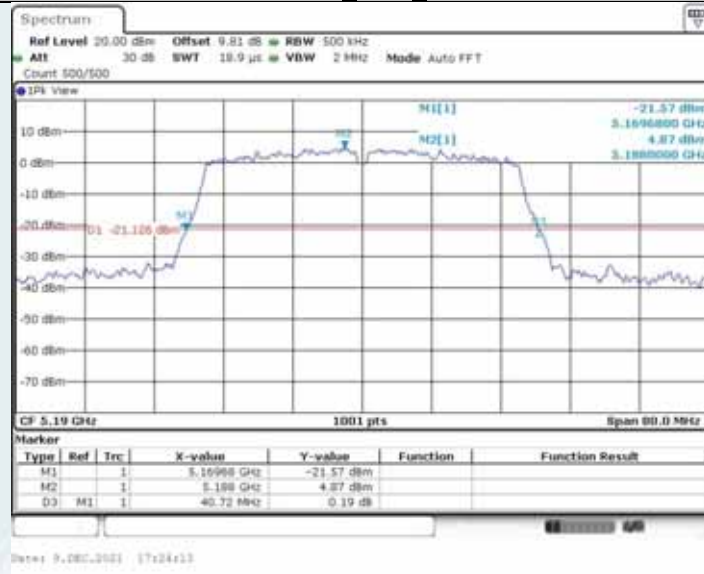


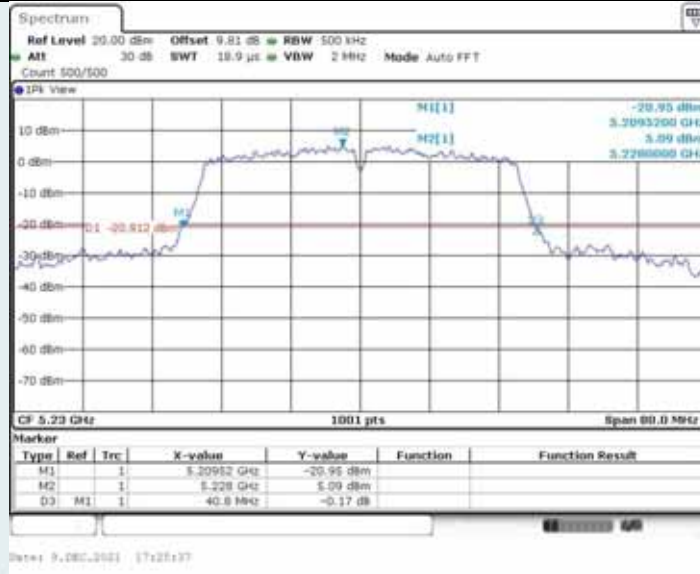
802.11n HT40 Ant1 5190MHz



802.11n HT40 Ant2 5190MHz



802.11n HT40\_Ant1\_5230MHz



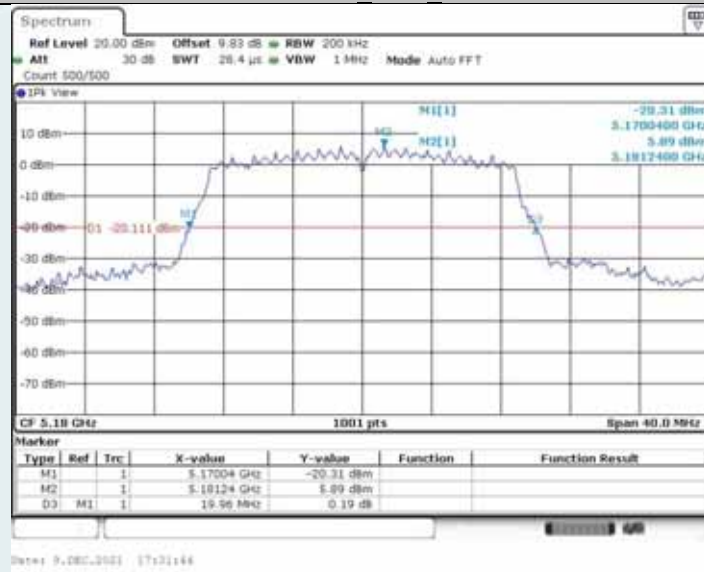
802.11n HT40\_Ant2\_5230MHz



802.11ac VHT20 Ant1 5180MHz



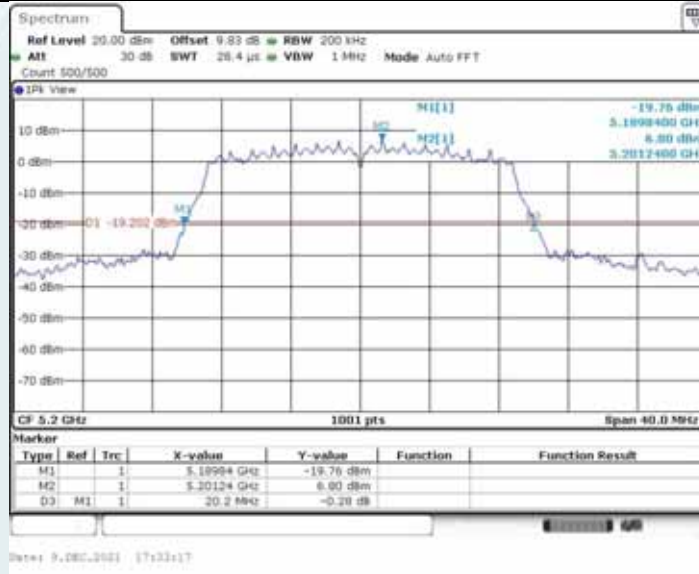
802.11ac VHT20 Ant2 5180MHz



802.11ac VHT20 Ant1\_5200MHz



802.11ac VHT20 Ant2\_5200MHz



802.11ac VHT20\_Ant1\_5240MHz



802.11ac VHT20\_Ant2\_5240MHz



802.11ac VHT40\_Ant1\_5190MHz



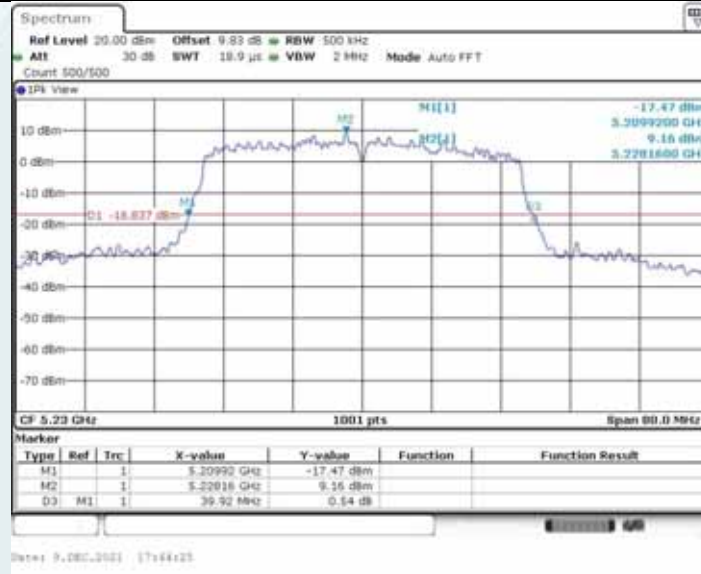
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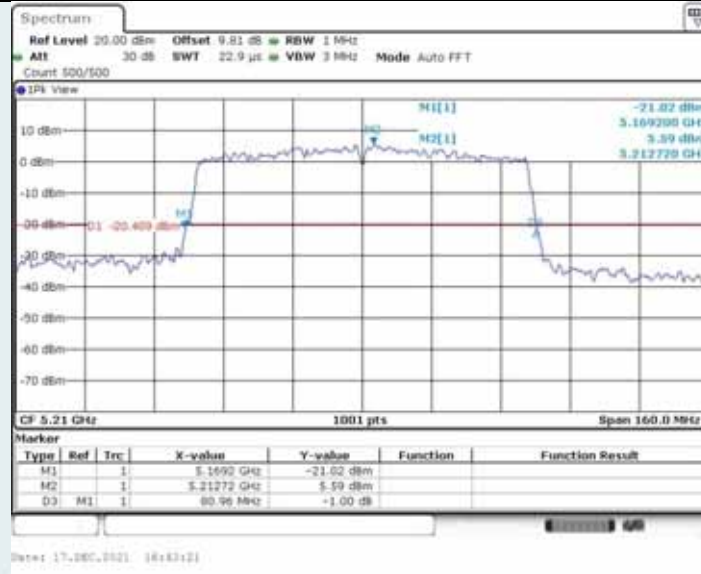
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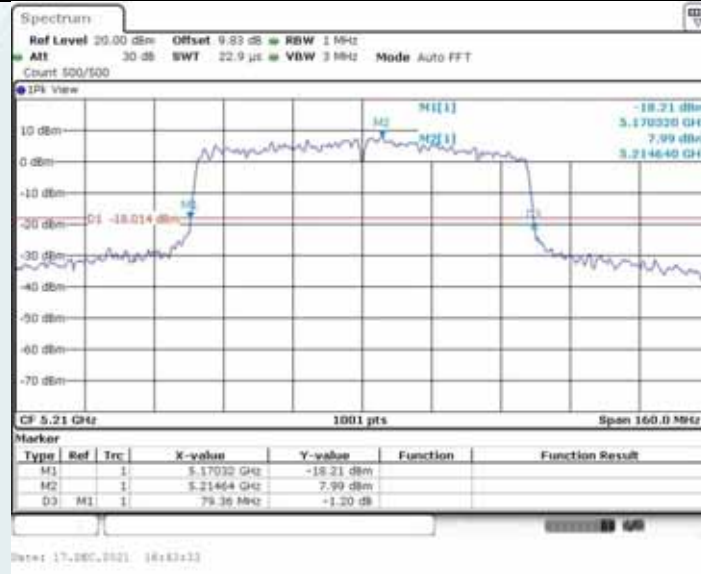
802.11ac VHT40\_Ant2\_5230MHz



802.11ac VHT80 Ant1\_5210MHz



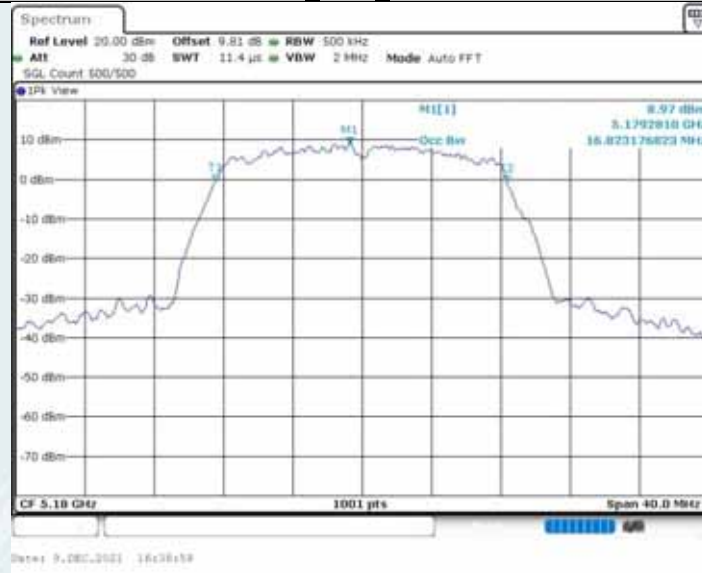
802.11ac VHT80 Ant2\_5210MHz





99% OCCUPIED BANDWIDTH

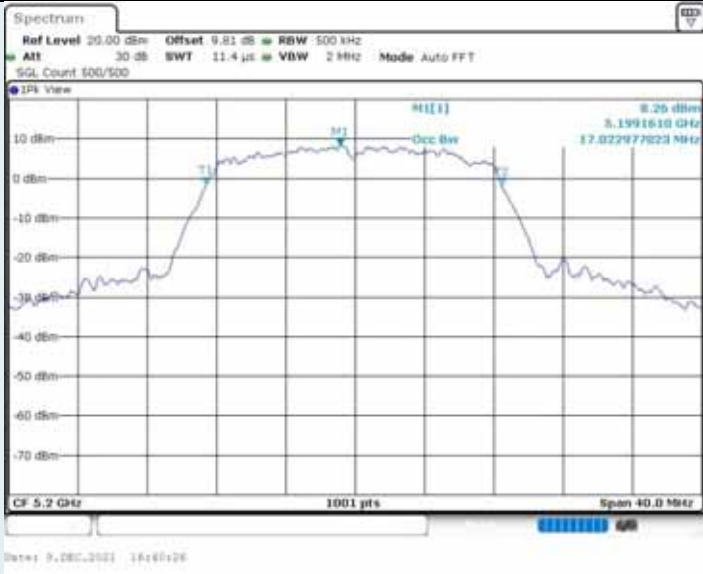
802.11a Ant1\_5180MHz



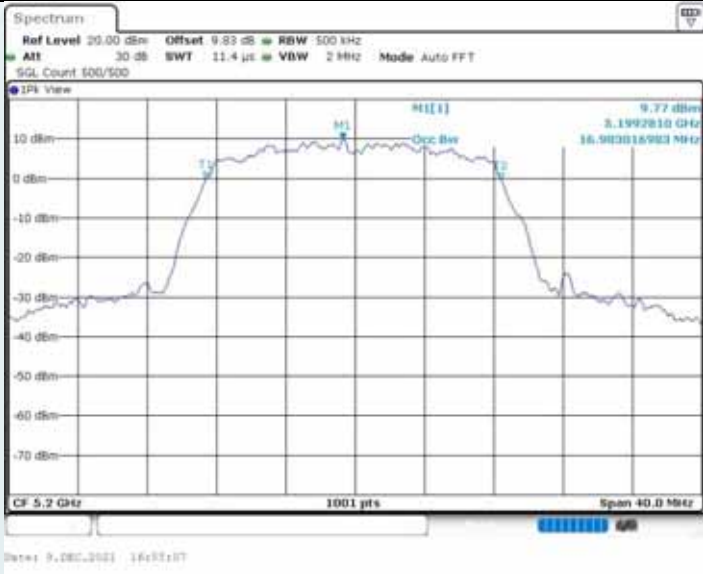
802.11a Ant2\_5180MHz



802.11a Ant1\_5200MHz



802.11a Ant2\_5200MHz

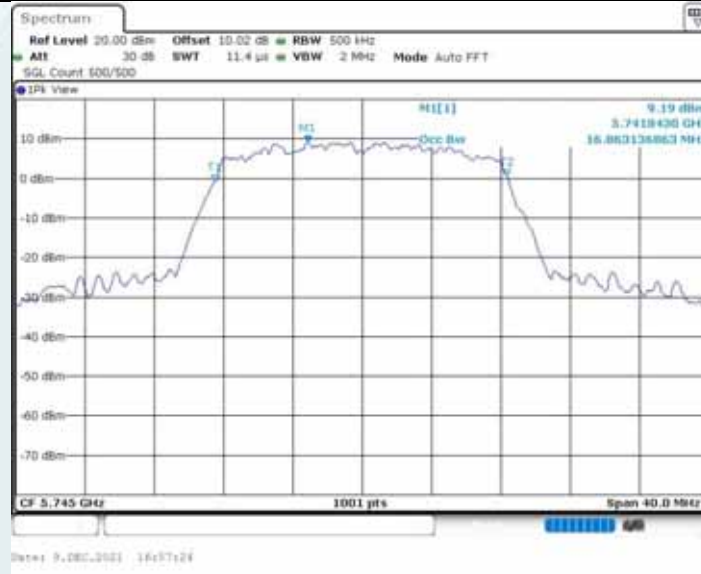




802.11a\_Ant1\_5745MHz



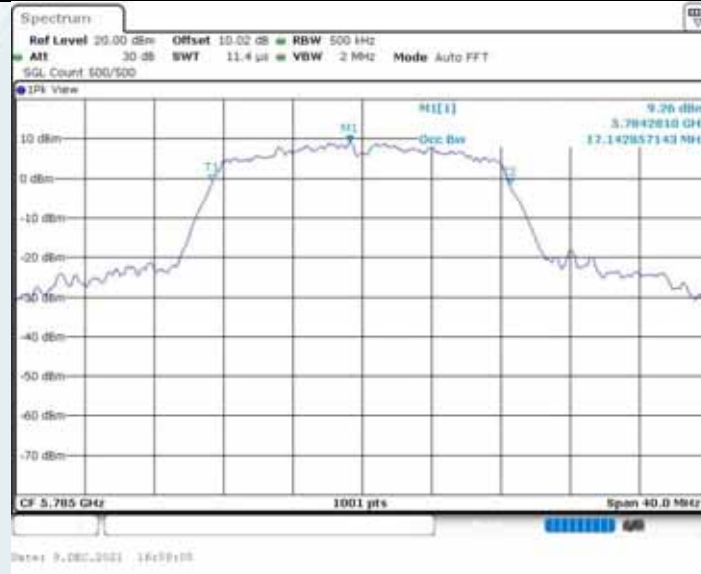
802.11a\_Ant2\_5745MHz



802.11a\_Ant1\_5785MHz



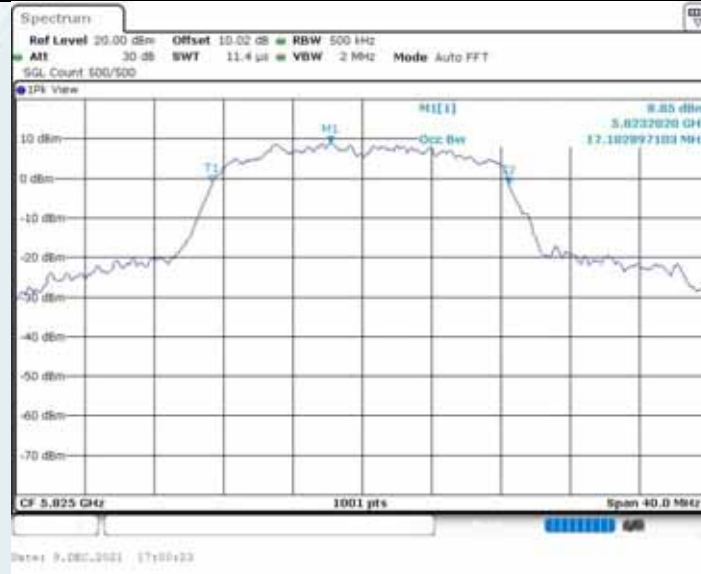
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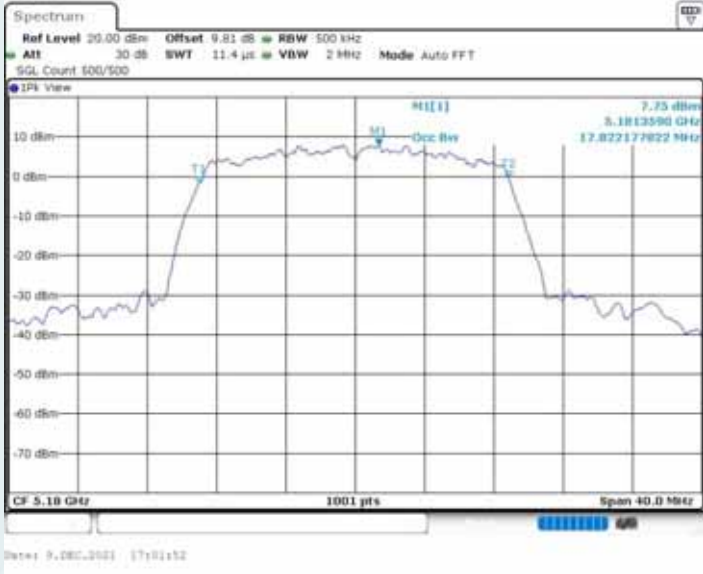
802.11a Ant1\_5825MHz



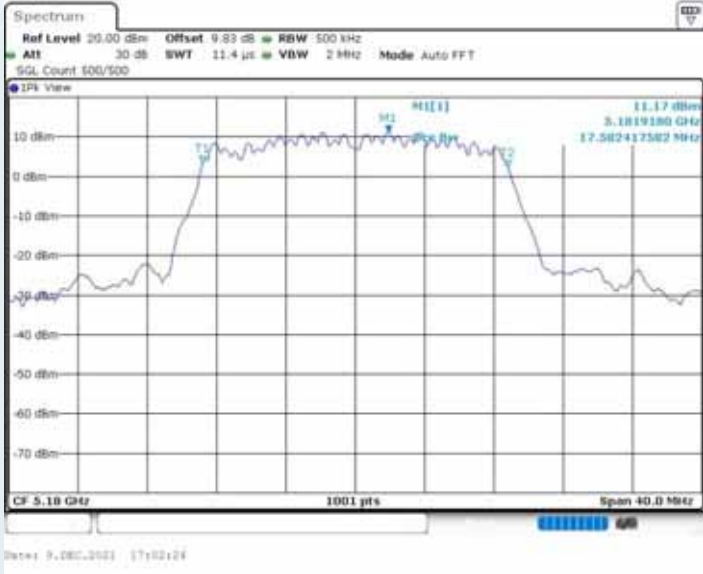
802.11a Ant2\_5825MHz



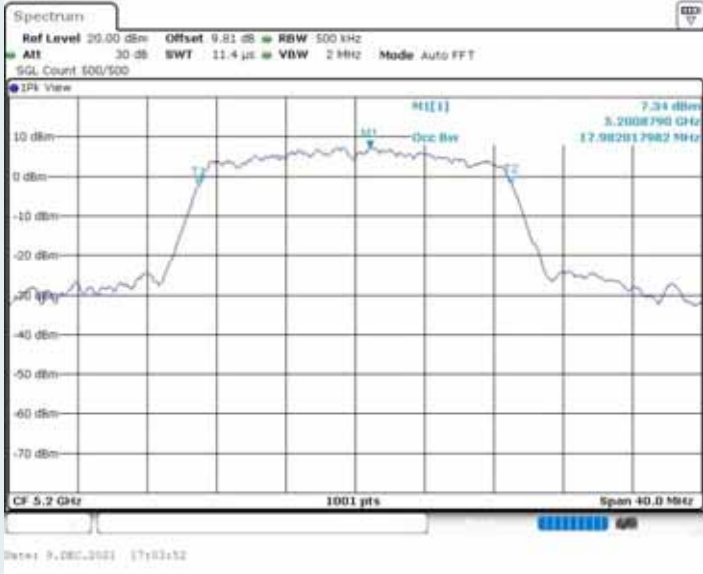
802.11n HT20\_Ant1\_5180MHz



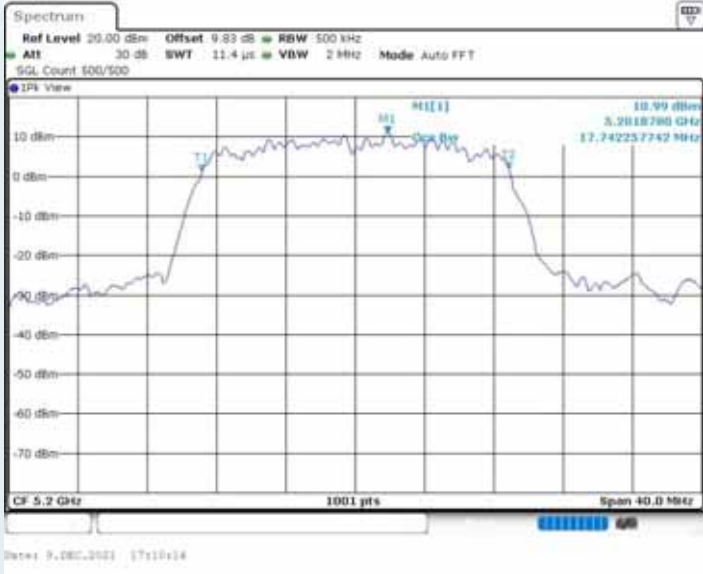
802.11n HT20\_Ant2\_5180MHz



802.11n HT20\_Ant1\_5200MHz



802.11n HT20\_Ant2\_5200MHz

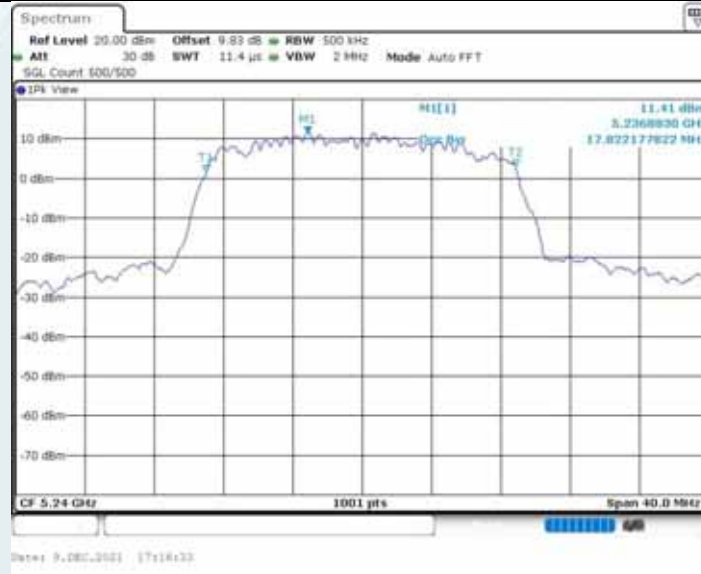




802.11n HT20\_Ant1\_5240MHz



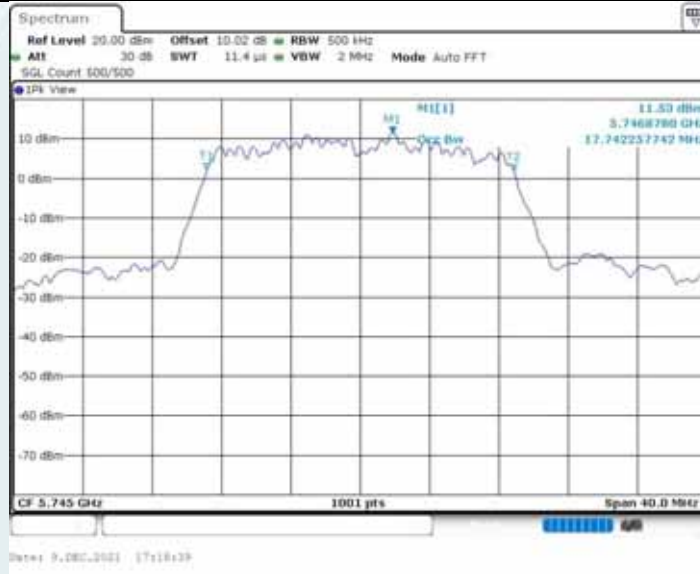
802.11n HT20\_Ant2\_5240MHz



802.11n HT20\_Ant1\_5745MHz



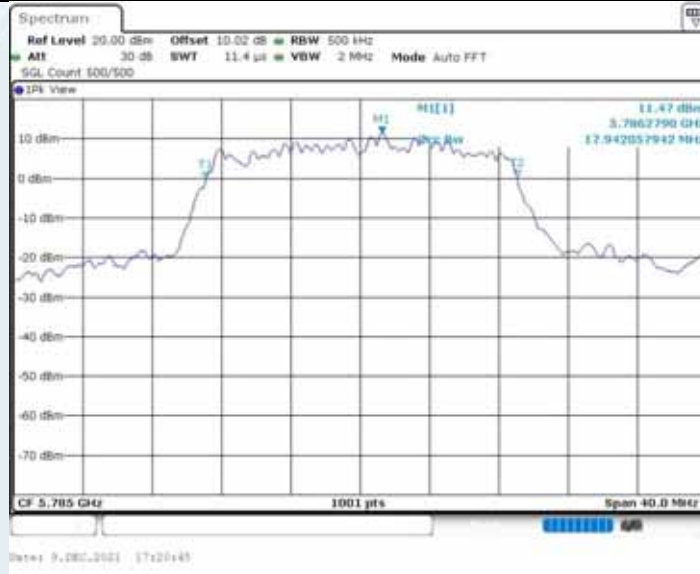
802.11n HT20\_Ant2\_5745MHz



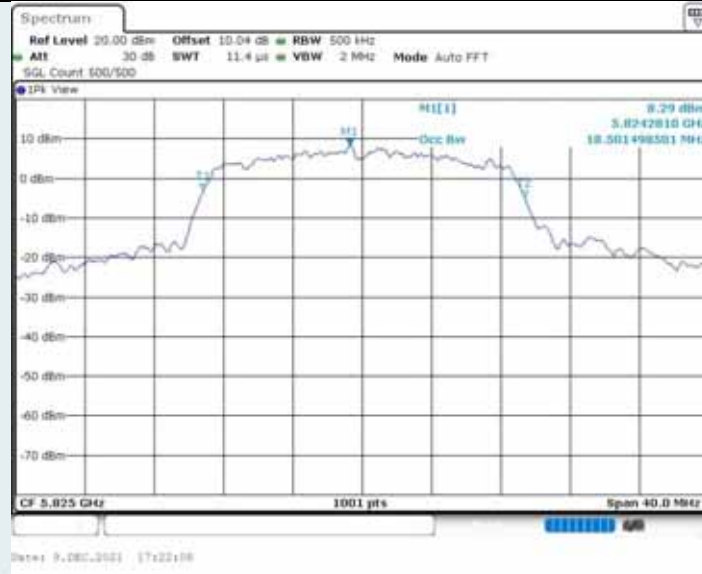
802.11n HT20\_Ant1\_5785MHz



802.11n HT20\_Ant2\_5785MHz



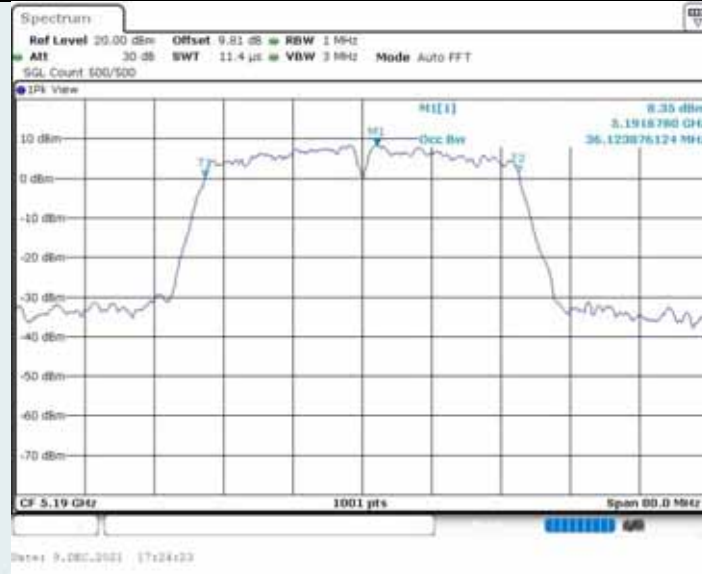
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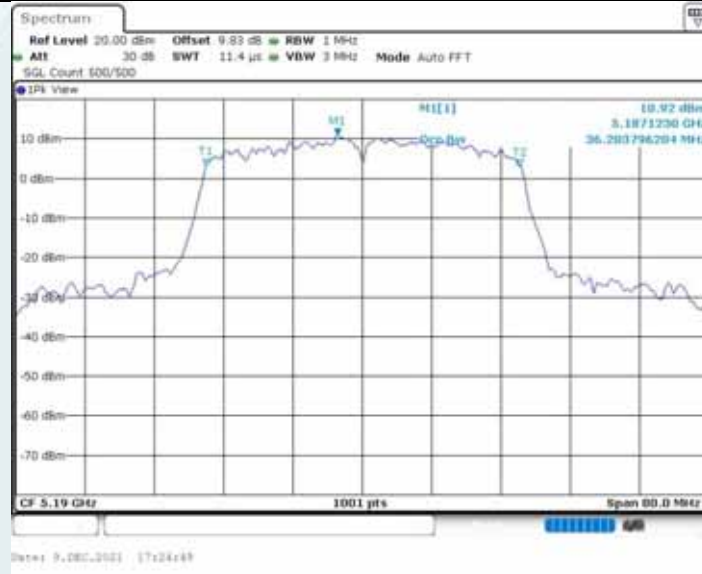
802.11n HT20\_Ant2\_5825MHz



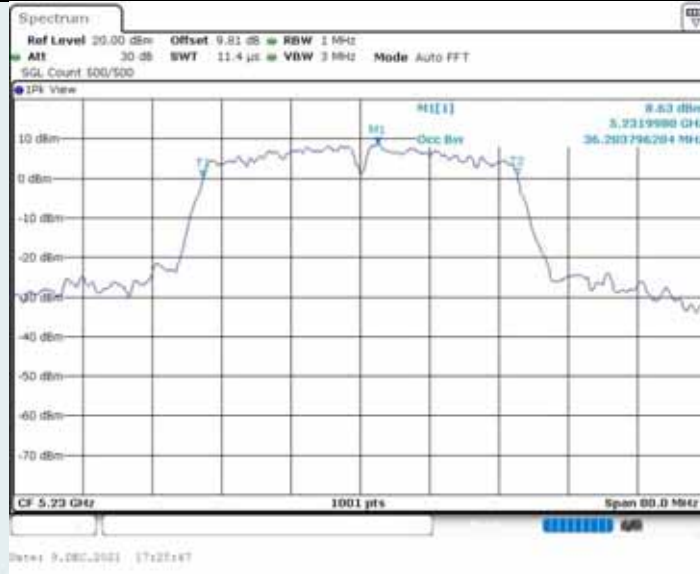
802.11n HT40\_Ant1\_5190MHz



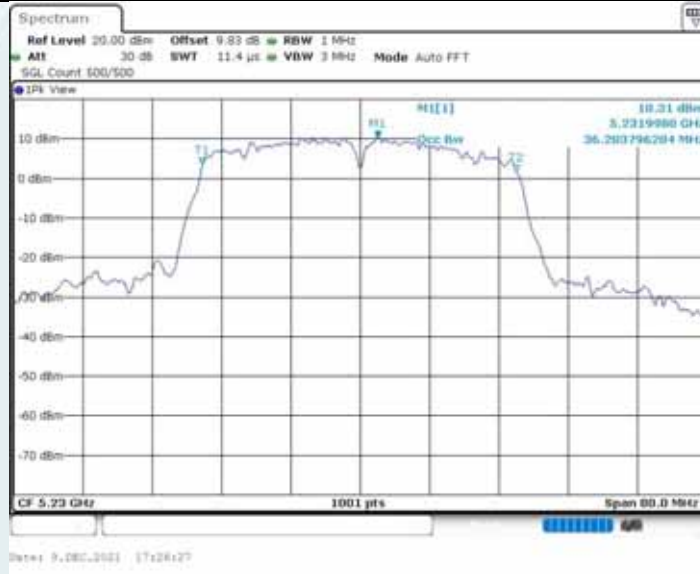
802.11n HT40\_Ant2\_5190MHz



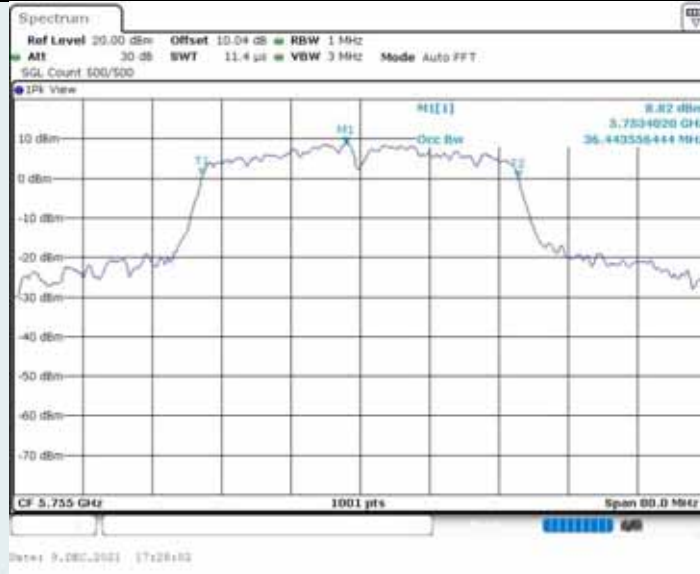
802.11n HT40\_Ant1\_5230MHz



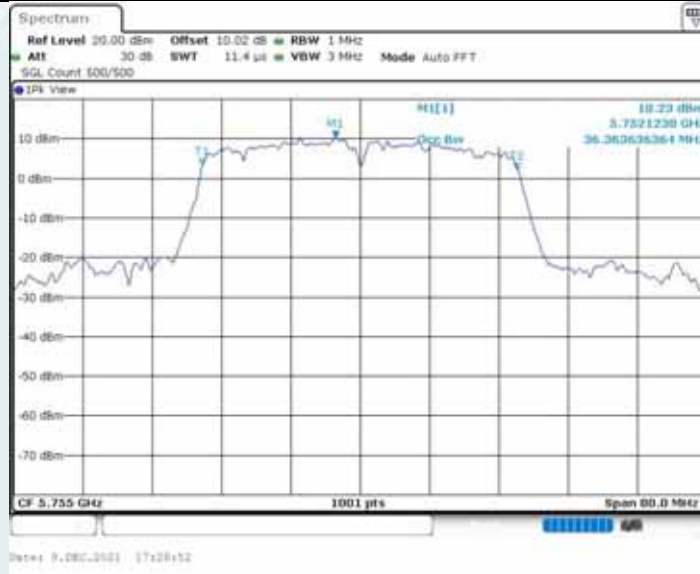
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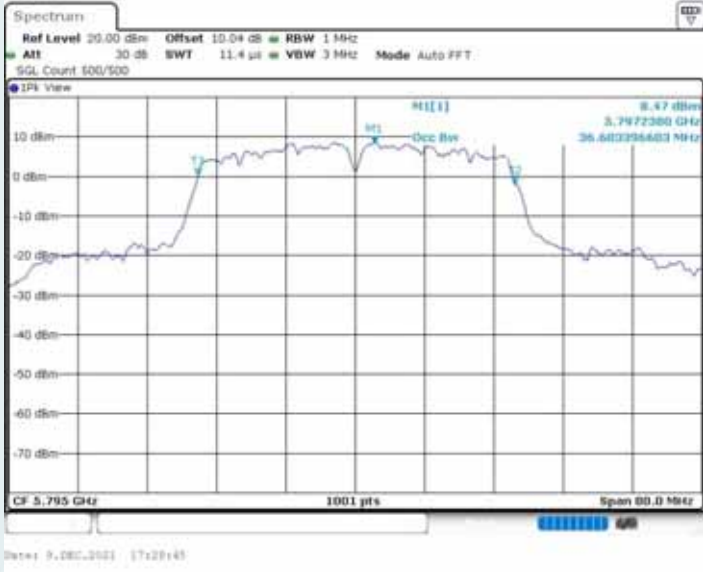
802.11n HT40\_Ant1\_5755MHz



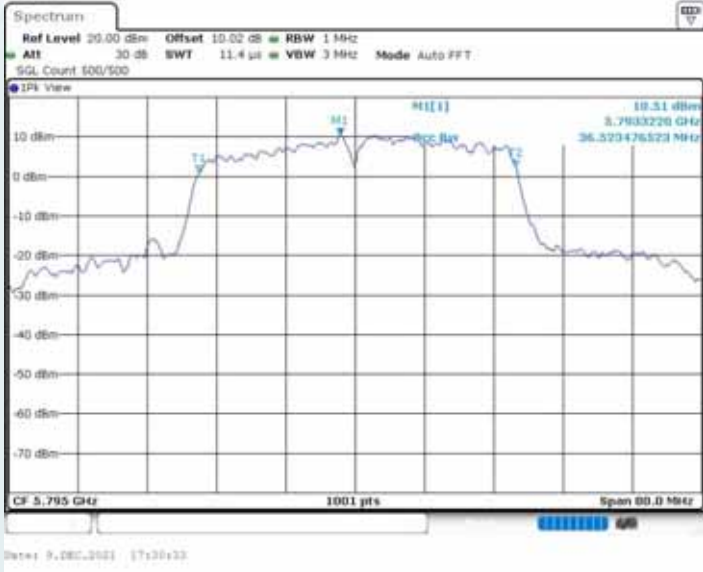
802.11n HT40\_Ant2\_5755MHz



802.11n HT40\_Ant1\_5795MHz

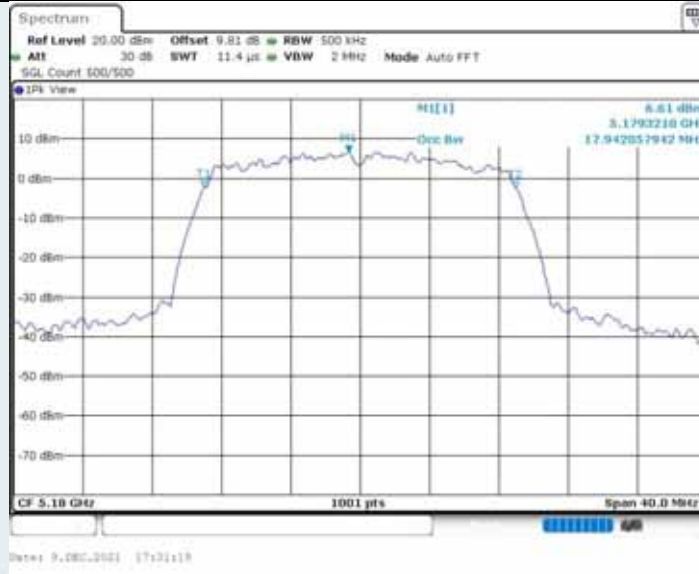


802.11n HT40\_Ant2\_5795MHz





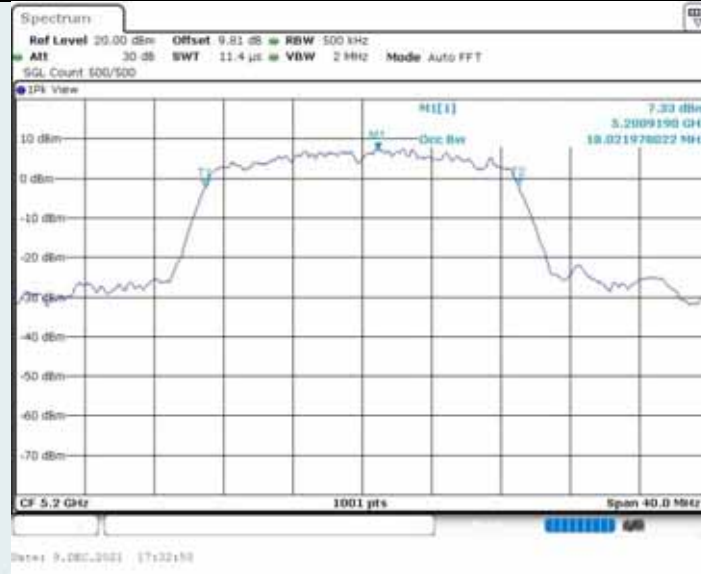
802.11ac VHT20\_Ant1\_5180MHz



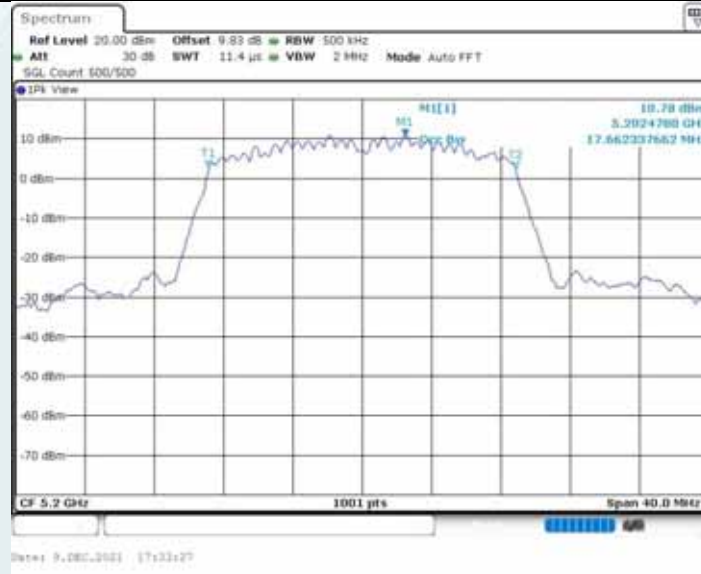
802.11ac VHT20\_Ant2\_5180MHz



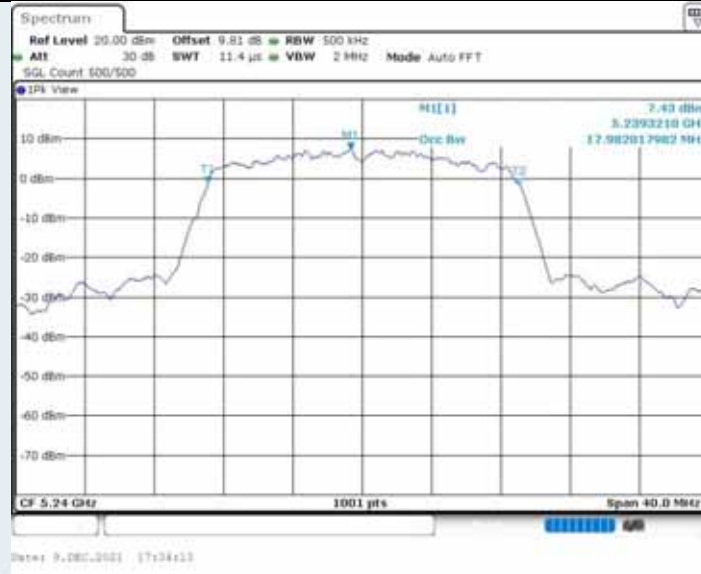
802.11ac VHT20\_Ant1\_5200MHz



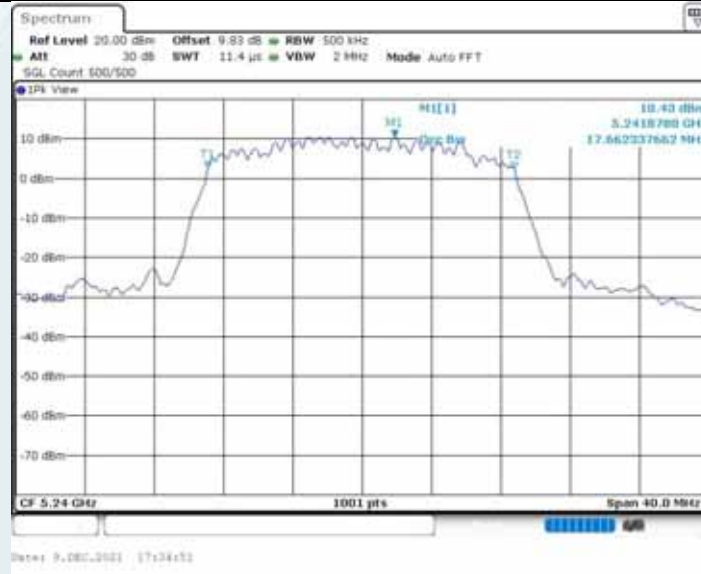
802.11ac VHT20\_Ant2\_5200MHz



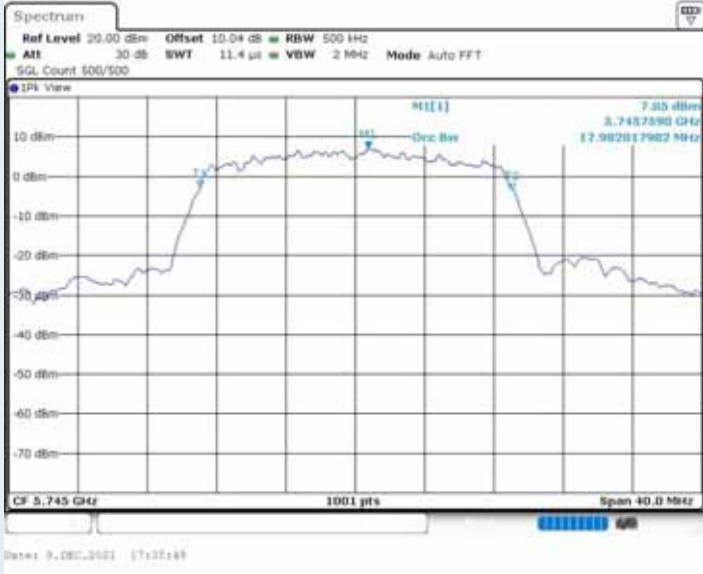
802.11ac VHT20\_Ant1\_5240MHz



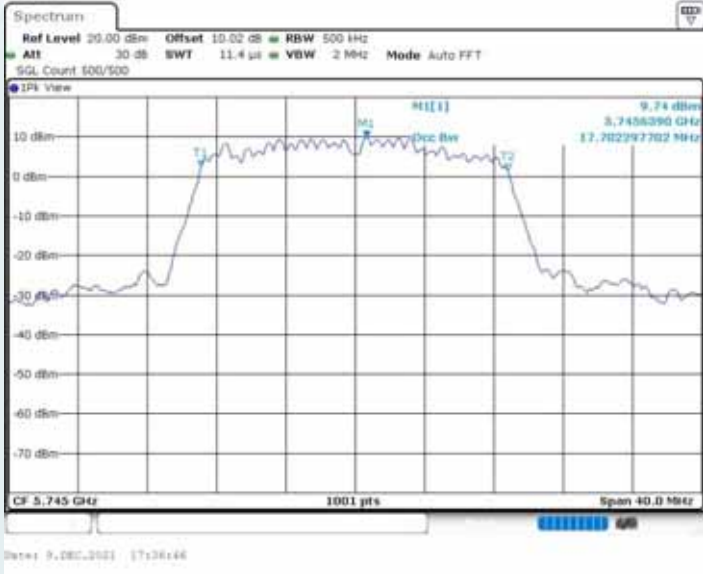
802.11ac VHT20\_Ant2\_5240MHz



802.11ac VHT20\_Ant1\_5745MHz



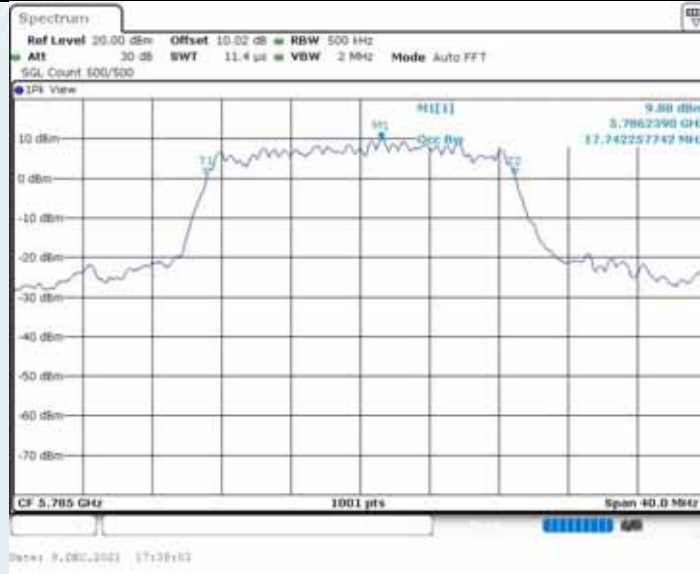
802.11ac VHT20\_Ant2\_5745MHz



802.11ac VHT20\_Ant1\_5785MHz

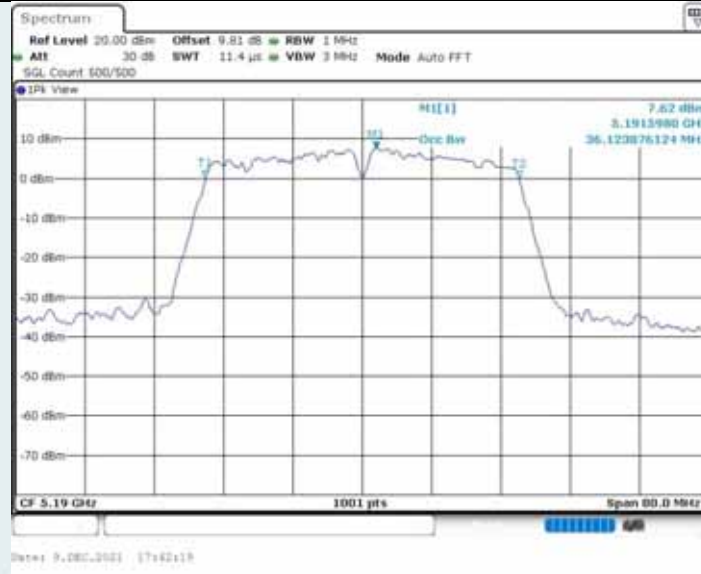


802.11ac VHT20\_Ant2\_5785MHz

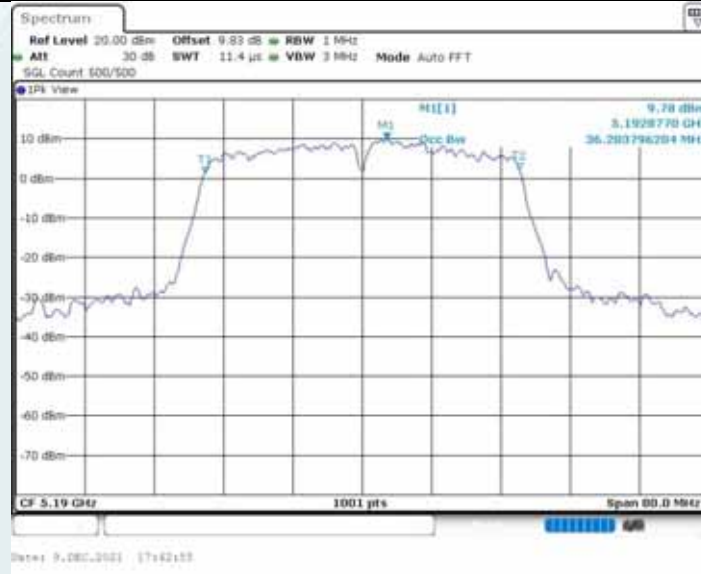




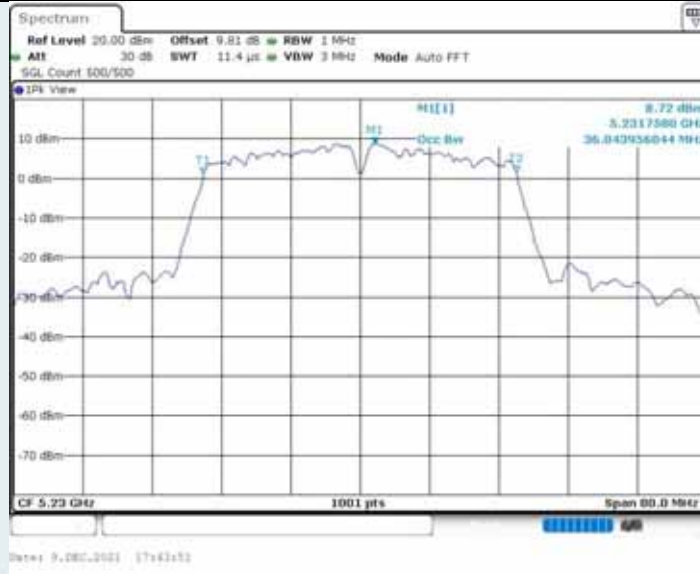
802.11ac VHT40\_Ant1\_5190MHz



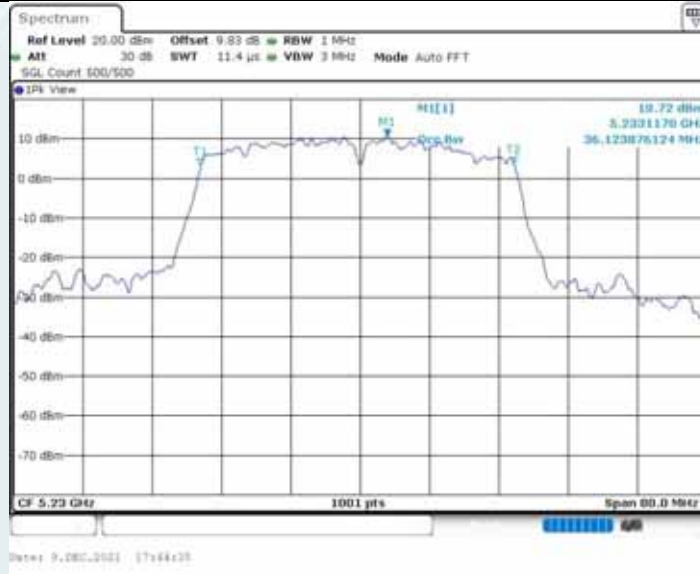
802.11ac VHT40\_Ant2\_5190MHz



802.11ac VHT40\_Ant1\_5230MHz

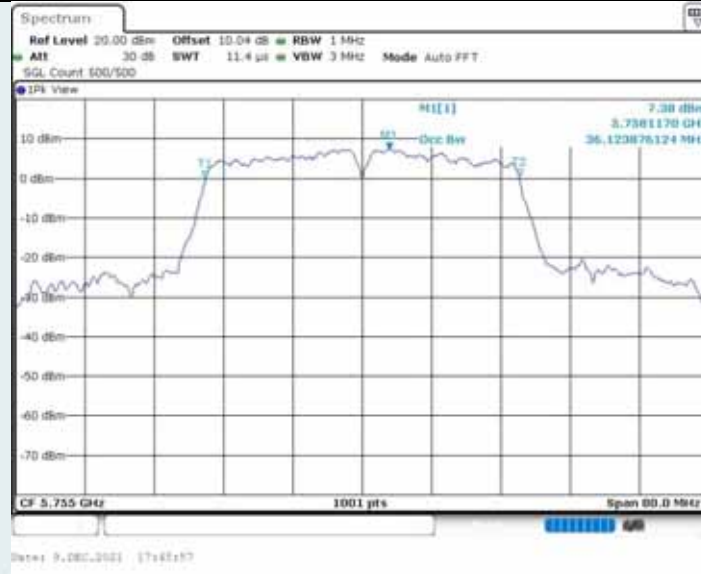


802.11ac VHT40\_Ant2\_5230MHz

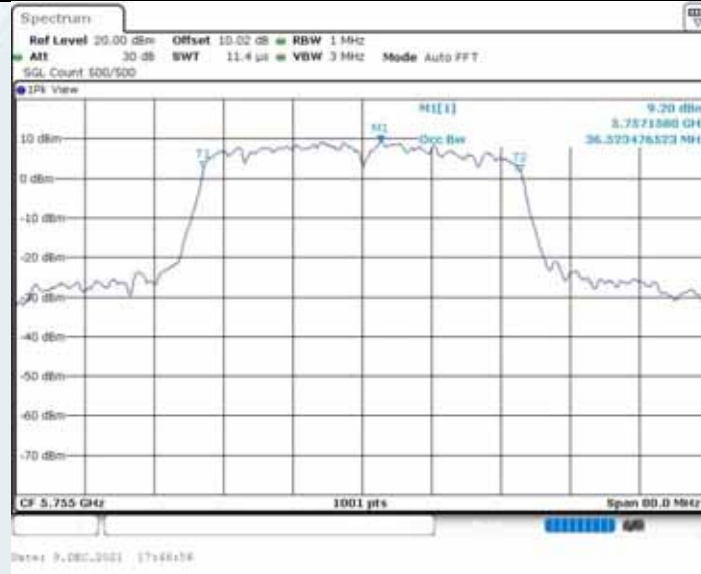




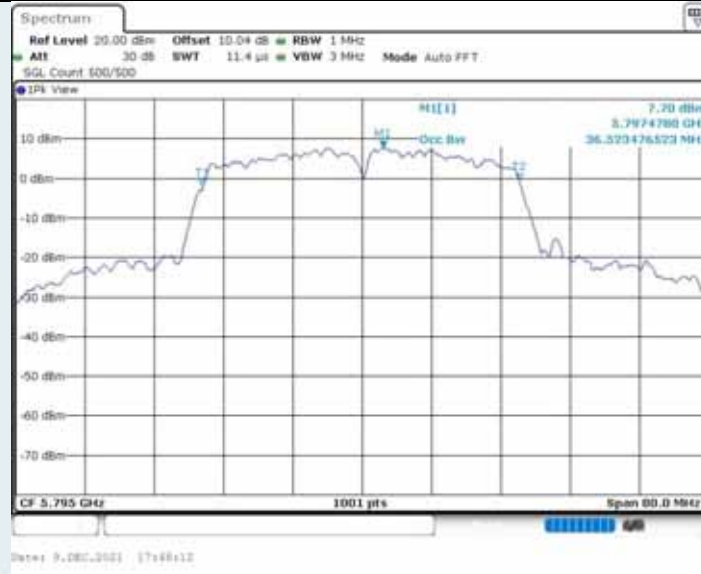
802.11ac VHT40\_Ant1\_5755MHz



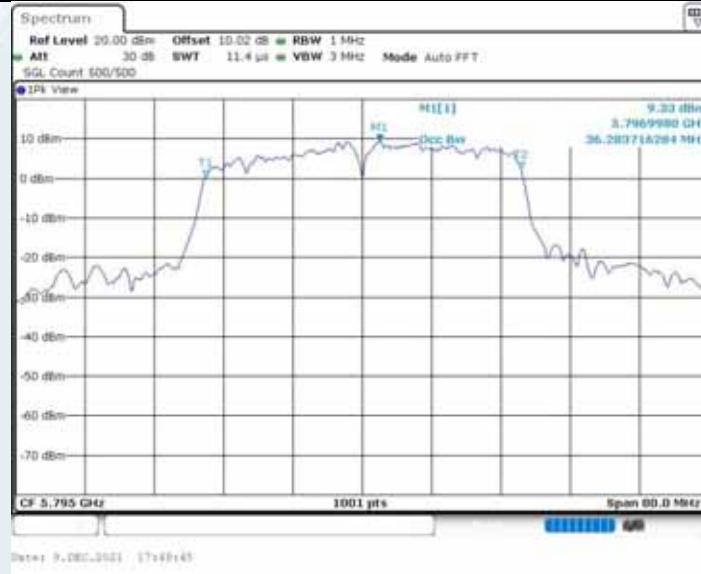
802.11ac VHT40\_Ant2\_5755MHz



802.11ac VHT40\_Ant1\_5795MHz



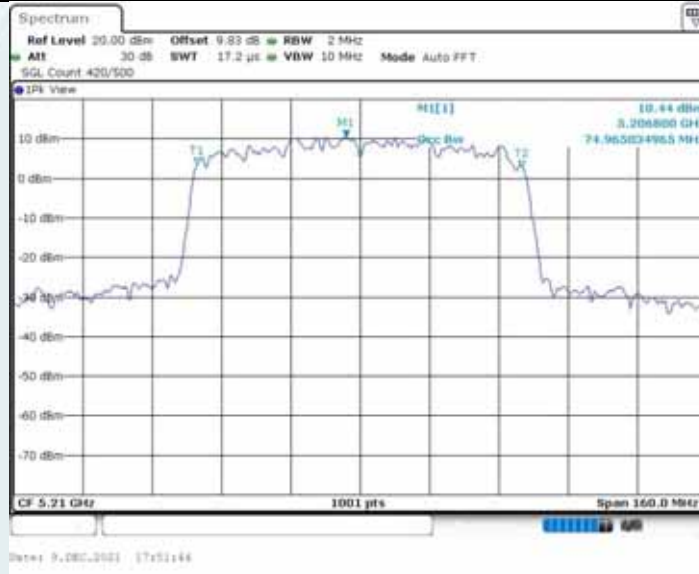
802.11ac VHT40\_Ant2\_5795MHz



802.11ac VHT80\_Ant1\_5210MHz



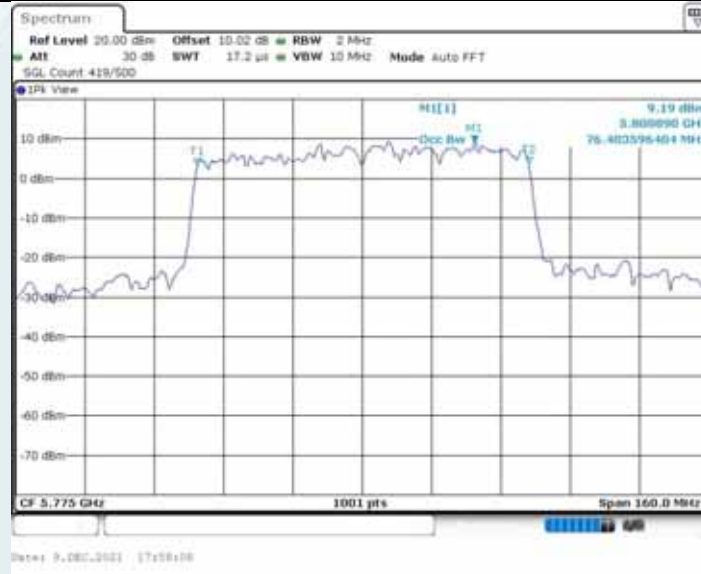
802.11ac VHT80\_Ant2\_5210MHz



802.11ac VHT80\_Ant1\_5775MHz



802.11ac VHT80\_Ant2\_5775MHz



## 9. OUTPUT POWER

### 9.1. LIMITS

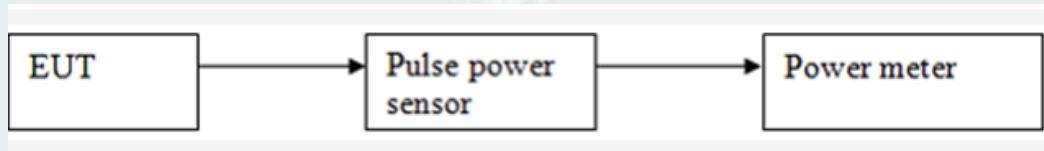
The FCC 15.407(a), The maximum conducted output power should not exceed:

Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	1W(30dBm) (Max. e.i.r.p $\leq$ 125mW at any elevation angle above 30 degrees as measured from the horizon)
	Indoor Access Point	1W(30dBm)
	Fixed point-to-point Access Point	1W(30dBm)
	Mobile and Portable Client Device	250mW(23.98dBm)
U-NII-3	All Device	1W(30dBm)

### 9.2. TEST PROCEDURES

- 1) The RF output of EUT was connected to the broadband average RF power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2) Set to the maximum power setting and enable the EUT transmit continuously.
- 3) Measure the conducted output power and record the results in the test report.

### 9.3. TEST SETUP



## 9.4. TEST RESULTS

<b>Environmental Conditions</b>	23.5°C/48%RH	<b>Test Voltage</b>	AC120V/60Hz
<b>Tested By</b>	Lu Wei	<b>Tested Date</b>	2021/12/21

TestMode	Band	Antenna	Frequency [MHz]	AVG Conducted Output Power with Duty Factor (dBm)	Limit[dBm]	Verdict
802.11a	U-NII-1	Ant1	5180	14.57	≤23.98	PASS
		Ant2	5180	15.01	≤23.98	PASS
		Ant1	5200	14.15	≤23.98	PASS
		Ant2	5200	14.86	≤23.98	PASS
		Ant1	5240	14.24	≤23.98	PASS
		Ant2	5240	15.06	≤23.98	PASS
	U-NII-3	Ant1	5745	14.76	≤30	PASS
		Ant2	5745	14.32	≤30	PASS
		Ant1	5785	14.42	≤30	PASS
		Ant2	5785	14.27	≤30	PASS
		Ant1	5825	14.02	≤30	PASS
		Ant2	5825	14.84	≤30	PASS
802.11n HT20	U-NII-1	Ant1	5180	13.79	≤23.98	PASS
		Ant2	5180	14.66	≤23.98	PASS
		total	5180	17.25	≤23.98	PASS
		Ant1	5200	13.33	≤23.98	PASS
		Ant2	5200	14.65	≤23.98	PASS
		total	5200	17.05	≤23.98	PASS
		Ant1	5240	13.23	≤23.98	PASS
		Ant2	5240	14.42	≤23.98	PASS
		total	5240	16.87	≤23.98	PASS
	U-NII-3	Ant1	5745	13.73	≤30	PASS
		Ant2	5745	14.60	≤30	PASS
		total	5745	17.19	≤29.94	PASS
		Ant1	5785	13.29	≤30	PASS
		Ant2	5785	15.14	≤30	PASS
		total	5785	17.32	≤29.94	PASS
		Ant1	5825	13.69	≤30	PASS
		Ant2	5825	14.96	≤30	PASS
		total	5825	17.38	≤29.94	PASS
802.11n HT40	U-NII-1	Ant1	5190	13.62	≤23.98	PASS
		Ant2	5190	14.55	≤23.98	PASS

		total	5190	17.12	≤23.98	PASS	
		Ant1	5230	11.29	≤23.98	PASS	
		Ant2	5230	12.53	≤23.98	PASS	
		total	5230	14.97	≤23.98	PASS	
		U-NII-3	Ant1	5755	14.09	≤30	PASS
			Ant2	5755	15.35	≤30	PASS
			total	5755	17.78	≤29.94	PASS
			Ant1	5795	13.65	≤30	PASS
			Ant2	5795	15.05	≤30	PASS
			total	5795	17.42	≤29.94	PASS
802.11ac VHT20	U-NII-1	Ant1	5180	12.48	≤23.98	PASS	
		Ant2	5180	13.59	≤23.98	PASS	
		total	5180	16.08	≤23.98	PASS	
		Ant1	5200	12.39	≤23.98	PASS	
		Ant2	5200	13.64	≤23.98	PASS	
		total	5200	16.07	≤23.98	PASS	
		Ant1	5240	12.12	≤23.98	PASS	
		Ant2	5240	13.47	≤23.98	PASS	
		total	5240	15.86	≤23.98	PASS	
	U-NII-3	Ant1	5745	13.02	≤30	PASS	
		Ant2	5745	14.57	≤30	PASS	
		total	5745	16.88	≤29.94	PASS	
		Ant1	5785	12.58	≤30	PASS	
		Ant2	5785	14.36	≤30	PASS	
		total	5785	16.57	≤29.94	PASS	
		Ant1	5825	12.31	≤30	PASS	
		Ant2	5825	14.02	≤30	PASS	
		total	5825	16.26	≤29.94	PASS	
802.11ac VHT40	U-NII-1	Ant1	5190	11.65	≤23.98	PASS	
		Ant2	5190	12.57	≤23.98	PASS	
		total	5190	15.15	≤23.98	PASS	
		Ant1	5230	11.35	≤23.98	PASS	
		Ant2	5230	12.50	≤23.98	PASS	
		total	5230	14.98	≤23.98	PASS	
	U-NII-3	Ant1	5755	13.08	≤30	PASS	
		Ant2	5755	14.47	≤30	PASS	
		total	5755	16.84	≤29.94	PASS	
		Ant1	5795	12.67	≤30	PASS	
		Ant2	5795	14.14	≤30	PASS	
		total	5795	16.48	≤29.94	PASS	
802.11ac VHT80	U-NII-1	Ant1	5210	11.20	≤23.98	PASS	
		Ant2	5210	13.16	≤23.98	PASS	

		total	5210	15.30	$\leq 23.98$	PASS
	U-NII-3	Ant1	5775	13.18	$\leq 30$	PASS
		Ant2	5775	14.25	$\leq 30$	PASS
		total	5775	16.76	$\leq 29.94$	PASS

Note:

1. This EUT supports MIMO 2X2, the antenna gains are not equal and any transmit signals are correlated with each other.

2. For power measurements on IEEE 802.11 devices, Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$  dBi.

The U-NII-1 Directional gain =  $10 \log[(10^{2.4/20} + 10^{2.1/20})^2 / 2] = 5.26$  dBi, Directional gain is not greater than 6dBi and the power limit does not need to be reversed.

The U-NII-3 Directional gain =  $10 \log[(10^{2.8/20} + 10^{3.3/20})^2 / 2] = 6.06$  dBi, Directional gain is greater than 6dBi, Power Limit =  $30 - (6.06 - 6) = 29.94$  dBm.

----- The following blanks -----



## 10. POWER SPECTRAL DENSITY

### 10.1. LIMITS

FCC 15.407(a)

The maximum power spectral density should not exceed:

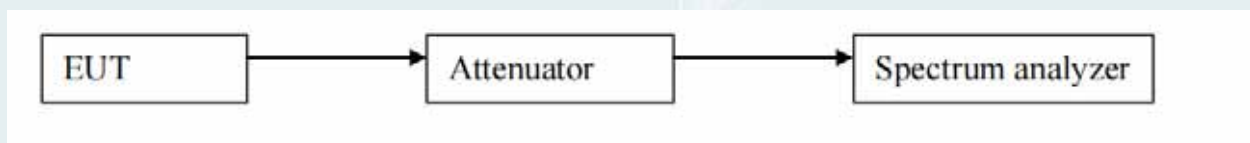
Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	17dBm/MHz
	Indoor Access Point	17dBm/MHz
	Fixed point-to-point Access Point	17dBm/MHz
	Mobile and Portable Client Device	11dBm/MHz
U-NII-3	All Device	30dBm/500kHz

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.

### 10.2. TEST PROCEDURES

Spectrum Parameters	Setting
RBW	1MHz(For U-NII-1) 500kHz(For U-NII-3)
VBW	3MHz(For U-NII-1) 2MHz(For U-NII-3)
Span	encompass the entire 26 dB EBW or 99% OBW of the signal
Sweep Time	Auto
Number of Sweep Point	$\geq 2 \times \text{SPAN} / \text{RBW}$
Detector	RMS(power averaging)
Trace Average	$\geq 100$ traces

### 10.3. TEST SETUP



## 10.4. TEST RESULTS

<b>Environmental Conditions</b>	23.5°C/48%RH	<b>Test Voltage</b>	AC120V/60Hz
<b>Tested By</b>	Lu Wei	<b>Tested Date</b>	2021-12-21

## U-NII-1:

TestMode	Antenna	Frequency [MHz]	Result+ Duty factor [dBm/MHz]	Limit [dBm/MHz]	Verdict
802.11a	Ant1	5180	4.78	≤11	PASS
	Ant2	5180	6.47	≤11	PASS
	Ant1	5200	4.24	≤11	PASS
	Ant2	5200	5.98	≤11	PASS
	Ant1	5240	4.54	≤11	PASS
	Ant2	5240	6.43	≤11	PASS
802.11n HT20	Ant1	5180	3.53	≤11	PASS
	Ant2	5180	4.59	≤11	PASS
	total	5180	7.10	≤11	PASS
	Ant1	5200	3.19	≤11	PASS
	Ant2	5200	5.04	≤11	PASS
	total	5200	7.22	≤11	PASS
	Ant1	5240	3.24	≤11	PASS
	Ant2	5240	5.21	≤11	PASS
	total	5240	7.35	≤11	PASS
802.11n HT40	Ant1	5190	0.41	≤11	PASS
	Ant2	5190	2.8	≤11	PASS
	total	5190	4.78	≤11	PASS
	Ant1	5230	-1.46	≤11	PASS
	Ant2	5230	0.58	≤11	PASS
	total	5230	2.69	≤11	PASS
802.11ac VHT20	Ant1	5180	2.83	≤11	PASS
	Ant2	5180	4.31	≤11	PASS
	total	5180	6.64	≤11	PASS
	Ant1	5200	2.07	≤11	PASS
	Ant2	5200	4.08	≤11	PASS
	total	5200	6.20	≤11	PASS
	Ant1	5240	2.24	≤11	PASS
	Ant2	5240	3.97	≤11	PASS
	total	5240	6.20	≤11	PASS

802.11ac VHT40	Ant1	5190	-1.9	$\leq 11$	PASS
	Ant2	5190	0.29	$\leq 11$	PASS
	total	5190	2.34	$\leq 11$	PASS
	Ant1	5230	-1.66	$\leq 11$	PASS
	Ant2	5230	0.75	$\leq 11$	PASS
	total	5230	2.72	$\leq 11$	PASS
802.11ac VHT80	Ant1	5210	-4.96	$\leq 11$	PASS
	Ant2	5210	-2.51	$\leq 11$	PASS
	total	5210	-0.55	$\leq 11$	PASS

**U-NII-3:**

TestMode	Antenna	Frequency [MHz]	Result+ Duty factor [dBm/MHz]	Limit [dBm/500kHz]	Verdict
802.11a	Ant1	5745	2.10	$\leq 30$	PASS
	Ant2	5745	2.62	$\leq 30$	PASS
	Ant1	5785	2.15	$\leq 30$	PASS
	Ant2	5785	2.38	$\leq 30$	PASS
	Ant1	5825	1.83	$\leq 30$	PASS
	Ant2	5825	1.88	$\leq 30$	PASS
802.11n HT20	Ant1	5745	0.76	$\leq 30$	PASS
	Ant2	5745	2.63	$\leq 30$	PASS
	total	5745	4.81	$\leq 29.94$	PASS
	Ant1	5785	0.45	$\leq 30$	PASS
	Ant2	5785	2.23	$\leq 30$	PASS
	total	5785	4.44	$\leq 29.94$	PASS
	Ant1	5825	1.26	$\leq 30$	PASS
	Ant2	5825	2.54	$\leq 30$	PASS
	total	5825	4.96	$\leq 29.94$	PASS
802.11n HT40	Ant1	5755	-2.24	$\leq 30$	PASS
	Ant2	5755	-0.44	$\leq 30$	PASS
	total	5755	1.76	$\leq 29.94$	PASS
	Ant1	5795	-2.13	$\leq 30$	PASS
	Ant2	5795	-0.80	$\leq 30$	PASS
	total	5795	1.60	$\leq 29.94$	PASS
802.11ac VHT20	Ant1	5745	-0.08	$\leq 30$	PASS
	Ant2	5745	1.35	$\leq 30$	PASS
	total	5745	3.70	$\leq 29.94$	PASS
	Ant1	5785	-0.13	$\leq 30$	PASS
	Ant2	5785	1.12	$\leq 30$	PASS
	total	5785	3.55	$\leq 29.94$	PASS
	Ant1	5825	-0.11	$\leq 30$	PASS

	Ant2	5825	1.13	$\leq 30$	PASS
	total	5825	3.56	$\leq 29.94$	PASS
802.11ac VHT40	Ant1	5755	-2.66	$\leq 30$	PASS
	Ant2	5755	-1.83	$\leq 30$	PASS
	total	5755	0.79	29.94	PASS
	Ant1	5795	-3.22	$\leq 30$	PASS
	Ant2	5795	-1.66	$\leq 30$	PASS
	total	5795	0.64	29.94	PASS
802.11ac VHT80	Ant1	5775	-6.20	$\leq 30$	PASS
	Ant2	5775	-5.04	$\leq 30$	PASS
	total	5775	-2.57	$\leq 29.94$	PASS

Note:

**U-NII-1 :**

1. This EUT supports MIMO 2X2, the antenna gains are not equal and any transmit signals are correlated with each other.

2. For power spectral density measurements on IEEE 802.11 devices, Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$  dBi.

3. So Directional gain =  $10 \log[(10^{2.4/20} + 10^{2.1/20})^2 / 2] = 5.26$  dBi, Directional gain is not greater than 6dBi and the power limit does not need to be reversed.

**U-NII-3:**

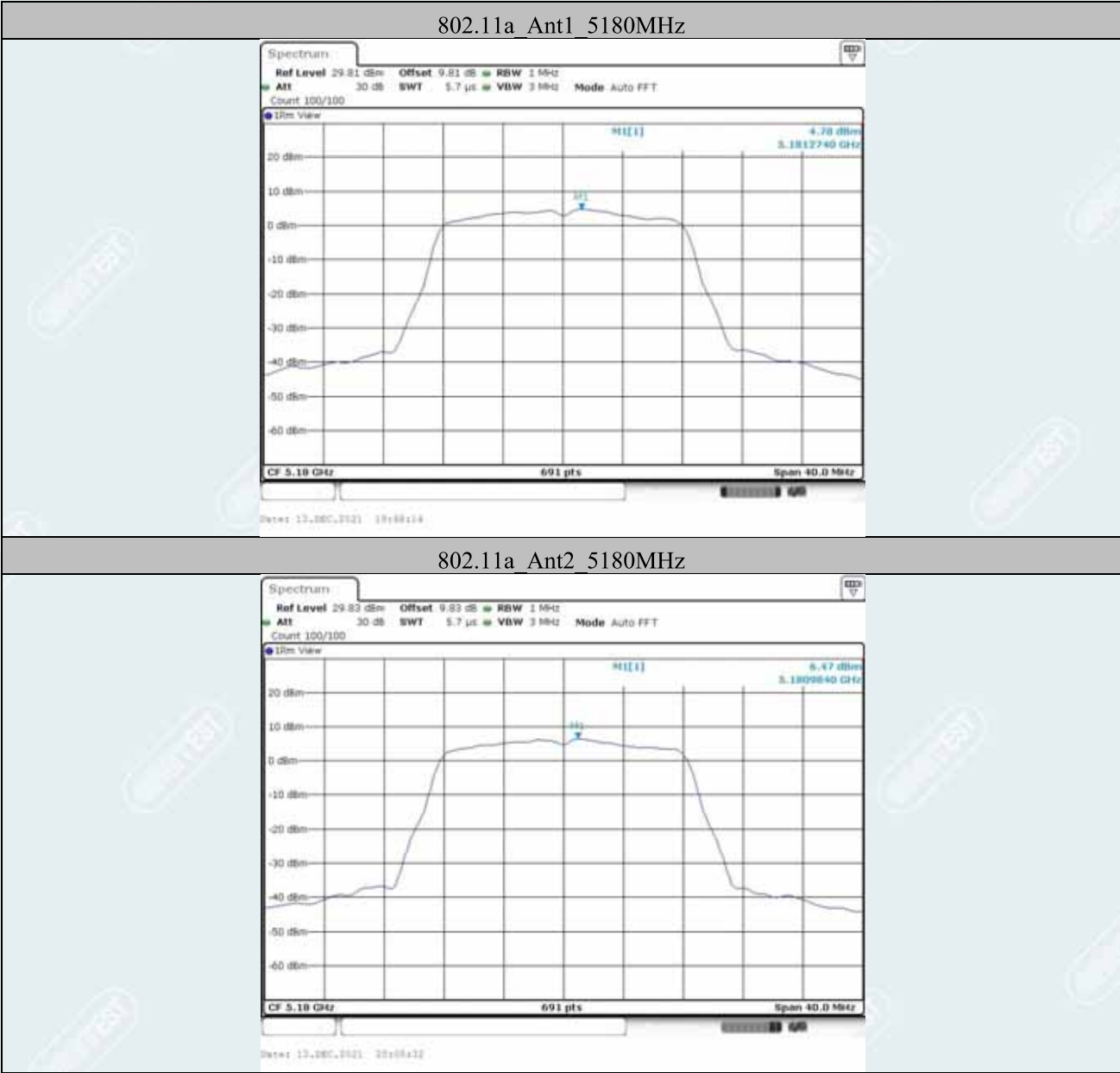
1. This EUT supports MIMO 2X2, the antenna gains are not equal and any transmit signals are correlated with each other.

2. For power spectral density measurements on IEEE 802.11 devices, Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$  dBi.

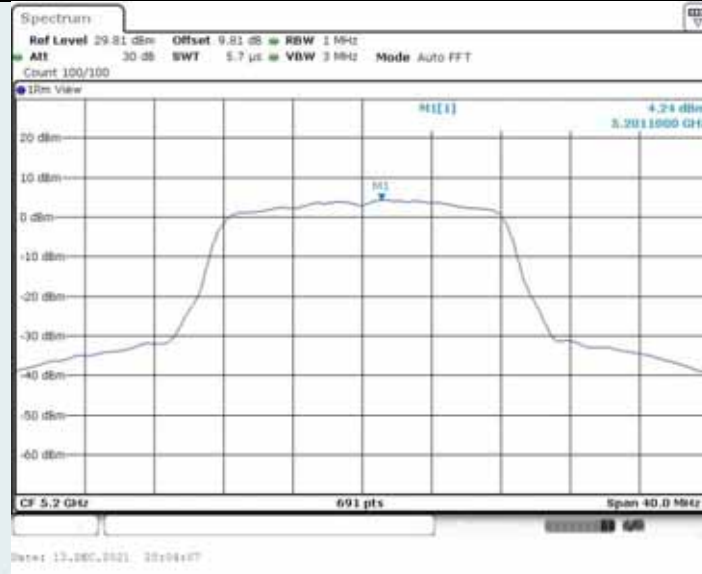
3. So Directional gain =  $10 \log[(10^{2.8/20} + 10^{3.3/20})^2 / 2] = 6.06$  dBi, Directional gain is greater than 6dBi, PSD Limit =  $30 - (6.06 - 6) = 29.94$  dBm/500kHz.

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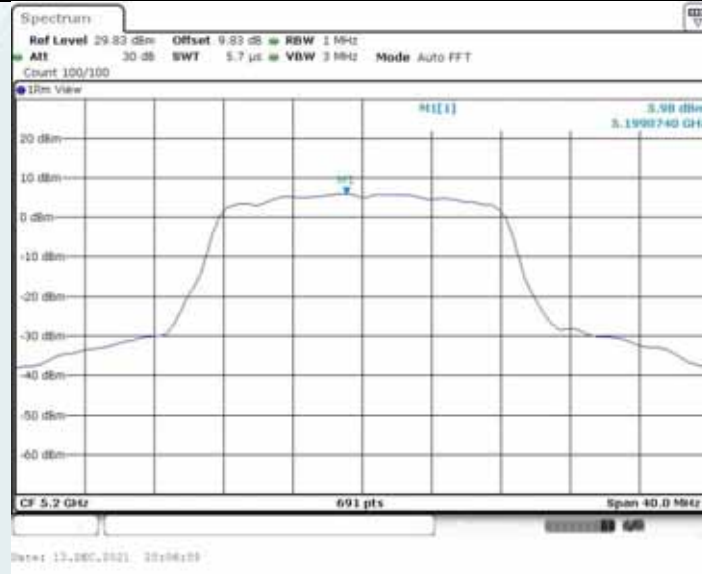
Test Graphs



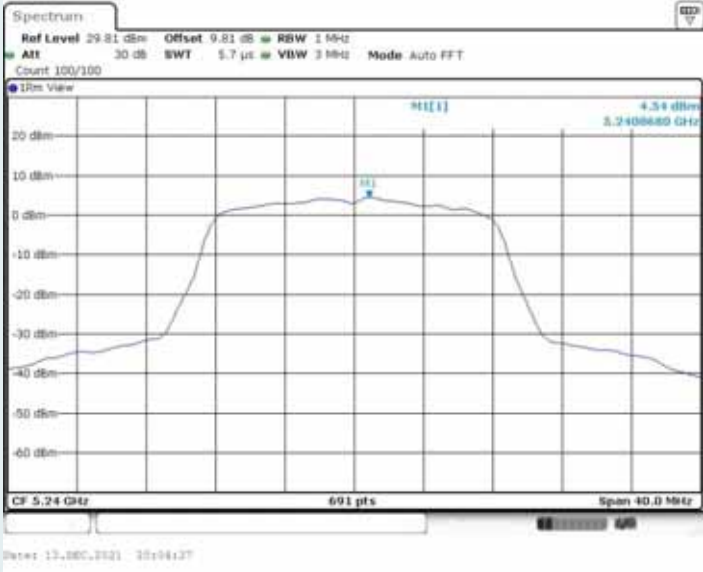
802.11a\_Ant1\_5200MHz



802.11a\_Ant2\_5200MHz



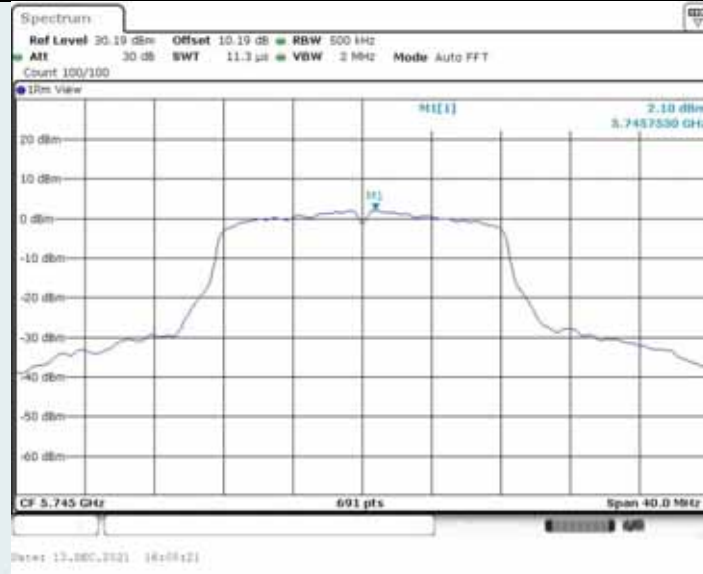
802.11a\_Ant1\_5240MHz



802.11a\_Ant2\_5240MHz



802.11a\_Ant1\_5745MHz

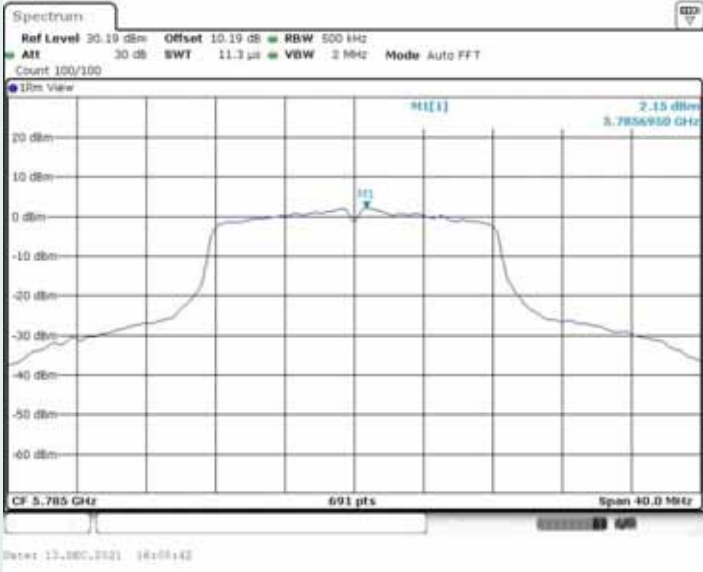


802.11a\_Ant2\_5745MHz





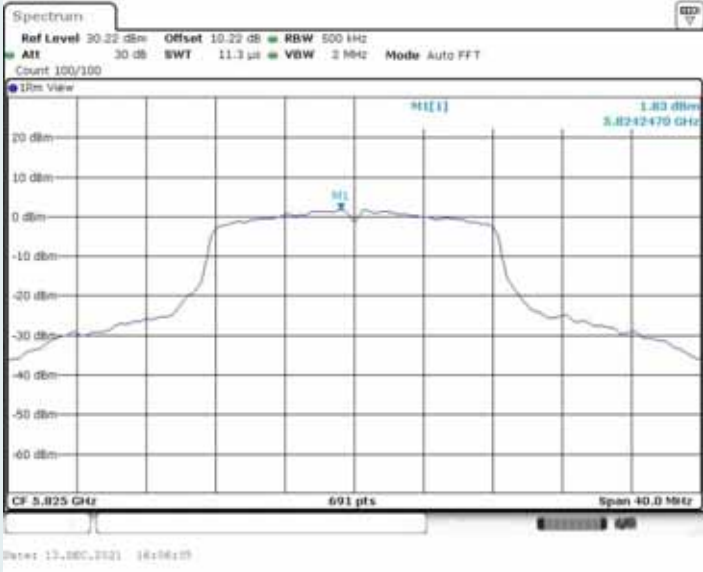
802.11a\_Ant1\_5785MHz



802.11a\_Ant2\_5785MHz



802.11a\_Ant1\_5825MHz



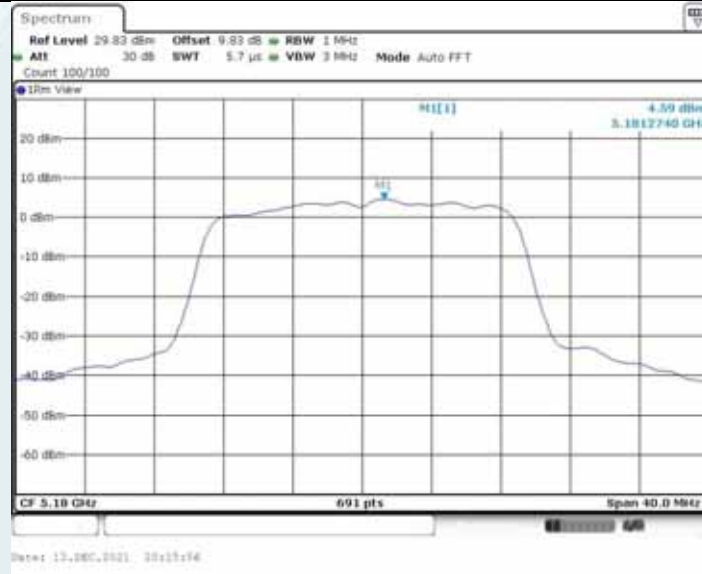
802.11a\_Ant2\_5825MHz



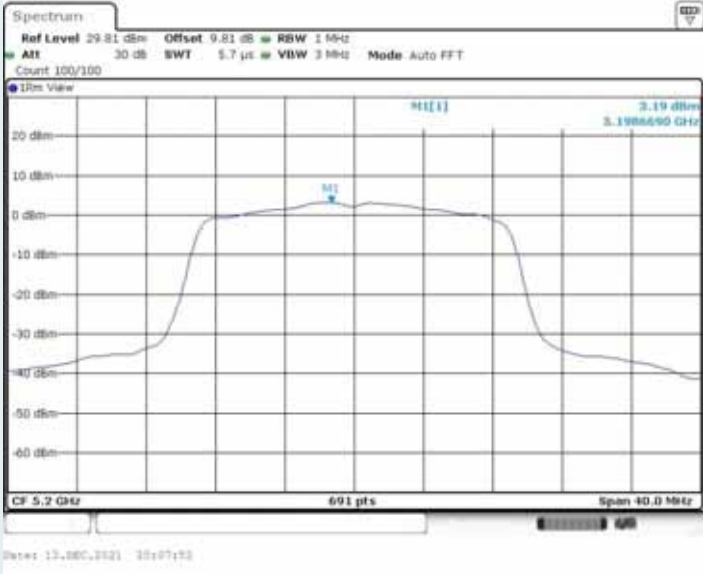
802.11n HT20\_Ant1\_5180MHz



802.11n HT20\_Ant2\_5180MHz



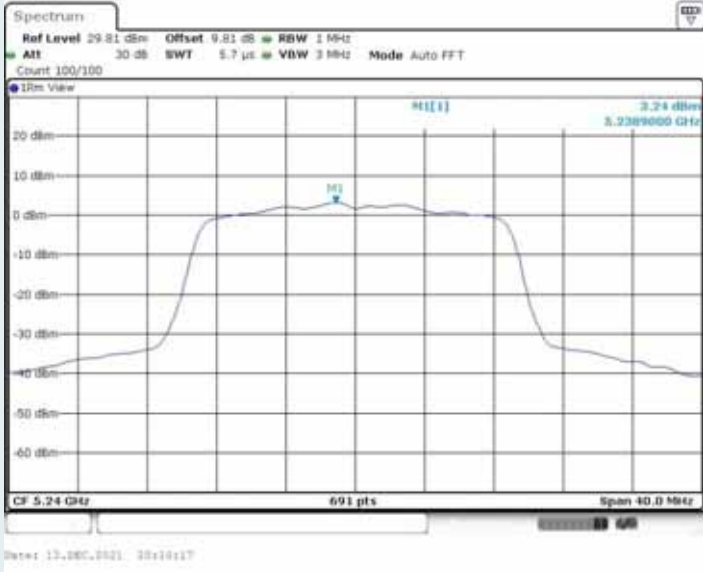
802.11n HT20\_Ant1\_5200MHz



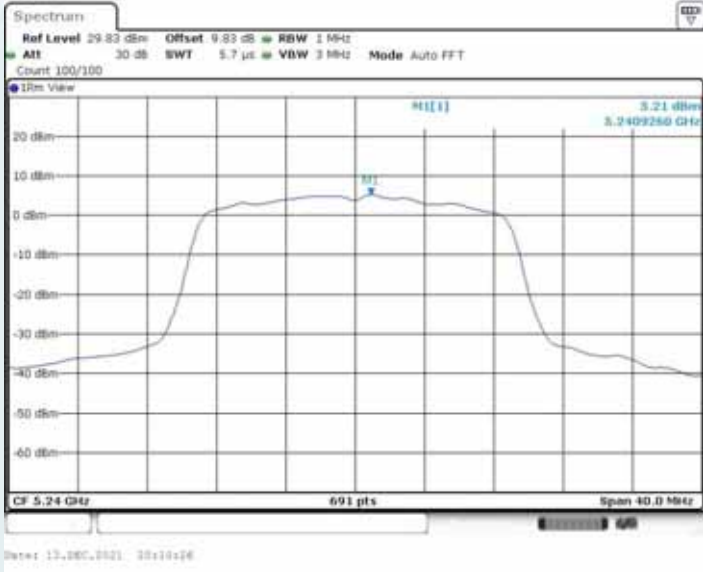
802.11n HT20\_Ant2\_5200MHz



802.11n HT20\_Ant1\_5240MHz



802.11n HT20\_Ant2\_5240MHz



802.11n HT20\_Ant1\_5745MHz



802.11n HT20\_Ant2\_5745MHz



802.11n HT20\_Ant1\_5785MHz



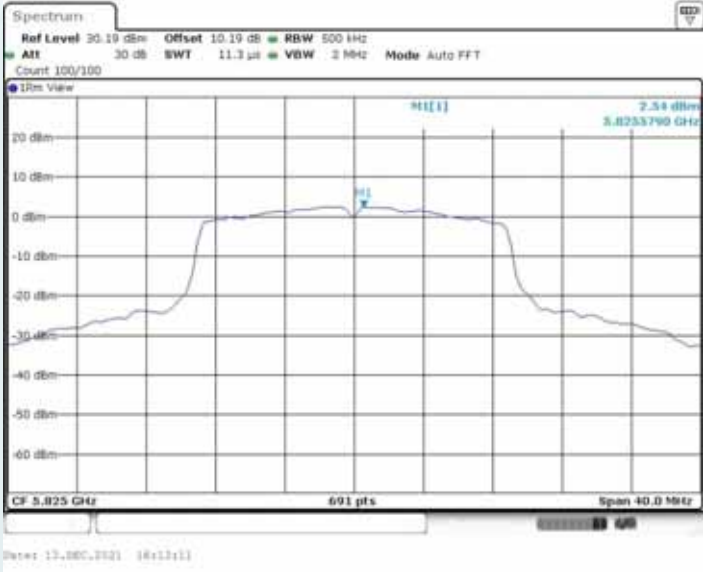
802.11n HT20\_Ant2\_5785MHz



802.11n HT20\_Ant1\_5825MHz



802.11n HT20\_Ant2\_5825MHz





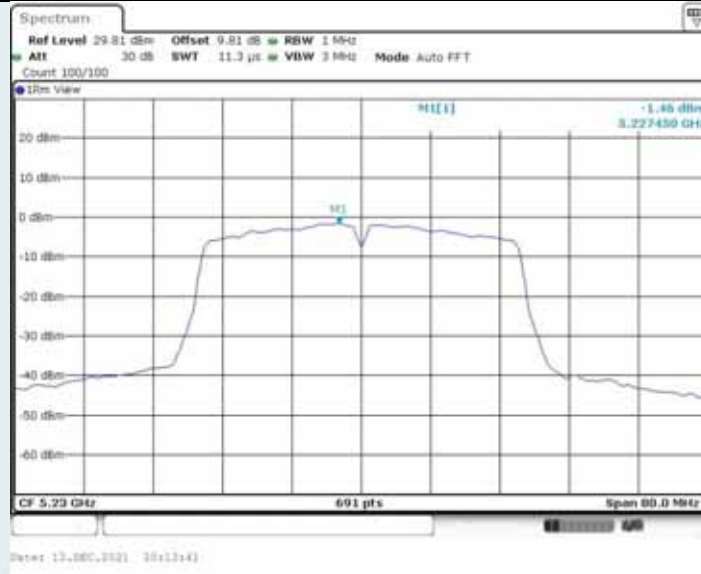
802.11n HT40\_Ant1\_5190MHz



802.11n HT40\_Ant2\_5190MHz



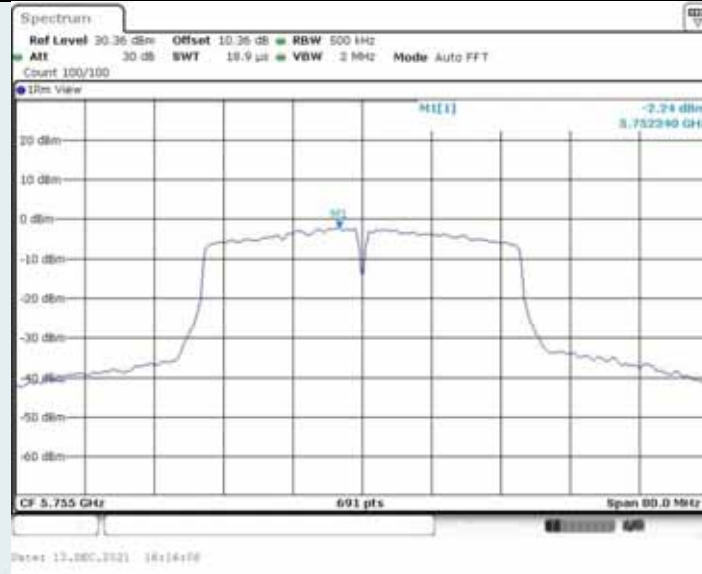
802.11n HT40\_Ant1\_5230MHz



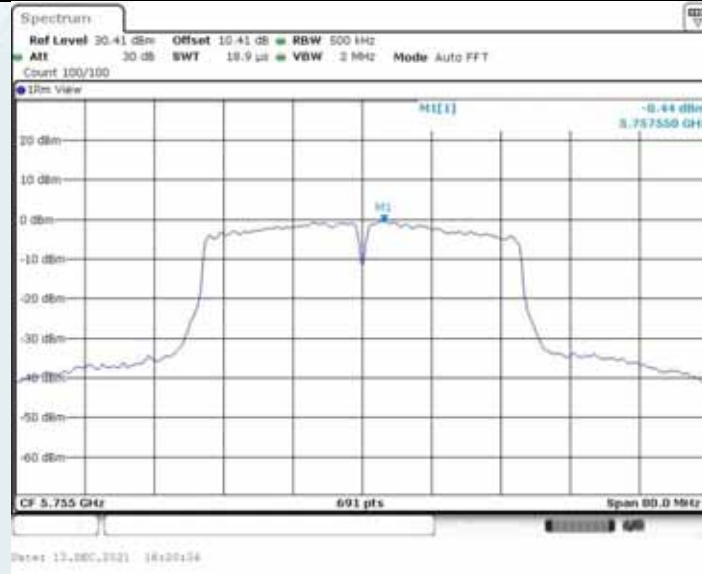
802.11n HT40\_Ant2\_5230MHz



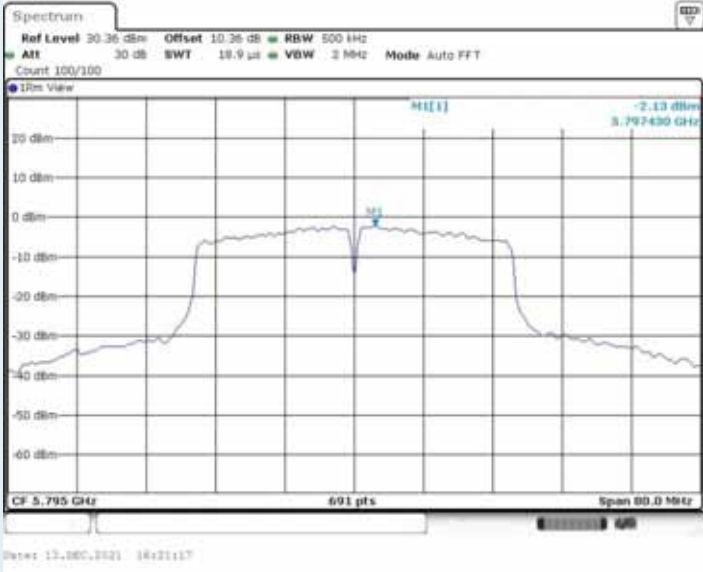
802.11n HT40\_Ant1\_5755MHz



802.11n HT40\_Ant2\_5755MHz



802.11n HT40\_Ant1\_5795MHz



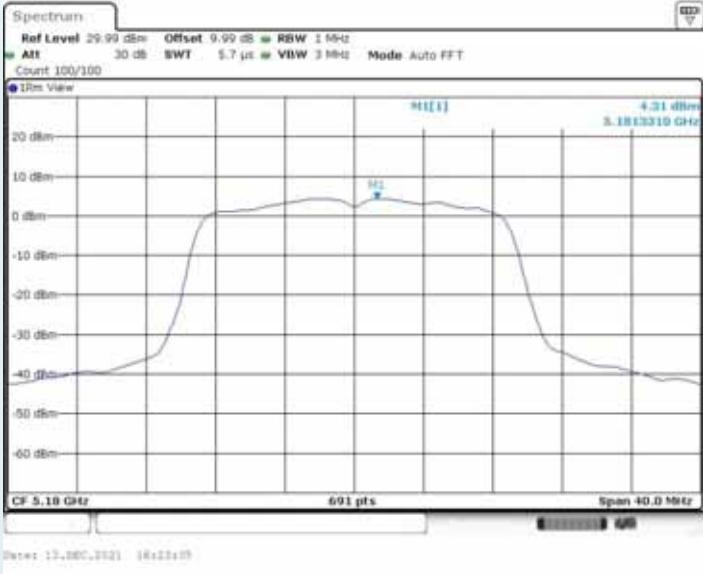
802.11n HT40\_Ant2\_5795MHz



802.11ac VHT20\_Ant1\_5180MHz



802.11ac VHT20\_Ant2\_5180MHz



802.11ac VHT20\_Ant1\_5200MHz



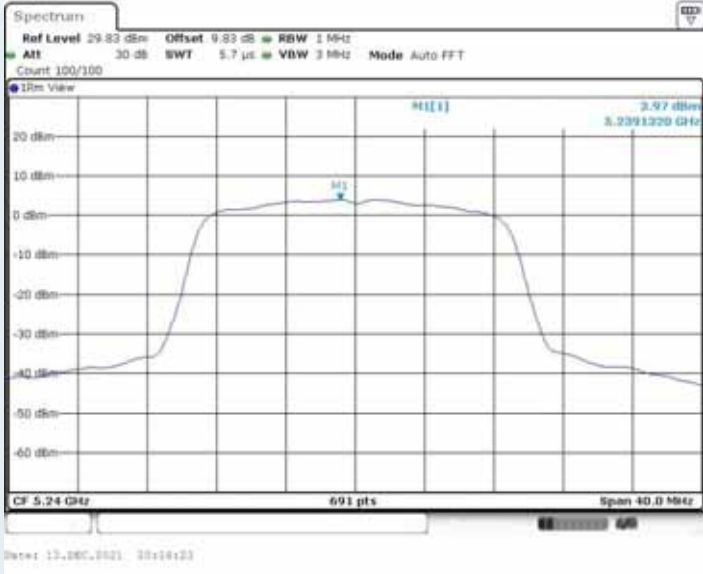
802.11ac VHT20\_Ant2\_5200MHz



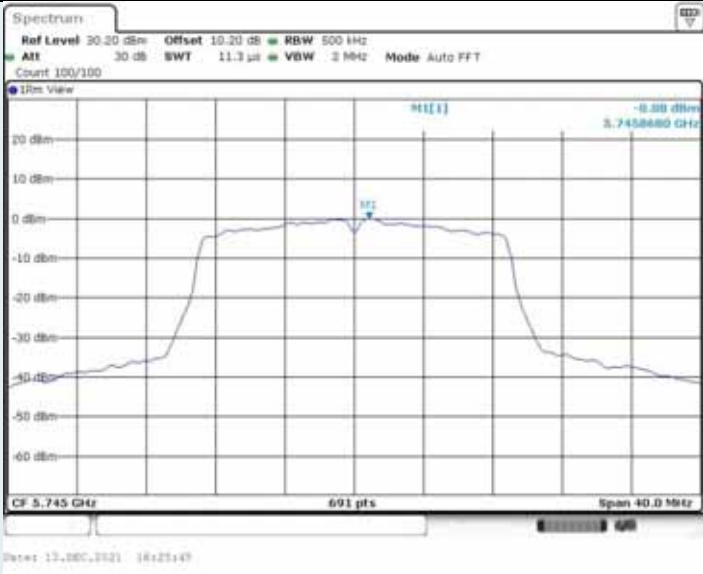
802.11ac VHT20\_Ant1\_5240MHz



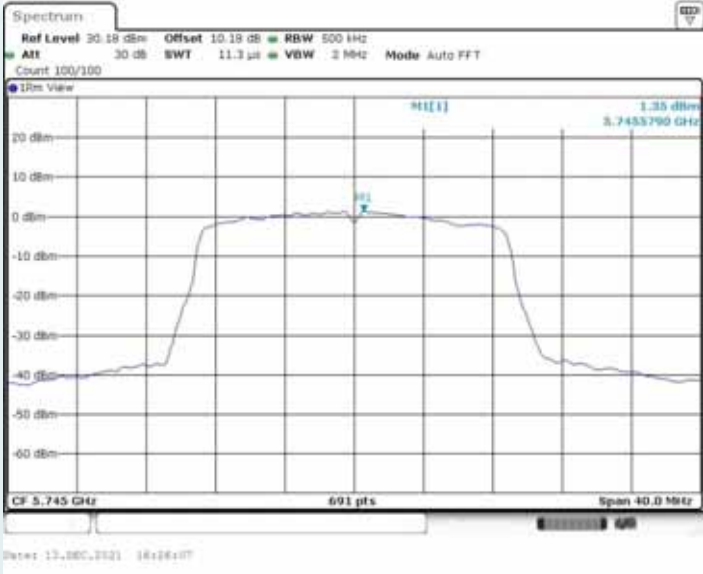
802.11ac VHT20\_Ant2\_5240MHz



802.11ac VHT20\_Ant1\_5745MHz



802.11ac VHT20\_Ant2\_5745MHz

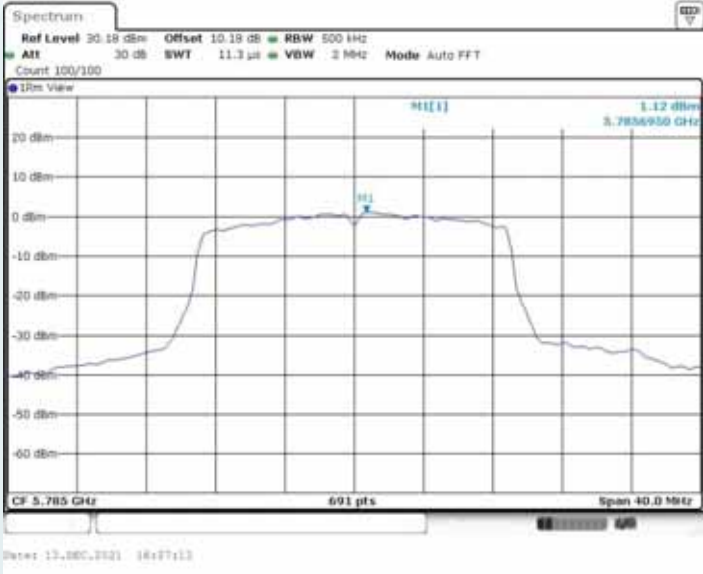




802.11ac VHT20\_Ant1\_5785MHz



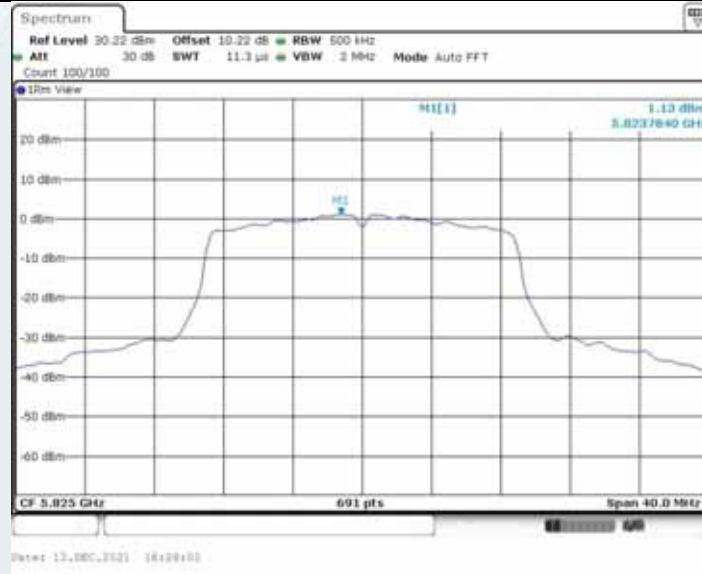
802.11ac VHT20\_Ant2\_5785MHz



802.11ac VHT20\_Ant1\_5825MHz



802.11ac VHT20\_Ant2\_5825MHz



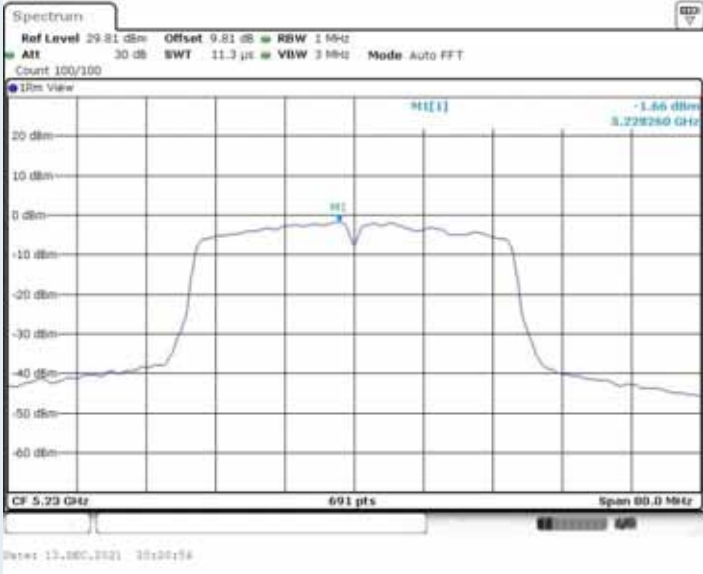
802.11ac VHT40\_Ant1\_5190MHz



802.11ac VHT40\_Ant2\_5190MHz



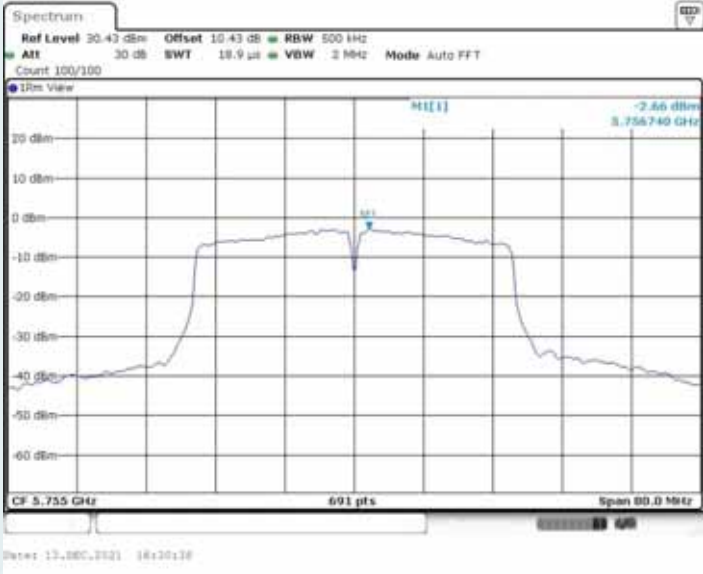
802.11ac VHT40\_Ant1\_5230MHz



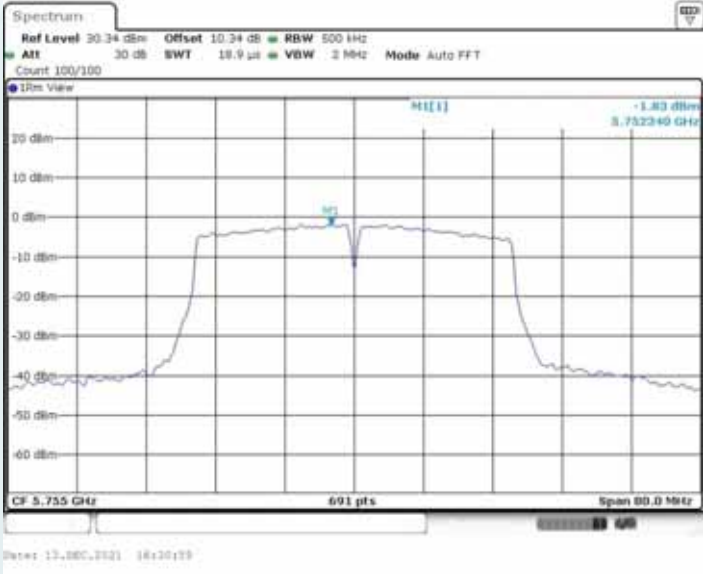
802.11ac VHT40\_Ant2\_5230MHz



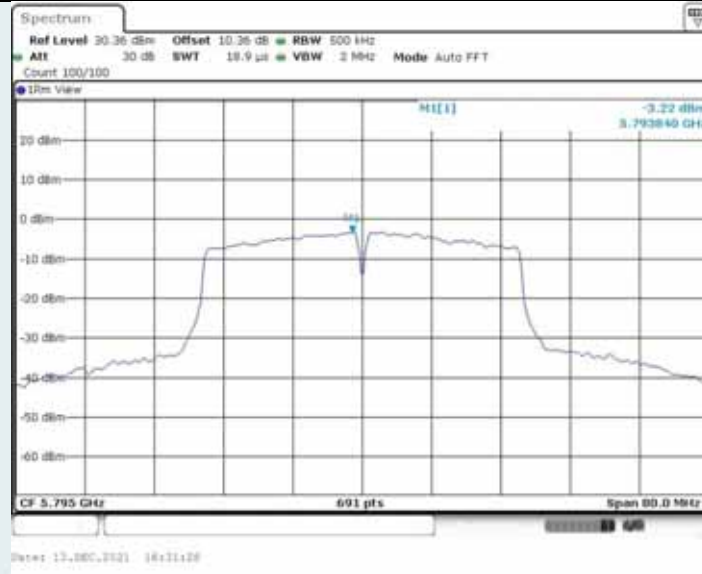
802.11ac VHT40\_Ant1\_5755MHz



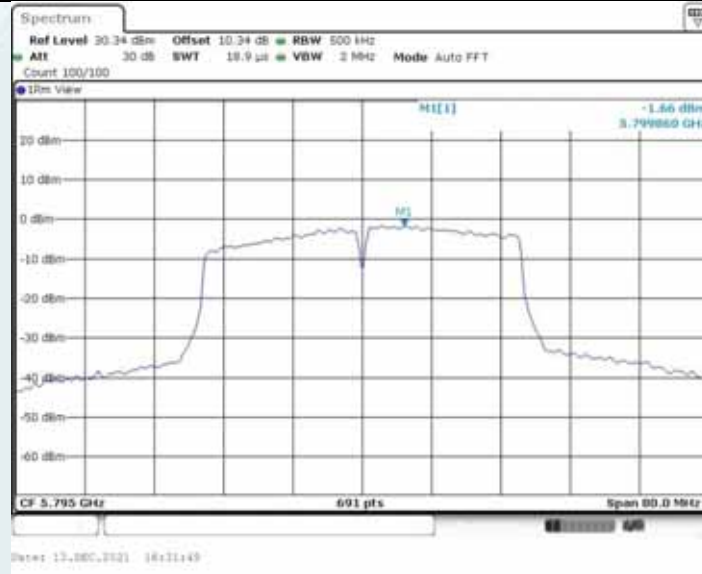
802.11ac VHT40\_Ant2\_5755MHz



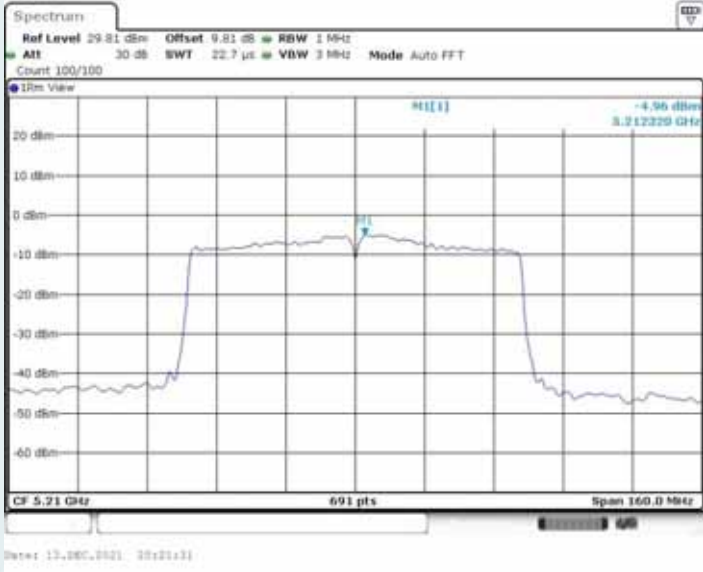
802.11ac VHT40\_Ant1\_5795MHz



802.11ac VHT40\_Ant2\_5795MHz



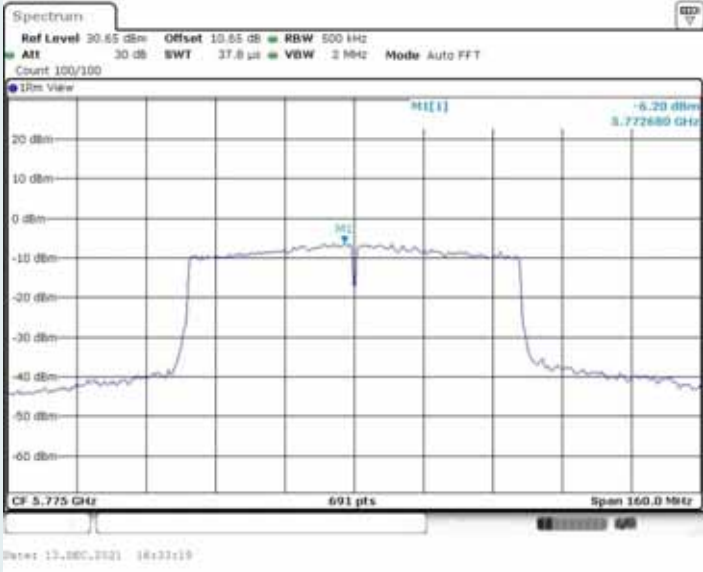
802.11ac VHT80\_Ant1\_5210MHz



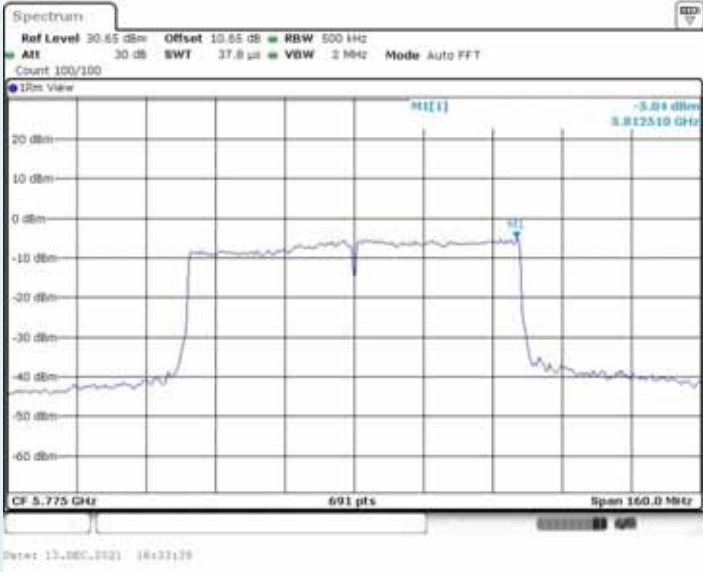
802.11ac VHT80\_Ant2\_5210MHz



802.11ac VHT80\_Ant1\_5775MHz



802.11ac VHT80\_Ant2\_5775MHz





## 11. FREQUENCY STABILITY

### 11.1. LIMITS

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

### 11.2. TEST PROCEDURES

#### (1) Frequency stability with respect to ambient temperature

- a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in §ANSI C63.10-2013(5.6).
- b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

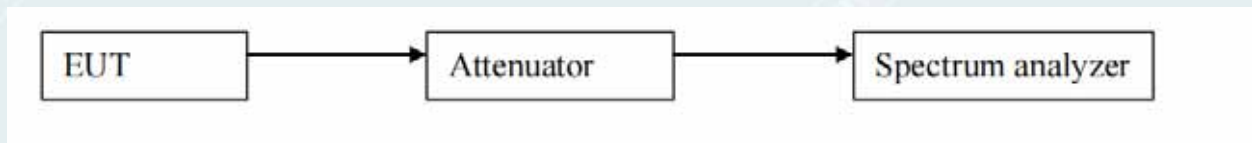
- c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.
- e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.
- f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.
- g) Measure the frequency at each of frequencies specified in §ANSI C63.10-2013(5.6).
- h) Switch OFF the EUT but do not switch OFF the oscillator heater.
- i) Lower the chamber temperature by not more than 10°C, and allow the temperature inside the chamber to stabilize.
- j) Repeat step f) through step i) down to the lowest specified temperature.

**(2) Frequency stability when varying supply voltage**

- a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

- b) Tune the EUT to one of the number of frequencies required in §ANSI C63.10-2013(5.6). Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in §ANSI C63.10-2013(5.6).
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in §ANSI C63.10-2013(5.13).

**11.3. TEST SETUP**

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## 11.4. TEST RESULTS

<b>Tested By</b>	Lu Wei	<b>Tested Date</b>	2021/12/21
<b>Environmental Conditions</b>	23.5°C/48%RH	<b>Test Voltage</b>	AC120V/60Hz

TestMode	Antenna	Frequency (MHz)	Voltage				Limit (ppm)	Verdict
			Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)		
802.11a	Ant1	5180	NV	NT	-5000	-0.965251	20	PASS
			LV	NT	-4000	-0.772201	20	PASS
			HV	NT	-4000	-0.772201	20	PASS
	Ant2	5180	NV	NT	0	0	20	PASS
			LV	NT	0	0	20	PASS
			HV	NT	2000	0.3861	20	PASS
	Ant1	5200	NV	NT	-6000	-1.153846	20	PASS
			LV	NT	-5000	-0.961538	20	PASS
			HV	NT	-5000	-0.961538	20	PASS
	Ant2	5200	NV	NT	1000	0.192308	20	PASS
			LV	NT	1000	0.192308	20	PASS
			HV	NT	1000	0.192308	20	PASS
	Ant1	5240	NV	NT	-4000	-0.763359	20	PASS
			LV	NT	-2000	-0.381679	20	PASS
			HV	NT	-3000	-0.572519	20	PASS
	Ant2	5240	NV	NT	2000	0.381679	20	PASS
			LV	NT	1000	0.19084	20	PASS
			HV	NT	2000	0.381679	20	PASS
	Ant1	5745	NV	NT	-2000	-0.348129	20	PASS
			LV	NT	-2000	-0.348129	20	PASS
			HV	NT	-2000	-0.348129	20	PASS
	Ant2	5745	NV	NT	2000	0.348129	20	PASS
			LV	NT	2000	0.348129	20	PASS
			HV	NT	3000	0.522193	20	PASS
Ant1	5785	NV	NT	-2000	-0.345722	20	PASS	
		LV	NT	-2000	-0.345722	20	PASS	
		HV	NT	-1000	-0.172861	20	PASS	
Ant2	5785	NV	NT	2000	0.345722	20	PASS	
		LV	NT	2000	0.345722	20	PASS	
		HV	NT	3000	0.518583	20	PASS	
Ant1	5825	NV	NT	0	0	20	PASS	

	Ant2	5825	LV	NT	0	0	20	PASS
			HV	NT	1000	0.171674	20	PASS
			NV	NT	3000	0.515021	20	PASS
			LV	NT	3000	0.515021	20	PASS
			HV	NT	3000	0.515021	20	PASS

TestMode	Antenna	Frequency (MHz)	Temperature					
			Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
802.11a	Ant1	5180	NV	-20	-5000	-0.965251	20	PASS
			NV	-10	-5000	-0.965251	20	PASS
			NV	0	-6000	-1.158301	20	PASS
			NV	10	-6000	-1.158301	20	PASS
			NV	20	-6000	-1.158301	20	PASS
			NV	30	-6000	-1.158301	20	PASS
			NV	40	-6000	-1.158301	20	PASS
			NV	50	-7000	-1.351351	20	PASS
			NV	60	-6000	-1.158301	20	PASS
			NV	70	-7000	-1.351351	20	PASS
			NV	80	-6000	-1.158301	20	PASS
			NV	85	-7000	-1.351351	20	PASS
	Ant2	5180	NV	-20	1000	0.19305	20	PASS
			NV	-10	1000	0.19305	20	PASS
			NV	0	1000	0.19305	20	PASS
			NV	10	1000	0.19305	20	PASS
			NV	20	1000	0.19305	20	PASS
			NV	30	1000	0.19305	20	PASS
			NV	40	1000	0.19305	20	PASS
			NV	50	1000	0.19305	20	PASS
			NV	60	3000	0.579151	20	PASS
			NV	70	4000	0.772201	20	PASS
			NV	80	3000	0.579151	20	PASS
			NV	85	4000	0.772201	20	PASS
	Ant1	5200	NV	-20	-2000	-0.384615	20	PASS
			NV	-10	-3000	-0.576923	20	PASS
			NV	0	-3000	-0.576923	20	PASS
			NV	10	-4000	-0.769231	20	PASS
			NV	20	-4000	-0.769231	20	PASS
			NV	30	-3000	-0.576923	20	PASS
			NV	40	-3000	-0.576923	20	PASS
			NV	50	-3000	-0.576923	20	PASS

			NV	60	-3000	-0.576923	20	PASS
			NV	70	-4000	-0.769231	20	PASS
			NV	80	-3000	-0.576923	20	PASS
			NV	85	-4000	-0.769231	20	PASS
	Ant2	5200	NV	-20	0	0	20	PASS
			NV	-10	1000	0.192308	20	PASS
			NV	0	2000	0.384615	20	PASS
			NV	10	1000	0.192308	20	PASS
			NV	20	2000	0.384615	20	PASS
			NV	30	1000	0.192308	20	PASS
			NV	40	1000	0.192308	20	PASS
			NV	50	1000	0.192308	20	PASS
			NV	60	2000	0.384615	20	PASS
			NV	70	1000	0.192308	20	PASS
			NV	80	2000	0.384615	20	PASS
			NV	85	1000	0.192308	20	PASS
	Ant1	5240	NV	-20	-2000	-0.381679	20	PASS
			NV	-10	-3000	-0.572519	20	PASS
			NV	0	-1000	-0.19084	20	PASS
			NV	10	-2000	-0.381679	20	PASS
			NV	20	-3000	-0.572519	20	PASS
			NV	30	-3000	-0.572519	20	PASS
			NV	40	-2000	-0.381679	20	PASS
			NV	50	-2000	-0.381679	20	PASS
			NV	60	-2000	-0.381679	20	PASS
			NV	70	-3000	-0.572519	20	PASS
			NV	80	-2000	-0.381679	20	PASS
			NV	85	-3000	-0.572519	20	PASS
	Ant2	5240	NV	-20	1000	0.19084	20	PASS
			NV	-10	2000	0.381679	20	PASS
			NV	0	2000	0.381679	20	PASS
			NV	10	2000	0.381679	20	PASS
NV			20	2000	0.381679	20	PASS	
NV			30	1000	0.19084	20	PASS	
NV			40	2000	0.381679	20	PASS	
NV			50	2000	0.381679	20	PASS	
NV			60	1000	0.19084	20	PASS	
NV			70	2000	0.381679	20	PASS	
NV			80	1000	0.19084	20	PASS	
NV			85	2000	0.381679	20	PASS	
Ant1	5745	NV	-20	-2000	-0.348129	20	PASS	
		NV	-10	-2000	-0.348129	20	PASS	

			NV	0	-1000	-0.174064	20	PASS
			NV	10	-2000	-0.348129	20	PASS
			NV	20	-2000	-0.348129	20	PASS
			NV	30	-1000	-0.174064	20	PASS
			NV	40	-1000	-0.174064	20	PASS
			NV	50	-2000	-0.348129	20	PASS
			NV	60	-1000	-0.174064	20	PASS
			NV	70	-2000	-0.348129	20	PASS
			NV	80	-1000	-0.174064	20	PASS
			NV	85	-2000	-0.348129	20	PASS
	Ant2	5745	NV	-20	2000	0.348129	20	PASS
			NV	-10	3000	0.522193	20	PASS
			NV	0	3000	0.522193	20	PASS
			NV	10	3000	0.522193	20	PASS
			NV	20	2000	0.348129	20	PASS
			NV	30	4000	0.696258	20	PASS
			NV	40	3000	0.522193	20	PASS
			NV	50	2000	0.348129	20	PASS
			NV	60	3000	0.522193	20	PASS
			NV	70	2000	0.348129	20	PASS
			NV	80	3000	0.522193	20	PASS
			NV	85	2000	0.348129	20	PASS
	Ant1	5785	NV	-20	-1000	-0.172861	20	PASS
			NV	-10	-2000	-0.345722	20	PASS
			NV	0	-2000	-0.345722	20	PASS
			NV	10	0	0	20	PASS
			NV	20	-1000	-0.172861	20	PASS
			NV	30	-1000	-0.172861	20	PASS
			NV	40	-1000	-0.172861	20	PASS
			NV	50	0	0	20	PASS
			NV	60	-1000	-0.172861	20	PASS
			NV	70	-2000	-0.345722	20	PASS
			NV	80	-1000	-0.172861	20	PASS
			NV	85	-2000	-0.345722	20	PASS
	Ant2	5785	NV	-20	2000	0.345722	20	PASS
			NV	-10	3000	0.518583	20	PASS
			NV	0	2000	0.345722	20	PASS
			NV	10	3000	0.518583	20	PASS
			NV	20	3000	0.518583	20	PASS
			NV	30	3000	0.518583	20	PASS
			NV	40	3000	0.518583	20	PASS
			NV	50	3000	0.518583	20	PASS

			NV	60	2000	0.345722	20	PASS		
			NV	70	3000	0.518583	20	PASS		
			NV	80	2000	0.345722	20	PASS		
			NV	85	3000	0.518583	20	PASS		
	Ant1	5825	NV	-20	1000	0.171674	20	PASS		
			NV	-10	1000	0.171674	20	PASS		
			NV	0	1000	0.171674	20	PASS		
			NV	10	0	0	20	PASS		
			NV	20	1000	0.171674	20	PASS		
			NV	30	0	0	20	PASS		
			NV	40	1000	0.171674	20	PASS		
			NV	50	1000	0.171674	20	PASS		
			NV	60	0	0	20	PASS		
			NV	70	1000	0.171674	20	PASS		
			NV	80	1000	0.171674	20	PASS		
			NV	85	1000	0.171674	20	PASS		
			Ant2	5825	NV	-20	3000	0.515021	20	PASS
					NV	-10	3000	0.515021	20	PASS
	NV	0			3000	0.515021	20	PASS		
	NV	10			3000	0.515021	20	PASS		
	NV	20			3000	0.515021	20	PASS		
	NV	30			4000	0.686695	20	PASS		
	NV	40			3000	0.515021	20	PASS		
	NV	50			3000	0.515021	20	PASS		
	NV	60			3000	0.515021	20	PASS		
	NV	70			4000	0.686695	20	PASS		
	NV	80			3000	0.515021	20	PASS		
	NV	85			4000	0.686695	20	PASS		

- Note: 1.This report records the worst case of temperature change test observation time 0/2/5/10min .  
 2.Test Voltage-NV: AC120V/60Hz, Test Voltage-LV: AC102V/60Hz, Test Voltage-HV: AC138V/60Hz.  
 3.Temperature Range: -20°C~85°C, Temperature-NT: 24°C.

**APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM**

Please refer to the attached document E202111252962-11-Test photo.

**APPENDIX B. PHOTOGRAPH OF THE EUT**

Please refer to the attached document E202111252962-12-EUT photo.

———— End of Report ————