FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Product Name: YI-Cloud Dome Camera 1080P
Brand Name: YI
Model No.: YYS.1917
Series Model.: N/A
FCC ID: 2AFIB-YYS1917
Test Report Number:
C171019R01-RPW

Issued for

Shanghai Xiaoyi Technology Co., Ltd.
16F, Building 1 , No. 515, Huanke Road, Shanghai, China

Issued by

Compliance Certification Services Inc.
Kun shan Laboratory
No.10 Weiye Rd., Innovation park, Eco&Tec,
Development Zone, Kunshan City, Jiangsu, China
TEL: 86-512-57355888
FAX: 86-512-57370818

TESTING CERT #2541.01

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	March 16, 2018	C171019R01-RPW	ALL	N/A
01	March 30, 2018	C171019R01-RPW	5 17 69-82	Replace average output power to maximum output power on page 5; Modify test procedure on page 17; Add test plot on page 69-82.

1. TEST RESULT CERTIFICATION

Product Name:	YI-Cloud Dome Camera 1080P
Trade Name:	YI
Model Name.:	YYS.1917
Series Model:	N/A
Applicant Discrepancy:	Initial
Device Category:	mobile unit
Date of Test:	March 02, 2018~March 13, 2018
Applicant:	**Shanghai Xiaoyi Technology Co., Ltd.** 16F,Building 1 ,No. 515,Huanke Road,Shanghai,China
Manufacturer:	**Shanghai Xiaoyi Technology Co., Ltd.** 16F,Building 1 ,No. 515,Huanke Road,Shanghai,China
Application Type:	Certification

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

We hereby certify that:

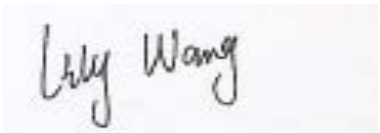
The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described 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
RF Manager
Compliance Certification Service Inc.

Tested by:



Lily.Wang
Test Engineer
Compliance Certification Service Inc.

2. EUT DESCRIPTION

Product Name:	YI-Cloud Dome Camera 1080P	
Brand Name:	YI	
Model Name:	YYS.1917	
Series Model:	N/A	
Model Discrepancy:	N/A	
Power Adapter:	Adapter Model: A8-501000 Input:100-240V ~ 50/60Hz 0.2A Output:5.0V ~ 1.0A	
Frequency Range:	IEEE 802.11b/g: 2412MHz to 2462 MHz IEEE 802.11n HT20: 2412MHz to 2462 MHz IEEE 802.11n HT40: 2422MHz to 2452 MHz	
Maximum Peak Transmit Power:	IEEE 802.11b mode: 17.85dBm IEEE 802.11g mode: 18.29dBm IEEE 802.11n HT20 mode: 18.32dBm IEEE 802.11n HT40 mode: 17.94dBm	
Modulation Technique:	IEEE802.11b mode: DSSS (1,2,5.5 and 11 Mbps) IEEE802.11g mode: DSSS /OFDM (6,9,12,18,24,36,48 and 54 Mbps) IEEE802.11n HT20 mode: OFDM (MCS0~MCS15) IEEE802.11n HT40 mode: OFDM (MCS0~MCS15)	
Number of Channels:	IEEE 802.11b/g mode: 11 Channels IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels	
Antenna Specification:	FCB Antenna	
Antenna Specification:	Brand	Gain(dBi)
	UB	3.0
Beamforming Function:	☐ With beamforming	☒ Without beamforming

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: 2AFIB-YYS1917*** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10 2013 and 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 6.2 of ANSI C63.10 2013 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

Under 1GHz

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 6.4 & 6.5 of ANSI C63.10:2013.

Above 1GHz

The EUT is placed on a turn table, which is 1.5 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 6.6 of ANSI C63.10:2013.

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 0.490-0.510MHz.

[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. Which 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.

3.5.DESCRIPTION OF TEST MODES

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

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 1Mbps data rate was chosen for full testing.

IEEE802.11g mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 6Mbps data rate was chosen for full testing.

IEEE 802.11n HT20 MHz Channel mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with MCS0 data rate was chosen for full testing.

IEEE 802.11n HT40 MHz Channel mode:

Channel Low (2422MHz)

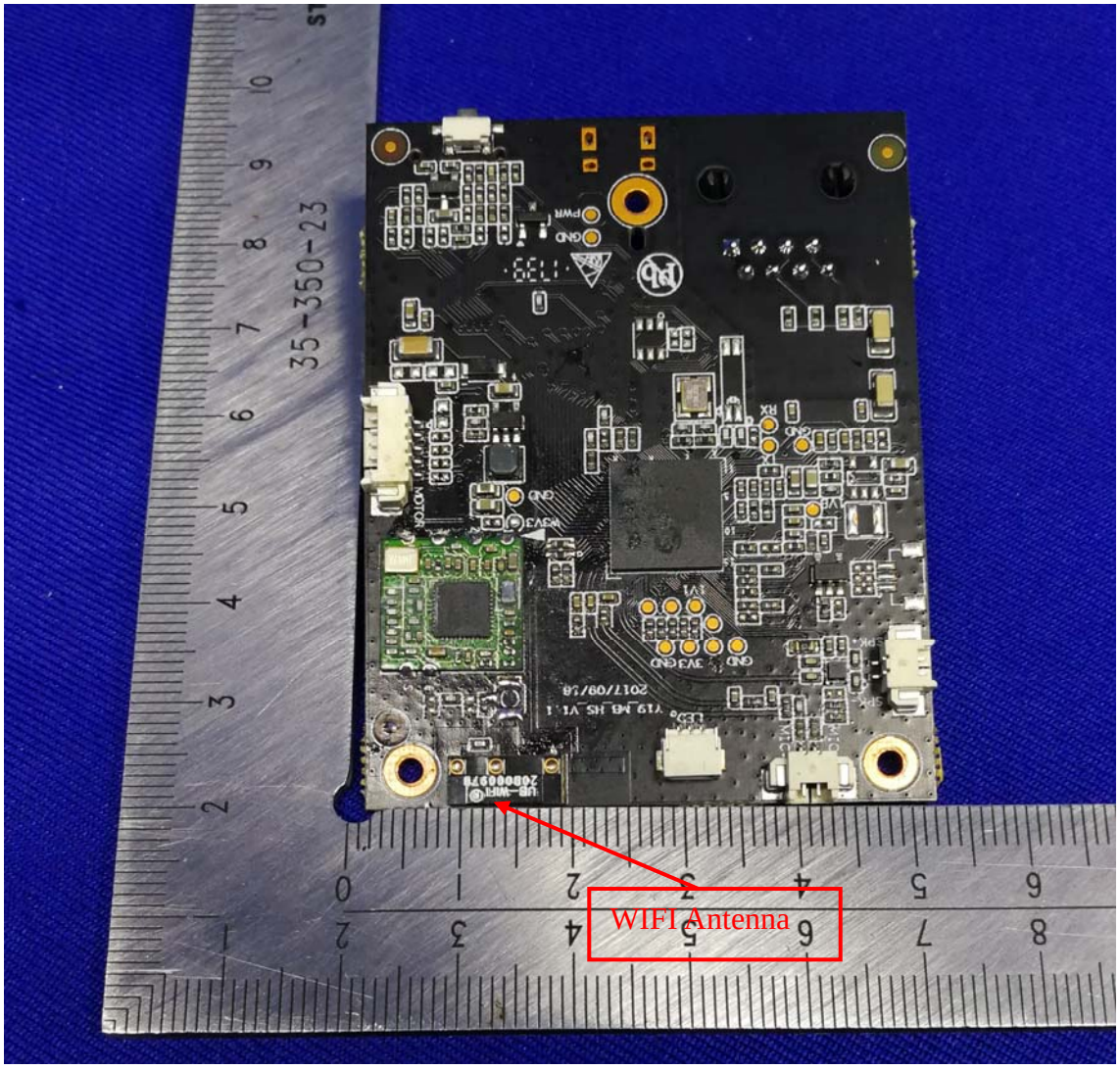
Channel Mid (2437MHz)

Channel High (2452MHz) with MCS0 data rate was chosen for full testing.

3.6.ANTENNA DESCRIPTION

an intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached or an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section”

* the antenna of this EUT is a unique (FCB Antenna for WIFI).
* the EUT complies with the requirement of 15.203.



4. INSTRUMENT CALIBRATION

4.1.URING 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 Data**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2017-9-4	2018-9-3
Spectrum Analyzer	RS	FSU26	200789	2017-7-20	2018-7-19
Power meter	Anritsu	ML2495A	1445010	2017-4-26	2018-4-25
Power sensor	Anritsu	MA2411B	1339220	2017-4-26	2018-4-25
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	N.C.R	N.C.R
DC Power Supply	AGILENT	E3632A	MY50340053	N.C.R	N.C.R
Temp. / Humidity Gauge	Anymetre	TH603	CCS007	2017-10-24	2018-10-23
Test Software			EZ-EMC		

Conducted Emission					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Data**	**Calibration Due**
EMI TEST RECEIVER	R&S	ESCI	100781	2018-2-26	2019-2-25
V (V-LISN)	SCHWARZBECK	NNLK 8129	8129-143	2017-10-29	2018-10-28
TWO-LINE V-NETWORK	R&S	ENV216	101604	2017-10-29	2018-10-28
Pulse LIMITER	R&S	ESH3-Z2	100524	2017-12-27	2018-12-26
Cable	Thermax	Cable-02	14	2017-12-27	2018-12-26
Test Software			EZ-EMC		

977 Chamber					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Data**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2017-9-4	2018-9-3
Spectrum Analyzer	RS	FSU26	200789	2017-7-20	2018-7-19
EMI Test Receiver	R&S	ESCI	101378	2017-12-27	2018-12-26
Amplifier	COM-POWER	PAM-840A	461332	2017-8-30	2018-8-29
Amplifier	MITEQ	JS41-00101800-32-10P	1675713	2017-7-20	2018-7-19
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9170	9170-515	2018-2-27	2019-2-26
Bilog Antenna	SCHAFFNER	CBL6143	5078	2017-11-5	2018-11-4
Loop Antenna	Hengweiyi	39501C	2014012	2018-1-3	2019-1-2
Horn-antenna	SCHWARZBECK	9120D	D:266	2018-2-26	2019-2-25
Horn-antenna	SCHWARZBECK	9120D	D:267	2017-11-5	2018-11-4
Turn Table	CT	CT123	4165	N.C.R	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R	N.C.R
Controller	CT	CT1OO	95637	N.C.R	N.C.R
Cable	REBES MICROWAVE	Cable-93	N/A	2017-10-29	2018-10-28
Cable	REBES MICROWAVE	Cable-94	N/A	2017-10-29	2018-10-28
Cable	REBES MICROWAVE	Cable-95	N/A	2017-10-29	2018-10-28
Cable	N/A	Cable-03	N/A	2017-4-26	2018-4-25
Cable	N/A	Cable-04	N/A	2017-4-26	2018-4-25
Test Software			EZ-EMC		

Remark: *Each piece of equipment is scheduled for calibration once a year.*

4.2.MEASUREMENT UNCERTAINTY

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with TR 100 028-1 [2] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Table 6 is based on such expansion factors.

Table 6: Maximum measurement uncertainty

Parameter	*Uncertainty*
Radio frequency	±0.8 × 10-7
RF power, conducted	0.2054
Conducted emission (150KHz ~30MHz)	+/-2.5819dB
Conducted emission	+/-1.129dB
Radiated emission (30MHz ~200MHz)	+/- 4.7254dB
Radiated emission (200MHz ~1GHz)	+/- 4.4336dB
Radiated emission (1GHz ~6GHz)	+/- 4.8181dB
Radiated emission (6GHz ~18GHz)	+/- 4.26 dB
Radiated emission (18GHz ~40GHz)	+/- 4.03 dB
Temperature	0.1979
Humidity	±1 %

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 C63.10 2013 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

FCC –Designation Number: CN1172.

Compliance Certification Services Inc. Kun shan Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Designation Number: CN1172.

5.4.TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC, Part 15,Subpart B (using ANSI C63.4 :2009 and ANSI C63.4:2014);ICES-003; 47 CFR FCC, Part 18(using MP-5:1986);ICES-001;VCCI - V3; VCCI-CISPR-32(up to 6GHz);VCCI 32-1;CNS 13438(up to 6GHz); CNS 13439; CNS 13803; CISPR 11; EN 55011; CISPR 13; EN 55013; CISPR 22; EN 55022; AS/NZS CISPR 22;CISPR32;EN55032; AS/NZS CISPR 32;EN55014-1(excluding clicks);CISPR 14-1(excluding clicks);EN55015;CISPR 15; IEC 61000-3-2; EN 61000-3-2; AS/NZS 61000.3.2 IEC 61000-3-3; EN 61000-3-3; AS/NZS 61000.3.3 IEC 61000-4-2; EN 61000-4-2; AS/NZS 61000.4.2 IEC 61000-4-3; EN 61000-4-3; AS/NZS 61000.4.3 IEC 61000-4-4; EN 61000-4-4; AS/NZS 61000.4.4 IEC 61000-4-5; EN 61000-4-5; AS/NZS 61000.4.5 IEC 61000-4-6; EN 61000-4-6; AS/NZS 61000.4.6 IEC 61000-4-8; EN 61000-4-8; AS/NZS 61000.4.8 IEC 61000-4-11; EN 61000-4-11; AS/NZS 61000.4.11 EN 61000-6-1; EN 61000-6-2; EN 61000-6-3 (excluding discontinuous interference); EN 61000-6-4; IEC 61000-6-1; IEC 61000-6-2; IEC 61000-6-3 (excluding discontinuous interference); IEC 61000-6-4; AS/NZS 61000.6.1; AS/NZS 61000.6.2; AS/NZS 61000.6.3 (excluding discontinuous interference); AS/NZS 61000.6.4; EN 55024; CISPR 24; AS/NZS CISPR 24; EN 61547; IEC 61547; EN 60601-1-2; IEC 60601-1-2; EN 50130-4; EN 55014-2; CISPR 14-2; EN 62040-2; IEC 62040-2; EN 61204-3; IEC 61204-3; EN 50121-1; EN 50121-3-2; EN 50121-4; EN 50121-5; EN 50155 (clauses 5.4 and 5.5); EN 61326-1; IEC 61326-1; EN 50083-2; EN 300 386; EN 301 489-1 (excluding Section 9.6); EN 301 489-3; EN 301 489-7; EN 301 489-17; EN 301 489-19; EN 301 489-24; EN 301 489-25; EN 301 489-34 FCC Part 15, Subparts 15C, 15E (KDB 905462 D03 (v01r02))(using ANSI C63.4:2009, ANSI C63.4:2014 and ANSI C63.10:2013) FCC Parts 22E, 24E (using ANSI/TIA-603-D) RSS-132; RSS-133; RSS-210; RSS-247 (excluding DFS testing) EN 300 220-1; EN 300 220-2; EN 300 328; EN 300 330-1; EN 300 330-2; EN 300 440-1; EN 300 440-2; EN 301 893 (excluding DFS testing); EN 301 511(clauses 4.2.12 to 4.2.19, and 5.2.12 to 5.2.19); EN 301 908-1 (clauses 4.2.2, 4.2.3, 5.3.1, and 5.3.2); EN 301 908-2 (clauses 4.2.4, 4.2.10, 5.3.3, and 5.3.9) AS/NZS 4268 IEEE Std 1528:2013; EN 50360; EN 50566; EN 62479;	 TESTING CERT #2541.01

		EN 50383; EN 50385; EN 62311; IEC 62209-1; EN 62209-1; IEC 62209-2; EN 62209-2; CNS 14958-1; CNS 14959; RSS-102; ACMA Radio Communications (Electromagnetic Radiation – Human Exposure) Standard 2014	
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	CN1172
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	R-1600 C-1707 G-216

** No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.*

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	N/A	N/A

Remark:

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

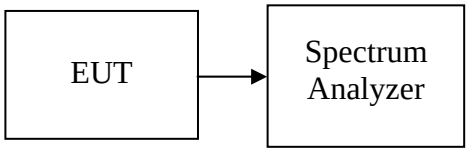
7. FCC PART 15.247 REQUIREMENTS

7.1.6DB BANDWIDTH

LIMIT

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

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW to 100 kHz. 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

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.097	>500	PASS
Mid	2437	10.141		PASS
High	2462	10.135		PASS

IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.409	>500	PASS
Mid	2437	16.419		PASS
High	2462	16.404		PASS

IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.167	>500	PASS
Mid	2437	17.223		PASS
High	2462	17.375		PASS

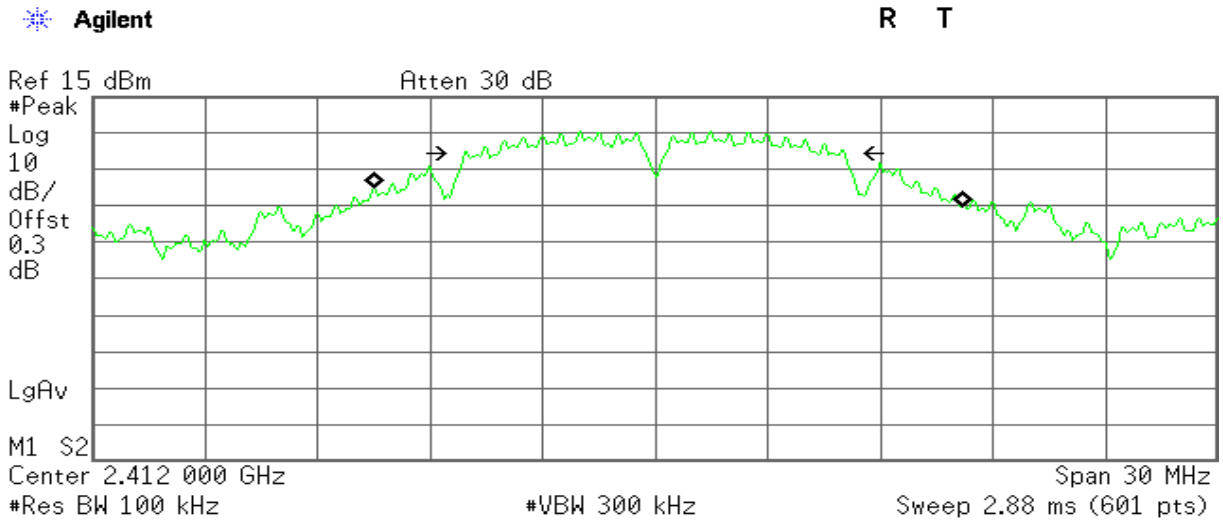
IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.884	>500	PASS
Mid	2437	36.382		PASS
High	2452	36.164		PASS

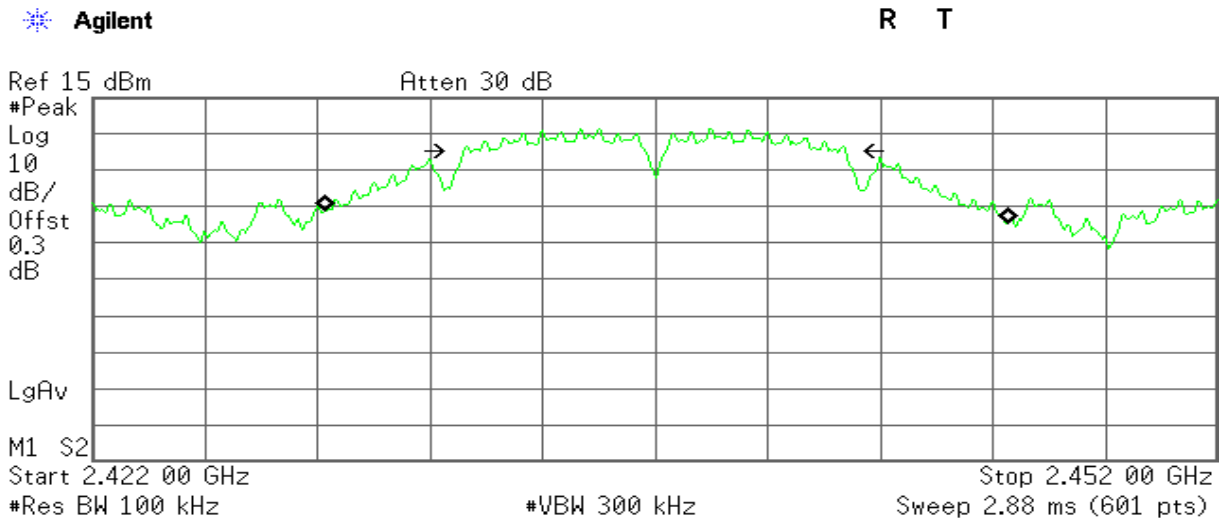
Test Plot

IEEE 802.11b mode

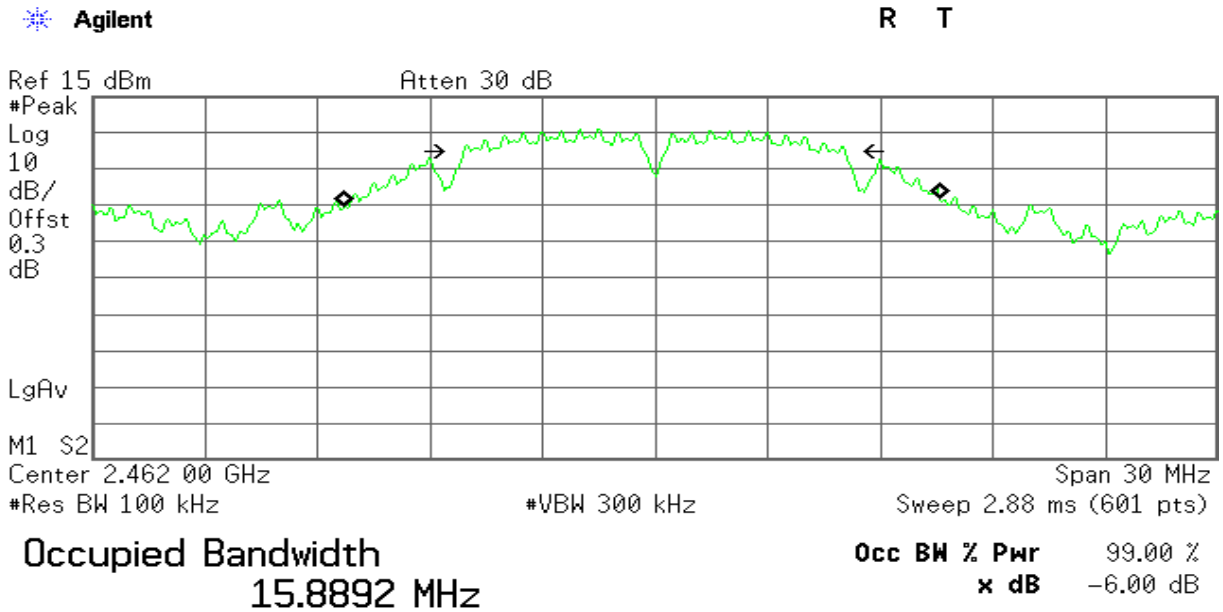
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



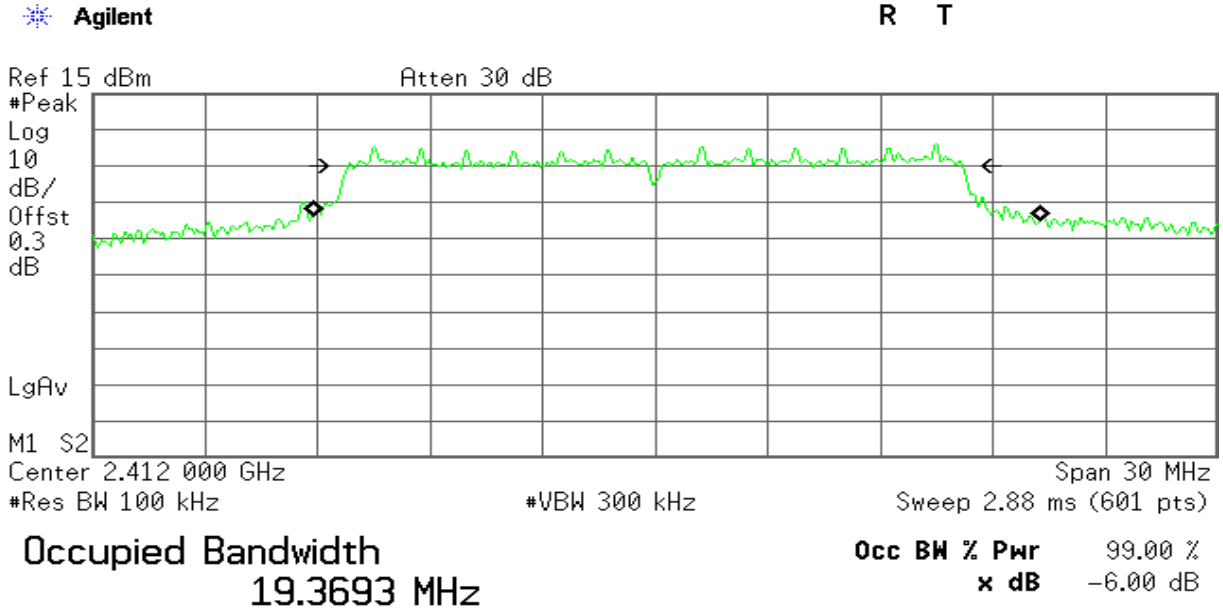
6dB Bandwidth (CH High)



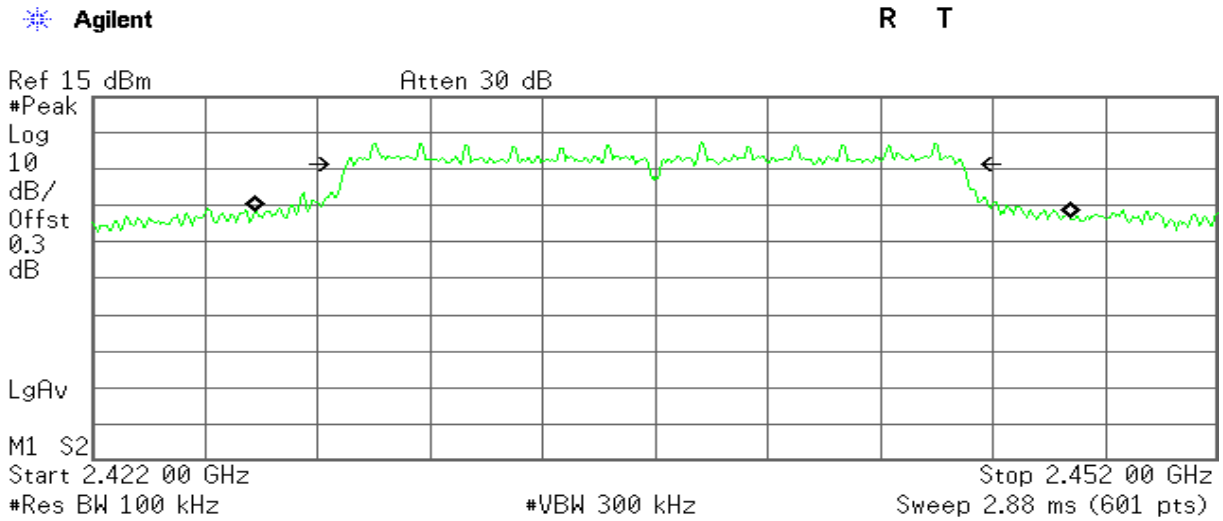
Test Plot

IEEE 802.11g mode

6dB Bandwidth (CH Low)

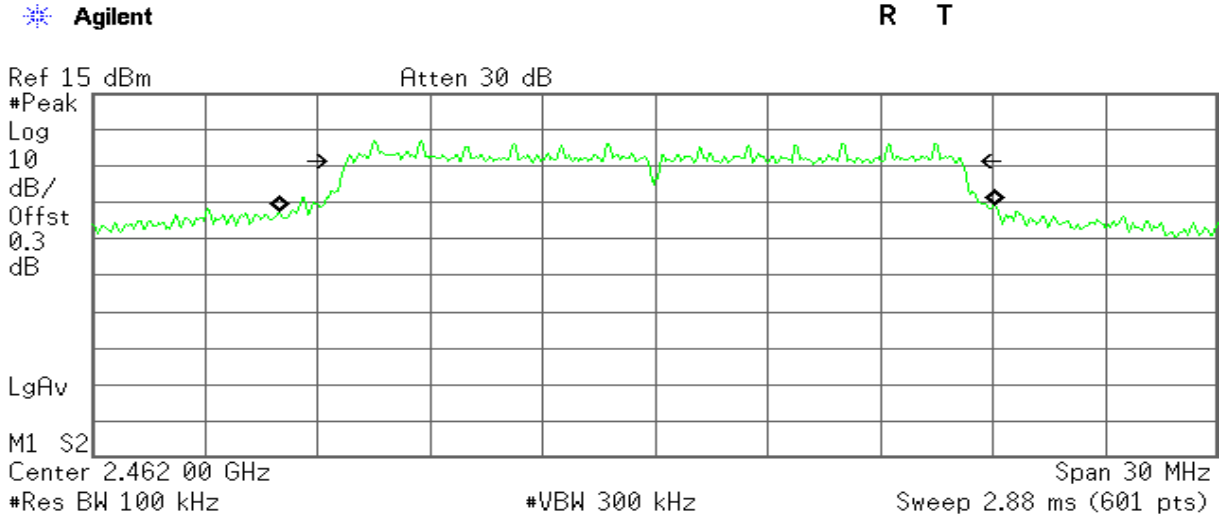


6dB Bandwidth (CH Mid)



Transmit Freq Error 200.084 kHz
x dB Bandwidth 16.419 MHz

6dB Bandwidth (CH High)

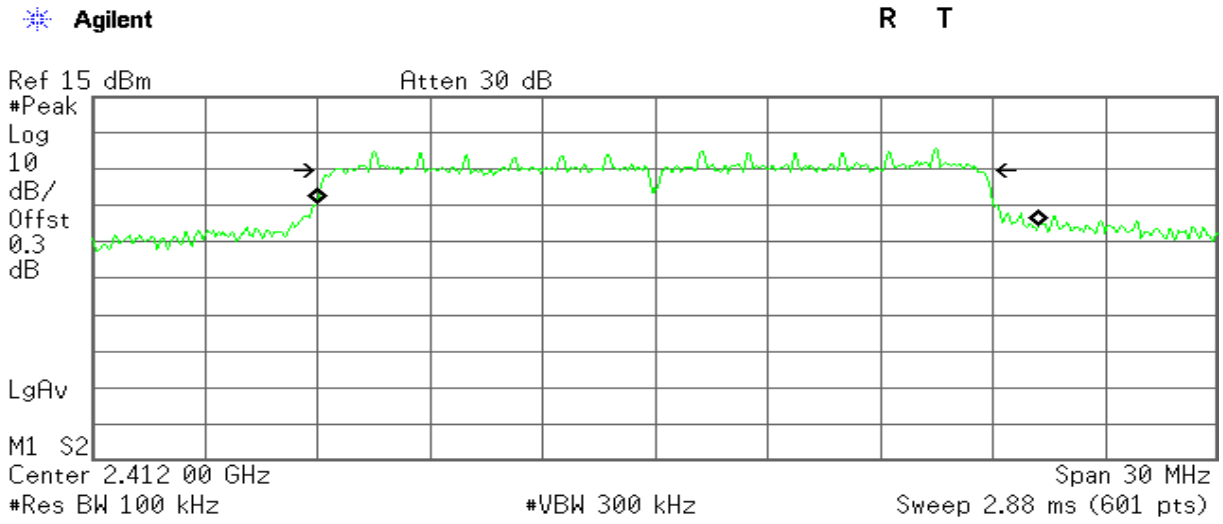


Transmit Freq Error -475.346 kHz
x dB Bandwidth 16.404 MHz

Test Plot

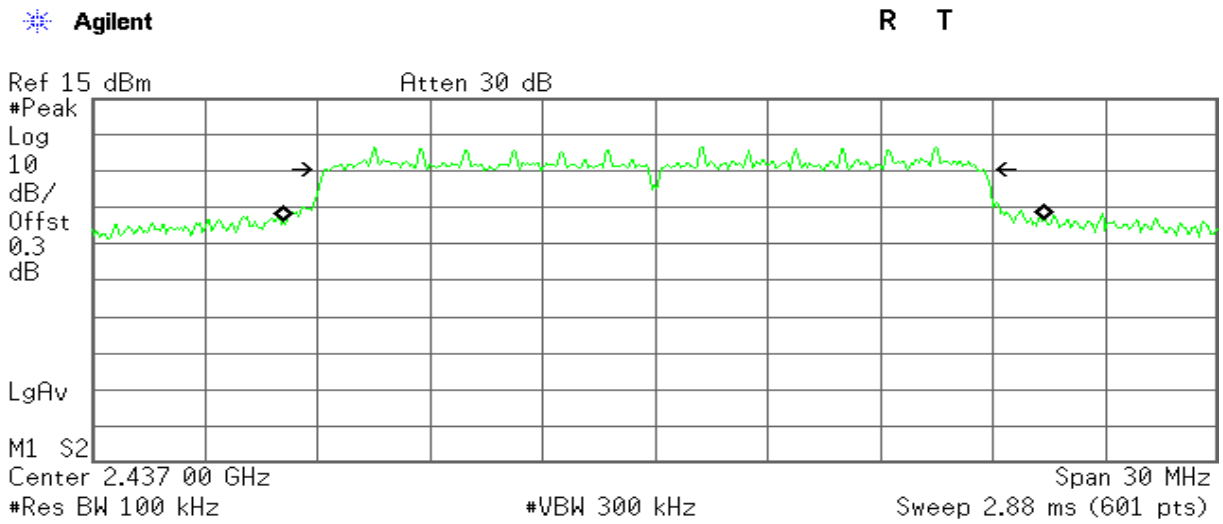
IEEE 802.11n HT20 mode

6dB Bandwidth (CH Low)



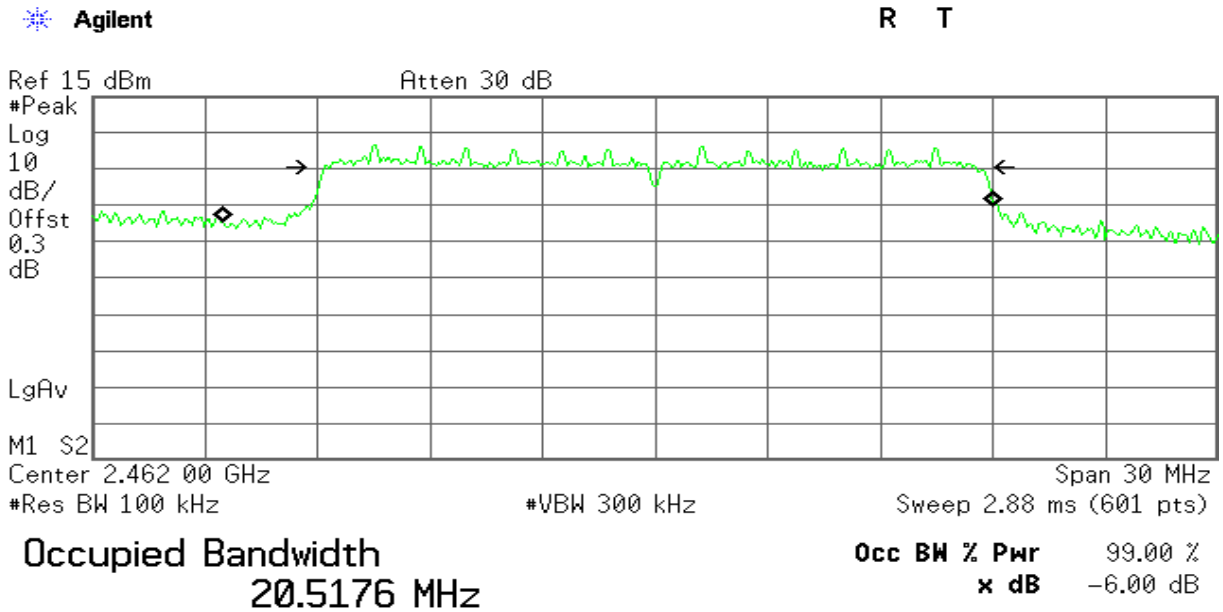
Transmit Freq Error 589.185 kHz
x dB Bandwidth 17.167 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error 239.942 kHz
x dB Bandwidth 17.223 MHz

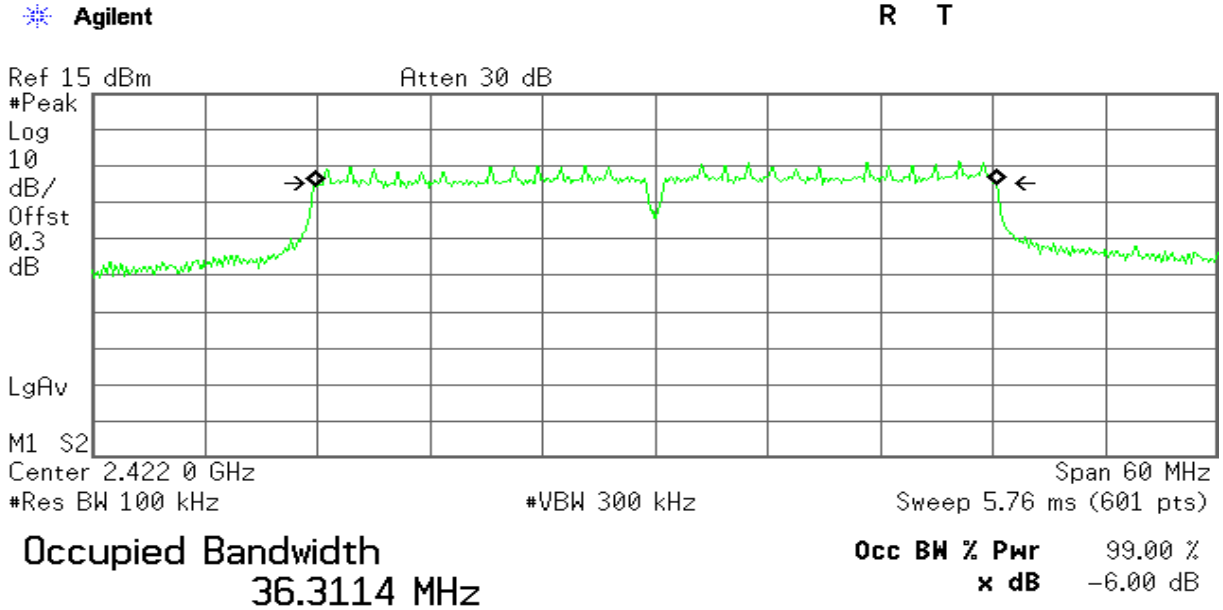
6dB Bandwidth (CH High)



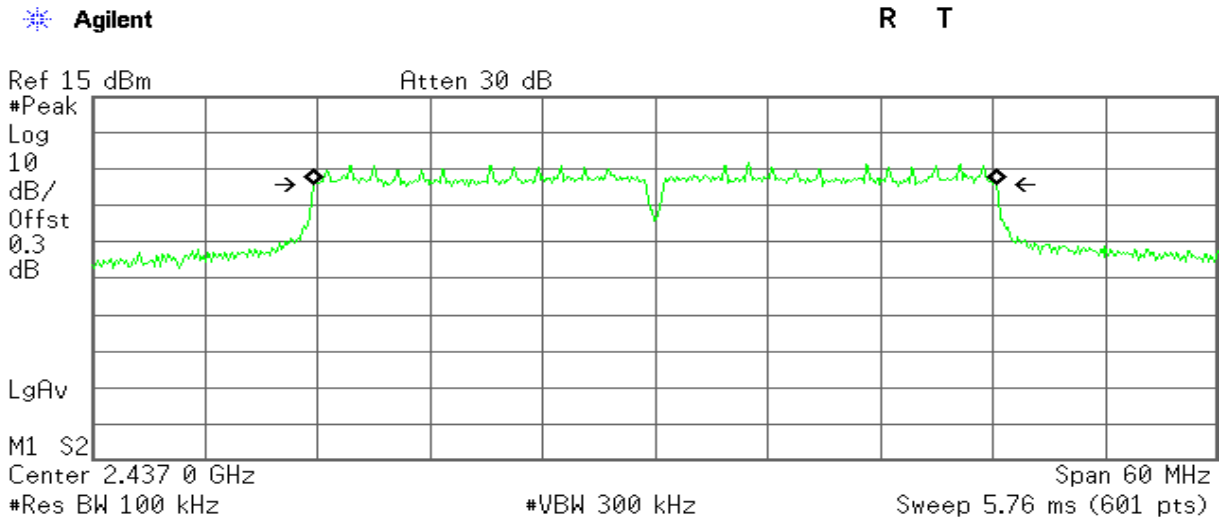
Test Plot

IEEE 802.11n HT40 mode

6dB Bandwidth (CH Low)

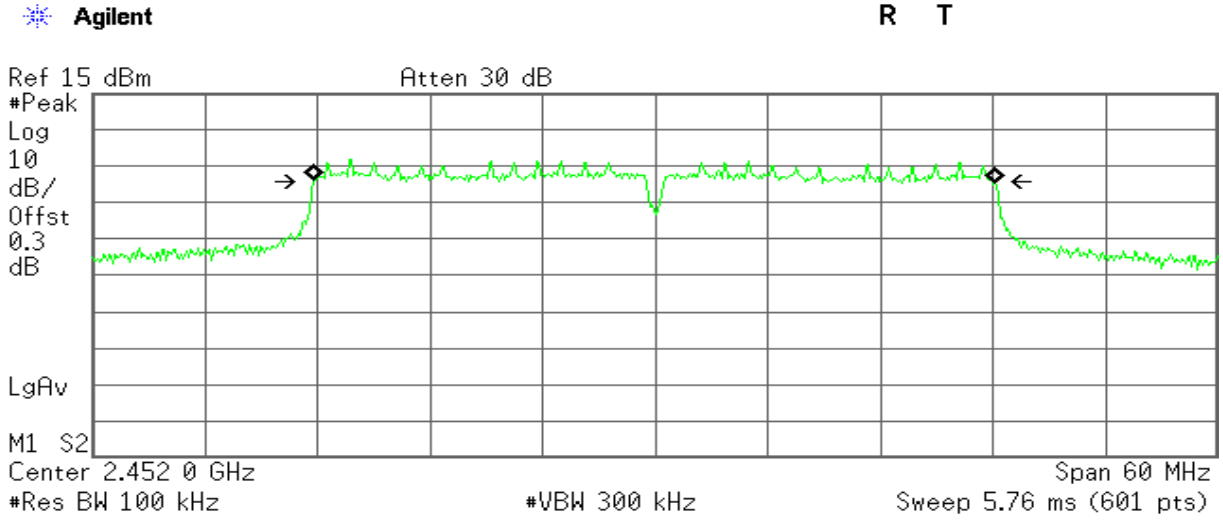


6dB Bandwidth (CH Mid)



Transmit Freq Error 21.514 kHz
x dB Bandwidth 36.382 MHz

6dB Bandwidth (CH High)



Transmit Freq Error -40.709 kHz
x dB Bandwidth 36.164 MHz

7.2.PEAK POWER

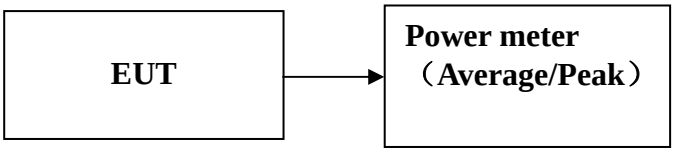
LIMIT

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

1.According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, and 2400-2483.5 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 6dBi.

Test Configuration



TEST PROCEDURE

1. The EUT transmitter output is connected to the Power meter.
   The Power meter is set to the peak power detection.
2. The testing follows the Measurement Procedure FCC KDB No. 558074 D01 DTS Meas. Guidance v04 9.1.2 PKPM1 Peak power meter method.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2412	17.44	30.00
Mid	2437	17.85	30.00
High	2462	17.50	30.00

Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
Low	2412	15.13	30.00
Mid	2437	16.06	30.00
High	2462	15.63	30.00

Note:Duty factor has been offseted with cableloss

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2412	18.08	30.00
Mid	2437	18.29	30.00
High	2462	18.03	30.00

Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
Low	2412	11.41	30.00
Mid	2437	13.03	30.00
High	2462	12.65	30.00

Note:Duty factor has been offseted with cableloss

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2412	18.30	30.00
Mid	2437	18.32	30.00
High	2462	18.03	30.00

Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
Low	2412	10.91	30.00
Mid	2437	12.33	30.00
High	2462	11.96	30.00

Note:Duty factor has been offseted with cableloss

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2422	17.89	30.00
Mid	2437	17.94	30.00
High	2452	17.75	30.00

Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
Low	2422	9.72	30.00
Mid	2437	10.58	30.00
High	2452	10.56	30.00

Note:Duty factor has been offseted with cableloss

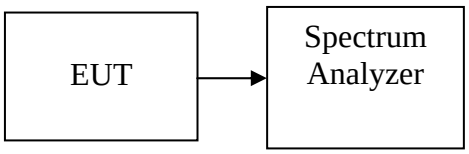
7.3.PEAK POWER SPECTRAL DENSITY

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 8dBm in any 3kHz 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

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-11.12	8.00	PASS
Mid	2437	-9.98	8.00	PASS
High	2462	-10.61	8.00	PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-15.76	8.00	PASS
Mid	2437	-13.78	8.00	PASS
High	2462	-13.41	8.00	PASS

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-14.93	8.00	PASS
Mid	2437	-12.64	8.00	PASS
High	2462	-13.12	8.00	PASS

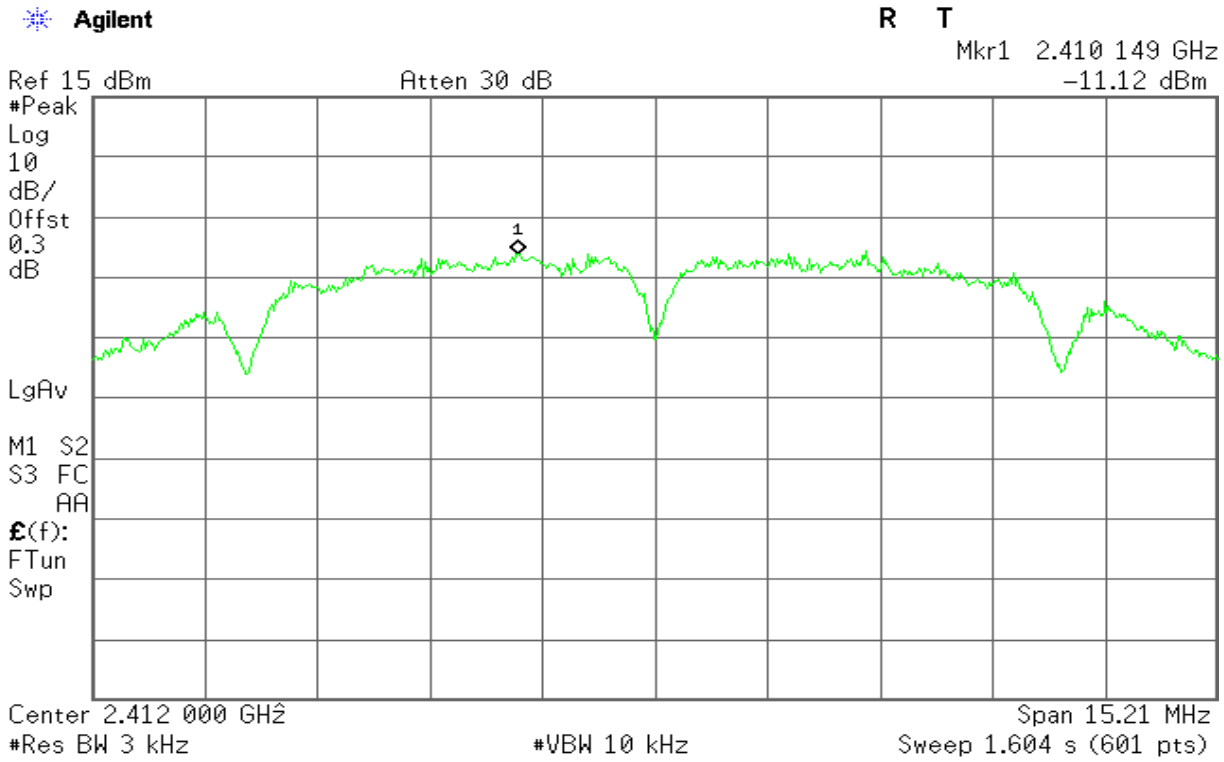
Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-18.13	8.00	PASS
Mid	2437	-17.79	8.00	PASS
High	2452	-18.82	8.00	PASS

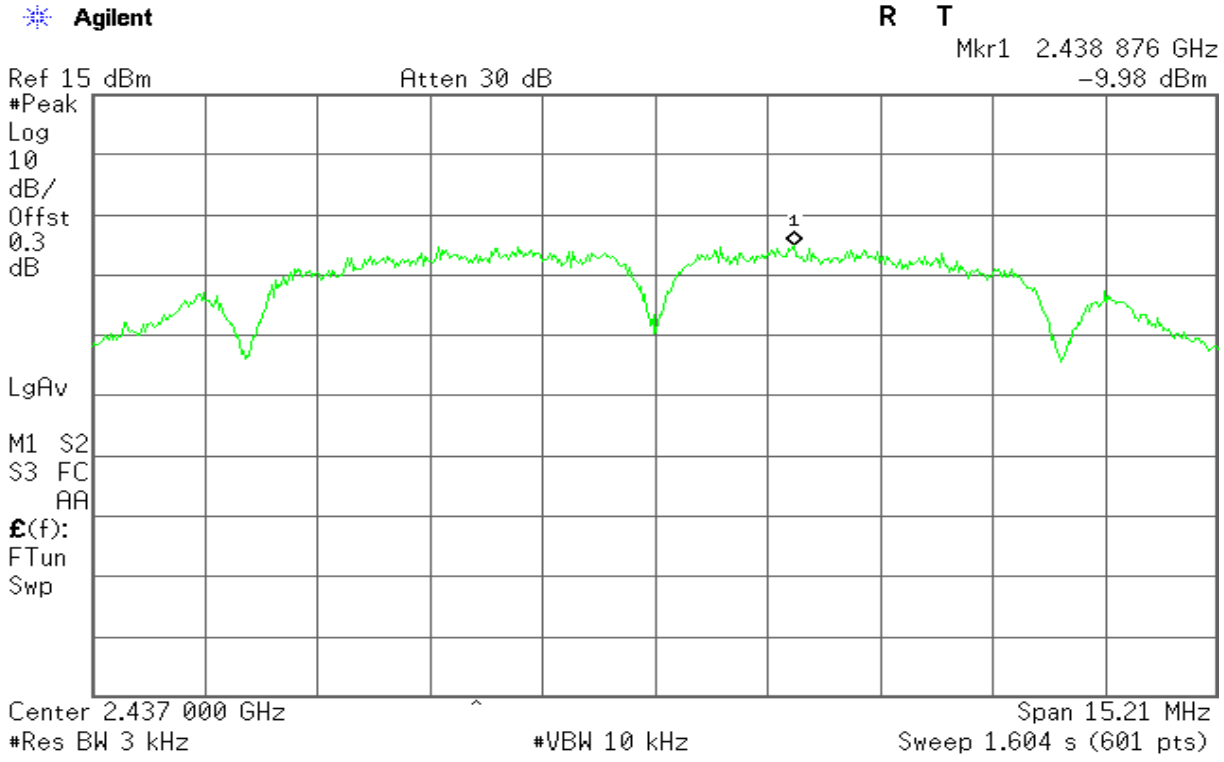
Test Plot

IEEE 802.11b mode

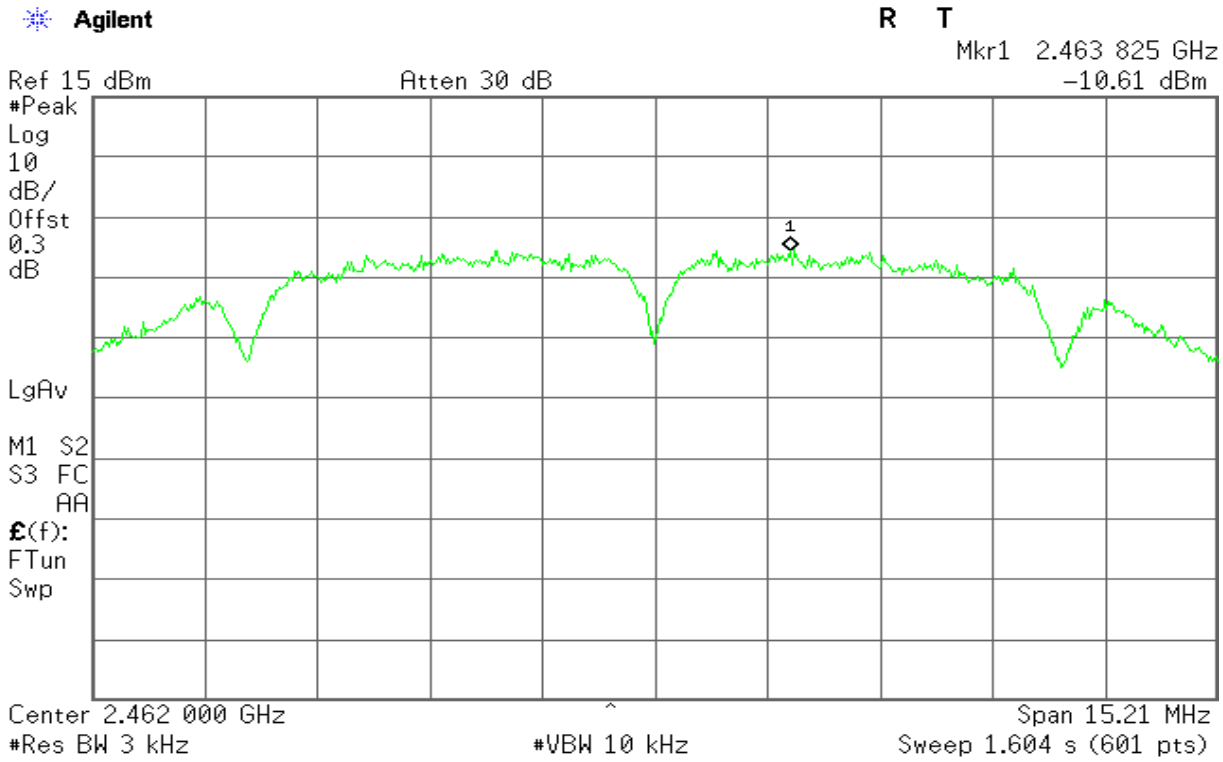
PPSD (CH Low)



PPSD (CH Mid)



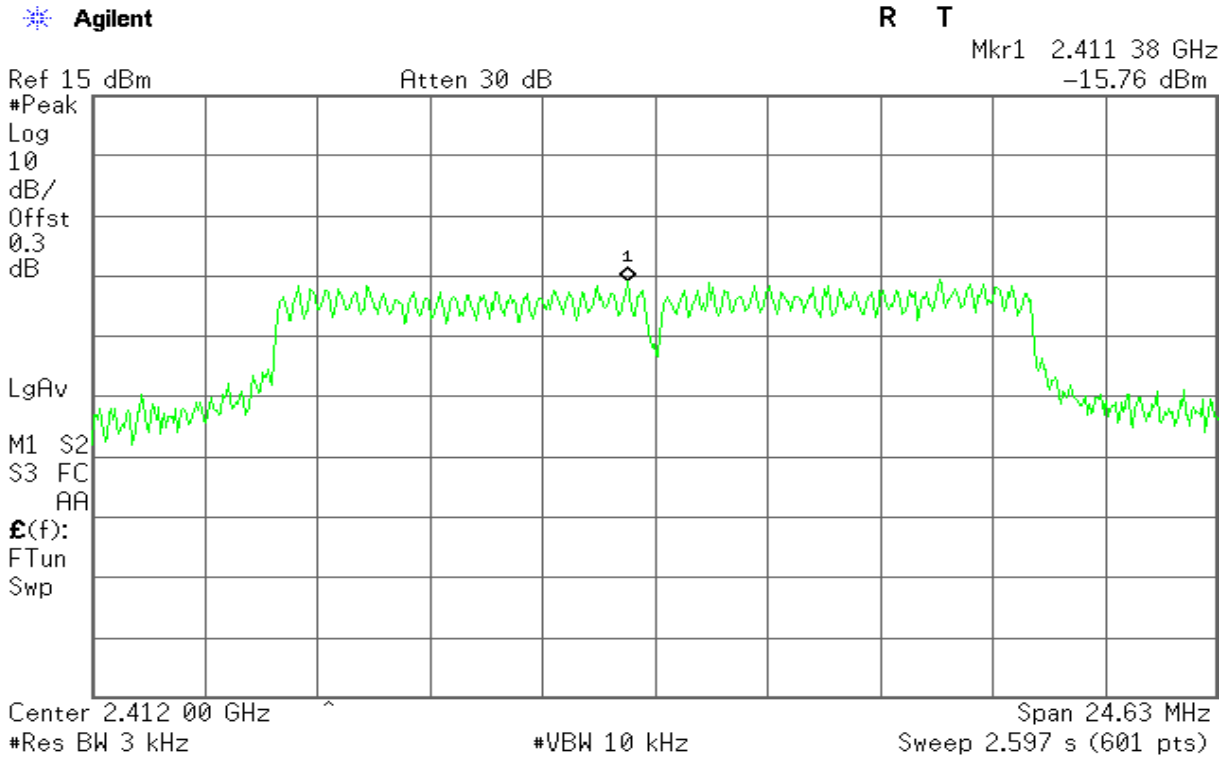
PPSD (CH High)



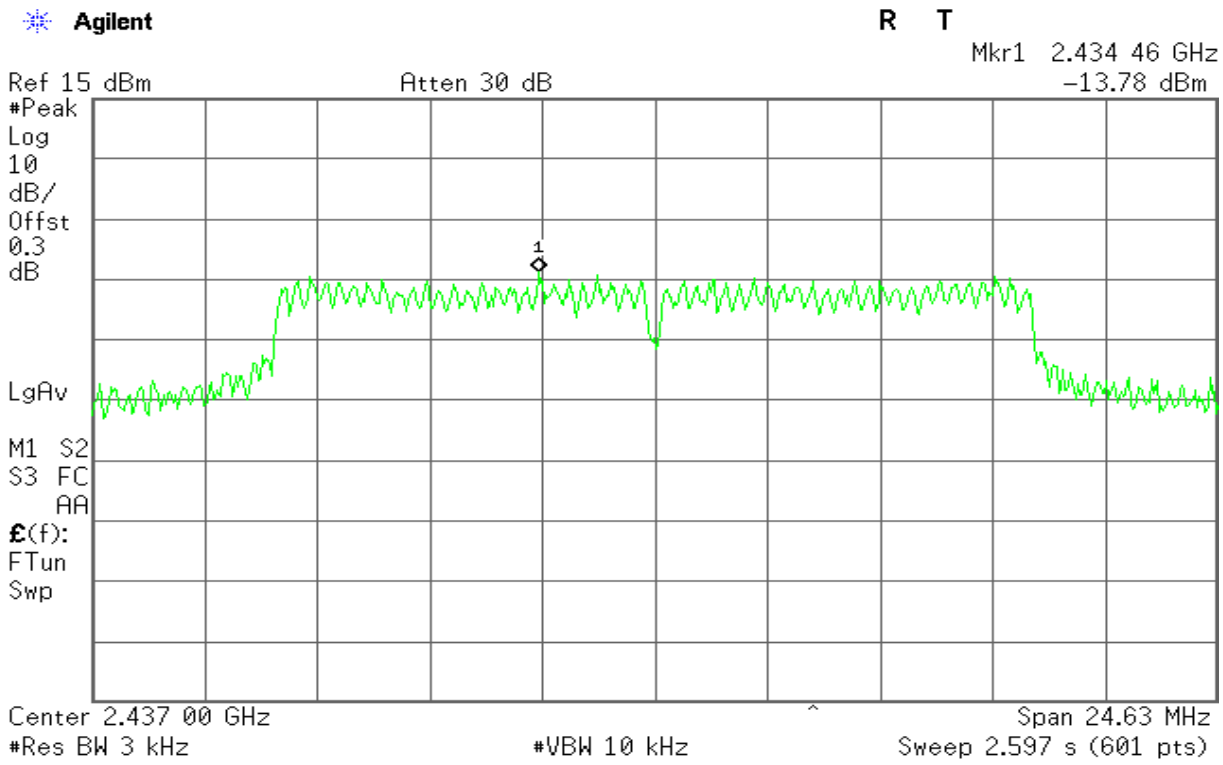
Test Plot

IEEE 802.11g mode

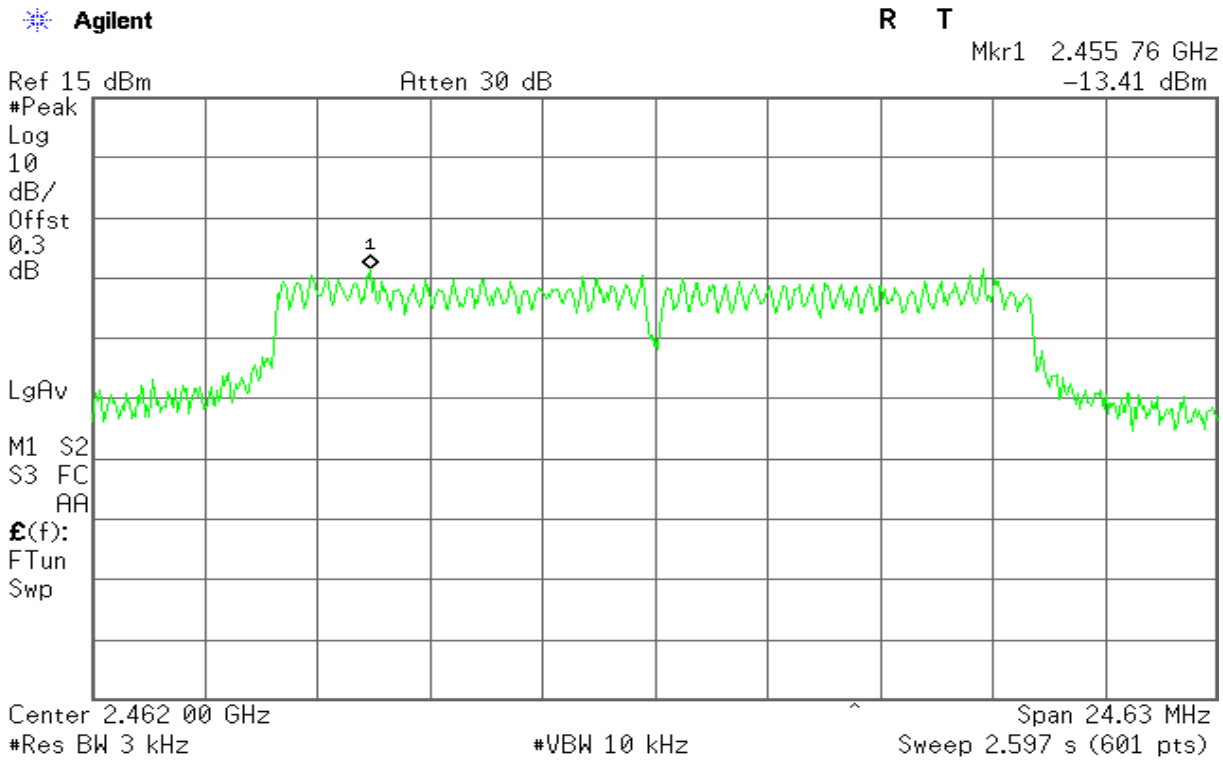
PPSD (CH Low)



PPSD (CH Mid)



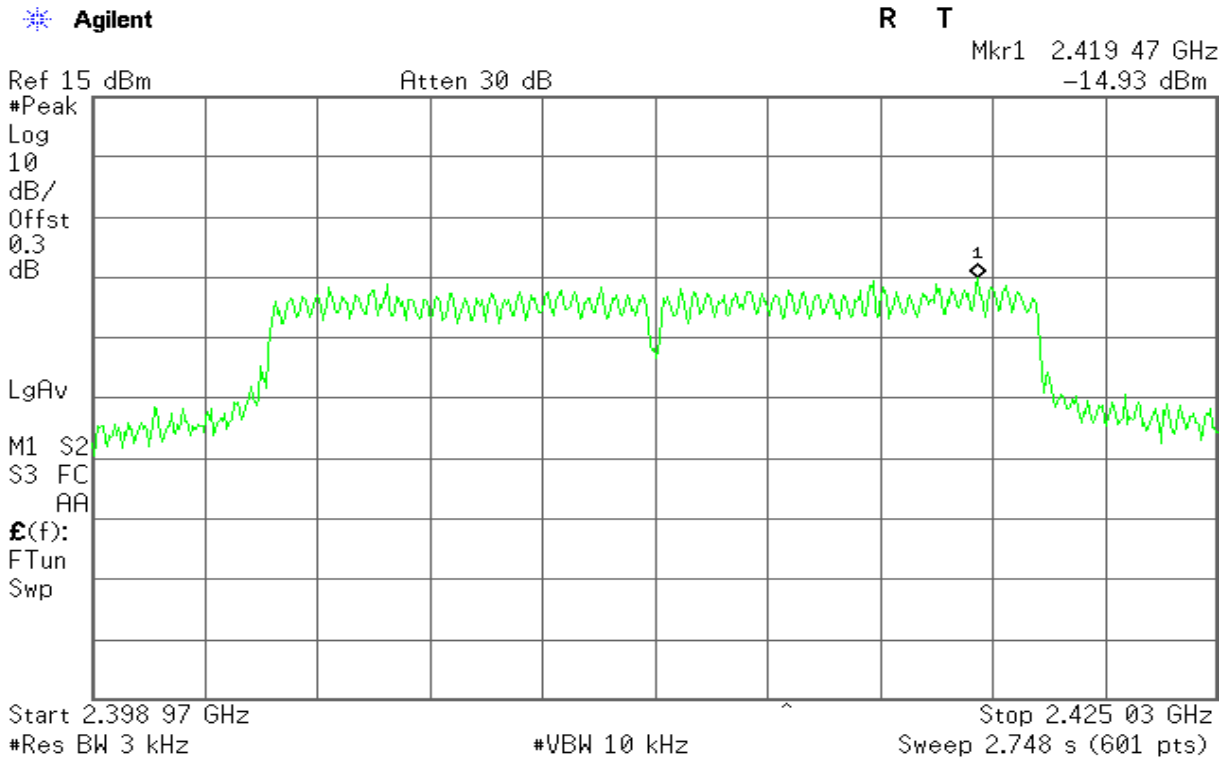
PPSD (CH High)



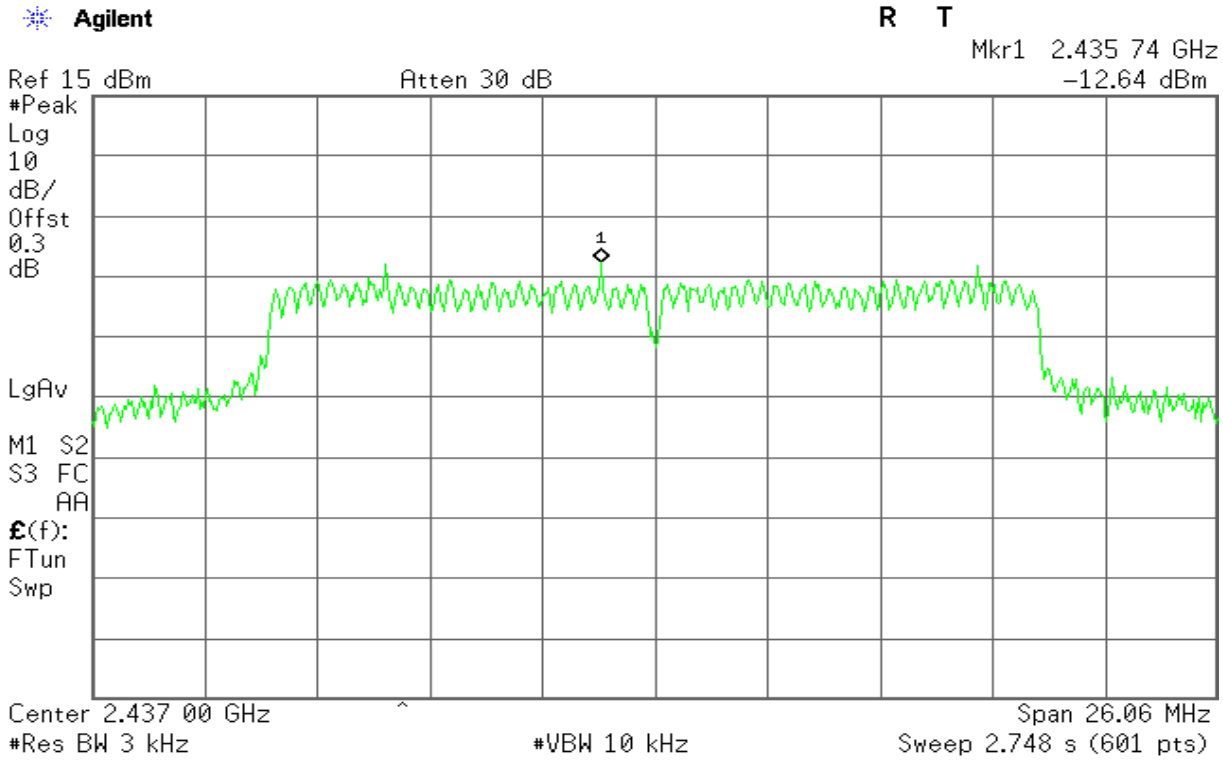
Test Plot

IEEE 802.11n HT20 mode

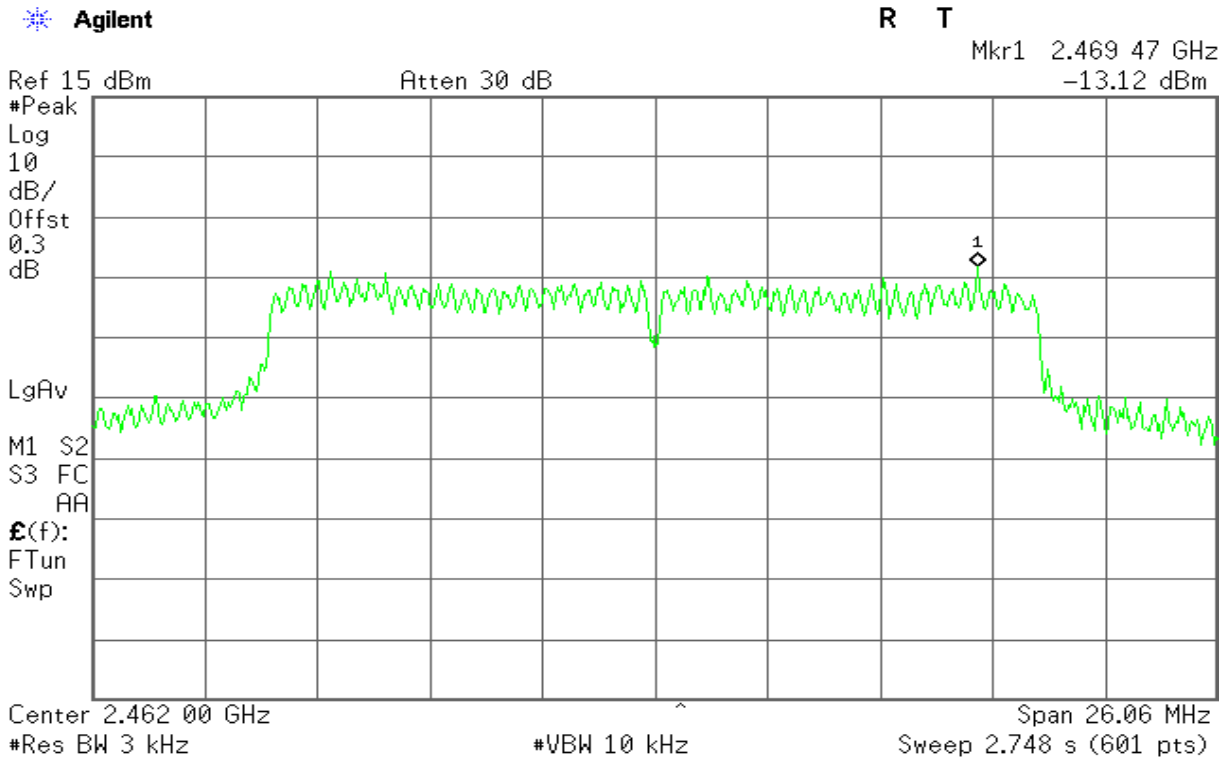
PPSD (CH Low)



PPSD (CH Mid)



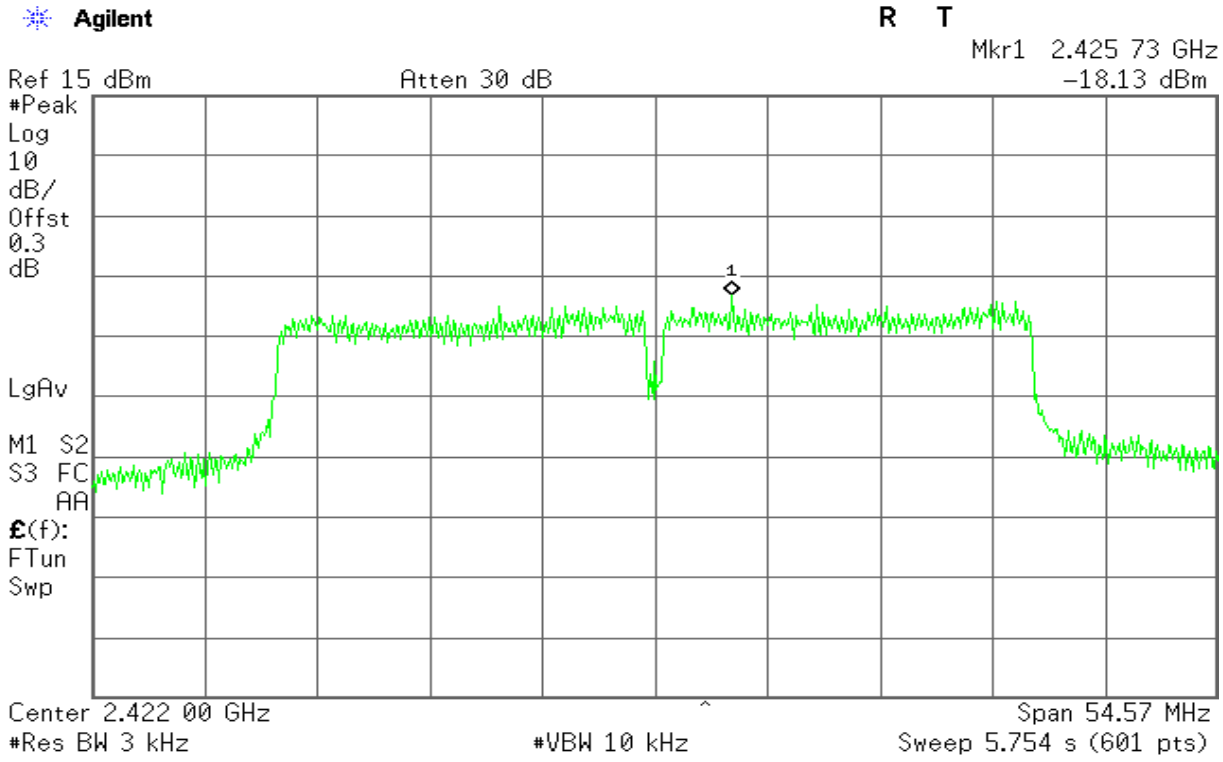
PPSD (CH High)



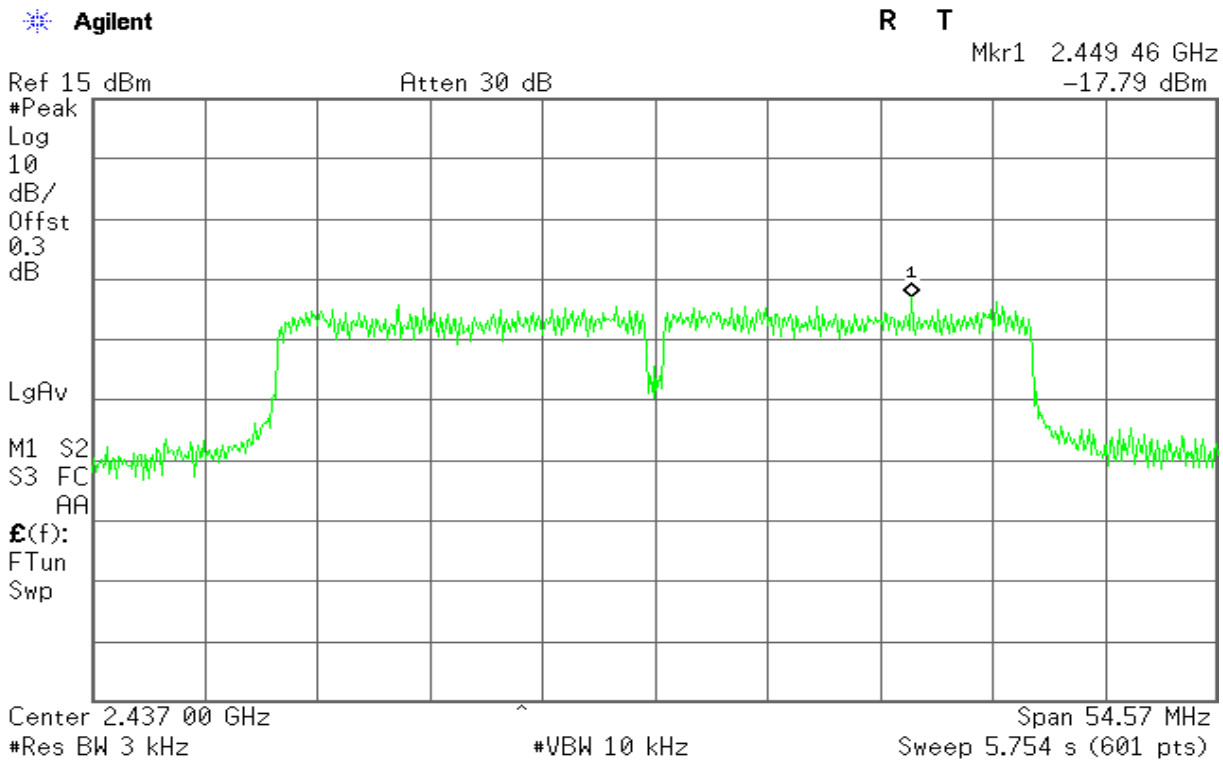
Test Plot

IEEE 802.11n HT40 mode

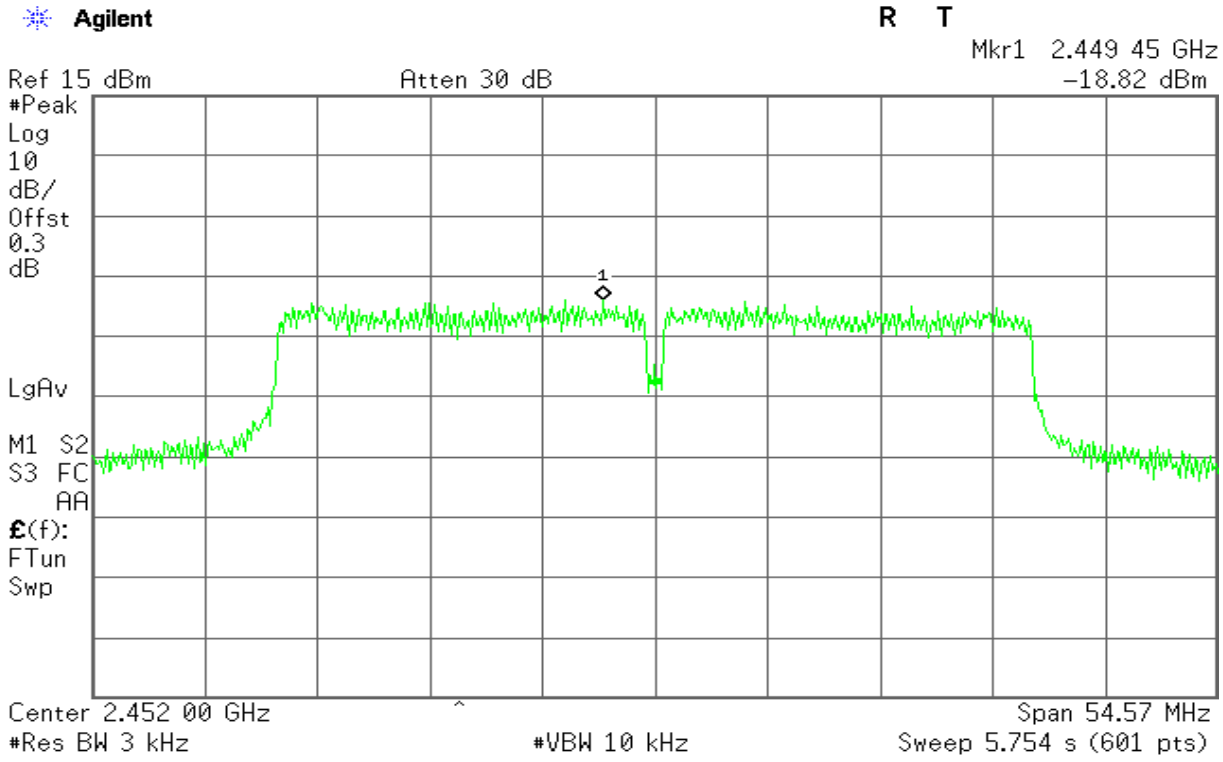
PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)

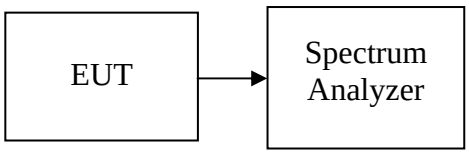


7.4.SPURIOUS EMISSIONS
Conducted Measurement

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.

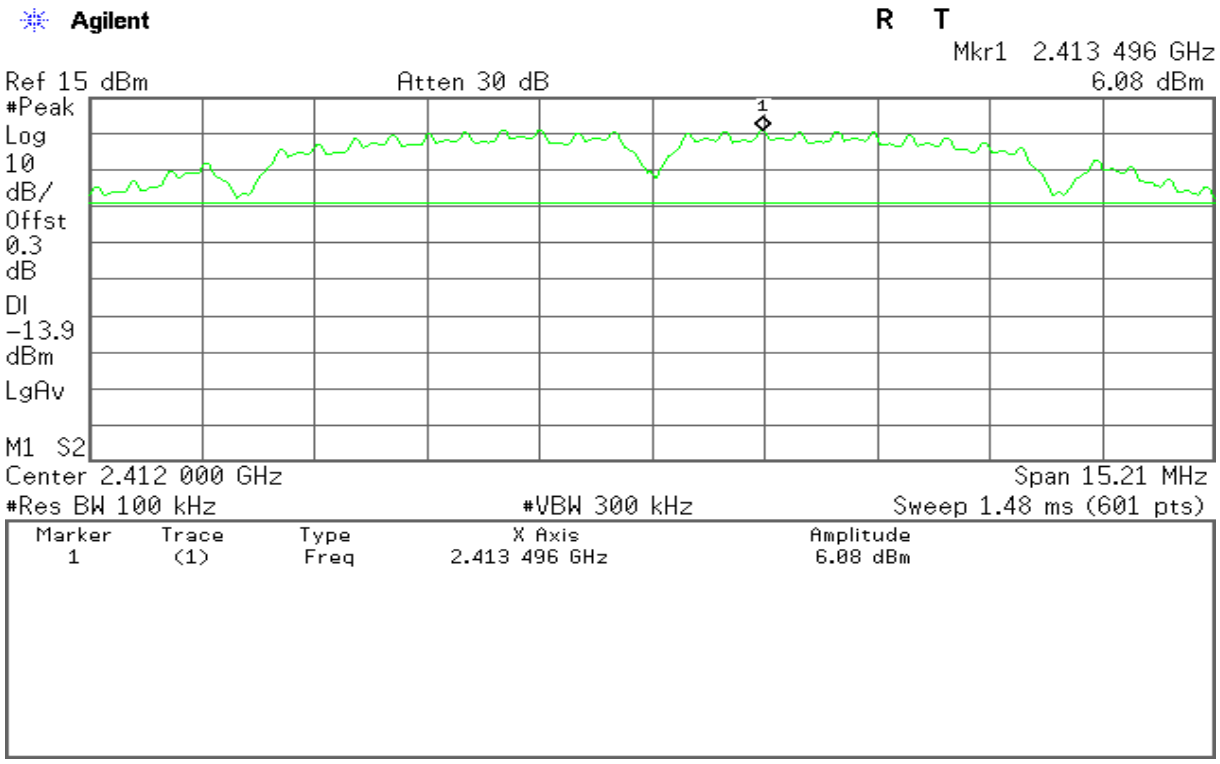
TEST RESULTS

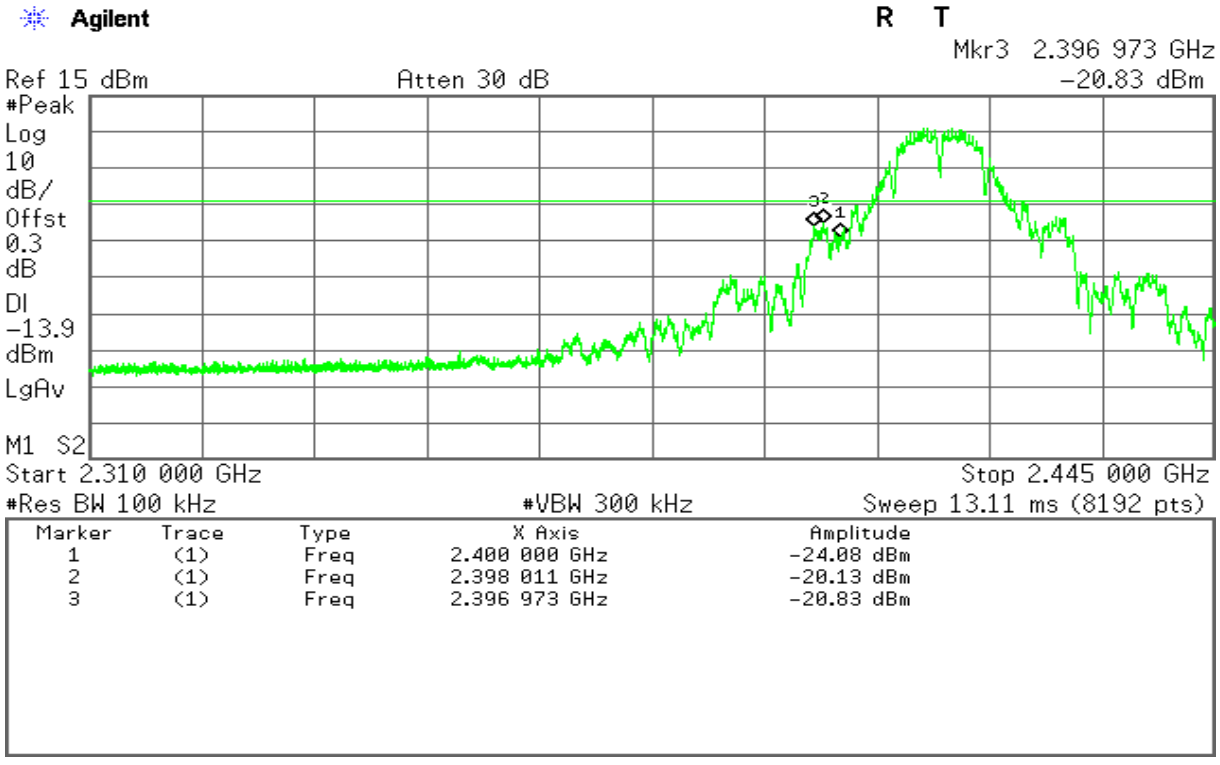
No non-compliance noted

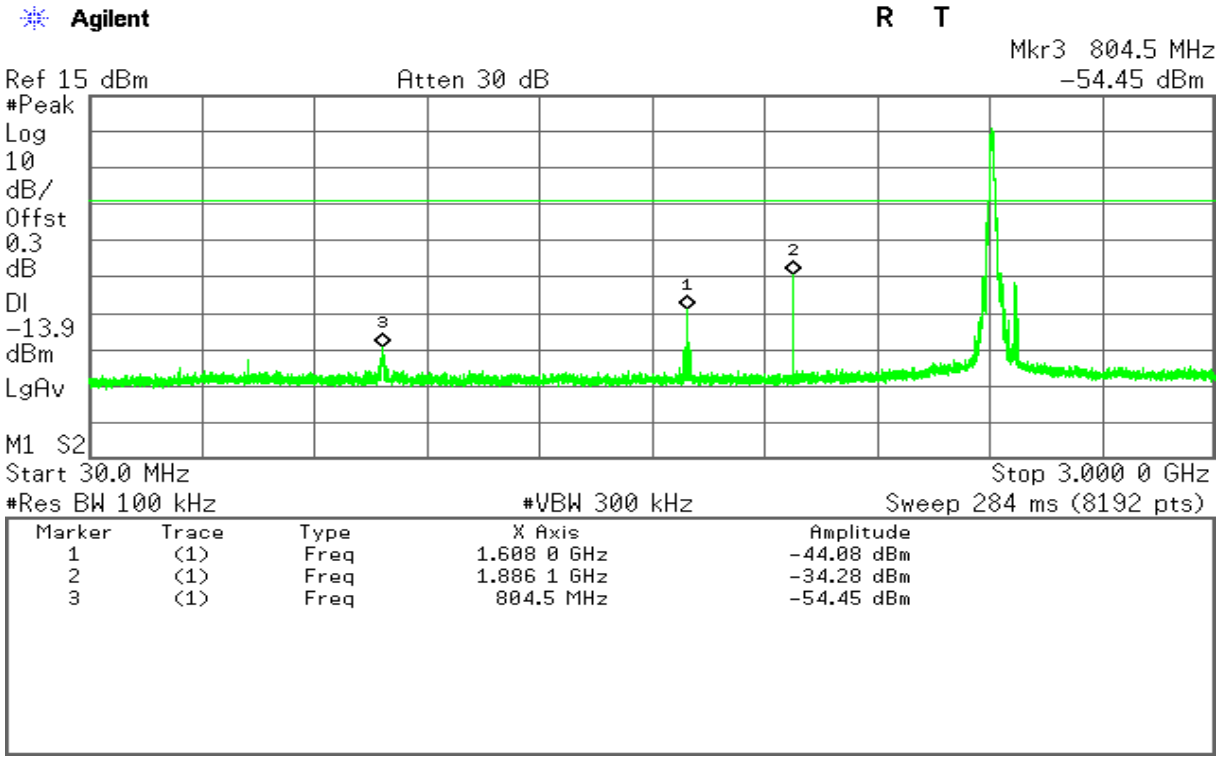
Test Plot
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

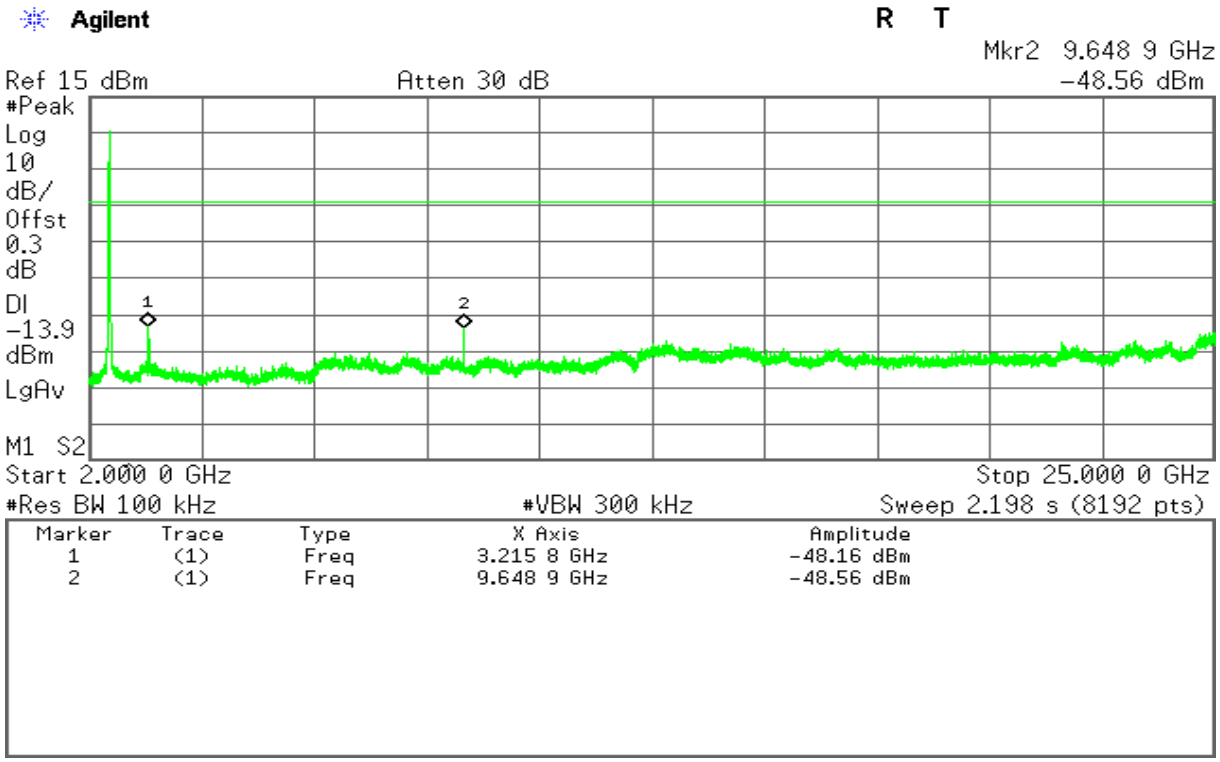
IEEE 802.11b mode

CH Low

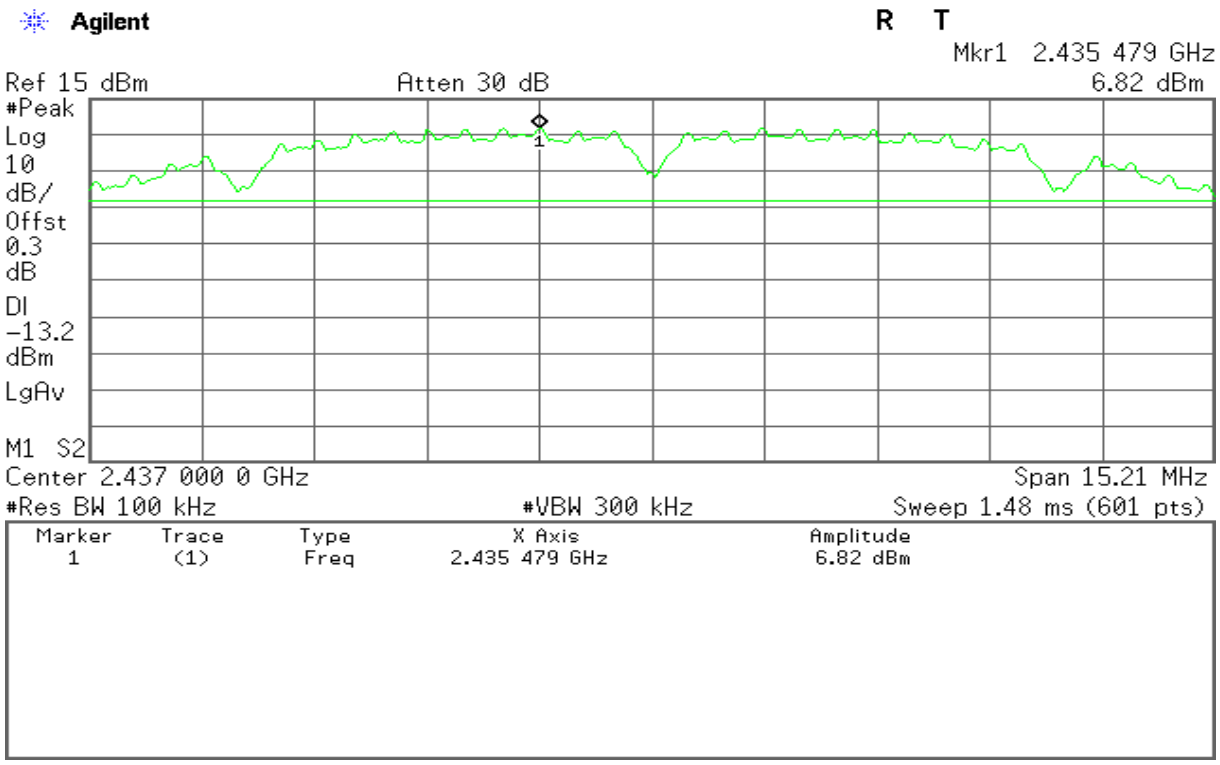


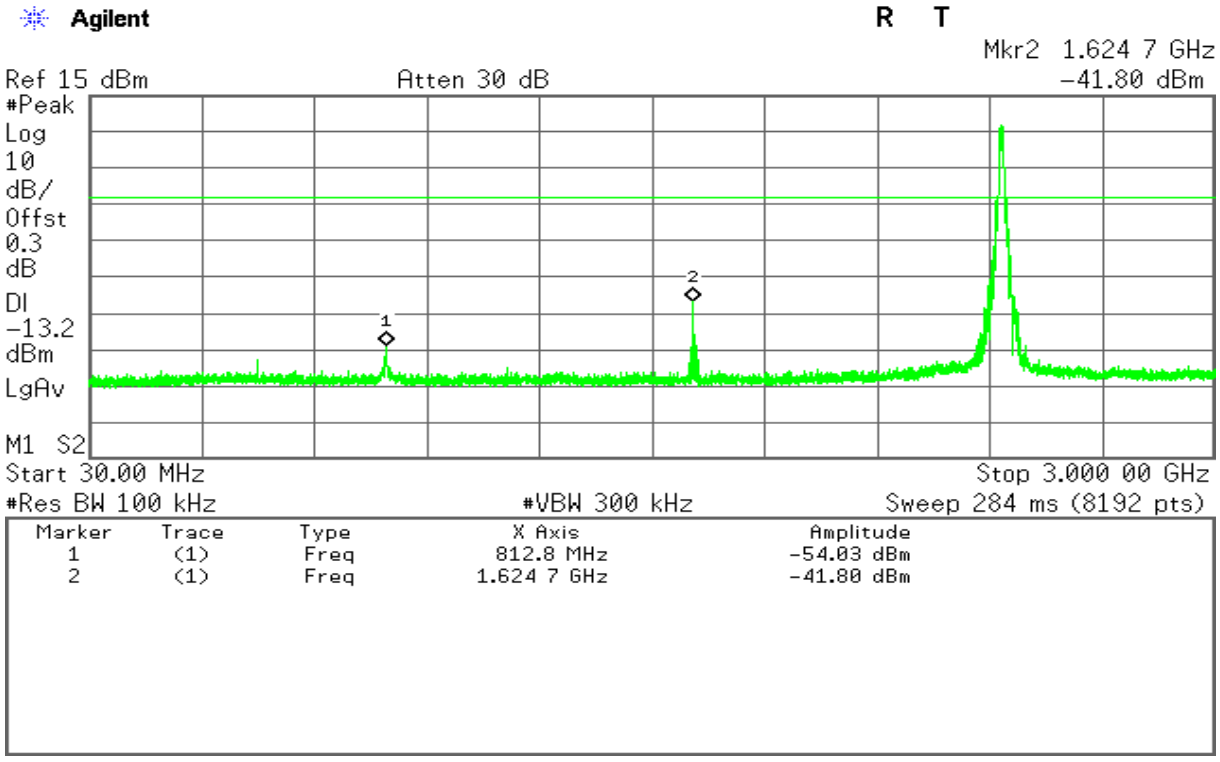


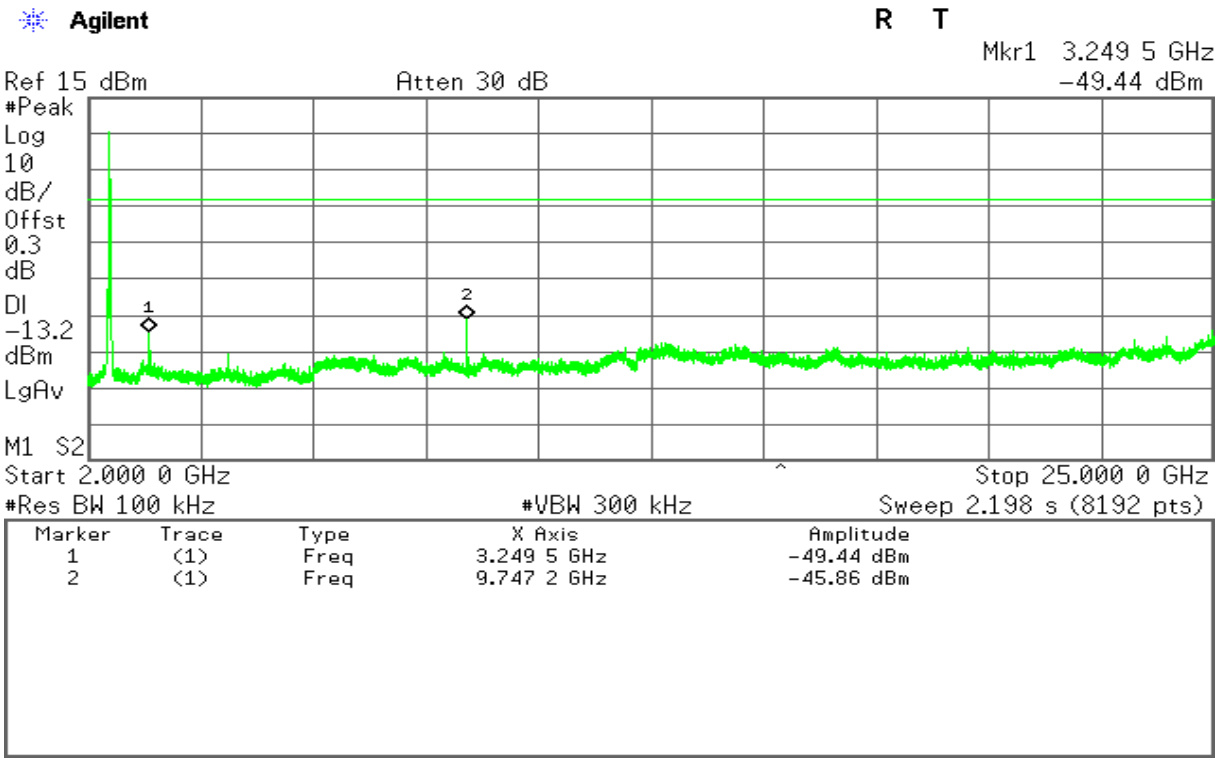

Agilent
R T
Mkr3 804.5 MHz
-54.45 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.9
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 1.608 0 GHz -44.08 dBm
2 (1) Freq 1.886 1 GHz -34.28 dBm
3 (1) Freq 804.5 MHz -54.45 dBm


Agilent
R T
Mkr2 9.648 9 GHz
-48.56 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.9
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.215 8 GHz -48.16 dBm
2 (1) Freq 9.648 9 GHz -48.56 dBm

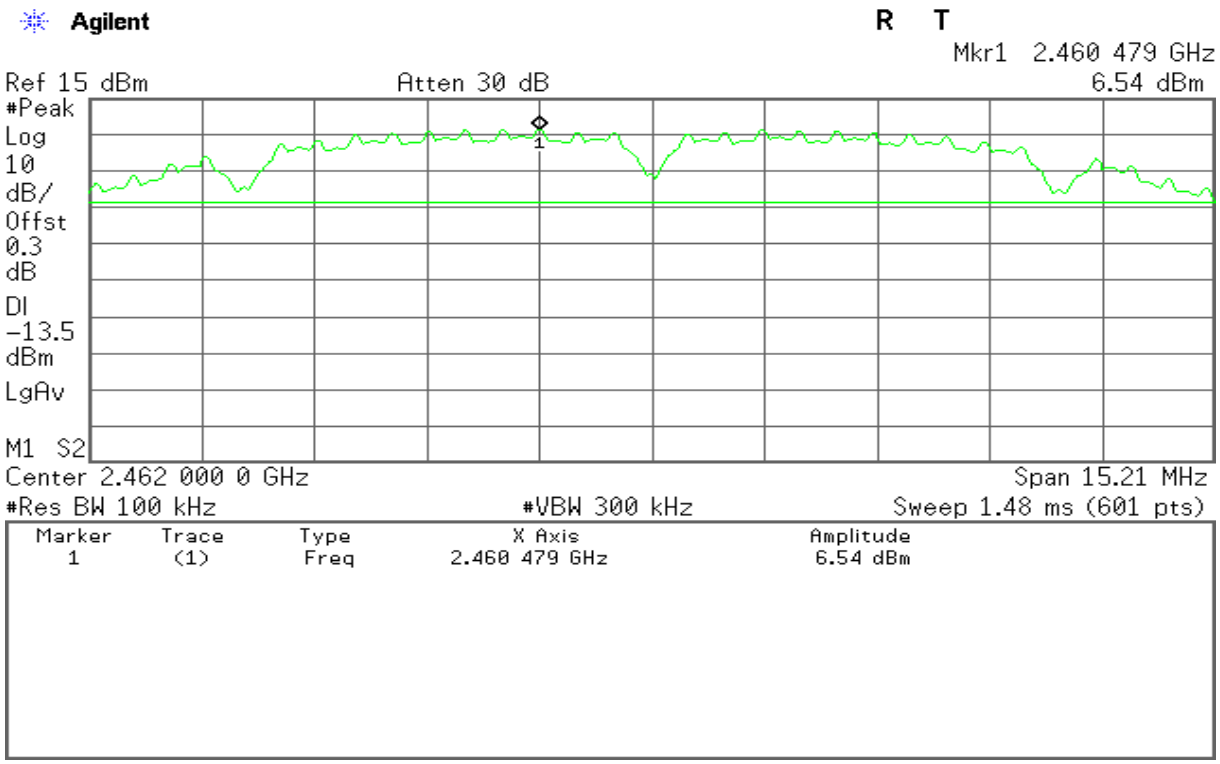
CH Mid

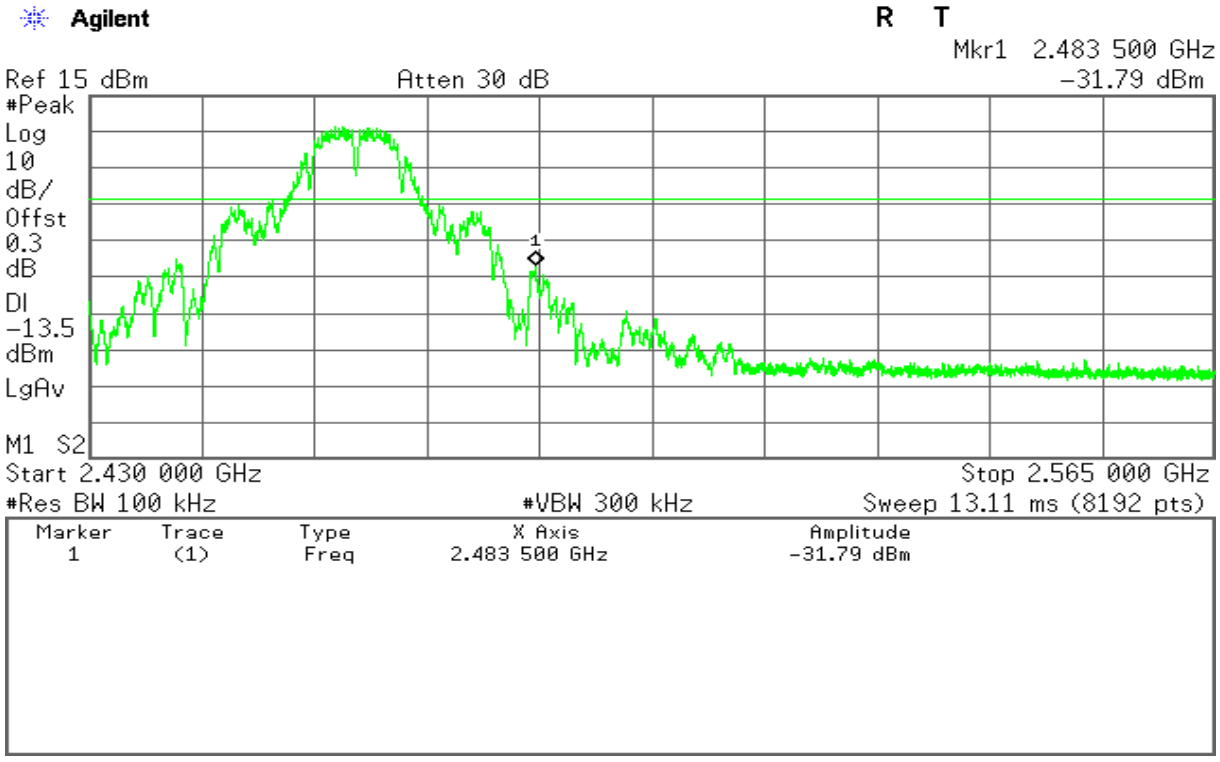

Agilent
R T
Mkr1 2.435 479 GHz
6.82 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.2
dBm
LgAv
M1 S2
Center 2.437 000 0 GHz
Span 15.21 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 1.48 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.435 479 GHz 6.82 dBm

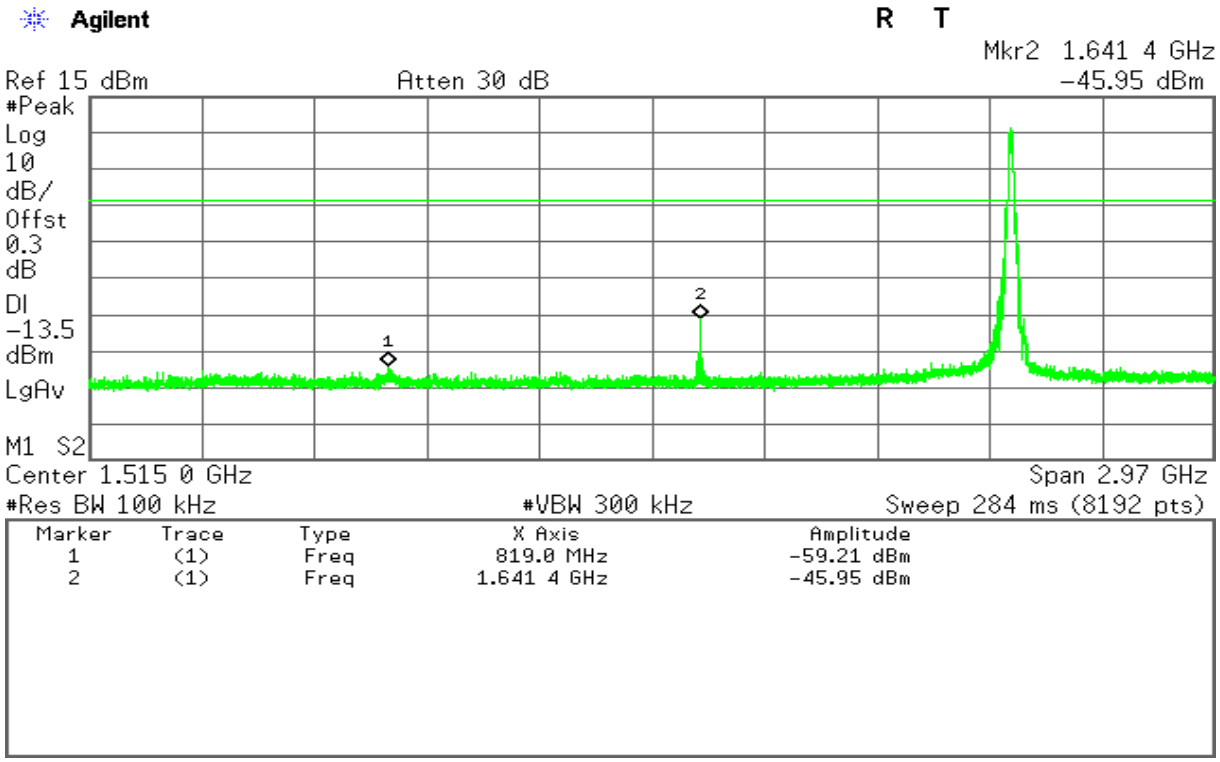

Agilent
R T
Mkr2 1.624 7 GHz
-41.80 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.2
dBm
LgAv
M1 S2
Start 30.00 MHz
Stop 3.000 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 812.8 MHz -54.03 dBm
2 (1) Freq 1.624 7 GHz -41.80 dBm

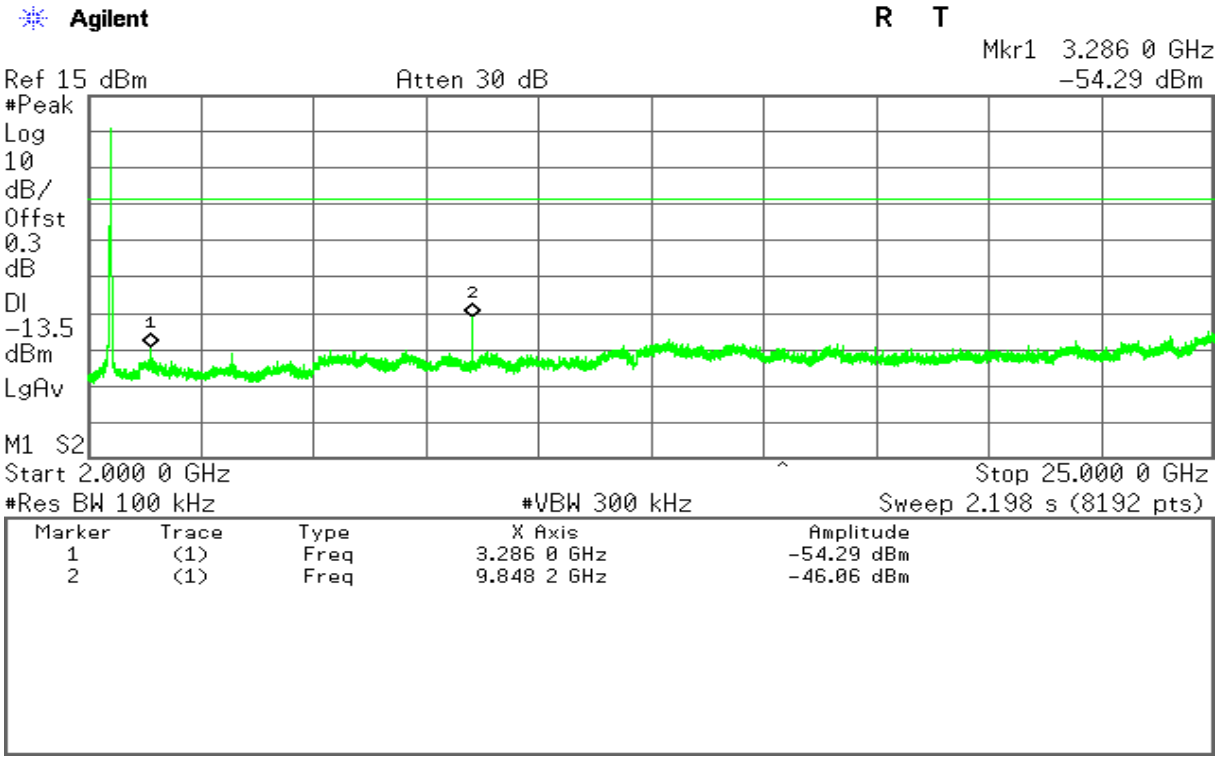

Agilent
R T
Mkr1 3.249 5 GHz
-49.44 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.2
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.249 5 GHz -49.44 dBm
2 (1) Freq 9.747 2 GHz -45.86 dBm

CH High


Agilent
R T
Mkr1 2.460 479 GHz
6.54 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.5
dBm
LgAv
M1 S2
Center 2.462 000 0 GHz
Span 15.21 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 1.48 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.460 479 GHz 6.54 dBm

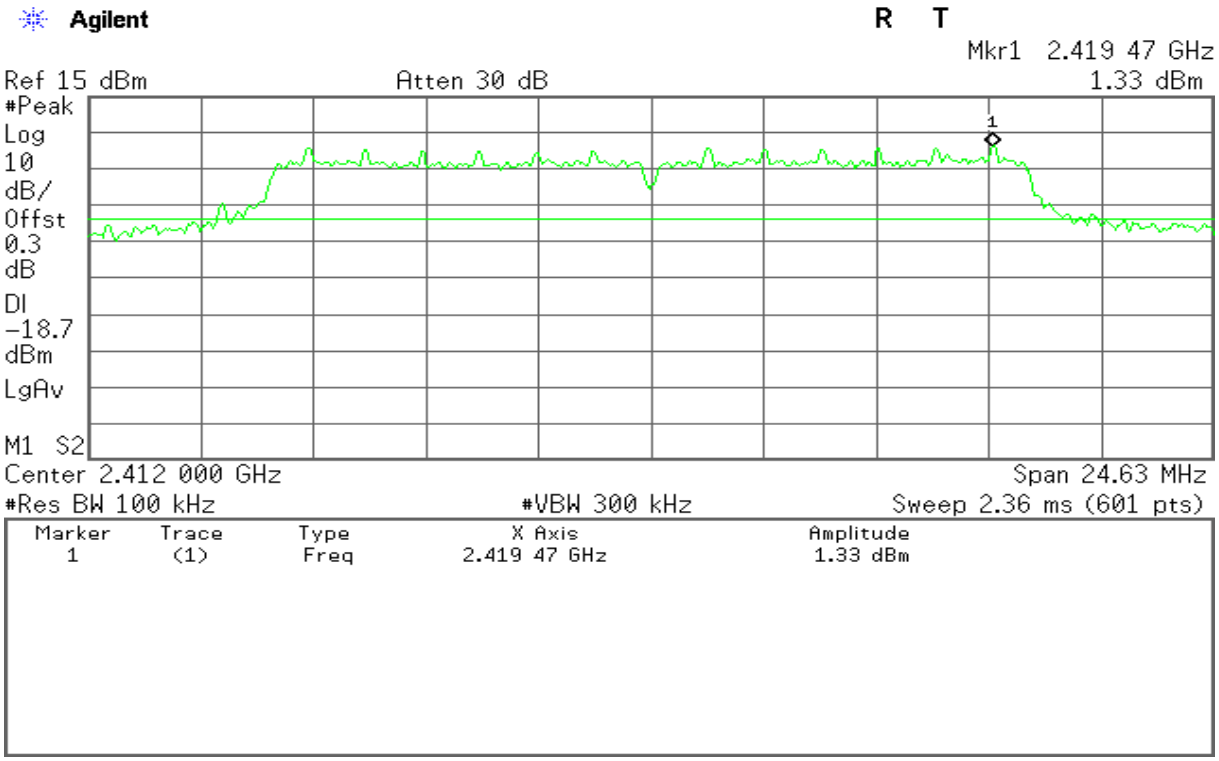

Agilent
R T
Mkr1 2.483 500 GHz
-31.79 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.5
dBm
LgAv
M1 S2
Start 2.430 000 GHz
Stop 2.565 000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 13.11 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.483 500 GHz -31.79 dBm

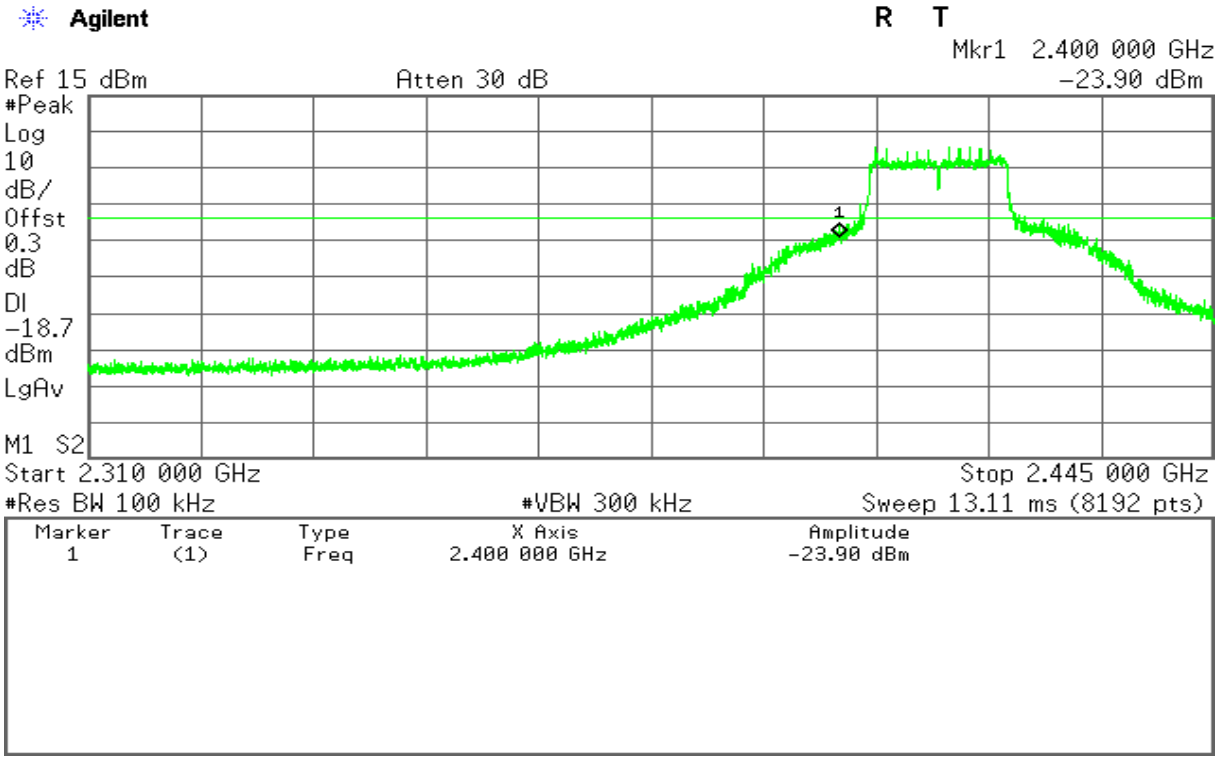

Agilent
R T
Mkr2 1.641 4 GHz
-45.95 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-13.5
dBm
LgAv
M1 S2
Center 1.515 0 GHz
Span 2.97 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 819.0 MHz -59.21 dBm
2 (1) Freq 1.641 4 GHz -45.95 dBm

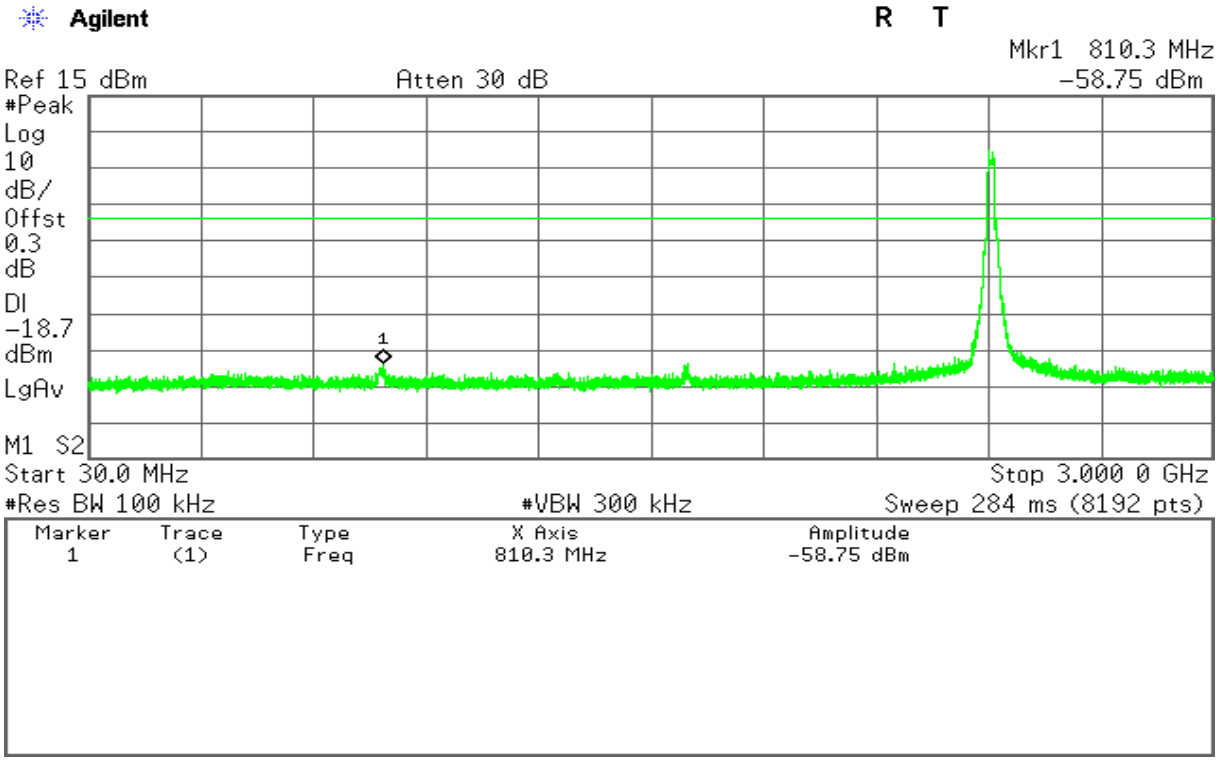


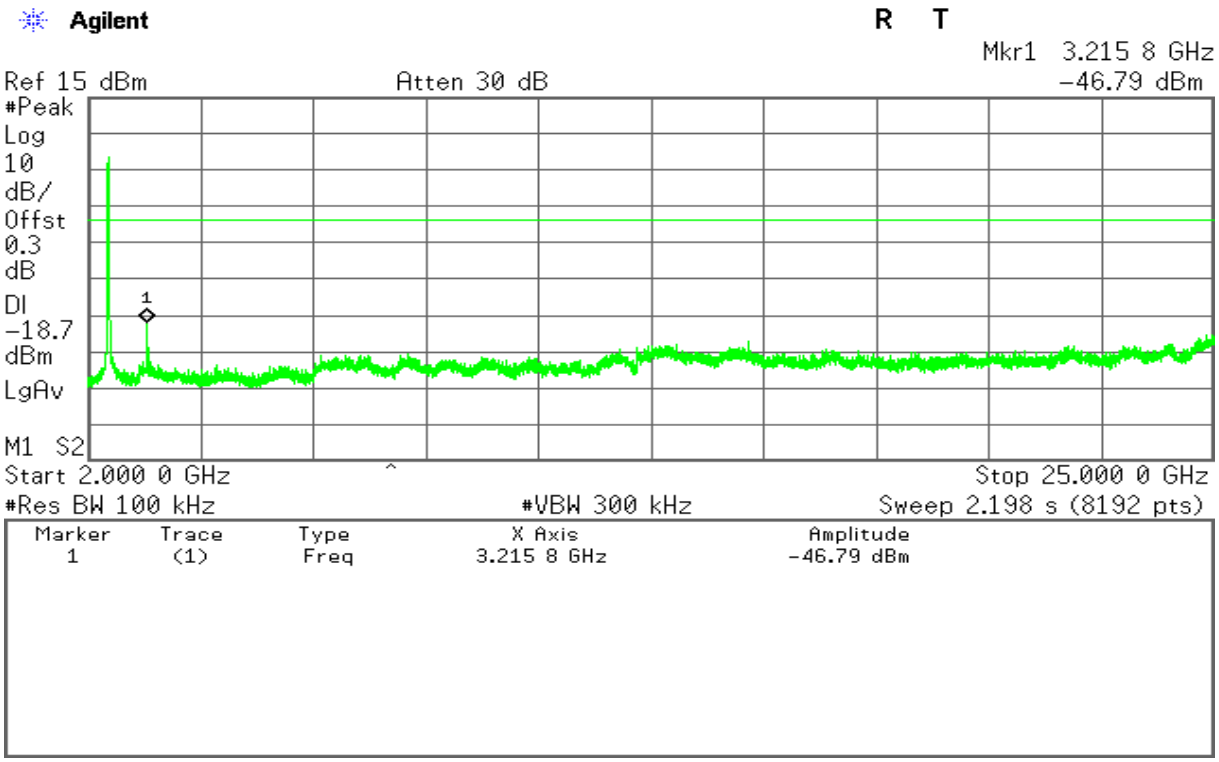
IEEE 802.11g mode

CH Low

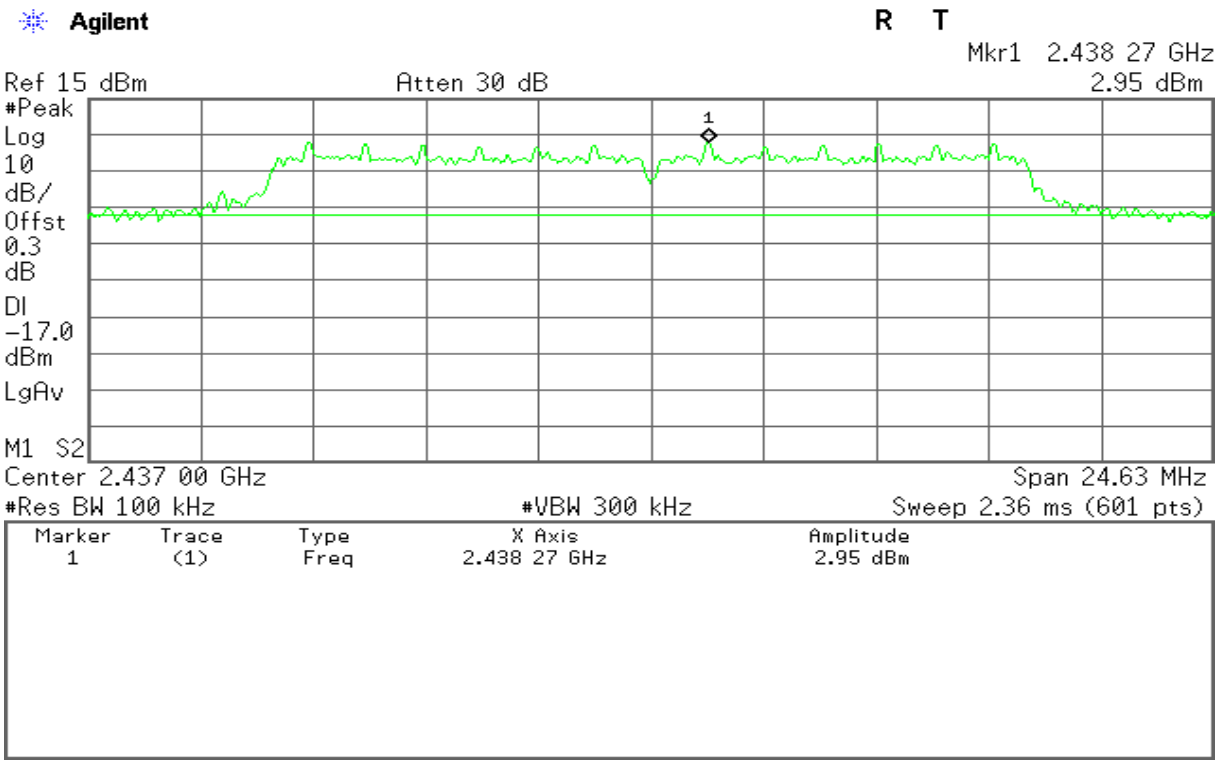


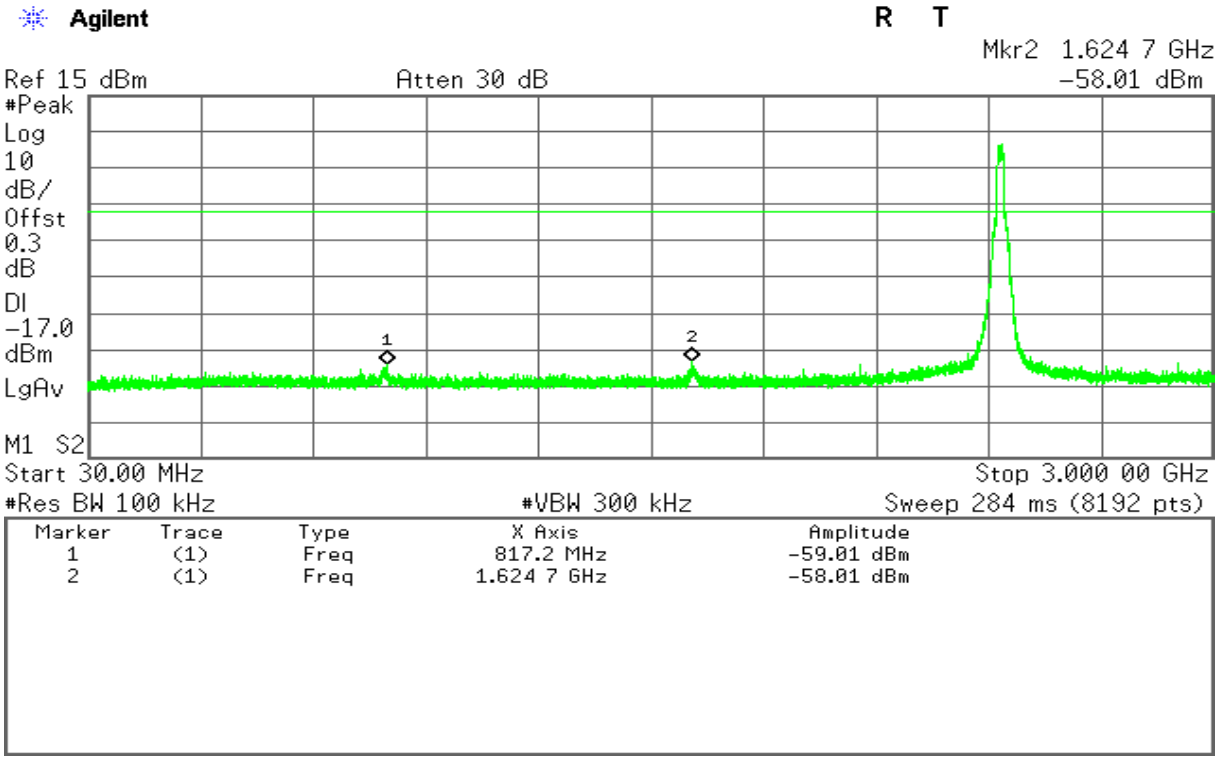

Agilent
R T
Mkr1 2.400 000 GHz
Ref 15 dBm
Atten 30 dB
-23.90 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.7
dBm
LgAv
M1 S2
Start 2.310 000 GHz
Stop 2.445 000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 13.11 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.400 000 GHz -23.90 dBm

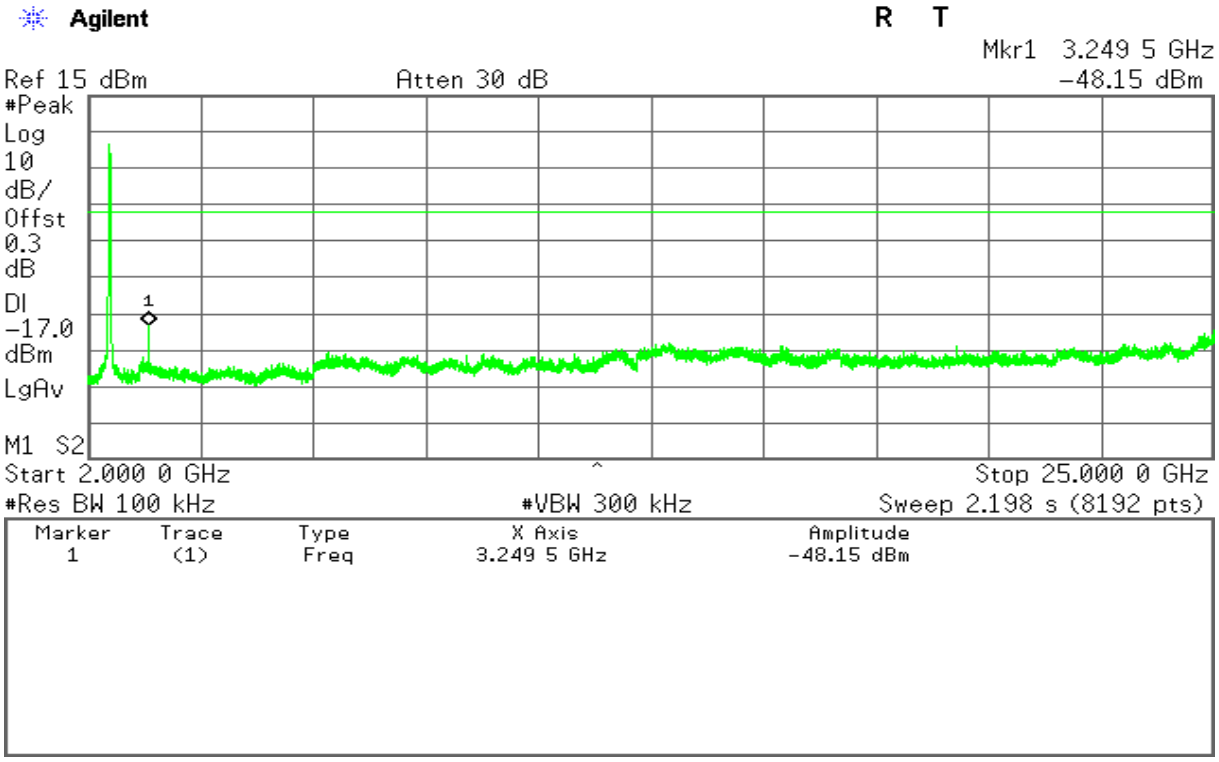

Agilent
R T
Mkr1 810.3 MHz
Ref 15 dBm
Atten 30 dB
-58.75 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.7
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 810.3 MHz -58.75 dBm


Agilent
R T
Mkr1 3.215 8 GHz
Ref 15 dBm
Atten 30 dB
-46.79 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.7
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.215 8 GHz -46.79 dBm

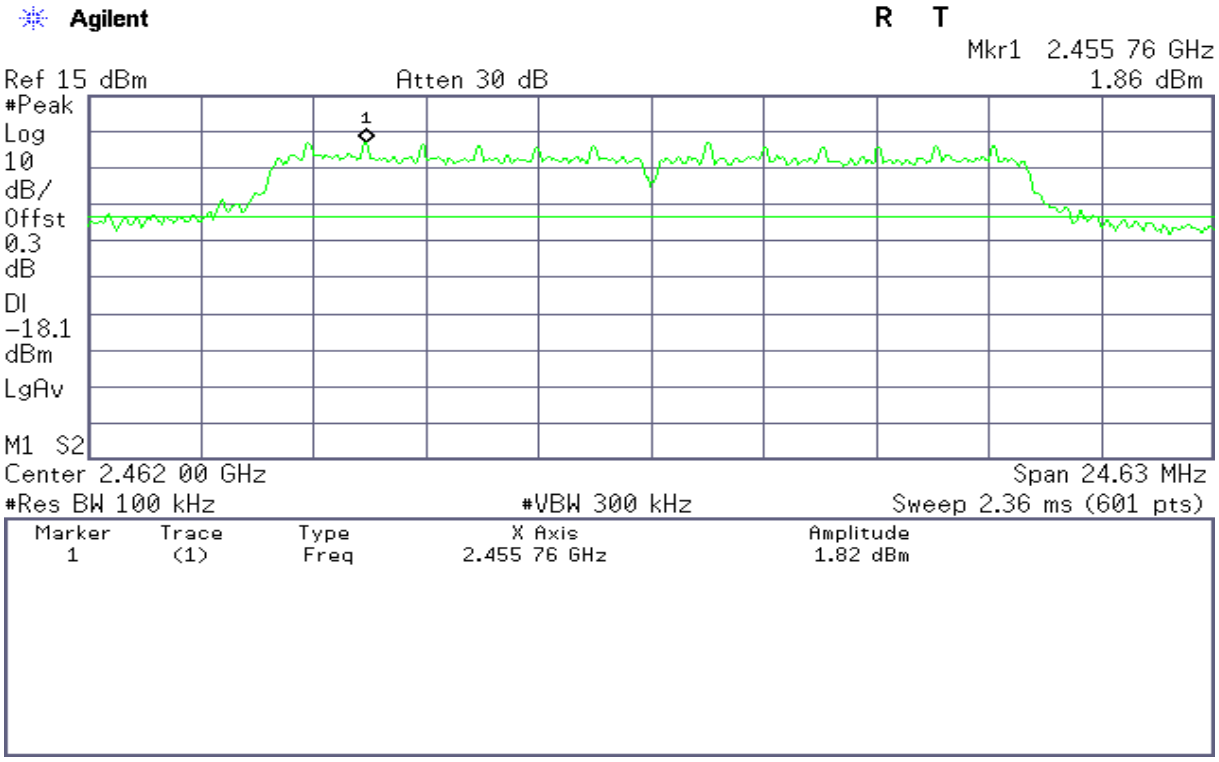
CH Mid

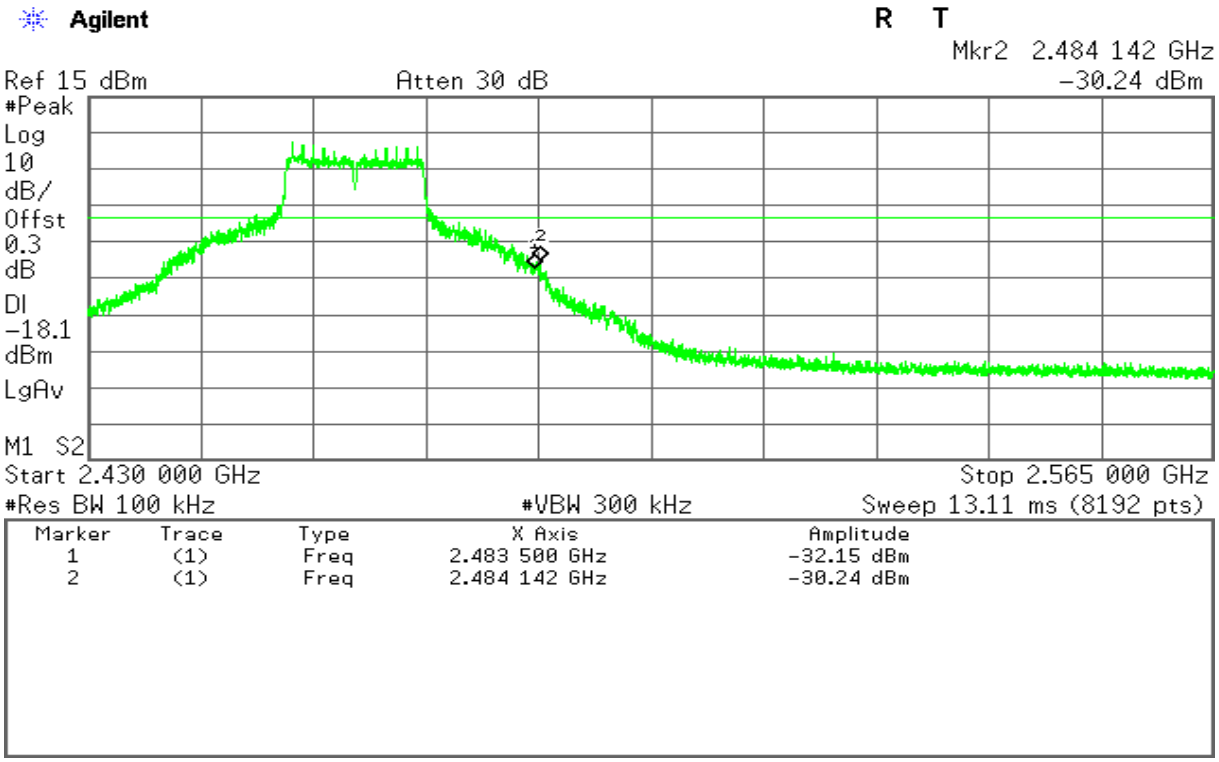

Agilent
R T
Mkr1 2.438 27 GHz
Ref 15 dBm
Atten 30 dB
2.95 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-17.0
dBm
LgAv
M1 S2
Center 2.437 00 GHz
Span 24.63 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.36 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.438 27 GHz 2.95 dBm

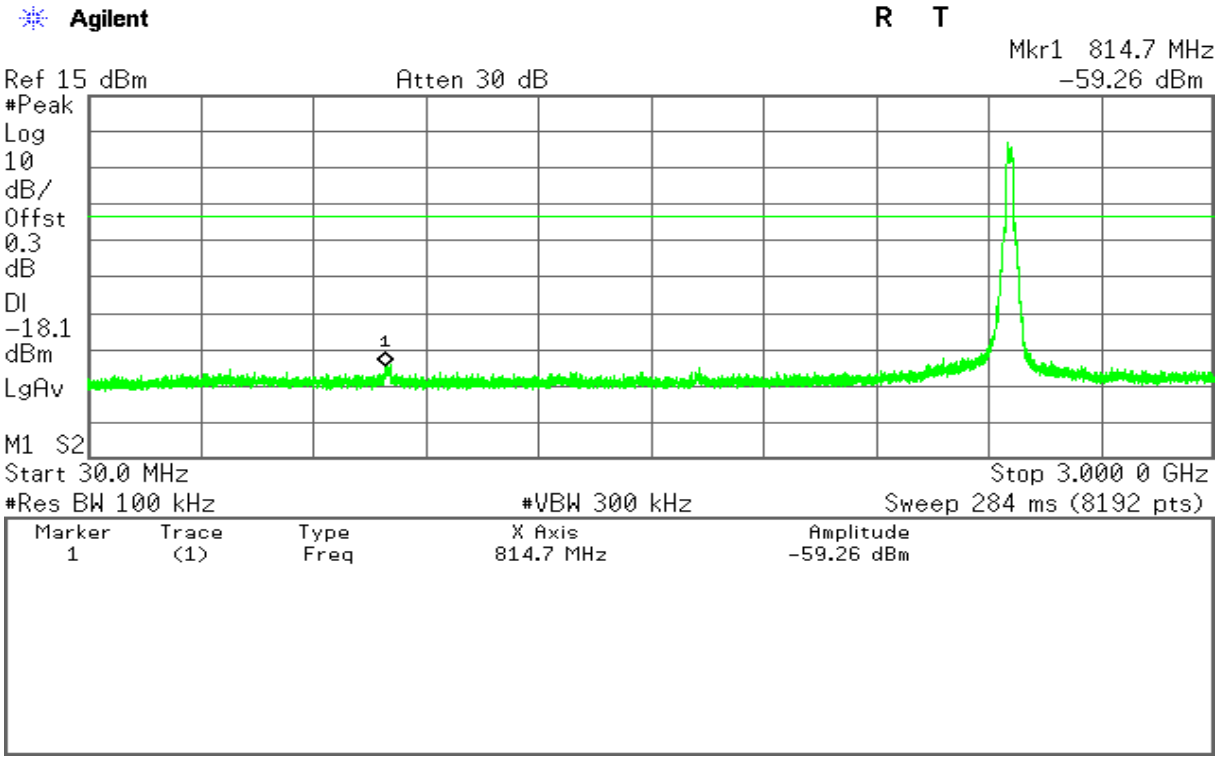

Agilent
R T
Mkr2 1.624 7 GHz
-58.01 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-17.0
dBm
LgAv
M1 S2
Start 30.00 MHz
Stop 3.000 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 817.2 MHz -59.01 dBm
2 (1) Freq 1.624 7 GHz -58.01 dBm

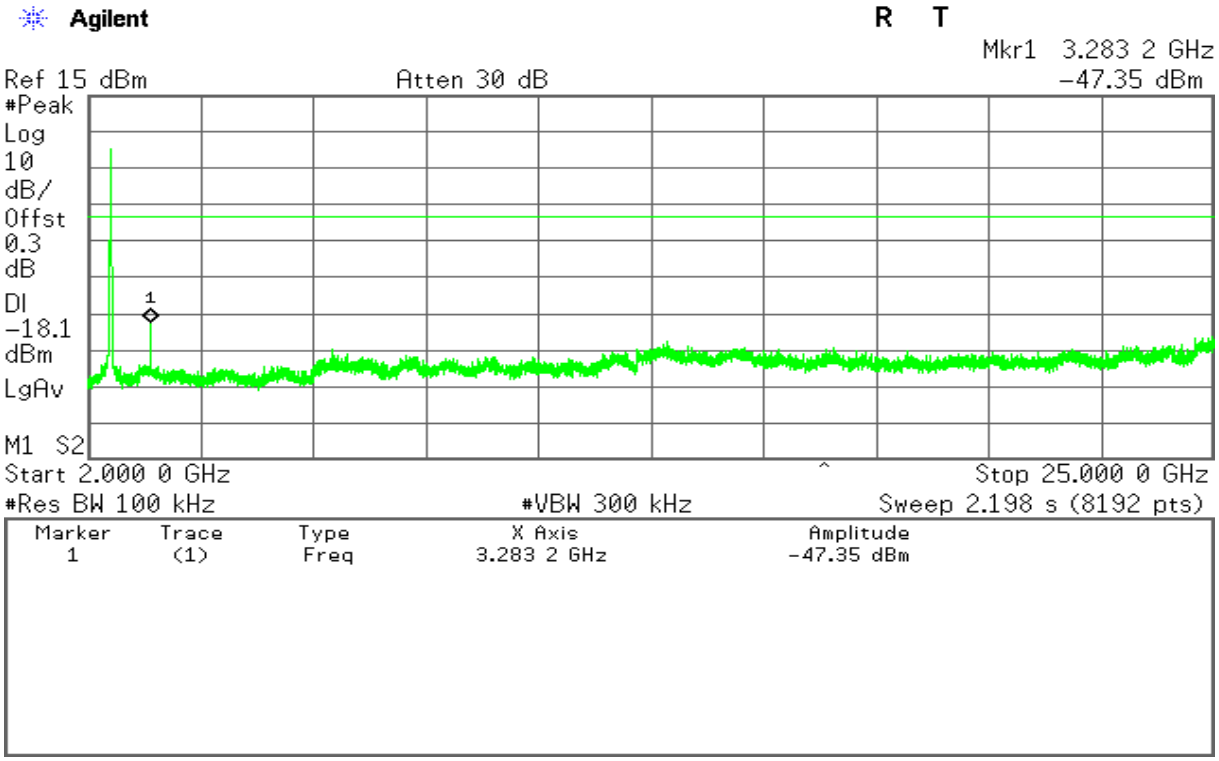

Agilent
R T
Mkr1 3.249 5 GHz
-48.15 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-17.0
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.249 5 GHz -48.15 dBm

CH High


Agilent
R T
Mkr1 2.455 76 GHz
1.86 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Center 2.462 00 GHz
Span 24.63 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.36 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.455 76 GHz 1.82 dBm

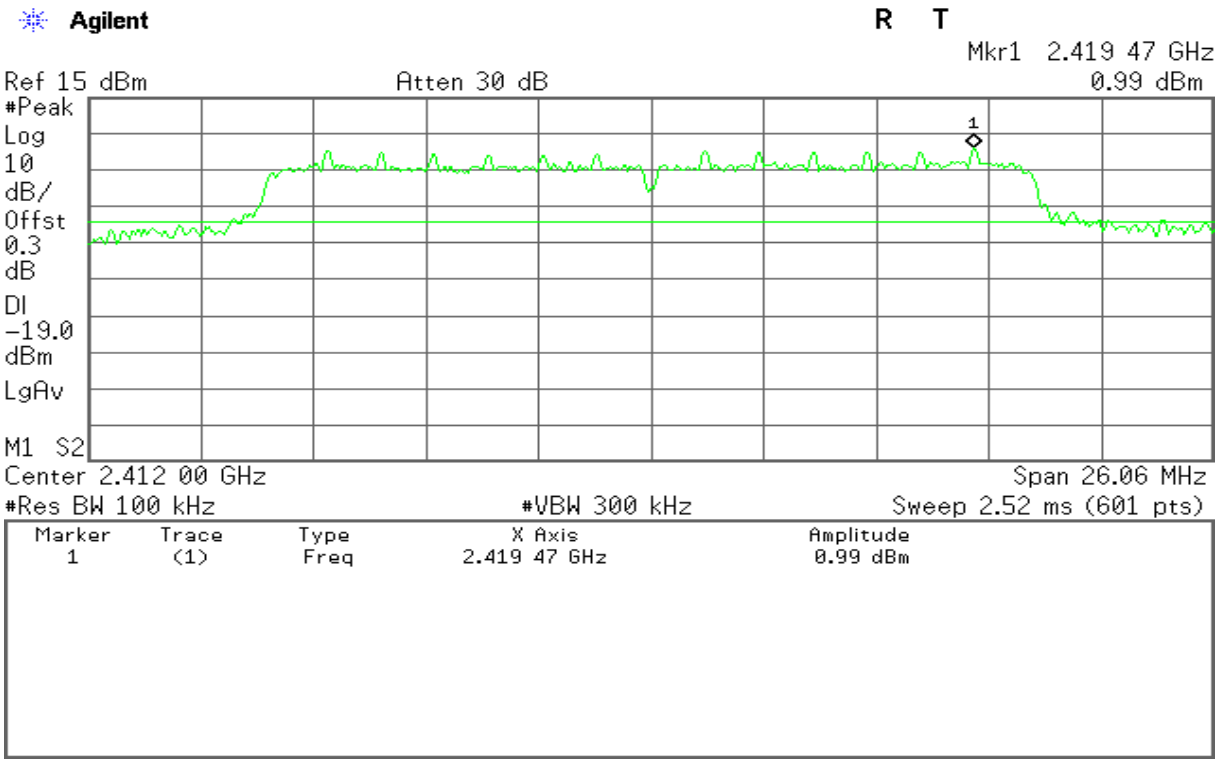

Agilent
R T
Mkr2 2.484 142 GHz
-30.24 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Start 2.430 000 GHz
Stop 2.565 000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 13.11 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.483 500 GHz -32.15 dBm
2 (1) Freq 2.484 142 GHz -30.24 dBm

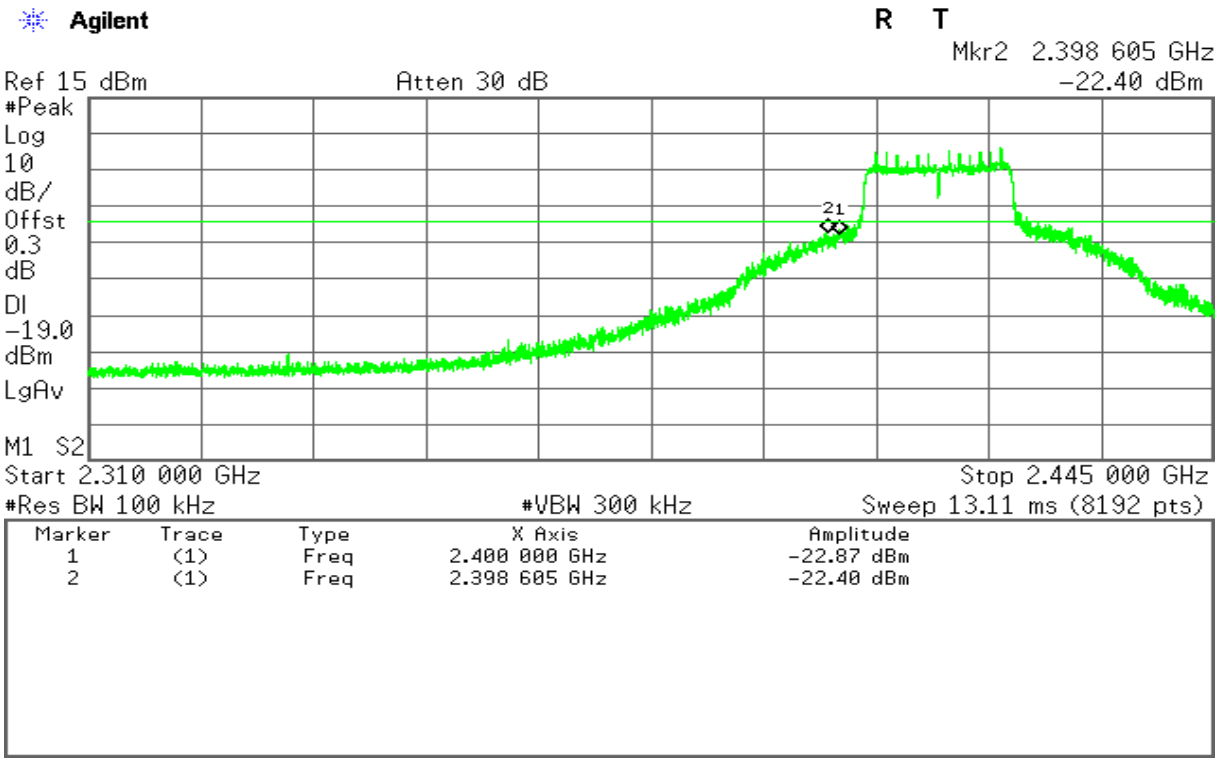

Agilent
R T
Mkr1 814.7 MHz
Ref 15 dBm
Atten 30 dB
-59.26 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 814.7 MHz -59.26 dBm

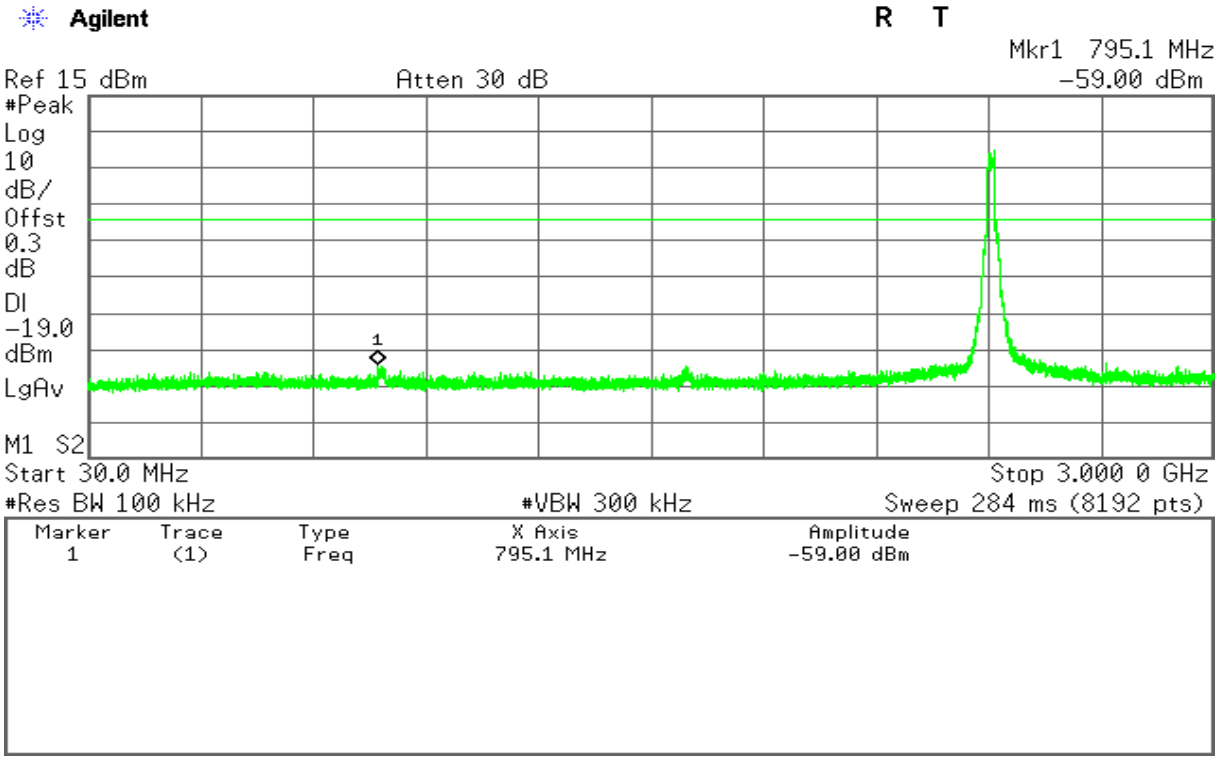

Agilent
R T
Mkr1 3.283 2 GHz
Ref 15 dBm
Atten 30 dB
-47.35 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.283 2 GHz -47.35 dBm

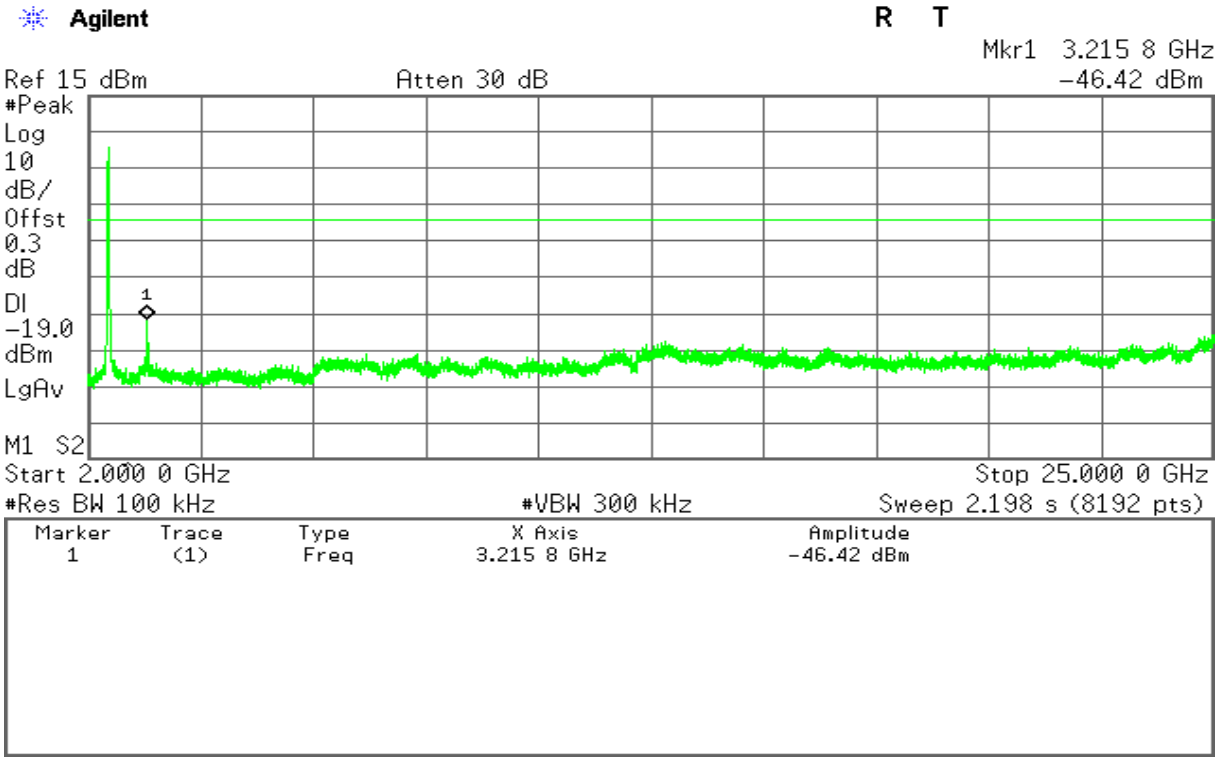
IEEE 802.11n HT20 mode

CH Low

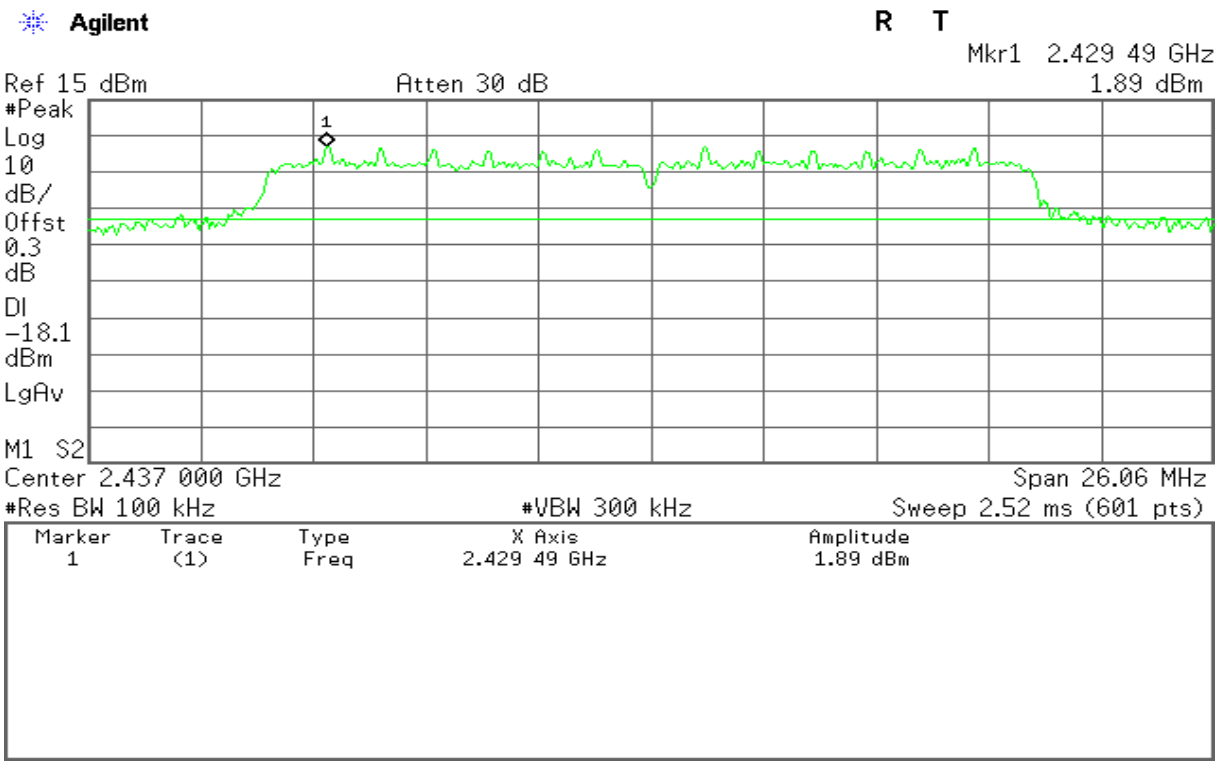


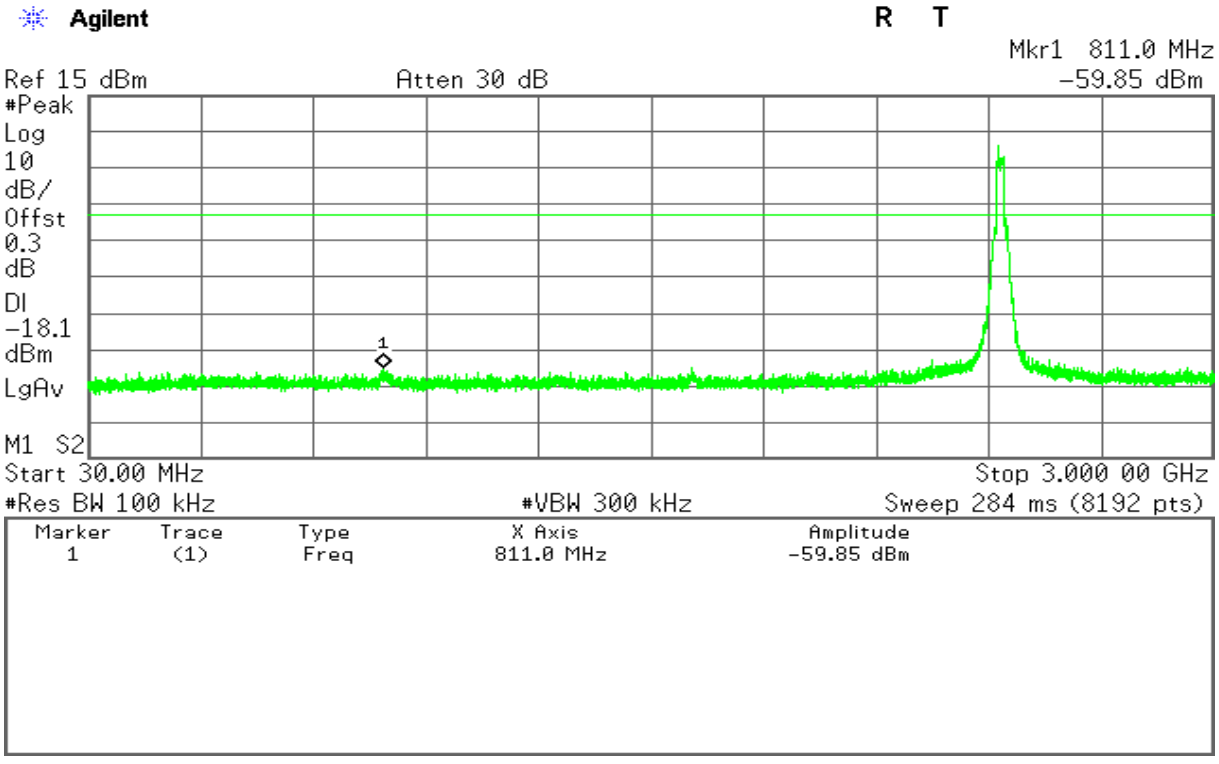


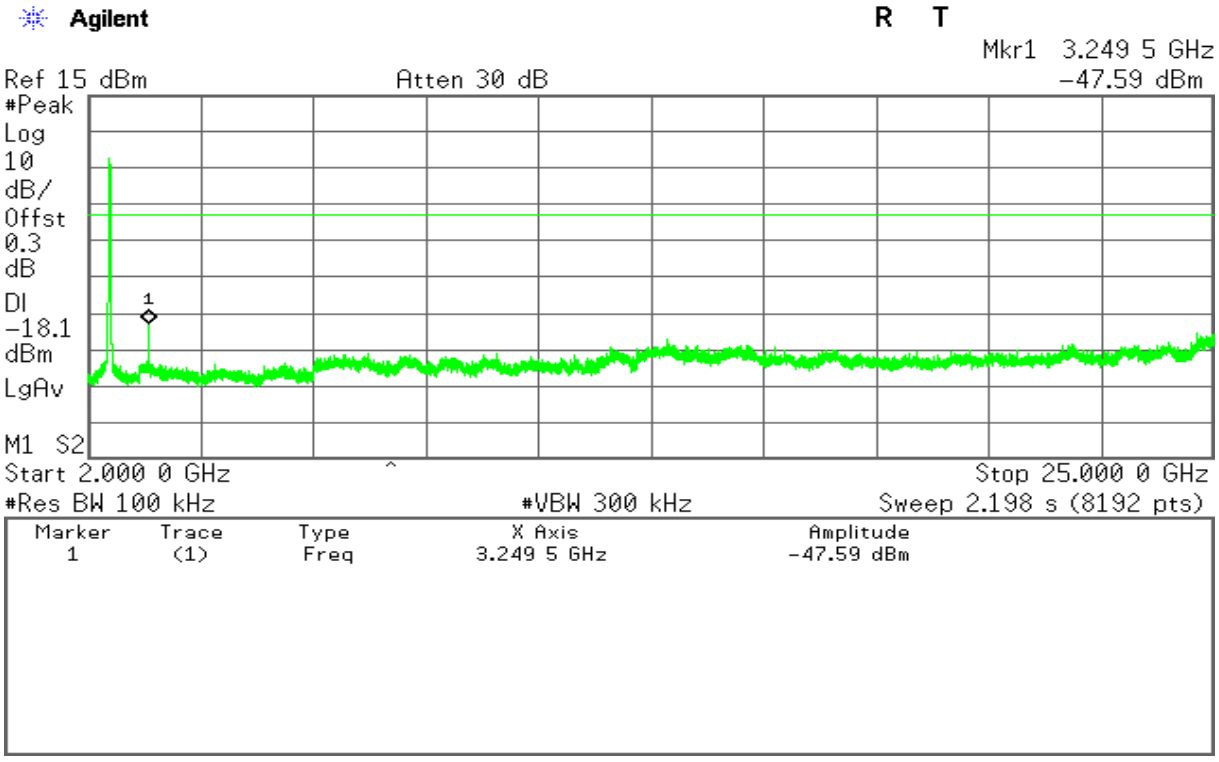

Agilent
R T
Mkr1 795.1 MHz
Ref 15 dBm
Atten 30 dB
-59.00 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-19.0
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 795.1 MHz -59.00 dBm


Agilent
R T
Mkr1 3.215 8 GHz
Ref 15 dBm
Atten 30 dB
-46.42 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-19.0
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.215 8 GHz -46.42 dBm

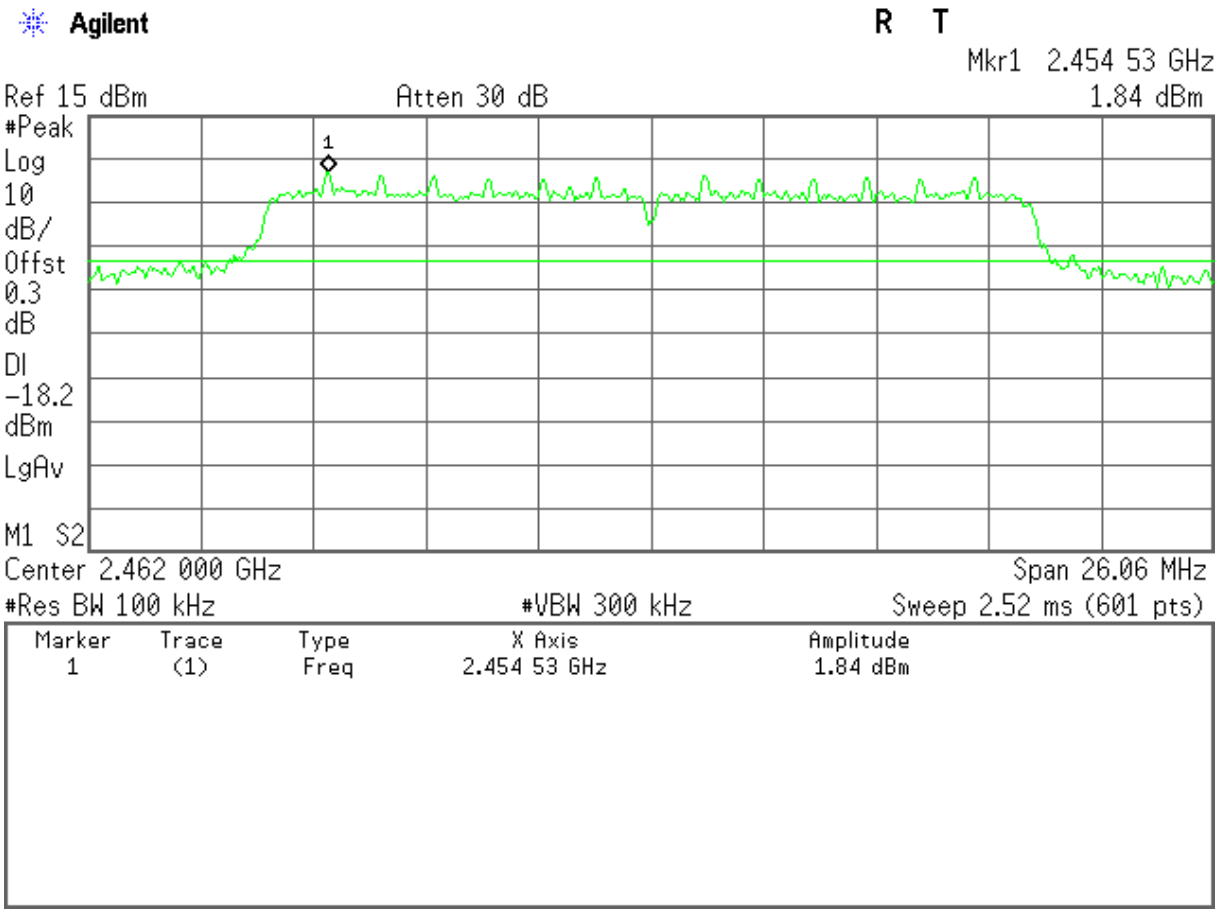
CH Mid

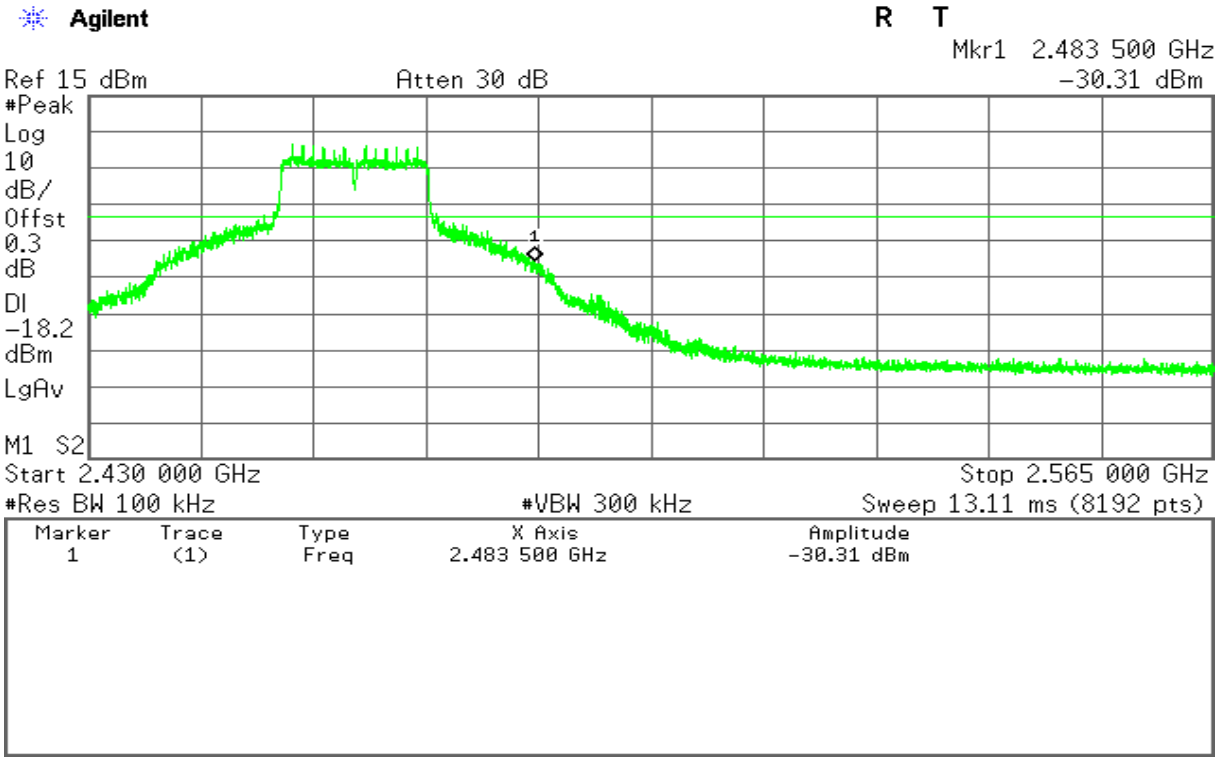

Agilent
R T
Mkr1 2.429 49 GHz
1.89 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Center 2.437 000 GHz
Span 26.06 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.52 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.429 49 GHz 1.89 dBm

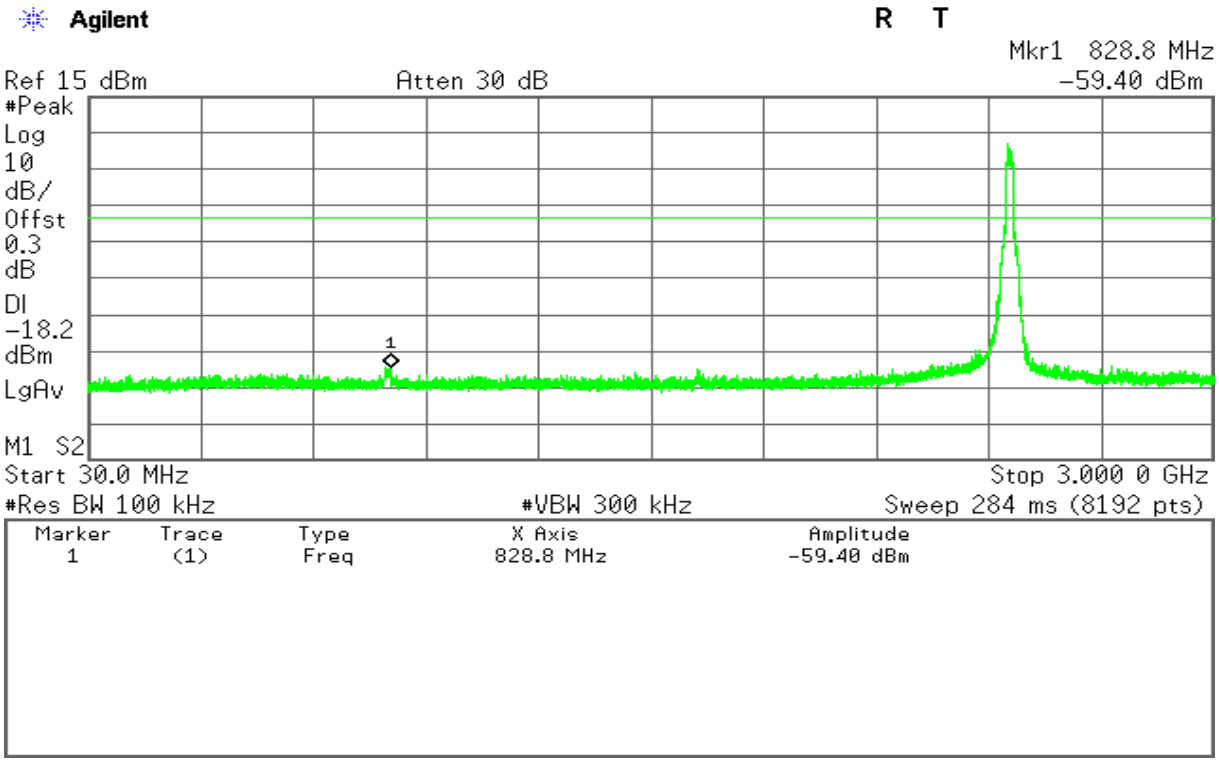

Agilent
R T
Mkr1 811.0 MHz
-59.85 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Start 30.00 MHz
Stop 3.000 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 811.0 MHz -59.85 dBm

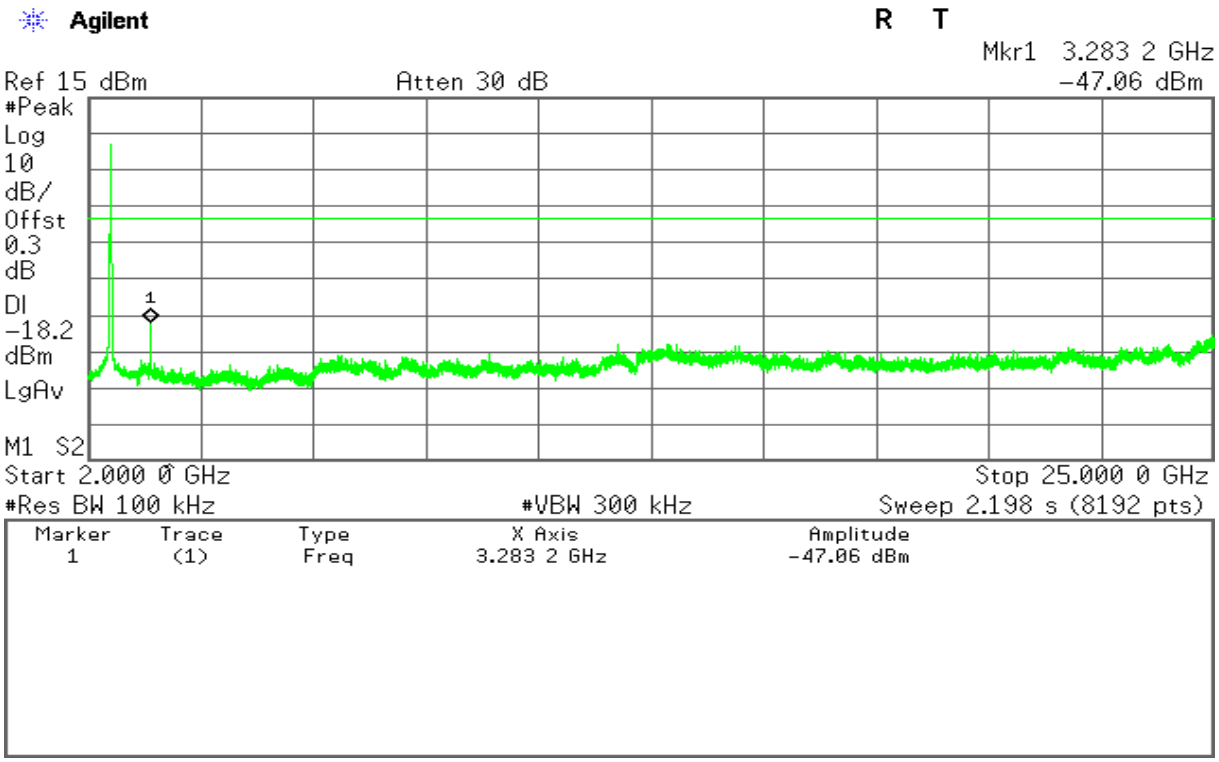

Agilent
R T
Mkr1 3.249 5 GHz
Ref 15 dBm
Atten 30 dB
-47.59 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.1
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.249 5 GHz -47.59 dBm

CH High


Agilent
R T
Mkr1 2.454 53 GHz
Ref 15 dBm
Atten 30 dB
1.84 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.2
dBm
LgAv
M1 S2
Center 2.462 000 GHz
Span 26.06 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.52 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.454 53 GHz 1.84 dBm

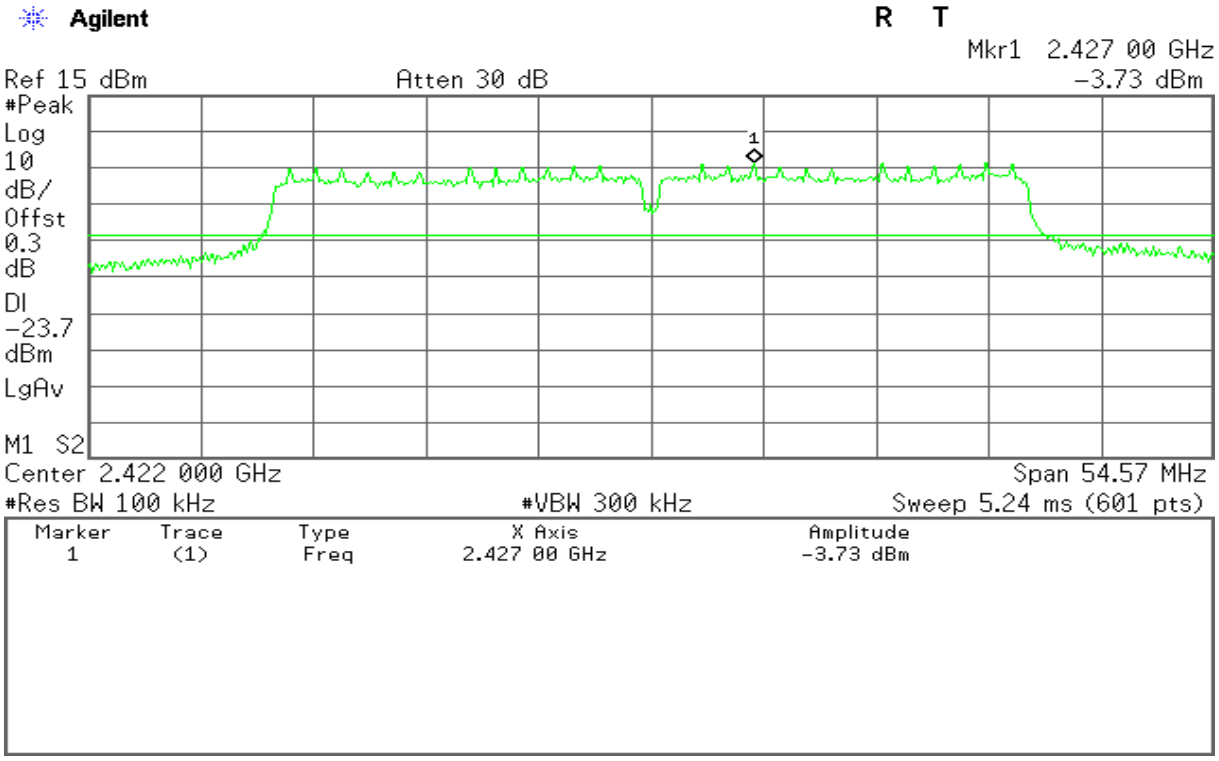

Agilent
R T
Mkr1 2.483 500 GHz
-30.31 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.2
dBm
LgAv
M1 S2
Start 2.430 000 GHz
Stop 2.565 000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 13.11 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.483 500 GHz -30.31 dBm

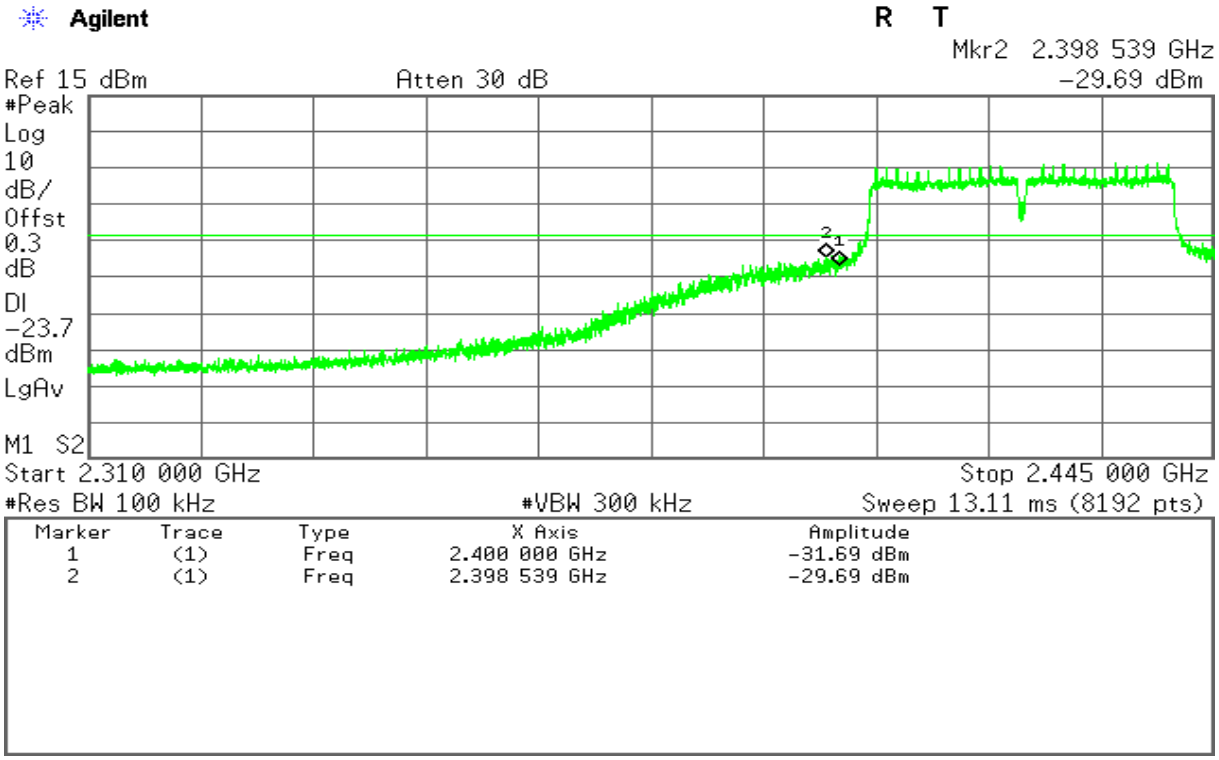

Agilent
R T
Mkr1 828.8 MHz
-59.40 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-18.2
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 828.8 MHz -59.40 dBm

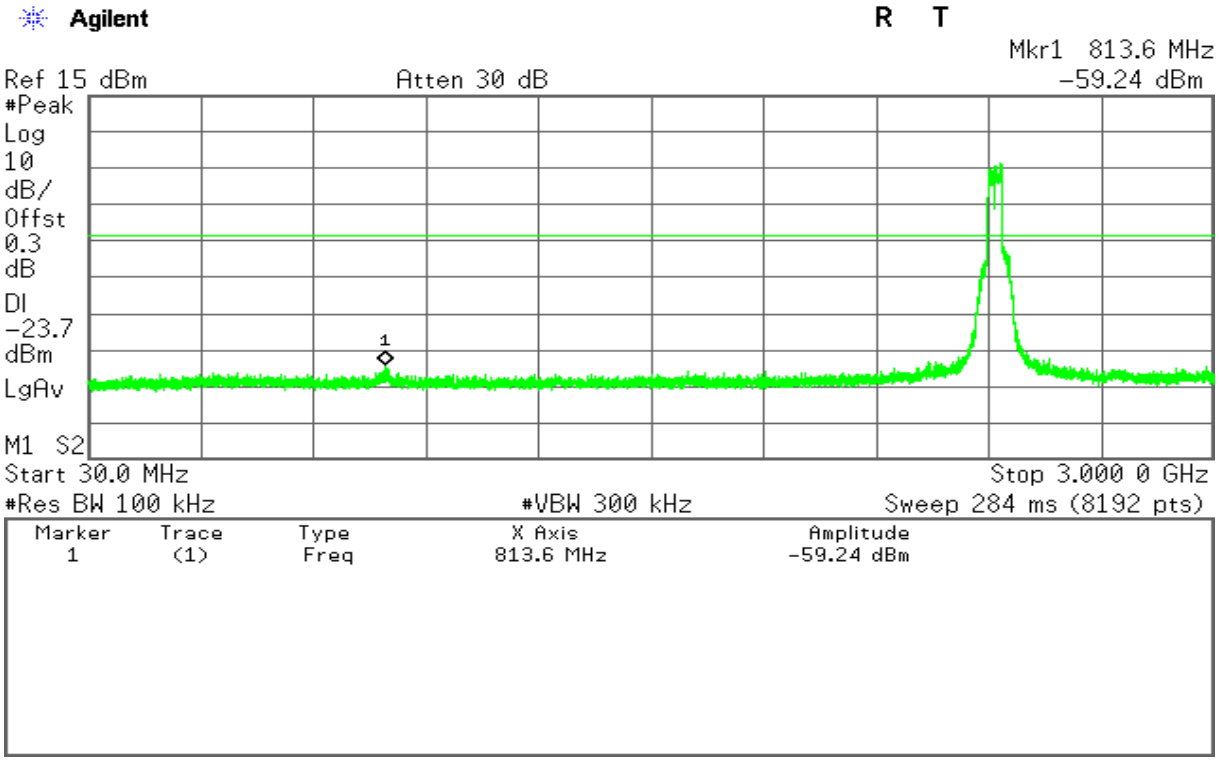


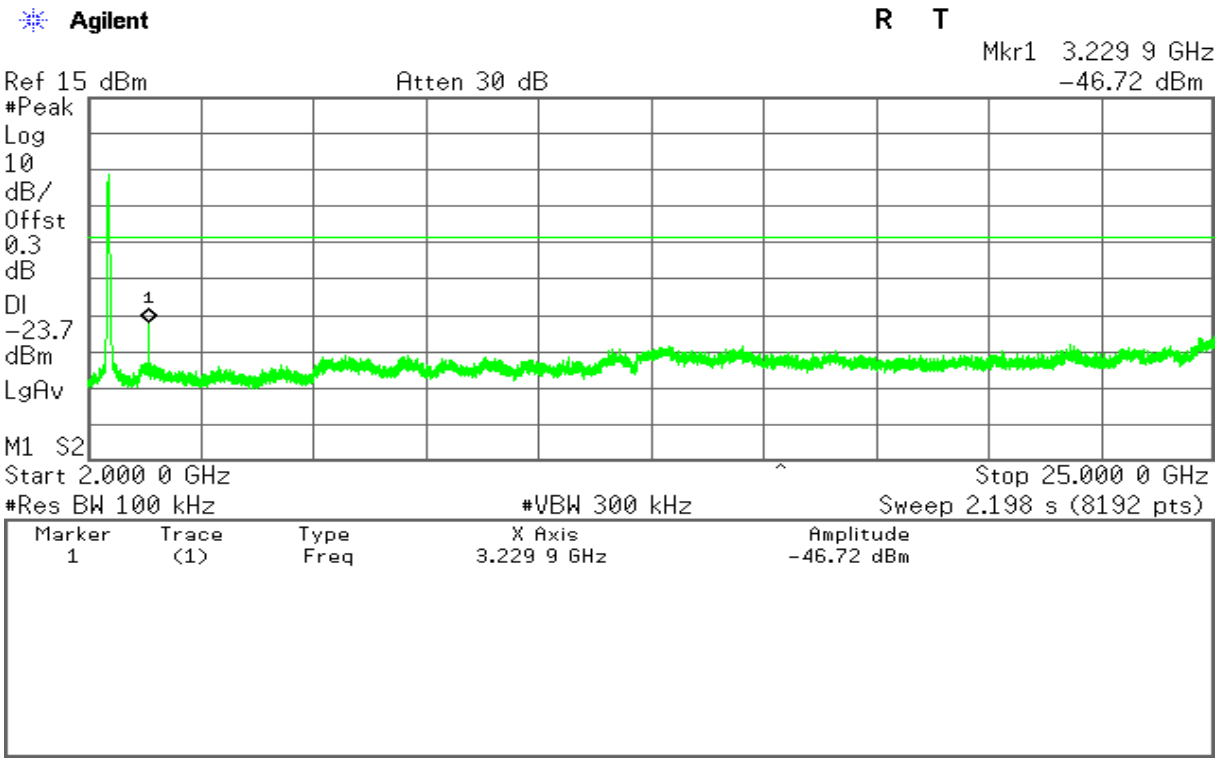
IEEE 802.11n HT40 mode

CH Low

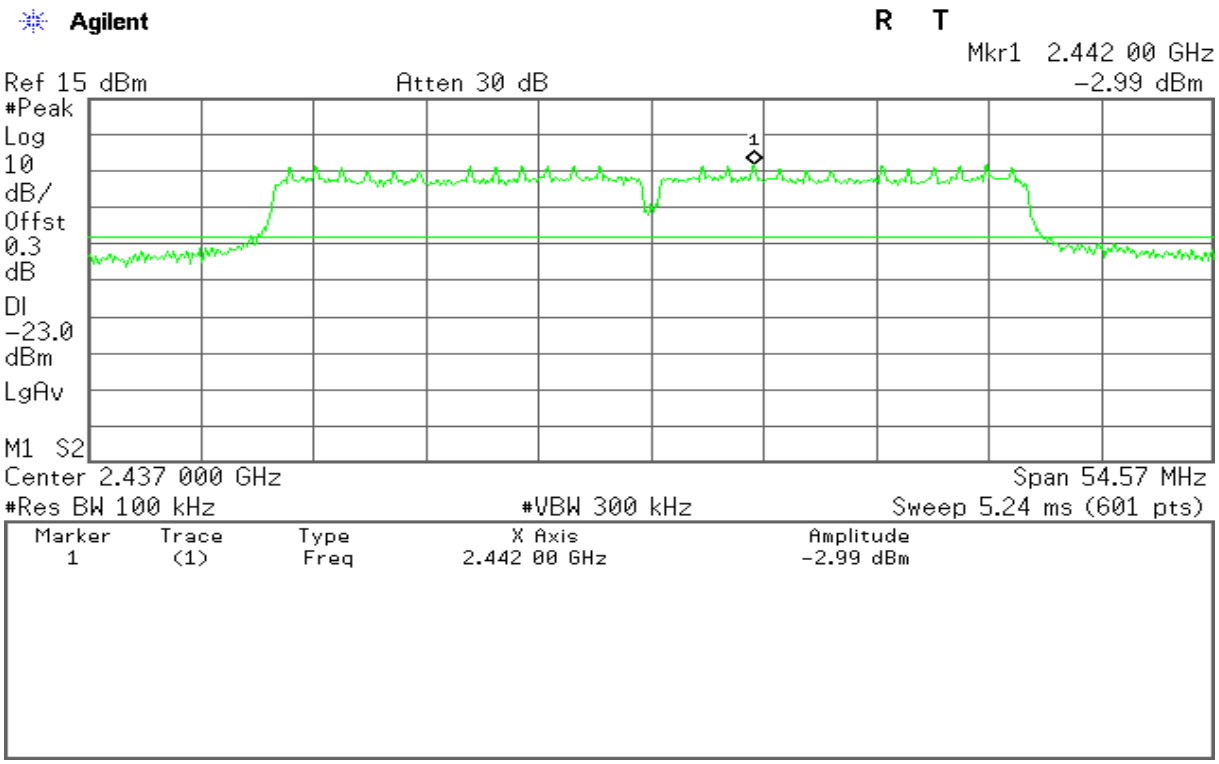


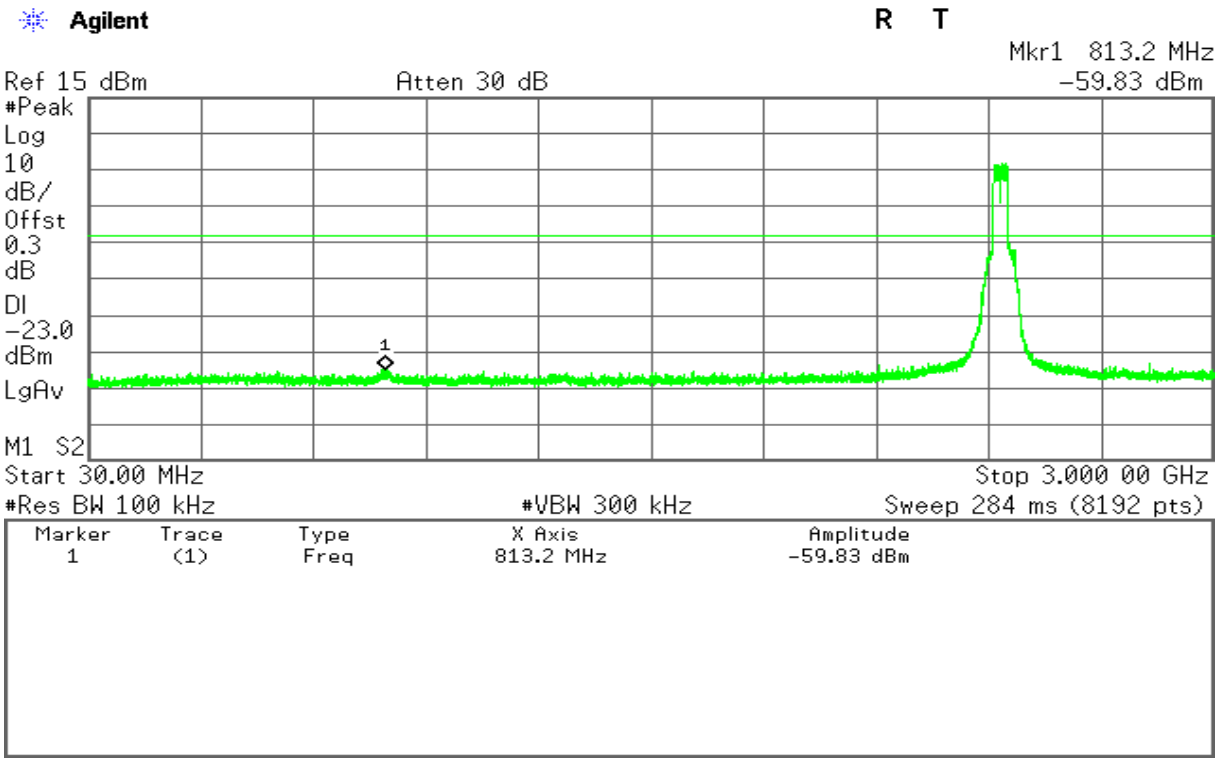

Agilent
R T
Mkr2 2.398 539 GHz
Ref 15 dBm
Atten 30 dB
-29.69 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.7
dBm
LgAv
M1 S2
Start 2.310 000 GHz
Stop 2.445 000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 13.11 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.400 000 GHz -31.69 dBm
2 (1) Freq 2.398 539 GHz -29.69 dBm

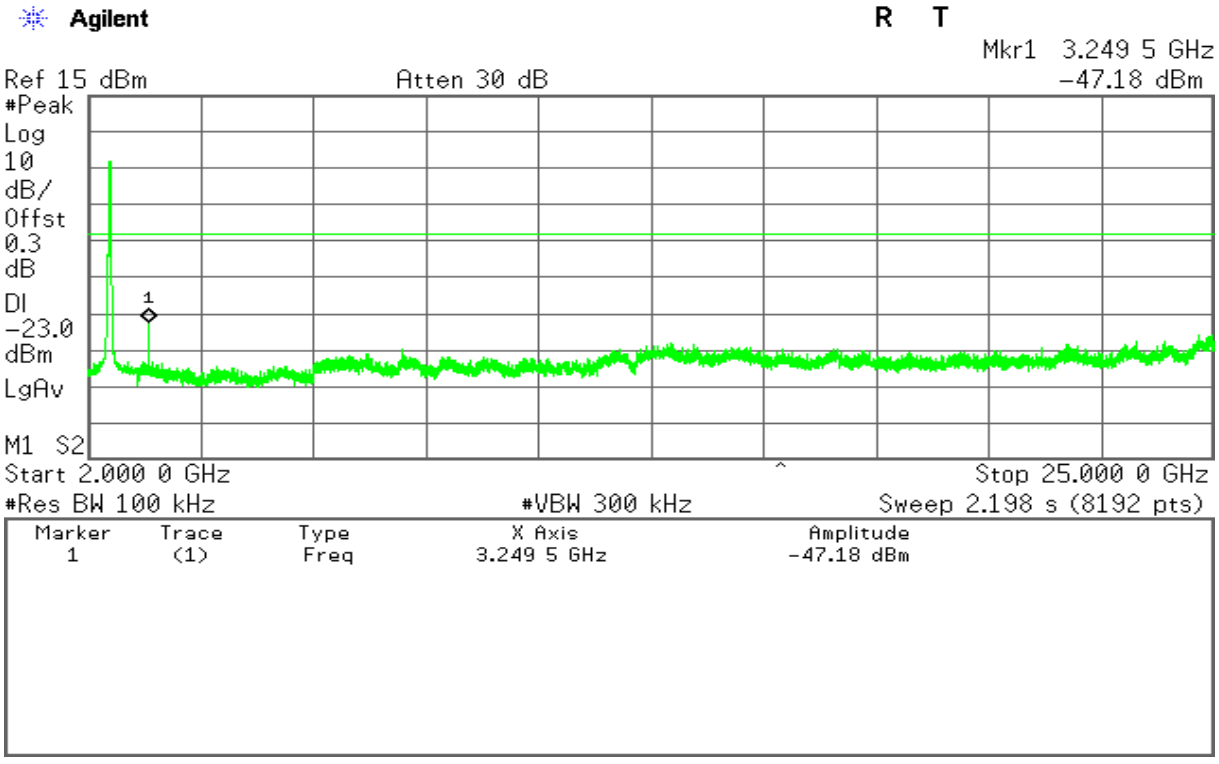

Agilent
R T
Mkr1 813.6 MHz
Ref 15 dBm
Atten 30 dB
-59.24 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.7
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 813.6 MHz -59.24 dBm


Agilent
R T
Mkr1 3.229 9 GHz
Ref 15 dBm
Atten 30 dB
-46.72 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.7
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.229 9 GHz -46.72 dBm

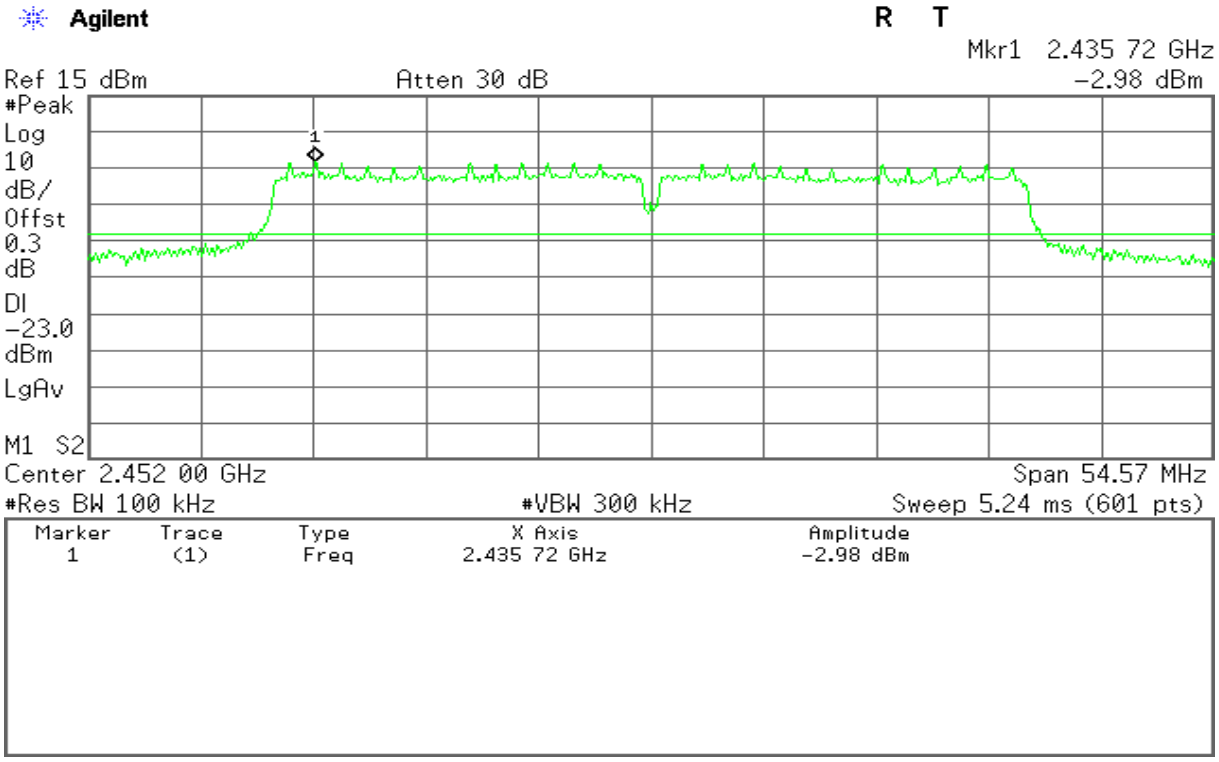
CH Mid

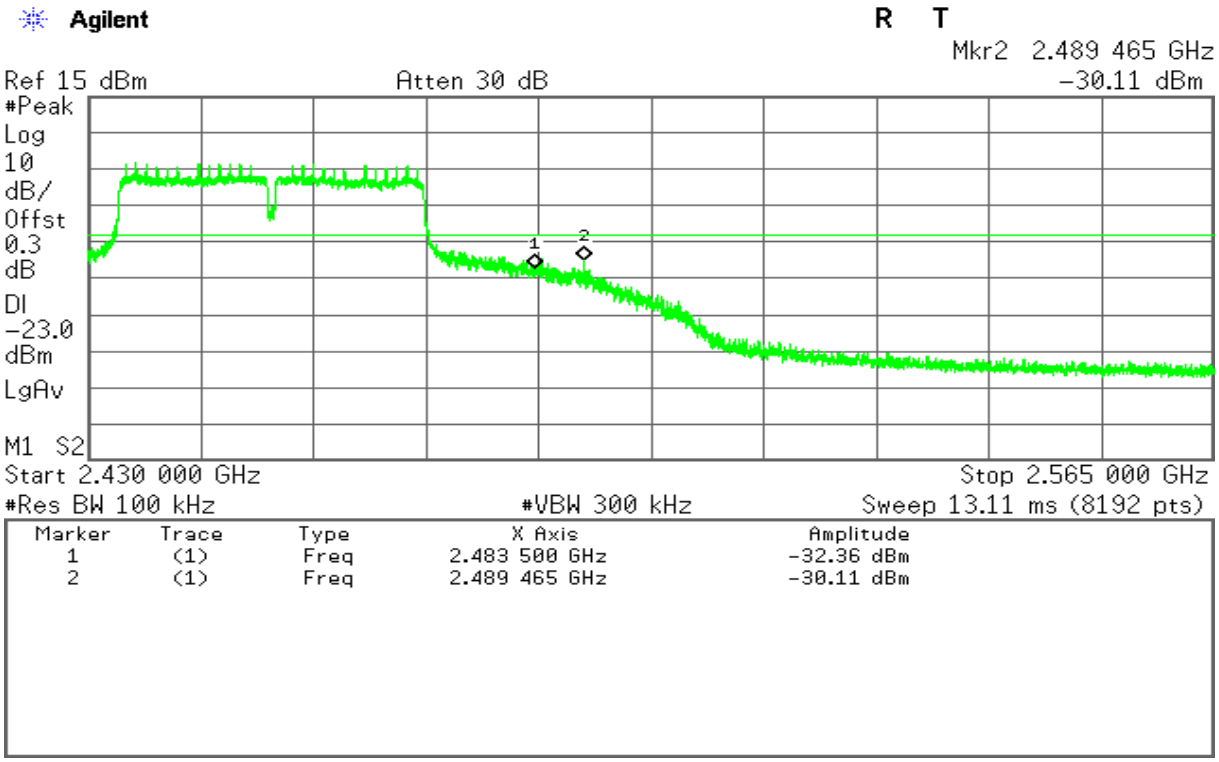

Agilent
R T
Mkr1 2.442 00 GHz
Ref 15 dBm
Atten 30 dB
-2.99 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Center 2.437 000 GHz
Span 54.57 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 5.24 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.442 00 GHz -2.99 dBm

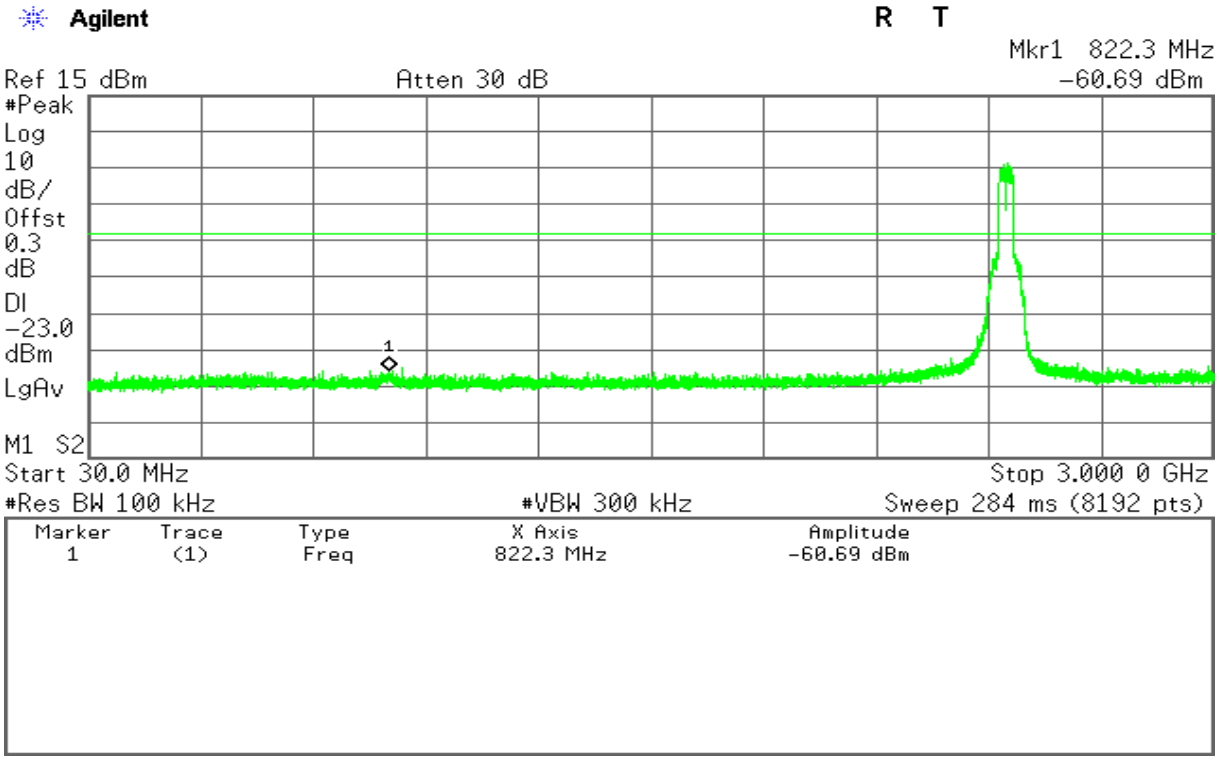

Agilent
R T
Mkr1 813.2 MHz
Ref 15 dBm
Atten 30 dB
-59.83 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Start 30.00 MHz
Stop 3.000 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 813.2 MHz -59.83 dBm

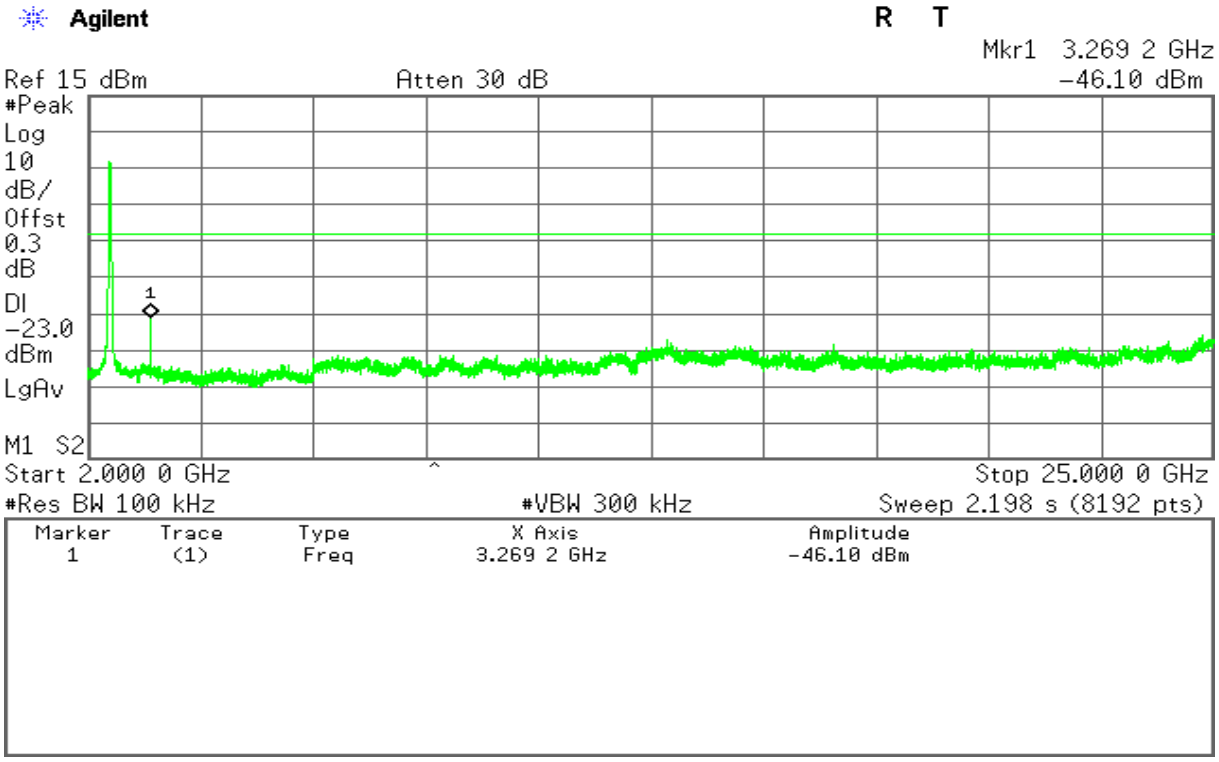

Agilent
R T
Mkr1 3.249 5 GHz
Ref 15 dBm
Atten 30 dB
-47.18 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.249 5 GHz -47.18 dBm

CH High


Agilent
R T
Mkr1 2.435 72 GHz
-2.98 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Center 2.452 00 GHz
Span 54.57 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 5.24 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.435 72 GHz -2.98 dBm


Agilent
R T
Mkr2 2.489 465 GHz
-30.11 dBm
Ref 15 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Start 2.430 000 GHz
Stop 2.565 000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 13.11 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.483 500 GHz -32.36 dBm
2 (1) Freq 2.489 465 GHz -30.11 dBm


Agilent
R T
Mkr1 822.3 MHz
Ref 15 dBm
Atten 30 dB
-60.69 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Start 30.0 MHz
Stop 3.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 284 ms (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 822.3 MHz -60.69 dBm


Agilent
R T
Mkr1 3.269 2 GHz
Ref 15 dBm
Atten 30 dB
-46.10 dBm
#Peak
Log
10
dB/
Offst
0.3
dB
Dl
-23.0
dBm
LgAv
M1 S2
Start 2.000 0 GHz
Stop 25.000 0 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.198 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 3.269 2 GHz -46.10 dBm

7.5.RADIATED EMISSIONS

LIMIT

Radiated emissions from 9 kHz to 25 GHz were measured according to the methods defines in ANSI C63.10-2013. The EUT was placed above the ground plane, 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz. 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

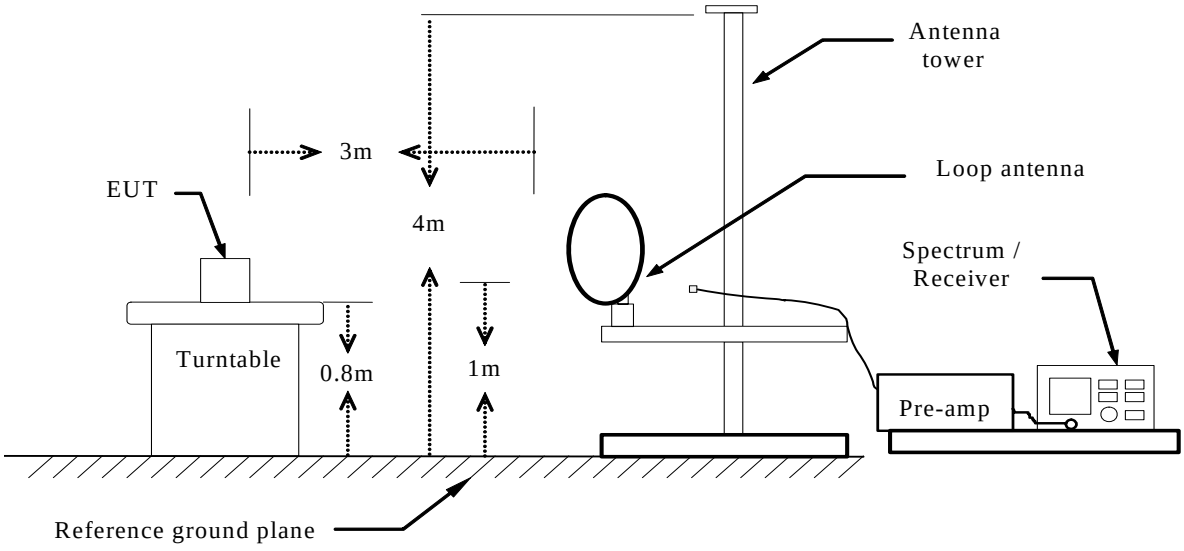
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

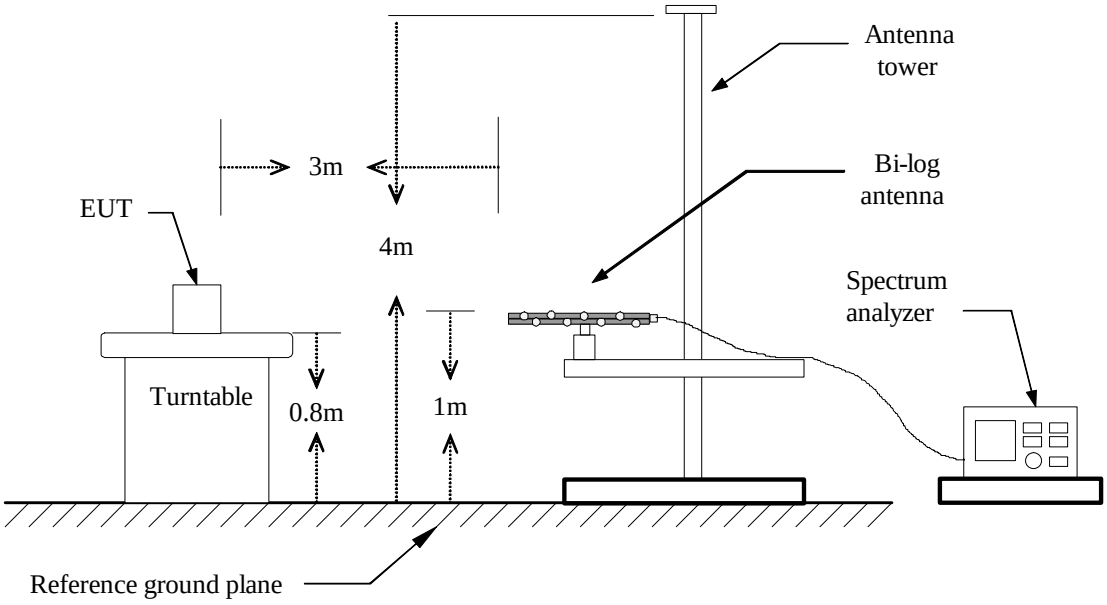
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

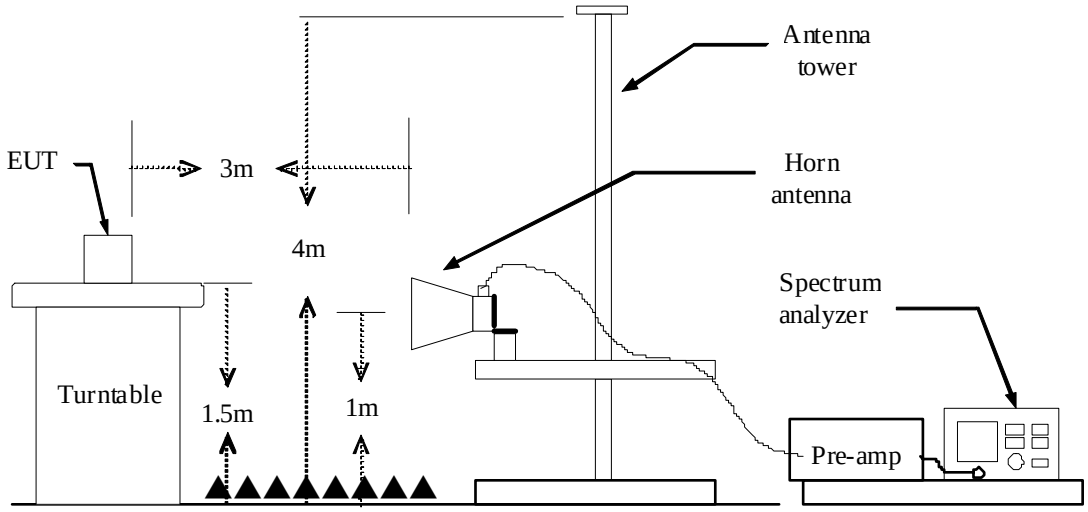
Below 30MHz



Below 1 GHz



Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable above ground plane, which is 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz.
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:

   PEAK: RBW=VBW=1MHz / Sweep=AUTO

   AVERAGE: RBW=1MHz / Sweep=AUTO

   VBW=10Hz,when duty cycle is no less than 98 percent.

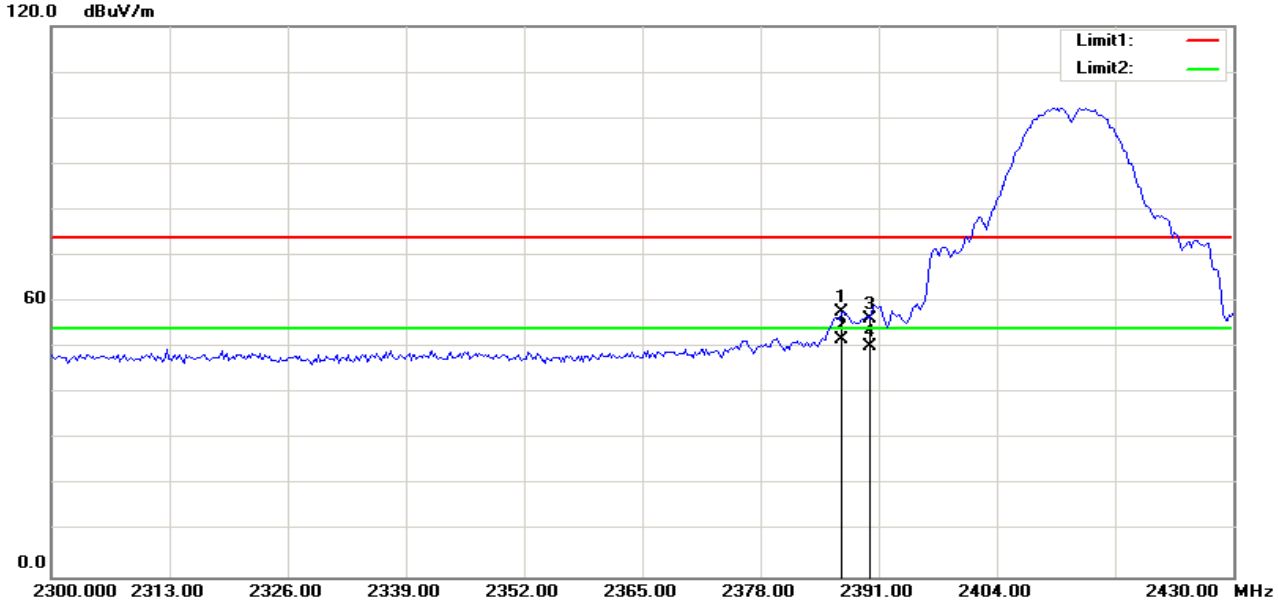
   VBW≧1/T, when duty cycle is less than 98 percent, where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximun power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
IEEE 802.11b	98.22	--	--	10Hz
IEEE 802.11g	87.97	1.41	0.71	1 kHz
IEEE 802.11n HT20	87.53	1.32	0.76	1 kHz
IEEE 802.11n HT40	77.36	0.66	1.52	2 kHz

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

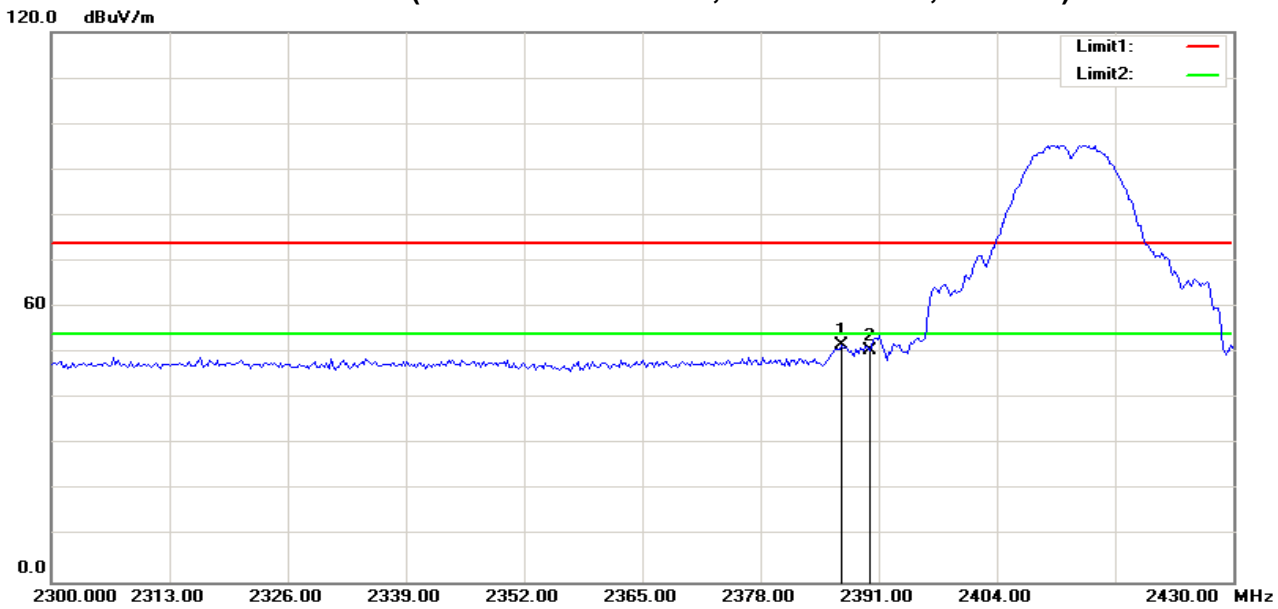
TEST RESULTS

RESTRICTED BANDEDGE (IEEE 802.11b mode, Low Channel, Horizontal)



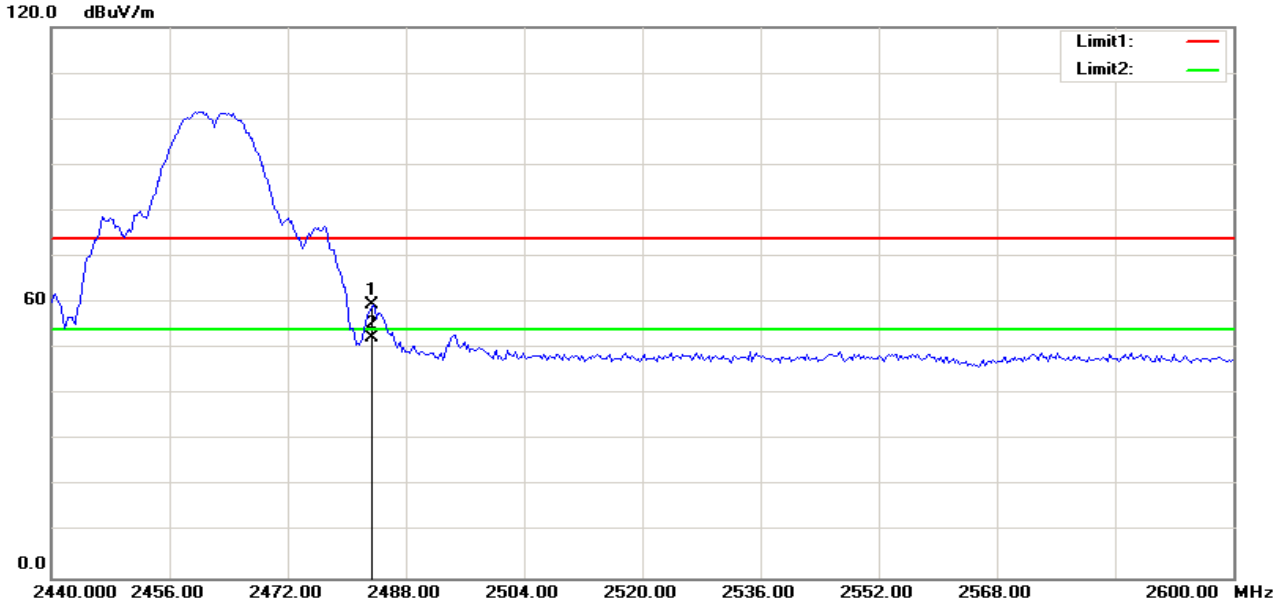
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2386.875	65.26	-7.58	57.68	74.00	-16.32	100	19	peak
2	2386.875	59.28	-7.58	51.70	54.00	-2.30	100	19	AVG
3	2390.000	63.69	-7.57	56.12	74.00	-17.88	100	360	peak
4	2390.000	57.83	-7.57	50.26	54.00	-3.74	100	359	AVG

RESTRICTED BANDEDGE (IEEE 802.11b mode, Low Channel, Vertical)



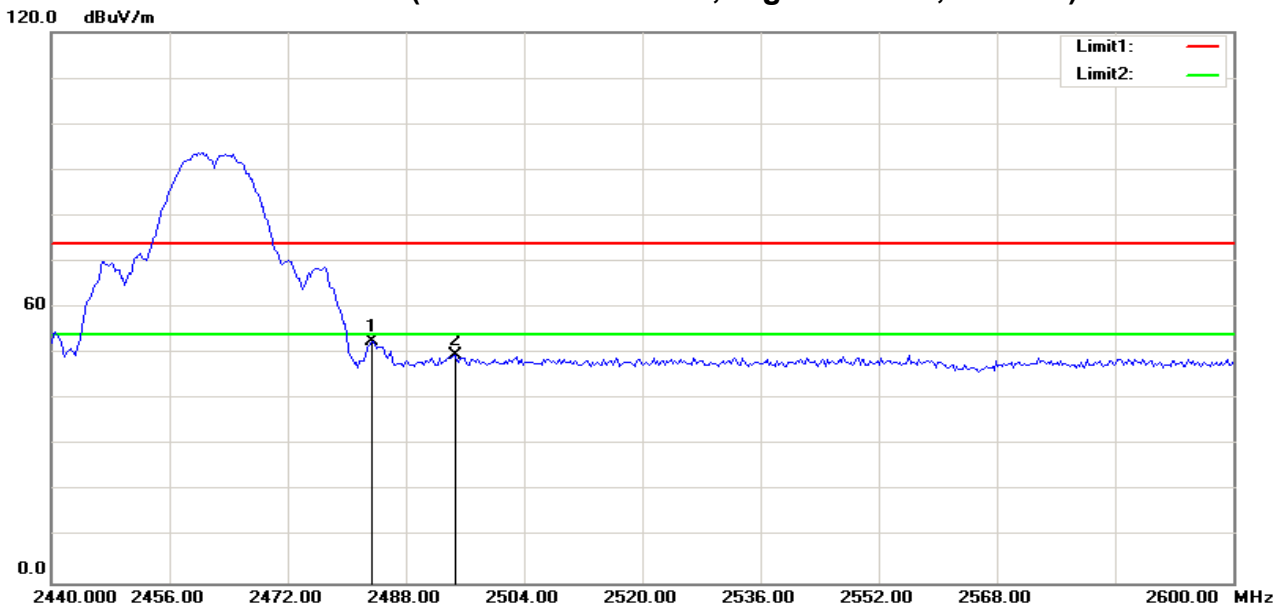
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2386.875	59.40	-7.58	51.82	74.00	-22.18	114	0	peak
2	2390.000	58.13	-7.57	50.56	74.00	-23.44	115	0	peak

RESTRICTED BANDEDGE (IEEE 802.11b mode, High Channel, Horizontal)



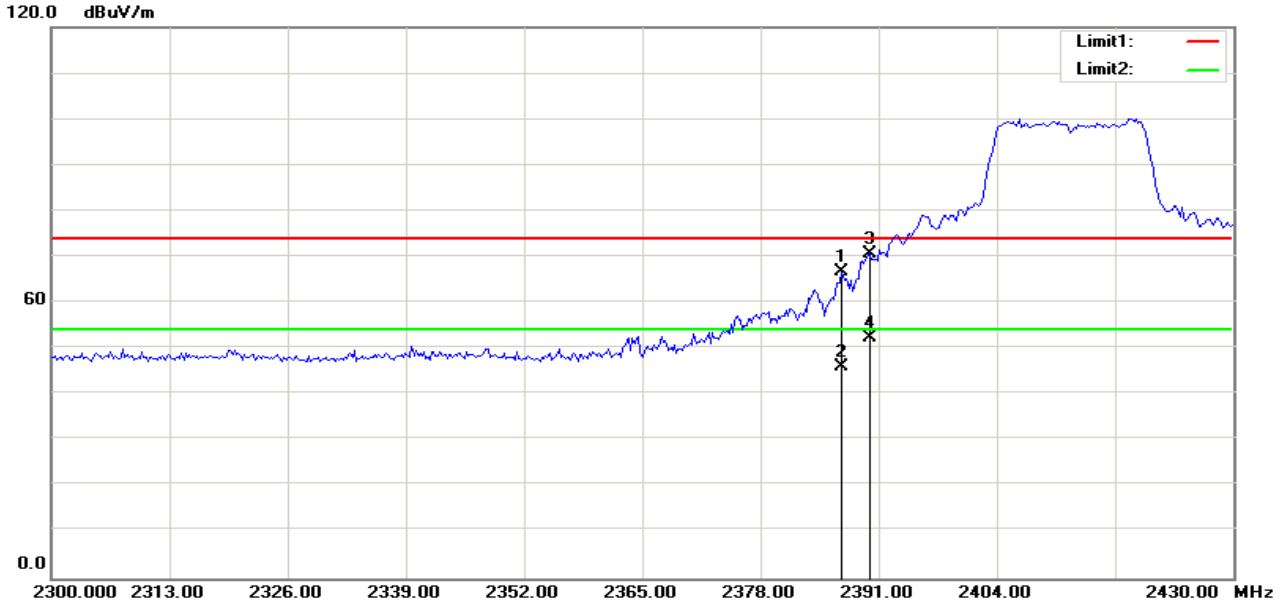
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	66.75	-7.26	59.49	74.00	-14.51	100	355	peak
2	2483.500	59.72	-7.26	52.46	54.00	-1.54	100	354	AVG

RESTRICTED BANDEDGE (IEEE 802.11b mode, High Channel, Vertical)



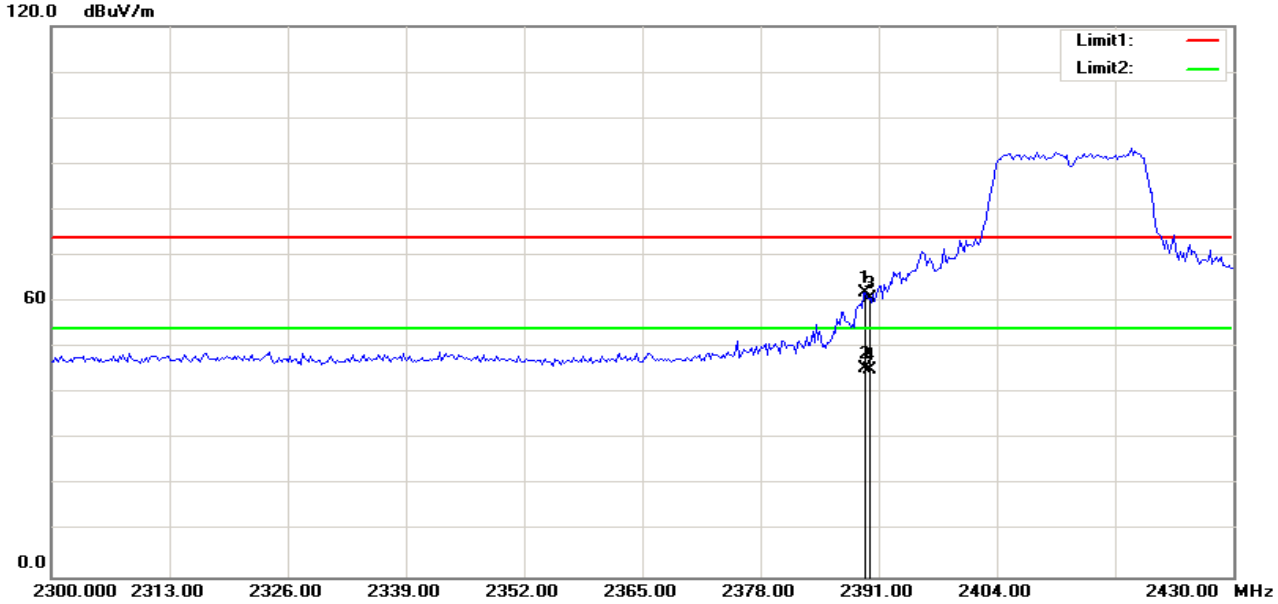
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	59.93	-7.26	52.67	74.00	-21.33	100	228	peak
2	2494.615	56.87	-7.23	49.64	74.00	-24.36	100	228	peak

RESTRICTED BANDEDGE (IEEE 802.11g mode, Low Channel, Horizontal)



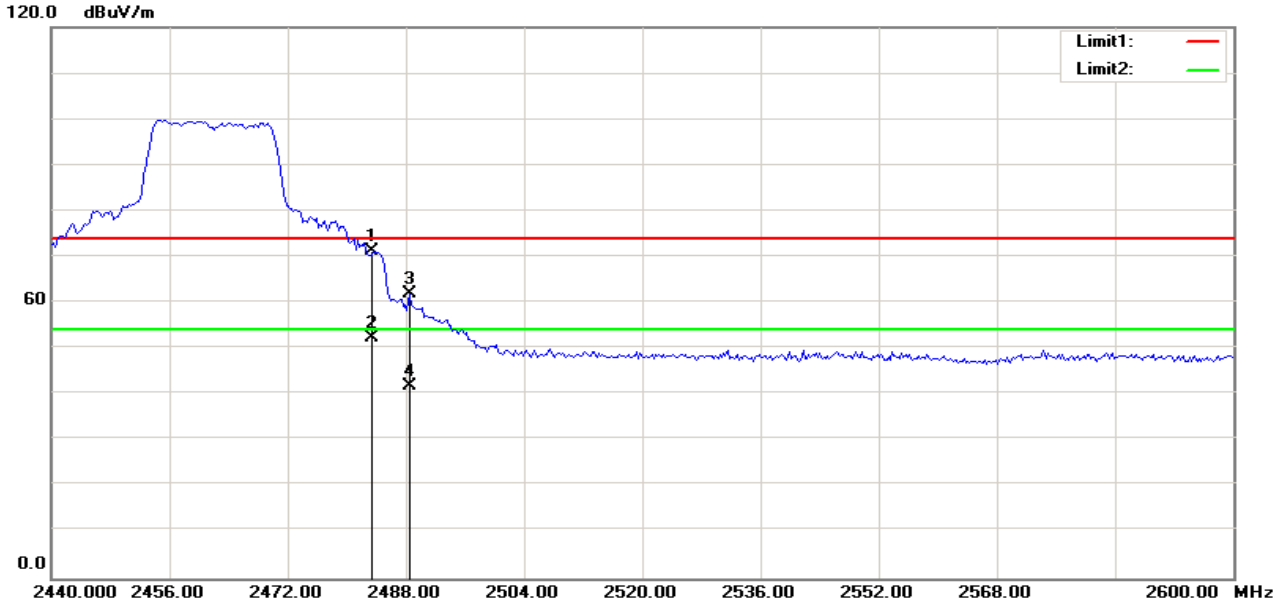
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2386.875	74.41	-7.58	66.83	74.00	-7.17	100	357	peak
2	2386.875	53.74	-7.58	46.16	54.00	-7.84	100	358	AVG
3	2390.000	78.32	-7.57	70.75	74.00	-3.25	100	21	peak
4	2390.000	60.07	-7.57	52.50	54.00	-1.50	100	21	AVG

RESTRICTED BANDEDGE (IEEE 802.11g mode, Low Channel, Vertical)



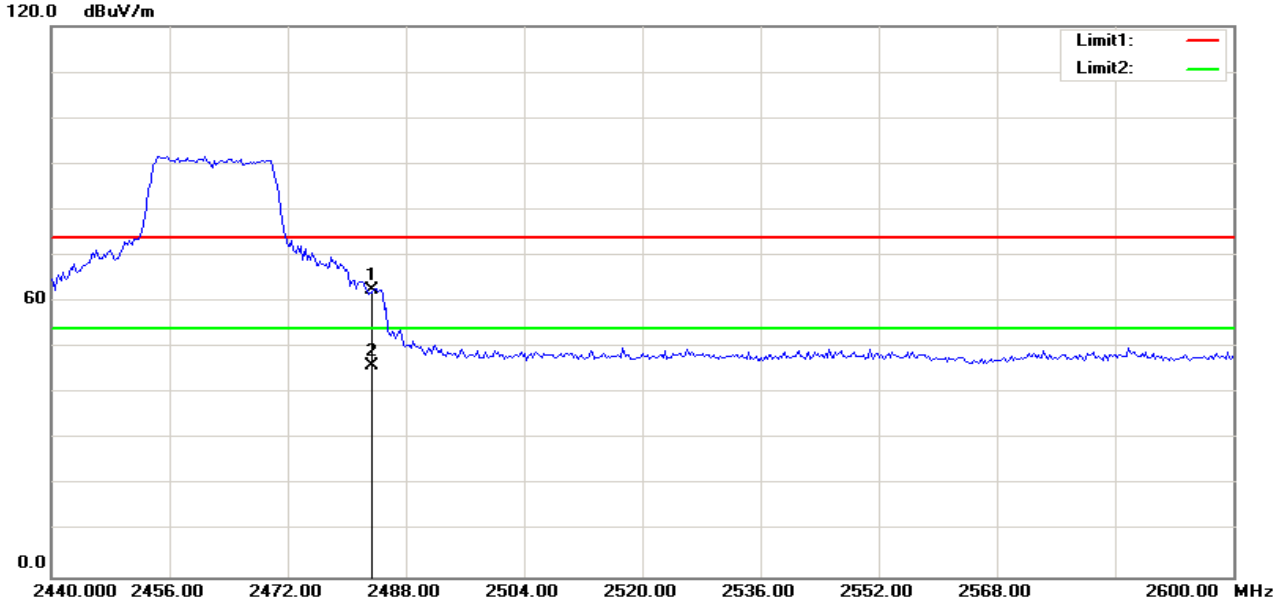
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2389.583	69.58	-7.57	62.01	74.00	-11.99	111	0	peak
2	2389.583	52.95	-7.57	45.38	54.00	-8.62	110	0	AVG
3	2390.000	68.30	-7.57	60.73	74.00	-13.27	146	0	peak
4	2390.000	52.59	-7.57	45.02	54.00	-8.98	146	1	AVG

RESTRICTED BANDEDGE (IEEE 802.11g mode, High Channel, Horizontal)



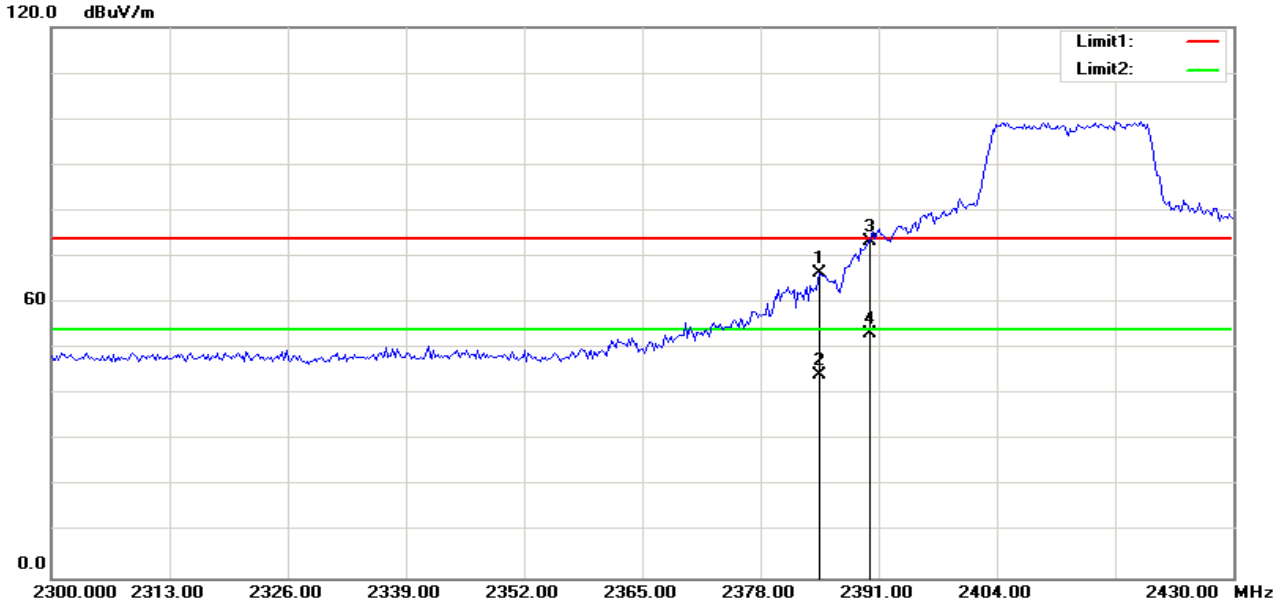
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2483.500	78.51	-7.26	71.25	74.00	-2.75	100	0	peak
2	2483.500	59.61	-7.26	52.35	54.00	-1.65	100	0	AVG
3	2488.461	69.18	-7.25	61.93	74.00	-12.07	100	0	peak
4	2488.461	49.11	-7.25	41.86	54.00	-12.14	100	0	AVG

RESTRICTED BANDEDGE (IEEE 802.11g mode, High Channel, Vertical)



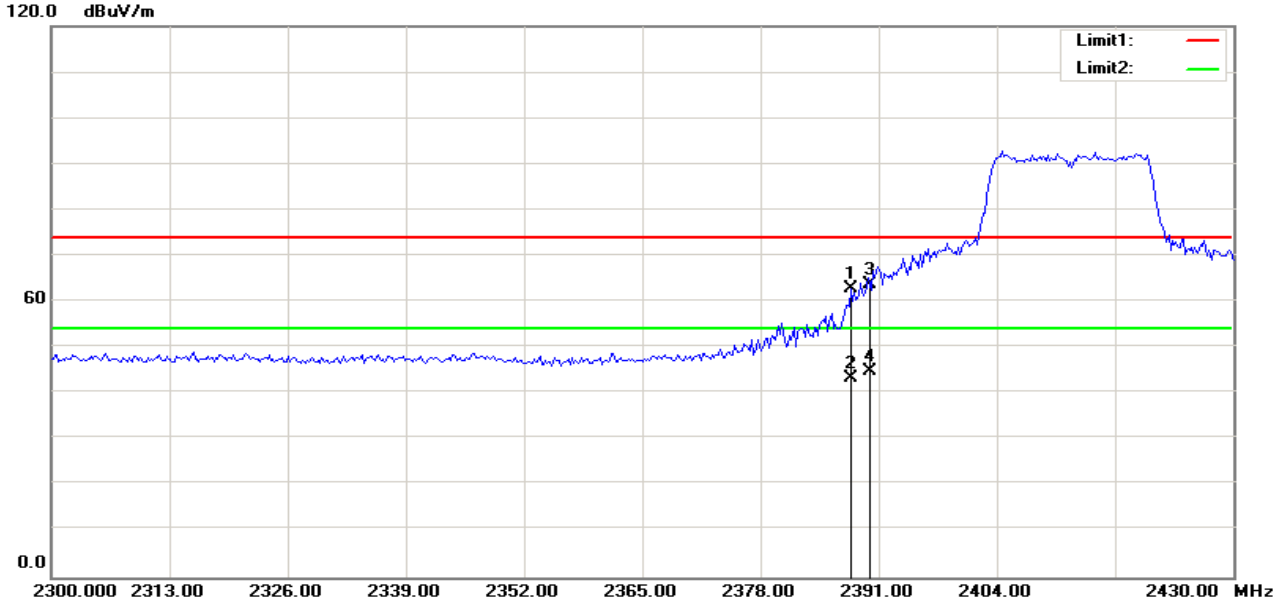
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2483.500	69.77	-7.26	62.51	74.00	-11.49	100	220	peak
2	2483.500	53.32	-7.26	46.06	54.00	-7.94	100	219	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT20 mode, Low Channel, Horizontal)



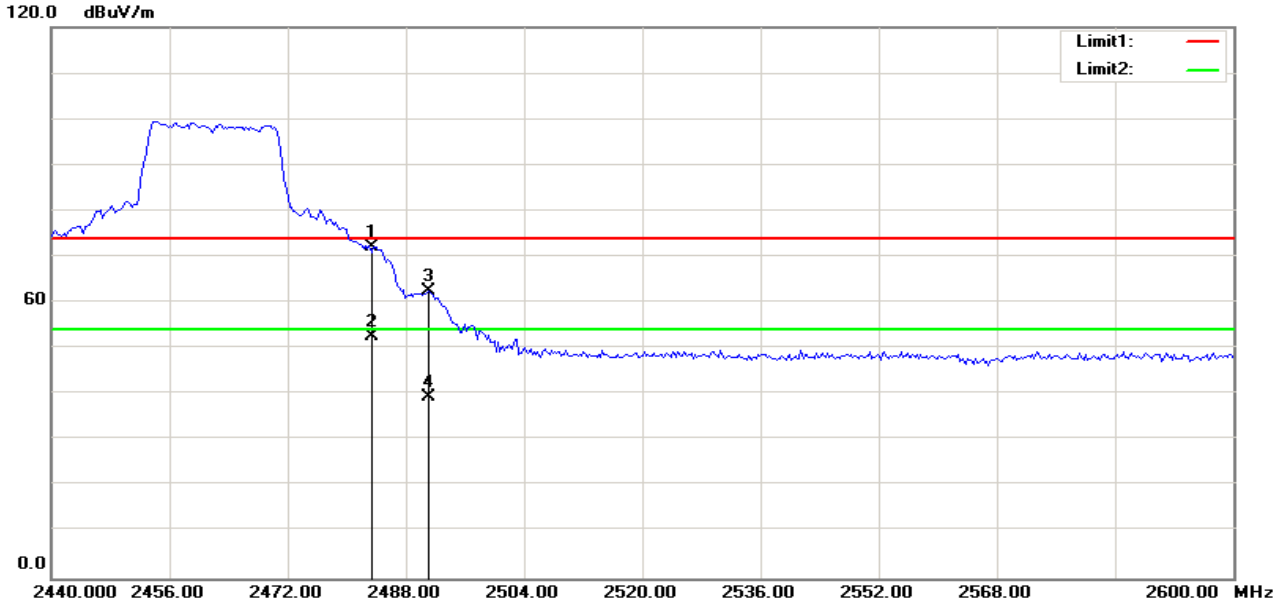
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2384.583	73.96	-7.59	66.37	74.00	-7.63	100	0	peak
2	2384.583	51.90	-7.59	44.31	54.00	-9.69	100	0	AVG
3	2390.000	80.86	-7.57	73.29	74.00	-0.71	100	22	peak
4	2390.000	60.87	-7.57	53.30	54.00	-0.70	100	23	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT20 mode, Low Channel, Vertical)



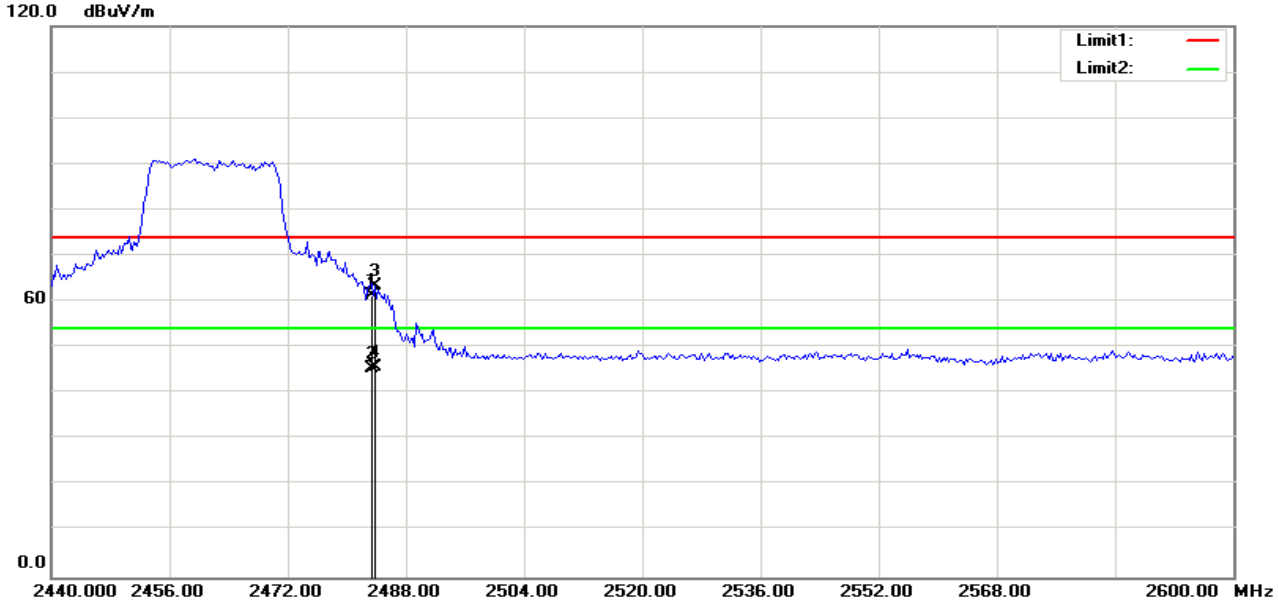
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2387.917	70.42	-7.58	62.84	74.00	-11.16	116	360	peak
2	2387.917	51.03	-7.58	43.45	54.00	-10.55	115	360	AVG
3	2390.000	71.37	-7.57	63.80	74.00	-10.20	200	152	peak
4	2390.000	52.47	-7.57	44.90	54.00	-9.10	200	153	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT20 mode, High Channel, Horizontal)



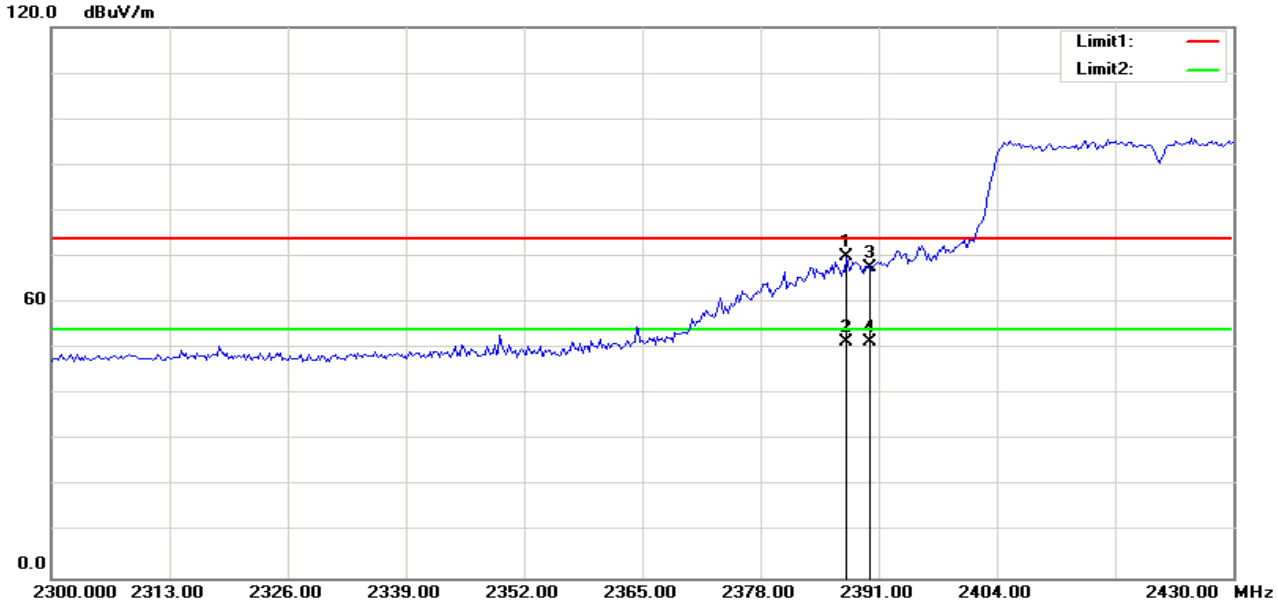
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	79.35	-7.26	72.09	74.00	-1.91	100	353	peak
2	2483.500	60.03	-7.26	52.77	54.00	-1.23	100	355	AVG
3	2491.026	69.77	-7.24	62.53	74.00	-11.47	100	24	peak
4	2491.026	46.84	-7.24	39.60	54.00	-14.40	100	24	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT20 mode, High Channel, Vertical)



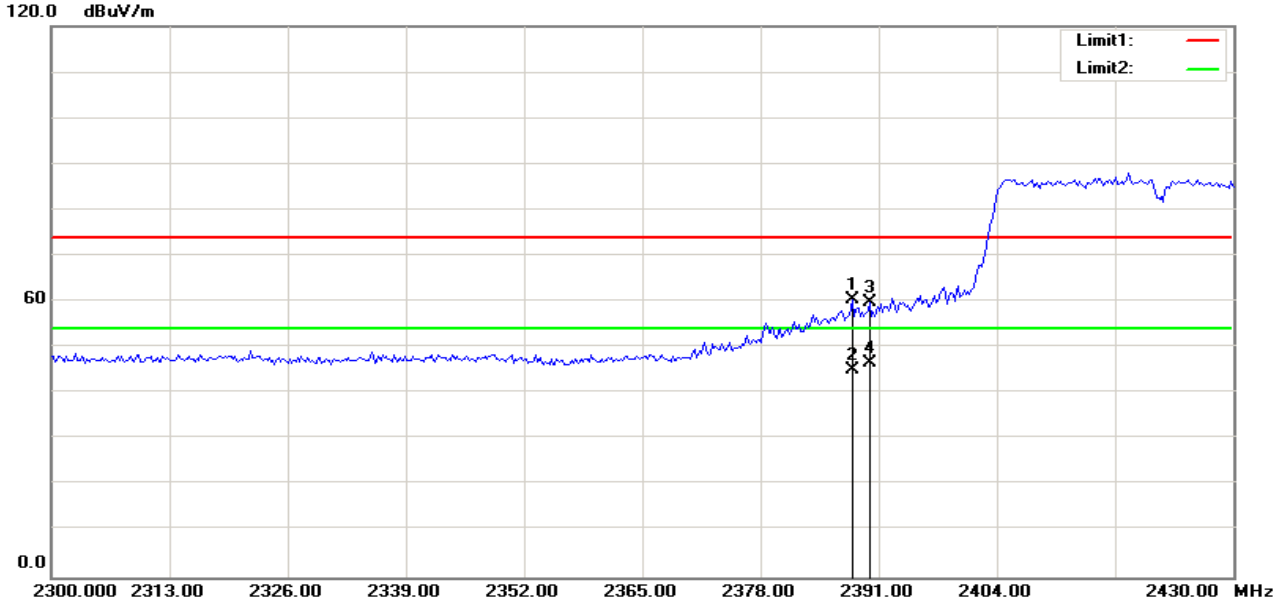
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	68.55	-7.26	61.29	74.00	-12.71	100	220	peak
2	2483.500	52.74	-7.26	45.48	54.00	-8.52	100	220	AVG
3	2483.846	70.66	-7.26	63.40	74.00	-10.60	100	217	peak
4	2483.846	53.15	-7.26	45.89	54.00	-8.11	100	217	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT40 mode, Low Channel, Horizontal)



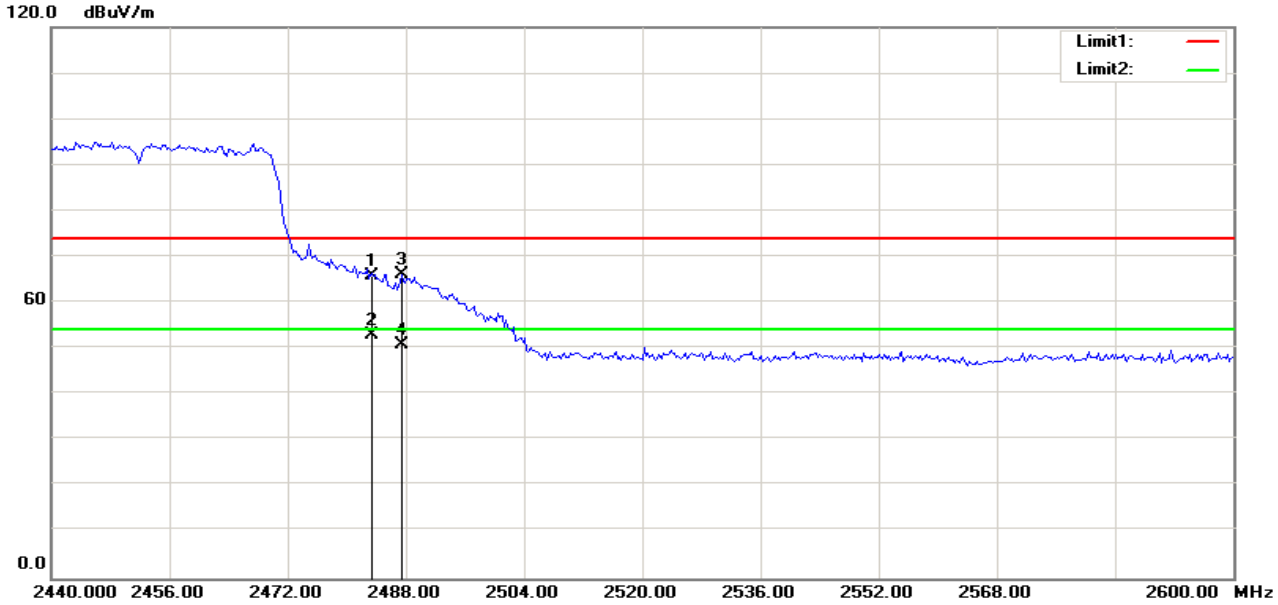
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2387.500	77.55	-7.58	69.97	74.00	-4.03	100	32	peak
2	2387.500	58.97	-7.58	51.39	54.00	-2.61	100	32	AVG
3	2390.000	75.23	-7.57	67.66	74.00	-6.34	100	39	peak
4	2390.000	59.08	-7.57	51.51	54.00	-2.49	100	39	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT40 mode, Low Channel, Vertical)



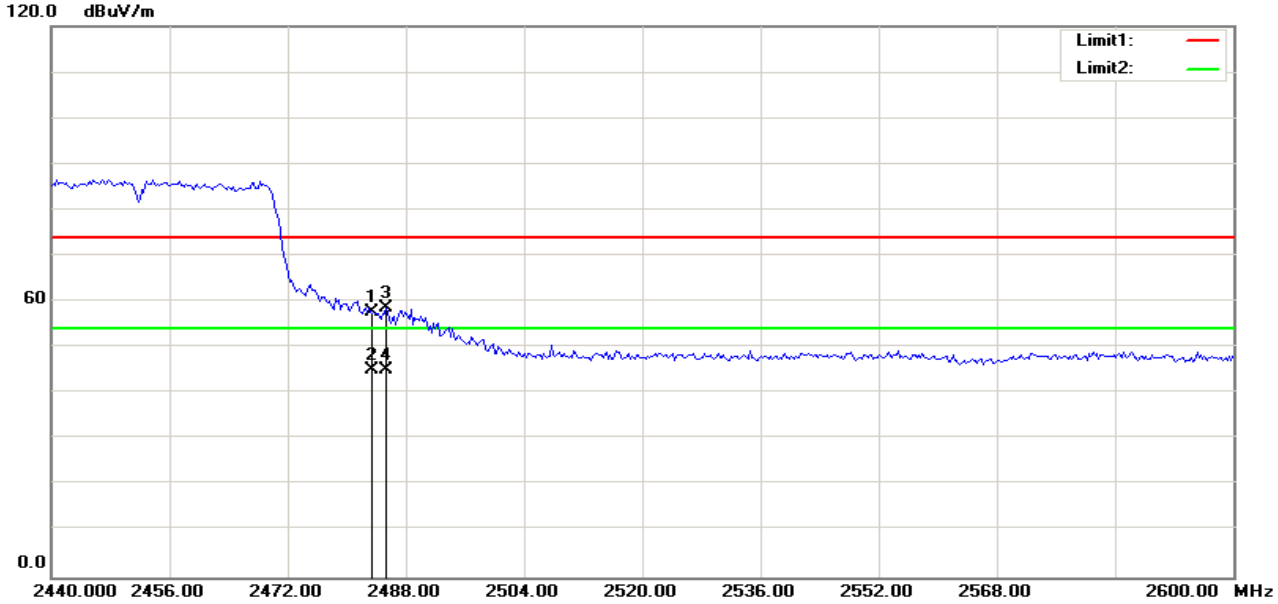
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2388.125	67.96	-7.58	60.38	74.00	-13.62	114	360	peak
2	2388.125	52.71	-7.58	45.13	54.00	-8.87	114	360	AVG
3	2390.000	67.48	-7.57	59.91	74.00	-14.09	115	360	peak
4	2390.000	54.16	-7.57	46.59	54.00	-7.41	113	360	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT40 mode, High Channel, Horizontal)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2483.500	73.21	-7.26	65.95	74.00	-8.05	100	5	peak
2	2483.500	60.31	-7.26	53.05	54.00	-0.95	100	4	AVG
3	2487.436	73.41	-7.25	66.16	74.00	-7.84	100	33	peak
4	2487.436	58.23	-7.25	50.98	54.00	-3.02	100	33	AVG

RESTRICTED BANDEDGE (IEEE 802.11n HT40 mode, High Channel, Vertical)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	2483.500	64.95	-7.26	57.69	74.00	-16.31	100	211	peak
2	2483.500	52.42	-7.26	45.16	54.00	-8.84	100	211	AVG
3	2485.385	65.98	-7.26	58.72	74.00	-15.28	109	360	peak
4	2485.385	52.29	-7.26	45.03	54.00	-8.97	100	360	AVG

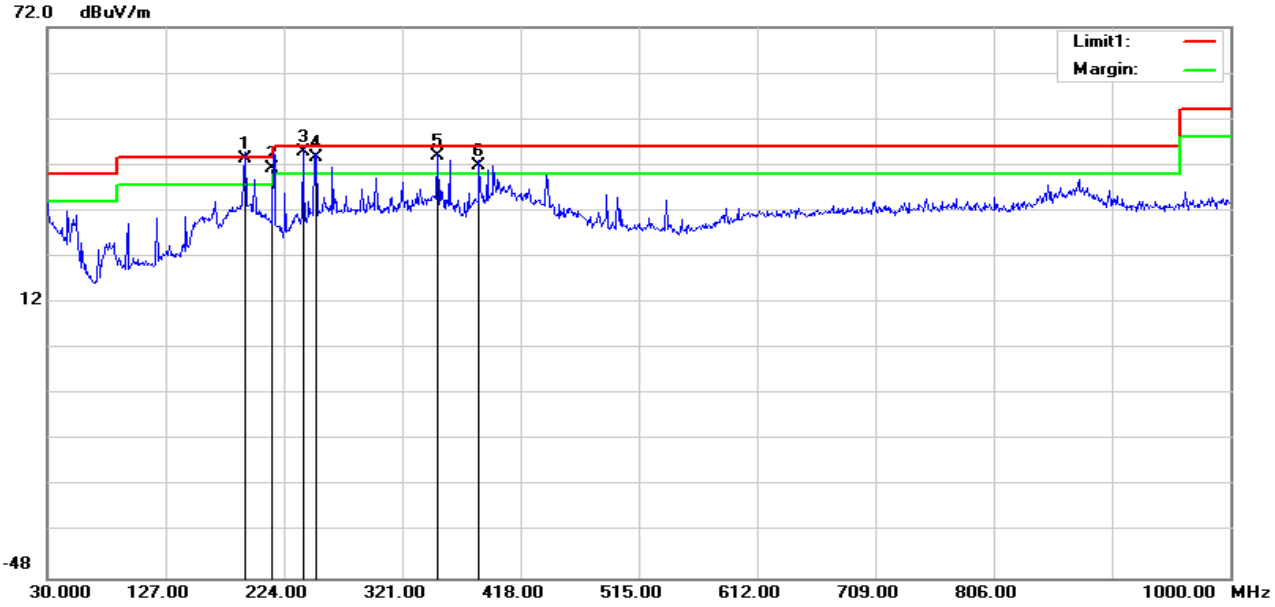
Test Result of Radiated Emission

Below 30MHz

The interference of the frequency value is lower than the limit below 20 db, measured as the background noise values and will not be recorded.

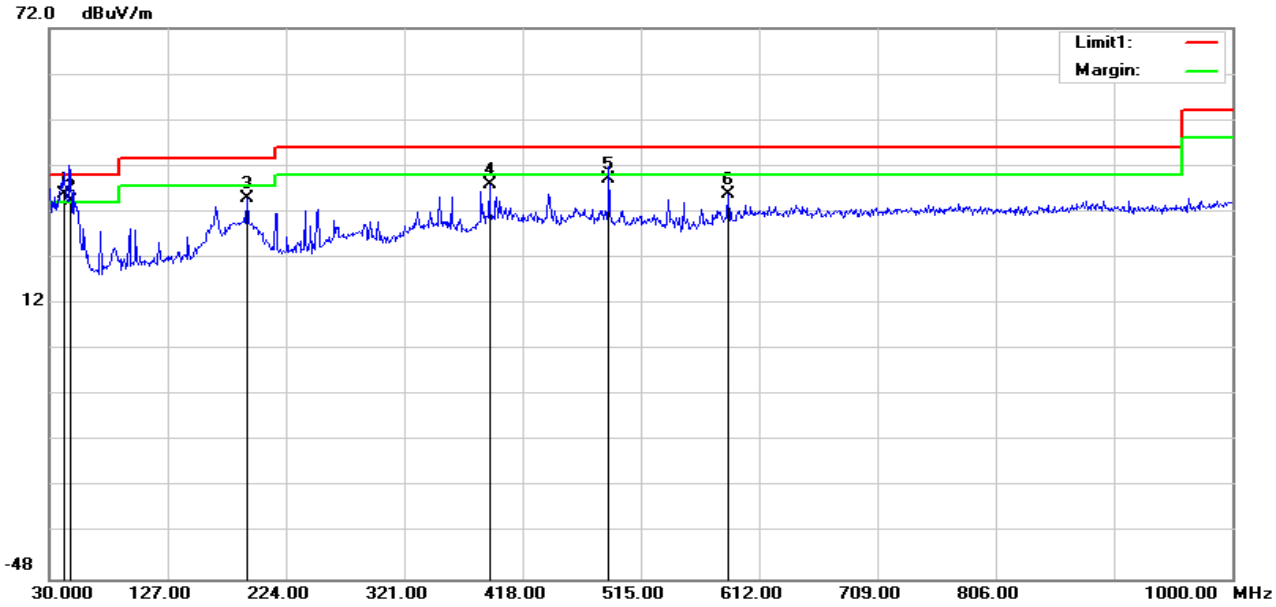
30MHz-1GHz

Operation Mode:	Normal Link	**Test Date:**	2018-3-11
Temperature:	25°C	**Tested by:**	Lily.Wang
Humidity:	48% RH	**Polarity:**	Hor.



Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
192.0050	H	28.79	14.42	43.21	43.50	-0.29	QP
214.7700	H	6.53	14.70	41.23	43.50	-2.27	QP
240.0190	H	29.82	15.14	44.96	46.00	-1.04	QP
250.0220	H	28.23	15.32	43.55	46.00	-2.45	QP
350.0040	H	25.22	18.82	44.04	46.00	-1.96	QP
384.0240	H	21.31	20.51	41.82	46.00	-4.18	QP

Operation Mode:	Normal Link	Test Date:	2018-3-11
Temperature:	25°C	Tested by:	Lily.Wang
Humidity:	48% RH	Polarity:	Ver.



Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
47.9870	V	18.73	16.99	35.72	40.00	-4.28	QP
48.0000	V	17.42	16.98	34.40	40.00	-5.60	QP
191.9900	V	20.41	14.42	34.83	43.50	-8.67	peak
390.8400	V	17.10	20.85	37.95	46.00	-8.05	peak
488.5730	V	17.44	21.60	39.04	46.00	-6.96	QP
586.7800	V	11.78	23.95	35.73	46.00	-10.27	peak

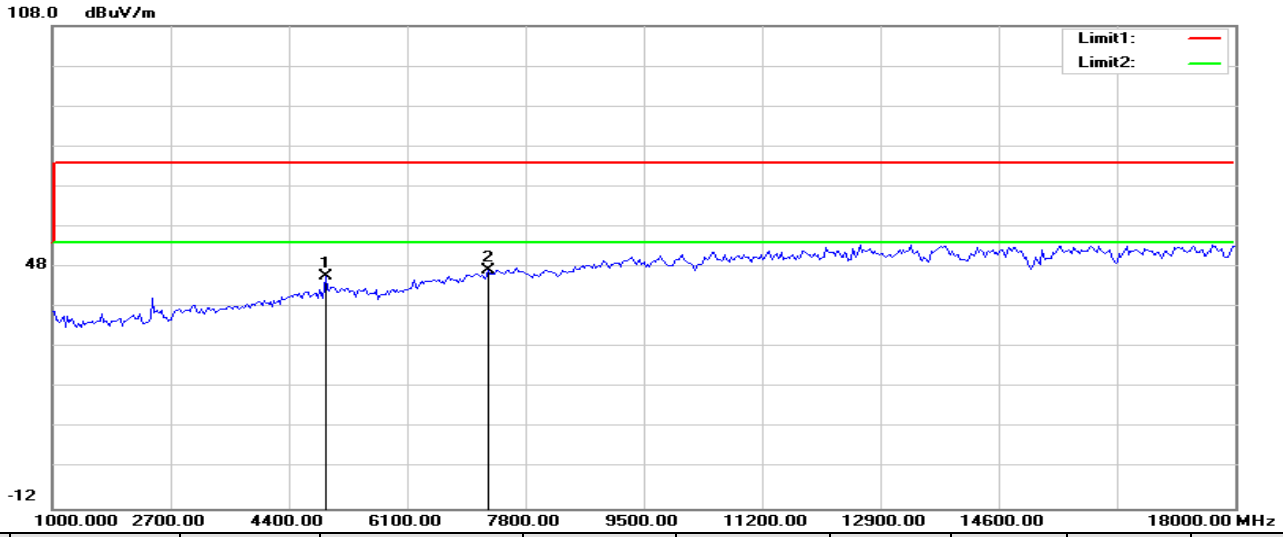
Remark:

1. *Measuring frequencies from 30 MHz to the 1GHz (No emission found between lowest internal used/generated frequency to 30 MHz).*
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).*

Above 1 GHz

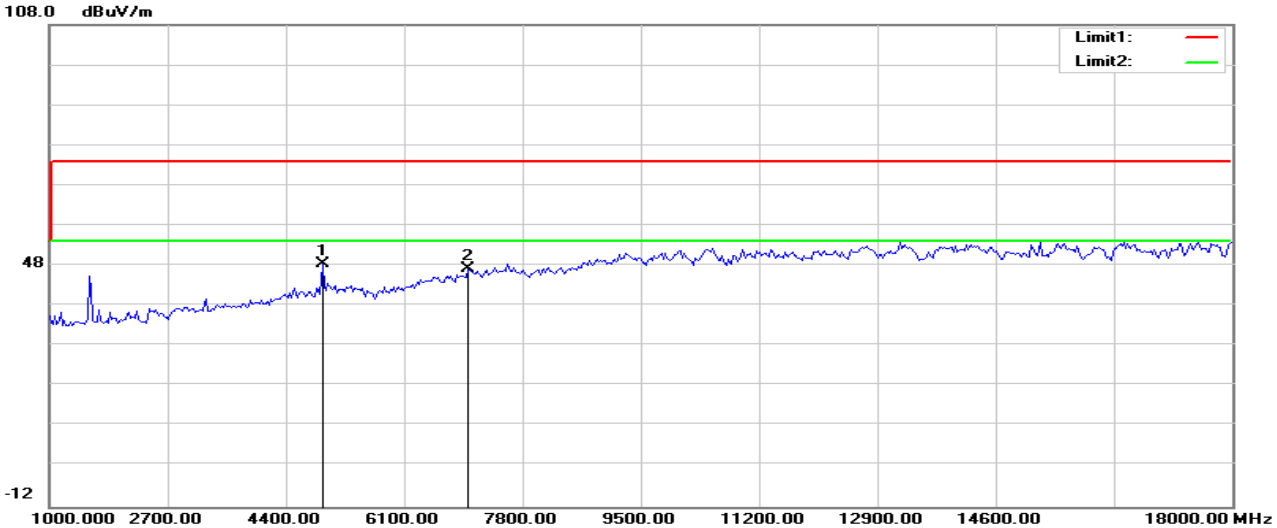
Operation Mode: TX / IEEE 802.11b mode / CH Low
Test Date: 2018-3-11
Temperature: 24°C
Tested by: Lily.Wang
Humidity: 48 % RH
Polarity: Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	45.78	0.08	45.86	74.00	-28.14	100	159	peak
2	7266.026	41.87	5.26	47.13	74.00	-26.87	100	222	peak
N/A									

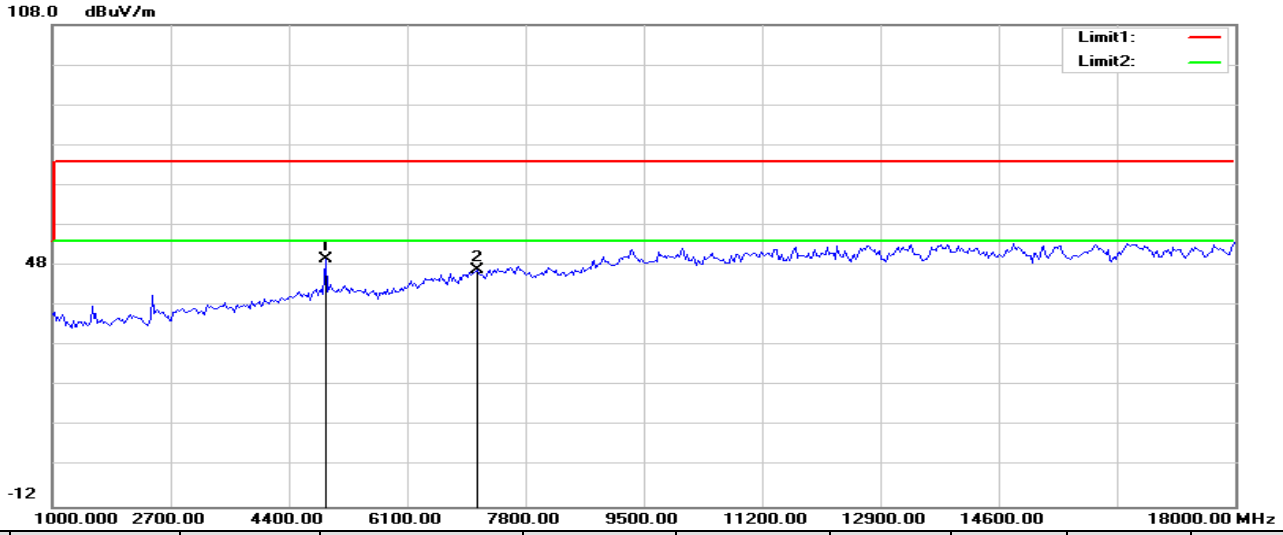
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	48.47	0.08	48.55	74.00	-25.45	100	301	peak
2	7020.833	42.88	4.38	47.26	74.00	-26.74	200	54	peak
N/A									

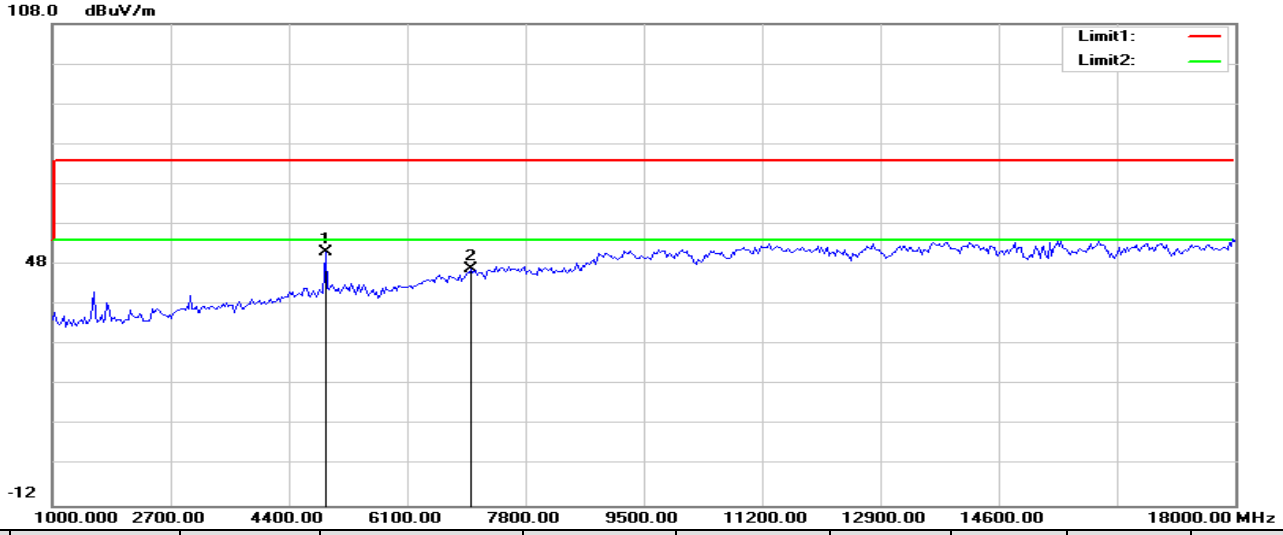
Operation Mode: TX / IEEE 802.11b mode / CH Mid
Test Date: 2018-3-11
Temperature: 24°C
Tested by: Lily.Wang
Humidity: 48 % RH
Polarity: Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	49.52	0.08	49.60	74.00	-24.40	100	161	peak
2	7102.564	42.29	4.68	46.97	74.00	-27.03	103	0	peak
N/A									

Vertical



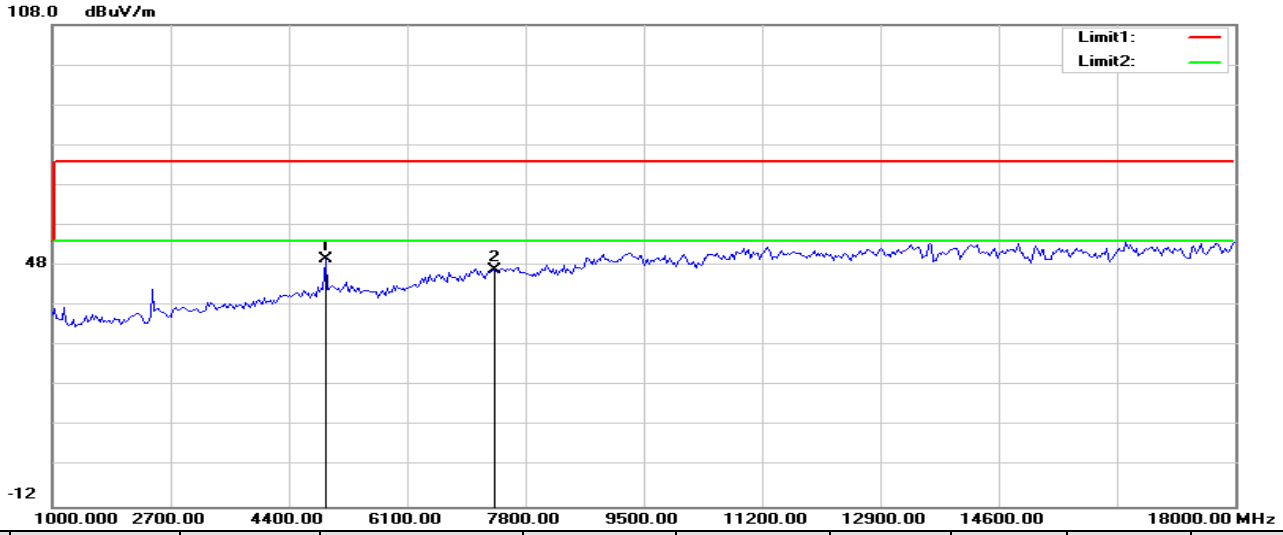
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	51.21	0.08	51.29	74.00	-22.71	100	309	peak
2	7020.833	42.53	4.38	46.91	74.00	-27.09	100	305	peak
N/A									

Operation Mode: TX / IEEE 802.11b mode / CH High **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

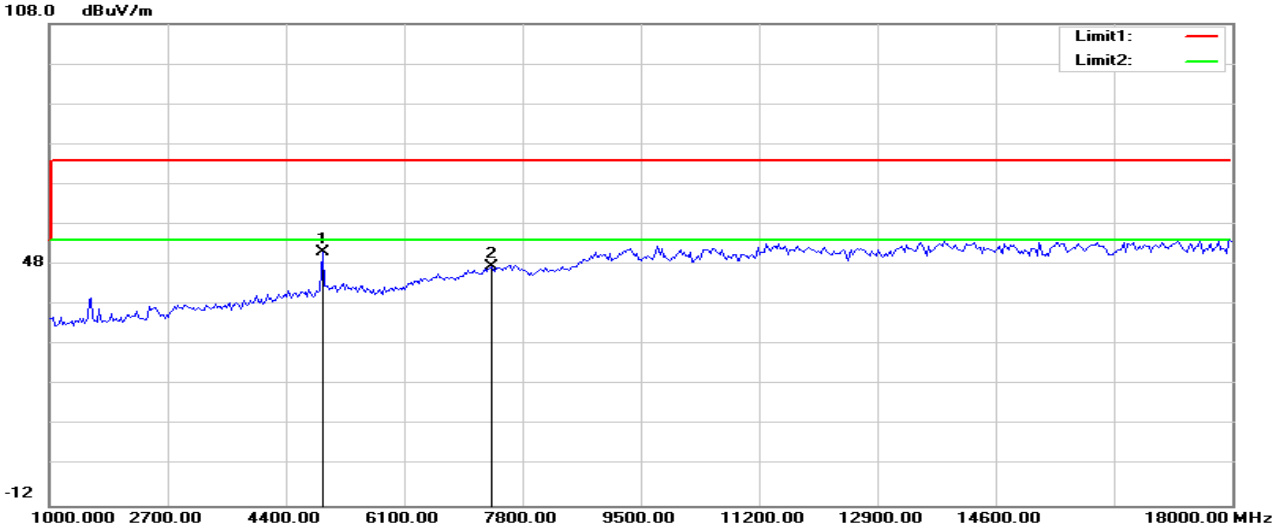
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	4923.077	49.56	0.08	49.64	74.00	-24.36	100	159	peak
2	7347.756	41.36	5.55	46.91	74.00	-27.09	100	0	peak
N/A									

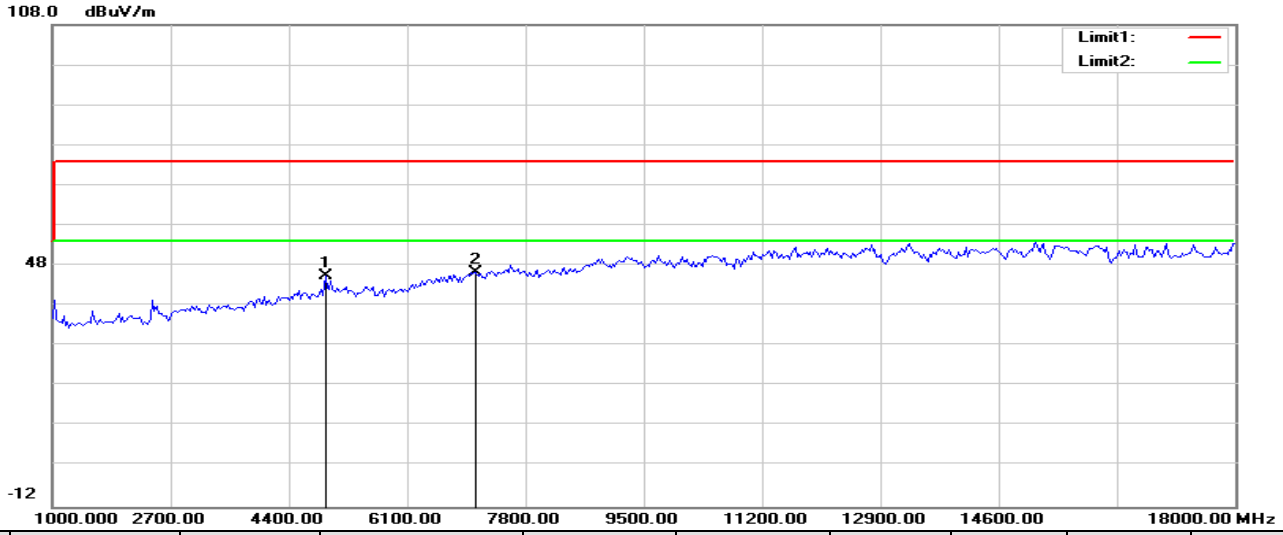
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	4923.077	51.15	0.08	51.23	74.00	-22.77	100	301	peak
2	7347.756	42.11	5.55	47.66	74.00	-26.34	100	72	peak
N/A									

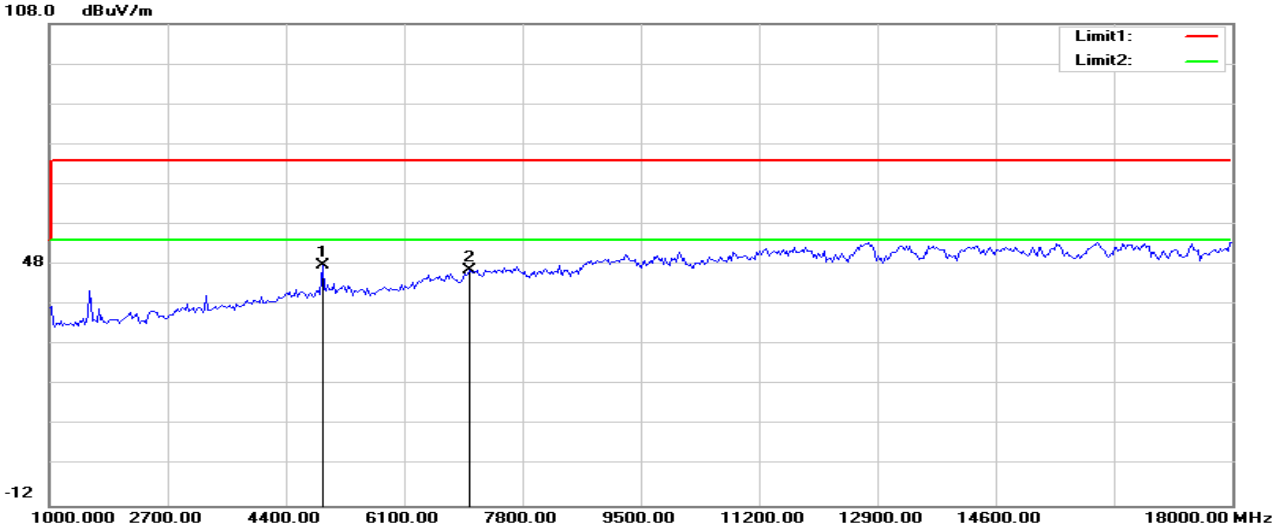
Operation Mode: TX / IEEE 802.11g mode / CH Low
Test Date: 2018-3-11
Temperature: 24°C
Tested by: Lily.Wang
Humidity: 48 % RH
Polarity: Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	45.47	0.08	45.55	74.00	-28.45	100	217	peak
2	7075.320	41.88	4.58	46.46	74.00	-27.54	100	132	peak
N/A									

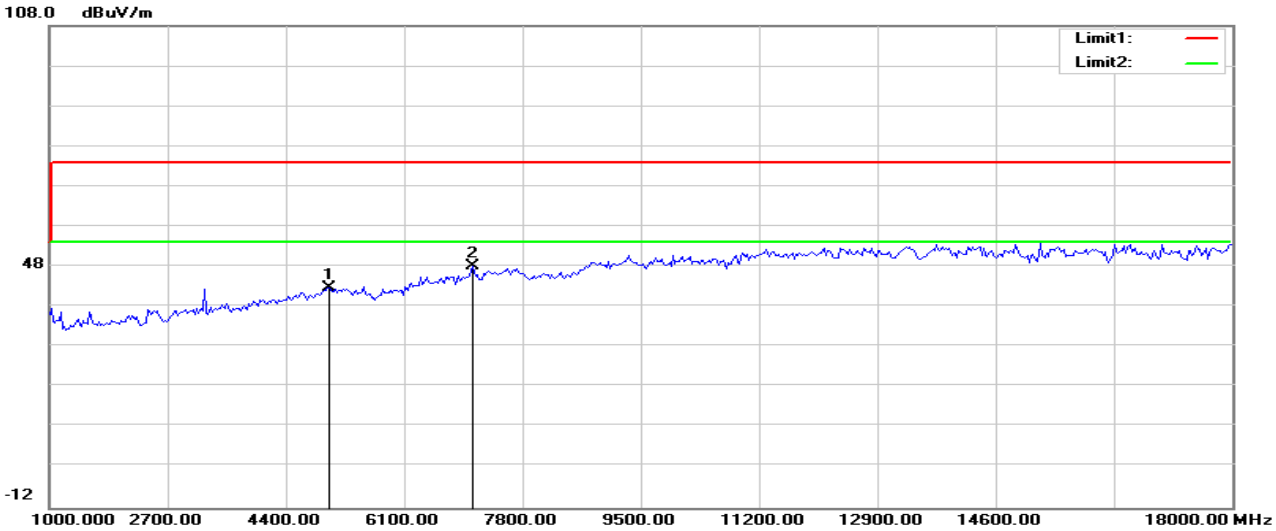
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	47.87	0.08	47.95	74.00	-26.05	100	300	peak
2	7048.077	42.03	4.48	46.51	74.00	-27.49	100	255	peak
N/A									

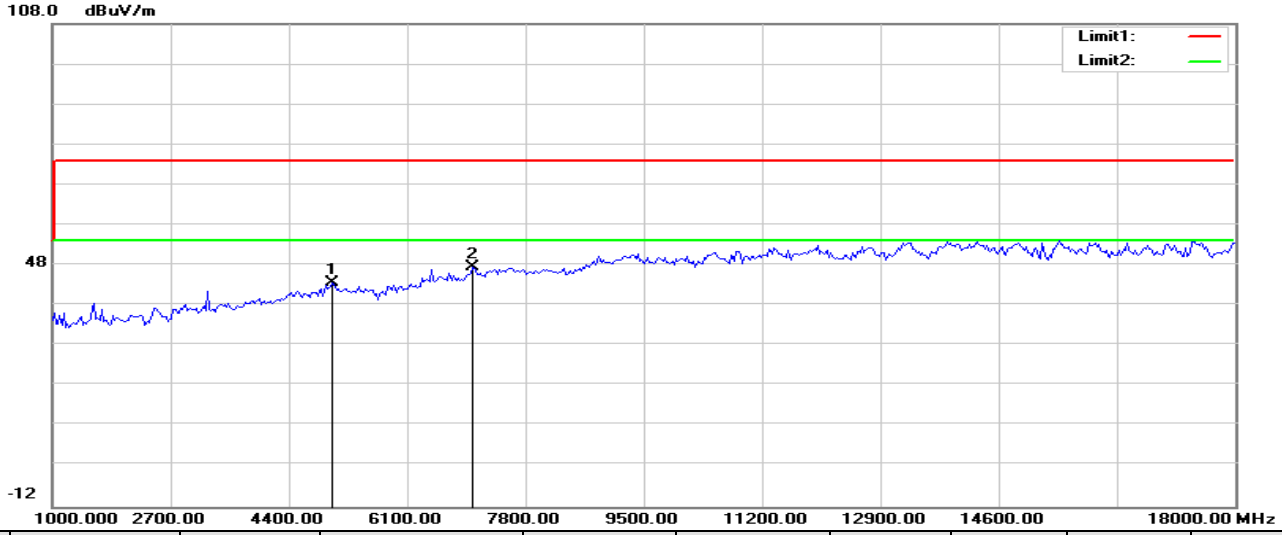
Operation Mode: TX / IEEE 802.11g mode / CH Mid
Test Date: 2018-3-11
Temperature: 24°C
Tested by: Lily.Wang
Humidity: 48 % RH
Polarity: Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5032.051	42.31	0.36	42.67	74.00	-31.33	100	82	peak
2	7075.320	43.67	4.58	48.25	74.00	-25.75	100	10	peak
N/A									

Vertical



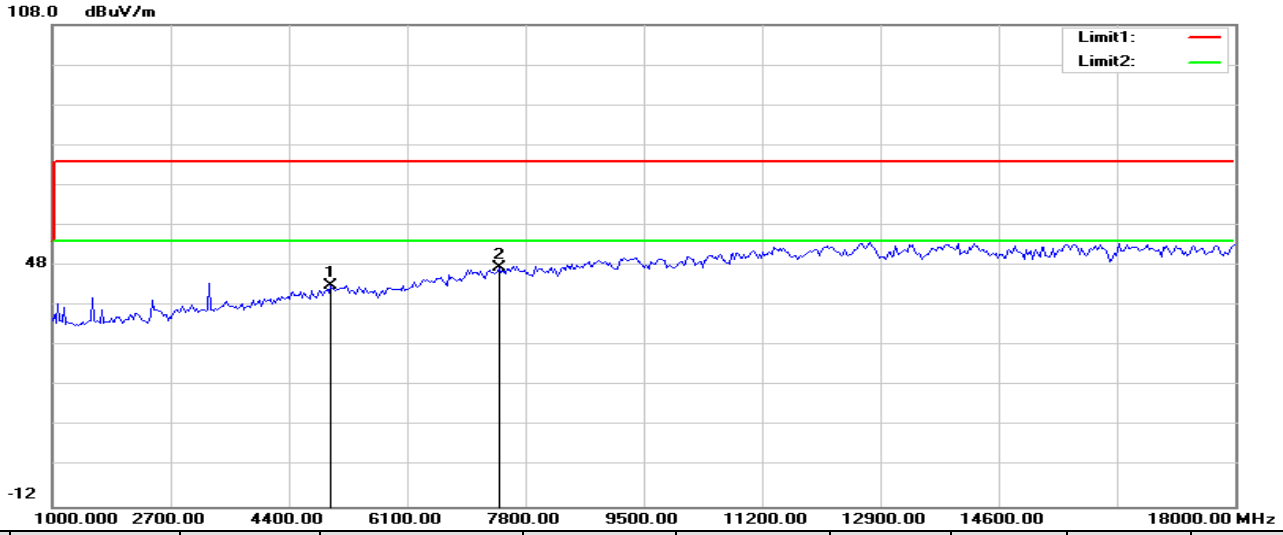
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5032.051	43.25	0.36	43.61	74.00	-30.39	200	296	peak
2	7048.077	43.09	4.48	47.57	74.00	-26.43	100	61	peak
N/A									

Operation Mode: TX / IEEE 802.11g mode / CH High **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

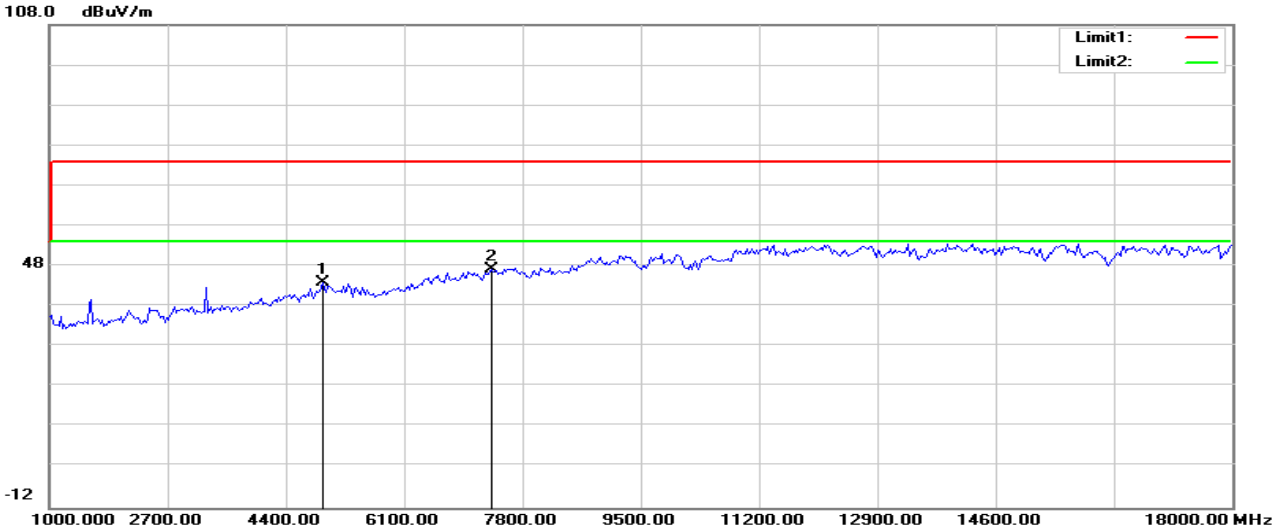
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5004.808	42.77	0.37	43.14	74.00	-30.86	100	271	peak
2	7429.487	41.59	5.84	47.43	74.00	-26.57	100	102	peak
N/A									

Vertical



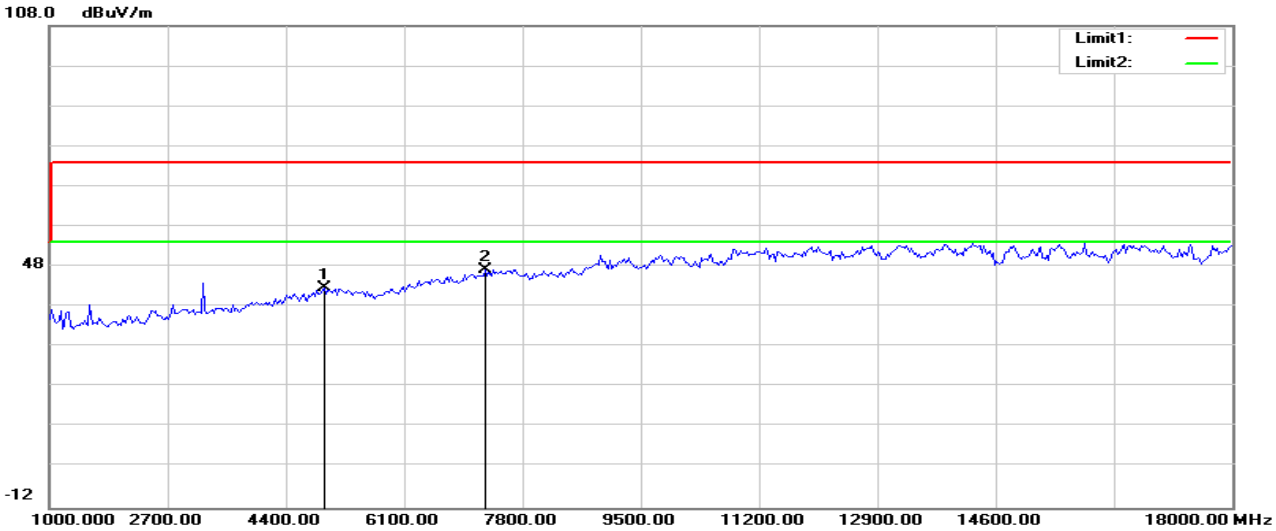
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	4923.077	43.74	0.08	43.82	74.00	-30.18	100	167	peak
2	7347.756	41.72	5.55	47.27	74.00	-26.73	100	34	peak
N/A									

Operation Mode: TX / IEEE 802.11n HT20 mode / CH Low **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

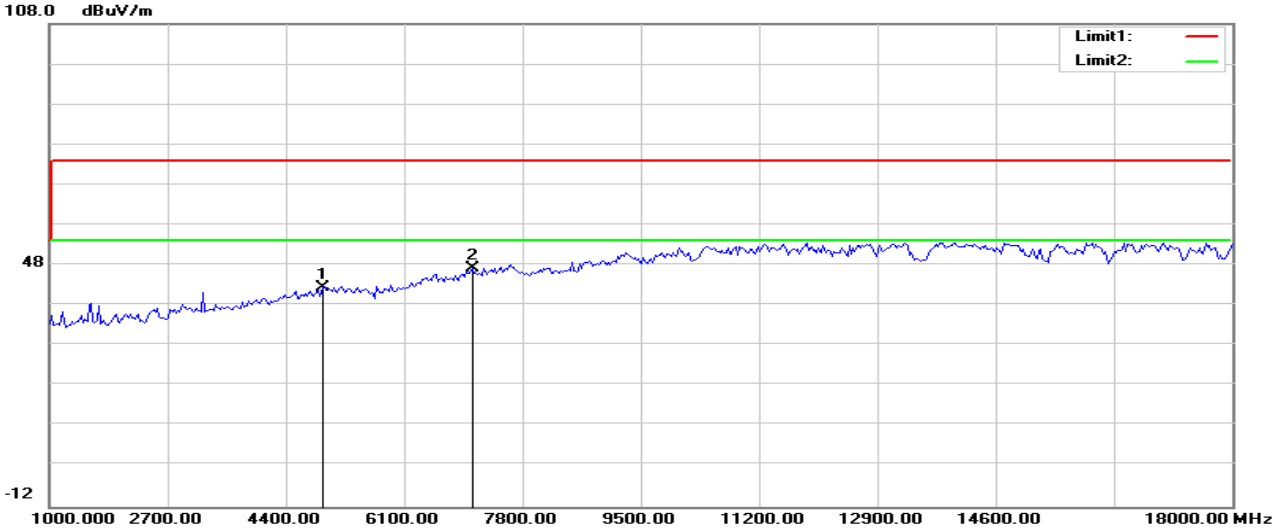
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4950.320	42.70	0.18	42.88	74.00	-31.12	100	344	peak
2	7266.026	41.93	5.26	47.19	74.00	-26.81	100	87	peak
N/A									

Vertical



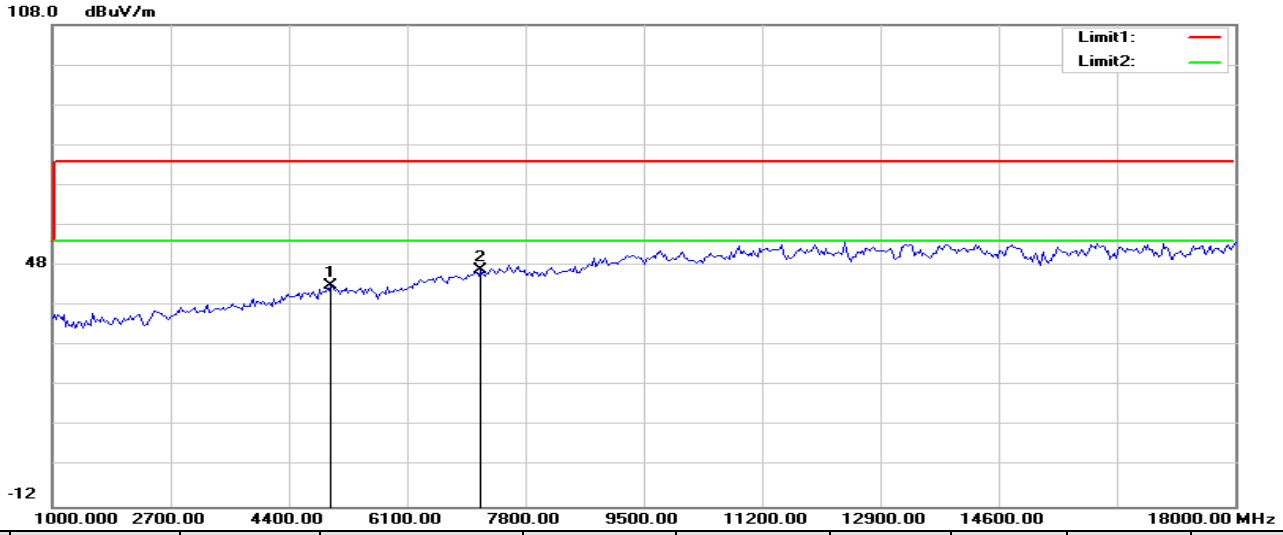
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	42.38	0.08	42.46	74.00	-31.54	100	108	peak
2	7075.320	42.66	4.58	47.24	74.00	-26.76	100	357	peak
N/A									

Operation Mode: TX / IEEE 802.11n HT20 mode / CH Mid **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

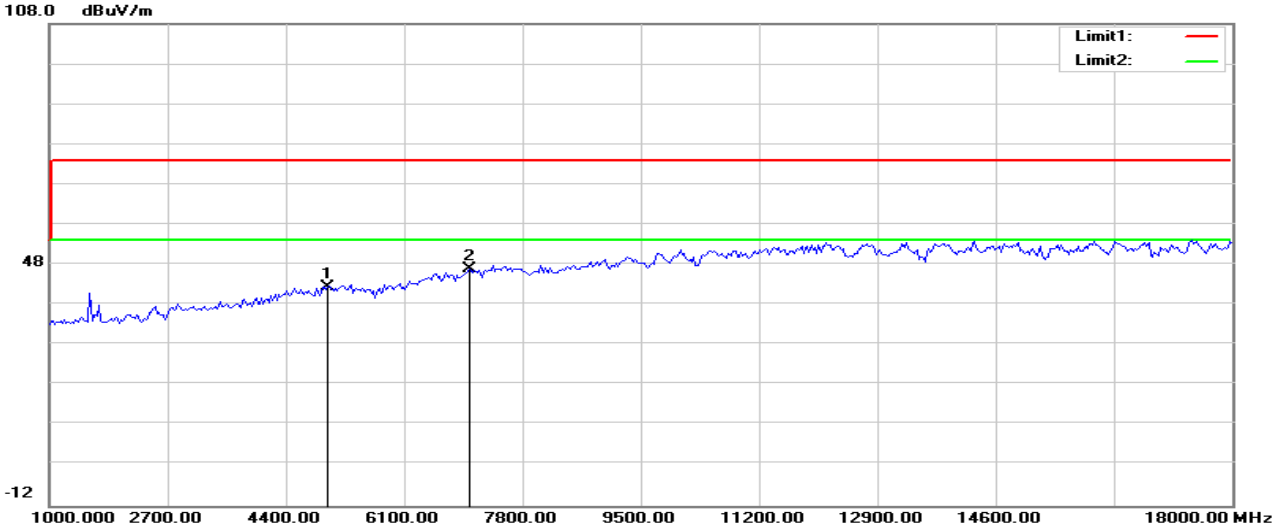
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5004.808	42.56	0.37	42.93	74.00	-31.07	104	0	peak
2	7157.051	42.20	4.87	47.07	74.00	-26.93	100	2	peak
N/A									

Vertical



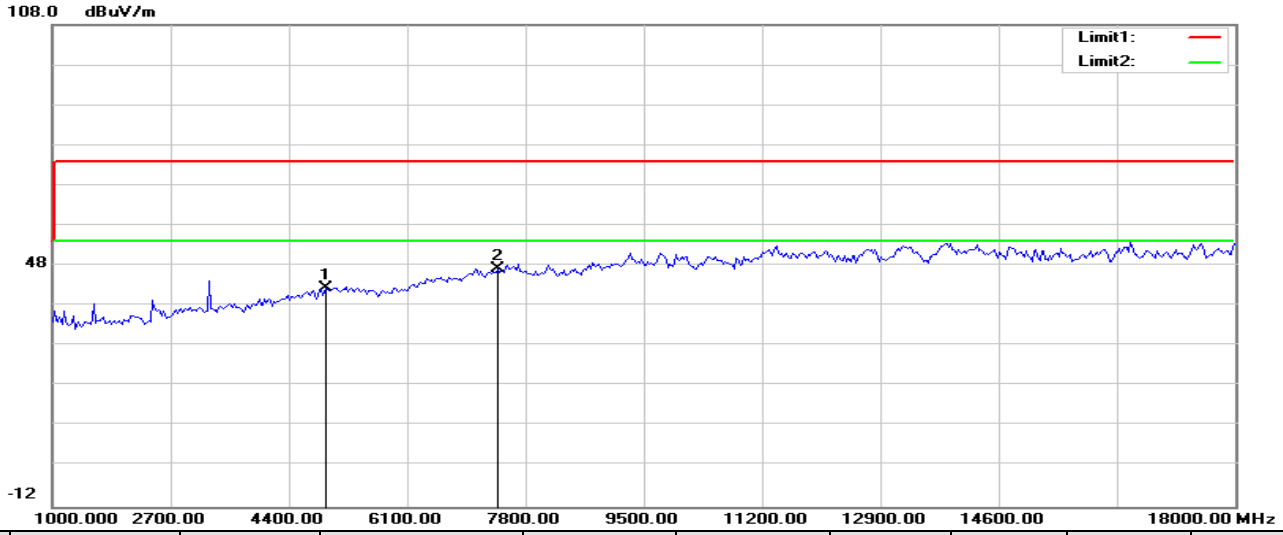
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5004.808	42.08	0.37	42.45	74.00	-31.55	100	89	peak
2	7048.077	42.36	4.48	46.84	74.00	-27.16	100	1	peak
N/A									

Operation Mode: TX / IEEE 802.11n HT20 mode / CH High **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

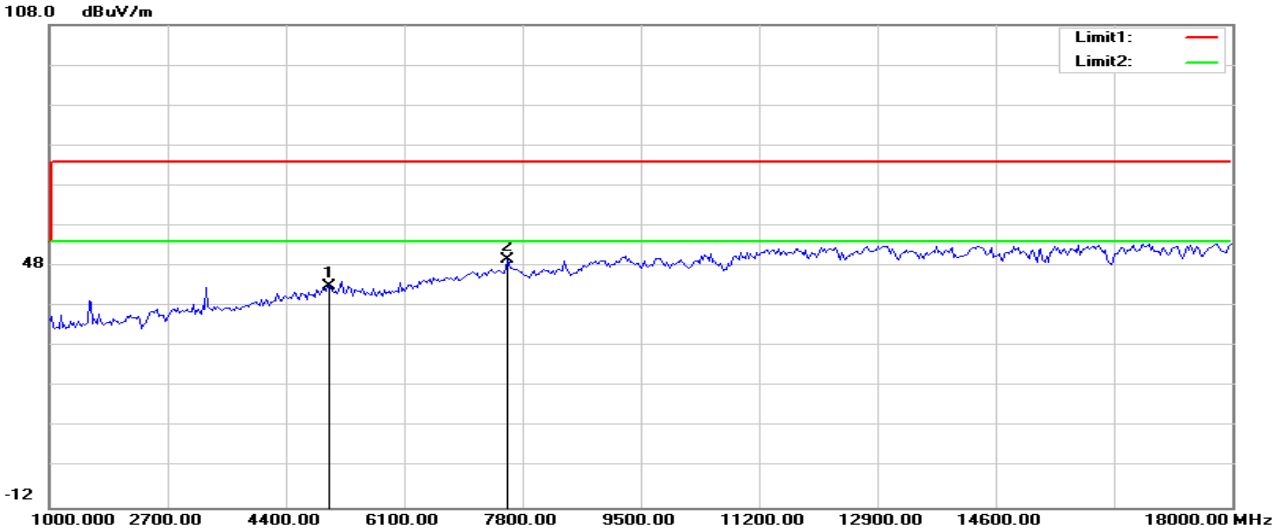
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	4923.077	42.23	0.08	42.31	74.00	-31.69	100	354	peak
2	7402.244	41.46	5.74	47.20	74.00	-26.80	100	0	peak
N/A									

Vertical



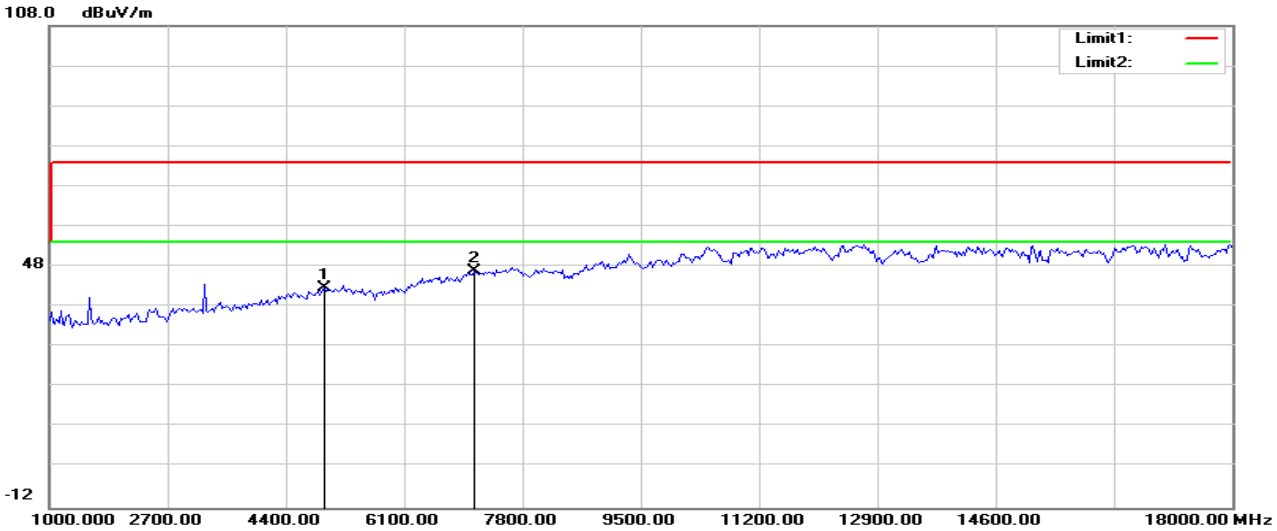
No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5032.051	42.67	0.36	43.03	74.00	-30.97	155	0	peak
2	7592.949	43.61	6.03	49.64	74.00	-24.36	100	360	peak
N/A									

Operation Mode: TX / IEEE 802.11n HT40 mode / CH Low **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

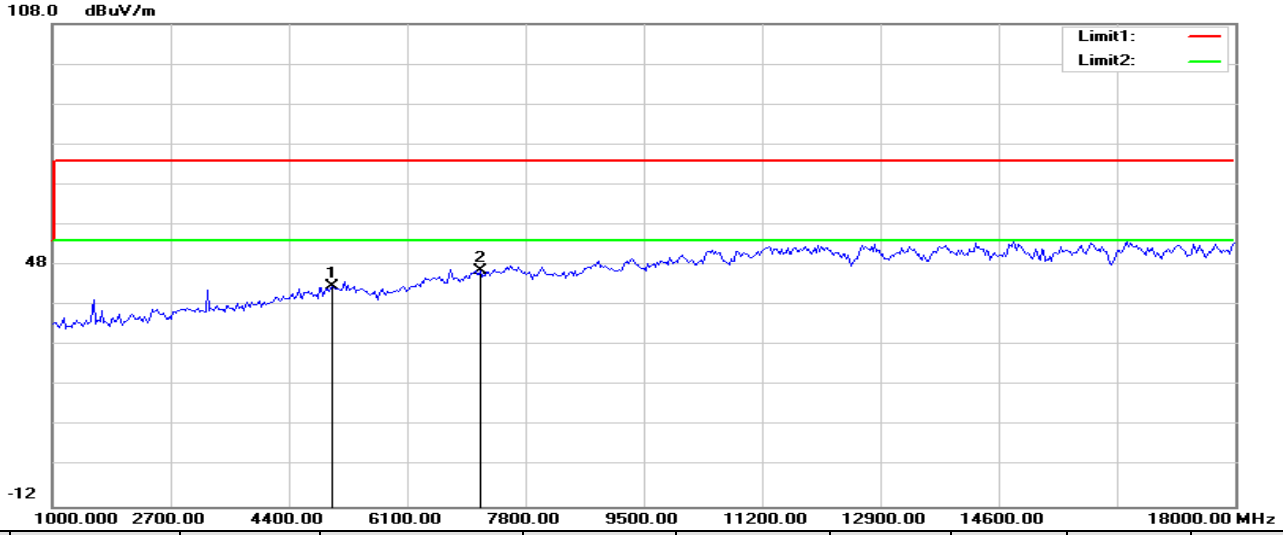
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4950.320	42.55	0.18	42.73	74.00	-31.27	200	17	peak
2	7102.564	42.14	4.68	46.82	74.00	-27.18	200	140	peak
N/A									

Vertical



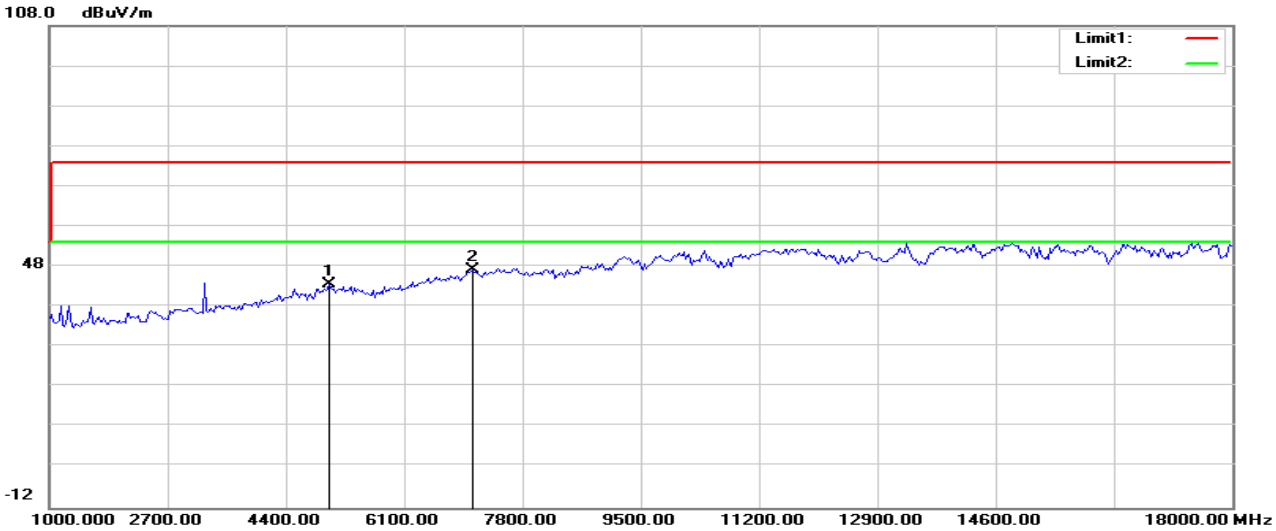
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5032.051	42.52	0.36	42.88	74.00	-31.12	100	321	peak
2	7157.051	41.75	4.87	46.62	74.00	-27.38	100	43	peak
N/A									

Operation Mode: TX / IEEE 802.11n HT40 mode / CH Mid **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

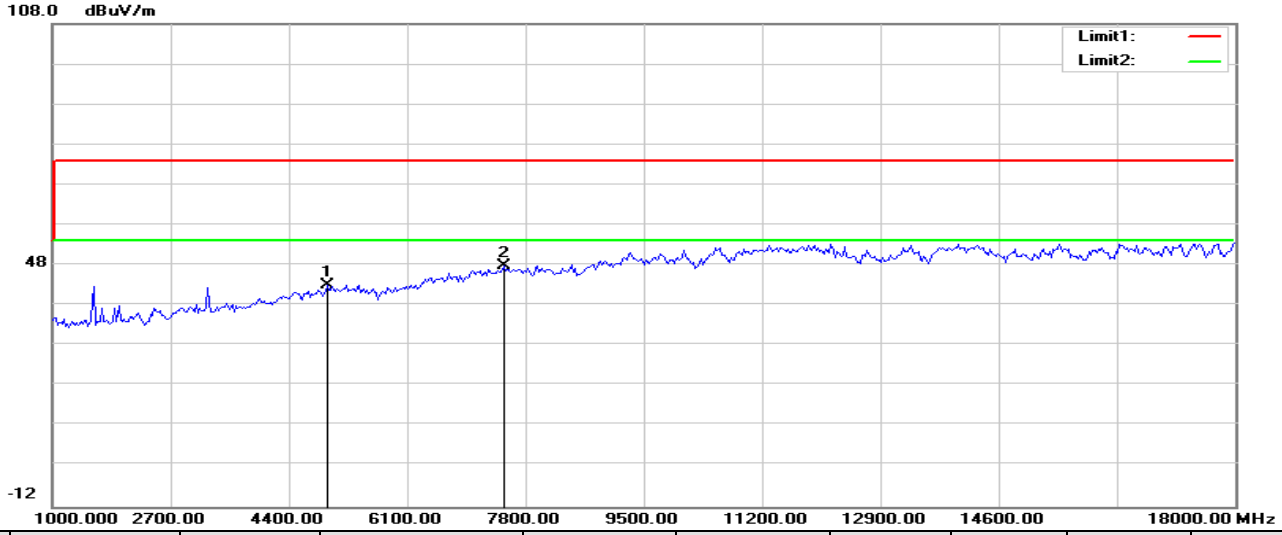
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5032.051	43.24	0.36	43.60	74.00	-30.40	300	358	peak
2	7075.320	42.53	4.58	47.11	74.00	-26.89	100	141	peak
N/A									

Vertical



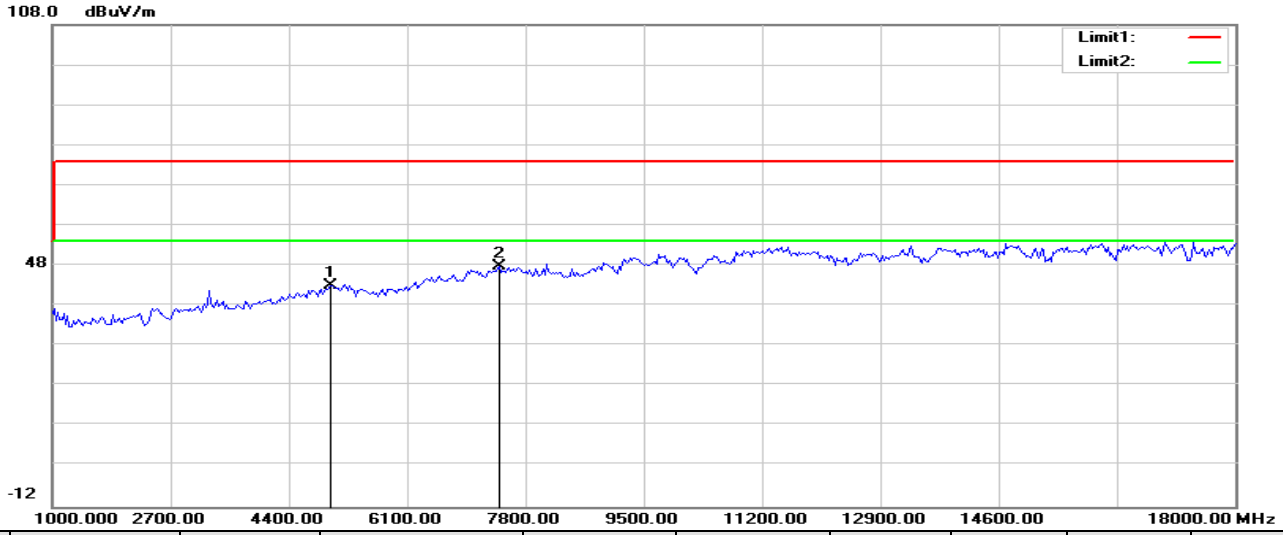
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4950.320	42.73	0.18	42.91	74.00	-31.09	100	80	peak
2	7483.974	41.96	6.03	47.99	74.00	-26.01	100	193	peak
N/A									

Operation Mode: TX / IEEE 802.11n HT40 mode / CH High **Test Date:** 2018-3-11

Temperature: 24°C **Tested by:** Lily.Wang

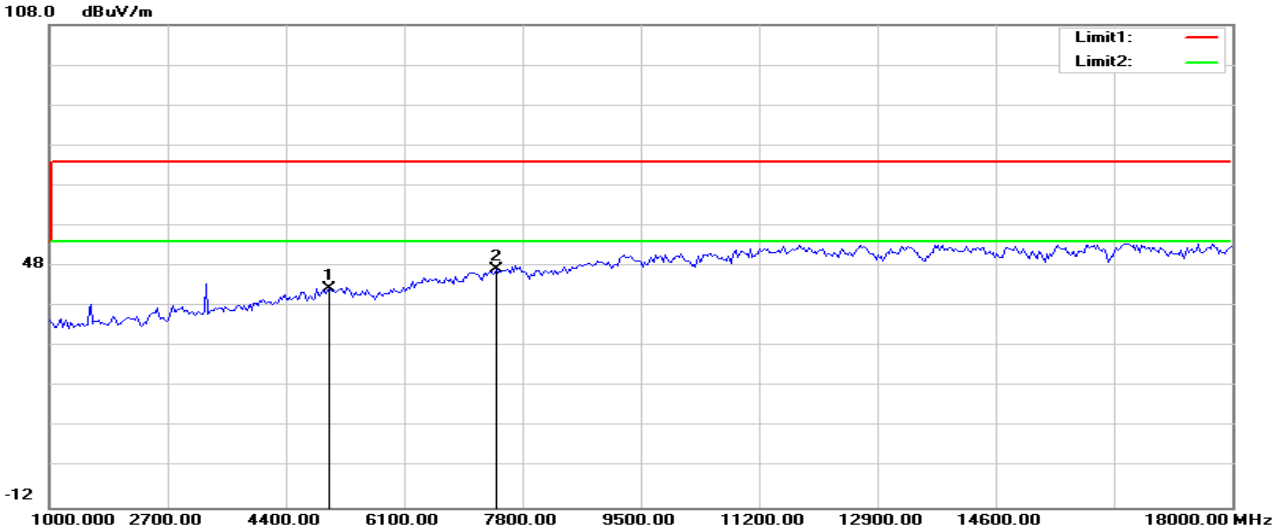
Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5004.808	42.58	0.37	42.95	74.00	-31.05	100	360	peak
2	7429.487	41.94	5.84	47.78	74.00	-26.22	100	360	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	5032.051	41.96	0.36	42.32	74.00	-31.68	100	112	peak
2	7429.487	41.54	5.84	47.38	74.00	-26.62	100	272	peak
N/A									

7.6.POWERLINE CONDUCTED EMISSIONS

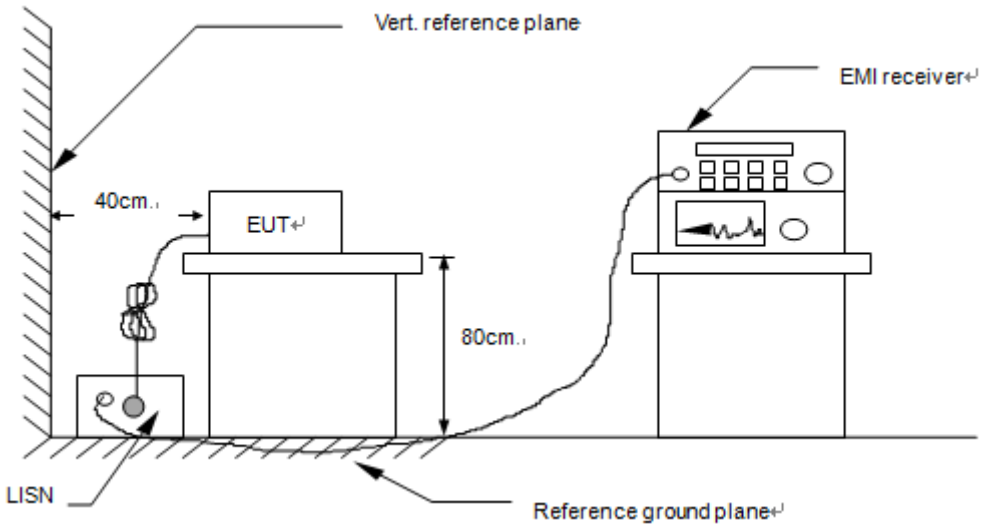
LIMIT

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



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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.

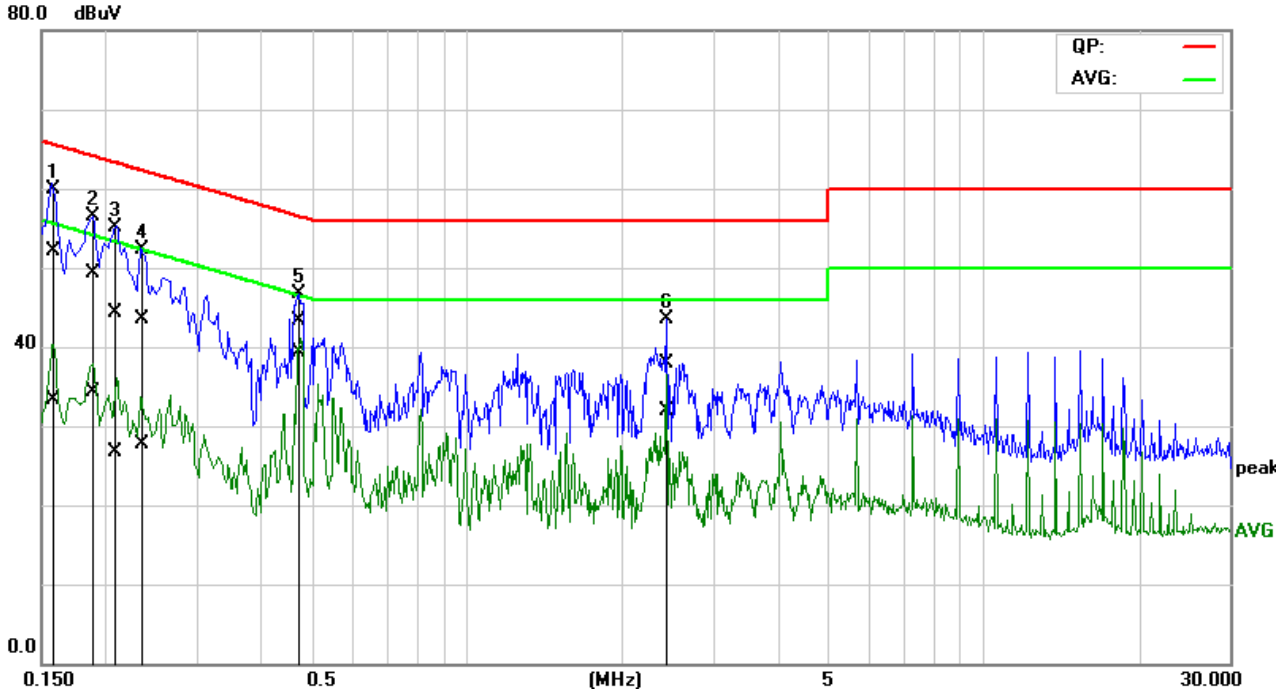
TEST RESULTS

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.:	C171019R01	Date:	2018/03/11
Model No.:	YYS.1917	Time:	18:55:02
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Lily.Wang
Line:	L1	Test Voltage:	AC 120V/60Hz
Model:		Description:	

L1

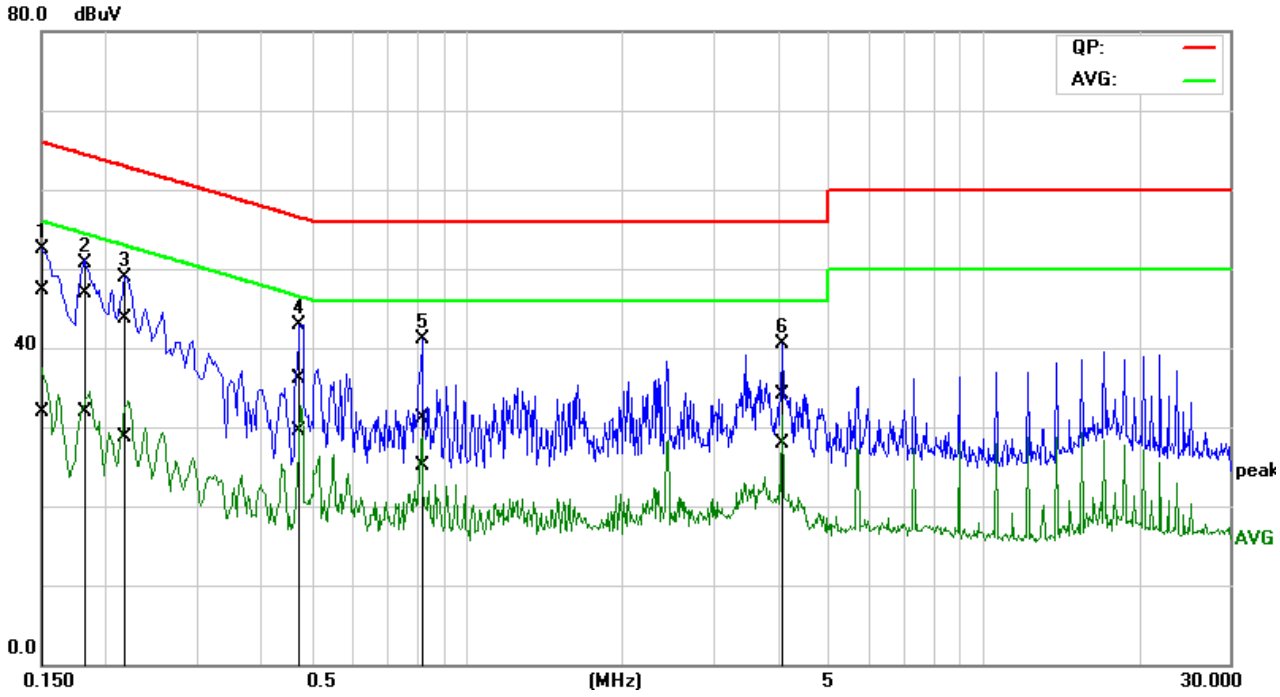


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1596	31.43	12.64	20.58	52.01	33.22	65.48	55.48	-13.47	-22.26	Pass
2	0.1853	28.84	13.75	20.54	49.38	34.29	64.24	54.24	-14.86	-19.95	Pass
3	0.2051	23.89	6.25	20.51	44.40	26.76	63.40	53.40	-19.00	-26.64	Pass
4	0.2363	22.99	7.26	20.46	43.45	27.72	62.22	52.23	-18.77	-24.51	Pass
5*	0.4774	22.89	18.80	20.49	43.38	39.29	56.38	46.38	-13.00	-7.09	Pass
6	2.4461	17.39	11.44	20.49	37.88	31.93	56.00	46.00	-18.12	-14.07	Pass

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

Job No.:	C171019R01	Date:	2018/03/11
Model No.:	YYS.1917	Time:	18:59:48
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Lily.Wang
Line:	L2	Test Voltage:	AC 120V/60Hz
Model:		Description:	

L2

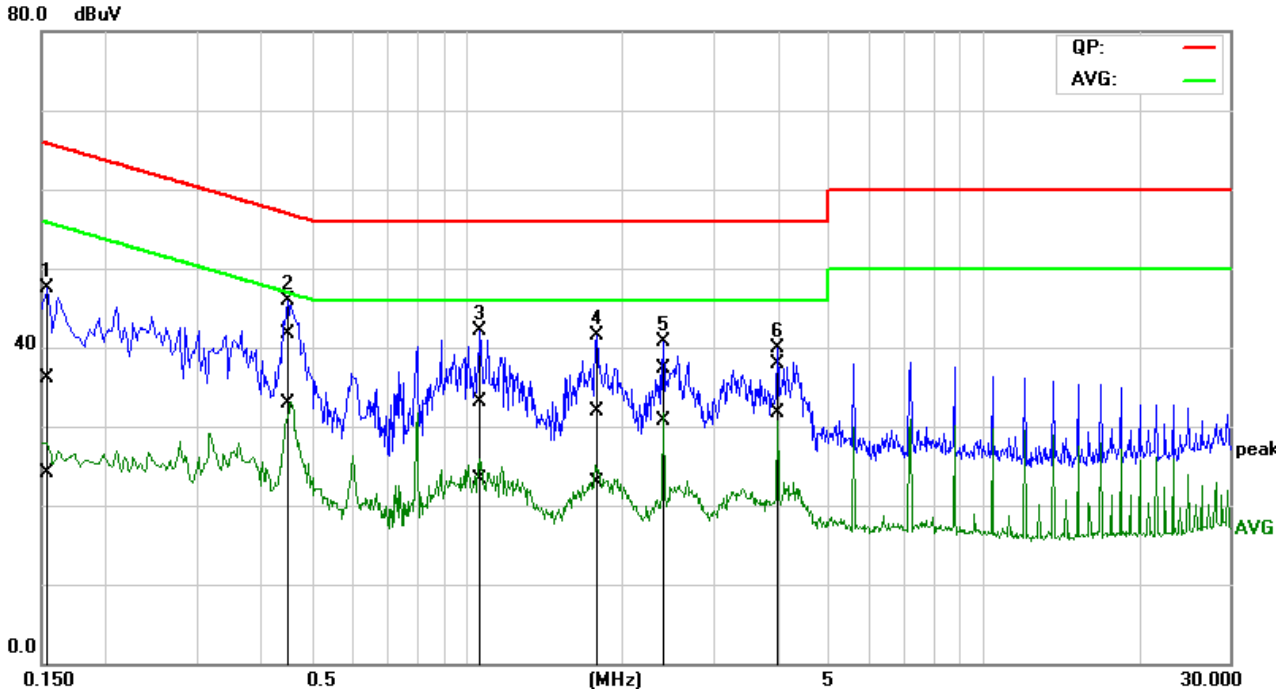


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1505	27.04	11.50	20.36	47.40	31.86	65.97	55.97	-18.57	-24.11	Pass
2	0.1840	26.58	11.44	20.39	46.97	31.83	64.30	54.30	-17.33	-22.47	Pass
3	0.2194	23.37	8.32	20.42	43.79	28.74	62.84	52.84	-19.05	-24.10	Pass
4*	0.4737	15.68	9.04	20.45	36.13	29.49	56.45	46.45	-20.32	-16.96	Pass
5	0.8199	10.69	4.72	20.46	31.15	25.18	56.00	46.00	-24.85	-20.82	Pass
6	4.0830	13.52	7.22	20.68	34.20	27.90	56.00	46.00	-21.80	-18.10	Pass

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

Job No.:	C171019R01	Date:	2018/03/11
Model No.:	YYS.1917	Time:	18:35:42
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Lily.Wang
Line:	L1	Test Voltage:	AC 240V/60Hz
Model:		Description:	

L1

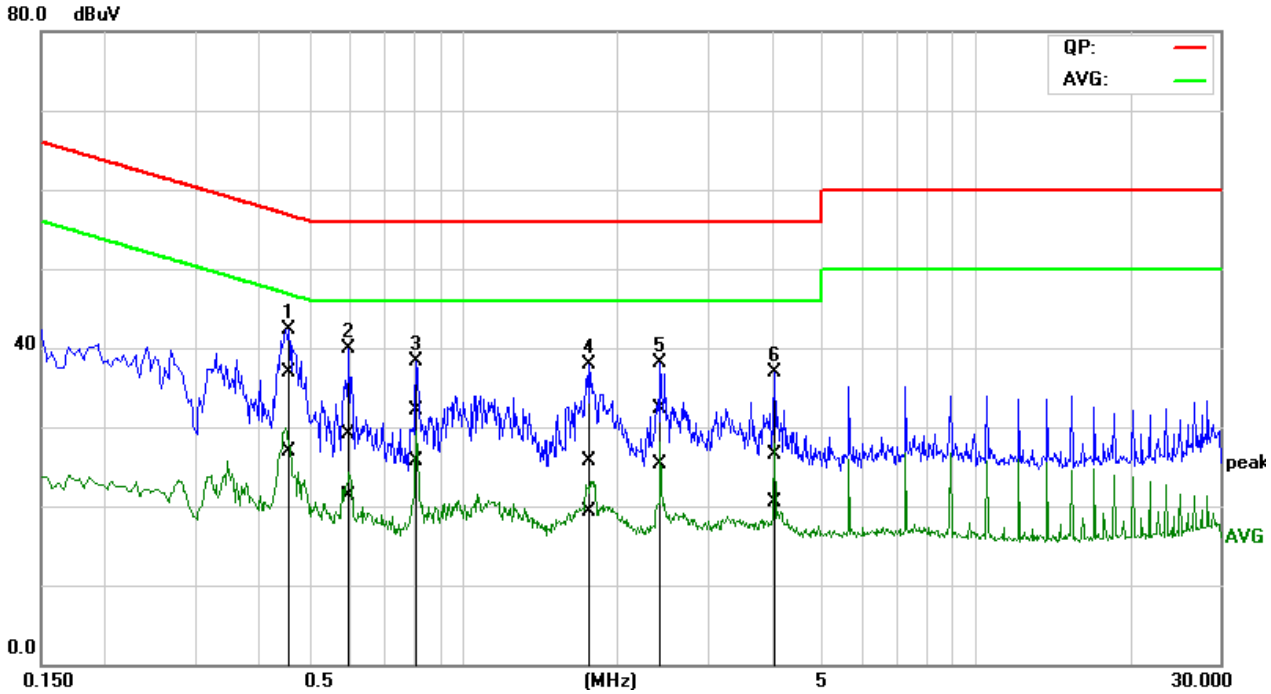


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1550	15.56	3.62	20.58	36.14	24.20	65.72	55.73	-29.58	-31.53	Pass
2*	0.4502	21.18	12.32	20.49	41.67	32.81	56.87	46.87	-15.20	-14.06	Pass
3	1.0700	12.75	2.94	20.43	33.18	23.37	56.00	46.00	-22.82	-22.63	Pass
4	1.7698	11.53	2.38	20.46	31.99	22.84	56.00	46.00	-24.01	-23.16	Pass
5	2.4200	16.75	10.28	20.49	37.24	30.77	56.00	46.00	-18.76	-15.23	Pass
6	4.0006	17.41	11.18	20.56	37.97	31.74	56.00	46.00	-18.03	-14.26	Pass

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

Job No.:	C171019R01	Date:	2017/03/11
Model No.:	YYS.1917	Time:	18:42:01
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Lily.Wang
Line:	L2	Test Voltage:	AC 240V/60Hz
Model:		Description:	

L2



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.4566	16.45	6.40	20.45	36.90	26.85	56.75	46.75	-19.85	-19.90	Pass
2	0.5994	8.60	0.92	20.46	29.06	21.38	56.00	46.00	-26.94	-24.62	Pass
3	0.8105	11.70	5.27	20.46	32.16	25.73	56.00	46.00	-23.84	-20.27	Pass
4	1.7628	5.25	-1.22	20.51	25.76	19.29	56.00	46.00	-30.24	-26.71	Pass
5	2.4391	11.83	4.76	20.56	32.39	25.32	56.00	46.00	-23.61	-20.68	Pass
6	4.0679	5.82	-0.16	20.68	26.50	20.52	56.00	46.00	-29.50	-25.48	Pass

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

Remark:

1.The measuring frequencies range between 0.15 MHz and 30 MHz.

2.The emissions measured in the frequency range between 0.15 MHz and 30MHz were made with an instrument using Quasi-peak detector and Average detector.

3."---" denotes the emission level was or more than 2dB below the Average limit, and no re-check was made.

4.The IF bandwidth of SPA between 0.15MHz and 30MHz was 10KHz. The IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9kHz.

END OF REPORT