FCC PART 15.407

TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave, Nanshan, Shenzhen, Guangdong, China

FCC ID: SS3-GL300E1609

Report Type:	Product Type:
Original Report	C1

Report Number:	RDG160820008-00B
Report Date:	2016-09-30
Reviewed By:	Allen Qiao RF Engineer
Approved By:	Sula Huang RF Leader
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

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.(Dongguan). This report may contain data or test methods that are not covered by the NVLAP accreditation scope and shall be marked with an asterisk "*" and noted.

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SZ DJI TECHNOLOGY CO., LTD*'s product, model number: *GL300E (FCC ID: SS3-GL300E1609)* (the "EUT") in this report was a *C1,* which was measured approximately: 18.2 cm (L) x17.14 cm (W) x 10.52 cm(H), rated input voltage: DC 7.4V from lithium battery, or DC17.5Vfrom adapter.

Adapter Information:
MODEL: PH4C100
INPUT:100-240V~1.4A ,50-60Hz
OUTPUT:17.5V, 5.7A(Total)

** All measurement and test data in this report was gathered from production sample serial number: 160820008 (Assigned by BACL Dongguan). The EUT was received on 2016-08-13.*

Objective

This type approval report is prepared on behalf of *SZ DJI TECHNOLOGY 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 15.247 DTS submissions with FCC ID: SS3-GL300E1609.

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.

The device employed LB mode, and 802.11a/b/g/n ht20 modes, 2.4GHz band, LB and wifi can`t transmit Simultaneously; and 5GHz band, LB and wifi can`t transmit Simultaneously.

For LB mode, 42 channels are provided to testing in 5.8GHz band:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5727	22	5775.3
2	5729.3	23	5777.6
…	…	…	…
…	…	…	…
…	…	41	5819
21	5773	42	5821.3

For 802.11a, and 802.11n20 modes, 4 channels are provided in 5.2GHz band, and 5 channel in 5.8GHz band:

5.2GHz band:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

5.8GHz band:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785	/	/

EUT Exercise Software

The software “DJI-RF Certification” was used for testing, which was provided by manufacturer. 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 date rates bandwidths, and modulations.

For 802.11a/n mode, the maximum power was as below setting, the power setting was provided by the manufacturer:

5.2GHz band:

Antenna 0&1				
Test Mode	Test Software Version	DJI-RF Certification		
	Test Frequency(MHz)	5180	5200	5240
802.11a	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	10	10	10
HT20	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	10	10	10

5.8GHz band:

Antenna 0&1				
Test Mode	Test Software Version	DJI-RF Certification		
	Test Frequency(MHz)	5745	5785	5825
802.11a	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	10	10	10
HT20	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	10	10	10

For LB mode, the maximum power was configured by system default setting. The default setting level as below:

Antenna 0					
Test Software Version	DJI-RF Certification				
Frequency (MHz)	5727	5729.3	5731.6~5816.7	5819	5821.3
Power Level Setting	23	24	25	24	23

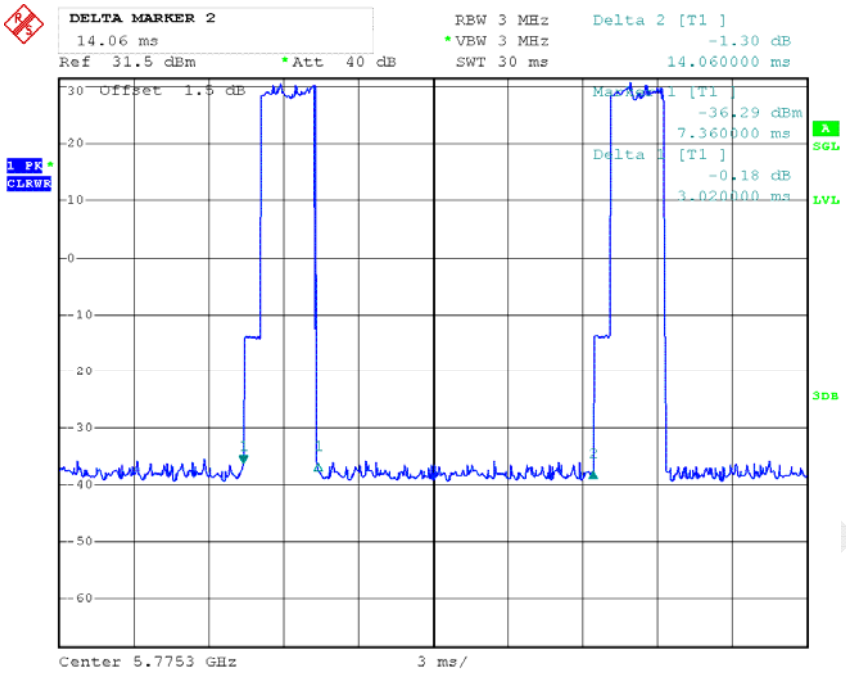
All test items performed at Low, Middle and High Channel, and for difference power level setting configured by software(LB mode),output power, radiation bandedge test with additional channels according to the power setting and power test results.

The software configured maximum duty cycle as below:

Mode	**T_{on} (ms)**	**T_{on+off} (ms)**	**Duty Cycle (%)**
LB	3.02	14.06	21.48
802.11a	2.06	2.1	98.10
802.11n ht20	1.91	1.95	97.95

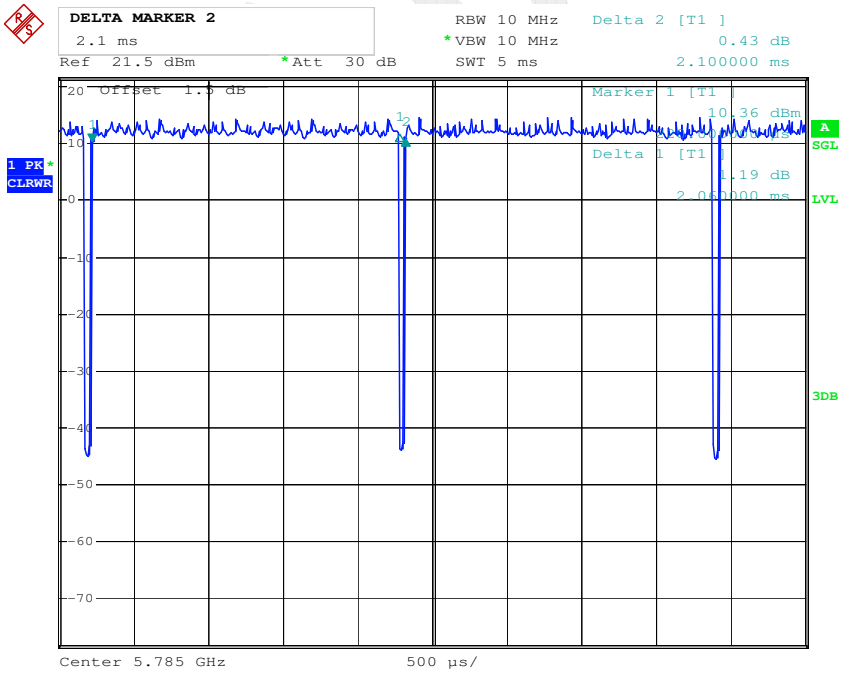
The minimum transmission duration(T) is 3.02ms in LB mode, 2.06ms in 802.11a mode, and 1.91ms in 802.11n mode.

LB mode



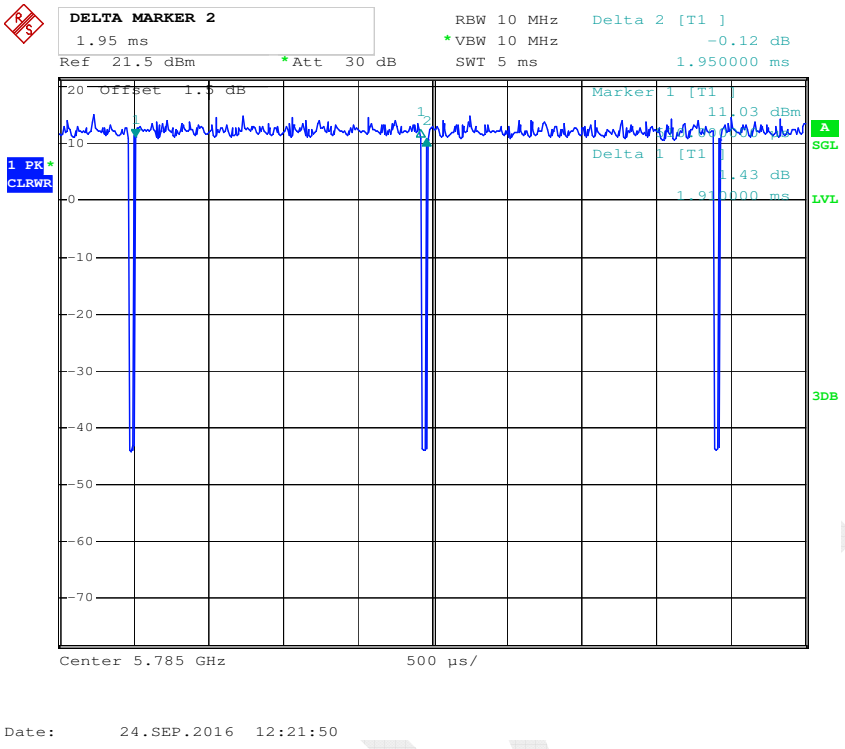
Date: 22.SEP.2016 12:52:19

802.11a mode



Date: 24.SEP.2016 12:22:38

802.11n20 mode



Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

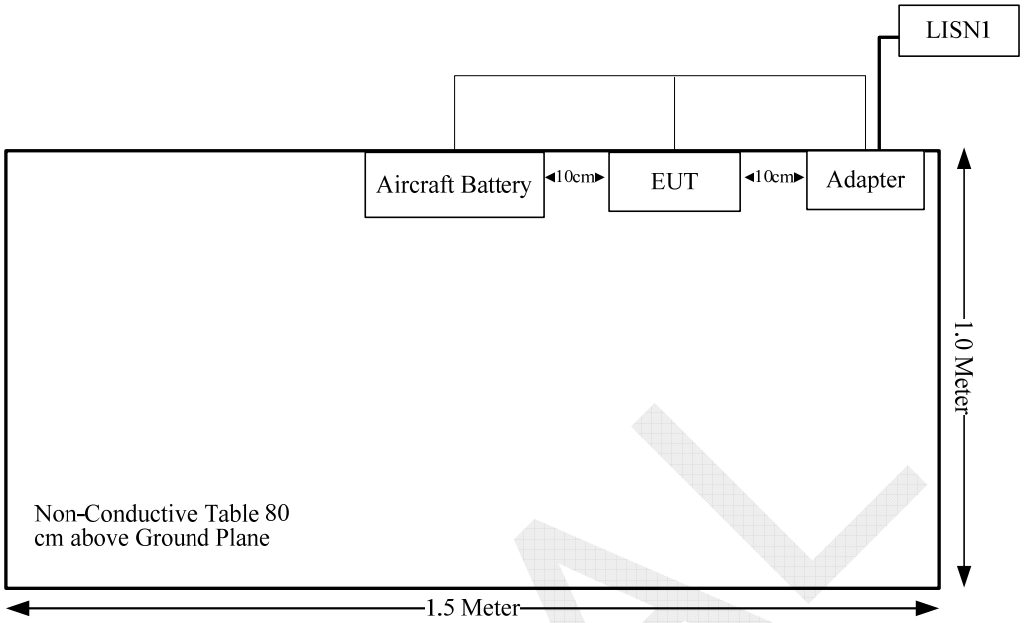
Manufacturer	Description	Model	Serial Number
DJI	Aircraft Battery	PH4	/

External Cable

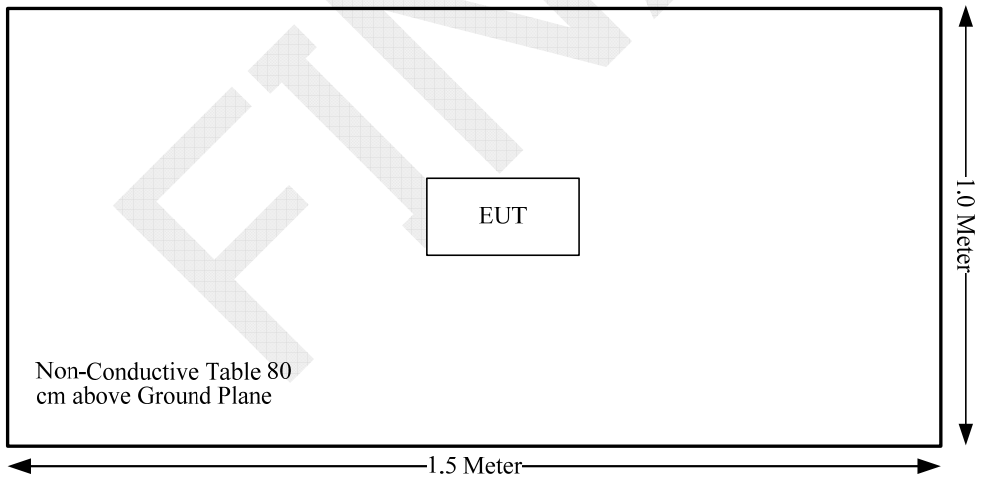
Cable Description	Shielding Type	Ferrite Core	Length(m)	From Port	To
DC cable	Yes	Yes	1	Adapter	Battery& Remote

Block Diagram of Test Setup

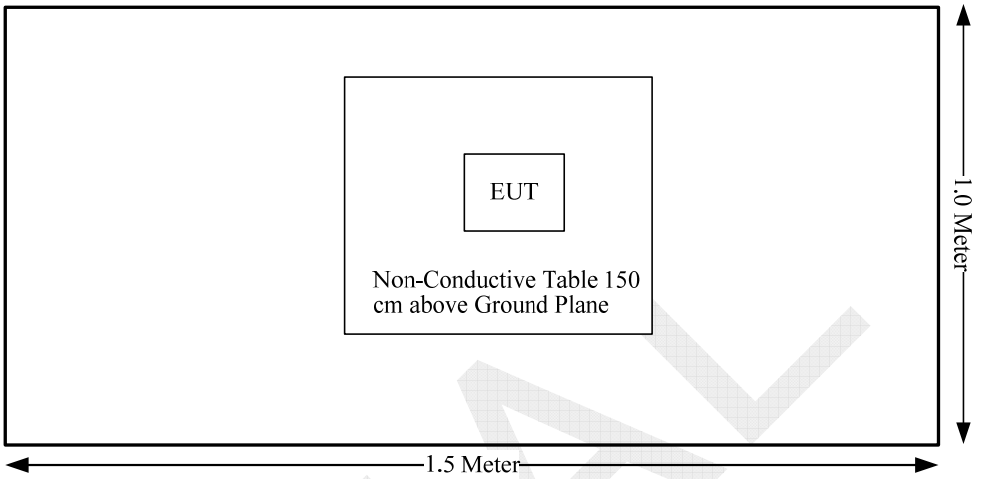
AC Line Conducted Test:



Radiation test below 1GHz:



Radiation test above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 &§15.407(b) (1),(6),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1),(2),(3),(4)	Out Of Band Emissions	Compliance
§15.407(a)	Emission Bandwidth	Compliance
§15.407(a)(1),	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1),(5)	Power Spectral Density	Compliance

Test Time:2016-09-21~2016-09-29.

FCC §15.407 (f) & §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

According to subpart 15.407(f), §1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: RDG160820008-20A.

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 2 internal antennas arrangement for 802.11a/b/g/n, and the antennas gain are 4.9dBi@2.4GHz, 6.07 dBi@5GHz, 2 un-detachable external antenna for LB, one for Transmitting, one for receiving, the antenna gain is 3.3dBi@ 2.4GHz band, 4.48dBi @ 5 GHz band, that fulfill the requirement of the item. Please refer to the internal photos.

Result: Compliance.

§15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

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.

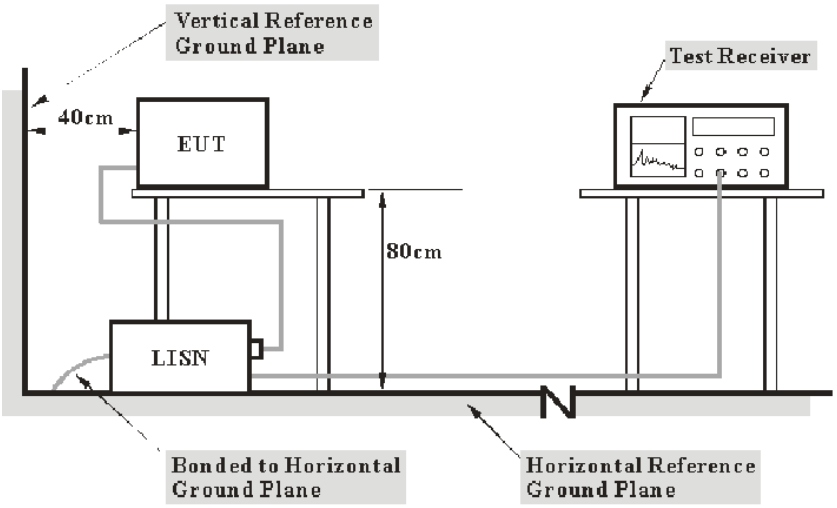
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), 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	2015-12-10	2016-12-09
R&S	L.I.S.N	ESH2-Z5	892107/021	2016-09-01	2017-08-31
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	2016-09-01	2017-09-01
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 in accordance to NVLAP requirements, 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 Data

Environmental Conditions

Temperature:	29.6 °C
Relative Humidity:	49%
ATM Pressure:	100 kPa

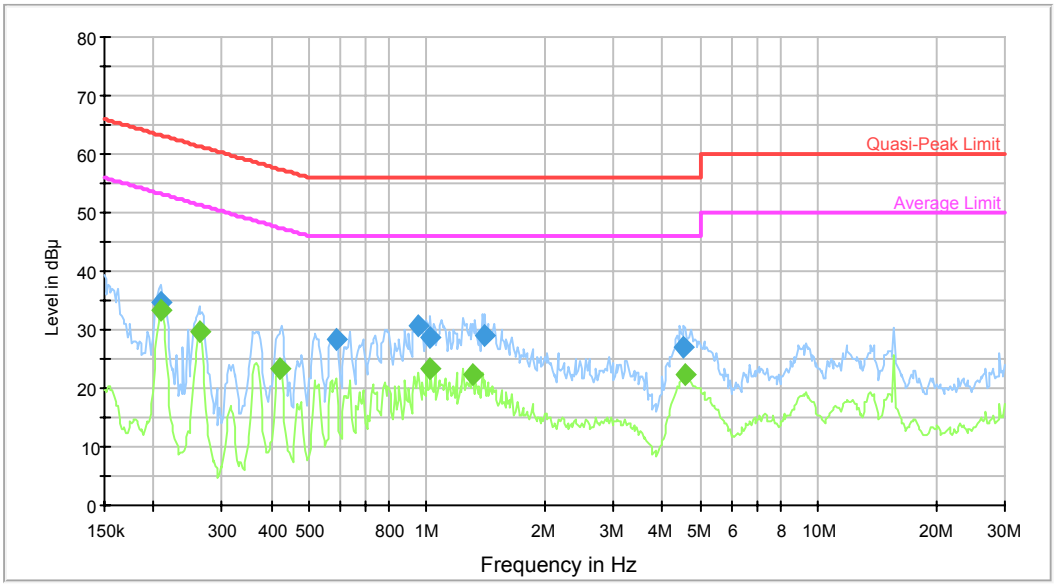
The testing was performed by David Huang on 2016-09-22.

Test Mode: Transmitting,

Test Result: Compliance, please refer to the below data and plots.

Test Mode: Charging

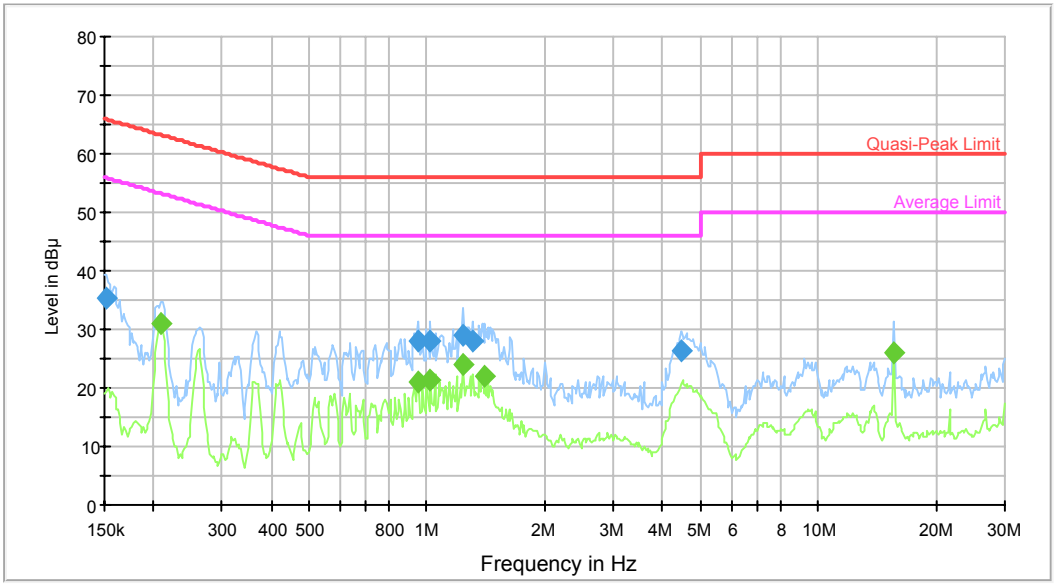
AC120V, 60Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.209621	34.7	9.000	L1	9.6	28.5	63.2	Compliance
0.585926	28.2	9.000	L1	9.7	27.8	56.0	Compliance
0.952654	30.6	9.000	L1	9.7	25.4	56.0	Compliance
1.023481	28.7	9.000	L1	9.7	27.3	56.0	Compliance
1.407671	29.1	9.000	L1	9.7	26.9	56.0	Compliance
4.541500	26.9	9.000	L1	9.7	29.1	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
0.209621	33.2	9.000	L1	9.6	20.0	53.2	Compliance
0.262017	29.7	9.000	L1	9.6	21.7	51.4	Compliance
0.422630	23.2	9.000	L1	9.7	24.2	47.4	Compliance
1.023481	23.2	9.000	L1	9.7	22.8	46.0	Compliance
1.310256	22.4	9.000	L1	9.7	23.6	46.0	Compliance
4.577832	22.3	9.000	L1	9.7	23.7	46.0	Compliance

AC120V, 60Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.151200	35.2	9.000	N	9.6	30.7	65.9	Compliance
0.952654	28.0	9.000	N	9.7	28.0	56.0	Compliance
1.023481	28.1	9.000	N	9.7	27.9	56.0	Compliance
1.239175	28.9	9.000	N	9.7	27.1	56.0	Compliance
1.310256	27.9	9.000	N	9.7	28.1	56.0	Compliance
4.469698	26.4	9.000	N	9.7	29.6	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.209621	31.1	9.000	N	9.6	22.1	53.2	Compliance
0.952654	21.1	9.000	N	9.7	24.9	46.0	Compliance
1.023481	21.3	9.000	N	9.7	24.7	46.0	Compliance
1.239175	24.0	9.000	N	9.7	22.0	46.0	Compliance
1.407671	22.0	9.000	N	9.7	24.0	46.0	Compliance
15.616430	25.9	9.000	N	10.0	24.1	50.0	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:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(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.

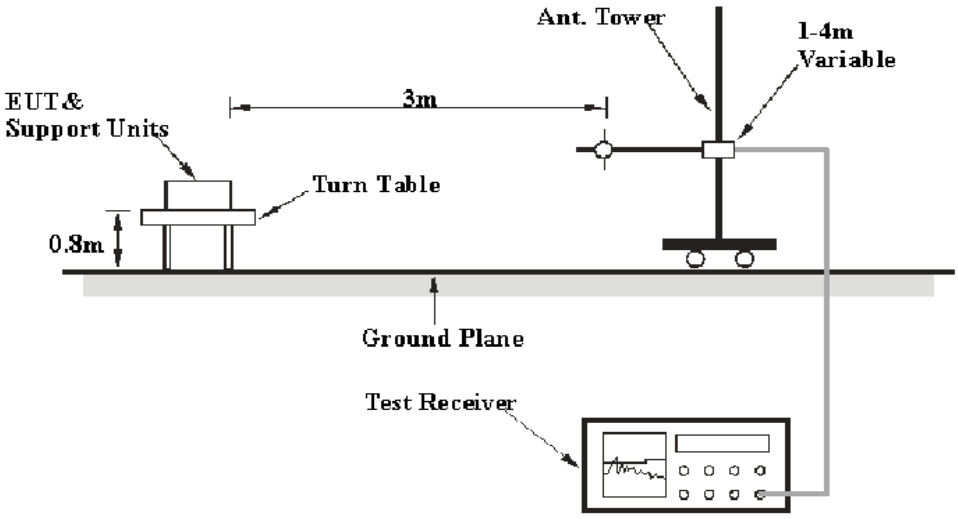
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB.

Table 1 – Values of U_{cispr}

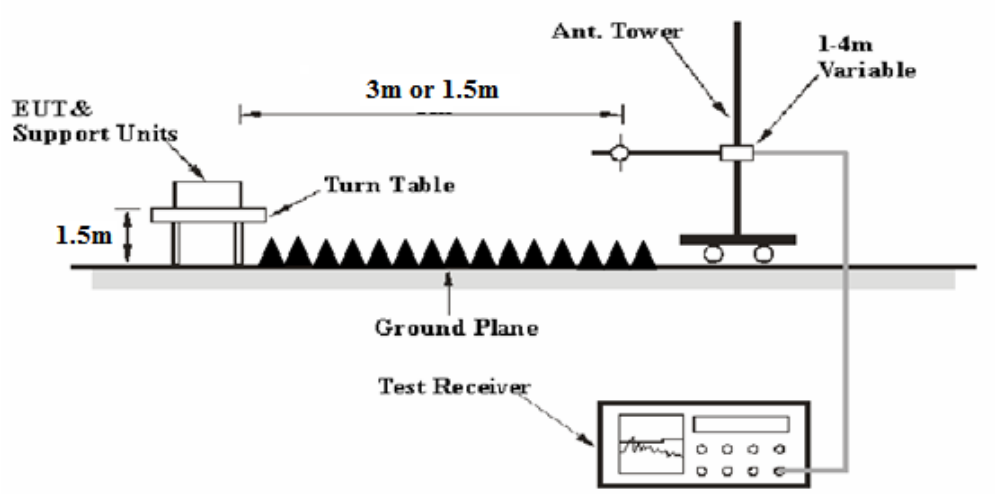
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

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.

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.

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02, emission shall be computed as: E [dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m
Distance extrapolation factor =20 log (specific distance [3m]/test distance [1.5m]) dB
Extrapolation result = Corrected Amplitude (dBμV/m) - distance extrapolation factor (6dB)

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	2016-08-03	2017-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2016-09-01	2017-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
N/A	Coaxial Cable	14m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	8m	N/A	2016-05-06	2017-05-06
Sinoscite	Bandstop Filters	BSF5150-5850MN-0899-003	N/A	2016-05-06	2017-05-06
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
Agilent	Spectrum Analyzer	8564E	3943A01781	2016-05-08	2017-05-08
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	2016-09-06	2017-09-06

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

Test Data

Environmental Conditions

Temperature:	28.9 °C
Relative Humidity:	39 %
ATM Pressure:	100.9 kPa

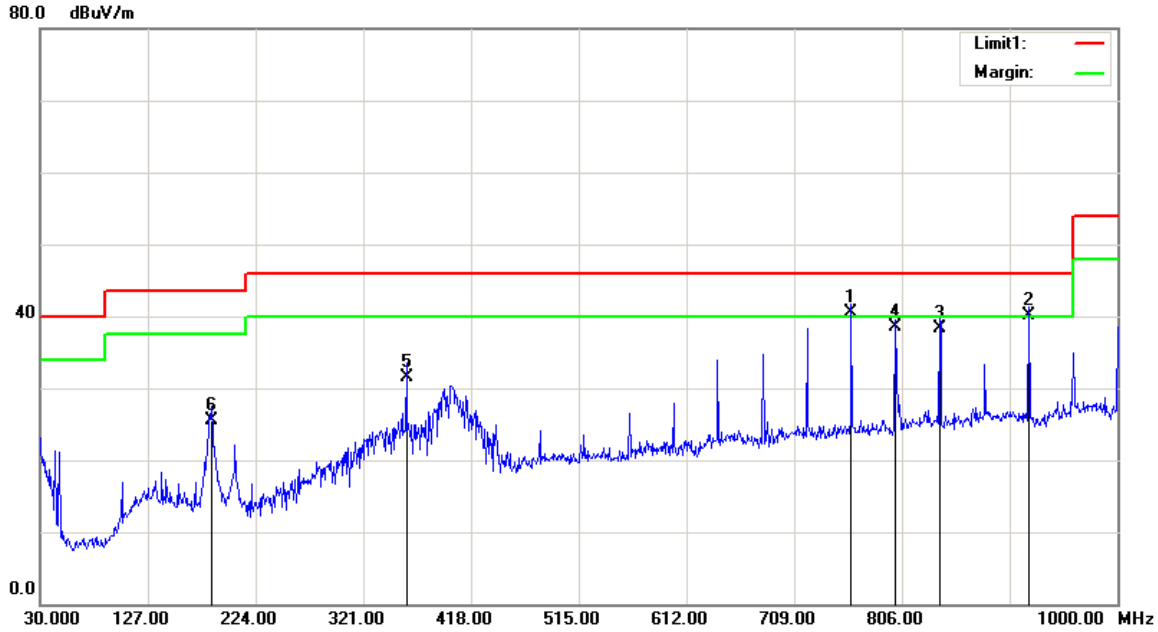
The testing was performed by Meixiang Chen on 2016-09-25.

Test Mode: Transmitting

1) Below 1GHz

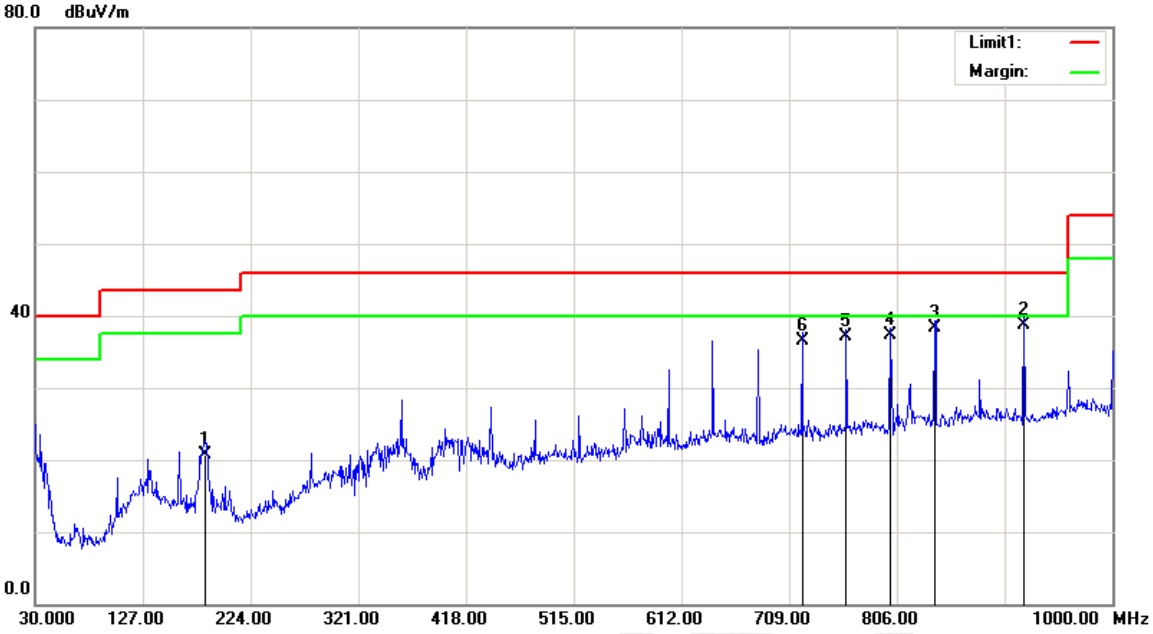
(Pretest all modes, 2.4G LB middle channel+ 5.8G 802.11a high channel was the worst)

Horizontal:



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
760.4100	38.33	QP	2.17	40.50	46.00	5.50
920.4600	35.69	QP	4.51	40.20	46.00	5.80
839.9500	35.43	QP	2.97	38.40	46.00	7.60
800.1800	35.91	QP	2.69	38.60	46.00	7.40
359.8000	36.05	QP	-4.45	31.60	46.00	14.40
184.2300	34.27	QP	-8.77	25.50	43.50	18.00

Vertical:



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
183.2600	29.58	QP	-8.78	20.80	43.50	22.70
920.4600	34.29	QP	4.51	38.80	46.00	7.20
839.9500	35.33	QP	2.97	38.30	46.00	7.70
800.1800	34.71	QP	2.69	37.40	46.00	8.60
760.4100	34.93	QP	2.17	37.10	46.00	8.90
720.6400	34.91	QP	1.69	36.60	46.00	9.40

2) 1GHz-40GHz(Test performed at 3.0m distance EUT to antenna)

5125MHz-5250MHz:

802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
frequency: 5180 MHz									
5180	66.49	PK	H	31.46	5.40	0.00	103.35	N/A	N/A
5180	56.55	AV	H	31.46	5.40	0.00	93.41	N/A	N/A
5180	67.86	PK	V	31.46	5.40	0.00	104.72	N/A	N/A
5180	57.10	AV	V	31.46	5.40	0.00	93.96	N/A	N/A
5150	27.40	PK	V	31.40	5.26	0.00	64.06	74.00	9.94
5150	14.66	AV	V	31.40	5.26	0.00	51.32	54.00	2.68
10360	32.55	PK	V	36.97	8.36	25.52	52.36	74.00	21.64
10360	19.58	AV	V	36.97	8.36	25.52	39.39	54.00	14.61
15540	32.49	PK	V	37.43	14.94	24.98	59.88	74.00	14.12
15540	19.24	AV	V	37.43	14.94	24.98	46.63	54.00	7.37
2920	35.96	PK	V	26.99	6.19	27.54	41.60	74.00	32.40
2920	23.45	AV	V	26.99	6.19	27.54	29.09	54.00	24.91
1405	45.22	PK	V	23.35	3.03	27.02	44.58	74.00	29.42
1405	33.74	AV	V	23.35	3.03	27.02	33.10	54.00	20.90
frequency: 5200 MHz									
5200	66.24	PK	H	31.50	5.49	0.00	103.23	N/A	N/A
5200	56.12	AV	H	31.50	5.49	0.00	93.11	N/A	N/A
5200	68.11	PK	V	31.50	5.49	0.00	105.10	N/A	N/A
5200	57.15	AV	V	31.50	5.49	0.00	94.14	N/A	N/A
10400	33.05	PK	V	36.98	8.32	25.50	52.85	74.00	21.15
10400	21.69	AV	V	36.98	8.32	25.50	41.49	54.00	12.51
15600	32.58	PK	V	37.32	14.69	24.69	59.90	74.00	14.10
15600	20.74	AV	V	37.32	14.69	24.69	48.06	54.00	5.94
3460	33.82	PK	V	28.67	4.86	27.22	40.13	74.00	33.87
3460	21.35	AV	V	28.67	4.86	27.22	27.66	54.00	26.34
1435	43.59	PK	V	23.43	2.97	27.14	42.85	74.00	31.15
1435	31.22	AV	V	23.43	2.97	27.14	30.48	54.00	23.52
frequency: 5240 MHz									
5240	65.84	PK	H	31.58	5.28	0.00	102.70	N/A	N/A
5240	55.36	AV	H	31.58	5.28	0.00	92.22	N/A	N/A
5240	67.17	PK	V	31.58	5.28	0.00	104.03	N/A	N/A
5240	56.15	AV	V	31.58	5.28	0.00	93.01	N/A	N/A
5350	26.11	PK	V	31.80	5.61	0.00	63.52	74.00	10.48
5350	14.19	AV	V	31.80	5.61	0.00	51.60	54.00	2.40
10480	32.58	PK	V	37.00	8.23	26.01	51.80	74.00	22.20
10480	20.16	AV	V	37.00	8.23	26.01	39.38	54.00	14.62
15720	32.84	PK	V	37.10	14.20	24.92	59.22	74.00	14.78
15720	20.13	AV	V	37.10	14.20	24.92	46.51	54.00	7.49
2155	35.01	PK	V	25.00	3.18	27.33	35.86	74.00	38.14
2155	22.59	AV	V	25.00	3.18	27.33	23.44	54.00	30.56
1435	42.91	PK	V	23.43	2.97	27.14	42.17	74.00	31.83
1435	29.38	AV	V	23.43	2.97	27.14	28.64	54.00	25.36

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
frequency: 5180 MHz									
5180	67.55	PK	H	31.46	5.40	0.00	104.41	N/A	N/A
5180	56.24	AV	H	31.46	5.40	0.00	93.10	N/A	N/A
5180	69.44	PK	V	31.46	5.40	0.00	106.30	N/A	N/A
5180	58.41	AV	V	31.46	5.40	0.00	95.27	N/A	N/A
5150	28.33	PK	V	31.40	5.26	0.00	64.99	74.00	9.01
5150	15.09	AV	V	31.40	5.26	0.00	51.75	54.00	2.25
10360	33.26	PK	V	36.97	8.36	25.52	53.07	74.00	20.93
10360	20.15	AV	V	36.97	8.36	25.52	39.96	54.00	14.04
15540	32.52	PK	V	37.43	14.94	24.98	59.91	74.00	14.09
15540	19.46	AV	V	37.43	14.94	24.98	46.85	54.00	7.15
2875	36.82	PK	V	26.88	5.69	27.55	41.84	74.00	32.16
2875	23.41	AV	V	26.88	5.69	27.55	28.43	54.00	25.57
1435	43.52	PK	V	23.43	2.97	27.14	42.78	74.00	31.22
1435	30.74	AV	V	23.43	2.97	27.14	30.00	54.00	24.00
frequency: 5200 MHz									
5200	67.36	PK	H	31.50	5.49	0.00	104.35	N/A	N/A
5200	56.47	AV	H	31.50	5.49	0.00	93.46	N/A	N/A
5200	68.22	PK	V	31.50	5.49	0.00	105.21	N/A	N/A
5200	57.15	AV	V	31.50	5.49	0.00	94.14	N/A	N/A
10400	33.91	PK	V	36.98	8.32	25.50	53.71	74.00	20.29
10400	20.54	AV	V	36.98	8.32	25.50	40.34	54.00	13.66
15600	32.58	PK	V	37.32	14.69	24.69	59.90	74.00	14.10
15600	19.86	AV	V	37.32	14.69	24.69	47.18	54.00	6.82
2905	38.27	PK	V	26.95	5.98	27.54	43.66	74.00	30.34
2905	25.68	AV	V	26.95	5.98	27.54	31.07	54.00	22.93
1405	45.06	PK	V	23.35	3.03	27.02	44.42	74.00	29.58
1405	32.74	AV	V	23.35	3.03	27.02	32.10	54.00	21.90
frequency: 5240 MHz									
5240	67.62	PK	H	31.58	5.28	0.00	104.48	N/A	N/A
5240	56.74	AV	H	31.58	5.28	0.00	93.60	N/A	N/A
5240	68.29	PK	V	31.58	5.28	0.00	105.15	N/A	N/A
5240	57.33	AV	V	31.58	5.28	0.00	94.19	N/A	N/A
5350	26.54	PK	V	31.80	5.61	0.00	63.95	74.00	10.05
5350	14.68	AV	V	31.80	5.61	0.00	52.09	54.00	1.91
10480	34.01	PK	V	37.00	8.23	26.01	53.23	74.00	20.77
10480	21.68	AV	V	37.00	8.23	26.01	40.90	54.00	13.10
15720	32.83	PK	V	37.10	14.20	24.92	59.21	74.00	14.79
15720	19.64	AV	V	37.10	14.20	24.92	46.02	54.00	7.98
2140	36.12	PK	V	24.96	3.18	27.35	36.91	74.00	37.09
2140	23.66	AV	V	24.96	3.18	27.35	24.45	54.00	29.55
1435	43.62	PK	V	23.43	2.97	27.14	42.88	74.00	31.12
1435	30.18	AV	V	23.43	2.97	27.14	29.44	54.00	24.56

5725MHz-5850MHz:

802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
frequency: 5745 MHz									
5745	64.80	PK	H	32.15	5.53	0.00	102.48	N/A	N/A
5745	52.48	AV	H	32.15	5.53	0.00	90.16	N/A	N/A
5745	67.77	PK	V	32.15	5.53	0.00	105.45	N/A	N/A
5745	56.07	AV	V	32.15	5.53	0.00	93.75	N/A	N/A
5725	37.02	PK	V	32.15	5.60	0.00	74.77	122.20	47.43
5720	30.60	PK	V	32.14	5.61	0.00	68.35	110.80	42.45
5700	30.15	PK	V	32.14	5.68	0.00	67.97	105.20	37.23
5650	28.63	PK	V	32.13	5.28	0.00	66.04	68.20	2.16
11490	32.72	PK	V	37.89	8.94	26.14	53.41	74.00	20.59
11490	20.08	AV	V	37.89	8.94	26.14	40.77	54.00	13.23
17235	33.58	PK	V	40.91	13.69	25.63	62.55	74.00	11.45
17235	21.10	AV	V	40.91	13.69	25.63	50.07	54.00	3.93
1440	43.94	PK	V	23.44	2.96	27.16	43.18	74.00	30.82
1440	33.31	AV	V	23.44	2.96	27.16	32.55	54.00	21.45
4570	34.47	PK	V	29.98	5.11	27.26	42.30	74.00	31.70
4570	22.31	AV	V	29.98	5.11	27.26	30.14	54.00	23.86
frequency: 5785 MHz									
5775.3	65.80	PK	H	32.16	5.48	0.00	103.44	N/A	N/A
5775.3	53.46	AV	H	32.16	5.48	0.00	91.10	N/A	N/A
5775.3	68.79	PK	V	32.16	5.48	0.00	106.43	N/A	N/A
5775.3	58.16	AV	V	32.16	5.48	0.00	95.80	N/A	N/A
11570	32.81	PK	V	37.90	8.92	26.07	53.56	74.00	20.44
11570	20.11	AV	V	37.90	8.92	26.07	40.86	54.00	13.14
17355	33.66	PK	V	41.63	12.99	25.63	62.65	74.00	11.35
17355	21.21	AV	V	41.63	12.99	25.63	50.20	54.00	3.80
1440	44.05	PK	V	23.44	2.96	27.16	43.29	74.00	30.71
1440	34.45	AV	V	23.44	2.96	27.16	33.69	54.00	20.31
6681	34.55	PK	V	32.77	6.22	26.62	46.92	74.00	27.08
6681	22.41	AV	V	32.77	6.22	26.62	34.78	54.00	19.22
frequency: 5825 MHz									
5825	65.51	PK	H	32.17	5.75	0.00	103.43	N/A	N/A
5825	53.19	AV	H	32.17	5.75	0.00	91.11	N/A	N/A
5825	68.47	PK	V	32.17	5.75	0.00	106.39	N/A	N/A
5825	57.90	AV	V	32.17	5.75	0.00	95.82	N/A	N/A
5850	29.96	PK	V	32.17	6.05	0.00	68.18	122.20	54.02
5855	28.75	PK	V	32.17	6.03	0.00	66.95	110.80	43.85
5875	28.79	PK	V	32.18	5.97	0.00	66.94	105.20	38.26
5925	28.00	PK	V	32.19	5.96	0.00	66.15	68.20	2.05
11650	32.73	PK	V	37.90	8.90	25.75	53.78	74.00	20.22
11650	20.10	AV	V	37.90	8.90	25.75	41.15	54.00	12.85
17475	33.58	PK	V	42.35	12.30	25.39	62.84	74.00	11.16
17475	21.16	AV	V	42.35	12.30	25.39	50.42	54.00	3.58
1440	45.97	PK	V	23.44	2.96	27.16	45.21	74.00	28.79
1440	36.37	AV	V	23.44	2.96	27.16	35.61	54.00	18.39
4570	34.47	PK	V	29.98	5.11	27.26	42.30	74.00	31.70
4570	22.34	AV	V	29.98	5.11	27.26	30.17	54.00	23.83

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
frequency: 5745 MHz									
5745	64.20	PK	H	32.15	5.53	0.00	101.88	N/A	N/A
5745	51.88	AV	H	32.15	5.53	0.00	89.56	N/A	N/A
5745	67.13	PK	V	32.15	5.53	0.00	104.81	N/A	N/A
5745	55.76	AV	V	32.15	5.53	0.00	93.44	N/A	N/A
5725	39.44	PK	V	32.15	5.60	0.00	77.19	122.20	45.01
5720	31.75	PK	V	32.14	5.61	0.00	69.50	110.80	41.30
5700	29.59	PK	V	32.14	5.68	0.00	67.41	105.20	37.79
5650	29.04	PK	V	32.13	5.28	0.00	66.45	68.20	1.75
11490	31.88	PK	V	37.89	8.94	26.14	52.57	74.00	21.43
11490	19.83	AV	V	37.89	8.94	26.14	40.52	54.00	13.48
17235	32.61	PK	V	40.91	13.69	25.63	61.58	74.00	12.42
17235	20.48	AV	V	40.91	13.69	25.63	49.45	54.00	4.55
1440	45.14	PK	V	23.44	2.96	27.16	44.38	74.00	29.62
1440	36.24	AV	V	23.44	2.96	27.16	35.48	54.00	18.52
6547	34.23	PK	V	32.42	6.16	26.54	46.27	74.00	27.73
6547	21.78	AV	V	32.42	6.16	26.54	33.82	54.00	20.18
frequency: 5785 MHz									
5775.3	65.97	PK	H	32.16	5.48	0.00	103.61	N/A	N/A
5775.3	53.74	AV	H	32.16	5.48	0.00	91.38	N/A	N/A
5775.3	68.99	PK	V	32.16	5.48	0.00	106.63	N/A	N/A
5775.3	57.94	AV	V	32.16	5.48	0.00	95.58	N/A	N/A
11570	31.96	PK	V	37.90	8.92	26.07	52.71	74.00	21.29
11570	19.87	AV	V	37.90	8.92	26.07	40.62	54.00	13.38
17355	32.69	PK	V	41.63	12.99	25.63	61.68	74.00	12.32
17355	20.51	AV	V	41.63	12.99	25.63	49.50	54.00	4.50
1440	46.34	PK	V	23.44	2.96	27.16	45.58	74.00	28.42
1440	37.51	AV	V	23.44	2.96	27.16	36.75	54.00	17.25
6681	34.26	PK	V	32.77	6.22	26.62	46.63	74.00	27.37
6681	21.86	AV	V	32.77	6.22	26.62	34.23	54.00	19.77
frequency: 5825 MHz									
5825	65.69	PK	H	32.17	5.75	0.00	103.61	N/A	N/A
5825	53.49	AV	H	32.17	5.75	0.00	91.41	N/A	N/A
5825	68.57	PK	V	32.17	5.75	0.00	106.49	N/A	N/A
5825	57.63	AV	V	32.17	5.75	0.00	95.55	N/A	N/A
5850	30.86	PK	V	32.17	6.05	0.00	69.08	122.20	53.12
5855	29.44	PK	V	32.17	6.03	0.00	67.64	110.80	43.16
5875	28.73	PK	V	32.18	5.97	0.00	66.88	105.20	38.32
5925	27.13	PK	V	32.19	5.96	0.00	65.28	68.20	2.92
11650	32.15	PK	V	37.90	8.90	25.75	53.20	74.00	20.80
11650	20.05	AV	V	37.90	8.90	25.75	41.10	54.00	12.90
17475	32.85	PK	V	42.35	12.30	25.39	62.11	74.00	11.89
17475	20.70	AV	V	42.35	12.30	25.39	49.96	54.00	4.04
1440	46.21	PK	V	23.44	2.96	27.16	45.45	74.00	28.55
1440	37.58	AV	V	23.44	2.96	27.16	36.82	54.00	17.18
4570	34.42	PK	V	29.98	5.11	27.26	42.25	74.00	31.75
4570	22.00	AV	V	29.98	5.11	27.26	29.83	54.00	24.17

LB 5.8G

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
frequency: 5727 MHz									
5727	74.59	PK	H	32.15	5.59	0.00	112.33	N/A	N/A
5727	62.73	AV	H	32.15	5.59	0.00	100.47	N/A	N/A
5727	88.17	PK	V	32.15	5.59	0.00	125.91	N/A	N/A
5727	76.50	AV	V	32.15	5.59	0.00	114.24	N/A	N/A
5725	65.02	PK	V	32.15	5.60	0.00	102.77	122.20	19.43
5720	32.58	PK	V	32.14	5.61	0.00	70.33	110.80	40.47
5700	30.04	PK	V	32.14	5.68	0.00	67.86	105.20	37.34
5650	28.84	PK	V	32.13	5.28	0.00	66.25	68.20	1.95
11454	34.25	PK	V	37.85	8.89	26.17	54.82	74.00	19.18
11454	22.98	AV	V	37.85	8.89	26.17	43.55	54.00	10.45
17181	33.74	PK	V	40.59	14.00	25.58	62.75	74.00	11.25
17181	21.24	AV	V	40.59	14.00	25.58	50.25	54.00	3.75
1440	46.51	PK	V	23.44	2.96	27.16	45.75	74.00	28.25
1440	35.78	AV	V	23.44	2.96	27.16	35.02	54.00	18.98
6574	34.43	PK	V	32.49	6.17	26.56	46.53	74.00	27.47
6574	22.32	AV	V	32.49	6.17	26.56	34.42	54.00	19.58
frequency: 5775.3MHz									
5775.3	77.26	PK	H	32.16	5.48	0.00	114.90	N/A	N/A
5775.3	67.24	AV	H	32.16	5.48	0.00	104.88	N/A	N/A
5775.3	90.42	PK	V	32.16	5.48	0.00	128.06	N/A	N/A
5775.3	79.36	AV	V	32.16	5.48	0.00	117.00	N/A	N/A
11550.6	34.46	PK	V	37.90	8.93	26.09	55.20	74.00	18.80
11550.6	23.18	AV	V	37.90	8.93	26.09	43.92	54.00	10.08
17325.9	33.96	PK	V	41.46	13.16	25.63	62.95	74.00	11.05
17325.9	21.45	AV	V	41.46	13.16	25.63	50.44	54.00	3.56
1440	46.85	PK	V	23.44	2.96	27.16	46.09	74.00	27.91
1440	36.51	AV	V	23.44	2.96	27.16	35.75	54.00	18.25
4526	34.64	PK	V	29.87	4.99	27.17	42.33	74.00	31.67
4526	22.53	AV	V	29.87	4.99	27.17	30.22	54.00	23.78
frequency: 5821.3 MHz									
5821.3	78.34	PK	H	32.16	5.71	0.00	116.21	N/A	N/A
5821.3	67.89	AV	H	32.16	5.71	0.00	105.76	N/A	N/A
5821.3	91.00	PK	V	32.16	5.71	0.00	128.87	N/A	N/A
5821.3	80.73	AV	V	32.16	5.71	0.00	118.60	N/A	N/A
5850	28.87	PK	V	32.17	6.05	0.00	67.09	122.20	55.11
5855	29.13	PK	V	32.17	6.03	0.00	67.33	110.80	43.47
5875	29.45	PK	V	32.18	5.97	0.00	67.60	105.20	37.60
5925	28.60	PK	V	32.19	5.96	0.00	66.75	68.20	1.45
11642.6	34.47	PK	V	37.90	8.90	25.79	55.48	74.00	18.52
11642.6	23.17	AV	V	37.90	8.90	25.79	44.18	54.00	9.82
17463.9	33.85	PK	V	42.28	12.36	25.43	63.06	74.00	10.94
17463.9	21.40	AV	V	42.28	12.36	25.43	50.61	54.00	3.39
1442	45.89	PK	V	23.45	2.96	27.17	45.13	74.00	28.87
1442	36.02	AV	V	23.45	2.96	27.17	35.26	54.00	18.74
6327	34.63	PK	V	32.27	6.05	26.55	46.40	74.00	27.60
6327	22.52	AV	V	32.27	6.05	26.55	34.29	54.00	19.71

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
Additional test frequency: 5729.3 MHz									
5729.3	88.59	PK	V	32.15	5.58	0.00	126.32	N/A	N/A
5729.3	76.34	AV	V	32.15	5.58	0.00	114.07	N/A	N/A
5725	30.88	PK	V	32.15	5.60	0.00	68.63	122.20	53.57
5720	29.53	PK	V	32.14	5.61	0.00	67.28	110.80	43.52
5700	29.64	PK	V	32.14	5.68	0.00	67.46	105.20	37.74
5650	29.51	PK	V	32.13	5.28	0.00	66.92	68.20	1.28
Additional test frequency: 5731.6 MHz									
5731.6	89.25	PK	V	32.15	5.57	0.00	126.97	N/A	N/A
5731.6	80.51	AV	V	32.15	5.57	0.00	118.23	N/A	N/A
5725	35.98	PK	V	32.15	5.60	0.00	73.73	122.20	48.47
5720	29.68	PK	V	32.14	5.61	0.00	67.43	110.80	43.37
5700	29.66	PK	V	32.14	5.68	0.00	67.48	105.20	37.72
5650	29.44	PK	V	32.13	5.28	0.00	66.85	68.20	1.35
Additional test frequency: 5816.7 MHz									
5816.7	91.00	PK	V	32.16	5.65	0.00	128.81	N/A	N/A
5816.7	80.73	AV	V	32.16	5.65	0.00	118.54	N/A	N/A
5850	28.87	PK	V	32.17	6.05	0.00	67.09	122.20	55.11
5855	29.13	PK	V	32.17	6.03	0.00	67.33	110.80	43.47
5875	29.45	PK	V	32.18	5.97	0.00	67.60	105.20	37.60
5925	28.60	PK	V	32.19	5.96	0.00	66.75	68.20	1.45
Additional test frequency: 5819 MHz									
5819	90.93	PK	V	32.16	5.68	0.00	128.77	N/A	N/A
5819	80.19	AV	V	32.16	5.68	0.00	118.03	N/A	N/A
5850	29.18	PK	V	32.17	6.05	0.00	67.40	122.20	54.80
5855	28.86	PK	V	32.17	6.03	0.00	67.06	110.80	43.74
5875	28.81	PK	V	32.18	5.97	0.00	66.96	105.20	38.24
5925	28.90	PK	V	32.19	5.96	0.00	67.05	68.20	1.15

Transmitting Simultaneously:

(Pretest all modes, 2.4G LB middle channel+ 5.8G 802.11a high channel was the worst)

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dB	dB	dBµV/m	dBµV/m	dB
1440	46.94	PK	H	23.44	2.96	27.16	46.18	74.00	27.82
1440	38.58	AV	H	23.44	2.96	27.16	37.82	54.00	16.18
1440.28	46.94	PK	V	23.44	2.96	27.16	46.18	74.00	27.82
1440.28	37.69	AV	V	23.44	2.96	27.16	36.93	54.00	17.07
1920	43.53	PK	H	24.44	3.02	27.50	43.49	74.00	30.51
1920	34.69	AV	H	24.44	3.02	27.50	34.65	54.00	19.35
1920	42.59	PK	V	24.44	3.02	27.50	42.55	74.00	31.45
1920	36.71	AV	V	24.44	3.02	27.50	36.67	54.00	17.33
1594.93	54.91	PK	H	23.79	2.55	27.79	53.46	74.00	20.54
1594.93	23.41	AV	H	23.79	2.55	27.79	21.96	54.00	32.04
1594.69	64.3	PK	V	23.79	2.55	27.79	62.85	74.00	11.15
1594.69	23.14	AV	V	23.79	2.55	27.79	21.69	54.00	32.31
3338.9	47.67	PK	H	28.28	4.87	27.25	53.57	74.00	20.43
3338.9	30.68	AV	H	28.28	4.87	27.25	36.58	54.00	17.42
3348.72	48.68	PK	V	28.32	4.80	27.24	54.56	74.00	19.44
3348.72	32.06	AV	V	28.32	4.80	27.24	37.94	54.00	16.06
4882.92	56.62	PK	H	30.80	5.20	27.42	65.20	74.00	8.80
4882.92	42.02	AV	H	30.80	5.20	27.42	50.60	54.00	3.40
4882.92	59.6	PK	V	30.80	5.20	27.42	68.18	74.00	5.82
4882.92	44.89	AV	V	30.80	5.20	27.42	53.47	54.00	0.53
7324.21	38.84	PK	H	34.38	6.75	25.88	54.09	74.00	19.91
7324.21	25.67	AV	H	34.38	6.75	25.88	40.92	54.00	13.08
7324.33	37.86	PK	V	34.38	6.75	25.88	53.11	74.00	20.89
7324.33	24.85	AV	V	34.38	6.75	25.88	40.10	54.00	13.90

FCC §15.407(a) –EMISSION BANDWIDTH

Applicable Standard

15.407(a)

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
R&S	Test Receiver	ESPI	100120	2015-12-10	2016-12-09
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

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

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02

Test Data

Environmental Conditions

Temperature:	25.8~27.4 °C
Relative Humidity:	32~33 %
ATM Pressure:	100.7~100.9 kPa

The testing was performed by Robin Zheng on 2016-09-21 to 2016-09-29.

Test Result: Pass.

Please refer to the following tables and plots.

Test mode: Transmitting (Test was performed at chain 0)

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	Result
802.11a	Low	5180	21.36	PASS
	Middle	5200	21.44	PASS
	High	5240	21.44	PASS
802.11n20	Low	5180	22.24	PASS
	Middle	5200	22.24	PASS
	High	5240	22.28	PASS

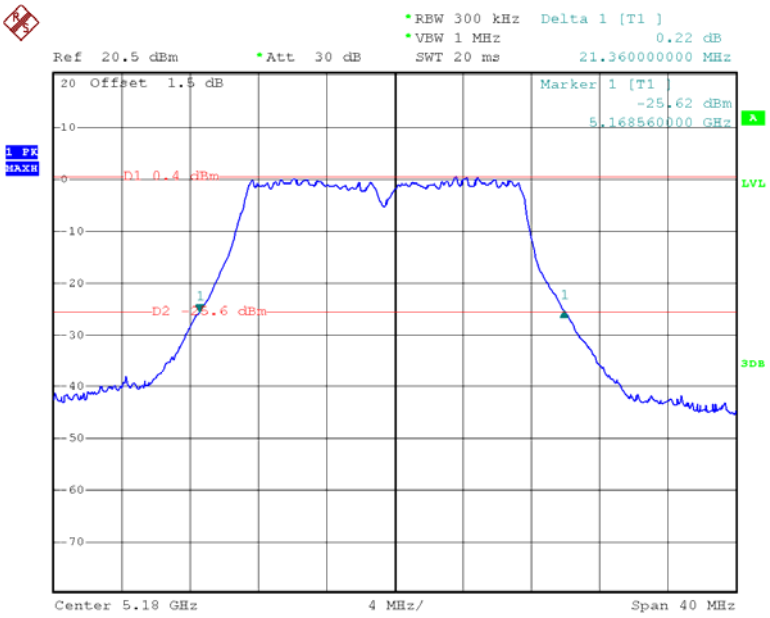
Note: the 26dB bandwidth within the frequency band 5150-5250 MHz. please refer to the test plots.

5725MHz-5850MHz:

Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Result
802.11a	Low	5745	16.08	PASS
	Middle	5785	16.16	PASS
	High	5825	16.32	PASS
802.11n20	Low	5745	16.88	PASS
	Middle	5785	16.88	PASS
	High	5825	17.04	PASS
LB	Low	5727	1.212	PASS
	Middle	5775.3	1.218	PASS
	High	5821.3	1.23	PASS

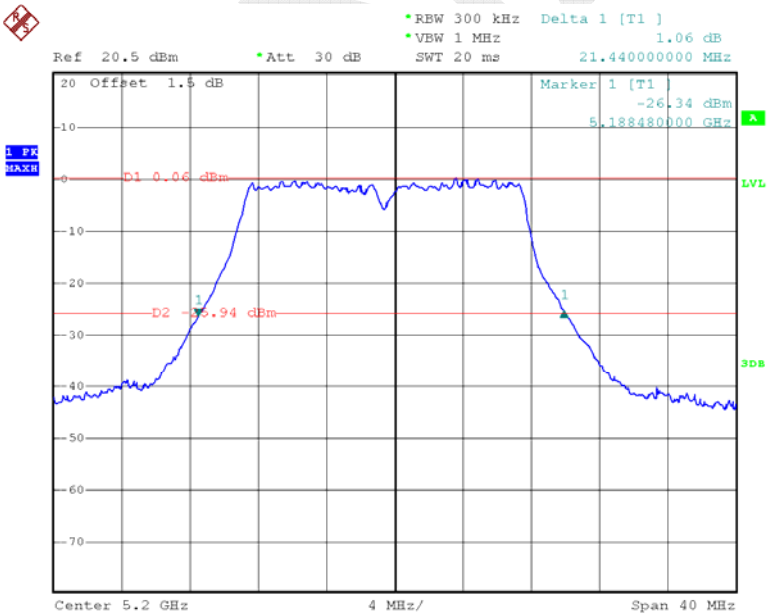
5150MHz-5250MHz:

802.11a Low Channel



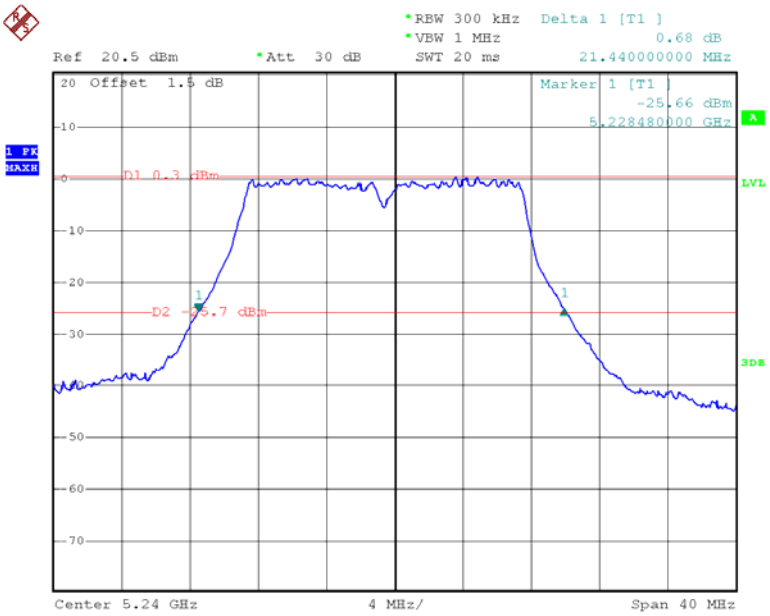
Date: 29.SEP.2016 20:26:00

802.11a Middle Channel



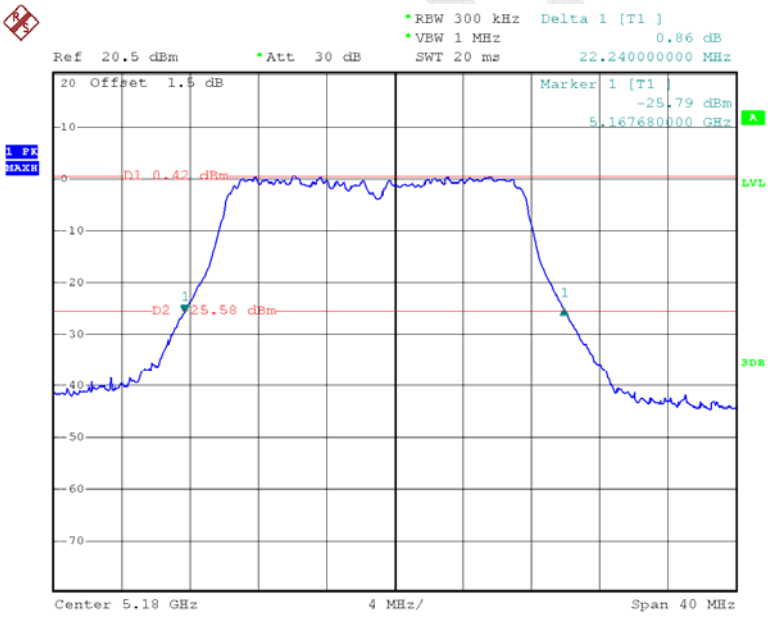
Date: 29.SEP.2016 20:25:04

802.11a High Channel



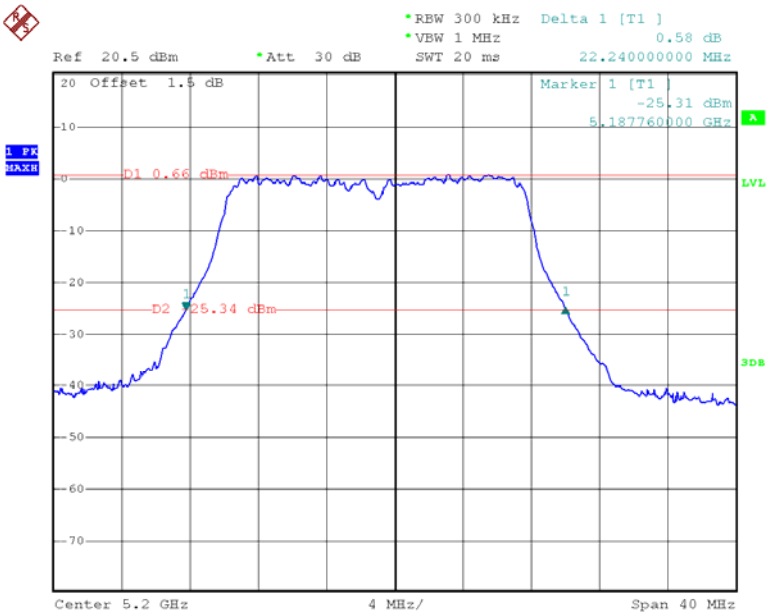
Date: 29.SEP.2016 20:23:43

802.11n Low Channel



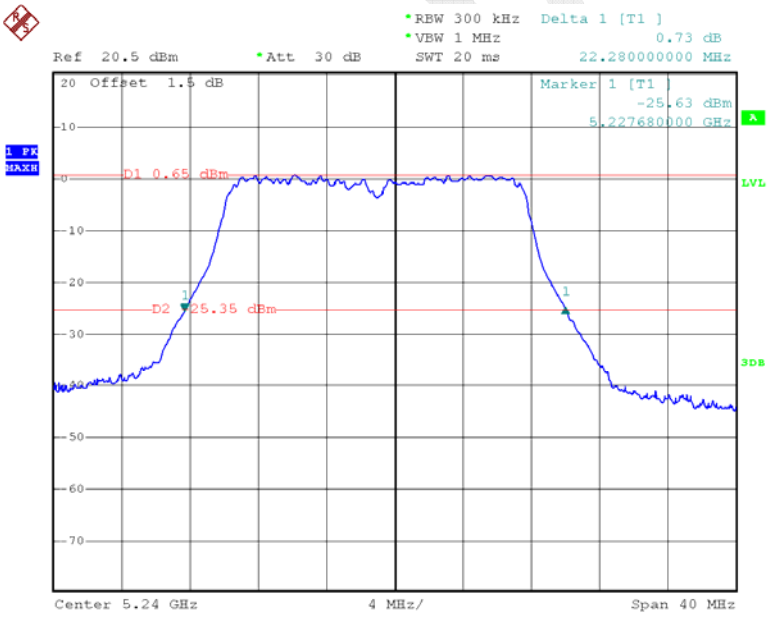
Date: 29.SEP.2016 20:34:28

802.11n Middle Channel



Date: 29.SEP.2016 20:35:40

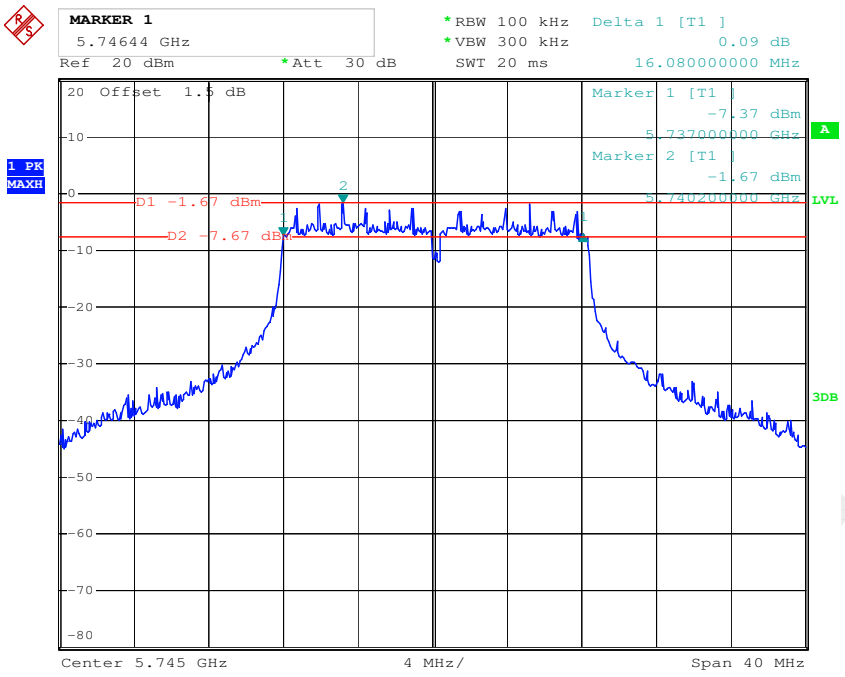
802.11n High Channel



Date: 29.SEP.2016 20:33:39

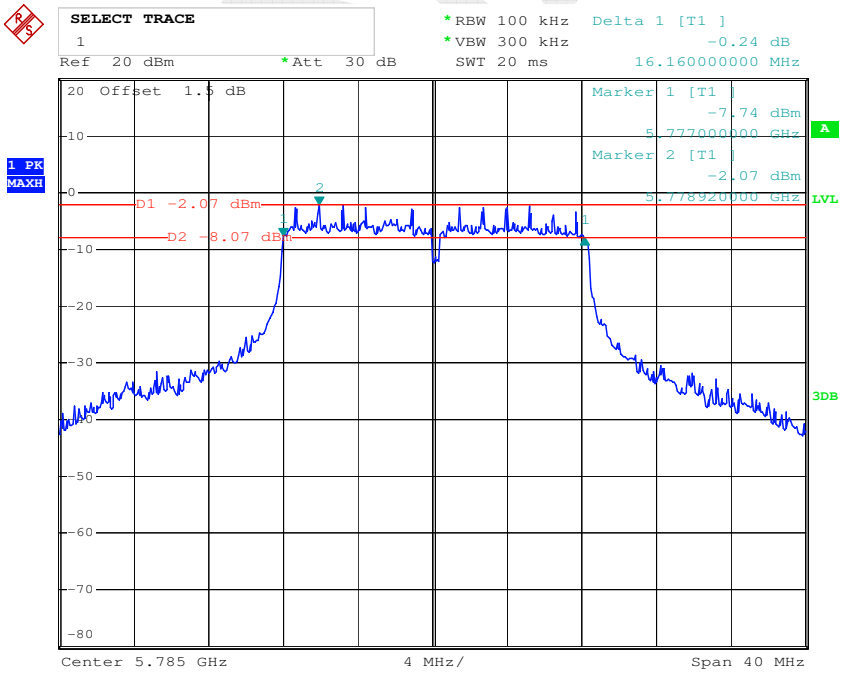
5725MHz-5850MHz:

802.11a Low Channel



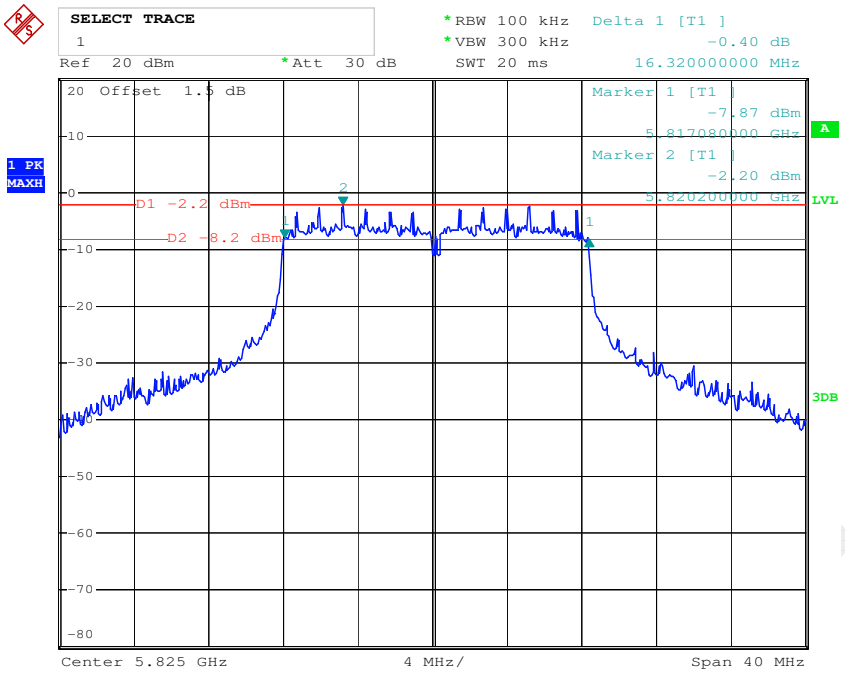
Date: 21.SEP.2016 15:29:22

802.11a Middle Channel



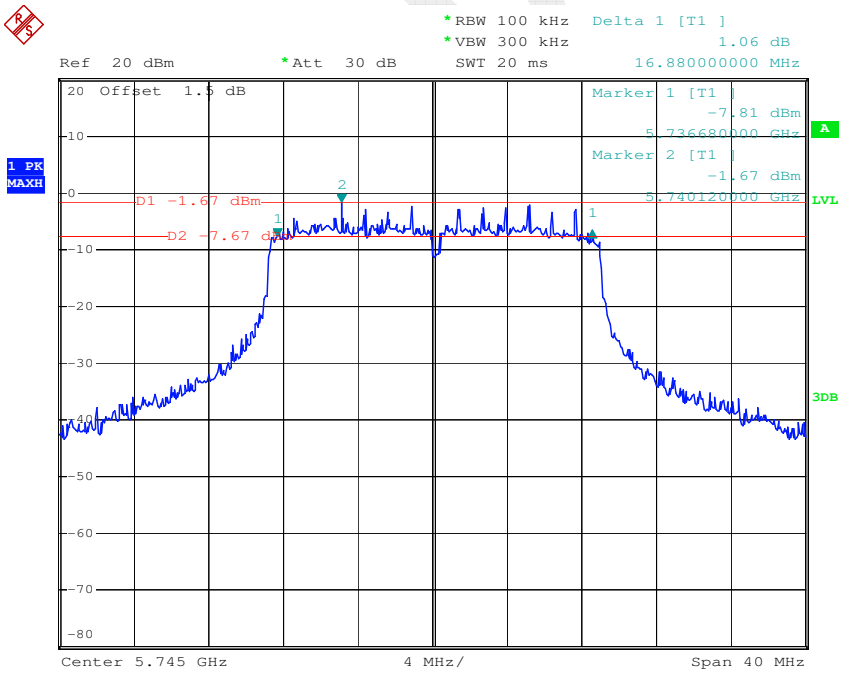
Date: 21.SEP.2016 15:32:44

802.11a High Channel



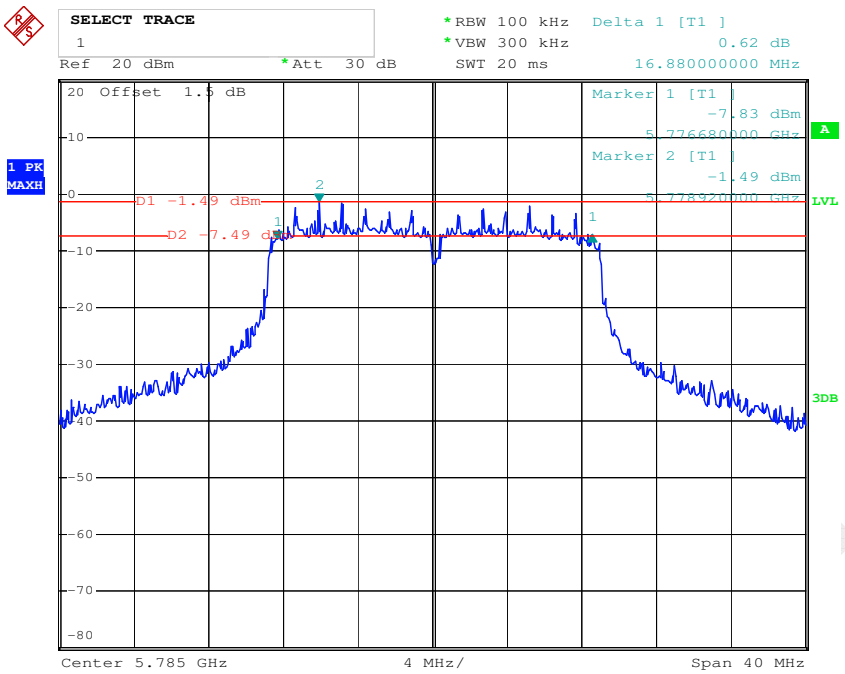
Date: 21.SEP.2016 15:34:30

802.11n ht20 Low Channel



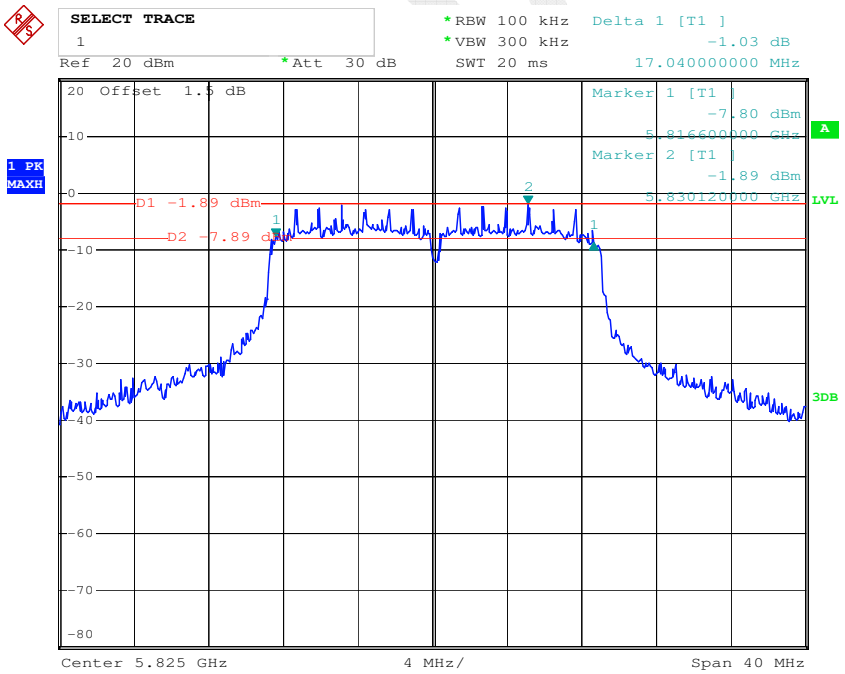
Date: 21.SEP.2016 15:10:55

802.11n ht20 Middle Channel



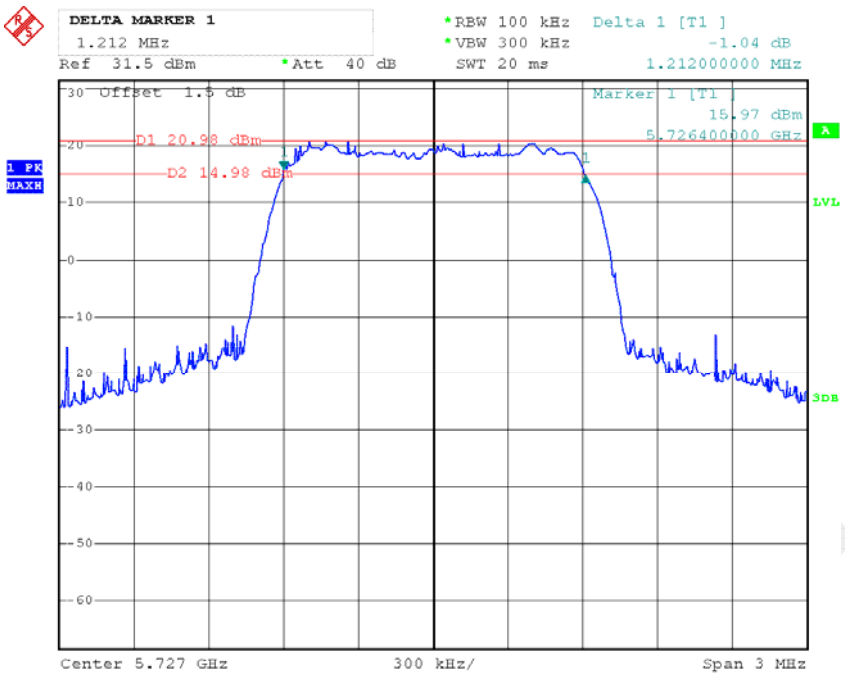
Date: 21.SEP.2016 15:15:45

802.11n ht20 High Channel



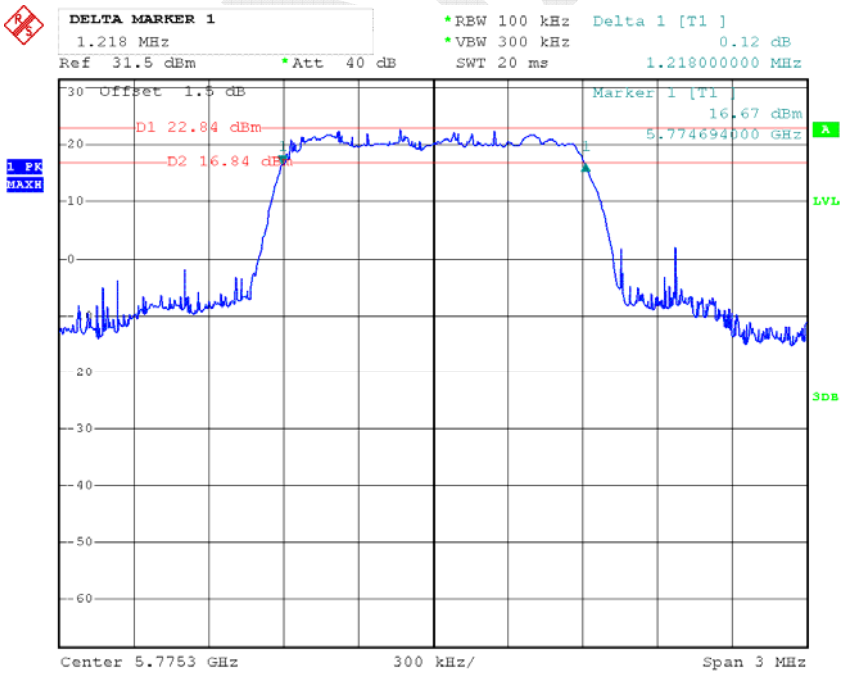
Date: 21.SEP.2016 15:18:35

LB, Low Channel



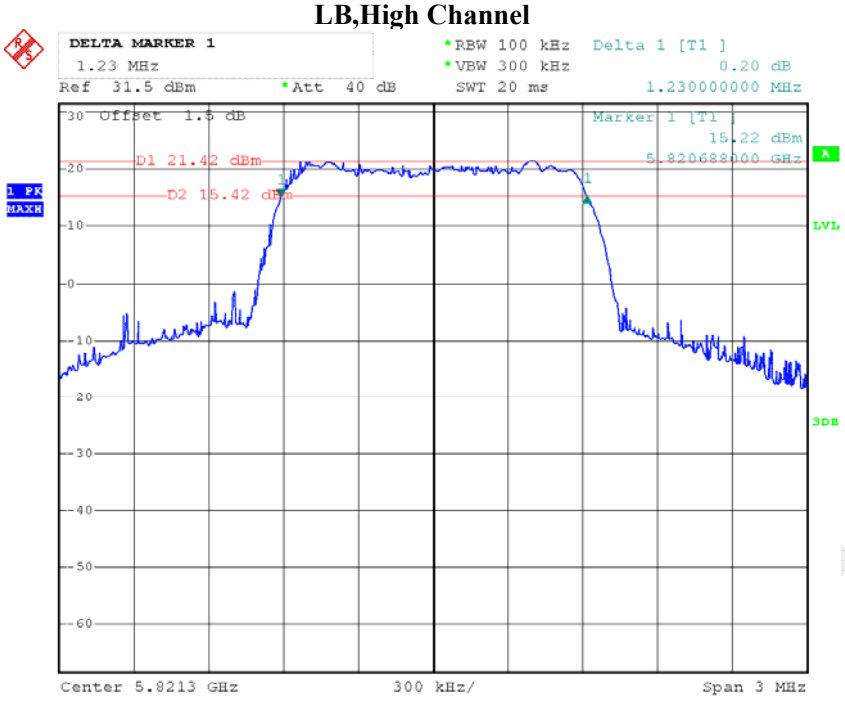
Date: 22.SEP.2016 12:16:16

LB,Middle Channel



Date: 22.SEP.2016 12:26:40

LB,High Channel



Date: 22.SEP.2016 12:34:07

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	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

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

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r02

Test Data

Environmental Conditions

Temperature:	28.9 °C
Relative Humidity:	39 %
ATM Pressure:	100.9kPa

The testing was performed by Robin Zheng on 2016-09-21.

Test Mode: Transmitting

Mode	Frequency (MHz)	Maximum Conducted Output Power (dBm)		Total (dBm)	Limits (dBm)	Result
		Chain 0	Chain 1			
802.11a	5180	11.06	10.91	14	23.93	PASS
	5200	10.27	10.73	13.52	23.93	PASS
	5240	9.75	9.8	12.79	23.93	PASS
	5745	9.12	9.13	12.14	29.93	PASS
	5785	8.95	10.08	12.56	29.93	PASS
	5825	8.89	9.74	12.35	29.93	PASS
802.11n20	5180	11.05	10.77	13.92	23.93	PASS
	5200	10.37	10.57	13.48	23.93	PASS
	5240	9.81	9.69	12.76	23.93	PASS
	5745	8.97	10.04	12.55	29.93	PASS
	5785	8.81	10.02	12.47	29.93	PASS
	5825	8.77	9.66	12.25	29.93	PASS
LB	5727	22.18	/	/	29.93	PASS
	5729.3	23.15	/	/	29.93	PASS
	5731.6	24.35	/	/	29.93	PASS
	5775.3	24.46	/	/	29.93	PASS
	5819	24.35	/	/	29.93	PASS
	5821.3	23.47	/	/	29.93	PASS
	5821.3	22.92	/	/	29.93	PASS

Note: For 802.11a/n mode, the device employed Cyclic Delay Diversity (CDD) for MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

So:

Directional gain = GANT + Array Gain = 6.07dBi > 6dBi

The power limit should be reduce 0.07dBc.

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 v01r02

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
R&S	Test Receiver	ESPI	100120	2015-12-10	2016-12-09
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

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

Test Data

Environmental Conditions

Temperature:	25.8~27.5 °C
Relative Humidity:	32~33 %
ATM Pressure:	100.7~100.9kPa

The testing was performed by Robin Zheng from 2016-09-21to2016-09-23.

Test Mode: Transmitting

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

5150-5250MHz band:

Mode	Channel	Frequency MHz	PSD (dBm/MHz)		Total (dBm/MHz)	Limit (dBm/MHz)
			Chain 0	Chain 1		
802.11a	Low	5180	0.09	-0.3	2.91	13.93
	Middle	5200	-0.58	-0.54	2.45	13.93
	High	5240	-1.22	-1.4	1.7	13.93
802.11n20	Low	5180	-0.07	-0.7	2.64	13.93
	Middle	5200	-0.52	-0.79	2.36	13.93
	High	5240	-1.3	-1.78	1.48	13.93

5725-5850MHz band:

Mode	Channel	Frequency MHz	PSD (dBm/300kHz)		Total (dBm/ 500kHz)	Limit (dBm/ 500kHz)
			Chain 0	Chain 1		
802.11a	Low	5745	-5.15	-5.11	0.1	26.93
	Middle	5785	-5.61	-4.43	0.25	26.93
	High	5825	-6.1	-5.1	-0.34	26.93
802.11n20	Low	5745	-5.07	-4.09	0.68	26.93
	Middle	5785	-5.03	-4.19	0.64	26.93
	High	5825	-5.08	-4.63	0.38	26.93
LB	Low	5727	20.1	/	20.1	29.93
	Middle	5775.3	22.03	/	22.03	29.93
	High	5821.3	20.74	/	20.74	29.93

Note: the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO modes, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

Array Gain = 10 log(NANT/NSS) dB.

So:

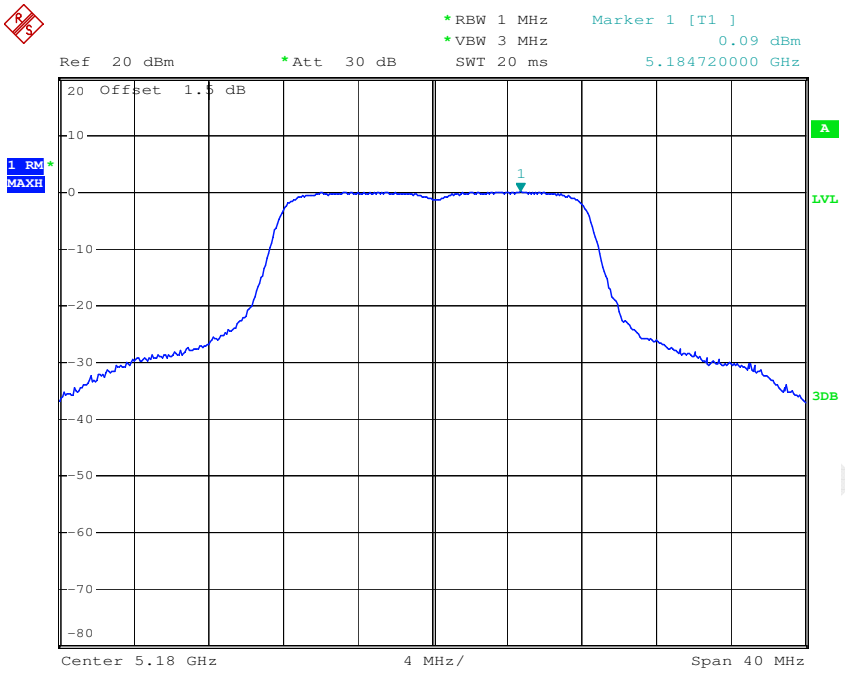
Directional gain = GANT + Array Gain = 6.07+10*log(2) =9.07 dBi

The Power density Limits was reduce 3.07dB

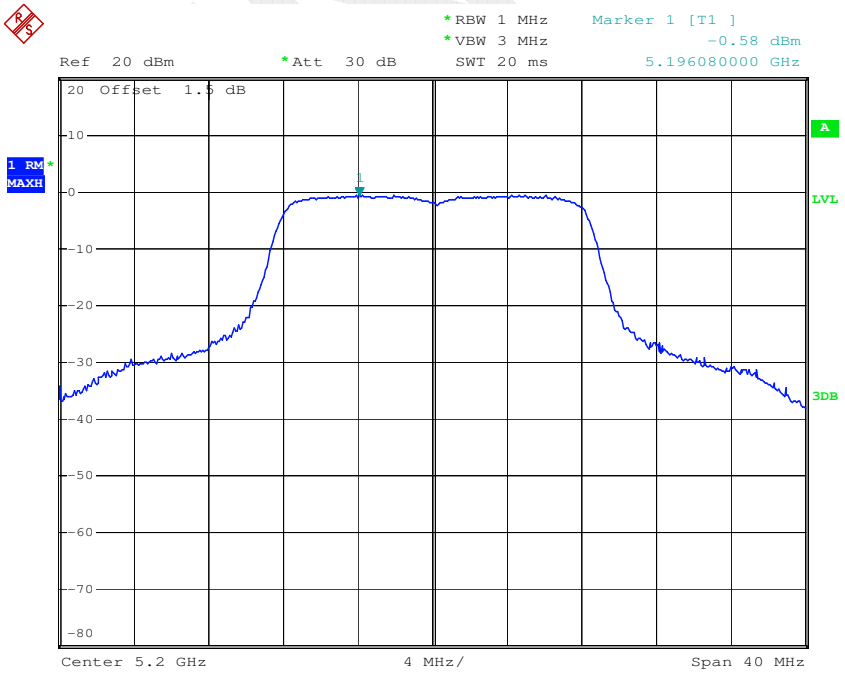
The measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

5150MHz-5250MHz:
Chain 0:

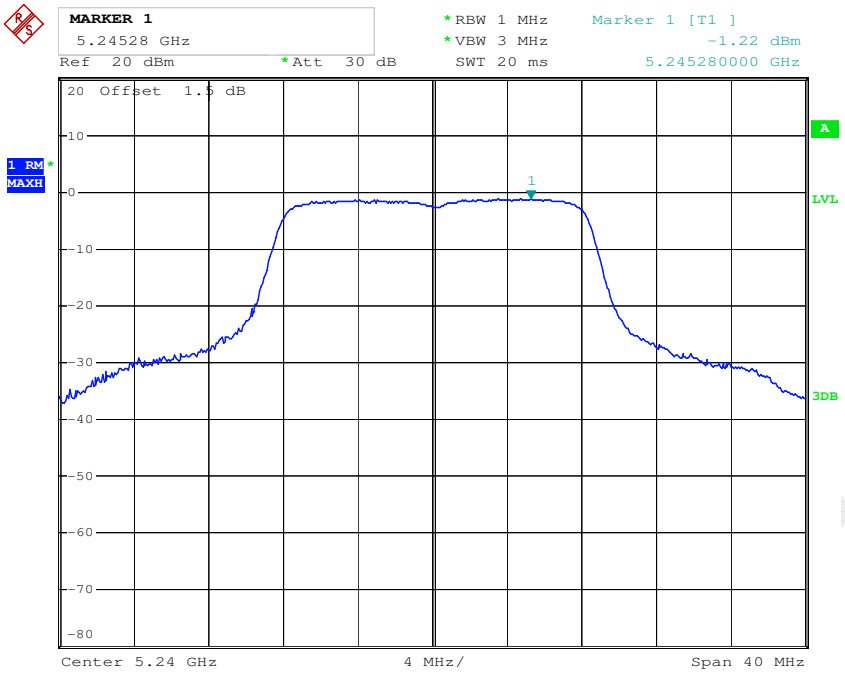
802.11a Low Channel



802.11a Middle Channel

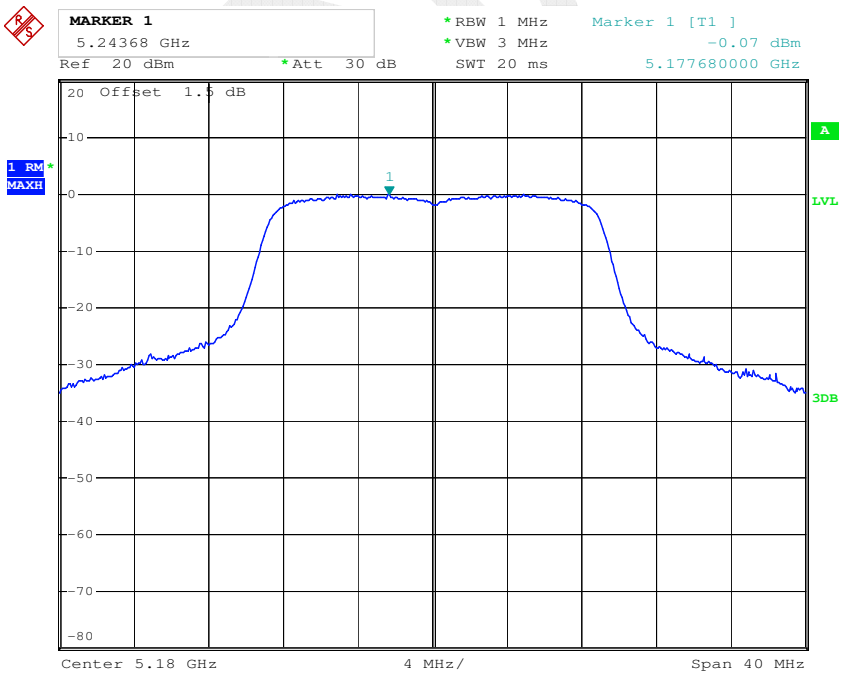


802.11a High Channel



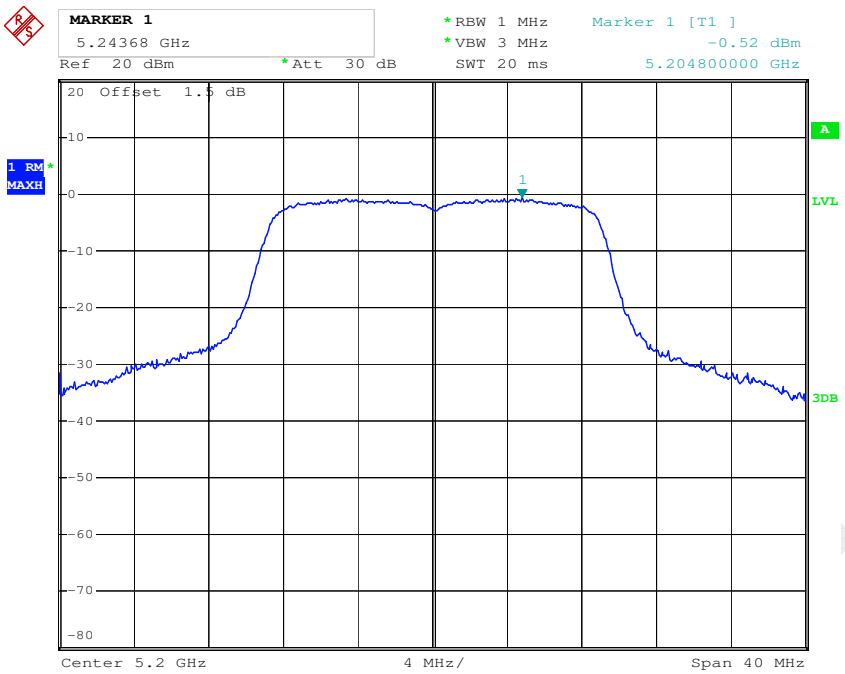
Date: 21.SEP.2016 15:03:14

802.11n ht20 Low Channel



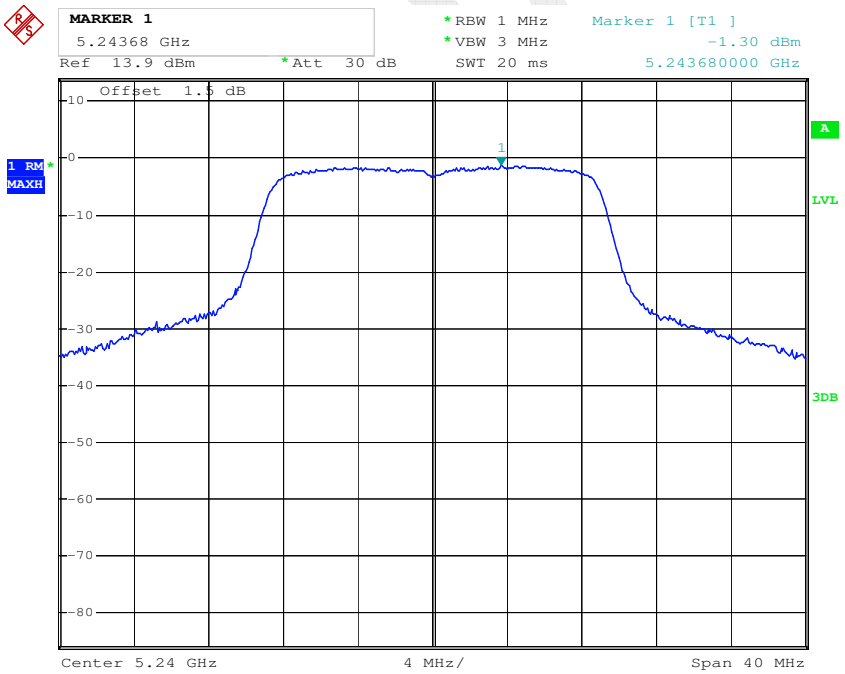
Date: 21.SEP.2016 15:09:18

802.11n ht20 Middle Channel



Date: 21.SEP.2016 15:07:45

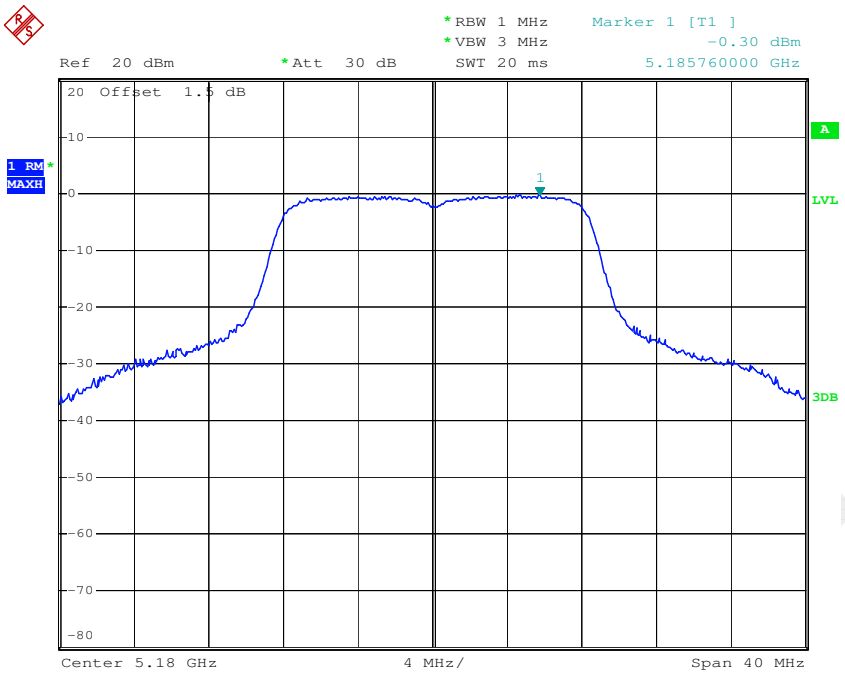
802.11n ht20 High Channel



Date: 21.SEP.2016 15:06:22

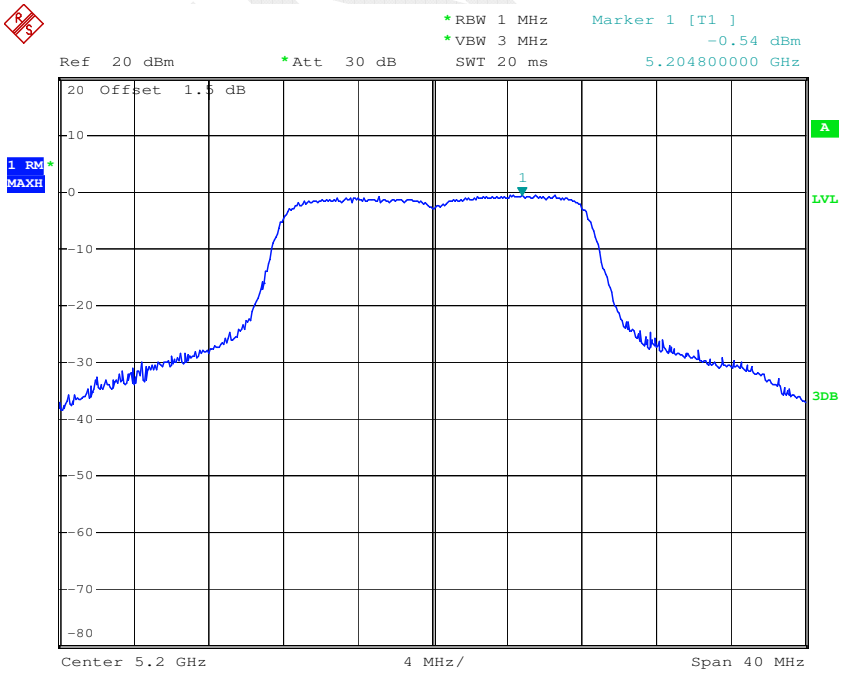
Chain 1:

802.11a Low Channel



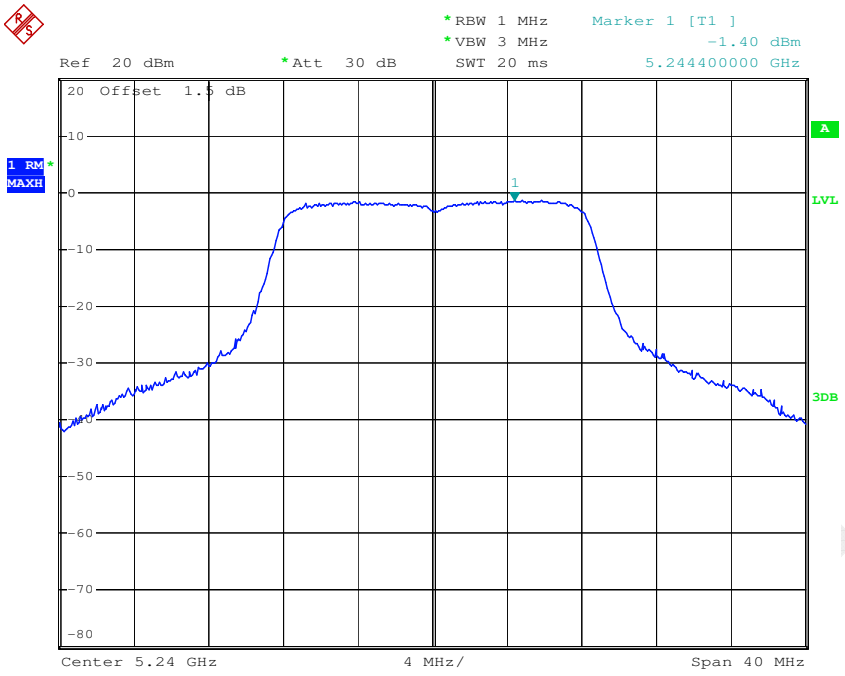
Date: 21.SEP.2016 21:10:03

802.11a Middle Channel



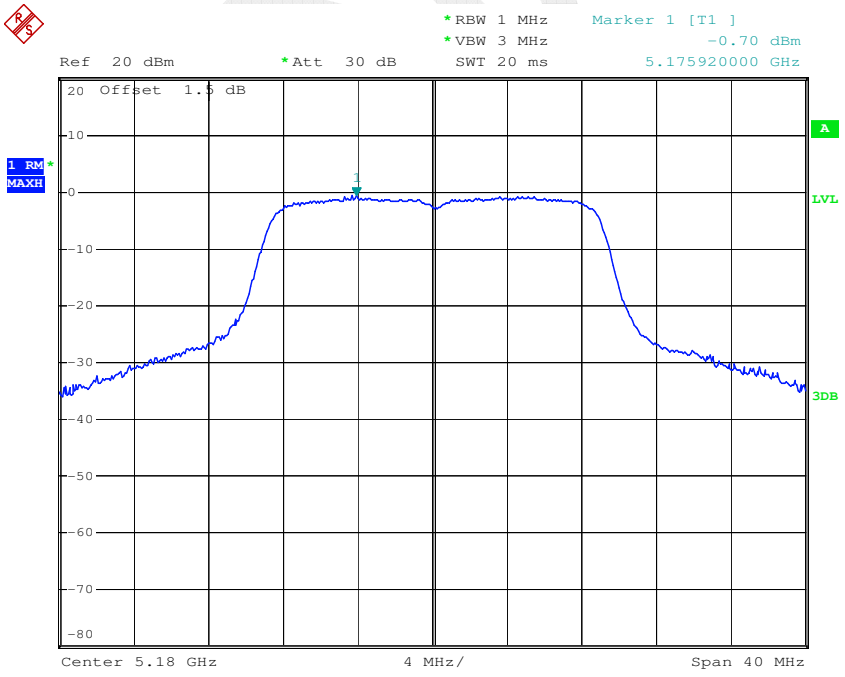
Date: 21.SEP.2016 21:11:35

802.11a High Channel



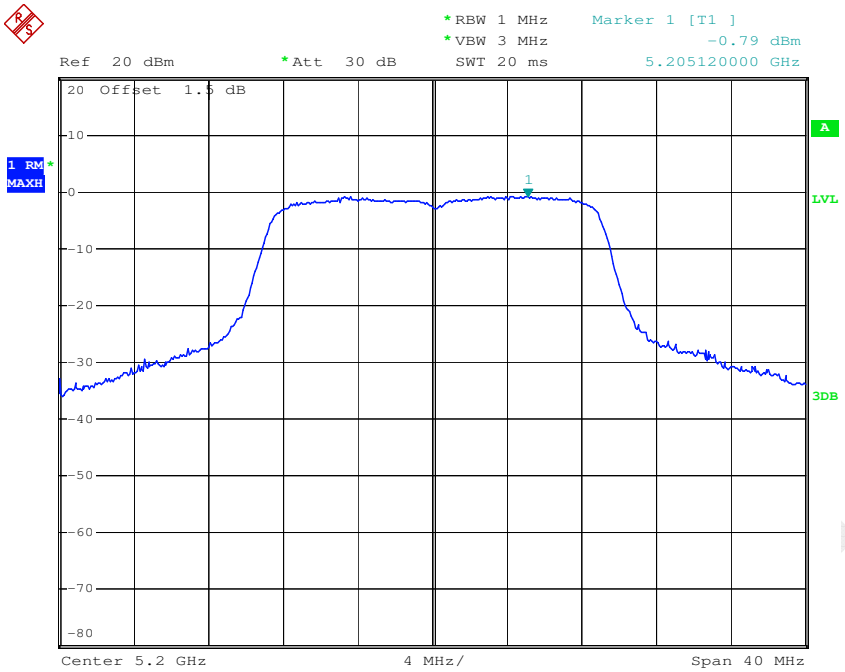
Date: 21.SEP.2016 21:12:48

802.11n ht20 Low Channel

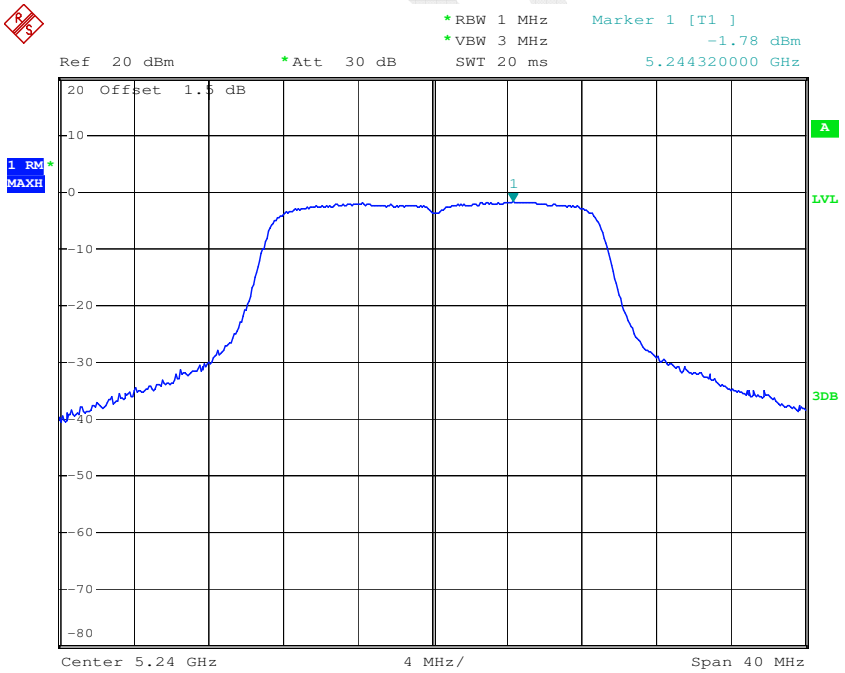


Date: 21.SEP.2016 21:17:38

802.11n ht20 Middle Channel

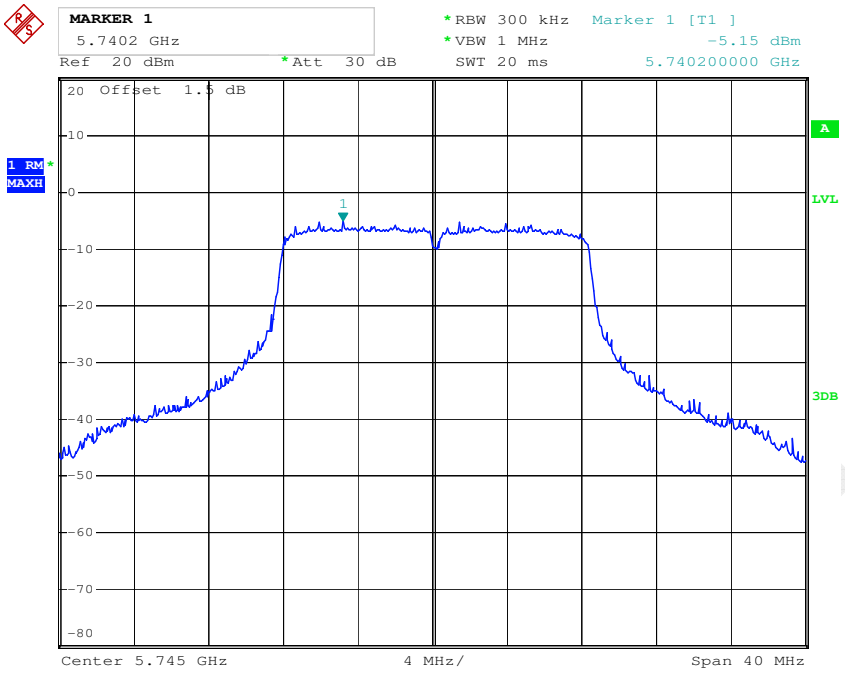


802.11n ht20 High Channel



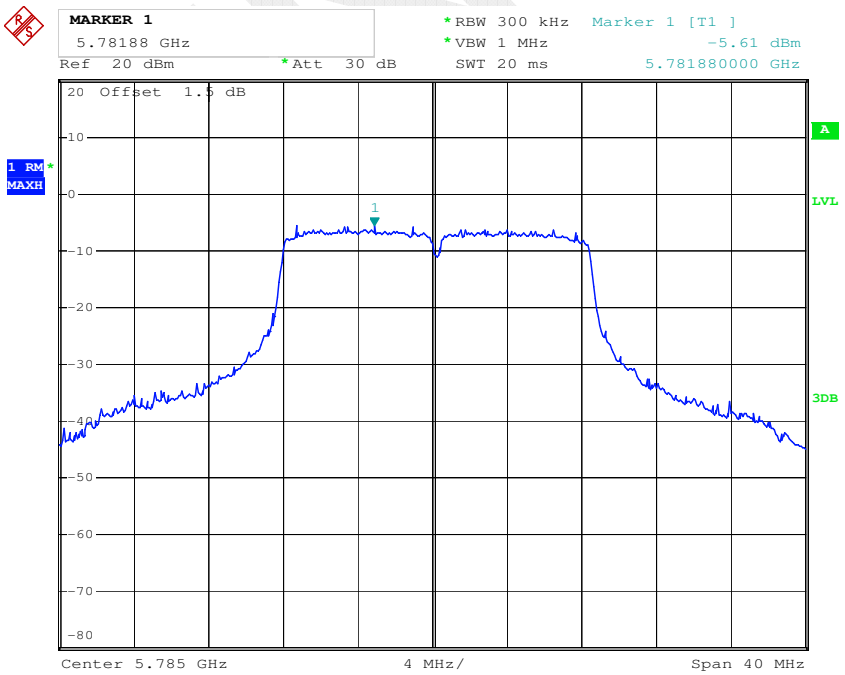
5725MHz-5850MHz:
Chain 0:

802.11a Low Channel



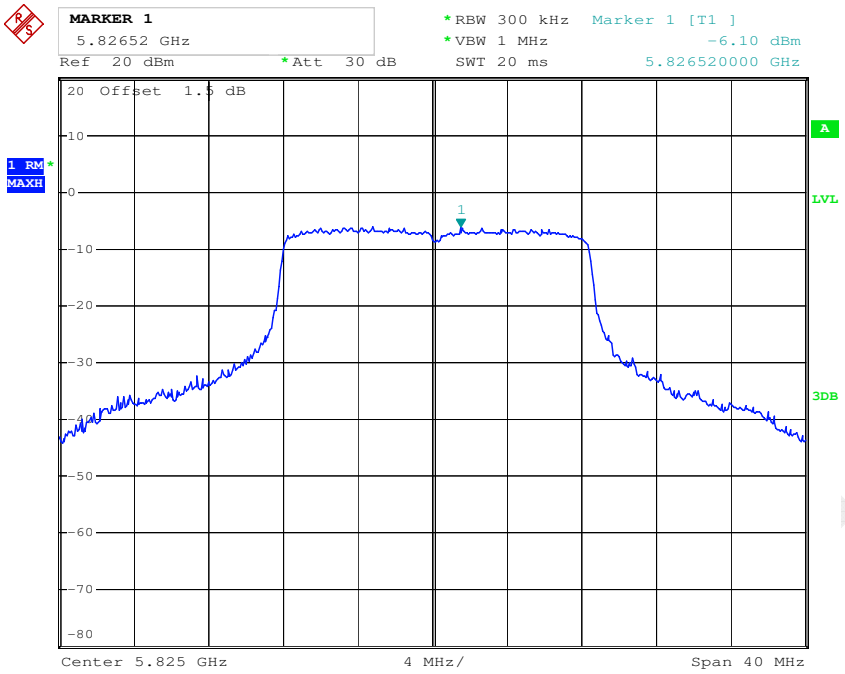
Date: 21.SEP.2016 15:45:21

802.11a Middle Channel



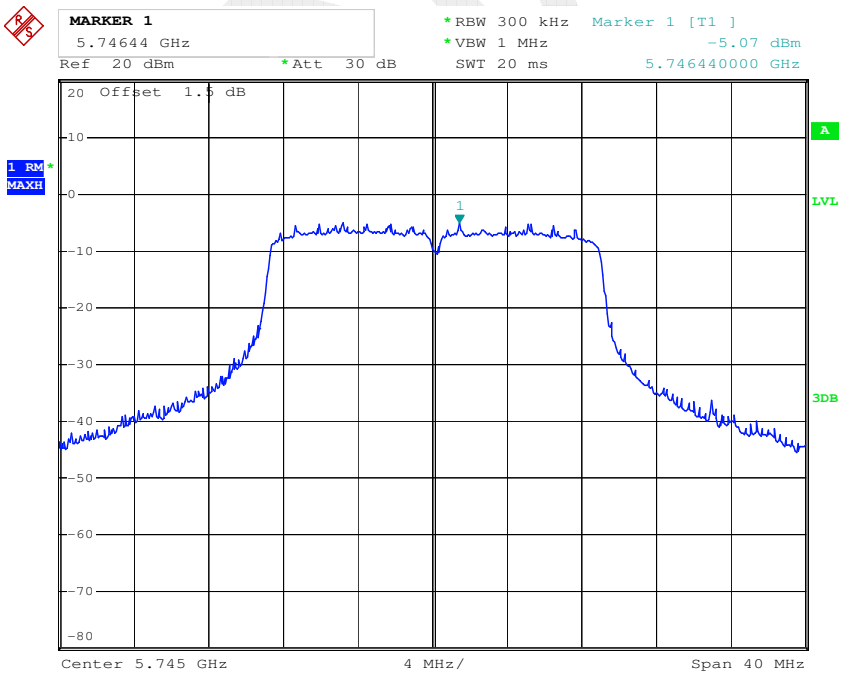
Date: 21.SEP.2016 15:47:33

802.11a High Channel



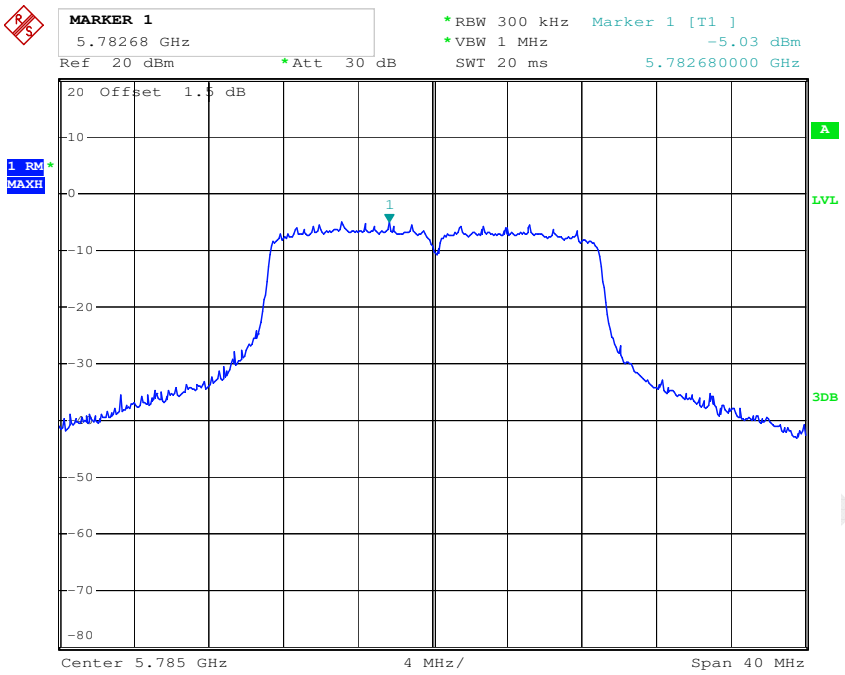
Date: 21.SEP.2016 15:48:04

802.11n ht20 Low Channel



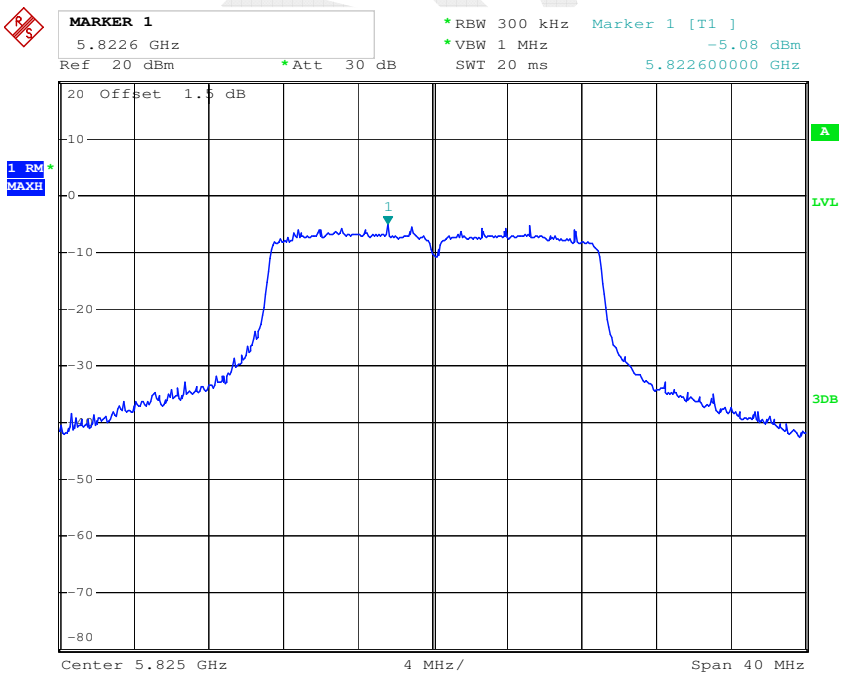
Date: 21.SEP.2016 15:24:24

802.11n ht20 Middle Channel



Date: 21.SEP.2016 15:22:53

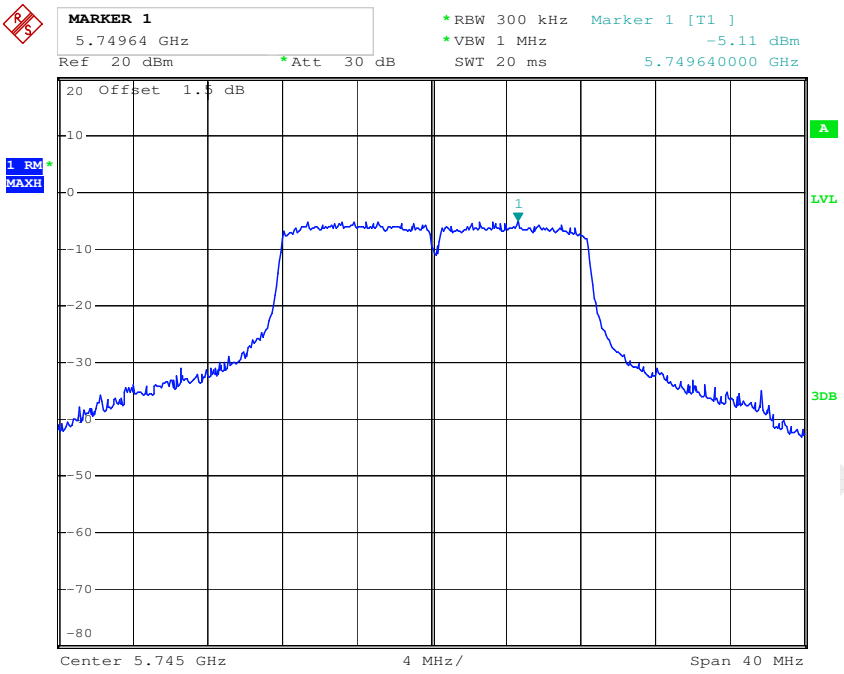
802.11n ht20 High Channel



Date: 21.SEP.2016 15:22:35

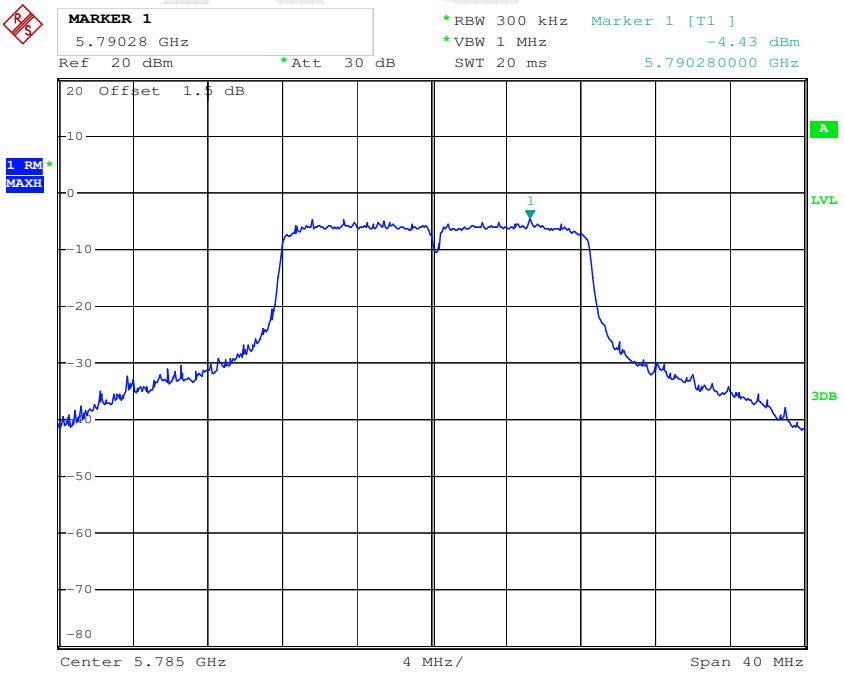
Chain 1:

802.11a Low Channel



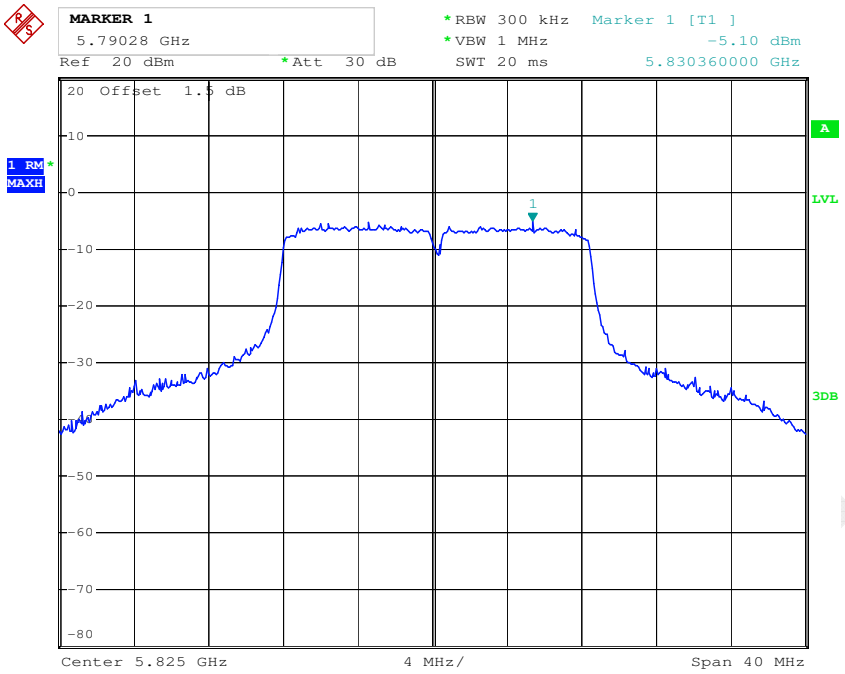
Date: 21.SEP.2016 21:34:41

802.11a Middle Channel



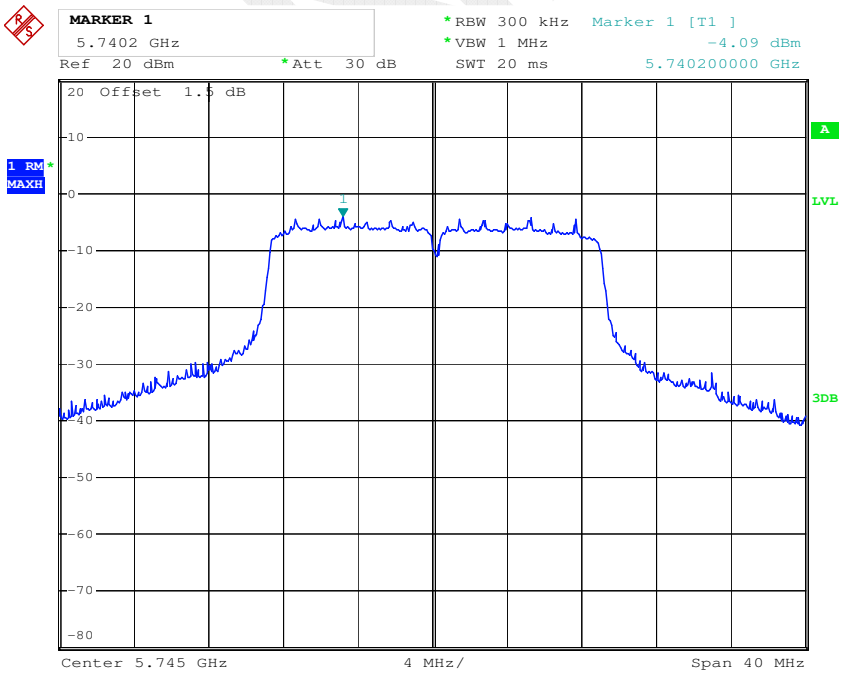
Date: 21.SEP.2016 21:38:44

802.11a High Channel



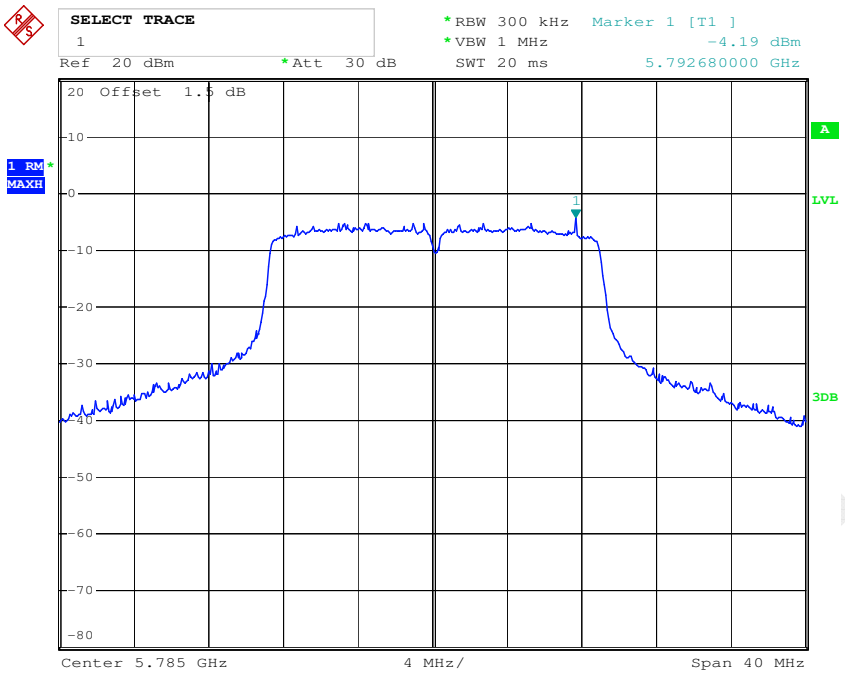
Date: 21.SEP.2016 21:40:55

802.11n ht20 Low Channel



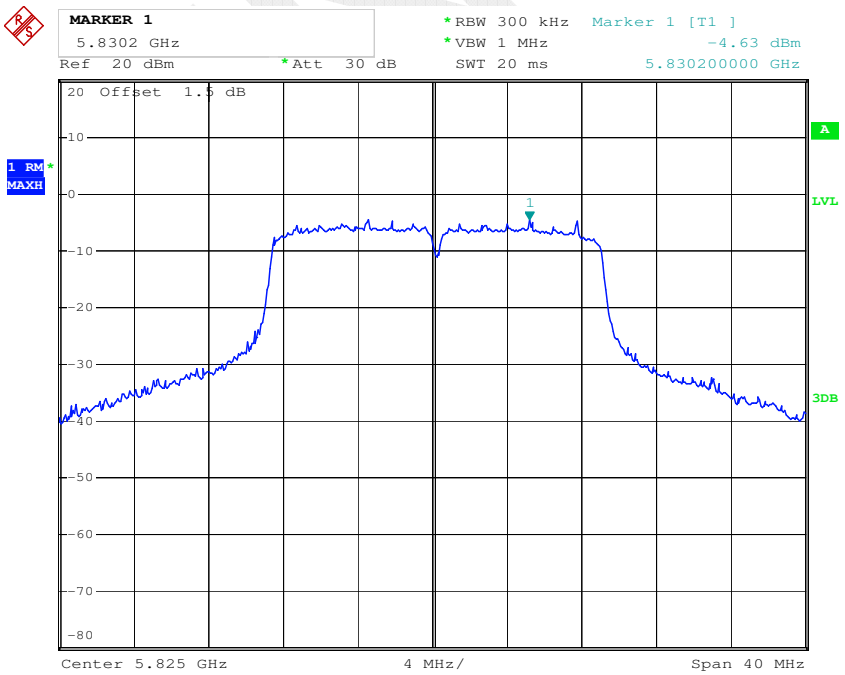
Date: 21.SEP.2016 21:30:25

802.11n ht20 Middle Channel



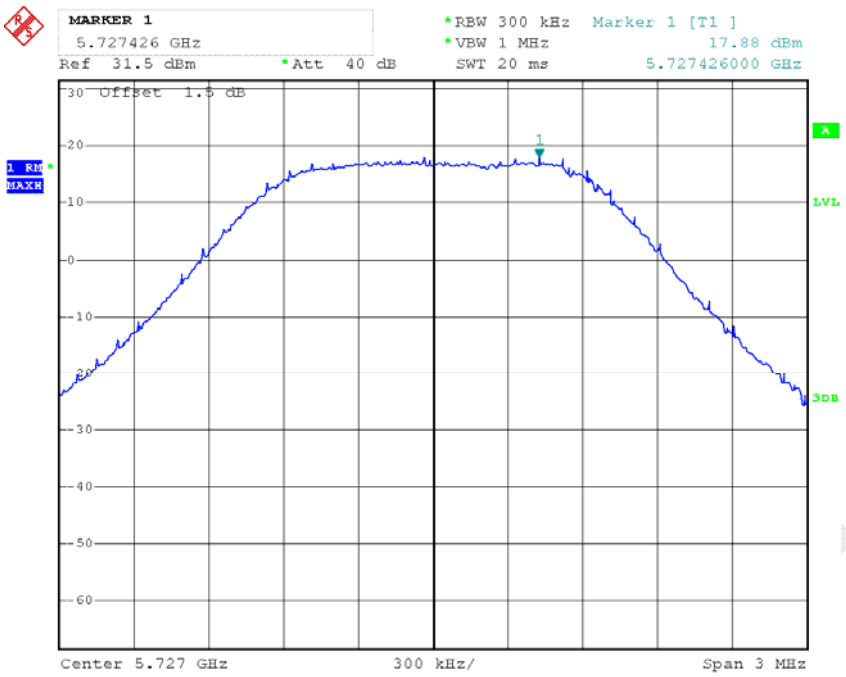
Date: 21.SEP.2016 21:23:05

802.11n ht20 High Channel



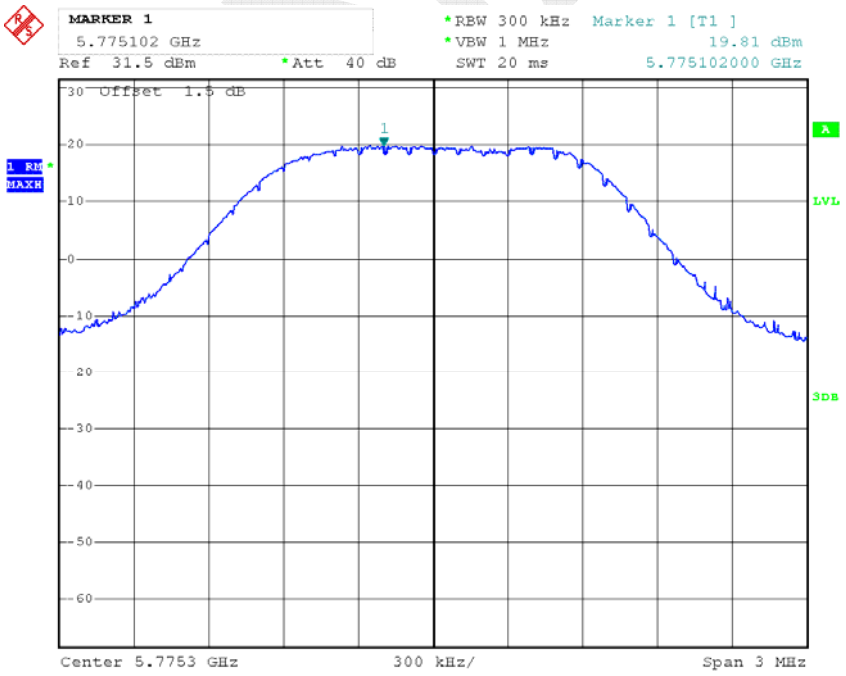
Date: 21.SEP.2016 16:26:08

LB,Low Channel



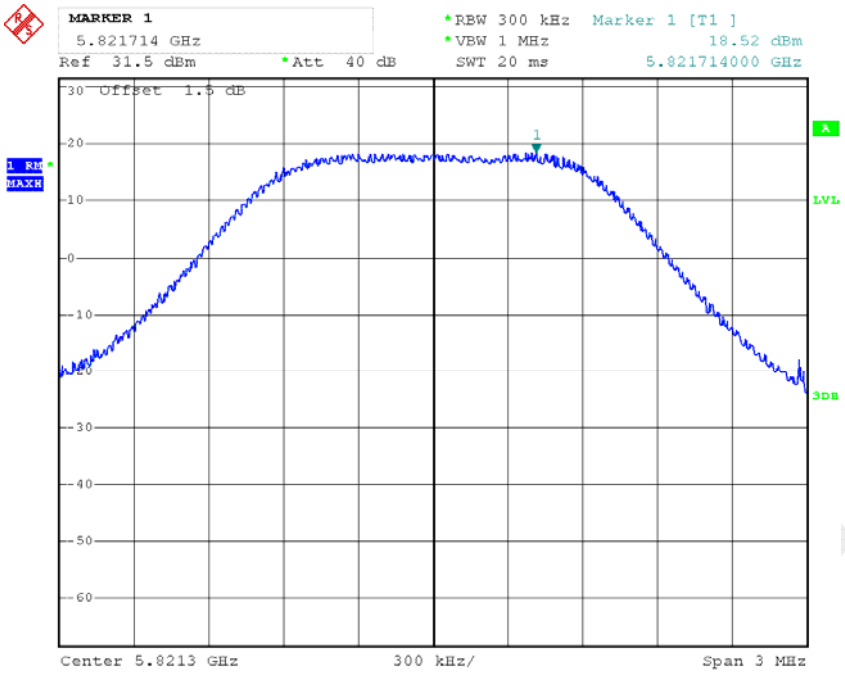
Date: 22.SEP.2016 11:42:59

LB, Middle Channel



Date: 22.SEP.2016 12:31:44

LB,High Channel



Date: 23.SEP.2016 16:24:31

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