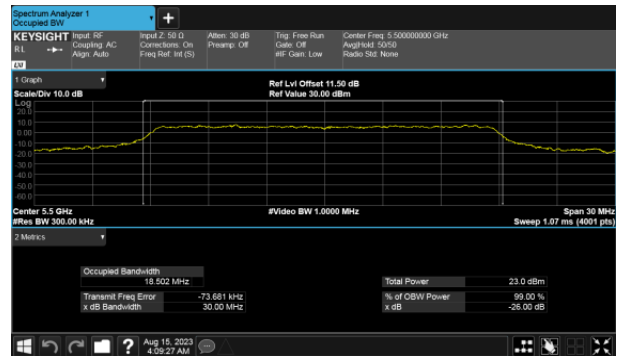




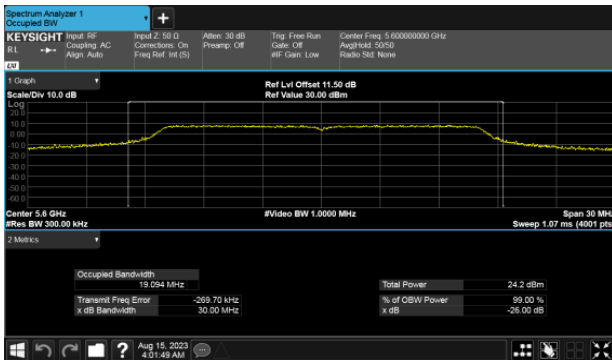
26dB Bandwidth Band 3
Modulation Type: 802.11a (6Mbps)
CH100



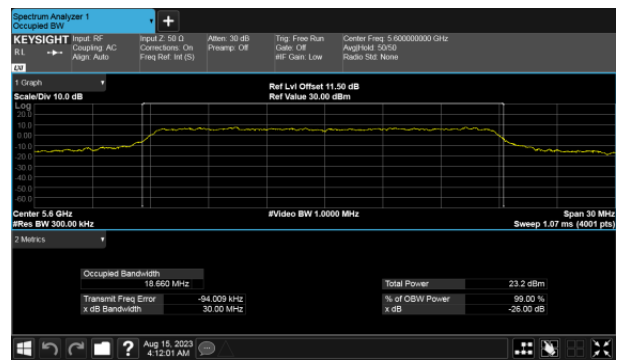
802.11ac VHT20 (6.5Mbps)
CH100



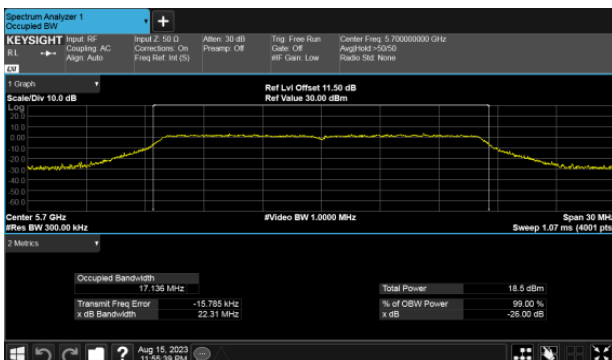
CH120



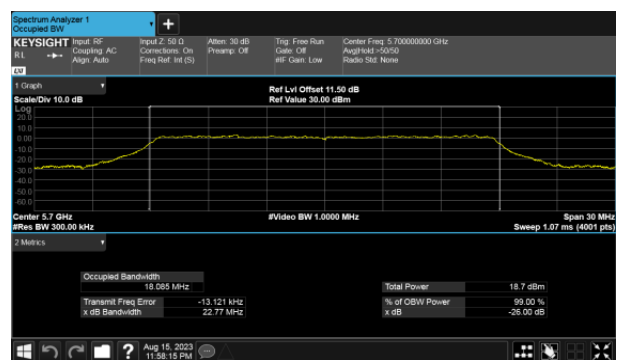
CH120



CH140



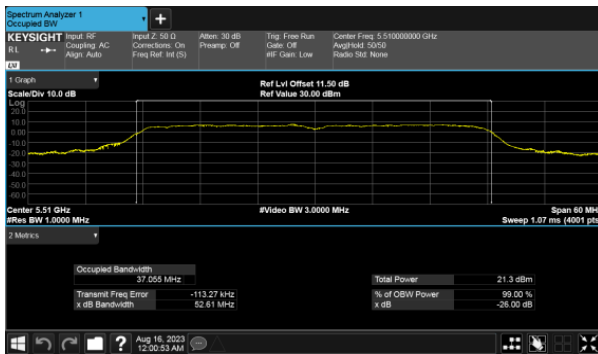
CH140



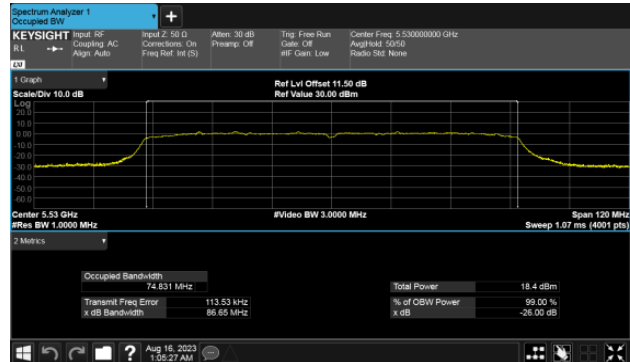


26dB Bandwidth Band 3

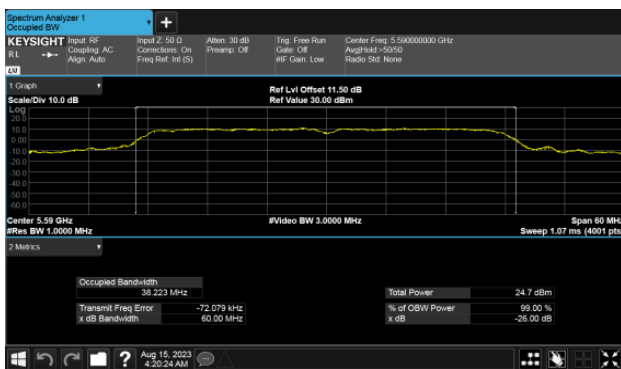
Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH102



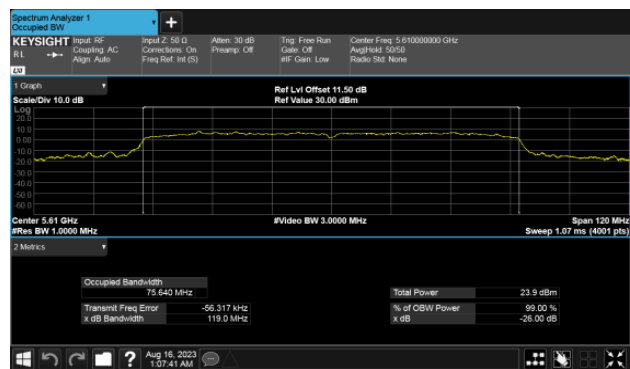
Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH106



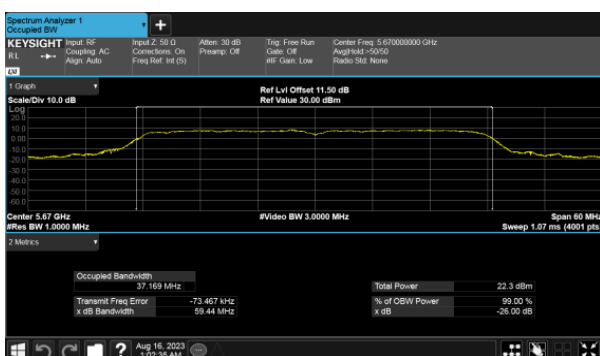
CH118



CH122



CH134

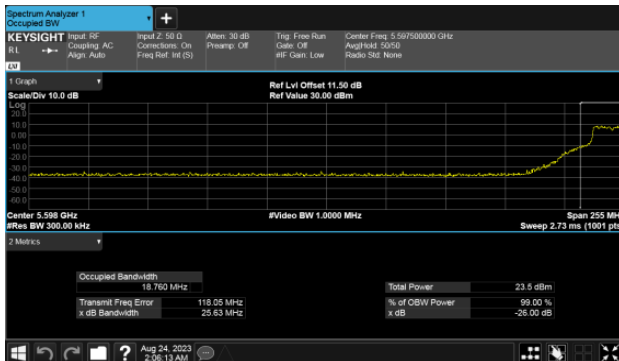




26dB Bandwidth

Within 5470-5725MHz Band, Straddle Channel

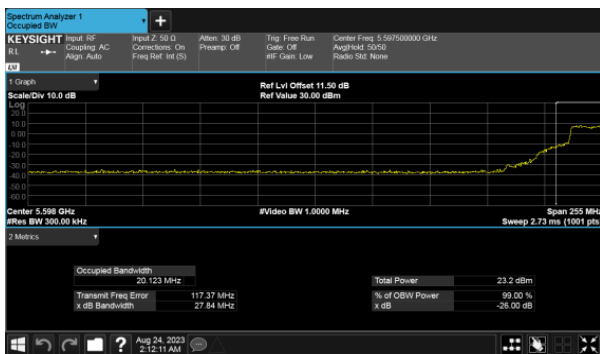
Modulation Type: 802.11a (6Mbps)
CH144



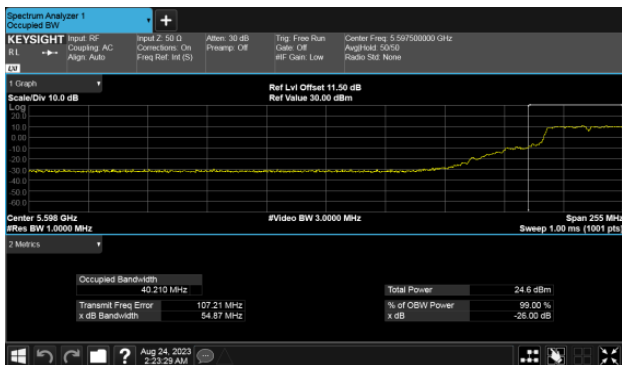
Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Type: 802.11ac VHT20 (6.5Mbps)
CH144



Modulation Type: 802.11ac VHT40 (29.3Mbps)
CH142

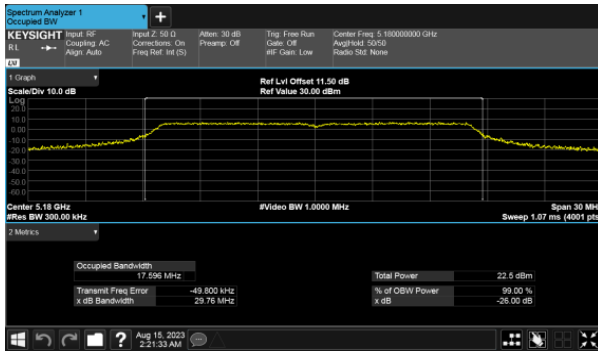




99% Bandwidth Band 1

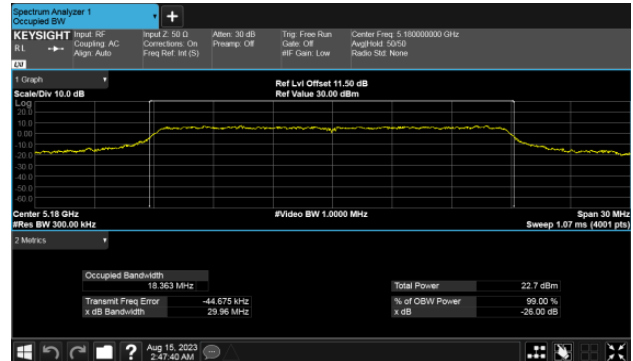
Modulation Type: 802.11a (6Mbps)

CH36



802.11ac VHT20 (6.5Mbps)

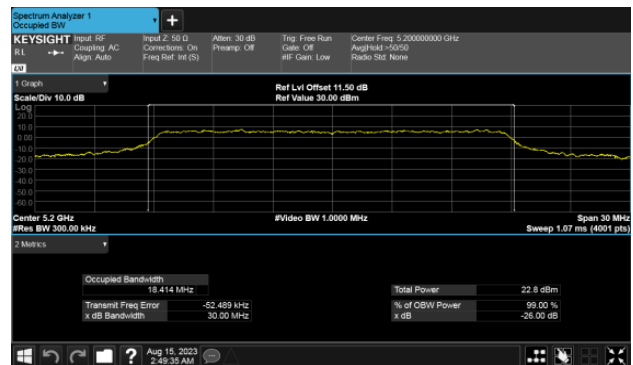
CH36



CH40



CH40



CH48



CH48

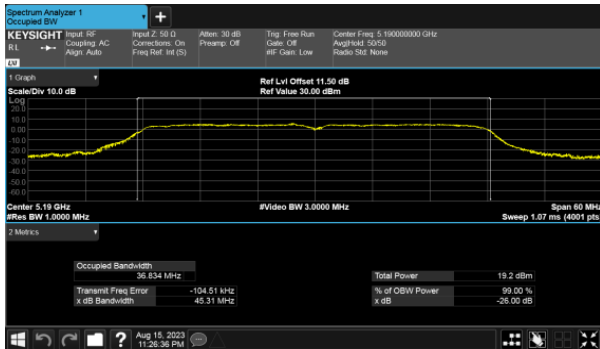




99% Bandwidth Band 1

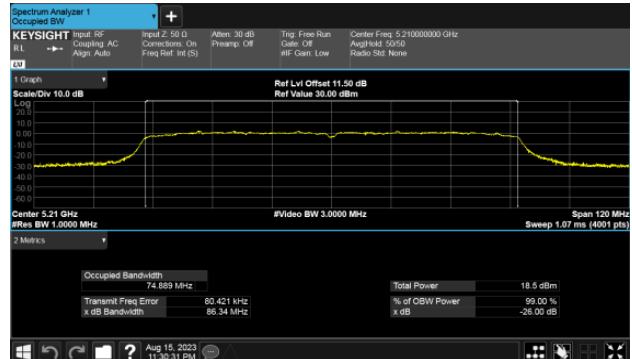
Modulation Type: 802.11ac VHT40 (13.5Mbps)

CH38

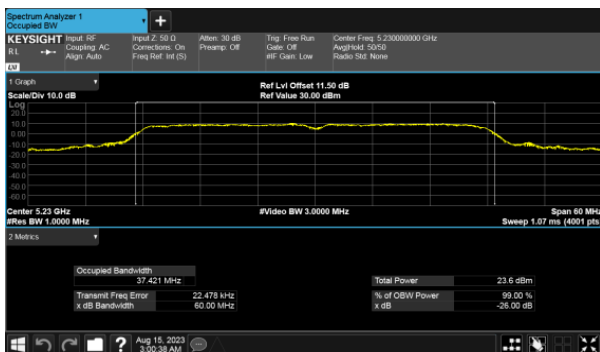


Modulation Type: 802.11ac VHT80 (29.3Mbps)

CH42



CH46





99% Bandwidth Band 2

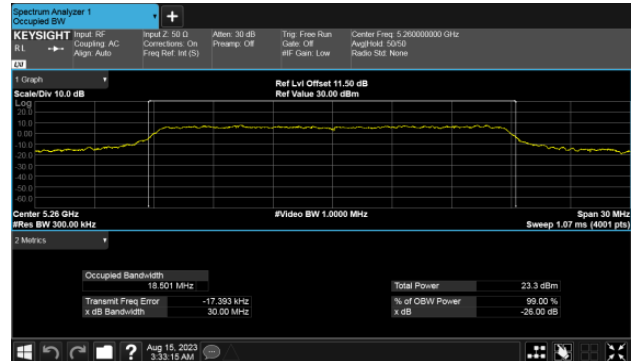
Modulation Type: 802.11a (6Mbps)

CH52



802.11ac VHT20 (6.5Mbps)

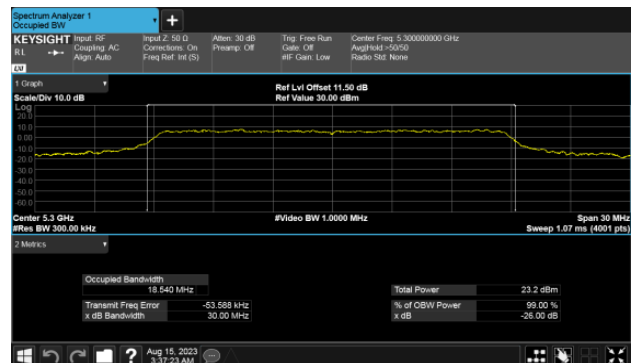
CH52



CH60



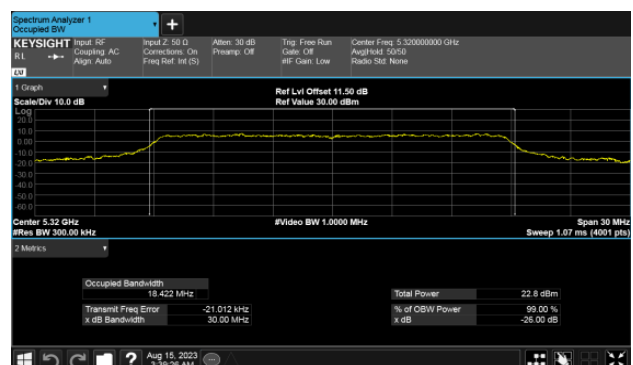
CH60



CH64



CH64

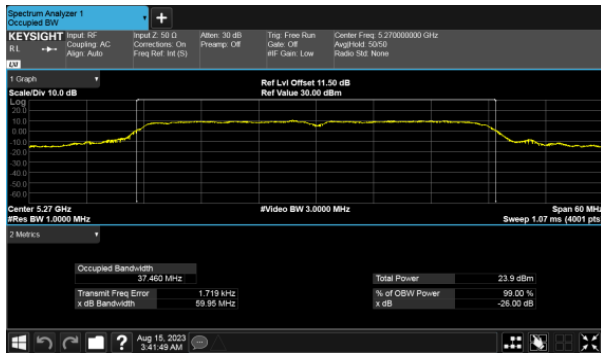




99% Bandwidth Band 2

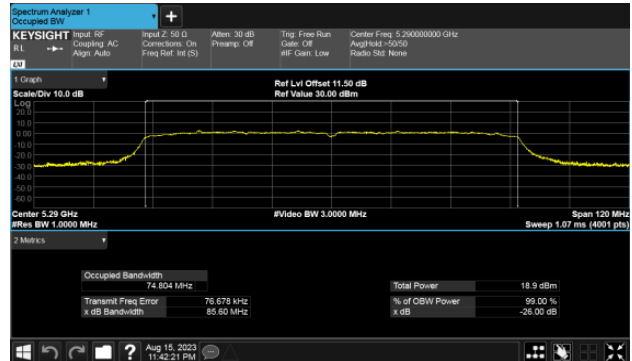
Modulation Type: 802.11ac VHT40 (13.5Mbps)

CH54

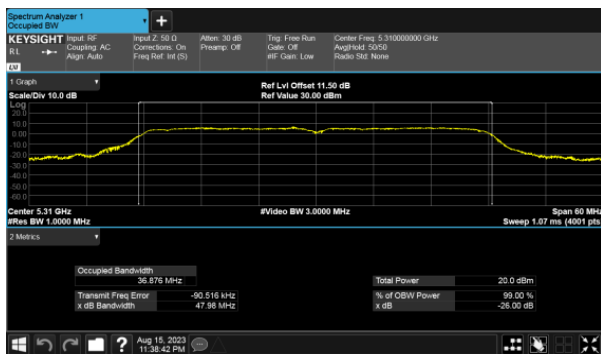


Modulation Type: 802.11ac VHT80 (29.3Mbps)

CH58



CH62





99% Bandwidth Band 3

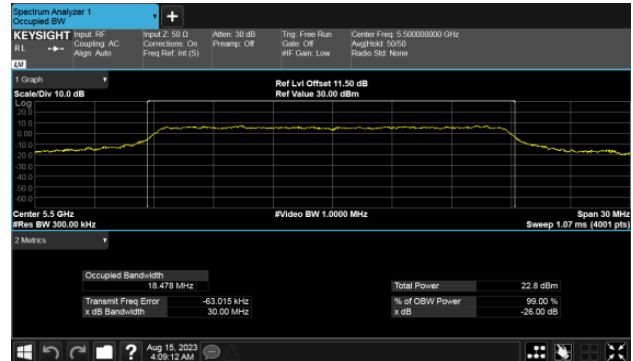
Modulation Type: 802.11a (6Mbps)

CH100

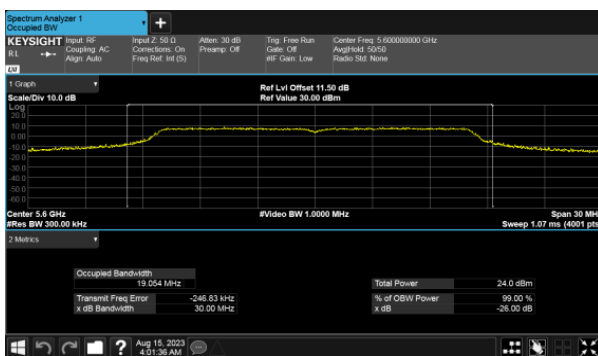


802.11ac VHT20 (6.5Mbps)

CH100



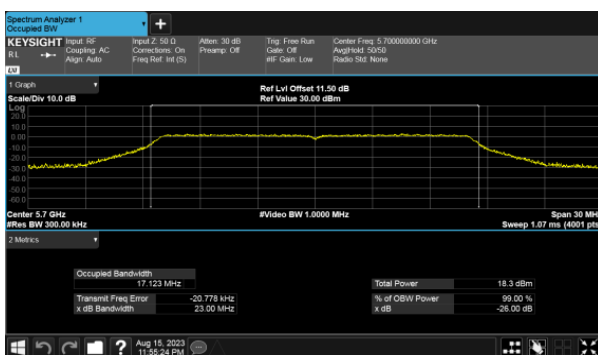
CH120



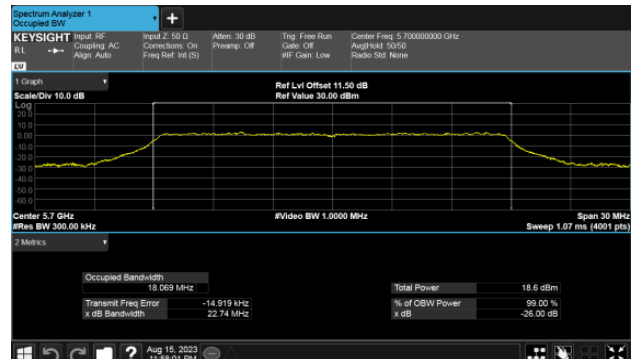
CH120



CH140



CH140





99% Bandwidth Band 3

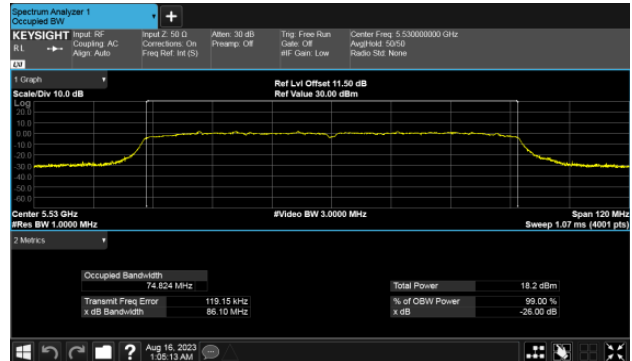
Modulation Type: 802.11ac VHT40 (13.5Mbps)

CH102

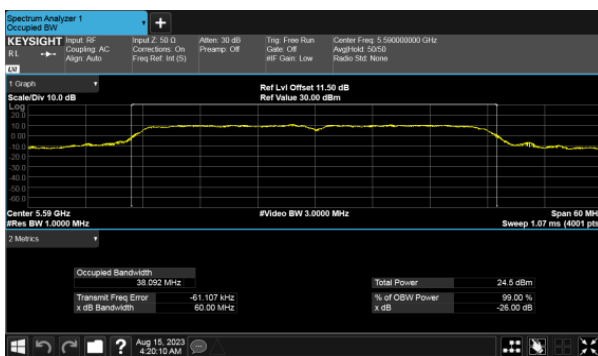


Modulation Type: 802.11ac VHT80 (29.3Mbps)

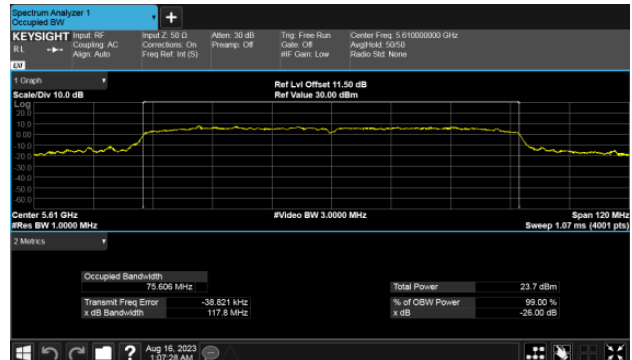
CH106



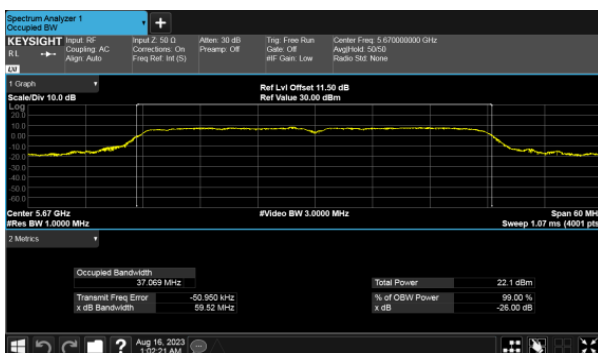
CH118



CH122



CH134



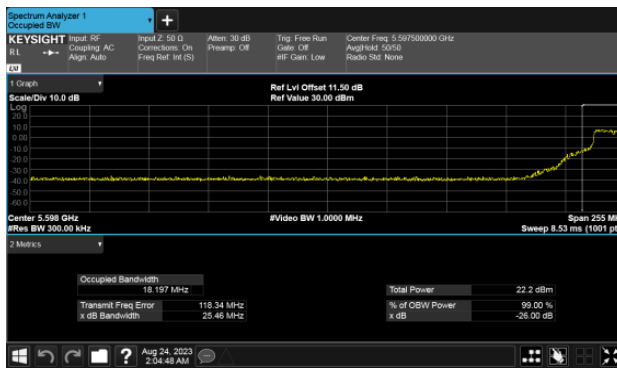


99% Bandwidth

Within 5470-5725MHz Band, Straddle Channel

Modulation Type: 802.11a (6Mbps)

CH144



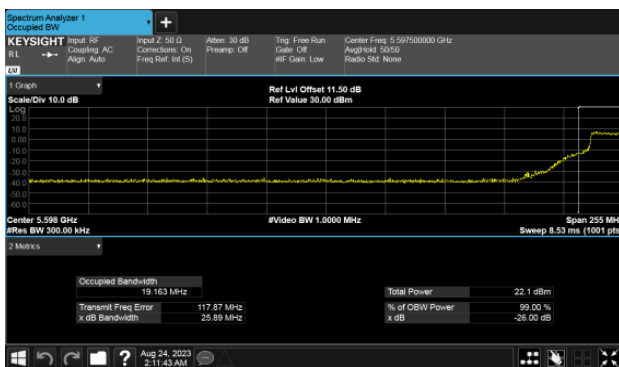
Modulation Type: 802.11ac VHT80 (29.3Mbps)

CH138



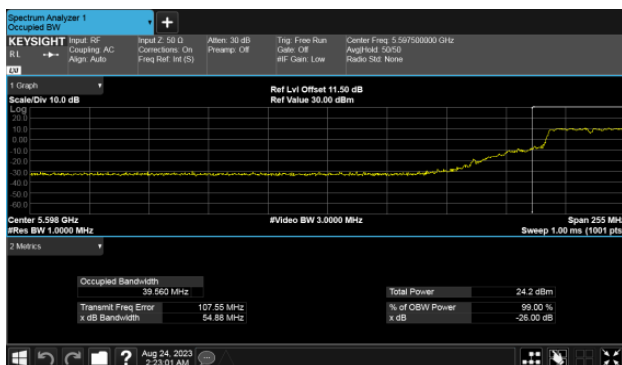
Modulation 802.11ac VHT20 (6.5Mbps)

CH144



Modulation Type: 802.11ac VHT40 (29.3Mbps)

CH142





10. Average Power

10.1. Test Limit

Output Power:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed 125 mW (21 dBm).
☐	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. 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.
☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
☒	client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. 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.



Frequency Band		Limit
☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. 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.
☒	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). 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.

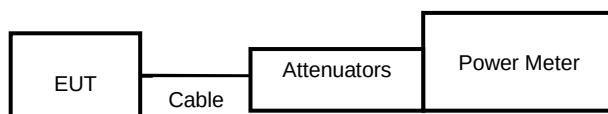
10.2.Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 12.3

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3.Test Setup Layout





10.4. Test Result and Data

In the 5.2G Band

Modulation Type	Data Rate	Conducted Setting	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)	Total power (dBm)	Total power (mW)	FCC Limit (dBm)
					ANT C			
11a	6 Mbps	14	36	5180	15.82	15.82	38.194	24.00
11a	6 Mbps	14	40	5200	15.98	15.98	39.628	24.00
11a	6 Mbps	14	48	5240	15.96	15.96	39.446	24.00
11ac VHT20	NSS1-MCS0	14	36	5180	16.04	16.04	40.179	24.00
11ac VHT20	NSS1-MCS0	14	40	5200	15.92	15.92	39.084	24.00
11ac VHT20	NSS1-MCS0	14	48	5240	16.09	16.09	40.644	24.00
11ac VHT40	NSS1-MCS0	9	38	5190	11.67	11.67	14.689	24.00
11ac VHT40	NSS1-MCS0	14	46	5230	16.01	16.01	39.902	24.00
11ac VHT80	NSS1-MCS0	9.5	42	5210	11.48	11.48	14.060	24.00

In the 5.3G Band

Modulation Type	Data Rate	Conducted Setting	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)	Total power (dBm)	Total power (mW)	FCC Limit (dBm)
					ANT C			
11a	6 Mbps	14	52	5260	16.25	16.25	42.170	24.00
11a	6 Mbps	14	60	5300	16.12	16.12	40.926	24.00
11a	6 Mbps	14	64	5320	16.03	16.03	40.087	24.00
11ac VHT20	NSS1-MCS0	14	52	5260	15.98	15.98	39.628	24.00
11ac VHT20	NSS1-MCS0	14	60	5300	16.32	16.32	42.855	24.00
11ac VHT20	NSS1-MCS0	14	64	5320	16.01	16.01	39.902	24.00
11ac VHT40	NSS1-MCS0	14	54	5270	16.04	16.04	40.179	24.00
11ac VHT40	NSS1-MCS0	9.5	62	5310	12.49	12.49	17.742	24.00
11ac VHT80	NSS1-MCS0	10.5	58	5290	12.57	12.57	18.072	24.00



In the 5.5G Band

Modulation Type	Data Rate	Conducted Setting	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)	Total power (dBm)	Total power (mW)	FCC Limit (dBm)
					ANT C			
11a	6 Mbps	15	100	5500	16.66	16.66	46.345	24.00
11a	6 Mbps	15	120	5600	16.78	16.78	47.643	24.00
11a	6 Mbps	9	140	5700	11.17	11.17	13.092	24.00
11ac VHT20	NSS1-MCS0	14	100	5500	15.82	15.82	38.194	24.00
11ac VHT20	NSS1-MCS0	15	120	5600	16.89	16.89	48.865	24.00
11ac VHT20	NSS1-MCS0	9.5	140	5700	11.52	11.52	14.191	24.00
11ac VHT40	NSS1-MCS0	11	102	5510	13.26	13.26	21.184	24.00
11ac VHT40	NSS1-MCS0	15	118	5590	16.77	16.77	47.534	24.00
11ac VHT40	NSS1-MCS0	12	134	5670	13.63	13.63	23.067	24.00
11ac VHT80	NSS1-MCS0	11	106	5530	13.61	13.61	22.961	24.00
11ac VHT80	NSS1-MCS0	15	122	5610	16.40	16.40	43.652	24.00

In the 5.8G Band

Modulation Type	Data Rate	Conducted Setting	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)	Total power (dBm)	Total power (mW)	FCC Limit (dBm)
					ANT C			
11a	6 Mbps	17	149	5745	17.84	17.84	60.814	30.00
11a	6 Mbps	16	157	5785	17.80	17.80	60.256	30.00
11a	6 Mbps	16	165	5825	17.55	17.55	56.885	30.00
11ac VHT20	NSS1-MCS0	16	149	5745	17.47	17.47	55.847	30.00
11ac VHT20	NSS1-MCS0	16	157	5785	17.86	17.86	61.094	30.00
11ac VHT20	NSS1-MCS0	16	165	5825	17.52	17.52	56.494	30.00
11ac VHT40	NSS1-MCS0	16	151	5755	17.22	17.22	52.723	30.00
11ac VHT40	NSS1-MCS0	16	159	5795	17.72	17.72	59.156	30.00
11ac VHT80	NSS1-MCS0	13.5	155	5775	15.69	15.69	37.068	30.00



FCC Maximum Conducted Output Power (Within 5470-5725MHz band) RF Output Power(dBm)									
Setting	Modulation Type	Data Rate	Frequency (MHz)	W/O Duty Factor Measured value of each antenna port (dBm)	W/O duty factor Total power (dBm)	Duty Factor (dB)	With duty factor Total power (mW)	With duty factor Total power (dBm)	FCC Limit (dBm)
				ANT C					
16	11a	6M	5720	15.77	15.77	0.00	37.757	15.77	24.00
16	11ac VHT20	NSS1-MCS0	5720	15.71	15.71	0.00	37.239	15.71	24.00
16	11ac VHT40	NSS1-MCS0	5710	16.62	16.62	0.00	45.920	16.62	24.00
16	11ac VHT80	NSS1-MCS0	5690	16.76	16.76	0.15	49.091	16.91	24.00

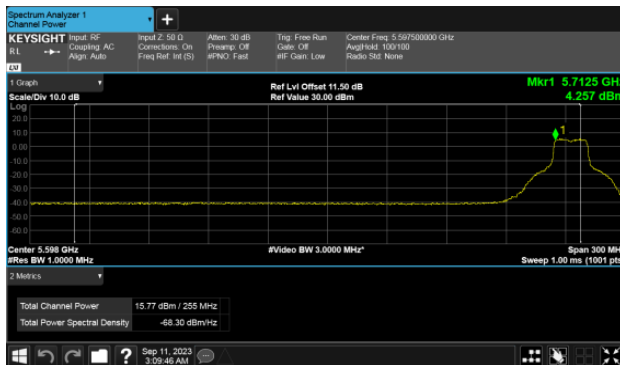
FCC Maximum Conducted Output Power (Extends across 5725MHz band) RF Output Power(dBm)									
Setting	Modulation Type	Data Rate	Frequency (MHz)	W/O Duty Factor Measured value of each antenna port (dBm)	W/O duty factor Total power (dBm)	Duty Factor (dB)	With duty factor Total power (mW)	With duty factor Total power (dBm)	FCC Limit (dBm)
				ANT C					
16	11a	6M	5720	10.07	10.07	0.00	10.162	10.07	30.00
16	11ac VHT20	NSS1-MCS0	5720	10.46	10.46	0.00	11.117	10.46	30.00
16	11ac VHT40	NSS1-MCS0	5710	5.67	5.67	0.00	3.690	5.67	30.00
16	11ac VHT80	NSS1-MCS0	5690	0.56	0.56	0.15	1.178	0.71	30.00

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)	Total Power
					ANT C	(dBm)
Meter power (for full power)						
11a	6 Mbps	16	Ch144	5720MHz	16.55	16.55
11ac VHT20	NSS1-MCS0	16	Ch144	5720MHz	16.61	16.61
11ac VHT40	NSS1-MCS0	16	Ch142	5710MHz	16.77	16.77
11ac VHT80	NSS1-MCS0	16	Ch138	5690MHz	16.95	16.95

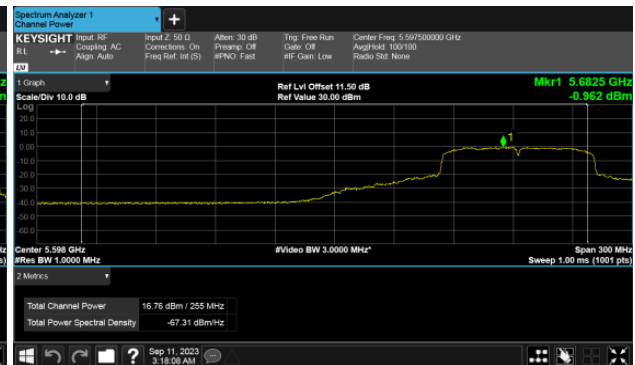
Note: Power Meter Average power is for reference only.



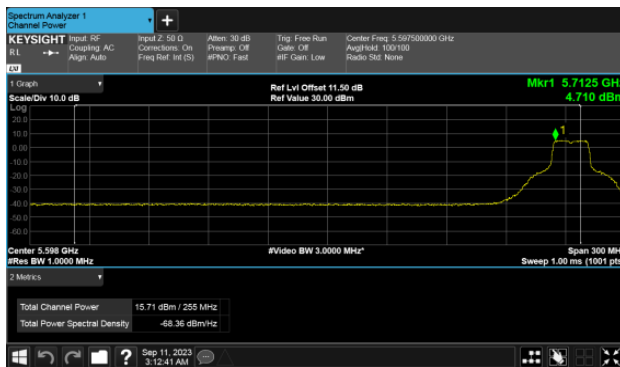
Within 5470-5725MHz Band, Straddle Channel
Modulation Type: 802.11a (6Mbps)
CH144



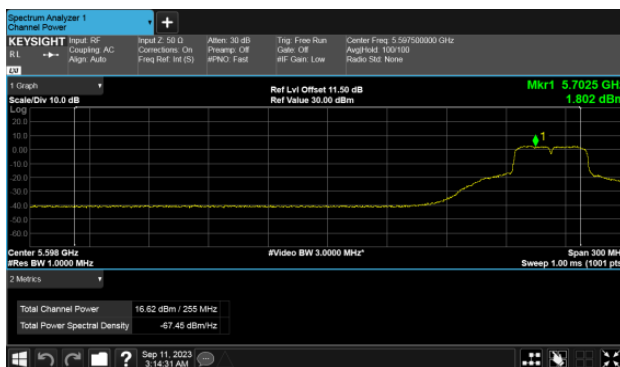
Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Type: 802.11ac VHT20 (6.5Mbps)
CH144

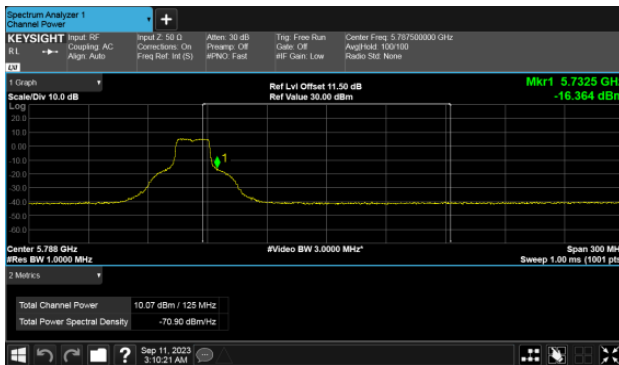


Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH142

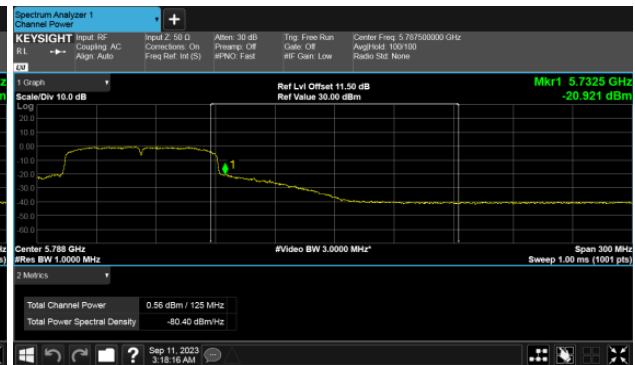




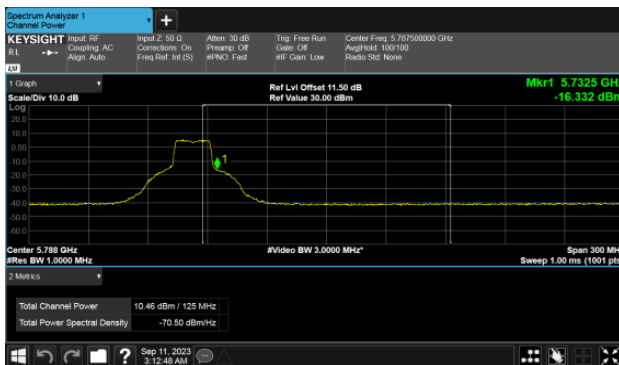
Extends across 5725MHz band, Straddle Channel
Modulation Type: 802.11a (6Mbps)
CH144



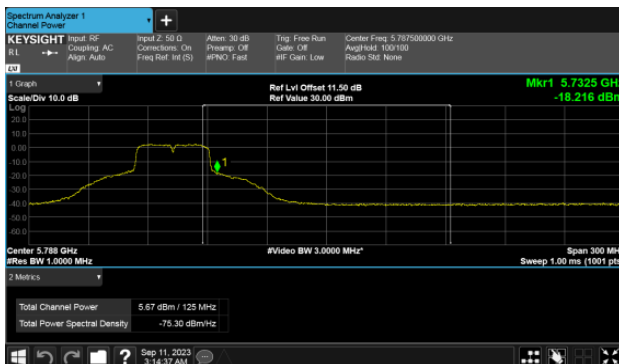
Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Type: 802.11ac VHT20 (6.5Mbps)
CH144



Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH142





11. Power Spectral Density

11.1. Test Limit

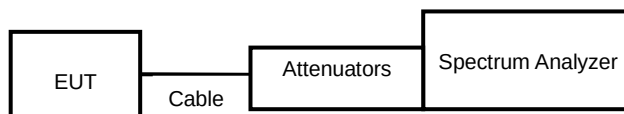
PSD:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	17 dBm/MHz
☐	Indoor access point	17 dBm/MHz
☐	Fixed point-to-point access points	17 dBm/MHz
☒	Mobile and portable client devices	11 dBm/MHz
☒	5.725~5.85 GHz	11 dBm/MHz
☒	5.470-5.725 GHz	11 dBm/MHz
☒	5.725~5.85 GHz	30 dBm/500kHz

11.2. Test Procedure

Reference to KDB789033 D02 General UNII Test Procedures New Rules v02r01

11.3. Test Setup Layout





11.4. Test Result and Data

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	Meas PSD (dBm/MHz)	Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			ANT C				
11a	36	5180	4.65	4.65	0.00	4.65	11.00
11a	40	5200	4.82	4.82	0.00	4.82	11.00
11a	48	5240	5.05	5.05	0.00	5.05	11.00
11ac VHT20	36	5180	4.63	4.63	0.00	4.63	11.00
11ac VHT20	40	5200	4.73	4.73	0.00	4.73	11.00
11ac VHT20	48	5240	4.88	4.88	0.00	4.88	11.00
11ac VHT40	38	5190	-2.59	-2.59	0.00	-2.59	11.00
11ac VHT40	46	5230	1.93	1.93	0.00	1.93	11.00
11ac VHT80	42	5210	-6.83	-6.83	0.15	-6.68	11.00

In the 5.3G Band

Modulation Type	Channel	Frequency (MHz)	Meas PSD (dBm/MHz)	Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			ANT C				
11a	52	5260	5.36	5.36	0.00	5.36	11.00
11a	60	5300	5.21	5.21	0.00	5.21	11.00
11a	64	5320	4.70	4.70	0.00	4.70	11.00
11ac VHT20	52	5260	4.98	4.98	0.00	4.98	11.00
11ac VHT20	60	5300	4.98	4.98	0.00	4.98	11.00
11ac VHT20	64	5320	4.58	4.58	0.00	4.58	11.00
11ac VHT40	54	5270	2.10	2.10	0.00	2.10	11.00
11ac VHT40	62	5310	-1.70	-1.70	0.00	-1.70	11.00
11ac VHT80	58	5290	-6.52	-6.52	0.15	-6.37	11.00



In the 5.5G Band

Modulation Type	Channel	Frequency (MHz)	Meas PSD (dBm/MHz)	Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			ANT C				
11a	100	5500	5.41	5.41	0.00	5.41	11.00
11a	120	5600	5.74	5.74	0.00	5.74	11.00
11a	140	5700	0.33	0.33	0.00	0.33	11.00
11a	144	5720	5.39	5.39	0.00	5.39	11.00
11ac VHT20	100	5500	4.59	4.59	0.00	4.59	11.00
11ac VHT20	120	5600	5.39	5.39	0.00	5.39	11.00
11ac VHT20	140	5700	0.43	0.43	0.00	0.43	11.00
11ac VHT20	144	5720	5.12	5.12	0.00	5.12	11.00
11ac VHT40	102	5510	-0.52	-0.52	0.00	-0.52	11.00
11ac VHT40	118	5590	2.54	2.54	0.00	2.54	11.00
11ac VHT40	134	5670	0.22	0.22	0.00	0.22	11.00
11ac VHT40	142	5710	2.90	2.90	0.00	2.90	11.00
11ac VHT80	106	5530	-7.06	-7.06	0.15	-6.91	11.00
11ac VHT80	122	5610	-1.79	-1.79	0.15	-1.64	11.00
11ac VHT80	138	5690	-0.15	-0.15	0.15	0.00	11.00

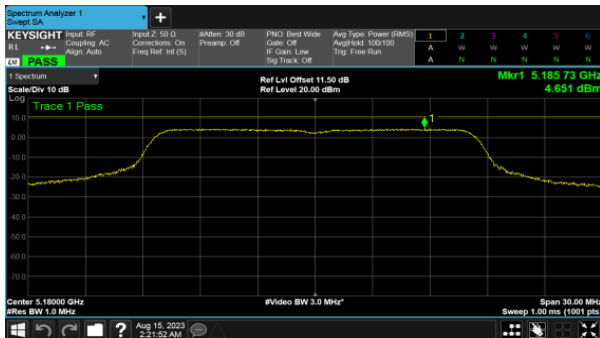
In the 5.8G Band

Modulation Type	Channel (MHz)	Frequency (MHz)	Meas PSD (dBm/MHz)	Sum chain (dBm)	Duty Cycle CF(dB)	10log(500KHz/RBW) CF (dB)	Total Corr'd PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)
			ANT C					
11a	149	5745	6.24	6.24	0.00	-3.01	3.23	30.00
11a	157	5785	6.52	6.52	0.00	-3.01	3.51	30.00
11a	165	5825	6.24	6.24	0.00	-3.01	3.22	30.00
11ac VHT20	149	5745	5.75	5.75	0.00	-3.01	2.73	30.00
11ac VHT20	157	5785	6.28	6.28	0.00	-3.01	3.27	30.00
11ac VHT20	165	5825	5.98	5.98	0.00	-3.01	2.97	30.00
11ac VHT40	151	5755	2.76	2.76	0.00	-3.01	-0.25	30.00
11ac VHT40	159	5795	3.11	3.11	0.00	-3.01	0.10	30.00
11ac VHT80	155	5775	-2.40	-2.40	0.15	-3.01	-5.26	30.00



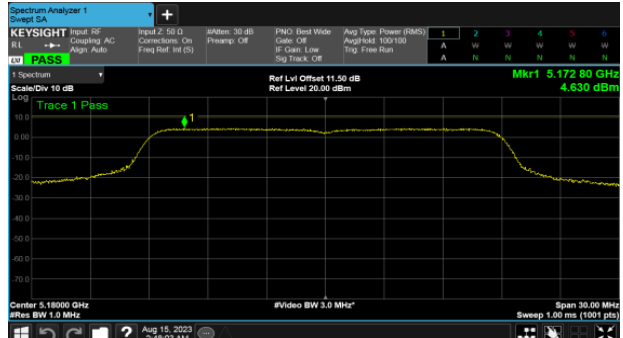
Modulation Type: 802.11a (6Mbps)

CH36

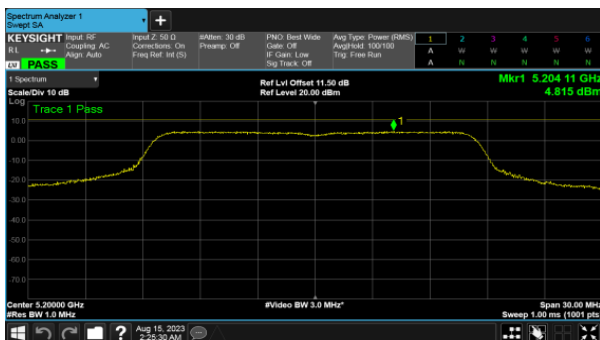


Modulation Type: 802.11ac VHT20 (6.5Mbps)

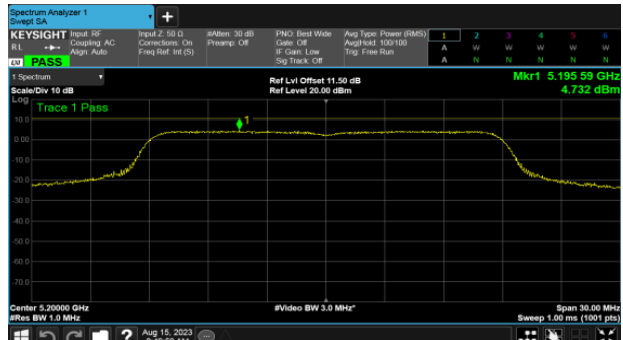
CH36



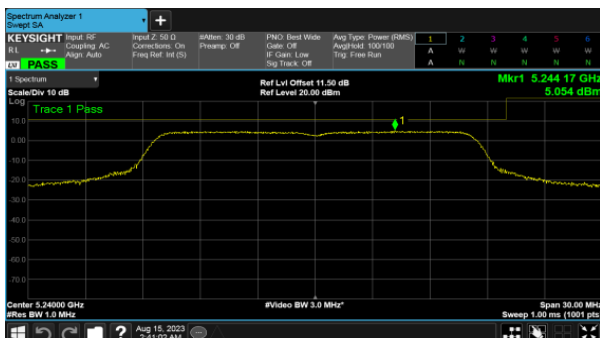
CH40



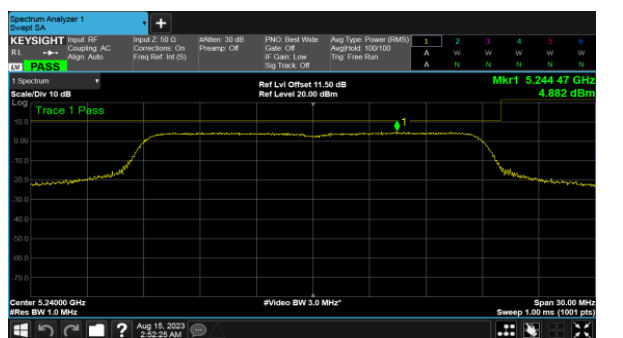
CH40



CH48

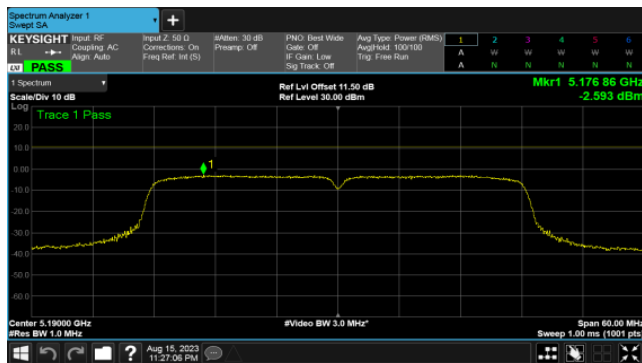


CH48

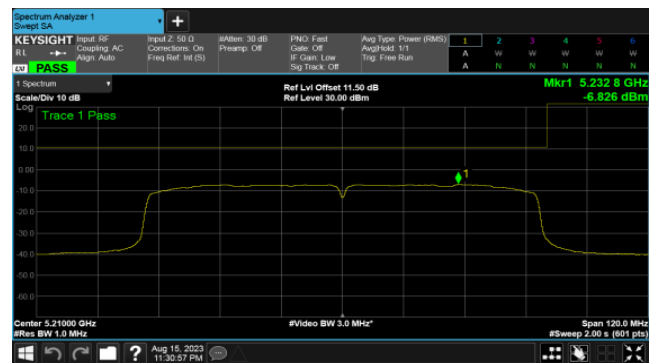




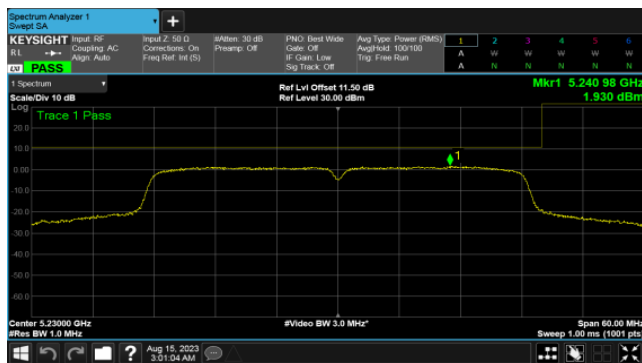
Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH42

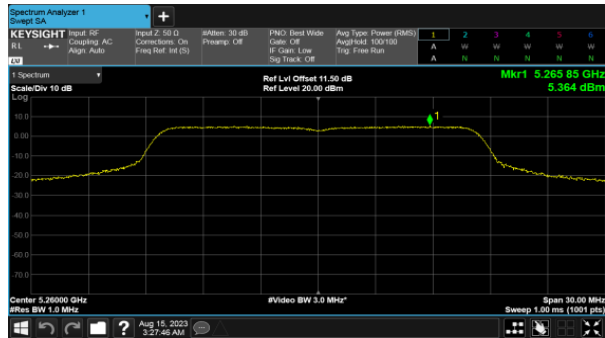


CH46

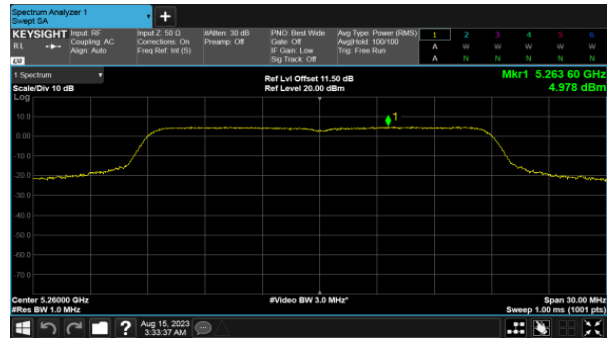




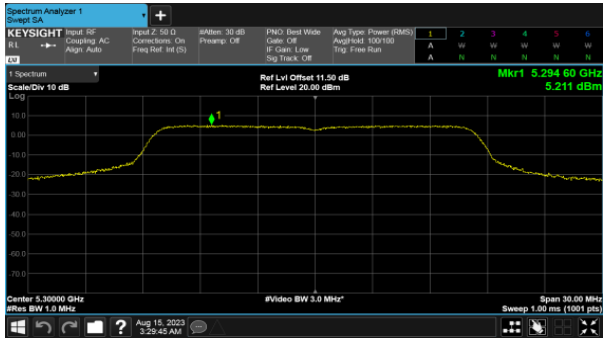
Modulation Type: 802.11a (6Mbps)
CH52



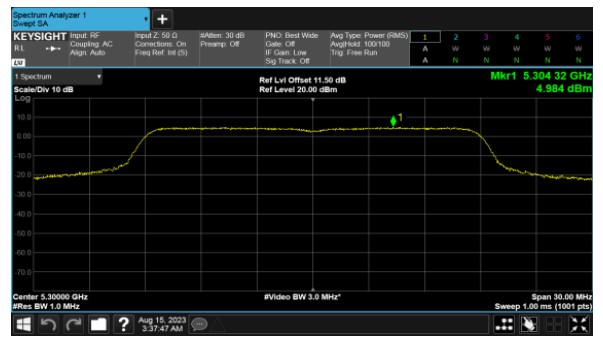
Modulation Type: 802.11ac VHT20 (6.5Mbps)
CH52



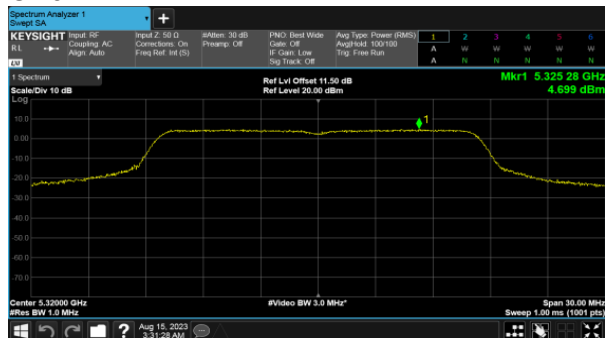
CH60



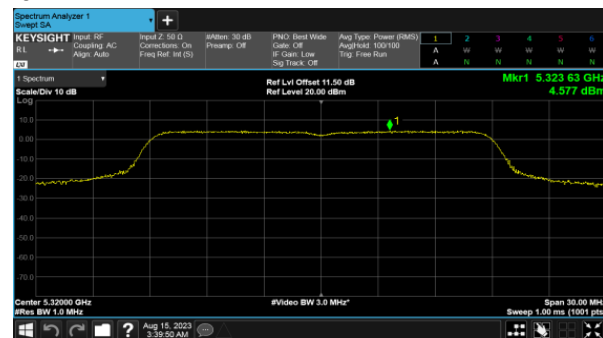
CH60



CH64

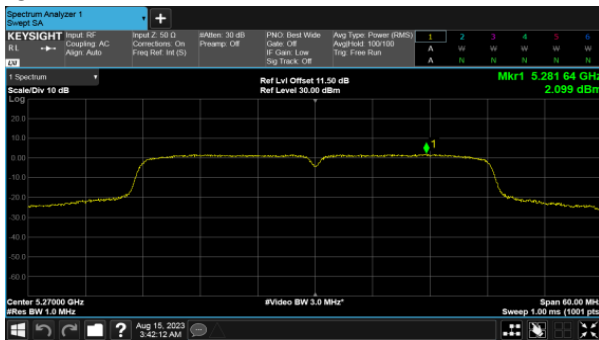


CH64

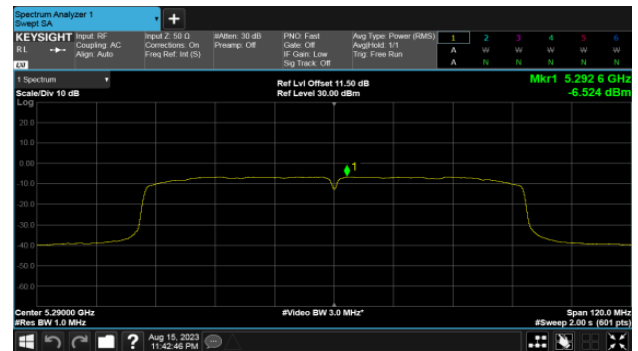




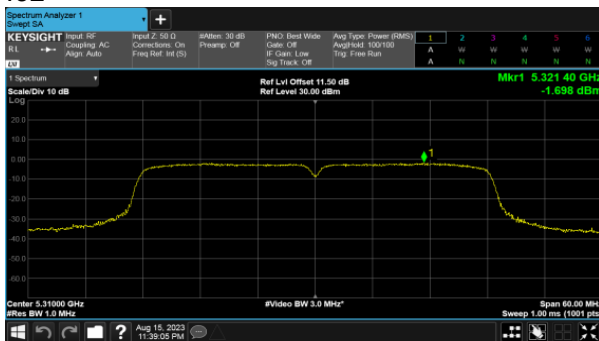
Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH54



Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH58

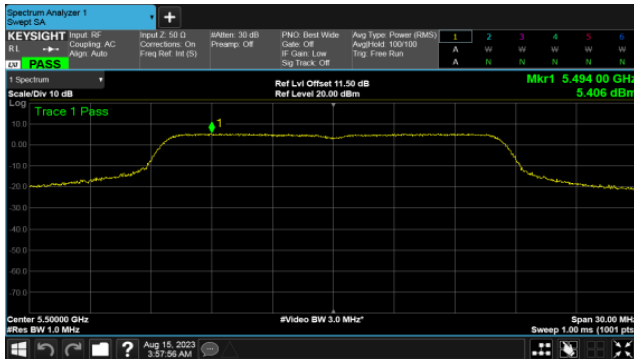


CH62

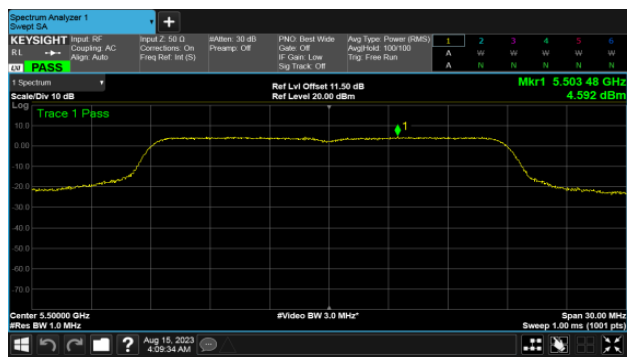




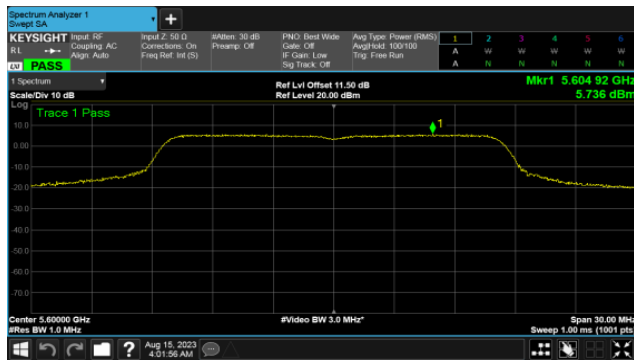
Modulation Type: 802.11a (6Mbps)
CH100



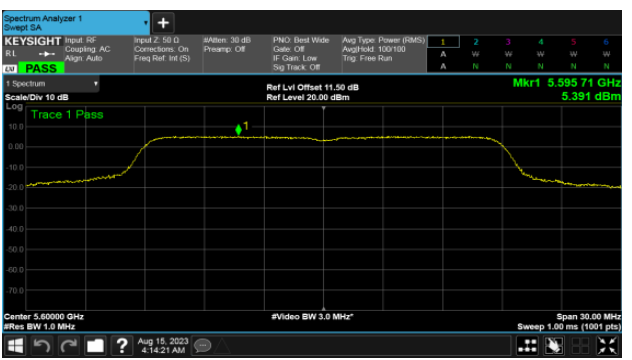
Modulation Type:802.11ac VHT20 (6.5Mbps)
CH100



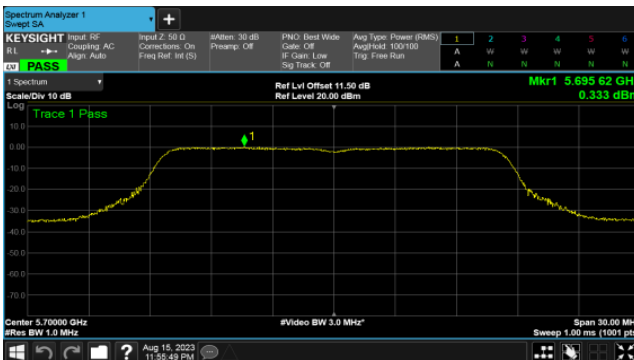
CH120



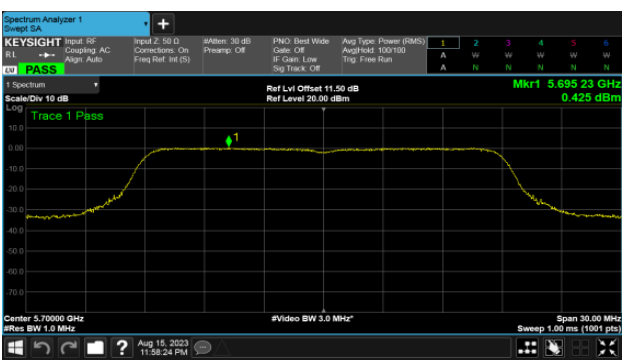
CH120

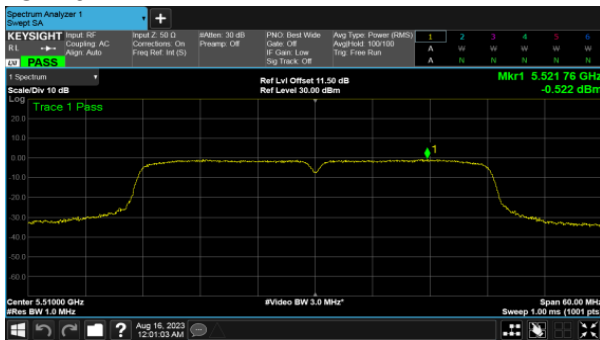
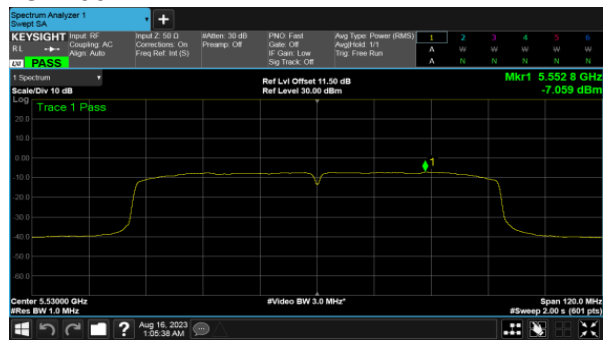


CH140

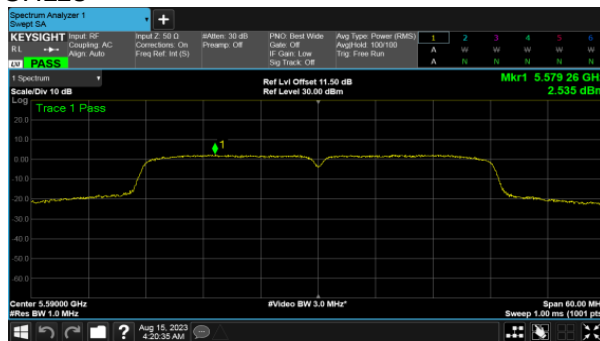


CH140

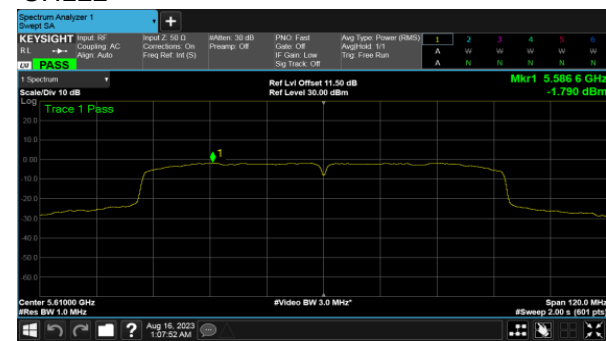


Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH102Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH106

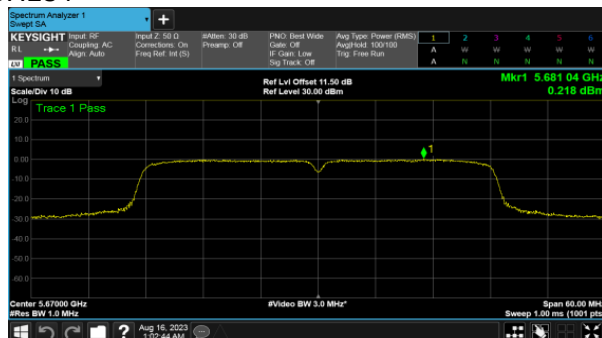
CH118



CH122



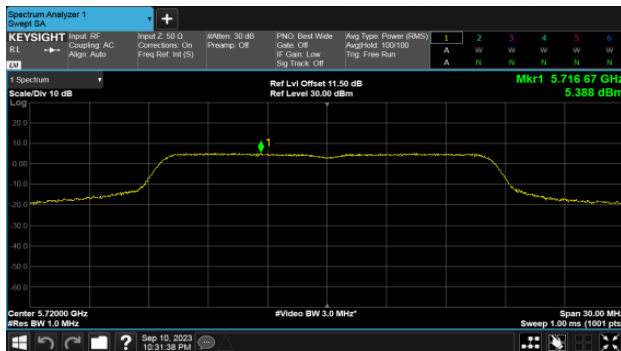
CH134



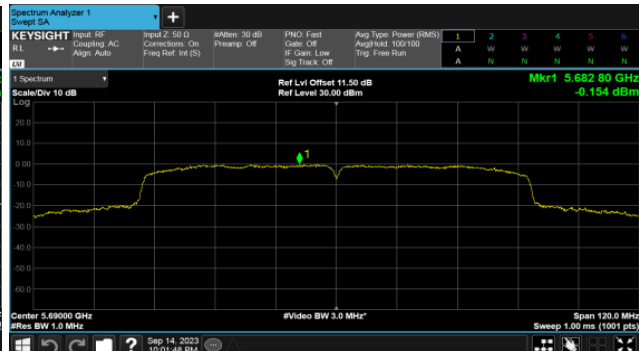


Straddle Channel

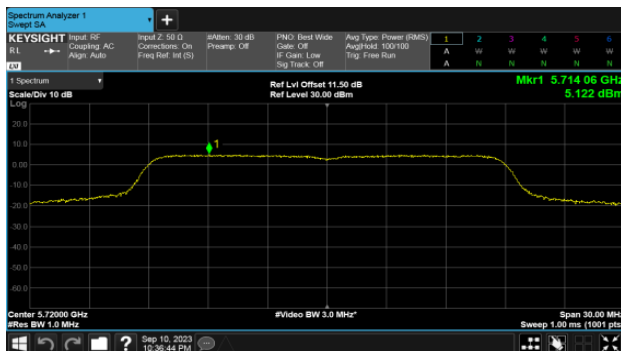
Modulation Type: 802.11a (6Mbps)
CH144



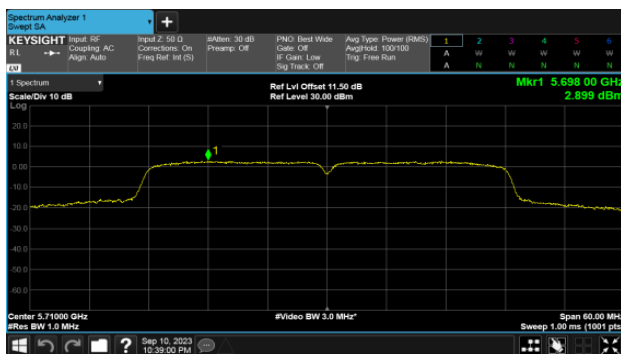
Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Type: 802.11ac VHT20 (6.5Mbps)
CH144



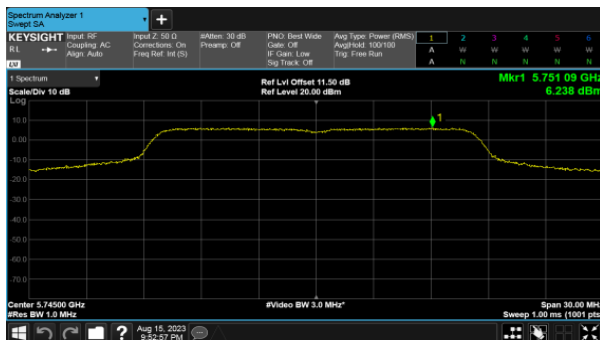
Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH142





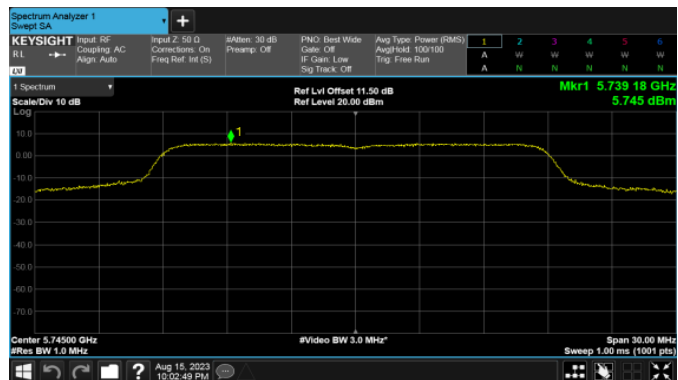
Modulation Type: 802.11a (6Mbps)

CH149

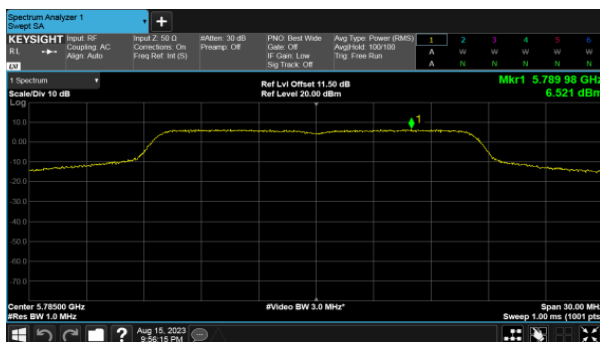


Modulation Type: 802.11ac VHT20 (6.5Mbps)

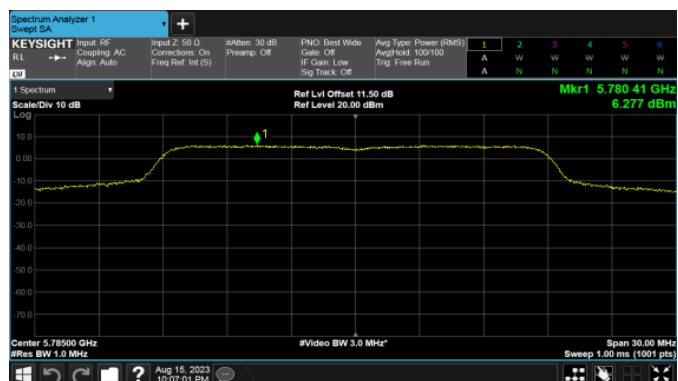
CH149



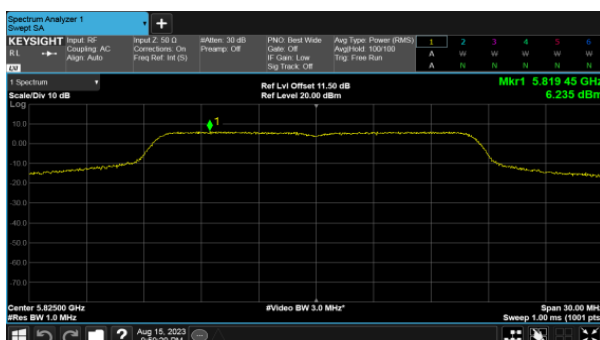
CH157



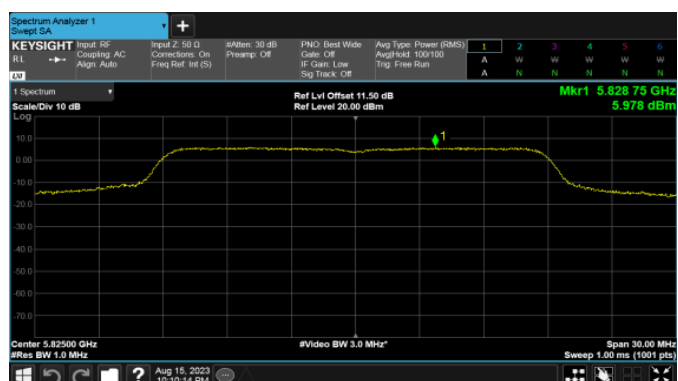
CH157



CH165

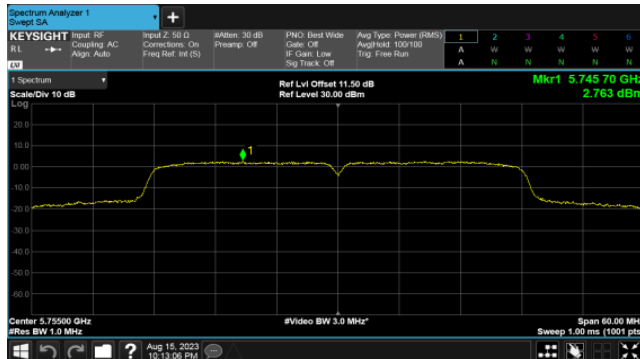


CH165

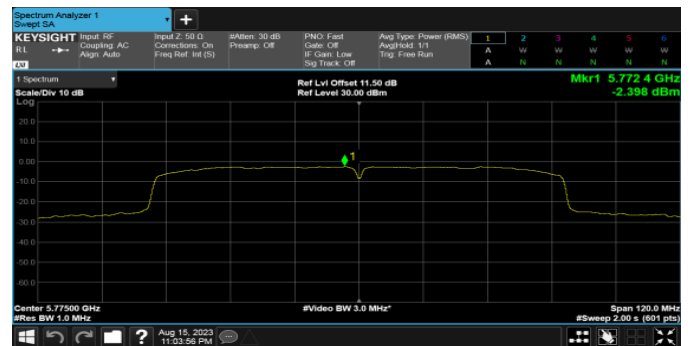




Modulation Type: 802.11ac VHT40 (13.5Mbps)
CH151



Modulation Type: 802.11ac VHT80 (29.3Mbps)
CH155



CH159

