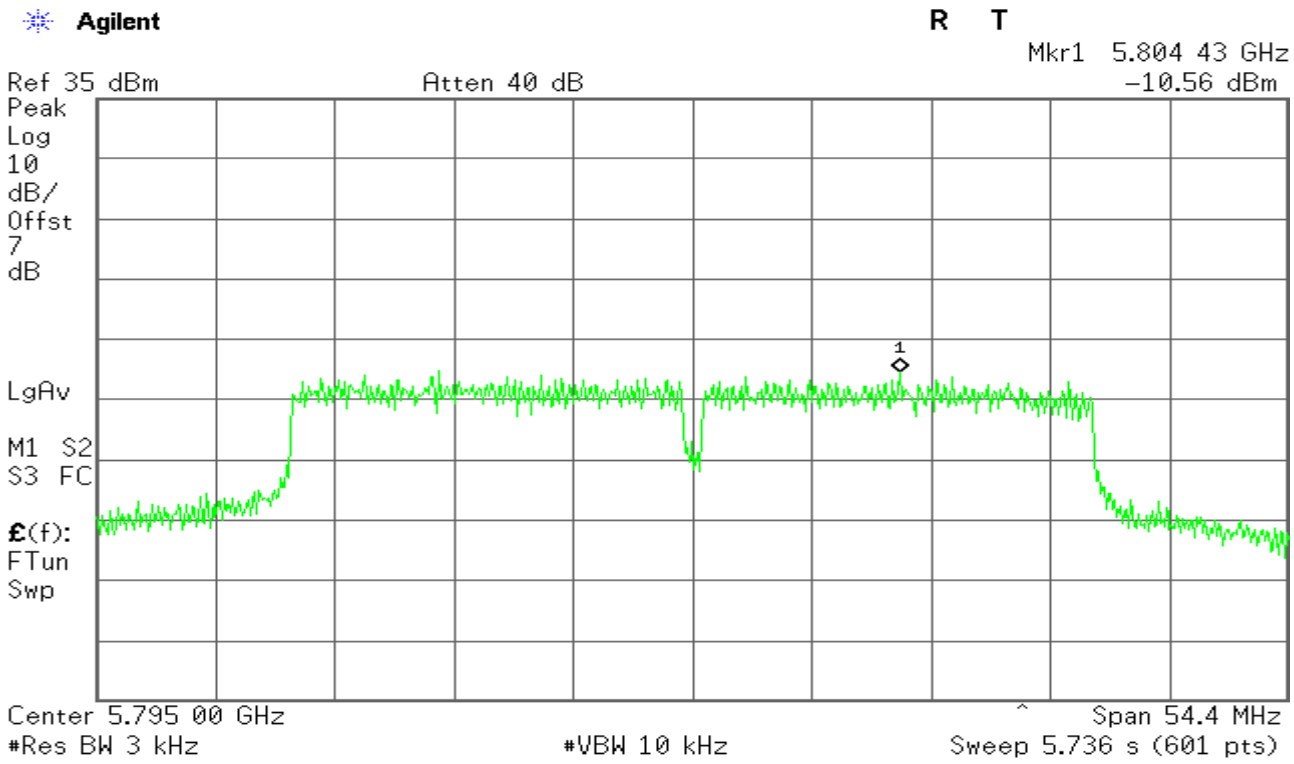
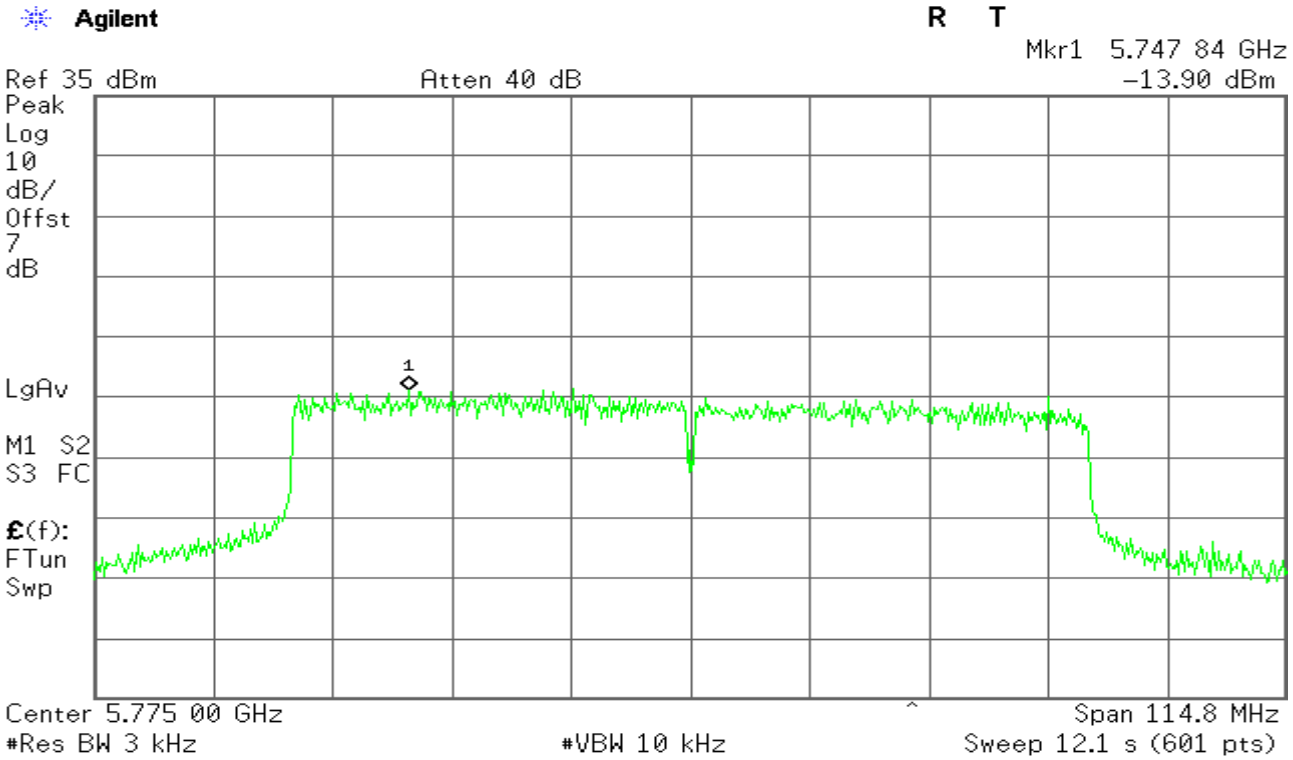
CH High



draft 802.11ac Wide-80 MHz Channel mode / Chain 0



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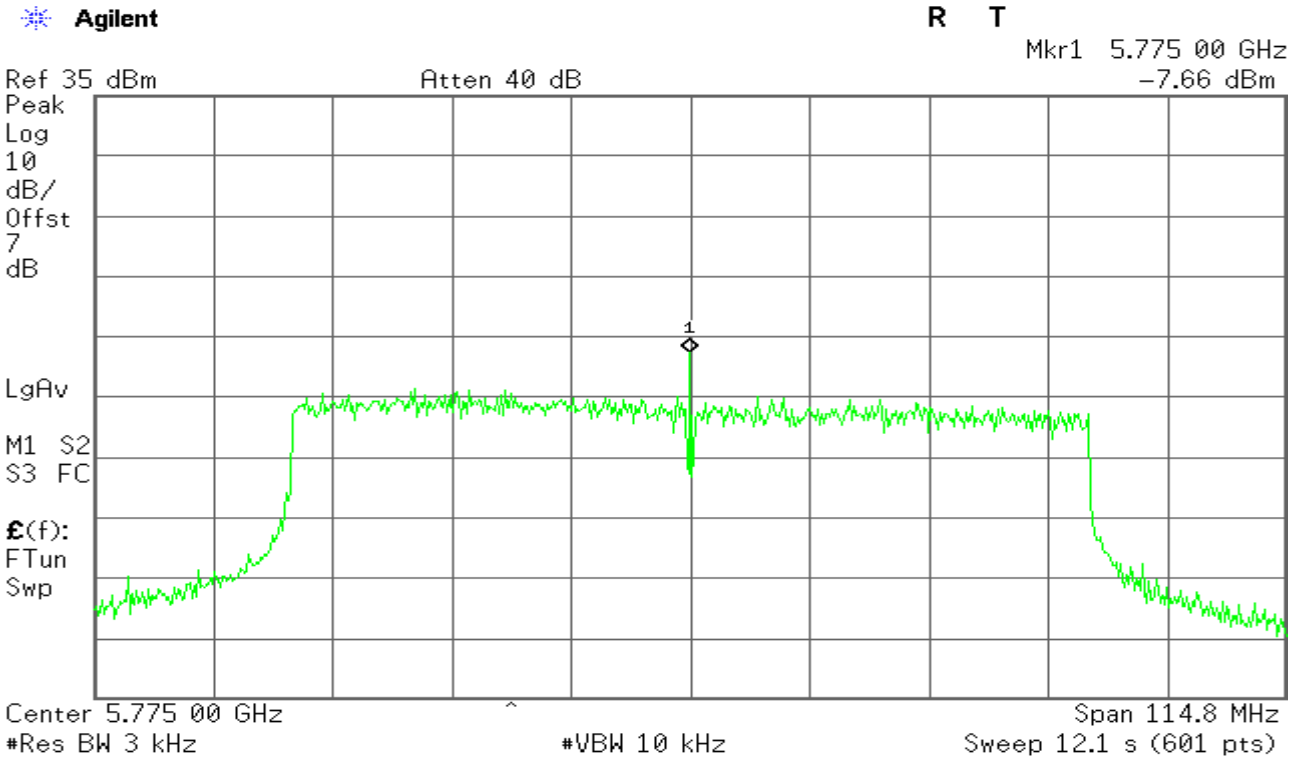
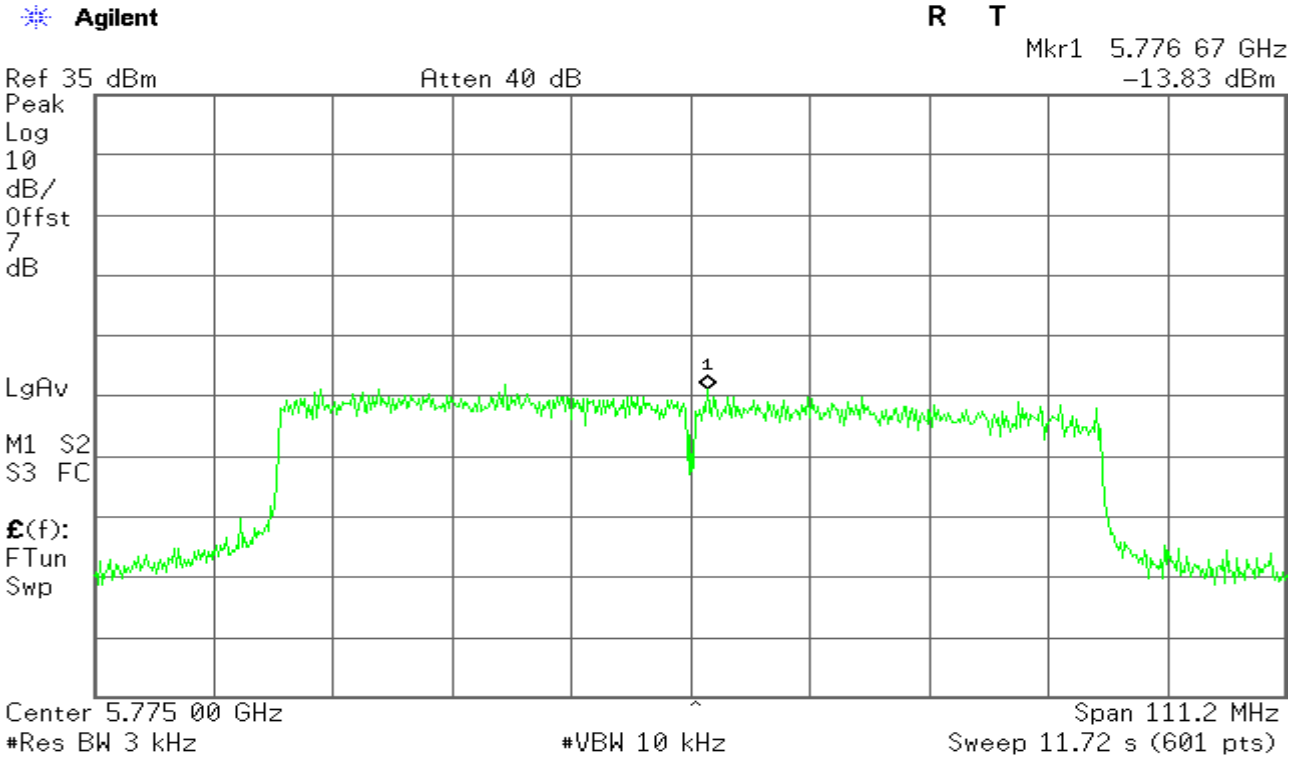
draft 802.11ac Wide-80 MHz Channel mode / Chain 1



draft 802.11ac Wide-80 MHz Channel mode / Chain 2



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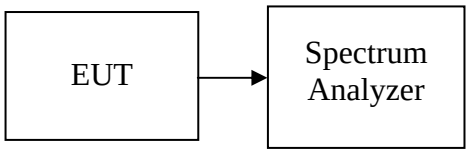
4.4.SPURIOUS EMISSIONS
Conducted Measurement

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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. 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 in 15.209(a) (see Section 15.205(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. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

Measurements are made over the 30MHz to 40GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted

Test Plot

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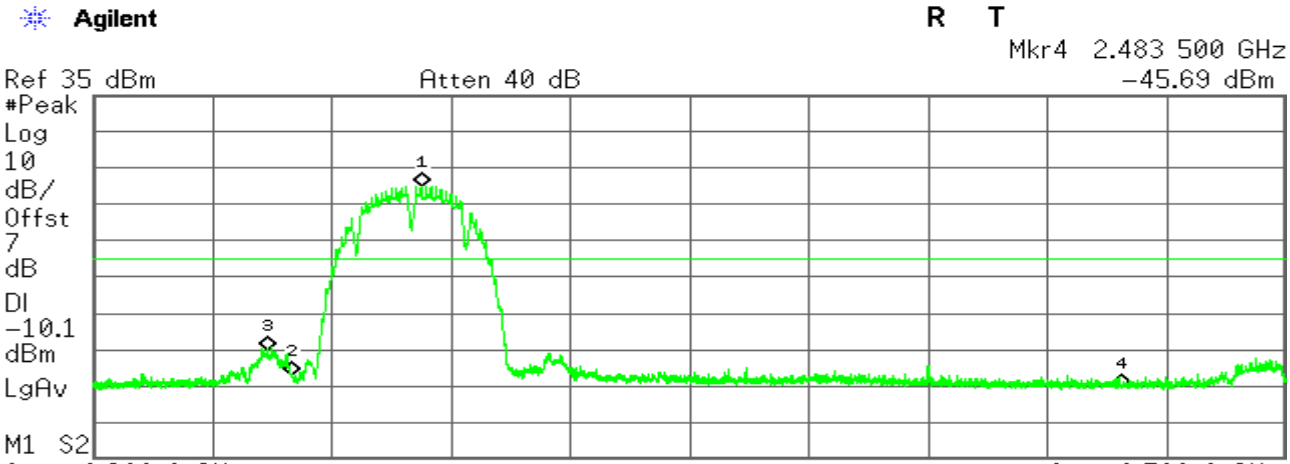
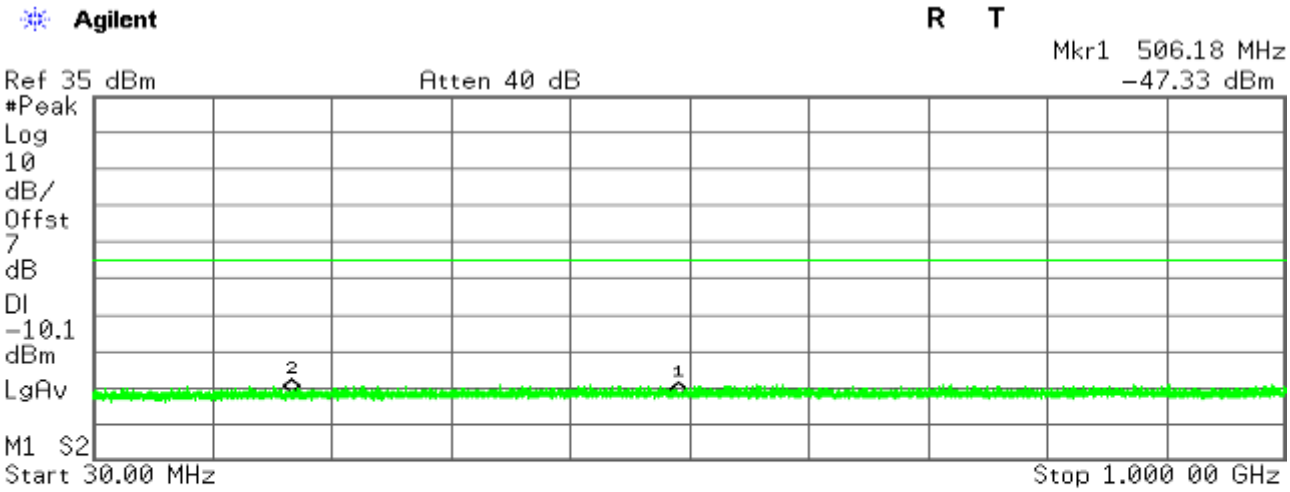
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

IEEE 802.11b mode/Chain 0

CH Low



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.413 007 GHz	9.87 dBm
2	(1)	Freq	2.400 000 GHz	-41.86 dBm
3	(1)	Freq	2.397 534 GHz	-35.17 dBm
4	(1)	Freq	2.483 500 GHz	-45.69 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	506.18 MHz	-47.33 dBm
2	(1)	Freq	191.67 MHz	-46.40 dBm

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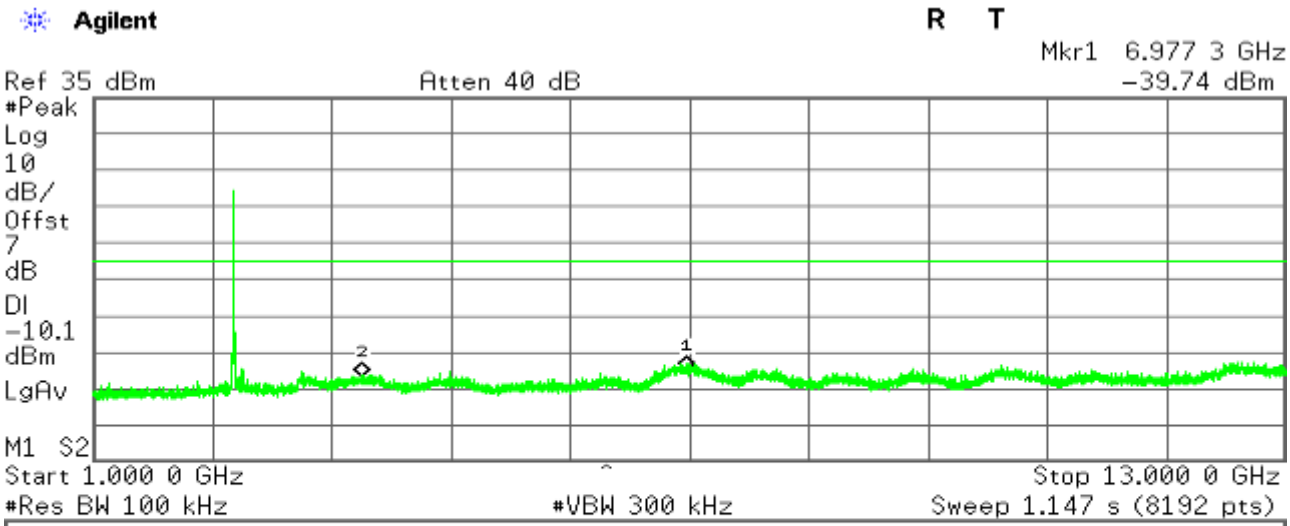
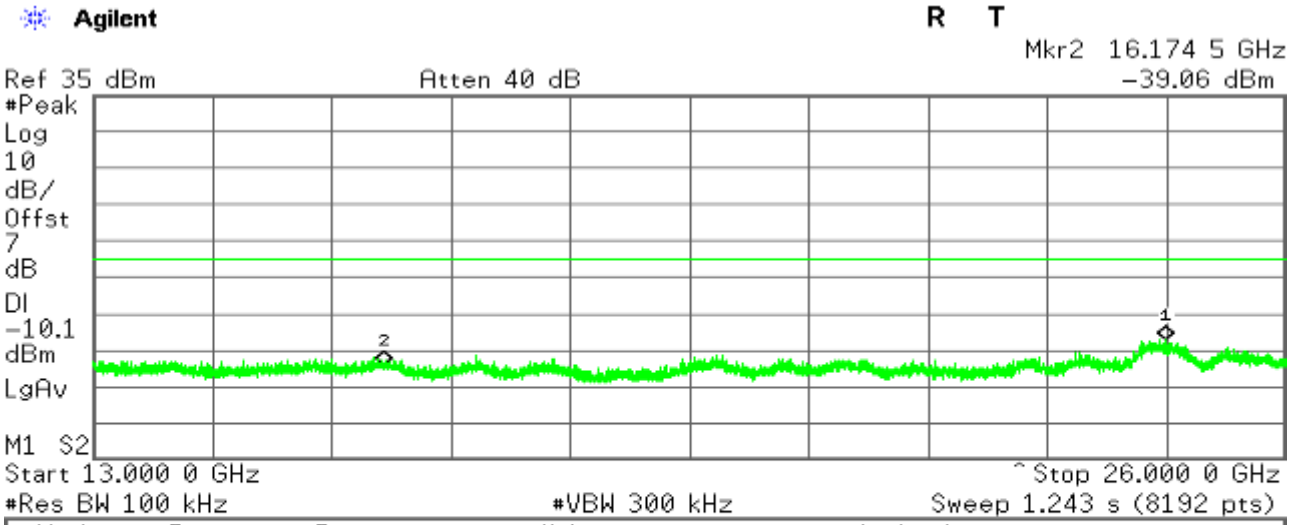


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	6.977 3 GHz	-39.74 dBm
2	(1)	Freq	3.709 1 GHz	-41.79 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.692 2 GHz	-32.11 dBm
2	(1)	Freq	16.174 5 GHz	-39.06 dBm

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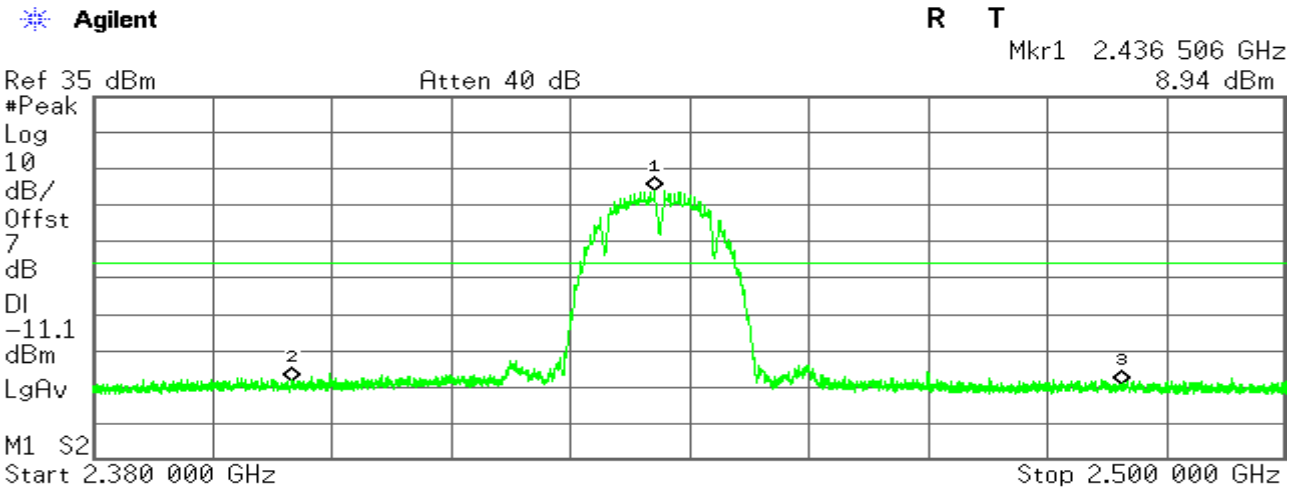
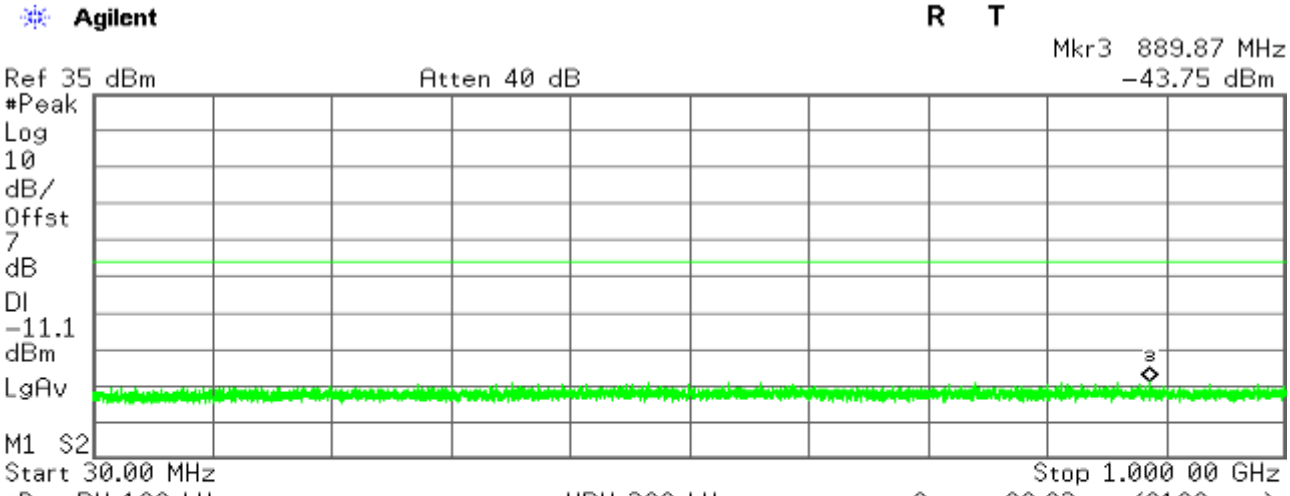
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.436 506 GHz	8.94 dBm
2	(1)	Freq	2.400 000 GHz	-43.27 dBm
3	(1)	Freq	2.483 500 GHz	-44.40 dBm



Marker	Trace	Type	X Axis	Amplitude
3	(1)	Freq	889.87 MHz	-43.75 dBm

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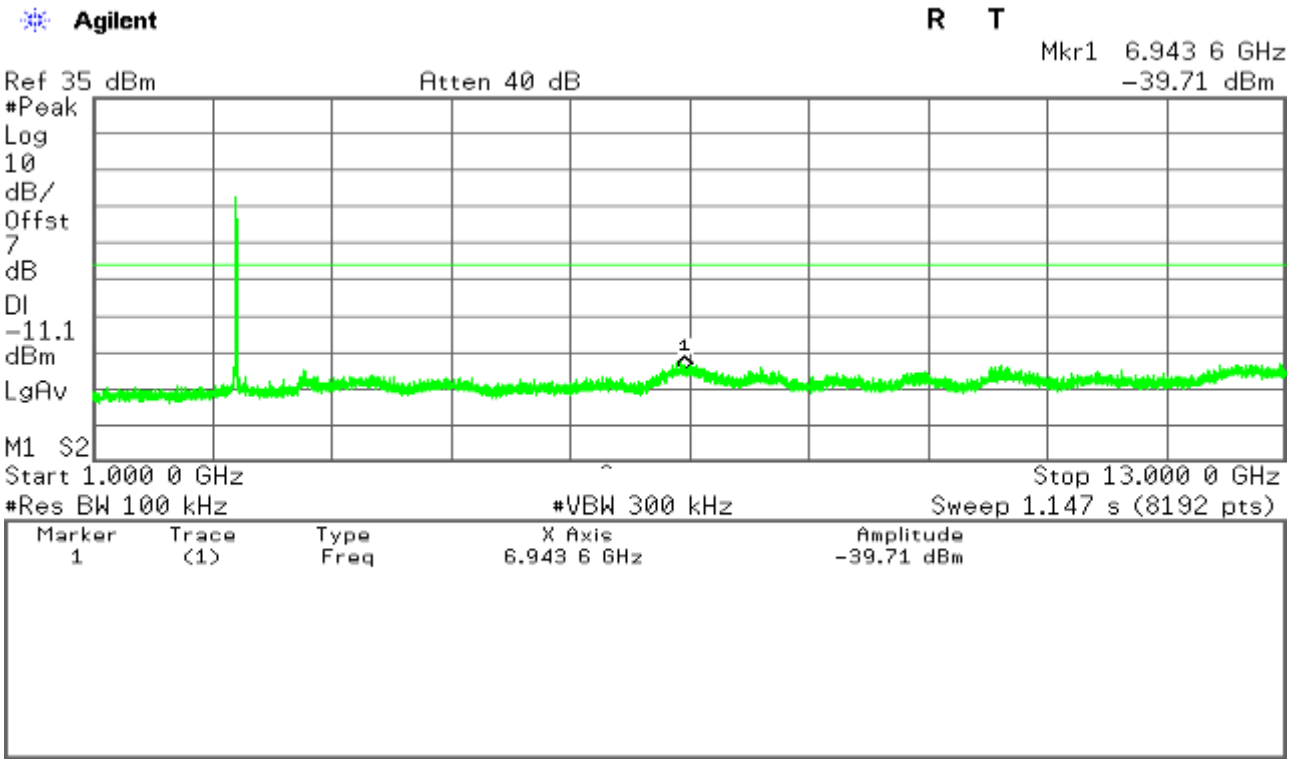

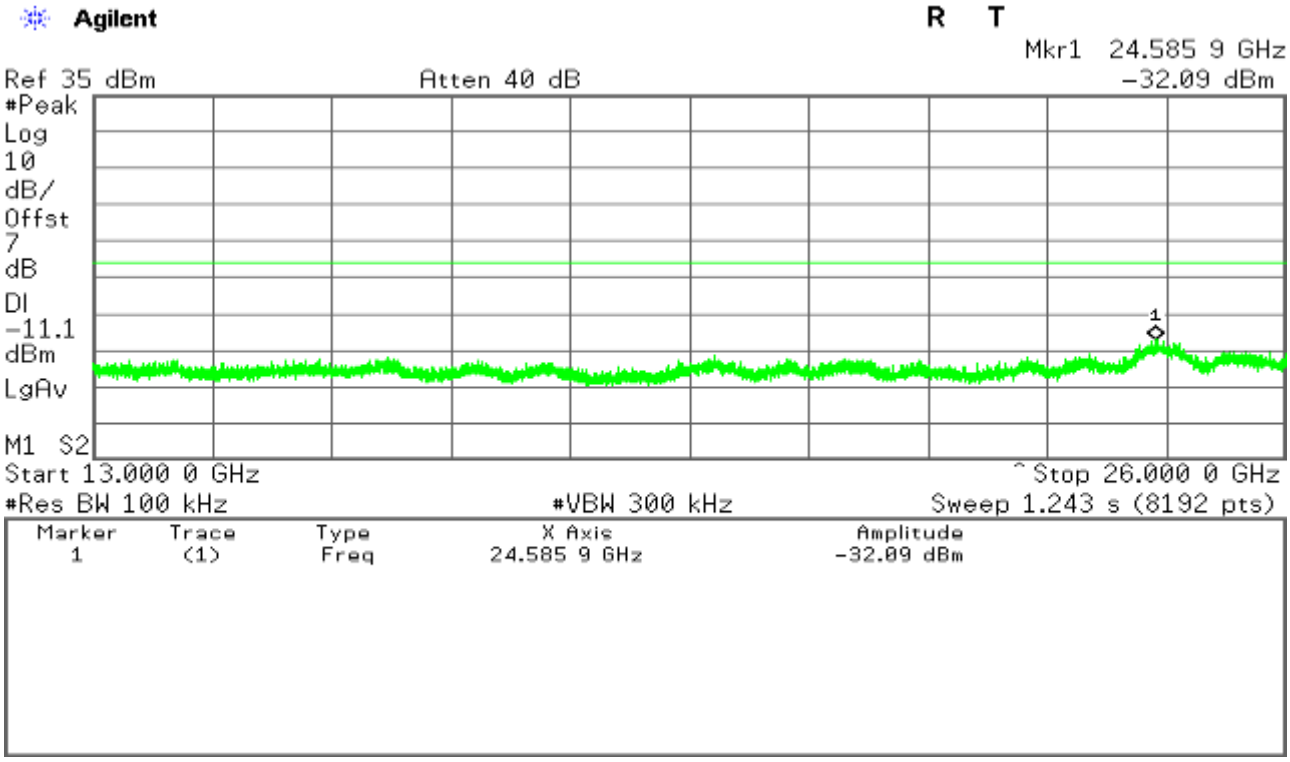

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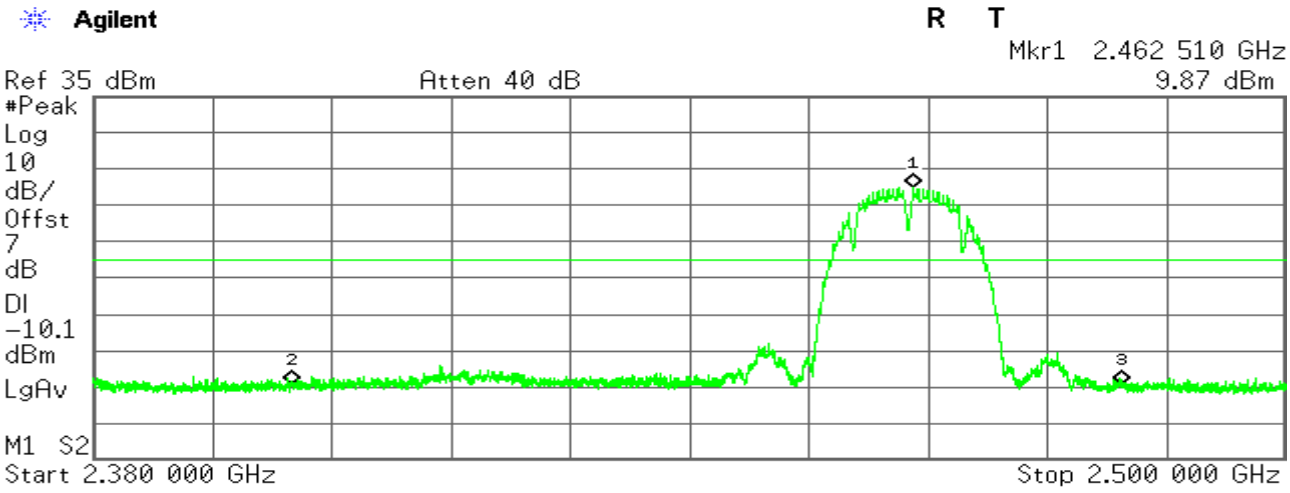
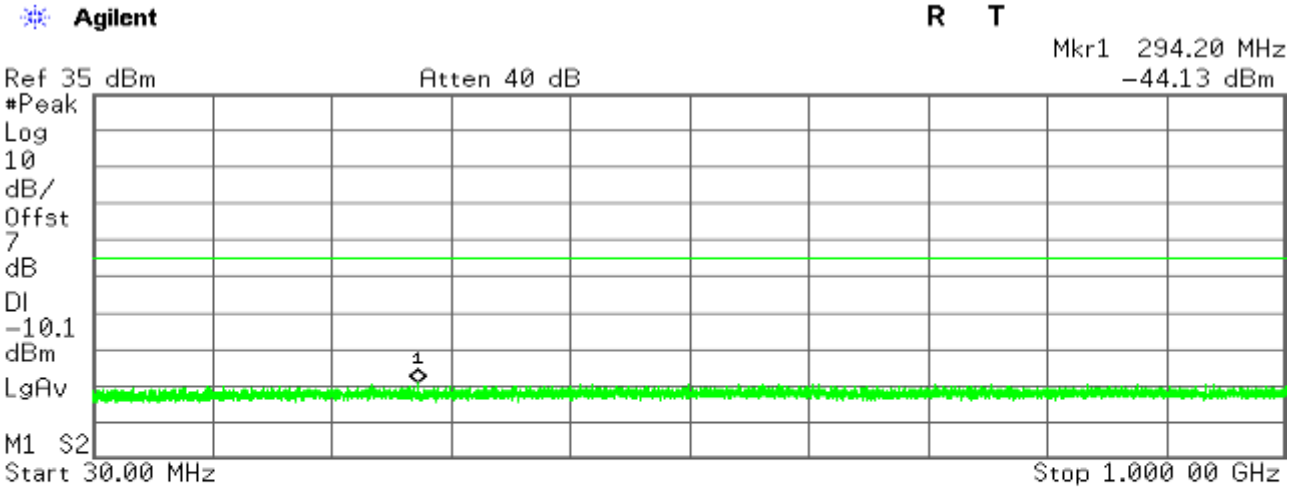
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.462 510 GHz	9.87 dBm
2	(1)	Freq	2.400 000 GHz	-44.20 dBm
3	(1)	Freq	2.483 500 GHz	-44.05 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	294.20 MHz	-44.13 dBm

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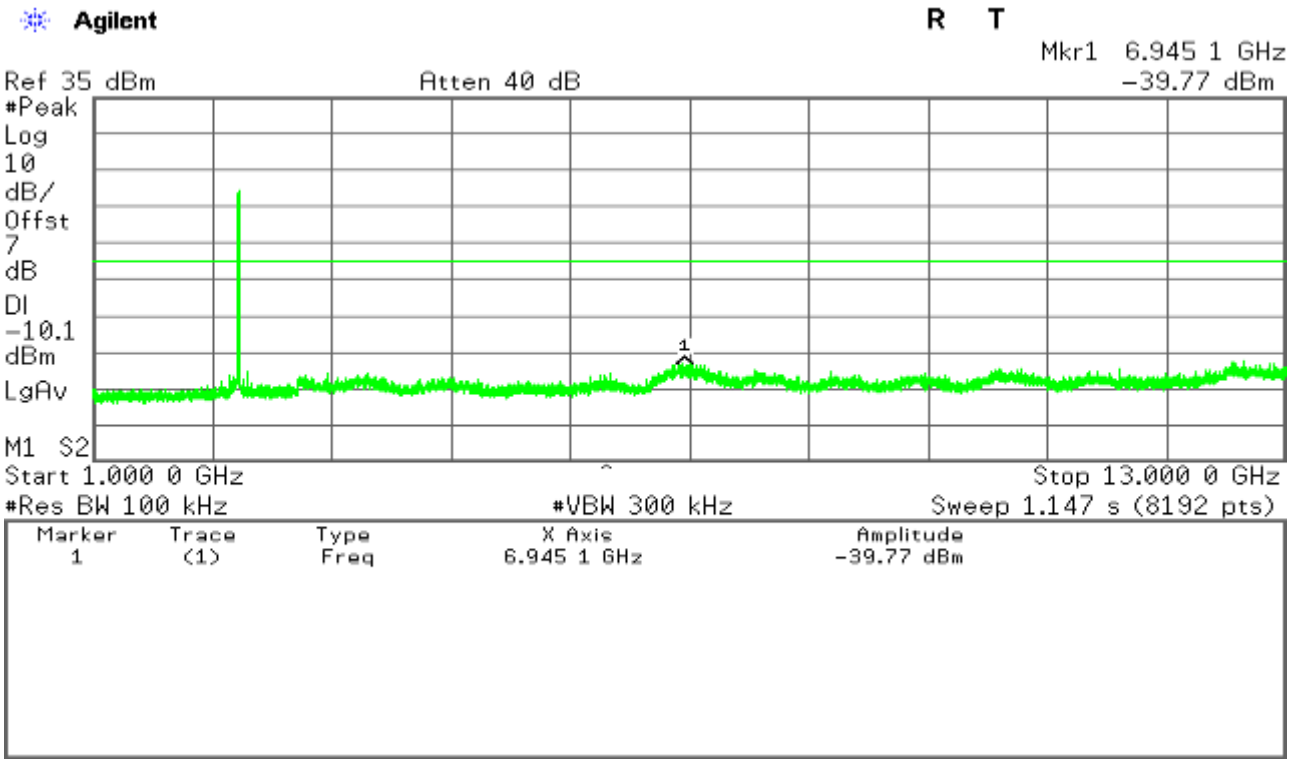

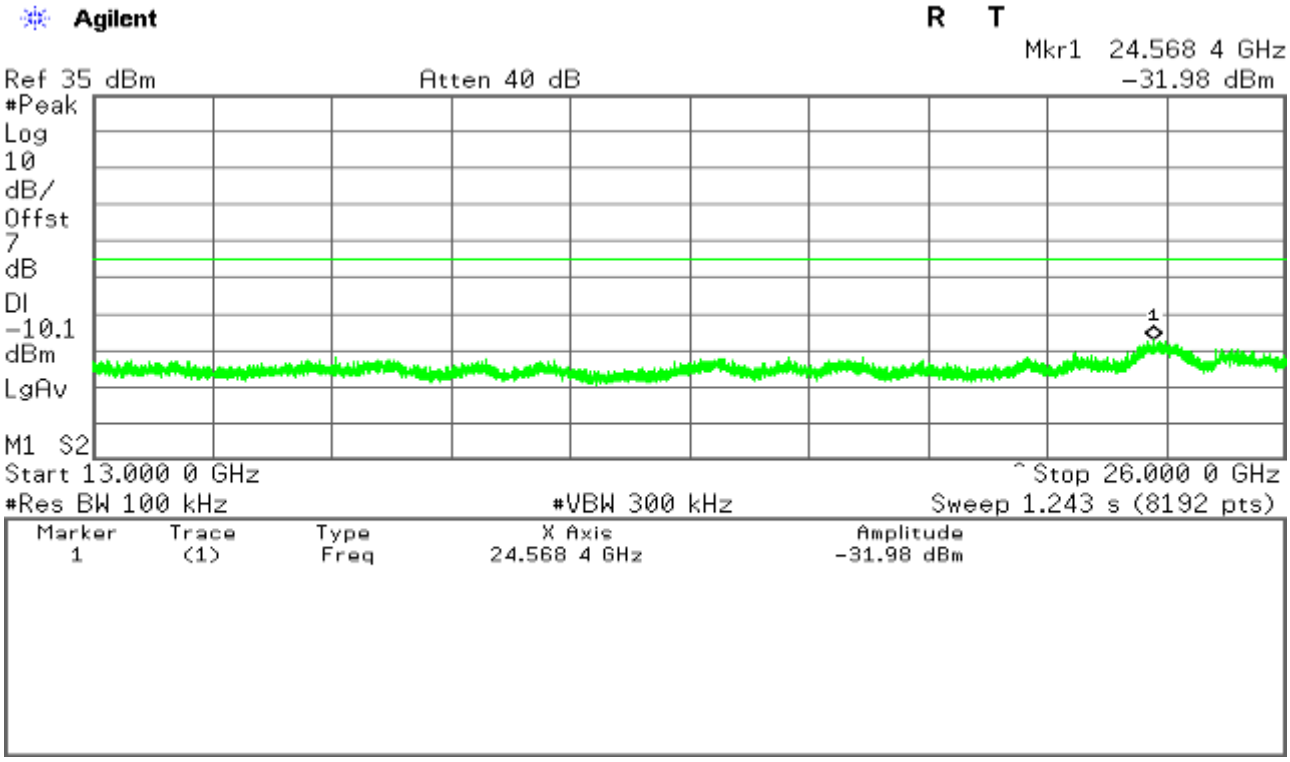

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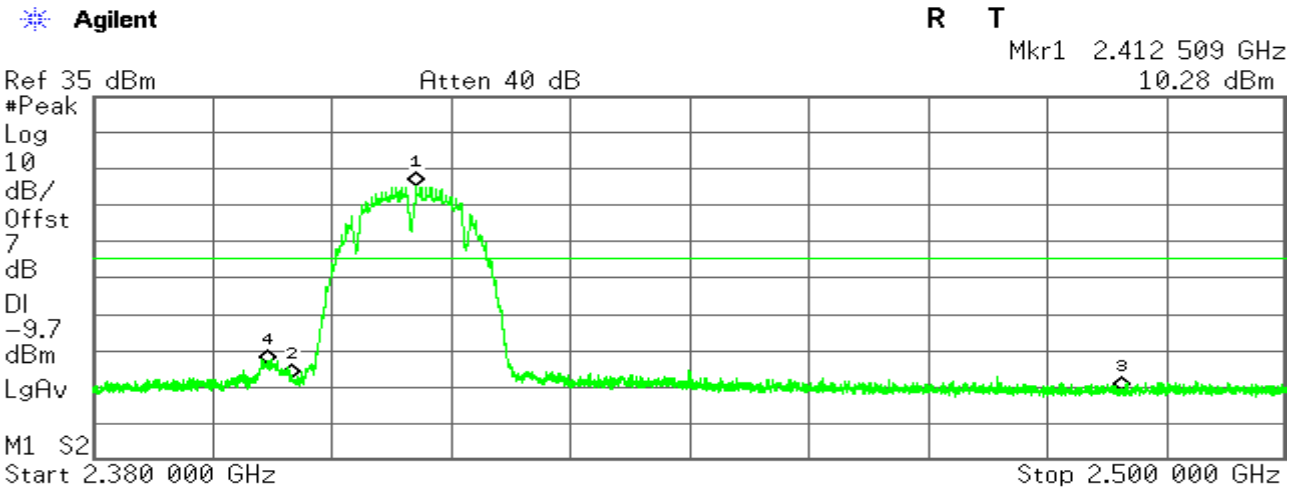
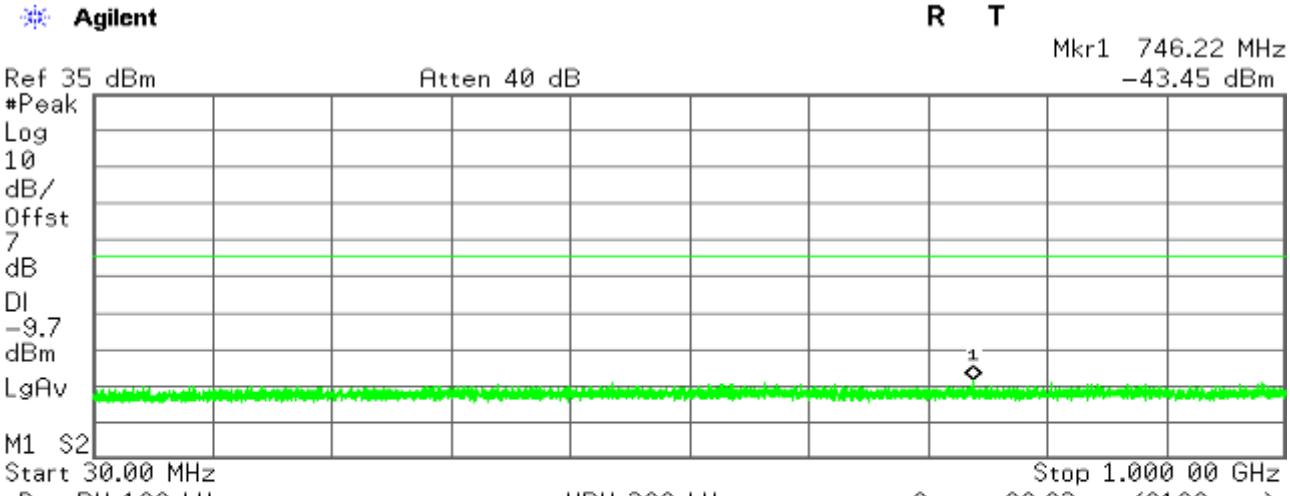
IEEE 802.11b mode/Chain 1

CH Low



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 509 GHz	10.28 dBm
2	(1)	Freq	2.400 000 GHz	-42.51 dBm
3	(1)	Freq	2.483 500 GHz	-45.77 dBm
4	(1)	Freq	2.397 478 GHz	-38.53 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	746.22 MHz	-43.45 dBm

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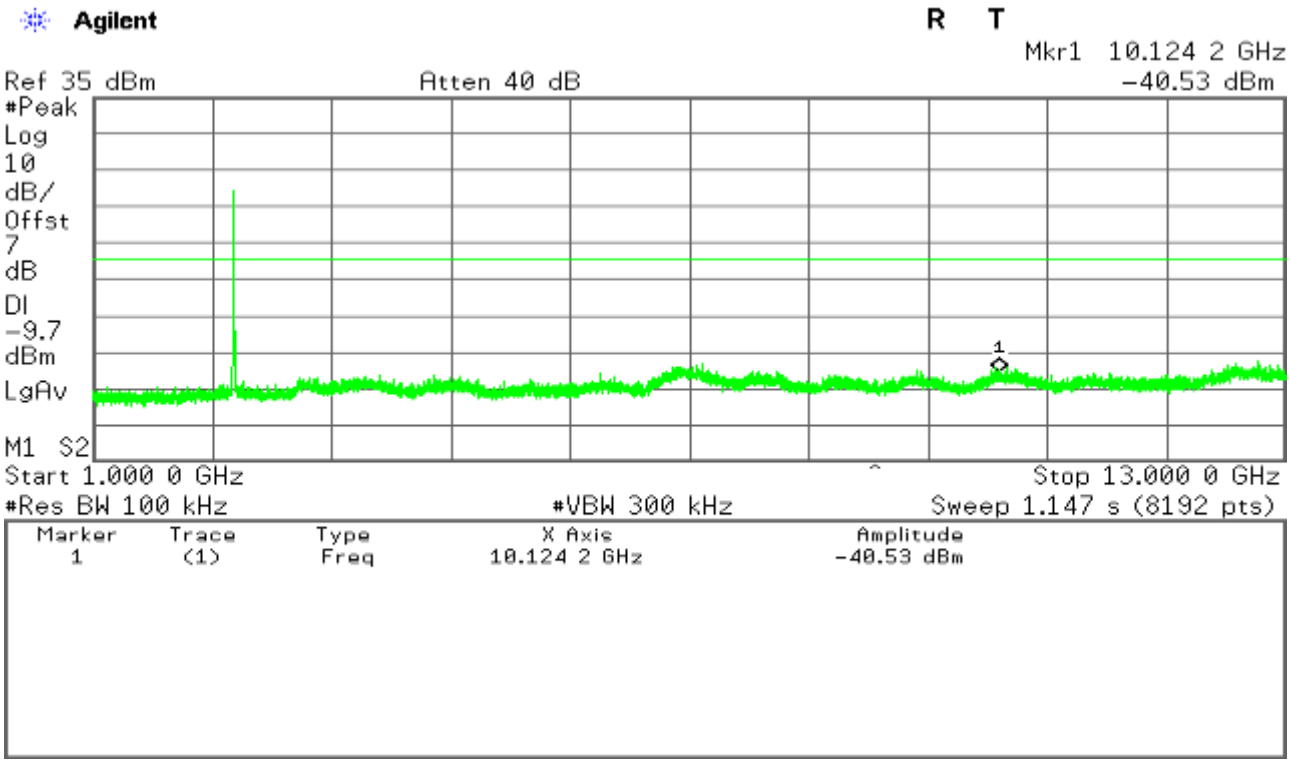

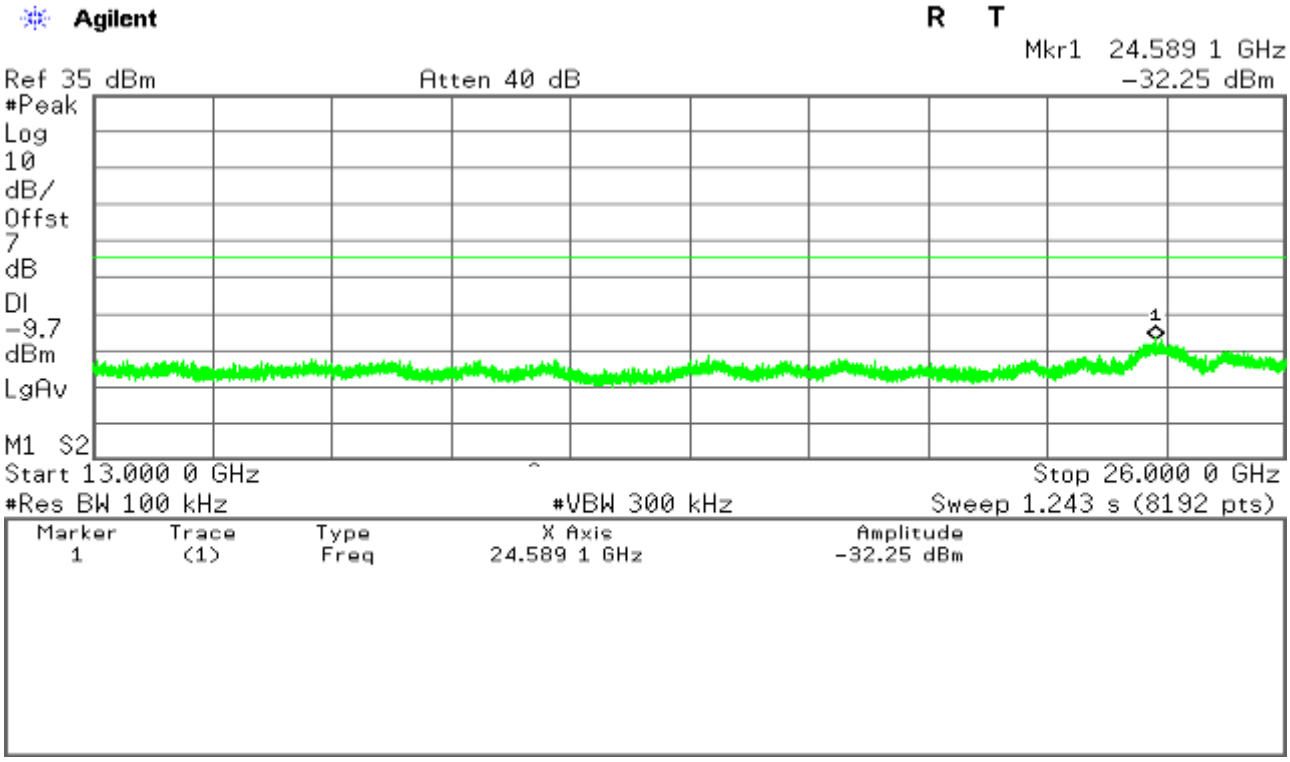

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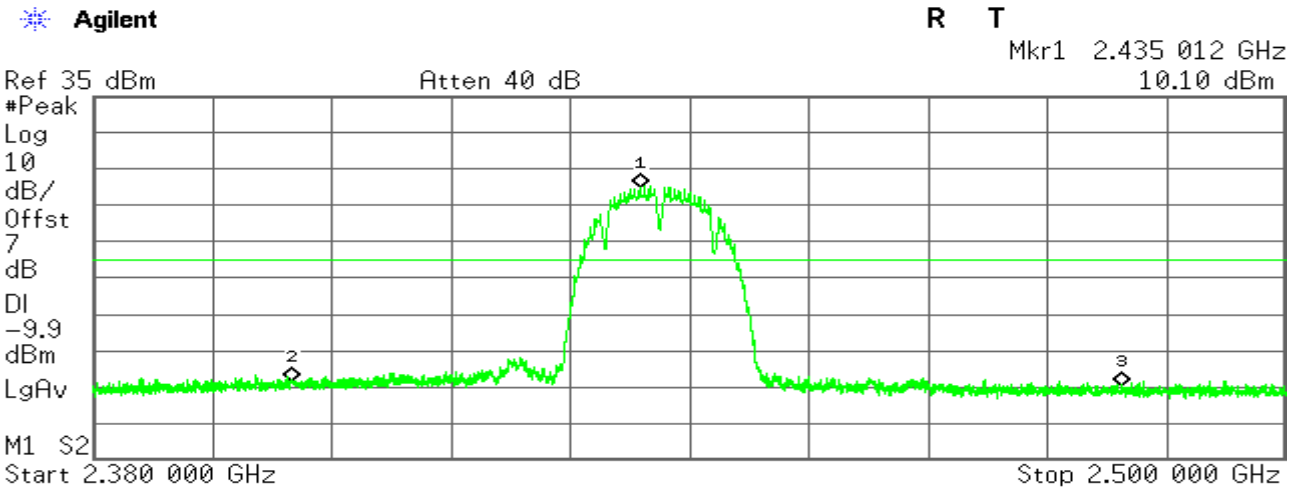
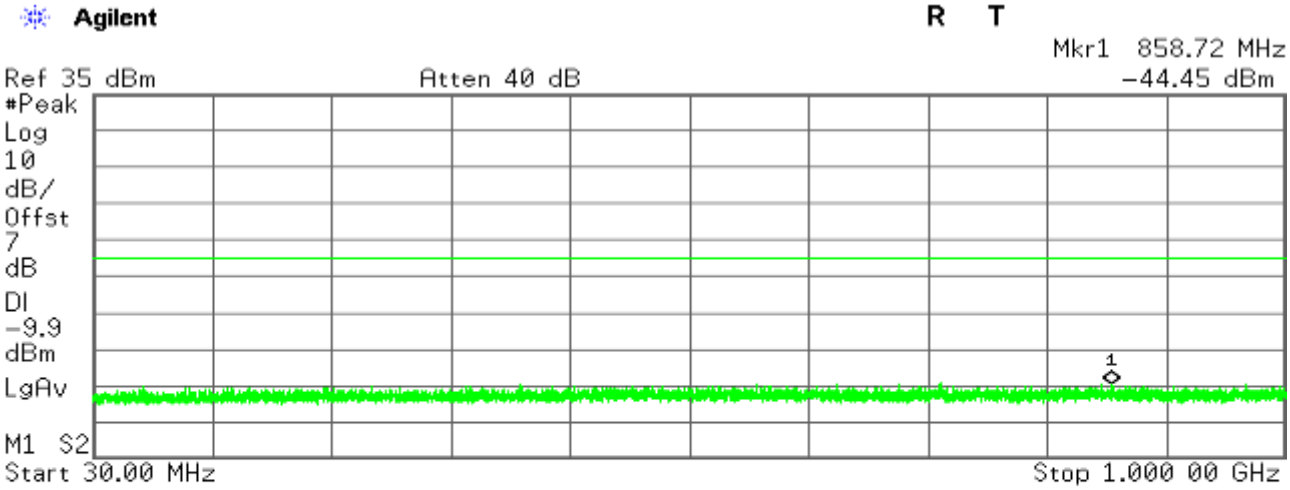
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.435 012 GHz	10.10 dBm
2	(1)	Freq	2.400 000 GHz	-43.35 dBm
3	(1)	Freq	2.483 500 GHz	-44.76 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	858.72 MHz	-44.45 dBm

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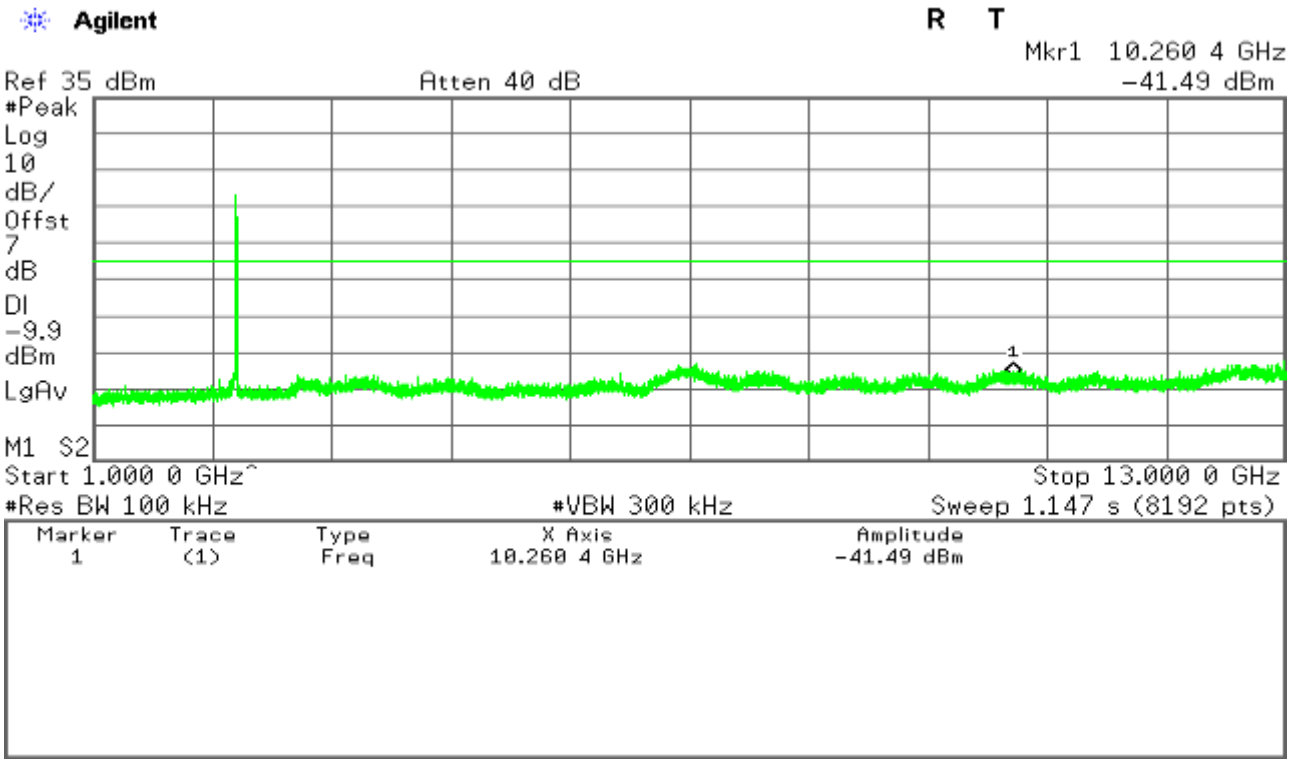

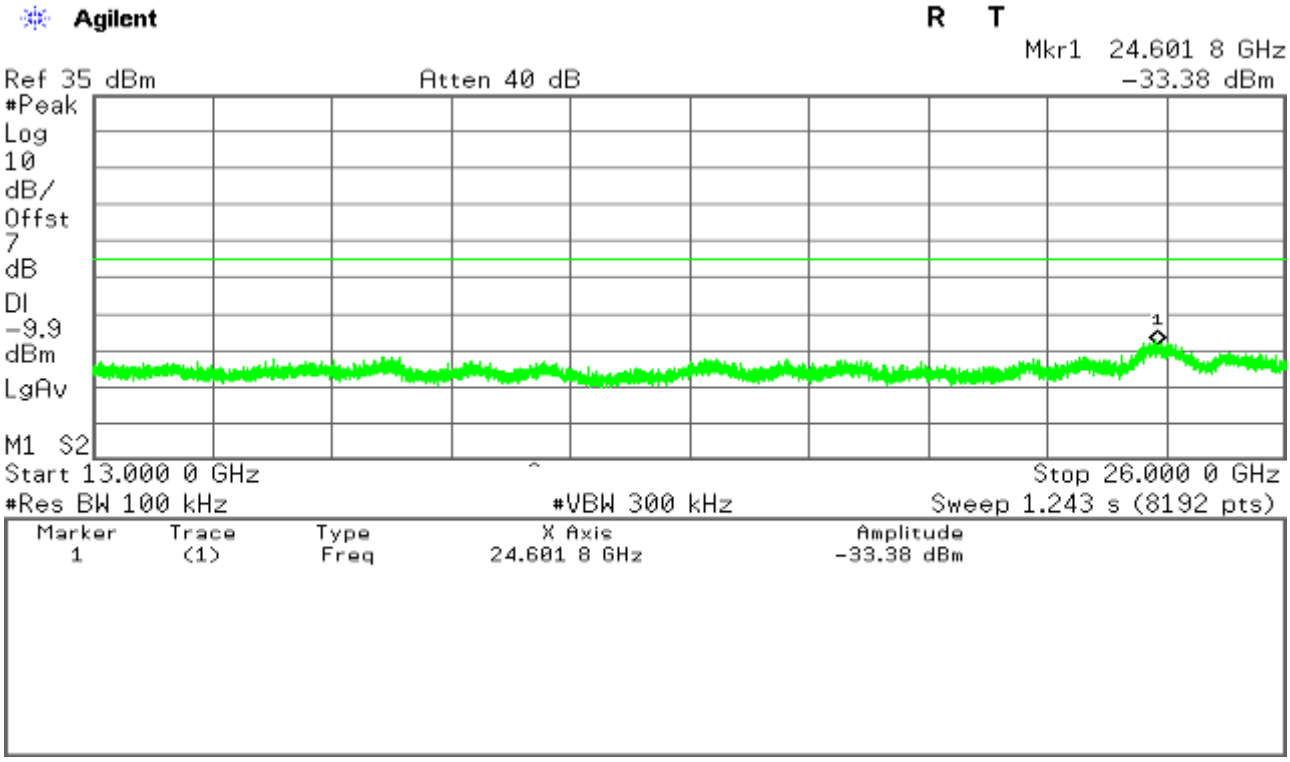

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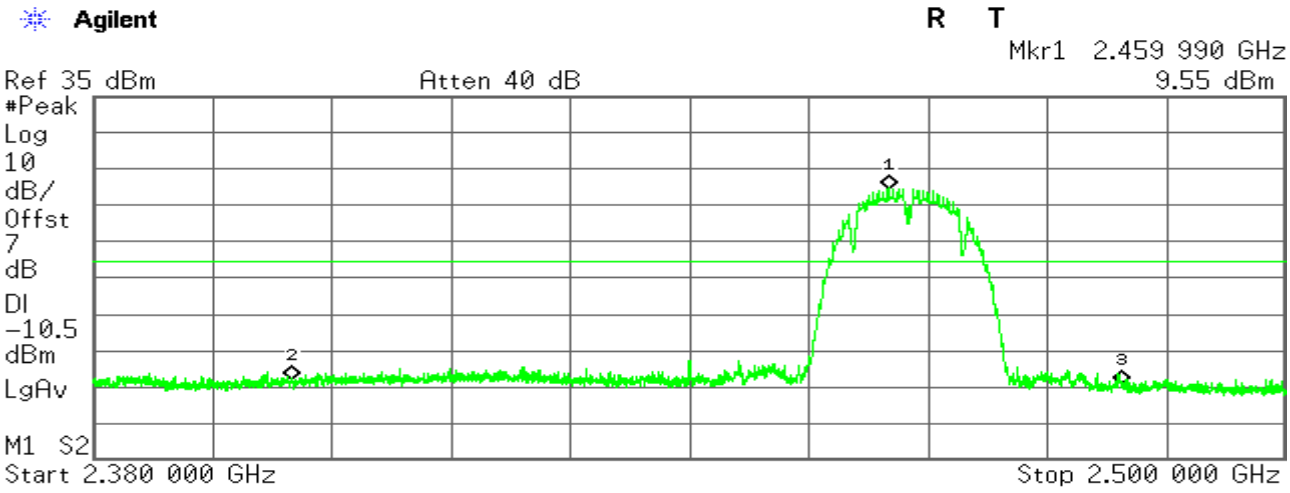
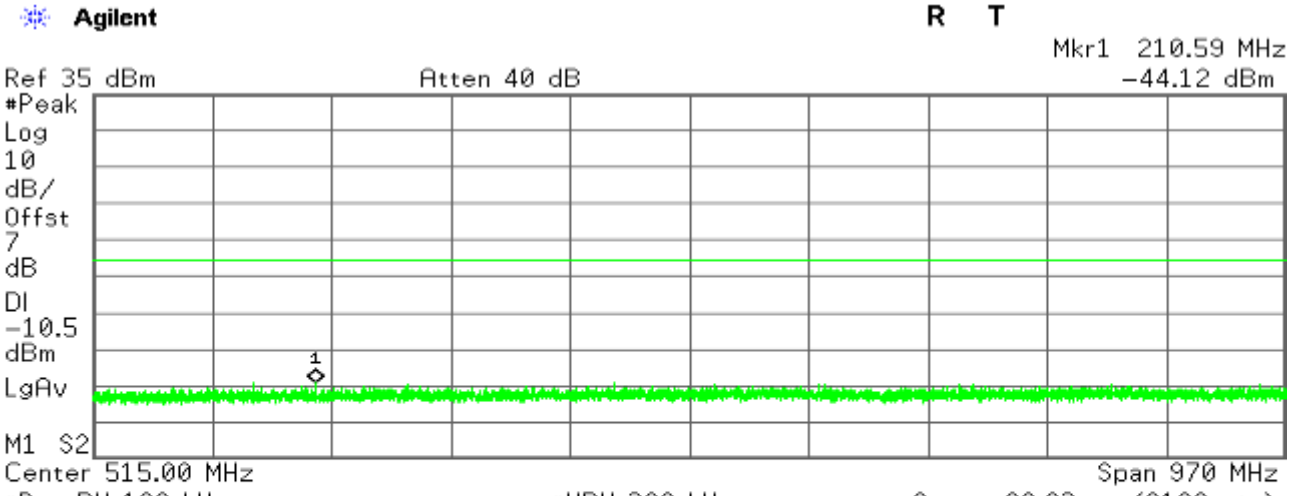
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.459 990 GHz	9.55 dBm
2	(1)	Freq	2.400 000 GHz	-42.75 dBm
3	(1)	Freq	2.483 500 GHz	-44.16 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	210.59 MHz	-44.12 dBm

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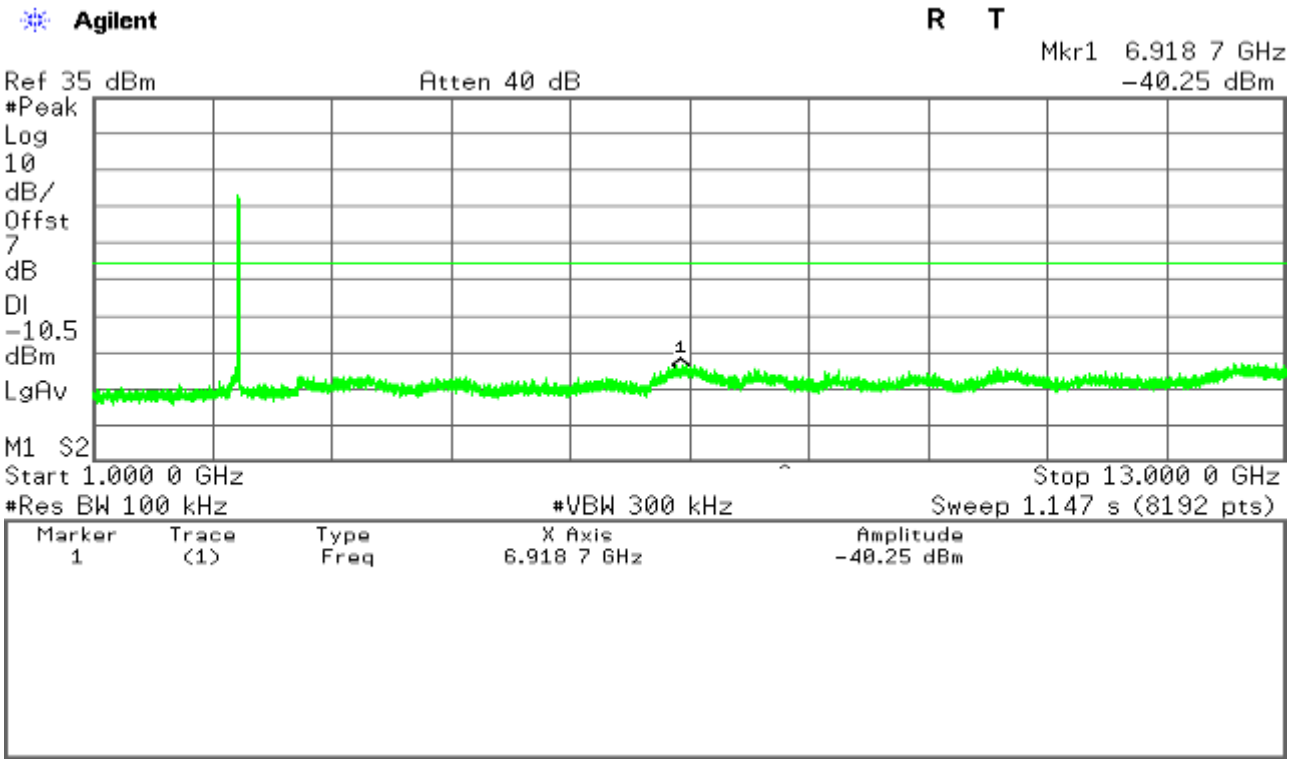

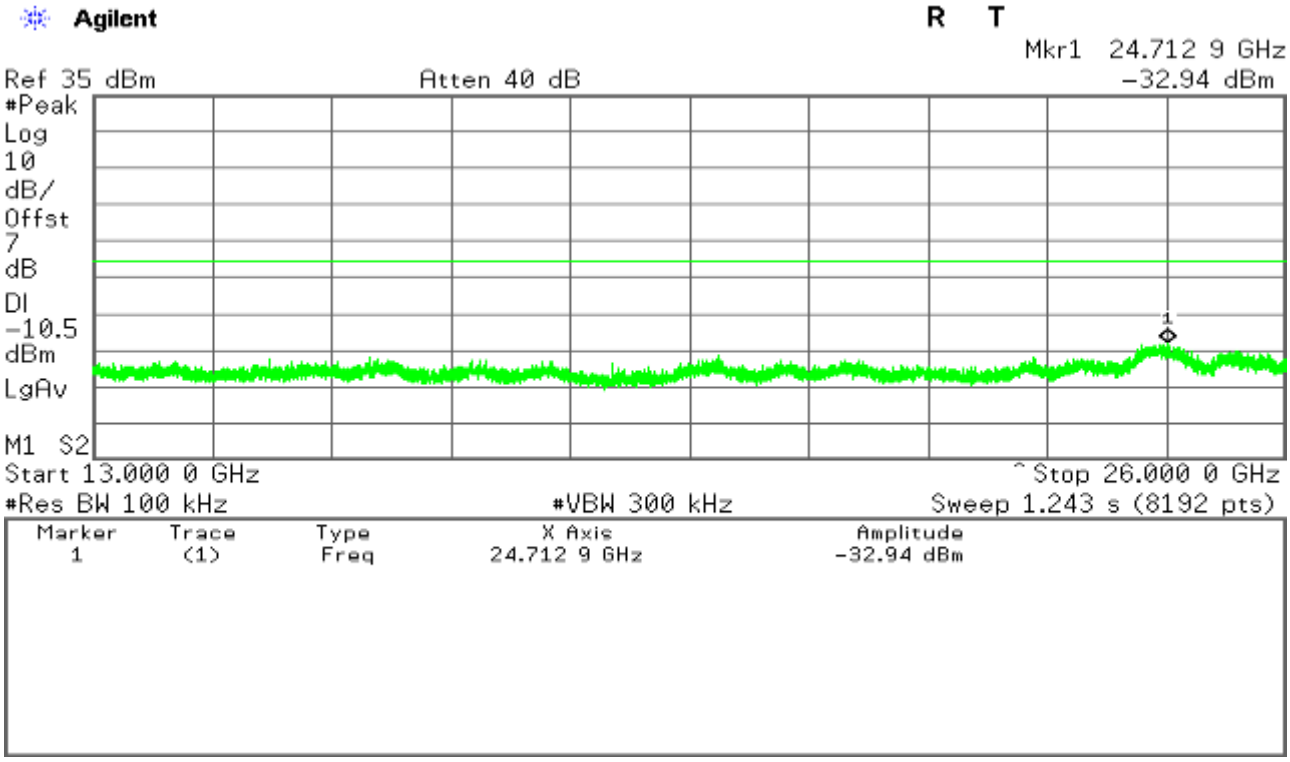

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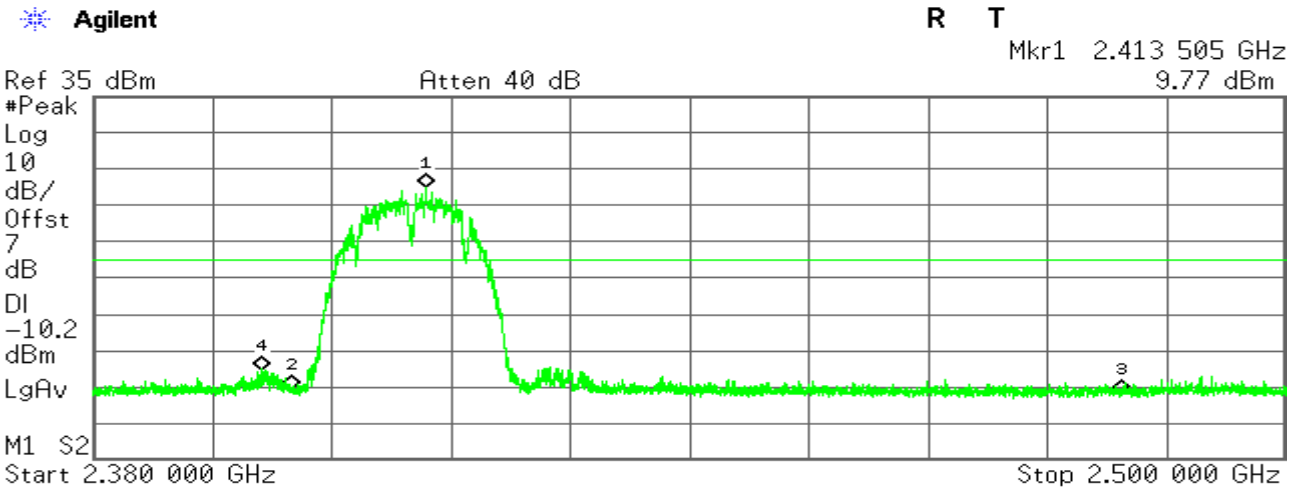
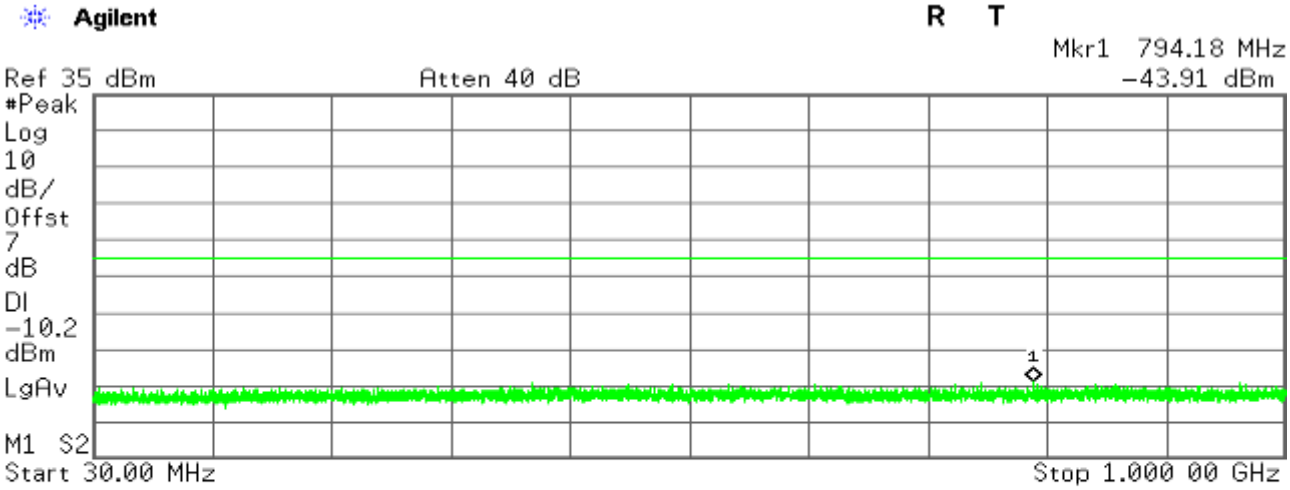
IEEE 802.11b mode/Chain 2

CH Low



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.413 505 GHz	9.77 dBm
2	(1)	Freq	2.400 000 GHz	-45.57 dBm
3	(1)	Freq	2.483 500 GHz	-46.70 dBm
4	(1)	Freq	2.396 980 GHz	-40.17 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	794.18 MHz	-43.91 dBm

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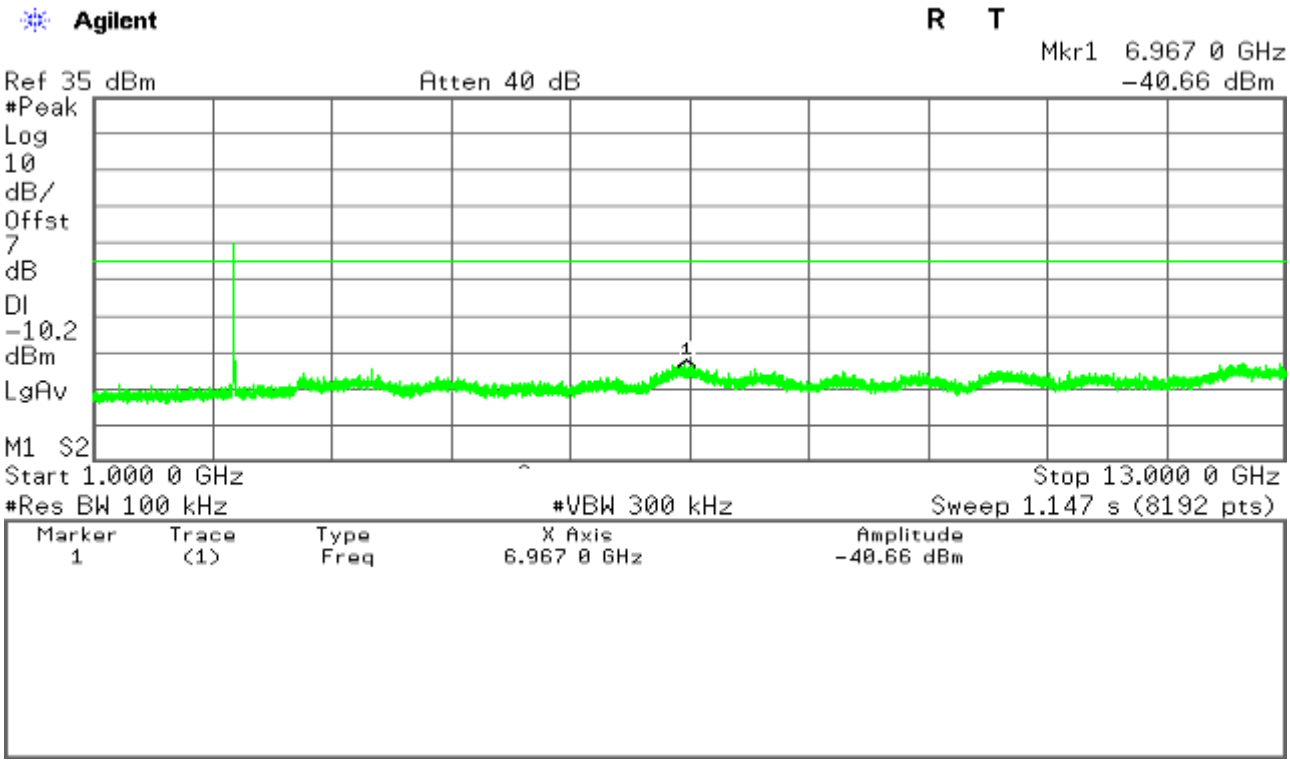

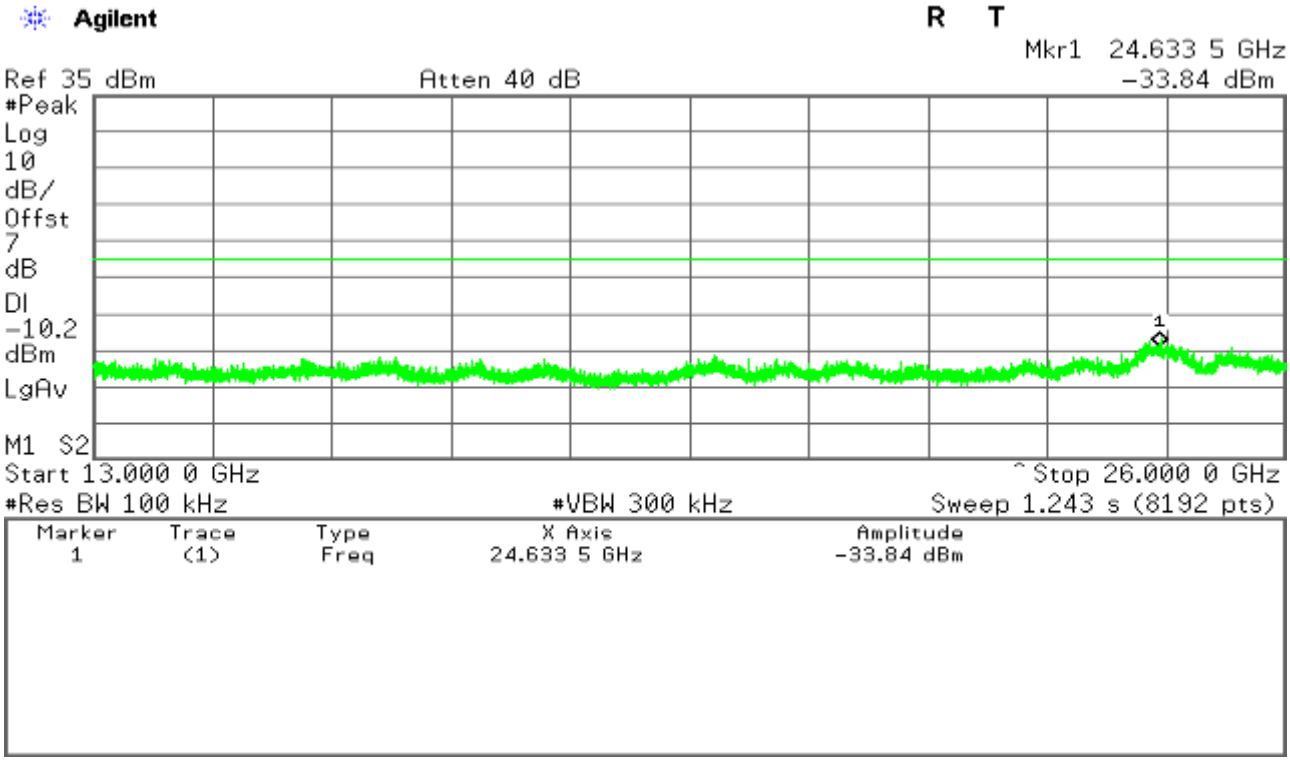

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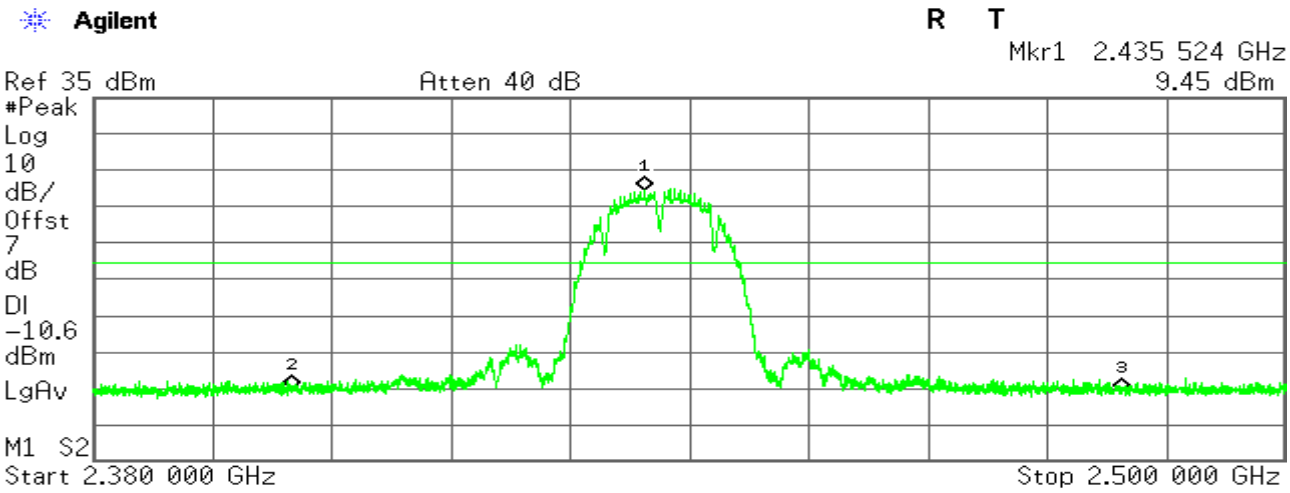
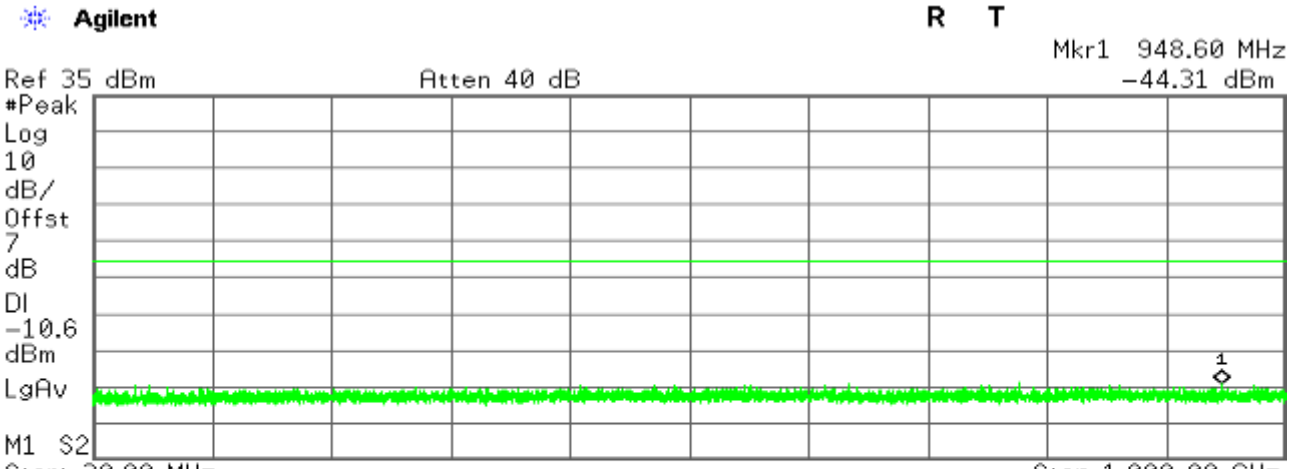
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.435 524 GHz	9.45 dBm
2	(1)	Freq	2.400 000 GHz	-45.22 dBm
3	(1)	Freq	2.483 500 GHz	-45.85 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	948.60 MHz	-44.31 dBm

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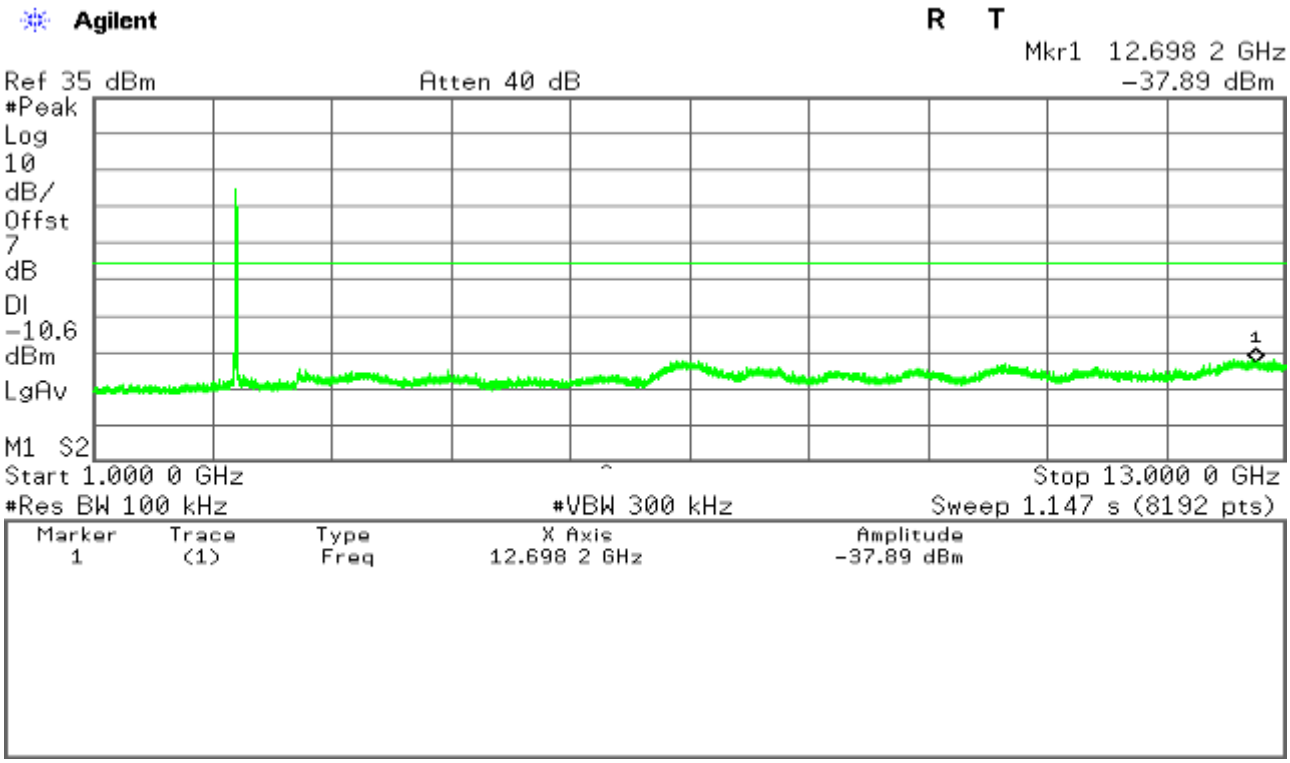

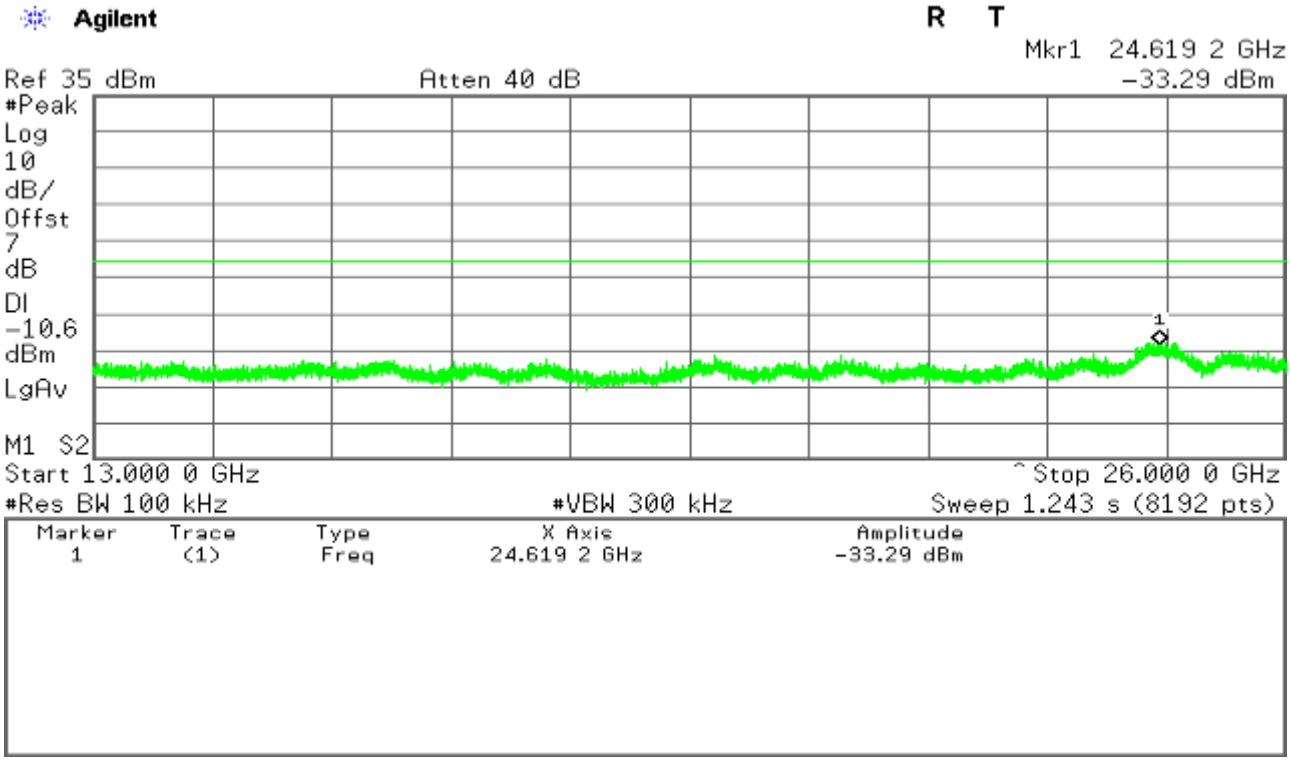

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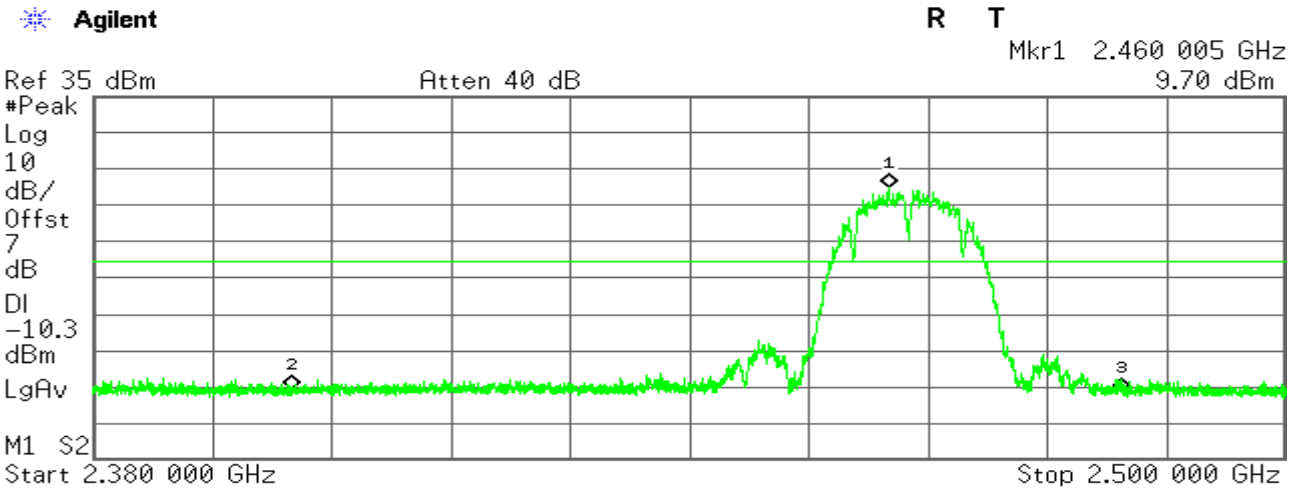
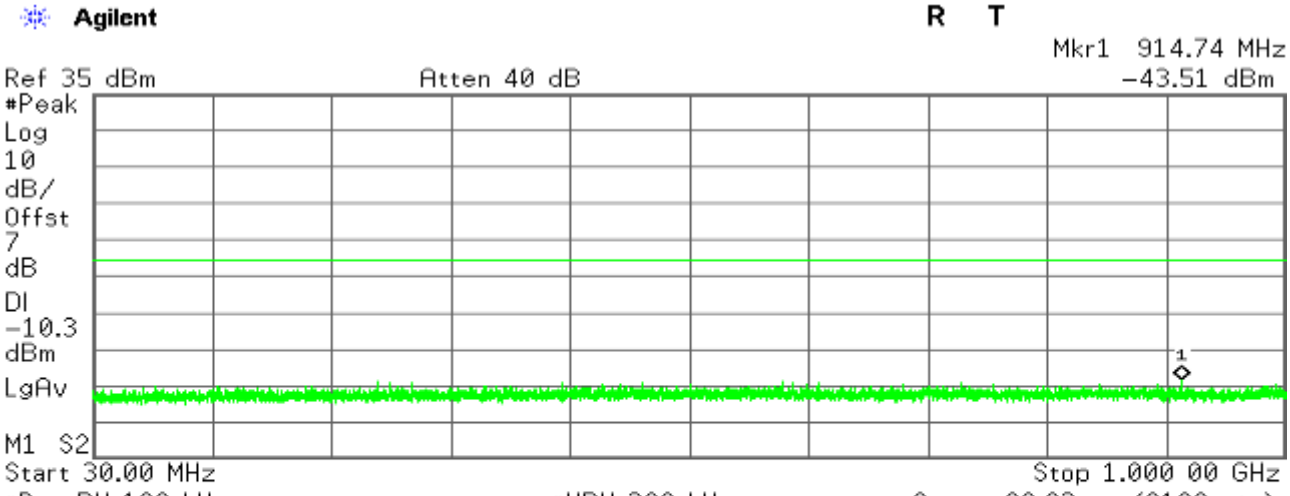
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.460 005 GHz	9.70 dBm
2	(1)	Freq	2.400 000 GHz	-45.40 dBm
3	(1)	Freq	2.483 500 GHz	-46.53 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	914.74 MHz	-43.51 dBm

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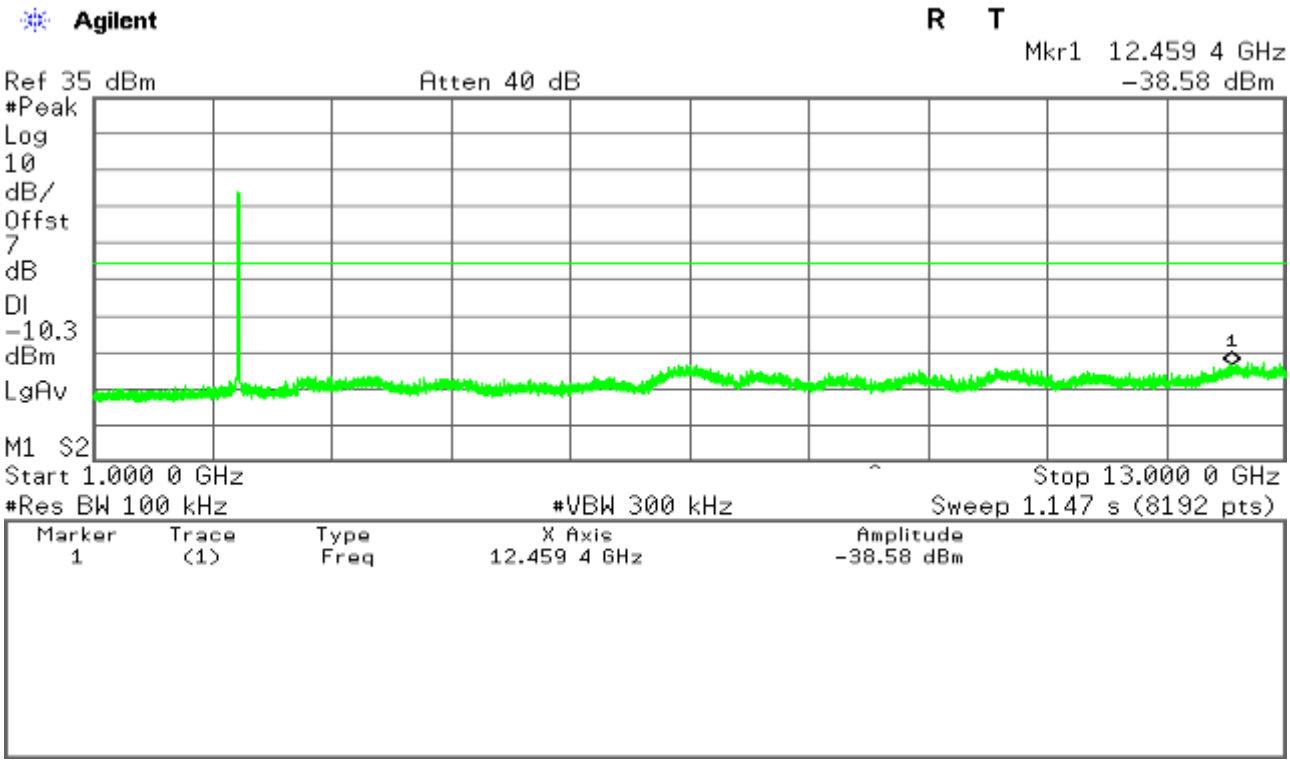

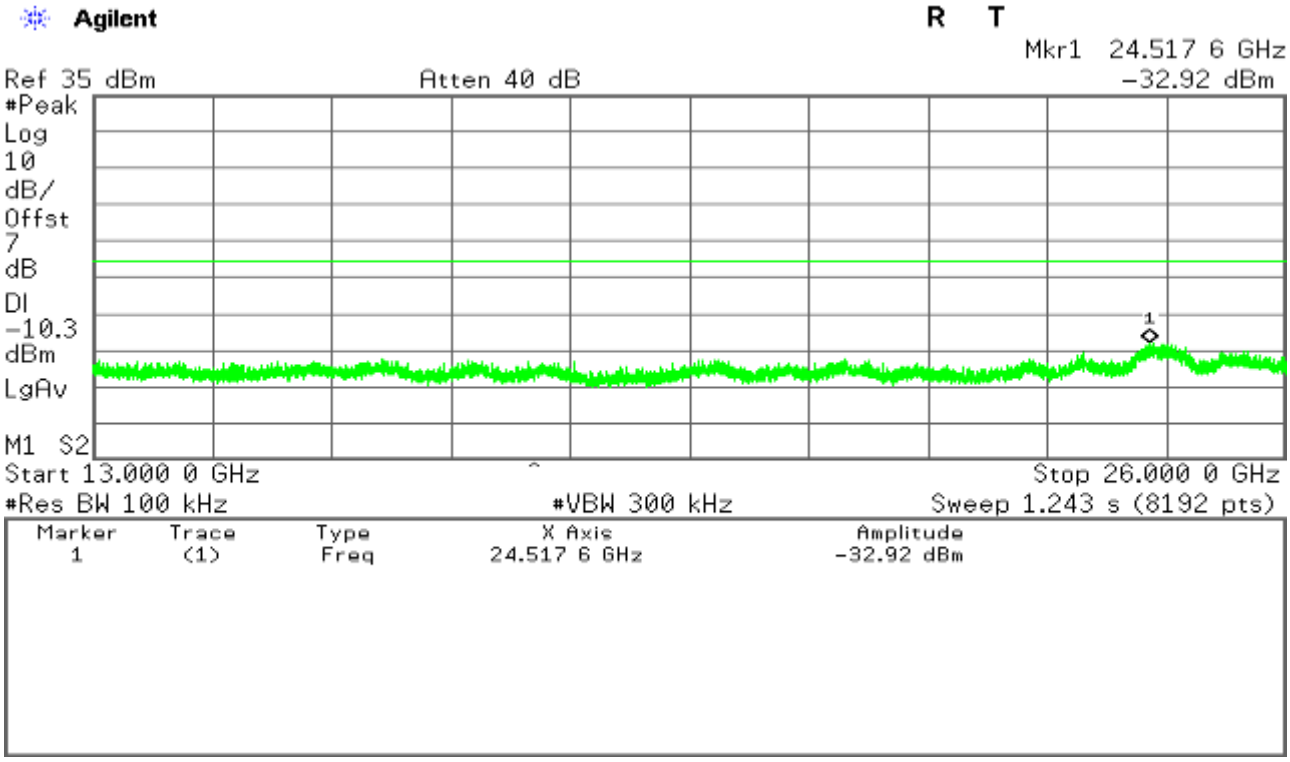

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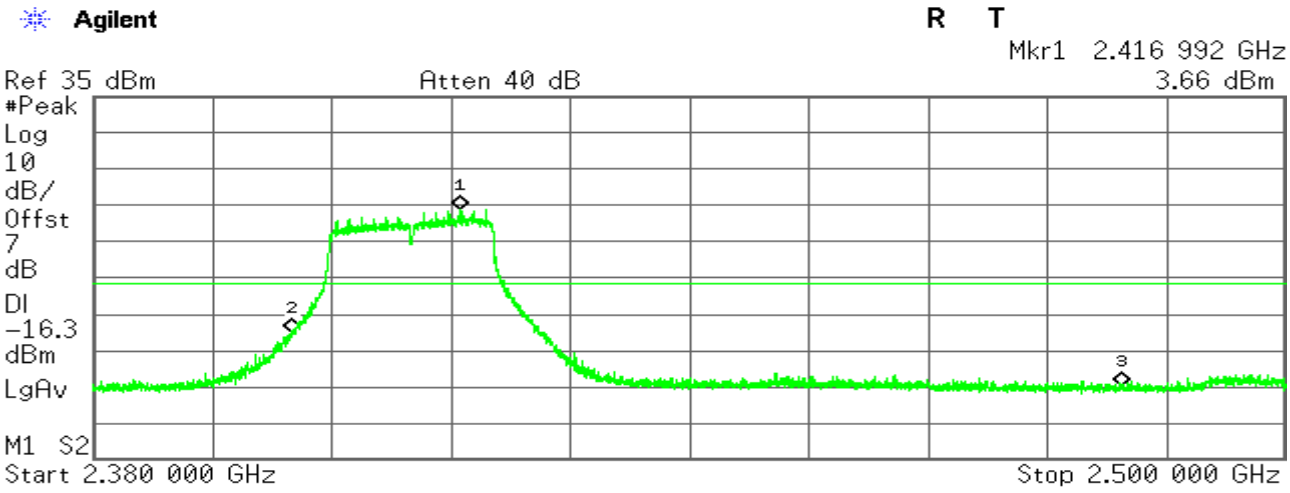
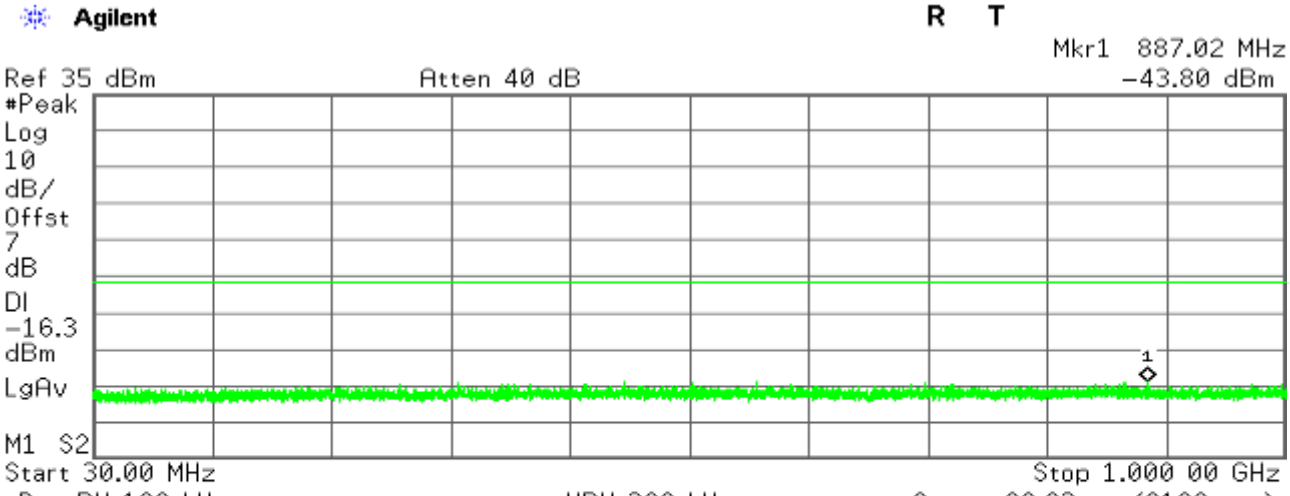
IEEE 802.11g mode/Chain 0

CH Low



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.416 992 GHz	3.66 dBm
2	(1)	Freq	2.400 000 GHz	-29.92 dBm
3	(1)	Freq	2.483 500 GHz	-44.81 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	887.02 MHz	-43.80 dBm

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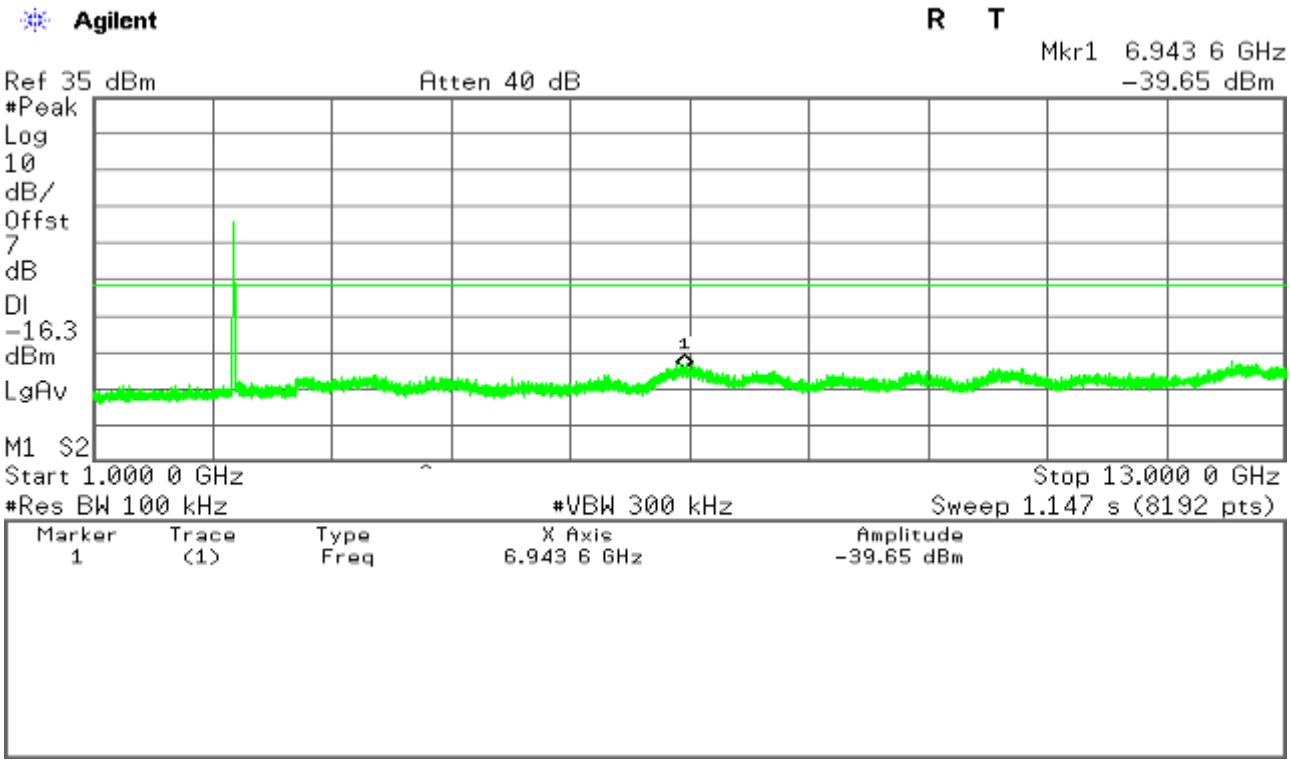

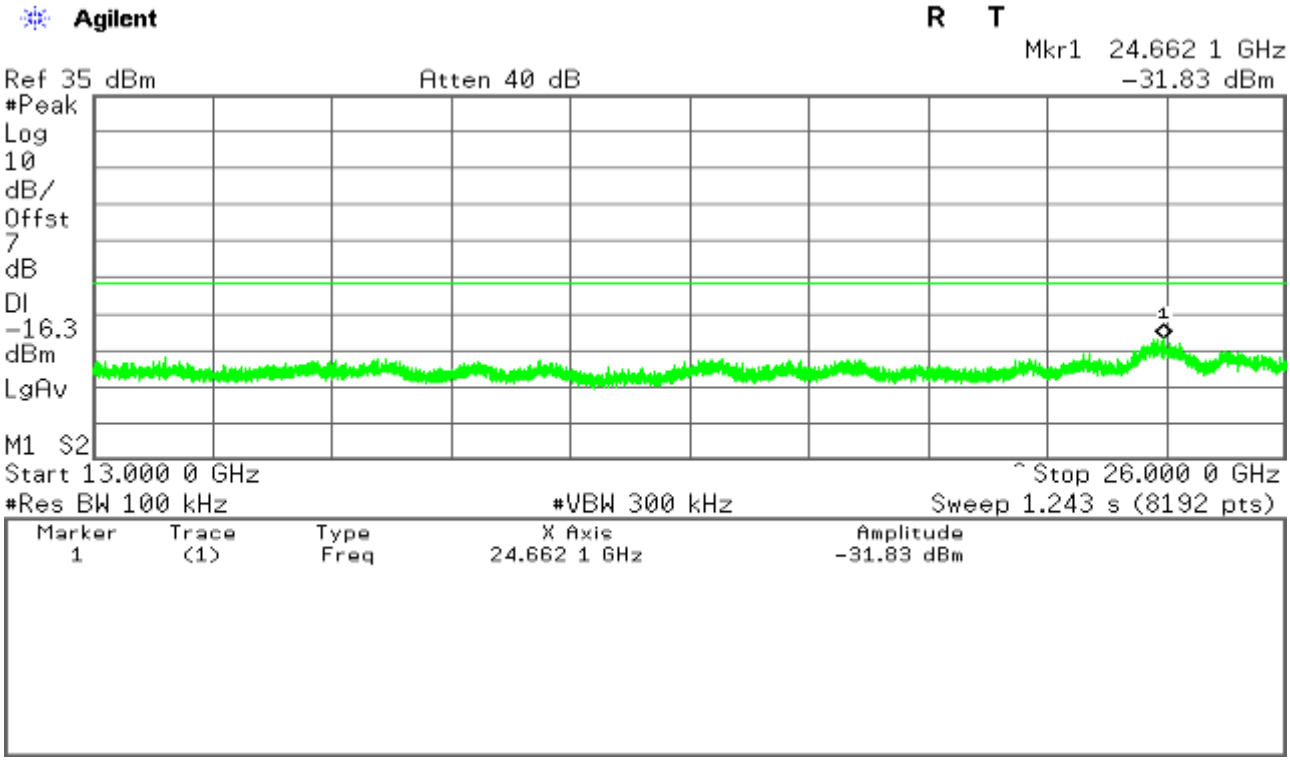

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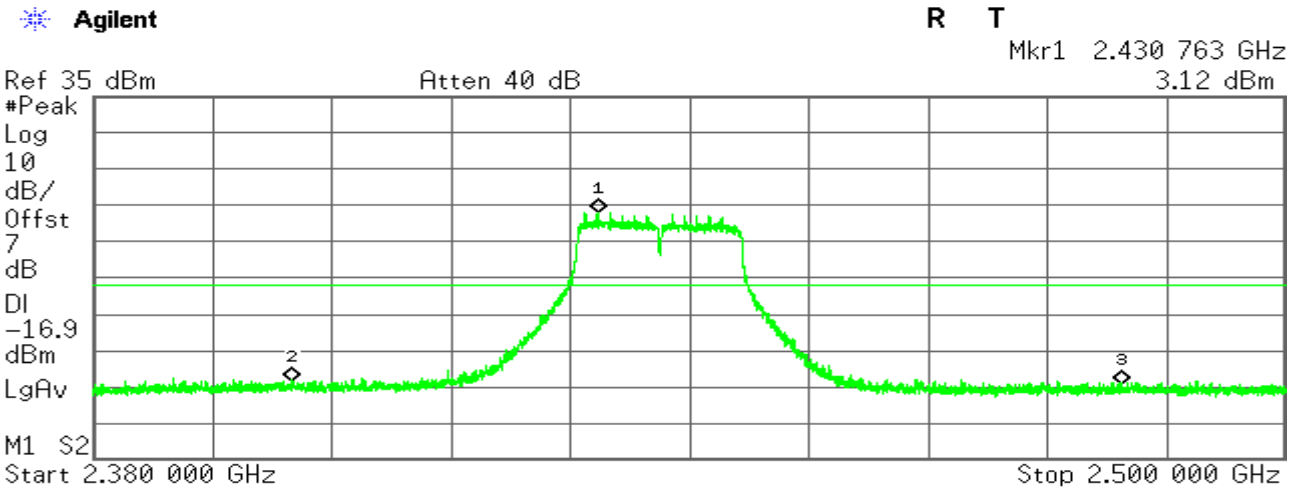
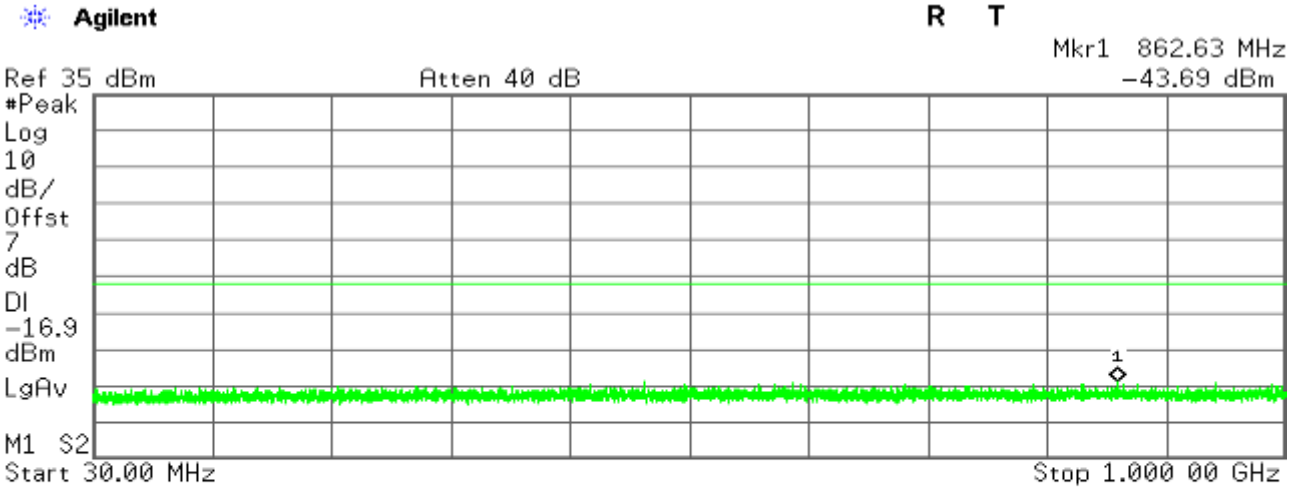
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.430 763 GHz	3.12 dBm
2	(1)	Freq	2.400 000 GHz	-43.16 dBm
3	(1)	Freq	2.483 500 GHz	-44.19 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	862.63 MHz	-43.69 dBm

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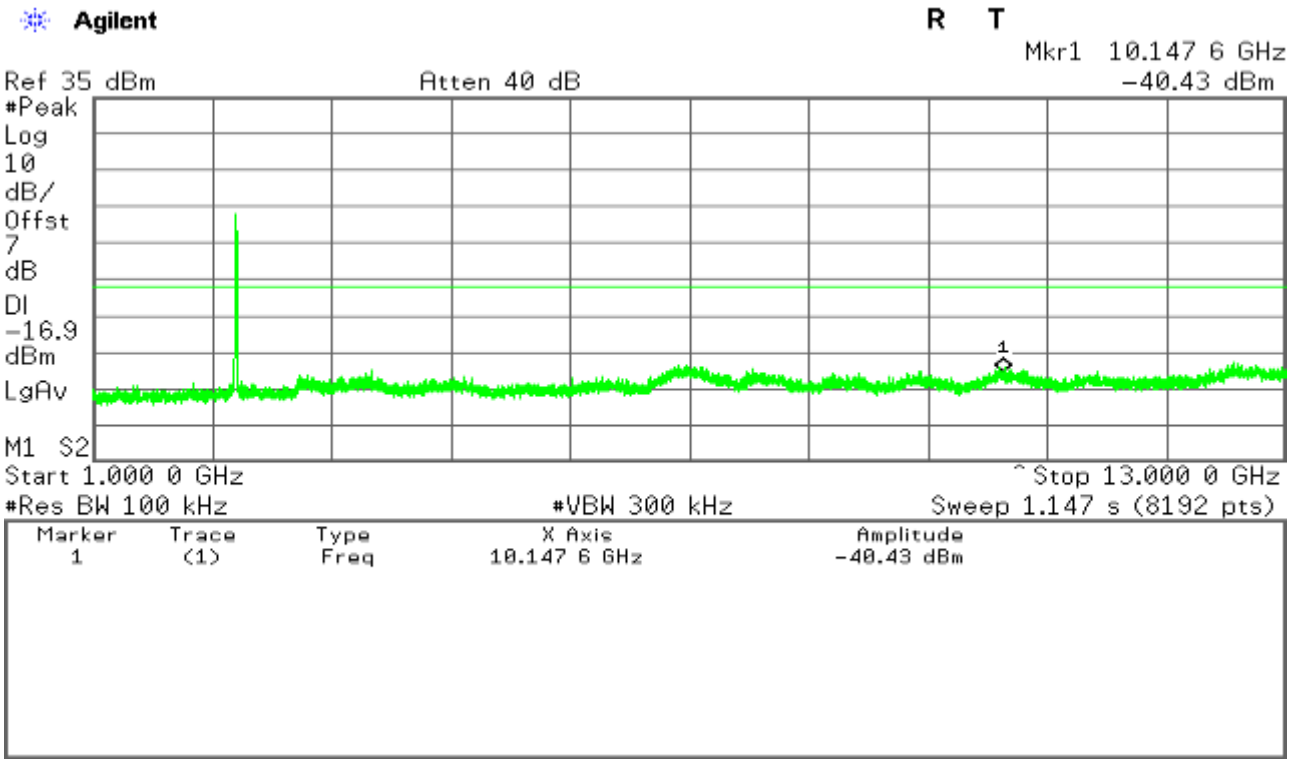

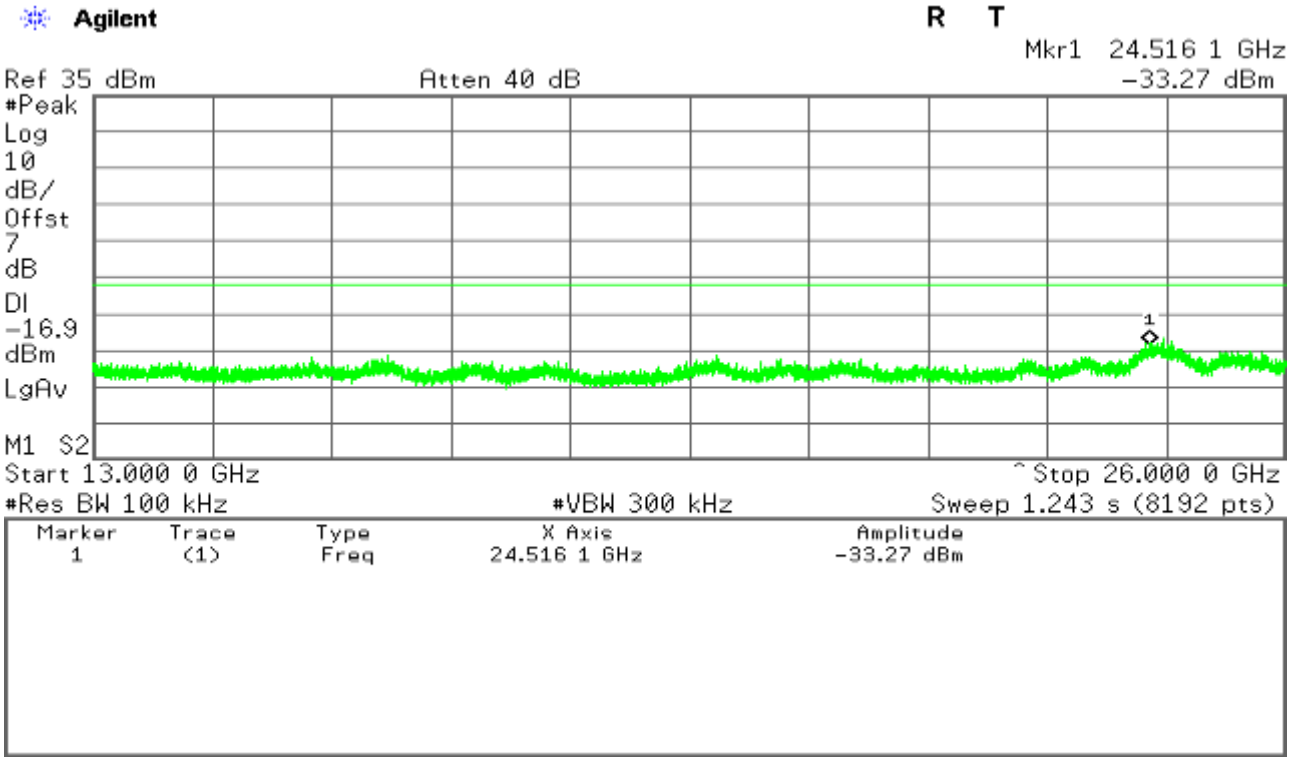

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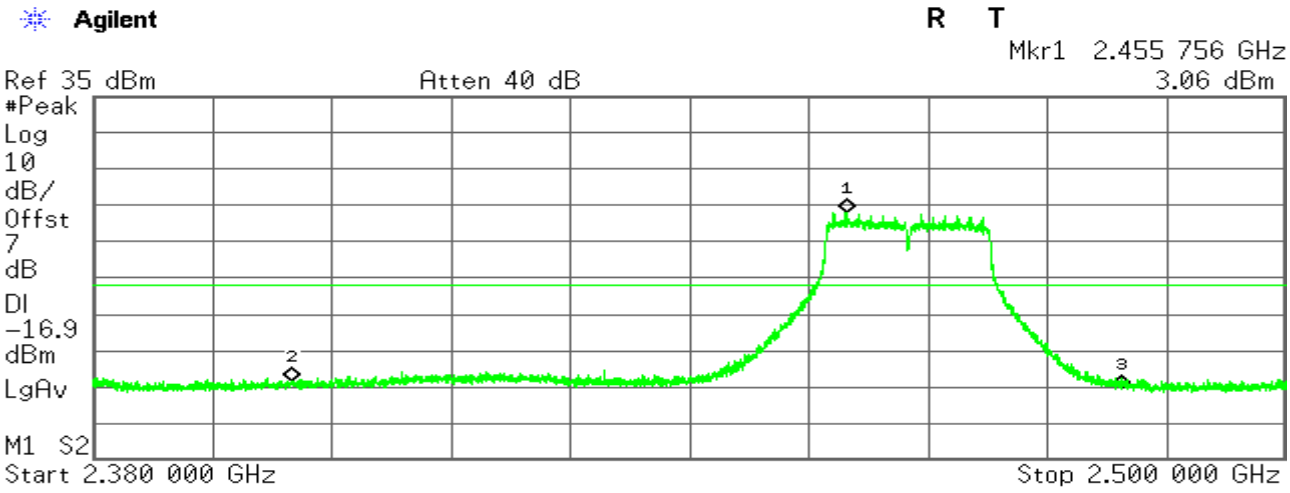
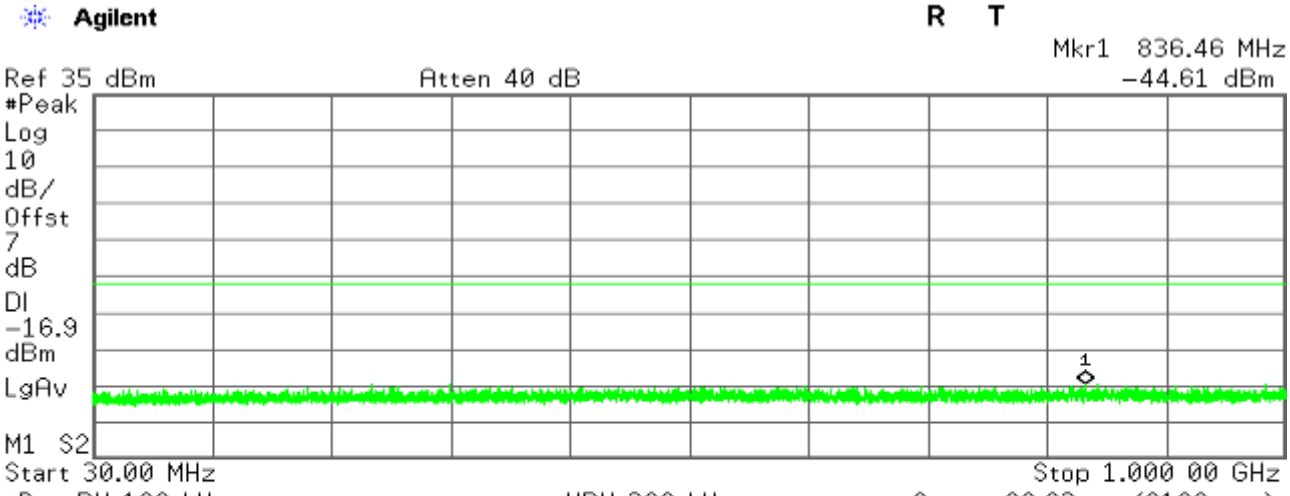
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.455 756 GHz	3.06 dBm
2	(1)	Freq	2.400 000 GHz	-43.57 dBm
3	(1)	Freq	2.483 500 GHz	-45.37 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	836.46 MHz	-44.61 dBm

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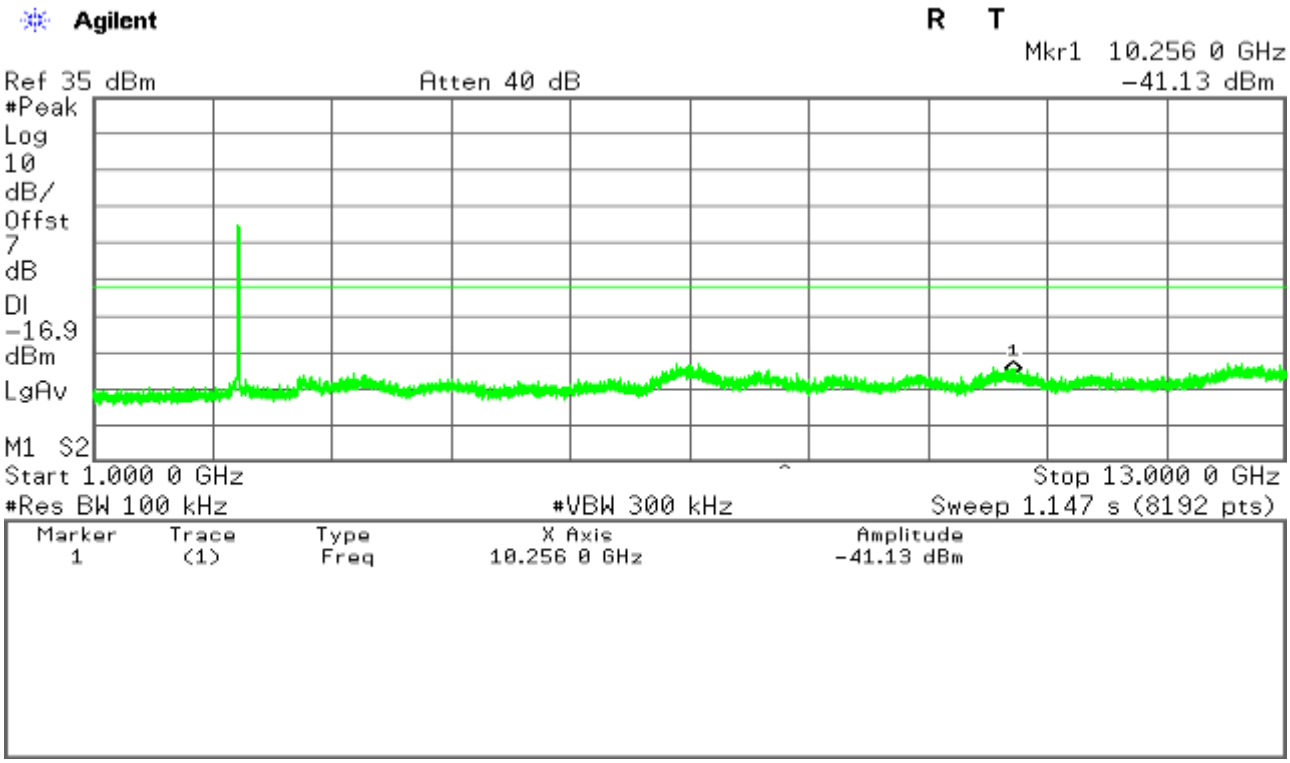

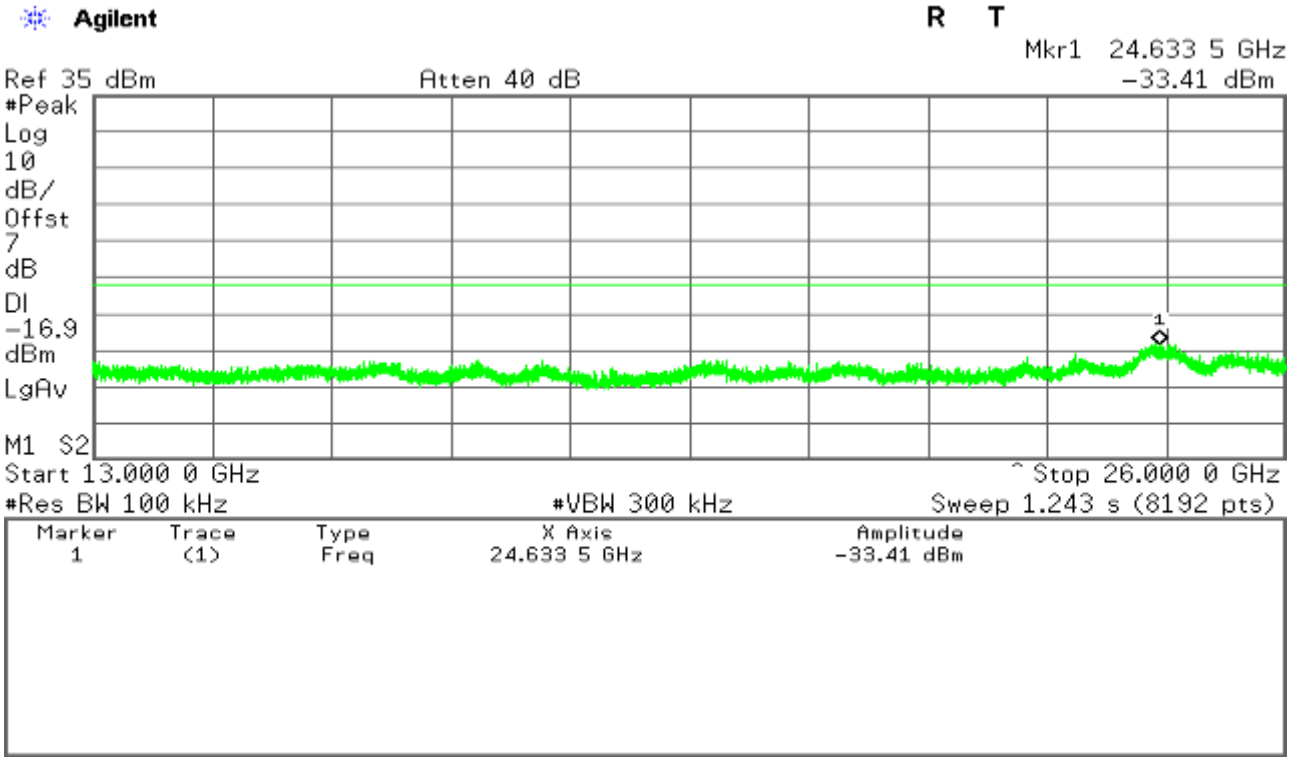

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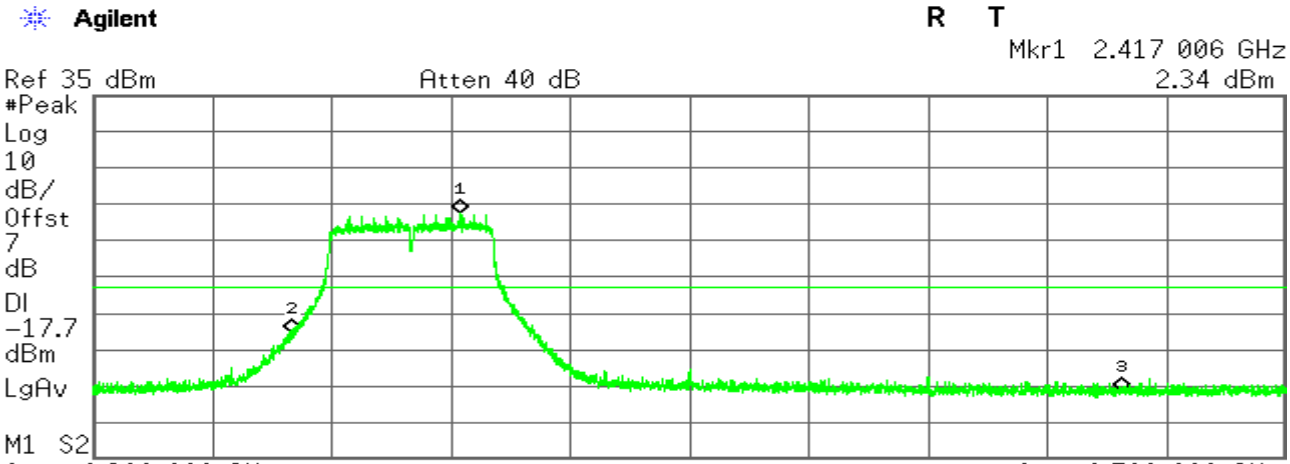
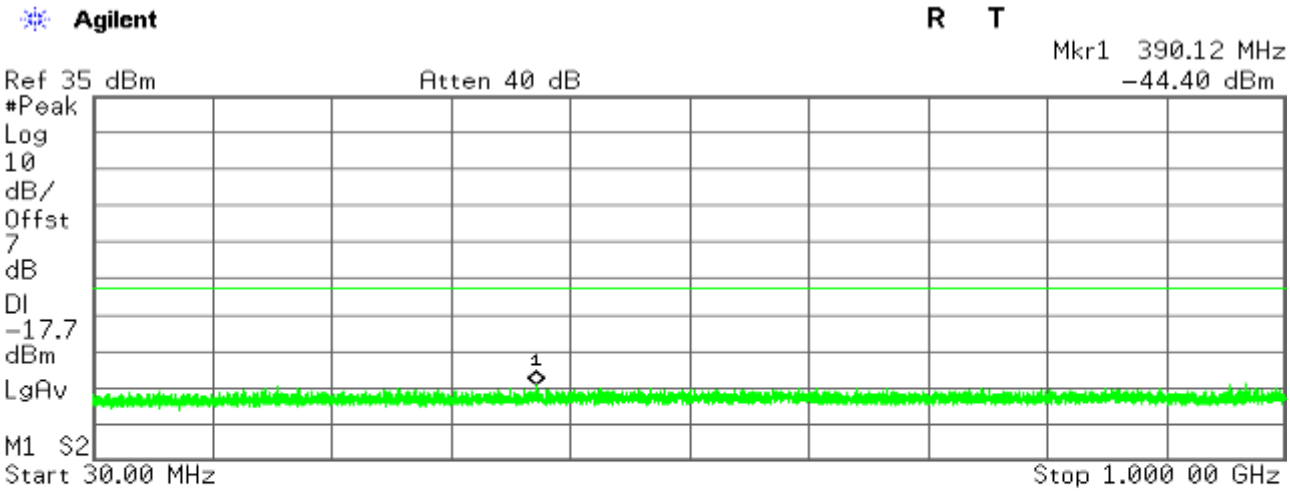
IEEE 802.11g mode/Chain 1

CH Low



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.417 006 GHz	2.34 dBm
2	(1)	Freq	2.400 000 GHz	-30.51 dBm
3	(1)	Freq	2.483 500 GHz	-46.53 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	390.12 MHz	-44.40 dBm

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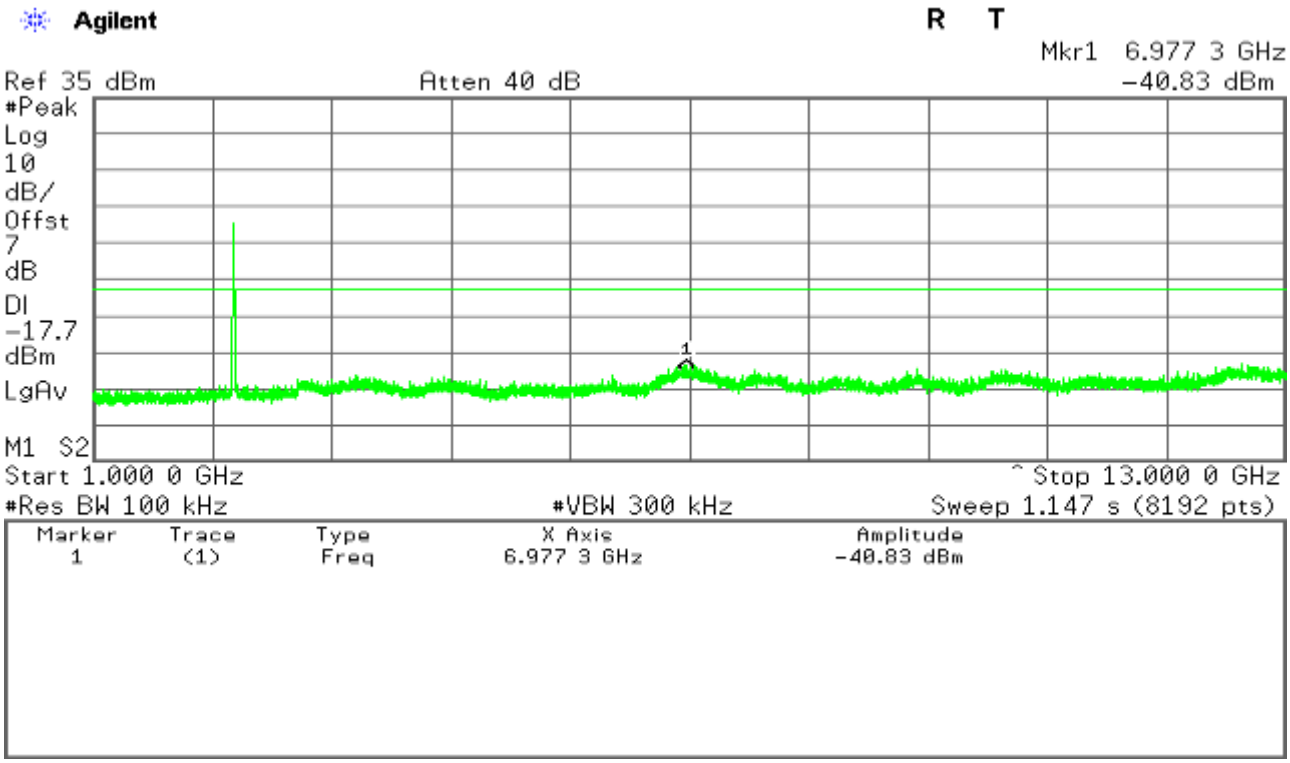

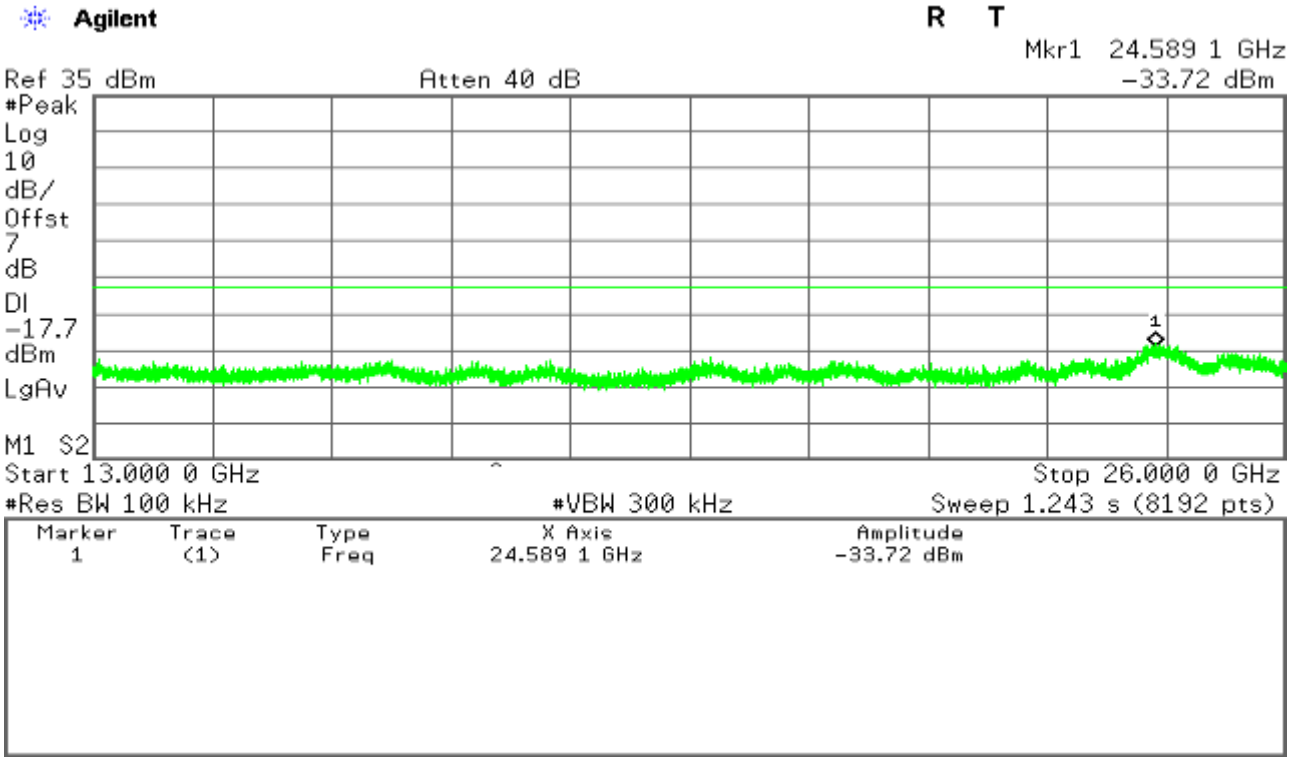

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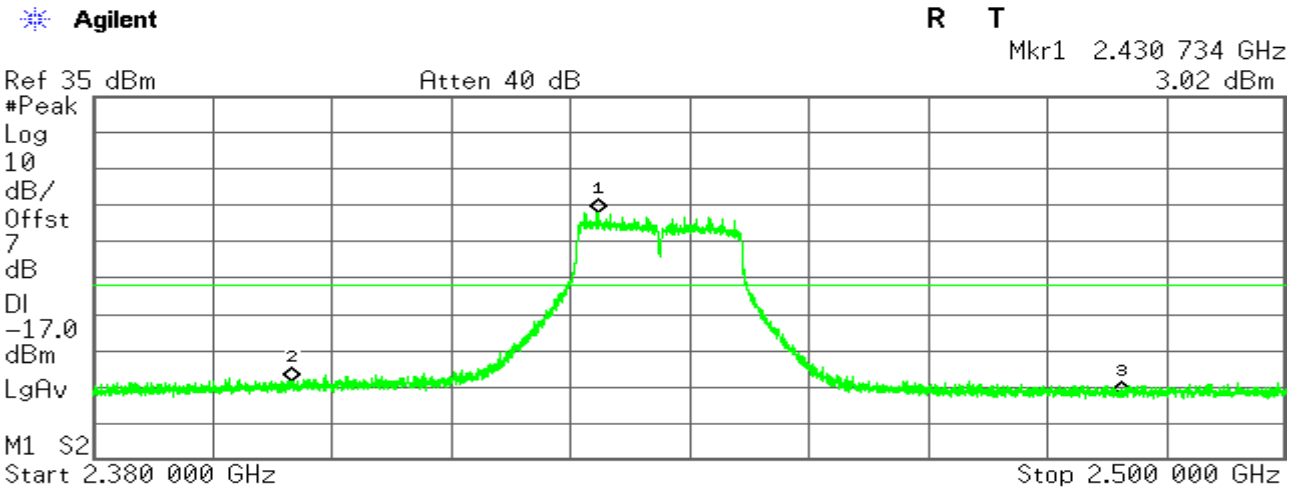
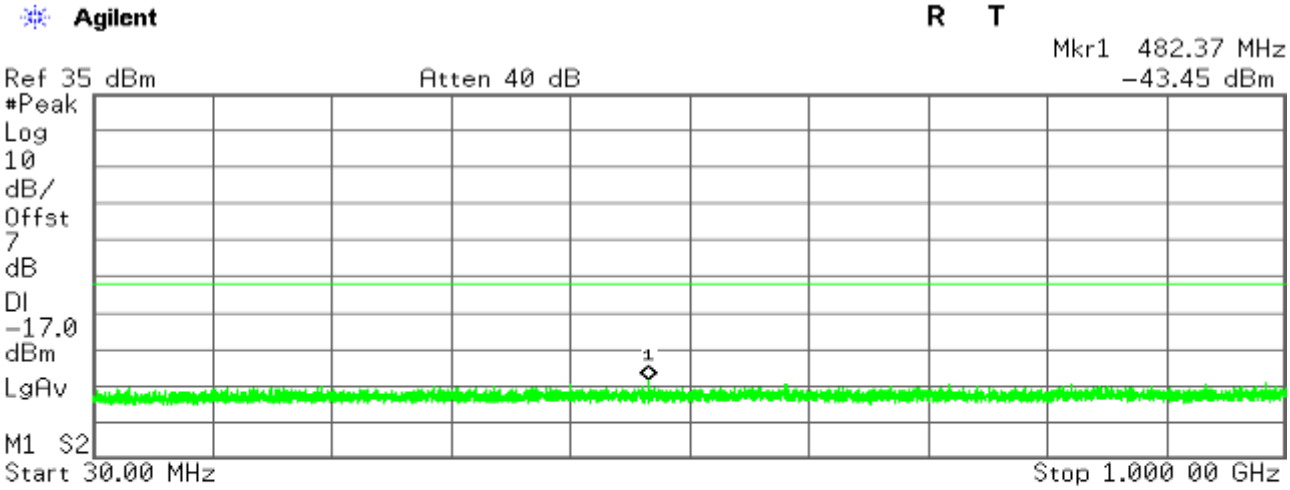
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.430 734 GHz	3.02 dBm
2	(1)	Freq	2.400 000 GHz	-43.50 dBm
3	(1)	Freq	2.483 500 GHz	-47.46 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	482.37 MHz	-43.45 dBm

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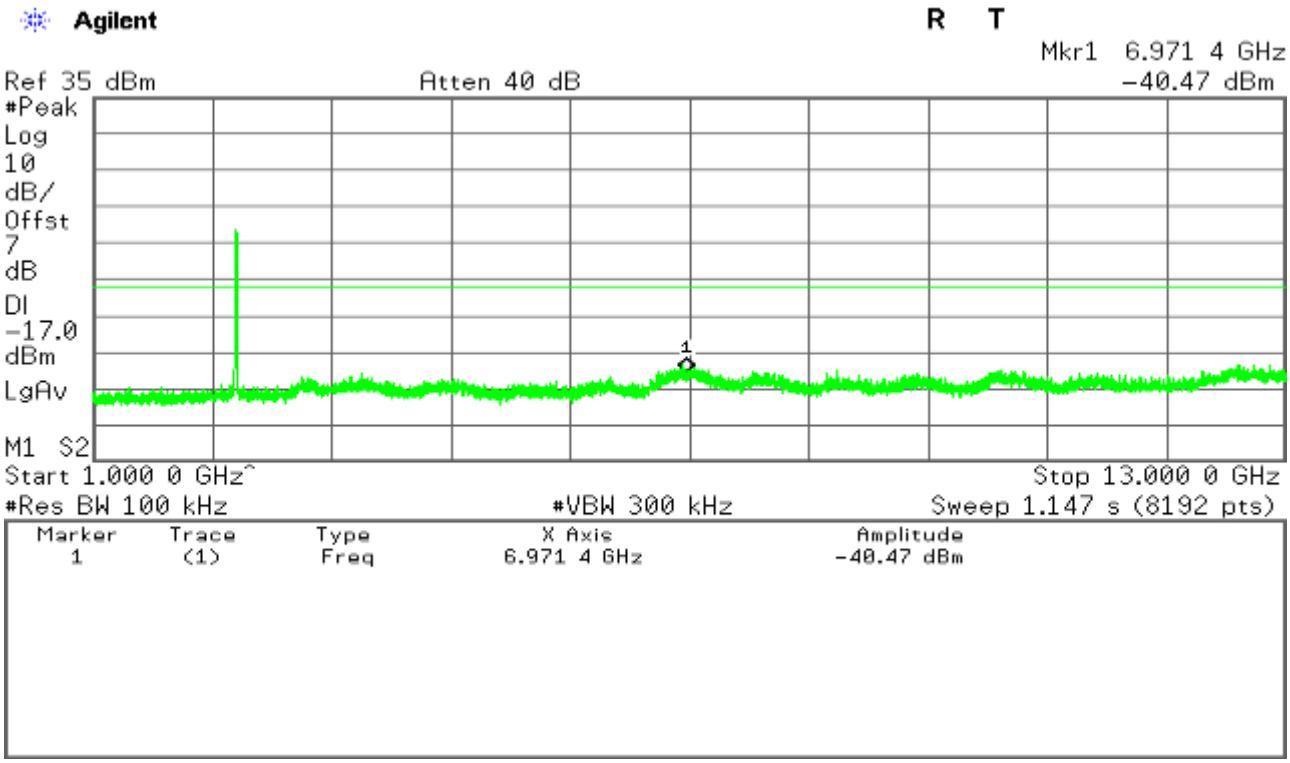

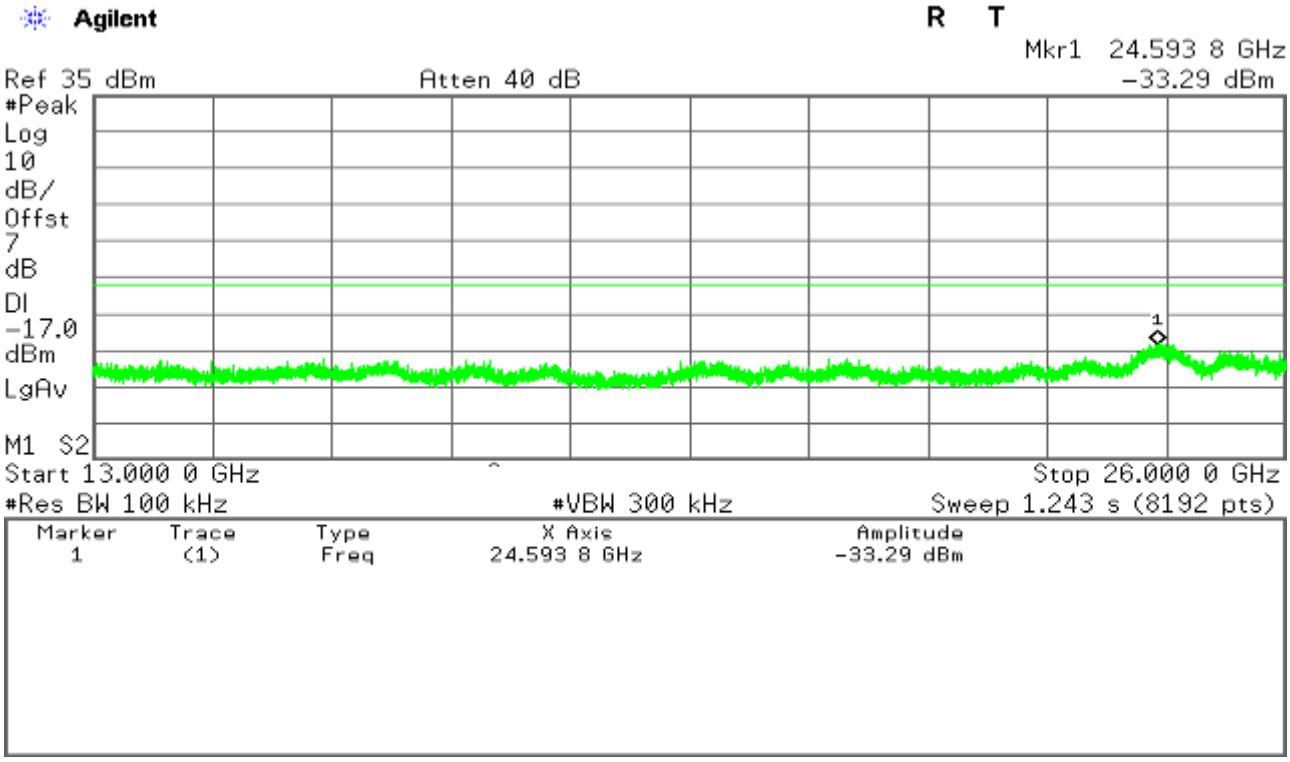

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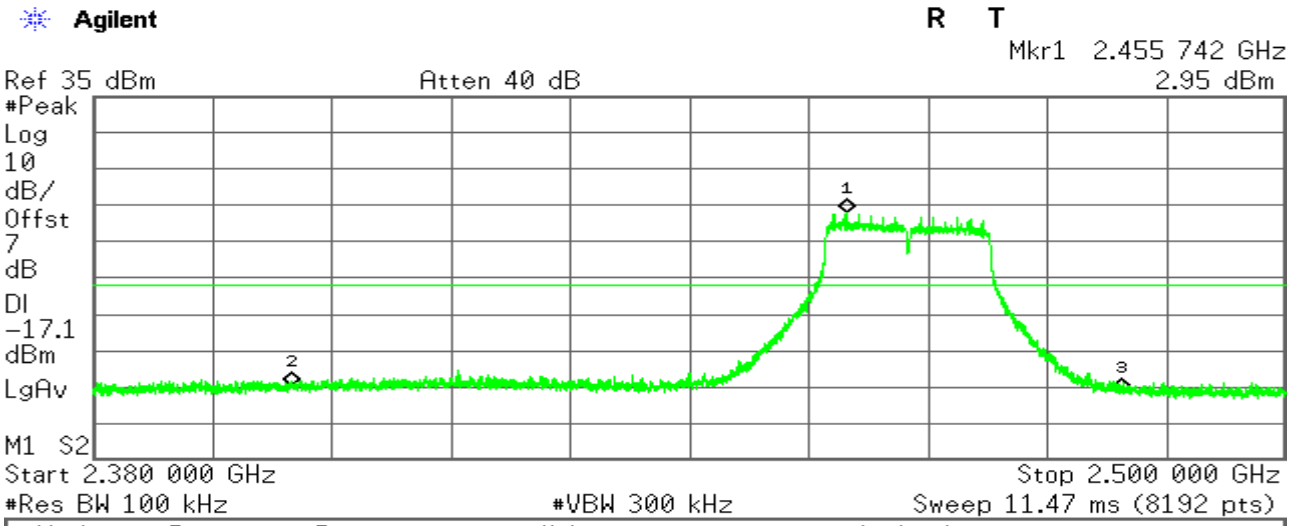
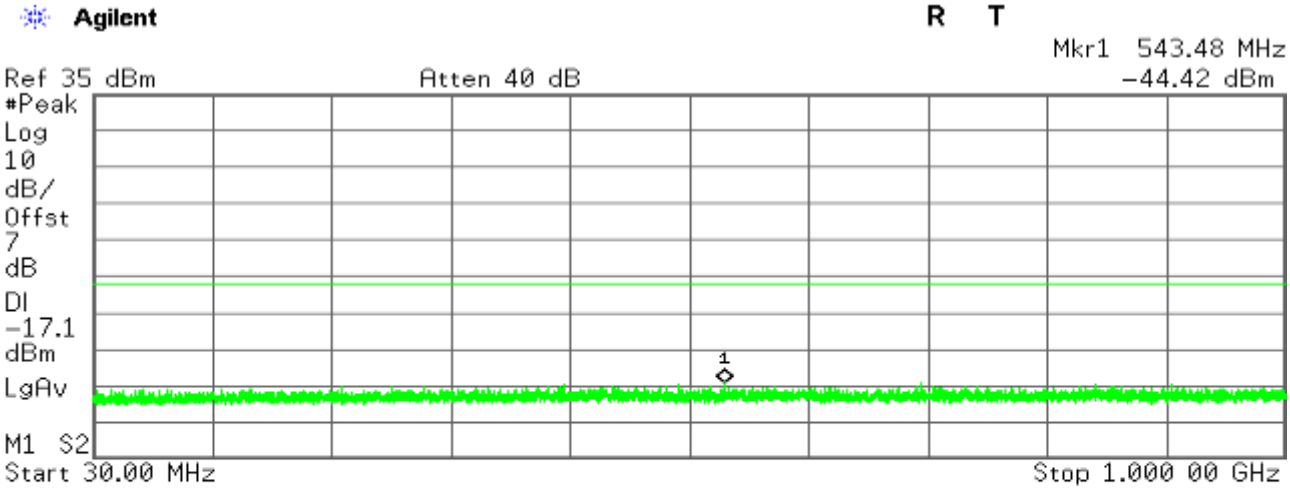
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.455 742 GHz	2.95 dBm
2	(1)	Freq	2.400 000 GHz	-44.44 dBm
3	(1)	Freq	2.483 500 GHz	-46.21 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	543.48 MHz	-44.42 dBm

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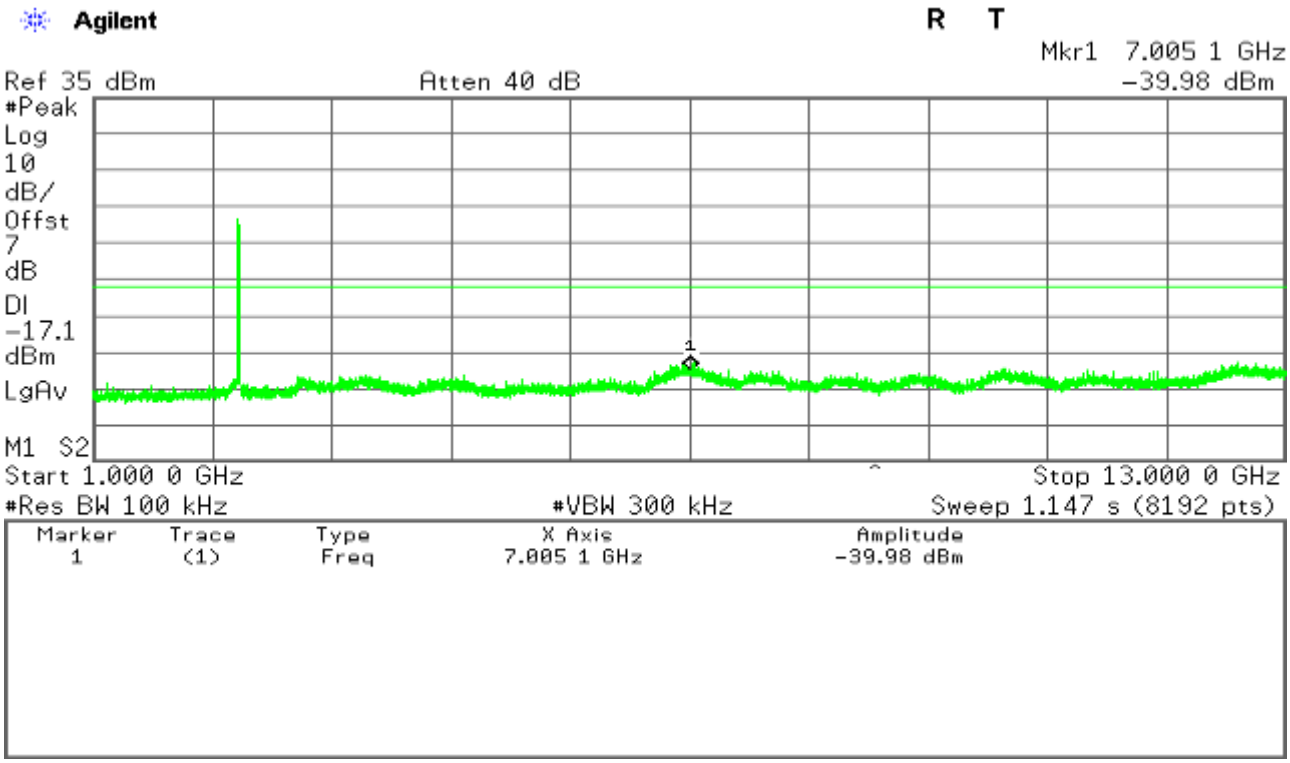

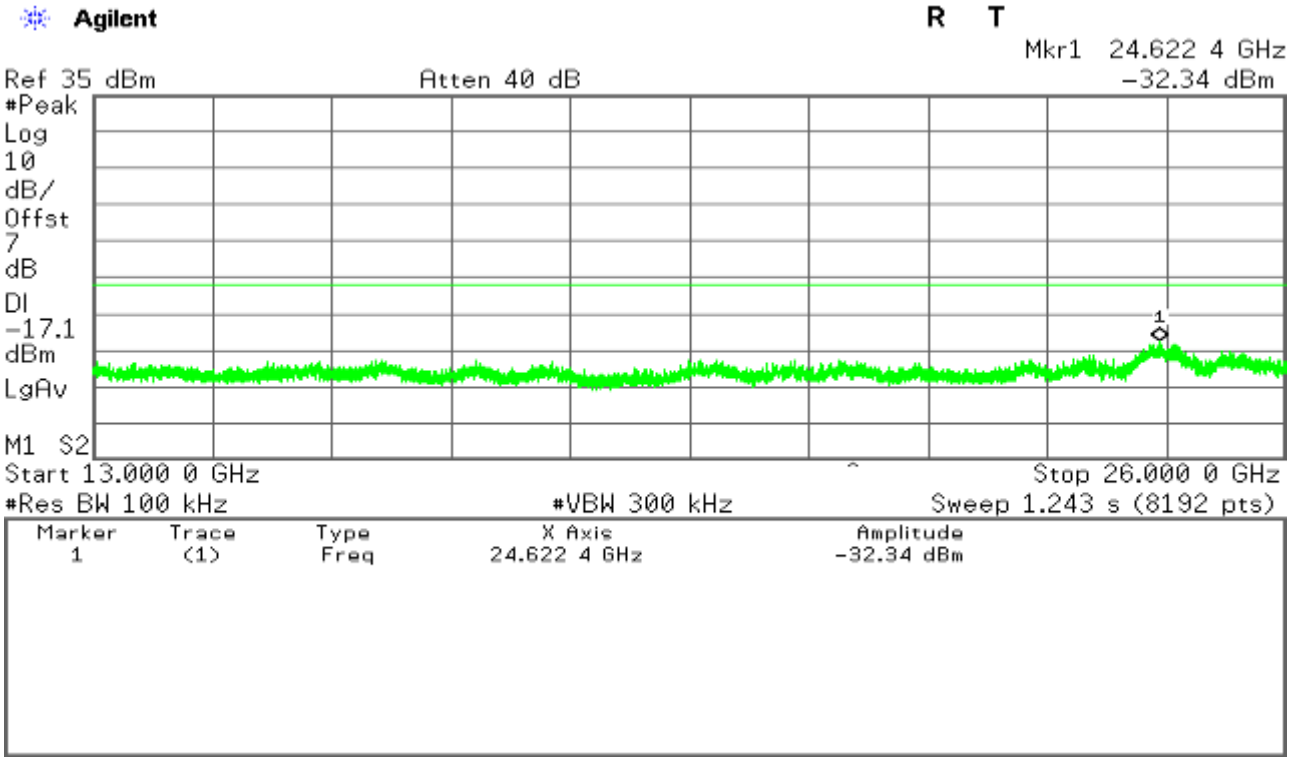

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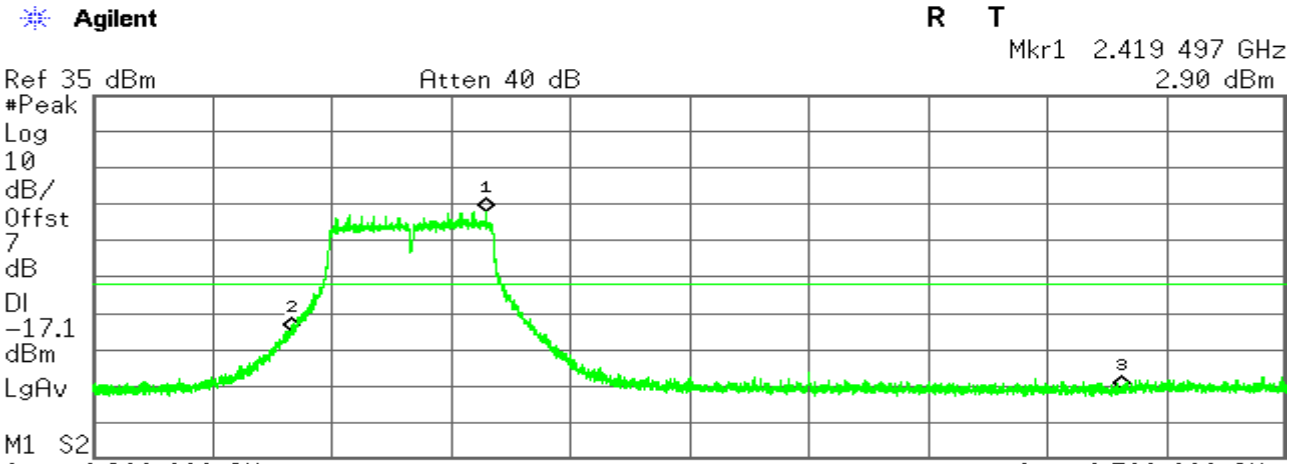
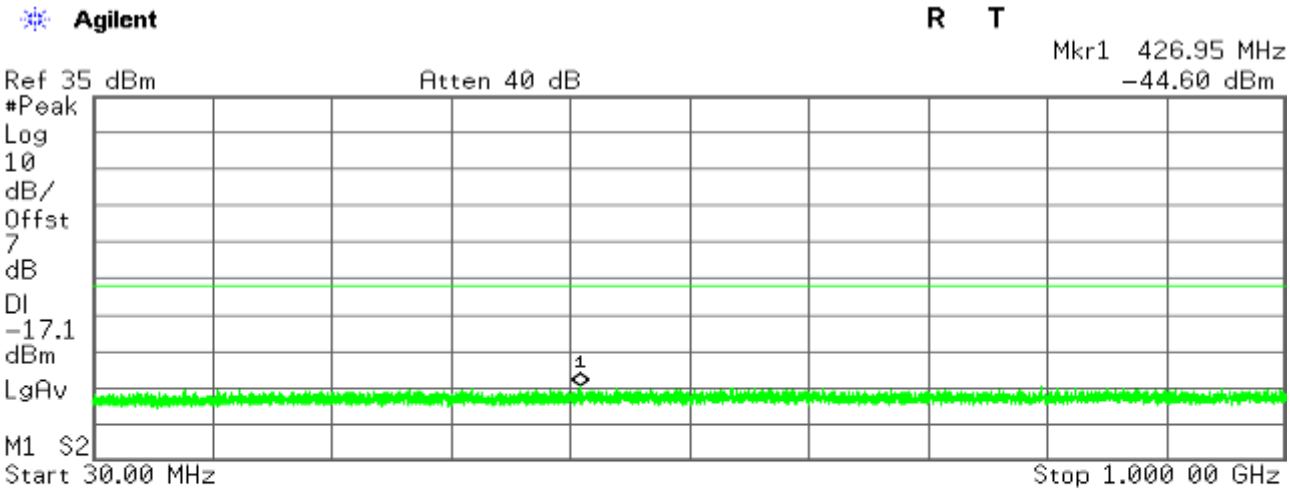
IEEE 802.11g mode/Chain 2

CH Low



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.419 497 GHz	2.90 dBm
2	(1)	Freq	2.400 000 GHz	-30.03 dBm
3	(1)	Freq	2.483 500 GHz	-45.75 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	426.95 MHz	-44.60 dBm

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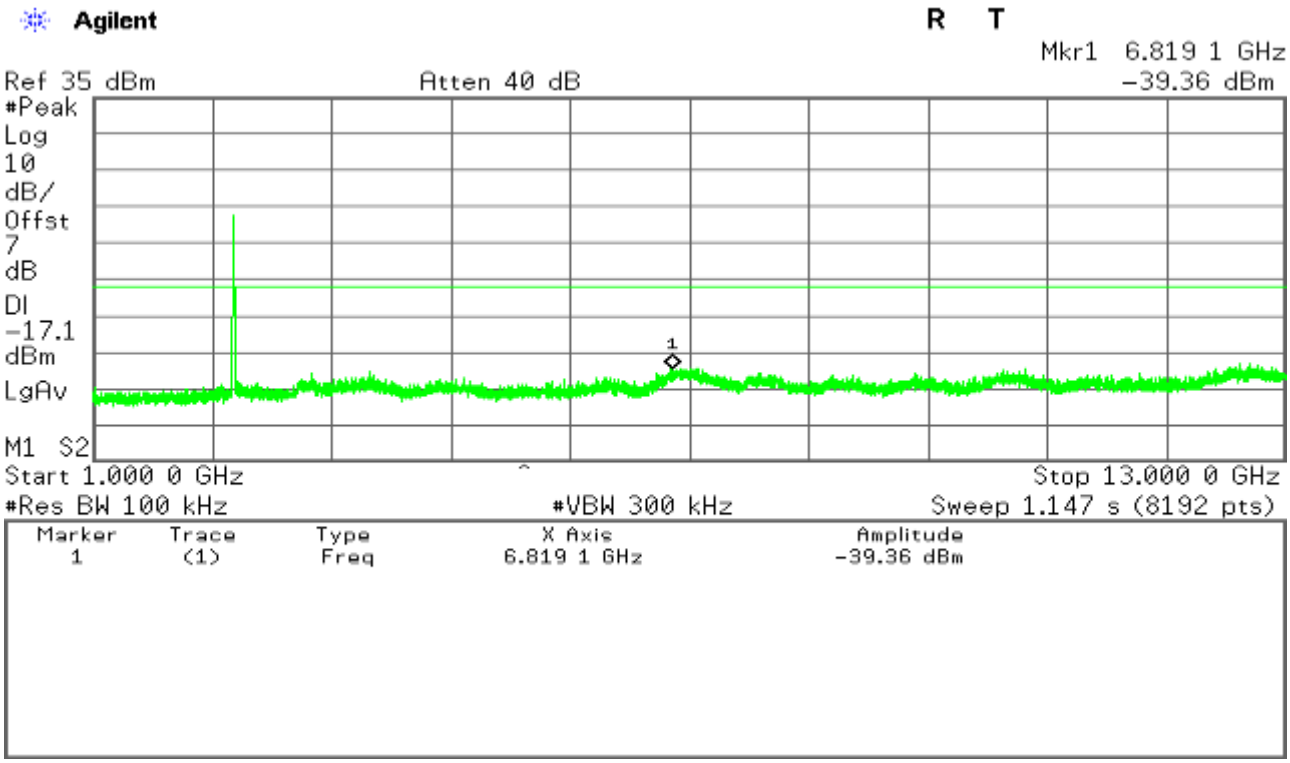

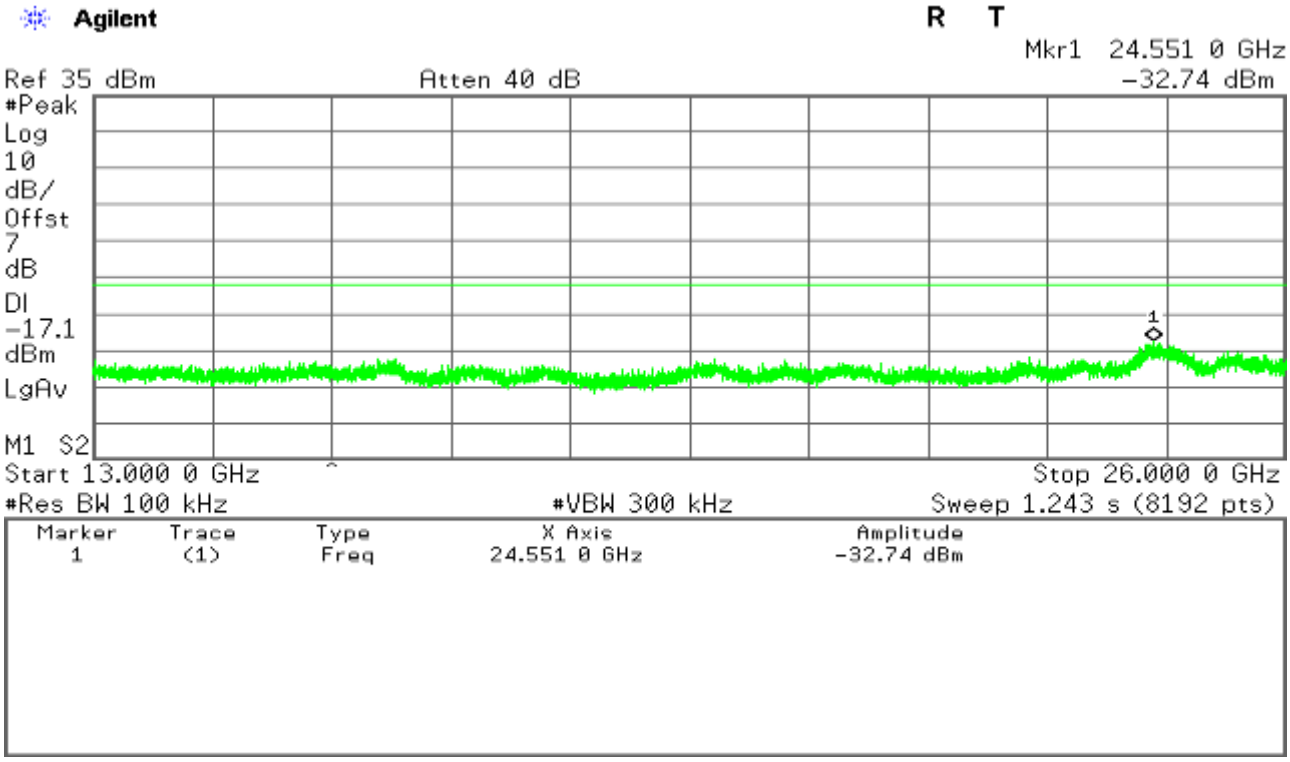

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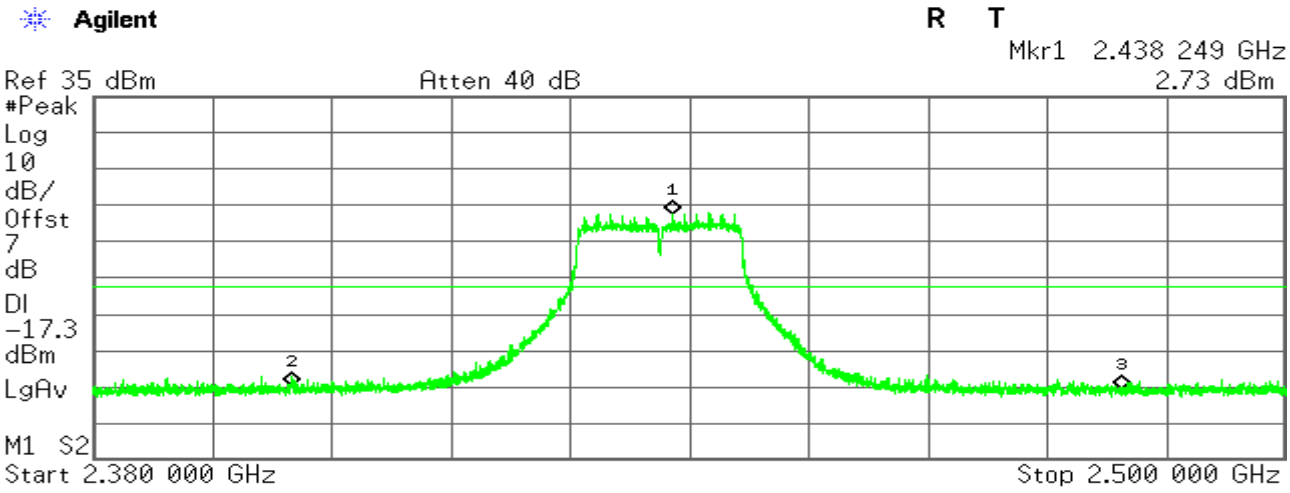
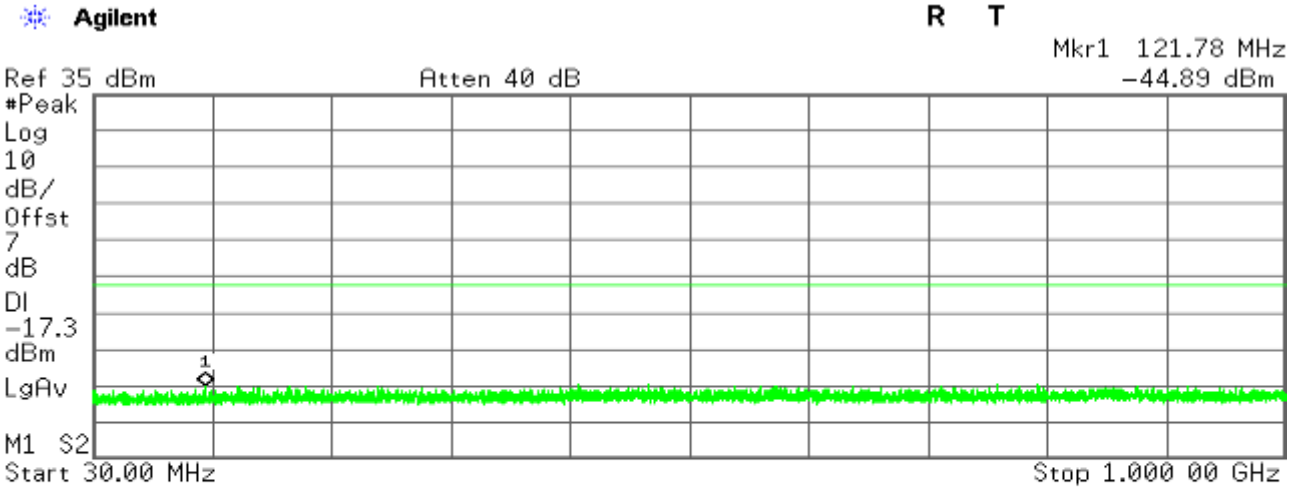
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.438 249 GHz	2.73 dBm
2	(1)	Freq	2.400 000 GHz	-44.46 dBm
3	(1)	Freq	2.483 500 GHz	-45.40 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	121.78 MHz	-44.89 dBm

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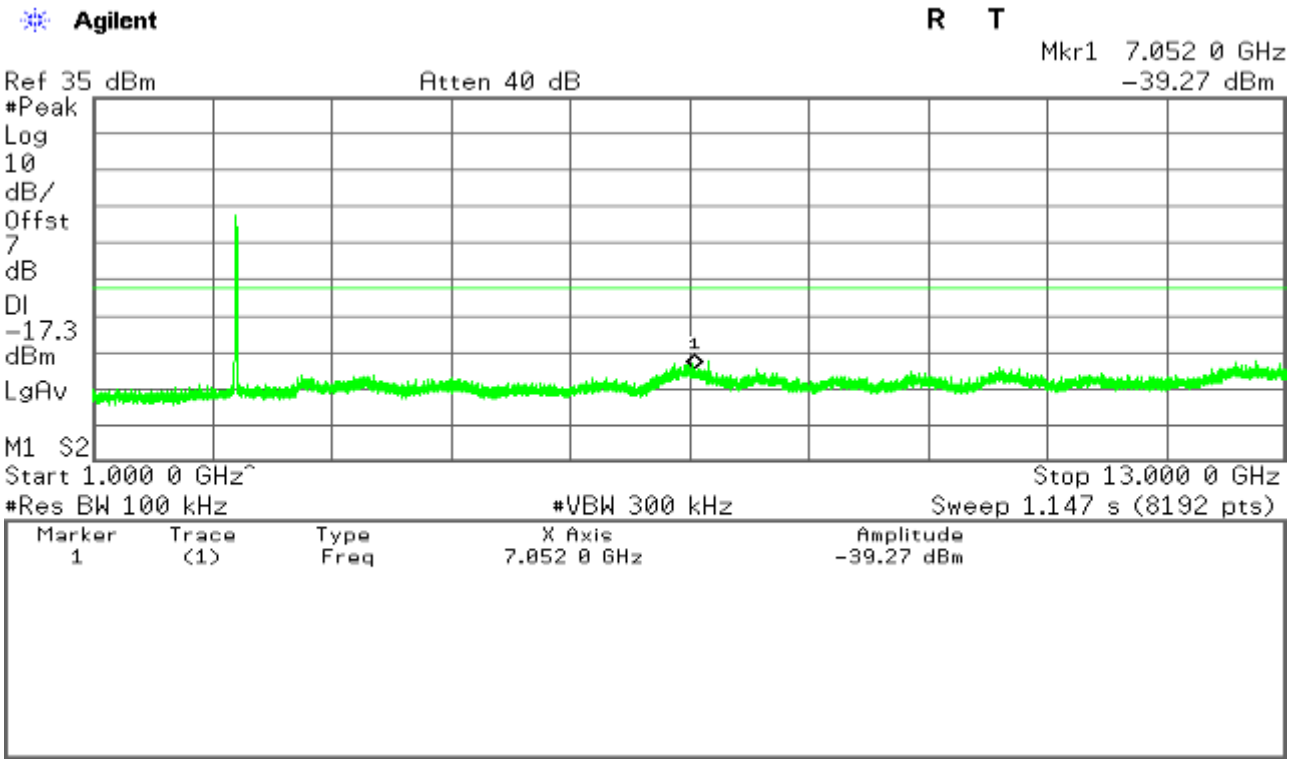

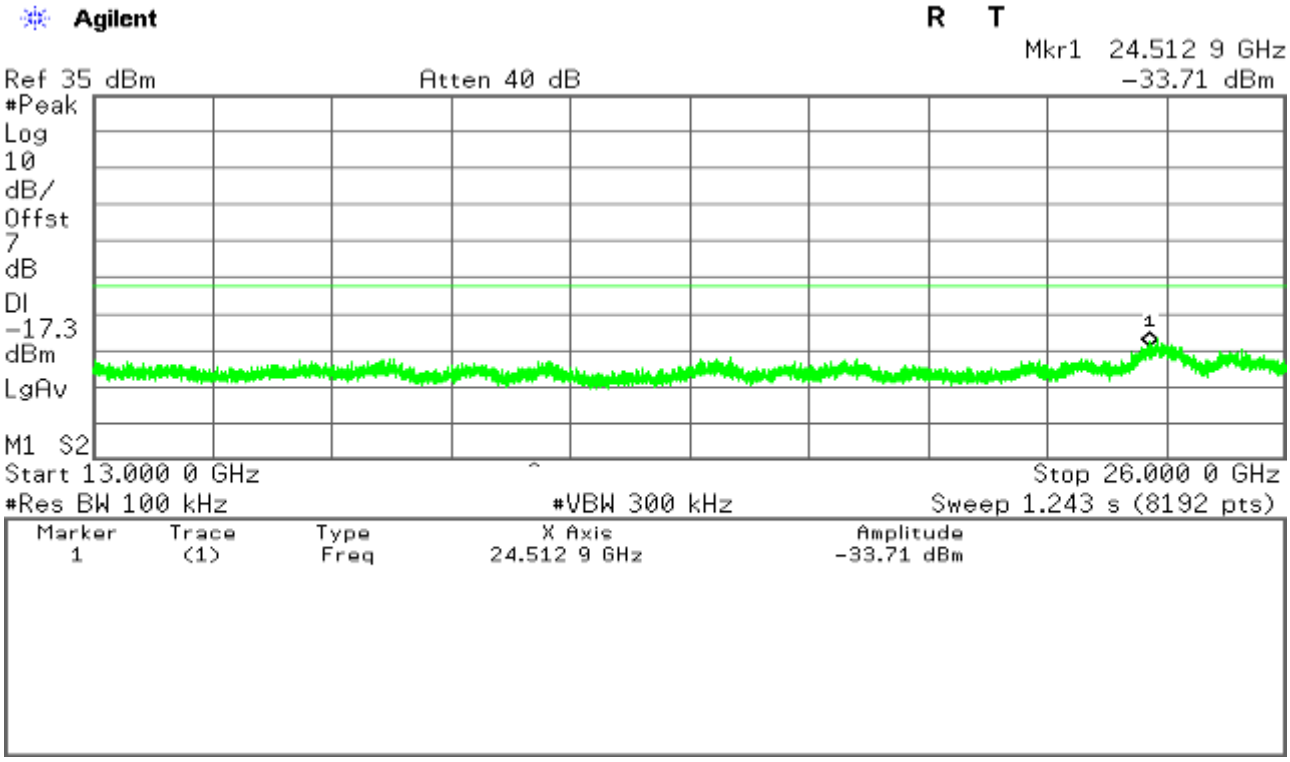

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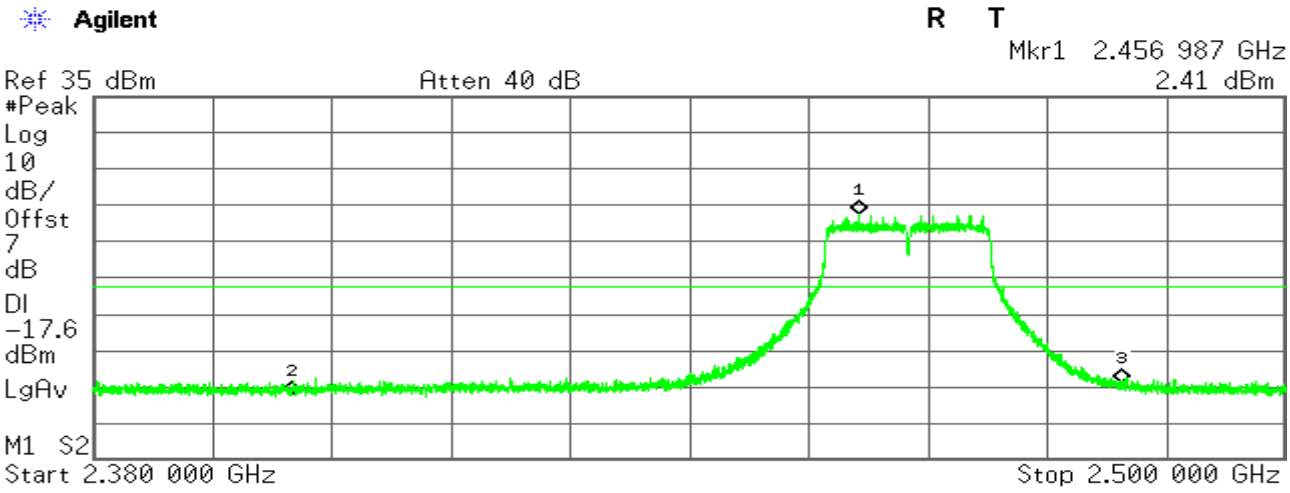
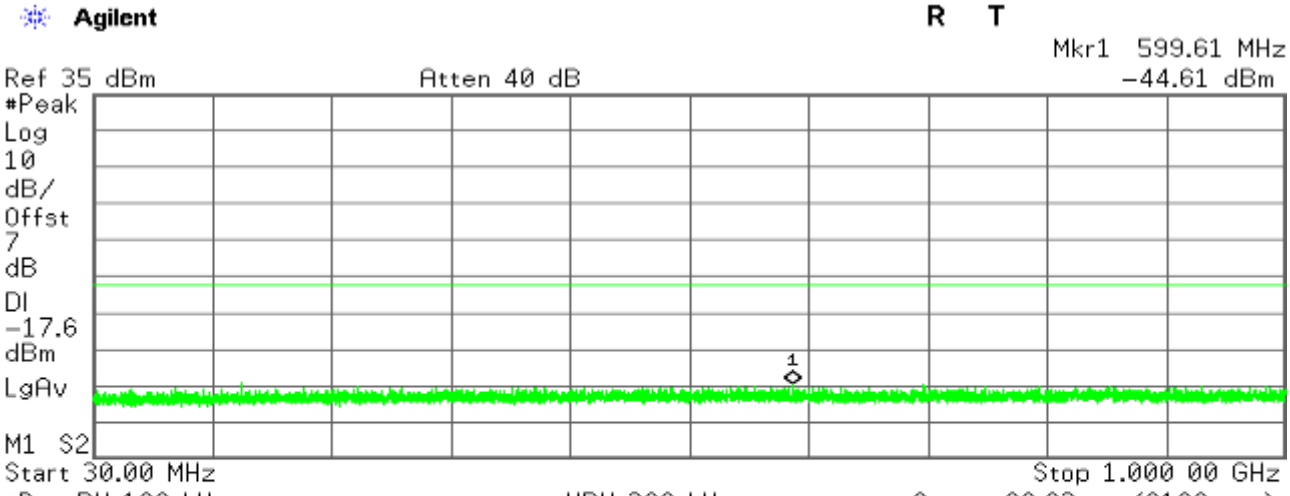
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.456 987 GHz	2.41 dBm
2	(1)	Freq	2.400 000 GHz	-47.24 dBm
3	(1)	Freq	2.483 500 GHz	-43.83 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	599.61 MHz	-44.61 dBm

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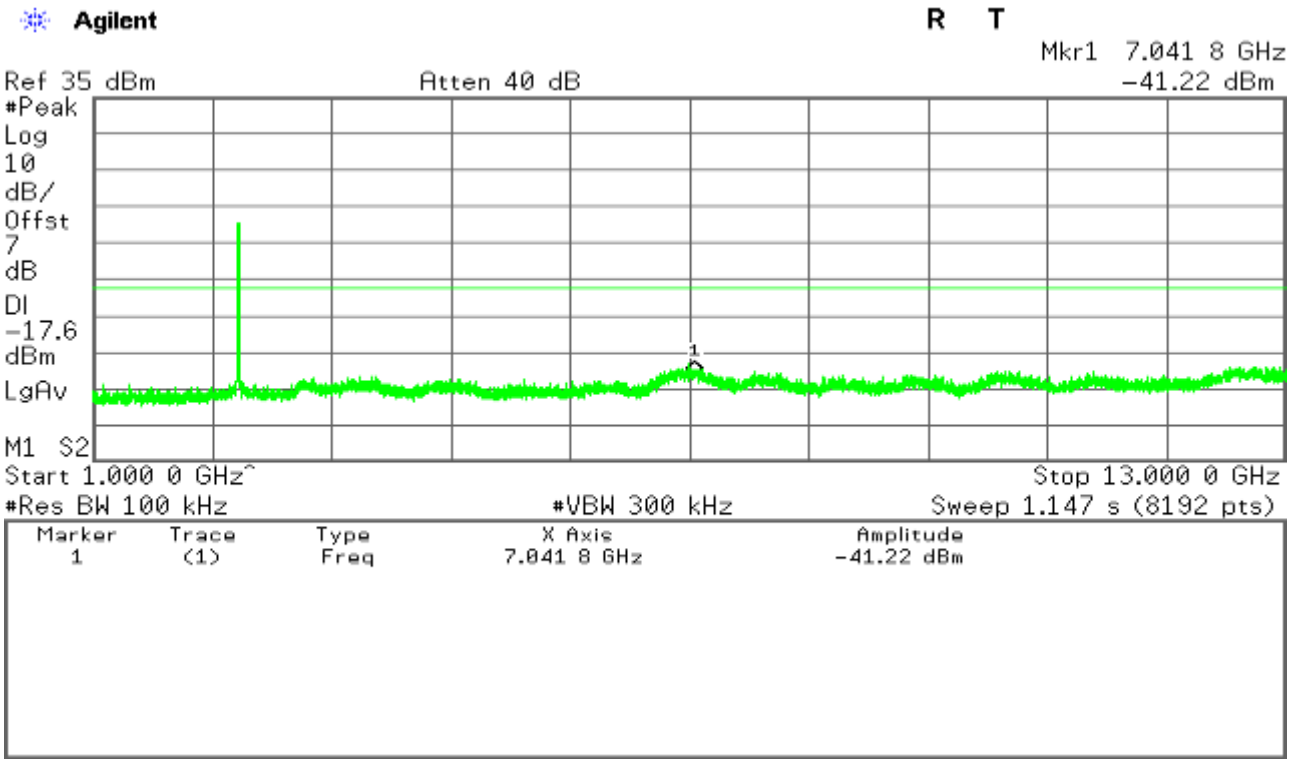

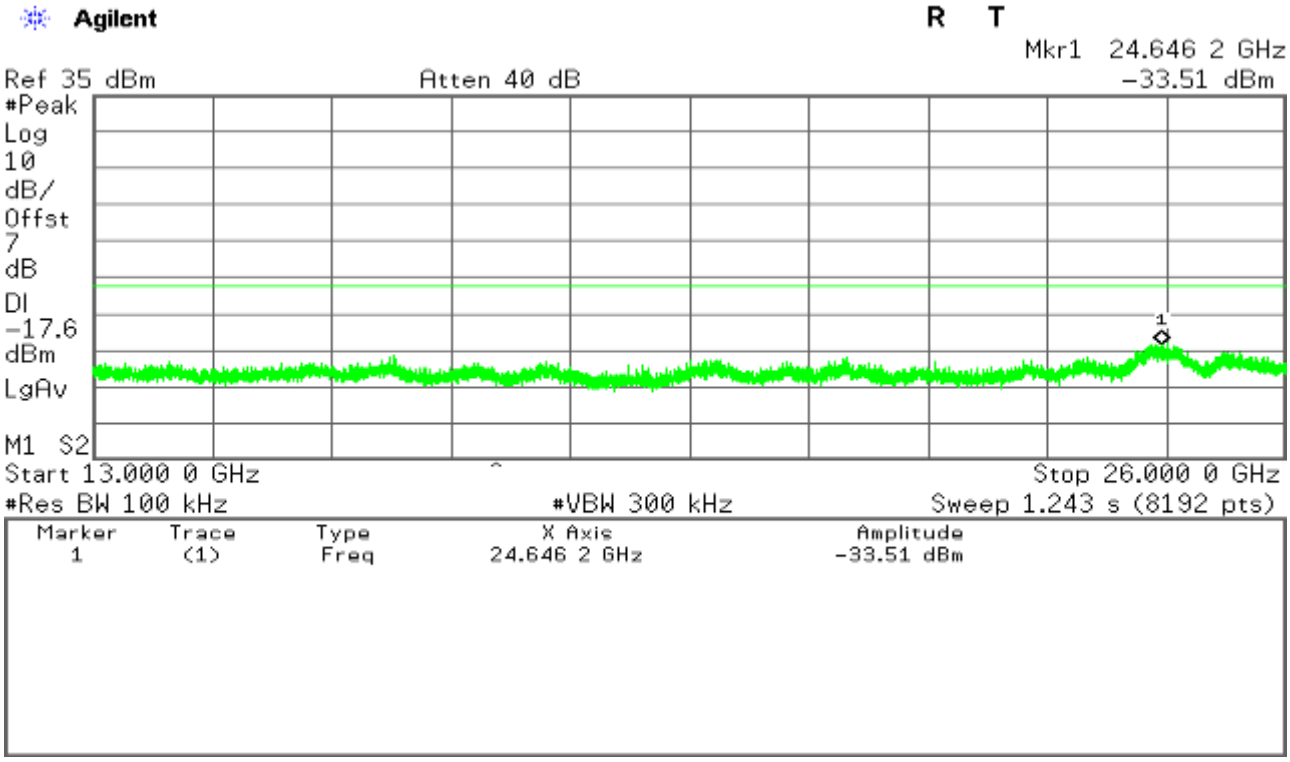

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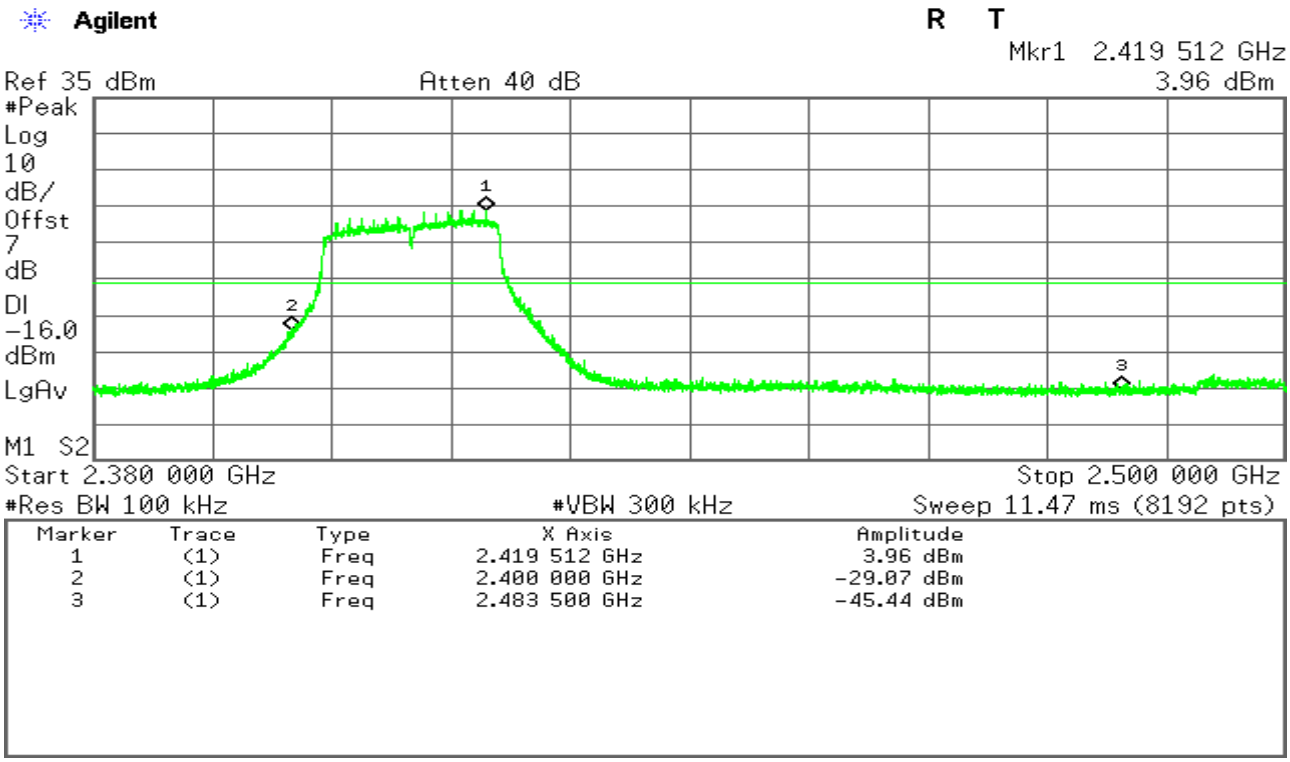
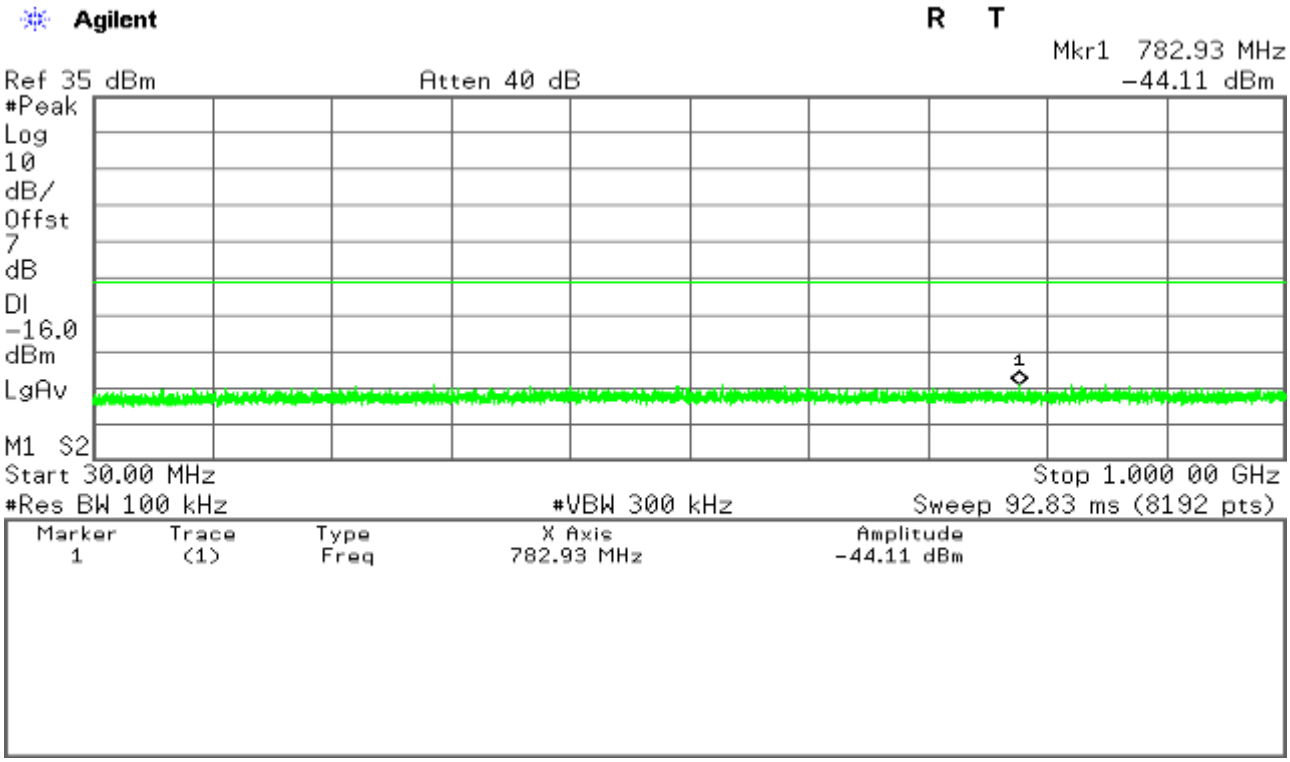
draft 802.11n Standard-20 MHz Channel mode / Chain 0

CH Low





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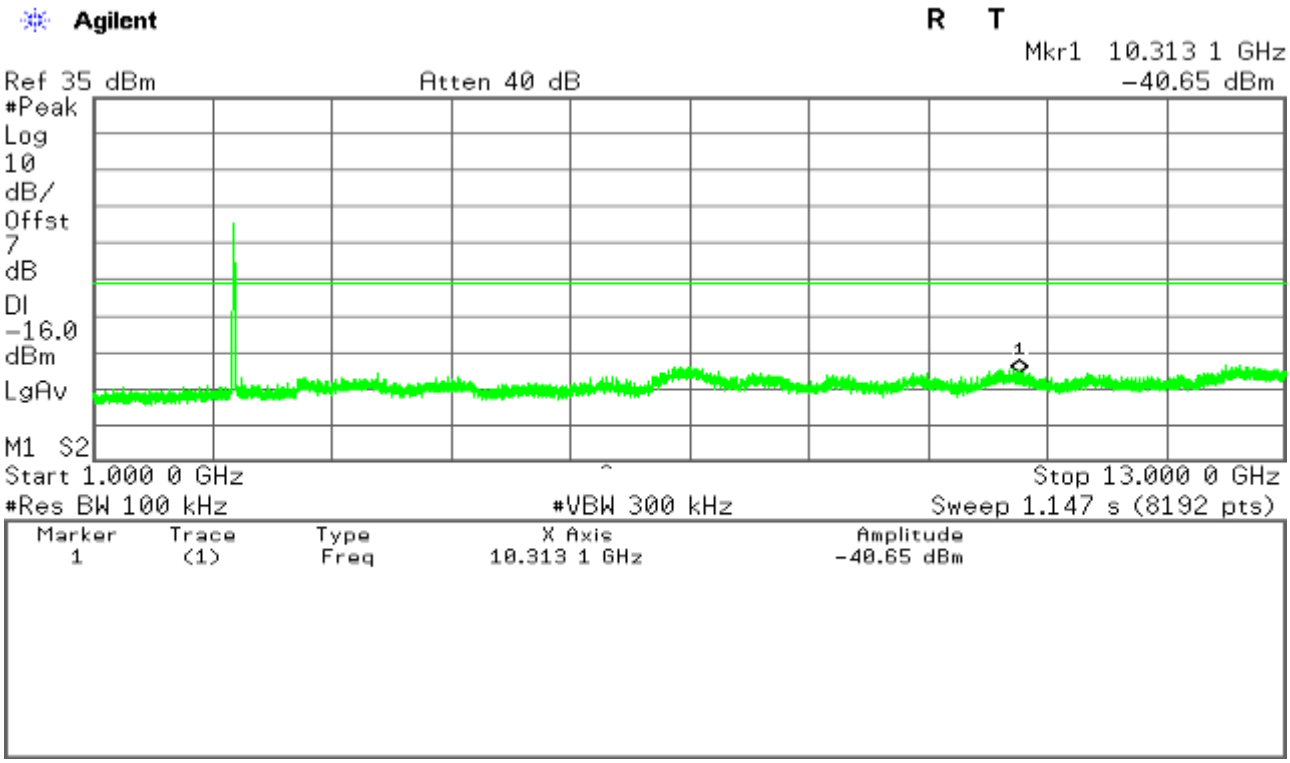

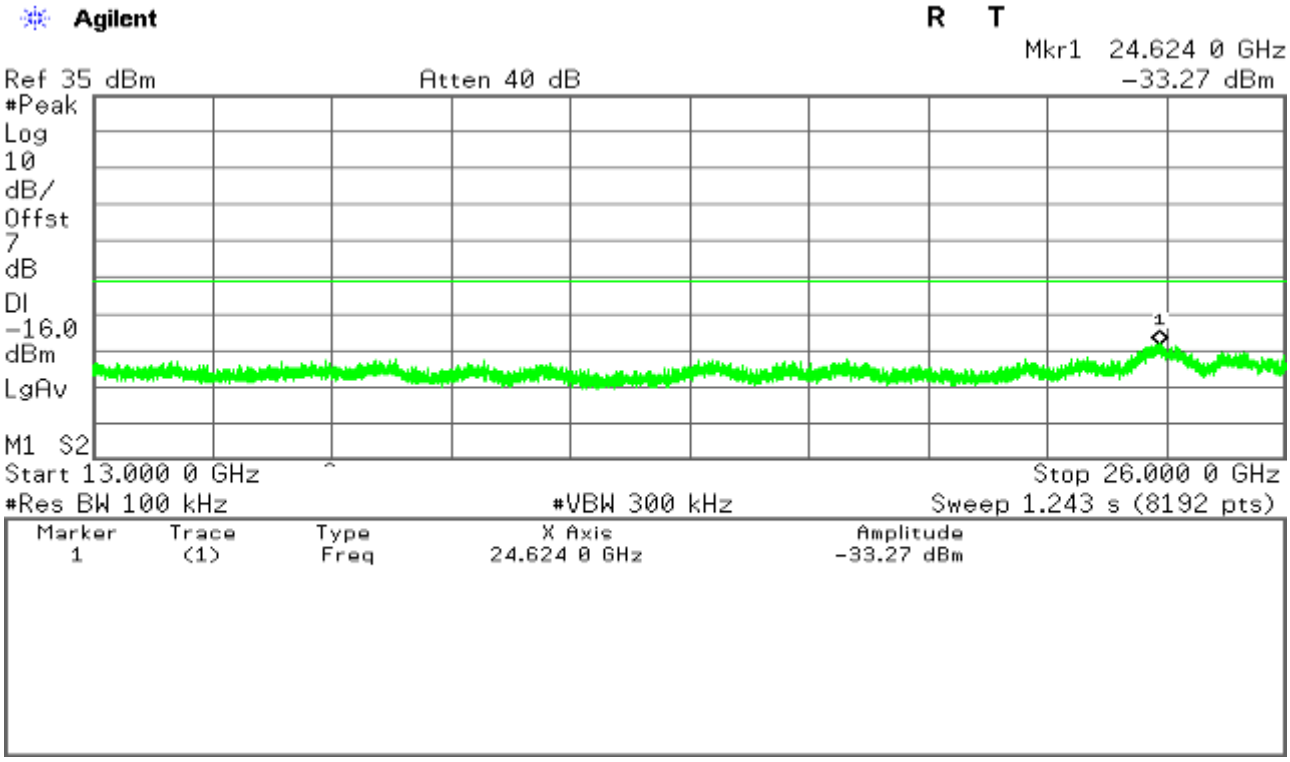

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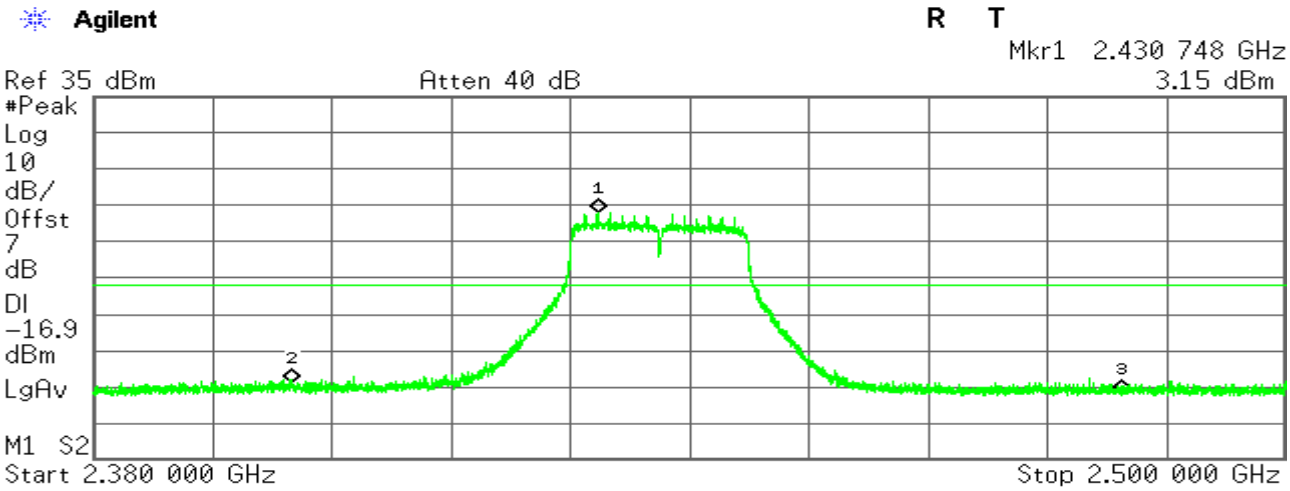
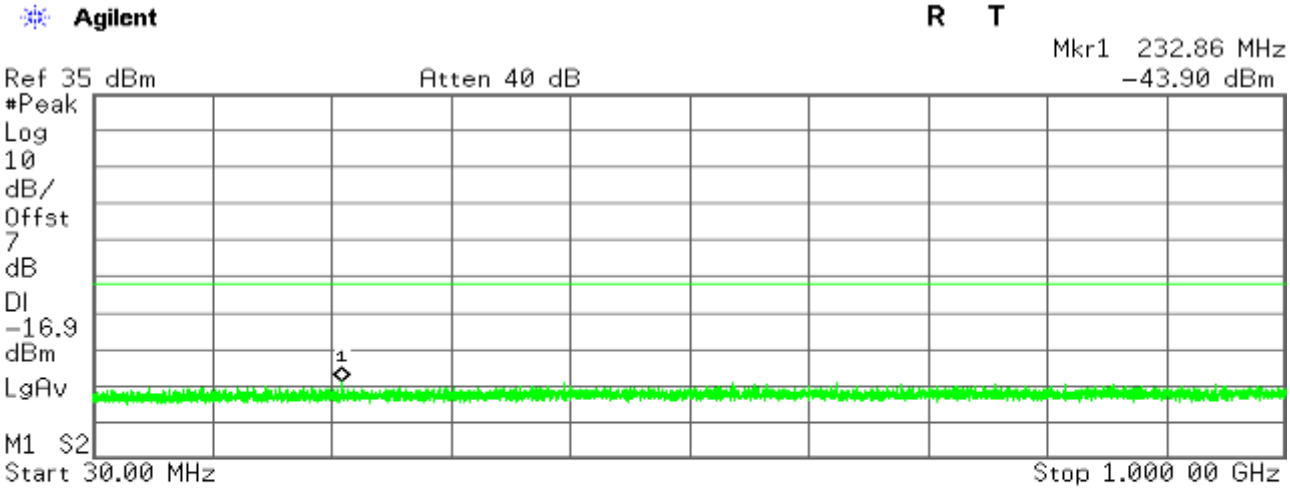
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.430 748 GHz	3.15 dBm
2	(1)	Freq	2.400 000 GHz	-43.94 dBm
3	(1)	Freq	2.483 500 GHz	-46.71 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	232.86 MHz	-43.90 dBm

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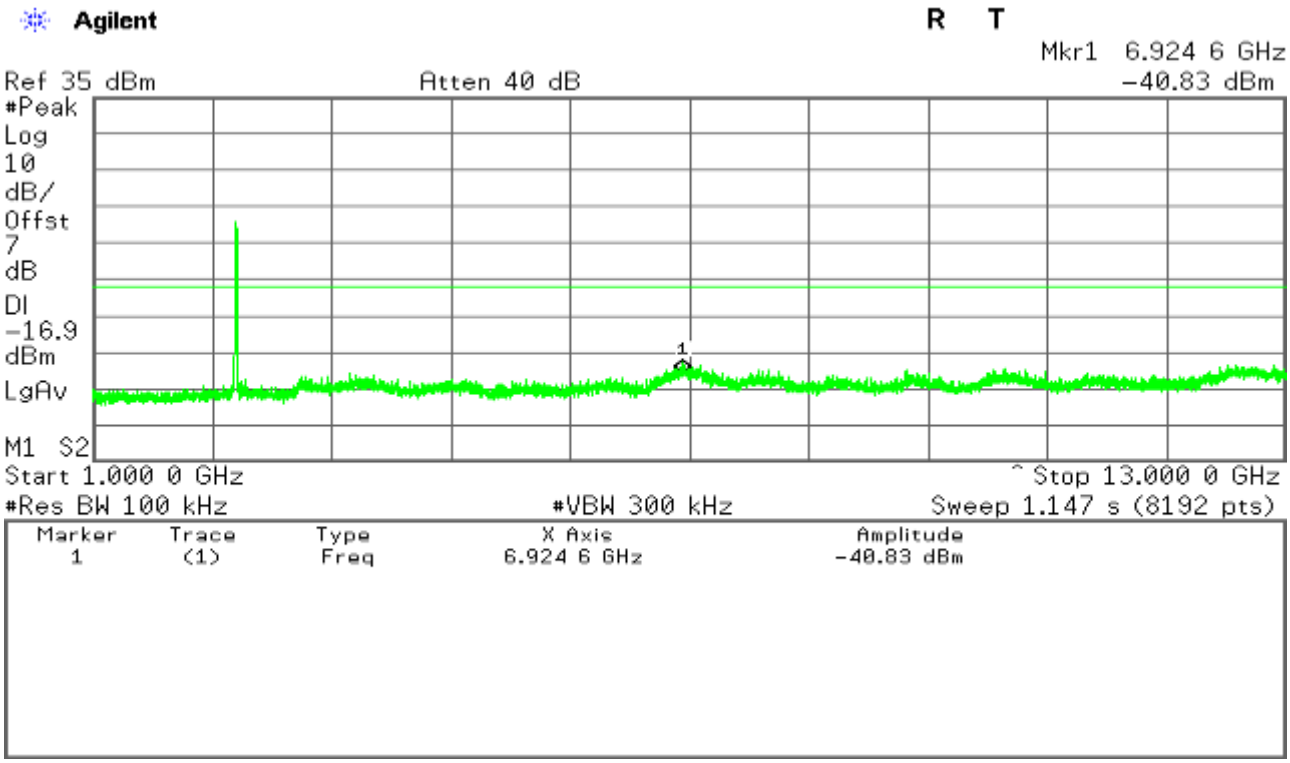

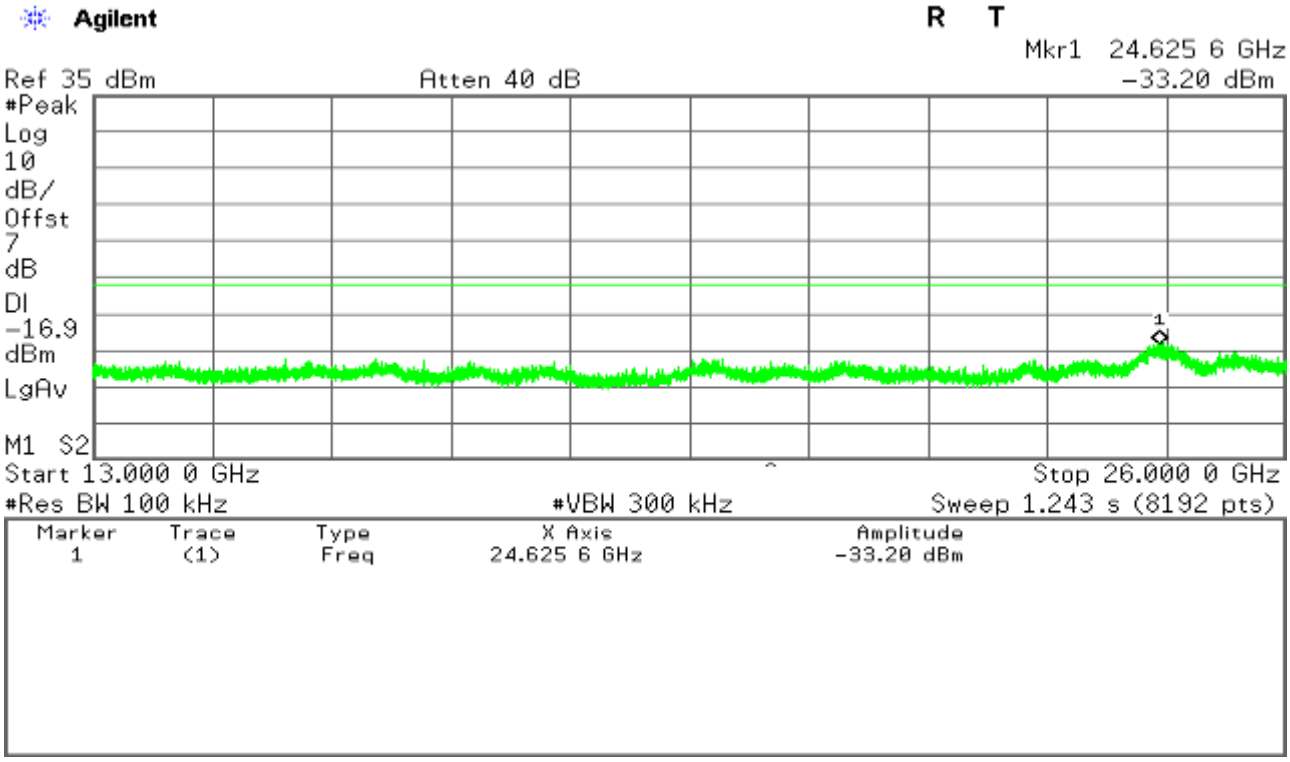

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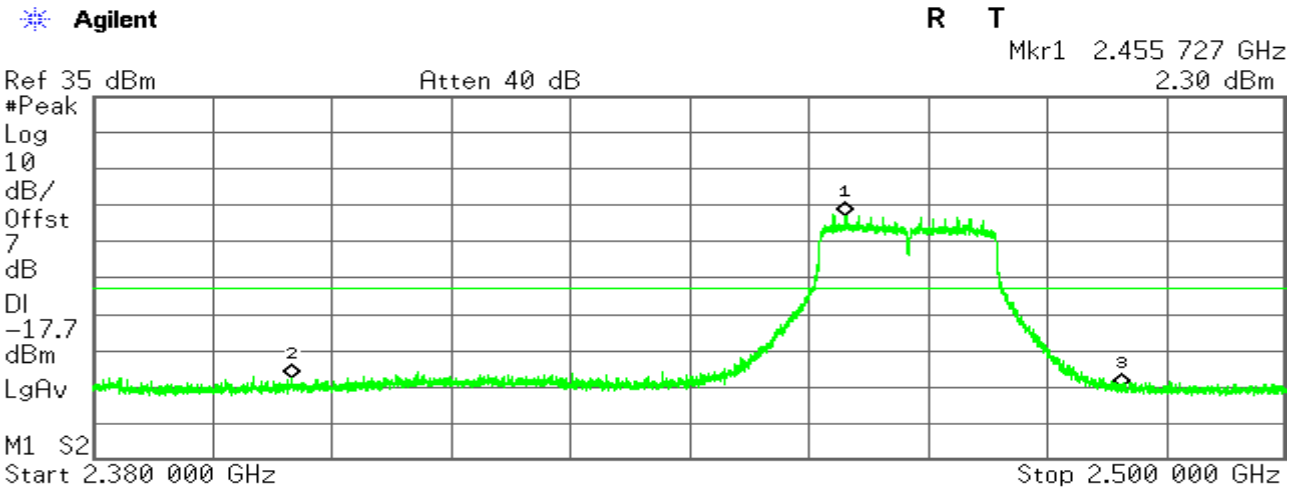
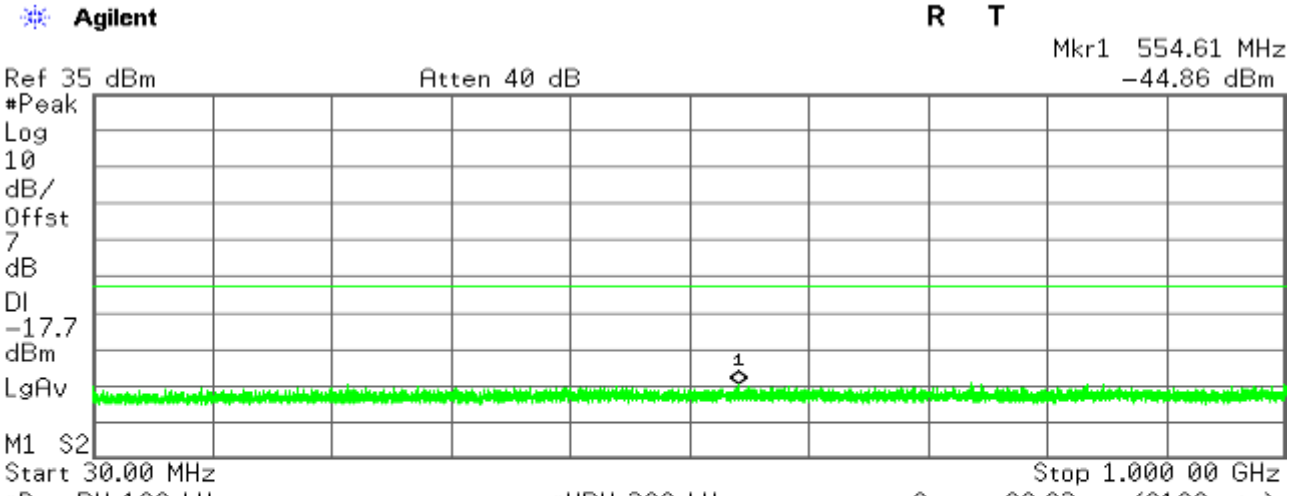
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.455 727 GHz	2.30 dBm
2	(1)	Freq	2.400 000 GHz	-42.65 dBm
3	(1)	Freq	2.483 500 GHz	-45.30 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	554.61 MHz	-44.86 dBm

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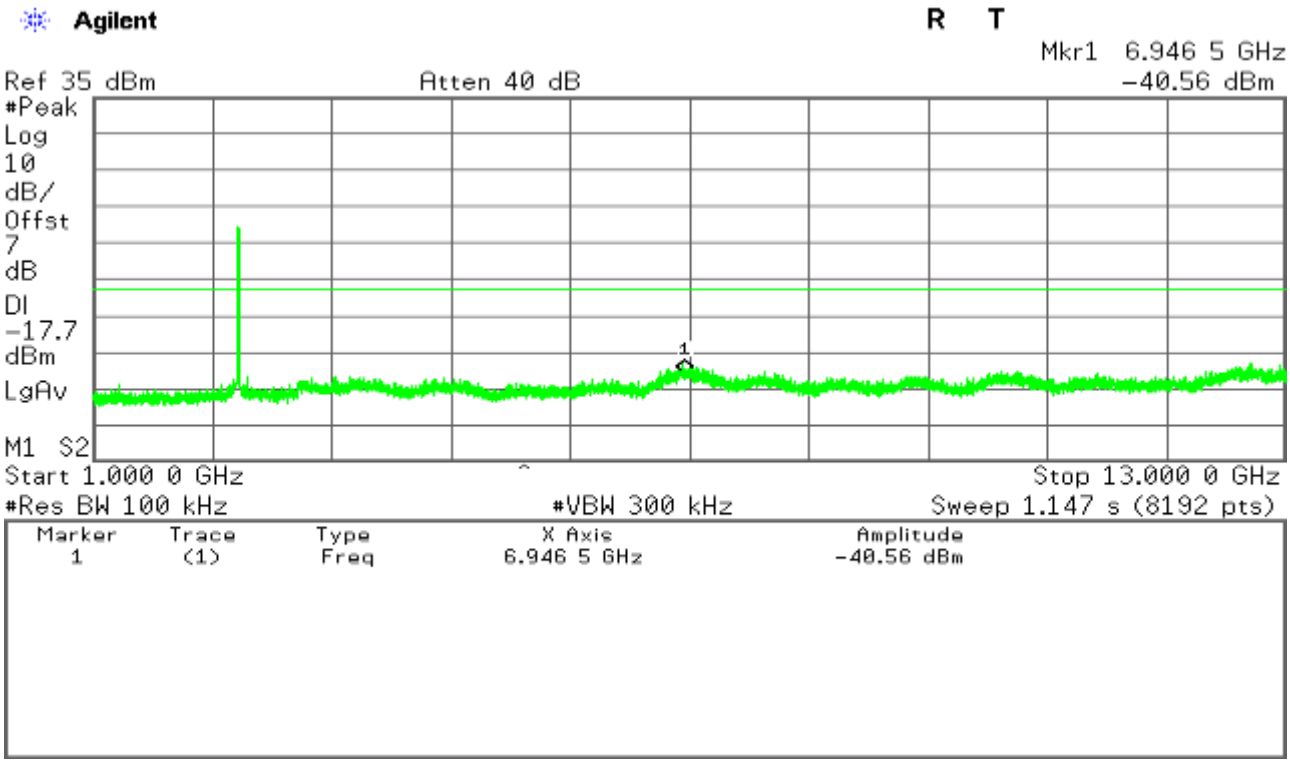

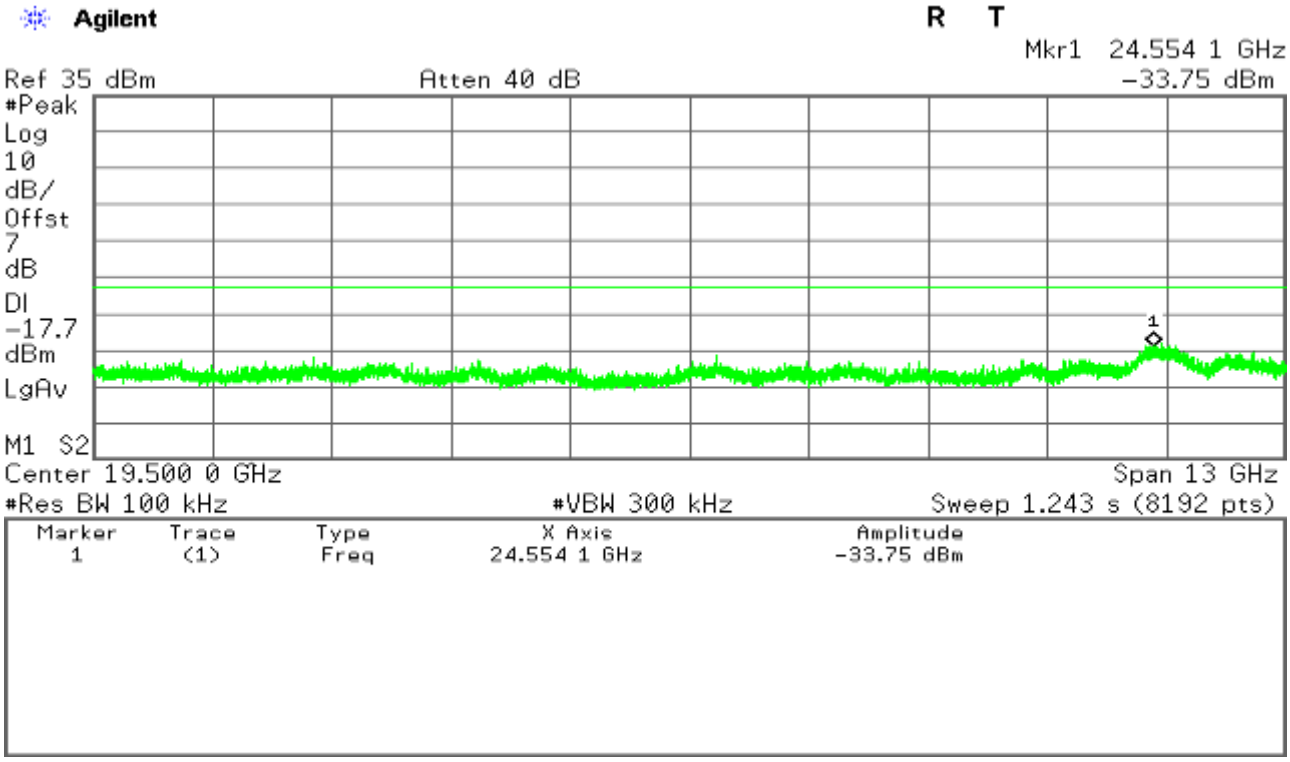

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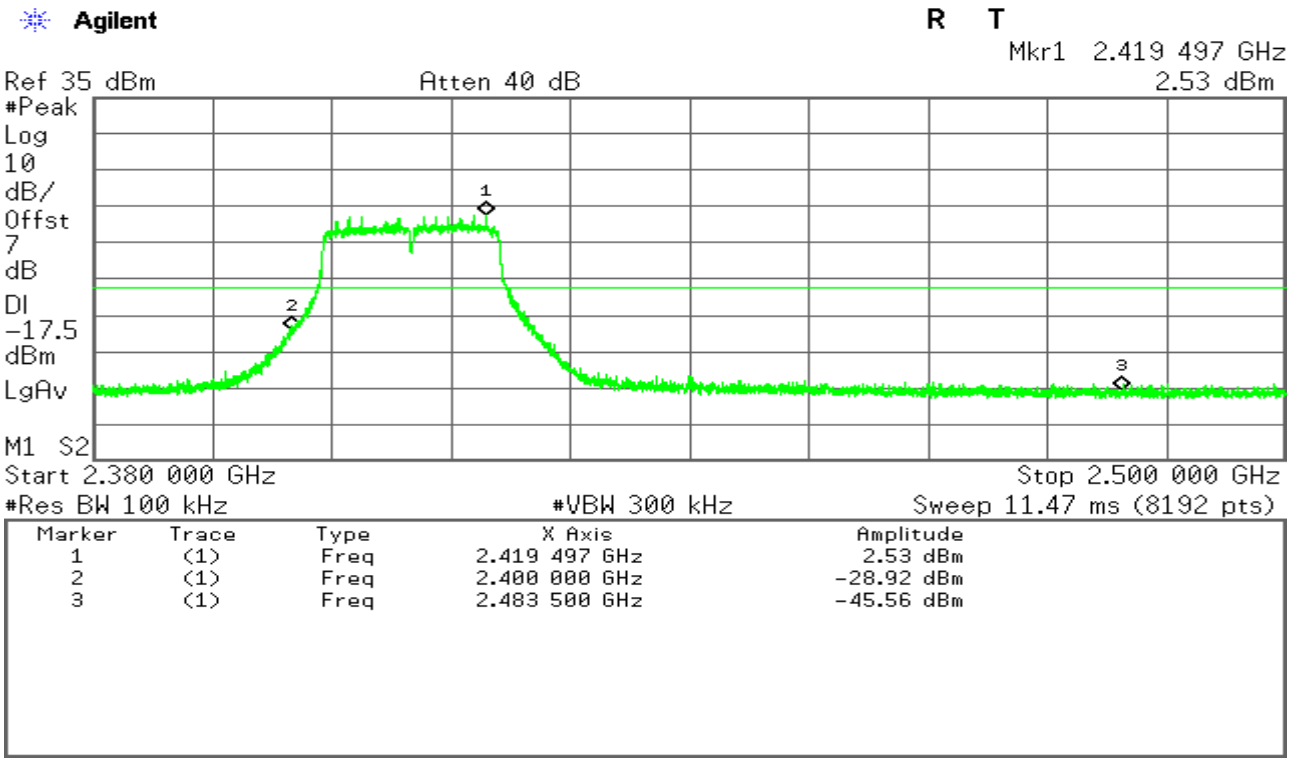
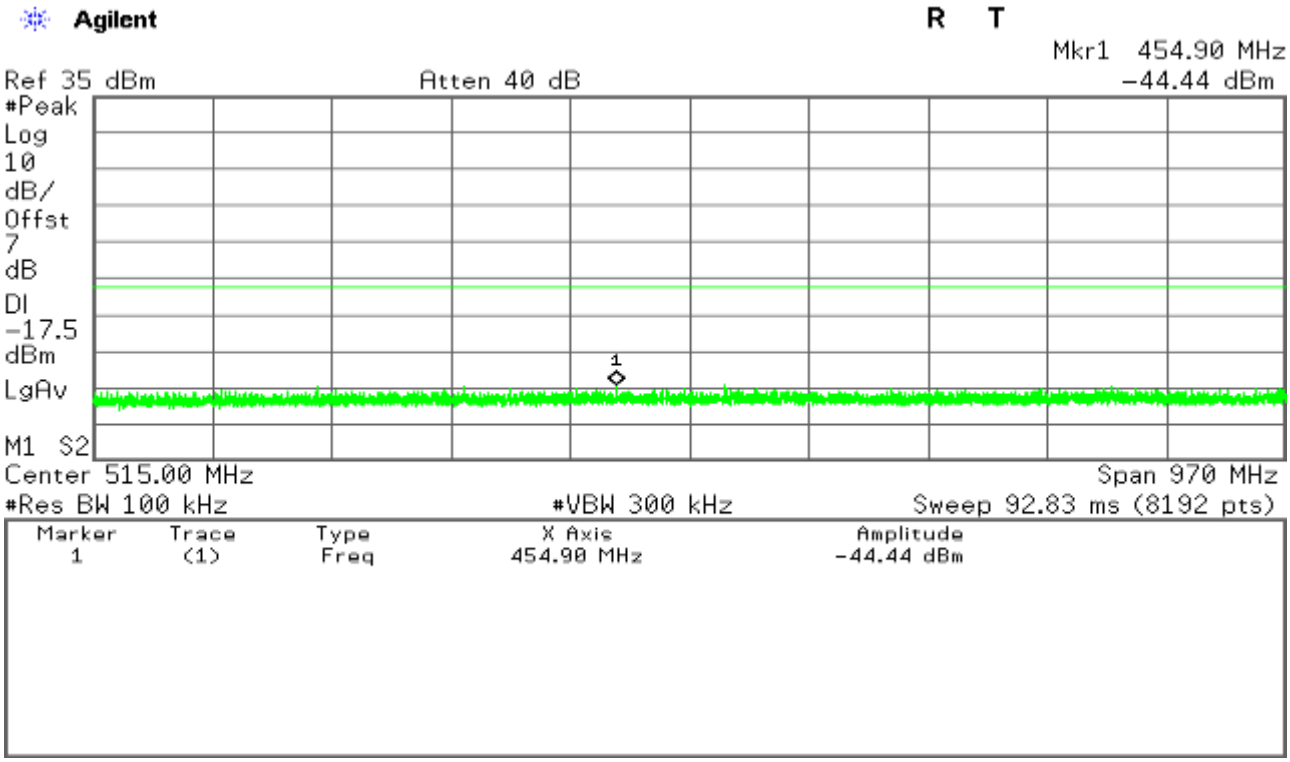
draft 802.11n Standard-20 MHz Channel mode / Chain 1

CH Low





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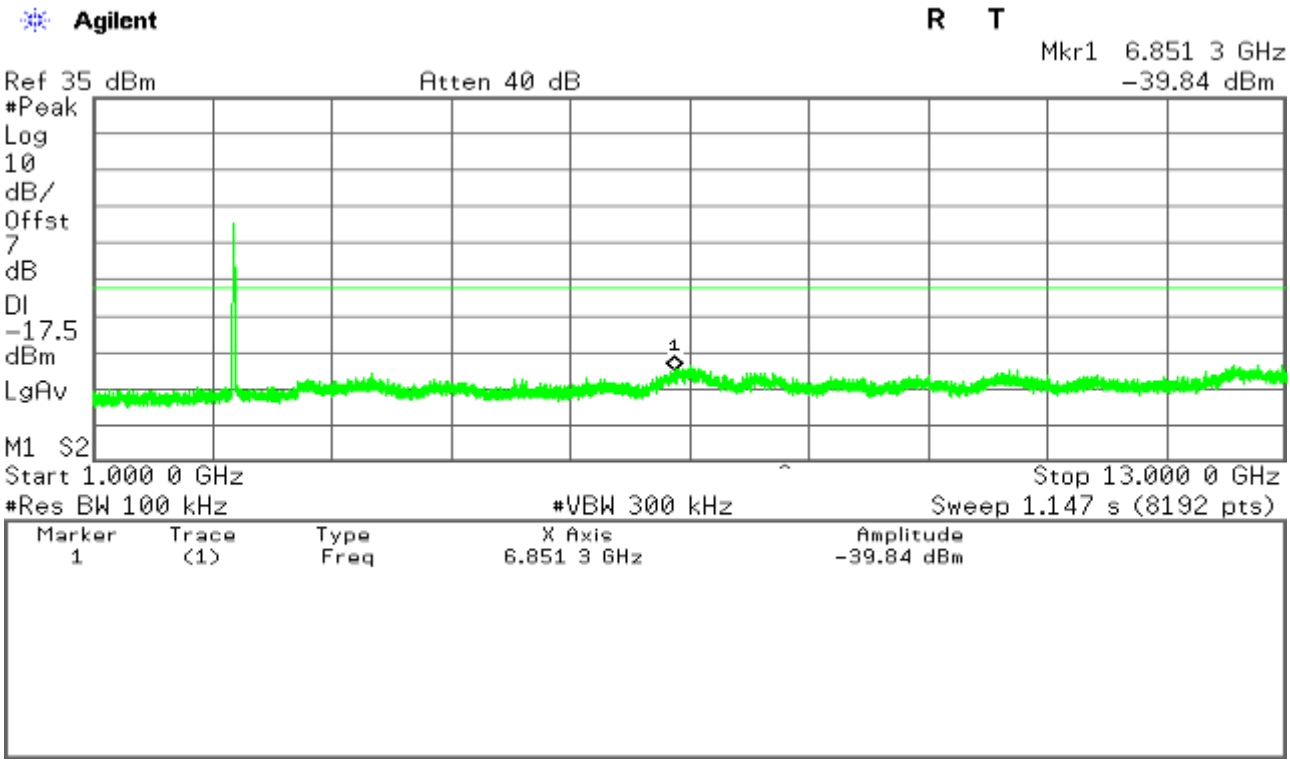

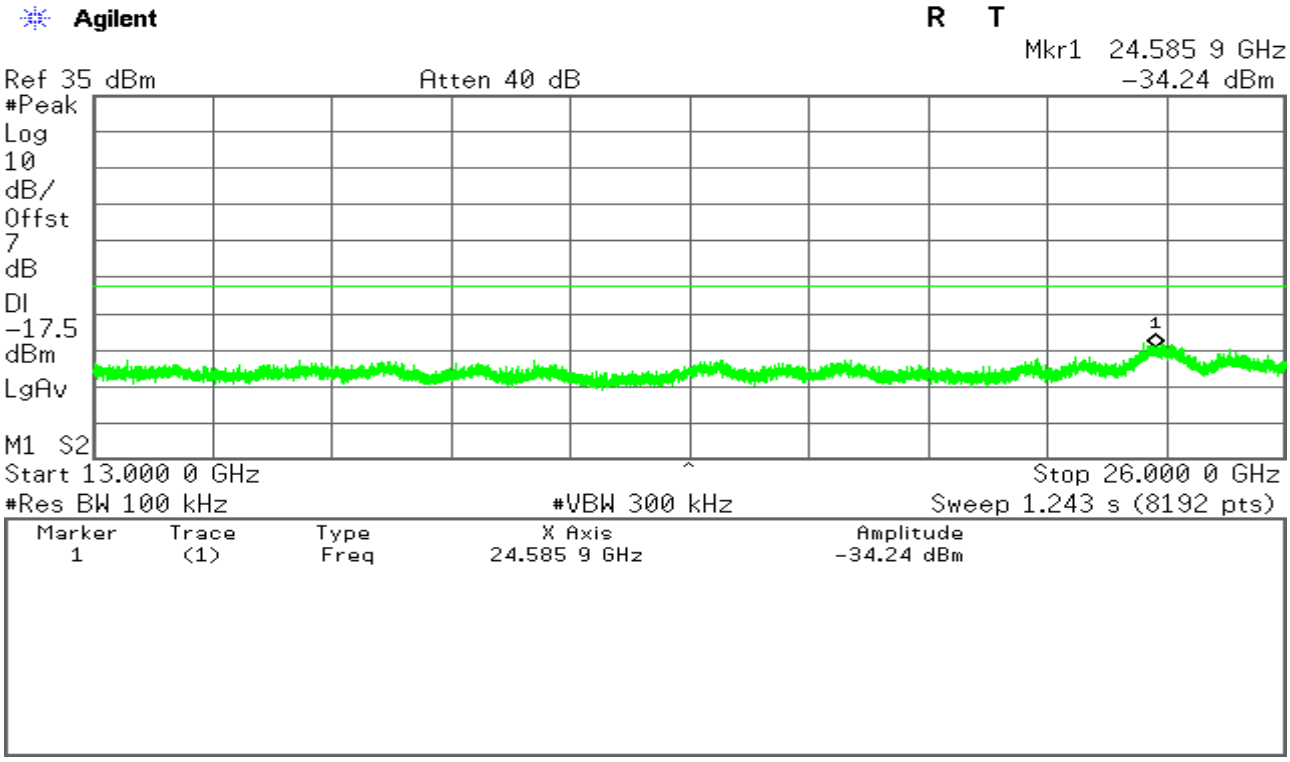

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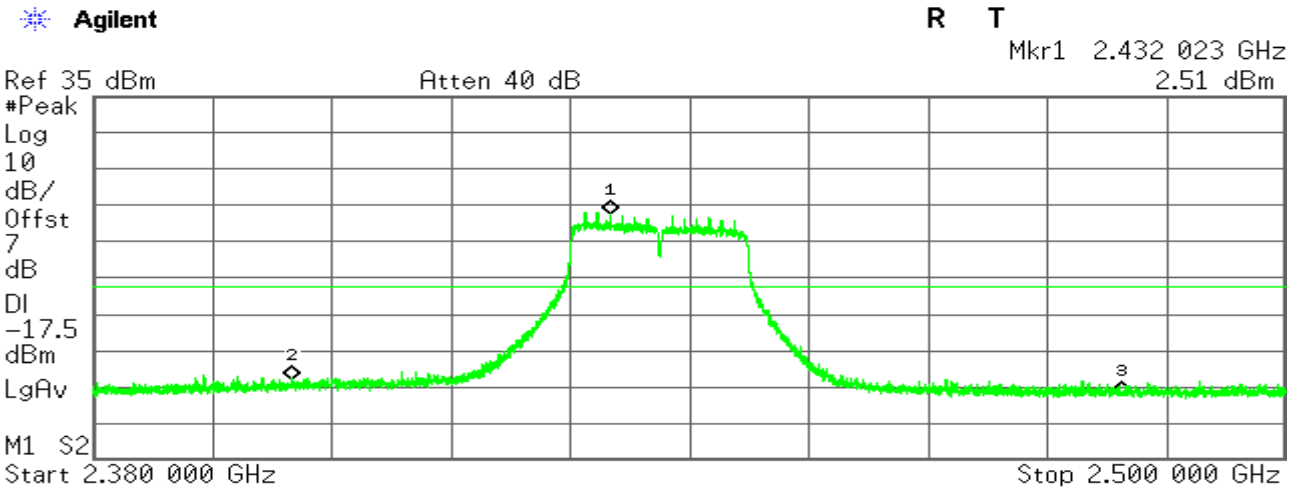
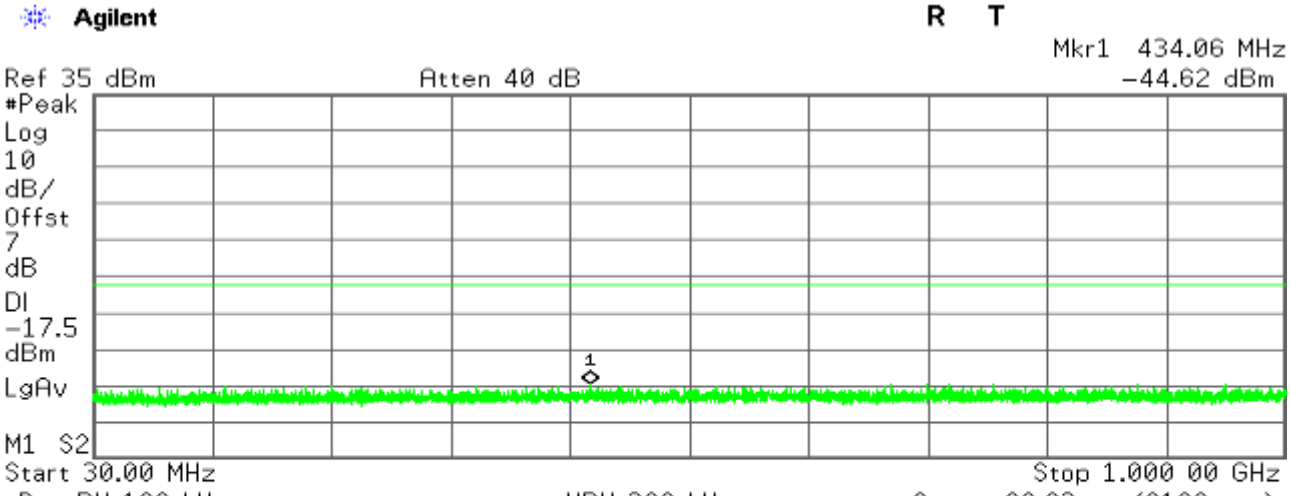
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.432 023 GHz	2.51 dBm
2	(1)	Freq	2.400 000 GHz	-43.05 dBm
3	(1)	Freq	2.483 500 GHz	-47.05 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	434.06 MHz	-44.62 dBm

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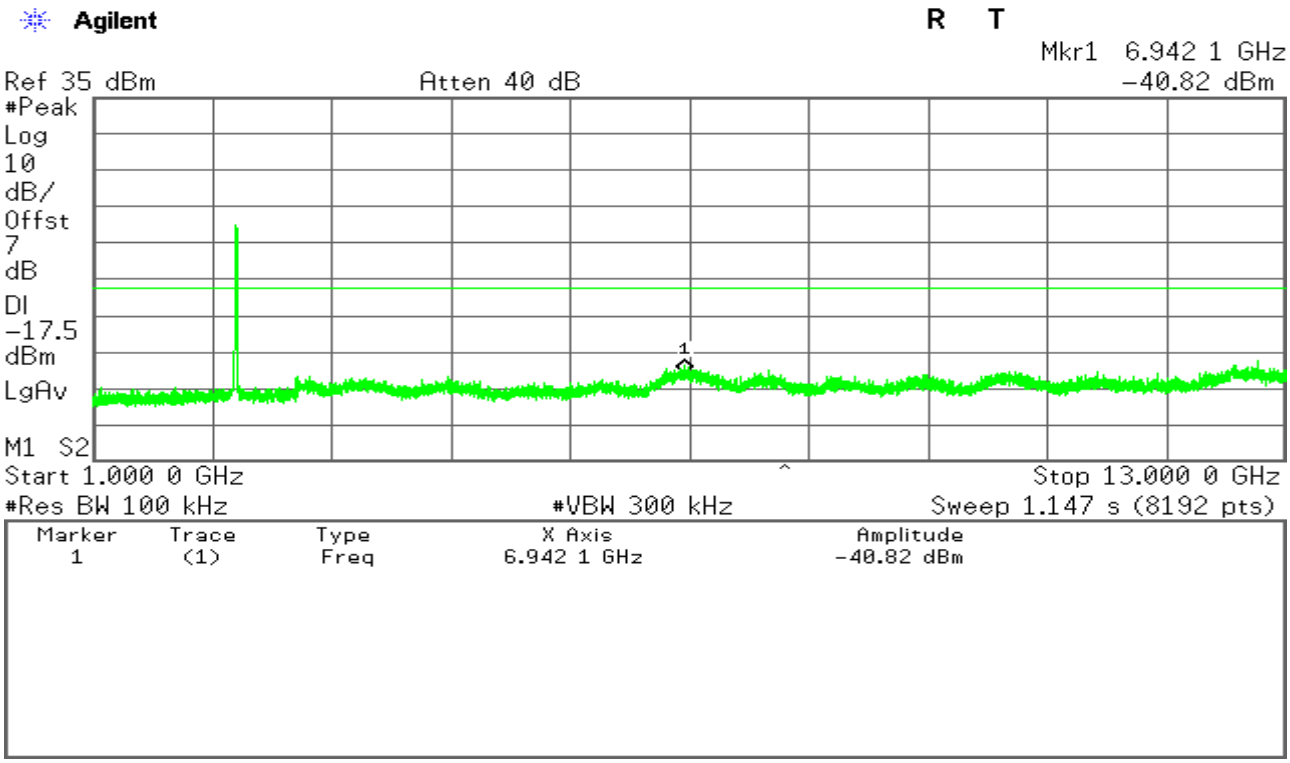

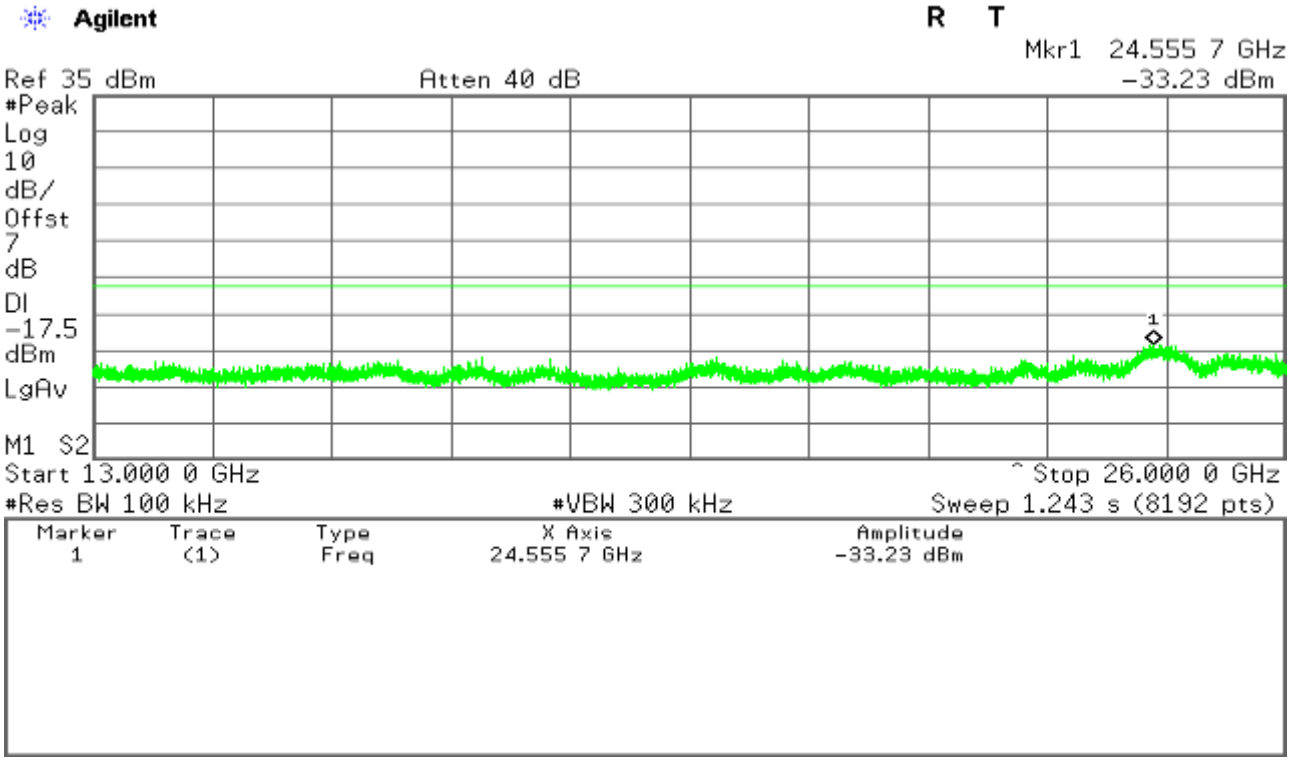

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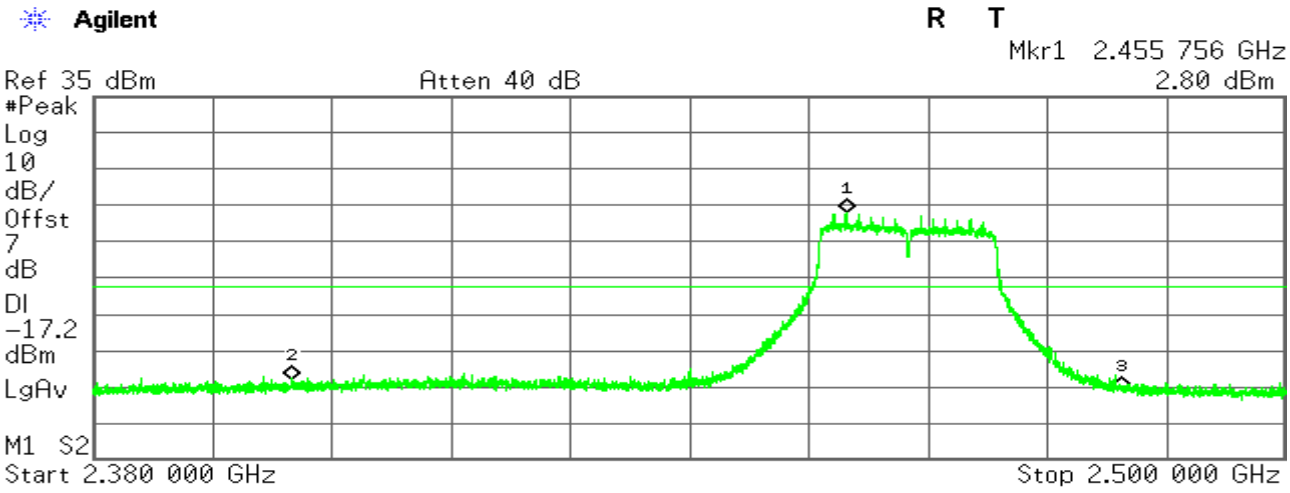
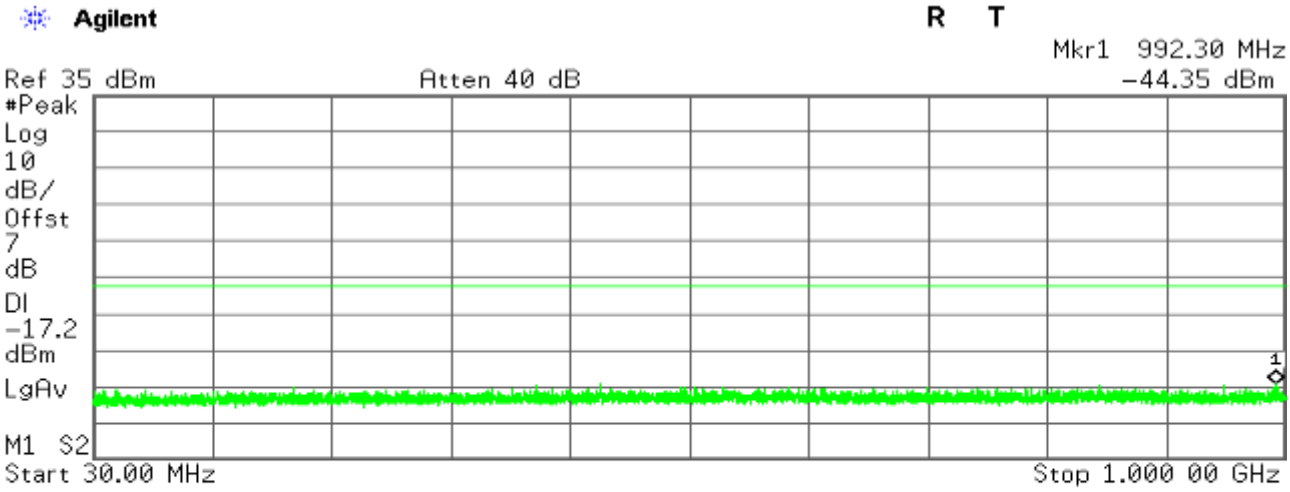
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.455 756 GHz	2.80 dBm
2	(1)	Freq	2.400 000 GHz	-43.04 dBm
3	(1)	Freq	2.483 500 GHz	-45.97 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	992.30 MHz	-44.35 dBm

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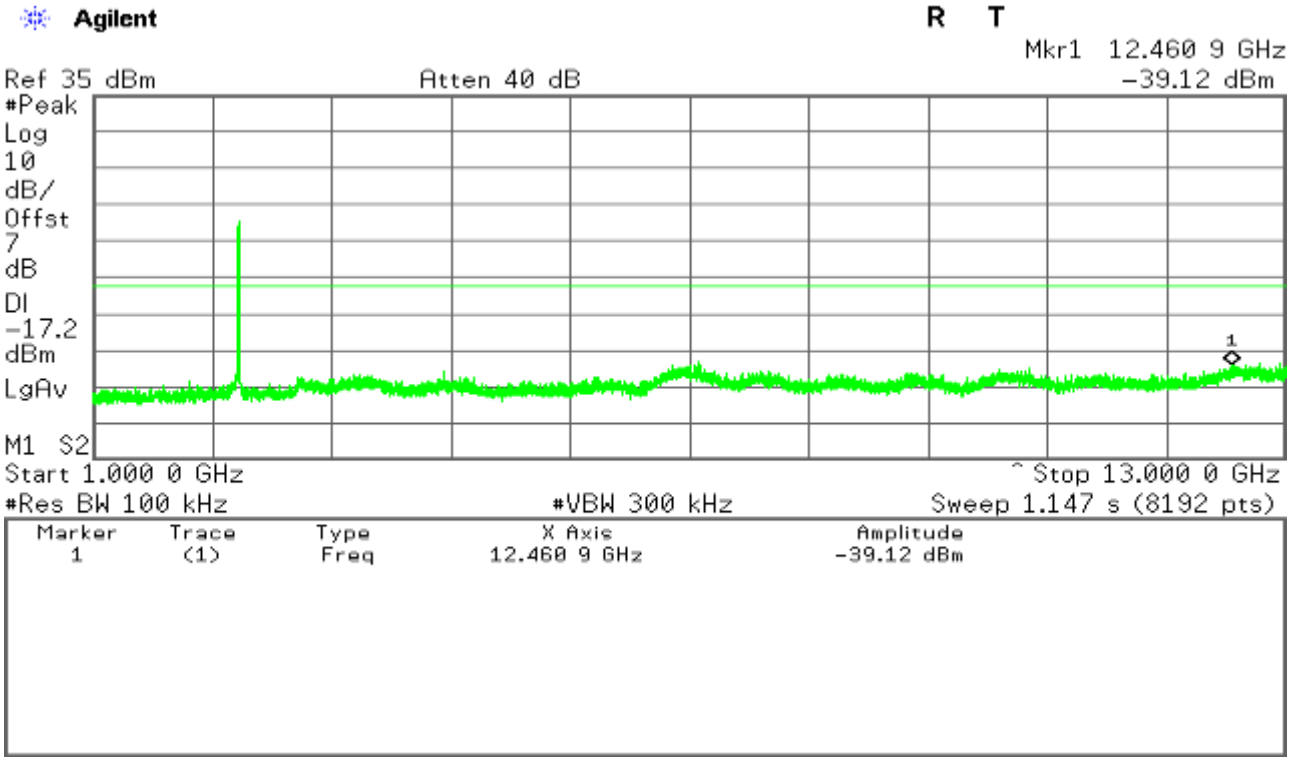

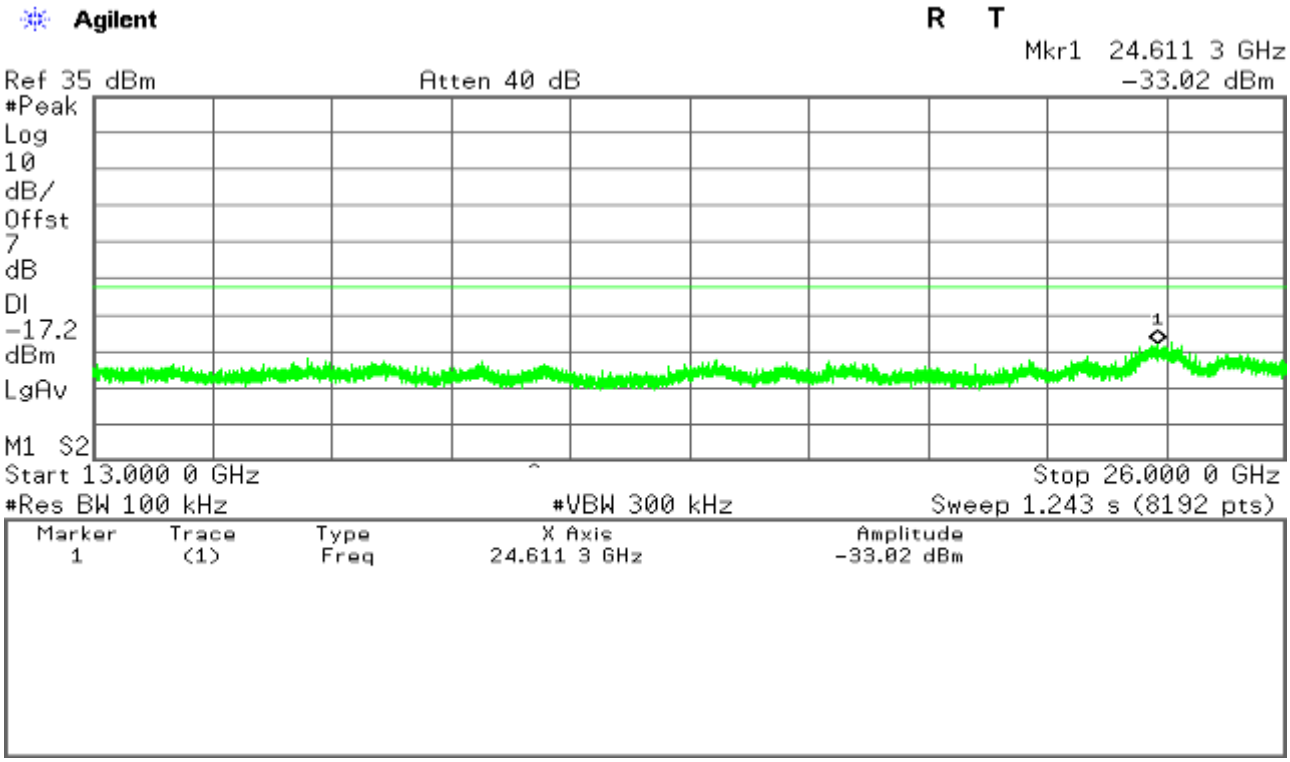

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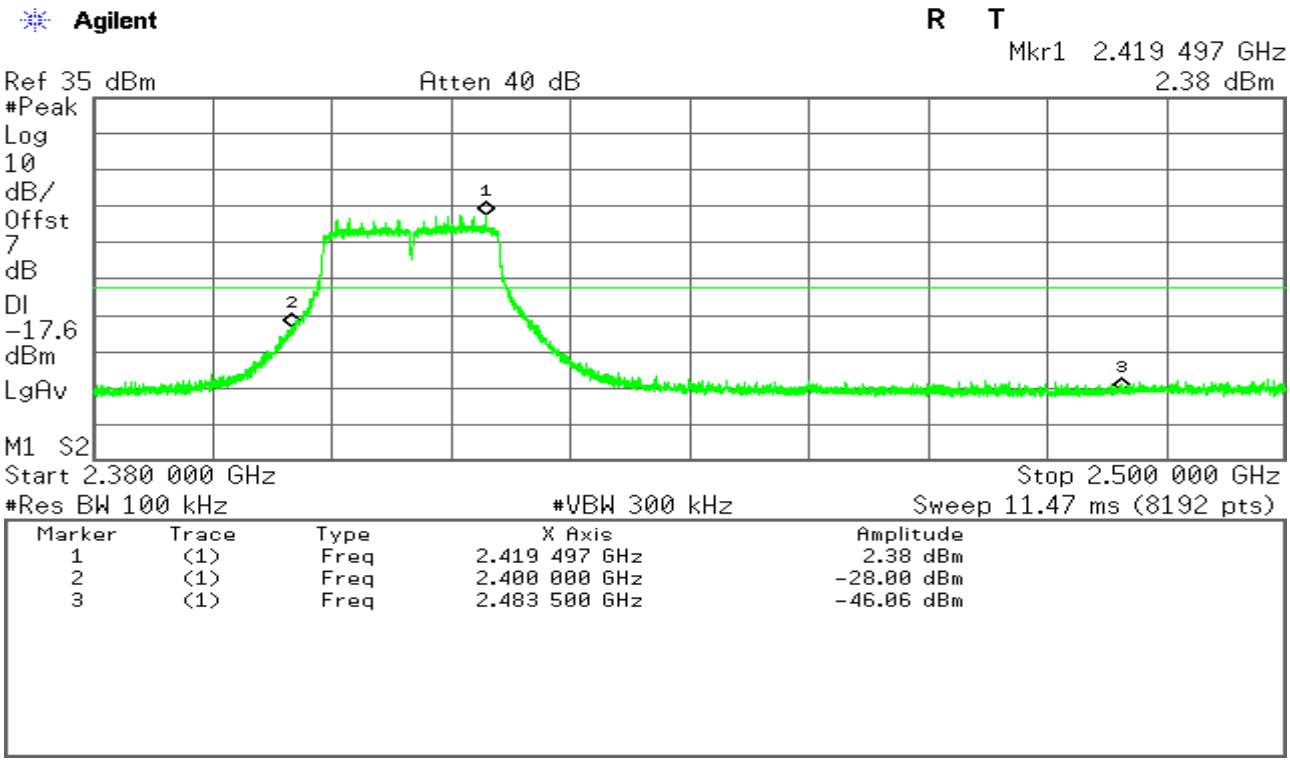
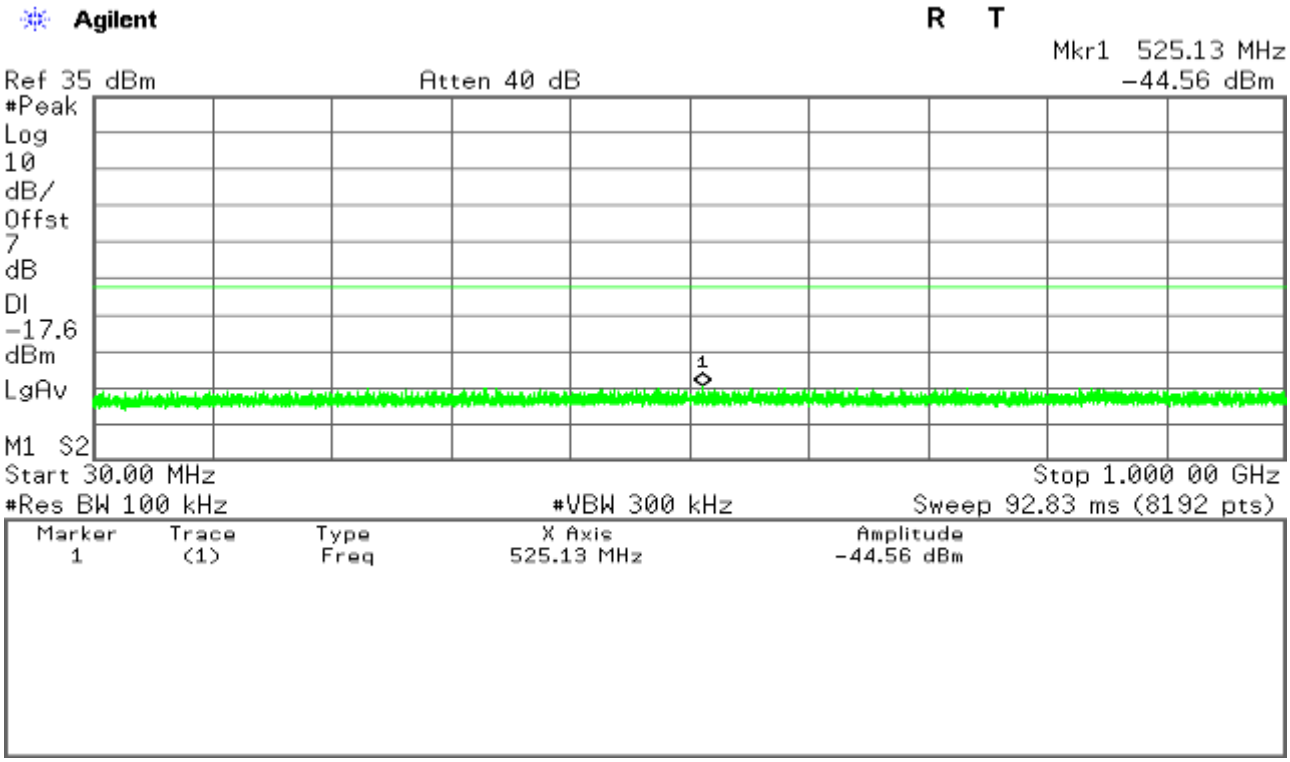
draft 802.11n Standard-20 MHz Channel mode / Chain 2

CH Low





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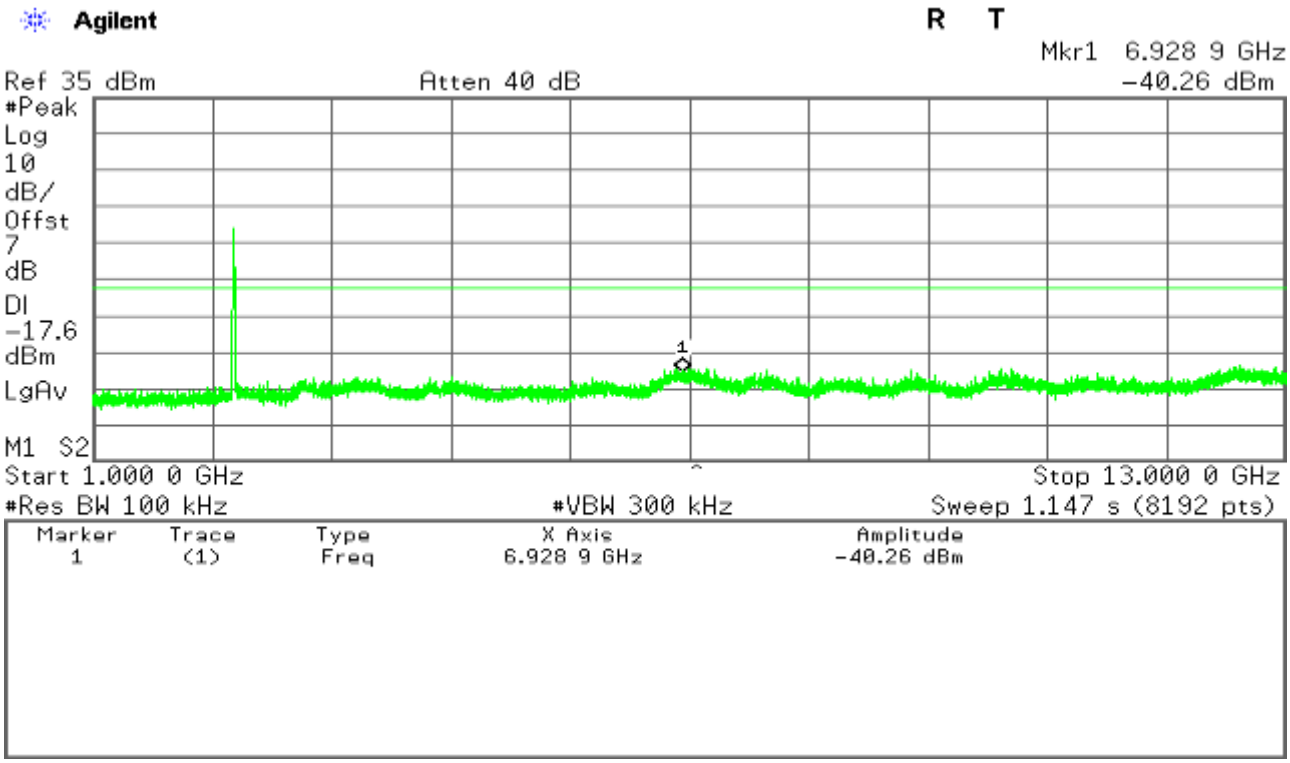

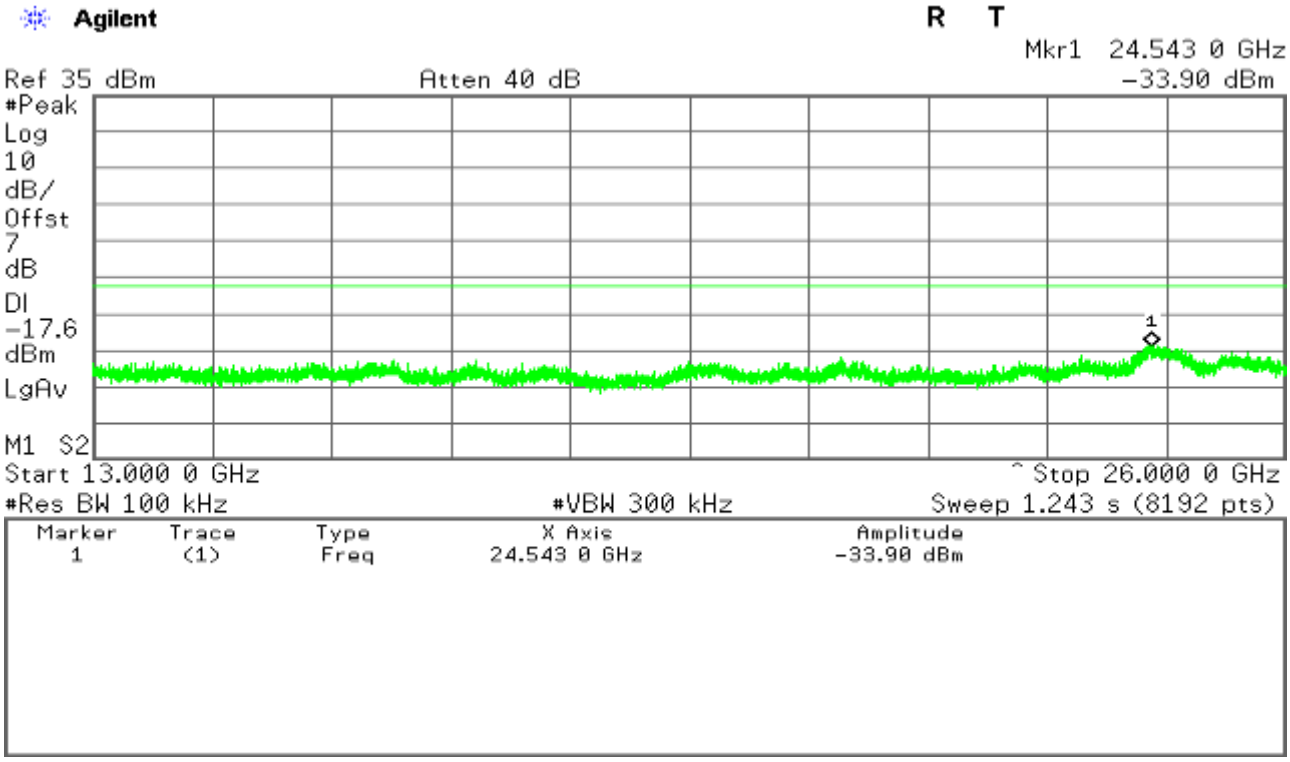

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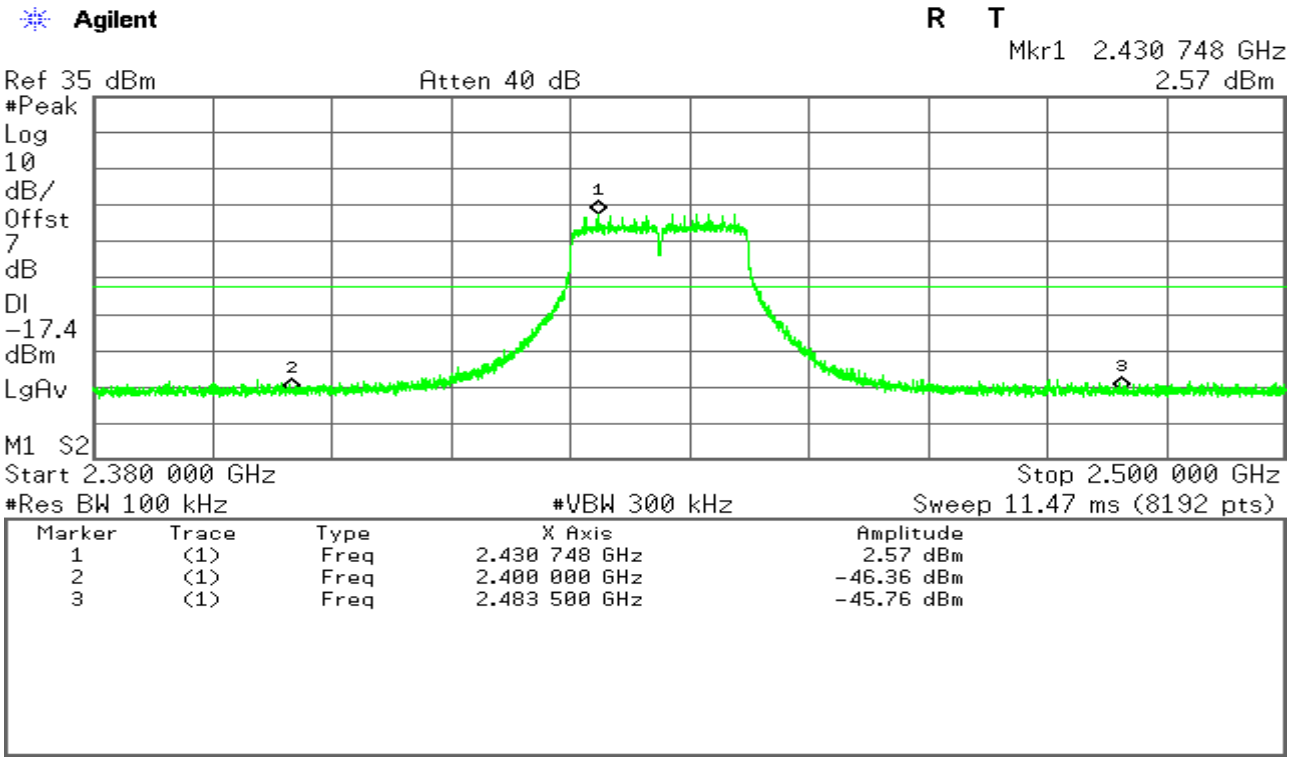
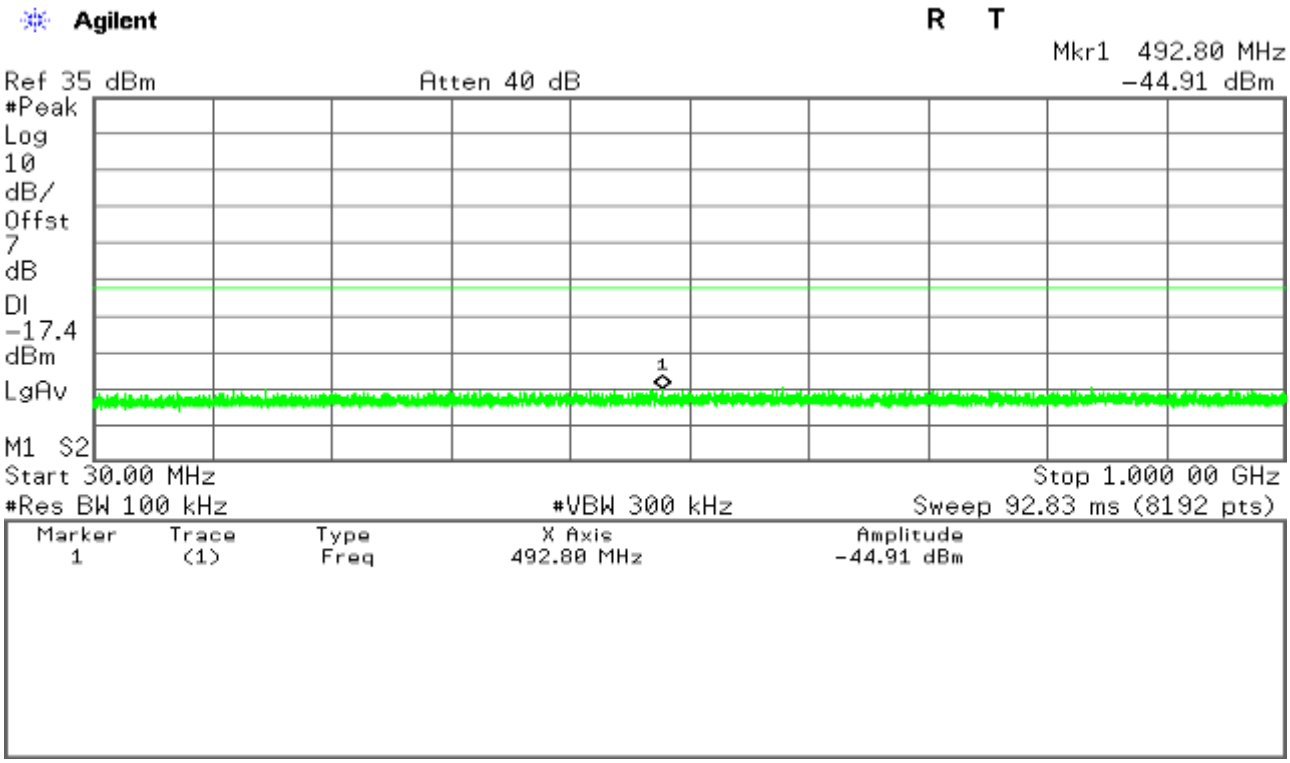
CH Mid





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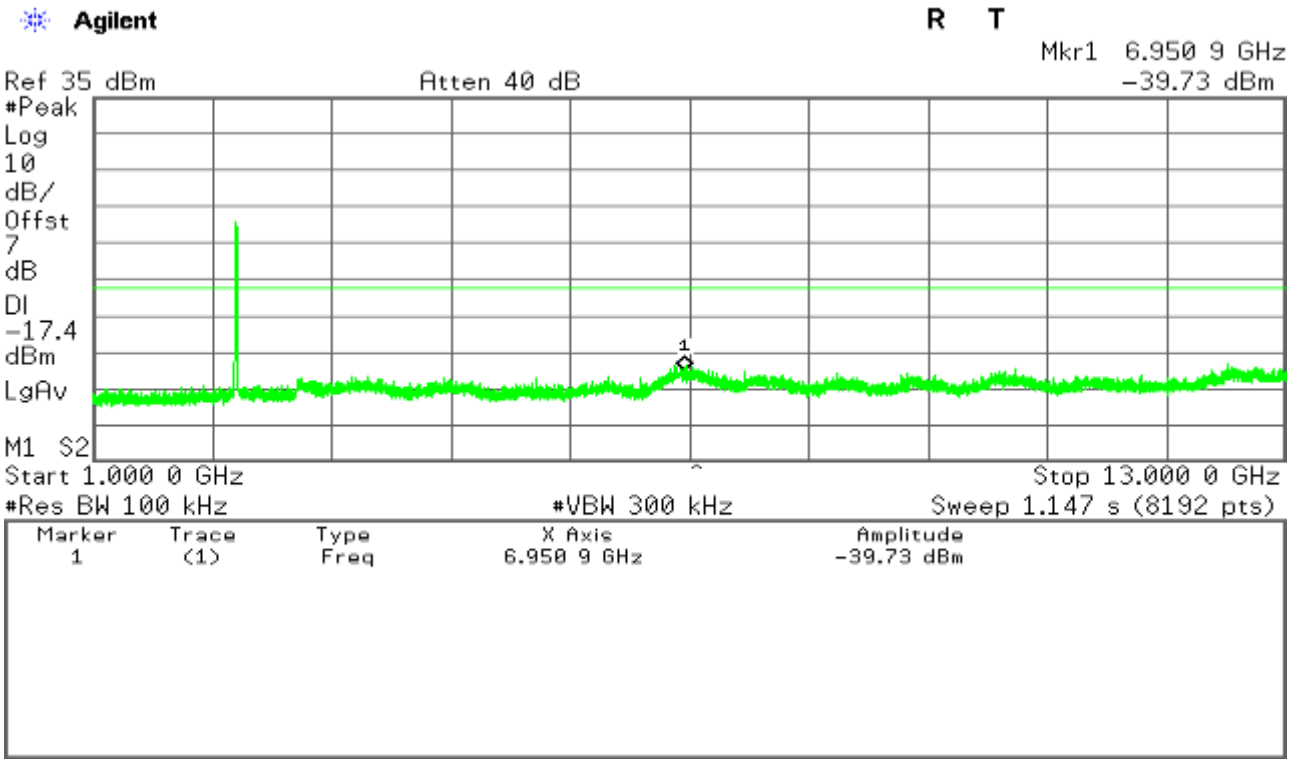

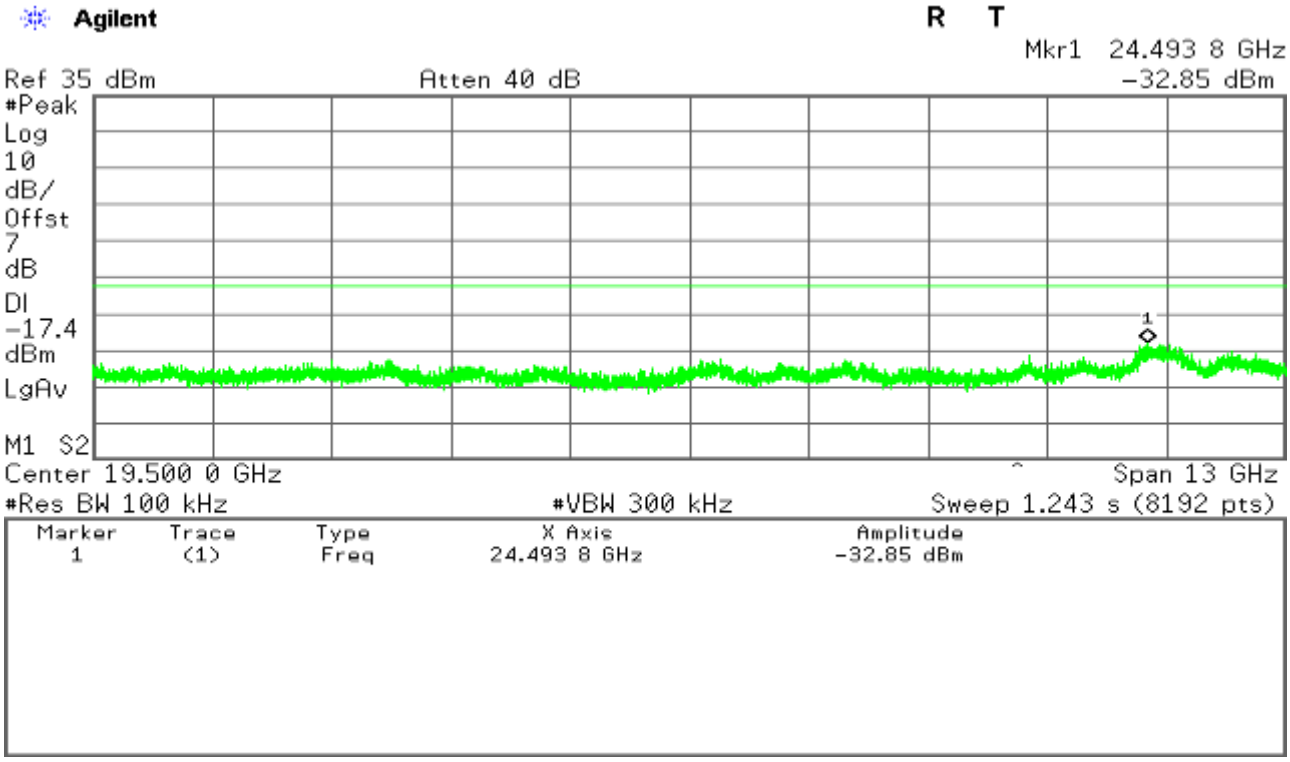

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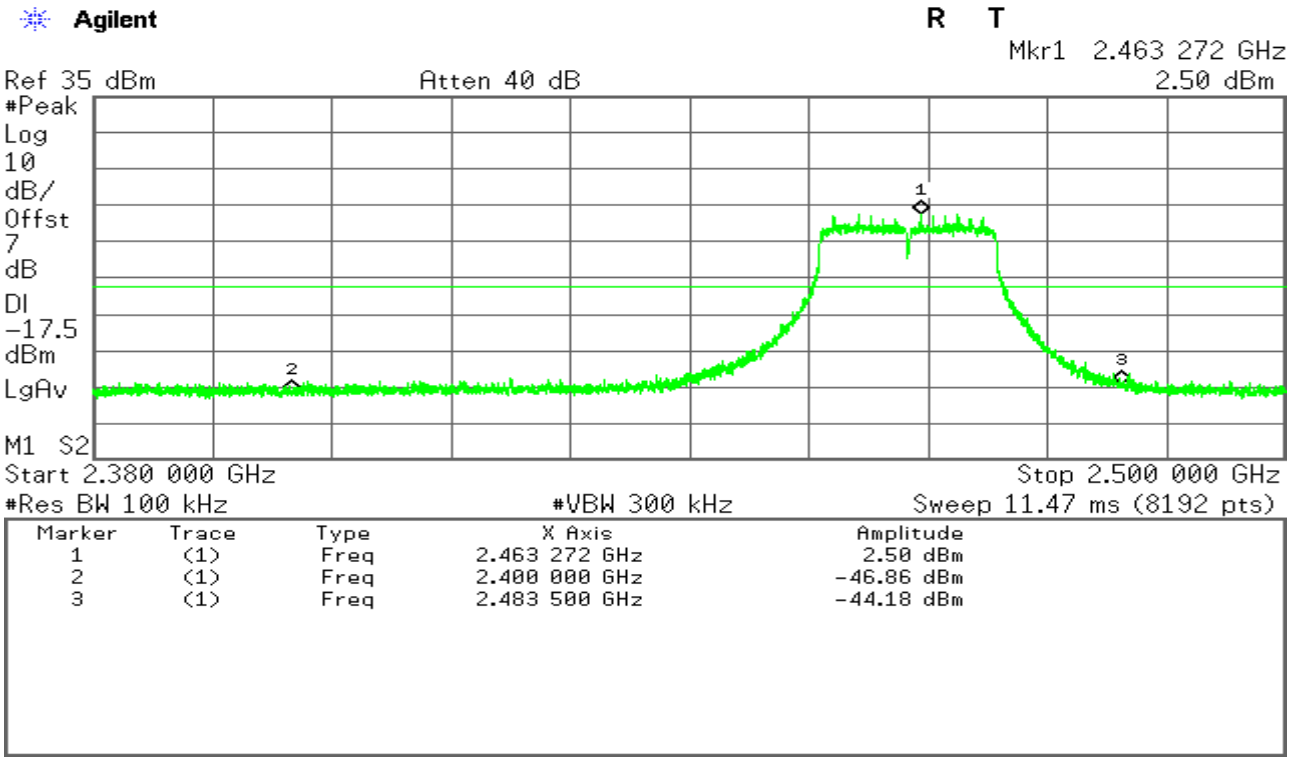
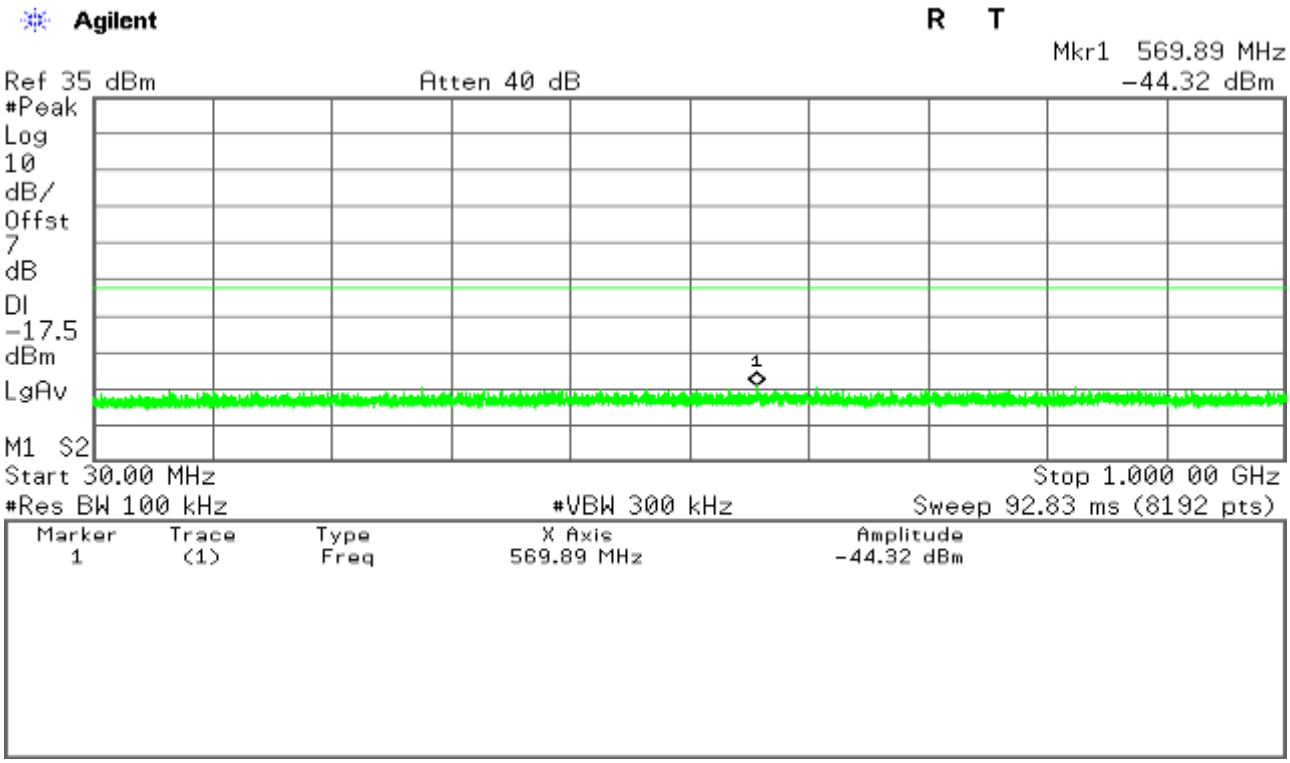
CH High





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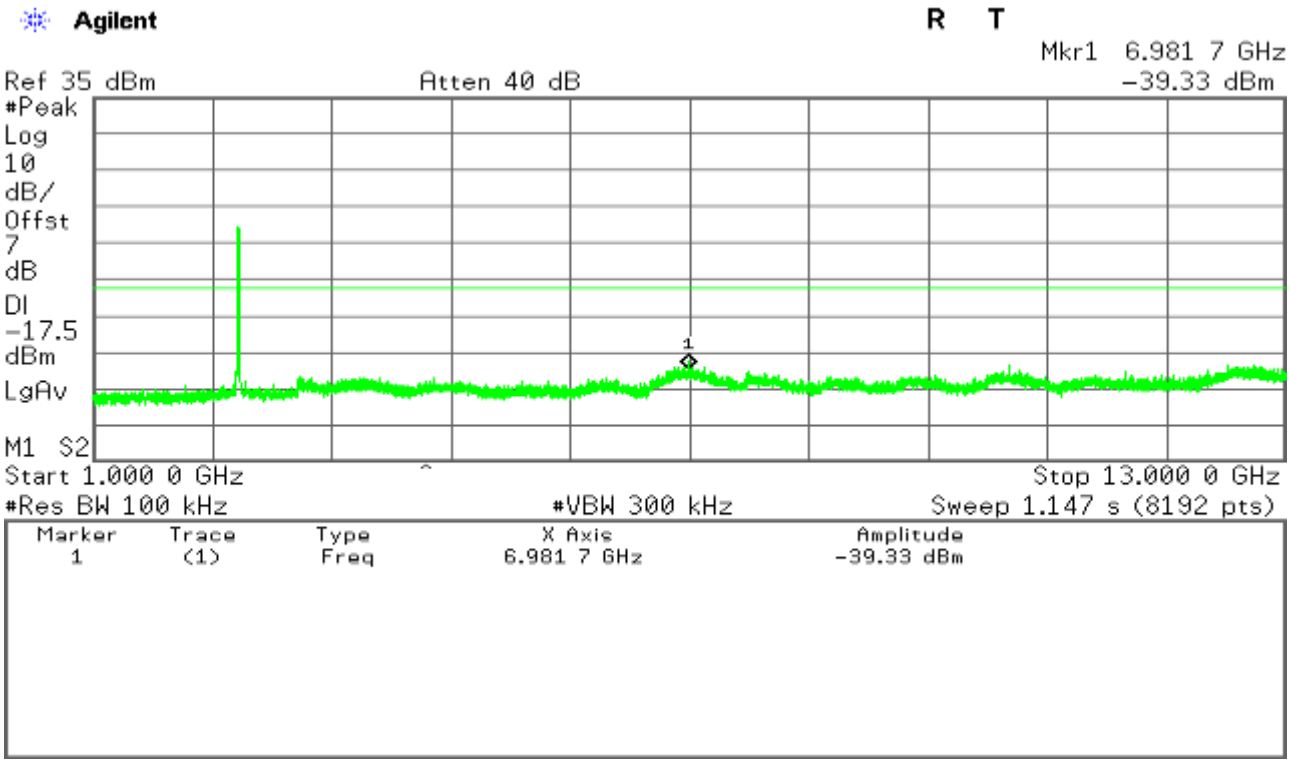

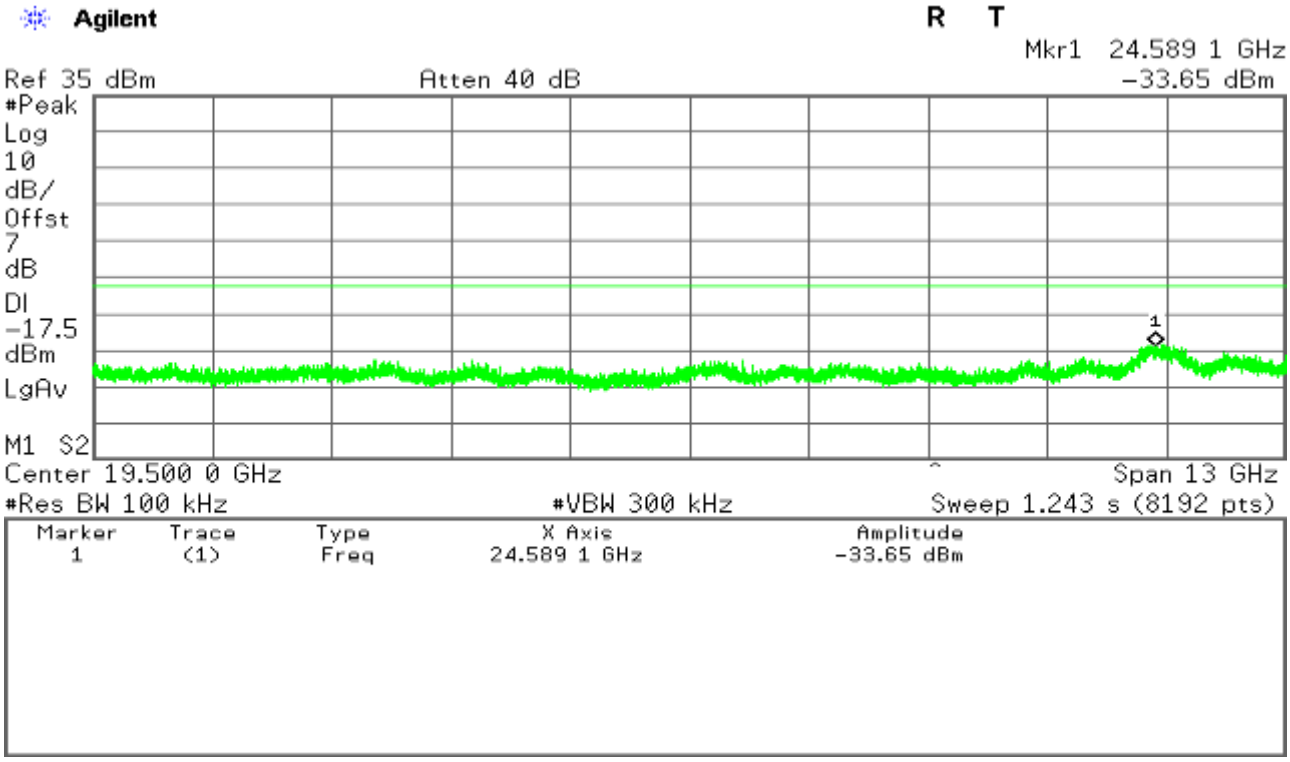

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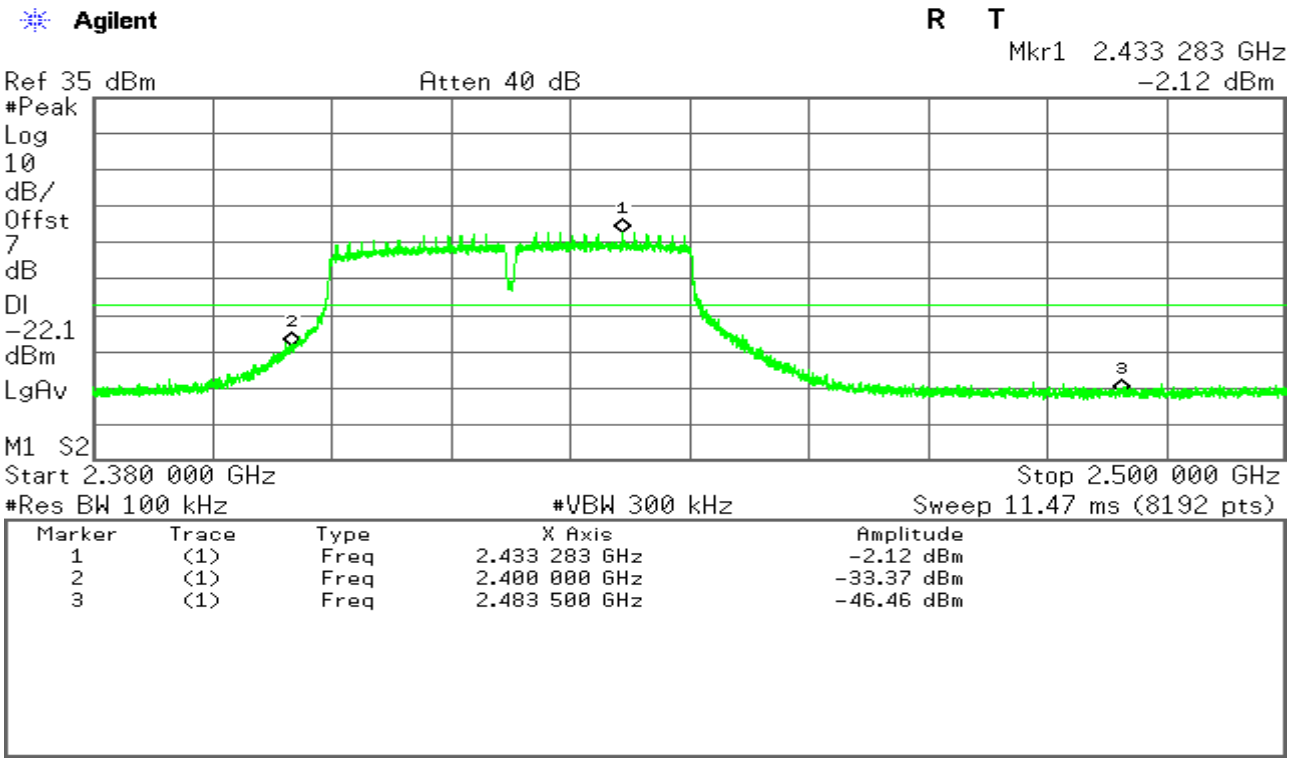
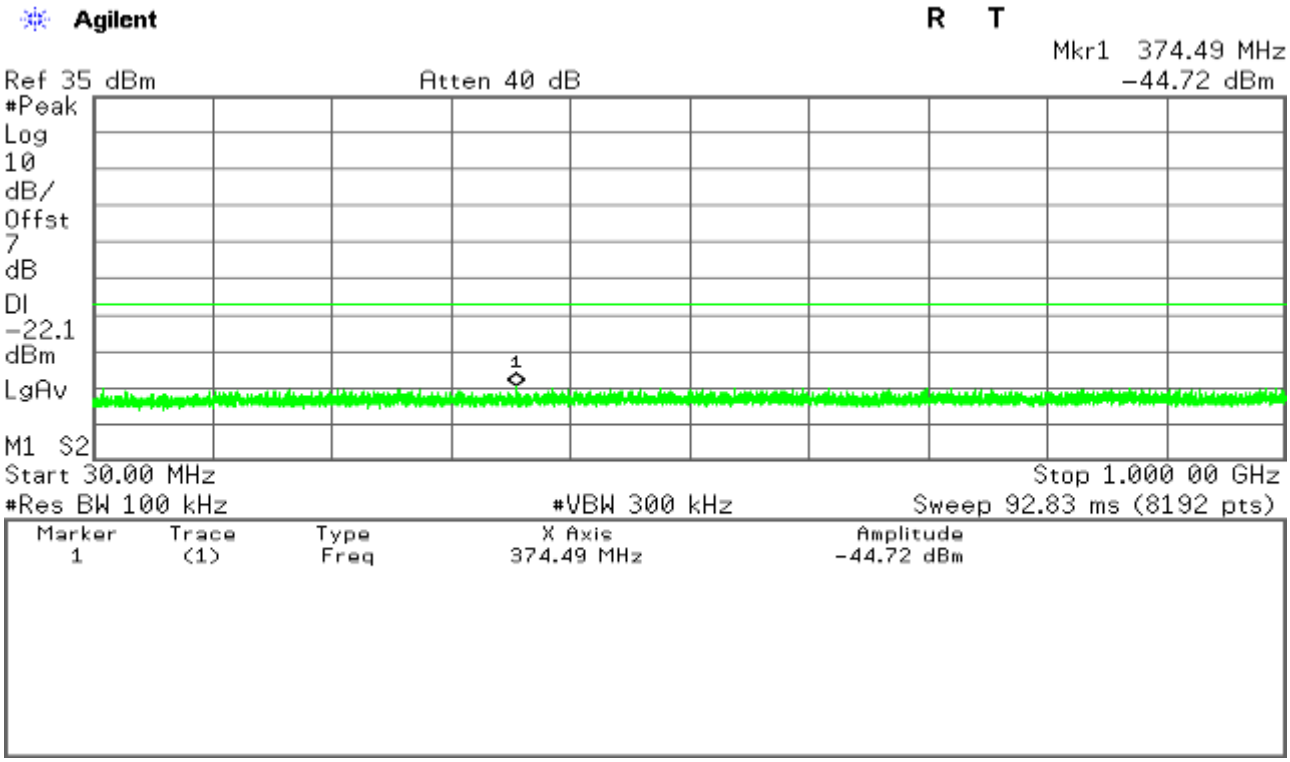
draft 802.11n wide-40 MHz Channel mode / Chain 0

CH Low





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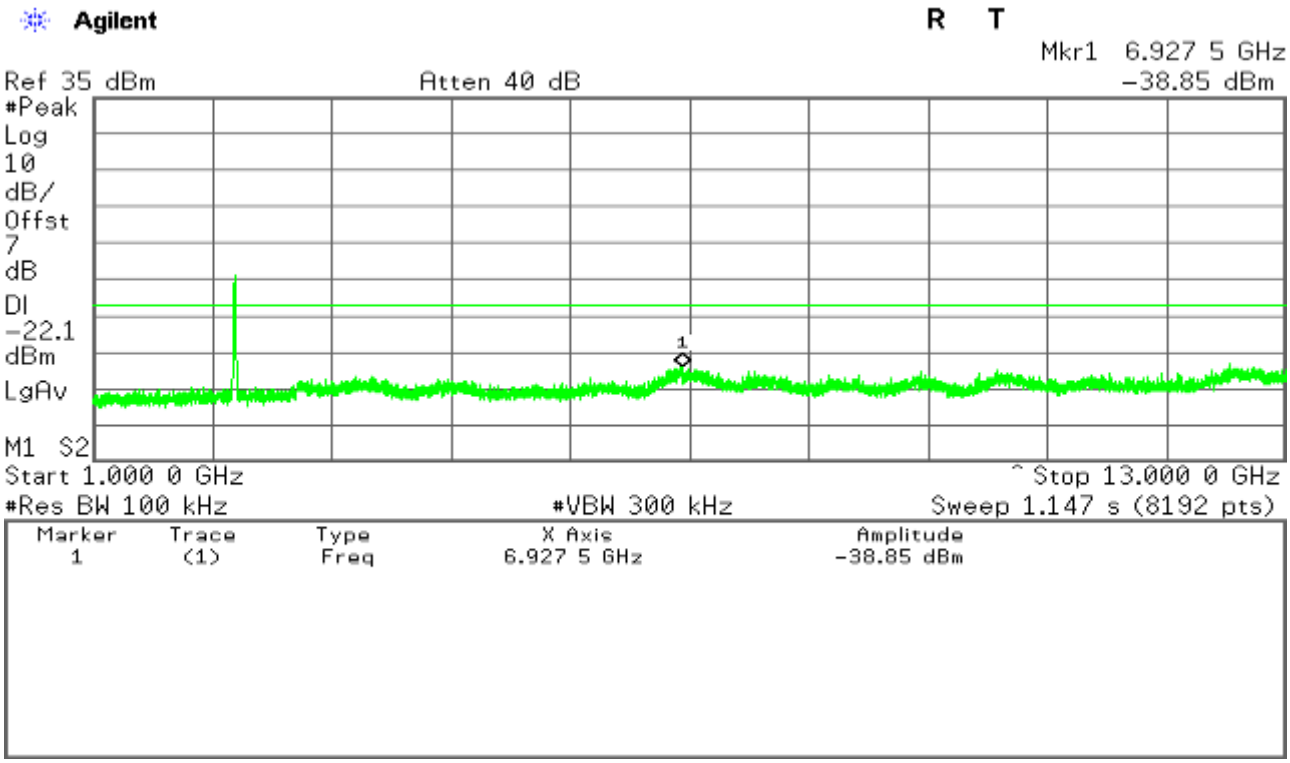

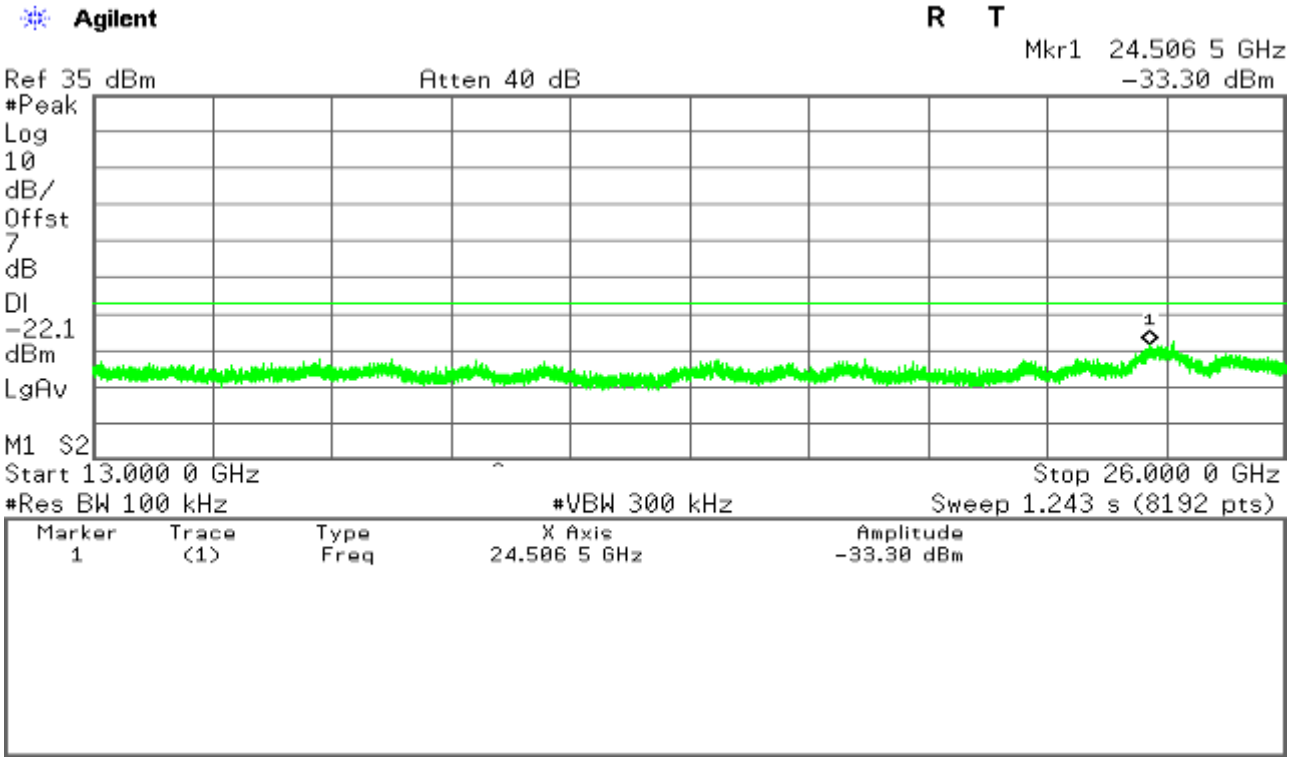

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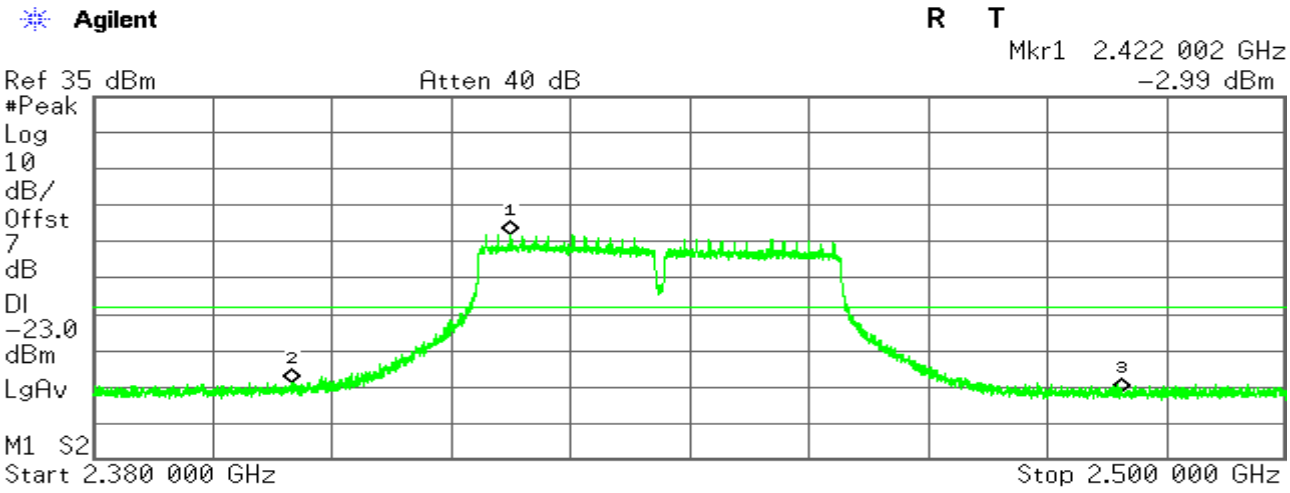
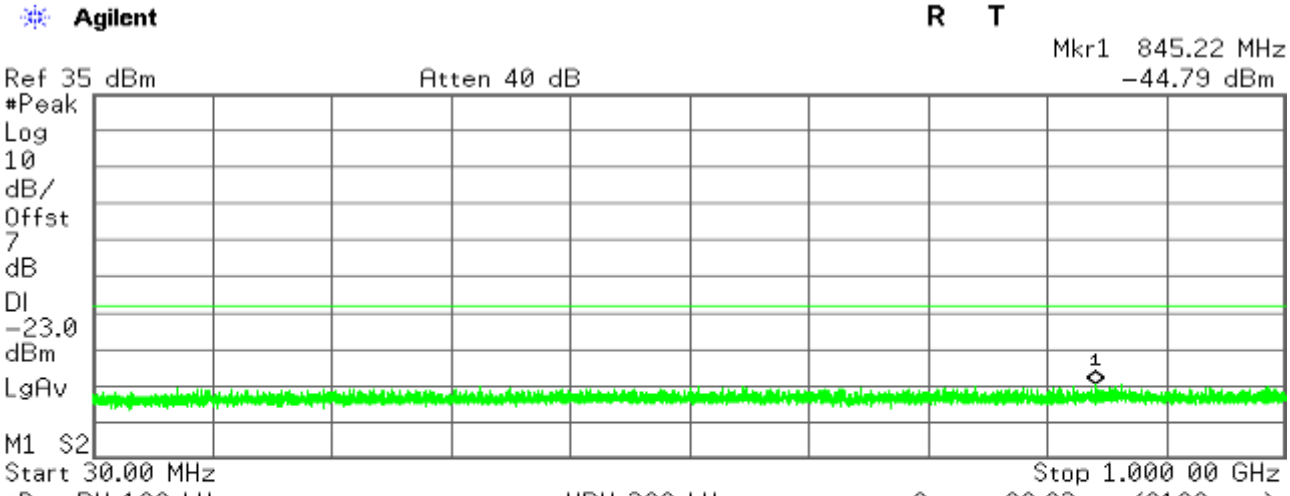
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.422 002 GHz	-2.99 dBm
2	(1)	Freq	2.400 000 GHz	-43.72 dBm
3	(1)	Freq	2.483 500 GHz	-46.34 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	845.22 MHz	-44.79 dBm

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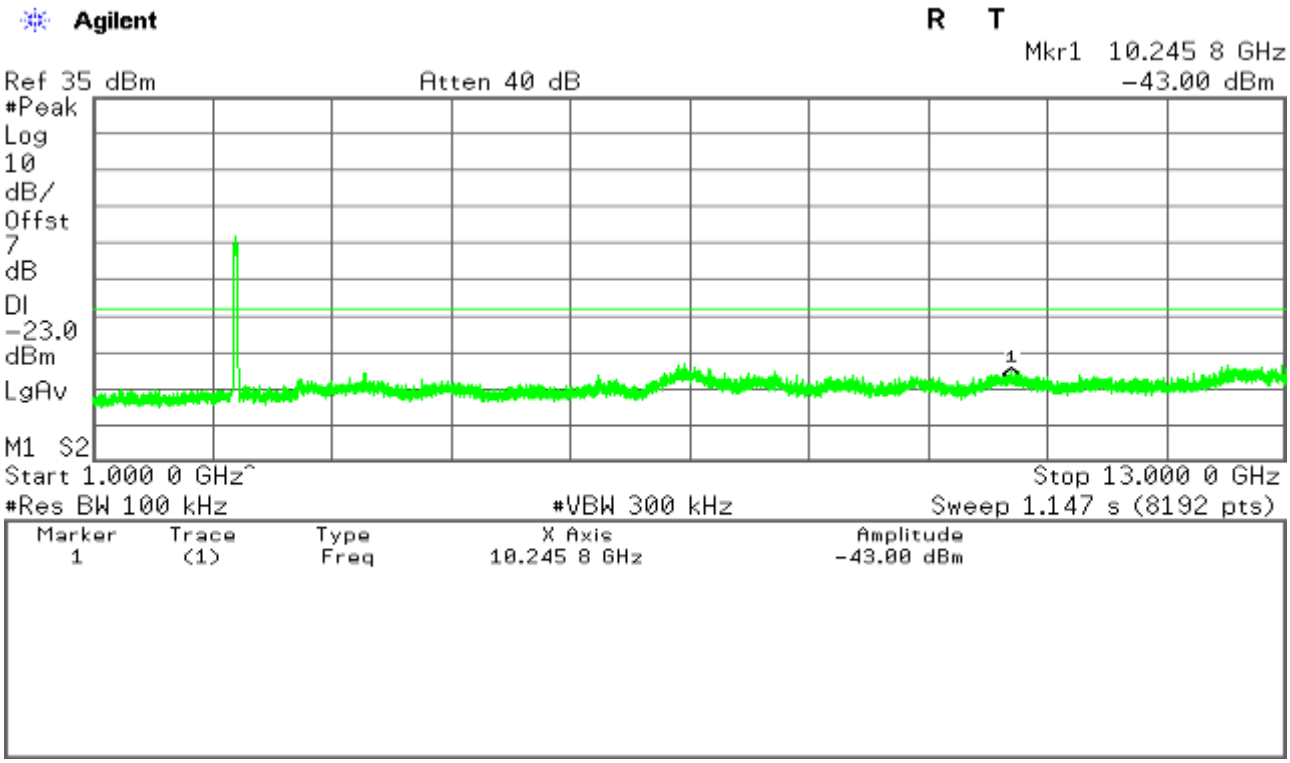

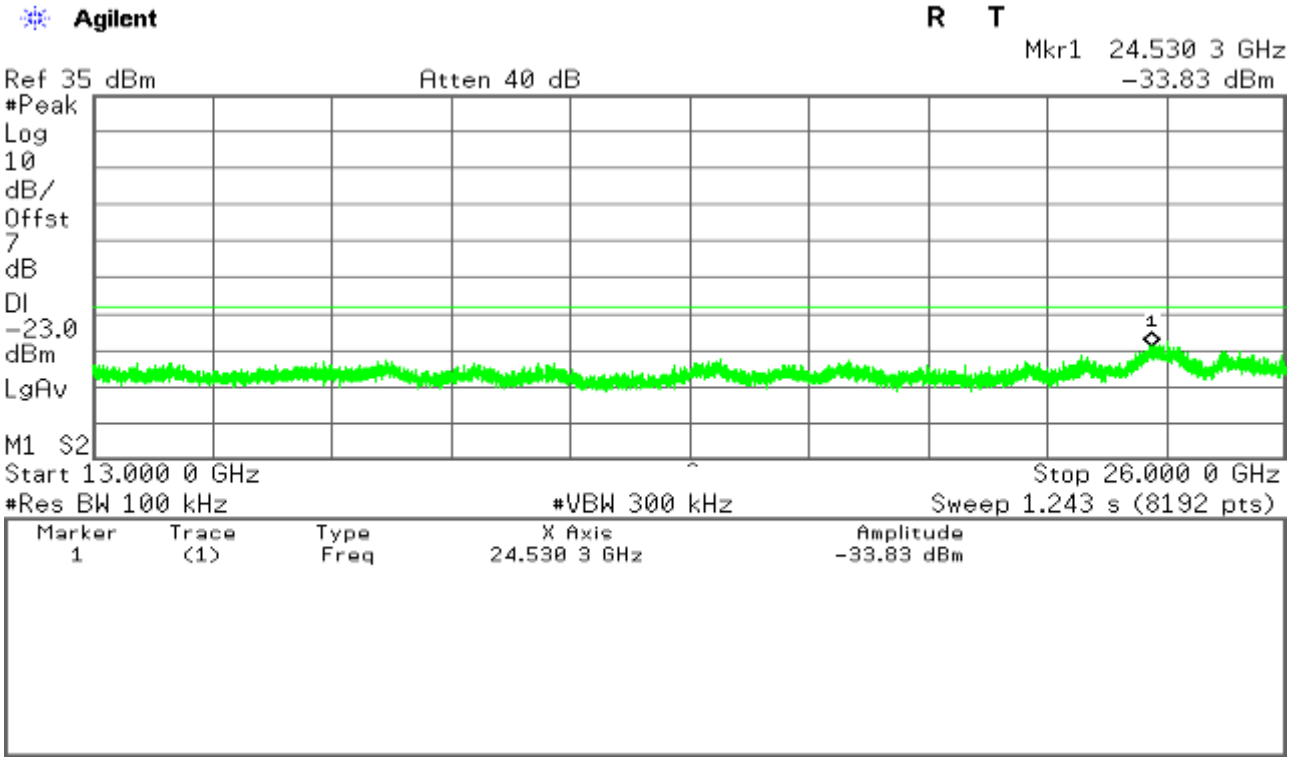

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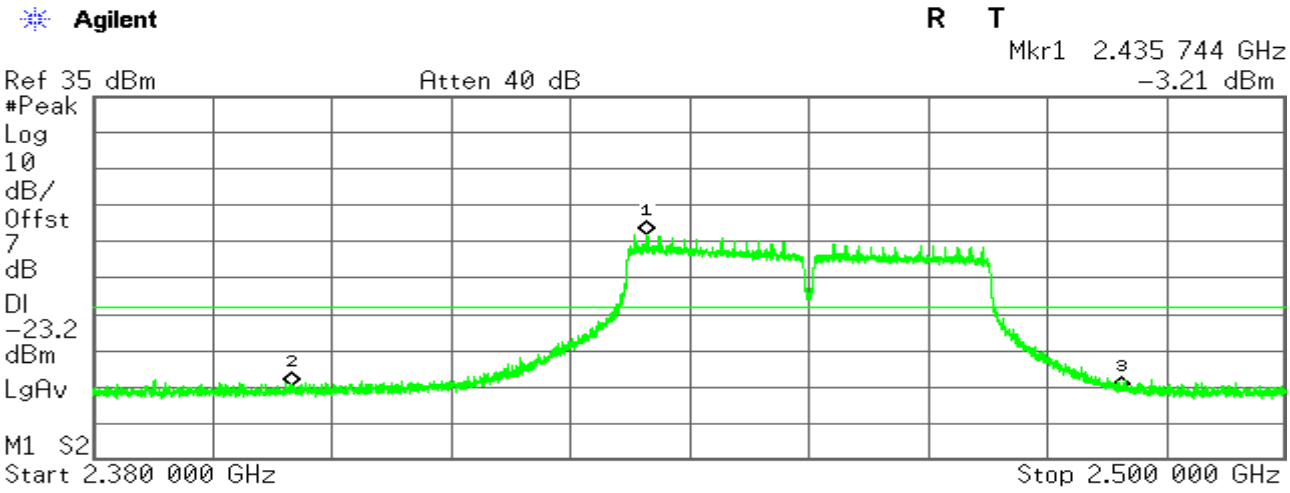
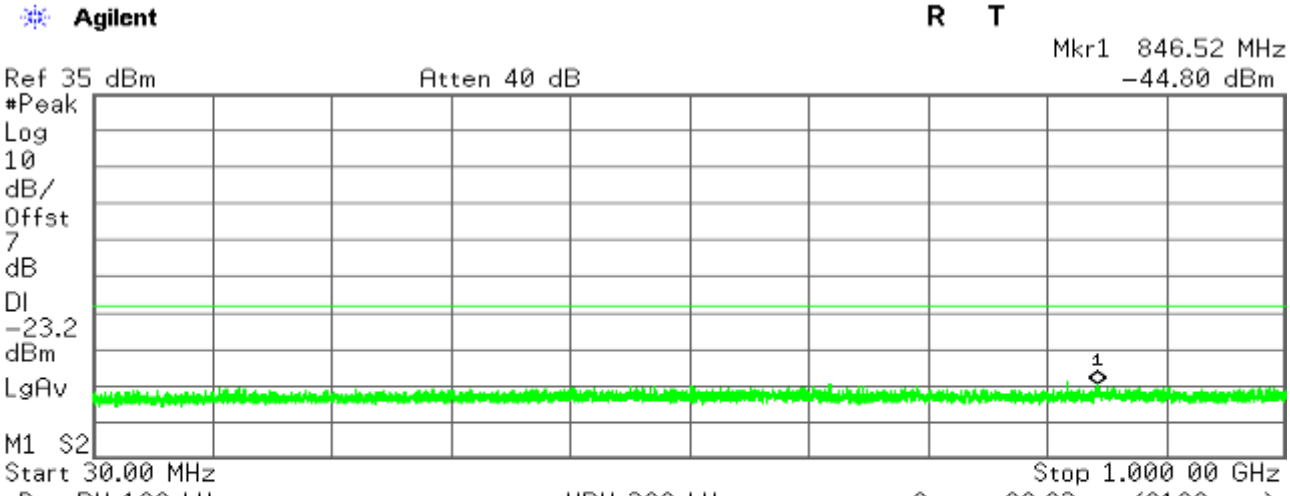
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.435 744 GHz	-3.21 dBm
2	(1)	Freq	2.400 000 GHz	-44.46 dBm
3	(1)	Freq	2.483 500 GHz	-45.89 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	846.52 MHz	-44.80 dBm

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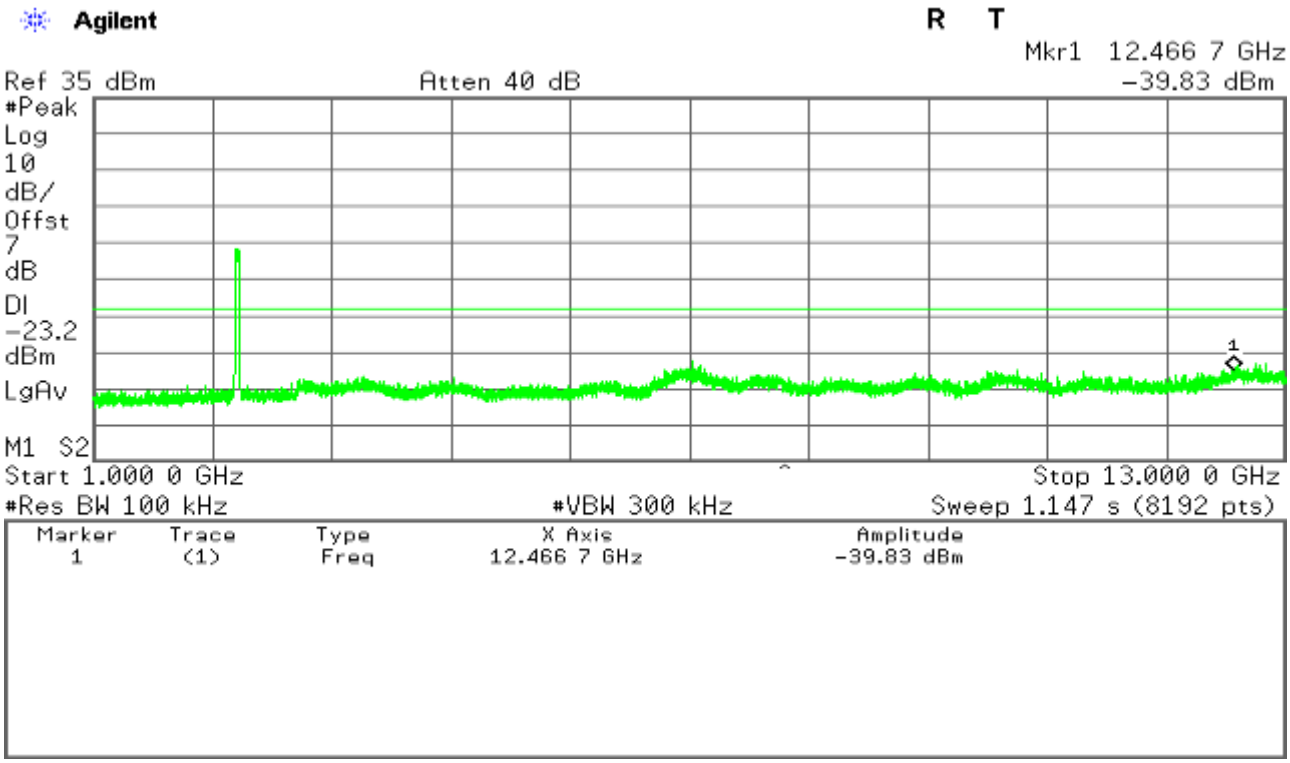

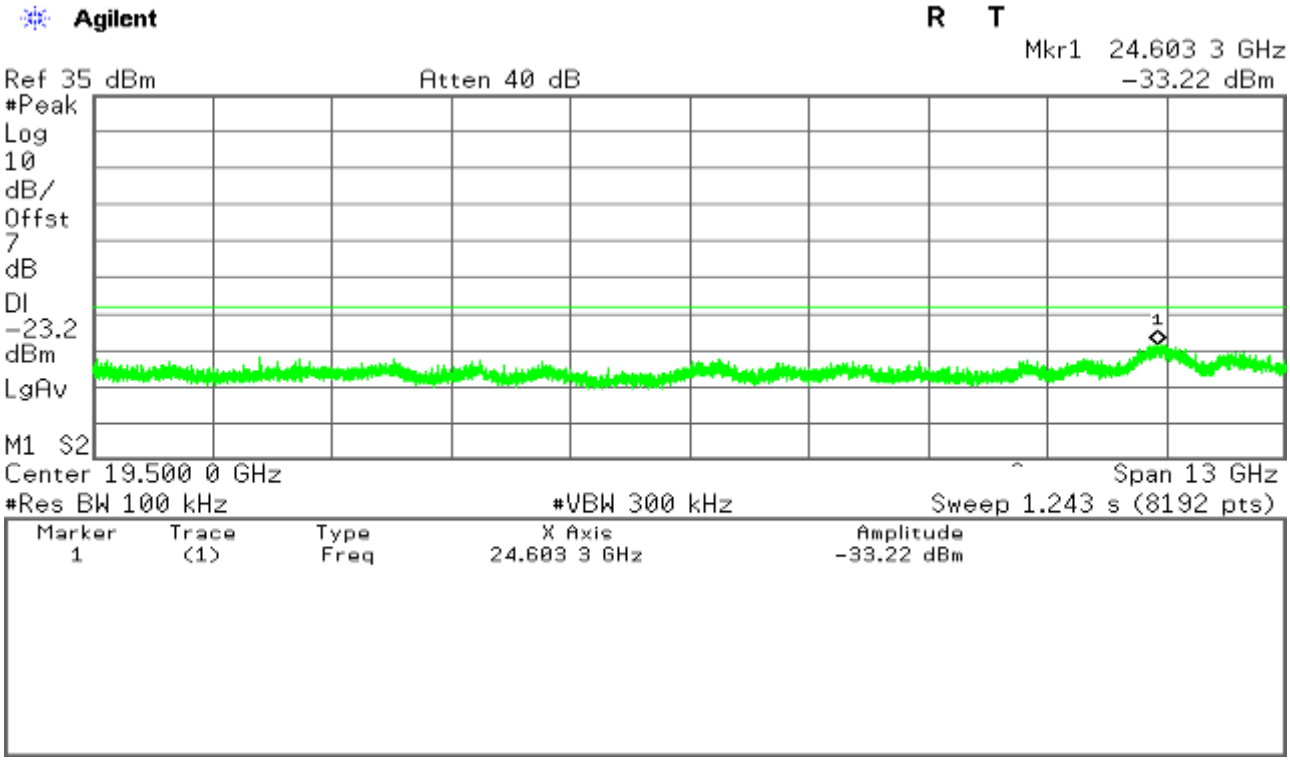

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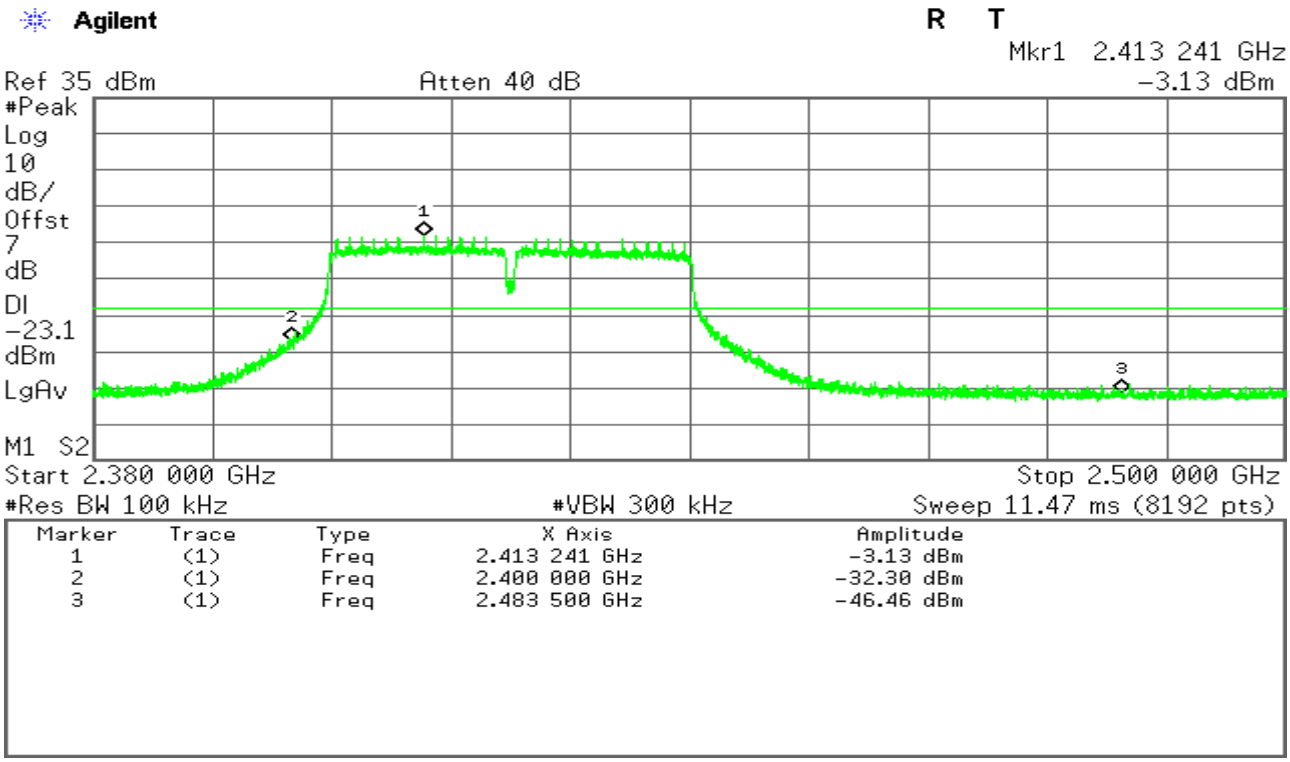
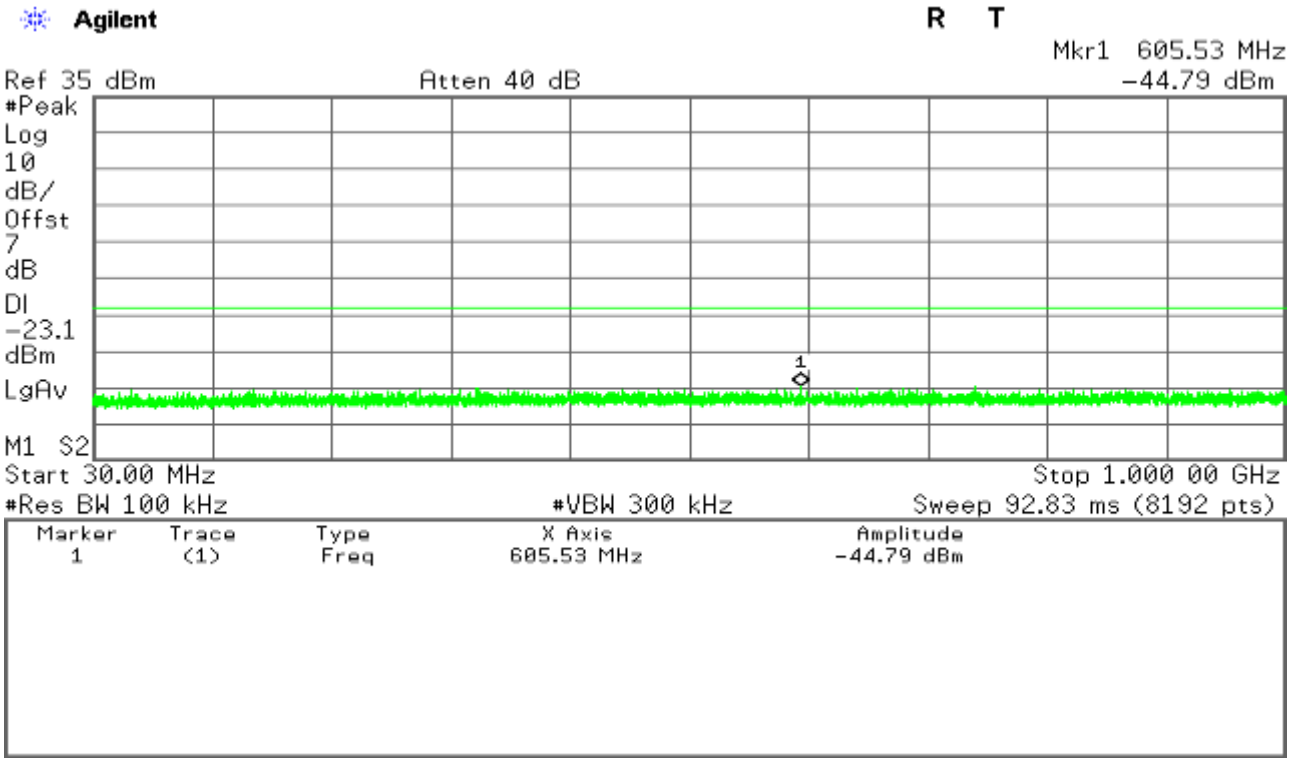
draft 802.11n wide-40 MHz Channel mode / Chain 1

CH Low





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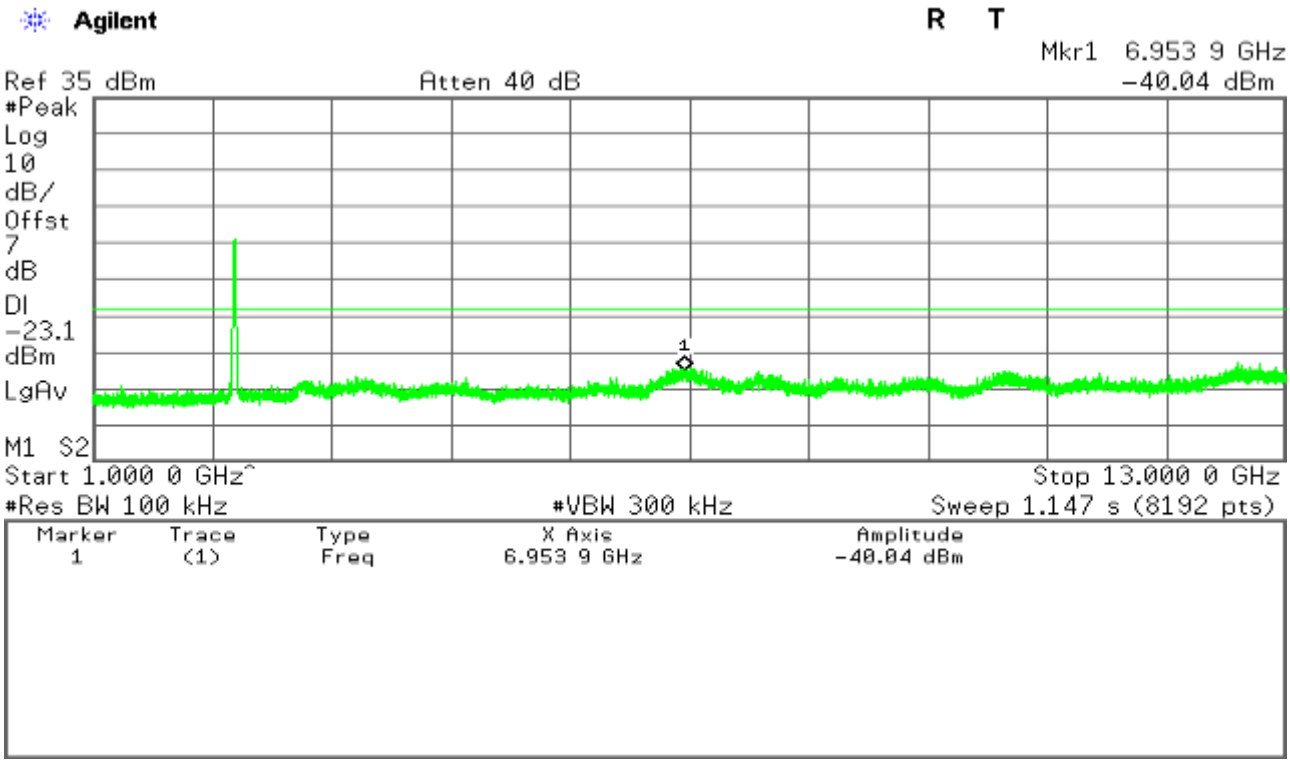

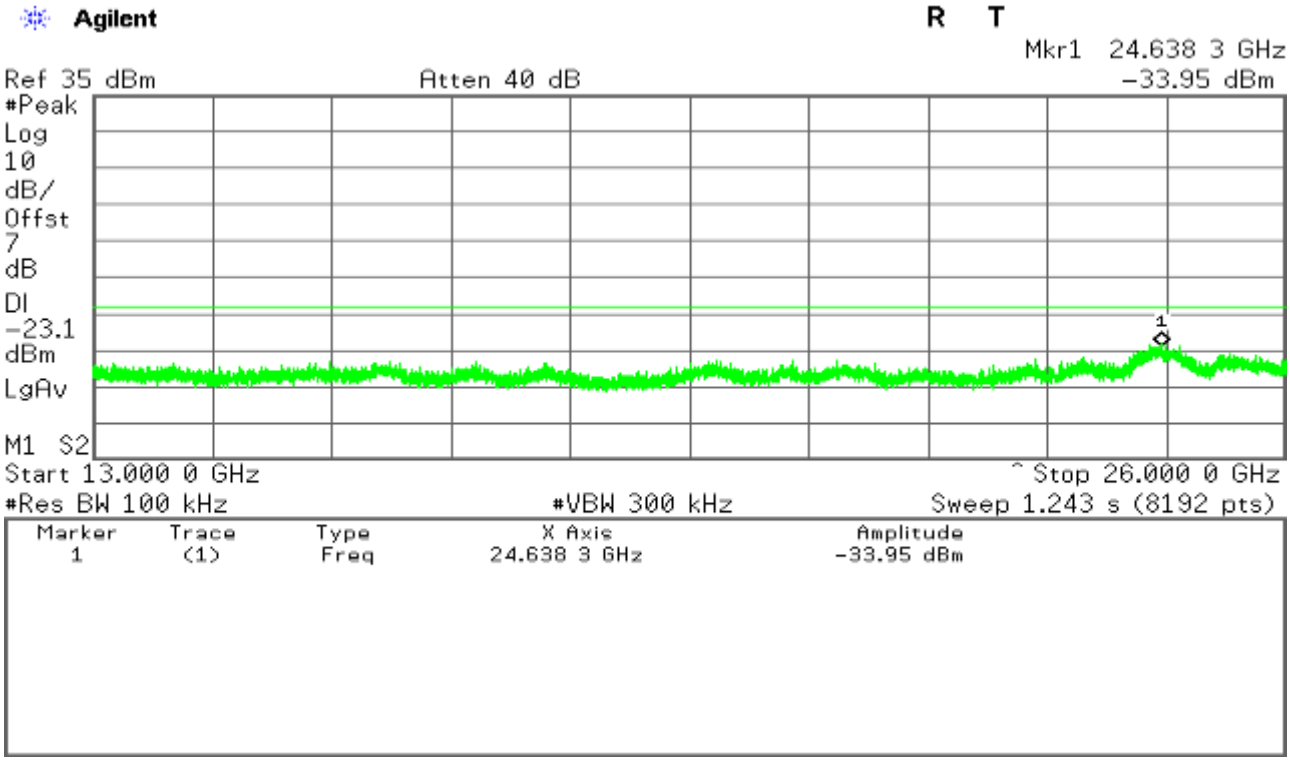

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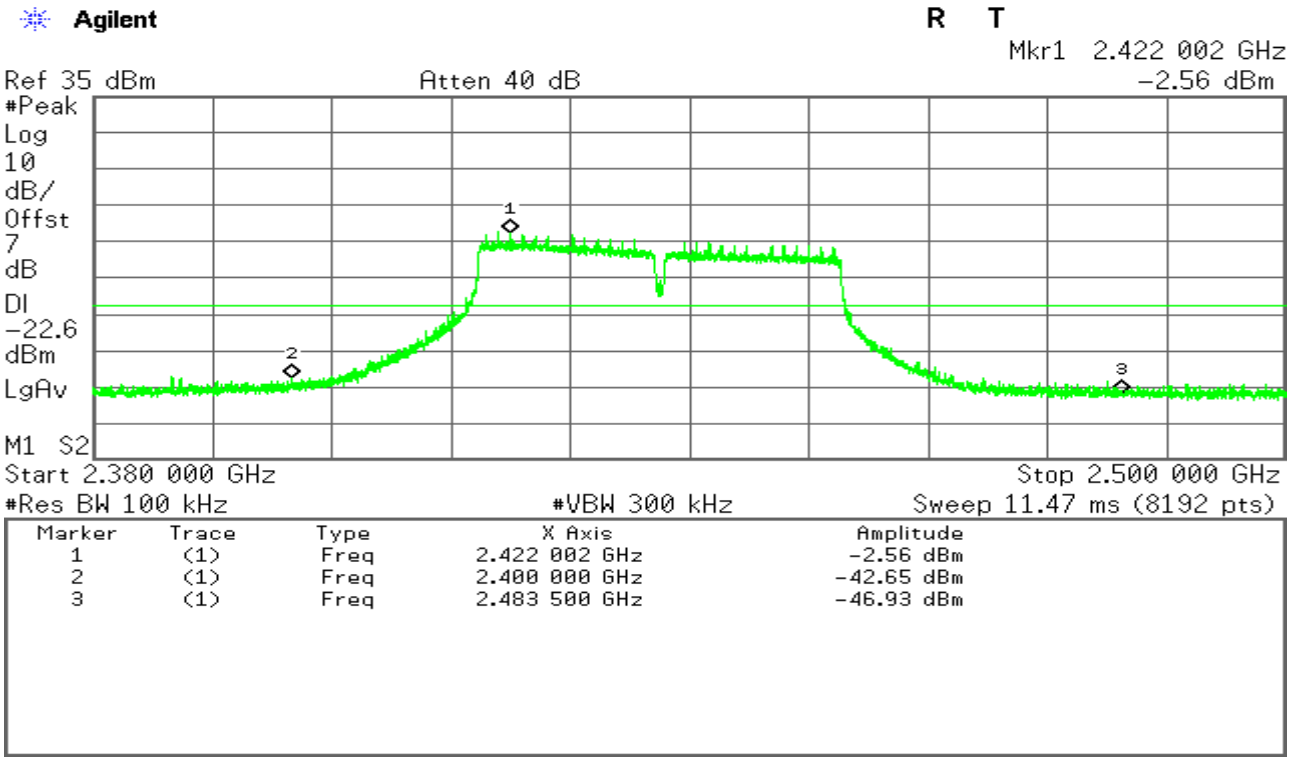
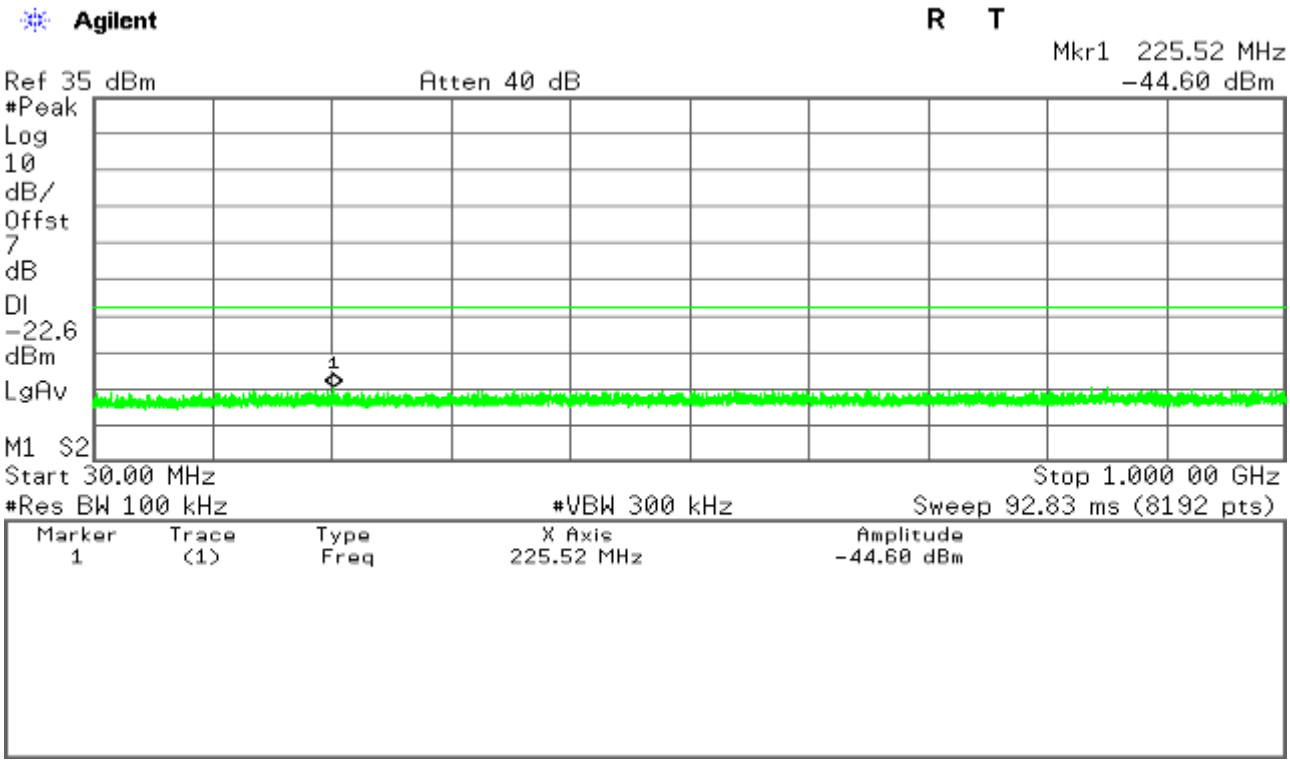
CH Mid





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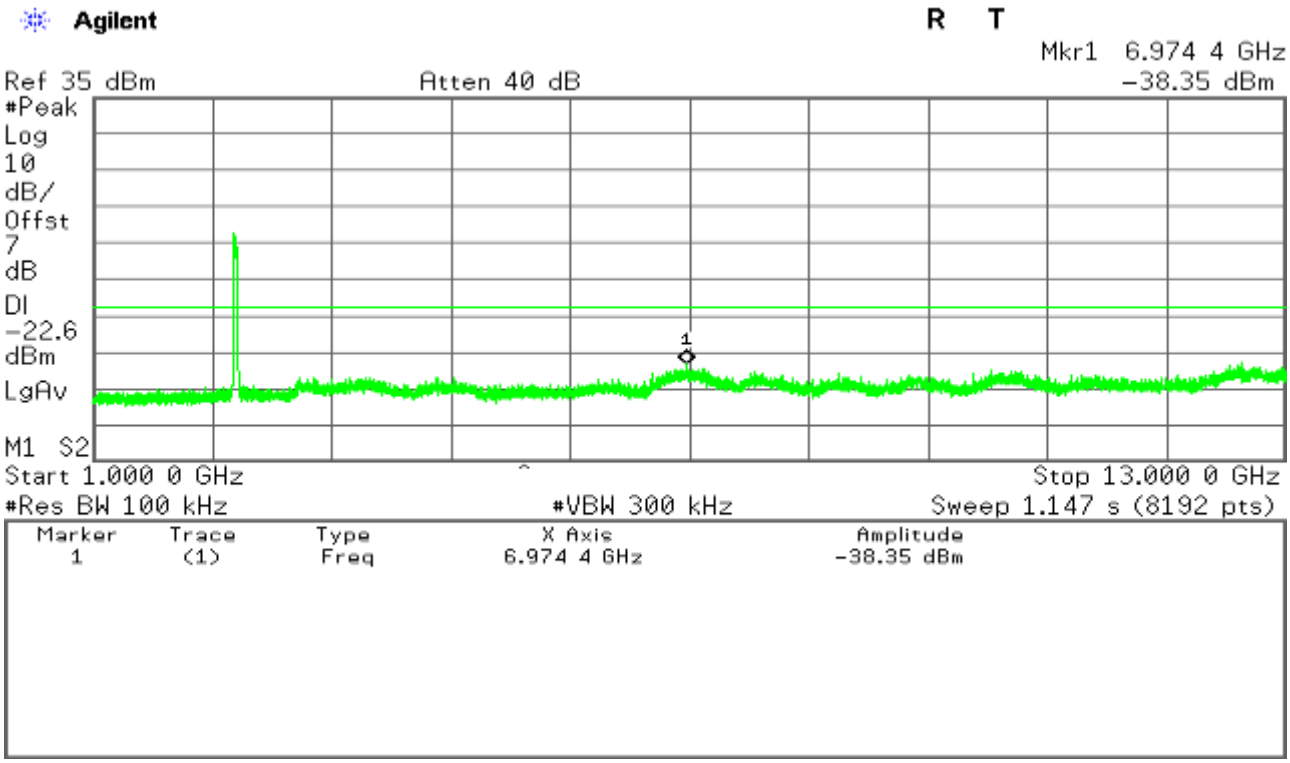

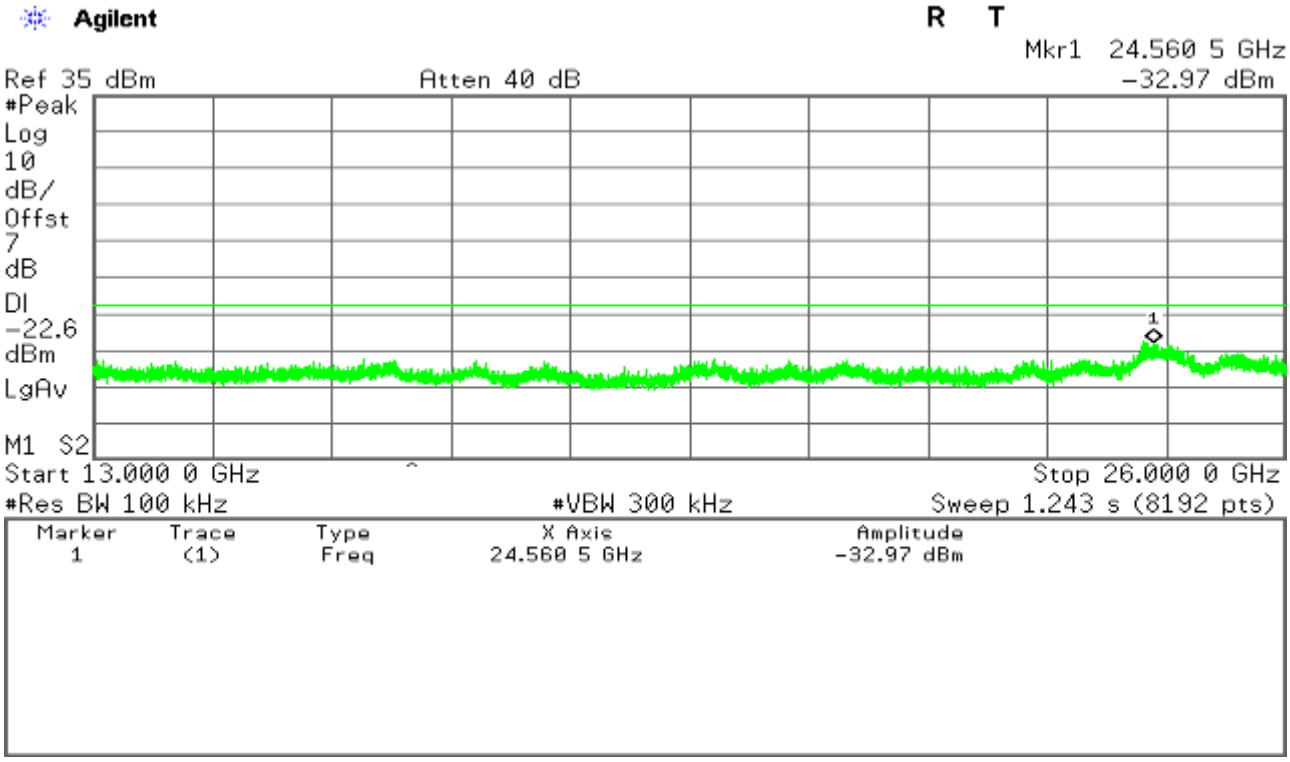

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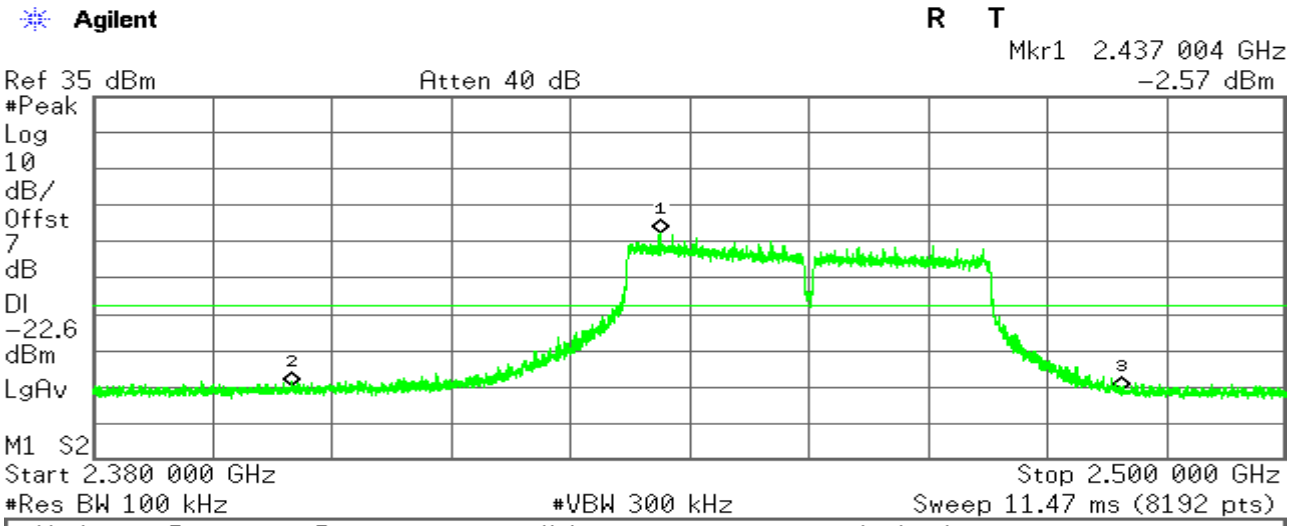
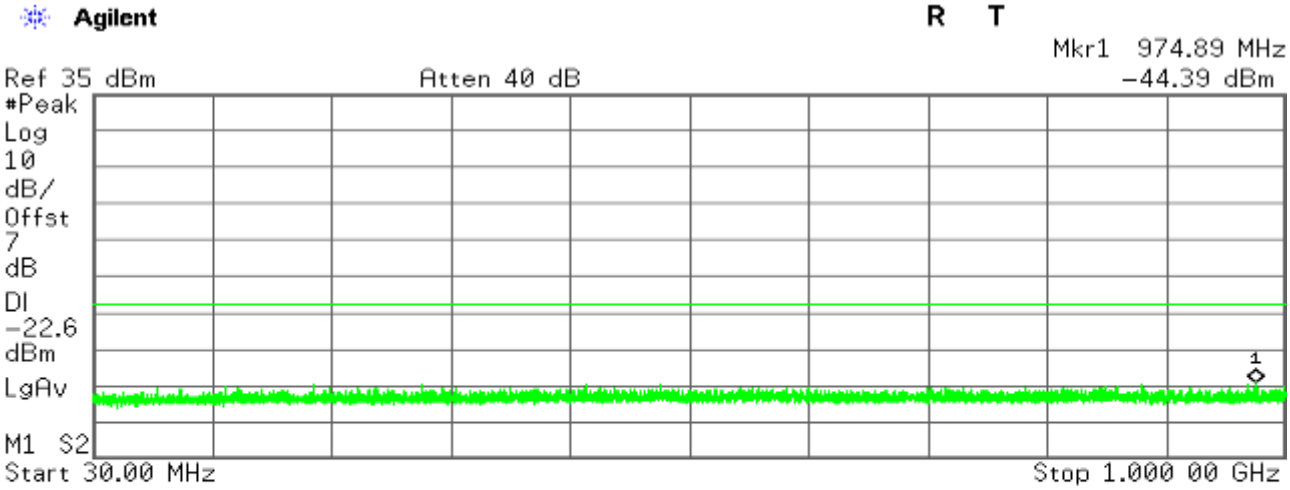
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.437 004 GHz	-2.57 dBm
2	(1)	Freq	2.400 000 GHz	-44.61 dBm
3	(1)	Freq	2.483 500 GHz	-46.07 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	974.89 MHz	-44.39 dBm

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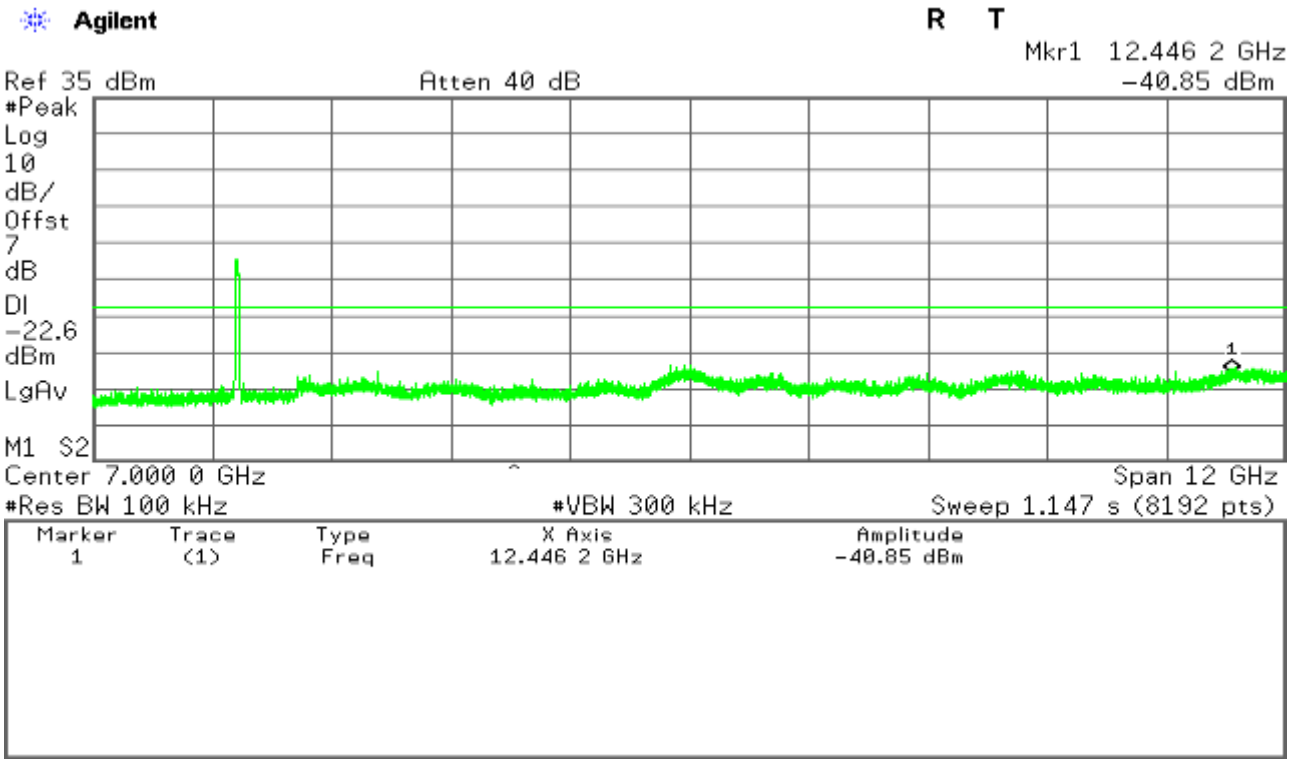

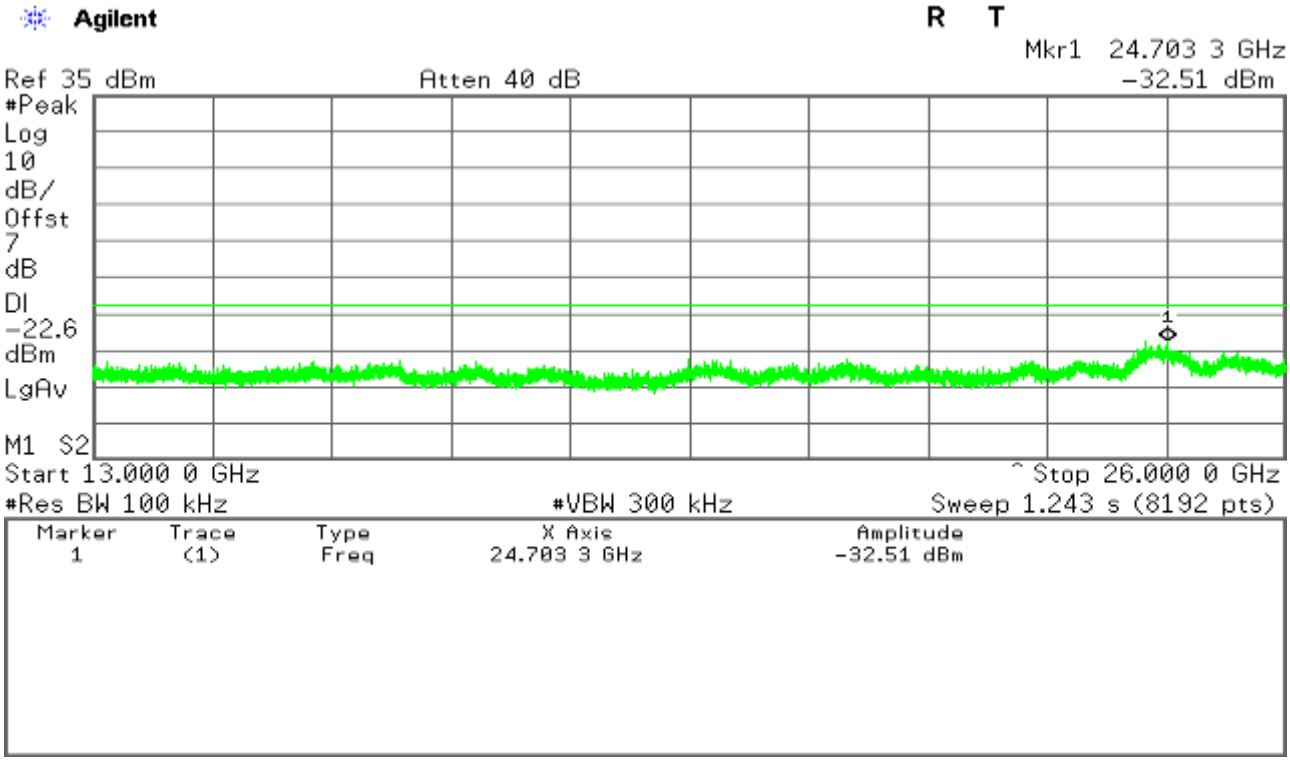

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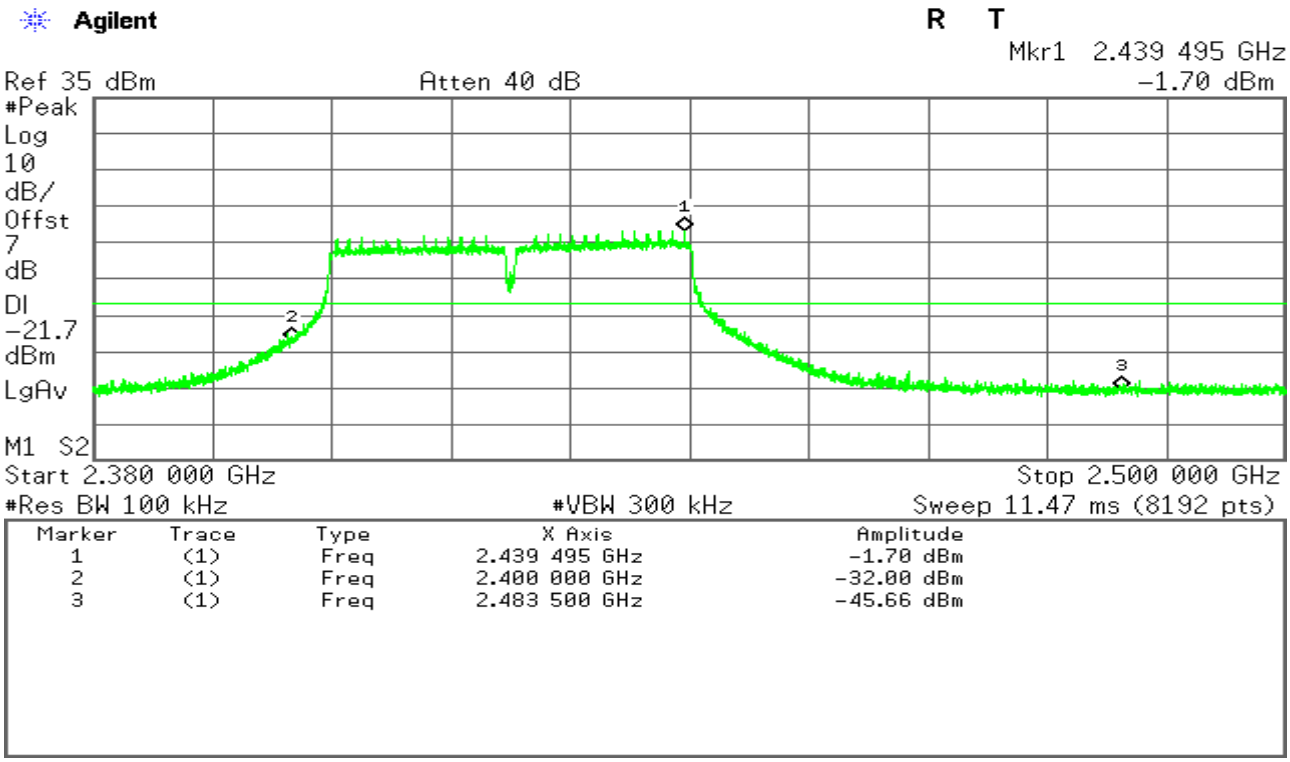
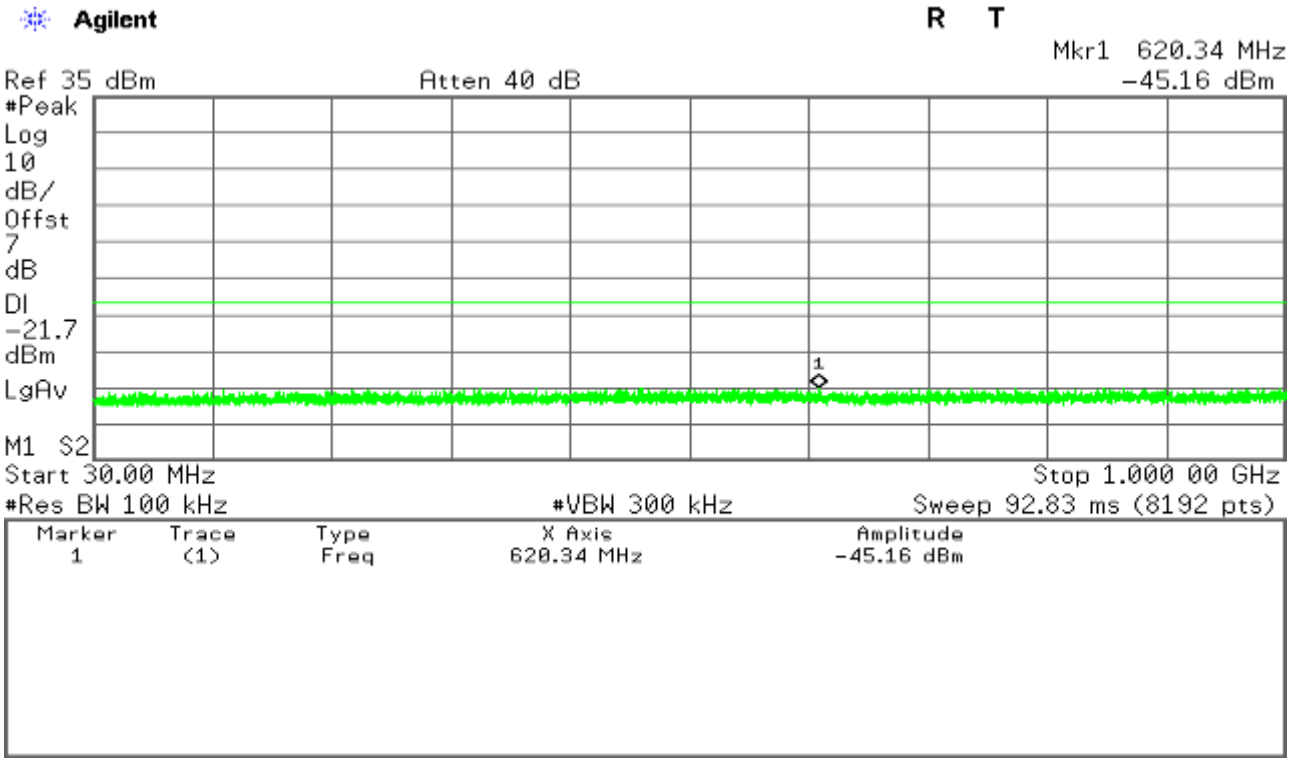
draft 802.11n wide-40 MHz Channel mode / Chain 2

CH Low





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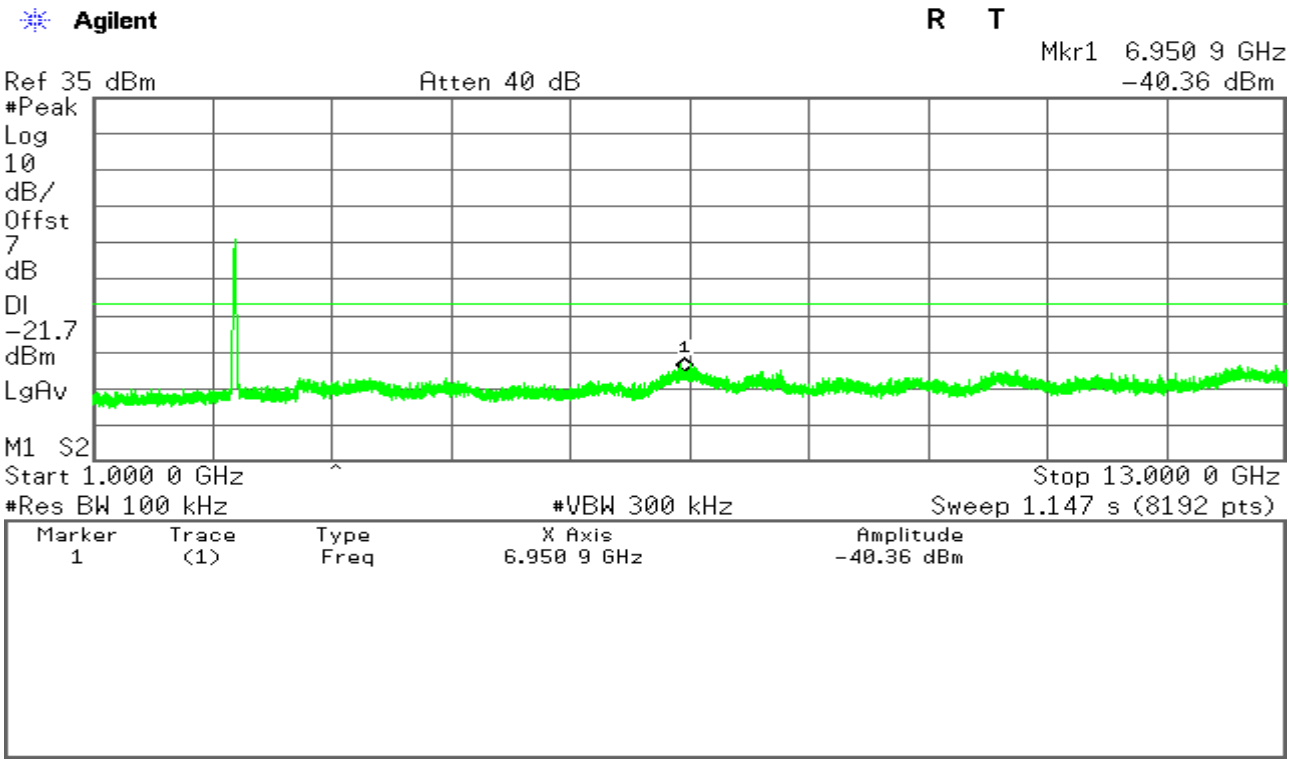

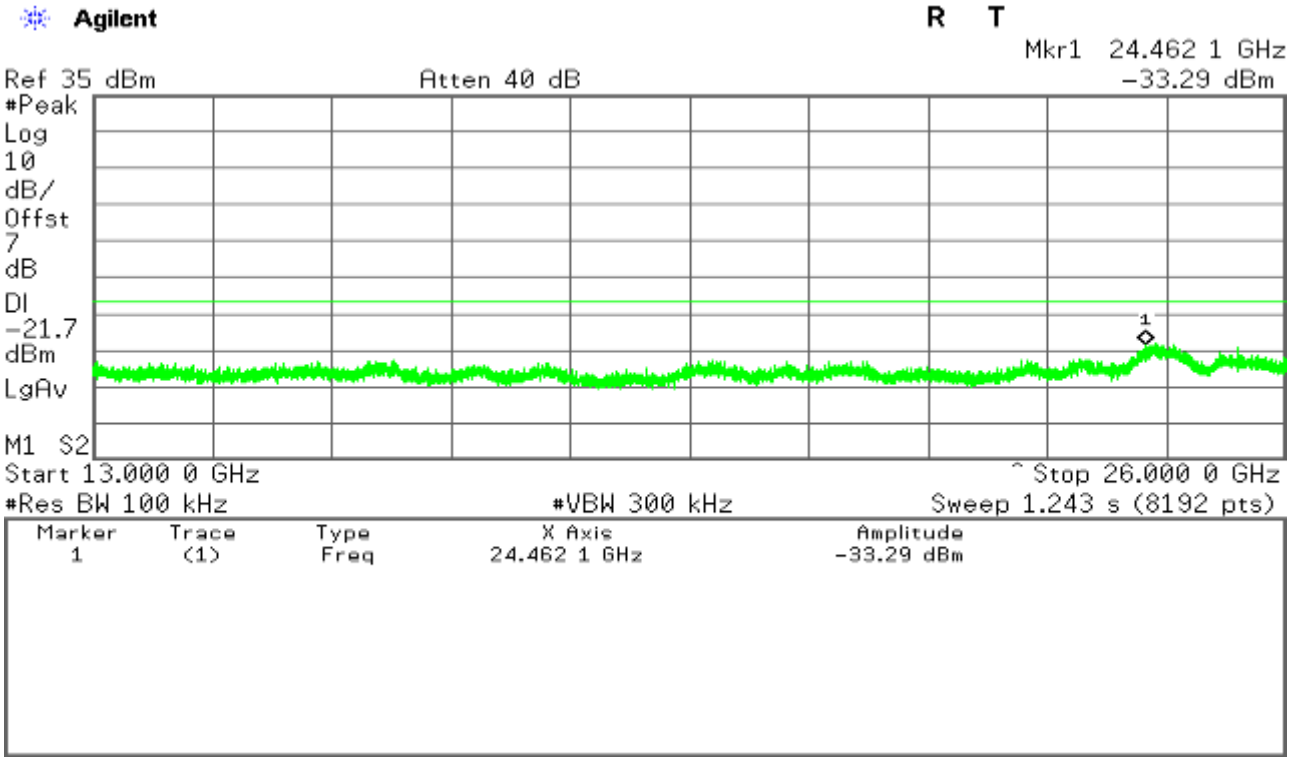

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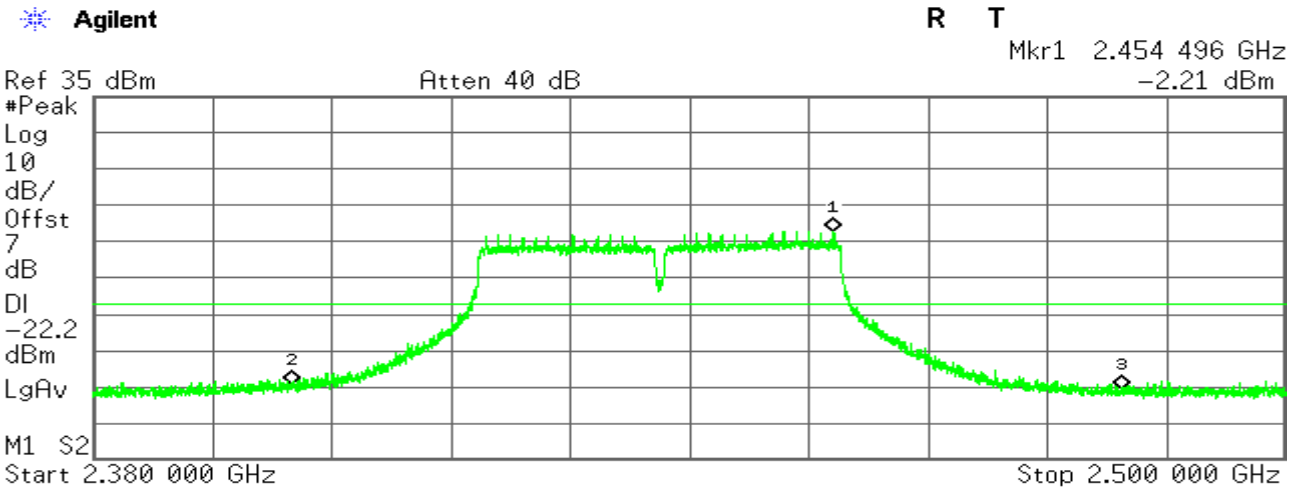
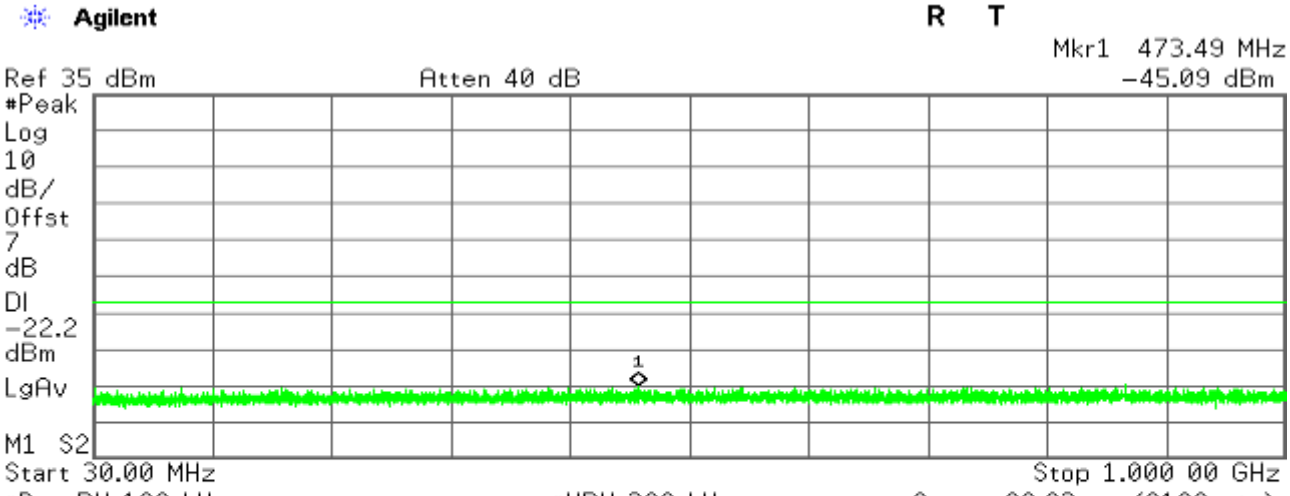
CH Mid



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.454 496 GHz	-2.21 dBm
2	(1)	Freq	2.400 000 GHz	-44.20 dBm
3	(1)	Freq	2.483 500 GHz	-45.60 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	473.49 MHz	-45.09 dBm

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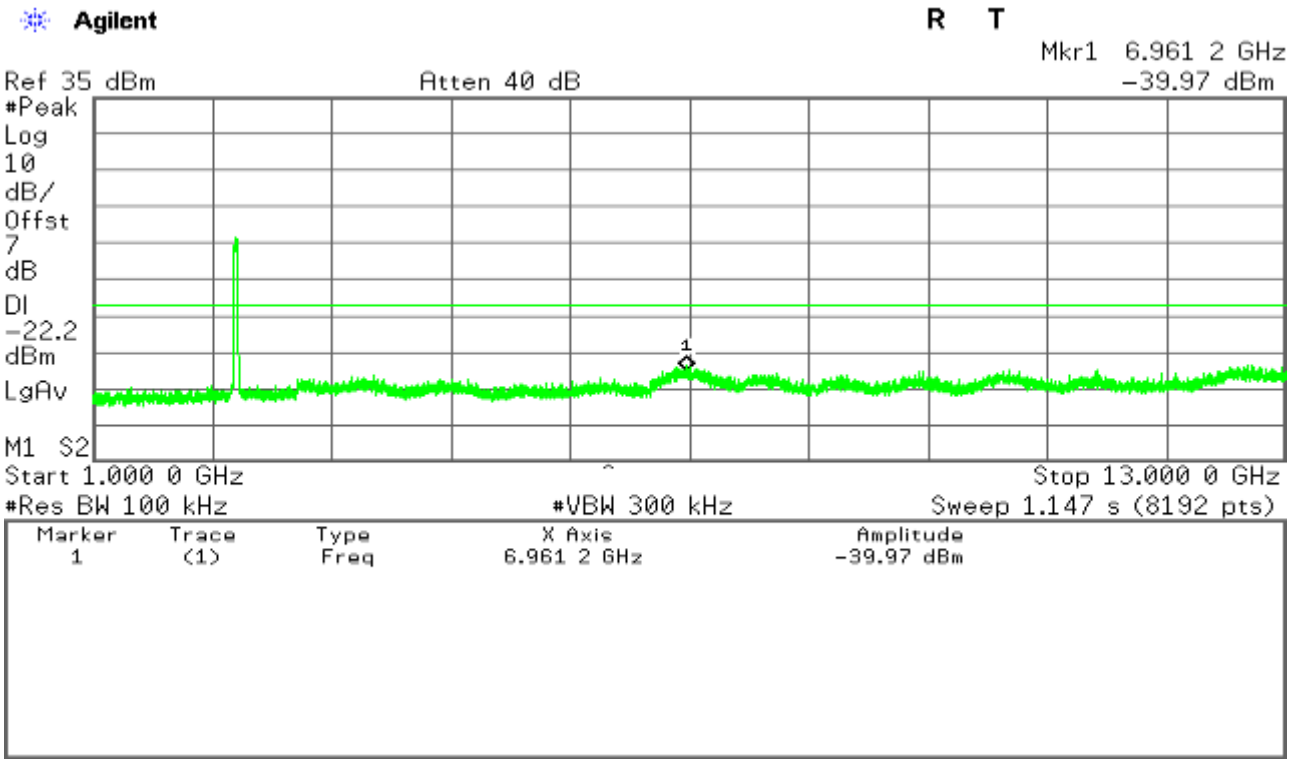

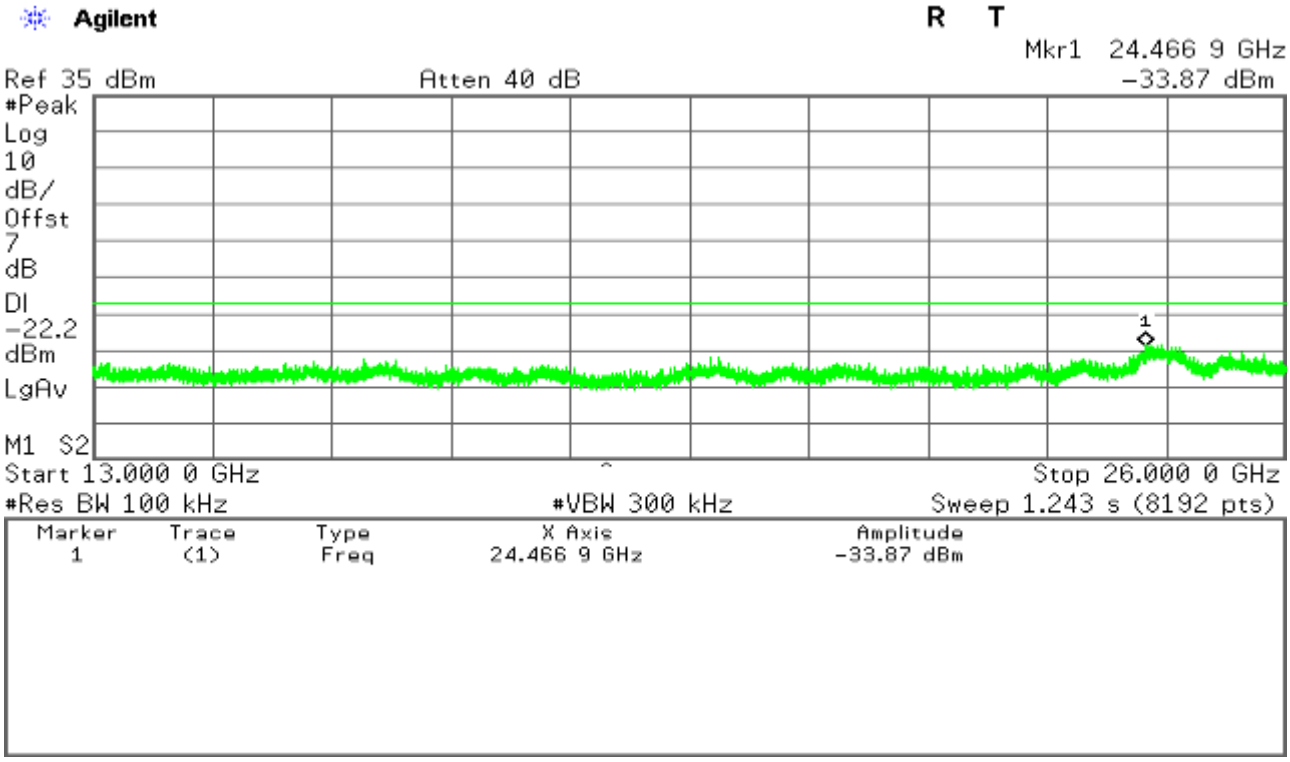

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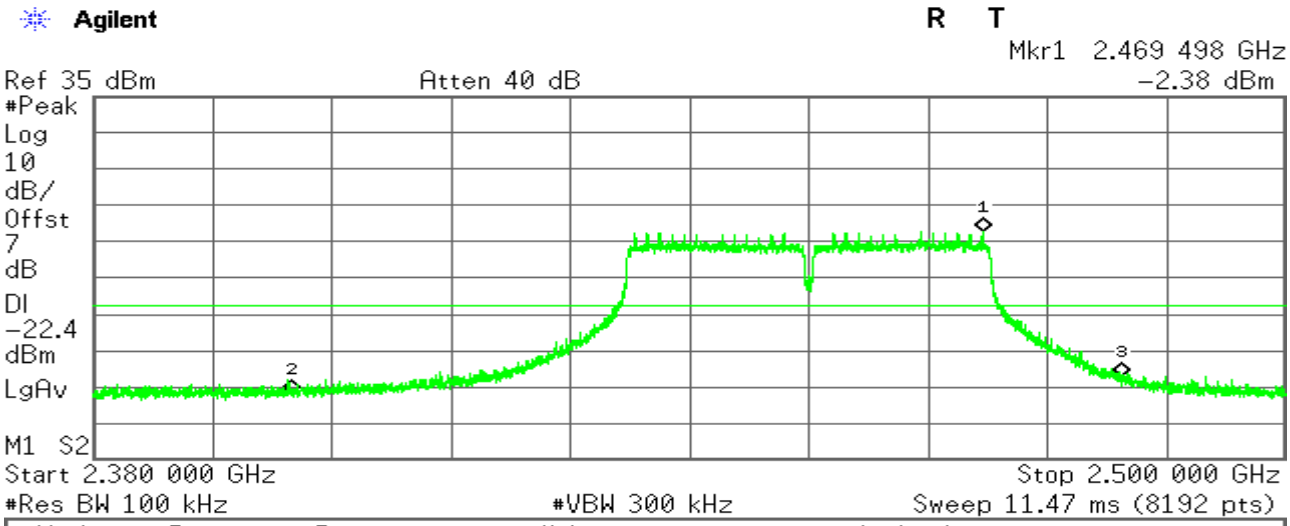
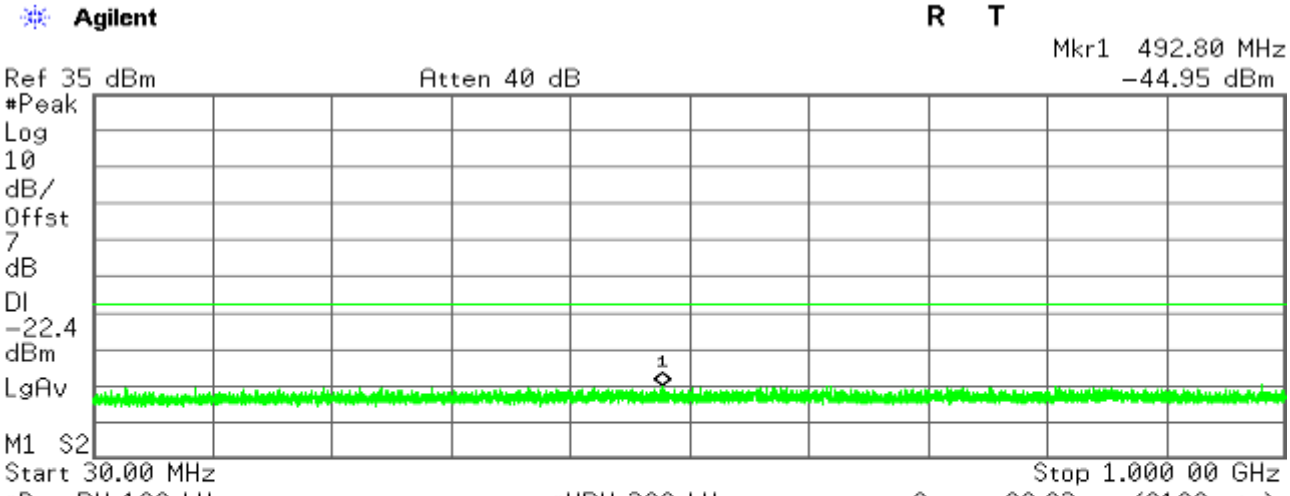
CH High



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.469 498 GHz	-2.38 dBm
2	(1)	Freq	2.400 000 GHz	-46.82 dBm
3	(1)	Freq	2.483 500 GHz	-42.25 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	492.80 MHz	-44.95 dBm

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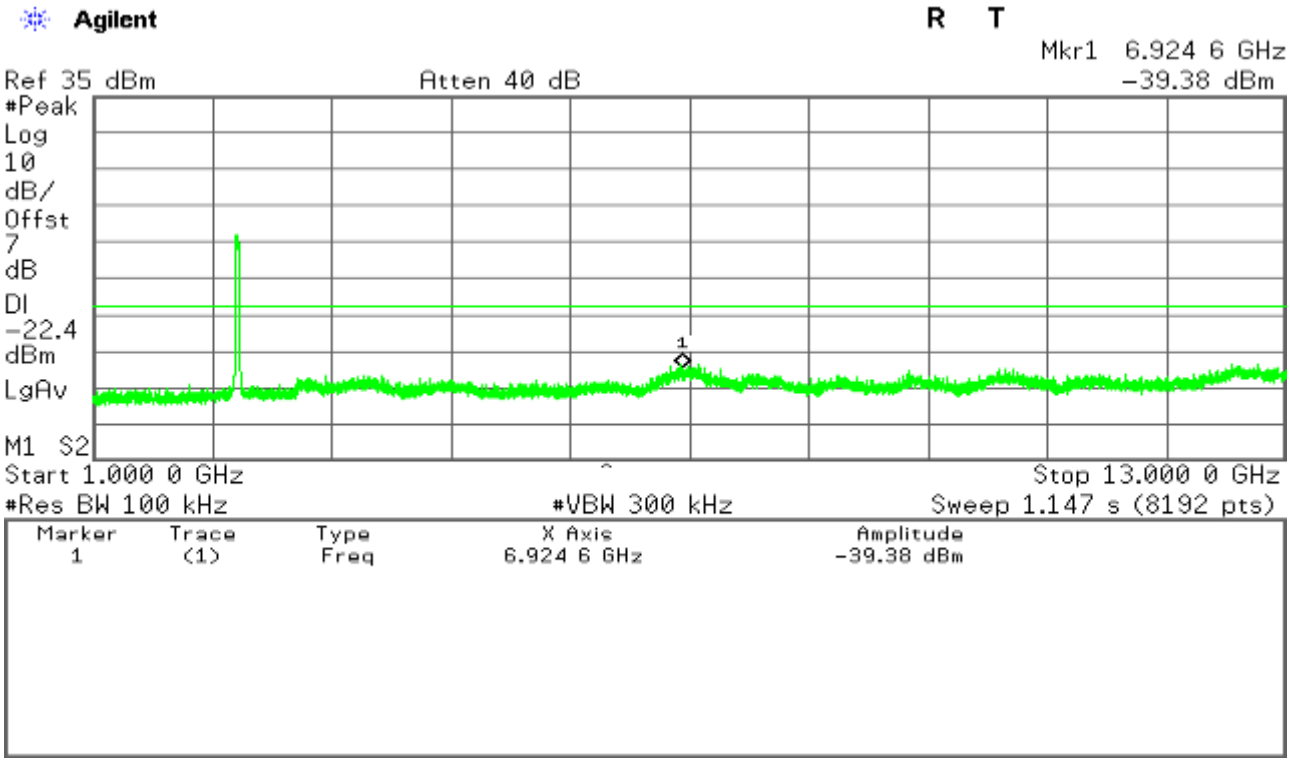

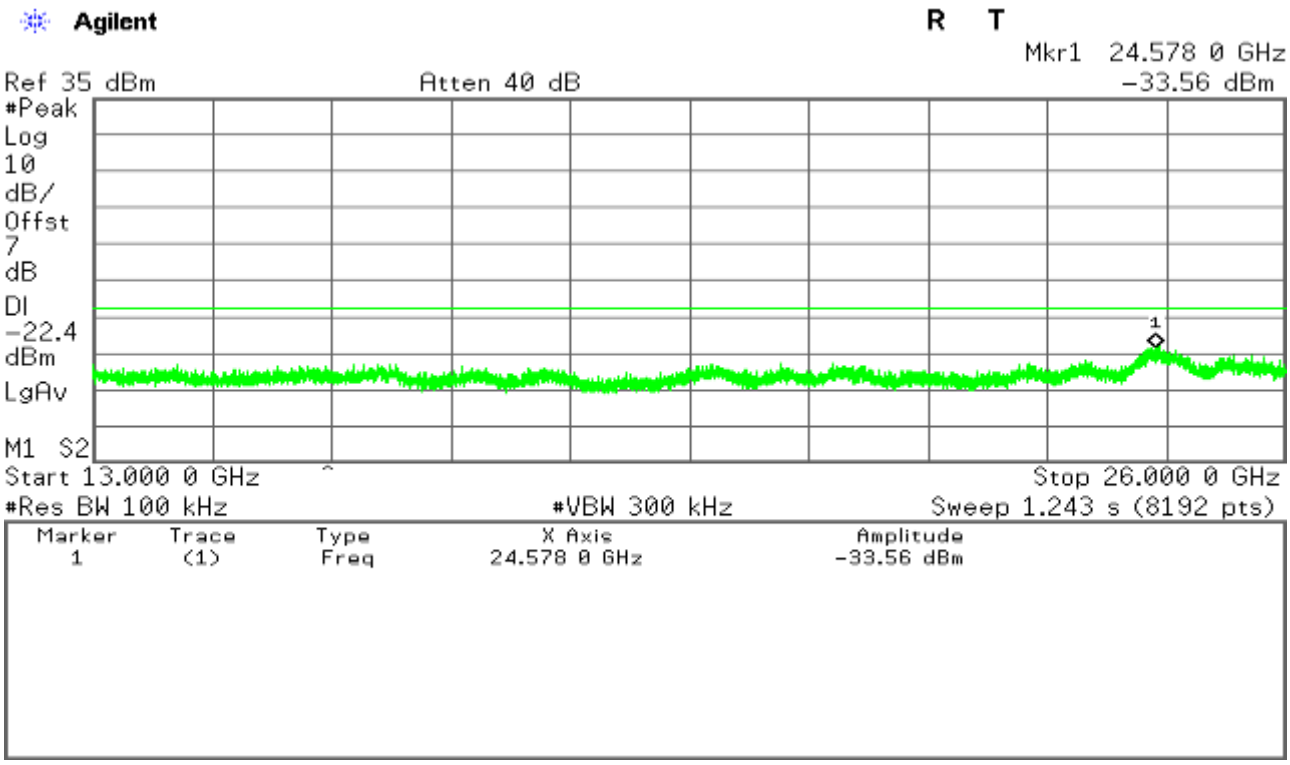

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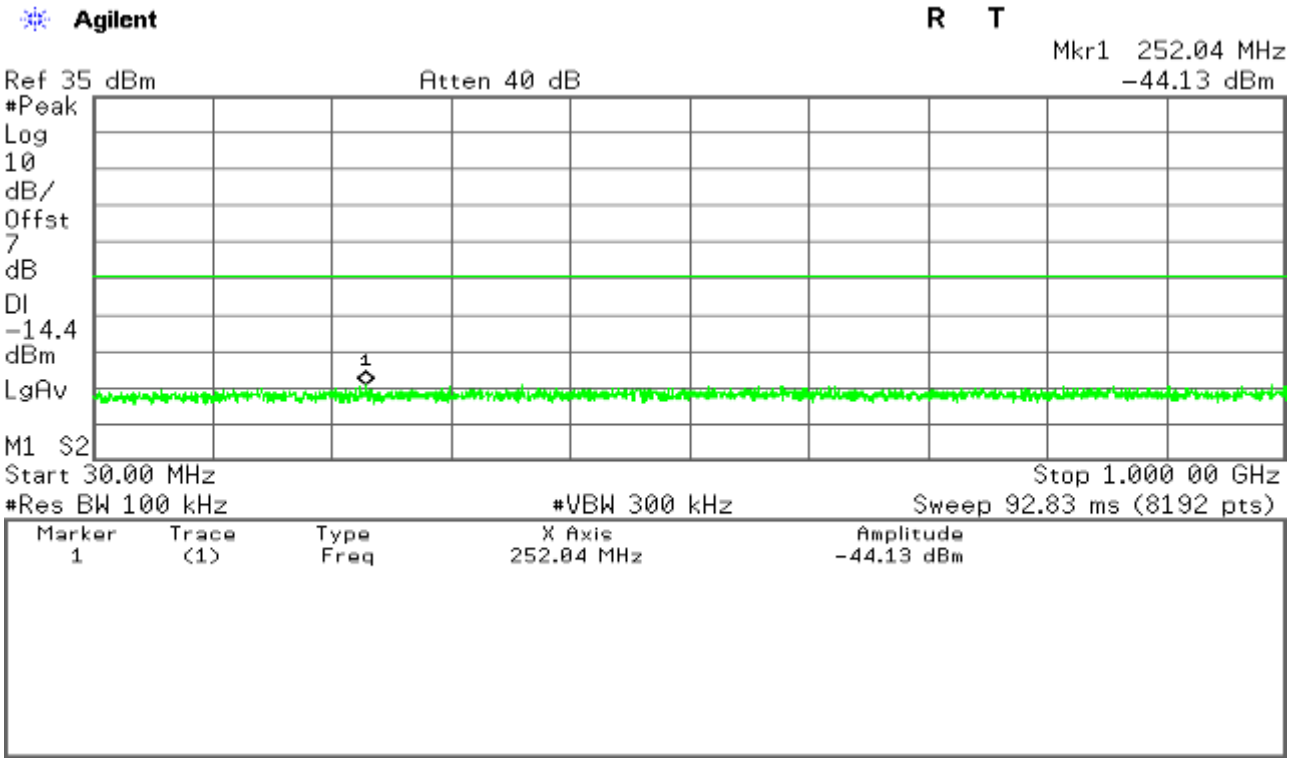
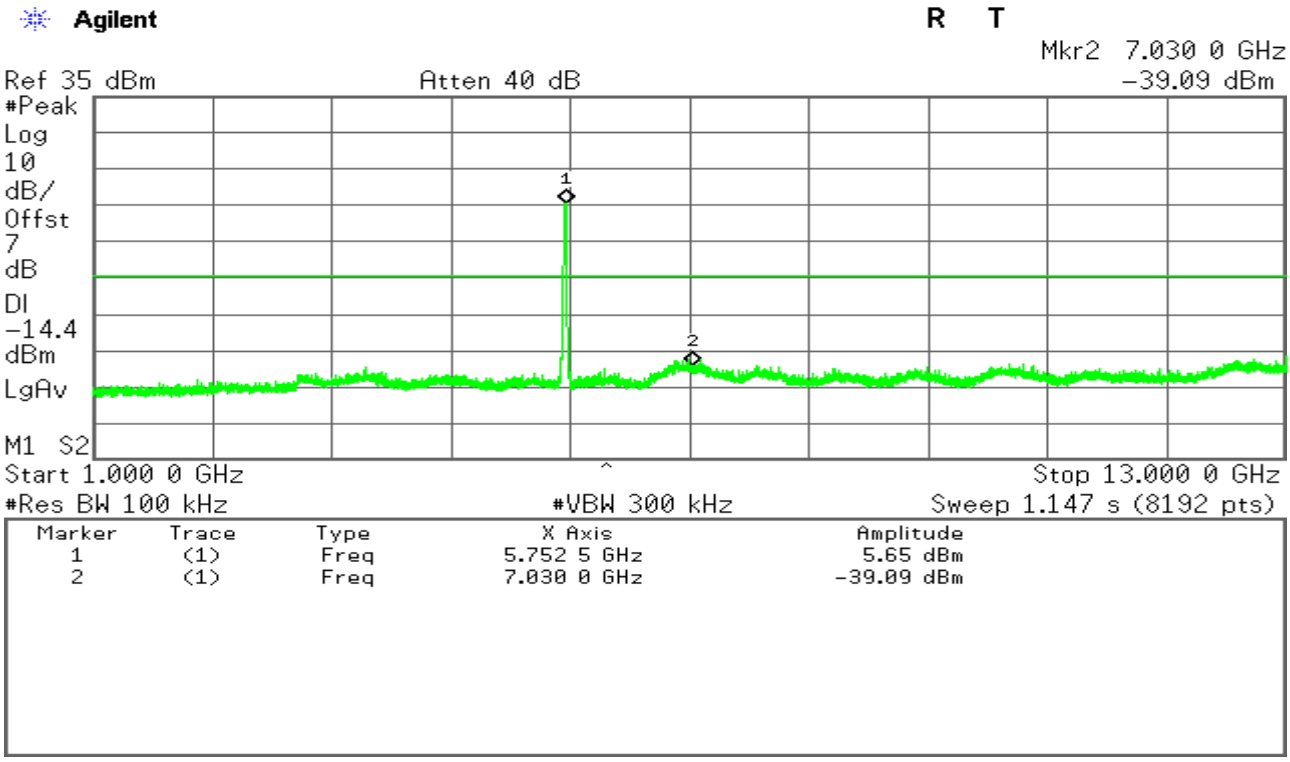
IEEE 802.11a mode/chain 0

CH Low





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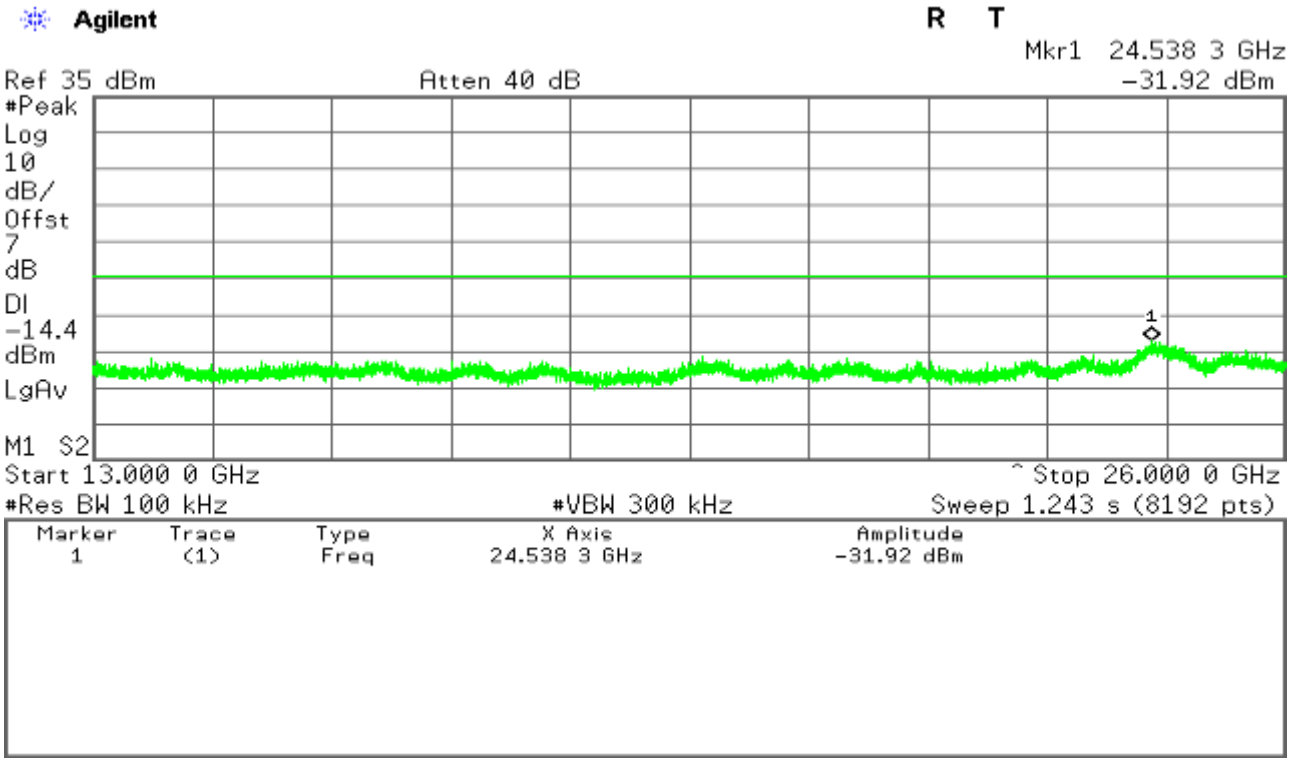

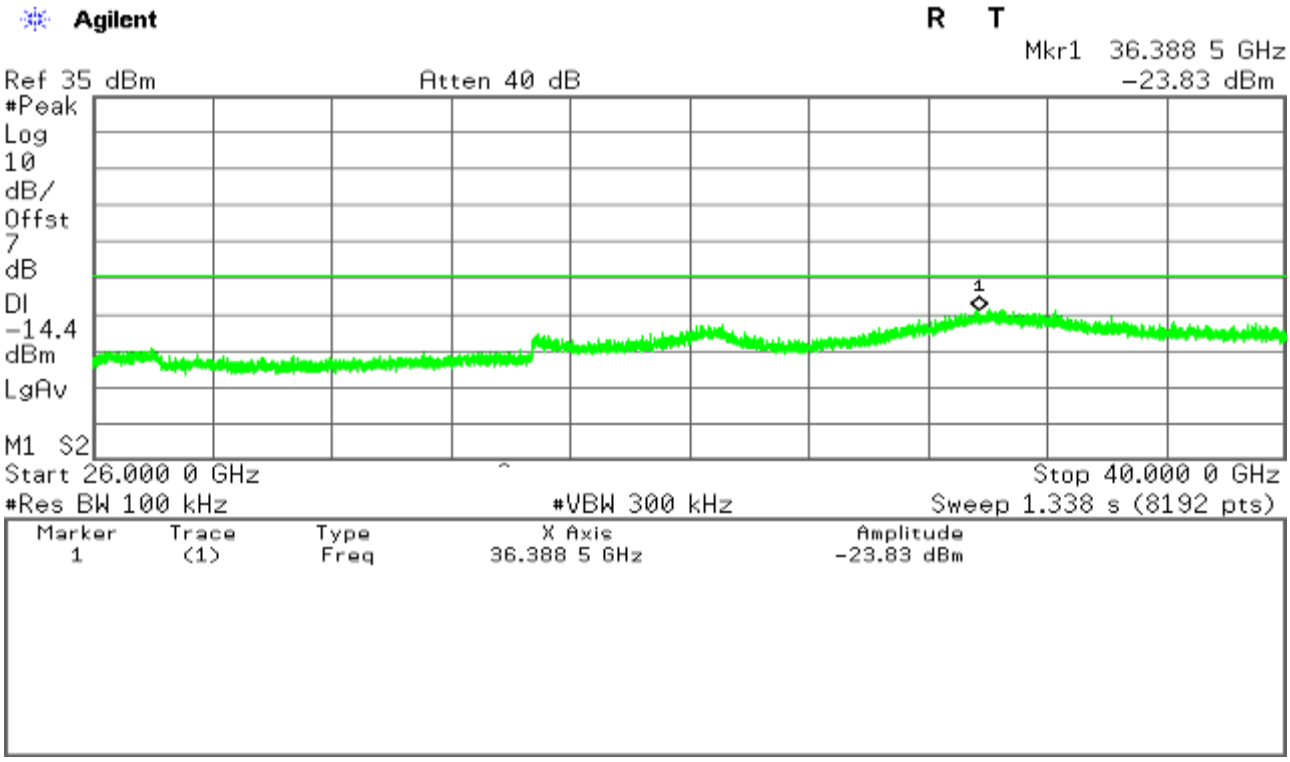

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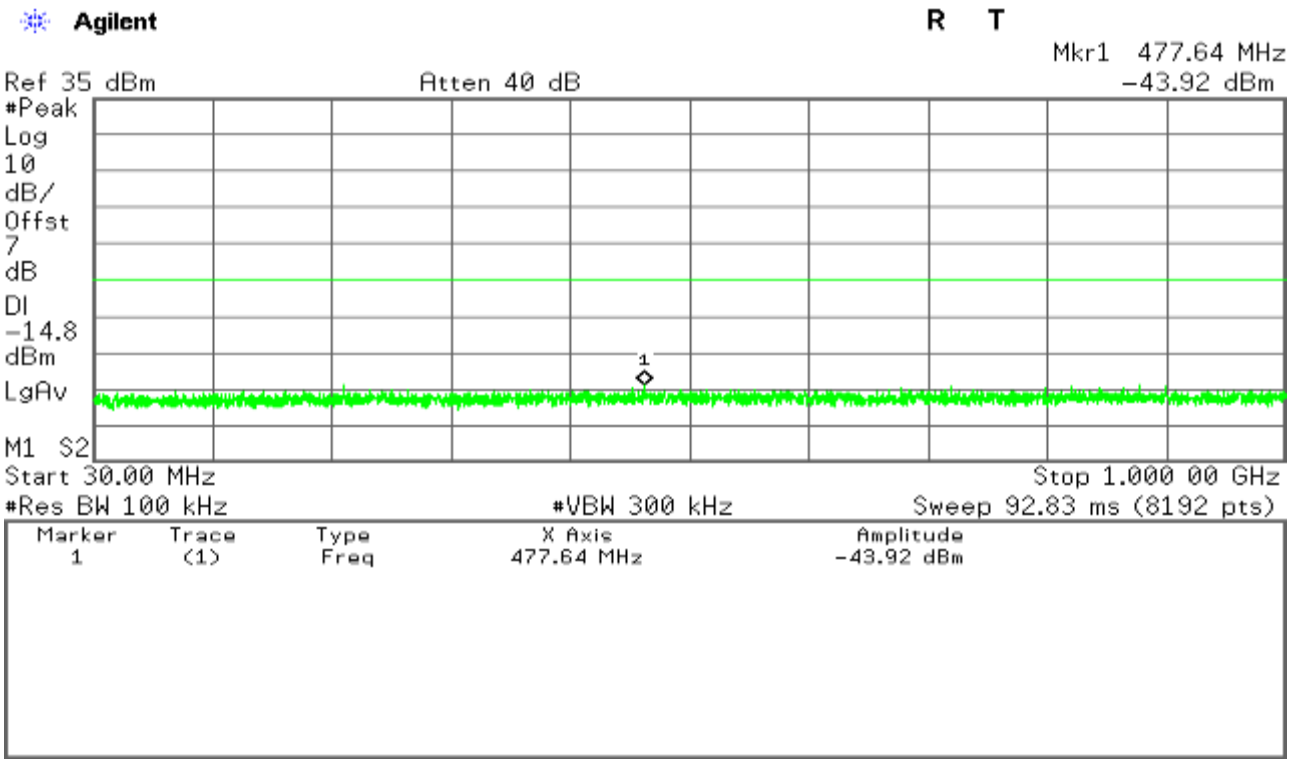
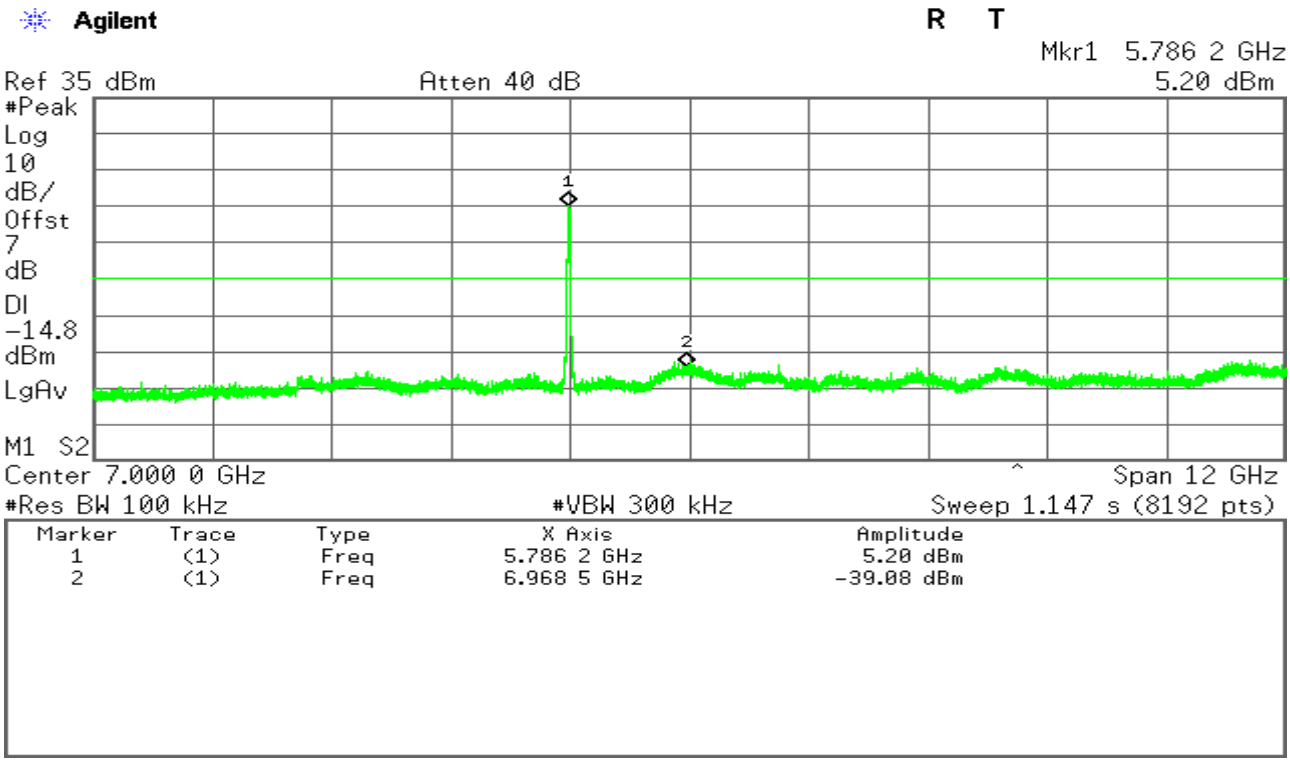
CH Mid





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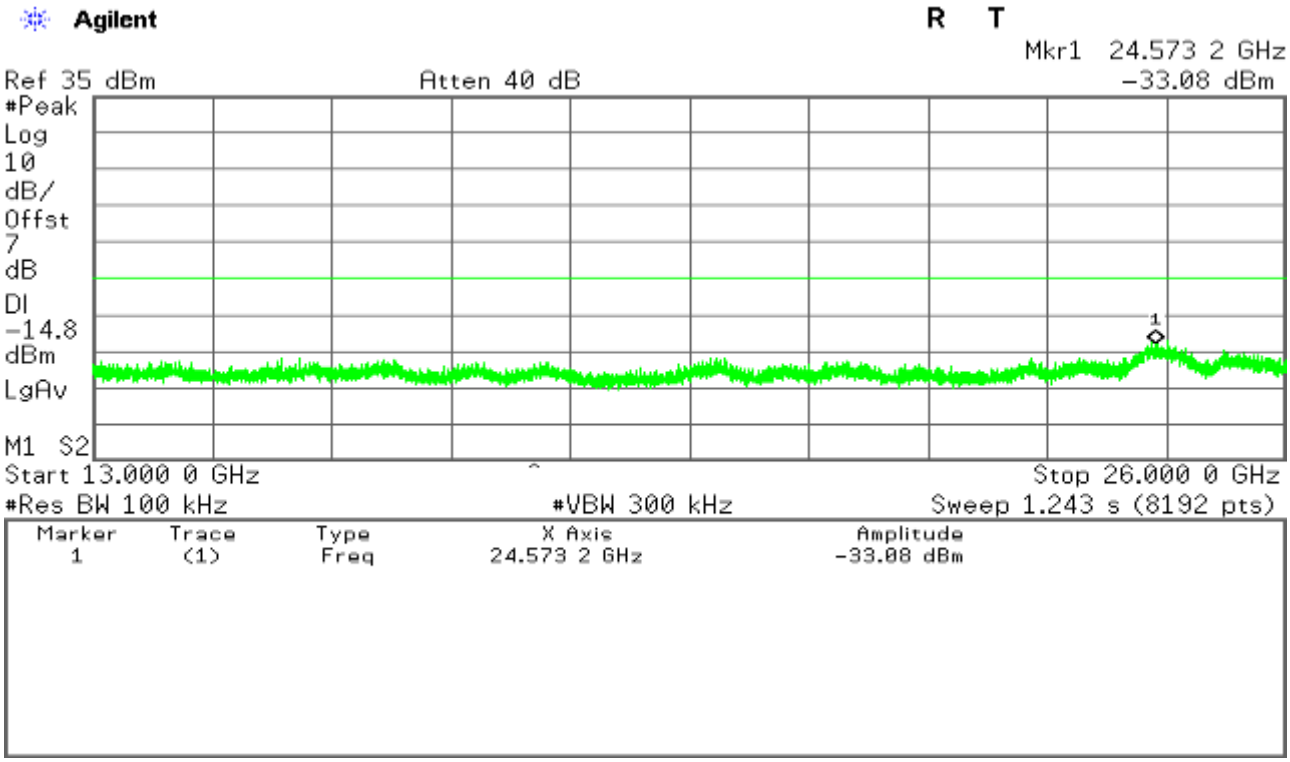

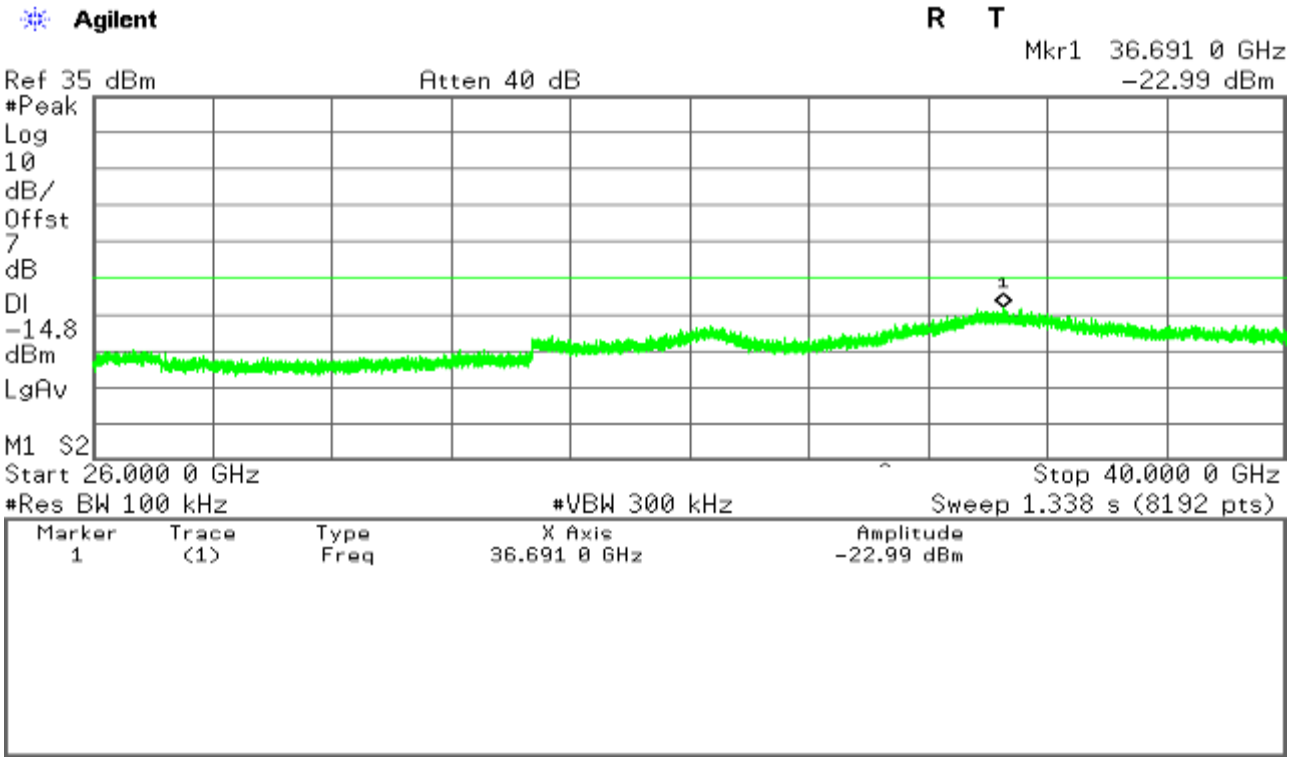

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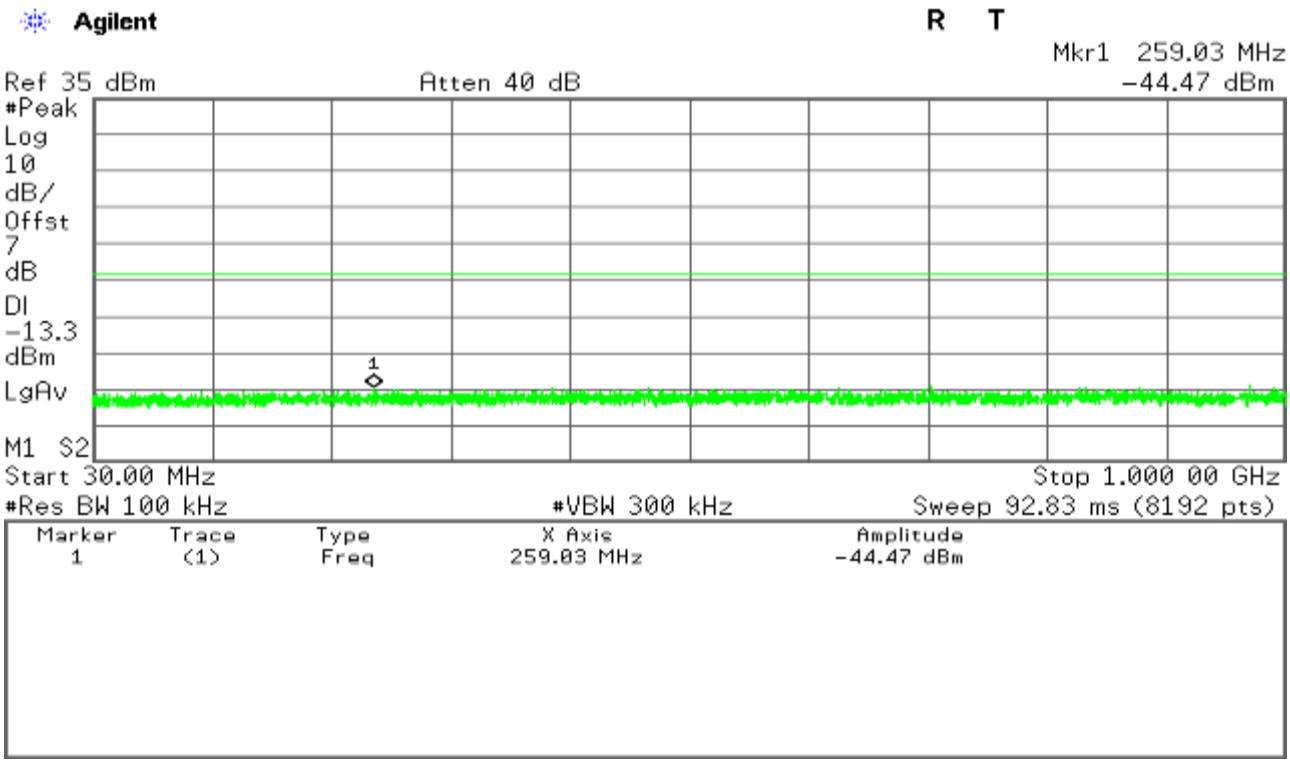
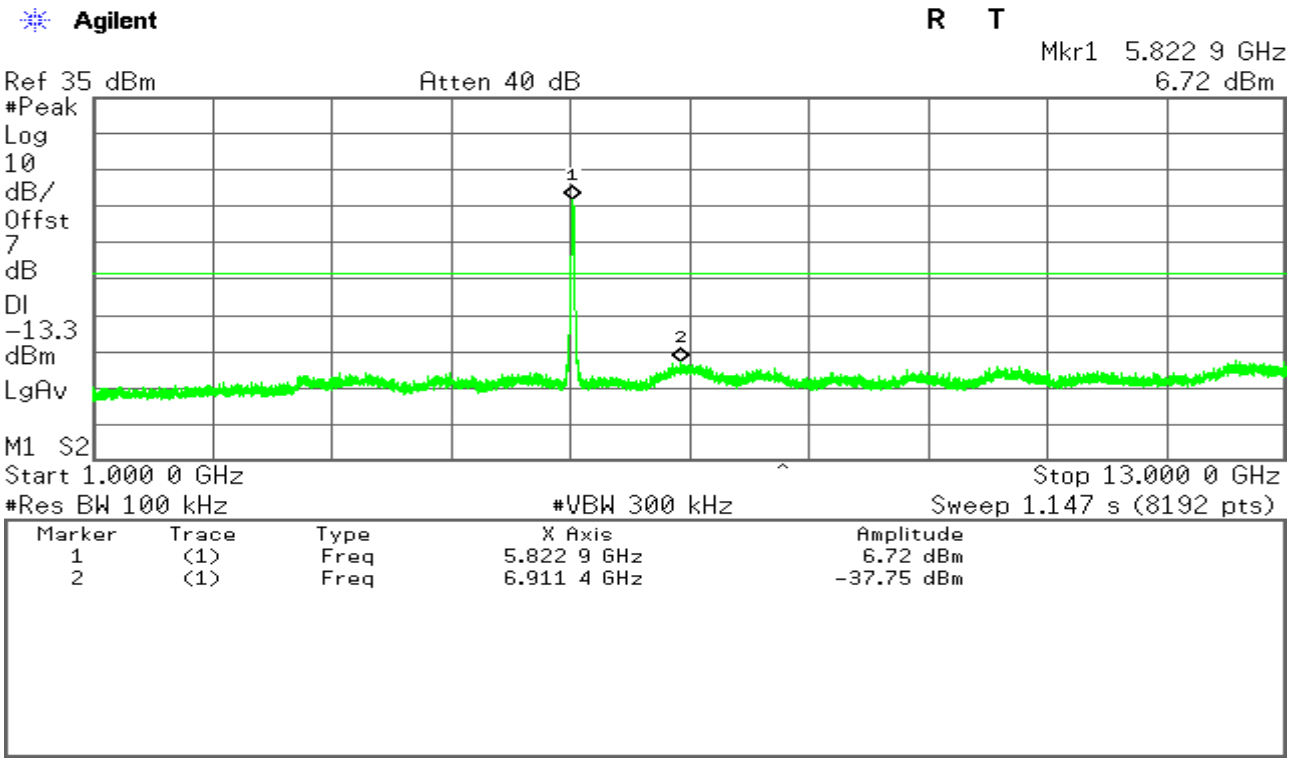
CH High





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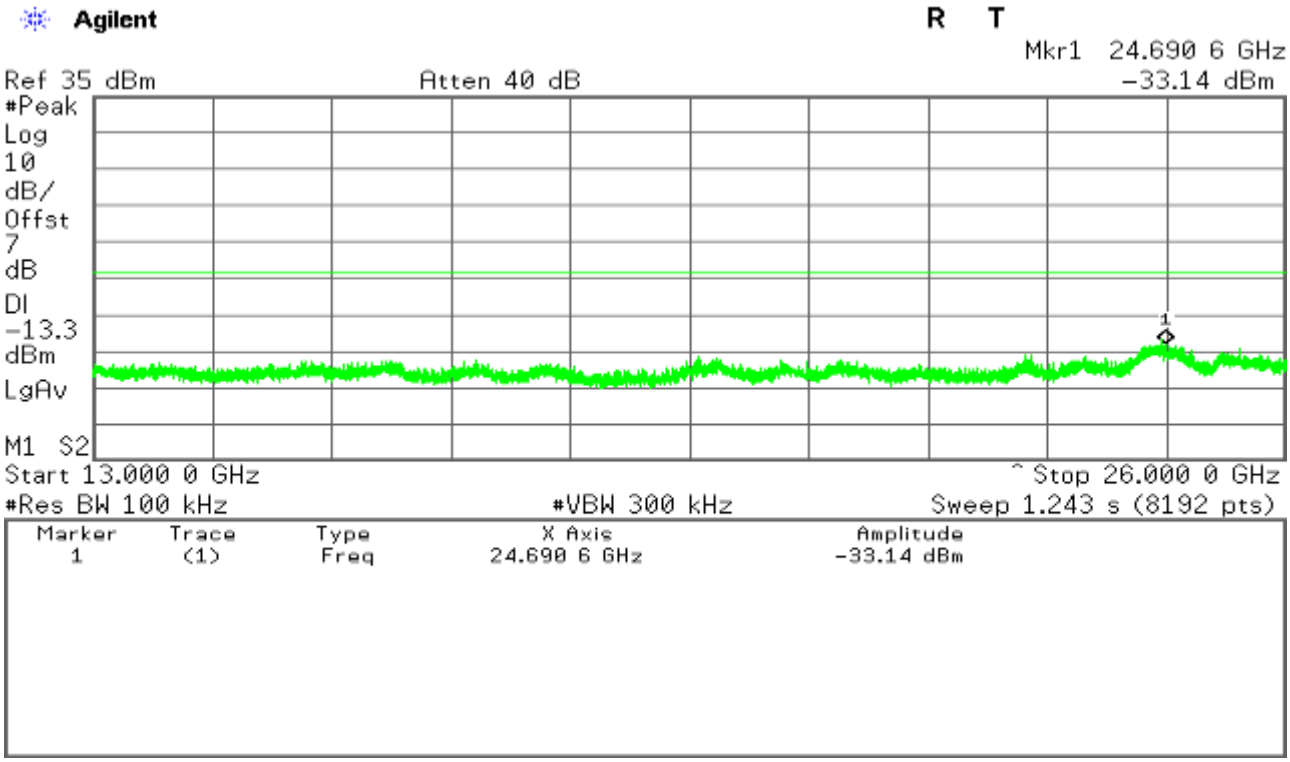

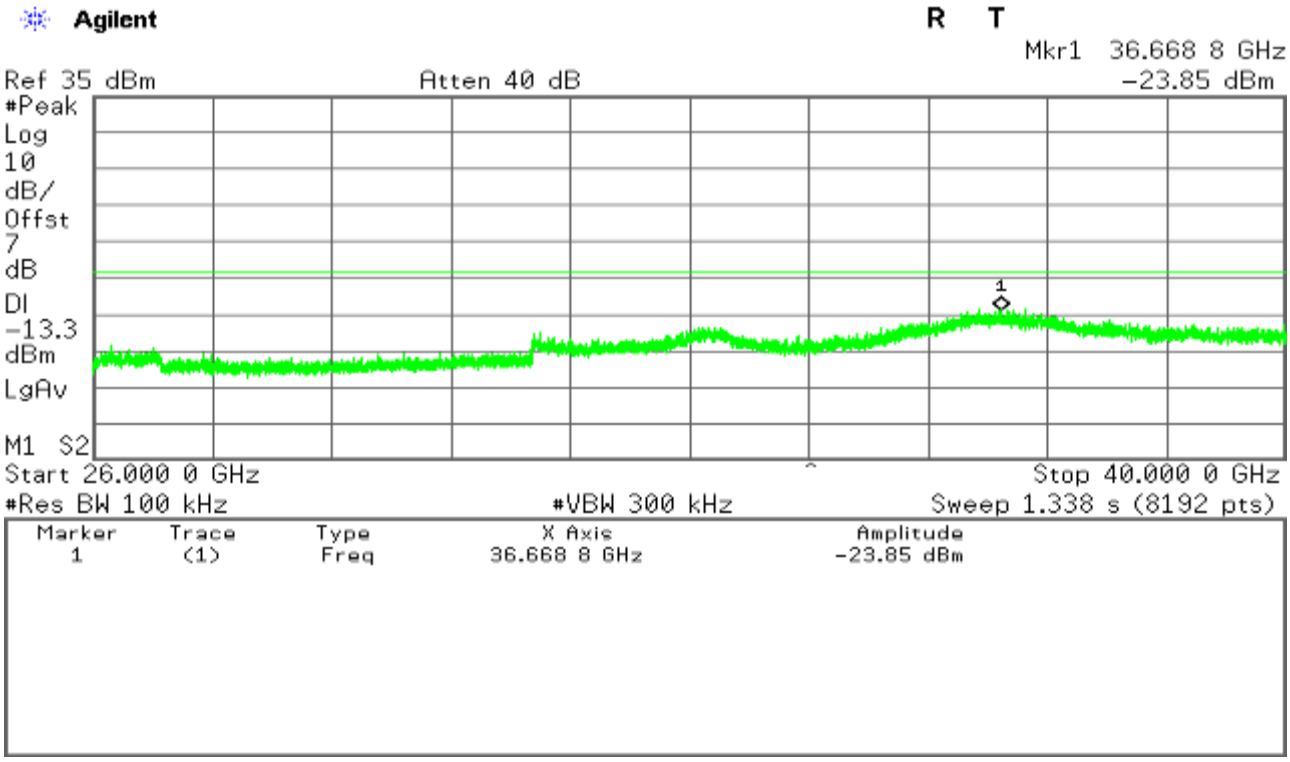

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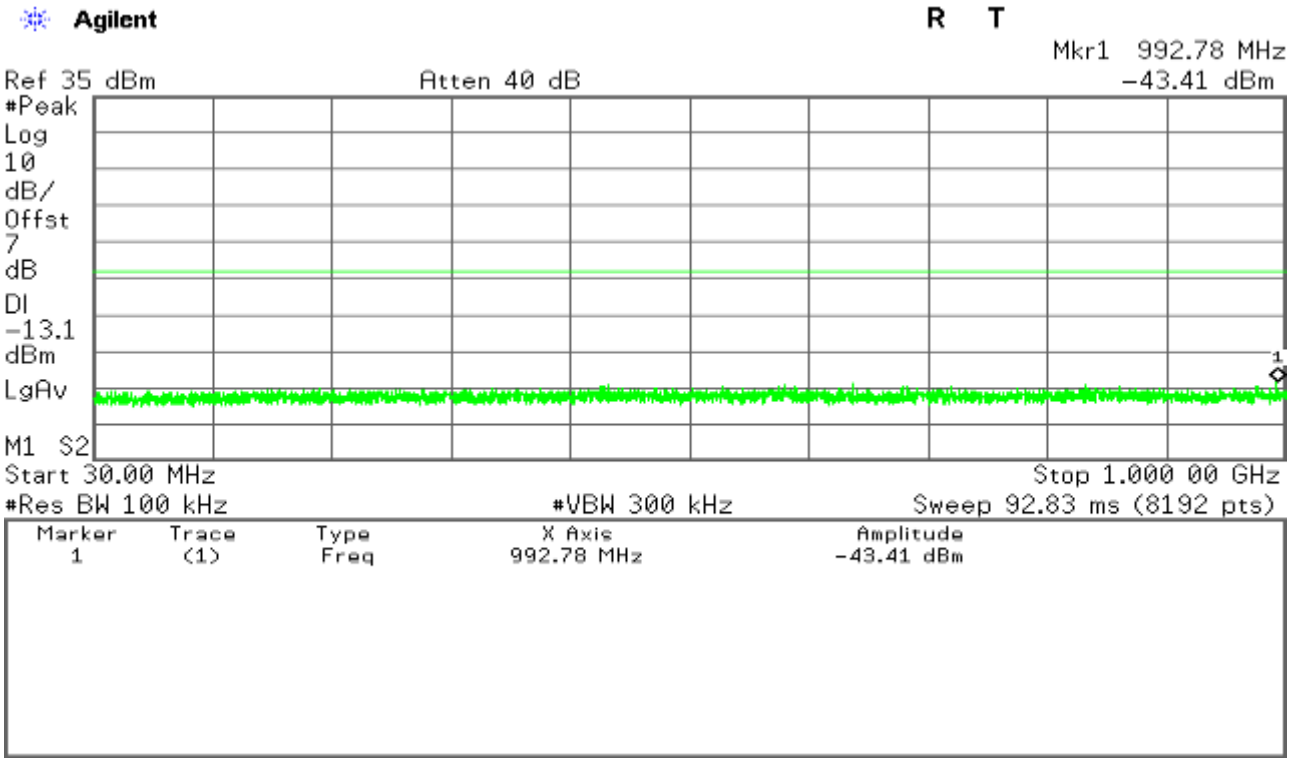
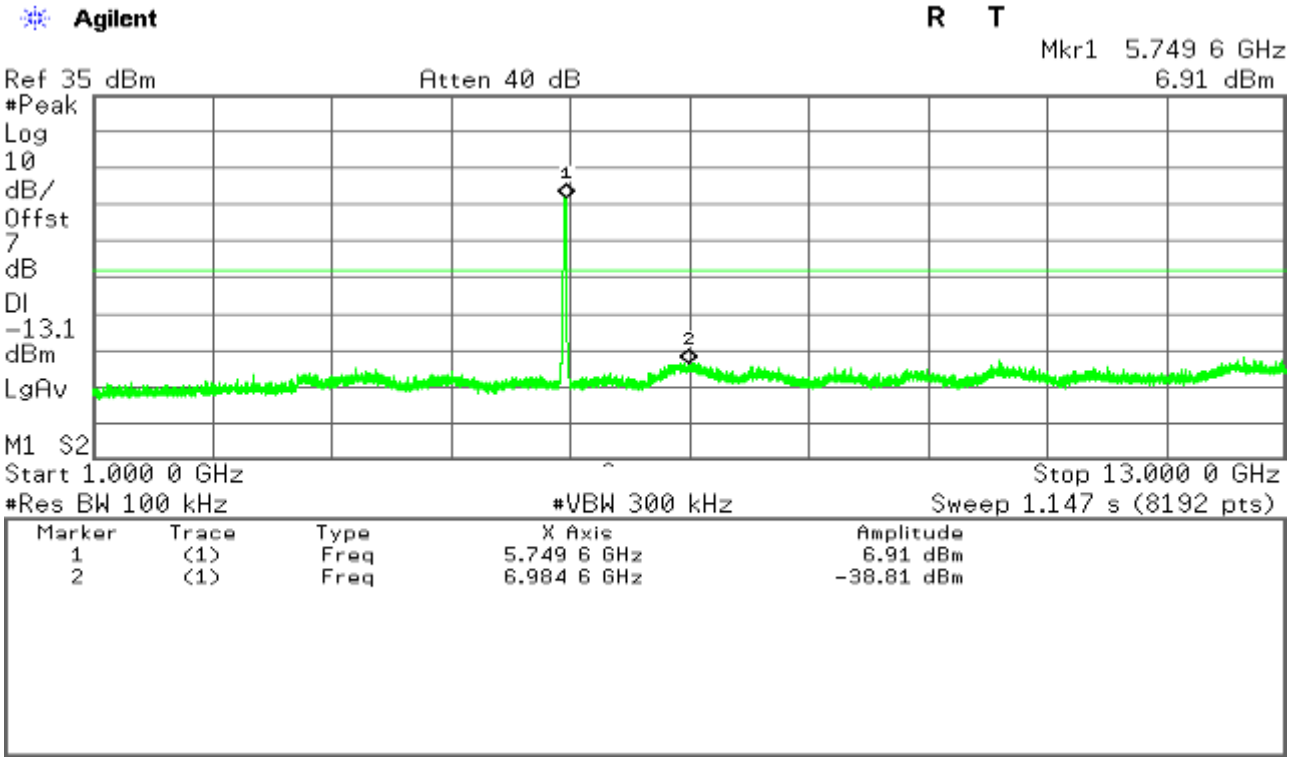
IEEE 802.11a mode/chain 1

CH Low





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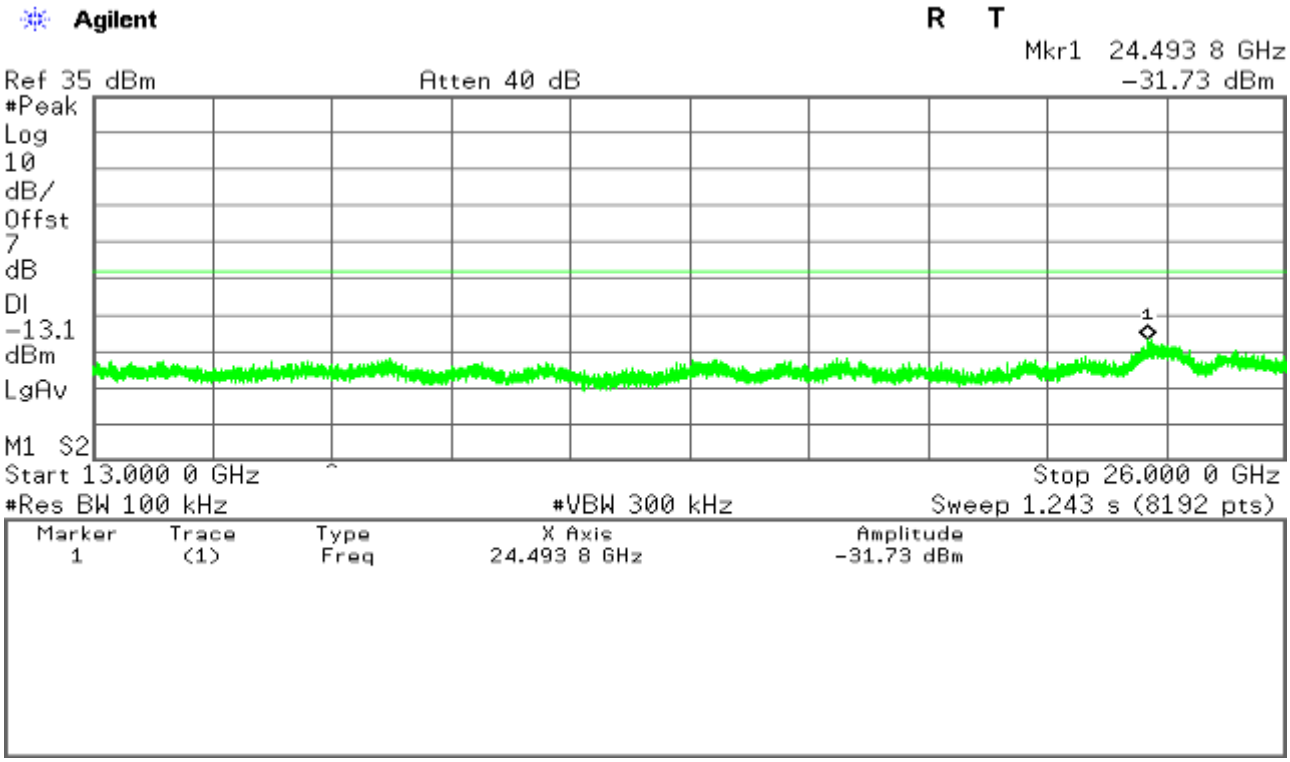

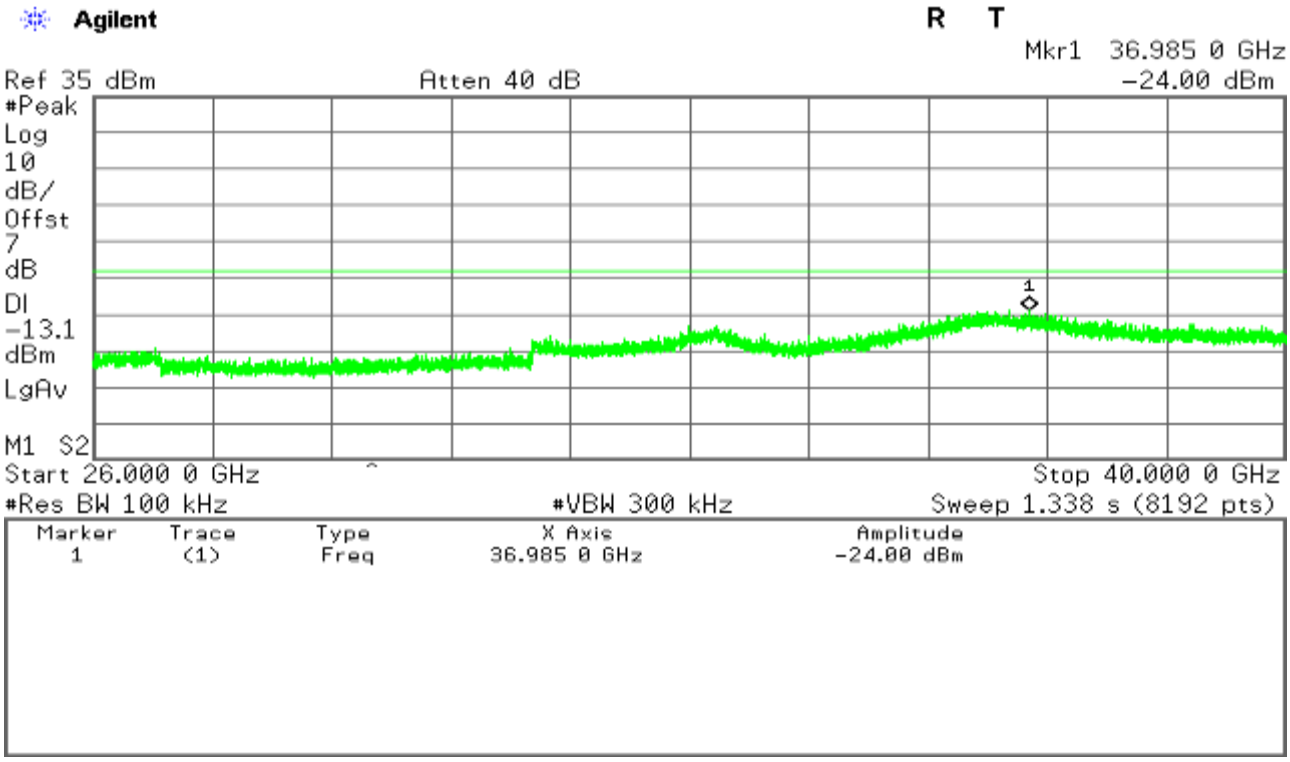

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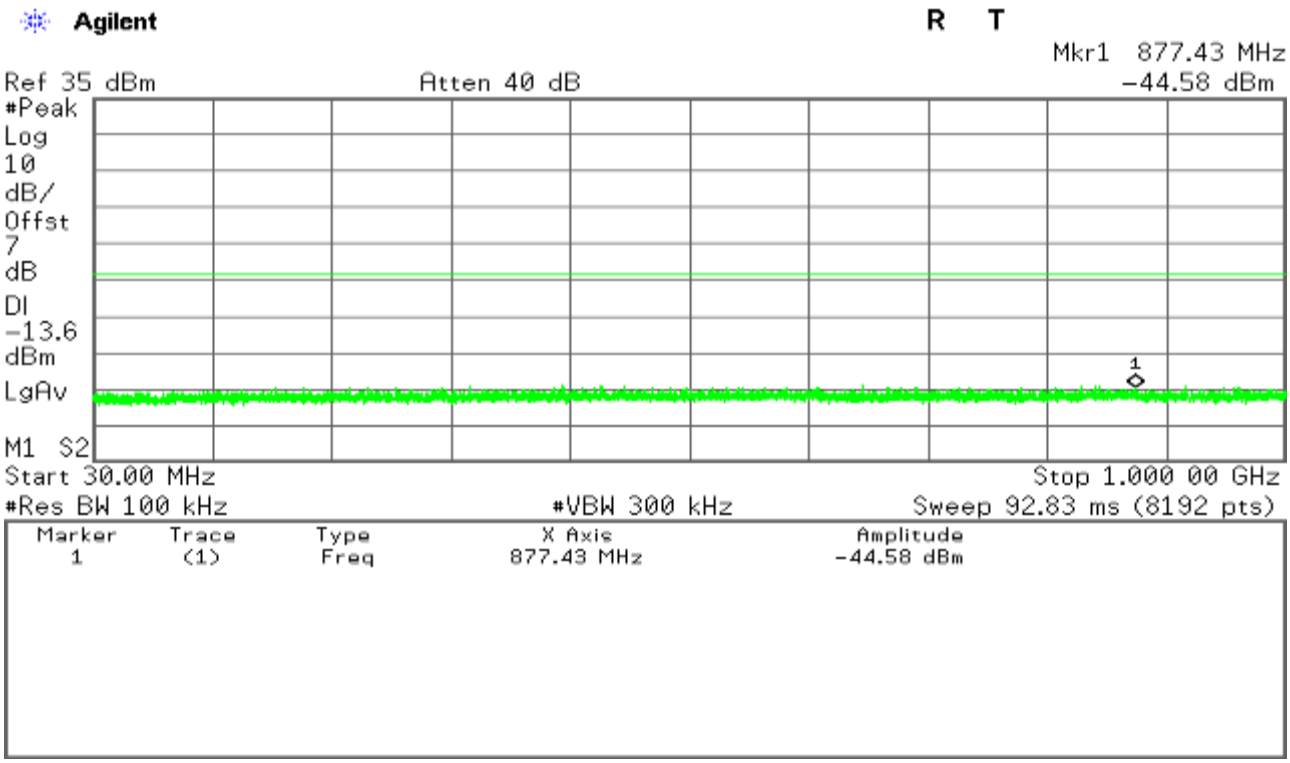
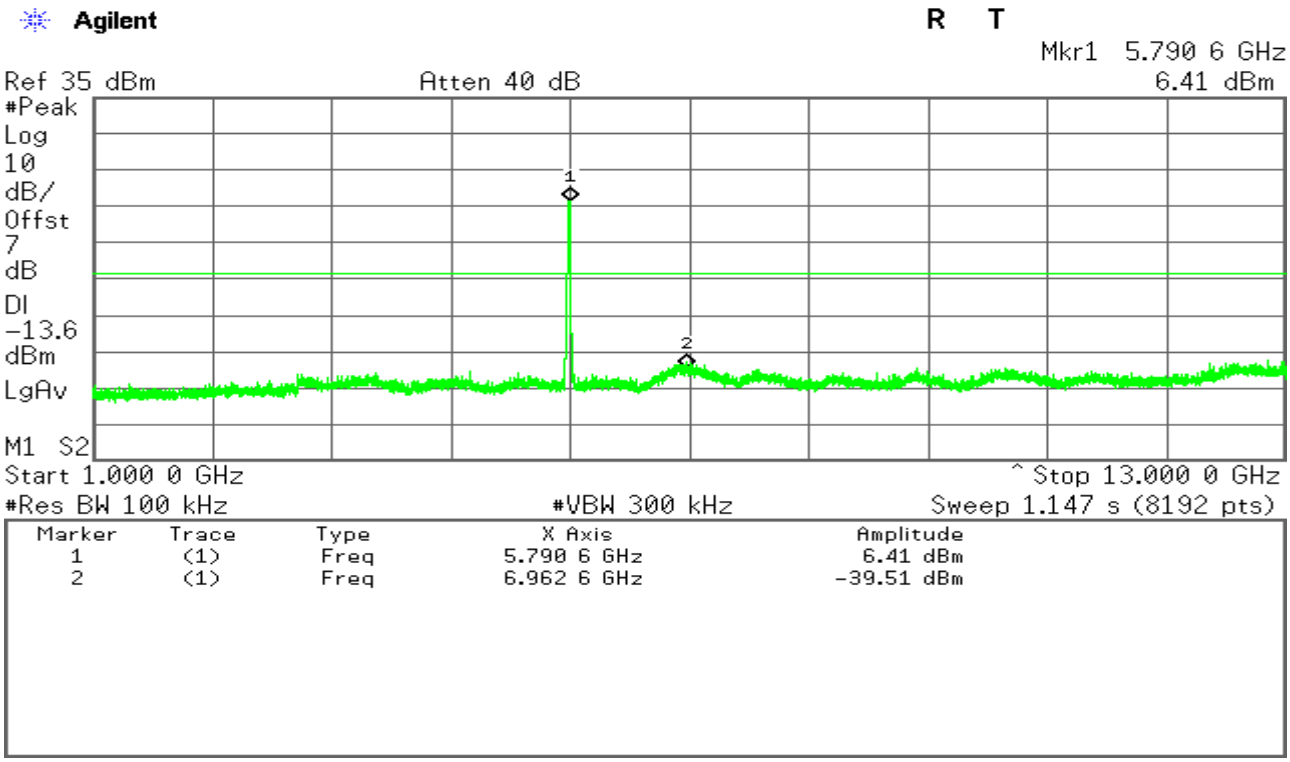
CH Mid





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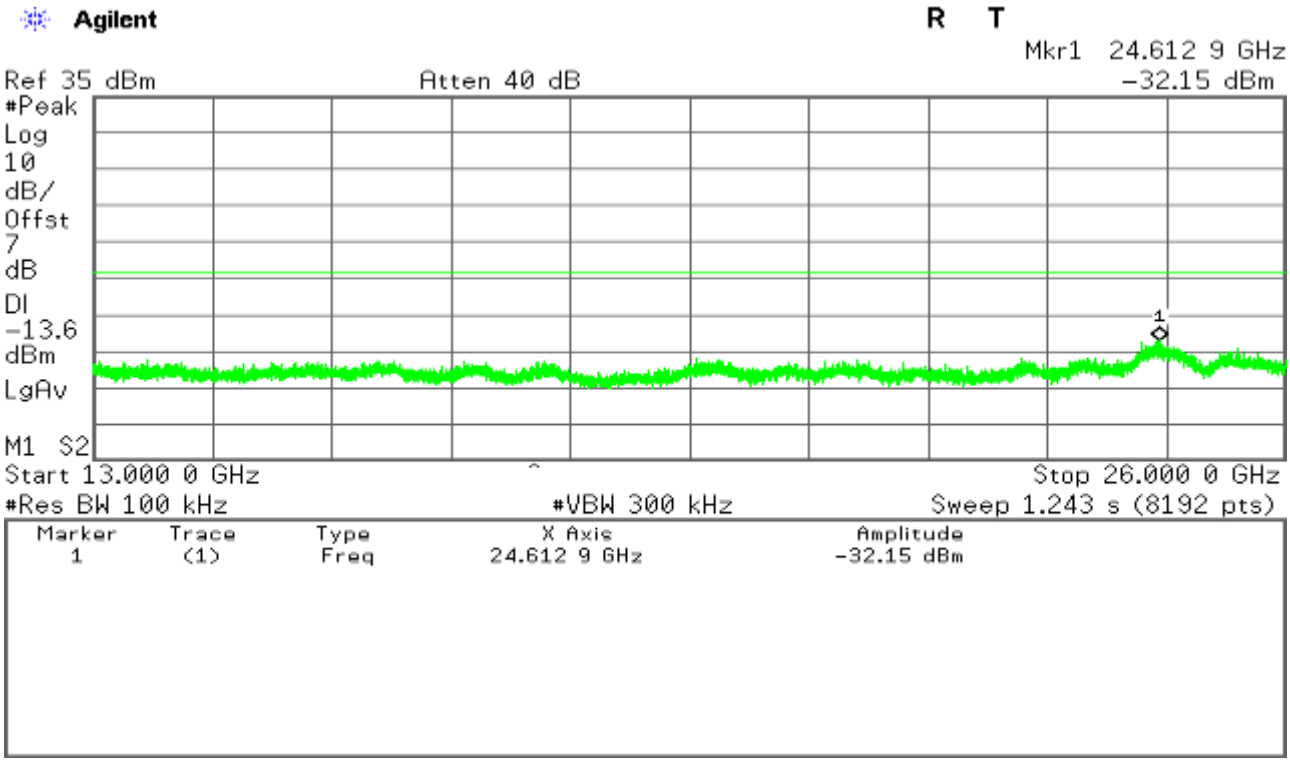

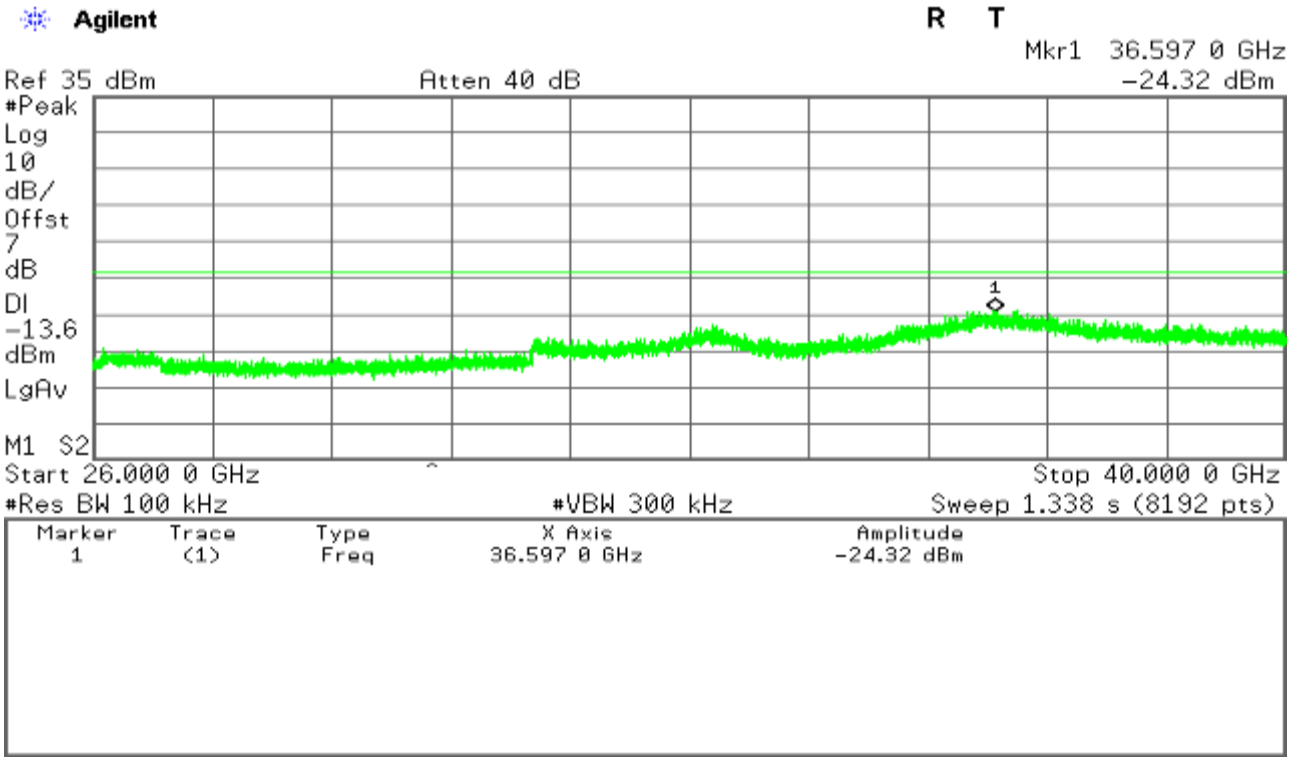

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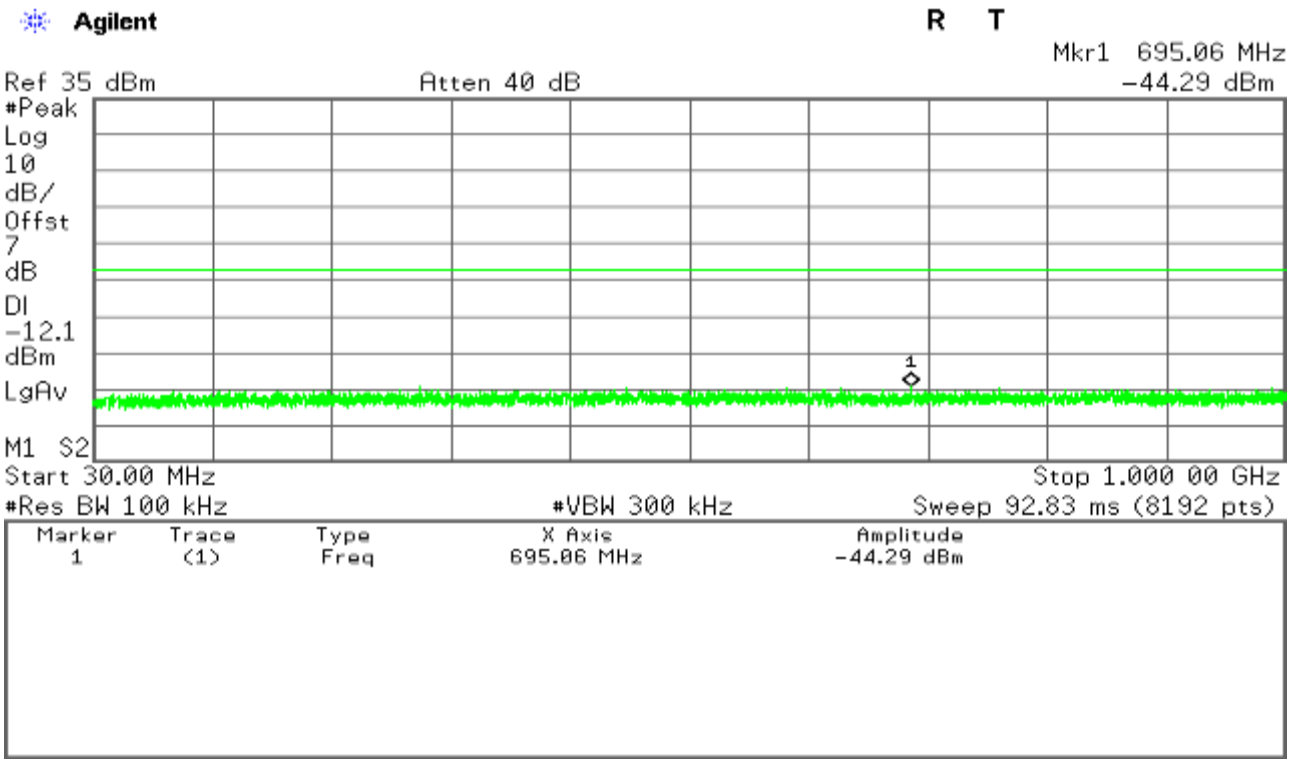
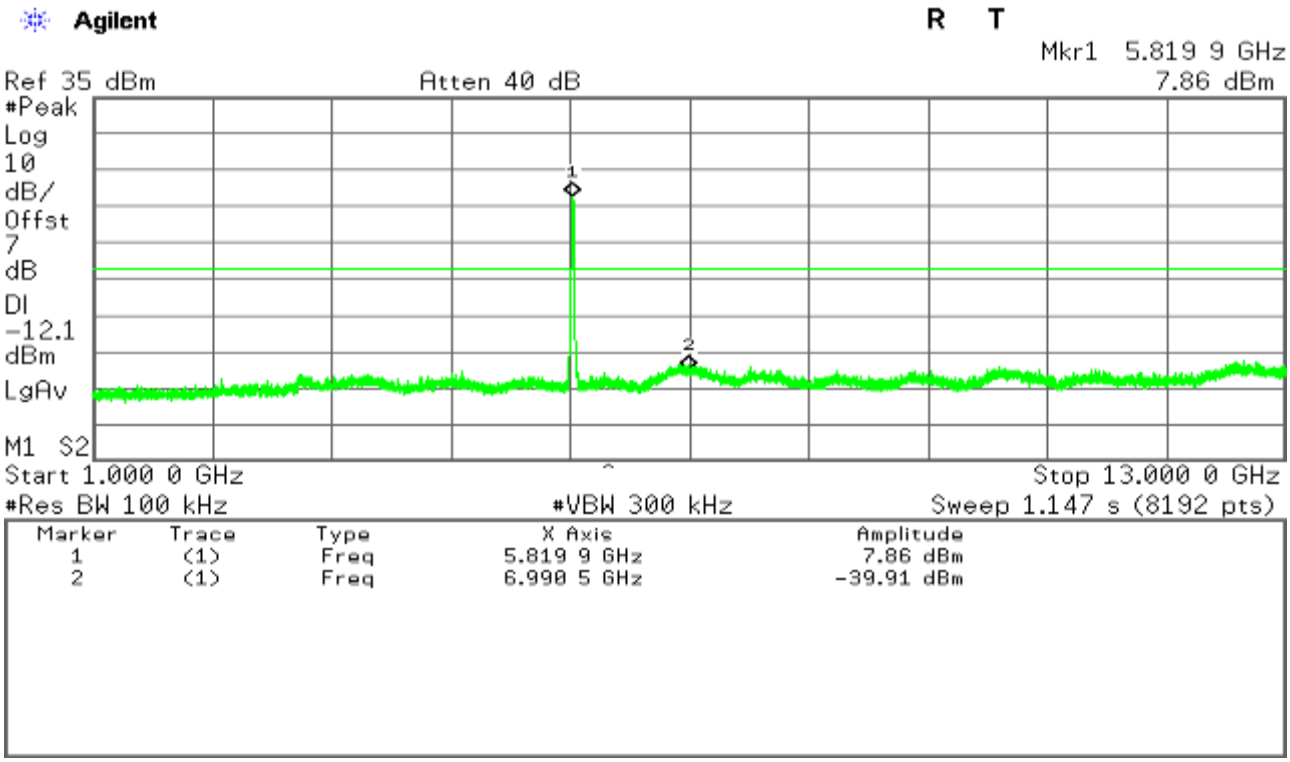
CH High





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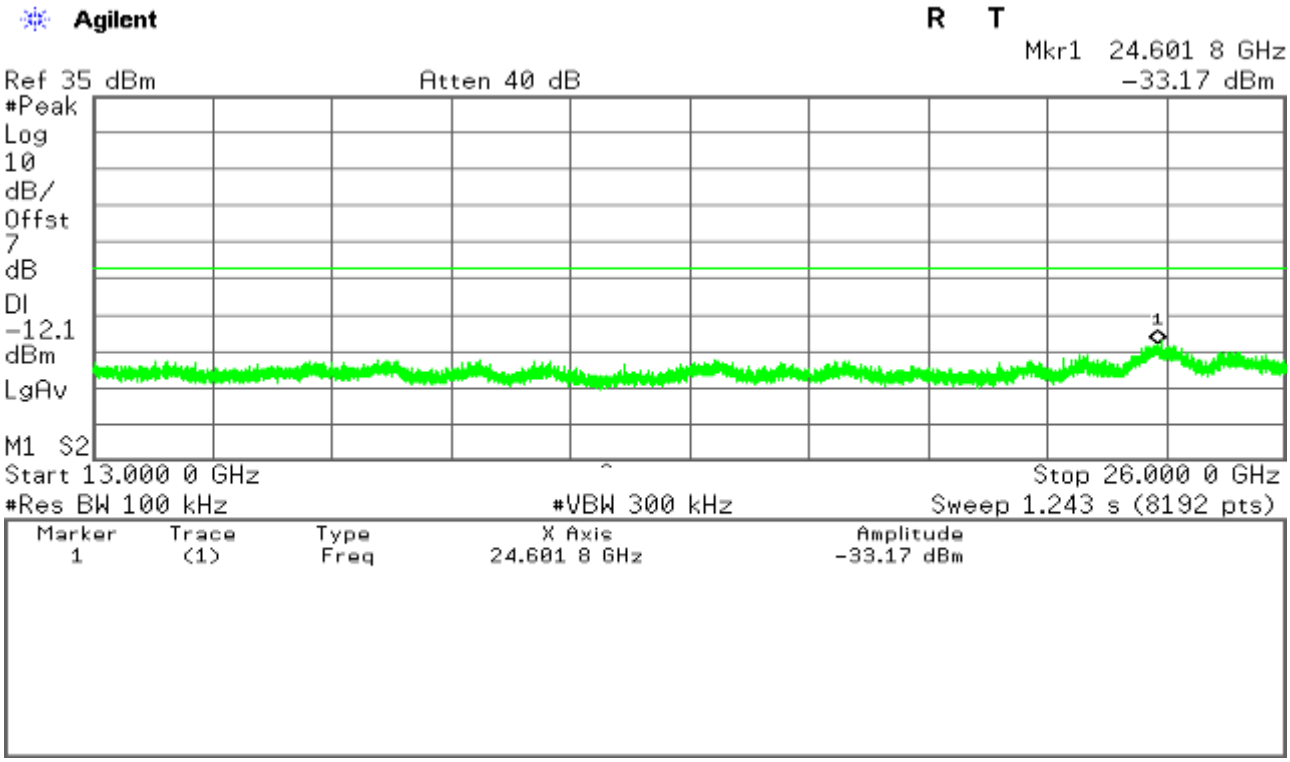

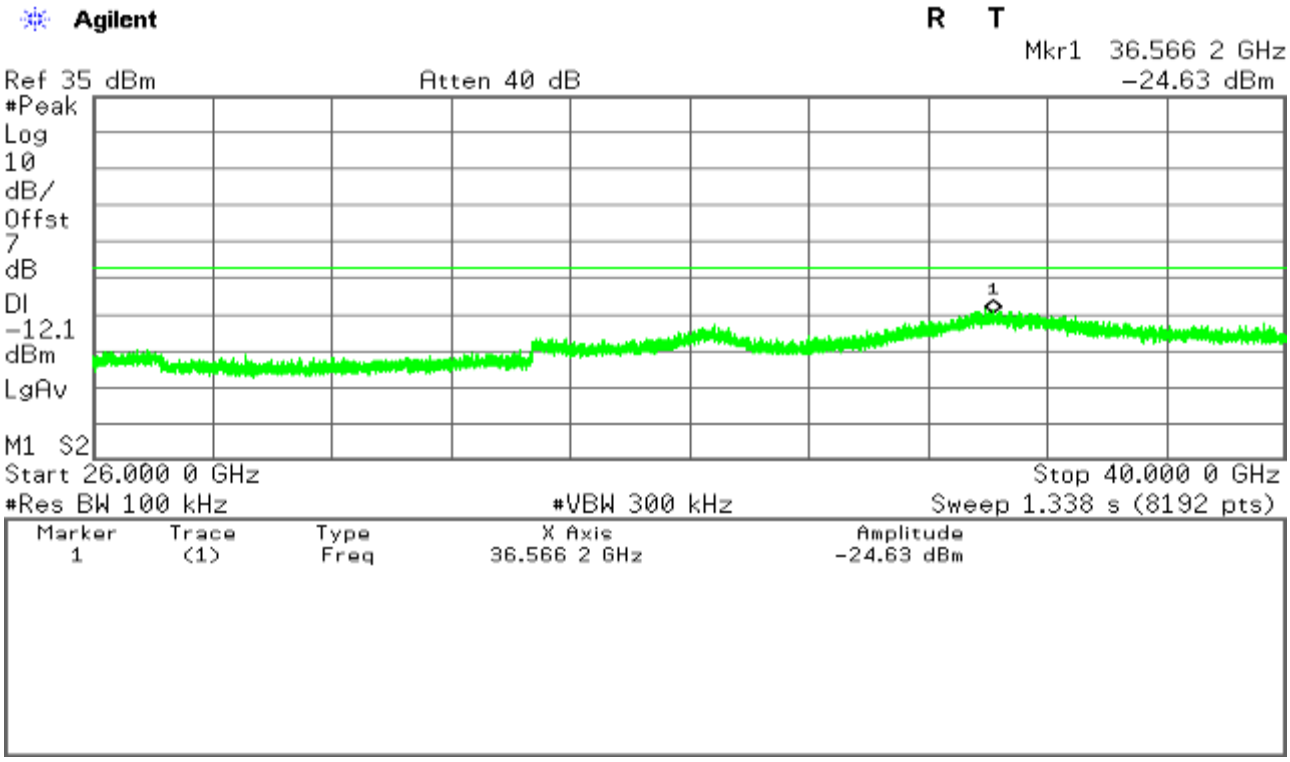

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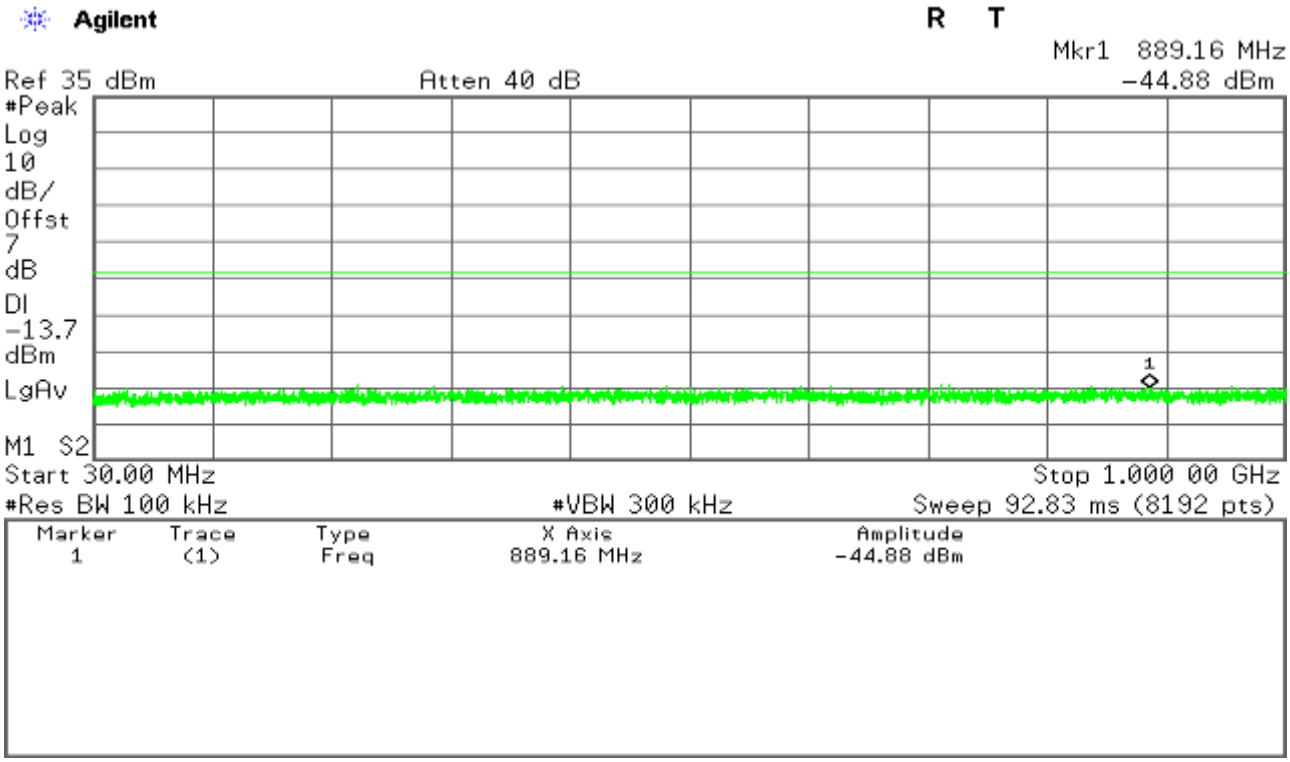
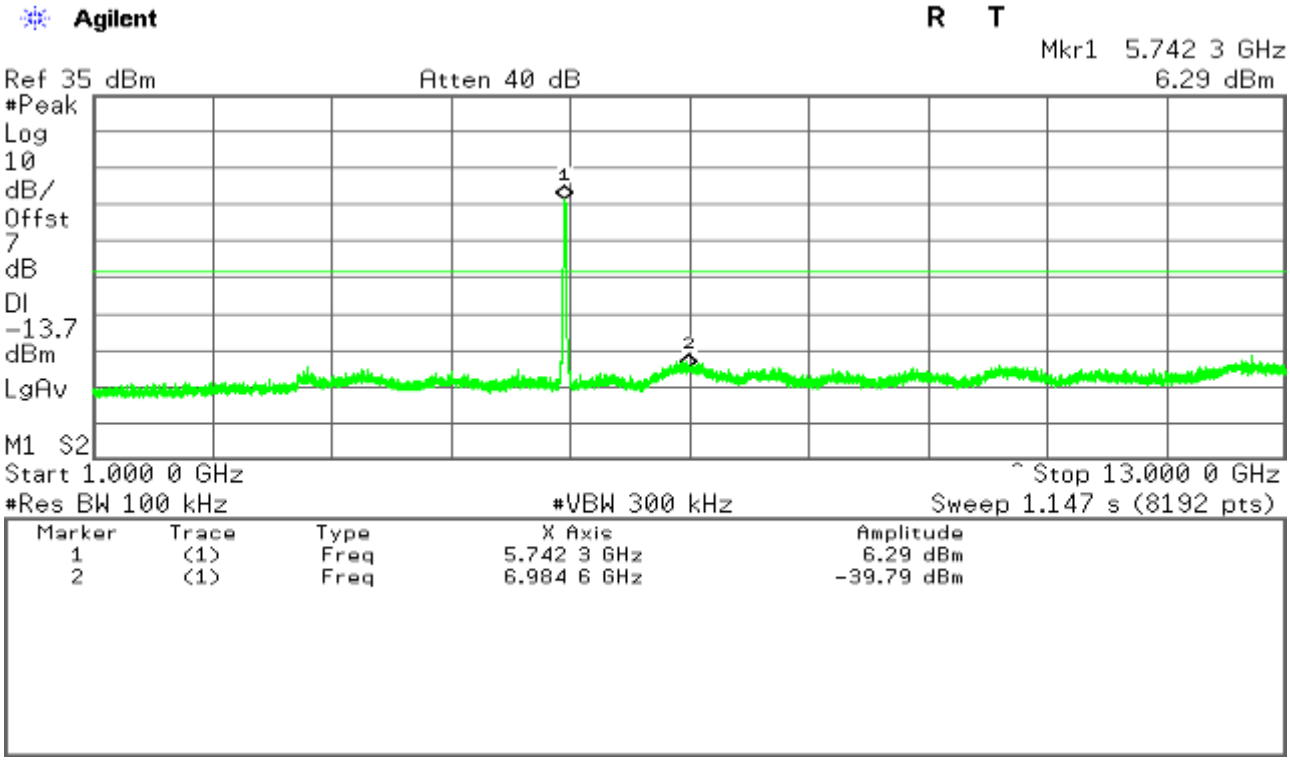
IEEE 802.11a mode/chain 2

CH Low





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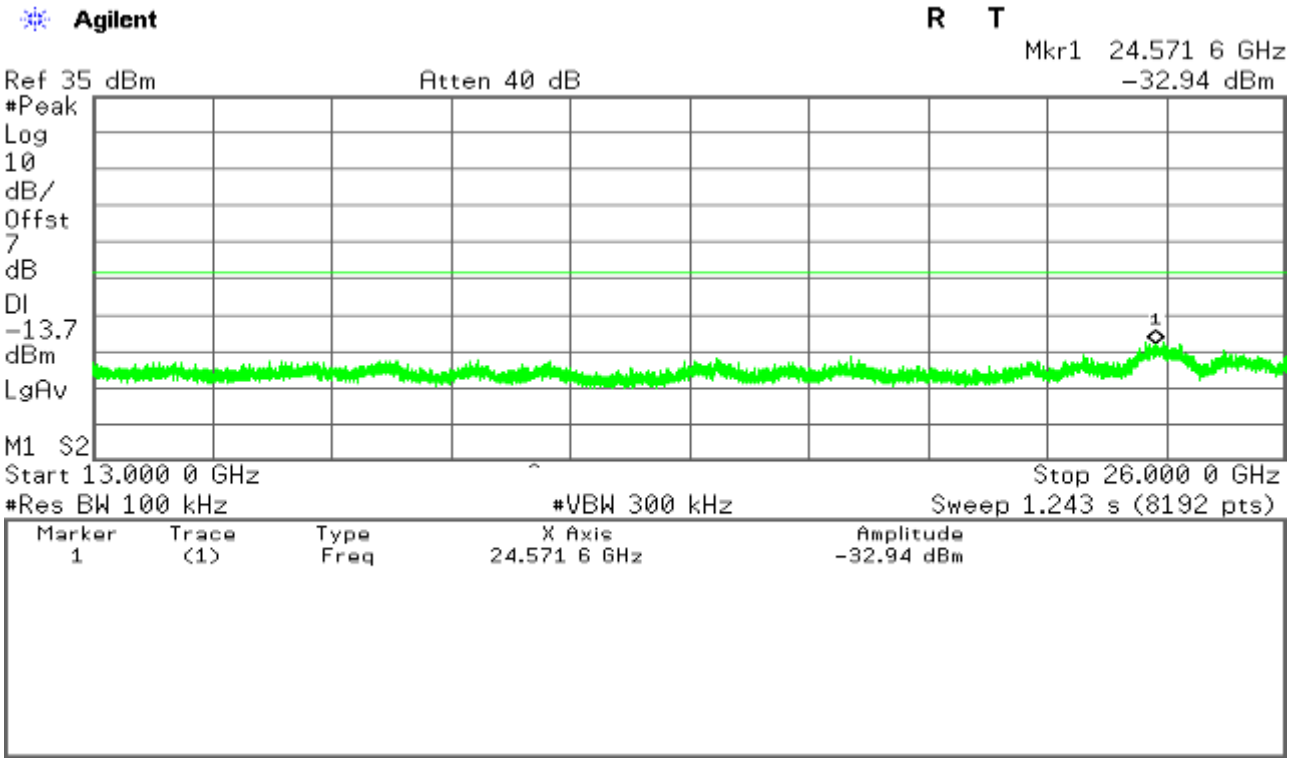

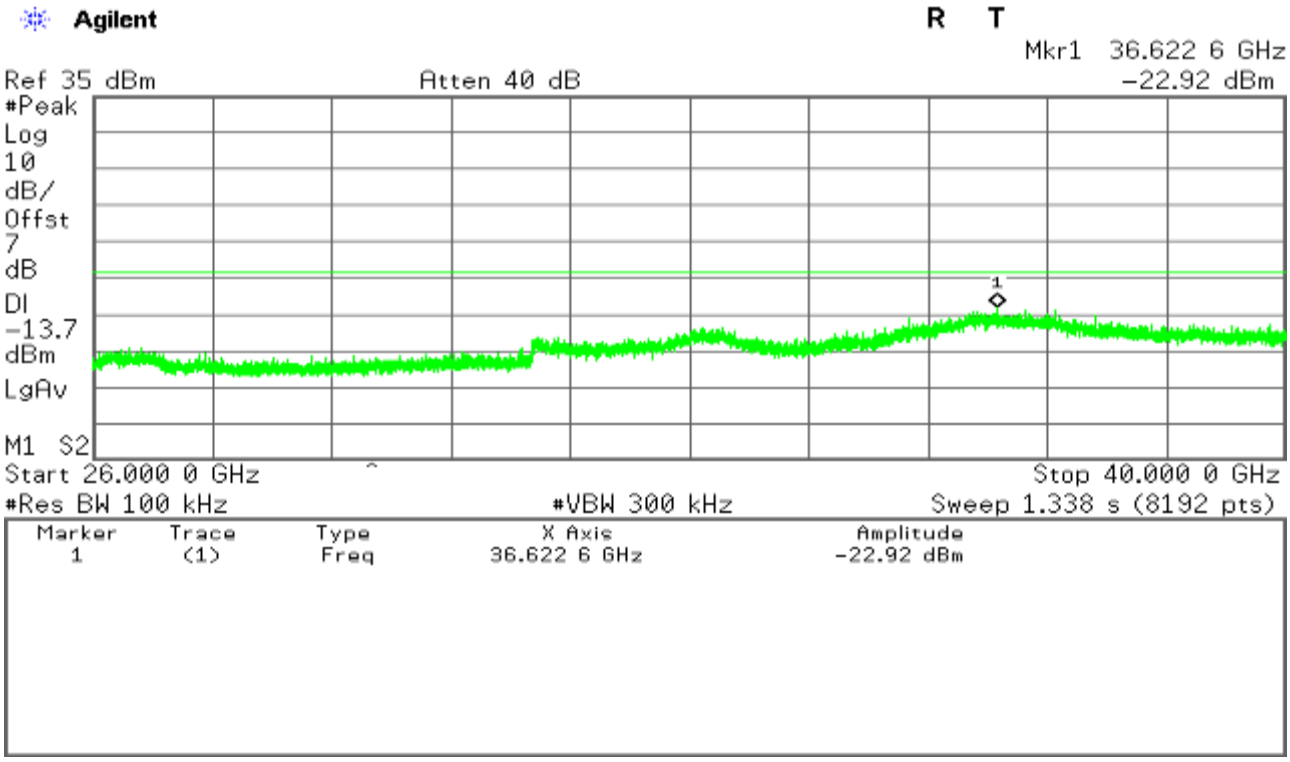

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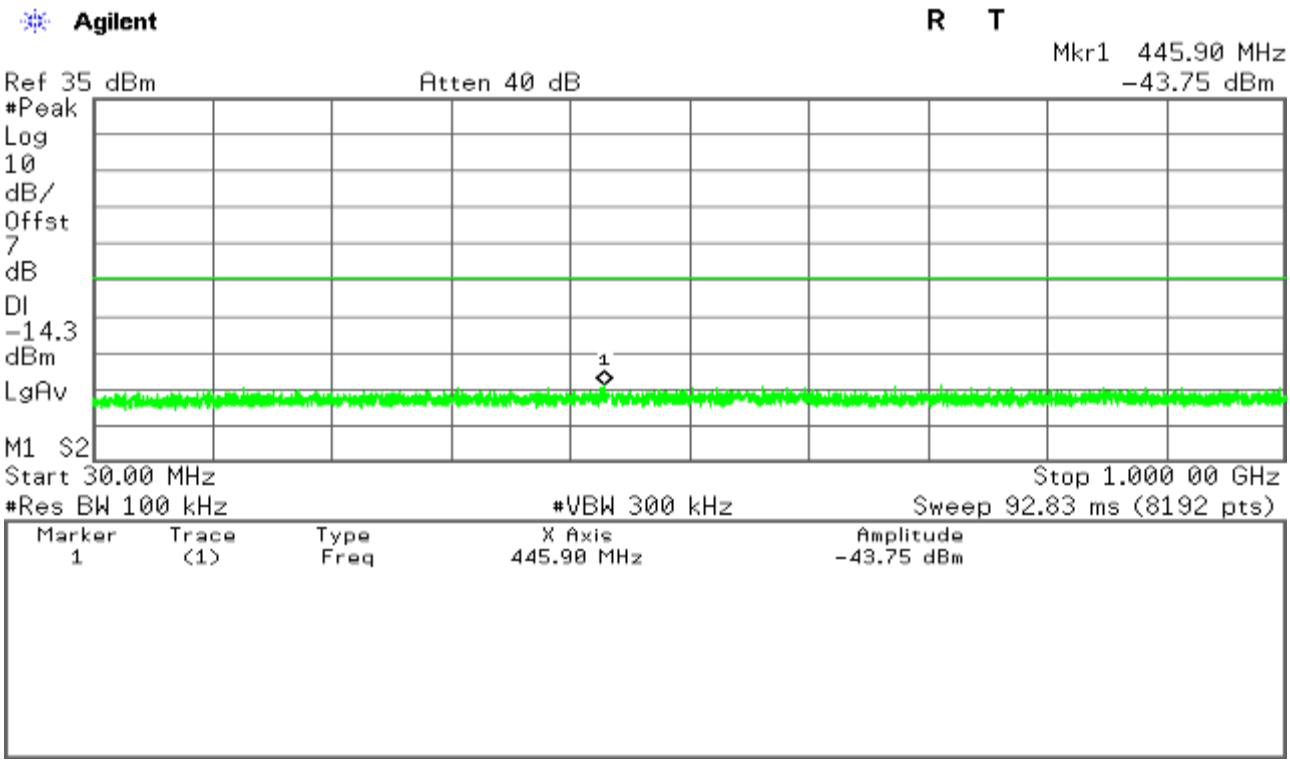
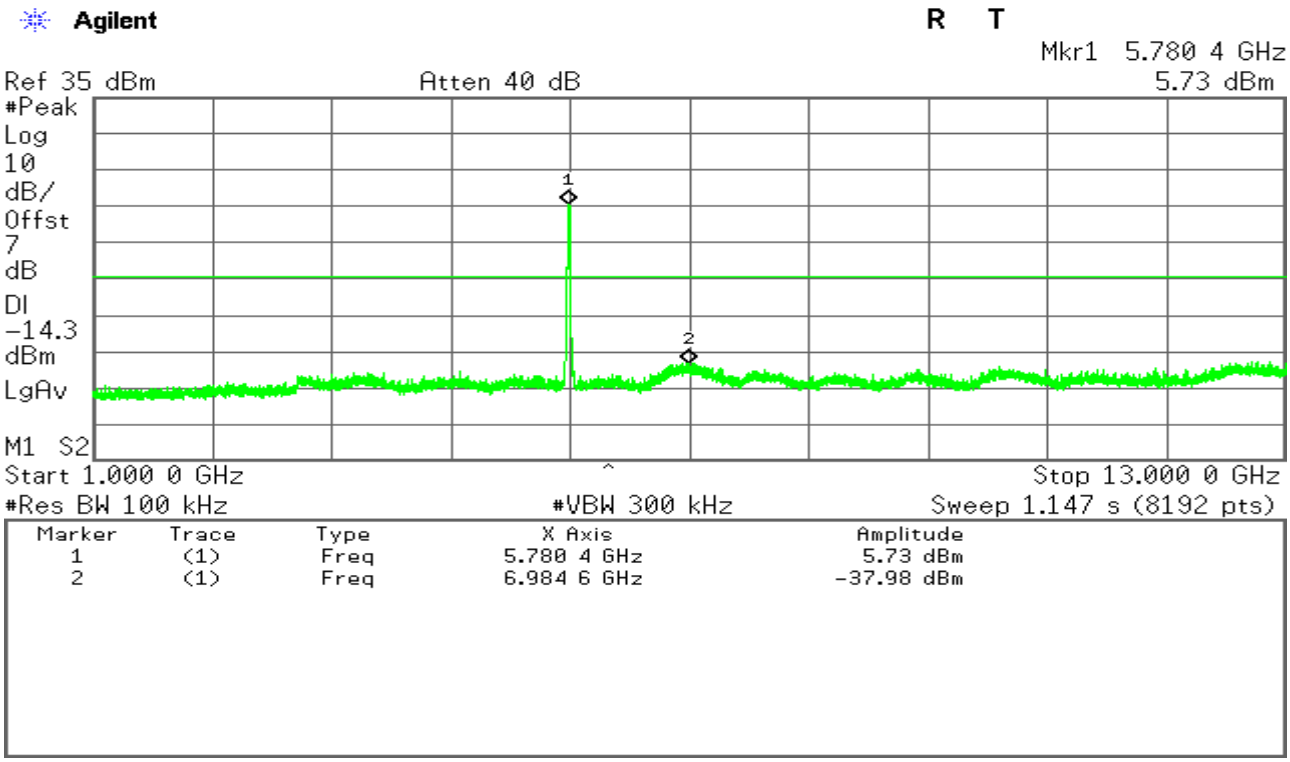
CH Mid





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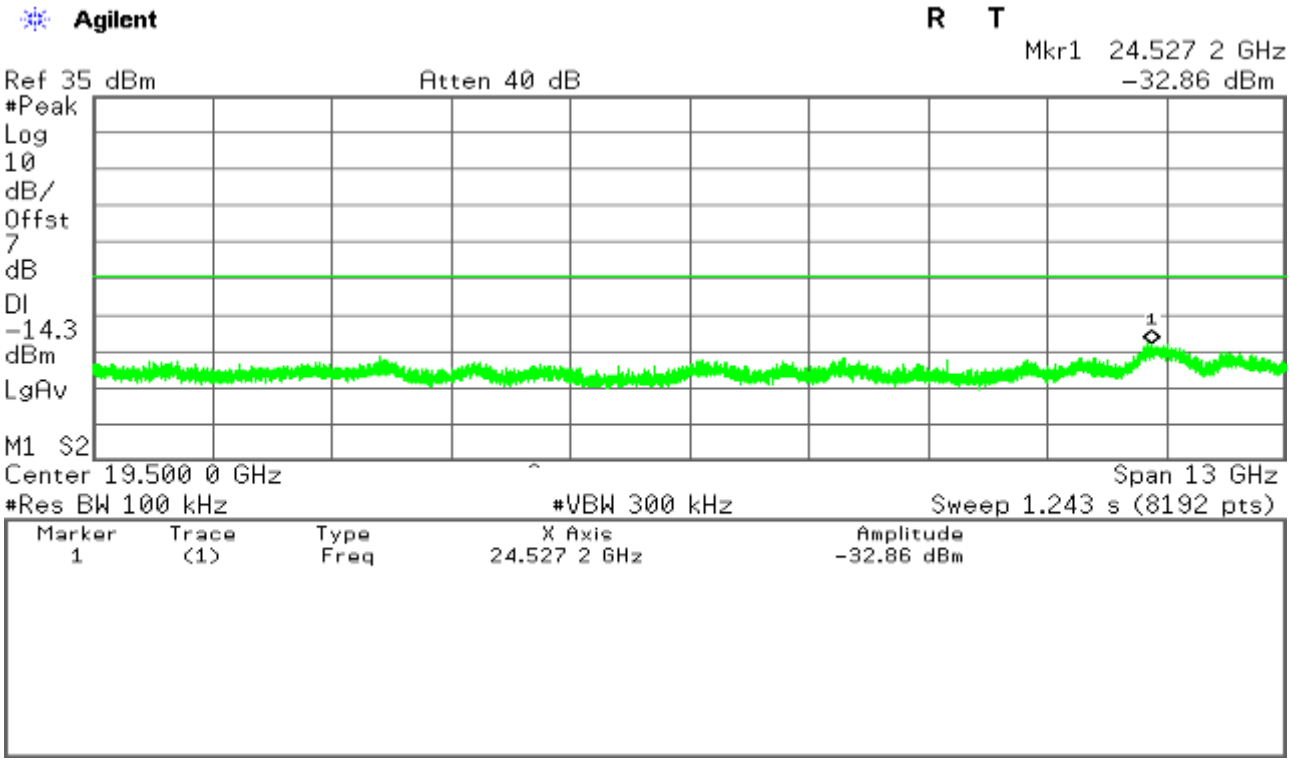

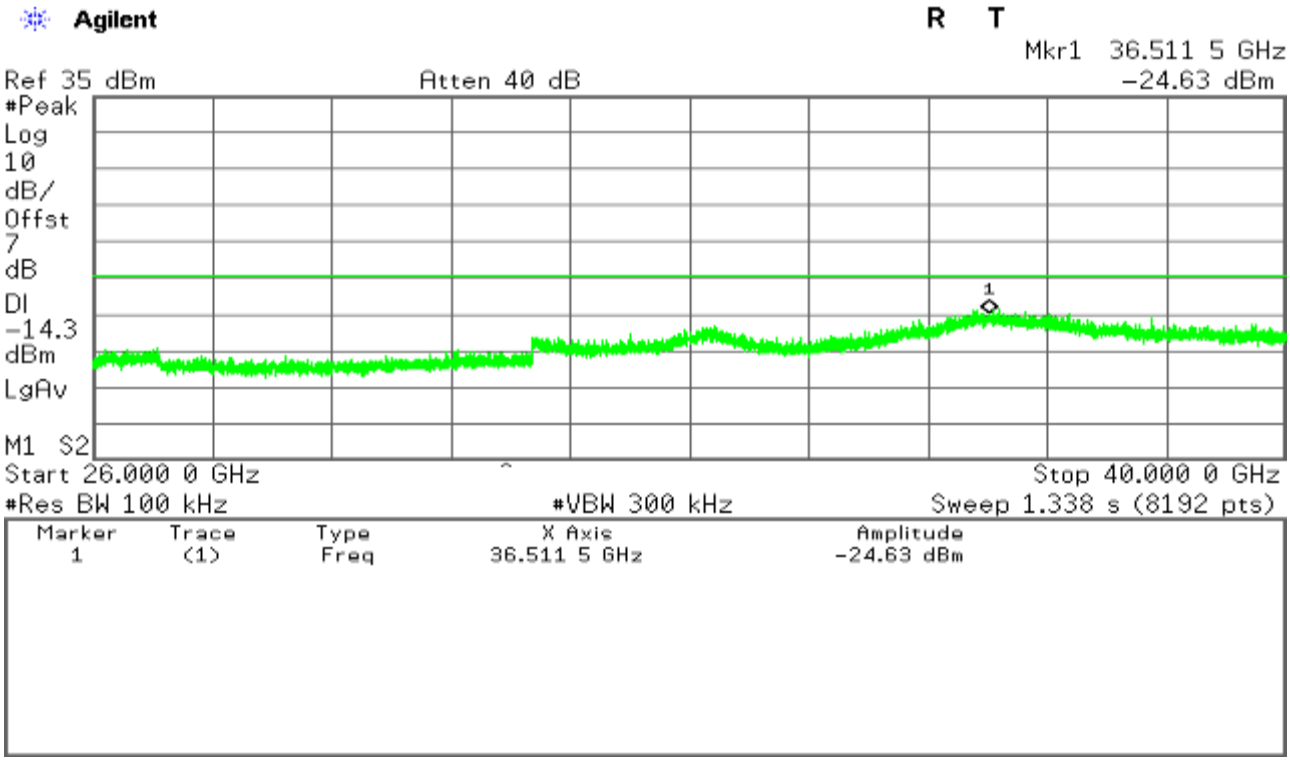

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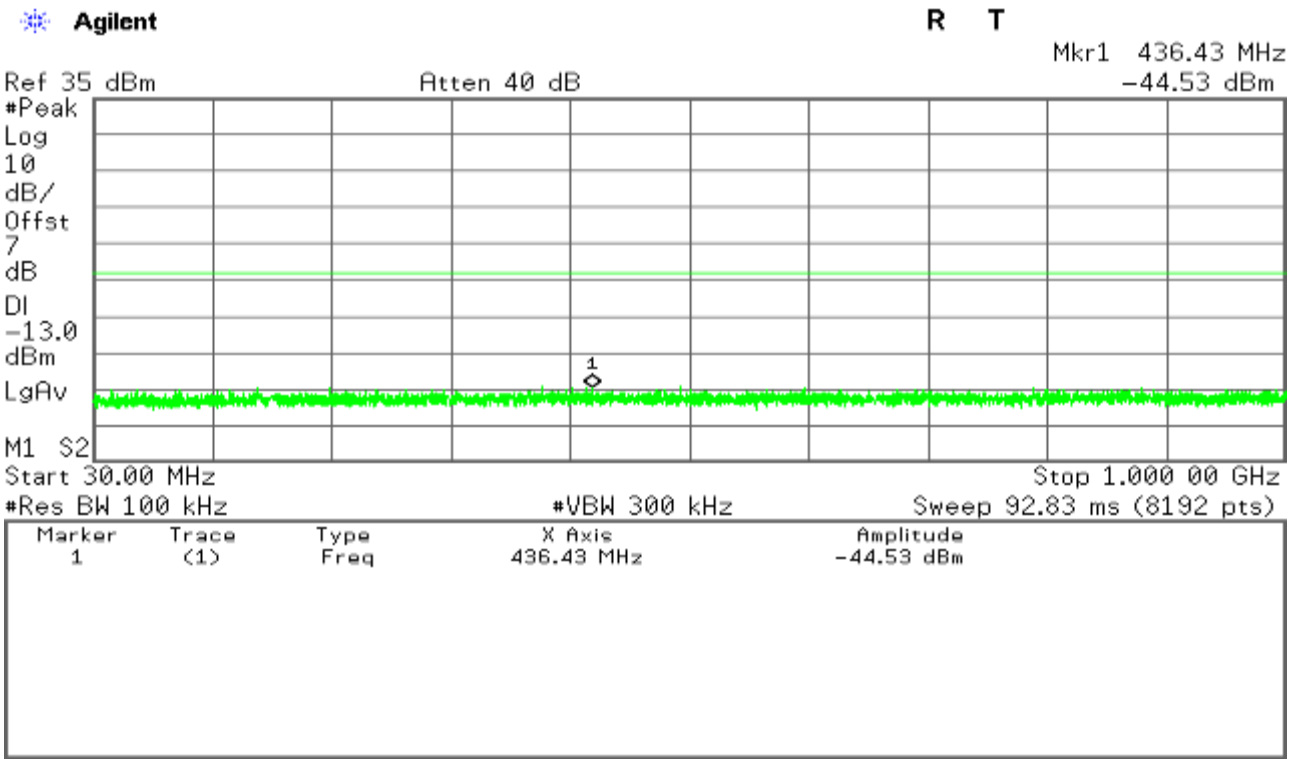

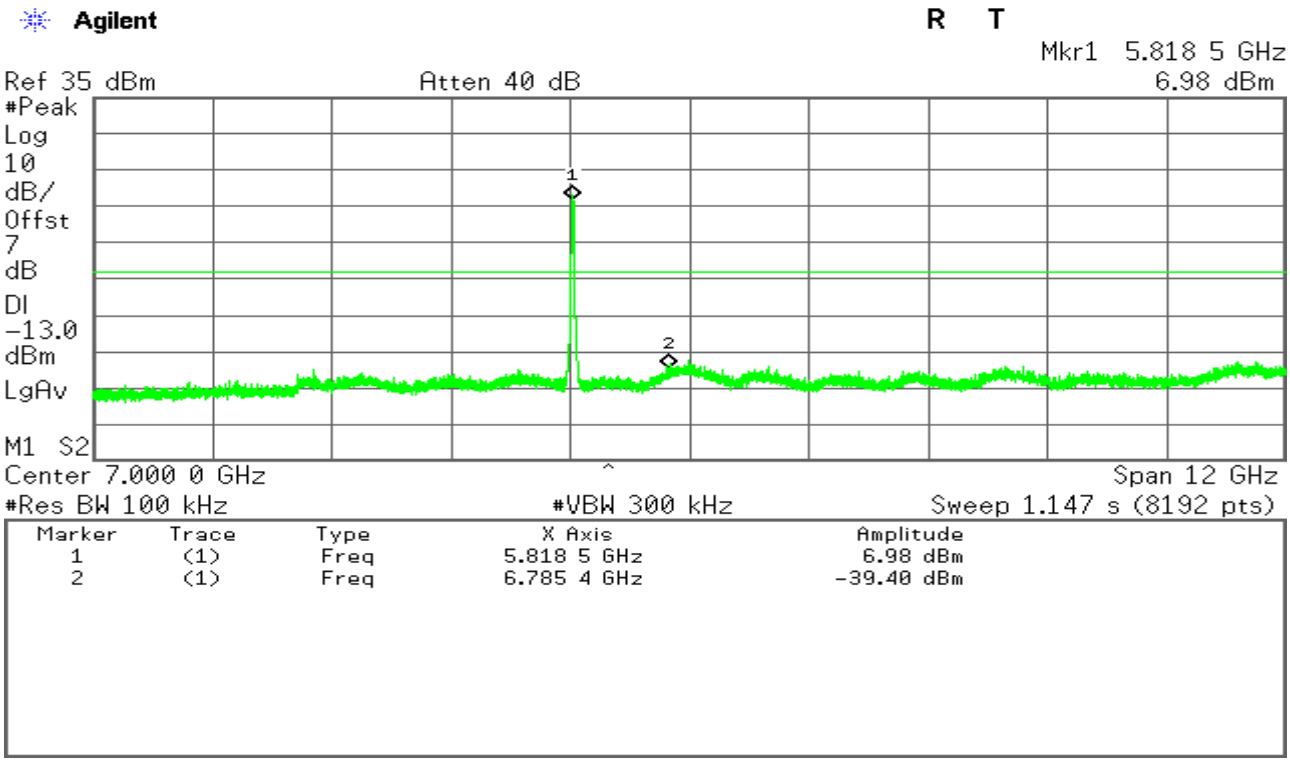

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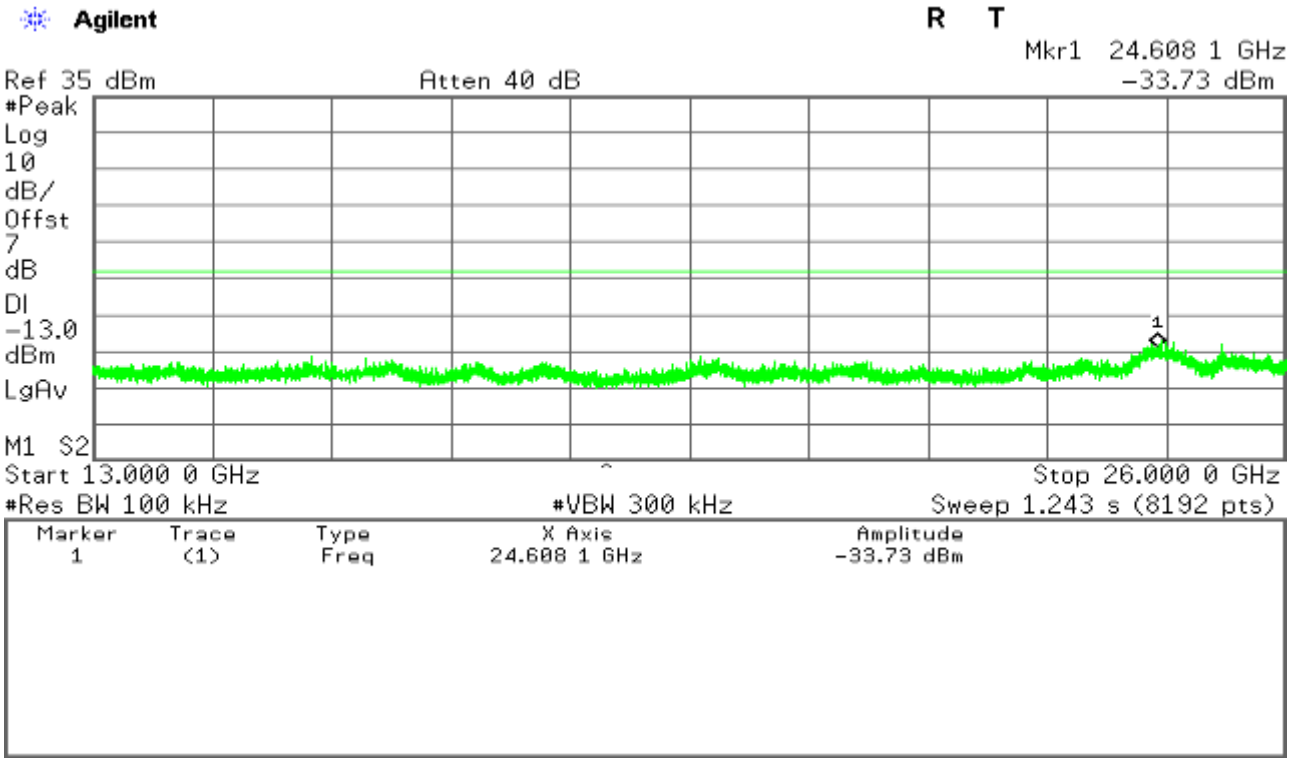

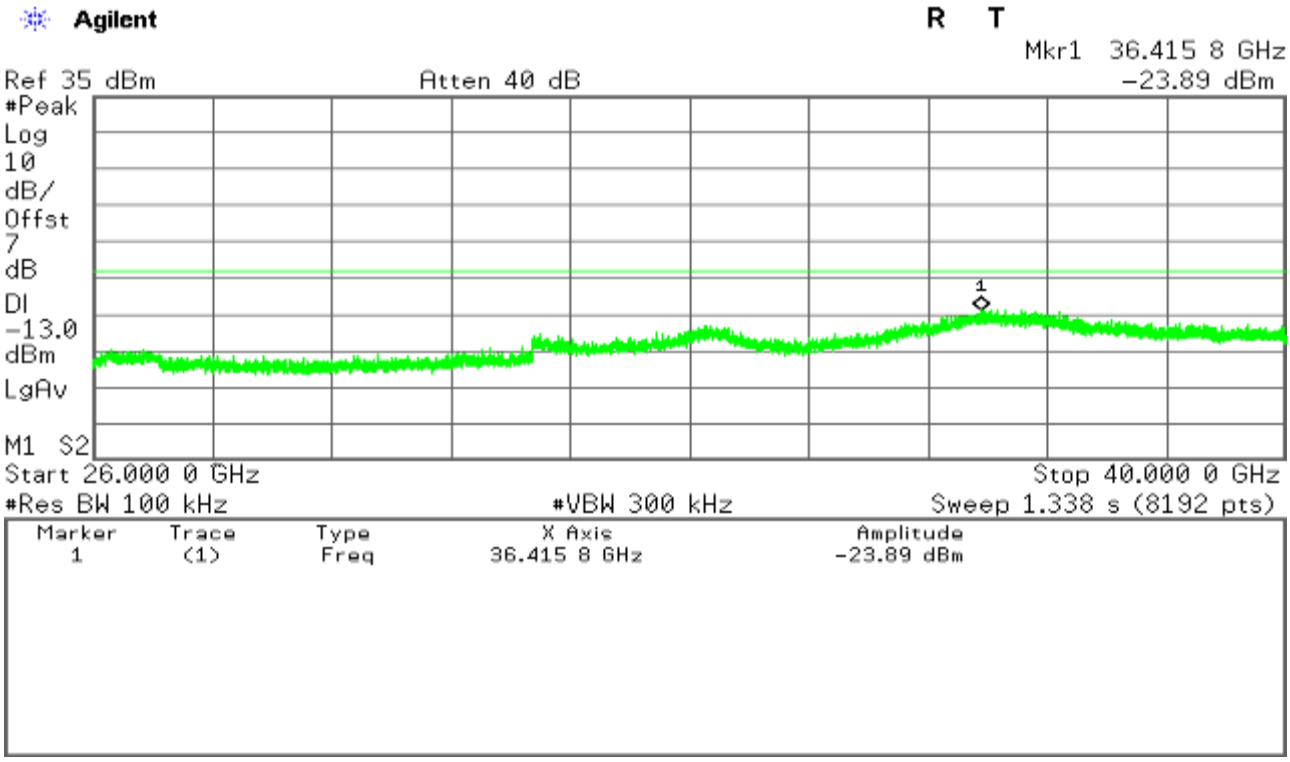

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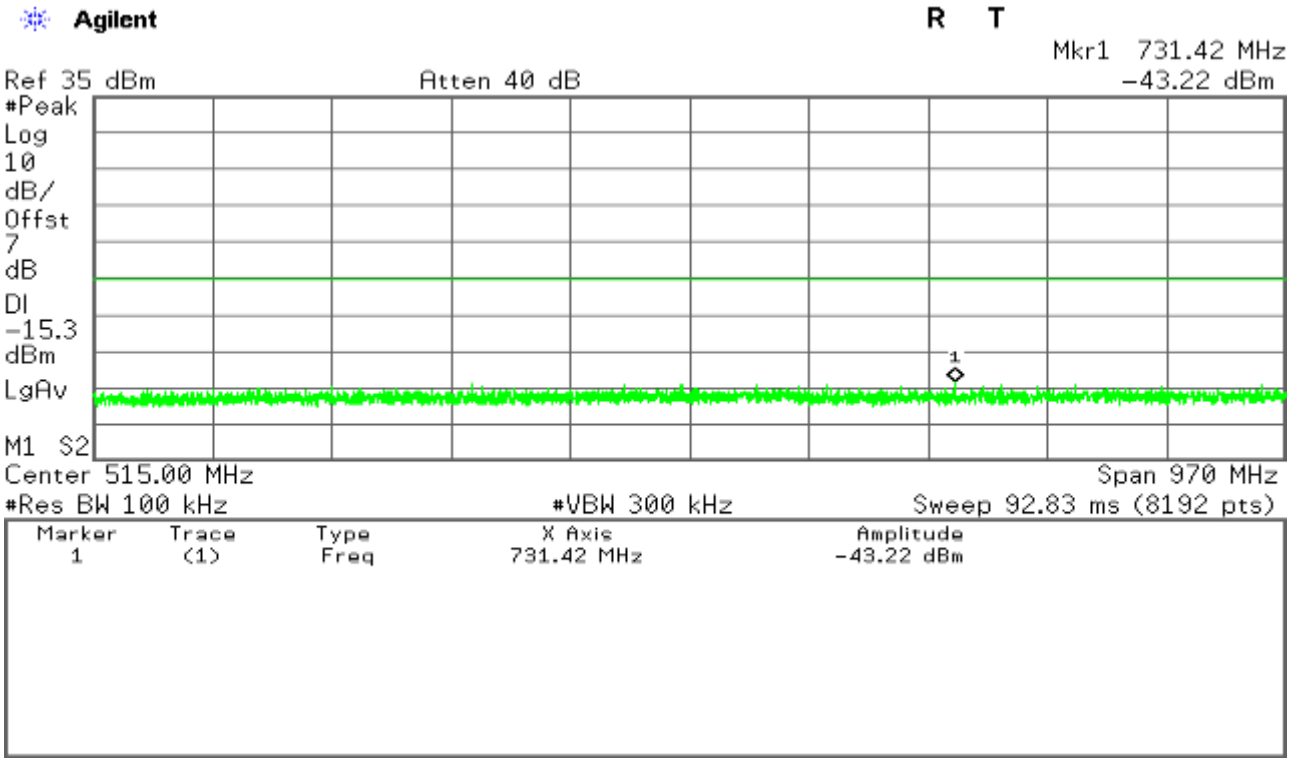
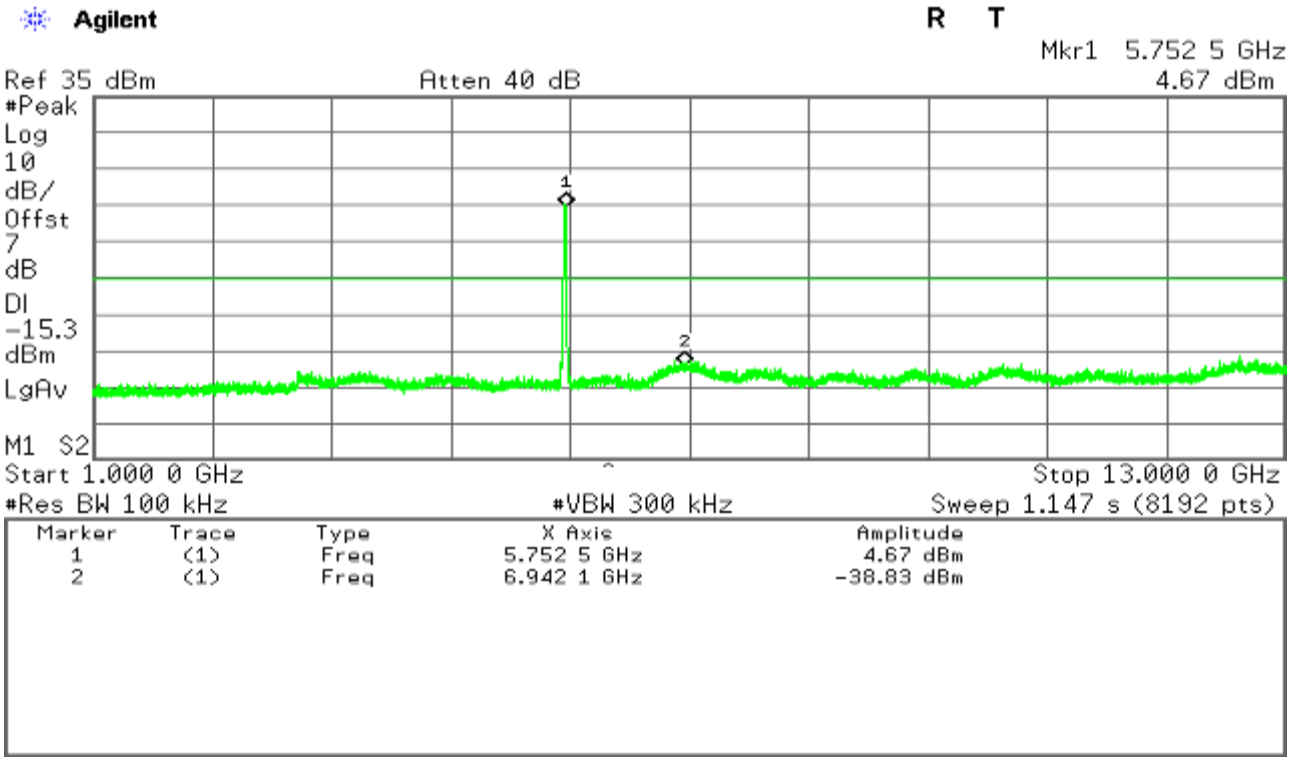
draft 802.11n Standard-20 MHz Channel mode / Chain 0

CH Low





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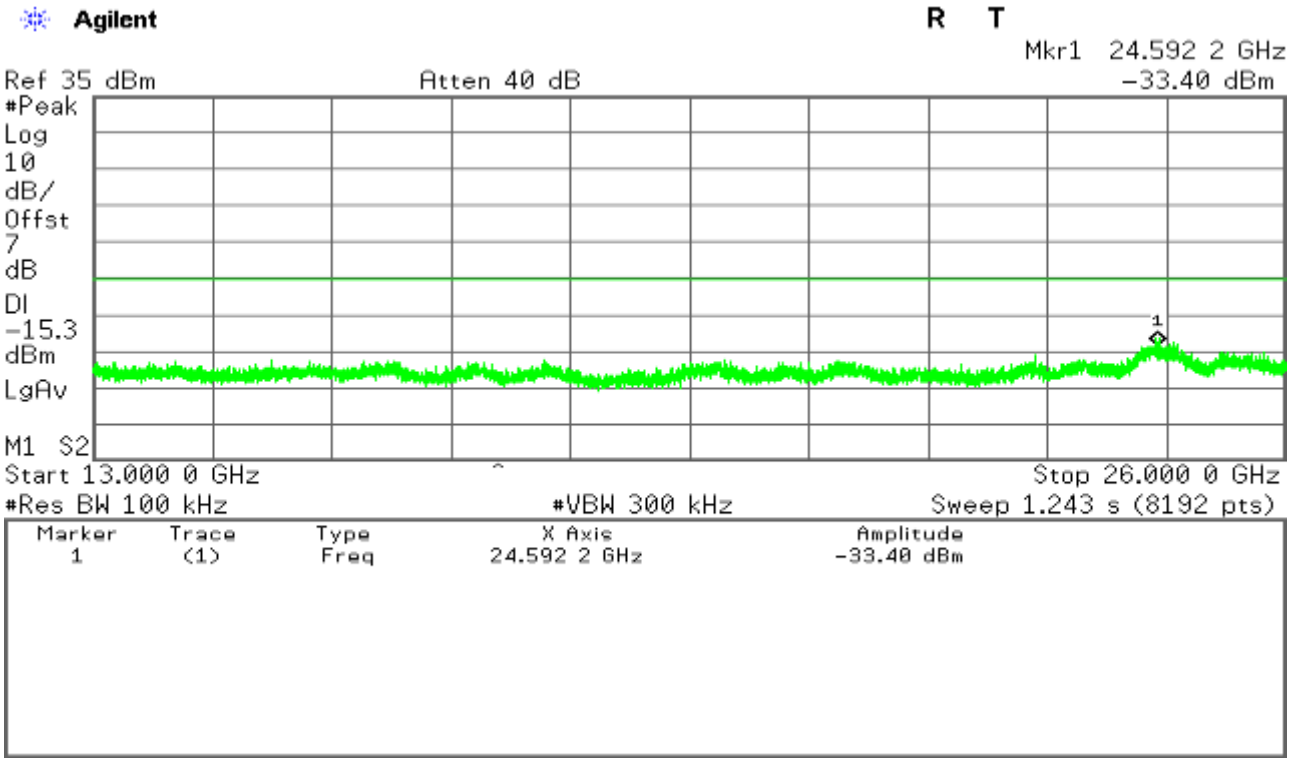

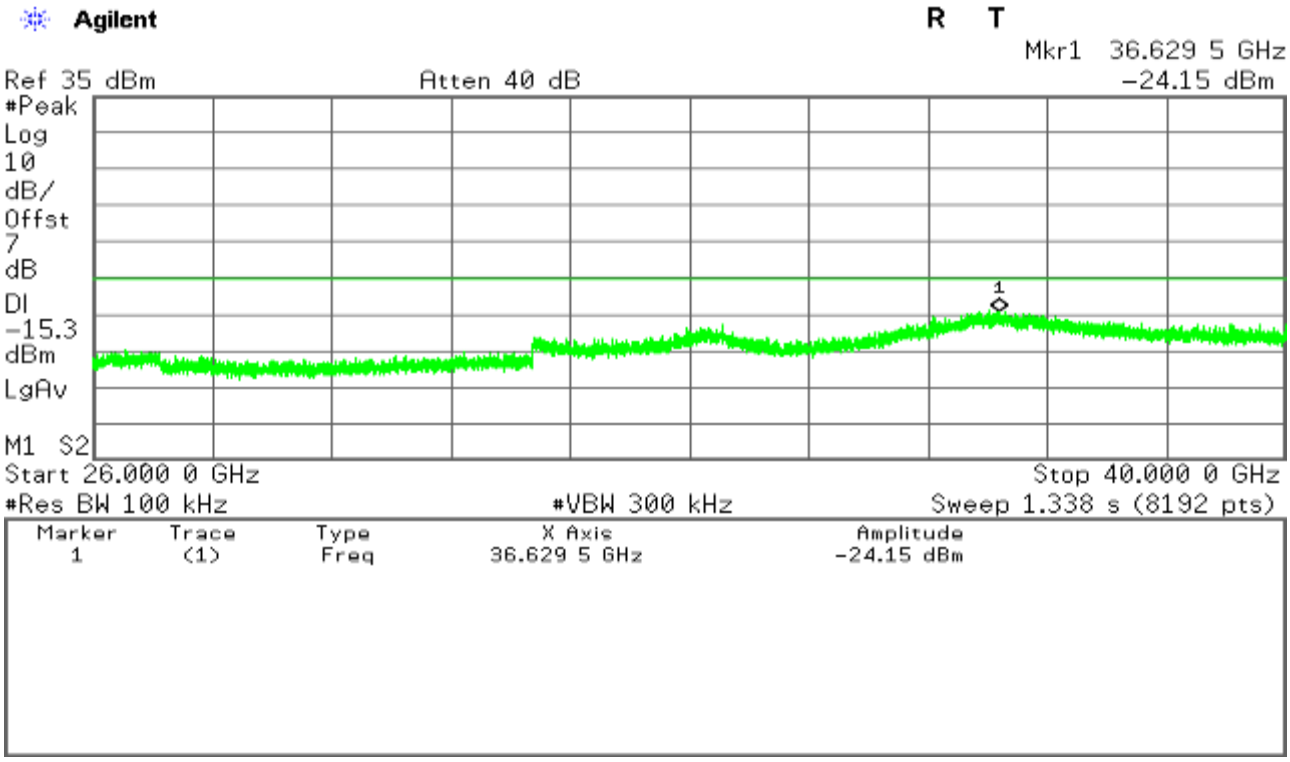

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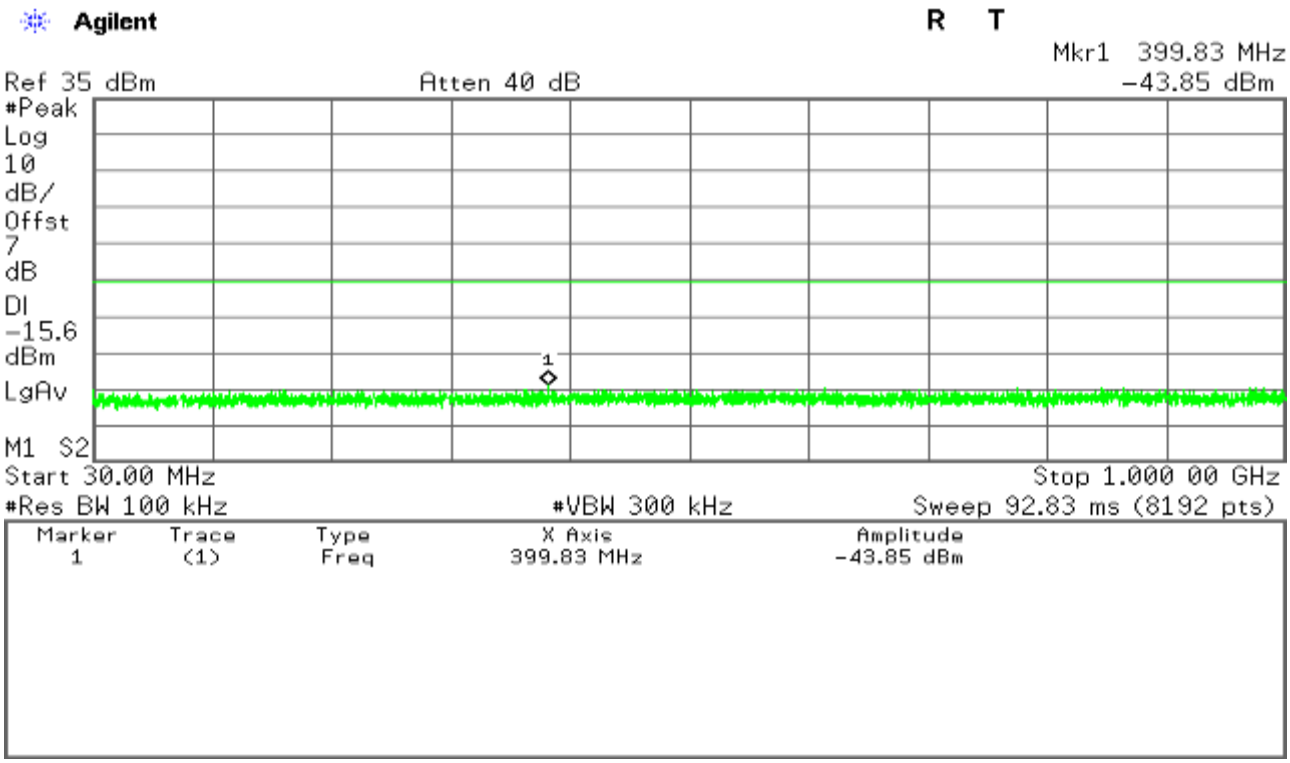
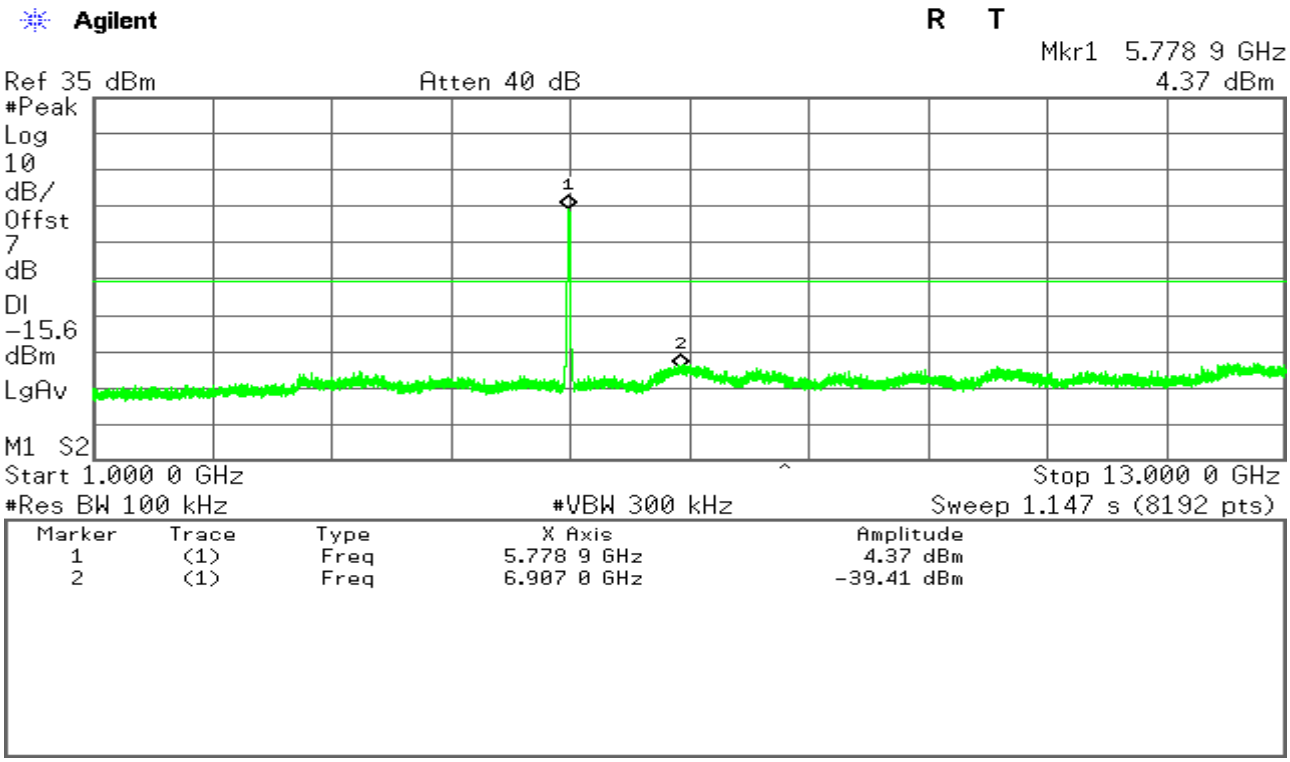
CH Mid





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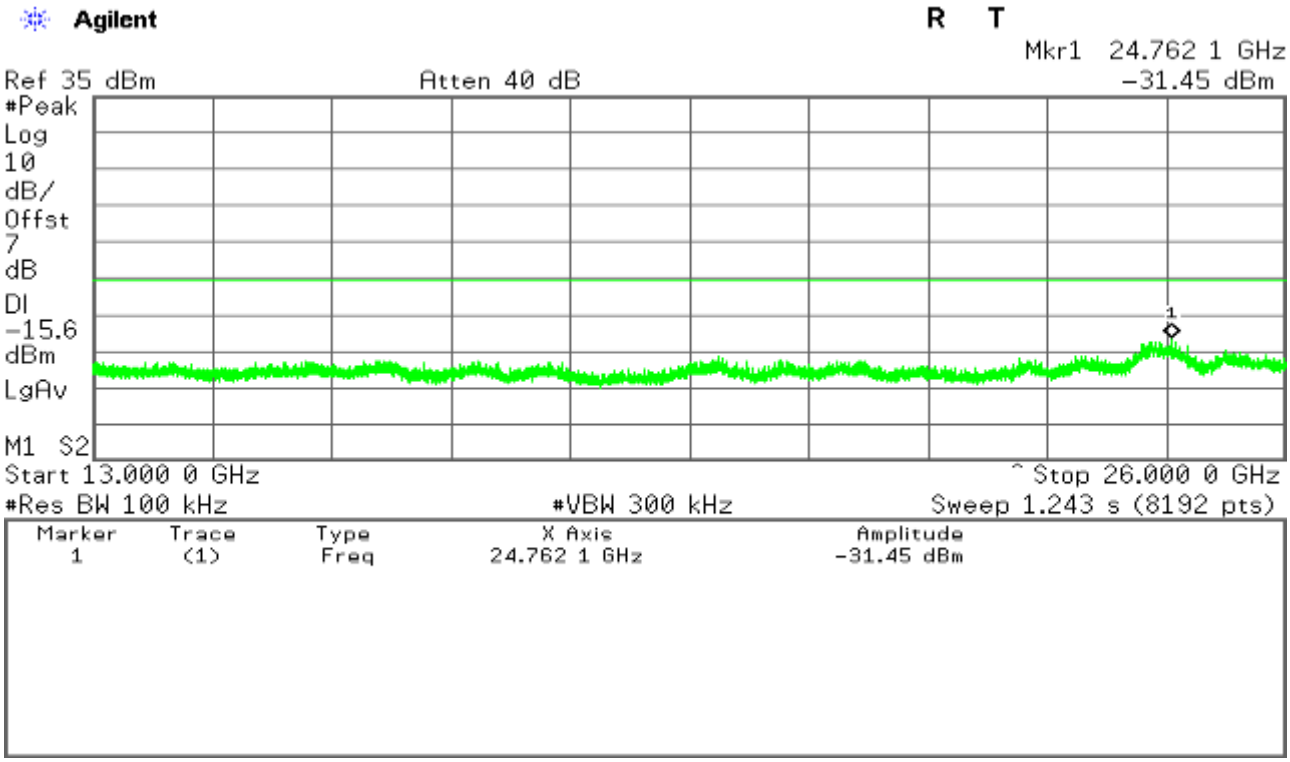

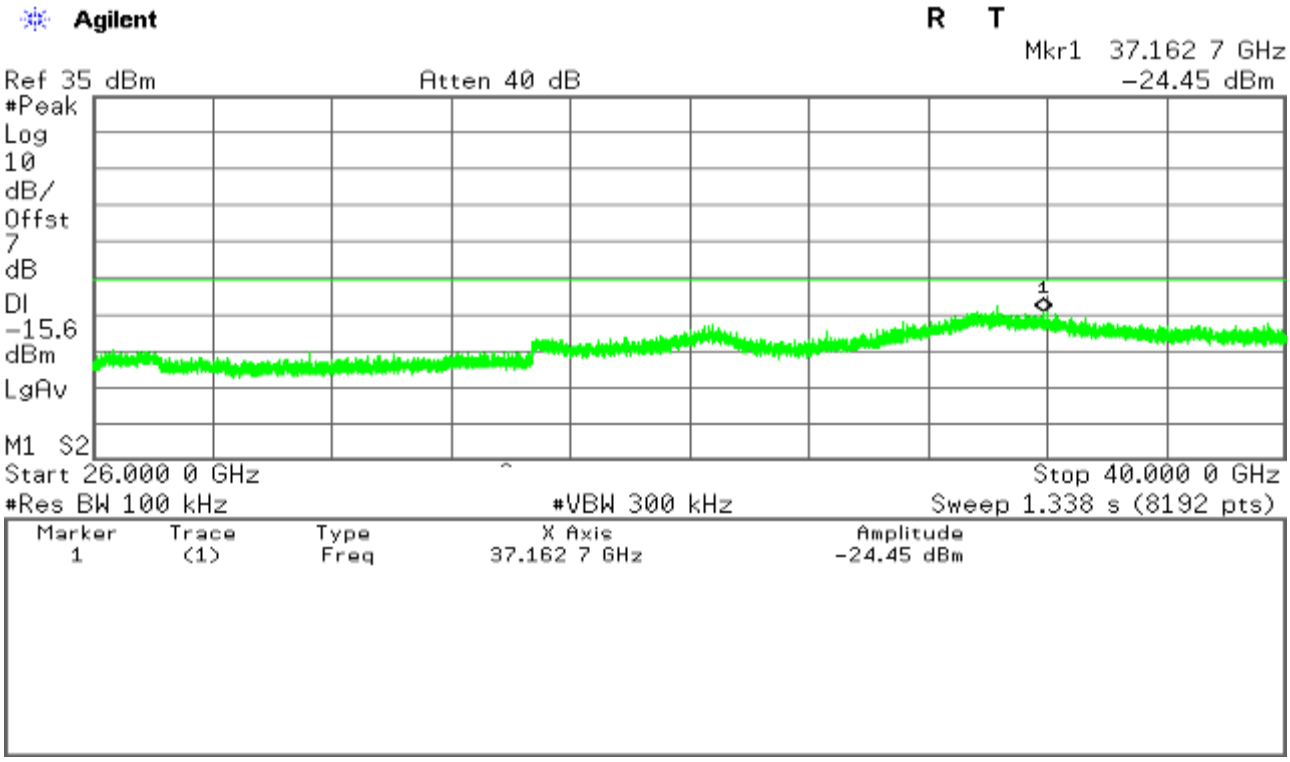

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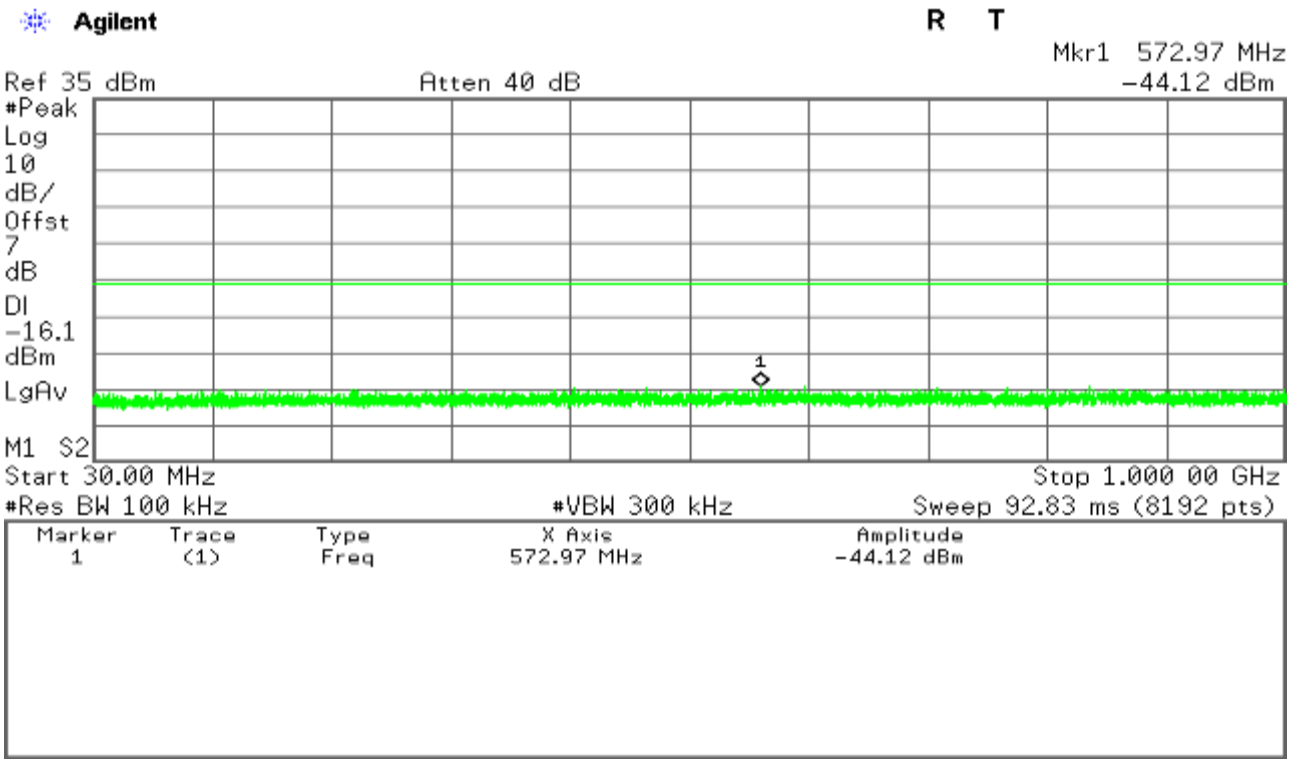
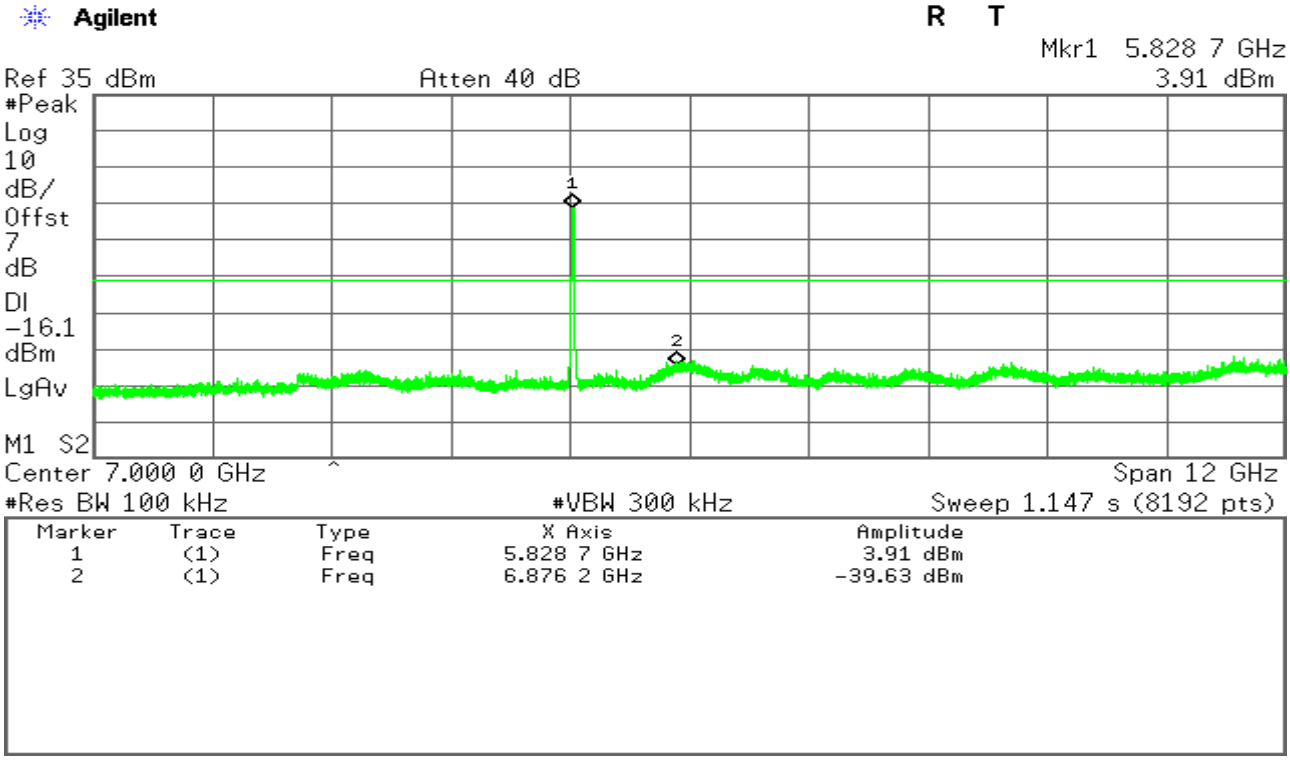
CH High





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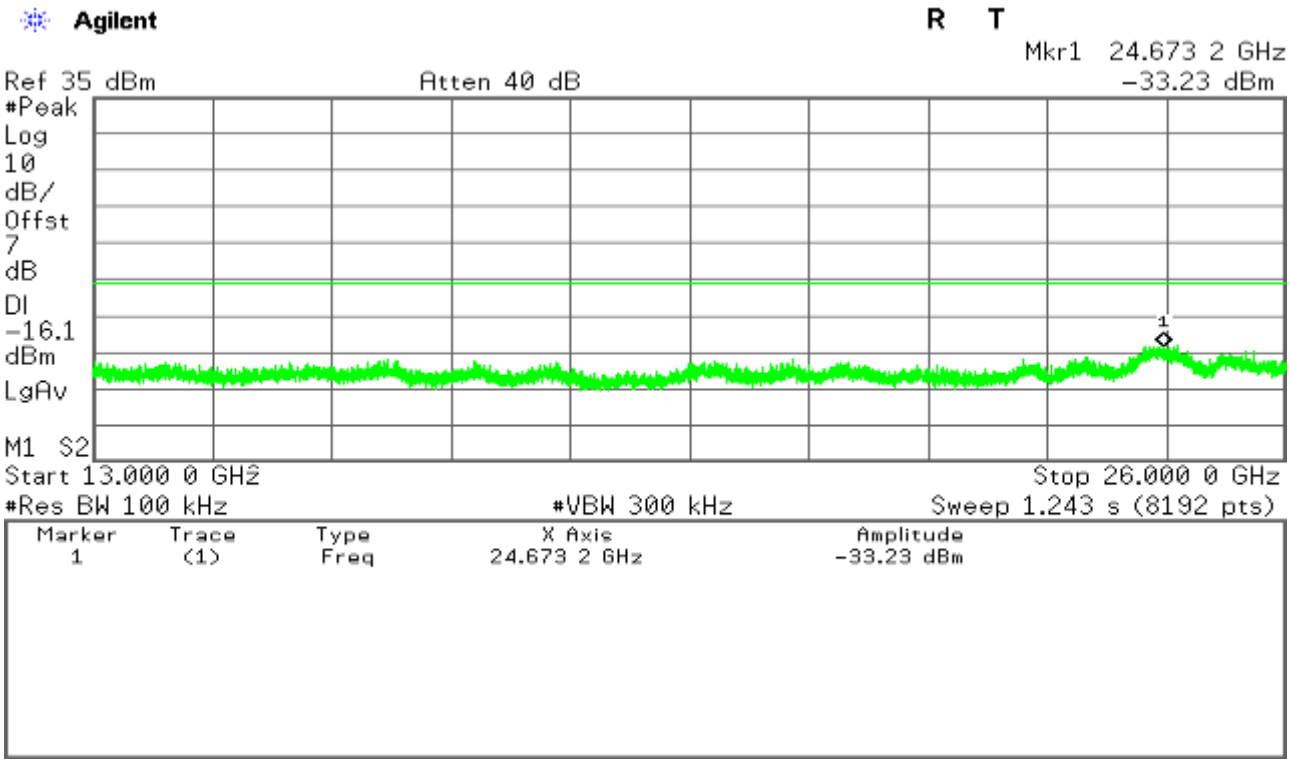

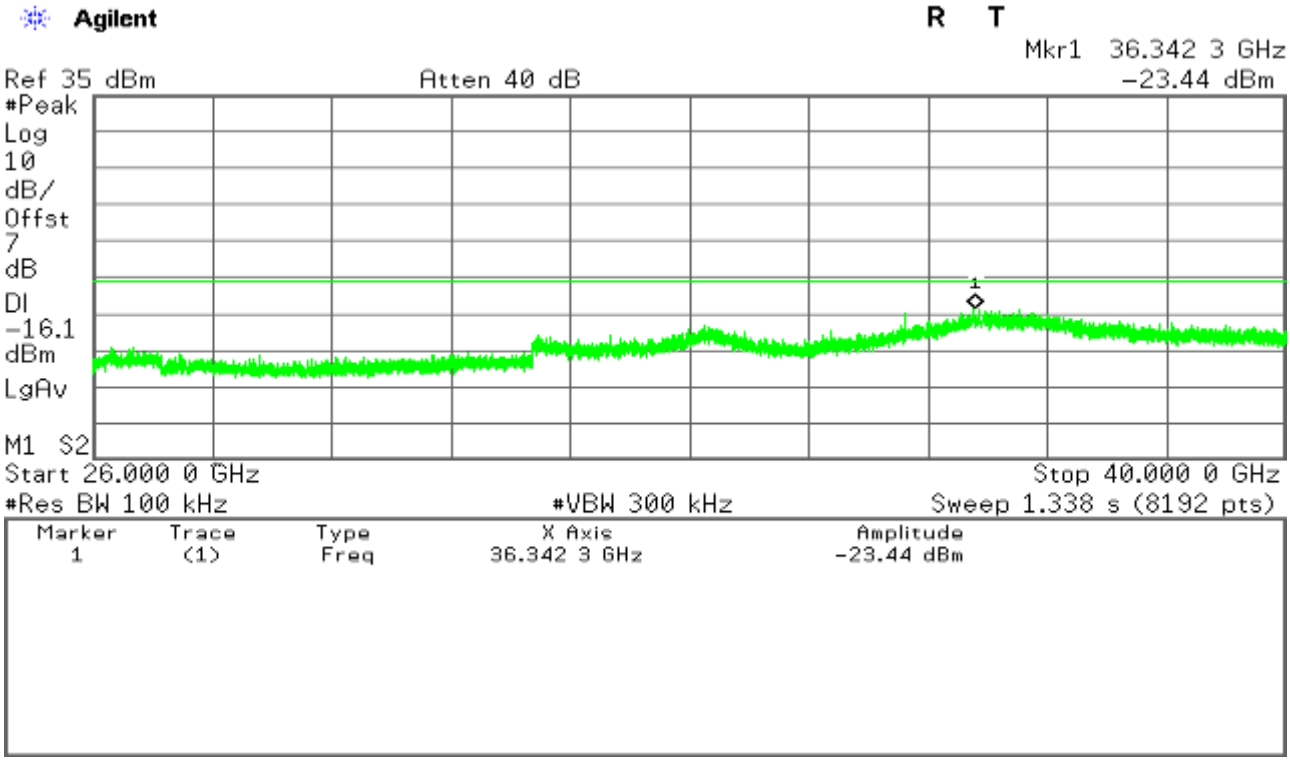

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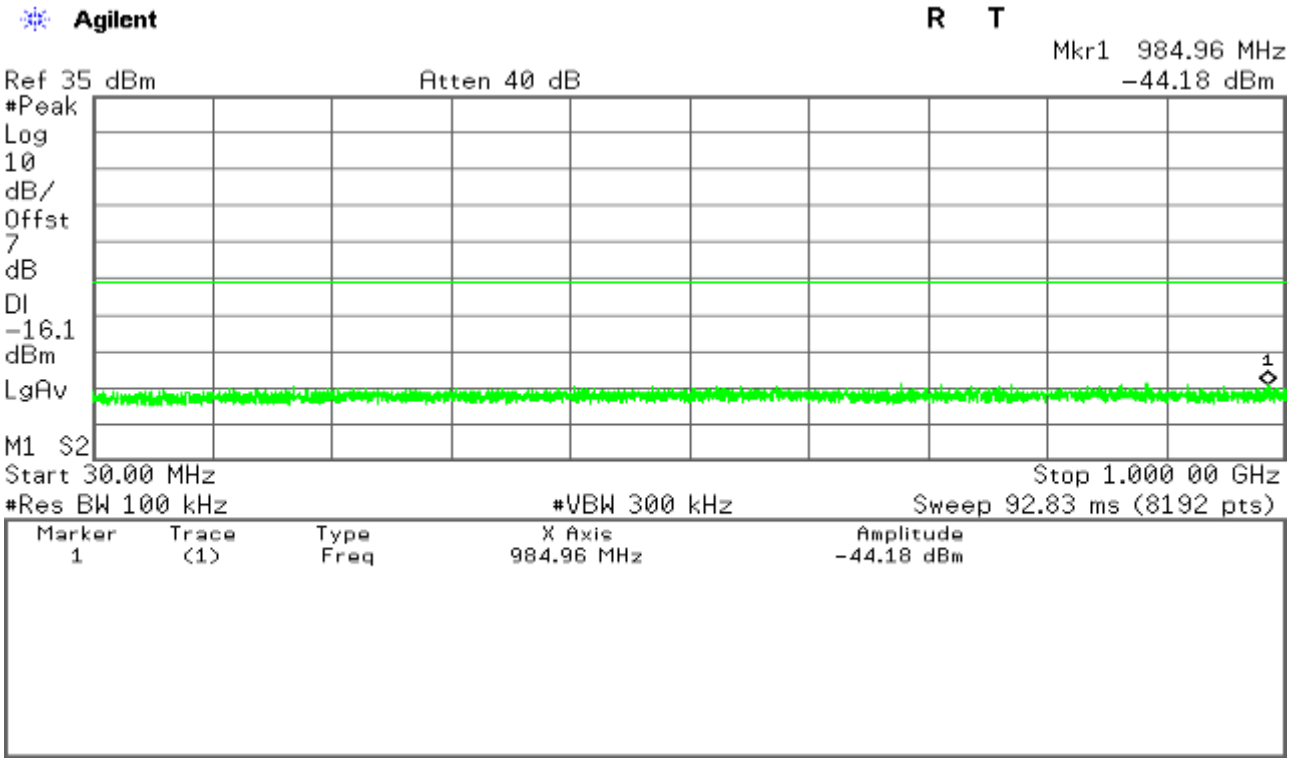
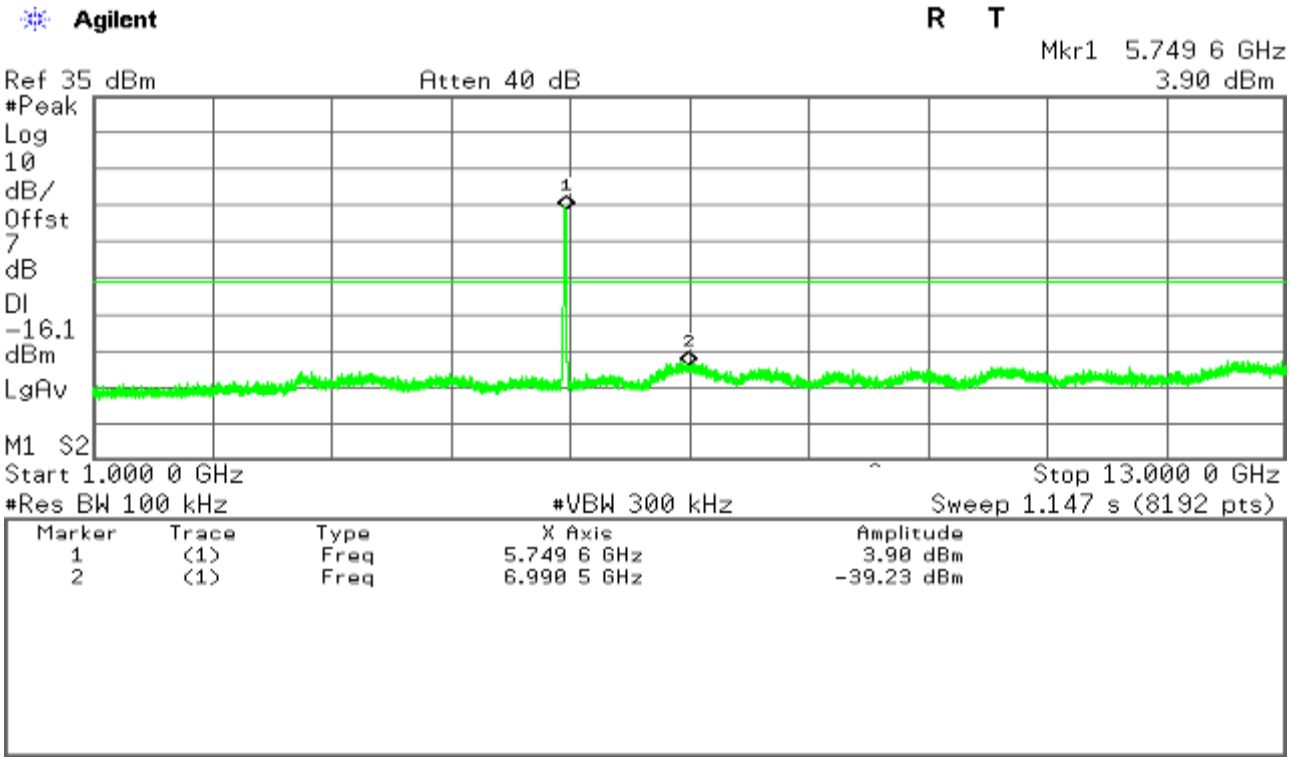
draft 802.11n Standard-20 MHz Channel mode / Chain 1

CH Low





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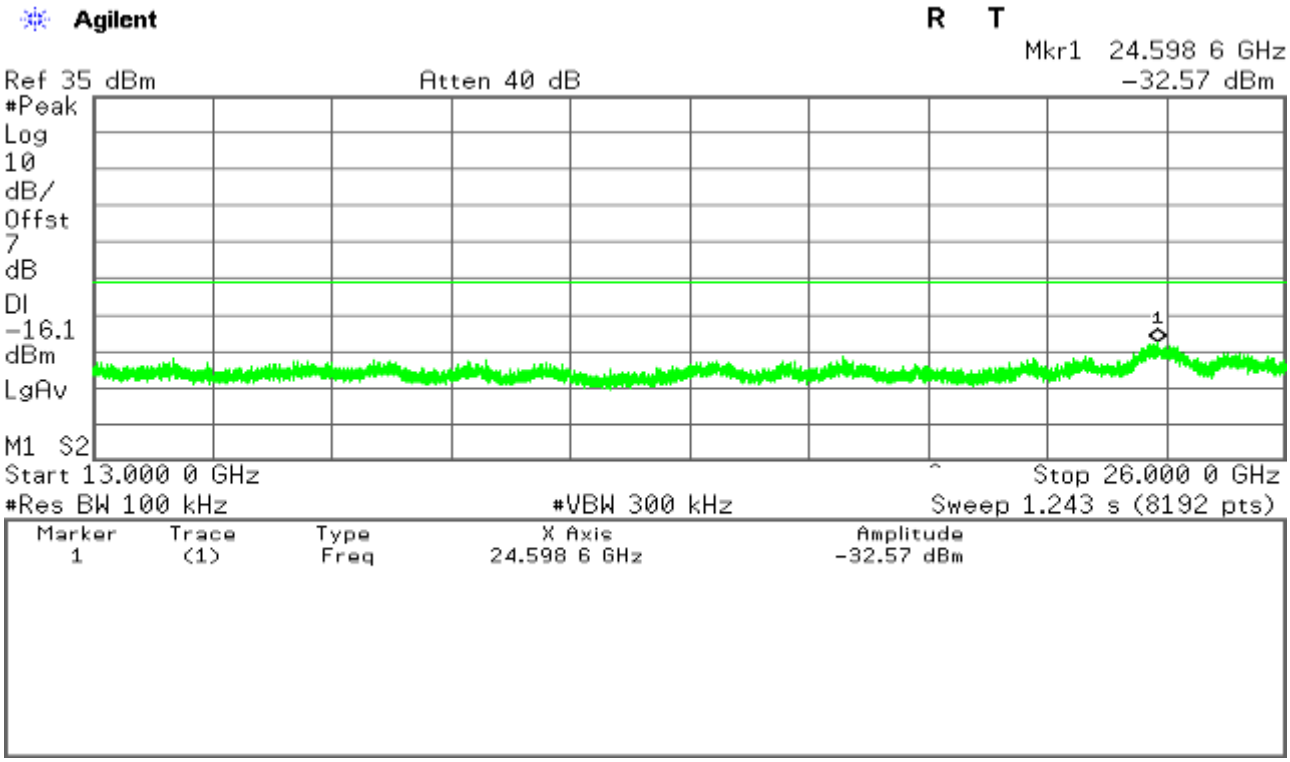

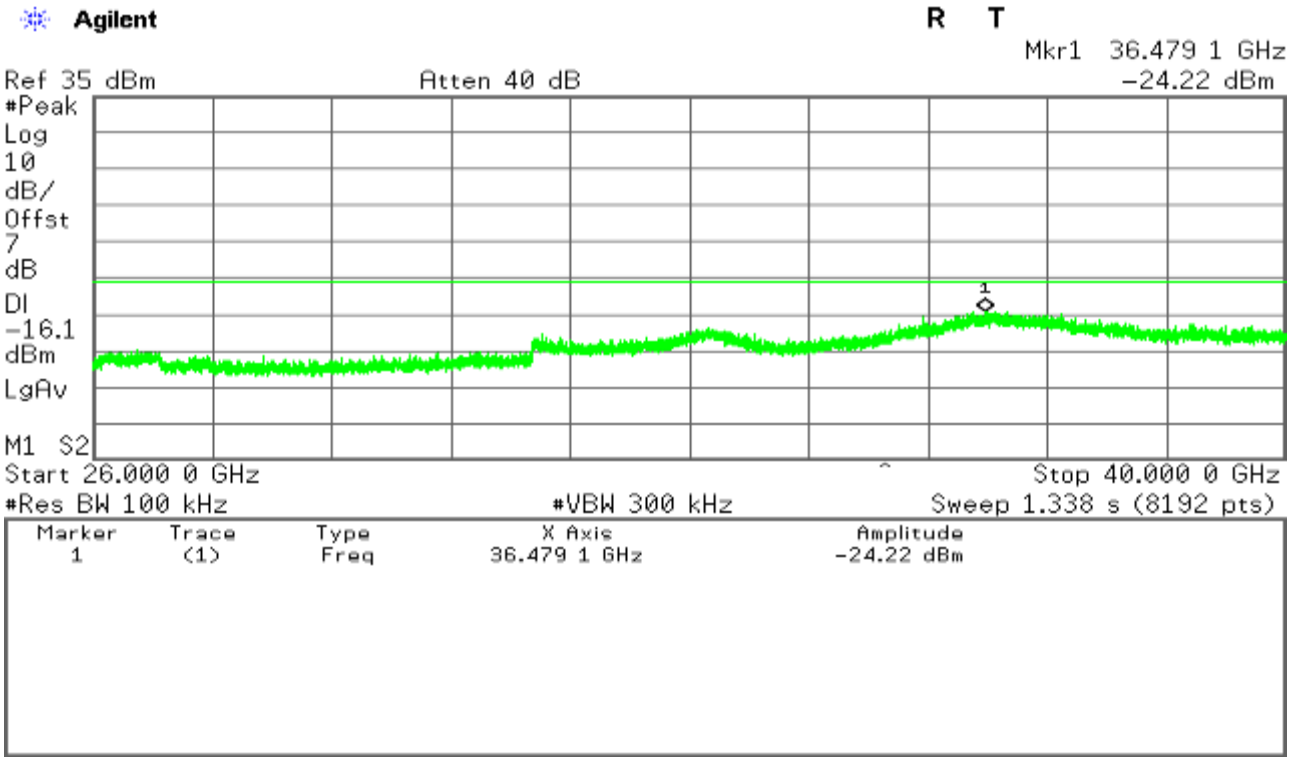

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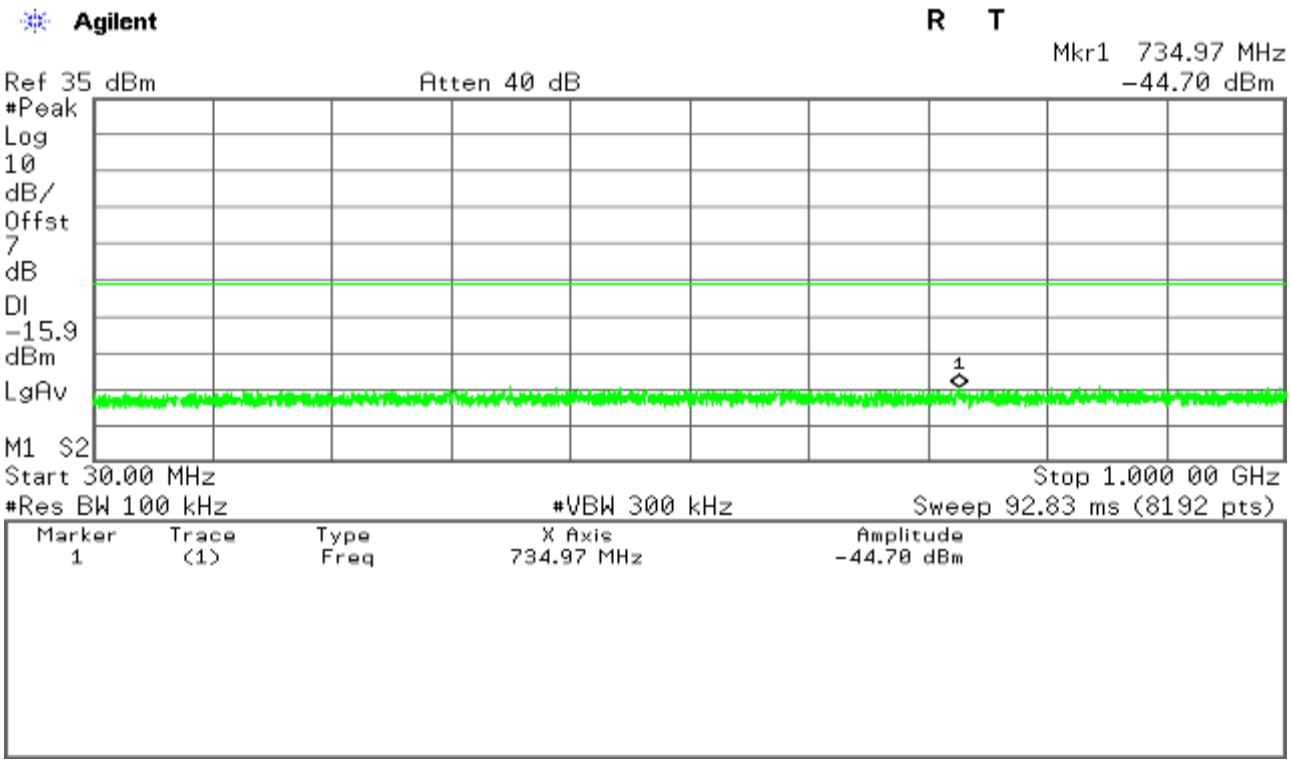
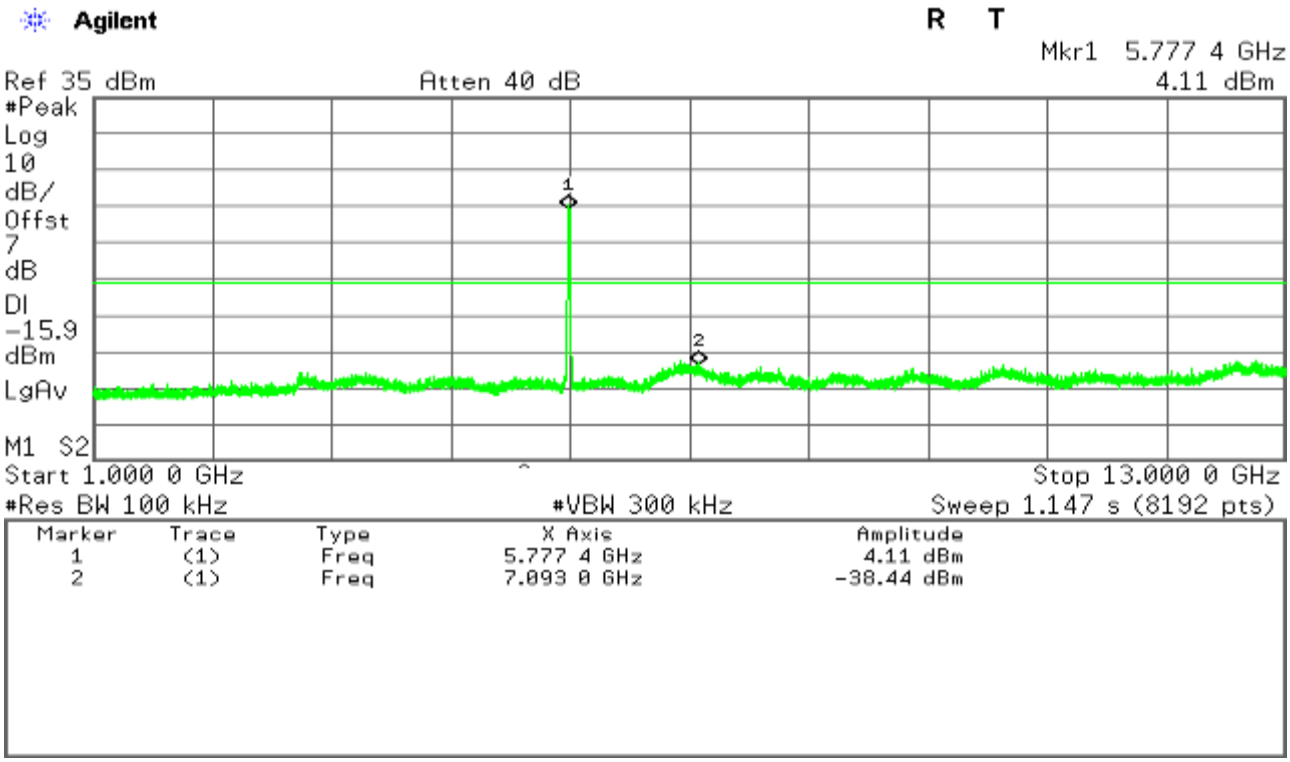
CH Mid





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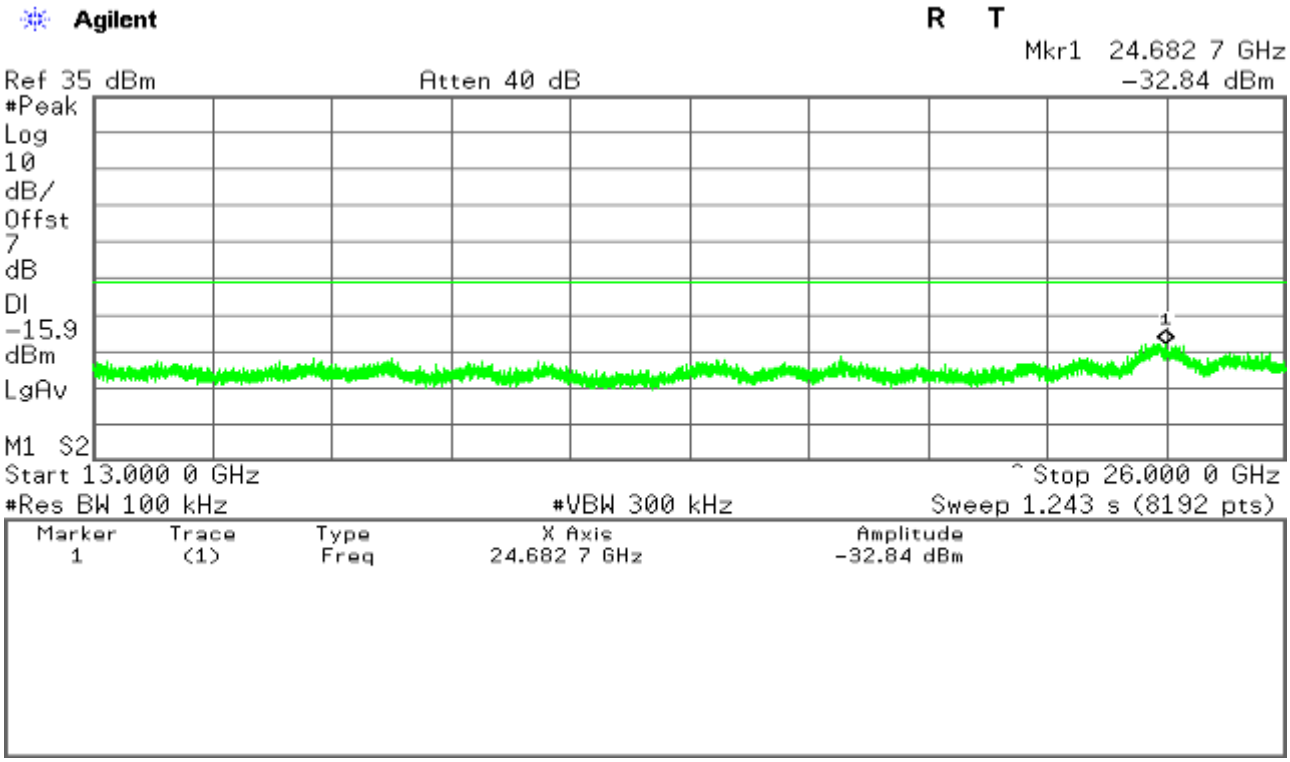

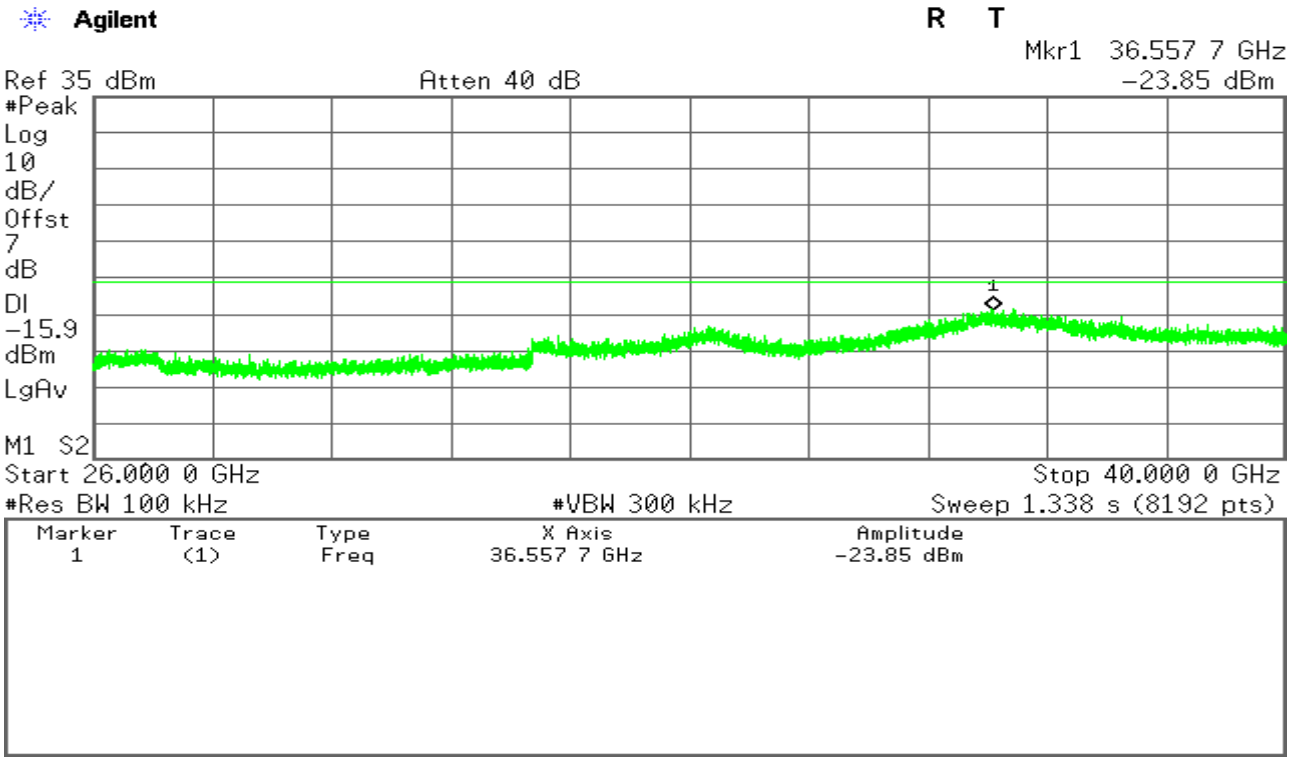

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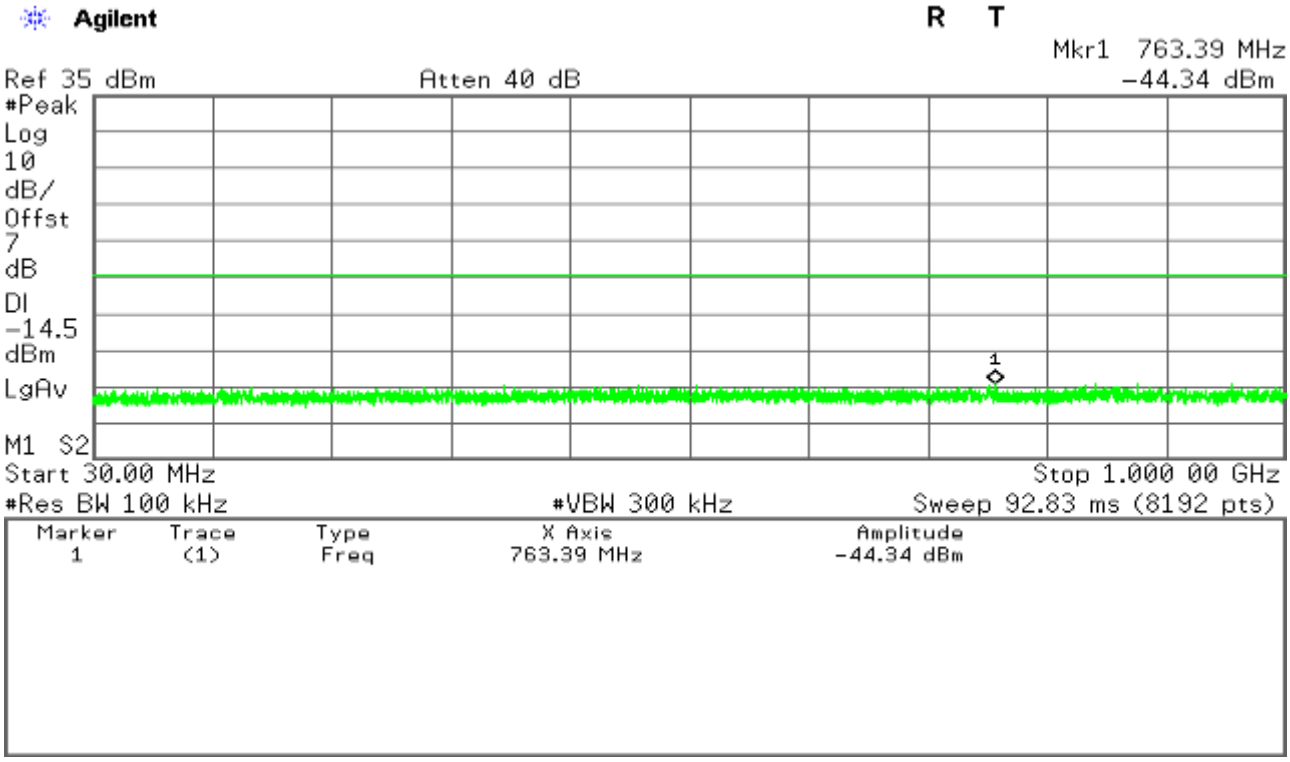
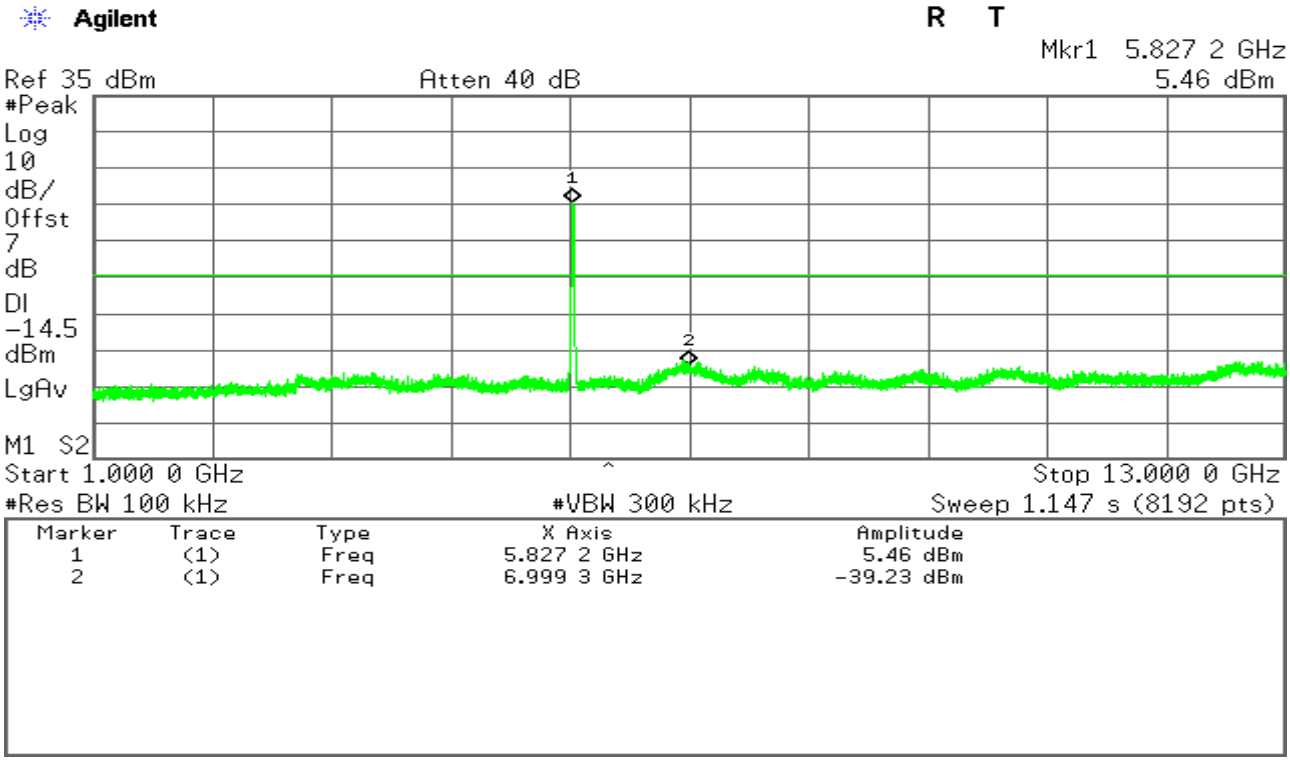
CH High





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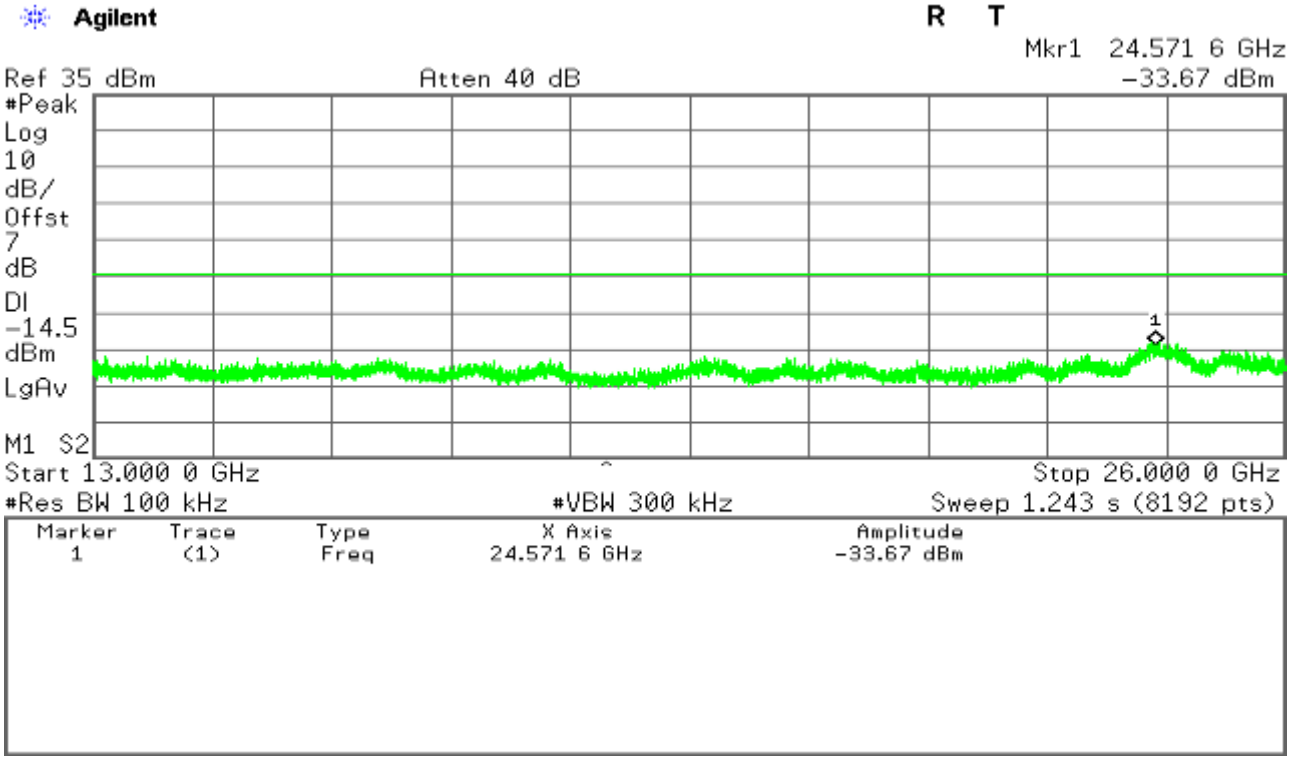

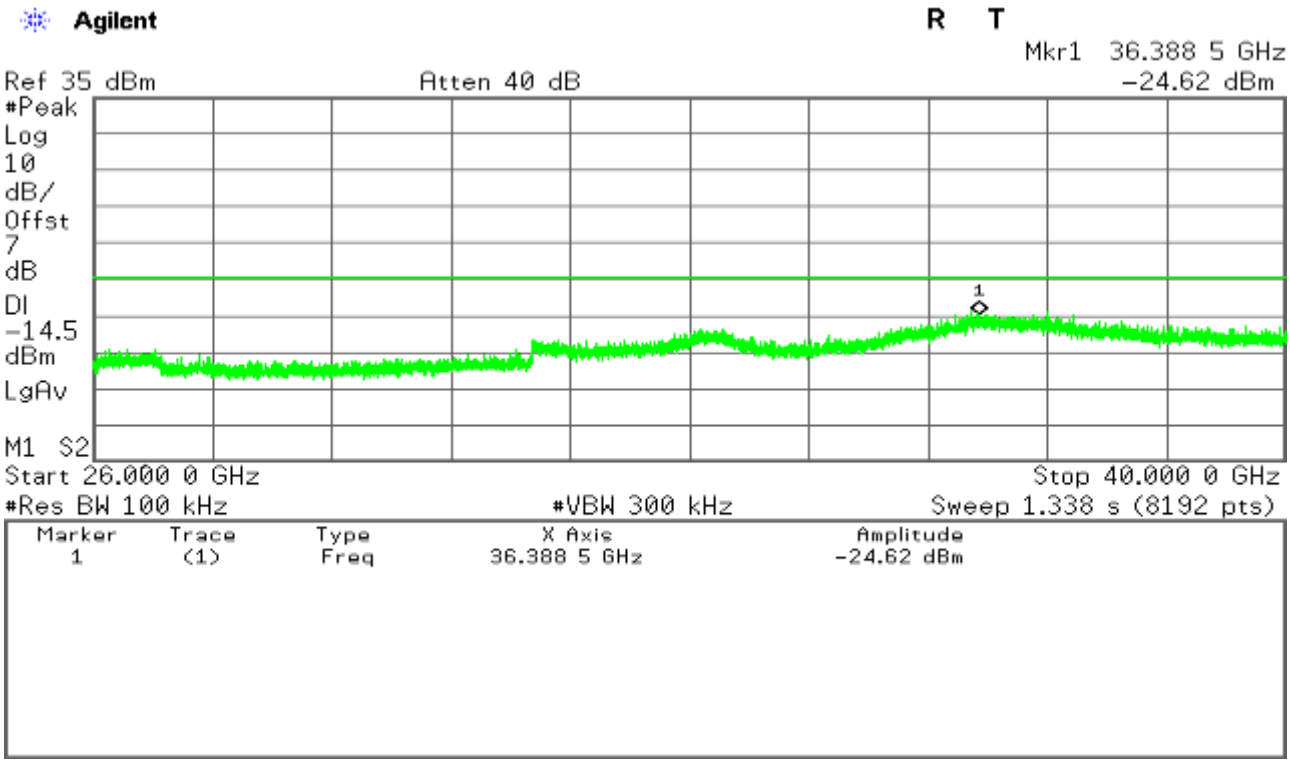

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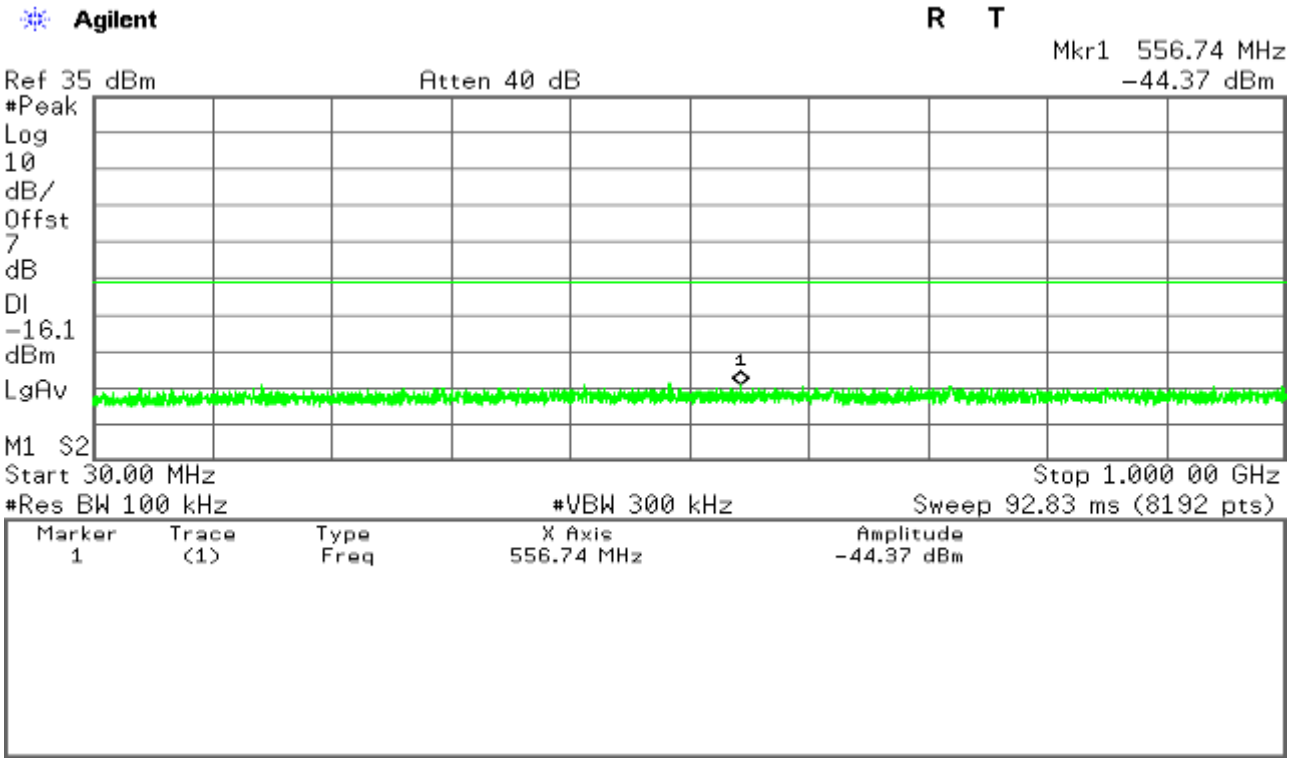
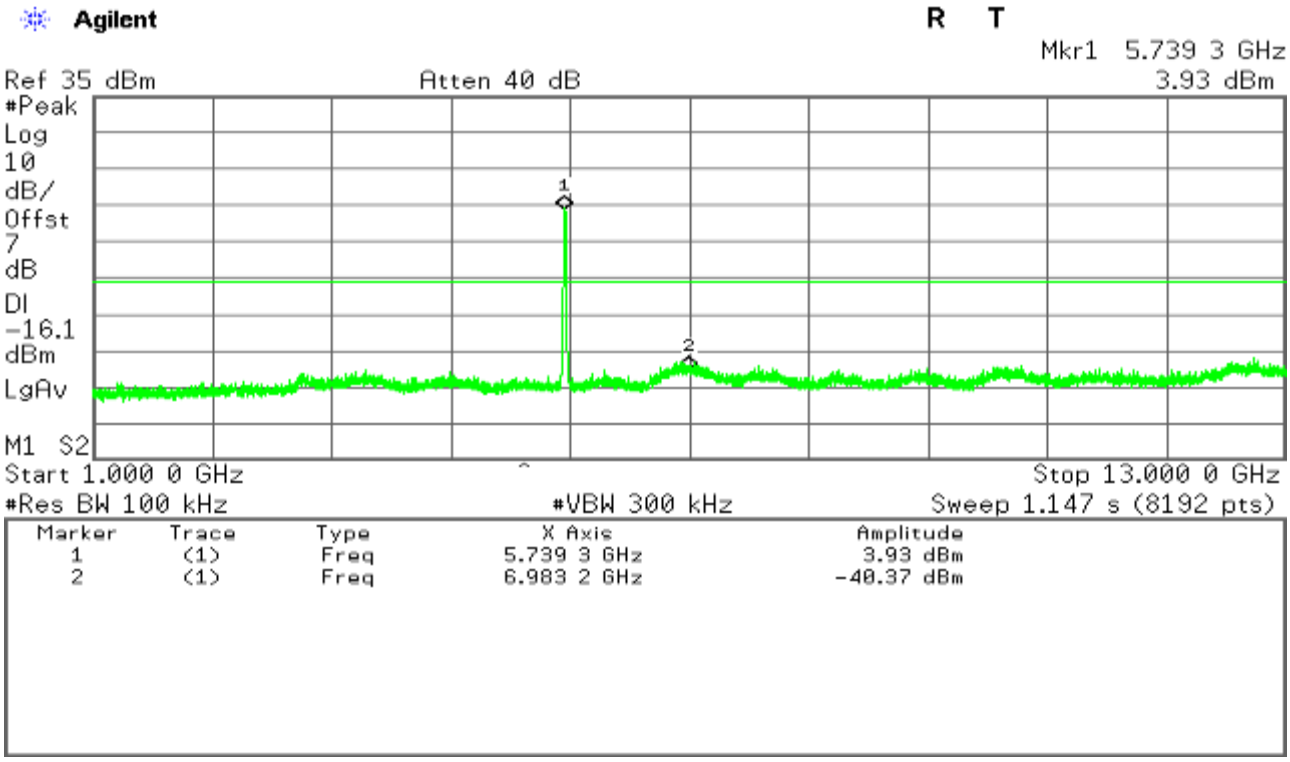
draft 802.11n Standard-20 MHz Channel mode / Chain 2

CH Low





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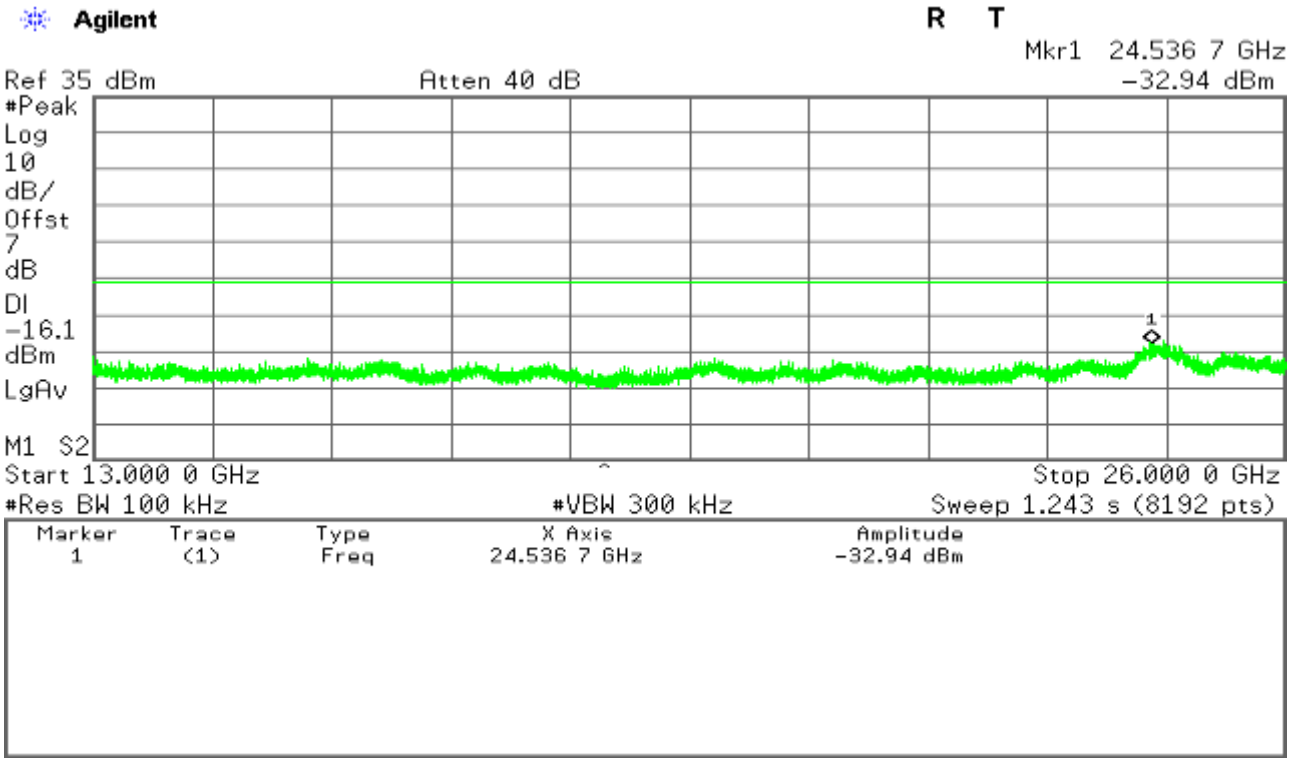

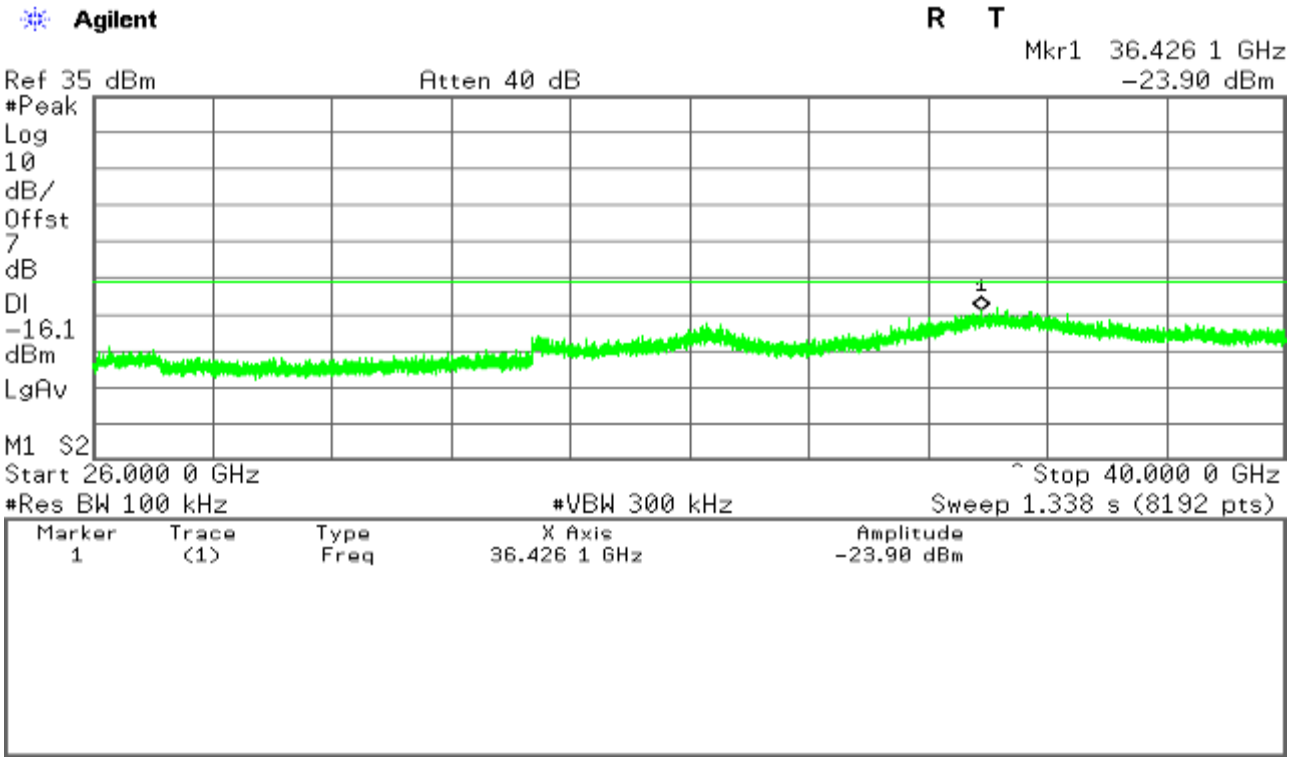

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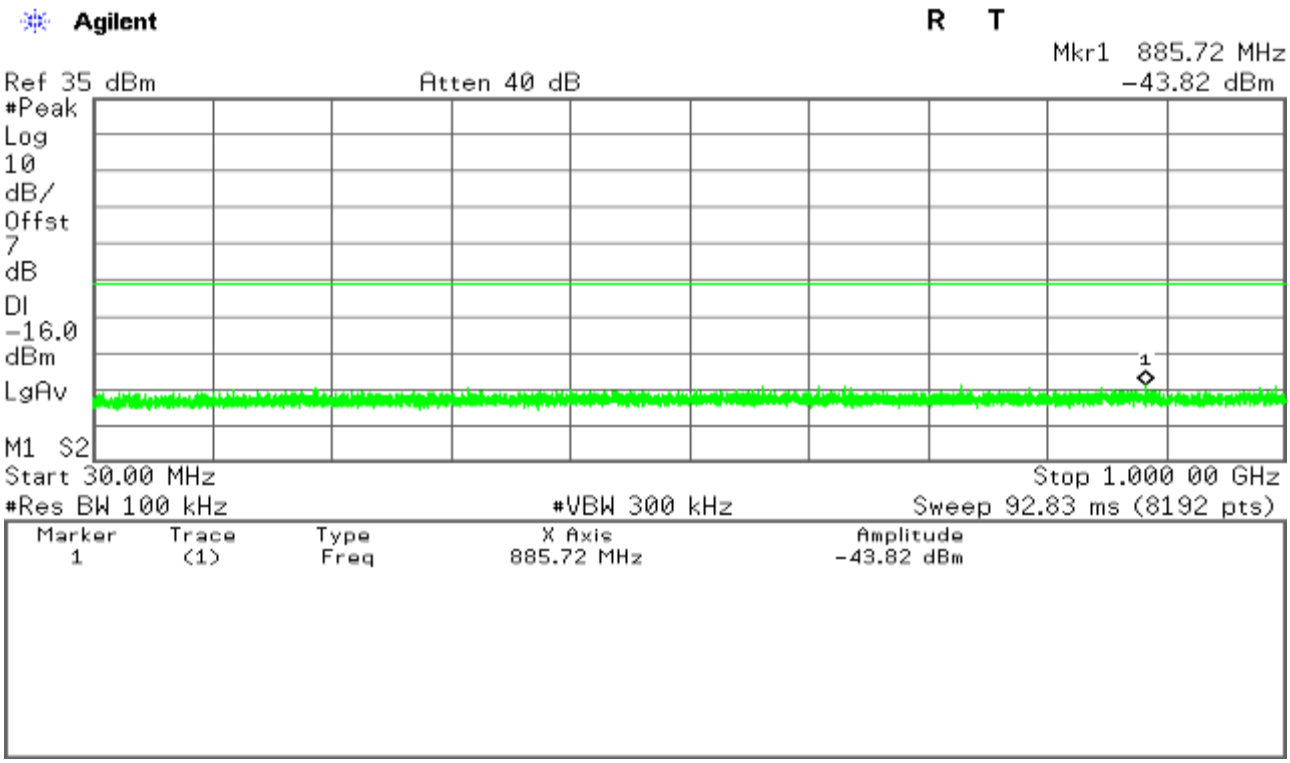
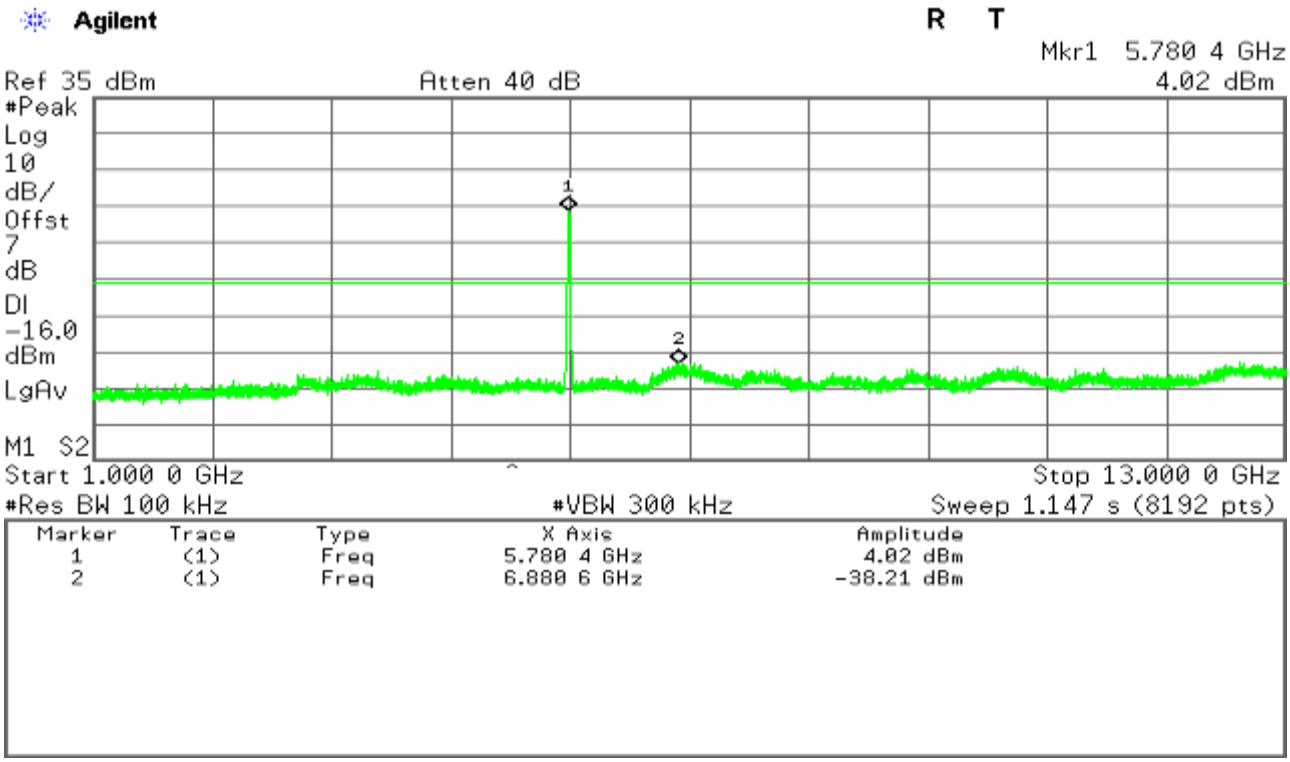
CH Mid





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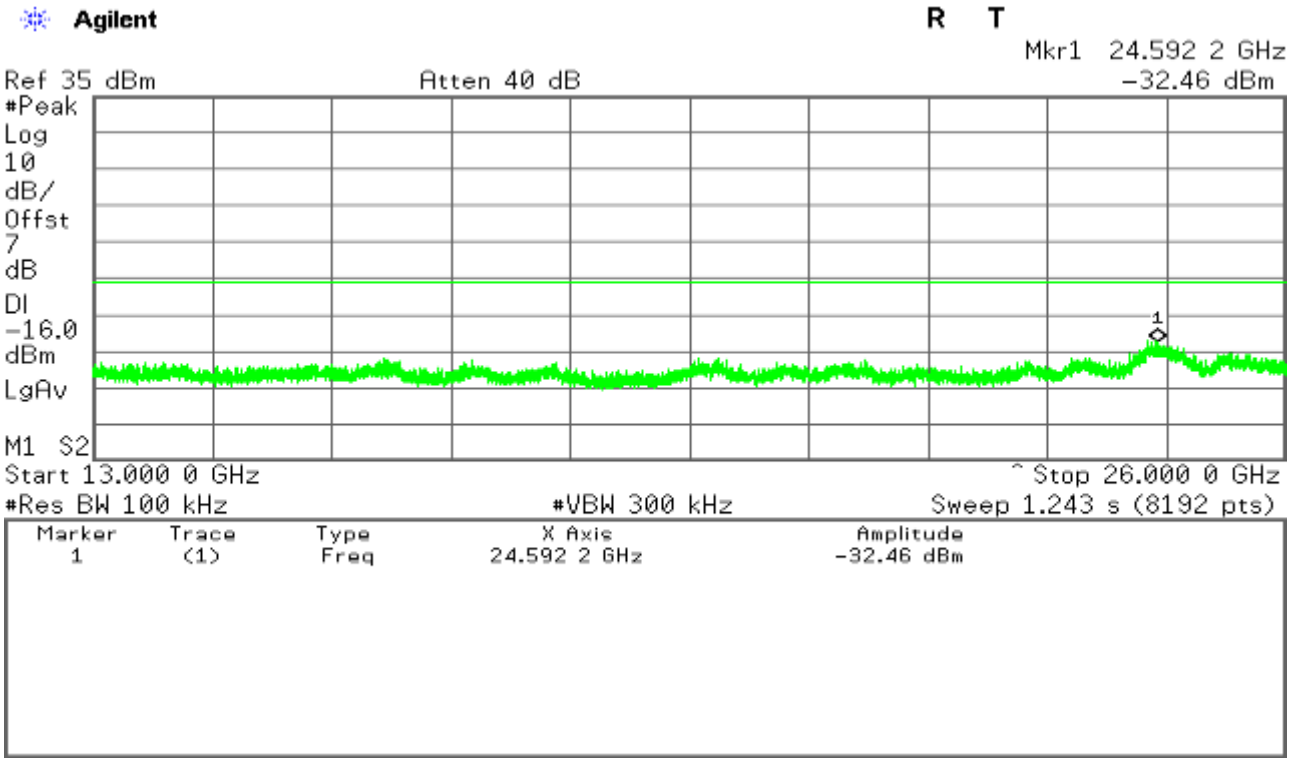

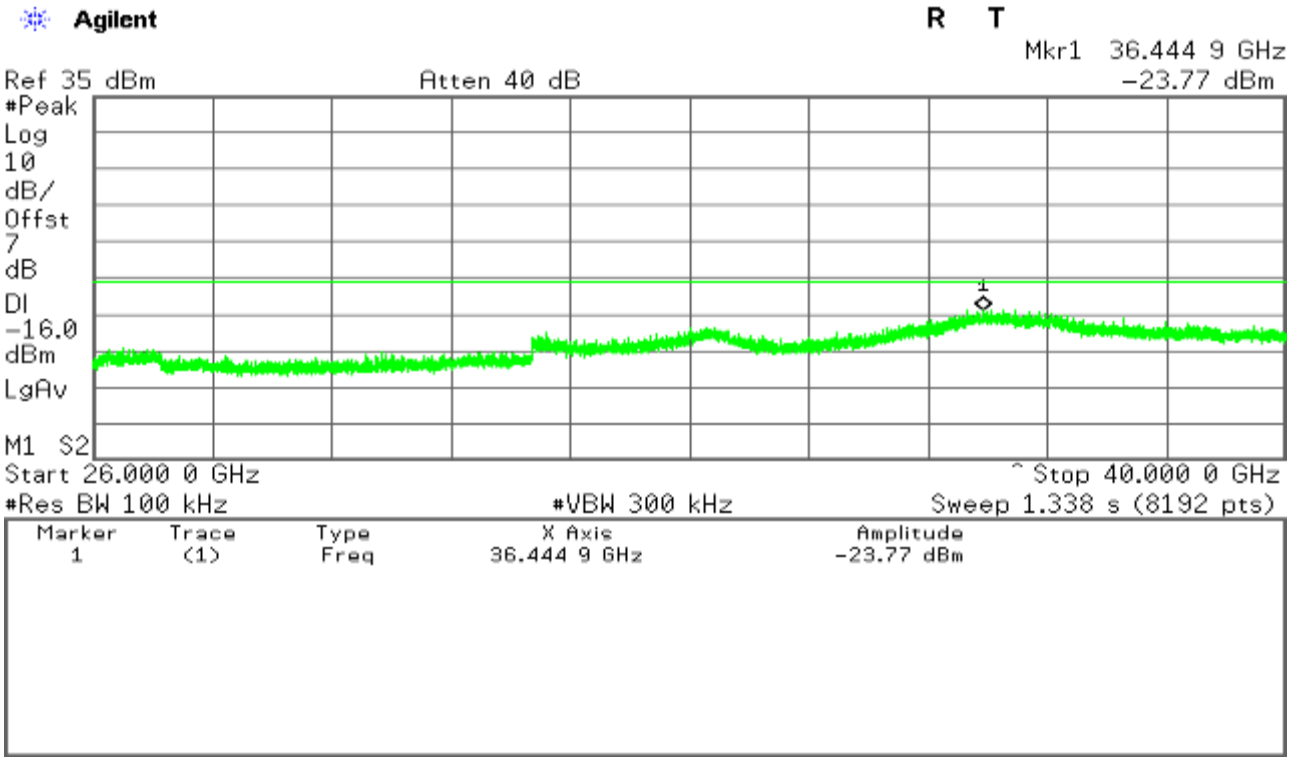

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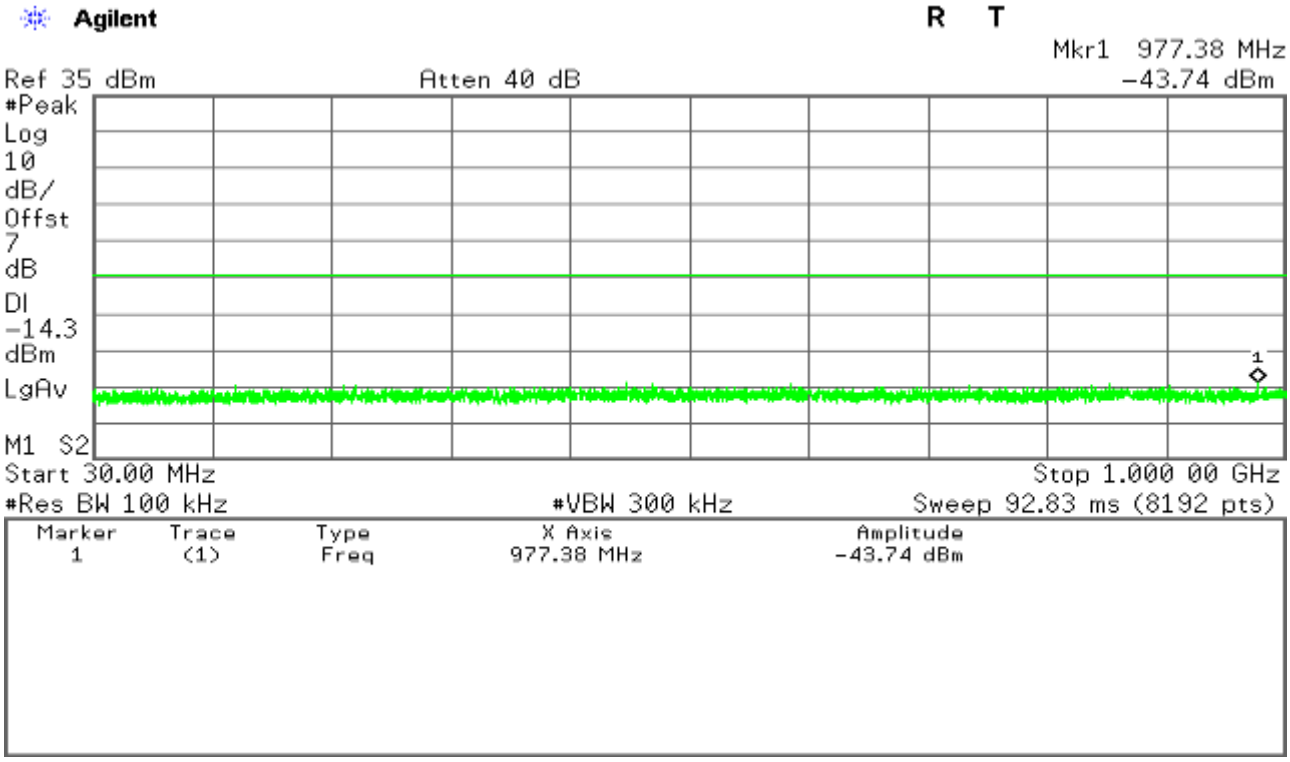
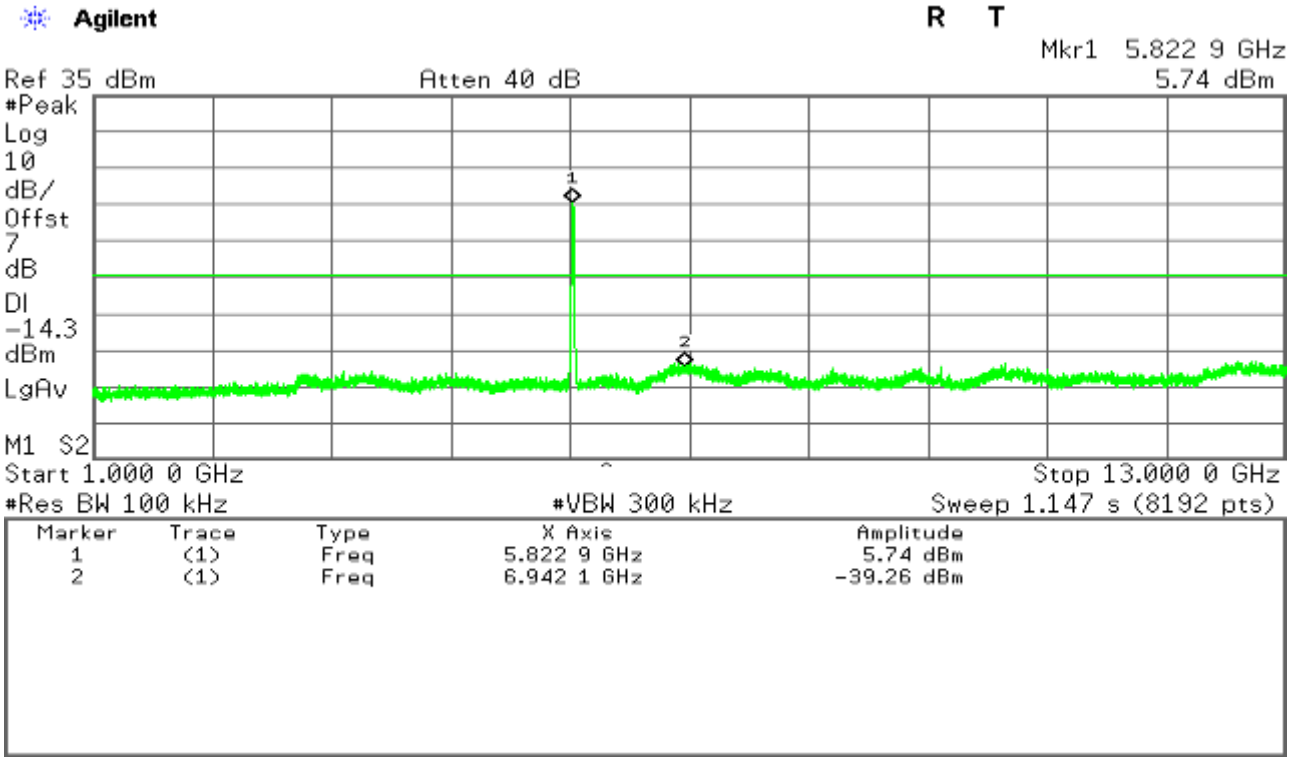
CH High





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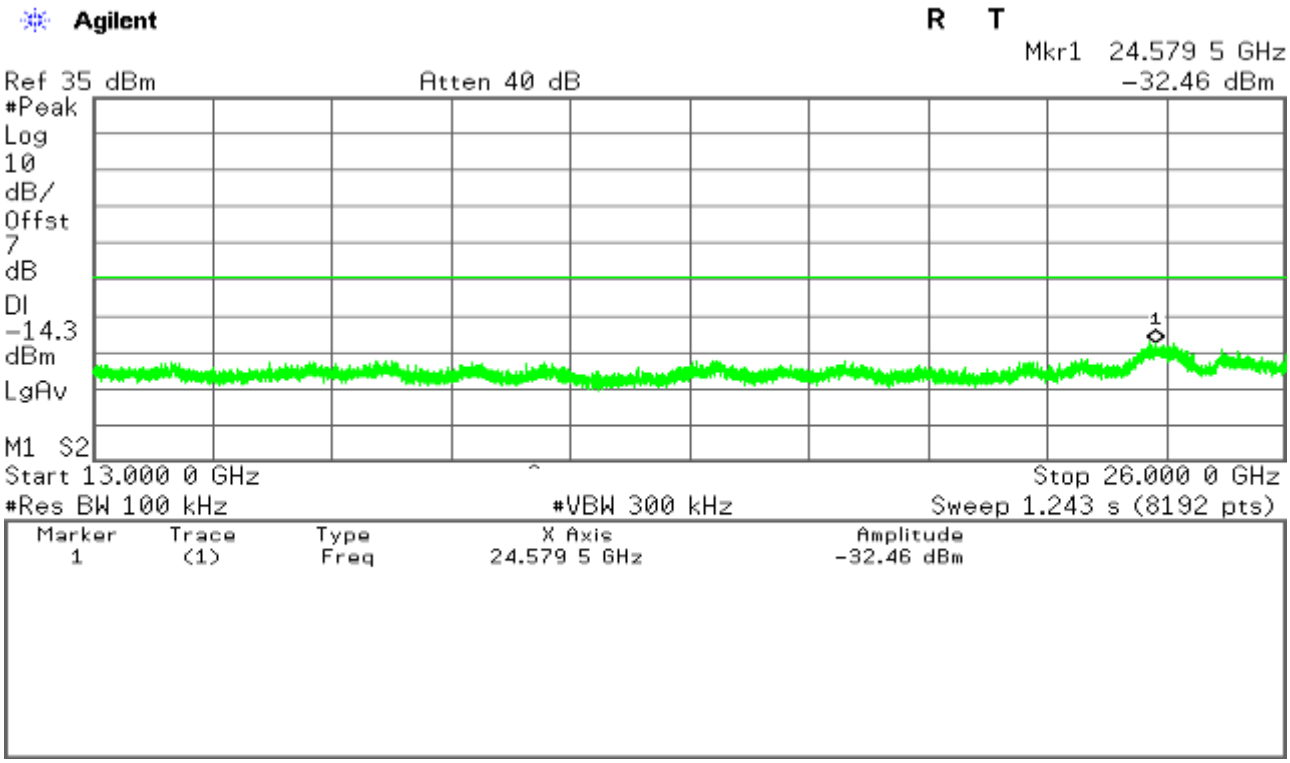

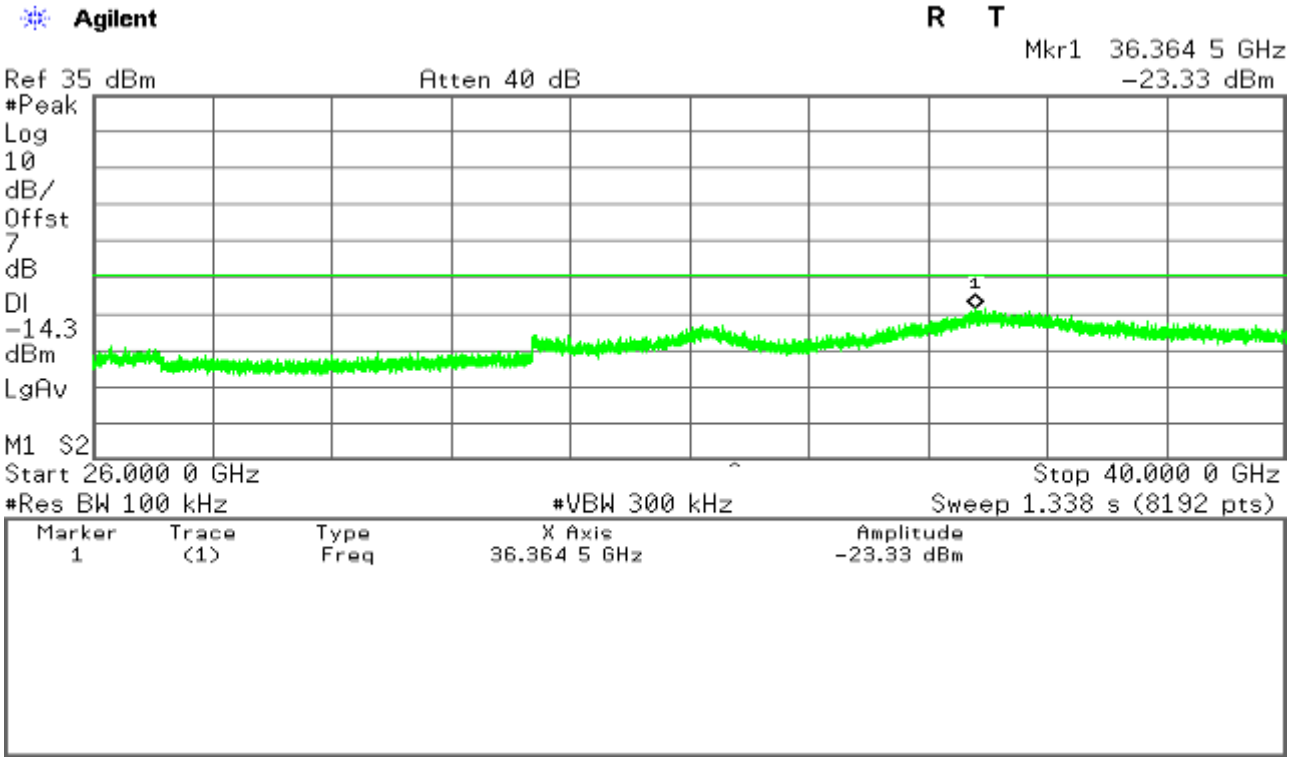

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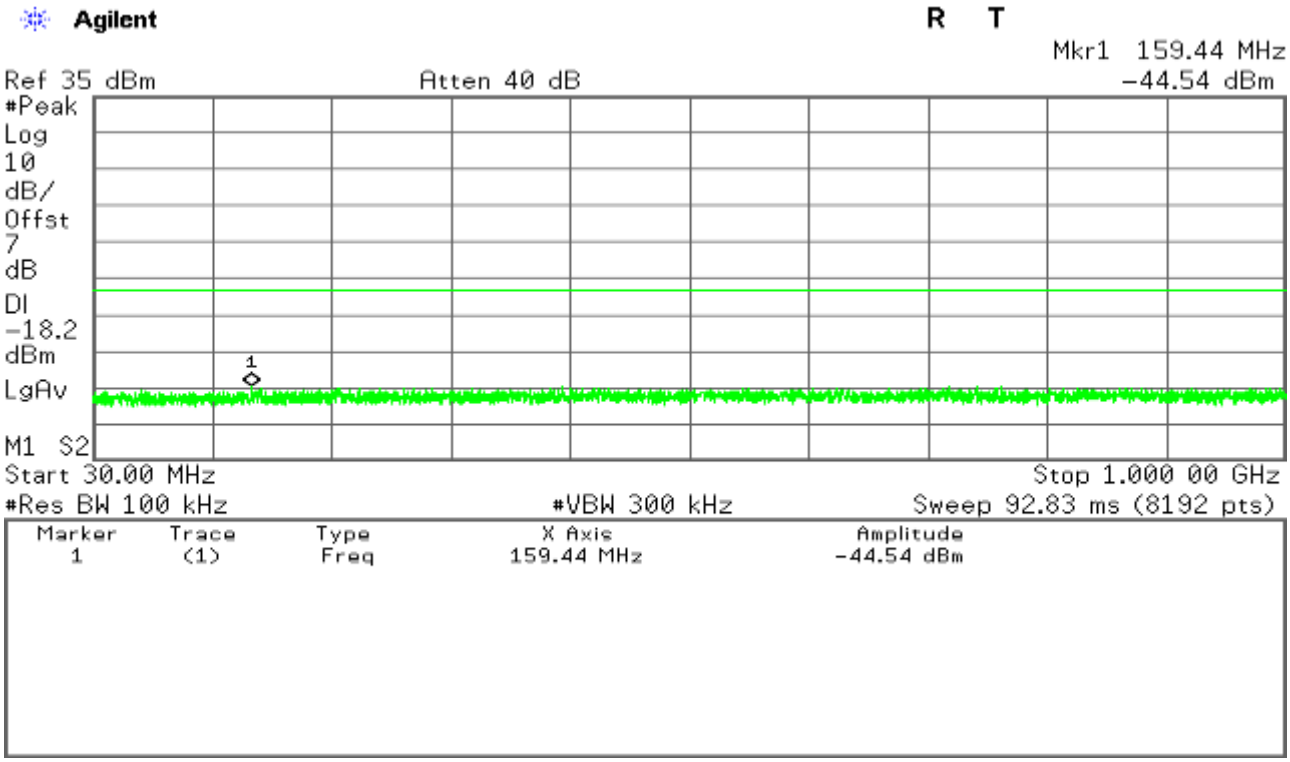
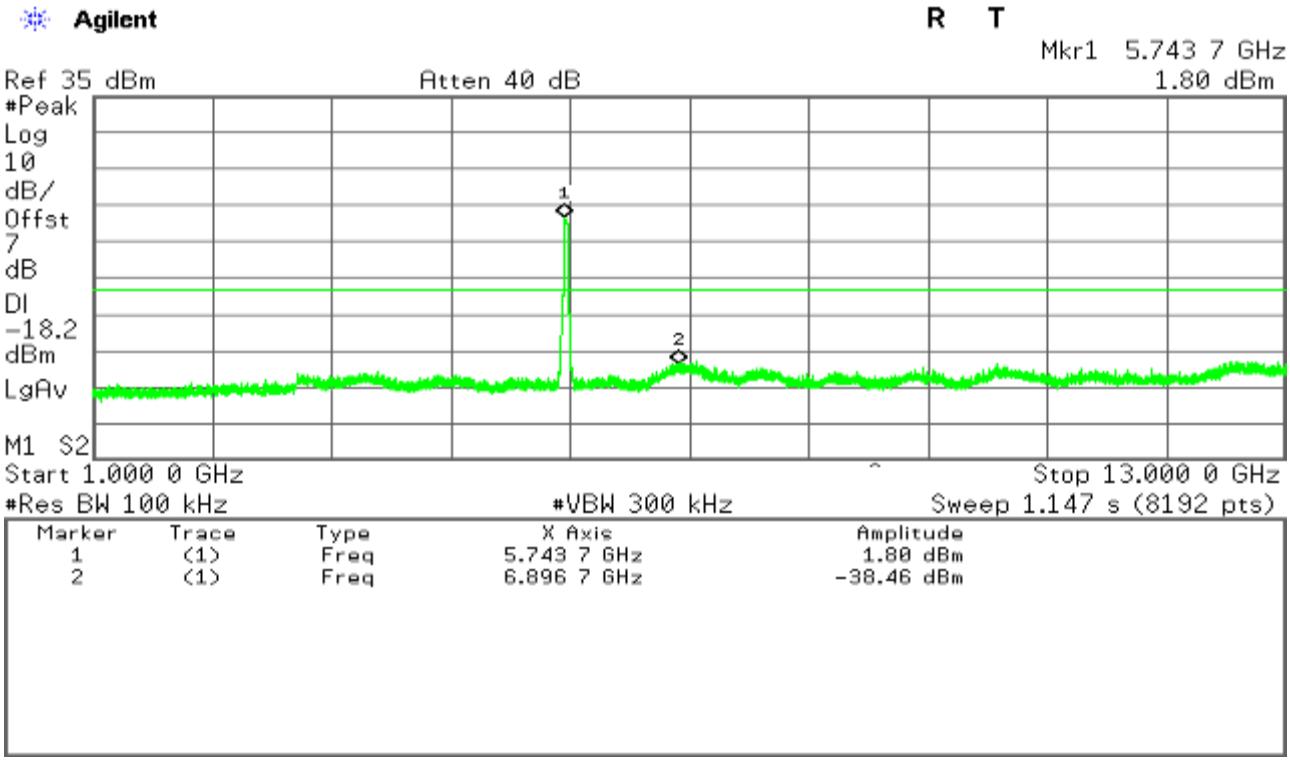
draft 802.11n Wide-40 MHz Channel mode / Chain 0

CH Low





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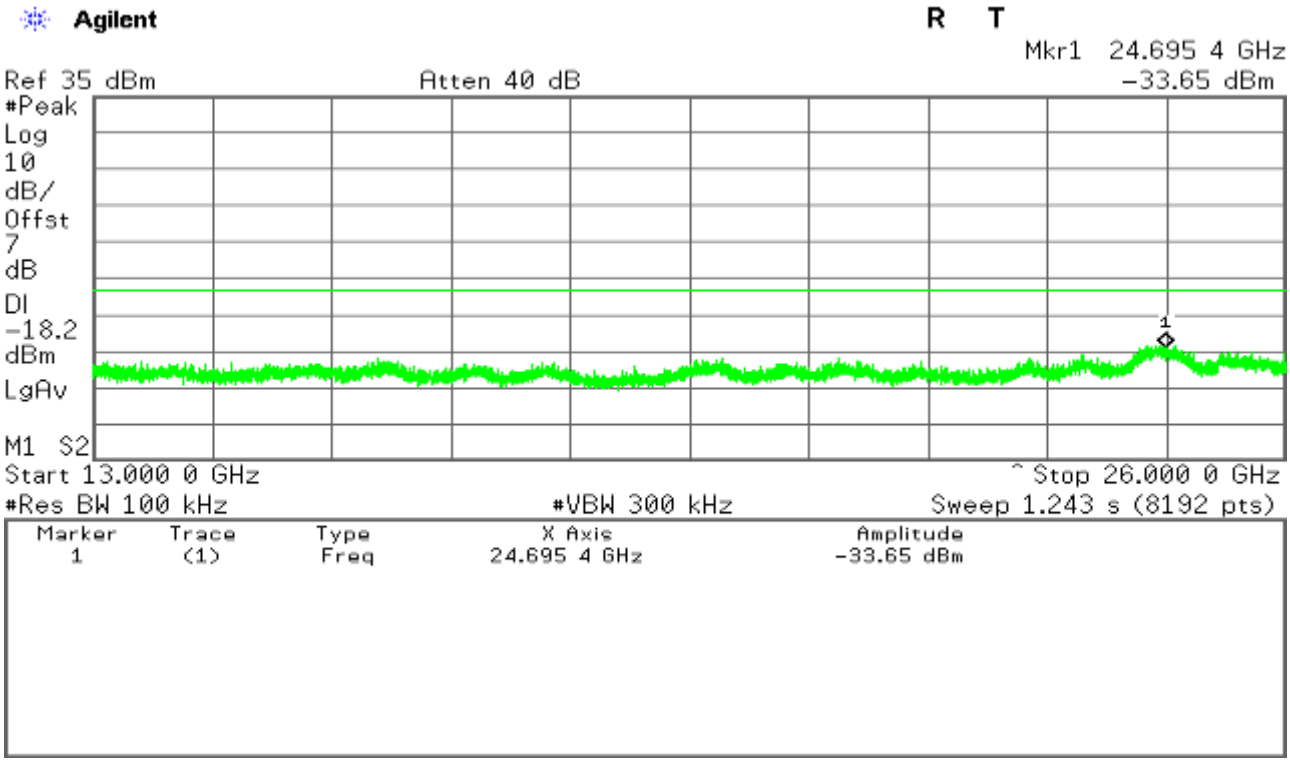

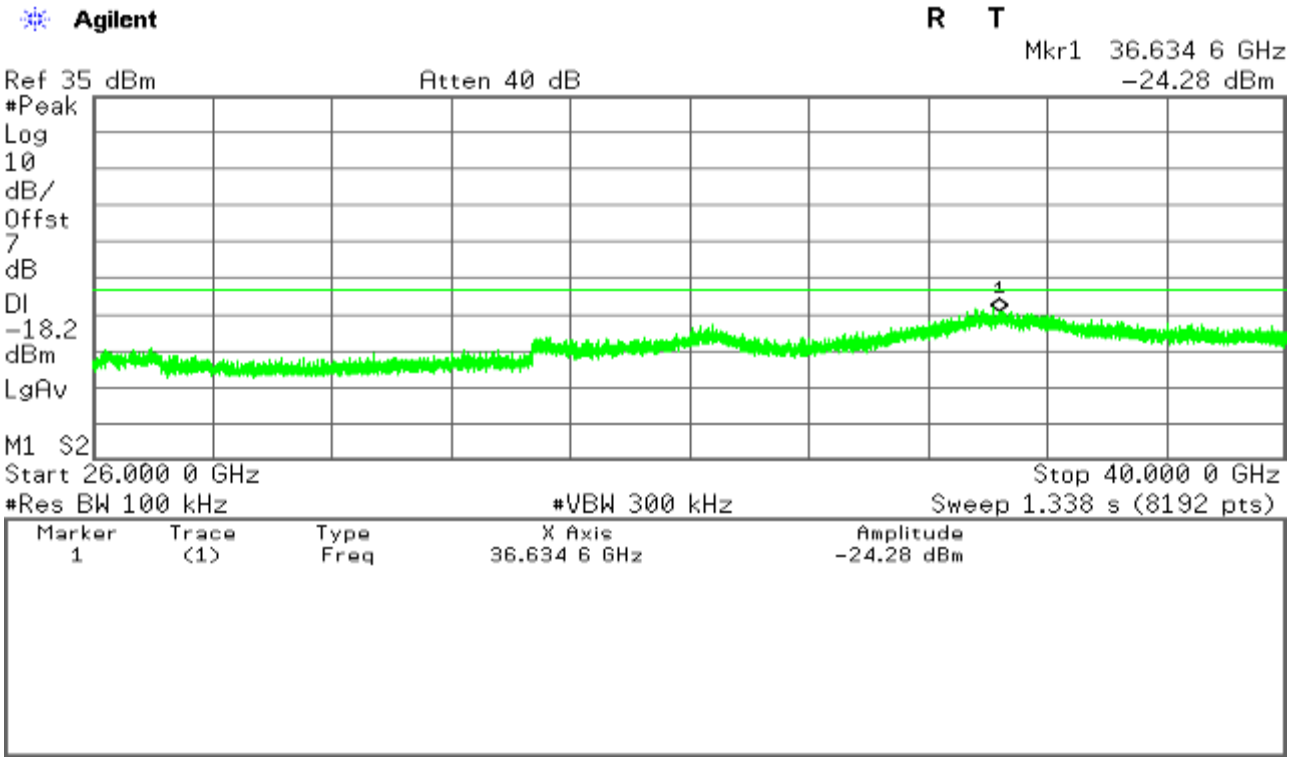

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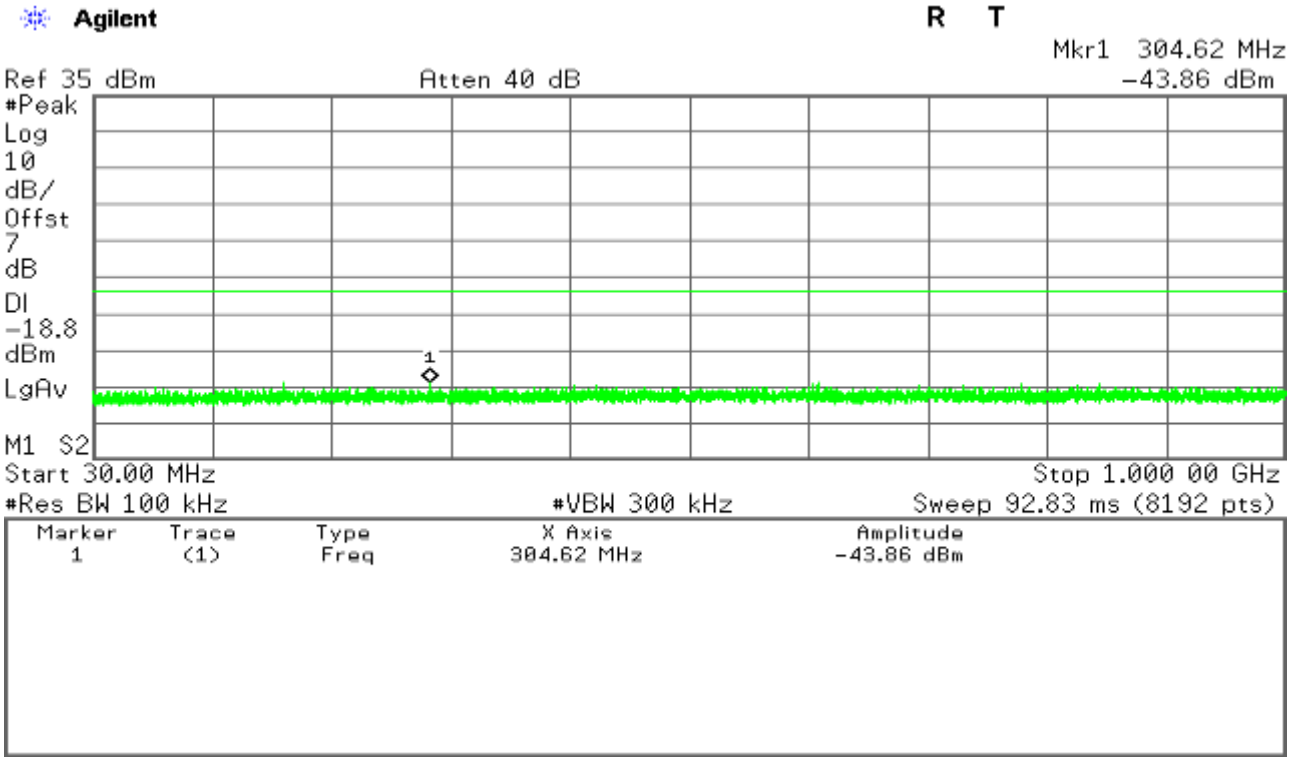
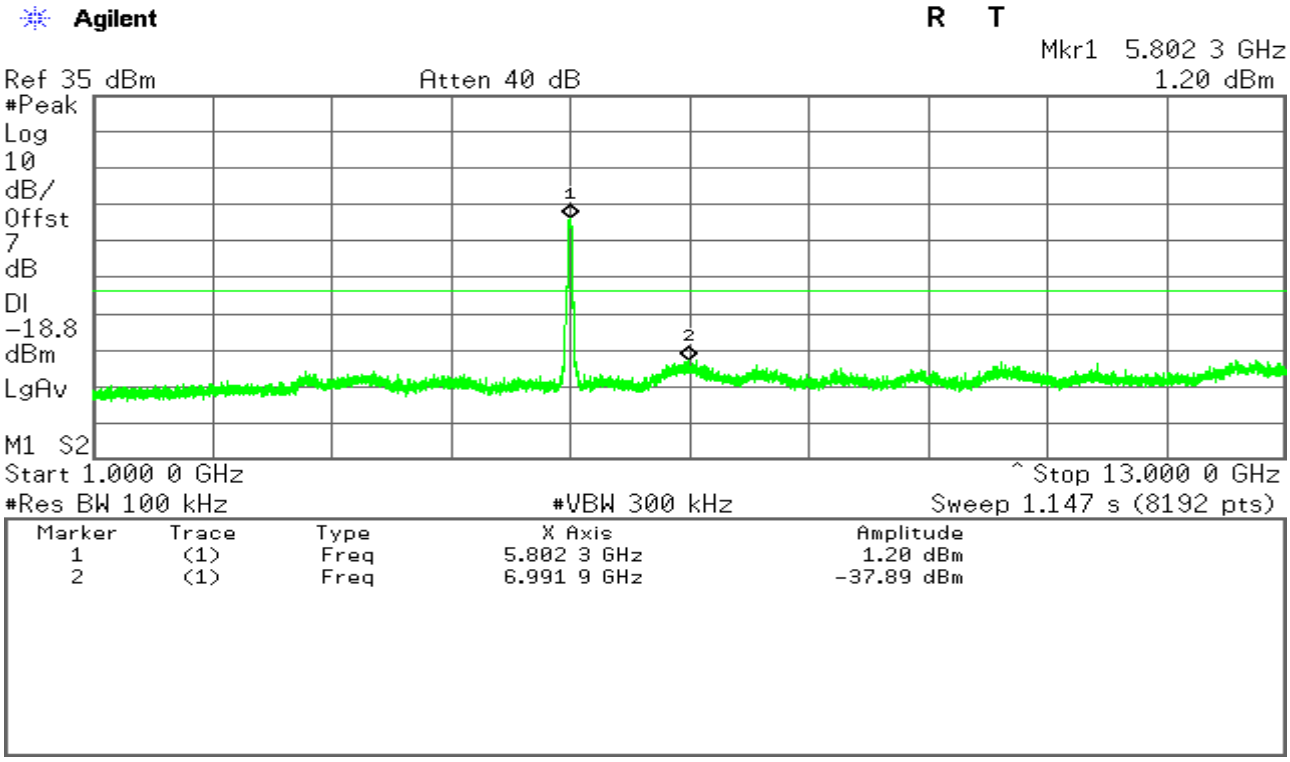
CH High





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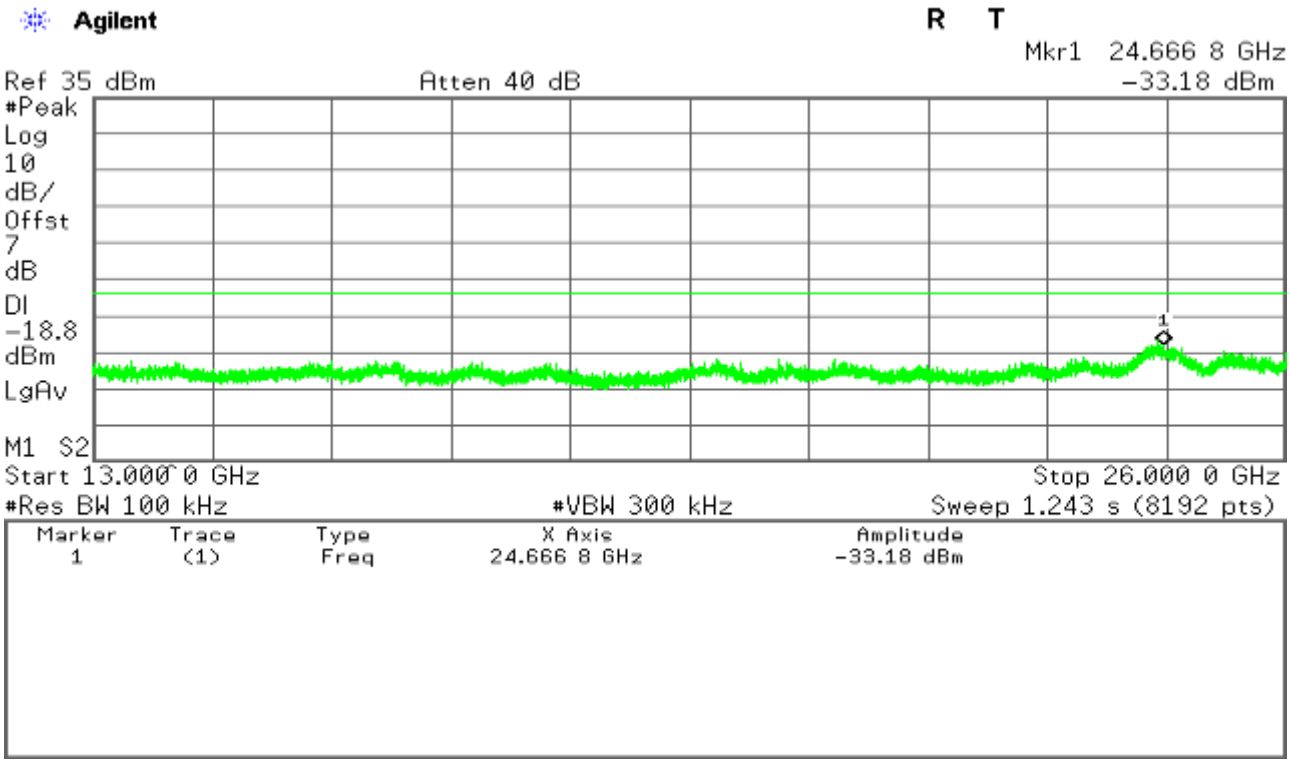

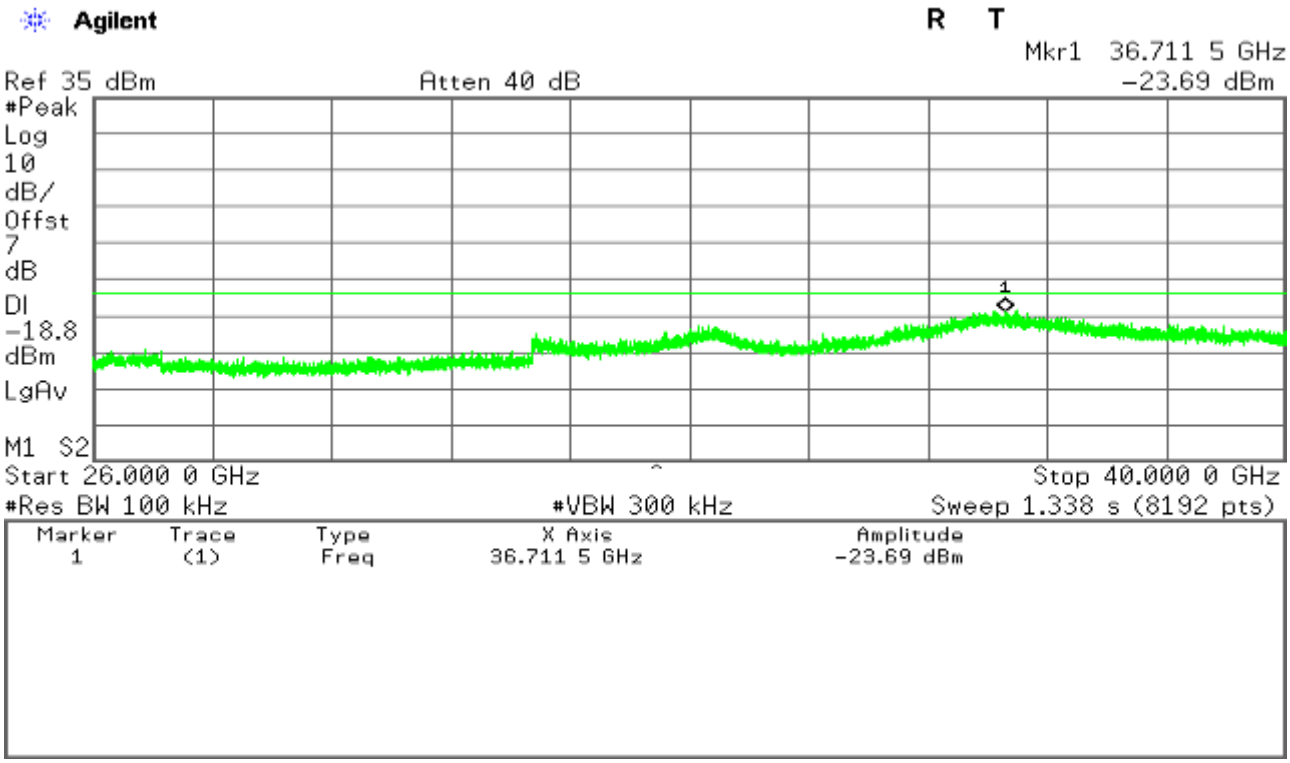

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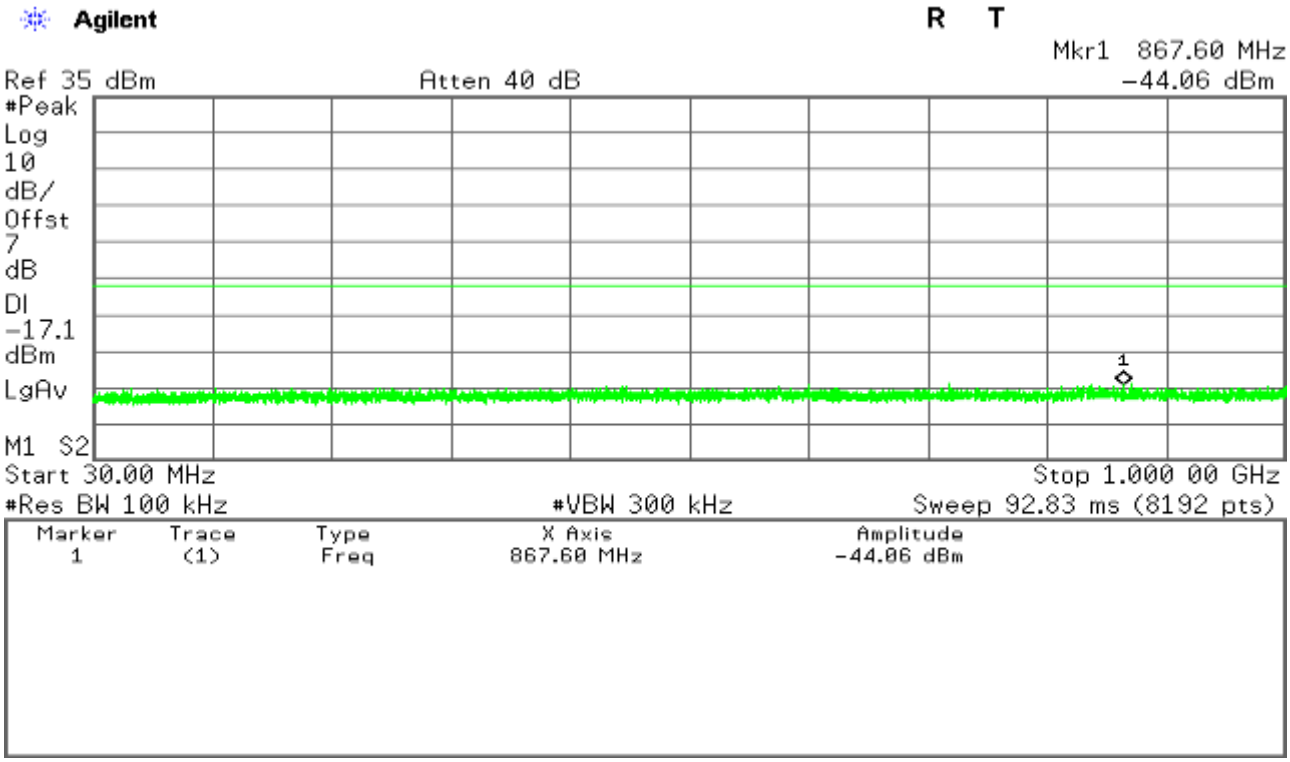
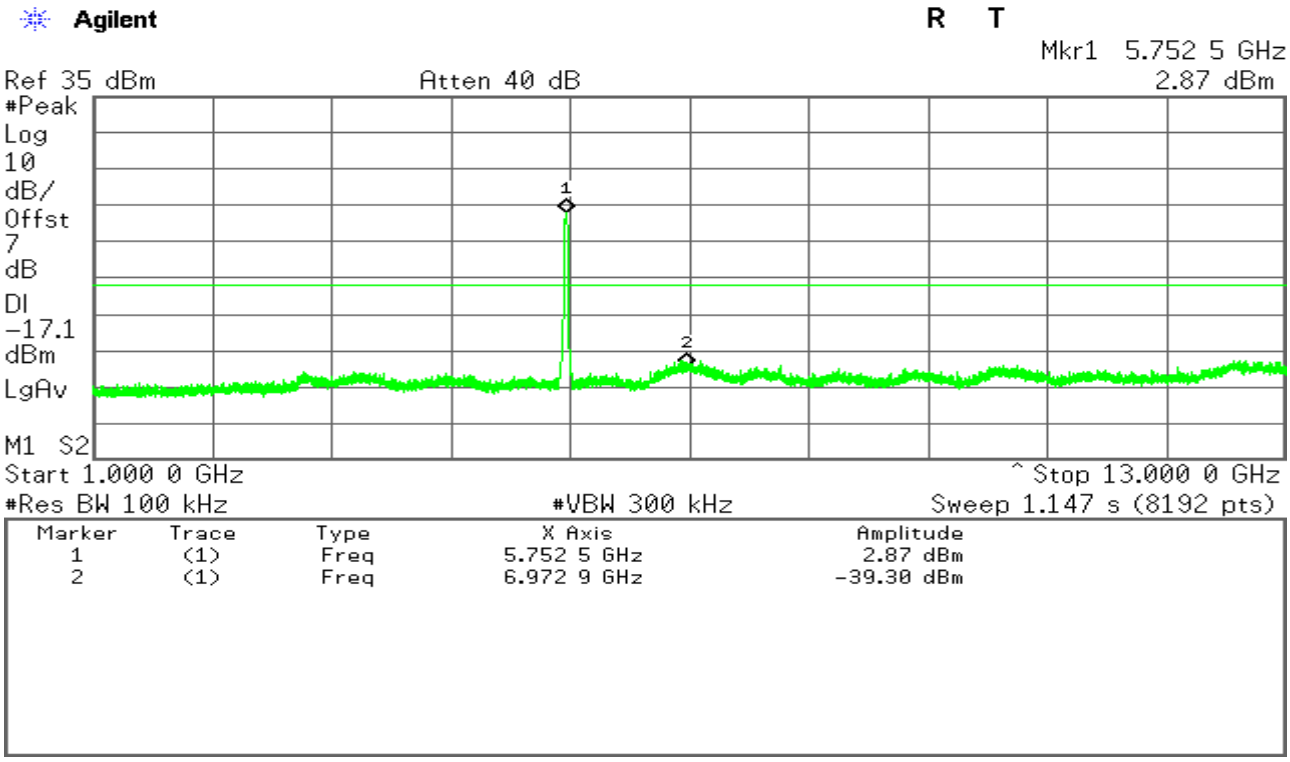
draft 802.11n Wide-40 MHz Channel mode / Chain 1

CH Low





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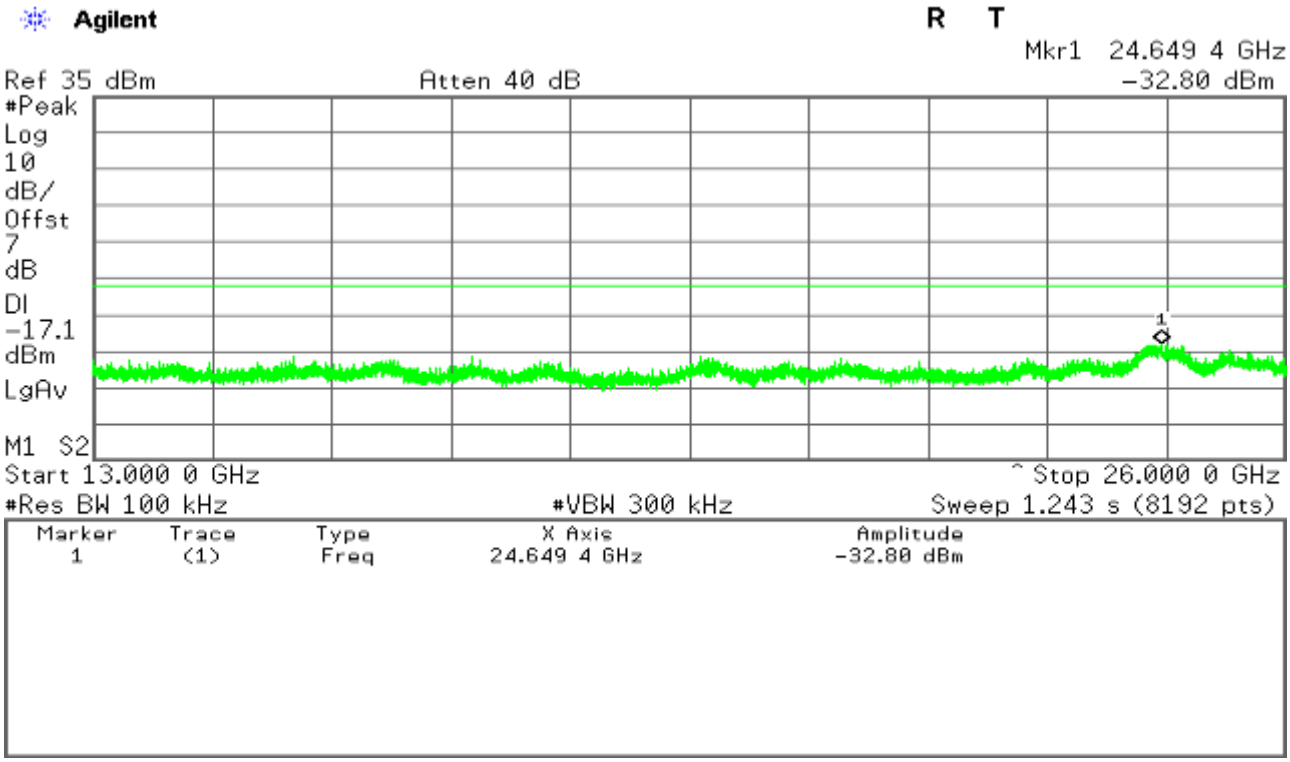

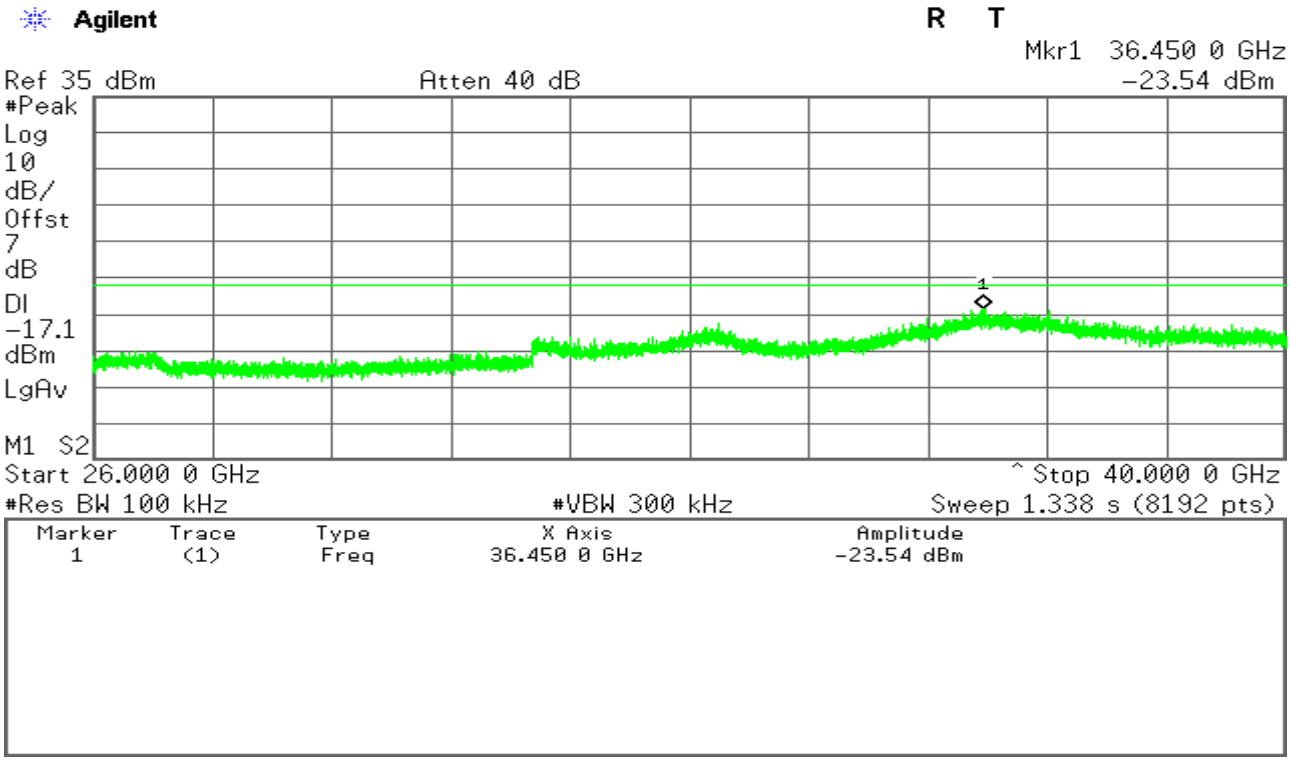

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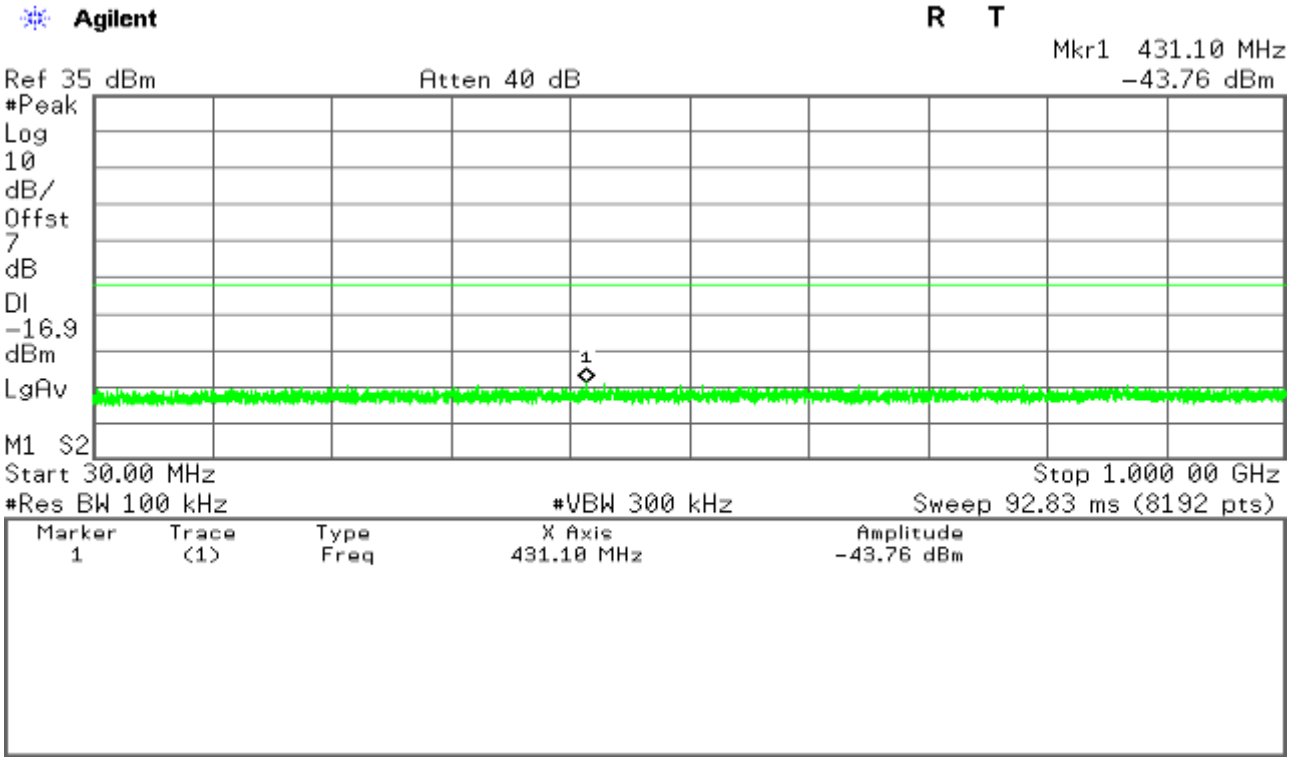
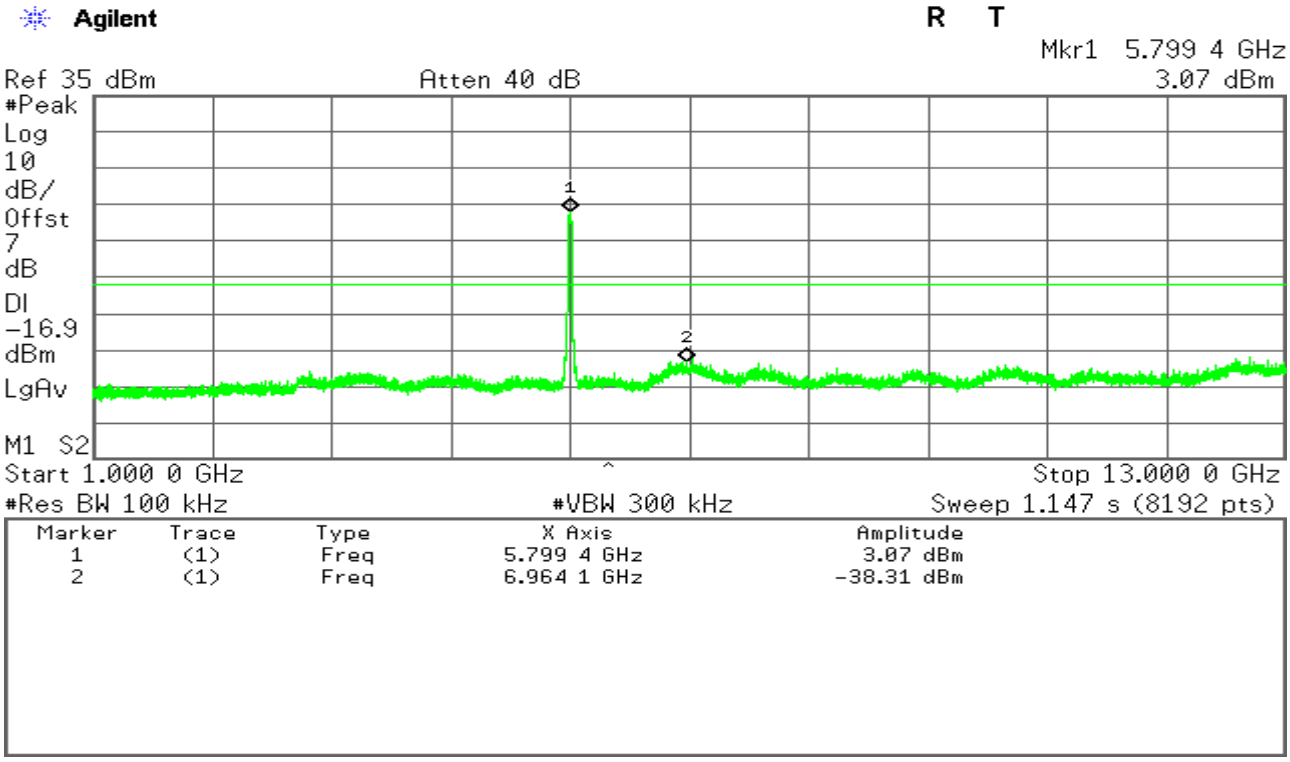
CH High





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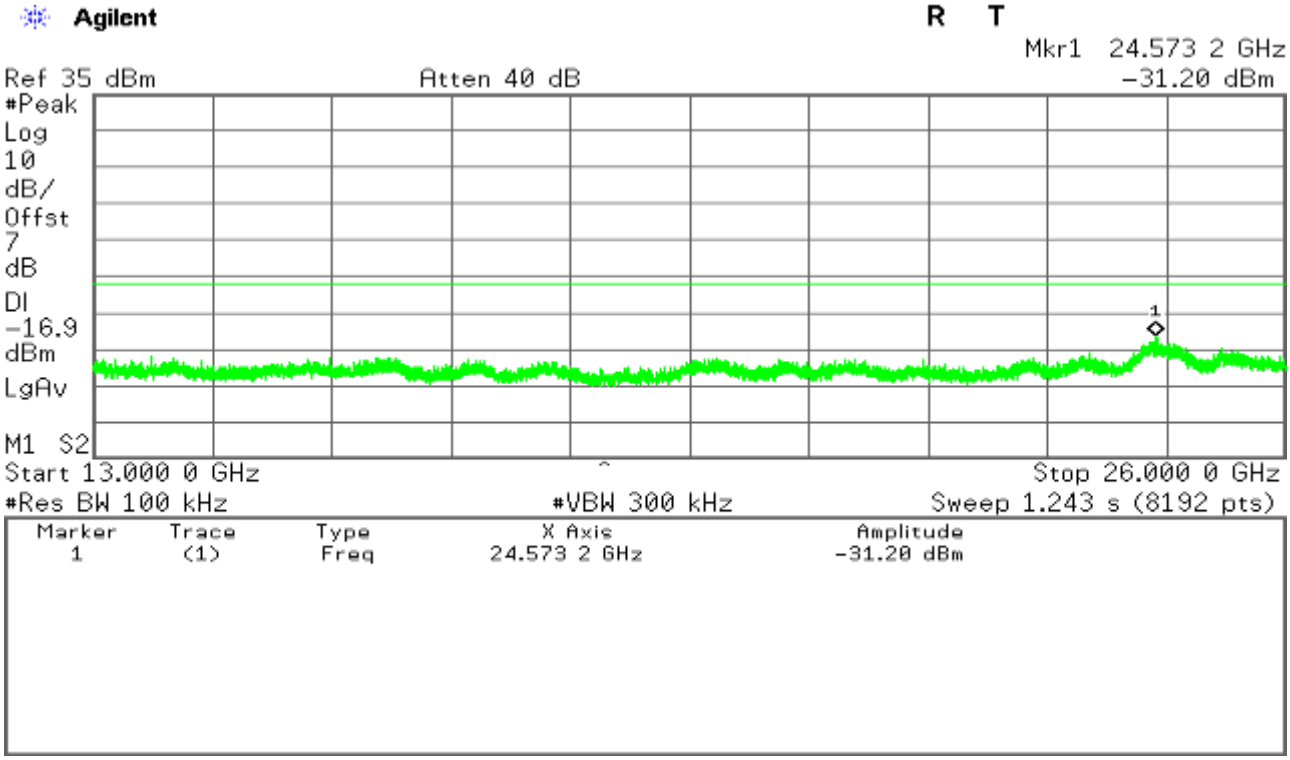

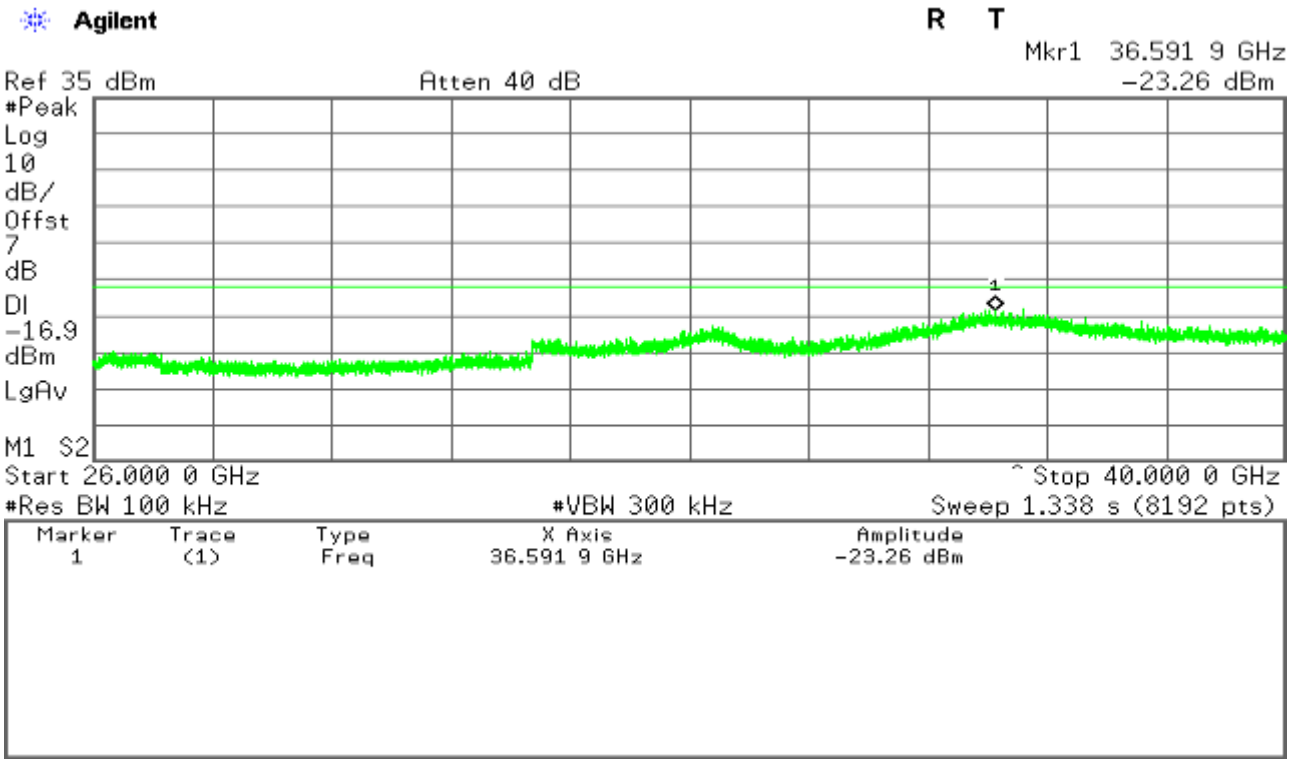

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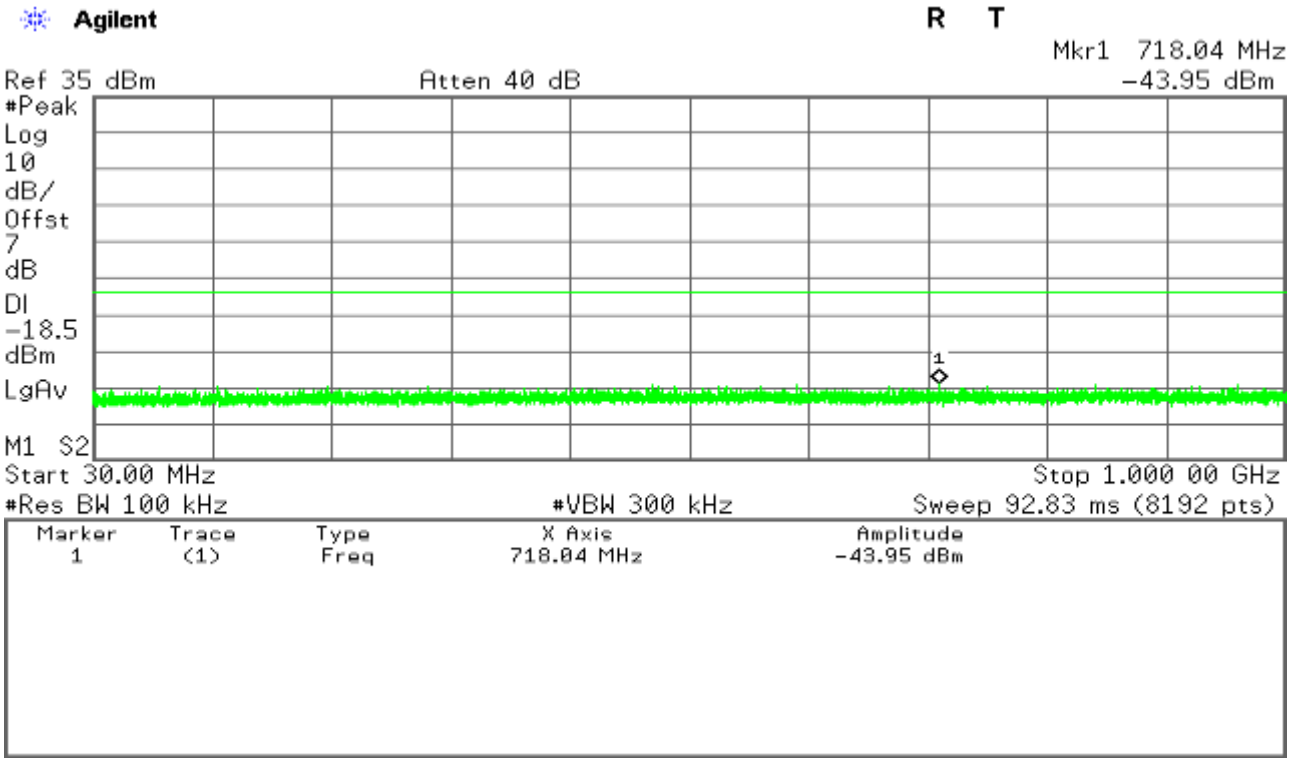
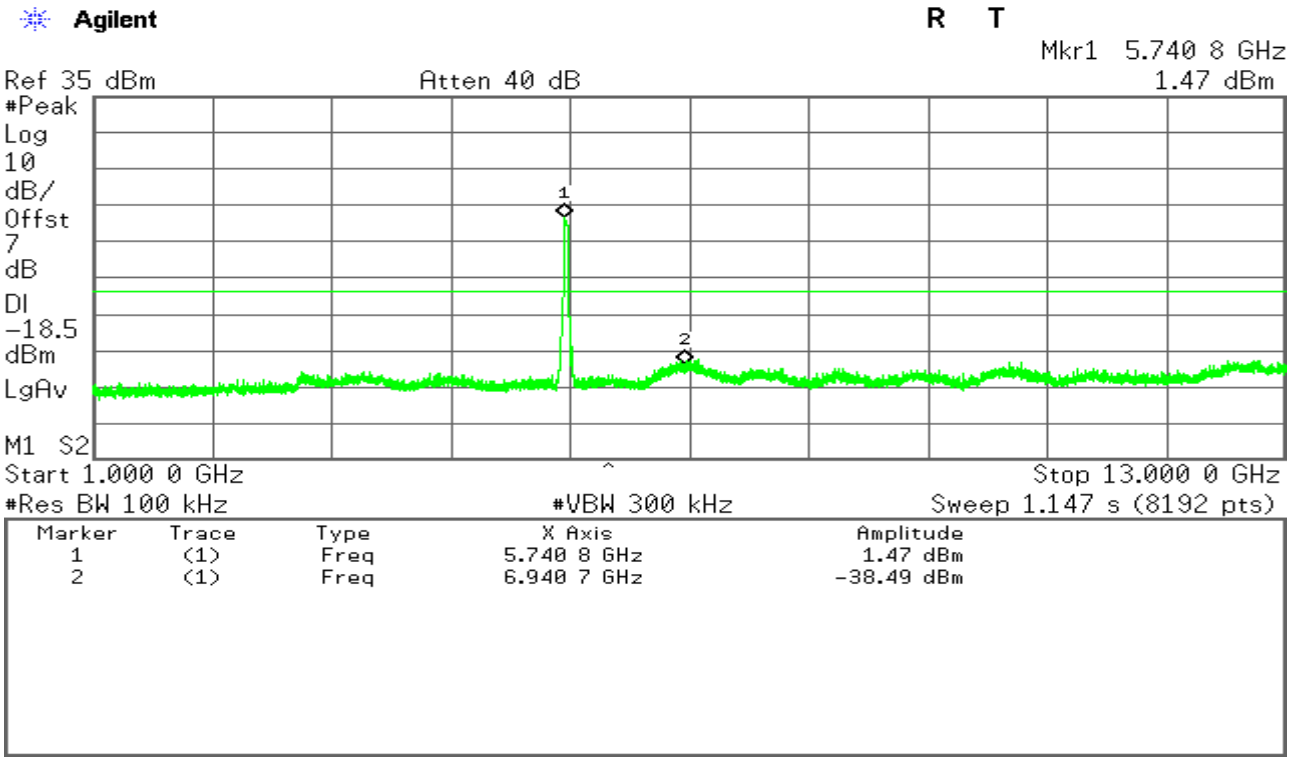
draft 802.11n Wide-40 MHz Channel mode / Chain 2

CH Low





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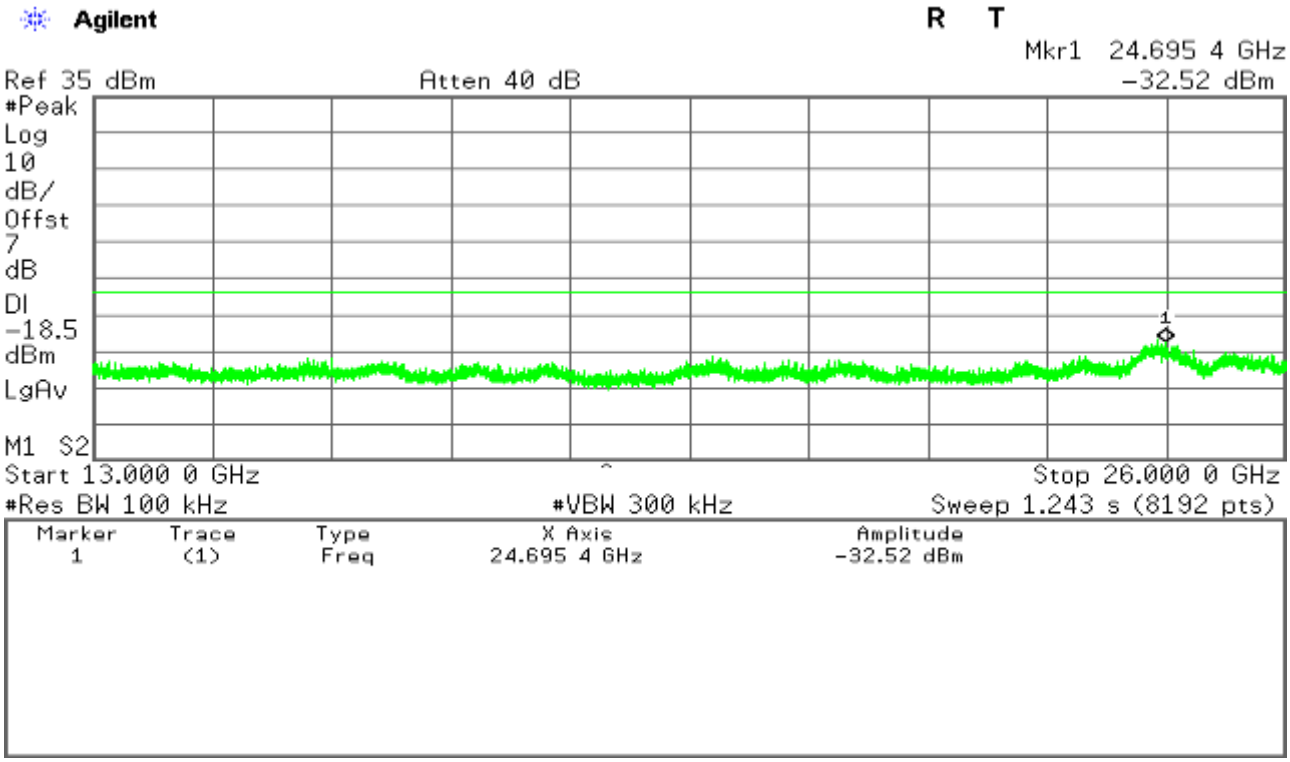

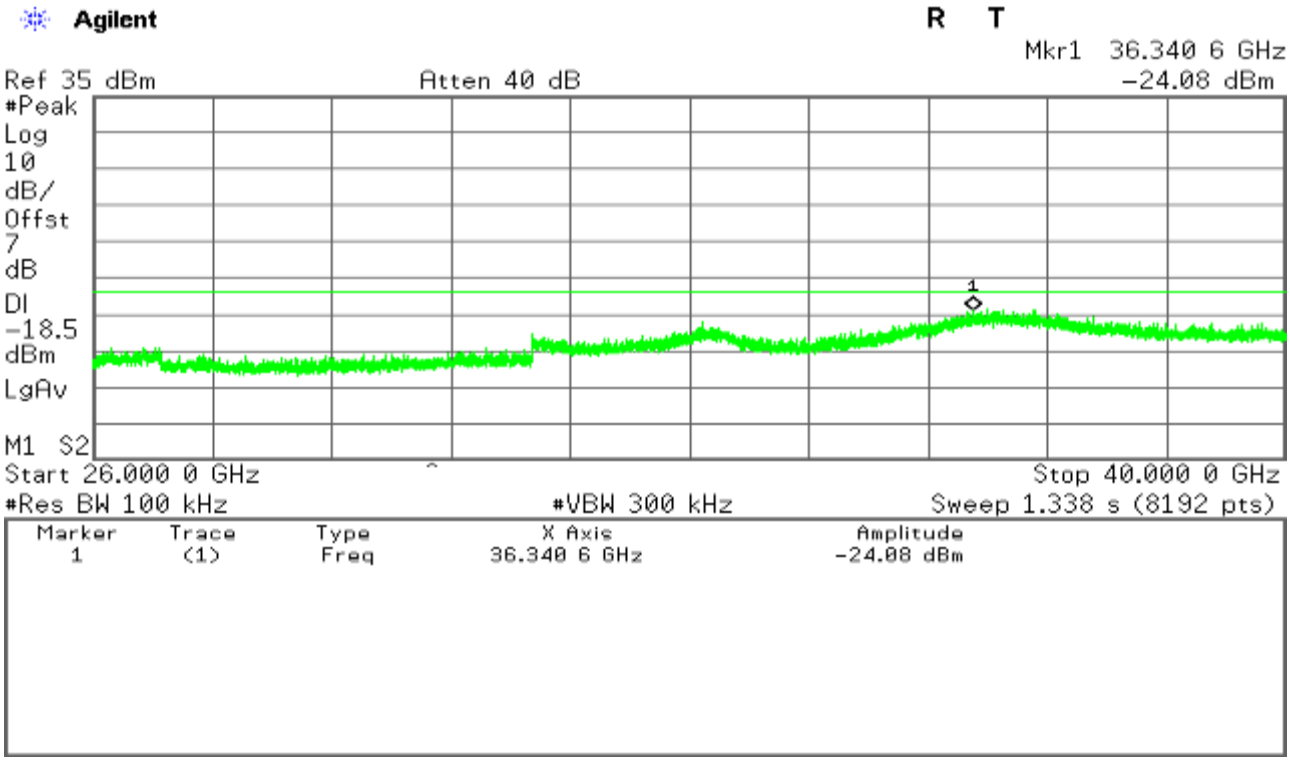

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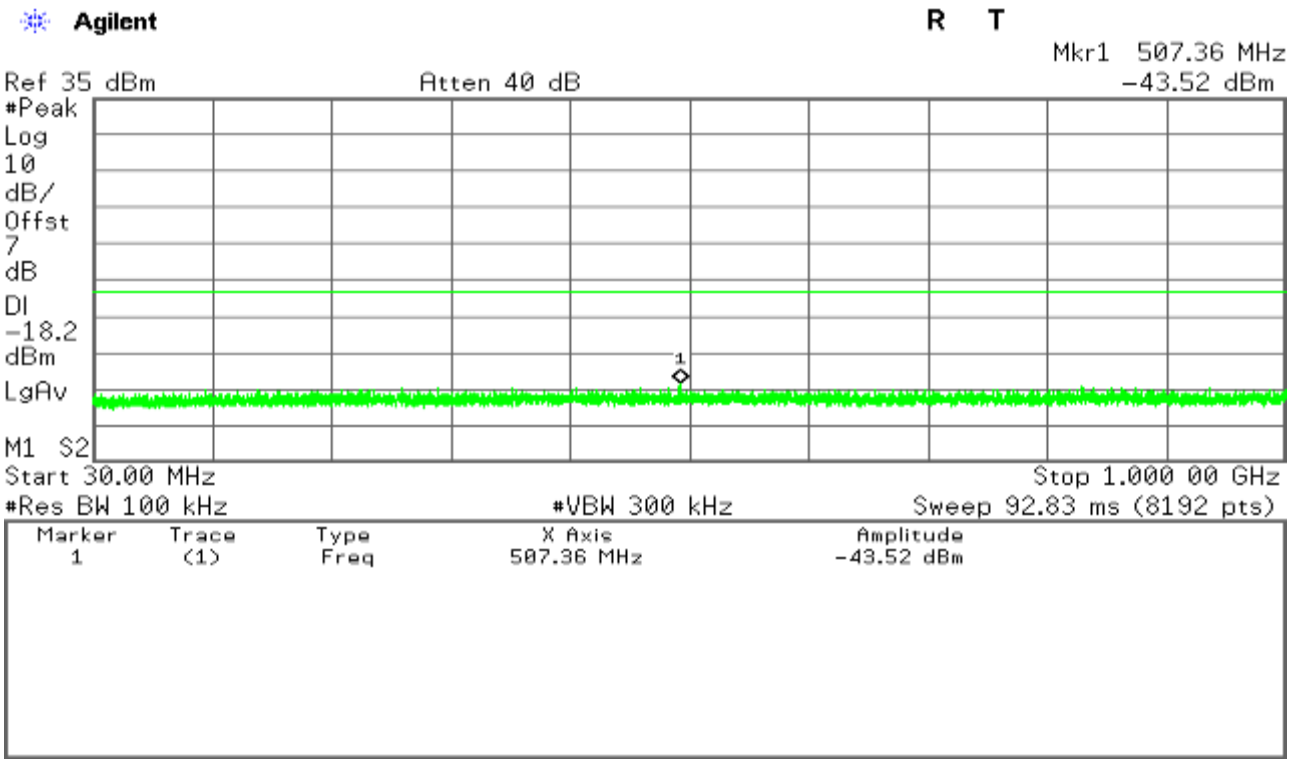
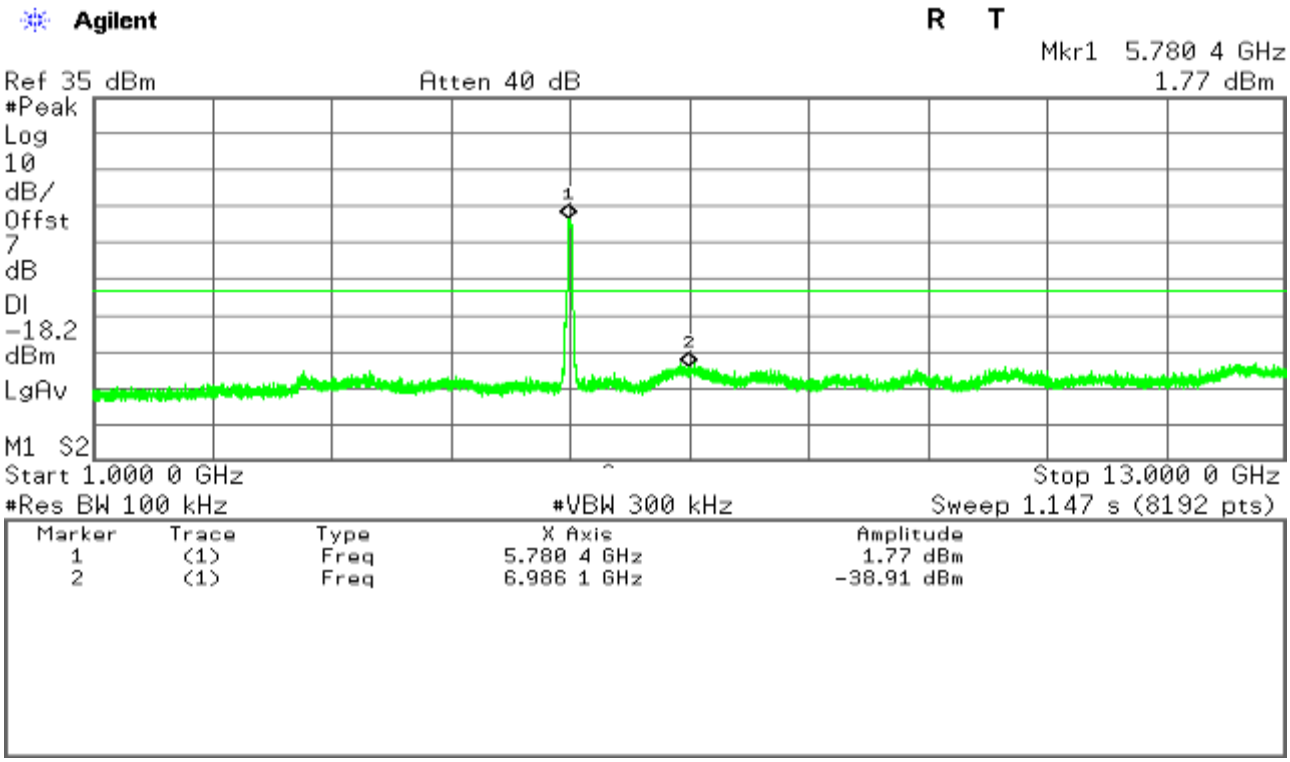
CH High





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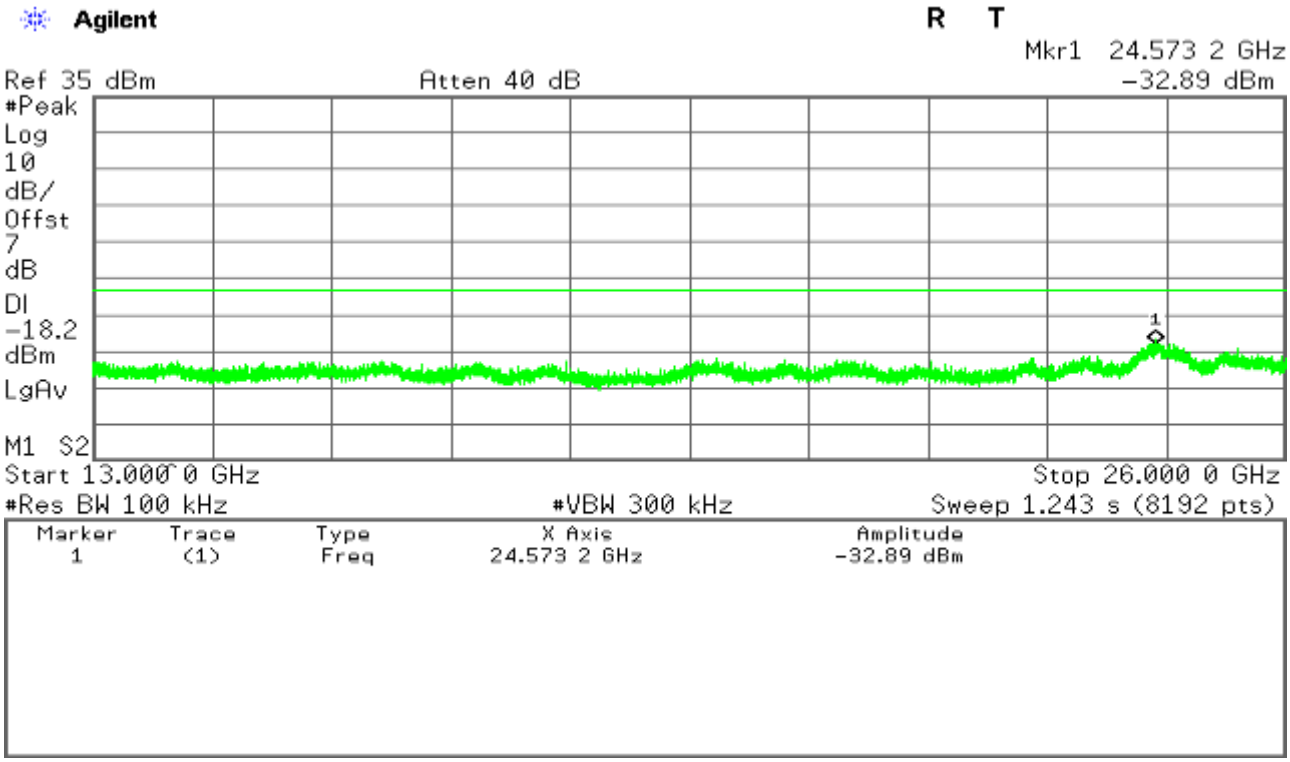

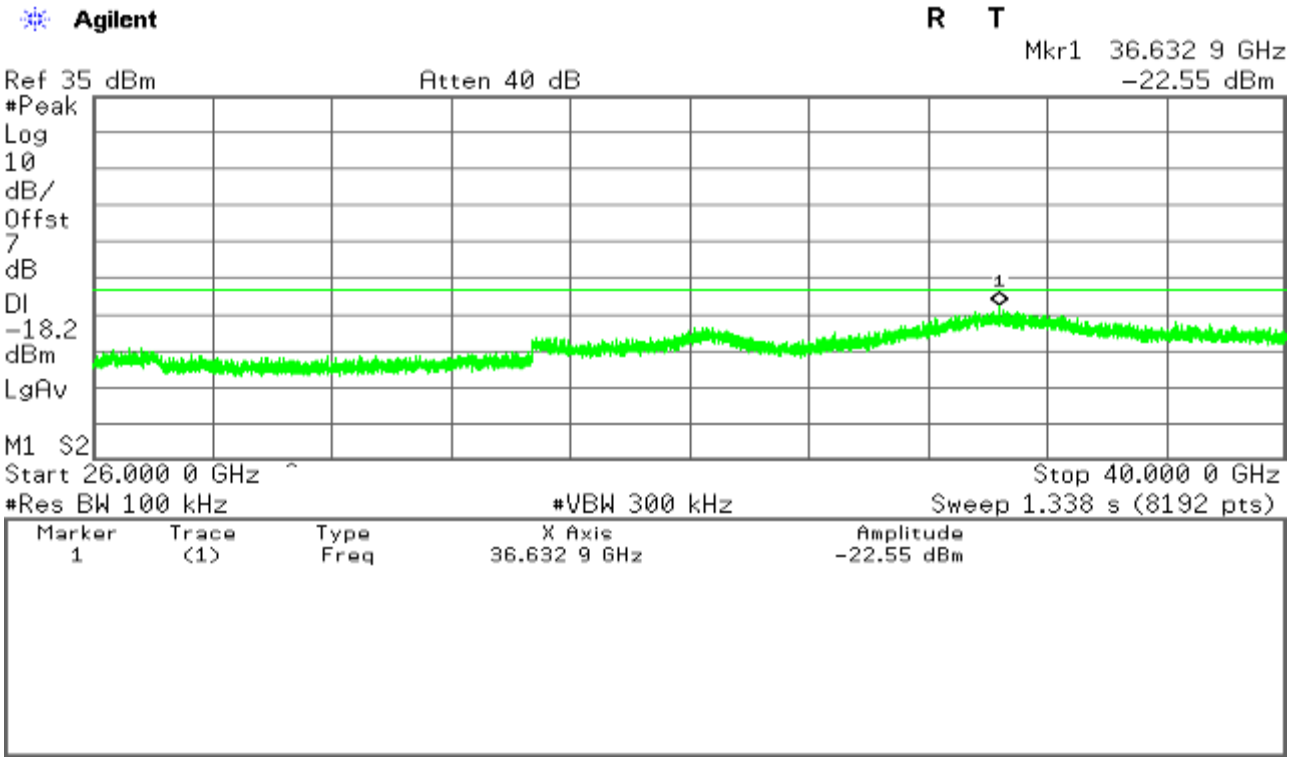

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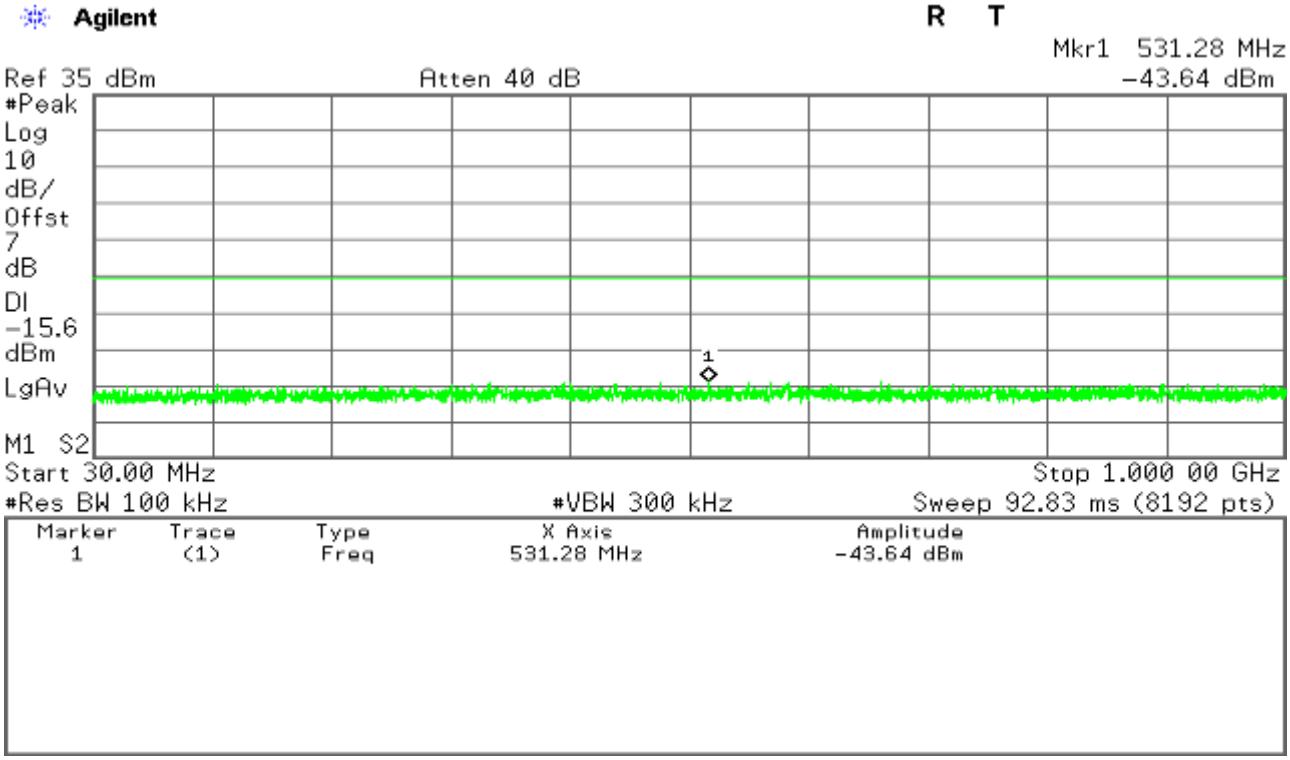
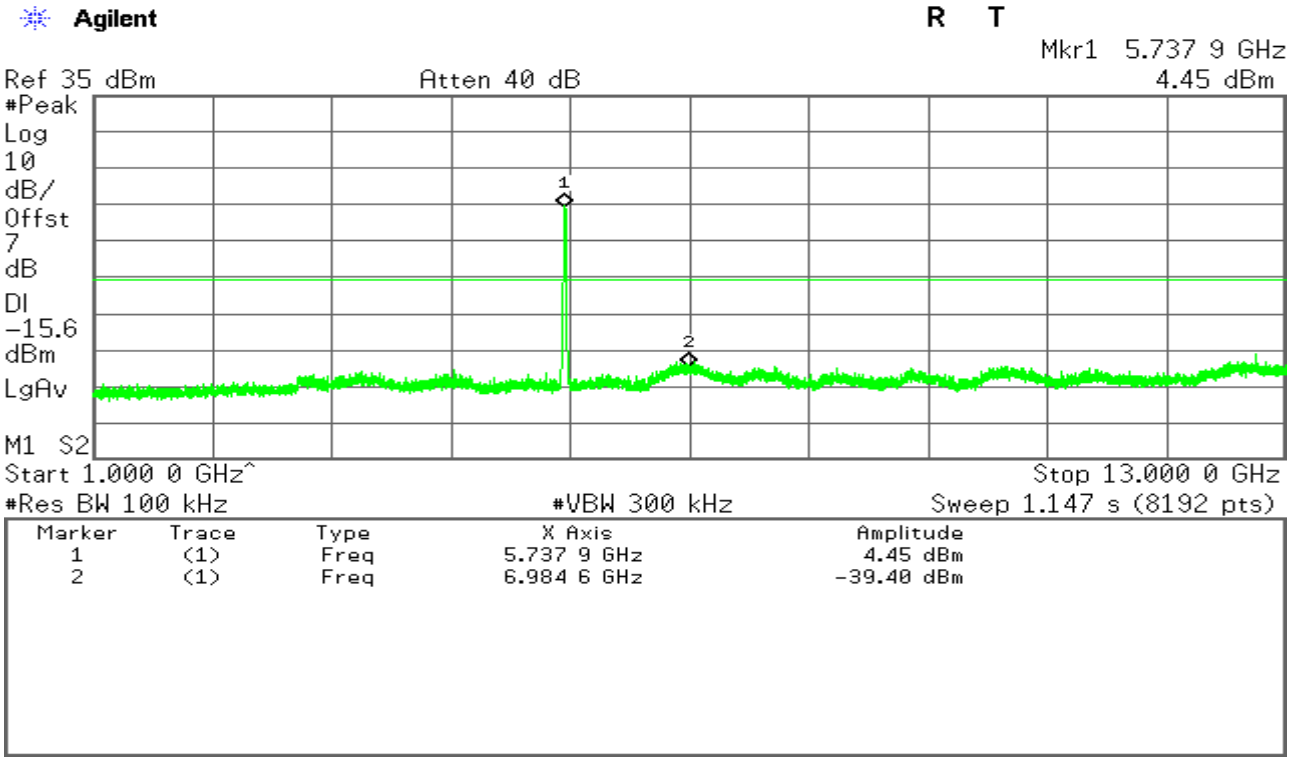
draft 802.11ac Standard-20 MHz Channel mode / Chain 0

CH Low





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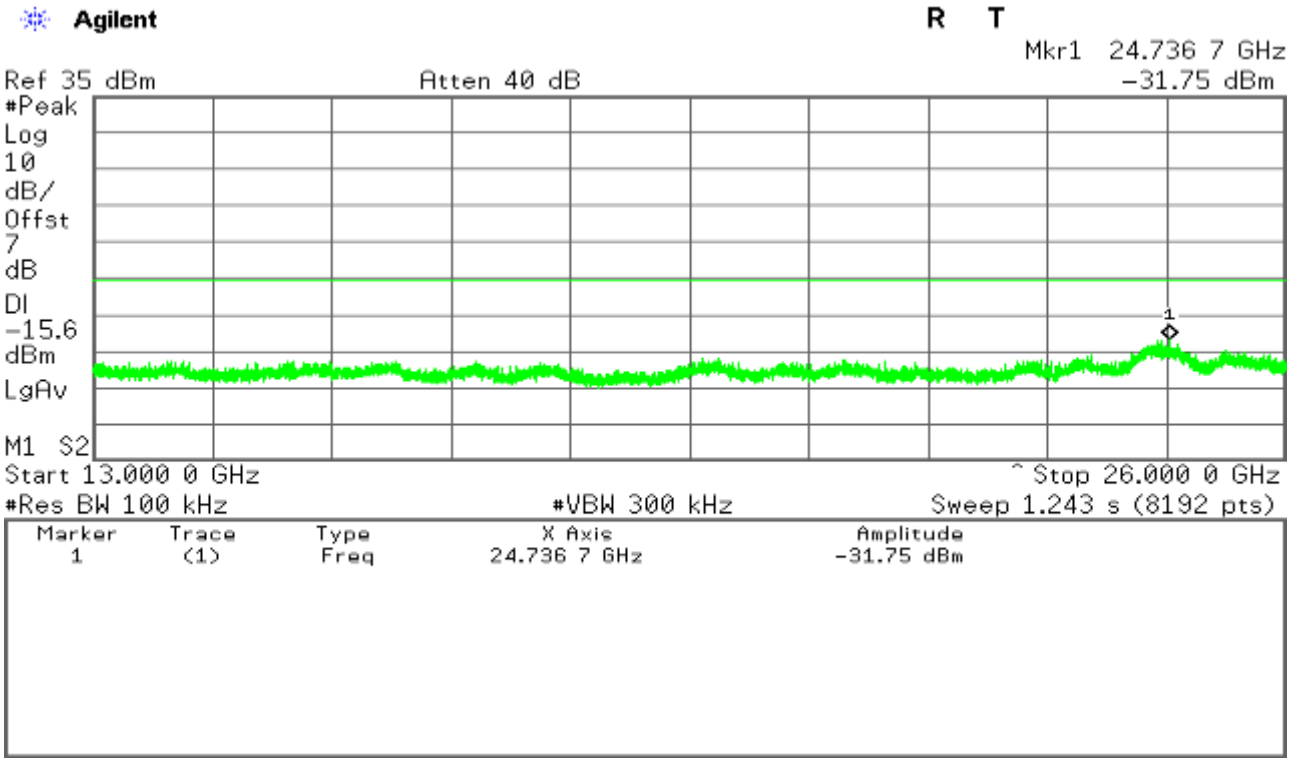

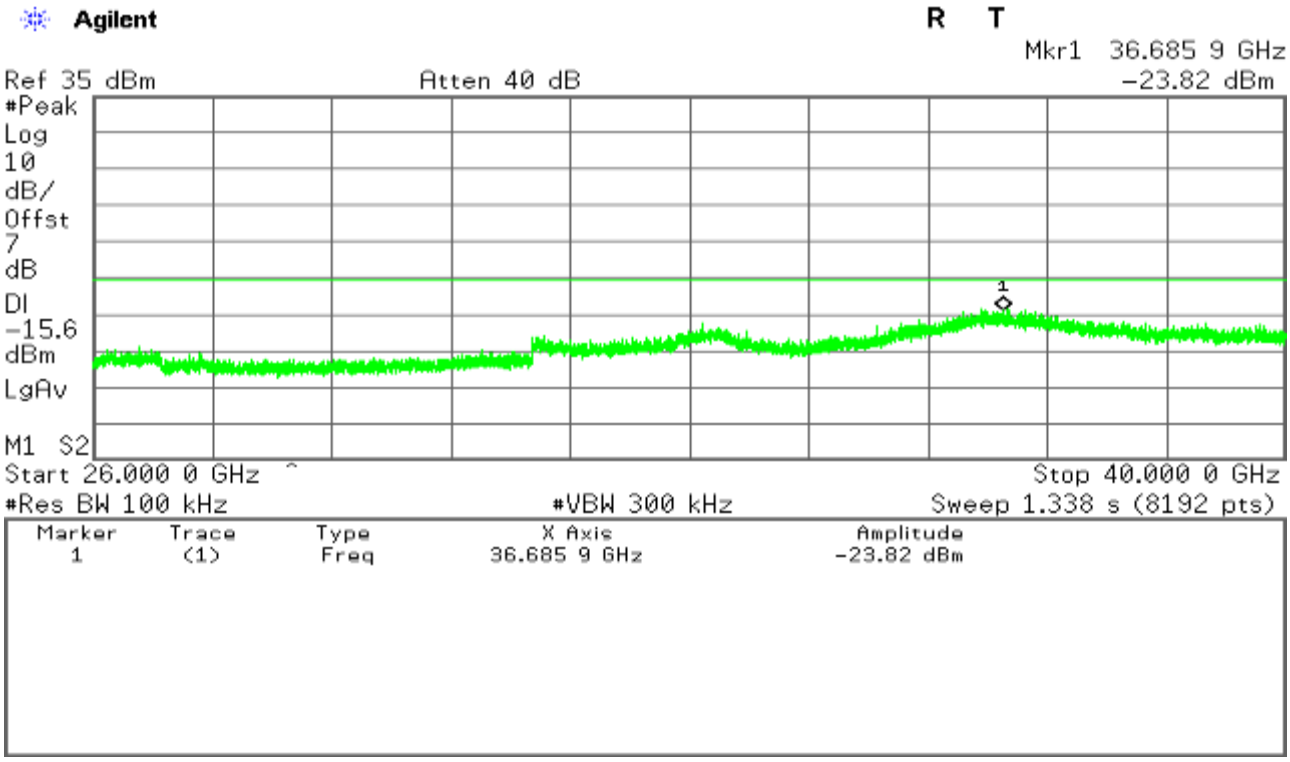

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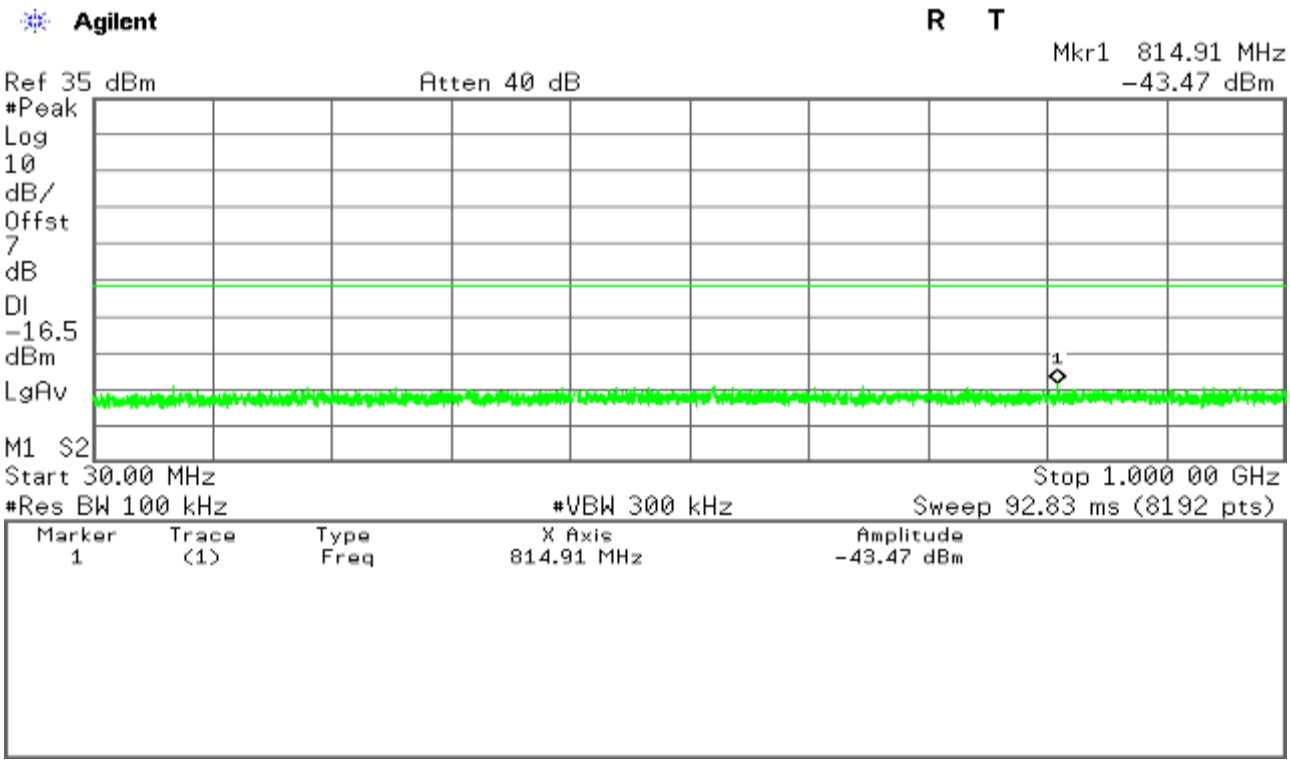
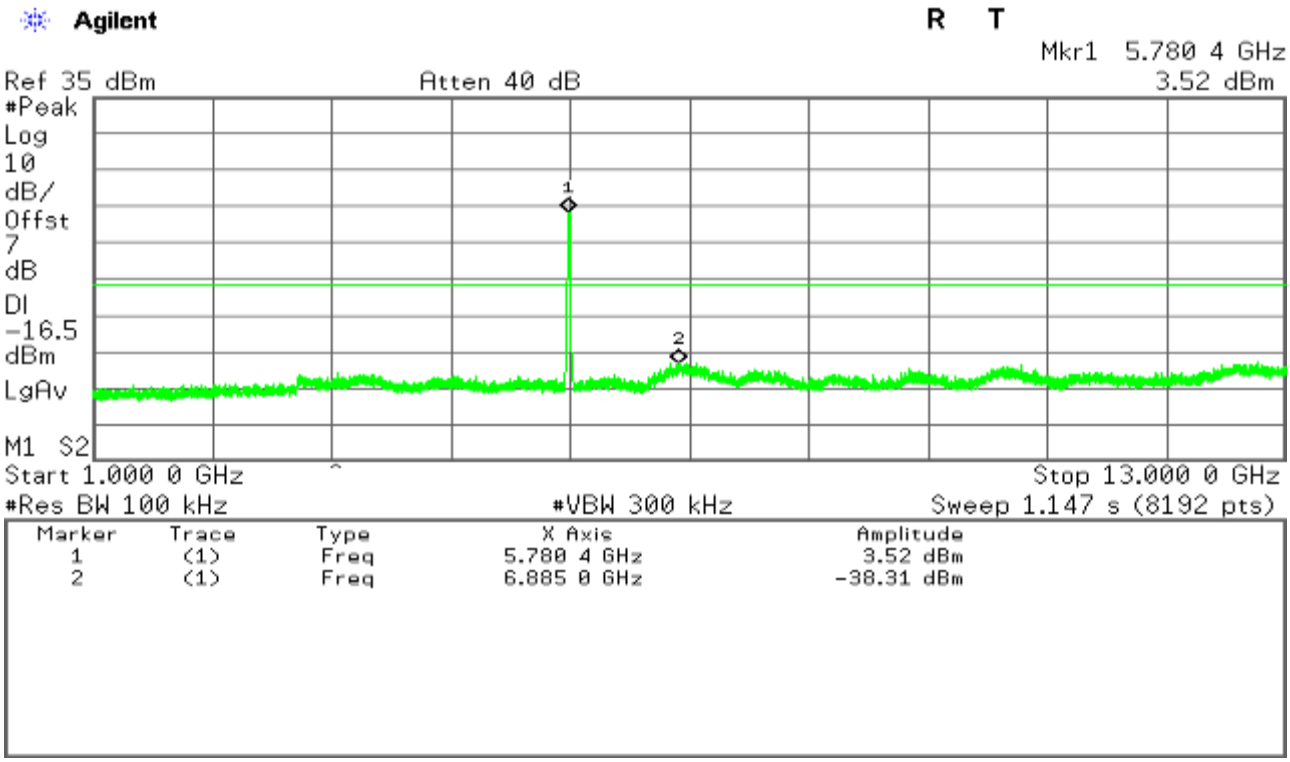
CH Mid





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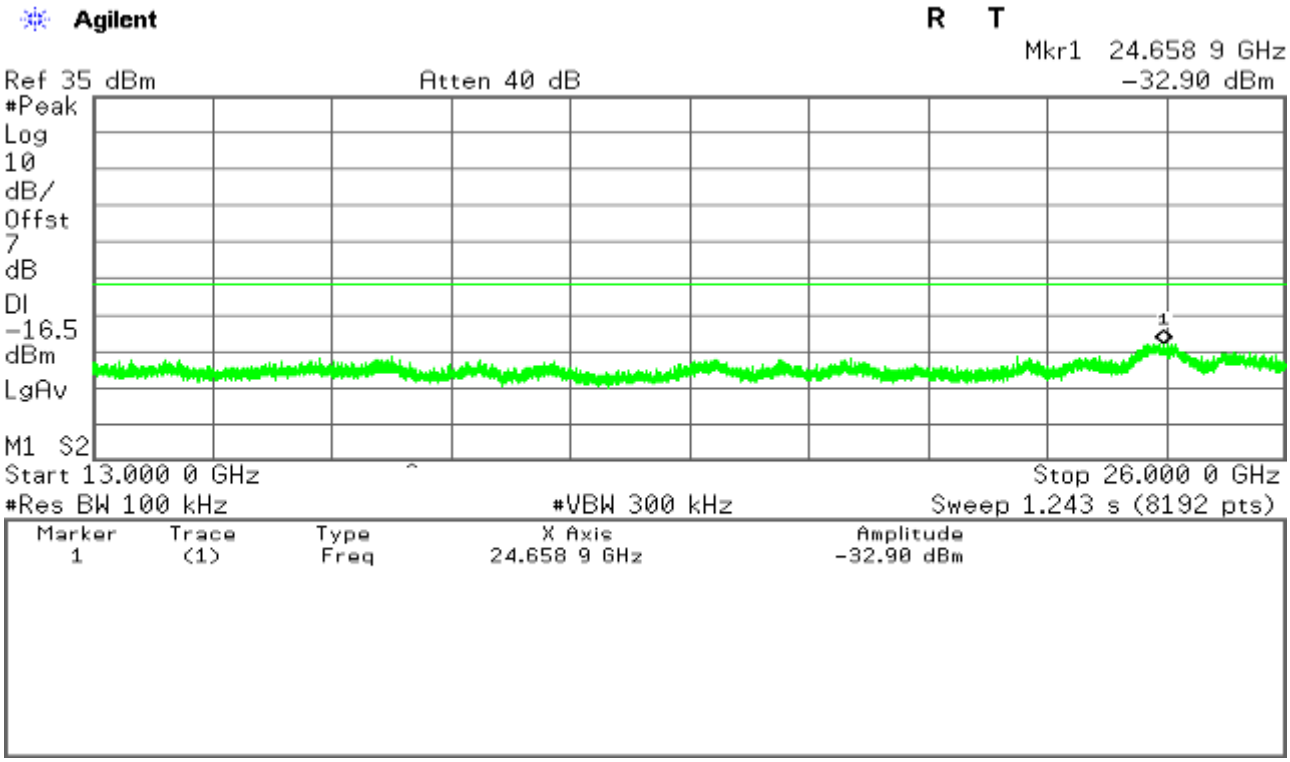

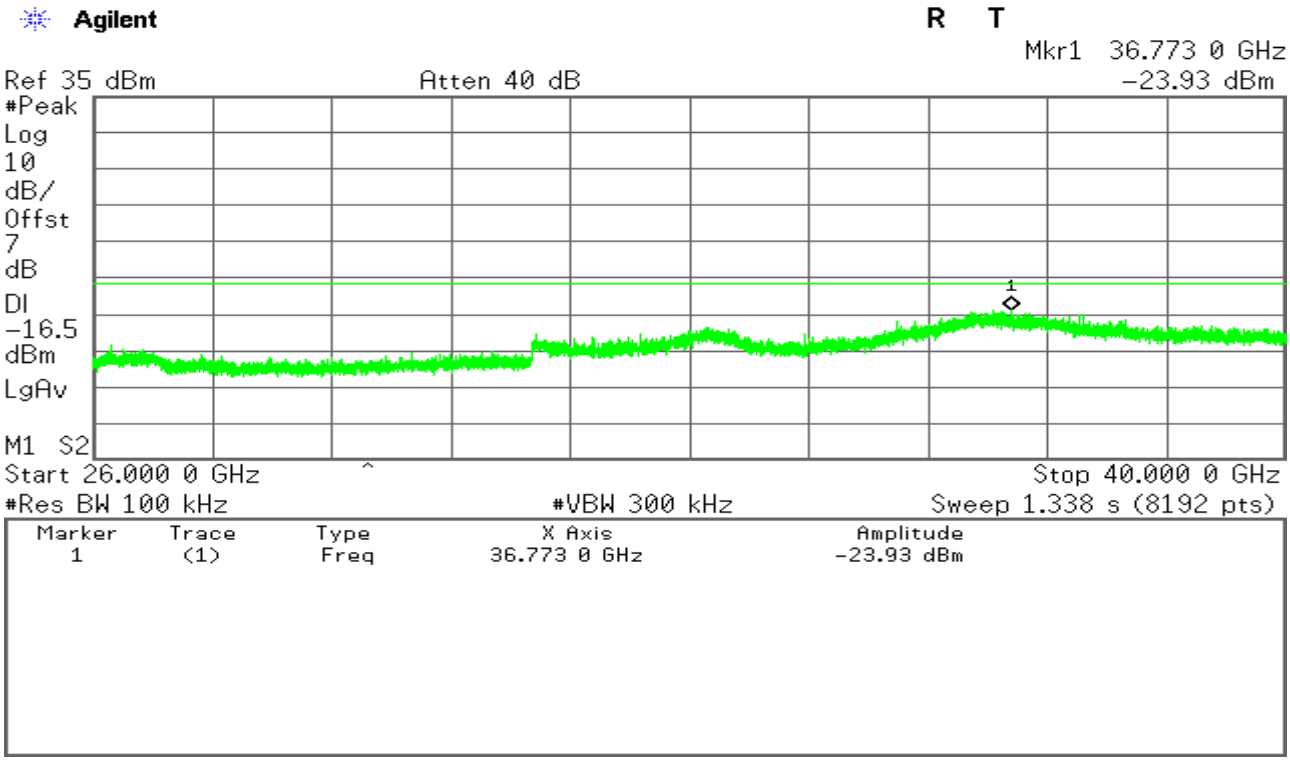

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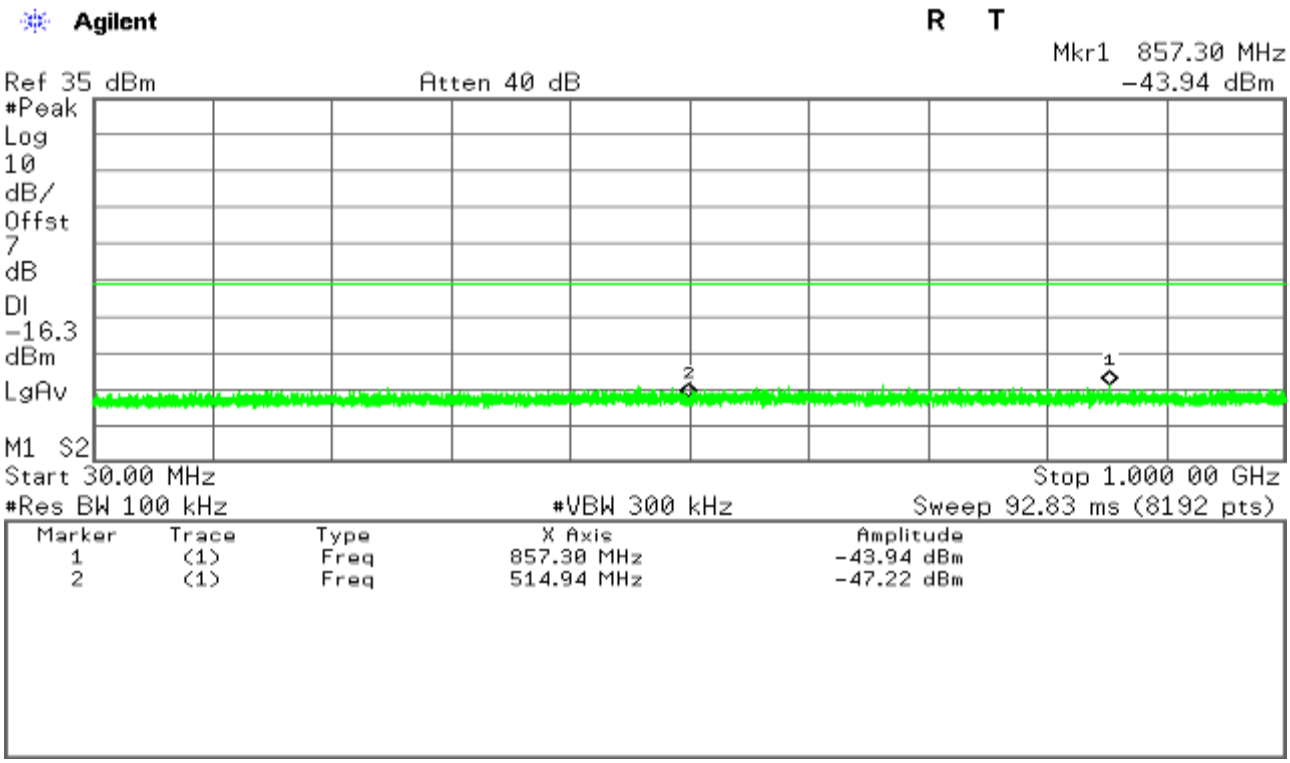
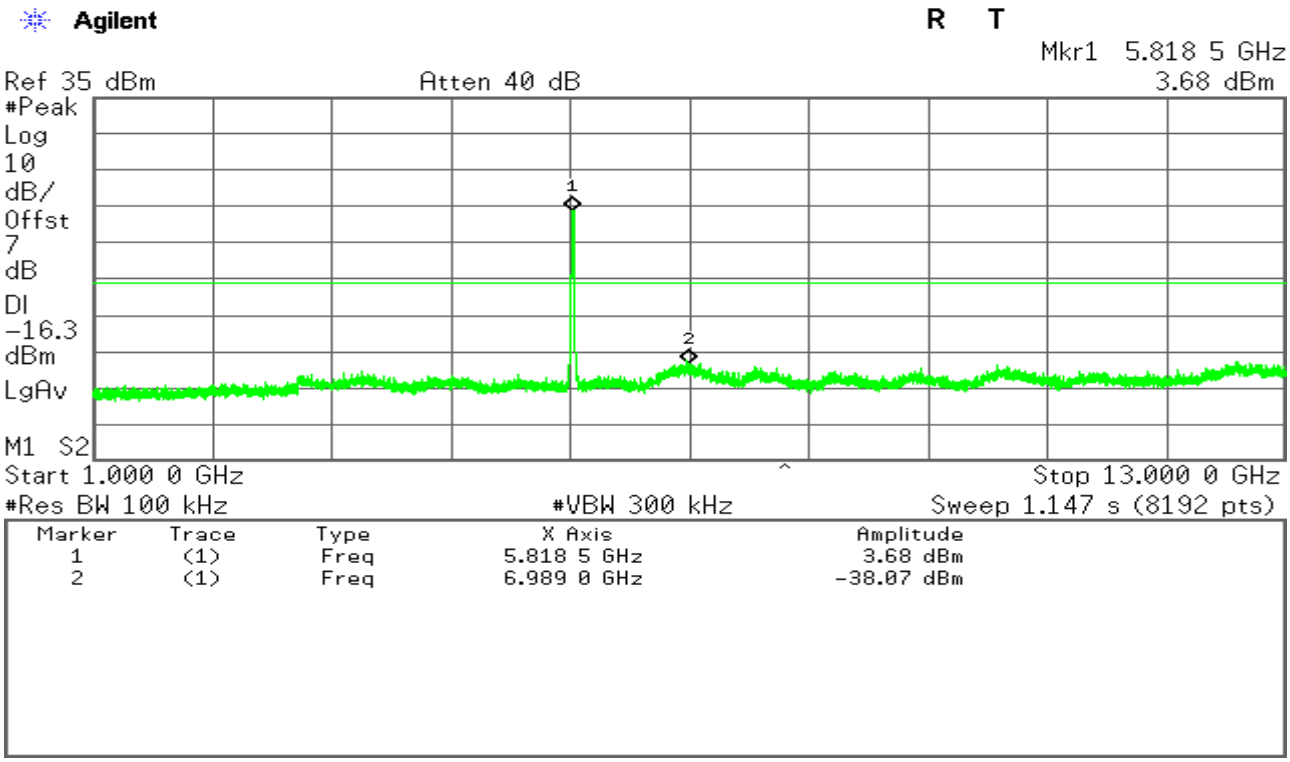
CH High





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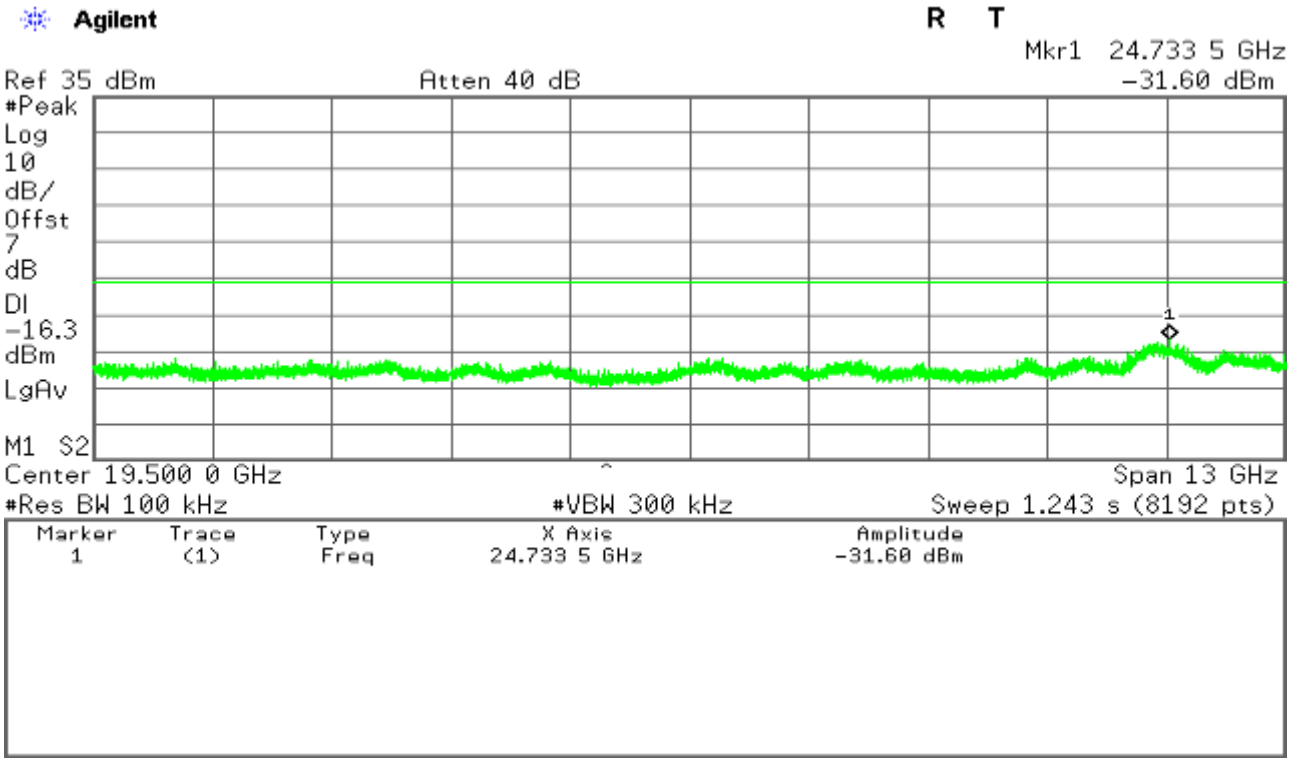

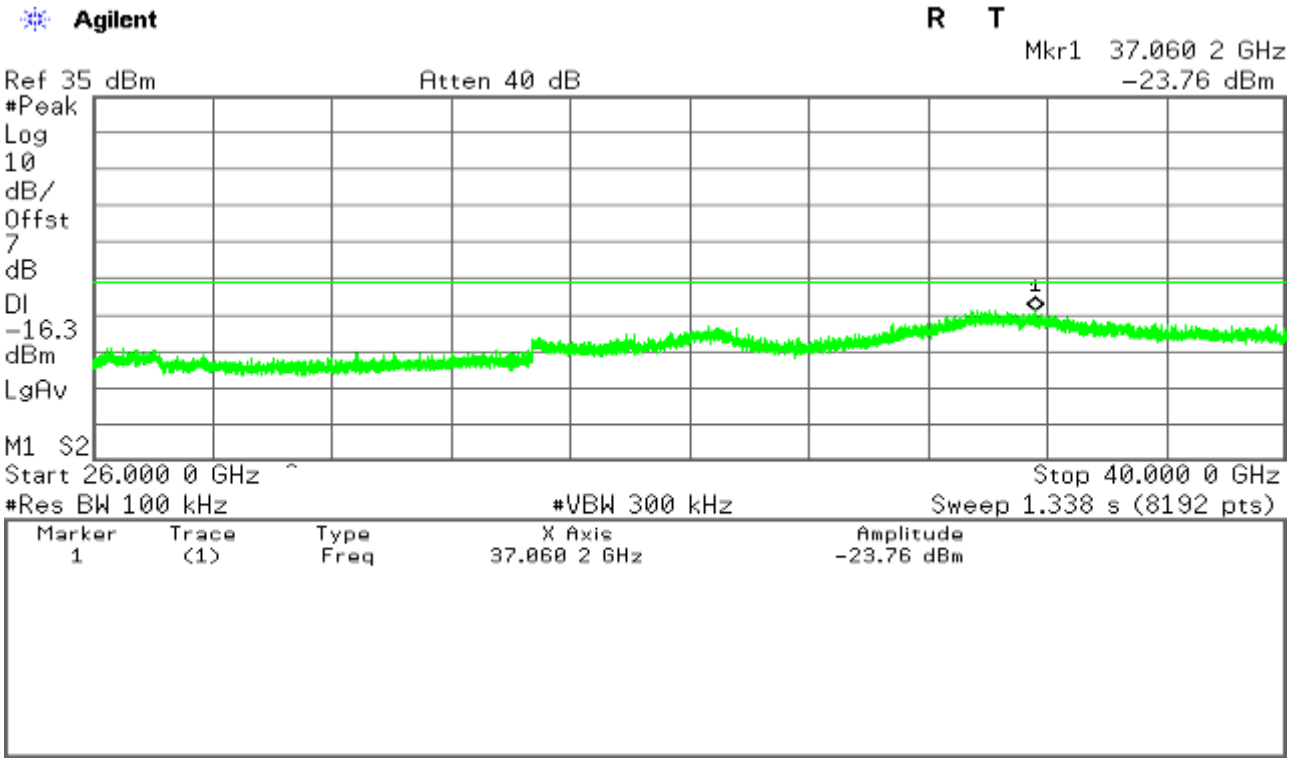

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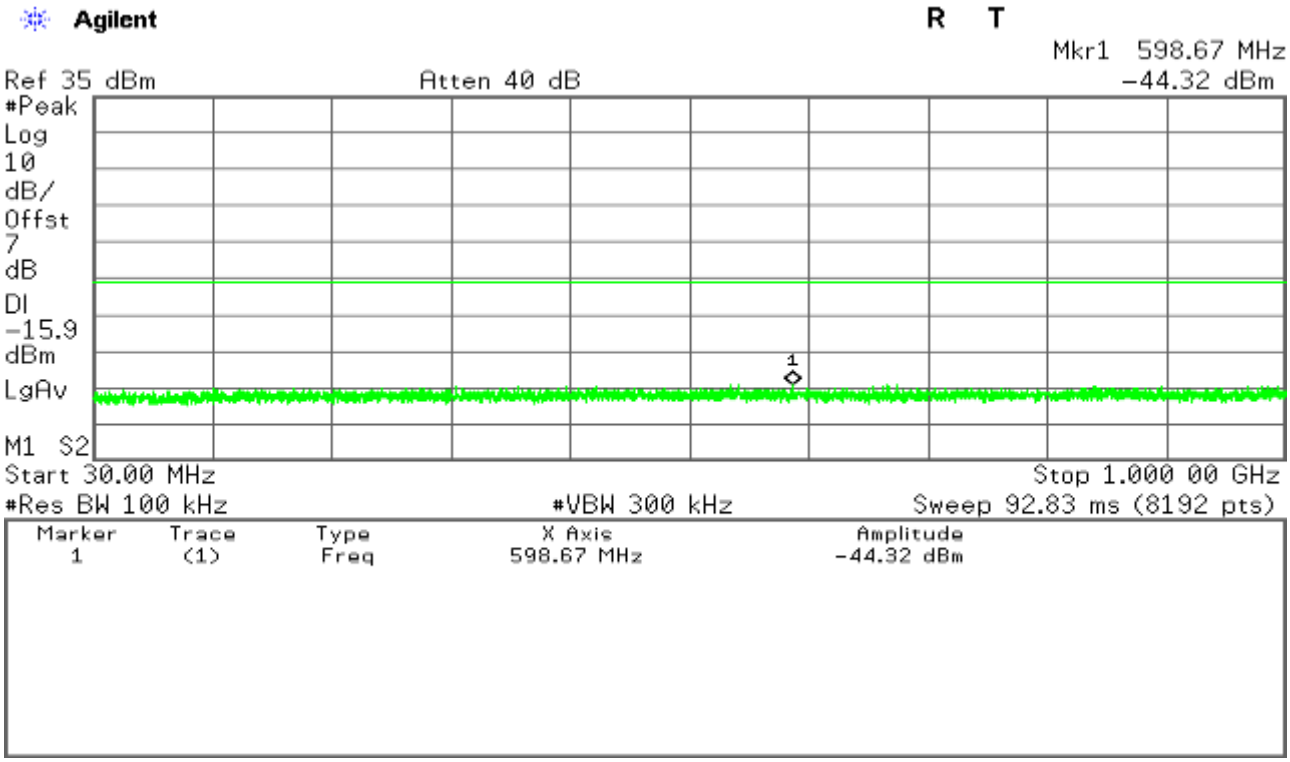
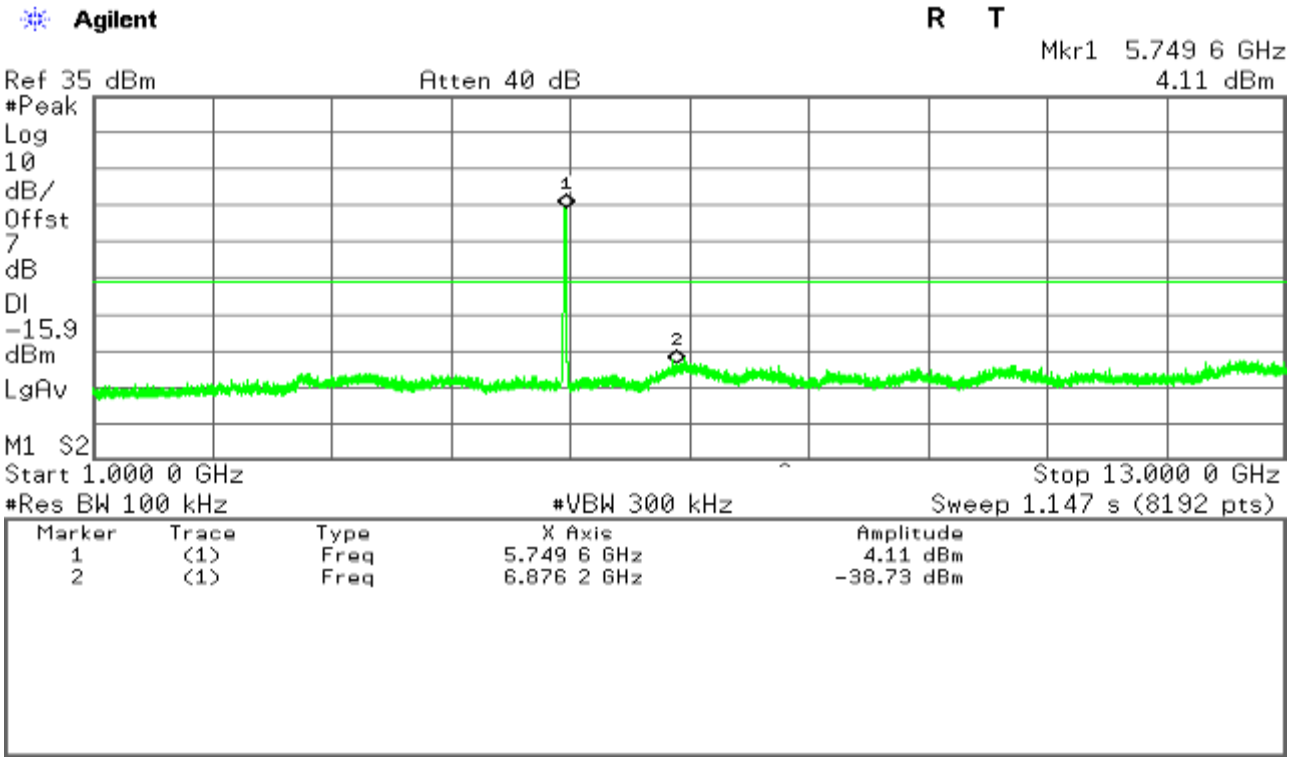
draft 802.11ac Standard-20 MHz Channel mode / Chain 1

CH Low





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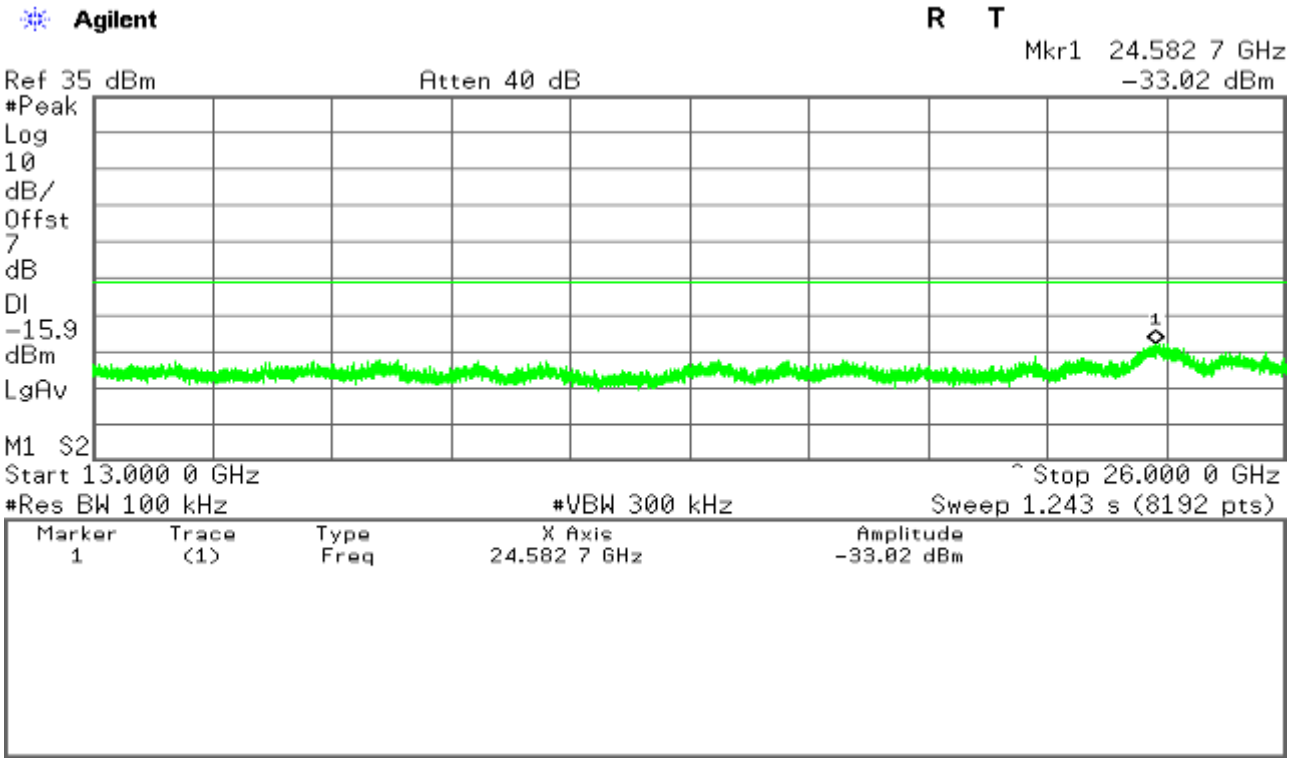

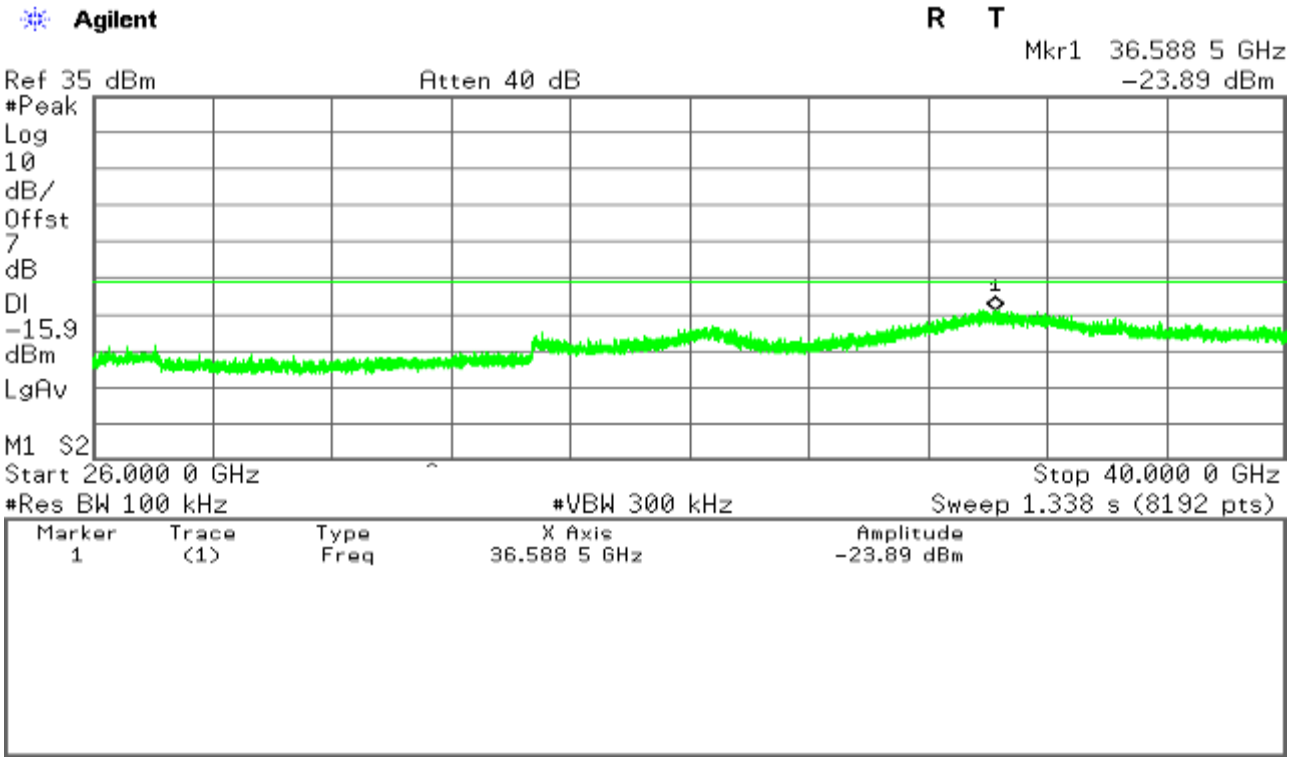

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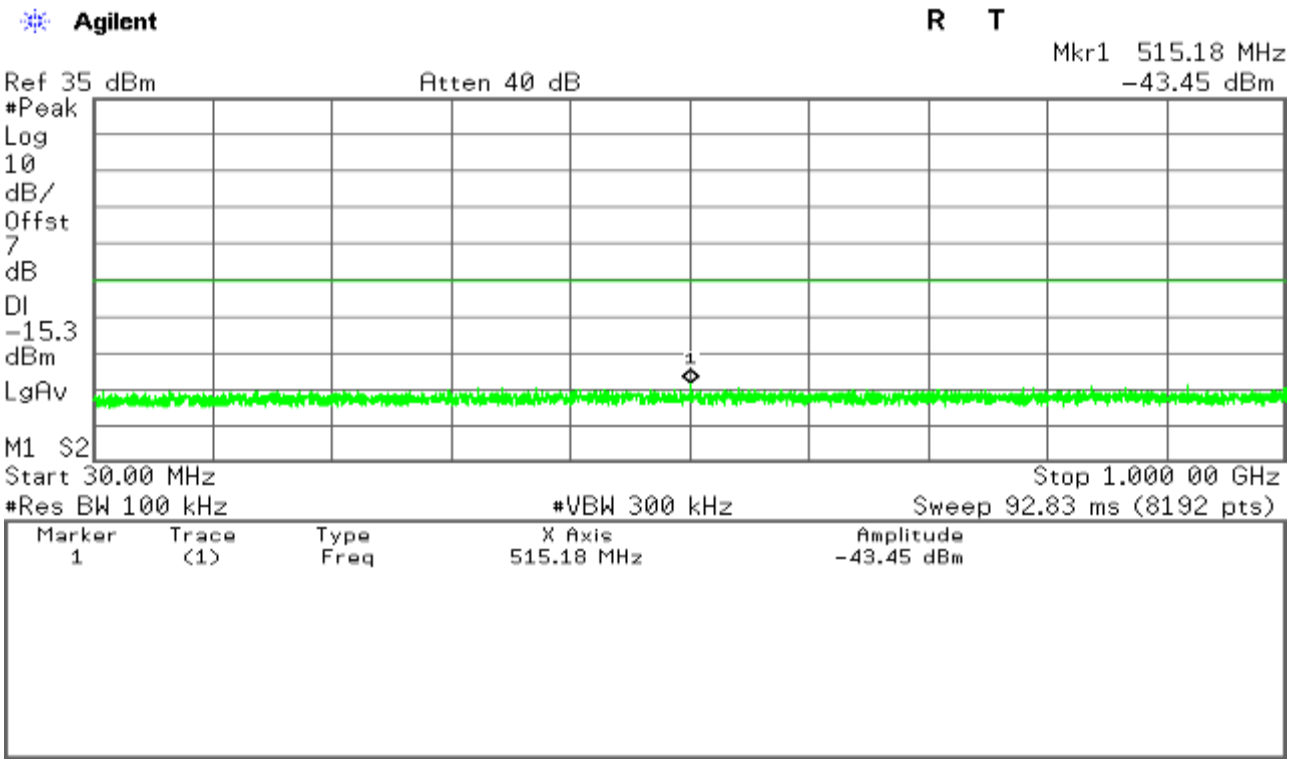
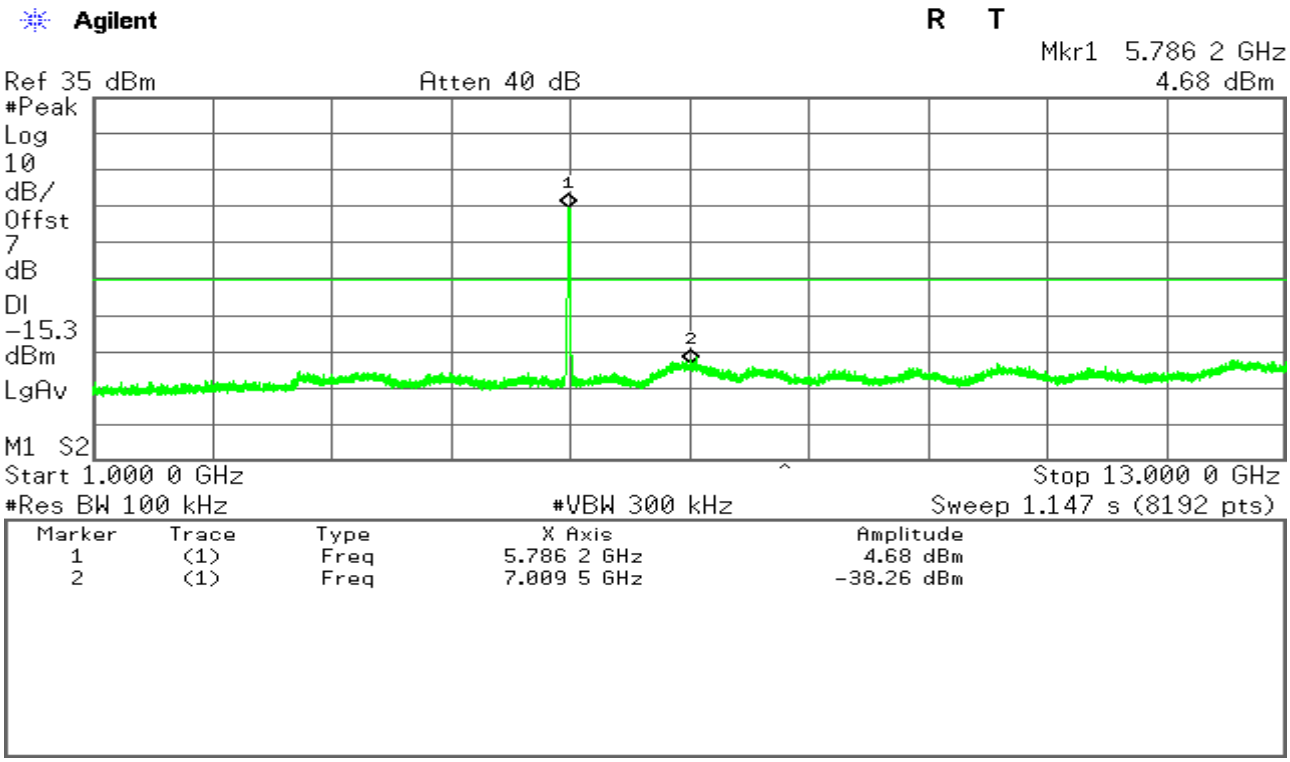
CH Mid





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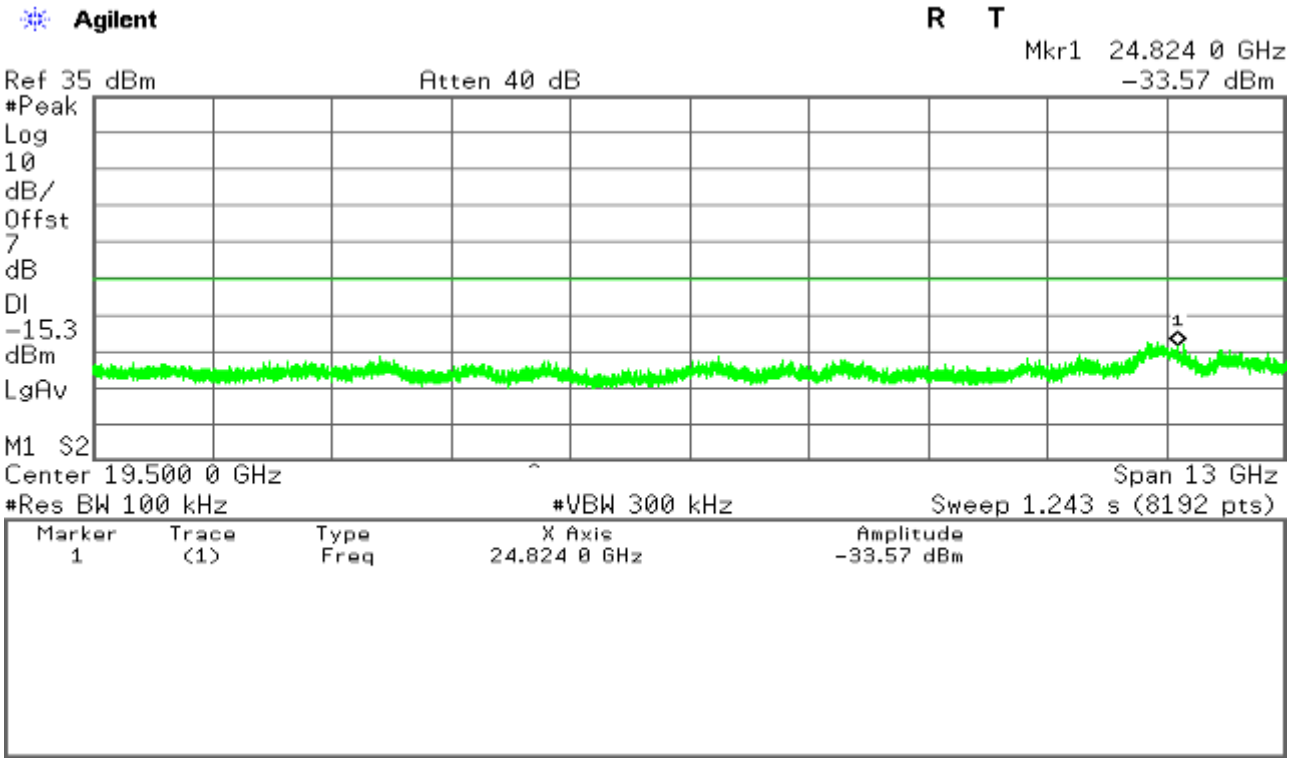

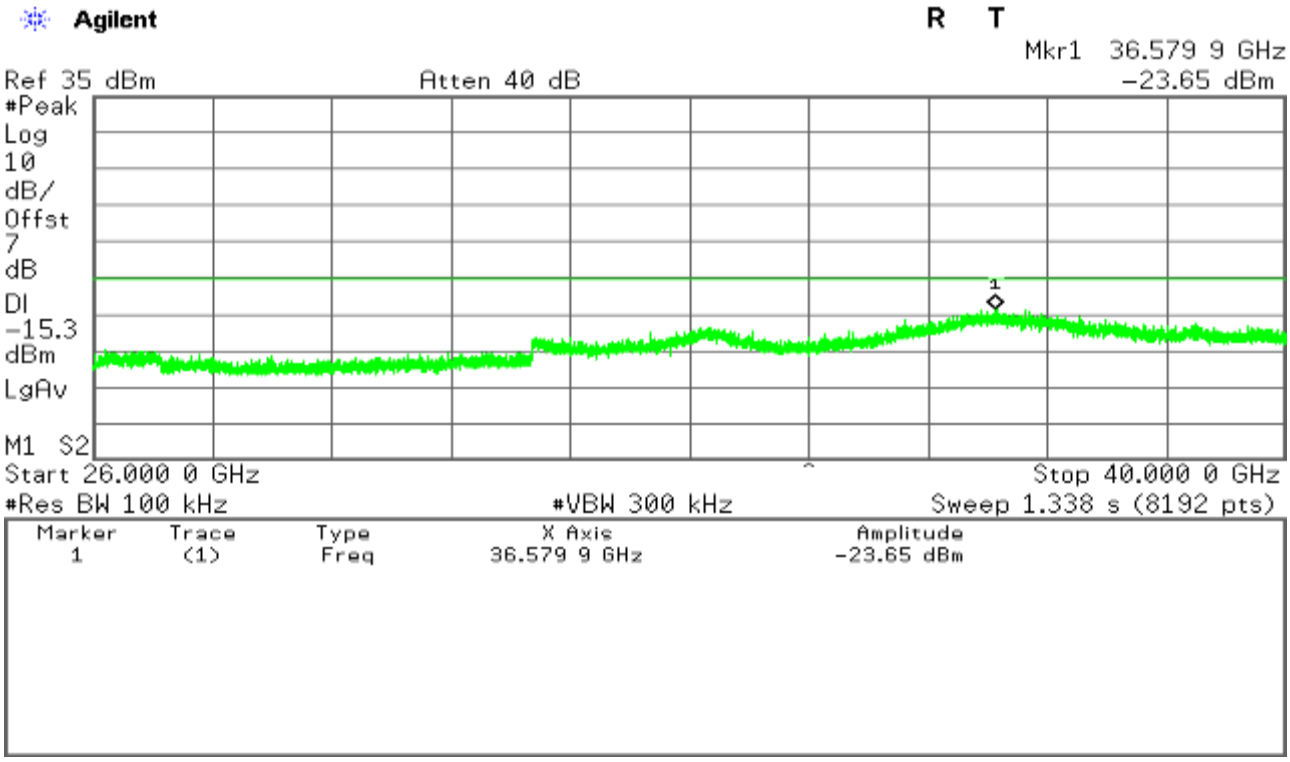

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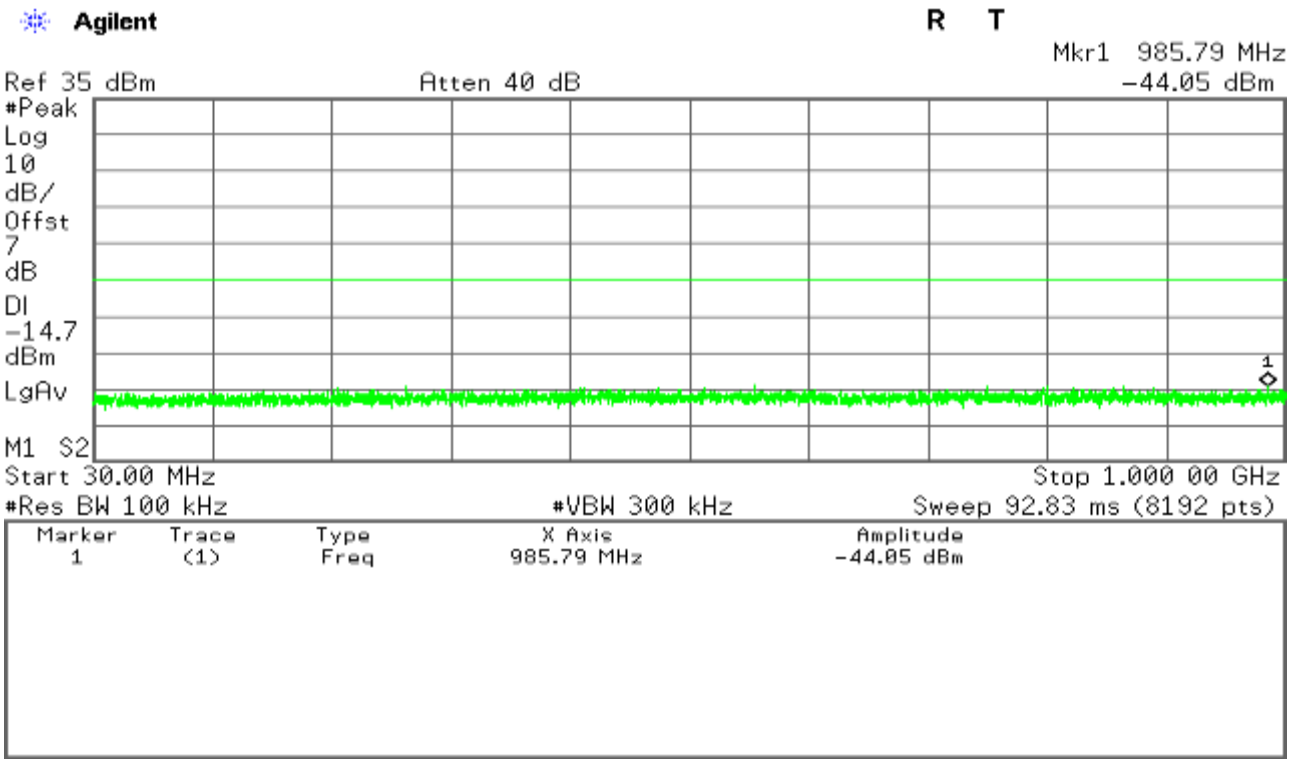
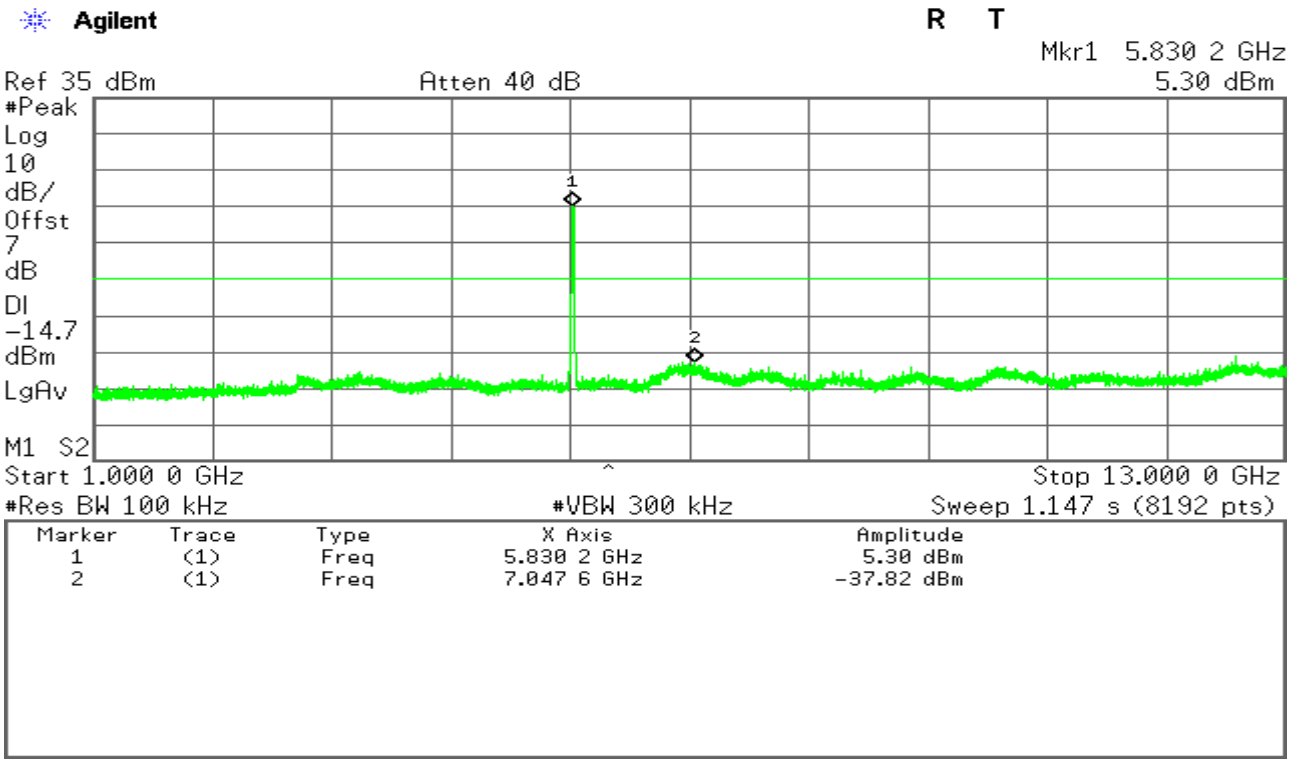
CH High





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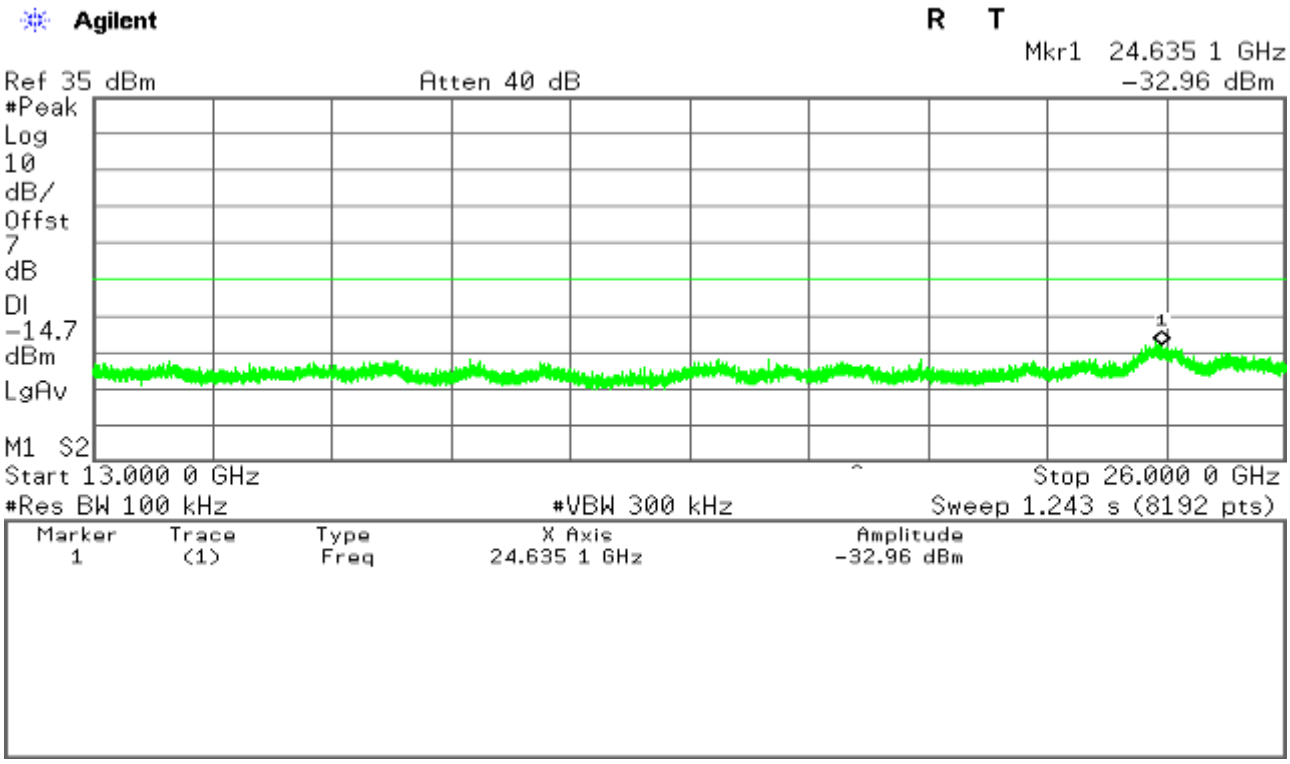

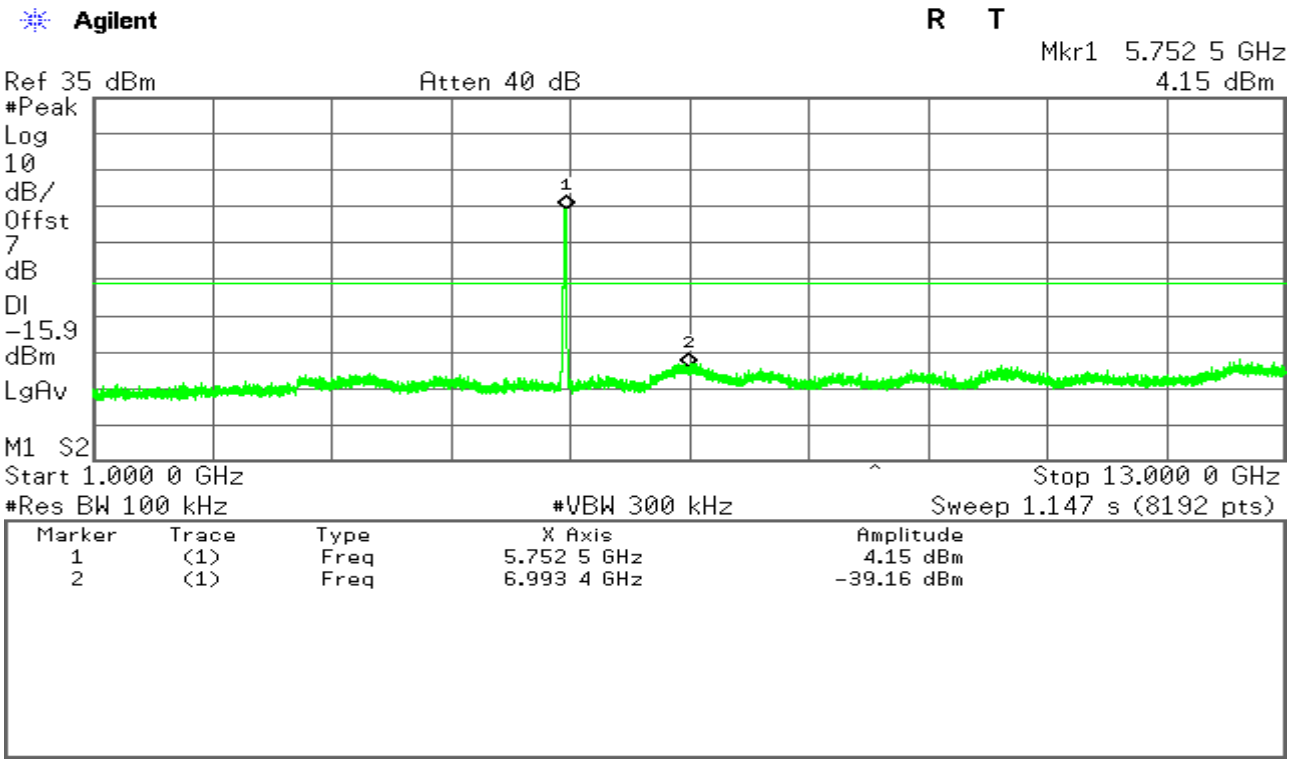

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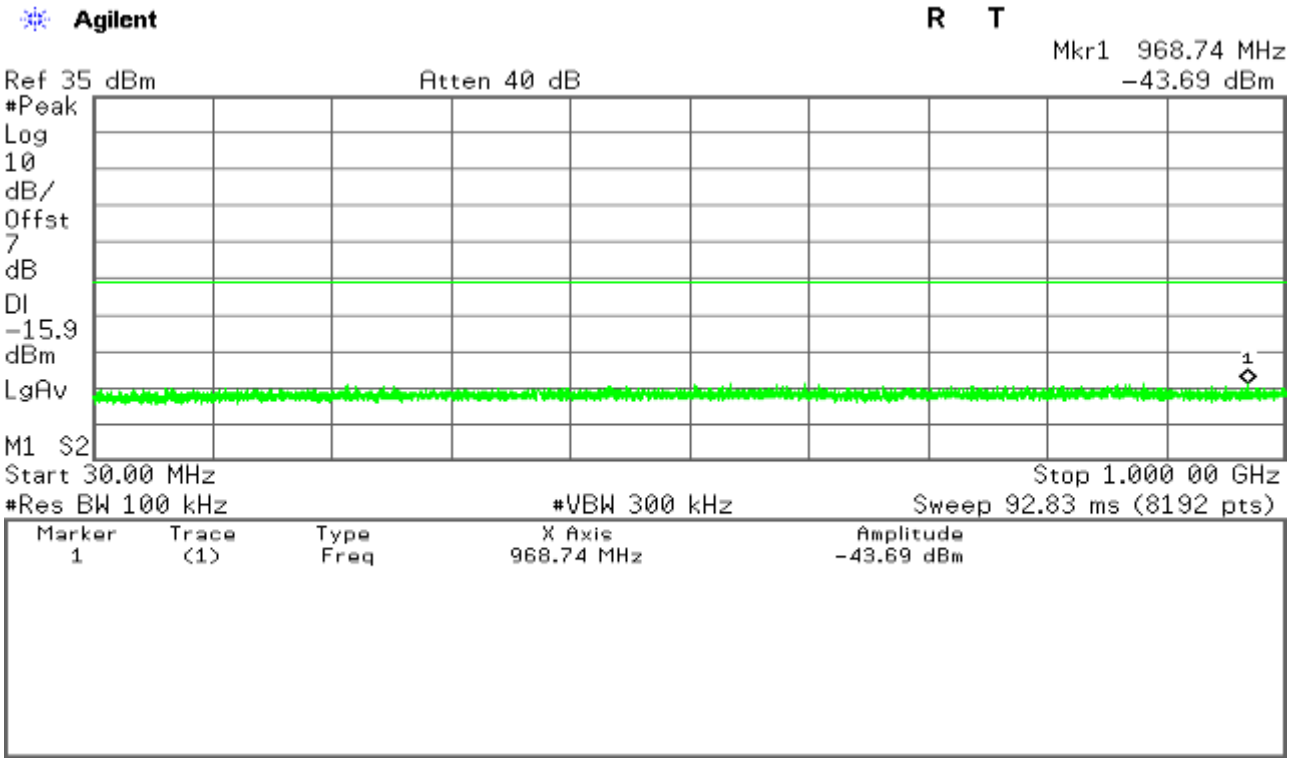
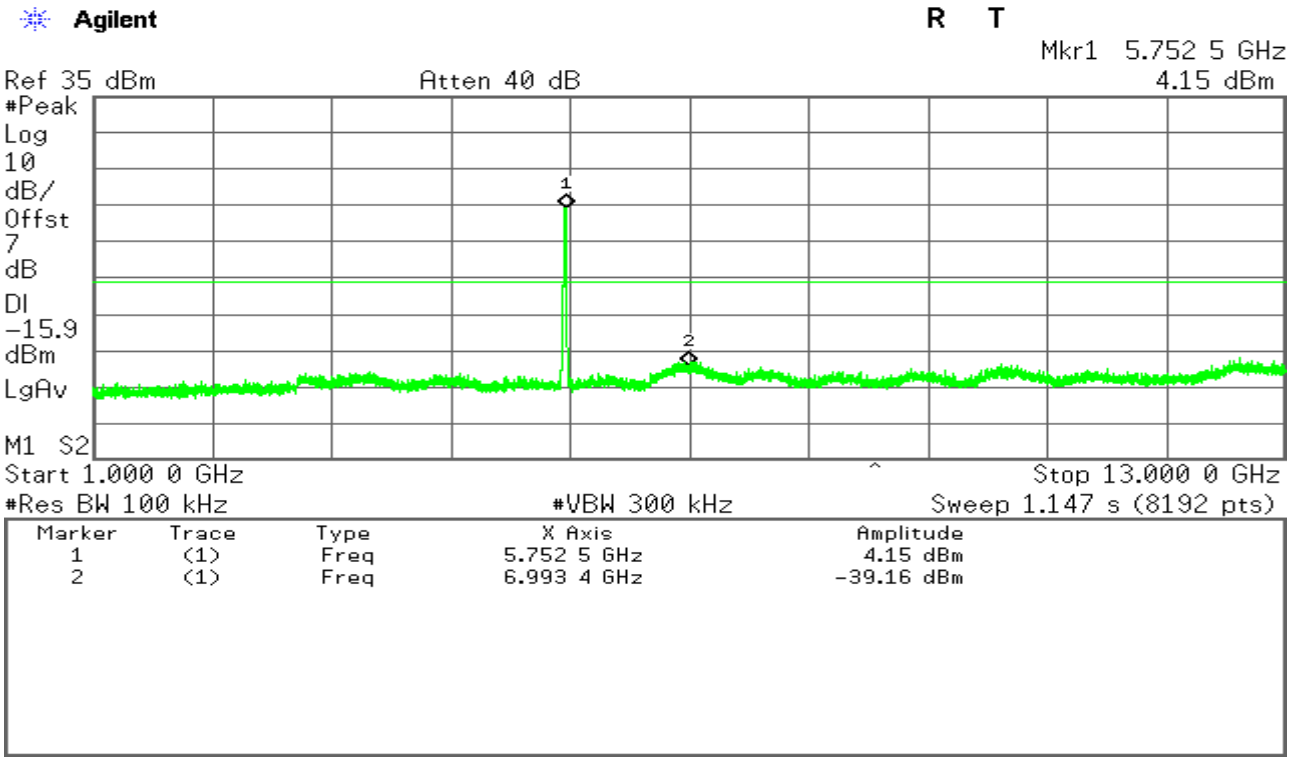
draft 802.11ac Standard-20 MHz Channel mode / Chain 2

CH Low





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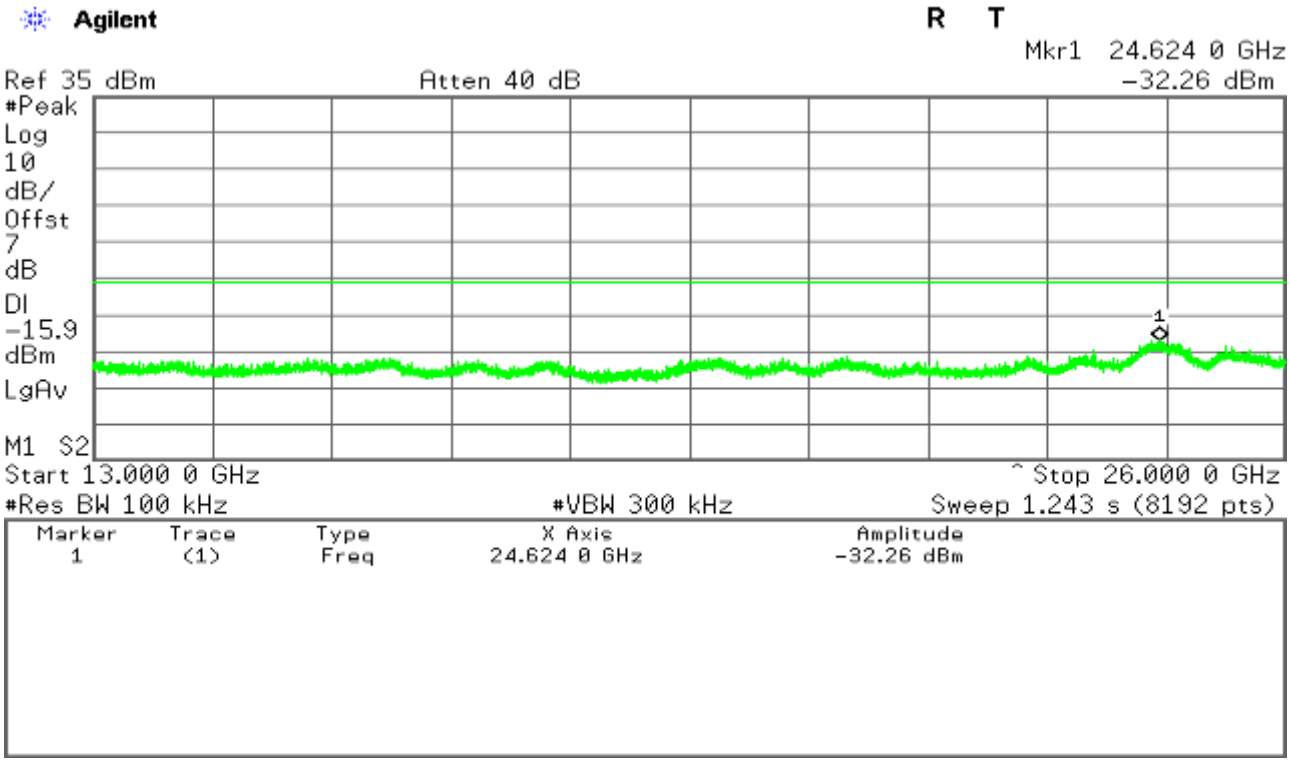

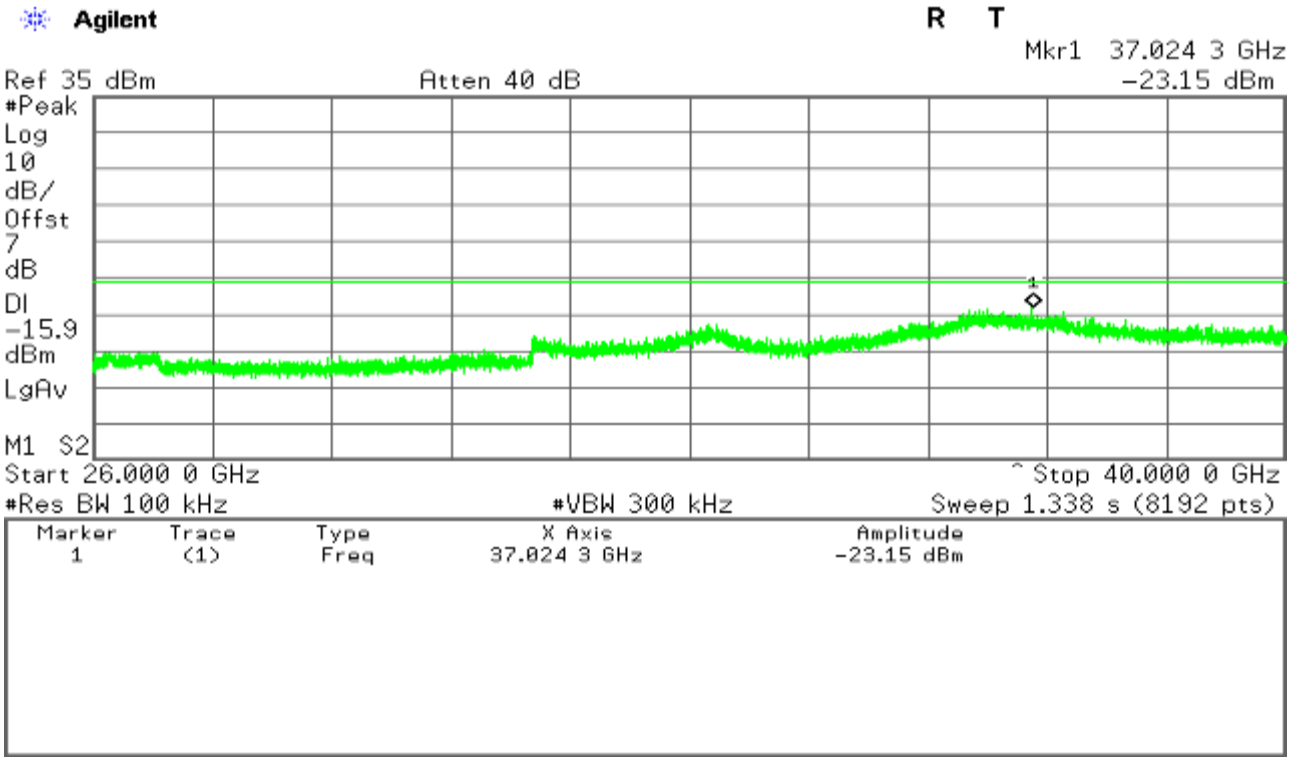

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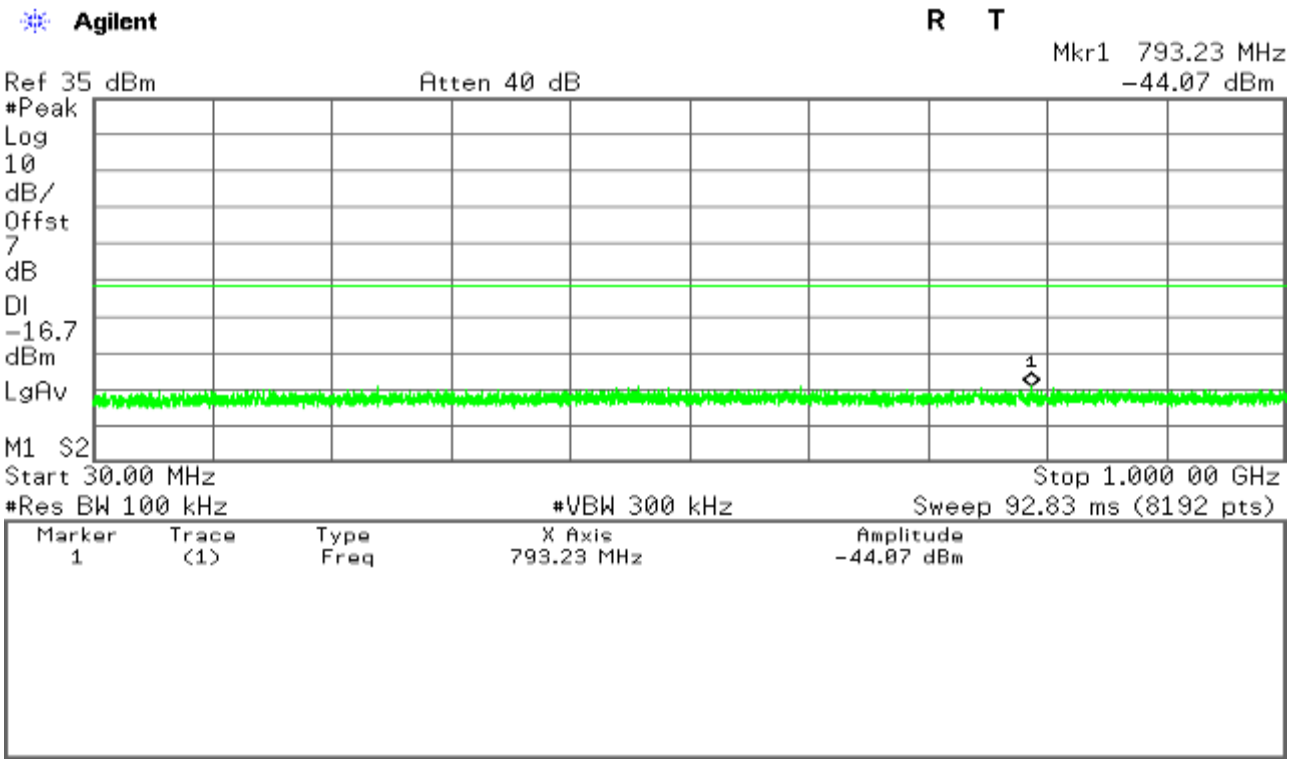
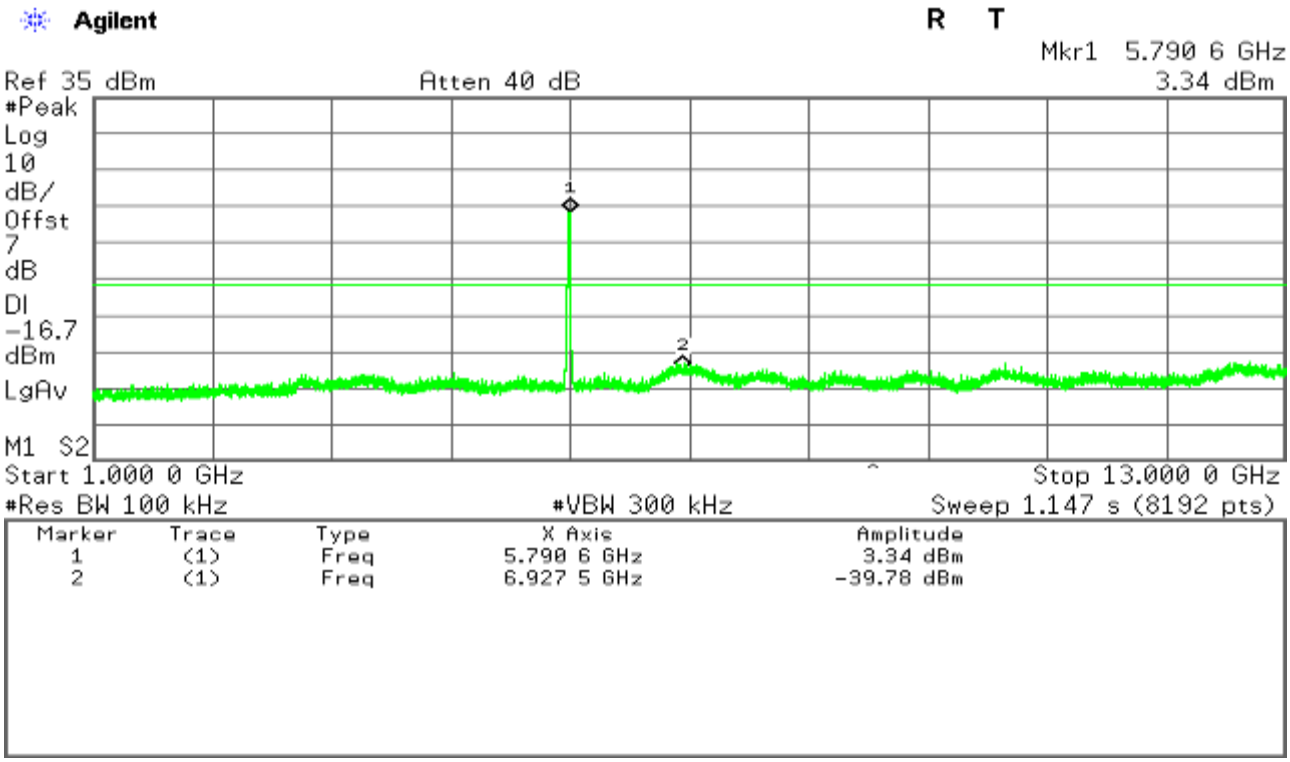
CH Mid





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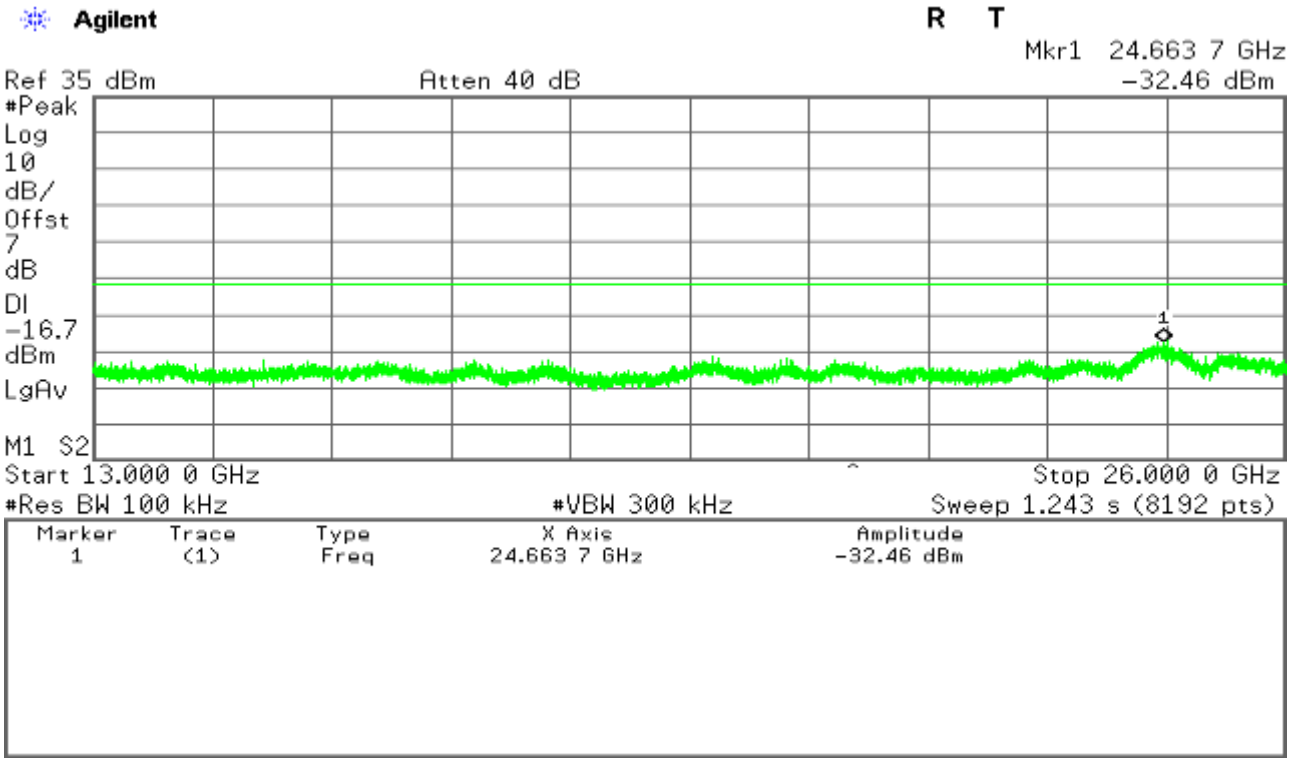

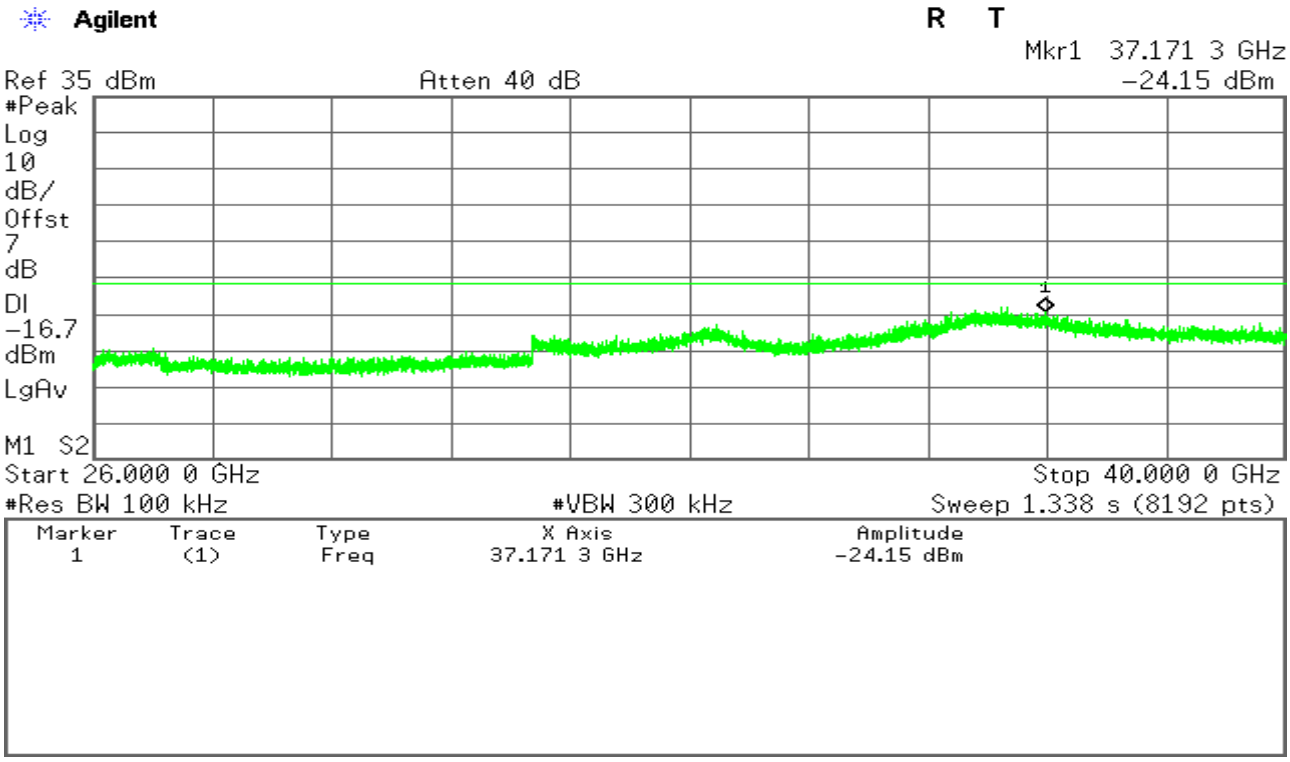

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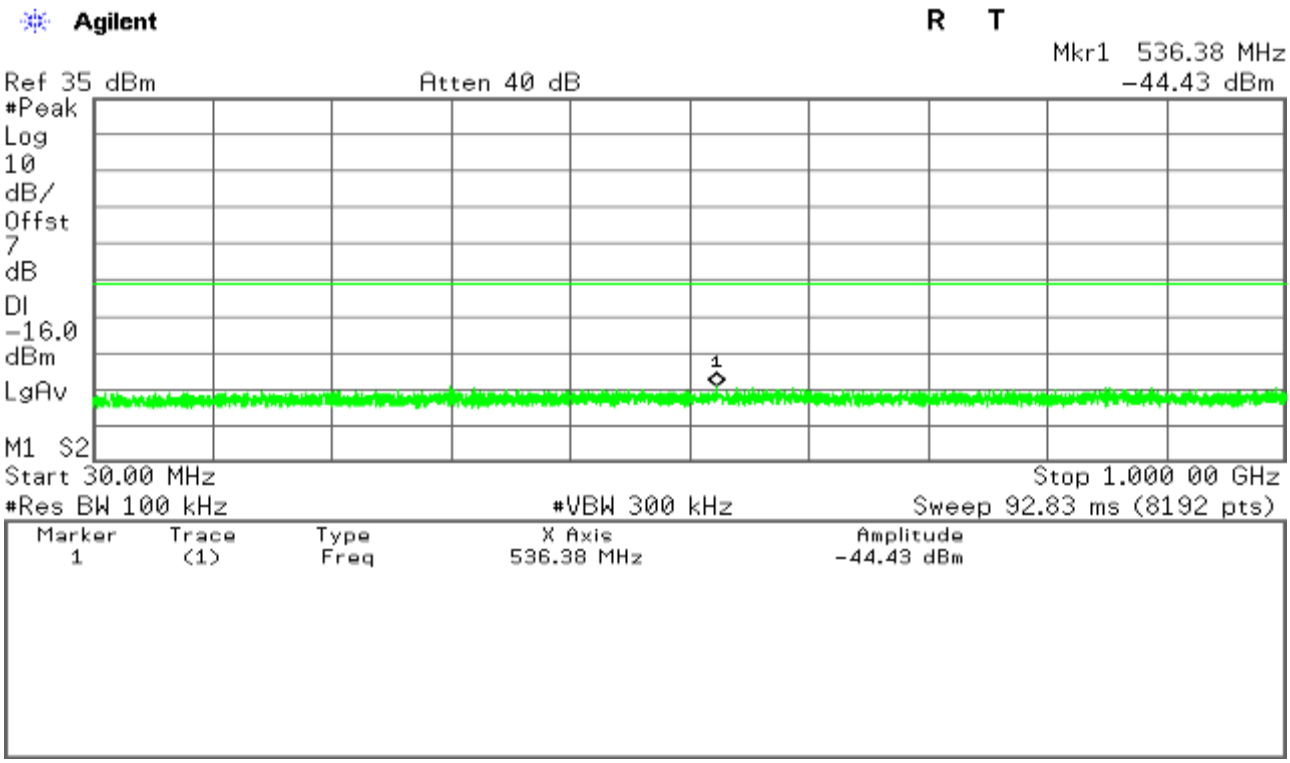

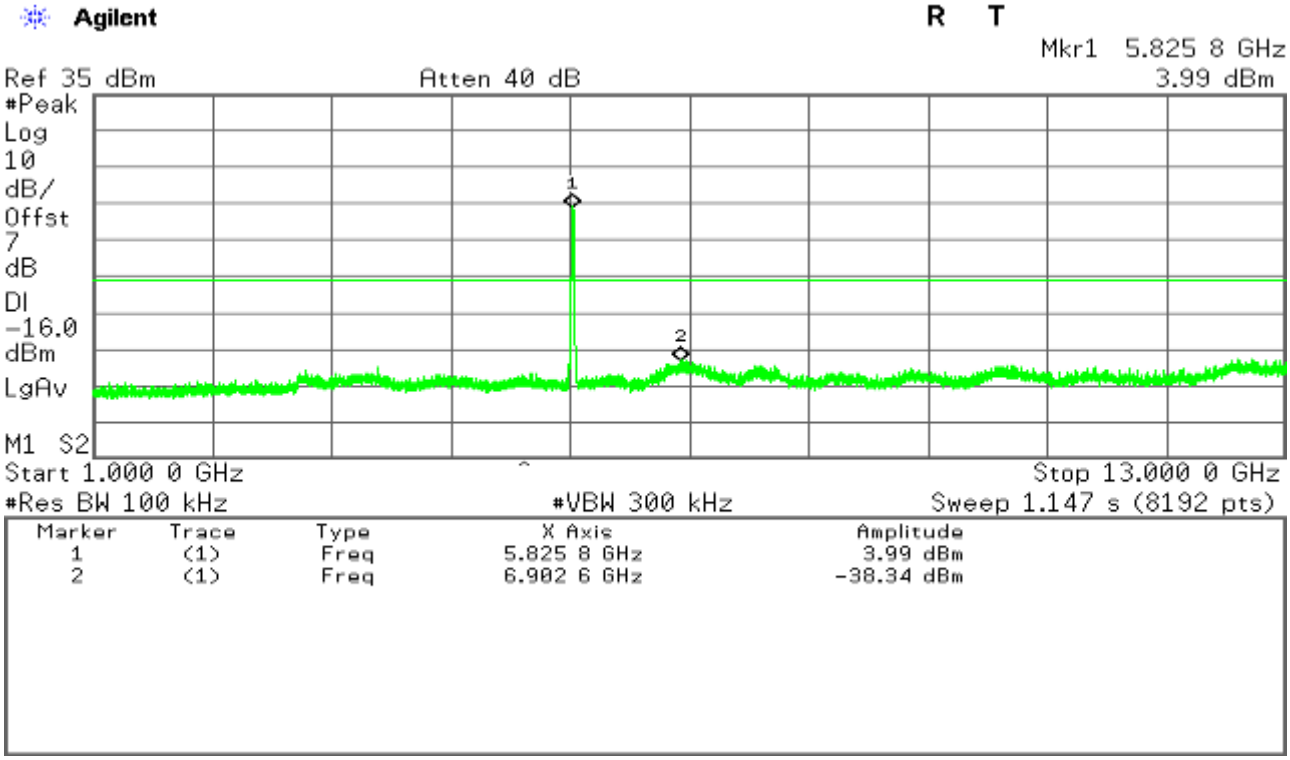

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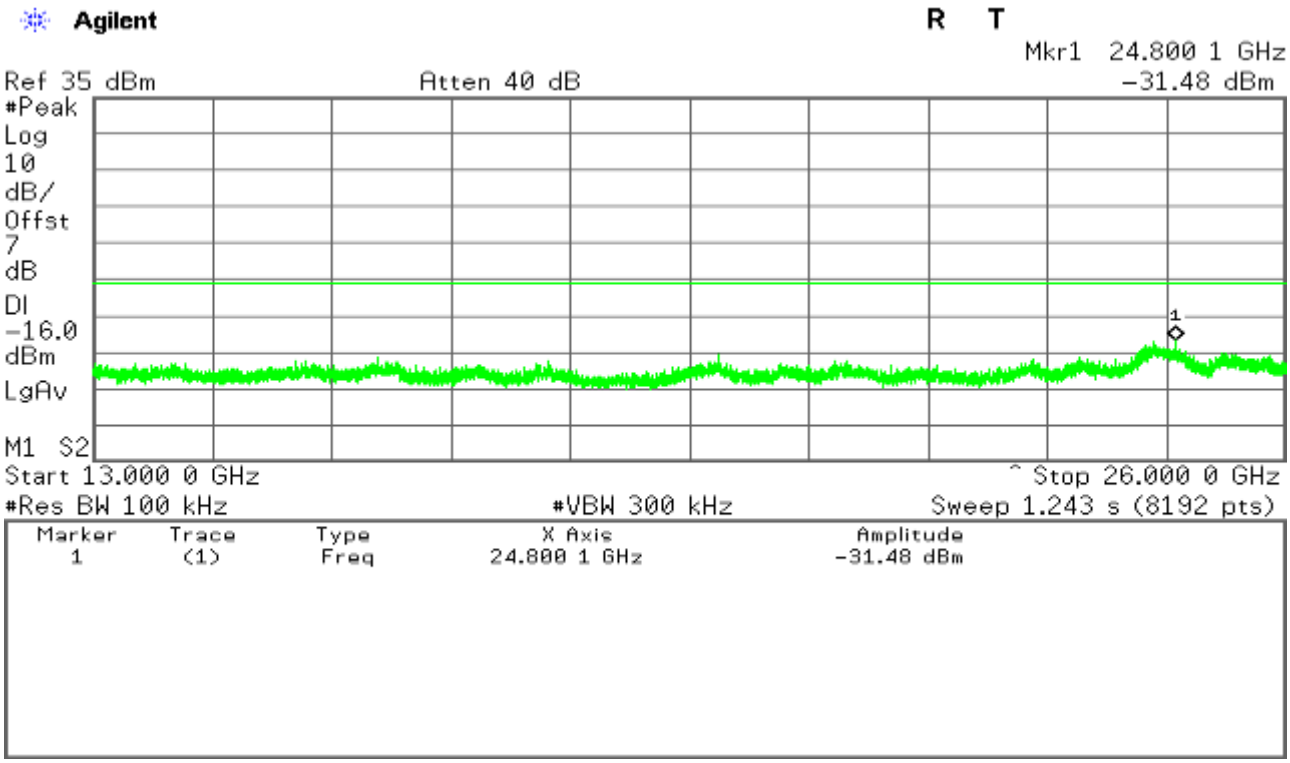

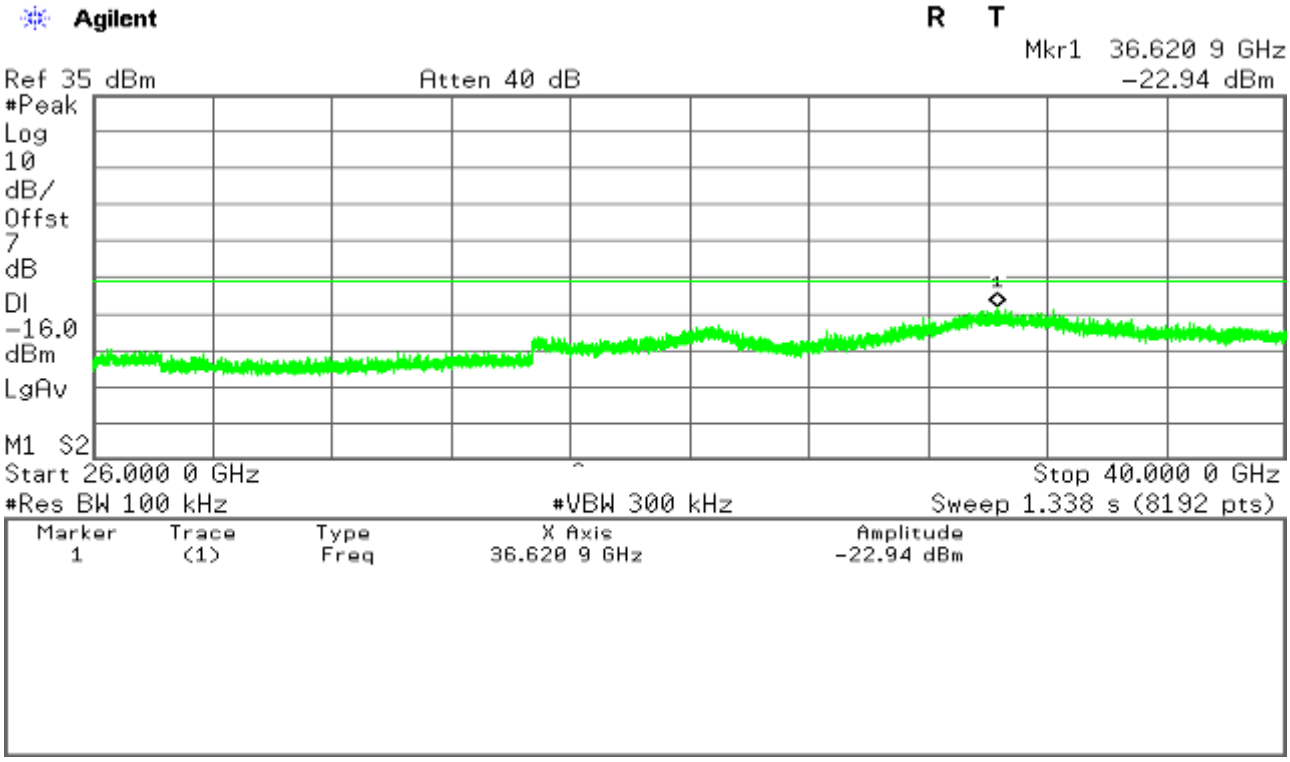

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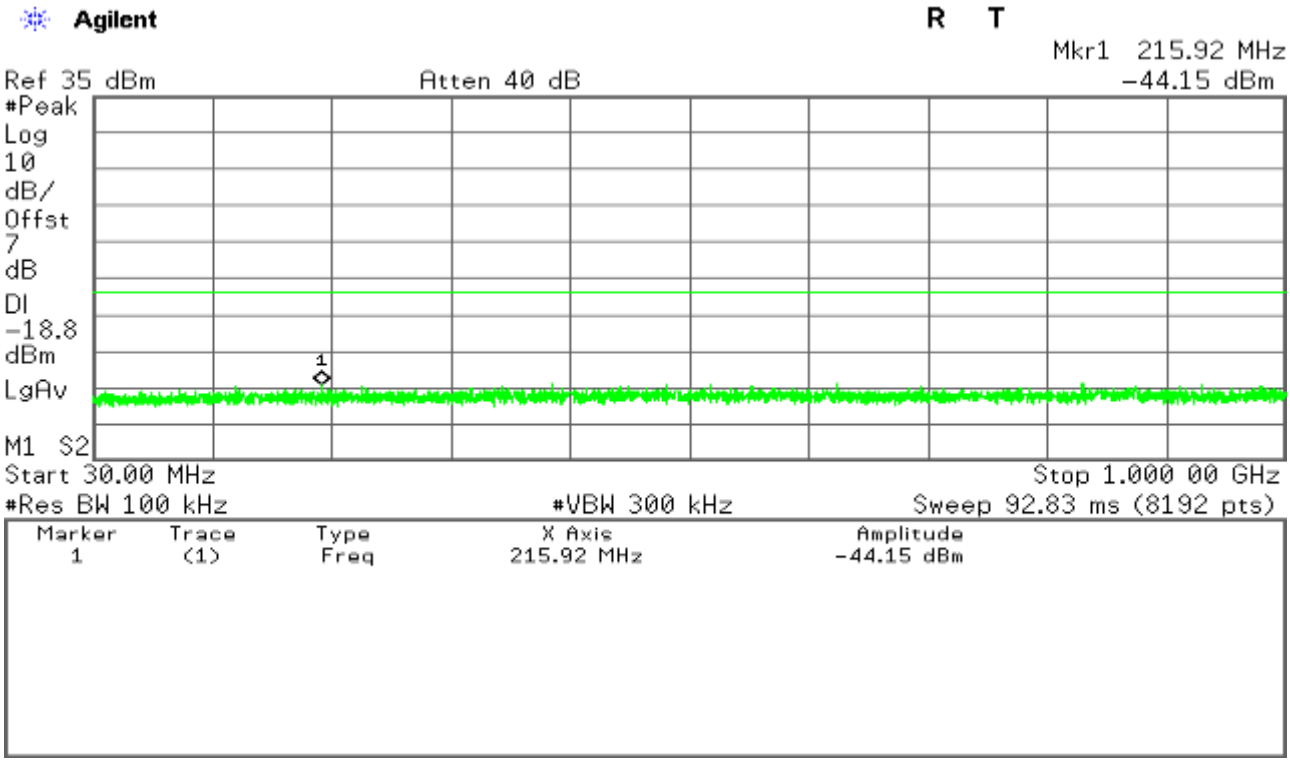
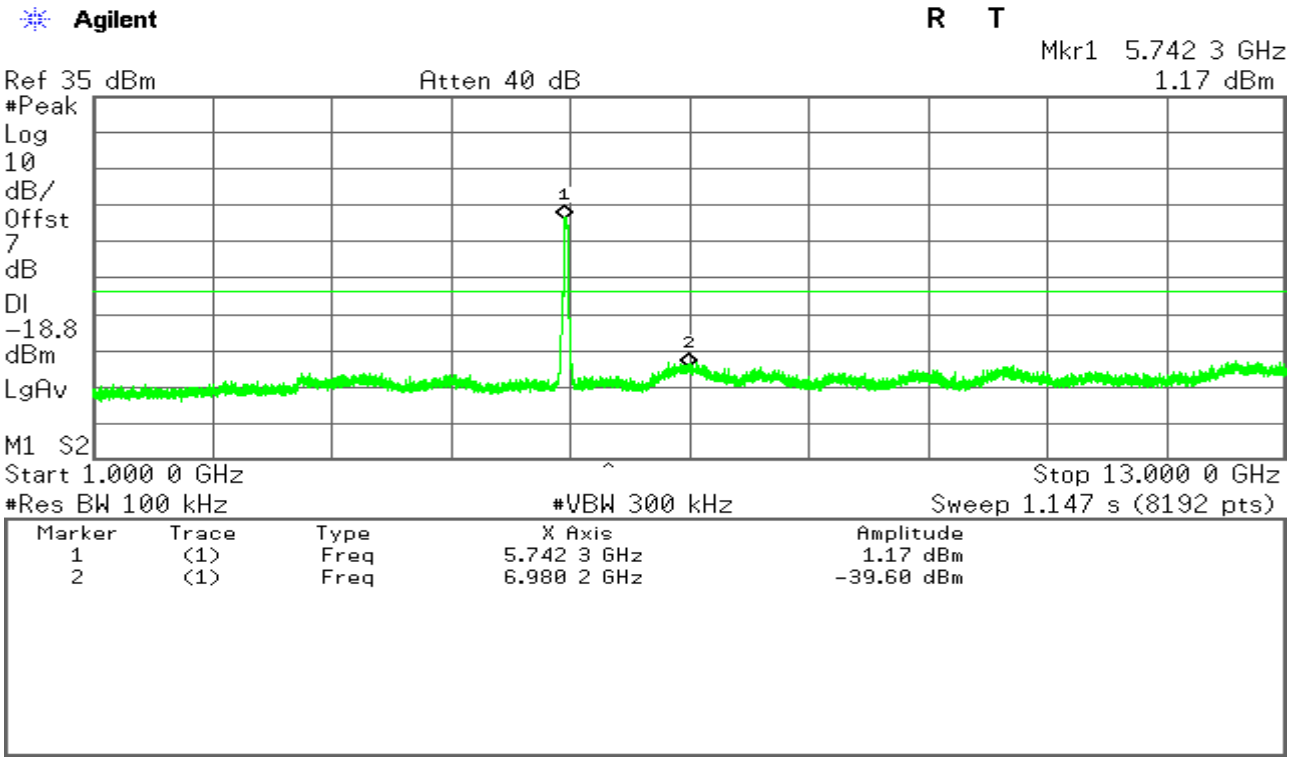
draft 802.11ac Wide-40 MHz Channel mode / Chain 0

CH Low





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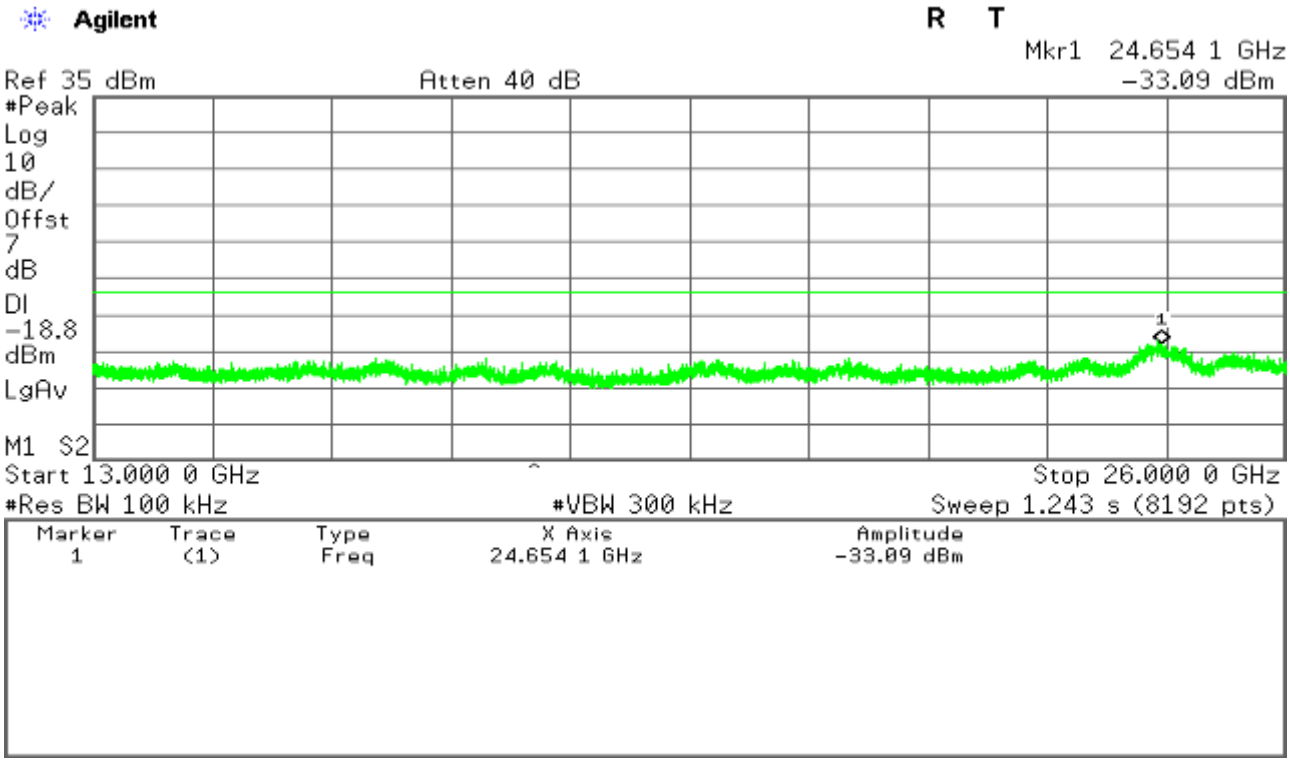

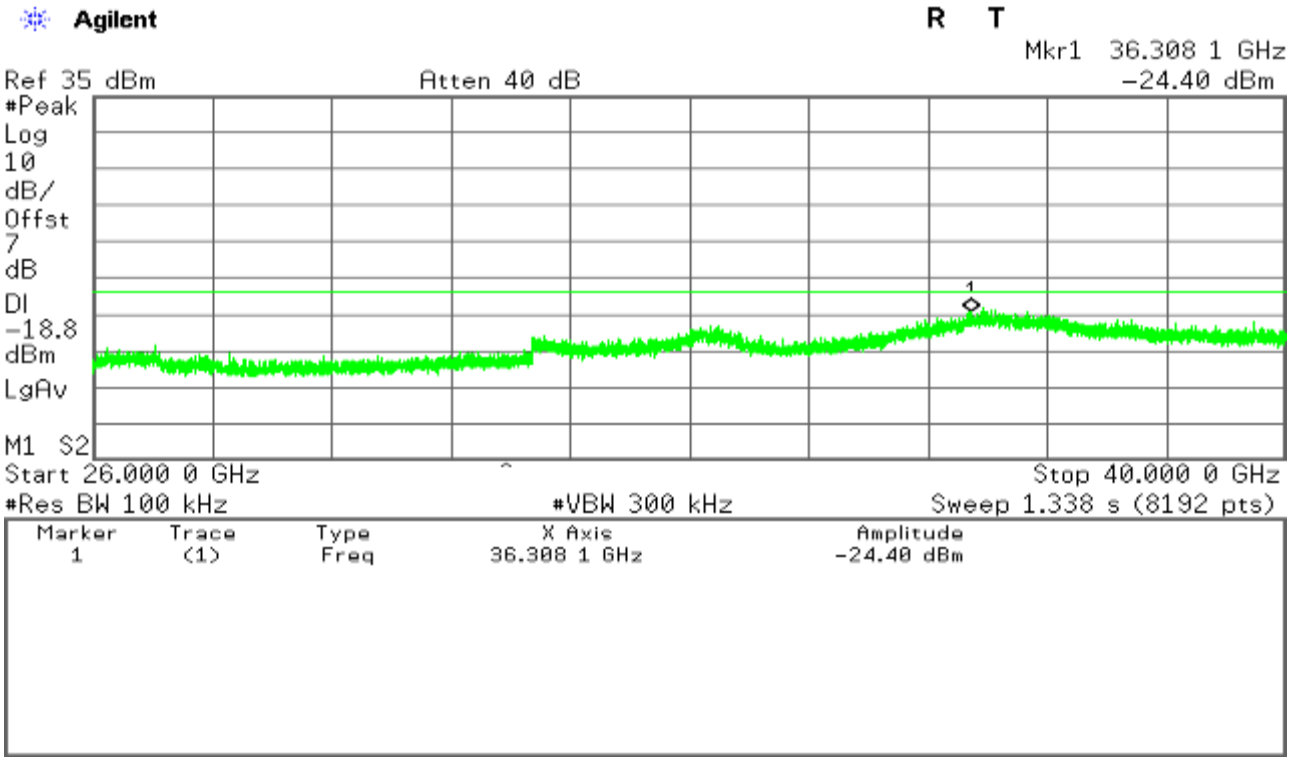

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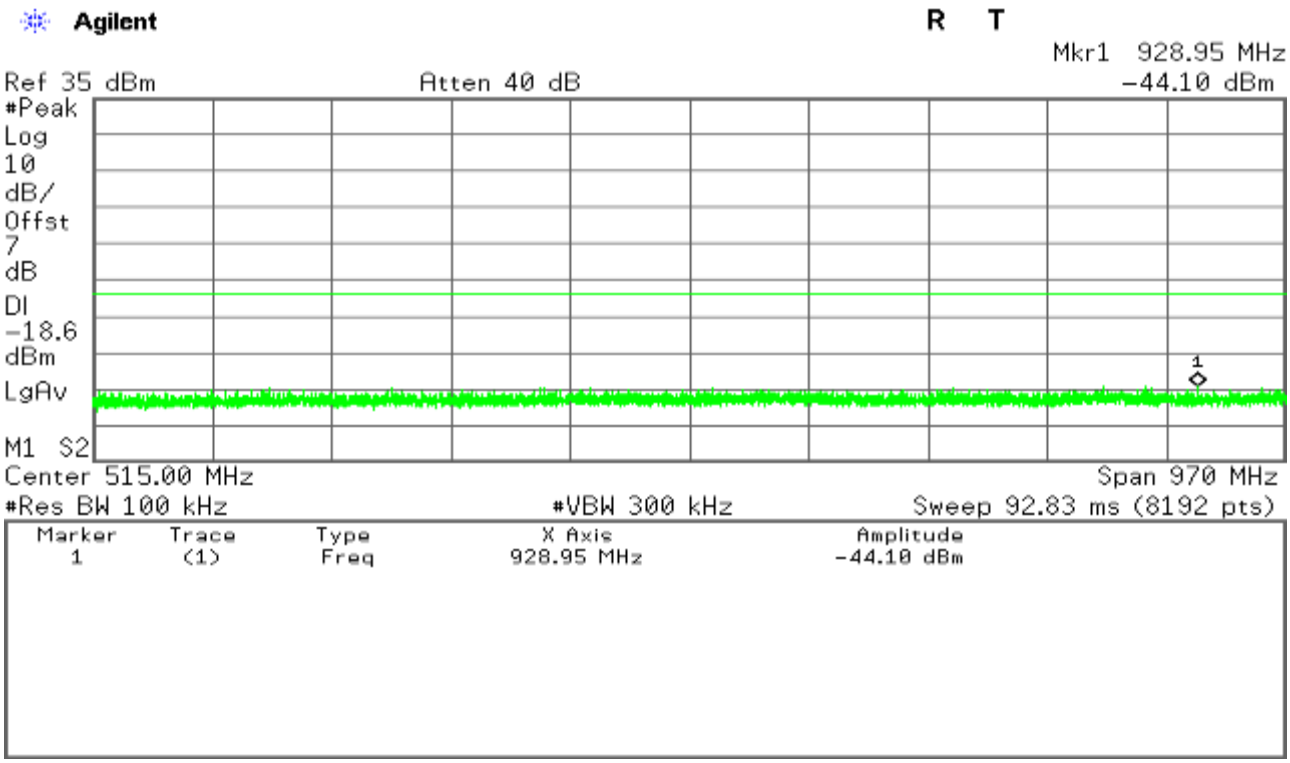
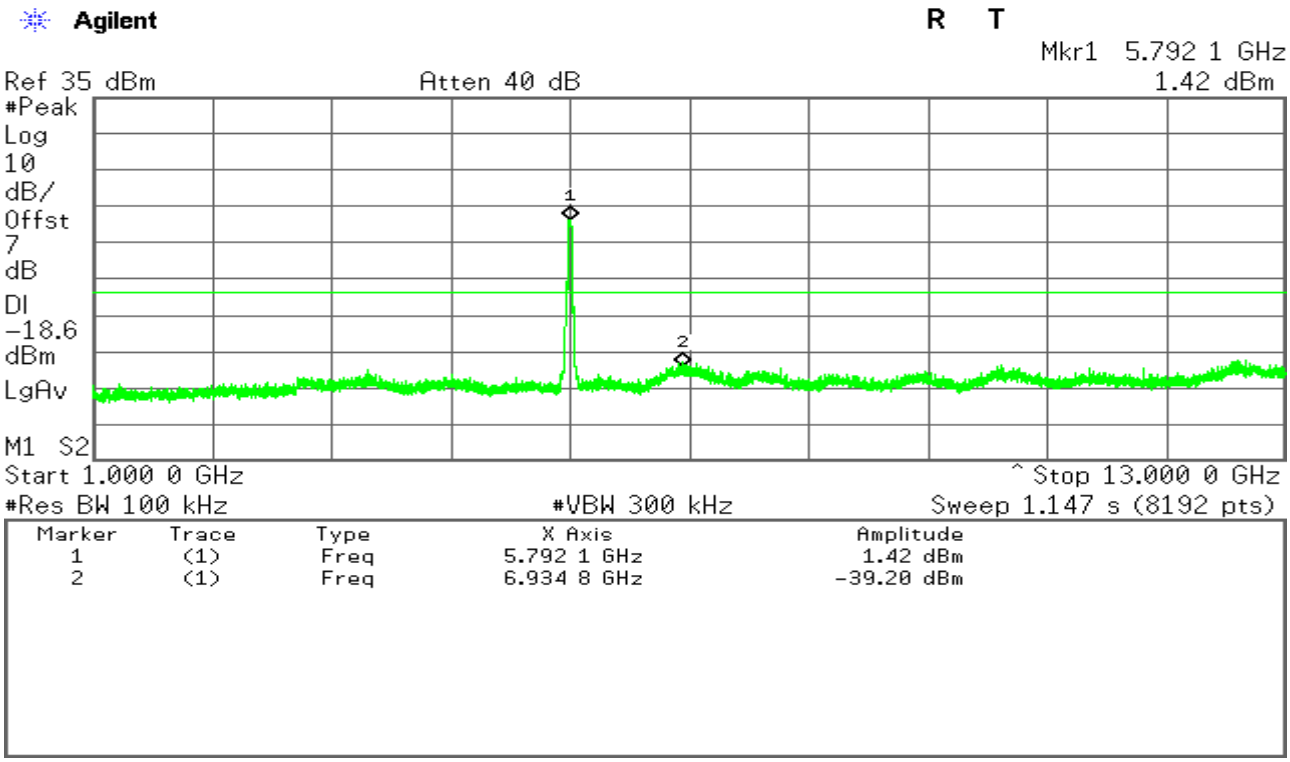
CH High





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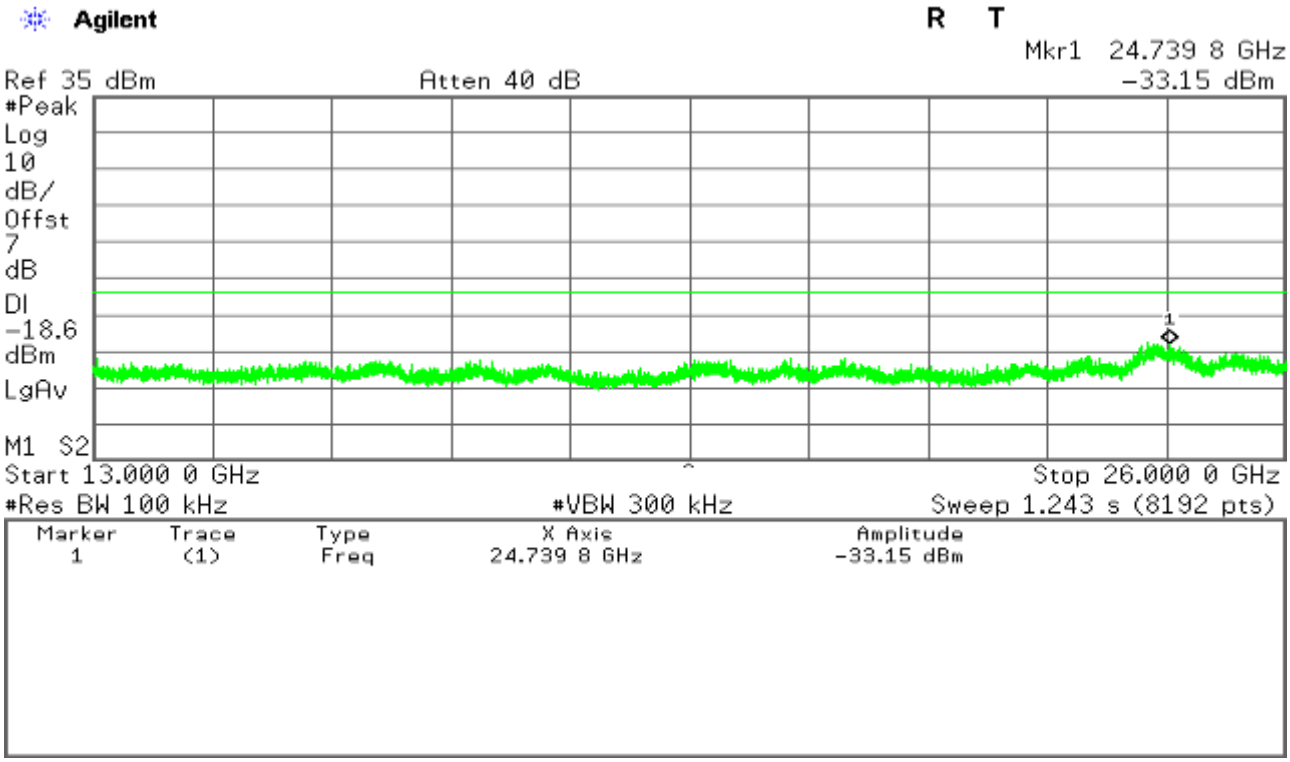

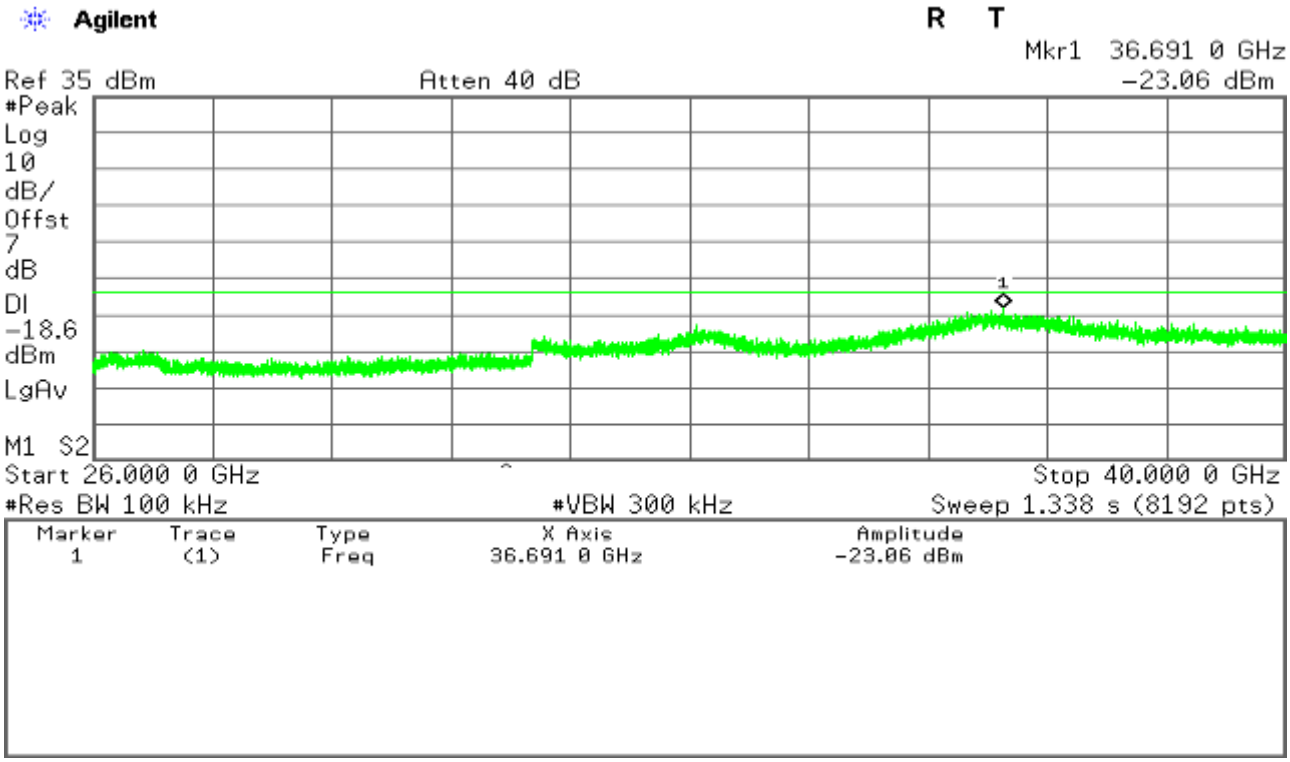

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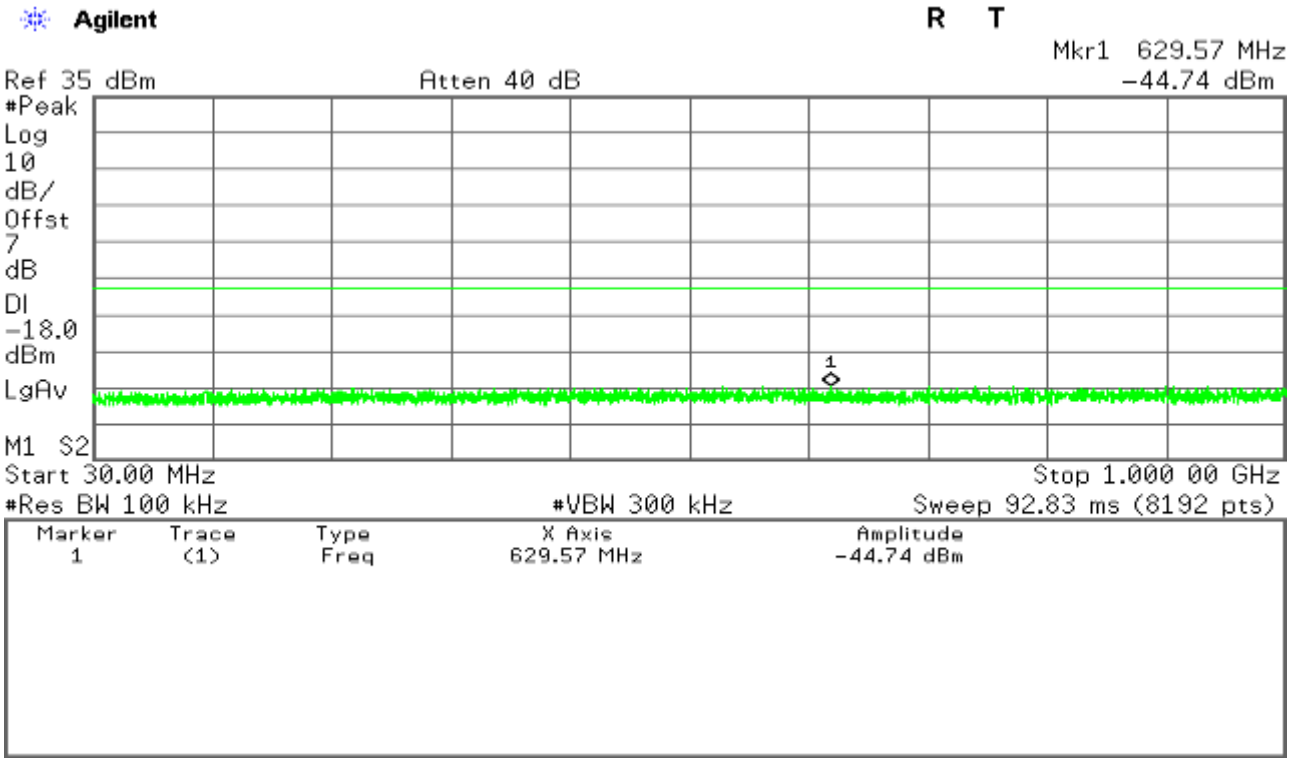
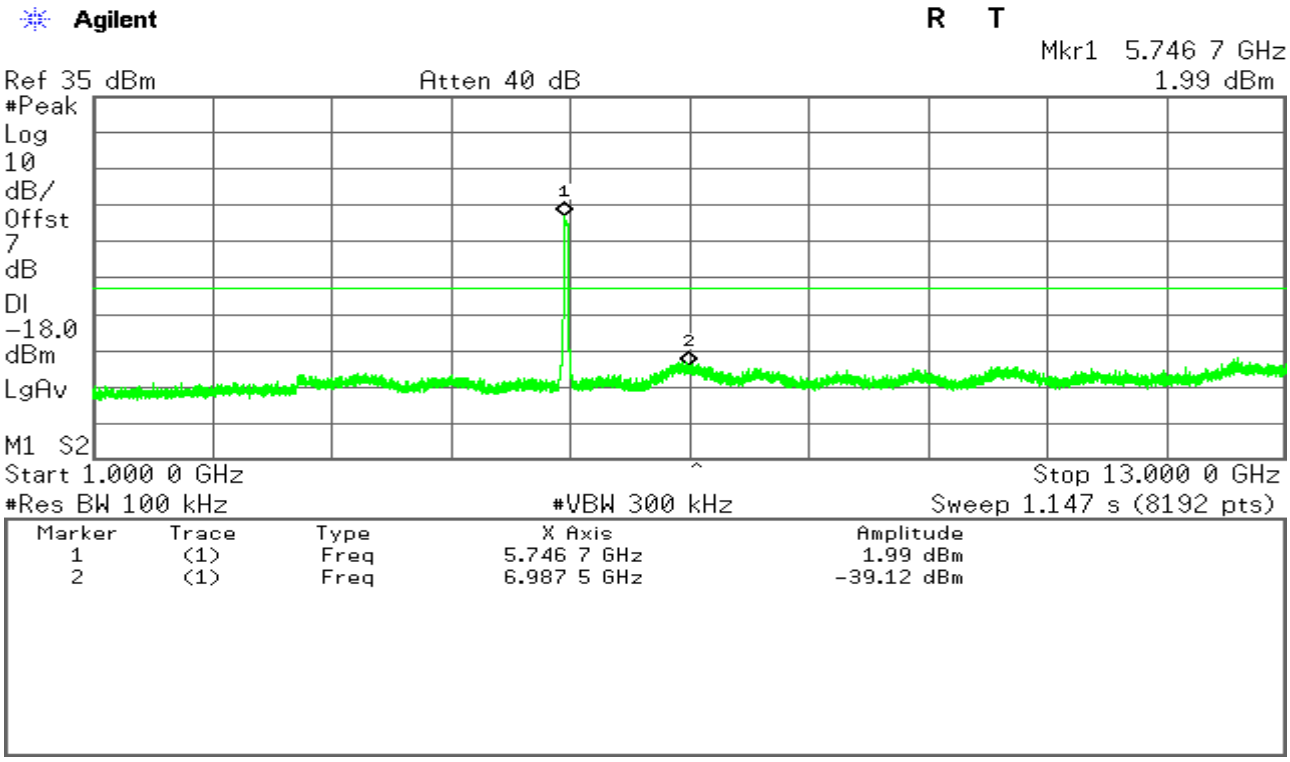
draft 802.11ac Wide-40 MHz Channel mode / Chain 1

CH Low





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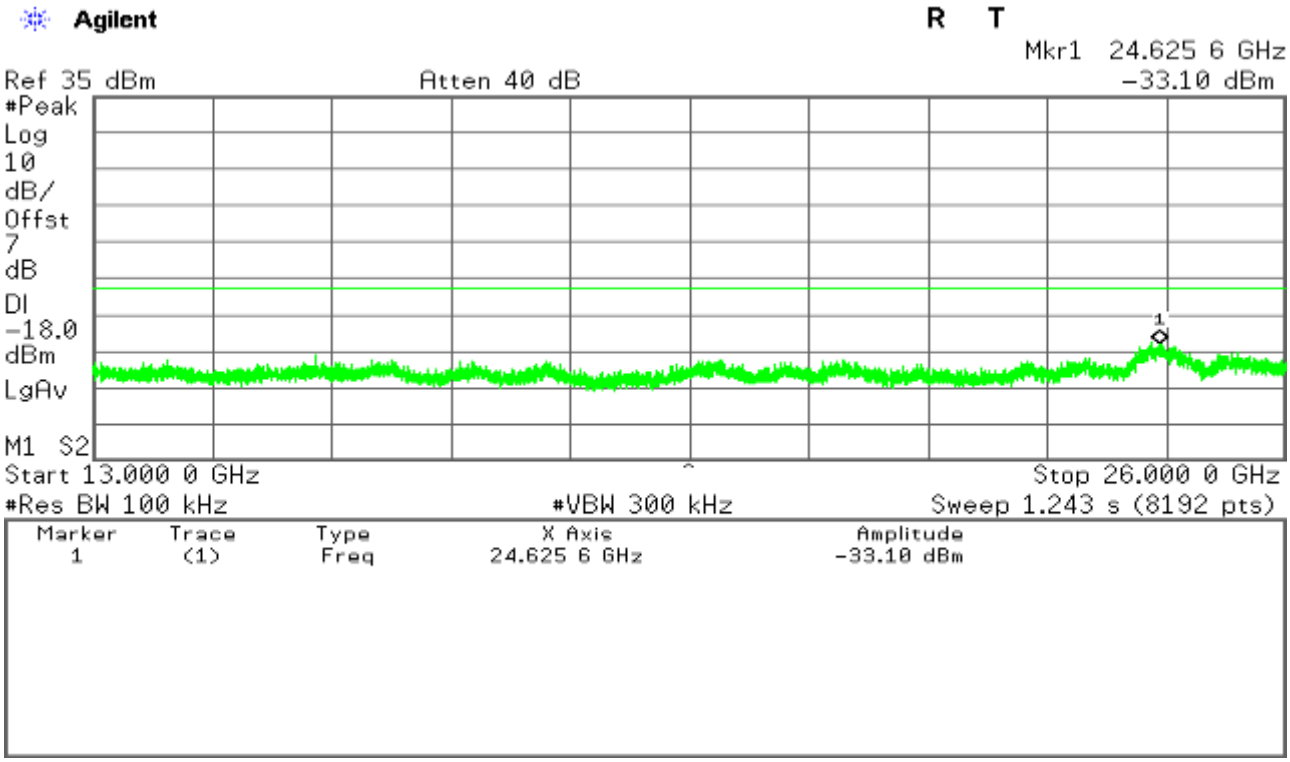

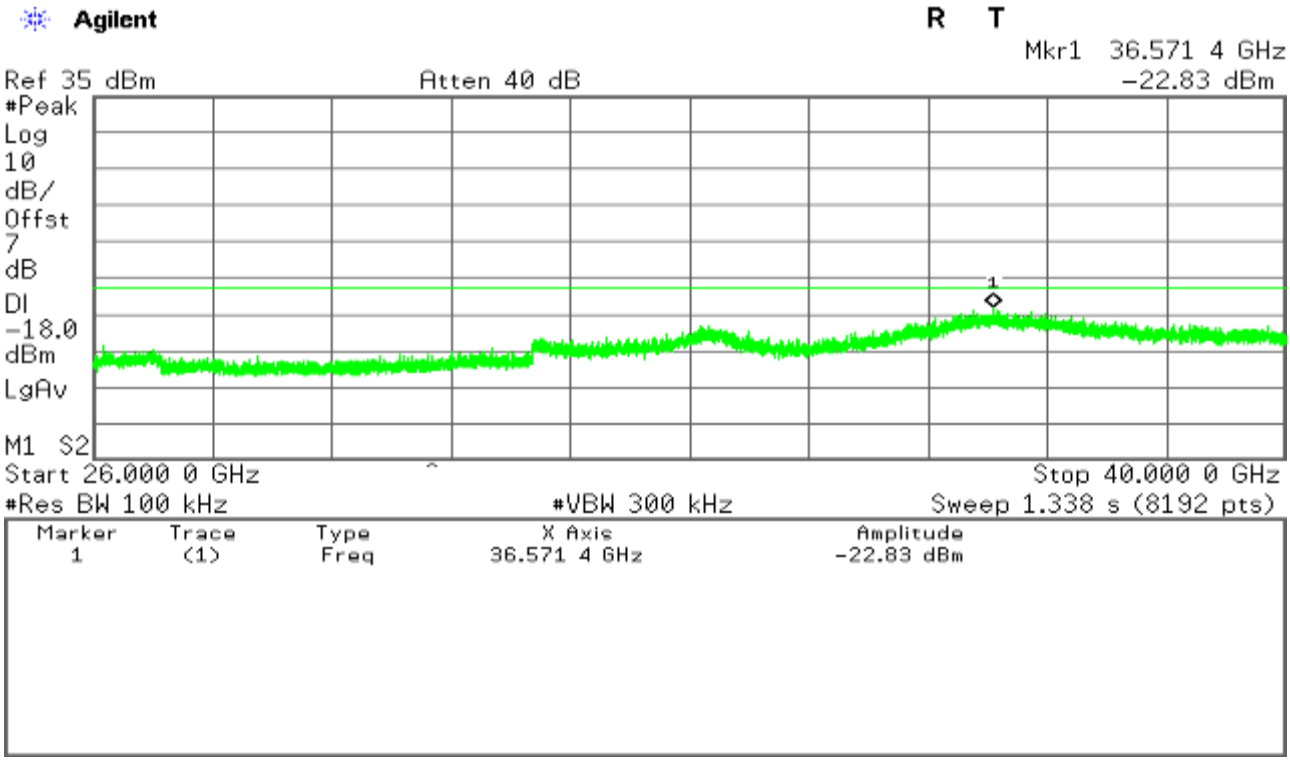

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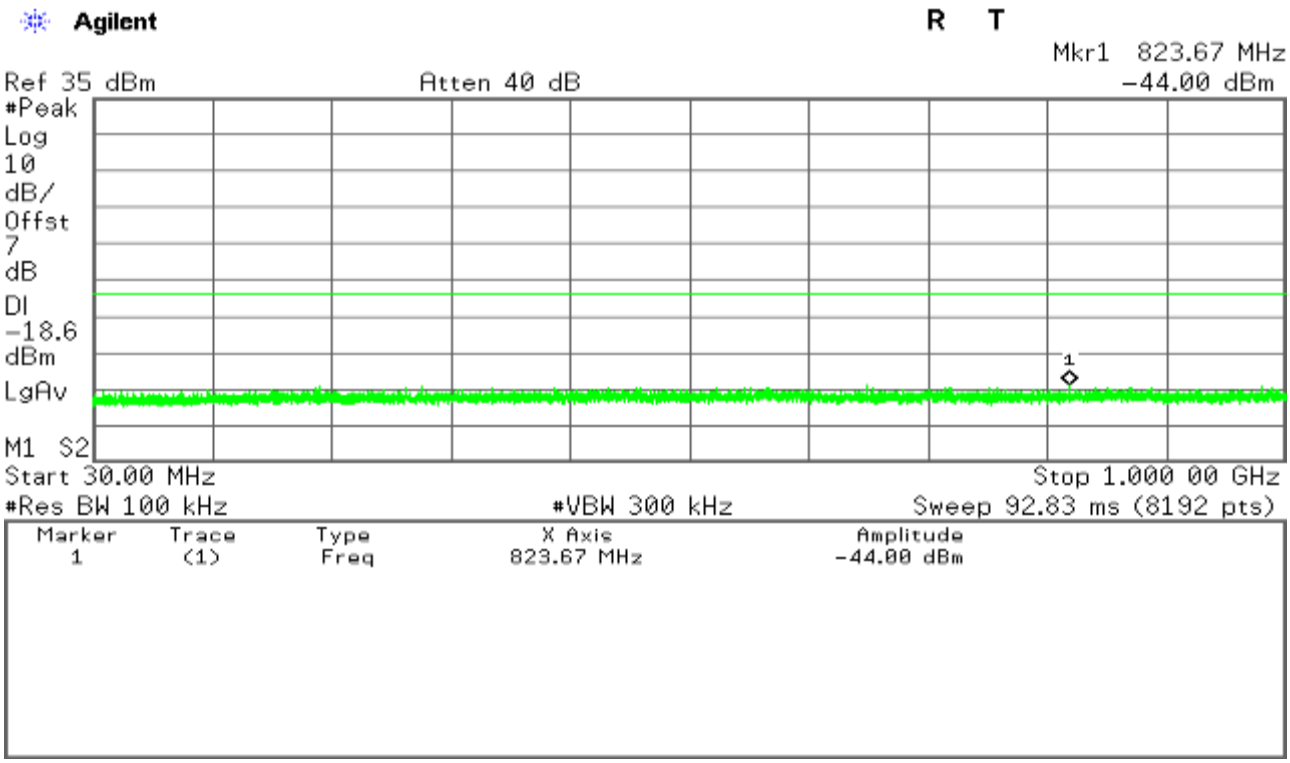
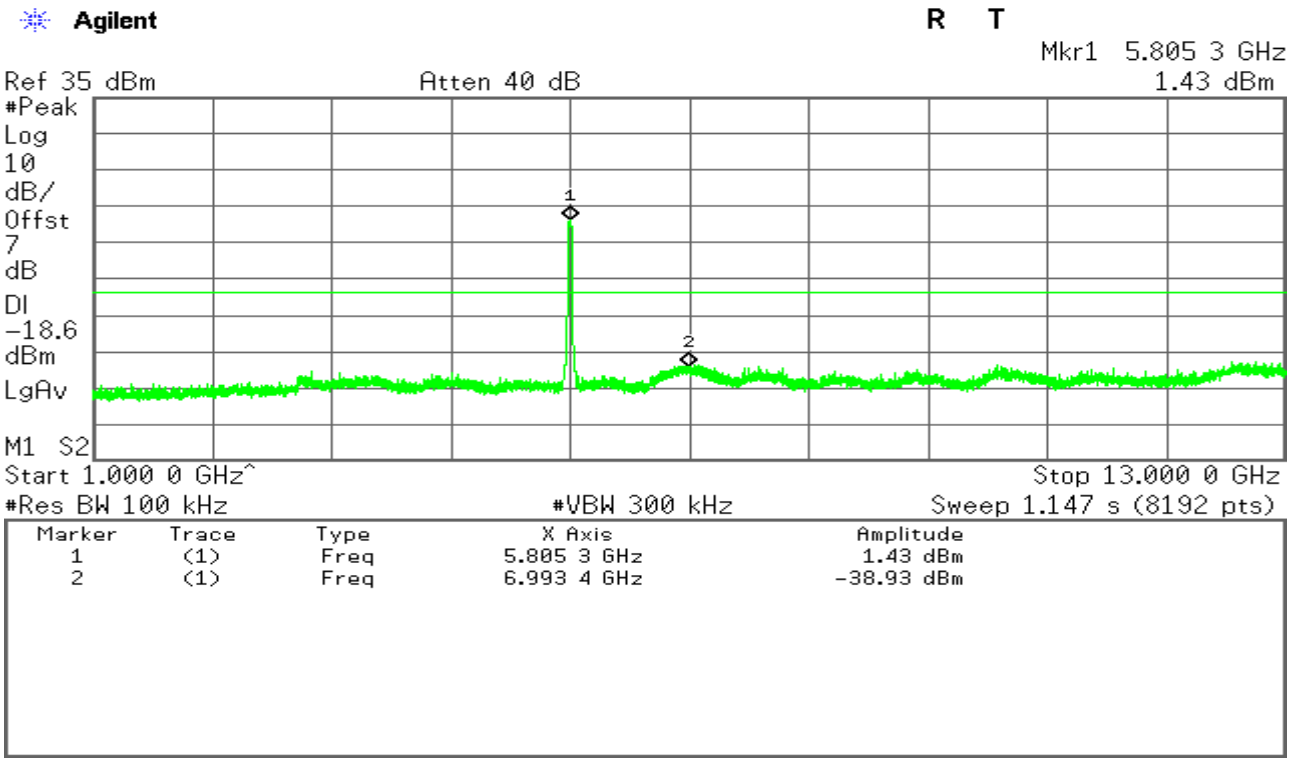
CH High





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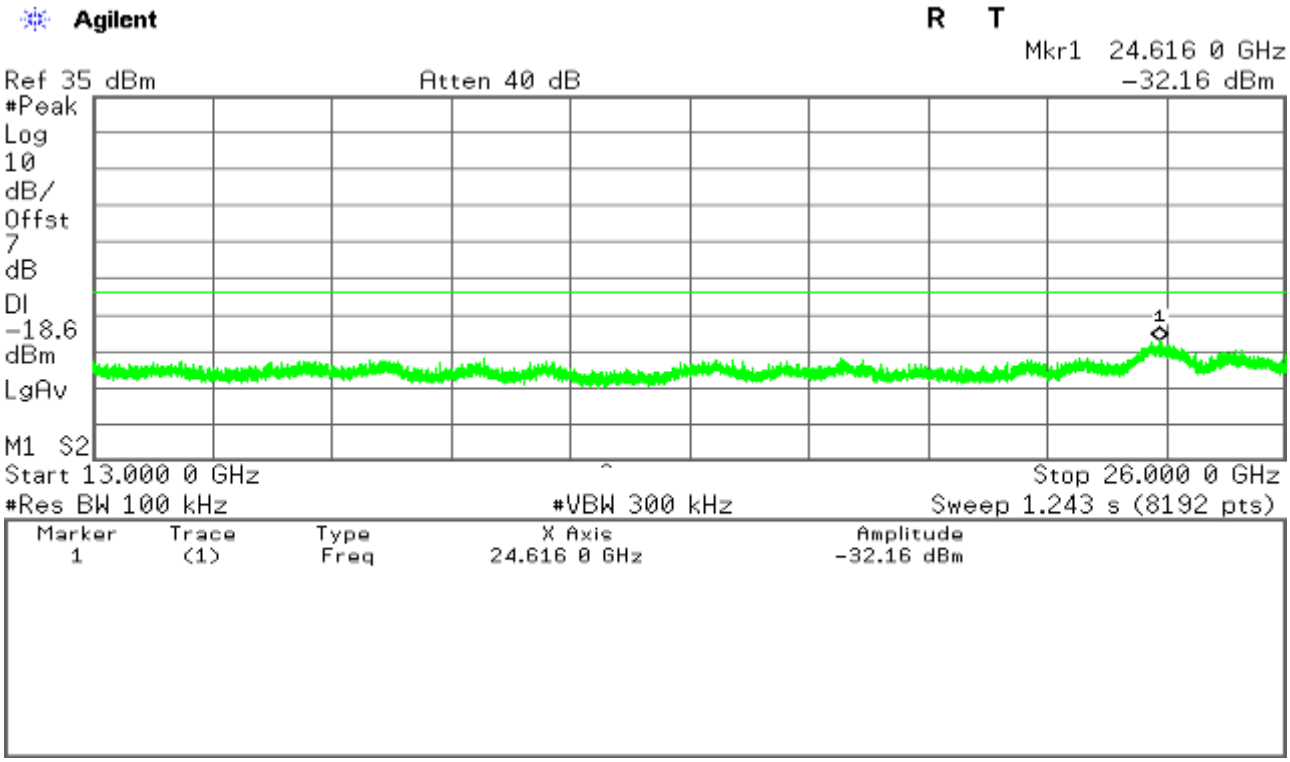

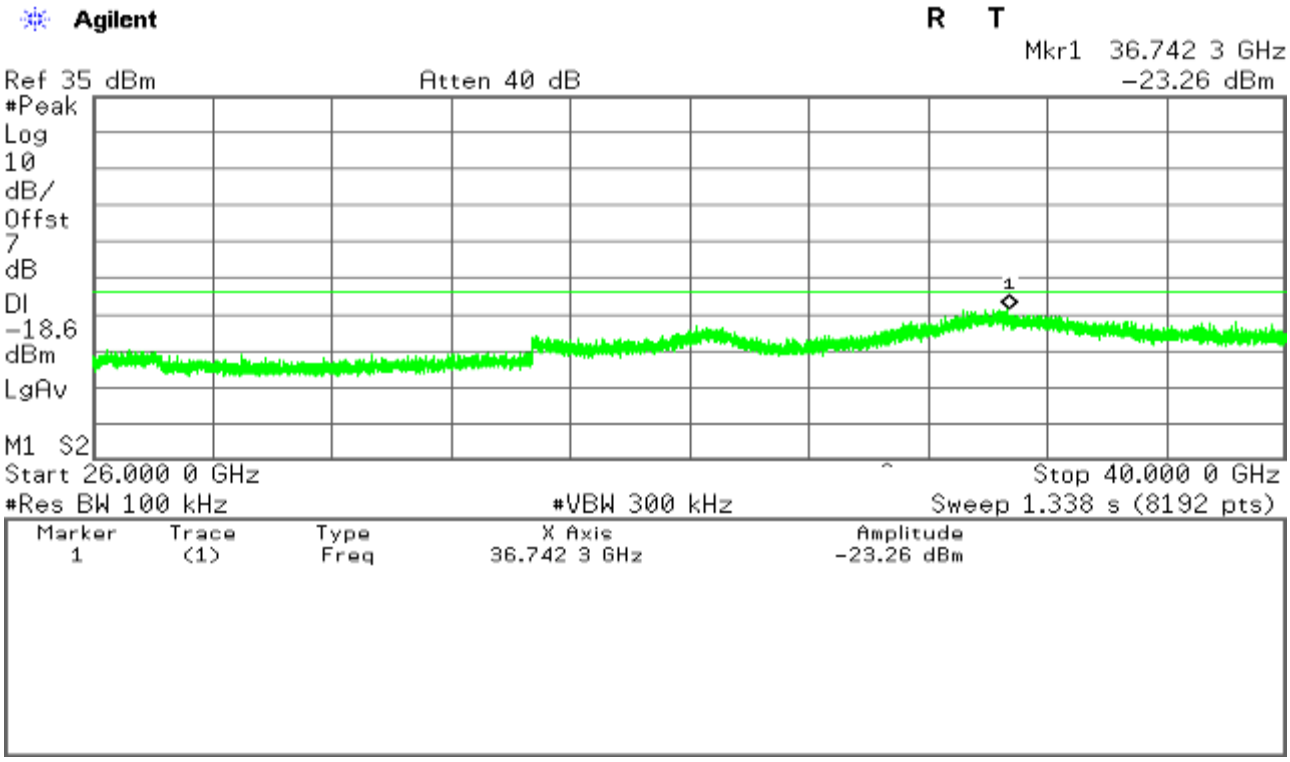

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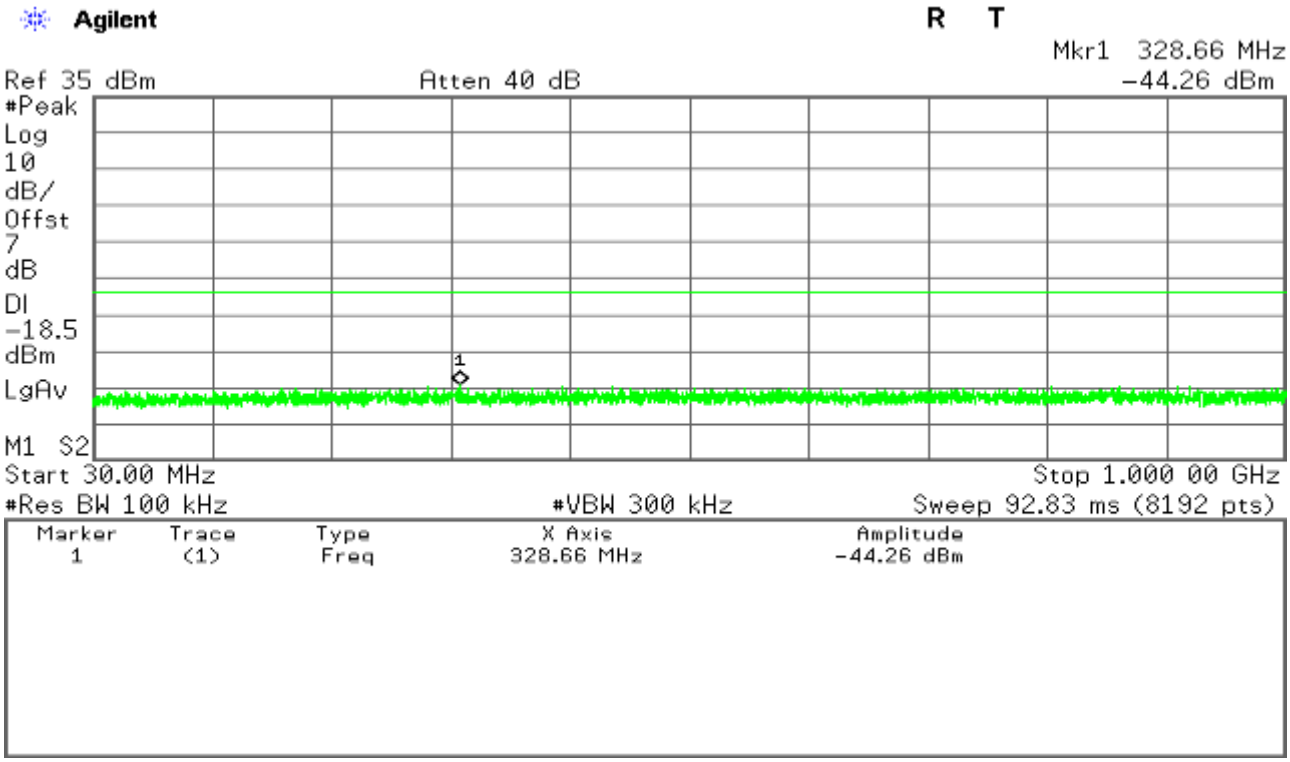
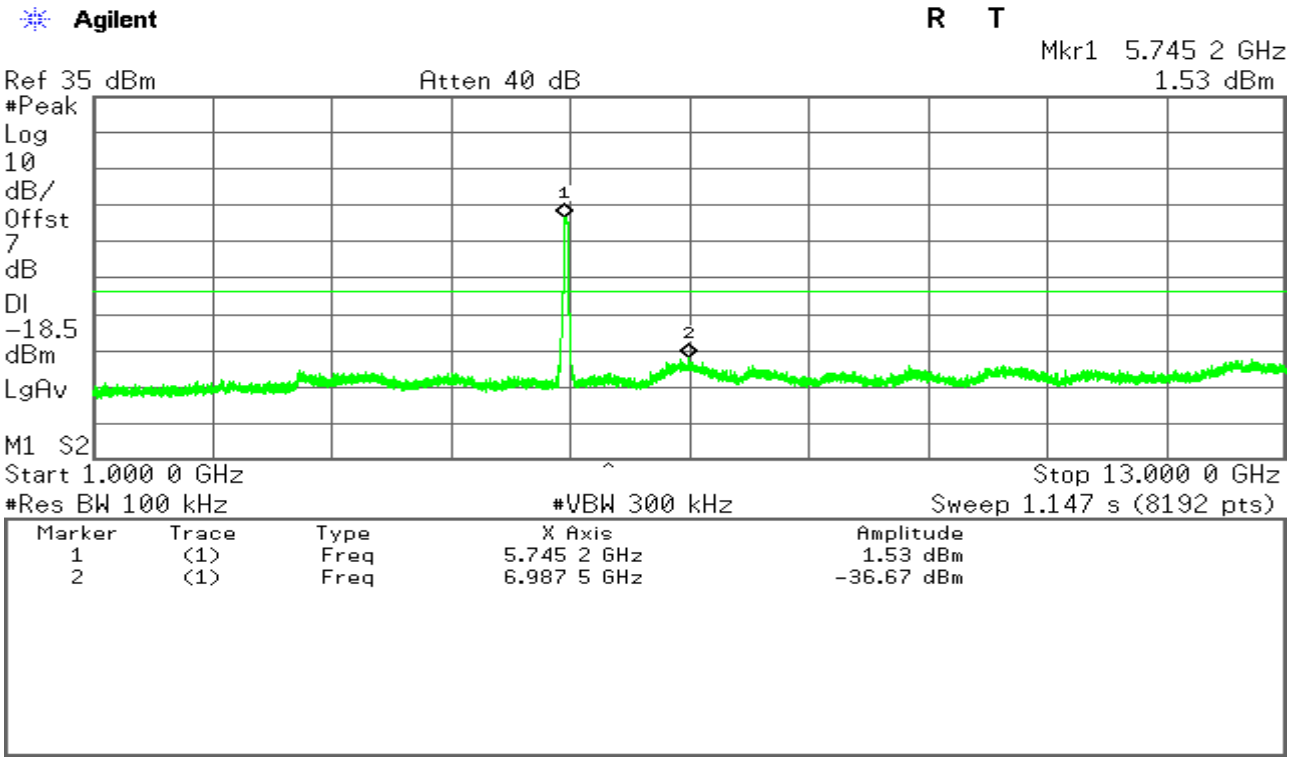
draft 802.11ac Wide-40 MHz Channel mode / Chain 2

CH Low





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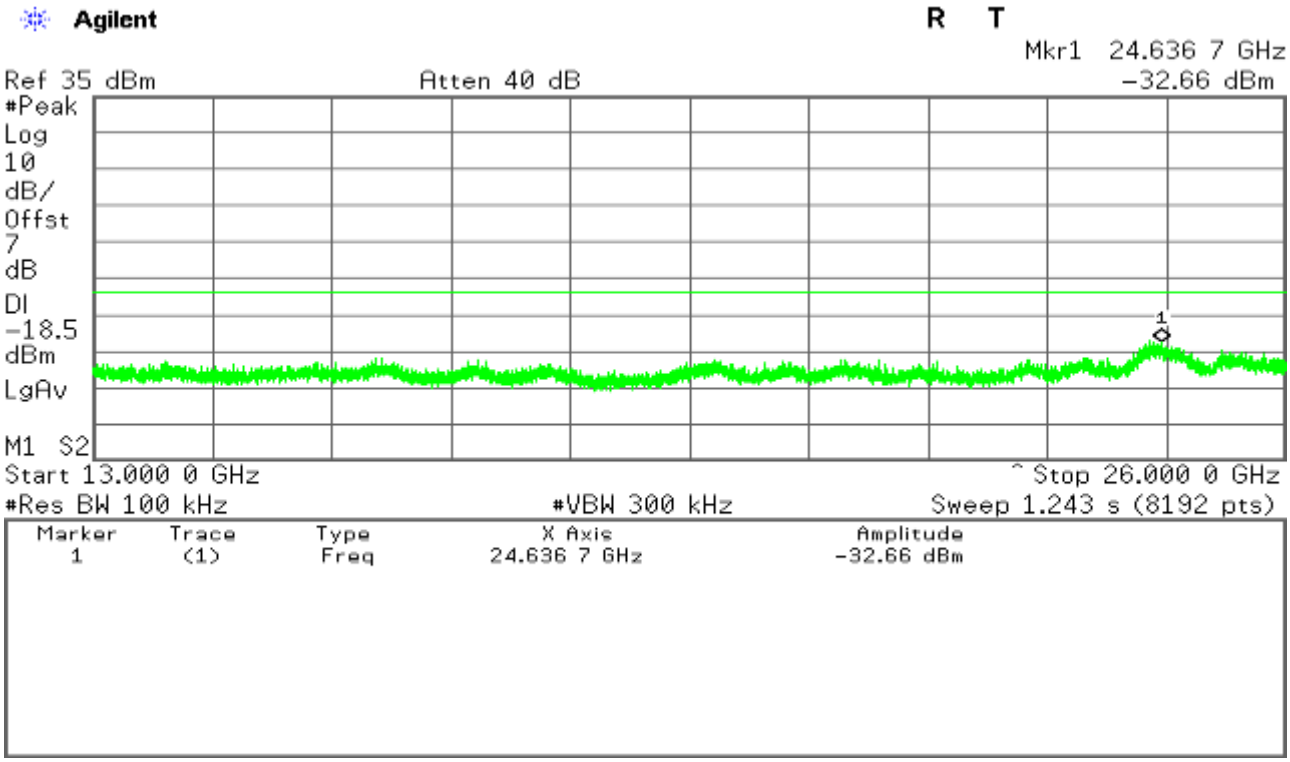

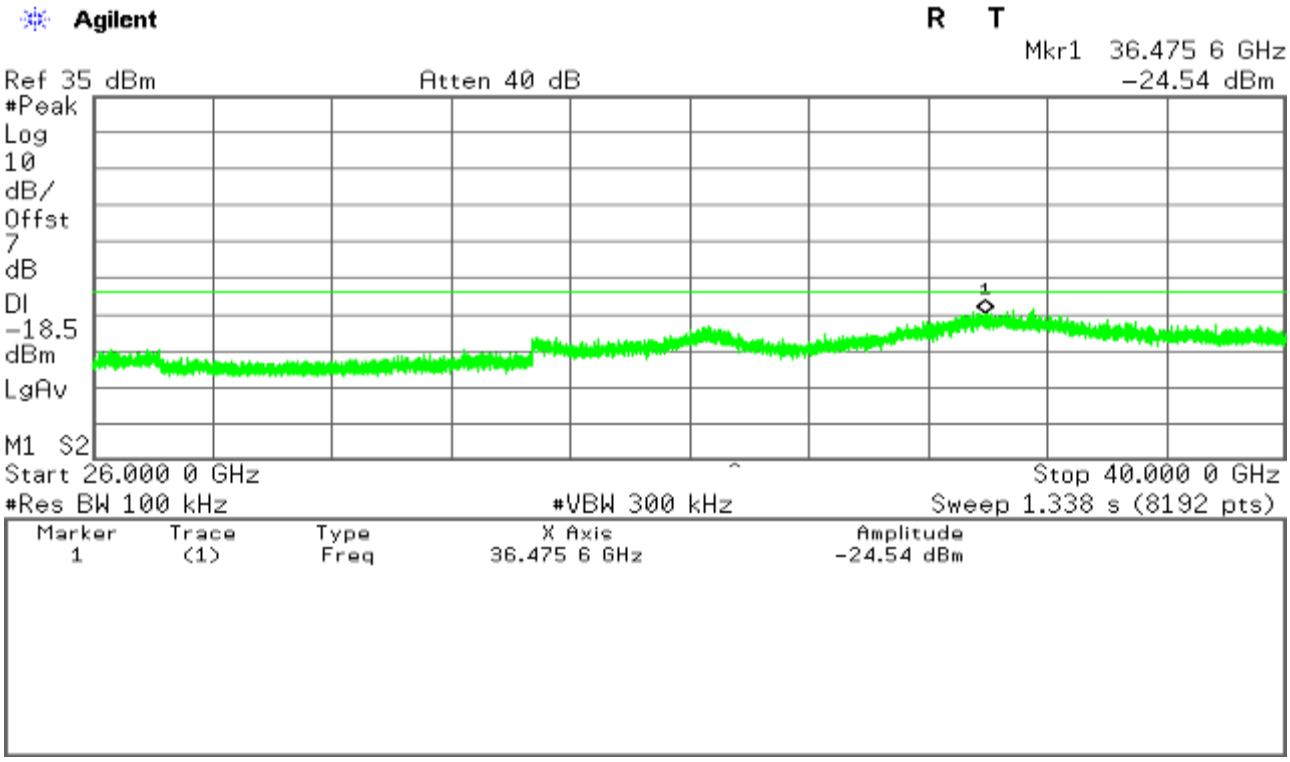

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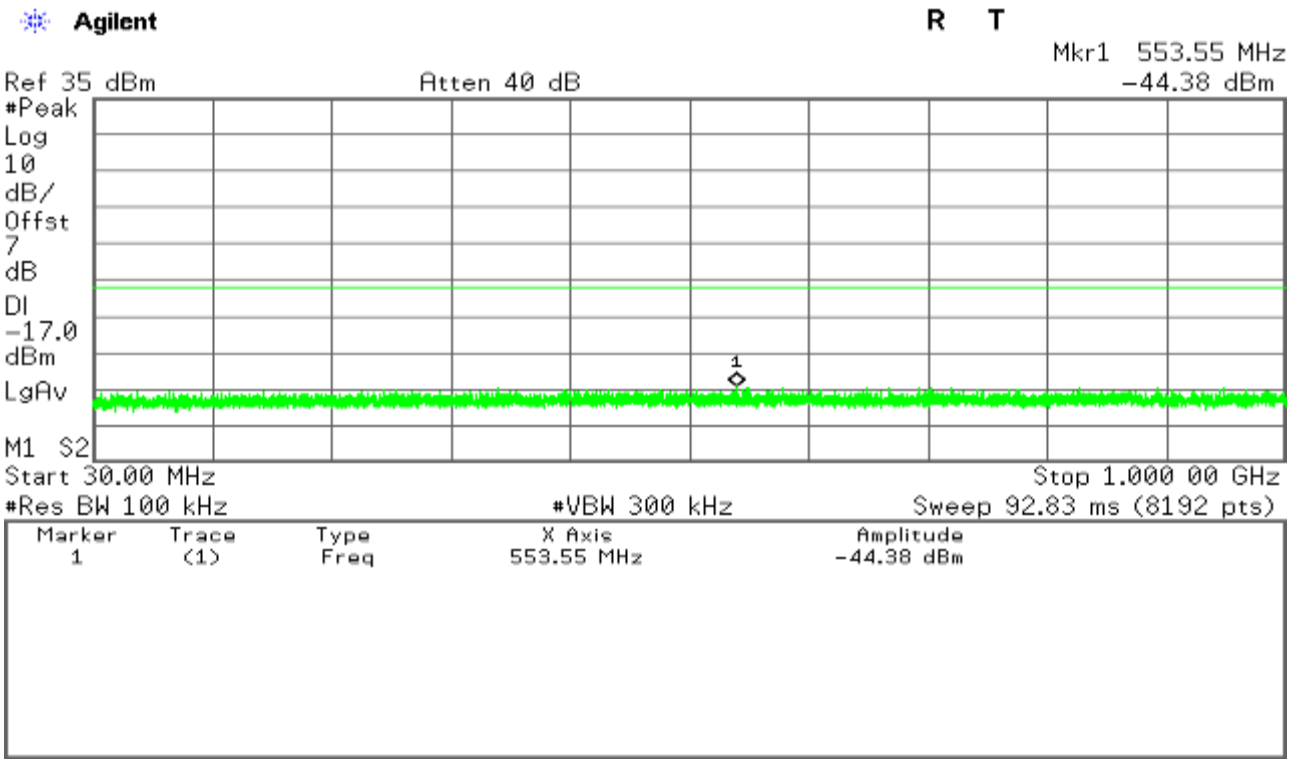
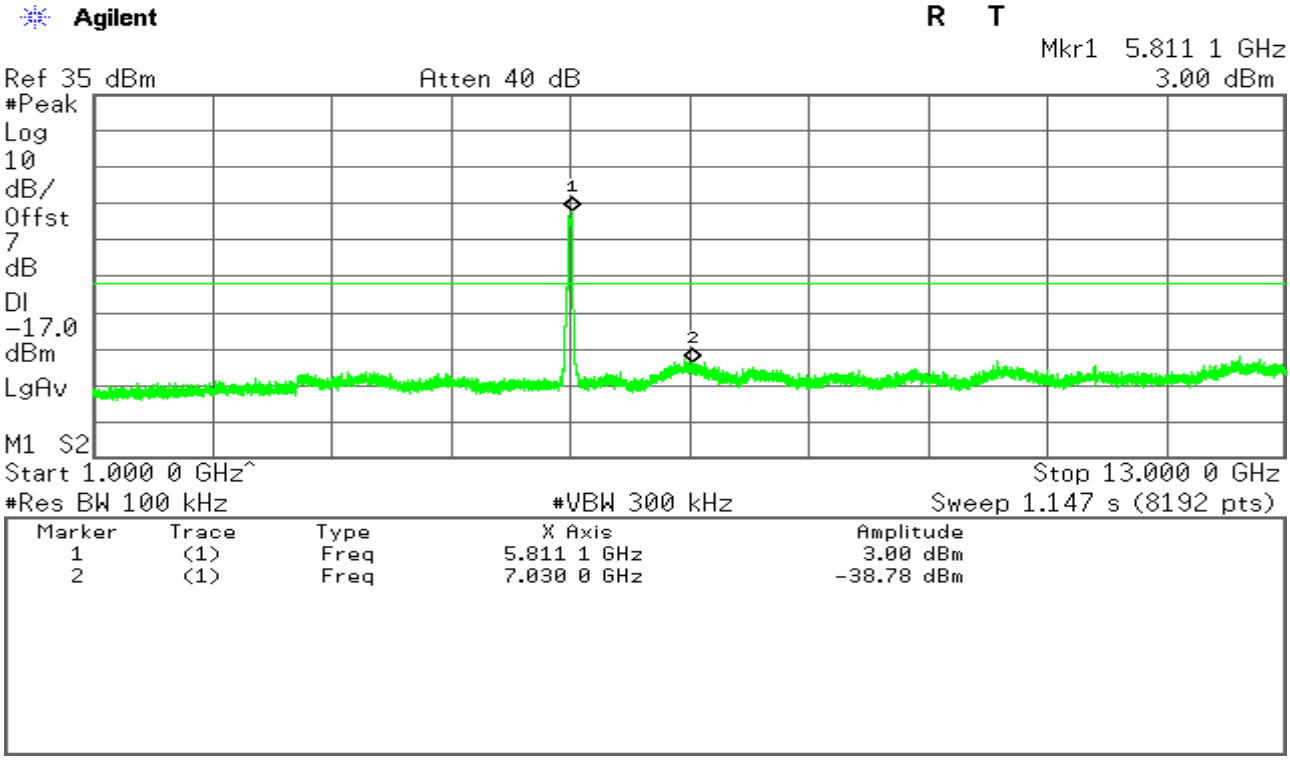
CH High





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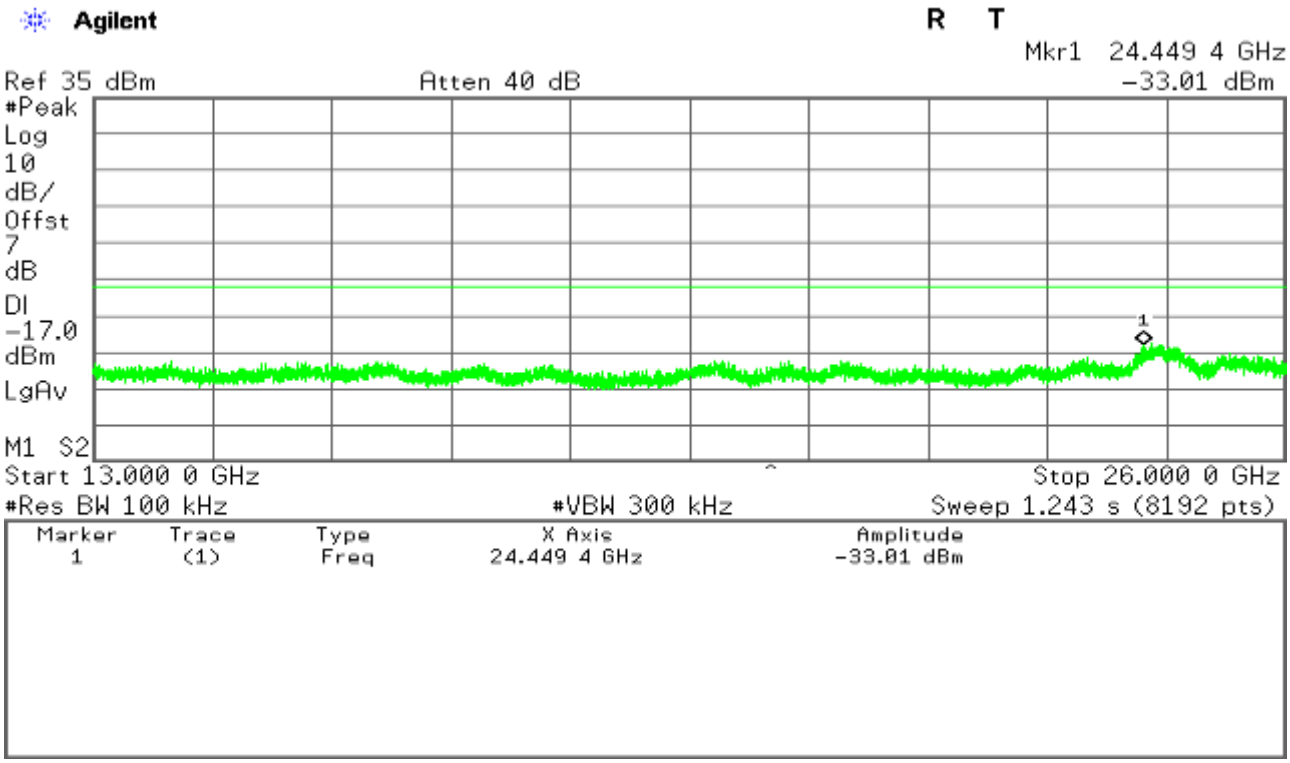

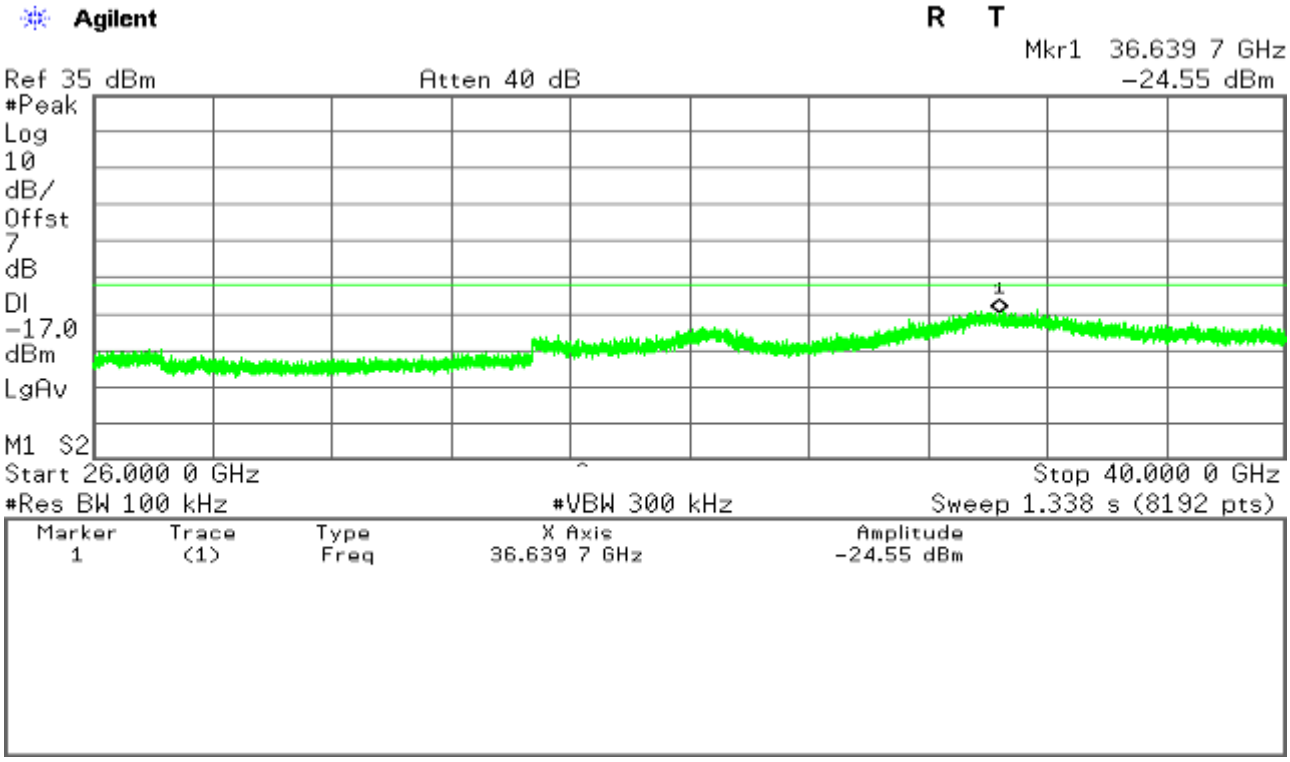

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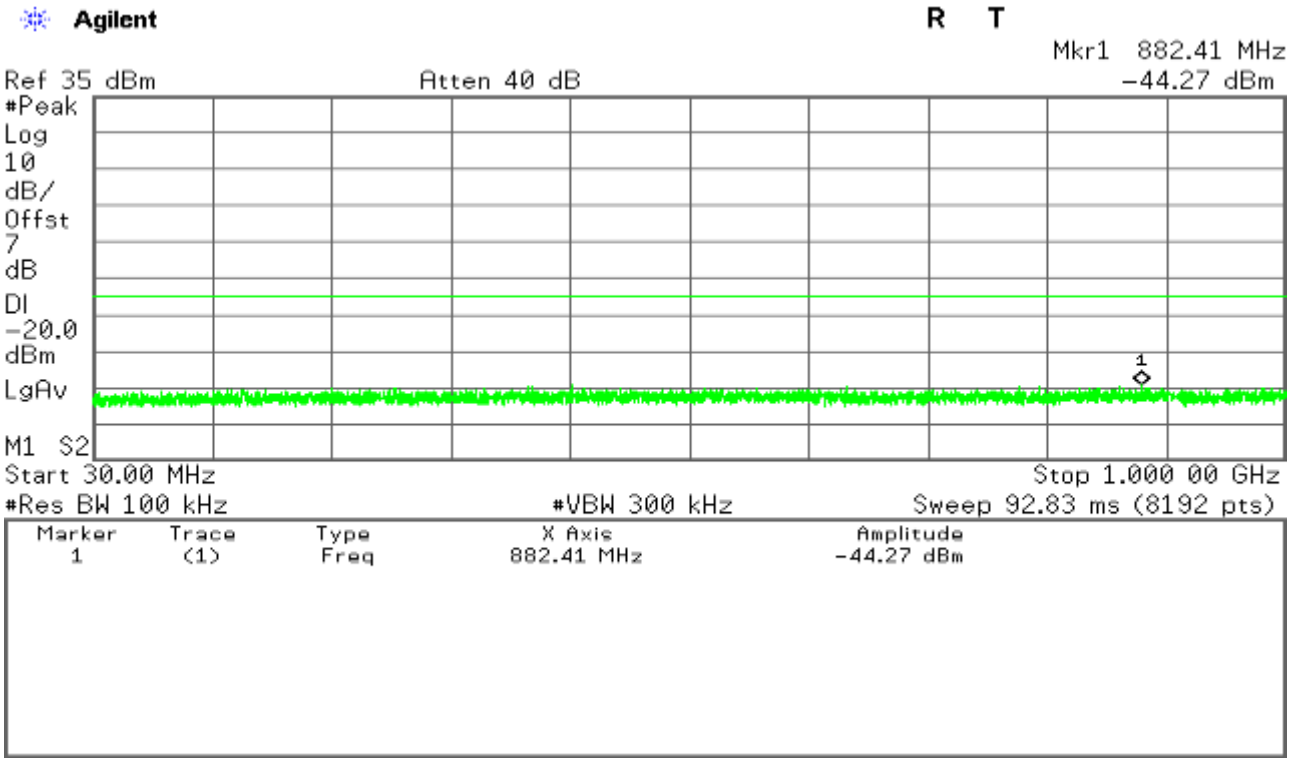
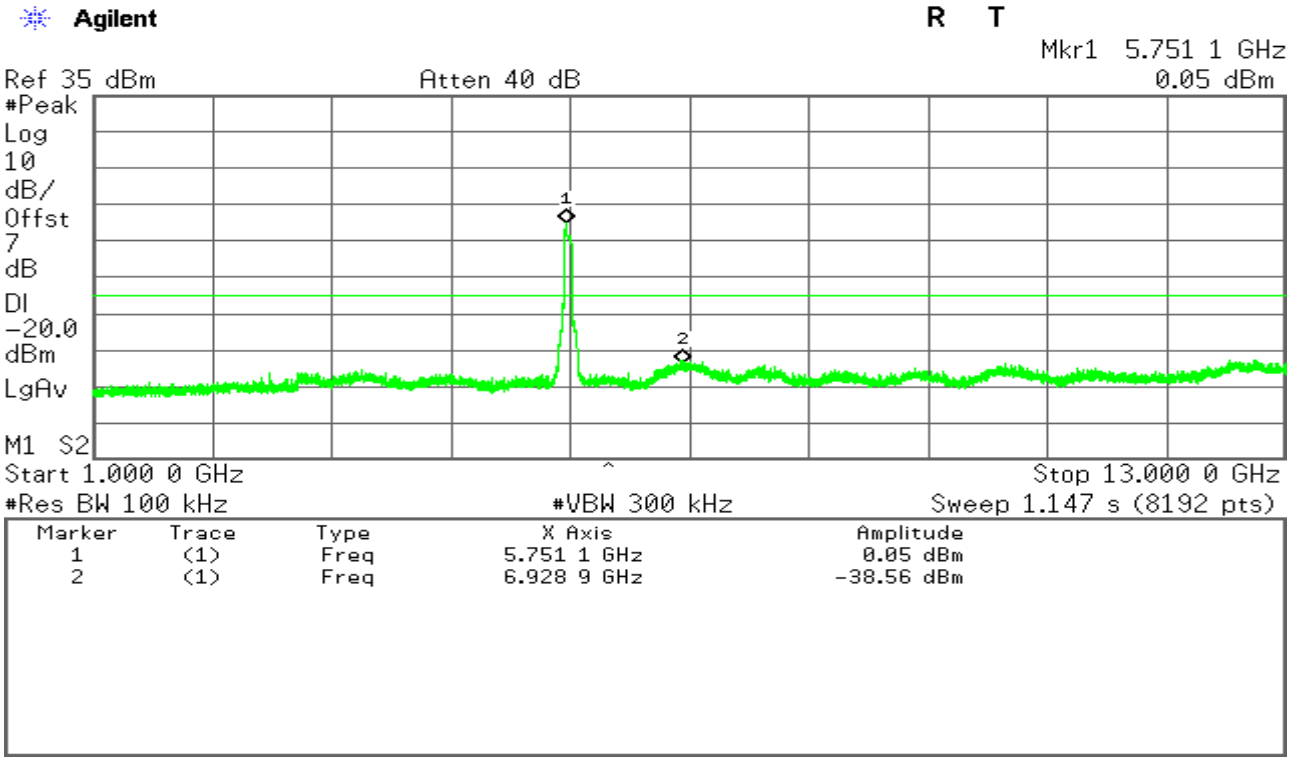
draft 802.11ac Wide-80 MHz Channel mode / Chain 0





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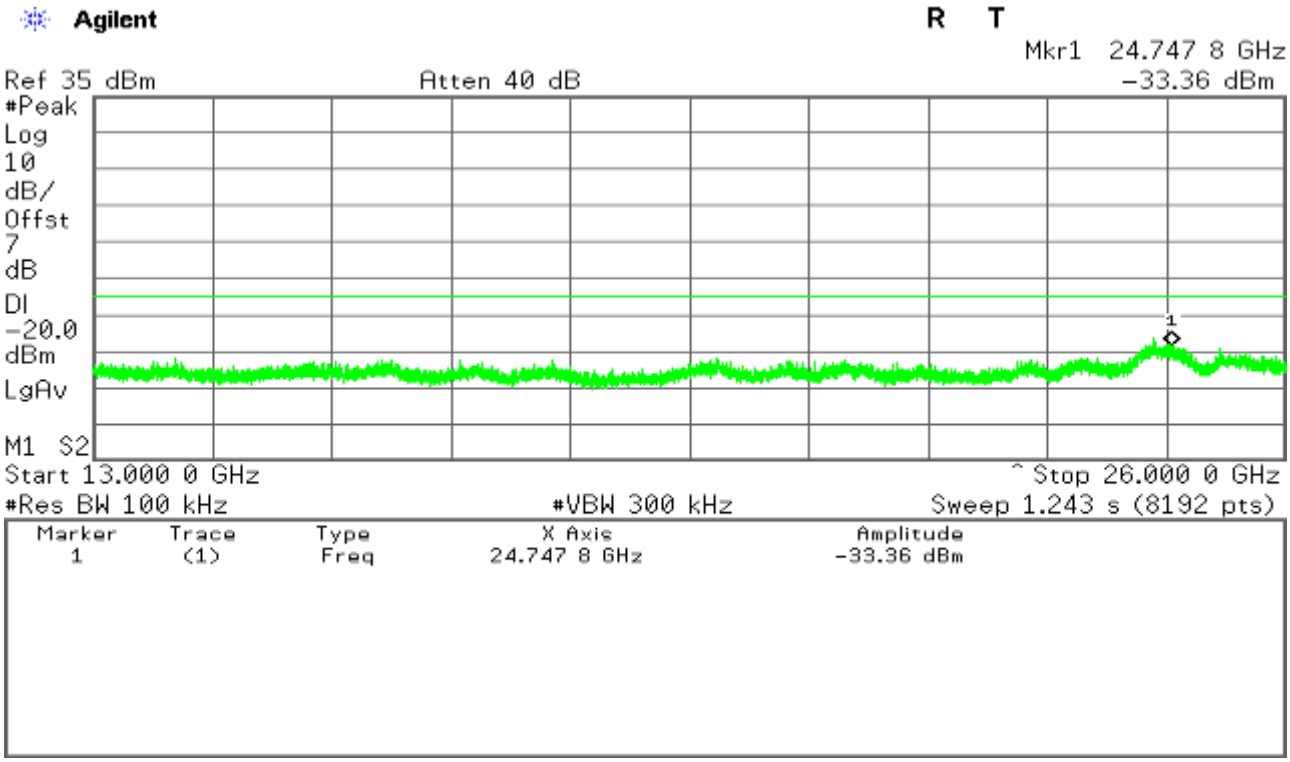

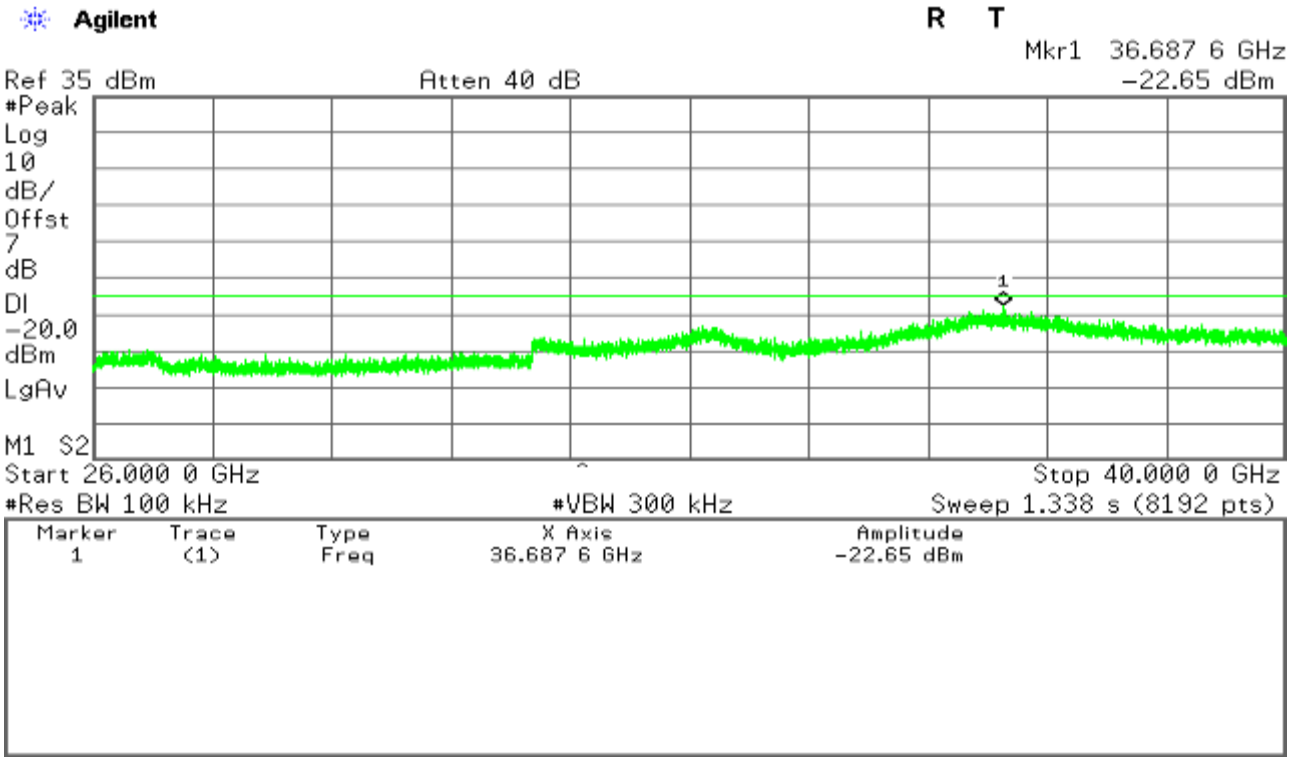

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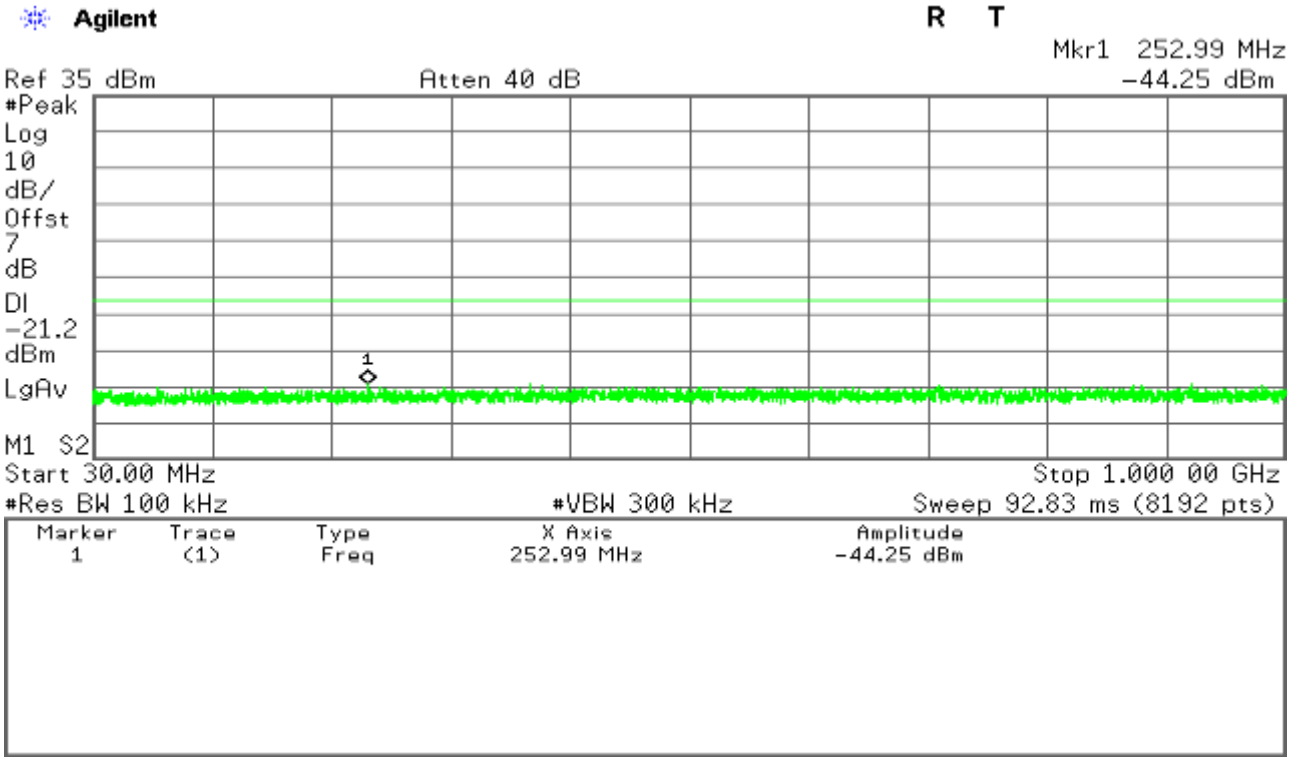
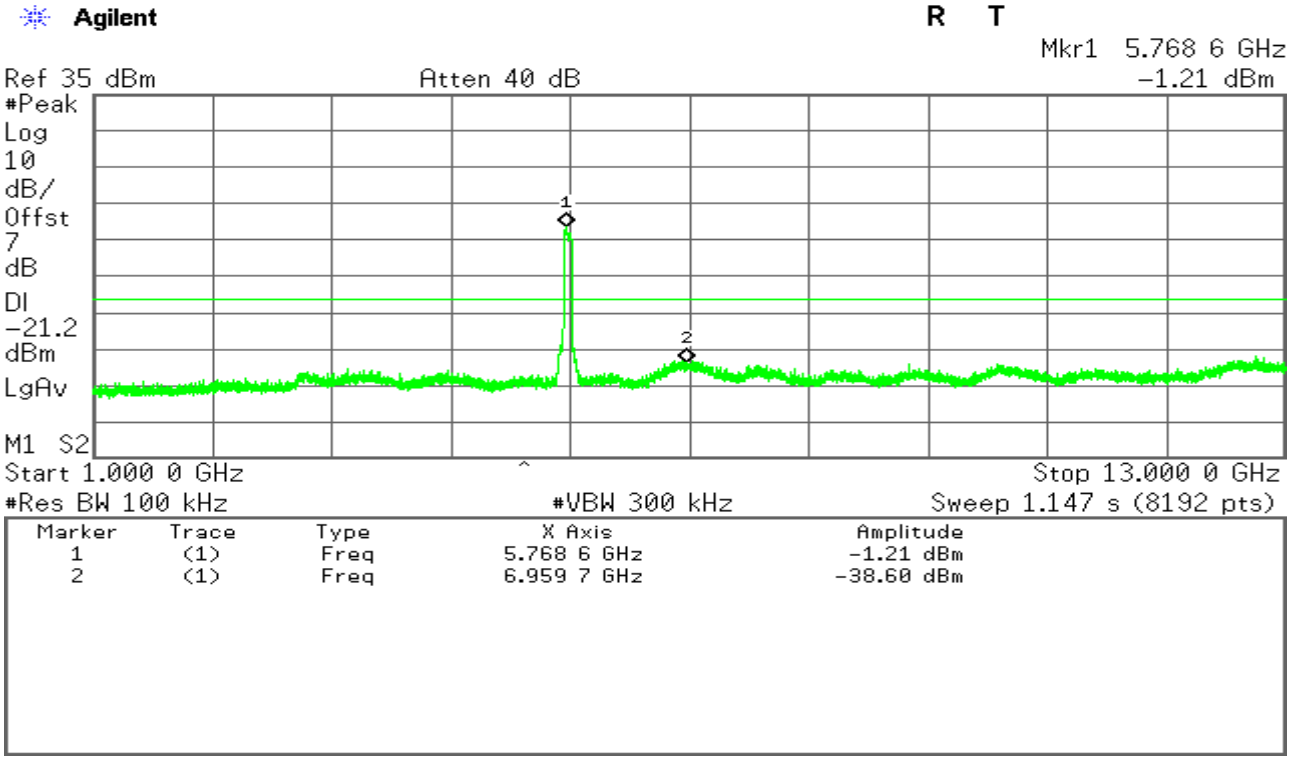
draft 802.11ac Wide-80 MHz Channel mode / Chain 1





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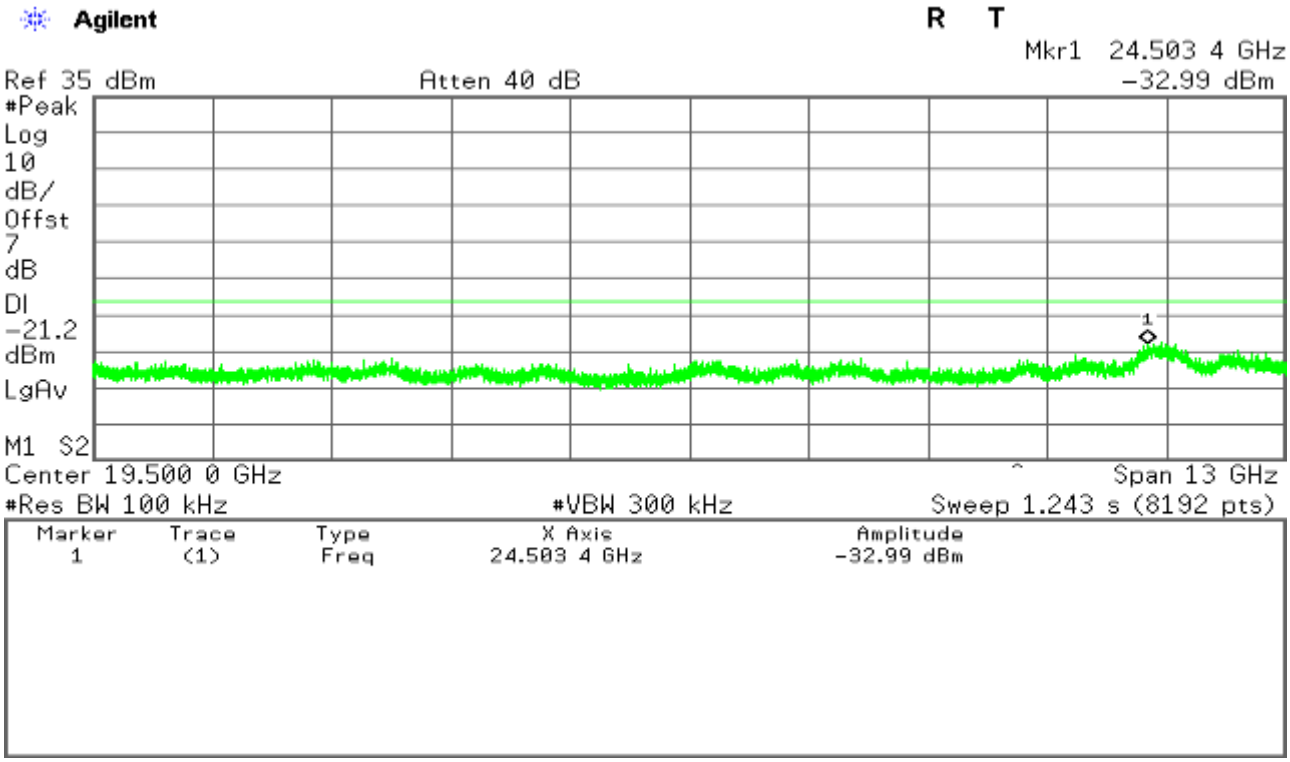

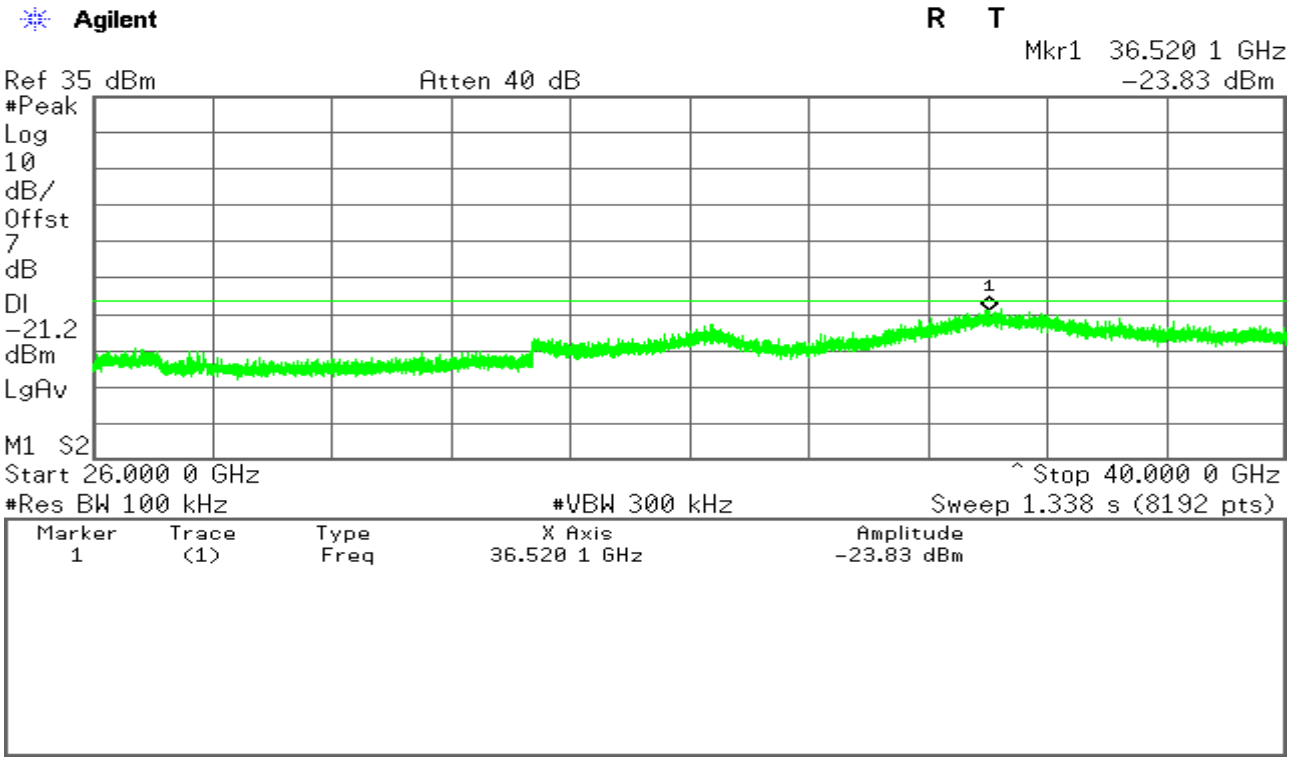

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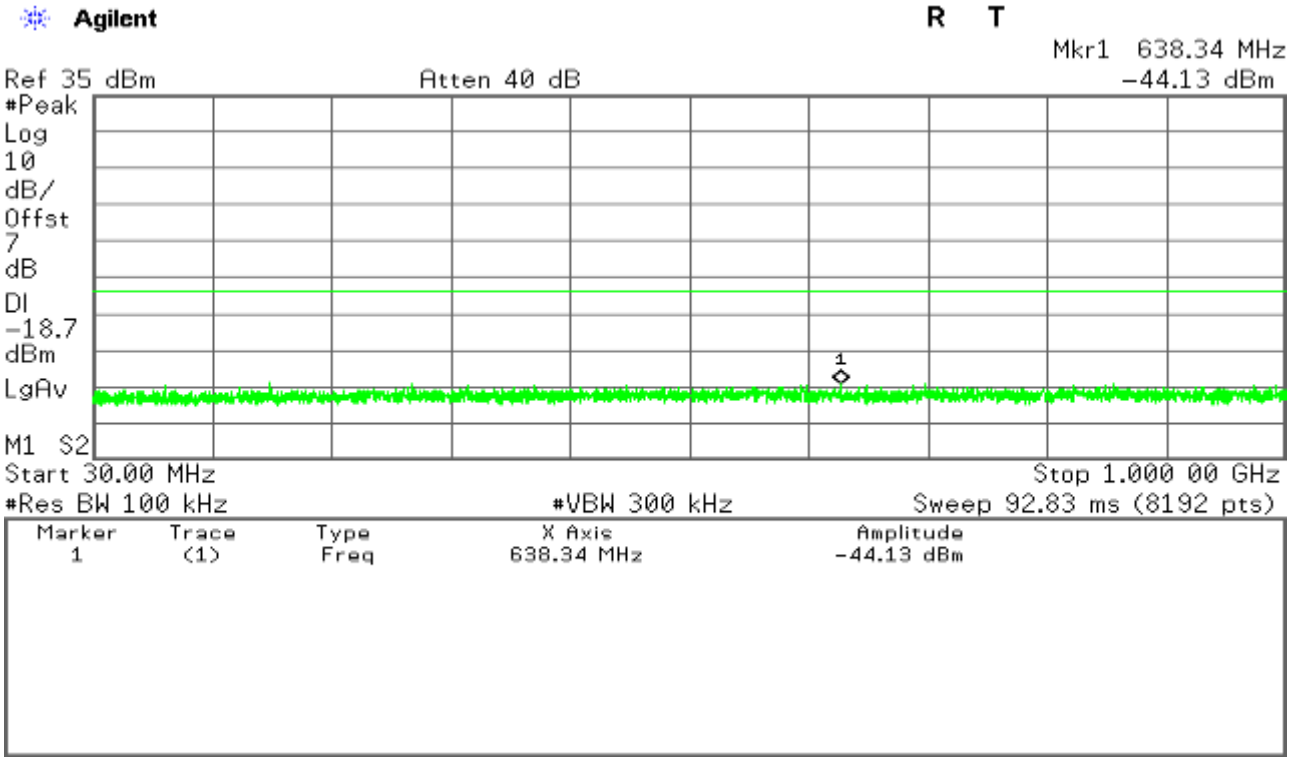
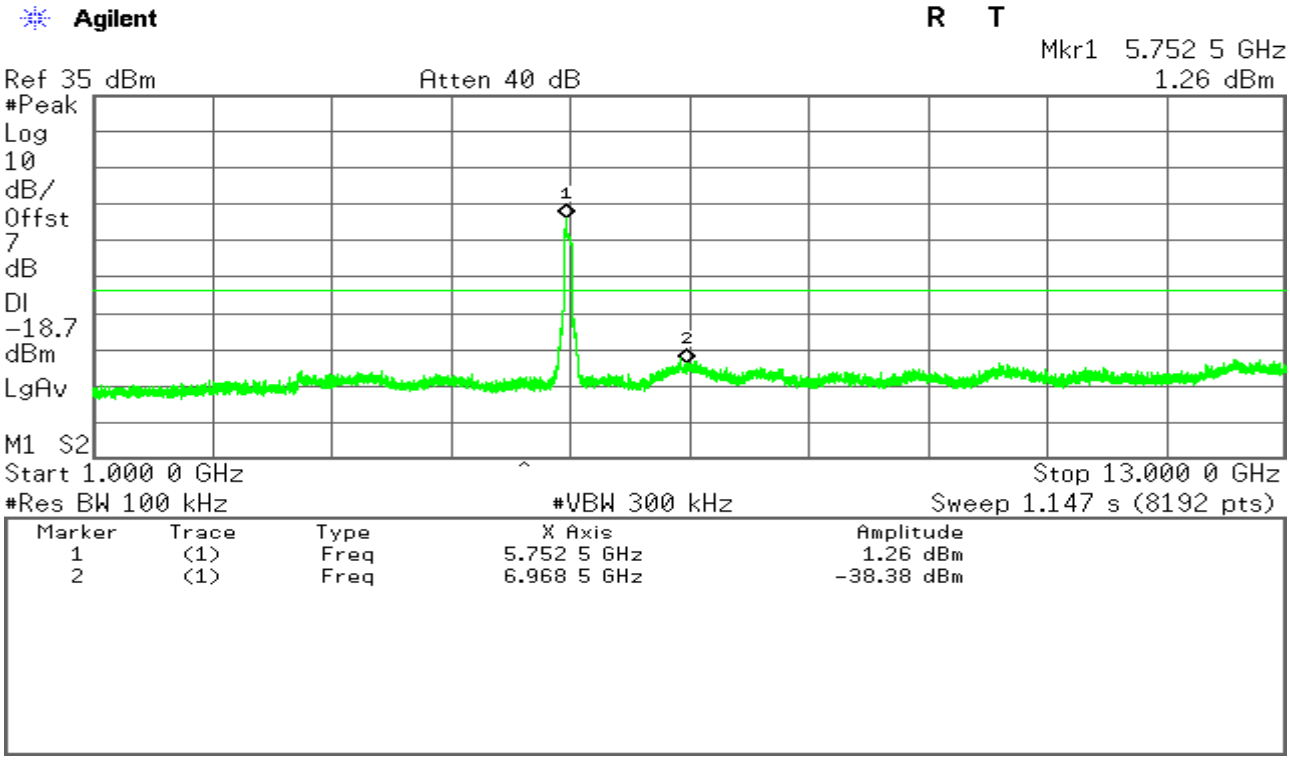
draft 802.11ac Wide-80 MHz Channel mode / Chain 2





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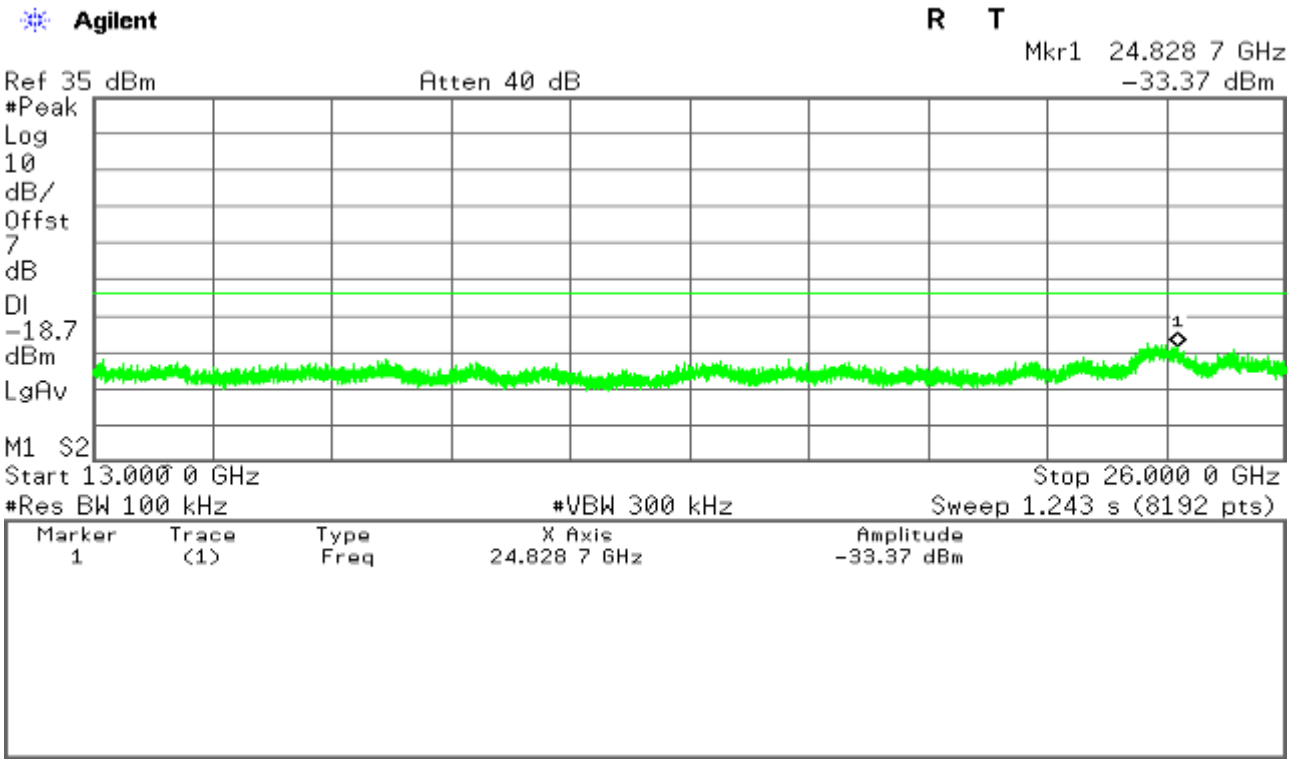

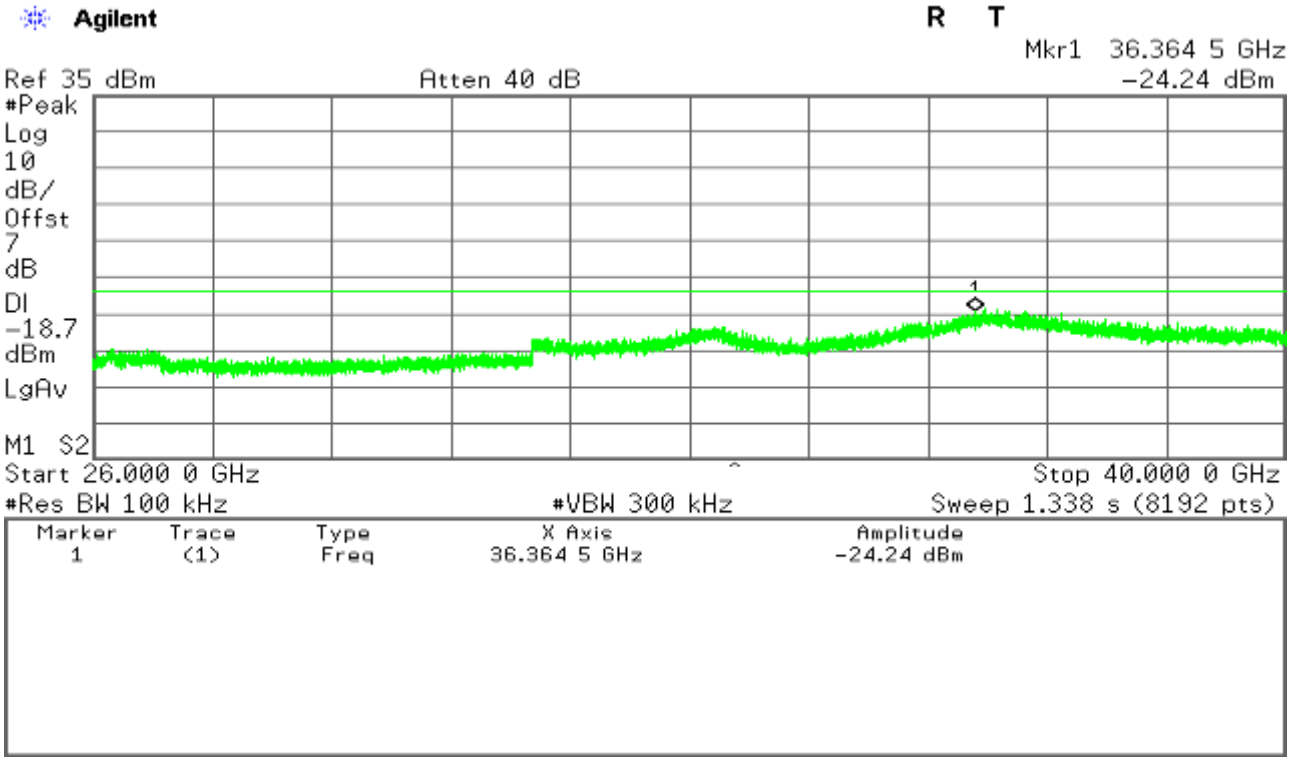

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4.5.RADIATED EMISSIONS

LIMIT

Radiated emissions from 9 kHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2009. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

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:

FREQUENCIES(MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE(meters)
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 emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

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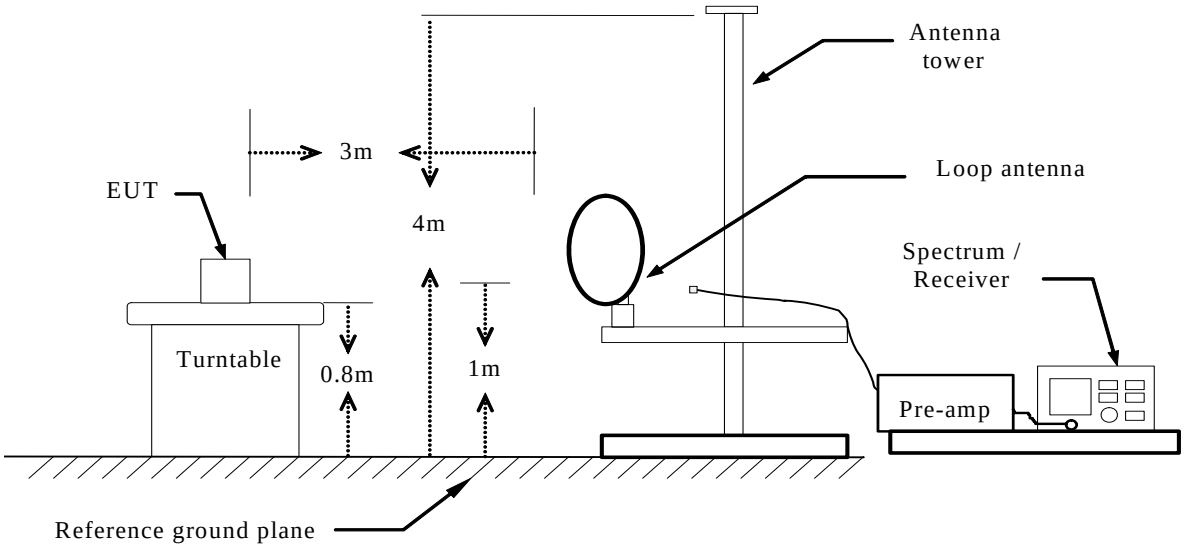
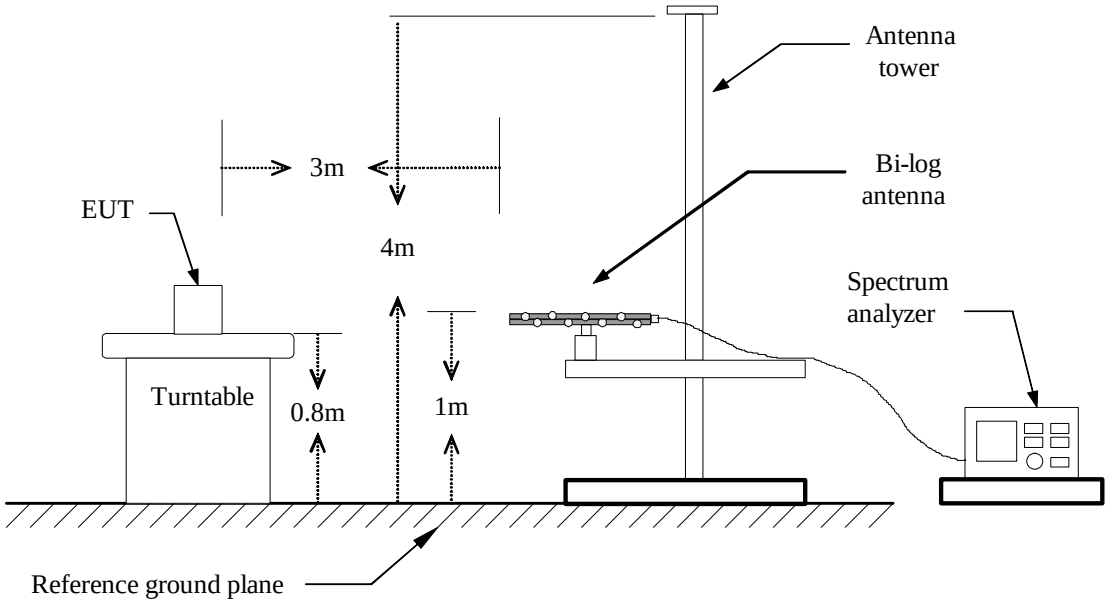
Below 30MHz



Below 1 GHz



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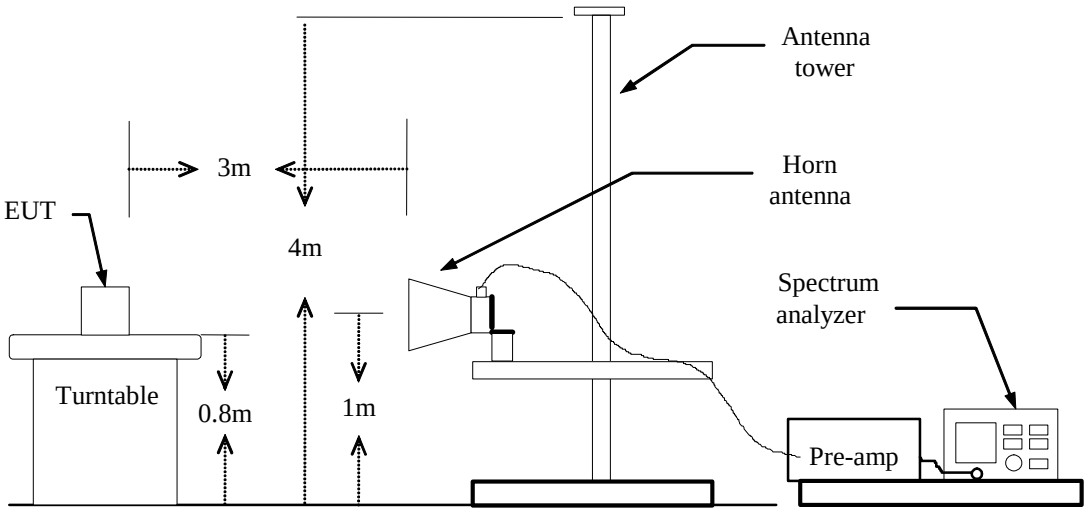
Above 1 GHz



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 1GHz:

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

   Above 1GHz:

   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

TEST RESULTS

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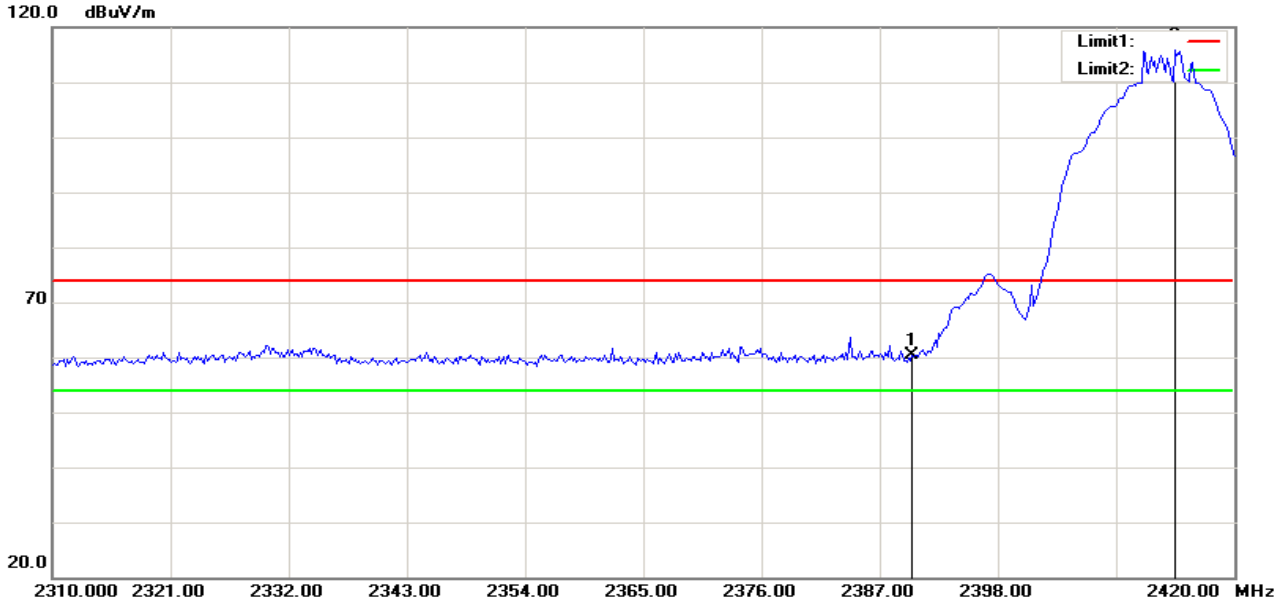
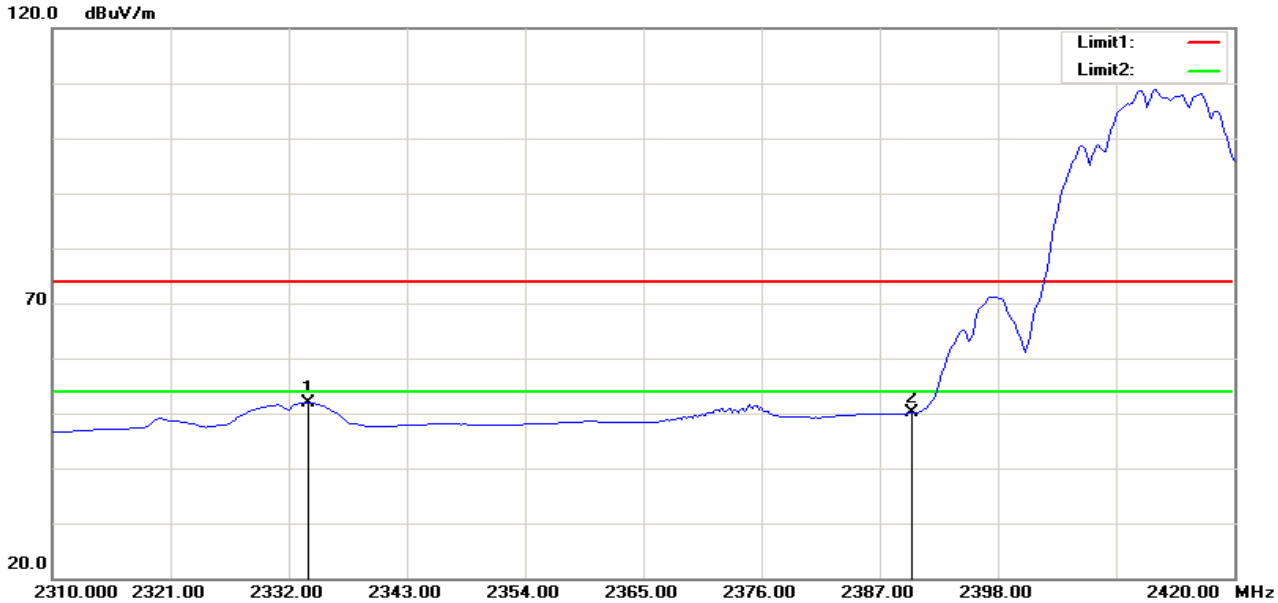
RESTRICTED BANDEDGE (b Mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	74.55	-14.28	60.27	74.00	-13.73	101	313	peak
2	2414.535	129.95	-14.18	115.77	74.00	41.77	101	323	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2333.798	66.20	-14.26	51.94	54.00	-2.06	101	334	AVG
2	2390.000	64.38	-14.28	50.10	54.00	-3.90	101	313	AVG

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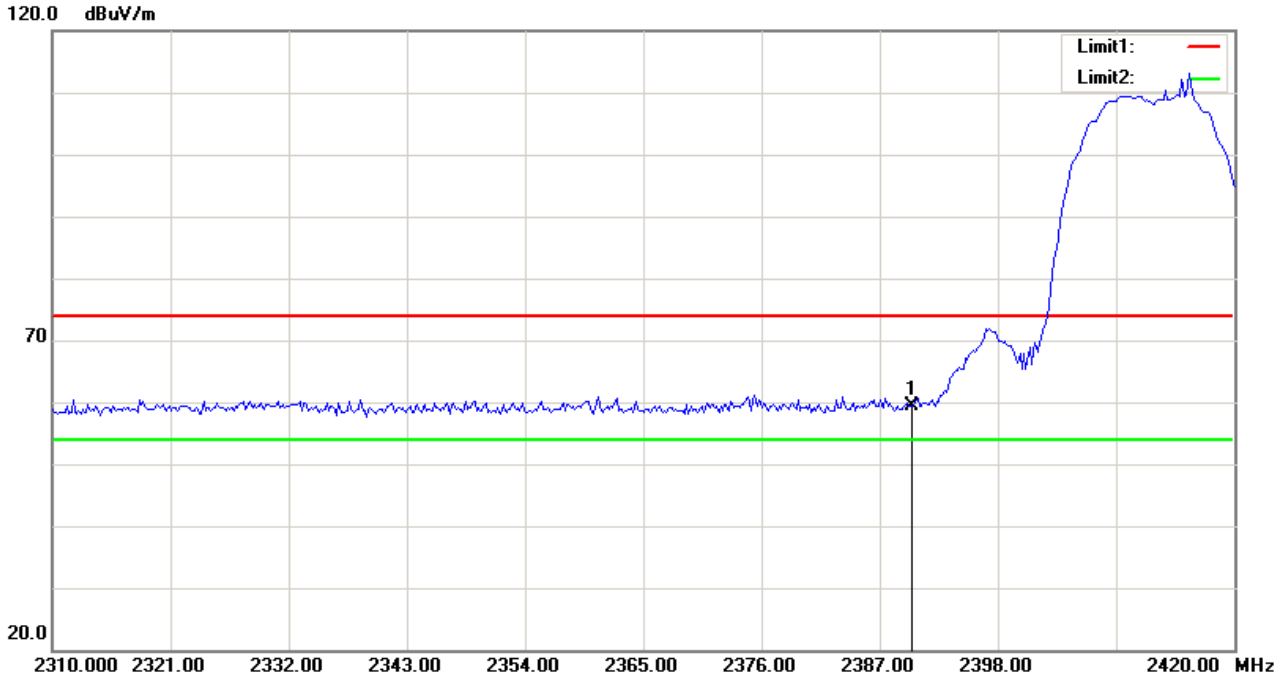
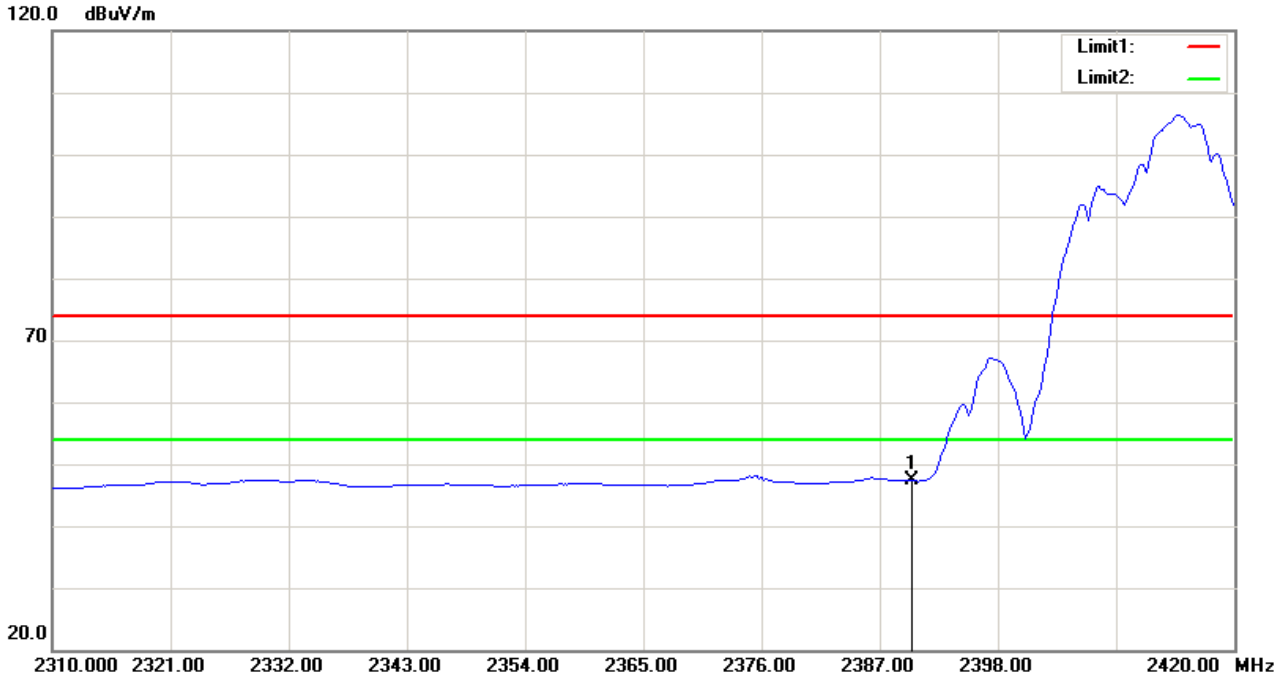
RESTRICTED BANDEDGE (b Mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	73.56	-14.28	59.28	74.00	-14.72	101	134	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	61.57	-14.28	47.29	54.00	-6.71	101	134	AVG

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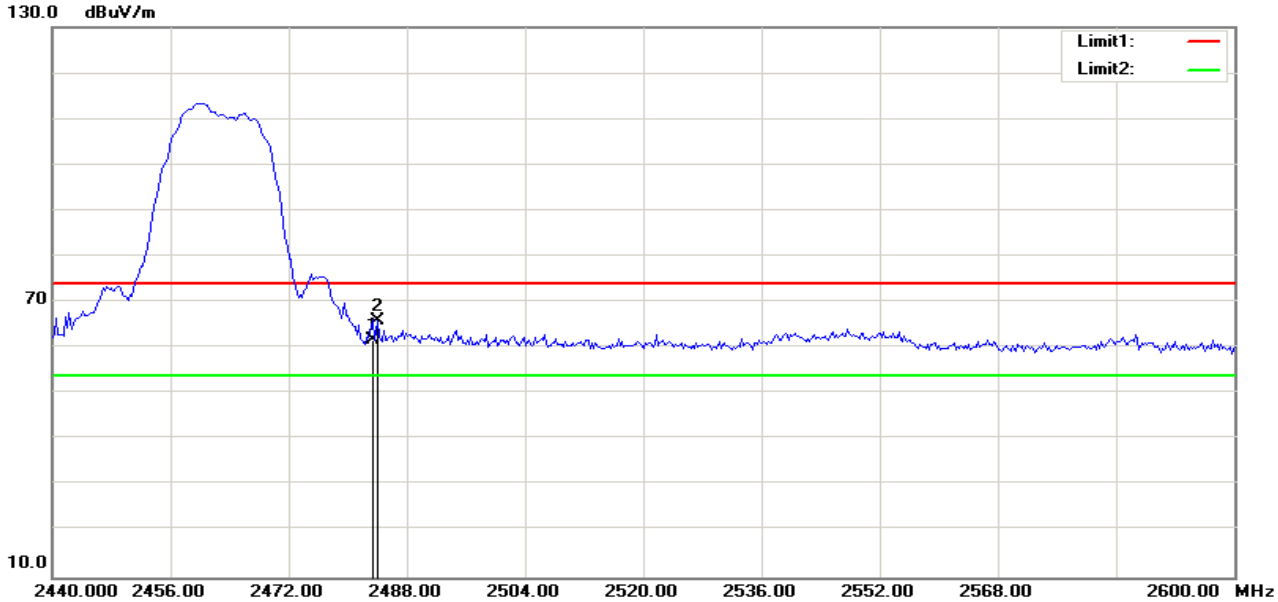
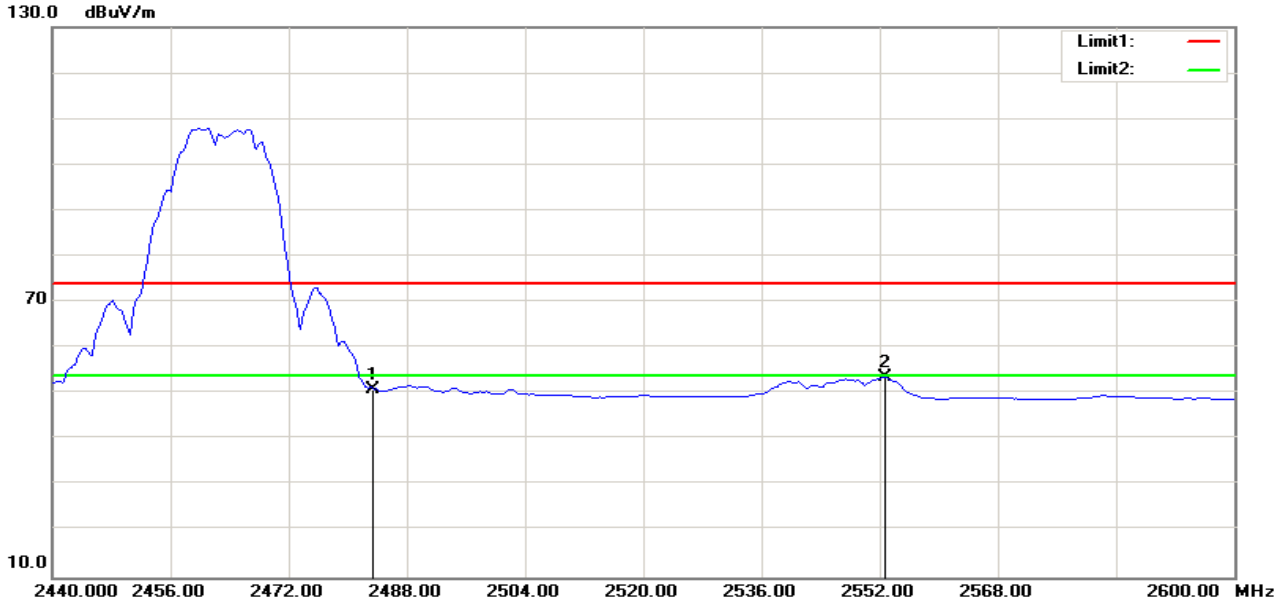
RESTRICTED BANDEDGE (b Mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	75.40	-13.65	61.75	74.00	-12.25	100	317	peak
2	2484.103	79.69	-13.64	66.05	74.00	-7.95	100	330	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	64.75	-13.65	51.10	54.00	-2.90	100	317	AVG
2	2552.820	67.09	-13.46	53.63	54.00	-0.37	100	331	AVG

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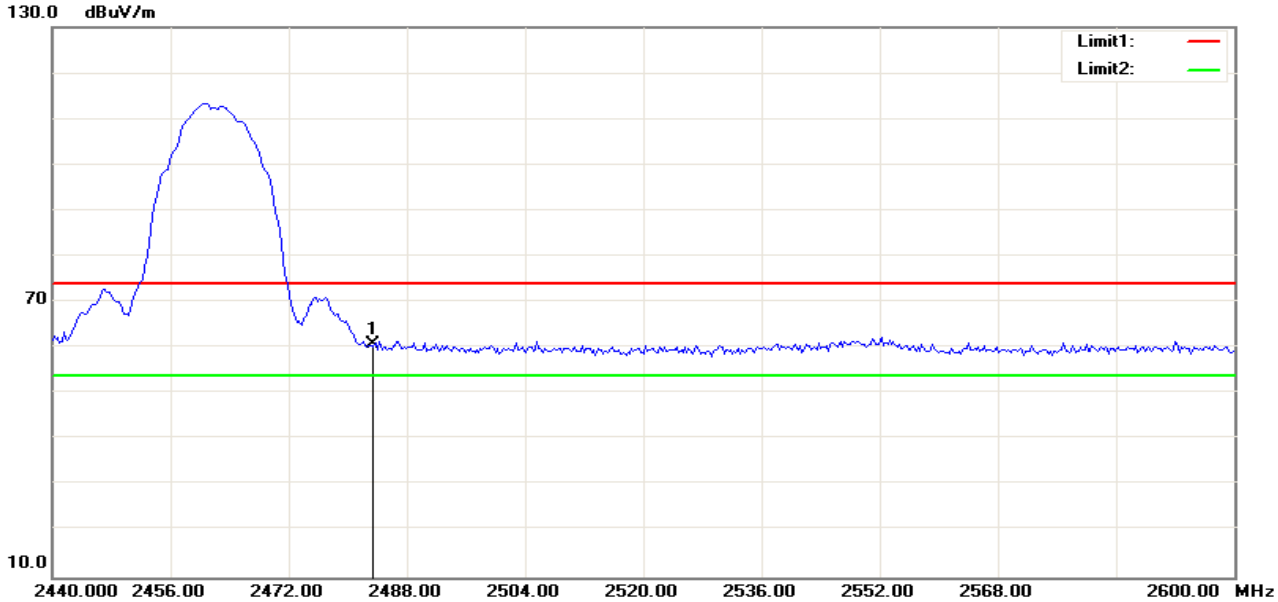
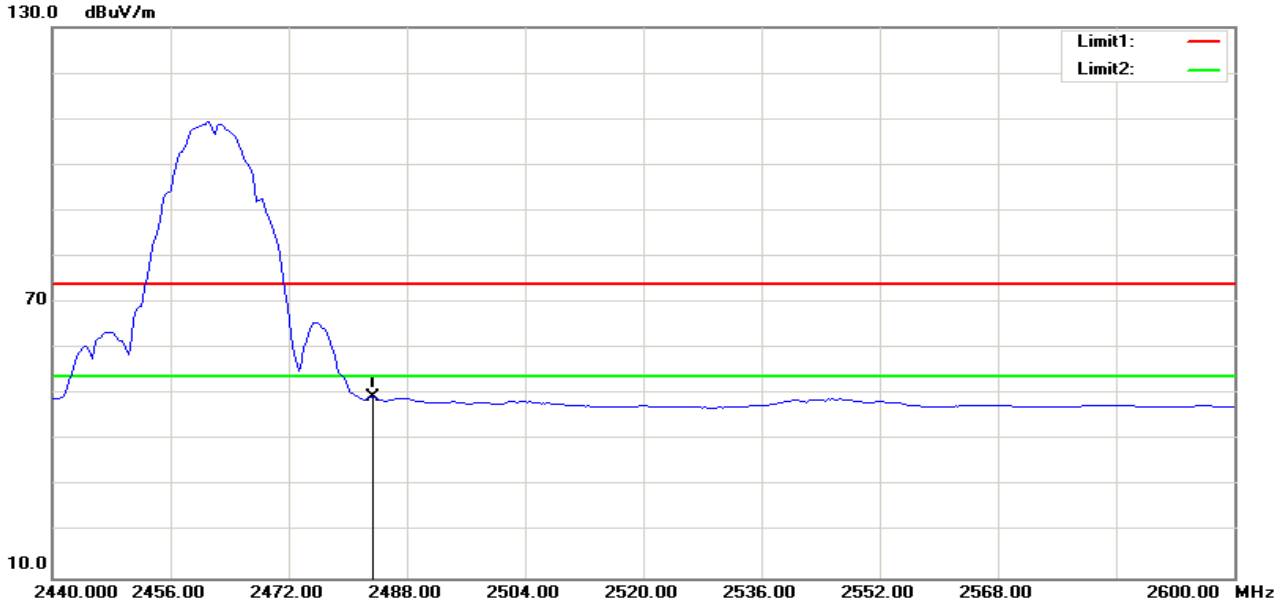
RESTRICTED BANDEDGE (b Mode, High Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	74.45	-13.65	60.80	74.00	-13.20	100	333	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	63.03	-13.65	49.38	54.00	-4.62	100	333	AVG

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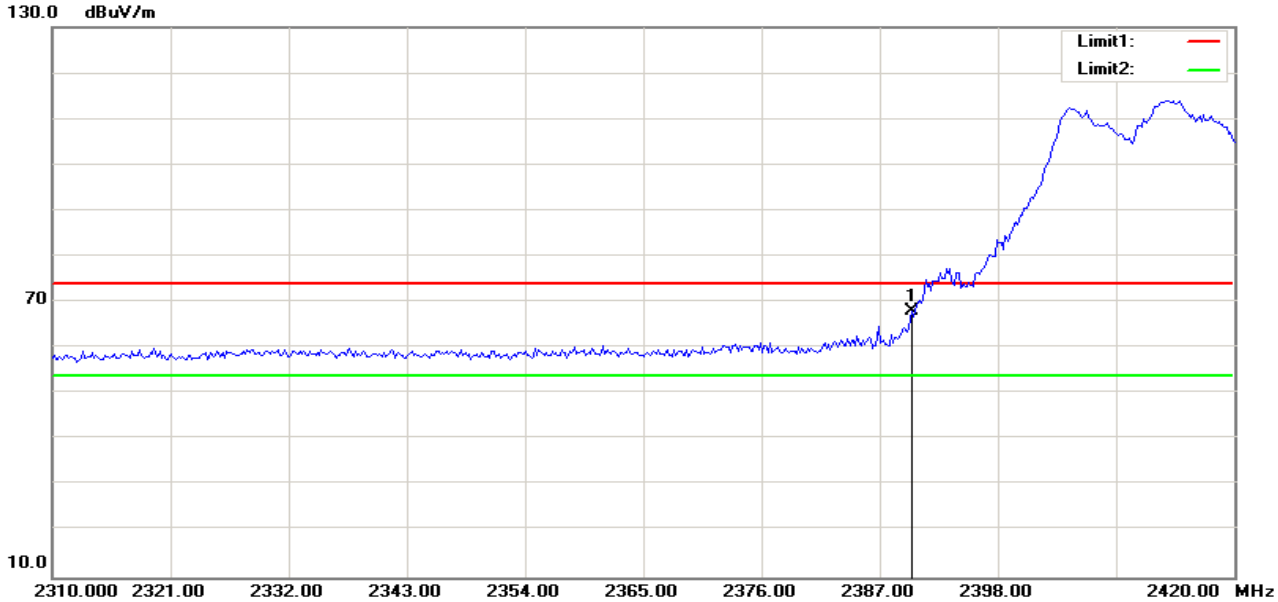
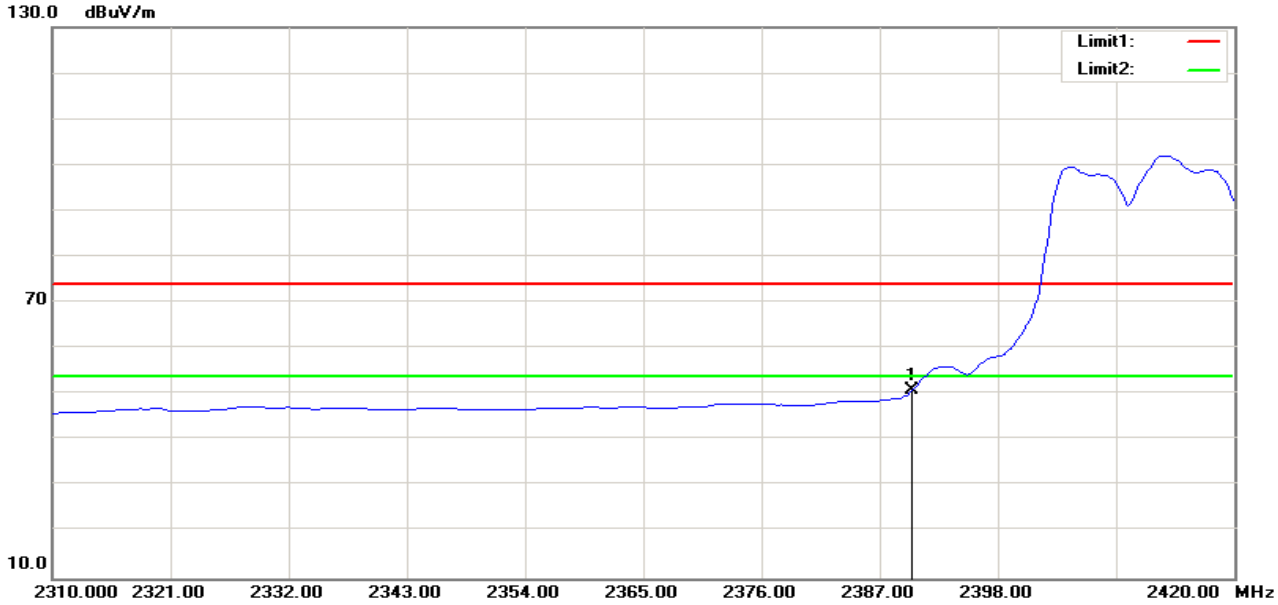
RESTRICTED BANDEDGE (g Mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	82.30	-14.28	68.02	74.00	-5.98	100	325	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	65.09	-14.28	50.81	54.00	-3.19	100	325	AVG

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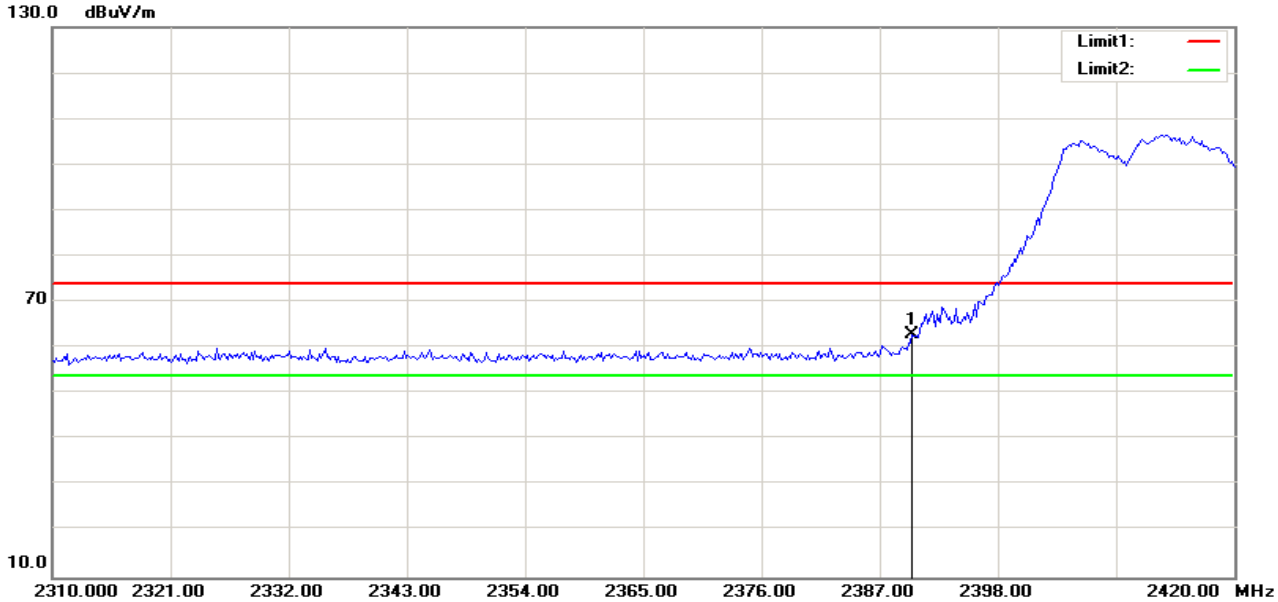
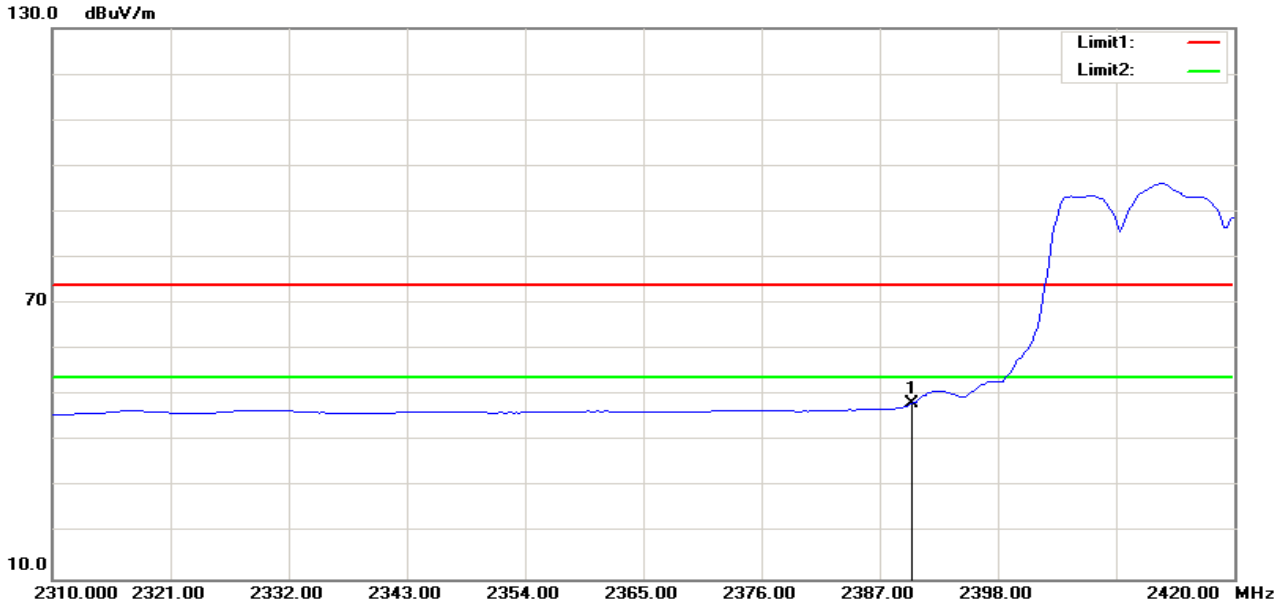
RESTRICTED BANDEDGE (g Mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	77.34	-14.28	63.06	74.00	-10.94	100	325	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	62.58	-14.28	48.30	54.00	-5.70	100	325	AVG

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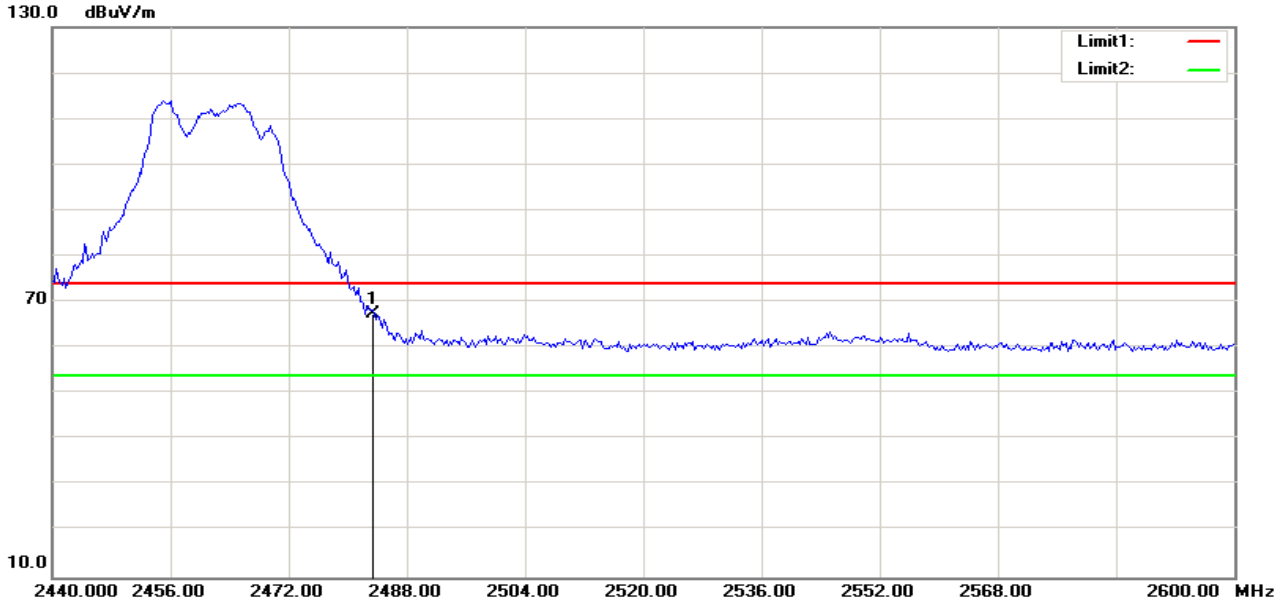
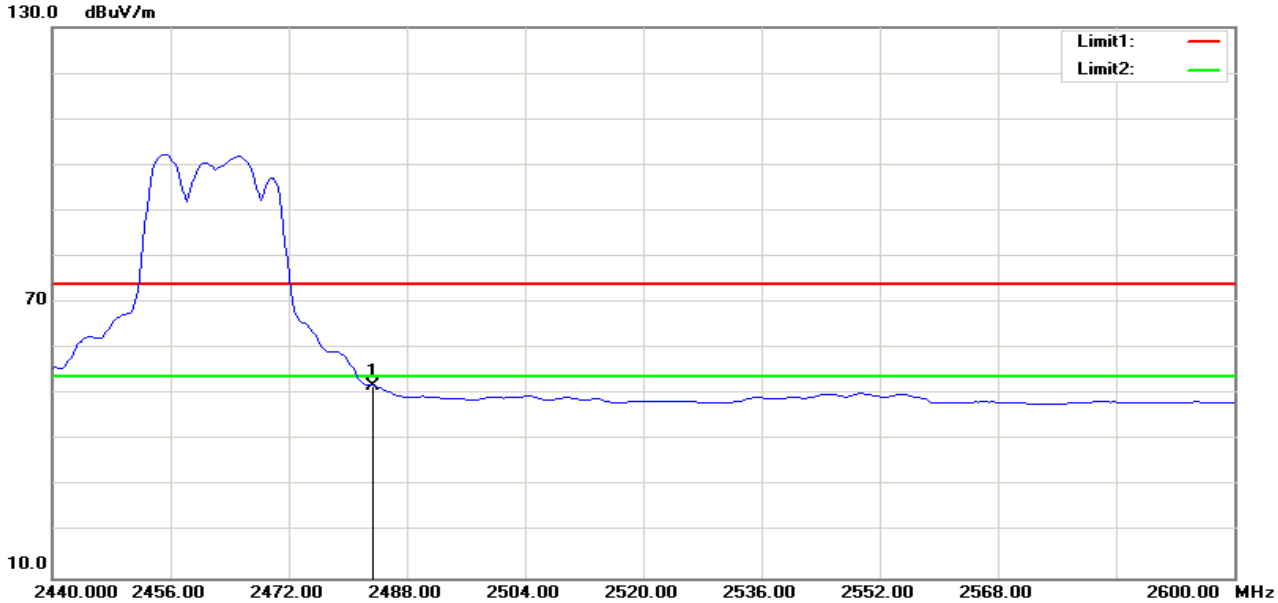
RESTRICTED BANDEDGE (g Mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	81.10	-13.65	67.45	74.00	-6.55	100	317	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	65.58	-13.65	51.93	54.00	-2.07	100	317	AVG

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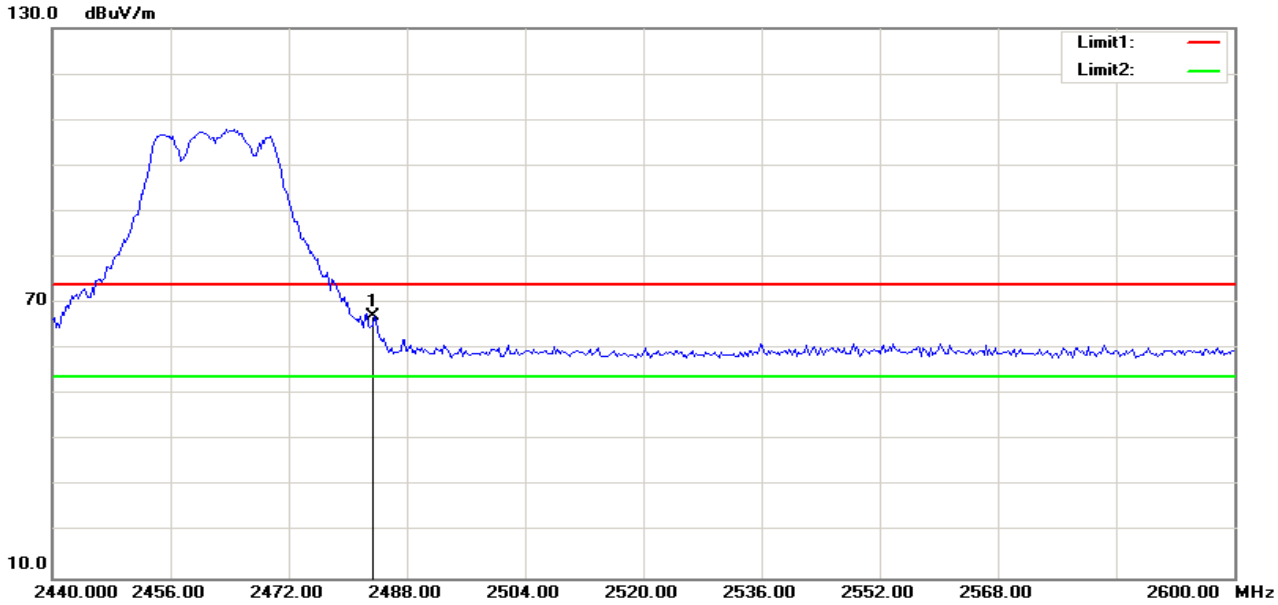
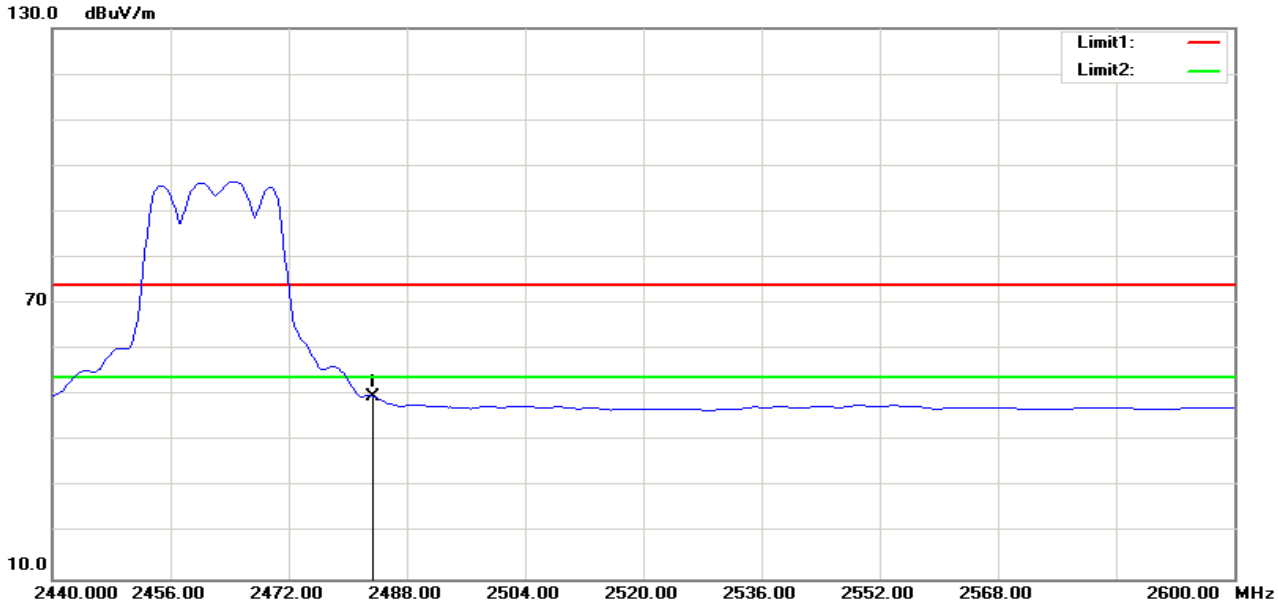
RESTRICTED BANDEDGE (g Mode, High Channel, Vertical)
Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	80.93	-13.65	67.28	74.00	-6.72	100	317	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	63.42	-13.65	49.77	54.00	-4.23	100	317	AVG

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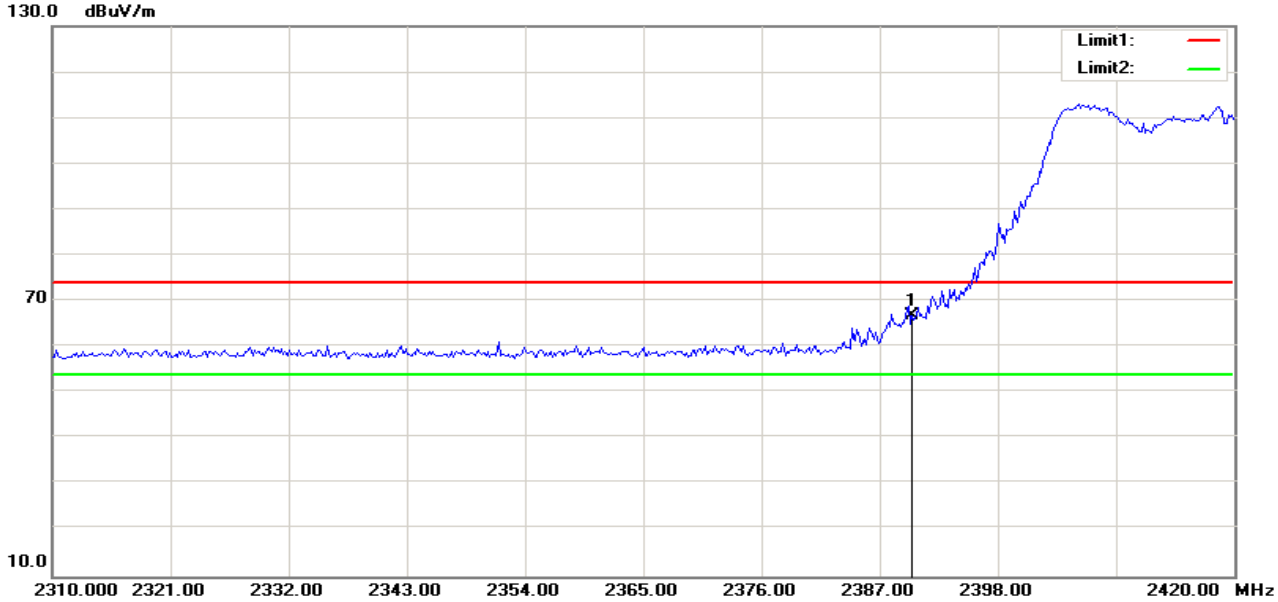
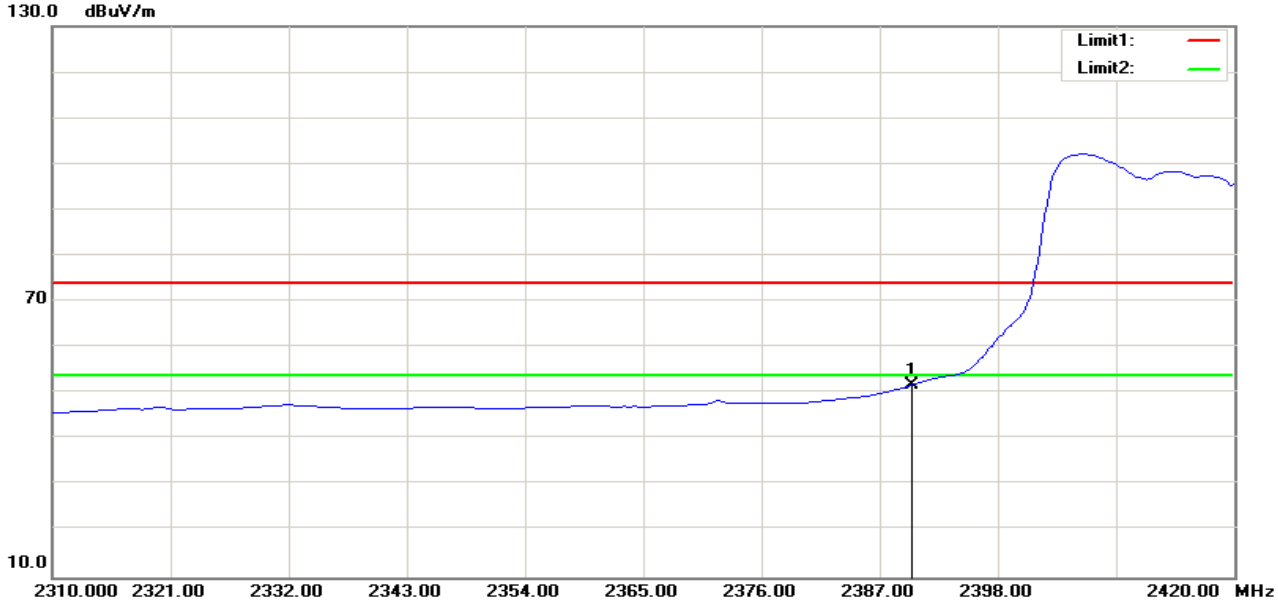
RESTRICTED BANDEDGE (draft 802.11n Standard-20 MHz Channel mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	81.16	-14.28	66.88	74.00	-7.12	100	333	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	66.19	-14.28	51.91	54.00	-2.09	100	333	AVG

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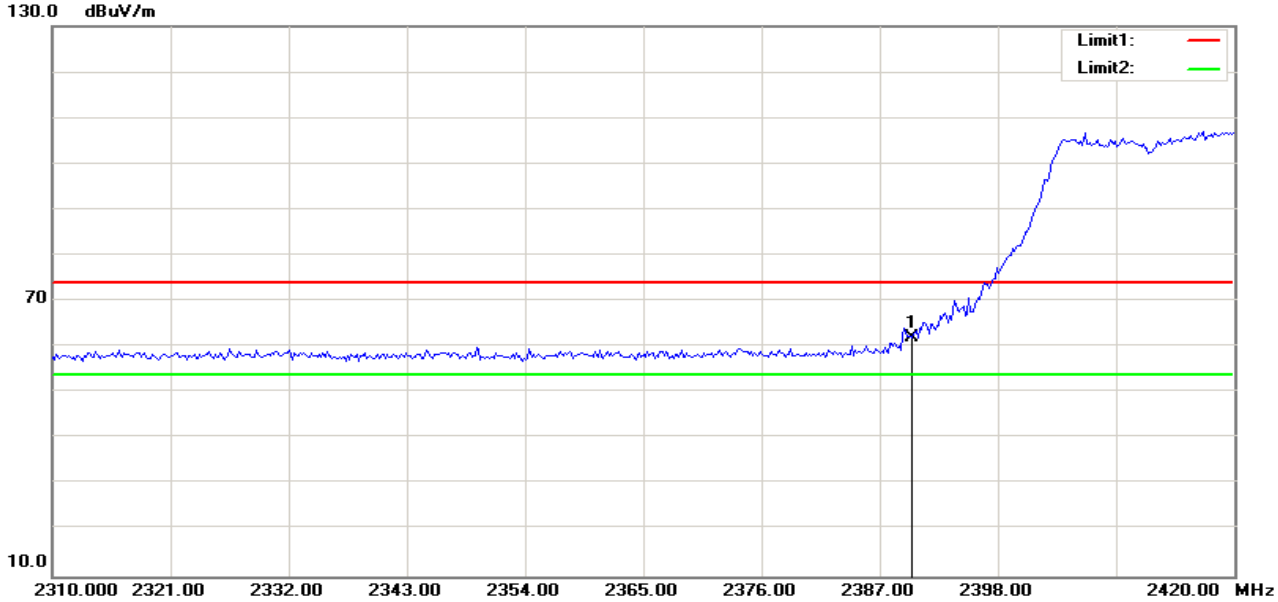
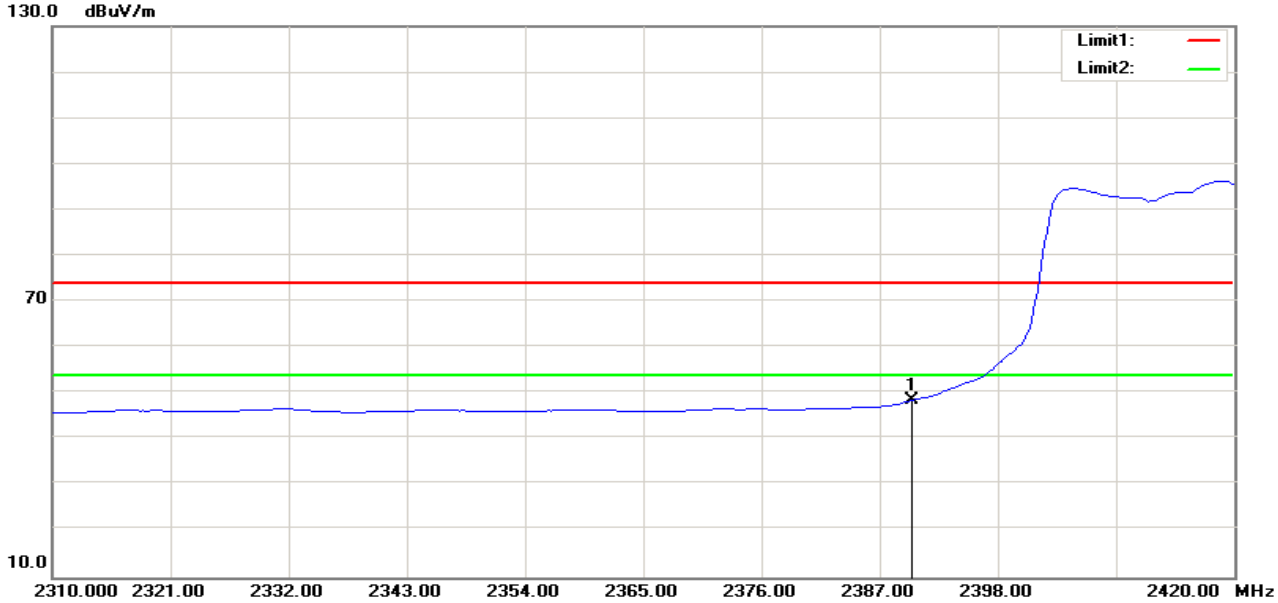
RESTRICTED BANDEDGE (draft 802.11n Standard-20 MHz Channel mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	76.41	-14.28	62.13	74.00	-11.87	100	116	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	62.79	-14.28	48.51	54.00	-5.49	100	116	AVG

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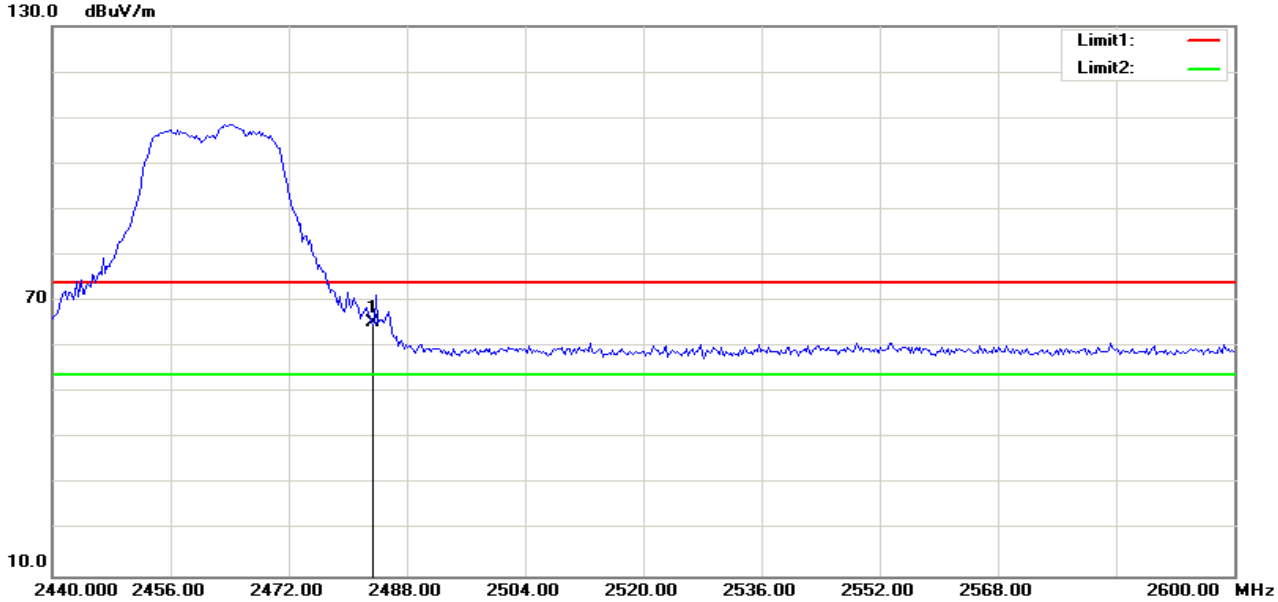
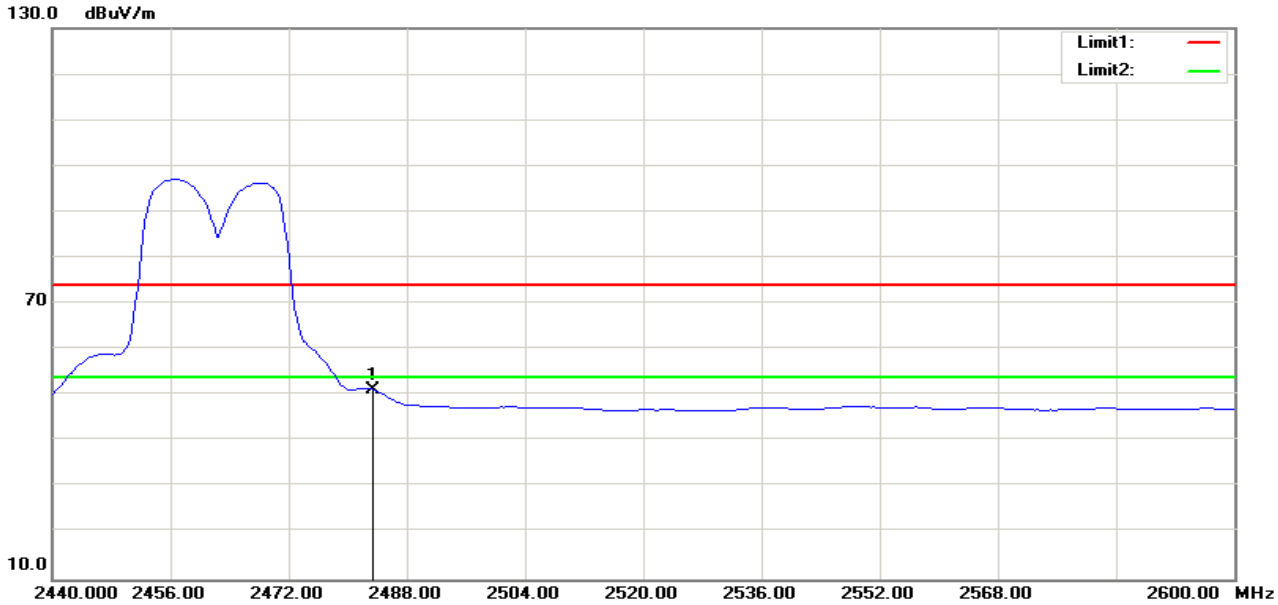
RESTRICTED BANDEDGE (draft 802.11n Standard-20 MHz Channel mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	79.07	-13.65	65.42	74.00	-8.58	100	265	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	64.81	-13.65	51.16	54.00	-2.84	100	265	AVG

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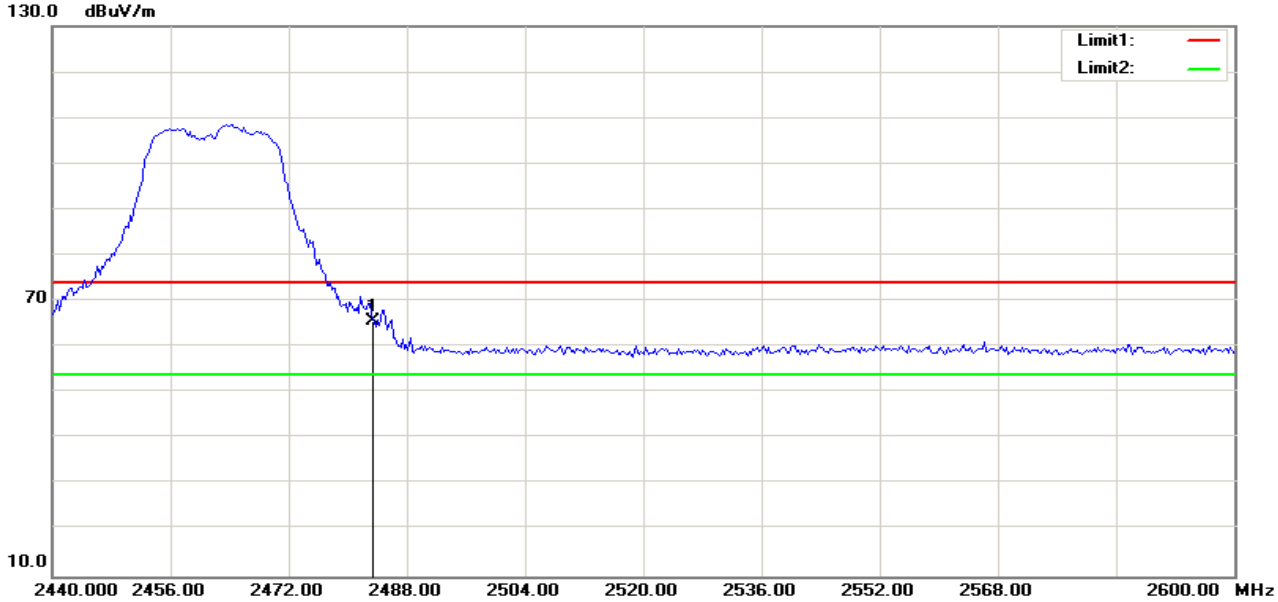
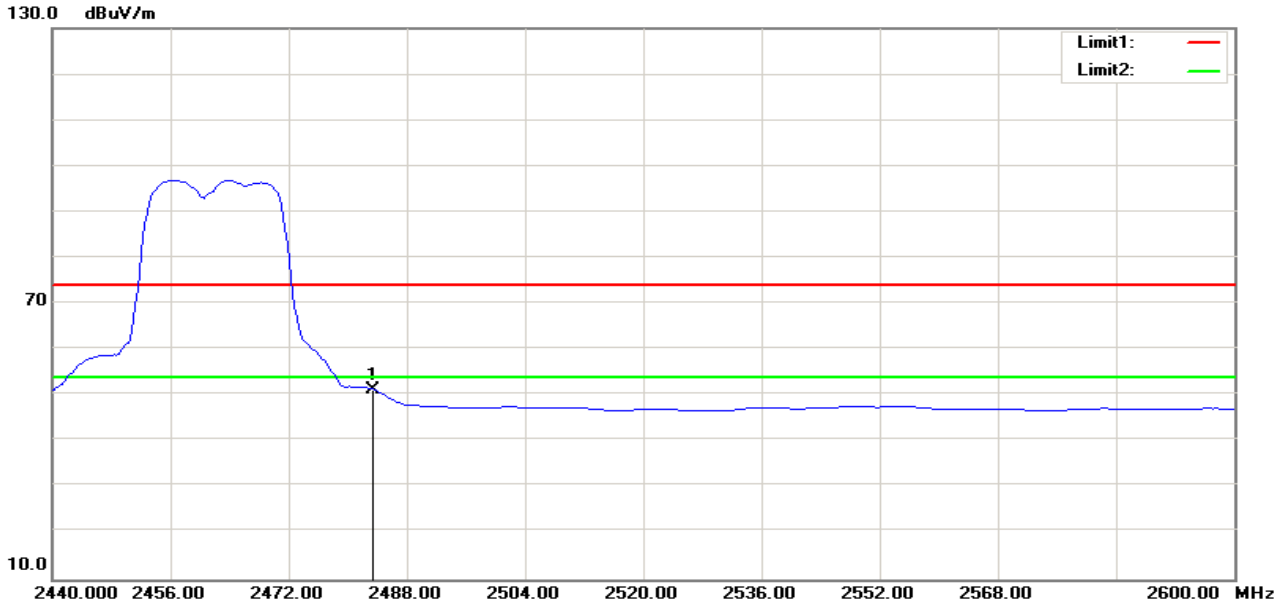
RESTRICTED BANDEDGE (draft 802.11n Standard-20 MHz Channel mode, High Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	79.39	-13.65	65.74	74.00	-8.26	100	261	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	64.95	-13.65	51.30	54.00	-2.70	100	261	AVG

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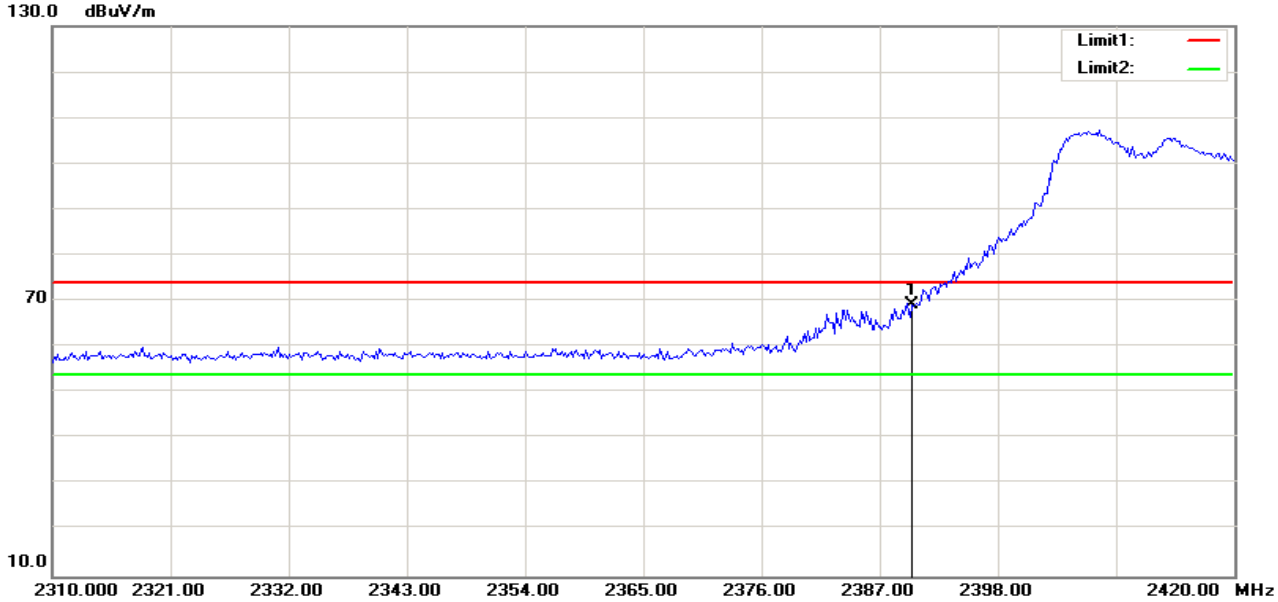
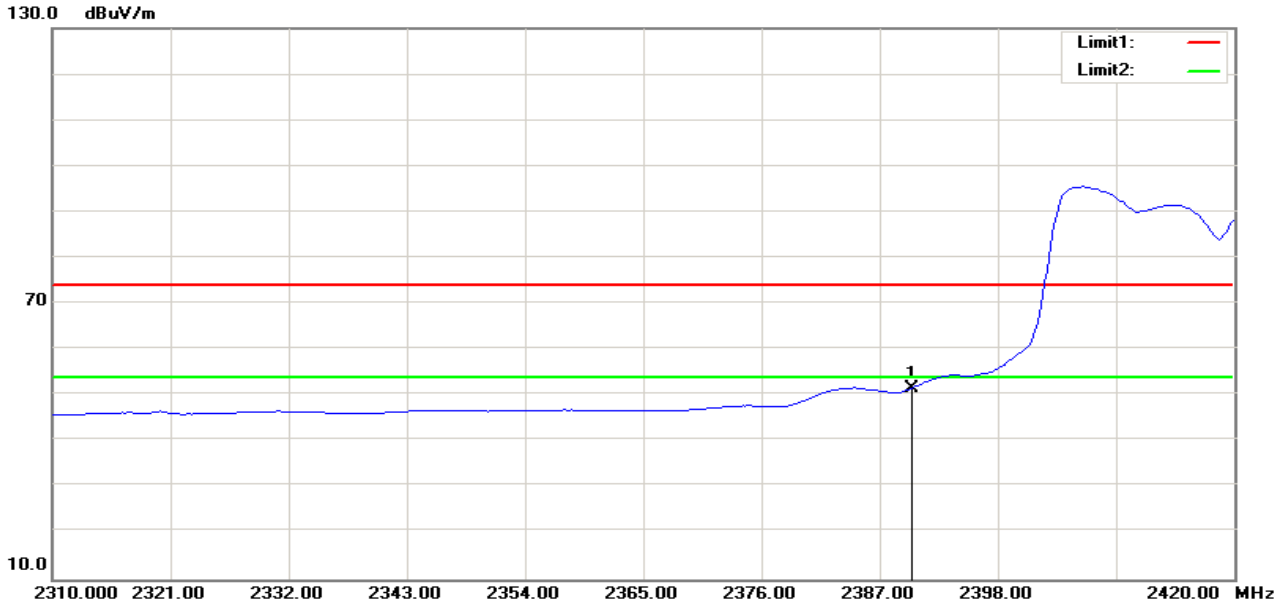
RESTRICTED BANDEDGE (draft 802.11n Wide -40 MHz Channel mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	83.42	-14.28	69.14	74.00	-4.86	100	318	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	65.91	-14.28	51.63	54.00	-2.37	100	324	AVG

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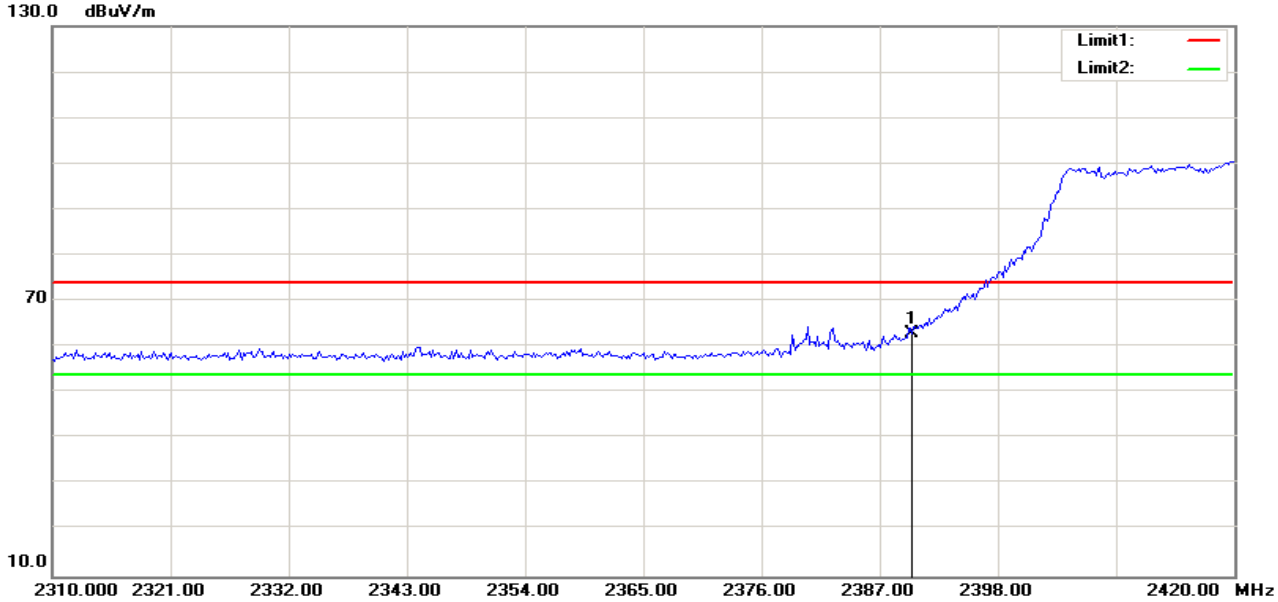
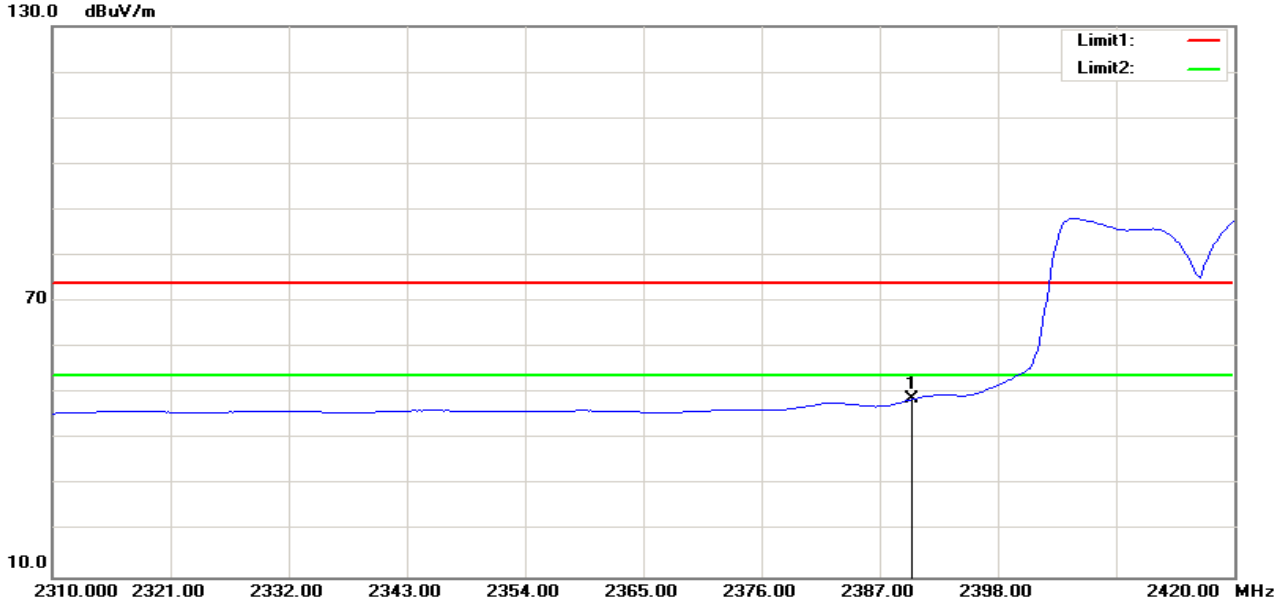
RESTRICTED BANDEDGE (draft 802.11n Wide -40 MHz Channel mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	77.20	-14.28	62.92	74.00	-11.08	100	326	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	63.03	-14.28	48.75	54.00	-5.25	100	330	AVG

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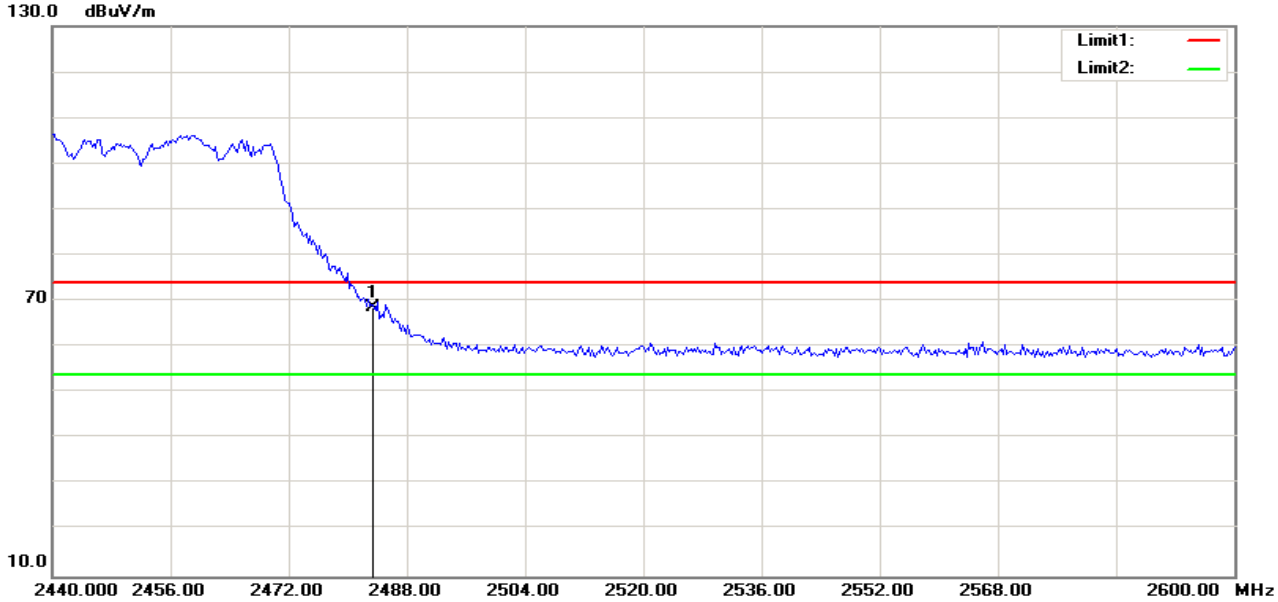
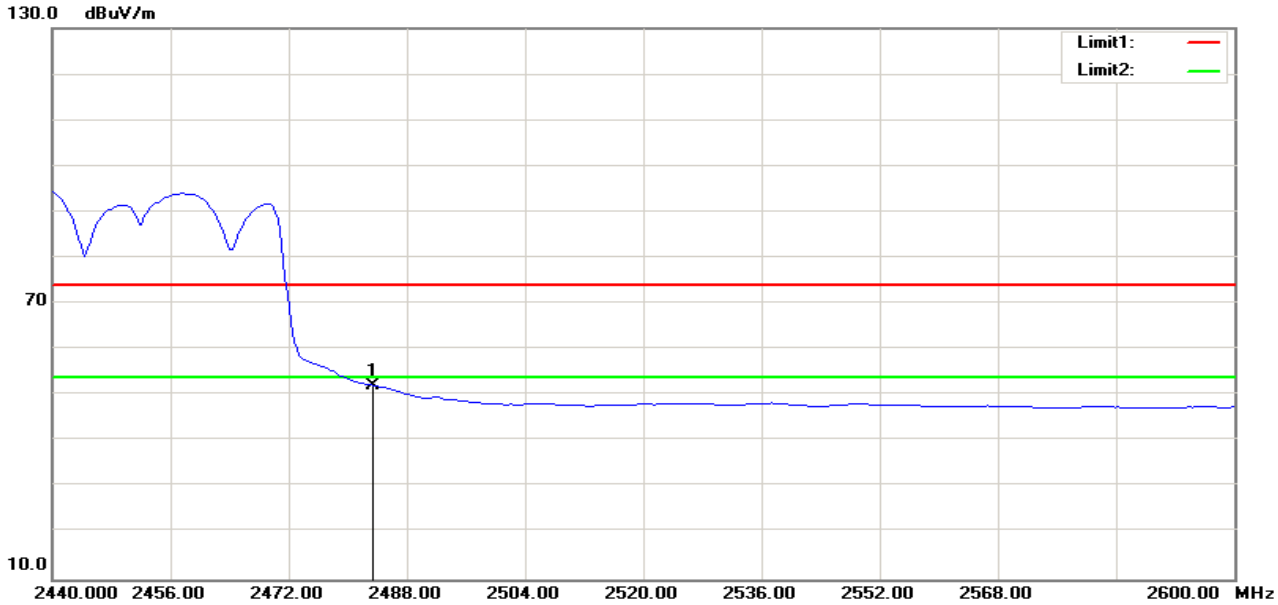
RESTRICTED BANDEDGE (draft 802.11n Wide -40 MHz Channel mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	82.24	-13.65	68.59	74.00	-5.41	100	329	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	65.88	-13.65	52.23	54.00	-1.77	100	331	AVG

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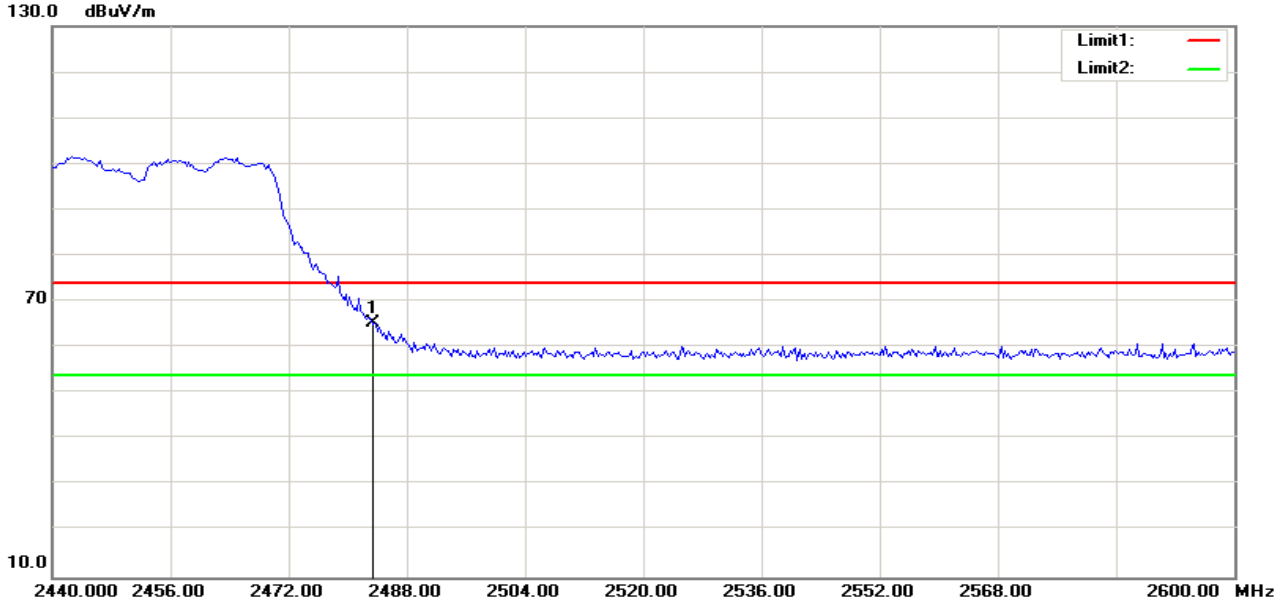
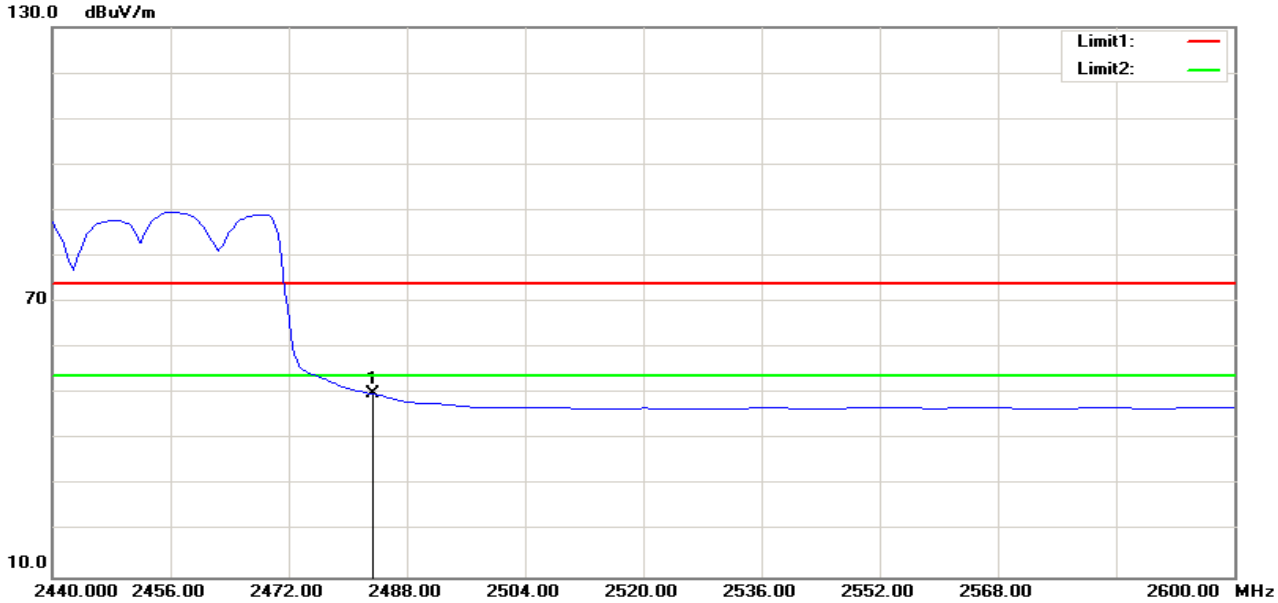
RESTRICTED BANDEDGE (draft 802.11n Wide -40 MHz Channel mode, High Channel, Vertical)

Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	78.93	-13.65	65.28	74.00	-8.72	100	268	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	63.59	-13.65	49.94	54.00	-4.06	100	333	AVG

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Below 1GHz

Operation Mode: Normal Link **Test Date:** 2013-12-24

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
58.1300	V	28.49	8.09	36.58	40.00	-3.42	Peak
157.0700	V	17.05	13.47	30.52	43.50	-12.98	Peak
375.3200	V	21.41	17.45	38.86	46.00	-7.14	Peak
500.4500	V	15.35	19.64	34.99	46.00	-11.01	Peak
625.5800	V	17.53	21.39	38.92	46.00	-7.08	Peak
851.5900	V	13.80	25.32	39.12	46.00	-6.88	Peak
60.0700	H	28.16	7.98	36.14	40.00	-3.86	Peak
153.1900	H	16.56	13.51	30.07	43.50	-13.43	Peak
217.2100	H	19.24	13.28	32.52	46.00	-13.48	Peak
310.3300	H	22.73	14.93	37.66	46.00	-8.34	Peak
675.0500	H	14.72	22.07	36.79	46.00	-9.21	Peak
838.0100	H	13.92	25.02	38.94	46.00	-7.06	Peak

Remark:

1. *Measuring frequencies from 30 MHz to the 1GHz (No emission found between lowest internal used/generated frequency to 30 MH).*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *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.*
4. *Margin (dB) = Result (dBuV/m) – Limit (dBuV/m).*

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Above 1 GHz

Operation Mode: TX / IEEE 802.11b / CH Low **Test Date:** 2013-11-30

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3315.705	56.46	-11.64	44.82	74.00	-29.18	100	186	peak
2	4814.103	56.25	-8.00	48.25	74.00	-25.75	100	243	peak
3	9636.218	50.73	2.75	53.48	74.00	-20.52	100	119	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4814.103	57.40	-8.00	49.40	74.00	-24.60	100	116	peak
2	9636.218	47.94	2.75	50.69	74.00	-23.31	100	95	peak
3	11080.128	43.05	7.21	50.26	74.00	-23.74	100	201	peak
N/A									

Operation Mode: TX / IEEE 802.11b / CH Mid **Test Date:** 2013-11-30

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2436.667	62.43	-14.01	48.42	74.00	-25.58	100	154	peak
2	4868.590	54.13	-7.72	46.41	74.00	-27.59	100	253	peak
3	9745.192	44.00	2.90	46.90	74.00	-27.10	100	131	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2416.667	57.32	-14.16	43.16	74.00	-30.84	100	100	peak
2	4868.590	55.89	-7.72	48.17	74.00	-25.83	100	116	peak
3	9745.192	46.08	2.90	48.98	74.00	-25.02	100	94	peak
N/A									

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Operation Mode: TX / IEEE 802.11b / CH High **Test Date:** 2013-11-30

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2463.910	62.68	-13.80	48.88	74.00	-25.12	100	42	peak
2	4923.077	53.84	-7.57	46.27	74.00	-27.73	100	306	peak
3	9854.167	49.05	3.17	52.22	74.00	-21.78	100	127	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2443.910	61.03	-13.95	47.08	74.00	-26.92	100	17	peak
2	4923.077	58.97	-7.57	51.40	74.00	-22.60	100	128	peak
3	9854.167	47.65	3.17	50.82	74.00	-23.18	100	105	peak
N/A									

Operation Mode: TX / IEEE 802.11g / CH Low **Test Date:** 2013-11-30

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	52.55	-7.59	44.96	74.00	-29.04	100	219	peak
2	9173.077	45.15	2.47	47.62	74.00	-26.38	100	214	peak
3	10780.449	55.64	5.23	60.87	74.00	-13.13	100	159	peak
4	10780.514	43.60	5.23	48.83	54.00	-5.17	100	147	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	52.15	-7.59	44.56	74.00	-29.44	100	304	peak
2	7211.538	45.10	-0.59	44.51	74.00	-29.49	100	132	peak
3	10807.692	54.90	5.24	60.14	74.00	-13.86	100	130	peak
4	10807.701	42.31	5.24	47.55	54.00	-6.45	100	124	AVG
N/A									

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Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** 2013-11-30

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2436.667	61.79	-14.01	47.78	74.00	-26.22	100	151	peak
2	4977.564	49.17	-7.59	41.58	74.00	-32.42	100	49	peak
3	9173.077	44.60	2.47	47.07	74.00	-26.93	100	214	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	51.93	-7.59	44.34	74.00	-29.66	100	309	peak
2	9227.564	44.57	2.67	47.24	74.00	-26.76	100	110	peak
3	10780.449	49.86	5.23	55.09	74.00	-18.91	100	155	peak
4	10780.477	39.39	5.23	44.62	54.00	-9.38	100	161	AVG
N/A									

Operation Mode: TX / IEEE 802.11g / CH High **Test Date:** 2013-11-30

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	52.55	-7.59	44.96	74.00	-29.04	100	206	peak
2	8383.013	41.47	1.17	42.64	74.00	-31.36	100	77	peak
3	10780.401	41.05	5.23	46.28	54.00	-7.72	100	52	AVG
4	10780.449	53.75	5.23	58.98	74.00	-15.02	100	39	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	52.43	-7.59	44.84	74.00	-29.16	100	254	peak
2	7865.385	42.33	0.97	43.30	74.00	-30.70	100	277	peak
3	10780.449	56.81	5.23	62.04	74.00	-11.96	100	142	peak
4	10780.553	41.40	5.22	46.62	54.00	-7.38	100	110	AVG
N/A									

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Operation Mode: TX / draft 802.11gn Standard-20 MHz Channel mode / CH Low **Test Date:** 2013-11-30

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	50.96	-7.59	43.37	74.00	-30.63	100	213	peak
2	7211.538	44.66	-0.59	44.07	74.00	-29.93	100	4	peak
3	10780.449	55.57	5.23	60.80	74.00	-13.20	100	34	peak
4	10780.452	42.35	5.23	47.58	54.00	-6.42	100	53	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	50.74	-7.59	43.15	74.00	-30.85	100	303	peak
2	7947.115	43.42	1.09	44.51	74.00	-29.49	100	132	peak
3	10780.449	50.26	5.23	55.49	74.00	-18.51	100	267	peak
4	10780.513	40.61	5.28	45.89	54.00	-8.11	100	267	AVG
N/A									

Operation Mode: TX / draft 802.11gn Standard-20 MHz Channel mode / CH Mid **Test Date:** 2013-11-30

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	52.13	-7.59	44.54	74.00	-29.46	100	219	peak
2	7402.244	46.40	-0.66	45.74	74.00	-28.26	100	102	peak
3	10780.449	51.97	5.23	57.20	74.00	-16.80	100	120	peak
4	10780.453	42.39	5.23	47.62	54.00	-6.38	100	115	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	54.45	-7.59	46.86	74.00	-27.14	100	238	peak
2	8682.692	44.02	1.90	45.92	74.00	-28.08	100	96	peak
3	10780.449	51.73	5.23	56.96	74.00	-17.04	100	44	peak
4	10780.451	41.60	5.23	46.83	54.00	-7.17	100	62	AVG
N/A									

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Operation Mode: TX / draft 802.11gn Standard-20 MHz Channel mode / CH High **Test Date:** 2013-11-30

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2443.910	61.20	-13.95	47.25	74.00	-26.75	100	155	peak
2	7184.295	45.50	-0.65	44.85	74.00	-29.15	100	58	peak
3	10780.449	52.99	5.23	58.22	74.00	-15.78	100	139	peak
4	10780.461	41.99	5.23	47.22	54.00	-6.78	100	130	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	53.31	-7.59	45.72	74.00	-28.28	100	301	peak
2	9227.564	44.87	2.67	47.54	74.00	-26.46	100	90	peak
3	10780.449	50.98	5.23	56.21	74.00	-17.79	100	47	peak
4	10780.532	41.65	5.29	46.94	54.00	-7.06	100	39	AVG
N/A									

Operation Mode: TX / draft 802.11gn Wide-40 MHz Channel mode / CH Low **Test Date:** 2013-11-30

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	50.74	-7.59	43.15	74.00	-30.85	100	213	peak
2	8682.692	44.05	1.90	45.95	74.00	-28.05	100	0	peak
3	10780.449	56.00	5.23	61.23	74.00	-12.77	100	154	peak
4	10780.451	40.12	5.23	45.35	54.00	-8.65	100	166	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4977.564	53.42	-7.59	45.83	74.00	-28.17	100	309	peak
2	7266.026	44.01	-0.77	43.24	74.00	-30.76	100	10	peak
3	10780.449	51.69	5.23	56.92	74.00	-17.08	100	67	peak
4	10780.521	41.60	5.23	46.83	54.00	-7.17	100	84	AVG
N/A									

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Operation Mode: TX / draft 802.11gn Wide-40 MHz Channel mode / CH Mid **Test Date:** 2013-11-30

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2436.667	57.42	-14.01	43.41	74.00	-30.59	100	156	peak
2	7266.026	45.62	-0.77	44.85	74.00	-29.15	100	185	peak
3	10780.449	55.54	5.23	60.77	74.00	-13.23	100	185	peak
4	10780.556	41.59	5.35	46.94	54.00	-7.06	100	185	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	63.76	-10.40	53.36	74.00	-20.64	100	336	peak
2	4923.077	57.11	-7.57	49.54	74.00	-24.46	100	310	peak
3	10834.936	56.08	5.52	61.60	74.00	-12.40	100	263	peak
4	10834.915	40.79	5.52	46.31	54.00	-7.69	100	251	AVG
N/A									

Operation Mode: TX / draft 802.11gn Wide-40 MHz Channel mode / CH High **Test Date:** 2013-11-30

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2443.910	56.02	-13.95	42.07	74.00	-31.93	100	146	peak
2	4977.564	50.07	-7.59	42.48	74.00	-31.52	100	130	peak
3	10807.692	56.69	5.24	61.93	74.00	-12.07	100	135	peak
4	10807.702	41.11	5.24	46.35	54.00	-7.65	100	135	AVG
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2443.910	57.03	-13.95	43.08	74.00	-30.92	100	166	peak
2	4977.564	51.46	-7.59	43.87	74.00	-30.13	100	304	peak
3	10807.692	52.59	5.24	57.83	74.00	-16.17	100	228	peak
4	10807.702	40.74	5.24	45.98	54.00	-8.02	100	228	AVG
N/A									

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Operation Mode: TX / IEEE 802.11a / CH Low **Test Date:** 2014-3-26

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	62.00	-10.40	51.60	74.00	-22.40	100	281	peak
2	11488.764	41.72	6.16	47.88	54.00	-6.12	100	43	AVG
3	11488.782	53.20	6.16	59.36	74.00	-14.64	100	44	peak
4	17346.154	42.03	9.81	51.84	74.00	-22.16	100	281	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5300.243	53.15	-6.87	46.28	54.00	-7.72	100	176	AVG
2	5304.487	62.94	-6.88	56.06	74.00	-17.94	101	176	peak
3	11486.939	43.68	6.18	49.86	54.00	-4.14	102	87	AVG
4	11488.782	55.25	6.16	61.41	74.00	-12.59	100	87	peak
5	17264.423	45.48	9.53	55.01	74.00	-18.99	101	139	peak
6	17264.423	37.86	9.53	47.39	54.00	-6.61	100	139	AVG

Operation Mode: TX / IEEE 802.11a / CH Mid **Test Date:** 2014-3-26

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	6421.474	54.82	-3.87	50.95	74.00	-23.05	100	0	peak
2	11570.489	40.43	6.55	46.98	54.00	-7.02	100	90	AVG
3	11570.513	55.70	6.55	62.25	74.00	-11.75	100	90	peak
4	17264.423	41.63	9.53	51.16	74.00	-22.84	100	264	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	6339.743	53.31	-4.24	49.07	74.00	-24.93	100	194	peak
2	11570.513	55.36	6.55	61.91	74.00	-12.09	100	79	peak
3	11570.687	40.78	6.55	47.33	54.00	-6.67	100	79	AVG
4	17346.154	41.03	9.81	50.84	74.00	-23.16	100	64	peak
N/A									

Operation Mode: TX / IEEE 802.11a / CH High **Test Date:** 2014-3-26

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	6448.718	53.98	-3.85	50.13	74.00	-23.87	100	360	peak
2	11652.244	55.60	6.41	62.01	74.00	-11.99	100	95	peak
3	11652.317	40.75	6.41	47.16	54.00	-6.84	100	95	AVG
4	17291.667	41.16	9.78	50.94	74.00	-23.06	100	24	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	6394.231	51.83	-3.92	47.91	74.00	-26.09	100	194	peak
2	11652.168	39.90	6.41	46.31	54.00	-7.69	100	77	AVG
3	11652.244	54.68	6.41	61.09	74.00	-12.91	100	77	peak
4	17373.397	42.20	9.80	52.00	74.00	-22.00	100	257	peak
N/A									

Operation Mode: TX / draft 802.11n Standard-20 MHz mode / CH Low **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	7701.923	50.41	0.67	51.08	74.00	-22.92	100	159	peak
2	11488.695	35.97	6.16	42.13	54.00	-11.87	100	41	AVG
3	11488.782	47.11	6.16	53.27	74.00	-20.73	100	40	peak
4	17318.910	41.37	9.84	51.21	74.00	-22.79	100	265	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11488.782	49.32	6.16	55.48	74.00	-18.52	100	74	peak
2	11489.070	37.12	6.16	43.28	54.00	-10.72	100	74	AVG
3	14567.308	43.12	9.23	52.35	74.00	-21.65	100	267	peak
4	17373.397	41.39	9.80	51.19	74.00	-22.81	100	47	peak
N/A									

Operation Mode: TX / draft 802.11n Standard-20 MHz mode / CH Mid **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	7701.923	50.96	0.67	51.63	74.00	-22.37	100	60	peak
2	11570.011	38.97	6.54	45.51	54.00	-8.49	100	98	AVG
3	11570.513	49.20	6.55	55.75	74.00	-18.25	100	99	peak
4	17373.397	40.60	9.80	50.40	74.00	-23.60	100	326	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	56.18	-10.40	45.78	74.00	-28.22	100	209	peak
2	11570.502	40.73	6.55	47.28	54.00	-6.72	100	82	AVG
3	11570.513	50.30	6.55	56.85	74.00	-17.15	100	82	peak
4	17373.397	41.25	9.80	51.05	74.00	-22.95	100	307	peak
N/A									

Operation Mode: TX / draft 802.11n Standard-20 MHz mode / CH High **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	62.15	-10.40	51.75	74.00	-22.25	100	243	peak
2	11652.244	53.02	6.41	59.43	74.00	-14.57	100	98	peak
3	11652.415	36.75	6.41	43.16	54.00	-10.84	100	98	AVG
4	17318.910	41.93	9.84	51.77	74.00	-22.23	100	100	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	54.32	-10.40	43.92	74.00	-30.08	100	93	peak
2	11652.244	51.51	6.41	57.92	74.00	-16.08	100	91	peak
3	11652.354	38.68	6.41	45.09	54.00	-8.91	100	91	AVG
4	17400.641	42.02	9.77	51.79	74.00	-22.21	100	166	peak
N/A									

Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode / CH Low **Test Date:** 2014-3-26

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5495.192	58.36	-6.86	51.50	74.00	-22.50	100	338	peak
2	11516.026	45.85	6.18	52.03	74.00	-21.97	100	36	peak
3	17400.641	42.16	9.77	51.93	74.00	-22.07	100	91	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5522.436	56.88	-6.79	50.09	74.00	-23.91	100	184	peak
2	11543.269	44.98	6.36	51.34	74.00	-22.66	100	89	peak
3	17346.154	41.54	9.81	51.35	74.00	-22.65	100	293	peak
N/A									

Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode / CH High **Test Date:** 2014-3-26

Temperature: 22°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	7701.923	49.54	0.67	50.21	74.00	-23.79	100	138	peak
2	11570.513	46.05	6.55	52.60	74.00	-21.40	100	42	peak
3	17291.667	41.85	9.78	51.63	74.00	-22.37	100	359	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5495.192	58.14	-6.86	51.28	74.00	-22.72	100	193	peak
2	11597.731	36.45	6.73	43.18	54.00	-10.82	100	95	AVG
3	11597.756	47.40	6.73	54.13	74.00	-19.87	100	96	peak
4	17264.423	41.23	9.53	50.76	74.00	-23.24	100	313	peak
N/A									

Operation Mode: TX / draft 802.11ac Standard-20 MHz mode / CH Low **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5413.462	58.58	-7.04	51.54	74.00	-22.46	100	223	peak
2	11488.721	36.78	6.16	42.94	54.00	-11.06	100	51	AVG
3	11488.782	49.09	6.16	55.25	74.00	-18.75	100	51	peak
4	17427.885	41.59	9.73	51.32	74.00	-22.68	100	346	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5440.705	56.57	-6.98	49.59	74.00	-24.41	100	198	peak
2	11488.764	37.46	6.16	43.62	54.00	-10.38	100	94	AVG
3	11488.782	49.00	6.16	55.16	74.00	-18.84	100	94	peak
4	17264.423	42.04	9.53	51.57	74.00	-22.43	100	201	peak
N/A									

Operation Mode: TX / draft 802.11ac Standard-20 MHz mode / CH Mid **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	60.88	-10.40	50.48	74.00	-23.52	100	253	peak
2	11570.468	37.13	6.55	43.68	54.00	-10.32	100	84	AVG
3	11570.513	48.13	6.55	54.68	74.00	-19.32	100	84	peak
4	17373.397	41.81	9.80	51.61	74.00	-22.39	100	93	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5304.487	57.79	-6.88	50.91	74.00	-23.09	100	187	peak
2	11570.486	37.10	6.55	43.65	54.00	-10.35	100	90	AVG
3	11570.513	49.11	6.55	55.66	74.00	-18.34	100	90	peak
4	17291.667	41.20	9.78	50.98	74.00	-23.02	100	64	peak
N/A									

Operation Mode: TX / draft 802.11ac Standard-20 MHz mode / CH High **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	7701.923	51.41	0.67	52.08	74.00	-21.92	100	35	peak
2	11652.244	52.30	6.41	58.71	74.00	-15.29	100	90	peak
3	11652.297	37.97	6.41	44.38	54.00	-9.62	100	90	AVG
4	17373.397	41.57	9.80	51.37	74.00	-22.63	100	253	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	55.15	-10.40	44.75	74.00	-29.25	100	184	peak
2	11652.244	52.04	6.41	58.45	74.00	-15.55	100	91	peak
3	11652.319	36.27	6.41	42.68	54.00	-11.32	100	90	AVG
4	17400.641	41.37	9.77	51.14	74.00	-22.86	100	322	peak
N/A									

Operation Mode: TX / draft 802.11ac wide-40 MHz mode / CH Low **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5331.731	59.06	-6.94	52.12	74.00	-21.88	100	0	peak
2	11543.269	47.65	6.36	54.01	74.00	-19.99	100	127	peak
3	11543.301	36.89	6.37	43.26	54.00	-10.74	100	126	AVG
4	17346.154	41.48	9.81	51.29	74.00	-22.71	100	135	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5495.192	56.59	-6.86	49.73	74.00	-24.27	100	0	peak
2	11516.026	45.74	6.18	51.92	74.00	-22.08	100	92	peak
3	17400.641	41.53	9.77	51.30	74.00	-22.70	100	94	peak
N/A									

Operation Mode: TX / draft 802.11ac wide-40 MHz mode / CH High **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3833.333	60.31	-10.40	49.91	74.00	-24.09	100	239	peak
2	11597.756	46.16	6.73	52.89	74.00	-21.11	100	87	peak
3	16964.744	43.55	8.04	51.59	74.00	-22.41	100	223	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5467.949	57.51	-6.92	50.59	74.00	-23.41	100	186	peak
2	11597.756	47.35	6.73	54.08	74.00	-19.92	100	89	peak
3	11597.825	36.55	6.73	43.28	54.00	-10.72	100	90	AVG
4	17291.667	41.44	9.78	51.22	74.00	-22.78	100	309	peak
N/A									

Operation Mode: TX / draft 802.11ac wide-80 MHz mode **Test Date:** 2014-3-26

Temperature: 24°C **Tested by:** Charly.xue

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5467.949	58.59	-6.92	51.67	74.00	-22.33	100	345	peak
2	11543.269	46.35	6.36	52.71	74.00	-21.29	100	125	peak
3	17237.179	41.83	9.29	51.12	74.00	-22.88	100	348	peak
N/A									

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5467.949	57.35	-6.92	50.43	74.00	-23.57	100	183	peak
2	11570.513	43.55	6.55	50.10	74.00	-23.90	100	64	peak
3	17264.423	41.49	9.53	51.02	74.00	-22.98	100	126	peak
N/A									

4.6.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 is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (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 1 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.

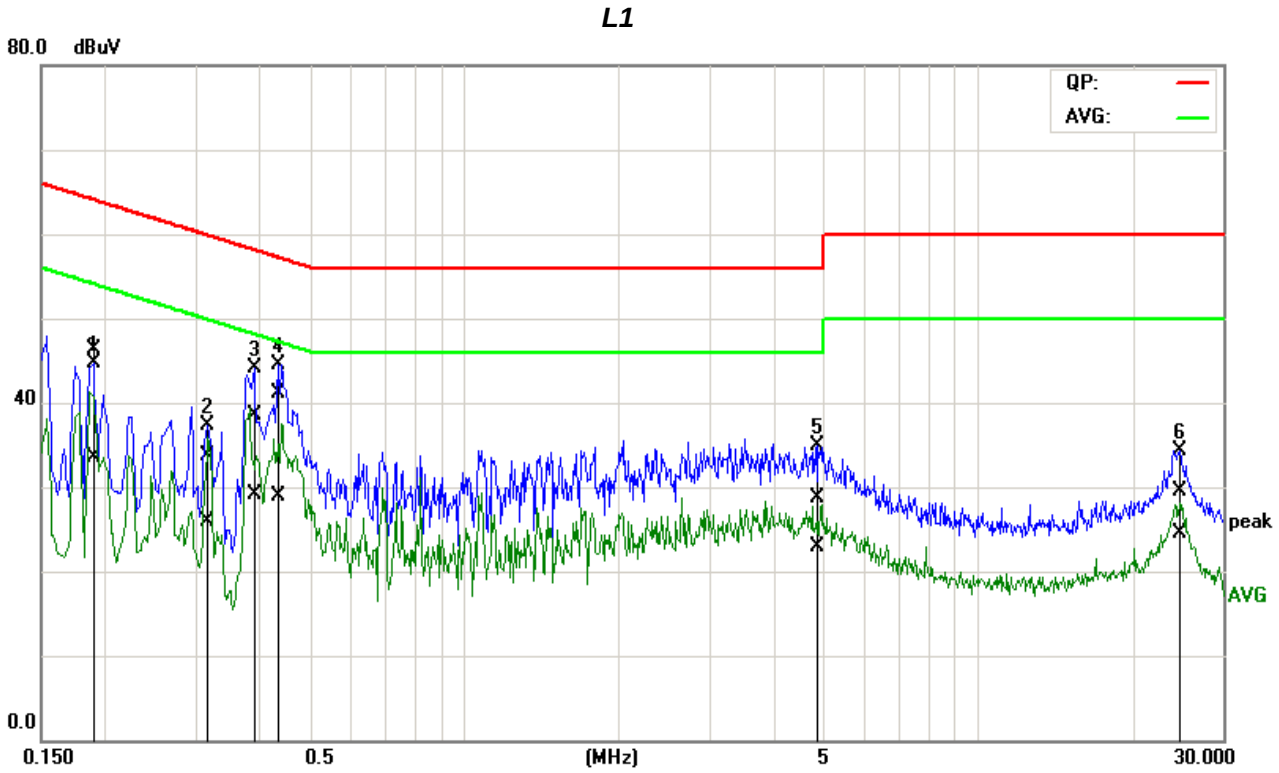
3.Repeat above procedures until all frequency measured were complete.

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.

Test Data

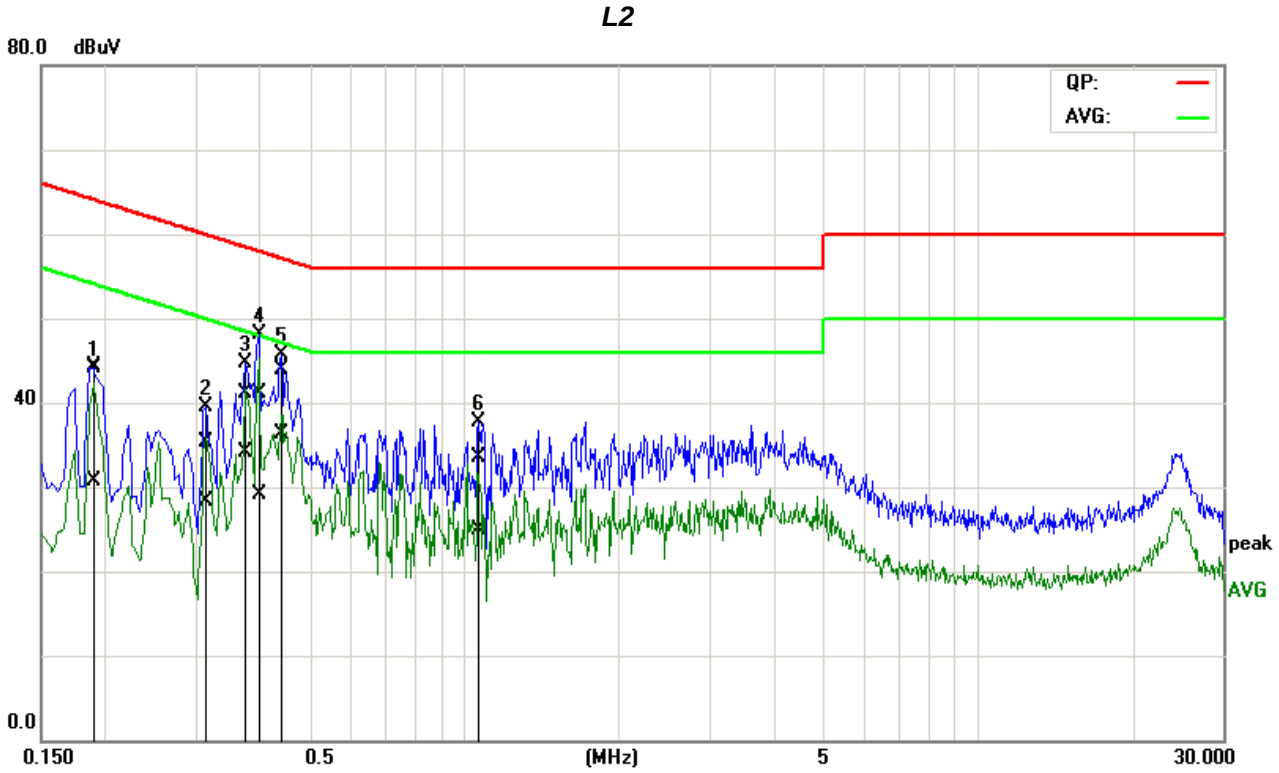
Job No.:	C140220R01	Date:	2013-12-29
Company:	TG1682G	Time:	15:32:29
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Charly.xue
Line:	L1	Test Voltage:	AC 120V/60Hz
Model:		Description:	



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)	
1	0.1900	26.73	13.77	19.64	46.37	33.41	64.04	54.04	-17.67	-20.63	Pass
2	0.3148	13.93	6.15	19.69	33.62	25.84	59.84	49.84	-26.22	-24.00	Pass
3	0.3879	18.80	9.39	19.74	38.54	29.13	58.11	48.11	-19.57	-18.98	Pass
4	0.4305	21.31	9.18	19.78	41.09	28.96	57.24	47.24	-16.15	-18.28	Pass
5*	4.8827	8.40	2.67	20.29	28.69	22.96	56.00	46.00	-27.31	-23.04	Pass
6	24.6934	8.23	3.30	21.20	29.43	24.50	60.00	50.00	-30.57	-25.50	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Job No.:	C140220R01	Date:	2013-12-29
Company:	TG1682G	Time:	15:36:59
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Charly.xue
Line:	L2	Test Voltage:	AC 120V/60Hz
Model:		Description:	



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)	
1	0.1892	24.67	10.97	19.66	44.33	30.63	64.07	54.07	-19.74	-23.44	Pass
2	0.3126	15.63	8.52	19.72	35.35	28.24	59.90	49.90	-24.55	-21.66	Pass
3	0.3748	21.41	14.25	19.76	41.17	34.01	58.39	48.39	-17.22	-14.38	Pass
4	0.3979	21.31	9.29	19.78	41.09	29.07	57.90	47.90	-16.81	-18.83	Pass
5*	0.4412	24.00	16.43	19.81	43.81	36.24	57.04	47.04	-13.23	-10.80	Pass
6	1.0590	13.59	5.02	19.83	33.42	24.85	56.00	46.00	-22.58	-21.15	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).