



FCC Part 15.407

RSS-247 Issue 2, Feb 2017; RSS-Gen Issue 5, Mar 2019

TEST REPORT

For

Redpine Signals Inc

2107 N First Street, Suite 540, San Jose, CA 95131-2019, USA

FCC ID: XF6-M7DB7
IC: 8407A-M7DB7

Report Type	CIIPC Report
Product Name:	Dual Band 802.11 a/b/g/n, Bluetooth 5.0 SIP Module
Model Name:	M7DB
Report Number :	RLK200519001-00D
Report Date :	2020/07/02
Reviewed By :	Zeus Chen <i>Zeus Chen</i>
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Linkou Laboratory)

Revision History

Revision	Report Number	Issue Date	Description
1.0	RLK200519001-00D	2020/07/02	CIIPC Report ^{Note1}

Note1: The original report number is RLK200203002-00E, and the CIIPC report is for adding antenna (PIFA Antenna (MARS-31A8 WiFi Antenna))

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	Redpine Signals Inc 2107 N First Street, Suite 540, San Jose, CA 95131-2019, USA
Manufacturer	Redpine Signals Inc 2107 N First Street, Suite 540, San Jose, CA 95131-2019, USA
Brand Name	
Product (Equipment)	Dual Band 802.11 a/b/g/n, Bluetooth 5.0 SIP Module
Model Name	M7DB
EUT Function	IEEE 802.11 an(HT20/HT40)
Frequency Range	UNII-1: 5150 MHz - 5250 MHz UNII-2a: 5250 MHz - 5350 MHz, UNII-2c: 5470 MHz - 5725 MHz UNII-3: 5725 MHz - 5850 MHz
Number of Channels	For UNII-1: IEEE 802.11a/n HT20: 4 Channels IEEE 802.11n HT40: 2 Channels For UNII-2a: IEEE 802.11a/n HT20: 4 Channels IEEE 802.11n HT40: 2 Channels For UNII-2c: IEEE 802.11a/n HT20: 10 Channels IEEE 802.11n HT40: 5 Channels For UNII-3: IEEE 802.11a/n HT20: 5 Channels IEEE 802.11n HT40: 2 Channels
Output Power	<PIFA Antenna: MARS-31A8 WiFi Antenna> For UNII-1: IEEE 802.11a: 12.78 dBm (0.0190 W) IEEE 802.11n HT20: 13.61 dBm (0.0230 W) IEEE 802.11n HT40: 9.59 dBm (0.0091 W) For UNII-2a: IEEE 802.11a: 12.31 dBm (0.0170 W) IEEE 802.11n HT20: 12.55 dBm (0.0180 W) IEEE 802.11n HT40: 9.53 dBm (0.0090 W) For UNII-2c: IEEE 802.11a: 13.18 dBm (0.0208 W) IEEE 802.11n HT20: 13.14 dBm (0.0206 W) IEEE 802.11n HT40: 11.59 dBm (0.0144 W) For UNII-3: IEEE 802.11a: 13.98 dBm (0.0250 W) IEEE 802.11n HT20: 14.18 dBm (0.0262 W) IEEE 802.11n HT40: 11.82 dBm (0.0152 W)

Modulation Type	OFDM
Received Date	2020-05-19
Date of Test	2020-06-02 – 2020-06-23
Related Submittal(s)/Grant(s)	FCC Part 15.247 DTS with FCC ID: XF6-M7DB7 FCC Part 15.247 DSS with FCC ID: XF6-M7DB7 IC RSS-247 DTS with IC: 8407A-M7DB7 IC RSS-247 FHSS with IC: 8407A-M7DB7

1.2 Operation Condition of EUT

Power Operation (Voltage Range)	<input type="checkbox"/> AC 120 V/60 Hz <input type="checkbox"/> Adapter <input type="checkbox"/> By Power Cord.
	<input checked="" type="checkbox"/> DC Type <input checked="" type="checkbox"/> DC Power Supply: 3.3V <input type="checkbox"/> Battery: <input type="checkbox"/> External from USB Cable <input type="checkbox"/> External DC Adapter
	<input type="checkbox"/> Host System

1.3 Objective

The Objective of this Test Report was to document the compliance of the Redpine Signals Inc. Appliance (Model: M7DB) to the requirements of the following Standards:

- Part 2, Subpart J, Part 15, Subparts A and C, section 15.407 of the Federal Communication Commission’s rules.
- ANSI C63.10-2013 of t American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
- RSS-Gen Issue 5, Mar 2019— General Requirements for Compliance of Radio Apparatus
- RSS-247 Issue 2, Feb 2017— Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

1.4 Measurement Uncertainty

Parameter	Expanded Measurement uncertainty
RF output power	± 1.488 dB
Occupied Channel Bandwidth	± 453.927 Hz
RF Conducted Emission test	± 2.77 dB
AC Power Line Conducted Emission	± 2.66 dB
Radiated Below 1G	± 3.57 dB
Radiated Above 1G	± 5.32 dB

The test results with statement of conformity, the decision rules are based on the specifications and standards. The test results will not take the measurement uncertainty into account.

1.5 Environmental Conditions and Test Date

Test Site	Test Date	Temperature (°C)	Relative Humidity (% RH)	Test Engineer
Radiated (966A)	2020-06-02 to 2020-06-15	19.8-20.6	49-56	Leo Cheng
Conducted (TH-02)	2020-06-06 to 2020-06-23	23.1-23.5	56-61	Blake Wang

1.6 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Linkou Laboratory) to collect test data is located on

No.6, Wende 2Rd., Guishan Dist., Taoyuan City 33382, Taiwan (R.O.C.).

Bay Area Compliance Laboratories Corp. (Linkou Laboratory) Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3546) by Mutual Recognition Agreement (MRA). The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database. The FCC Registration No.: 0027578244. Designation No.: TW3546. The Test Firm Registration No.: 181430.

2 System Test Configuration

2.1 Description of Test Configuration

The system was configured for testing in testing mode which was provided by manufacturer.

No special accessory, No modification was made to the EUT and No special equipment used during test.

- For BW: 20MHz

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	120 ^{Note}	5600
40	5200	124 ^{Note}	5620
44	5220	128 ^{Note}	5640
48	5240	132	5660
52	5260	136	5680
56	5280	140	5700
60	5300	149	5745
64	5320	153	5765
100	5500	157	5785
104	5520	161	5805
108	5540	165	5825
112	5560	-	--
116	5580	-	--

For UNII-1: Channel 36, 40 and 48 were tested. For UNII-2a: Channel 52, 60 and 64 were tested. For UNII-2c: Channel 100, 116 and 140 were tested. For UNII-3: Channel 149, 157 and 165 were tested,

Note: Canada not support.

- For BW: 40MHz

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	118 ^{Note}	5590
46	5230	126 ^{Note}	5630
54	5270	134	5670
62	5310	151	5755
102	5510	159	5795
110	5500	-	-

For UNII-1: Channel 38 and 46 were tested. For UNII-2a: Channel 54 and 62 were tested. For UNII-2c: Channel 102, 118,

Note: Canada not support.

Modulation Used for Conformance Test			
Configuration	N _{TX}	Data Rate	Worst Data Rate
802.11a mode	1	6-54 Mbps	6 Mbps
802.11n HT20 mode	1	MCS 0-7	MCS 0
802.11n HT40 mode	1	MCS 0-7	MCS 0

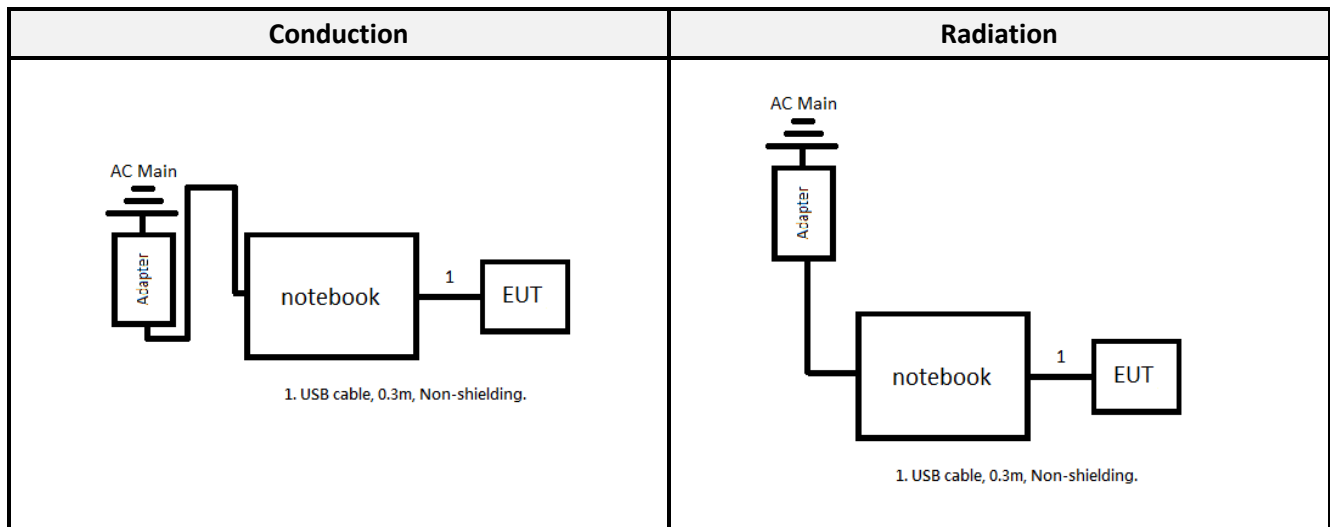
Worst Case of Power Setting					
EUT Exercise Software			FCC_PER_TEST_GUI.py		
PIFA Antenna (MARS-31A8 WiFi Antenna)					
Configuration	N _{TX}	UNII Band	Low CH	Mid CH	High CH
802.11a mode	1	UNII-1	22	22	22
		UNII-2a	22	22	22
		UNII-2c	12	22	8
		UNII-3	22	22	22
802.11n HT20 mode	1	UNII-1	22	22	22
		UNII-2a	22	22	22
		UNII-2c	12	22	7
		UNII-3	22	22	22
802.11n HT40 mode	1	UNII-1	8	-	22
		UNII-2a	22	-	8
		UNII-2c	7	22	22
		UNII-3	22	-	22

2.2 Support Equipment and External Cable List

No.	Description	Manufacturer	Model Number
A	Notebook	DELL	Inspiron 15
B	Adapter	Chicony Power	HA65NS5-00 (DELL)

No.	Cable Description	Shielding Type	Length (m)	From	To
1	USB Cable	Non-Shielded	1	EUT	NB

2.3 Block Diagram of Test Setup



2.4 Duty Cycle

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 section B:

All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum power transmission duration, T, are required for each tested mode of operation.

Configuration	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11a mode	100	100	100	0.00
802.11n HT20 mode	100	100	100	0.00
802.11n HT40 mode	100	100	100	0.00

Note1: Adding antenna not affect the duty result, please refer to the original report. (Report No.: RLK200203002-00E)

3 Summary of Test Results

FCC/ISED Rules	Description of Test	Result
§1.1310, §2.1091, §15.407 (f)	Maximum Permissible Exposure (MPE)	Compliance
ISED RSS-102 Sec 2.5.2	Exemption Limits for Routine Evaluation – RF Exposure Evaluation	Compliance
§15.207(a), §15.407(b)(6) ISED RSS-Gen Sec 8.8	AC Line Conducted Emissions	Compliance ^{Note1}
§15.205, §15.209, §15.407(b) ISED RSS-Gen Sec 8.9 and 8.10 ISED RSS-247 Sec 6.2	Spurious Emissions	Compliance ^{Note4}
§15.407(a)(e) ISED RSS-247 Sec 6.2 ISED RSS-Gen Sec 6.7	Emission Bandwidth	Compliance ^{Note3}
§15.407(a)(1) ISED RSS-247 Sec 6.2	Maximum Peak Output Power	Compliance
§15.407(a)(1)(5) ISED RSS-247 Sec 6.2	Power Spectral Density	Compliance
FCC §15.407 (h) ISED RSS-247 Sec 6.3	Dynamic Frequency Selections (DFS)	Compliance ^{Note2}

Note1: Adding antenna not affect the conducted emission test rule, please refer to the original report. (Report No.: RLK200203002-00E)

Note2: The original Test Antenna Gain is 1.25 dBi (Model: RSIA7) and the New Antenna Gain is 2.00 dBi, higher than original.

Therefore, DFS not need test. The compliance test data was recorded in a separate report, please refer to original report (Report No.: RLK200203002-00F)

Note3: The power reduce is not affect the result, please refer to the original report. (Report No.: RLK200203002-00F)

Note4: It is not affect the conducted Spurious Emissions, please refer to the original report. (Report No.: RLK200203002-00F)

4 FCC §1.1310, §2.1091, §15.407(f) - Maximum Permissible Exposure (MPE)

4.1 Applicable Standard

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

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

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

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

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

Calculated Formulary: Predication of MPE limit at a given distance

S = $PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

4.2 RF Exposure Evaluation Result

Mode	Frequency Range (MHz)	Antenna Gain		Target Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
BLE	2402-2480	2.00	1.5849	17.00	50.1187	20	0.0158	1
BR/EDR	2402-2480	2.00	1.5849	21.00	125.8925	20	0.0397	1
Wi-Fi 2.4G	2412-2462	2.00	1.5849	25.00	316.2278	20	0.0998	1
Wi-Fi 5G	5150-5850	2.00	1.5849	14.50	28.1838	20	0.0089	1

Note: Wi-Fi and BT can't simultaneously.

Result: MPE evaluation meet 20 cm the requirement of standard.

5 RSS-102 Sec 2.5.2- Exemption Limits for Routine Evaluation – RF Exposure Evaluation

5.1 Applicable Standard

According to subpart RSS-102 Sec 2.5.2,

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz⁶ and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

5.2 RF Exposure Evaluation Result

BLE Max tune-up conducted output power is 17.00 dBm (50.1187 mW) at 2402 MHz, Antenna Gain = 2.00 dBi, EIRP = 19.00 dBm (0.0794 W), so the maximum conducted and E.I.R.P. source-based, time-averaged output is less than 2.68 W for general public use.

BR/EDR Max tune-up conducted output power is 21.00 dBm (125.8925mW) at 2402 MHz, Antenna Gain = 2.00 dBi, EIRP = 23.00 dBm (0.1995 W), so the maximum conducted and E.I.R.P. source-based, time-averaged output is less than 2.68 W for general public use.

Wi-Fi 2.4G Max tune-up conducted output power is 25.00 dBm (316.2278 mW) at 2437 MHz, Antenna Gain = 2.00 dBi, EIRP = 27.00 dBm (0.5012 W), so the maximum conducted and E.I.R.P. source-based, time-averaged output is less than 2.70 W for general public use.

Wi-Fi 5G Max tune-up conducted output power is 14.50 dBm (28.1839 mW) at 5825 MHz, Antenna Gain = 2.00 dBi, EIRP = 16.45 dBm (0.0442 W), so the maximum conducted and E.I.R.P. source-based, time-averaged output is less than 4.90 W for general public use.

Note: Wi-Fi and BT can't simultaneously.

Result: MPE test exempted.

6 FCC §15.203 and RSS-247 Sec 6.8 – Antenna Requirements

6.1 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 user of a standard antenna jack or electrical connector is prohibited.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna does not exceed 6dBi

According to RSS-Gen 6.3: Transmitter Antenna for Licence-Exempt Radio Apparatus

The applicant for equipment certification, as per RSP-100, must provide a list of all antenna types that may be used with the licence-exempt transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna.

Licence-exempt transmitters that have received equipment certification may operate with different types of antennas. However, it is not permissible to exceed the maximum equivalent isotropically radiated power (e.i.r.p.) limits specified in the applicable standard (RSS) for the licence-exempt apparatus.

Testing shall be performed using the highest gain antenna of each combination of licence-exempt transmitter and antenna type, with the transmitter output power set at the maximum level. Footnote8 When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna manufacturer.

User manuals for transmitters equipped with detachable antennas shall also contain the following notice in a conspicuous location:

This radio transmitter (identify the device by certification number) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types approved for use with the transmitter, indicating the maximum permissible antenna gain (in dBi).

6.2 Antenna List and Details

Brand	Model	Antenna Type	Antenna Gain (dBi)	Result
JOINSOON ELECTRONICS MFG .CO,LTO	MARS-31A8 WiFi Antenna	PIFA	2.00	Compliance

The EUT has an antenna arrangement, which was permanently attached, fulfill the requirement of this section.

7 FCC §15.209, §15.205 & §15.407(b), RSS-Gen Sec 8.9, 8.10 and RSS-247 Sec 6.2 – Spurious Unwanted Emissions

7.1 Applicable Standard

According to 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:
 - (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.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section.
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	13.36-13.41	399.9-410	4.5-5.15
0.495-0.505	16.42-16.423	608-614	5.35-5.46
2.1735-2.1905	16.69475-16.69525	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6

As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

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

According to ISED RSS-247 Sec 6.2,

- The outermost carrier frequencies or channels shall be used when measuring unwanted emissions. Such carrier or channel centre frequencies are to be indicated in the test report.

- For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz. The 26 dB bandwidth may fall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band

- Devices shall comply with the following:
 - a) All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.; or
 - b) All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device, except devices installed in vehicles, shall be labelled or include in the user manual the following text “for indoor use only.”

- Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, devices with bandwidth overlapping the band edge of 5725 MHz can meet the emission limit of -27 dBm/MHz e.i.r.p. at 5850 MHz instead of 5725 MHz.

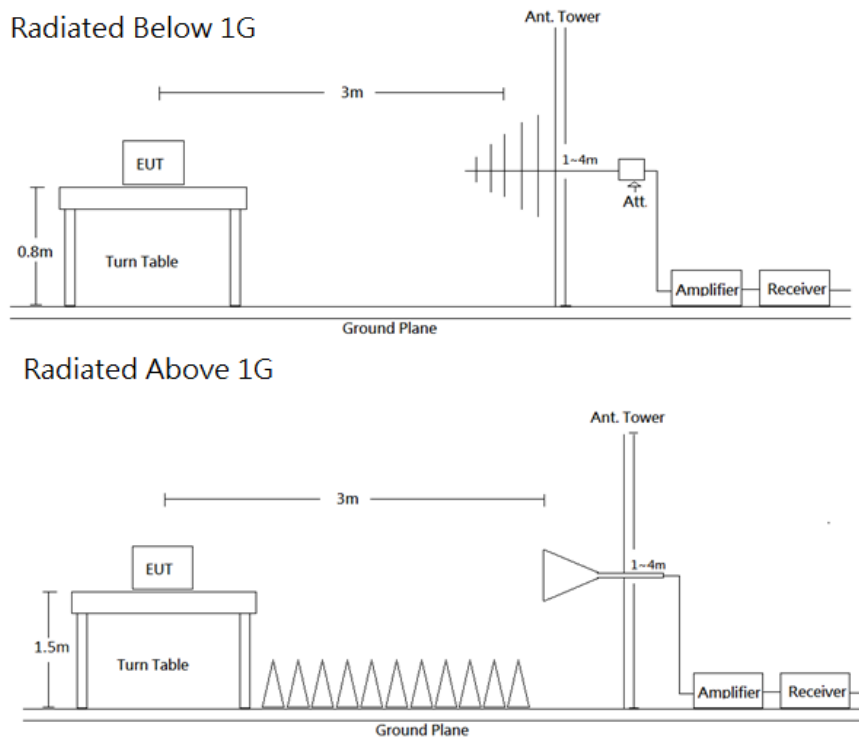
- Devices operating in the band 5725-5850 MHz with antenna gain greater than 10 dBi can have unwanted emissions that comply with either the limits in this section or in section 5.5 until six (6) months after the publication date of this standard for certification. Certified devices that do not comply with emission limits in this section shall not be manufactured, imported, distributed, leased, offered for sale or sold after April 1, 2018.

● Devices operating in the band 5725-5850 MHz with antenna gain of 10 dBi or less can have unwanted emissions that comply with either the limits in this section or in section 5.5 until April 1, 2018 for certification. Certified devices that do not comply with emission limits in this section shall not be manufactured, imported, distributed, leased, offered for sale or sold after April 1, 2020.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

- a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

7.2 EUT Setup and Test Procedure



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

The system was investigated from 30 MHz to 40 GHz. During the radiated emission test, the EMI test receiver was set with the following configurations measurement method 6.3 in ANSI C63.10-2013.

Frequency Range	RBW	VBW	Duty cycle	Measurement method
30-1000 MHz	120 kHz	/	-	QP
Above 1 GHz	1 MHz	3 MHz	-	PK
	1 MHz	10 Hz	>98%	Ave
	1 MHz	1/T	<98%	Ave

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations. All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

7.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
Radiation 3M Room (966A)					
Active Loop	EMCO	6502	0001-3322	2020/03/16	2021/03/15
Bilog Antenna/6 dB Attenuator	SUNOL SCIENCES & EMEC /EMCI	JB3/N-6-06	A111513/AT-N0668	2020/03/19	2021/03/18
Horn Antenna	ETS-Lindgren	3115	00109141	2019/07/05	2020/07/04
Horn Antenna	ETS-Lindgren	3160-09	00123852	2019/07/11	2020/07/10
Preamplifier	A.H. Systems	PAM-0118	470	2020/03/16	2021/03/15
Preamplifier	A.H. Systems	PAM-1840VH	174	2020/03/25	2021/03/24
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	101456	2019/07/12	2020/07/11
Microflex Cable (1m)	EMCI	EMC106-SM-SM-2000	180515	2019/08/07	2020/08/06
Microflex Cable (2m)	MTJ	H0919	00000-MT28A-100	2019/08/07	2020/08/06
Microflex Cable (8m)	UTIFLEX	UFA210A-1-3149-300300	MFR 64639 232490-001	2019/08/07	2020/08/06
Turn Table	Chaintek	T-200-S-1	003501	N.C.R	N.C.R
Antenna Tower	Chaintek	MBD-400-1	003504	N.C.R	N.C.R
Controller	Chaintek	3000-1	003507	N.C.R	N.C.R
Software	Audix	e3 v9	E3LK-01	N.C.R	N.C.R

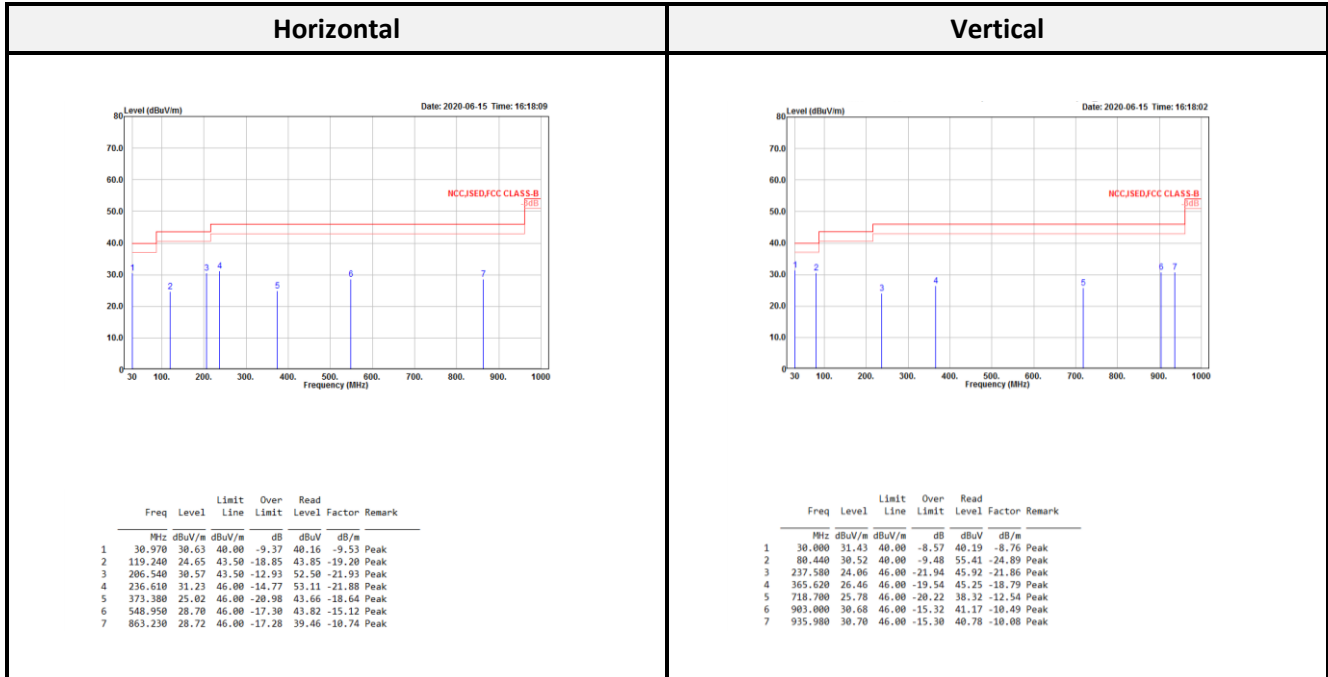
***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).

7.4 Test Data and Test Plot

PIFA Antenna (MARS-31A8 WiFi Antenna)

Transmitting mode (Pre-scan with three orthogonal axis, and worse case as X axis)

Below 1G (30 MHz-1 GHz) test the output power worst mode



$Level = Read\ Level + Factor$

$Over\ Limit = Level - Limit$

$Correct\ Factor = Antenna\ Factor + Cable\ Loss - Amplifier\ Gain$

Spurious emissions more than 20 dB below the limit were not reported

Above 1G (1 GHz-40 GHz) in UNII-1:

802.11a mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5148.250	48.18	54.00	-5.82	50.52	-2.34	Average	5147.200	47.22	54.00	-6.78	49.56	-2.34	Average
5148.250	67.07	74.00	-6.93	69.41	-2.34	Peak	5147.200	64.19	74.00	-9.81	66.53	-2.34	Peak
5182.150	92.52			94.84	-2.32	Average	5181.550	89.66			91.98	-2.32	Average
5182.150	103.10			105.42	-2.32	Peak	5181.550	100.17			102.49	-2.32	Peak
6906.700	57.25	68.20	-10.95	54.60	2.65	Peak	6906.700	57.49	68.20	-10.71	54.84	2.65	Peak
10360.000	49.19	68.20	-19.01	42.19	7.00	Peak	10360.000	49.94	68.20	-18.26	42.94	7.00	Peak
15540.000	38.01	54.00	-15.99	28.35	9.66	Average	15540.000	37.57	54.00	-16.43	27.91	9.66	Average
15540.000	53.48	74.00	-20.52	43.82	9.66	Peak	15540.000	53.43	74.00	-20.57	43.77	9.66	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5117.200	44.79	54.00	-9.21	47.15	-2.36	Average	5083.600	44.94	54.00	-9.06	47.30	-2.36	Average
5117.200	58.30	74.00	-15.70	60.66	-2.36	Peak	5083.600	58.52	74.00	-15.48	60.88	-2.36	Peak
5202.400	89.89			92.21	-2.32	Average	5199.200	93.28			95.60	-2.32	Average
5202.400	100.20			102.52	-2.32	Peak	5199.200	103.60			105.92	-2.32	Peak
5368.800	45.21	54.00	-8.79	47.09	-1.88	Average	5411.600	45.60	54.00	-8.40	47.31	-1.71	Average
5368.800	59.00	74.00	-15.00	60.88	-1.88	Peak	5411.600	59.04	74.00	-14.96	60.75	-1.71	Peak
6933.300	55.28	68.20	-12.92	52.61	2.67	Peak	6933.300	56.08	68.20	-12.12	53.41	2.67	Peak
10400.000	50.29	68.20	-17.91	43.23	7.06	Peak	10400.000	50.36	68.20	-17.84	43.30	7.06	Peak
15600.000	40.33	54.00	-13.67	30.60	9.73	Average	15600.000	40.23	54.00	-13.77	30.50	9.73	Average
15600.000	55.41	74.00	-18.59	45.68	9.73	Peak	15600.000	54.30	74.00	-19.70	44.57	9.73	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5126.800	44.70	54.00	-9.30	47.05	-2.35	Average	5129.200	44.79	54.00	-9.21	47.14	-2.35	Average
5126.800	58.13	74.00	-15.87	60.48	-2.35	Peak	5129.200	58.39	74.00	-15.61	60.74	-2.35	Peak
5240.000	91.19			93.50	-2.31	Average	5239.600	94.12			96.43	-2.31	Average
5240.000	100.47			102.78	-2.31	Peak	5239.600	104.07			106.38	-2.31	Peak
5447.600	45.87	54.00	-8.13	47.46	-1.59	Average	5449.600	45.77	54.00	-8.23	47.35	-1.58	Average
5447.600	59.58	74.00	-14.42	61.17	-1.59	Peak	5449.600	59.70	74.00	-14.30	61.28	-1.58	Peak
6986.700	55.29	68.20	-12.91	52.51	2.78	Peak	6986.700	56.49	68.20	-11.71	53.71	2.78	Peak
10480.000	50.00	68.20	-18.20	42.76	7.24	Peak	10480.000	49.89	68.20	-18.31	42.65	7.24	Peak
15720.000	41.27	54.00	-12.73	31.46	9.81	Average	15720.000	41.39	54.00	-12.61	31.58	9.81	Average
15720.000	55.62	74.00	-18.38	45.81	9.81	Peak	15720.000	56.41	74.00	-17.59	46.60	9.81	Peak

802.11n HT20 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5149.600	48.61	54.00	-5.39	50.94	-2.33	Average	5149.600	50.91	54.00	-3.09	53.24	-2.33	Average
5149.600	66.25	74.00	-7.75	68.58	-2.33	Peak	5149.600	69.35	74.00	-4.65	71.68	-2.33	Peak
5178.100	89.14			91.46	-2.32	Average	5178.250	92.79			95.11	-2.32	Average
5178.100	99.97			102.29	-2.32	Peak	5178.250	103.70			106.02	-2.32	Peak
6906.700	57.04	68.20	-11.16	54.39	2.65	Peak	6906.700	58.16	68.20	-10.04	55.51	2.65	Peak
10360.000	49.05	68.20	-19.15	42.05	7.00	Peak	10360.000	49.90	68.20	-18.30	42.90	7.00	Peak
15540.000	37.78	54.00	-16.22	28.12	9.66	Average	15540.000	37.83	54.00	-16.17	28.17	9.66	Average
15540.000	52.51	74.00	-21.49	42.85	9.66	Peak	15540.000	53.59	74.00	-20.41	43.93	9.66	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5121.600	44.79	54.00	-9.21	47.14	-2.35	Average	5112.800	44.92	54.00	-9.08	47.27	-2.35	Average
5121.600	59.44	74.00	-14.56	61.79	-2.35	Peak	5112.800	58.91	74.00	-15.09	61.26	-2.35	Peak
5198.000	89.25			91.57	-2.32	Average	5198.800	93.53			95.85	-2.32	Average
5198.000	99.99			102.31	-2.32	Peak	5198.800	103.28			105.60	-2.32	Peak
5445.600	45.74	54.00	-8.26	47.33	-1.59	Average	5424.400	45.69	54.00	-8.31	47.35	-1.66	Average
5445.600	59.48	74.00	-14.52	61.07	-1.59	Peak	5424.400	59.79	74.00	-14.21	61.45	-1.66	Peak
6933.300	55.52	68.20	-12.68	52.85	2.67	Peak	6933.300	56.40	68.20	-11.80	53.73	2.67	Peak
10400.000	49.45	68.20	-18.75	42.39	7.06	Peak	10400.000	50.27	68.20	-17.93	43.21	7.06	Peak
15600.000	39.84	54.00	-14.16	30.11	9.73	Average	15600.000	40.33	54.00	-13.67	30.60	9.73	Average
15600.000	55.84	74.00	-18.16	46.11	9.73	Peak	15600.000	55.00	74.00	-19.00	45.27	9.73	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5117.600	44.95	54.00	-9.05	47.30	-2.35	Average	5056.800	44.79	54.00	-9.21	47.15	-2.36	Average
5117.600	58.34	74.00	-15.66	60.69	-2.35	Peak	5056.800	58.99	74.00	-15.01	61.35	-2.36	Peak
5242.800	91.31			93.61	-2.30	Average	5238.400	94.37			96.68	-2.31	Average
5242.800	101.39			103.69	-2.30	Peak	5238.400	104.43			106.74	-2.31	Peak
5410.800	45.60	54.00	-8.40	47.33	-1.73	Average	5359.200	45.54	54.00	-8.46	47.45	-1.91	Average
5410.800	59.81	74.00	-14.19	61.54	-1.73	Peak	5359.200	59.37	74.00	-14.63	61.28	-1.91	Peak
6986.700	55.51	68.20	-12.69	52.73	2.78	Peak	6986.700	56.68	68.20	-11.52	53.90	2.78	Peak
10480.000	50.48	68.20	-17.72	43.24	7.24	Peak	10480.000	50.42	68.20	-17.78	43.18	7.24	Peak
15720.000	41.14	54.00	-12.86	31.33	9.81	Average	15720.000	41.24	54.00	-12.76	31.43	9.81	Average
15720.000	55.30	74.00	-18.70	45.49	9.81	Peak	15720.000	52.83	74.00	-21.17	43.02	9.81	Peak

802.11n HT40 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5148.400	49.80	54.00	-4.20	52.14	-2.34	Average	5148.560	53.23	54.00	-0.77	55.57	-2.34	Average
5148.400	64.75	74.00	-9.25	67.09	-2.34	Peak	5148.560	68.63	74.00	-5.37	70.97	-2.34	Peak
5193.040	81.78			84.10	-2.32	Average	5195.600	85.94			88.26	-2.32	Average
5193.040	92.93			95.25	-2.32	Peak	5195.600	97.40			99.72	-2.32	Peak
! 6920.000	56.12	68.20	-12.08	53.46	2.66	Peak	6920.000	56.87	68.20	-11.33	54.21	2.66	Peak
!10380.000	48.26	68.20	-19.94	41.23	7.03	Peak	10380.000	48.58	68.20	-19.62	41.55	7.03	Peak
!15570.000	39.49	54.00	-14.51	29.81	9.68	Average	15570.000	39.46	54.00	-14.54	29.78	9.68	Average
15570.000	53.61	74.00	-20.39	43.93	9.68	Peak	15570.000	54.18	74.00	-19.82	44.50	9.68	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5069.600	44.94	54.00	-9.06	47.31	-2.37	Average	5107.200	44.96	54.00	-9.04	47.31	-2.35	Average
5069.600	58.77	74.00	-15.23	61.14	-2.37	Peak	5107.200	58.46	74.00	-15.54	60.81	-2.35	Peak
5224.400	84.78			87.10	-2.32	Average	5235.200	88.30			90.61	-2.31	Average
5224.400	95.68			98.00	-2.32	Peak	5235.200	98.73			101.04	-2.31	Peak
5442.800	45.82	54.00	-8.18	47.42	-1.60	Average	5352.000	45.44	54.00	-8.56	47.38	-1.94	Average
5442.800	59.77	74.00	-14.23	61.37	-1.60	Peak	5352.000	59.39	74.00	-14.61	61.33	-1.94	Peak
6973.300	56.11	68.20	-12.09	53.35	2.76	Peak	6973.300	57.35	68.20	-10.85	54.59	2.76	Peak
10460.000	49.55	68.20	-18.65	42.38	7.17	Peak	10460.000	49.11	68.20	-19.09	41.94	7.17	Peak
15690.000	41.69	54.00	-12.31	31.92	9.77	Average	15690.000	41.75	54.00	-12.25	31.98	9.77	Average
15690.000	56.15	74.00	-17.85	46.38	9.77	Peak	15690.000	56.07	74.00	-17.93	46.30	9.77	Peak

Above 1G (1 GHz-40 GHz) in UNII-2a:

802.11a mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5124.800	44.80	54.00	-9.20	47.15	-2.35	Average	5149.600	44.79	54.00	-9.21	47.12	-2.33	Average
5124.800	57.97	74.00	-16.03	60.32	-2.35	Peak	5149.600	58.80	74.00	-15.20	61.13	-2.33	Peak
5259.600	92.58			94.84	-2.26	Average	5261.600	95.22			97.47	-2.25	Average
5259.600	102.84			105.10	-2.26	Peak	5261.600	104.64			106.89	-2.25	Peak
5405.200	45.70	54.00	-8.30	47.44	-1.74	Average	5447.200	45.83	54.00	-8.17	47.42	-1.59	Average
5405.200	59.00	74.00	-15.00	60.74	-1.74	Peak	5447.200	59.39	74.00	-14.61	60.98	-1.59	Peak
7013.300	55.52	68.20	-12.68	52.66	2.86	Peak	7013.300	57.02	68.20	-11.18	54.16	2.86	Peak
10520.000	49.76	68.20	-18.44	42.55	7.21	Peak	10520.000	49.84	68.20	-18.36	42.63	7.21	Peak
15780.000	41.61	54.00	-12.39	31.72	9.89	Average	15780.000	41.68	54.00	-12.32	31.79	9.89	Average
15780.000	55.61	74.00	-18.39	45.72	9.89	Peak	15780.000	55.80	74.00	-18.20	45.91	9.89	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5097.600	44.75	54.00	-9.25	47.10	-2.35	Average	5082.000	44.78	54.00	-9.22	47.14	-2.36	Average
5097.600	58.24	74.00	-15.76	60.59	-2.35	Peak	5082.000	57.74	74.00	-16.26	60.10	-2.36	Peak
5302.000	93.62			95.73	-2.11	Average	5302.400	95.76			97.87	-2.11	Average
5302.000	103.48			105.59	-2.11	Peak	5302.400	106.00			108.11	-2.11	Peak
5434.000	45.72	54.00	-8.28	47.36	-1.64	Average	5448.800	45.88	54.00	-8.12	47.46	-1.58	Average
5434.000	59.20	74.00	-14.80	60.84	-1.64	Peak	5448.800	58.82	74.00	-15.18	60.40	-1.58	Peak
7066.700	54.74	68.20	-13.46	51.67	3.07	Peak	7066.700	55.18	68.20	-13.02	52.11	3.07	Peak
10600.000	36.46	54.00	-17.54	29.11	7.35	Average	10600.000	36.48	54.00	-17.52	29.13	7.35	Average
10600.000	50.28	74.00	-23.72	42.93	7.35	Peak	10600.000	49.55	74.00	-24.45	42.20	7.35	Peak
15900.000	40.21	54.00	-13.79	30.31	9.90	Average	15900.000	40.94	54.00	-13.06	31.04	9.90	Average
15900.000	54.55	74.00	-19.45	44.65	9.90	Peak	15900.000	54.87	74.00	-19.13	44.97	9.90	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5317.280	93.90			95.95	-2.05	Average	5322.180	96.54			98.58	-2.04	Average
5317.280	104.63			106.68	-2.05	Peak	5322.180	107.21			109.25	-2.04	Peak
5351.580	48.03	54.00	-5.97	49.97	-1.94	Average	5350.180	48.71	54.00	-5.29	50.66	-1.95	Average
5351.580	66.69	74.00	-7.31	68.63	-1.94	Peak	5350.180	67.73	74.00	-6.27	69.68	-1.95	Peak
7093.300	54.49	68.20	-13.71	51.29	3.20	Peak	7093.300	55.81	68.20	-12.39	52.61	3.20	Peak
10640.000	36.01	54.00	-17.99	28.60	7.41	Average	10640.000	35.57	54.00	-18.43	28.16	7.41	Average
10640.000	49.64	74.00	-24.36	42.23	7.41	Peak	10640.000	50.91	74.00	-23.09	43.50	7.41	Peak
15960.000	41.37	54.00	-12.63	31.44	9.93	Average	15960.000	41.66	54.00	-12.34	31.73	9.93	Average
15960.000	55.10	74.00	-18.90	45.17	9.93	Peak	15960.000	55.48	74.00	-18.52	45.55	9.93	Peak

802.11n HT20 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5072.000	44.85	54.00	-9.15	47.21	-2.36	Average	5122.800	44.75	54.00	-9.25	47.10	-2.35	Average
5072.000	58.52	74.00	-15.48	60.88	-2.36	Peak	5122.800	58.19	74.00	-15.81	60.54	-2.35	Peak
5258.800	92.18			94.45	-2.27	Average	5261.600	95.15			97.40	-2.25	Average
5258.800	102.20			104.47	-2.27	Peak	5261.600	105.12			107.37	-2.25	Peak
5441.200	45.74	54.00	-8.26	47.36	-1.62	Average	5396.400	45.21	54.00	-8.79	46.99	-1.78	Average
5441.200	59.04	74.00	-14.96	60.66	-1.62	Peak	5396.400	59.49	74.00	-14.51	61.27	-1.78	Peak
7013.300	55.74	68.20	-12.46	52.88	2.86	Peak	7013.300	56.34	68.20	-11.86	53.48	2.86	Peak
10520.000	50.46	68.20	-17.74	43.25	7.21	Peak	10520.000	49.98	68.20	-18.22	42.77	7.21	Peak
15780.000	41.33	54.00	-12.67	31.44	9.89	Average	15780.000	41.33	54.00	-12.67	31.44	9.89	Average
15780.000	56.88	74.00	-17.12	46.99	9.89	Peak	15780.000	56.44	74.00	-17.56	46.55	9.89	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5083.200	44.74	54.00	-9.26	47.10	-2.36	Average	5086.000	44.83	54.00	-9.17	47.19	-2.36	Average
5083.200	58.37	74.00	-15.63	60.73	-2.36	Peak	5086.000	58.54	74.00	-15.46	60.90	-2.36	Peak
5298.800	93.61			95.73	-2.12	Average	5298.800	95.47			97.59	-2.12	Average
5298.800	103.95			106.07	-2.12	Peak	5298.800	105.80			107.92	-2.12	Peak
5445.200	45.80	54.00	-8.20	47.40	-1.60	Average	5437.600	45.63	54.00	-8.37	47.26	-1.63	Average
5445.200	59.80	74.00	-14.20	61.40	-1.60	Peak	5437.600	59.36	74.00	-14.64	60.99	-1.63	Peak
7066.700	53.62	68.20	-14.58	50.55	3.07	Peak	7066.700	55.84	68.20	-12.36	52.77	3.07	Peak
10600.000	35.67	54.00	-18.33	28.32	7.35	Average	10600.000	35.68	54.00	-18.32	28.33	7.35	Average
10600.000	49.13	68.20	-19.07	41.78	7.35	Peak	10600.000	49.46	74.00	-24.54	42.11	7.35	Peak
15900.000	40.33	54.00	-13.67	30.43	9.90	Average	15900.000	40.27	54.00	-13.73	30.37	9.90	Average
15900.000	54.61	74.00	-19.39	44.71	9.90	Peak	15900.000	54.08	74.00	-19.92	44.18	9.90	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5321.480	94.13			96.17	-2.04	Average	5318.120	96.56			98.61	-2.05	Average
5321.480	105.19			107.23	-2.04	Peak	5318.120	107.41			109.46	-2.05	Peak
5350.040	49.61	54.00	-4.39	51.56	-1.95	Average	5350.180	50.60	54.00	-3.40	52.55	-1.95	Average
5350.040	67.71	74.00	-6.29	69.66	-1.95	Peak	5350.180	69.77	74.00	-4.23	71.72	-1.95	Peak
7093.300	53.66	68.20	-14.54	50.46	3.20	Peak	7093.300	55.13	68.20	-13.07	51.93	3.20	Peak
10640.000	35.51	54.00	-18.49	28.10	7.41	Average	10640.000	35.41	54.00	-18.59	28.00	7.41	Average
10640.000	50.12	74.00	-23.88	42.71	7.41	Peak	10640.000	49.56	74.00	-24.44	42.15	7.41	Peak
15960.000	41.33	54.00	-12.67	31.40	9.93	Average	15960.000	41.33	54.00	-12.67	31.40	9.93	Average
15960.000	54.29	74.00	-19.71	44.36	9.93	Peak	15960.000	55.87	74.00	-18.13	45.94	9.93	Peak

802.11n HT40 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5063.200	44.79	54.00	-9.21	47.15	-2.36	Average	5134.800	44.89	54.00	-9.11	47.24	-2.35	Average
5063.200	59.44	74.00	-14.56	61.80	-2.36	Peak	5134.800	58.33	74.00	-15.67	60.68	-2.35	Peak
5275.600	86.41			88.61	-2.20	Average	5274.400	89.96			92.16	-2.20	Average
5275.600	98.03			100.23	-2.20	Peak	5274.400	100.26			102.46	-2.20	Peak
5388.400	45.49	54.00	-8.51	47.30	-1.81	Average	5434.800	45.80	54.00	-8.20	47.44	-1.64	Average
5388.400	59.57	74.00	-14.43	61.38	-1.81	Peak	5434.800	59.31	74.00	-14.69	60.95	-1.64	Peak
7026.700	55.98	68.20	-12.22	53.07	2.91	Peak	7026.700	57.03	68.20	-11.17	54.12	2.91	Peak
10540.000	49.60	68.20	-18.60	42.37	7.23	Peak	10540.000	49.22	68.20	-18.98	41.99	7.23	Peak
15810.000	40.70	54.00	-13.30	30.84	9.86	Average	15810.000	40.69	54.00	-13.31	30.83	9.86	Average
15810.000	54.58	74.00	-19.42	44.72	9.86	Peak	15810.000	54.94	74.00	-19.06	45.08	9.86	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit	Over	Read		Remark	Freq	Level	Limit	Over	Read		Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5314.640	86.53			88.59	-2.06	Average	5316.880	88.91			90.97	-2.06	Average
5314.640	97.64			99.70	-2.06	Peak	5316.880	99.75			101.81	-2.06	Peak
5350.000	52.37	54.00	-1.63	54.32	-1.95	Average	5351.760	53.70	54.00	-0.30	55.64	-1.94	Average
5350.000	68.96	74.00	-5.04	70.91	-1.95	Peak	5351.760	70.92	74.00	-3.08	72.86	-1.94	Peak
! 7080.000	53.02	68.20	-15.18	49.88	3.14	Peak	7080.000	54.42	68.20	-13.78	51.28	3.14	Peak
!10620.000	35.86	54.00	-18.14	28.48	7.38	Average	10620.000	35.85	54.00	-18.15	28.47	7.38	Average
10620.000	50.22	74.00	-23.78	42.84	7.38	Peak	10620.000	49.95	74.00	-24.05	42.57	7.38	Peak
!15930.000	41.28	54.00	-12.72	31.40	9.88	Average	15930.000	41.14	54.00	-12.86	31.26	9.88	Average
!15930.000	55.28	74.00	-18.72	45.40	9.88	Peak	15930.000	55.39	74.00	-18.61	45.51	9.88	Peak

Above 1G (1 GHz-40 GHz) in UNII-2c:

802.11a mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5459.180	46.87	54.00	-7.13	48.42	-1.55	Average	5459.950	47.10	54.00	-6.90	48.65	-1.55	Average
5459.180	64.01	74.00	-9.99	65.56	-1.55	Peak	5459.950	64.19	74.00	-9.81	65.74	-1.55	Peak
5502.300	95.41			96.81	-1.40	Average	5502.300	96.08			97.48	-1.40	Average
5502.300	106.16			107.56	-1.40	Peak	5502.300	106.72			108.12	-1.40	Peak
7333.300	50.43	54.00	-3.57	46.41	4.02	Average	7333.300	53.49	54.00	-0.51	49.47	4.02	Average
7333.300	53.98	74.00	-20.02	49.96	4.02	Peak	7333.300	56.44	74.00	-17.56	52.42	4.02	Peak
11000.000	35.64	54.00	-18.36	27.80	7.84	Average	11000.000	35.62	54.00	-18.38	27.78	7.84	Average
11000.000	49.11	74.00	-24.89	41.27	7.84	Peak	11000.000	49.28	74.00	-24.72	41.44	7.84	Peak
16500.000	53.31	68.20	-14.89	42.13	11.18	Peak	16500.000	53.09	68.20	-15.11	41.91	11.18	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5454.720	45.86	54.00	-8.14	47.42	-1.56	Average	5449.020	45.82	54.00	-8.18	47.40	-1.58	Average
5454.720	59.35	74.00	-14.65	60.91	-1.56	Peak	5449.020	59.32	74.00	-14.68	60.90	-1.58	Peak
5577.840	98.04			99.25	-1.21	Average	5583.160	97.87			99.07	-1.20	Average
5577.840	108.54			109.75	-1.21	Peak	5583.160	108.12			109.32	-1.20	Peak
5767.460	61.14	68.20	-7.06	61.77	-0.63	Peak	5773.540	61.02	68.20	-7.18	61.61	-0.59	Peak
11160.000	35.77	54.00	-18.23	28.20	7.57	Average	7440.000	49.85	54.00	-4.15	45.60	4.25	Average
11160.000	49.11	74.00	-24.89	41.54	7.57	Peak	7440.000	53.77	74.00	-20.23	49.52	4.25	Peak
16740.000	54.89	68.20	-13.31	42.61	12.28	Peak	11160.000	35.74	54.00	-18.26	28.17	7.57	Average
							11160.000	49.31	74.00	-24.69	41.74	7.57	Peak
							16740.000	54.74	68.20	-13.46	42.46	12.28	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5697.370	94.57			95.44	-0.87	Average	5701.440	94.63			95.49	-0.86	Average
5697.370	105.24			106.11	-0.87	Peak	5701.440	105.37			106.23	-0.86	Peak
5725.090	67.95	68.20	-0.25	68.74	-0.79	Peak	5725.200	68.15	68.20	-0.05	68.94	-0.79	Peak
11400.000	35.67	54.00	-18.33	28.22	7.45	Average	11400.000	35.51	54.00	-18.49	28.06	7.45	Average
11400.000	49.18	74.00	-24.82	41.73	7.45	Peak	11400.000	48.87	74.00	-25.13	41.42	7.45	Peak
17100.000	56.07	68.20	-12.13	41.89	14.18	Peak	17100.000	55.65	68.20	-12.55	41.47	14.18	Peak

802.11n HT20 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5459.950	47.43	54.00	-6.57	48.98	-1.55	Average	5457.970	47.72	54.00	-6.28	49.27	-1.55	Average
5459.950	65.60	74.00	-8.40	67.15	-1.55	Peak	5457.970	66.84	74.00	-7.16	68.39	-1.55	Peak
5501.420	95.09			96.49	-1.40	Average	5501.640	96.06			97.46	-1.40	Average
5501.420	105.89			107.29	-1.40	Peak	5501.640	106.97			108.37	-1.40	Peak
7333.300	47.97	54.00	-6.03	43.95	4.02	Average	7333.300	53.52	54.00	-0.48	49.50	4.02	Average
7333.300	53.12	74.00	-20.88	49.10	4.02	Peak	7333.300	56.13	74.00	-17.87	52.11	4.02	Peak
11000.000	35.95	54.00	-18.05	28.11	7.84	Average	11000.000	35.45	54.00	-18.55	27.61	7.84	Average
11000.000	50.35	74.00	-23.65	42.51	7.84	Peak	11000.000	49.82	74.00	-24.18	41.98	7.84	Peak
16500.000	54.29	68.20	-13.91	43.11	11.18	Peak	16500.000	53.63	68.20	-14.57	42.45	11.18	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5455.480	45.84	54.00	-8.16	47.40	-1.56	Average	5404.560	45.66	54.00	-8.34	47.41	-1.75	Average
5455.480	59.15	74.00	-14.85	60.71	-1.56	Peak	5404.560	59.30	74.00	-14.70	61.05	-1.75	Peak
5581.640	98.13			99.33	-1.20	Average	5581.640	97.42			98.62	-1.20	Average
5581.640	108.89			110.09	-1.20	Peak	5581.640	107.92			109.12	-1.20	Peak
5751.500	60.64	68.20	-7.56	61.35	-0.71	Peak	5767.840	61.32	68.20	-6.88	61.95	-0.63	Peak
11160.000	34.98	54.00	-19.02	27.41	7.57	Average	7440.000	48.26	54.00	-5.74	44.01	4.25	Average
11160.000	50.86	74.00	-23.14	43.29	7.57	Peak	7440.000	52.65	74.00	-21.35	48.40	4.25	Peak
16740.000	56.09	68.20	-12.11	43.81	12.28	Peak	11160.000	34.75	54.00	-19.25	27.18	7.57	Average
							11160.000	49.54	74.00	-24.46	41.97	7.57	Peak
							16740.000	55.51	68.20	-12.69	43.23	12.28	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5698.030	93.23			94.10	-0.87	Average	5701.440	93.08			93.94	-0.86	Average
5698.030	104.22			105.09	-0.87	Peak	5701.440	104.32			105.18	-0.86	Peak
5725.090	67.85	68.20	-0.35	68.64	-0.79	Peak	5725.090	68.15	68.20	-0.05	68.94	-0.79	Peak
11400.000	35.06	54.00	-18.94	27.61	7.45	Average	11400.000	35.03	54.00	-18.97	27.58	7.45	Average
11400.000	50.60	74.00	-23.40	43.15	7.45	Peak	11400.000	49.78	74.00	-24.22	42.33	7.45	Peak
17100.000	55.88	68.20	-12.32	41.70	14.18	Peak	17100.000	54.34	68.20	-13.86	40.16	14.18	Peak

802.11n HT40 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5459.930	48.43	54.00	-5.57	49.98	-1.55	Average	5459.540	48.89	54.00	-5.11	50.44	-1.55	Average
5459.930	64.62	74.00	-9.38	66.17	-1.55	Peak	5459.540	66.87	74.00	-7.13	68.42	-1.55	Peak
5515.440	87.76			89.12	-1.36	Average	5516.870	88.23			89.58	-1.35	Average
5515.440	99.13			100.49	-1.36	Peak	5516.870	99.03			100.38	-1.35	Peak
7346.700	50.34	54.00	-3.66	46.29	4.05	Average	7346.700	53.62	54.00	-0.38	49.57	4.05	Average
7346.700	53.77	74.00	-20.23	49.72	4.05	Peak	7346.700	56.11	74.00	-17.89	52.06	4.05	Peak
11020.000	34.84	54.00	-19.16	27.03	7.81	Average	11020.000	34.90	54.00	-19.10	27.09	7.81	Average
11020.000	48.49	74.00	-25.51	40.68	7.81	Peak	11020.000	49.11	74.00	-24.89	41.30	7.81	Peak
16530.000	53.73	68.20	-14.47	42.40	11.33	Peak	16530.000	53.35	68.20	-14.85	42.02	11.33	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5457.000	46.54	54.00	-7.46	48.10	-1.56	Average	5457.760	46.30	54.00	-7.70	47.86	-1.56	Average
5457.000	59.70	74.00	-14.30	61.26	-1.56	Peak	5457.760	59.94	74.00	-14.06	61.50	-1.56	Peak
5553.140	92.61			93.87	-1.26	Average	5543.640	92.46			93.75	-1.29	Average
5553.140	103.76			105.02	-1.26	Peak	5543.640	102.99			104.28	-1.29	Peak
5753.400	61.01	68.20	-7.19	61.72	-0.71	Peak	5772.780	61.05	68.20	-7.15	61.64	-0.59	Peak
11100.000	34.84	54.00	-19.16	27.16	7.68	Average	7400.000	53.28	54.00	-0.72	49.13	4.15	Average
11100.000	48.39	74.00	-25.61	40.71	7.68	Peak	7400.000	56.06	74.00	-17.94	51.91	4.15	Peak
16650.000	55.18	68.20	-13.02	43.23	11.95	Peak	11100.000	34.80	54.00	-19.20	27.12	7.68	Average
							11100.000	48.62	74.00	-25.38	40.94	7.68	Peak
							16650.000	54.71	68.20	-13.49	42.76	11.95	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5675.350	92.29			93.22	-0.93	Average	5664.400	92.14			93.11	-0.97	Average
5675.350	103.38			104.31	-0.93	Peak	5664.400	103.15			104.12	-0.97	Peak
5728.900	67.56	68.20	-0.64	68.34	-0.78	Peak	5727.400	67.22	68.20	-0.98	68.01	-0.79	Peak
11340.000	35.11	54.00	-18.89	27.65	7.46	Average	11340.000	35.13	54.00	-18.87	27.67	7.46	Average
11340.000	49.49	74.00	-24.51	42.03	7.46	Peak	11340.000	49.43	74.00	-24.57	41.97	7.46	Peak
17010.000	56.85	68.20	-11.35	43.02	13.83	Peak	17010.000	56.48	68.20	-11.72	42.65	13.83	Peak

Above 1G (1 GHz-40 GHz) in UNII-3:

802.11a mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5627.640	59.99	68.20	-8.21	61.05	-1.06	Peak	5627.640	59.99	68.20	-8.21	61.05	-1.06	Peak
5691.720	60.82	99.10	-38.28	61.70	-0.88	Peak	5691.720	60.82	99.10	-38.28	61.70	-0.88	Peak
5719.440	75.17	110.64	-35.47	75.98	-0.81	Peak	5719.440	75.17	110.64	-35.47	75.98	-0.81	Peak
5742.840	105.95			106.69	-0.74	Peak	5742.840	105.95			106.69	-0.74	Peak
5872.440	62.43	105.92	-43.49	62.49	-0.06	Peak	5872.440	62.43	105.92	-43.49	62.49	-0.06	Peak
5911.320	61.87	78.29	-16.42	61.73	0.14	Peak	5911.320	61.87	78.29	-16.42	61.73	0.14	Peak
5968.920	62.62	68.20	-5.58	62.18	0.44	Peak	5968.920	62.62	68.20	-5.58	62.18	0.44	Peak
11490.000	35.16	54.00	-18.84	27.73	7.43	Average	11490.000	35.16	54.00	-18.84	27.73	7.43	Average
11490.000	48.91	74.00	-25.09	41.48	7.43	Peak	11490.000	48.91	74.00	-25.09	41.48	7.43	Peak
17235.000	56.70	68.20	-11.50	41.99	14.71	Peak	17235.000	56.70	68.20	-11.50	41.99	14.71	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5643.120	60.05	68.20	-8.15	61.06	-1.01	Peak	5619.360	59.75	68.20	-8.45	60.83	-1.08	Peak
5665.440	60.04	79.66	-19.62	61.01	-0.97	Peak	5669.400	60.84	82.59	-21.75	61.79	-0.95	Peak
5712.600	60.81	108.73	-47.92	61.63	-0.82	Peak	5706.480	60.98	107.02	-46.04	61.83	-0.85	Peak
5786.760	106.01			106.54	-0.53	Peak	5787.480	108.04			108.57	-0.53	Peak
5862.000	61.61	108.84	-47.23	61.74	-0.13	Peak	5871.360	61.94	106.22	-44.28	62.02	-0.08	Peak
5900.880	62.00	86.01	-24.01	61.93	0.07	Peak	5889.360	63.00	94.54	-31.54	62.99	0.01	Peak
5930.760	62.68	68.20	-5.52	62.44	0.24	Peak	5966.040	62.22	68.20	-5.98	61.79	0.43	Peak
11570.000	35.30	54.00	-18.70	27.83	7.47	Average	11570.000	35.48	54.00	-18.52	28.01	7.47	Average
11570.000	48.27	74.00	-25.73	40.80	7.47	Peak	11570.000	48.72	74.00	-25.28	41.25	7.47	Peak
17355.000	57.72	68.20	-10.48	42.63	15.09	Peak	17355.000	55.04	68.20	-13.16	39.95	15.09	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5623.680	59.48	68.20	-8.72	60.55	-1.07	Peak	5623.680	59.94	68.20	-8.26	61.01	-1.07	Peak
5673.360	59.74	85.53	-25.79	60.67	-0.93	Peak	5686.320	60.40	95.11	-34.71	61.30	-0.90	Peak
5703.600	60.05	106.21	-46.16	60.90	-0.85	Peak	5712.960	60.50	108.83	-48.33	61.32	-0.82	Peak
5822.400	106.29			106.63	-0.34	Peak	5828.160	107.65			107.97	-0.32	Peak
5855.520	74.09	110.65	-36.56	74.25	-0.16	Peak	5856.240	73.62	110.45	-36.83	73.77	-0.15	Peak
5902.320	62.47	84.94	-22.47	62.39	0.08	Peak	5880.720	63.14	100.95	-37.81	63.16	-0.02	Peak
5932.200	62.20	68.20	-6.00	61.96	0.24	Peak	5946.960	62.30	68.20	-5.90	61.98	0.32	Peak
11650.000	35.79	54.00	-18.21	28.22	7.57	Average	11650.000	35.75	54.00	-18.25	28.18	7.57	Average
11650.000	46.92	74.00	-27.08	39.35	7.57	Peak	11650.000	48.77	74.00	-25.23	41.20	7.57	Peak
17475.000	54.75	68.20	-13.45	39.09	15.66	Peak	17475.000	56.62	68.20	-11.58	40.96	15.66	Peak

802.11n HT20 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5622.960	59.89	68.20	-8.31	60.96	-1.07	Peak	5646.000	59.64	68.20	-8.56	60.65	-1.01	Peak
5696.400	61.34	102.55	-41.21	62.22	-0.88	Peak	5697.480	62.43	103.34	-40.91	63.30	-0.87	Peak
5719.080	74.69	110.54	-35.85	75.50	-0.81	Peak	5719.440	75.15	110.64	-35.49	75.96	-0.81	Peak
5747.880	105.69			106.42	-0.73	Peak	5742.120	107.70			108.44	-0.74	Peak
5862.000	61.88	108.84	-46.96	62.01	-0.13	Peak	5872.080	61.88	106.02	-44.14	61.94	-0.06	Peak
5917.440	62.47	73.77	-11.30	62.30	0.17	Peak	5914.560	62.44	75.90	-13.46	62.29	0.15	Peak
5934.720	62.96	68.20	-5.24	62.71	0.25	Peak	5929.680	62.12	68.20	-6.08	61.90	0.22	Peak
11490.000	35.01	54.00	-18.99	27.58	7.43	Average	11490.000	35.54	54.00	-18.46	28.11	7.43	Average
11490.000	50.26	74.00	-23.74	42.83	7.43	Peak	11490.000	49.27	74.00	-24.73	41.84	7.43	Peak
17235.000	57.70	68.20	-10.50	42.99	14.71	Peak	17235.000	57.43	68.20	-10.77	42.72	14.71	Peak

Middle CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5616.120	60.83	68.20	-7.37	61.91	-1.08	Peak	5635.920	60.72	68.20	-7.48	61.75	-1.03	Peak
5686.320	60.38	95.11	-34.73	61.28	-0.90	Peak	5662.560	60.69	77.53	-16.84	61.66	-0.97	Peak
5709.000	60.22	107.72	-47.50	61.07	-0.85	Peak	5703.240	61.50	106.11	-44.61	62.35	-0.85	Peak
5781.000	105.80			106.35	-0.55	Peak	5789.280	107.73			108.25	-0.52	Peak
5858.040	61.91	109.95	-48.04	62.05	-0.14	Peak	5869.920	62.48	106.62	-44.14	62.57	-0.09	Peak
5900.880	62.72	86.01	-23.29	62.65	0.07	Peak	5899.440	62.47	87.08	-24.61	62.40	0.07	Peak
5938.680	62.37	68.20	-5.83	62.09	0.28	Peak	5955.960	62.50	68.20	-5.70	62.12	0.38	Peak
11570.000	35.82	54.00	-18.18	28.35	7.47	Average	11570.000	35.77	54.00	-18.23	28.30	7.47	Average
11570.000	49.82	74.00	-24.18	42.35	7.47	Peak	11570.000	49.44	74.00	-24.56	41.97	7.47	Peak
17355.000	56.71	68.20	-11.49	41.62	15.09	Peak	17355.000	57.09	68.20	-11.11	42.00	15.09	Peak

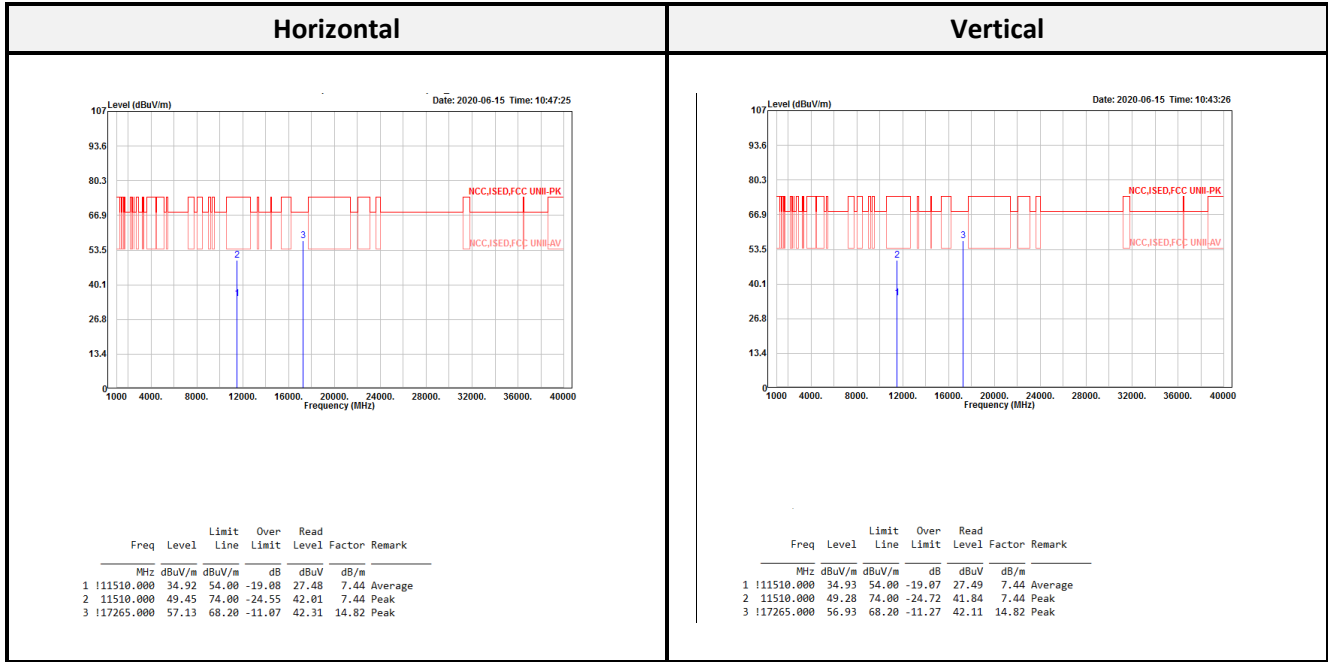
High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5647.080	59.79	68.20	-8.41	60.79	-1.00	Peak	5629.440	60.16	68.20	-8.04	61.21	-1.05	Peak
5682.720	60.08	92.45	-32.37	61.00	-0.92	Peak	5689.560	60.44	97.50	-37.06	61.34	-0.90	Peak
5715.840	60.80	109.64	-48.84	61.61	-0.81	Peak	5709.360	60.73	107.82	-47.09	61.58	-0.85	Peak
5822.760	106.16			106.50	-0.34	Peak	5822.040	107.77			108.11	-0.34	Peak
5855.520	74.43	110.65	-36.22	74.59	-0.16	Peak	5855.160	75.17	110.76	-35.59	75.33	-0.16	Peak
5909.160	62.08	79.89	-17.81	61.96	0.12	Peak	5877.480	63.73	103.36	-39.63	63.77	-0.04	Peak
5936.160	62.39	68.20	-5.81	62.13	0.26	Peak	5951.280	62.63	68.20	-5.57	62.27	0.36	Peak
11650.000	35.90	54.00	-18.10	28.33	7.57	Average	11650.000	36.02	54.00	-17.98	28.45	7.57	Average
11650.000	48.88	74.00	-25.12	41.31	7.57	Peak	11650.000	49.05	74.00	-24.95	41.48	7.57	Peak
17475.000	57.32	68.20	-10.88	41.66	15.66	Peak	17475.000	57.50	68.20	-10.70	41.84	15.66	Peak

802.11n HT40 mode:

Low CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5628.360	60.34	68.20	-7.86	61.39	-1.05	Peak	5610.000	60.00	68.20	-8.20	61.10	-1.10	Peak
5697.840	66.22	103.61	-37.39	67.09	-0.87	Peak	5693.520	67.08	100.42	-33.34	67.96	-0.88	Peak
5719.080	77.23	110.54	-33.31	78.04	-0.81	Peak	5717.640	76.46	110.14	-33.68	77.27	-0.81	Peak
5749.320	103.35			104.08	-0.73	Peak	5763.720	102.49			103.14	-0.65	Peak
5873.880	62.46	105.51	-43.05	62.51	-0.05	Peak	5864.880	62.05	108.03	-45.98	62.16	-0.11	Peak
5909.880	61.95	79.36	-17.41	61.83	0.12	Peak	5882.160	62.57	99.88	-37.31	62.59	-0.02	Peak
5953.080	63.15	68.20	-5.05	62.79	0.36	Peak	5962.440	62.21	68.20	-5.99	61.80	0.41	Peak
!11510.000	34.92	54.00	-19.08	27.48	7.44	Average	11510.000	34.93	54.00	-19.07	27.49	7.44	Average
11510.000	49.45	74.00	-24.55	42.01	7.44	Peak	11510.000	49.28	74.00	-24.72	41.84	7.44	Peak
!17265.000	57.13	68.20	-11.07	42.31	14.82	Peak	17265.000	56.93	68.20	-11.27	42.11	14.82	Peak

High CH													
Horizontal							Vertical						
Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
5626.200	60.83	68.20	-7.37	61.89	-1.06	Peak	5636.280	59.72	68.20	-8.48	60.75	-1.03	Peak
5680.560	60.33	90.85	-30.52	61.25	-0.92	Peak	5682.360	60.45	92.18	-31.73	61.37	-0.92	Peak
5707.920	61.91	107.42	-45.51	62.76	-0.85	Peak	5711.880	60.99	108.53	-47.54	61.81	-0.82	Peak
5789.280	103.17			103.69	-0.52	Peak	5799.000	103.03			103.49	-0.46	Peak
5858.040	65.86	109.95	-44.09	66.00	-0.14	Peak	5860.920	64.78	109.14	-44.36	64.91	-0.13	Peak
5901.240	62.06	85.74	-23.68	61.98	0.08	Peak	5906.640	62.37	81.75	-19.38	62.26	0.11	Peak
5928.240	63.03	68.20	-5.17	62.82	0.21	Peak	5955.600	63.07	68.20	-5.13	62.70	0.37	Peak
11590.000	34.96	54.00	-19.04	27.47	7.49	Average	11590.000	35.04	54.00	-18.96	27.55	7.49	Average
11590.000	49.65	74.00	-24.35	42.16	7.49	Peak	11590.000	48.84	74.00	-25.16	41.35	7.49	Peak
17385.000	56.91	68.20	-11.29	41.69	15.22	Peak	17385.000	58.15	68.20	-10.05	42.93	15.22	Peak

Above 1G (1 GHz-40 GHz): test the worst mode: UNII-1 802.11n HT20 Low CH.



Level = Read Level + Factor

Over Limit = Level – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported

8 FCC §15.407(a)(1) and RSS-247 Sec 6.2 – Maximum Output Power

8.1 Applicable Standard

According to FCC §15.407(a),

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.

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.

There is no requirement in RSS-247 for the value of bandwidth. However, the 99% bandwidth is used to calculate the power limits given in RSS-247 section 6.2.1.1. Power measurements are made using the 99% Bandwidth as the integration bandwidth.

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10} B$, dBm, whichever is less stringent. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz.

8.2 Test Procedure

The use Power Meter

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a Power sensor.

8.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
Conducted Room(TH-02)					
USB Wideband Power Sensor	Agilent	U2021XA	MY56120026	2019/09/06	2020/09/05
RF Cable	MTJ	MT40S	MT40S-001	Each Use	/

***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).

8.4 Test Data

PIFA Antenna (MARS-31A8 WiFi Antenna)

Band	Configure	CH	Freq. (MHz)	Conducted Output Power		FCC Limit (dBm)	Ant Gain (dBi)	EIRP Output Power		ISED EIRP Limit (dBm)
				(dBm)	(W)			(dBm)	(W)	
UNII-1	IEEE 802.11a	36	5180	12.45	0.0176	24.00	2.00	14.45	0.0279	22.43
		40	5200	12.53	0.0179	24.00	2.00	14.53	0.0284	22.41
		48	5240	12.78	0.0190	24.00	2.00	14.78	0.0301	22.44
	IEEE 802.11n HT20	36	5180	12.77	0.0189	24.00	2.00	14.77	0.0300	22.66
		40	5200	13.08	0.0203	24.00	2.00	15.08	0.0322	22.67
		48	5240	13.61	0.0230	24.00	2.00	15.61	0.0364	22.62
IEEE 802.11n HT40	38	5190	9.04	0.0080	24.00	2.00	11.04	0.0127	23.00	
	46	5230	9.59	0.0091	24.00	2.00	11.59	0.0144	23.00	
UNII-2a	IEEE 802.11a	52	5260	12.31	0.0170	23.39	2.00	14.31	0.0270	29.39
		60	5300	11.93	0.0156	23.32	2.00	13.93	0.0247	29.32
		64	5320	11.81	0.0152	23.37	2.00	13.81	0.0240	29.37
	IEEE 802.11n HT20	52	5260	12.55	0.0180	23.64	2.00	14.55	0.0285	29.64
		60	5300	12.12	0.0163	23.59	2.00	14.12	0.0258	29.59
		64	5320	11.91	0.0155	23.58	2.00	13.91	0.0246	29.58
IEEE 802.11n HT40	54	5270	9.53	0.0090	24.00	2.00	11.53	0.0142	30.00	
	62	5310	8.58	0.0072	24.00	2.00	10.58	0.0114	30.00	
UNII-2c	IEEE 802.11a	100	5500	10.41	0.0110	23.76	2.00	12.41	0.0174	29.76
		116	5580	13.18	0.0208	23.98	2.00	15.18	0.0330	29.98
		140	5700	10.05	0.0101	23.37	2.00	12.05	0.0160	29.37
	IEEE 802.11n HT20	100	5500	12.63	0.0183	24.00	2.00	14.63	0.0290	30.00
		116	5580	13.03	0.0201	24.00	2.00	15.03	0.0318	30.00
		140	5700	11.64	0.0146	23.57	2.00	13.64	0.0231	29.57
IEEE 802.11n HT40	102	5510	9.43	0.0088	24.00	2.00	11.43	0.0139	30.00	
	110	5550	10.75	0.0119	24.00	2.00	12.75	0.0188	30.00	
	134	5670	12.78	0.0190	24.00	2.00	14.78	0.0301	30.00	
UNII-3	IEEE 802.11a	149	5745	13.71	0.0235	30.00	2.00	15.71	0.0372	36.00
		157	5785	13.65	0.0232	30.00	2.00	15.65	0.0367	36.00
		165	5825	13.98	0.0250	30.00	2.00	15.98	0.0396	36.00
	IEEE 802.11n HT20	149	5745	13.75	0.0237	30.00	2.00	15.75	0.0376	36.00
		157	5785	14.02	0.0252	30.00	2.00	16.02	0.0400	36.00
		165	5825	14.18	0.0262	30.00	2.00	16.18	0.0415	36.00
IEEE 802.11n HT40	151	5755	11.55	0.0143	30.00	2.00	13.55	0.0226	36.00	
	159	5795	11.82	0.0152	30.00	2.00	13.82	0.0241	36.00	

Note1: The Limit is Conducted Power for FCC. Note2: The Limit is Conducted + Antenna Gain = EIRP Power for ISEDC

Note3: The power limit should calculate for 99% bandwidth less than 20MHz for ISEDC.

9 FCC §15.407(a) and RSS-247 Sec 6.2 – Power Spectral Density

9.1 Applicable Standard

According to FCC §15.407(a),

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.

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..

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.

According to RSS-247 Sec 6.2:

For 5150-5250 MHz: The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band

For 5250-5350 MHz: The power spectral density shall not exceed 11 dBm in any 1.0 MHz band

For 5470-5725 MHz: The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

For 5725-5850 MHz: The output power spectral density shall not exceed 30 dBm in any 500 kHz band

9.2 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 and ANSI 63.10: 2013 Sec 10.3.7.

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set the RBW to 1 MHz.
- b) Set the VBW to be at least 1 MHz (a VBW of 3 MHz is desirable).
- c) Set the frequency span to examine the spectrum across a convenient frequency segment (e.g., 600 MHz).
- d) Select the power averaging (rms) detector.
- e) Set the sweep time so that there is no more than a 1 ms integration period over each measurement bin.
- f) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

9.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
Conducted Room					
Signal Analyzer 40GHZ	Rohde & Schwarz	FSV40-N	102248	2019/09/11	2020/09/10
RF Cable	MTJ	MT40S	MT40S-001	Each Use	/

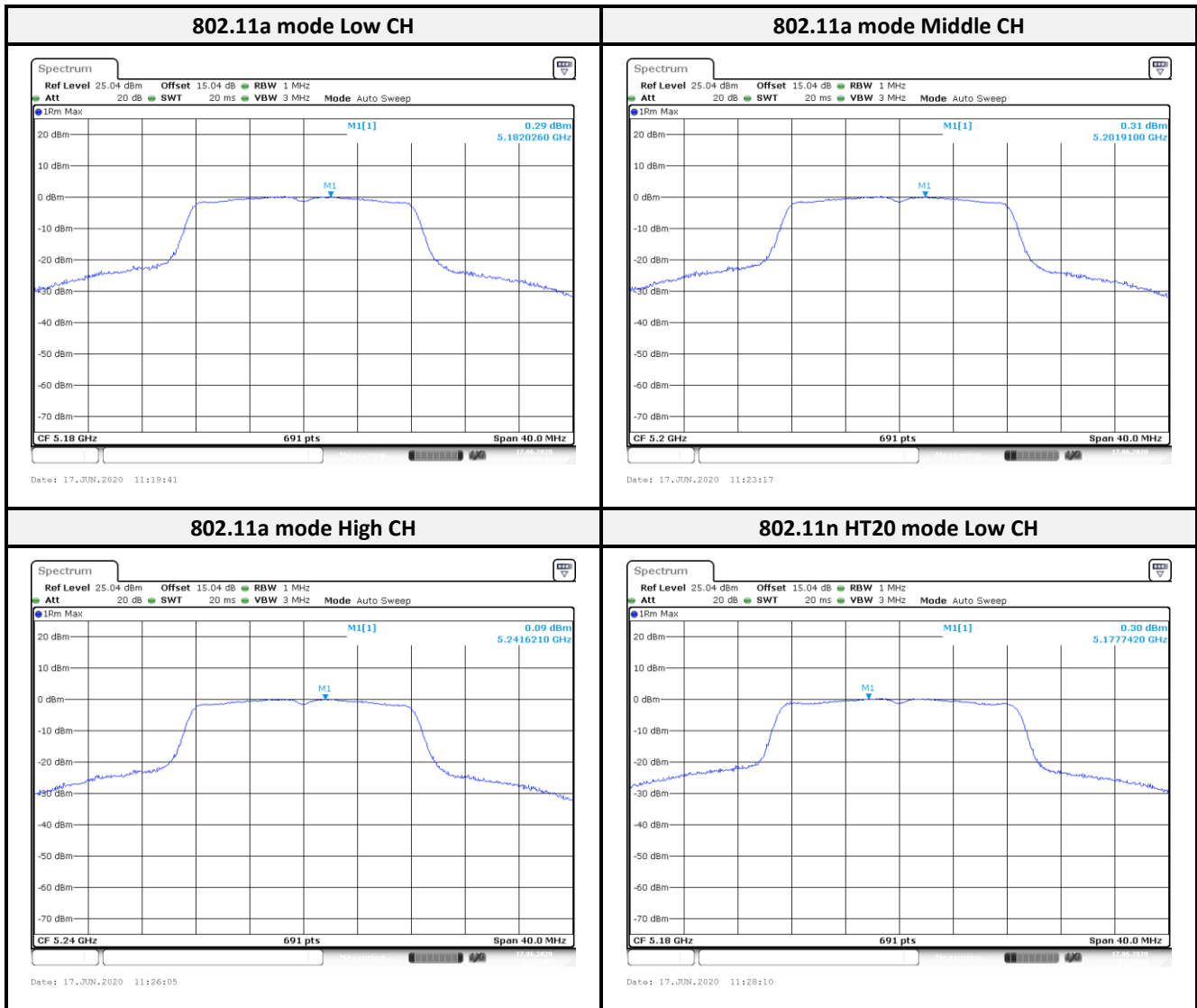
***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).

9.4 Test Data and Test Plot
PIFA Antenna (MARS-31A8 WiFi Antenna)

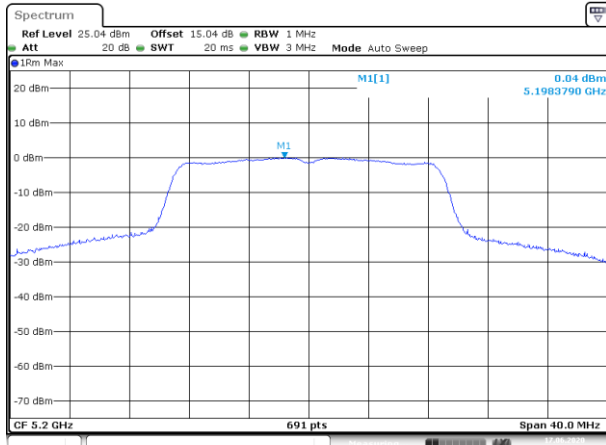
Band	Configuration	Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Antenna Gain (dBi)	EIRP Power Spectral Density (dBm/MHz)	FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
UNII-1	IEEE 802.11a	36	5180	0.29	2.00	2.29	11	10
		40	5200	0.31	2.00	2.31	11	10
		48	5240	0.09	2.00	2.09	11	10
	IEEE 802.11n HT20	36	5180	0.30	2.00	2.3	11	10
		40	5200	0.04	2.00	2.04	11	10
		48	5240	-0.13	2.00	1.87	11	10
	IEEE 802.11n HT40	38	5190	-6.23	2.00	-4.23	11	10
46		5230	-5.66	2.00	-3.66	11	10	
UNII-2a	IEEE 802.11a	52	5260	-0.10	2.00	1.9	11	17
		60	5300	-0.53	2.00	1.47	11	17
		64	5320	-0.59	2.00	1.41	11	17
	IEEE 802.11n HT20	52	5260	-0.43	2.00	1.57	11	17
		60	5300	-0.22	2.00	1.78	11	17
		64	5320	-0.69	2.00	1.31	11	17
	IEEE 802.11n HT40	54	5270	-6.24	2.00	-4.24	11	17
62		5310	-6.88	2.00	-4.88	11	17	
UNII-2c	IEEE 802.11a	100	5500	3.02	2.00	5.02	11	17
		116	5580	3.67	2.00	5.67	11	17
		140	5700	-1.11	2.00	0.89	11	17
	IEEE 802.11n HT20	100	5500	2.78	2.00	4.78	11	17
		116	5580	3.31	2.00	5.31	11	17
		140	5700	-2.05	2.00	-0.05	11	17
	IEEE 802.11n HT40	102	5510	-4.75	2.00	-2.75	11	17
110		5550	4.67	2.00	6.67	11	17	
134	5670	-2.81	2.00	-0.81	11	17		
Band	Configuration	Channel	Frequency (MHz)	Power Spectral Density (dBm/500kHz)	Antenna Gain (dBi)	EIRP Power Spectral Density (dBm/500kHz)	FCC Limit (dBm/500kHz)	ISED Limit (dBm/500kHz)
UNII-3	IEEE 802.11a	149	5745	-0.41	2.00	-	30.00	30.00
		157	5785	-0.86	2.00	-	30.00	30.00
		165	5825	-1.10	2.00	-	30.00	30.00
	IEEE 802.11n HT20	149	5745	-0.43	2.00	-	30.00	30.00
		157	5785	-0.89	2.00	-	30.00	30.00
		165	5825	-0.72	2.00	-	30.00	30.00
	IEEE 802.11n HT40	151	5755	-5.78	2.00	-	30.00	30.00
159		5795	-6.10	2.00	-	30.00	30.00	

Note: Duty Factor = 0 dB.

For UNII-1

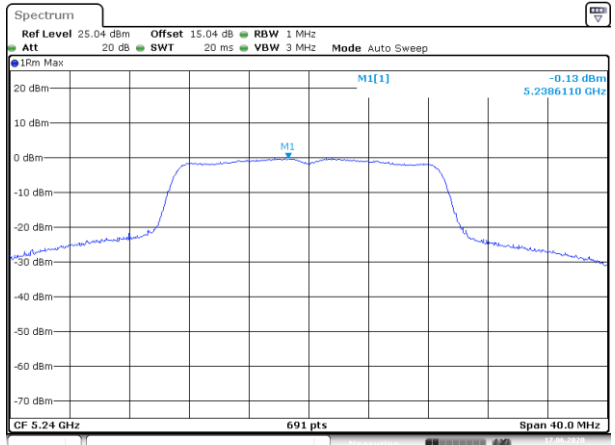


802.11n HT20 mode Middle CH



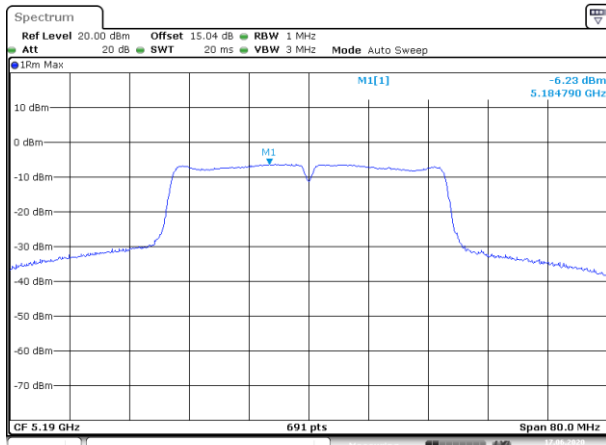
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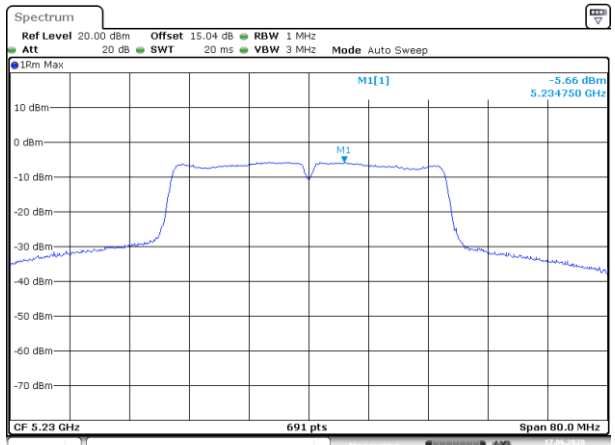
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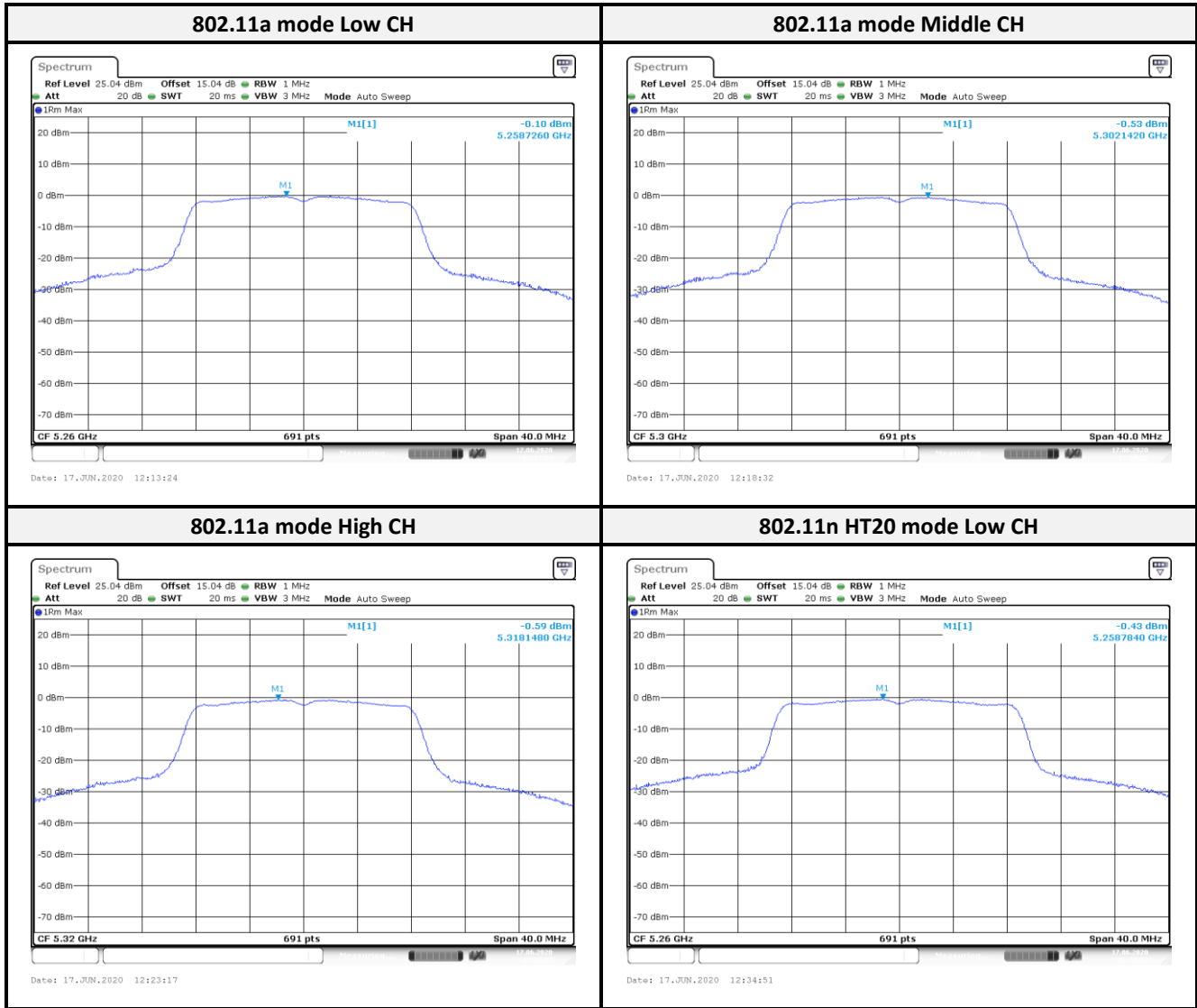
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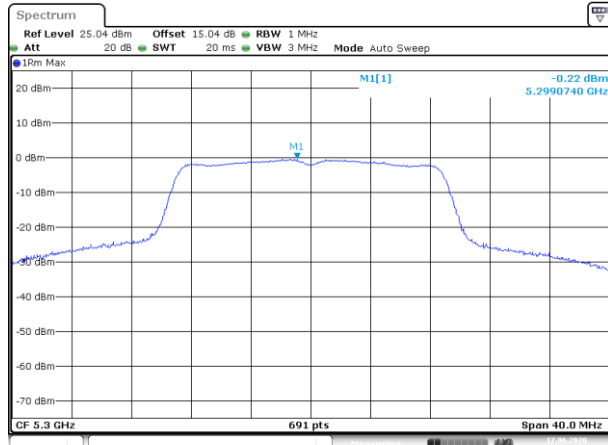


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For UNII-2a

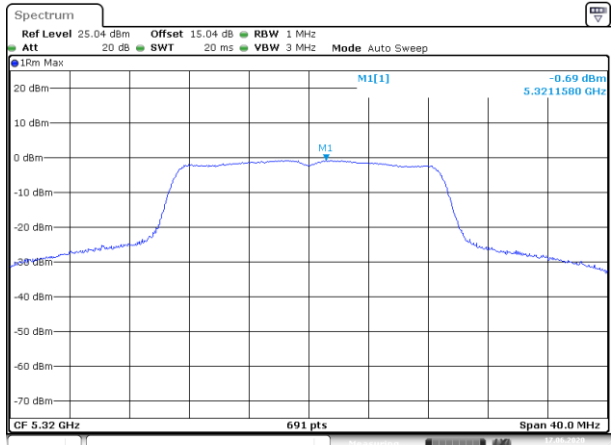


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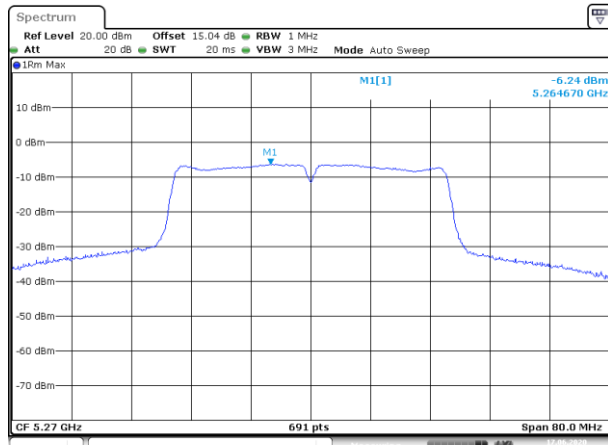
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802.11n HT20 mode High CH



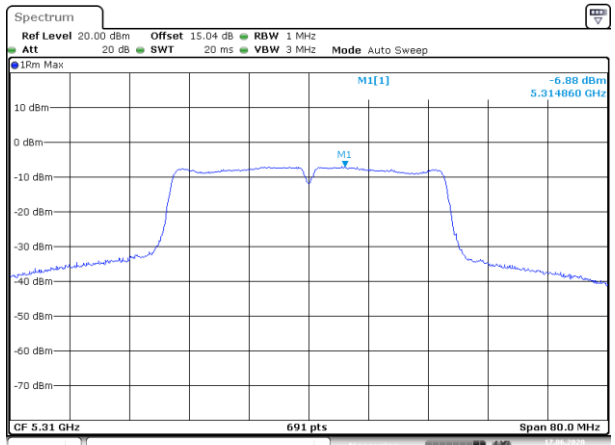
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802.11n HT40 mode Low CH



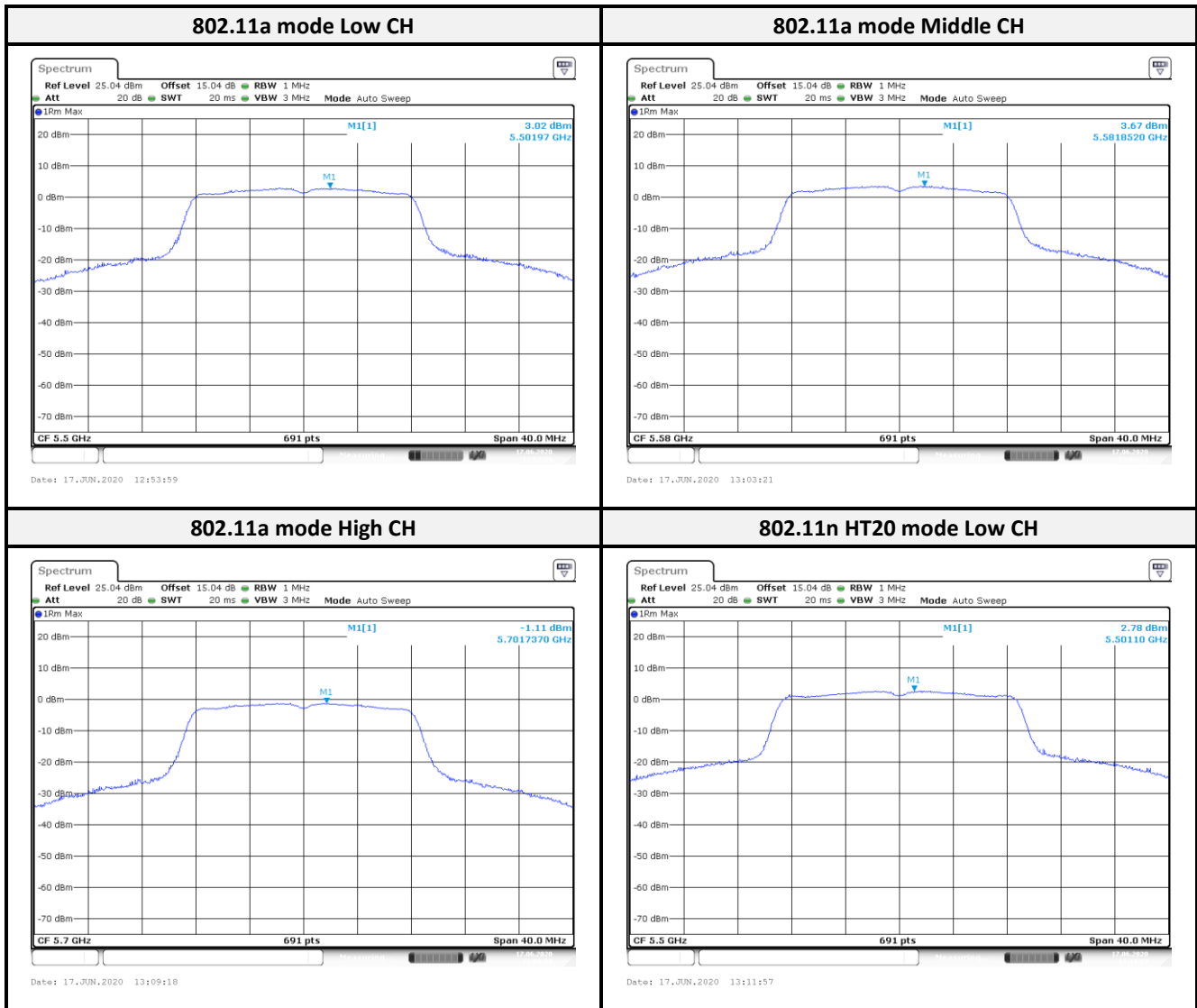
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802.11n HT40 mode High CH

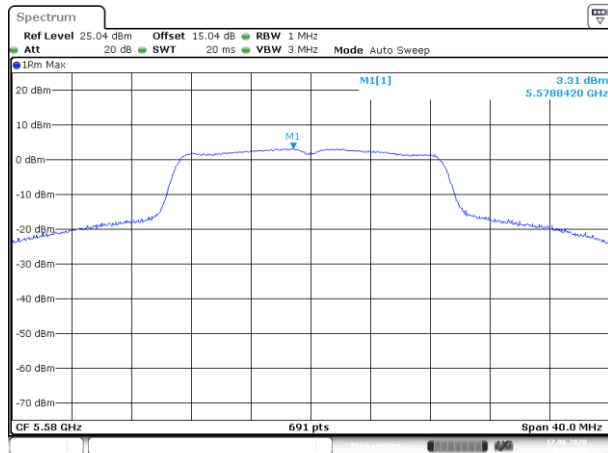


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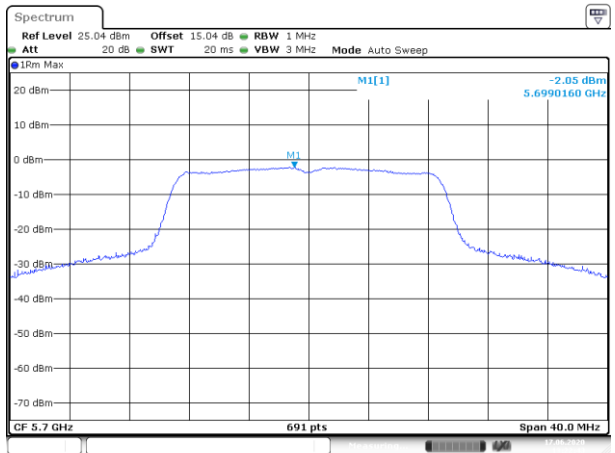


802.11n HT20 mode Middle CH



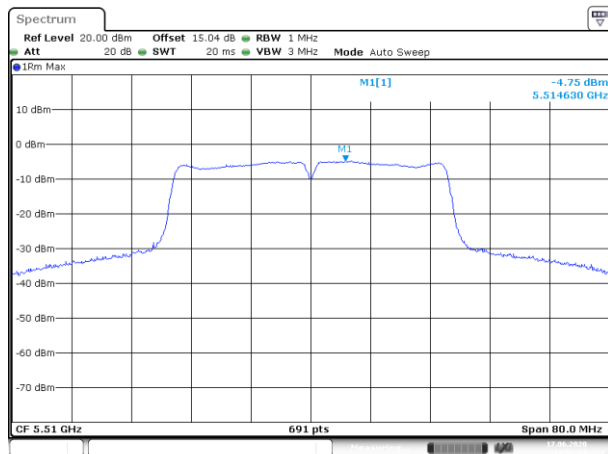
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802.11n HT20 mode High CH



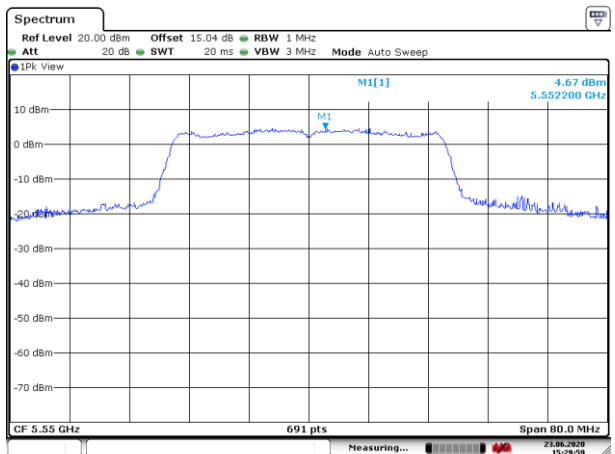
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802.11n HT40 mode Low CH



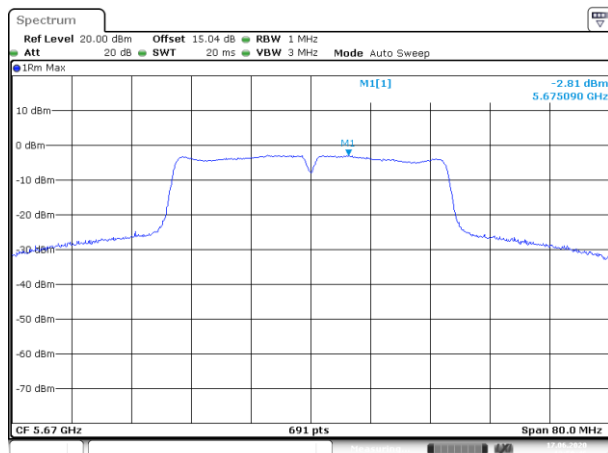
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802.11n HT40 mode Middle CH



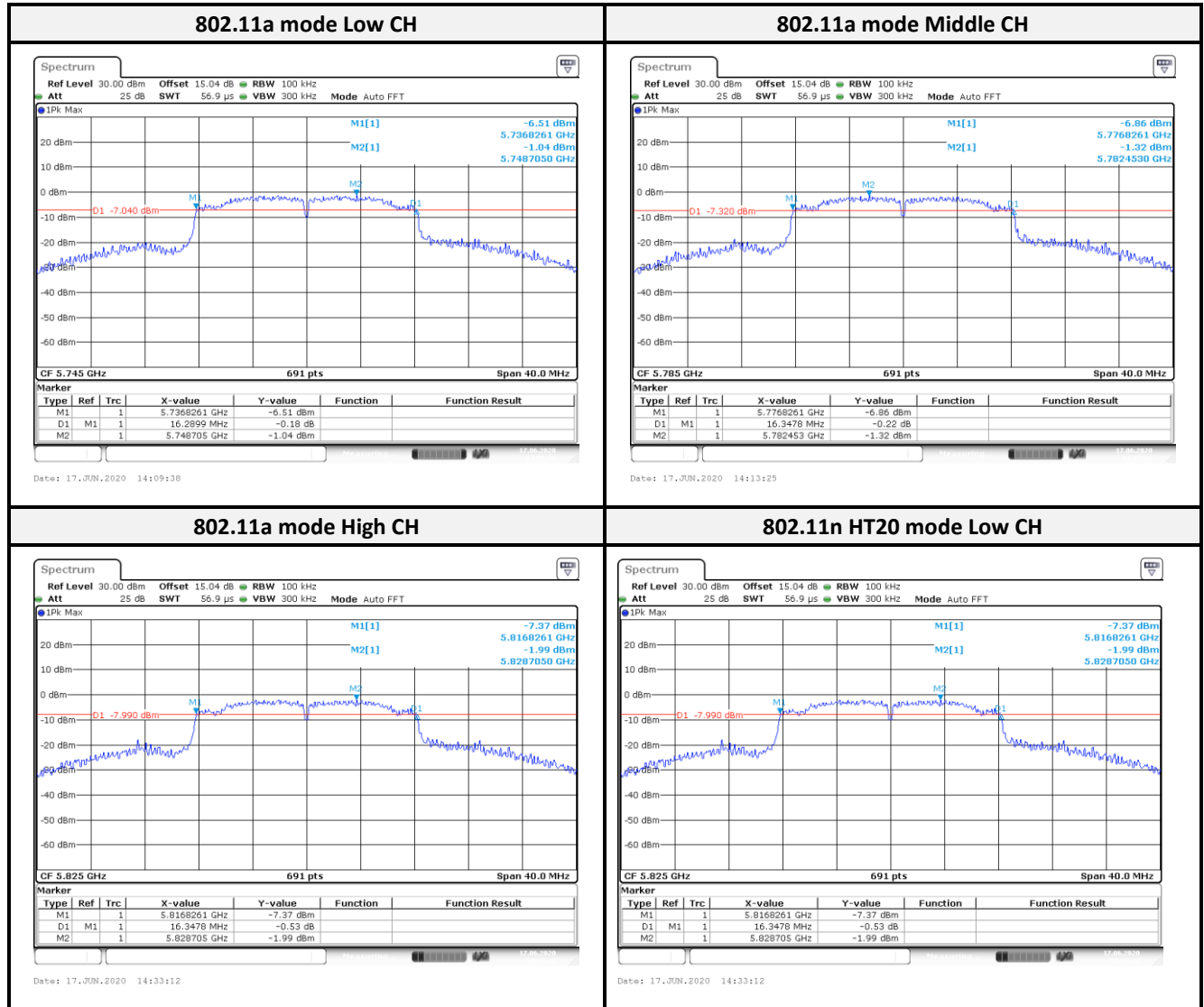
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802.11n HT40 mode High CH

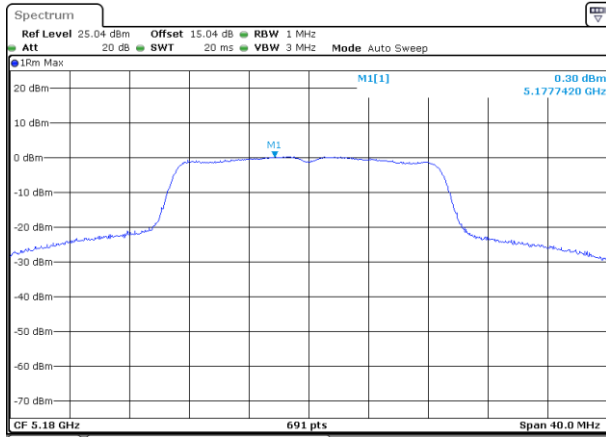


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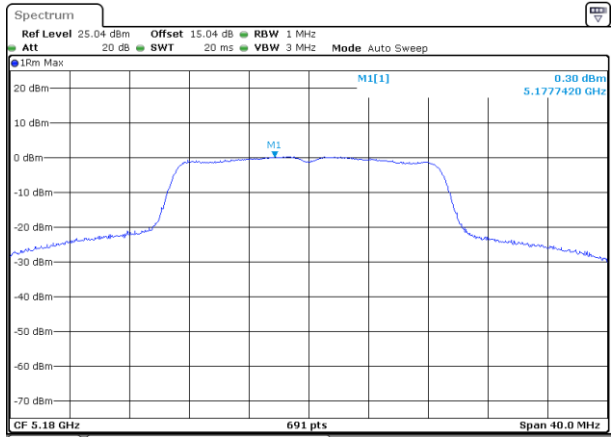


802.11n HT20 mode Middle CH



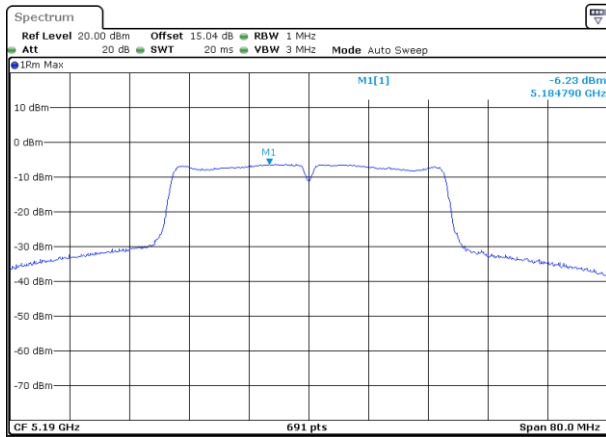
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802.11n HT20 mode High CH



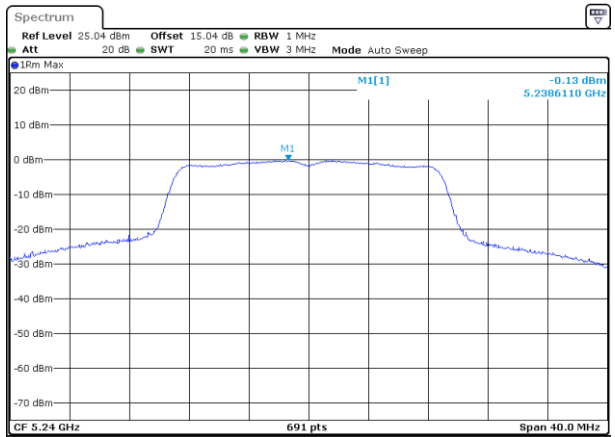
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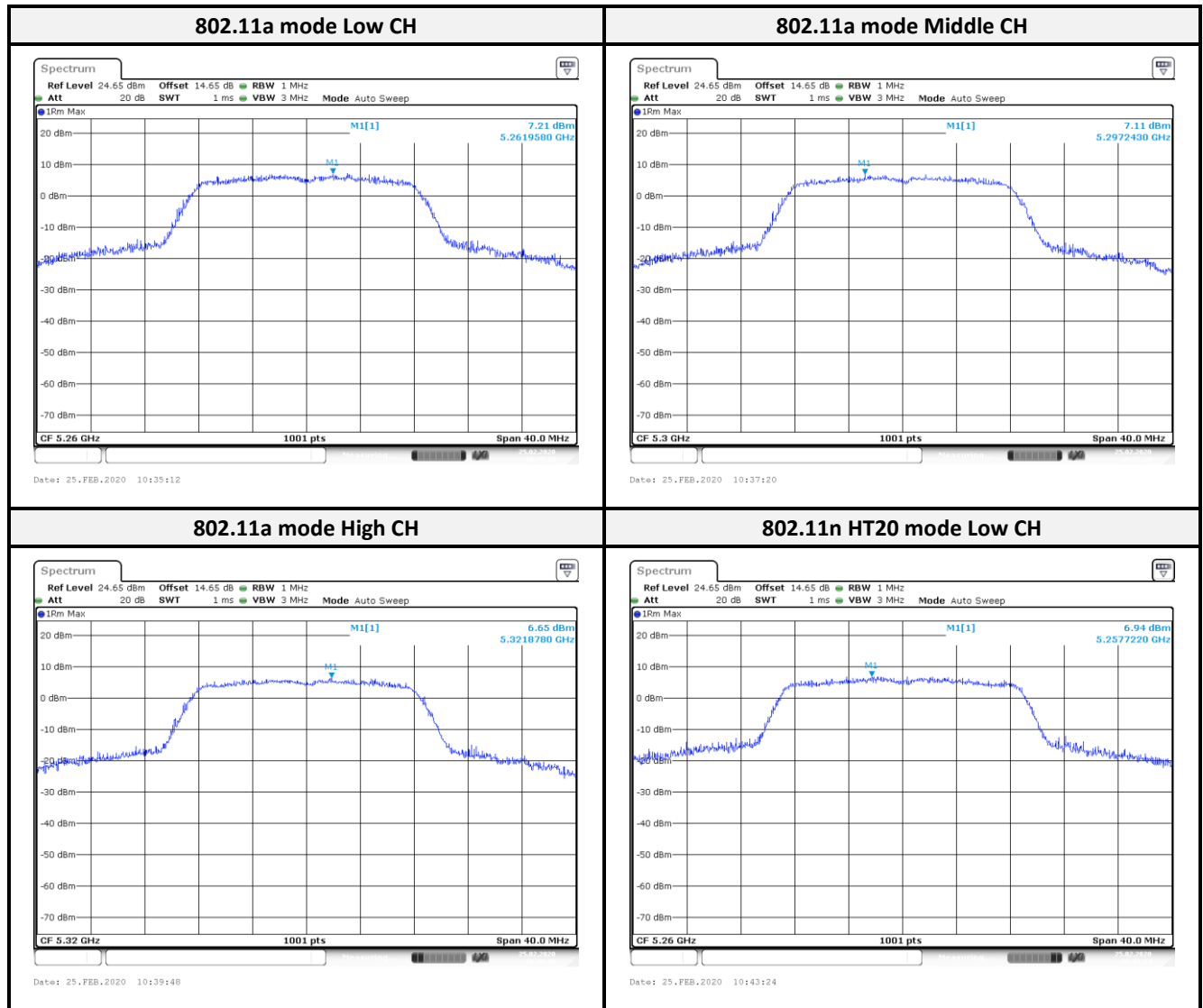
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802.11n HT40 mode High CH

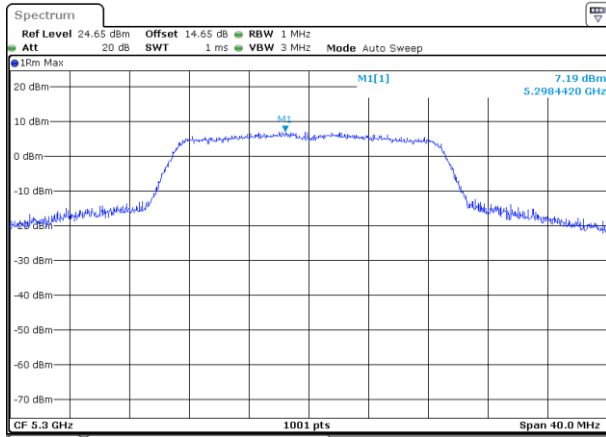


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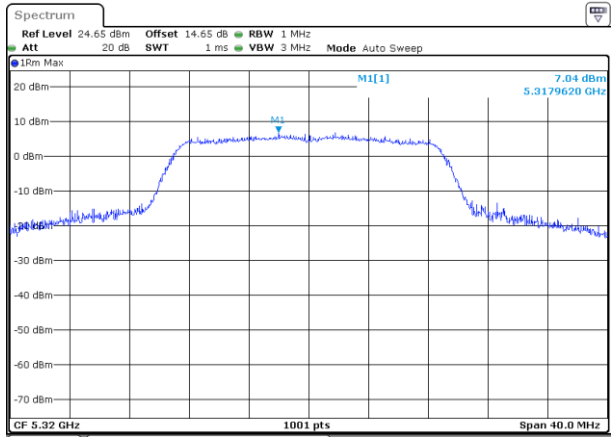


802.11n HT20 mode Middle CH



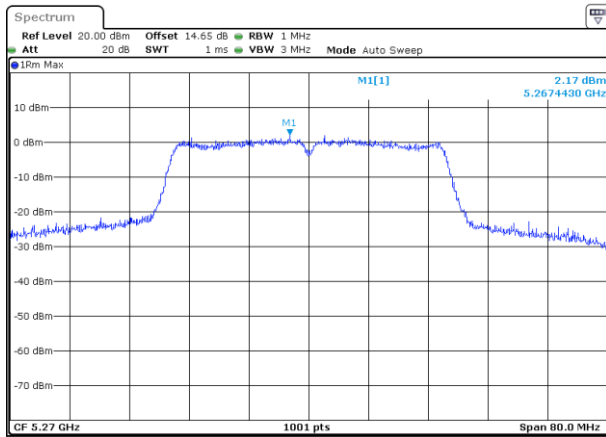
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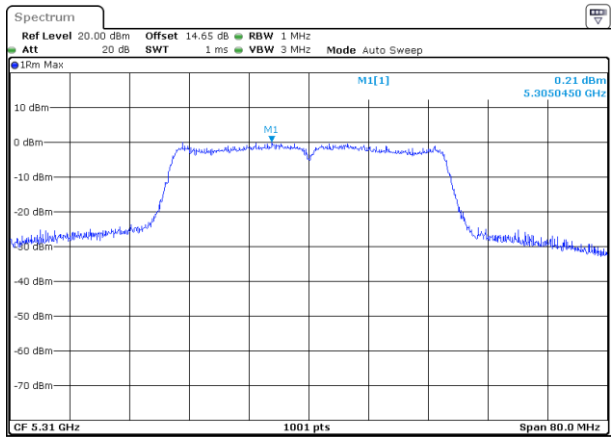
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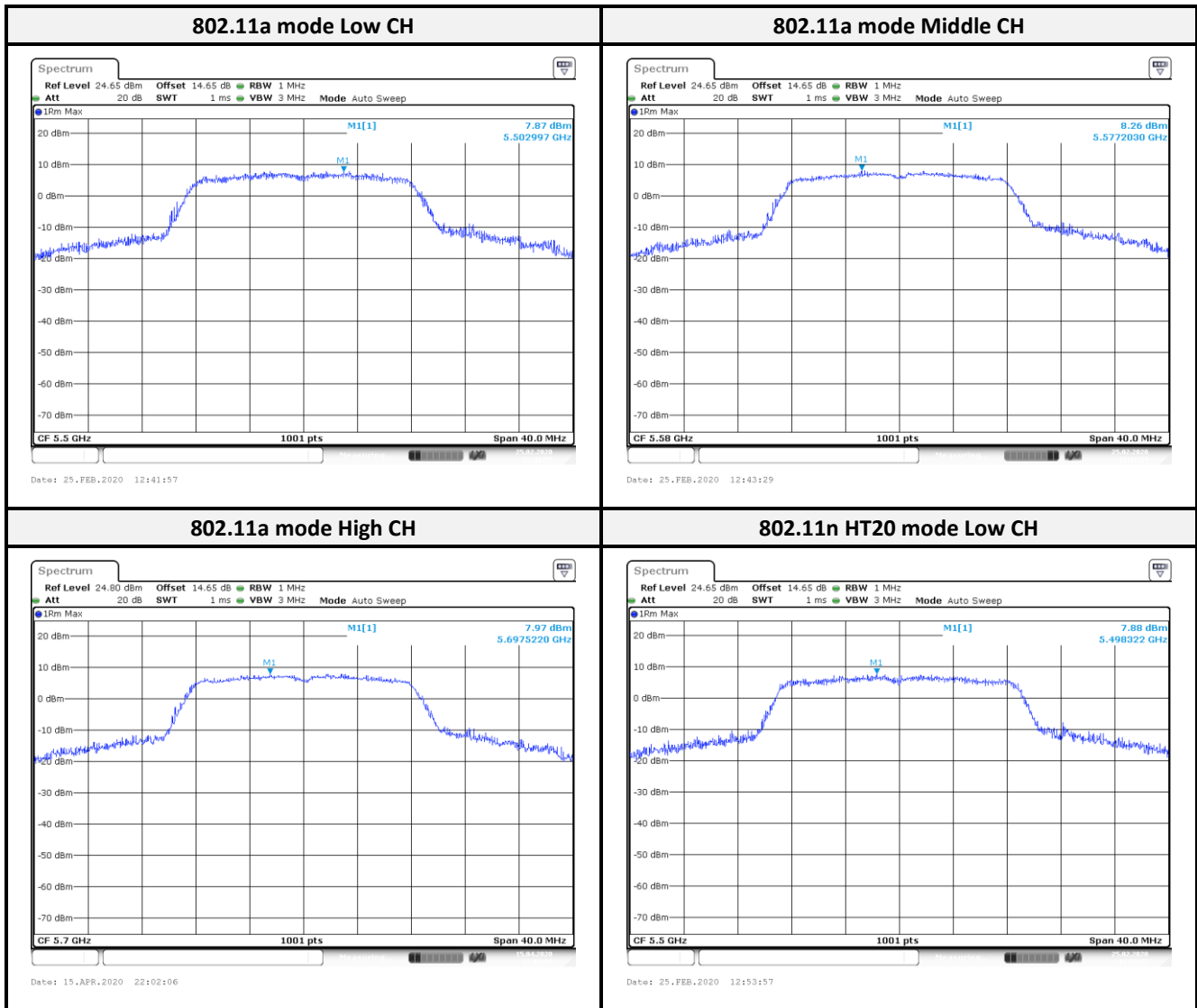
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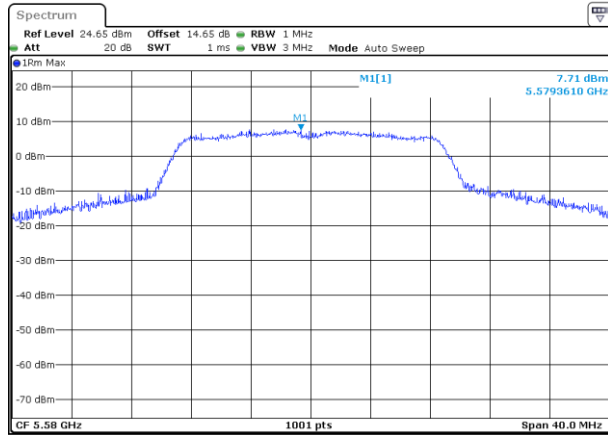


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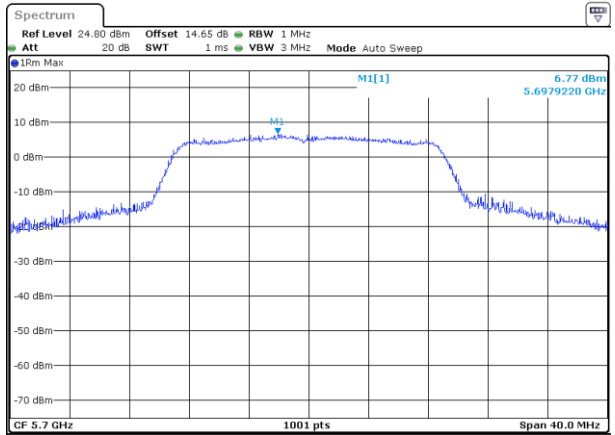


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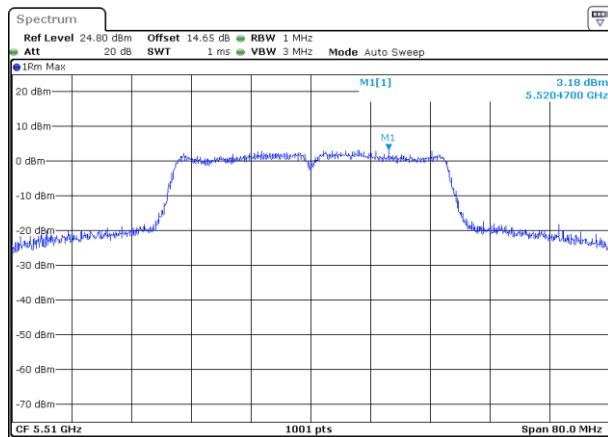
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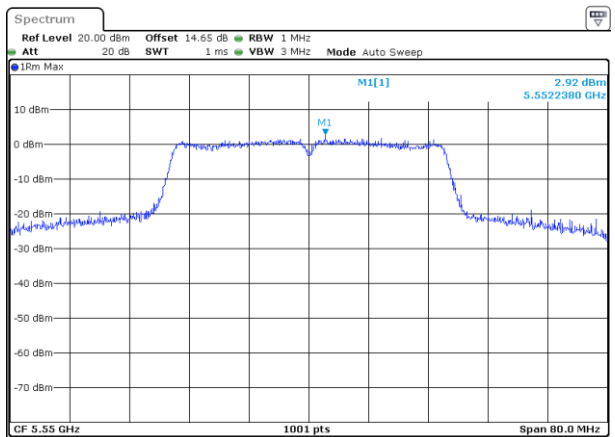
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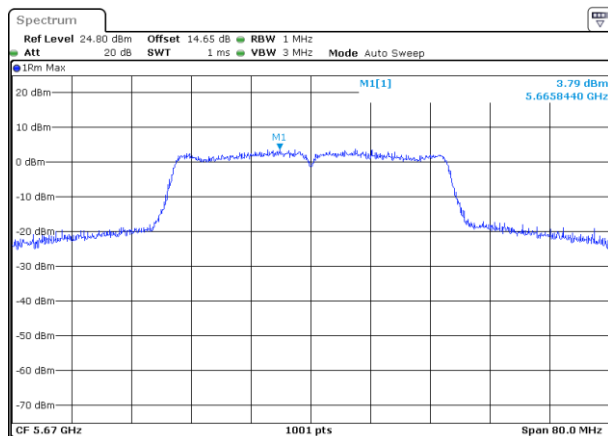
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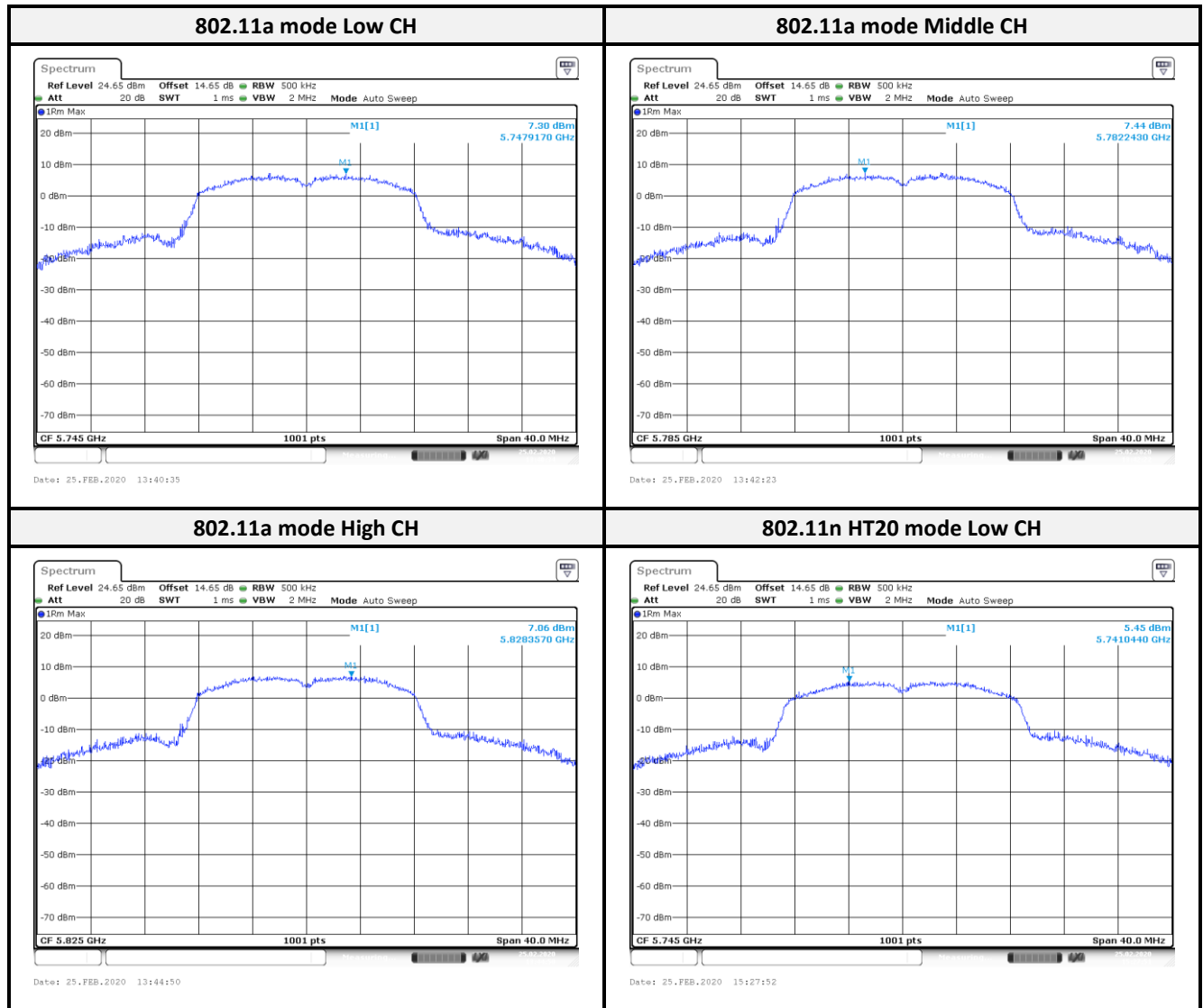
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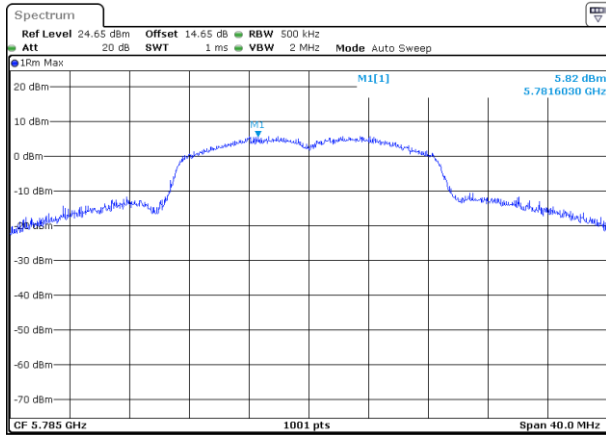


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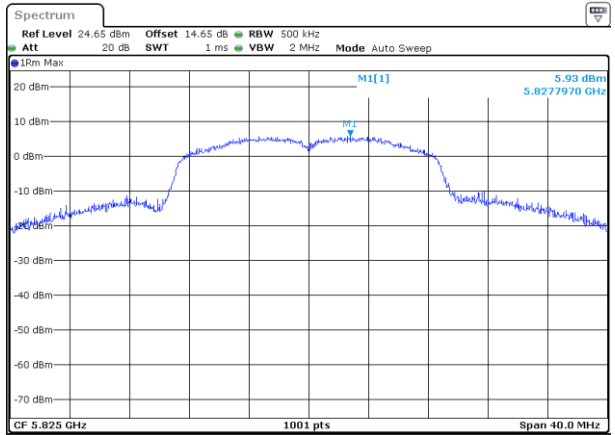
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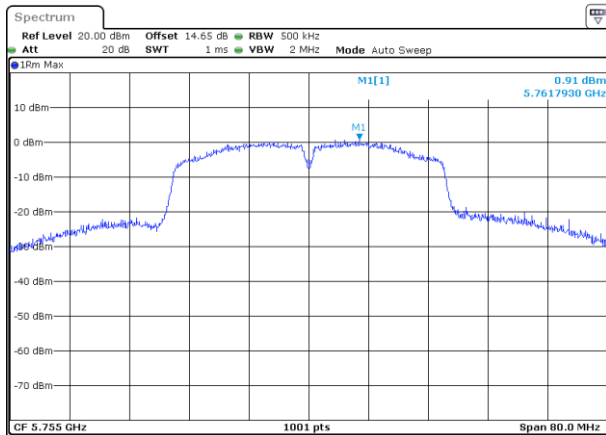
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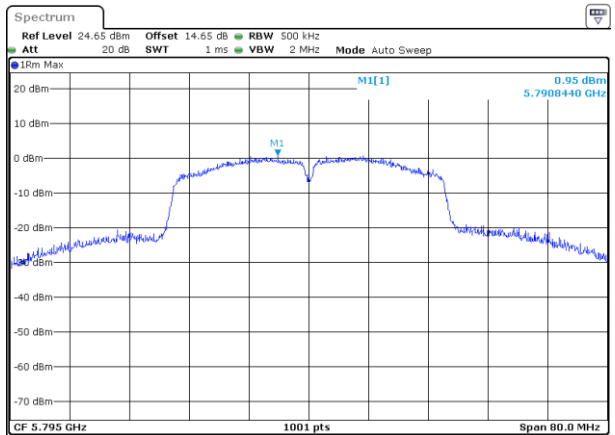
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802.11n HT40 mode Low CH



802.11n HT40 mode High CH



**** END OF REPORT ****