FCC 47 CFR PART15 SUBPART E

For

Prepared by

Product Name: Wireless digital flat panel detector

Brand Name: N/A

Model No.: Mars1717XU-VSI

Series Model.: N/A

FCC ID: 2AQ9VMARS1717XU

Test Report Number:

C180928E08-RPW1

Issued for

Shanghai United Imaging Healthcare Co., Ltd.

2258 Chengbei Rd., Jiading District, Shanghai

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
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TESTING CERT #2541.01

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	November 8, 2018	C180928E08-RPW1	ALL	N/A
01	December 11, 2018	C180928E08-RPW1	P5; P9; P11-P13; P50; P74; P75; P78-P79	Update power rating; Add channel list; Update duty cycle plot; Revise the version of KDB789033; Update data of frequency stability and radiated emissions below 1GHz.
02	December 17, 2018	C180928E08-RPW1	P5; P9	Add test voltage and the worst-case test mode.
03	December 19, 2018	C180928E08-RPW1	P5; P74	Add notes for test voltage.

1 TEST RESULT CERTIFICATION

Product Name:	Wireless digital flat panel detector
Trade Name:	N/A
Model Name.:	Mars1717XU-VSI
Series Model:	N/A
Applicant Discrepancy:	Initial
Date of Test:	October 30, 2018~November 5, 2018 and December 11, 2018
Applicant:	**Shanghai United Imaging Healthcare Co., Ltd.** 2258 Chengbei Rd., Jiading District, Shanghai
Manufacturer:	**iRay Technology Co., Ltd.** RM202,Building 7 No. 590,Ruiqing RD. Zhangjiang East, Pudong 201201 Shanghai,China
Application Type:	Certification

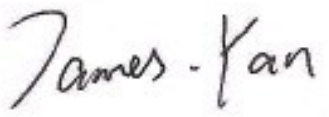
APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart E	No non-compliance noted

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, 15.407and KDB 789033.
The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Jeff.Fang
Manager
Compliance Certification Services Inc.

Reviewed by:



James.Yan
RF Section Manager
Compliance Certification Services Inc.

2 EUT DESCRIPTION

Product Name:	Wireless digital flat panel detector			
Brand Name:	N/A			
Model Name:	Mars1717XU-VSI			
Series Model:	N/A			
Model Discrepancy:	N/A			
Power Rating:	Input: 12V⎓2.5A Capacitance 1: 3.8V-2.2V 2100F 2.8Wh Capacitance 2: 3.8V-2.2V 2100F 2.8Wh Capacitance 1+ Capacitance 2: 7.6V-4.4V			
Test Voltage:	DC 7.6V (full charge) AC120V/60Hz (see remark 3)			
Frequency Range :	Band	Mode	Frequency Range(MHz)	Number of Channels
	Band I UNII-I	IEEE802.11a mode	5150 MHz~5250 MHz	3
		IEEE802.11n HT20 mode		3
		IEEE802.11n HT40 mode		1
		IEEE802.11ac VHT20 mode		3
		IEEE802.11ac VHT40 mode		1
Average Transmit Power :	IEEE802.11a mode: 12.70dBm IEEE802.11n HT20 mode: 13.49dBm IEEE802.11n HT40 mode: 13.25dBm IEEE802.11ac VHT20 mode: 13.46dBm IEEE802.11ac VHT40 mode: 13.21dBm			
Modulation Technique :	IEEE802.11a mode: 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) IEEE802.11ac VHT20 mode: OFDM (VHTMCS0~VHTMCS9) IEEE802.11ac VHT40 mode: OFDM (VHTMCS0~VHTMCS9)			
Antenna Specification:			Gain(dBi)	
			Band I	
	Antenna 1		7.1	
	Antenna 2		4.6	
	Directional gain		9.04	

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: 2AQ9VMARS1717XU*** filing to comply with FCC Part 15, Subpart E Rules.
3. Only for powerline conducted test.

3 SUMMARY OF THE TEST RESULT

FCC 47 CFR Part 15, Subpart E 15.407			
Part	**Rule section**	**Description of Test**	**Result**
8.1	47 CFR Part 15, Subpart E 15.407	26 dB Emission Bandwidth	Compliance
8.2	47 CFR Part 15, Subpart E 15.407	99% Emission Bandwidth	–
8.3	47 CFR Part 15, Subpart E 15.407	Maximum Conducted Output Power	Compliance
8.4	47 CFR Part 15, Subpart E 15.407	Band Edges Measurement	Compliance
8.5	47 CFR Part 15, Subpart E 15.407	Maximum Power Spectral Density	Compliance
8.6	47 CFR Part 15, Subpart E 15.407	Frequency Stability Measurement	Compliance
8.7	47 CFR Part 15, Subpart E 15.407	Radiated Undesirable Emission	Compliance
8.8	47 CFR Part 15, Subpart E 15.407	Powerline Conducted Emissions	Compliance

4 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, 15.407 and KDB 789033, KDB 662911.

4.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

4.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the Tx frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

4.3 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.

4.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

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

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.50 - 5.15
0.495 - 0.505 (1)	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960.0 - 1240	7.25 - 7.75
4.125 - 4.128	25.50 - 25.67	1300 - 1427	8.025 - 8.500
4.17725 - 4.17775	37.50 - 38.25	1435.0 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73.00 - 74.60	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.80 - 75.20	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108.00 - 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	149.90 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 – 2500.0	17.7 - 21.4
8.37625 - 8.38675	156.70 - 156.90	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.1700	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.20	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358.0	36.43 - 36.5(2)
12.57675 - 12.57725	322.0- 335.4	3600 - 4400	
13.36 - 13.41			

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

[2] Above 38.6

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

4.5 DESCRIPTION OF TEST MODES

Description	Modulation Technology	Modulation Type
26dB Bandwidth and 99% bandwidth	OFDM	BPSK
Maximum conducted output power	OFDM	BPSK
Band edges measurement	OFDM	BPSK
Peak Power Spectral Density	OFDM	BPSK
Radiated undesirable emission	OFDM	BPSK
Powerline conducted emission	OFDM	BPSK

Test Mode	SISO Antenna 1	SISO Antenna 2	MIMO at both Antennas 1 and 2
802.11a	√	√	x
802.11n HT20	√	√	√
802.11n HT40	√	√	√
802.11ac VHT20	√	√	√
802.11ac VHT40	√	√	√

The worst-case for conducted:

Test Mode	SISO Antenna 1	SISO Antenna 2	MIMO at both Antennas 1 and 2
802.11a	√	√	x
802.11n HT20	x	x	√
802.11n HT40	x	x	√
802.11ac VHT20	x	x	√
802.11ac VHT40	x	x	√

The worst-case for radiated and powerline conducted:

Test Mode	SISO Antenna 1	SISO Antenna 2	MIMO at both Antennas 1 and 2
802.11a	√	x	x
802.11n HT20	x	x	√
802.11n HT40	x	x	√
802.11ac VHT20	x	x	√
802.11ac VHT40	x	x	√

Operated in 5150MHz~5250MHz band:

3 channels are used for 802.11a, 802.11n HT20, 802.11ac VHT20:

Channel Frequency	Channel Frequency
36	5180 MHz
40	5200 MHz
44	5220 MHz

1 channels are used for 802.11n HT40, 802.11ac VHT40:

Channel Frequency	Channel Frequency
38	5190 MHz

IEEE 802.11a mode:

Channel (5180MHz),Channel (5200MHz) and Channel (5220MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT20 mode:

Channel (5180MHz),Channel (5200MHz) and Channel (5220MHz) with MCS0 data rate were chosen for full testing.

IEEE 802.11n HT40 mode:

Channel (5190MHz) with MCS0 data rate were chosen for full testing.

IEEE 802.11ac VHT20 mode:

Channel (5180MHz),Channel (5200MHz) and Channel (5220MHz) with VHTMCS0 data rate were chosen for full testing.

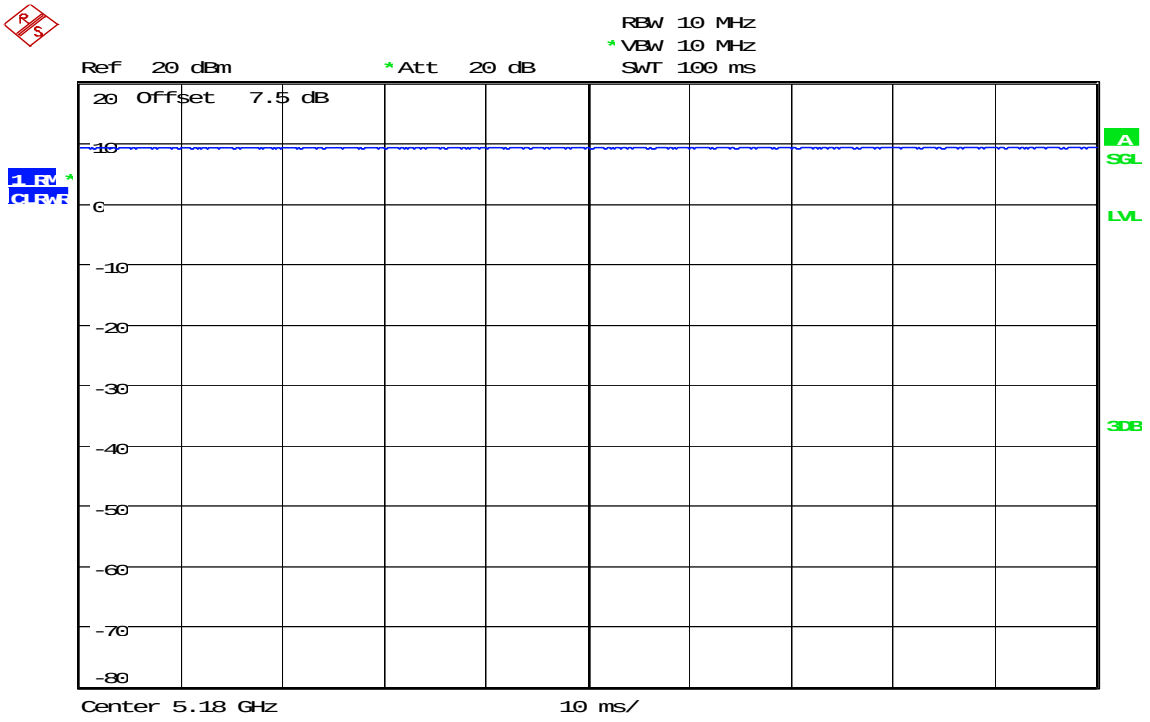
IEEE 802.11ac VHT40 mode:

Channel (5190MHz) with VHTMCS0 data rate were chosen for full testing.

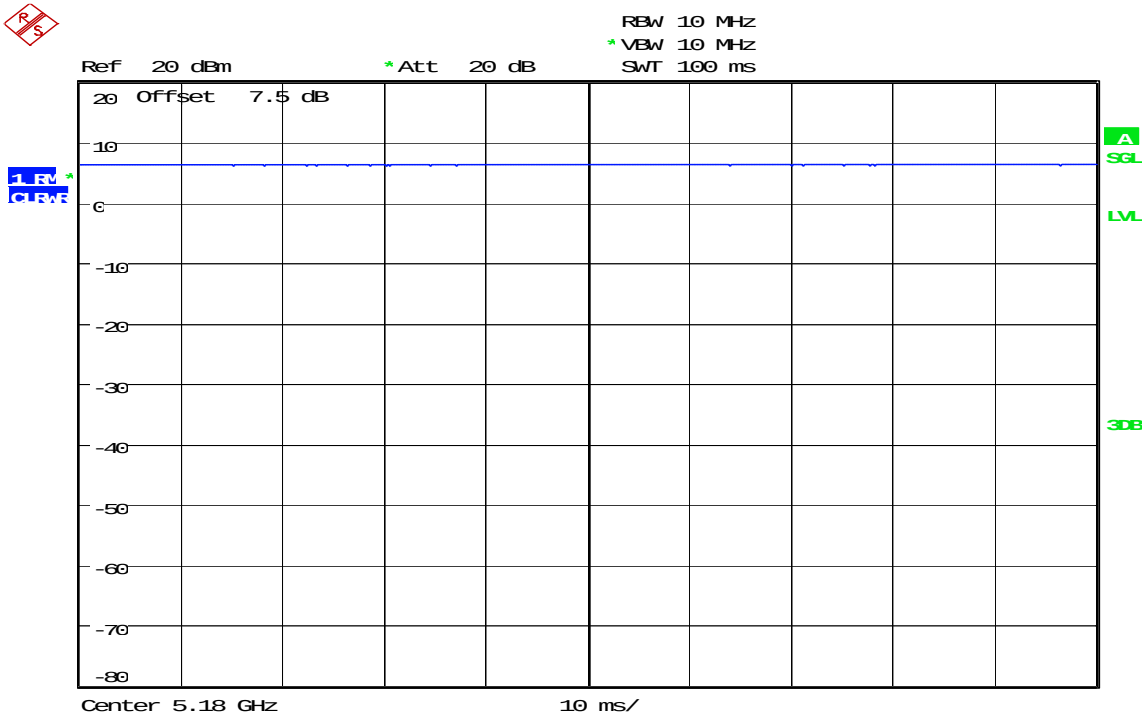
4.6 DUTY CYCLE

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
IEEE 802.11 a	100	-	-	10Hz
IEEE 802.11n HT20	100	-	-	10Hz
IEEE 802.11n HT40	100	-	-	10Hz
IEEE 802.11ac VHT20	100	-	-	10Hz
IEEE 802.11ac VHT40	100	-	-	10Hz

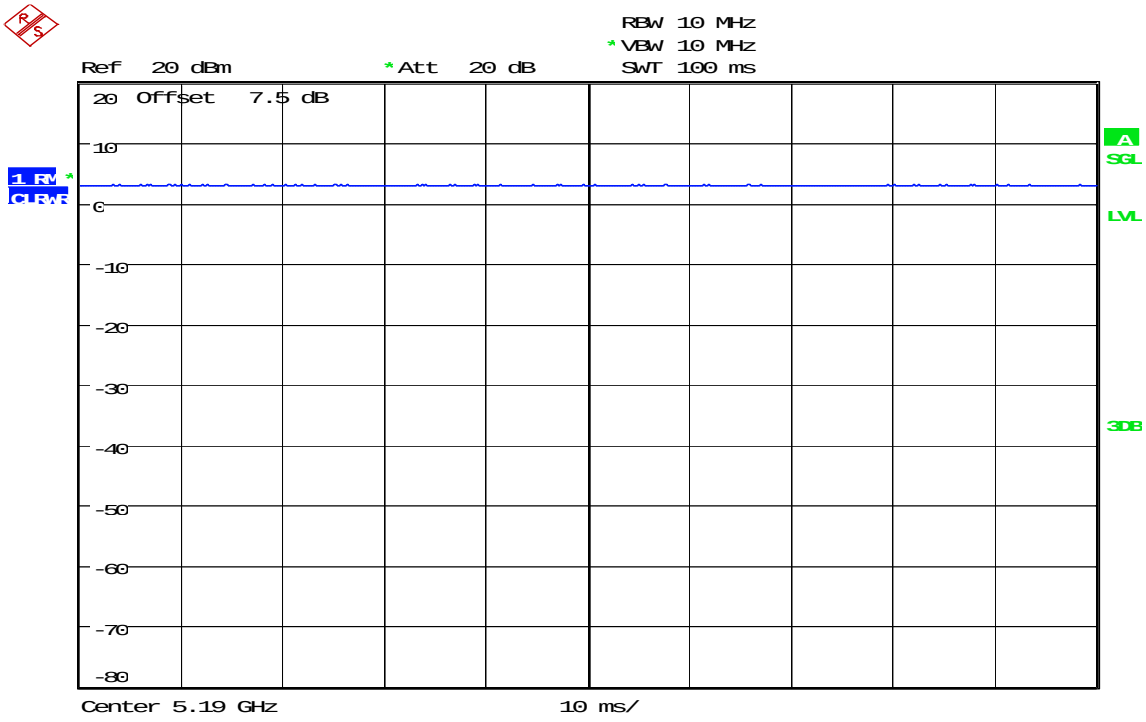
IEEE 802.11 a



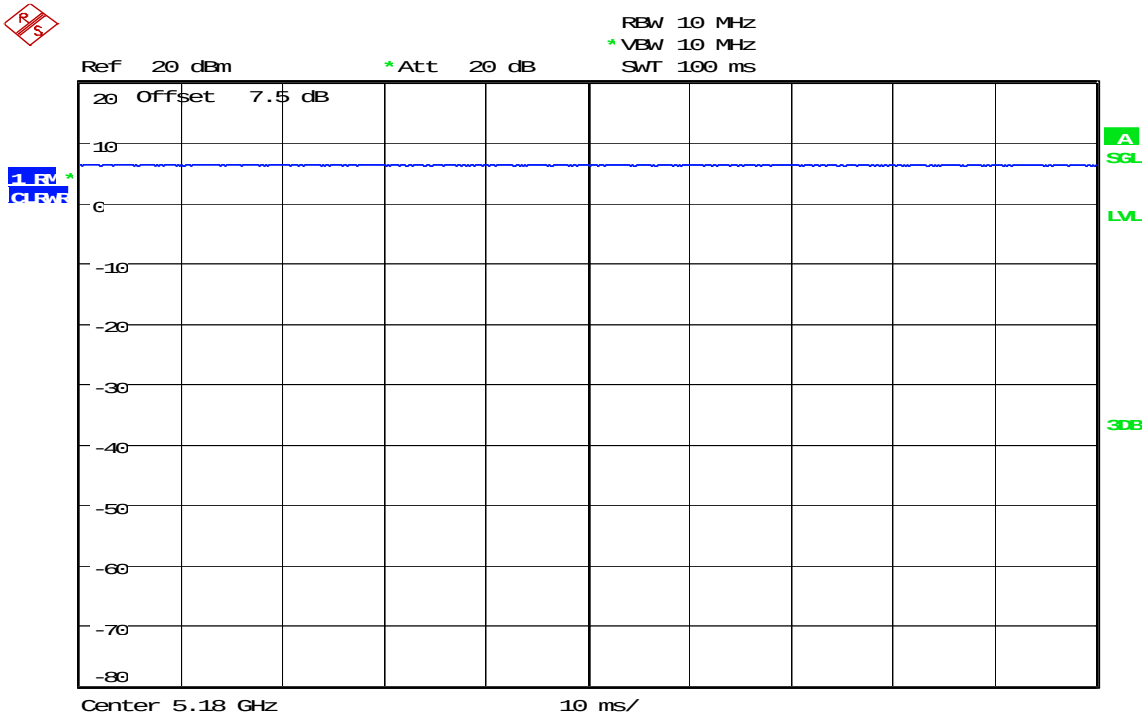
IEEE 802.11n HT20



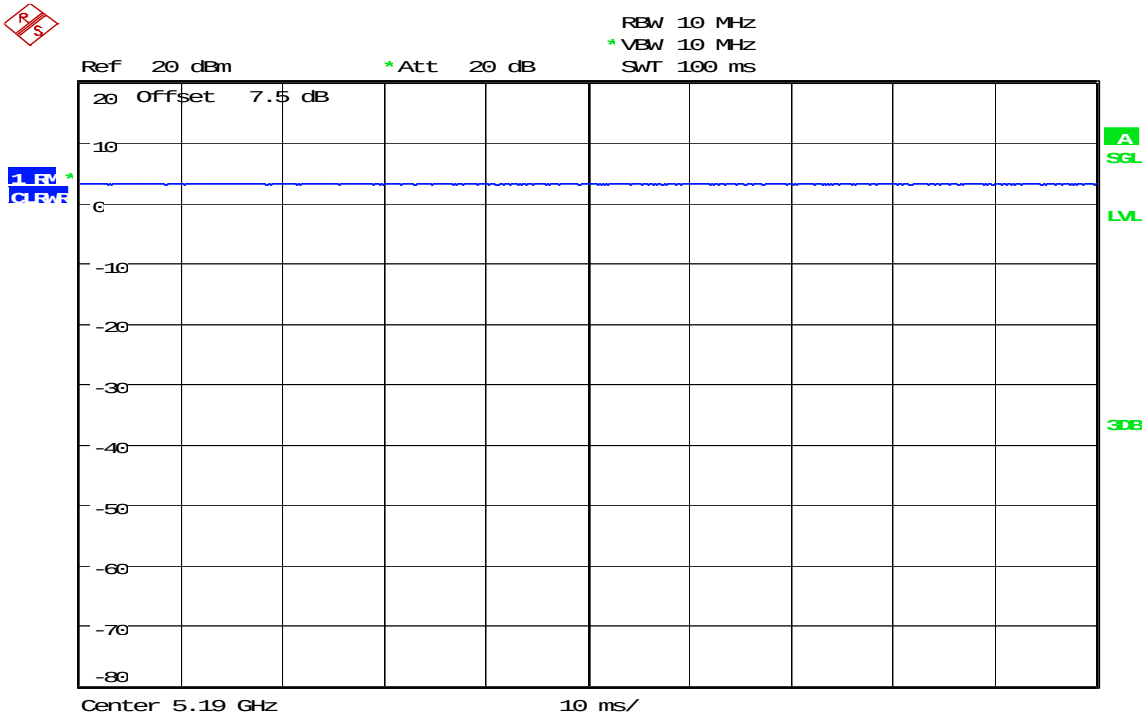
IEEE 802.11n HT40



IEEE 802.11ac VHT20

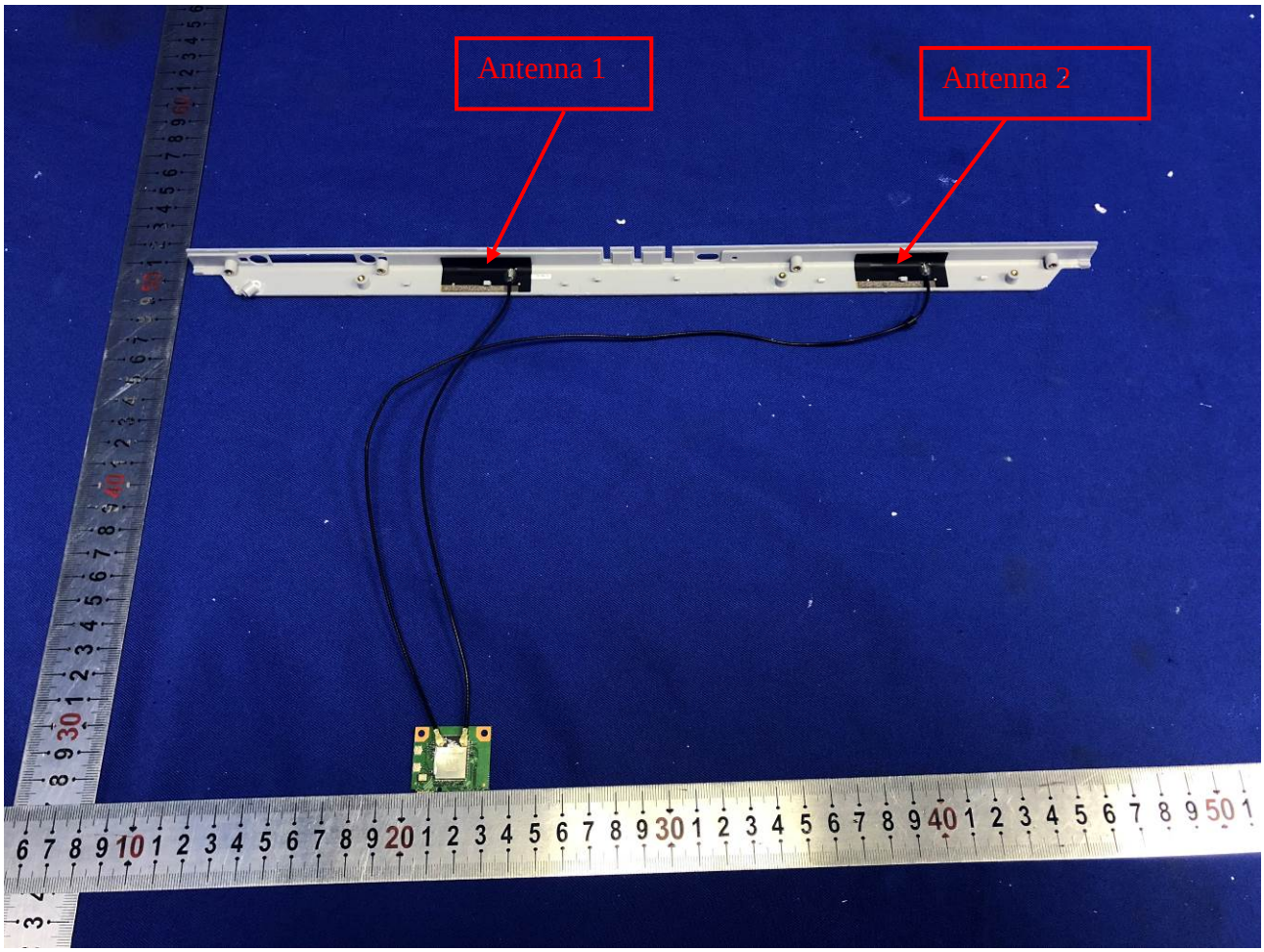


IEEE 802.11ac VHT40



4.7 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(FPC Antenna for WLAN).
* the EUT complies with the requirement of 15.203.



5 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.

5.1 MEASUREMENT EQUIPMENT USED

Conducted Emissions Test Site					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Data**	**Calibration Due**
Spectrum Analyzer	RS	FSU26	200789	2018-7-13	2019-7-12
Power meter	Anritsu	ML2495A	1445010	2018-4-26	2019-4-25
Power sensor	Anritsu	MA2411B	1339220	2018-4-26	2019-4-25
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 Chamber	TERCHY	MHK-120AK	X30109	2018-4-23	2019-4-22
Cable	N/A	Cable-05	N/A	2018-4-24	2019-4-23
Cable	N/A	Cable-06	N/A	2018-4-24	2019-4-23
6dB Attenuator	N/A	N/A	N/A	2018-4-24	2019-4-23
Temp. / Humidity Gauge	Anymetre	TH603	CCS007	2018-10-30	2019-10-29

Conducted Emission					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
EMI TEST RECEIVER	R&S	ESCI	100781	2018-2-26	2019-2-25
V (V-LISN)	SCHWARZBECK	NNLK 8129	8129-143	2018-10-28	2019-10-27
TWO-LINE V-NETWORK	R&S	ENV216	101604	2018-10-28	2019-10-27
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 ver.3A1		

977 Chamber					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Data**	**Calibration Due**
Spectrum Analyzer	RS	FSU26	200789	2018-7-13	2019-7-12
Spectrum Analyzer	RS	FSV40	101493	2017-12-18	2018-12-17
EMI Test Receiver	R&S	ESCI	101378	2017-12-27	2018-12-26
Amplifier	COM-POWER	PAM-840A	461332	2017-11-29	2018-11-28
Amplifier	COM-POWER	PAM-118A	551044	2018-4-26	2019-4-25
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9170	9170-515	2018-2-27	2019-2-26
Bilog Antenna	SCHAFFNER	CBL6112D	36996	2018-7-7	2019-7-6
Loop Antenna	COM-POWER	AL-130R	10160008	2018-5-8	2019-5-7
Horn-antenna	SCHWARZBECK	9120D	D:266	2018-2-26	2019-2-25
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	2018-10-28	2019-10-27
Cable	REBES MICROWAVE	Cable-94	N/A	2018-10-28	2019-10-27
Cable	REBES MICROWAVE	Cable-95	N/A	2018-10-28	2019-10-27
Cable	N/A	Cable-03	N/A	2018-4-24	2019-4-23
Cable	N/A	Cable-04	N/A	2018-4-24	2019-4-23
2.4G Filter	N/A	N/A	N/A	2018-4-24	2019-4-23
Test Software			EZ-EMC ver.3A1		

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

5.2 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
RF output power, conducted	±1.129dB
Unwanted Emissions, conducted	±2.406dB
RF Power density, conducted	±2.379dB
Conducted emissions	±2.582dB
All emissions, radiated (Below 1GHz)	±4.725dB
All emissions, radiated (Above 1GHz)	± 4.818dB
Temperature	±0.3dB
Supply voltages	±0.2%

6 FACILITIES AND ACCREDITATIONS

6.1 FACILITIES

All measurement facilities used to collect the measurement data are located at
☒ **No.10Weiye Rd., Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.**
The sites are constructed in conformance with the requirements of ANSI C63.10:2013 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

6.2 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 preselectors 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.”

6.3 TABLE OF ACCREDITATIONS AND LISTINGS

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.

6.4 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC, Part 15,Subpart B (using ANSI 63.4 :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)	 TESTING CERT #2541.01

		AS/NZS 4268 IEEE Std 1528:2013; EN 50360; EN 50566; EN 62479; 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.*

7 SETUP OF EQUIPMENT UNDER TEST

7.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Setup photo for the actual connections between EUT and support equipment.

7.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID
1	Adapter	TDK	HWS100A-12/MEA	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.

8 FCC PART 15 REQUIREMENTS

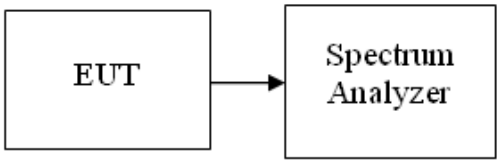
8.1 26 DB EMISSION BANDWIDTH

LIMIT

According to §15.403(i), for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

Test Configuration

TEST PROCEDURE



1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low-loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = approximately 1% of the emission bandwidth, VBW > RBW, Detector = Peak ,Span >26dB bandwidth, and Sweep = auto ,Trace mode = max hold.
4. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
5. Repeat until all the rest channels were investigated.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	20.288
Mid	5200	20.224
High	5220	20.288

Test mode: IEEE 802.11a mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	20.224
Mid	5200	20.224
High	5220	20.288

Test mode: IEEE 802.11n HT20MHz mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	20.544
Mid	5200	20.544
High	5220	20.672

Test mode: IEEE 802.11n HT20MHz mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	20.672
Mid	5200	20.480
High	5220	20.544

Test mode: IEEE 802.11n HT40MHz mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	41.728

Test mode: IEEE 802.11n HT40MHz mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	40.704

Test mode: IEEE 802.11ac VHT20MHz mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	20.544
Mid	5200	20.544
High	5220	20.416

Test mode: IEEE 802.11ac VHT20MHz mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	20.416
Mid	5200	20.544
High	5220	20.224

Test mode: IEEE 802.11ac VHT40MHz mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	42.112

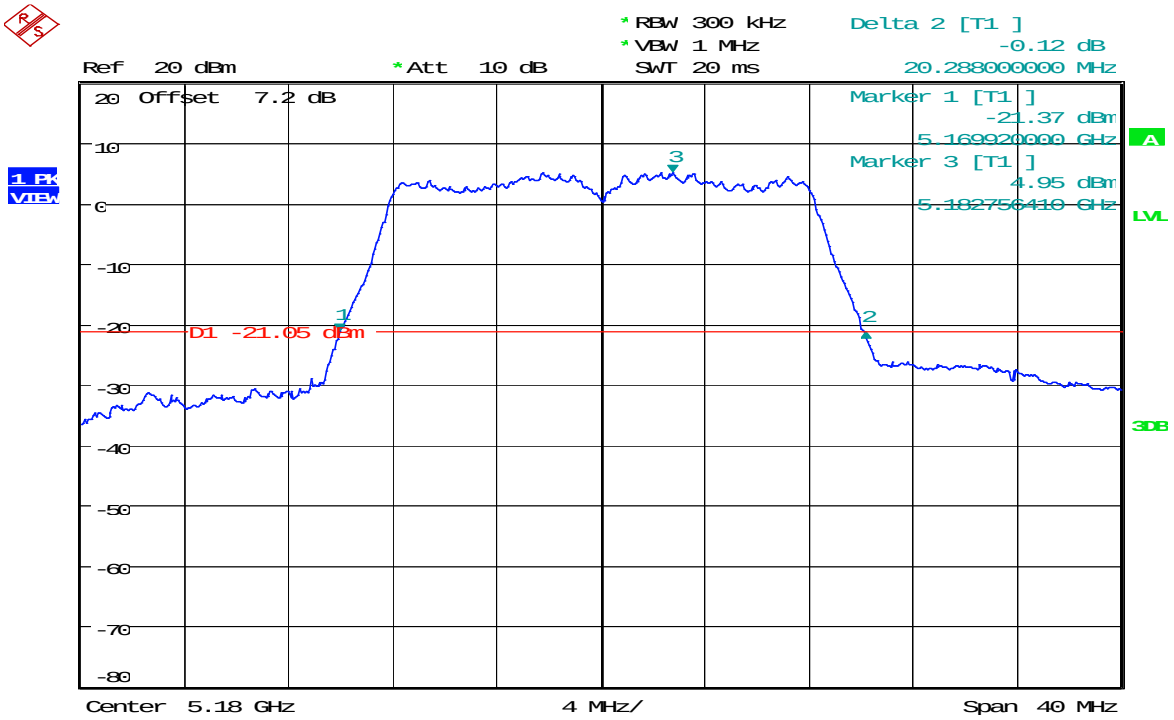
Test mode: IEEE 802.11ac VHT40MHz mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	40.704

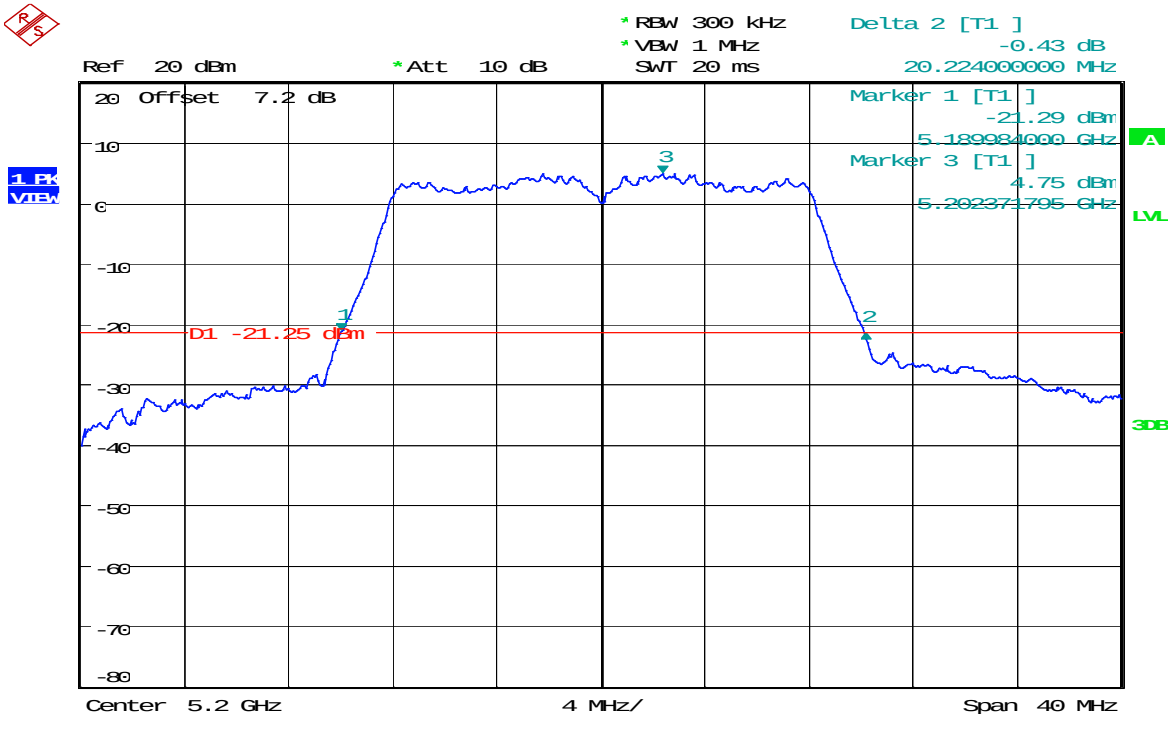
Test Plot

IEEE 802.11a mode/Chain 1:

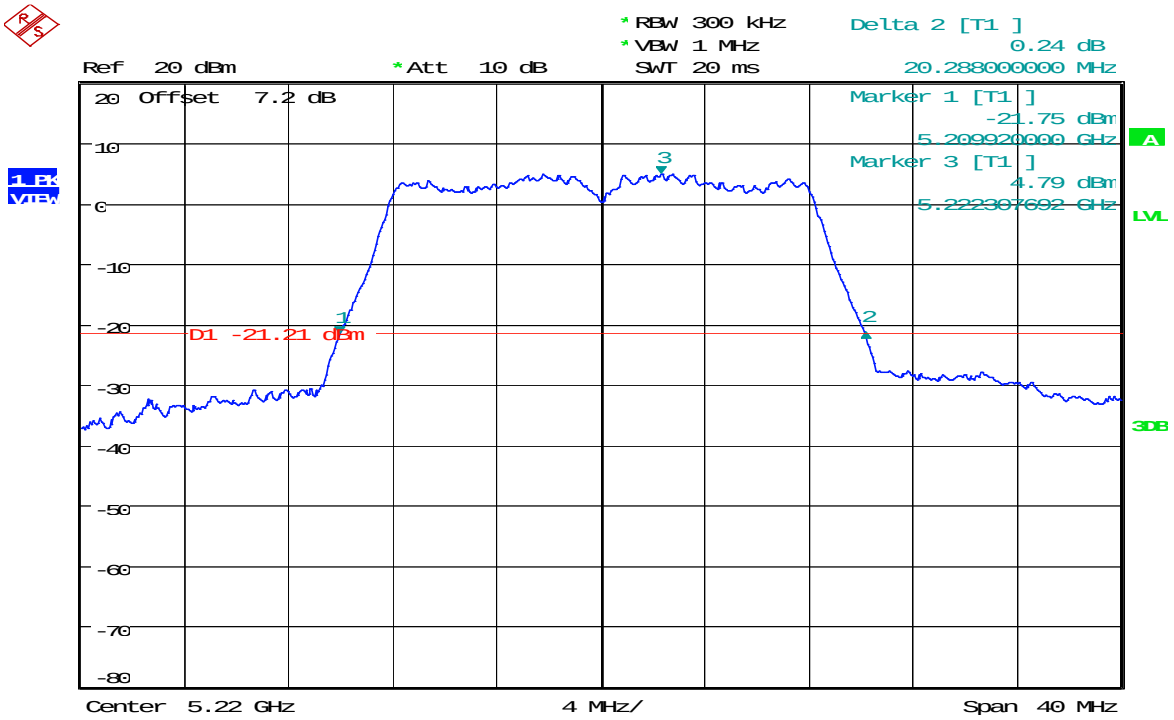
CH Low



CH Mid

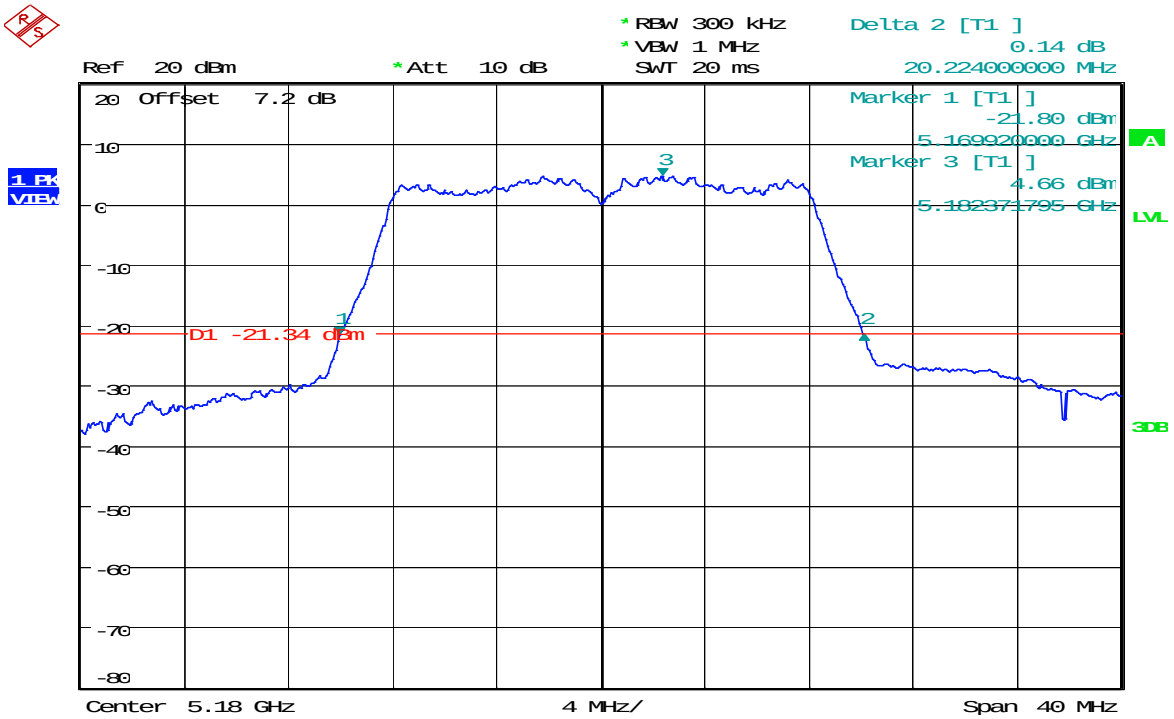


CH High

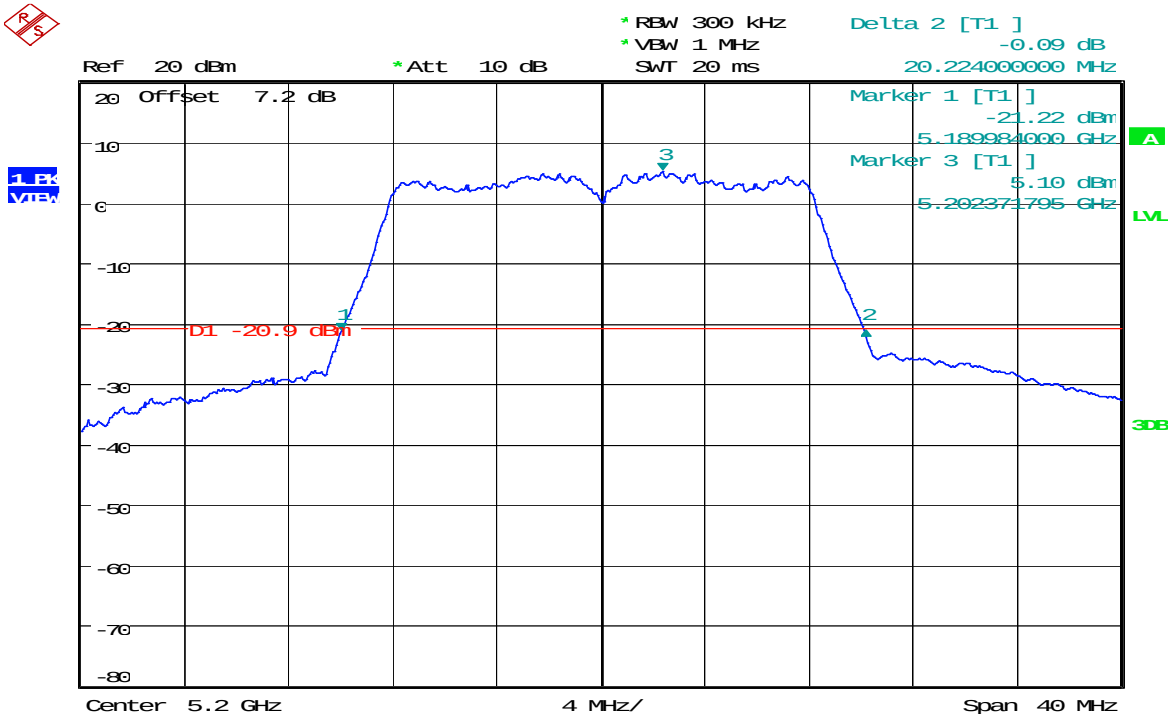


IEEE 802.11a mode/Chain 2:

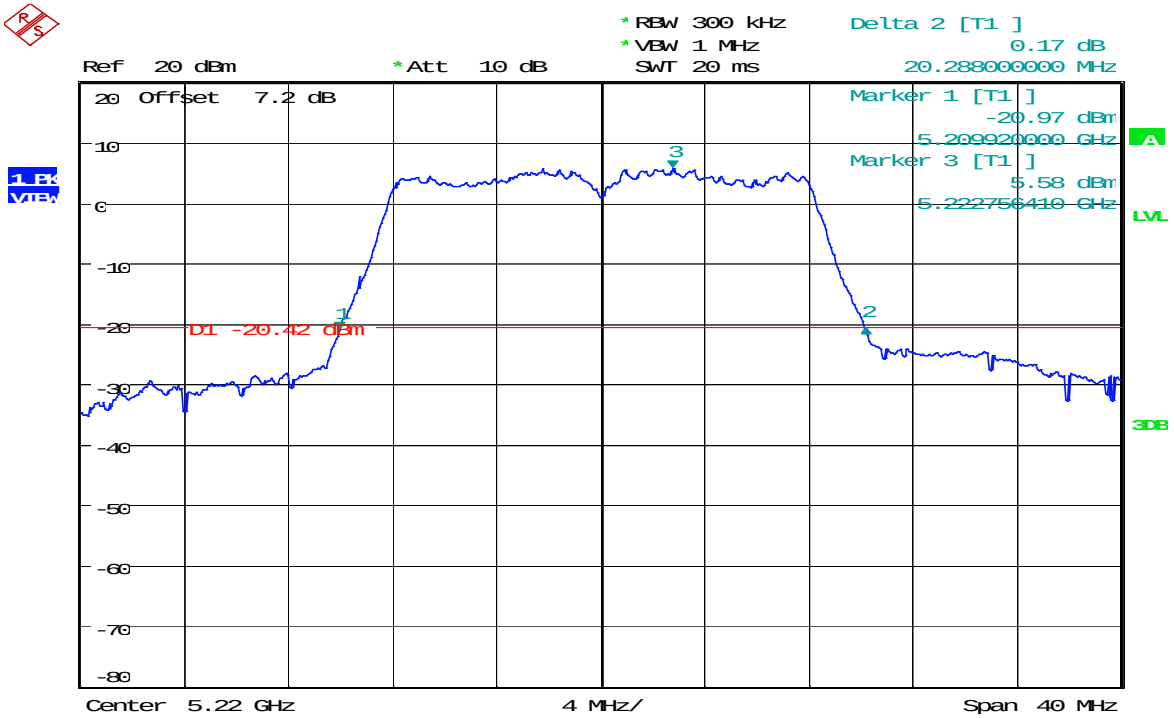
CH Low



CH Mid

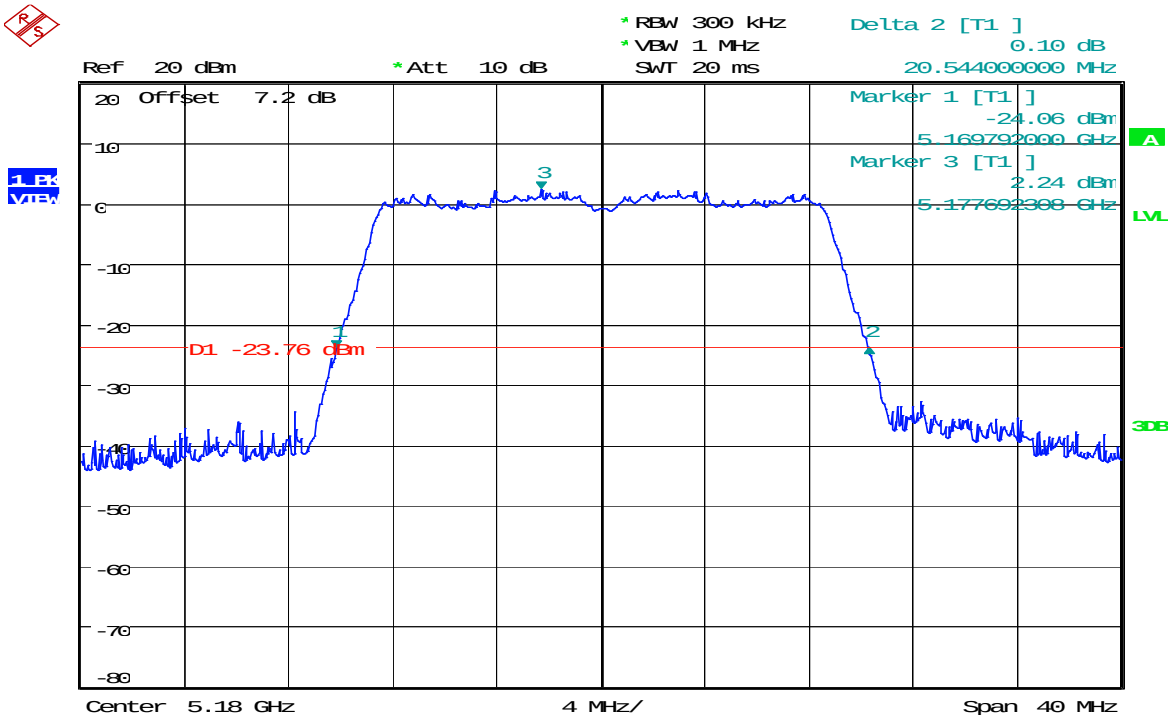


CH High

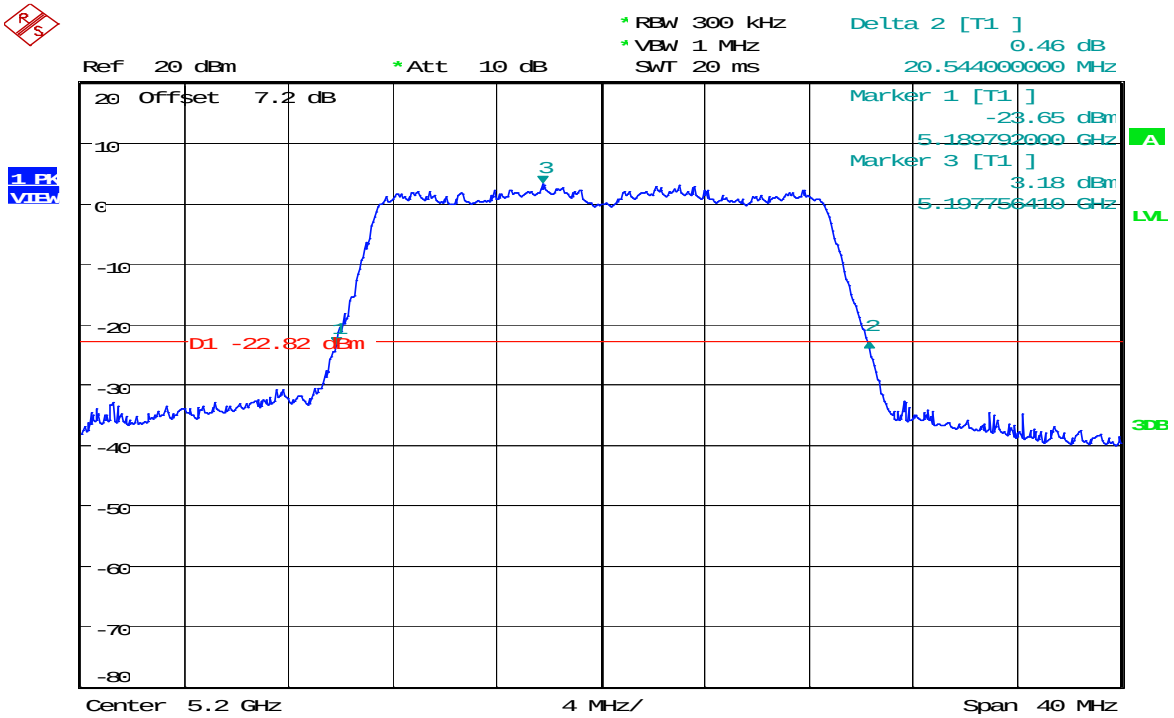


IEEE 802.11n HT20 mode/Chain 1:

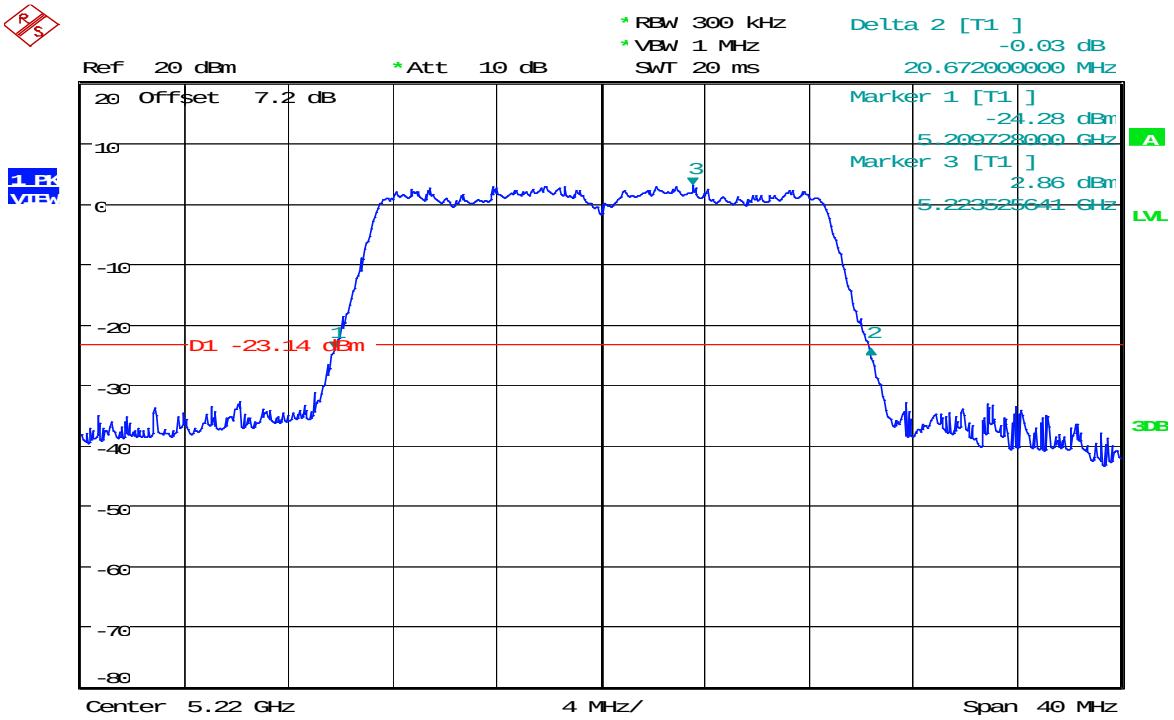
CH Low



CH Mid

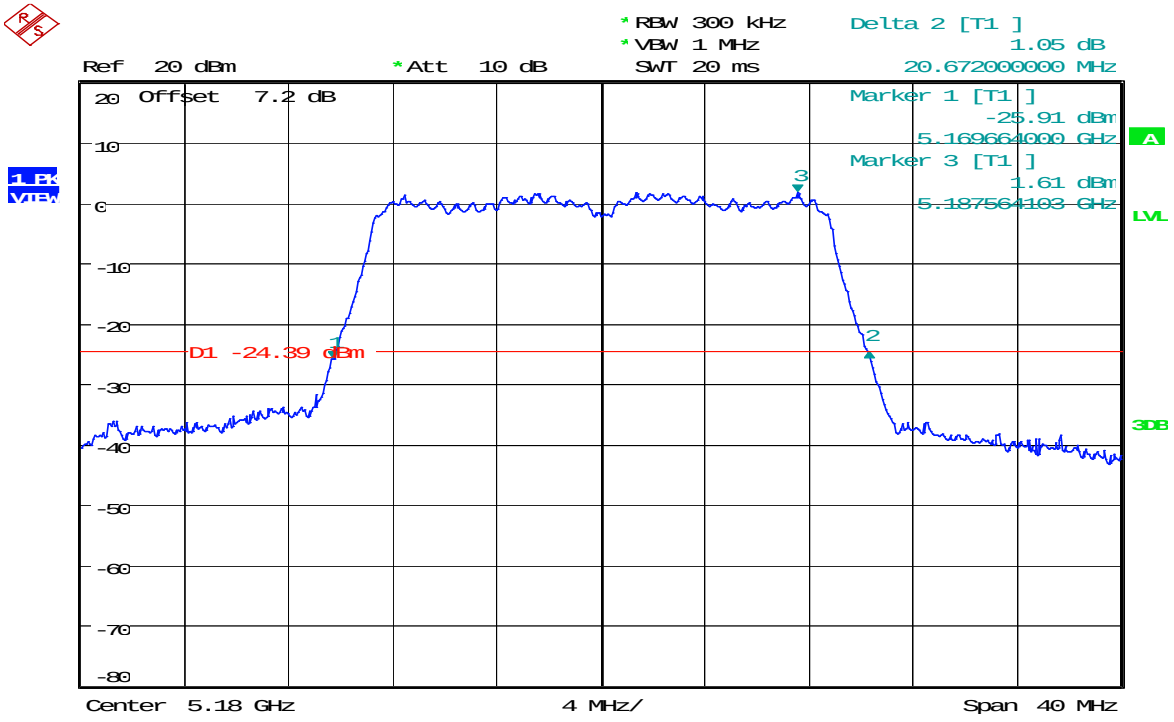


CH High

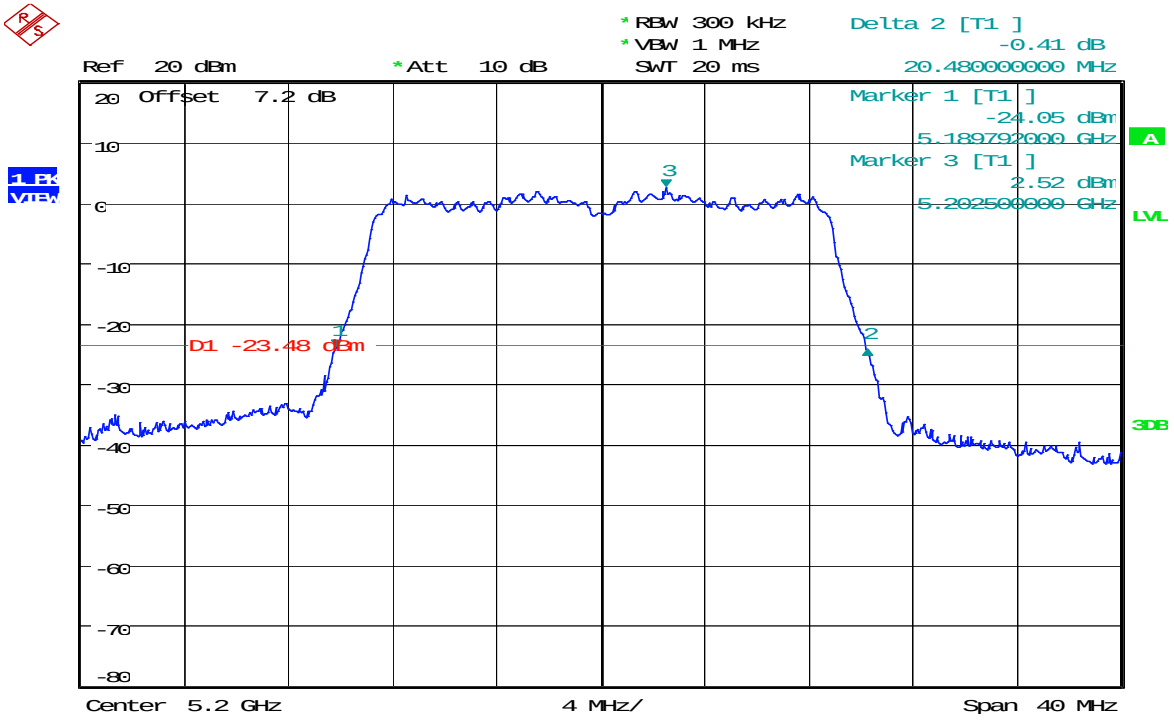


IEEE 802.11n HT20 mode/Chain 2:

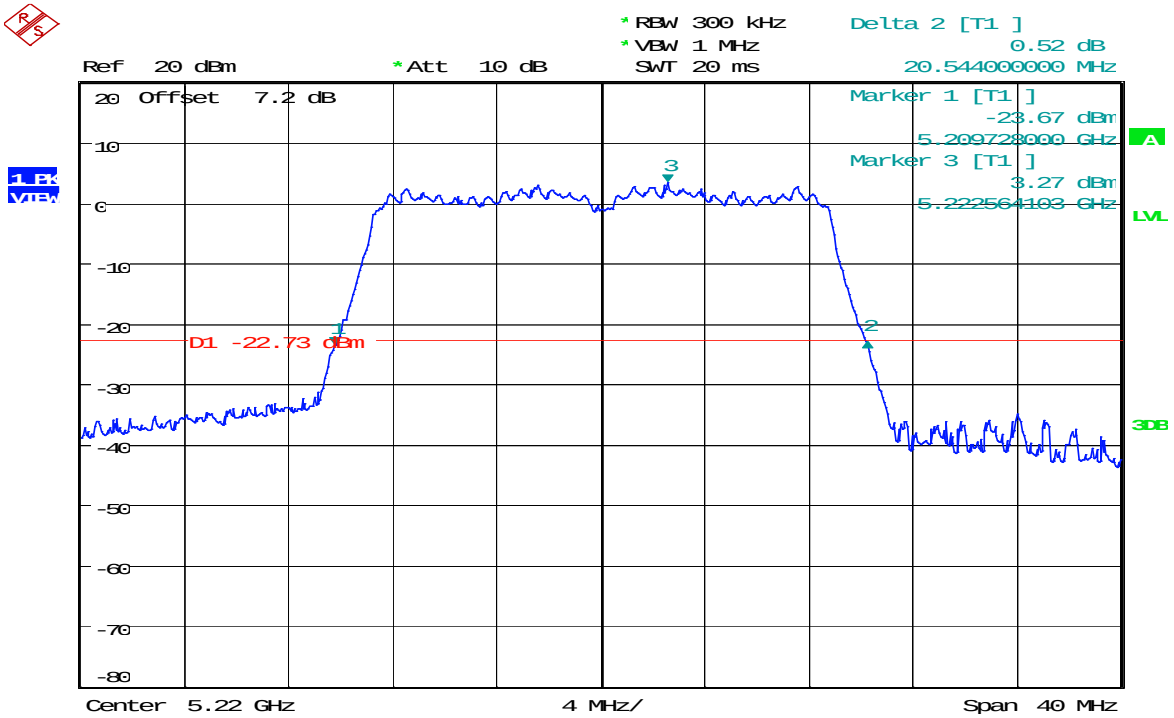
CH Low



CH Mid

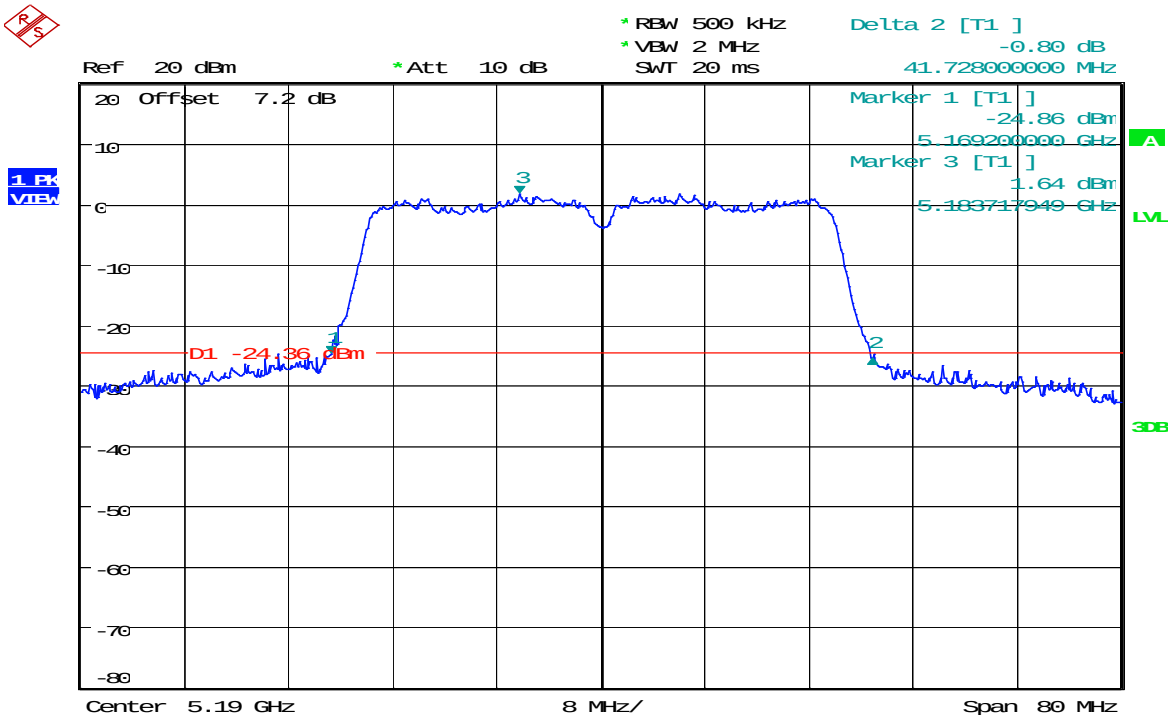


CH High



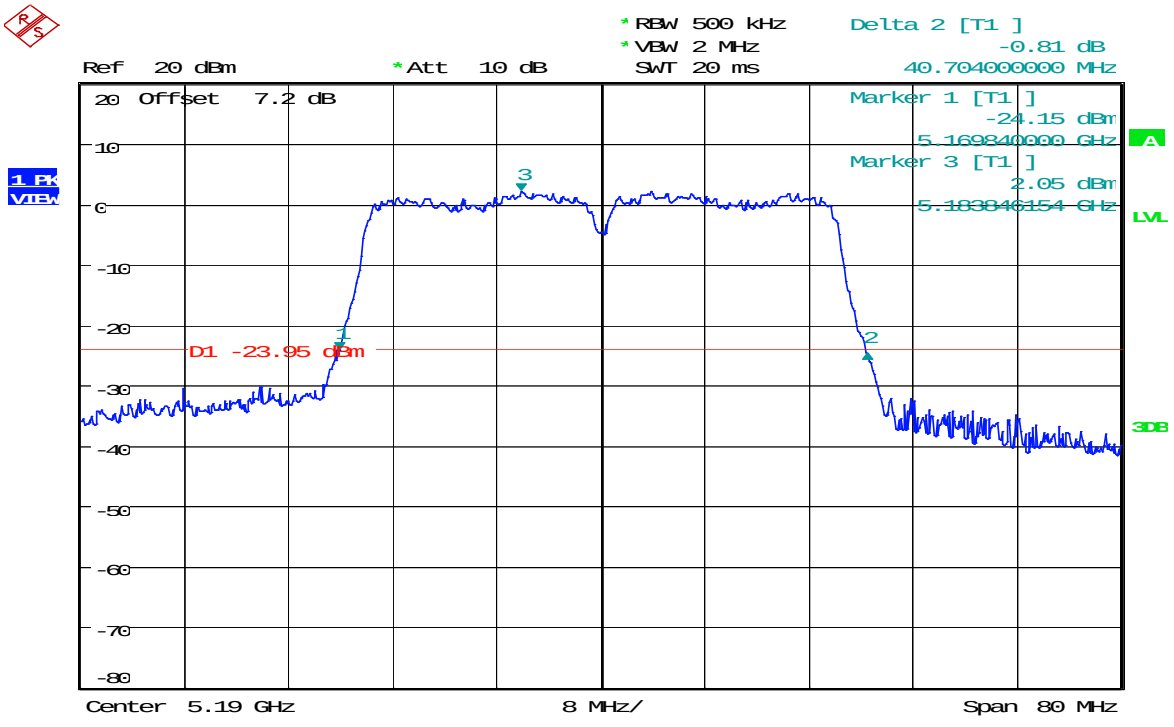
IEEE 802.11n HT40 mode/Chain 1:

CH Low



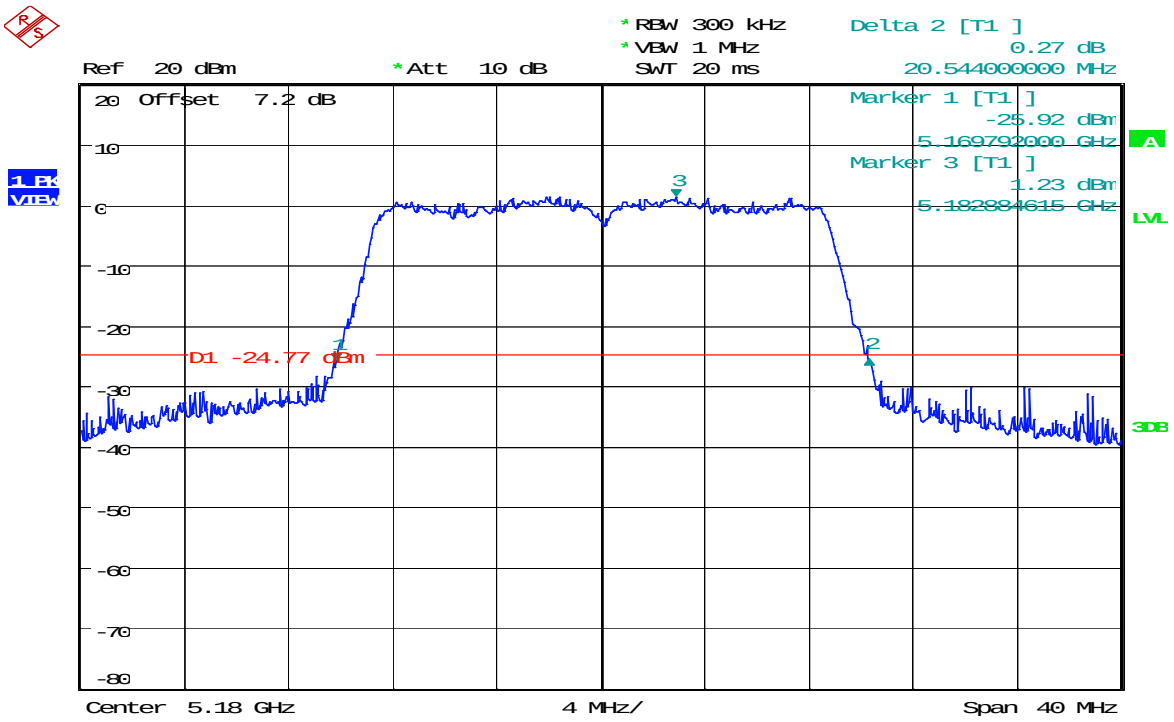
IEEE 802.11n HT40 mode/Chain 2:

CH Low

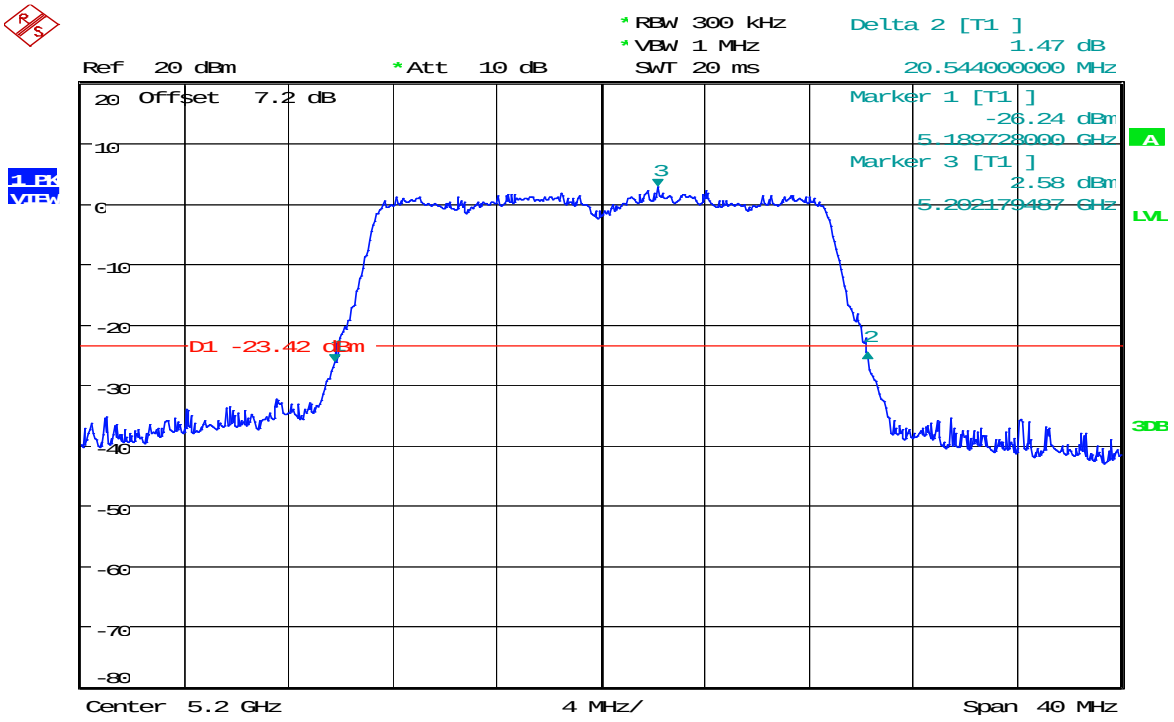


IEEE 802.11ac VHT20 mode/Chain 1:

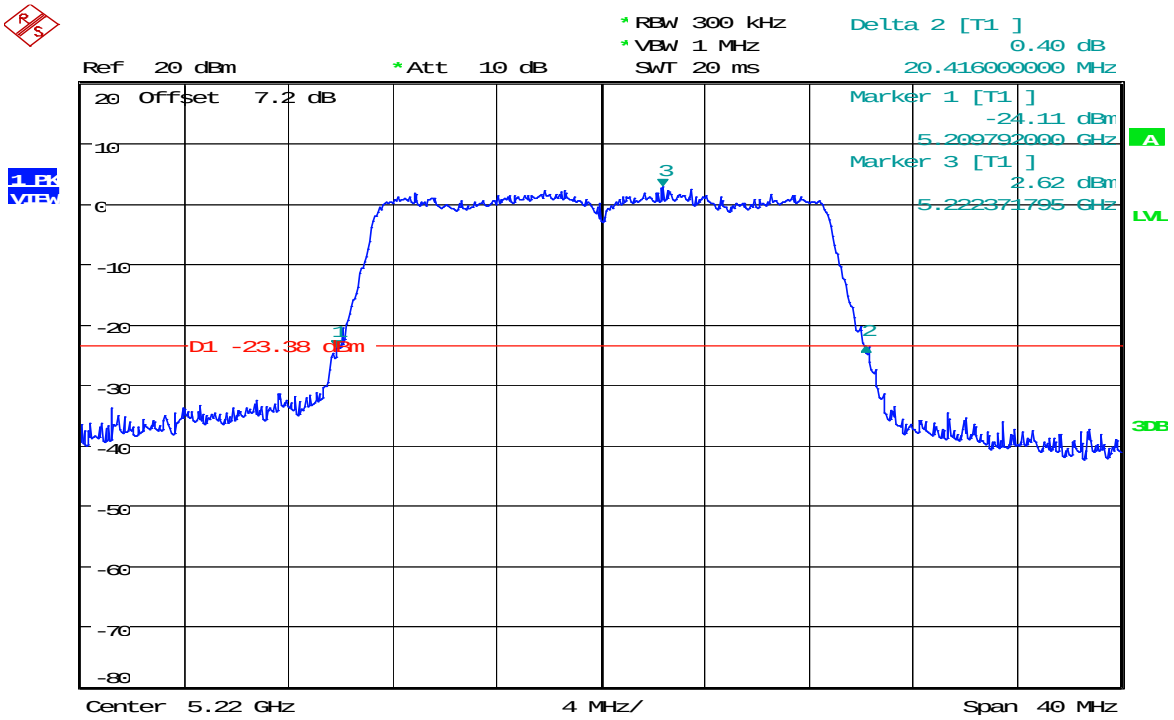
CH Low



CH Mid

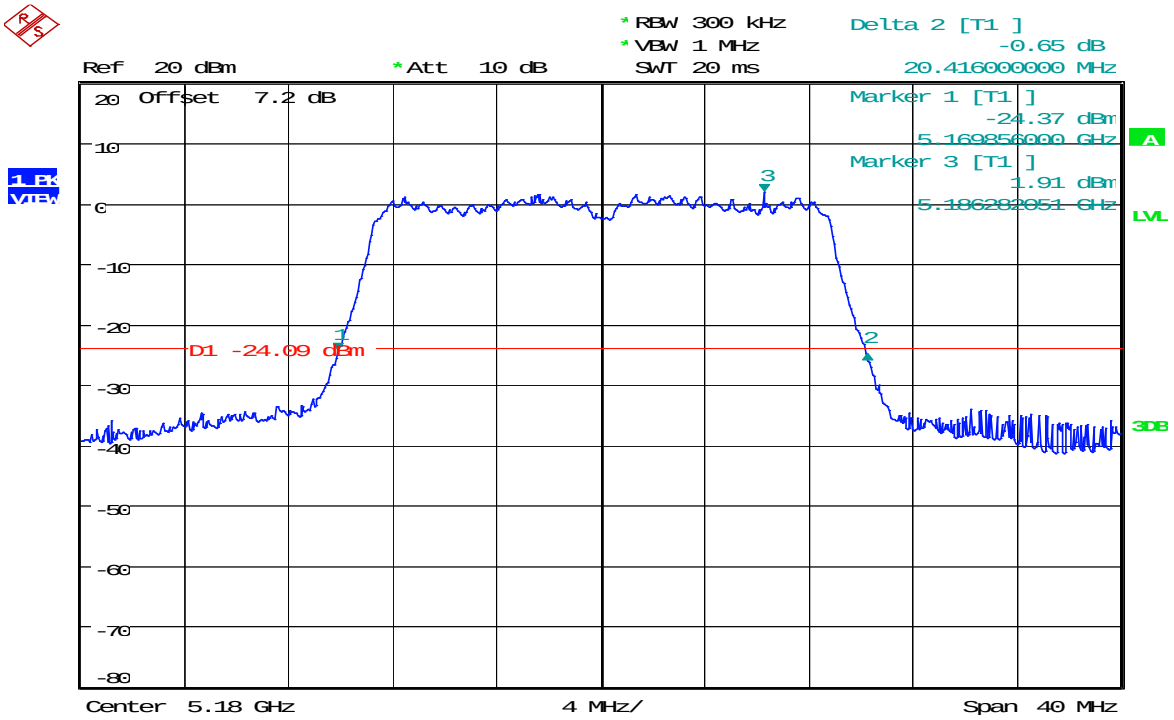


CH High

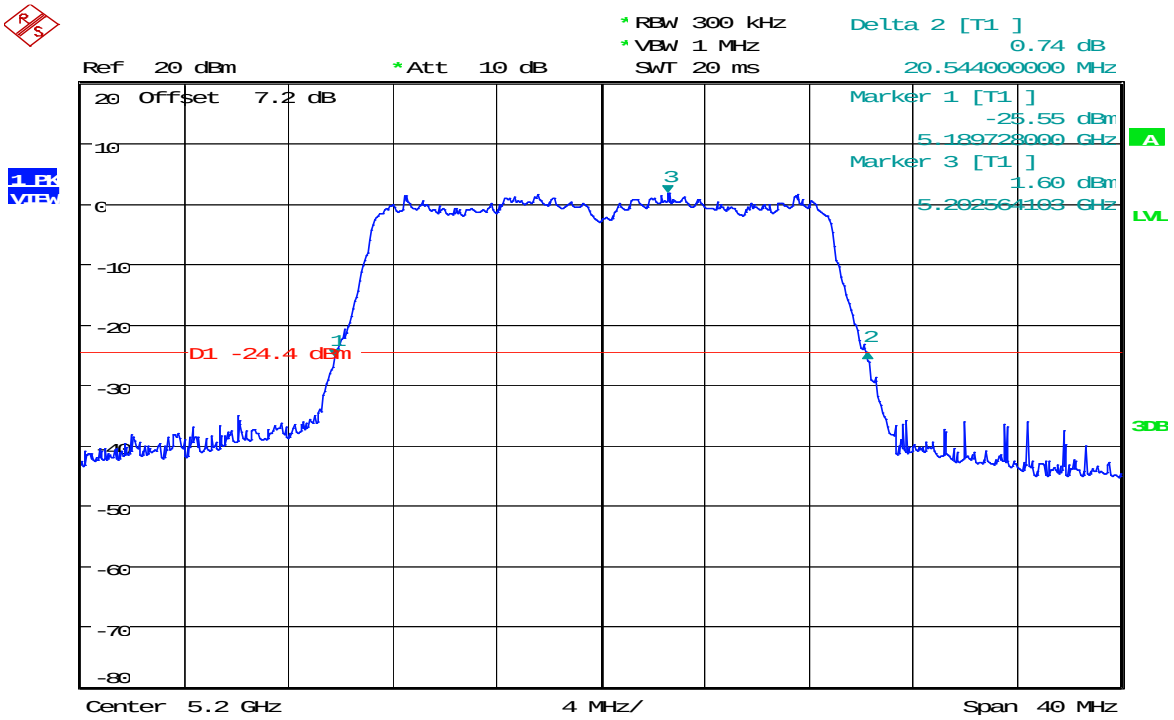


IEEE 802.11ac VHT20 mode/Chain 2:

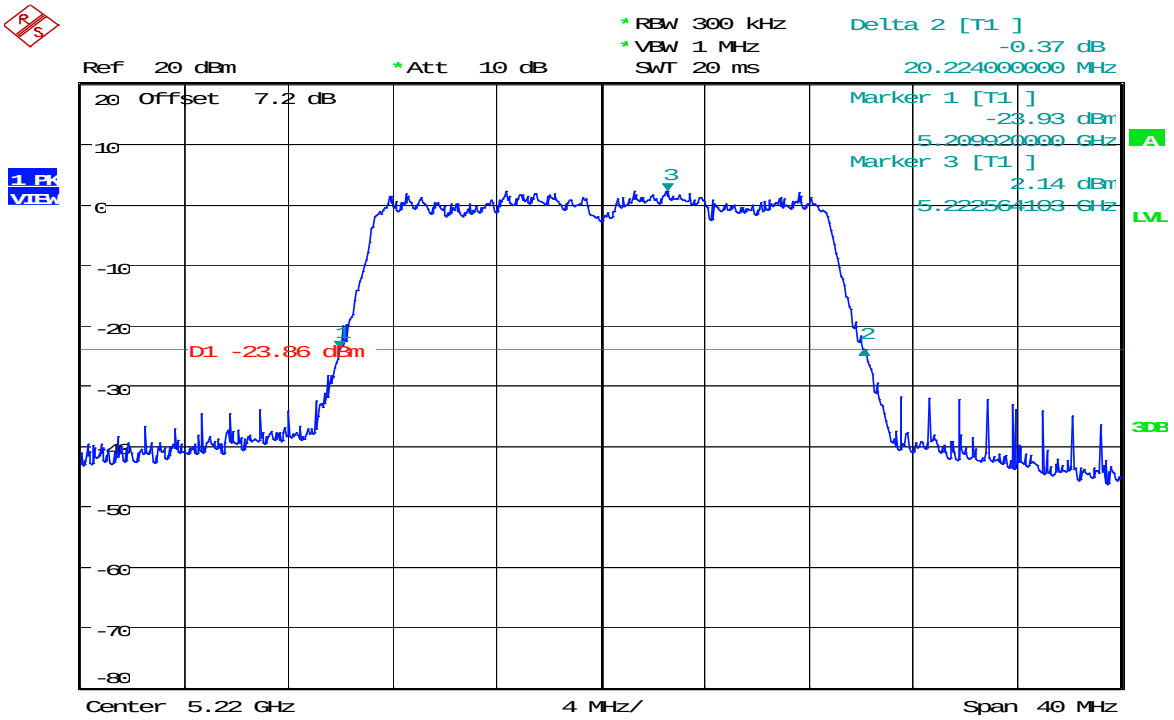
CH Low



CH Mid

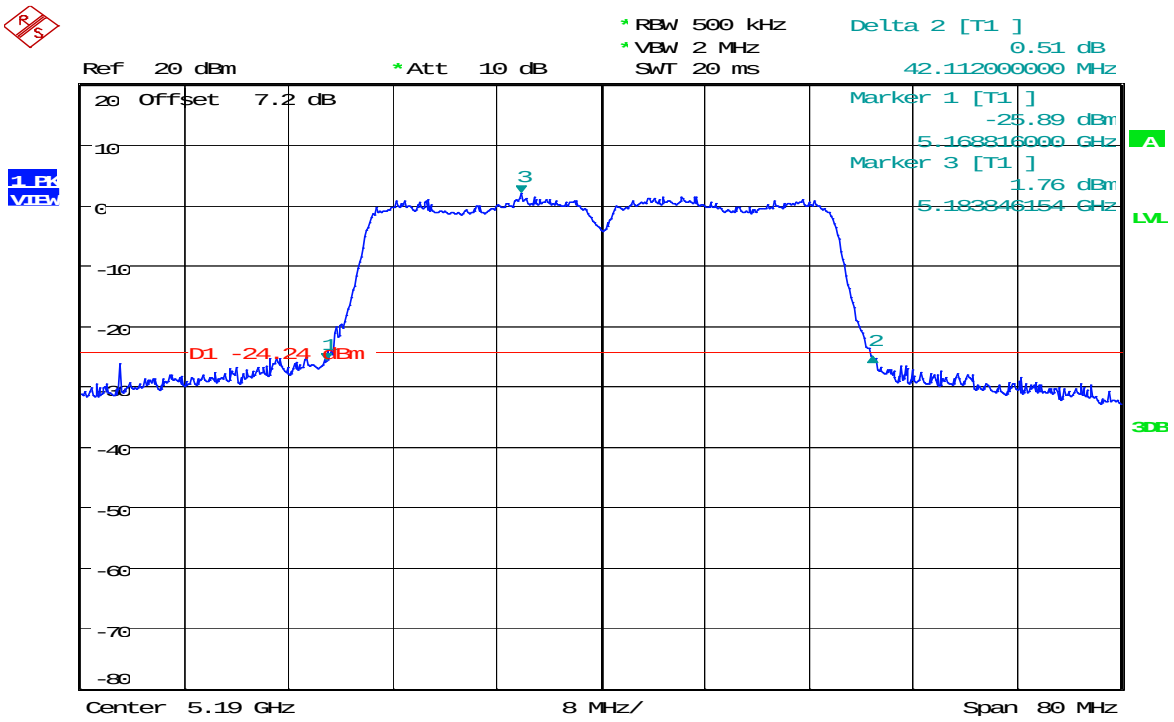


CH High



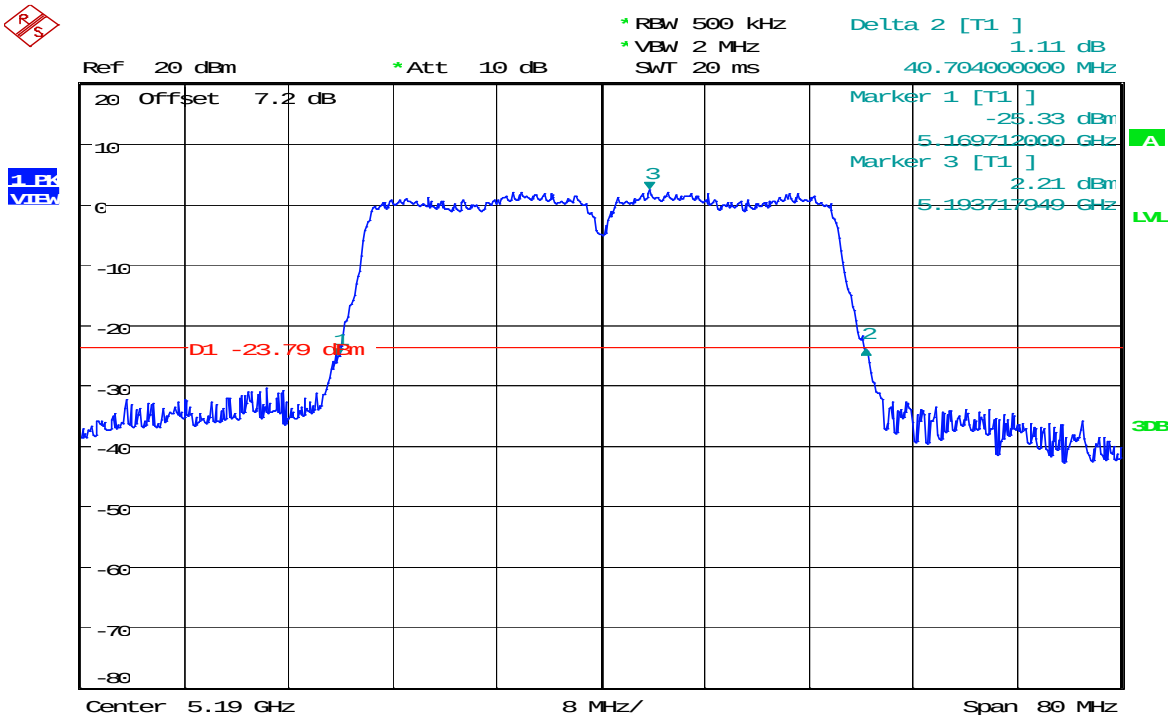
IEEE 802.11ac VHT40 mode/Chain 1:

CH Low



IEEE 802.11ac VHT40 mode/Chain 2:

CH Low

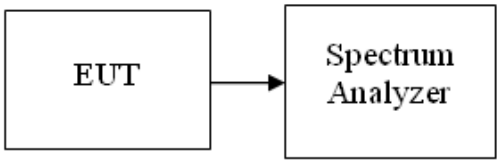


8.2 99% EMISSION BANDWIDTH

LIMIT

None; for reporting purposes only.

Test Configuration



Test Procedure

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geqslant$ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode/ Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.923
Mid	5200	16.923
High	5220	16.923

Test mode: IEEE 802.11a mode/ Chain 2

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.859
Mid	5200	16.923
High	5220	16.923

Test mode: IEEE 802.11n HT20MHz mode/ Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.821
Mid	5200	17.821
High	5220	17.756

Test mode: IEEE 802.11n HT20MHz mode/ Chain 2

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.756
Mid	5200	17.756
High	5220	17.756

Test mode: IEEE 802.11n HT40MHz mode / Chain 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.410

Test mode: IEEE 802.11n HT40MHz mode / Chain 2

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.282

Test mode: IEEE 802.11ac VHT20MHz mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	17.756
Mid	5200	17.692
High	5220	17.756

Test mode: IEEE 802.11ac VHT20MHz mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	17.756
Mid	5200	17.756
High	5220	17.756

Test mode: IEEE 802.11ac VHT40MHz mode/ Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	36.538

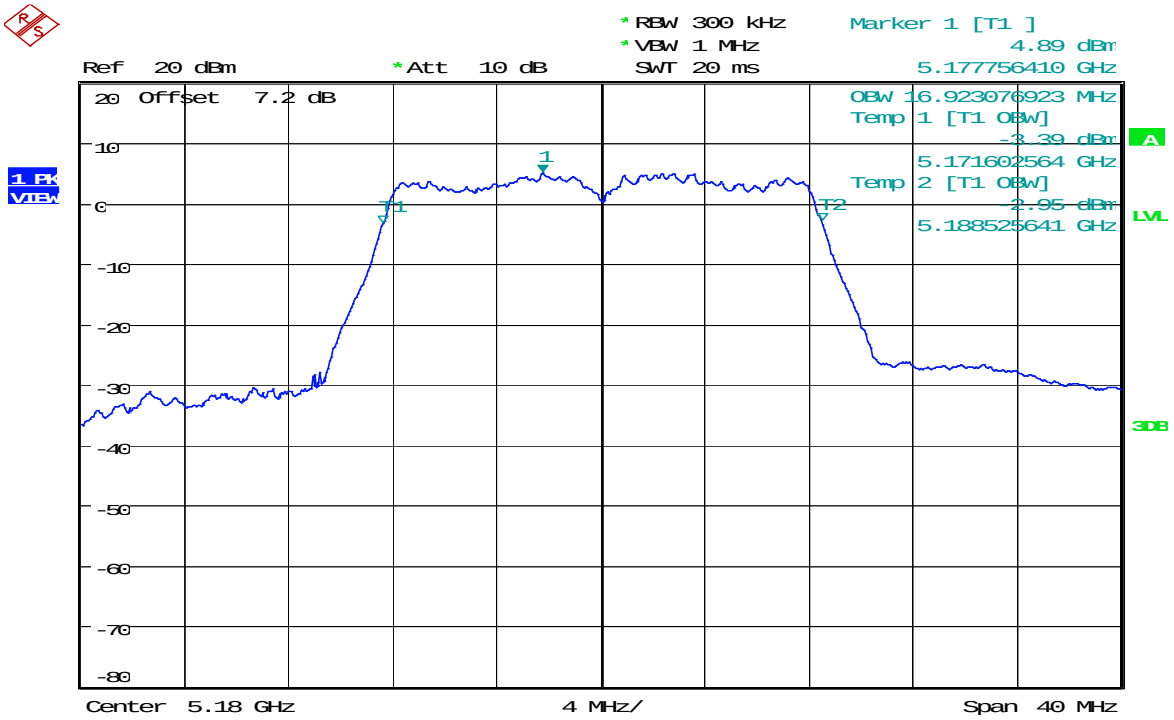
Test mode: IEEE 802.11ac VHT40MHz mode/ Chain 2

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	36.154

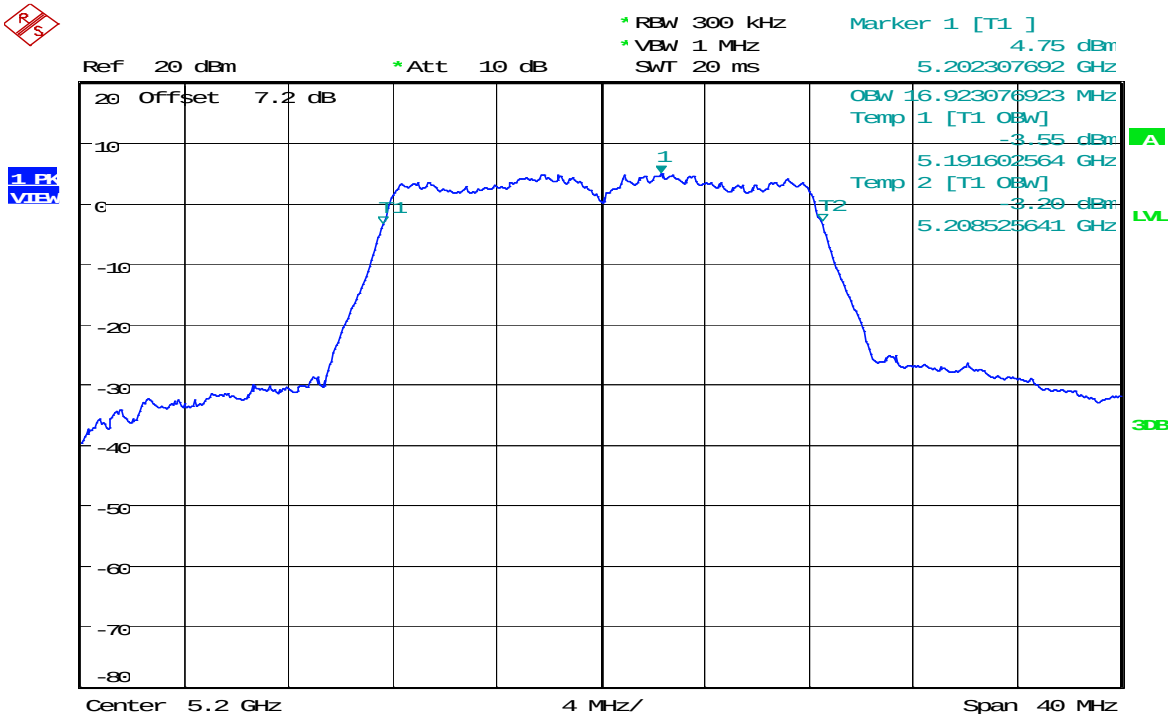
Test Plot

IEEE 802.11a mode/Chain 1:

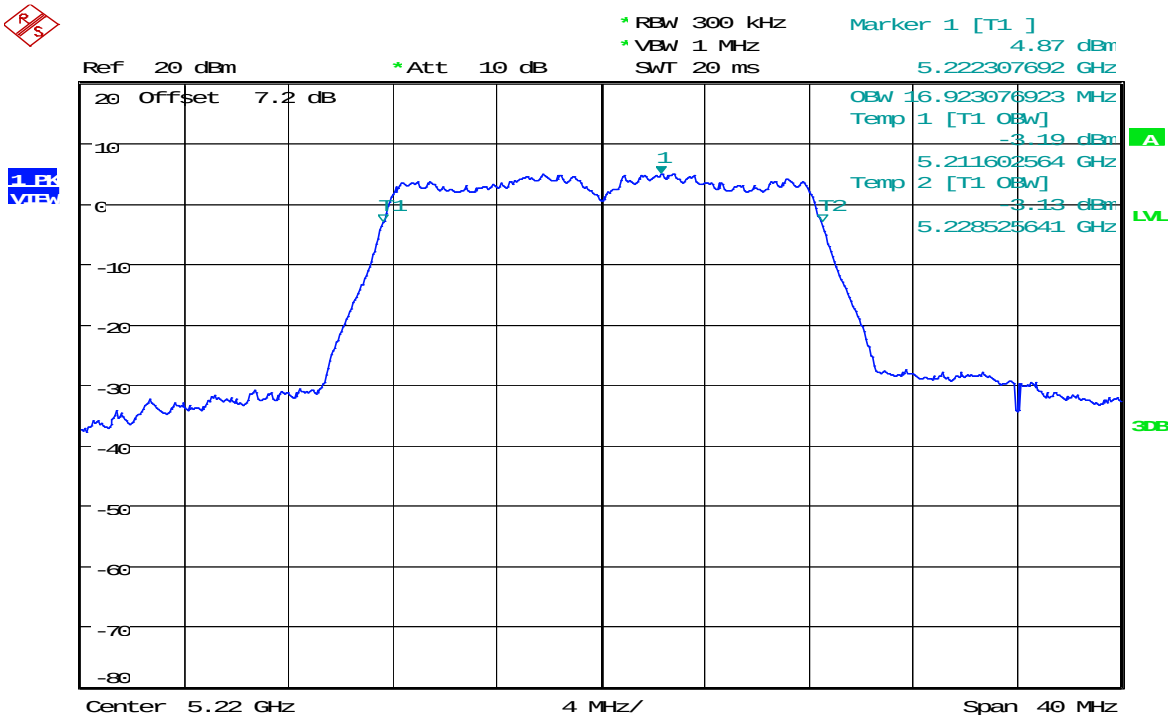
CH Low



CH Mid

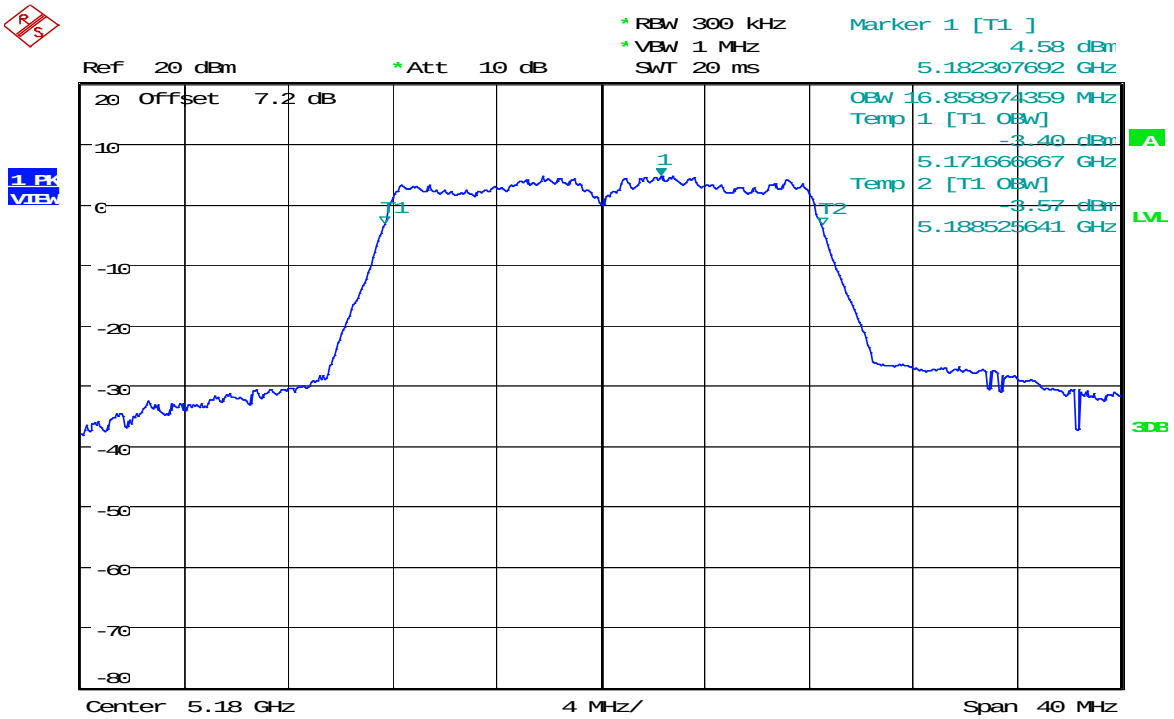


CH High

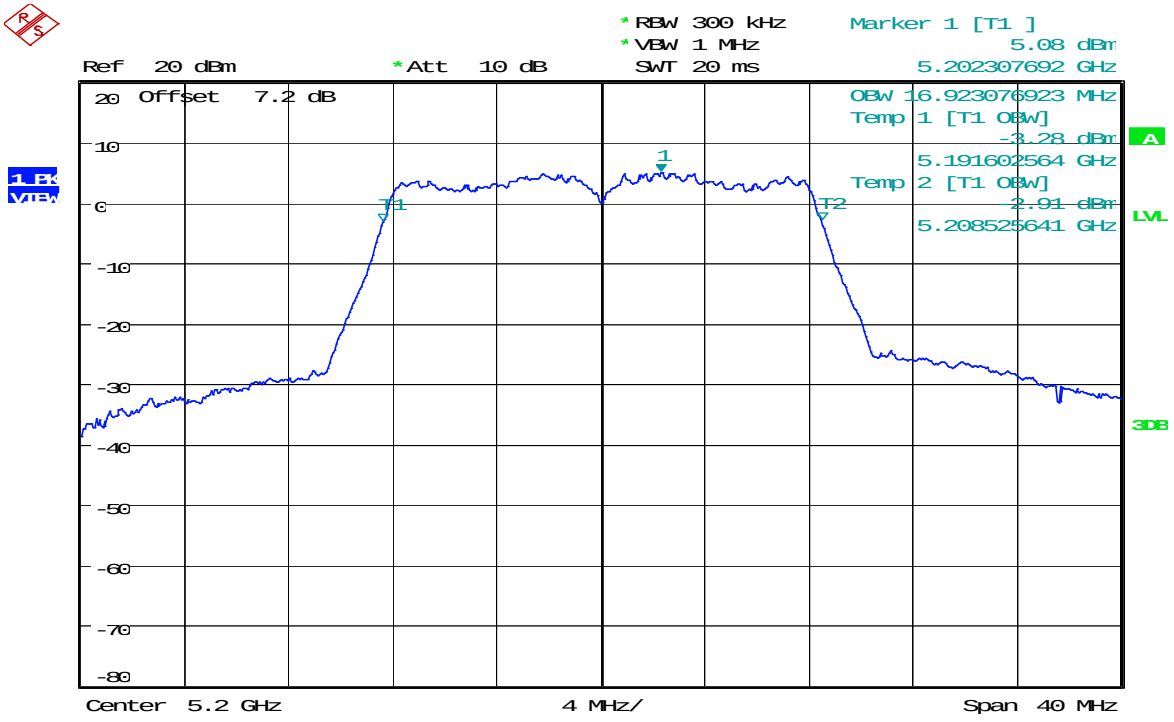


IEEE 802.11a mode/Chain 2:

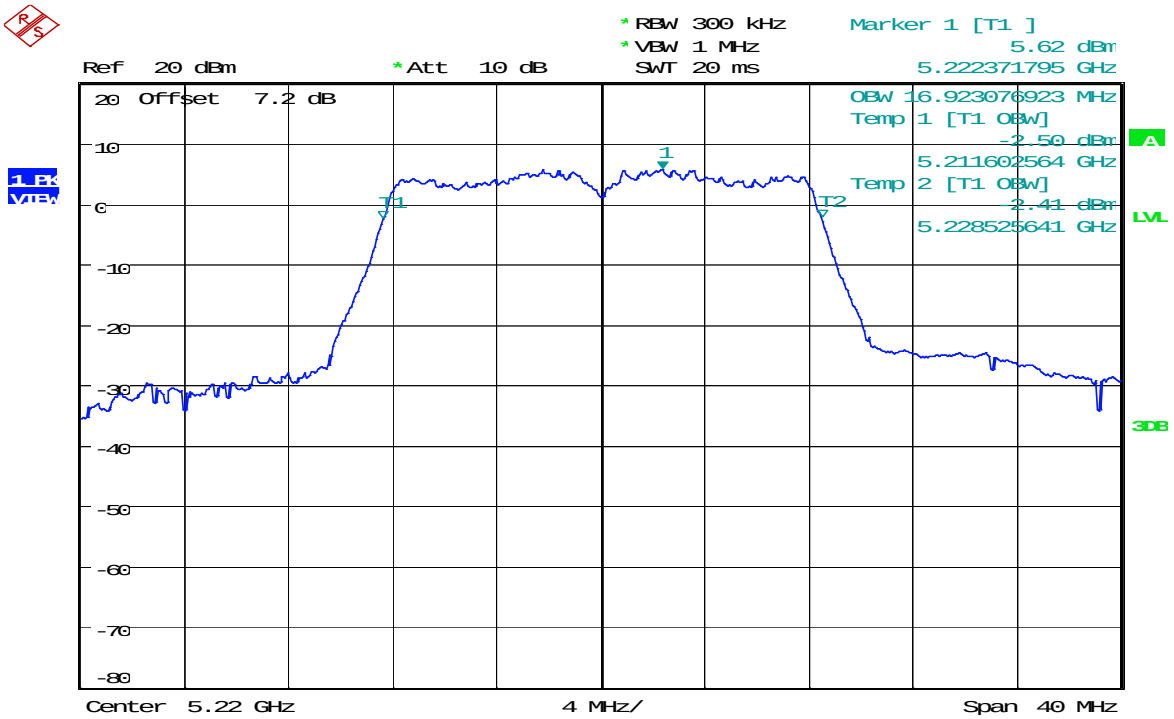
CH Low



CH Mid

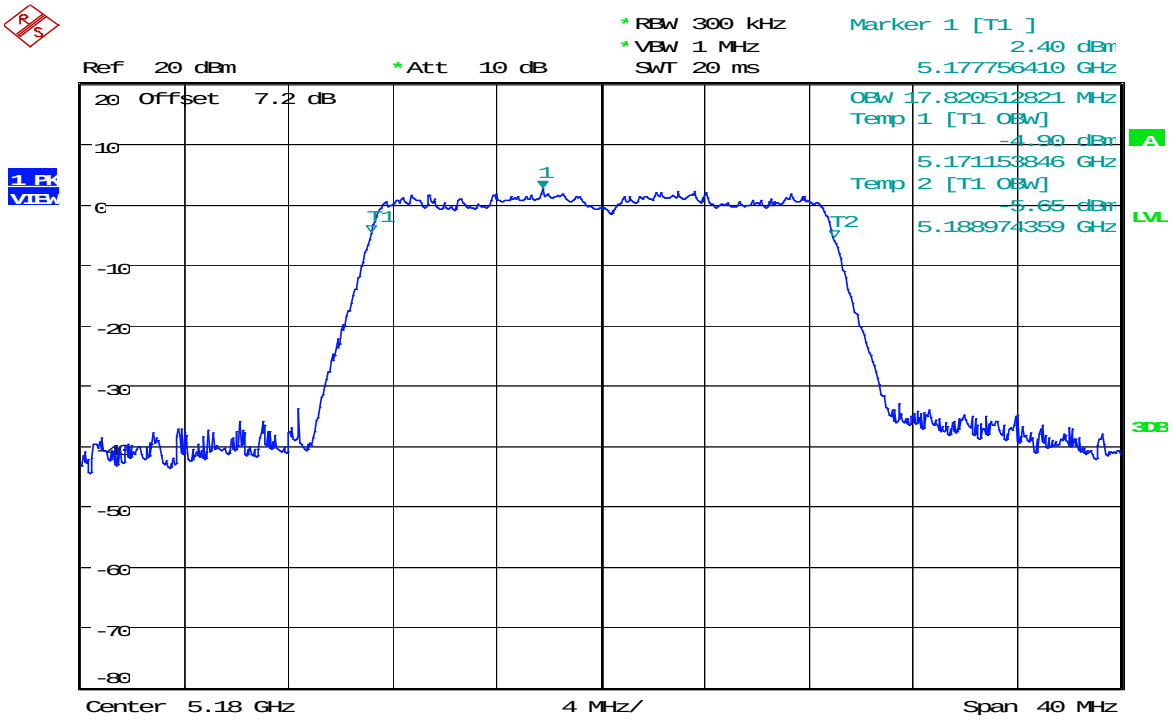


CH High

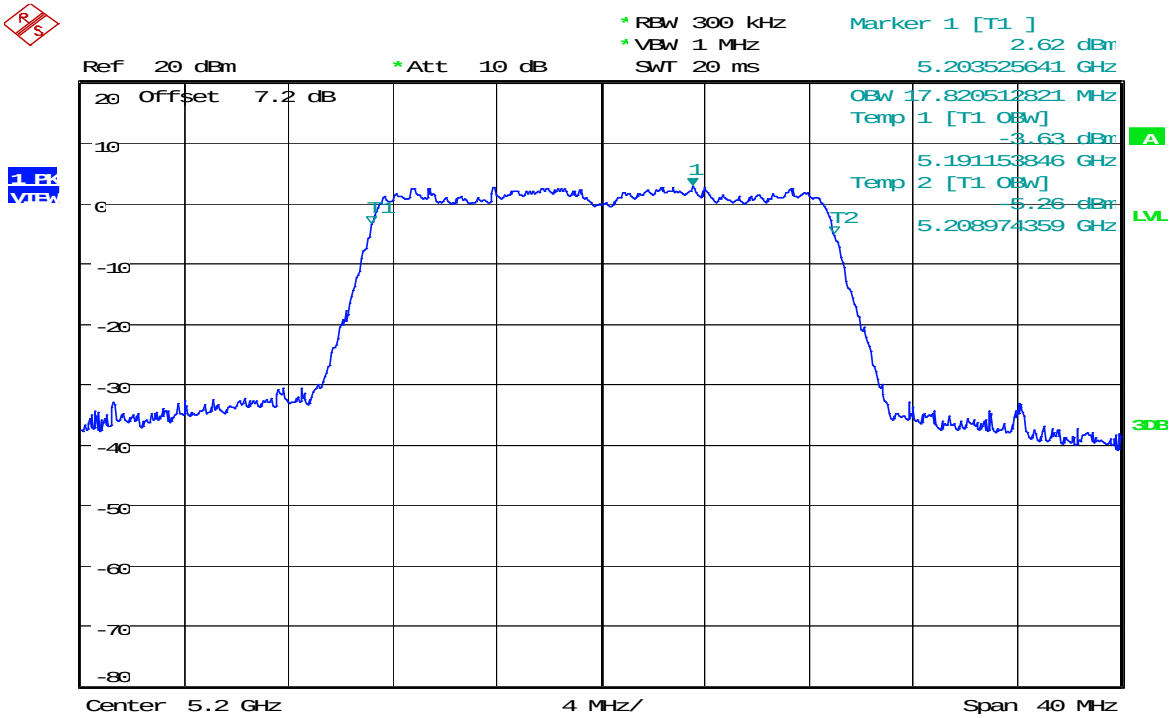


IEEE 802.11n HT20 mode/Chain 1:

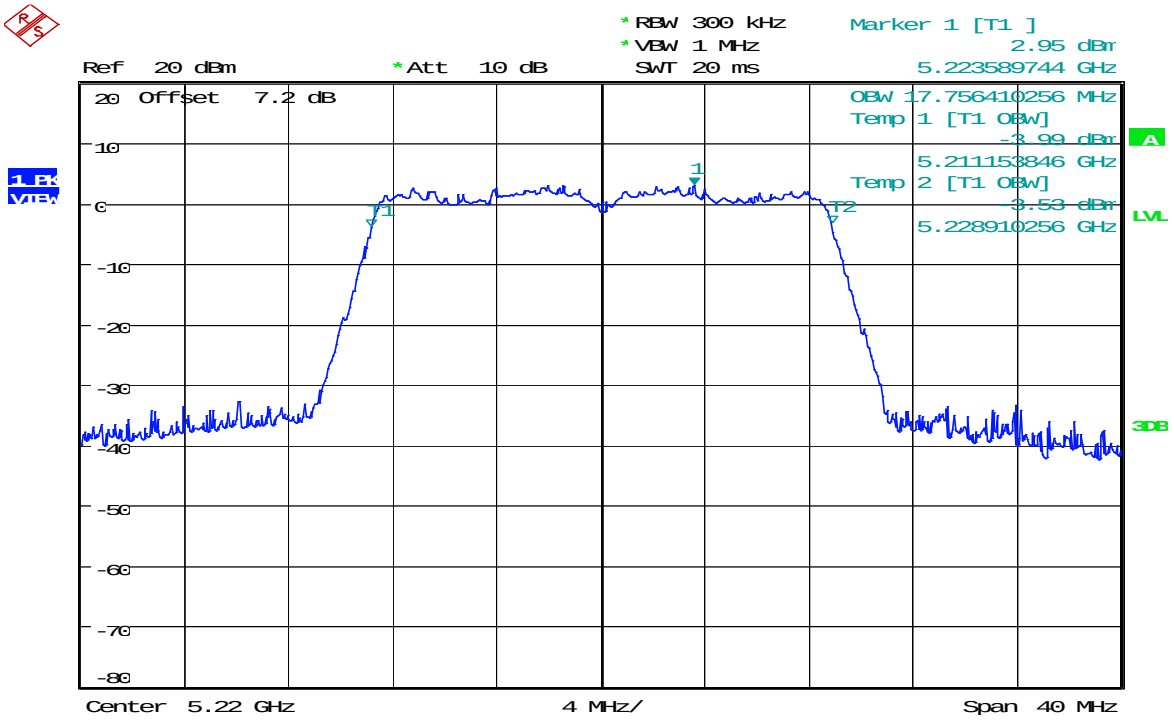
CH Low



CH Mid

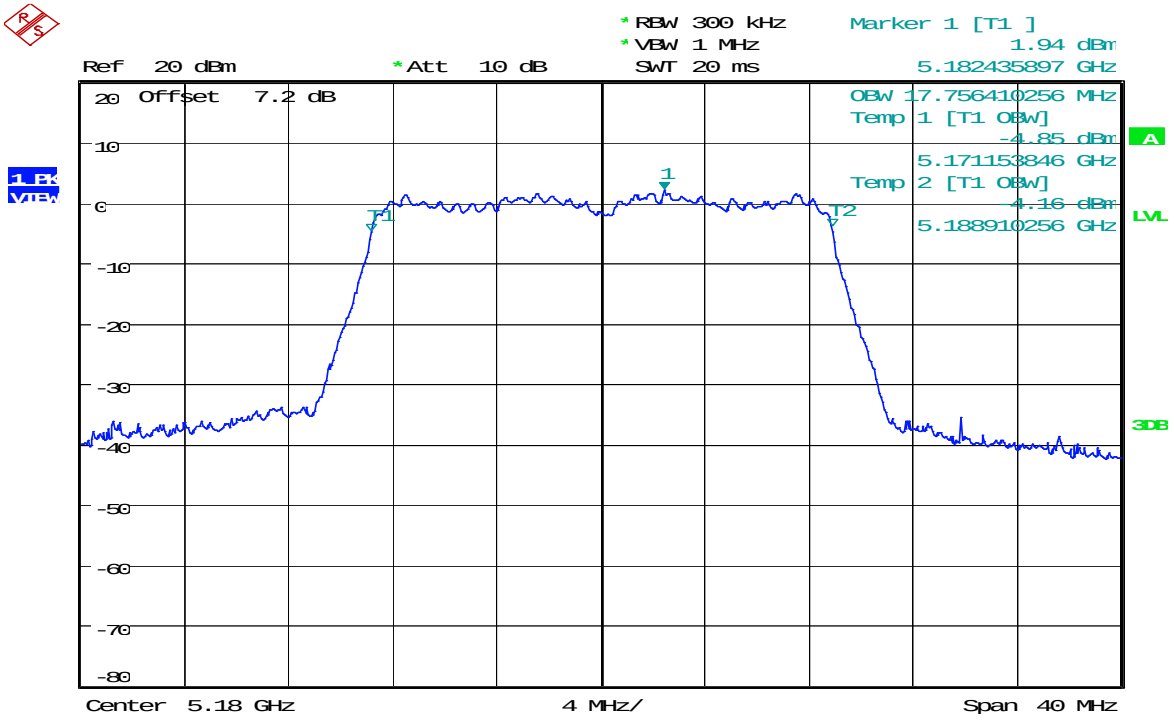


CH High

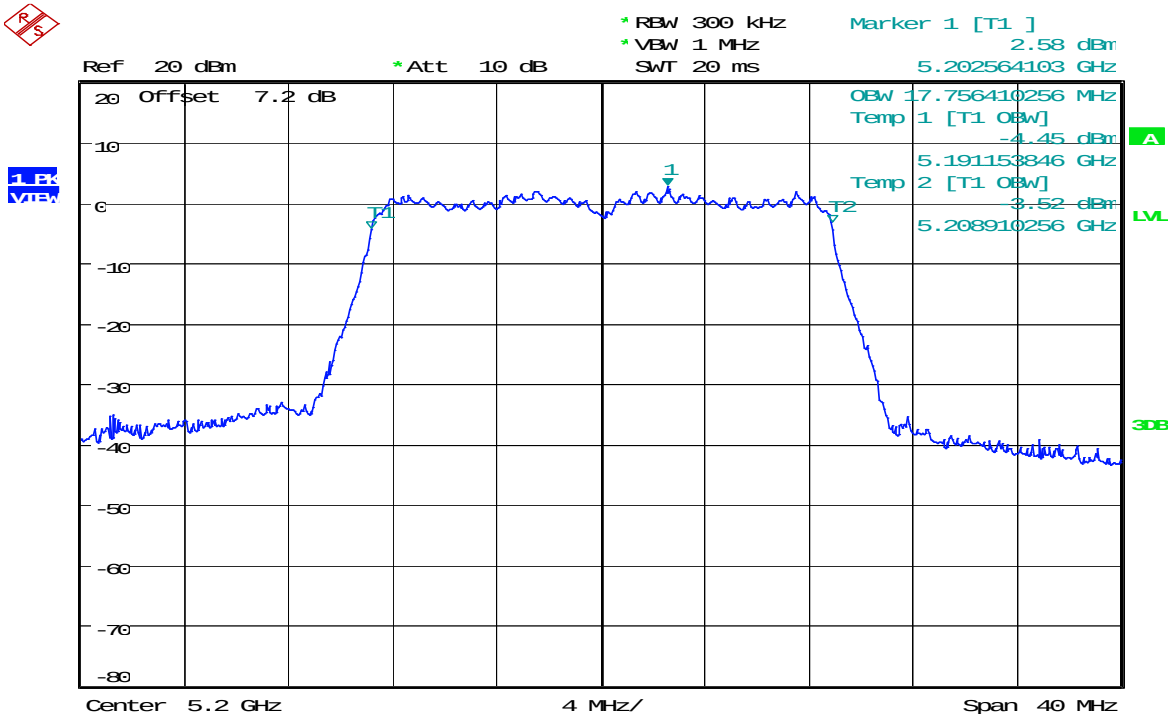


IEEE 802.11n HT20 mode/Chain 2:

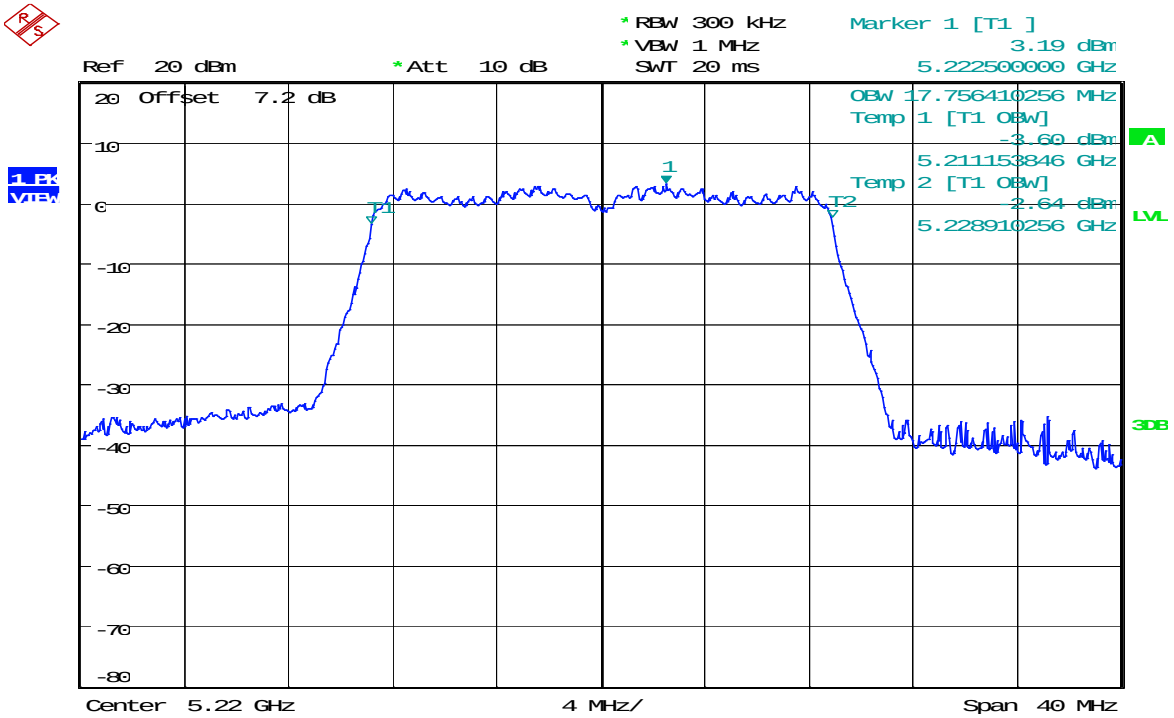
CH Low



CH Mid

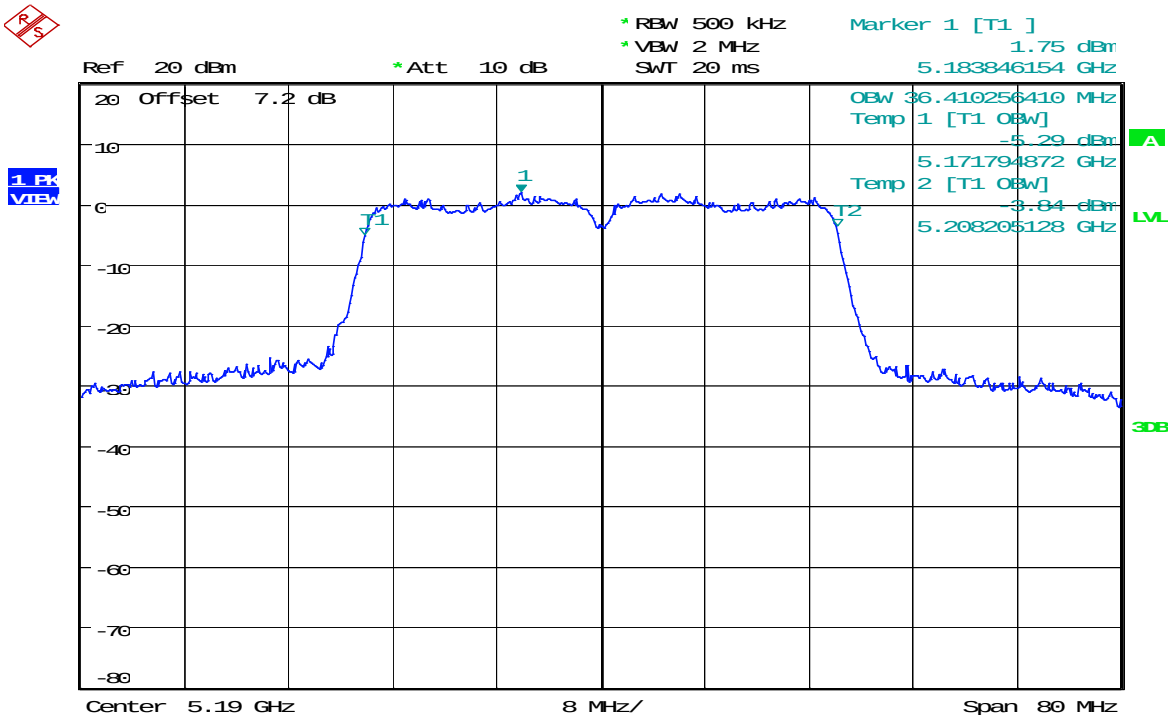


CH High



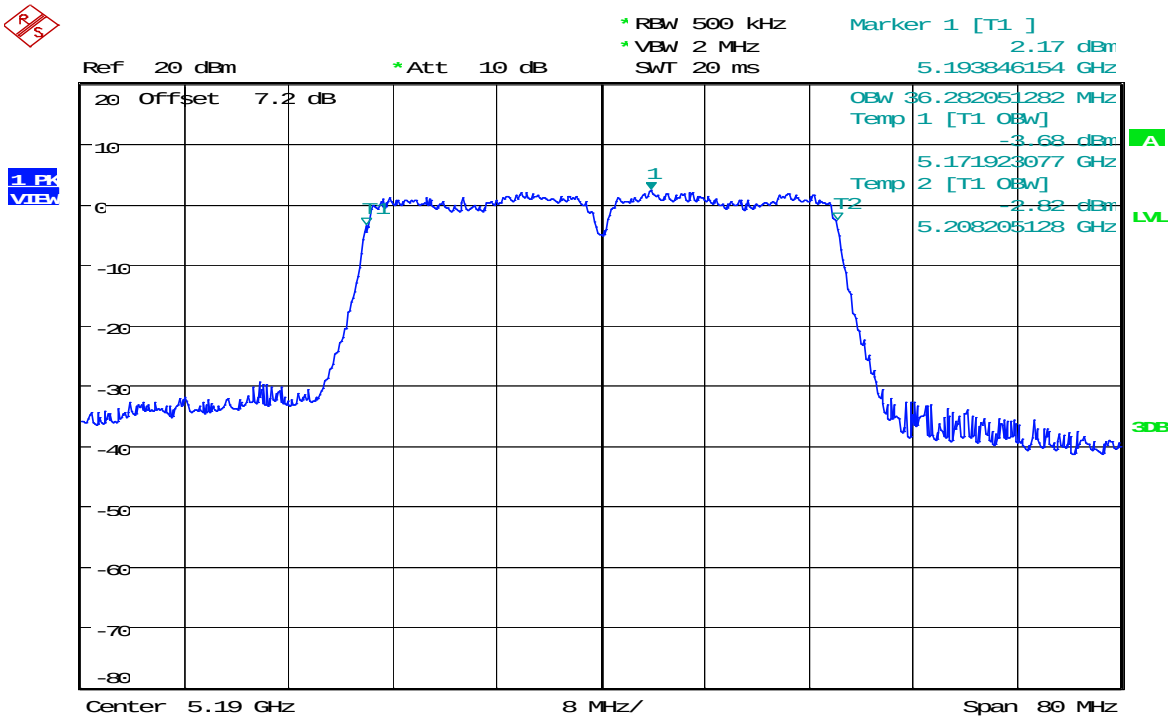
IEEE 802.11n HT40 mode/Chain 1:

CH Low



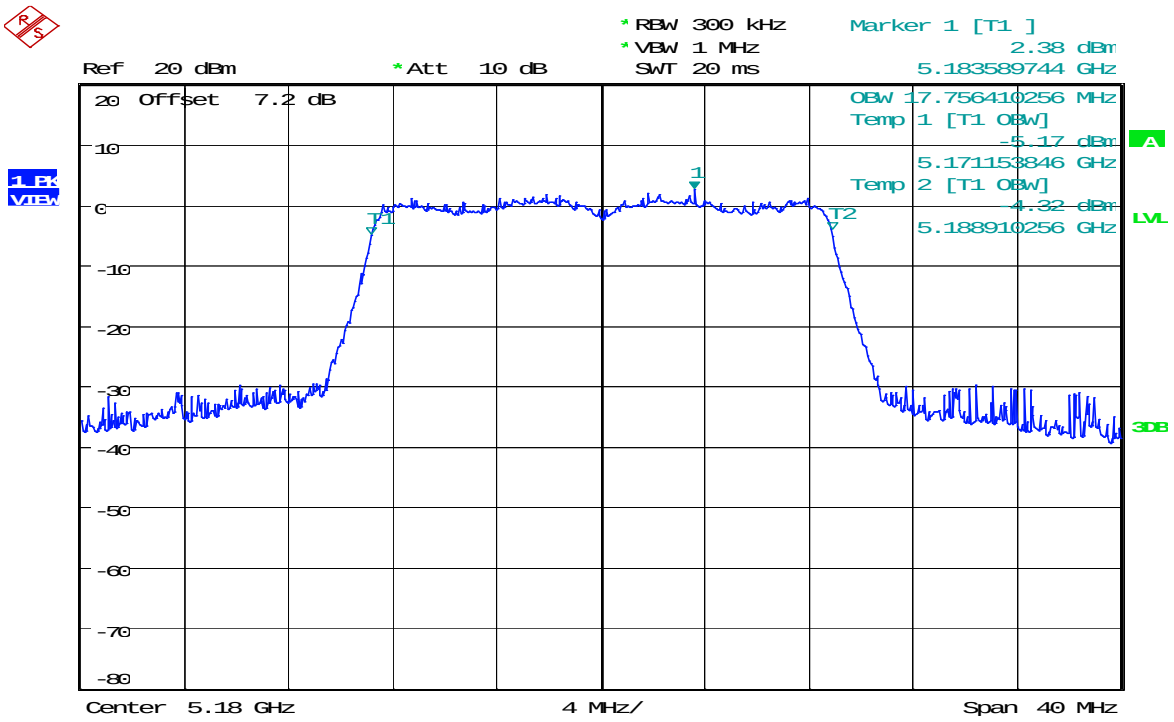
IEEE 802.11n HT40 mode/Chain 2:

CH Low

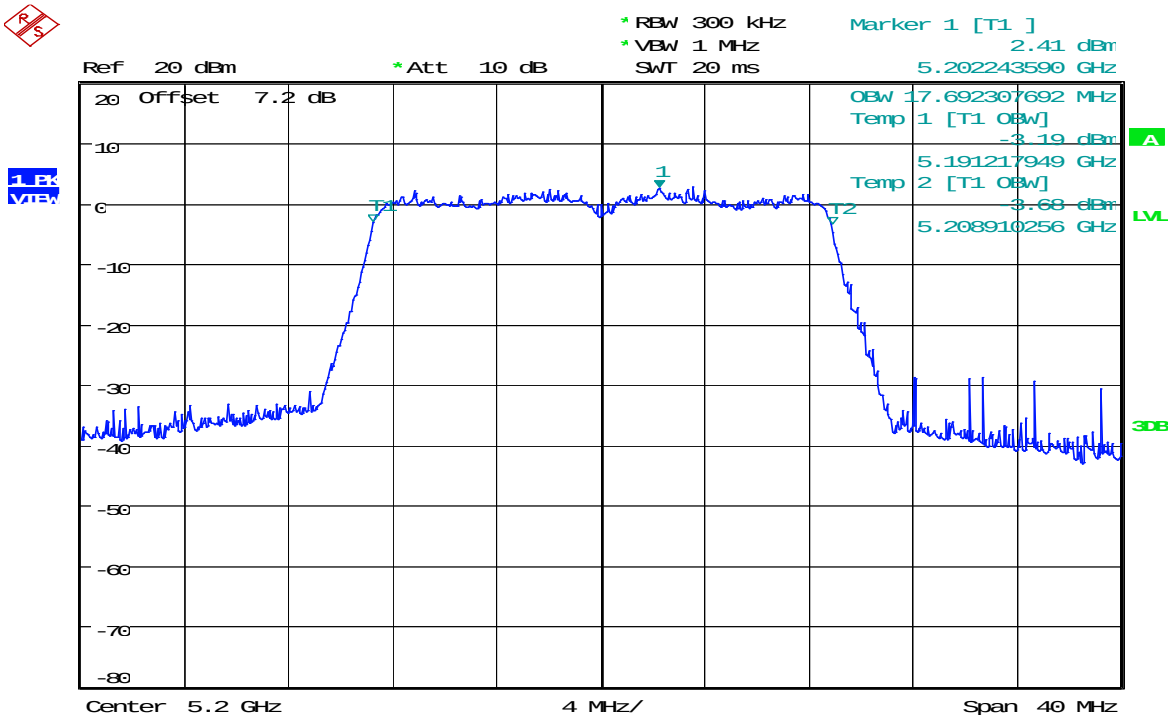


IEEE 802.11ac VHT20 mode/Chain 1:

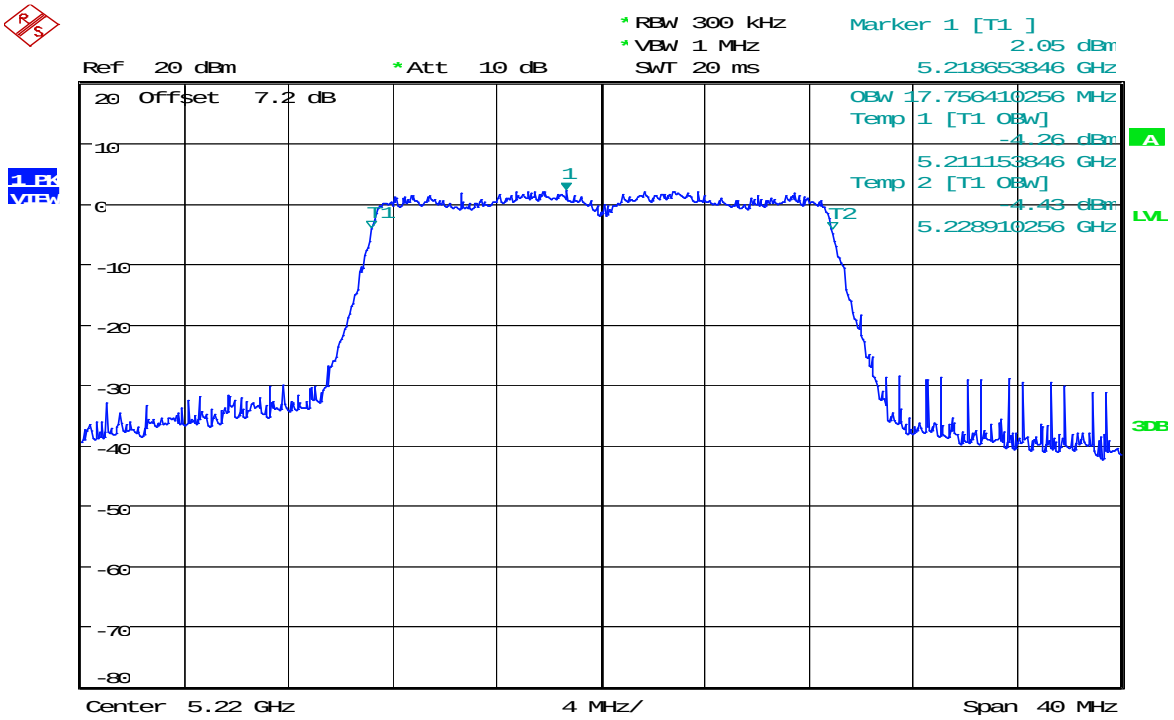
CH Low



CH Mid

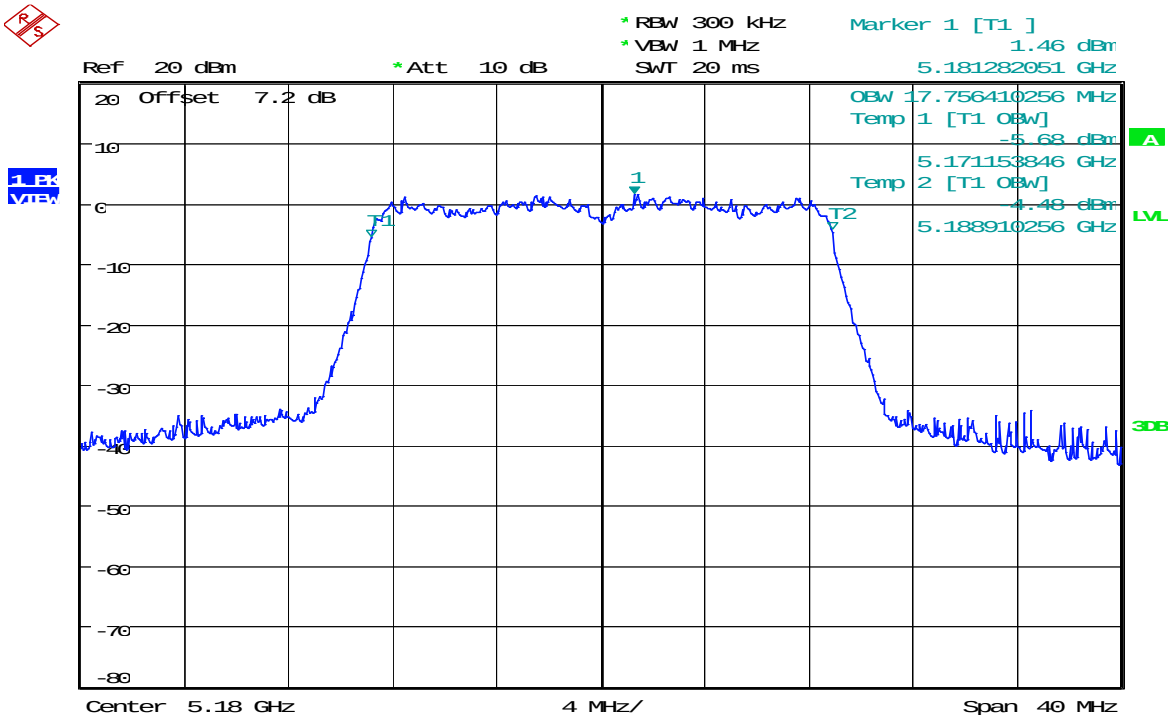


CH High

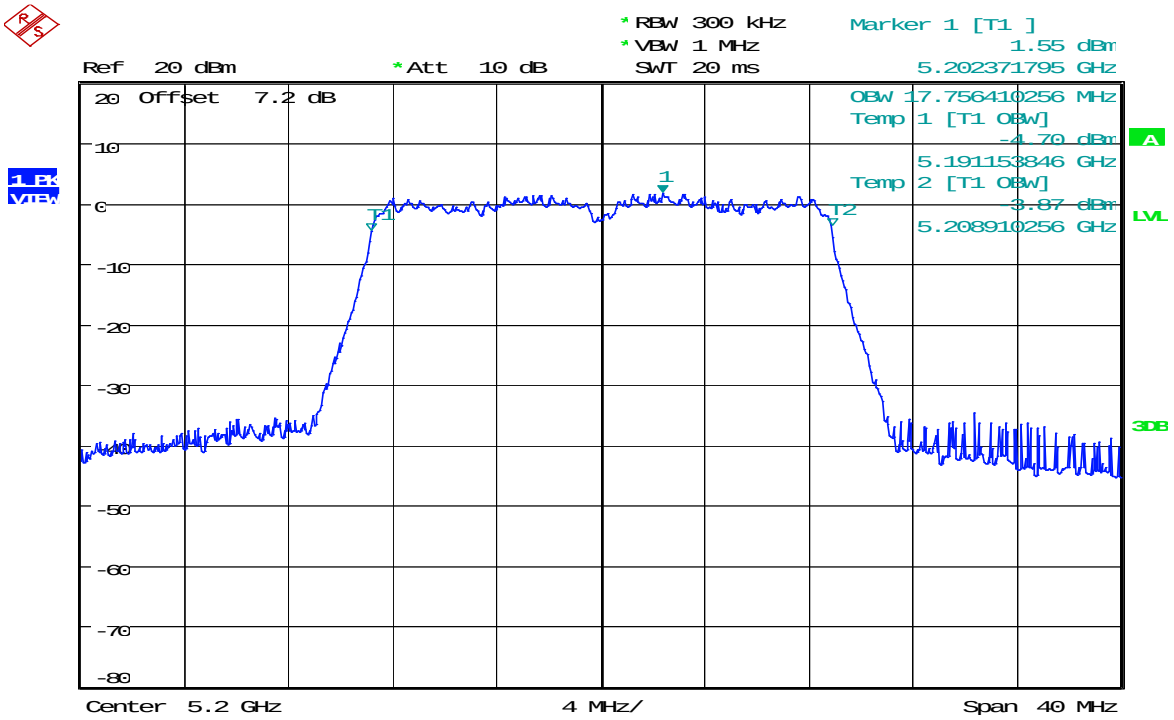


IEEE 802.11ac VHT20 mode/Chain 2:

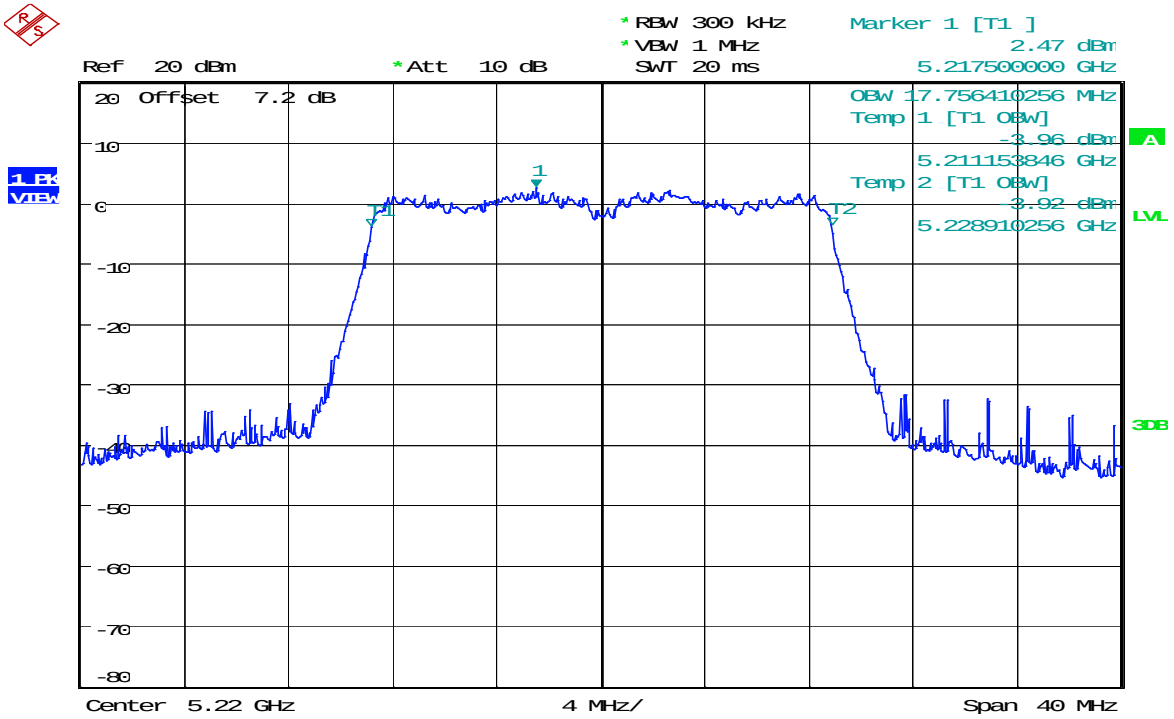
CH Low



CH Mid

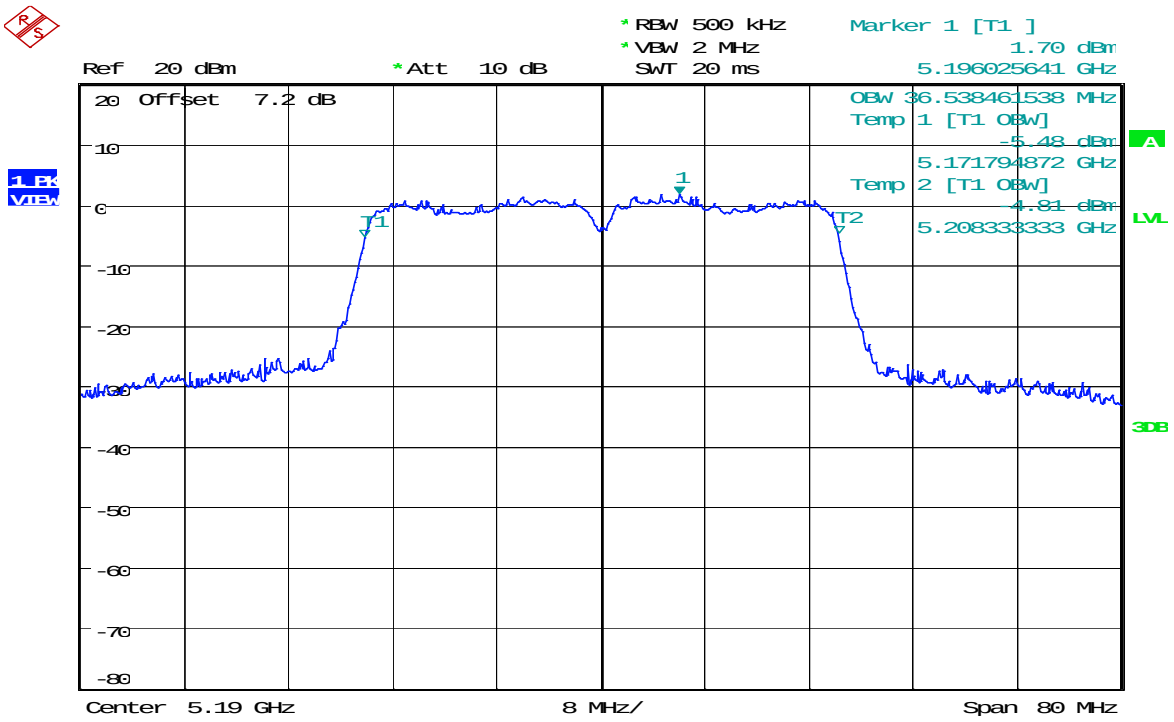


CH High



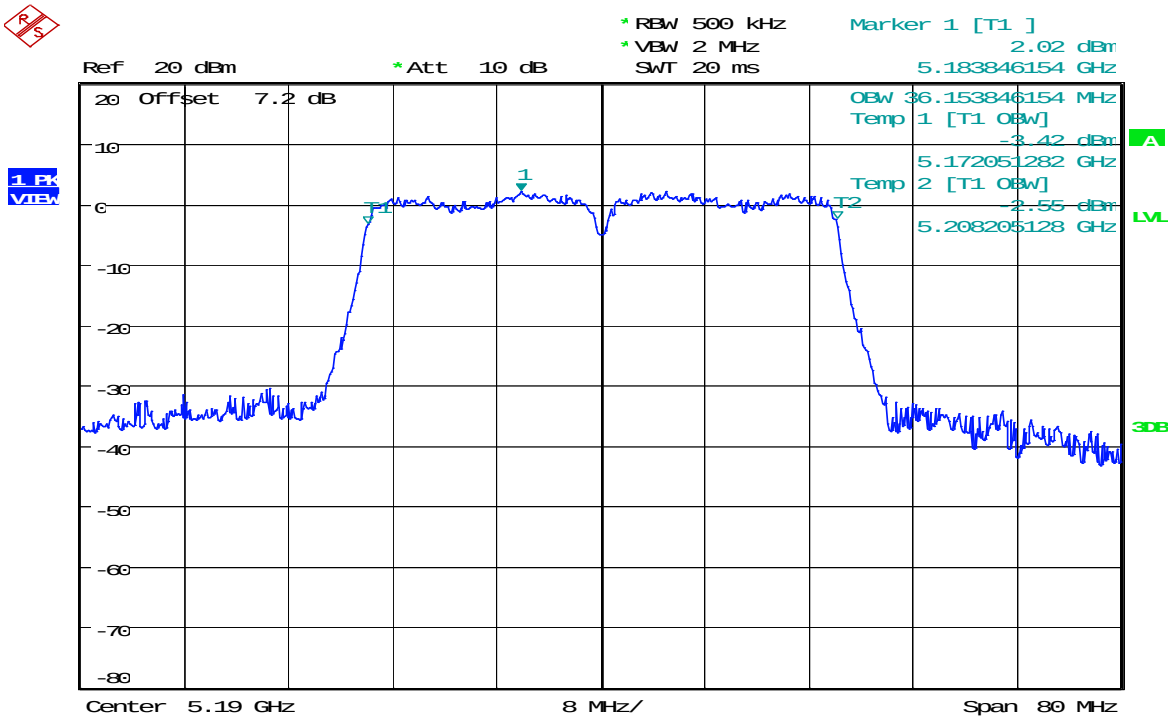
IEEE 802.11ac VHT40 mode/Chain 1:

CH Low



IEEE 802.11ac VHT40 mode/Chain 2:

CH Low



8.3 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

The peak power shall not exceed the limit as follow:

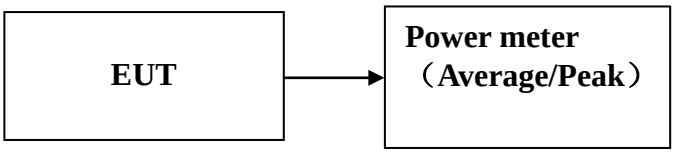
According to §15.407(a),

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Antenna 1 Gain=7.1dBi>6dBi
Chain 1 Limit=24.00dBm-(7.1-6) dB=22.90dBm
Antenna 2 Gain=4.6dBi<6dBi
Chain 2 Limit=24.00dBm
Directional Gain=9.04dBi>6dBi
MIMO Limit=24.00dBm-(9.04-6) dB=20.96dBm

Test Configuration



The EUT was connected to a spectrum analyzer through a 50Ω RF cable.

TEST PROCEDURE

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

TEST RESULTS

No non-compliance noted

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	Chain 1 Average Output Power (dBm)	Chain 1 Limit (dBm)	Chain 2 Average Output Power (dBm)	Chain 2 Limit (dBm)
Low	5180	12.70	22.90	12.30	24.00
Mid	5200	12.51	22.90	12.37	24.00
High	5220	12.53	22.90	12.70	24.00

Test mode: IEEE 802.11n HT20MHz mode

Channel	Frequency (MHz)	Chain 1 Average Output Power (dBm)	Chain 2 Average Output Power (dBm)	Total Maximum Conducted Average Output Power (dBm)	MIMO Limit (dBm)
Low	5180	10.35	9.50	12.96	20.96
Mid	5200	10.63	9.61	13.16	20.96
High	5220	10.82	10.12	13.49	20.96

Test mode: IEEE 802.11n HT40MHz mode

Channel	Frequency (MHz)	Chain 1 Average Output Power (dBm)	Chain 2 Average Output Power (dBm)	Total Maximum Conducted Average Output Power (dBm)	MIMO Limit (dBm)
Low	5190	10.40	10.07	13.25	20.96

Test mode: IEEE 802.11ac VHT20MHz mode

Channel	Frequency (MHz)	Chain 1 Average Output Power (dBm)	Chain 2 Average Output Power (dBm)	Total Maximum Conducted Average Output Power (dBm)	MIMO Limit (dBm)
Low	5180	10.33	9.69	13.03	20.96
Mid	5200	10.92	9.68	13.35	20.96
High	5220	10.82	10.04	13.46	20.96

Test mode: IEEE 802.11ac VHT40MHz mode

Channel	Frequency (MHz)	Chain 1 Average Output Power (dBm)	Chain 2 Average Output Power (dBm)	Total Maximum Conducted Average Output Power (dBm)	MIMO Limit (dBm)
Low	5190	10.25	10.15	13.21	20.96

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

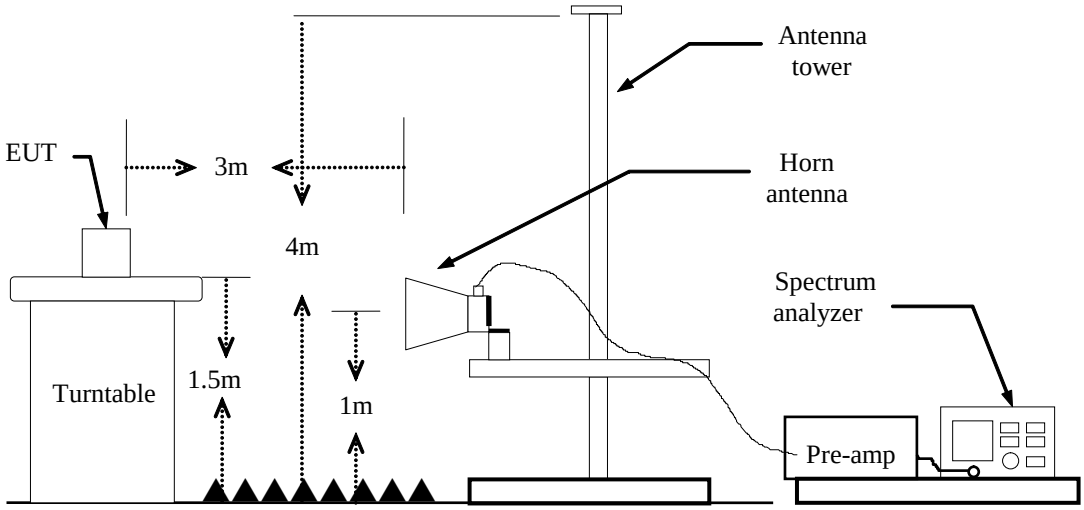
2.Duty factor has been offset with cable loss

8.4 BAND EDGES MEASUREMENT

LIMIT

According to §15.407(b),
(1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / Sweep=AUTO

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

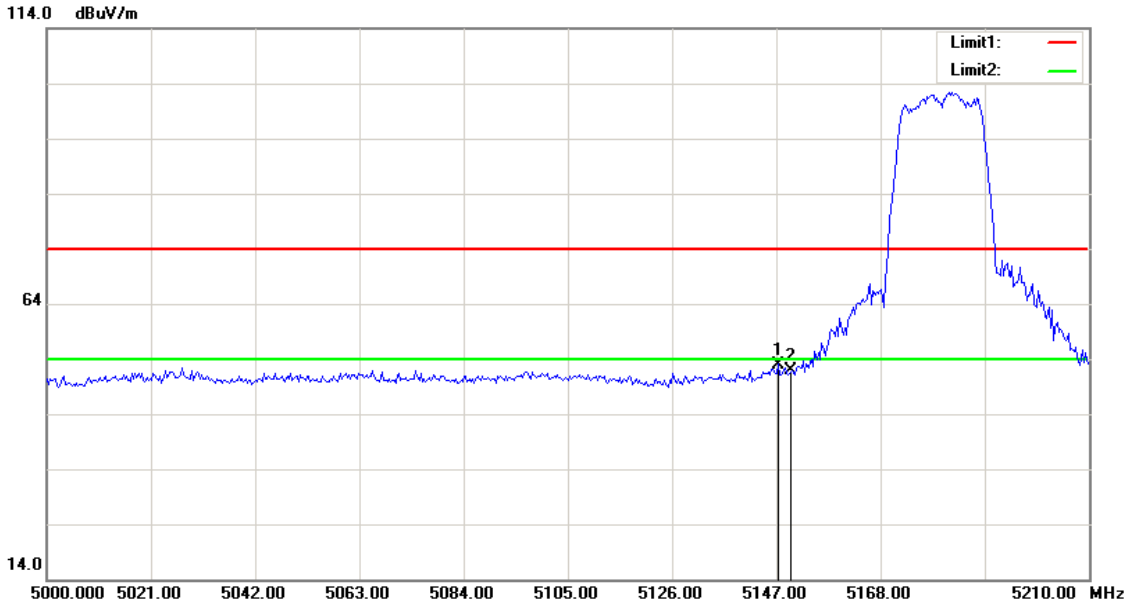
   VBW≧1/T,when duty cycle is less than 98 percent,where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximun power control level for the tested mode of operation.

TEST RESULTS

Refer to attach spectrum analyzer data chart.

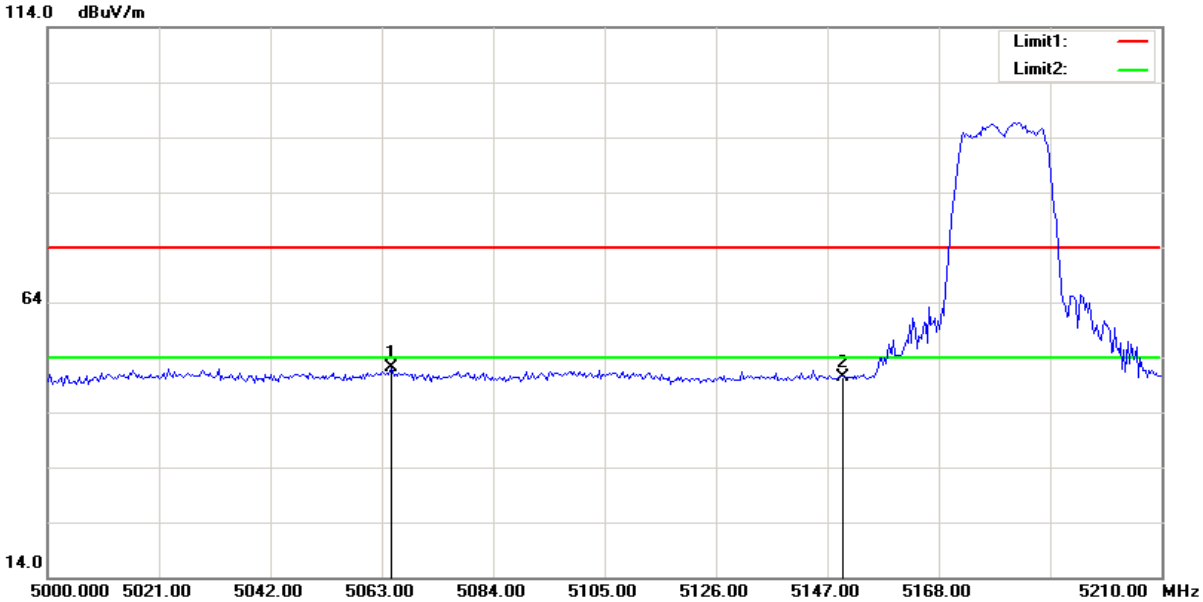
Band Edges (IEEE 802.11a mode)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5147.404	52.25	0.75	53.00	74.00	-21.00	100	194	peak
2	5150.000	51.04	0.76	51.80	74.00	-22.20	100	194	peak

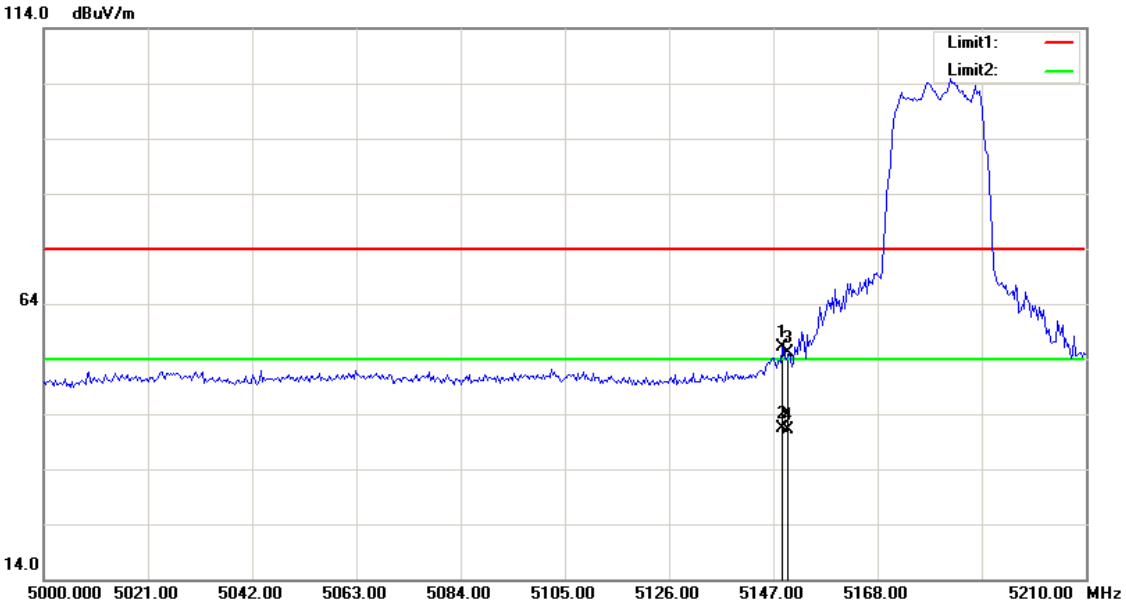
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5064.952	51.48	0.72	52.20	74.00	-21.80	100	4	peak
2	5150.000	49.53	0.76	50.29	74.00	-23.71	100	267	peak

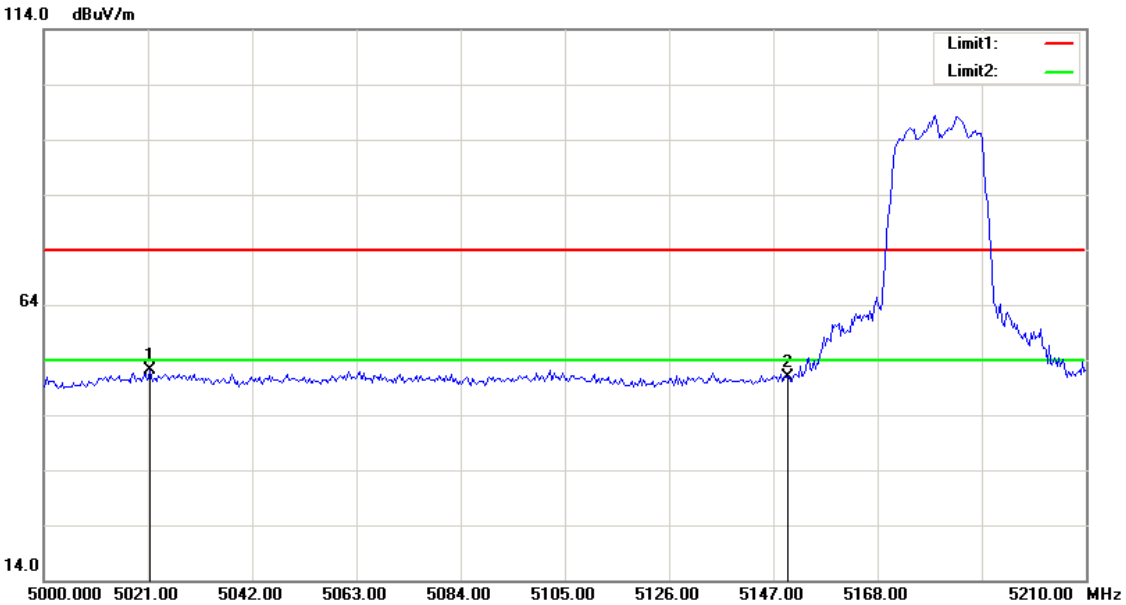
Band Edges (IEEE 802.11n HT20 mode)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5148.750	55.33	0.76	56.09	74.00	-17.91	200	200	peak
2	5148.750	40.71	0.76	41.47	54.00	-12.53	200	200	AVG
3	5150.000	54.40	0.76	55.16	74.00	-18.84	100	203	peak
4	5150.000	40.25	0.76	41.01	54.00	-12.99	100	203	AVG

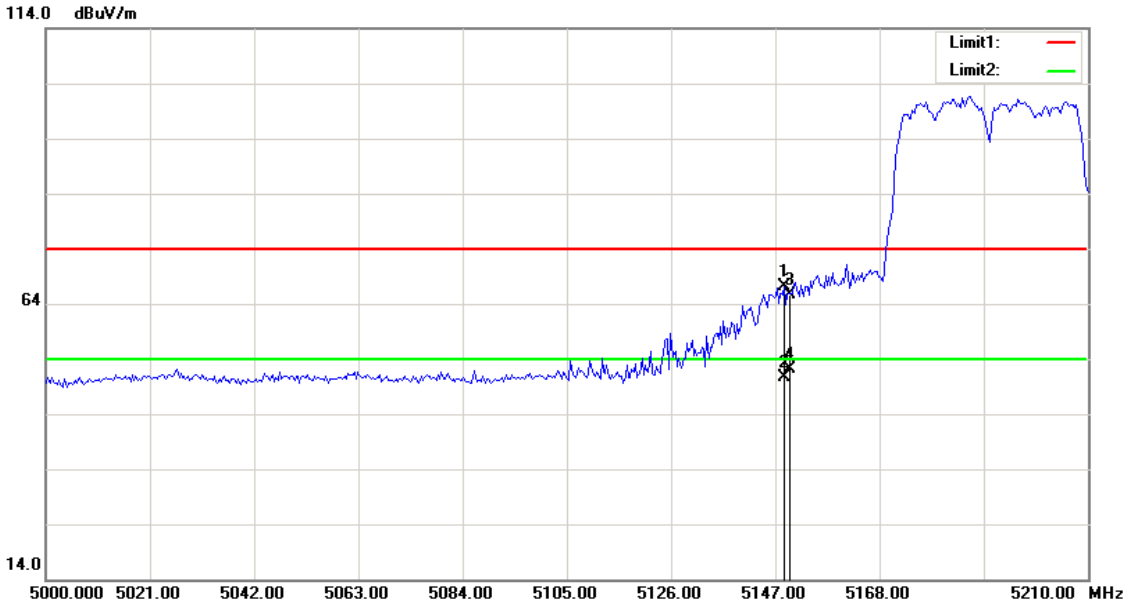
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5021.538	51.49	0.70	52.19	74.00	-21.81	200	0	peak
2	5150.000	50.01	0.76	50.77	74.00	-23.23	100	164	peak

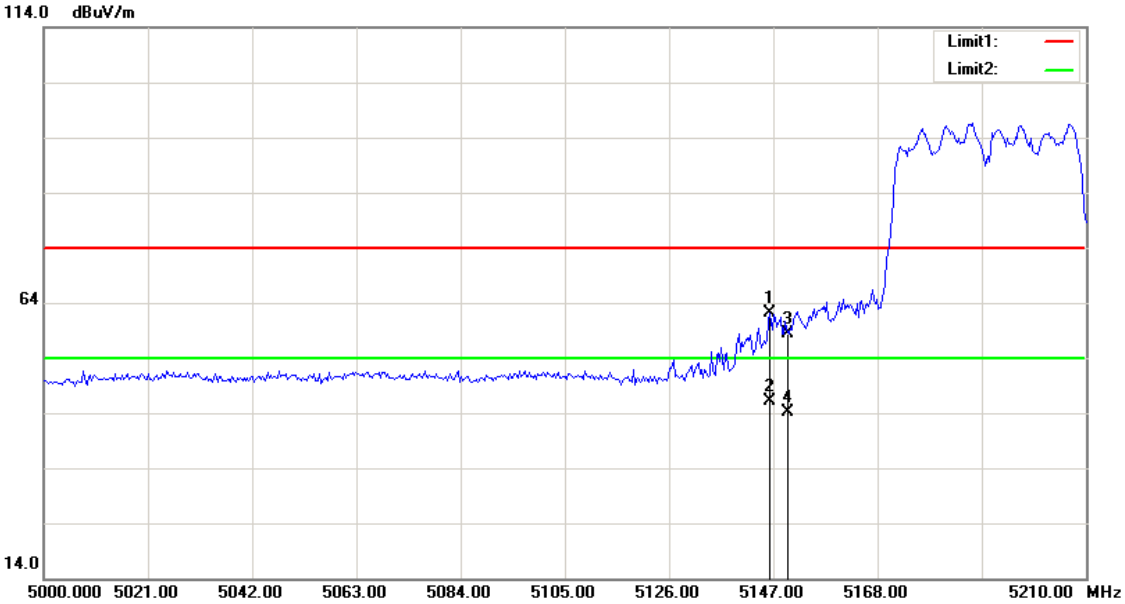
Band Edges (IEEE 802.11n HT40 mode)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5148.750	66.46	0.76	67.22	74.00	-6.78	100	206	peak
2	5148.750	49.88	0.76	50.64	54.00	-3.36	100	206	AVG
3	5150.000	64.99	0.76	65.75	74.00	-8.25	100	187	peak
4	5150.000	51.30	0.76	52.06	54.00	-1.94	100	187	AVG

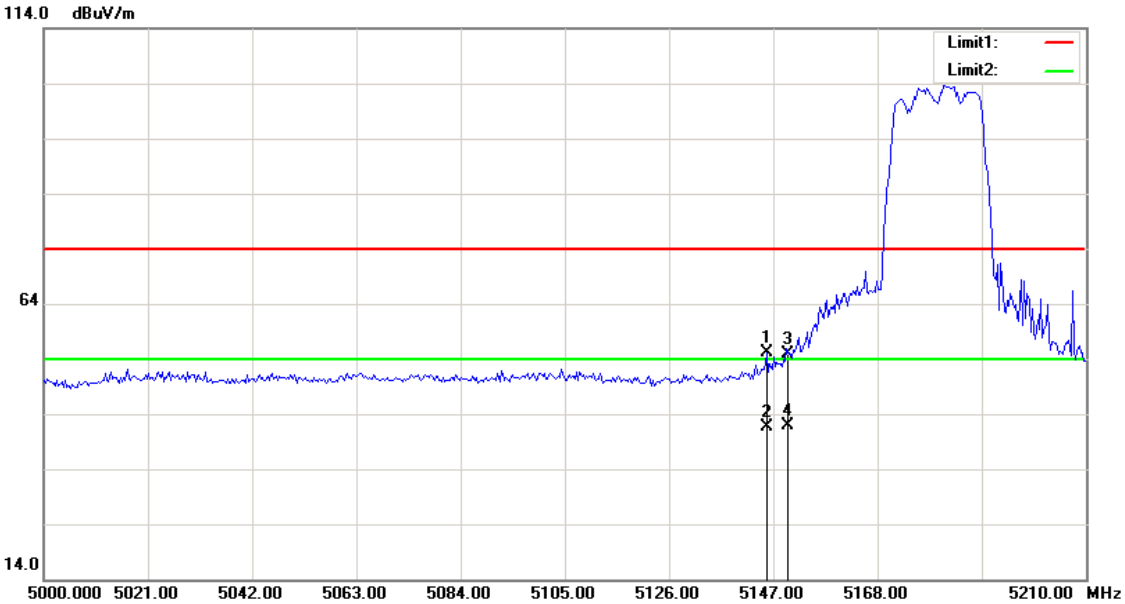
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5146.394	61.35	0.75	62.10	74.00	-11.90	100	165	peak
2	5146.394	45.36	0.75	46.11	54.00	-7.89	100	165	AVG
3	5150.000	57.73	0.76	58.49	74.00	-15.51	200	32	peak
4	5150.000	43.29	0.76	44.05	54.00	-9.95	200	32	AVG

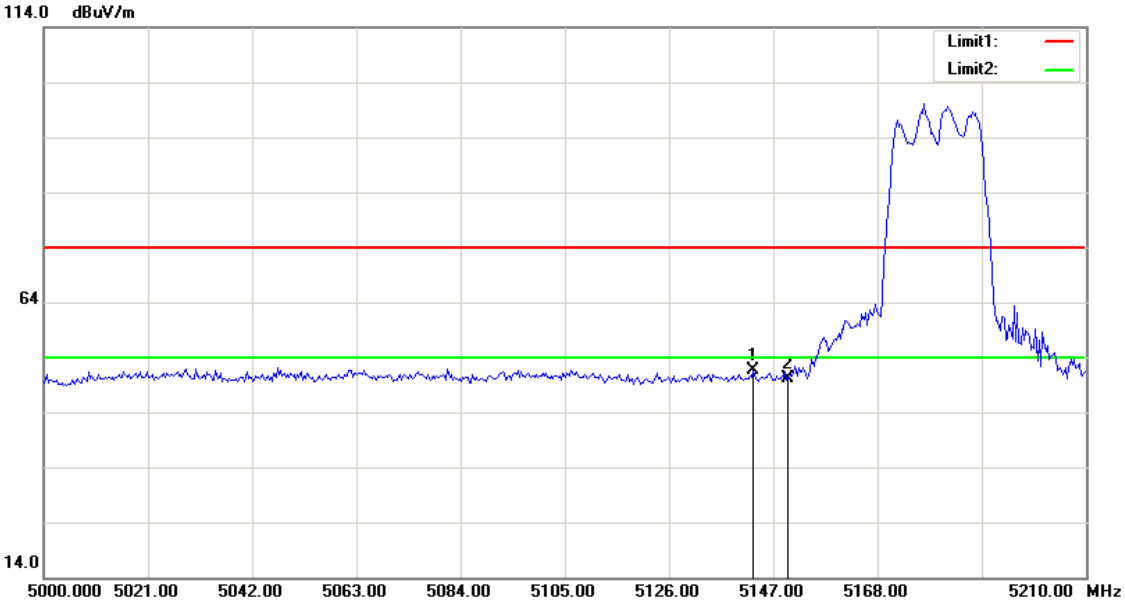
Band Edges (IEEE 802.11ac VHT20 mode)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5145.721	54.48	0.75	55.23	74.00	-18.77	100	203	peak
2	5145.721	40.77	0.75	41.52	54.00	-12.48	100	203	AVG
3	5150.000	54.12	0.76	54.88	74.00	-19.12	100	201	peak
4	5150.000	41.19	0.76	41.95	54.00	-12.05	100	201	AVG

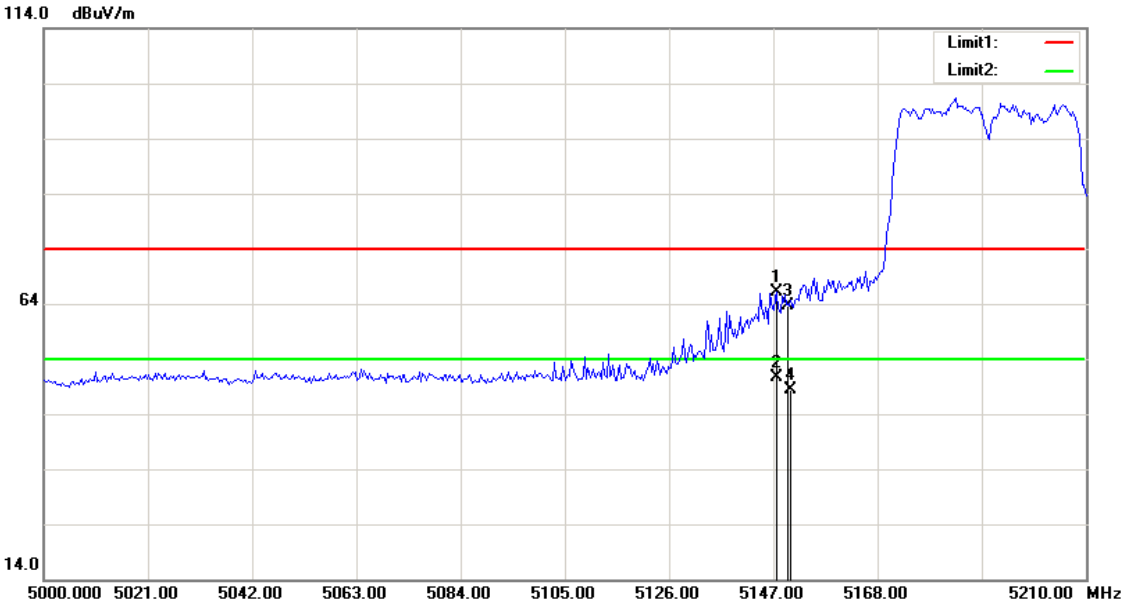
Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5143.029	50.80	0.75	51.55	74.00	-22.45	100	284	peak
2	5150.000	49.31	0.76	50.07	74.00	-23.93	100	193	peak

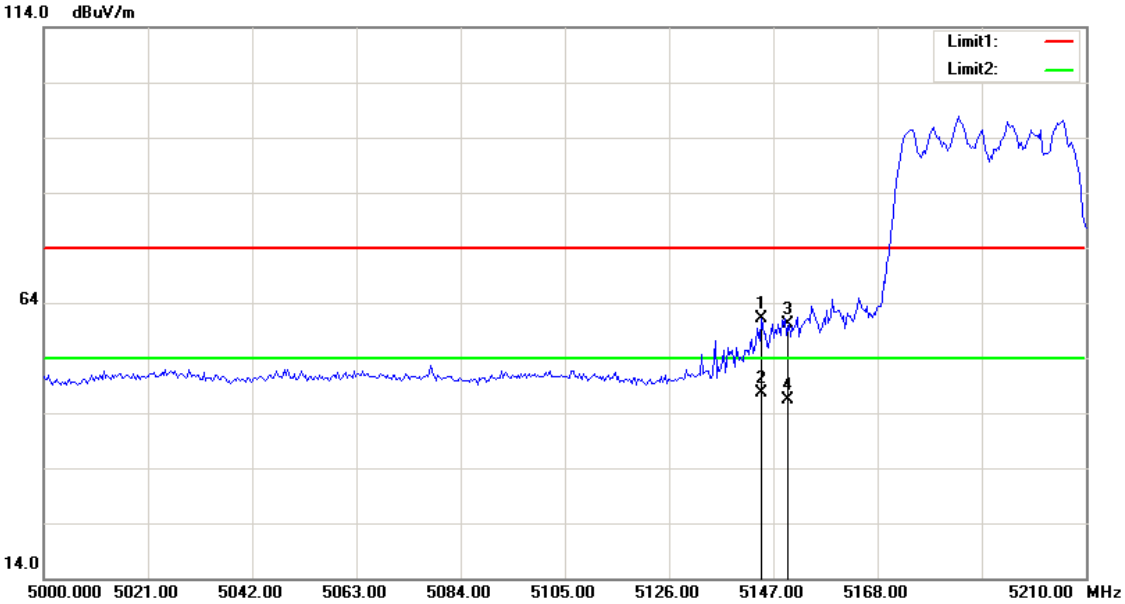
Band Edges (IEEE 802.11ac VHT40 mode)

Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5147.740	65.45	0.76	66.21	74.00	-7.79	100	201	peak
2	5147.740	49.87	0.76	50.63	54.00	-3.37	100	201	AVG
3	5150.000	62.98	0.76	63.74	74.00	-10.26	100	360	peak
4	5150.500	47.55	0.76	48.31	54.00	-5.69	100	360	AVG

Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	5144.712	60.42	0.75	61.17	74.00	-12.83	100	166	peak
2	5144.712	46.98	0.75	47.73	54.00	-6.27	100	166	AVG
3	5150.000	59.39	0.76	60.15	74.00	-13.85	100	166	peak
4	5150.000	45.51	0.76	46.27	54.00	-7.73	100	166	AVG

8.5 MAXIMUM POWER SPECTRAL DENSITY

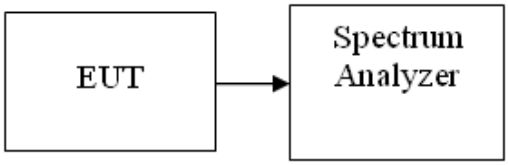
LIMIT

According to §15.407(a),

For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna 1 Gain=7.1dBi>6dBi
Chain 1 Limit=11.00dBm-(7.1-6) dB=9.90dBm
Antenna 2 Gain=4.6dBi<6dBi
Chain 2 Limit=11.00dBm
Directional Gain=9.04dBi>6dBi
MIMO Limit=11.00dBm-(9.04-6) dB=7.96dBm

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 = 1MHz, VBW = 3MHz, Span must be greater than 26dB bandwidth, adjust as necessary, Sweep= auto, Detector RMS
3. Record the max. reading.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	Chain 1 PPSD (dBm)	Chain 1 Limit (dBm)	Chain 2 PPSD (dBm)	Chain 2 Limit (dBm)	Result
Low	5180	1.65	9.90	1.34	11.00	PASS
Mid	5200	1.48	9.90	1.86	11.00	PASS
High	5220	1.55	9.90	2.48	11.00	PASS

Test mode: IEEE 802.11n HT20MHz mode

Channel	Frequency (MHz)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	MIMO Limit (dBm)	Result
Low	5180	-1.35	-2.32	1.20	7.96	PASS
Mid	5200	-0.60	-1.85	1.83	7.96	PASS
High	5220	-0.62	-1.19	2.11	7.96	PASS

Test mode: IEEE 802.11n HT40MHz mode

Channel	Frequency (MHz)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	MIMO Limit (dBm)	Result
Low	5190	-4.15	-4.32	-1.22	7.96	PASS

Test mode: IEEE 802.11ac VHT20MHz mode

Channel	Frequency (MHz)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	MIMO Limit (dBm)	Result
Low	5180	-1.35	-2.35	1.19	7.96	PASS
Mid	5200	-0.66	-2.01	1.73	7.96	PASS
High	5220	-0.67	-1.26	2.06	7.96	PASS

Test mode: IEEE 802.11ac VHT40MHz mode

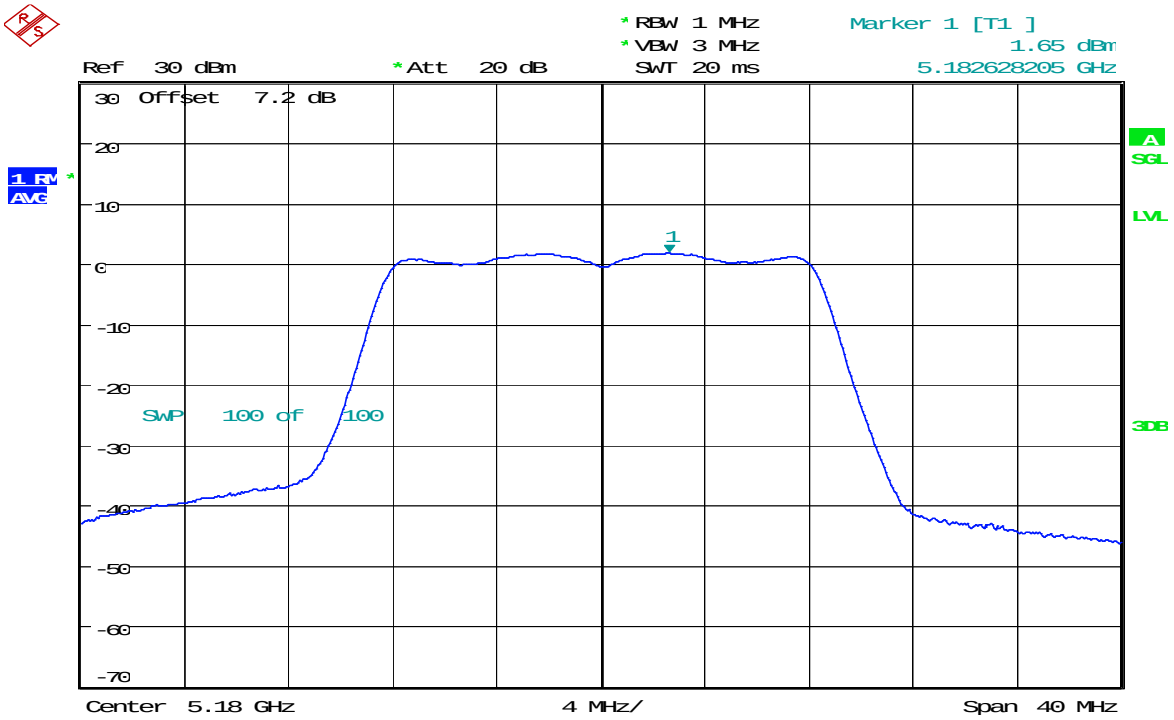
Channel	Frequency (MHz)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	Total PPSD (dBm)	MIMO Limit (dBm)	Result
Low	5190	-4.15	-4.36	-1.24	7.96	PASS

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

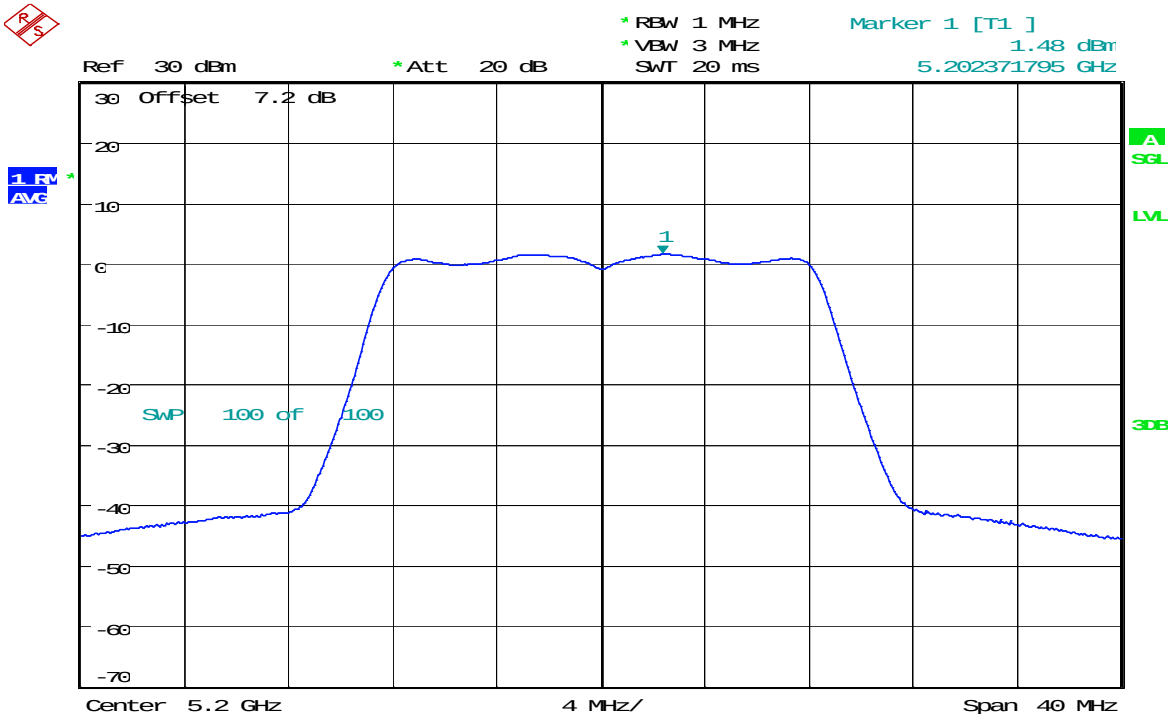
2.Duty factor has been offset with cable loss

Test Plot
IEEE 802.11a mode/Chain 1:

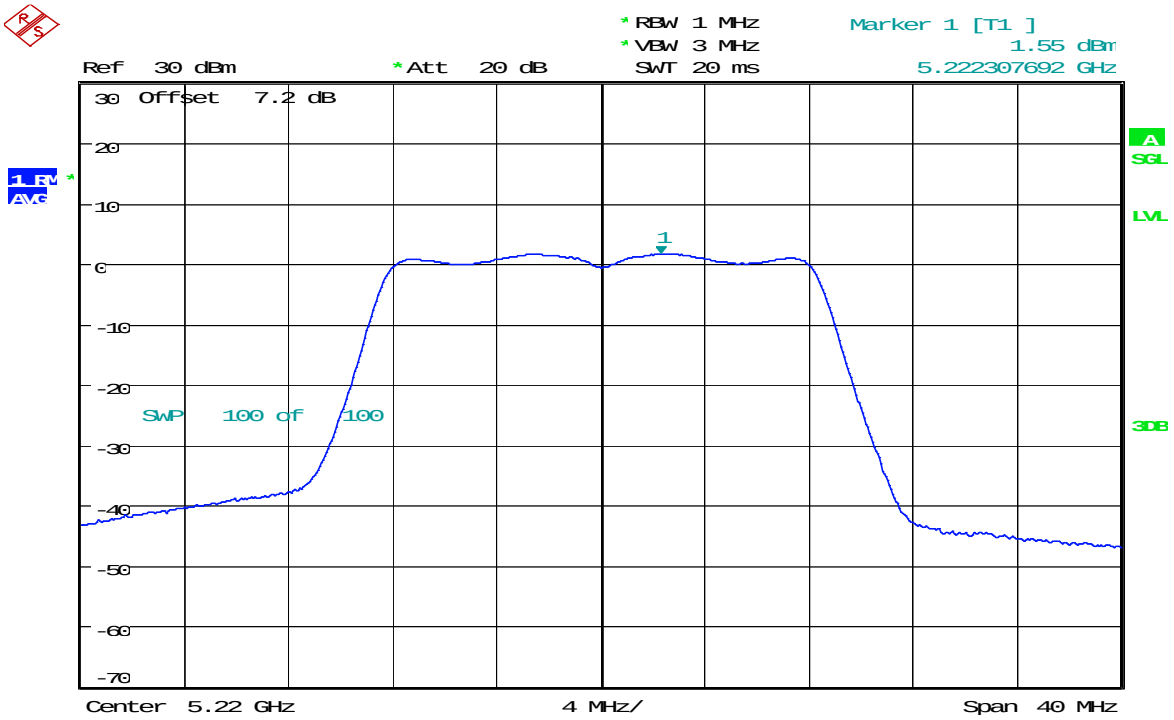
CH Low



CH Mid

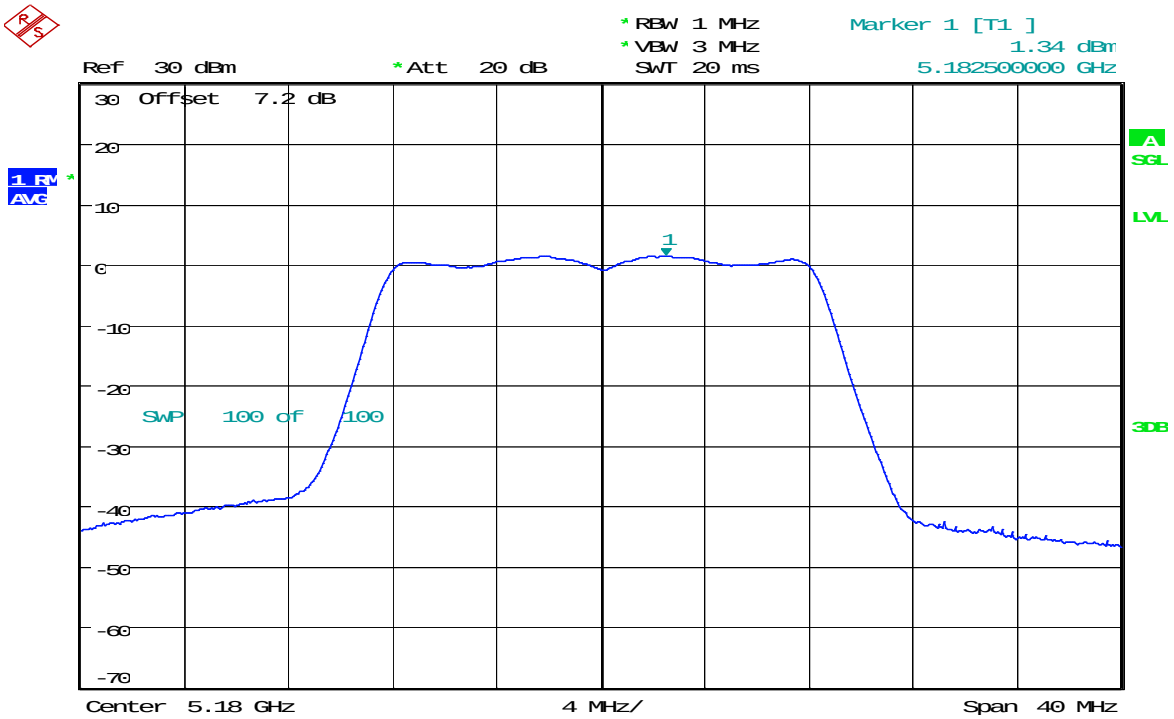


CH High

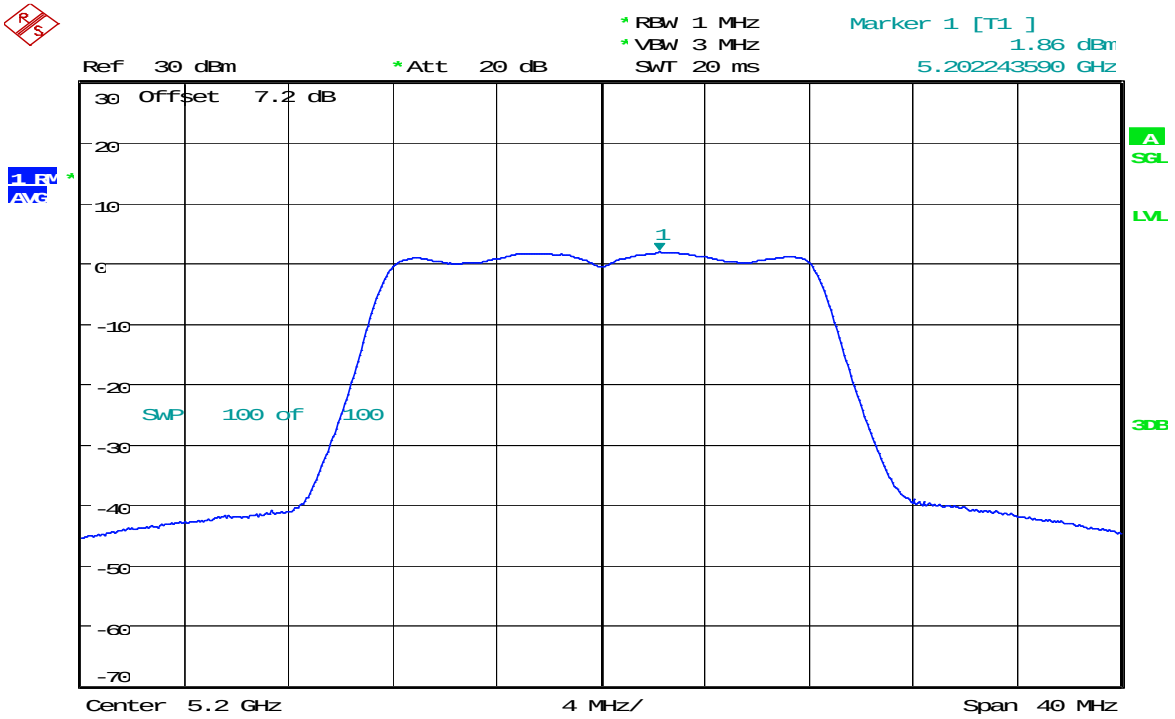


IEEE 802.11a mode/Chain 2:

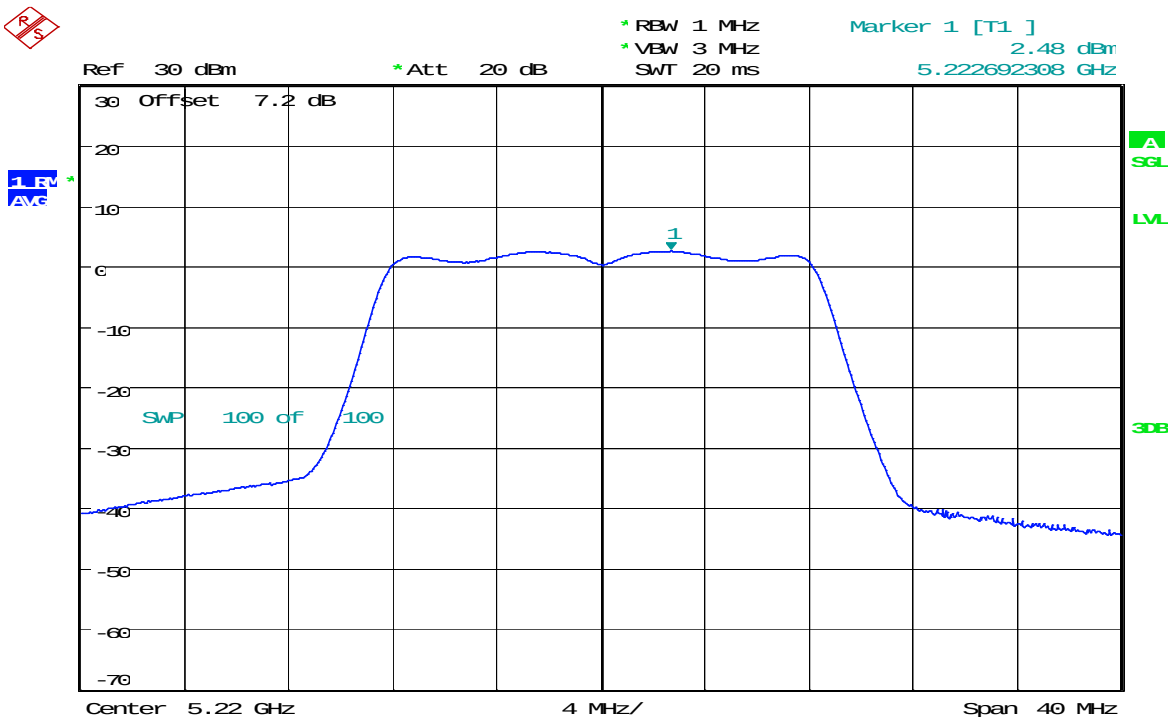
CH Low



CH Mid

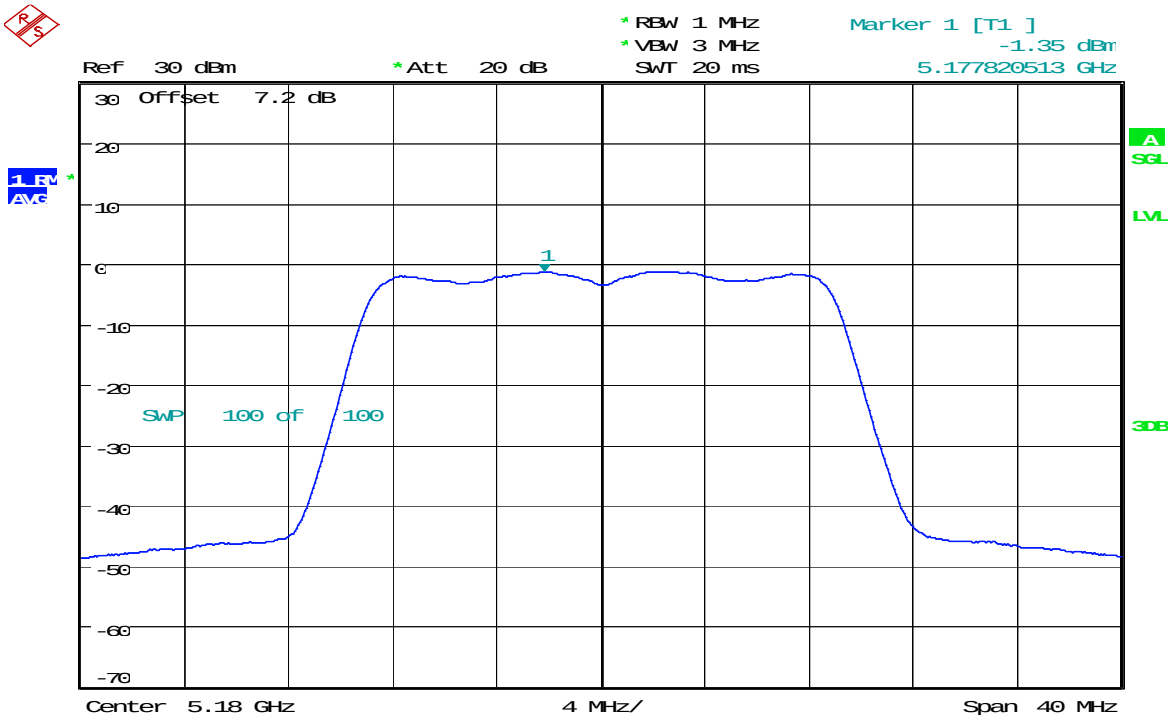


CH High

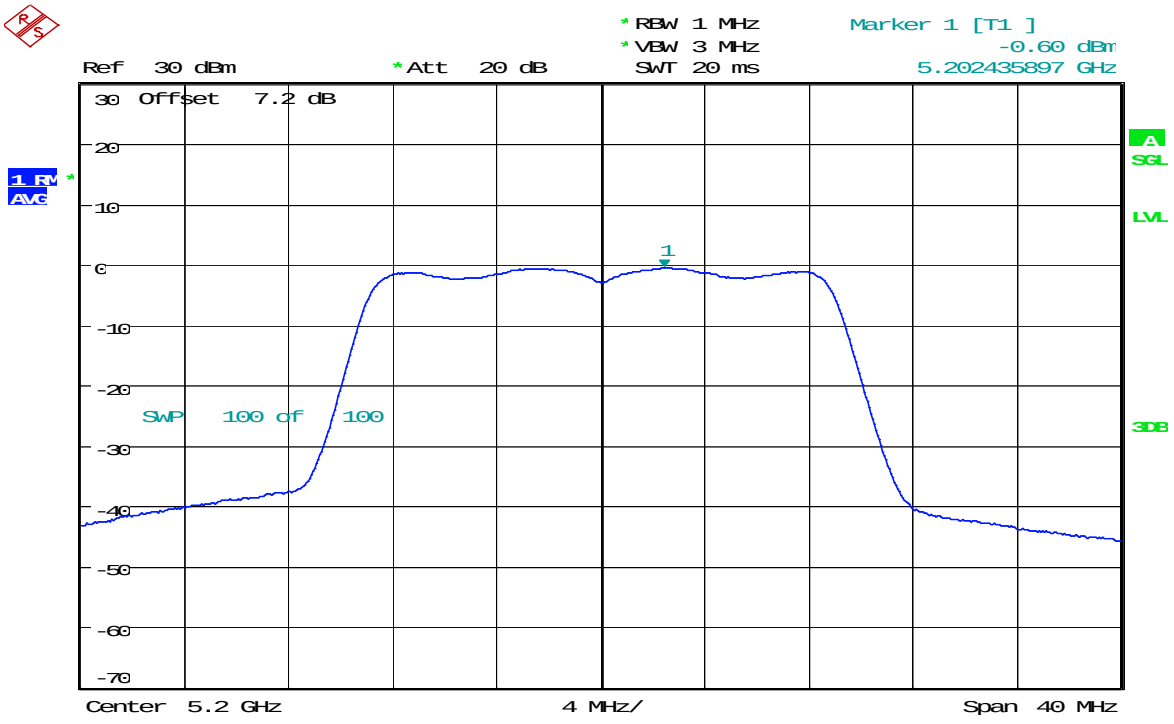


IEEE 802.11n HT20 mode/Chain 1:

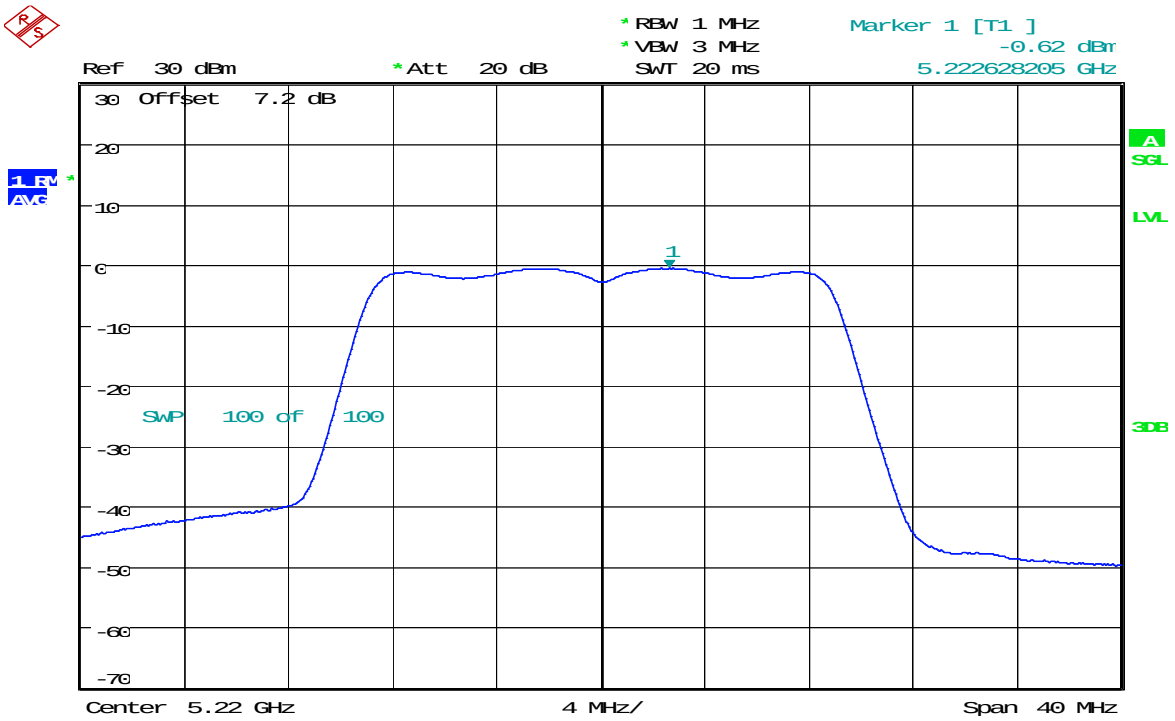
CH Low



CH Mid

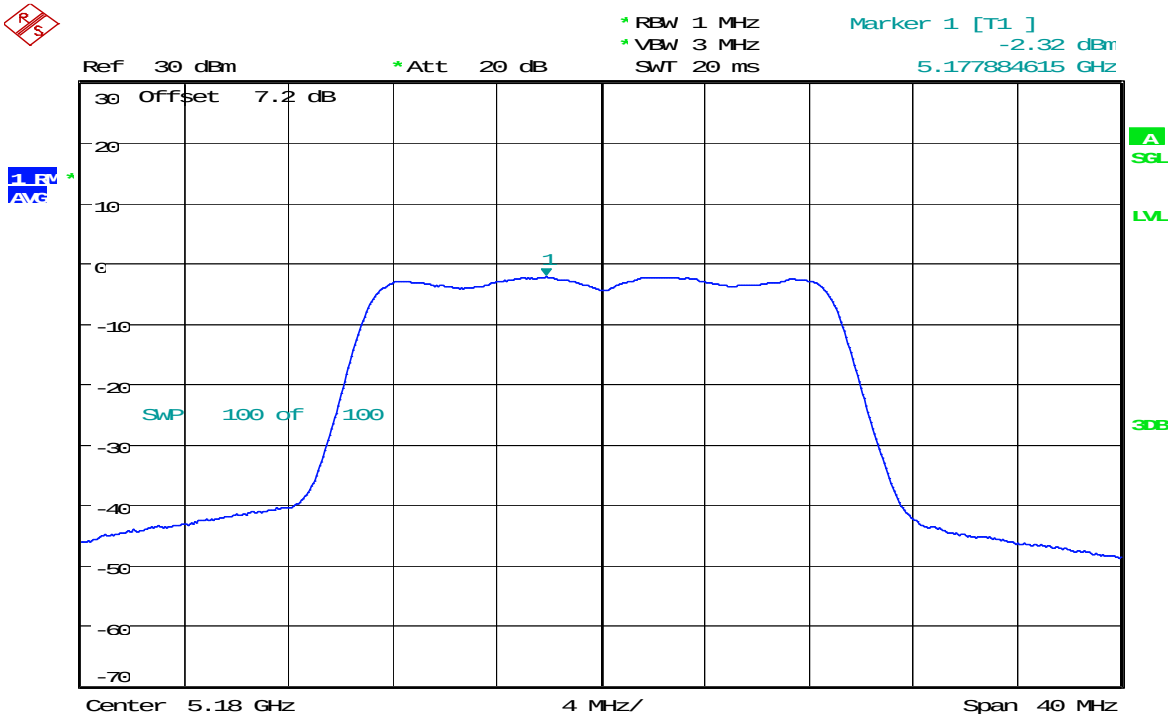


CH High

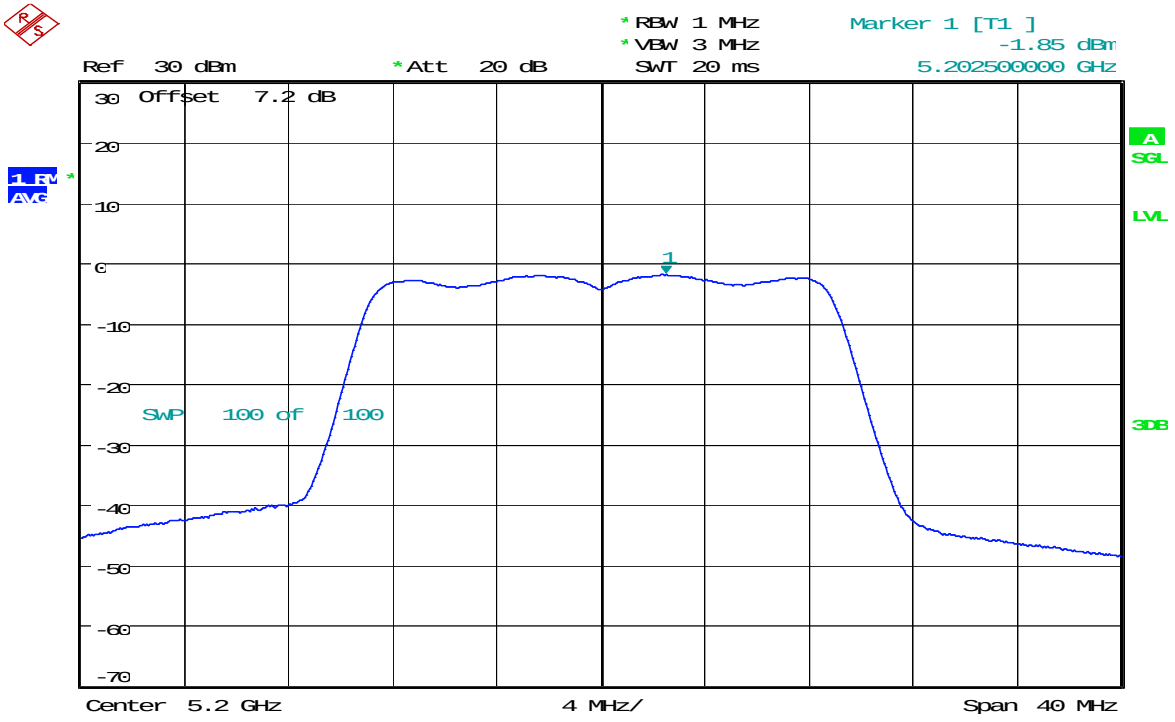


IEEE 802.11n HT20 mode/Chain 2:

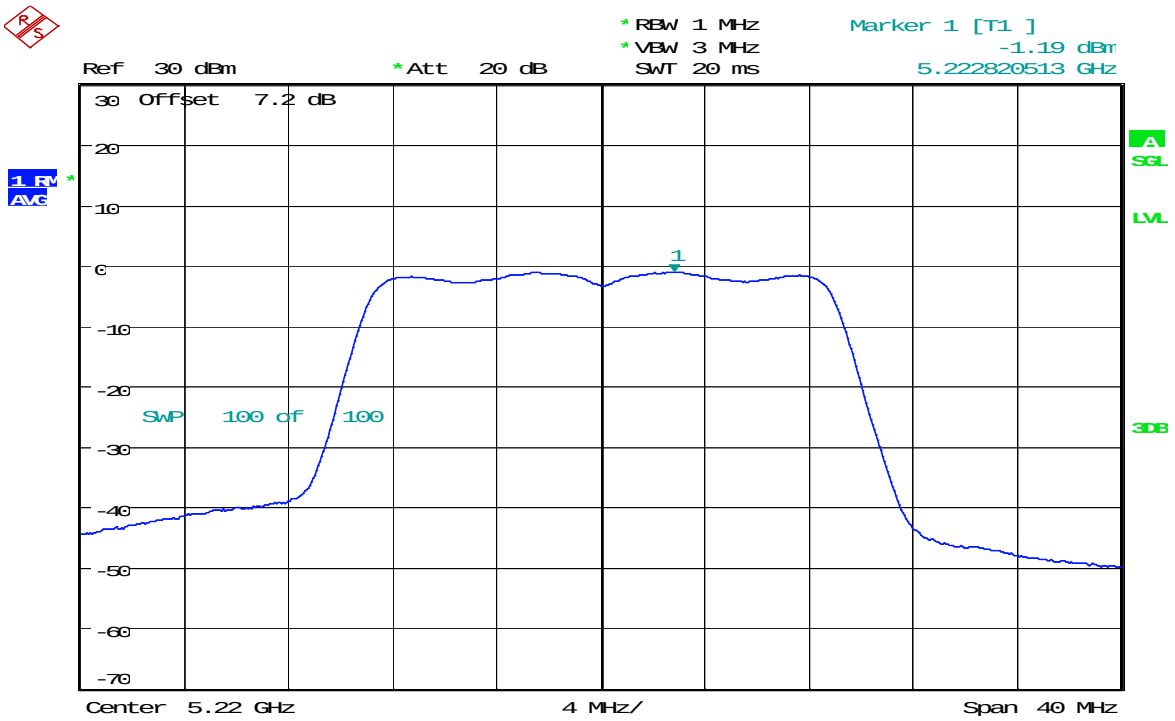
CH Low



CH Mid

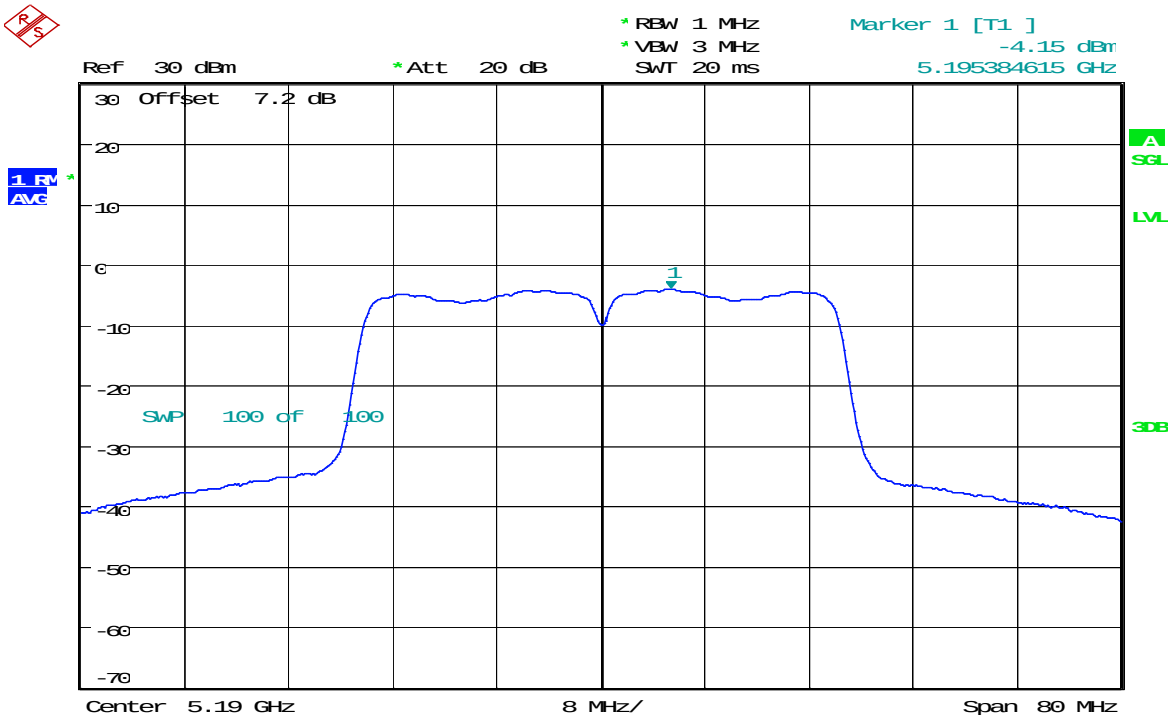


CH High



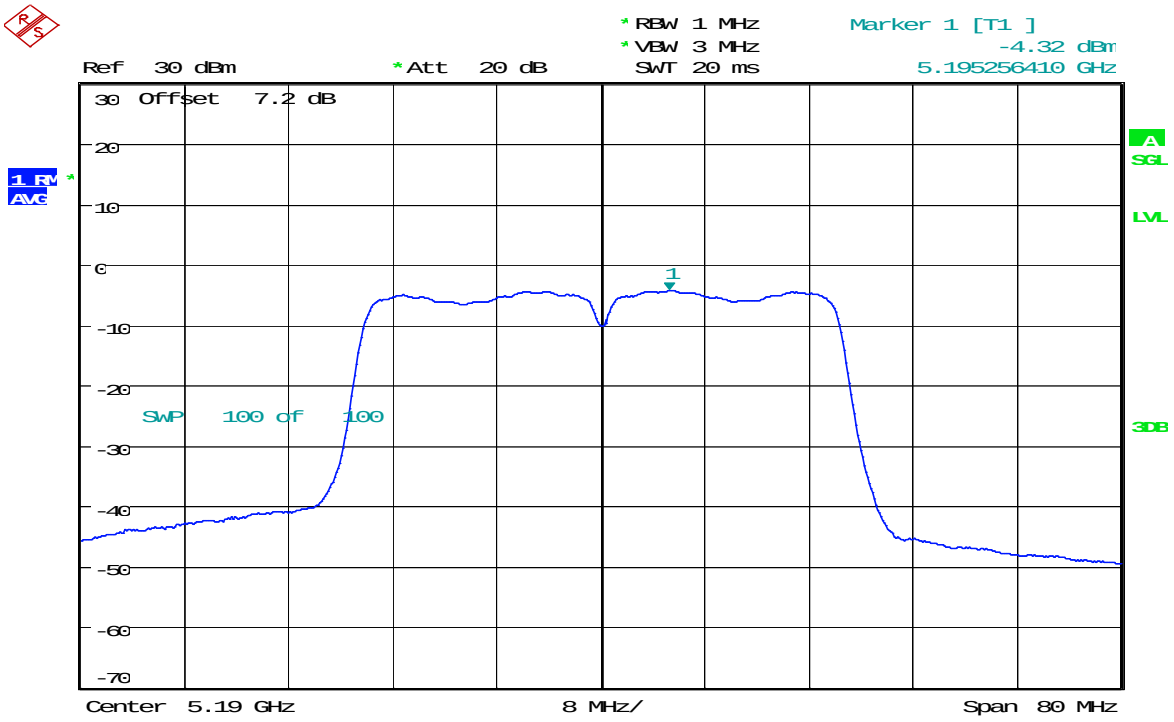
IEEE 802.11n HT40 mode/Chain 1:

CH Low



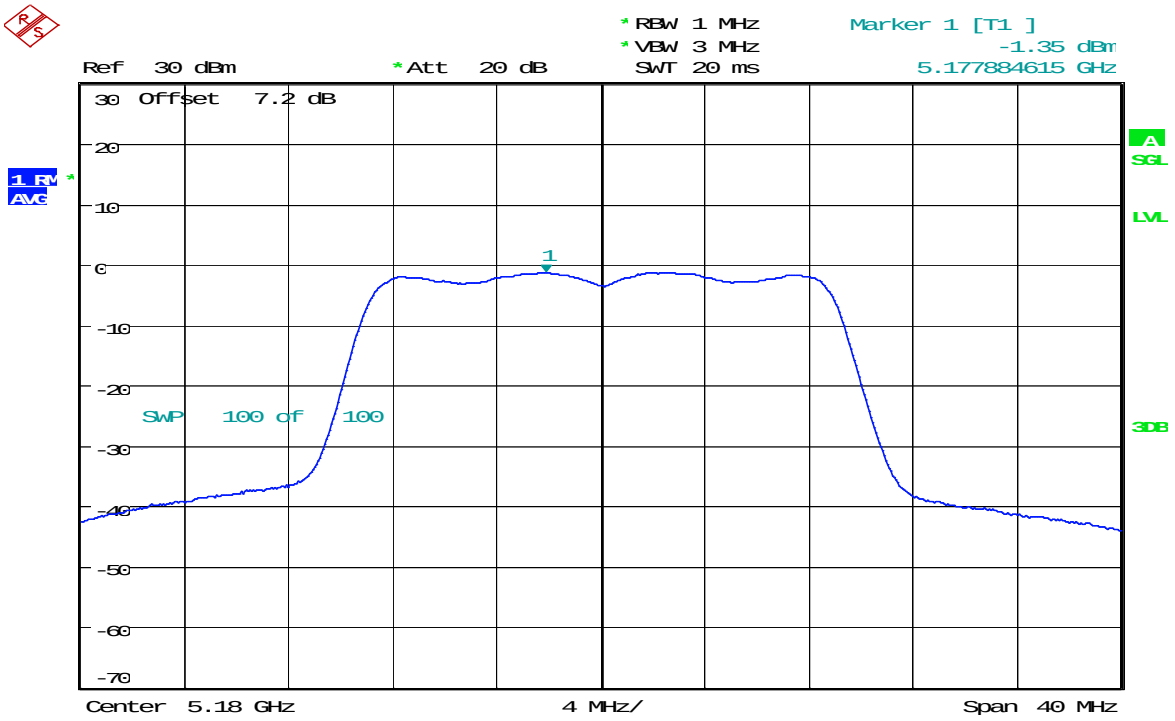
IEEE 802.11n HT40 mode/Chain 2:

CH Low

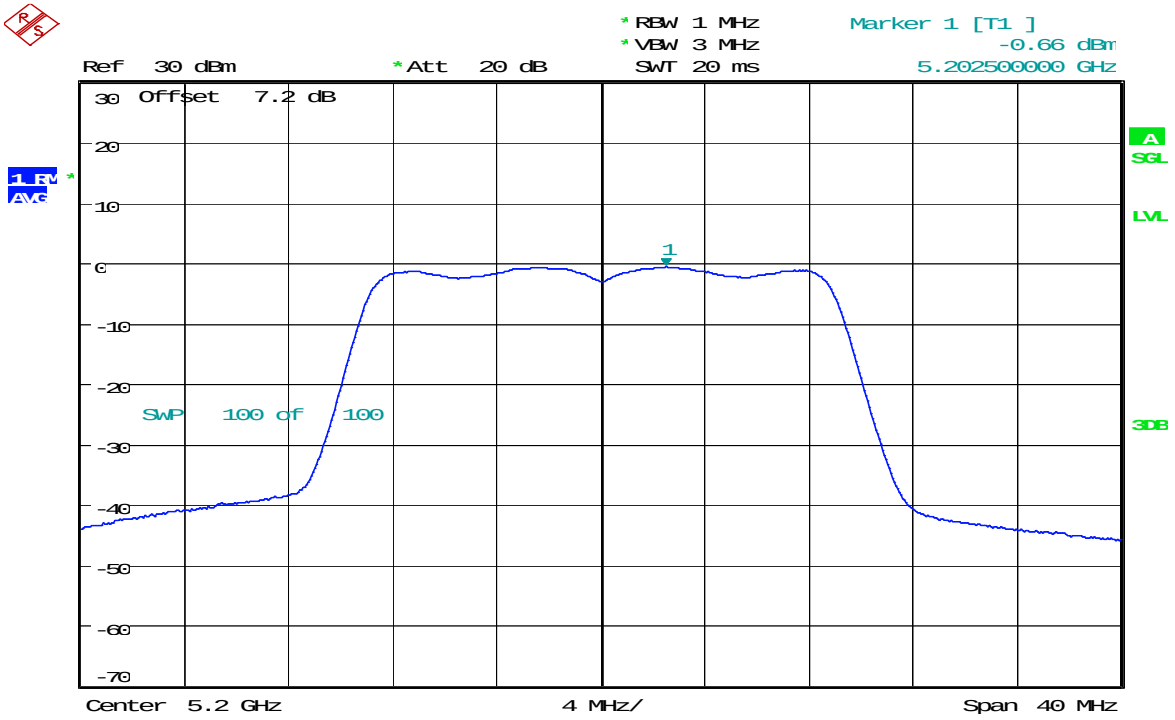


IEEE 802.11ac VHT20 mode/Chain 1:

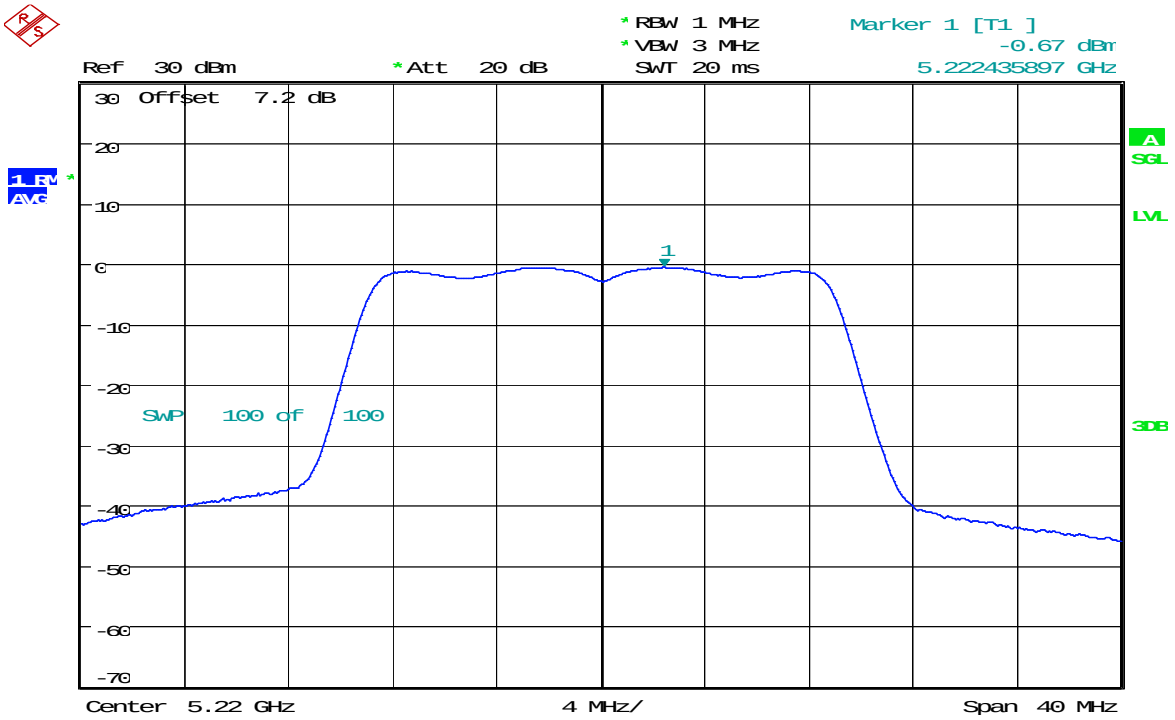
CH Low



CH Mid

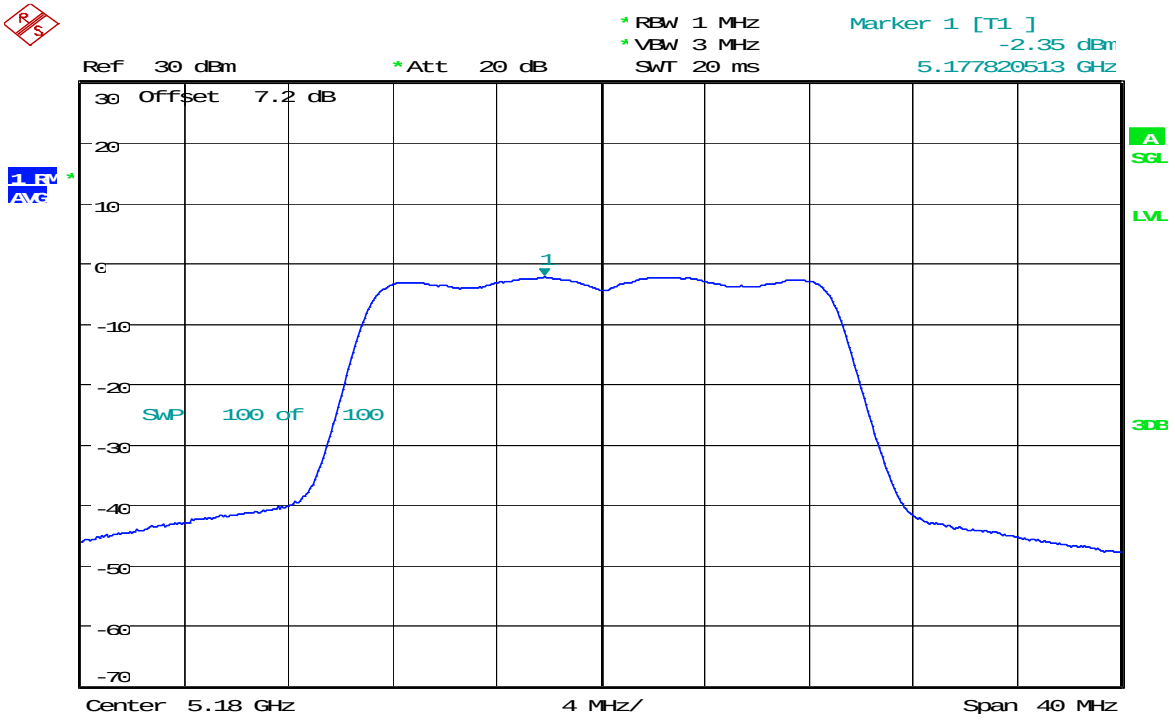


CH High

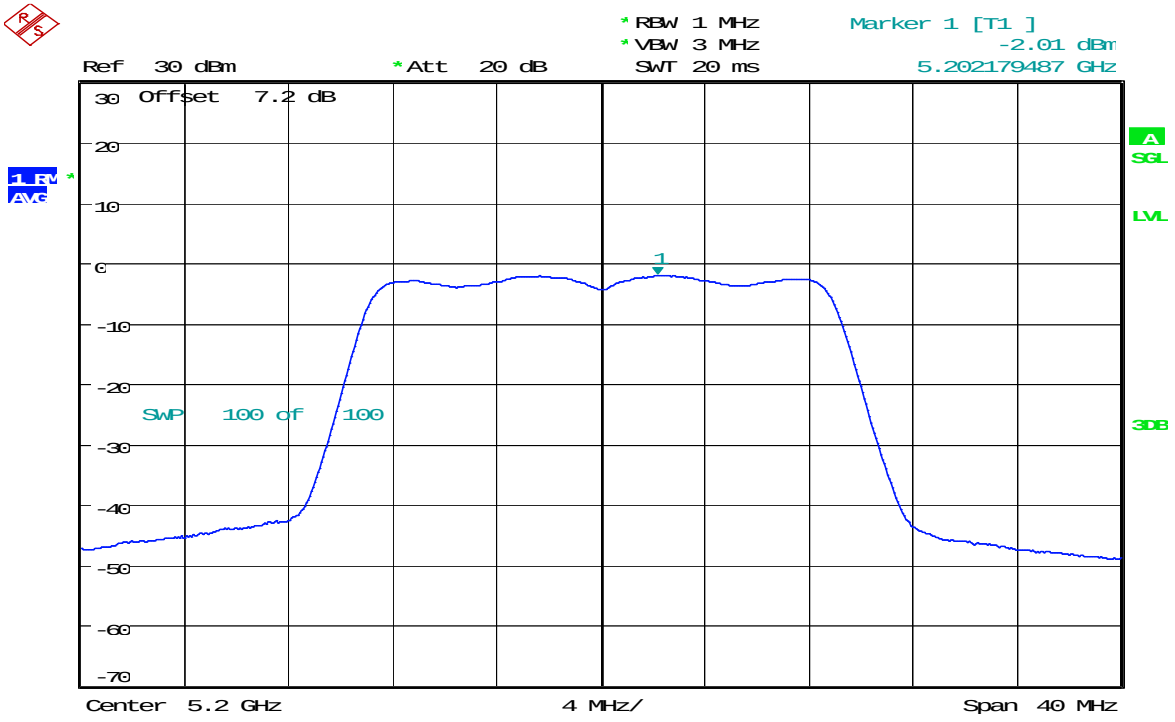


IEEE 802.11ac VHT20 mode/Chain 2:

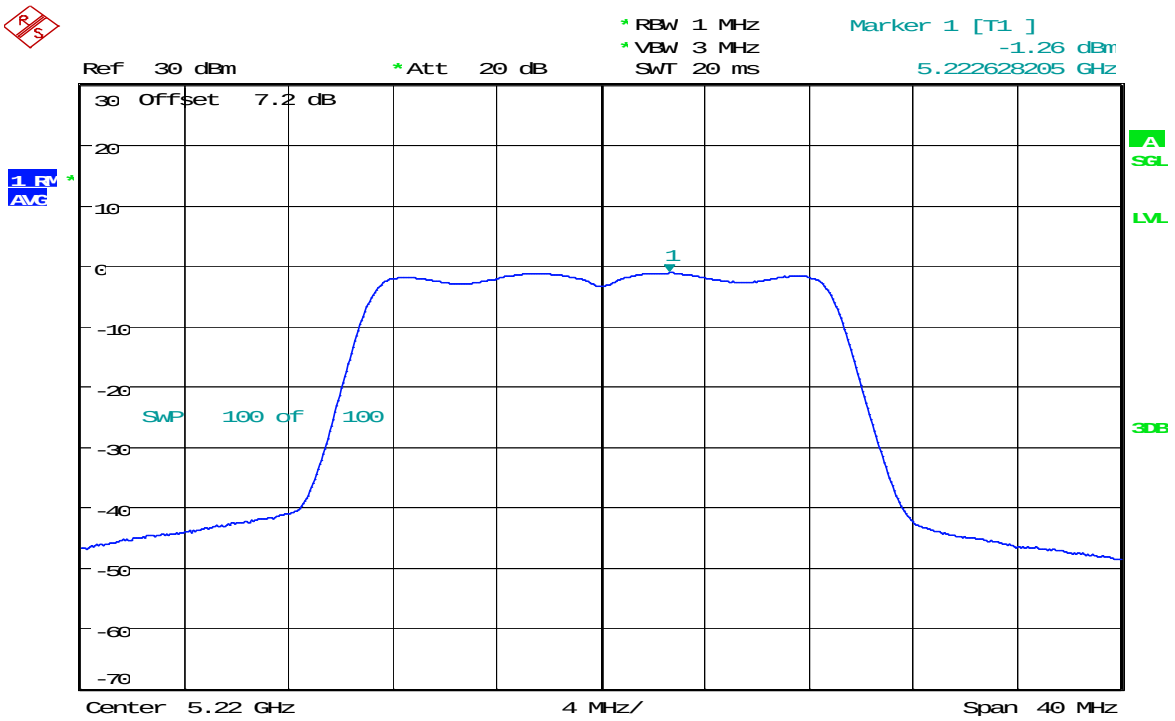
CH Low



CH Mid

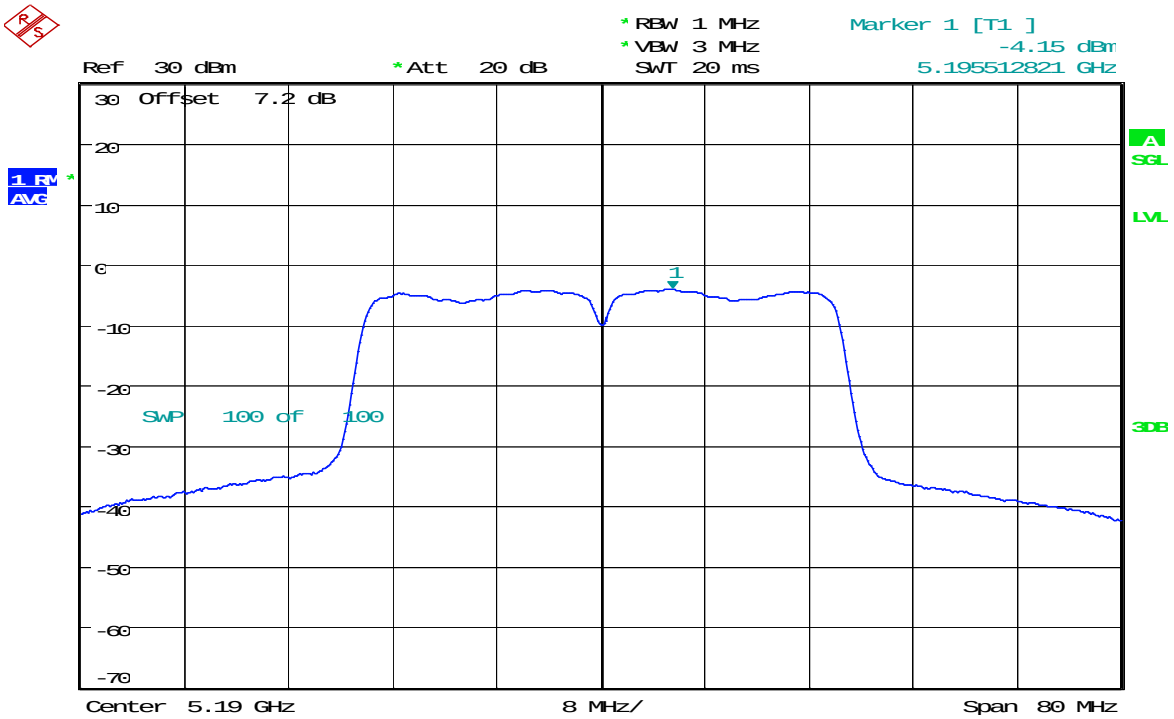


CH High



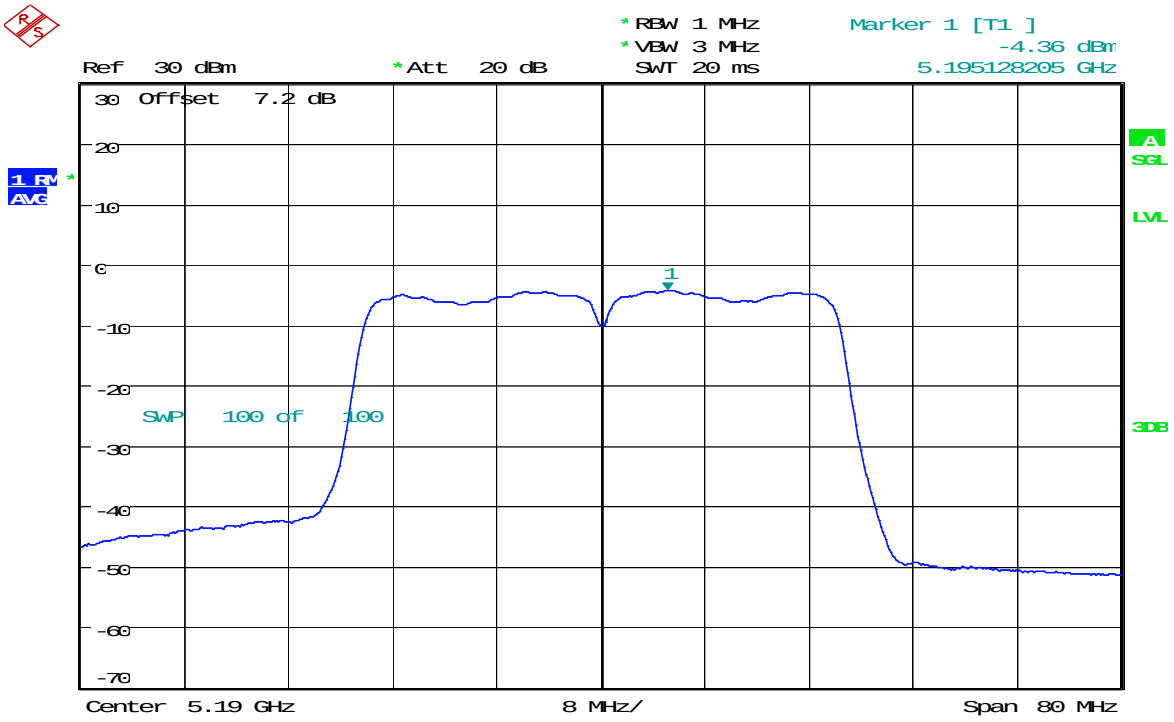
IEEE 802.11ac VHT40 mode/Chain 1:

CH Low



IEEE 802.11ac VT40 mode/Chain 2:

CH Low

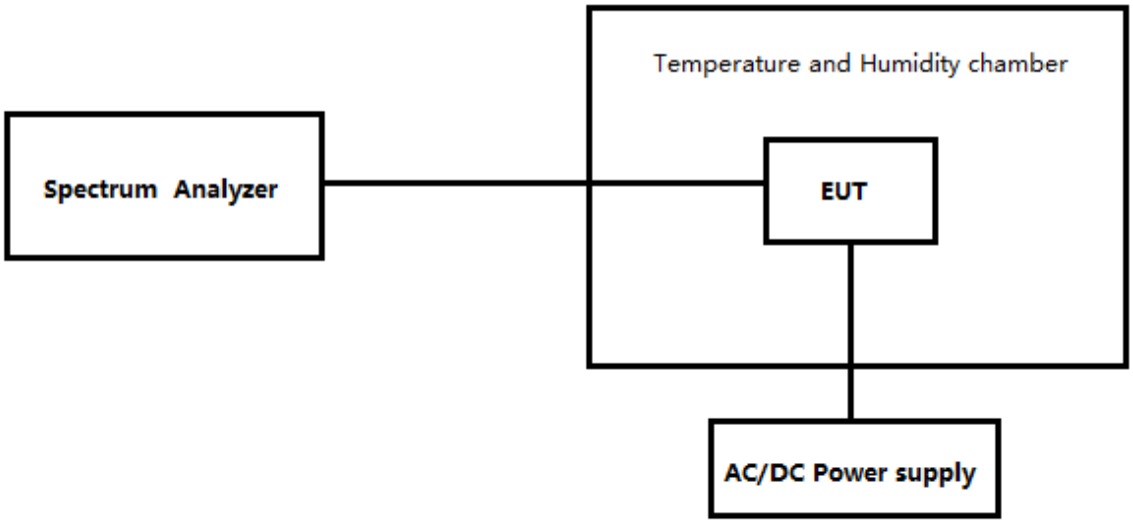


8.6 FREQUENCY STABILITY MEASUREMENT

LIMIT

According to §15.407(g),Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

TEST CONFIGURATION



TEST PROCEDURE

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

TEST RESULTS

U-NII-1-(5150MHz-5250MHz)					
Freq.(MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
5180	5180.021580	0.022	4.17	25	V_{min} (4.4V)
5180	5180.021580	0.022	4.17	25	V_{max} (7.6V)
5180	5180.017700	0.018	3.42	5	V_{nor} (6V)
5180	5180.010800	0.011	2.08	15	V_{nor} (6V)
5180	5180.021580	0.022	4.17	25	V_{nor} (6V)
5180	5180.058300	0.058	11.25	35	V_{nor} (6V)

8.7 RADIATED UNDESIRABLE EMISSION

LIMIT

Radiated emissions from 9 kHz to 40 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. For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of –27dBm/MHz.
   For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.
   For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.
2. KDB789033 v02r01 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.
3. 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

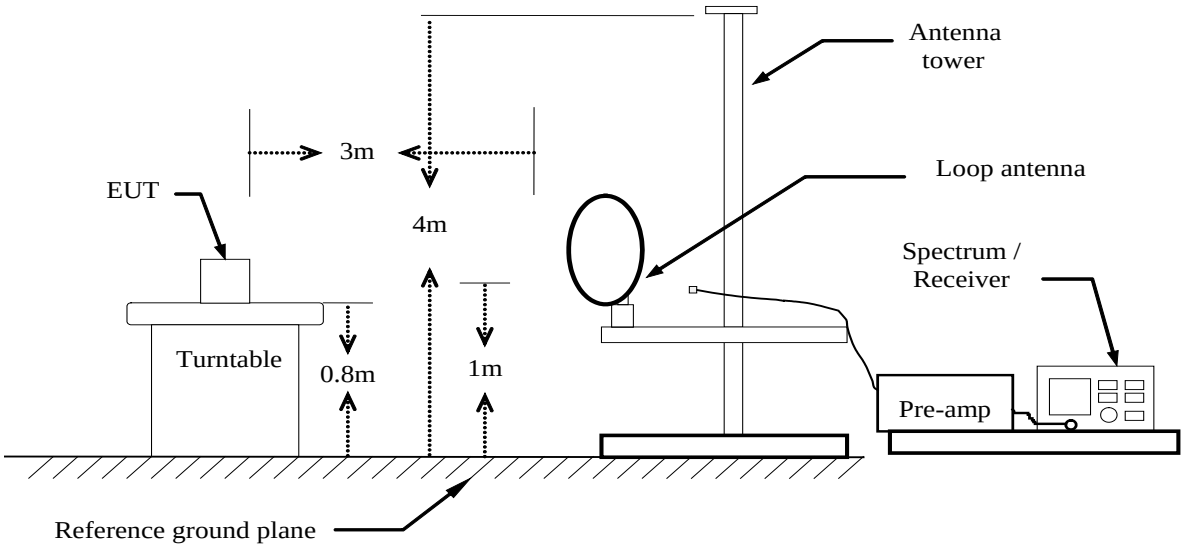
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

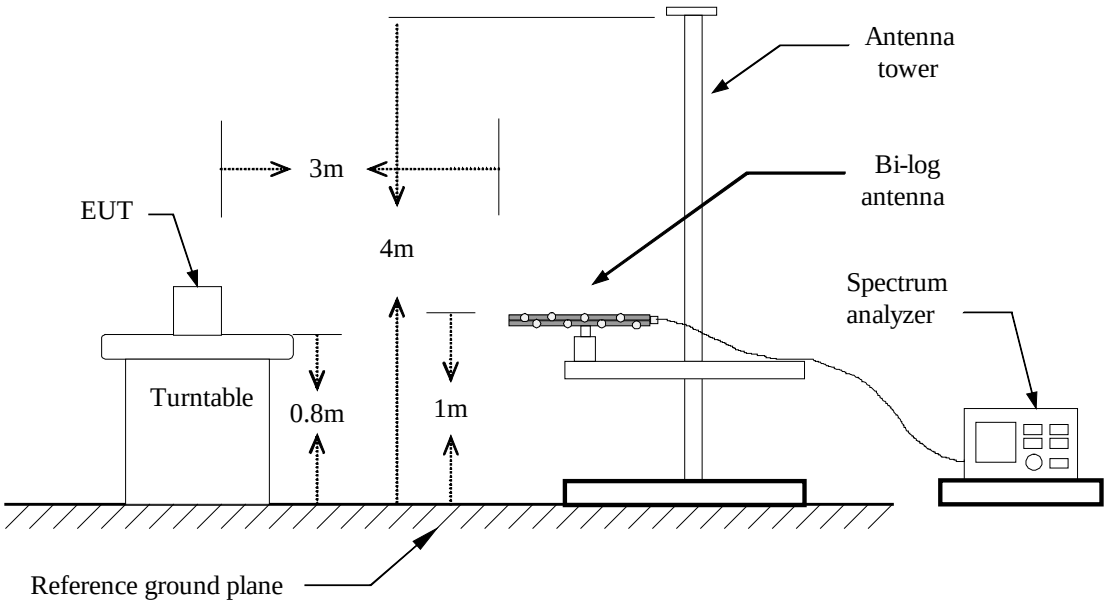
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

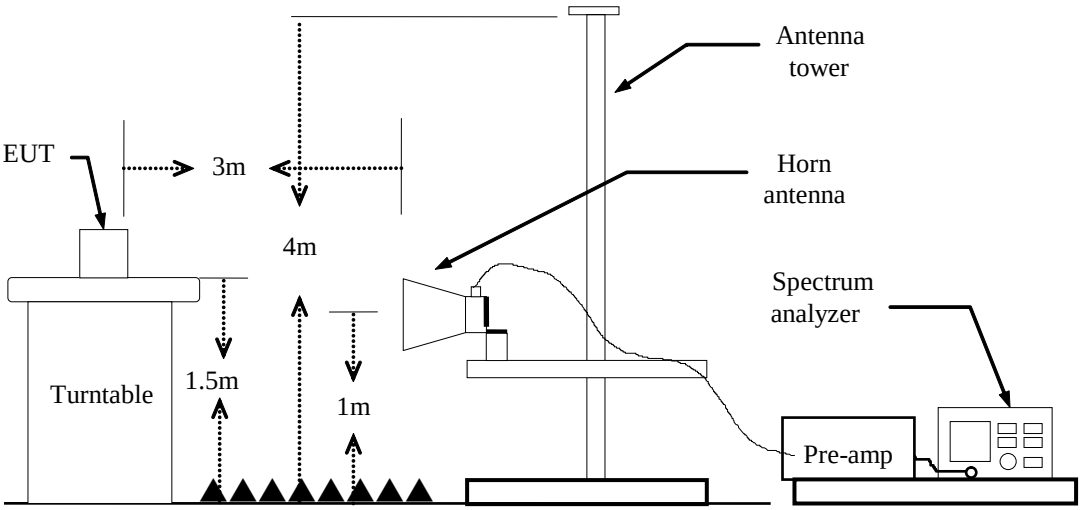
Below 30MHz



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:

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

   (b) AVERAGE: RBW=1MHz / Sweep=AUTO

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

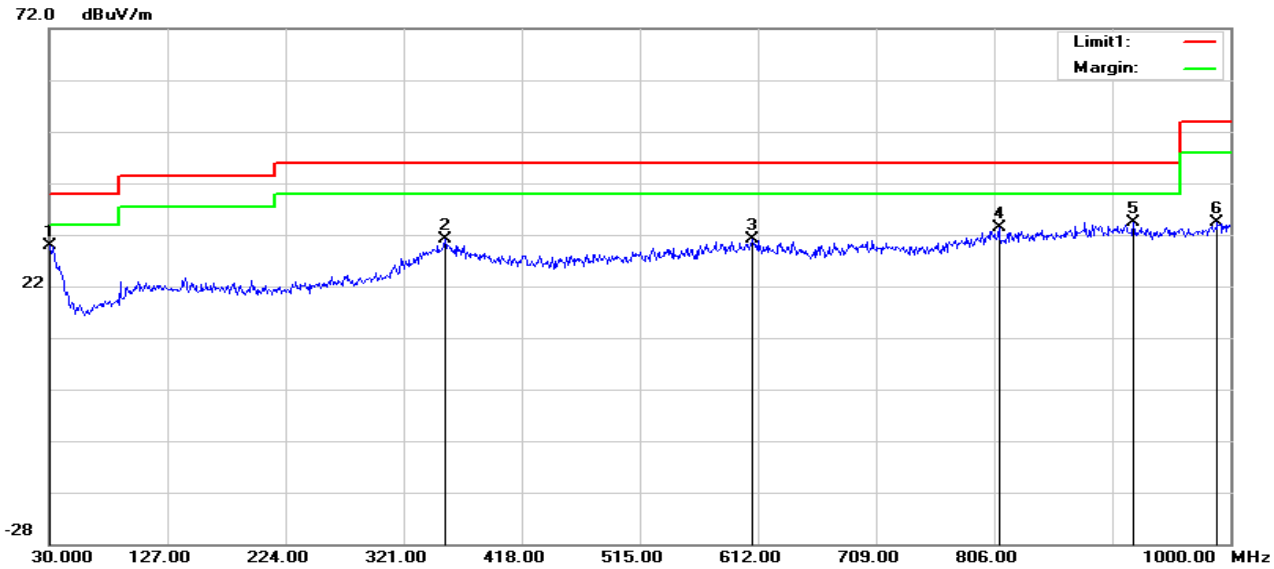
   VBW≧1/T, when duty cycle is less than 98 percent, where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximun power control level for the tested mode of operation.
7. Repeat above procedures until the measurements for all frequencies are complete.

TEST RESULTS

Below 30MHz and above 18GHz. The measured value have enough margin over 20dB than the limit, therefore they are not reported.

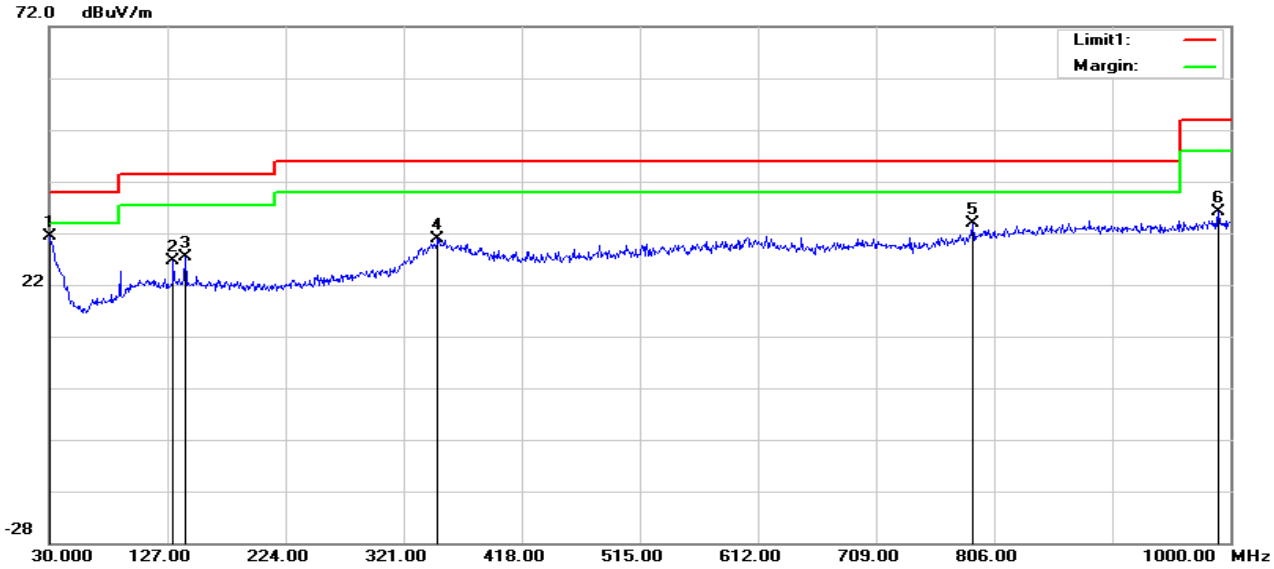
30MHz-1GHz

Operation Mode:	IEEE 802.11a mode	**Test Date:**	2018-12-11
Temperature:	25°C	**Tested by:**	Wendy.Wei
Humidity:	51% RH	**Polarity:**	Hor.



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.0000	4.23	25.76	29.99	40.00	-10.01	100	68	peak
2	354.9500	5.06	26.07	31.13	46.00	-14.87	100	97	peak
3	607.1500	5.21	25.81	31.02	46.00	-14.98	200	360	peak
4	809.8800	5.61	27.76	33.37	46.00	-12.63	100	255	peak
5	920.4600	5.65	28.84	34.49	46.00	-11.51	300	196	peak
6	989.3300	4.74	29.68	34.42	54.00	-19.58	100	263	peak

Operation Mode:	IEEE 802.11a mode	Test Date:	2018-12-11
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver.



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.0000	5.65	25.76	31.41	40.00	-8.59	100	0	peak
2	131.8500	8.88	17.87	26.75	43.50	-16.75	200	0	peak
3	141.5500	9.56	17.86	27.42	43.50	-16.08	200	80	peak
4	349.1300	4.62	26.19	30.81	46.00	-15.19	100	234	peak
5	788.5400	6.79	27.07	33.86	46.00	-12.14	200	0	peak
6	990.3000	6.30	29.71	36.01	54.00	-17.99	100	172	peak

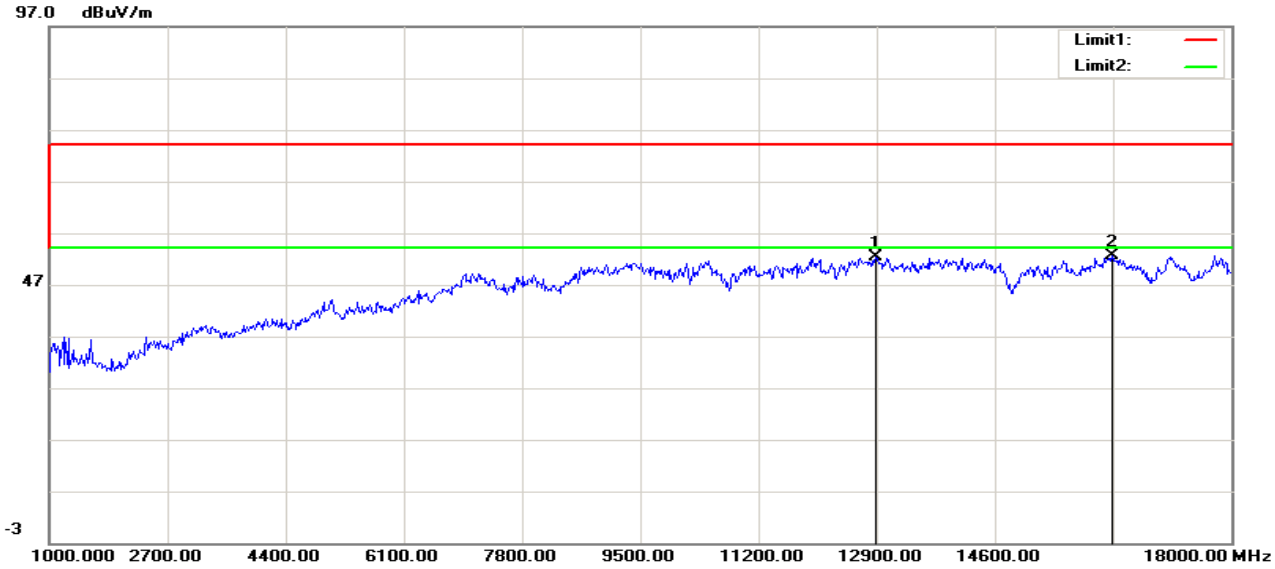
Remark:

1. Measuring frequencies from 30 MHz to the 1GHz.(no emission found from the lowest internal used/generated frequency to 30MHz)
2. Radiated emissions measured were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. 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.
5. Margin (dB) = Result (dBuV/m) – Limit (dBuV/m).

Above 1 GHz

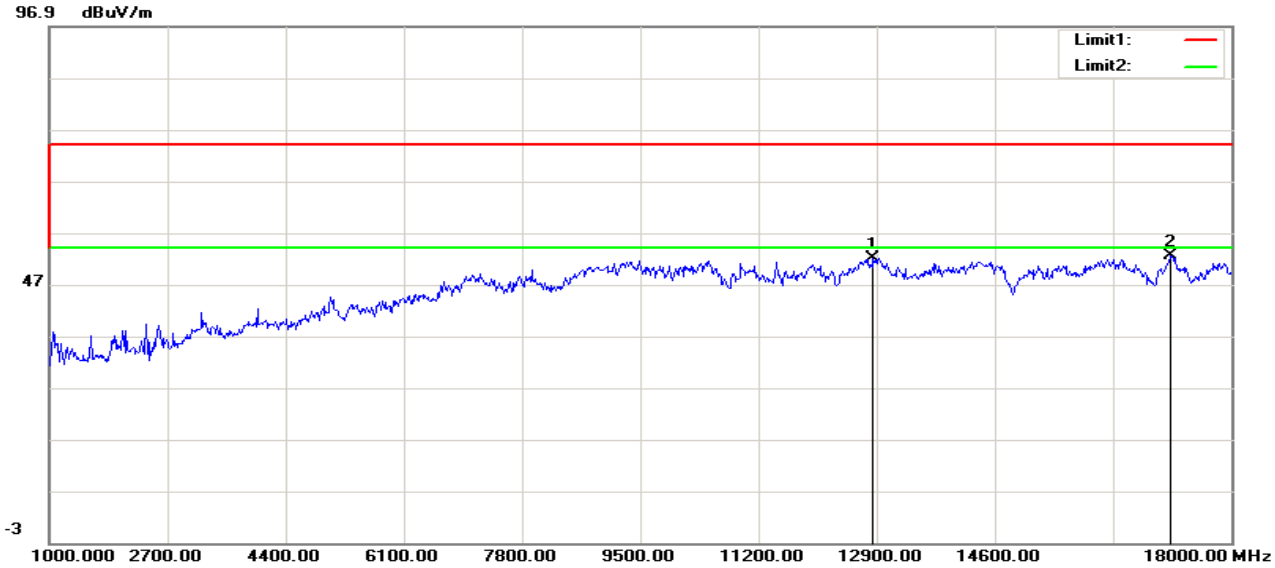
Operation Mode:	Tx / IEEE 802.11a mode CH Low	**Test Date:**	2018-11-1
Temperature:	25°C	**Tested by:**	Wendy.Wei
Humidity:	51% RH	**Polarity:**	Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	12883.000	40.07	12.36	52.43	74.00	-21.57	200	84	peak
2	16283.000	38.22	14.40	52.62	74.00	-21.38	100	109	peak

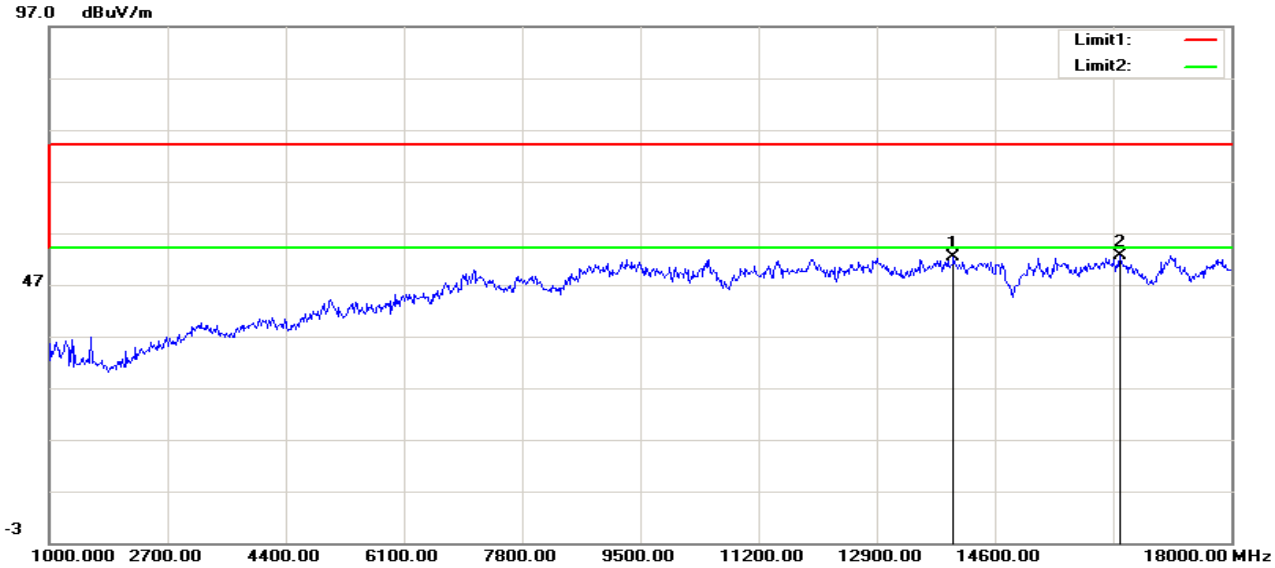
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	12849.000	39.74	12.31	52.05	74.00	-21.95	100	360	peak
2	17133.000	36.43	16.15	52.58	74.00	-21.42	200	360	peak

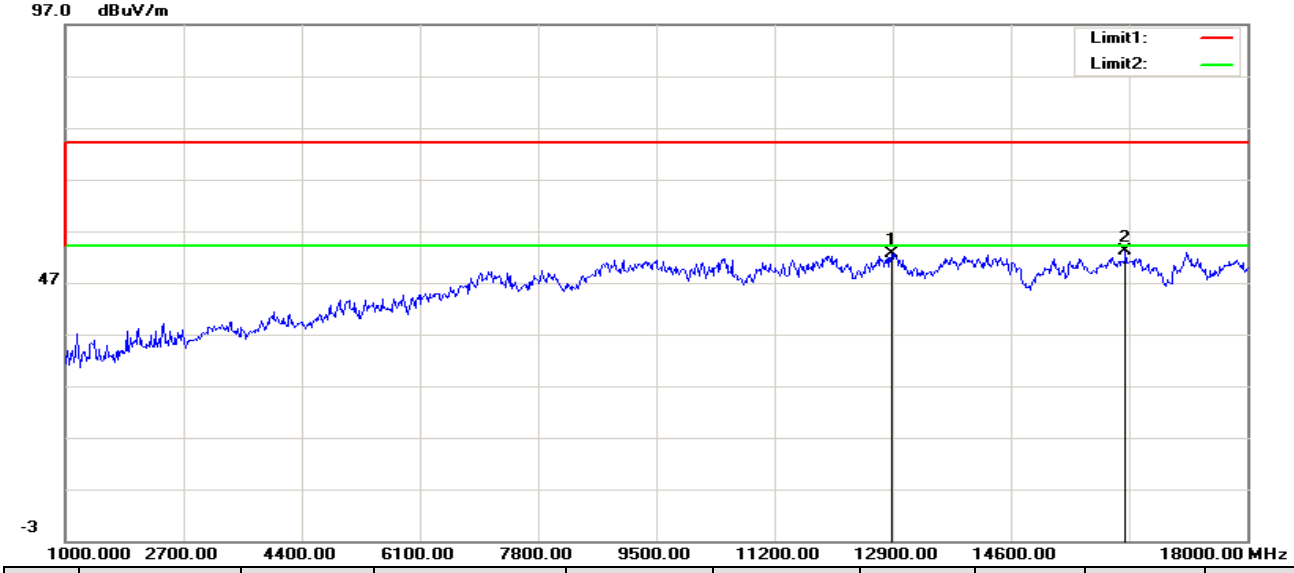
Operation Mode:	Tx / IEEE 802.11a mode CH Mid	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	14005.000	39.15	13.19	52.34	74.00	-21.66	200	0	peak
2	16402.000	38.18	14.44	52.62	74.00	-21.38	100	360	peak

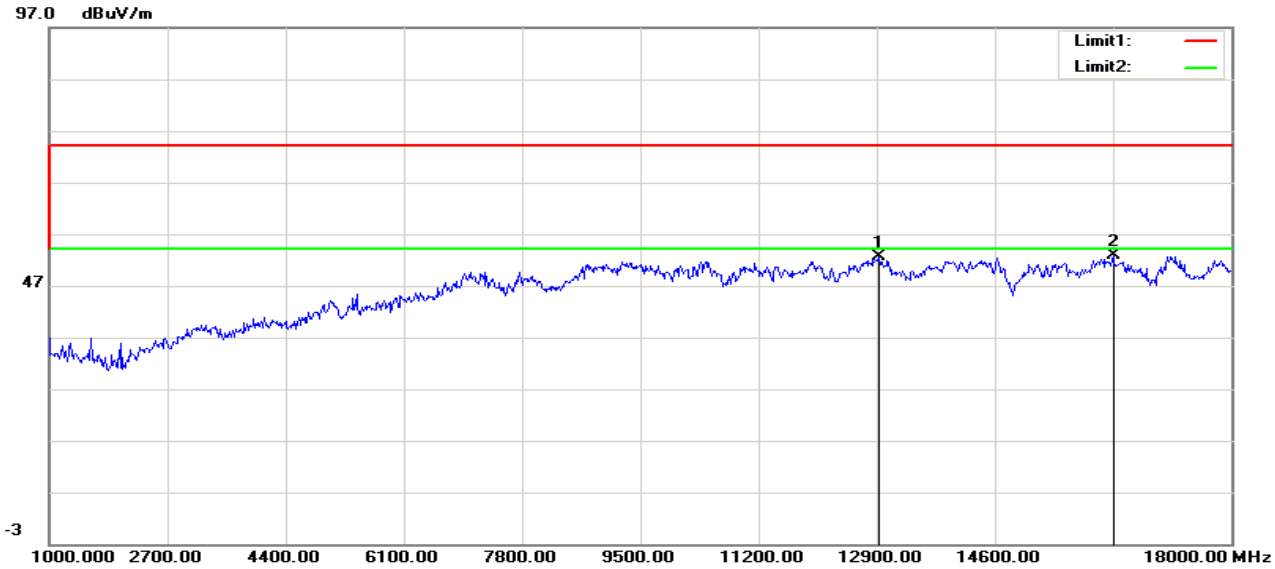
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	12883.000	40.31	12.36	52.67	74.00	-21.33	100	360	peak
2	16249.000	38.65	14.38	53.03	74.00	-20.97	100	156	peak

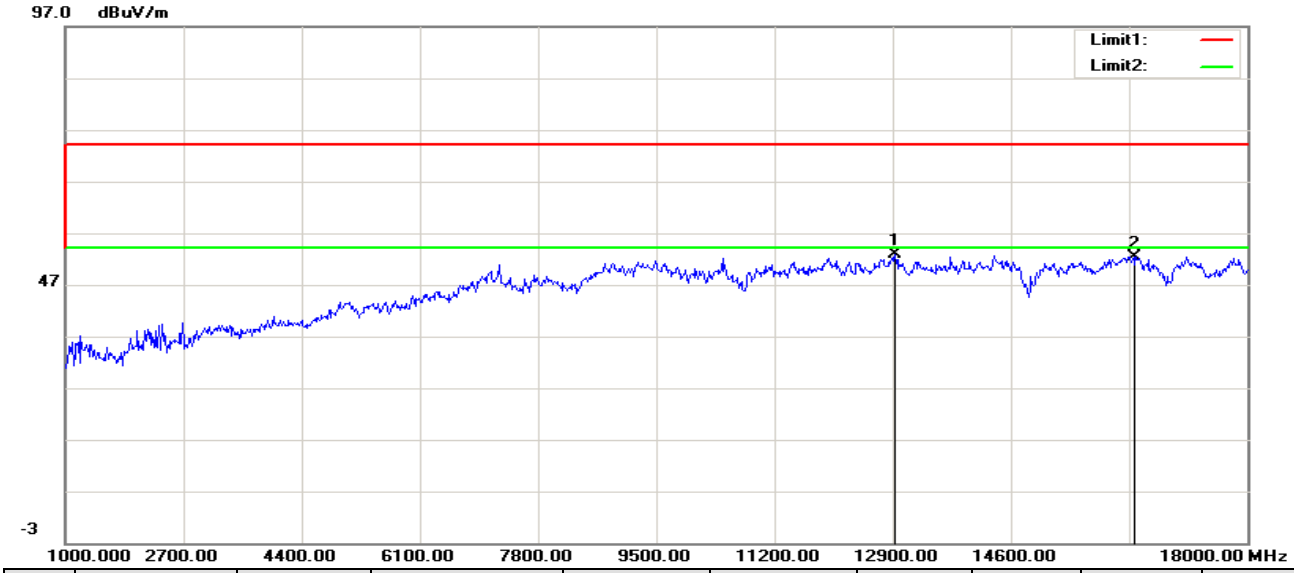
Operation Mode:	Tx / IEEE 802.11a mode CH High	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	12934.000	40.18	12.44	52.62	74.00	-21.38	100	87	peak
2	16300.000	38.39	14.40	52.79	74.00	-21.21	200	360	peak

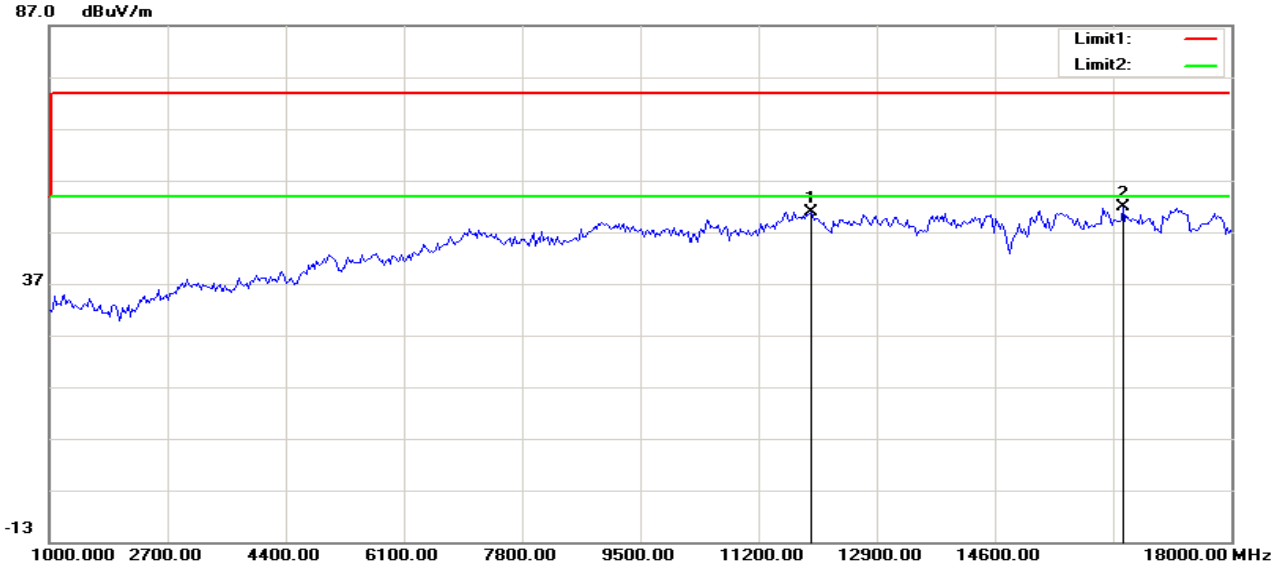
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	12934.000	40.44	12.44	52.88	74.00	-21.12	200	360	peak
2	16368.000	37.93	14.43	52.36	74.00	-21.64	200	0	peak

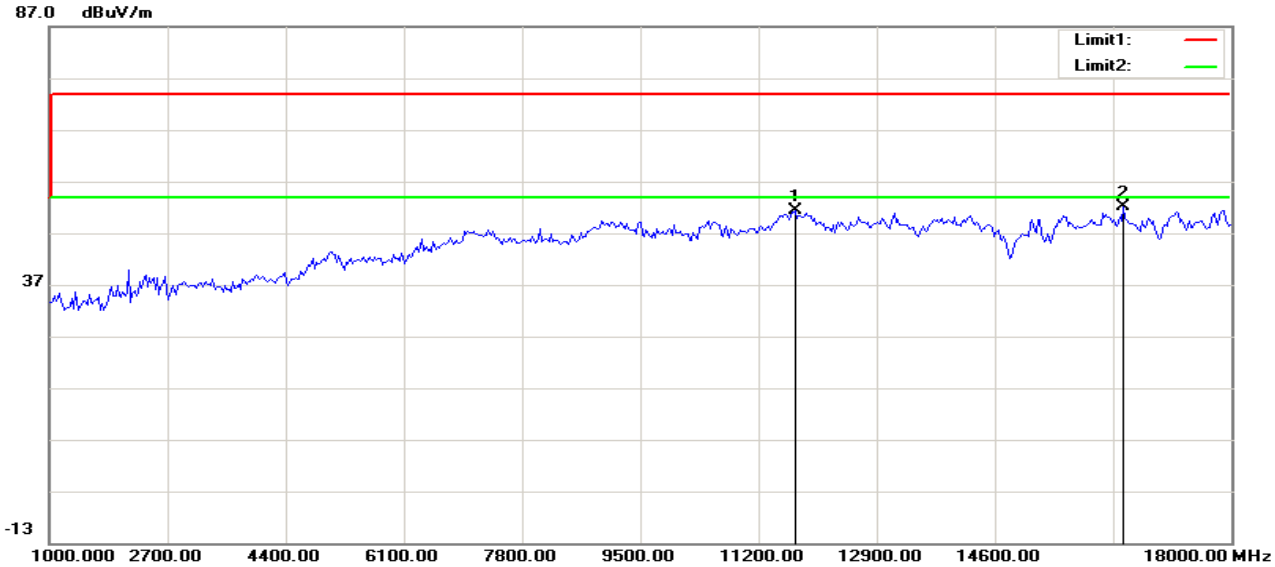
Operation Mode:	TX / IEEE 802.11n HT20 mode /CH Low	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11951.923	38.83	12.06	50.89	74.00	-23.11	200	0	peak
2	16447.115	37.40	14.45	51.85	74.00	-22.15	100	323	peak

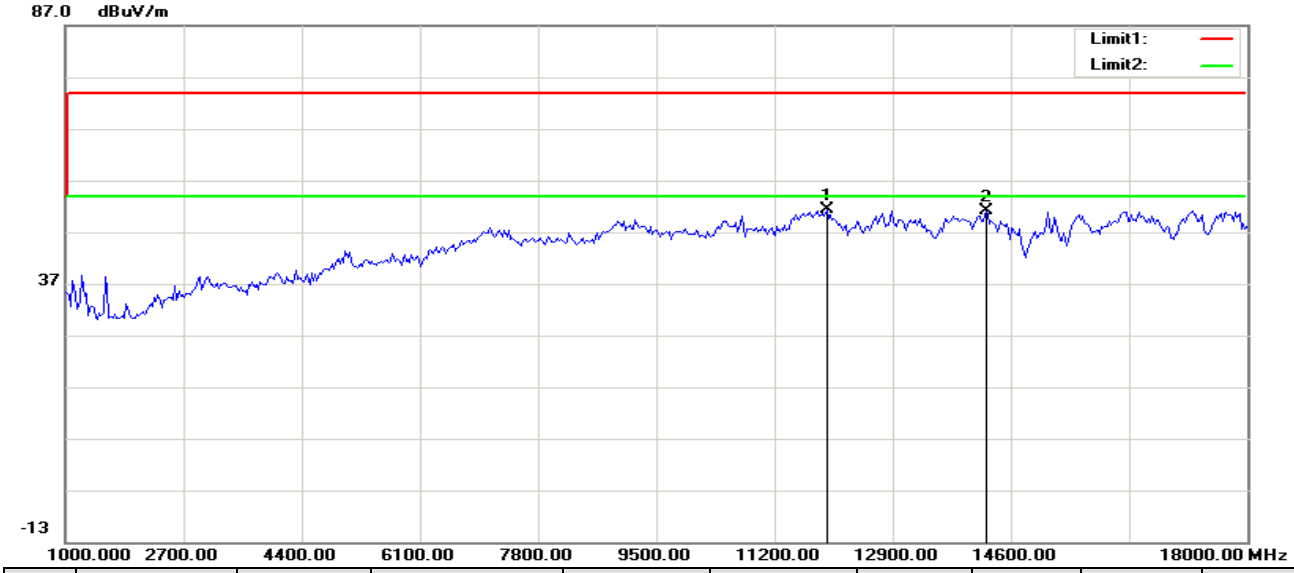
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11733.974	39.59	11.69	51.28	74.00	-22.72	100	0	peak
2	16447.115	37.71	14.45	52.16	74.00	-21.84	100	0	peak

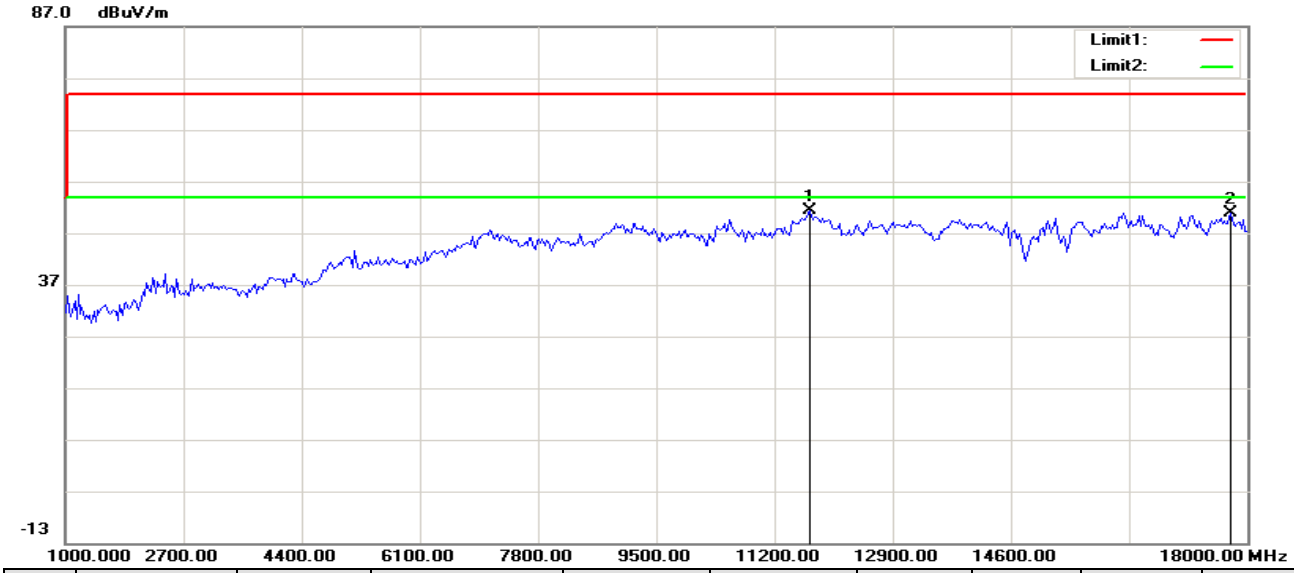
Operation Mode:	TX / IEEE 802.11n HT20 mode /CH Mid	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11951.923	39.24	12.06	51.30	74.00	-22.70	100	129	peak
2	14240.385	38.11	13.11	51.22	74.00	-22.78	100	180	peak

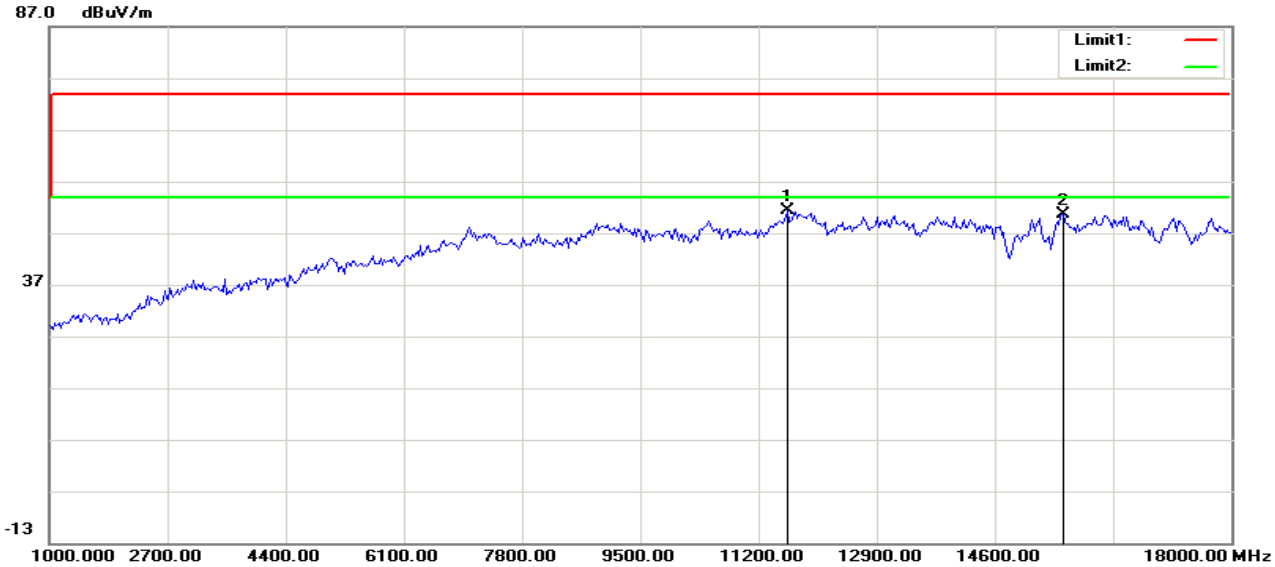
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11706.731	39.70	11.64	51.34	74.00	-22.66	100	204	peak
2	17754.808	32.97	17.88	50.85	74.00	-23.15	100	109	peak

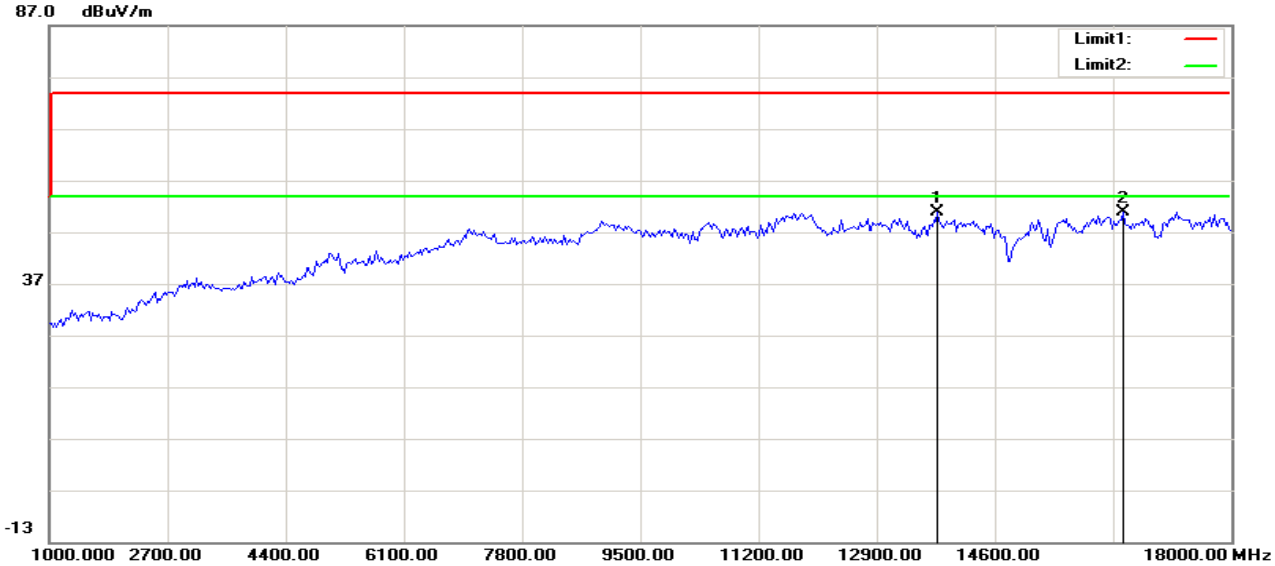
Operation Mode:	TX / IEEE 802.11n HT20 mode /CH High	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11625.000	39.84	11.50	51.34	74.00	-22.66	100	136	peak
2	15575.320	36.69	13.84	50.53	74.00	-23.47	100	15	peak

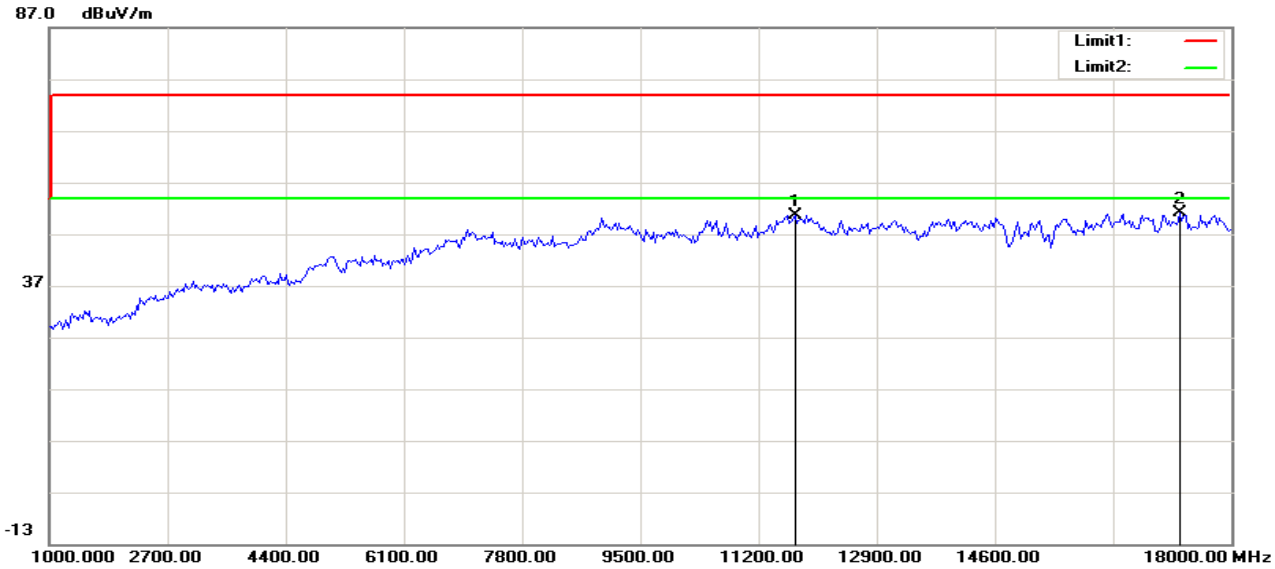
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	13777.244	39.01	11.83	50.84	74.00	-23.16	100	355	peak
2	16447.115	36.43	14.45	50.88	74.00	-23.12	100	101	peak

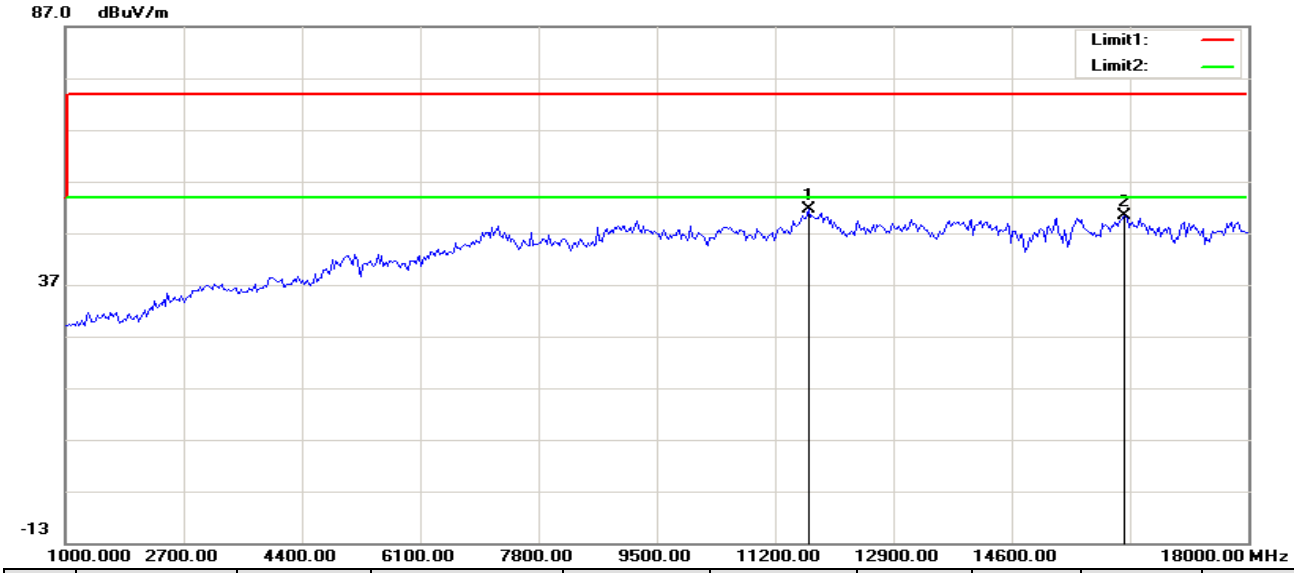
Operation Mode:	TX / IEEE 802.11n HT40 mode /CH Low	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11733.974	39.02	11.69	50.71	74.00	-23.29	100	96	peak
2	17264.423	34.41	16.67	51.08	74.00	-22.92	100	360	peak

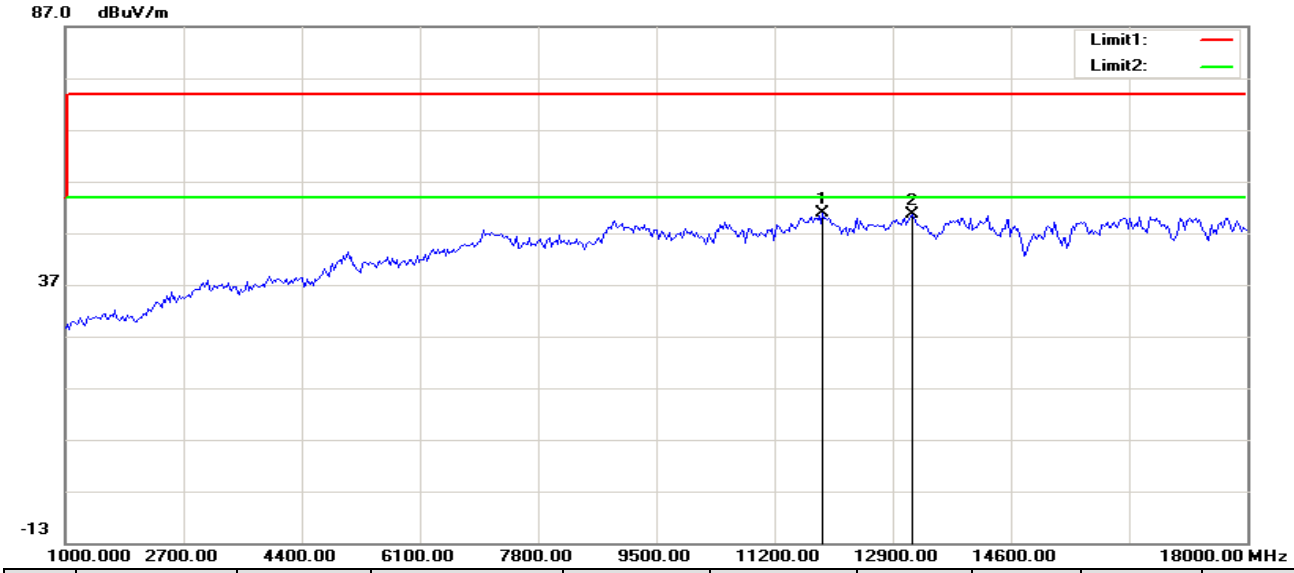
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11679.487	40.00	11.60	51.60	74.00	-22.40	100	211	peak
2	16229.167	36.10	14.38	50.48	74.00	-23.52	100	241	peak

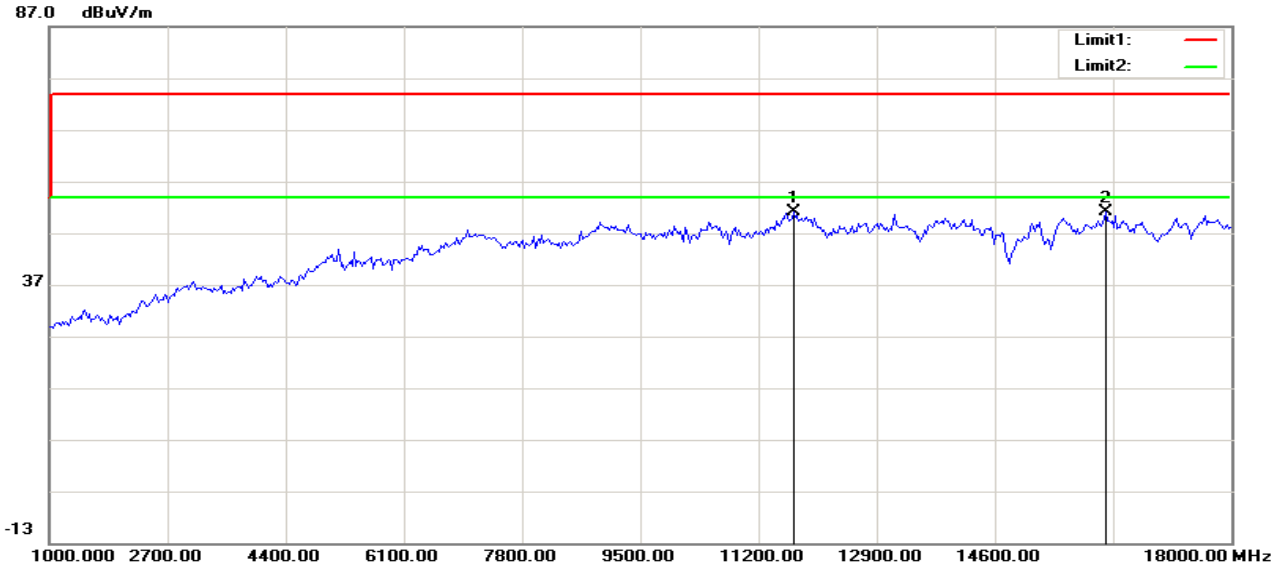
Operation Mode:	TX / IEEE 802.11ac VHT20 mode /CH Low	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11897.436	38.99	11.97	50.96	74.00	-23.04	100	360	peak
2	13177.885	38.90	11.68	50.58	74.00	-23.42	100	271	peak

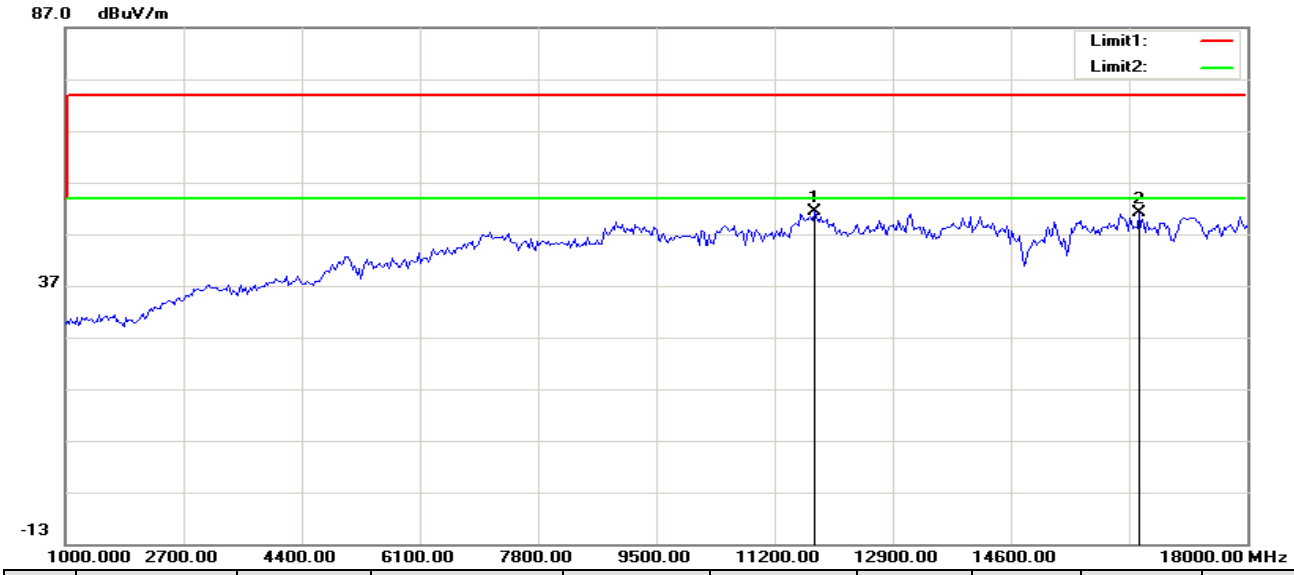
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11706.731	39.53	11.64	51.17	74.00	-22.83	100	216	peak
2	16201.923	36.66	14.37	51.03	74.00	-22.97	100	32	peak

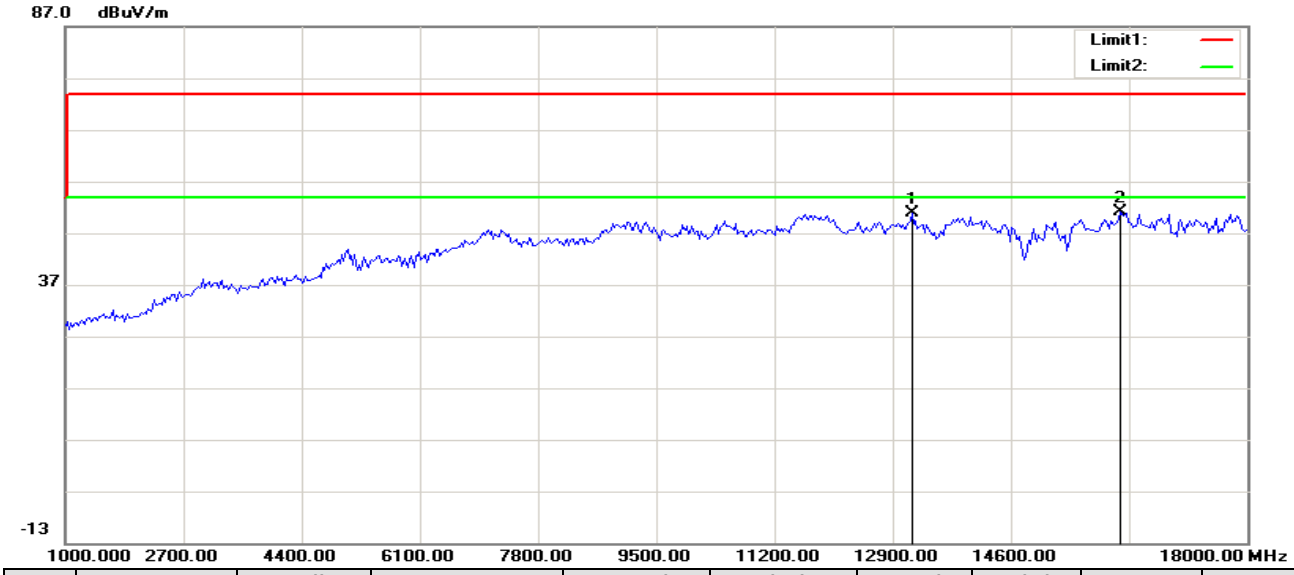
Operation Mode:	TX / IEEE 802.11ac VHT20 mode /CH Mid	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11788.461	39.61	11.78	51.39	74.00	-22.61	100	57	peak
2	16447.115	36.64	14.45	51.09	74.00	-22.91	100	339	peak

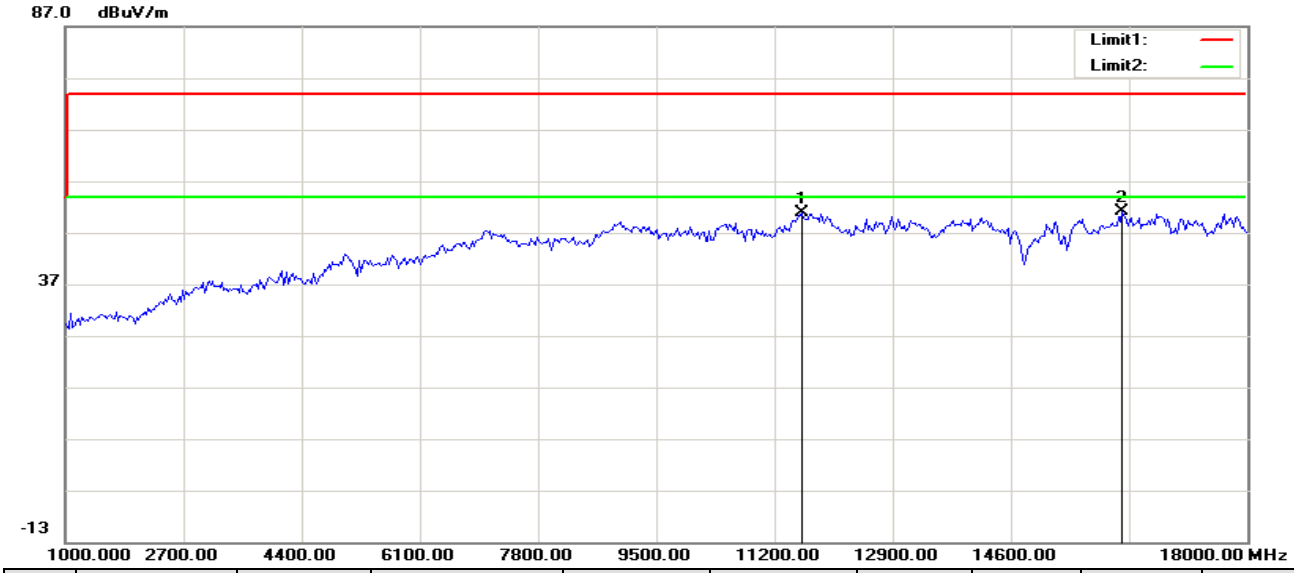
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	13177.885	39.25	11.68	50.93	74.00	-23.07	200	78	peak
2	16174.680	36.71	14.36	51.07	74.00	-22.93	200	140	peak

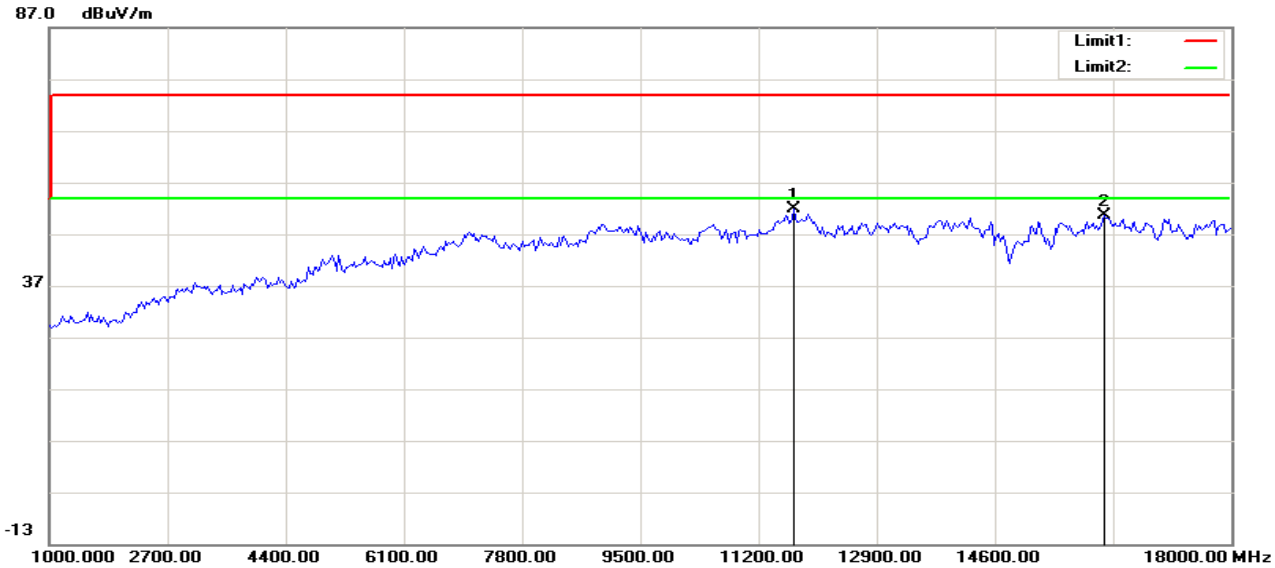
Operation Mode:	TX / IEEE 802.11ac VHT20 mode /CH High	**Test Date:**	2018-11-1
Temperature:	25°C	**Tested by:**	Wendy.Wei
Humidity:	51% RH	**Polarity:**	Ver. / Hor.

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11597.756	39.31	11.46	50.77	74.00	-23.23	100	6	peak
2	16201.923	36.64	14.37	51.01	74.00	-22.99	100	0	peak

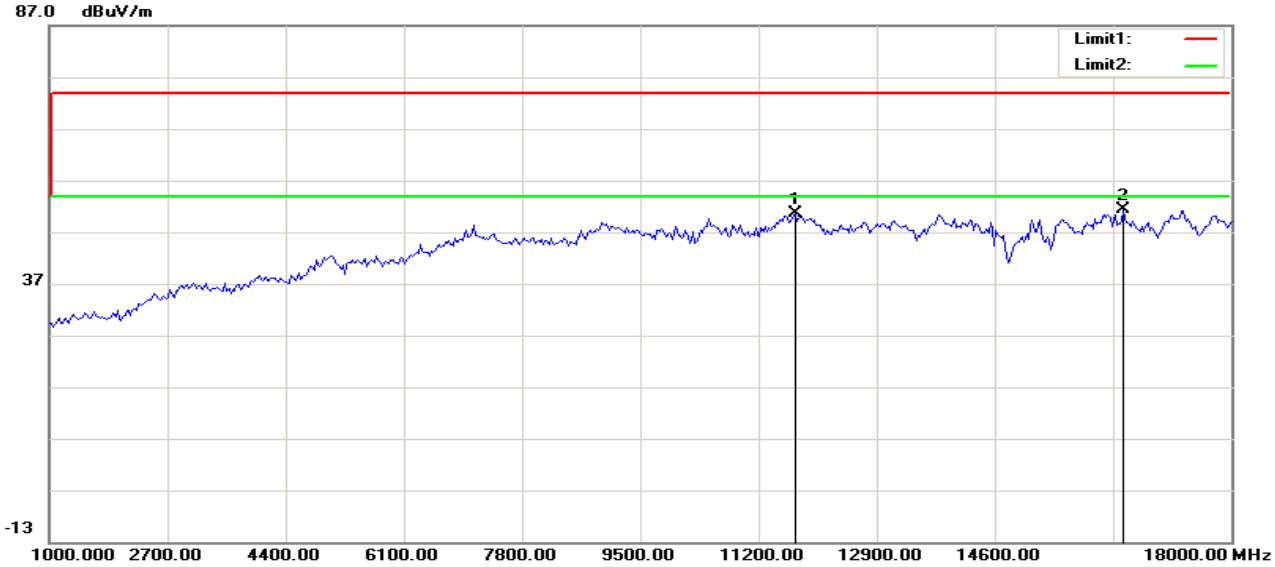
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	11706.731	40.24	11.64	51.88	74.00	-22.12	100	91	peak
2	16174.680	36.21	14.36	50.57	74.00	-23.43	100	312	peak

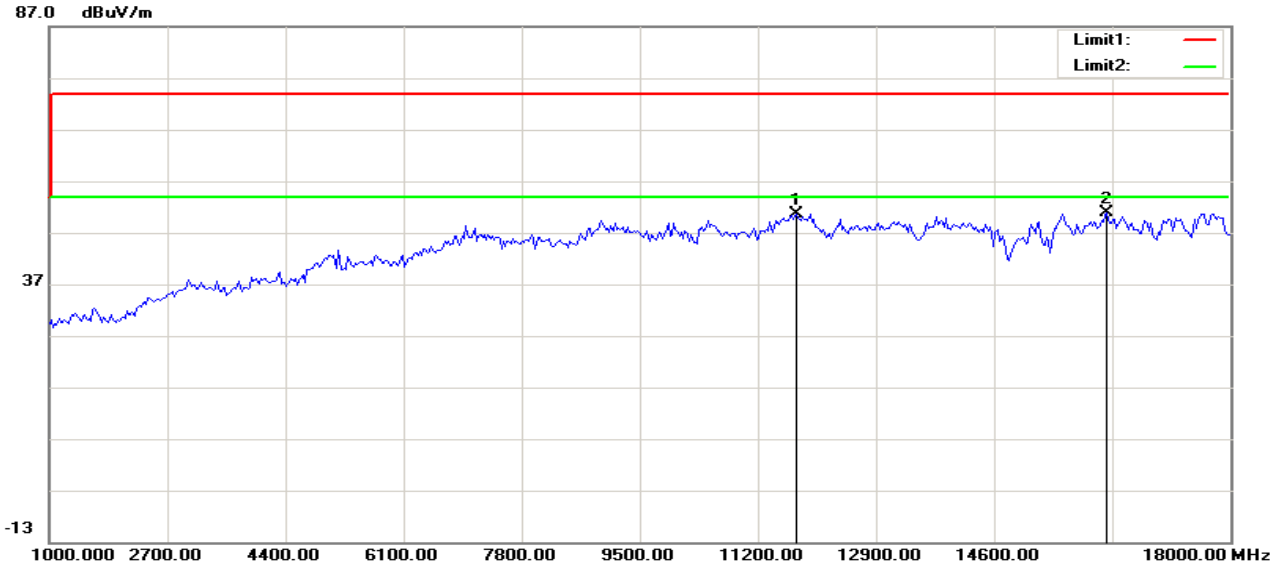
Operation Mode:	TX / IEEE 802.11ac VHT40 mode /CH Low	Test Date:	2018-11-1
Temperature:	25°C	Tested by:	Wendy.Wei
Humidity:	51% RH	Polarity:	Ver. / Hor.

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11733.974	38.85	11.69	50.54	74.00	-23.46	100	73	peak
2	16447.115	37.00	14.45	51.45	74.00	-22.55	100	225	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	11761.218	38.96	11.73	50.69	74.00	-23.31	100	250	peak
2	16229.167	36.58	14.38	50.96	74.00	-23.04	100	39	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 3 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.*
6. *Margin (dB) = Result (dBuV/m) – Limit (dBuV/m).*

8.8 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 Setup photo 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.

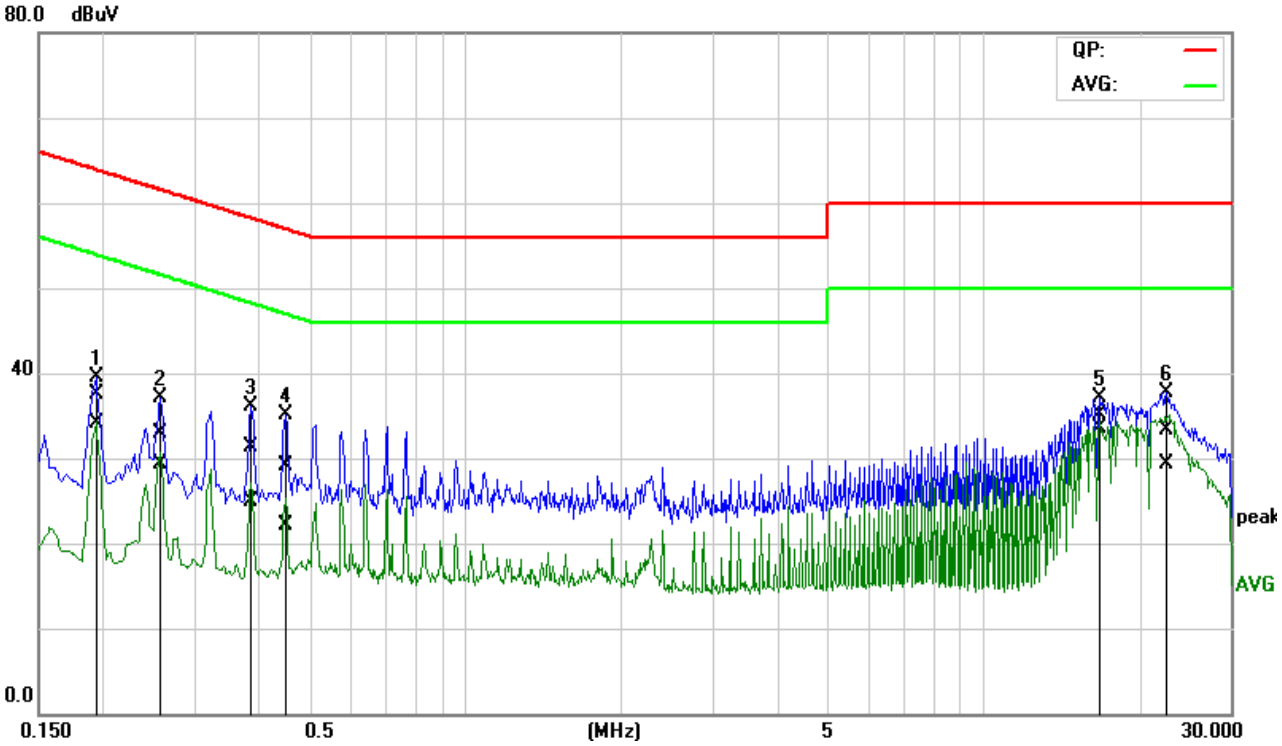
TEST RESULTS

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.:	C180928E08	Date:	2018/11/5
Model No.:	Mars1717XU-VSI	Time:	9:14:31
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/41%
Test item:	Conduction test	Test By:	Wendy.Wei
Line:	L1	Test Voltage:	AC 120V/60Hz
Model:		Description:	

L1

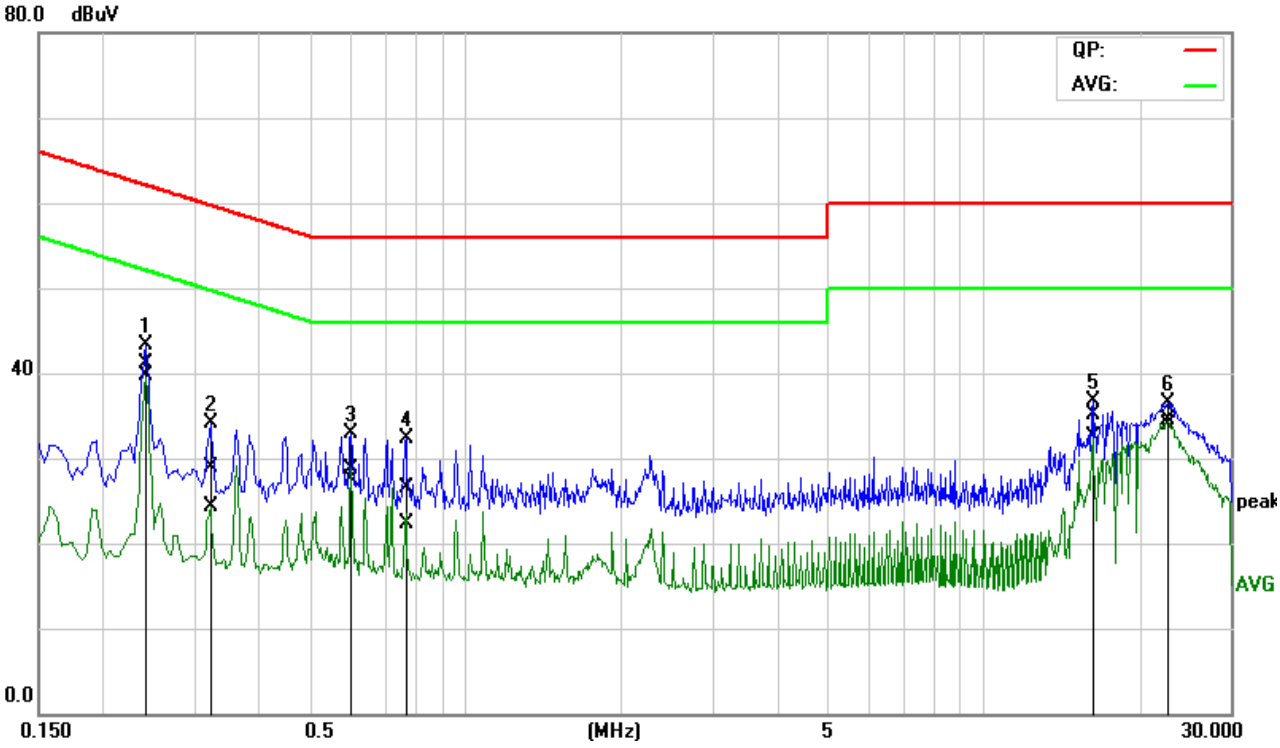


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1927	18.01	14.67	19.45	37.46	34.12	63.92	53.92	-26.46	-19.80	Pass
2	0.2586	13.45	9.89	19.47	32.92	29.36	61.48	51.48	-28.56	-22.12	Pass
3	0.3876	11.84	5.41	19.49	31.33	24.90	58.11	48.11	-26.78	-23.21	Pass
4	0.4523	9.59	2.56	19.49	29.08	22.05	56.83	46.83	-27.75	-24.78	Pass
5*	16.8426	15.03	13.43	20.06	35.09	33.49	60.00	50.00	-24.91	-16.51	Pass
6	22.6191	13.18	9.13	20.08	33.26	29.21	60.00	50.00	-26.74	-20.79	Pass

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

Job No.:	C180928E08	Date:	2018/11/5
Model No.:	Mars1717XU-VSI	Time:	9:21:22
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/41%
Test item:	Conduction test	Test By:	Wendy.Wei
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*	0.2410	21.74	20.30	19.45	41.19	39.75	62.06	52.06	-20.87	-12.31	Pass
2	0.3211	9.35	4.81	19.47	28.82	24.28	59.68	49.68	-30.86	-25.40	Pass
3	0.6037	9.29	7.96	19.49	28.78	27.45	56.00	46.00	-27.22	-18.55	Pass
4	0.7706	7.00	2.76	19.53	26.53	22.29	56.00	46.00	-29.47	-23.71	Pass
5	16.2290	15.20	12.52	20.00	35.20	32.52	60.00	50.00	-24.80	-17.48	Pass
6	22.7383	14.53	13.81	20.03	34.56	33.84	60.00	50.00	-25.44	-16.16	Pass

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

*R*emark:

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