



5260-5320MHz
ANT1





802.11ac(VH20)-5260



802.11ac(VH20)-5280



802.11ac(VH20)-5320



802.11ac(VH40)-5270



802.11ac(VH40)-5310



802.11ac(VH80)-5290



ANT2

802.11a-5260



802.11a-5280



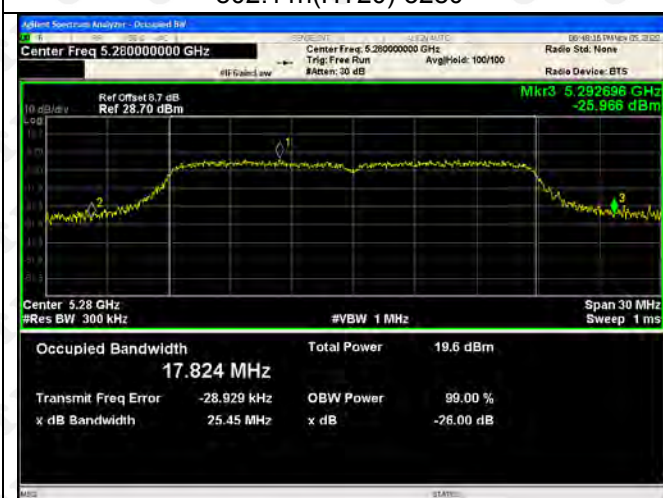
802.11a-5320



802.11n(HT20)-5260



802.11n(HT20)-5280



802.11n(HT20)-5320



802.11n(HT40)-5270

802.11n(HT40)-5310



802.11ac(VH20)-5260



802.11ac(VH20)-5280



802.11ac(VH20)-5320



802.11ac(VH40)-5270



802.11ac(VH40)-5310



802.11ac(VH80)-5290



5500-5700MHz
ANT1

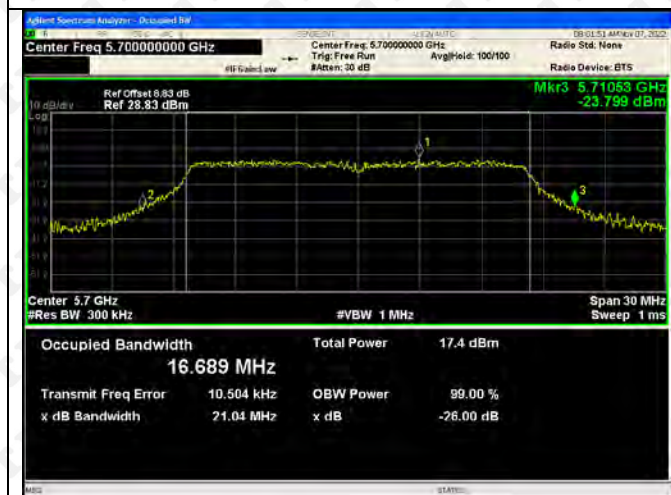
802.11a-5500



802.11a-5580



802.11a-5700



802.11n(HT20)-5500



802.11n(HT20)-5580



802.11n(HT20)-5700



802.11n(HT40)-5510

802.11n(HT40)-5670

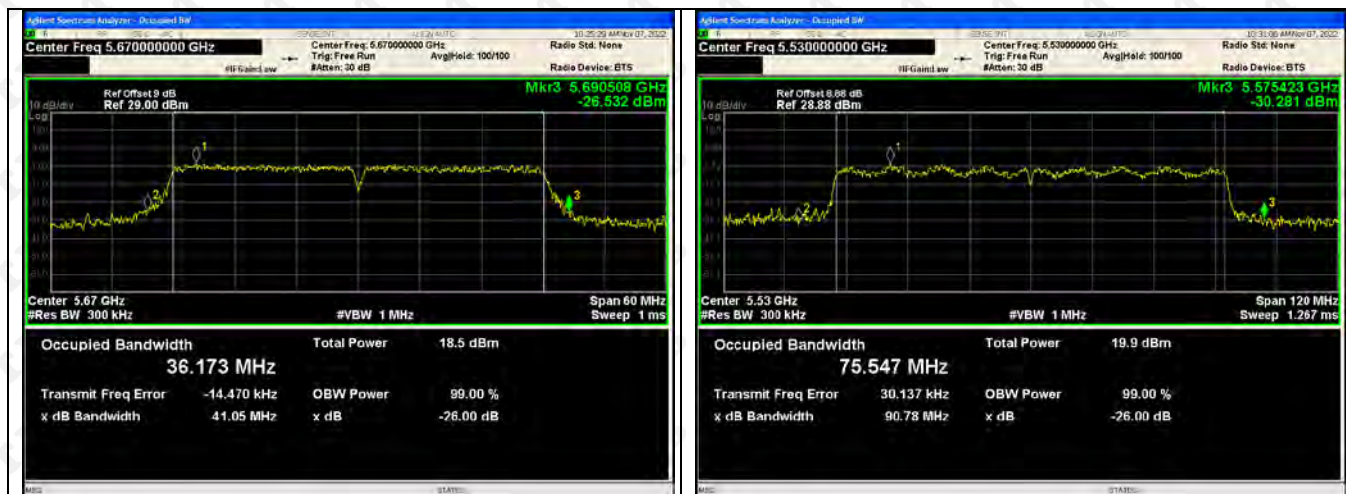




ANT2







5745-5825MHz
ANT1





802.11ac(VH20)-5745



802.11ac(VH20)-5785



802.11ac(VH20)-5825



802.11ac(VH40)-5755



802.11ac(VH40)-5795

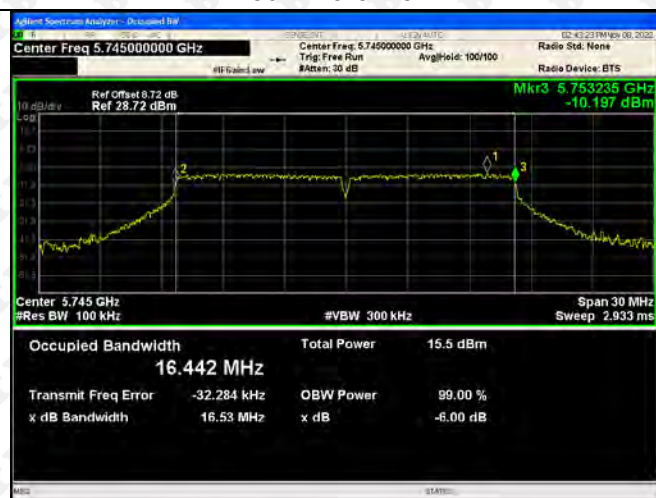


802.11ac(VH80)-5775



ANT2

802.11a-5745



802.11a-5785



802.11a-5825



802.11n(HT20)-5745



802.11n(HT20)-5785



802.11n(HT20)-5825



802.11n(HT40)-5755



802.11n(HT40)-5795





802.11ac(VH20)-5745



802.11ac(VH20)-5785



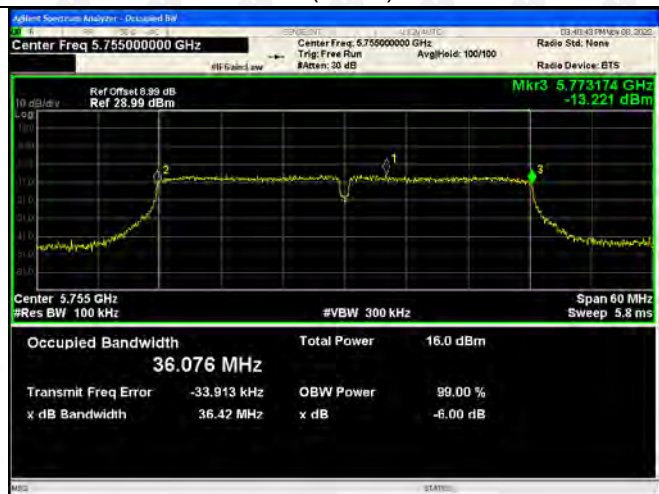
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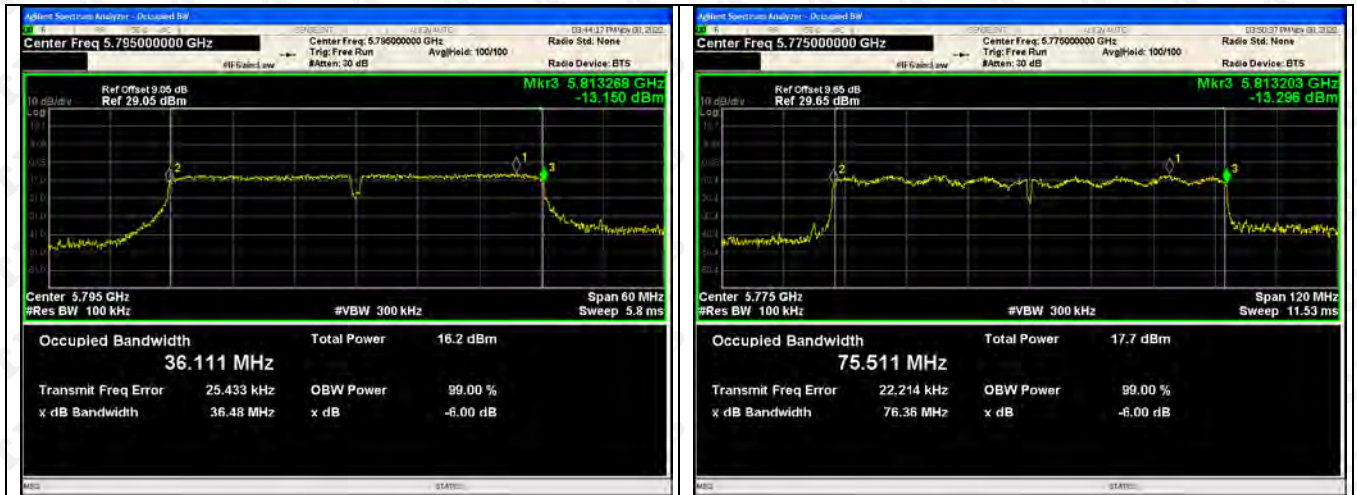
802.11ac(VH40)-5755



802.11ac(VH40)-5795

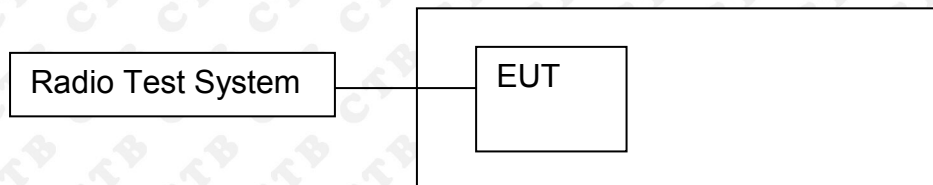


802.11ac(VH80)-5775



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 $11 \text{ dBm} + 10 \log B$, 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 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 $\text{RBW} \geq 1/T$, where T is defined in II.B.I.a).

b) Set $\text{VBW} \geq 3 \text{ RBW}$.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log (500 \text{ kHz}/\text{RBW})$ 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 $10 \log (1\text{MHz}/\text{RBW})$ to the measured result, whereas RBW ($< 1 \text{ MHz}$) 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

5180-5240MHz

ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5180	6.619	6.898	/	11	Pass
	5200	6.987	6.516	/	11	Pass
	5240	6.848	6.976	/	11	Pass
802.11n(HT20)	5180	6.353	6.219	9.771	11	Pass
	5200	6.56	6.704	9.768	11	Pass
	5240	7.037	7.217	9.923	11	Pass
802.11n(HT40)	5190	4.545	3.964	9.297	11	Pass
	5230	4.297	4.745	9.643	11	Pass
802.11ac(VH20)	5210	2.603	2.689	10.138	11	Pass
	5180	6.445	7.019	7.275	11	Pass
	5200	6.946	6.64	7.537	11	Pass
802.11ac(VH40)	5240	7.166	6.88	5.657	11	Pass
	5190	3.964	4.111	9.752	11	Pass
802.11ac(VH80)	5230	4.357	4.314	9.806	11	Pass

5260-5320MHz

ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5260	7.111	7.265	/	10.86	Pass
	5280	7.037	6.68	/	10.86	Pass
	5320	7.453	6.727	/	10.86	Pass
802.11n(HT20)	5260	6.762	6.975	9.880	10.86	Pass
	5280	6.663	6.58	9.632	10.86	Pass
	5320	6.377	6.339	9.368	10.86	Pass
802.11n(HT40)	5270	3.735	4.157	6.961	10.86	Pass
	5310	4.298	4.248	7.283	10.86	Pass
802.11ac(VH20)	5260	2.775	2.691	5.744	10.86	Pass
	5280	6.692	6.705	9.709	10.86	Pass
	5320	6.735	6.71	9.733	10.86	Pass
802.11ac(VH40)	5270	6.517	6.688	9.614	10.86	Pass
	5310	6.418	3.856	10.199	10.86	Pass
802.11ac(VH80)	5290	4.384	4.672	9.872	10.86	Pass

5500-5700MHz

ANT1+ANT2

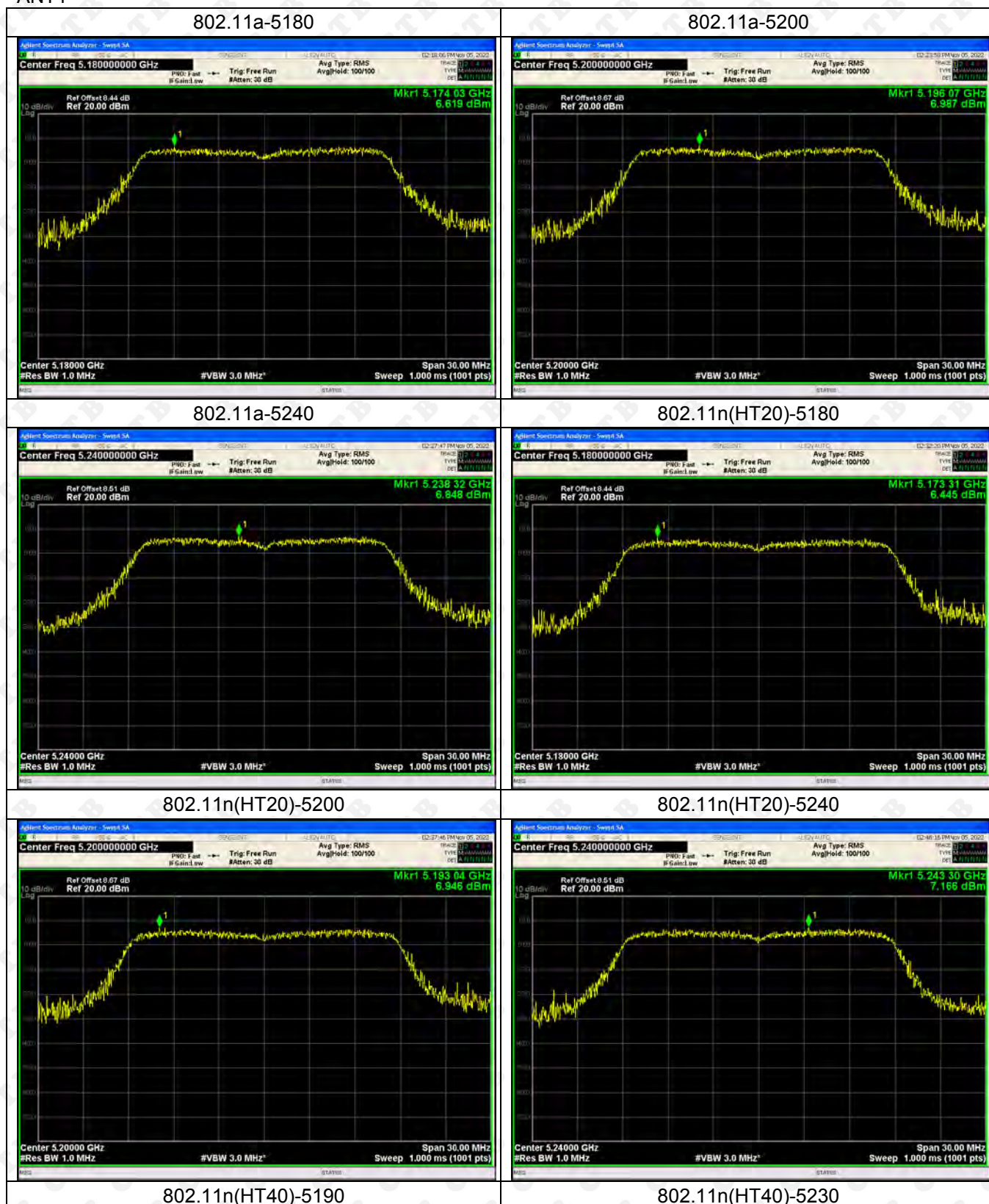
Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5500	6.548	7.13	/	10.63	Pass
	5580	7.351	7.374	/	10.63	Pass
	5700	6.47	6.971	/	10.63	Pass
802.11n(HT20)	5500	6.795	6.834	9.825	10.63	Pass
	5580	6.694	6.366	9.543	10.63	Pass
	5700	5.958	6.005	8.992	10.63	Pass
802.11n(HT40)	5510	4.619	4.757	7.699	10.63	Pass
	5670	4.354	4.062	7.221	10.63	Pass
802.11ac(VH20)	5530	1.61	3.172	5.471	10.63	Pass
	5500	7.385	7.233	10.320	10.63	Pass
	5580	6.662	6.64	9.661	10.63	Pass
802.11ac(VH40)	5700	5.956	6.192	9.086	10.63	Pass
	5510	4.406	3.864	9.825	10.63	Pass
802.11ac(VH80)	5670	4.078	3.445	9.543	10.63	Pass

5745-5825MHz

ANT1+ANT2

Test mode	Test Channel (MHz)	PSD [dBm/MHz] ANT 1	PSD [dBm/MHz] ANT 2	PSD [dBm/MHz] Total	Limit (dBm)	Result
802.11a	5745	4.088	1.436	/	29.85	Pass
	5785	3.827	1.629	/	29.85	Pass
	5825	4.742	3.954	/	29.85	Pass
802.11n(HT20)	5745	3.926	2.788	6.404	29.85	Pass
	5785	2.282	1.807	5.061	29.85	Pass
	5825	3.562	3.594	6.588	29.85	Pass
802.11n(HT40)	5755	-1.422	-1.165	1.719	29.85	Pass
	5795	-1.212	-0.272	2.294	29.85	Pass
802.11ac(VH20)	5745	-2.801	-1.273	1.040	29.85	Pass
	5785	3.355	1.829	5.669	29.85	Pass
	5825	3.645	2.139	5.967	29.85	Pass
802.11ac(VH40)	5755	4.847	3.897	7.408	29.85	Pass
	5795	-1.081	-0.19	6.404	29.85	Pass
802.11ac(VH80)	5775	-1.355	-1.429	5.061	29.85	Pass

5180-5240MHz
ANT1





802.11ac(VH20)-5180



802.11ac(VH20)-5200



802.11ac(VH20)-5240



802.11ac(VH40)-5190



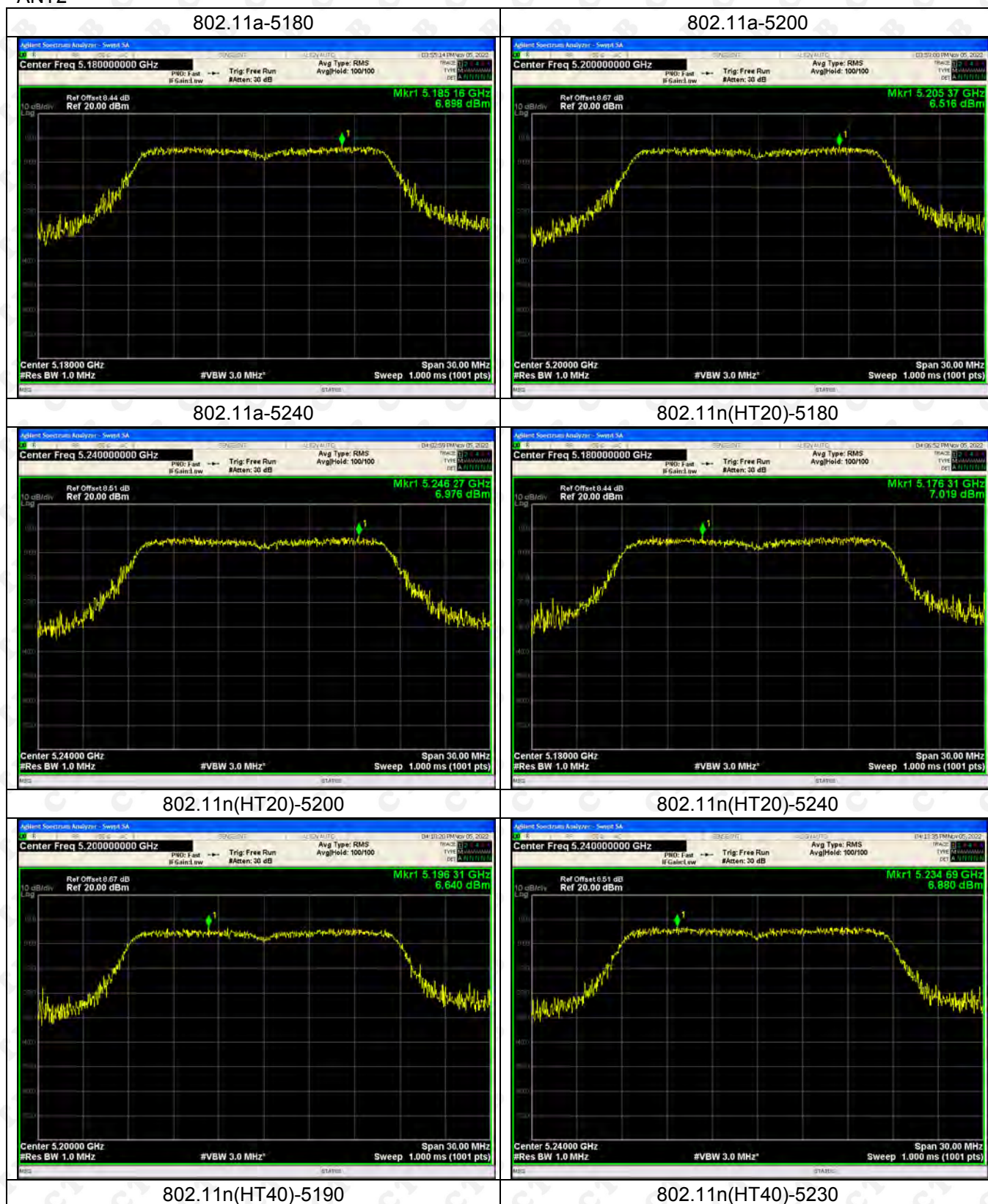
802.11ac(VH40)-5230



802.11ac(VH80)-5210



ANT2





802.11ac(VH20)-5180



802.11ac(VH20)-5200



802.11ac(VH20)-5240



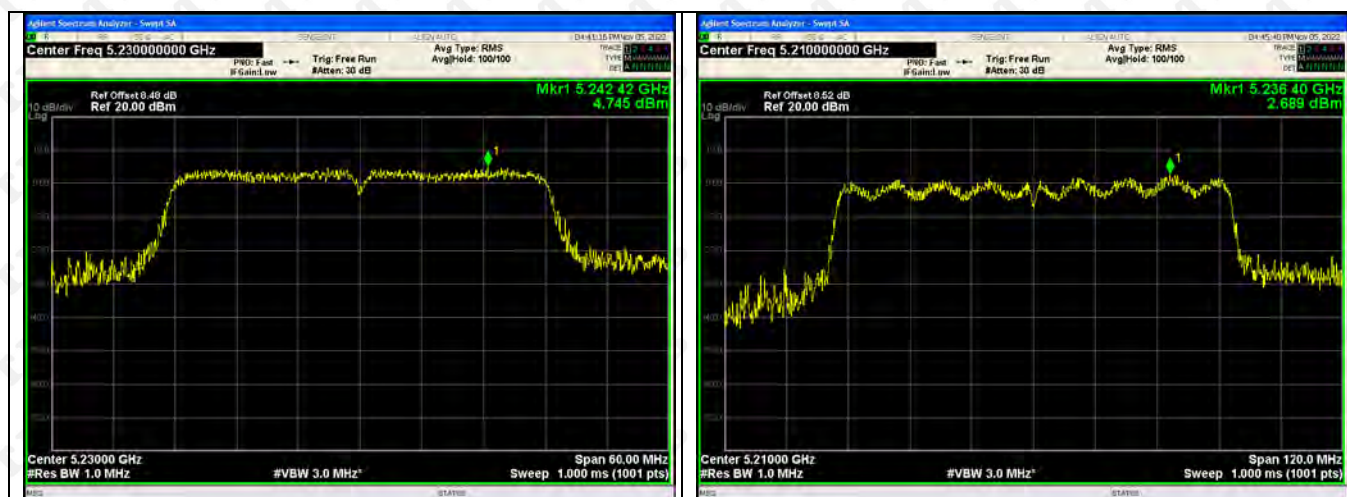
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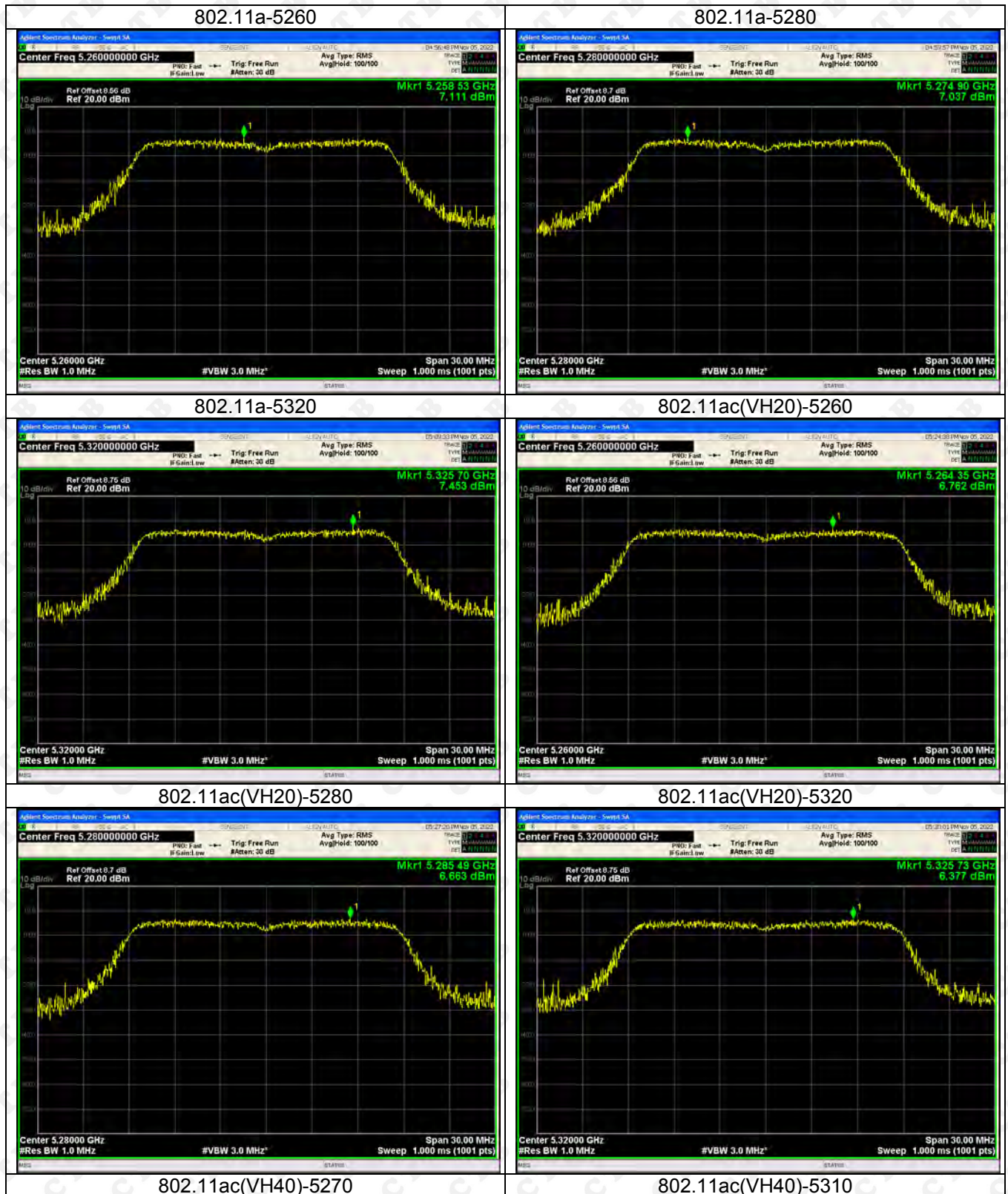
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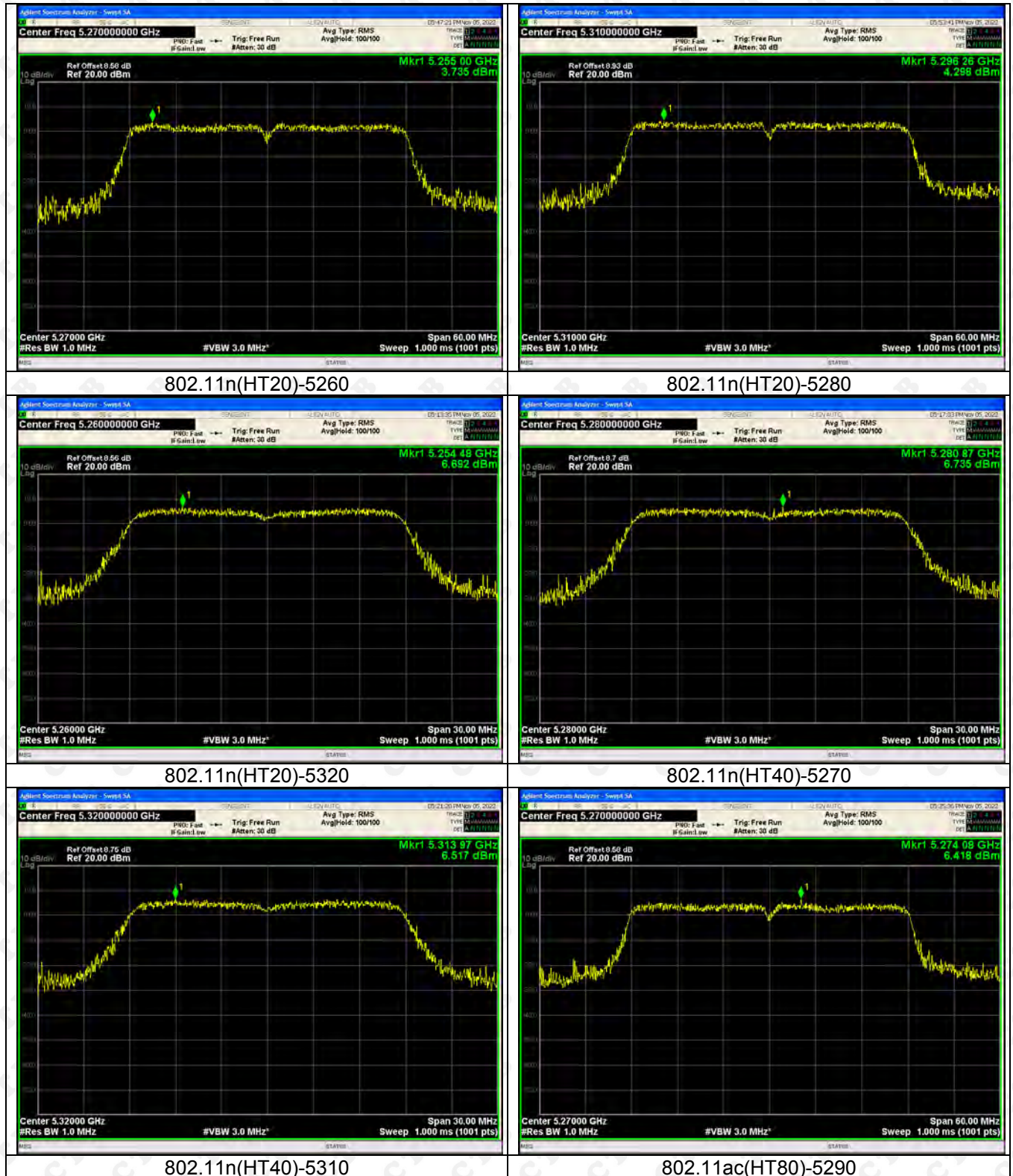


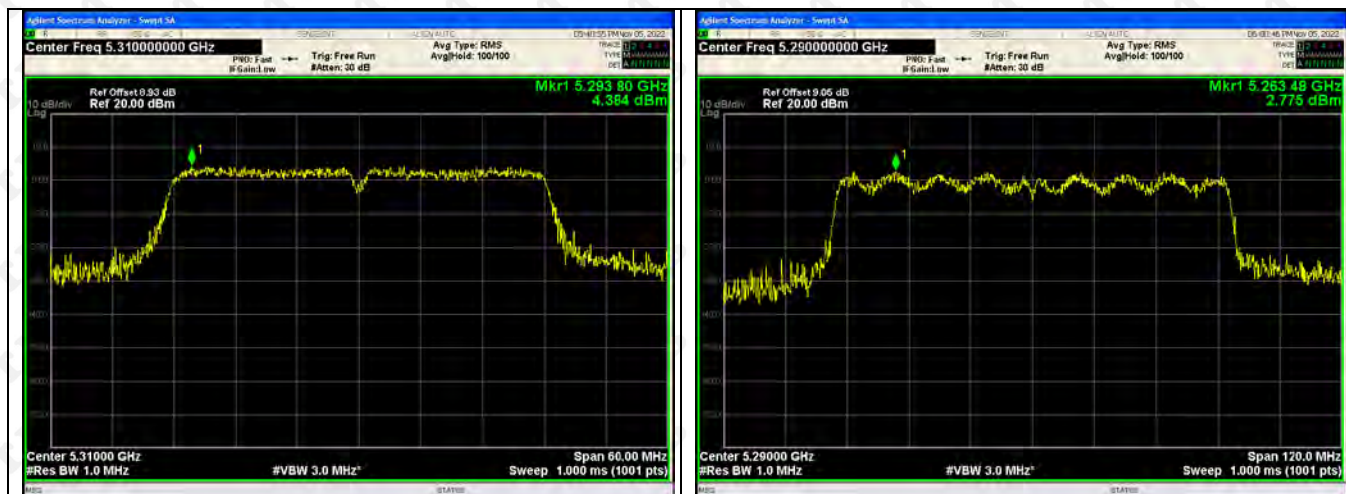
802.11ac(VH80)-5210



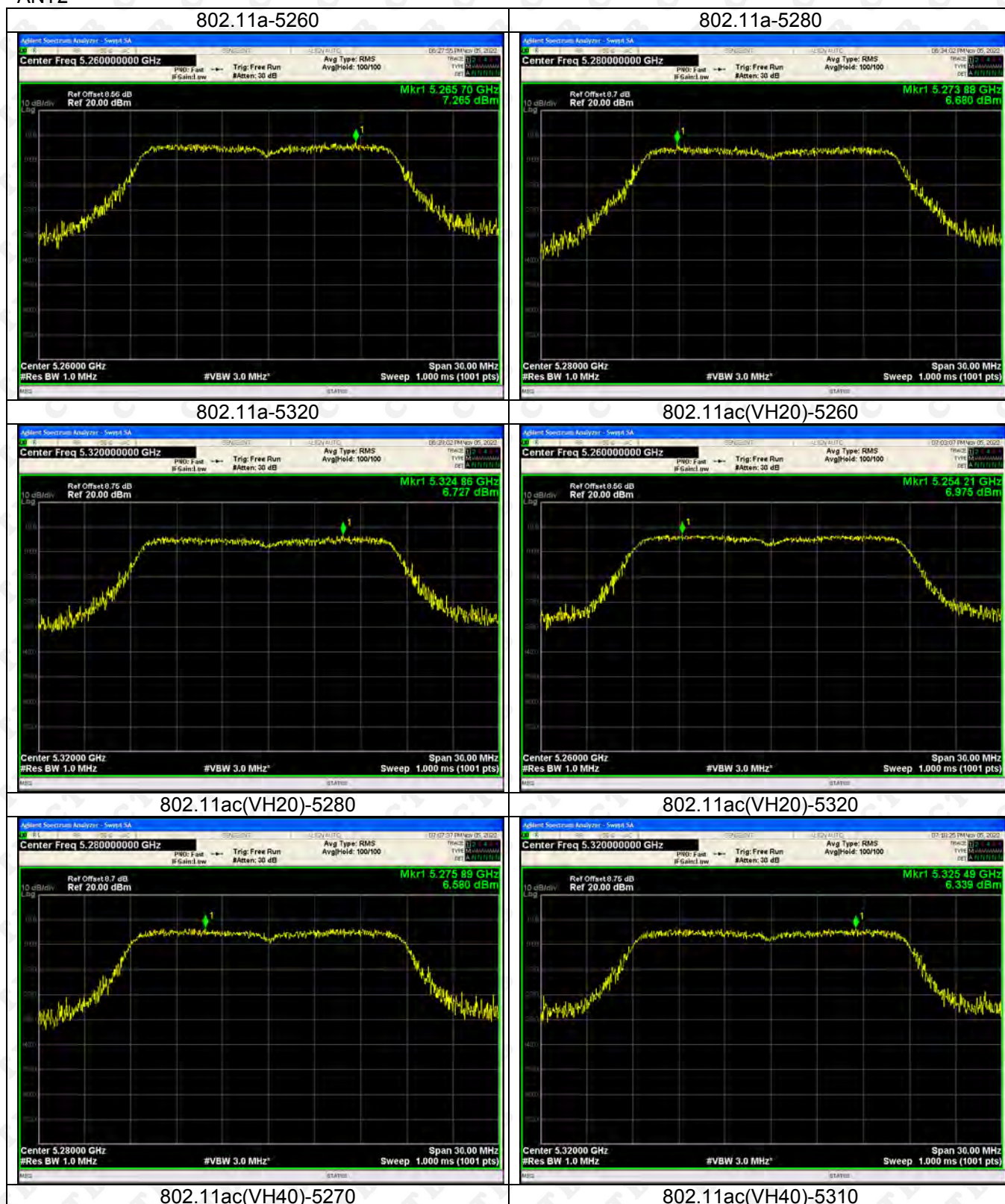
5260-5320MHz
ANT1







ANT2





802.11n(HT20)-5260



802.11n(HT20)-5280



802.11n(HT20)-5320



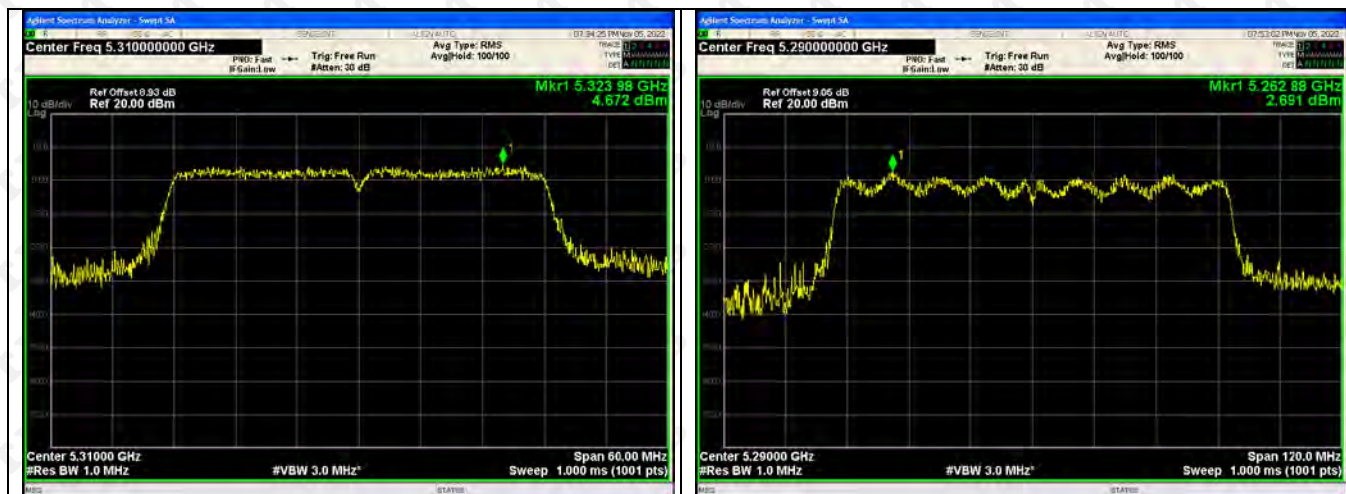
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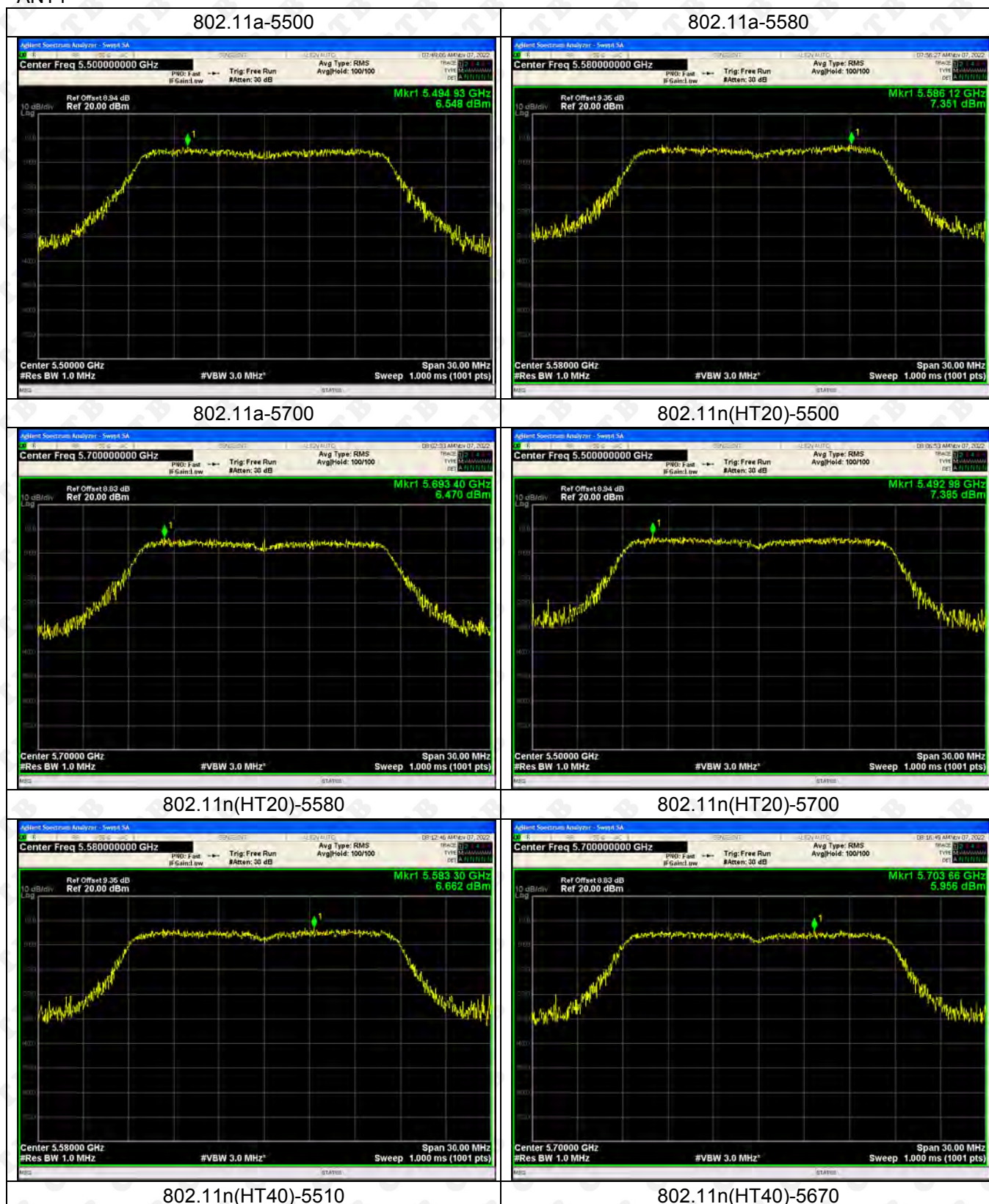
802.11n(HT40)-5310



802.11ac(HT80)-5290



5500-5700MHz
ANT1





802.11ac(VH20)-5500



802.11ac(VH20)-5580



802.11ac(VH20)-5700



802.11ac(VH40)-5510



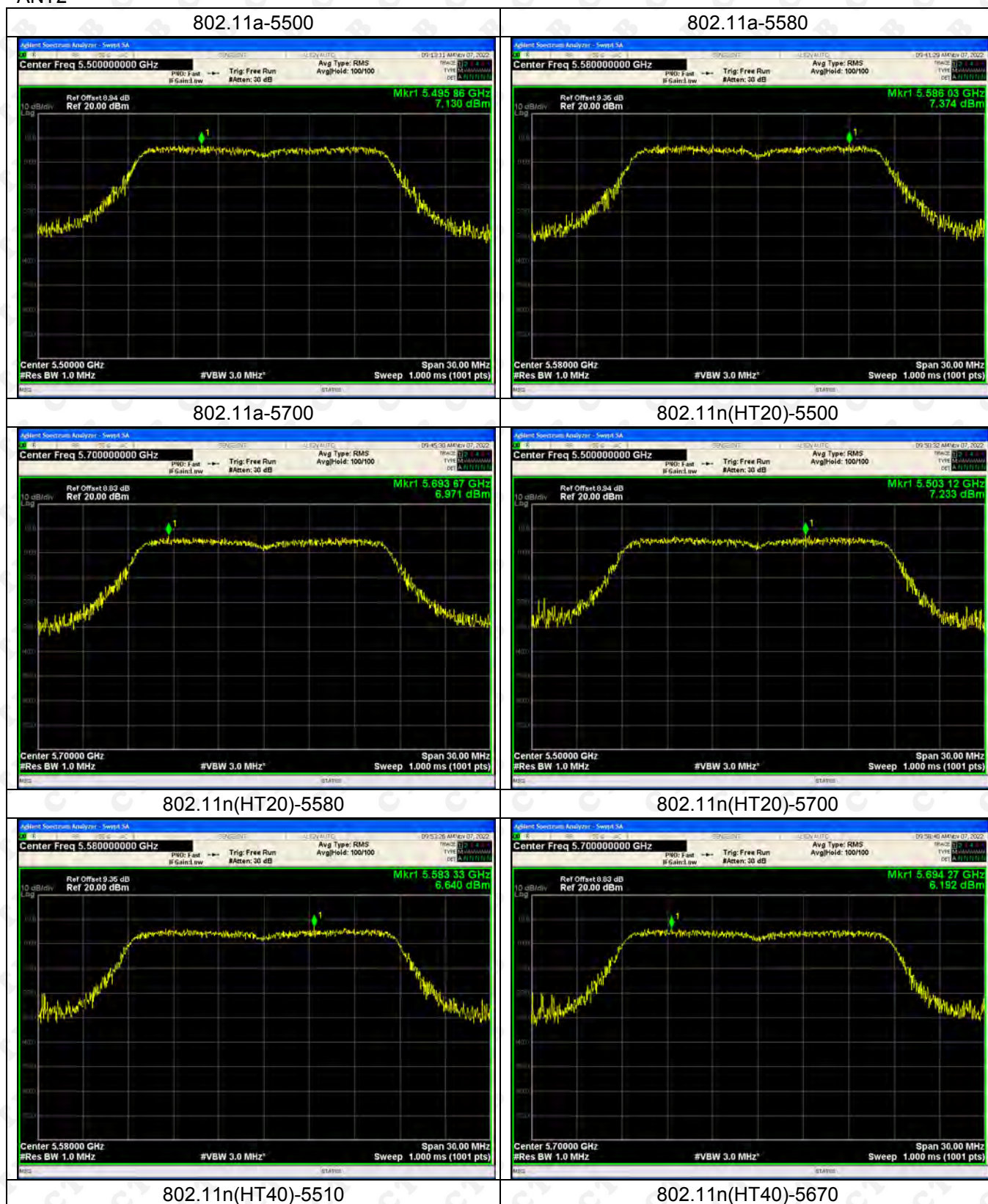
802.11ac(VH40)-5670



802.11ac(VH80)-5530



ANT2





802.11ac(VH20)-5500



802.11ac(VH20)-5580



802.11ac(VH20)-5700



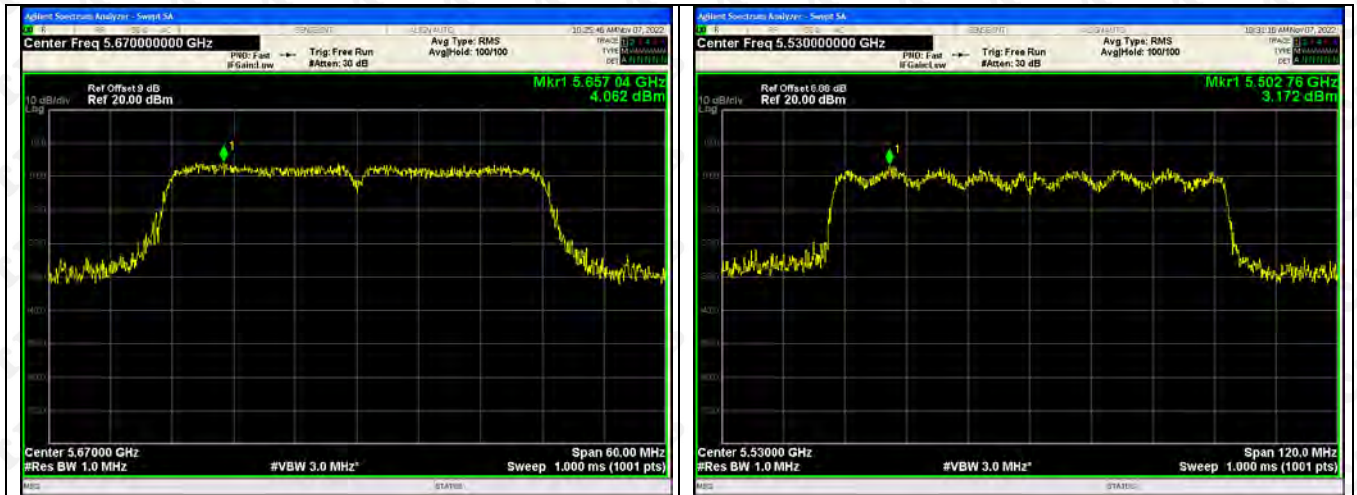
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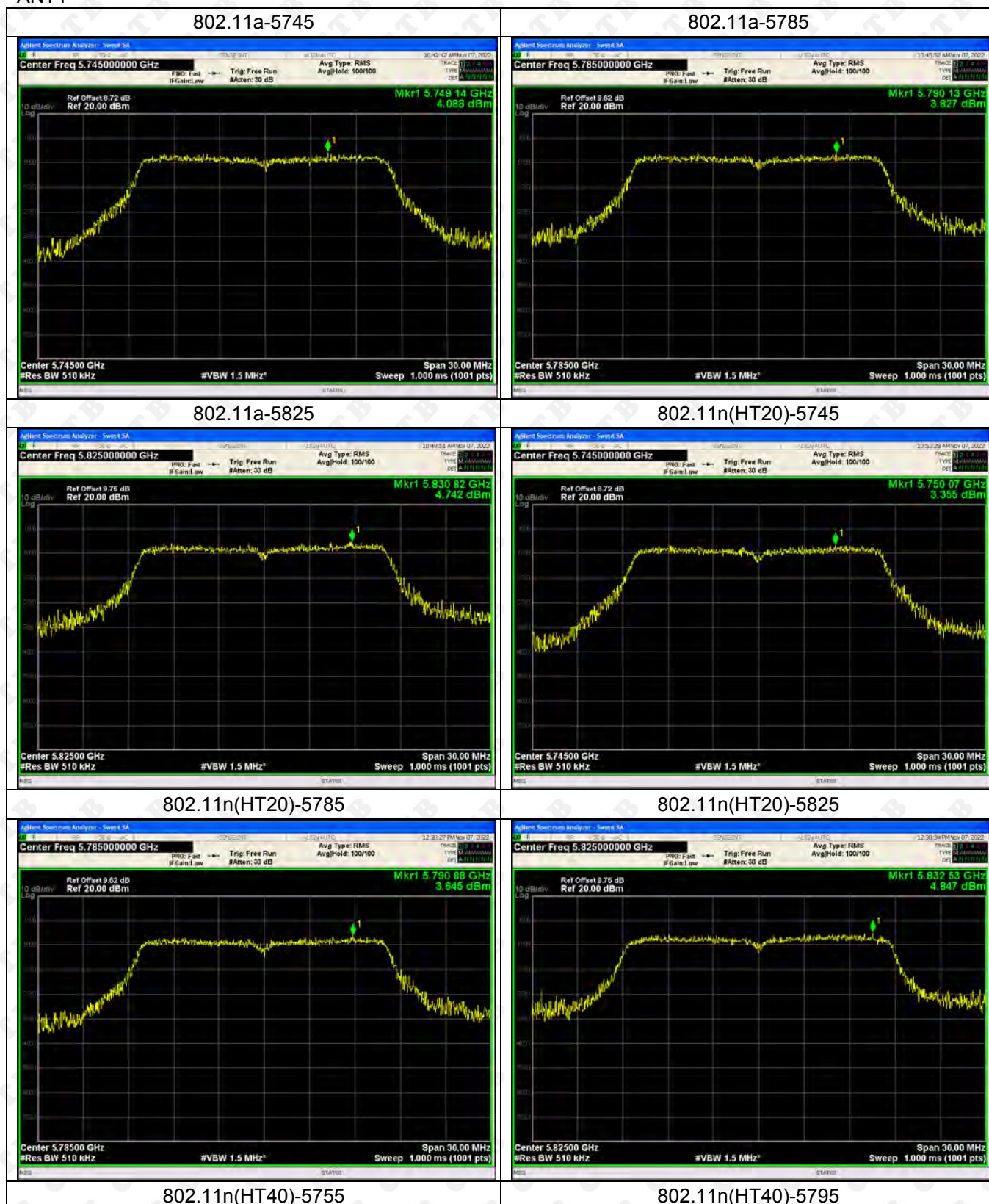
802.11ac(VH40)-5670



802.11ac(VH80)-5530



5745-5825MHz
ANT1





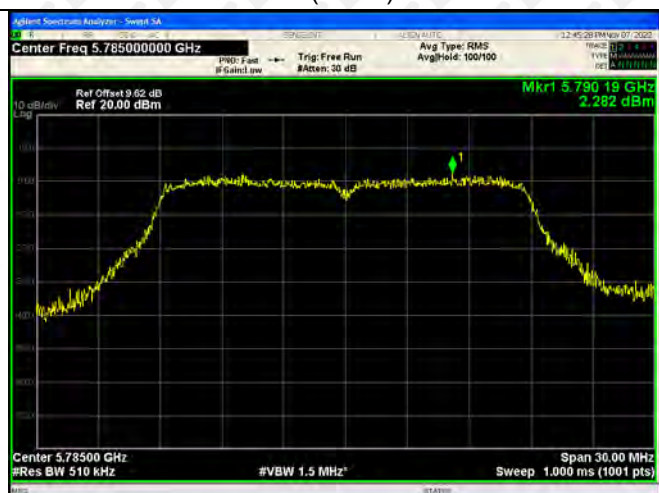
802.11ac(VH20)-5745



802.11ac(VH20)-5785



802.11ac(VH20)-5825



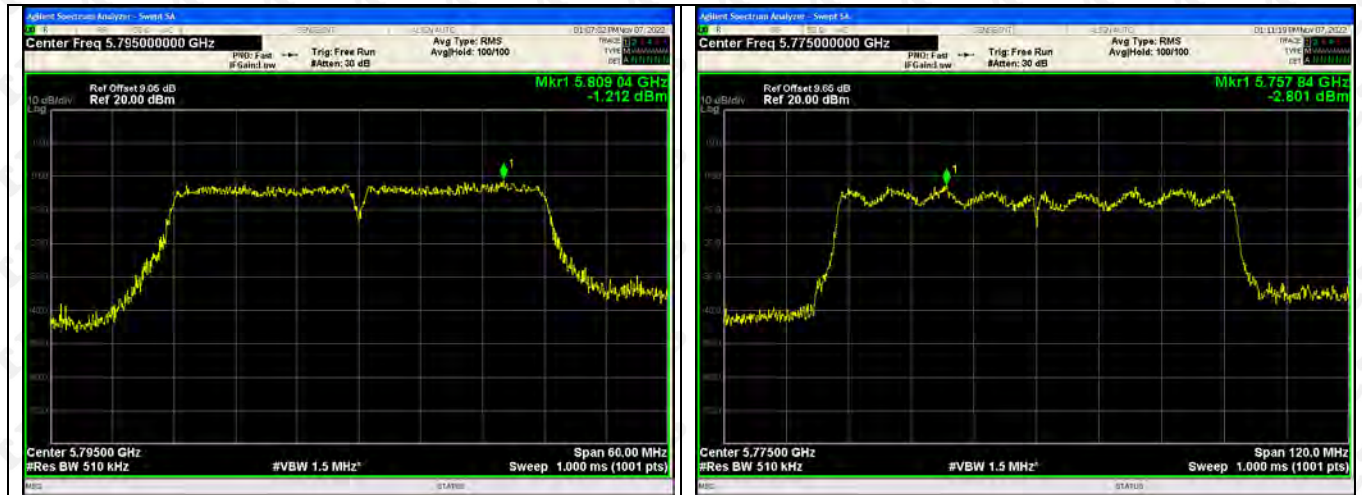
802.11ac(VH40)-5755



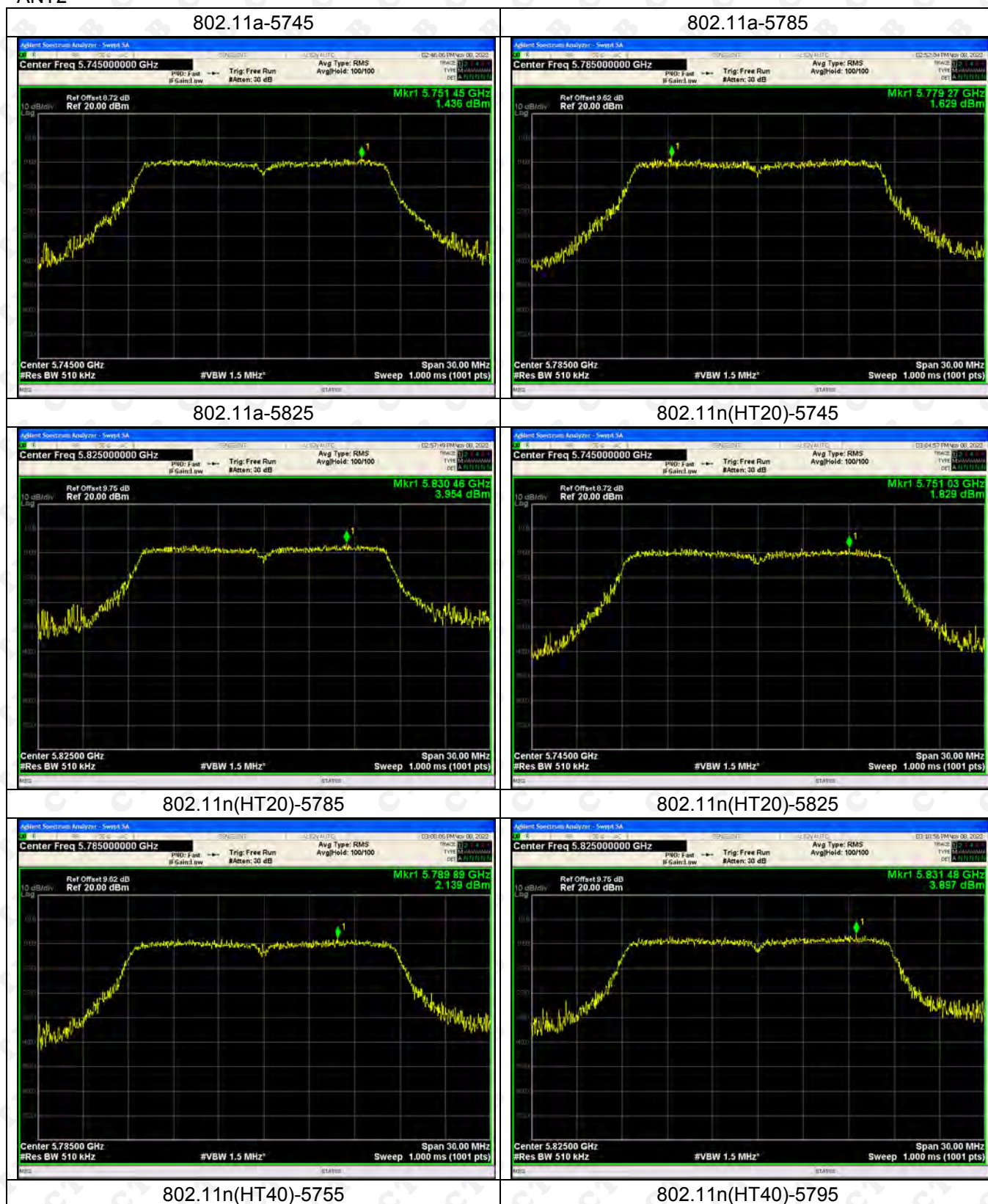
802.11ac(VH40)-5795



802.11ac(VH80)-5775



ANT2





802.11ac(VH20)-5745



802.11ac(VH20)-5785



802.11ac(VH20)-5825



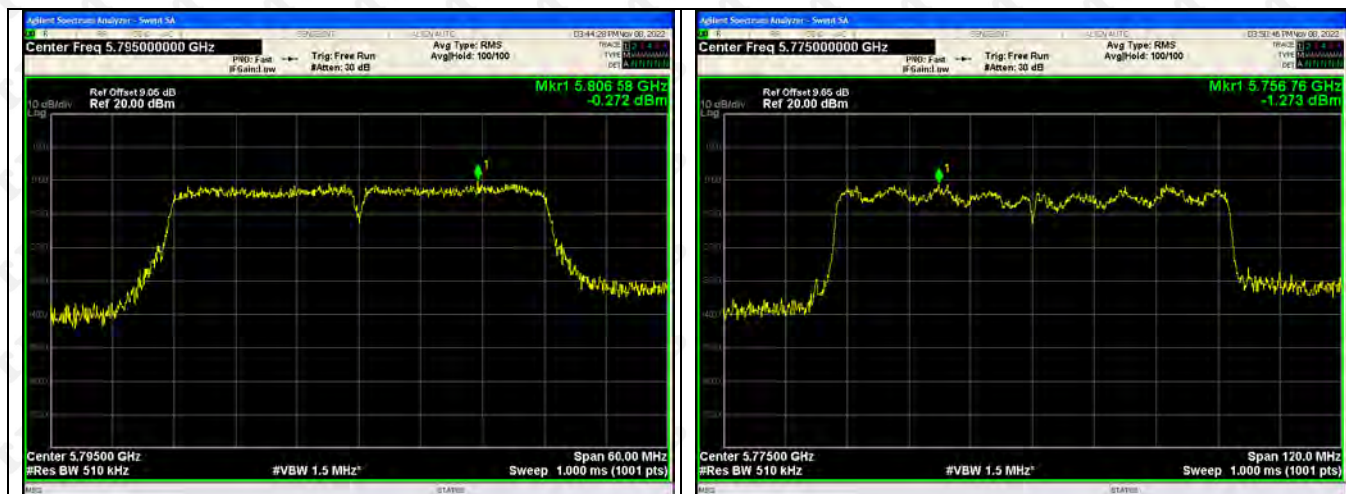
802.11ac(VH40)-5755



802.11ac(VH40)-5795

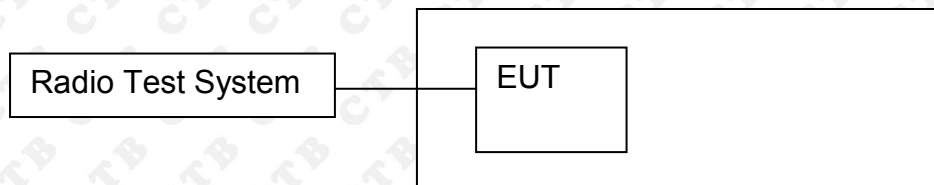


802.11ac(VH80)-5775



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

TX Frequency (5150-5250MHz)

ANT1

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	5180.0924	5180	0.0924	17.8450
		V max (V)	132	5180.1045	5180	0.1045	20.1722
		V min (V)	108	5180.0734	5180	0.0734	14.1774
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	5180.0222	5180	0.0222	4.2922
		T (°C)	10	5180.0398	5180	0.0398	7.6741
		T (°C)	20	5180.0419	5180	0.0419	8.0975
		T (°C)	30	5180.0310	5180	0.0310	5.9838
		T (°C)	40	5180.0340	5180	0.0340	6.5665
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	5200.0515	5200	0.0515	9.9098
		V max (V)	132	5200.0420	5200	0.0420	8.0681
		V min (V)	108	5200.0202	5200	0.0202	3.8777
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	5200.0035	5200	0.0035	0.6642
		T (°C)	10	5200.0319	5200	0.0319	6.1400
		T (°C)	20	5200.0111	5200	0.0111	2.1268
		T (°C)	30	5200.0420	5200	0.0420	8.0727
		T (°C)	40	5200.0220	5200	0.0220	4.2343
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	5240.0345	5240	0.0345	6.5893
		V max (V)	132	5240.0038	5240	0.0038	0.7287
		V min (V)	108	5240.0234	5240	0.0234	4.4581
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	5240.0343	5240	0.0343	6.5517
		T (°C)	10	5240.0037	5240	0.0037	0.7007
		T (°C)	20	5240.0405	5240	0.0405	7.7276
		T (°C)	30	5240.0391	5240	0.0391	7.4705
		T (°C)	40	5240.0361	5240	0.0361	6.8858
Limits				±20ppm			
Result				Complies			

TX Frequency (5250-5350MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5260.0168	5260	0.0168	3.1949
		V max (V)	132	5260.0263	5260	0.0263	5.0084
		V min (V)	108	5260.0289	5260	0.0289	5.4922
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5260.0735	5260	0.0735	13.9781
		T (°C)	10	5260.0525	5260	0.0525	9.9892
		T (°C)	20	5260.0247	5260	0.0247	4.6878
		T (°C)	30	5260.0745	5260	0.0745	14.1544
		T (°C)	40	5260.0919	5260	0.0919	17.4762
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5280.0242	5280	0.0242	4.5861
		V max (V)	132	5280.0030	5280	0.0030	0.5645
		V min (V)	108	5280.0568	5280	0.0568	10.7618
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5280.0092	5280	0.0092	1.7362
		T (°C)	10	5280.0514	5280	0.0514	9.7402
		T (°C)	20	5280.0805	5280	0.0805	15.2423
		T (°C)	30	5280.0244	5280	0.0244	4.6121
		T (°C)	40	5280.0056	5280	0.0056	1.0559
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5320.0197	5320	0.0197	3.6960
		V max (V)	132	5320.0138	5320	0.0138	2.5983
		V min (V)	108	5320.0301	5320	0.0301	5.6532
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5320.0496	5320	0.0496	9.3142
		T (°C)	10	5320.0437	5320	0.0437	8.2109
		T (°C)	20	5320.0034	5320	0.0034	0.6355
		T (°C)	30	5320.0637	5320	0.0637	11.9799
		T (°C)	40	5320.0615	5320	0.0615	11.5692
Limits				±20ppm			
Result				Complies			

TX Frequency (5470-5725MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5550.0529	5500	50.0529	9100.5363
		V max (V)	132	5550.0734	5500	50.0734	9104.2633
		V min (V)	108	5550.0230	5500	50.0230	9095.0827
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5500.0175	5500	0.0175	3.1908
		T (°C)	10	5500.0404	5500	0.0404	7.3422
		T (°C)	20	5500.0907	5500	0.0907	16.4958
		T (°C)	30	5500.0185	5500	0.0185	3.3619
		T (°C)	40	5500.0205	5500	0.0205	3.7283
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (° C)	20	V nom (V)	120	5580.0172	5580	0.0172	3.0764
		V max (V)	132	5580.0269	5580	0.0269	4.8260
		V min (V)	108	5580.0039	5580	0.0039	0.6944
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5580.0140	5580	0.0140	2.5146
		T (°C)	10	5580.0840	5580	0.0840	15.0474
		T (°C)	20	5580.0775	5580	0.0775	13.8892
		T (°C)	30	5580.0814	5580	0.0814	14.5940
		T (°C)	40	5580.0055	5580	0.0055	0.9878
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5700.0014	5700	0.0014	0.2408
		V max (V)	132	5700.0680	5700	0.0680	11.9289
		V min (V)	108	5700.0768	5700	0.0768	13.4768
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5700.0727	5700	0.0727	12.7553
		T (°C)	10	5700.0339	5700	0.0339	5.9461
		T (°C)	20	5700.0382	5700	0.0382	6.7045
		T (°C)	30	5700.0078	5700	0.0078	1.3650
		T (°C)	40	5700.0409	5700	0.0409	7.1742
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	5745.0687	5745	0.0687	11.9615
		V max (V)	132	5745.0861	5745	0.0861	14.9937
		V min (V)	108	5745.0687	5745	0.0687	11.9615
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	5745.0550	5745	0.0550	9.5688
		T (°C)	10	5745.0133	5745	0.0133	2.3102
		T (°C)	20	5745.0057	5745	0.0057	0.9968
		T (°C)	30	5745.0325	5745	0.0325	5.6642
		T (°C)	40	5745.0892	5745	0.0892	15.5306
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	5785.0450	5785	0.0450	7.7776
		V max (V)	132	5785.0112	5785	0.0112	1.9310
		V min (V)	108	5785.0572	5785	0.0572	9.8914
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	5785.0079	5785	0.0079	1.3690
		T (°C)	10	5785.0756	5785	0.0756	13.0755
		T (°C)	20	5785.0442	5785	0.0442	7.6449
		T (°C)	30	5785.0052	5785	0.0052	0.8905
		T (°C)	40	5785.0061	5785	0.0061	1.0503
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	5825.0097	5825	0.0097	1.6615
		V max (V)	132	5825.0733	5825	0.0733	12.5781
		V min (V)	108	5825.0750	5825	0.0750	12.8734
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	5825.0456	5825	0.0456	7.8332
		T (°C)	10	5825.0846	5825	0.0846	14.5206
		T (°C)	20	5825.0669	5825	0.0669	11.4765
		T (°C)	30	5825.0132	5825	0.0132	2.2598
		T (°C)	40	5825.0798	5825	0.0798	13.7067
Limits				±20ppm			
Result				Complies			

ANT2:

TX Frequency (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	5180.0501	5180	0.0501	9.6744
		V max (V)	132	5180.0757	5180	0.0757	14.6070
		V min (V)	108	5180.0304	5180	0.0304	5.8639
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	5180.0933	5180	0.0933	18.0098
		T (°C)	10	5180.0811	5180	0.0811	15.6578
		T (°C)	20	5180.0132	5180	0.0132	2.5518
		T (°C)	30	5180.0282	5180	0.0282	5.4374
		T (°C)	40	5180.0593	5180	0.0593	11.4545
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	5200.0113	5200	0.0113	2.1661
		V max (V)	132	5200.0873	5200	0.0873	16.7927
		V min (V)	108	5200.0662	5200	0.0662	12.7359
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	5200.0743	5200	0.0743	14.2821
		T (°C)	10	5200.0060	5200	0.0060	1.1446
		T (°C)	20	5200.0124	5200	0.0124	2.3881
		T (°C)	30	5200.0928	5200	0.0928	17.8383
		T (°C)	40	5200.0070	5200	0.0070	1.3432
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	5240.0788	5240	0.0788	15.0364
		V max (V)	132	5240.0256	5240	0.0256	4.8906
		V min (V)	108	5240.0834	5240	0.0834	15.9234
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	5240.0522	5240	0.0522	9.9529
		T (°C)	10	5240.0534	5240	0.0534	10.1908
		T (°C)	20	5240.0150	5240	0.0150	2.8576
		T (°C)	30	5240.0403	5240	0.0403	7.6995
		T (°C)	40	5240.0205	5240	0.0205	3.9176
Limits				±20ppm			
Result				Complies			

TX Frequency (5250-5350MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5260.0730	5260	0.0730	13.8849
		V max (V)	132	5260.0478	5260	0.0478	9.0818
		V min (V)	108	5260.0668	5260	0.0668	12.7074
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5260.0132	5260	0.0132	2.5004
		T (°C)	10	5260.0914	5260	0.0914	17.3729
		T (°C)	20	5260.0248	5260	0.0248	4.7118
		T (°C)	30	5260.0380	5260	0.0380	7.2235
		T (°C)	40	5260.0539	5260	0.0539	10.2518
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5280.0381	5280	0.0381	7.2141
		V max (V)	132	5280.0296	5280	0.0296	5.5984
		V min (V)	108	5280.0103	5280	0.0103	1.9576
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5280.0799	5280	0.0799	15.1372
		T (°C)	10	5280.0395	5280	0.0395	7.4720
		T (°C)	20	5280.0192	5280	0.0192	3.6413
		T (°C)	30	5280.0233	5280	0.0233	4.4158
		T (°C)	40	5280.0070	5280	0.0070	1.3315
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5320.0879	5320	0.0879	16.5195
		V max (V)	132	5320.0565	5320	0.0565	10.6195
		V min (V)	108	5320.0603	5320	0.0603	11.3323
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5320.0678	5320	0.0678	12.7514
		T (°C)	-10	5320.0052	5320	0.0052	0.9729
		T (°C)	0	5320.0757	5320	0.0757	14.2328
		T (°C)	10	5320.0224	5320	0.0224	4.2140
		T (°C)	20	5320.0521	5320	0.0521	9.7866
		T (°C)	30	5320.0810	5320	0.0810	15.2333
		T (°C)	40	5320.0439	5320	0.0439	8.2533
		T (°C)	50	5320.0526	5320	0.0526	9.8789
		T (°C)	60	5320.0312	5320	0.0312	5.8662
		T (°C)	70	5320.0049	5320	0.0049	0.9272
Limits				±20ppm			
Result				Complies			

TX Frequency (5470-5725MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5500.0266	5500	0.0266	4.8311
		V max (V)	132	5500.0768	5500	0.0768	13.9634
		V min (V)	108	5500.0111	5500	0.0111	2.0243
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5500.0915	5500	0.0915	16.6386
		T (°C)	10	5500.0528	5500	0.0528	9.6025
		T (°C)	20	5500.0104	5500	0.0104	1.8874
		T (°C)	30	5500.0592	5500	0.0592	10.7678
		T (°C)	40	5500.0636	5500	0.0636	11.5565
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5580.0370	5580	0.0370	6.6378
		V max (V)	132	5580.0094	5580	0.0094	1.6791
		V min (V)	108	5580.0090	5580	0.0090	1.6057
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5580.0543	5580	0.0543	9.7370
		T (°C)	10	5580.0224	5580	0.0224	4.0205
		T (°C)	20	5580.0289	5580	0.0289	5.1802
		T (°C)	30	5580.0470	5580	0.0470	8.4206
		T (°C)	40	5580.0829	5580	0.0829	14.8580
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120	5700.0133	5700	0.0133	2.3358
		V max (V)	132	5700.0684	5700	0.0684	11.9969
		V min (V)	108	5700.0345	5700	0.0345	6.0459
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5700.0306	5700	0.0306	5.3650
		T (°C)	10	5700.0123	5700	0.0123	2.1527
		T (°C)	20	5700.0428	5700	0.0428	7.5157
		T (°C)	30	5700.0455	5700	0.0455	7.9905
		T (°C)	40	5700.0172	5700	0.0172	3.0149
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	5745.0934	5745	0.0934	16.2566
		V max (V)	132	5745.0637	5745	0.0637	11.0838
		V min (V)	108	5745.0308	5745	0.0308	5.3526
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	5745.0445	5745	0.0445	7.7522
		T (°C)	10	5745.0530	5745	0.0530	9.2273
		T (°C)	20	5745.0918	5745	0.0918	15.9813
		T (°C)	30	5745.0602	5745	0.0602	10.4837
		T (°C)	40	5745.0295	5745	0.0295	5.1330
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	5785.0901	5785	0.0901	15.5768
		V max (V)	132	5785.0792	5785	0.0792	13.6876
		V min (V)	108	5785.0354	5785	0.0354	6.1268
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	5785.0805	5785	0.0805	13.9092
		T (°C)	10	5785.0853	5785	0.0853	14.7489
		T (°C)	20	5785.0038	5785	0.0038	0.6547
		T (°C)	30	5785.0453	5785	0.0453	7.8222
		T (°C)	40	5785.0055	5785	0.0055	0.9490
		T (°C)	50	5785.0523	5785	0.0523	9.0397
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	5825.0904	5825	0.0904	15.5218
		V max (V)	132	5825.0917	5825	0.0917	15.7480
		V min (V)	108	5825.0113	5825	0.0113	1.9469
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	5825.0134	5825	0.0134	2.3029
		T (°C)	10	5825.0284	5825	0.0284	4.8794
		T (°C)	20	5825.0576	5825	0.0576	9.8857
		T (°C)	30	5825.0401	5825	0.0401	6.8802
		T (°C)	40	5825.0392	5825	0.0392	6.7308
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 ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission. (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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is PIFA antenna and no consideration of replacement. The best case gain of the antenna is 5.2G:2.88dBi, 5.3G:3.13dBi, 5.6G:3.36dBi, 5.8G:3.14dBi.

15. EUT PHOTOGRAPHS**EUT Photo 1****EUT Photo 2**

16. EUT TEST SETUP PHOTOGRAPHS

Spurious emissions

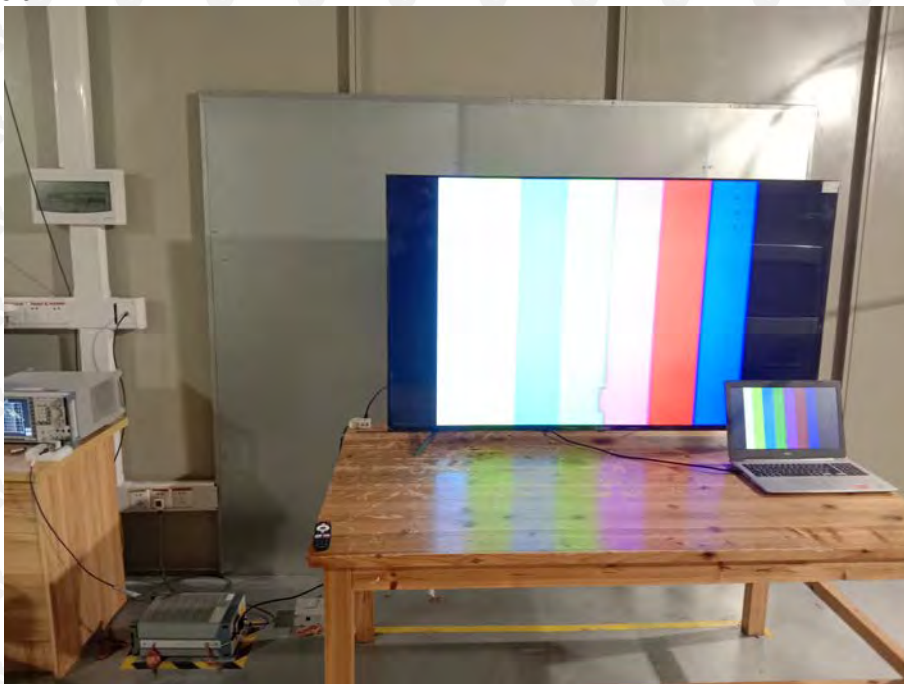
Below 1GHz



Above 1GHz



Conducted Emission



***** END OF REPORT *****