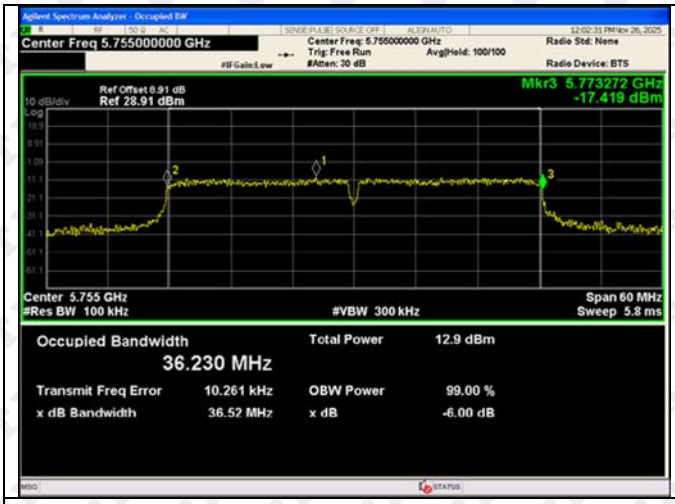
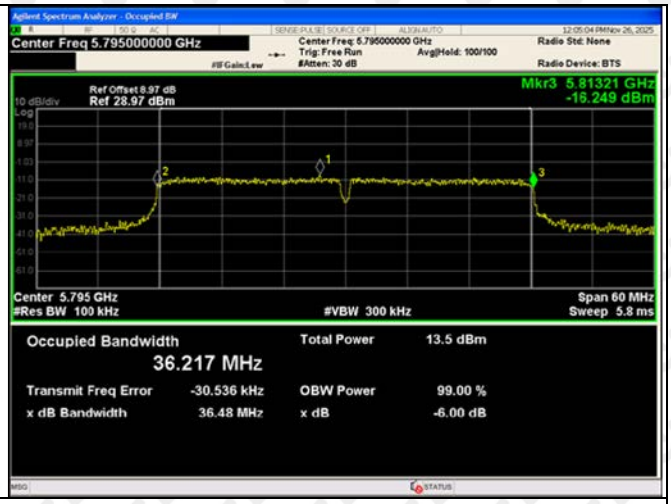


802.11ac(VHT80)-5775



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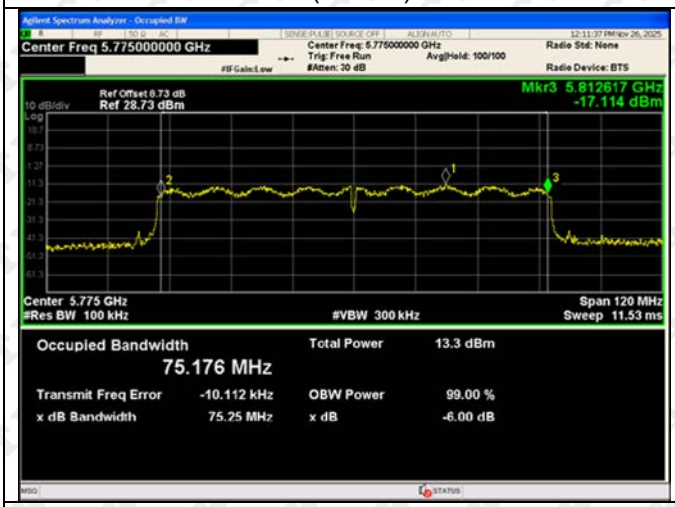

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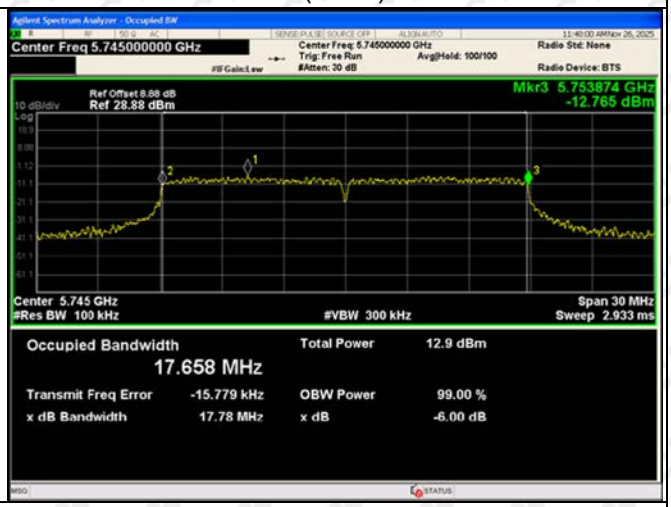

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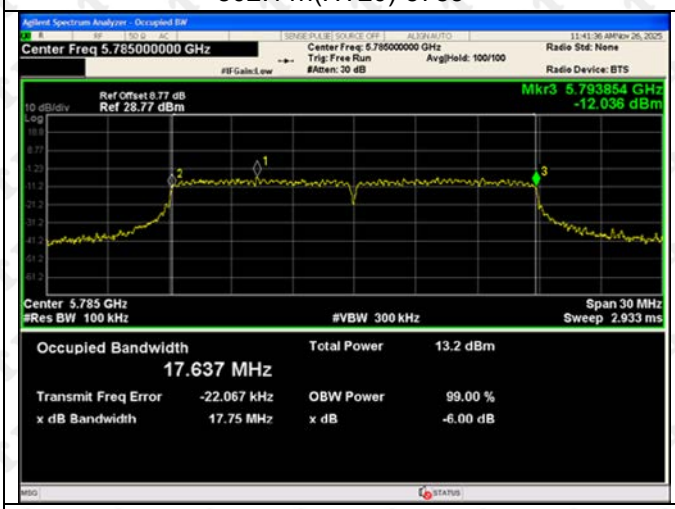
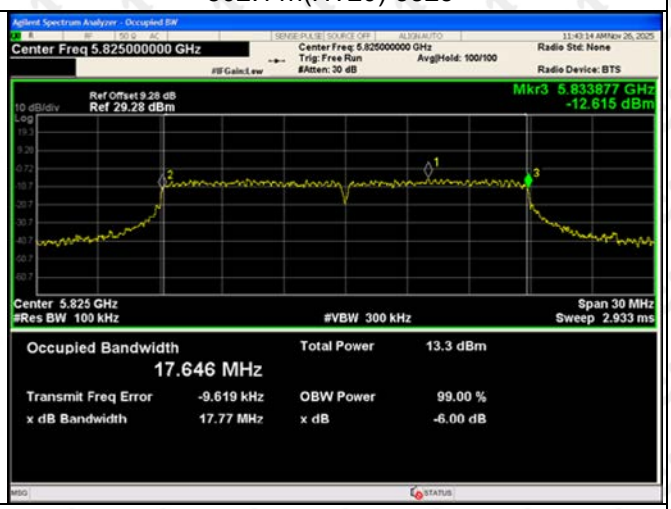


5802.11n(HT40)-5755



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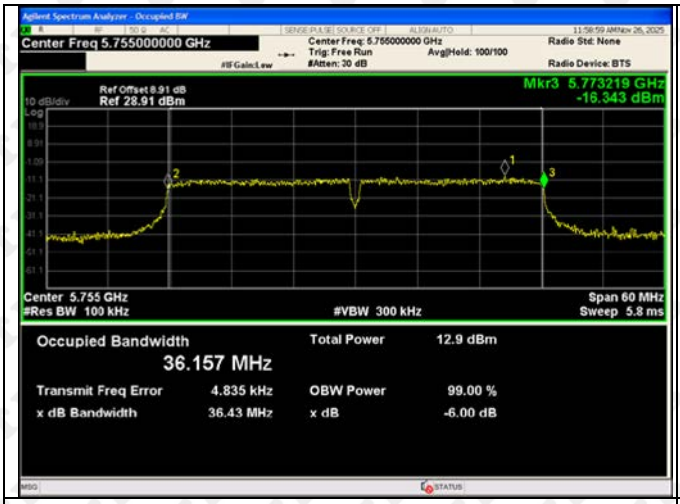
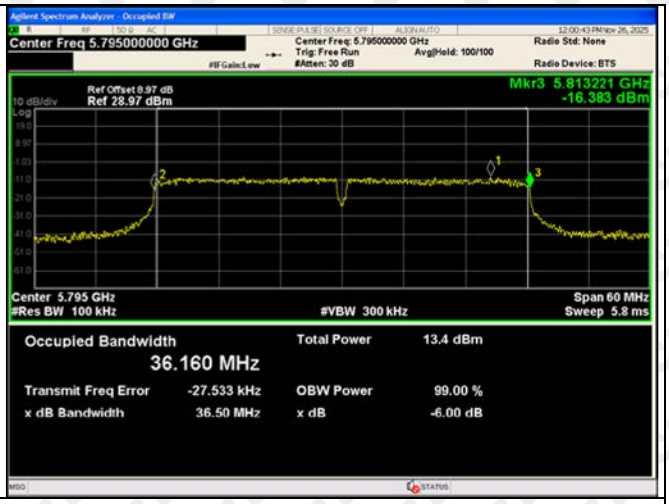
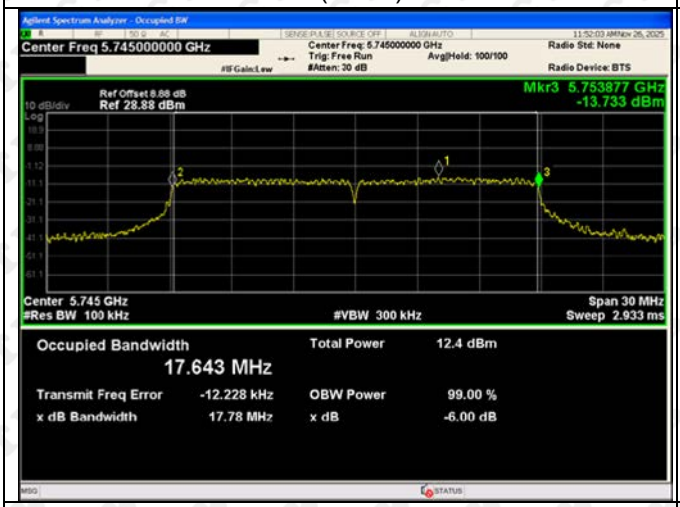


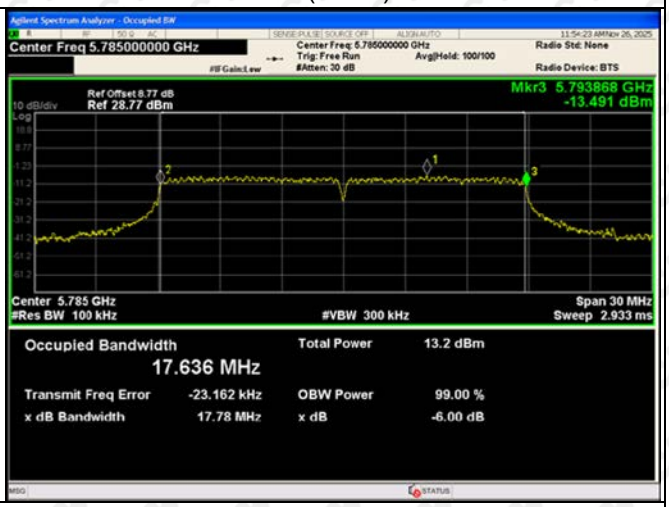
802.11ax(HE20)-5745



802.11ax(HE20)-5785



802.11ax(HE20)-5825



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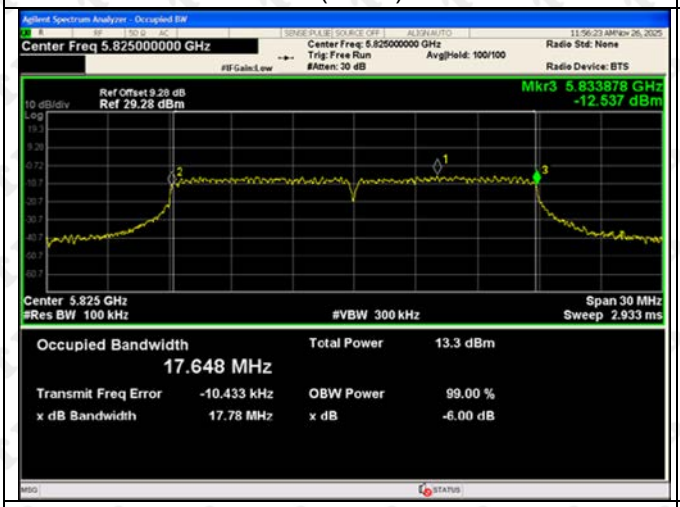

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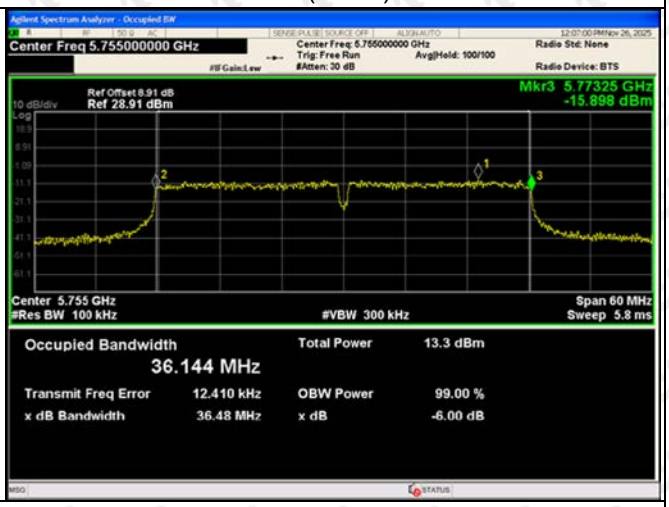
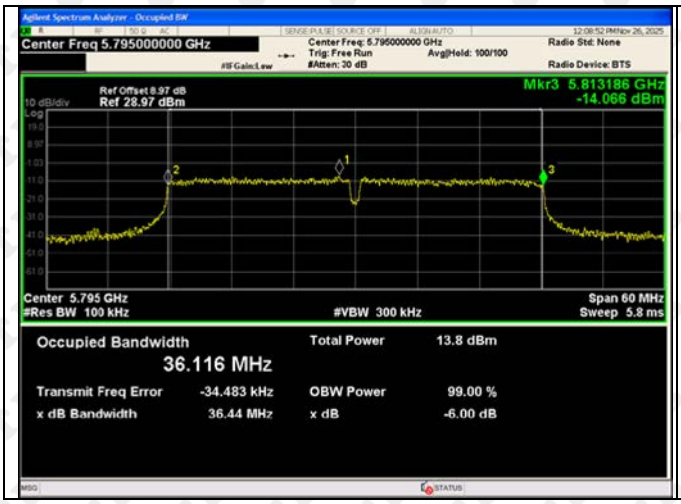
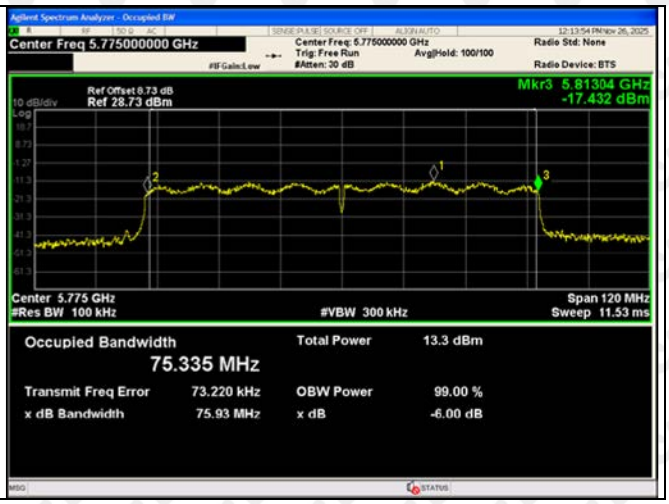


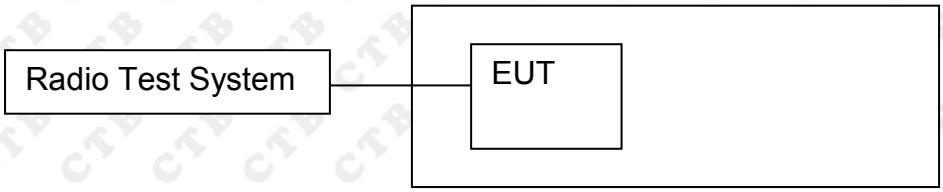
802.11ax(HE80)-5775


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.795000000 GHz
Center Freq: 5.795000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.97 dB
10 dB/div
Ref 28.97 dBm
Mkr3 5.813186 GHz
-14.066 dBm
Center 5.795 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 60 MHz
Sweep 5.8 ms
Occupied Bandwidth
36.116 MHz
Total Power 13.8 dBm
Transmit Freq Error -34.483 kHz
OBW Power 99.00 %
x dB Bandwidth 36.44 MHz
x dB -6.00 dB


Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.775000000 GHz
Center Freq: 5.775000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.73 dB
10 dB/div
Ref 28.73 dBm
Mkr3 5.81304 GHz
-17.432 dBm
Center 5.775 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120 MHz
Sweep 11.53 ms
Occupied Bandwidth
75.335 MHz
Total Power 13.3 dBm
Transmit Freq Error 73.220 kHz
OBW Power 99.00 %
x dB Bandwidth 75.93 MHz
x dB -6.00 dB

11. POWER SPECTRAL DENSITY

11.1 Block Diagram Of Test Setup



11.2 Limit

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable 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 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 directional antennas are used exclusively for fixed, point-to-point operations.

11.3 Test procedure

According to KDB789033 D02v02r01 sectionE, the following is the measurement procedure.

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

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.
Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) and II.F.5.d), since RBW=100 kHz is available on nearly all spectrum analyzers.

11.4 Test Result

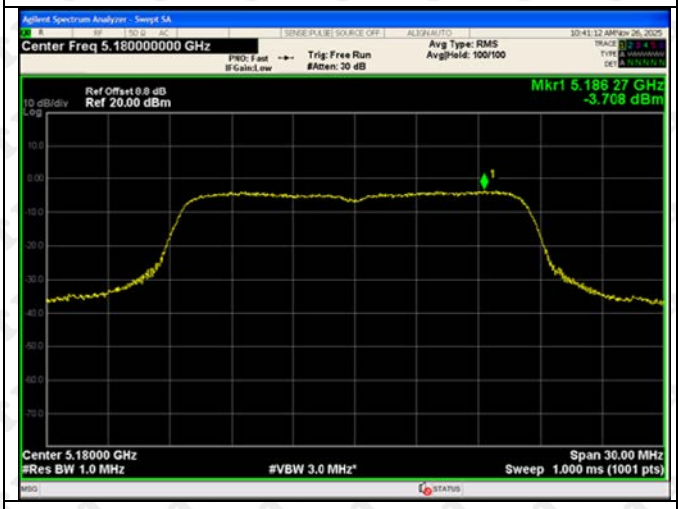
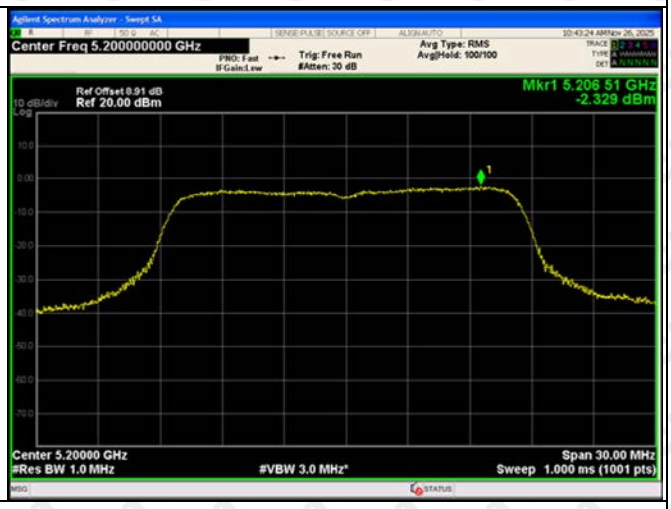
5150-5250MHz:

Test mode	Test Channel (MHz)	PSD [dBm/MHz]	Limit [dBm/MHz]	Result
802.11a	5180	-3.708	11	Pass
	5200	-2.329	11	Pass
	5240	-2.442	11	Pass
802.11ac(VHT20)	5180	-4.732	11	Pass
	5200	-3.508	11	Pass
	5240	-3.149	11	Pass
802.11ac(VHT40)	5190	-6.857	11	Pass
	5230	-5.914	11	Pass
802.11ac(VHT80)	5210	-8.386	11	Pass
802.11n(HT20)	5180	-4.291	11	Pass
	5200	-2.75	11	Pass
	5240	-3.126	11	Pass
802.11n(HT40)	5190	-6.827	11	Pass
	5230	-5.989	11	Pass
802.11ax(HE20)	5180	-4.337	11	Pass
	5200	-3.083	11	Pass
	5240	-3.39	11	Pass
802.11ax(HE40)	5190	-6.482	11	Pass
	5230	-5.752	11	Pass
802.11ax(HE80)	5210	-8.254	11	Pass

5725-5850MHz:

Test mode	Test Channel (MHz)	PSD [dBm/500kHz]	Limit [dBm/MHz]	Result
802.11a	5745	-7.464	30	Pass
	5785	-6.62	30	Pass
	5825	-7.05	30	Pass
802.11ac(VHT20)	5745	-7.81	30	Pass
	5785	-7.539	30	Pass
	5825	-7.156	30	Pass
802.11ac(VHT40)	5755	-10.877	30	Pass
	5795	-10.236	30	Pass
802.11ac(VHT80)	5775	-13.193	30	Pass
802.11n(HT20)	5745	-7.735	30	Pass
	5785	-7.339	30	Pass
	5825	-7.143	30	Pass
802.11n(HT40)	5755	-10.951	30	Pass
	5795	-10.426	30	Pass
802.11ax(HE20)	5745	-8.318	30	Pass
	5785	-7.48	30	Pass
	5825	-7.345	30	Pass
802.11ax(HE40)	5755	-10.383	30	Pass
	5795	-10.27	30	Pass
802.11ax(HE80)	5775	-13.548	30	Pass

5150-5250MHz

802.11a-5180	802.11a-5200
	
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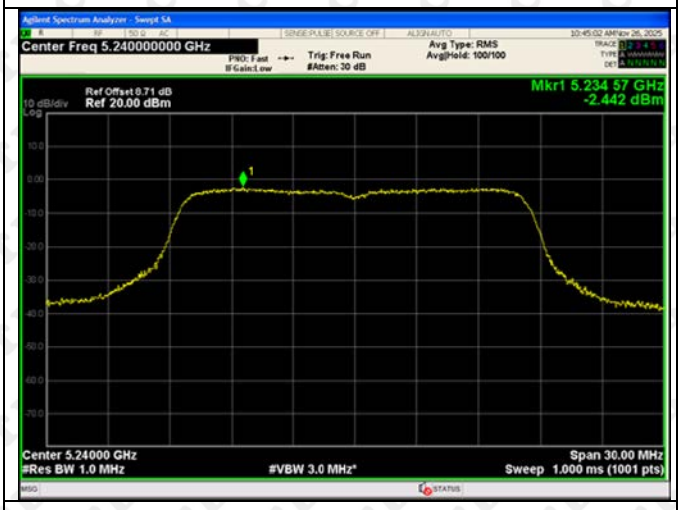	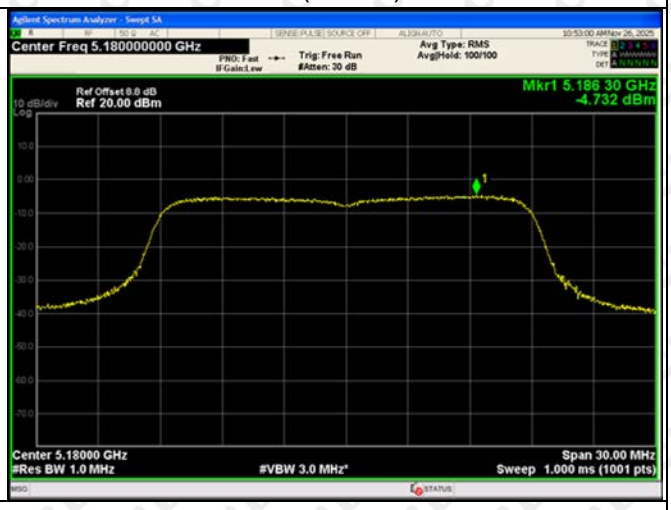
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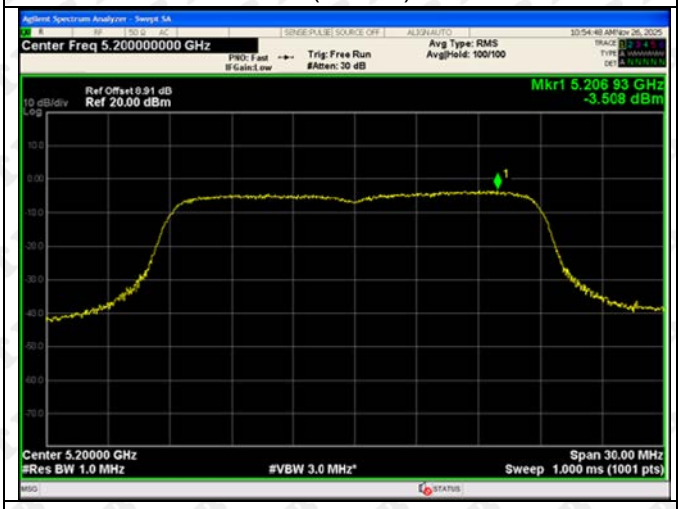
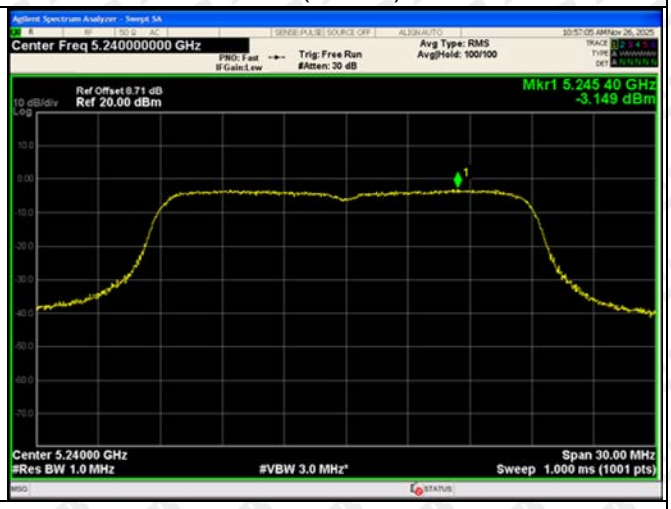
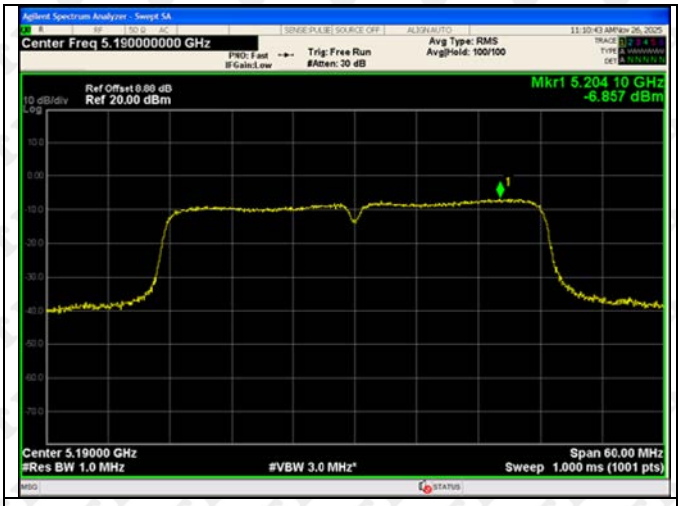
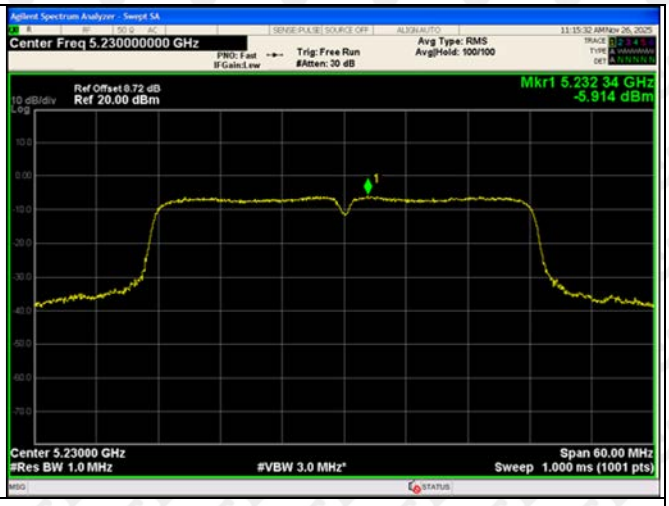
	
802.11ac(VHT40)-5190	802.11ac(VHT40)-5230



802.11ac(VHT80)-5210



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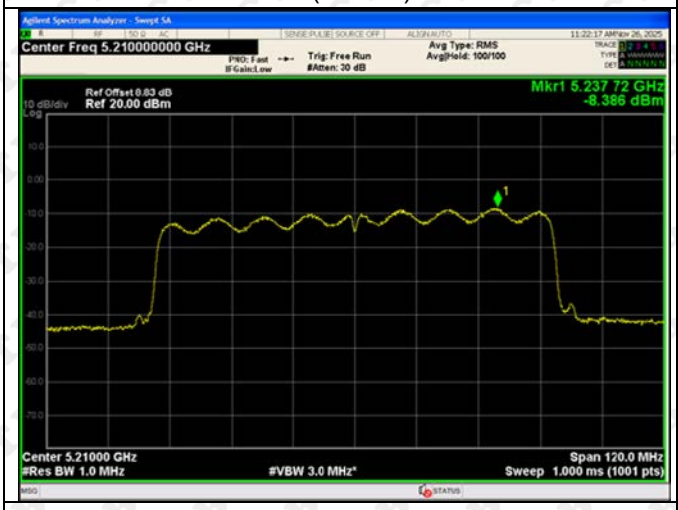

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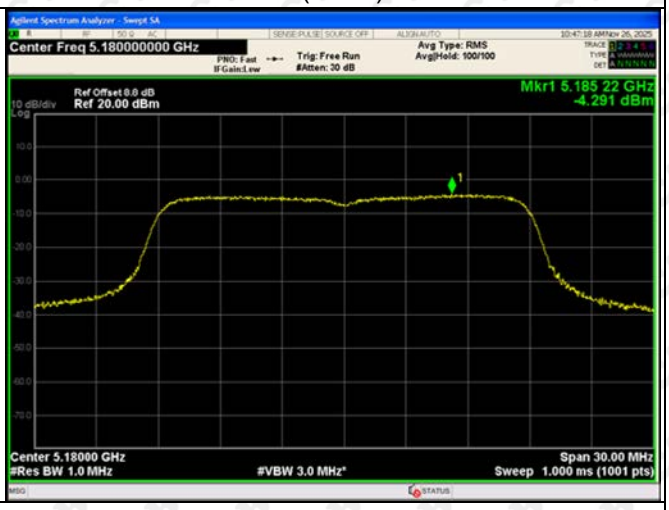
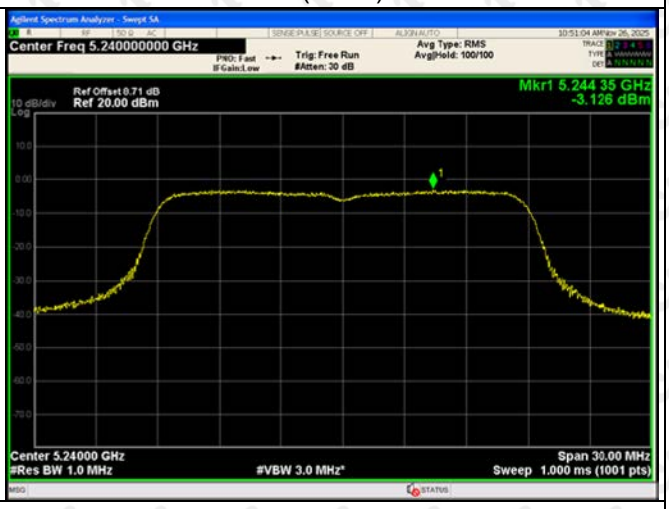


802.11n(HT20)-5240

802.11n(HT40)-5190



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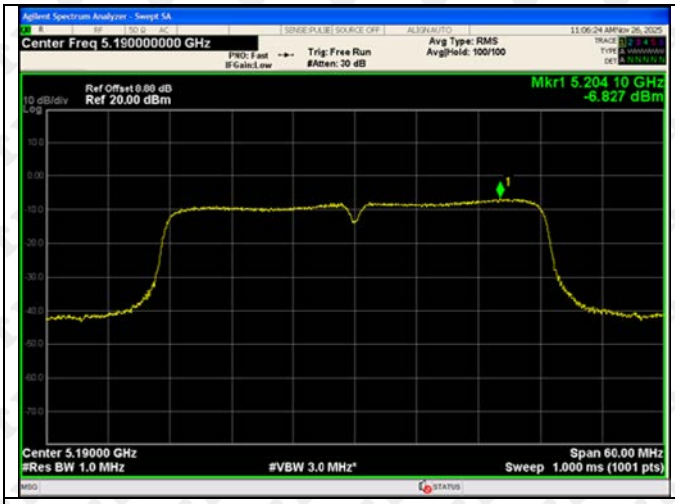
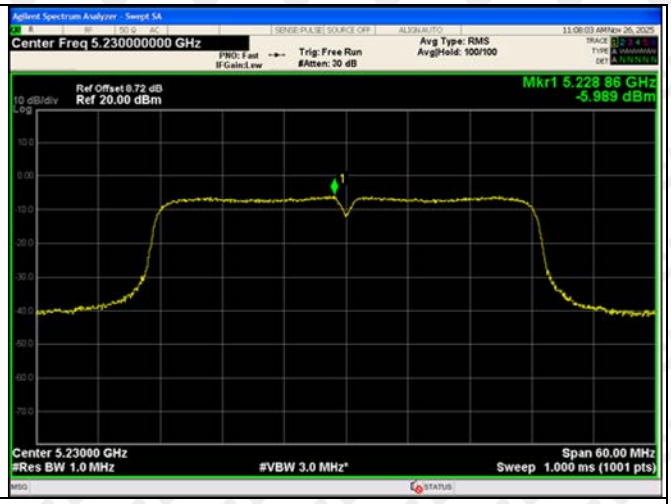
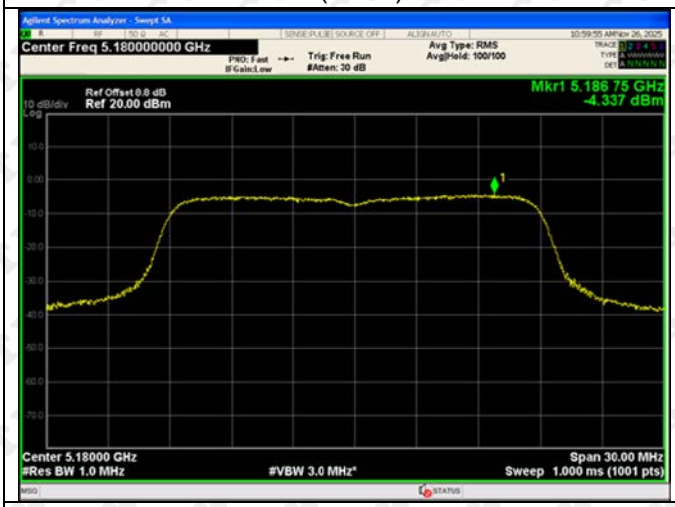


802.11ax(HE20)-5180



802.11ax(HE20)-5200



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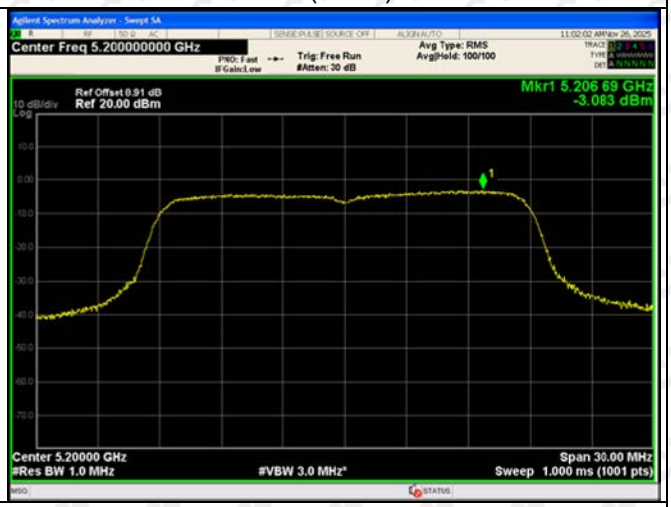
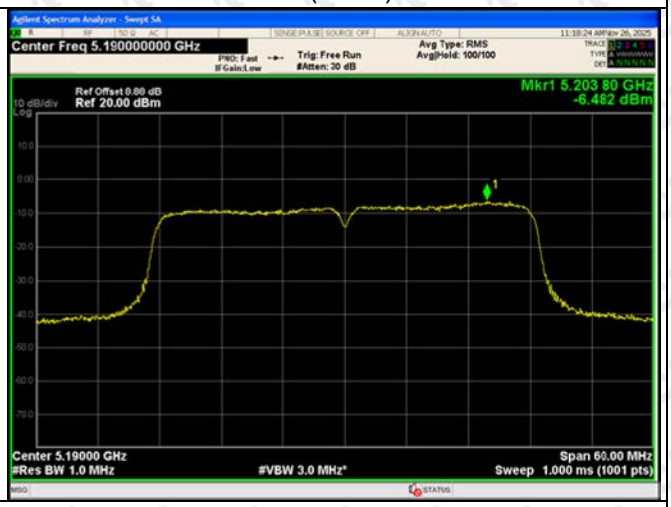
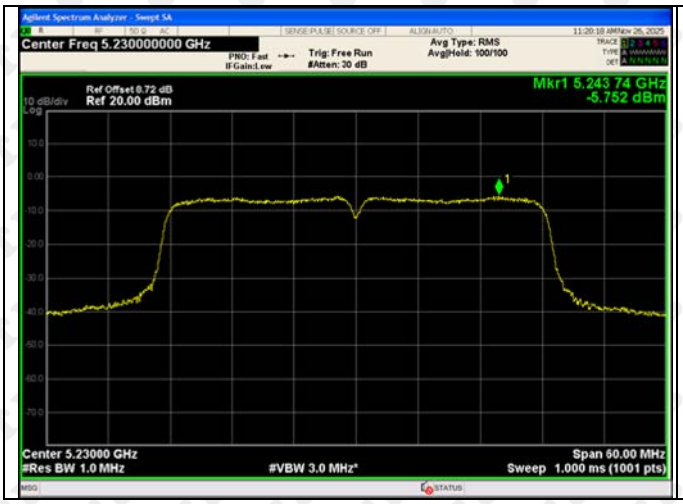


802.11ax(HE40)-5190

802.11ax(HE40)-5230



802.11ax(HE80)-5210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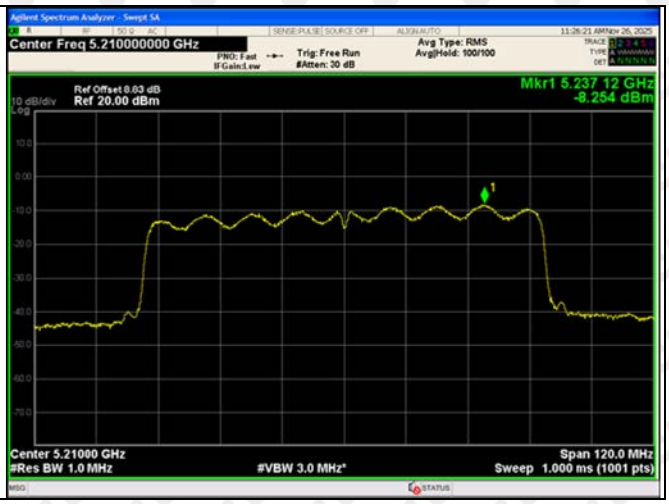
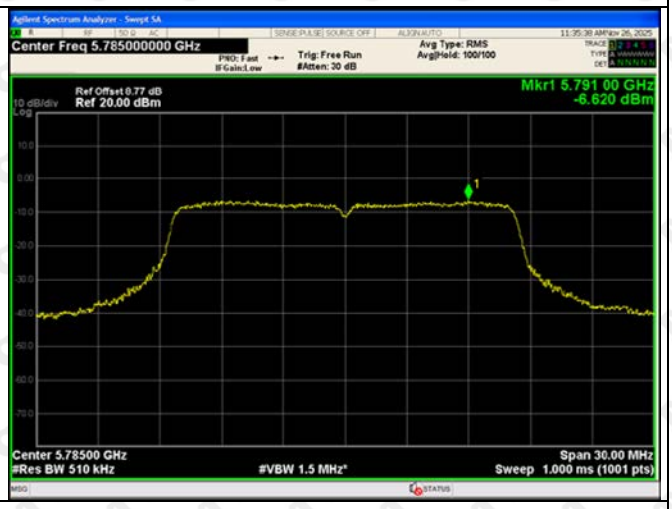
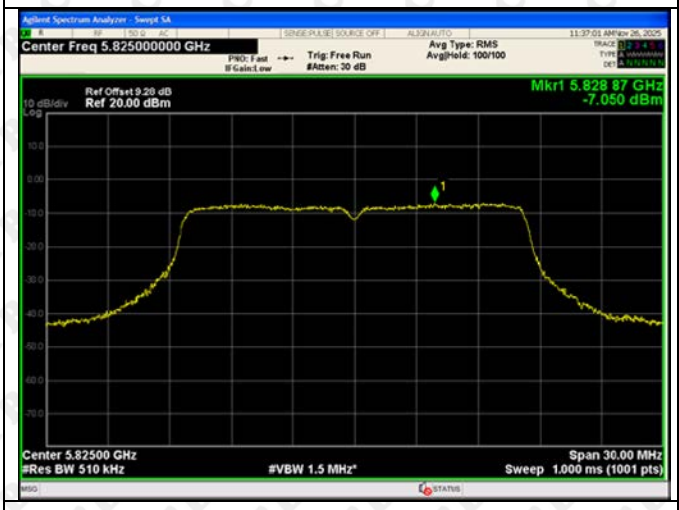
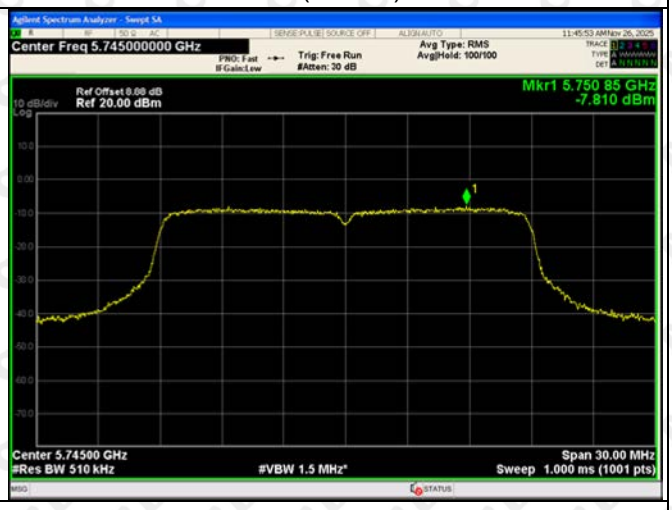
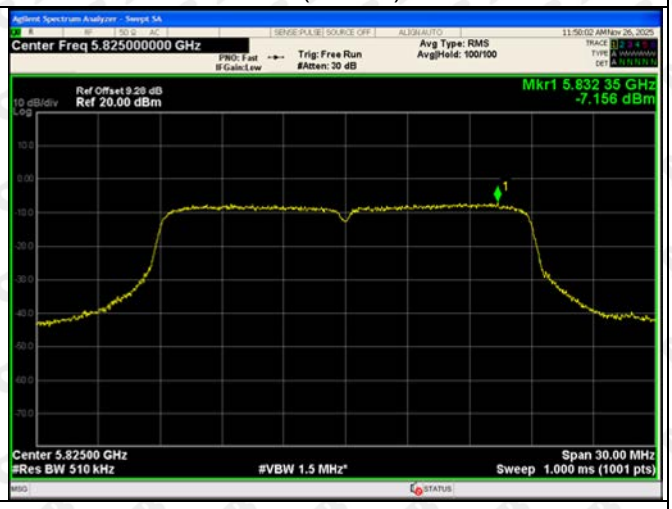
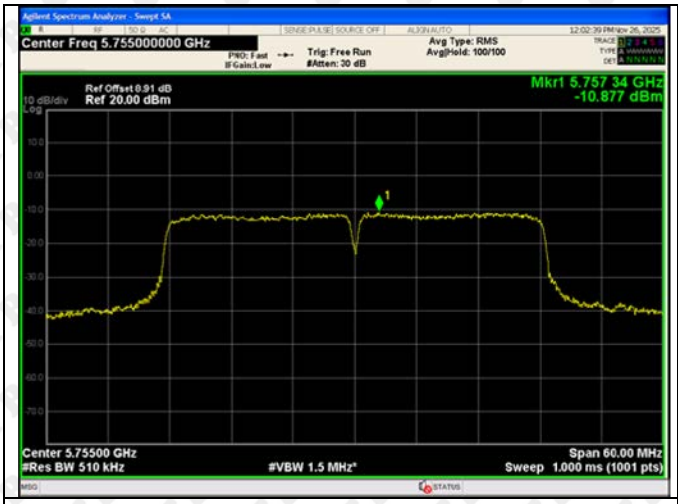
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 8.72 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.243 74 GHz
-5.752 dBm
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 60.00 MHz
Sweep 1.000 ms (1001 pts)

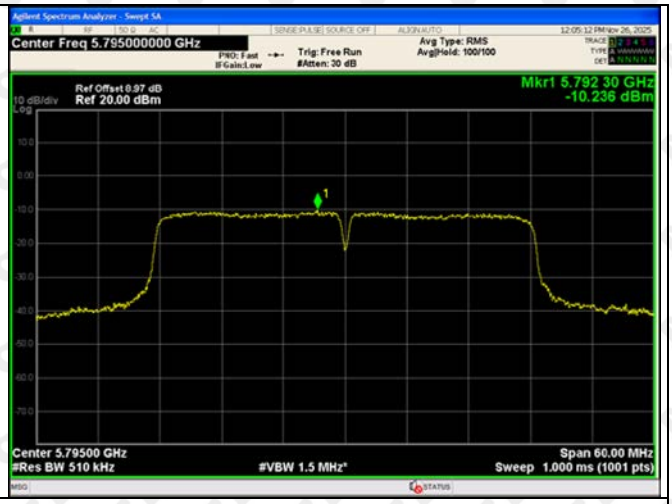

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 8.83 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.237 12 GHz
-8.254 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

5725-5850MHz

802.11a-5745	802.11a-5785
	
802.11a-5825	802.11ac(VHT20)-5745
	
802.11ac(VHT20)-5785	802.11ac(VHT20)-5825
	
802.11ac(VHT40)-5755	802.11ac(VHT40)-5795

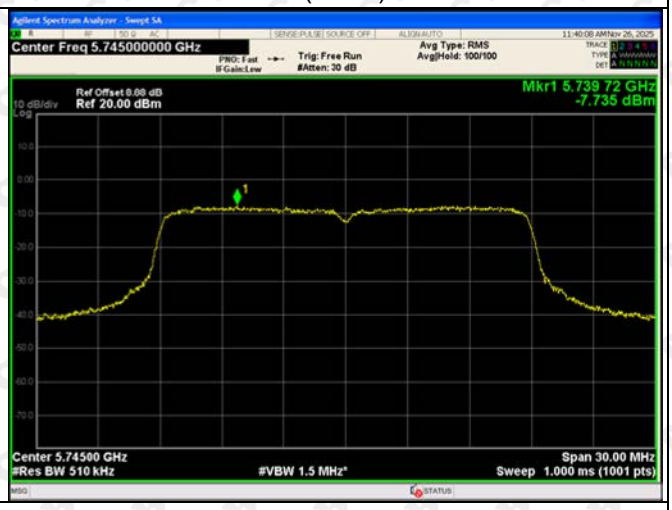


802.11ac(VHT80)-5775



802.11n(HT20)-5745

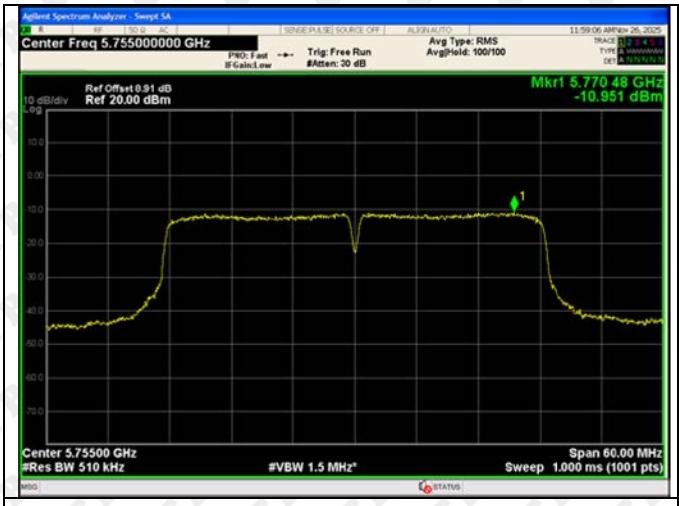
802.11n(HT20)-5785



802.11n(HT20)-5825

5802.11n(HT40)-5755

802.11n(HT40)-5795



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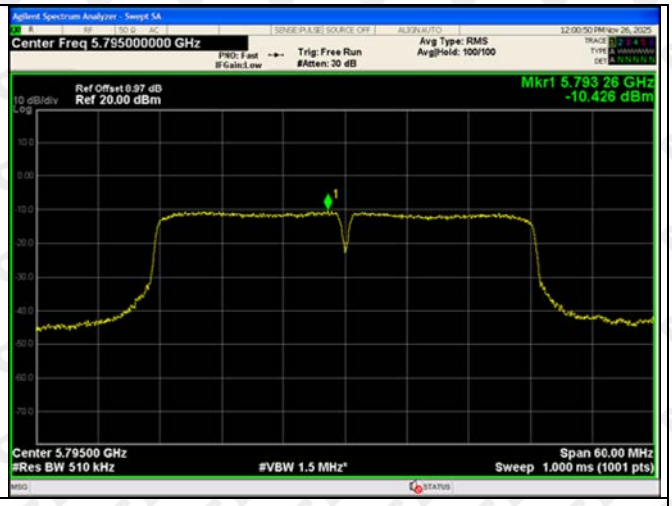

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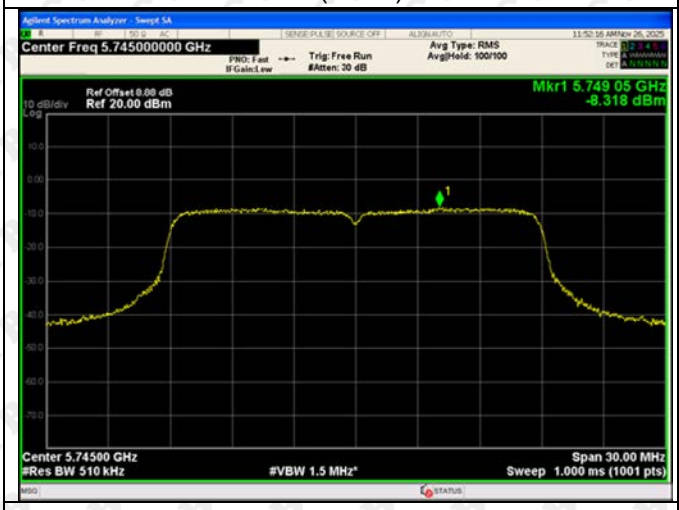

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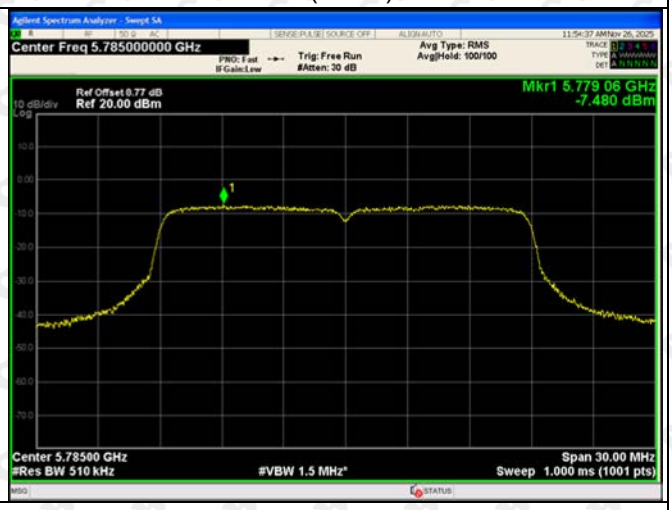
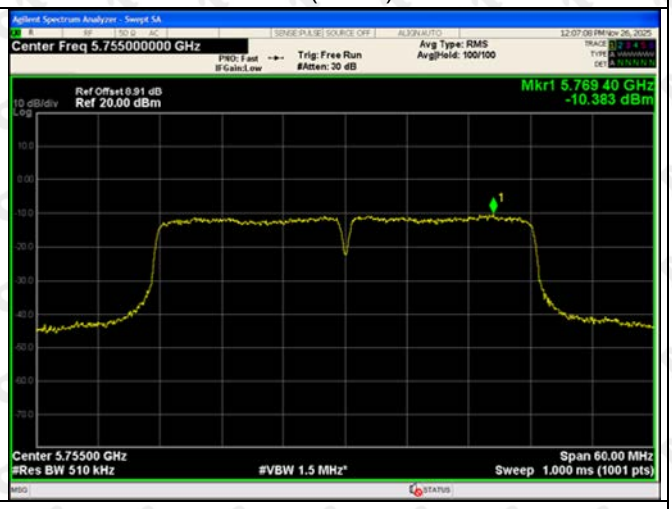
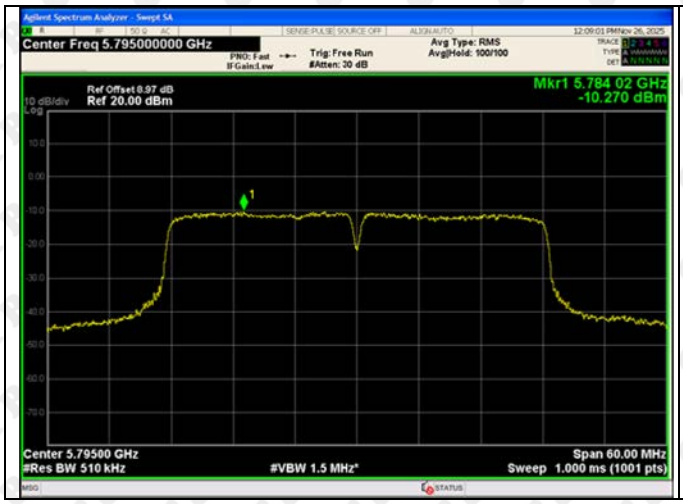


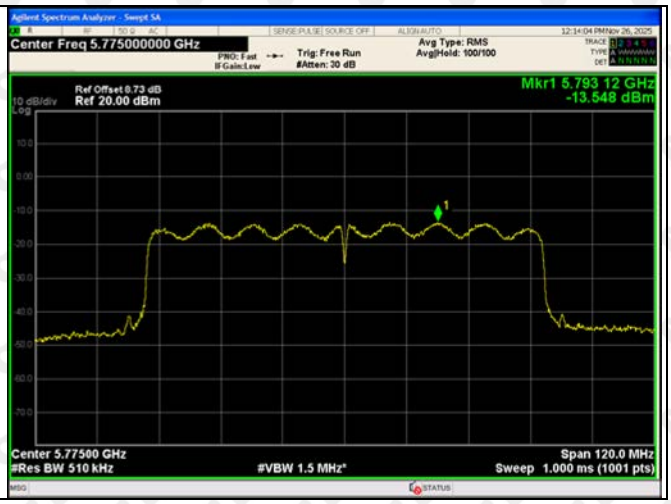
802.11ax(HE40)-5755

802.11ax(HE40)-5795



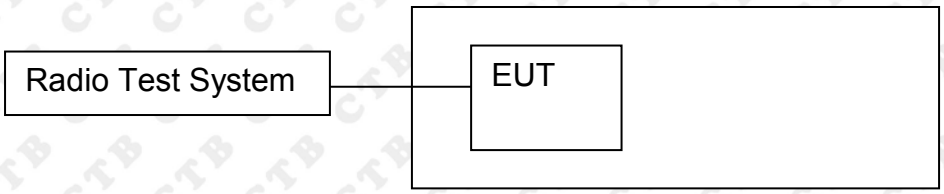
802.11ax(HE80)-5775


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.795000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold: 100/100
12:09:01 PM Nov 26, 2025
Ref Offset 8.97 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.784 02 GHz
-10.270 dBm
Center 5.79500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 60.00 MHz
Sweep 1.000 ms (1001 pts)


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold: 100/100
12:14:04 PM Nov 26, 2025
Ref Offset 8.73 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.793 12 GHz
-13.548 dBm
Center 5.77500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 120.0 MHz
Sweep 1.000 ms (1001 pts)

12. FREQUENCY STABILITY

12.1 Block Diagram Of Test Setup



12.2 Limit

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 user's manual.

12.3 Test procedure

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.

2. Set EUT as normal operation.

3. Turn the EUT on and couple its output to spectrum.

4. Turn the EUT off and set the chamber to the highest temperature specified.

5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.

6. Repeat step with the temperature chamber set to the lowest temperature.

12.4 Test Result

5150-5250MHz

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5180.0183	5180	0.0183	3.5295
		V max (V)	132	5180.0046	5180	0.0046	0.8911
		V min (V)	108	5180.0056	5180	0.0056	1.0861
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5180.0225	5180	0.0225	4.3488
		T (°C)	10	5180.0377	5180	0.0377	7.2715
		T (°C)	20	5180.0225	5180	0.0225	4.3396
		T (°C)	30	5180.0178	5180	0.0178	3.4410
		T (°C)	40	5180.0437	5180	0.0437	8.4408
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5200.0335	5200	0.0335	6.4331
		V max (V)	132	5200.0203	5200	0.0203	3.8951
		V min (V)	108	5200.0432	5200	0.0432	8.3008
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5200.0339	5200	0.0339	6.5176
		T (°C)	10	5200.0106	5200	0.0106	2.0381
		T (°C)	20	5200.0114	5200	0.0114	2.1995
		T (°C)	30	5200.0362	5200	0.0362	6.9644
		T (°C)	40	5200.0028	5200	0.0028	0.5380
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5240.0517	5240	0.0517	9.8707
		V max (V)	132	5240.0524	5240	0.0524	10.0035
		V min (V)	108	5240.0320	5240	0.0320	6.1075
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5240.0502	5240	0.0502	9.5775
		T (°C)	10	5240.0451	5240	0.0451	8.6000
		T (°C)	20	5240.0322	5240	0.0322	6.1403
		T (°C)	30	5240.0180	5240	0.0180	3.4293
		T (°C)	40	5240.0306	5240	0.0306	5.8384
Limits				±20ppm			
Result				Complies			

TX Frequency (5725-5850MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5745.0324	5745	0.0324	5.6442
		V max (V)	132	5745.0030	5745	0.0030	0.5215
		V min (V)	108	5745.0324	5745	0.0324	5.6442
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5745.0653	5745	0.0653	11.3732
		T (°C)	10	5745.0393	5745	0.0393	6.8409
		T (°C)	20	5745.0525	5745	0.0525	9.1377
		T (°C)	30	5745.0065	5745	0.0065	1.1247
		T (°C)	40	5745.0114	5745	0.0114	1.9912
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5785.0291	5785	0.0291	5.0304
		V max (V)	132	5785.0106	5785	0.0106	1.8401
		V min (V)	108	5785.0132	5785	0.0132	2.2842
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5785.0613	5785	0.0613	10.6048
		T (°C)	10	5785.0341	5785	0.0341	5.8959
		T (°C)	20	5785.0853	5785	0.0853	14.7481
		T (°C)	30	5785.0679	5785	0.0679	11.7444
		T (°C)	40	5785.0429	5785	0.0429	7.4152
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5825.0162	5825	0.0162	2.7885
		V max (V)	132	5825.0494	5825	0.0494	8.4782
		V min (V)	108	5825.0028	5825	0.0028	0.4869
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5825.0108	5825	0.0108	1.8555
		T (°C)	10	5825.0177	5825	0.0177	3.0461
		T (°C)	20	5825.0927	5825	0.0927	15.9098
		T (°C)	30	5825.0439	5825	0.0439	7.5407
		T (°C)	40	5825.0850	5825	0.0850	14.5941
Limits				±20ppm			
Result				Complies			

13. OPERATION IN THE ABSENCE OF INFORMATION TO THE TRANSMIT

13.1 Requirement

15.407(c) requirement:
The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signal ling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

13.2 Test Results

Operation in the absence of information to the transmit:

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of WLAN message transmitting from remote device and verify whether it shall reconnect. (manufacturer declare)

14. ANTENNA 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.

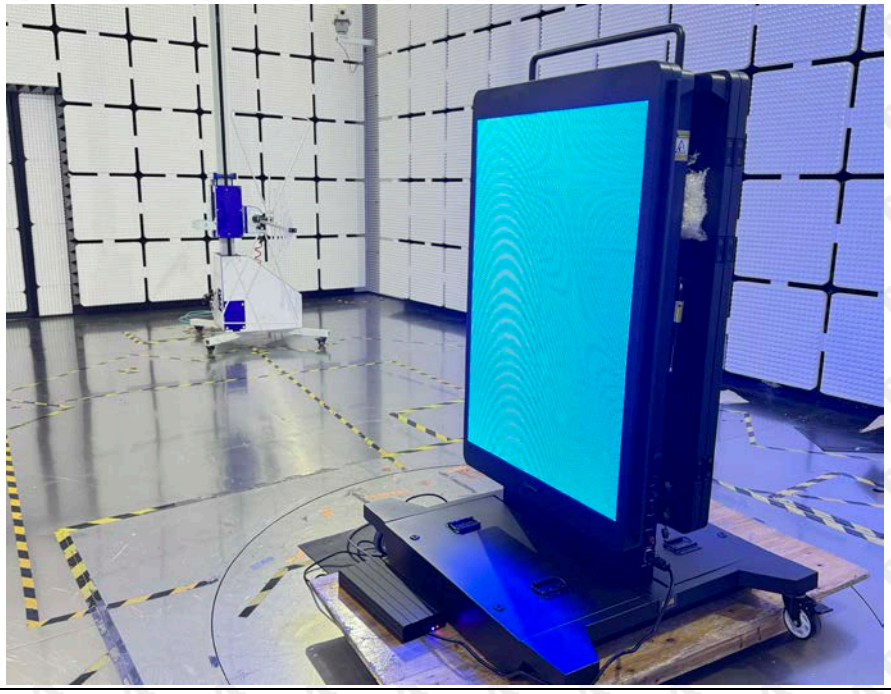
EUT Antenna:

The antenna is External antenna and no consideration of replacement. The best case gain of the antenna 5.2G is -2.07dBi, 5.8G is 0.89dBi.

15. EUT TEST SETUP PHOTOGRAPHS

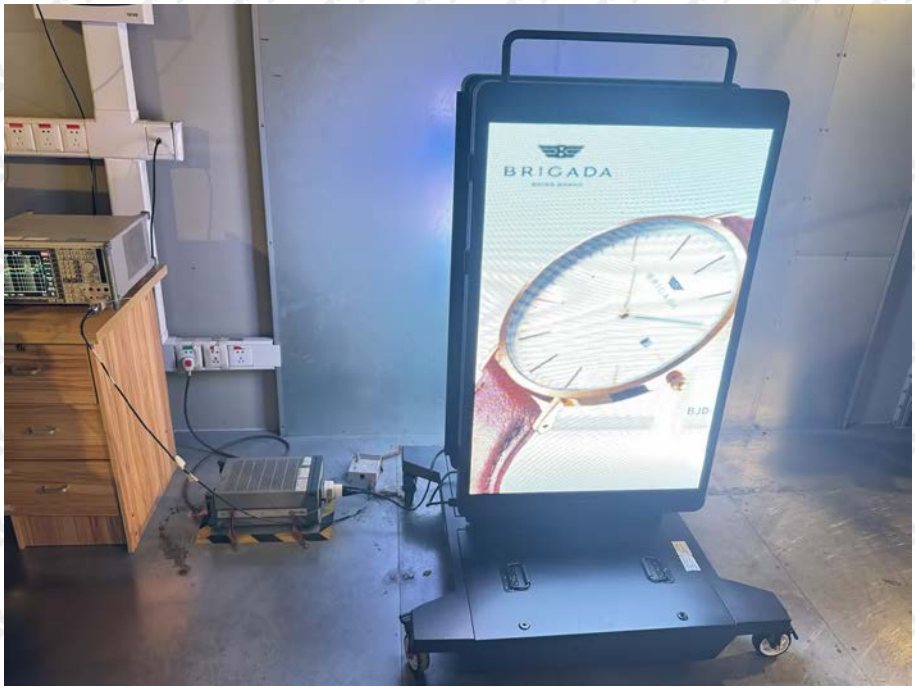
Radiated Emission

Below 1G



Above 1G

Conducted emissions



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