



FCC PART 15.407

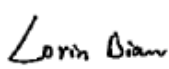
TEST REPORT

For

Logic Instrument SA

43, Avenue de l'Europe P.O. Box BP 60012, DOMONT, 95330 ,France

FCC ID: XGIFBF1

Report Type: Original Report	Product Name: Mobile Phone
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Report Number:	<u>RBJ160829050D</u>
Report Date:	<u>2016-11-02</u>
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The **Logic Instrument SA**'s product, model number: **Fieldbook F1 (FCC ID: XGIFBF1)** (the "EUT") in this report was a **Mobile Phone**, which was measured approximately: 17.7 cm (L) x 8.9 cm (W) x 1.1cm (H), rated input voltage: DC 3.7V from rechargeable Li-ion battery or DC 5V from adapter.

Adapter information:

MODEL: HKA01105021-XE

INPUT: 100-240V ~ 50/60Hz 0.5A

OUTPUT: DC 5.0V, 2.1A

**All measurement and test data in this report was gathered from final production sample, serial number: 160829050 (assigned by the BACL, Chengdu). It may have deviation from any other sample. The EUT supplied by the applicant was received on 2016-08-28, and EUT conformed to test requirement.*

Objective

This type approval report is prepared on behalf of **Logic Instrument SA** 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 15B JBP submissions with FCC ID: XGIFBF1.

FCC Part 22H, 24E, 27 PCE submissions with FCC ID: XGIFBF1.

FCC Part 15C DTS submissions with FCC ID: XGIFBF1.

FCC Part 15C DSS submissions with FCC ID: XGIFBF1.

FCC Part 15.225 DXX submissions with FCC ID: XGIFBF1.

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. (Chengdu). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

The uncertainty of any RF tests which use conducted method measurement is ± 3.17 dB, the uncertainty of any radiation on emissions measurement is:

30M~200MHz: ± 4.7 dB;

200M~1GHz: ± 6.0 dB;

1G-6GHz: ± 5.13 dB;

6G~25GHz: ± 5.47 dB;

And the uncertainty will not be taken into consideration for all test data recorded in the report.

Test Facility

The test site used by BACL to collect test data is located in the 5040, HuiLongWan Plaza, No. 1, ShaWan Road, JinNiu District, ChengDu, China

Test site at BACL has been fully described in reports submitted to the Federal Communication 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 April 24, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 560332. 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/ac vht20/ac vht40/ac vht80, the vht20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

For 5150~5250 MHz band, 7 channels are provided:

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

For 802.11a, 802.11n ht20, Channel 36, 40 and 48 was tested, for 802.11n ht40, Channel 38, 46 were tested, for 802.11ac 80, channel 42 was tested.

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

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

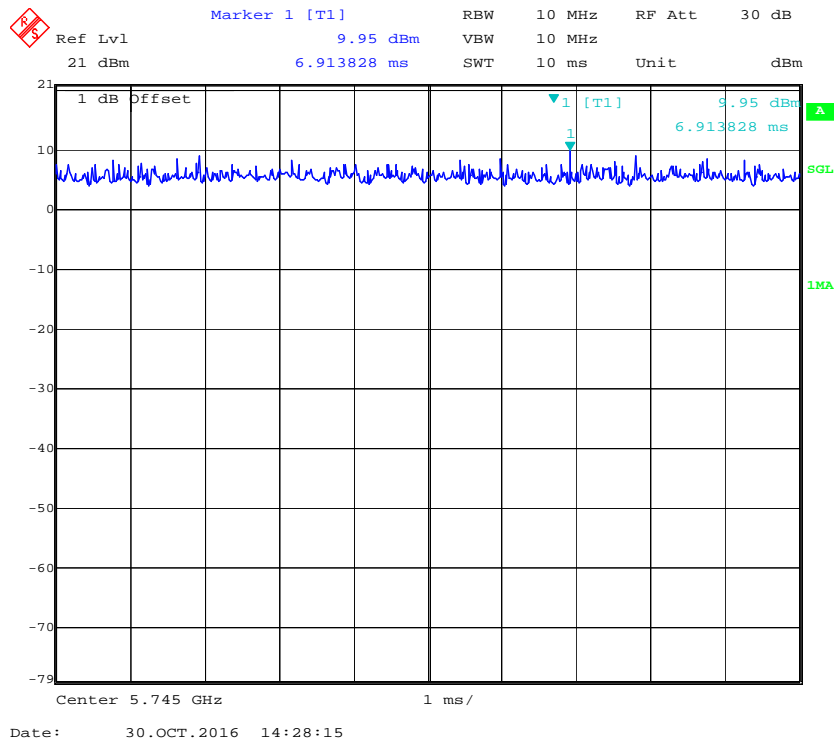
For 802.11a, 802.11n ht20, Channel 149, 157 and 165 was tested, for 802.11n ht40, Channel 151, 159 was tested, for 802.11ac 80, channel 155 was tested.

EUT Exercise Software

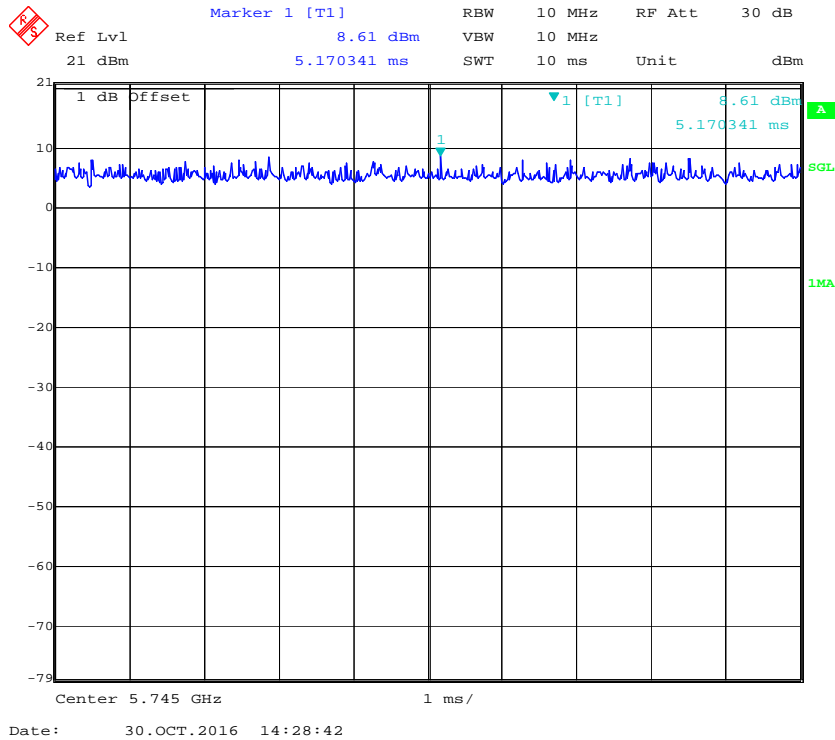
The maximum duty cycle was setting in engineering mode as following table:

Test mode	T _{on} (ms)	T _{on+off} (ms)	Duty Cycle (%)
802.11 a	10	10	100%
802.11 n20	10	10	100%
802.11 n40	10	10	100%
802.11ac 80	10	10	100%

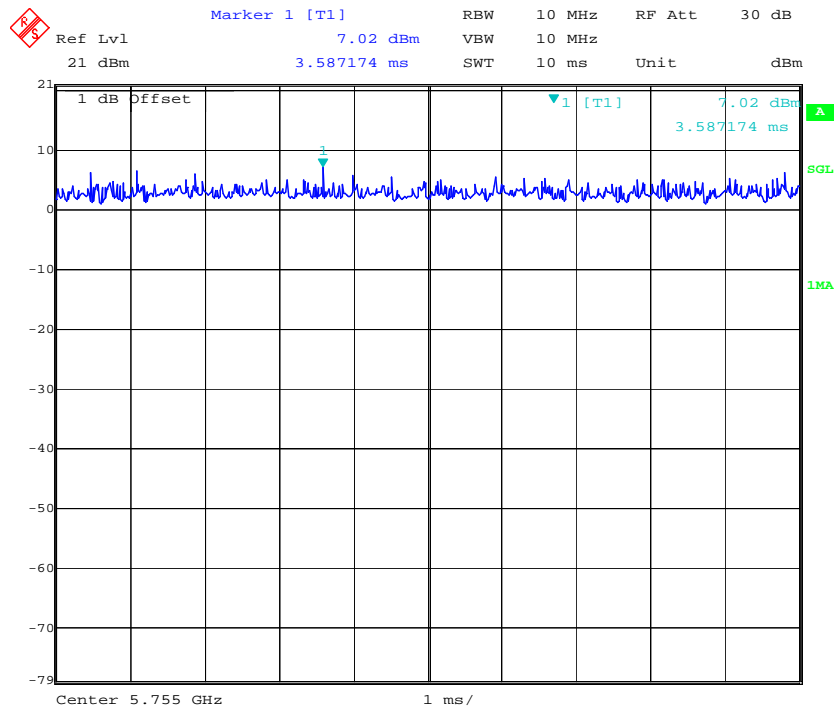
802.11 a



802.11 n20

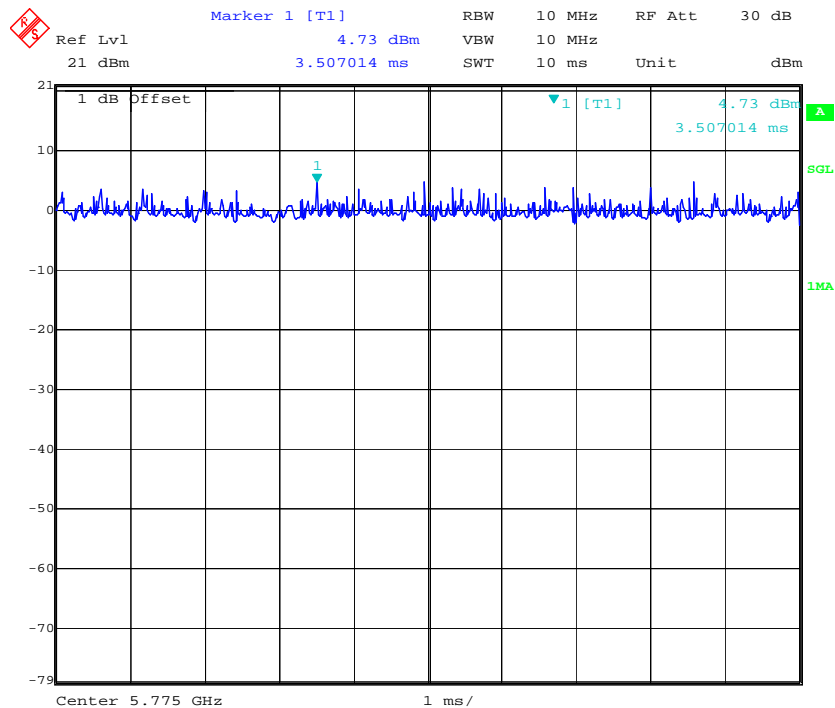


802.11 n40



Date: 30.OCT.2016 14:29:32

802.11ac 80



Date: 30.OCT.2016 14:30:07

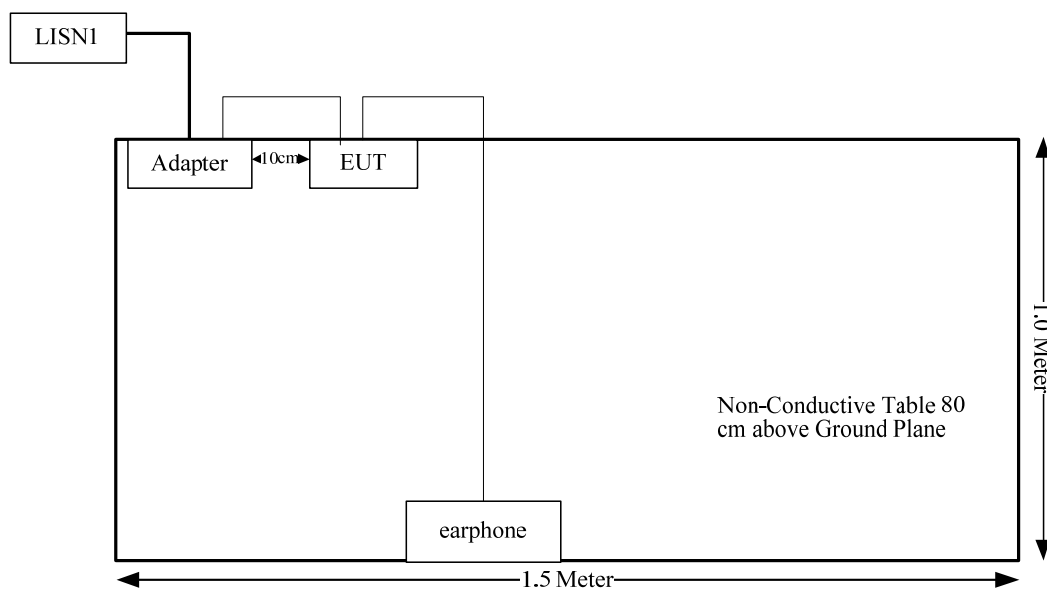
Equipment Modifications

No modification was made to the EUT.

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Adapter cable	Yes	No	1.2	Adapter	EUT
Earphone Cable	No	No	1.6	EUT	Earphone

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 Antenna 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

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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ 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

The tune-up power is 7.0dBm (5.0 mW).

$[(\text{max. power of channel, mW})/(\text{min. test separation distance, mm})][\sqrt{f(\text{GHz})}]$
 $= 5.0/5 \cdot (\sqrt{5.825}) = 2.4 < 3.0$

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/ BT, and the max antenna gain is -3.4 dBi, 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_{cisprr} 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_{cisprr} of Table 1, then:

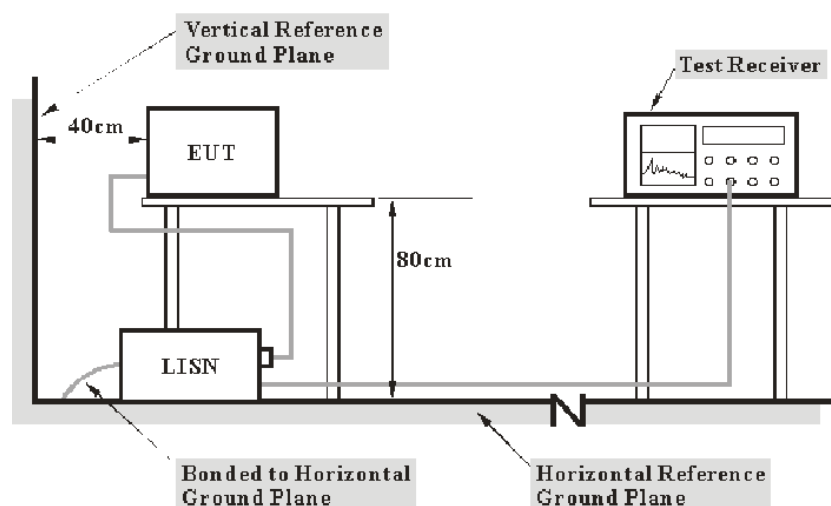
–compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cisprr})$, exceeds the disturbance limit;
–non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cisprr})$, exceeds the disturbance limit.

Based on CISPR 16-4-2:2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Chengdu) is ± 3.17 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cisprr}

Measurement	U_{cisprr}
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 120V/60 Hz AC 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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS 30	836858/0016	2015-12-02	2016-12-01
Rohde & Schwarz	L.I.S.N.	ENV216	3560.6550.06	2015-12-02	2016-12-01
N/A	Conducted Cable	NO.5	N/A	2015-11-10	2016-11-09

* **Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to 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

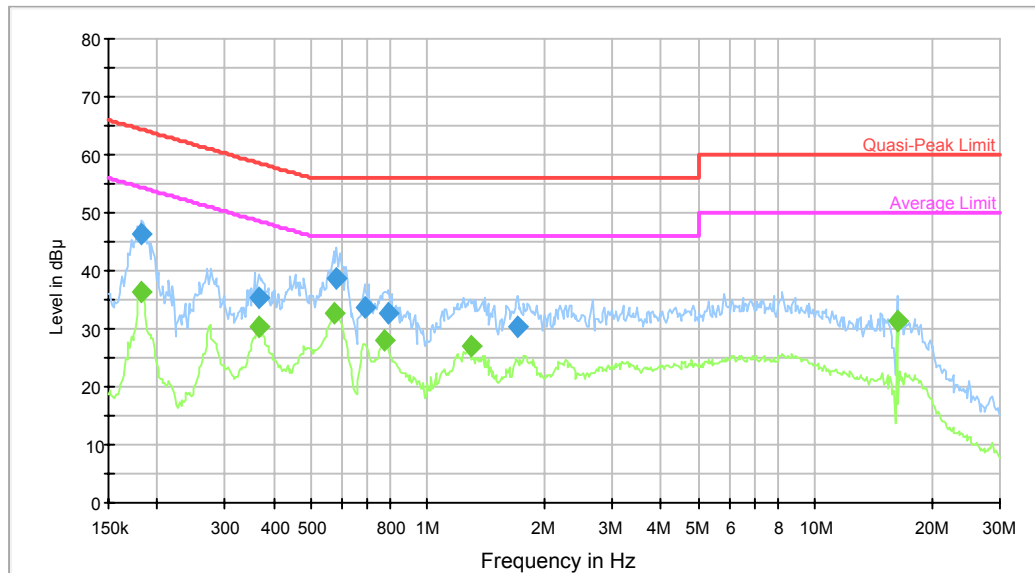
Environmental Conditions

Temperature:	28.6 °C
Relative Humidity:	60 %
ATM Pressure:	101.1 kPa

The testing was performed by Lorin Bian on 2016-10-26.

Test Mode: Transmitting

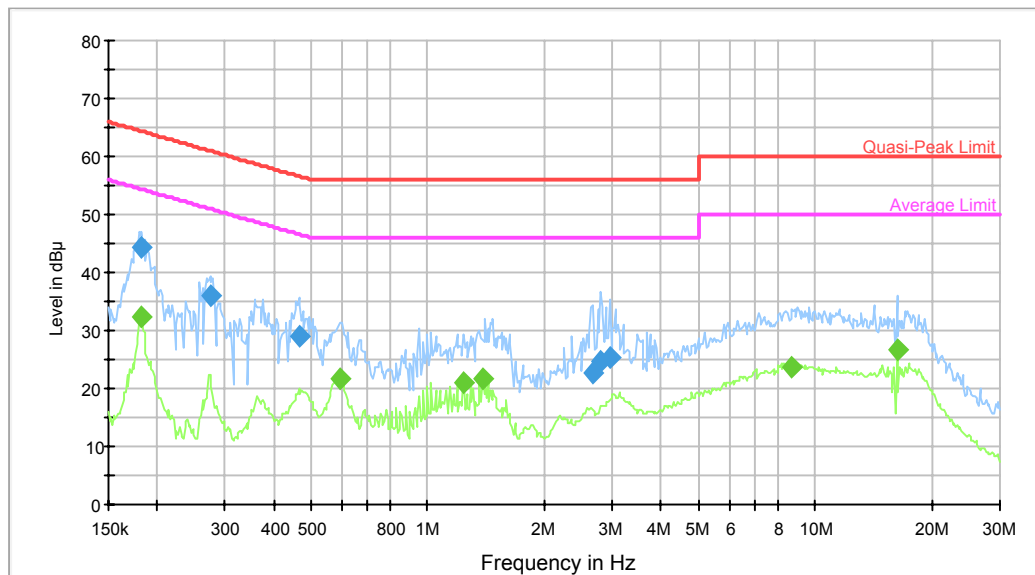
Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.183065	46.3	9.000	L1	9.7	18.0	64.3	Compliance
0.366160	35.5	9.000	L1	9.7	23.1	58.6	Compliance
0.581275	38.7	9.000	L1	9.7	17.3	56.0	Compliance
0.687153	33.6	9.000	L1	9.7	22.4	56.0	Compliance
0.793127	32.8	9.000	L1	9.7	23.2	56.0	Compliance
1.704331	30.3	9.000	L1	9.7	25.7	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.181612	36.4	9.000	L1	9.7	18.0	54.4	Compliance
0.366160	30.3	9.000	L1	9.7	18.3	48.6	Compliance
0.572086	32.5	9.000	L1	9.7	13.5	46.0	Compliance
0.774393	28.0	9.000	L1	9.7	18.0	46.0	Compliance
1.289541	26.9	9.000	L1	9.7	19.1	46.0	Compliance
16.251162	31.2	9.000	L1	10.0	18.8	50.0	Compliance

Neutral:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.183065	44.2	9.000	N	9.6	20.1	64.3	Compliance
0.274848	35.8	9.000	N	9.6	25.2	61.0	Compliance
0.465037	29.1	9.000	N	9.6	27.5	56.6	Compliance
2.662831	22.6	9.000	N	9.7	33.4	56.0	Compliance
2.793231	24.7	9.000	N	9.7	31.3	56.0	Compliance
2.953456	25.2	9.000	N	9.7	30.8	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.183065	32.5	9.000	N	9.6	21.8	54.3	Compliance
0.590613	21.8	9.000	N	9.6	24.2	46.0	Compliance
1.239175	21.0	9.000	N	9.7	25.0	46.0	Compliance
1.385415	21.7	9.000	N	9.7	24.3	46.0	Compliance
8.728968	23.7	9.000	N	9.8	26.3	50.0	Compliance
16.251162	26.6	9.000	N	10.0	23.4	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. (Chengdu) is:

30M~200MHz: ± 4.7 dB ;

200M~1GHz: ± 6.0 dB ;

1G-6GHz: ± 5.13 dB;

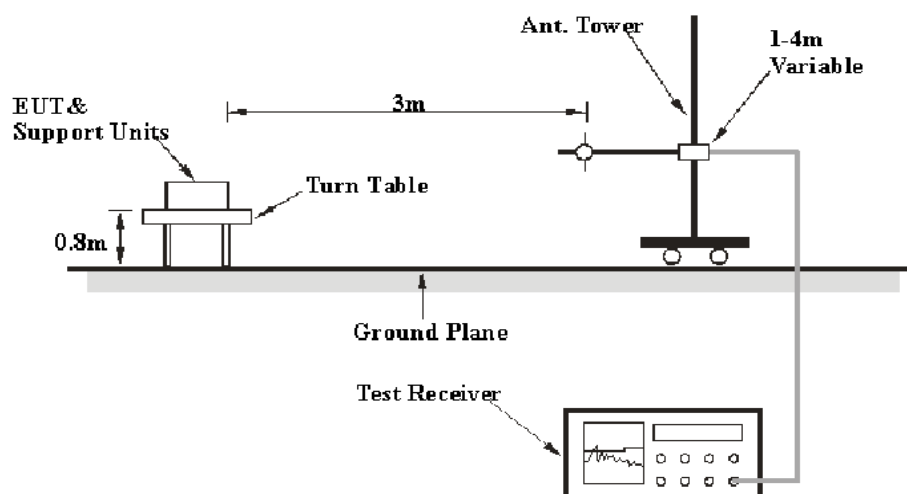
6G~25GHz: ± 5.47 dB;

Table 1 – Values of U_{cispr}

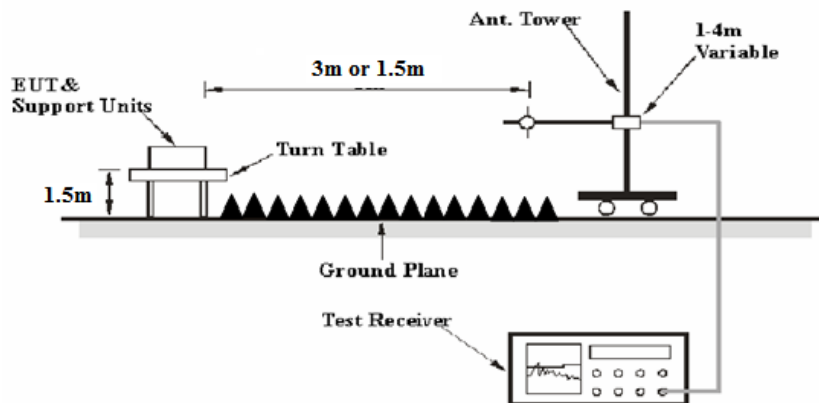
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

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 V/60 Hz AC 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: $E [dB\mu V/m] = EIRP[dBm] + 95.2$, 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 = $20 \log (\text{specific distance [3m]}/\text{test distance [1.5m]})$ 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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Extrapolation result}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Amplifier	8447D	2944A10442	2015-12-02	2016-12-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2015-12-02	2016-12-01
Sunol Sciences	Broadband Antenna	JB3	A101808	2016-04-10	2019-04-09
Rohde & Schwarz	Spectrum Analyzer	FSEM30	100018	2015-12-02	2016-12-01
EM TEST	Horn Antenna	3115	003-6076	2015-12-02	2016-12-01
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-0113024	2014-06-16	2017-06-15
Mini-circuits	Amplifier	ZVA-213-S+	771001215	2016-05-20	2017-05-19
EMCT	Semi-Anechoic Chamber	966	N/A	2015-04-24	2018-04-23
N/A	RF Cable (below 1GHz)	NO.1	N/A	2015-11-10	2016-11-09
N/A	RF Cable (below 1GHz)	NO.4	N/A	2015-11-10	2016-11-09
N/A	RF Cable (above 1GHz)	NO.2	N/A	2015-11-10	2016-11-09
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-011315	2016-08-18	2017-08-18
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-011312	2016-08-18	2017-08-18
Quinstar	Amplifier	QLW-18405536-JO	15964001032	2016-08-18	2017-08-18
Agilent	Spectrum Analyzer	8564E	5943A01752	2016-08-18	2017-08-18

* **Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, Section 15.205, 15.209 and Subpart E, section 15.407.

Test Data

Environmental Conditions

Temperature:	28.6 °C
Relative Humidity:	60 %
ATM Pressure:	101.1 kPa

The testing was performed by Lorin Bian on 2016-10-26.

Result: Compliance.

Note 1: For above 1GHz, the test distance is 1.5m.

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-40GHz:

5150-5250MHz Band: 802.11a Mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	64.36	PK	H	31.72	5.21	0.00	101.29	95.29	N/A	N/A
5180	51.47	AV	H	31.72	5.21	0.00	88.40	82.40	N/A	N/A
5180	66.16	PK	V	31.72	5.21	0.00	103.09	97.09	N/A	N/A
5180	52.86	AV	V	31.72	5.21	0.00	89.79	83.79	N/A	N/A
5150	32.08	PK	V	31.67	5.18	0.00	68.93	62.93	74.00	11.07
5150	18.17	AV	V	31.67	5.18	0.00	55.02	49.02	54.00	4.98
10360	31.88	PK	V	37.37	7.76	26.37	50.64	44.64	74.00	29.36
10360	19.74	AV	V	37.37	7.76	26.37	38.50	32.50	54.00	21.50
15540	32.08	PK	V	39.41	10.22	25.32	56.39	50.39	74.00	23.61
15540	20.98	AV	V	39.41	10.22	25.32	45.29	39.29	54.00	14.71
7405	31.7	PK	V	35.11	6.26	26.44	46.63	40.63	74.00	33.37
7405	20.12	AV	V	35.11	6.26	26.44	35.05	29.05	54.00	24.95
5608	31.65	PK	V	32.43	5.62	26.62	43.08	37.08	74.00	36.92
5608	21.33	AV	V	32.43	5.62	26.62	32.76	26.76	54.00	27.24
46.49	46.05	QP	V	10.56	0.37	28.51	28.47	/	40.00	11.53
103.72	28.49	QP	V	11.82	0.61	28.27	12.65	/	43.50	30.85
Middle Channel:5200 MHz										
5200	64.57	PK	H	31.76	5.23	0.00	101.56	95.56	N/A	N/A
5200	52.43	AV	H	31.76	5.23	0.00	89.42	83.42	N/A	N/A
5200	64.85	PK	V	31.76	5.23	0.00	101.84	95.84	N/A	N/A
5200	52.68	AV	V	31.76	5.23	0.00	89.67	83.67	N/A	N/A
10400	31.43	PK	V	37.38	7.79	26.36	50.24	44.24	74.00	29.76
10400	19.99	AV	V	37.38	7.79	26.36	38.80	32.80	54.00	21.20
15600	32.14	PK	V	39.42	10.22	25.31	56.47	50.47	74.00	23.53
15600	20.64	AV	V	39.42	10.22	25.31	44.97	38.97	54.00	15.03
6725	32.33	PK	V	33.81	6.10	26.41	45.83	39.83	74.00	34.17
6725	19.92	AV	V	33.81	6.10	26.41	33.42	27.42	54.00	26.58
4210	31.62	PK	V	29.34	5.07	26.68	39.35	33.35	74.00	40.65
4210	20.62	AV	V	29.34	5.07	26.68	28.35	22.35	54.00	31.65
46.49	45.87	QP	V	10.56	0.37	28.51	28.29	/	40.00	11.71
103.72	29.58	QP	V	11.82	0.61	28.27	13.74	/	43.50	29.76
High Channel:5240 MHz										
5240	64.11	PK	H	31.83	5.27	0.00	101.21	95.21	N/A	N/A
5240	52.41	AV	H	31.83	5.27	0.00	89.51	83.51	N/A	N/A
5240	64.79	PK	V	31.83	5.27	0.00	101.89	95.89	N/A	N/A
5240	52.78	AV	V	31.83	5.27	0.00	89.88	83.88	N/A	N/A
5350	30.47	PK	V	32.03	5.37	0.00	67.87	61.87	74.00	12.13
5350	18.26	AV	V	32.03	5.37	0.00	55.66	49.66	54.00	4.34
10480	31.59	PK	V	37.40	7.84	26.35	50.48	44.48	74.00	29.52
10480	19.75	AV	V	37.40	7.84	26.35	38.64	32.64	54.00	21.36
15720	32.23	PK	V	39.44	10.24	25.30	56.61	50.61	74.00	23.39
15720	20.96	AV	V	39.44	10.24	25.30	45.34	39.34	54.00	14.66
7892	32.31	PK	V	35.77	6.89	26.70	48.27	42.27	74.00	31.73
7892	19.91	AV	V	35.77	6.89	26.70	35.87	29.87	54.00	24.13
4960	31.65	PK	V	31.27	5.05	26.88	41.09	35.09	74.00	38.91
4960	21.33	AV	V	31.27	5.05	26.88	30.77	24.77	54.00	29.23
46.49	47.25	QP	V	10.56	0.37	28.51	29.67	/	40.00	10.33
103.72	30.17	QP	V	11.82	0.61	28.27	14.33	/	43.50	29.17

802.11n ht20 Mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	64.21	PK	H	31.72	5.21	0.00	101.14	95.14	N/A	N/A
5180	51.73	AV	H	31.72	5.21	0.00	88.66	82.66	N/A	N/A
5180	65.4	PK	V	31.72	5.21	0.00	102.33	96.33	N/A	N/A
5180	52.8	AV	V	31.72	5.21	0.00	89.73	83.73	N/A	N/A
5150	35.5	PK	V	31.67	5.18	0.00	72.35	66.35	74.00	7.65
5150	20.41	AV	V	31.67	5.18	0.00	57.26	51.26	54.00	2.74
10360	31.67	PK	V	37.37	7.76	26.37	50.43	44.43	74.00	29.57
10360	19.89	AV	V	37.37	7.76	26.37	38.65	32.65	54.00	21.35
15540	31.76	PK	V	39.41	10.22	25.32	56.07	50.07	74.00	23.93
15540	20.57	AV	V	39.41	10.22	25.32	44.88	38.88	54.00	15.12
6245	31.9	PK	V	33.15	6.04	26.60	44.49	38.49	74.00	35.51
6245	20	AV	V	33.15	6.04	26.60	32.59	26.59	54.00	27.41
5475	32.05	PK	V	32.26	5.50	26.62	43.19	37.19	74.00	36.81
5475	21.61	AV	V	32.26	5.50	26.62	32.75	26.75	54.00	27.25
46.49	47.22	QP	V	10.56	0.37	28.51	29.64	/	40.00	10.36
103.72	31.44	QP	V	11.82	0.61	28.27	15.60	/	43.50	27.90
Middle Channel:5200 MHz										
5200	64.14	PK	H	31.50	5.49	0.00	101.13	95.13	N/A	N/A
5200	52.20	AV	H	31.50	5.49	0.00	89.19	83.19	N/A	N/A
5200	64.93	PK	V	31.50	5.49	0.00	101.92	95.92	N/A	N/A
5200	53.05	AV	V	31.50	5.49	0.00	90.04	84.04	N/A	N/A
10400	32.10	PK	V	36.98	8.32	25.50	51.90	45.90	74.00	22.10
10400	19.71	AV	V	36.98	8.32	25.50	39.51	33.51	54.00	14.49
15600	31.69	PK	V	37.32	14.69	24.69	59.01	53.01	74.00	14.99
15600	21.31	AV	V	37.32	14.69	24.69	48.63	42.63	54.00	5.37
6585	32.00	PK	V	32.52	6.18	26.57	44.13	38.13	74.00	29.87
6585	20.54	AV	V	32.52	6.18	26.57	32.67	26.67	54.00	21.33
4890	31.62	PK	V	30.81	5.24	27.42	40.25	34.25	74.00	33.75
4890	21.58	AV	V	30.81	5.24	27.42	30.21	24.21	54.00	23.79
46.49	46.81	QP	V	10.56	0.37	28.51	29.23	/	40.00	10.77
103.72	30.72	QP	V	11.82	0.61	28.27	14.88	/	43.50	28.62
High Channel:5240 MHz										
5240	60.06	PK	H	31.83	5.27	0.00	97.16	91.16	N/A	N/A
5240	49.3	AV	H	31.83	5.27	0.00	86.40	80.40	N/A	N/A
5240	63.33	PK	V	31.83	5.27	0.00	100.43	94.43	N/A	N/A
5240	50.74	AV	V	31.83	5.27	0.00	87.84	81.84	N/A	N/A
5350	31.74	PK	V	32.03	5.37	0.00	69.14	63.14	74.00	10.86
5350	18.17	AV	V	32.03	5.37	0.00	55.57	49.57	54.00	4.43
10480	31.52	PK	V	37.40	7.84	26.35	50.41	44.41	74.00	29.59
10480	19.78	AV	V	37.40	7.84	26.35	38.67	32.67	54.00	21.33
15720	31.88	PK	V	39.44	10.24	25.30	56.26	50.26	74.00	23.74
15720	21.18	AV	V	39.44	10.24	25.30	45.56	39.56	54.00	14.44
6321	31.2	PK	V	33.22	6.07	26.58	43.91	37.91	74.00	36.09
6321	20.15	AV	V	33.22	6.07	26.58	32.86	26.86	54.00	27.14
4710	31.35	PK	V	30.47	5.17	26.86	40.13	34.13	74.00	39.87
4710	21.83	AV	V	30.47	5.17	26.86	30.61	24.61	54.00	29.39
46.49	47.18	QP	V	10.56	0.37	28.51	29.60	/	40.00	10.40
103.72	34.69	QP	V	11.82	0.61	28.27	18.85	/	43.50	24.65

802.11n ht40 Mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)						
Low Channel:5190 MHz										
5190	58.94	PK	H	31.74	5.22	0.00	95.90	89.90	N/A	N/A
5190	45.7	AV	H	31.74	5.22	0.00	82.66	76.66	N/A	N/A
5190	60.81	PK	V	31.74	5.22	0.00	97.77	91.77	N/A	N/A
5190	47.02	AV	V	31.74	5.22	0.00	83.98	77.98	N/A	N/A
5150	32.49	PK	V	31.67	5.18	0.00	69.34	63.34	74.00	10.66
5150	18.64	AV	V	31.67	5.18	0.00	55.49	49.49	54.00	4.51
10380	31.84	PK	V	37.38	7.78	26.37	50.63	44.63	74.00	29.37
10380	19.44	AV	V	37.38	7.78	26.37	38.23	32.23	54.00	21.77
15570	32.09	PK	V	39.41	10.22	25.31	56.41	50.41	74.00	23.59
15570	21.25	AV	V	39.41	10.22	25.31	45.57	39.57	54.00	14.43
6550	31.78	PK	V	33.49	6.12	26.50	44.89	38.89	74.00	35.11
6550	19.79	AV	V	33.49	6.12	26.50	32.90	26.90	54.00	27.10
4860	31.25	PK	V	30.95	5.10	26.87	40.43	34.43	74.00	39.57
4860	21.75	AV	V	30.95	5.10	26.87	30.93	24.93	54.00	29.07
46.49	48.74	QP	V	10.56	0.37	28.51	31.16	/	40.00	8.84
103.72	36.24	QP	V	11.82	0.61	28.27	20.40	/	43.50	23.10
High Channel:5230 MHz										
5230	58.65	PK	H	31.81	5.26	0.00	95.72	89.72	N/A	N/A
5230	44.24	AV	H	31.81	5.26	0.00	81.31	75.31	N/A	N/A
5230	61.79	PK	V	31.81	5.26	0.00	98.86	92.86	N/A	N/A
5230	47.08	AV	V	31.81	5.26	0.00	84.15	78.15	N/A	N/A
5350	34.05	PK	V	32.03	5.37	0.00	71.45	65.45	74.00	8.55
5350	20.72	AV	V	32.03	5.37	0.00	58.12	52.12	54.00	1.88
10460	31.66	PK	V	37.39	7.83	26.36	50.52	44.52	74.00	29.48
10460	19.51	AV	V	37.39	7.83	26.36	38.37	32.37	54.00	21.63
15690	32.57	PK	V	39.44	10.24	25.30	56.95	50.95	74.00	23.05
15690	20.86	AV	V	39.44	10.24	25.30	45.24	39.24	54.00	14.76
6254	31.33	PK	V	33.15	6.05	26.59	43.94	37.94	74.00	36.06
6254	20.22	AV	V	33.15	6.05	26.59	32.83	26.83	54.00	27.17
3550	32.02	PK	V	27.20	4.25	26.59	36.88	30.88	74.00	43.12
3550	21.57	AV	V	27.20	4.25	26.59	26.43	20.43	54.00	33.57
46.49	48.21	QP	V	10.56	0.37	28.51	30.63	/	40.00	9.37
103.72	35.96	QP	V	11.82	0.61	28.27	20.12	/	43.50	23.38

802.11n ac80 Mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Extrapolation result	Limit	Margin
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel:5210 MHz										
5210	59.63	PK	H	31.78	5.24	0.00	96.65	90.65	N/A	N/A
5210	46.16	AV	H	31.78	5.24	0.00	83.18	77.18	N/A	N/A
5210	61.37	PK	V	31.78	5.24	0.00	98.39	92.39	N/A	N/A
5210	49.51	AV	V	31.78	5.24	0.00	86.53	80.53	N/A	N/A
5150	36.92	PK	V	31.67	5.18	0.00	73.77	67.77	74.00	6.23
5150	20.11	AV	V	31.67	5.18	0.00	56.96	50.96	54.00	3.04
5350	33.57	PK	V	32.03	5.37	0.00	70.97	64.97	74.00	9.03
5350	20.71	AV	V	32.03	5.37	0.00	58.11	52.11	54.00	1.89
10420	32.05	PK	V	37.38	7.80	26.36	50.87	44.87	74.00	29.13
10420	20.04	AV	V	37.38	7.80	26.36	38.86	32.86	54.00	21.14
15630	31.6	PK	V	39.43	10.23	25.31	55.95	49.95	74.00	24.05
15630	20.48	AV	V	39.43	10.23	25.31	44.83	38.83	54.00	15.17
7850	31.43	PK	V	35.72	6.83	26.68	47.30	41.30	74.00	32.70
7850	19.99	AV	V	35.72	6.83	26.68	35.86	29.86	54.00	24.14
46.49	47.55	QP	V	10.56	0.37	28.51	29.97	/	40.00	10.03
103.72	38.47	QP	V	11.82	0.61	28.27	22.63	/	43.50	20.87

5725-5850MHz: 802.11a Mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	61.35	PK	H	32.15	5.53	0.00	99.03	93.03	N/A	N/A
5745	48.72	AV	H	32.15	5.53	0.00	86.40	80.40	N/A	N/A
5745	63.91	PK	V	32.15	5.53	0.00	101.59	95.59	N/A	N/A
5745	50.34	AV	V	32.15	5.53	0.00	88.02	82.02	N/A	N/A
5650	30.39	PK	V	32.48	5.65	0.00	68.52	62.52	68.20	5.68
5700	29.42	PK	V	32.54	5.70	0.00	67.66	61.66	105.20	43.54
5720	28.68	PK	V	32.56	5.71	0.00	66.95	60.95	110.80	49.85
5725	36.5	PK	V	32.57	5.72	0.00	74.79	68.79	122.20	53.41
11490	30.51	PK	V	37.89	8.94	26.14	51.20	45.20	74.00	28.80
11490	17.09	AV	V	37.89	8.94	26.14	37.78	31.78	54.00	22.22
17235	33.02	PK	V	40.91	13.69	25.63	61.99	55.99	74.00	18.01
17235	20.54	AV	V	40.91	13.69	25.63	49.51	43.51	54.00	10.49
7340	33.74	PK	V	34.42	6.77	25.88	49.05	43.05	74.00	30.95
7340	20.26	AV	V	34.42	6.77	25.88	35.57	29.57	54.00	24.43
5045	32.68	PK	V	31.19	5.27	27.36	41.78	35.78	74.00	38.22
5045	20.71	AV	V	31.19	5.27	27.36	29.81	23.81	54.00	30.19
46.49	48.25	QP	V	10.56	0.37	28.51	30.67	/	40.00	9.33
103.72	35.96	QP	V	11.82	0.61	28.27	20.12	/	43.50	23.38
Middle Channel:5785 MHz										
5785	61.81	PK	H	32.64	5.77	0.00	100.22	94.22	N/A	N/A
5785	49.26	AV	H	32.64	5.77	0.00	87.67	81.67	N/A	N/A
5785	62.53	PK	V	32.64	5.77	0.00	100.94	94.94	N/A	N/A
5785	50.56	AV	V	32.64	5.77	0.00	88.97	82.97	N/A	N/A
11570	31.58	PK	V	38.03	8.21	26.00	51.82	45.82	74.00	28.18
11570	18.09	AV	V	38.03	8.21	26.00	38.33	32.33	54.00	21.67
17355	32.74	PK	V	43.53	11.03	26.16	61.14	55.14	74.00	18.86
17355	20.19	AV	V	43.53	11.03	26.16	48.59	42.59	54.00	11.41
6880	32.87	PK	V	34.08	6.08	26.32	46.71	40.71	74.00	33.29
6880	20.25	AV	V	34.08	6.08	26.32	34.09	28.09	54.00	25.91
4265	33.71	PK	V	29.42	5.11	26.71	41.53	35.53	74.00	38.47
4265	20.89	AV	V	29.42	5.11	26.71	28.71	22.71	54.00	31.29
46.49	47.19	QP	V	10.56	0.37	28.51	29.61	/	40.00	10.39
103.72	36.29	QP	V	11.82	0.61	28.27	20.45	/	43.50	23.05

High Channel:5825 MHz										
5825	62.18	PK	H	32.69	5.81	0.00	100.68	94.68	N/A	N/A
5825	50.37	AV	H	32.69	5.81	0.00	88.87	82.87	N/A	N/A
5825	63.43	PK	V	32.69	5.81	0.00	101.93	95.93	N/A	N/A
5825	51.71	AV	V	32.69	5.81	0.00	90.21	84.21	N/A	N/A
5850	37.33	PK	V	32.72	5.83	0.00	75.88	69.88	122.20	52.32
5855	29.56	PK	V	32.73	5.83	0.00	68.12	62.12	110.80	48.68
5875	28.15	PK	V	32.75	5.85	0.00	66.75	60.75	105.20	44.45
5925	28.42	PK	V	32.81	5.89	0.00	67.12	61.12	68.20	7.08
11650	31.16	PK	V	38.06	8.20	25.98	51.44	45.44	74.00	28.56
11650	19.57	AV	V	38.06	8.20	25.98	39.85	33.85	54.00	20.15
17475	32.35	PK	V	44.09	11.23	26.33	61.34	55.34	74.00	18.66
17475	20.71	AV	V	44.09	11.23	26.33	49.70	43.70	54.00	10.30
6053	33.49	PK	V	32.95	5.98	26.65	45.77	39.77	74.00	34.23
6053	21.57	AV	V	32.95	5.98	26.65	33.85	27.85	54.00	26.15
4322	34.09	PK	V	29.52	5.15	26.74	42.02	36.02	74.00	37.98
4322	22.13	AV	V	29.52	5.15	26.74	30.06	24.06	54.00	29.94
46.49	48.27	QP	V	10.56	0.37	28.51	30.69	/	40.00	9.31
103.72	38.94	QP	V	11.82	0.61	28.27	23.10	/	43.50	20.40

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)							
Low Channel:5745 MHz										
5745	61.5	PK	H	32.59	5.74	0.00	99.83	93.83	N/A	N/A
5745	49.31	AV	H	32.59	5.74	0.00	87.64	81.64	N/A	N/A
5745	63.75	PK	V	32.59	5.74	0.00	102.08	96.08	N/A	N/A
5745	51.63	AV	V	32.59	5.74	0.00	89.96	83.96	N/A	N/A
5650	29.77	PK	V	32.48	5.65	0.00	67.90	61.90	68.20	6.30
5700	29.37	PK	V	32.54	5.70	0.00	67.61	61.61	105.20	43.59
5720	32.33	PK	V	32.56	5.71	0.00	70.60	64.60	110.80	46.20
5725	36.97	PK	V	32.57	5.72	0.00	75.26	69.26	122.20	52.94
11490	31.05	PK	V	37.99	8.22	26.02	51.24	45.24	74.00	28.76
11490	19.28	AV	V	37.99	8.22	26.02	39.47	33.47	54.00	20.53
17235	32.94	PK	V	42.98	10.82	25.99	60.75	54.75	74.00	19.25
17235	20.19	AV	V	42.98	10.82	25.99	48.00	42.00	54.00	12.00
6540	32.84	PK	V	33.47	6.13	26.51	45.93	39.93	74.00	34.07
6540	20.46	AV	V	33.47	6.13	26.51	33.55	27.55	54.00	26.45
5080	32.06	PK	V	31.54	5.11	26.84	41.87	35.87	74.00	38.13
5080	19.74	AV	V	31.54	5.11	26.84	29.55	23.55	54.00	30.45
46.49	47.28	QP	V	10.56	0.37	28.51	29.70	/	40.00	10.30
103.72	39.55	QP	V	11.82	0.61	28.27	23.71	/	43.50	19.79
Middle Channel:5785 MHz										
5785	60.85	PK	H	32.64	5.77	0.00	99.26	93.26	N/A	N/A
5785	47.64	AV	H	32.64	5.77	0.00	86.05	80.05	N/A	N/A
5785	61.72	PK	V	32.64	5.77	0.00	100.13	94.13	N/A	N/A
5785	48.35	AV	V	32.64	5.77	0.00	86.76	80.76	N/A	N/A
11570	31.05	PK	V	38.03	8.21	26.00	51.29	45.29	74.00	28.71
11570	19.28	AV	V	38.03	8.21	26.00	39.52	33.52	54.00	20.48
17355	32.94	PK	V	43.53	11.03	26.16	61.34	55.34	74.00	18.66
17355	20.19	AV	V	43.53	11.03	26.16	48.59	42.59	54.00	11.41
6632	33.08	PK	V	33.64	6.11	26.46	46.37	40.37	74.00	33.63
6632	21.41	AV	V	33.64	6.11	26.46	34.70	28.70	54.00	25.30
4698	32.82	PK	V	30.43	5.17	26.86	41.56	35.56	74.00	38.44
4698	20.34	AV	V	30.43	5.17	26.86	29.08	23.08	54.00	30.92
46.49	48.75	QP	V	10.56	0.37	28.51	31.17	/	40.00	8.83
103.72	40.28	QP	V	11.82	0.61	28.27	24.44	/	43.50	19.06

High Channel:5825 MHz										
5825	60.56	PK	H	32.69	5.81	0.00	99.06	93.06	N/A	N/A
5825	47.91	AV	H	32.69	5.81	0.00	86.41	80.41	N/A	N/A
5825	62.52	PK	V	32.69	5.81	0.00	101.02	95.02	N/A	N/A
5825	49.38	AV	V	32.69	5.81	0.00	87.88	81.88	N/A	N/A
5850	30.18	PK	V	32.72	5.83	0.00	68.73	62.73	122.20	59.47
5855	28.63	PK	V	32.73	5.83	0.00	67.19	61.19	110.80	49.61
5875	28.26	PK	V	32.75	5.85	0.00	66.86	60.86	105.20	44.34
5925	28.01	PK	V	32.81	5.89	0.00	66.71	60.71	68.20	7.49
11650	30.69	PK	V	38.06	8.20	25.98	50.97	44.97	74.00	29.03
11650	18.17	AV	V	38.06	8.20	25.98	38.45	32.45	54.00	21.55
17475	31.58	PK	V	44.09	11.23	26.33	60.57	54.57	74.00	19.43
17475	19.74	AV	V	44.09	11.23	26.33	48.73	42.73	54.00	11.27
5874	33.37	PK	V	32.75	5.85	26.65	45.32	39.32	74.00	34.68
5874	21.76	AV	V	32.75	5.85	26.65	33.71	27.71	54.00	26.29
4217	32.61	PK	V	29.35	5.07	26.68	40.35	34.35	74.00	39.65
4217	20.89	AV	V	29.35	5.07	26.68	28.63	22.63	54.00	31.37
46.49	48.77	QP	V	10.56	0.37	28.51	31.19	/	40.00	8.81
103.72	41.02	QP	V	11.82	0.61	28.27	25.18	/	43.50	18.32

802.11n ht40 Mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)						
Low Channel:5755 MHz										
5755	59.32	PK	H	32.61	5.74	0.00	97.67	91.67	N/A	N/A
5755	46.92	AV	H	32.61	5.74	0.00	85.27	79.27	N/A	N/A
5755	60.78	PK	V	32.61	5.74	0.00	99.13	93.13	N/A	N/A
5755	47.53	AV	V	32.61	5.74	0.00	85.88	79.88	N/A	N/A
5650	29.78	PK	V	32.48	5.65	0.00	67.91	61.91	68.20	6.29
5700	29.88	PK	V	32.54	5.70	0.00	68.12	62.12	105.20	43.08
5720	50.75	PK	V	32.56	5.71	0.00	89.02	83.02	110.80	27.78
5725	52.18	PK	V	32.57	5.72	0.00	90.47	84.47	122.20	37.73
11510	31.26	PK	V	38.00	8.22	26.02	51.46	45.46	74.00	28.54
11510	19.73	AV	V	38.00	8.22	26.02	39.93	33.93	54.00	20.07
17265	32.48	PK	V	43.12	10.88	26.04	60.44	54.44	74.00	19.56
17265	20.31	AV	V	43.12	10.88	26.04	48.27	42.27	54.00	11.73
5988	32.73	PK	V	32.89	5.95	26.66	44.91	38.91	74.00	35.09
5988	20.48	AV	V	32.89	5.95	26.66	32.66	26.66	54.00	27.34
3869	33.15	PK	V	28.48	4.73	26.56	39.80	33.80	74.00	40.20
3869	21.78	AV	V	28.48	4.73	26.56	28.43	22.43	54.00	31.57
46.49	47.58	QP	V	10.56	0.37	28.51	30.00	/	40.00	10.00
103.72	42.55	QP	V	11.82	0.61	28.27	26.71	/	43.50	16.79
High Channel:5795 MHz										
5795	55.68	PK	H	32.65	5.78	0.00	94.11	88.11	N/A	N/A
5795	42.96	AV	H	32.65	5.78	0.00	81.39	75.39	N/A	N/A
5795	57.43	PK	V	32.65	5.78	0.00	95.86	89.86	N/A	N/A
5795	45.72	AV	V	32.65	5.78	0.00	84.15	78.15	N/A	N/A
5850	34.44	PK	V	32.72	5.83	26.65	46.34	40.34	122.20	81.86
5855	34.79	PK	V	32.73	5.83	26.65	46.70	40.70	110.80	70.10
5875	35.35	PK	V	32.75	5.85	26.65	47.30	41.30	105.20	63.90
5925	35.31	PK	V	32.81	5.89	26.65	47.36	41.36	68.20	26.84
11590	32.74	PK	V	38.04	8.21	25.99	53.00	47.00	74.00	27.00
11590	20.56	AV	V	38.04	8.21	25.99	40.82	34.82	54.00	19.18
17385	33.06	PK	V	43.67	11.08	26.21	61.60	55.60	74.00	18.40
17385	21.93	AV	V	43.67	11.08	26.21	50.47	44.47	54.00	9.53
6441	32.18	PK	V	33.34	6.11	26.55	45.08	39.08	74.00	34.92
6441	20.71	AV	V	33.34	6.11	26.55	33.61	27.61	54.00	26.39
4065	32.98	PK	V	29.10	4.97	26.59	40.46	34.46	74.00	39.54
4065	20.05	AV	V	29.10	4.97	26.59	27.53	21.53	54.00	32.47
46.49	47.22	QP	V	10.56	0.37	28.51	29.64	/	40.00	10.36
103.72	42.14	QP	V	11.82	0.61	28.27	26.30	/	43.50	17.20

802.11n ac80 Mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Extrapolation result	Limit	Margin
(MHz)	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel:5775 MHz										
5775	59.08	PK	H	32.63	5.76	0.00	97.47	91.47	N/A	N/A
5775	47.84	AV	H	32.63	5.76	0.00	86.23	80.23	N/A	N/A
5775	61.03	PK	V	32.63	5.76	0.00	99.42	93.42	N/A	N/A
5775	49.36	AV	V	32.63	5.76	0.00	87.75	81.75	N/A	N/A
5650	29.48	PK	V	32.48	5.65	26.63	40.98	34.98	68.20	33.22
5700	28.92	PK	V	32.54	5.70	26.63	40.53	34.53	105.20	70.67
5720	30.15	PK	V	32.56	5.71	26.63	41.79	35.79	110.80	75.01
5725	39.92	PK	V	32.57	5.72	26.63	51.58	45.58	122.20	76.62
5850	29.49	PK	V	32.72	5.83	26.65	41.39	35.39	122.20	86.81
5855	29.6	PK	V	32.73	5.83	26.65	41.51	35.51	110.80	75.29
5875	30.27	PK	V	32.75	5.85	26.65	42.22	36.22	105.20	68.98
5925	28.52	PK	V	32.81	5.89	26.65	40.57	34.57	68.20	33.63
11550	32.74	PK	V	38.02	8.21	26.01	52.96	46.96	74.00	27.04
11550	20.56	AV	V	38.02	8.21	26.01	40.78	34.78	54.00	19.22
17325	33.06	PK	V	43.40	10.98	26.12	61.32	55.32	74.00	18.68
17325	21.93	AV	V	43.40	10.98	26.12	50.19	44.19	54.00	9.81
6850	34.08	PK	V	34.03	6.09	26.34	47.86	41.86	74.00	32.14
6850	22.19	AV	V	34.03	6.09	26.34	35.97	29.97	54.00	24.03
46.49	47.21	QP	V	10.56	0.37	28.51	29.63	/	40.00	10.37
103.72	41.55	QP	V	11.82	0.61	28.27	25.71	/	43.50	17.79

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

Applicable Standard

15.407(a)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

* **Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, 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:	29.8 °C~29.8 °C
Relative Humidity:	39 %~39 %
ATM Pressure:	101.2 kPa~101.2 kPa

The testing was performed by Lorin Bian on 2016-10-30 and 2016-11-01.

Test Result: Pass.

Please refer to the following tables and plots.

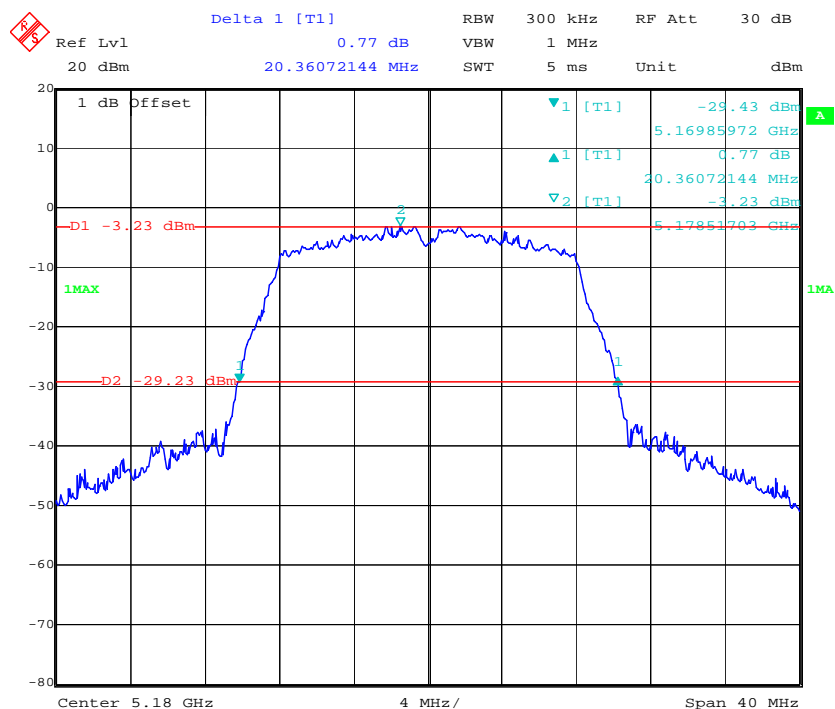
Test mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
5150-5250MHz	802.11 a	Low	5180	20.36
		Middle	5200	20.36
		High	5240	20.46
	802.11 n20	Low	5180	20.36
		Middle	5200	20.36
		High	5240	20.76
	802.11 n40	Low	5190	40.24
		High	5230	40.66
	802.11 ac80	Middle	5210	81.92

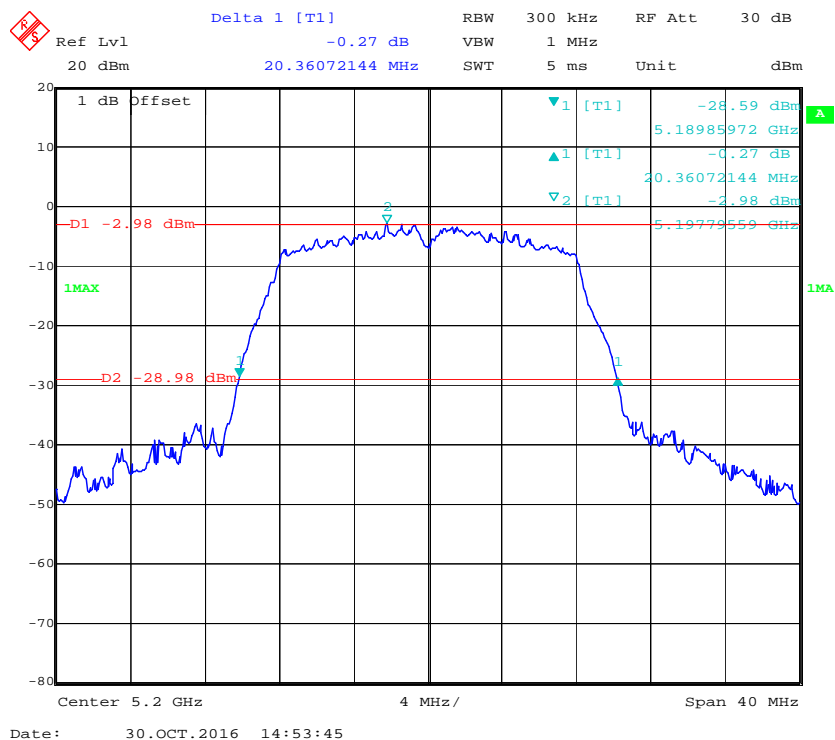
UNII Band	Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
5725-5850MHz	802.11 a	Low	5745	15.23	0.5
		Middle	5785	15.23	0.5
		High	5825	15.23	0.5
	5G 802.11 n20	Low	5745	15.23	0.5
		Middle	5785	15.15	0.5
		High	5825	15.15	0.5
	5G 802.11 n40	Low	5755	35.11	0.5
		High	5795	36.07	0.5
	802.11 ac80	Middle	5775	76.63	0.5

5150-5250MHz:

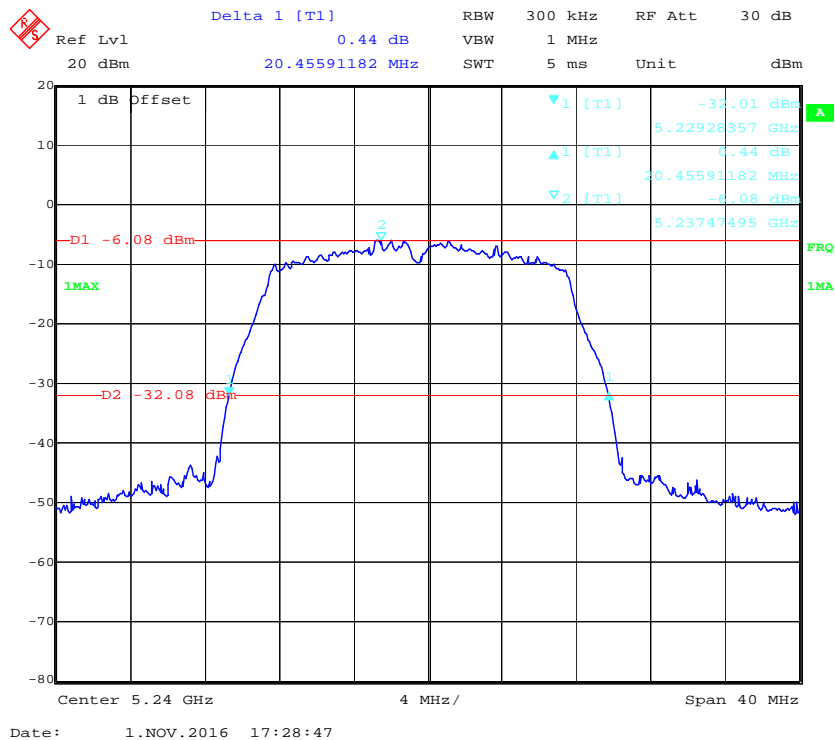
802.11a Low Channel



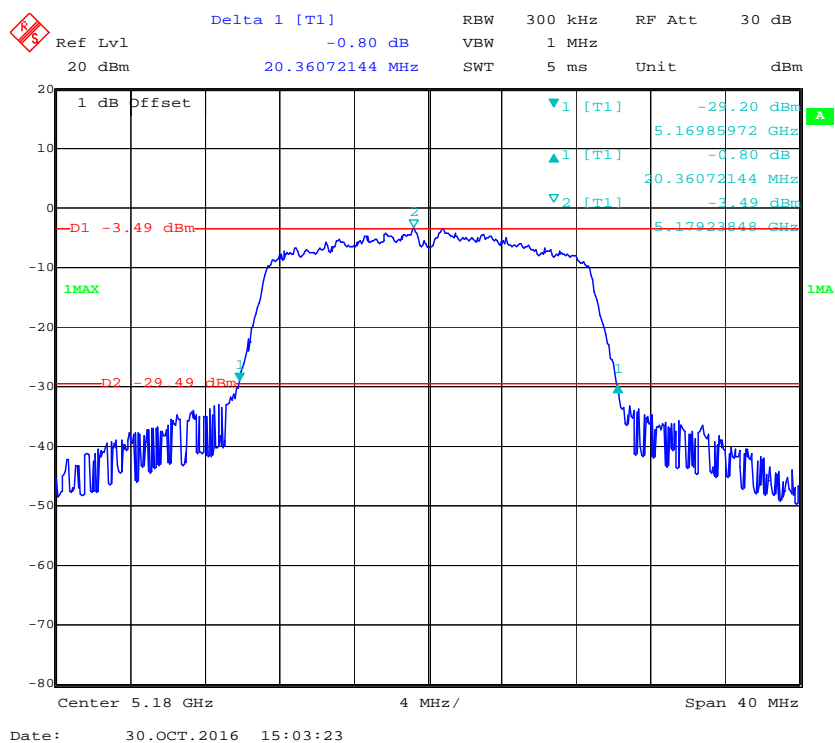
802.11a Middle Channel



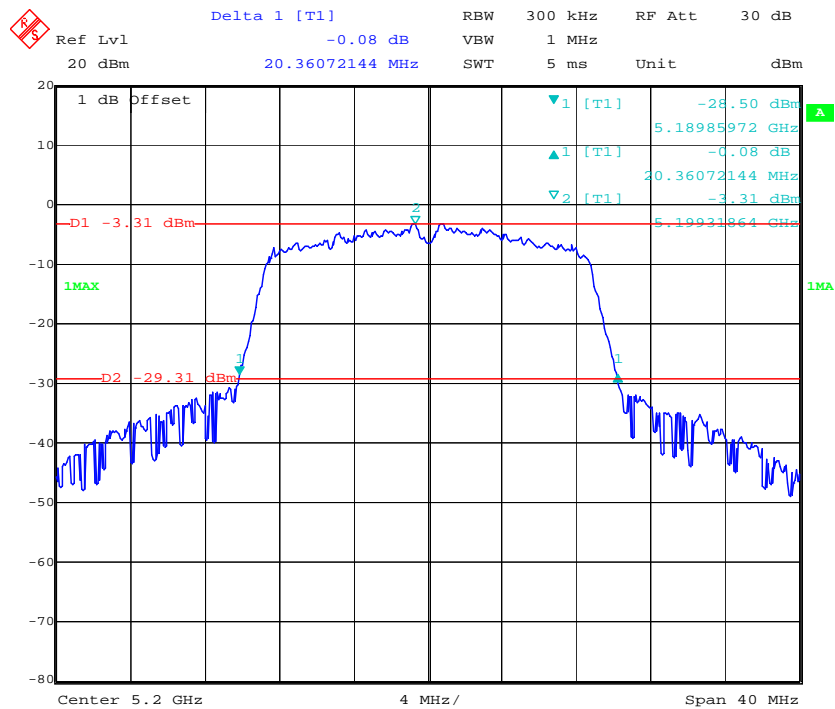
802.11a High Channel



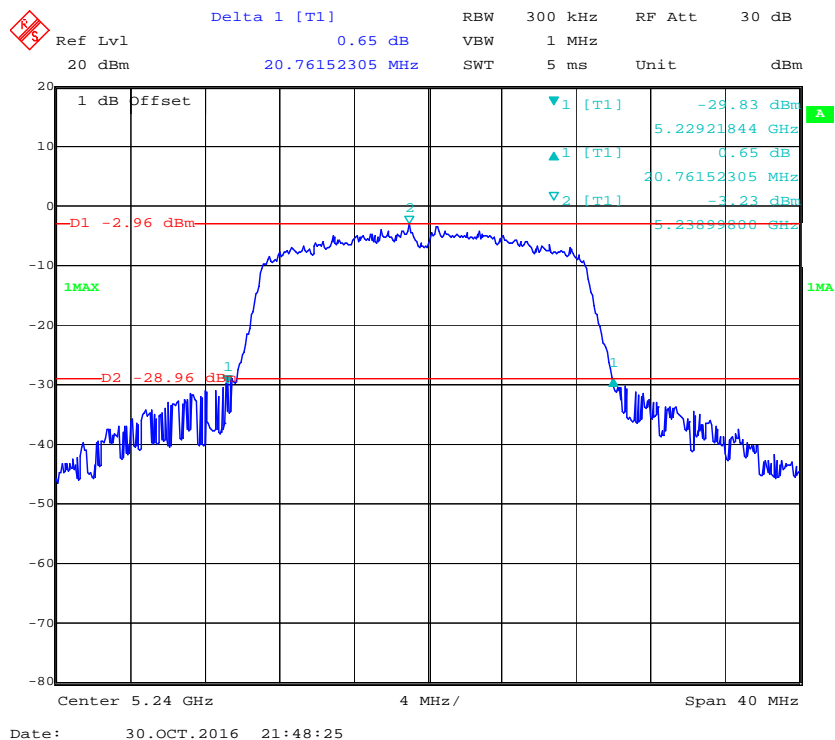
802.11n ht20 Low Channel



802.11n ht20 Middle Channel



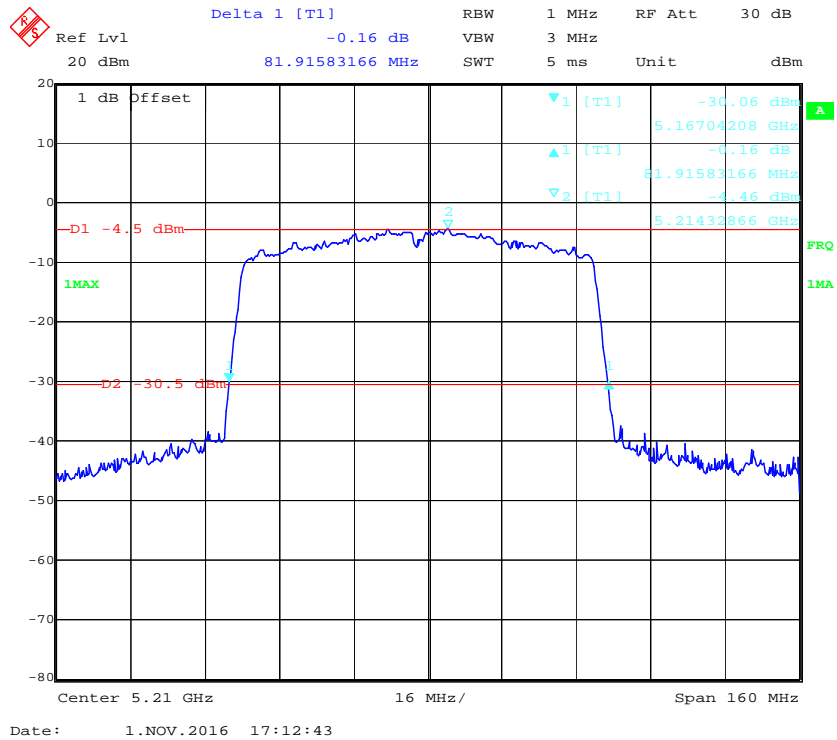
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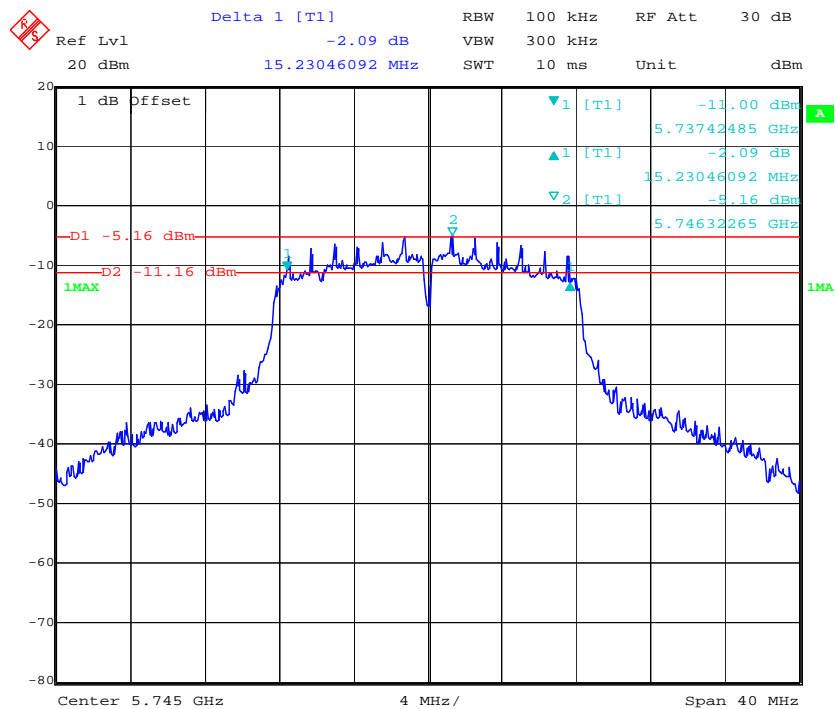
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802.11n ac80 Middle Channel



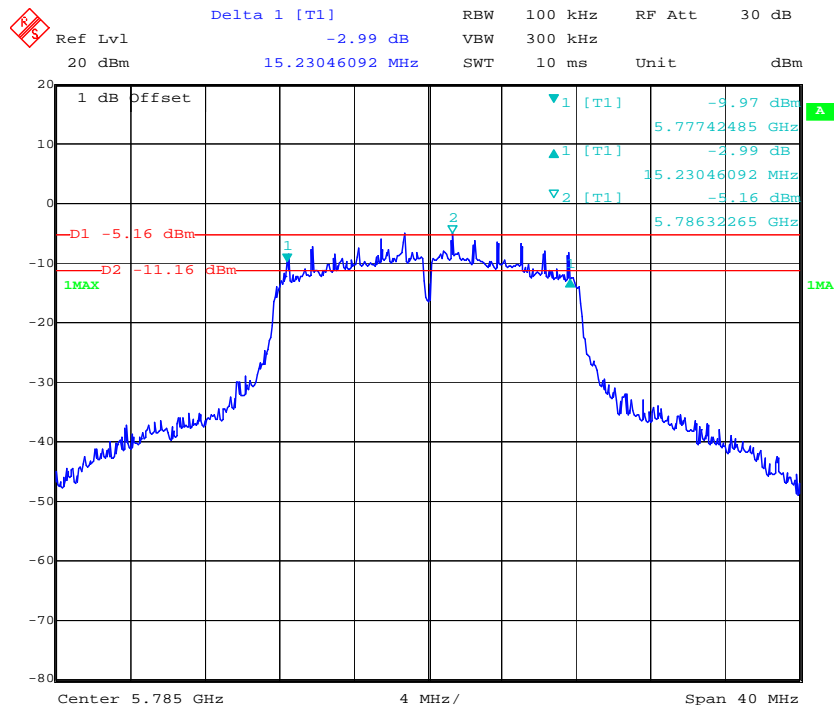
5725-5850MHz, 6dB Minimum Emission Bandwidth:

802.11a Low Channel



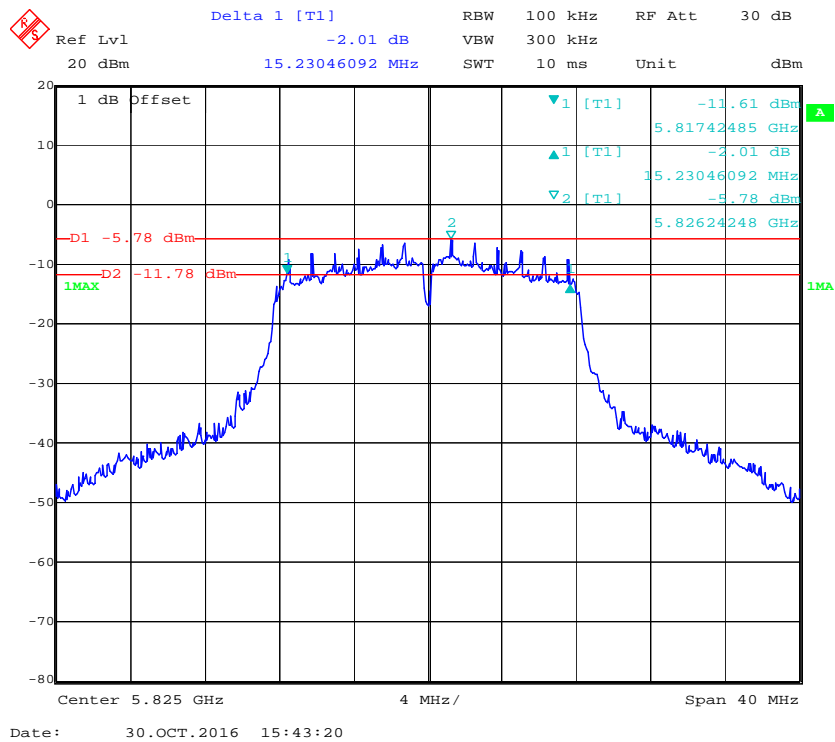
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802.11a Middle Channel

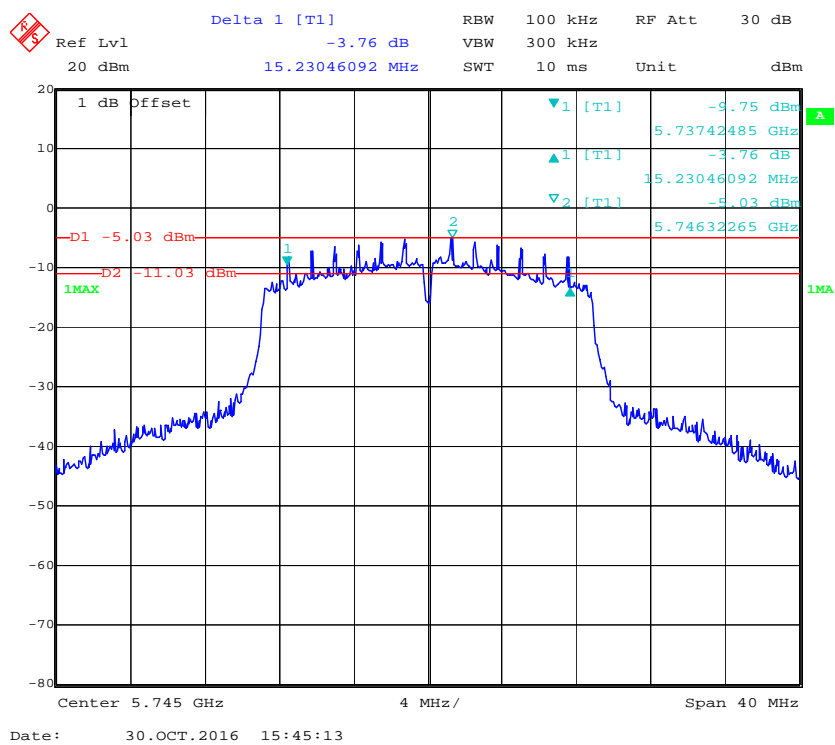


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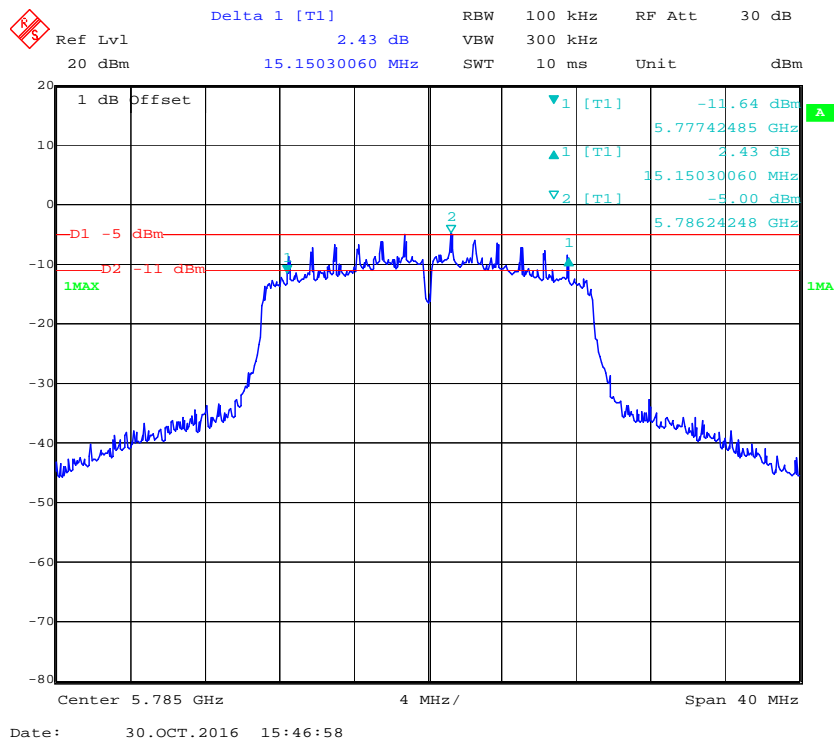
802.11a High Channel



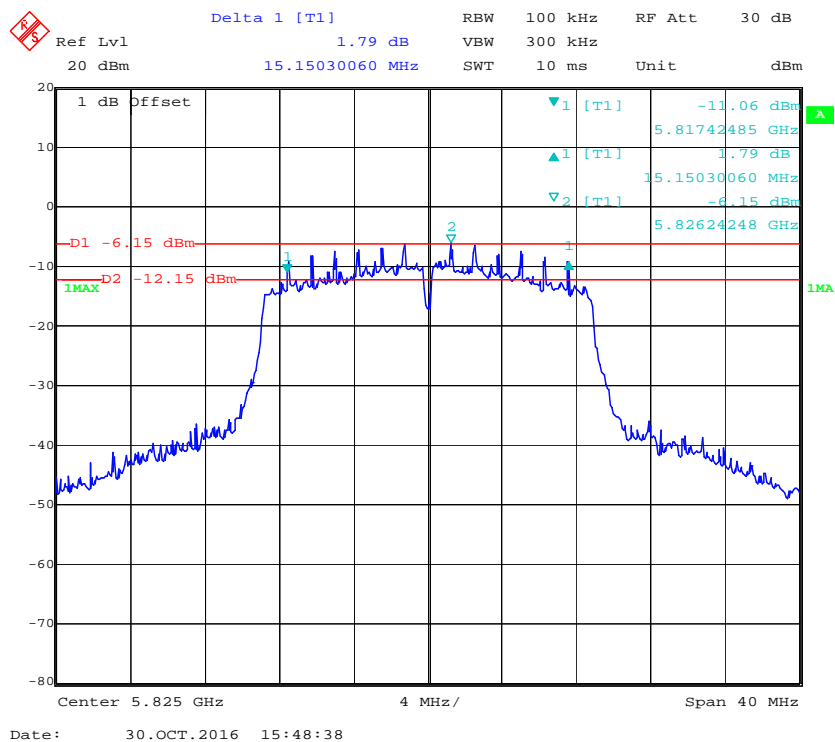
802.11n ht20 Low Channel



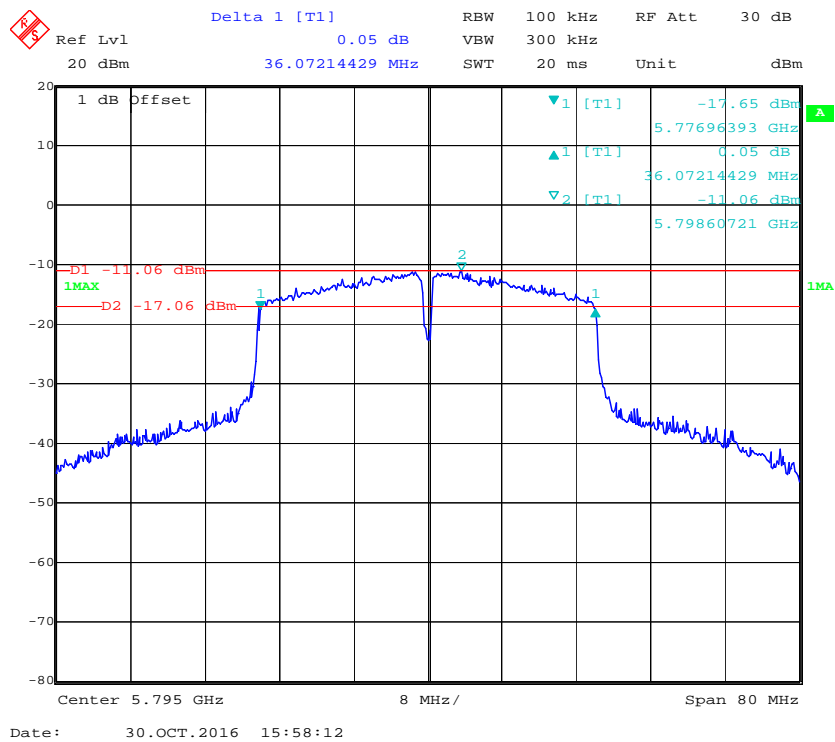
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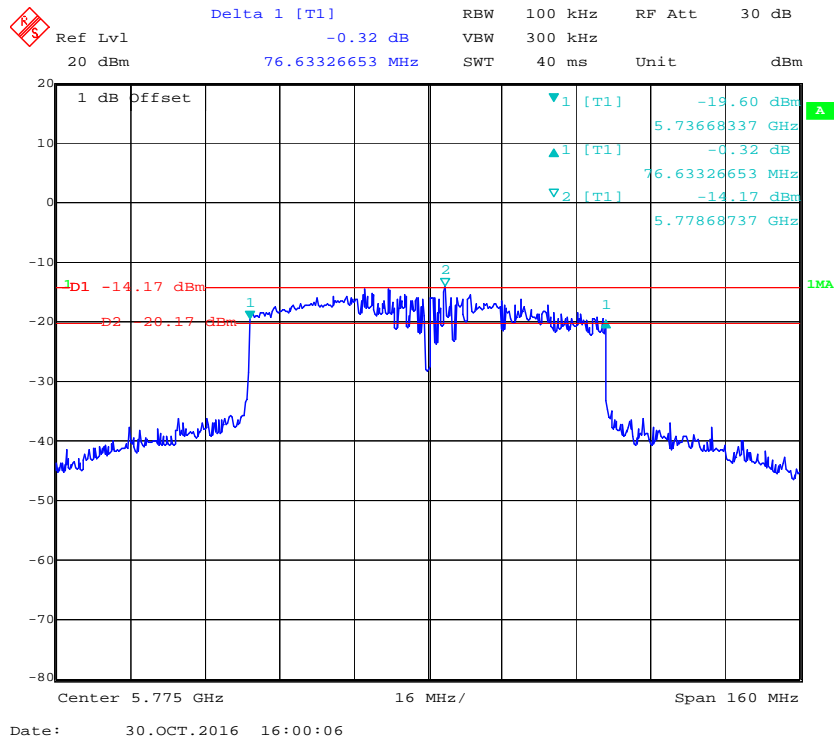
802.11n ht20 High Channel



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802.11n ac80 Middle 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 $11 \text{ dBm} + 10 \log B$, 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	MY54170074	2016-01-03	2017-01-03
Agilent	P-Series Power Meter	N1912A	MY5000798	2016-01-03	2017-01-03
N/A	RF Cable	N/A	N/A	Each Time	/

* **Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, 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:	29.8 °C
Relative Humidity:	39 %
ATM Pressure:	101.2 kPa

The testing was performed by Lorin Bian on 2016-10-30.

Test Mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	RMS Channel Power (dBm)	Limit (dBm)
5150-5250MHz	802.11 a	Low	5180	6.12	24
		Middle	5200	6.57	24
		High	5240	6.43	24
	5G 802.11 n20	Low	5180	6.01	24
		Middle	5200	6.53	24
		High	5240	6.40	24
	5G 802.11 n40	Low	5190	6.36	24
		High	5230	6.26	24
	802.11 ac80	Middle	5210	6.72	24
5725-5850MHz	802.11 a	Low	5745	6.67	30
		Middle	5785	6.08	30
		High	5825	6.42	30
	5G 802.11 n20	Low	5745	6.62	30
		Middle	5785	6.47	30
		High	5825	6.33	30
	5G 802.11 n40	Low	5755	6.87	30
		High	5795	6.41	30
	802.11 ac80	Middle	5775	6.59	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 $11 \text{ dBm} + 10 \log B$, 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 colocated 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
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

* **Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	29.8 °C
Relative Humidity:	39 %
ATM Pressure:	101.2 kPa

The testing was performed by Lorin Bian on 2016-10-30.

Test Result: Compliance.

Test Mode: Transmitting

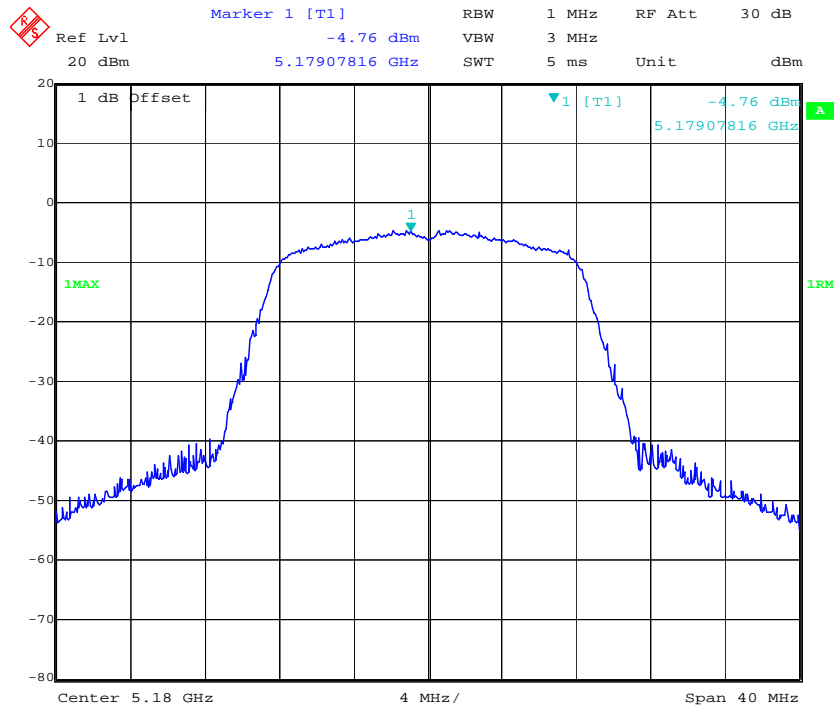
UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
5150-5250MHz	802.11 a	Low	5180	-4.76	11
		Middle	5200	-4.51	11
		High	5240	-4.51	11
	802.11 n20	Low	5180	-4.92	11
		Middle	5200	-4.85	11
		High	5240	-4.76	11
	802.11 n40	Low	5190	-8.03	11
		High	5230	-8.08	11
	802.11 ac80	Middle	5210	-10.98	11

UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density		Limit (dBm/500kHz)
				(dBm/300kHz)	(dBm/500kHz)	
5725-5850MHz	802.11 a	Low	5745	-5.72	-3.52	30
		Middle	5785	-7.5	-5.3	30
		High	5825	-7.64	-5.44	30
	802.11 n20	Low	5745	-7.03	-4.83	30
		Middle	5785	-6.45	-4.25	30
		High	5825	-6.32	-4.12	30
	802.11 n40	Low	5755	-8.53	-6.33	30
		High	5795	-10.87	-8.67	30
	802.11 ac80	Middle	5775	-13.71	-11.51	30

The measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/\text{RBW})$ to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement:
 $10*\log(500\text{kHz}/\text{RBW})=10*\log(500\text{kHz}/300\text{kHz})=2.2\text{dB}$

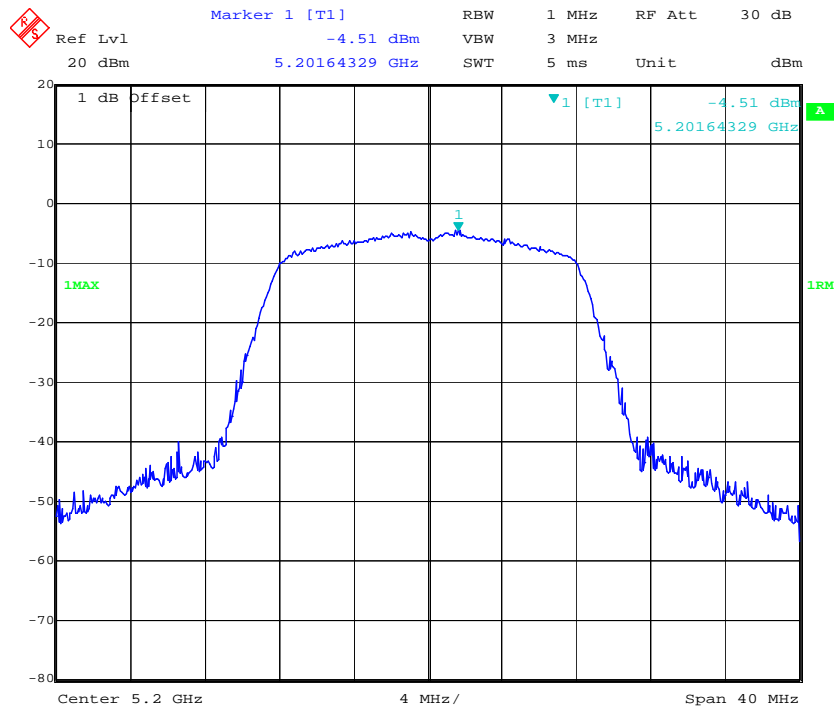
5150-5250MHz:

Power Spectral Density, 802.11a Low Channel



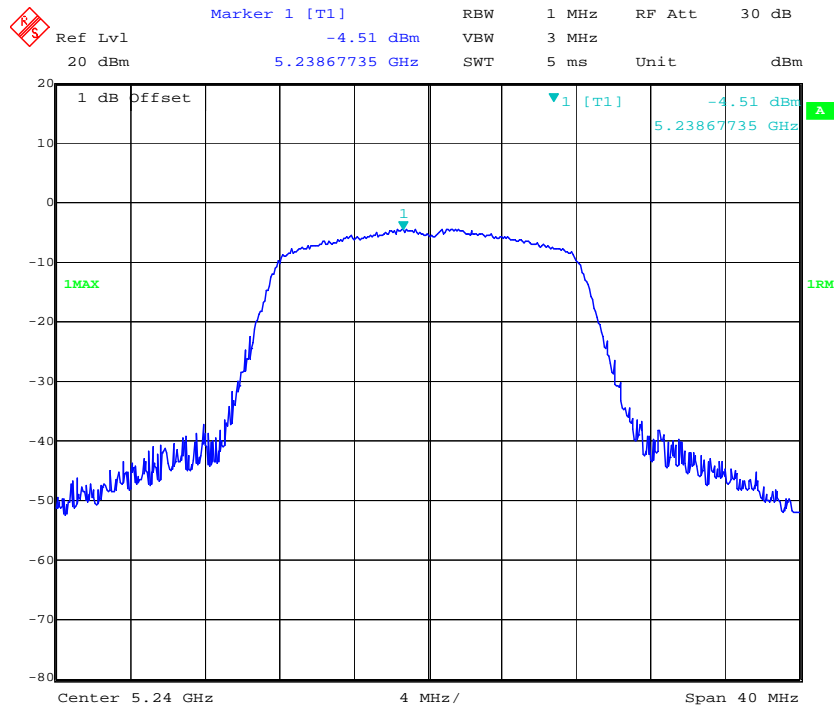
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Power Spectral Density, 802.11a Middle Channel



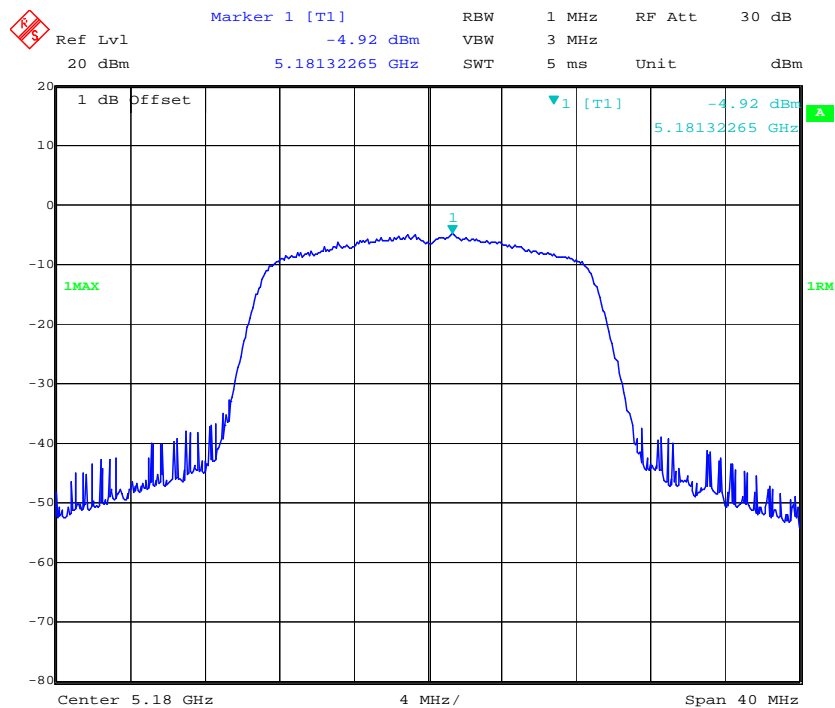
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Power Spectral Density, 802.11a High Channel



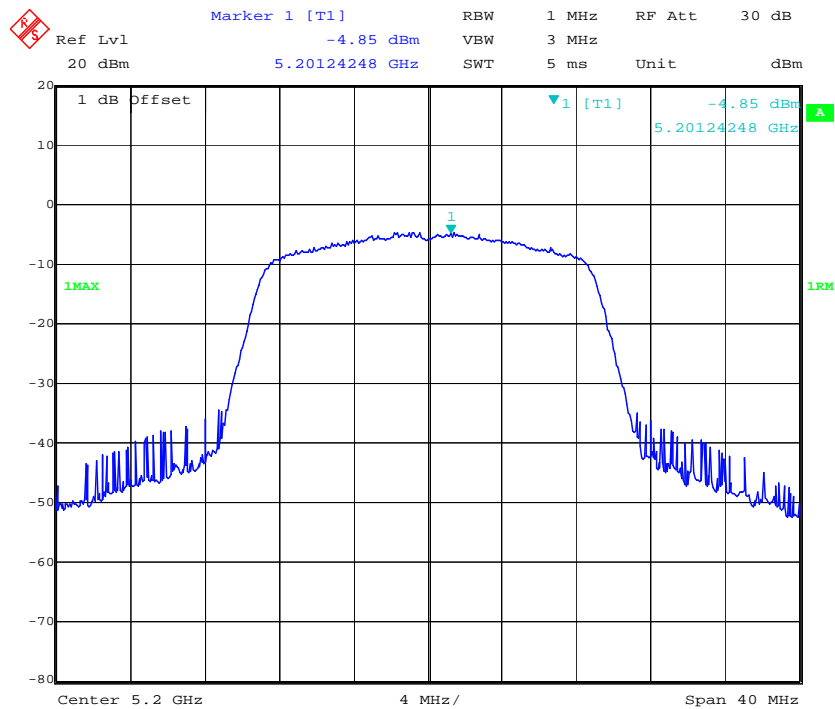
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Power Spectral Density, 802.11n ht20 Low Channel



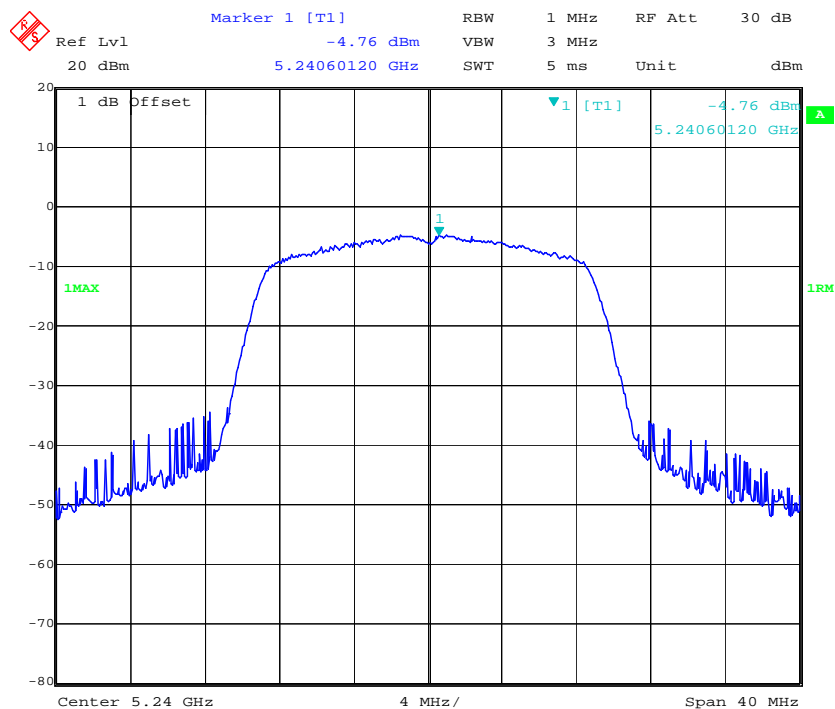
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Power Spectral Density, 802.11n ht20 Middle Channel



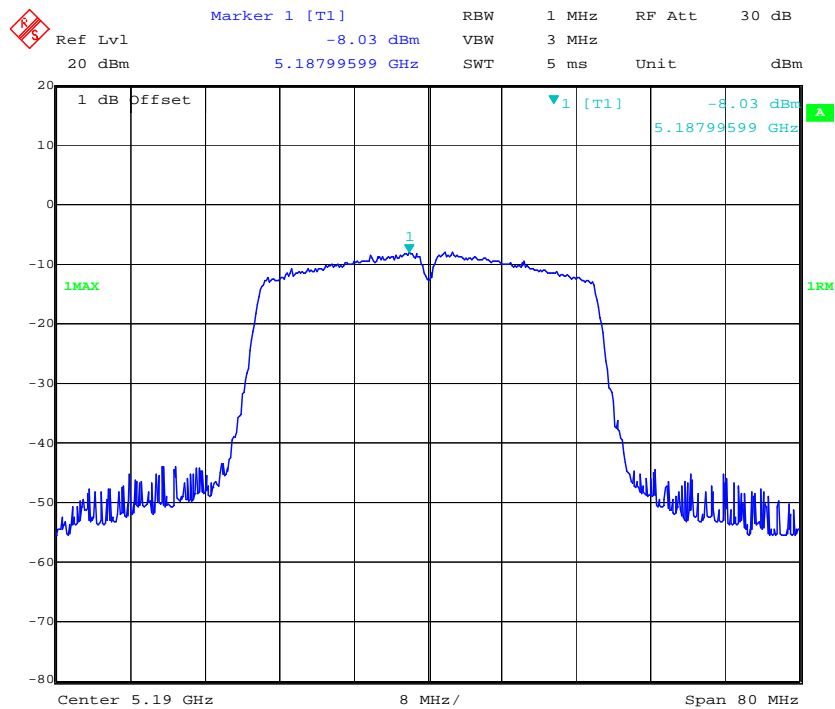
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Power Spectral Density, 802.11n ht20 High Channel



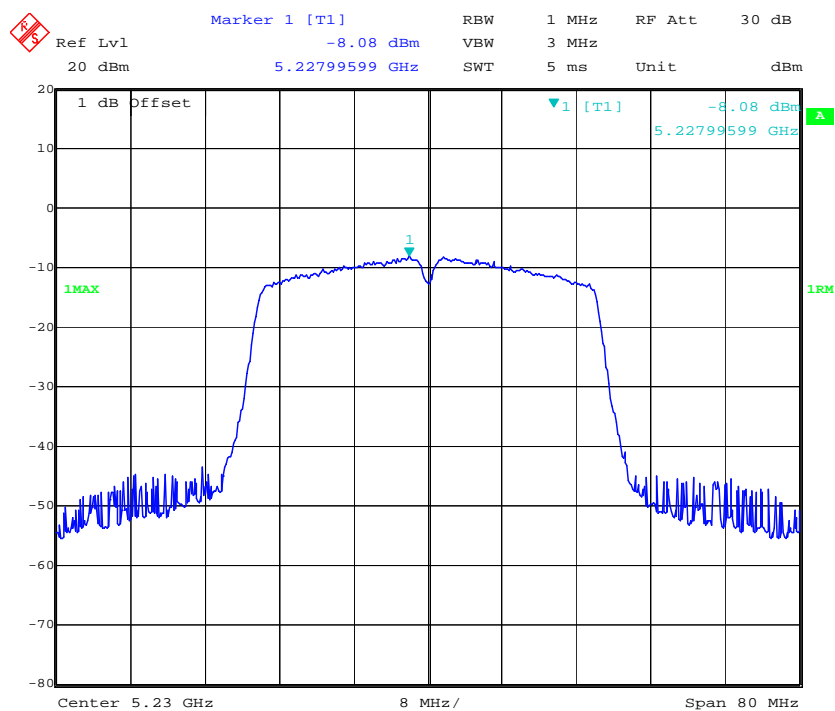
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Power Spectral Density, 802.11n ht40 Low Channel



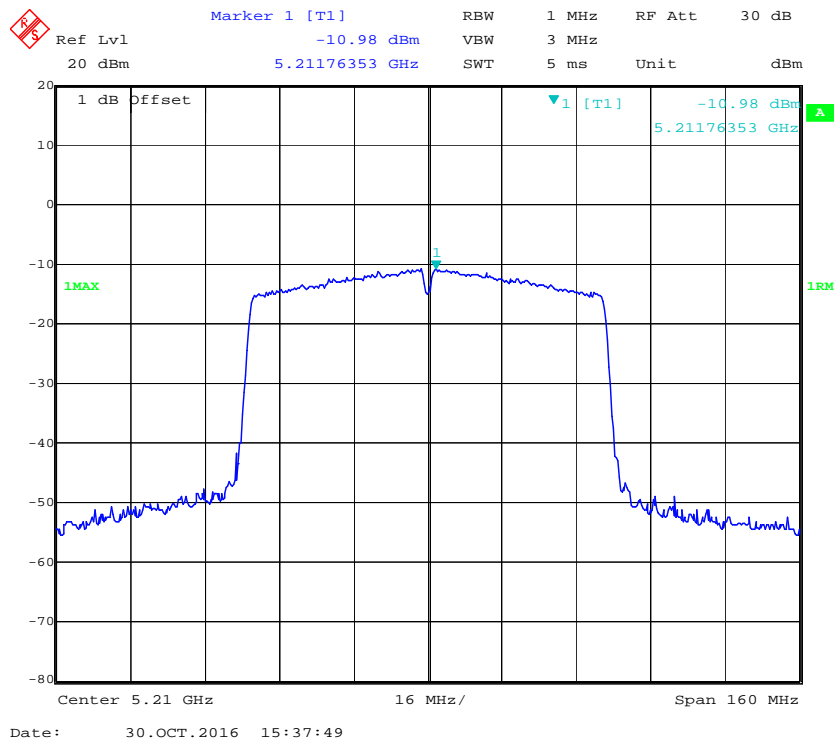
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Power Spectral Density, 802.11n ht40 High Channel



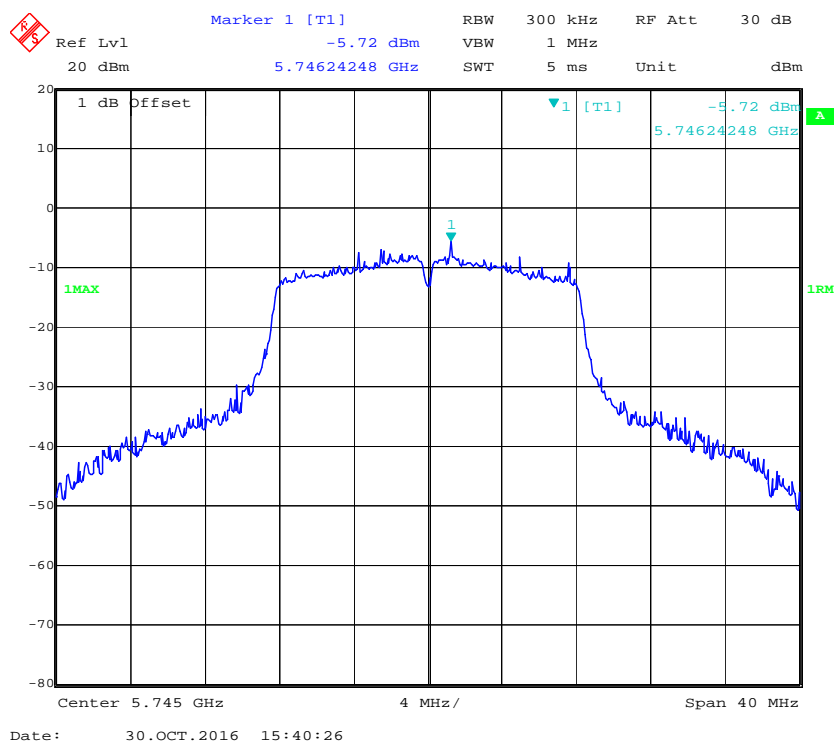
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Power Spectral Density, 802.11n ac80 Middle Channel

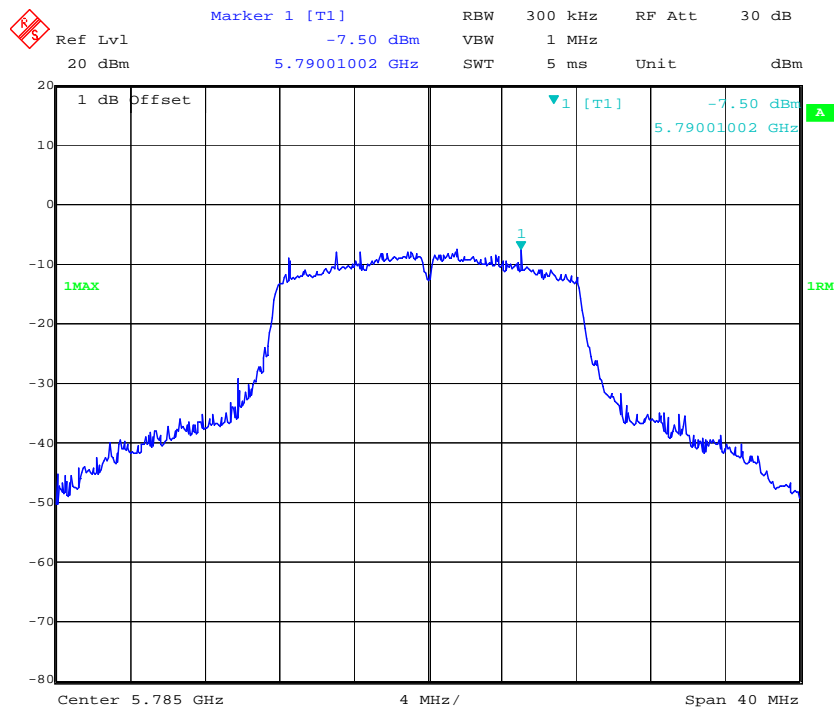


5725-5850MHz:

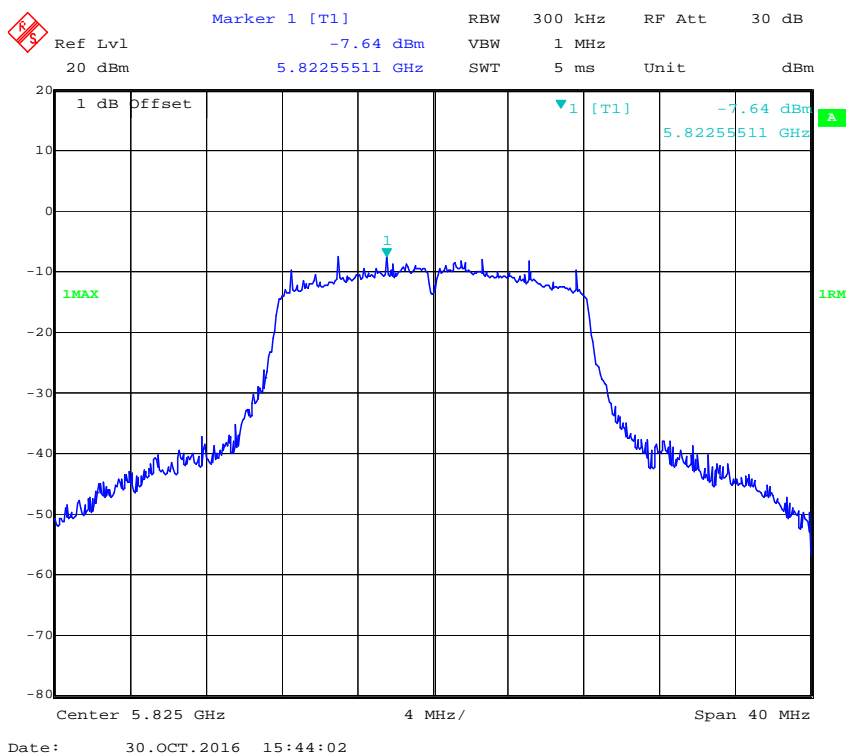
Power Spectral Density, 802.11a Low Channel



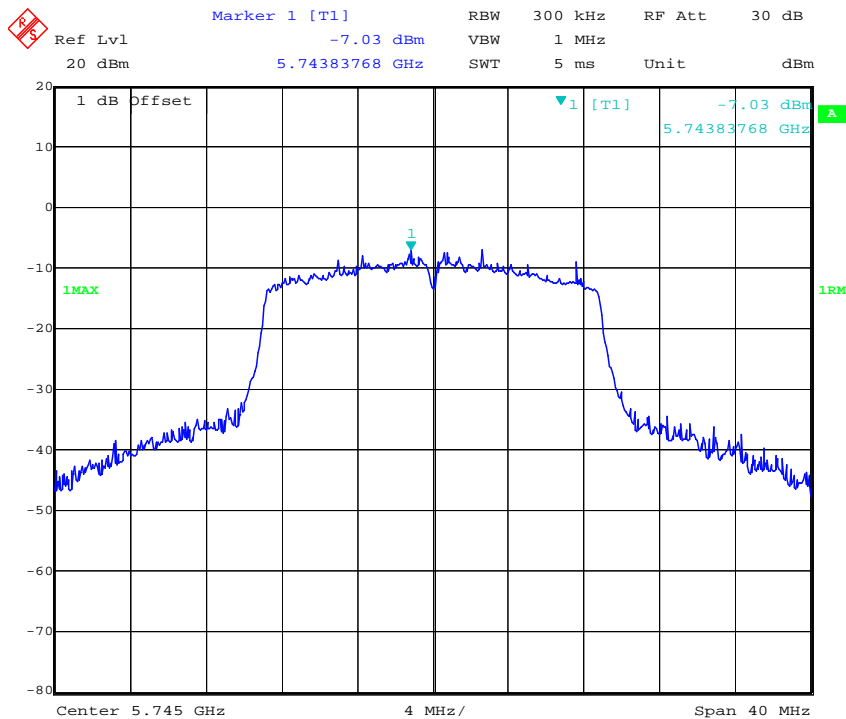
Power Spectral Density, 802.11a Middle Channel



Power Spectral Density, 802.11a High Channel

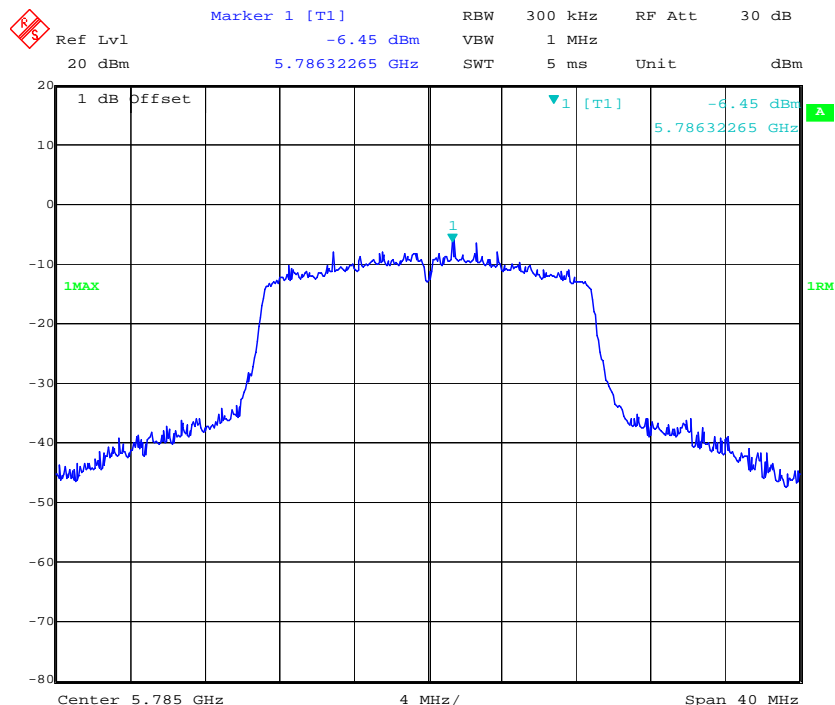


Power Spectral Density, 802.11n ht20 Low Channel



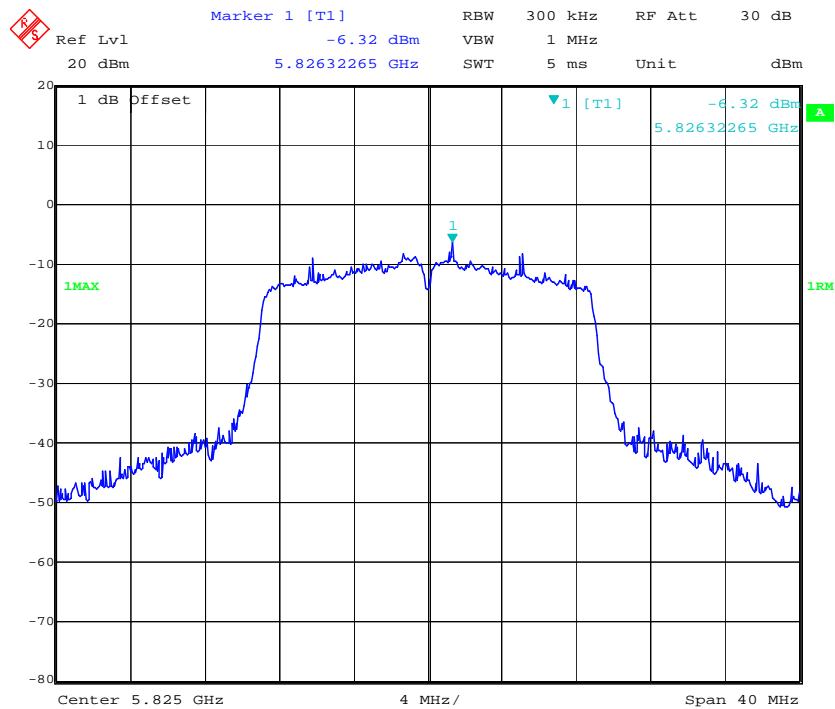
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Power Spectral Density, 802.11n ht20 Middle Channel



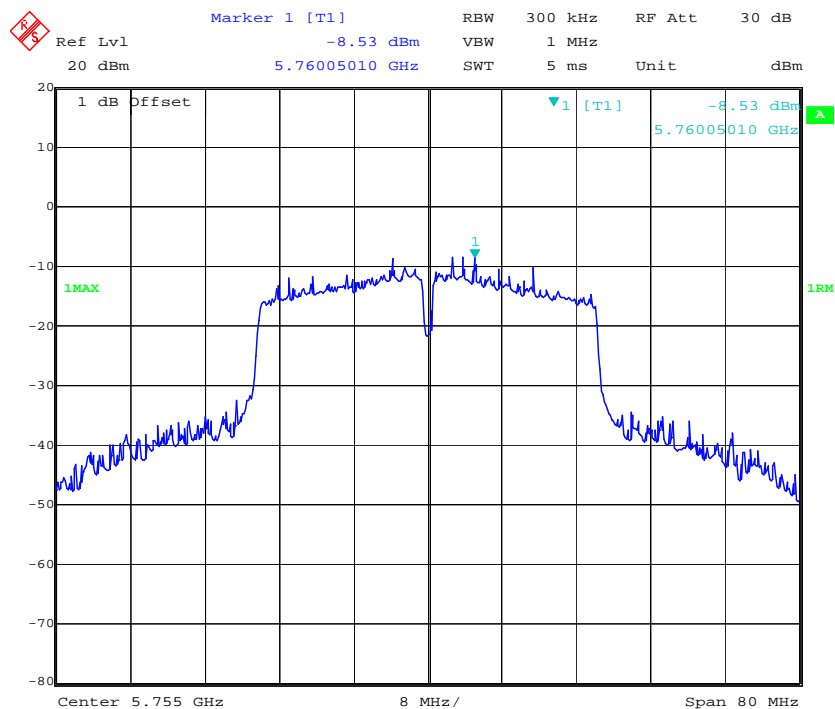
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Power Spectral Density, 802.11n ht20 High Channel



Date: 30.OCT.2016 15:49:19

Power Spectral Density, 802.11n ht40 Low Channel



Date: 30.OCT.2016 15:51:18

