FCC PART 15.407

TEST REPORT

For

SHENZHEN IP-COM NETWORKS CO.,LTD.

Unit A, First Floor, Tower E3, No. 1001, Zhongshanyuan Road,Nanshan District, Shenzhen, China

FCC ID: 2ABZMAP355

Report Type:	Product Type:
Original Report	Wireless Access Point

Test Engineer:	Lion Xiao
Report Number:	RDG160310003-00B
Report Date:	2016-03-30
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SHENZHEN IP-COM NETWORKS CO.,LTD.* 's product, model number: *AP355 (FCC ID: 2ABZMAP355)* (the "EUT") in this report was a *Wireless Access Point,* which was measured approximately: 20.0 cm (L) x 20.0 cm (W) x 3.7 cm (H), rated input voltage: DC12V from adapter or DC 48V from POE.

Adapter information:
Model: BN050-A18012U
Input: 100-240V~ 50/60Hz 0.6A
Output: DC 12V, 1.5A

All measurement and test data in this report was gathered from production sample serial number: 160310003 (Assigned by BACL, Dongguan). The EUT was received on 2016-03-10.

Objective

This type approval report is prepared on behalf of *SHENZHEN IP-COM NETWORKS CO.,LTD.* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and E of the Federal Communications Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: 2ABZMAP355 .

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

For 5150~5250 MHz band, channels are provided to test as follows:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a, 802.11n ht20, Channel 36, 40 and 48 were tested, for 802.11n ht40, Channel 38, 46 were tested, for 802.11 ac80, Channel 42 was tested.

For 5725~5850 MHz band, channels are provided to test as follows:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
155	5775	/	/
157	5785	/	/

For 802.11a, 802.11n ht20, Channel 149, 157 and 165 were tested, for 802.11n ht40, Channel 151, 159 were tested, for 802.11 ac80, Channel 155 was tested.

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

EUT Exercise Software

The software “Atheros Radio Test 2” was used for testing, and the commands were provided by manufacturer. The worst condition (maximum power) was setting by the software as following table:

5150¬5250MHz Band:

Test Mode	Test Software Version	M_Tool V2.0.0.3					
802.11A	Test Frequency	5180MHz		5200MHz		5240MHz	
	Data Rate	6Mbps		6Mbps		6Mbps	
	ANT	Chain0	chain1	Chain0	chain1	Chain0	chain1
	Power Level Setting	72	72	72	72	72	72
802.11n ht20	Test Frequency	5180MHz		5200MHz		5240MHz	
	Data Rate	MCS8		MCS8		MCS8	
	ANT	Chain0	chain1	Chain0	chain1	Chain0	chain1
	Power Level Setting	60	60	60	60	60	60
802.11n ht40	Test Frequency	5190MHz		/		5230MHz	
	Data Rate	MCS8		/		MCS8	
	ANT	Chain0	chain1	/	/	Chain0	chain1
	Power Level Setting	60	60	/	/	60	60
802.11 ac80	Test Frequency	/		5210MHz		/	
	Data Rate	/		MCS8		/	
	ANT	/	/	Chain0	chain1	/	/
	Power Level Setting	/	/	60	60	/	/

5725¬5850MHz Band:

Test Mode	Test Software Version	M_Tool V2.0.0.3					
802.11A	Test Frequency	5745MHz		5785MHz		5825MHz	
	Data Rate	6Mbps		6Mbps		6Mbps	
	ANT	Chain0	chain1	Chain0	chain1	Chain0	chain1
	Power Level Setting	75	75	75	75	75	75
802.11n ht20	Test Frequency	5745MHz		5785MHz		5825MHz	
	Data Rate	MCS8		MCS8		MCS8	
	ANT	Chain0	chain1	Chain0	chain1	Chain0	chain1
	Power Level Setting	62	62	62	62	62	62
802.11n ht40	Test Frequency	5755MHz		/		5795MHz	
	Data Rate	MCS8		/		MCS8	
	ANT	Chain0	chain1	/	/	Chain0	chain1
	Power Level Setting	62	62	/	/	62	62
802.11 ac80	Test Frequency	/		5775MHz		/	
	Data Rate	/		MCS8		/	
	ANT	/	/	Chain0	chain1	/	/
	Power Level Setting	/	/	62	62	/	/

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

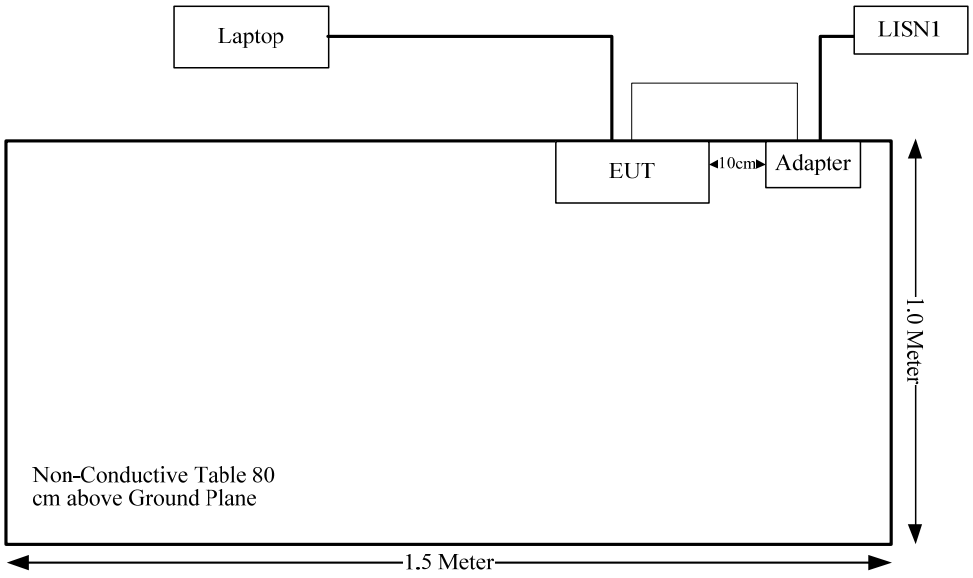
Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
I.T.E	SWITCHING MODE POWER SUPPLY	C0548B-480-050	N/A

Support Cable List and Details

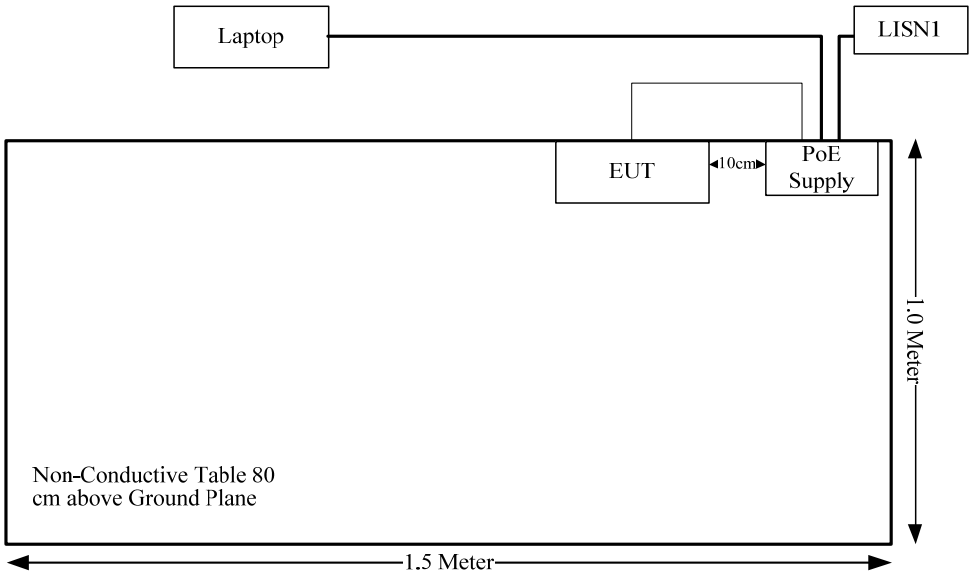
Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
RJ45 Cable*1	no	no	10	EUT	Router
DC Power Cable	No	No	1.2	Adapter	EUT

Block Diagram of Test Setup

Test Mode: Supply by adapter



Test Mode: Supply by PoE



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091	Maximum Permissible Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b)	Out Of Band Emissions	Compliance
§15.407(a) (e)	Emission Bandwidth	Compliance
§15.407(a)	Conducted Transmitter Output Power	Compliance
§15.407 (a)	Power Spectral Density	Compliance

FCC §15.407(f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.407(f)and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Frequency (MHz)	**Antenna Gain**		**Tune-up Power**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
	(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
5150-5250	3.00	3.16	21	125.89	20.00	0.08	1.0
5725-5850	3.00	3.16	21	125.89	20.00	0.08	1.0

Note: The tune-up power is 19+/-2dBm.

Result: The device meet FCC MPE at 20 cm distance

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
And according to FCC 47 CFR section 15.407 (a)(1),if transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has two internal antennas, which was permanently attached and the antenna gain is 3dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

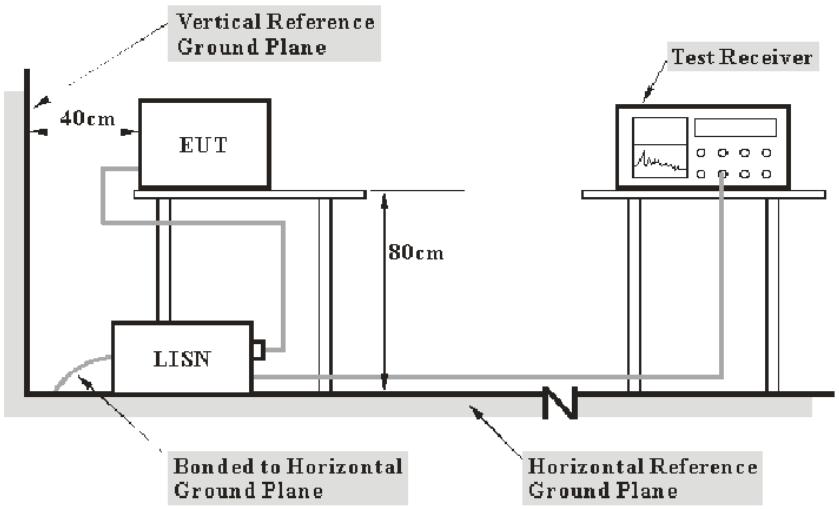
If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
– non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
If U_{lab} is greater than U_{cispr} of Table 1, then:
– compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
– non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.12 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2015-10-20	2016-10-20
R&S	L.I.S.N	ESH2-Z5	892107/021	2015-06-09	2016-06-09
R&S	Two-line V-network	ENV 216	3560.6550.12	2015-11-26	2016-11-25
N/A	Coaxial Cable	1.8m	N/A	2015-05-06	2016-05-06
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to thefirst LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

7.20 dB at **0.439808 MHz** in the **Neutral** conducted mode *for adapter*.

Test Data

Environmental Conditions

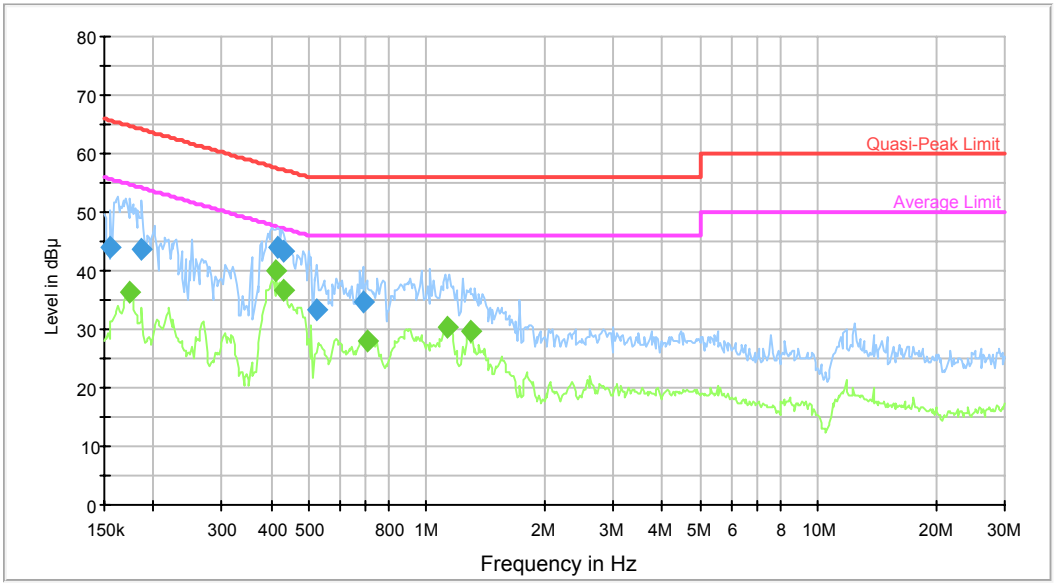
Temperature:	21.4°C
Relative Humidity:	51 %
ATM Pressure:	101.4kPa

The testing was performed by Lion Xiao on 2016-03-14.

Test Mode: Operation

Supply by adapter:

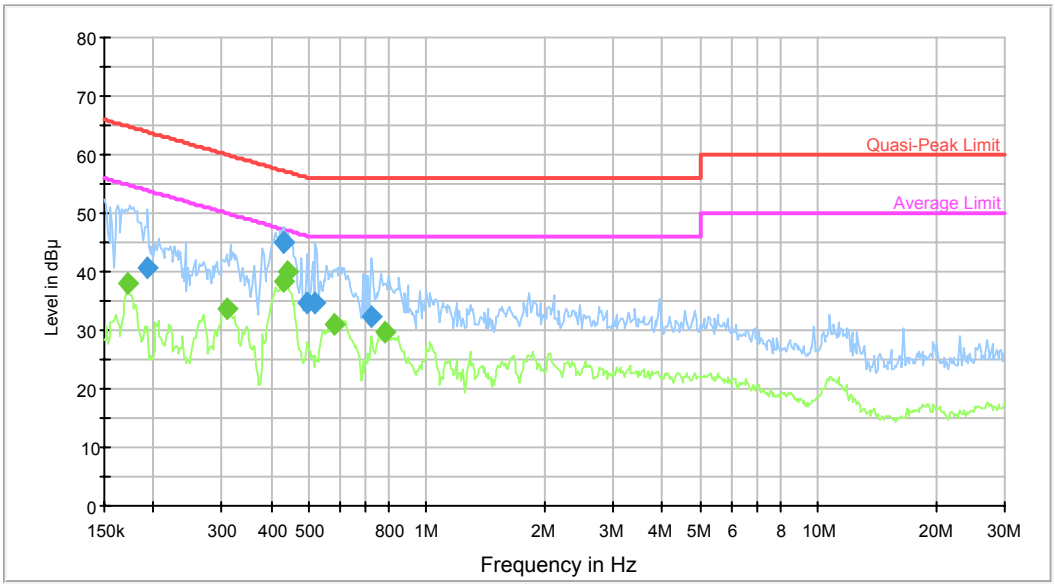
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.156097	43.9	9.000	L1	9.7	21.8	65.7	Compliance
0.187494	43.5	9.000	L1	9.7	20.6	64.1	Compliance
0.415949	44.1	9.000	L1	9.8	13.4	57.5	Compliance
0.432855	43.4	9.000	L1	9.8	13.8	57.2	Compliance
0.524077	33.5	9.000	L1	9.8	22.5	56.0	Compliance
0.687153	34.6	9.000	L1	9.8	21.4	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.173134	36.4	9.000	L1	9.7	18.4	54.8	Compliance
0.412647	40.1	9.000	L1	9.8	7.5	47.6	Compliance
0.432855	36.7	9.000	L1	9.8	10.5	47.2	Compliance
0.703777	28.1	9.000	L1	9.8	17.9	46.0	Compliance
1.135185	30.5	9.000	L1	9.8	15.5	46.0	Compliance
1.289541	29.5	9.000	L1	9.8	16.5	46.0	Compliance

AC120 V, 60 Hz, Neutral:

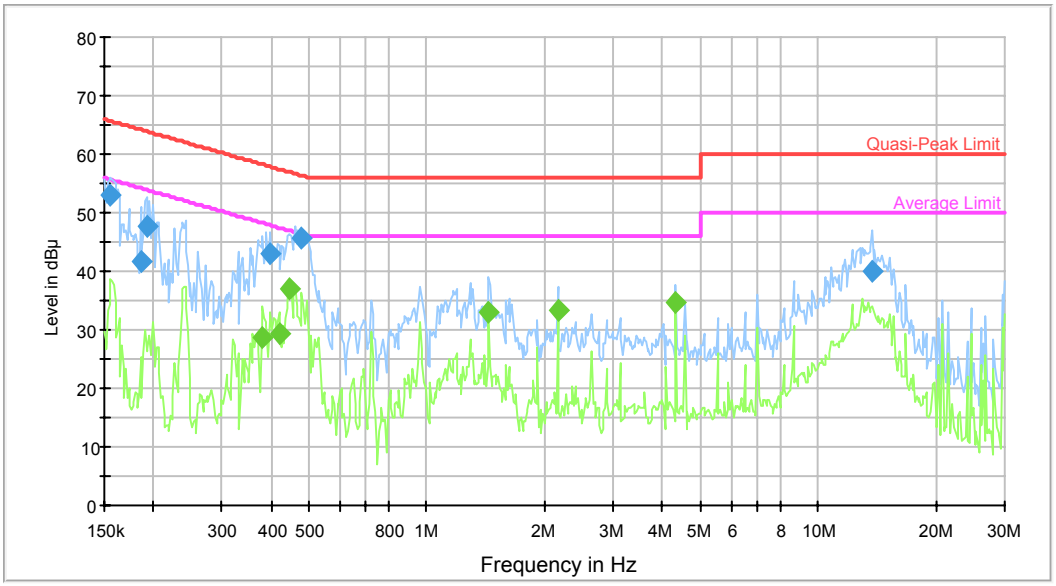


requency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.193566	40.8	9.000	N	9.7	23.1	63.9	Compliance
0.429420	45.0	9.000	N	9.7	12.3	57.3	Compliance
0.432855	44.9	9.000	N	9.7	12.3	57.2	Compliance
0.495646	34.9	9.000	N	9.7	21.2	56.1	Compliance
0.519918	34.5	9.000	N	9.7	21.5	56.0	Compliance
0.720803	32.3	9.000	N	9.7	23.7	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.171759	37.9	9.000	N	9.7	17.0	54.9	Compliance
0.309742	33.8	9.000	N	9.7	16.2	50.0	Compliance
0.429420	38.5	9.000	N	9.7	8.8	47.3	Compliance
0.439808	39.9	9.000	N	9.7	7.2	47.1	Compliance
0.581275	30.9	9.000	N	9.7	15.1	46.0	Compliance
0.780588	29.8	9.000	N	9.7	16.2	46.0	Compliance

Supply by PoE:

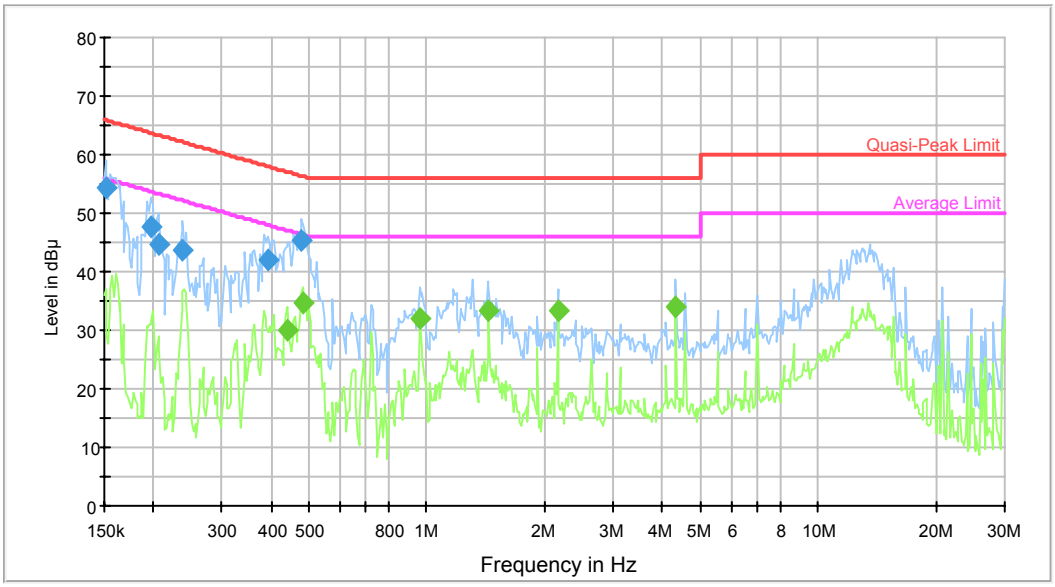
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.156097	53.0	9.000	L1	9.7	12.7	65.7	Compliance
0.186006	41.7	9.000	L1	9.7	22.5	64.2	Compliance
0.192030	47.6	9.000	L1	9.7	16.3	63.9	Compliance
0.399703	42.9	9.000	L1	9.8	15.0	57.9	Compliance
0.480097	45.6	9.000	L1	9.8	10.7	56.3	Compliance
13.747168	40.1	9.000	L1	10.1	19.9	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.381043	28.8	9.000	L1	9.8	19.5	48.3	Compliance
0.419276	29.4	9.000	L1	9.8	18.1	47.5	Compliance
0.446873	37.0	9.000	L1	9.8	9.9	46.9	Compliance
1.441726	33.1	9.000	L1	9.8	12.9	46.0	Compliance
2.164561	33.2	9.000	L1	9.8	12.8	46.0	Compliance
4.329484	34.6	9.000	L1	9.9	11.4	46.0	Compliance

AC120 V, 60 Hz, Neutral:



requency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.151200	54.2	9.000	N	9.7	11.7	65.9	Compliance
0.196675	47.7	9.000	N	9.7	16.0	63.7	Compliance
0.206306	44.8	9.000	N	9.7	18.6	63.4	Compliance
0.238124	43.6	9.000	N	9.7	18.6	62.2	Compliance
0.393383	41.9	9.000	N	9.7	16.1	58.0	Compliance
0.480097	45.3	9.000	N	9.7	11.0	56.3	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.443327	29.8	9.000	N	9.7	17.2	47.0	Compliance
0.483938	34.5	9.000	N	9.7	11.8	46.3	Compliance
0.960275	32.0	9.000	N	9.8	14.0	46.0	Compliance
1.441726	33.2	9.000	N	9.8	12.8	46.0	Compliance
2.164561	33.3	9.000	N	9.8	12.7	46.0	Compliance
4.329484	34.1	9.000	N	9.9	11.9	46.0	Compliance

FCC §15.209, §15.205 & §15.407(b) (1) (6) (7) –UNWANTED EMISSION

Applicable Standard

FCC §15.407; §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

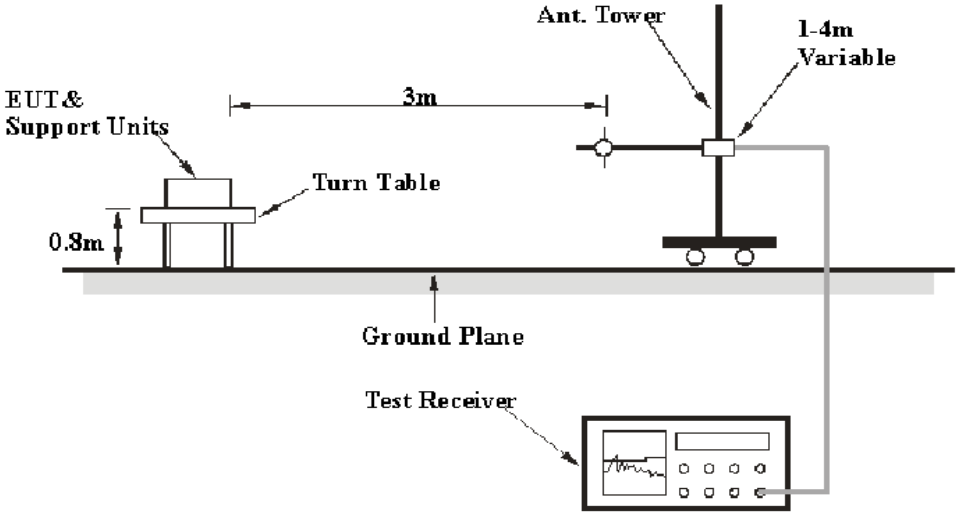
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

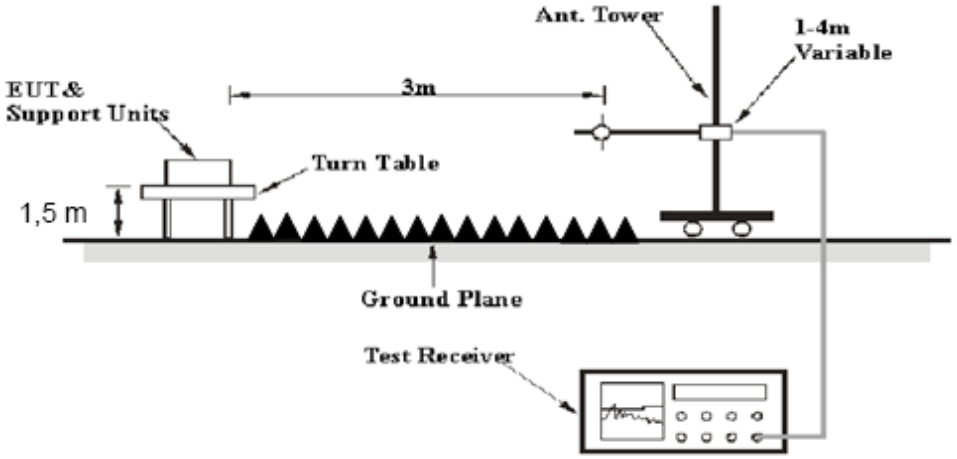
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit –Extrapolation result

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
N/A	Coaxial Cable	14m	N/A	2015-05-06	2016-05-06
N/A	Coaxial Cable	8m	N/A	2015-05-06	2016-05-06
Sinoscite	Bandstop Filters	BSF5150-5850MN-0899-003	N/A	2015-05-06	2016-05-06
ETS-Lindgren	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, Section 15.205, 15.209 and 15.407, with the worst margin reading of:

1.00 dB at **5715 MHz** in the **Horizontal** polarization for 802.11n ht40 mode

Test Data

Environmental Conditions

Temperature:	24.9°C
Relative Humidity:	42%
ATM Pressure:	101.6 kPa

The testing was performed by Lion Xiao on 2016-03-28.

Test Mode: Transmitting (Powered by adapter)

5150MHz-5250MHz: 802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel:5180 MHz									
5180	102.52	PK	H	31.46	5.40	27.13	112.25	N/A	N/A
5180	92.63	AV	H	31.46	5.40	27.13	102.36	N/A	N/A
5180	99.50	PK	V	31.46	5.40	27.13	109.23	N/A	N/A
5180	89.62	AV	V	31.46	5.40	27.13	99.35	N/A	N/A
5150	61.25	PK	H	31.40	5.26	27.18	70.73	74.00	3.27
5150	43.25	AV	H	31.40	5.26	27.18	52.73	54.00	1.27
10360	42.24	PK	H	36.97	8.36	25.52	62.05	68.20	6.15
15540	32.07	PK	H	37.43	14.94	24.98	59.46	74.00	14.54
15540	18.19	AV	H	37.43	14.94	24.98	45.58	54.00	8.42
7961	44.69	PK	H	35.17	6.75	27.10	59.51	74.00	14.49
7961	18.23	AV	H	35.17	6.75	27.10	33.05	54.00	20.95
1600	38.83	PK	H	23.80	2.54	27.81	37.36	74.00	36.64
1600	32.06	AV	H	23.80	2.54	27.81	30.59	54.00	23.41
271	34.50	QP	H	13.71	2.00	21.50	28.71	46.00	17.29
Middle Channel:5200 MHz									
5200	102.54	PK	H	31.50	5.49	27.09	112.44	N/A	N/A
5200	92.20	AV	H	31.50	5.49	27.09	102.10	N/A	N/A
5200	99.56	PK	V	31.50	5.49	27.09	109.46	N/A	N/A
5200	89.67	AV	V	31.50	5.49	27.09	99.57	N/A	N/A
10400	43.67	PK	H	36.98	8.32	25.50	63.47	68.20	4.73
15600	32.29	PK	H	37.32	14.69	24.69	59.61	74.00	14.39
15600	18.37	AV	H	37.32	14.69	24.69	45.69	54.00	8.31
7961	44.71	PK	H	35.17	6.75	27.10	59.53	74.00	14.47
7961	18.00	AV	H	35.17	6.75	27.10	32.82	54.00	21.18
1600	38.73	PK	H	23.80	2.54	27.81	37.26	74.00	36.74
1600	32.04	AV	H	23.80	2.54	27.81	30.57	54.00	23.43
271	34.60	QP	H	13.71	2.00	21.50	28.81	46.00	17.19
375.7	33.80	QP	H	15.73	2.35	21.71	30.17	46.00	15.83
High Channel:5240 MHz									
5240	102.57	PK	H	31.58	5.28	27.07	112.36	N/A	N/A
5240	92.41	AV	H	31.58	5.28	27.07	102.20	N/A	N/A
5240	99.69	PK	V	31.58	5.28	27.07	109.48	N/A	N/A
5240	89.56	AV	V	31.58	5.28	27.07	99.35	N/A	N/A
5350	43.20	PK	H	31.80	5.61	27.02	53.59	74.00	20.41
5350	30.58	AV	H	31.80	5.61	27.02	40.97	54.00	13.03
10480	42.67	PK	H	37.00	8.23	26.01	61.89	68.20	6.31
15720	32.30	PK	H	37.10	14.20	24.92	58.68	74.00	15.32
15720	18.36	AV	H	37.10	14.20	24.92	44.74	54.00	9.26
7961	44.88	PK	H	35.17	6.75	27.10	59.70	74.00	14.30
7961	18.48	AV	H	35.17	6.75	27.10	33.30	54.00	20.70
1600	38.55	PK	H	23.80	2.54	27.81	37.08	74.00	36.92
1600	32.03	AV	H	23.80	2.54	27.81	30.56	54.00	23.44
271	34.30	QP	H	13.71	2.00	21.50	28.51	46.00	17.49

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel:5180 MHz									
5180	101.23	PK	H	31.46	5.40	27.13	110.96	N/A	N/A
5180	89.40	AV	H	31.46	5.40	27.13	99.13	N/A	N/A
5180	96.25	PK	V	31.46	5.40	27.13	105.98	N/A	N/A
5180	84.43	AV	V	31.46	5.40	27.13	94.16	N/A	N/A
5150	61.02	PK	V	31.40	5.26	27.18	70.50	74.00	3.50
5150	42.97	AV	V	31.40	5.26	27.18	52.45	54.00	1.55
10360	43.37	PK	V	36.97	8.36	25.52	63.18	68.20	5.02
15540	32.27	PK	V	37.43	14.94	24.98	59.66	74.00	14.34
15540	18.25	AV	V	37.43	14.94	24.98	45.64	54.00	8.36
7961	44.85	PK	V	35.17	6.75	27.10	59.67	74.00	14.33
7961	18.28	AV	V	35.17	6.75	27.10	33.10	54.00	20.90
1600	39.02	PK	V	23.80	2.54	27.81	37.55	74.00	36.45
1600	32.17	AV	V	23.80	2.54	27.81	30.70	54.00	23.30
271	34.00	QP	V	13.71	2.00	21.50	28.21	46.00	17.79
Middle Channel:5200 MHz									
5200	102.52	PK	H	31.50	5.49	27.09	112.42	N/A	N/A
5200	90.16	AV	H	31.50	5.49	27.09	100.06	N/A	N/A
5200	97.55	PK	V	31.50	5.49	27.09	107.45	N/A	N/A
5200	85.70	AV	V	31.50	5.49	27.09	95.60	N/A	N/A
10400	43.56	PK	V	36.98	8.32	25.50	63.36	68.20	4.84
15600	32.73	PK	V	37.32	14.69	24.69	60.05	74.00	13.95
15600	18.56	AV	V	37.32	14.69	24.69	45.88	54.00	8.12
7961	44.84	PK	V	35.17	6.75	27.10	59.66	74.00	14.34
7961	17.96	AV	V	35.17	6.75	27.10	32.78	54.00	21.22
1600	39.10	PK	V	23.80	2.54	27.81	37.63	74.00	36.37
1600	32.09	AV	V	23.80	2.54	27.81	30.62	54.00	23.38
271	34.70	QP	V	13.71	2.00	21.50	28.91	46.00	17.09
375.7	33.40	QP	V	15.73	2.35	21.71	29.77	46.00	16.23
High Channel:5240 MHz									
5240	101.79	PK	H	31.58	5.28	27.07	111.58	N/A	N/A
5240	89.54	AV	H	31.58	5.28	27.07	99.33	N/A	N/A
5240	96.81	PK	V	31.58	5.28	27.07	106.60	N/A	N/A
5240	84.67	AV	V	31.58	5.28	27.07	94.46	N/A	N/A
5350	58.28	PK	V	31.80	5.61	27.02	68.67	74.00	5.33
5350	41.84	AV	V	31.80	5.61	27.02	52.23	54.00	1.77
10480	43.27	PK	V	37.00	8.23	26.01	62.49	68.20	5.71
15720	32.76	PK	V	37.10	14.20	24.92	59.14	74.00	14.86
15720	18.57	AV	V	37.10	14.20	24.92	44.95	54.00	9.05
7961	44.73	PK	V	35.17	6.75	27.10	59.55	74.00	14.45
7961	18.34	AV	V	35.17	6.75	27.10	33.16	54.00	20.84
1600	38.98	PK	V	23.80	2.54	27.81	37.51	74.00	36.49
1600	32.29	AV	V	23.80	2.54	27.81	30.82	54.00	23.18
271	34.30	QP	V	13.71	2.00	21.50	28.51	46.00	17.49

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel:5190 MHz									
5190	100.22	PK	H	31.48	5.44	27.11	110.03	N/A	N/A
5190	87.09	AV	H	31.48	5.44	27.11	96.90	N/A	N/A
5190	95.93	PK	V	31.48	5.44	27.11	105.74	N/A	N/A
5190	82.79	AV	V	31.48	5.44	27.11	92.60	N/A	N/A
5150	61.21	PK	H	31.40	5.26	27.18	70.69	74.00	3.31
5150	42.84	AV	H	31.40	5.26	27.18	52.32	54.00	1.68
10380	43.79	PK	H	36.98	8.34	25.51	63.60	68.20	4.60
15570	32.14	PK	H	37.37	14.81	24.83	59.49	74.00	14.51
15570	18.24	AV	H	37.37	14.81	24.83	45.59	54.00	8.41
7961	44.85	PK	H	35.17	6.75	27.10	59.67	74.00	14.33
7961	18.39	AV	H	35.17	6.75	27.10	33.21	54.00	20.79
1600	38.88	PK	H	23.80	2.54	27.81	37.41	74.00	36.59
1600	32.17	AV	H	23.80	2.54	27.81	30.70	54.00	23.30
271	34.50	QP	H	13.71	2.00	21.50	28.71	46.00	17.29
High Channel:5230 MHz									
5230	100.31	PK	H	31.56	5.33	27.08	110.12	N/A	N/A
5230	87.67	AV	H	31.56	5.33	27.08	97.48	N/A	N/A
5230	96.57	PK	V	31.56	5.33	27.08	106.38	N/A	N/A
5230	83.63	AV	V	31.56	5.33	27.08	93.44	N/A	N/A
5350	56.36	PK	H	31.80	5.61	27.02	66.75	74.00	7.25
5350	42.04	AV	H	31.80	5.61	27.02	52.43	54.00	1.57
10460	43.86	PK	H	36.99	8.25	25.88	63.22	68.20	4.98
15690	32.38	PK	H	37.16	14.32	24.87	58.99	74.00	15.01
15690	18.30	AV	H	37.16	14.32	24.87	44.91	54.00	9.09
7961	44.95	PK	H	35.17	6.75	27.10	59.77	74.00	14.23
7961	18.33	AV	H	35.17	6.75	27.10	33.15	54.00	20.85
1600	38.87	PK	H	23.80	2.54	27.81	37.40	74.00	36.60
1600	32.05	AV	H	23.80	2.54	27.81	30.58	54.00	23.42
271	34.80	QP	H	13.71	2.00	21.50	29.01	46.00	16.99

802.11 ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Middle Channel:5210 MHz									
5210	98.34	PK	H	31.52	5.44	27.09	108.21	N/A	N/A
5210	87.71	AV	H	31.52	5.44	27.09	97.58	N/A	N/A
5210	94.83	PK	V	31.52	5.44	27.09	104.70	N/A	N/A
5210	83.52	AV	V	31.52	5.44	27.09	93.39	N/A	N/A
5150	62.81	PK	V	31.40	5.26	27.18	72.29	74.00	1.71
5150	43.12	AV	V	31.40	5.26	27.18	52.60	54.00	1.40
5350	43.66	PK	V	31.80	5.61	27.02	54.05	74.00	19.95
5350	30.12	AV	V	31.80	5.61	27.02	40.51	54.00	13.49
10420	43.97	PK	V	36.98	8.30	25.63	63.62	68.20	4.58
15630	31.86	PK	V	37.27	14.57	24.75	58.95	74.00	15.05
15630	18.23	AV	V	37.27	14.57	24.75	45.32	54.00	8.68
7961	44.88	PK	V	35.17	6.75	27.10	59.70	74.00	14.30
7961	18.39	AV	V	35.17	6.75	27.10	33.21	54.00	20.79
271	34.20	QP	V	13.71	2.00	21.50	28.41	46.00	17.59

5725MHz-5850MHz:
802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
(MHz)	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel:5745 MHz									
5745	102.75	PK	H	32.15	5.53	26.60	113.83	N/A	N/A
5745	93.07	AV	H	32.15	5.53	26.60	104.15	N/A	N/A
5745	101.91	PK	V	32.15	5.53	26.60	112.99	N/A	N/A
5745	92.29	AV	V	32.15	5.53	26.60	103.37	N/A	N/A
5725	64.01	PK	H	32.15	5.60	26.63	75.13	78.20	3.07
5715	55.36	PK	H	32.14	5.63	26.64	66.49	68.20	1.71
11490	33.85	PK	H	37.89	8.94	26.14	54.54	74.00	19.46
11490	28.44	AV	H	37.89	8.94	26.14	49.13	54.00	4.87
17235	31.62	PK	H	40.91	13.69	25.63	60.59	74.00	13.41
17235	18.05	AV	H	40.91	13.69	25.63	47.02	54.00	6.98
1737	44.16	PK	H	24.07	2.69	27.62	43.30	74.00	30.70
1737	31.52	AV	H	24.07	2.69	27.62	30.66	54.00	23.34
6213	35.13	PK	H	32.24	5.99	26.74	46.62	74.00	27.38
6213	21.61	AV	H	32.24	5.99	26.74	33.10	54.00	20.90
271	34.20	QP	H	13.71	2.00	21.50	28.41	46.00	17.59
Middle Channel:5785 MHz									
5785	102.42	PK	H	32.16	5.47	26.56	113.49	N/A	N/A
5785	92.26	AV	H	32.16	5.47	26.56	103.33	N/A	N/A
5785	101.36	PK	V	32.16	5.47	26.56	112.43	N/A	N/A
5785	91.16	AV	V	32.16	5.47	26.56	102.23	N/A	N/A
11570	35.12	PK	H	37.90	8.92	26.07	55.87	74.00	18.13
11570	30.12	AV	H	37.90	8.92	26.07	50.87	54.00	3.13
17355	31.66	PK	H	41.63	12.99	25.63	60.65	74.00	13.35
17355	18.39	AV	H	41.63	12.99	25.63	47.38	54.00	6.62
1737	42.02	PK	H	24.07	2.69	27.62	41.16	74.00	32.84
1737	28.66	AV	H	24.07	2.69	27.62	27.80	54.00	26.20
6270	35.62	PK	H	32.25	6.02	26.64	47.25	74.00	26.75
6270	22.27	AV	H	32.25	6.02	26.64	33.90	54.00	20.10
271	34.90	QP	H	13.71	2.00	21.50	29.11	46.00	16.89
375.7	33.40	QP	H	15.73	2.35	21.71	29.77	46.00	16.23
High Channel:5825 MHz									
5825	102.17	PK	H	32.17	5.75	26.61	113.48	N/A	N/A
5825	92.43	AV	H	32.17	5.75	26.61	103.74	N/A	N/A
5825	101.05	PK	V	32.17	5.75	26.61	112.36	N/A	N/A
5825	91.26	AV	V	32.17	5.75	26.61	102.57	N/A	N/A
5850	63.64	PK	H	32.17	6.05	26.68	75.18	78.20	3.02
5860	55.10	PK	H	32.17	6.02	26.71	66.58	68.20	1.62
11650	34.03	PK	H	37.90	8.90	25.75	55.08	74.00	18.92
11650	27.67	AV	H	37.90	8.90	25.75	48.72	54.00	5.28
17475	31.93	PK	H	42.35	12.30	25.39	61.19	74.00	12.81
17475	18.77	AV	H	42.35	12.30	25.39	48.03	54.00	5.97
1737	37.48	PK	H	24.07	2.69	27.62	36.62	74.00	37.38
1737	24.01	AV	H	24.07	2.69	27.62	23.15	54.00	30.85
6270	35.77	PK	H	32.25	6.02	26.64	47.40	74.00	26.60
6270	22.25	AV	H	32.25	6.02	26.64	33.88	54.00	20.12
271	34.50	QP	H	13.71	2.00	21.50	28.71	46.00	17.29

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel:5745 MHz									
5745	103.35	PK	H	32.15	5.53	26.60	114.43	N/A	N/A
5745	90.81	AV	H	32.15	5.53	26.60	101.89	N/A	N/A
5745	100.75	PK	V	32.15	5.53	26.60	111.83	N/A	N/A
5745	88.31	AV	V	32.15	5.53	26.60	99.39	N/A	N/A
5725	65.90	PK	H	32.15	5.60	26.63	77.02	78.20	1.18
5715	55.09	PK	H	32.14	5.63	26.64	66.22	68.20	1.98
11490	33.90	PK	H	37.89	8.94	26.14	54.59	74.00	19.41
11490	28.65	AV	H	37.89	8.94	26.14	49.34	54.00	4.66
17235	31.46	PK	H	40.91	13.69	25.63	60.43	74.00	13.57
17235	18.06	AV	H	40.91	13.69	25.63	47.03	54.00	6.97
7913	40.74	PK	H	35.13	6.77	27.09	55.55	74.00	18.45
7913	27.26	AV	H	35.13	6.77	27.09	42.07	54.00	11.93
6270	36.27	PK	H	32.25	6.02	26.64	47.90	74.00	26.10
6270	22.81	AV	H	32.25	6.02	26.64	34.44	54.00	19.56
271	34.10	QP	H	13.71	2.00	21.50	28.31	46.00	17.69
Middle Channel:5785 MHz									
5785	103.78	PK	H	32.16	5.47	26.56	114.85	N/A	N/A
5785	91.30	AV	H	32.16	5.47	26.56	102.37	N/A	N/A
5785	101.06	PK	V	32.16	5.47	26.56	112.13	N/A	N/A
5785	88.56	AV	V	32.16	5.47	26.56	99.63	N/A	N/A
11570	35.54	PK	H	37.90	8.92	26.07	56.29	74.00	17.71
11570	30.25	AV	H	37.90	8.92	26.07	51.00	54.00	3.00
17355	31.53	PK	H	41.63	12.99	25.63	60.52	74.00	13.48
17355	18.40	AV	H	41.63	12.99	25.63	47.39	54.00	6.61
7913	44.25	PK	H	35.13	6.77	27.09	59.06	74.00	14.94
7913	30.78	AV	H	35.13	6.77	27.09	45.59	54.00	8.41
6270	37.09	PK	H	32.25	6.02	26.64	48.72	74.00	25.28
6270	23.64	AV	H	32.25	6.02	26.64	35.27	54.00	18.73
271	34.40	QP	H	13.71	2.00	21.50	28.61	46.00	17.39
375.7	33.90	QP	H	15.73	2.35	21.71	30.27	46.00	15.73
High Channel:5825 MHz									
5825	103.21	PK	H	32.17	5.75	26.61	114.52	N/A	N/A
5825	90.78	AV	H	32.17	5.75	26.61	102.09	N/A	N/A
5825	100.57	PK	V	32.17	5.75	26.61	111.88	N/A	N/A
5825	88.03	AV	V	32.17	5.75	26.61	99.34	N/A	N/A
5850	63.52	PK	H	32.17	6.05	26.68	75.06	78.20	3.14
5860	54.88	PK	H	32.17	6.02	26.71	66.36	68.20	1.84
11650	33.62	PK	H	37.90	8.90	25.75	54.67	74.00	19.33
11650	27.51	AV	H	37.90	8.90	25.75	48.56	54.00	5.44
17475	32.59	PK	H	42.35	12.30	25.39	61.85	74.00	12.15
17475	18.78	AV	H	42.35	12.30	25.39	48.04	54.00	5.96
7913	42.65	PK	H	35.13	6.77	27.09	57.46	74.00	16.54
7913	29.24	AV	H	35.13	6.77	27.09	44.05	54.00	9.95
6270	36.91	PK	H	32.25	6.02	26.64	48.54	74.00	25.46
6270	23.52	AV	H	32.25	6.02	26.64	35.15	54.00	18.85
271	34.20	QP	H	13.71	2.00	21.50	28.41	46.00	17.59

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel:5755 MHz									
5755	98.47	PK	H	32.15	5.50	26.59	109.53	N/A	N/A
5755	85.48	AV	H	32.15	5.50	26.59	96.54	N/A	N/A
5755	93.84	PK	V	32.15	5.50	26.59	104.90	N/A	N/A
5755	80.96	AV	V	32.15	5.50	26.59	92.02	N/A	N/A
5725	64.53	PK	H	32.15	5.60	26.63	75.65	78.20	2.55
5715	56.07	PK	H	32.14	5.63	26.64	67.20	68.20	1.00
11510	35.61	PK	H	37.90	8.95	26.12	56.34	74.00	17.66
11510	30.80	AV	H	37.90	8.95	26.12	51.53	54.00	2.47
17265	31.51	PK	H	41.09	13.51	25.63	60.48	74.00	13.52
17265	18.16	AV	H	41.09	13.51	25.63	47.13	54.00	6.87
7913	40.19	PK	H	35.13	6.77	27.09	55.00	74.00	19.00
7913	26.78	AV	H	35.13	6.77	27.09	41.59	54.00	12.41
6270	32.90	PK	H	32.25	6.02	26.64	44.53	74.00	29.47
6270	19.46	AV	H	32.25	6.02	26.64	31.09	54.00	22.91
271	34.90	QP	H	13.71	2.00	21.50	29.11	46.00	16.89
High Channel:5795 MHz									
5795	98.28	PK	H	32.16	5.46	26.55	109.35	N/A	N/A
5795	84.93	AV	H	32.16	5.46	26.55	96.00	N/A	N/A
5795	93.35	PK	V	32.16	5.46	26.55	104.42	N/A	N/A
5795	80.42	AV	V	32.16	5.46	26.55	91.49	N/A	N/A
5850	62.29	PK	H	32.17	6.05	26.68	73.83	78.20	4.37
5860	55.40	PK	H	32.17	6.02	26.71	66.88	68.20	1.32
11590	33.61	PK	H	37.90	8.92	26.06	54.37	74.00	19.63
11590	27.75	AV	H	37.90	8.92	26.06	48.51	54.00	5.49
17385	31.80	PK	H	41.81	12.82	25.63	60.80	74.00	13.20
17385	18.50	AV	H	41.81	12.82	25.63	47.50	54.00	6.50
7913	41.65	PK	H	35.13	6.77	27.09	56.46	74.00	17.54
7913	28.28	AV	H	35.13	6.77	27.09	43.09	54.00	10.91
6270	33.08	PK	H	32.25	6.02	26.64	44.71	74.00	29.29
6270	19.69	AV	H	32.25	6.02	26.64	31.32	54.00	22.68
271	34.60	QP	H	13.71	2.00	21.50	28.81	46.00	17.19

802.11 ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Middle Channel:5775 MHz									
5775	95.45	PK	H	32.16	5.48	26.57	106.52	N/A	N/A
5775	84.22	AV	H	32.16	5.48	26.57	95.29	N/A	N/A
5775	92.31	PK	V	32.16	5.48	26.57	103.38	N/A	N/A
5775	81.20	AV	V	32.16	5.48	26.57	92.27	N/A	N/A
5725	64.74	PK	H	32.15	5.60	26.63	75.86	78.20	2.34
5715	56.01	PK	H	32.14	5.63	26.64	67.14	68.20	1.06
5850	59.39	PK	H	32.17	6.05	26.68	70.93	78.20	7.27
5860	55.44	PK	H	32.17	6.02	26.71	66.92	68.20	1.28
11550	35.36	PK	H	37.90	8.93	26.09	56.10	74.00	17.90
11550	30.80	AV	H	37.90	8.93	26.09	51.54	54.00	2.46
17325	32.12	PK	H	41.45	13.17	25.63	61.11	74.00	12.89
17325	18.31	AV	H	41.45	13.17	25.63	47.30	54.00	6.70
1737	46.95	PK	H	24.07	2.69	27.62	46.09	74.00	27.91
1737	33.42	AV	H	24.07	2.69	27.62	32.56	54.00	21.44
271	34.40	QP	H	13.71	2.00	21.50	28.61	46.00	17.39

FCC §15.407(b) –BAND EDGE

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (4);

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r01

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.6 °C
Relative Humidity:	72 %
ATM Pressure:	100.5 kPa

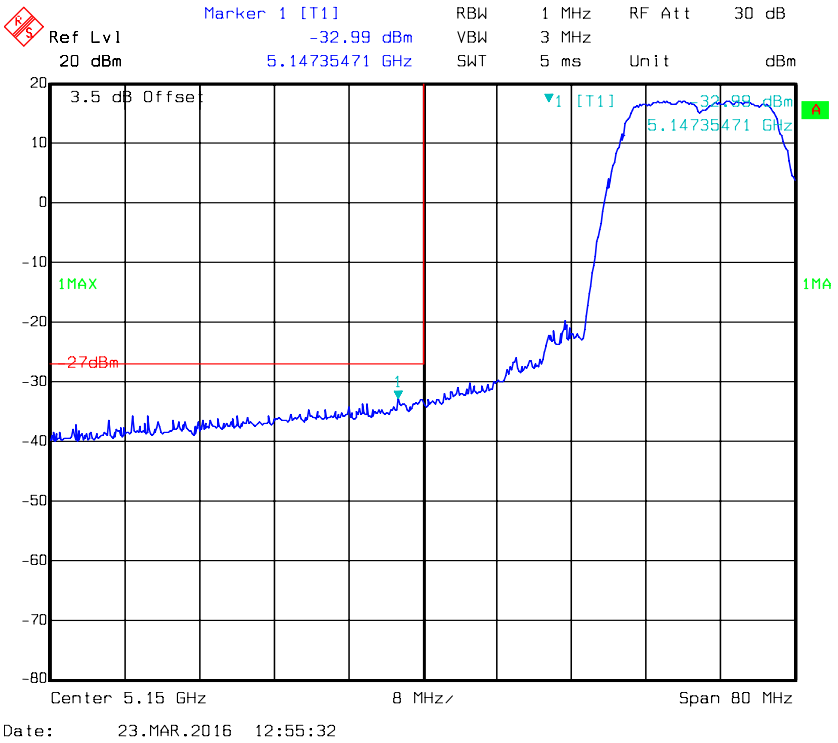
The testing was performed by Lion Xiao on 2016-03-23.

Test Result: Compliance, please refer to the following table and plots,

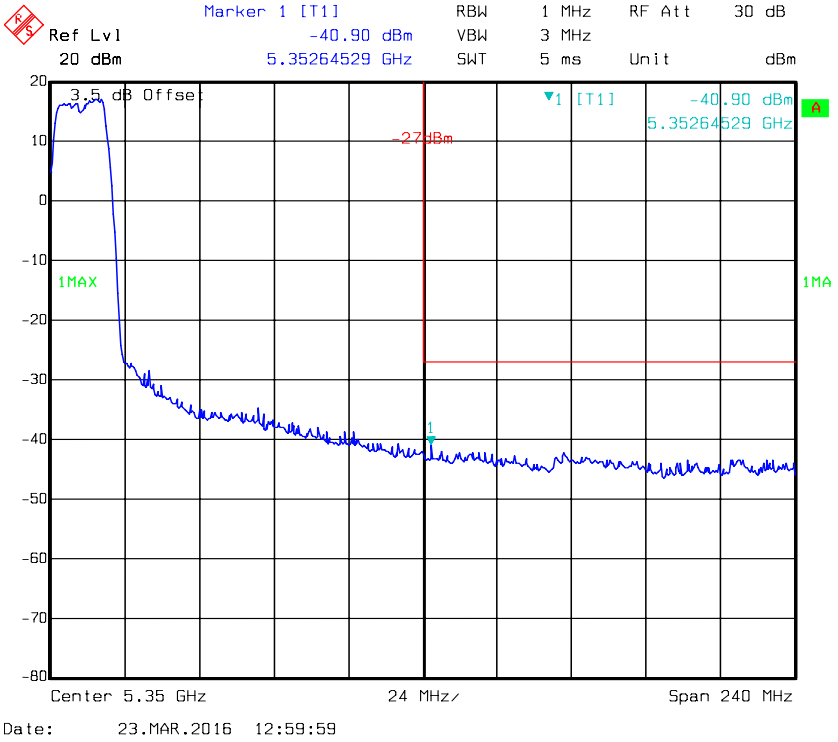
Note:
All emissions under limits 3dBc, so combined two chains meet the requirement, Offset= Antenna Gain(dBi)+Cable loss(dB)

5150MHz-5250MHz:

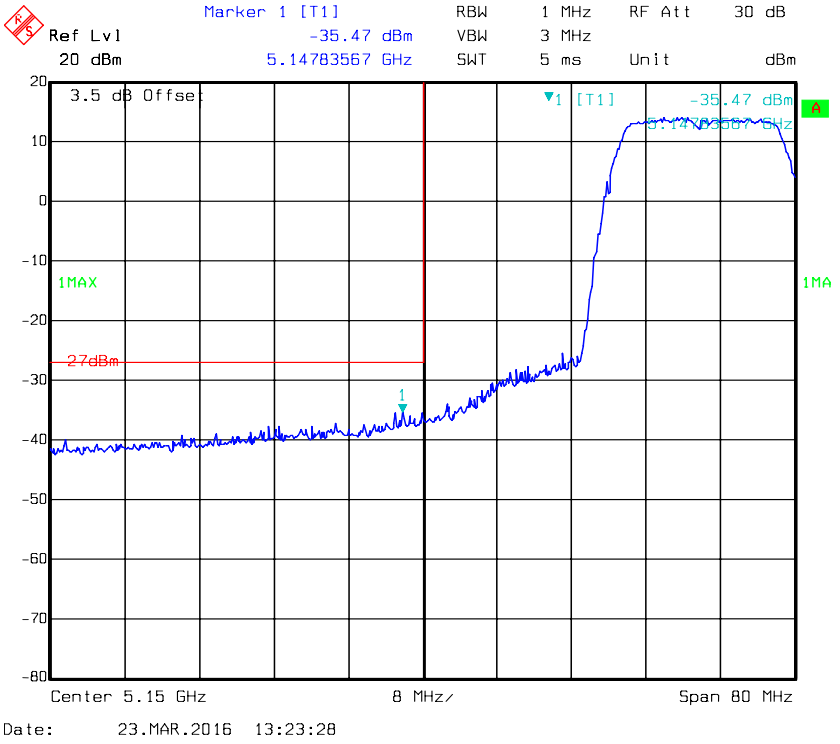
802.11a Band Edge, Left Side – Chain0



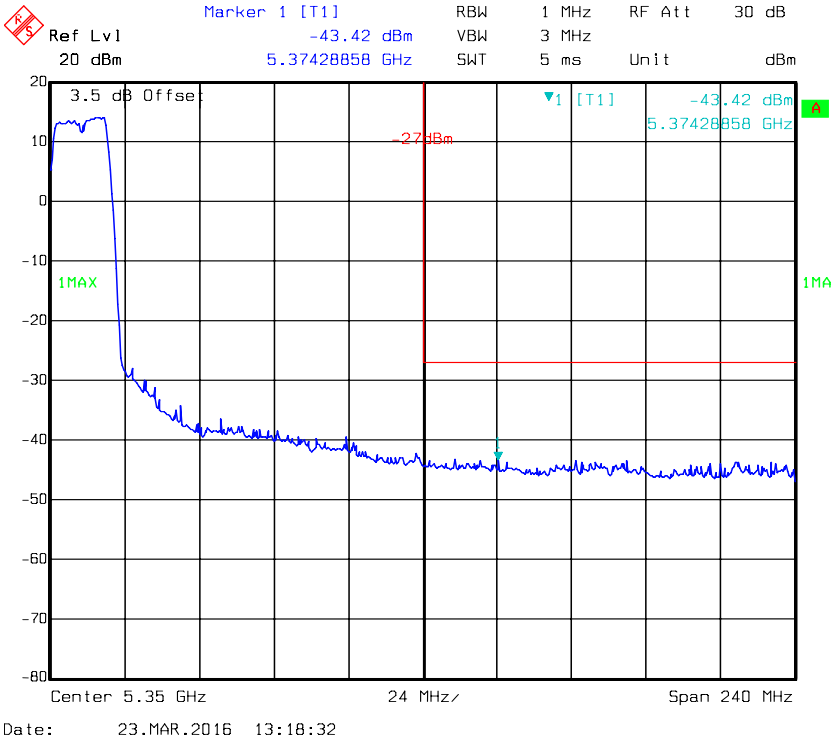
802.11a Band Edge, Right Side– Chain0



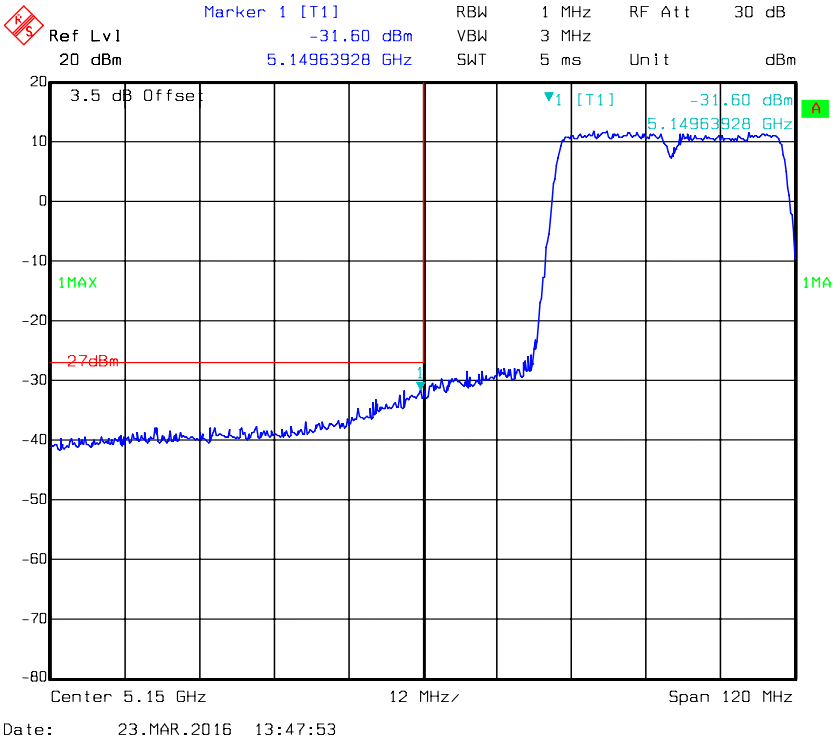
802.11n ht20 Band Edge, Left Side– Chain0



802.11n ht20 Band Edge, Right Side– Chain0

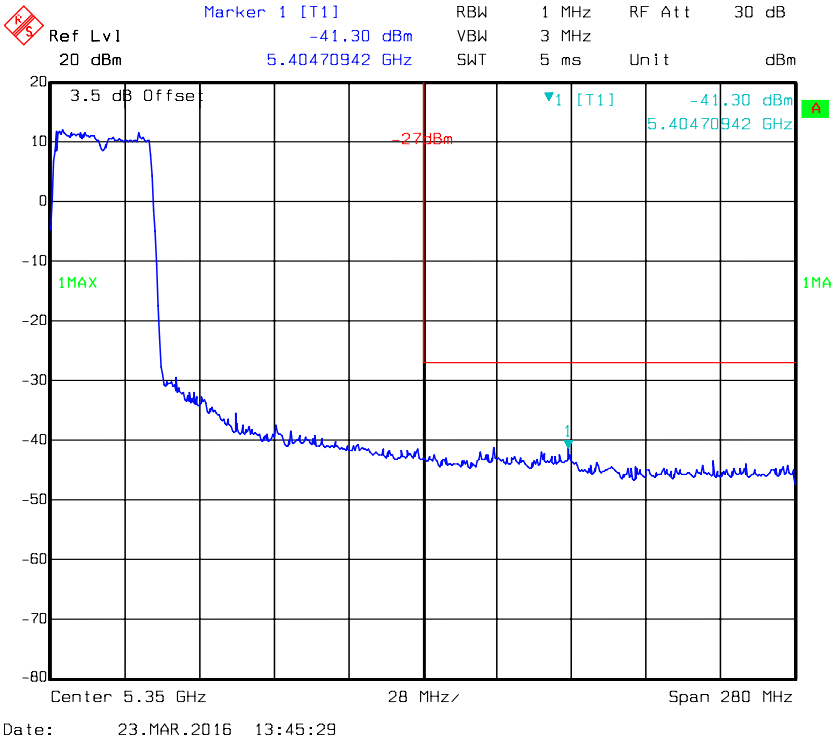


802.11n ht40 Band Edge, Left Side– Chain0



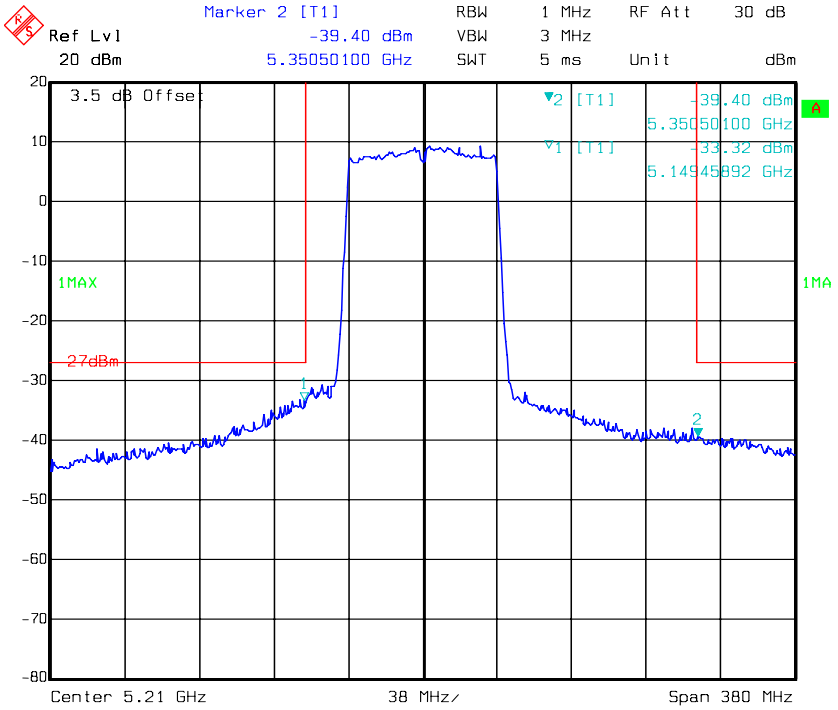
Date: 23.MAR.2016 13:47:53

802.11n ht40 Band Edge, Right Side– Chain0



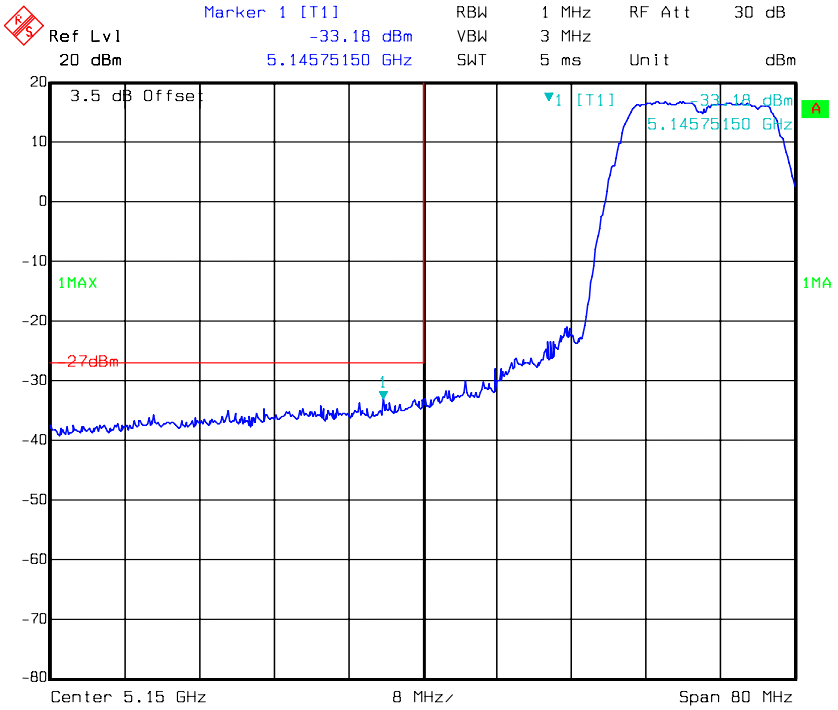
Date: 23.MAR.2016 13:45:29

802.11 ac80 Band Edge, Middle Side– Chain0



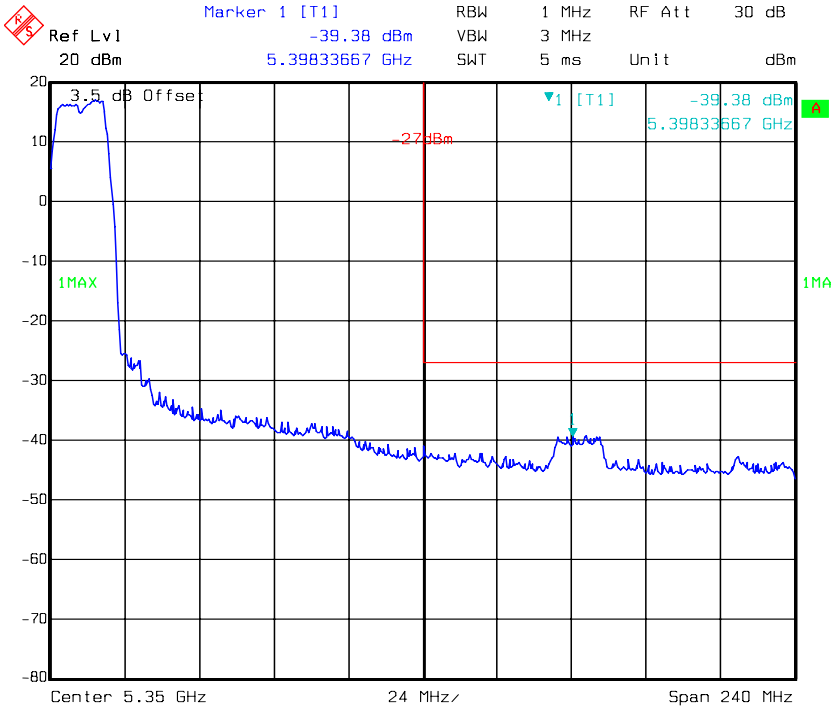
Date: 23.MAR.2016 15:02:06

802.11a Band Edge, Left Side – Chain1

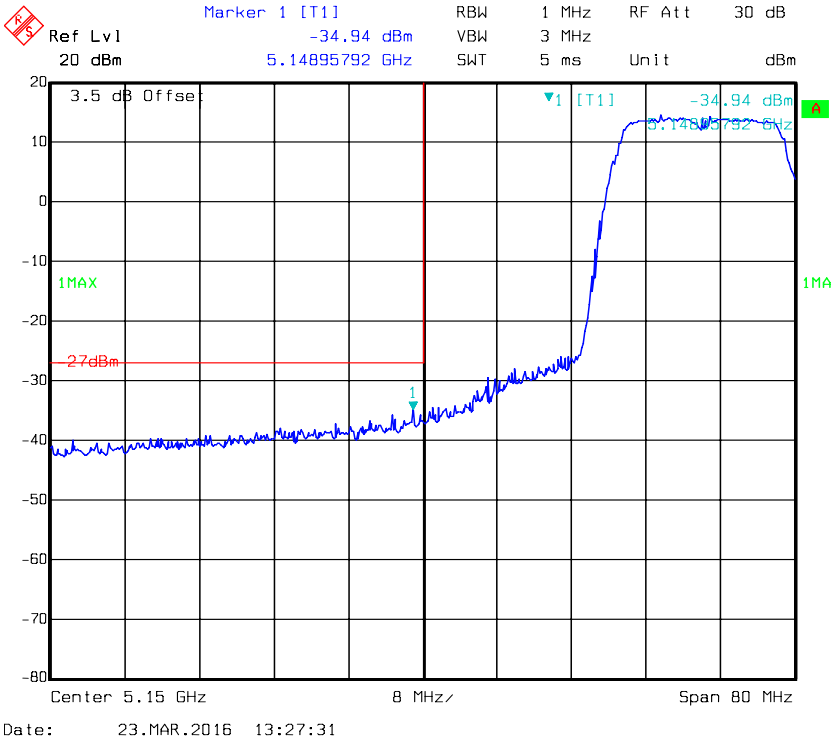


Date: 23.MAR.2016 13:10:11

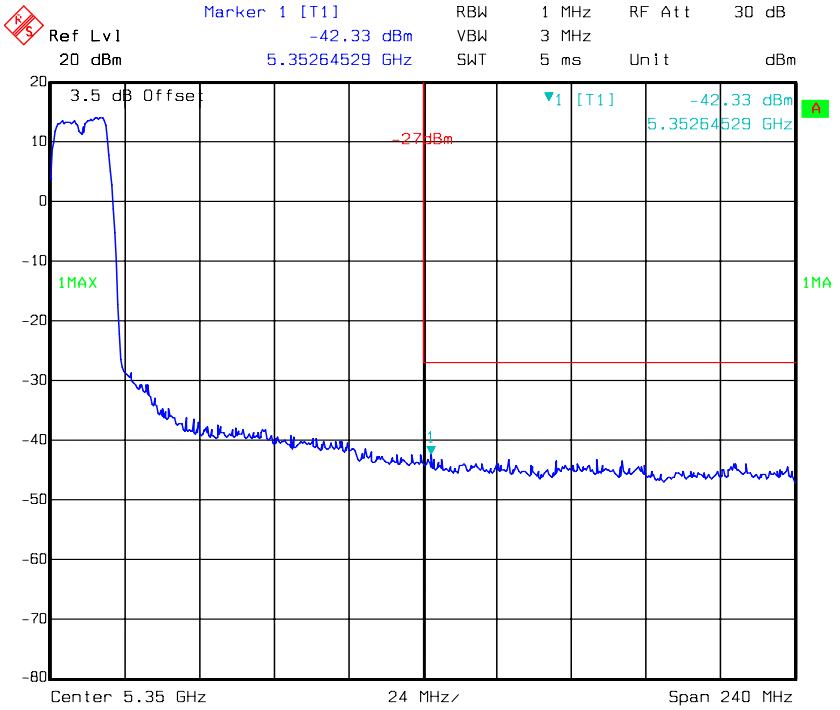
802.11a Band Edge, Right Side– Chain1



802.11n ht20 Band Edge, Left Side– Chain1

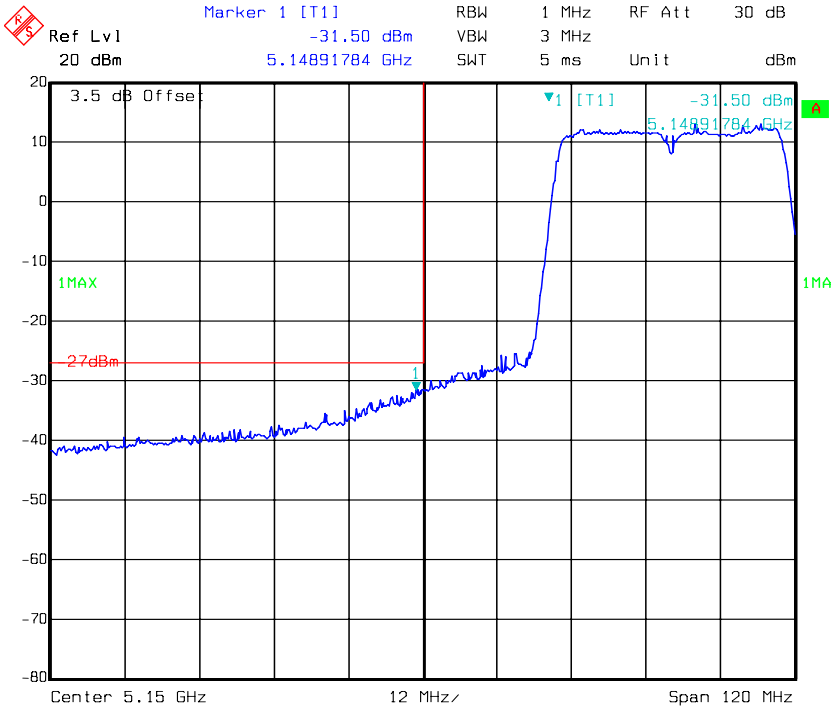


802.11n ht20 Band Edge, Right Side– Chain1



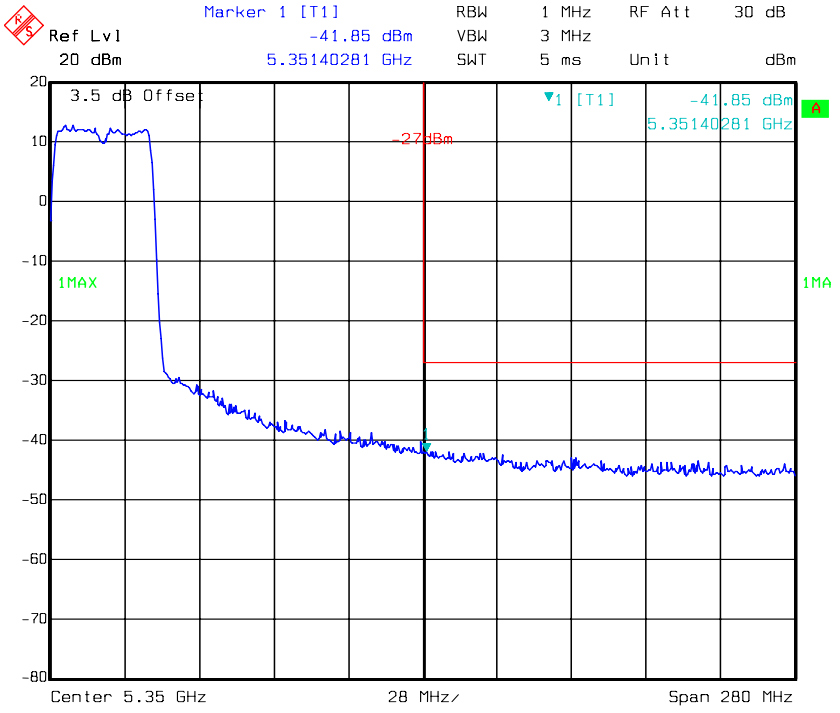
Date: 23.MAR.2016 13:32:12

802.11n ht40 Band Edge, Left Side– Chain1

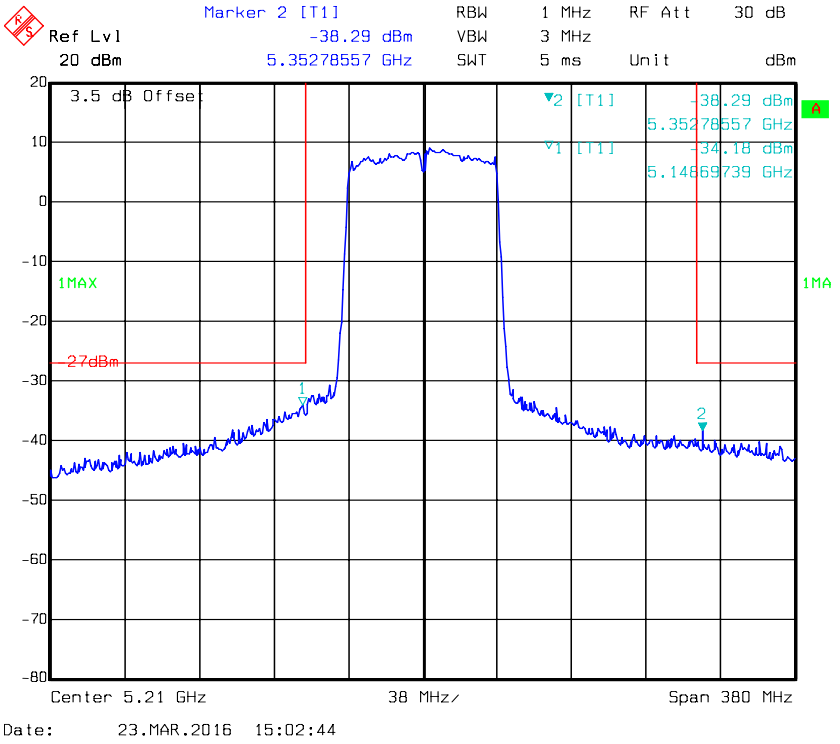


Date: 23.MAR.2016 13:50:37

802.11n ht40 Band Edge, Right Side– Chain1

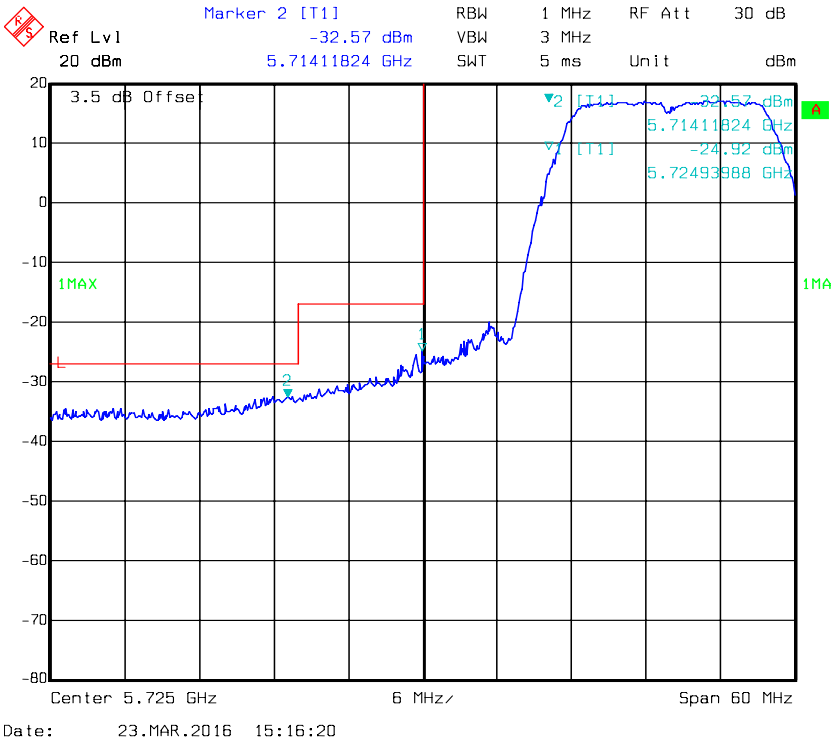


802.11 ac80 Band Edge, Middle Side– Chain1

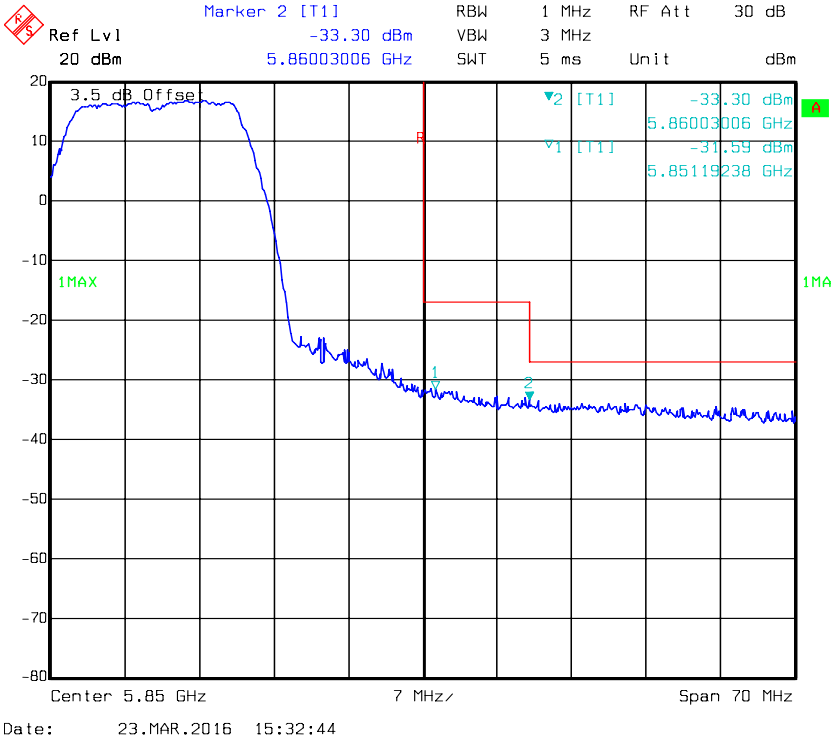


5725MHz-5850MHz:

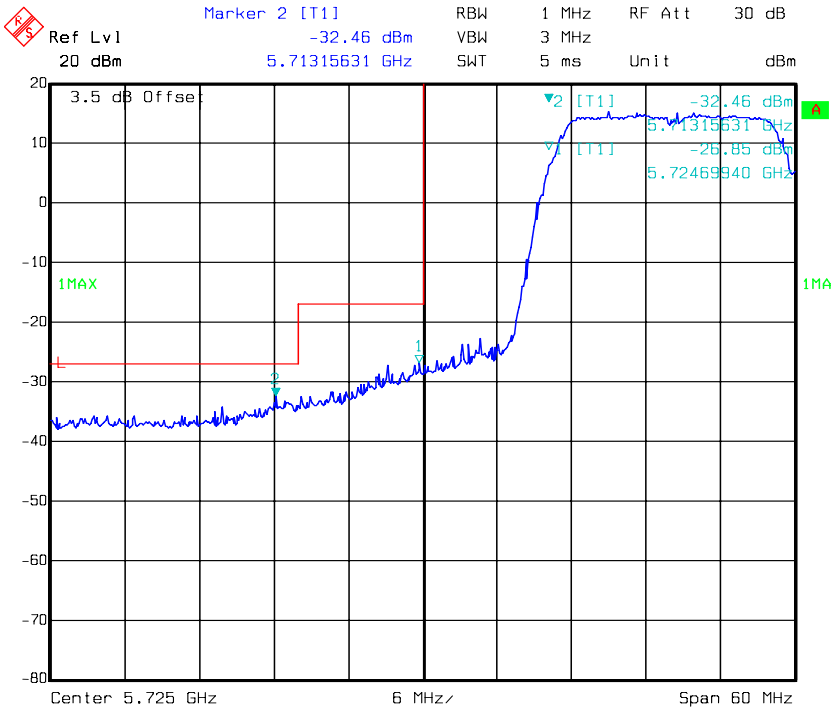
802.11a Band Edge, Left Side – Chain0



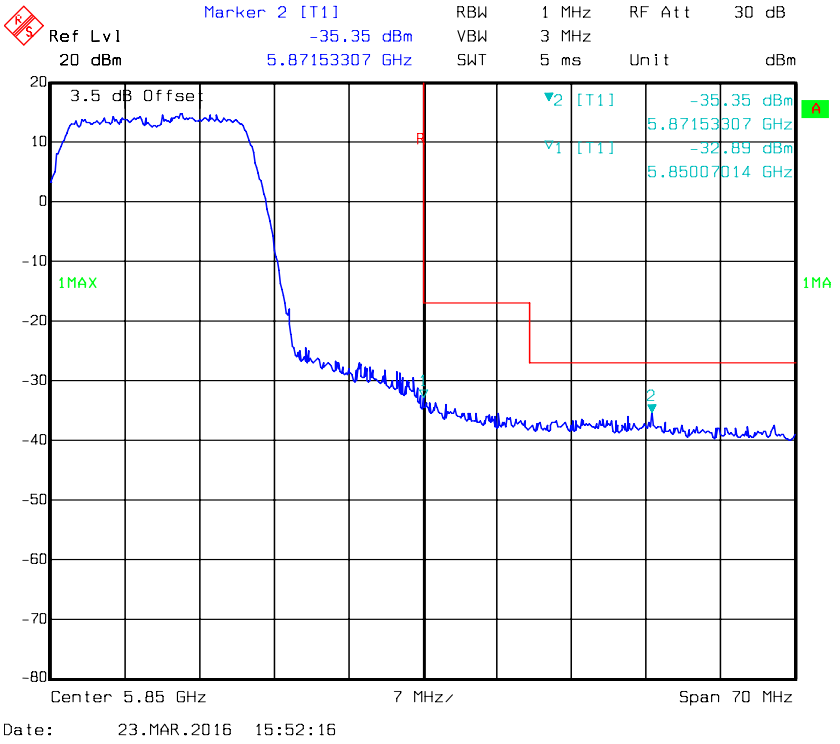
802.11a Band Edge, Right Side – Chain0



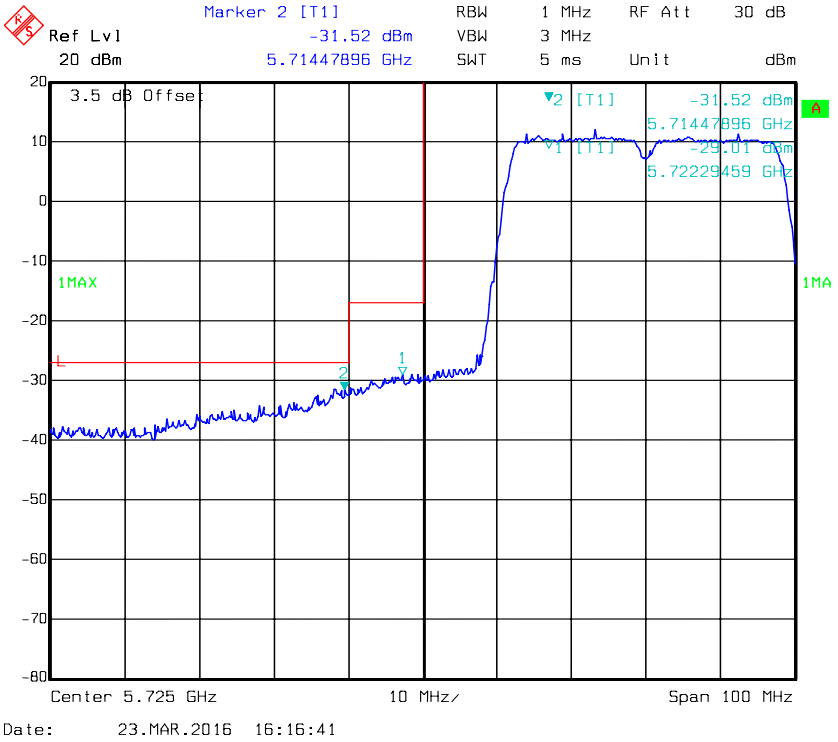
802.11n ht20 Band Edge, Left Side – Chain0



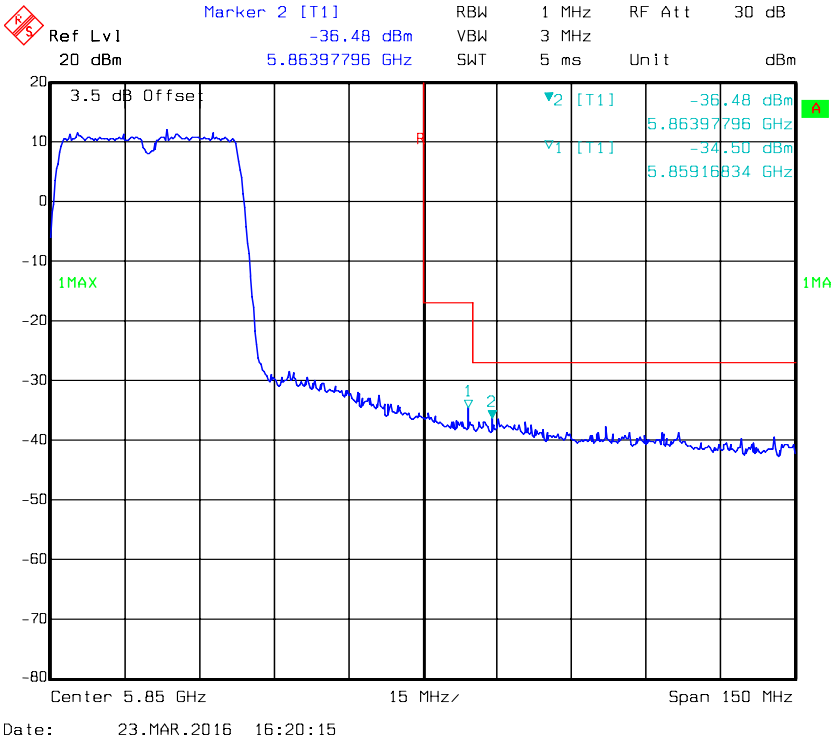
802.11n ht20 Band Edge, Right Side – Chain0



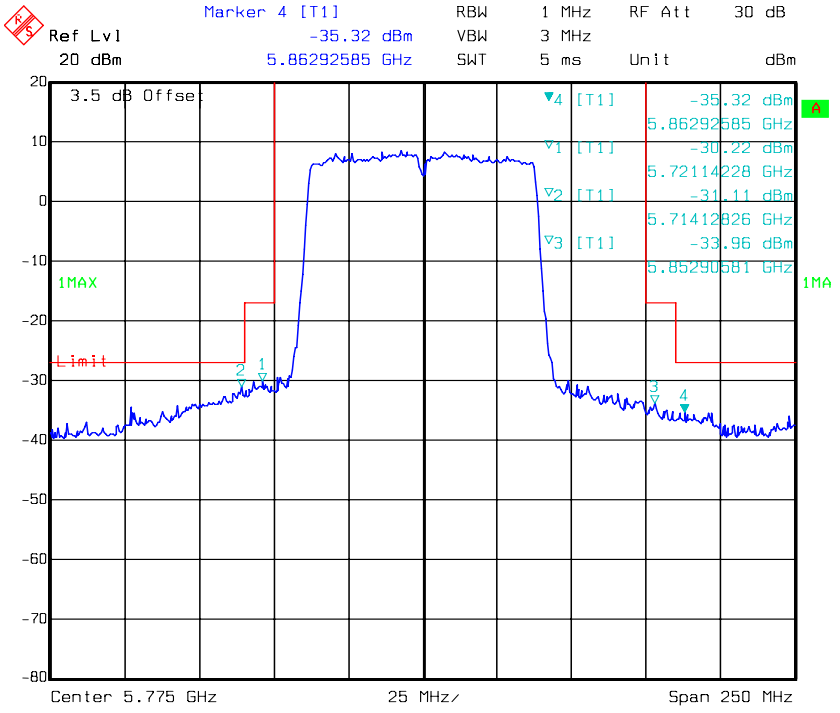
802.11n ht40 Band Edge, Left Side – Chain0



802.11n ht40 Band Edge, Right Side – Chain0

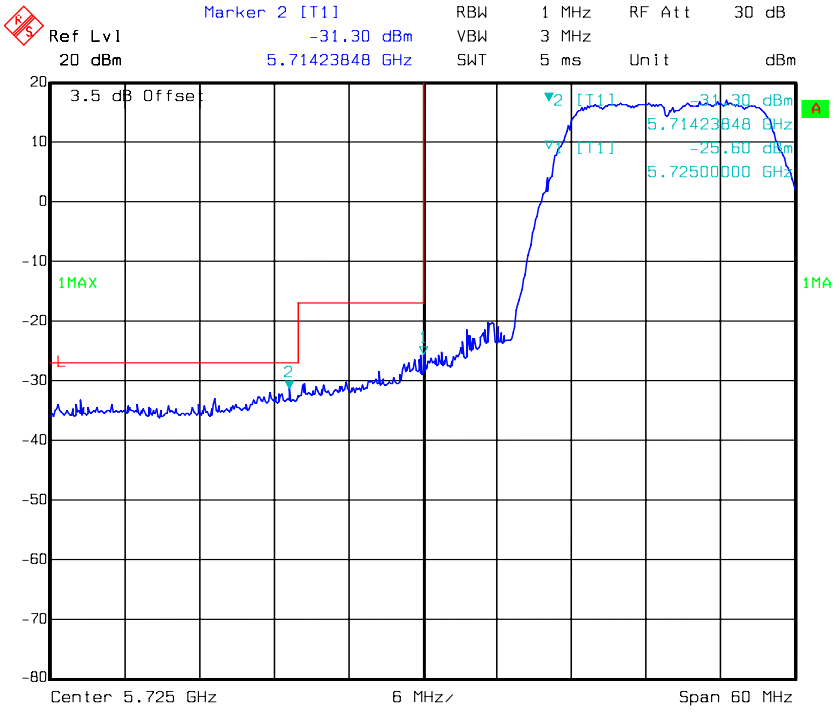


802.11 ac80 Band Edge, Middle Side – Chain0



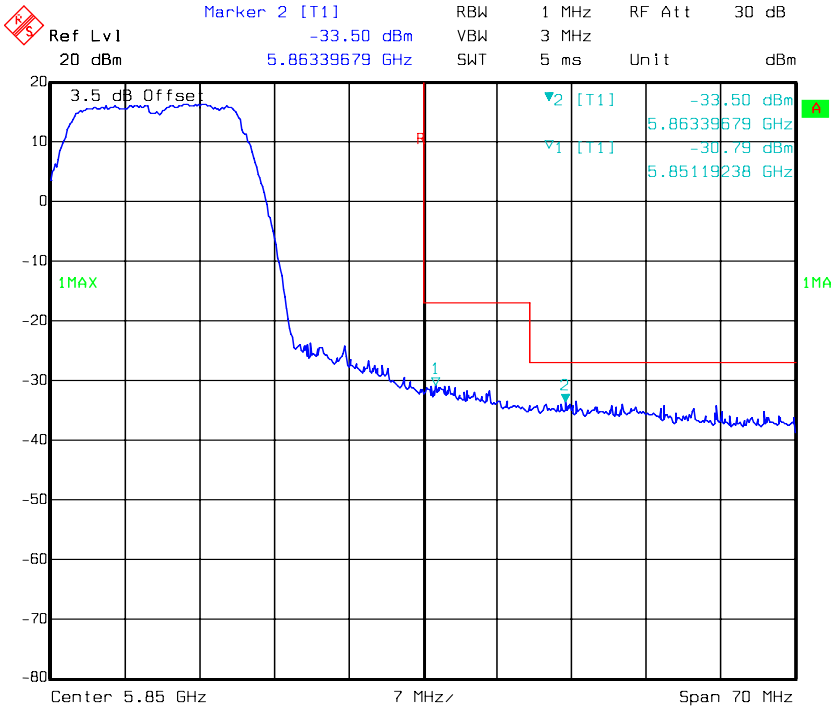
Date: 23.MAR.2016 15:11:10

802.11a Band Edge, Left Side – Chain1



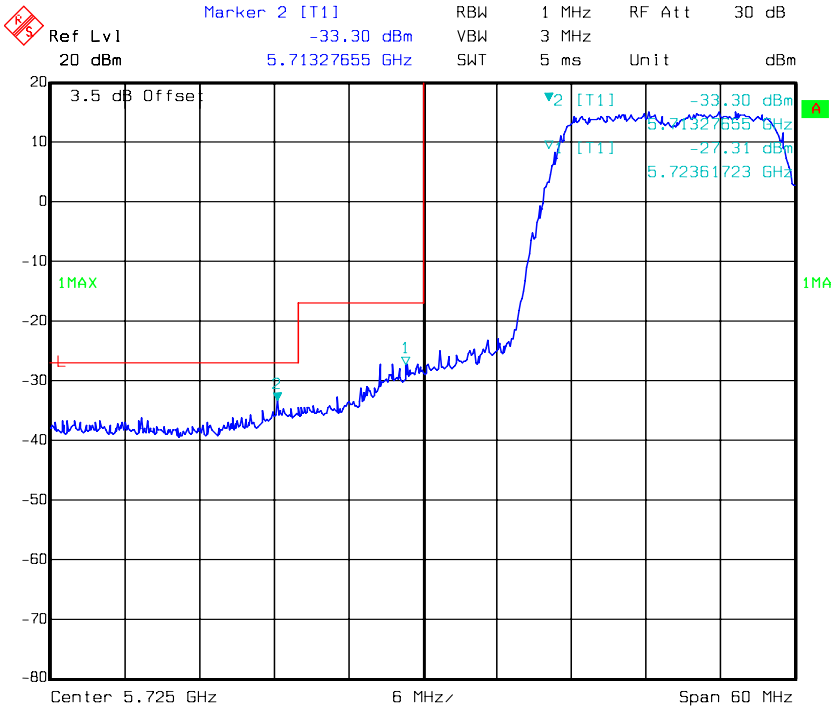
Date: 23.MAR.2016 15:18:58

802.11a Band Edge, Right Side – Chain1



Date: 23.MAR.2016 15:36:31

802.11n ht20 Band Edge, Left Side – Chain1



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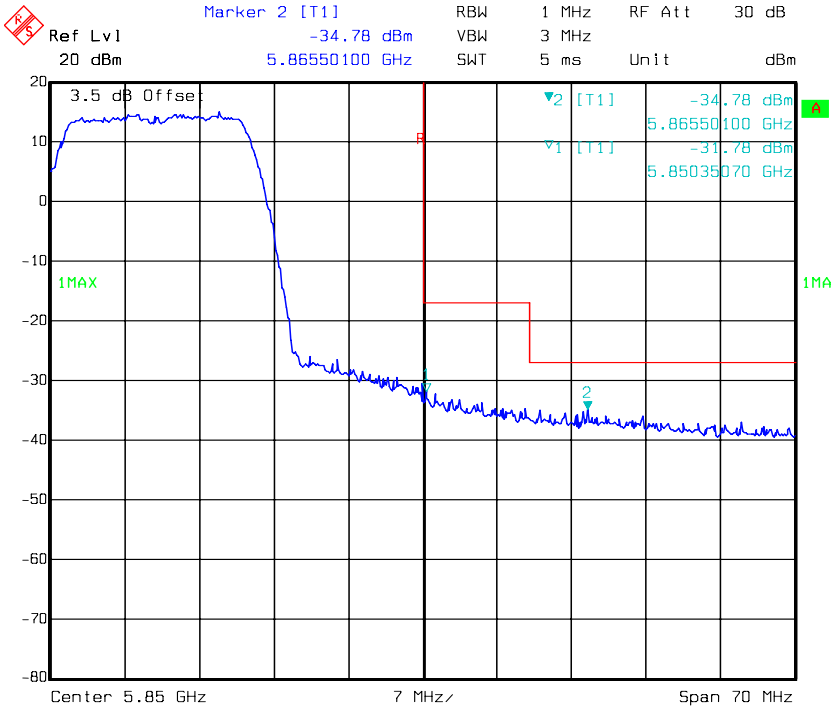
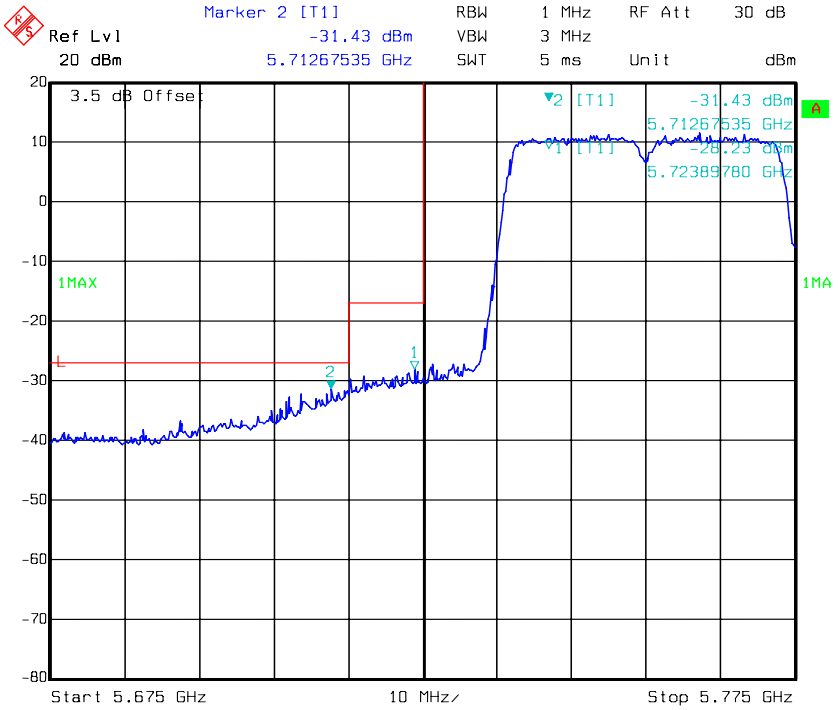
802.11n ht20 Band Edge, Right Side – Chain1



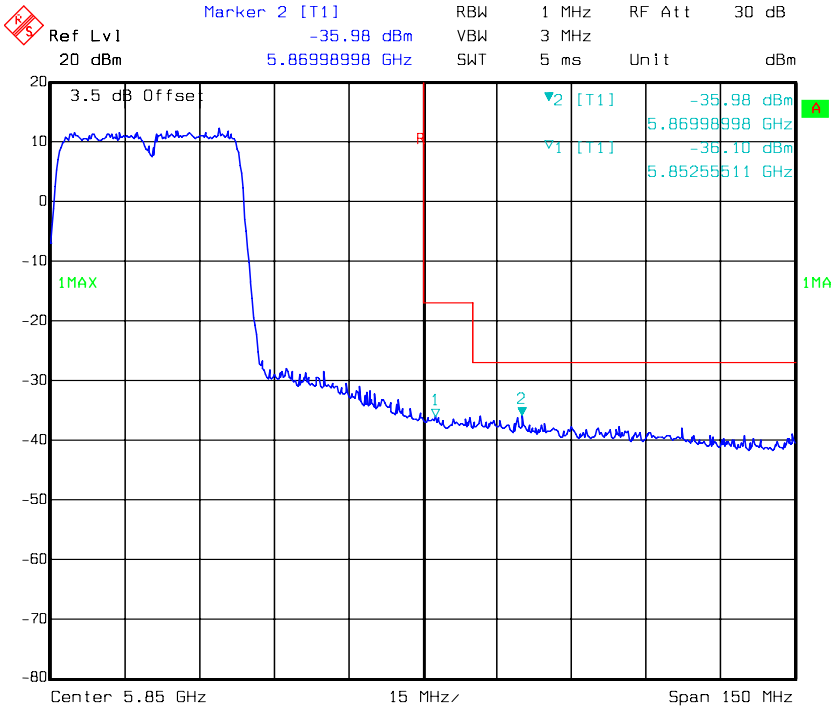
Date: 23.MAR.2016 15:41:10

802.11n ht40 Band Edge, Left Side – Chain1

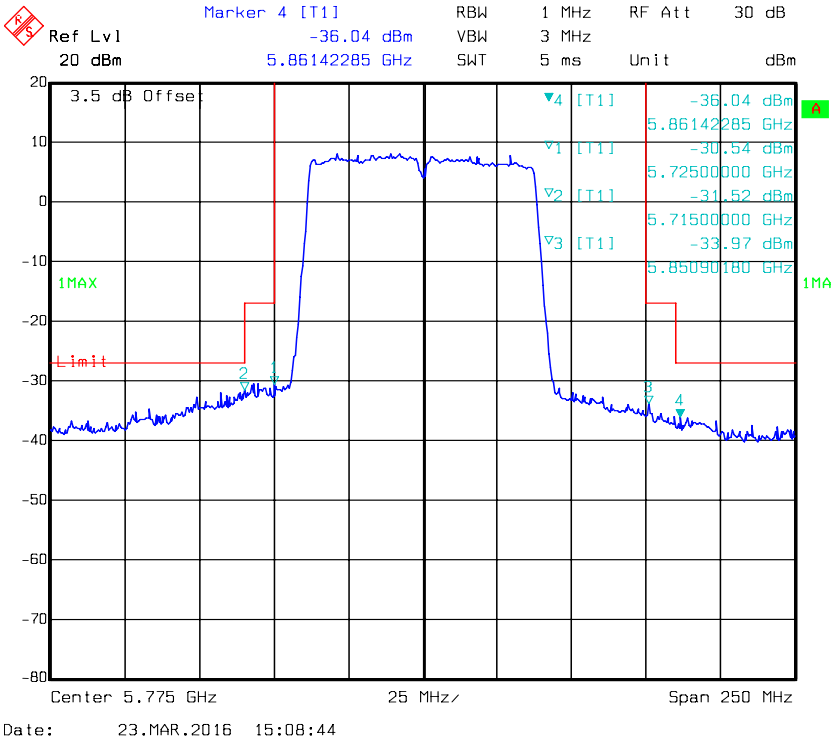


Date: 23.MAR.2016 16:31:02

802.11n ht40 Band Edge, Right Side – Chain1



802.11 ac80 Band Edge, Middle Side – Chain1



FCC §15.407(a) ,(e)–EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

15.407(a), (e)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r01

Test Data

Environmental Conditions

Temperature:	24.6 °C
Relative Humidity:	72 %
ATM Pressure:	100.5 kPa

The testing was performed by Lion Xiao on 2016-03-23.

Test Result: Pass.

Please refer to the following tables and plots.

Test mode: Transmitting

5150MHz-5250MHz:

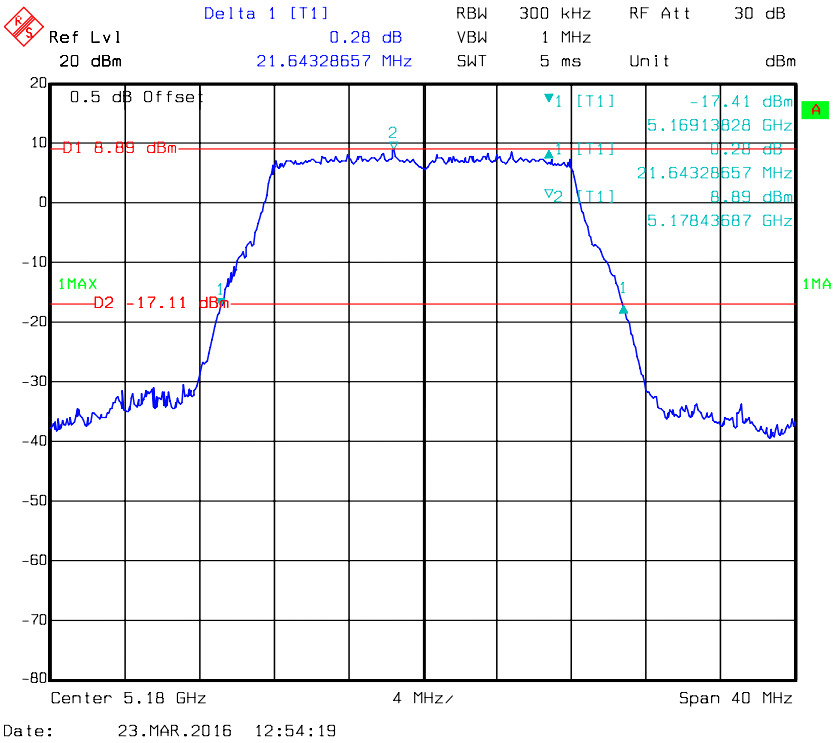
Mode	Channel	Frequency MHz	26 dB Bandwidth (MHz)		Result
			Chain0	Chain1	
802.11a	Low	5180	21.64	21.56	Compliance
	Middle	5200	21.72	21.80	Compliance
	High	5240	21.72	21.72	Compliance
802.11n20	Low	5180	22.04	22.04	Compliance
	Middle	5200	21.88	22.04	Compliance
	High	5240	22.12	22.04	Compliance
802.11n40	Low	5190	39.6	40.08	Compliance
	High	5230	39.76	39.76	Compliance
802.11 ac80	Middle	5210	82.73	82.40	Compliance

5725MHz-5850MHz:

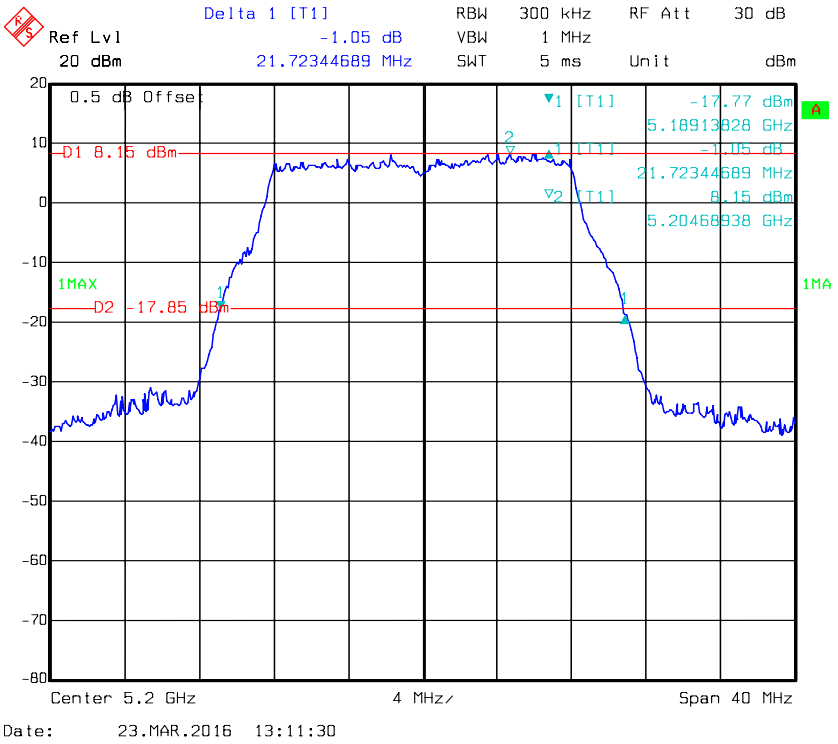
Mode	Channel	Frequency MHz	6dB Bandwidth (MHz)		Limits (kHz)	Result
			Chain0	Chain1		
802.11a	Low	5745	16.51	16.51	500	Compliance
	Middle	5785	16.51	16.51	500	Compliance
	High	5825	16.51	16.43	500	Compliance
802.11n20	Low	5745	17.64	17.64	500	Compliance
	Middle	5785	17.8	17.64	500	Compliance
	High	5825	17.72	17.64	500	Compliance
802.11n40	Low	5755	36.39	36.39	500	Compliance
	High	5795	36.55	36.39	500	Compliance
802.11 ac80	Middle	5775	76.31	76.31	500	Compliance

5150MHz-5250MHz: 26 dB Bandwidth

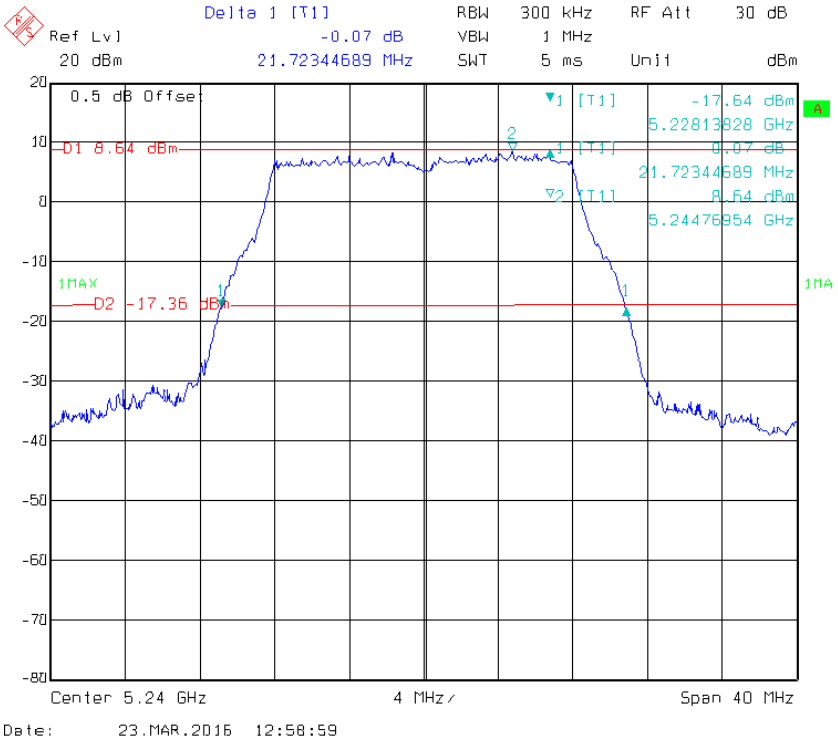
802.11a Low Channel – Chain0



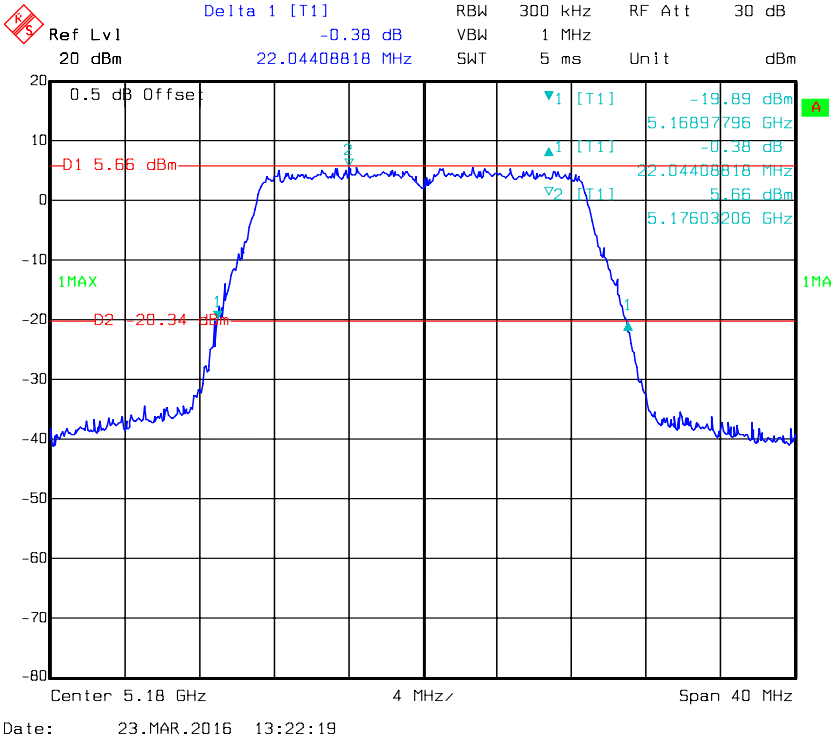
802.11a Middle Channel – Chain0



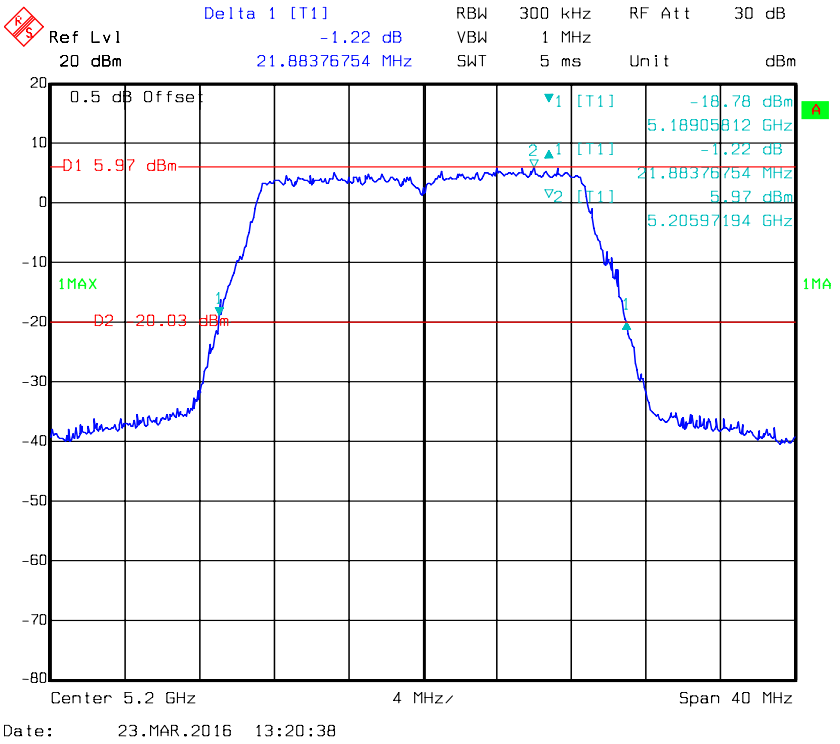
802.11a High Channel – Chain0



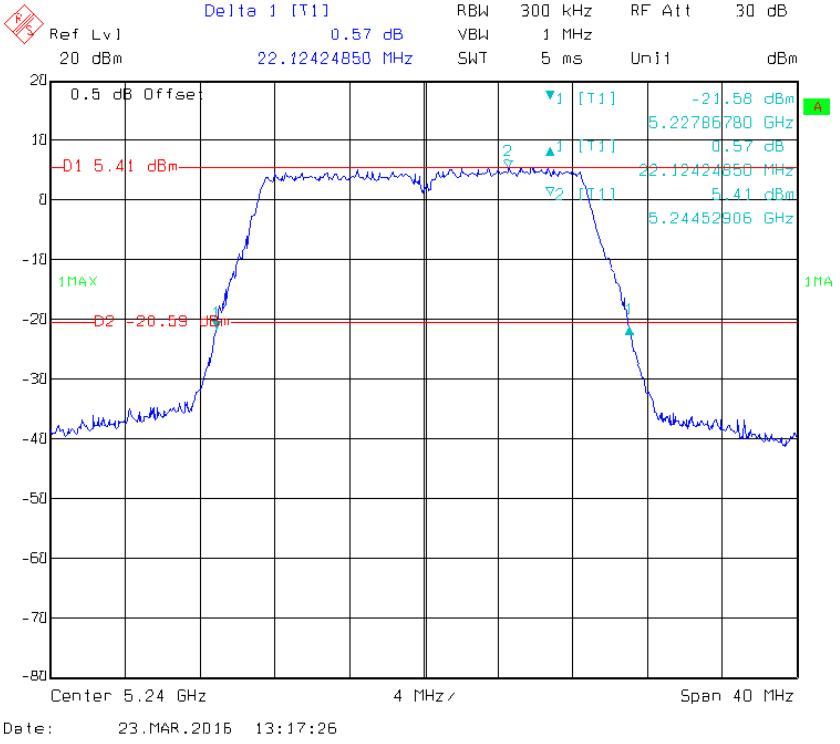
802.11n ht20 Low Channel – Chain0



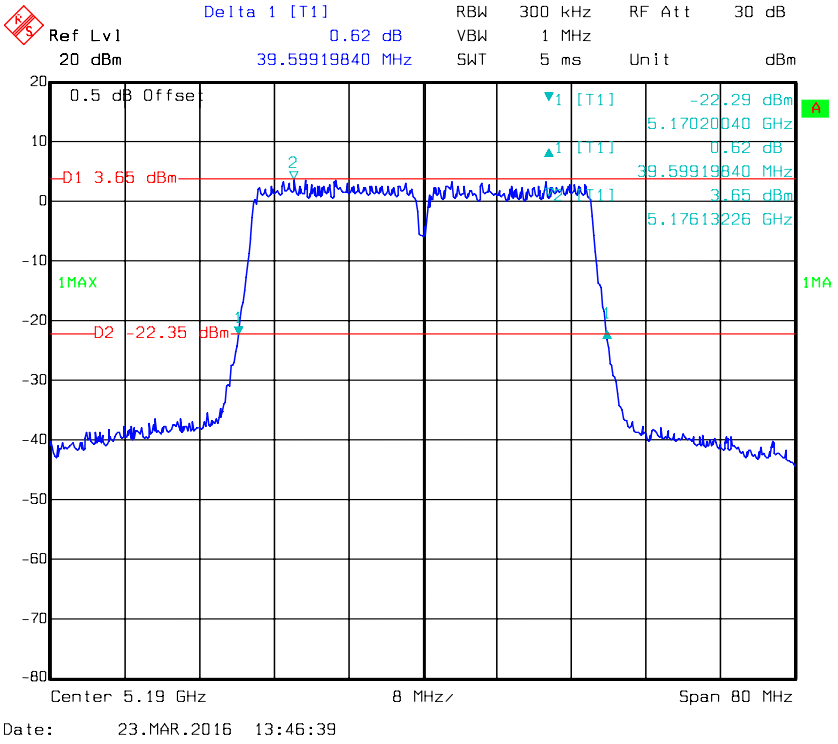
802.11n ht20 Middle Channel – Chain0



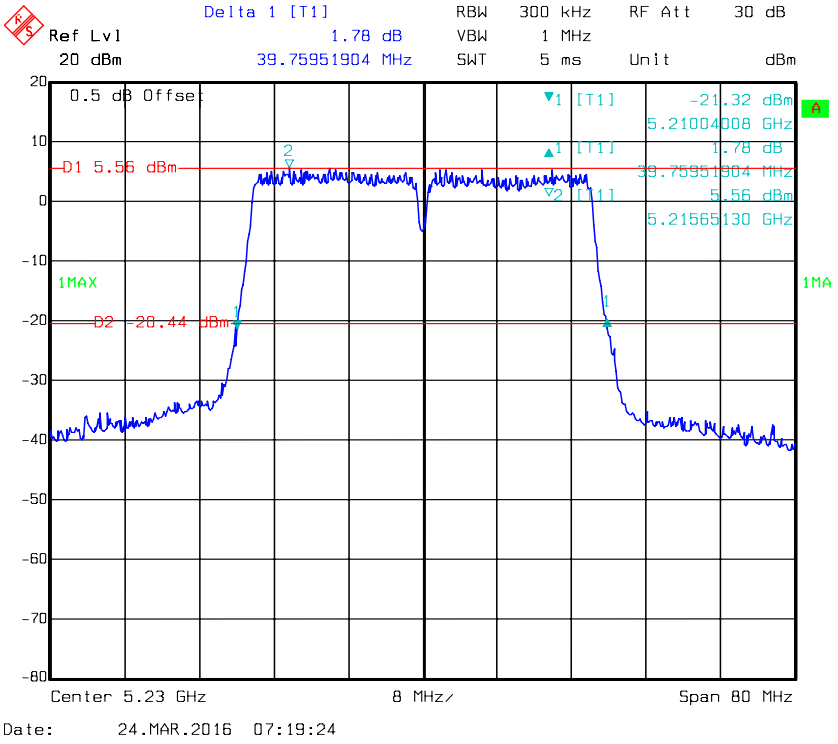
802.11n ht20 High Channel – Chain0



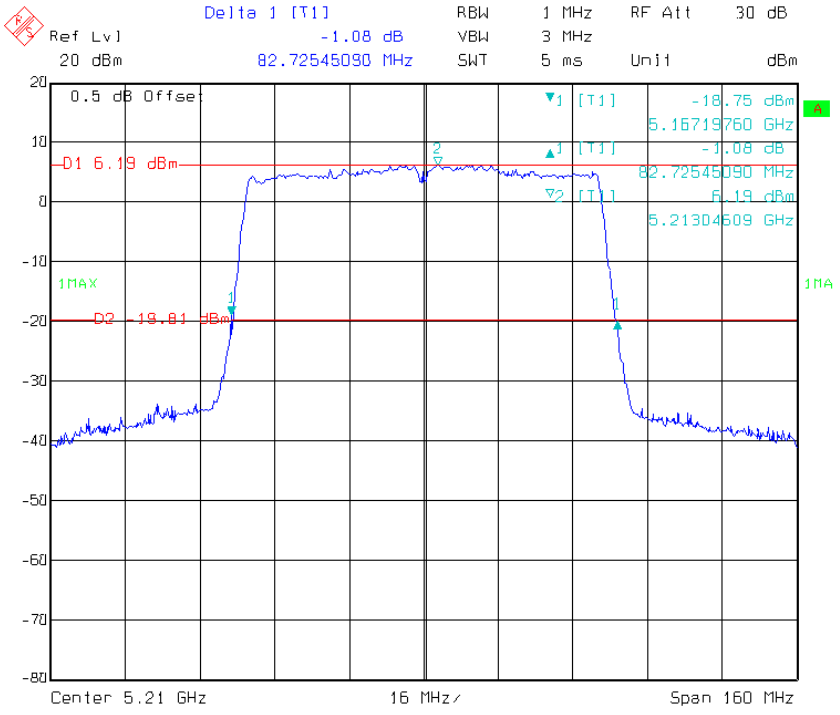
802.11n ht40 Low Channel – Chain0



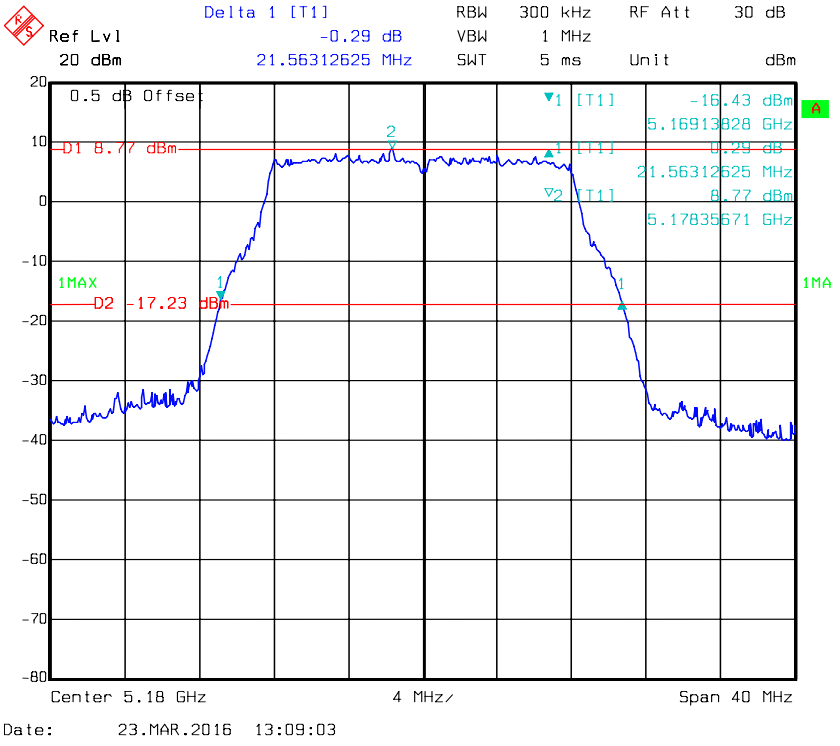
802.11n ht40 High Channel – Chain0



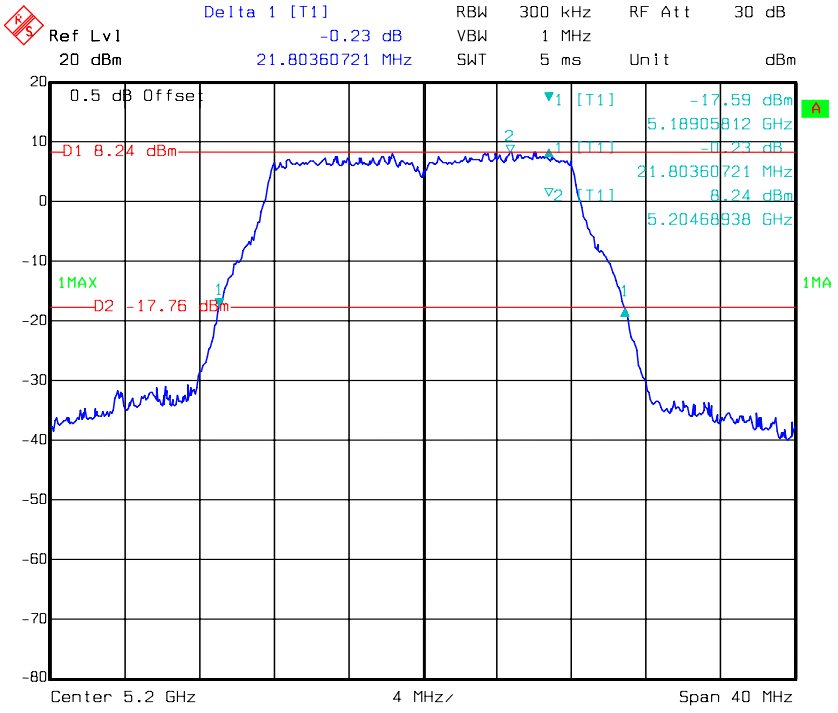
802.11 ac80 Middle Channel – Chain0



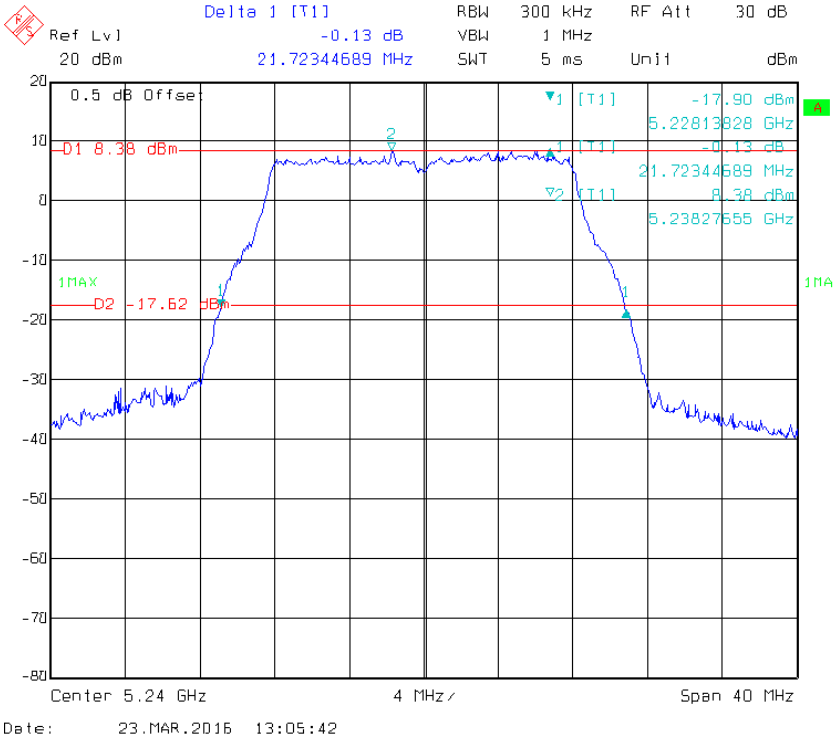
802.11a Low Channel – Chain1



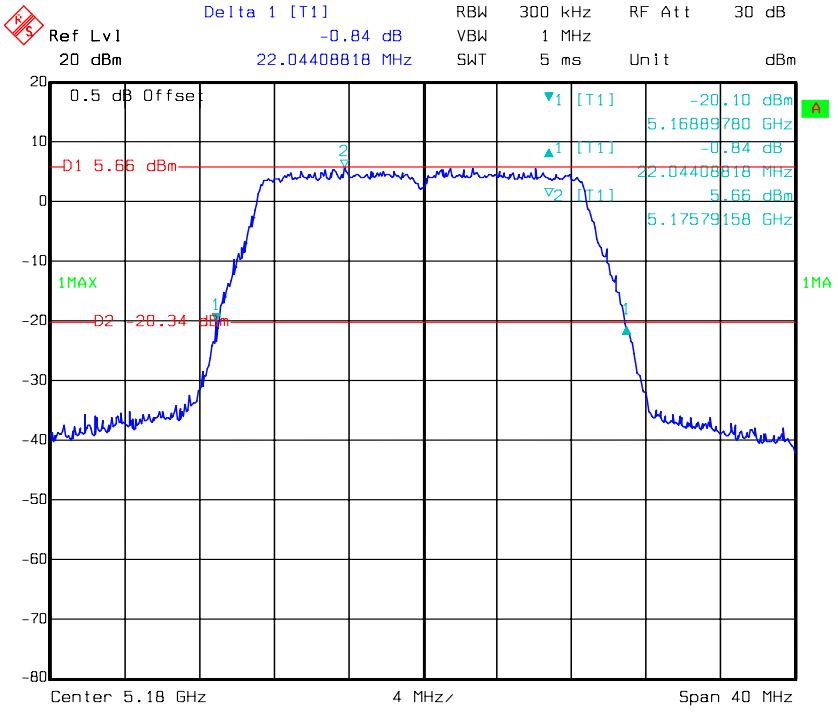
802.11a Middle Channel – Chain1



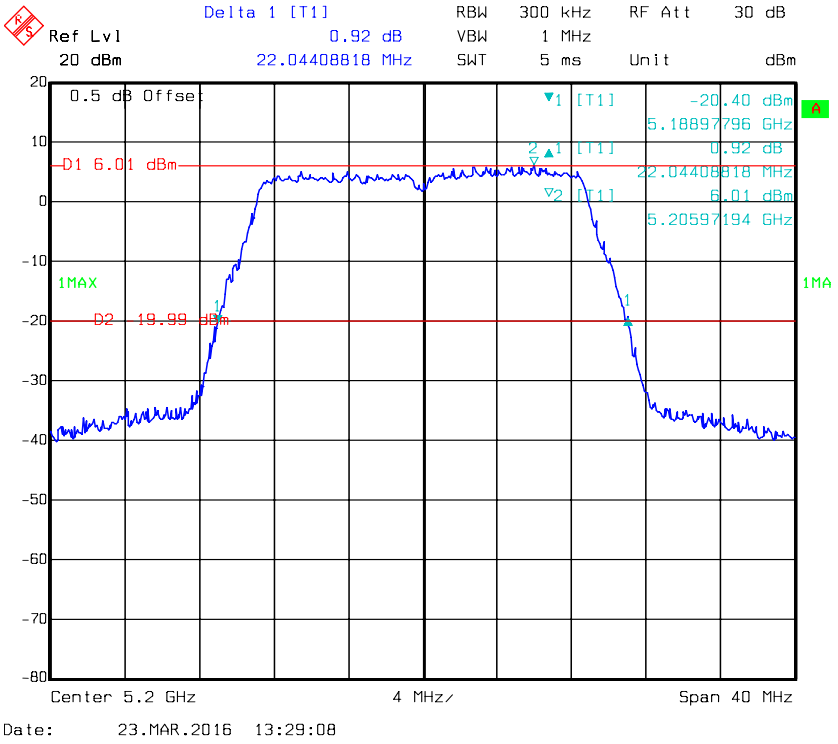
802.11a High Channel – Chain1



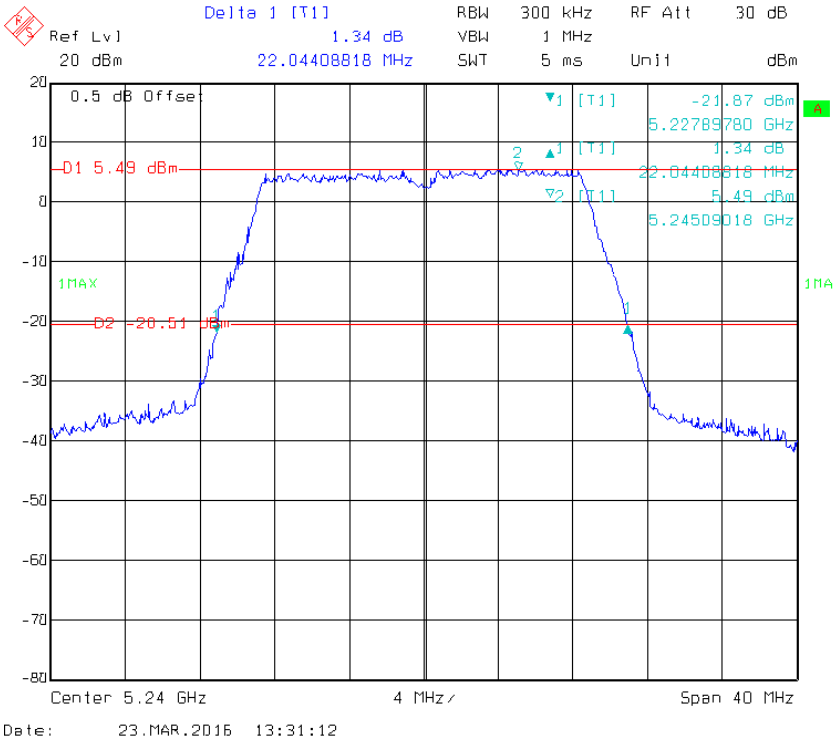
802.11n ht20 Low Channel – Chain1



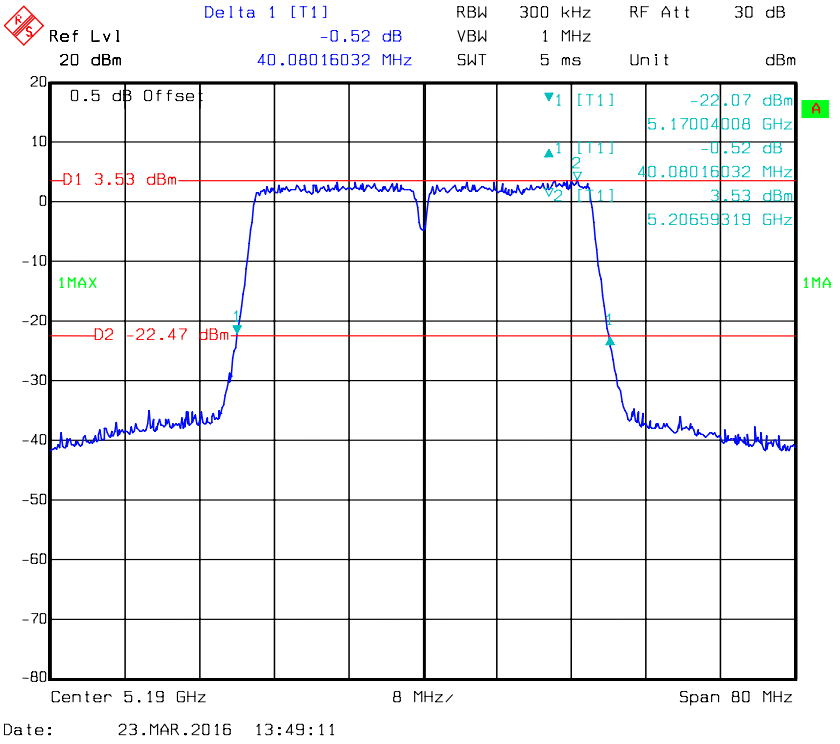
802.11n ht20 Middle Channel – Chain1



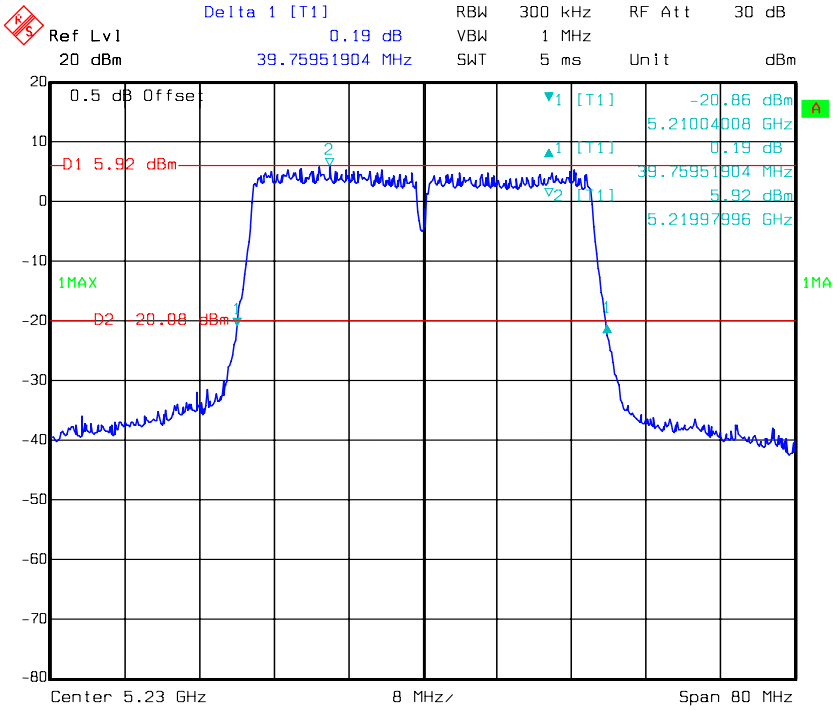
802.11n ht20 High Channel – Chain1



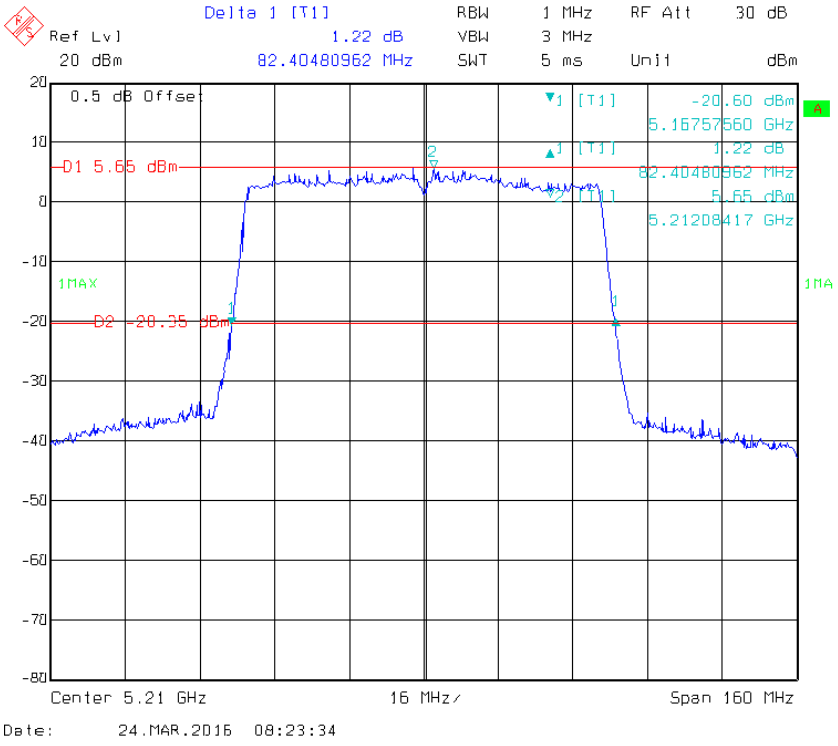
802.11n ht40 Low Channel – Chain1



802.11n ht40 High Channel – Chain1

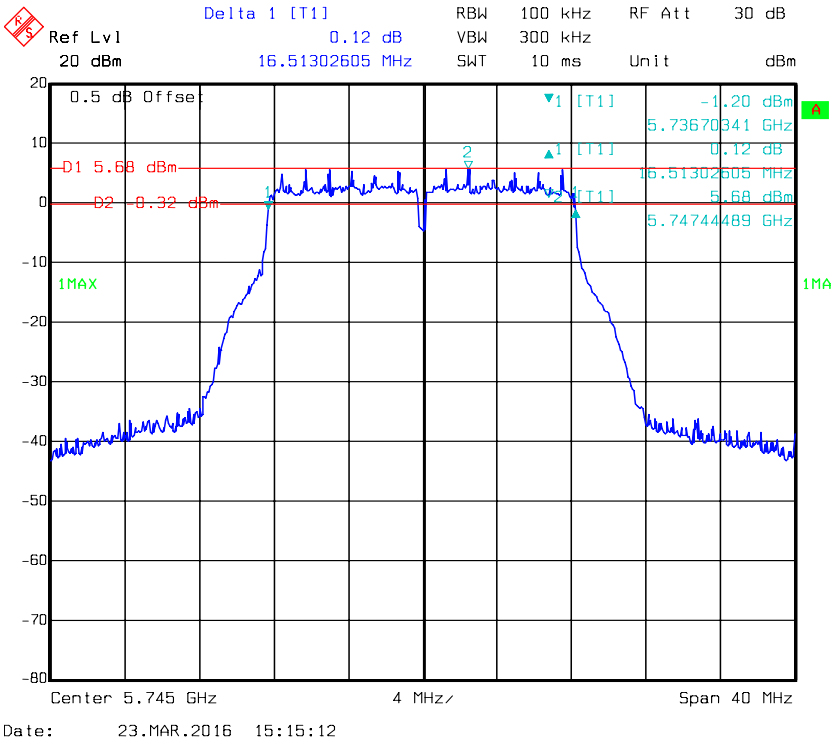


802.11 ac80 Middle Channel – Chain1

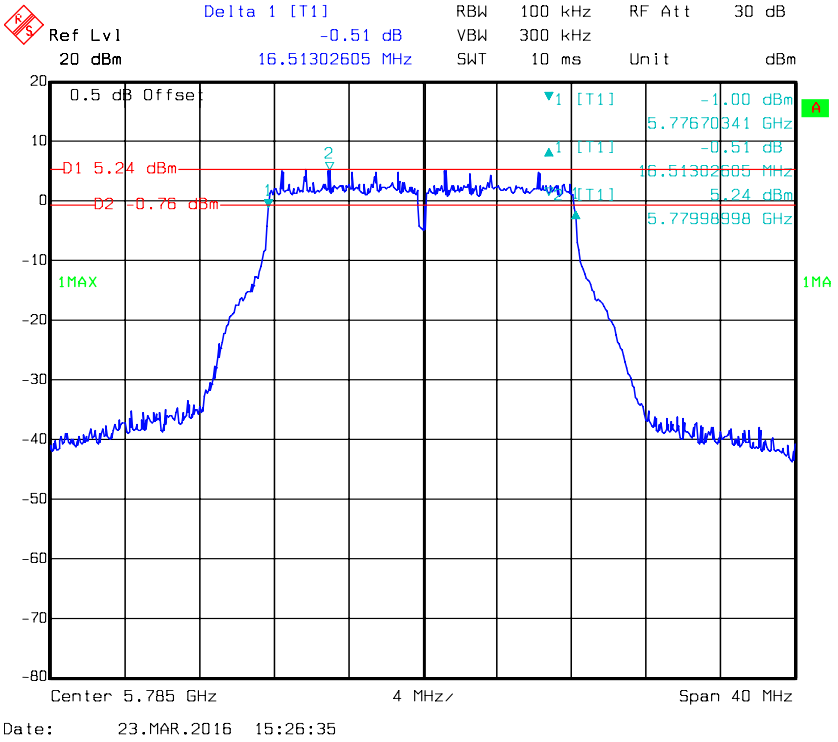


5725-5850MHz: 6 dB Bandwidth

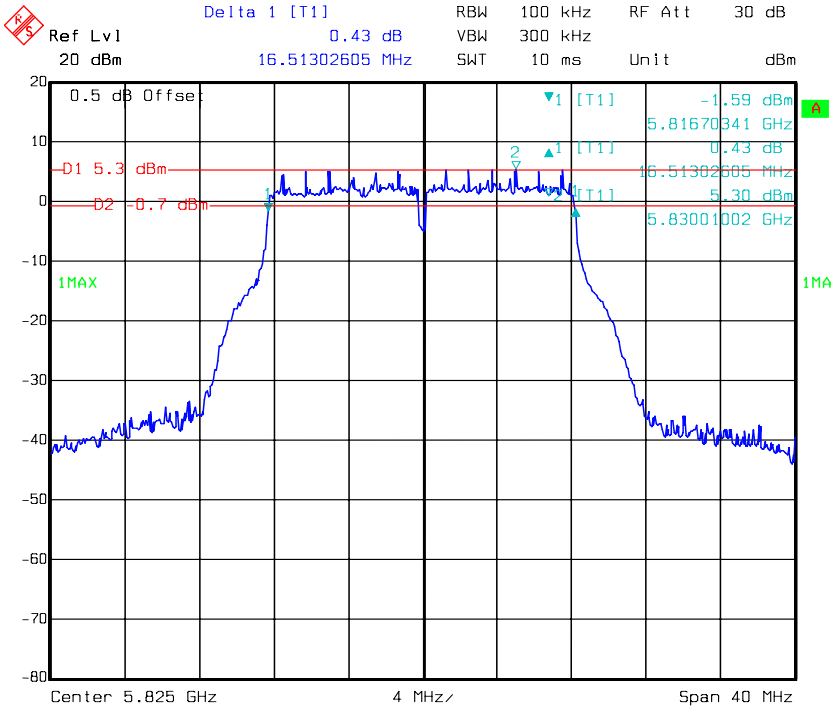
802.11a Low Channel – Chain0



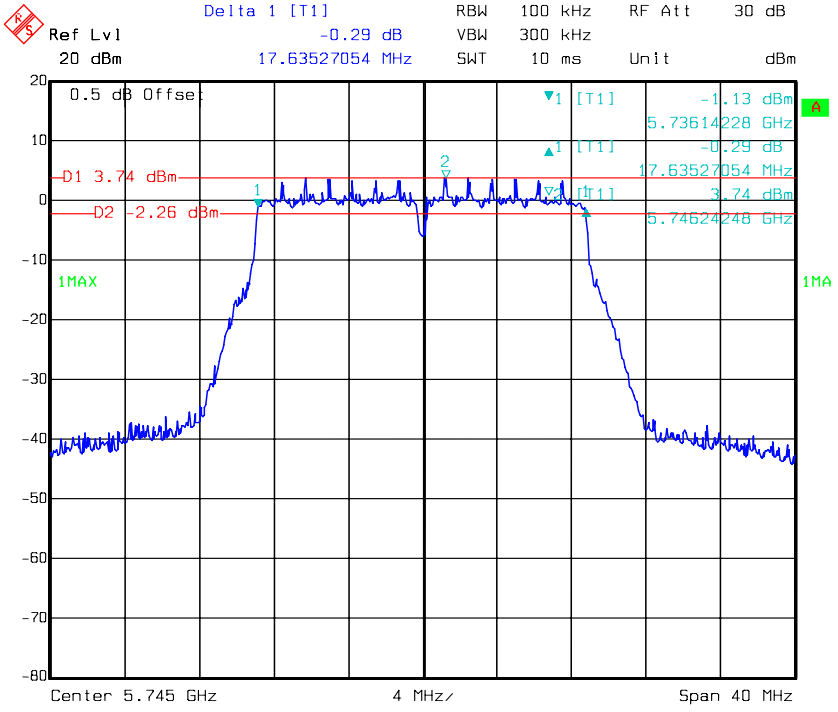
802.11a Middle Channel – Chain0



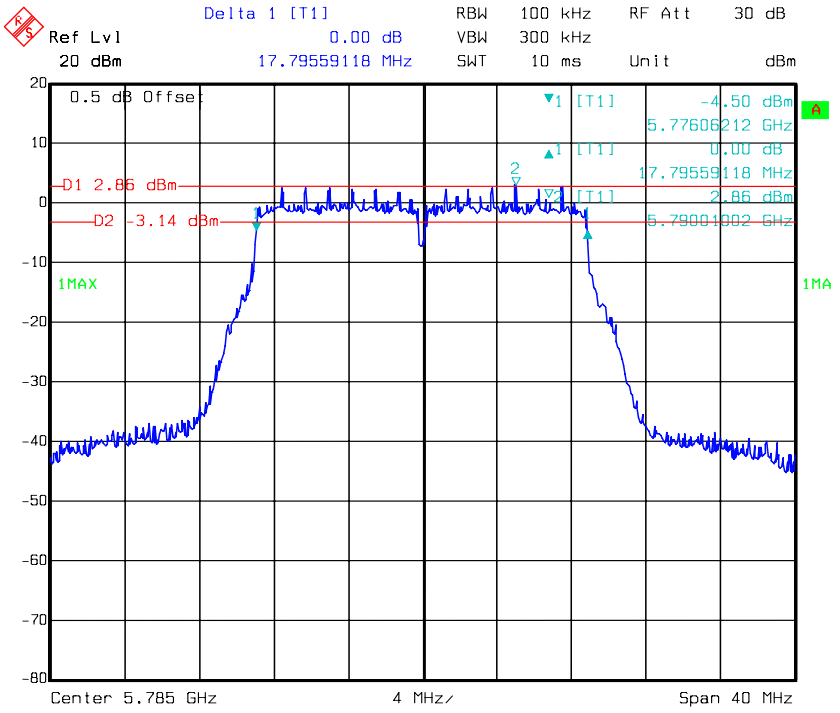
802.11a High Channel – Chain0



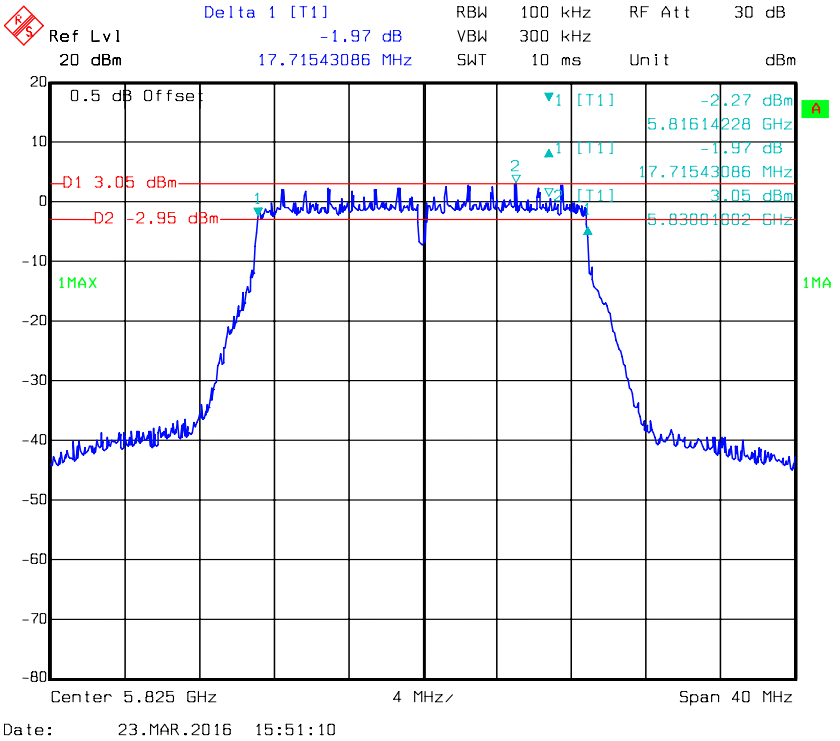
802.11n ht20 Low Channel – Chain0



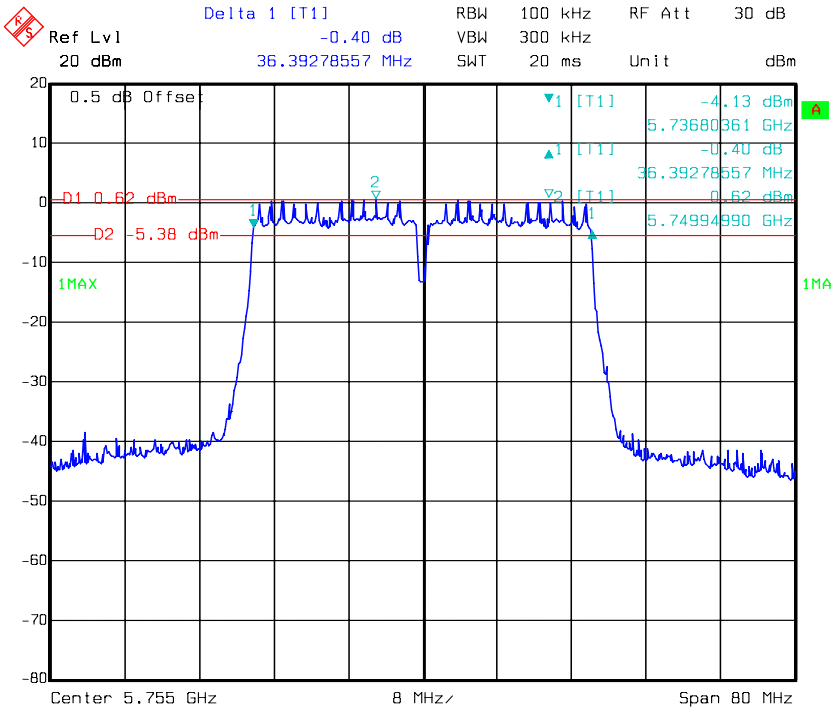
802.11n ht20 Middle Channel – Chain0



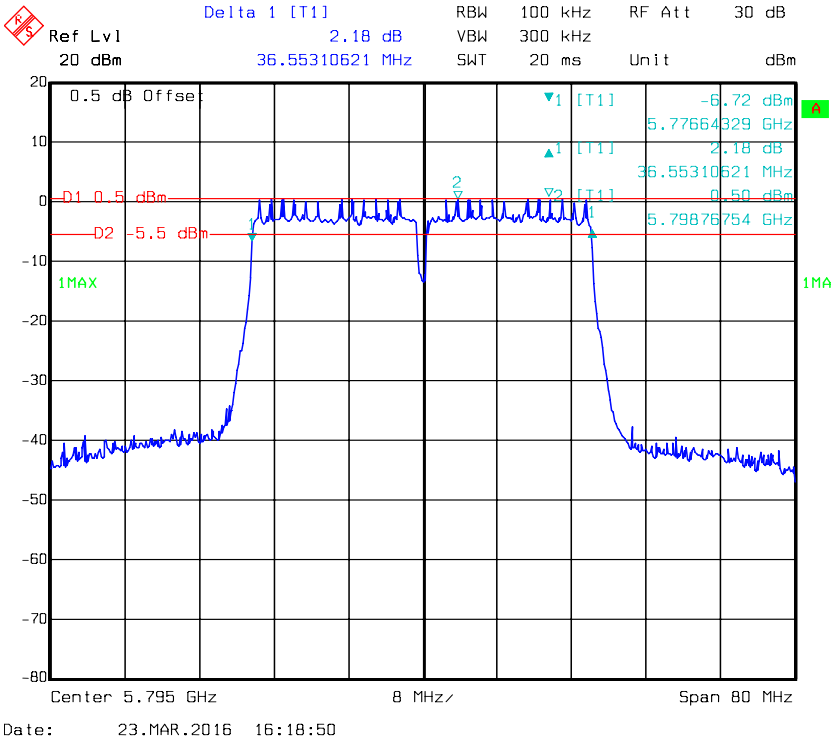
802.11n ht20 High Channel – Chain0



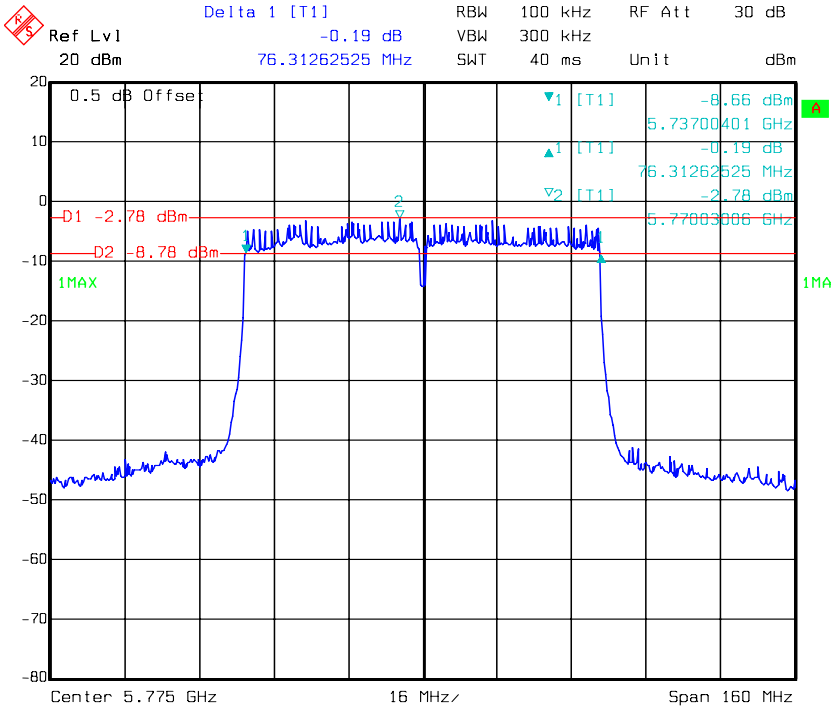
802.11n ht40 Low Channel – Chain0



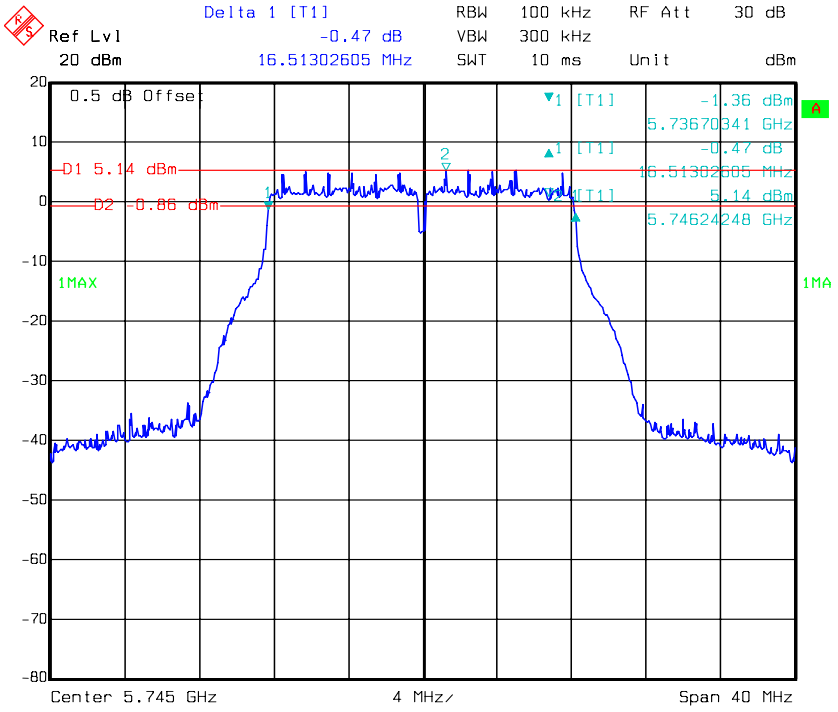
802.11n ht40 High Channel – Chain0



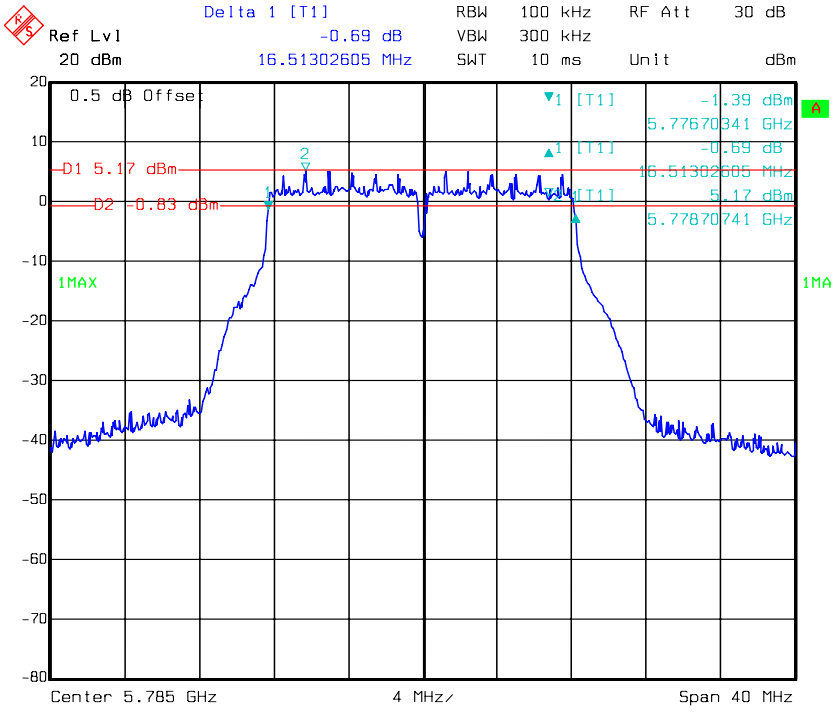
802.11 ac80 Middle Channel – Chain0



802.11a Low Channel – Chain1

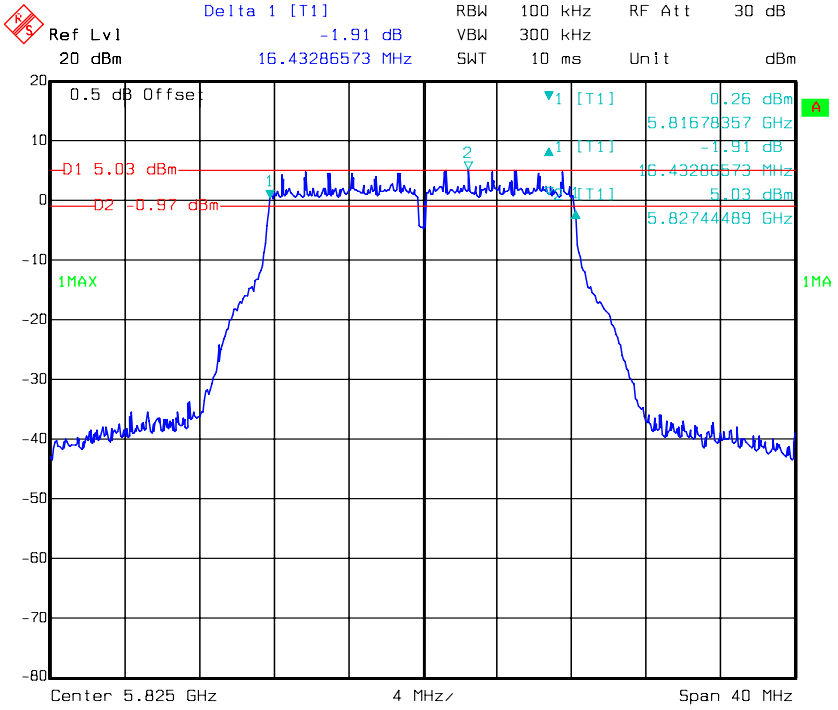


802.11a Middle Channel – Chain1



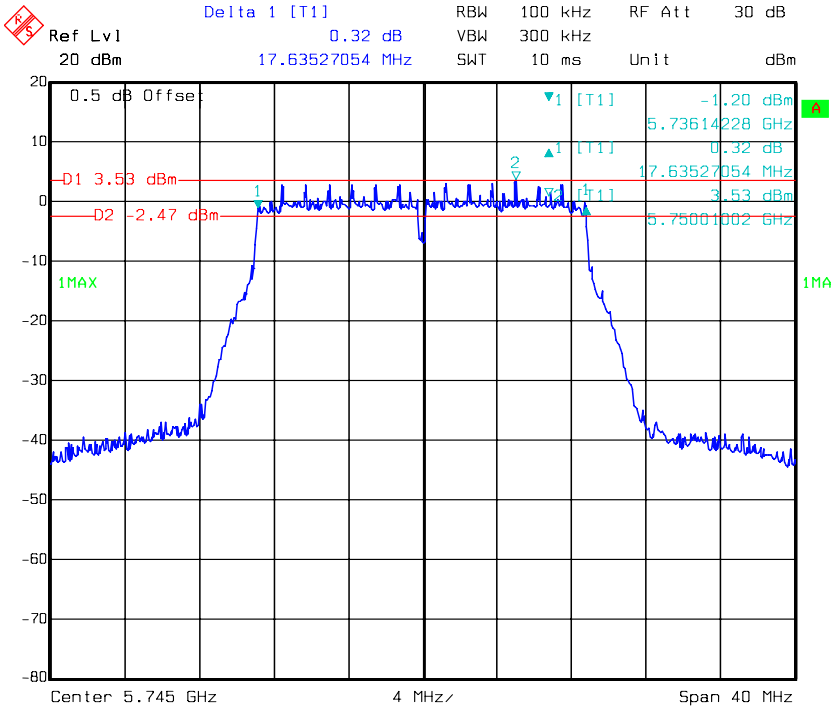
Date: 23.MAR.2016 15:24:07

802.11a High Channel – Chain1

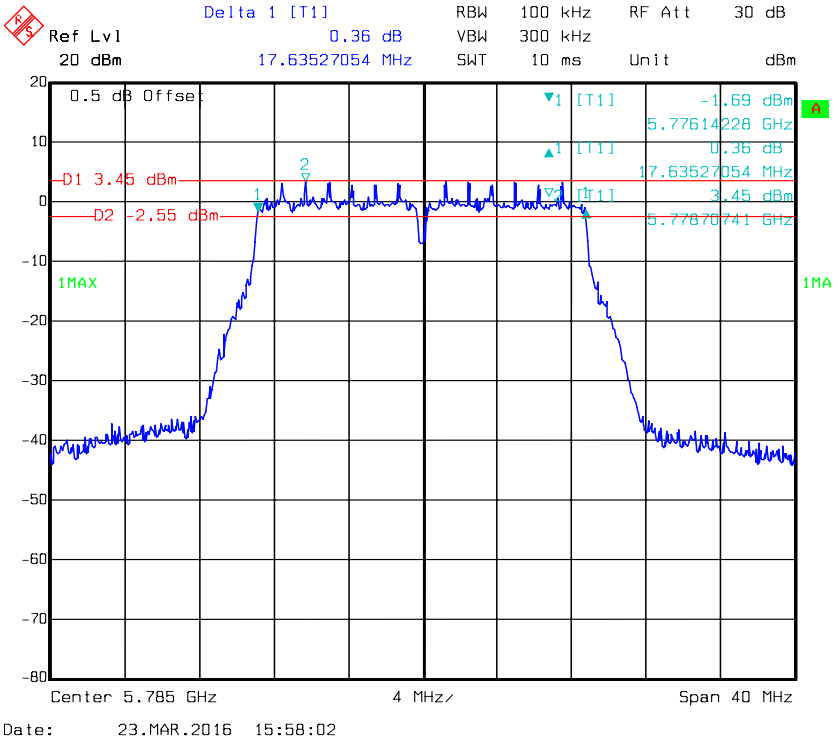


Date: 23.MAR.2016 15:34:44

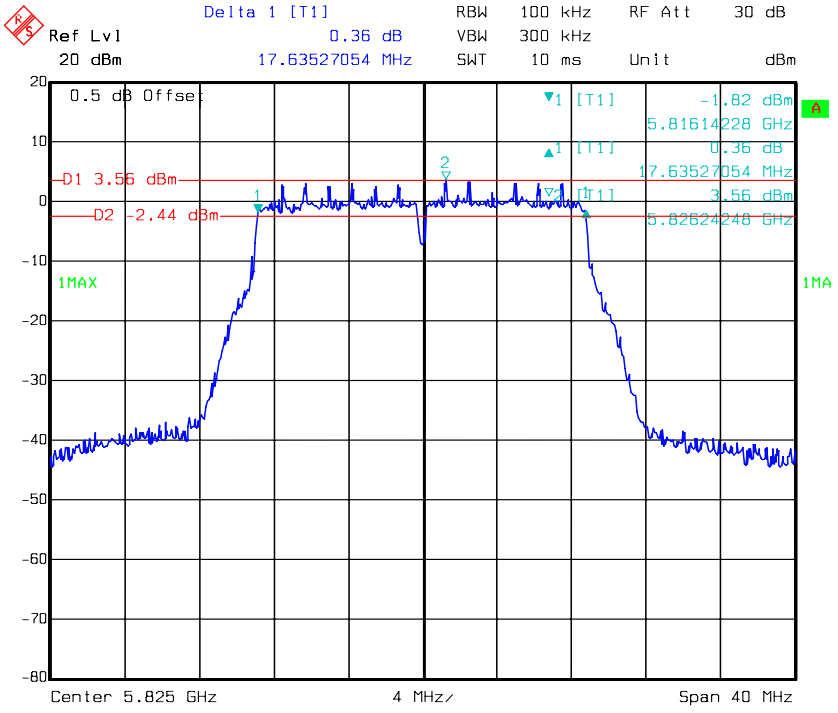
802.11n ht20 Low Channel – Chain1



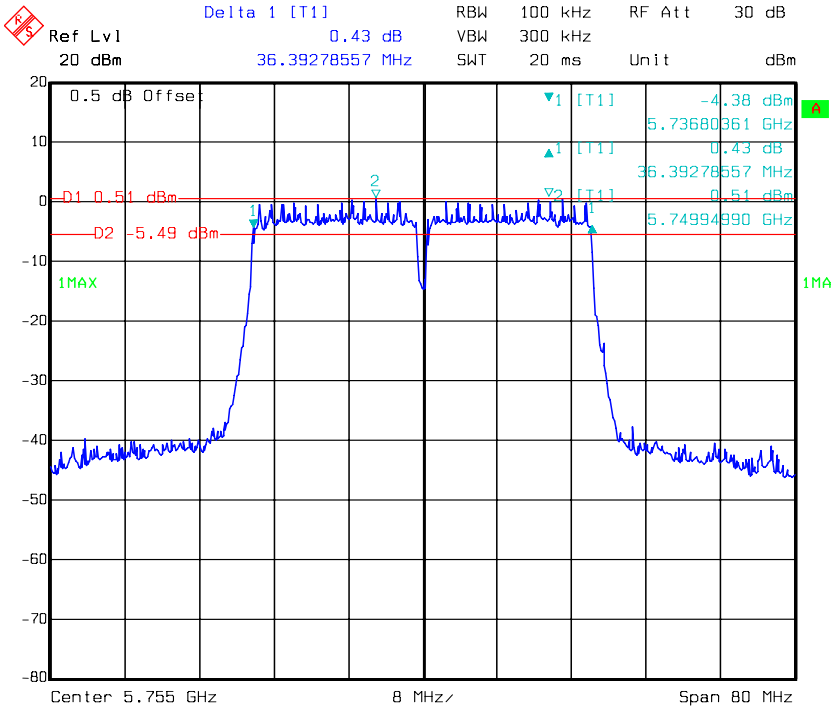
802.11n ht20 Middle Channel – Chain1



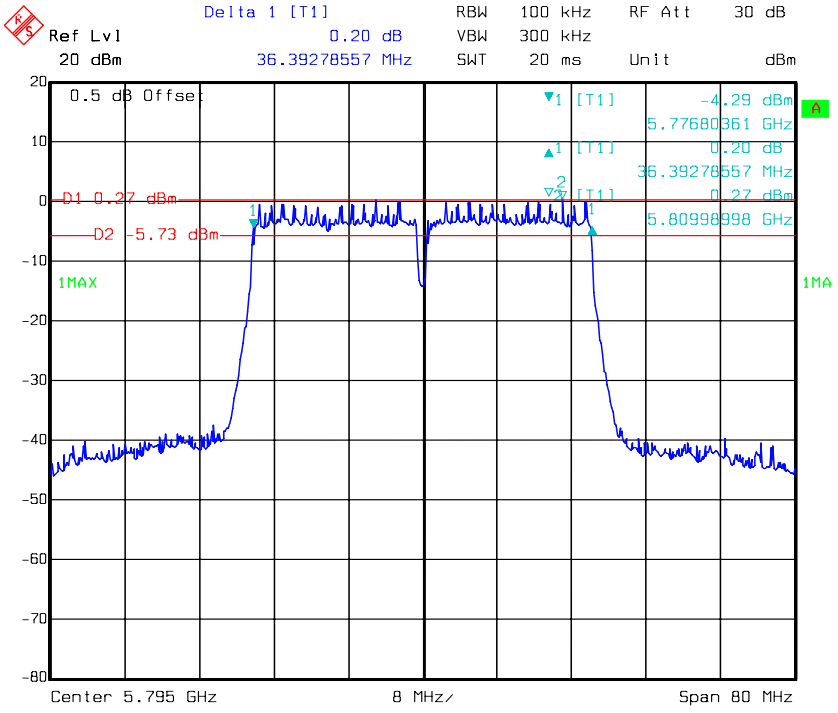
802.11n ht20 High Channel – Chain1



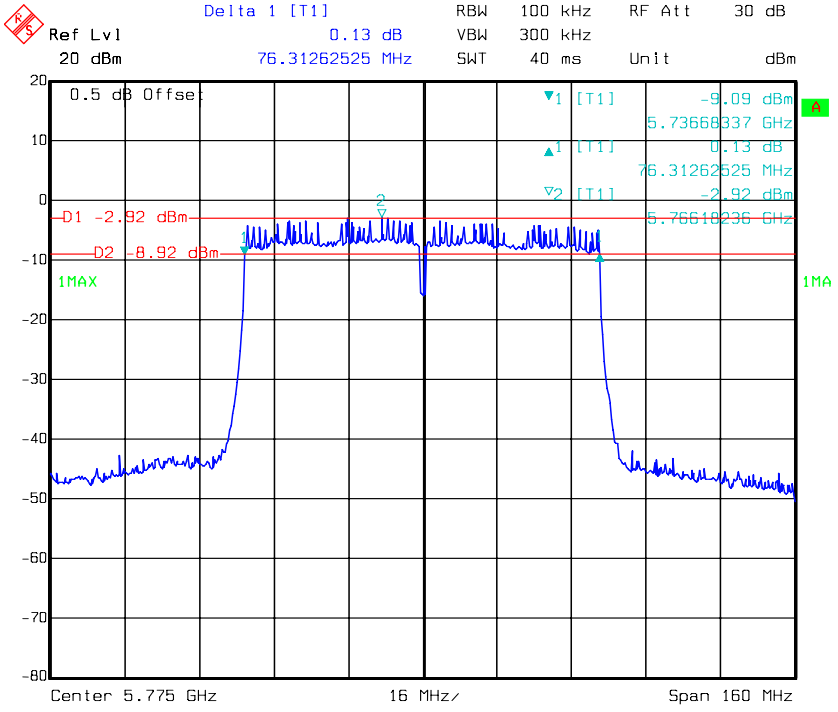
802.11n ht40 Low Channel – Chain1



802.11n ht40 High Channel – Chain1



802.11 ac80 Middle Channel – Chain1



FCC §15.407(a) –MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable 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. In addition, 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.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, 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.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2015-11-03	2016-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2015-11-03	2016-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2015-11-03	2016-11-03
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r01

Test Data

Environmental Conditions

Temperature:	24.6 °C
Relative Humidity:	72 %
ATM Pressure:	100.5 kPa

The testing was performed by Lion Xiao on 2016-03-23.

Test Mode: Transmitting

5150-5250 MHz band

Mode	Channel	Frequency	Maximum Conducted Output Power (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5180	19.51	19.65	/	30	Compliance
	Middle	5200	19.60	19.63	/	30	Compliance
	High	5240	19.56	19.53	/	30	Compliance
802.11n20	Low	5180	15.81	15.85	18.84	30	Compliance
	Middle	5200	15.89	15.83	18.87	30	Compliance
	High	5240	15.91	15.83	18.88	30	Compliance
802.11n40	Low	5190	15.73	15.67	18.71	30	Compliance
	High	5230	15.79	15.70	18.76	30	Compliance
802.11 ac80	Middle	5210	15.61	15.47	18.55	30	Compliance

5725-5850 MHz band

Mode	Channel	Frequency	Maximum Conducted Output Power (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5745	19.63	19.70	/	30	Compliance
	Middle	5785	19.58	19.67	/	30	Compliance
	High	5825	19.62	19.55	/	30	Compliance
802.11n20	Low	5745	15.68	15.72	18.71	30	Compliance
	Middle	5785	15.62	15.80	18.72	30	Compliance
	High	5825	15.74	15.67	18.72	30	Compliance
802.11n40	Low	5755	15.61	15.55	18.59	30	Compliance
	High	5795	15.49	15.57	18.54	30	Compliance
802.11 ac80	Middle	5775	15.25	15.30	18.29	30	Compliance

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable 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. In addition, 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.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, 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.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r01

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.6 °C
Relative Humidity:	72 %
ATM Pressure:	100.5 kPa

The testing was performed by Lion Xiao from 2016-03-23 to 2016-03-24.

Test Mode: Transmitting

Test Result:Compliance.Please refer to the following table and plot.

5150MHz-5250MHz:

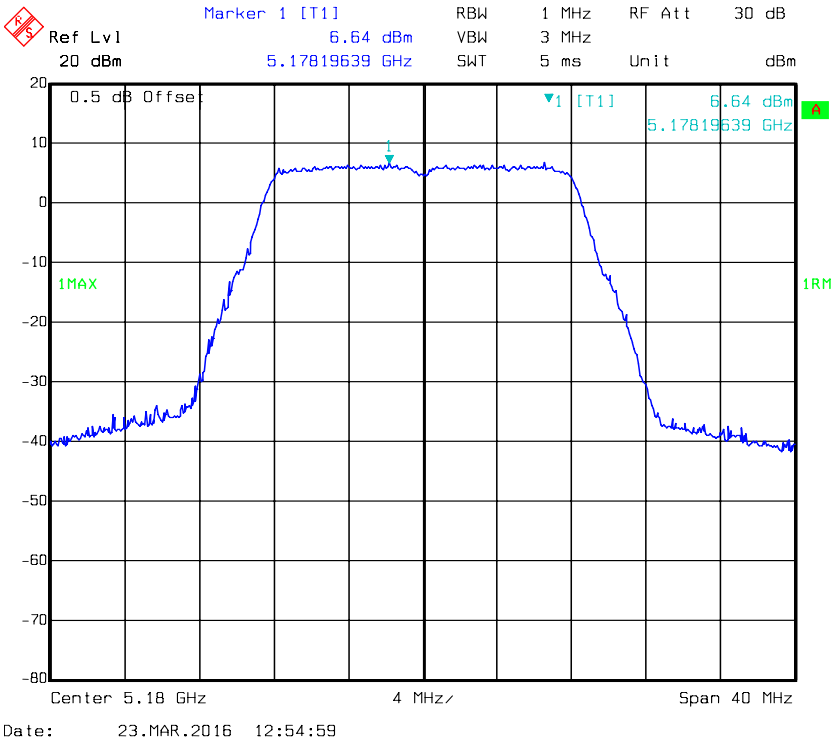
Mode	Frequency MHz	PSD (dBm/MHz)			Limit (dBm/MHz)	Result
		Chain0	Chain1	Total		
802.11a	5180	6.64	6.74	/	17	Compliance
	5200	6.72	6.73	/	17	Compliance
	5240	6.66	6.65	/	17	Compliance
802.11n20	5180	4.24	4.25	7.25	17	Compliance
	5200	4.26	4.25	7.27	17	Compliance
	5240	4.21	4.25	7.24	17	Compliance
802.11n40	5190	2.13	2.07	5.11	17	Compliance
	5230	2.15	2.09	5.13	17	Compliance
802.11 ac80	5210	-1.24	-1.54	1.62	17	Compliance

5725MHz-5850MHz:

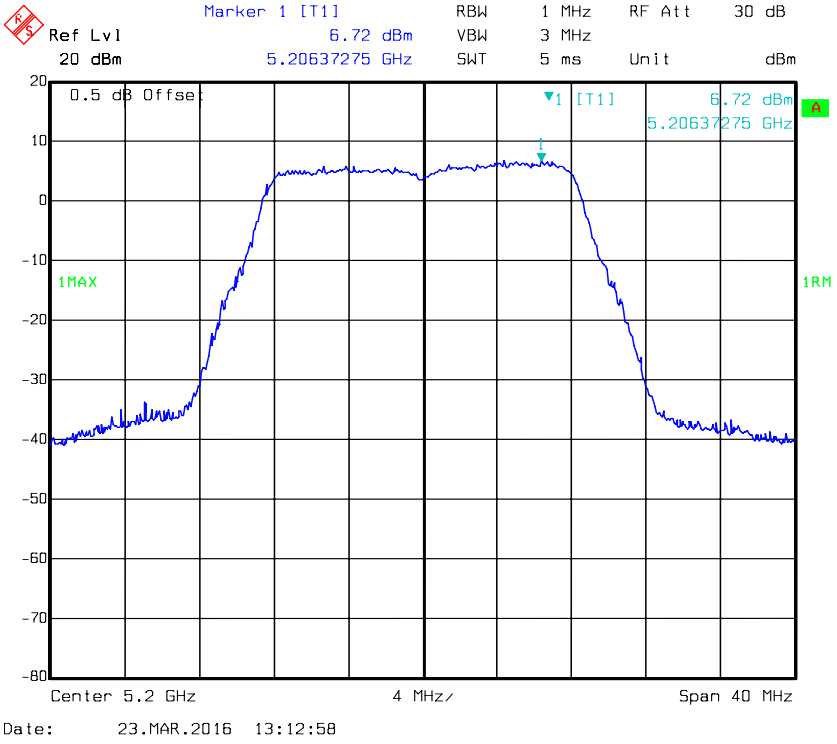
Mode	Frequency MHz	Power Spectral Density				Total (dBm/500kHz)	Limits (dBm/500kHz)
		Chain0		Chain 1			
		Reading (dBm/ 300kHz)	Integrated (dBm/ 500kHz)	Reading (dBm/ 300kHz)	Integrated (dBm/ 500kHz)		
802.11a	5745	4.61	6.83	4.66	6.88	/	30
	5785	4.63	6.85	4.65	6.87	/	30
	5825	4.67	6.89	4.58	6.80	/	30
802.11n20	5745	2.22	4.44	2.25	4.47	7.46	30
	5785	2.18	4.40	2.32	4.54	7.48	30
	5825	2.26	4.48	2.22	4.44	7.47	30
802.11n40	5755	0.29	2.51	0.26	2.48	5.50	30
	5795	0.19	2.41	0.26	2.48	5.45	30
802.11 ac80	5775	-4.25	-2.03	-4.21	-1.99	1.00	30

5150MHz-5250MHz:

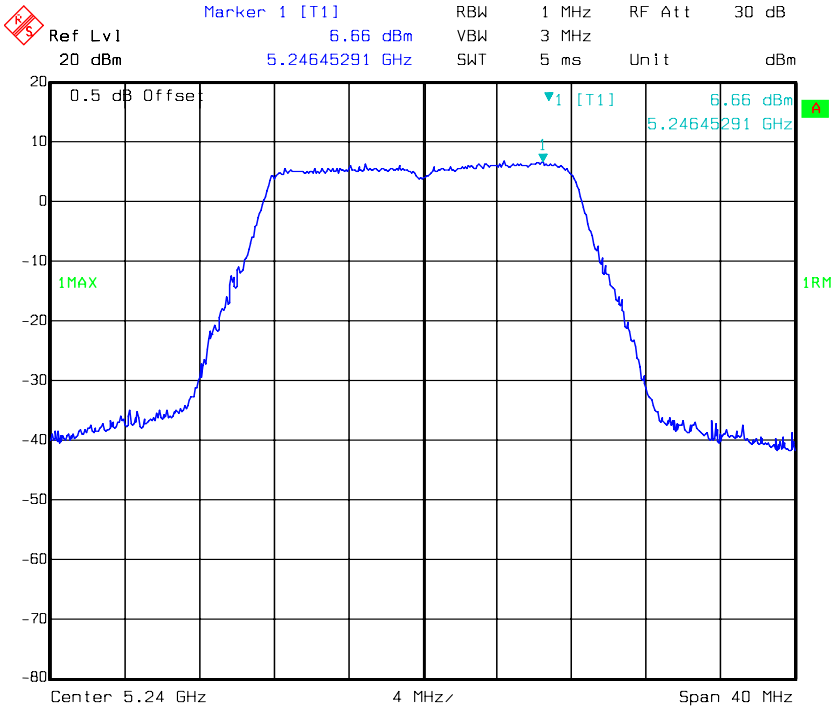
802.11a Low Channel – Chain0



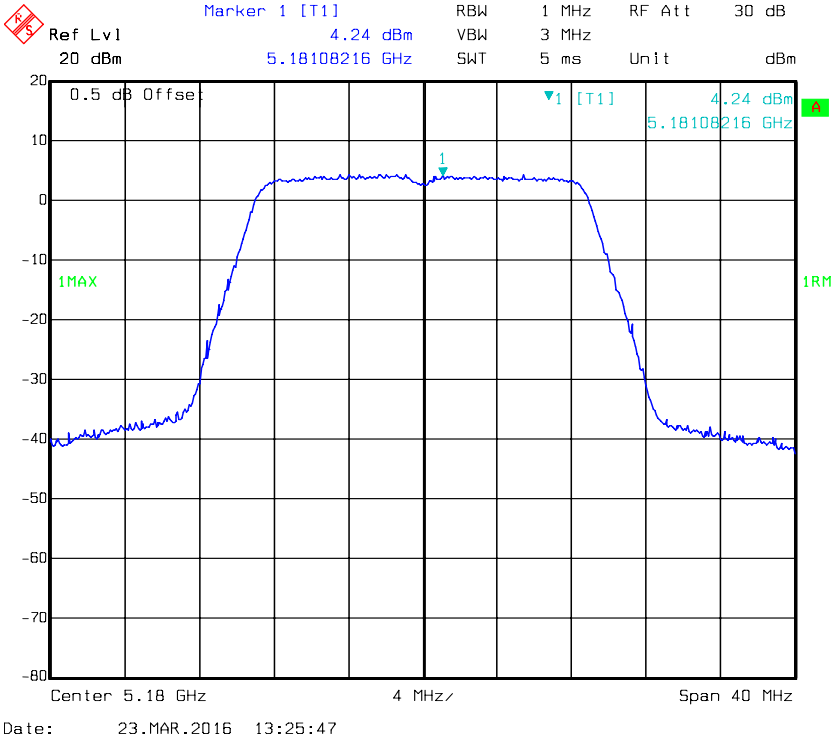
802.11a Middle Channel – Chain0



802.11a High Channel – Chain0



802.11n ht20 Low Channel – Chain0



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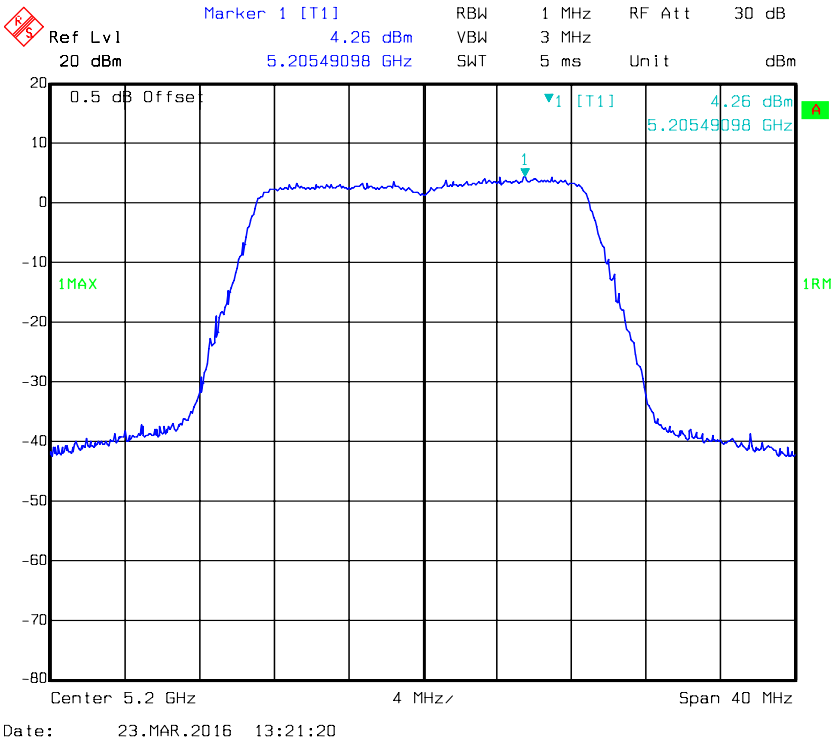

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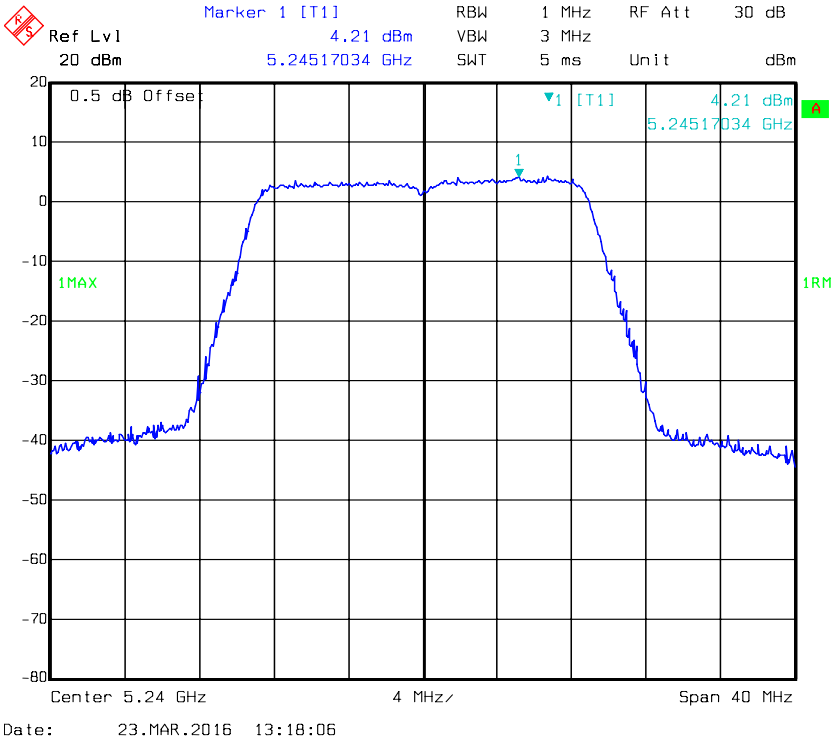
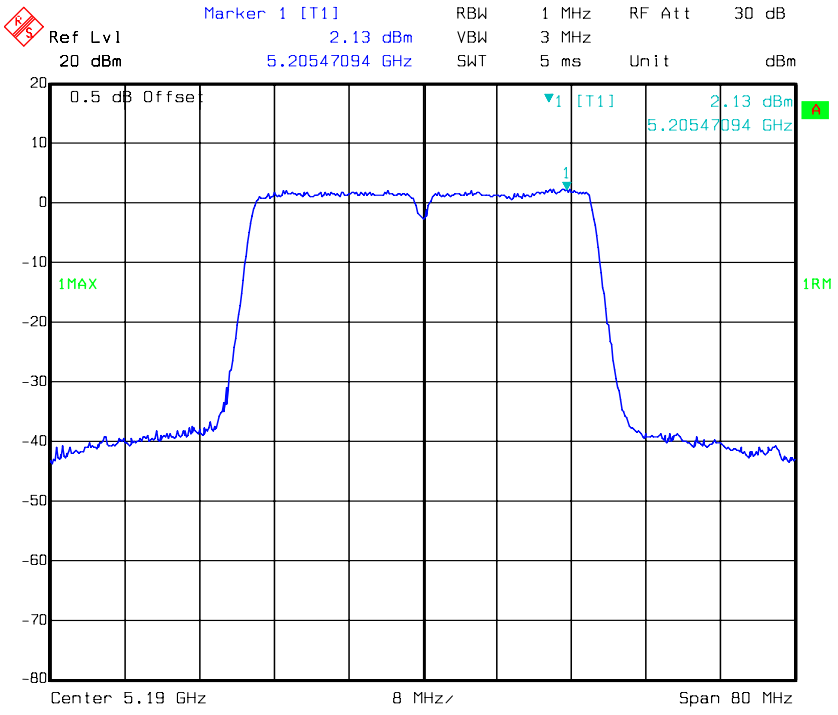
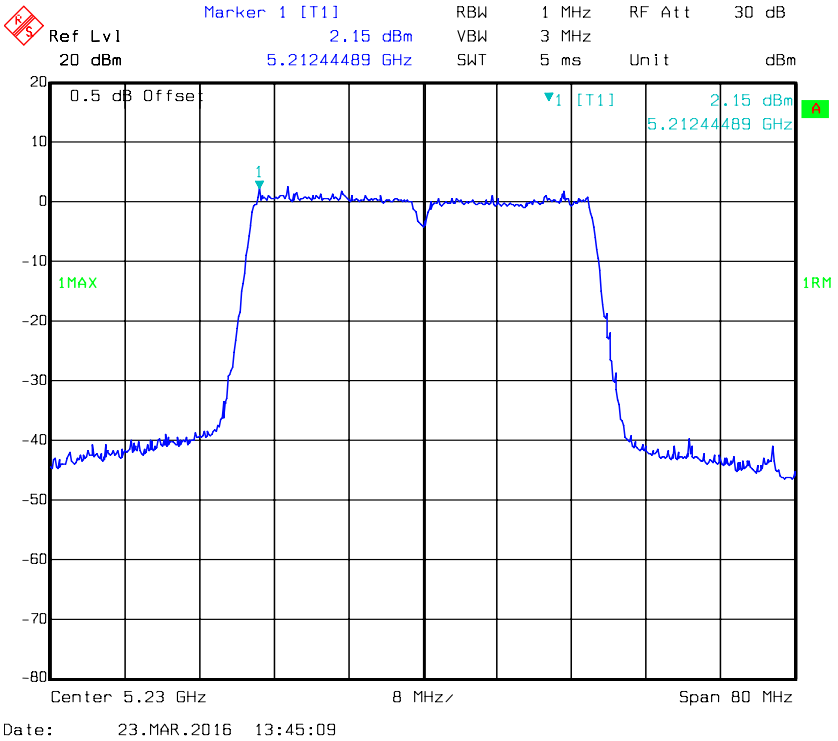


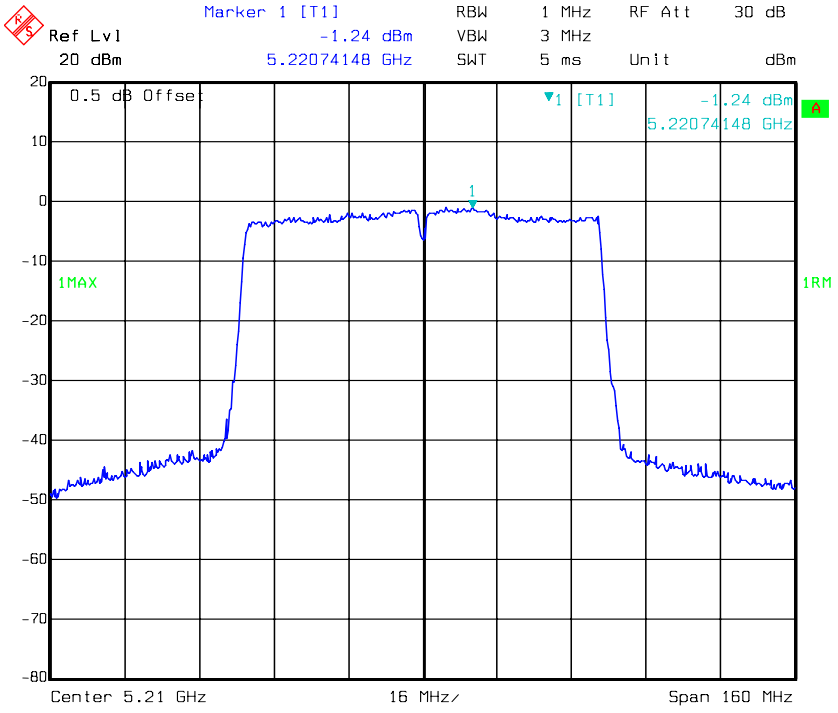
802.11n ht40 Low Channel – Chain0



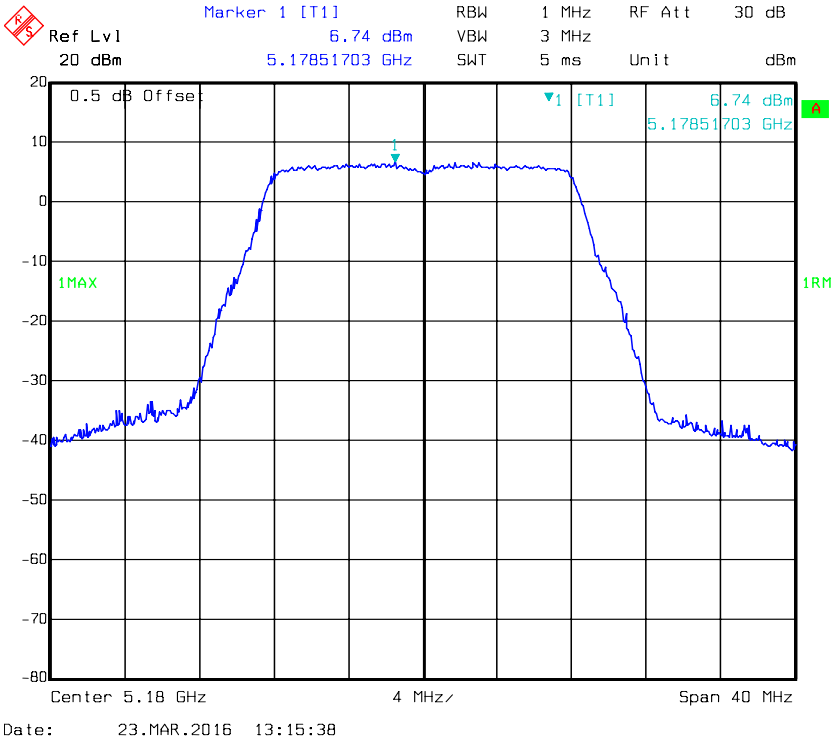
802.11n ht40 High Channel – Chain0



802.11 ac80 Middle Channel – Chain0



802.11a Low Channel – Chain1



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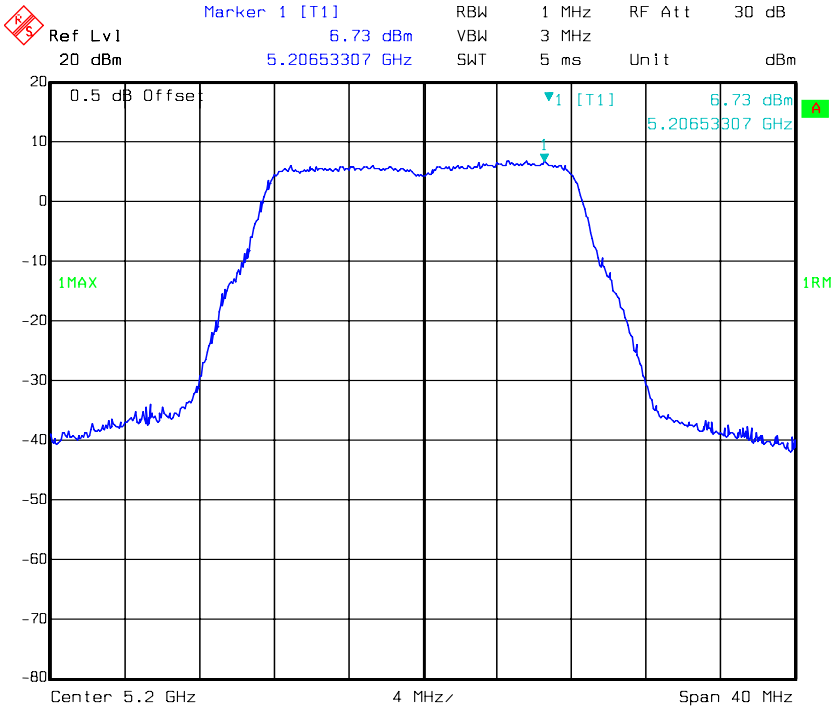

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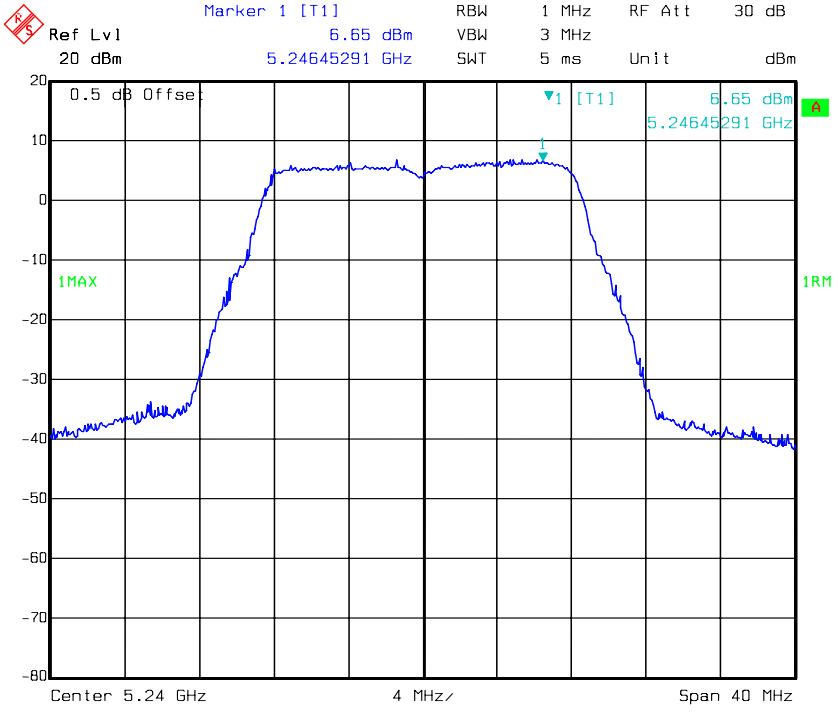
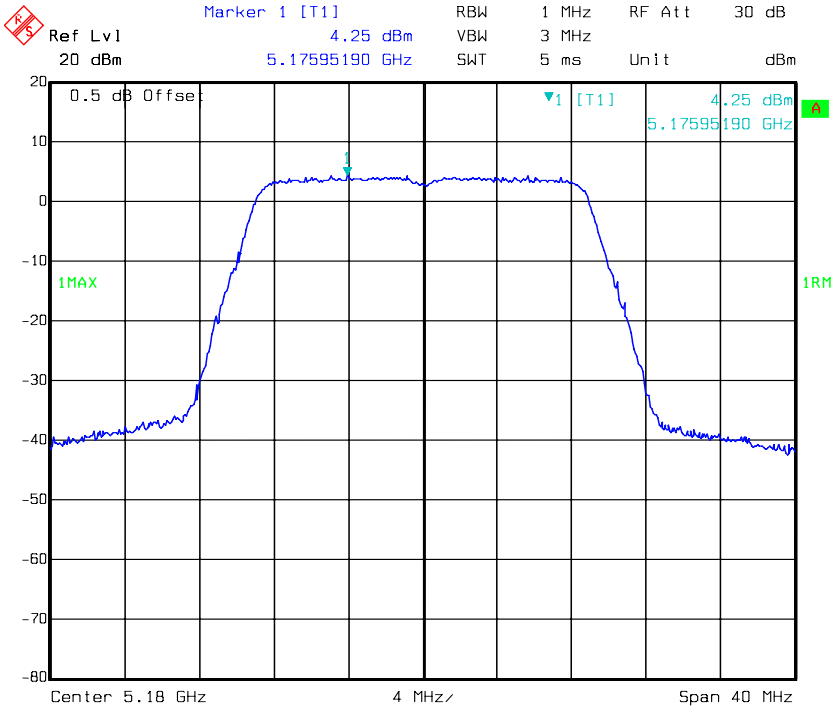


802.11n ht20 Low Channel – Chain1



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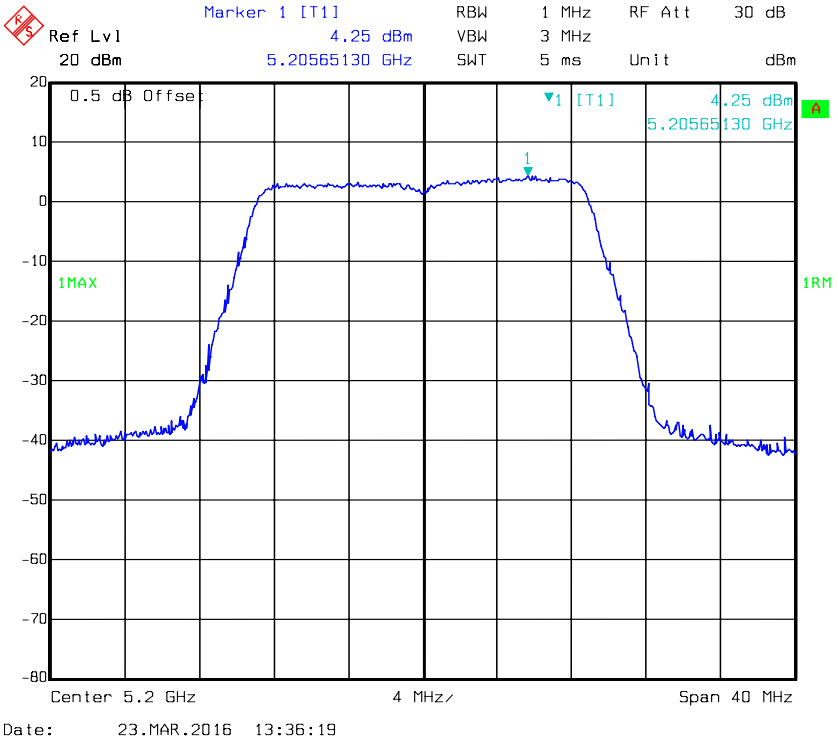

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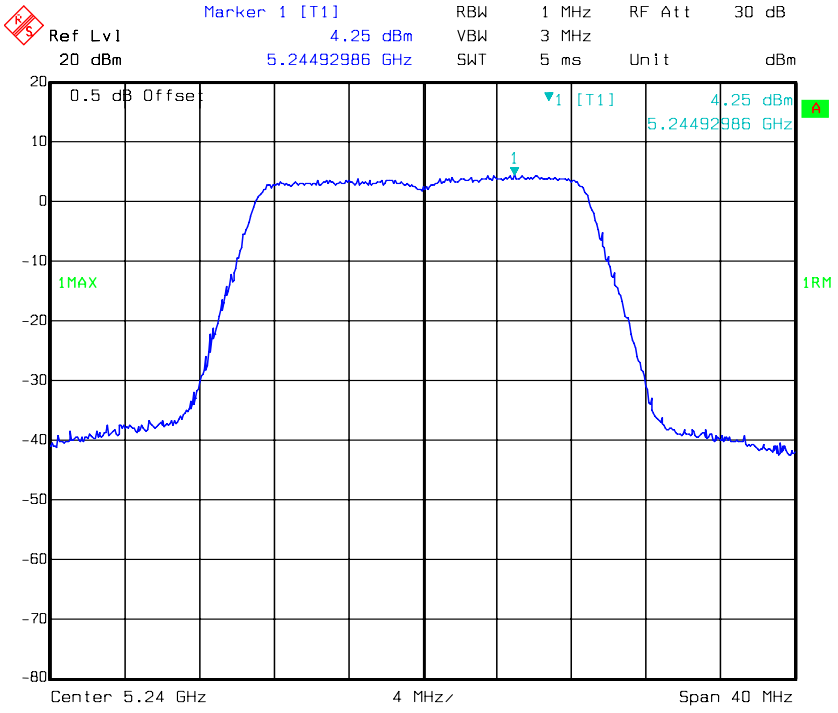
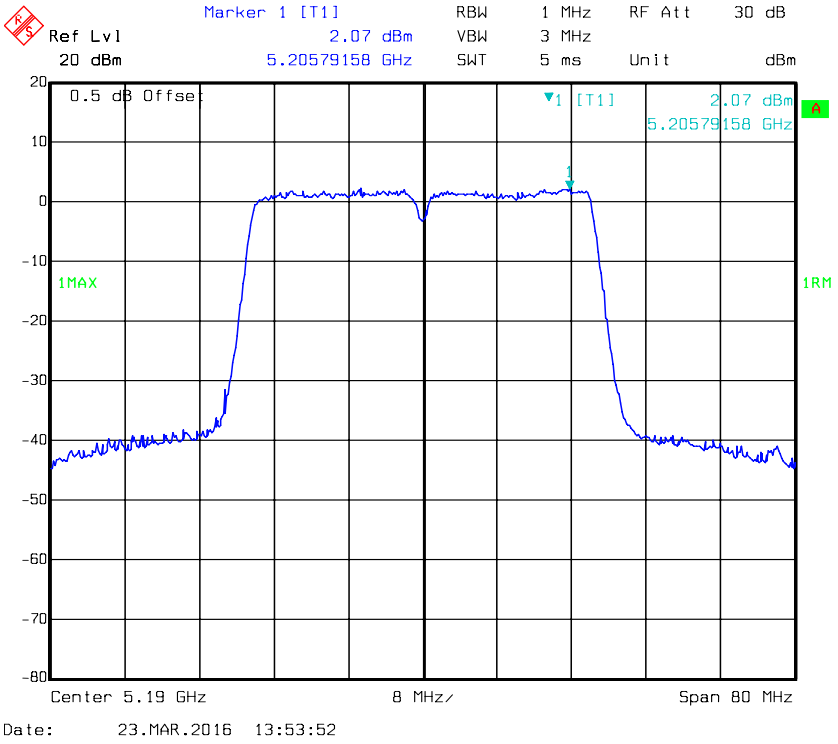
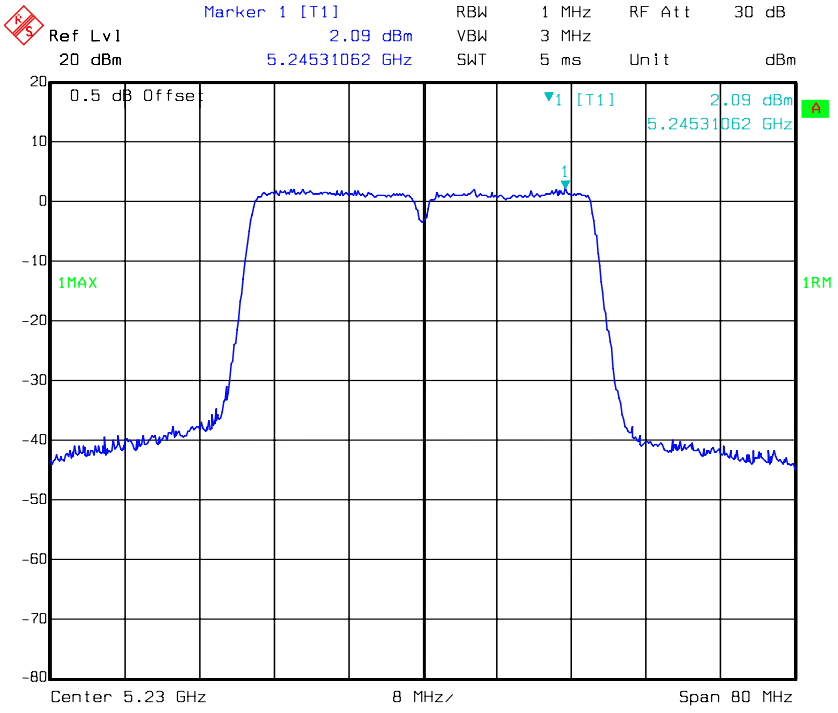


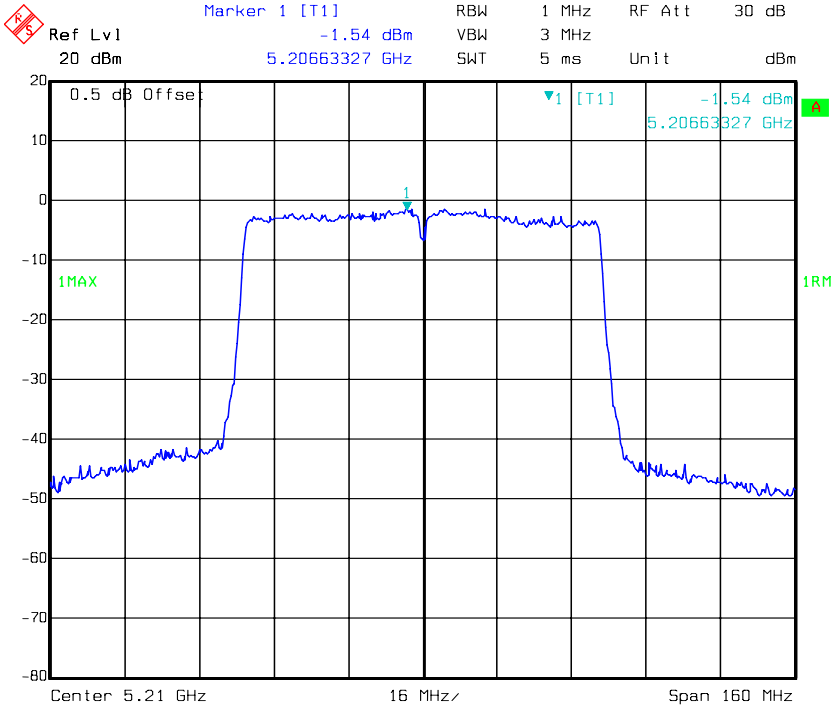
802.11n ht40 Low Channel – Chain1



802.11n ht40 High Channel – Chain1

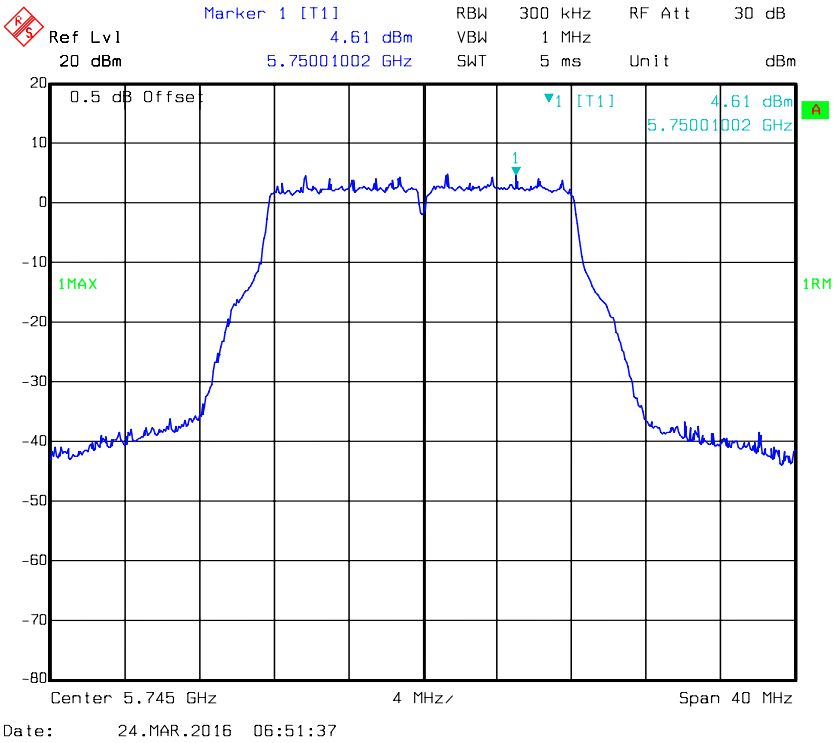


802.11 ac80 Middle Channel – Chain1

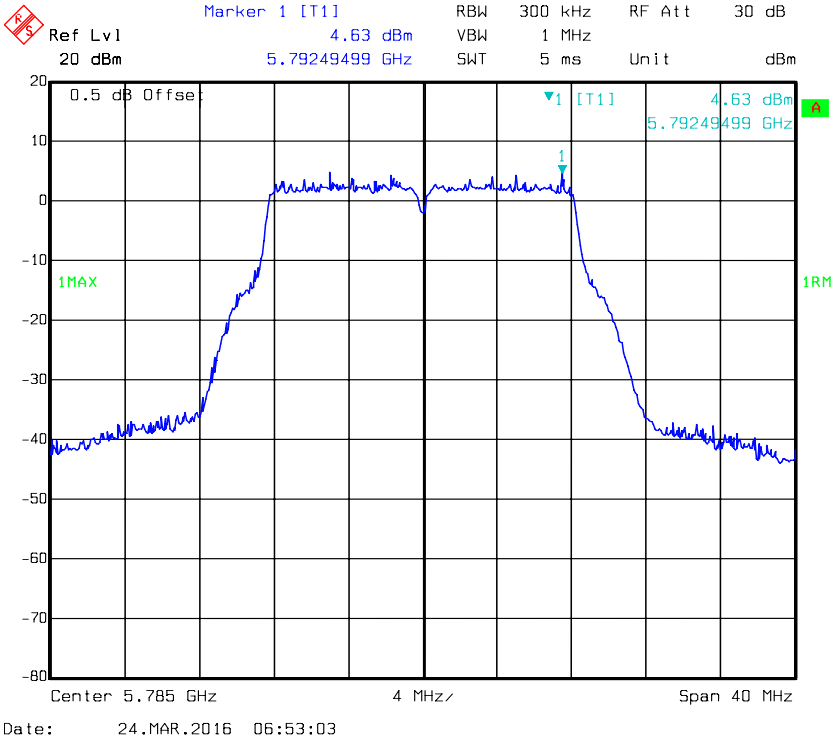


5725MHz-5850MHz:

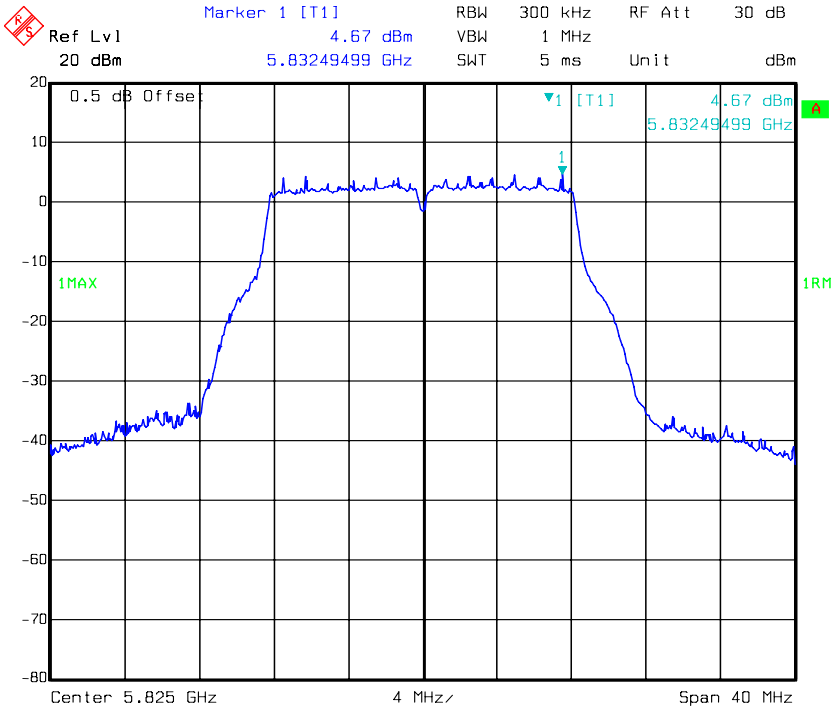
802.11a Low Channel – Chain0



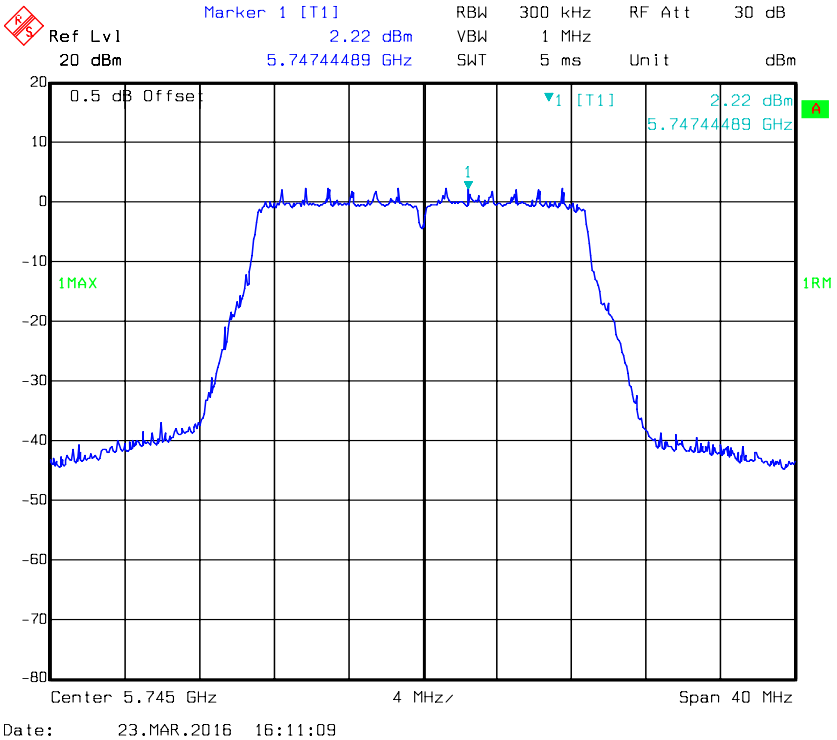
802.11a Middle Channel – Chain0



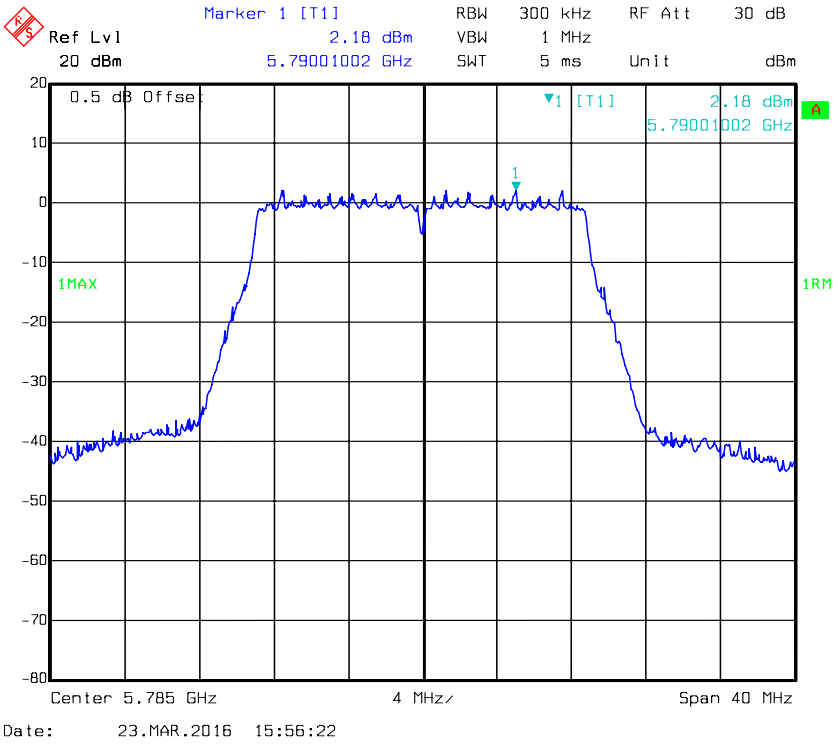
802.11a High Channel – Chain0



802.11n ht20 Low Channel – Chain0



802.11n ht20 Middle Channel – Chain0



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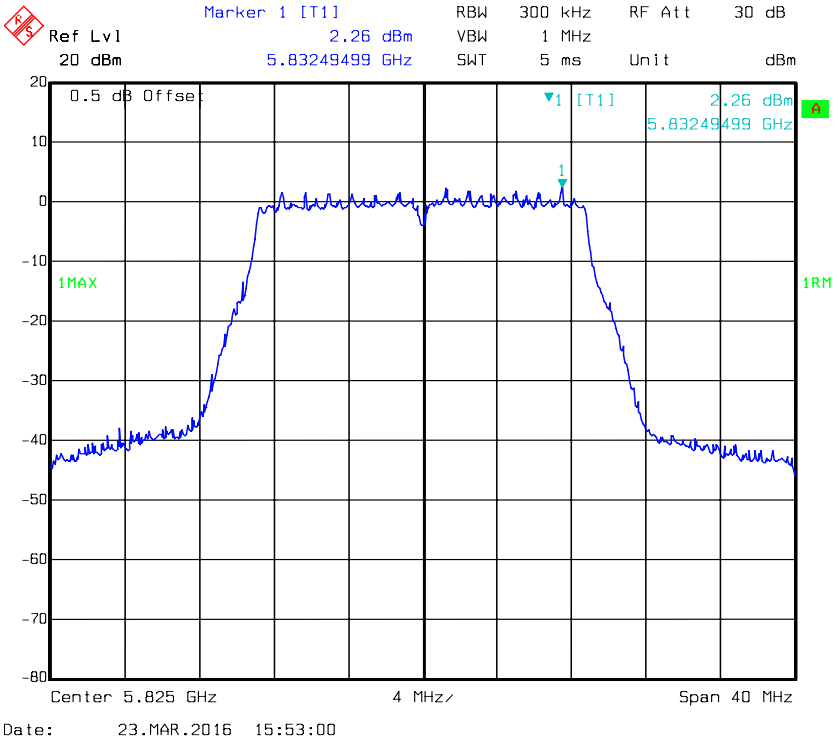
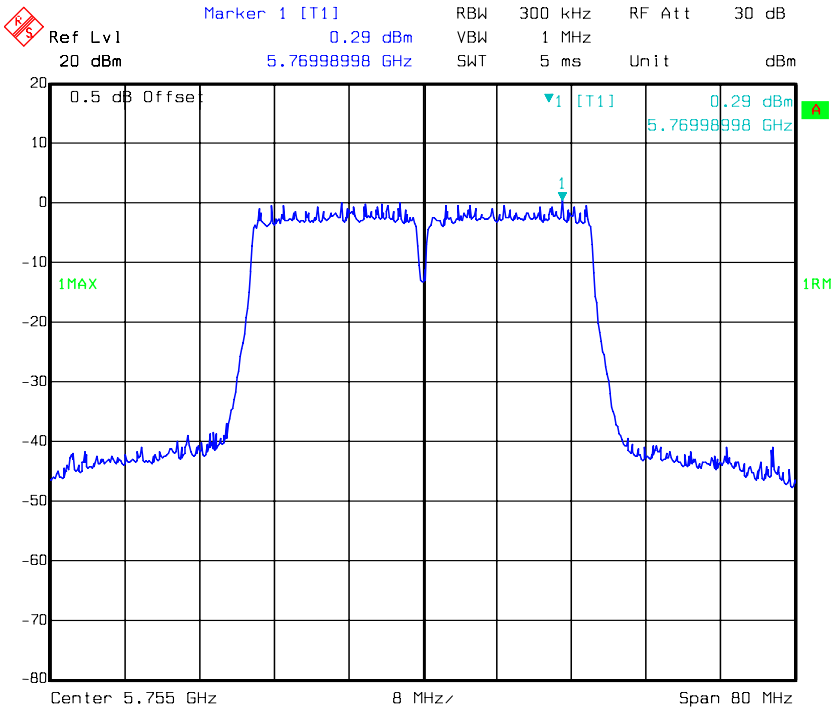
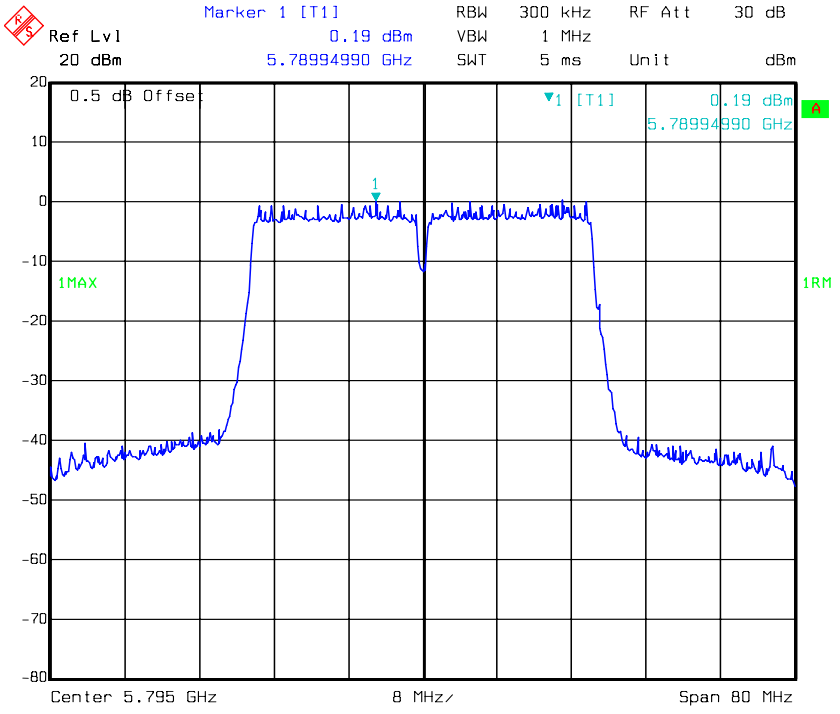


802.11n ht40 Low Channel – Chain0



Date: 24.MAR.2016 07:05:00

802.11n ht40 High Channel – Chain0



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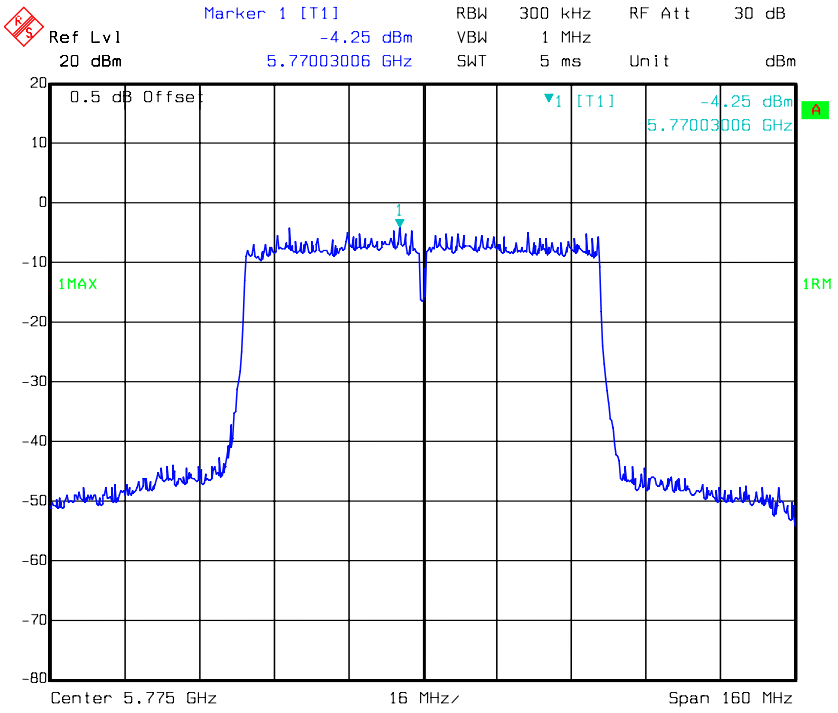
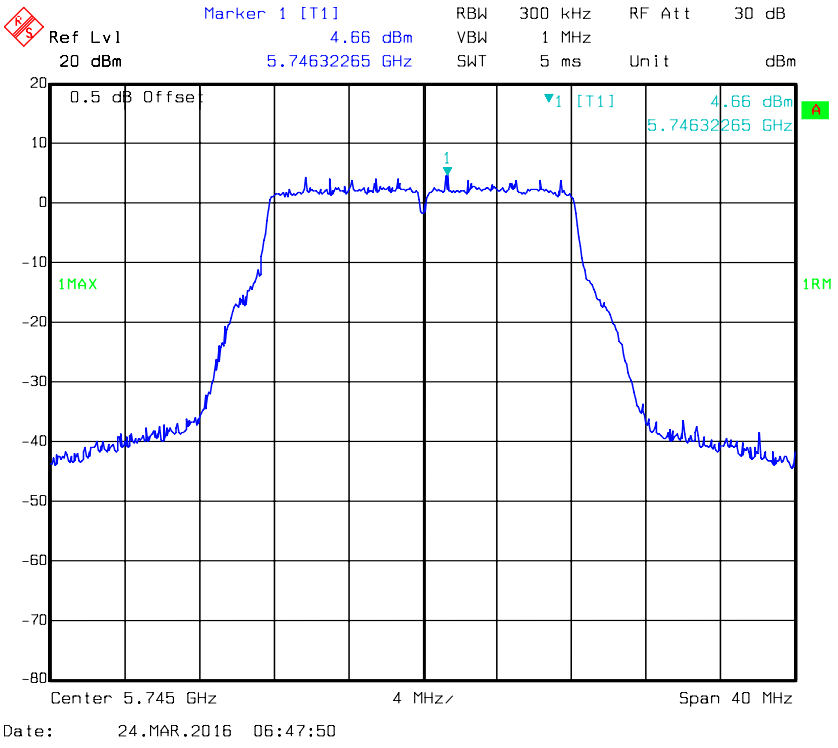
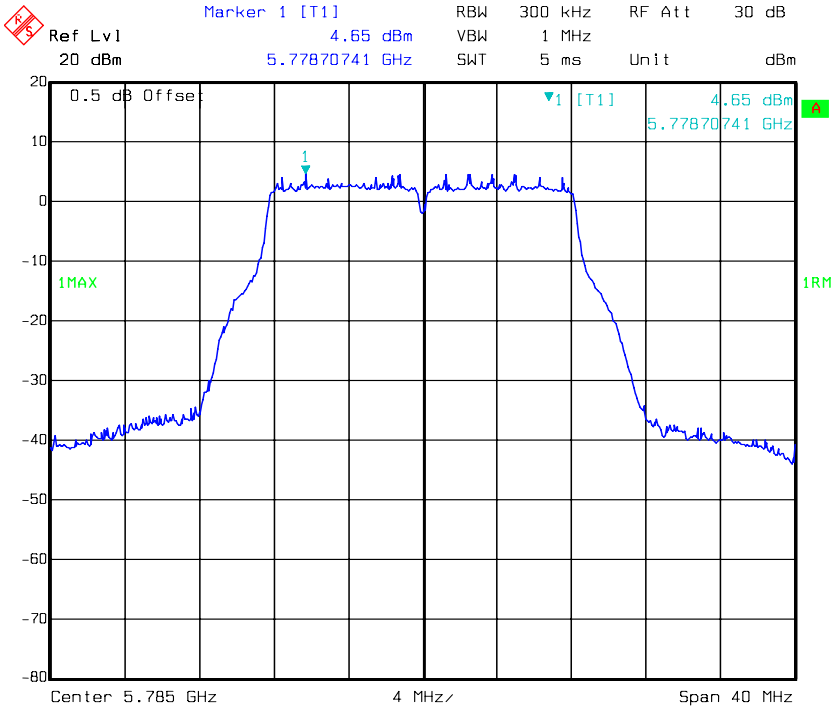
802.11 ac80 Middle Channel – Chain0



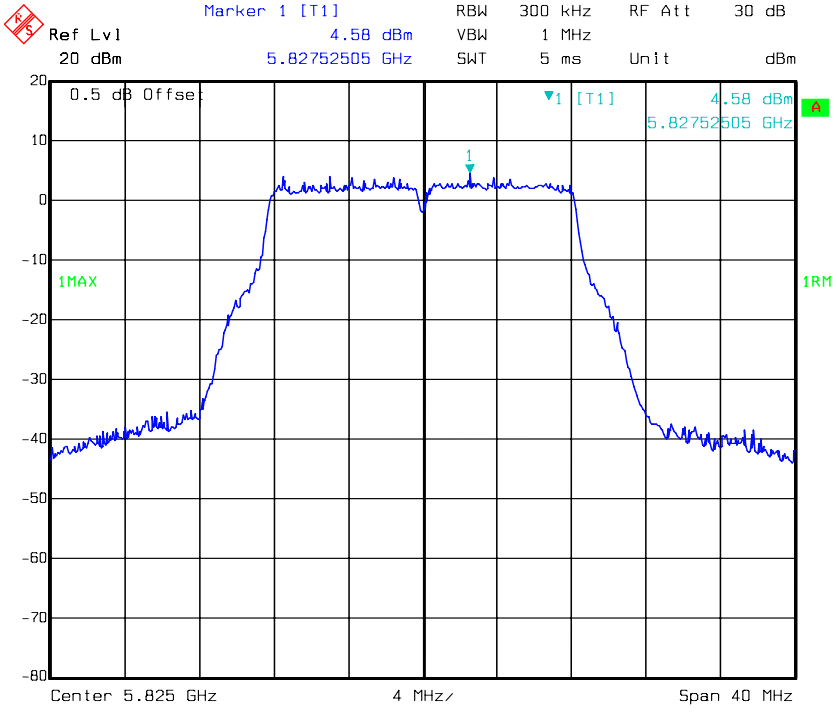
802.11a Low Channel – Chain1



802.11a Middle Channel – Chain1



802.11a High Channel – Chain1



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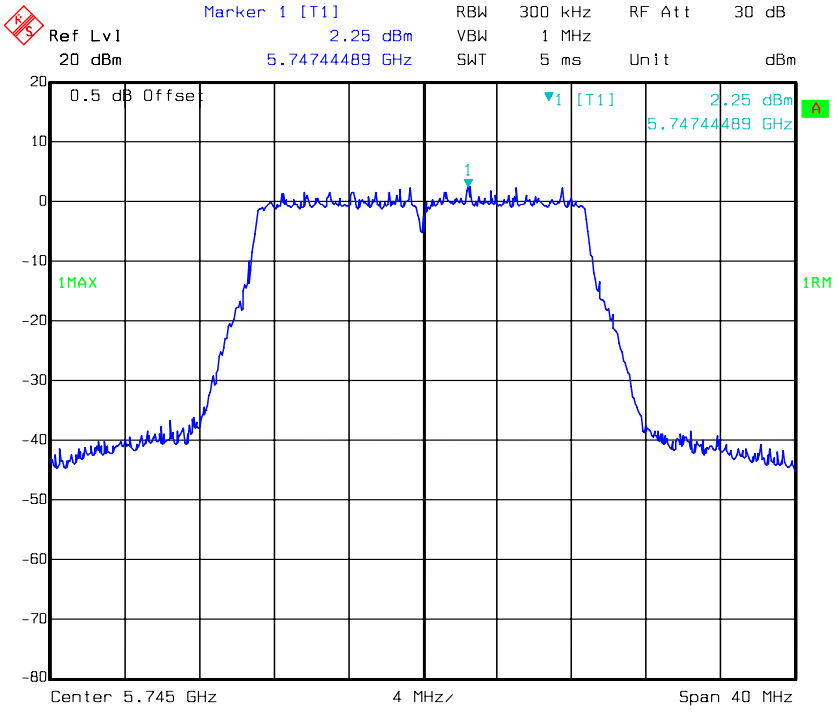

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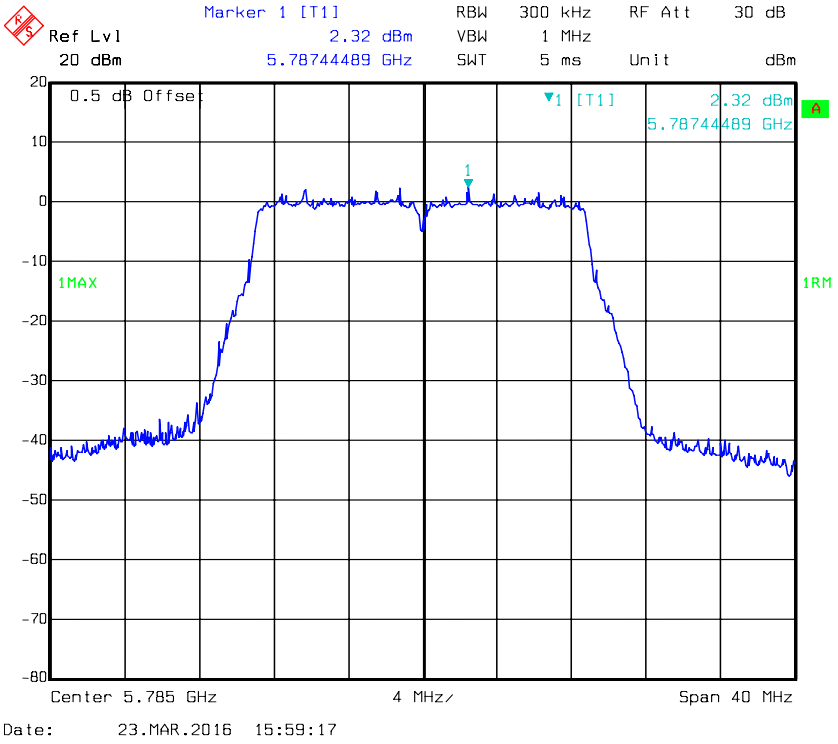

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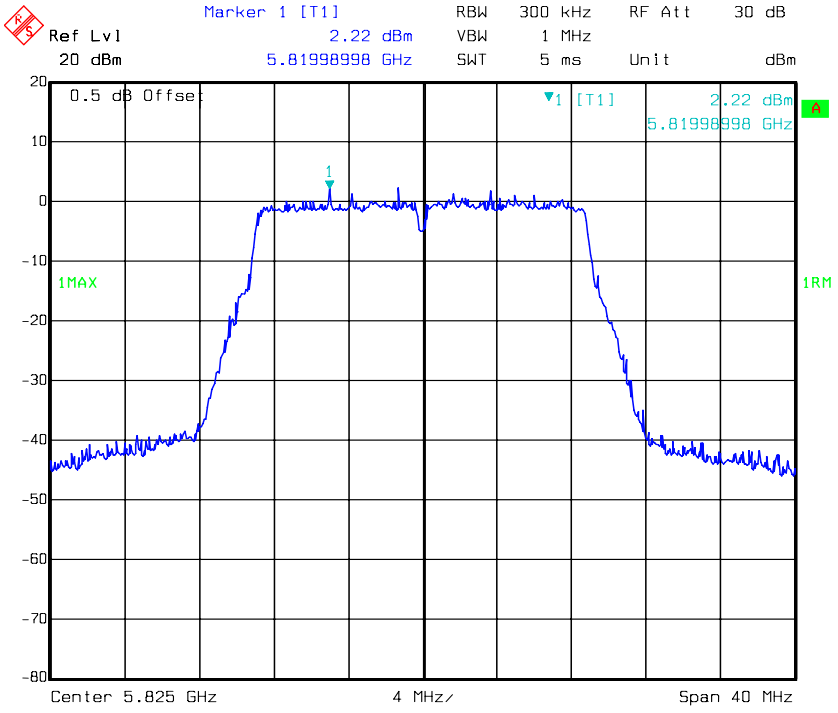
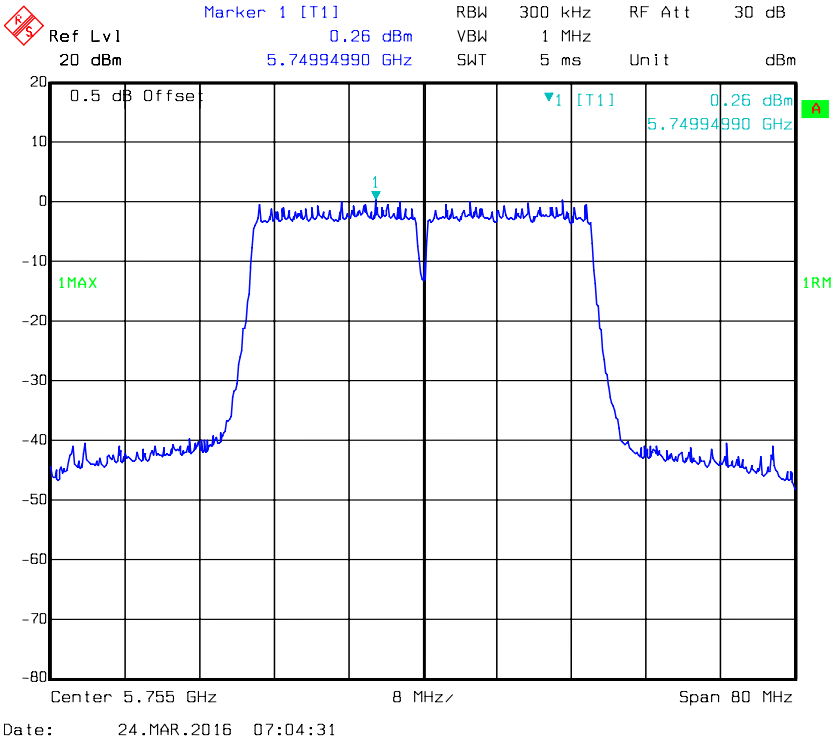


802.11n ht40 Low Channel – Chain1



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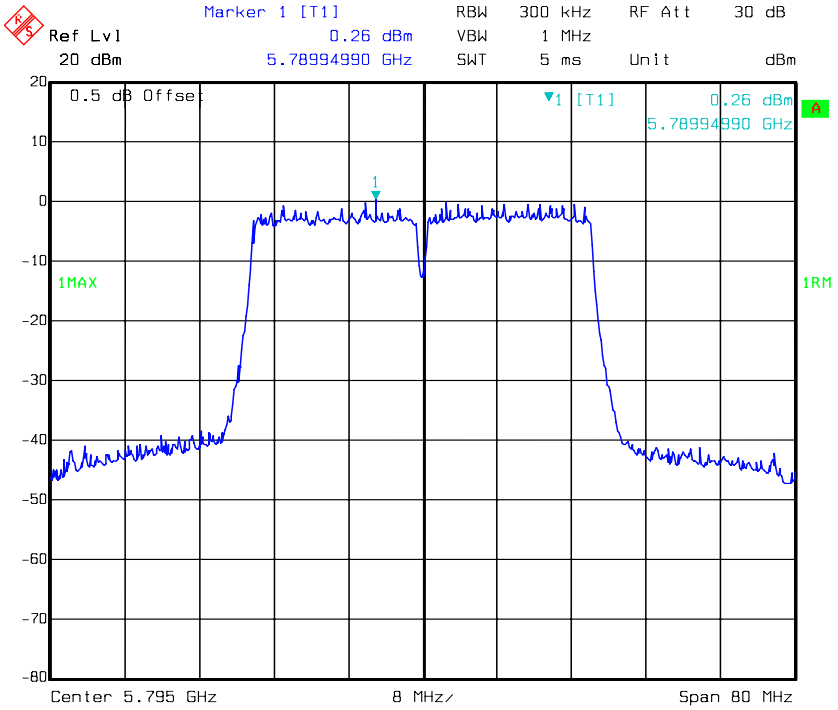
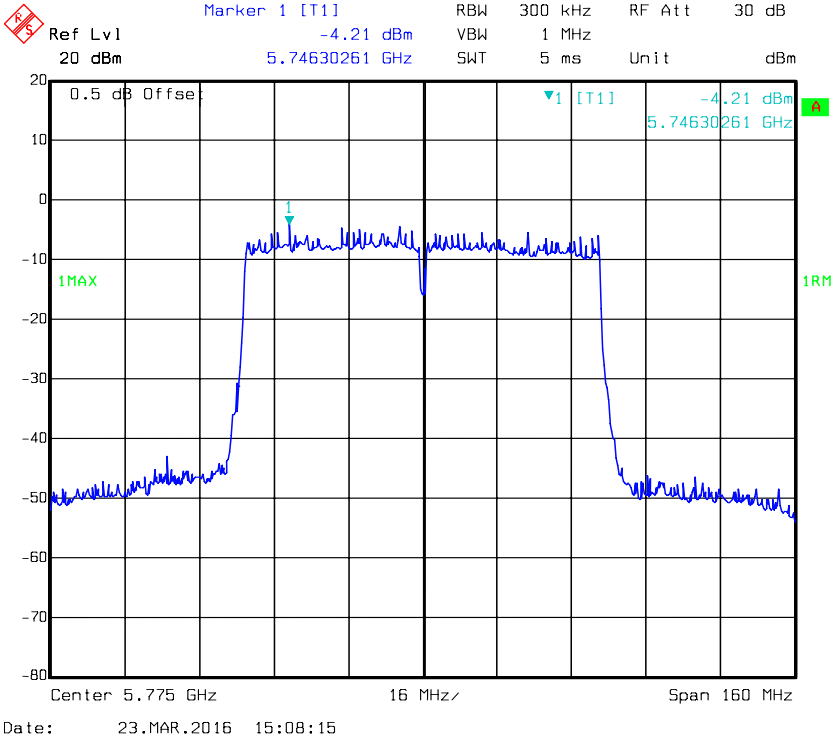


802.11 ac80 Middle Channel – Chain1



******* END OF REPORT *******