FCC PART 15.407

TEST REPORT

For

INGENICO

9 Avenue de la Gare-Rolvatain TGV, BP 25156, Valence Cedex 9,France

FCC ID: XKB-L2500CL3GWIBT

Report Type:	Product Type:
Original Report	Link/2500

Report Number:	RXM160823052-00F
Report Date:	2016-09-27
Reviewed By:	Dean Liu RF Engineer
Approved 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 *INGENICO*'s product, model number: *LINK/2500 CL/3G/WiFi/BT (FCC ID: XKB-2500CL3GWIBT)* (the "EUT") in this report was a *Link/2500 ,* which was measured approximately: 12.8 cm (L) x 7.0 cm (W) x 1.7cm (H), rated input voltage: DC 3.7V from rechargeable Li-ion battery or DC 5V from adapter.

Adapter information:
MODEL: PSA105R-050QL6
INPUT: 100-240V ~ 0.3A 50-60Hz 11-15VA
OUTPUT: DC 5V, 1.0A MAX

All measurement and test data in this report was gathered from production sample serial number: 160823052 (Assigned by BACL, Dongguan). The EUT was received on 2016-08-25.

Objective

This type approval report is prepared on behalf of *INGENICO* 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 22H, 24E PCB submissions with FCC ID: XKB-L2500CL3GWIBT.
FCC Part 15C DTS submissions with FCC ID: XKB-L2500CL3GWIBT.
FCC Part 15C DSS submissions with FCC ID: XKB-L2500CL3GWIBT.
FCC Part 15C DXX submissions with FCC ID: XKB-L2500CL3GWIBT.

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 system was configured for testing in an engineering mode, which is provided by manufacture.

The system support 802.11a/n ht20/n ht40.

For 5150~5250 MHz band, 6 channels are provided:

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

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

For 5725~5850MHz band, 8 channels are provided to testing:

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

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

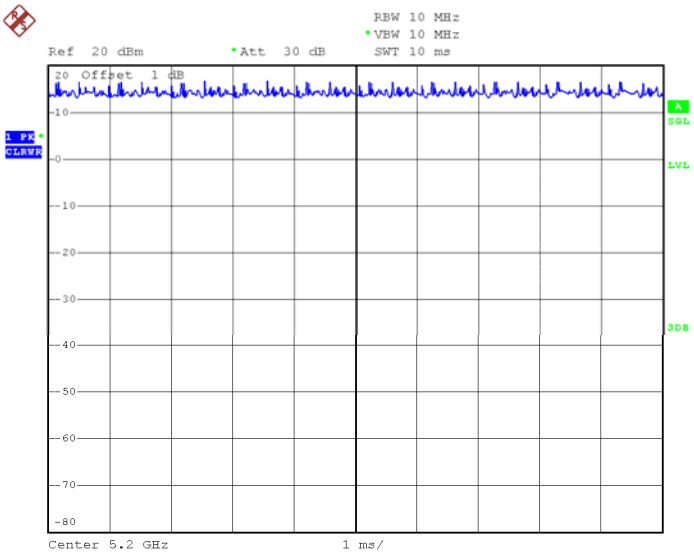
The maximum duty cycle was setting in engineering mode as following table:

UNII Band	Test mode	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)
5125-5250 MHz	802.11 a	10	10	100%
	802.11 n20	10	10	100%
	802.11 n40	10	10	100%

UNII Band	Test mode	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)
5725-5850 MHz	802.11 a	10	10	100%
	802.11 n20	10	10	100%
	802.11 n40	10	10	100%

5125-5250 MHz:

802.11 a



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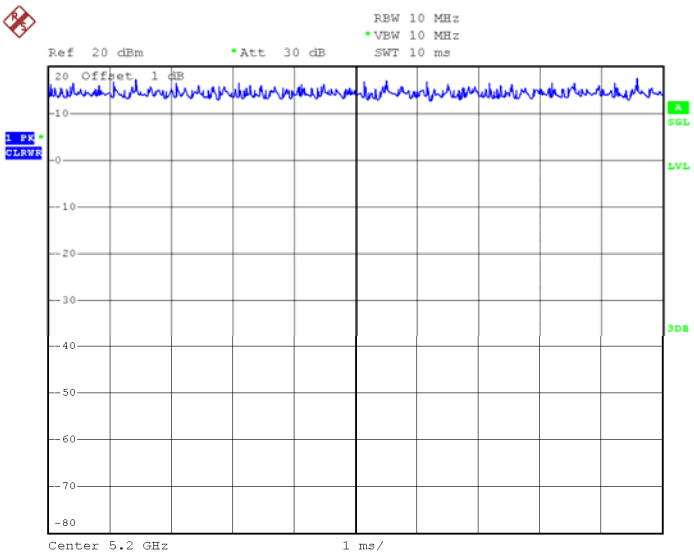
802.11 n20



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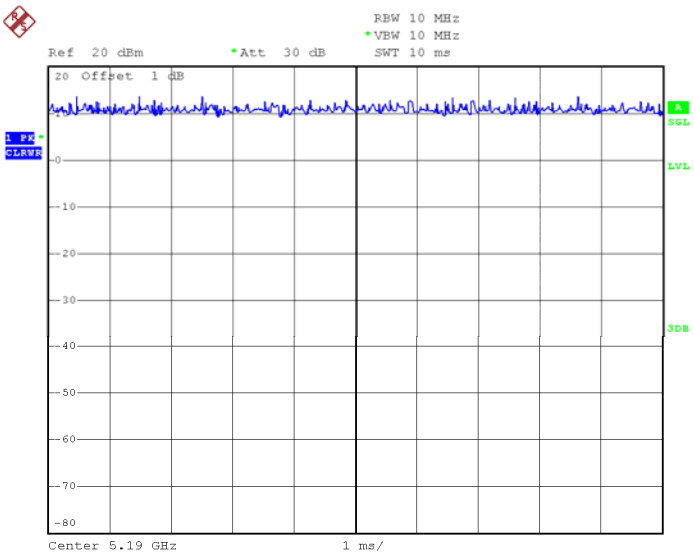
802.11 n40



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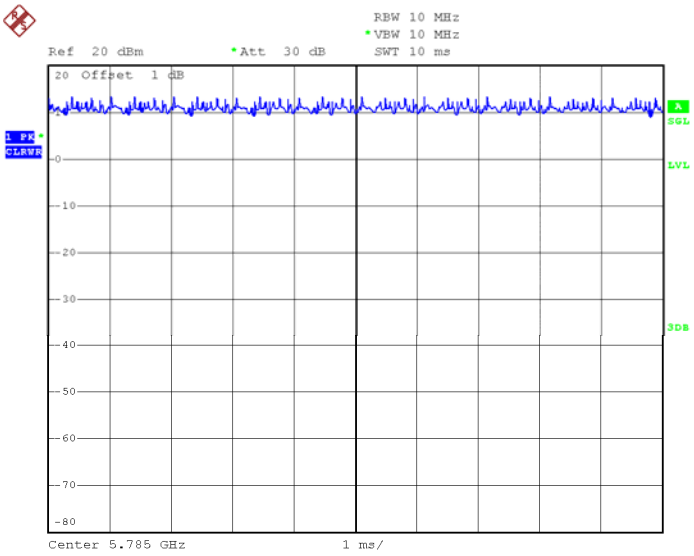
5725-5850 MHz

802.11 a



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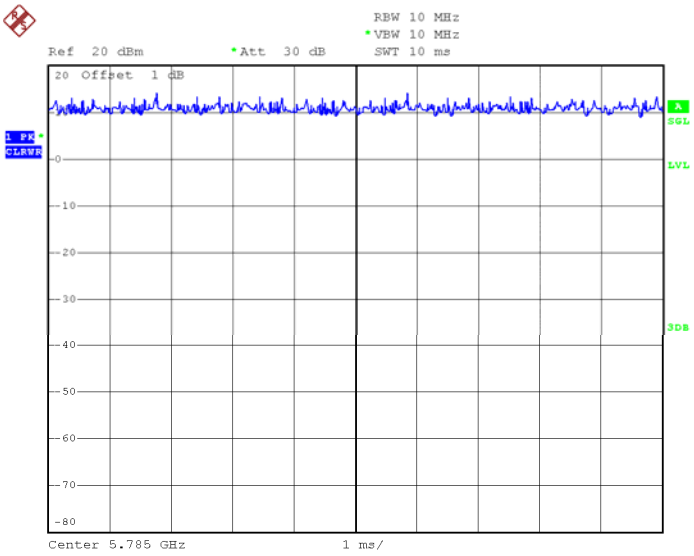
802.11 n20



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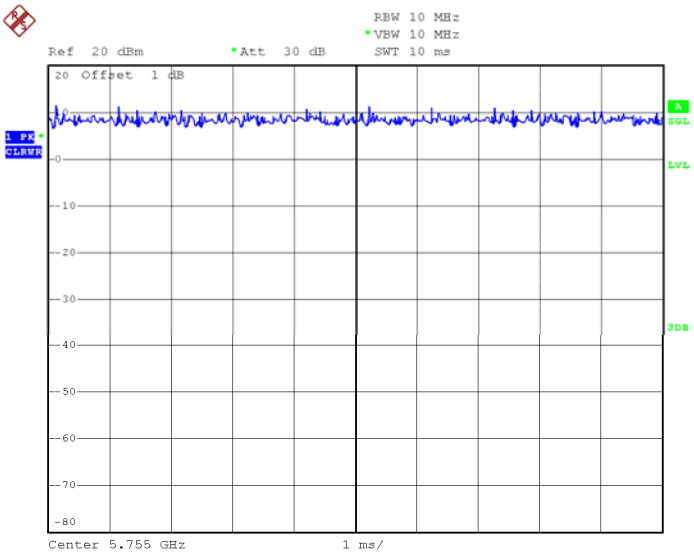
802.11 n40



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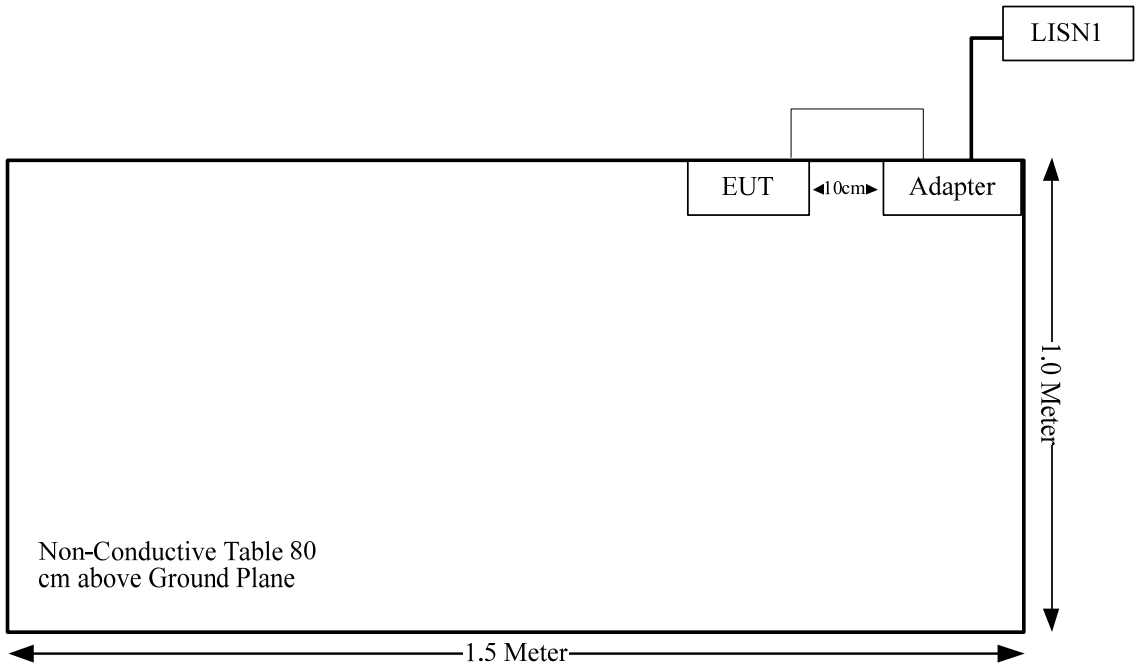
Equipment Modifications

No modification was made to the EUT.

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Usb Cable	no	no	1.08	Adapter	EUT

Block Diagram of Test Setup



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),(6),(7)	Spurious Emission Attenna Ports	Compliance
§15.407(a) (1) & §15.407(e)	26 dB Bandwidth & 6 dB Bandwidth	Compliance
§15.407(a)(1),	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1),(5)	Power Spectral Density	Compliance
§15.407(H)	Dynamic Frequency Selection	Not Applicable

Test time: 2016.08.29~2016.09.23

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

Applicable Standard

According to§15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v06

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Measurement Result

This device is for handheld:

The tune-up power is 11.2 dBm (13.2 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
= 13.2/5*(√5.825) =6.4 < 7.5

So the stand-alone SAR evaluation is not necessary.

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 one internal antenna arrangement for WLAN, and the max antenna gain is 1dBi, 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.

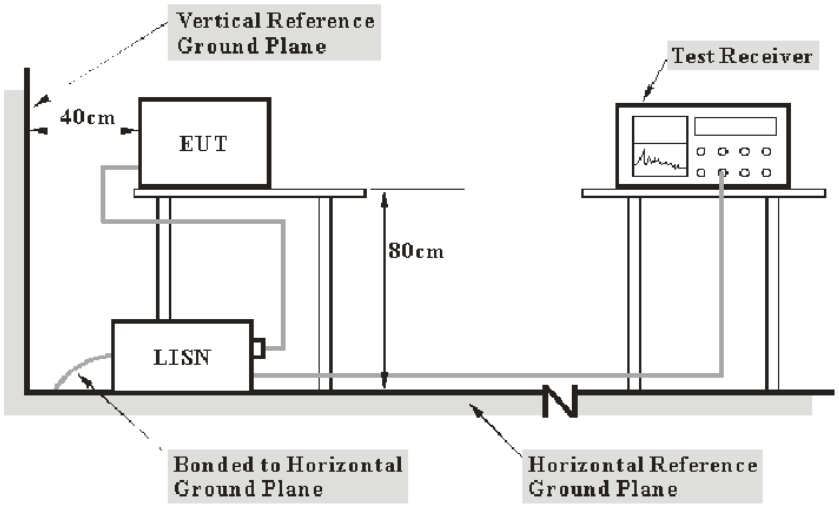
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), 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 120VAC/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	2017-09-01
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	2016-05-06	2017-05-06
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 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 the first 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.

Test Data

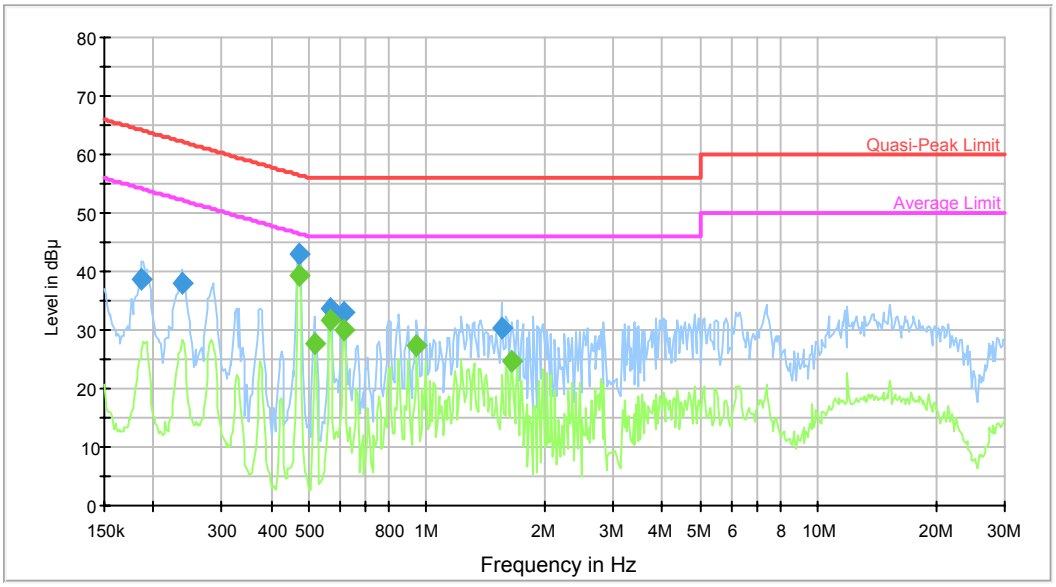
Environmental Conditions

Temperature:	29.4°C
Relative Humidity:	43 %
ATM Pressure:	99.9 kPa

The testing was performed by Lion Xao on 2016-08-29.

Test Mode: Transmitting

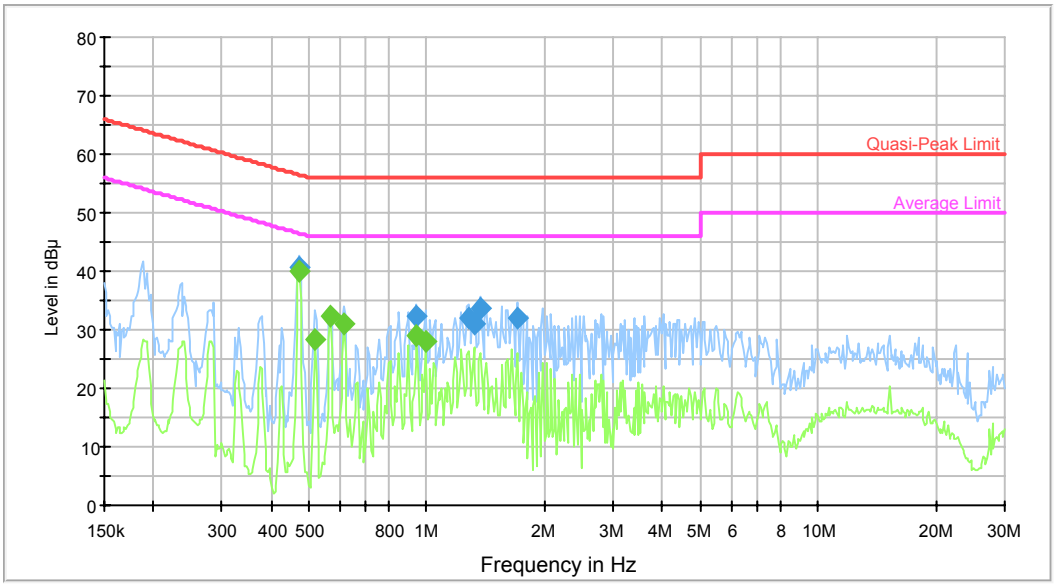
Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.187494	38.7	9.000	L1	10.2	25.4	64.1	Compliance
0.236234	38.1	9.000	L1	10.2	24.1	62.2	Compliance
0.472507	42.9	9.000	L1	10.1	13.6	56.5	Compliance
0.567545	33.6	9.000	L1	10.1	22.4	56.0	Compliance
0.614619	32.8	9.000	L1	10.3	23.2	56.0	Compliance
1.548915	30.3	9.000	L1	10.4	25.7	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.472507	39.4	9.000	L1	10.1	7.1	46.5	Compliance
0.519918	27.6	9.000	L1	10.1	18.4	46.0	Compliance
0.567545	31.6	9.000	L1	10.1	14.4	46.0	Compliance
0.614619	30.0	9.000	L1	10.3	16.0	46.0	Compliance
0.945093	27.4	9.000	L1	10.4	18.6	46.0	Compliance
1.650866	24.8	9.000	L1	10.4	21.2	46.0	Compliance

Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.472507	40.7	9.000	N	10.1	15.8	56.5	Compliance
0.945093	32.5	9.000	N	10.4	23.5	56.0	Compliance
1.279307	32.1	9.000	N	10.4	23.9	56.0	Compliance
1.331304	31.1	9.000	N	10.4	24.9	56.0	Compliance
1.374420	33.6	9.000	N	10.4	22.4	56.0	Compliance
1.704331	31.9	9.000	N	10.4	24.1	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.472507	39.9	9.000	N	10.1	6.6	46.5	Compliance
0.519918	28.4	9.000	N	10.1	17.6	46.0	Compliance
0.567545	32.3	9.000	N	10.1	13.7	46.0	Compliance
0.614619	31.0	9.000	N	10.3	15.0	46.0	Compliance
0.945093	28.9	9.000	N	10.4	17.1	46.0	Compliance
0.991374	28.0	9.000	N	10.4	18.0	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:

(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.

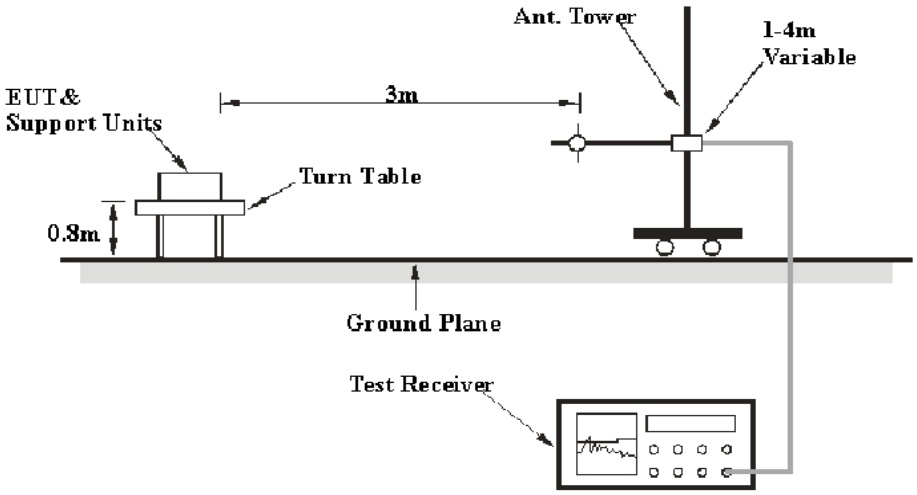
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB.

Table 1 – Values of U_{cispr}

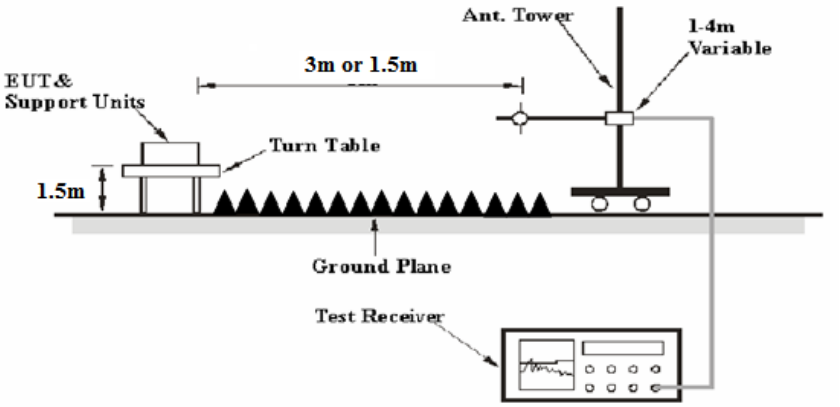
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

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.

The adapter 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	/	Av

Test Procedure

During the radiated emission test, the adapter was connected to the first 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 C63.10-2013, emission shall be computed as: E [dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

According to C63.10-2013, 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	2016-09-01	2017-09-01
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
ETS-Lindgren	Horn Antenna	3115	9808-5557	2016-01-05	2019-01-04
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
R&S	Spectrum Analyzer	FSEM	DE23437	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
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
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
Farad	Test Software	EZ-EMC	V1.1.4.2	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 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 Subpart E, section 15.407.

Test Data

Environmental Conditions

Temperature:	28.3 °C
Relative Humidity:	63%
ATM Pressure:	100.6 kPa

The testing was performed by Lion Xao on 2016-09-23.

Result: Compliance.

Note 1: For above 1GHz, the test distance is 3m.
Note 2: the emission compliance 15.209 general requirements,or compliance the outside band emission limits in the un-restricted bands.

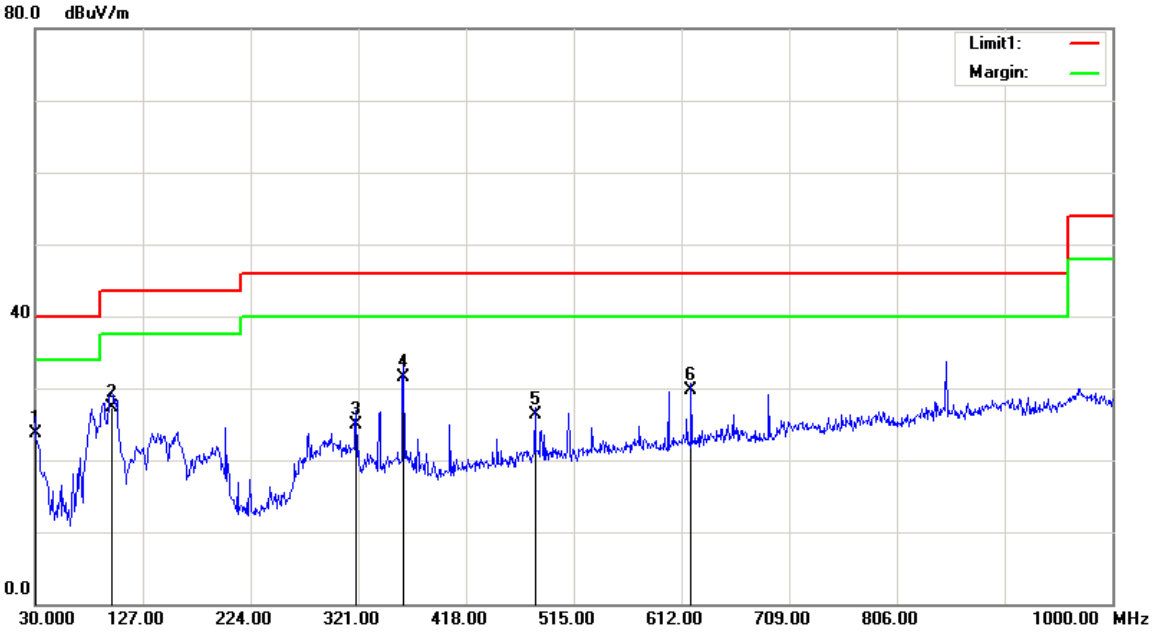
Please refer to the following tables

30MHz-1GHz:

5150MHz~5250MHz

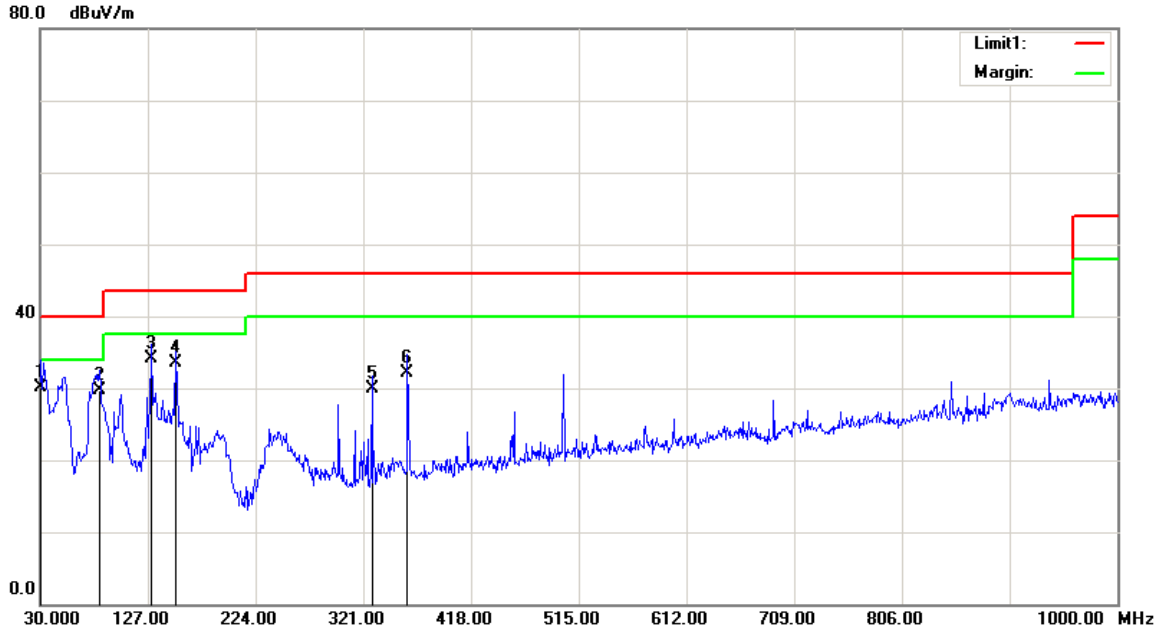
Test Mode: Transmitting – 802.11 a 5200MHz worst case

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	22.77	QP	1.03	23.80	40.00	16.20
98.8700	37.43	QP	-10.13	27.30	43.50	16.20
319.0600	30.44	QP	-5.54	24.90	46.00	21.10
361.7400	35.94	QP	-4.44	31.50	46.00	14.50
480.0800	27.68	QP	-1.38	26.30	46.00	19.70
620.7300	29.87	QP	-0.17	29.70	46.00	16.30

Vertical

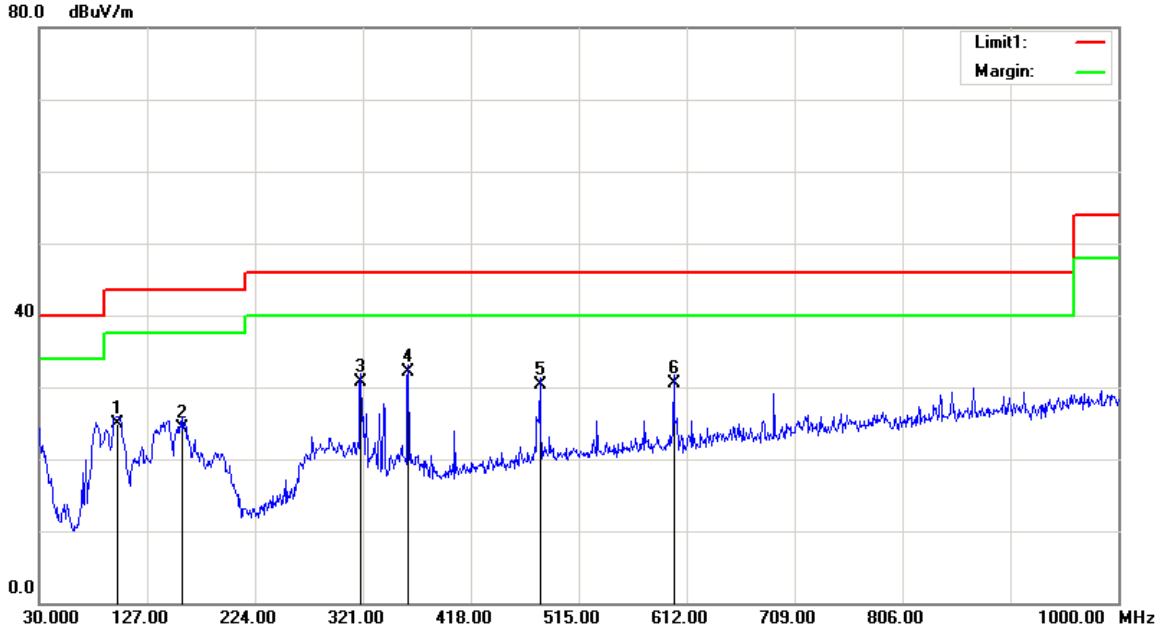


Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	29.17	QP	1.03	30.20	40.00	9.80
83.3500	41.92	QP	-12.22	29.70	40.00	10.30
129.9100	39.96	QP	-5.86	34.10	43.50	9.40
152.2200	40.69	QP	-7.19	33.50	43.50	10.00
328.7600	35.37	QP	-5.47	29.90	46.00	16.10
360.7700	36.63	QP	-4.43	32.20	46.00	13.80

5725MHz~5850MHz

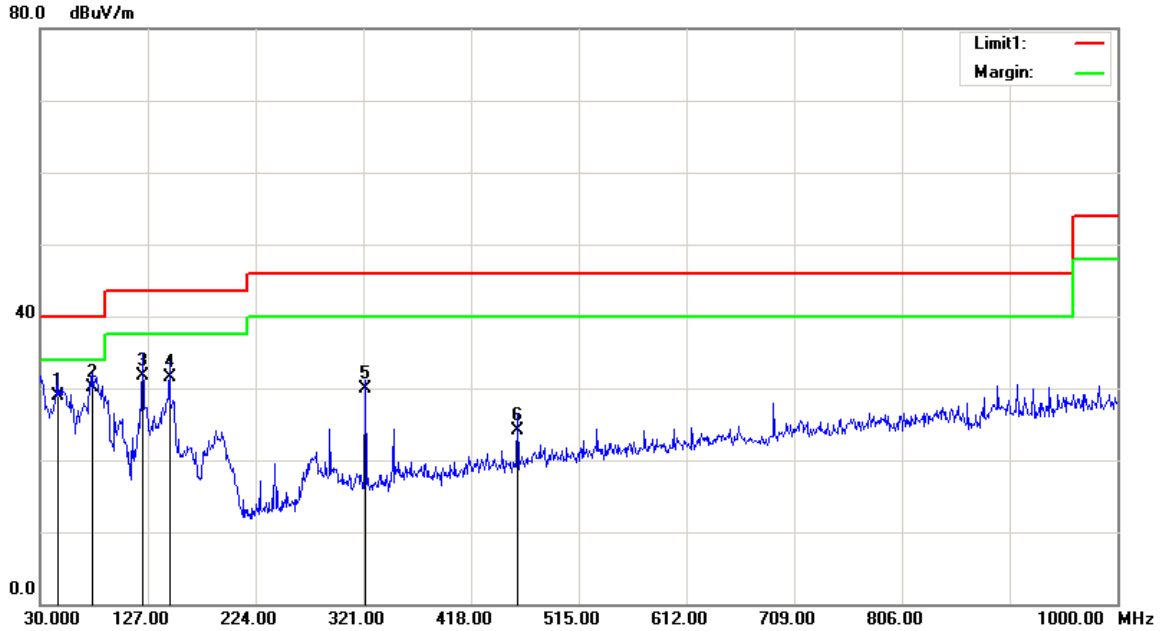
Test Mode: Transmitting –802.11a 5825 MHz worst case

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
99.8400	34.71	QP	-9.81	24.90	43.50	18.60
158.0400	31.47	QP	-7.17	24.30	43.50	19.20
319.0600	36.34	QP	-5.54	30.80	46.00	15.20
361.7400	36.54	QP	-4.44	32.10	46.00	13.90
480.0800	31.78	QP	-1.38	30.40	46.00	15.60
600.3600	30.93	QP	-0.33	30.60	46.00	15.40

Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
45.5200	39.18	QP	-10.28	28.90	40.00	11.10
76.5600	42.11	QP	-12.01	30.10	40.00	9.90
122.1500	37.50	QP	-5.70	31.80	43.50	11.70
146.4000	38.70	QP	-7.20	31.50	43.50	12.00
322.9400	35.43	QP	-5.53	29.90	46.00	16.10
459.7100	26.40	QP	-2.20	24.20	46.00	21.80

1-40GHz：

5150-5250MHz Band: 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	Polar (H/V)	Factor (dB)					
Low Channel:5180 MHz									
5180	59.95	PK	H	31.46	5.40	0.00	96.81	N/A	N/A
5180	50.83	AV	H	31.46	5.40	0.00	87.69	N/A	N/A
5180	63.22	PK	V	31.46	5.40	0.00	100.08	N/A	N/A
5180	52.94	AV	V	31.46	5.40	0.00	89.80	N/A	N/A
5150	27.24	PK	V	31.40	5.26	0.00	63.90	74.00	10.10
5150	14.76	AV	V	31.40	5.26	0.00	51.42	54.00	2.58
10360	40.62	PK	V	36.97	8.36	25.52	60.43	74.00	13.57
10360	30.76	AV	V	36.97	8.36	25.52	50.57	54.00	3.43
15540	33.29	PK	V	37.43	14.94	24.98	60.68	74.00	13.32
15540	20.18	AV	V	37.43	14.94	24.98	47.57	54.00	6.43
6903	34.25	PK	V	33.35	6.33	26.45	47.48	74.00	26.52
6903	21.84	AV	V	33.35	6.33	26.45	35.07	54.00	18.93
4936	33.89	PK	V	30.93	5.35	27.43	42.74	74.00	31.26
4936	21.12	AV	V	30.93	5.35	27.43	29.97	54.00	24.03
Middle Channel:5200 MHz									
5200	60.08	PK	H	31.50	5.49	0.00	97.07	N/A	N/A
5200	50.98	AV	H	31.50	5.49	0.00	87.97	N/A	N/A
5200	63.38	PK	V	31.50	5.49	0.00	100.37	N/A	N/A
5200	53.10	AV	V	31.50	5.49	0.00	90.09	N/A	N/A
10400	40.76	PK	V	36.98	8.32	25.50	60.56	74.00	13.44
10400	30.94	AV	V	36.98	8.32	25.50	50.74	54.00	3.26
15600	33.47	PK	V	37.32	14.69	24.69	60.79	74.00	13.21
15600	20.30	AV	V	37.32	14.69	24.69	47.62	54.00	6.38
6933	34.41	PK	V	33.43	6.34	26.38	47.80	74.00	26.20
6933	22.00	AV	V	33.43	6.34	26.38	35.39	54.00	18.61
3280	34.08	PK	V	28.10	5.61	27.30	40.49	74.00	33.51
3280	21.25	AV	V	28.10	5.61	27.30	27.66	54.00	26.34
High Channel:5240 MHz									
5240	58.62	PK	H	31.58	5.28	0.00	95.48	N/A	N/A
5240	48.57	AV	H	31.58	5.28	0.00	85.43	N/A	N/A
5240	62.26	PK	V	31.58	5.28	0.00	99.12	N/A	N/A
5240	52.14	AV	V	31.58	5.28	0.00	89.00	N/A	N/A
5350	25.39	PK	V	31.80	5.61	0.00	62.80	74.00	11.20
5350	14.00	AV	V	31.80	5.61	0.00	51.41	54.00	2.59
10480	40.47	PK	V	37.00	8.23	26.01	59.69	74.00	14.31
10480	30.88	AV	V	37.00	8.23	26.01	50.10	54.00	3.90
15720	33.14	PK	V	37.10	14.20	24.92	59.52	74.00	14.48
15720	20.01	AV	V	37.10	14.20	24.92	46.39	54.00	7.61
6984	34.08	PK	V	33.56	6.36	26.27	47.73	74.00	26.27
6984	21.66	AV	V	33.56	6.36	26.27	35.31	54.00	18.69
3280	33.74	PK	V	28.10	5.61	27.30	40.15	74.00	33.85
3280	20.99	AV	V	28.10	5.61	27.30	27.40	54.00	26.60

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	Polar (H/V)	Factor (dB)					
Low Channel:5180 MHz									
5180	60.14	PK	H	31.46	5.40	0.00	97.00	N/A	N/A
5180	51.02	AV	H	31.46	5.40	0.00	87.88	N/A	N/A
5180	63.37	PK	V	31.46	5.40	0.00	100.23	N/A	N/A
5180	53.12	AV	V	31.46	5.40	0.00	89.98	N/A	N/A
5150	27.38	PK	V	31.40	5.26	0.00	64.04	74.00	9.96
5150	14.94	AV	V	31.40	5.26	0.00	51.60	54.00	2.40
10360	40.27	PK	V	36.97	8.36	25.52	60.08	74.00	13.92
10360	30.87	AV	V	36.97	8.36	25.52	50.68	54.00	3.32
15540	32.86	PK	V	37.43	14.94	24.98	60.25	74.00	13.75
15540	19.76	AV	V	37.43	14.94	24.98	47.15	54.00	6.85
6933	33.86	PK	V	33.43	6.34	26.38	47.25	74.00	26.75
6933	21.41	AV	V	33.43	6.34	26.38	34.80	54.00	19.20
4936	33.52	PK	V	30.93	5.35	27.43	42.37	74.00	31.63
4936	20.72	AV	V	30.93	5.35	27.43	29.57	54.00	24.43
Middle Channel:5200 MHz									
5200	60.07	PK	H	31.50	5.49	0.00	97.06	N/A	N/A
5200	51.02	AV	H	31.50	5.49	0.00	88.01	N/A	N/A
5200	63.41	PK	V	31.50	5.49	0.00	100.40	N/A	N/A
5200	53.06	AV	V	31.50	5.49	0.00	90.05	N/A	N/A
10400	40.01	PK	V	36.98	8.32	25.50	59.81	74.00	14.19
10400	30.42	AV	V	36.98	8.32	25.50	50.22	54.00	3.78
15600	33.44	PK	V	37.32	14.69	24.69	60.76	74.00	13.24
15600	21.60	AV	V	37.32	14.69	24.69	48.92	54.00	5.08
7513	34.11	PK	V	34.81	6.95	26.17	49.70	74.00	24.30
7513	21.70	AV	V	34.81	6.95	26.17	37.29	54.00	16.71
2786	33.75	PK	V	26.64	4.45	27.55	37.29	74.00	36.71
2786	21.01	AV	V	26.64	4.45	27.55	24.55	54.00	29.45
High Channel:5240 MHz									
5240	59.86	PK	H	31.58	5.28	0.00	96.72	N/A	N/A
5240	49.10	AV	H	31.58	5.28	0.00	85.96	N/A	N/A
5240	62.53	PK	V	31.58	5.28	0.00	99.39	N/A	N/A
5240	52.37	AV	V	31.58	5.28	0.00	89.23	N/A	N/A
5350	25.63	PK	V	31.80	5.61	0.00	63.04	74.00	10.96
5350	14.17	AV	V	31.80	5.61	0.00	51.58	54.00	2.42
10480	40.32	PK	V	37.00	8.23	26.01	59.54	74.00	14.46
10480	30.77	AV	V	37.00	8.23	26.01	49.99	54.00	4.01
15720	32.98	PK	V	37.10	14.20	24.92	59.36	74.00	14.64
15720	19.90	AV	V	37.10	14.20	24.92	46.28	54.00	7.72
6984	34.02	PK	V	33.56	6.36	26.27	47.67	74.00	26.33
6984	21.56	AV	V	33.56	6.36	26.27	35.21	54.00	18.79
2786	33.58	PK	V	26.64	4.45	27.55	37.12	74.00	36.88
2786	20.84	AV	V	26.64	4.45	27.55	24.38	54.00	29.62

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	Polar (H/V)	Factor (dB)					
Low Channel:5190 MHz									
5190	59.37	PK	H	31.48	5.44	0.00	96.29	N/A	N/A
5190	50.73	AV	H	31.48	5.44	0.00	87.65	N/A	N/A
5190	62.03	PK	V	31.48	5.44	0.00	98.95	N/A	N/A
5190	52.85	AV	V	31.48	5.44	0.00	89.77	N/A	N/A
5150	26.09	PK	V	31.40	5.26	0.00	62.75	74.00	11.25
5150	14.67	AV	V	31.40	5.26	0.00	51.33	54.00	2.67
10380	38.59	PK	V	36.98	8.34	25.51	58.40	74.00	15.60
10380	28.05	AV	V	36.98	8.34	25.51	47.86	54.00	6.14
15570	33.00	PK	V	37.37	14.81	24.83	60.35	74.00	13.65
15570	21.13	AV	V	37.37	14.81	24.83	48.48	54.00	5.52
6933	33.78	PK	V	33.43	6.34	26.38	47.17	74.00	26.83
6933	21.29	AV	V	33.43	6.34	26.38	34.68	54.00	19.32
2786	33.39	PK	V	26.64	4.45	27.55	36.93	74.00	37.07
2786	20.59	AV	V	26.64	4.45	27.55	24.13	54.00	29.87
High Channel:5230 MHz									
5230	57.14	PK	H	31.56	5.33	0.00	94.03	N/A	N/A
5230	47.69	AV	H	31.56	5.33	0.00	84.58	N/A	N/A
5230	60.75	PK	V	31.56	5.33	0.00	97.64	N/A	N/A
5230	50.63	AV	V	31.56	5.33	0.00	87.52	N/A	N/A
5350	25.85	PK	V	31.80	5.61	0.00	63.26	74.00	10.74
5350	14.43	AV	V	31.80	5.61	0.00	51.84	54.00	2.16
10460	38.39	PK	V	36.99	8.25	25.88	57.75	74.00	16.25
10460	27.77	AV	V	36.99	8.25	25.88	47.13	54.00	6.87
15690	32.79	PK	V	37.16	14.32	24.87	59.40	74.00	14.60
15690	20.90	AV	V	37.16	14.32	24.87	47.51	54.00	6.49
6973	33.52	PK	V	33.53	6.36	26.30	47.11	74.00	26.89
6973	21.12	AV	V	33.53	6.36	26.30	34.71	54.00	19.29
2786	33.13	PK	V	26.64	4.45	27.55	36.67	74.00	37.33
2786	20.38	AV	V	26.64	4.45	27.55	23.92	54.00	30.08

5725-5850MHz:

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	Polar (H/V)	Factor (dB)					
Low Channel:5745 MHz									
5745	58.44	PK	H	32.15	5.53	0.00	96.12	N/A	N/A
5745	48.51	AV	H	32.15	5.53	0.00	86.19	N/A	N/A
5745	61.69	PK	V	32.15	5.53	0.00	99.37	N/A	N/A
5745	51.75	AV	V	32.15	5.53	0.00	89.43	N/A	N/A
5725	32.48	PK	V	32.15	5.60	0.00	70.23	122.20	51.97
5720	30.48	PK	V	32.14	5.61	0.00	68.23	110.80	42.57
5700	29.64	PK	V	32.14	5.68	0.00	67.46	105.20	37.74
5650	28.95	PK	V	32.13	5.28	0.00	66.36	68.20	1.84
11490	37.11	PK	V	37.89	8.94	26.14	57.80	74.00	16.20
11490	27.31	AV	V	37.89	8.94	26.14	48.00	54.00	6.00
17235	33.80	PK	V	40.91	13.69	25.63	62.77	74.00	11.23
17235	20.71	AV	V	40.91	13.69	25.63	49.68	54.00	4.32
3547	35.09	PK	V	28.90	4.50	27.25	41.24	74.00	32.76
3547	22.66	AV	V	28.90	4.50	27.25	28.81	54.00	25.19
4652	34.25	PK	V	30.20	4.89	27.35	41.99	74.00	32.01
4652	21.49	AV	V	30.20	4.89	27.35	29.23	54.00	24.77
Middle Channel:5785 MHz									
5775.3	58.82	PK	H	32.16	5.48	0.00	96.46	N/A	N/A
5775.3	48.83	AV	H	32.16	5.48	0.00	86.47	N/A	N/A
5775.3	62.03	PK	V	32.16	5.48	0.00	99.67	N/A	N/A
5775.3	52.12	AV	V	32.16	5.48	0.00	89.76	N/A	N/A
11570	39.78	PK	V	37.90	8.92	26.07	60.53	74.00	13.47
11570	29.94	AV	V	37.90	8.92	26.07	50.69	54.00	3.31
17355	33.48	PK	V	41.63	12.99	25.63	62.47	74.00	11.53
17355	20.32	AV	V	41.63	12.99	25.63	49.31	54.00	4.69
3075	34.86	PK	V	27.44	6.74	27.47	41.57	74.00	32.43
3075	22.41	AV	V	27.44	6.74	27.47	29.12	54.00	24.88
6681	33.98	PK	V	32.77	6.22	26.62	46.35	74.00	27.65
6681	21.23	AV	V	32.77	6.22	26.62	33.60	54.00	20.40
High Channel:5825 MHz									
5825	58.99	PK	H	32.17	5.75	0.00	96.91	N/A	N/A
5825	48.01	AV	H	32.17	5.75	0.00	85.93	N/A	N/A
5825	61.33	PK	V	32.17	5.75	0.00	99.25	N/A	N/A
5825	51.22	AV	V	32.17	5.75	0.00	89.14	N/A	N/A
5850	29.37	PK	V	32.17	6.05	0.00	67.59	122.20	54.61
5855	29.02	PK	V	32.17	6.03	0.00	67.22	110.80	43.58
5875	28.59	PK	V	32.18	5.97	0.00	66.74	105.20	38.46
5925	27.80	PK	V	32.19	5.96	0.00	65.95	68.20	2.25
11650	37.47	PK	V	37.90	8.90	25.75	58.52	74.00	15.48
11650	27.68	AV	V	37.90	8.90	25.75	48.73	54.00	5.27
17475	34.19	PK	V	42.35	12.30	25.39	63.45	74.00	10.55
17475	21.02	AV	V	42.35	12.30	25.39	50.28	54.00	3.72
3625	35.39	PK	V	29.08	4.58	27.28	41.77	74.00	32.23
3625	22.94	AV	V	29.08	4.58	27.28	29.32	54.00	24.68
4570	34.51	PK	V	29.98	5.11	27.26	42.34	74.00	31.66
4570	21.70	AV	V	29.98	5.11	27.26	29.53	54.00	24.47

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	Polar (H/V)	Factor (dB)					
Low Channel:5745 MHz									
5745	58.79	PK	H	32.15	5.53	0.00	96.47	N/A	N/A
5745	48.56	AV	H	32.15	5.53	0.00	86.24	N/A	N/A
5745	61.11	PK	V	32.15	5.53	0.00	98.79	N/A	N/A
5745	51.40	AV	V	32.15	5.53	0.00	89.08	N/A	N/A
5725	35.31	PK	V	32.15	5.60	0.00	73.06	122.20	49.14
5720	29.47	PK	V	32.14	5.61	0.00	67.22	110.80	43.58
5700	28.67	PK	V	32.14	5.68	0.00	66.49	105.20	38.71
5650	27.89	PK	V	32.13	5.28	0.00	65.30	68.20	2.90
11490	37.48	PK	V	37.89	8.94	26.14	58.17	74.00	15.83
11490	27.63	AV	V	37.89	8.94	26.14	48.32	54.00	5.68
17235	33.11	PK	V	40.91	13.69	25.63	62.08	74.00	11.92
17235	20.03	AV	V	40.91	13.69	25.63	49.00	54.00	5.00
3205	34.51	PK	V	27.86	6.10	27.37	41.10	74.00	32.90
3205	22.11	AV	V	27.86	6.10	27.37	28.70	54.00	25.30
4570	33.60	PK	V	29.98	5.11	27.26	41.43	74.00	32.57
4570	20.86	AV	V	29.98	5.11	27.26	28.69	54.00	25.31
Middle Channel:5785 MHz									
5775.3	59.10	PK	H	32.16	5.48	0.00	96.74	N/A	N/A
5775.3	48.86	AV	H	32.16	5.48	0.00	86.50	N/A	N/A
5775.3	62.02	PK	V	32.16	5.48	0.00	99.66	N/A	N/A
5775.3	51.71	AV	V	32.16	5.48	0.00	89.35	N/A	N/A
11570	39.54	PK	V	37.90	8.92	26.07	60.29	74.00	13.71
11570	29.72	AV	V	37.90	8.92	26.07	50.47	54.00	3.53
17355	33.21	PK	V	41.63	12.99	25.63	62.20	74.00	11.80
17355	20.10	AV	V	41.63	12.99	25.63	49.09	54.00	4.91
3128	34.58	PK	V	27.61	6.92	27.43	41.68	74.00	32.32
3128	22.17	AV	V	27.61	6.92	27.43	29.27	54.00	24.73
6681	33.69	PK	V	32.77	6.22	26.62	46.06	74.00	27.94
6681	20.98	AV	V	32.77	6.22	26.62	33.35	54.00	20.65
High Channel:5825 MHz									
5825	57.47	PK	H	32.17	5.75	0.00	95.39	N/A	N/A
5825	47.68	AV	H	32.17	5.75	0.00	85.60	N/A	N/A
5825	60.23	PK	V	32.17	5.75	0.00	98.15	N/A	N/A
5825	50.57	AV	V	32.17	5.75	0.00	88.49	N/A	N/A
5850	29.76	PK	V	32.17	6.05	0.00	67.98	122.20	54.22
5855	30.11	PK	V	32.17	6.03	0.00	68.31	110.80	42.49
5875	25.85	PK	V	32.18	5.97	0.00	64.00	105.20	41.20
5925	25.76	PK	V	32.19	5.96	0.00	63.91	68.20	4.29
11650	38.68	PK	V	37.90	8.90	25.75	59.73	74.00	14.27
11650	29.87	AV	V	37.90	8.90	25.75	50.92	54.00	3.08
17475	33.38	PK	V	42.35	12.30	25.39	62.64	74.00	11.36
17475	20.26	AV	V	42.35	12.30	25.39	49.52	54.00	4.48
3625	34.73	PK	V	29.08	4.58	27.28	41.11	74.00	32.89
3625	22.33	AV	V	29.08	4.58	27.28	28.71	54.00	25.29
4796	33.89	PK	V	30.57	5.10	27.41	42.15	74.00	31.85
4796	21.16	AV	V	30.57	5.10	27.41	29.42	54.00	24.58

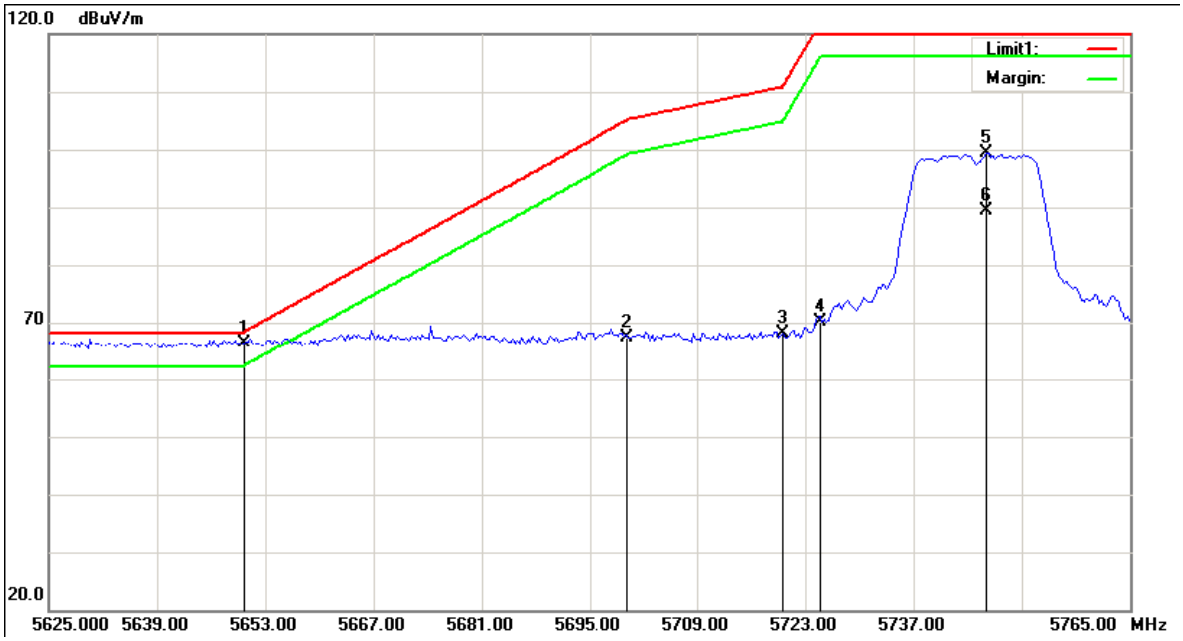
802.11n ht40 Mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)					
Low Channel:5755 MHz									
5755	58.22	PK	H	32.15	5.50	26.59	69.28	N/A	N/A
5755	48.69	AV	H	32.15	5.50	26.59	59.75	N/A	N/A
5755	61.57	PK	V	32.15	5.50	26.59	72.63	N/A	N/A
5755	50.89	AV	V	32.15	5.50	26.59	61.95	N/A	N/A
5725	34.11	PK	V	32.15	5.60	0.00	71.86	122.20	50.34
5720	32.94	PK	V	32.14	5.61	0.00	70.69	110.80	40.11
5700	29.41	PK	V	32.14	5.68	0.00	67.23	105.20	37.97
5650	28.66	PK	V	32.13	5.28	0.00	66.07	68.20	2.13
11510	38.65	PK	V	37.90	8.95	26.12	59.38	74.00	14.62
11510	27.82	AV	V	37.90	8.95	26.12	48.55	54.00	5.45
17265	33.24	PK	V	41.09	13.51	25.63	62.21	74.00	11.79
17265	20.19	AV	V	41.09	13.51	25.63	49.16	54.00	4.84
4015	34.64	PK	V	29.90	4.77	27.19	42.12	74.00	31.88
4015	22.25	AV	V	29.90	4.77	27.19	29.73	54.00	24.27
6241	33.73	PK	V	32.25	6.00	26.69	45.29	74.00	28.71
6241	20.98	AV	V	32.25	6.00	26.69	32.54	54.00	21.46
High Channel:5795 MHz									
5795	57.54	PK	H	32.16	5.46	26.55	68.61	N/A	N/A
5795	47.68	AV	H	32.16	5.46	26.55	58.75	N/A	N/A
5795	60.81	PK	V	32.16	5.46	26.55	71.88	N/A	N/A
5795	50.46	AV	V	32.16	5.46	26.55	61.53	N/A	N/A
5850	28.95	PK	V	32.17	6.05	0.00	67.17	122.20	55.03
5855	27.66	PK	V	32.17	6.03	0.00	65.86	110.80	44.94
5875	28.38	PK	V	32.18	5.97	0.00	66.53	105.20	38.67
5925	27.69	PK	V	32.19	5.96	0.00	65.84	68.20	2.36
11590	37.86	PK	V	37.90	8.92	26.06	58.62	74.00	15.38
11590	29.09	AV	V	37.90	8.92	26.06	49.85	54.00	4.15
17385	33.45	PK	V	41.81	12.82	25.63	62.45	74.00	11.55
17385	20.47	AV	V	41.81	12.82	25.63	49.47	54.00	4.53
3185	34.95	PK	V	27.79	6.35	27.38	41.71	74.00	32.29
3185	22.53	AV	V	27.79	6.35	27.38	29.29	54.00	24.71
6581	34.05	PK	V	32.51	6.18	26.57	46.17	74.00	27.83
6581	21.28	AV	V	32.51	6.18	26.57	33.40	54.00	20.60

Bandedge measurement of 5725-5850 MHz:

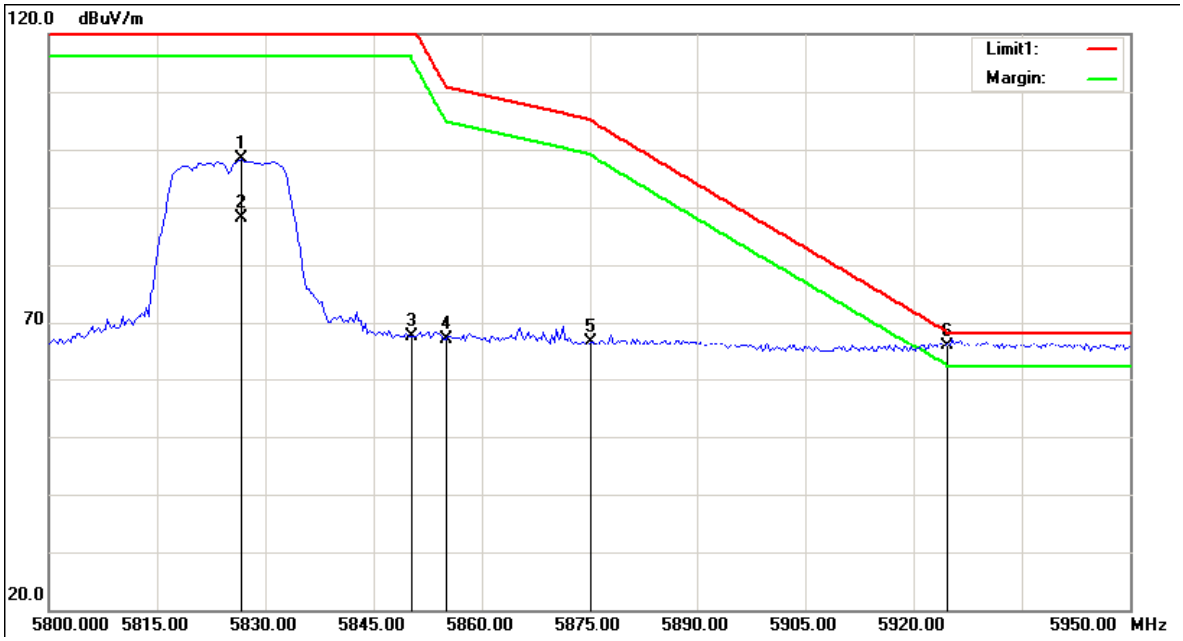
Vertical:

802.11a Low channel



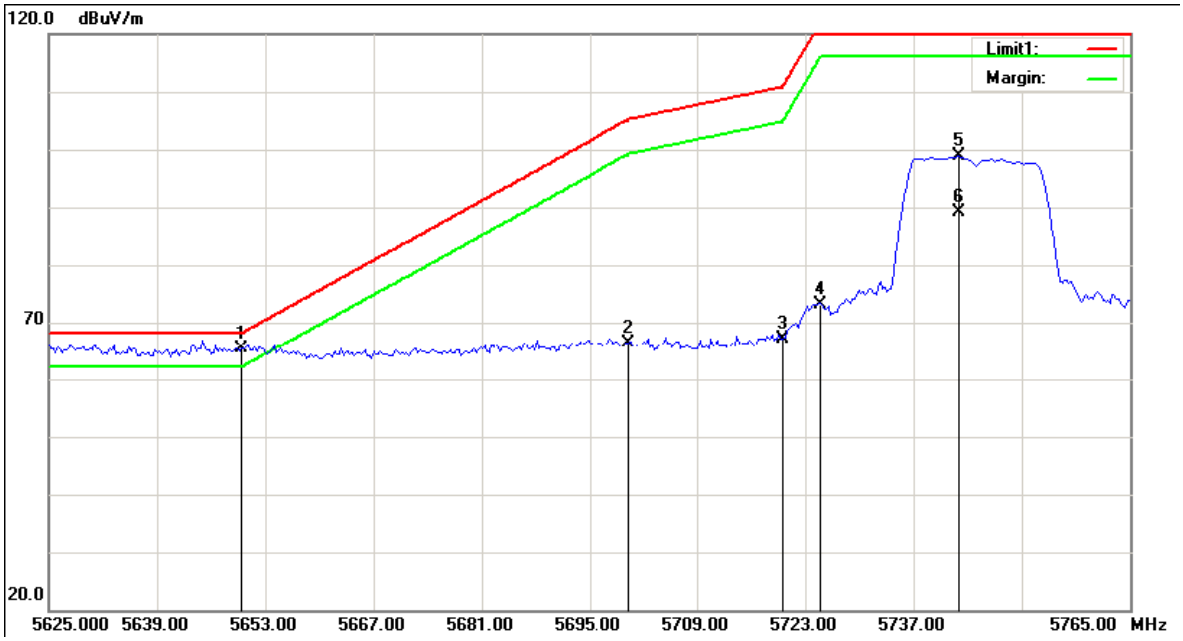
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	28.95	peak	37.41	66.36	68.20	142	307	-1.84	
	2	5700.000	29.64	peak	37.82	67.46	105.20	142	307	-37.74	
	3	5720.000	30.48	peak	37.75	68.23	110.80	142	307	-42.57	
	4	5725.000	32.48	peak	37.75	70.23	122.20	142	307	-51.97	
	5	5746.483	61.69	peak	37.67	99.36	122.20	142	307	-22.84	
	6	5746.483	51.75	AVG	37.67	89.42	122.20	142	307	-32.78	

802.11a High channel



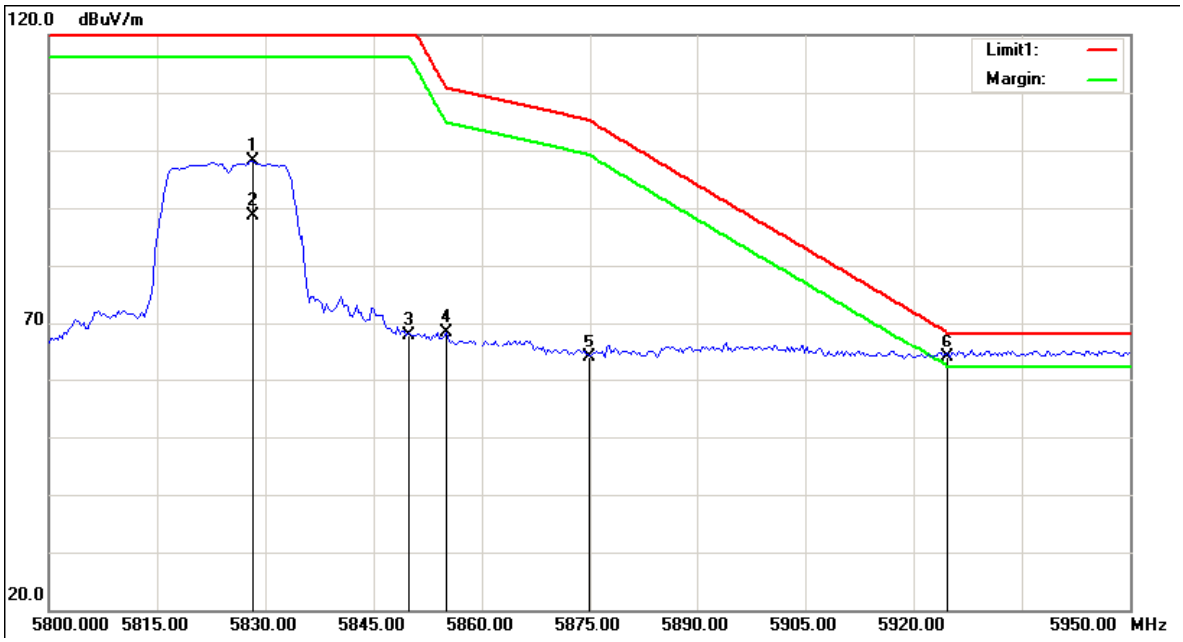
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5826.754	60.33	peak	37.94	98.27	122.20	169	285	-23.93	
	2	5826.754	50.22	AVG	37.94	88.16	122.20	169	285	-34.04	
	3	5850.000	29.37	peak	38.22	67.59	122.20	169	285	-54.61	
	4	5855.000	29.02	peak	38.20	67.22	110.80	169	285	-43.58	
	5	5875.000	28.59	peak	38.15	66.74	105.20	169	285	-38.46	
*	6	5925.000	27.80	peak	38.15	65.95	68.20	169	285	-2.25	

802.11n ht20 Low channel



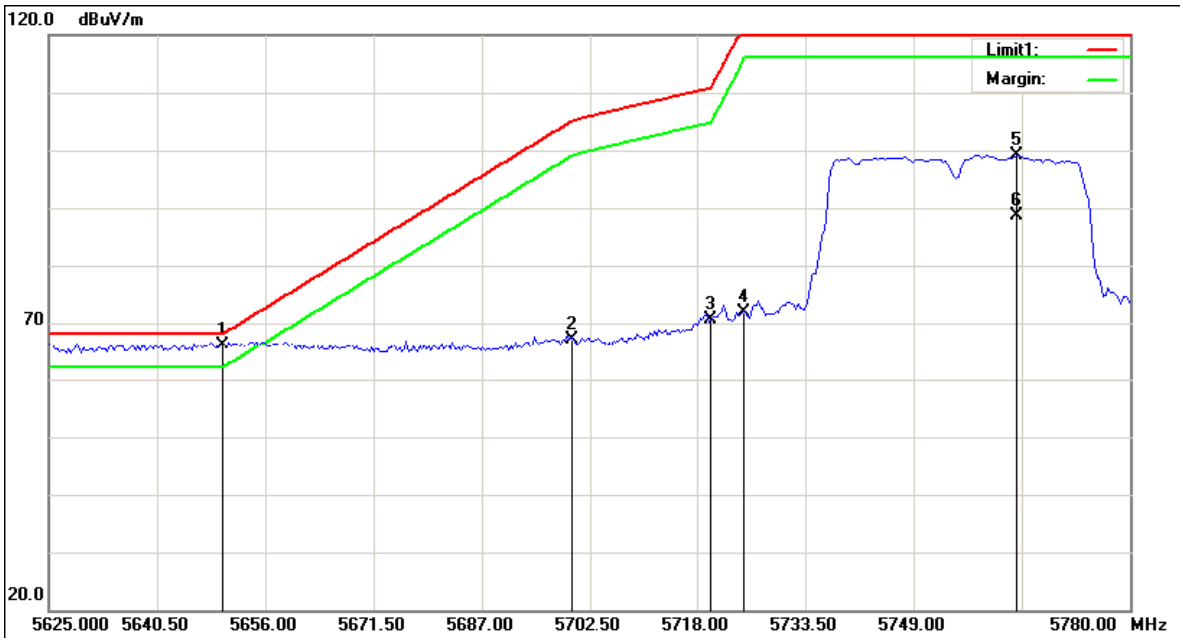
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	27.89	peak	37.41	65.30	68.20	143	305	-2.90	
	2	5700.000	28.67	peak	37.82	66.49	105.20	143	305	-38.71	
	3	5720.000	29.47	peak	37.75	67.22	110.80	143	305	-43.58	
	4	5725.000	35.31	peak	37.75	73.06	122.20	143	305	-49.14	
	5	5742.836	61.11	peak	37.68	98.79	122.20	143	305	-23.41	
	6	5742.836	51.40	AVG	37.68	89.08	122.20	143	305	-33.12	

802.11n ht20 High channel



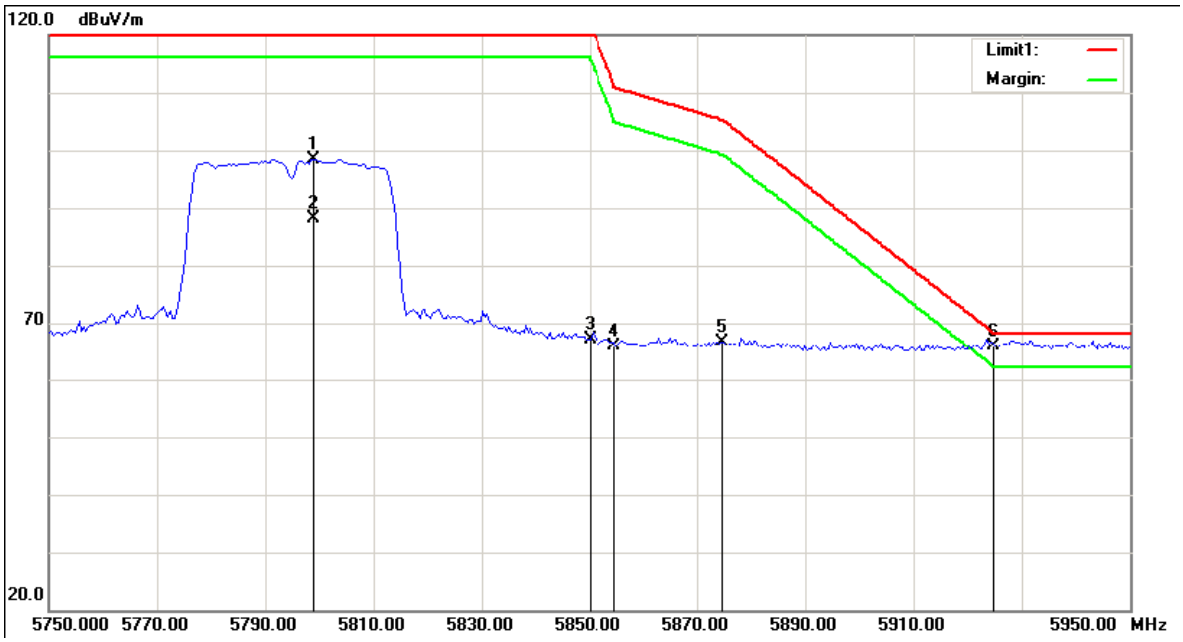
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5828.257	60.23	peak	37.96	98.19	122.20	148	256	-24.01	
	2	5828.257	50.57	AVG	37.96	88.53	122.20	148	256	-33.67	
	3	5850.000	29.76	peak	38.22	67.98	122.20	148	256	-54.22	
	4	5855.000	30.11	peak	38.20	68.31	110.80	148	256	-42.49	
	5	5875.000	25.85	peak	38.15	64.00	105.20	148	256	-41.20	
*	6	5925.000	25.76	peak	38.15	63.91	68.20	148	256	-4.29	

802.11n ht40 Low channel



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	28.66	peak	37.41	66.07	68.20	145	311	-2.13	
	2	5700.000	29.41	peak	37.82	67.23	105.20	145	311	-37.97	
	3	5720.000	32.94	peak	37.75	70.69	110.80	145	311	-40.11	
	4	5725.000	34.11	peak	37.75	71.86	122.20	145	311	-50.34	
	5	5763.848	61.57	peak	37.64	99.21	122.20	145	311	-22.99	
	6	5763.848	50.89	AVG	37.64	88.53	122.20	145	311	-33.67	

802.11n ht40 High channel



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5798.898	60.81	peak	37.61	98.42	122.20	156	268	-23.78	
	2	5798.898	50.46	AVG	37.61	88.07	122.20	156	268	-34.13	
	3	5850.000	28.95	peak	38.22	67.17	122.20	156	268	-55.03	
	4	5855.000	27.66	peak	38.20	65.86	110.80	156	268	-44.94	
	5	5875.000	28.38	peak	38.15	66.53	105.20	156	268	-38.67	
*	6	5925.000	27.69	peak	38.15	65.84	68.20	156	268	-2.36	

FCC§15.407(b) –CONDUCTED SPURIOUS EMISSION AT ANTENNA PORT

Applicable Standard

FCC §15.407;

(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.

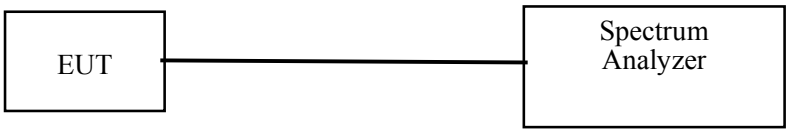
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(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.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The Resolution bandwidth is set to 1MHz, The Video bandwidth is set to ≥ 1MHz, report the peak value out of the oprating band. Offset the cable loss in the display.
3. Repeat above procedures until all frequencies measured were complete.



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	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
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:	28.8~29.3 °C
Relative Humidity:	37~49%
ATM Pressure:	100.1~100.2 kPa

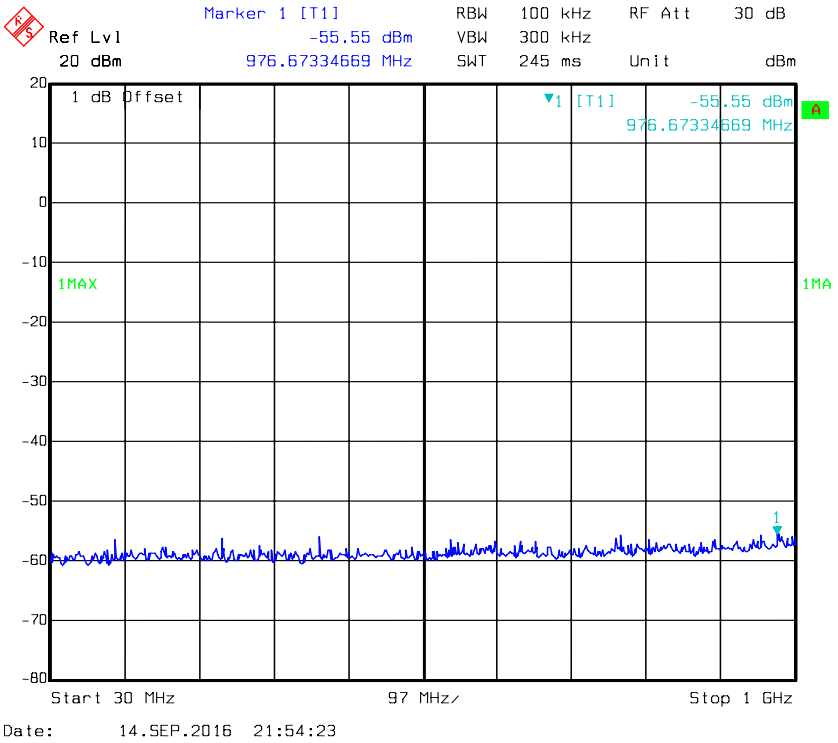
The testing was performed by Lion Xao from 2016-09-14 to 2016-09-18..

Result: Compliance.

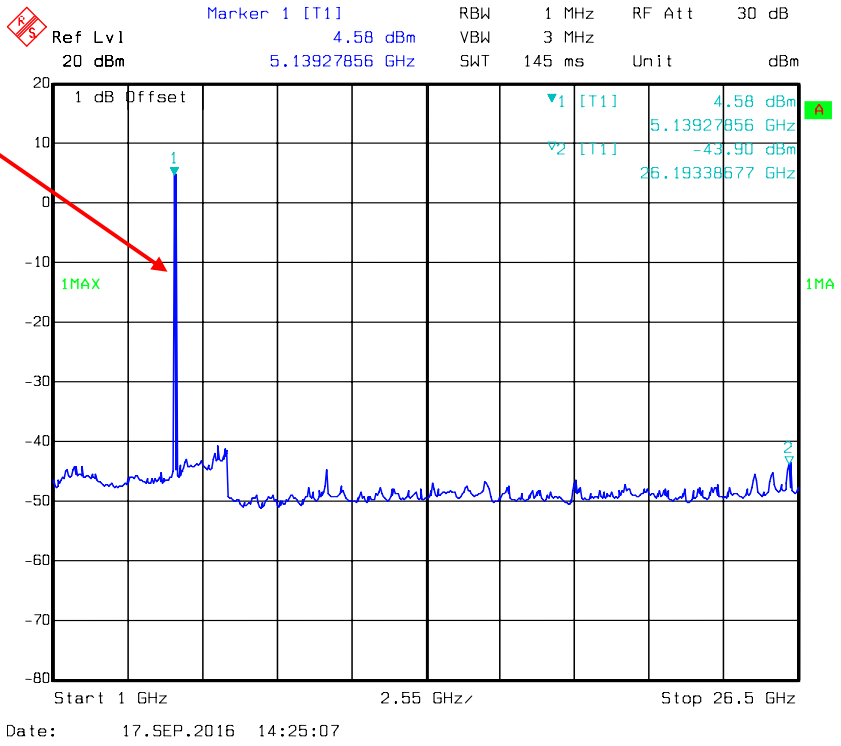
Note: The max antenna gain is 1.0 dBi, and conducted emissions comply with -26dBm/MHz. That is compliance with the requirement. Please refer to the below plots.

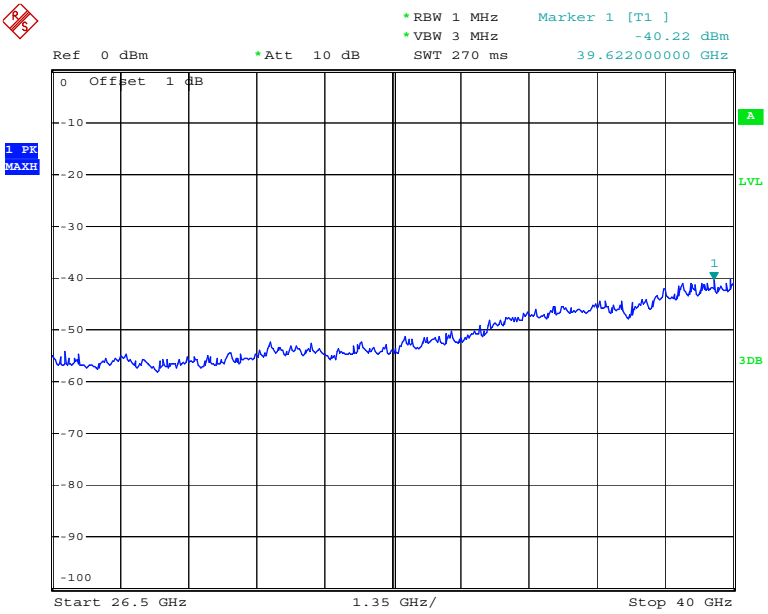
5150-5250MHz:

802.11a Low Channel



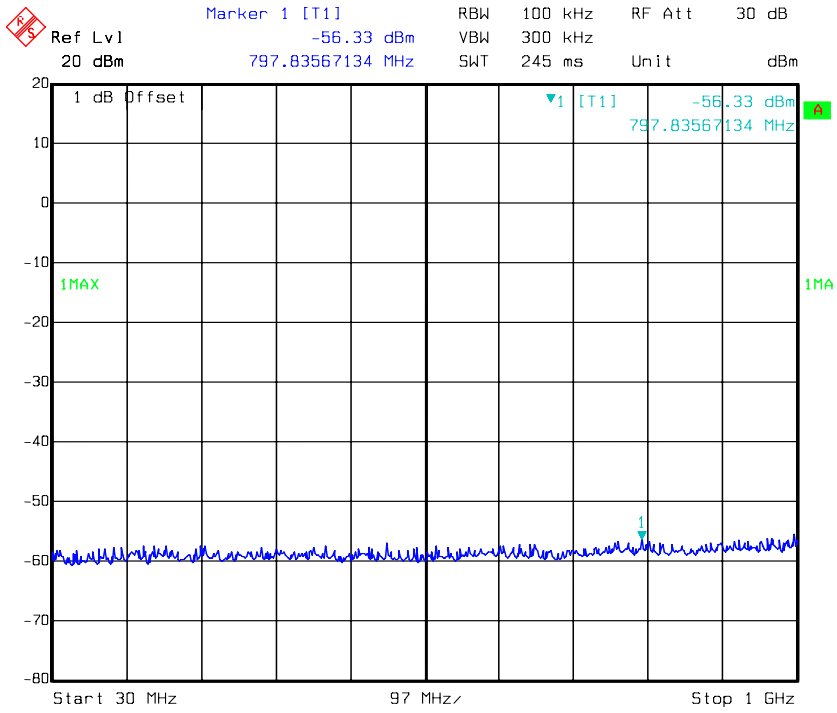
Fundamental





Date: 18.SEP.2016 16:44:23

802.11a Middle Channel



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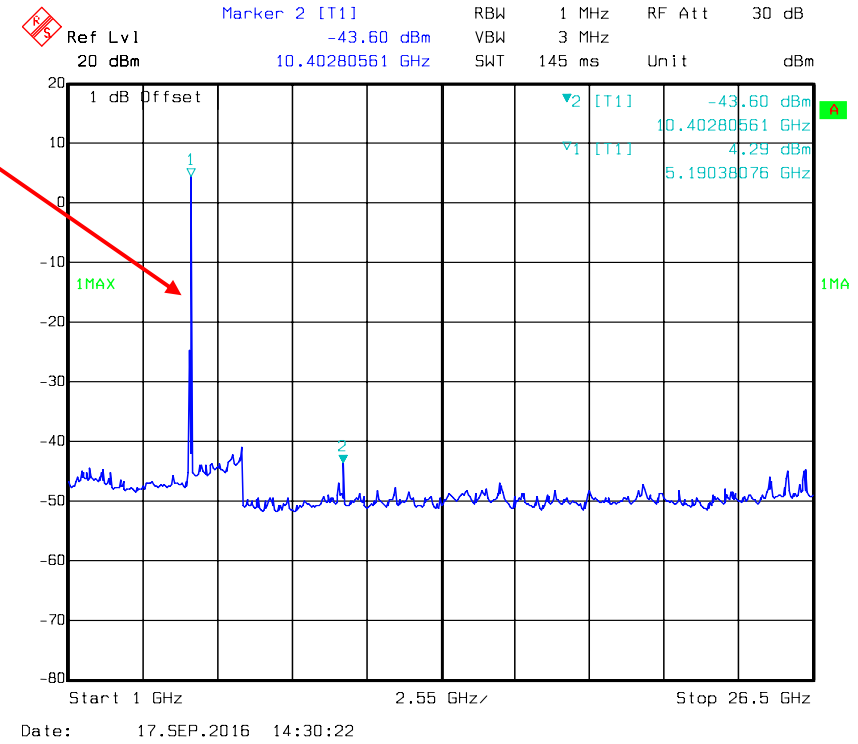
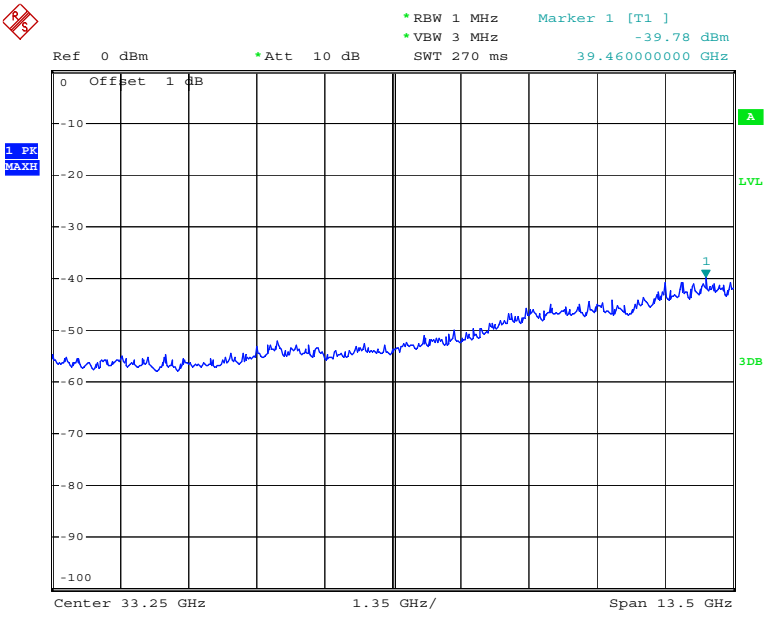
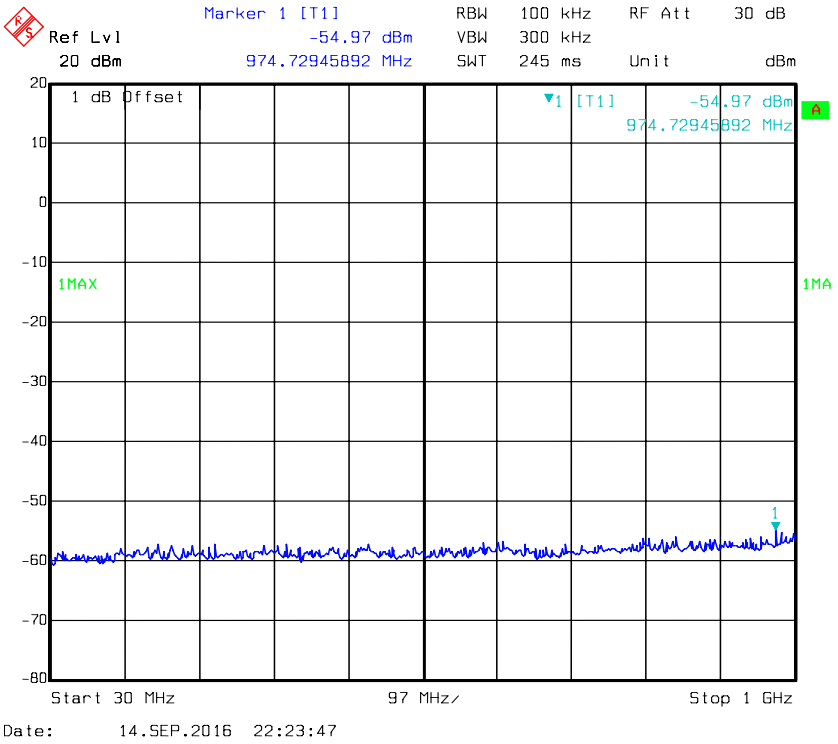
Fundamental

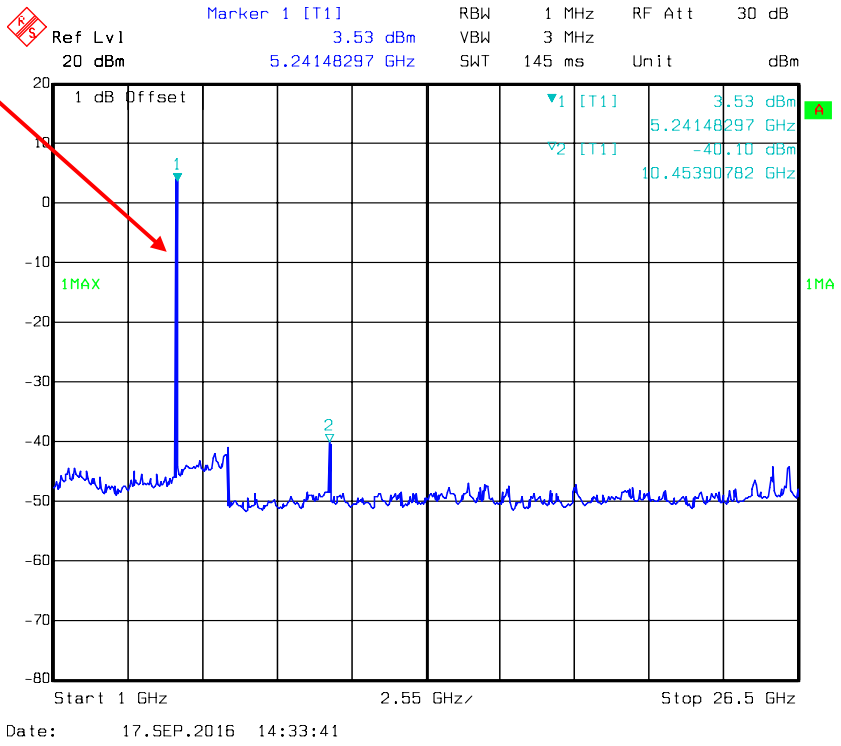


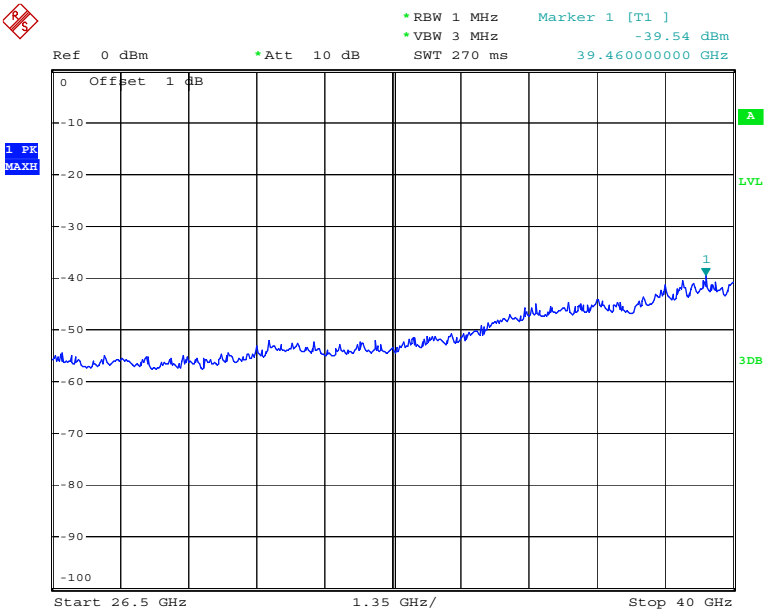


802.11a High Channel



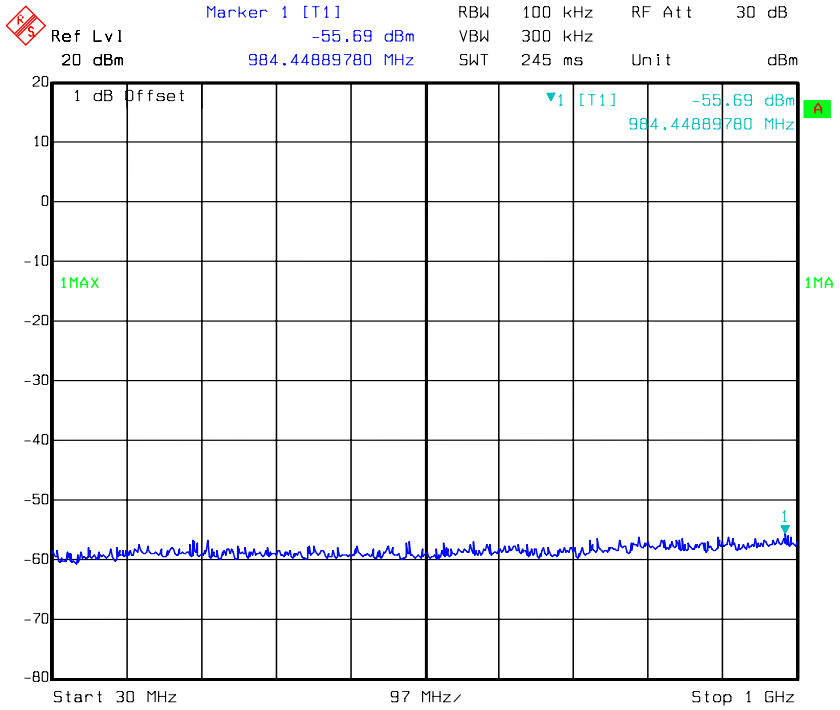
Fundamental





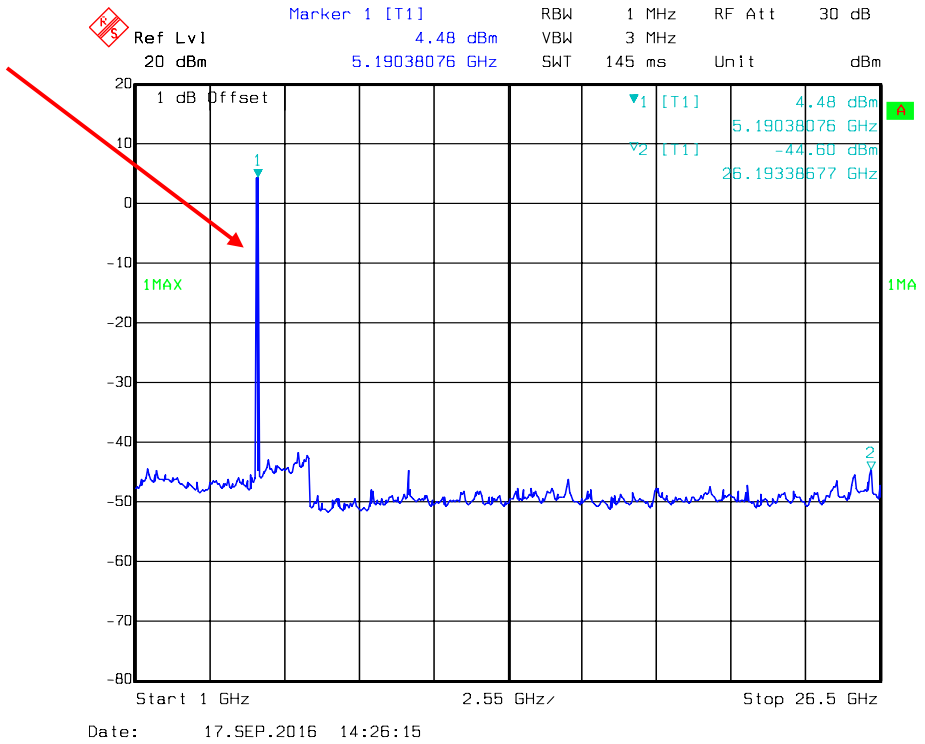
Date: 18.SEP.2016 16:42:06

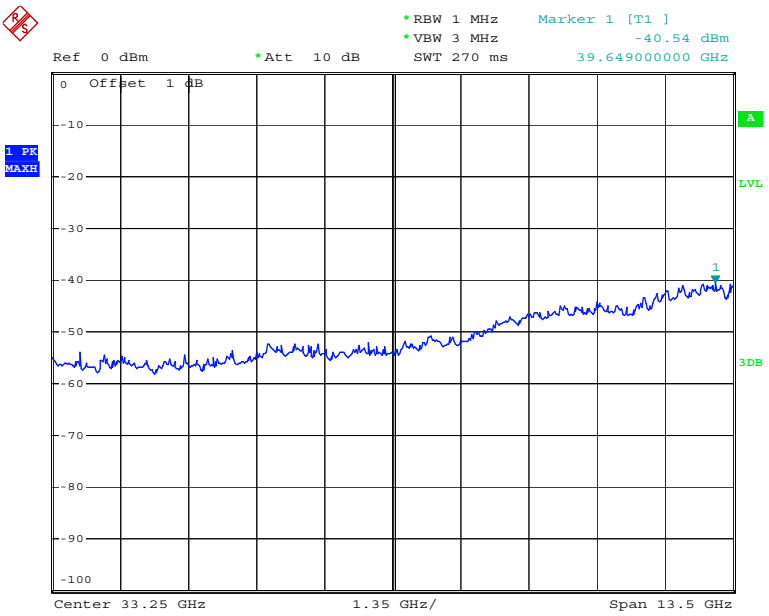
802.11n ht20 Low Channel



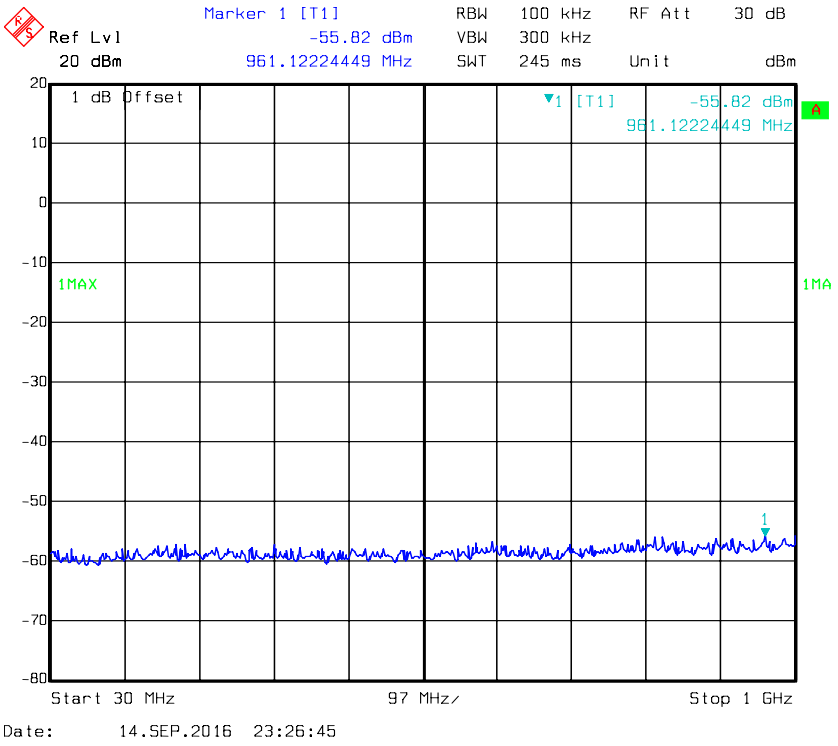
Date: 14.SEP.2016 23:19:53

Fundamental

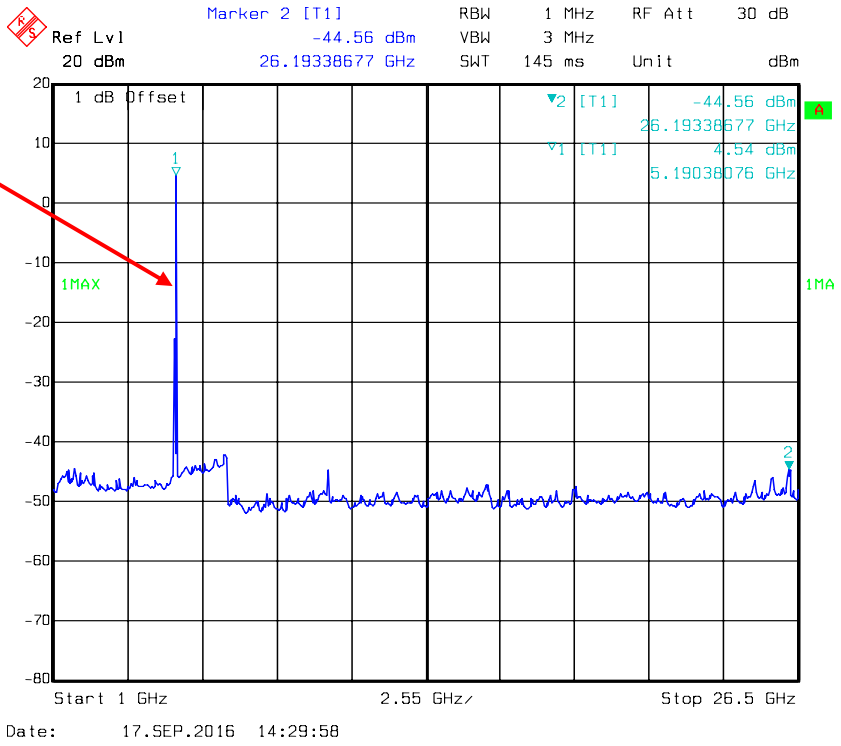


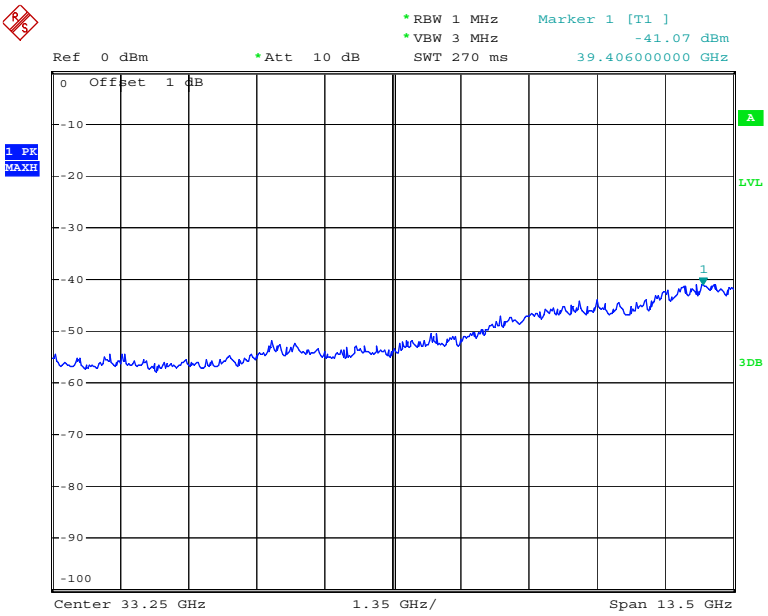


802.11n ht20 Middle Channel



Fundamental





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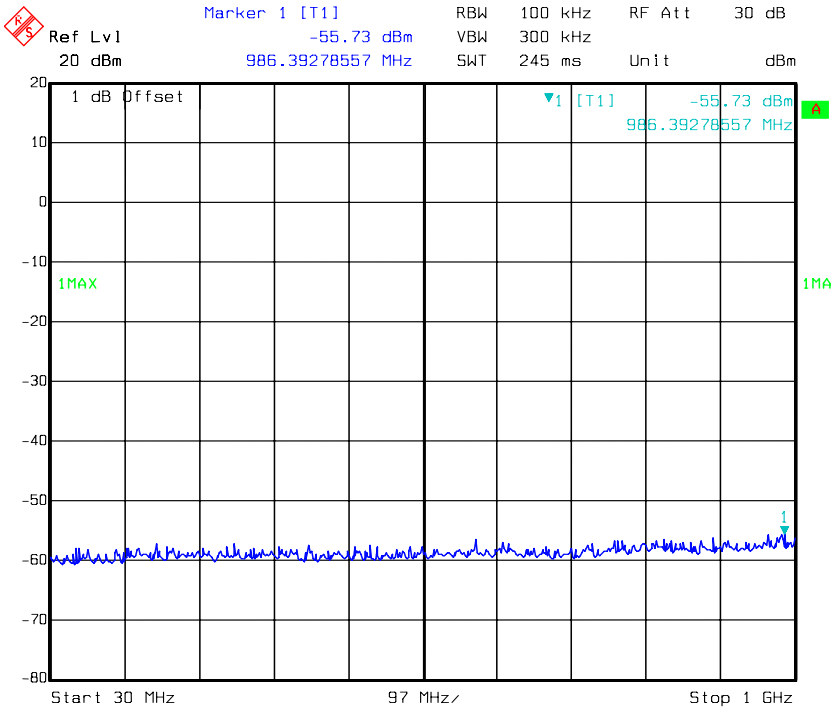
802.11n ht20 High Channel



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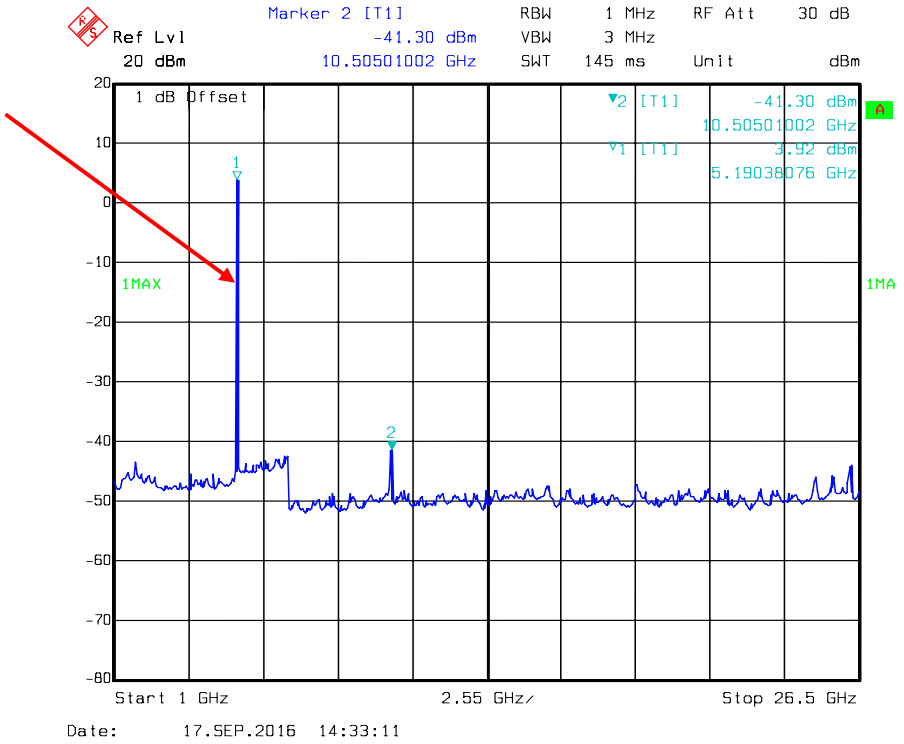
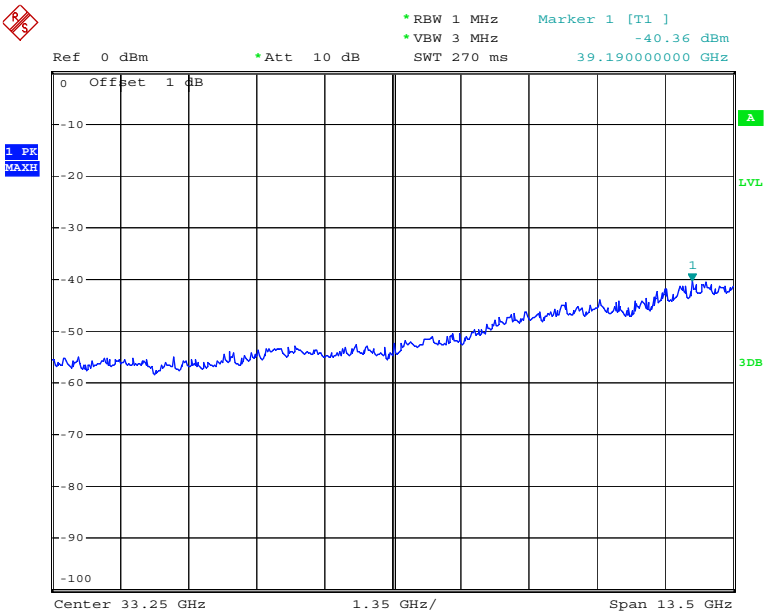
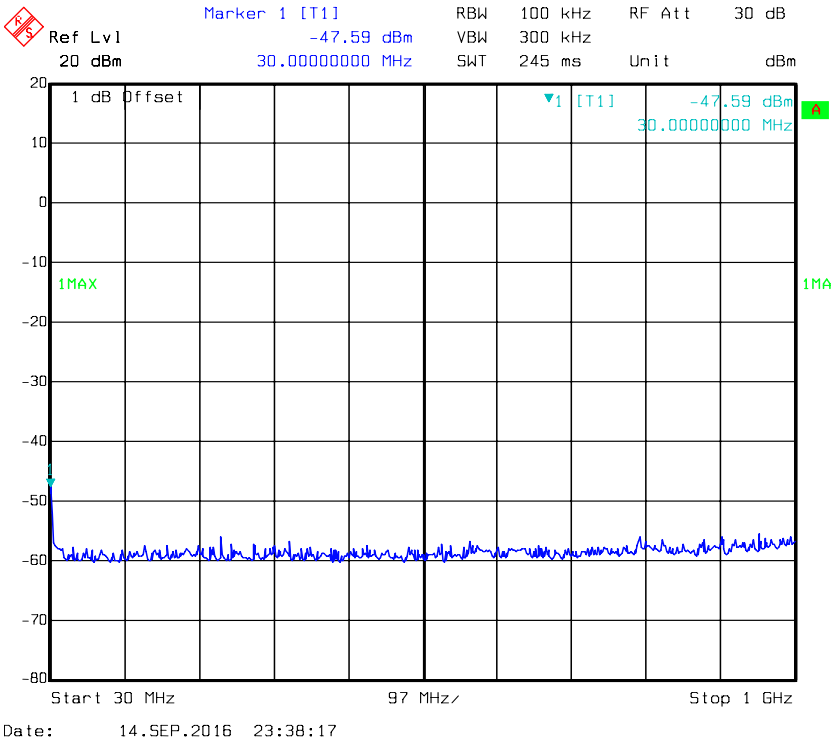
Fundamental

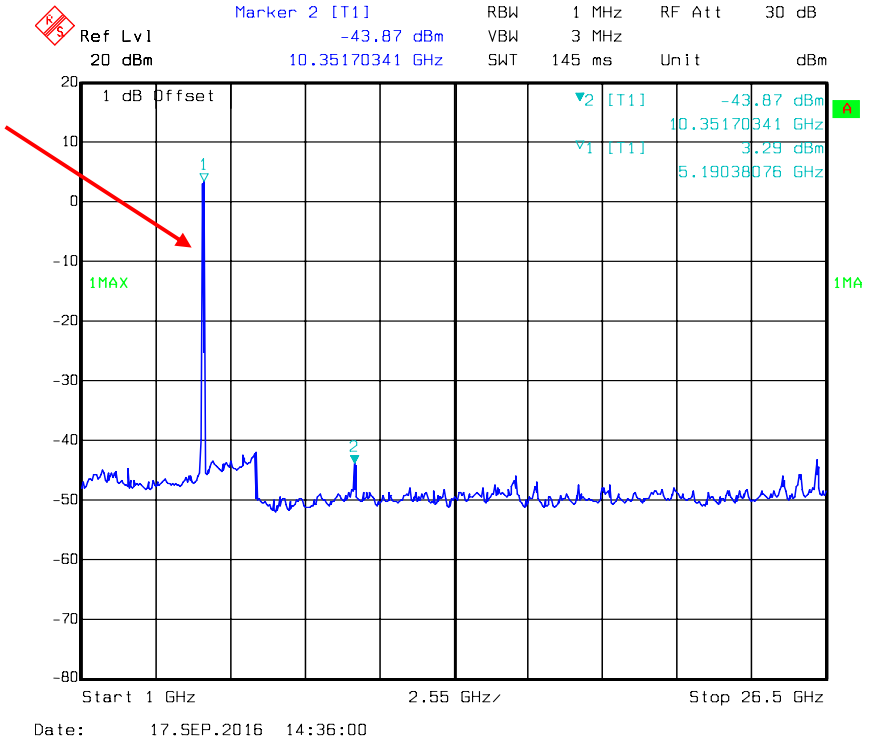


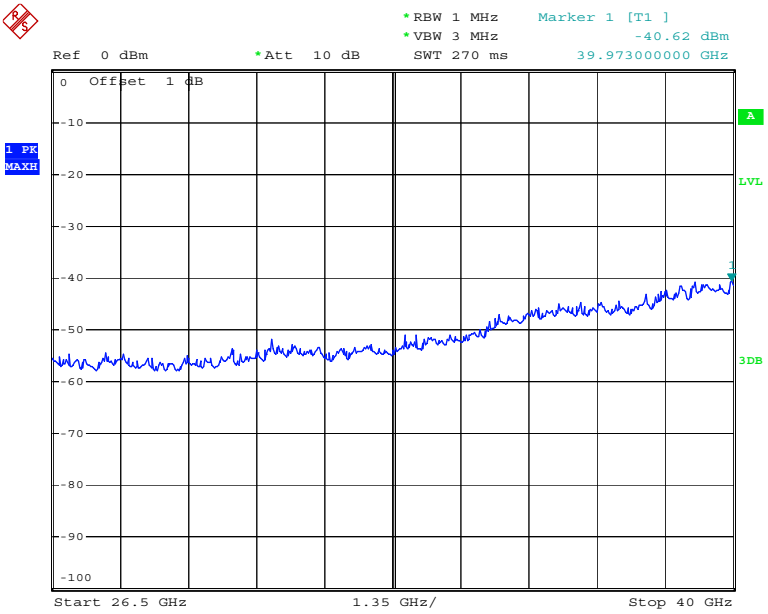


802.11n ht40 Low Channel



Fundamental





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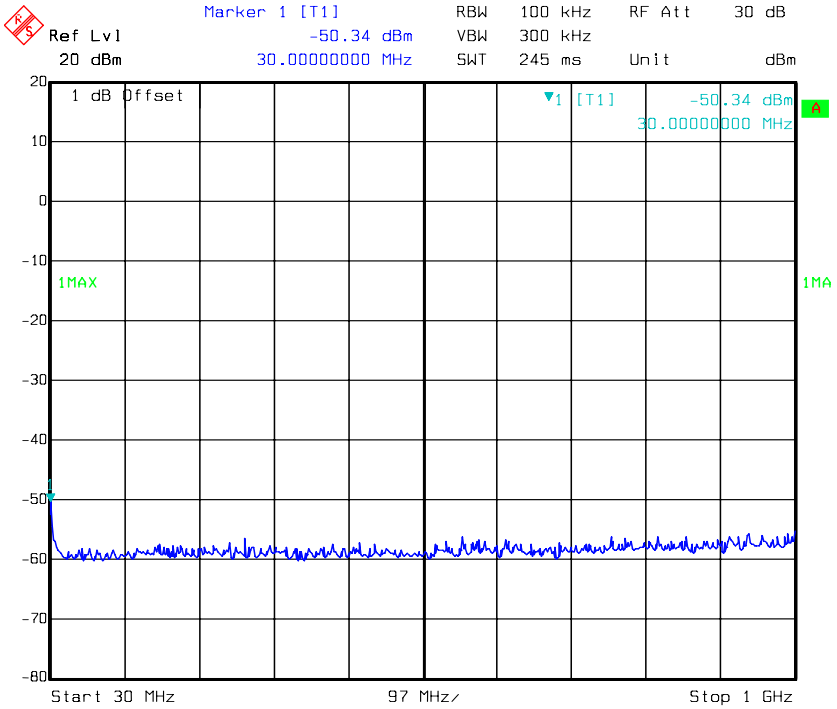
802.11n ht40 High Channel



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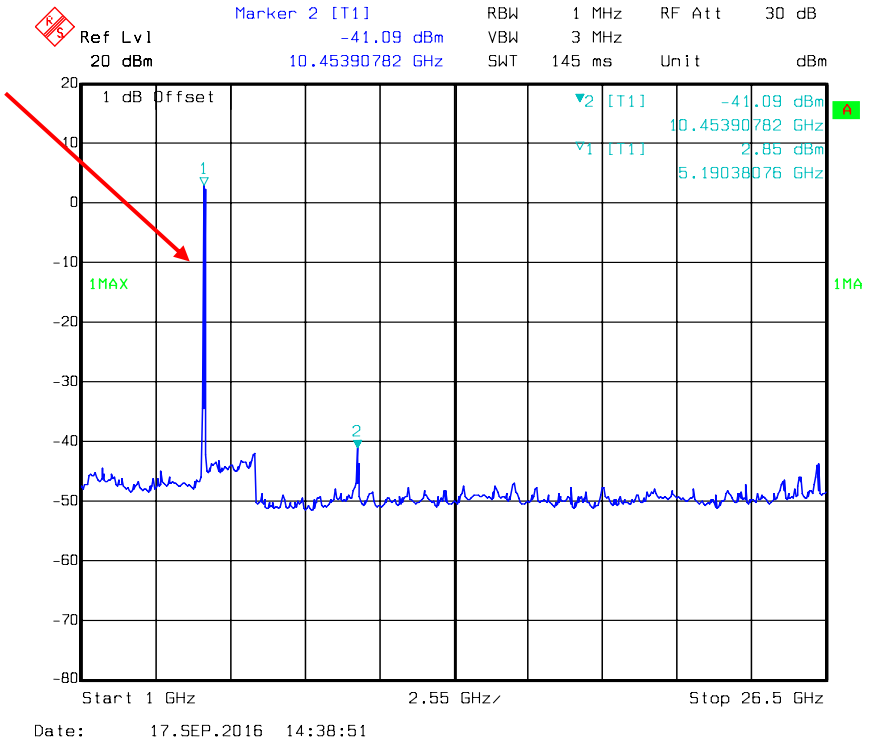
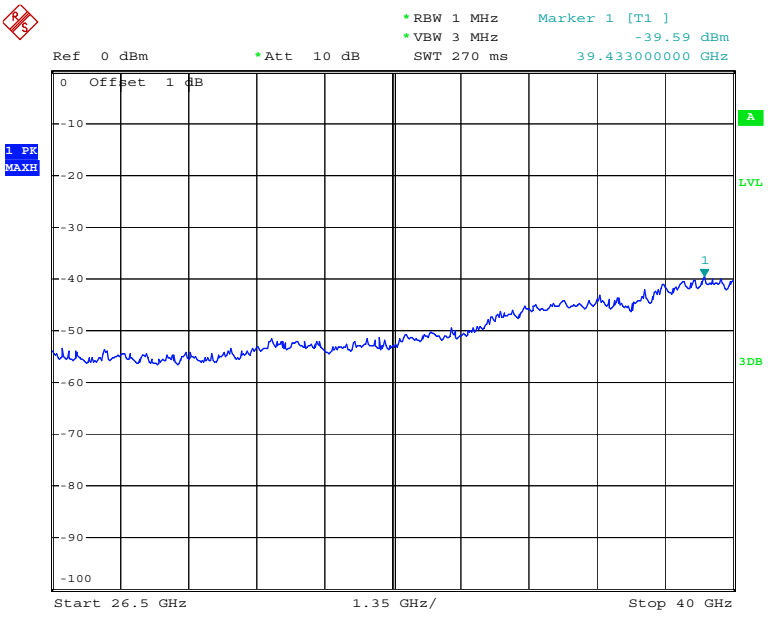
Fundamental





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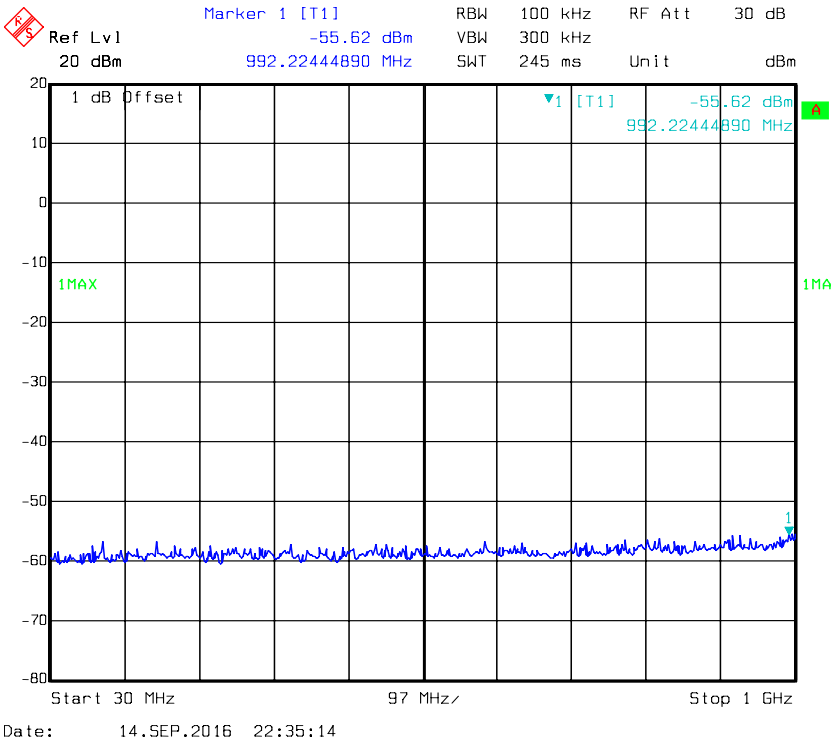
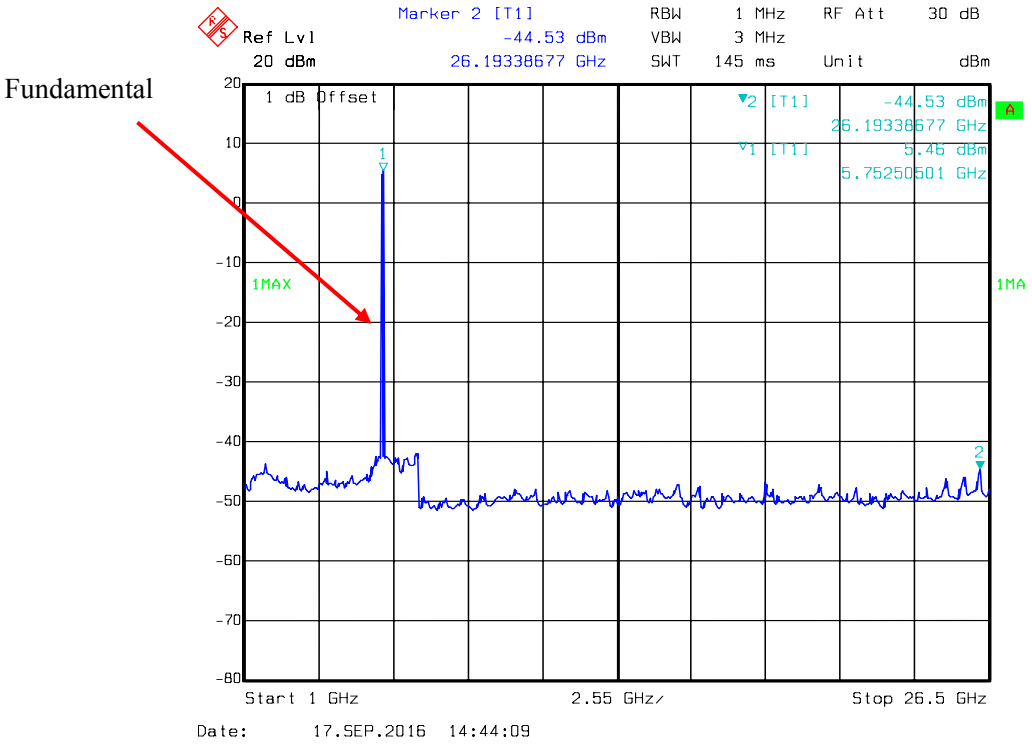
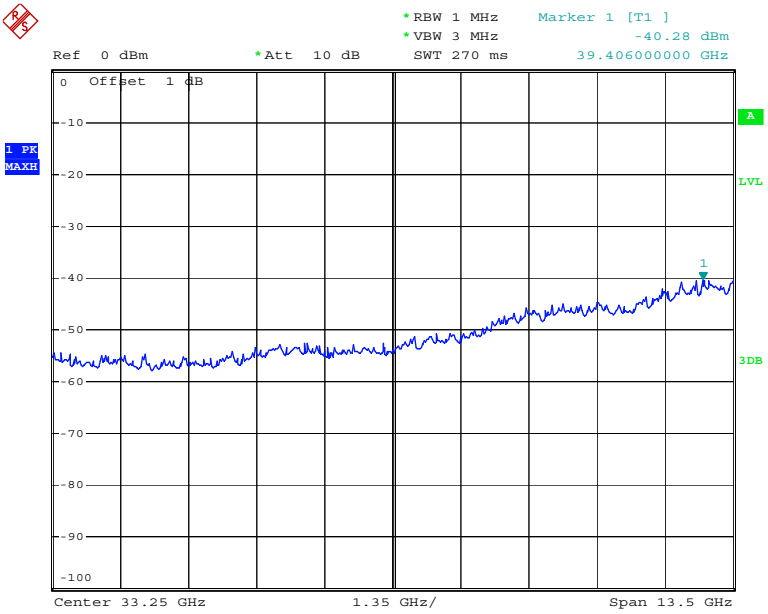
5725-5850MHz:

802.11a Low Channel







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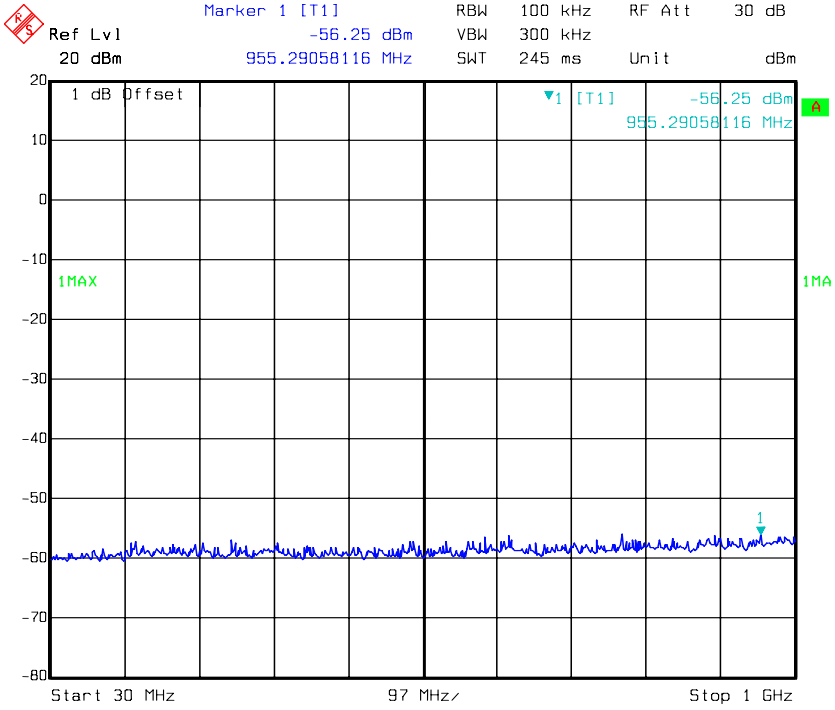
802.11a Middle Channel



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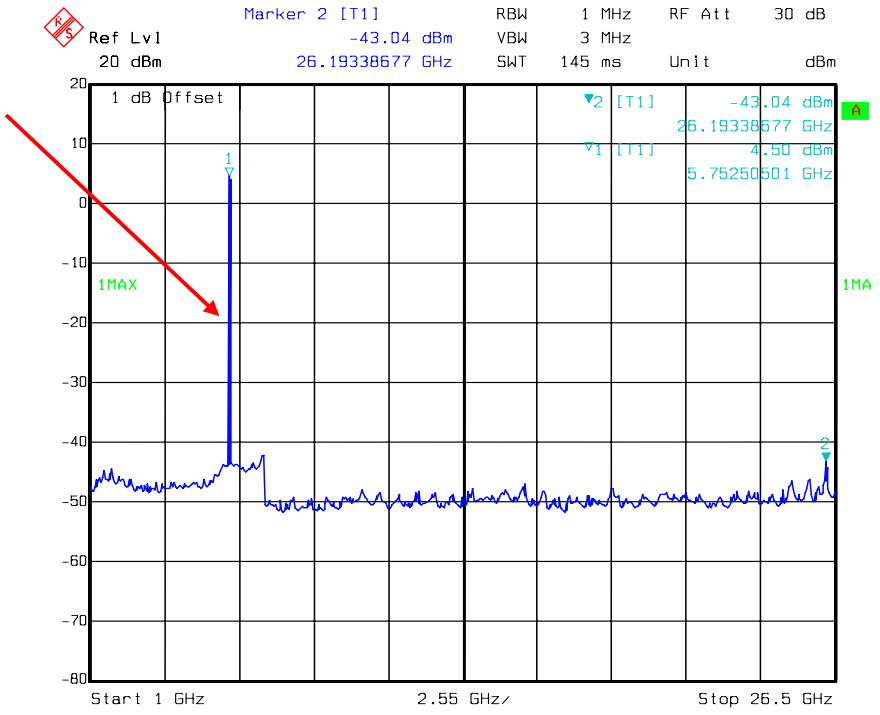
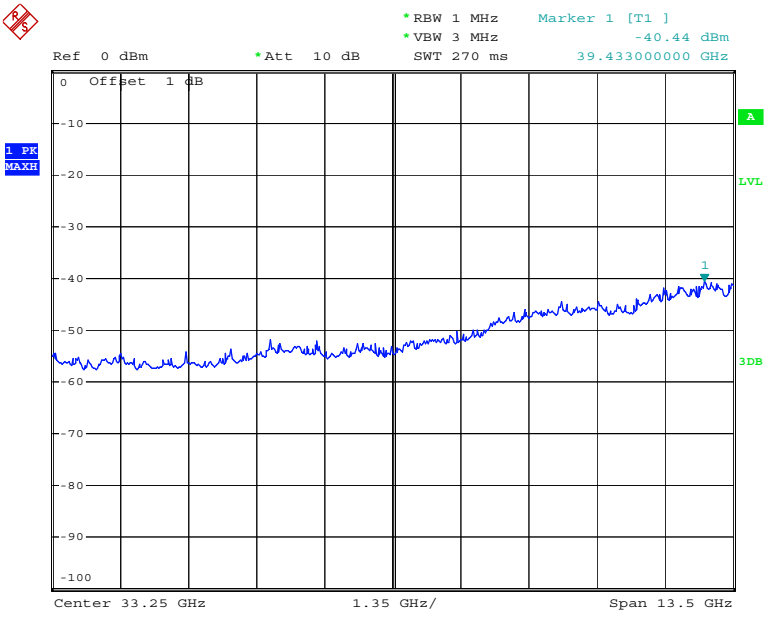
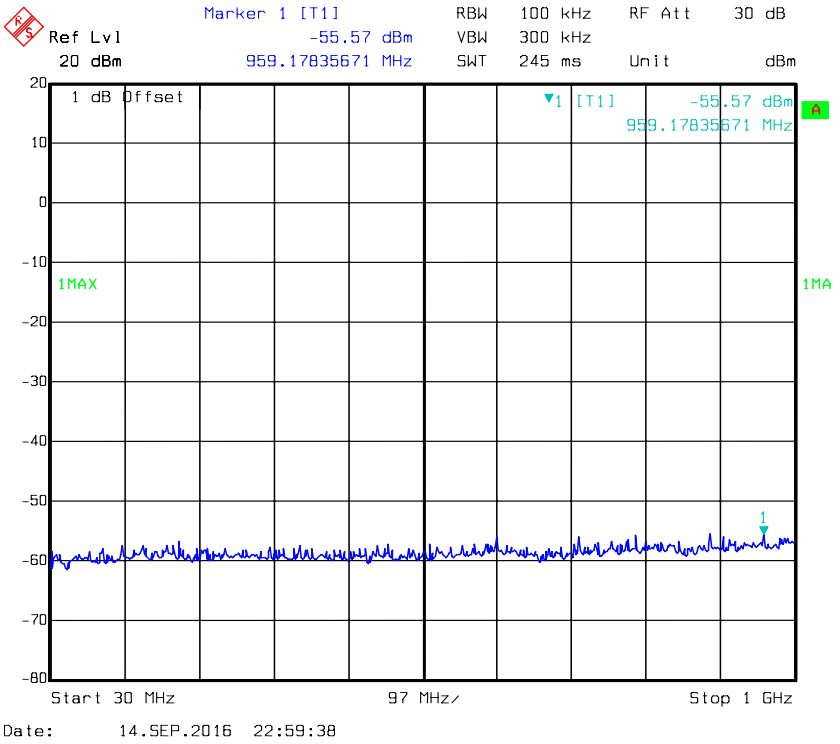
Fundamental





802.11a High Channel



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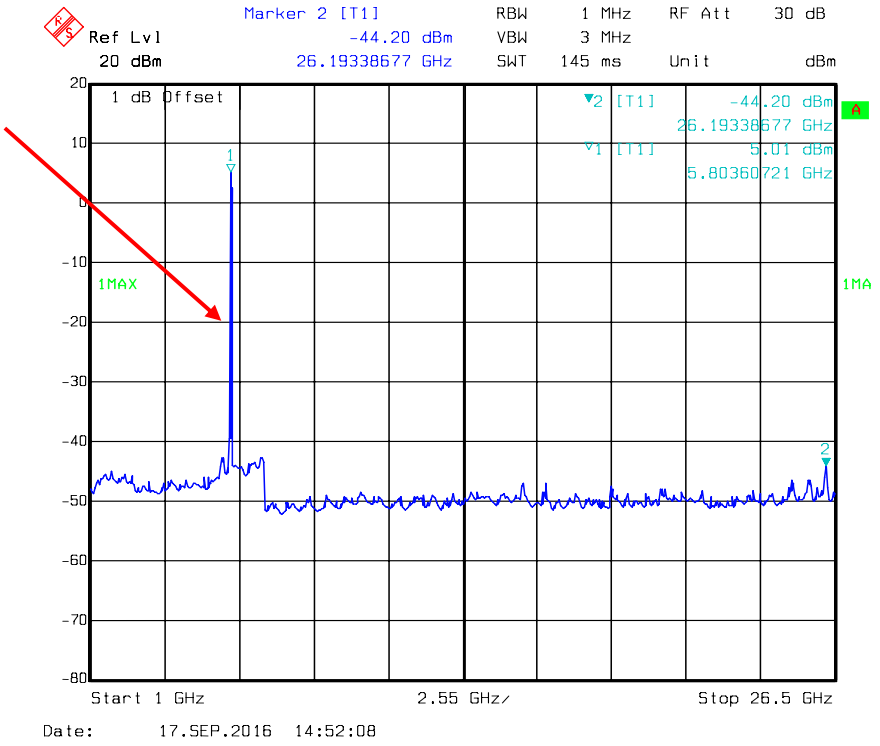

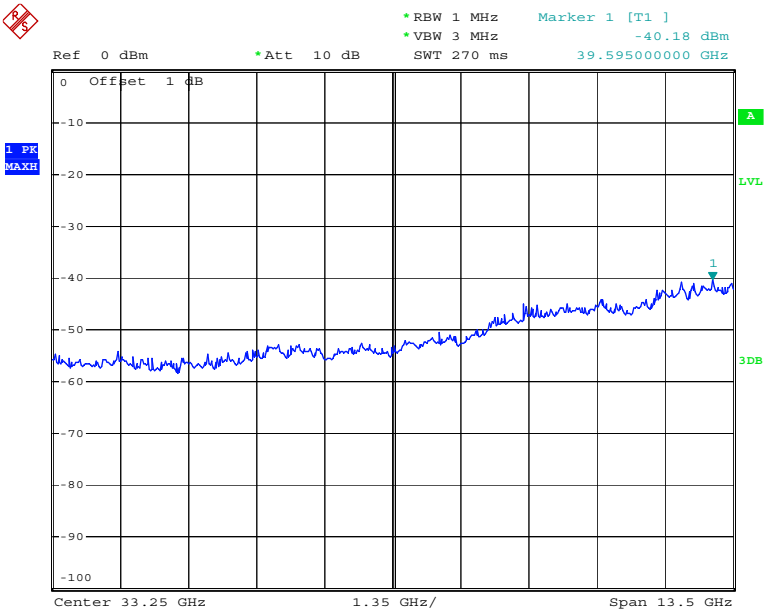

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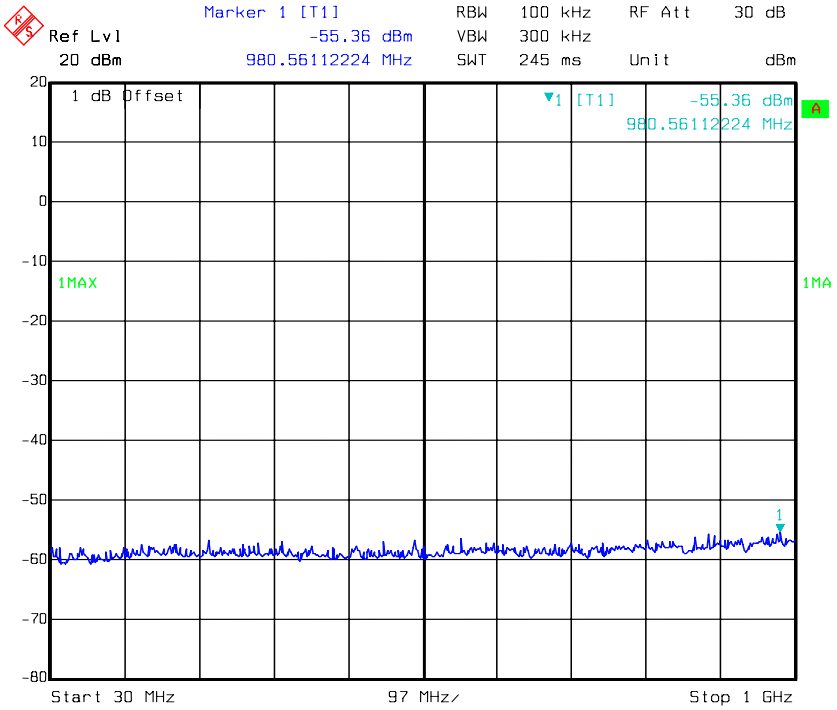
802.11n ht20 Low Channel



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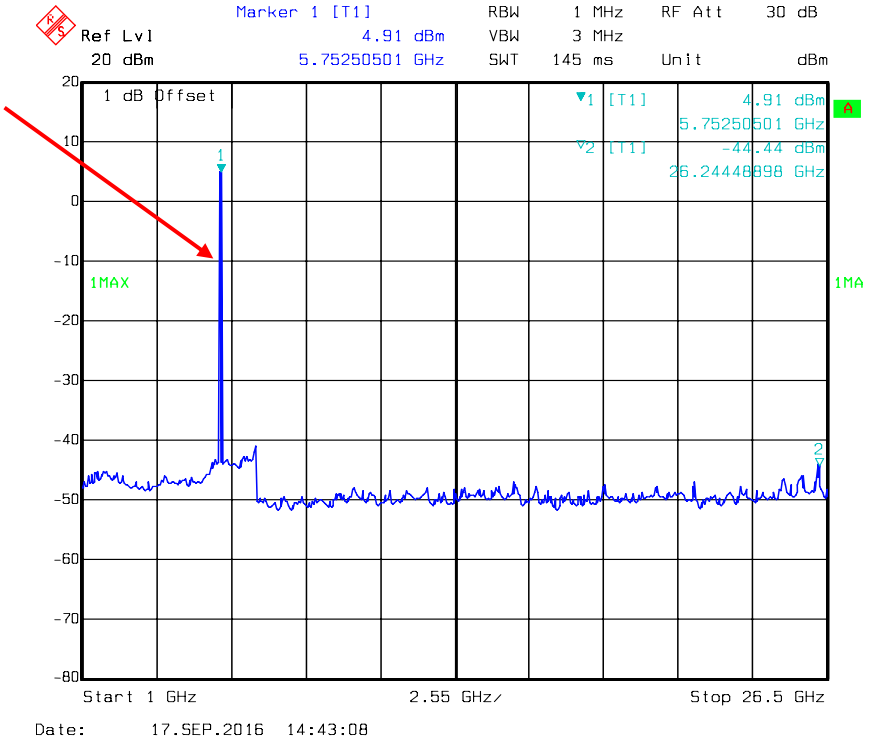
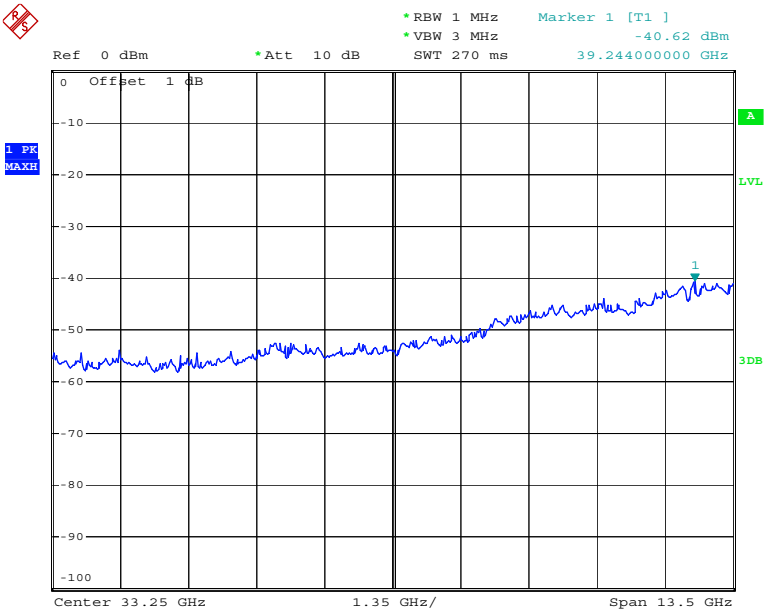
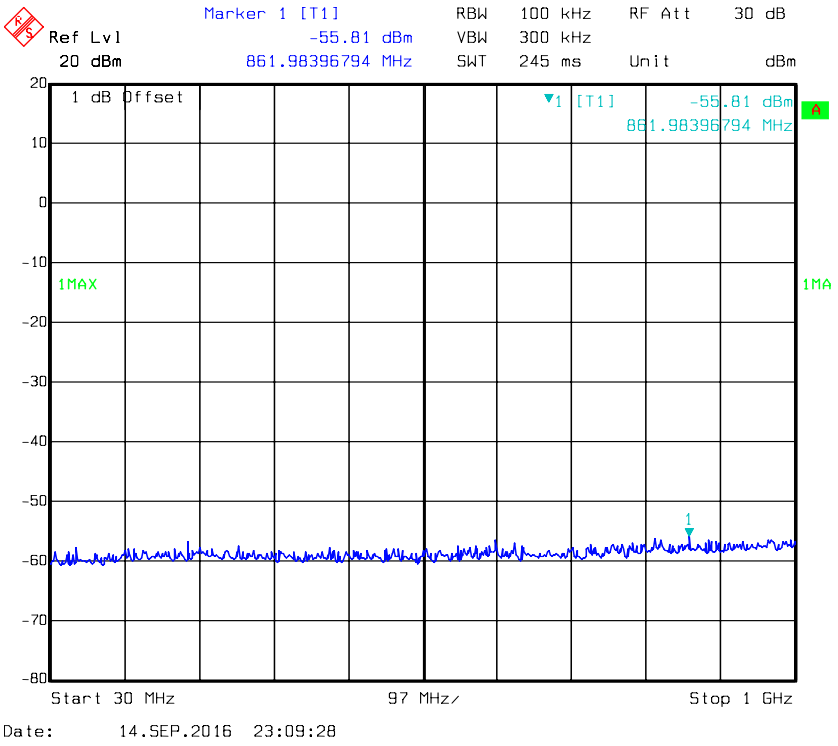
Fundamental





802.11n ht20 Middle Channel



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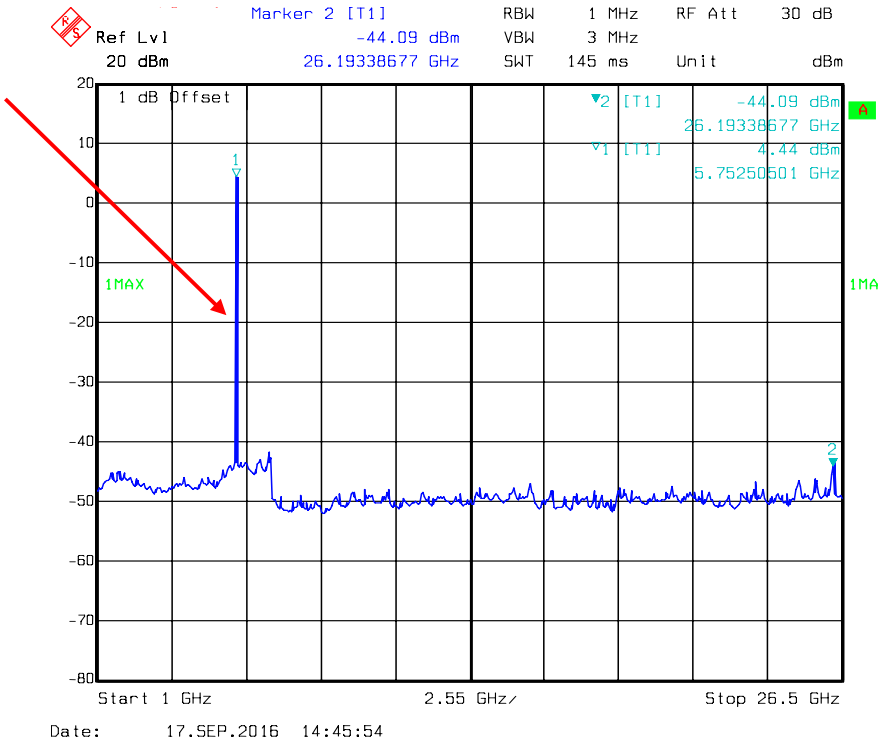

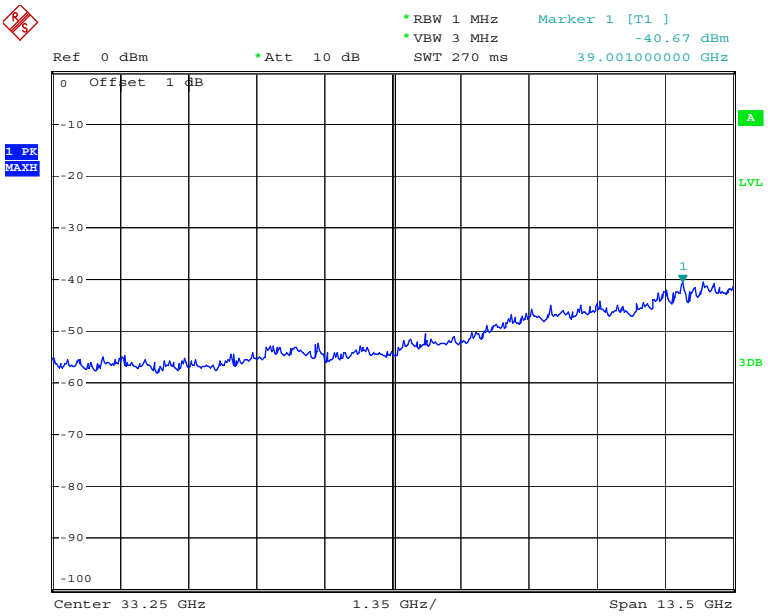

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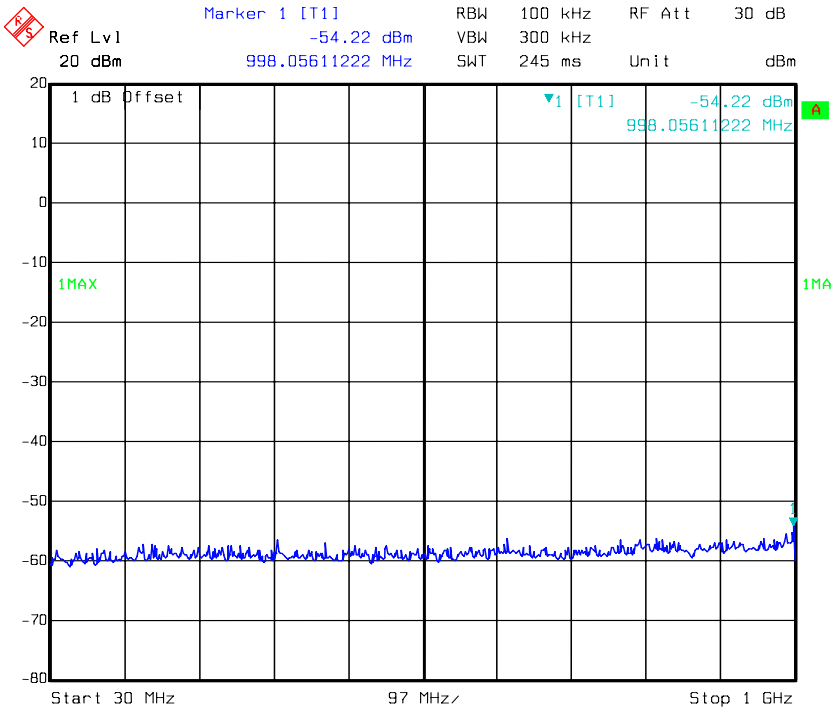
802.11n ht20 High Channel



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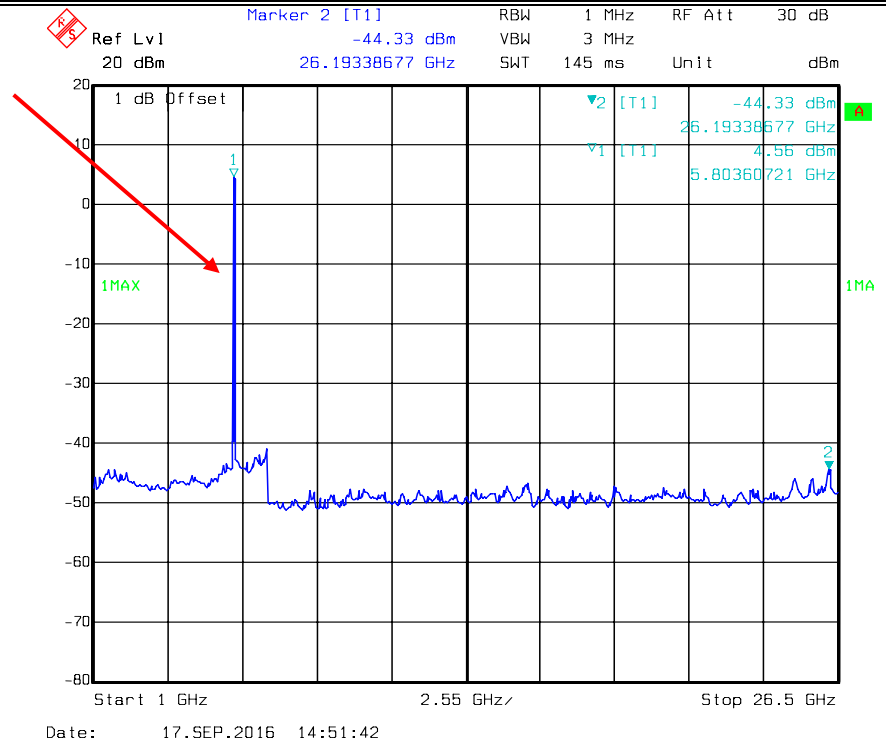
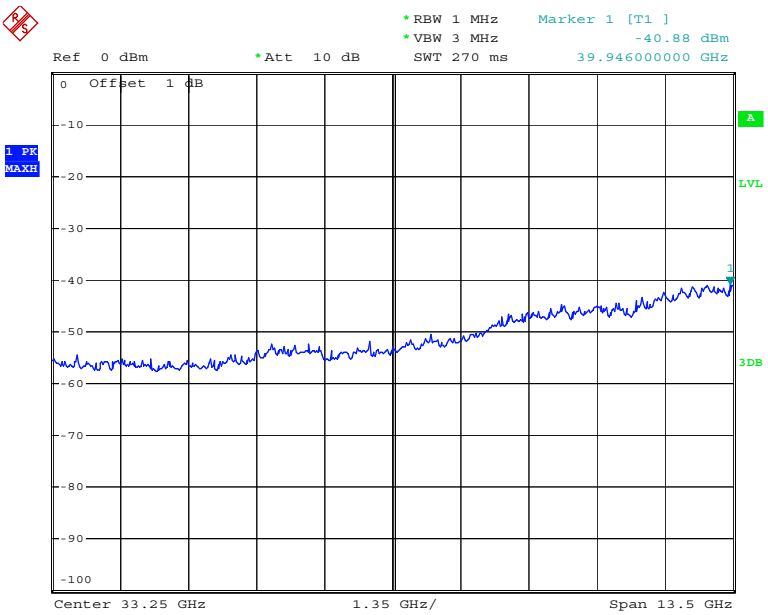
Fundamental





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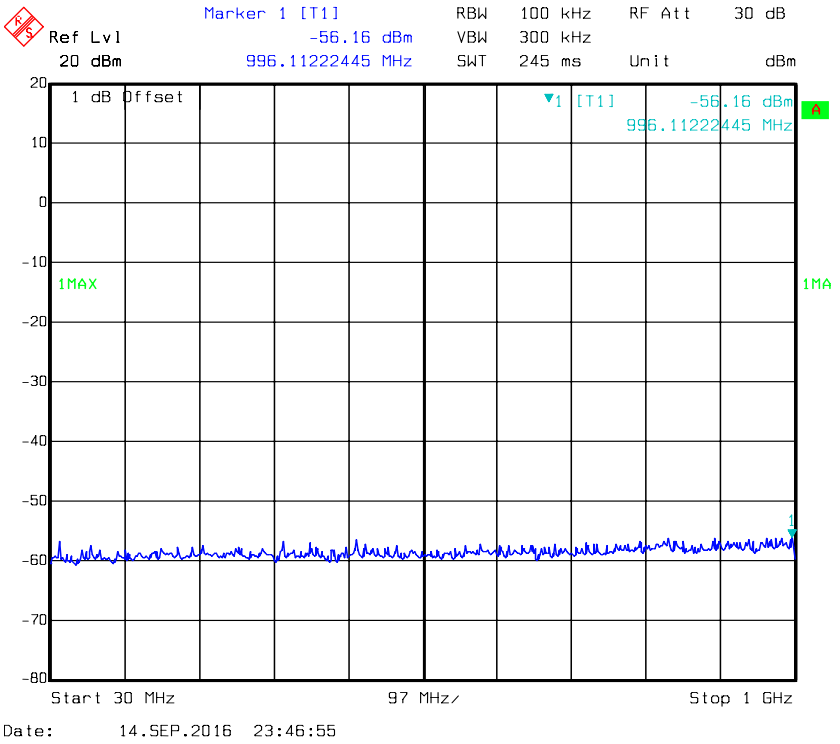
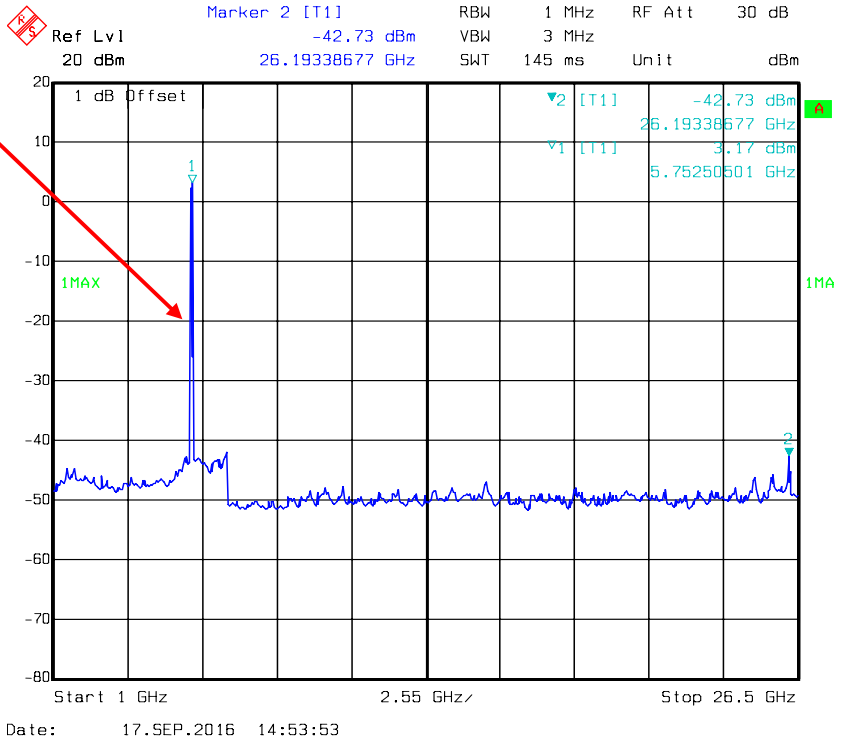
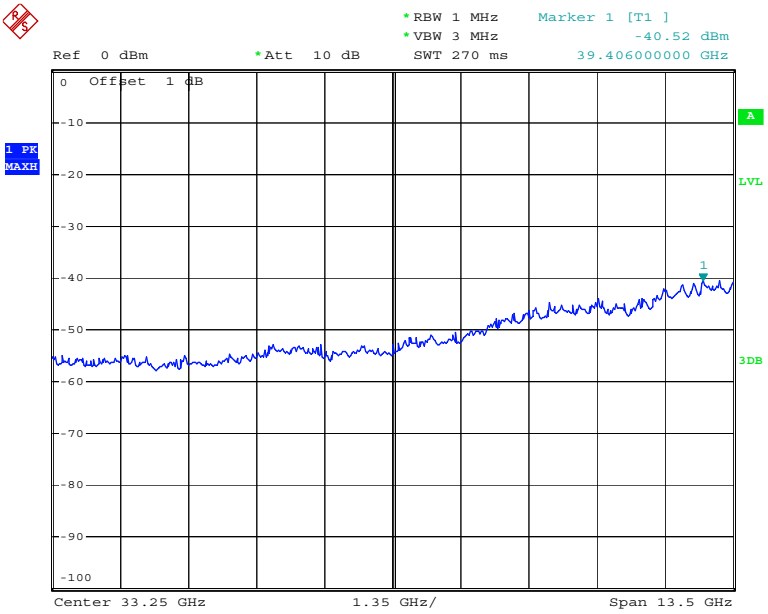
802.11n ht40 Low Channel



Fundamental





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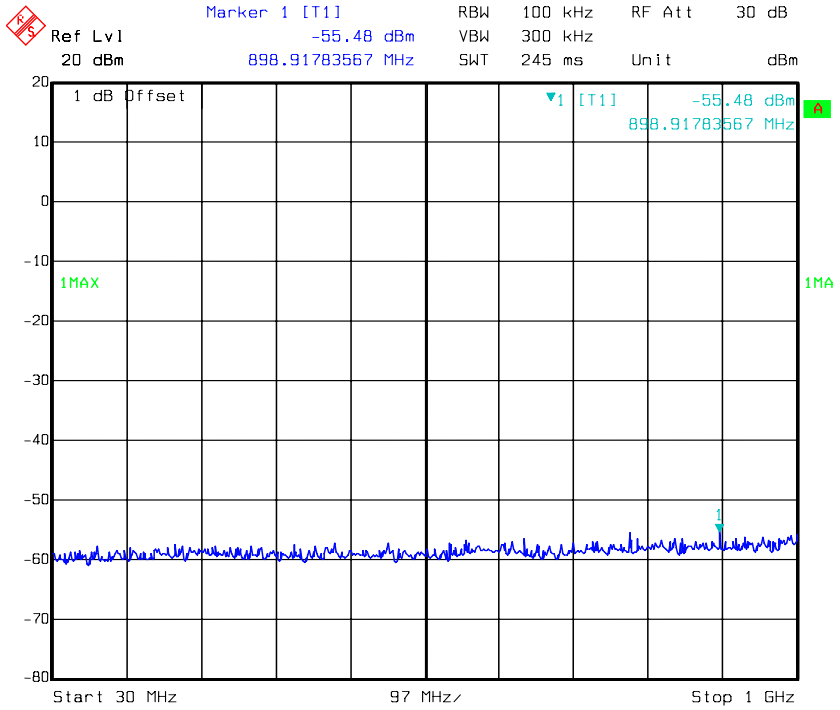
802.11n ht40 High Channel



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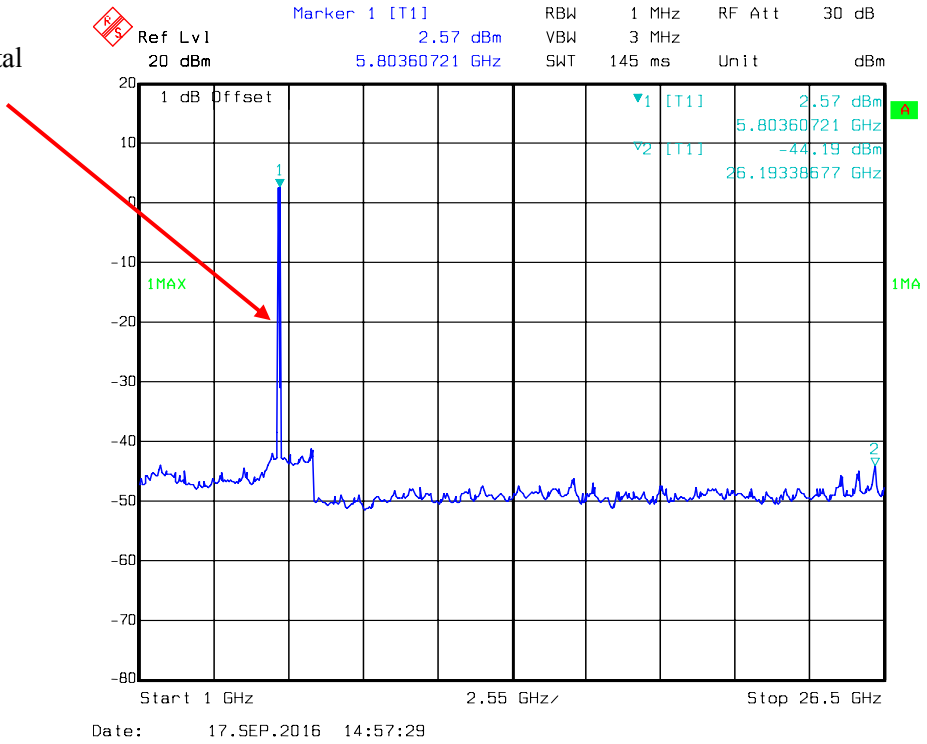
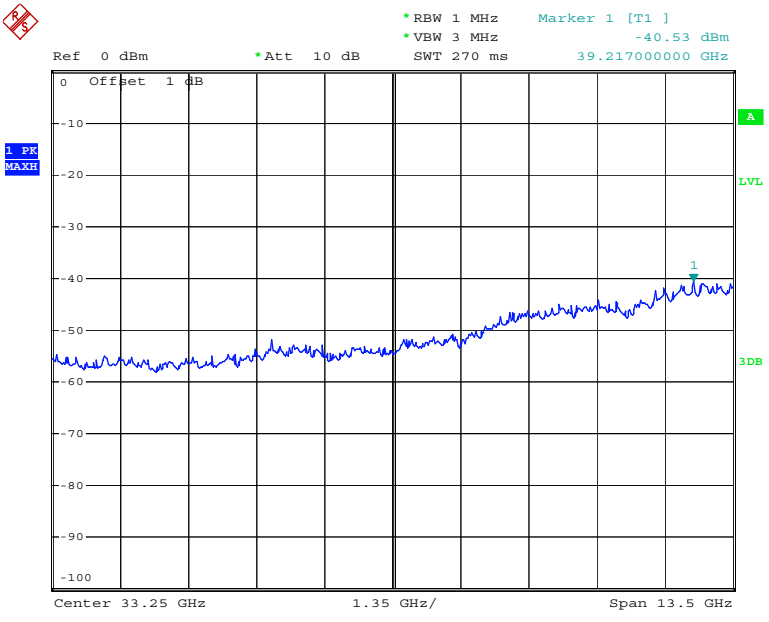
Fundamental





FCC §15.407(a) & §15.407 (e)–EMISSION BANDWIDTH

Applicable Standard

15.407(a) 15.407(e)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
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

1. According to KDB789033 D02 General U-NII Test Procedures New Rules v01r03

Test Data

Environmental Conditions

Temperature:	28. 8 °C
Relative Humidity:	49 %
ATM Pressure:	100.1 kPa

The testing was performed by Lion Xao on 2016-09-14.

Test Result: Pass.

Please refer to the following tables and plots.

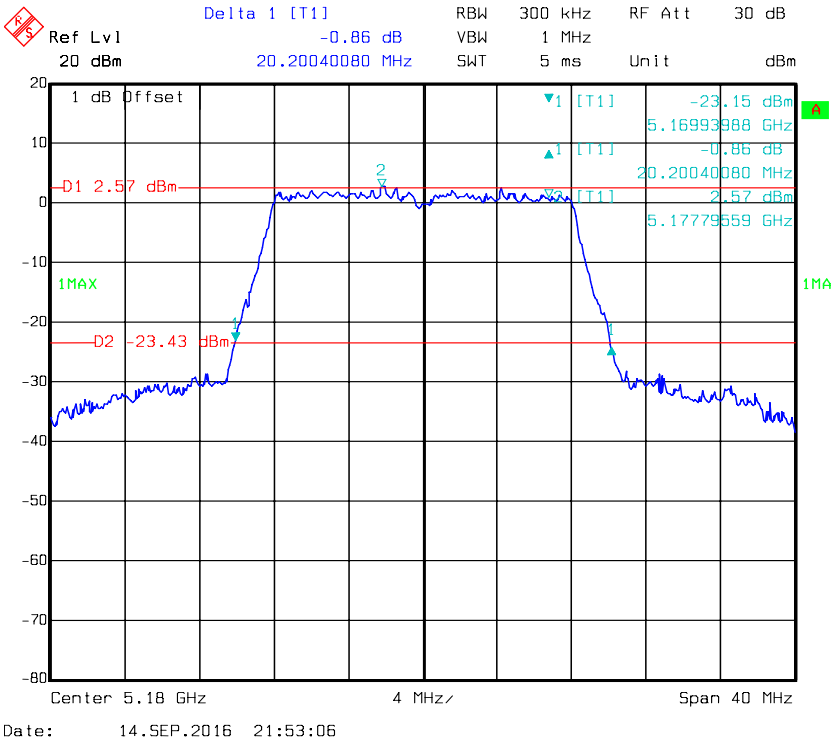
Test mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
5150-5250MHz	802.11 a	Low	5180	20.20
		Middle	5200	20.28
		High	5240	20.28
	802.11 n20	Low	5180	20.76
		Middle	5200	20.68
		High	5240	20.38
	802.11 n40	Low	5190	41.36
		High	5230	40.90
5725-5850MHz	802.11 a	Low	5745	20.12
		Middle	5785	20.36
		High	5825	20.36
	802.11 n20	Low	5745	20.68
		Middle	5785	20.76
		High	5825	20.76
	802.11 n40	Low	5755	40.88
		High	5795	41.04

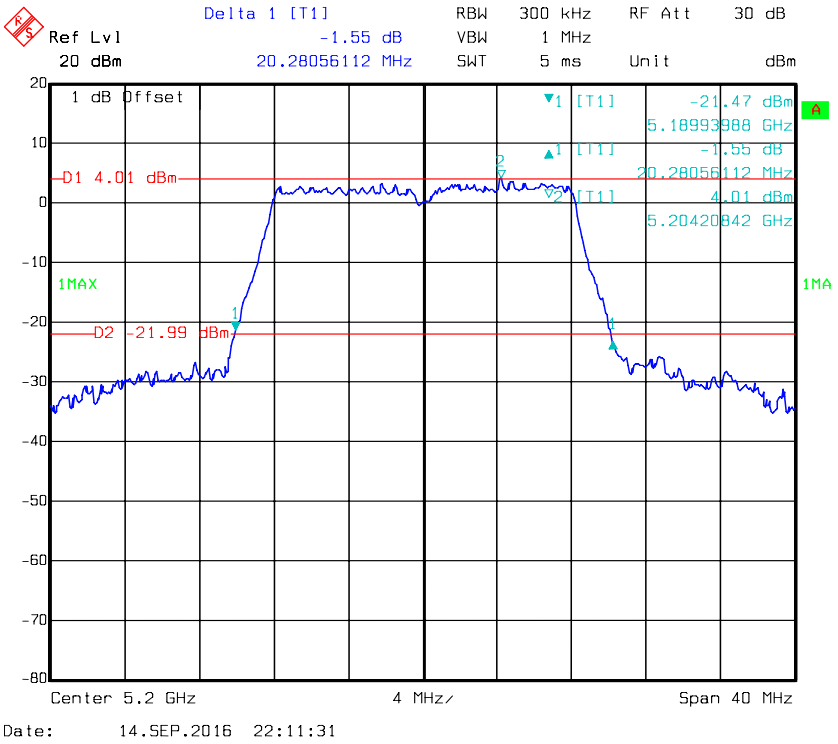
UNII Band	Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
5725-5850MHz	802.11 a	Low	5745	16.67	0.5
		Middle	5785	16.67	0.5
		High	5825	16.59	0.5
	5G 802.11 n20	Low	5745	17.80	0.5
		Middle	5785	17.88	0.5
		High	5825	17.88	0.5
	5G 802.11 n40	Low	5755	36.55	0.5
		High	5795	36.71	0.5

26 dB Emission Bandwidth:
5150-5250MHz:

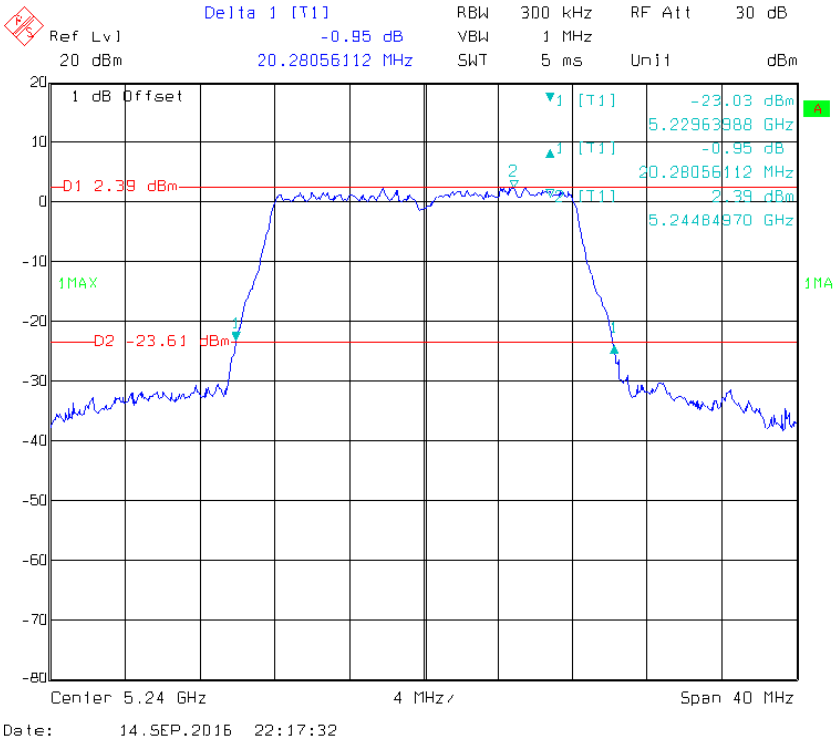
802.11a Low Channel



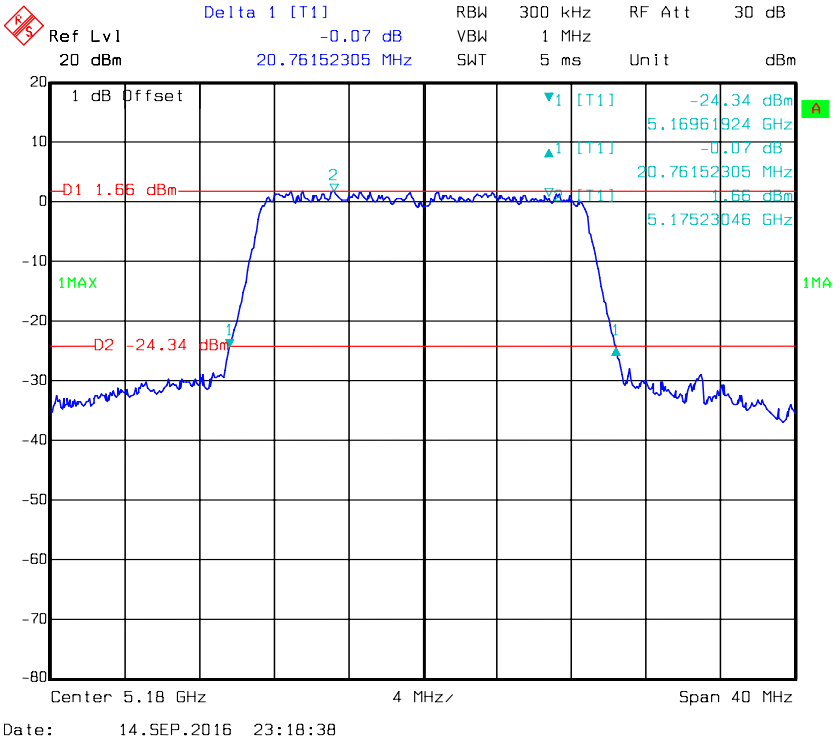
802.11a Middle Channel



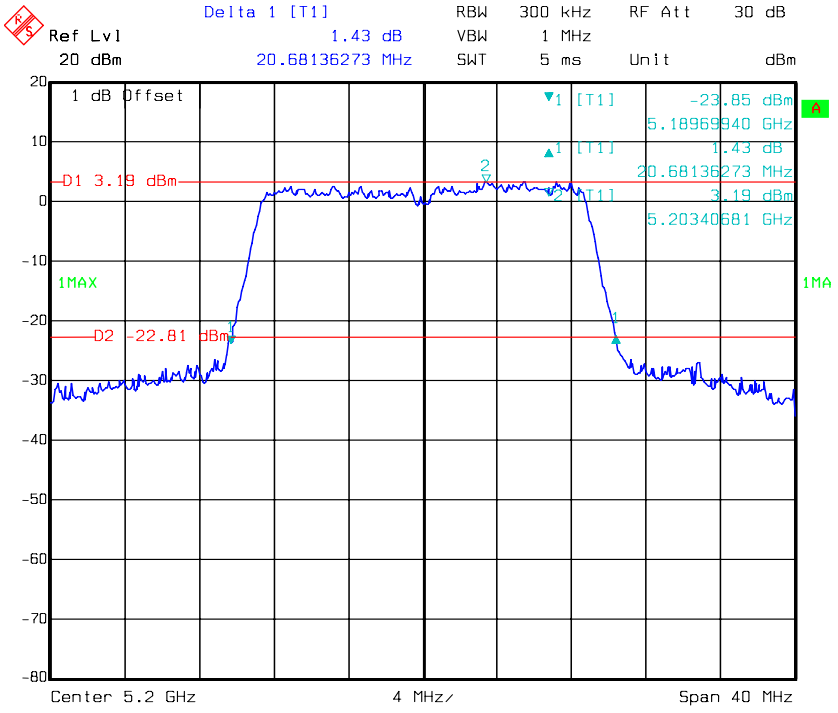
802.11a High Channel



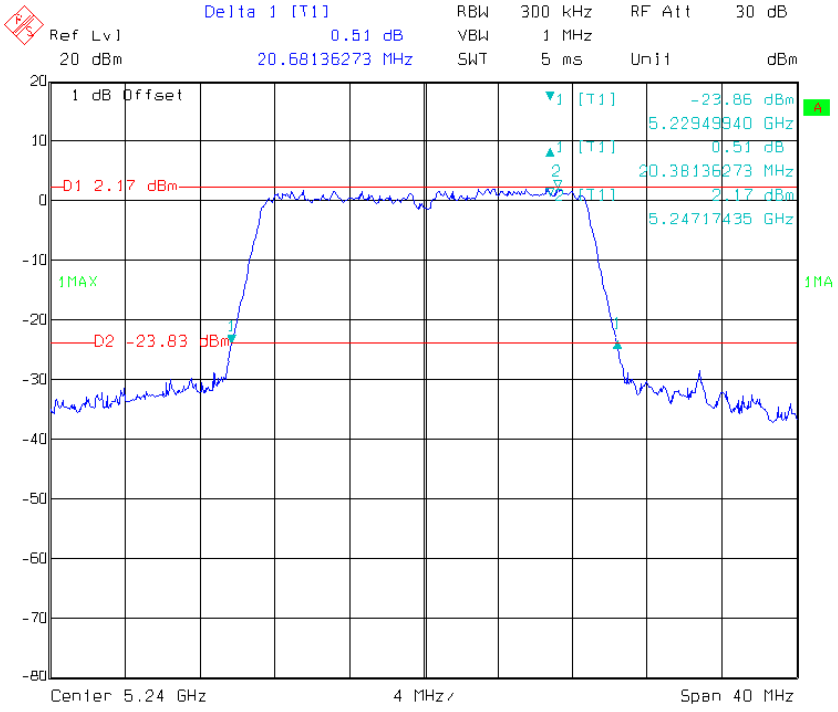
802.11n ht20 Low Channel



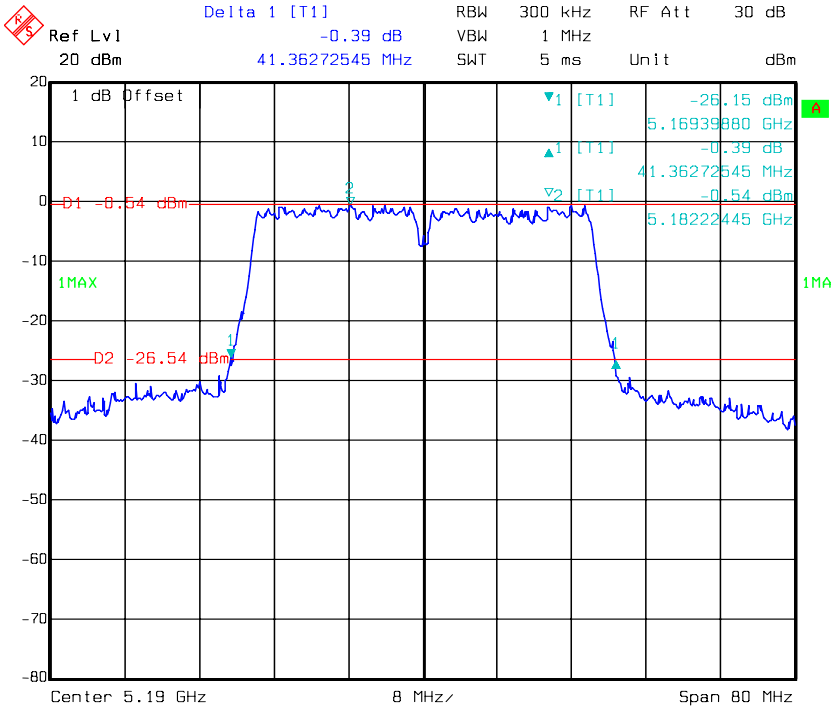
802.11n ht20 Middle Channel



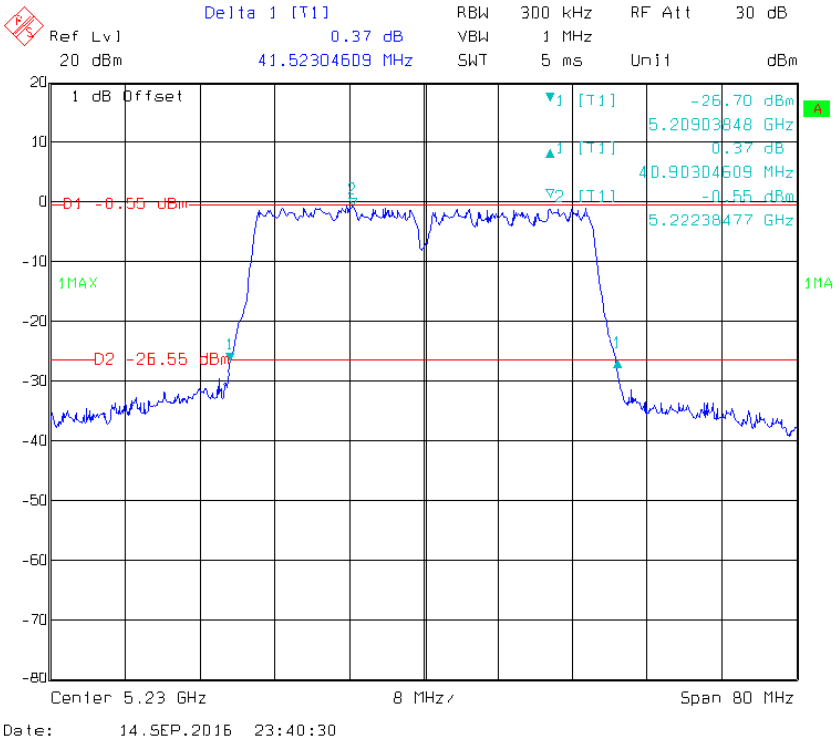
802.11n ht20 High Channel



802.11n ht40 Low Channel

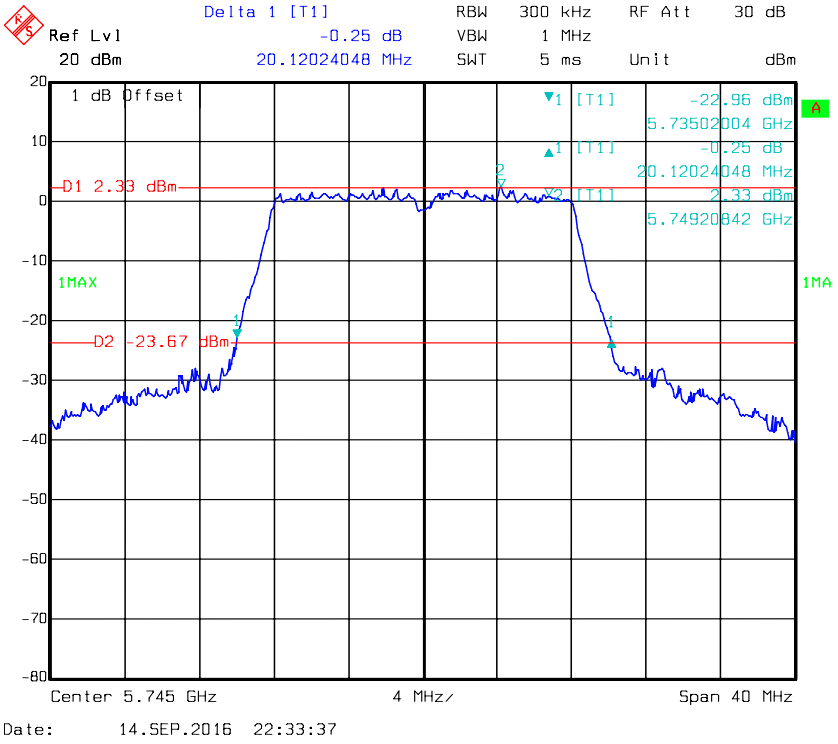


802.11n ht40 High Channel



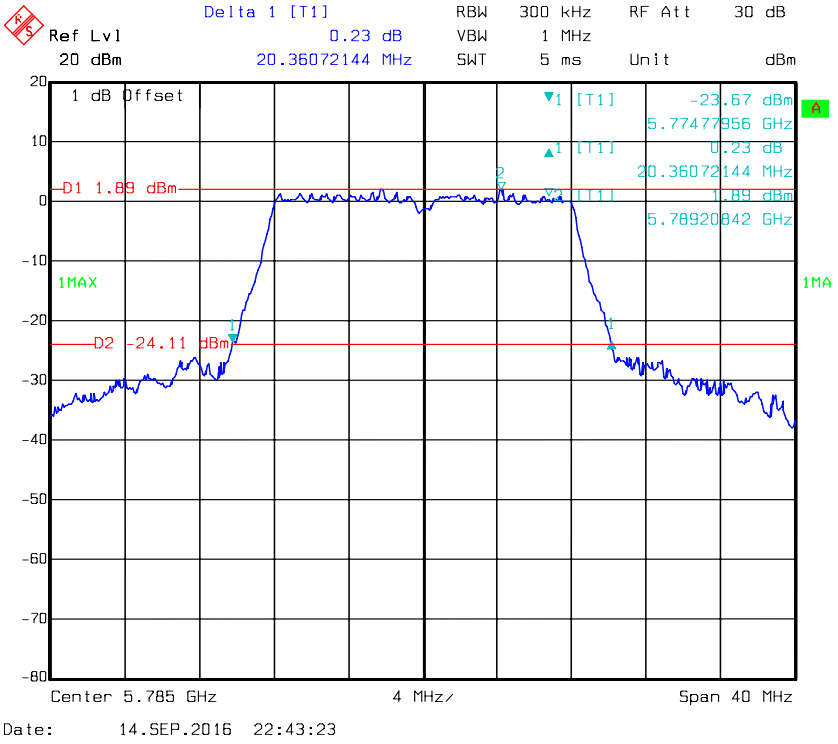
5725-5850MHz

802.11a Low Channel



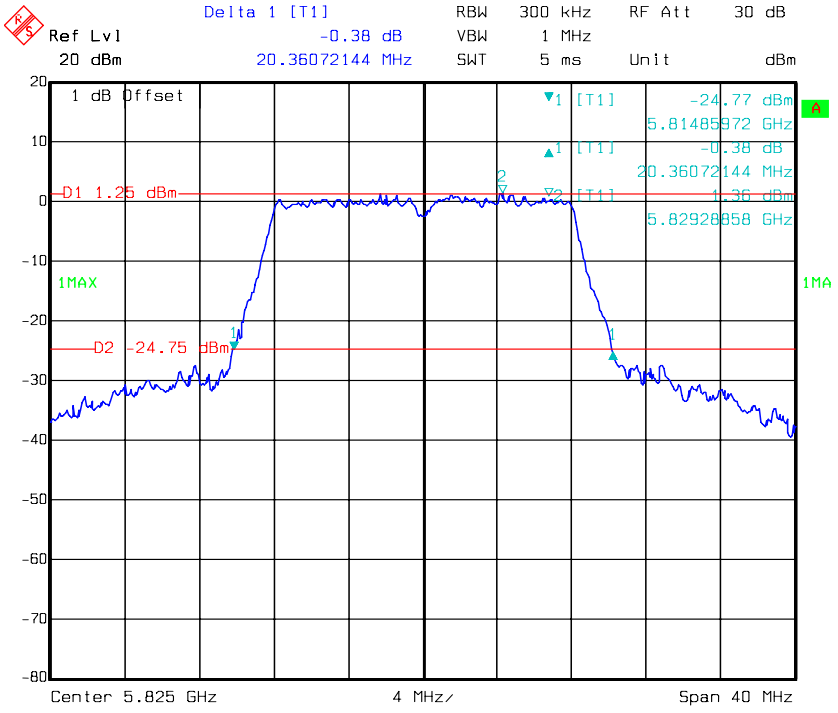
Date: 14.SEP.2016 22:33:37

802.11a Middle Channel

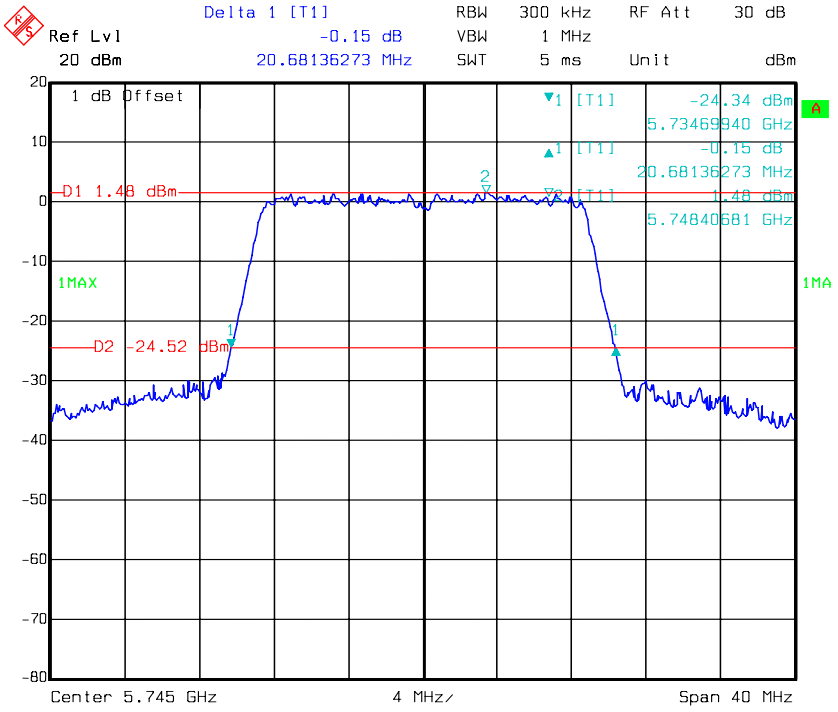


Date: 14.SEP.2016 22:43:23

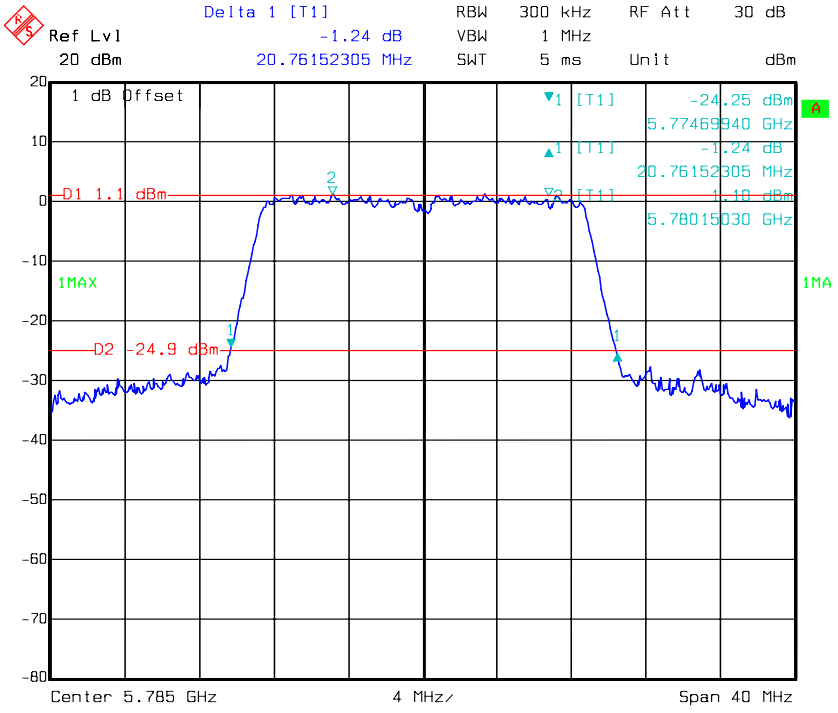
802.11a High Channel



802.11n ht20 Low Channel



802.11n ht20 Middle Channel



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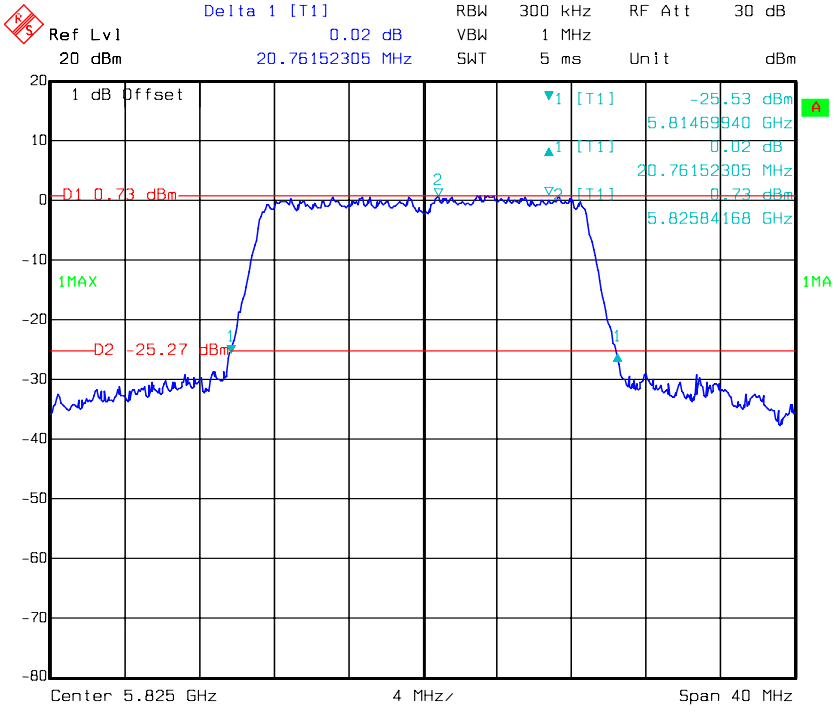

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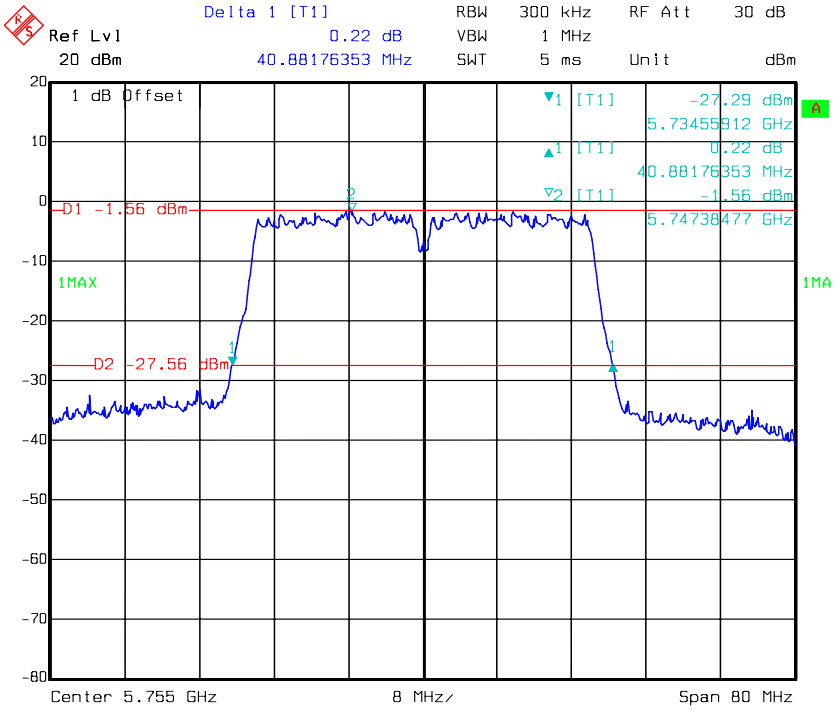
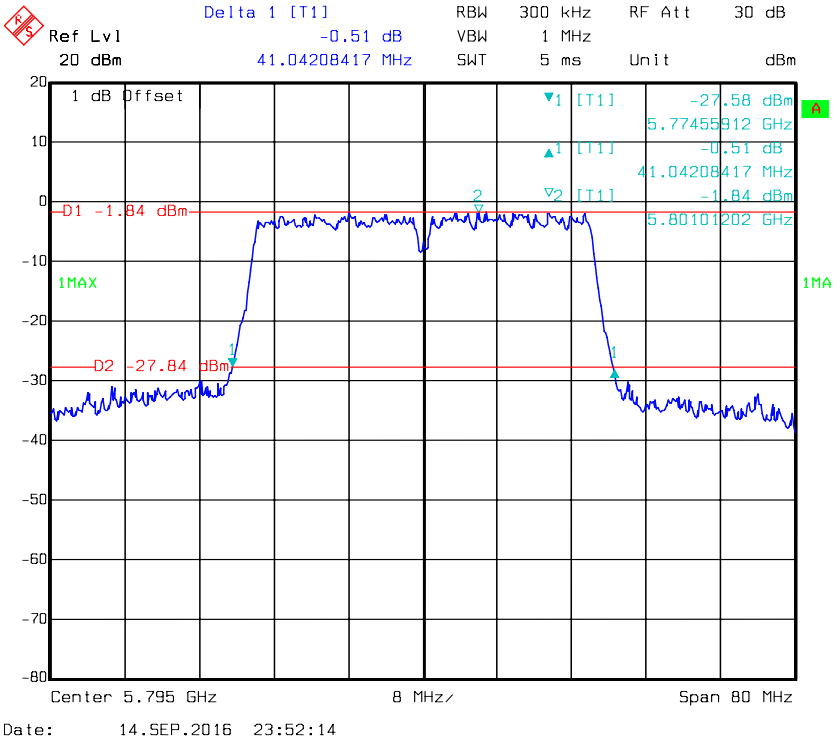
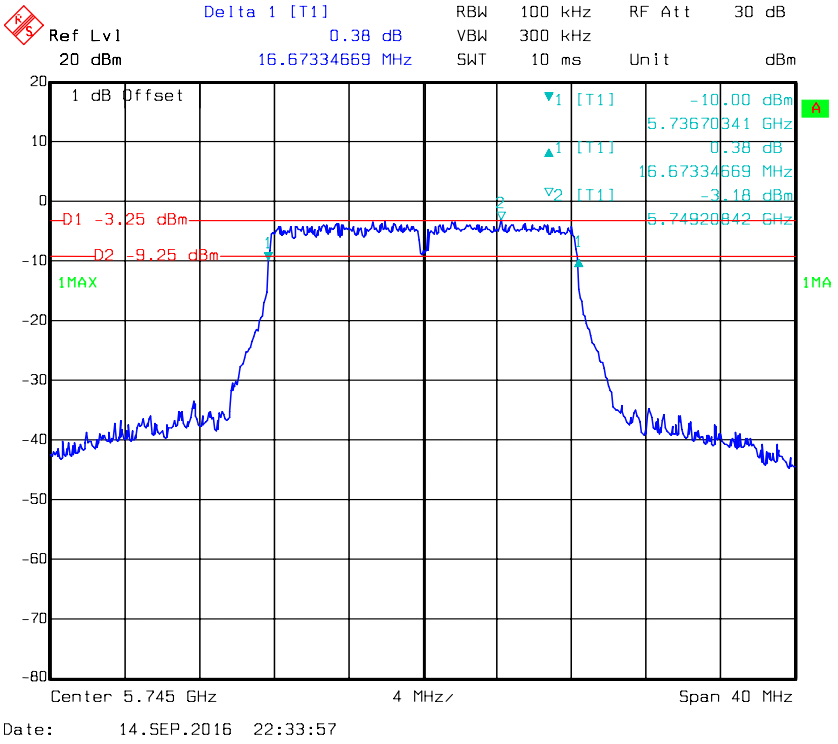


802.11n ht40 High Channel

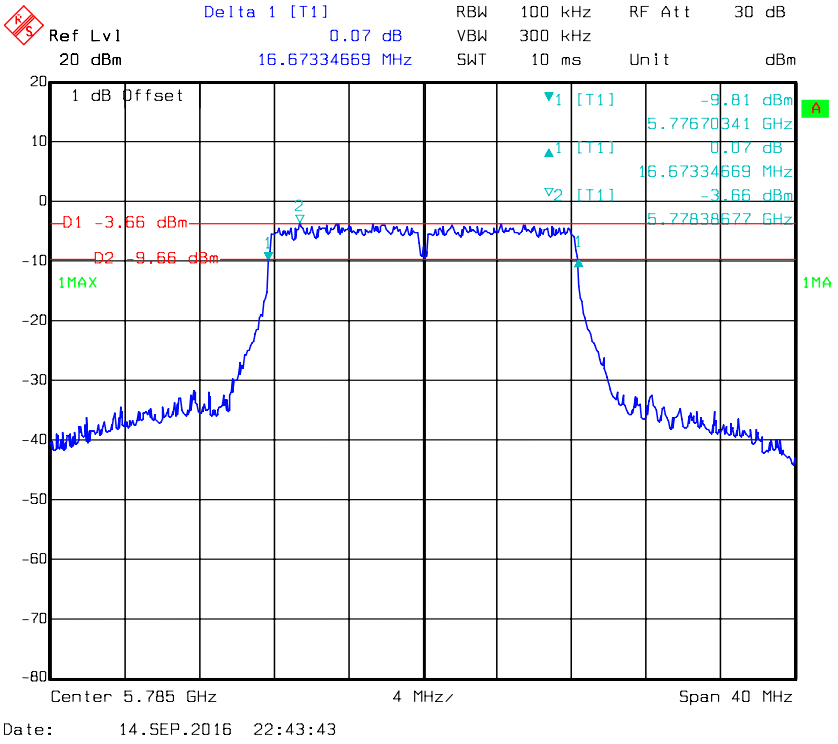


5725-5850MHz, 6dB Minimum Emission Bandwidth:

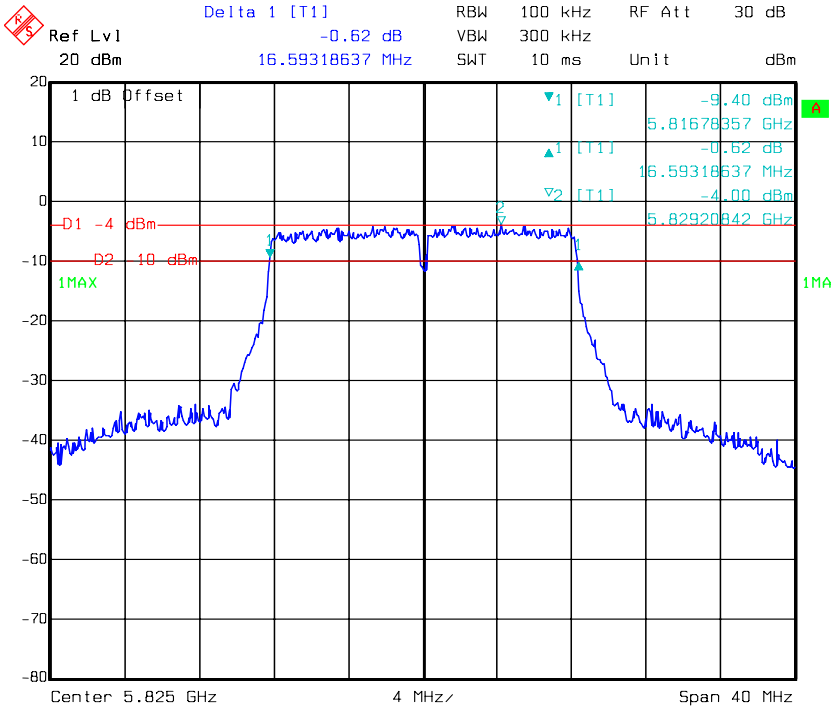
802.11a Low Channel



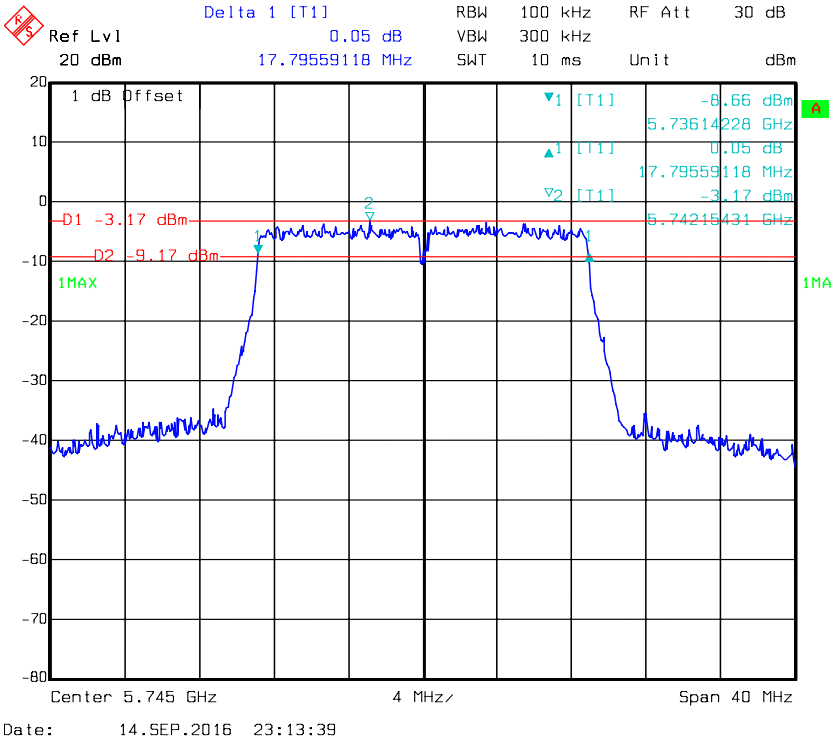
802.11a Middle Channel



802.11a High Channel



802.11n ht20 Low Channel



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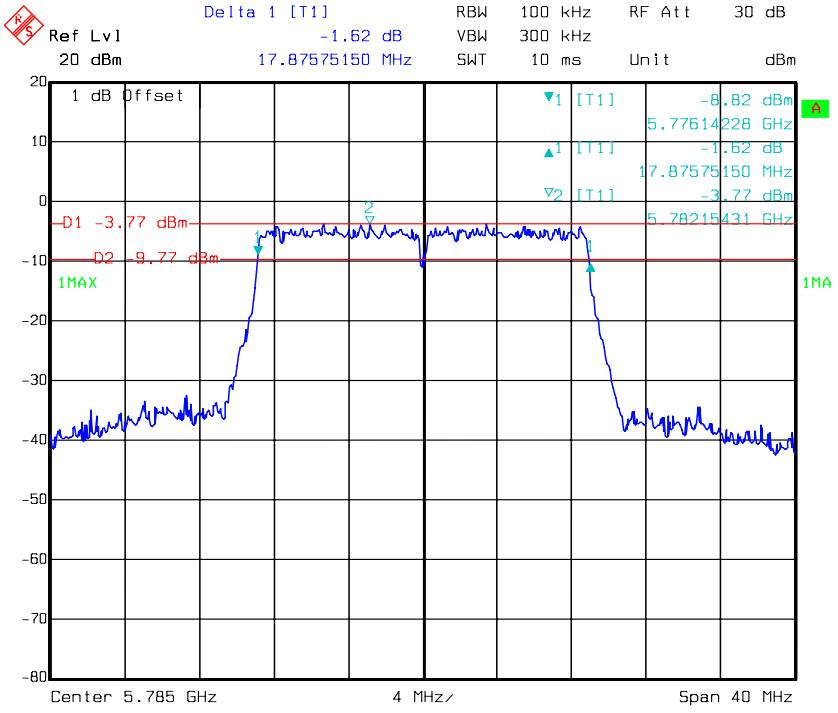

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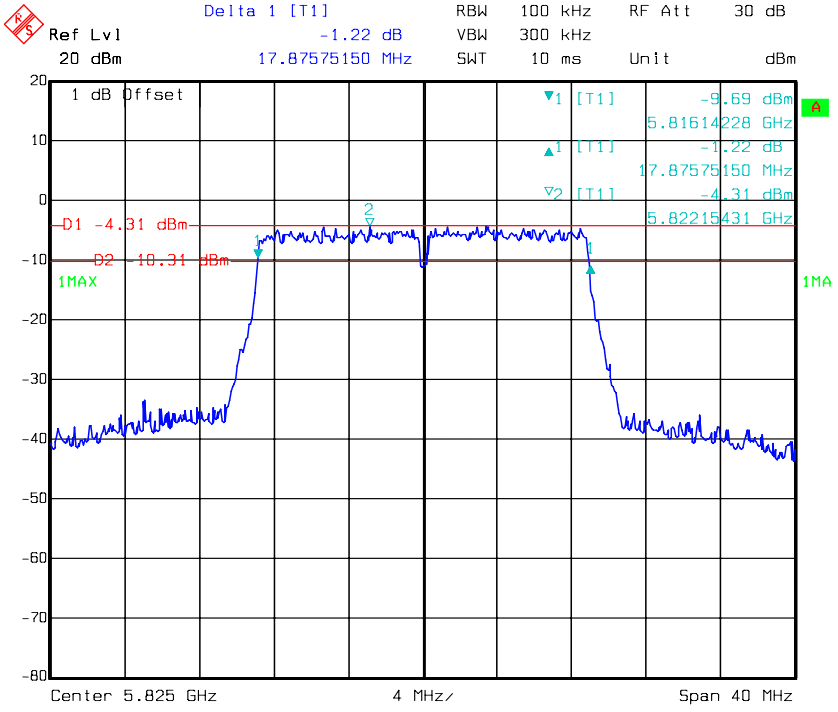

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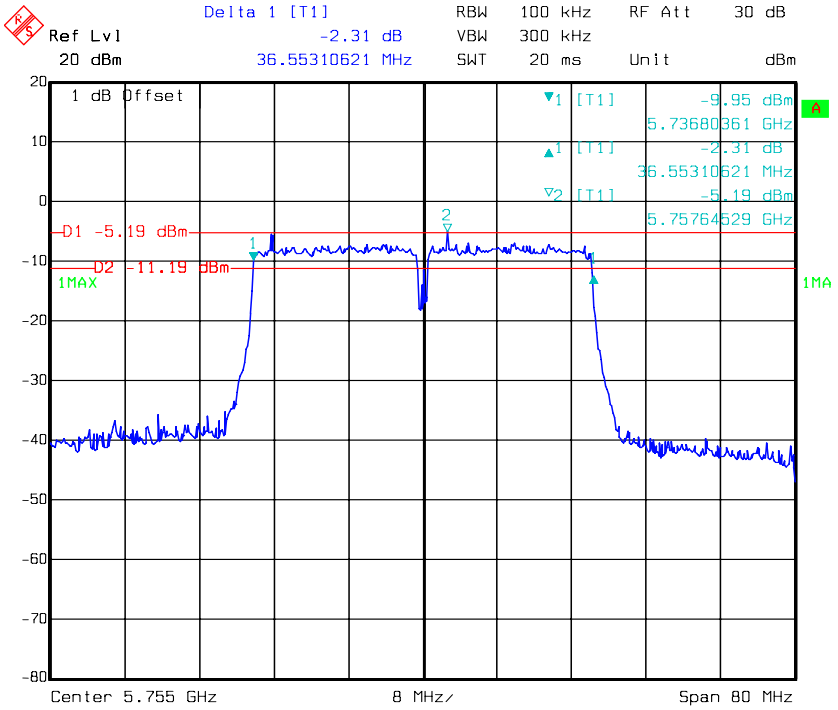
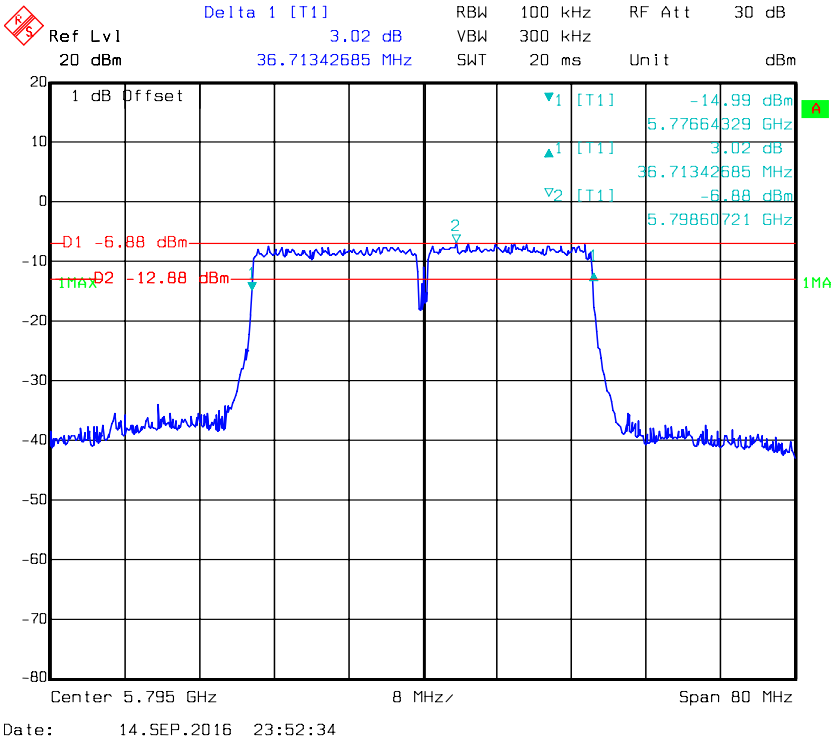


802.11n ht40 High Channel



FCC §15.407(a) (1) (ii) (4) –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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. 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 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.
Note to paragraph (a)(3): The Commission strongly recommends that parties employing U-NII devices to provide critical communications services should determine if there are any nearby Government radar systems that could affect their operation.

(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.

(5) The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

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 KDB789033 D02 General U-NII Test Procedures New Rules v01r03

Test Data

Environmental Conditions

Temperature:	28.8 °C
Relative Humidity:	49 %
ATM Pressure:	100.1 kPa

The testing was performed by Lion Xao on 2016-09-14.

Test Mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	RMS Channel Power(dBm)	Limit (dBm)
5150-5250MHz	802.11 a	Low	5180	10.90	24
		Middle	5200	10.99	24
		High	5240	10.85	24
	5G 802.11 n20	Low	5180	10.85	24
		Middle	5200	10.98	24
		High	5240	10.87	24
	5G 802.11 n40	Low	5190	10.97	24
		High	5230	10.78	24
5725-5850MHz	802.11 a	Low	5745	10.80	30
		Middle	5785	10.69	30
		High	5825	10.86	30
	5G 802.11 n20	Low	5745	10.70	30
		Middle	5785	10.52	30
		High	5825	10.47	30
	5G 802.11 n40	Low	5755	10.75	30
		High	5795	10.86	30

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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. 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 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.
Note to paragraph (a)(3): The Commission strongly recommends that parties employing U-NII devices to provide critical communications services should determine if there are any nearby Government radar systems that could affect their operation.

(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.

(5) The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Test Procedure

According to KDB 789033 D02 General U-NII Test Procedures New Rules v01r03

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
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:	29.3 °C
Relative Humidity:	37 %
ATM Pressure:	100.2 kPa

The testing was performed by Lion Xao on 2016-09-17.

Test Result:Compliance.

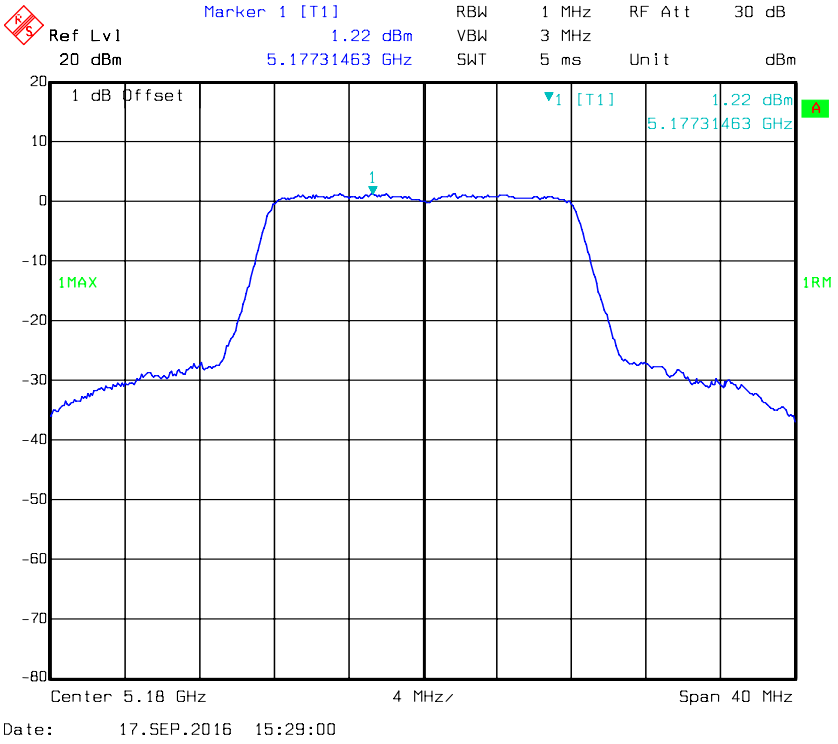
Test Mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density(dBm/MHz)	Limit (dBm/MHz)
5150-5250MHz	802.11 a	Low	5180	1.22	11
		Middle	5200	1.33	11
		High	5240	1.20	11
	802.11 n20	Low	5180	0.90	11
		Middle	5200	1.01	11
		High	5240	0.92	11
	802.11 n40	Low	5190	-2.40	11
		High	5230	-2.61	11

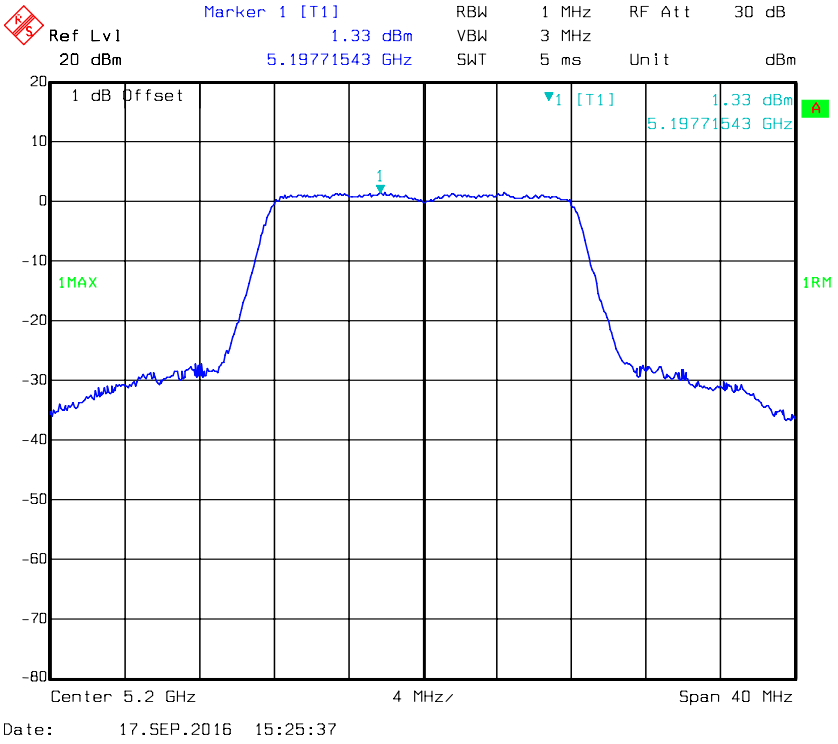
UNII Band	Mode	Channel	Frequency(MHz)	Power Spectral Density(dBm/500kHz)	Limit (dBm/500kHz)
5725-5850MHz	802.11 a	Low	5745	-2.66	30
		Middle	5785	-2.73	30
		High	5825	-2.64	30
	802.11 n20	Low	5745	-3.21	30
		Middle	5785	-3.36	30
		High	5825	-3.61	30
	802.11 n40	Low	5755	-6.43	30
		High	5795	-6.33	30

5150-5250MHz:

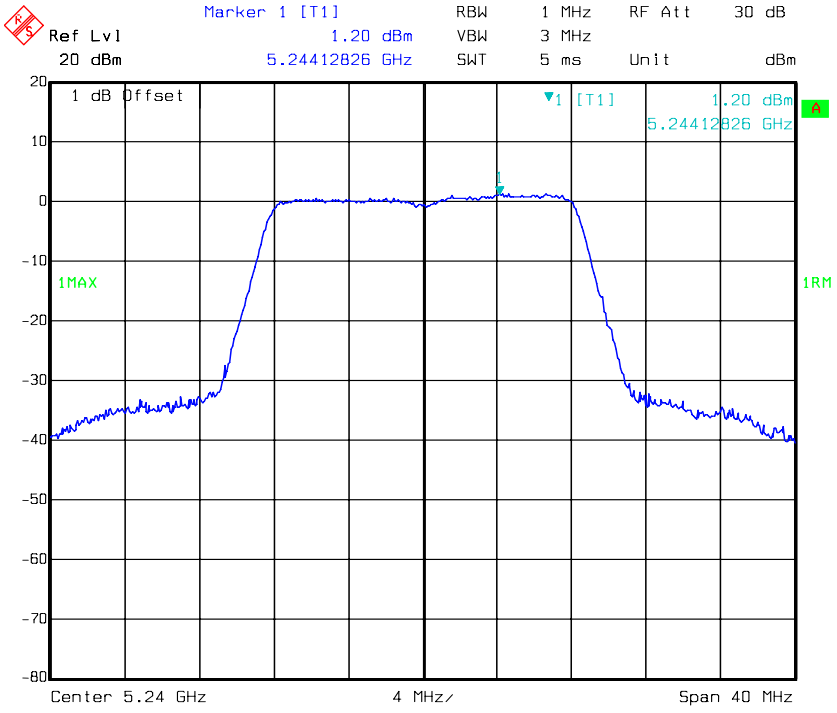
Power Spectral Density, 802.11a Low Channel



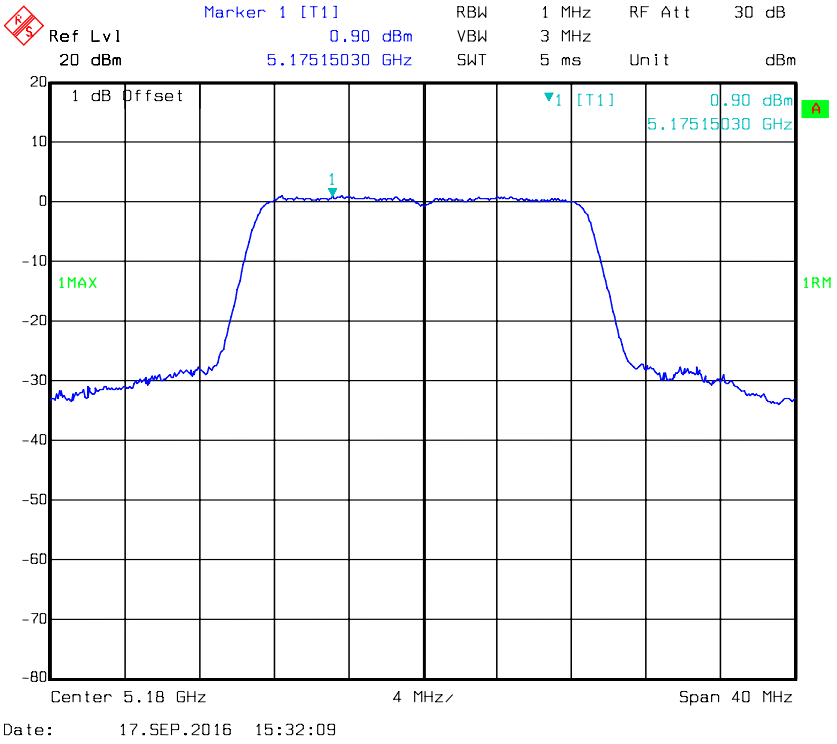
Power Spectral Density, 802.11a Middle Channel



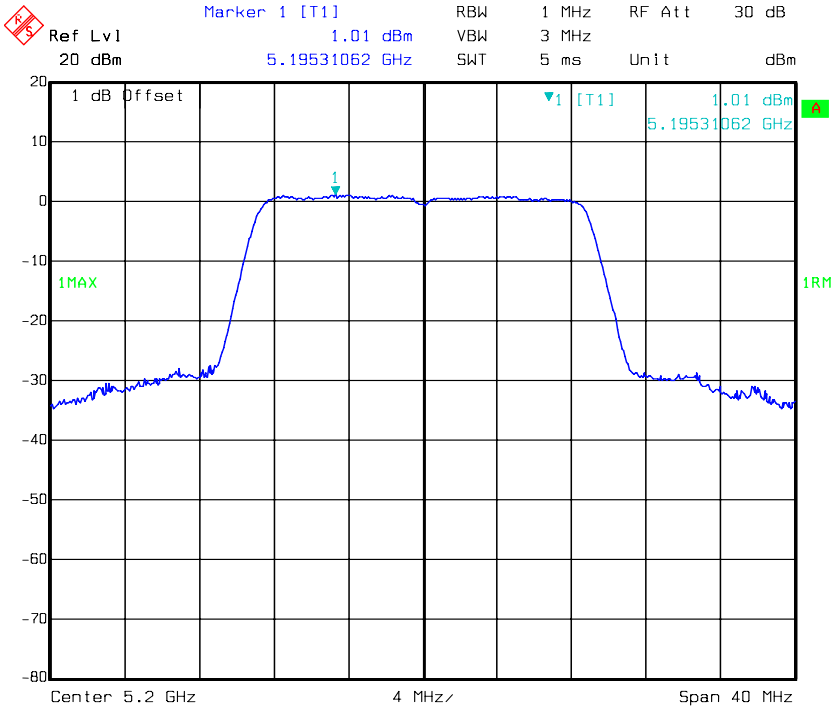
Power Spectral Density, 802.11a High Channel



Power Spectral Density, 802.11n ht20 Low Channel



Power Spectral Density, 802.11n ht20 Middle Channel



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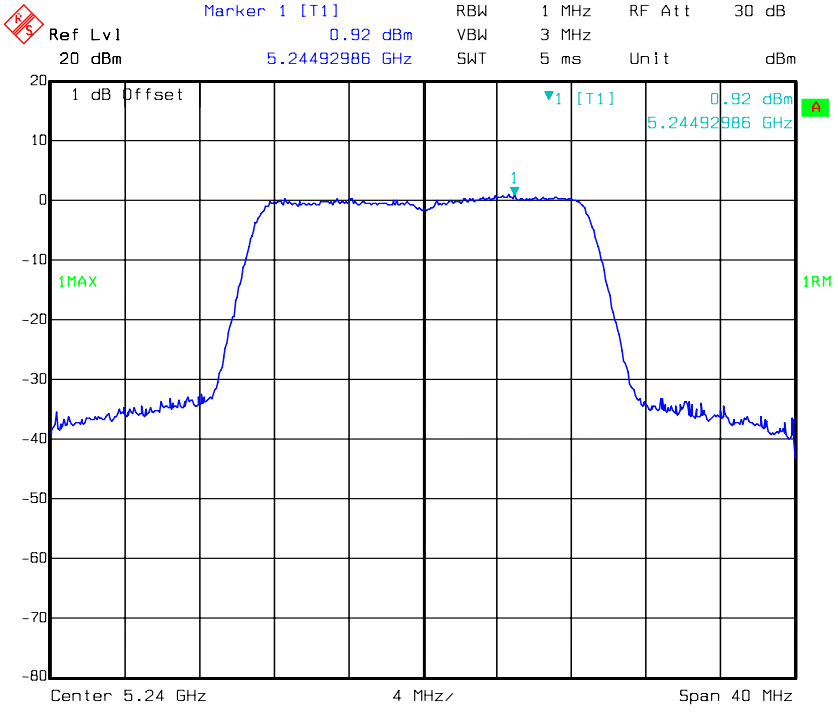
Power Spectral Density, 802.11n ht20 High Channel



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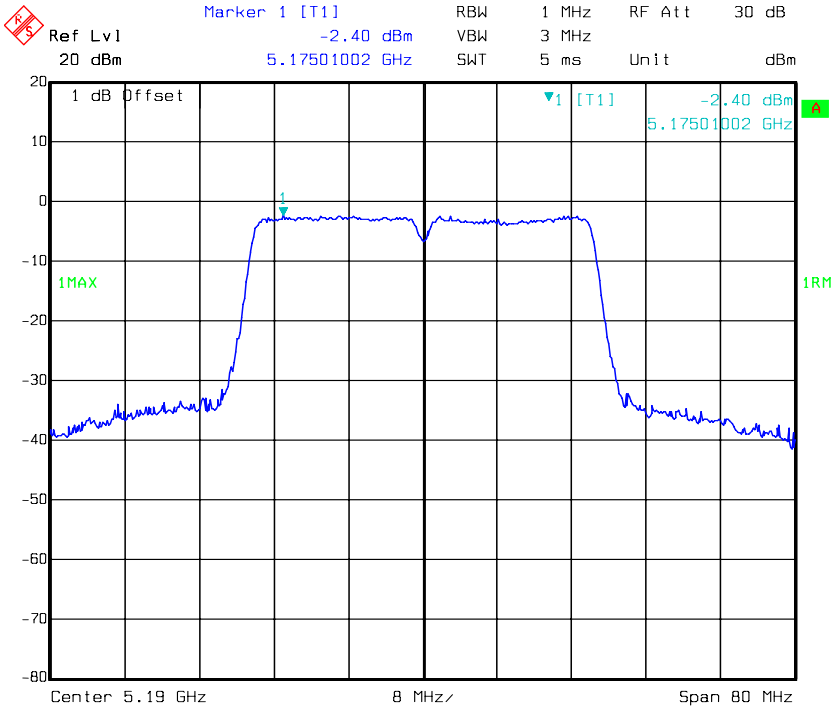

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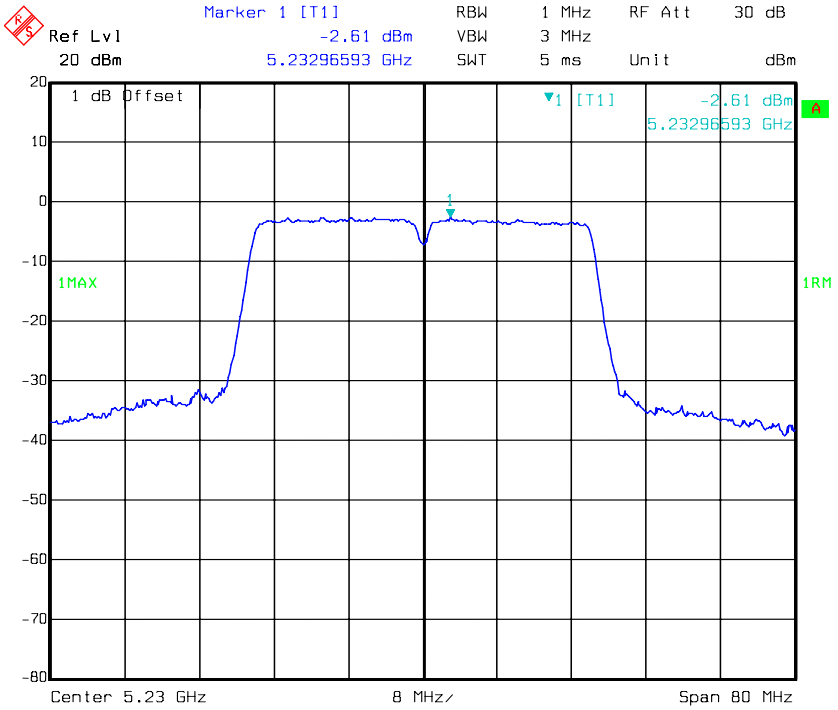
Power Spectral Density, 802.11n ht40 High Channel



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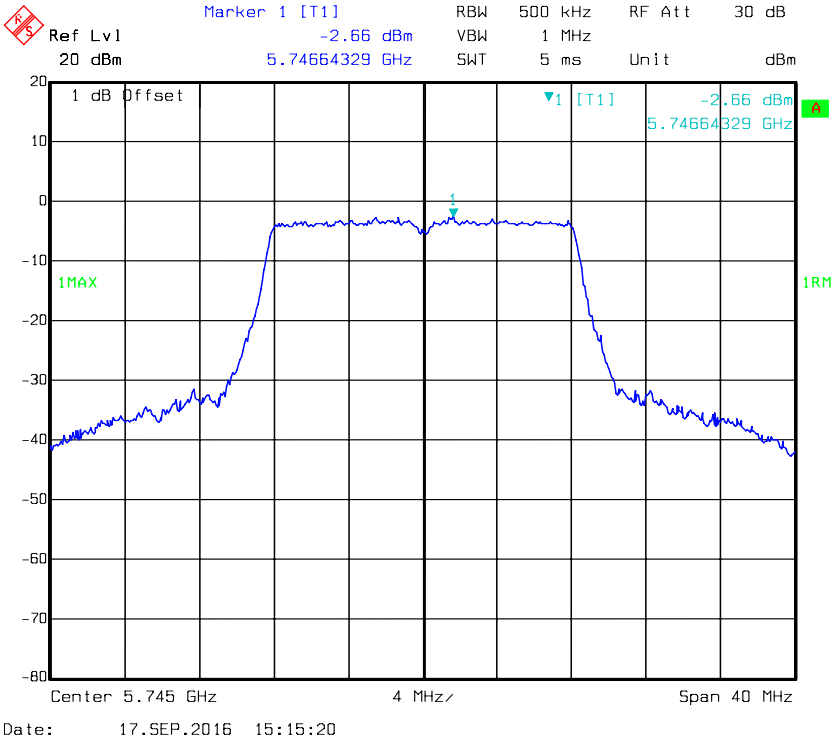
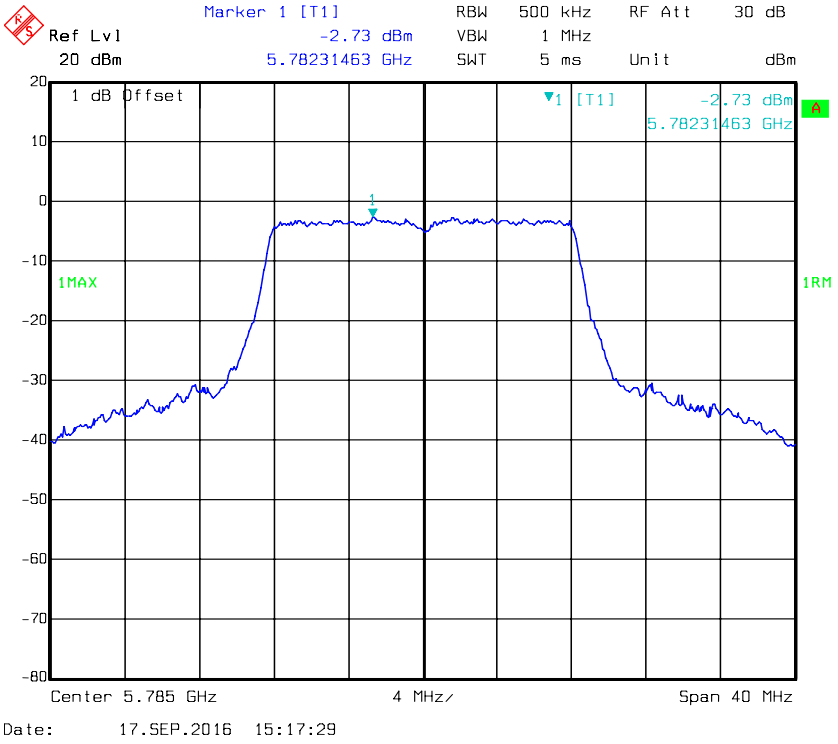
5725-5850MHz:

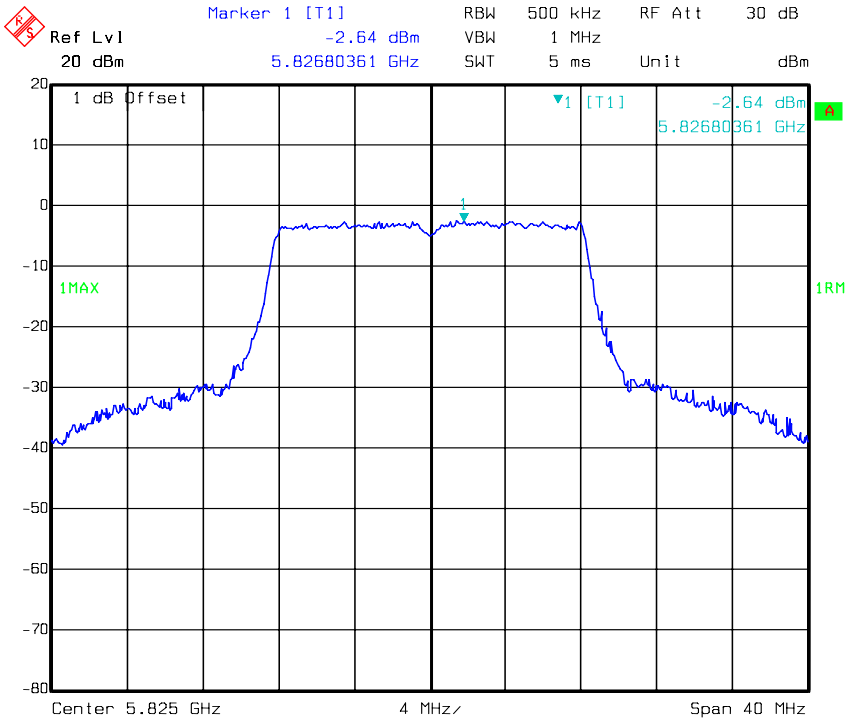
Power Spectral Density, 802.11a Low Channel



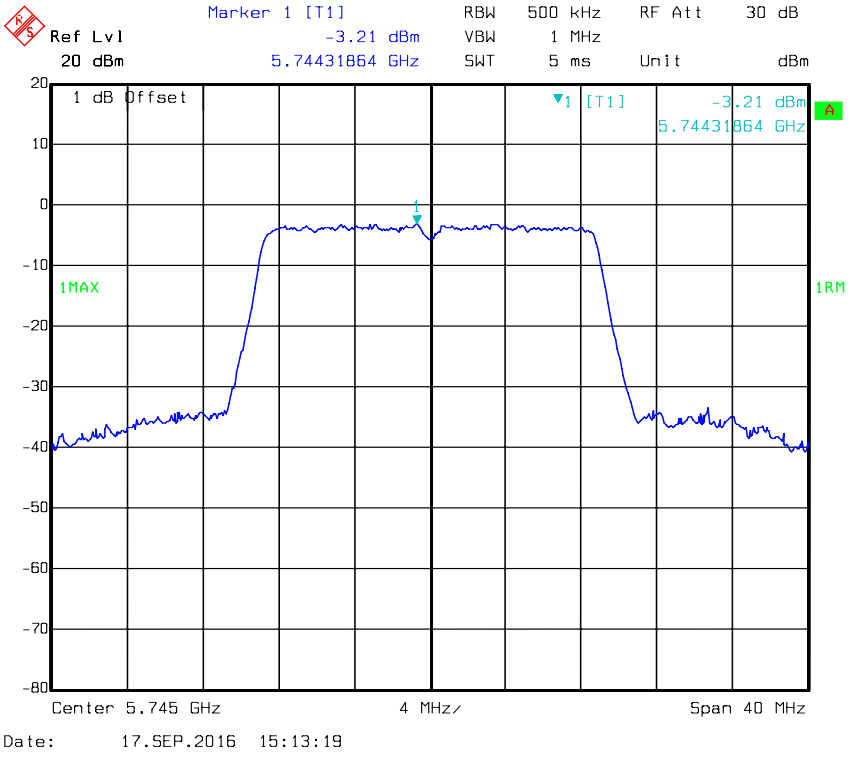
Power Spectral Density, 802.11a Middle Channel



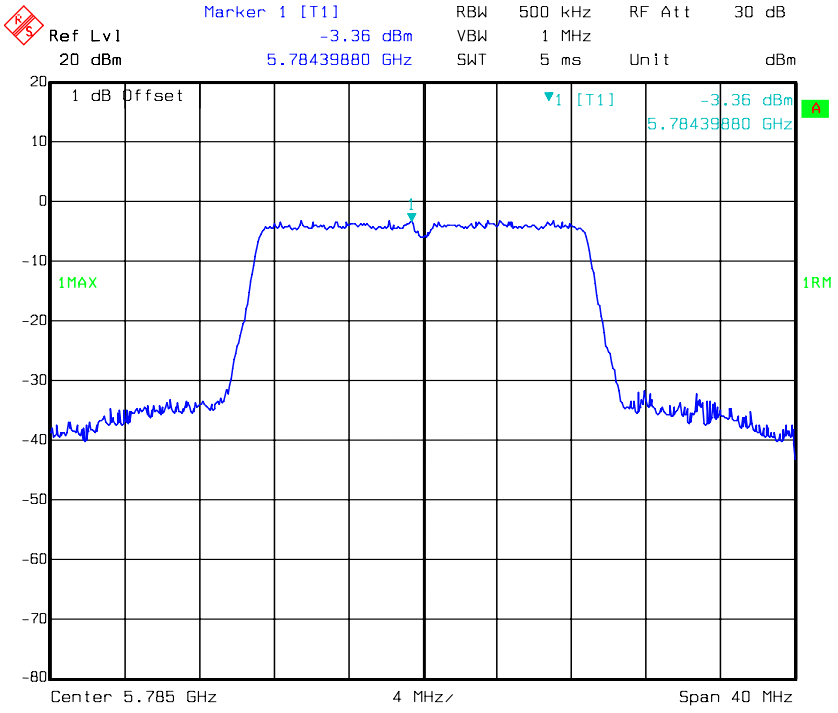
Power Spectral Density, 802.11a High Channel



Power Spectral Density, 802.11n ht20 Low Channel



Power Spectral Density, 802.11n ht20 Middle Channel



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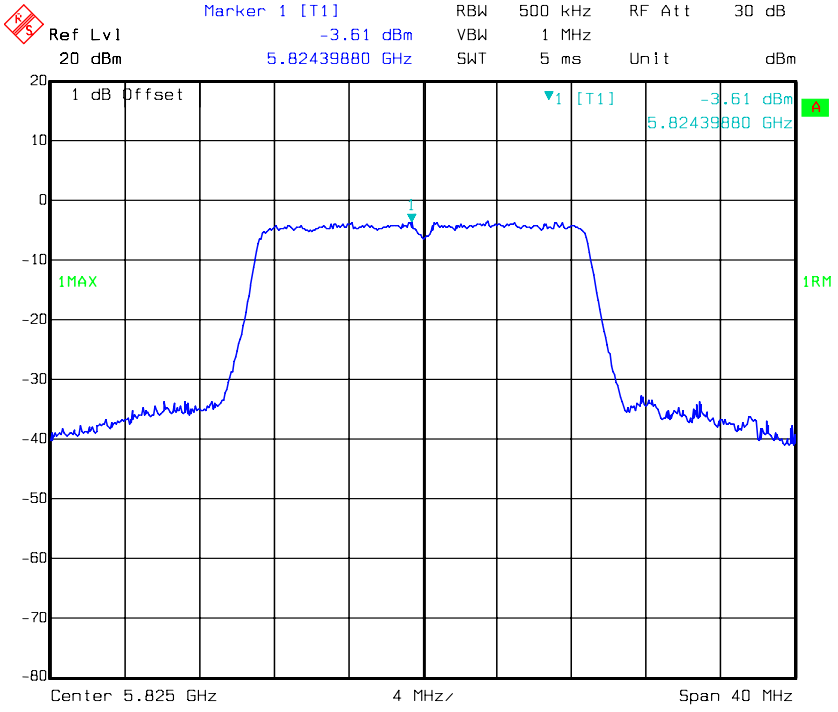

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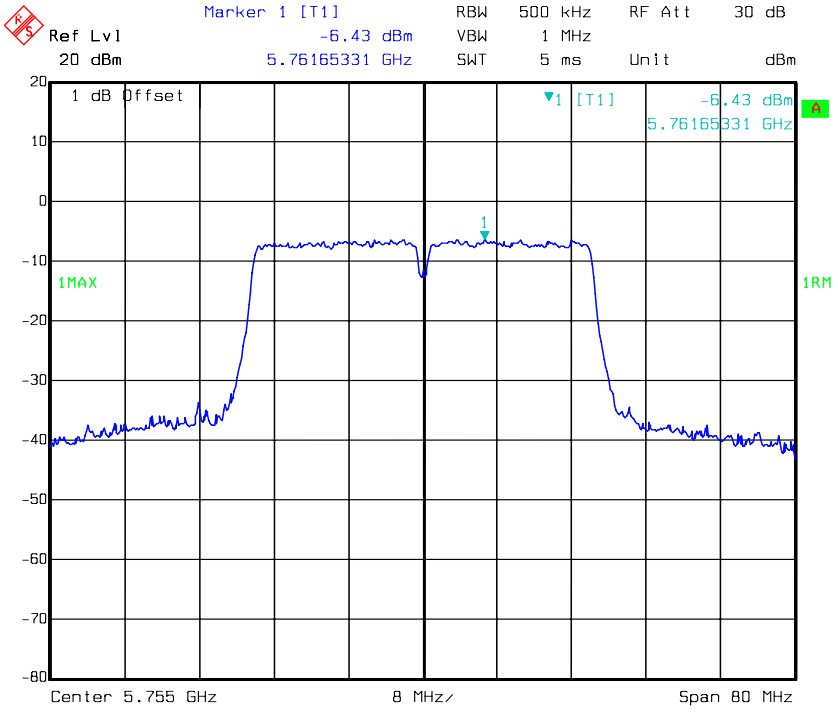
Power Spectral Density, 802.11n ht40 Low Channel



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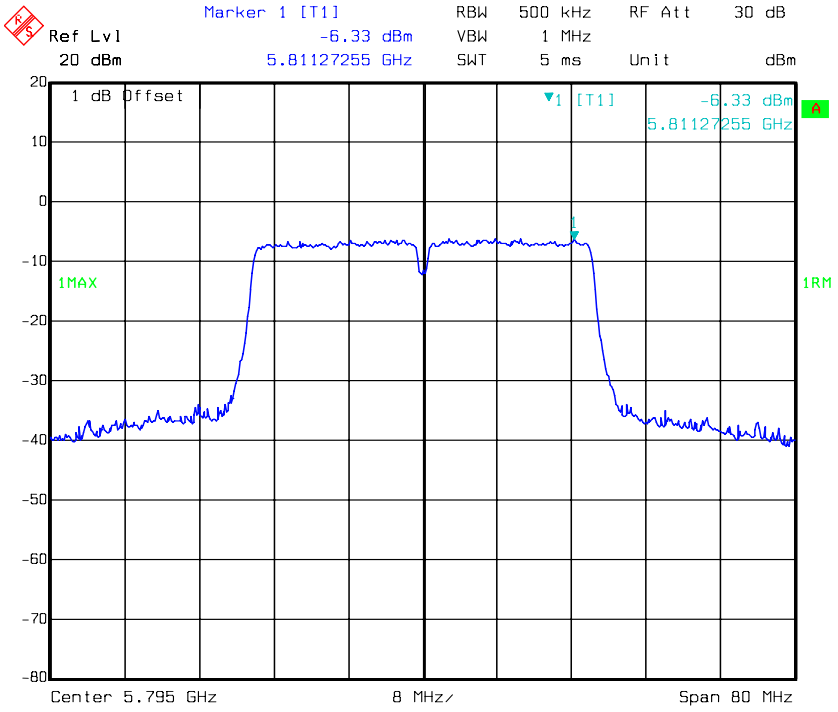

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******* END OF REPORT *******