



FCC Part 15.407; LP0002-2018

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

TEST REPORT

For

Cisco Systems, Inc.

170 West Tasman Dr., San Jose, CA 95134, USA

FCC ID: LDK948342197
IC: 2461N-948342197

Report Type :	Original Report
Product Type :	Cisco Catalyst 9130AXE Series Access Points
Product Name :	For FCC: C9130AXE-B ; For Canada: C9130AXE-A For Taiwan: C9130AXE-T
Report Number :	RLK191129003-001
Report Date :	2019/12/13
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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	RLK191129003-00I	2019/12/13	Original Report

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	Cisco Systems, Inc. 170 West Tasman Dr., San Jose, CA 95134, USA
Manufacturer	Cisco Systems, Inc. 170 West Tasman Dr., San Jose, CA 95134, USA
Brand(Trade) Name	Cisco
Product (Equipment)	Cisco Catalyst 9130AXE Series Access Points
Model Name	For FCC: C9130AXE-B For Canada: C9130AXE-A For Taiwan: C9130AXE-T *Note: These 3 models are using same hardware specification include antennas, only for market purpose.
Frequency Range	UNII: 5150 MHz ~ 5850 MHz
Received Date	Nov. 26, 2019
Date of Test	Nov. 26, 2019 - Dec. 13, 2019
Modulation Type	OFDM
Related Submittal(s)/Grant(s)	FCC Part 15.247 DTS with FCC ID: LDK948342197

**All measurement and test data in this report was gathered from production sample serial number: RLK191129003 (Assigned by BACL Linkou Laboratory)*

1.2 Operation Condition of EUT

Power Operation (Voltage Range)	☒ DC Type ☒ PoE: 30W Brand Name: Cisco Model: SB-PWR-INJ2 I/P: 100-240Vac,50/60Hz, 0.67A O/P: 55Vdc,0.6A ☐ By Power Core
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1.3 Objective and Test Methodology

The Objective of this Test Report was to document the compliance of the Cisco System, Inc. Appliance (Model: For FCC: C9130AXE-B; For Canada: C9130AXE-A, For Taiwan: C9130AXE-T) to the requirements of the following Standards:

-Part 2, Subpart J, Part 15 Subparts A and Part 15 Subparts E of the Federal Communication Commission's rules.

-ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

-KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

-RSS-247 Issue 2, Feb 2017 — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

-RSS-Gen Issue 5, Mar 2019 — General Requirements for Compliance of Radio Apparatus.

-LP0002-2018 — Low-power Radio-frequency Devices Technical Regulations.

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
Frequency Error	± 94.731 Hz
Radiated Above 18G-40G	± 4.67 dB

1.5 Environmental Conditions and Test Date record

Test Site	Test Date	Temperature (°C)	Relative Humidity (% RH)	Test Engineer
Conducted (TH02)	Nov. 26, 2019 – Dec. 13, 2019	21.6-22.6	59-62	Boris Kao/Jason Hsiao

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 Test Channels and Description of Worst 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	144 ^{Note}	5720
64	5320	149	5745
100	5500	153	5765
104	5520	157	5785
108	5540	161	5805
112	5560	165	5825
116	5580	-	--

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	142 ^{Note}	5710
102	5510	151	5755
110	5500	159	5795

Note: Canada not support.

● For BW: 80MHz

Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	122 ^{Note}	5610
58	5290	138 ^{Note}	5690
106	5530	155	5775

Note: Canada not support.

● For BW: 160MHz

Channel	Frequency (MHz)	Channel	Frequency (MHz)
50	5250	114 ^{Note}	5570

Note: Canada not support.

Radiated below 1G were tested worst output power mode.

2.2 Support Equipment List and External Cable List

No.	Description	Manufacturer	Model Number
A	Notebook PC*2	DELL	Latitude E5470
B	PoE Adapter	Cisco	AIR-PWRINJ6B01

No.	Cable Description	Manufacturer	Model Number	From	To
1	LAN Cable	BACL	BACL-LAN	EUT	NB
2	LAN Cable	BACL	BACL-LAN	EUT	PoE
3	LAN Cable	BACL	BACL-LAN	NB	PoE

2.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
Conducted (TH02)					
USB Wideband Power Sensor	Agilent	U2021XA	MY56120026	2019/09/06	2020/09/05
Cable	MTJ	MT40S	620620-MT40S-100	2018/12/28	2019/12/27
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	101457	2019/06/24	2020/06/23

***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).

2.4 Duty Cycle

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 20 mode	1.42754	1.5434	0.92	0.36
802.11ac 20 mode	5.4275	5.6884	0.95	0.22
802.11ax 20 mode	5.4565	5.7464	0.95	0.22
802.11a 40 mode	1.4347	1.5507	0.93	0.32
802.11ac 40 mode	5.4058	5.6667	0.95	0.22
802.11ax 40 mode	5.4348	5.7536	0.94	0.27
802.11a 80 mode	1.4347	1.5579	0.92	0.36
802.11ac 80 mode	5.4638	6.0797	0.9	0.46
802.11ax 80 mode	5.4638	5.8188	0.94	0.27
802.11a 80+80 mode	1.4347	1.5579	0.92	0.36
802.11ac 80+80 mode	5.4058	6.0507	0.89	0.51
802.11ax 80+80 mode	5.4058	5.7319	0.94	0.27

3 Summary of Test Results

FCC/ISED/NCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091 ISED RSS-102 LP0002 Sec 5.20.2	Maximum Permissible Exposure (MPE)	Note ¹
FCC §15.203 ISED RSS-Gen Sec 6.8 LP0002-2018 Sec 2.2	Antenna Requirement	Note ²
FCC §15.207, FCC §15.407 (b) ISED RSS-Gen Sec 8.8 LP0002-2018 Sec 2.3	AC Line Conducted Emissions	N/A
FCC §15.205, §15.209, §15.407(b), §2.1053 ISED RSS-Gen Sec 8.9 and 8.10 ISED RSS-247 Sec 6.2 LP0002-2018 Sec 3.10 and 4.7	Spurious Unwanted Emission	Compliance/Note ²
FCC §15.407(a) (e) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Emission Bandwidth	Compliance
FCC §15.407(a) (1) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Conducted Transmitter Output Power	Compliance
FCC §2.1051, §15.407(b) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Band Edge	Compliance
FCC §15.407 (a) (1)(5) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Power Spectral Density	Compliance
FCC §15.407 (h) ISED RSS-247 Sec 6.3 LP0002 Sec 4.7	Dynamic Frequency Selections (DFS)	Note ³

Note¹: Compliance test data was recorded in a separate report, please refer to RF Exposure Report

Note²: Compliance test data was recorded in a separate report, please refer to Test Report: EDCS-18486571 issued by Cisco Systems, Inc.

Note³: Compliance test data was recorded in a separate report, please refer to Test Report: EDCS-18337252 issued by Cisco Systems, Inc.

4 FCC §15.203, RSS-Gen and LP0002 Sec 2.2- Antenna Requirements

4.1 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 15.407, 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

4.2 Antenna List and Details

Part Number	Description	Gain
C-ANT9101=	Ceiling Mount Omni Self-Identifying Antenna, 8-port, with DART connectors.	2 dBi (2.4 GHz) 6 dBi (5 GHz)
C-ANT9102=	Pole or Wall Mount Omni Self-Identifying Antenna, 8-port, with DART connectors.	4 dBi (2.4 GHz) 4 dBi (5 GHz)
C-ANT9103=	Pole or Wall mount 75° Directional Self-Identifying Antenna, 8-port, with DART connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2566P4W-R=	Directional Antenna, 4-port, with RP-TNC connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2566P4W-RS=	Directional Self-Identifying Antenna, 4-port, with RP-TNC connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2524V4C-R=	Ceiling Mount Omni Antenna, 4-port, with RP-TNC connectors.	2 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2524V4C-RS=	Ceiling Mount Omni Self-Identifying Antenna, 4-port, with RP-TNC connectors.	2 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2544V4M-R=	Wall Mount Omni Antenna, 4-port, with RP-TNC connectors.	4 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2544V4M-RS=	Wall Mount Omni Self-Identifying Antenna, 4-port, with RP-TNC connectors.	4 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2566D4M-R=	60° Patch Antenna, 4-port, with RP-TNC connectors. ¹	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2566D4M-RS=	60° Patch Self-Identifying Antenna, 4-port, with RP-TNC connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)

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

5 FCC §15.209, §15.205, §15.407(b), §2.1053, RSS-Gen Sec 8.9, 8.10, RSS-247 Sec 6.2 and LP0002 Sec 3.10 and 4.7 – Spurious Unwanted Emissions

5.1 Applicable Standard

According to FCC §15.407(b), LP0002 Sec 3.10 and 4.7.

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:
- (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.

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 NCC Section 2.7,

MHz	MHz	MHz
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
6.200 - 6.300	758.00 - 803.00	7250.0 - 7750.0
8.230 - 8.400	825.00 - 915.00	8025.0 - 8500.0
12.265 - 12.600	930.00 - 1240.0	9000.0 - 9200.0
13.340 - 13.430	1300.0 - 1427.0	9300.0 - 9500.0
14.965 - 15.020	1435.0 - 1626.5	10600 - 12700
16.700 - 16.755	1660.0 - 1785.0	13250 - 13400
19.965 - 20.020	1805.0 - 1880.0	14470 - 14500
25.500 - 25.700	1885.0 - 1900.0	15350 - 16200
37.475 - 38.275	1905.0 - 1985.0	17700 - 21400
73.500 - 75.400	2010.0 - 2025.0	22010 - 23120
108.00 - 138.00	2110.0 - 2170.0	23600 - 24000
149.90 - 150.05	2200.0 - 2300.0	31200 - 31800
156.70 - 156.90	2310.0 - 2390.0	36430 - 36500
162.01 - 167.17	2483.5 - 2900.0	Above 38600

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 ISSED 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.

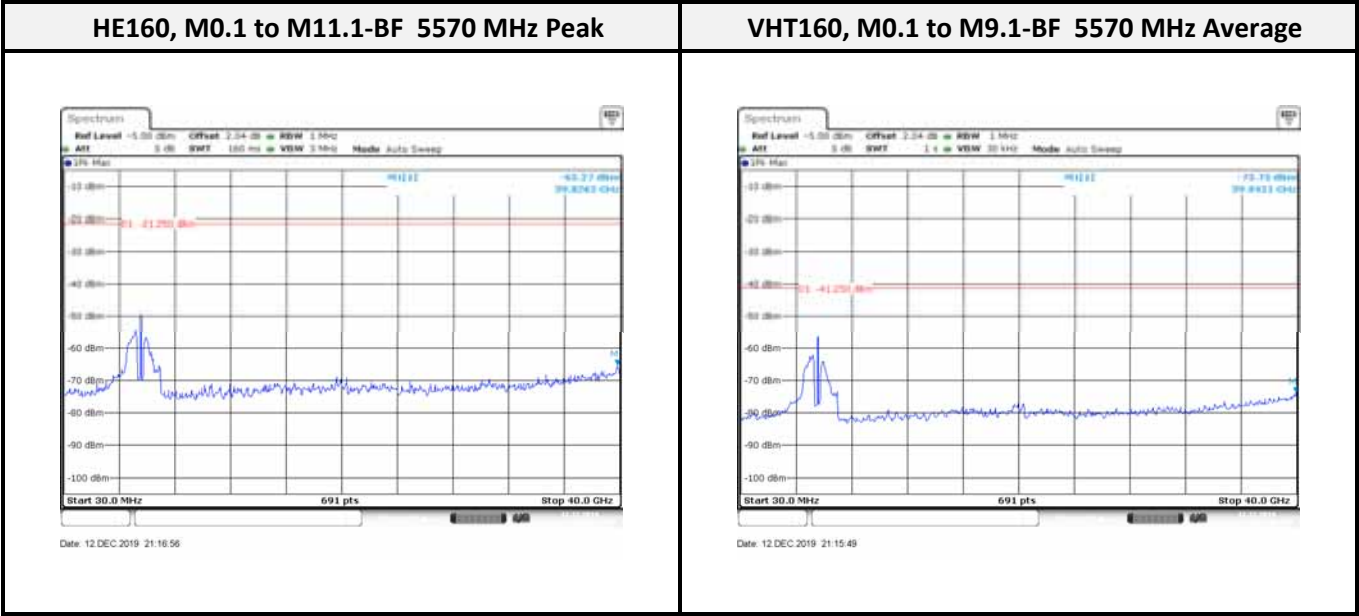
Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

- 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.

5.2 EUT Setup and Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Place the radio in continuous transmit mode. Use the procedures in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 to substitute conducted measurements in place of radiated measurements.
3. Configure Spectrum analyzer as per test parameters below (be sure to enter all losses between the transmitter output and the spectrum analyzer).
4. Record the marker. Also measure any emissions in the restricted bands.
5. The “measure-and-sum technique” is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units. The worst case output is recorded.
6. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands
7. Capture graphs and record pertinent measurement data.

5.3 Conducted Emission Test Plot and Data
For FCC/NCC



Note: Record the worst plot in the report.

Conducted Emission Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	4.00		-66.77								-62.77	-21.25	41.52
			4.00						-66.22				-62.22	-21.25	40.97
	non HT160, 6 to 54 Mbps	2	4.00		-67.35	-66.91							-60.12	-21.25	38.87
			4.00						-66.43	-66.86			-59.63	-21.25	38.38
	non HT160, 6 to 54 Mbps	3	4.00		-67.20	-66.14	-67.20						-58.05	-21.25	36.80
			4.00						-65.51	-66.70	-66.59		-57.46	-21.25	36.21
	non HT160, 6 to 54 Mbps	4	4.00	-66.24	-66.32	-67.07	-66.42						-56.48	-21.25	35.23
			4.00					-66.54	-66.03	-66.82	-65.82		-56.26	-21.25	35.01
	VHT160, M0.1 to M9.1	1	4.00		-66.31								-62.31	-21.25	41.06
			4.00						-67.34				-63.34	-21.25	42.09
	VHT160, M0.1 to M9.1	2	4.00		-65.57	-66.40							-58.95	-21.25	37.70
			4.00						-65.93	-66.65			-59.26	-21.25	38.01
	VHT160, M0.1 to M9.1	3	4.00		-66.12	-66.36	-66.10						-57.42	-21.25	36.17
			4.00						-67.36	-66.37	-66.10		-57.80	-21.25	36.55
	VHT160, M0.1 to M9.1	4	4.00	-65.83	-67.16	-67.11	-67.12						-56.75	-21.25	35.50
			4.00					-67.27	-66.55	-66.72	-66.21		-56.65	-21.25	35.40
	VHT160, M0.1 to M9.1-BF	2	7.01		-66.44	-67.09							-56.73	-21.25	35.48
			7.01						-66.66	-65.95			-56.27	-21.25	35.02
	VHT160, M0.1 to M9.1-BF	3	8.77		-66.40	-66.01	-67.04						-52.92	-21.25	31.67
			8.77						-66.71	-66.52	-67.00		-53.20	-21.25	31.95
	VHT160, M0.1 to M9.1-BF	4	10.02	-67.26	-66.46	-66.61	-66.82						-50.74	-21.25	29.49
			10.02					-66.21	-66.53	-65.90	-66.70		-50.28	-21.25	29.03
	HE160, M0.1 to M11.1	1	4.00		-65.85								-61.85	-21.25	40.60
			4.00						-67.08				-63.08	-21.25	41.83
	HE160, M0.1 to M11.1	2	4.00		-66.27	-66.53							-59.38	-21.25	38.13
			4.00						-67.02	-66.80			-59.90	-21.25	38.65
	HE160, M0.1 to M11.1	3	4.00		-65.95	-65.98	-66.89						-57.48	-21.25	36.23
			4.00						-66.66	-66.70	-66.30		-57.78	-21.25	36.53

	HE160, M0.1 to M11.1	4	4.00	-67.07	-66.47	-66.74	-65.74						-56.45	-21.25	35.20
			4.00					-65.75	-66.68	-67.25	-66.34		-56.45	-21.25	35.20
	HE160, M0.1 to M11.1-BF	2	7.01		-66.43	-66.59							-56.49	-21.25	35.24
			7.01						-66.69	-66.79			-56.72	-21.25	35.47
	HE160, M0.1 to M11.1-BF	3	8.77		-66.93	-66.12	-67.11						-53.16	-21.25	31.91
			8.77						-66.99	-67.41	-66.35		-53.35	-21.25	32.10
	HE160, M0.1 to M11.1-BF	4	10.02	-66.23	-65.79	-66.76	-66.36						-50.23	-21.25	28.98
			10.02					-66.55	-67.08	-66.79	-66.09		-50.57	-21.25	29.32

5570 MHz	non HT160, 6 to 54 Mbps	1	4.00		-65.22								-61.22	-21.25	39.97
			4.00						-65.83				-61.83	-21.25	40.58
	non HT160, 6 to 54 Mbps	2	4.00		-66.71	-66.95							-59.82	-21.25	38.57
			4.00						-66.67	-66.72			-59.69	-21.25	38.44
	non HT160, 6 to 54 Mbps	3	4.00		-66.39	-66.32	-66.77						-57.72	-21.25	36.47
			4.00						-67.04	-67.06	-65.68		-57.77	-21.25	36.52
	non HT160, 6 to 54 Mbps	4	4.00	-66.66	-66.89	-66.52	-65.63						-56.38	-21.25	35.13
			4.00					-66.87	-66.73	-66.37	-66.19		-56.51	-21.25	35.26
	VHT160, M0.1 to M9.1	1	4.00		-67.03								-63.03	-21.25	41.78
			4.00						-66.63				-62.63	-21.25	41.38
	VHT160, M0.1 to M9.1	2	4.00		-66.39	-66.27							-59.32	-21.25	38.07
			4.00						-67.33	-66.84			-60.07	-21.25	38.82
	VHT160, M0.1 to M9.1	3	4.00		-66.34	-66.62	-67.09						-57.90	-21.25	36.65
			4.00						-66.38	-66.26	-67.11		-57.80	-21.25	36.55
	VHT160, M0.1 to M9.1	4	4.00	-67.38	-67.32	-66.45	-66.86						-56.97	-21.25	35.72
			4.00					-67.64	-66.41	-66.86	-66.55		-56.82	-21.25	35.57
	VHT160, M0.1 to M9.1-BF	2	7.01		-66.82	-67.41							-57.08	-21.25	35.83
			7.01						-67.16	-67.46			-57.29	-21.25	36.04
	VHT160, M0.1 to M9.1-BF	3	8.77		-66.69	-65.26	-66.71						-52.63	-21.25	31.38
			8.77						-66.38	-66.90	-66.65		-53.10	-21.25	31.85
	VHT160, M0.1 to M9.1-BF	4	10.02	-66.70	-67.41	-66.36	-66.51						-50.68	-21.25	29.43
			10.02					-66.51	-67.10	-66.43	-66.97		-50.70	-21.25	29.45
	HE160, M0.1 to M11.1	1	4.00		-66.98								-62.98	-21.25	41.73
			4.00						-66.62				-62.62	-21.25	41.37
	HE160, M0.1 to M11.1	2	4.00		-66.74	-66.43							-59.57	-21.25	38.32
			4.00						-66.86	-66.65			-59.74	-21.25	38.49

	HE160, M0.1 to M11.1	3	4.00		-66.96	-66.50	-66.22						-57.78	-21.25	36.53
			4.00						-66.50	-66.32	-67.09		-57.86	-21.25	36.61
	HE160, M0.1 to M11.1	4	4.00	-66.92	-66.84	-66.47	-66.56						-56.67	-21.25	35.42
			4.00					-67.57	-65.40	-66.99	-66.20		-56.44	-21.25	35.19
	HE160, M0.1 to M11.1-BF	2	7.01		-64.57	-66.80							-55.52	-21.25	34.27
			7.01						-65.66	-66.11			-55.86	-21.25	34.61
	HE160, M0.1 to M11.1-BF	3	8.77		-67.09	-65.04	-66.46						-52.57	-21.25	31.32
			8.77						-67.28	-66.13	-66.87		-53.19	-21.25	31.94
	HE160, M0.1 to M11.1-BF	4	10.02	-66.10	-65.27	-65.69	-66.19						-49.76	-21.25	28.51
			10.02					-66.90	-67.13	-67.03	-66.67		-50.89	-21.25	29.64

Conducted Emission Test Data (Average)

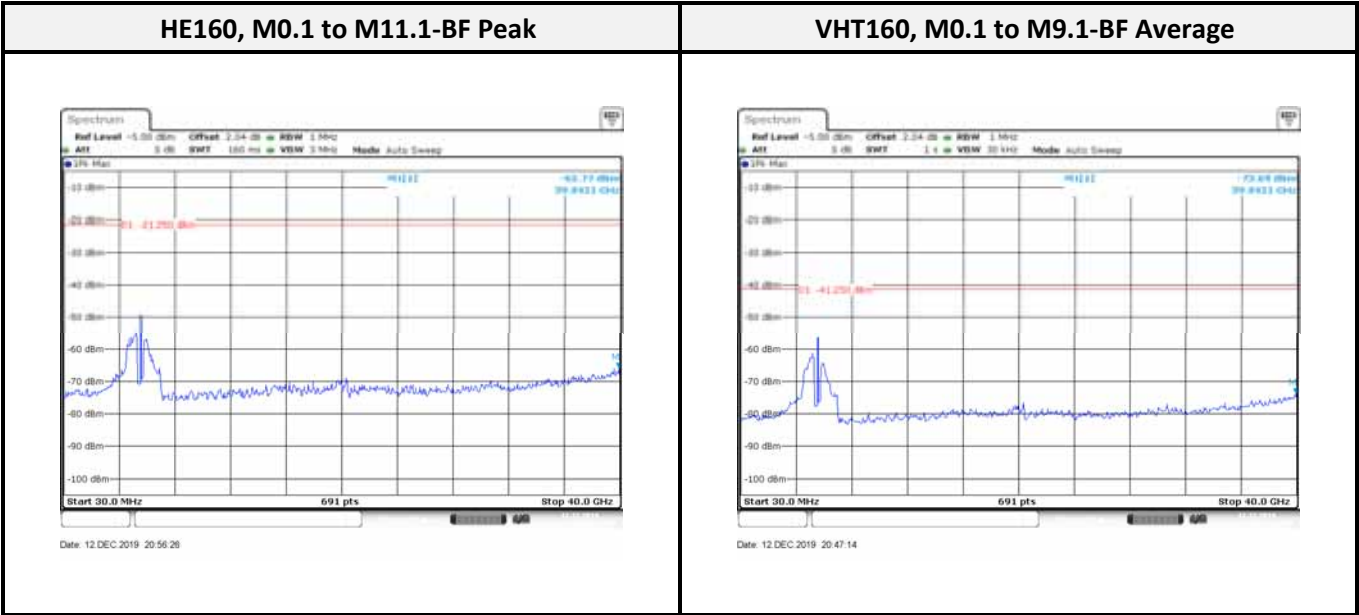
Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	4.00		-74.53							0.51	-70.02	-41.25	28.77
			4.00						-74.31			0.51	-69.80	-41.25	28.55
	non HT160, 6 to 54 Mbps	2	4.00		-74.36	-74.56						0.51	-66.94	-41.25	25.69
			4.00						-74.51	-74.33		0.51	-66.90	-41.25	25.65
	non HT160, 6 to 54 Mbps	3	4.00		-74.38	-74.46	-74.53					0.51	-65.17	-41.25	23.92
			4.00						-74.23	-74.46	-74.03	0.51	-64.96	-41.25	23.71
	non HT160, 6 to 54 Mbps	4	4.00	-74.33	-73.91	-74.64	-74.40					0.51	-63.78	-41.25	22.53
			4.00					-74.47	-74.34	-74.09	-74.45	0.51	-63.80	-41.25	22.55
	VHT160, M0.1 to M9.1	1	4.00		-73.51							0.51	-69.00	-41.25	27.75
			4.00						-73.76			0.51	-69.25	-41.25	28.00
	VHT160, M0.1 to M9.1	2	4.00		-74.68	-74.20						0.51	-66.91	-41.25	25.66
			4.00						-73.66	-74.18		0.51	-66.39	-41.25	25.14
	VHT160, M0.1 to M9.1	3	4.00		-74.20	-74.74	-74.17					0.51	-65.08	-41.25	23.83
			4.00						-74.20	-74.47	-74.39	0.51	-65.07	-41.25	23.82
	VHT160, M0.1 to M9.1	4	4.00	-74.39	-74.34	-74.42	-74.64					0.51	-63.92	-41.25	22.67
			4.00					-74.43	-74.38	-73.90	-74.06	0.51	-63.65	-41.25	22.40
	VHT160, M0.1 to M9.1-BF	2	7.01		-74.27	-74.67						0.51	-63.93	-41.25	22.68

			7.01						-74.70	-74.60		0.51	-64.11	-41.25	22.86
	VHT160, M0.1 to M9.1-BF	3	8.77		-73.83	-74.31	-74.48					0.51	-60.14	-41.25	18.89
			8.77						-74.28	-74.38	-74.09	0.51	-60.20	-41.25	18.95
	VHT160, M0.1 to M9.1-BF	4	10.02	-74.45	-74.18	-74.49	-74.16					0.51	-57.77	-41.25	16.52
			10.02					-74.60	-73.85	-74.49	-74.16	0.51	-57.71	-41.25	16.46
	HE160, M0.1 to M11.1	1	4.00		-74.01							0.27	-69.74	-41.25	28.49
			4.00						-73.43			0.27	-69.16	-41.25	27.91
	HE160, M0.1 to M11.1	2	4.00		-74.84	-74.02						0.27	-67.13	-41.25	25.88
			4.00						-74.29	-74.19		0.27	-66.96	-41.25	25.71
	HE160, M0.1 to M11.1	3	4.00		-74.13	-73.87	-74.12					0.27	-65.00	-41.25	23.75
			4.00						-74.31	-74.22	-74.58	0.27	-65.32	-41.25	24.07
	HE160, M0.1 to M11.1	4	4.00	-73.96	-74.53	-74.29	-74.14					0.27	-63.94	-41.25	22.69
			4.00					-74.22	-74.33	-74.64	-74.49	0.27	-64.13	-41.25	22.88
	HE160, M0.1 to M11.1-BF	2	7.01		-73.53	-74.19						0.27	-63.55	-41.25	22.30
			7.01						-74.67	-74.41		0.27	-64.25	-41.25	23.00
	HE160, M0.1 to M11.1-BF	3	8.77		-74.54	-73.56	-74.33					0.27	-60.31	-41.25	19.06
			8.77						-74.39	-74.27	-74.30	0.27	-60.51	-41.25	19.26
	HE160, M0.1 to M11.1-BF	4	10.02	-74.38	-74.42	-74.23	-73.38					0.27	-57.77	-41.25	16.52
			10.02					-74.57	-74.55	-73.94	-74.46	0.27	-58.06	-41.25	16.81

5570 MHz	non HT160, 6 to 54 Mbps	1	4.00		-74.38							0.51	-69.87	-41.25	28.62
			4.00						-73.67			0.51	-69.16	-41.25	27.91
	non HT160, 6 to 54 Mbps	2	4.00		-74.57	-74.19						0.51	-66.85	-41.25	25.60
			4.00						-74.57	-74.15		0.51	-66.83	-41.25	25.58
	non HT160, 6 to 54 Mbps	3	4.00		-74.51	-74.70	-74.54					0.51	-65.30	-41.25	24.05
			4.00						-74.56	-74.43	-74.19	0.51	-65.11	-41.25	23.86
	non HT160, 6 to 54 Mbps	4	4.00	-74.19	-74.63	-73.95	-73.57					0.51	-63.54	-41.25	22.29
			4.00					-73.80	-74.48	-74.59	-73.94	0.51	-63.66	-41.25	22.41
	VHT160, M0.1 to M9.1	1	4.00		-74.41							0.51	-69.90	-41.25	28.65
			4.00						-74.16			0.51	-69.65	-41.25	28.40
	VHT160, M0.1 to M9.1	2	4.00		-74.18	-74.23						0.51	-66.68	-41.25	25.43
			4.00						-74.62	-74.17		0.51	-66.87	-41.25	25.62
	VHT160, M0.1 to M9.1	3	4.00		-74.37	-74.77	-74.14					0.51	-65.14	-41.25	23.89
			4.00						-74.06	-73.83	-74.32	0.51	-64.78	-41.25	23.53
	VHT160, M0.1 to M9.1	4	4.00	-74.12	-74.43	-74.79	-74.29					0.51	-63.87	-41.25	22.62

			4.00					-74.52	-74.33	-74.39	-74.05	0.51	-63.78	-41.25	22.53
	VHT160, M0.1 to M9.1-BF	2	7.01		-73.92	-74.46						0.51	-63.65	-41.25	22.40
			7.01						-74.06	-74.51		0.51	-63.74	-41.25	22.49
	VHT160, M0.1 to M9.1-BF	3	8.77		-74.26	-74.50	-74.72					0.51	-60.44	-41.25	19.19
			8.77						-74.24	-74.22	-74.45	0.51	-60.25	-41.25	19.00
	VHT160, M0.1 to M9.1-BF	4	10.02	-73.79	-73.75	-74.53	-74.03					0.51	-57.46	-41.25	16.21
			10.02					-74.35	-74.52	-74.55	-74.47	0.51	-57.92	-41.25	16.67
	HE160, M0.1 to M11.1	1	4.00		-74.42							0.27	-70.15	-41.25	28.90
			4.00						-74.44			0.27	-70.17	-41.25	28.92
	HE160, M0.1 to M11.1	2	4.00		-74.08	-74.29						0.27	-66.90	-41.25	25.65
			4.00						-74.72	-74.64		0.27	-67.40	-41.25	26.15
	HE160, M0.1 to M11.1	3	4.00		-74.61	-74.28	-74.08					0.27	-65.28	-41.25	24.03
			4.00						-74.03	-74.00	-74.42	0.27	-65.10	-41.25	23.85
	HE160, M0.1 to M11.1	4	4.00	-74.58	-74.08	-74.75	-74.20					0.27	-64.10	-41.25	22.85
			4.00					-74.38	-74.11	-74.30	-74.48	0.27	-64.02	-41.25	22.77
	HE160, M0.1 to M11.1-BF	2	7.01		-74.56	-74.20						0.27	-64.08	-41.25	22.83
			7.01						-73.75	-74.58		0.27	-63.86	-41.25	22.61
	HE160, M0.1 to M11.1-BF	3	8.77		-74.40	-74.41	-74.15					0.27	-60.51	-41.25	19.26
			8.77						-74.71	-74.73	-74.16	0.27	-60.71	-41.25	19.46
	HE160, M0.1 to M11.1-BF	4	10.02	-73.00	-74.19	-74.24	-74.39					0.27	-57.61	-41.25	16.36
			10.02					-74.55	-74.67	-73.85	-74.50	0.27	-58.07	-41.25	16.82

For ISED



Note: Record the worst plot in the report.

Conducted Emission Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	4.00		-67.06								-63.06	-21.25	41.81
			4.00						-65.84				-61.84	-21.25	40.59
	non HT160, 6 to 54 Mbps	2	4.00		-66.21	-65.41							-58.78	-21.25	37.53
			4.00						-65.80	-66.61			-59.17	-21.25	37.92
	non HT160, 6 to 54 Mbps	3	4.00		-66.45	-66.59	-67.13						-57.94	-21.25	36.69
			4.00						-66.83	-66.76	-65.56		-57.57	-21.25	36.32
	non HT160, 6 to 54 Mbps	4	4.00	-65.99	-66.96	-66.43	-66.21						-56.36	-21.25	35.11
			4.00					-66.07	-66.38	-67.19	-67.17		-56.65	-21.25	35.40
	VHT160, M0.1 to M9.1	1	4.00		-67.32								-63.32	-21.25	42.07
			4.00						-66.25				-62.25	-21.25	41.00
	VHT160, M0.1 to M9.1	2	4.00		-66.70	-67.31							-59.98	-21.25	38.73
			4.00						-67.02	-67.31			-60.15	-21.25	38.90
	VHT160, M0.1 to M9.1	3	4.00		-66.80	-66.41	-66.67						-57.85	-21.25	36.60
			4.00						-66.75	-66.83	-67.22		-58.16	-21.25	36.91
	VHT160, M0.1 to M9.1	4	4.00	-66.71	-66.71	-67.63	-66.56						-56.86	-21.25	35.61
			4.00					-66.53	-66.48	-66.93	-65.41		-56.28	-21.25	35.03
	VHT160, M0.1 to M9.1-BF	2	7.01		-66.45	-66.56							-56.48	-21.25	35.23
			7.01						-66.59	-65.82			-56.17	-21.25	34.92
	VHT160, M0.1 to M9.1-BF	3	8.77		-67.21	-66.53	-66.75						-53.28	-21.25	32.03
			8.77						-66.62	-66.94	-65.38		-52.72	-21.25	31.47
	VHT160, M0.1 to M9.1-BF	4	10.02	-66.96	-67.20	-66.70	-66.73						-50.85	-21.25	29.60
			10.02					-66.68	-66.63	-67.09	-67.13		-50.83	-21.25	29.58
	HE160, M0.1 to M11.1	1	4.00		-67.26								-63.26	-21.25	42.01
			4.00						-66.64				-62.64	-21.25	41.39
	HE160, M0.1 to M11.1	2	4.00		-66.15	-66.48							-59.30	-21.25	38.05
			4.00						-67.28	-66.47			-59.84	-21.25	38.59
	HE160, M0.1 to M11.1	3	4.00		-67.49	-66.02	-66.54						-57.87	-21.25	36.62
			4.00						-66.49	-66.57	-67.03		-57.92	-21.25	36.67

	HE160, M0.1 to M11.1	4	4.00	-66.94	-66.59	-67.32	-66.79						-56.88	-21.25	35.63
			4.00					-67.00	-66.46	-66.18	-66.37		-56.47	-21.25	35.22
	HE160, M0.1 to M11.1-BF	2	7.01		-66.24	-66.35							-56.27	-21.25	35.02
			7.01						-66.42	-66.09			-56.23	-21.25	34.98
	HE160, M0.1 to M11.1-BF	3	8.77		-66.34	-66.71	-65.36						-52.56	-21.25	31.31
			8.77						-66.52	-66.60	-66.56		-53.02	-21.25	31.77
	HE160, M0.1 to M11.1-BF	4	10.02	-67.17	-66.84	-66.77	-66.94						-50.89	-21.25	29.64
			10.02					-66.87	-66.74	-66.86	-65.77		-50.49	-21.25	29.24

Conducted Emission Test Data (Average)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	4.00		-74.45							0.51	-69.94	-41.25	28.69
			4.00						-74.63			0.51	-70.12	-41.25	28.87
	non HT160, 6 to 54 Mbps	2	4.00		-73.55	-73.97						0.51	-66.23	-41.25	24.98
			4.00						-74.44	-74.21		0.51	-66.80	-41.25	25.55
	non HT160, 6 to 54 Mbps	3	4.00		-73.99	-73.95	-74.83					0.51	-64.96	-41.25	23.71
			4.00						-74.19	-74.57	-74.13	0.51	-65.01	-41.25	23.76
	non HT160, 6 to 54 Mbps	4	4.00	-73.99	-74.30	-74.13	-74.21					0.51	-63.62	-41.25	22.37
			4.00					-74.68	-74.49	-74.50	-74.64	0.51	-64.05	-41.25	22.80
	VHT160, M0.1 to M9.1	1	4.00		-74.24							0.51	-69.73	-41.25	28.48
			4.00						-74.47			0.51	-69.96	-41.25	28.71
	VHT160, M0.1 to M9.1	2	4.00		-74.54	-74.15						0.51	-66.82	-41.25	25.57
			4.00						-74.05	-74.62		0.51	-66.80	-41.25	25.55
	VHT160, M0.1 to M9.1	3	4.00		-74.06	-74.07	-74.05					0.51	-64.78	-41.25	23.53
			4.00						-73.86	-74.14	-74.34	0.51	-64.83	-41.25	23.58
	VHT160, M0.1 to M9.1	4	4.00	-74.82	-73.95	-74.34	-73.69					0.51	-63.65	-41.25	22.40
			4.00					-74.52	-74.57	-74.53	-74.38	0.51	-63.97	-41.25	22.72
	VHT160, M0.1 to M9.1-BF	2	7.01		-74.10	-74.06						0.51	-63.55	-41.25	22.30
			7.01						-73.87	-74.66		0.51	-63.72	-41.25	22.47

VHT160, M0.1 to M9.1-BF	3	8.77		-74.33	-74.00	-74.66					0.51	-60.27	-41.25	19.02
		8.77						-74.17	-74.30	-73.87	0.51	-60.06	-41.25	18.81
VHT160, M0.1 to M9.1-BF	4	10.02	-74.33	-74.53	-74.32	-74.33					0.51	-57.82	-41.25	16.57
		10.02					-74.27	-73.69	-74.44	-74.16	0.51	-57.58	-41.25	16.33
HE160, M0.1 to M11.1	1	4.00		-74.47							0.27	-70.20	-41.25	28.95
		4.00						-74.63			0.27	-70.36	-41.25	29.11
HE160, M0.1 to M11.1	2	4.00		-74.17	-74.14						0.27	-66.88	-41.25	25.63
		4.00						-74.39	-74.50		0.27	-67.16	-41.25	25.91
HE160, M0.1 to M11.1	3	4.00		-74.56	-74.18	-74.46					0.27	-65.36	-41.25	24.11
		4.00						-74.32	-74.40	-74.64	0.27	-65.41	-41.25	24.16
HE160, M0.1 to M11.1	4	4.00	-74.60	-74.18	-74.54	-74.55					0.27	-64.17	-41.25	22.92
		4.00					-74.52	-73.98	-73.61	-74.57	0.27	-63.86	-41.25	22.61
HE160, M0.1 to M11.1-BF	2	7.01		-74.36	-74.27						0.27	-64.02	-41.25	22.77
		7.01						-73.00	-74.54		0.27	-63.41	-41.25	22.16
HE160, M0.1 to M11.1-BF	3	8.77		-74.34	-74.25	-74.52					0.27	-60.56	-41.25	19.31
		8.77						-74.22	-74.14	-73.73	0.27	-60.21	-41.25	18.96
HE160, M0.1 to M11.1-BF	4	10.02	-74.68	-74.78	-74.48	-73.12					0.27	-57.90	-41.25	16.65
		10.02					-74.74	-74.56	-74.69	-74.38	0.27	-58.28	-41.25	17.03

6 FCC §15.407(a)(e), RSS-Gen Sec 6.7, RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Emission Bandwidth and Occupied Bandwidth

6.1 Applicable Standard

According to FCC §15.407(a),

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.

As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

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.

6.2 Test Procedure

Emission Bandwidth (EBW)

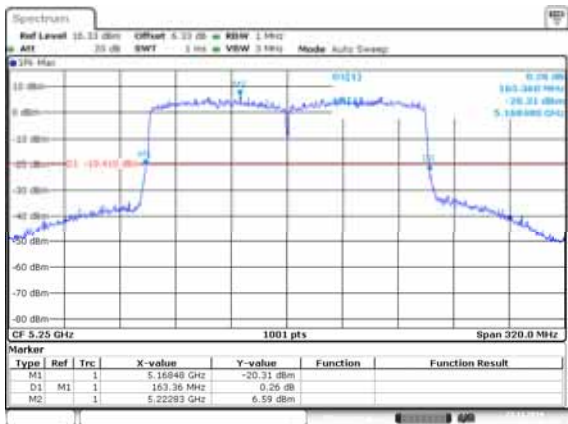
- a) Set RBW = approximately 1% of the emission bandwidth; b) Set the VBW > RBW; c) Detector = Peak;
- d) Trace mode = max hold; e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%;

99% Occupied Bandwidth

The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99% occupied bandwidth is *required* only as a condition for using the optional band-edge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

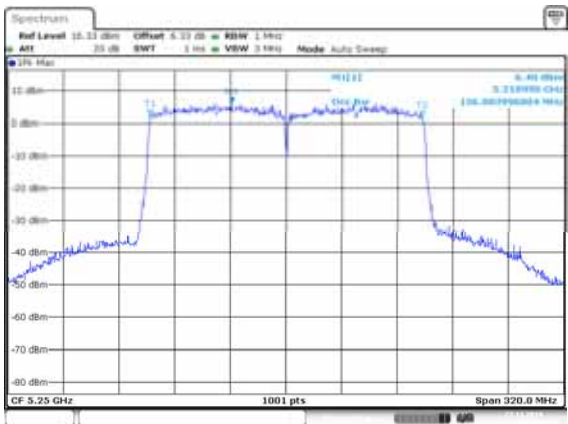
6.3 Test Plot and Data

HE160, M0 to M9 ss=1 5250 MHz 26dB BW



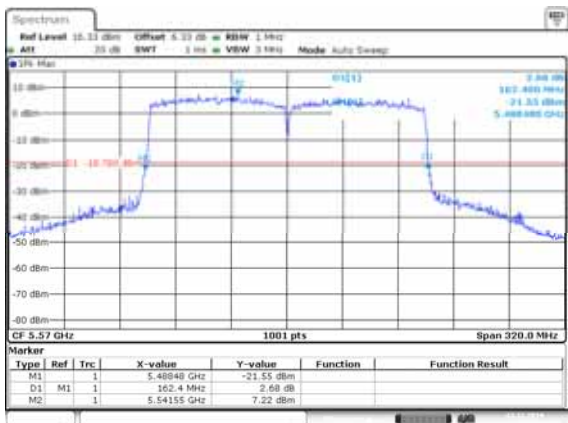
Date: 27 NOV 2019 14:43:48

HE160, M0 to M9 ss=1 5250 MHz OCB



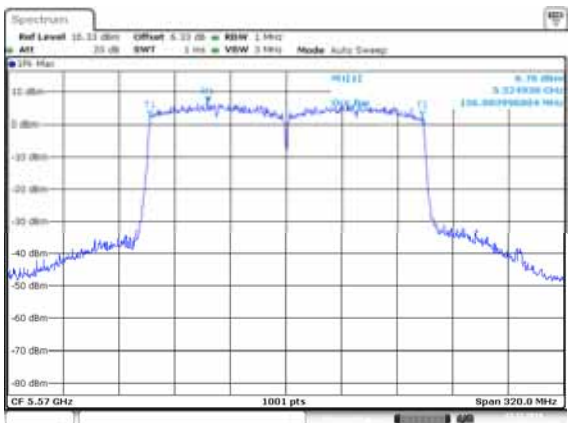
Date: 27 NOV 2019 14:33:05

HE160, M0 to M9 ss=1 5570 MHz 26dB BW



Date: 13 DEC 2019 15:26:19

HE160, M0 to M9 ss=1 5570 MHz OCB



Date: 13 DEC 2019 15:24:17

Note: Record the worst plot in the report.

For FCC/NCC/ISED

Frequency (MHz)	Mode	Data Rate (Mbps)	26dB BW (MHz)	99% BW (MHz)
5250	non HT160, 6 to 54 Mbps	6	163.04	154.73
		MIN	165.28	151.36
		B1	82.24	75.60
		B2	83.04	75.76
	VHT160, M0 to M9 ss=1	m0	163.04	154.41
		MIN	165.44	150.72
		B1	82.56	75.28
		B2	82.88	75.44
	HE160, M0 to M9 ss=1	h0	163.36	156.00
		MIN	166.56	154.56
		B1	83.20	77.20
		B2	83.36	77.36
5570	non HT160, 6 to 54 Mbps	6	162.72	154.73
		MIN	165.28	151.36
		B3	82.72	75.76
		B3	82.56	75.60
	VHT160, M0 to M9 ss=1	m0	162.4	154.09
		MIN	165.76	150.88
		B3	83.2	75.44
		B3	82.56	75.44
	HE160, M0 to M9 ss=1	h0	162.40	156.00
		MIN	165.76	154.24
		B3	82.72	77.04
		B3	83.04	77.2

7 FCC §15.407(a)(1), RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Conducted Transmitter Output Power

7.1 Applicable Standard

According to FCC §15.407(a),

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.

As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

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. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

Devices, other than devices installed in vehicles, shall comply with the following:

a) The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less;

b) The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

7.2 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.

7.3 Test Data

FCC/NCC:

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Max ower (dBm)	Tx 2 Max ower (dBm)	Tx 3 Max ower (dBm)	Tx 4 Max ower (dBm)	Tx 5 Max ower (dBm)	Tx 6 Max ower (dBm)	Tx 7 Max ower (dBm)	Tx 8 Max ower (dBm)	Duty factor	Total Conducted Max power (dBm)	FCC Limit	Margin (dB)	Total Conducted Max EIRP power (dBm)	ISED Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	4.00		11.38							0.51	11.89	30.00	18.12			
			4.00						11.37			0.51	11.88	30.00	18.12			
	non HT160, 6 to 54 Mbps	2	4.00		7.99	8.05						0.51	11.54	30.00	18.46			
			4.00						8.34	8.43		0.51	11.90	30.00	18.10			
	non HT160, 6 to 54 Mbps	3	4.00		8.33	8.43	8.32					0.51	13.64	30.00	16.36			
			4.00						8.32	8.52	7.82	0.51	13.51	30.00	16.49			
	non HT160, 6 to 54 Mbps	4	4.00	4.91	8.24	8.19	8.31					0.51	14.15	30.00	15.85			
			4.00					5.22	8.52	8.74	8.71	0.51	14.55	30.00	15.45			
	VHT160, M0.1 to M9.1	1	4.00		13.00							0.51	13.51	30.00	16.49			
			4.00						12.59			0.51	13.10	30.00	16.90			
	VHT160, M0.1 to M9.1	2	4.00		11.16	10.82						0.51	14.52	30.00	15.48			
			4.00						10.85	11.02		0.51	14.46	30.00	15.54			
	VHT160, M0.1 to M9.1	3	4.00		10.57	10.89	11.04					0.51	16.12	30.00	13.88			
			4.00						10.82	11.09	10.44	0.51	16.07	30.00	13.93			
	VHT160, M0.1 to M9.1	4	4.00	7.58	11.02	10.71	11.00					0.51	16.82	30.00	13.18			
			4.00					7.38	10.54	10.84	10.90	0.51	16.66	30.00	13.34			
	VHT160, M0.1 to M9.1-BF	2	7.01		10.73	10.82						0.51	14.30	30.00	15.70			
			7.01						10.85	11.03		0.51	14.46	30.00	15.54			
	VHT160, M0.1 to M9.1-BF	3	8.77		7.82	7.68	7.87					0.51	13.07	30.00	16.93			
			8.77						7.97	8.13	7.29	0.51	13.09	30.00	16.91			
	VHT160, M0.1 to M9.1-BF	4	10.02	2.73	6.12	5.80	5.66					0.51	11.80	30.00	18.20			
			10.02					2.30	5.32	6.01	6.04	0.51	11.68	30.00	18.32			
	HE160, M0.1 to M11.1	1	4.00		13.07							0.27	13.34	30.00	16.66			
			4.00						12.72			0.27	12.99	30.00	17.01			
	HE160, M0.1 to M11.1	2	4.00		11.20	10.88						0.27	14.32	30.00	15.68			
			4.00						10.92	11.08		0.27	14.28	30.00	15.72			
	HE160, M0.1 to M11.1	3	4.00		11.08	10.67	11.09					0.27	15.99	30.00	14.01			

			4.00						10.89	11.18	10.47	0.27	15.90	30.00	14.10			
	HE160, M0.1 to M11.1	4	4.00	7.55	11.13	10.72	11.01					0.27	16.61	30.00	13.39			
			4.00					7.31	10.60	11.12	10.83	0.27	16.49	30.00	13.51			
	HE160, M0.1 to M11.1-BF	2	7.01		11.21	10.91						0.27	14.34	30.00	15.66			
			7.01						10.90	11.09		0.27	14.28	30.00	15.72			
	HE160, M0.1 to M11.1-BF	3	8.77		8.22	7.73	8.08					0.27	13.06	30.00	16.94			
			8.77						8.05	8.17	7.36	0.27	12.92	30.00	17.08			
	HE160, M0.1 to M11.1-BF	4	10.02	2.74	6.09	5.95	5.60					0.27	11.58	30.00	18.42			
			10.02					2.25	5.43	6.32	6.04	0.27	11.56	30.00	18.44			

5570 MHz	non HT160, 6 to 54 Mbps	1	4.00		11.48							0.51	11.99	23.85	11.86			
			4.00						12.23			0.51	12.74	23.85	11.11			
	non HT160, 6 to 54 Mbps	2	4.00		10.61	10.87						0.51	14.26	23.85	9.59			
			4.00						11.06	10.86		0.51	14.48	23.85	9.37			
	non HT160, 6 to 54 Mbps	3	4.00		10.55	10.82	10.76					0.51	15.99	23.85	7.86			
			4.00						11.06	10.88	11.33	0.51	16.38	23.85	7.47			
	non HT160, 6 to 54 Mbps	4	4.00	7.69	10.45	10.87	10.91					0.51	16.69	23.85	7.16			
			4.00					7.64	11.32	11.45	11.17	0.51	17.18	23.85	6.67			
	VHT160, M0.1 to M9.1	1	4.00		14.09							0.51	14.60	23.85	9.25			
			4.00						14.60			0.51	15.11	23.85	8.74			
	VHT160, M0.1 to M9.1	2	4.00		12.98	13.44						0.51	16.74	23.85	7.11			
			4.00						13.71	13.38		0.51	17.07	23.85	6.78			
	VHT160, M0.1 to M9.1	3	4.00		12.34	12.44	12.45					0.51	17.69	23.85	6.16			
			4.00						12.74	12.36	12.93	0.51	17.97	23.85	5.88			
	VHT160, M0.1 to M9.1	4	4.00	9.08	12.10	12.46	12.60					0.51	18.30	23.85	5.55			
			4.00					8.75	12.48	12.51	12.32	0.51	18.30	23.85	5.55			
	VHT160, M0.1 to M9.1-BF	2	7.01		12.00	12.51						0.51	15.78	23.85	8.07			
			7.01						12.70	12.38		0.51	16.06	23.85	7.79			
	VHT160, M0.1 to M9.1-BF	3	8.77		11.30	11.42	11.80					0.51	16.79	23.85	7.06			
			8.77						11.70	11.50	11.97	0.51	17.01	23.85	6.84			
	VHT160, M0.1 to M9.1-BF	4	10.02	7.18	10.01	10.48	10.58					0.51	16.29	23.85	7.56			
			10.02					6.76	10.47	10.63	10.32	0.51	16.33	23.85	7.52			
	HE160, M0.1 to M11.1	1	4.00		15.12							0.27	15.39	23.85	8.46			
			4.00						15.70			0.27	15.97	23.85	7.88			
	HE160, M0.1 to M11.1	2	4.00		13.04	13.48						0.27	16.55	23.85	7.30			

			4.00						13.77	13.43		0.27	16.88	23.85	6.97			
	HE160, M0.1 to M11.1	3	4.00		12.41	12.57	12.51					0.27	17.54	23.85	6.31			
			4.00						12.77	12.41	13.01	0.27	17.78	23.85	6.07			
	HE160, M0.1 to M11.1	4	4.00	9.04	12.14	12.40	12.65					0.27	18.06	23.85	5.79			
			4.00					8.99	12.47	12.46	12.60	0.27	18.15	23.85	5.70			
	HE160, M0.1 to M11.1-BF	2	7.01		12.04	12.56						0.27	15.58	23.85	8.27			
			7.01						12.76	12.44		0.27	15.88	23.85	7.97			
	HE160, M0.1 to M11.1-BF	3	8.77		10.92	11.44	11.67					0.27	16.39	23.85	7.46			
			8.77						11.74	11.56	12.01	0.27	16.82	23.85	7.03			
	HE160, M0.1 to M11.1-BF	4	10.02	7.14	10.26	10.44	10.66					0.27	16.12	23.85	7.73			
			10.02					7.01	10.45	10.54	10.60	0.27	16.17	23.85	7.68			

ISED:

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Max ower (dBm)	Tx 2 Max ower (dBm)	Tx 3 Max ower (dBm)	Tx 4 Max ower (dBm)	Tx 5 Max ower (dBm)	Tx 6 Max ower (dBm)	Tx 7 Max ower (dBm)	Tx 8 Max ower (dBm)	Duty factor	Total Conducted Max power (dBm)	FCC Limit	Margin (dB)	Total Conducted Max EIRP power (dBm)	ISED Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	4.00		11.31							0.51				11.82	23.00	7.18
			4.00						11.47			0.51				11.98	30.00	14.02
	non HT160, 6 to 54 Mbps	2	4.00		7.93	8.16						0.51				11.57	23.00	7.43
			4.00						8.28	8.25		0.51				11.79	30.00	14.21
	non HT160, 6 to 54 Mbps	3	4.00		8.57	8.19	8.24					0.51				13.62	23.00	5.38
			4.00						8.32	8.33	7.86	0.51				13.46	30.00	12.54
	non HT160, 6 to 54 Mbps	4	4.00	4.73	8.09	8.03	8.27					0.51				14.03	23.00	4.97
			4.00					5.19	8.46	8.53	8.75	0.51				14.48	30.00	11.52
	VHT160, M0.1 to M9.1	1	4.00		12.85							0.51				13.36	23.00	5.64
			4.00						12.63			0.51				13.14	30.00	12.86
	VHT160, M0.1 to M9.1	2	4.00		10.99	10.65						0.51				14.34	23.00	4.66
			4.00						10.92	10.87		0.51				14.41	30.00	11.59
	VHT160, M0.1 to M9.1	3	4.00		10.70	10.57	11.08					0.51				16.07	23.00	2.93
			4.00						10.90	10.95	10.46	0.51				16.05	30.00	9.95
	VHT160, M0.1 to M9.1	4	4.00	7.42	10.87	10.49	10.82					0.51				16.64	23.00	2.36
			4.00					7.40	10.60	10.67	10.91	0.51				16.64	30.00	9.36

VHT160, M0.1 to M9.1-BF	2	7.01		10.73	10.82						0.51				14.30	23.00	1.80
		7.01						10.85	11.03		0.51				14.46	30.00	8.58
VHT160, M0.1 to M9.1-BF	3	8.77		7.82	7.68	7.87					0.51				13.07	23.00	1.34
		8.77						7.97	8.13	7.29	0.51				13.09	30.00	8.15
VHT160, M0.1 to M9.1-BF	4	10.02	2.73	6.12	5.80	5.66					0.51				11.80	23.00	2.18
		10.02					2.30	5.32	6.01	6.04	0.51				11.68	30.00	9.17
HE160, M0.1 to M11.1	1	4.00		13.07							0.27				13.34	23.00	5.84
		4.00						12.72			0.27				12.99	30.00	12.92
HE160, M0.1 to M11.1	2	4.00		11.20	10.88						0.27				14.32	23.00	5.22
		4.00						10.92	11.08		0.27				14.28	30.00	11.76
HE160, M0.1 to M11.1	3	4.00		11.08	10.67	11.09					0.27				15.99	23.00	3.35
		4.00						10.89	11.18	10.47	0.27				15.90	30.00	10.14
HE160, M0.1 to M11.1	4	4.00	7.55	11.13	10.72	11.01					0.27				16.61	23.00	2.52
		4.00					7.31	10.60	11.12	10.83	0.27				16.49	30.00	9.52
HE160, M0.1 to M11.1-BF	2	7.01		11.21	10.91						0.27				14.34	23.00	2.22
		7.01						10.90	11.09		0.27				14.28	30.00	8.76
HE160, M0.1 to M11.1-BF	3	8.77		8.22	7.73	8.08					0.27				13.06	23.00	1.79
		8.77						8.05	8.17	7.36	0.27				12.92	30.00	8.31
HE160, M0.1 to M11.1-BF	4	10.02	2.74	6.09	5.95	5.60					0.27				11.58	23.00	2.34
		10.02					2.25	5.43	6.32	6.04	0.27				11.56	30.00	9.30

8 FCC §2.1051, §15.407(b), RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Conducted Band Edge and MASK

8.1 Applicable Standard

According to FCC §15.407(b):

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.

For transmitters operating in the 5.725-5.85 GHz band: 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.

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.

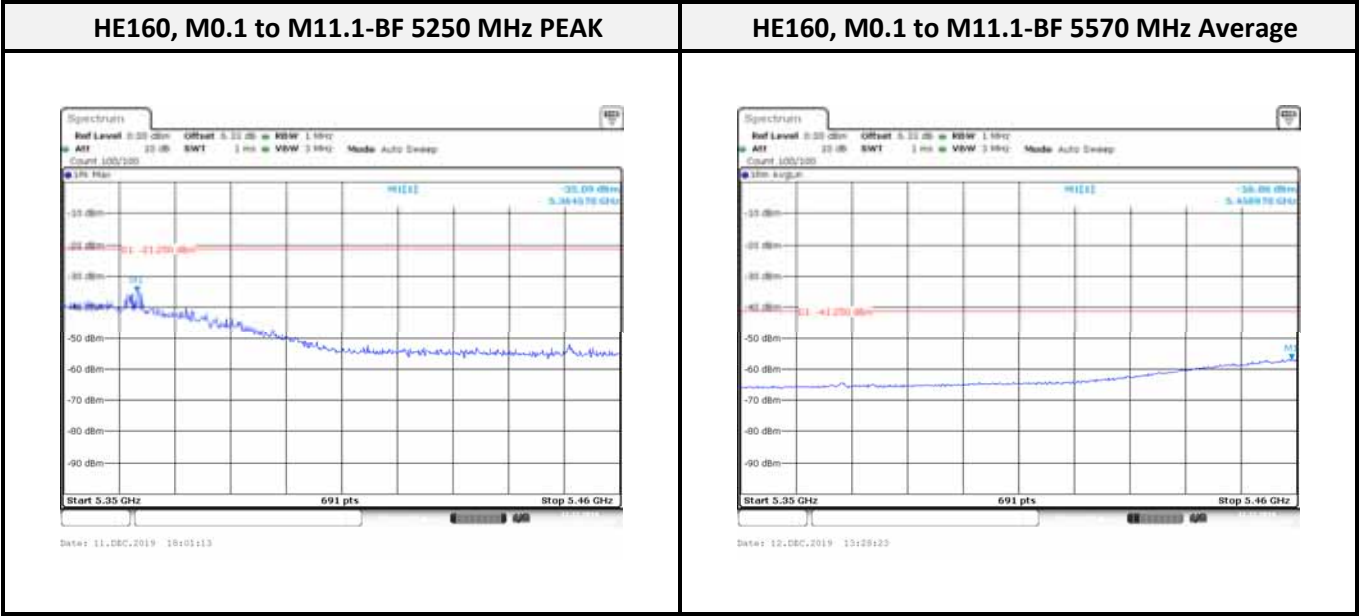
In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

8.2 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Place the radio in continuous transmit mode. Use the procedures in KDB 789033 D02 General UNII Test Procedures New Rules v01r04 to substitute conducted measurements in place of radiated measurements.
3. Configure Spectrum analyzer as per test parameters below (be sure to enter all losses between the transmitter output and the spectrum analyzer).
4. Record the marker. Also measure any emissions in the restricted bands.
5. The “measure-and-sum technique” is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units. The worst case output is recorded.
6. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance.
Also measure any emissions in the restricted bands
7. Capture graphs and record pertinent measurement data.

8.3 Test Data

For FCC/NCC



Note: Record the worst plot in the report.

Conducted Band Edge Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZHUW 052C	non HT160, 6 to 54 Mbps	1	4.00		-36.14								-32.14	-21.25	10.89
			4.00						-35.90				-31.90	-21.25	10.65
	non HT160, 6 to 54 Mbps	2	4.00		-43.67	-40.74							-34.95	-21.25	13.70
			4.00						-37.24	-37.91			-30.55	-21.25	9.30
	non HT160, 6 to 54 Mbps	3	4.00		-41.59	-40.56	-39.52						-31.70	-21.25	10.45
			4.00						-36.58	-37.43	-45.85		-29.70	-21.25	8.45
	non HT160, 6 to 54 Mbps	4	4.00	-43.46	-42.45	-39.90	-38.96						-30.80	-21.25	9.55
			4.00					-44.36	-39.86	-43.22	-46.11		-32.73	-21.25	11.48
	VHT160, M0.1 to M9.1	1	4.00		-38.01								-34.01	-21.25	12.76
			4.00						-33.42				-29.42	-21.25	8.17
	VHT160, M0.1 to M9.1	2	4.00		-42.24	-42.72							-35.46	-21.25	14.21
			4.00						-40.33	-37.31			-31.55	-21.25	10.30
	VHT160, M0.1 to M9.1	3	4.00		-44.09	-42.27	-39.91						-32.98	-21.25	11.73
			4.00						-40.49	-37.99	-39.57		-30.45	-21.25	9.20
	VHT160, M0.1 to M9.1	4	4.00	-43.20	-42.15	-43.04	-41.29						-32.33	-21.25	11.08
			4.00					-38.70	-40.33	-36.59	-46.83		-29.30	-21.25	8.05
	VHT160, M0.1 to M9.1-BF	2	7.01		-40.98	-42.90							-31.82	-21.25	10.57
			7.01						-40.34	-36.88			-28.25	-21.25	7.00
	VHT160, M0.1 to M9.1-BF	3	8.77		-48.99	-47.53	-46.77						-34.13	-21.25	12.88
			8.77						-45.87	-45.70	-49.11		-33.09	-21.25	11.84
	VHT160, M0.1 to M9.1-BF	4	10.02	-52.19	-49.25	-47.90	-50.51						-33.64	-21.25	12.39
			10.02					-48.64	-45.57	-47.00	-47.09		-30.90	-21.25	9.65
	HE160, M0.1 to M11.1	1	4.00		-38.48								-34.48	-21.25	13.23
			4.00						-33.51				-29.51	-21.25	8.26
	HE160, M0.1 to M11.1	2	4.00		-41.64	-42.00							-34.80	-21.25	13.55
			4.00						-37.91	-35.55			-29.56	-21.25	8.31
	HE160, M0.1 to M11.1	3	4.00		-42.26	-42.66	-40.96						-33.13	-21.25	11.88
			4.00						-38.25	-34.89	-38.69		-28.15	-21.25	6.90

	HE160, M0.1 to M11.1	4	4.00	-44.29	-40.89	-42.94	-38.92						-31.26	-21.25	10.01
			4.00					-39.71	-38.52	-37.12	-46.24		-29.32	-21.25	8.07
	HE160, M0.1 to M11.1-BF	2	7.01		-42.19	-43.05							-32.58	-21.25	11.33
			7.01						-38.51	-35.09			-26.45	-21.25	5.20
	HE160, M0.1 to M11.1-BF	3	8.77		-48.18	-47.25	-44.53						-32.82	-21.25	11.57
			8.77						-43.90	-42.31	-48.98		-30.73	-21.25	9.48
	HE160, M0.1 to M11.1-BF	4	10.02	-49.38	-48.81	-44.51	-49.37						-31.43	-21.25	10.18
			10.02					-46.96	-43.60	-43.37	-43.78		-28.17	-21.25	6.92

55/70 MHz	non HT160, 6 to 54 Mbps	1	4.00		-37.17								-33.17	-21.25	11.92
			4.00						-49.01				-45.01	-21.25	23.76
	non HT160, 6 to 54 Mbps	2	4.00		-40.63	-36.74							-31.25	-21.25	10.00
			4.00						-49.23	-51.31			-43.14	-21.25	21.89
	non HT160, 6 to 54 Mbps	3	4.00		-40.33	-37.68	-38.91						-30.07	-21.25	8.82
			4.00						-49.07	-50.82	-48.26		-40.49	-21.25	19.24
	non HT160, 6 to 54 Mbps	4	4.00	-43.91	-40.94	-36.91	-38.54						-29.33	-21.25	8.08
			4.00					-44.97	-50.54	-51.64	-50.59		-38.50	-21.25	17.25
	VHT160, M0.1 to M9.1	1	4.00		-30.76								-26.76	-21.25	5.51
			4.00						-39.92				-35.92	-21.25	14.67
	VHT160, M0.1 to M9.1	2	4.00		-43.06	-39.85							-34.15	-21.25	12.90
			4.00						-50.96	-51.28			-44.11	-21.25	22.86
	VHT160, M0.1 to M9.1	3	4.00		-40.80	-40.60	-40.11						-31.72	-21.25	10.47
			4.00						-48.75	-51.35	-49.36		-40.91	-21.25	19.66
	VHT160, M0.1 to M9.1	4	4.00	-44.57	-42.09	-39.35	-40.49						-31.20	-21.25	9.95
			4.00					-45.12	-51.48	-51.36	-49.69		-38.52	-21.25	17.27
	VHT160, M0.1 to M9.1-BF	2	7.01		-42.77	-38.34							-29.99	-21.25	8.74
			7.01						-49.54	-51.57			-40.42	-21.25	19.17
	VHT160, M0.1 to M9.1-BF	3	8.77		-43.92	-43.12	-42.41						-29.57	-21.25	8.32
			8.77						-50.89	-51.37	-50.84		-37.49	-21.25	16.24
	VHT160, M0.1 to M9.1-BF	4	10.02	-46.51	-45.64	-44.60	-44.86						-29.30	-21.25	8.05
			10.02					-45.02	-52.24	-52.08	-50.20		-32.72	-21.25	11.47
	HE160, M0.1 to M11.1	1	4.00		-28.64								-24.64	-21.25	3.39
			4.00						-38.84				-34.84	-21.25	13.59
	HE160, M0.1 to M11.1	2	4.00		-42.95	-36.98							-32.00	-21.25	10.75
			4.00						-49.17	-47.96			-41.51	-21.25	20.26

	HE160, M0.1 to M11.1	3	4.00		-38.36	-35.26	-39.58						-28.57	-21.25	7.32
			4.00						-50.19	-51.06	-48.25		-40.90	-21.25	19.65
	HE160, M0.1 to M11.1	4	4.00	-43.69	-41.42	-35.83	-38.85						-28.95	-21.25	7.70
			4.00					-45.85	-48.09	-49.65	-49.30		-37.93	-21.25	16.68
	HE160, M0.1 to M11.1-BF	2	7.01		-42.31	-36.30							-28.32	-21.25	7.07
			7.01						-49.67	-50.42			-40.01	-21.25	18.76
	HE160, M0.1 to M11.1-BF	3	8.77		-44.88	-43.30	-42.27						-29.81	-21.25	8.56
			8.77						-52.19	-51.54	-49.88		-37.55	-21.25	16.30
	HE160, M0.1 to M11.1-BF	4	10.02	-47.29	-45.99	-43.92	-45.31						-29.42	-21.25	8.17
			10.02					-46.06	-51.02	-51.95	-51.03		-33.26	-21.25	12.01

Conducted Band Edge Test Data (Average)

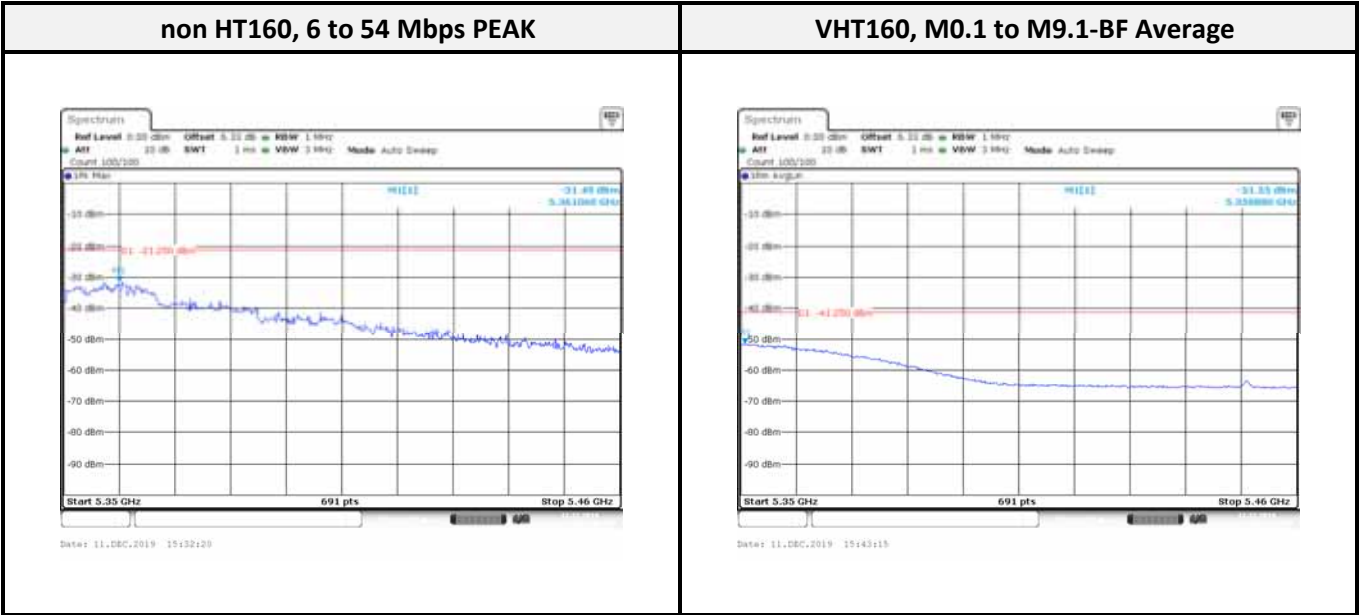
Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZLHM 0676	non HT160, 6 to 54 Mbps	1	4.00		-46.30							1.02	-41.28	-41.25	0.03
			4.00						-50.33			1.02	-45.31	-41.25	4.06
	non HT160, 6 to 54 Mbps	2	4.00		-52.70	-51.40						1.02	-43.97	-41.25	2.72
			4.00						-50.64	-50.38		1.02	-42.48	-41.25	1.23
	non HT160, 6 to 54 Mbps	3	4.00		-52.18	-50.69	-52.03					1.02	-41.79	-41.25	0.54
			4.00						-50.02	-49.61	-56.00	1.02	-41.29	-41.25	0.04
	non HT160, 6 to 54 Mbps	4	4.00	-53.34	-52.17	-52.19	-52.39					1.02	-41.46	-41.25	0.21
			4.00					-57.18	-55.63	-56.35	-59.01	1.02	-45.83	-41.25	4.58
	VHT160, M0.1 to M9.1	1	4.00		-49.24							1.02	-44.22	-41.25	2.97
			4.00						-48.06			1.02	-43.04	-41.25	1.79
	VHT160, M0.1 to M9.1	2	4.00		-53.24	-53.78						1.02	-45.47	-41.25	4.22
			4.00						-53.26	-51.51		1.02	-44.27	-41.25	3.02
	VHT160, M0.1 to M9.1	3	4.00		-54.23	-53.51	-50.87					1.02	-42.83	-41.25	1.58
			4.00						-53.67	-50.89	-56.80	1.02	-43.36	-41.25	2.11
	VHT160, M0.1 to M9.1	4	4.00	-54.96	-53.68	-53.51	-51.47					1.02	-42.18	-41.25	0.93
			4.00					-53.39	-54.32	-50.81	-58.87	1.02	-42.46	-41.25	1.21
	VHT160, M0.1 to M9.1-BF	2	7.01		-54.19	-53.17						1.02	-42.61	-41.25	1.36

			7.01							-53.31	-54.72		1.02	-42.92	-41.25	1.67
	VHT160, M0.1 to M9.1-BF	3	8.77		-58.91	-58.82	-57.64						1.02	-43.86	-41.25	2.61
			8.77							-58.37	-58.35	-61.44	1.02	-44.60	-41.25	3.35
	VHT160, M0.1 to M9.1-BF	4	10.02	-63.26	-60.91	-60.59	-60.94						1.02	-44.25	-41.25	3.00
			10.02					-63.12	-61.21	-61.20	-61.15		1.02	-44.53	-41.25	3.28
	HE160, M0.1 to M11.1	1	4.00		-49.06								0.54	-44.52	-41.25	3.27
			4.00						-47.18				0.54	-42.64	-41.25	1.39
	HE160, M0.1 to M11.1	2	4.00		-52.42	-53.08							0.54	-45.19	-41.25	3.94
			4.00						-52.93	-50.70			0.54	-44.12	-41.25	2.87
	HE160, M0.1 to M11.1	3	4.00		-52.82	-53.45	-51.30						0.54	-43.12	-41.25	1.87
			4.00						-53.17	-50.35	-56.31		0.54	-43.32	-41.25	2.07
	HE160, M0.1 to M11.1	4	4.00	-54.45	-52.70	-53.72	-51.07						0.54	-42.23	-41.25	0.98
			4.00					-53.27	-53.50	-50.51	-58.54		0.54	-42.57	-41.25	1.32
	HE160, M0.1 to M11.1-BF	2	7.01		-52.40	-52.46							0.54	-41.87	-41.25	0.62
			7.01						-52.73	-51.97			0.54	-41.77	-41.25	0.52
	HE160, M0.1 to M11.1-BF	3	8.77		-58.45	-58.22	-56.36						0.54	-43.49	-41.25	2.24
			8.77						-57.97	-57.86	-60.83		0.54	-44.61	-41.25	3.36
	HE160, M0.1 to M11.1-BF	4	10.02	-62.92	-60.05	-59.46	-60.60						0.54	-44.00	-41.25	2.75
			10.02					-62.65	-60.54	-59.90	-60.65		0.54	-44.24	-41.25	2.99

55/70MHz	non HT160, 6 to 54 Mbps	1	4.00		-49.39								1.02	-44.37	-41.25	3.12
			4.00						-63.00				1.02	-57.98	-41.25	16.73
	non HT160, 6 to 54 Mbps	2	4.00		-51.76	-49.87							1.02	-42.68	-41.25	1.43
			4.00						-62.80	-61.32			1.02	-53.97	-41.25	12.72
	non HT160, 6 to 54 Mbps	3	4.00		-52.50	-51.73	-51.98						1.02	-42.27	-41.25	1.02
			4.00						-62.46	-61.08	-59.93		1.02	-51.24	-41.25	9.99
	non HT160, 6 to 54 Mbps	4	4.00	-54.72	-52.38	-52.15	-52.01						1.02	-41.65	-41.25	0.40
			4.00					-65.87	-63.60	-61.61	-60.08		1.02	-51.24	-41.25	9.99
	VHT160, M0.1 to M9.1	1	4.00		-47.32								1.02	-42.30	-41.25	1.05
			4.00						-54.32				1.02	-49.30	-41.25	8.05
	VHT160, M0.1 to M9.1	2	4.00		-53.33	-53.88							1.02	-45.57	-41.25	4.32
			4.00						-63.40	-61.81			1.02	-54.50	-41.25	13.25
	VHT160, M0.1 to M9.1	3	4.00		-54.58	-53.98	-54.17						1.02	-44.44	-41.25	3.19
			4.00						-62.77	-61.78	-58.43		1.02	-50.78	-41.25	9.53
	VHT160, M0.1 to M9.1	4	4.00	-57.93	-55.65	-53.42	-53.86						1.02	-43.84	-41.25	2.59

		4.00					-65.65	-62.92	-61.45	-59.54	1.02	-50.81	-41.25	9.56
VHT160, M0.1 to M9.1-BF	2	7.01		-55.65	-53.53						1.02	-43.42	-41.25	2.17
		7.01						-63.38	-61.60		1.02	-51.36	-41.25	10.11
VHT160, M0.1 to M9.1-BF	3	8.77		-56.48	-55.86	-55.42					1.02	-41.34	-41.25	0.09
		8.77						-63.14	-61.84	-60.24	1.02	-47.02	-41.25	5.77
VHT160, M0.1 to M9.1-BF	4	10.02	-60.78	-58.37	-58.67	-58.92					1.02	-42.03	-41.25	0.78
		10.02					-65.69	-63.36	-61.93	-62.83	1.02	-46.19	-41.25	4.94
HE160, M0.1 to M11.1	1	4.00		-50.03							0.54	-45.49	-41.25	4.24
		4.00						-53.13			0.54	-48.59	-41.25	7.34
HE160, M0.1 to M11.1	2	4.00		-52.42	-53.35						0.54	-45.31	-41.25	4.06
		4.00						-62.94	-61.83		0.54	-54.80	-41.25	13.55
HE160, M0.1 to M11.1	3	4.00		-53.93	-52.65	-53.81					0.54	-44.11	-41.25	2.86
		4.00						-62.98	-61.13	-59.43	0.54	-51.63	-41.25	10.38
HE160, M0.1 to M11.1	4	4.00	-57.55	-55.46	-53.09	-52.90					0.54	-43.80	-41.25	2.55
		4.00					-65.44	-63.25	-61.52	-59.78	0.54	-51.45	-41.25	10.20
HE160, M0.1 to M11.1-BF	2	7.01		-55.21	-52.93						0.54	-43.36	-41.25	2.11
		7.01						-62.83	-61.47		0.54	-51.54	-41.25	10.29
HE160, M0.1 to M11.1-BF	3	8.77		-57.34	-55.40	-55.14					0.54	-41.77	-41.25	0.52
		8.77						-63.34	-61.53	-59.67	0.54	-47.18	-41.25	5.93
HE160, M0.1 to M11.1-BF	4	10.02	-60.49	-57.94	-56.96	-56.86					0.54	-41.26	-41.25	0.01
		10.02					-65.97	-63.57	-61.37	-60.24	0.54	-45.70	-41.25	4.45

For ISED



Note: Record the worst plot in the report.

Conducted Band Edge Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZHUW 057C	non HT160, 6 to 54 Mbps	1	4.00		-33.82								-29.82	-21.25	8.57
			4.00						-33.17				-29.17	-21.25	7.92
	non HT160, 6 to 54 Mbps	2	4.00		-38.86	-36.22							-30.33	-21.25	9.08
			4.00						-31.72	-34.16			-25.76	-21.25	4.51
	non HT160, 6 to 54 Mbps	3	4.00		-37.86	-36.29	-34.07						-27.02	-21.25	5.77
			4.00						-31.49	-33.22	-41.13		-24.98	-21.25	3.73
	non HT160, 6 to 54 Mbps	4	4.00	-39.05	-38.50	-35.56	-34.92						-26.63	-21.25	5.38
			4.00					-38.53	-35.41	-37.40	-40.24		-27.52	-21.25	6.27
	VHT160, M0.1 to M9.1	1	4.00		-38.68								-34.68	-21.25	13.43
			4.00						-33.75				-29.75	-21.25	8.50
	VHT160, M0.1 to M9.1	2	4.00		-42.49	-42.42							-35.44	-21.25	14.19
			4.00						-40.00	-37.11			-31.31	-21.25	10.06
	VHT160, M0.1 to M9.1	3	4.00		-42.39	-42.00	-40.25						-32.67	-21.25	11.42
			4.00						-41.13	-37.13	-41.38		-30.64	-21.25	9.39
	VHT160, M0.1 to M9.1	4	4.00	-42.81	-43.40	-43.09	-39.44						-31.84	-21.25	10.59
			4.00					-39.57	-40.35	-37.06	-46.58		-29.75	-21.25	8.50
	VHT160, M0.1 to M9.1-BF	2	7.01		-42.27	-43.66							-32.89	-21.25	11.64
			7.01						-40.48	-38.21			-29.18	-21.25	7.93
	VHT160, M0.1 to M9.1-BF	3	8.77		-47.67	-48.00	-47.69						-34.24	-21.25	12.99
			8.77						-45.27	-46.28	-49.45		-33.12	-21.25	11.87
	VHT160, M0.1 to M9.1-BF	4	10.02	-55.09	-52.07	-51.83	-51.00						-36.21	-21.25	14.96
			10.02					-51.28	-48.03	-50.53	-50.84		-33.93	-21.25	12.68
	HE160, M0.1 to M11.1	1	4.00		-36.95								-32.95	-21.25	11.70
			4.00						-33.21				-29.21	-21.25	7.96
	HE160, M0.1 to M11.1	2	4.00		-42.46	-43.58							-35.97	-21.25	14.72
			4.00						-38.16	-35.92			-29.89	-21.25	8.64
	HE160, M0.1 to M11.1	3	4.00		-43.13	-43.55	-40.44						-33.37	-21.25	12.12
			4.00						-38.12	-34.92	-38.28		-28.04	-21.25	6.79

	HE160, M0.1 to M11.1	4	4.00	-43.31	-43.28	-41.66	-40.48						-32.00	-21.25	10.75
			4.00					-39.62	-41.14	-37.45	-36.78		-28.40	-21.25	7.15
	HE160, M0.1 to M11.1-BF	2	7.01		-43.40	-43.24							-33.30	-21.25	12.05
			7.01						-37.79	-35.25			-26.31	-21.25	5.06
	HE160, M0.1 to M11.1-BF	3	8.77		-48.19	-48.40	-46.06						-33.87	-21.25	12.62
			8.77						-43.99	-44.33	-49.47		-31.78	-21.25	10.53
	HE160, M0.1 to M11.1-BF	4	10.02	-52.28	-49.86	-51.26	-50.62						-34.88	-21.25	13.63
			10.02					-49.24	-46.06	-49.04	-50.95		-32.41	-21.25	11.16

Conducted Band Edge Test Data (Average)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZLW 0626	non HT160, 6 to 54 Mbps	1	4.00		-47.03							1.02	-42.01	-41.25	0.76
			4.00						-51.40			1.02	-46.38	-41.25	5.13
	non HT160, 6 to 54 Mbps	2	4.00		-53.51	-52.86						1.02	-45.14	-41.25	3.89
			4.00						-51.55	-51.83		1.02	-43.66	-41.25	2.41
	non HT160, 6 to 54 Mbps	3	4.00		-52.42	-52.40	-52.56					1.02	-42.67	-41.25	1.42
			4.00						-51.84	-51.79	-51.73	1.02	-42.00	-41.25	0.75
	non HT160, 6 to 54 Mbps	4	4.00	-53.30	-52.21	-51.98	-51.93					1.02	-41.28	-41.25	0.03
			4.00					-57.74	-56.81	-57.02	-56.97	1.02	-46.08	-41.25	4.83
	VHT160, M0.1 to M9.1	1	4.00		-49.51							1.02	-44.49	-41.25	3.24
			4.00						-48.09			1.02	-43.07	-41.25	1.82
	VHT160, M0.1 to M9.1	2	4.00		-53.47	-53.64						1.02	-45.52	-41.25	4.27
			4.00						-53.37	-51.60		1.02	-44.37	-41.25	3.12
	VHT160, M0.1 to M9.1	3	4.00		-53.86	-53.94	-51.22					1.02	-43.02	-41.25	1.77
			4.00						-53.53	-51.16	-56.89	1.02	-43.48	-41.25	2.23
	VHT160, M0.1 to M9.1	4	4.00	-55.02	-53.42	-53.47	-51.77					1.02	-42.23	-41.25	0.98
			4.00					-53.74	-54.03	-51.11	-59.16	1.02	-42.64	-41.25	1.39
	VHT160, M0.1 to M9.1-BF	2	7.01		-53.20	-54.83						1.02	-42.90	-41.25	1.65
			7.01						-53.23	-51.55		1.02	-41.27	-41.25	0.02
	VHT160, M0.1 to M9.1-BF	3	8.77		-59.34	-59.12	-57.41					1.02	-43.97	-41.25	2.72

		8.77						-58.70	-58.48	-61.34	1.02	-44.77	-41.25	3.52
VHT160, M0.1 to M9.1-BF	4	10.02	-65.11	-62.80	-62.72	-61.73					1.02	-45.87	-41.25	4.62
		10.02					-64.53	-62.67	-63.67	-62.96	1.02	-46.34	-41.25	5.09
HE160, M0.1 to M11.1	1	4.00		-49.15							0.54	-44.61	-41.25	3.36
		4.00						-47.04			0.54	-42.50	-41.25	1.25
HE160, M0.1 to M11.1	2	4.00		-53.66	-53.38						0.54	-45.97	-41.25	4.72
		4.00						-52.51	-51.24		0.54	-44.28	-41.25	3.03
HE160, M0.1 to M11.1	3	4.00		-54.10	-53.89	-51.15					0.54	-43.52	-41.25	2.27
		4.00						-52.69	-50.53	-56.69	0.54	-43.32	-41.25	2.07
HE160, M0.1 to M11.1	4	4.00	-55.01	-52.89	-53.55	-50.91					0.54	-42.28	-41.25	1.03
		4.00					-52.90	-53.32	-50.82	-55.42	0.54	-42.25	-41.25	1.00
HE160, M0.1 to M11.1-BF	2	7.01		-53.34	-54.06						0.54	-43.12	-41.25	1.87
		7.01						-53.16	-50.89		0.54	-41.32	-41.25	0.07
HE160, M0.1 to M11.1-BF	3	8.77		-59.38	-58.65	-57.57					0.54	-44.39	-41.25	3.14
		8.77						-58.04	-58.19	-60.99	0.54	-44.80	-41.25	3.55
HE160, M0.1 to M11.1-BF	4	10.02	-65.29	-61.72	-62.38	-62.02					0.54	-46.07	-41.25	4.82
		10.02					-64.40	-62.25	-62.37	-62.53	0.54	-46.22	-41.25	4.97

9 FCC §15.407(a), RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Power Spectral Density

9.1 Applicable Standard

According to FCC §15.407(a):

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

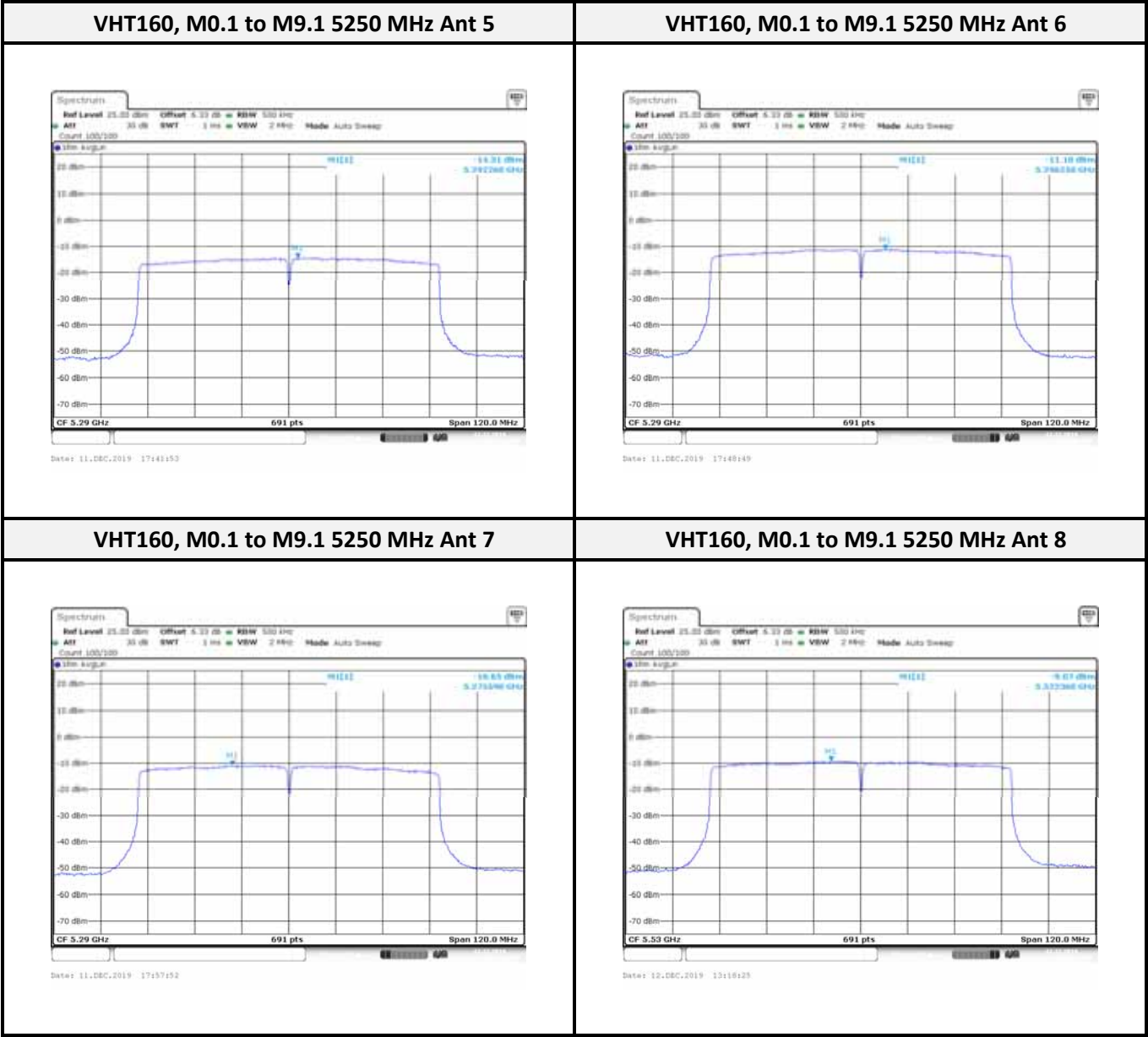
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum 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:

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

9.2 Test Procedure

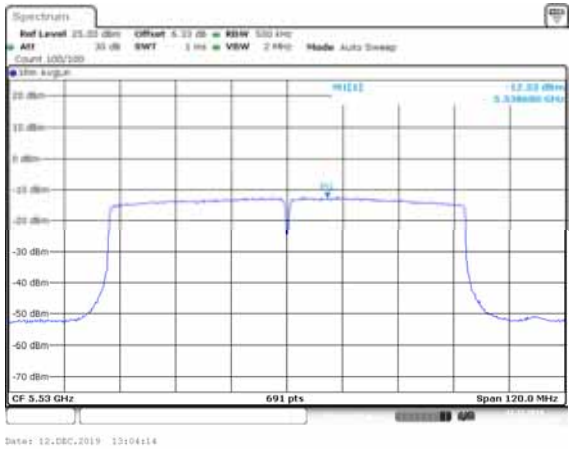
- (i) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW $\geq$ 3 MHz.
- (iv) Number of points in sweep $\geq$ 2 Span / RBW. (This ensures that bin-to-bin spacing is $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq$ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “ free run ”.
- (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- (ix) Use the peak search function on the instrument to find the peak of the spectrum and record its value.

9.3 Test Data
For FCC/NCC

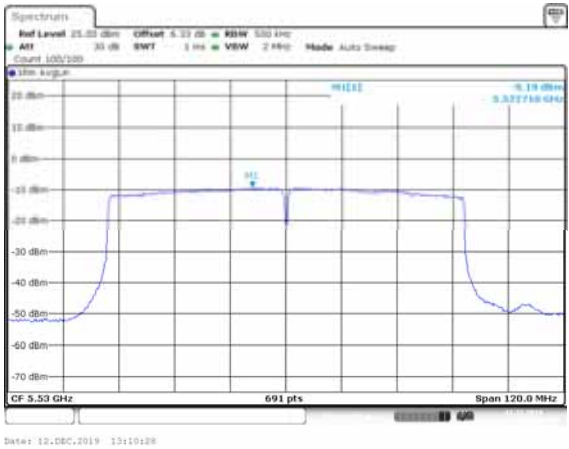


Note: Record the worst plot in the report.

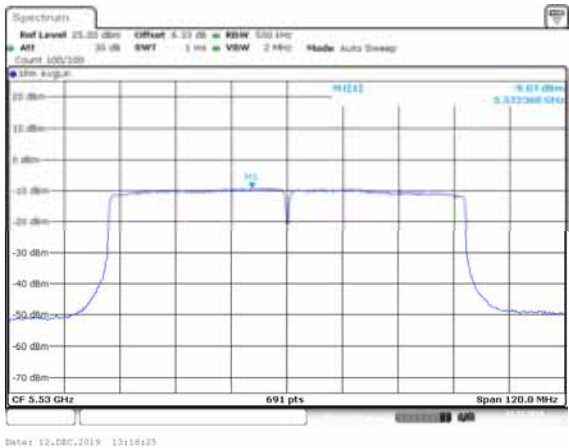
VHT160, M0.1 to M9.1 5570 MHz Ant 1



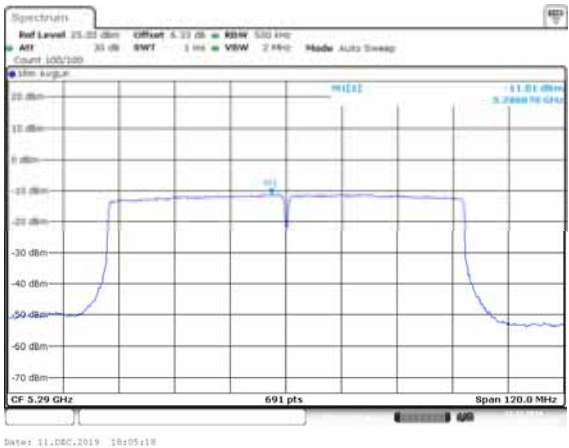
VHT160, M0.1 to M9.1 5570 MHz Ant 2



VHT160, M0.1 to M9.1 5570 MHz Ant 3



VHT160, M0.1 to M9.1 5570 MHz Ant 4



Note: Record the worst plot in the report.

Test Data

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 PSD (dBm)	Tx 2 PSD (dBm)	Tx 3 PSD (dBm)	Tx 4 PSD (dBm)	Tx 5 PSD (dBm)	Tx 6 PSD (dBm)	Tx 7 PSD (dBm)	Tx 8 PSD (dBm)	Duty factor	Total Conducted PSD (dBm)	Limit	Margin (dB)
5250MHz	non HT160, 6 to 54 Mbps	1	4.00		-9.47							1.02	-8.45	19.00	27.45
			4.00						-9.33			1.02	-8.31	13.00	21.31
	non HT160, 6 to 54 Mbps	2	7.01		-12.67	-12.76						1.02	-8.68	15.99	24.67
			7.01						-12.20	-12.49		1.02	-8.31	9.99	18.30
	non HT160, 6 to 54 Mbps	3	8.77		-12.36	-12.11	-12.30					1.02	-6.46	14.23	20.69
			8.77						-12.35	-11.97	-12.51	1.02	-6.48	8.23	14.71
	non HT160, 6 to 54 Mbps	4	10.02	-15.70	-12.61	-12.36	-12.29					1.02	-5.99	12.98	18.97
			10.02					-15.06	-12.21	-12.00	-12.20	1.02	-5.66	6.98	12.64
	VHT160, M0.1 to M9.1	1	4.00		-8.49							1.02	-7.47	19.00	26.47
			4.00						-9.32			1.02	-8.30	13.00	21.30
	VHT160, M0.1 to M9.1	2	7.01		-10.57	-10.80						1.02	-6.65	15.99	22.64
			7.01						-10.95	-10.67		1.02	-6.78	9.99	16.77
	VHT160, M0.1 to M9.1	3	8.77		-11.06	-10.59	-10.87					1.02	-5.04	14.23	19.27
			8.77						-11.18	-10.50	-11.03	1.02	-5.10	8.23	13.33
	VHT160, M0.1 to M9.1	4	10.02	-13.90	-10.36	-10.62	-10.56					1.02	-4.10	12.98	17.08
			10.02					-14.31	-11.10	-10.65	-11.01	1.02	-4.51	6.98	11.49
	VHT160, M0.1 to M9.1-BF	2	7.01		-10.79	-10.60						1.02	-6.66	15.99	22.65
			7.01						-10.61	-10.58		1.02	-6.56	9.99	16.55
	VHT160, M0.1 to M9.1-BF	3	8.77		-13.65	-14.05	-13.51					1.02	-7.94	14.23	22.17
			8.77						-13.65	-13.52	-14.52	1.02	-8.08	8.23	16.31
	VHT160, M0.1 to M9.1-BF	4	10.02	-18.76	-15.55	-15.97	-15.91					1.02	-9.34	12.98	22.32
			10.02					-19.32	-15.92	-15.56	-15.70	1.02	-9.34	6.98	16.32
	HE160, M0.1 to M11.1	1	4.00		-8.77							0.54	-8.23	19.00	27.23
			4.00						-8.94			0.54	-8.40	13.00	21.40
	HE160, M0.1 to M11.1	2	7.01		-10.37	-10.47						0.54	-6.87	15.99	22.86
			7.01						-10.79	-10.34		0.54	-7.01	9.99	17.00
	HE160, M0.1 to M11.1	3	8.77		-10.41	-10.83	-10.48					0.54	-5.26	14.23	19.49
			8.77						-10.94	-10.51	-10.96	0.54	-5.49	8.23	13.72

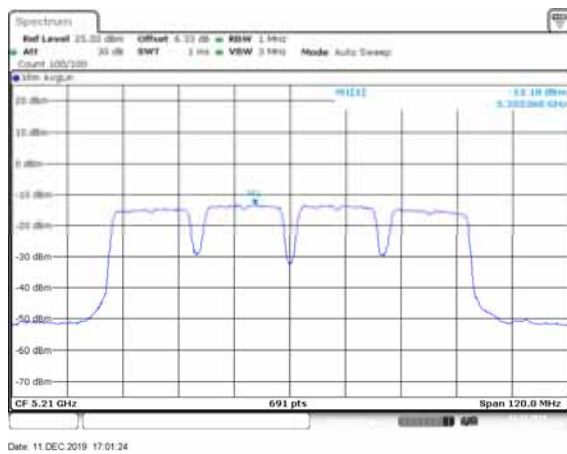
	HE160, M0.1 to M11.1	4	10.02	-13.74	-9.99	-10.50	-10.63					0.54	-4.43	12.98	17.41
			10.02					-14.39	-10.78	-10.38	-10.94	0.54	-4.80	6.98	11.78
	HE160, M0.1 to M11.1-BF	2	7.01		-10.47	-10.60						0.54	-6.98	15.99	22.97
			7.01						-10.80	-10.27		0.54	-6.98	9.99	16.97
	HE160, M0.1 to M11.1-BF	3	8.77		-13.33	-13.77	-13.40					0.54	-8.18	14.23	22.41
			8.77						-13.48	-13.28	-14.37	0.54	-8.37	8.23	16.60
	HE160, M0.1 to M11.1-BF	4	10.02	-18.96	-15.45	-15.48	-16.11					0.54	-9.73	12.98	22.71
			10.02					-19.19	-15.72	-15.10	-15.70	0.54	-9.61	6.98	16.59

5570MHz	non HT160, 6 to 54 Mbps	1	4.00		-9.13							1.02	-8.11	11.00	19.11
			4.00						-8.01			1.02	-6.99	11.00	17.99
	non HT160, 6 to 54 Mbps	2	7.01		-9.99	-9.93						1.02	-5.93	11.00	16.93
			7.01						-9.33	-9.85		1.02	-5.55	11.00	16.55
	non HT160, 6 to 54 Mbps	3	8.77		-9.86	-9.89	-9.89					1.02	-4.09	11.00	15.09
			8.77						-9.83	-10.01	-9.49	1.02	-3.98	11.00	14.98
	non HT160, 6 to 54 Mbps	4	10.02	-13.11	-9.94	-9.72	-9.55					1.02	-3.32	11.00	14.32
			10.02					-12.91	-9.03	-9.15	-9.67	1.02	-2.90	11.00	13.90
	VHT160, M0.1 to M9.1	1	4.00		-6.69							1.02	-5.67	11.00	16.67
			4.00						-5.93			1.02	-4.91	11.00	15.91
	VHT160, M0.1 to M9.1	2	7.01		-9.79	-9.18						1.02	-5.44	11.00	16.44
			7.01						-8.85	-9.02		1.02	-4.90	11.00	15.90
	VHT160, M0.1 to M9.1	3	8.77		-9.08	-8.84	-9.10					1.02	-3.21	11.00	14.21
			8.77						-8.70	-9.20	-8.50	1.02	-3.00	11.00	14.00
	VHT160, M0.1 to M9.1	4	10.02	-12.53	-9.19	-9.07	-9.18					1.02	-2.74	11.00	13.74
			10.02					-12.62	-9.20	-9.03	-9.28	1.02	-2.77	11.00	13.77
	VHT160, M0.1 to M9.1-BF	2	7.01		-9.51	-8.91						1.02	-5.17	11.00	16.17
			7.01						-8.57	-9.19		1.02	-4.84	11.00	15.84
	VHT160, M0.1 to M9.1-BF	3	8.77		-10.44	-10.48	-9.94					1.02	-4.49	11.00	15.49
			8.77						-9.86	-10.05	-9.43	1.02	-3.98	11.00	14.98
	VHT160, M0.1 to M9.1-BF	4	10.02	-14.53	-11.35	-10.86	-10.71					1.02	-4.58	11.00	15.58
			10.02					-14.58	-10.97	-11.06	-11.25	1.02	-4.70	11.00	15.70
	HE160, M0.1 to M11.1	1	4.00		-6.35							0.54	-5.81	11.00	16.81
			4.00						-5.58			0.54	-5.04	11.00	16.04
	HE160, M0.1 to M11.1	2	7.01		-9.18	-9.18						0.54	-5.63	11.00	16.63
			7.01						-8.79	-9.15		0.54	-5.42	11.00	16.42

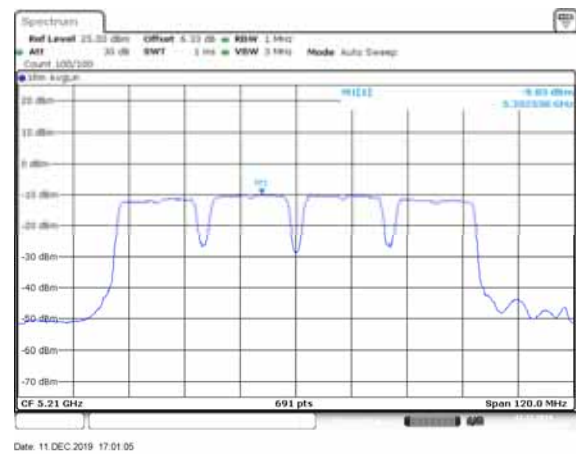
HE160, M0.1 to M11.1	3	8.77		-9.14	-9.22	-9.08					0.54	-3.84	11.00	14.84
		8.77						-8.57	-8.95	-8.30	0.54	-3.29	11.00	14.29
HE160, M0.1 to M11.1	4	10.02	-12.53	-9.38	-8.94	-8.85					0.54	-3.13	11.00	14.13
		10.02					-12.39	-8.92	-8.70	-8.72	0.54	-2.88	11.00	13.88
HE160, M0.1 to M11.1-BF	2	7.01		-9.15	-9.11						0.54	-5.58	11.00	16.58
		7.01						-8.81	-9.22		0.54	-5.46	11.00	16.46
HE160, M0.1 to M11.1-BF	3	8.77		-10.76	-10.19	-9.97					0.54	-4.98	11.00	15.98
		8.77						-9.64	-9.87	-9.38	0.54	-4.31	11.00	15.31
HE160, M0.1 to M11.1-BF	4	10.02	-14.42	-11.22	-10.81	-10.54					0.54	-4.94	11.00	15.94
		10.02					-14.30	-10.83	-10.93	-10.92	0.54	-4.97	11.00	15.97

For ISED

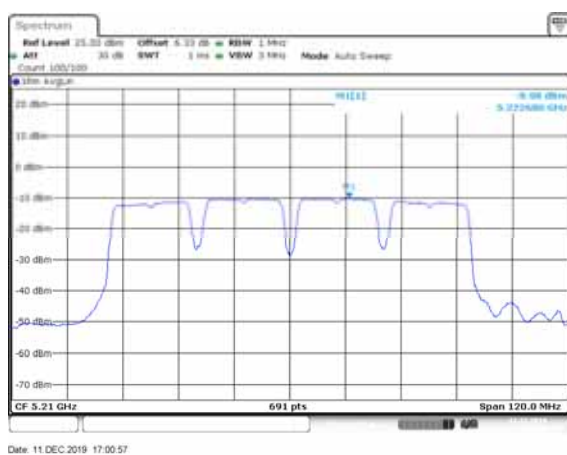
non HT160, 6 to 54 Mbps Ant1



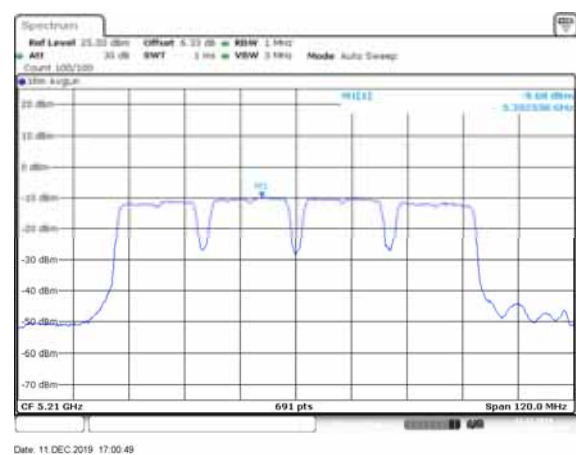
non HT160, 6 to 54 Mbps Ant 2



non HT160, 6 to 54 Mbps Ant 3



non HT160, 6 to 54 Mbps Ant 4



Note: Record the worst plot in the report.

Test Data

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 PSD (dBm)	Tx 2 PSD (dBm)	Tx 3 PSD (dBm)	Tx 4 PSD (dBm)	Tx 5 PSD (dBm)	Tx 6 PSD (dBm)	Tx 7 PSD (dBm)	Tx 8 PSD (dBm)	Duty factor	Total Conducted PSD (dBm)	Limit	Margin (dB)
5250MHz	non HT160, 6 to 54 Mbps	1	4.00		-6.78							1.02	-5.76	12.00	17.76
			4.00						-6.79			1.02	-5.77	13.00	18.77
	non HT160, 6 to 54 Mbps	2	7.01		-9.89	-9.89						1.02	-5.86	8.99	14.85
			7.01						-10.37	-10.10		1.02	-6.20	9.99	16.19
	non HT160, 6 to 54 Mbps	3	8.77		-9.99	-9.53	-9.54					1.02	-3.89	7.23	11.12
			8.77						-10.06	-10.07	-10.15	1.02	-4.30	8.23	12.53
	non HT160, 6 to 54 Mbps	4	10.02	-13.18	-9.83	-9.98	-9.68					1.02	-3.41	5.98	9.39
			10.02					-13.09	-9.84	-9.96	-9.86	1.02	-3.45	6.98	10.43
	VHT160, M0.1 to M9.1	1	4.00		-8.67							1.02	-7.65	12.00	19.65
			4.00						-8.93			1.02	-7.91	13.00	20.91
	VHT160, M0.1 to M9.1	2	7.01		-10.44	-11.03						1.02	-6.69	8.99	15.68
			7.01						-10.93	-10.98		1.02	-6.92	9.99	16.91
	VHT160, M0.1 to M9.1	3	8.77		-10.77	-11.05	-10.23					1.02	-4.88	7.23	12.11
			8.77						-10.55	-10.52	-11.03	1.02	-4.90	8.23	13.13
	VHT160, M0.1 to M9.1	4	10.02	-13.93	-10.65	-10.92	-11.00					1.02	-4.40	5.98	10.38
			10.02					-14.32	-10.94	-10.52	-11.06	1.02	-4.44	6.98	11.42
	VHT160, M0.1 to M9.1-BF	2	7.01		-10.62	-11.32						1.02	-6.93	8.99	15.92
			7.01						-10.64	-10.69		1.02	-6.63	9.99	16.62
	VHT160, M0.1 to M9.1-BF	3	8.77		-13.94	-14.40	-14.01					1.02	-8.32	7.23	15.55
			8.77						-13.64	-13.59	-14.61	1.02	-8.13	8.23	16.36
	VHT160, M0.1 to M9.1-BF	4	10.02	-20.08	-16.46	-16.82	-16.64					1.02	-10.24	5.98	16.22
			10.02					-20.06	-16.65	-16.89	-16.58	1.02	-10.29	6.98	17.27
	HE160, M0.1 to M11.1	1	4.00		-8.61							0.54	-8.07	12.00	20.07
			4.00						-8.57			0.54	-8.03	13.00	21.03
	HE160, M0.1 to M11.1	2	7.01		-10.87	-10.89						0.54	-7.33	8.99	16.32
			7.01						-10.44	-10.69		0.54	-7.01	9.99	17.00
	HE160, M0.1 to M11.1	3	8.77		-11.13	-11.10	-10.38					0.54	-5.54	7.23	12.77
			8.77						-10.66	-10.45	-10.97	0.54	-5.38	8.23	13.61

HE160, M0.1 to M11.1	4	10.02	-13.98	-10.72	-11.08	-10.45					0.54	-4.79	5.98	10.77
		10.02					-14.08	-10.84	-10.31	-10.76	0.54	-4.71	6.98	11.69
HE160, M0.1 to M11.1-BF	2	7.01		-10.93	-11.06						0.54	-7.44	8.99	16.43
		7.01						-10.65	-10.78		0.54	-7.16	9.99	17.15
HE160, M0.1 to M11.1-BF	3	8.77		-14.35	-14.38	-14.05					0.54	-8.95	7.23	16.18
		8.77						-13.32	-13.66	-13.99	0.54	-8.34	8.23	16.57
HE160, M0.1 to M11.1-BF	4	10.02	-19.71	-16.10	-17.26	-16.41					0.54	-10.60	5.98	16.58
		10.02					-20.04	-16.36	-16.07	-16.59	0.54	-10.45	6.98	17.43

----- END OF REPORT -----



FCC Part 15.407; LP0002-2018

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

TEST REPORT

For

Cisco Systems, Inc.

170 West Tasman Dr., San Jose, CA 95134, USA

FCC ID: LDK948342197
IC: 2461N-948342197

Report Type :	Original Report
Product Type :	Cisco Catalyst 9130AXE Series Access Points
Product Name :	For FCC: C9130AXE-B ; For Canada: C9130AXE-A For Taiwan: C9130AXE-T
Report Number :	RLK191129003-00J
Report Date :	2019/12/13
Reviewed By :	Zeus Chen 
Prepared By: Bay Area Compliance Laboratories Corp.(Linkou Laboratory) No.6, Wende 2Rd., Guishan Dist., Taoyuan City 33382, Taiwan (R.O.C.) Tel. (886-3)396-1072 Fax.(886-3)396-1027 www.bacl.com.tw	

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	RLK191129003-00J	2019/12/13	Original Report

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	Cisco Systems, Inc. 170 West Tasman Dr., San Jose, CA 95134, USA
Manufacturer	Cisco Systems, Inc. 170 West Tasman Dr., San Jose, CA 95134, USA
Brand(Trade) Name	Cisco
Product (Equipment)	Cisco Catalyst 9130AXE Series Access Points
Model Name	For FCC: C9130AXE-B For Canada: C9130AXE-A For Taiwan: C9130AXE-T *Note: These 3 models are using same hardware specification include antennas, only for market purpose.
Frequency Range	UNII: 5150 MHz ~ 5850 MHz
Received Date	Nov. 26, 2019
Date of Test	Nov. 26, 2019 - Dec. 13, 2019
Modulation Type	OFDM
Related Submittal(s)/Grant(s)	FCC Part 15.247 DTS with FCC ID: LDK948342197

**All measurement and test data in this report was gathered from production sample serial number: RLK191129003 (Assigned by BACL Linkou Laboratory)*

1.2 Operation Condition of EUT

Power Operation (Voltage Range)	☒ DC Type ☒ PoE: 30W <i>Brand Name: Cisco</i> <i>Model: SB-PWR-INJ2</i> <i>I/P: 100-240Vac,50/60Hz, 0.67A</i> <i>O/P: 55Vdc,0.6A</i> ☐ By Power Core
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1.3 Objective and Test Methodology

The Objective of this Test Report was to document the compliance of the Cisco System, Inc. Appliance (Model: For FCC: C9130AXE-B; For Canada: C9130AXE-A, For Taiwan: C9130AXE-T) to the requirements of the following Standards:

-Part 2, Subpart J, Part 15 Subparts A and Part 15 Subparts E of the Federal Communication Commission's rules.

-ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

-KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

-RSS-247 Issue 2, Feb 2017 — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

-RSS-Gen Issue 5, Mar 2019 — General Requirements for Compliance of Radio Apparatus.

-LP0002-2018 — Low-power Radio-frequency Devices Technical Regulations.

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
Frequency Error	± 94.731 Hz
Radiated Above 18G-40G	± 4.67 dB

1.5 Environmental Conditions and Test Date record

Test Site	Test Date	Temperature (°C)	Relative Humidity (% RH)	Test Engineer
Conducted (TH02)	Nov. 26, 2019 – Dec. 13, 2019	21.6-22.6	59-62	Boris Kao/Jason Hsiao

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 Test Channels and Description of Worst 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	144 ^{Note}	5720
64	5320	149	5745
100	5500	153	5765
104	5520	157	5785
108	5540	161	5805
112	5560	165	5825
116	5580	-	--

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	142 ^{Note}	5710
102	5510	151	5755
110	5500	159	5795

Note: Canada not support.

● For BW: 80MHz

Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	122 ^{Note}	5610
58	5290	138 ^{Note}	5690
106	5530	155	5775

Note: Canada not support.

● For BW: 160MHz

Channel	Frequency (MHz)	Channel	Frequency (MHz)
50	5250	114 ^{Note}	5570

Note: Canada not support.

Radiated below 1G were tested worst output power mode.

2.2 Support Equipment List and External Cable List

No.	Description	Manufacturer	Model Number
A	Notebook PC*2	DELL	Latitude E5470
B	PoE Adapter	Cisco	AIR-PWRINJ6B01

No.	Cable Description	Manufacturer	Model Number	From	To
1	LAN Cable	BACL	BACL-LAN	EUT	NB
2	LAN Cable	BACL	BACL-LAN	EUT	PoE
3	LAN Cable	BACL	BACL-LAN	NB	PoE

2.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
Conducted (TH02)					
USB Wideband Power Sensor	Agilent	U2021XA	MY56120026	2019/09/06	2020/09/05
Cable	MTJ	MT40S	620620-MT40S-100	2018/12/28	2019/12/27
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	101457	2019/06/24	2020/06/23

***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).

2.4 Duty Cycle

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 20 mode	1.42754	1.5434	0.92	0.36
802.11ac 20 mode	5.4275	5.6884	0.95	0.22
802.11ax 20 mode	5.4565	5.7464	0.95	0.22
802.11a 40 mode	1.4347	1.5507	0.93	0.32
802.11ac 40 mode	5.4058	5.6667	0.95	0.22
802.11ax 40 mode	5.4348	5.7536	0.94	0.27
802.11a 80 mode	1.4347	1.5579	0.92	0.36
802.11ac 80 mode	5.4638	6.0797	0.9	0.46
802.11ax 80 mode	5.4638	5.8188	0.94	0.27
802.11a 80+80 mode	1.4347	1.5579	0.92	0.36
802.11ac 80+80 mode	5.4058	6.0507	0.89	0.51
802.11ax 80+80 mode	5.4058	5.7319	0.94	0.27

3 Summary of Test Results

FCC/ISED/NCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091 ISED RSS-102 LP0002 Sec 5.20.2	Maximum Permissible Exposure (MPE)	Note ¹
FCC §15.203 ISED RSS-Gen Sec 6.8 LP0002-2018 Sec 2.2	Antenna Requirement	Note ²
FCC §15.207, FCC §15.407 (b) ISED RSS-Gen Sec 8.8 LP0002-2018 Sec 2.3	AC Line Conducted Emissions	N/A
FCC §15.205, §15.209, §15.407(b), §2.1053 ISED RSS-Gen Sec 8.9 and 8.10 ISED RSS-247 Sec 6.2 LP0002-2018 Sec 3.10 and 4.7	Spurious Unwanted Emission	Compliance/Note ²
FCC §15.407(a) (e) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Emission Bandwidth	Note ⁴
FCC §15.407(a) (1) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Conducted Transmitter Output Power	Compliance
FCC §2.1051, §15.407(b) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Band Edge	Compliance
FCC §15.407 (a) (1)(5) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Power Spectral Density	Compliance
FCC §15.407 (h) ISED RSS-247 Sec 6.3 LP0002 Sec 4.7	Dynamic Frequency Selections (DFS)	Note ³

Note¹: Compliance test data was recorded in a separate report, please refer to RF Exposure Report

Note²: Compliance test data was recorded in a separate report, please refer to Test Report: EDCS-18486571 issued by Cisco Systems, Inc.

Note³: Compliance test data was recorded in a separate report, please refer to Test Report: EDCS-18337252 issued by Cisco Systems, Inc.

Note⁴: Compliance test data was recorded in a separate report, please refer to Test Report: RLK191129003-00J

4 FCC §15.203, RSS-Gen and LP0002 Sec 2.2- Antenna Requirements

4.1 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 15.407, 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

4.2 Antenna List and Details

Part Number	Description	Gain
C-ANT9101=	Ceiling Mount Omni Self-Identifying Antenna, 8-port, with DART connectors.	2 dBi (2.4 GHz) 6 dBi (5 GHz)
C-ANT9102=	Pole or Wall Mount Omni Self-Identifying Antenna, 8-port, with DART connectors.	4 dBi (2.4 GHz) 4 dBi (5 GHz)
C-ANT9103=	Pole or Wall mount 75° Directional Self-Identifying Antenna, 8-port, with DART connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2566P4W-R=	Directional Antenna, 4-port, with RP-TNC connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2566P4W-RS=	Directional Self-Identifying Antenna, 4-port, with RP-TNC connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2524V4C-R=	Ceiling Mount Omni Antenna, 4-port, with RP-TNC connectors.	2 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2524V4C-RS=	Ceiling Mount Omni Self-Identifying Antenna, 4-port, with RP-TNC connectors.	2 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2544V4M-R=	Wall Mount Omni Antenna, 4-port, with RP-TNC connectors.	4 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2544V4M-RS=	Wall Mount Omni Self-Identifying Antenna, 4-port, with RP-TNC connectors.	4 dBi (2.4 GHz) 4 dBi (5 GHz)
AIR-ANT2566D4M-R=	60° Patch Antenna, 4-port, with RP-TNC connectors. ¹	6 dBi (2.4 GHz) 6 dBi (5 GHz)
AIR-ANT2566D4M-RS=	60° Patch Self-Identifying Antenna, 4-port, with RP-TNC connectors.	6 dBi (2.4 GHz) 6 dBi (5 GHz)

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

5 FCC §15.209, §15.205, §15.407(b), §2.1053, RSS-Gen Sec 8.9, 8.10, RSS-247 Sec 6.2 and LP0002 Sec 3.10 and 4.7 – Spurious Unwanted Emissions

5.1 Applicable Standard

According to FCC §15.407(b), LP0002 Sec 3.10 and 4.7.

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:
- (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.

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 NCC Section 2.7,

MHz	MHz	MHz
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
6.200 - 6.300	758.00 - 803.00	7250.0 - 7750.0
8.230 - 8.400	825.00 - 915.00	8025.0 - 8500.0
12.265 - 12.600	930.00 - 1240.0	9000.0 - 9200.0
13.340 - 13.430	1300.0 - 1427.0	9300.0 - 9500.0
14.965 - 15.020	1435.0 - 1626.5	10600 - 12700
16.700 - 16.755	1660.0 - 1785.0	13250 - 13400
19.965 - 20.020	1805.0 - 1880.0	14470 - 14500
25.500 - 25.700	1885.0 - 1900.0	15350 - 16200
37.475 - 38.275	1905.0 - 1985.0	17700 - 21400
73.500 - 75.400	2010.0 - 2025.0	22010 - 23120
108.00 - 138.00	2110.0 - 2170.0	23600 - 24000
149.90 - 150.05	2200.0 - 2300.0	31200 - 31800
156.70 - 156.90	2310.0 - 2390.0	36430 - 36500
162.01 - 167.17	2483.5 - 2900.0	Above 38600

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 ISSED 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.

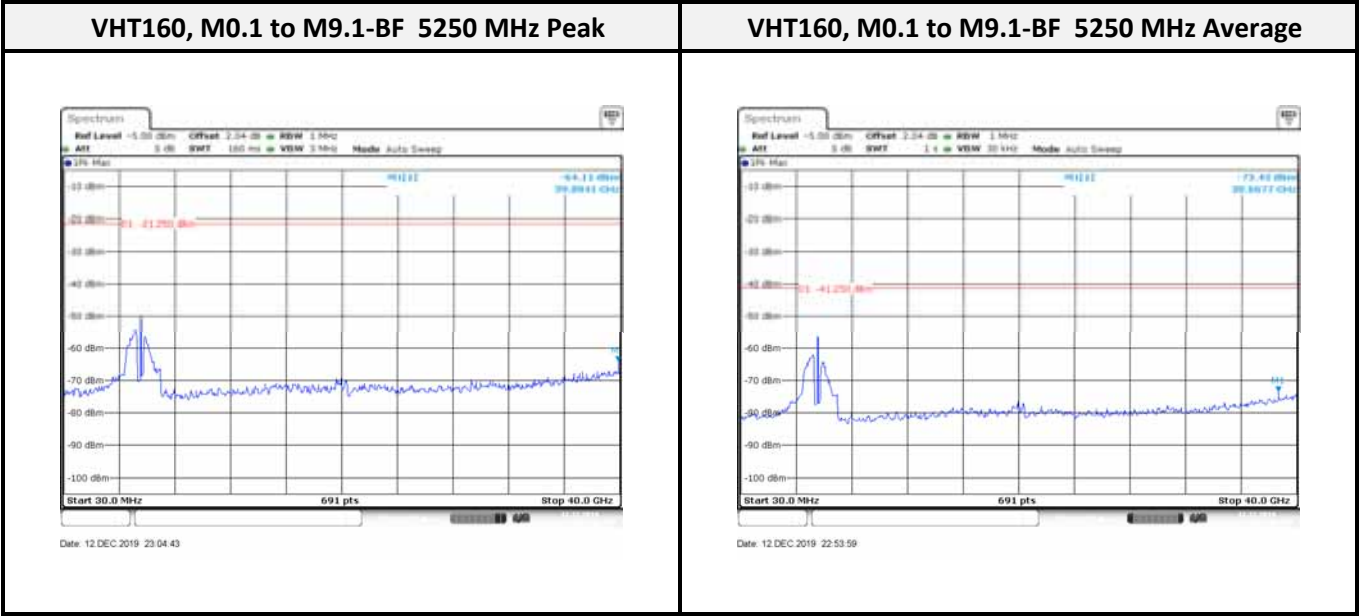
Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

- 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.

5.2 EUT Setup and Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Place the radio in continuous transmit mode. Use the procedures in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 to substitute conducted measurements in place of radiated measurements.
3. Configure Spectrum analyzer as per test parameters below (be sure to enter all losses between the transmitter output and the spectrum analyzer).
4. Record the marker. Also measure any emissions in the restricted bands.
5. The “measure-and-sum technique” is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units. The worst case output is recorded.
6. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands
7. Capture graphs and record pertinent measurement data.

5.3 Conducted Emission Test Plot and Data
For FCC/NCC



Note: Record the worst plot in the report.

Conducted Emission Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	6.00		-66.84								-60.84	-21.25	39.59
			6.00						-66.89				-60.89	-21.25	39.64
	non HT160, 6 to 54 Mbps	2	6.00		-66.26	-65.92							-57.08	-21.25	35.83
			6.00						-67.10	-66.23			-57.63	-21.25	36.38
	non HT160, 6 to 54 Mbps	3	6.00		-65.27	-66.93	-66.40						-55.37	-21.25	34.12
			6.00						-67.24	-67.07	-67.36		-56.45	-21.25	35.20
	non HT160, 6 to 54 Mbps	4	6.00	-66.37	-66.84	-65.75	-66.48						-54.32	-21.25	33.07
			6.00					-67.26	-66.91	-65.65	-66.14		-54.42	-21.25	33.17
	VHT160, M0.1 to M9.1	1	6.00		-66.85								-60.85	-21.25	39.60
			6.00						-67.20				-61.20	-21.25	39.95
	VHT160, M0.1 to M9.1	2	6.00		-65.51	-67.00							-57.18	-21.25	35.93
			6.00						-66.17	-66.17			-57.16	-21.25	35.91
	VHT160, M0.1 to M9.1	3	6.00		-67.02	-66.36	-66.75						-55.93	-21.25	34.68
			6.00						-66.35	-65.96	-66.83		-55.59	-21.25	34.34
	VHT160, M0.1 to M9.1	4	6.00	-66.20	-66.26	-66.91	-66.40						-54.41	-21.25	33.16
			6.00					-66.73	-66.83	-66.93	-66.46		-54.71	-21.25	33.46
	VHT160, M0.1 to M9.1-BF	2	9.01		-66.44	-67.08							-54.73	-21.25	33.48
			9.01						-67.10	-66.29			-54.65	-21.25	33.40
	VHT160, M0.1 to M9.1-BF	3	10.77		-66.55	-67.27	-65.22						-50.72	-21.25	29.47
			10.77						-65.90	-66.17	-67.02		-50.79	-21.25	29.54
	VHT160, M0.1 to M9.1-BF	4	12.02	-65.41	-66.60	-66.75	-66.92						-48.34	-21.25	27.09
			12.02					-67.01	-64.11	-66.84	-65.33		-47.61	-21.25	26.36
	HE160, M0.1 to M11.1	1	6.00		-66.63								-60.63	-21.25	39.38
			6.00						-67.23				-61.23	-21.25	39.98
	HE160, M0.1 to M11.1	2	6.00		-67.30	-65.77							-57.46	-21.25	36.21
			6.00						-66.07	-67.69			-57.79	-21.25	36.54
	HE160, M0.1 to M11.1	3	6.00		-66.53	-66.69	-67.41						-56.09	-21.25	34.84
			6.00						-66.59	-66.71	-66.03		-55.66	-21.25	34.41

	HE160, M0.1 to M11.1	4	6.00	-66.32	-66.57	-67.22	-66.74						-54.68	-21.25	33.43
			6.00					-66.98	-65.86	-66.74	-66.88		-54.57	-21.25	33.32
	HE160, M0.1 to M11.1-BF	2	9.01		-66.54	-66.99							-54.74	-21.25	33.49
			9.01						-66.42	-66.86			-54.61	-21.25	33.36
	HE160, M0.1 to M11.1-BF	3	10.77		-66.62	-67.01	-66.56						-51.18	-21.25	29.93
			10.77						-66.70	-66.61	-67.07		-51.25	-21.25	30.00
	HE160, M0.1 to M11.1-BF	4	12.02	-65.62	-65.58	-66.15	-65.36						-47.63	-21.25	26.38
			12.02					-66.65	-66.60	-65.95	-65.64		-48.15	-21.25	26.90

5570 MHz	non HT160, 6 to 54 Mbps	1	6.00		-66.62								-60.62	-21.25	39.37
			6.00						-66.20				-60.20	-21.25	38.95
	non HT160, 6 to 54 Mbps	2	6.00		-66.48	-67.10							-57.77	-21.25	36.52
			6.00						-66.79	-66.53			-57.65	-21.25	36.40
	non HT160, 6 to 54 Mbps	3	6.00		-67.08	-66.40	-65.64						-55.56	-21.25	34.31
			6.00						-67.21	-66.98	-66.52		-56.12	-21.25	34.87
	non HT160, 6 to 54 Mbps	4	6.00	-66.59	-66.35	-66.84	-66.66						-54.58	-21.25	33.33
			6.00					-66.13	-66.97	-66.29	-66.39		-54.41	-21.25	33.16
	VHT160, M0.1 to M9.1	1	6.00		-66.79								-60.79	-21.25	39.54
			6.00						-66.79				-60.79	-21.25	39.54
	VHT160, M0.1 to M9.1	2	6.00		-66.10	-65.66							-56.86	-21.25	35.61
			6.00						-66.34	-66.12			-57.22	-21.25	35.97
	VHT160, M0.1 to M9.1	3	6.00		-67.31	-66.57	-66.35						-55.95	-21.25	34.70
			6.00						-66.25	-65.68	-66.62		-55.39	-21.25	34.14
	VHT160, M0.1 to M9.1	4	6.00	-66.52	-66.16	-67.03	-67.25						-54.70	-21.25	33.45
			6.00					-66.82	-66.94	-66.56	-66.93		-54.79	-21.25	33.54
	VHT160, M0.1 to M9.1-BF	2	9.01		-66.77	-66.89							-54.81	-21.25	33.56
			9.01						-65.56	-66.59			-54.02	-21.25	32.77
	VHT160, M0.1 to M9.1-BF	3	10.77		-66.60	-67.30	-67.03						-51.42	-21.25	30.17
			10.77						-66.36	-65.91	-66.24		-50.62	-21.25	29.37
	VHT160, M0.1 to M9.1-BF	4	12.02	-66.52	-67.51	-67.65	-66.51						-48.98	-21.25	27.73
			12.02					-67.03	-66.72	-65.94	-66.44		-48.47	-21.25	27.22
	HE160, M0.1 to M11.1	1	6.00		-66.12								-60.12	-21.25	38.87
			6.00						-65.95				-59.95	-21.25	38.70
	HE160, M0.1 to M11.1	2	6.00		-66.55	-66.95							-57.73	-21.25	36.48
			6.00						-66.47	-66.26			-57.36	-21.25	36.11

	HE160, M0.1 to M11.1	3	6.00		-66.44	-66.85	-66.41						-55.79	-21.25	34.54
			6.00						-67.37	-66.06	-67.28		-56.09	-21.25	34.84
	HE160, M0.1 to M11.1	4	6.00	-66.59	-66.46	-66.34	-67.21						-54.62	-21.25	33.37
			6.00					-66.74	-67.40	-66.86	-66.03		-54.71	-21.25	33.46
	HE160, M0.1 to M11.1-BF	2	9.01		-66.49	-66.85							-54.65	-21.25	33.40
			9.01						-65.46	-65.79			-53.60	-21.25	32.35
	HE160, M0.1 to M11.1-BF	3	10.77		-66.65	-66.51	-66.64						-51.06	-21.25	29.81
			10.77						-67.16	-67.20	-66.62		-51.44	-21.25	30.19
	HE160, M0.1 to M11.1-BF	4	12.02	-66.82	-66.41	-66.87	-66.41						-48.58	-21.25	27.33
			12.02					-66.94	-66.25	-67.24	-67.03		-48.81	-21.25	27.56

Conducted Emission Test Data (Average)

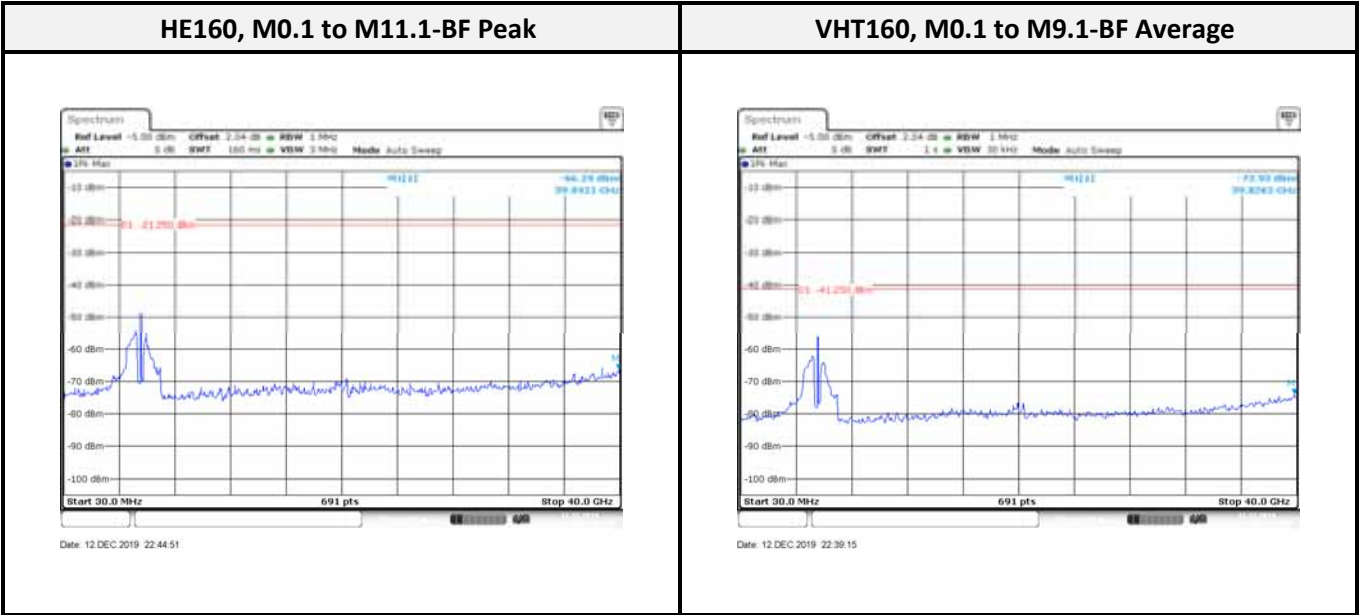
Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	6.00		-74.08							0.51	-67.57	-41.25	26.32
			6.00						-74.58			0.51	-68.07	-41.25	26.82
	non HT160, 6 to 54 Mbps	2	6.00		-74.21	-74.42						0.51	-64.79	-41.25	23.54
			6.00						-74.05	-74.67		0.51	-64.83	-41.25	23.58
	non HT160, 6 to 54 Mbps	3	6.00		-73.72	-74.66	-73.72					0.51	-62.73	-41.25	21.48
			6.00						-74.21	-74.10	-74.44	0.51	-62.97	-41.25	21.72
	non HT160, 6 to 54 Mbps	4	6.00	-74.12	-74.20	-74.22	-74.52					0.51	-61.73	-41.25	20.48
			6.00					-73.94	-74.45	-74.50	-74.26	0.51	-61.75	-41.25	20.50
	VHT160, M0.1 to M9.1	1	6.00		-74.25							0.51	-67.74	-41.25	26.49
			6.00						-73.78			0.51	-67.27	-41.25	26.02
	VHT160, M0.1 to M9.1	2	6.00		-73.93	-74.27						0.51	-64.57	-41.25	23.32
			6.00						-74.55	-74.15		0.51	-64.82	-41.25	23.57
	VHT160, M0.1 to M9.1	3	6.00		-74.09	-73.50	-74.28					0.51	-62.66	-41.25	21.41
			6.00						-73.89	-74.33	-74.06	0.51	-62.81	-41.25	21.56
	VHT160, M0.1 to M9.1	4	6.00	-74.06	-74.40	-73.92	-74.54					0.51	-61.69	-41.25	20.44
			6.00					-74.52	-74.60	-74.27	-73.90	0.51	-61.78	-41.25	20.53
	VHT160, M0.1 to M9.1-BF	2	9.01		-74.19	-74.37						0.51	-61.74	-41.25	20.49

			9.01						-74.25	-74.32		0.51	-61.75	-41.25	20.50
	VHT160, M0.1 to M9.1-BF	3	10.77		-74.19	-73.72	-74.26					0.51	-58.00	-41.25	16.75
			10.77						-74.70	-74.25	-74.45	0.51	-58.41	-41.25	17.16
	VHT160, M0.1 to M9.1-BF	4	12.02	-73.43	-74.31	-74.05	-74.39					0.51	-55.48	-41.25	14.23
			12.02					-74.10	-74.22	-74.38	-73.74	0.51	-55.55	-41.25	14.30
	HE160, M0.1 to M11.1	1	6.00		-74.14							0.27	-67.87	-41.25	26.62
			6.00						-74.36			0.27	-68.09	-41.25	26.84
	HE160, M0.1 to M11.1	2	6.00		-74.58	-74.26						0.27	-65.13	-41.25	23.88
			6.00						-74.50	-74.30		0.27	-65.12	-41.25	23.87
	HE160, M0.1 to M11.1	3	6.00		-73.77	-74.23	-74.53					0.27	-63.12	-41.25	21.87
			6.00						-73.64	-74.43	-74.31	0.27	-63.07	-41.25	21.82
	HE160, M0.1 to M11.1	4	6.00	-74.57	-73.91	-74.21	-74.37					0.27	-61.97	-41.25	20.72
			6.00					-74.66	-74.66	-74.30	-74.02	0.27	-62.11	-41.25	20.86
	HE160, M0.1 to M11.1-BF	2	9.01		-74.10	-74.09						0.27	-61.81	-41.25	20.56
			9.01						-74.43	-74.34		0.27	-62.10	-41.25	20.85
	HE160, M0.1 to M11.1-BF	3	10.77		-74.35	-73.61	-74.28					0.27	-58.26	-41.25	17.01
			10.77						-73.87	-74.58	-74.67	0.27	-58.55	-41.25	17.30
	HE160, M0.1 to M11.1-BF	4	12.02	-73.99	-74.42	-74.43	-74.26					0.27	-55.96	-41.25	14.71
			12.02					-74.41	-74.18	-73.78	-74.22	0.27	-55.83	-41.25	14.58

5570 MHz	non HT160, 6 to 54 Mbps	1	6.00		-73.98							0.51	-67.47	-41.25	26.22
			6.00						-73.85			0.51	-67.34	-41.25	26.09
	non HT160, 6 to 54 Mbps	2	6.00		-73.92	-73.68						0.51	-64.27	-41.25	23.02
			6.00						-74.54	-74.43		0.51	-64.97	-41.25	23.72
	non HT160, 6 to 54 Mbps	3	6.00		-74.71	-74.40	-74.46					0.51	-63.24	-41.25	21.99
			6.00						-73.83	-73.44	-74.34	0.51	-62.57	-41.25	21.32
	non HT160, 6 to 54 Mbps	4	6.00	-74.25	-73.83	-74.38	-74.62					0.51	-61.73	-41.25	20.48
			6.00					-74.33	-74.35	-74.48	-74.41	0.51	-61.86	-41.25	20.61
	VHT160, M0.1 to M9.1	1	6.00		-74.32							0.51	-67.81	-41.25	26.56
			6.00						-74.43			0.51	-67.92	-41.25	26.67
	VHT160, M0.1 to M9.1	2	6.00		-74.51	-73.16						0.51	-64.27	-41.25	23.02
			6.00						-74.20	-73.83		0.51	-64.49	-41.25	23.24
	VHT160, M0.1 to M9.1	3	6.00		-74.40	-74.19	-74.67					0.51	-63.13	-41.25	21.88
			6.00						-74.19	-73.50	-74.49	0.51	-62.76	-41.25	21.51
	VHT160, M0.1 to M9.1	4	6.00	-73.71	-74.49	-74.22	-74.39					0.51	-61.66	-41.25	20.41

		6.00					-74.55	-74.52	-74.72	-74.54	0.51	-62.05	-41.25	20.80
VHT160, M0.1 to M9.1-BF	2	9.01		-74.38	-74.44						0.51	-61.88	-41.25	20.63
		9.01						-73.66	-73.77		0.51	-61.18	-41.25	19.93
VHT160, M0.1 to M9.1-BF	3	10.77		-74.35	-74.48	-74.36					0.51	-58.34	-41.25	17.09
		10.77						-74.81	-74.13	-74.34	0.51	-58.37	-41.25	17.12
VHT160, M0.1 to M9.1-BF	4	12.02	-74.33	-74.13	-74.30	-74.48					0.51	-55.76	-41.25	14.51
		12.02					-74.62	-74.47	-73.97	-74.48	0.51	-55.83	-41.25	14.58
HE160, M0.1 to M11.1	1	6.00		-74.79							0.27	-68.52	-41.25	27.27
		6.00						-74.37			0.27	-68.10	-41.25	26.85
HE160, M0.1 to M11.1	2	6.00		-74.22	-73.84						0.27	-64.74	-41.25	23.49
		6.00						-74.62	-74.05		0.27	-65.05	-41.25	23.80
HE160, M0.1 to M11.1	3	6.00		-74.33	-74.59	-74.58					0.27	-63.46	-41.25	22.21
		6.00						-73.51	-74.39	-74.42	0.27	-63.05	-41.25	21.80
HE160, M0.1 to M11.1	4	6.00	-74.50	-73.73	-73.66	-74.20					0.27	-61.72	-41.25	20.47
		6.00					-74.26	-74.00	-74.17	-74.24	0.27	-61.88	-41.25	20.63
HE160, M0.1 to M11.1-BF	2	9.01		-74.32	-74.13						0.27	-61.93	-41.25	20.68
		9.01						-74.67	-74.34		0.27	-62.21	-41.25	20.96
HE160, M0.1 to M11.1-BF	3	10.77		-74.02	-74.31	-74.43					0.27	-58.44	-41.25	17.19
		10.77						-74.51	-74.42	-73.78	0.27	-58.41	-41.25	17.16
HE160, M0.1 to M11.1-BF	4	12.02	-74.61	-74.56	-74.26	-73.98					0.27	-56.03	-41.25	14.78
		12.02					-74.38	-74.43	-74.54	-74.54	0.27	-56.16	-41.25	14.91

For ISED



Note: Record the worst plot in the report.

Conducted Emission Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	6.00		-67.11								-61.11	-21.25	39.86
			6.00						-66.98				-60.98	-21.25	39.73
	non HT160, 6 to 54 Mbps	2	6.00		-67.06	-66.84							-57.94	-21.25	36.69
			6.00						-66.39	-66.65			-57.51	-21.25	36.26
	non HT160, 6 to 54 Mbps	3	6.00		-66.38	-66.46	-66.56						-55.69	-21.25	34.44
			6.00						-65.70	-66.12	-66.90		-55.44	-21.25	34.19
	non HT160, 6 to 54 Mbps	4	6.00	-66.54	-66.48	-66.20	-66.87						-54.50	-21.25	33.25
			6.00					-66.84	-66.73	-65.97	-66.96		-54.59	-21.25	33.34
	VHT160, M0.1 to M9.1	1	6.00		-67.20								-61.20	-21.25	39.95
			6.00						-66.49				-60.49	-21.25	39.24
	VHT160, M0.1 to M9.1	2	6.00		-66.49	-66.12							-57.29	-21.25	36.04
			6.00						-66.90	-66.46			-57.66	-21.25	36.41
	VHT160, M0.1 to M9.1	3	6.00		-66.08	-66.87	-67.29						-55.95	-21.25	34.70
			6.00						-66.41	-66.06	-66.35		-55.50	-21.25	34.25
	VHT160, M0.1 to M9.1	4	6.00	-65.71	-66.02	-66.90	-66.46						-54.23	-21.25	32.98
			6.00					-66.26	-66.30	-66.81	-66.70		-54.49	-21.25	33.24
	VHT160, M0.1 to M9.1-BF	2	9.01		-65.79	-65.24							-53.49	-21.25	32.24
			9.01						-66.16	-67.13			-54.60	-21.25	33.35
	VHT160, M0.1 to M9.1-BF	3	10.77		-67.02	-66.99	-66.27						-51.20	-21.25	29.95
			10.77						-66.97	-67.17	-66.08		-51.17	-21.25	29.92
	VHT160, M0.1 to M9.1-BF	4	12.02	-67.14	-66.50	-66.69	-66.37						-48.62	-21.25	27.37
			12.02					-66.44	-67.26	-66.85	-66.63		-48.74	-21.25	27.49
	HE160, M0.1 to M11.1	1	6.00		-66.08								-60.08	-21.25	38.83
			6.00						-65.11				-59.11	-21.25	37.86
	HE160, M0.1 to M11.1	2	6.00		-66.26	-66.75							-57.49	-21.25	36.24
			6.00						-66.05	-66.38			-57.20	-21.25	35.95
	HE160, M0.1 to M11.1	3	6.00		-66.99	-66.64	-65.82						-55.68	-21.25	34.43
			6.00						-66.78	-66.37	-65.75		-55.51	-21.25	34.26

	HE160, M0.1 to M11.1	4	6.00	-67.32	-65.98	-67.04	-66.45						-54.65	-21.25	33.40
			6.00					-66.57	-66.75	-67.56	-66.71		-54.86	-21.25	33.61
	HE160, M0.1 to M11.1-BF	2	9.01		-66.59	-67.52							-55.01	-21.25	33.76
			9.01						-66.67	-66.78			-54.71	-21.25	33.46
	HE160, M0.1 to M11.1-BF	3	10.77		-66.00	-66.58	-66.67						-50.87	-21.25	29.62
			10.77						-66.31	-66.02	-66.37		-50.69	-21.25	29.44
	HE160, M0.1 to M11.1-BF	4	12.02	-66.39	-66.41	-66.38	-66.29						-48.33	-21.25	27.08
			12.02					-67.03	-66.35	-67.10	-65.86		-48.52	-21.25	27.27

Conducted Emission Test Data (Average)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Spur Power (dBm)	Tx 2 Spur Power (dBm)	Tx 3 Spur Power (dBm)	Tx 4 Spur Power (dBm)	Tx 5 Spur Power (dBm)	Tx 6 Spur Power (dBm)	Tx 7 Spur Power (dBm)	Tx 8 Spur Power (dBm)	Duty factor	Total Conducted Spur Power (dBm)	Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	6.00		-74.24							0.51	-67.73	-41.25	26.48
			6.00						-74.61			0.51	-68.10	-41.25	26.85
	non HT160, 6 to 54 Mbps	2	6.00		-74.06	-74.66						0.51	-64.83	-41.25	23.58
			6.00						-74.18	-74.09		0.51	-64.61	-41.25	23.36
	non HT160, 6 to 54 Mbps	3	6.00		-74.32	-73.88	-74.33					0.51	-62.89	-41.25	21.64
			6.00						-74.59	-74.54	-73.18	0.51	-62.77	-41.25	21.52
	non HT160, 6 to 54 Mbps	4	6.00	-74.04	-74.56	-73.99	-74.49					0.51	-61.73	-41.25	20.48
			6.00					-74.59	-74.64	-74.45	-73.93	0.51	-61.86	-41.25	20.61
	VHT160, M0.1 to M9.1	1	6.00		-74.61							0.51	-68.10	-41.25	26.85
			6.00						-74.14			0.51	-67.63	-41.25	26.38
	VHT160, M0.1 to M9.1	2	6.00		-74.37	-74.36						0.51	-64.84	-41.25	23.59
			6.00						-74.30	-74.59		0.51	-64.92	-41.25	23.67
	VHT160, M0.1 to M9.1	3	6.00		-74.06	-74.06	-74.32					0.51	-62.86	-41.25	21.61
			6.00						-74.04	-73.77	-74.20	0.51	-62.72	-41.25	21.47
	VHT160, M0.1 to M9.1	4	6.00	-74.82	-73.96	-74.37	-74.50					0.51	-61.87	-41.25	20.62
			6.00					-74.09	-74.01	-74.68	-74.49	0.51	-61.78	-41.25	20.53
	VHT160, M0.1 to M9.1-BF	2	9.01		-74.67	-74.26						0.51	-61.93	-41.25	20.68
			9.01						-74.52	-74.54		0.51	-62.00	-41.25	20.75

VHT160, M0.1 to M9.1-BF	3	10.77		-74.59	-74.48	-74.06					0.51	-58.32	-41.25	17.07
		10.77						-74.36	-73.75	-74.36	0.51	-58.09	-41.25	16.84
VHT160, M0.1 to M9.1-BF	4	12.02	-74.54	-73.93	-74.26	-74.17					0.51	-55.67	-41.25	14.42
		12.02					-74.83	-73.57	-74.61	-74.21	0.51	-55.73	-41.25	14.48
HE160, M0.1 to M11.1	1	6.00		-74.37							0.27	-68.10	-41.25	26.85
		6.00						-74.27			0.27	-68.00	-41.25	26.75
HE160, M0.1 to M11.1	2	6.00		-73.92	-73.96						0.27	-64.66	-41.25	23.41
		6.00						-73.35	-74.39		0.27	-64.56	-41.25	23.31
HE160, M0.1 to M11.1	3	6.00		-73.88	-74.73	-74.64					0.27	-63.36	-41.25	22.11
		6.00						-74.00	-73.86	-74.09	0.27	-62.94	-41.25	21.69
HE160, M0.1 to M11.1	4	6.00	-74.28	-74.25	-74.32	-74.26					0.27	-61.99	-41.25	20.74
		6.00					-74.56	-74.62	-74.39	-74.39	0.27	-62.20	-41.25	20.95
HE160, M0.1 to M11.1-BF	2	9.01		-74.01	-73.63						0.27	-61.53	-41.25	20.28
		9.01						-74.23	-74.40		0.27	-62.02	-41.25	20.77
HE160, M0.1 to M11.1-BF	3	10.77		-74.40	-74.31	-74.55					0.27	-58.61	-41.25	17.36
		10.77						-74.14	-74.30	-74.08	0.27	-58.36	-41.25	17.11
HE160, M0.1 to M11.1-BF	4	12.02	-74.13	-74.34	-74.31	-74.04					0.27	-55.89	-41.25	14.64
		12.02					-74.11	-74.64	-74.58	-74.63	0.27	-56.17	-41.25	14.92

6 FCC §15.407(a)(1), RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Conducted Transmitter Output Power

6.1 Applicable Standard

According to FCC §15.407(a),

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.

As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

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. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

Devices, other than devices installed in vehicles, shall comply with the following:

- a) The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less;
- b) The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

6.2 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.

6.3 Test Data

FCC/NCC:

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Max ower (dBm)	Tx 2 Max ower (dBm)	Tx 3 Max ower (dBm)	Tx 4 Max ower (dBm)	Tx 5 Max ower (dBm)	Tx 6 Max ower (dBm)	Tx 7 Max ower (dBm)	Tx 8 Max ower (dBm)	Duty factor	Total Conducted Max power (dBm)	FCC Limit	Margin (dB)	Total Conducted Max EIRP power (dBm)	ISED Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	6.00		10.31							0.51	10.82	30.00	19.18			
			6.00						10.37			0.51	10.88	30.00	19.13			
	non HT160, 6 to 54 Mbps	2	6.00		7.31	6.83						0.51	10.59	30.00	19.41			
			6.00						7.36	7.22		0.51	10.81	30.00	19.19			
	non HT160, 6 to 54 Mbps	3	6.00		6.68	6.89	7.39					0.51	12.28	30.00	17.72			
			6.00						7.39	7.27	6.66	0.51	12.40	30.00	17.60			
	non HT160, 6 to 54 Mbps	4	6.00	3.56	7.01	7.01	7.19					0.51	12.95	30.00	17.05			
			6.00					4.27	7.54	7.50	7.60	0.51	13.46	30.00	16.54			
	VHT160, M0.1 to M9.1	1	6.00		12.89							0.51	13.40	30.00	16.60			
			6.00						12.55			0.51	13.06	30.00	16.94			
	VHT160, M0.1 to M9.1	2	6.00		10.59	10.37						0.51	14.00	30.00	16.00			
			6.00						10.82	10.82		0.51	14.34	30.00	15.66			
	VHT160, M0.1 to M9.1	3	6.00		10.43	10.29	11.02					0.51	15.87	30.00	14.13			
			6.00						10.79	10.90	10.44	0.51	15.99	30.00	14.01			
	VHT160, M0.1 to M9.1	4	6.00	6.29	9.89	9.64	10.09					0.51	15.75	30.00	14.25			
			6.00					6.30	9.55	9.60	9.89	0.51	15.58	30.00	14.42			
	VHT160, M0.1 to M9.1-BF	2	9.01		8.42	8.80						0.51	12.14	26.99	14.85			
			9.01						8.95	8.87		0.51	12.43	26.99	14.56			
	VHT160, M0.1 to M9.1-BF	3	10.77		6.38	5.67	5.56					0.51	11.17	25.23	14.06			
			10.77						5.59	6.08	5.60	0.51	11.04	25.23	14.19			
	VHT160, M0.1 to M9.1-BF	4	12.02	0.43	3.95	3.86	4.14					0.51	9.86	23.98	14.12			
			12.02					0.50	3.81	3.78	4.09	0.51	9.79	23.98	14.19			
	HE160, M0.1 to M11.1	1	6.00		12.90							0.27	13.17	30.00	16.83			
			6.00						12.68			0.27	12.95	30.00	17.05			
	HE160, M0.1 to M11.1	2	6.00		10.57	10.70						0.27	13.92	30.00	16.08			
			6.00						10.88	10.89		0.27	14.16	30.00	15.84			
	HE160, M0.1 to M11.1	3	6.00		10.42	10.77	10.84					0.27	15.72	30.00	14.28			

			6.00						10.84	10.95	10.48	0.27	15.80	30.00	14.20			
	HE160, M0.1 to M11.1	4	6.00	6.27	9.66	9.64	9.90					0.27	15.38	30.00	14.62			
			6.00					6.28	9.61	9.89	9.81	0.27	15.42	30.00	14.58			
	HE160, M0.1 to M11.1-BF	2	9.01		8.93	8.57						0.27	12.04	26.99	14.95			
			9.01						9.00	8.92		0.27	12.24	26.99	14.75			
	HE160, M0.1 to M11.1-BF	3	10.77		6.12	5.88	5.83					0.27	10.99	25.23	14.24			
			10.77						5.67	6.10	5.64	0.27	10.85	25.23	14.38			
	HE160, M0.1 to M11.1-BF	4	12.02	0.41	3.95	3.76	4.06					0.27	9.57	23.98	14.41			
			12.02					0.47	3.88	4.12	4.07	0.27	9.66	23.98	14.32			

5570 MHz	non HT160, 6 to 54 Mbps	1	6.00		11.52							0.51	12.03	23.85	11.82			
			6.00						12.24			0.51	12.75	23.85	11.10			
	non HT160, 6 to 54 Mbps	2	6.00		9.35	9.99						0.51	13.20	23.85	10.65			
			6.00						10.03	9.74		0.51	13.41	23.85	10.44			
	non HT160, 6 to 54 Mbps	3	6.00		9.26	10.03	9.95					0.51	15.04	23.85	8.81			
			6.00						10.06	9.74	10.22	0.51	15.29	23.85	8.56			
	non HT160, 6 to 54 Mbps	4	6.00	6.91	9.55	10.07	9.86					0.51	15.79	23.85	8.06			
			6.00					6.82	10.31	10.29	10.05	0.51	16.12	23.85	7.73			
	VHT160, M0.1 to M9.1	1	6.00		14.12							0.51	14.63	23.85	9.22			
			6.00						14.52			0.51	15.03	23.85	8.83			
	VHT160, M0.1 to M9.1	2	6.00		12.01	12.66						0.51	15.87	23.85	7.98			
			6.00						12.69	12.24		0.51	15.99	23.85	7.86			
	VHT160, M0.1 to M9.1	3	6.00		11.08	11.75	11.16					0.51	16.62	23.85	7.23			
			6.00						11.70	11.34	11.85	0.51	16.92	23.85	6.93			
	VHT160, M0.1 to M9.1	4	6.00	8.49	11.18	11.80	11.43					0.51	17.43	23.85	6.42			
			6.00					7.92	11.46	11.50	11.19	0.51	17.28	23.85	6.57			
	VHT160, M0.1 to M9.1-BF	2	9.01		10.99	11.68						0.51	14.87	20.84	5.97			
			9.01						11.70	11.37		0.51	15.06	20.84	5.78			
	VHT160, M0.1 to M9.1-BF	3	10.77		9.88	10.79	10.56					0.51	15.71	19.08	3.37			
			10.77						10.71	10.16	10.82	0.51	15.85	19.08	3.23			
	VHT160, M0.1 to M9.1-BF	4	12.02	5.47	8.09	8.68	8.48					0.51	14.38	17.83	3.45			
			12.02					4.99	8.34	8.47	8.19	0.51	14.24	17.83	3.59			
	HE160, M0.1 to M11.1	1	6.00		14.15							0.27	14.42	23.85	9.43			
			6.00						14.64			0.27	14.91	23.85	8.94			
	HE160, M0.1 to M11.1	2	6.00		12.06	12.80						0.27	15.72	23.85	8.13			

			6.00						12.74	12.28		0.27	15.80	23.85	8.05			
	HE160, M0.1 to M11.1	3	6.00		11.21	11.88	11.21					0.27	16.49	23.85	7.36			
			6.00						11.74	11.40	11.86	0.27	16.71	23.85	7.14			
	HE160, M0.1 to M11.1	4	6.00	8.41	11.06	11.83	11.53					0.27	17.19	23.85	6.66			
			6.00					8.17	11.45	11.46	11.47	0.27	17.13	23.85	6.72			
	HE160, M0.1 to M11.1-BF	2	9.01		11.04	11.73						0.27	14.68	20.84	6.16			
			9.01						11.75	11.44		0.27	14.88	20.84	5.96			
	HE160, M0.1 to M11.1-BF	3	10.77		9.21	9.80	9.80					0.27	14.65	19.08	4.43			
			10.77						9.73	9.42	9.87	0.27	14.72	19.08	4.36			
	HE160, M0.1 to M11.1-BF	4	12.02	6.40	9.25	9.70	9.47					0.27	15.18	17.83	2.65			
			12.02					6.25	9.33	9.43	9.44	0.27	15.09	17.83	2.74			

ISED:

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Max ower (dBm)	Tx 2 Max ower (dBm)	Tx 3 Max ower (dBm)	Tx 4 Max ower (dBm)	Tx 5 Max ower (dBm)	Tx 6 Max ower (dBm)	Tx 7 Max ower (dBm)	Tx 8 Max ower (dBm)	Duty factor	Total Conducted Max power (dBm)	FCC Limit	Margin (dB)	Total Conducted Max EIRP power (dBm)	ISED Limit	Margin (dB)
5250 MHz	non HT160, 6 to 54 Mbps	1	6.00		10.30							0.51	10.81			16.81	23.00	6.19
			6.00						10.38			0.51	10.89			16.89	30.00	13.11
	non HT160, 6 to 54 Mbps	2	6.00		7.33	6.93						0.51	10.65			16.65	23.00	6.35
			6.00						7.31	7.32		0.51	10.84			16.84	30.00	13.16
	non HT160, 6 to 54 Mbps	3	6.00		7.21	7.14	7.35					0.51	12.52			18.52	23.00	4.48
			6.00						7.33	7.39	6.74	0.51	12.44			18.44	30.00	11.56
	non HT160, 6 to 54 Mbps	4	6.00	3.57	7.02	6.97	7.15					0.51	12.94			18.94	23.00	4.06
			6.00					4.24	7.58	7.59	7.43	0.51	13.44			19.44	30.00	10.56
	VHT160, M0.1 to M9.1	1	6.00		12.86							0.51	13.37			19.37	23.00	3.63
			6.00						12.59			0.51	13.10			19.10	30.00	10.90
	VHT160, M0.1 to M9.1	2	6.00		11.06	10.37						0.51	14.24			20.24	23.00	2.76
			6.00						10.86	10.87		0.51	14.38			20.38	30.00	9.62
	VHT160, M0.1 to M9.1	3	6.00		11.20	10.75	11.27					0.51	16.36			22.36	23.00	0.64
			6.00						10.83	10.97	10.24	0.51	15.97			21.97	30.00	8.03
	VHT160, M0.1 to M9.1	4	6.00	6.27	9.92	9.62	10.13					0.51	15.76			21.76	23.00	1.24
			6.00					6.28	9.59	9.63	9.69	0.51	15.54			21.54	30.00	8.46

VHT160, M0.1 to M9.1-BF	2	9.01		8.47	8.51					0.51	12.01			21.02	23.00	1.98	
		9.01						9.00	8.91		0.51	12.47			21.48	30.00	8.52
	3	10.77		5.68	5.36	5.61					0.51	10.83			21.60	23.00	1.40
		10.77						5.63	6.12	5.44	0.51	11.02			21.79	30.00	8.21
	4	12.02	-0.69	2.87	2.78	3.06					0.51	8.78			20.80	23.00	2.20
		12.02					-0.43	2.87	2.84	2.87	0.51	8.77			20.79	30.00	9.21
	1	6.00		12.93							0.27	13.20			19.20	23.00	3.80
		6.00						12.73			0.27	13.00			19.00	30.00	11.00
	2	6.00		10.62	10.41						0.27	13.80			19.80	23.00	3.20
		6.00						10.91	10.89		0.27	14.18			20.18	30.00	9.82
	3	6.00		10.18	9.42	10.13					0.27	14.96			20.96	23.00	2.04
		6.00						9.96	9.96	9.26	0.27	14.78			20.78	30.00	9.22
	4	6.00	6.28	9.82	9.74	10.26					0.27	15.57			21.57	23.00	1.43
		6.00					6.28	9.66	9.94	9.61	0.27	15.39			21.39	30.00	8.61
	2	9.01		8.47	8.86						0.27	11.95			20.96	23.00	2.04
		9.01						9.04	8.90		0.27	12.25			21.26	30.00	8.74
	3	10.77		6.03	5.88	5.73					0.27	10.92			21.69	23.00	1.31
		10.77						5.71	6.16	5.43	0.27	10.82			21.59	30.00	8.41
	4	12.02	-0.71	2.76	2.89	2.96					0.27	8.50			20.52	23.00	2.48
			12.02					-0.44	2.94	3.15	2.77	0.27	8.61			20.63	30.00

7 FCC §2.1051, §15.407(b), RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Conducted Band Edge and MASK

7.1 Applicable Standard

According to FCC §15.407(b):

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.

For transmitters operating in the 5.725-5.85 GHz band: 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.

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.

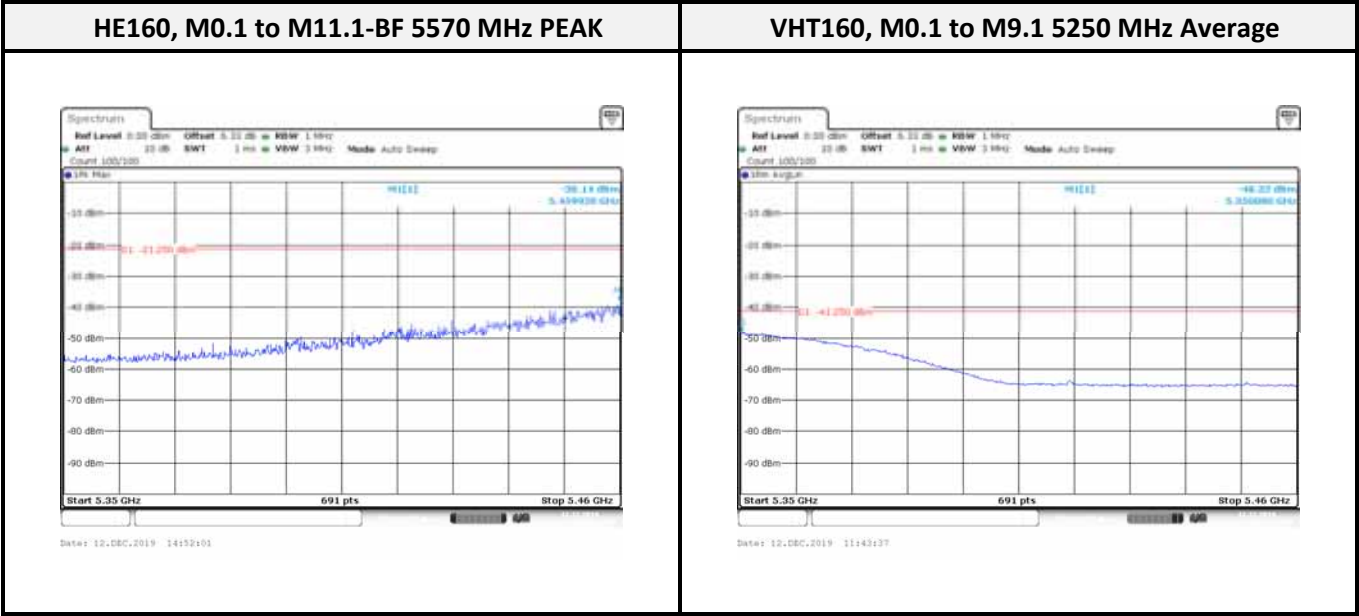
In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

7.2 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Place the radio in continuous transmit mode. Use the procedures in KDB 789033 D02 General UNII Test Procedures New Rules v01r04 to substitute conducted measurements in place of radiated measurements.
3. Configure Spectrum analyzer as per test parameters below (be sure to enter all losses between the transmitter output and the spectrum analyzer).
4. Record the marker. Also measure any emissions in the restricted bands.
5. The “measure-and-sum technique” is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units. The worst case output is recorded.
6. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance.
Also measure any emissions in the restricted bands
7. Capture graphs and record pertinent measurement data.

7.3 Test Data

For FCC/NCC



Note: Record the worst plot in the report.

Conducted Band Edge Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZHUW 057C	non HT160, 6 to 54 Mbps	1	6.00		-38.51								-32.51	-21.25	11.26
			6.00						-40.98				-34.98	-21.25	13.73
	non HT160, 6 to 54 Mbps	2	6.00		-44.30	-44.91							-35.59	-21.25	14.34
			6.00						-41.31	-40.67			-31.97	-21.25	10.72
	non HT160, 6 to 54 Mbps	3	6.00		-45.27	-44.93	-42.73						-33.39	-21.25	12.14
			6.00						-41.48	-41.83	-47.28		-32.08	-21.25	10.83
	non HT160, 6 to 54 Mbps	4	6.00	-46.62	-45.80	-43.97	-41.40						-31.94	-21.25	10.69
			6.00					-48.20	-45.12	-45.18	-48.41		-34.43	-21.25	13.18
	VHT160, M0.1 to M9.1	1	6.00		-37.65								-31.65	-21.25	10.40
			6.00						-34.26				-28.26	-21.25	7.01
	VHT160, M0.1 to M9.1	2	6.00		-42.84	-43.35							-34.08	-21.25	12.83
			6.00						-40.55	-37.47			-29.73	-21.25	8.48
	VHT160, M0.1 to M9.1	3	6.00		-43.85	-43.16	-41.08						-31.76	-21.25	10.51
			6.00						-39.27	-37.95	-41.44		-28.55	-21.25	7.30
	VHT160, M0.1 to M9.1	4	6.00	-45.99	-43.78	-43.21	-41.51						-31.32	-21.25	10.07
			6.00					-42.46	-39.09	-39.75	-44.52		-28.93	-21.25	7.68
	VHT160, M0.1 to M9.1-BF	2	9.01		-45.99	-44.61							-33.22	-21.25	11.97
			9.01						-43.17	-43.78			-31.44	-21.25	10.19
	VHT160, M0.1 to M9.1-BF	3	10.77		-47.20	-49.96	-50.79						-33.49	-21.25	12.24
			10.77						-50.66	-42.20	-48.75		-30.08	-21.25	8.83
	VHT160, M0.1 to M9.1-BF	4	12.02	-51.02	-54.99	-54.23	-52.29						-34.81	-21.25	13.56
			12.02					-53.20	-52.23	-53.57	-51.40		-34.48	-21.25	13.23
	HE160, M0.1 to M11.1	1	6.00		-37.38								-31.38	-21.25	10.13
			6.00						-33.34				-27.34	-21.25	6.09
	HE160, M0.1 to M11.1	2	6.00		-43.51	-43.28							-34.38	-21.25	13.13
			6.00						-38.09	-35.41			-27.54	-21.25	6.29
	HE160, M0.1 to M11.1	3	6.00		-44.14	-42.58	-39.77						-31.01	-21.25	9.76
			6.00						-38.05	-34.63	-37.57		-25.70	-21.25	4.45

	HE160, M0.1 to M11.1	4	6.00	-43.95	-42.97	-43.43	-40.37						-30.42	-21.25	9.17
			6.00					-38.26	-37.13	-38.44	-41.06		-26.49	-21.25	5.24
	HE160, M0.1 to M11.1-BF	2	9.01		-45.89	-45.88							-33.86	-21.25	12.61
			9.01						-40.98	-40.93			-28.94	-21.25	7.69
	HE160, M0.1 to M11.1-BF	3	10.77		-47.82	-46.15	-49.19						-32.00	-21.25	10.75
			10.77						-41.93	-42.81	-47.58		-27.96	-21.25	6.71
	HE160, M0.1 to M11.1-BF	4	12.02	-57.06	-54.48	-52.26	-51.39						-35.25	-21.25	14.00
			12.02					-51.76	-51.90	-52.05	-52.26		-33.95	-21.25	12.70

55/70 VHT/CC	non HT160, 6 to 54 Mbps	1	6.00		-36.35								-30.35	-21.25	9.10
			6.00						-48.22				-42.22	-21.25	20.97
	non HT160, 6 to 54 Mbps	2	6.00		-43.22	-41.73							-33.40	-21.25	12.15
			6.00						-52.02	-52.35			-43.17	-21.25	21.92
	non HT160, 6 to 54 Mbps	3	6.00		-43.64	-41.59	-41.38						-31.32	-21.25	10.07
			6.00						-52.31	-52.24	-50.43		-40.80	-21.25	19.55
	non HT160, 6 to 54 Mbps	4	6.00	-45.69	-42.55	-40.97	-41.23						-30.24	-21.25	8.99
			6.00					-45.01	-51.92	-51.67	-51.17		-36.80	-21.25	15.55
	VHT160, M0.1 to M9.1	1	6.00		-36.39								-30.39	-21.25	9.14
			6.00						-45.22				-39.22	-21.25	17.97
	VHT160, M0.1 to M9.1	2	6.00		-42.61	-37.70							-30.48	-21.25	9.23
			6.00						-48.90	-51.52			-41.00	-21.25	19.75
	VHT160, M0.1 to M9.1	3	6.00		-44.23	-41.99	-43.60						-32.39	-21.25	11.14
			6.00						-49.83	-52.35	-49.97		-39.80	-21.25	18.55
	VHT160, M0.1 to M9.1	4	6.00	-46.45	-43.72	-42.47	-42.74						-31.57	-21.25	10.32
			6.00					-45.15	-49.51	-51.21	-50.94		-36.41	-21.25	15.16
	VHT160, M0.1 to M9.1-BF	2	9.01		-45.48	-42.64							-31.81	-21.25	10.56
			9.01						-50.09	-52.16			-38.98	-21.25	17.73
	VHT160, M0.1 to M9.1-BF	3	10.77		-44.75	-40.88	-43.13						-27.09	-21.25	5.84
			10.77						-51.81	-51.92	-50.13		-35.66	-21.25	14.41
	VHT160, M0.1 to M9.1-BF	4	12.02	-46.58	-43.39	-40.55	-44.47						-25.15	-21.25	3.90
			12.02					-49.65	-51.00	-52.07	-53.13		-33.23	-21.25	11.98
	HE160, M0.1 to M11.1	1	6.00		-34.33								-28.33	-21.25	7.08
			6.00						-43.52				-37.52	-21.25	16.27
	HE160, M0.1 to M11.1	2	6.00		-43.03	-37.12							-30.13	-21.25	8.88
			6.00						-48.98	-50.61			-40.71	-21.25	19.46

	HE160, M0.1 to M11.1	3	6.00		-44.12	-41.68	-43.72						-32.26	-21.25	11.01
			6.00						-51.70	-51.93	-50.53		-40.57	-21.25	19.32
	HE160, M0.1 to M11.1	4	6.00	-46.80	-43.13	-41.22	-43.41						-31.20	-21.25	9.95
			6.00					-45.74	-50.54	-51.81	-50.75		-36.97	-21.25	15.72
	HE160, M0.1 to M11.1-BF	2	9.01		-44.94	-42.90							-31.78	-21.25	10.53
			9.01						-51.31	-52.50			-39.84	-21.25	18.59
	HE160, M0.1 to M11.1-BF	3	10.77		-44.92	-40.76	-42.30						-26.80	-21.25	5.55
			10.77						-51.41	-52.34	-50.33		-35.74	-21.25	14.49
	HE160, M0.1 to M11.1-BF	4	12.02	-44.71	-42.72	-38.14	-42.53						-23.26	-21.25	2.01
			12.02					-49.90	-50.55	-50.17	-50.55		-32.25	-21.25	11.00

Conducted Band Edge Test Data (Average)

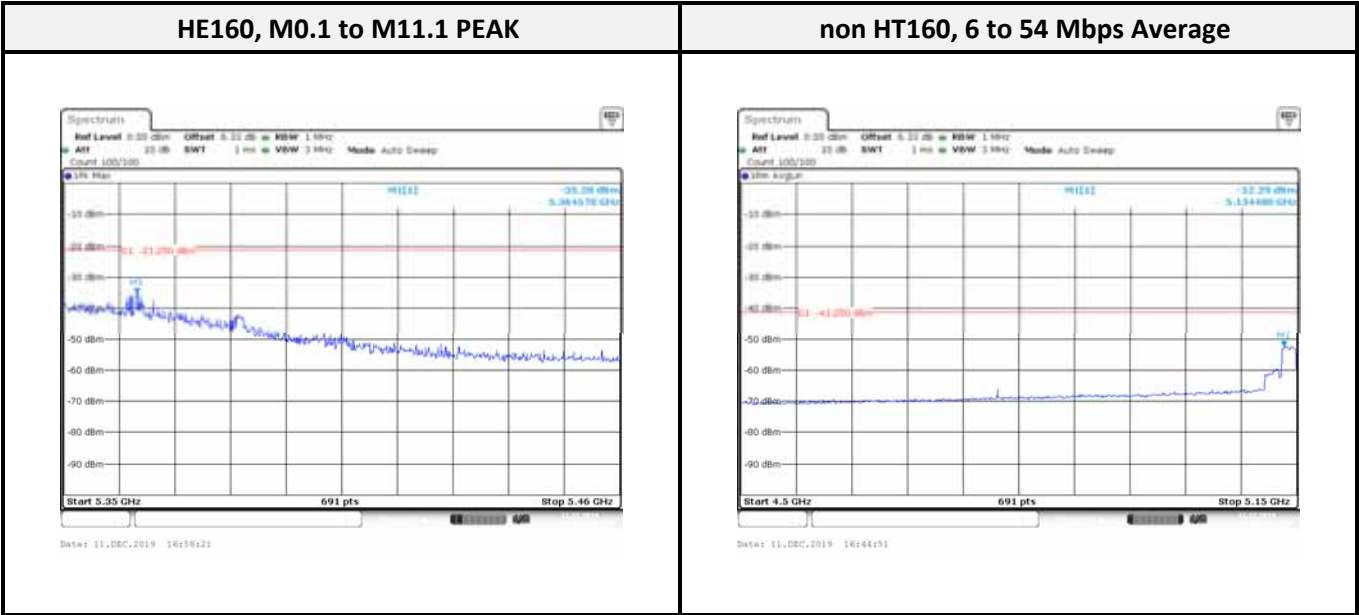
Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
5.25GHz	non HT160, 6 to 54 Mbps	1	6.00		-49.22							1.02	-42.20	-41.25	0.95
			6.00						-53.18			1.02	-46.16	-41.25	4.91
	non HT160, 6 to 54 Mbps	2	6.00		-54.64	-54.63						1.02	-44.60	-41.25	3.35
			6.00						-53.51	-53.55		1.02	-43.50	-41.25	2.25
	non HT160, 6 to 54 Mbps	3	6.00		-55.90	-54.21	-51.84					1.02	-41.87	-41.25	0.62
			6.00						-53.56	-53.13	-57.95	1.02	-42.62	-41.25	1.37
	non HT160, 6 to 54 Mbps	4	6.00	-56.62	-55.22	-54.55	-52.36					1.02	-41.37	-41.25	0.12
			6.00					-59.86	-58.56	-58.88	-60.72	1.02	-46.38	-41.25	5.13
	VHT160, M0.1 to M9.1	1	6.00		-49.33							1.02	-42.31	-41.25	1.06
			6.00						-48.32			1.02	-41.30	-41.25	0.05
	VHT160, M0.1 to M9.1	2	6.00		-53.80	-54.28						1.02	-44.00	-41.25	2.75
			6.00						-53.45	-51.36		1.02	-42.25	-41.25	1.00
	VHT160, M0.1 to M9.1	3	6.00		-54.16	-53.99	-53.40					1.02	-42.05	-41.25	0.80
			6.00						-53.65	-51.27	-57.07	1.02	-41.60	-41.25	0.35
	VHT160, M0.1 to M9.1	4	6.00	-57.29	-54.60	-54.60	-53.12					1.02	-41.62	-41.25	0.37
			6.00					-55.38	-54.70	-53.82	-57.96	1.02	-42.18	-41.25	0.93
	VHT160, M0.1 to M9.1-BF	2	9.01		-57.71	-56.00						1.02	-43.73	-41.25	2.48

			9.01							-55.88	-56.37		1.02	-43.08	-41.25	1.83
	VHT160, M0.1 to M9.1-BF	3	10.77		-59.54	-60.44	-61.15						1.02	-43.77	-41.25	2.52
			10.77							-63.07	-60.18	-61.94	1.02	-45.00	-41.25	3.75
	VHT160, M0.1 to M9.1-BF	4	12.02	-66.94	-64.55	-64.09	-63.61						1.02	-45.57	-41.25	4.32
			12.02					-66.13	-64.50	-65.61	-64.32		1.02	-46.01	-41.25	4.76
	HE160, M0.1 to M11.1	1	6.00		-49.24								0.54	-42.70	-41.25	1.45
			6.00						-48.10				0.54	-41.56	-41.25	0.31
	HE160, M0.1 to M11.1	2	6.00		-53.10	-53.04							0.54	-43.52	-41.25	2.27
			6.00						-52.71	-50.83			0.54	-42.12	-41.25	0.87
	HE160, M0.1 to M11.1	3	6.00		-53.92	-52.81	-52.60						0.54	-41.76	-41.25	0.51
			6.00						-53.08	-53.72	-56.37		0.54	-42.86	-41.25	1.61
	HE160, M0.1 to M11.1	4	6.00	-56.99	-55.37	-54.13	-52.37						0.54	-41.83	-41.25	0.58
			6.00					-55.08	-53.86	-52.96	-57.69		0.54	-42.01	-41.25	0.76
	HE160, M0.1 to M11.1-BF	2	9.01		-56.54	-56.00							0.54	-43.70	-41.25	2.45
			9.01						-55.69	-55.77			0.54	-43.17	-41.25	1.92
	HE160, M0.1 to M11.1-BF	3	10.77		-60.05	-59.47	-60.30						0.54	-43.84	-41.25	2.59
			10.77						-59.48	-59.36	-61.58		0.54	-43.95	-41.25	2.70
	HE160, M0.1 to M11.1-BF	4	12.02	-66.93	-64.14	-63.90	-63.80						0.54	-45.94	-41.25	4.69
			12.02					-66.24	-64.05	-64.57	-64.16		0.54	-46.09	-41.25	4.84

55/70MHz	non HT160, 6 to 54 Mbps	1	6.00		-49.12								1.02	-42.10	-41.25	0.85
			6.00						-63.06				1.02	-56.04	-41.25	14.79
	non HT160, 6 to 54 Mbps	2	6.00		-54.41	-52.73							1.02	-43.46	-41.25	2.21
			6.00						-63.47	-62.11			1.02	-52.71	-41.25	11.46
	non HT160, 6 to 54 Mbps	3	6.00		-54.52	-52.58	-53.94						1.02	-41.81	-41.25	0.56
			6.00						-63.26	-61.52	-60.31		1.02	-49.74	-41.25	8.49
	non HT160, 6 to 54 Mbps	4	6.00	-56.05	-53.23	-54.61	-54.54						1.02	-41.45	-41.25	0.20
			6.00					-66.01	-63.40	-61.50	-60.55		1.02	-49.37	-41.25	8.12
	VHT160, M0.1 to M9.1	1	6.00		-51.26								1.02	-44.24	-41.25	2.99
			6.00						-59.19				1.02	-52.17	-41.25	10.92
	VHT160, M0.1 to M9.1	2	6.00		-55.45	-53.26							1.02	-44.19	-41.25	2.94
			6.00						-63.45	-61.90			1.02	-52.58	-41.25	11.33
	VHT160, M0.1 to M9.1	3	6.00		-56.89	-55.16	-56.30						1.02	-44.27	-41.25	3.02
			6.00						-63.38	-61.89	-60.25		1.02	-49.86	-41.25	8.61
	VHT160, M0.1 to M9.1	4	6.00	-58.58	-56.96	-55.17	-55.93						1.02	-43.44	-41.25	2.19

		6.00					-65.92	-63.35	-61.83	-60.26	1.02	-49.33	-41.25	8.08
VHT160, M0.1 to M9.1-BF	2	9.01		-57.04	-55.65						1.02	-43.25	-41.25	2.00
		9.01						-63.49	-62.05		1.02	-49.67	-41.25	8.42
VHT160, M0.1 to M9.1-BF	3	10.77		-58.18	-58.08	-58.30					1.02	-41.62	-41.25	0.37
		10.77						-63.45	-61.89	-60.61	1.02	-45.27	-41.25	4.02
VHT160, M0.1 to M9.1-BF	4	12.02	-63.31	-60.54	-60.11	-60.49					1.02	-41.88	-41.25	0.63
		12.02					-67.25	-65.57	-64.54	-63.10	1.02	-45.80	-41.25	4.55
HE160, M0.1 to M11.1	1	6.00		-50.23							0.54	-43.69	-41.25	2.44
		6.00						-58.02			0.54	-51.48	-41.25	10.23
HE160, M0.1 to M11.1	2	6.00		-55.09	-52.45						0.54	-44.02	-41.25	2.77
		6.00						-62.82	-61.59		0.54	-52.61	-41.25	11.36
HE160, M0.1 to M11.1	3	6.00		-56.47	-54.98	-55.98					0.54	-44.45	-41.25	3.20
		6.00						-63.29	-61.52	-59.98	0.54	-50.08	-41.25	8.83
HE160, M0.1 to M11.1	4	6.00	-58.80	-56.62	-54.72	-55.02					0.54	-43.45	-41.25	2.20
		6.00					-65.97	-63.44	-61.67	-59.84	0.54	-49.61	-41.25	8.36
HE160, M0.1 to M11.1-BF	2	9.01		-57.01	-54.98						0.54	-43.32	-41.25	2.07
		9.01						-63.12	-61.90		0.54	-49.91	-41.25	8.66
HE160, M0.1 to M11.1-BF	3	10.77		-57.76	-57.84	-57.33					0.54	-41.56	-41.25	0.31
		10.77						-63.34	-61.76	-59.80	0.54	-45.31	-41.25	4.06
HE160, M0.1 to M11.1-BF	4	12.02	-63.31	-60.10	-60.36	-60.02					0.54	-42.18	-41.25	0.93
		12.02					-67.08	-65.38	-64.33	-63.04	0.54	-46.13	-41.25	4.88

For ISED



Note: Record the worst plot in the report.

Conducted Band Edge Test Data (PEAK)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZHUW 052G	non HT160, 6 to 54 Mbps	1	6.00		-37.42								-31.42	-21.25	10.17
			6.00						-36.16				-30.16	-21.25	8.91
	non HT160, 6 to 54 Mbps	2	6.00		-41.57	-41.70							-32.63	-21.25	11.38
			6.00						-37.04	-38.57			-28.72	-21.25	7.47
	non HT160, 6 to 54 Mbps	3	6.00		-41.99	-40.76	-37.84						-29.06	-21.25	7.81
			6.00						-36.84	-38.21	-45.68		-28.15	-21.25	6.90
	non HT160, 6 to 54 Mbps	4	6.00	-46.79	-45.35	-44.47	-42.81						-32.60	-21.25	11.35
			6.00					-48.17	-45.09	-46.46	-49.40		-34.95	-21.25	13.70
	VHT160, M0.1 to M9.1	1	6.00		-38.76								-32.76	-21.25	11.51
			6.00						-33.62				-27.62	-21.25	6.37
	VHT160, M0.1 to M9.1	2	6.00		-41.29	-43.49							-33.24	-21.25	11.99
			6.00						-40.69	-36.51			-29.10	-21.25	7.85
	VHT160, M0.1 to M9.1	3	6.00		-42.98	-43.20	-39.40						-30.72	-21.25	9.47
			6.00						-40.92	-38.03	-41.66		-29.13	-21.25	7.88
	VHT160, M0.1 to M9.1	4	6.00	-46.27	-43.21	-43.83	-40.64						-31.01	-21.25	9.76
			6.00					-40.97	-39.54	-41.04	-45.29		-29.24	-21.25	7.99
	VHT160, M0.1 to M9.1-BF	2	9.01		-47.03	-44.99							-33.87	-21.25	12.62
			9.01						-43.08	-42.03			-30.50	-21.25	9.25
	VHT160, M0.1 to M9.1-BF	3	10.77		-49.58	-48.84	-49.02						-33.59	-21.25	12.34
			10.77						-51.43	-42.92	-49.81		-30.86	-21.25	9.61
	VHT160, M0.1 to M9.1-BF	4	12.02	-57.71	-55.99	-55.96	-55.59						-38.20	-21.25	16.95
			12.02					-52.97	-54.26	-52.84	-54.30		-35.50	-21.25	14.25
	HE160, M0.1 to M11.1	1	6.00		-38.03								-32.03	-21.25	10.78
			6.00						-33.19				-27.19	-21.25	5.94
	HE160, M0.1 to M11.1	2	6.00		-43.10	-43.29							-34.18	-21.25	12.93
			6.00						-37.63	-35.36			-27.34	-21.25	6.09
	HE160, M0.1 to M11.1	3	6.00		-39.88	-41.00	-40.33						-29.61	-21.25	8.36
			6.00						-35.28	-36.69	-43.81		-26.58	-21.25	5.33

	HE160, M0.1 to M11.1	4	6.00	-43.81	-42.06	-42.86	-37.97						-29.02	-21.25	7.77
			6.00					-41.03	-39.34	-38.48	-43.18		-28.14	-21.25	6.89
	HE160, M0.1 to M11.1-BF	2	9.01		-46.16	-43.36							-32.52	-21.25	11.27
			9.01						-40.66	-40.44			-28.52	-21.25	7.27
	HE160, M0.1 to M11.1-BF	3	10.77		-47.64	-47.04	-48.00						-32.00	-21.25	10.75
			10.77						-41.56	-42.63	-48.78		-27.84	-21.25	6.59
	HE160, M0.1 to M11.1-BF	4	12.02	-57.80	-56.35	-54.89	-49.95						-35.59	-21.25	14.34
			12.02					-52.99	-54.30	-53.62	-53.79		-35.61	-21.25	14.36

Conducted Band Edge Test Data (Average)

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 Band Edge (dBm)	Tx 2 Band Edge (dBm)	Tx 3 Band Edge (dBm)	Tx 4 Band Edge (dBm)	Tx 5 Band Edge (dBm)	Tx 6 Band Edge (dBm)	Tx 7 Band Edge (dBm)	Tx 8 Band Edge (dBm)	Duty factor	Total Conducted Band Edge (dBm)	Limit	Margin (dB)
ZLUM 0626	non HT160, 6 to 54 Mbps	1	6.00		-48.71							1.02	-41.69	-41.25	0.44
			6.00						-53.82			1.02	-46.80	-41.25	5.55
	non HT160, 6 to 54 Mbps	2	6.00		-54.44	-53.70						1.02	-44.02	-41.25	2.77
			6.00						-54.49	-54.37		1.02	-44.40	-41.25	3.15
	non HT160, 6 to 54 Mbps	3	6.00		-54.50	-53.97	-53.56					1.02	-42.20	-41.25	0.95
			6.00						-54.41	-54.30	-56.25	1.02	-43.11	-41.25	1.86
	non HT160, 6 to 54 Mbps	4	6.00	-56.61	-55.04	-54.42	-52.29					1.02	-41.27	-41.25	0.02
			6.00					-60.04	-58.36	-59.10	-60.86	1.02	-46.45	-41.25	5.20
	VHT160, M0.1 to M9.1	1	6.00		-49.58							1.02	-42.56	-41.25	1.31
			6.00						-48.56			1.02	-41.54	-41.25	0.29
	VHT160, M0.1 to M9.1	2	6.00		-53.18	-54.36						1.02	-43.70	-41.25	2.45
			6.00						-53.34	-51.39		1.02	-42.23	-41.25	0.98
	VHT160, M0.1 to M9.1	3	6.00		-52.97	-53.37	-54.96					1.02	-41.89	-41.25	0.64
			6.00						-53.32	-51.21	-57.37	1.02	-41.50	-41.25	0.25
	VHT160, M0.1 to M9.1	4	6.00	-57.30	-54.11	-54.21	-53.31					1.02	-41.46	-41.25	0.21
			6.00					-55.09	-54.82	-54.13	-58.19	1.02	-42.27	-41.25	1.02
	VHT160, M0.1 to M9.1-BF	2	9.01		-57.78	-57.40						1.02	-44.55	-41.25	3.30
			9.01						-55.97	-56.32		1.02	-43.10	-41.25	1.85
	VHT160, M0.1 to M9.1-BF	3	10.77		-61.33	-60.71	-61.29					1.02	-44.54	-41.25	3.29

		10.77						-63.17	-60.30	-62.06	1.02	-45.12	-41.25	3.87
VHT160, M0.1 to M9.1-BF	4	12.02	-67.82	-66.05	-65.44	-65.61					1.02	-47.07	-41.25	5.82
		12.02					-67.46	-65.92	-66.28	-65.80	1.02	-47.26	-41.25	6.01
HE160, M0.1 to M11.1	1	6.00		-49.15							0.54	-42.61	-41.25	1.36
		6.00						-47.85			0.54	-41.31	-41.25	0.06
HE160, M0.1 to M11.1	2	6.00		-53.74	-53.76						0.54	-44.20	-41.25	2.95
		6.00						-52.92	-50.88		0.54	-42.23	-41.25	0.98
HE160, M0.1 to M11.1	3	6.00		-53.85	-54.65	-51.73					0.54	-41.92	-41.25	0.67
		6.00						-52.98	-52.75	-58.63	0.54	-42.77	-41.25	1.52
HE160, M0.1 to M11.1	4	6.00	-57.02	-54.12	-53.92	-52.45					0.54	-41.53	-41.25	0.28
		6.00					-55.01	-53.88	-52.67	-58.10	0.54	-41.94	-41.25	0.69
HE160, M0.1 to M11.1-BF	2	9.01		-57.00	-55.96						0.54	-43.89	-41.25	2.64
		9.01						-55.74	-55.41		0.54	-43.01	-41.25	1.76
HE160, M0.1 to M11.1-BF	3	10.77		-60.67	-59.53	-60.56					0.54	-44.14	-41.25	2.89
		10.77						-59.21	-59.81	-61.84	0.54	-44.07	-41.25	2.82
HE160, M0.1 to M11.1-BF	4	12.02	-67.79	-65.61	-65.36	-63.14					0.54	-46.59	-41.25	5.34
		12.02					-67.19	-65.67	-65.56	-65.49	0.54	-47.34	-41.25	6.09

8 FCC §15.407(a), RSS-247 Sec 6.2 and LP0002 Sec 4.7 – Power Spectral Density

8.1 Applicable Standard

According to FCC §15.407(a):

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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:

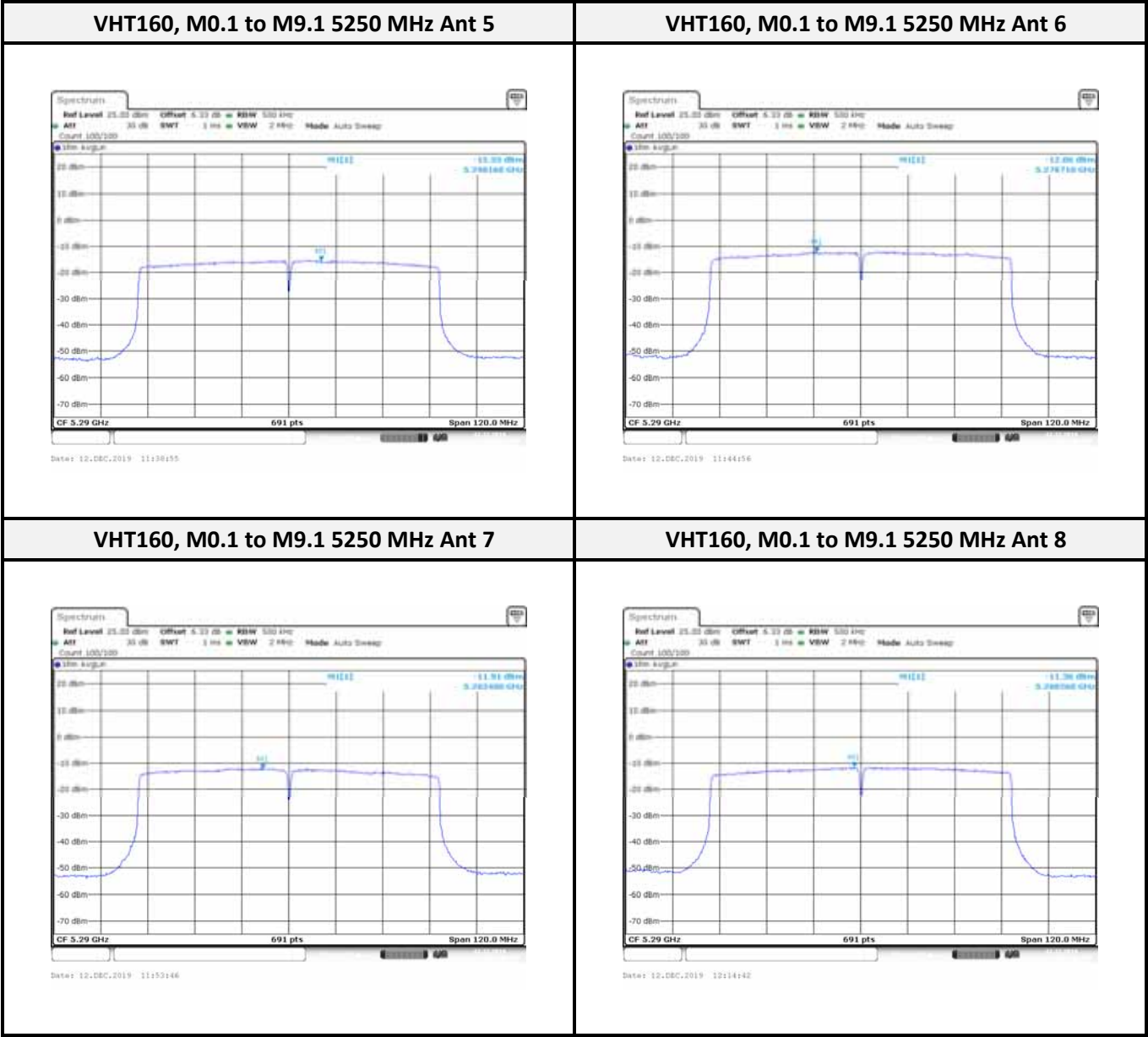
The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

8.2 Test Procedure

- (i) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW $\geq$ 3 MHz.
- (iv) Number of points in sweep $\geq$ 2 Span / RBW. (This ensures that bin-to-bin spacing is $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq$ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “ free run ” .
- (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- (ix) Use the peak search function on the instrument to find the peak of the spectrum and record its value.

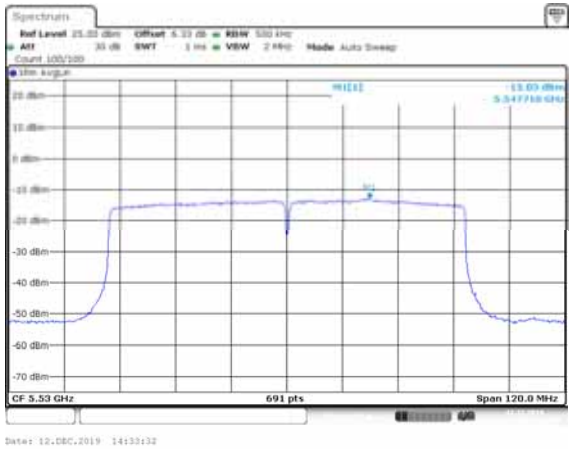
8.3 Test Data

For FCC/NCC

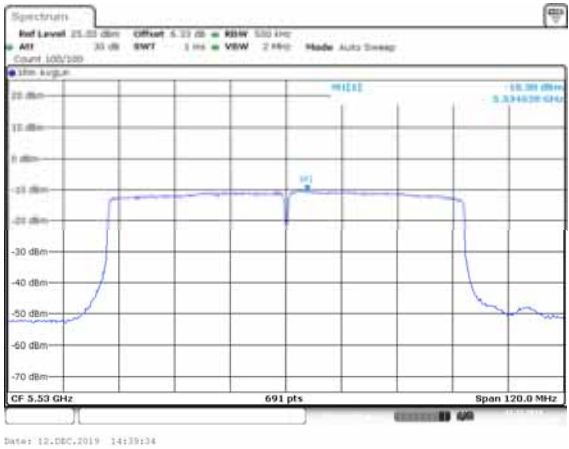


Note: Record the worst plot in the report.

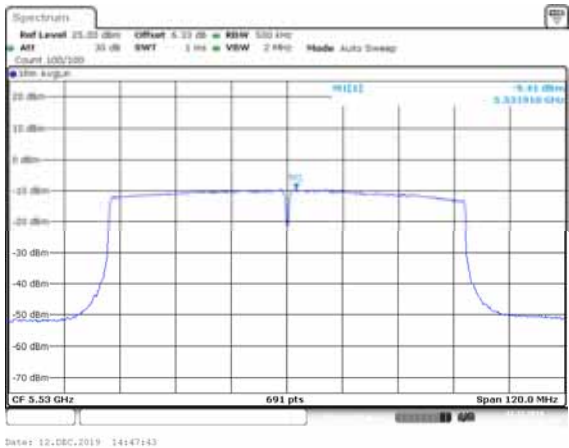
VHT160, M0.1 to M9.1 5570 MHz Ant 1



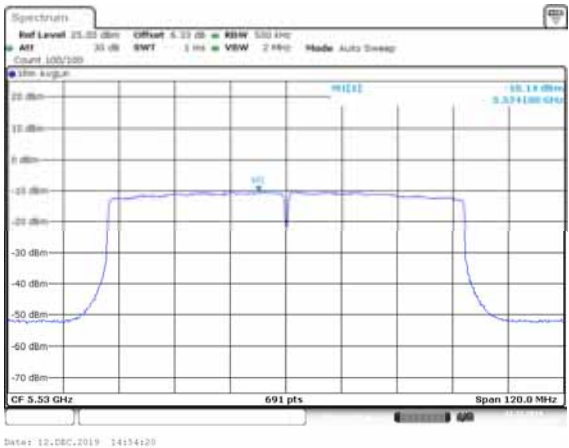
VHT160, M0.1 to M9.1 5570 MHz Ant 2



VHT160, M0.1 to M9.1 5570 MHz Ant 3



VHT160, M0.1 to M9.1 5570 MHz Ant 4



Note: Record the worst plot in the report.

Test Data

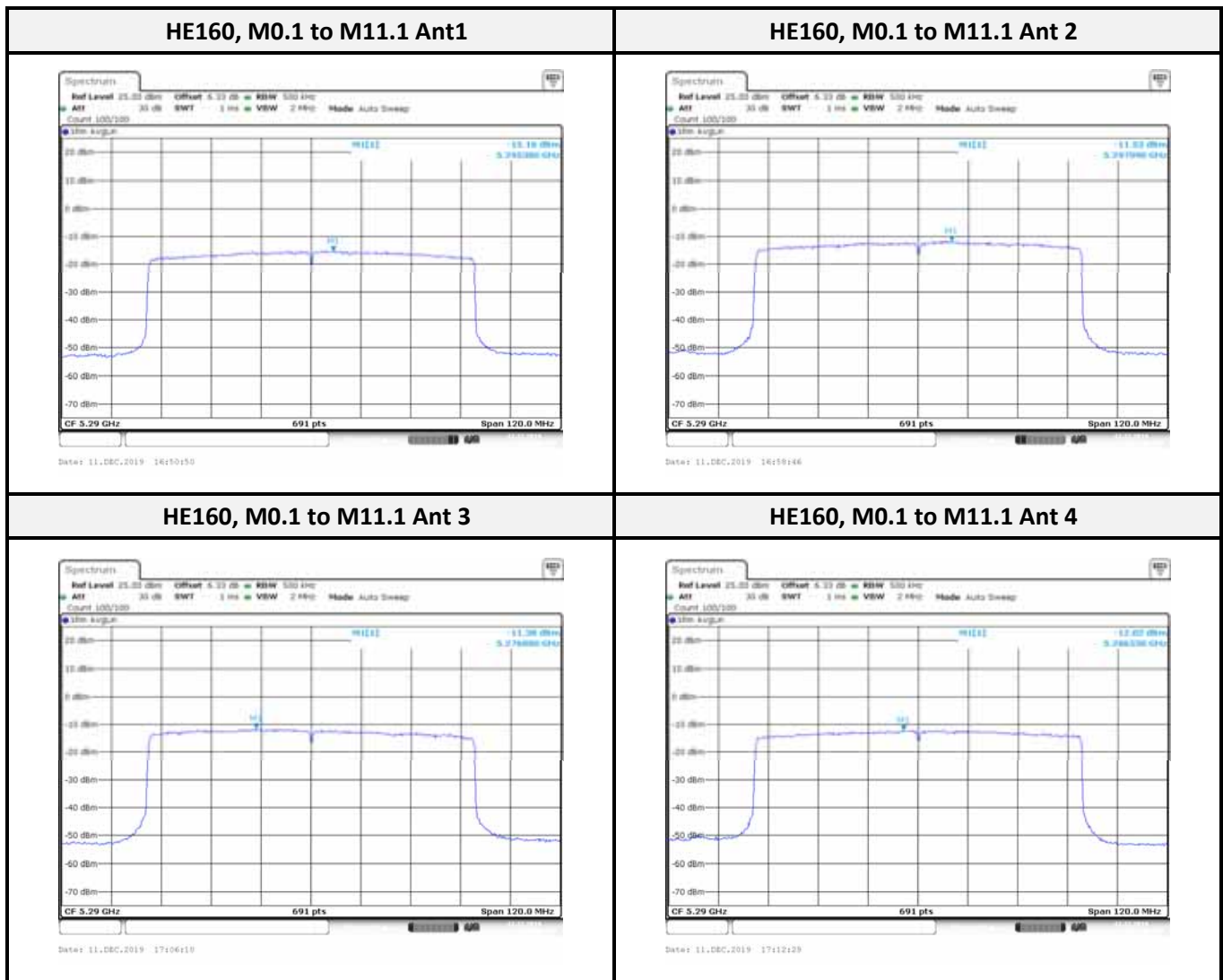
Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 PSD (dBm)	Tx 2 PSD (dBm)	Tx 3 PSD (dBm)	Tx 4 PSD (dBm)	Tx 5 PSD (dBm)	Tx 6 PSD (dBm)	Tx 7 PSD (dBm)	Tx 8 PSD (dBm)	Duty factor	Total Conducted PSD (dBm)	Limit	Margin (dB)
5250MHz	non HT160, 6 to 54 Mbps	1	6.00		-10.22							1.02	-9.20	17.00	26.20
			6.00						-10.42			1.02	-9.40	11.00	20.40
	non HT160, 6 to 54 Mbps	2	9.01		-13.32	-13.69						1.02	-9.47	10.98	20.45
			9.01						-13.27	-13.61		1.02	-9.41	4.98	14.39
	non HT160, 6 to 54 Mbps	3	10.77		-13.89	-13.59	-13.36					1.02	-7.82	7.46	15.28
			10.77						-13.29	-13.23	-14.16	1.02	-7.75	1.46	9.21
	non HT160, 6 to 54 Mbps	4	12.02	-16.69	-13.39	-13.60	-13.54					1.02	-7.07	4.96	12.03
			12.02					-16.30	-13.28	-13.09	-12.94	1.02	-6.67	-1.04	5.63
	VHT160, M0.1 to M9.1	1	6.00		-8.42							1.02	-7.40	17.00	24.40
			6.00						-8.86			1.02	-7.84	11.00	18.84
	VHT160, M0.1 to M9.1	2	9.01		-11.06	-11.08						1.02	-7.04	10.98	18.02
			9.01						-11.08	-10.79		1.02	-6.90	4.98	11.88
	VHT160, M0.1 to M9.1	3	10.77		-10.94	-11.56	-10.77					1.02	-5.29	7.46	12.75
			10.77						-10.69	-10.87	-11.39	1.02	-5.18	1.46	6.64
	VHT160, M0.1 to M9.1	4	12.02	-15.02	-11.35	-12.04	-11.62					1.02	-5.25	4.96	10.21
			12.02					-15.35	-12.06	-11.91	-11.36	1.02	-5.38	-1.04	4.34
	VHT160, M0.1 to M9.1-BF	2	9.01		-13.52	-12.75						1.02	-9.09	10.98	20.07
			9.01						-12.95	-12.80		1.02	-8.84	4.98	13.82
	VHT160, M0.1 to M9.1-BF	3	10.77		-15.13	-16.11	-16.35					1.02	-10.04	7.46	17.50
			10.77						-16.24	-15.76	-16.26	1.02	-10.29	1.46	11.75
	VHT160, M0.1 to M9.1-BF	4	12.02	-21.09	-17.55	-17.76	-17.43					1.02	-11.19	4.96	16.15
			12.02					-21.06	-17.75	-17.64	-17.59	1.02	-11.25	-1.04	10.21
	HE160, M0.1 to M11.1	1	6.00		-8.76							0.54	-8.22	17.00	25.22
			6.00						-8.99			0.54	-8.45	11.00	19.45
	HE160, M0.1 to M11.1	2	9.01		-10.73	-10.68						0.54	-7.15	10.98	18.13
			9.01						-10.73	-10.64		0.54	-7.13	4.98	12.11
	HE160, M0.1 to M11.1	3	10.77		-10.90	-10.61	-10.56					0.54	-5.38	7.46	12.84
			10.77						-10.64	-10.72	-11.05	0.54	-5.49	1.46	6.95

	HE160, M0.1 to M11.1	4	12.02	-15.23	-11.68	-11.84	-11.63					0.54	-5.80	4.96	10.76
			12.02					-15.06	-11.82	-11.77	-11.42	0.54	-5.74	-1.04	4.70
	HE160, M0.1 to M11.1-BF	2	9.01		-12.34	-12.91						0.54	-9.07	10.98	20.05
			9.01						-12.48	-12.71		0.54	-9.04	4.98	14.02
	HE160, M0.1 to M11.1-BF	3	10.77		-15.53	-15.61	-15.52					0.54	-10.24	7.46	17.70
			10.77						-15.93	-15.64	-15.96	0.54	-10.53	1.46	11.99
	HE160, M0.1 to M11.1-BF	4	12.02	-20.92	-17.77	-17.97	-17.53					0.54	-11.79	4.96	16.75
			12.02					-20.72	-17.50	-17.56	-17.50	0.54	-11.57	-1.04	10.53

5570MHz	non HT160, 6 to 54 Mbps	1	6.00		-9.01							1.02	-7.99	11.00	18.99
			6.00						-8.46			1.02	-7.44	11.00	18.44
	non HT160, 6 to 54 Mbps	2	9.01		-11.37	-10.65						1.02	-6.96	7.99	14.95
			9.01						-10.83	-10.62		1.02	-6.69	7.99	14.68
	non HT160, 6 to 54 Mbps	3	10.77		-11.32	-10.35	-10.73					1.02	-4.99	6.23	11.22
			10.77						-10.37	-10.98	-10.25	1.02	-4.73	6.23	10.96
	non HT160, 6 to 54 Mbps	4	12.02	-13.85	-11.09	-10.64	-10.75					1.02	-4.36	4.98	9.34
			12.02					-13.96	-10.24	-10.34	-10.47	1.02	-3.97	4.98	8.95
	VHT160, M0.1 to M9.1	1	6.00		-7.30							1.02	-6.28	11.00	17.28
			6.00						-6.92			1.02	-5.90	11.00	16.90
	VHT160, M0.1 to M9.1	2	9.01		-9.79	-9.08						1.02	-5.39	7.99	13.38
			9.01						-8.72	-9.60		1.02	-5.11	7.99	13.10
	VHT160, M0.1 to M9.1	3	10.77		-10.44	-9.89	-10.49					1.02	-4.47	6.23	10.70
			10.77						-9.76	-10.29	-9.77	1.02	-4.14	6.23	10.37
	VHT160, M0.1 to M9.1	4	12.02	-13.03	-10.30	-9.41	-10.14					1.02	-3.48	4.98	8.46
			12.02					-13.74	-10.11	-10.18	-10.54	1.02	-3.87	4.98	8.85
	VHT160, M0.1 to M9.1-BF	2	9.01		-10.61	-9.94						1.02	-6.23	7.99	14.22
			9.01						-10.04	-10.23		1.02	-6.10	7.99	14.09
	VHT160, M0.1 to M9.1-BF	3	10.77		-10.51	-9.91	-10.05					1.02	-4.36	6.23	10.59
			10.77						-10.16	-10.40	-9.52	1.02	-4.22	6.23	10.45
	VHT160, M0.1 to M9.1-BF	4	12.02	-15.17	-12.64	-12.20	-12.14					1.02	-5.84	4.98	10.82
			12.02					-15.40	-12.08	-12.14	-12.47	1.02	-5.79	4.98	10.77
	HE160, M0.1 to M11.1	1	6.00		-7.25							0.54	-6.71	11.00	17.71
			6.00						-6.69			0.54	-6.15	11.00	17.15
	HE160, M0.1 to M11.1	2	9.01		-9.26	-8.83						0.54	-5.49	7.99	13.48
			9.01						-8.68	-9.39		0.54	-5.47	7.99	13.46

HE160, M0.1 to M11.1	3	10.77		-10.51	-9.75	-10.15					0.54	-4.81	6.23	11.04
		10.77						-9.75	-10.33	-9.66	0.54	-4.59	6.23	10.82
HE160, M0.1 to M11.1	4	12.02	-12.98	-10.30	-9.17	-10.21					0.54	-3.90	4.98	8.88
		12.02					-13.43	-9.91	-9.76	-10.05	0.54	-3.99	4.98	8.97
HE160, M0.1 to M11.1-BF	2	9.01		-10.61	-9.89						0.54	-6.68	7.99	14.67
		9.01						-9.60	-10.23		0.54	-6.35	7.99	14.34
HE160, M0.1 to M11.1-BF	3	10.77		-10.22	-10.01	-9.78					0.54	-4.69	6.23	10.92
		10.77						-9.76	-9.99	-9.84	0.54	-4.55	6.23	10.78
HE160, M0.1 to M11.1-BF	4	12.02	-15.21	-11.96	-11.57	-11.80					0.54	-5.85	4.98	10.83
		12.02					-15.29	-11.77	-11.96	-12.07	0.54	-6.00	4.98	10.98

For ISED



Note: Record the worst plot in the report.

Test Data

Frequency	Configuration	Tx paths	Correlated antenna gain (dBi)	Tx 1 PSD (dBm)	Tx 2 PSD (dBm)	Tx 3 PSD (dBm)	Tx 4 PSD (dBm)	Tx 5 PSD (dBm)	Tx 6 PSD (dBm)	Tx 7 PSD (dBm)	Tx 8 PSD (dBm)	Duty factor	Total Conducted PSD (dBm)	Limit	Margin (dB)
5250MHz	non HT160, 6 to 54 Mbps	1	6.00		-7.95							1.02	-6.93	10.00	16.93
			6.00						-7.91			1.02	-6.89	11.00	17.89
	non HT160, 6 to 54 Mbps	2	9.01		-10.58	-10.75						1.02	-6.63	6.99	13.62
			9.01						-11.09	-10.88		1.02	-6.95	4.98	11.93
	non HT160, 6 to 54 Mbps	3	10.77		-10.80	-10.51	-10.75					1.02	-4.89	5.23	10.12
			10.77						-10.83	-11.01	-10.82	1.02	-5.09	1.46	6.55
	non HT160, 6 to 54 Mbps	4	12.02	-17.23	-13.43	-13.66	-13.64					1.02	-7.20	3.98	11.18
			12.02					-16.61	-13.14	-12.96	-13.35	1.02	-6.75	-1.04	5.71
	VHT160, M0.1 to M9.1	1	6.00		-8.82							1.02	-7.80	10.00	17.80
			6.00						-8.76			1.02	-7.74	11.00	18.74
	VHT160, M0.1 to M9.1	2	9.01		-10.58	-11.11						1.02	-6.81	6.99	13.80
			9.01						-10.92	-10.56		1.02	-6.71	4.98	11.69
	VHT160, M0.1 to M9.1	3	10.77		-10.57	-10.74	-10.37					1.02	-4.77	5.23	10.00
			10.77						-10.87	-10.60	-11.47	1.02	-5.17	1.46	6.63
	VHT160, M0.1 to M9.1	4	12.02	-15.36	-11.66	-11.97	-11.45					1.02	-5.32	3.98	9.30
			12.02					-15.22	-12.08	-11.74	-12.24	1.02	-5.58	-1.04	4.54
	VHT160, M0.1 to M9.1-BF	2	9.01		-13.08	-13.24						1.02	-9.13	6.99	16.12
			9.01						-12.73	-12.96		1.02	-8.81	4.98	13.79
	VHT160, M0.1 to M9.1-BF	3	10.77		-15.75	-16.10	-16.08					1.02	-10.18	5.23	15.41
			10.77						-15.99	-15.73	-16.13	1.02	-10.16	1.46	11.62
	VHT160, M0.1 to M9.1-BF	4	12.02	-22.49	-18.94	-18.71	-18.62					1.02	-12.39	3.98	16.37
			12.02					-22.06	-18.91	-18.75	-18.98	1.02	-12.44	-1.04	11.40
	HE160, M0.1 to M11.1	1	6.00		-8.53							0.54	-7.99	10.00	17.99
			6.00						-8.84			0.54	-8.30	11.00	19.30
	HE160, M0.1 to M11.1	2	9.01		-10.83	-10.98						0.54	-7.35	6.99	14.34
			9.01						-10.41	-10.60		0.54	-6.95	4.98	11.93
	HE160, M0.1 to M11.1	3	10.77		-11.20	-11.92	-11.41					0.54	-6.19	5.23	11.42
			10.77						-11.83	-11.44	-12.26	0.54	-6.52	1.46	7.98

	HE160, M0.1 to M11.1	4	12.02	-15.53	-11.33	-11.63	-11.30					0.54	-5.58	3.98	9.56
			12.02					-15.16	-11.53	-11.38	-12.02	0.54	-5.72	-1.04	4.68
	HE160, M0.1 to M11.1-BF	2	9.01		-13.09	-12.57						0.54	-9.27	6.99	16.26
			9.01						-12.36	-12.74		0.54	-9.00	4.98	13.98
	HE160, M0.1 to M11.1-BF	3	10.77		-15.26	-15.74	-16.09					0.54	-10.37	5.23	15.60
			10.77						-15.93	-15.49	-16.07	0.54	-10.51	1.46	11.97
	HE160, M0.1 to M11.1-BF	4	12.02	-22.12	-18.74	-18.52	-18.63					0.54	-12.71	3.98	16.69
			12.02					-21.95	-18.37	-18.31	-18.54	0.54	-12.50	-1.04	11.46

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