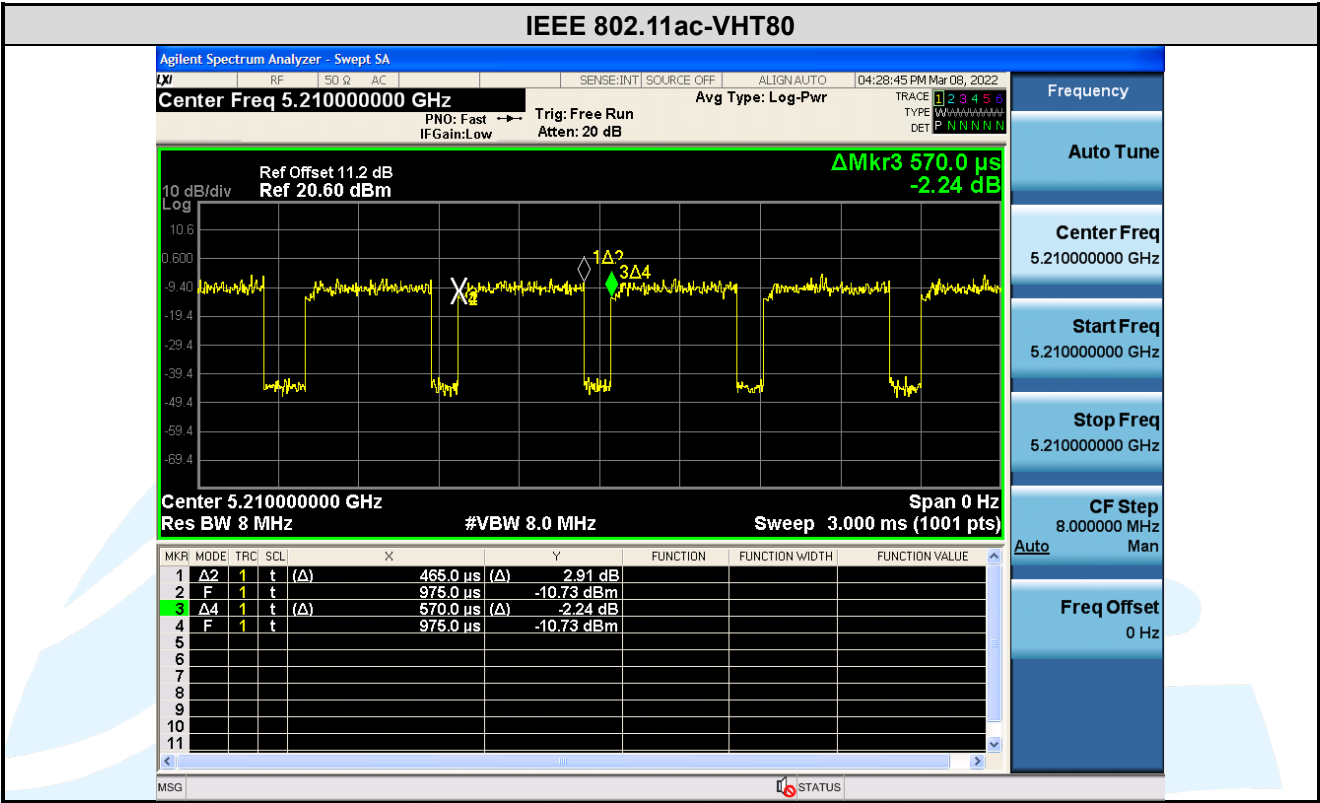




5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

5.1 REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	RSS-247 Issue 2	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
4	RSS-Gen Issue 5	General Requirements for Compliance of Radio Apparatus
5	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
6	KDB 789033 D02 General UNII Test Procedures New Rules v02r01	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15, subpart E
7	KDB 905462 D06 802.11 Channel Plans New Rules v02	Operation in U-NII bands -802.11 channel PLAN(§15.407)
8	KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02	Compliance measurement procedures for Unlicensed –National Information Infrastructure devices operates in the frequency bands 5250 MHz to 5350 MHz and 5470 MHz to 5725 MHz bands incorporating dynamic frequency selection
9	KDB 905462 D03 Client Without DFS New Rules v01r02	U-NII client devices without radar detection capability

5.2 ANTENNA REQUIREMENT

Standard Requirement
15.203 requirement: 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.407(a)(1) (2) requirement: The conducted output power limit specified in paragraph (a) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (a) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power and the peak power spectral density shall be reduced by the by the amount in dB that the directional gain of the antenna exceeds 6 dBi. RSS-Gen Issue 5, Section 6.8 requirement: According to RSS-Gen Issue 5, Section 6.8, a transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. EUT Antenna: Antenna in the interior of the equipment and no consideration of replacement. The gain of the antenna is 4.0 dBi.

5.326 DB BANDWIDTH & OCCUPIED BANDWIDTH

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(2)(5)
RSS-247 Issue 2 Section 6.2.1.2

Test Method: KDB 789033 D02 v02r01 Section C.1

Limit: None; for reporting purposes only.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum analyzer.

Spectrum analyzer according to the following Settings:

- Set RBW = approximately 1 % of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the peak 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 %.

Occupied Bandwidth

- Set RBW = 1% to 5% of the occupied bandwidth
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Results: Pass

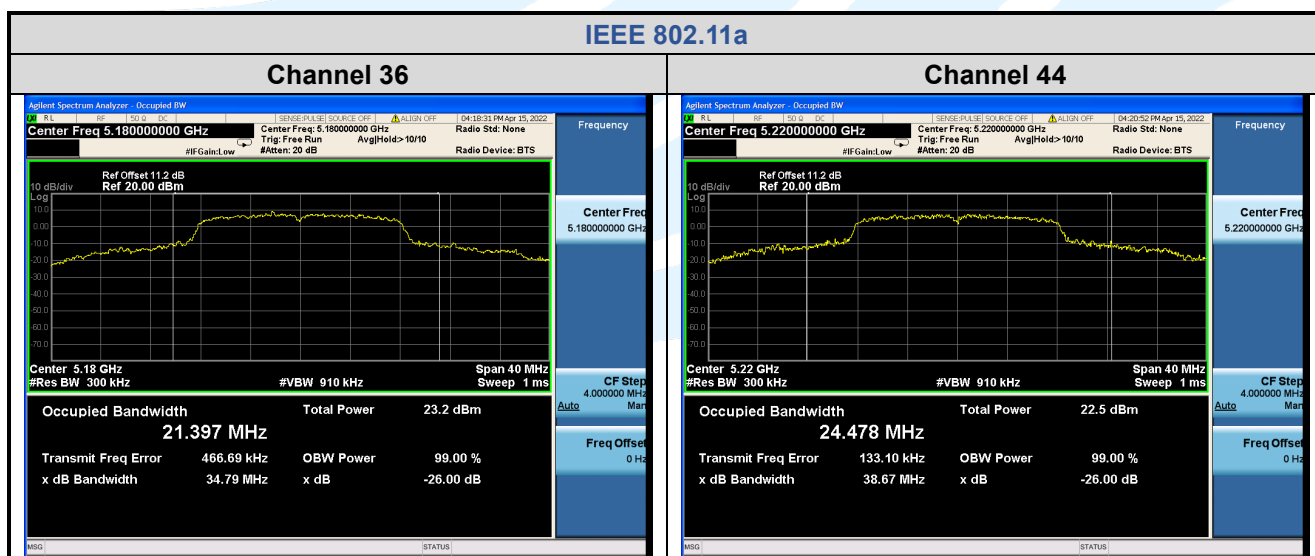
Mode	Channel	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
IEEE 802.11a	36 (5180)	34.79	21.397
	44 (5220)	38.67	24.478
	48 (5240)	37.73	23.352
	52 (5260)	39.09	23.687
	60 (5300)	39.22	24.327
	64 (5320)	37.75	24.038
	100 (5500)	39.06	25.456
	116 (5580)	39.85	25.781
	140 (5700)	39.88	27.405
IEEE 802.11n-HT20	36 (5180)	35.20	19.468
	44 (5220)	39.60	22.817
	48 (5240)	37.57	22.301
	52 (5260)	39.75	23.513
	60 (5300)	39.73	24.614
	64 (5320)	37.90	21.750
	100 (5500)	39.94	27.297
	116 (5580)	38.96	23.852

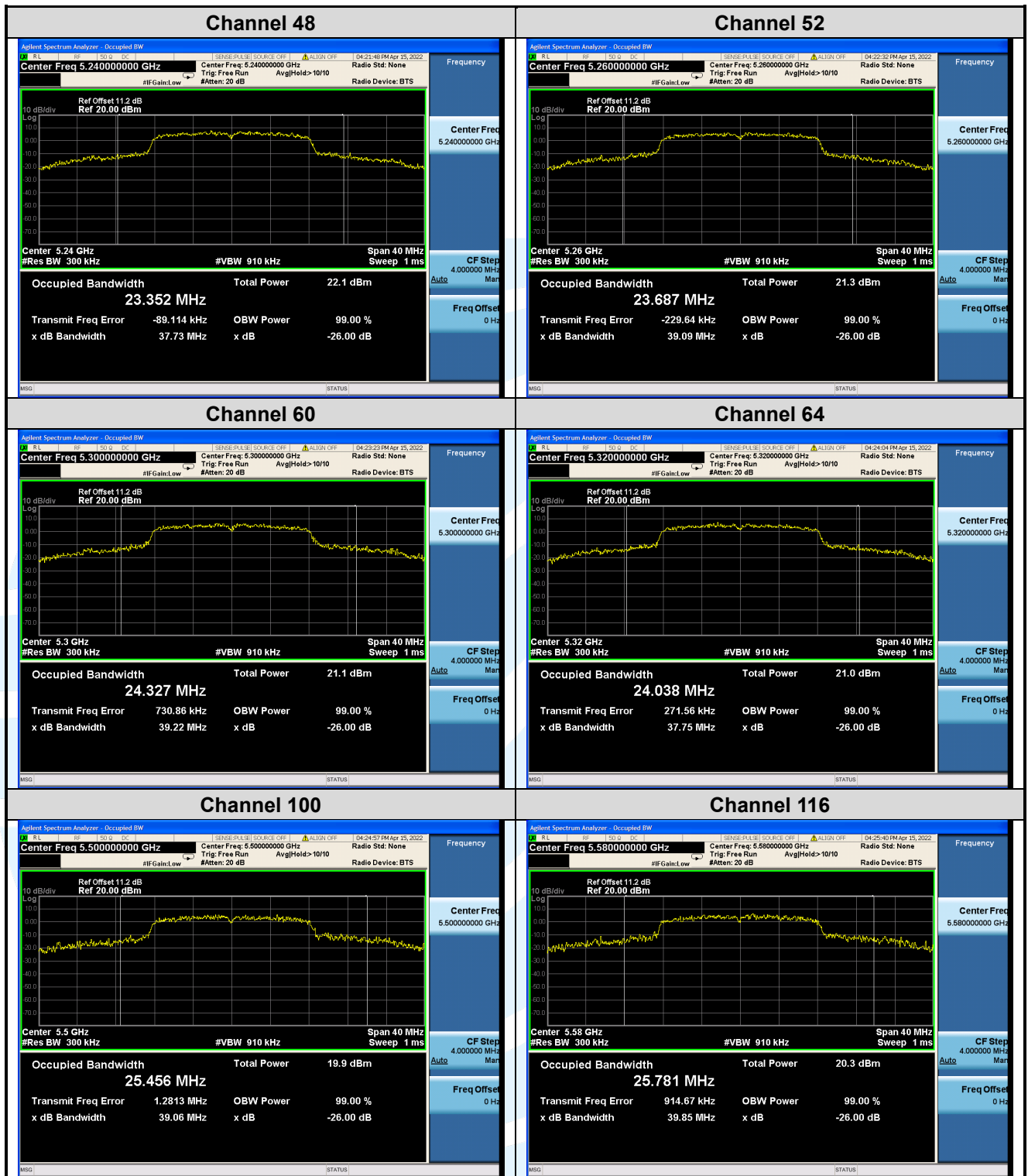
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	140 (5700)	39.83	22.303
IEEE 802.11n-HT40	38 (5190)	51.92	36.084
	46 (5230)	46.56	36.011
	54 (5270)	44.21	35.959
	62 (5310)	51.45	36.091
	102 (5510)	40.04	35.868
	110 (5550)	40.04	35.836
	134 (5670)	40.22	35.864
IEEE 802.11ac-VHT20	36 (5180)	38.87	22.638
	44 (5220)	39.87	25.528
	48 (5240)	38.99	23.796
	52 (5260)	39.73	23.121
	60 (5300)	36.02	21.450
	64 (5320)	38.15	23.239
	100 (5500)	39.98	27.146
	116 (5580)	39.76	25.725
IEEE 802.11ac-VHT40	140 (5700)	39.74	23.668
	38 (5190)	47.23	36.054
	46 (5230)	45.12	36.002
	54 (5270)	44.75	36.004
	62 (5310)	46.60	35.956
	102 (5510)	40.74	35.804
	110 (5550)	40.68	35.750
	134 (5670)	40.77	35.828
IEEE 802.11ac-VHT80	42 (5210)	82.87	75.084
	58 (5290)	84.42	75.153
	106 (5530)	81.72	75.955
	122 (5610)	81.47	75.006

The test plots as follows:





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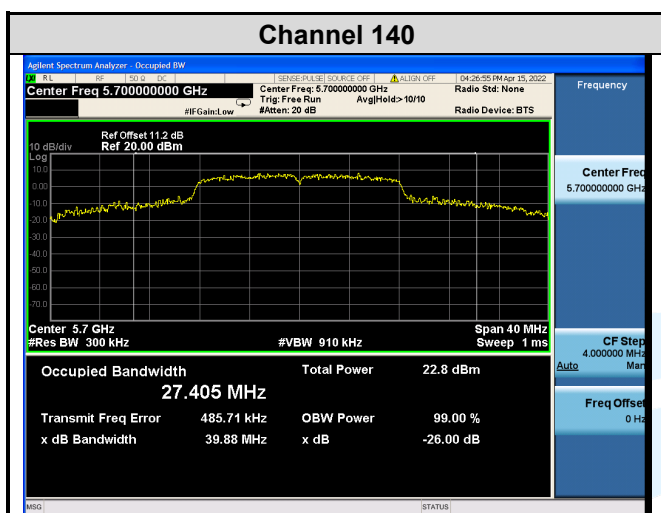
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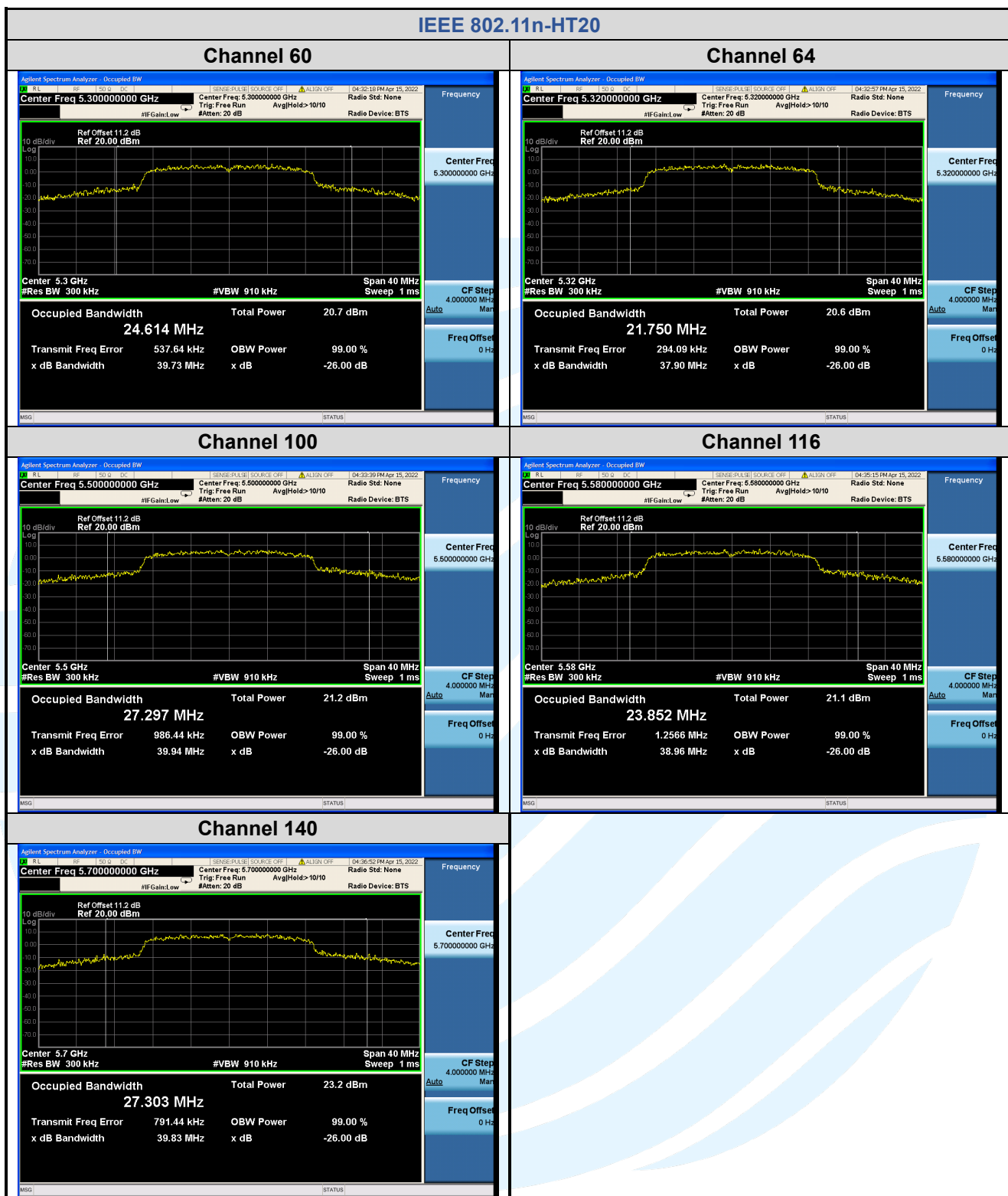
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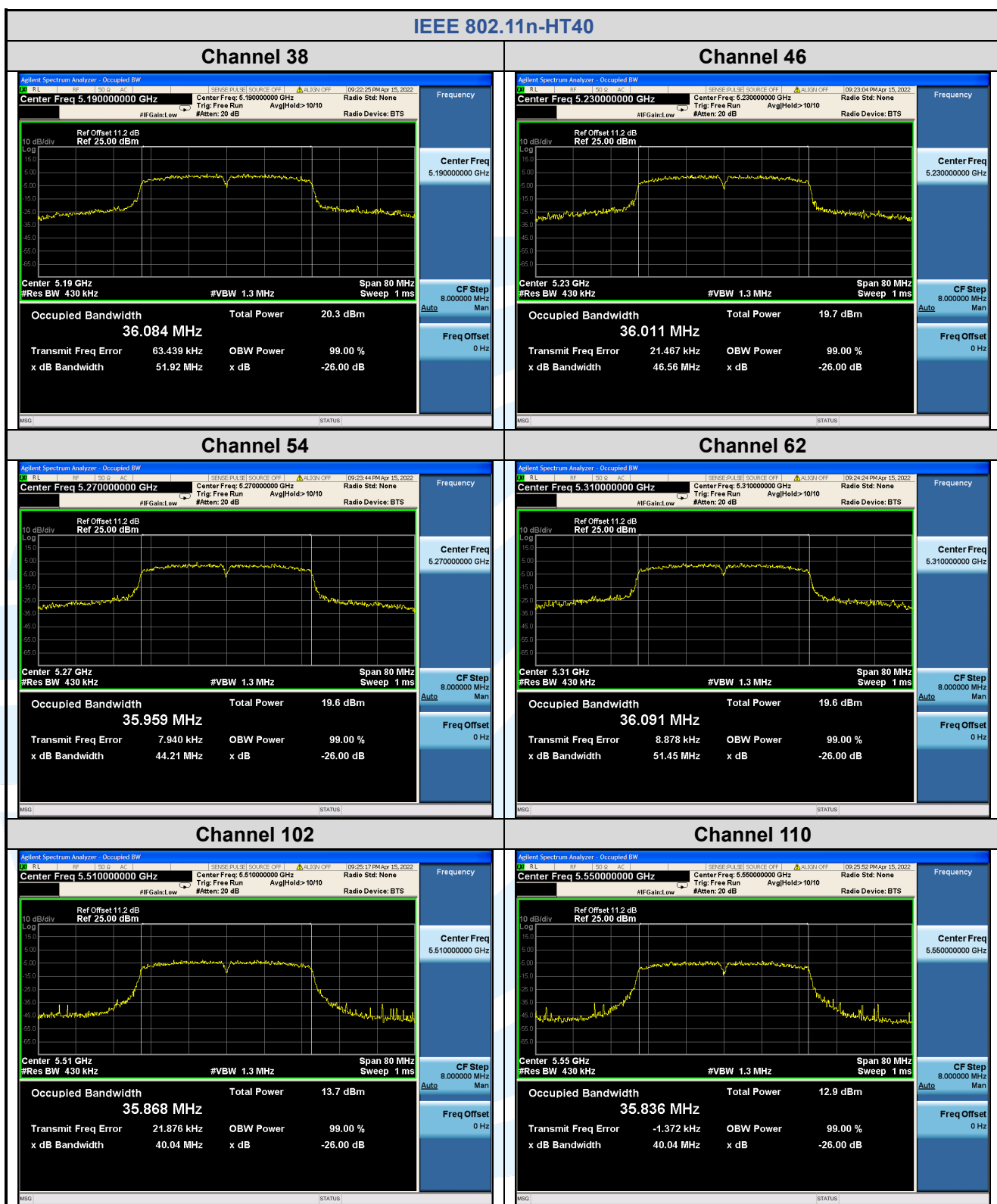
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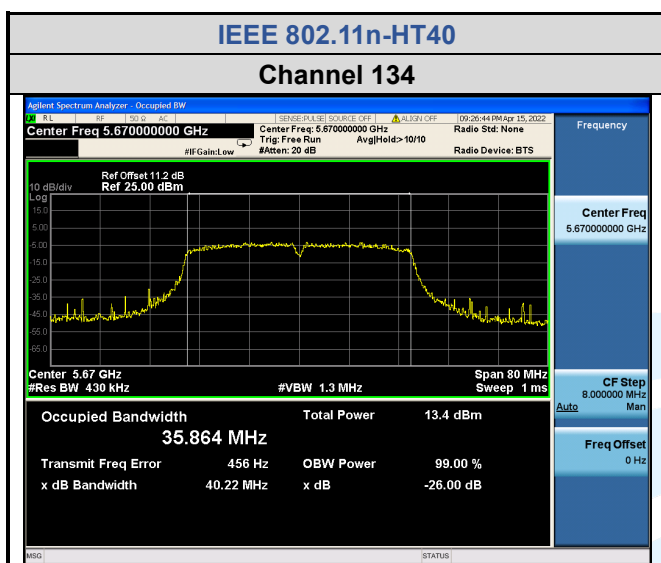
E-mail: info@uttlab.com
<http://www.uttlab.com>

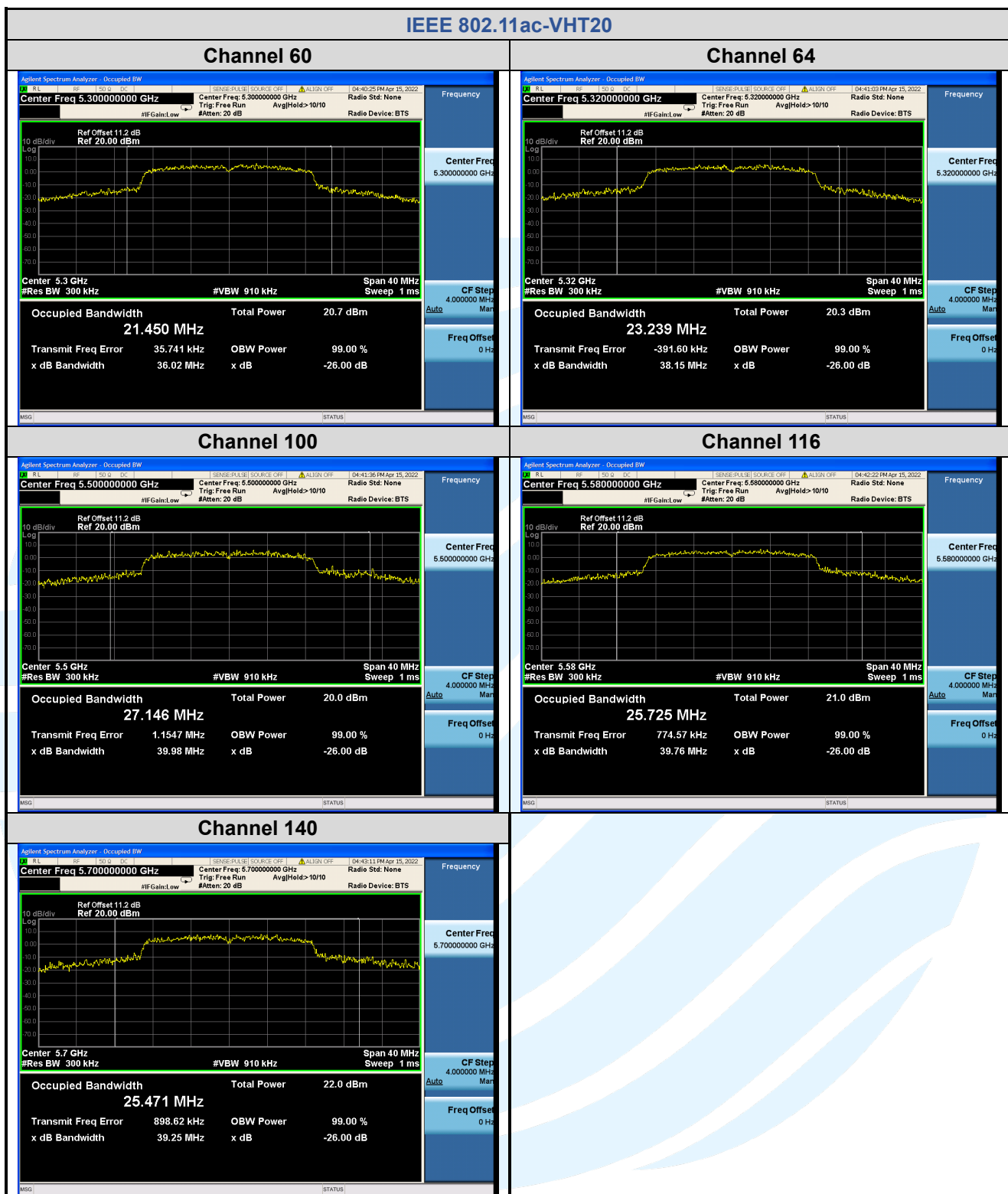
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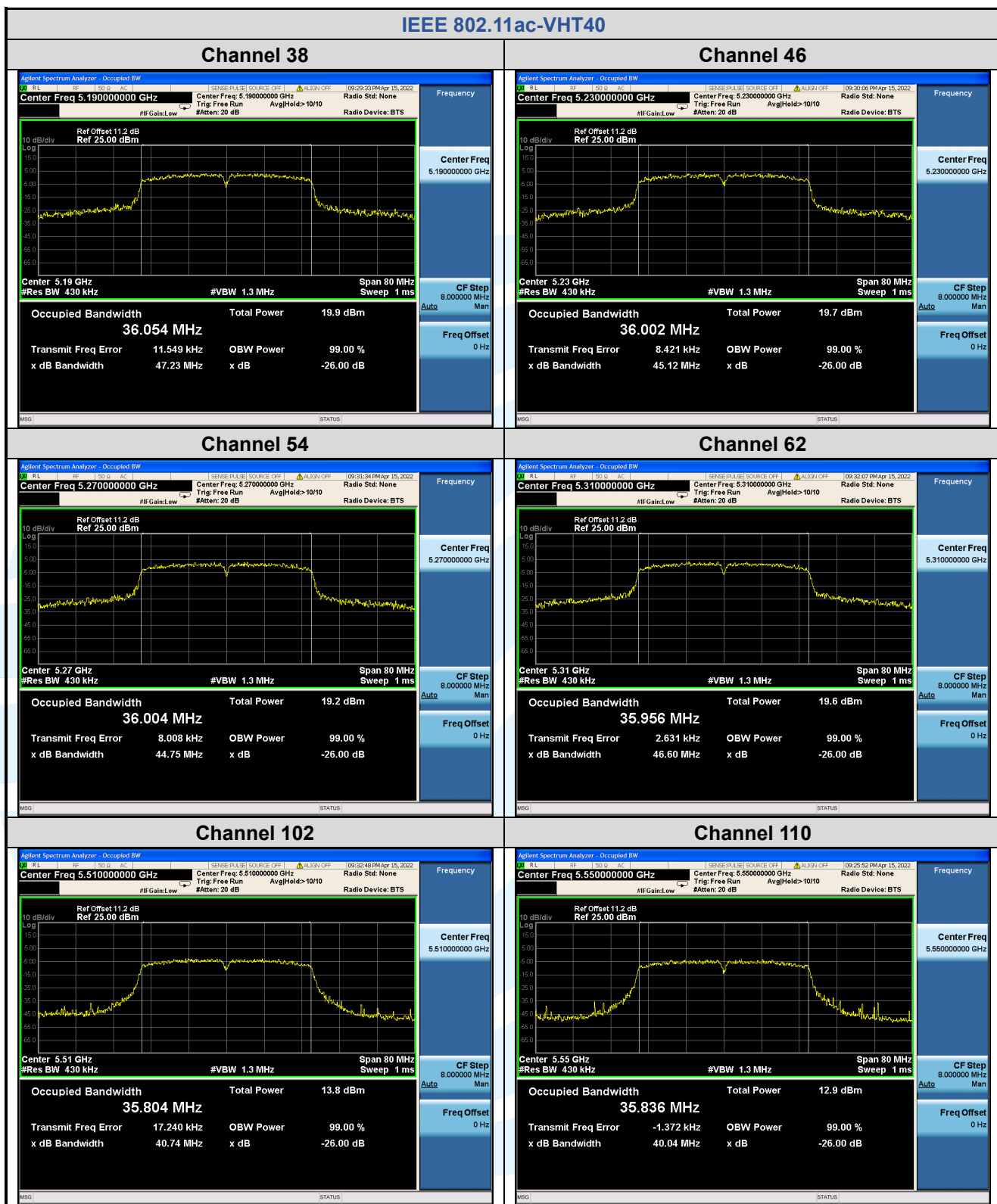


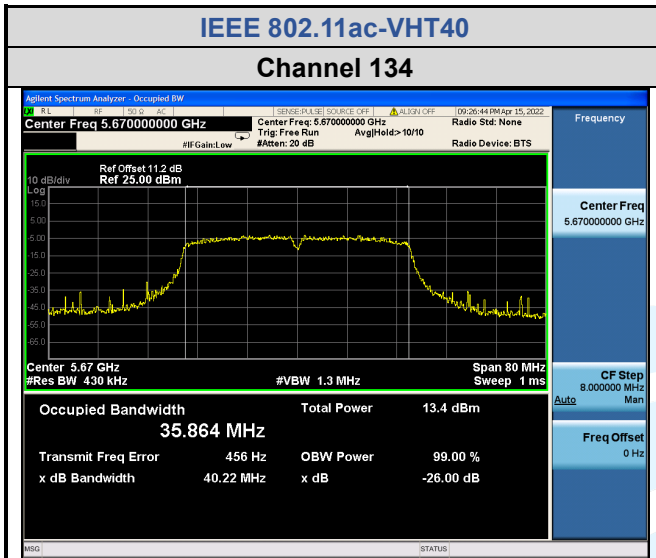












5.46 DB BANDWIDTH & OCCUPIED BANDWIDTH

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (e)
RSS-247 Issue 2 Section 6.2.4.1

Test Method: KDB 789033 D02 v02r01 Section C.2

Limit: Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:

6dB Bandwidth

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 * \text{RBW}$.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

- a) Set RBW = 1% to 5% of the occupied bandwidth
- b) Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

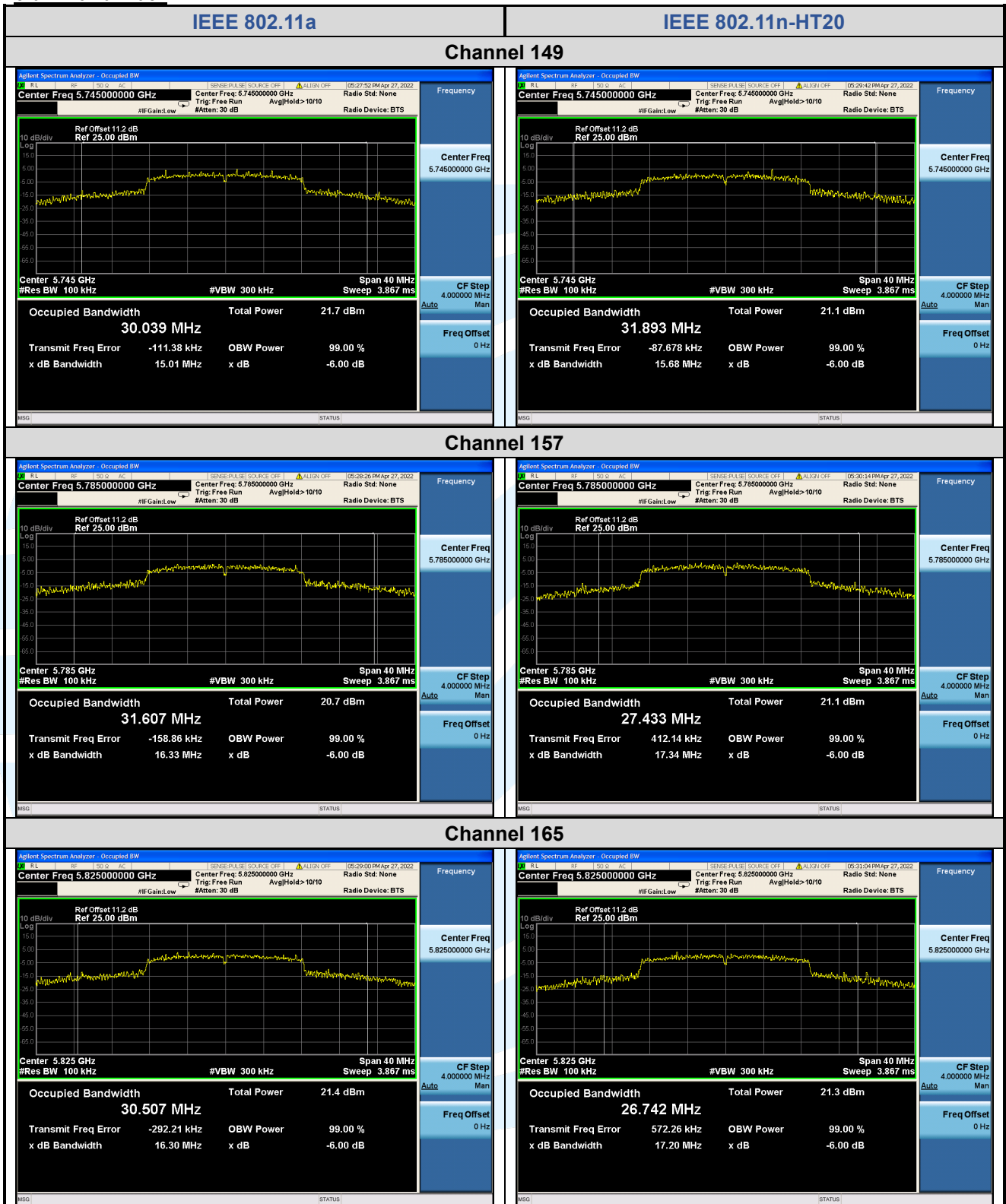
Test Results: Pass

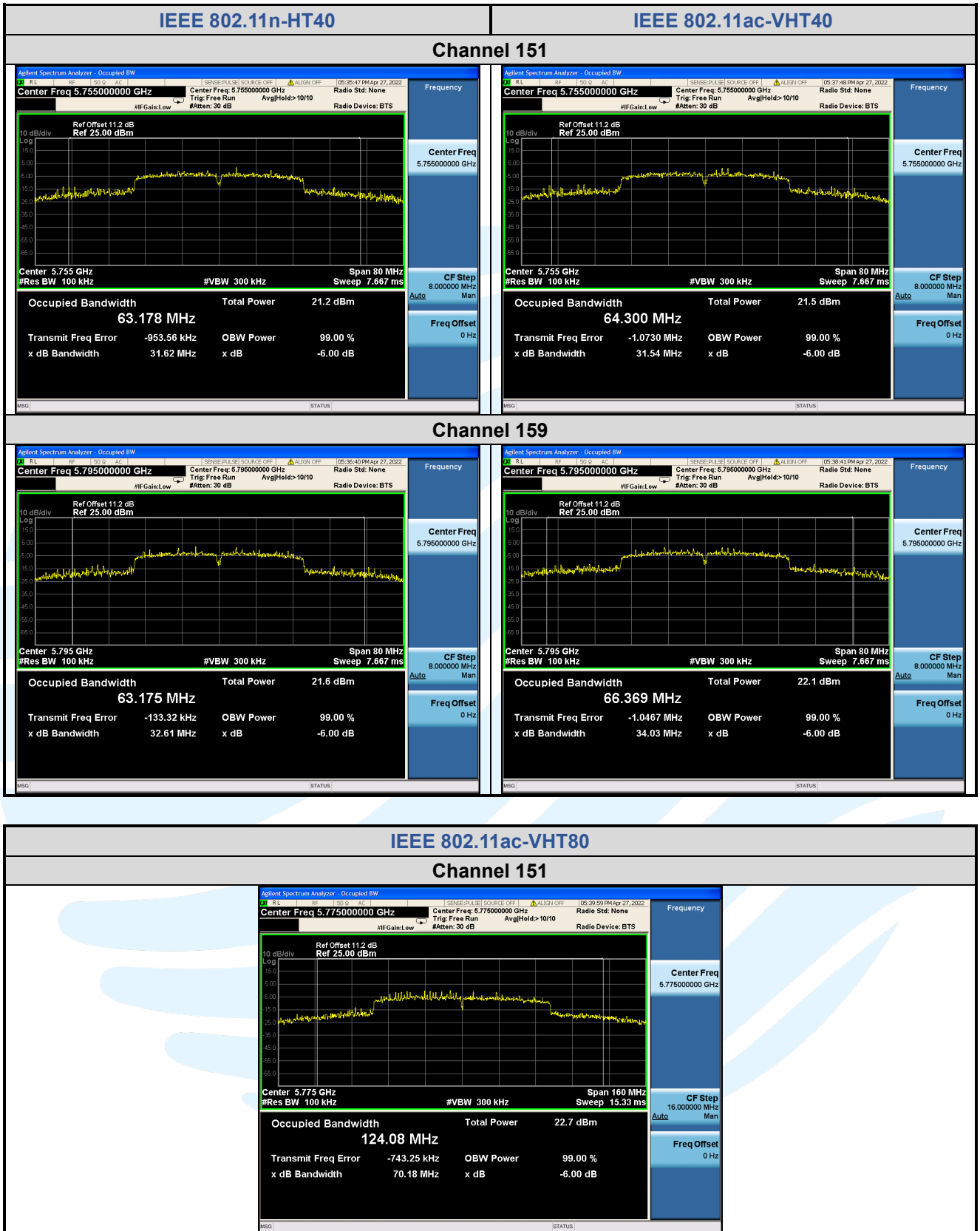
Test Data:

Mode	Channel/ Frequency (MHz)	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limit	Pass / Fail
IEEE 802.11a	149 (5745)	15.01	25.483	> 500 kHz	Pass
	157 (5785)	16.33	25.053	> 500 kHz	Pass
	165 (5825)	16.30	23.614	> 500 kHz	Pass
IEEE 802.11n- HT20	149 (5745)	15.68	25.578	> 500 kHz	Pass
	157 (5785)	17.34	23.975	> 500 kHz	Pass
	165 (5825)	17.20	23.312	> 500 kHz	Pass
IEEE 802.11n- HT40	151 (5755)	31.62	50.019	> 500 kHz	Pass
	159 (5795)	32.61	49.711	> 500 kHz	Pass
IEEE 802.11ac- VHT20	149 (5745)	16.84	25.667	> 500 kHz	Pass
	157 (5785)	16.97	25.463	> 500 kHz	Pass
	165 (5825)	16.66	23.433	> 500 kHz	Pass
IEEE 802.11ac- VHT40	151 (5755)	31.54	50.411	> 500 kHz	Pass
	159 (5795)	34.03	48.830	> 500 kHz	Pass
IEEE 802.11ac- VHT80	155 (5775)	70.18	101.43	> 500 kHz	Pass

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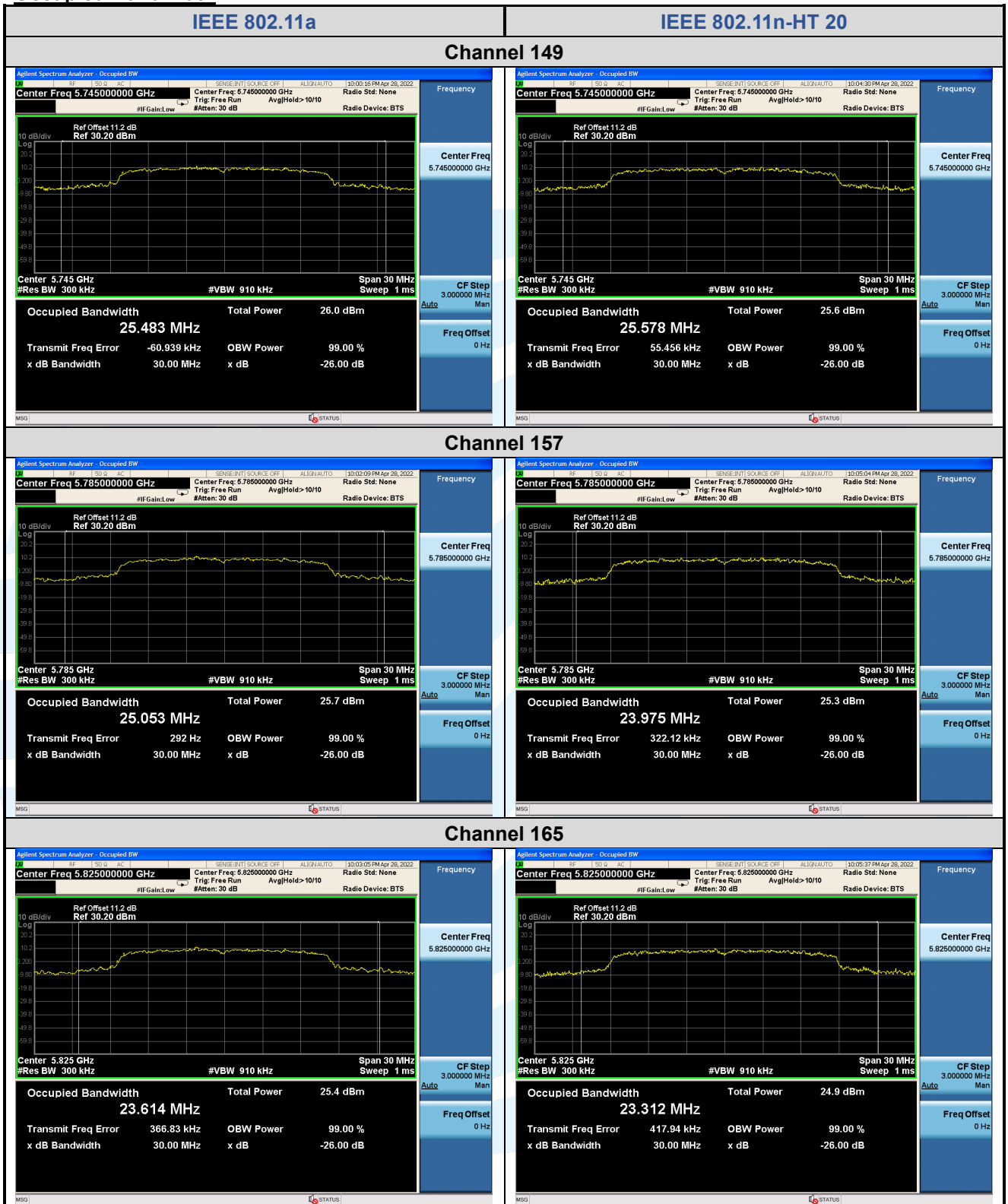
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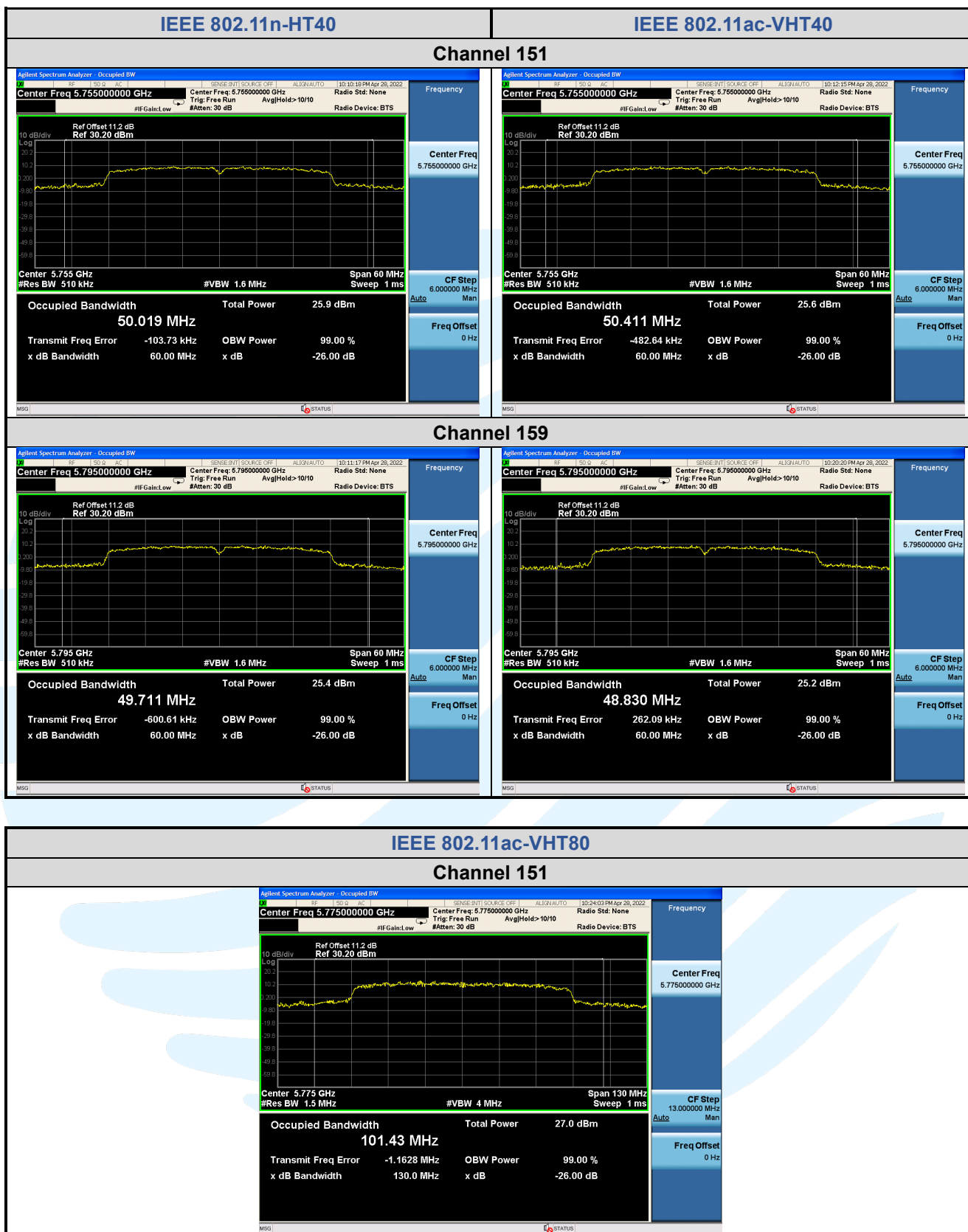
The test plots as follows:**6 dB Bandwidth**

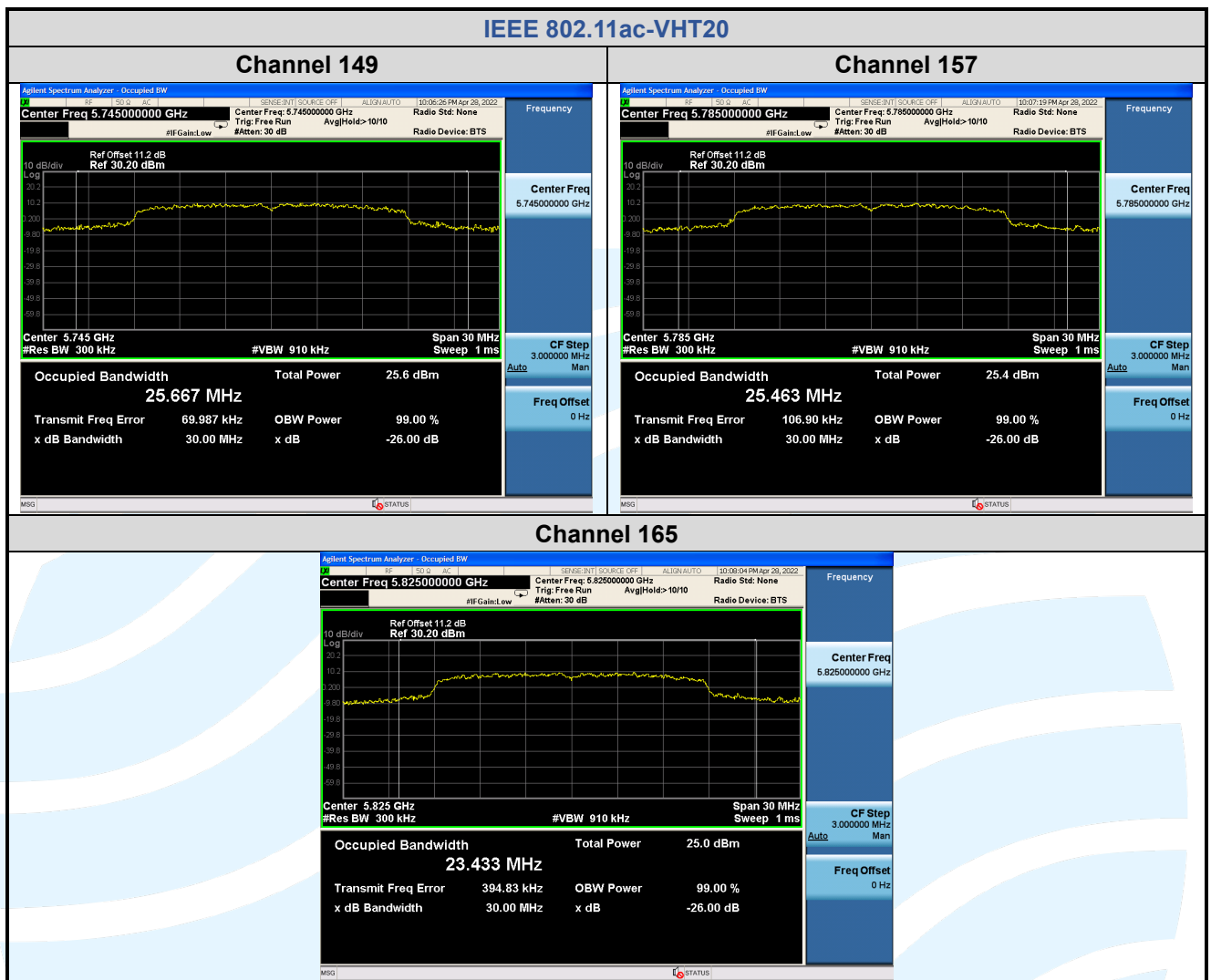




Occupied Bandwidth







5.5 MAXIMUM CONDUCTED OUTPUT POWER OR E.I.R.P

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)
RSS-247 Issue 2 Section 6.2.1.1/6.2.2.1/6.2.3.1/6.2.4.1

Test Method: KDB 789033 D02 v02r01 Section E.3.a (Method PM)

Limits: FCC 47 CFR Part 15 Subpart E

1. For the band 5.15-5.25 GHz.
 - (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
 - (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
 - (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
 - (iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain

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directional antennas are used exclusively for fixed, point-to-point operations.

Limits: RSS-247 Issue 2

1. Frequency band 5150-5250 MHz

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 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. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

2. Frequency band 5250-5350 MHz

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

Additional requirements

In addition to the above requirements, devices shall comply with the following, where applicable:

- a) Outdoor fixed devices with a maximum e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below:
 - i. -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$
 - ii. $-13 - 0.716 (\theta - 8)$ dBW/MHz for $8^\circ \leq \theta < 40^\circ$
 - iii. $-35.9 - 1.22 (\theta - 40)$ dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$
 - iv. -42 dBW/MHz for $\theta > 45^\circ$

The measurement procedure defined in Annex A of this document shall be used to verify the compliance to the e.i.r.p. at different elevations.

- b) Devices, other than outdoor fixed devices, having an e.i.r.p. greater than 200 mW shall comply with either i. or ii. below:
 - i. devices shall comply with the e.i.r.p. elevation mask in 6.2.2.3(a); or
 - ii. devices shall implement a method to permanently reduce their e.i.r.p. via a firmware feature in the event that the Department requires it. The test report must demonstrate how the device's power table can be updated to meet this firmware requirement. The manufacturer shall provide this firmware to update all systems automatically in compliance with the directions received from the Department.

3. Frequency bands 5470-5600 MHz and 5650-5725 MHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

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.

4. Frequency band 5725-5850 MHz

The maximum conducted output power shall not exceed 1 W. The output 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 output 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 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-multipoint³ systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

Test Procedure:

1. Connected the EUT's antenna port to measure device by 10dB attenuator.
2. Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of Tx on burst.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

Frequency band 5150-5250 MHz

RSS-247 Issue 2:

For IEEE 802.11 a/n-HT20/ac-VHT20, the minimum 99% emission bandwidth is 19.468 MHz

$10 \text{ dBm} + 10\log_{10}(19.468) = 22.89 \text{ dBm} < 23 \text{ dBm}$

So, the 22.89 dBm limit applicable

For IEEE 802.11 n-HT40/ac-VHT40/ac-VHT80, the minimum 99% emission bandwidth is 36.002MHz

$10 \text{ dBm} + 10\log_{10}(36.002) = 25.56 \text{ dBm} > 23 \text{ dBm}$

So, the 23 dBm limit applicable

Mode	Channel/ Frequency (MHz)	FCC Part 15E		RSS-247		Pass / Fail
		Maximum conducted output power (dBm)	Limit (dBm)	Maximum e.i.r.p (dBm)	e.i.r.p Limit (dBm)	
IEEE 802.11a	36 (5180)	15.54	24	19.54	22.89	Pass
	44 (5220)	16.46	24	20.46	22.89	Pass
	48 (5240)	16.85	24	20.85	22.89	Pass
IEEE 802.11n-HT20	36 (5180)	15.00	24	19.00	22.89	Pass
	44 (5220)	15.84	24	19.84	22.89	Pass
	48 (5240)	16.35	24	20.35	22.89	Pass
IEEE 802.11n-HT40	38 (5190)	15.40	24	19.40	23	Pass
	46 (5230)	16.20	24	20.20	23	Pass
IEEE 802.11ac-VHT20	36 (5180)	15.10	24	19.10	22.89	Pass
	44 (5220)	15.96	24	19.96	22.89	Pass
	48 (5240)	16.30	24	20.30	22.89	Pass
IEEE 802.11ac-VHT40	38 (5190)	15.28	24	19.28	23	Pass
	46 (5230)	16.23	24	20.23	23	Pass
IEEE 802.11ac-VHT80	42 (5210)	15.37	24	19.37	23	Pass

Remark:

1. Maximum conducted output power = Conducted output power + Duty Cycle Factor
2. Maximum e.i.r.p = Maximum conducted output power + Antenna Gain
3. The maximum ERP/EIRP is calculated from max output power and antenna gain, the antenna gain provided by the customer, and the customer takes all the responsibilities for the accuracy of antenna gain.

Frequency band 5250-5350 MHz

RSS-247 Issue 2:

For IEEE 802.11 a/n-HT20/ac-VHT 20, the minimum 99% emission bandwidth is 21.450 MHz

$$11 \text{ dBm} + 10\log_{10}(21.450) = 24.31\text{dBm} > 24\text{dBm}$$

So, the 24 dBm limit applicable

$$17\text{dBm} + 10\log_{10}(21.450) = 30.31 \text{ dBm} > 30 \text{ dBm}(1\text{W})$$

So, the 30 dBm limit applicable for e.i.r.p

For IEEE 802.11 n-HT40/ac-VHT80, the minimum 99% emission bandwidth is 35.956 MHz

$$11 \text{ dBm} + 10\log_{10}(35.956) = 26.56\text{dBm} > 24 \text{ dBm} (250\text{mW})$$

So, the 24 dBm limit applicable

FCC 47 CFR Part 15 Subpart E:

For IEEE 802.11 a/n/ac, the minimum 26 dB emission bandwidth is 36.02 MHz

$$11 \text{ dBm} + 10\log_{10}(36.02) = 26.57 \text{ dBm} > 24 \text{ dBm} (250\text{mW})$$

So, the 24 dBm limit applicable

Mode	Channel/ Frequency (MHz)	Maximum conducted output power (dBm)	Maximum e.i.r.p (dBm)	Limit (dBm)			Pass / Fail
				Conducted		e.i.r.p	
				FCC Part 15E	RSS-247		
IEEE 802.11a	52 (5260)	17.07	21.07	24	24	30	Pass
	60 (5300)	17.15	21.15	24	24	30	Pass
	64 (5320)	17.84	21.84	24	24	30	Pass
IEEE 802.11n- HT20	52 (5260)	16.76	20.76	24	24	30	Pass
	60 (5300)	16.83	20.83	24	24	30	Pass
	64 (5320)	17.47	21.47	24	24	30	Pass
IEEE 802.11n- HT40	54 (5270)	16.84	20.84	24	24	30	Pass
	62 (5310)	16.91	20.91	24	24	30	Pass
IEEE 802.11ac- VHT20	52 (5260)	16.80	20.80	24	24	30	Pass
	60 (5300)	16.75	20.75	24	24	30	Pass
	64 (5320)	17.49	21.49	24	24	30	Pass
IEEE 802.11ac- VHT40	54 (5270)	16.91	20.91	24	24	30	Pass
	62 (5310)	16.73	20.73	24	24	30	Pass
IEEE 802.11ac- VHT80	58 (5290)	16.89	20.89	24	24	30	Pass

Remark:

- Maximum conducted output power = Conducted output power + Duty Cycle Factor
- Maximum e.i.r.p = Maximum conducted output power + Antenna Gain
- The maximum ERP/EIRP is calculated from max output power and antenna gain, the antenna gain provided by the customer, and the customer takes all the responsibilities for the accuracy of antenna gain.

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UTTR-RF-RSS247-V1.1

Frequency bands 5470-5725 MHz (RSS-247 Issue 2 Not including 5600-5650 MHz)

RSS-247 Issue 2:

For IEEE 802.11 a/n-HT20/ac-VHT 20, the minimum 99% emission bandwidth is 22.303 MHz

$$11 \text{ dBm} + 10\log_{10}(22.303) = 24.48 \text{ dBm} > 24 \text{ dBm}$$

So, the 24 dBm limit applicable for conducted

$$17\text{dBm} + 10\log_{10}(22.303) = 30.48\text{dBm} > 30 \text{ dBm}(1\text{W})$$

So, the 30 dBm limit applicable for e.i.r.p

For IEEE 802.11 n-HT40/ac-VHT 40/ac-VHT80, the minimum 99% emission bandwidth is 35.75 MHz

$$11 \text{ dBm} + 10\log_{10}(35.75) = 26.56 \text{ dBm} > 24 \text{ dBm}$$

So, the 24 dBm limit applicable

FCC 47 CFR Part 15 Subpart E:

For IEEE 802.11 a/n/ac, the minimum 26 dB emission bandwidth is 38.96 MHz

$$11 \text{ dBm} + 10\log_{10}(30) = 26.91 \text{ dBm} > 24 \text{ dBm} (250\text{mW})$$

So, the 24 dBm limit applicable

Mode	Channel/ Frequency (MHz)	Maximum conducted output power (dBm)	Maximum e.i.r.p (dBm)	Limit (dBm)			Pass / Fail
				Conducted		e.i.r.p	
				FCC Part 15E	RSS-247		
IEEE 802.11a	100 (5500)	16.24	20.24	24	24	30	Pass
	116 (5580)	14.43	18.43	24	24	30	Pass
	140 (5700)	13.37	17.37	24	24	30	Pass
IEEE 802.11n- HT20	100 (5500)	15.99	19.99	24	24	30	Pass
	116 (5580)	13.76	17.76	24	24	30	Pass
	140 (5700)	13.55	17.55	24	24	30	Pass
IEEE 802.11n- HT40	102 (5510)	14.47	18.47	24	24	30	Pass
	110 (5550)	13.54	17.54	24	24	30	Pass
	134(5670)	12.84	16.84	24	24	30	Pass
IEEE 802.11ac- VHT20	100 (5500)	15.92	19.92	24	24	30	Pass
	116 (5580)	14.02	18.02	24	24	30	Pass
	140 (5700)	13.67	17.67	24	24	30	Pass
IEEE 802.11ac- VHT40	102 (5510)	14.56	18.56	24	24	30	Pass
	110 (5550)	13.65	17.65	24	24	30	Pass
	134(5670)	12.74	16.74	24	24	30	Pass
IEEE 802.11ac- VHT80	110 (5550)	12.53	16.53	24	24	30	Pass
	122(5610)	11.89	15.89	24	24	30	Pass

Remark:

- Maximum conducted output power = Conducted output power + Duty Cycle Factor
- Maximum e.i.r.p = Maximum conducted output power + Antenna Gain
- The maximum ERP/EIRP is calculated from max output power and antenna gain, the antenna gain provided by the customer, and the customer takes all the responsibilities for the accuracy of antenna gain.

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UTTR-RF-RSS247-V1.1

Frequency band 5725-5850 MHz

Mode	Channel/ Frequency (MHz)	Maximum conducted output power (dBm)	Limit (dBm)	Pass / Fail
IEEE 802.11a	149 (5745)	14.21	30	Pass
	157 (5785)	14.22	30	Pass
	165 (5825)	14.41	30	Pass
IEEE 802.11n-HT20	149 (5745)	13.99	30	Pass
	157 (5785)	14.13	30	Pass
	165 (5825)	14.43	30	Pass
IEEE 802.11n-HT40	151 (5755)	13.88	30	Pass
	159 (5795)	14.31	30	Pass
IEEE 802.11ac-VHT20	149 (5745)	14.02	30	Pass
	157 (5785)	13.87	30	Pass
	165 (5825)	14.39	30	Pass
IEEE 802.11ac-VHT40	151 (5755)	14.01	30	Pass
	159 (5795)	14.19	30	Pass
IEEE 802.11ac-VHT80	155 (5775)	13.98	30	Pass

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