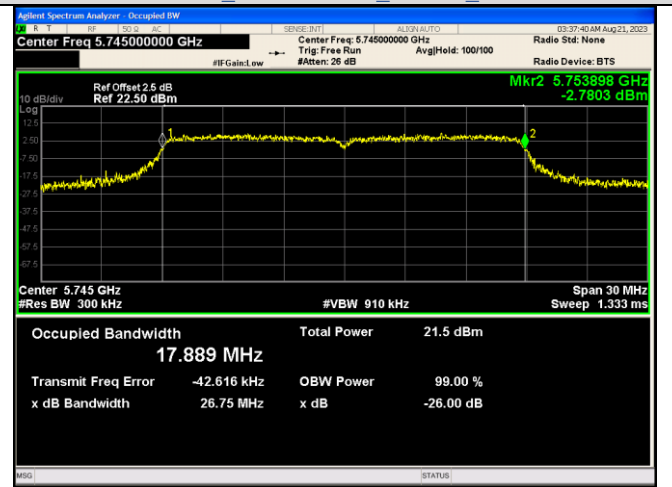
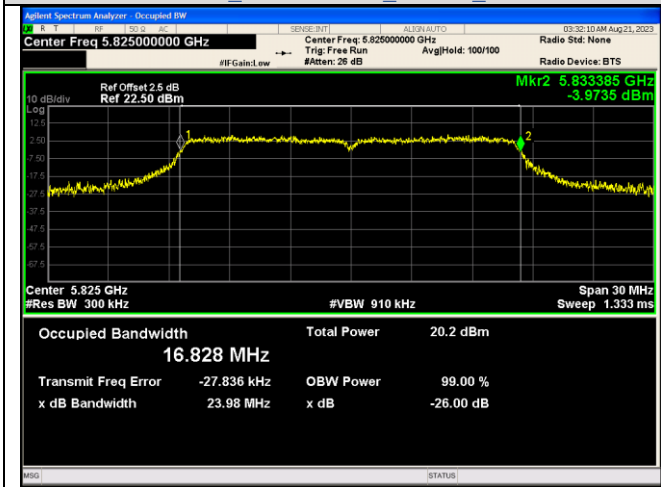


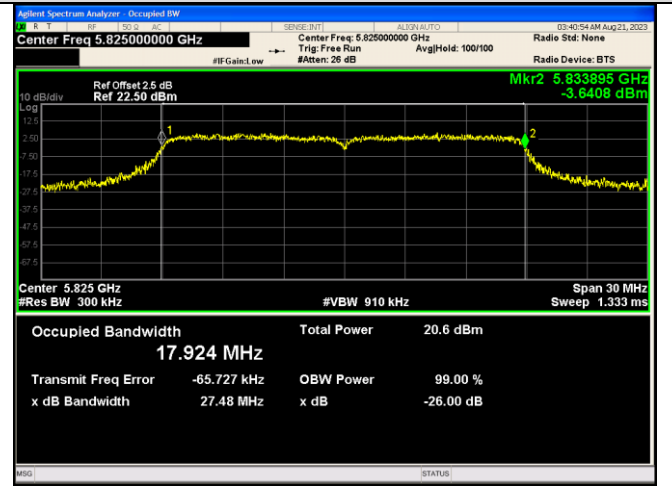
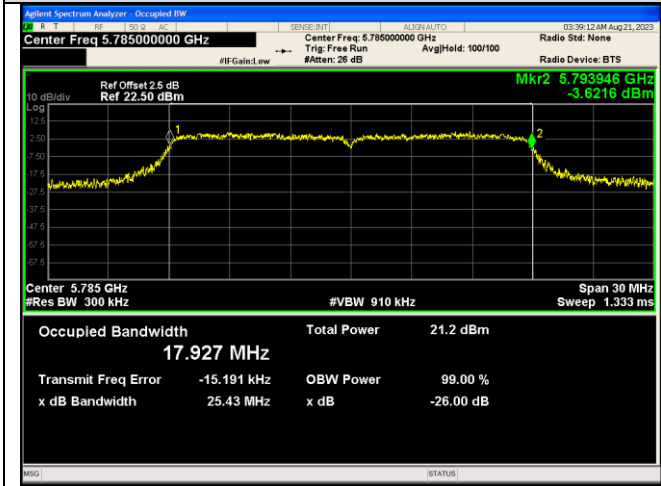
IEEE 802.11a Channel 149 20MHz Antenna 0

IEEE 802.11a Channel 157 20MHz Antenna 0



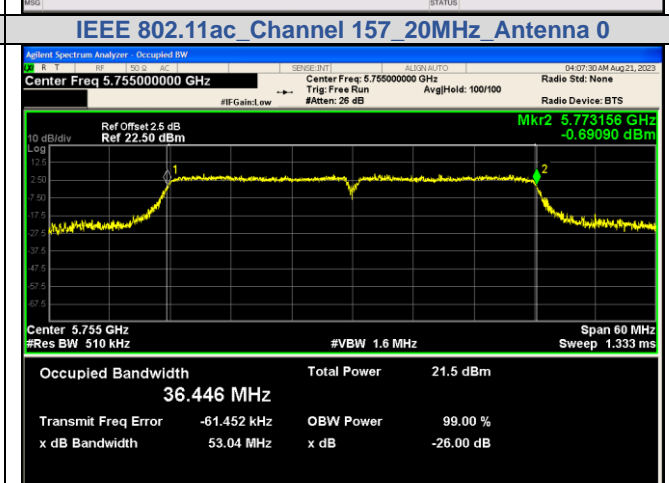
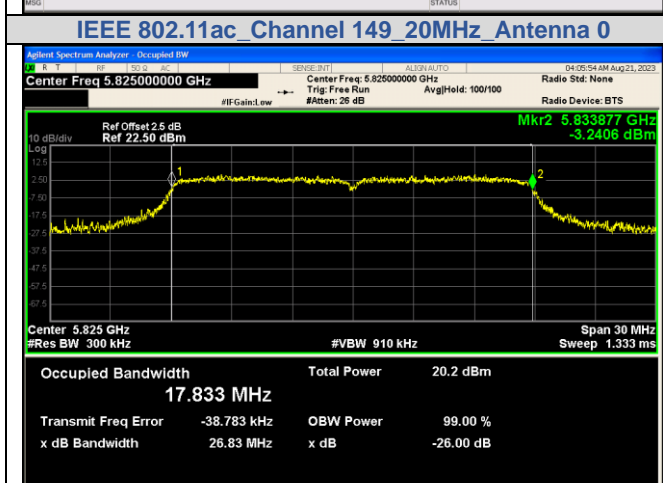
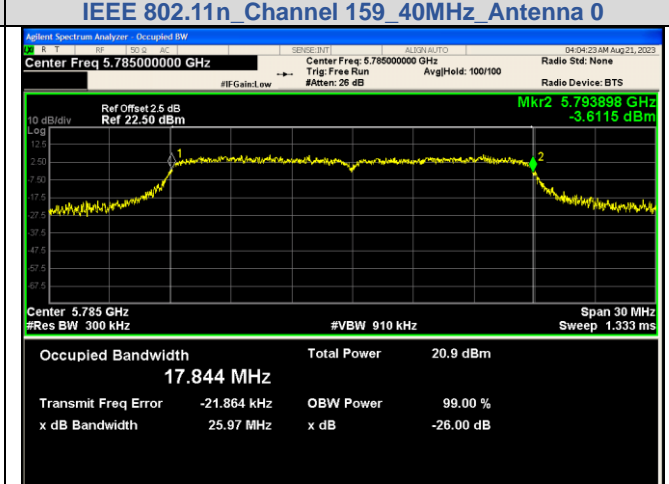
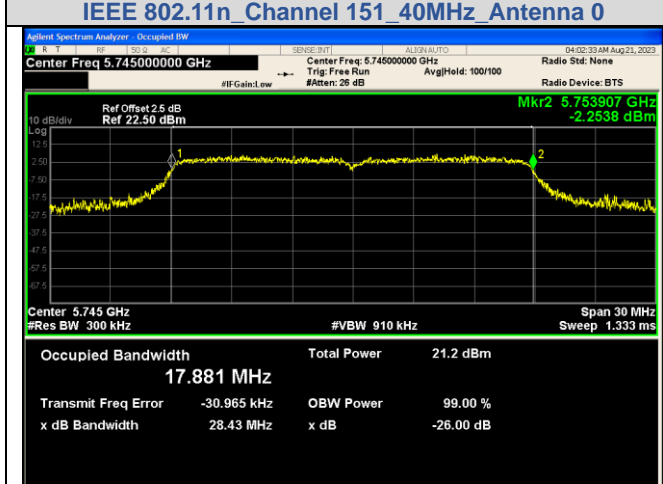
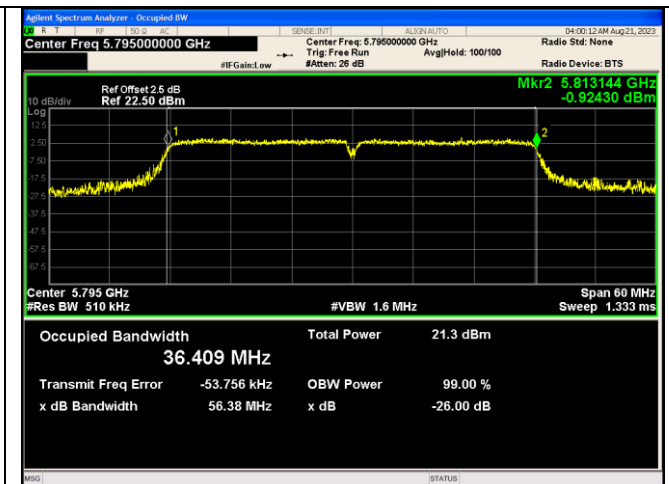
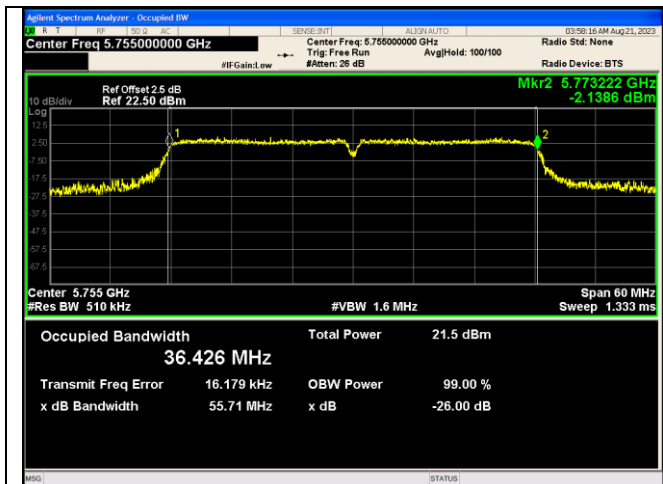
IEEE 802.11a Channel 165 20MHz Antenna 0

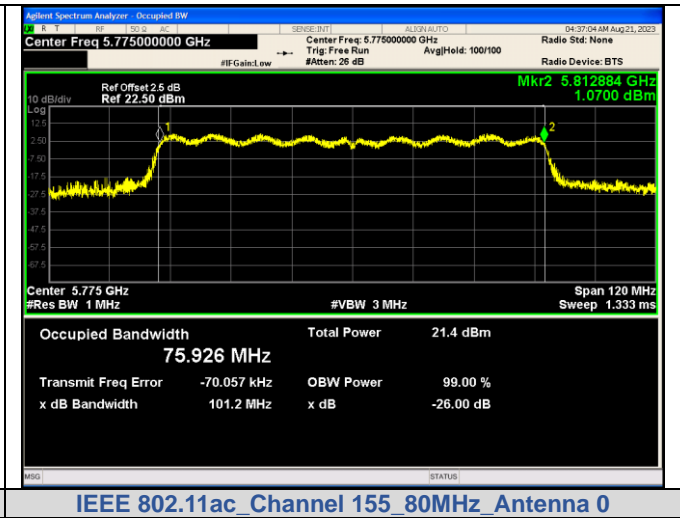
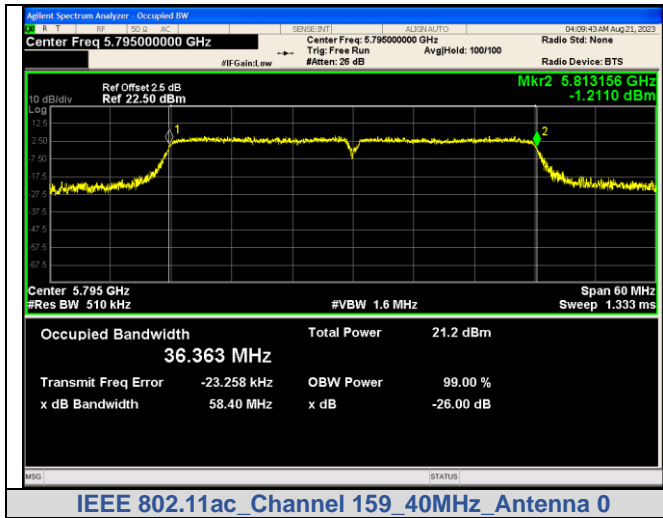
IEEE 802.11n Channel 149 20MHz Antenna 0



IEEE 802.11n Channel 157 20MHz Antenna 0

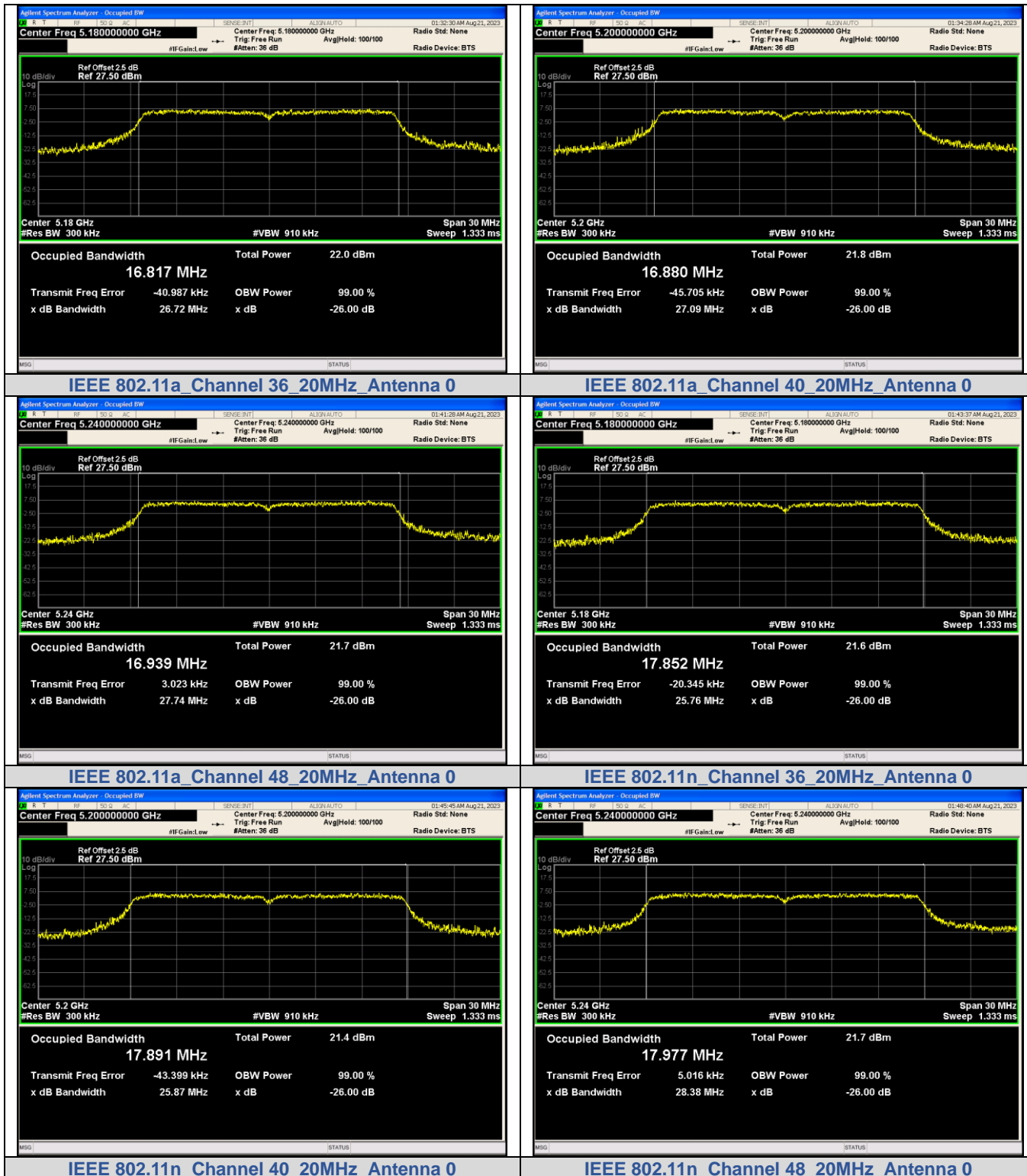
IEEE 802.11n Channel 165 20MHz Antenna 0

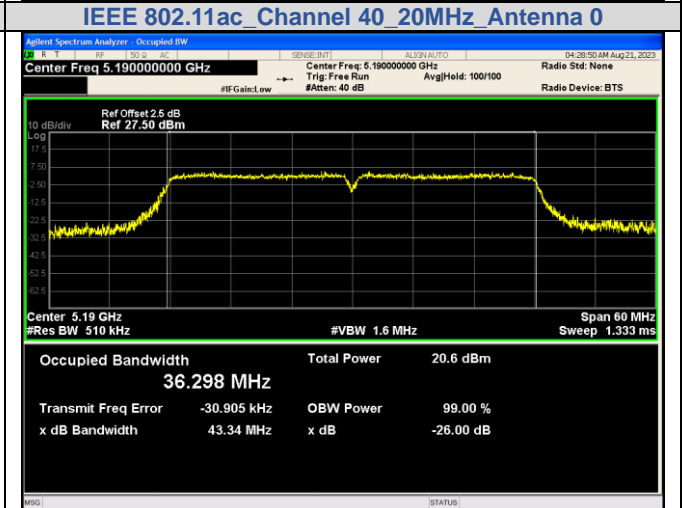
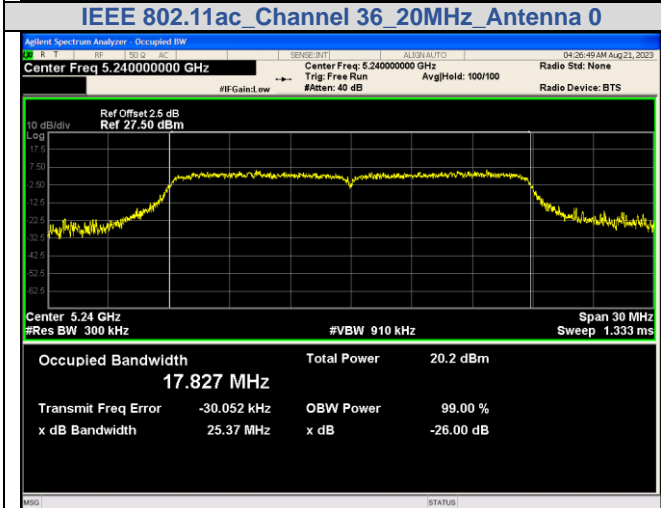
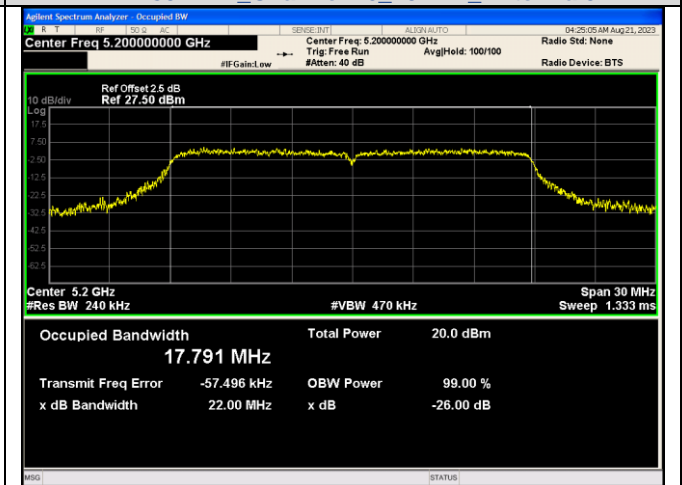
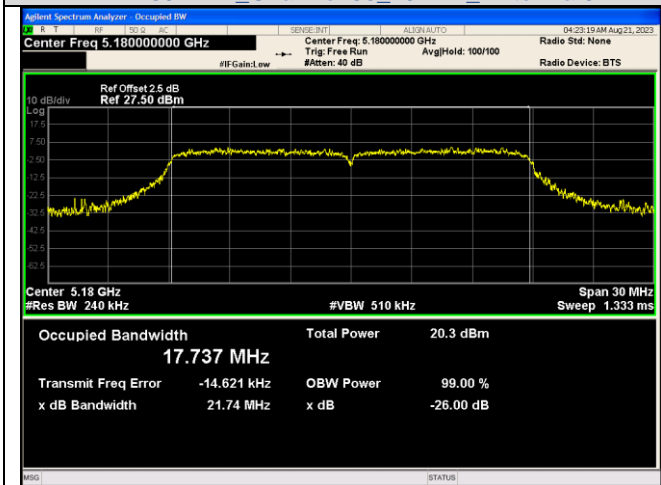
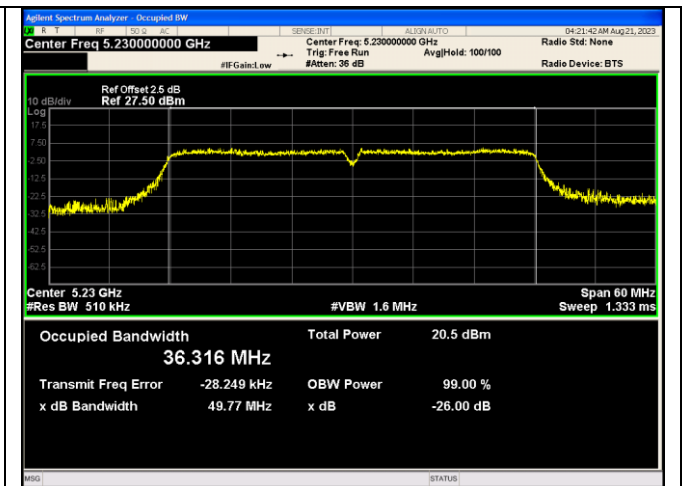
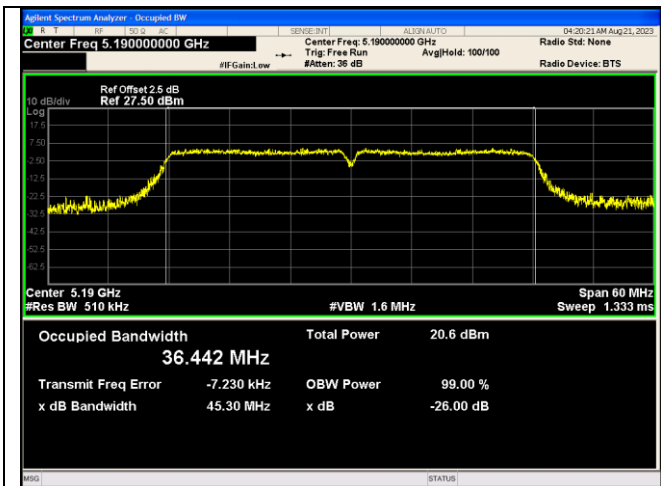






26dB Bandwidth:

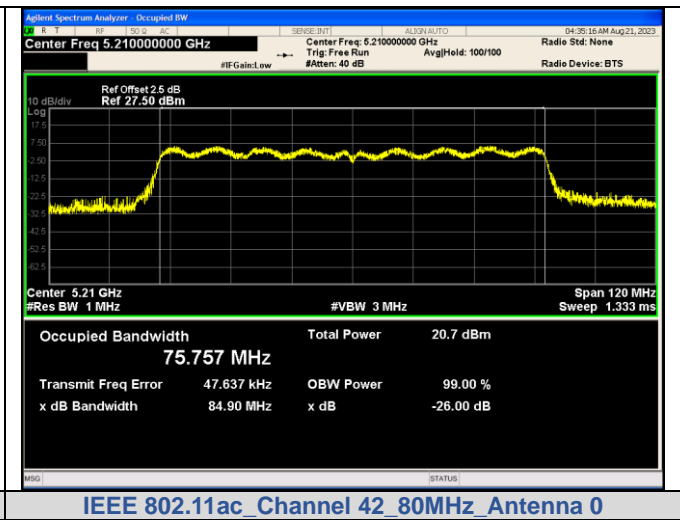
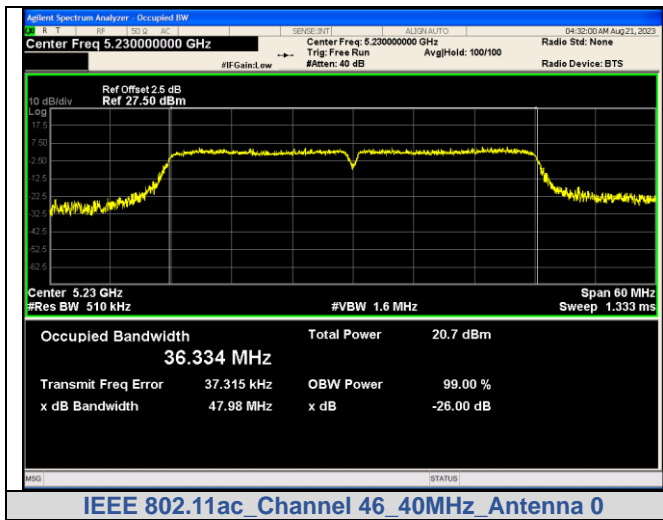


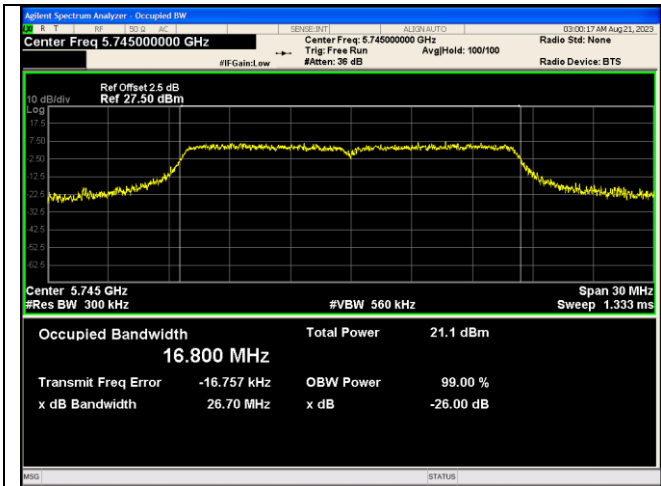


IEEE 802.11ac Channel 48 20MHz Antenna 0

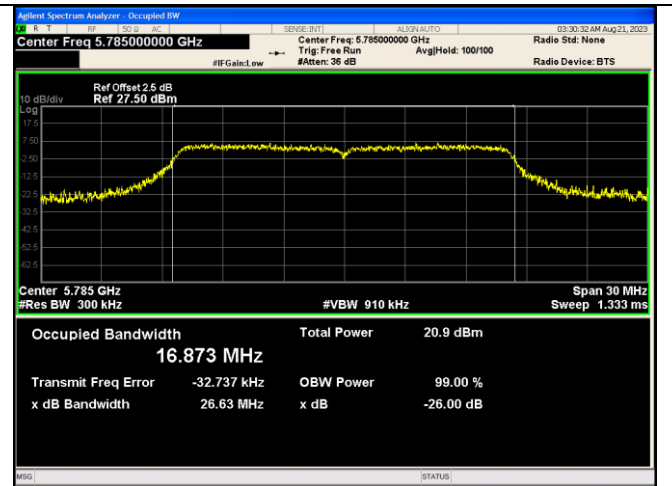
IEEE 802.11ac Channel 38 40MHz Antenna 0



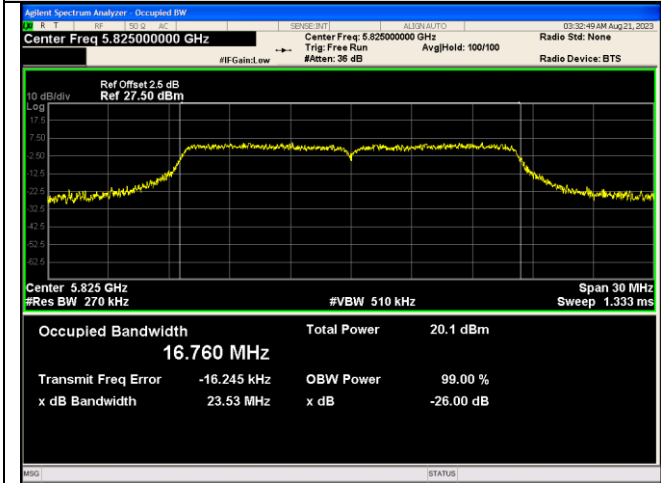




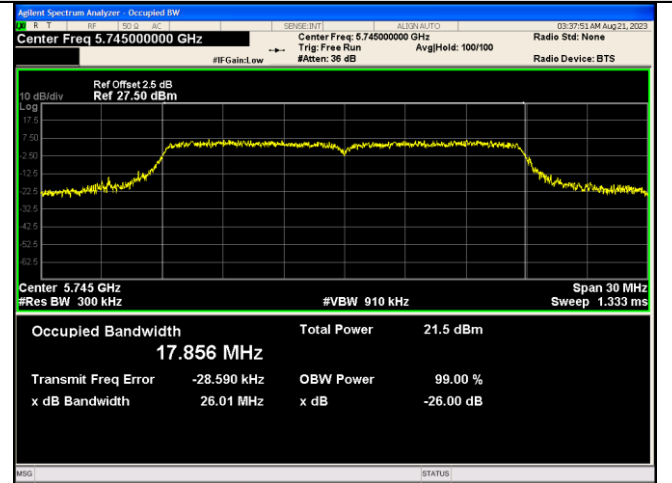
IEEE 802.11a Channel 149 20MHz Antenna 0



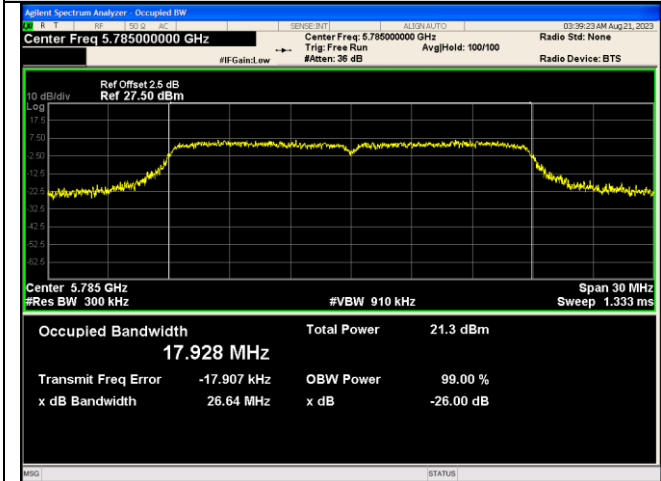
IEEE 802.11a Channel 157 20MHz Antenna 0



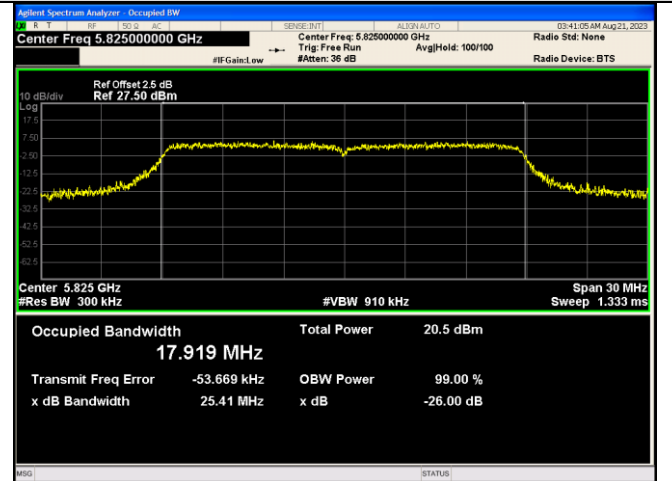
IEEE 802.11a Channel 165 20MHz Antenna 0



IEEE 802.11n Channel 149 20MHz Antenna 0



IEEE 802.11n Channel 157 20MHz Antenna 0



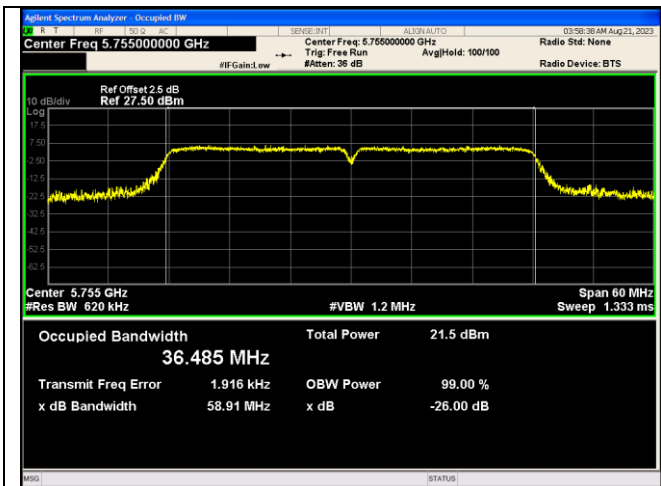
IEEE 802.11n Channel 165 20MHz Antenna 0

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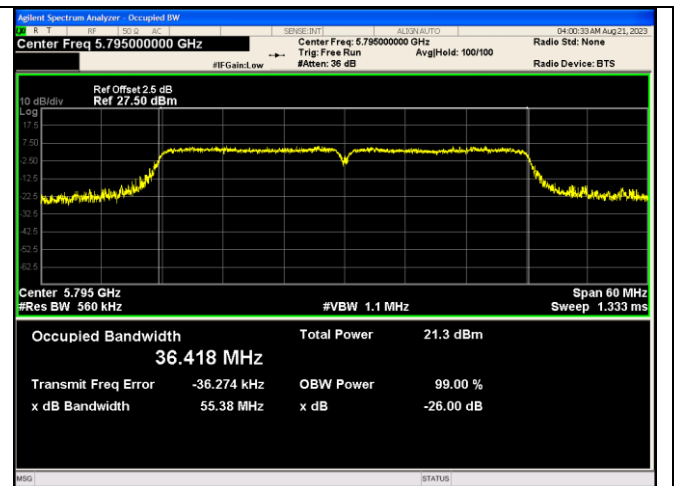
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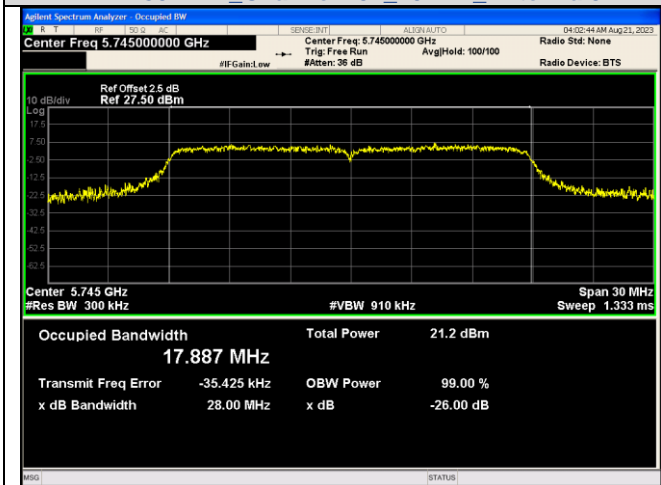
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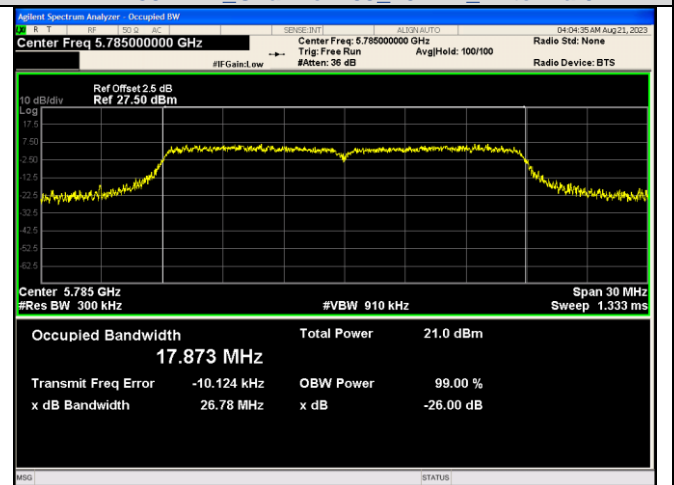
IEEE 802.11n Channel 151 40MHz Antenna 0



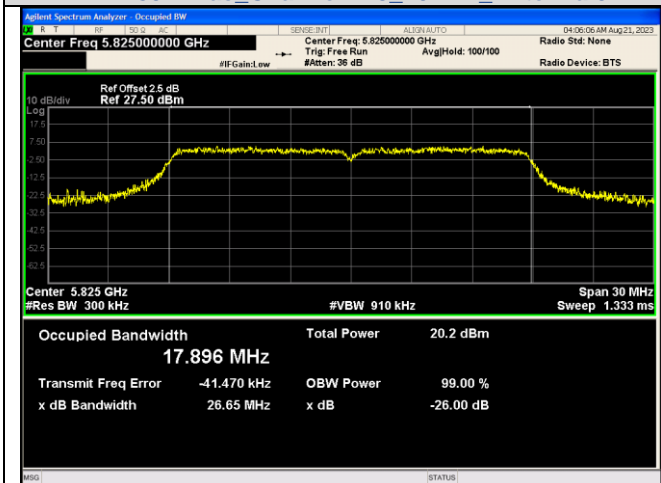
IEEE 802.11n Channel 159 40MHz Antenna 0



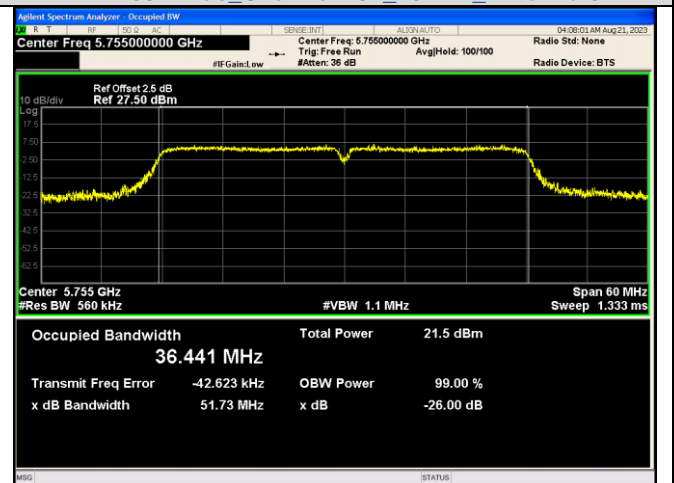
IEEE 802.11ac Channel 149 20MHz Antenna 0



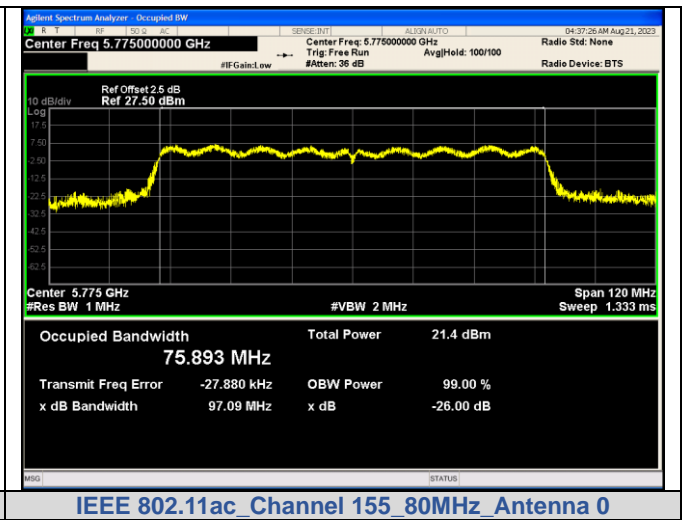
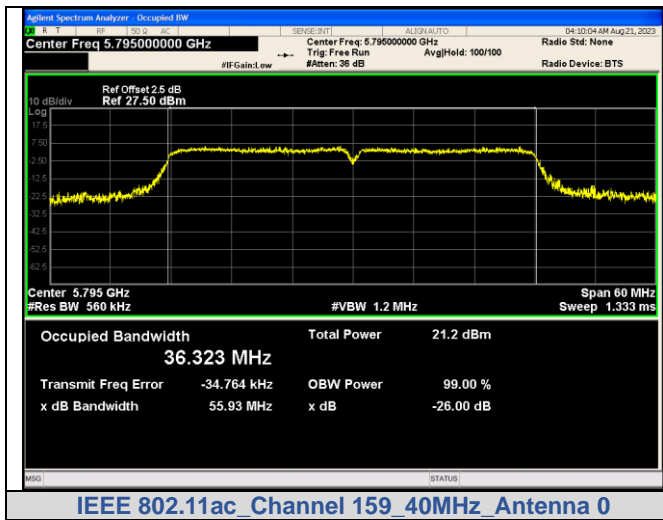
IEEE 802.11ac Channel 157 20MHz Antenna 0



IEEE 802.11ac Channel 165 20MHz Antenna 0

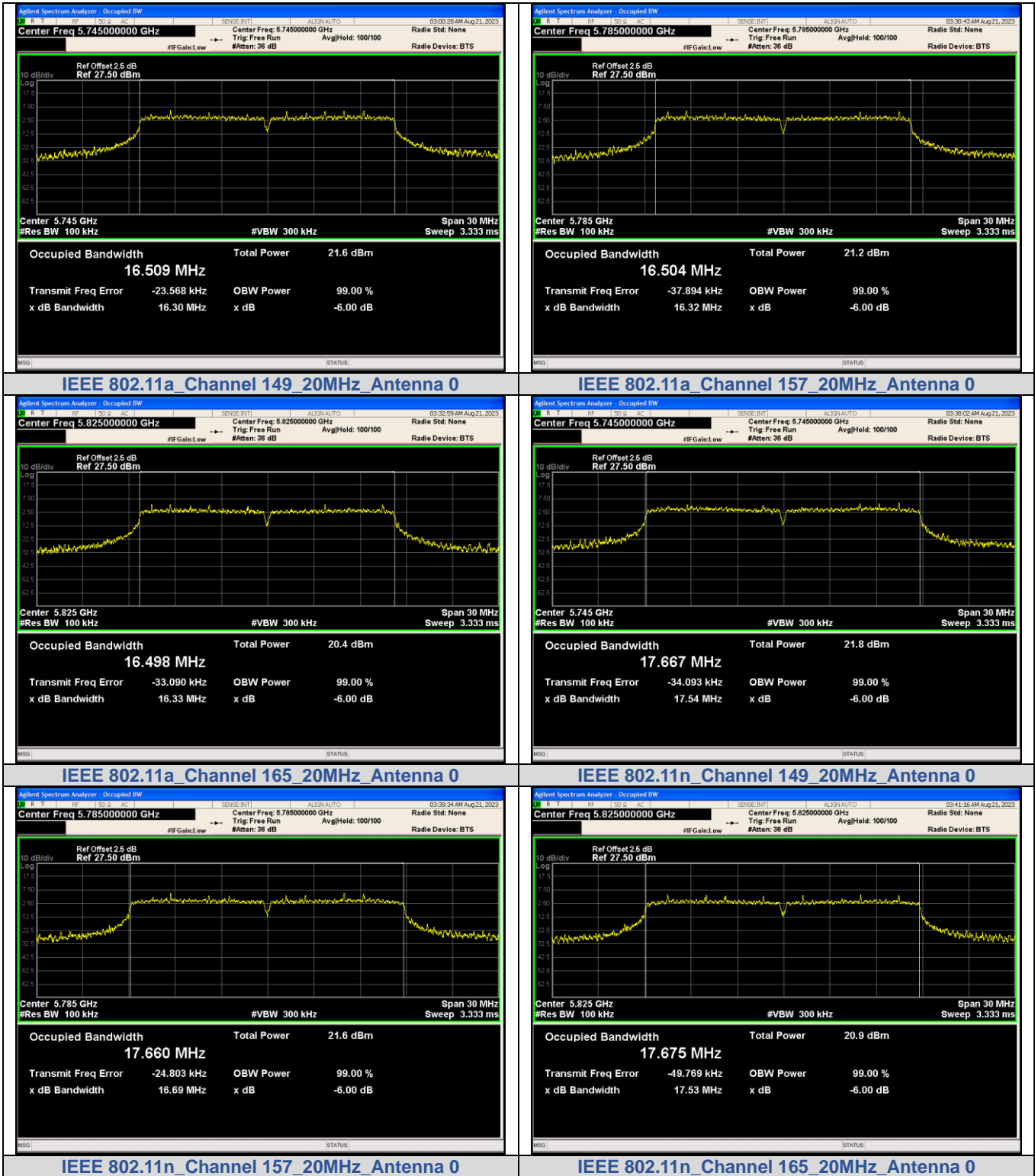


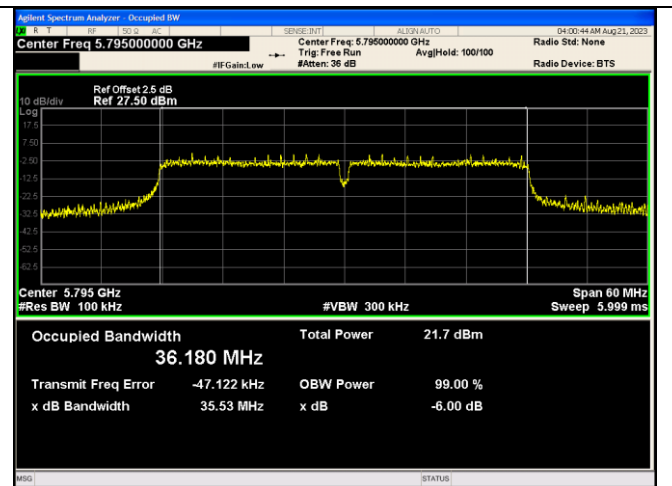
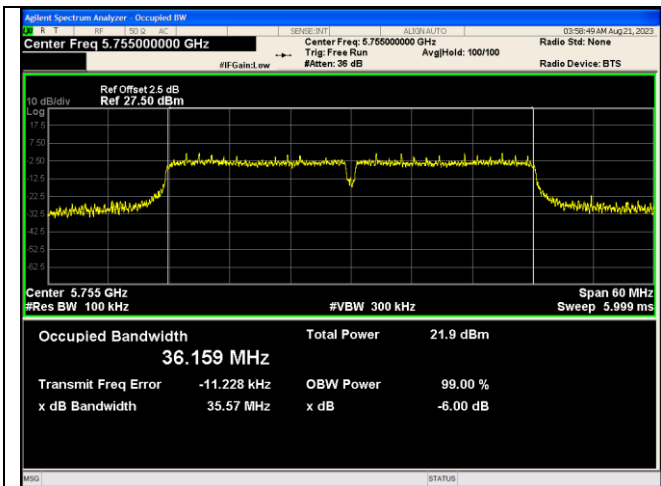
IEEE 802.11ac Channel 151 40MHz Antenna 0





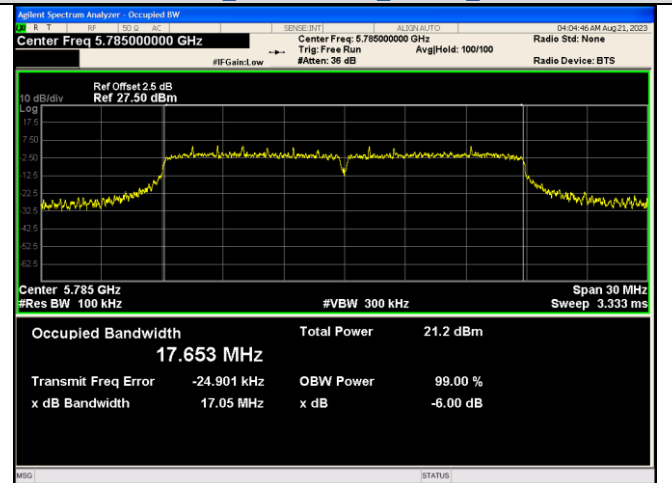
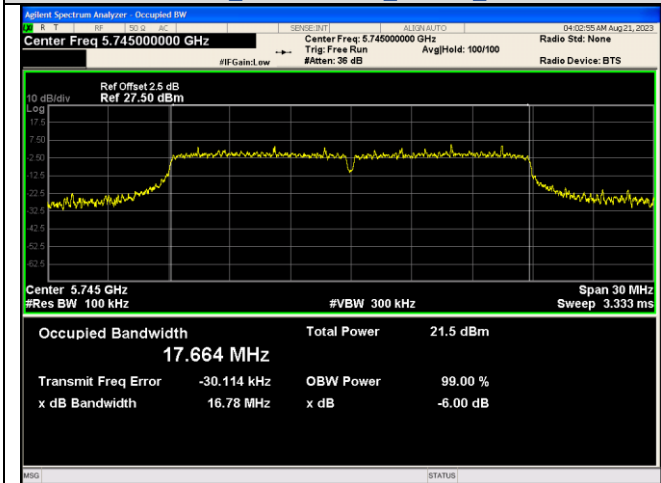
6dB Bandwidth:





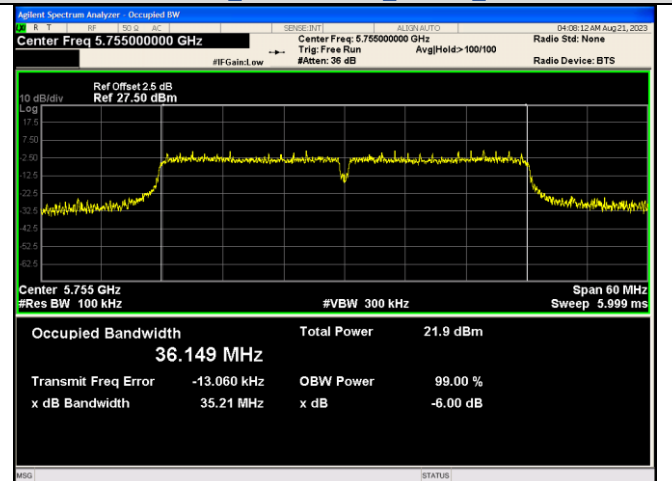
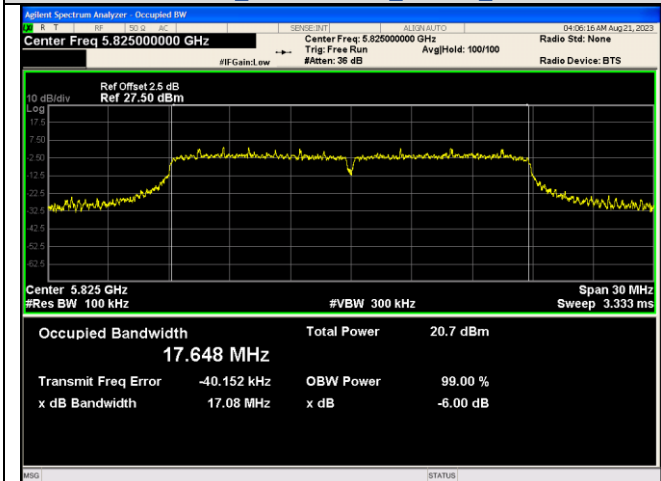
IEEE 802.11n Channel 151 40MHz Antenna 0

IEEE 802.11n Channel 159 40MHz Antenna 0



IEEE 802.11ac Channel 149 20MHz Antenna 0

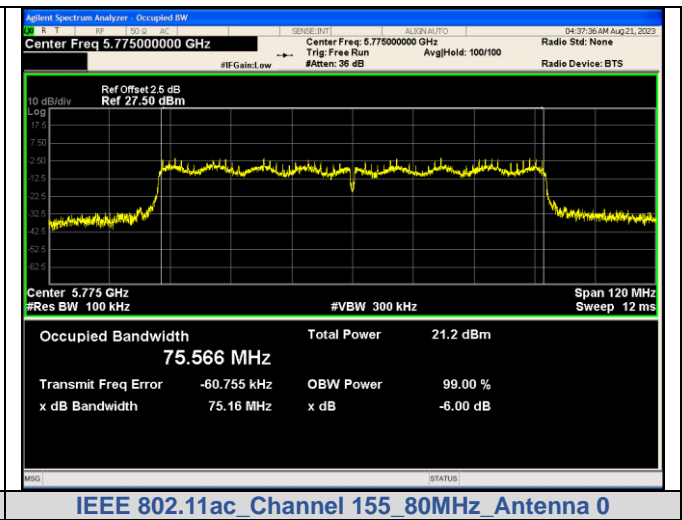
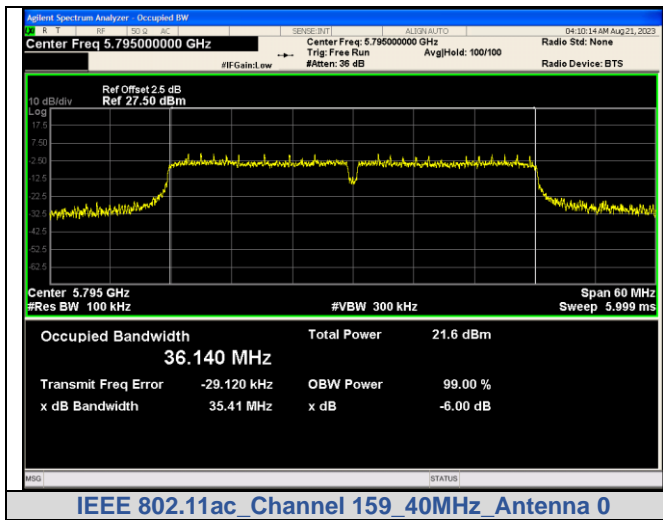
IEEE 802.11ac Channel 157 20MHz Antenna 0



IEEE 802.11ac Channel 165 20MHz Antenna 0

IEEE 802.11ac Channel 151 40MHz Antenna 0







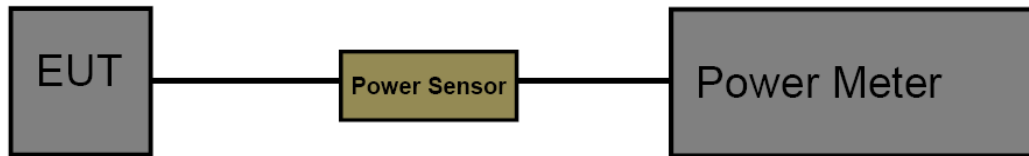
3.5. Peak Output Power

Limit

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a)

Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	Fixed: 1 Watt (30dBm) Mobile and Portable: 250mW (24dBm)	5150~5250
	250mW (24dBm)	5250~5350
	250mW (24dBm)	5500~5700
	1 Watt (30dBm)	5725~5850

Test Configuration



Test Procedure

The measurement is according to section 3 of KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

Test Mode

Please refer to the clause 2.4.

**Test Result**

Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11a	36	16.250	30	PASS
	40	16.044	30	PASS
	48	16.278	30	PASS
IEEE 802.11n_20	36	16.277	30	PASS
	40	15.627	30	PASS
	48	16.138	30	PASS
IEEE 802.11n_40	38	14.560	30	PASS
	46	14.755	30	PASS
IEEE 802.11ac_20	36	14.580	30	PASS
	40	14.254	30	PASS
	48	14.820	30	PASS
IEEE 802.11ac_40	38	14.521	30	PASS
	46	14.665	30	PASS
IEEE 802.11ac_80	42	13.777	30	PASS

Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11a	149	15.544	30	PASS
	157	15.241	30	PASS
	165	14.558	30	PASS
IEEE 802.11n_20	149	15.692	30	PASS
	157	15.437	30	PASS
	165	14.889	30	PASS
IEEE 802.11n_40	151	15.910	30	PASS
	159	15.442	30	PASS
IEEE 802.11ac_20	149	15.361	30	PASS
	157	15.108	30	PASS
	165	14.647	30	PASS
IEEE 802.11ac_40	151	15.660	30	PASS
	159	15.391	30	PASS
IEEE 802.11ac_80	155	14.711	30	PASS

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3.6. Power Spectral Density

Limit

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a)

For the 5.15~5.25GHz band:

- Outdoor AP
The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz.
If $G_{Tx} > 6\text{dBi}$, then $\text{PSD} = 17 - (G_{Tx} - 6)$.
- Indoor AP
The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz.
If $G_{Tx} > 6\text{dBi}$, then $\text{PSD} = 17 - (G_{Tx} - 6)$.
- Point-to-point AP
The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz.
If $G_{Tx} > 23\text{dBi}$, then $\text{PSD} = 17 - (G_{Tx} - 23)$.
- Client devices
The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz.
If $G_{Tx} > 6\text{dBi}$, then $\text{PSD} = 11 - (G_{Tx} - 6)$.

For the 5.25~5.35GHz band:

The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz.
If $G_{Tx} > 6\text{dBi}$, then $\text{PSD} = 11 - (G_{Tx} - 6)$.

For the 5.47~5.725GHz band:

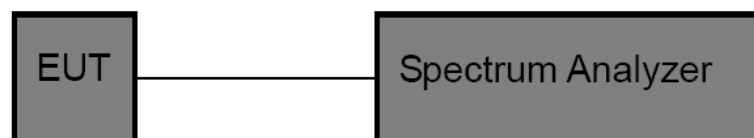
The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz.
If $G_{Tx} > 6\text{dBi}$, then $\text{PSD} = 11 - (G_{Tx} - 6)$.

For the 5.725~5.85GHz band:

- Point-to-multipoint systems (P2M)
The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz.
If $G_{Tx} > 6\text{dBi}$, then $\text{PSD} = 30 - (G_{Tx} - 6)$.
- Point-to-point systems (P2P)
The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz.

Note: G_{Tx} : EUT Antenna gain.

Test Configuration



Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement is according to KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyzer center frequency to transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW) (alternatively, the entire 99% OBW) of the signal.
- (4) RBW=1MHz for devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz
RBW=500kHz for devices operating in the band 5.725-5.85 GHz.



- (5) Set the VBW to: ≥ 3 RBW
- (6) Detector: AVG
- (7) Trace: Max Hold and View
- (7) Sweep time: auto
- (8) Trace average at least 100 traces in power averaging.
- (9) Use the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.

NOTE: The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.

Test Mode

Please refer to the clause 2.4.

Test Result

Mode	Channel	Ant. 0 Meas PSD	Ant. 0 Corr'd PSD	Limit (dBm/MHz)	Result
IEEE 802.11a	36	5.862	6.047	30	PASS
	40	5.717	5.992		PASS
	48	5.566	5.841		PASS
IEEE 802.11n_20	36	5.475	5.763		PASS
	40	5.344	5.581		PASS
	48	5.429	5.627		PASS
IEEE 802.11n_40	38	0.544	0.893		PASS
	46	0.896	1.207		PASS
IEEE 802.11ac_20	36	3.793	4.1		PASS
	40	3.705	4.03		PASS
	48	3.734	4.059		PASS
IEEE 802.11ac_40	38	0.902	1.211		PASS
	46	1.074	1.304		PASS
IEEE 802.11ac_80	42	-1.906	-1.43		PASS

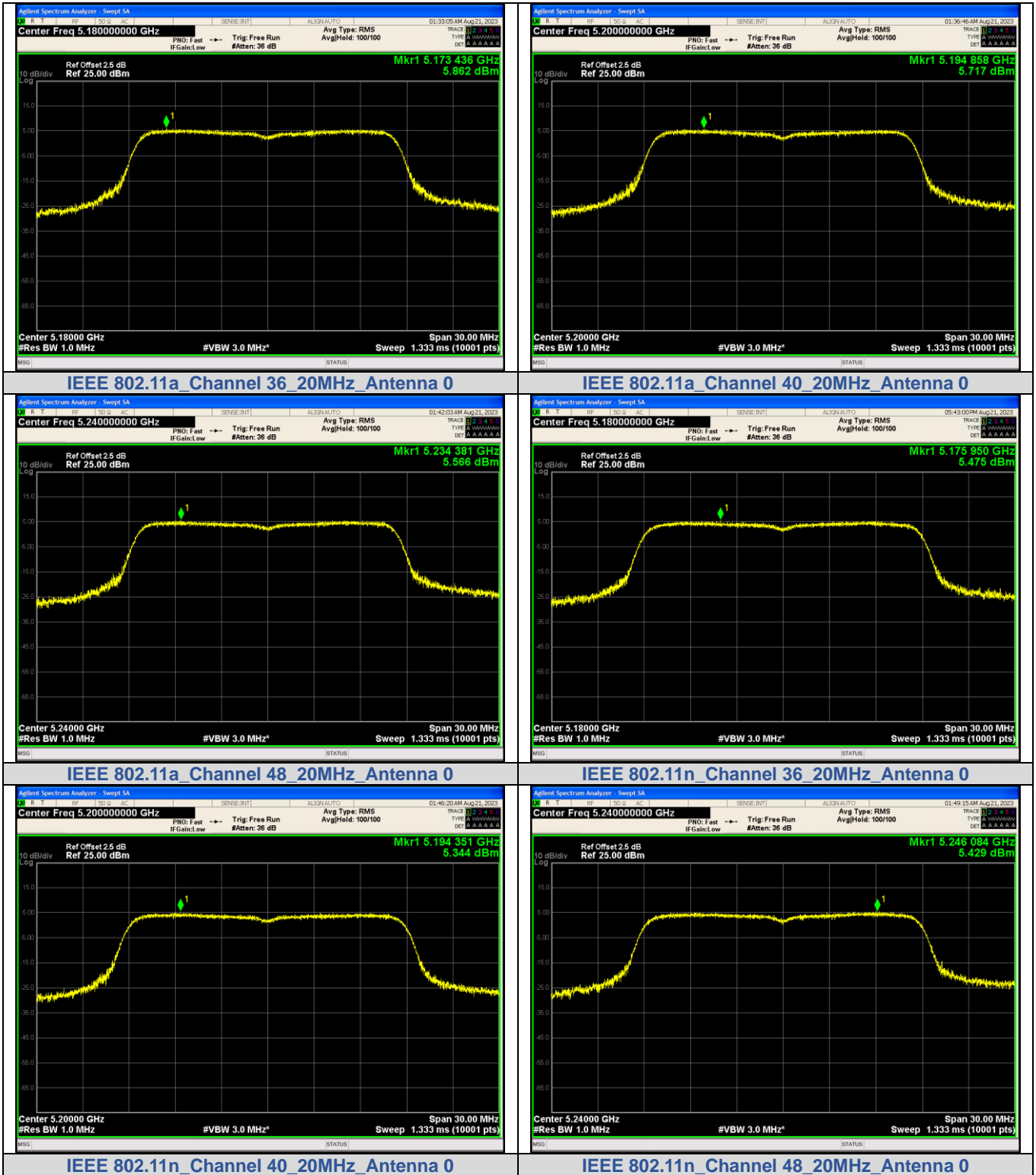
Note: Corr'd PSD= Meas PSD + duty cycle factor

Mode	Channel	Ant. 0 Meas PSD	Ant. 0 Corr'd PSD	Limit (dBm/0.5MHz)	Result
IEEE 802.11a	149	2.139	2.414	30	PASS
	157	1.705	1.944		PASS
	165	1.003	1.207		PASS
IEEE 802.11n_20	149	2.192	2.352		PASS
	157	1.827	1.967		PASS
	165	1.273	1.433		PASS
IEEE 802.11n_40	151	-1.441	-0.755		PASS
	159	-1.847	-1.196		PASS
IEEE 802.11ac_20	149	1.573	1.751		PASS
	157	1.470	1.629		PASS
	165	0.757	0.994		PASS
IEEE 802.11ac_40	151	-1.406	-0.975		PASS
	159	-1.590	-1.014		PASS
IEEE 802.11ac_80	155	-3.948	-3.316		PASS

Note: Corr'd PSD= Meas PSD + duty cycle factor



Test plot as follows:

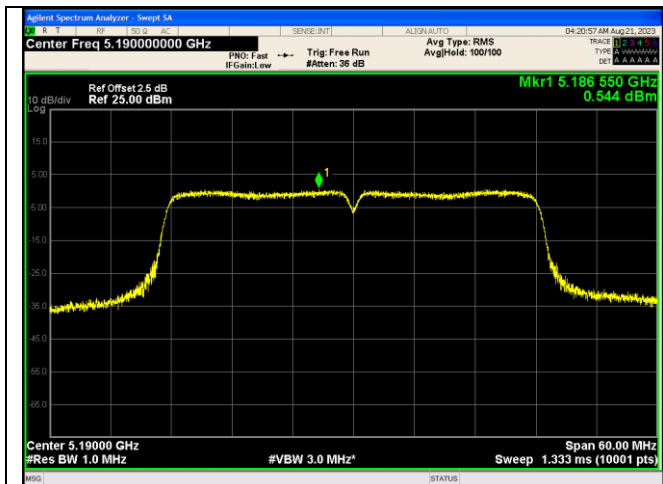


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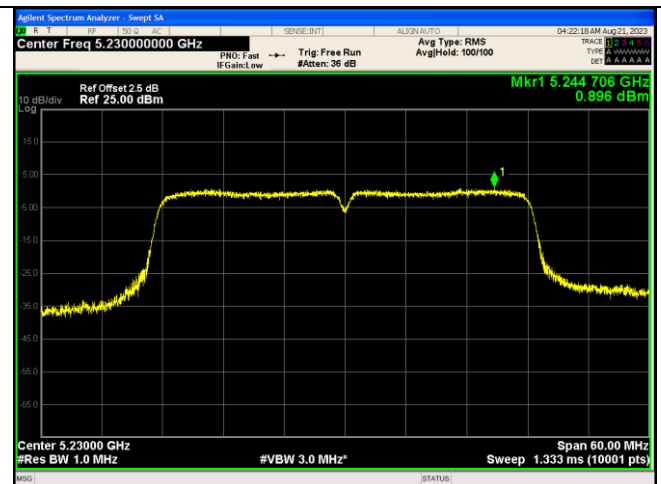
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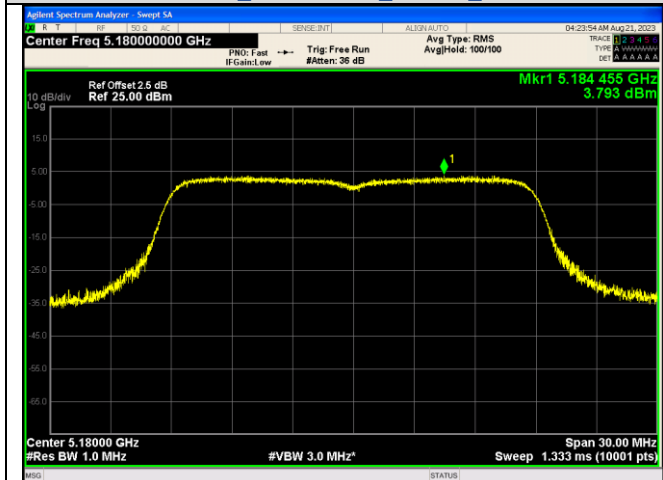
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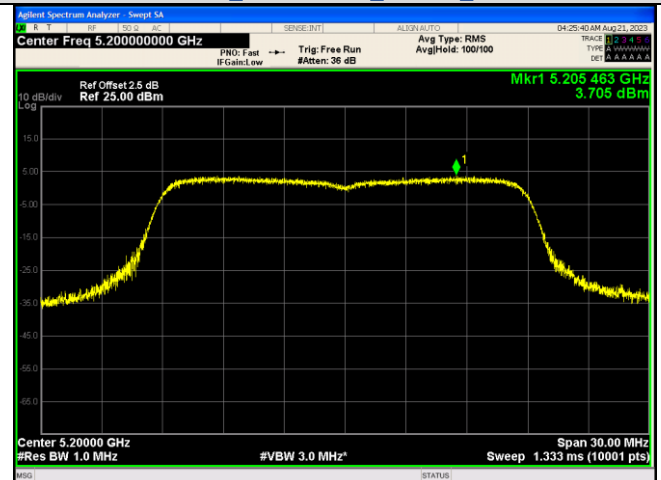
IEEE 802.11n Channel 38 40MHz Antenna 0



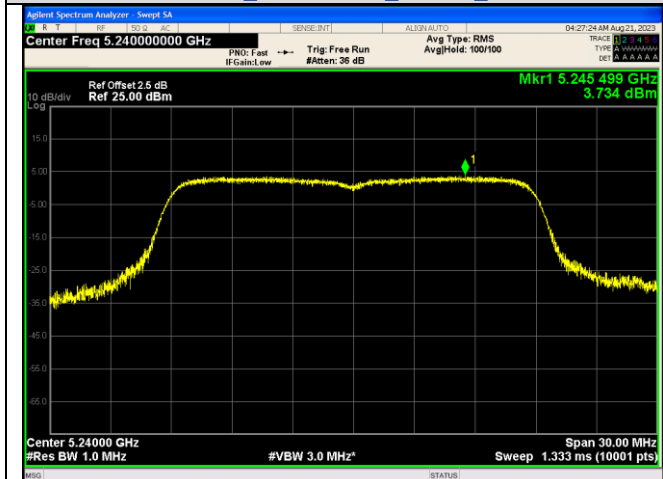
IEEE 802.11n Channel 46 40MHz Antenna 0



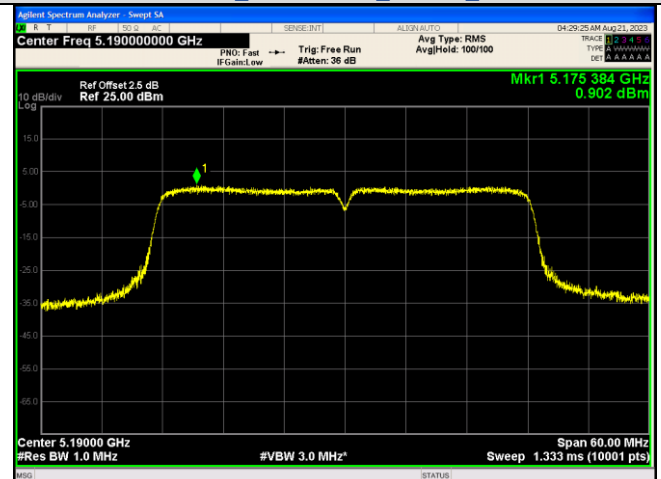
IEEE 802.11ac Channel 36 20MHz Antenna 0



IEEE 802.11ac Channel 40 20MHz Antenna 0

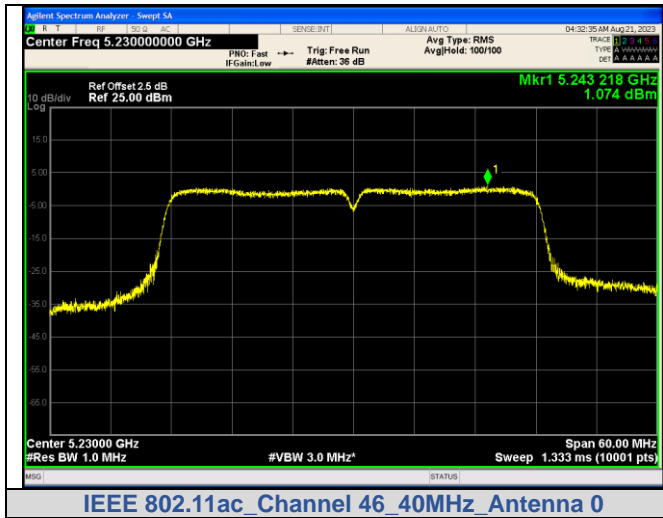


IEEE 802.11ac Channel 48 20MHz Antenna 0

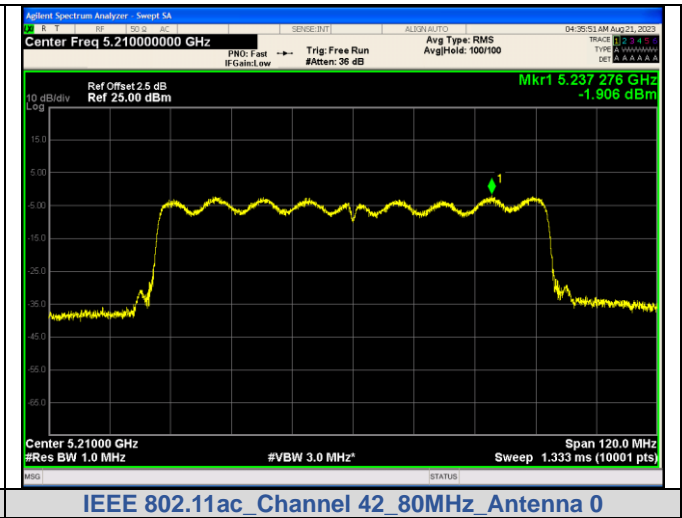


IEEE 802.11ac Channel 38 40MHz Antenna 0



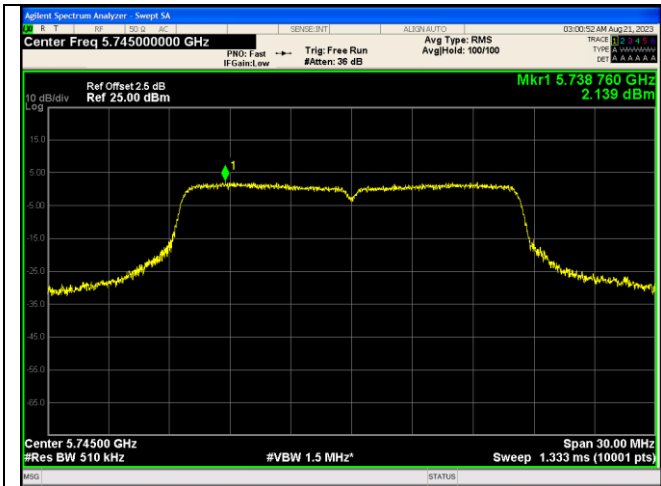


IEEE 802.11ac_Channel 46_40MHz_Antenna 0

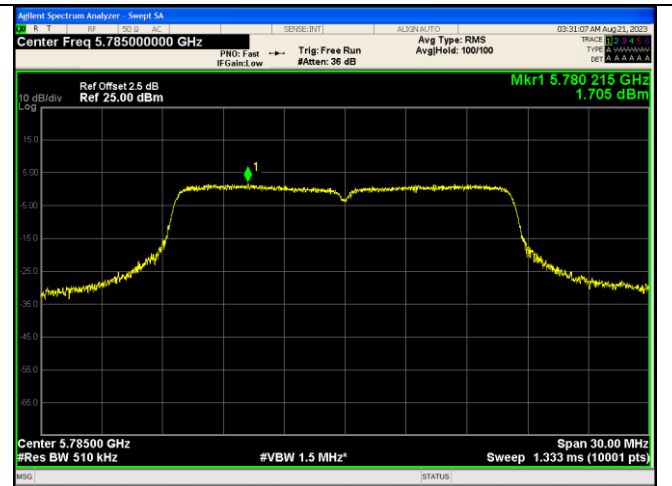


IEEE 802.11ac_Channel 42_80MHz_Antenna 0

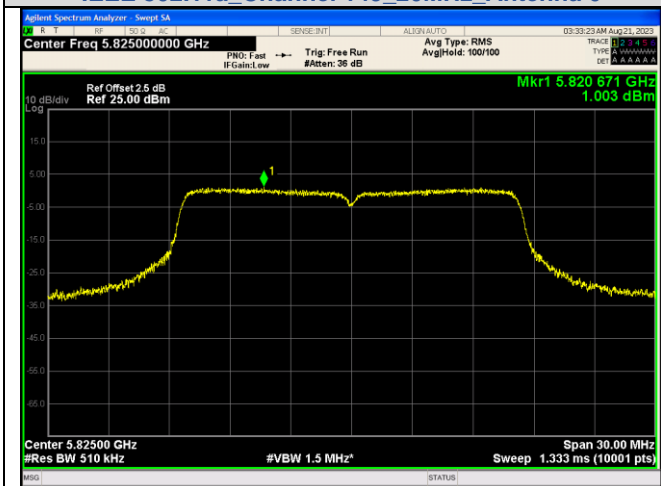




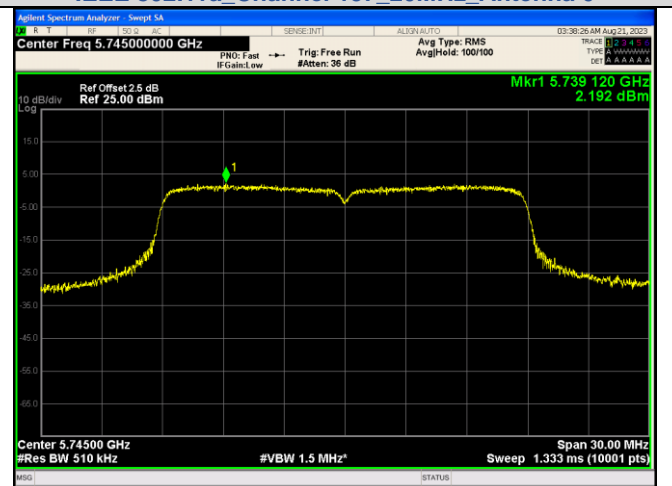
IEEE 802.11a Channel 149 20MHz Antenna 0



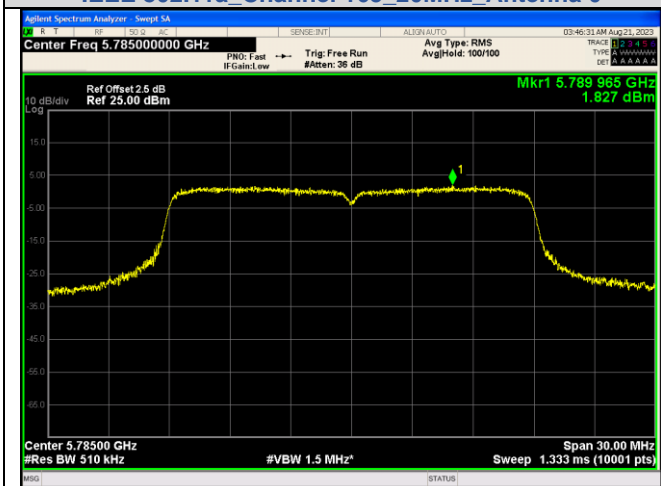
IEEE 802.11a Channel 157 20MHz Antenna 0



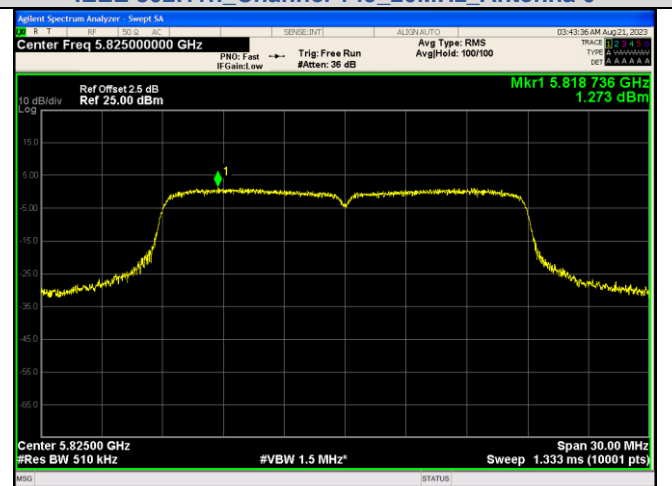
IEEE 802.11a Channel 165 20MHz Antenna 0



IEEE 802.11n Channel 149 20MHz Antenna 0

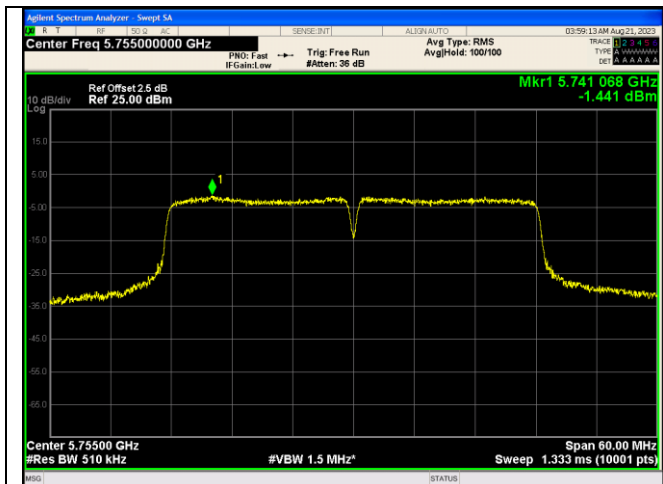


IEEE 802.11n Channel 157 20MHz Antenna 0

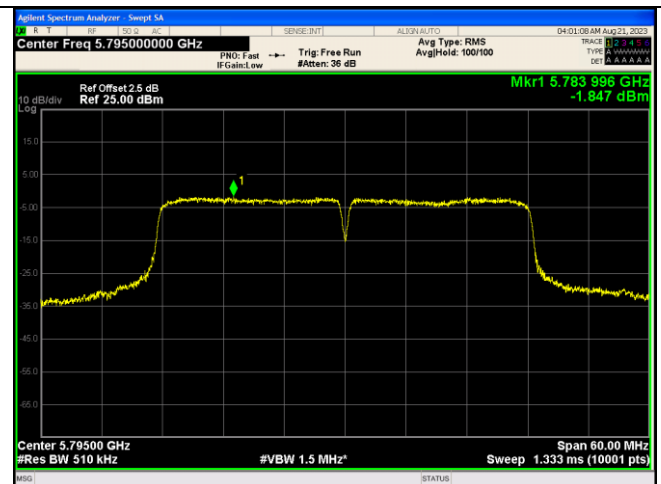


IEEE 802.11n Channel 165 20MHz Antenna 0

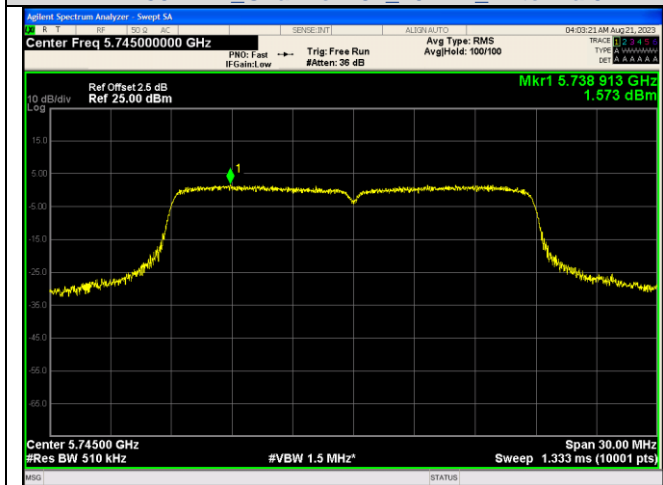




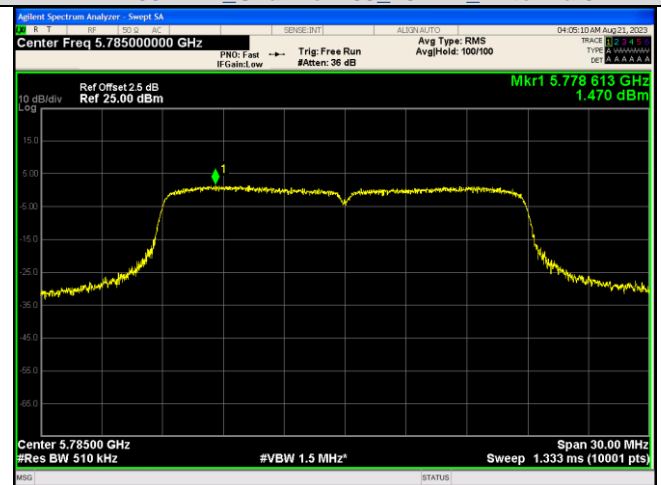
IEEE 802.11n Channel 151 40MHz Antenna 0



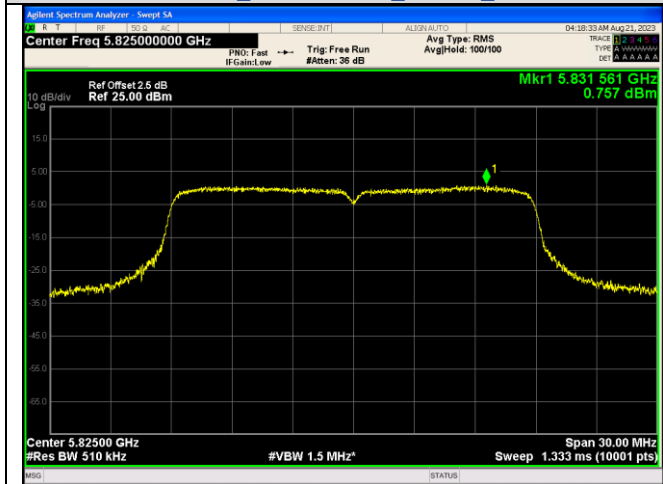
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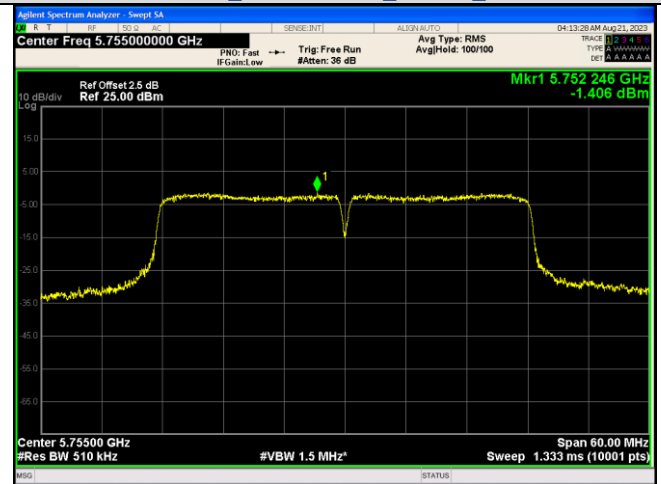
IEEE 802.11ac Channel 149 20MHz Antenna 0



IEEE 802.11ac Channel 157 20MHz Antenna 0



IEEE 802.11ac Channel 165 20MHz Antenna 0



IEEE 802.11ac Channel 151 40MHz Antenna 0

