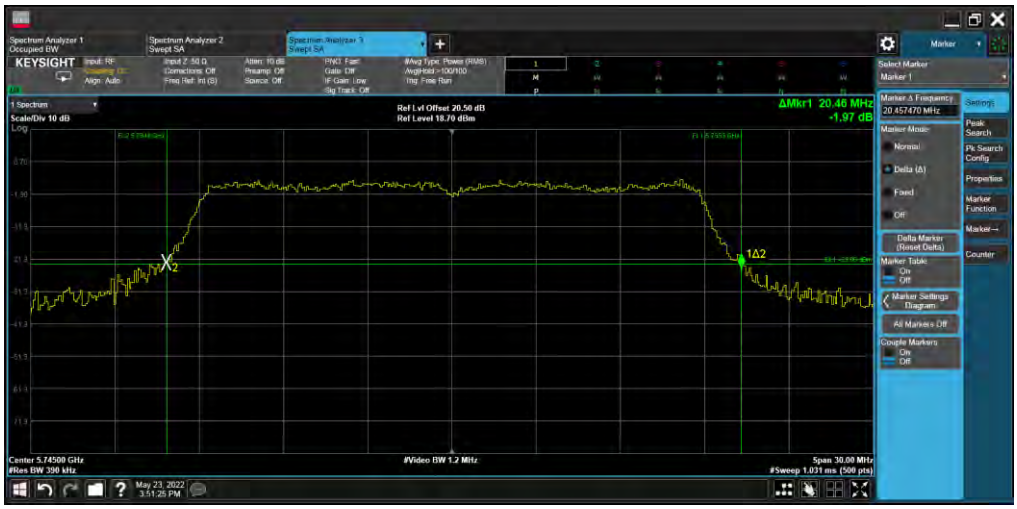
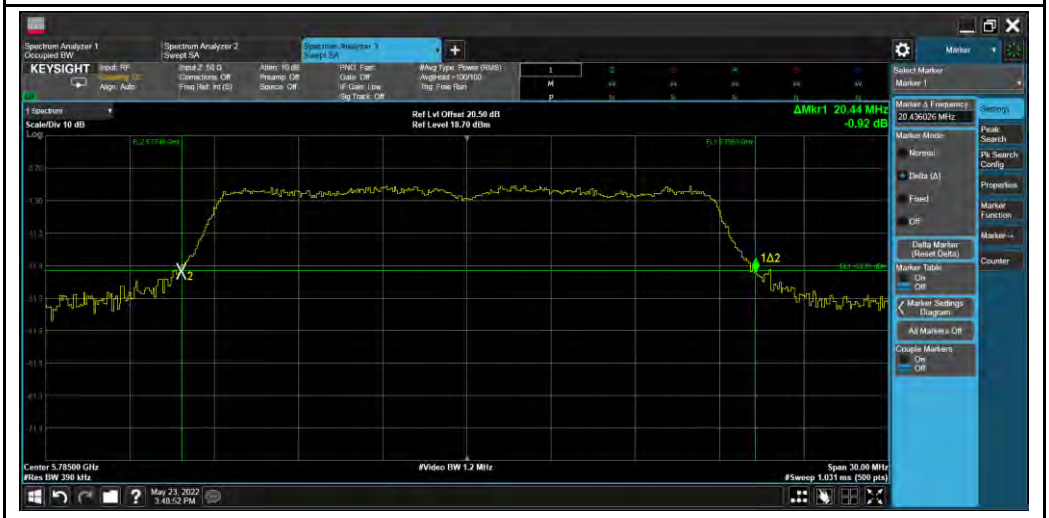
802.11n ch40

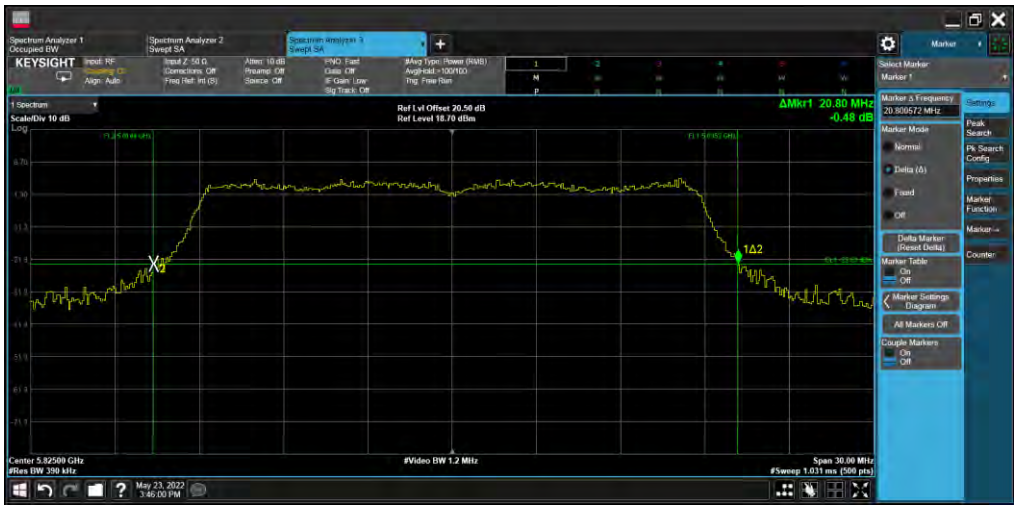
802.11n ch48



802.11n ch149



802.11n ch157



802.11n ch165

802.11ac ch36

802.11ac ch40

802.11ac ch48

802.11ac ch149

802.11ac ch157

802.11ac ch165

802.11ax ch36

802.11ax ch40

802.11ax ch48

802.11ax ch149

802.11ax ch157

802.11ax ch165

11n 40

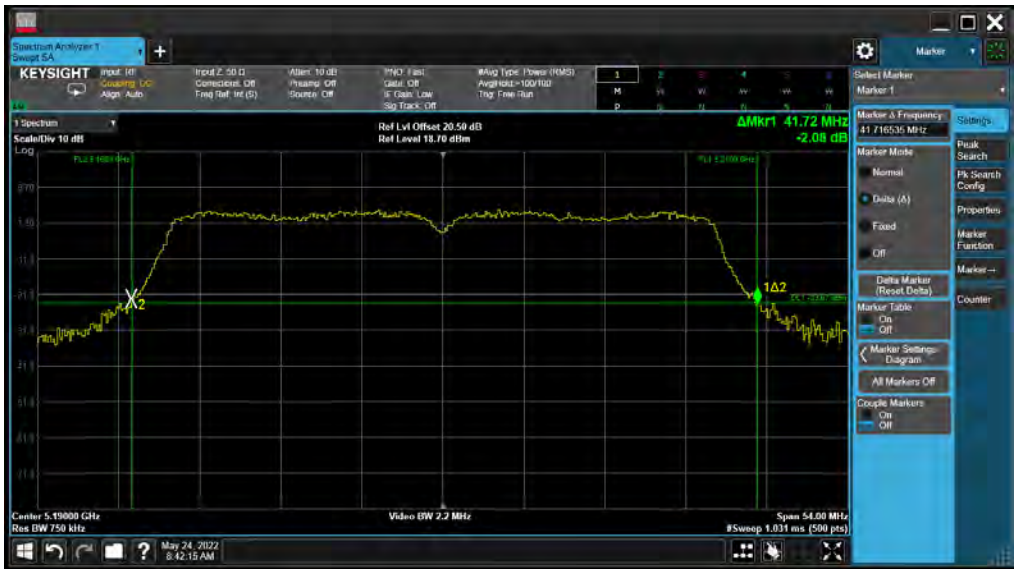
802.11n40 ch38

802.11n40 ch46

802.11 n40 ch151

802.11n40 ch159

11ac 40



802.11ac40 ch38

802.11nac40 ch46

802.11 ac40 ch151

802.11ac ch159

11ax 40

802.11ax40 ch38

802.11ax40 ch46

802.11ax40 ch151

802.11ax40 ch159

11ac 80 OBW

802.11ax80 ch42

802.11ax80 ch155

802.11ac80 ch42

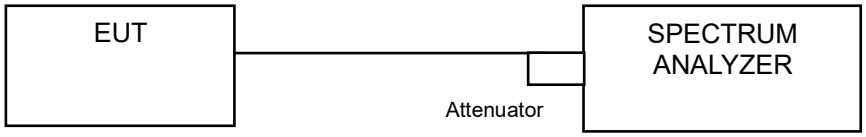
802.11ac80 ch155

4.6 Peak Power Spectral Density Measurement

4.6.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Client device	11dBm/ MHz
U-NII-2A	---		11dBm/ MHz
U-NII-2C	---		11dBm/ MHz
U-NII-3	---		30dBm/ 500kHz

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as Item 4.3.6.

4.6.7 Test Results

Path B; PSD measurement result

Mode	Channel	Frequency MHz	Conducted power (average) dBm	Conducted power Limit dBm	PSD (Peak) dBm 1MHz RBW	Correction PSD+10*log(1000KHz/750 KHz)	PSD Limit dBm
802.11a	36	5180	8.41	24	4.763		11
	40	5200	8.10	24	5.096		11
	48	5240	8.01	24	3.959		11
	149	5745	6.91	24			30
	157	5785	6.02	24			30
	165	5825	5.71	24			30
802.11n 20	36	5180	8.60	24	4.806		11
	40	5200	8.28	24	5.196		11
	48	5240	8.71	24	3.352		11
	149	5745	7.00	24			30
	157	5785	6.54	24			30
	165	5825	5.82	24			30
802.11ac 20	36	5180	8.27	24	4.857		11
	40	5200	8.28	24	5.206		11
	48	5240	8.57	24	3.530		11
	149	5745	7.01	24			30
	157	5785	6.47	24			30
	165	5825	5.80	24			30
802.11ax 20	36	5180	6.71	24	4.421		11
	40	5200	6.68	24	4.059		11
	48	5240	6.53	24	2.869		11
	149	5745	5.44	24			30
	157	5785	4.71	24			30
	165	5825	5.80	24			30
802.11n 40	38	5180	8.53	24	1.749	2.99	11
	46	5200	8.41	24	0.910	2.15	11
	151	5755	7.29	24			30
	159	5795	6.31	24			30
802.11ac 40	38	5180	8.51	24	1.753	3.00	11
	46	5200	8.39	24	0.910	2.15	11
	151	5755	7.22	24			30
	159	5795	6.27	24			30
802.11ax 40	38	5180	6.79	24	3.458	4.708	11
	46	5200	6.75	24	2.369	3.611	11

	151	5755	5.70	24			30
	159	5795	4.78	24			30
802.11ax 80	42	5210	8.44	24	-3.63		11
	155	5775	6.79	24			30
802.11ac 80	42	5210	8.75	24	-3.16		11
	155	5775	7.04	24			30

Path A

Mode	Channel	Frequency MHz	PSD	PSD	PSD Limit
			MHz @ 1MHz	Correction PSD+10*Log(1000KHz/750KHz)	dBm
802.11a	36	5180	1.55		11
	40	5200	2.61		11
	48	5240	1.55		11
	149	5745			30
	157	5785			30
	165	5825			30
802.11n 20	36	5180	1.91		11
	40	5200	1.60		11
	48	5240	1.60		11
	149	5745			30
	157	5785			30
	165	5825			30
802.11ac 20	36	5180	1.62		11
	40	5200	1.59		11
	48	5240	1.72		11
	149	5745			30
	157	5785			30
	165	5825			30
802.11ax 20	36	5180	1.51		11
	40	5200	1.10		11
	48	5240	1.40		11
	149	5745			11
	157	5785			30
	165	5825			30
802.11n 40	38	5190	0.02	1.269387	11
	46	5230	-1.10	0.149387	11
	151	5755			30
	159	5795			30
802.11ac 40	38	5190	-0.24	1.009387	11
	46	5230	-1.17	0.079387	11
	151	5755			30
	159	5795			30

802.11ax 40	38	5190	-0.08	1.169387	11
	46	5230	-0.68	0.569387	11
	151	5755			30
	159	5795			30
802.11ax 80	42	5210	-3.68		11
	155	5775			30
802.11ac 80	42	5210	-3.86		11
	155	5775			30

Path A 100KHz RBW

Mode	Channel	Frequency MHz	PSD	
			dBm	PSD dBm+10*log(500KHz/100 KHz
802.11a	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	3.057	10.0467
	157	5785	2.945	9.9347
	165	5825	3.655	10.6447
802.11n 20	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	2.384	9.3737
	157	5785	2.802	9.7917
	165	5825	3.118	10.1077
802.11ac 20	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	1.988	8.9777
	157	5785	2.402	9.3917
	165	5825	2.612	9.6017
802.11ax 20	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	2.794	9.7837
	157	5785	2.299	9.2887
	165	5825	2.688	9.6777
802.11n 40	38	5190	-	
	46	5230	-	
	151	5755	-5.3	1.6897
	159	5795		1.7407
802.11ac 40	38	5190	-	
	46	5230	-	
	151	5755	-5.57	1.4197

	159	5795	-5.824	1.1657
802.11ax 40	38	5190	-	
	46	5230	-	
	151	5755	-5.465	1.5247
	159	5795	-5.811	1.1787
802.11ax 80	42	5210	-	
	155	5775	-9.38	-2.3903
802.11ac 80	42	5210	-	
	155	5775	-9.364	-2.3743

Path B 100KHz RBW

Mode	Channel	Frequency MHz	PSD	
			dBm	PSD dBm+10*log(500KHz/100KHz
802.11a	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	-2.242	4.7477
	157	5785	-2.423	4.5667
	165	5825	-2.082	4.9077
802.11n 20	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	-2.4	4.5897
	157	5785	-2.197	4.7927
	165	5825	-2.111	4.8787
802.11ac 20	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	-2.421	4.5687
	157	5785	-2.398	4.5917
	165	5825	-2.069	4.9207
802.11ax 20	36	5180	-	
	40	5200	-	
	48	5240	-	
	149	5745	-2.29	4.6997
	157	5785	-2.404	4.5857
	165	5825	-1.987	5.0027
802.11n 40	38	5190	-	
	46	5230	-	
	151	5755	-6.317	0.6727
	159	5795	-6.137	0.8527

802.11ac 40	38	5190	-	
	46	5230	-	
	151	5755	-6.367	0.6227
	159	5795	-6.124	0.8657
802.11ax 40	38	5190	-	
	46	5230	-	
	151	5755	-6.133	0.8567
	159	5795	-5.854	1.1357
802.11ax 80	42	5210	-	
	155	5775	-9.401	-2.4113
802.11ac 80	42	5210	-	
	155	5775	-9.236	-2.2463

Power spectral density Path A + Path B

Mode	Channel	Frequency MHz	PSD path A	PSD path B	PSD path A	PSD path B	PSD path A+B	PSD path A+B	PSD limit
			dBm	dBm	mW	mW	mW	dBm	dBm
802.11a	36	5180	1.55	4.763	1.428894	2.994332	4.423226	6.457392	11
	40	5200	2.61	5.096	1.823896	3.232958	5.056853	7.038803	11
	48	5240	1.55	3.959	1.428894	2.488284	3.917178	5.929733	11
	149	5745	10.0467	-2.242	10.108111	0.5967604	10.70487	10.2958146	30
	157	5785	9.93470004	-2.423	9.85076604	0.57240049	10.42316	10.1799968	30
	165	5825	10.6447	-2.082	11.6003209	0.61915588	12.21947	10.8705261	30
802.11n 20	36	5180	1.91	4.806	1.55238701	3.02412682	4.576513	6.60534779	11
	40	5200	1.6	5.196	1.44543977	3.30826279	4.753702	6.77032004	11
	48	5240	1.6	3.352	1.44543977	2.16371472	3.609154	5.57405473	11
	149	5745	9.37370004	-2.4	8.65705156	0.57543994	9.232491	9.65318917	30
	157	5785	9.79170004	-2.197	9.53169209	0.60297596	10.134668	10.0580953	30
	165	5825	10.1077	-2.111	10.251089	0.61503524	10.866124	10.3607467	30
802.11ac 20	36	5180	1.62	4.857	1.45211162	3.05984903	4.5119607	6.54365304	11
	40	5200	1.59	5.206	1.44211535	3.31588912	4.7580045	6.77424846	11
	48	5240	1.72	3.53	1.48593564	2.25423921	3.7401749	5.72891906	11
	149	5745	8.97770004	-2.421	7.90260008	0.57266416	8.4752642	9.28153247	30
	157	5785	9.39170004	-2.398	8.6930065	0.575705	9.2687115	9.67019364	30
	165	5825	9.60170004	-2.069	9.12367915	0.62101201	9.7446912	9.8876808	30
802.11ax 20	36	5180	1.51	4.421	1.41579378	2.76757883	4.1833726	6.21526549	11
	40	5200	1.1	4.059	1.28824955	2.54624389	3.8344934	5.83707999	11
	48	5240	1.4	2.869	1.38038426	1.93597614	3.3163604	5.20661721	11
	149	5745	9.78370004	-2.29	9.51415022	0.59020108	10.104351	10.0450844	30
	157	5785	9.28870004	-2.404	8.48926331	0.57491018	9.0641735	9.5732821	30
	165	5825	9.67770004	-1.987	9.28474551	0.63284886	9.9175944	9.96406341	30
802.11n 40	38	5190	0.02	2.99	1.00461579	1.99067334	2.9952891	4.7643875	11
	46	5230	-1.1	2.15	0.77624712	1.64058977	2.4168369	3.83247341	11
	151	5755	1.68970004	-6.317	1.47560461	0.23350705	1.7091117	2.32770438	30
	159	5795	1.74070004	-6.137	1.49303505	0.24338847	1.7364235	2.39655661	30
802.11ac 40	38	5190	-0.24	3	0.94623716	1.99526231	2.9414995	4.68568775	11
	46	5230	-1.17	2.15	0.76383578	1.64058977	2.4044256	3.81011335	11
	151	5755	1.41970	-6.367	1.38666005	0.23083412	1.6174942	2.08842724	30
	159	5795	1.16570	-6.124	1.30788634	0.24411811	1.5520045	1.90892963	30
802.11ax 40	38	5190	-0.08	4.708	0.98174794	2.95665057	3.9383985	5.95319658	11
	46	5230	-0.68	3.611	0.85506671	2.29667742	3.1517441	4.98550953	11

	151	5755	1.524700	-6.133	1.42059409	0.24361274	1.6642068	2.21207301	30
	159	5795	1.178700	-5.854	1.31180718	0.25977658	1.5715838	1.96337534	30
802.11ax 80	42	5210	-3.68	-3.63	0.42854852	0.43351088	0.8620594	-0.64462809	11
	155	5775	-2.39029	-9.401	0.57672663	0.11478893	0.6915156	-1.60198045	30
802.11ac 80	42	5210	-3.86	-3.16	0.41114972	0.4830588	0.8942085	-0.48561195	11
	155	5775	-2.374299	-9.236	0.57885529	0.11923397	0.6980893	-1.56089046	30

PSD Path B 1MHz RBW Test Plot:

802.11a ch36

802.11a ch40

802.11a ch48

802.11ac20 ch36

802.11ac20 ch40

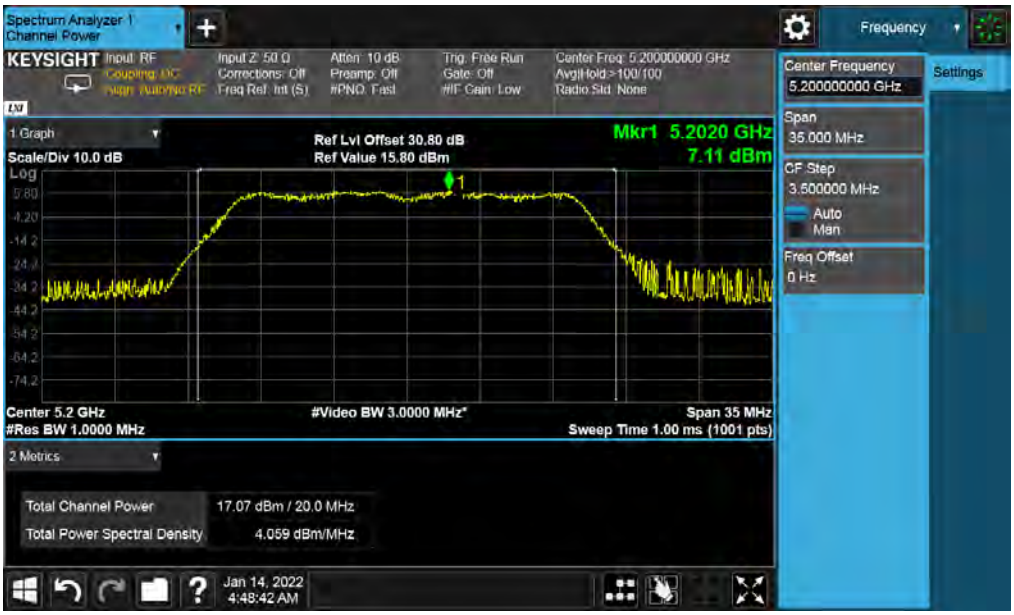
802.11ac20 ch48

802.11n20 ch36

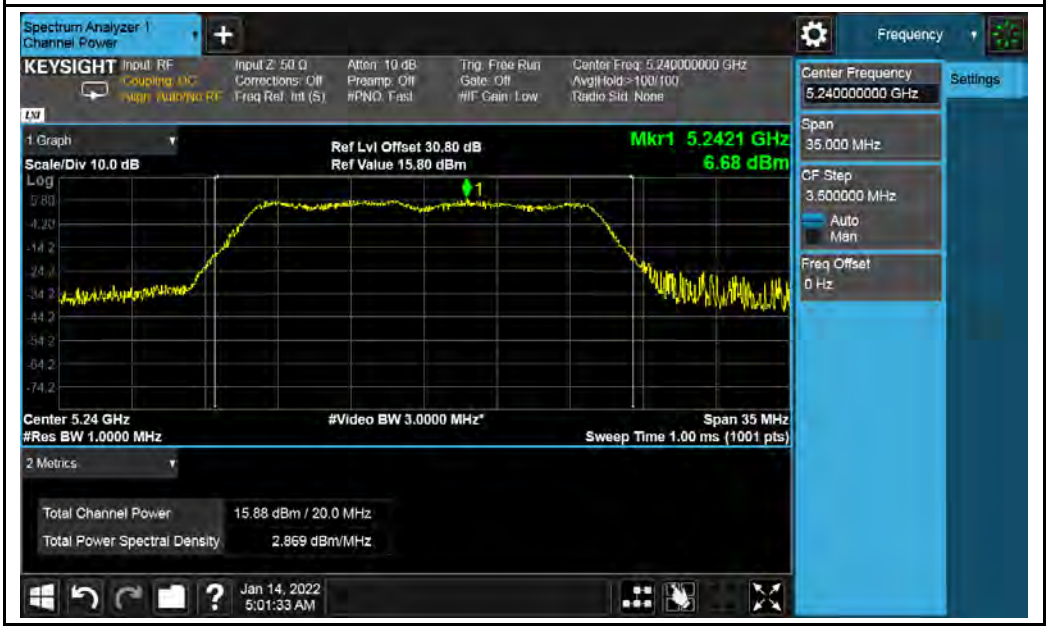
802.11n20 ch40

802.11n20 ch48

802.11ax20 ch36



802.11ax20 ch40



802.11ax20 ch48

802.11n40 ch38

802.11n40 ch46

802.11ac40 ch38

802.11ac40 ch46

802.11ax40 ch38

802.11ax40 ch46

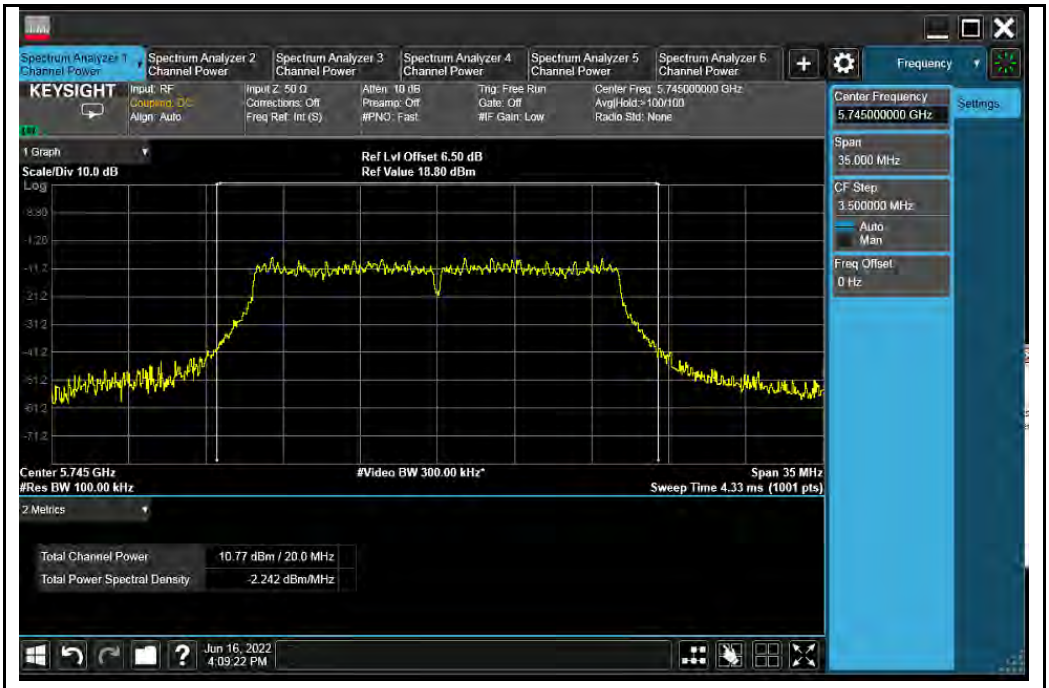
802.11ax80 ch42

802.11ac80 ch42

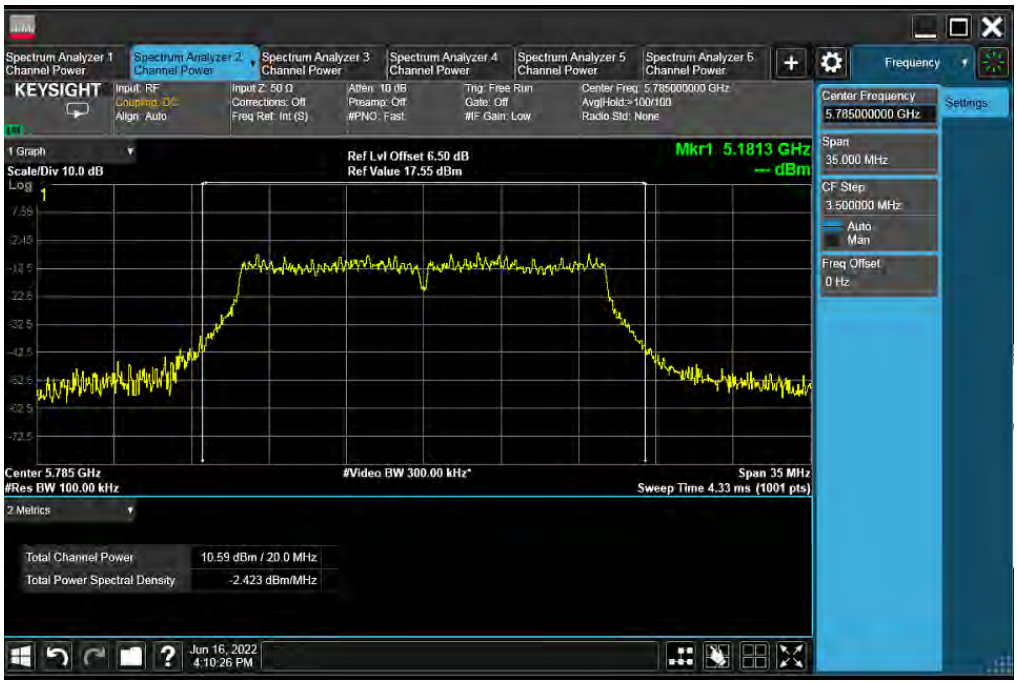
100 KHz RBW

Path B

11a20



802.11n ch149



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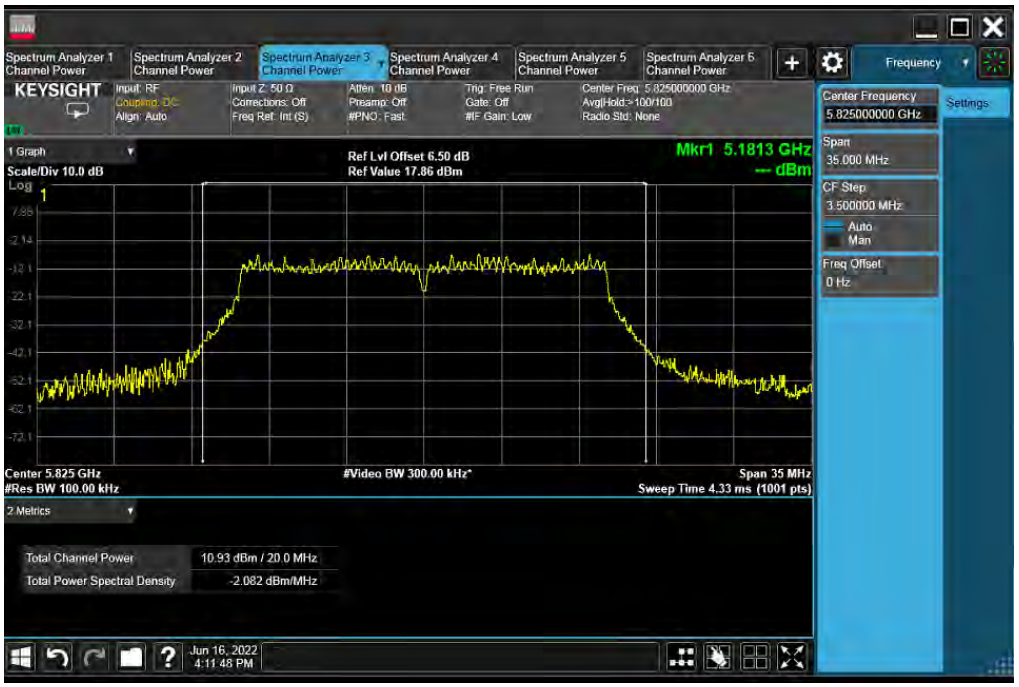
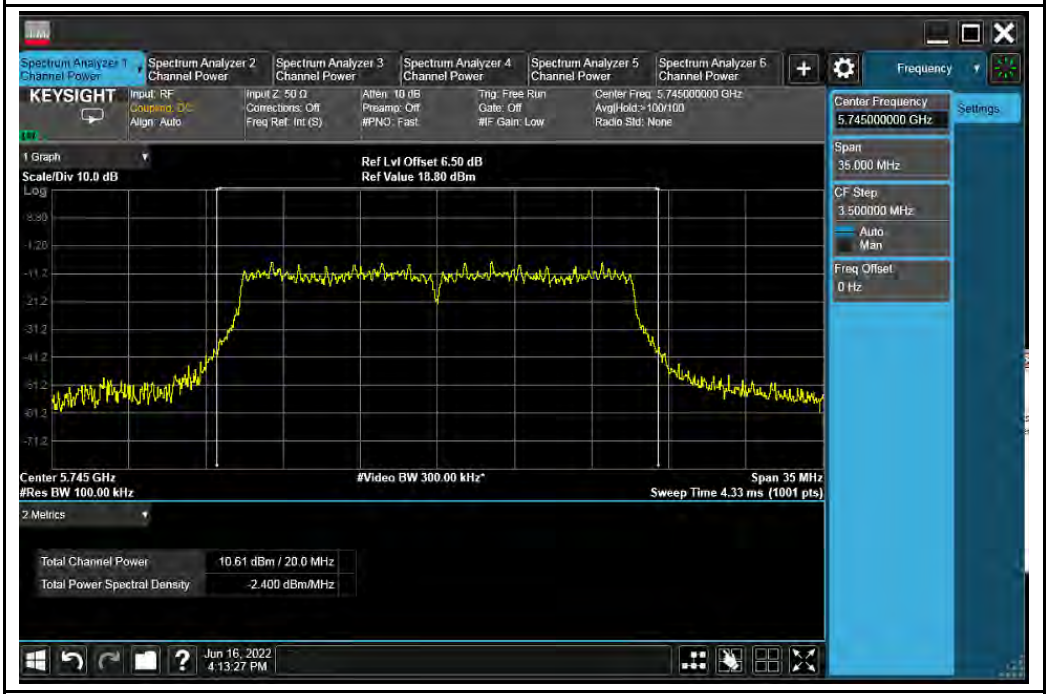
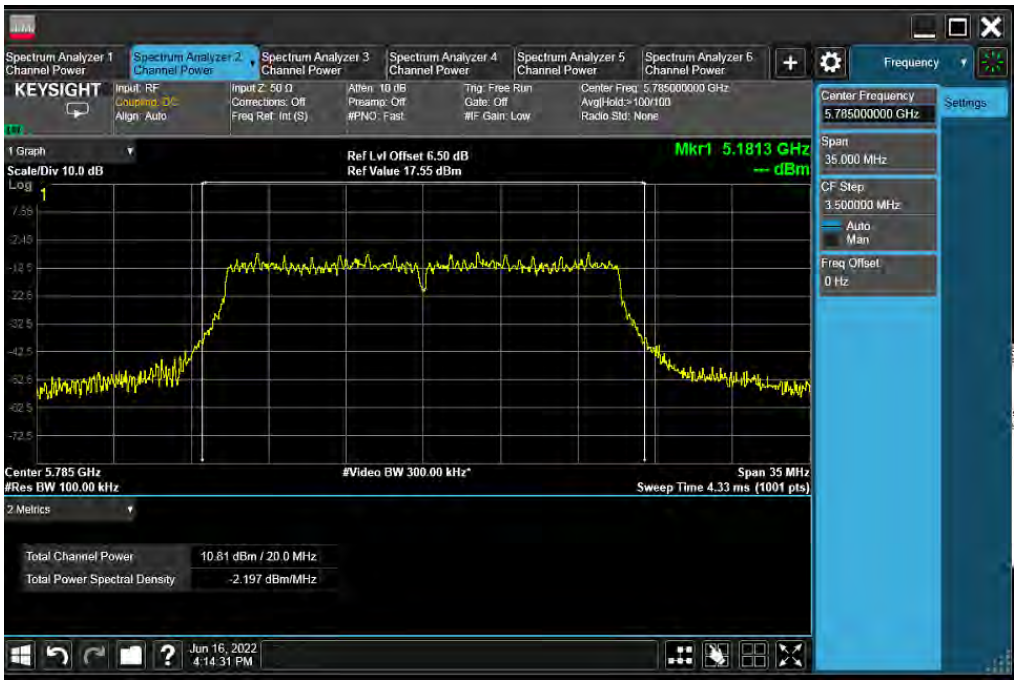


802.11n ch165

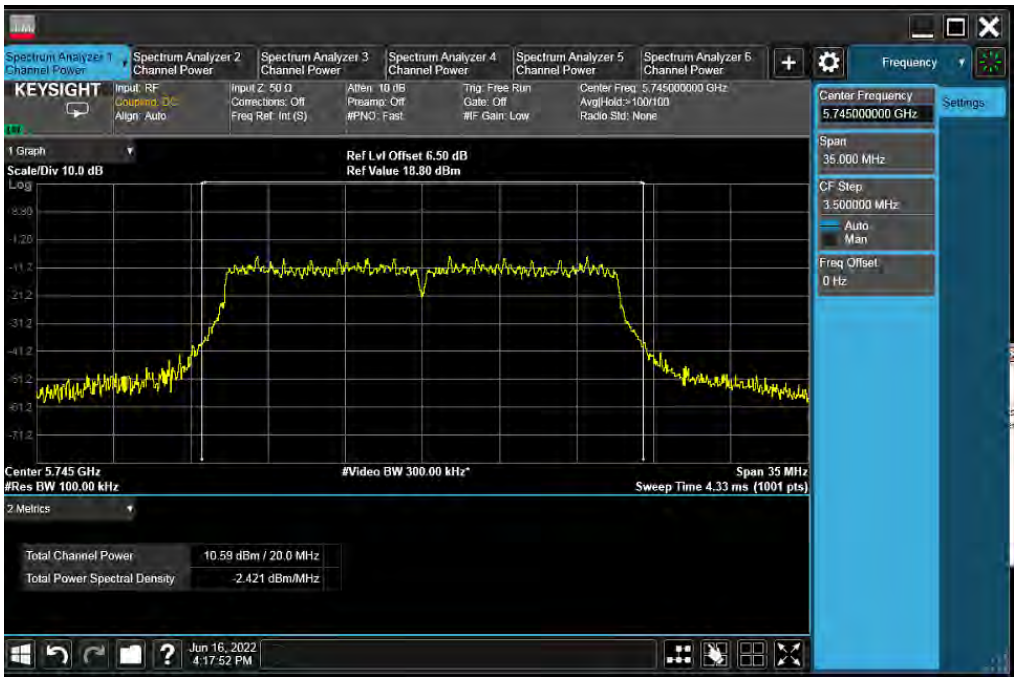


802.11a ch149

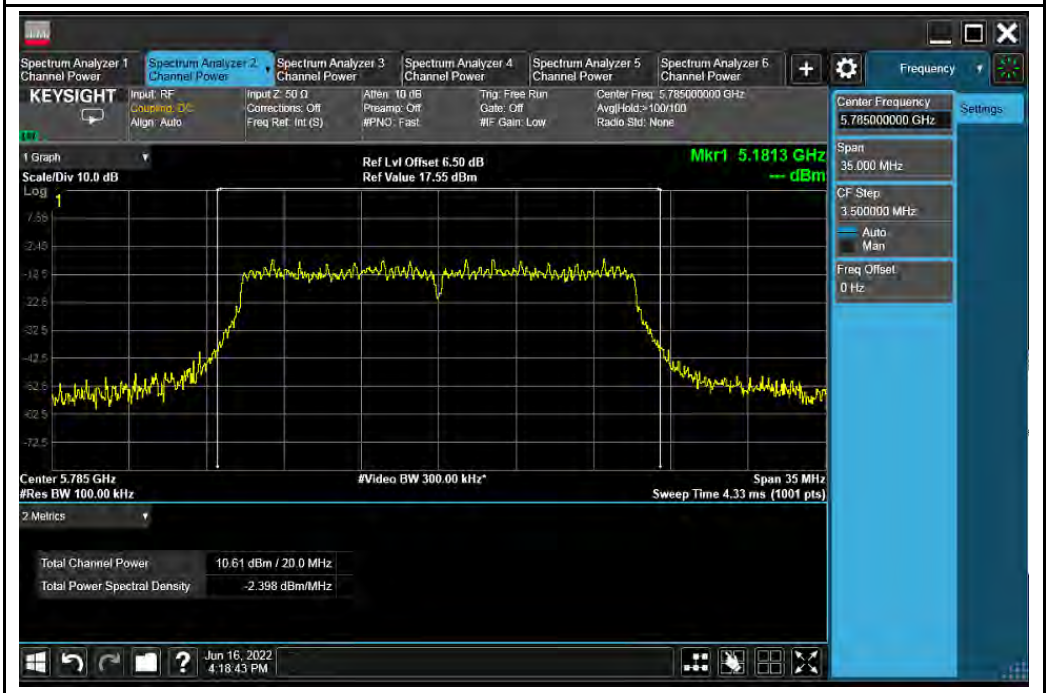


802.11a ch157

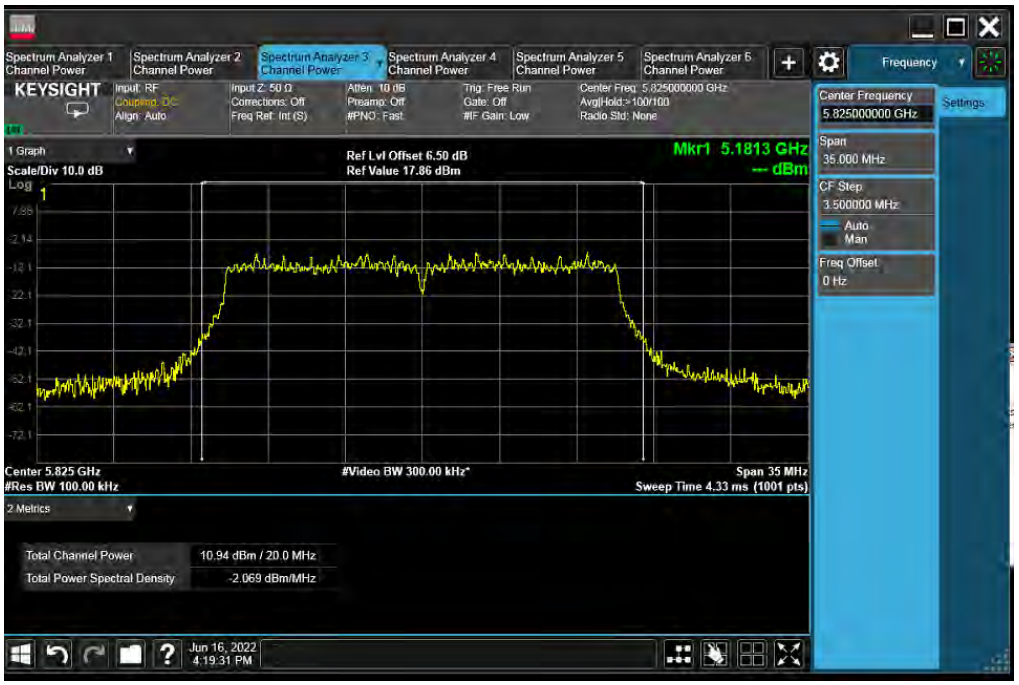
802.11a ch165



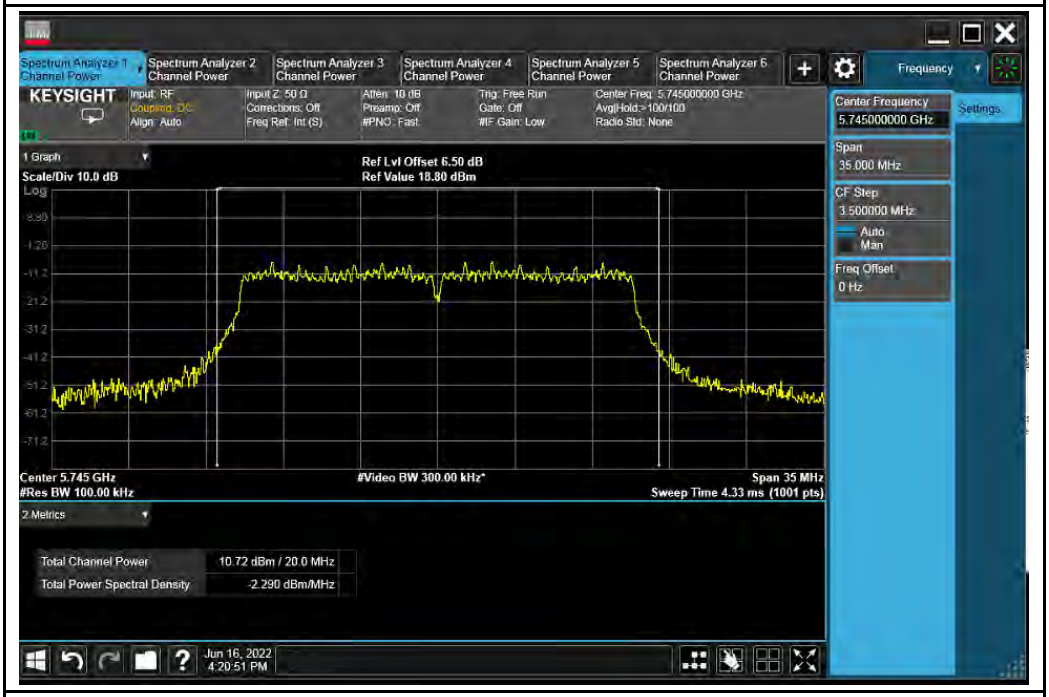
802.11ac ch149



802.11ac ch157

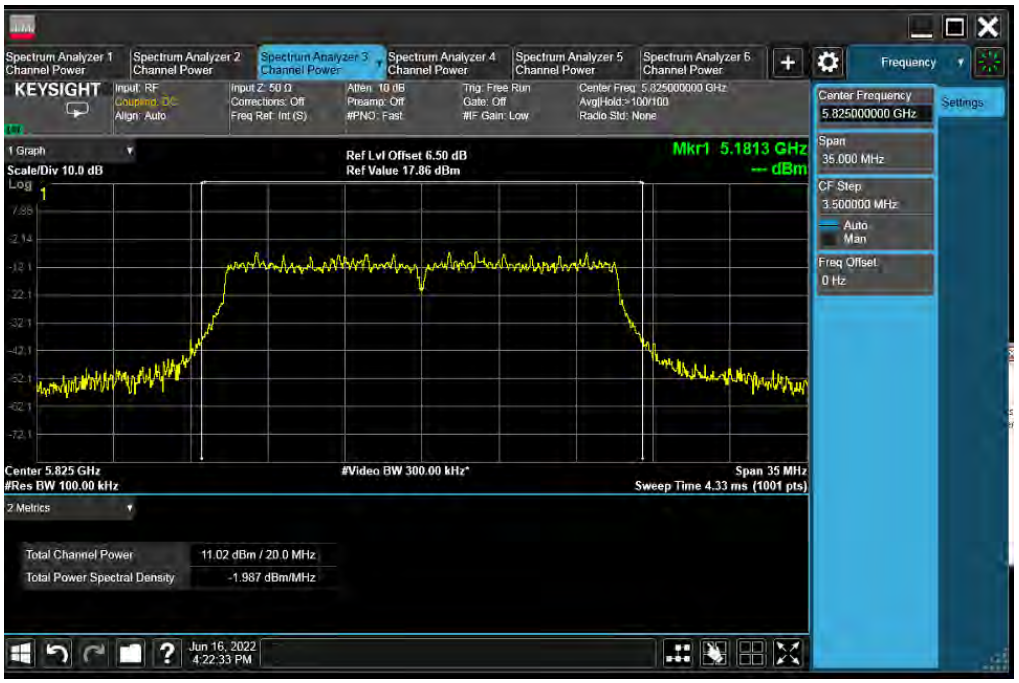


802.11ac ch165



802.11ax ch149

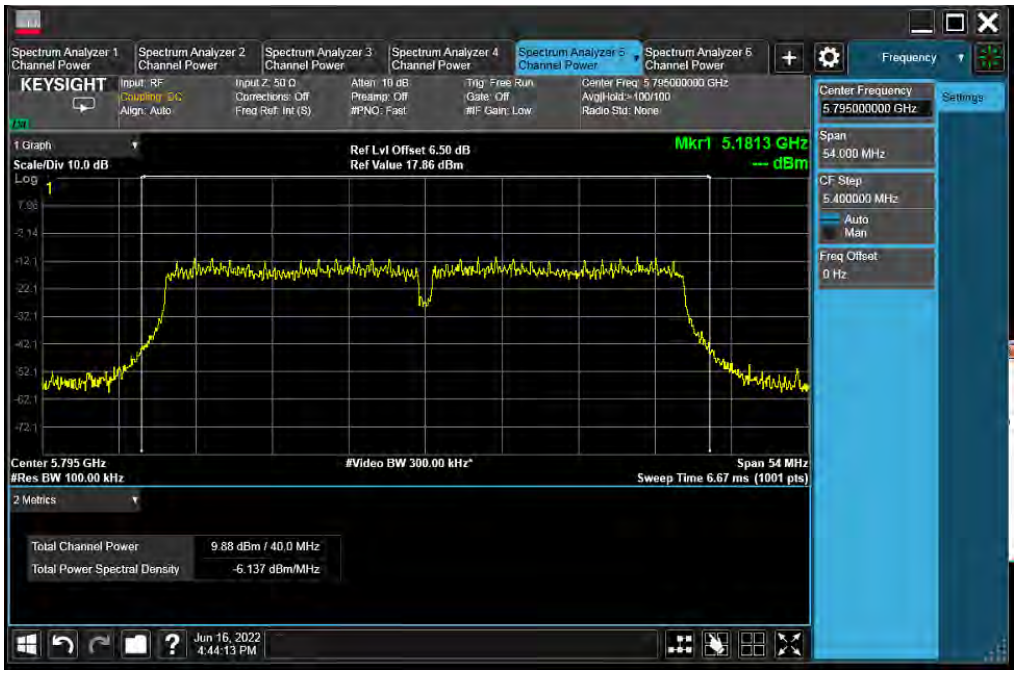
802.11ax ch157



802.11ax ch165

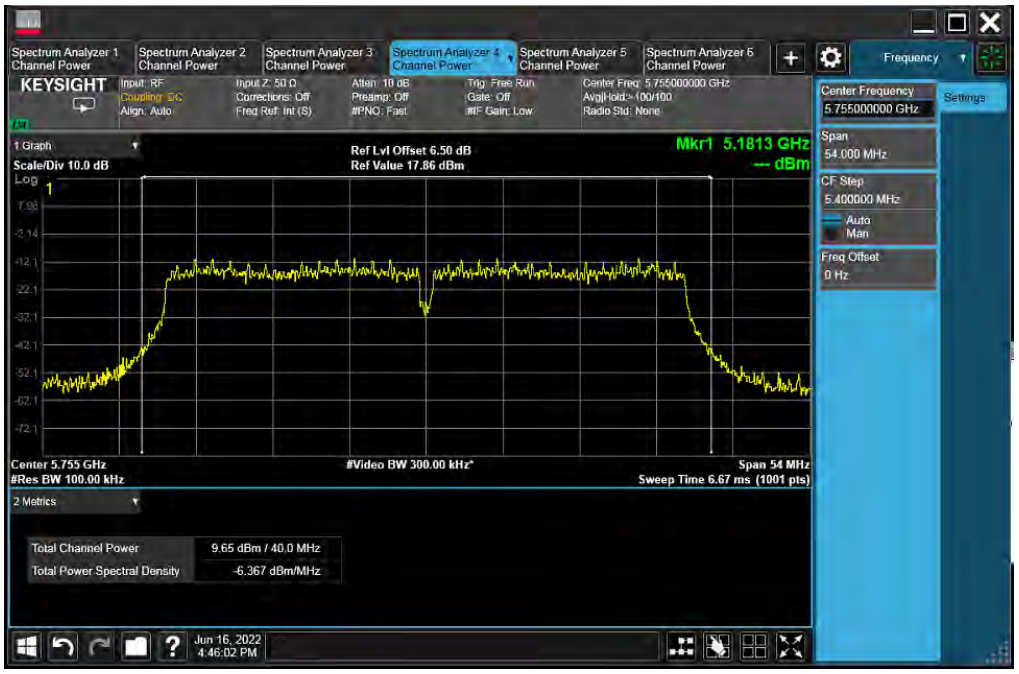
11n 40

802.11 n40 ch151



802.11n40 ch159

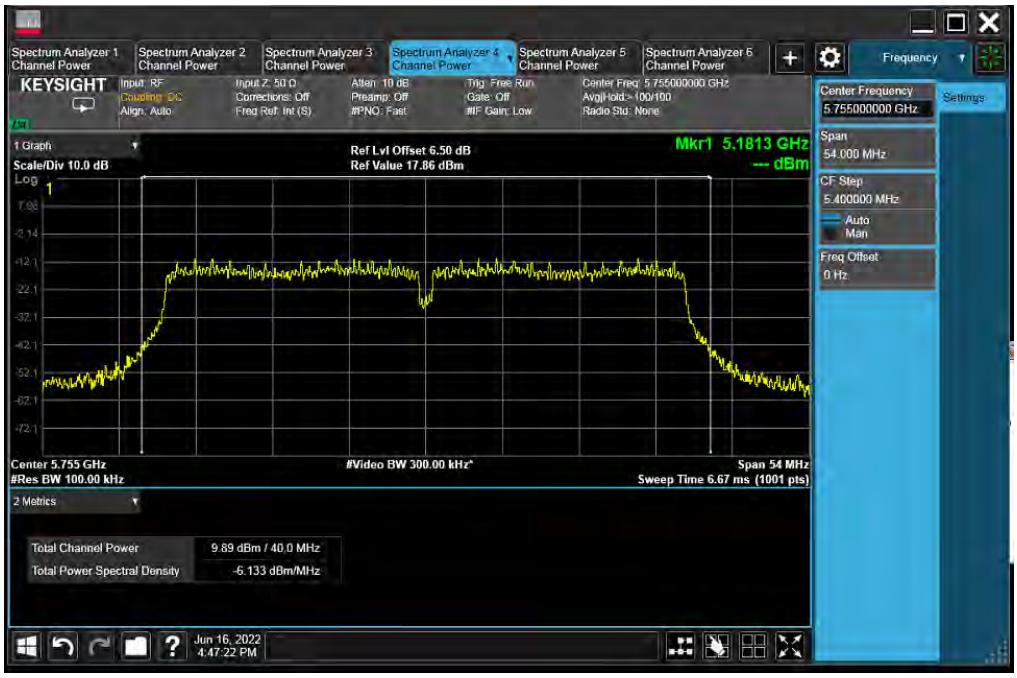
11ac 40



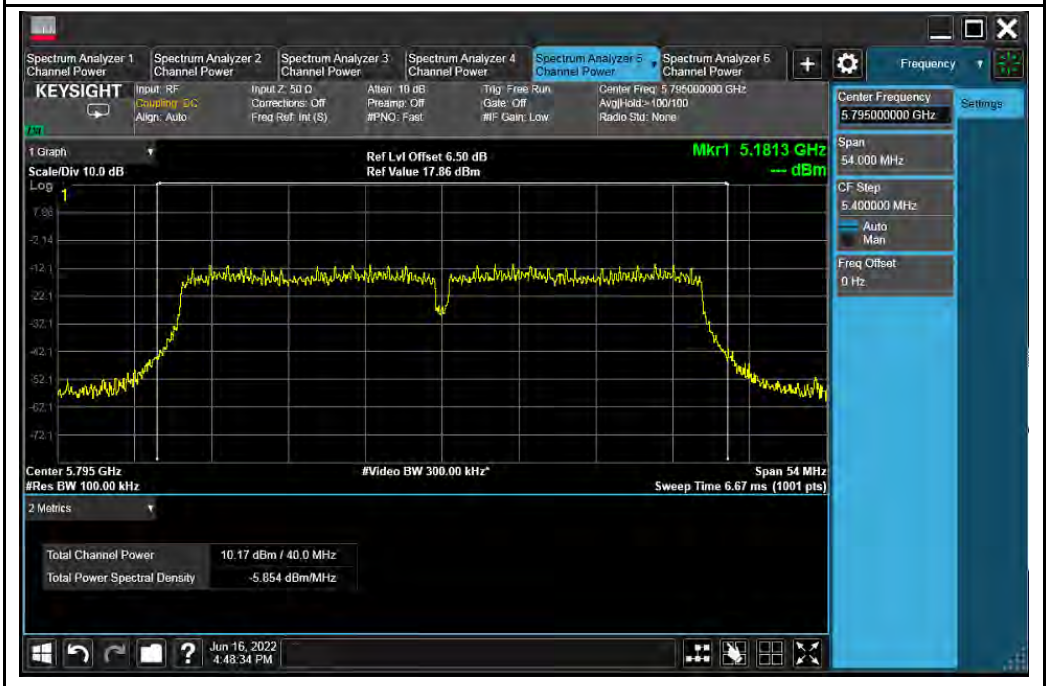
802.11 ac40 ch151

802.11ac ch159

11ax 40



802.11ax40 ch151



a

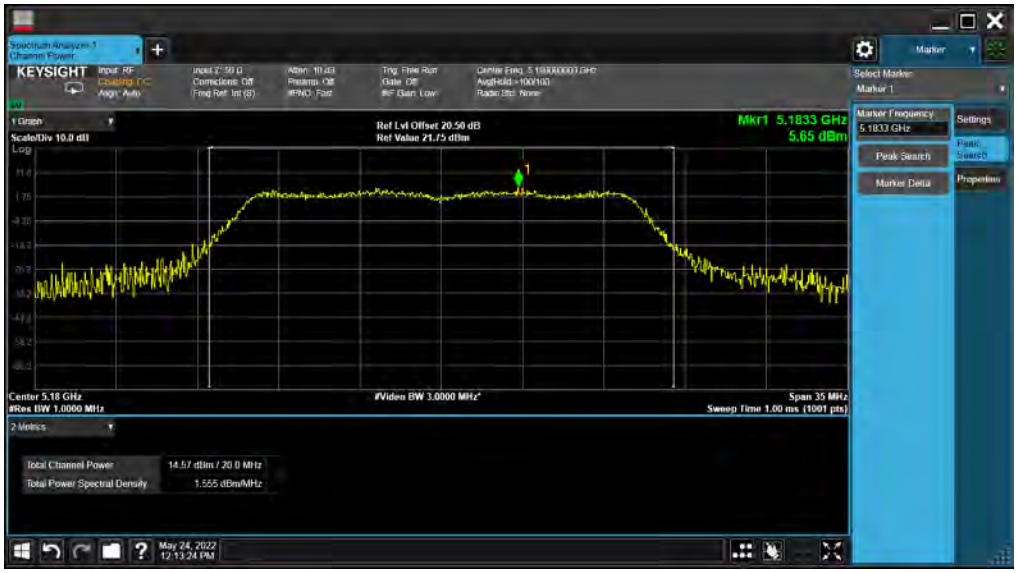
802.11ax40 ch159

11ac 80

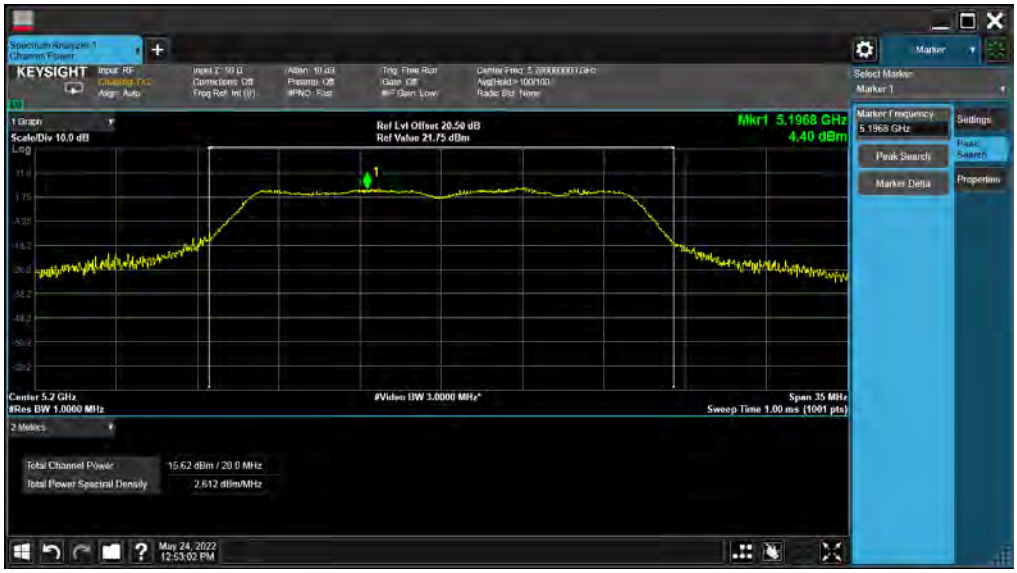
802.11ax80 ch155

802.11ac80 ch155

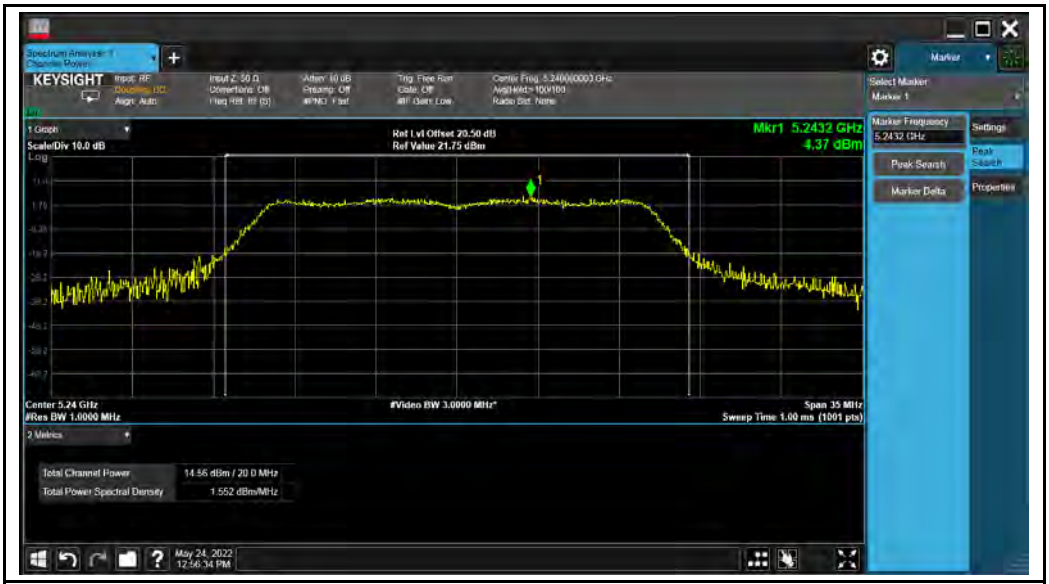
Path A, 1MHz PSD



802.11a ch36

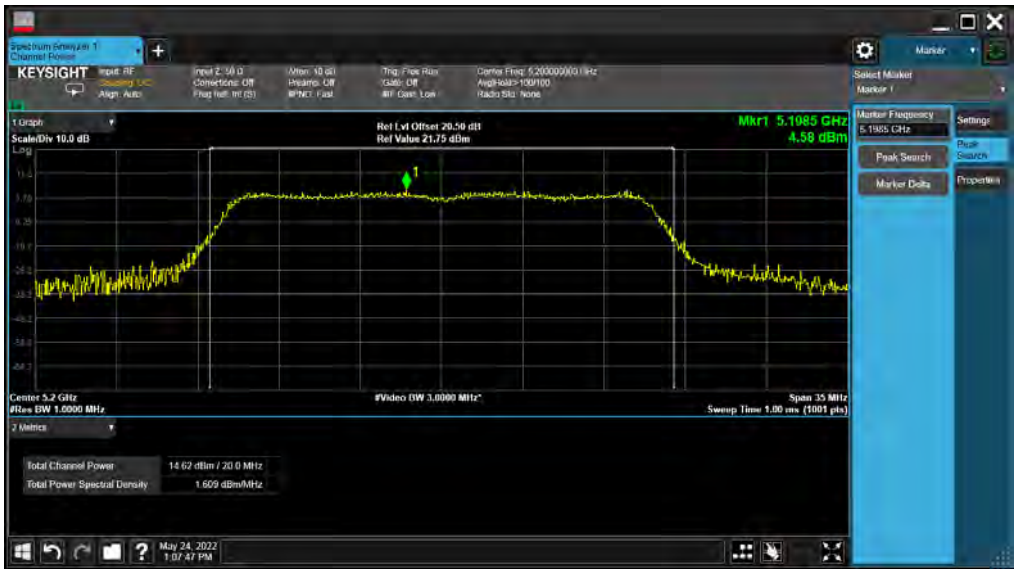


802.11a ch40



802.11a ch48

802.11n ch36

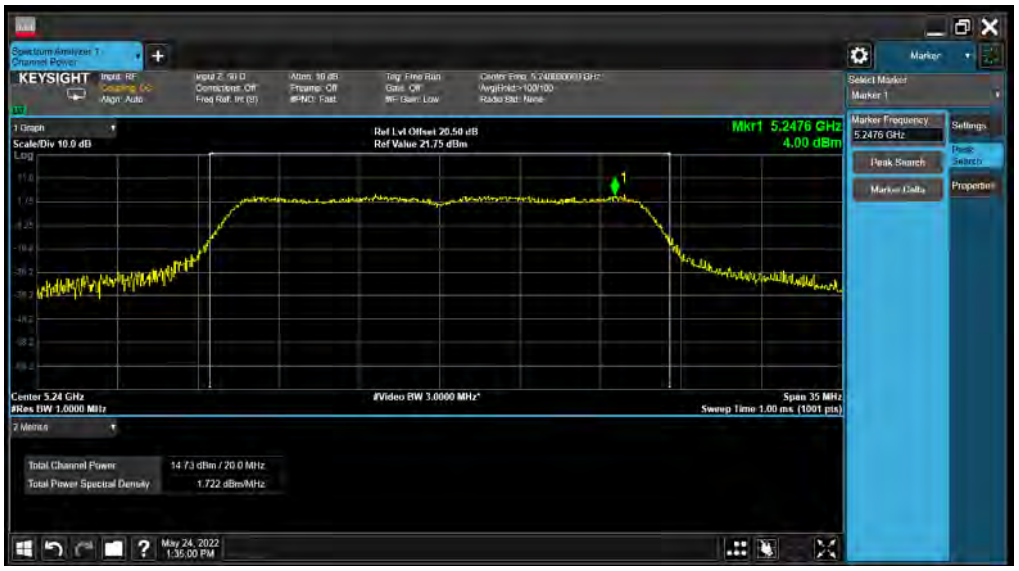


802.11n ch40

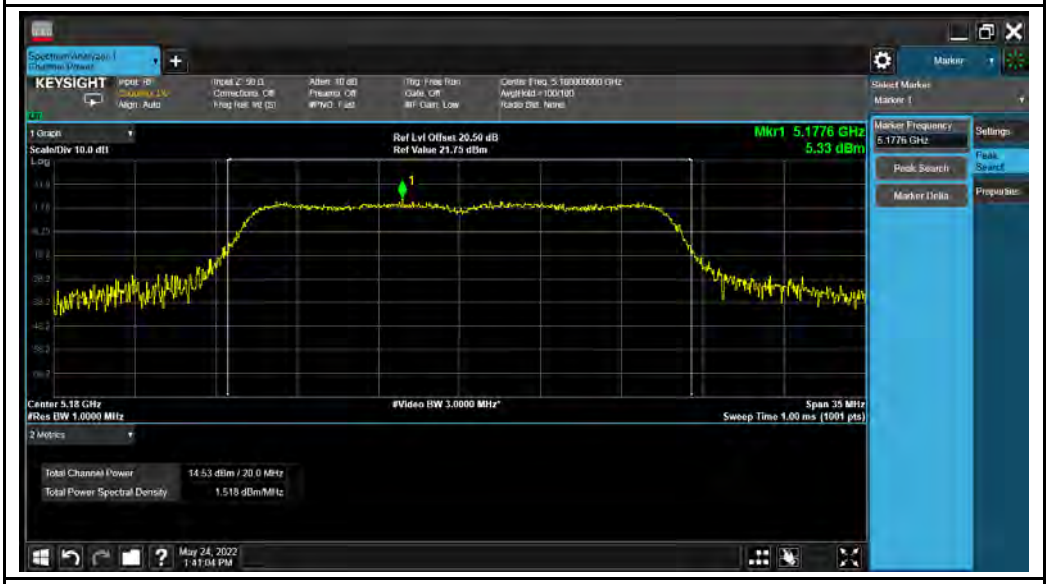
802.11n ch48

802.11ac ch36

802.11ac ch40



802.11ac ch48

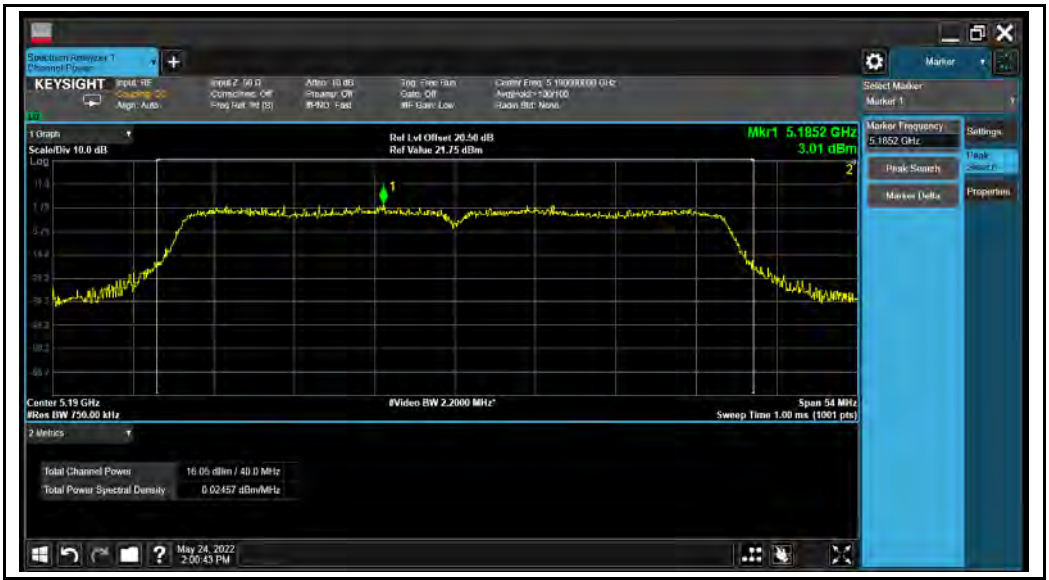


802.11ax ch36

802.11ax ch40

802.11ax ch48

11n 40

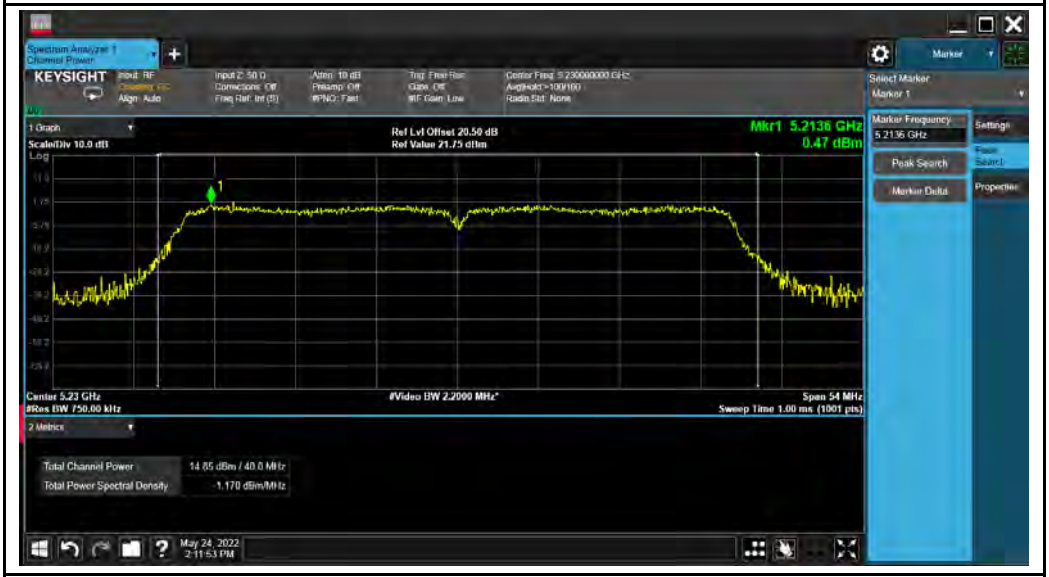


802.11n40 ch38

802.11n40 ch46

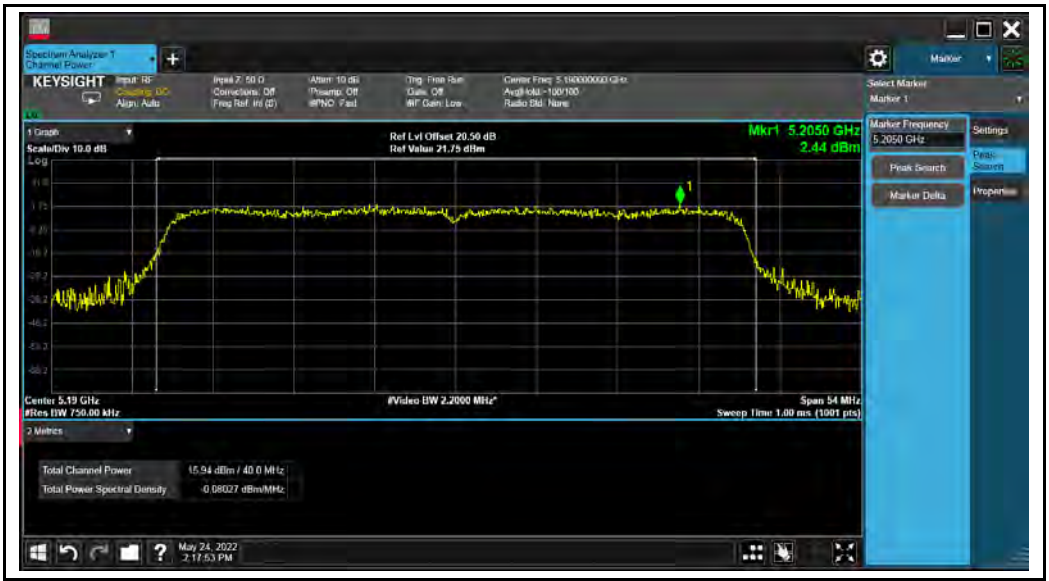
11ac 40

802.11ac40 ch38



802.11nac40 ch46

11ax 40



802.11ax40 ch38

802.11ax40 ch46

11ac 80

802.11ax80 ch42

802.11ac80 ch42

Path A 11a20 with 100kHz

802.11a ch149

802.11a ch157

802.11a ch165

802.11n ch149

802.11n ch157

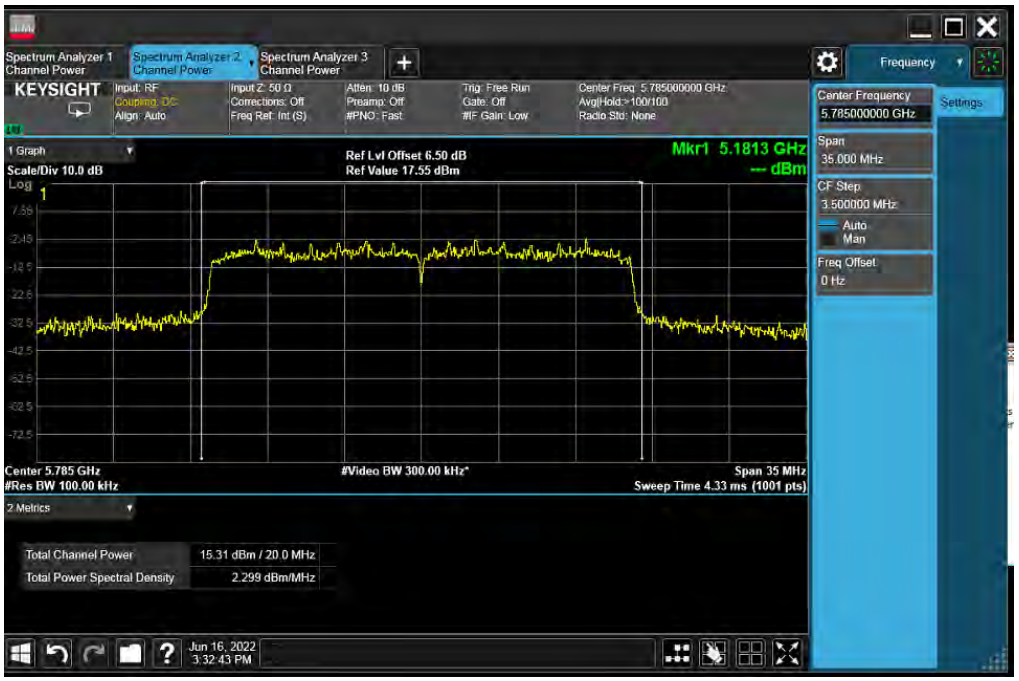
802.11n ch165

802.11ac ch149

802.11ac ch157

802.11ac ch165

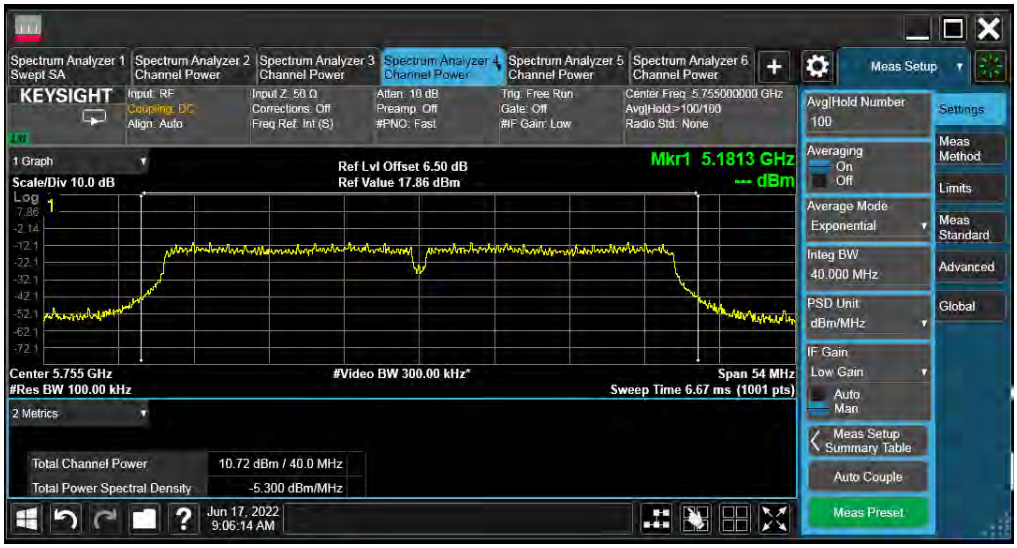
802.11ax ch149



802.11ax ch157

802.11ax ch165

11n 40



802.11 n40 ch151

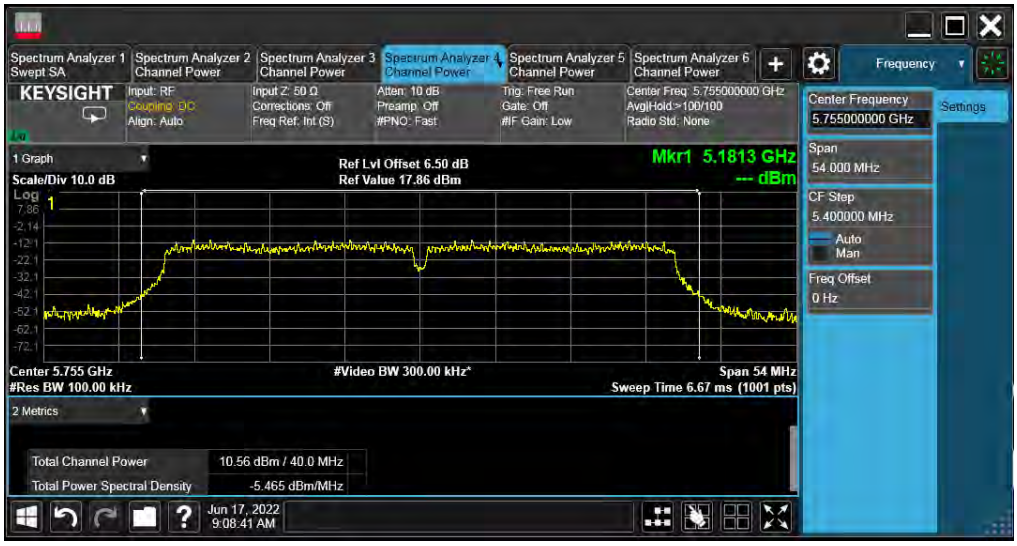
802.11n40 ch159

11ac 40

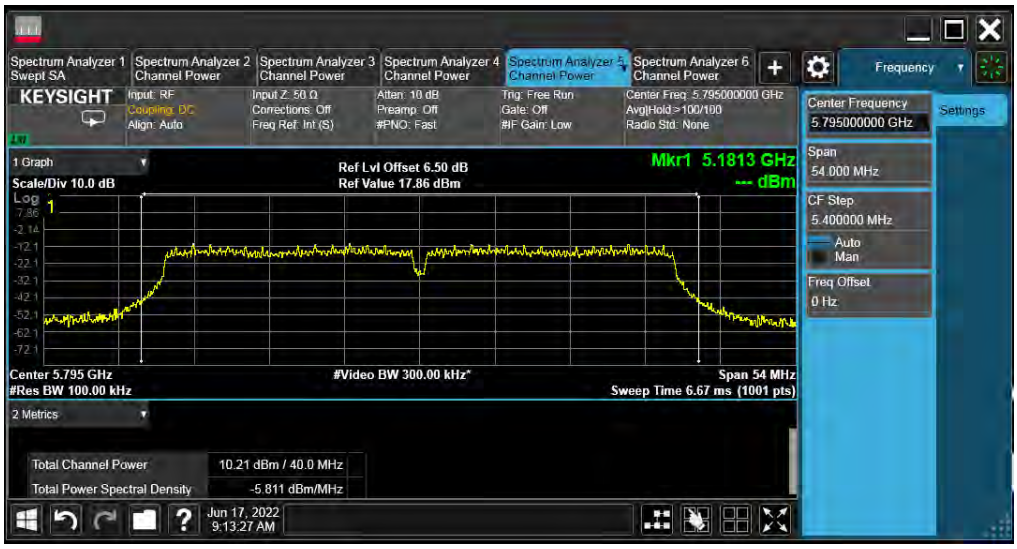
802.11 ac40 ch151

802.11ac ch159

11ax 40



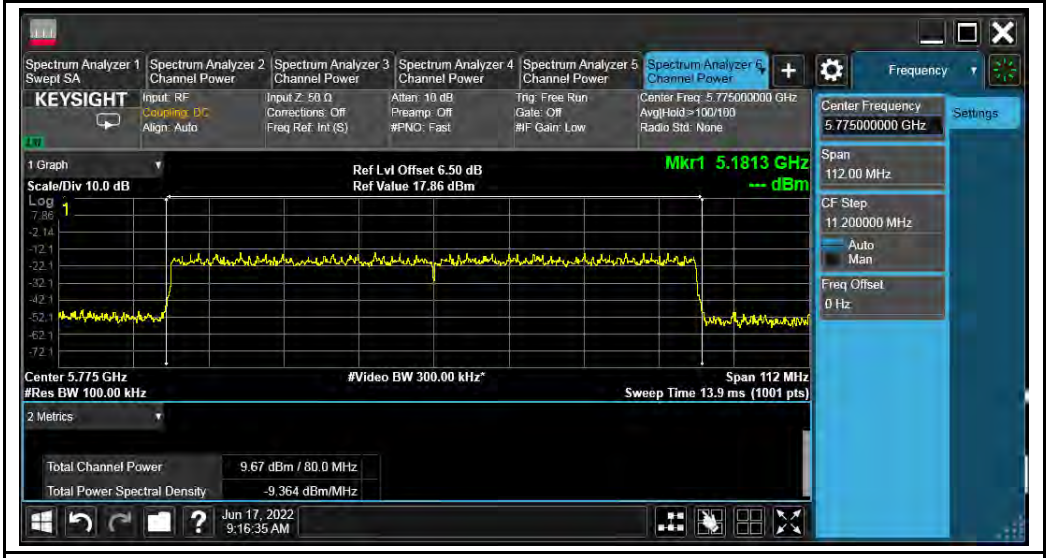
802.11ax40 ch151



802.11ax40 ch159

11ac 80

802.11ax80 ch155

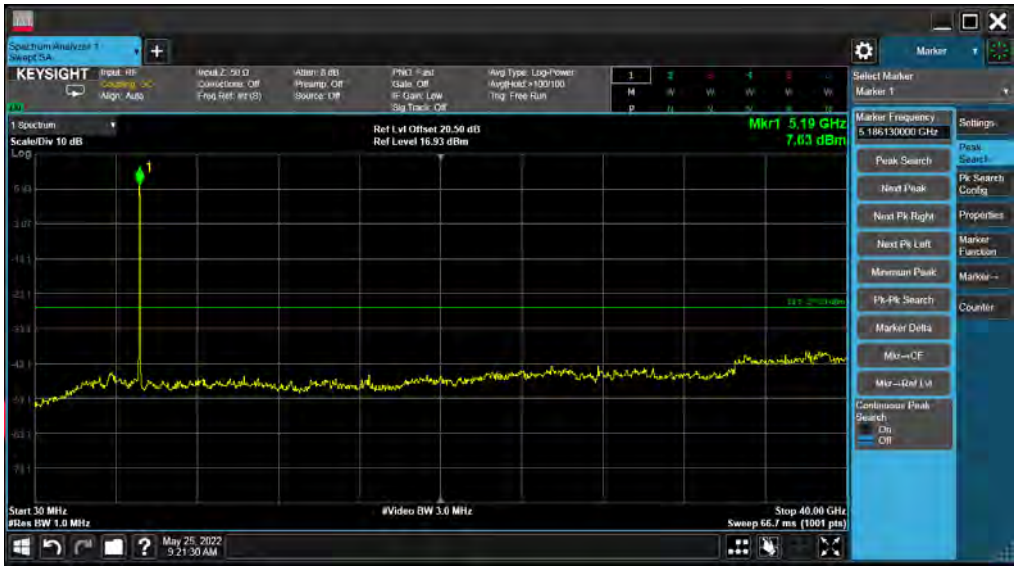


802.11ac80 ch155

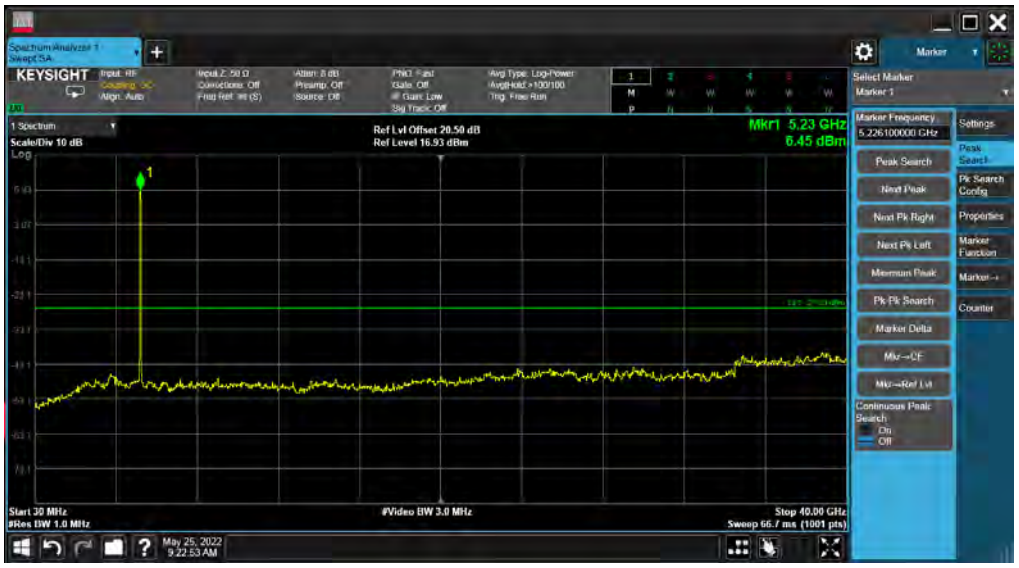
4.7 Conducted Spurious Emissions

Path A Conducted Spurious 11a20

802.11a ch36

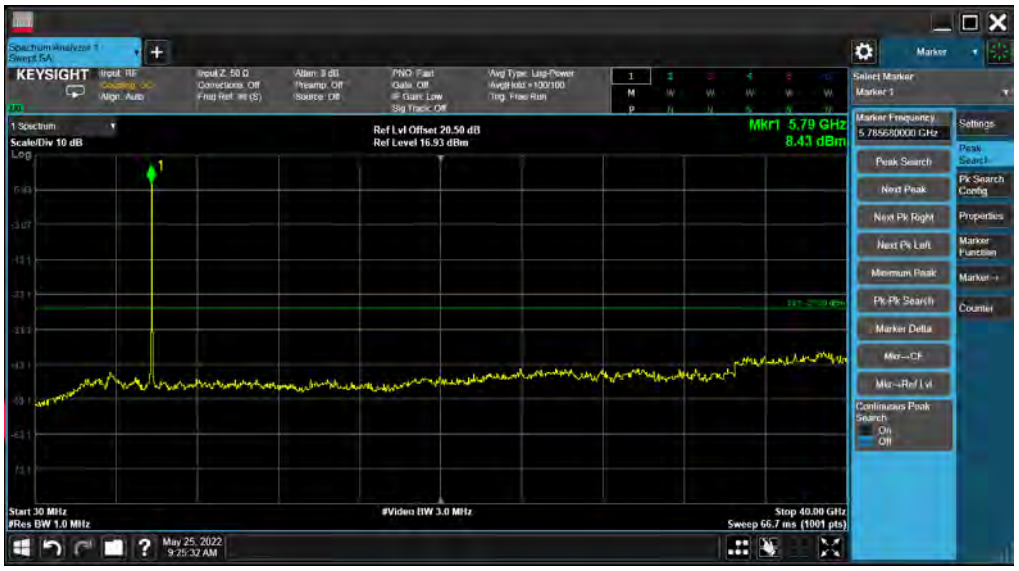


802.11a ch40

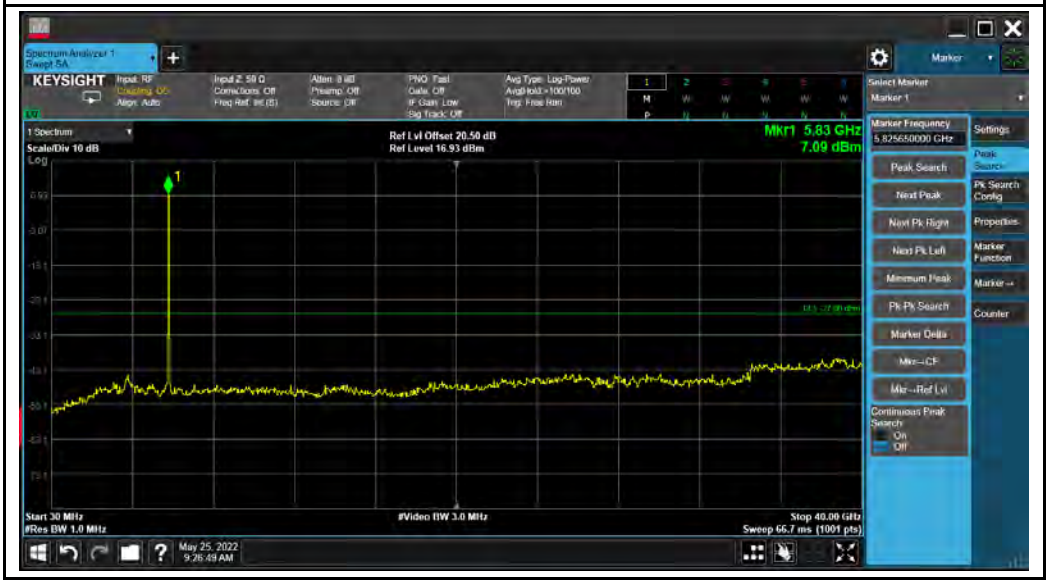


802.11a ch48

802.11a ch149

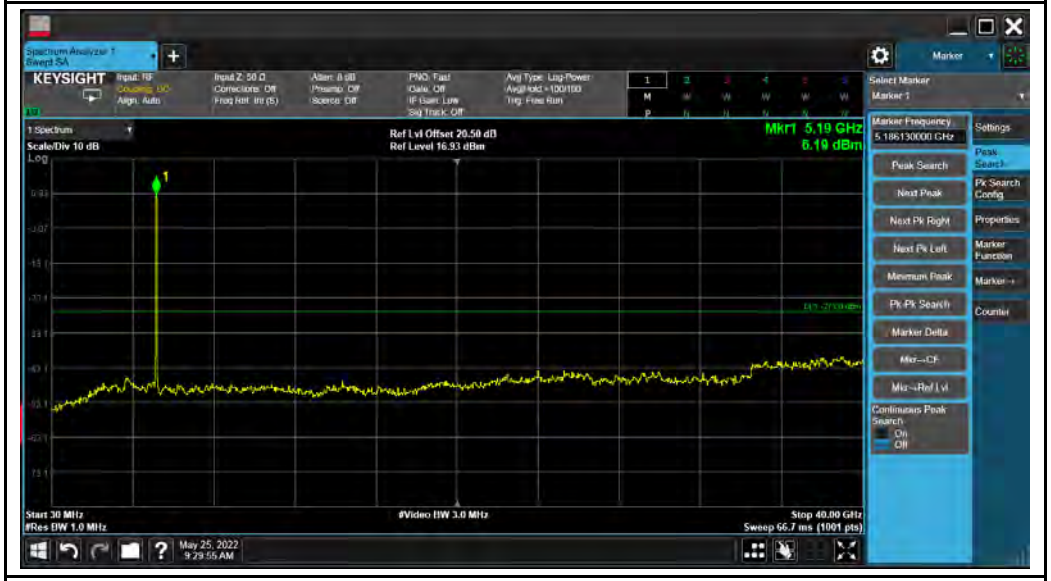


802.11a ch157

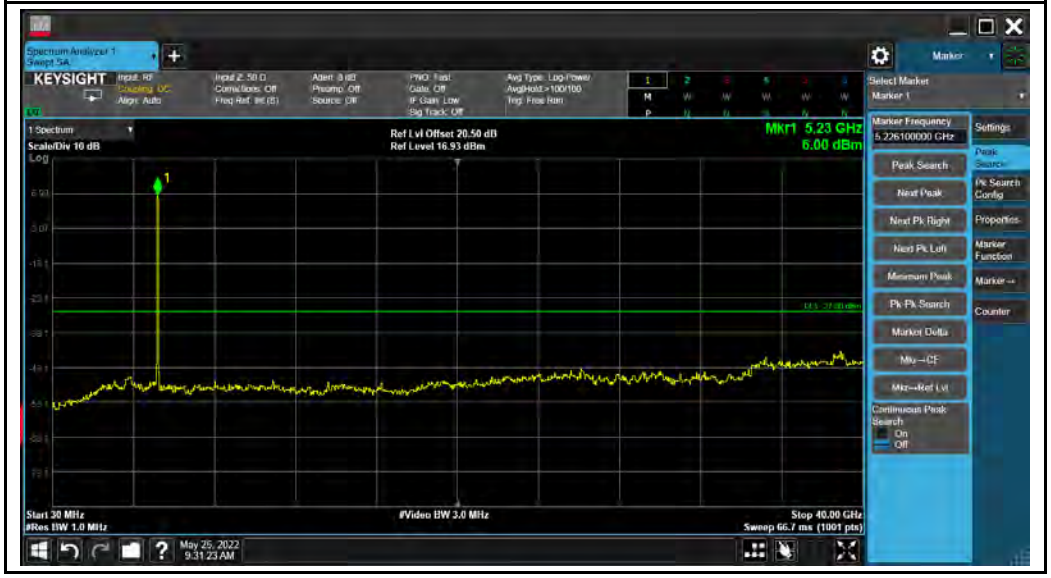


802.11a ch165

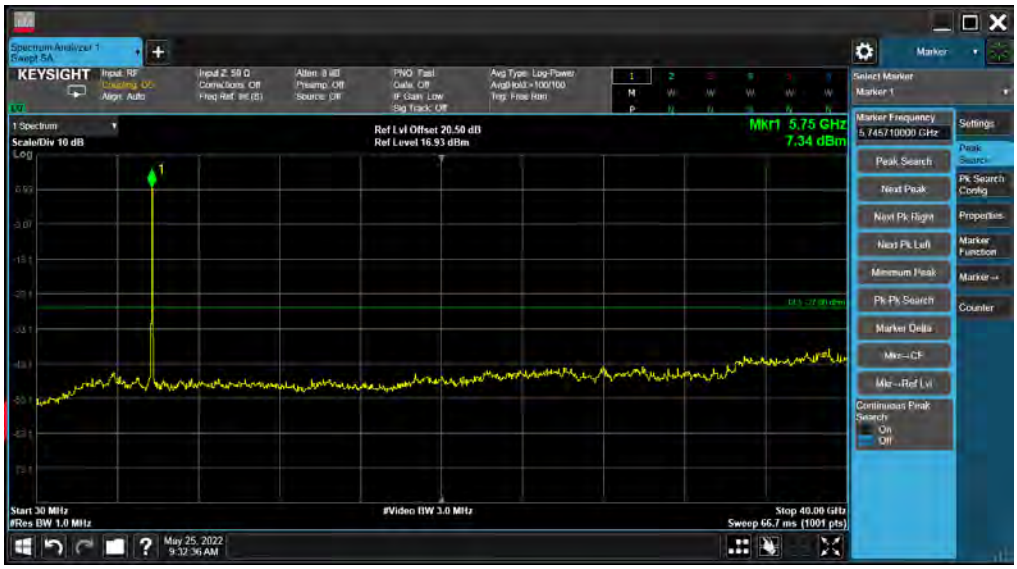
802.11n ch36



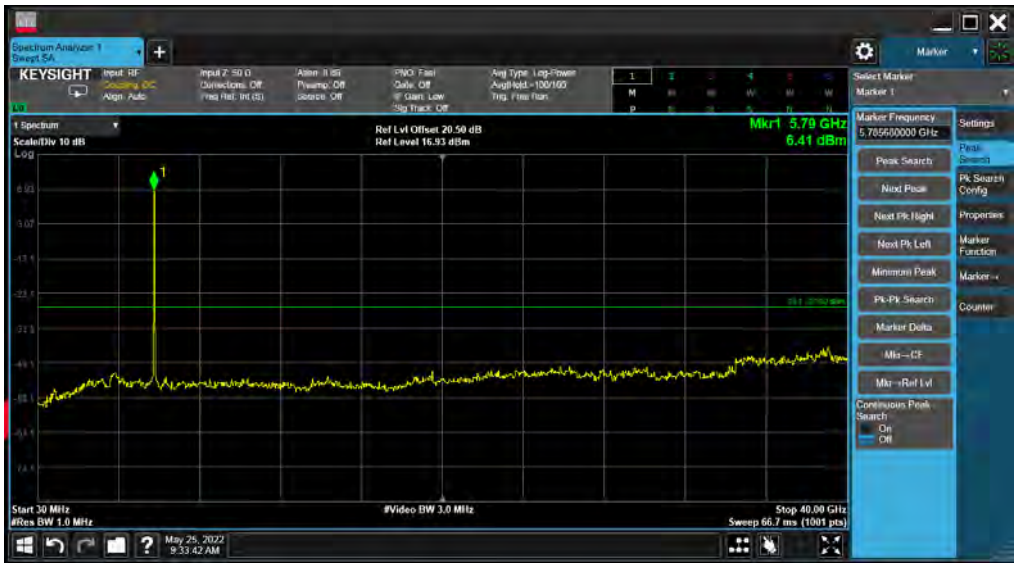
802.11n ch40



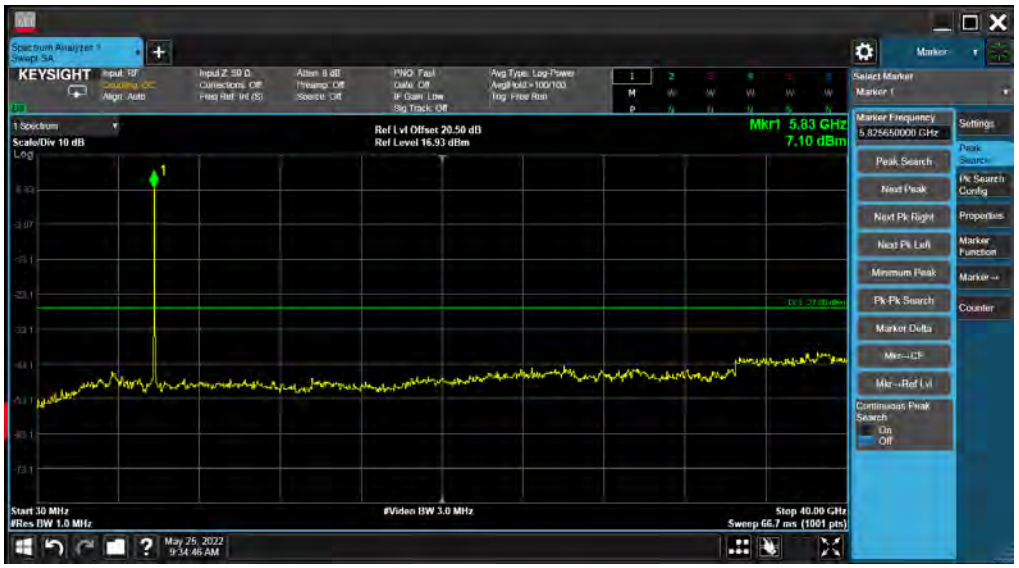
802.11n ch48



802.11n ch149

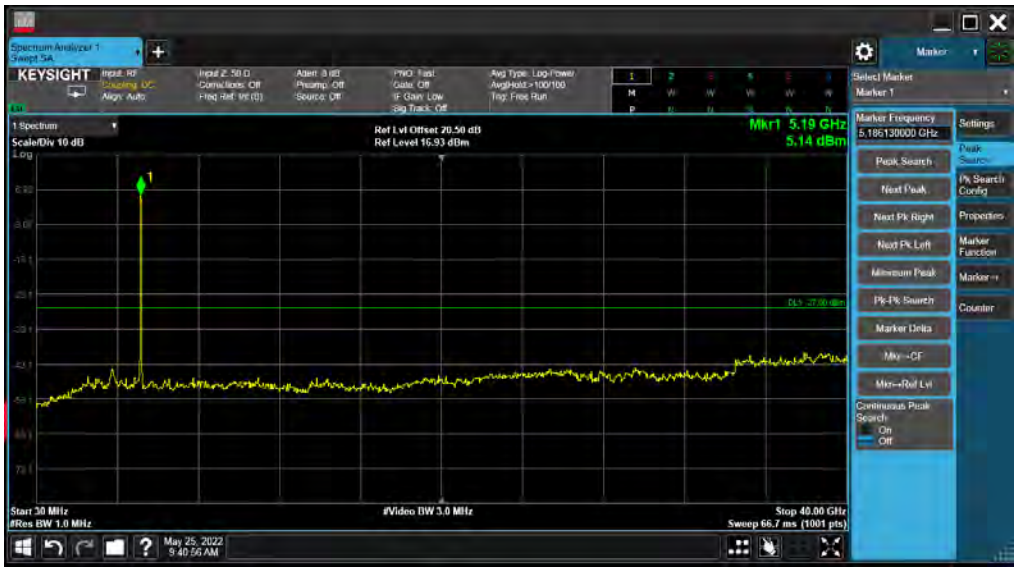


802.11n ch157

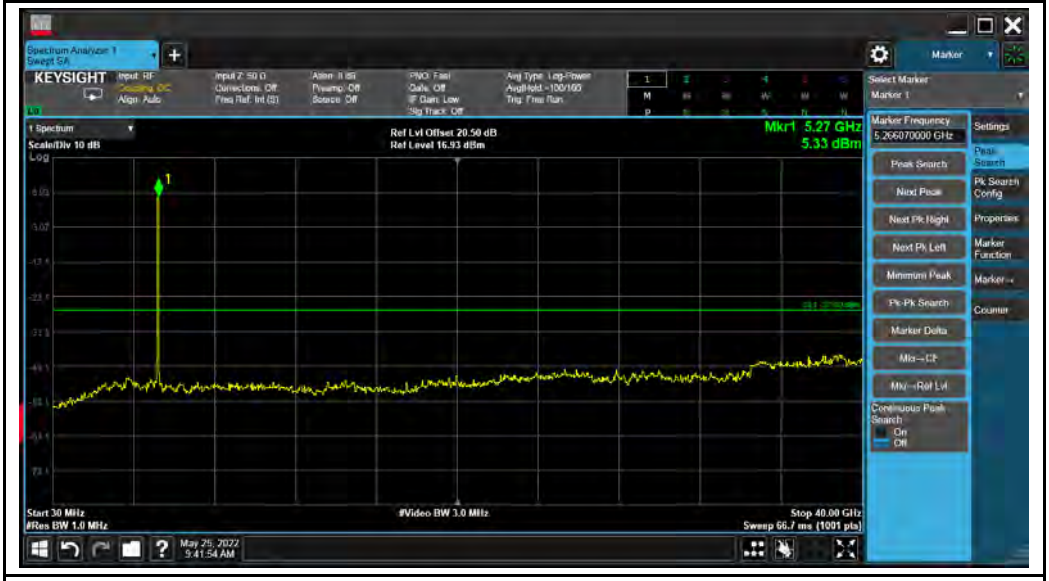


802.11n ch165

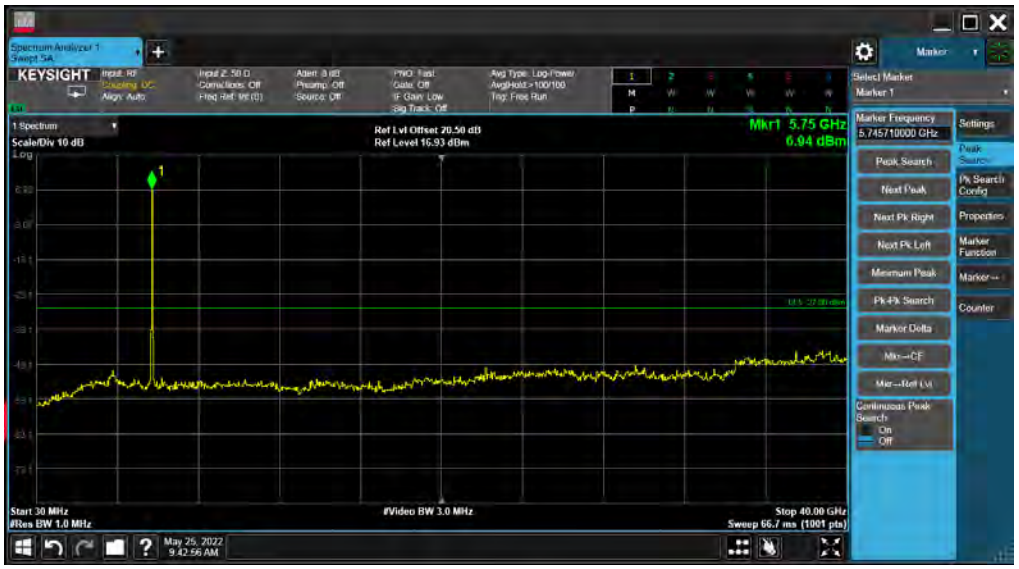
802.11ac ch36



802.11ac ch40

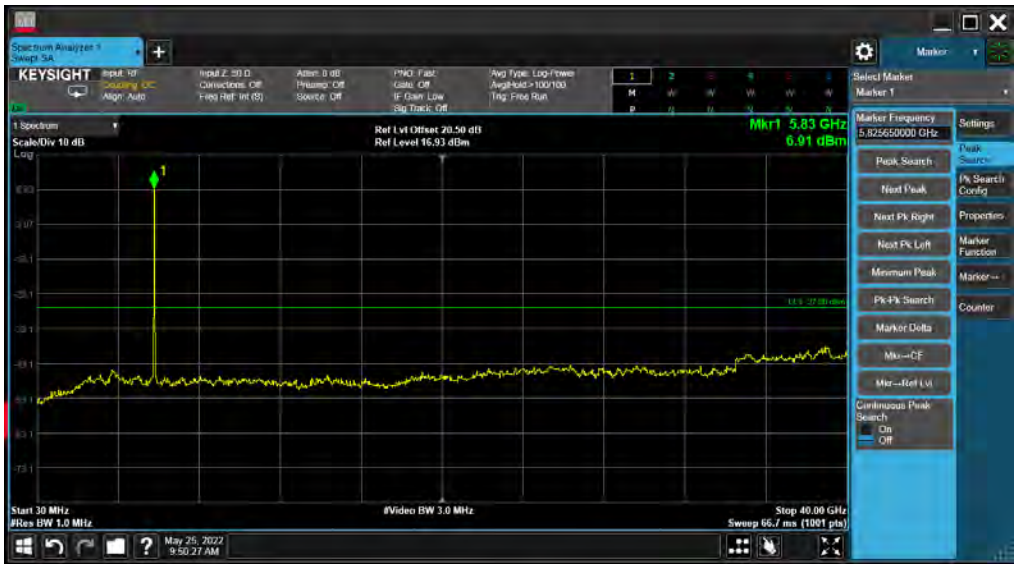


802.11ac ch48



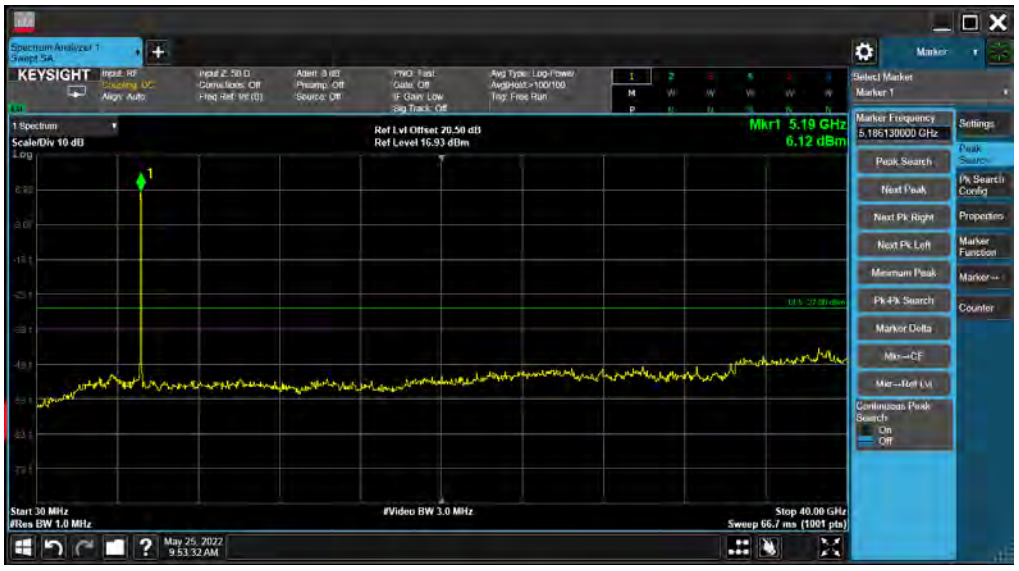
802.11ac ch149

802.11ac ch157

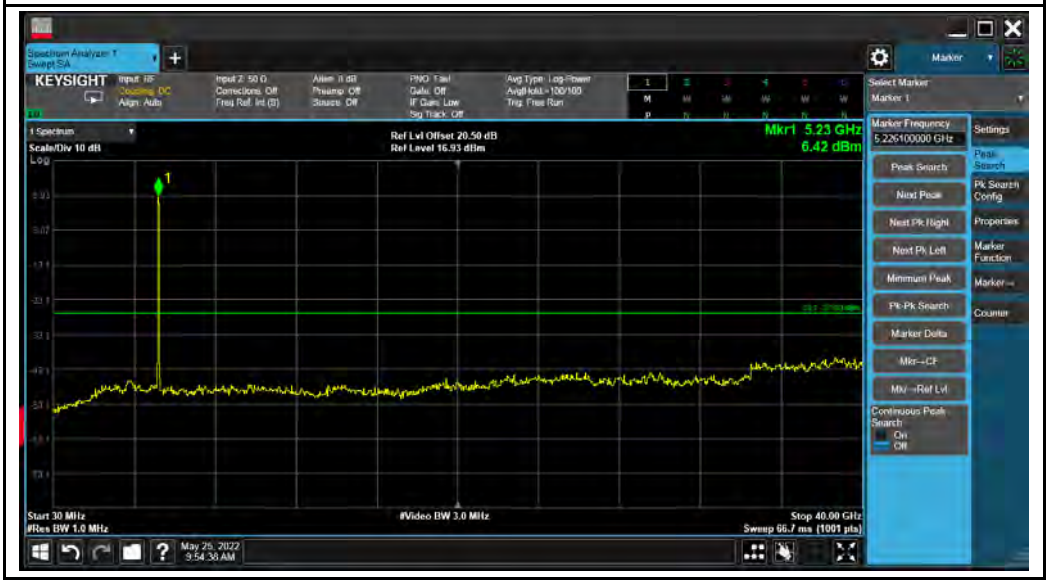


802.11ac ch165

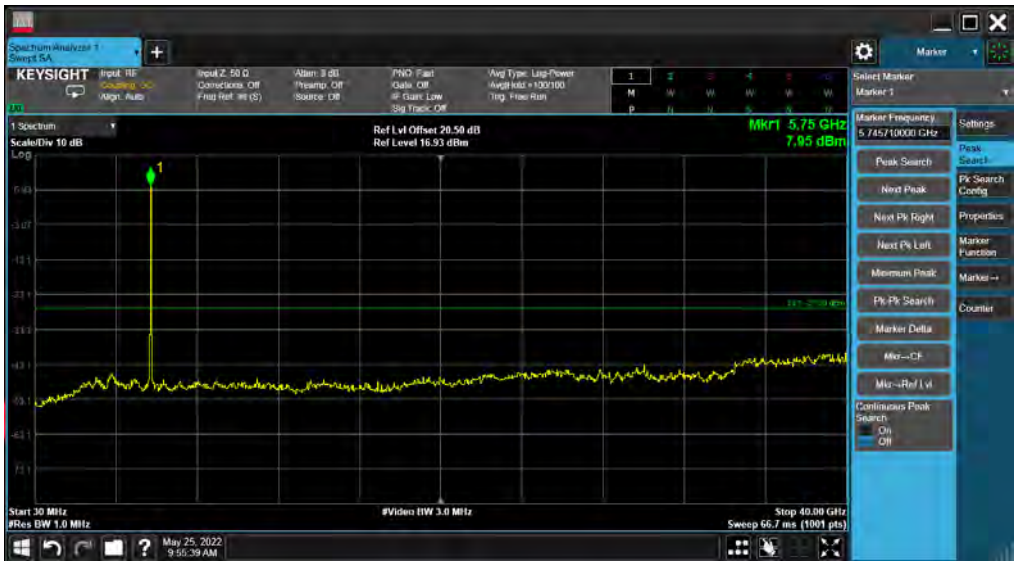
802.11ax ch36



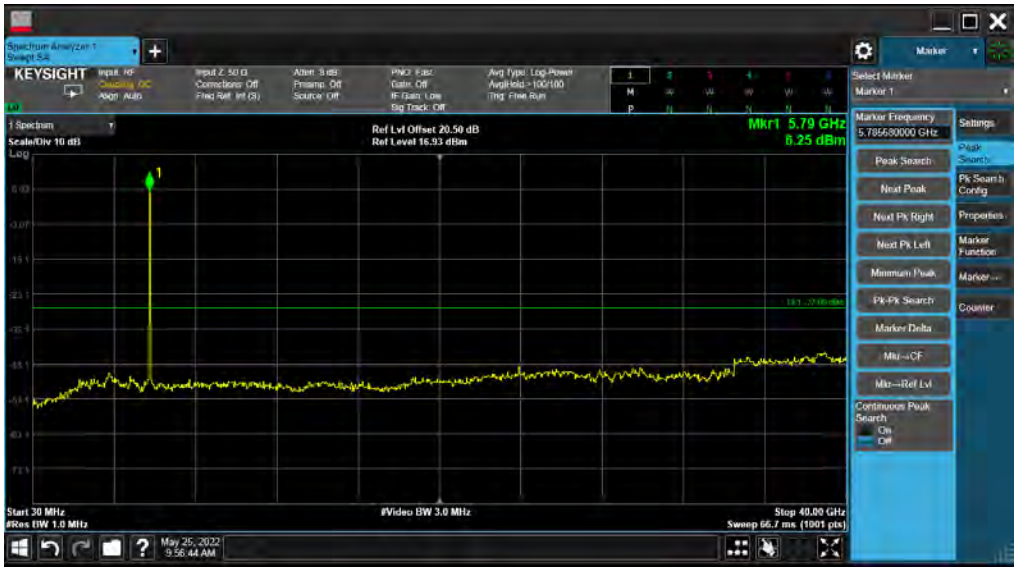
802.11ax ch40



802.11ax ch48



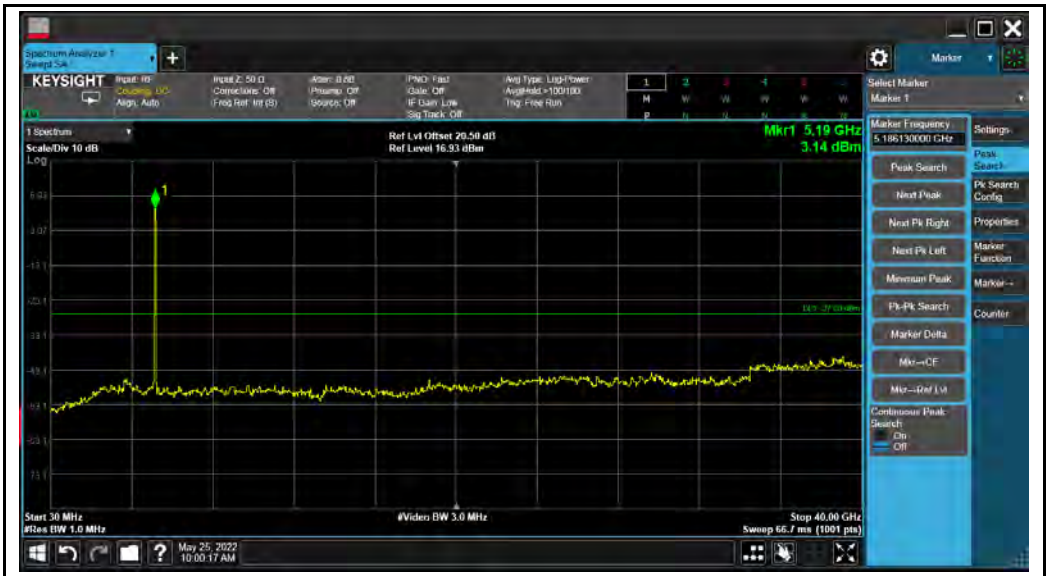
802.11ax ch149



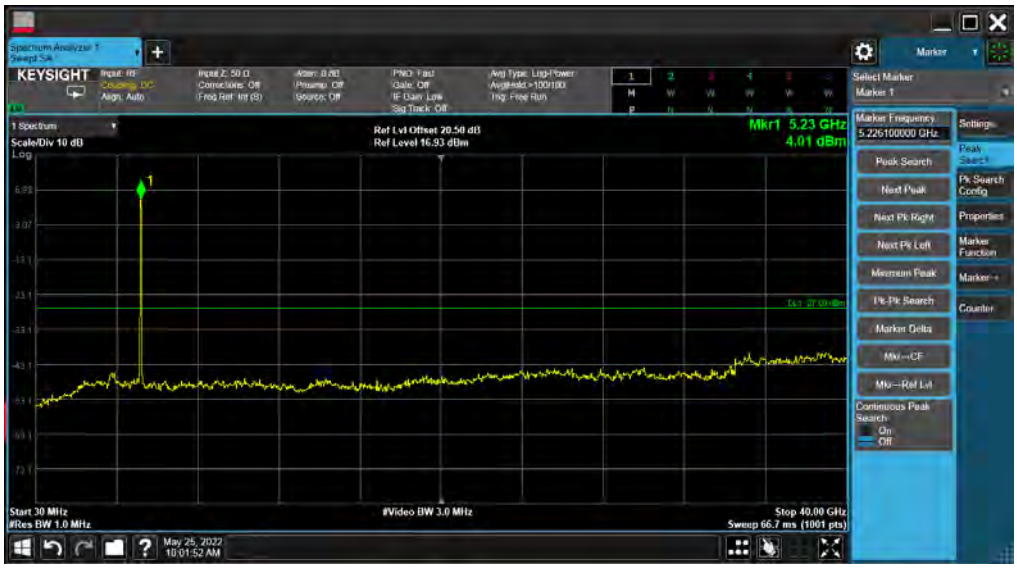
802.11ax ch157

802.11ax ch165

11n 40

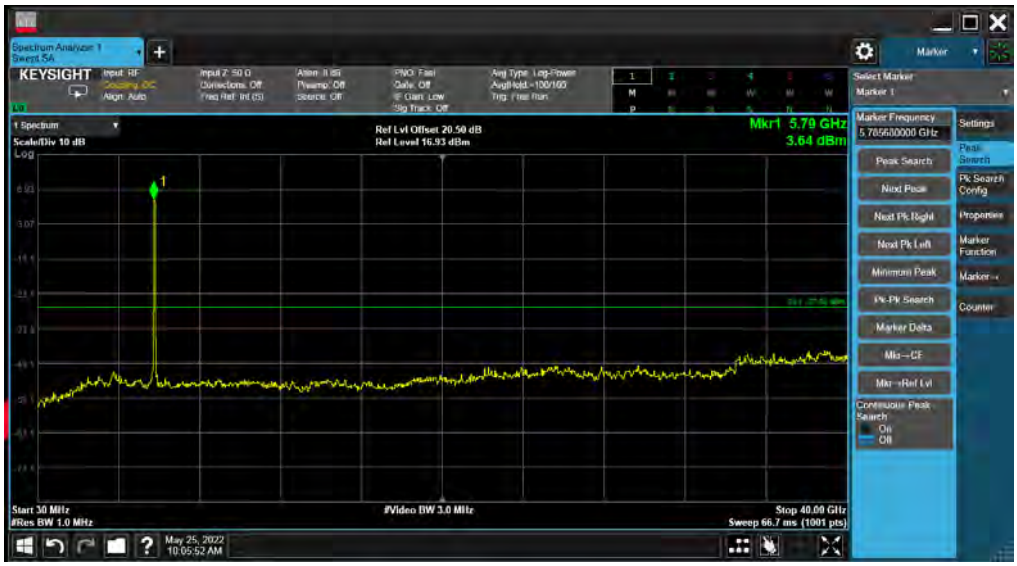


802.11n40 ch38



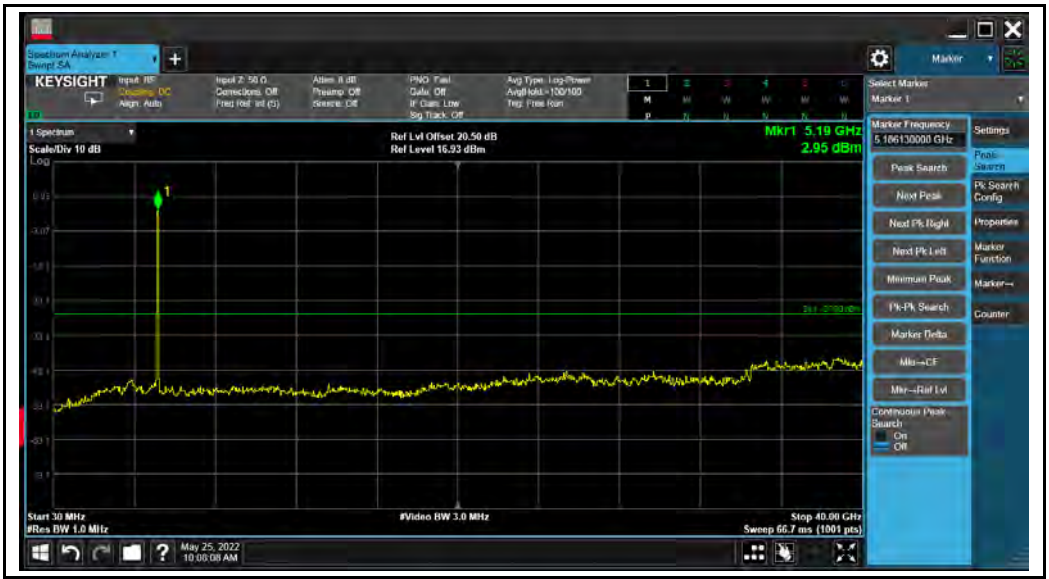
802.11n40 ch46

802.11 n40 ch151

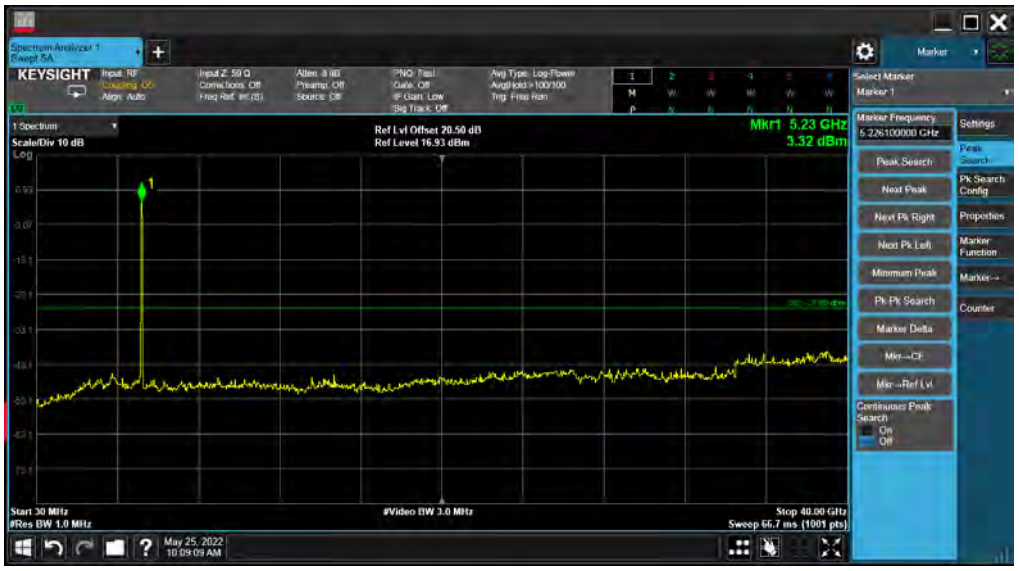


802.11n40 ch159

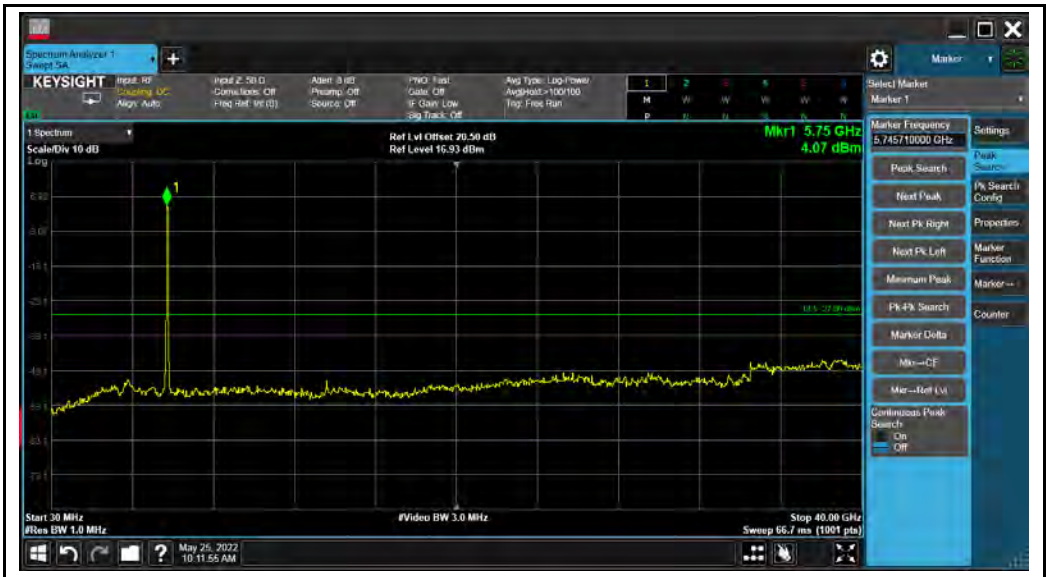
11ac 40



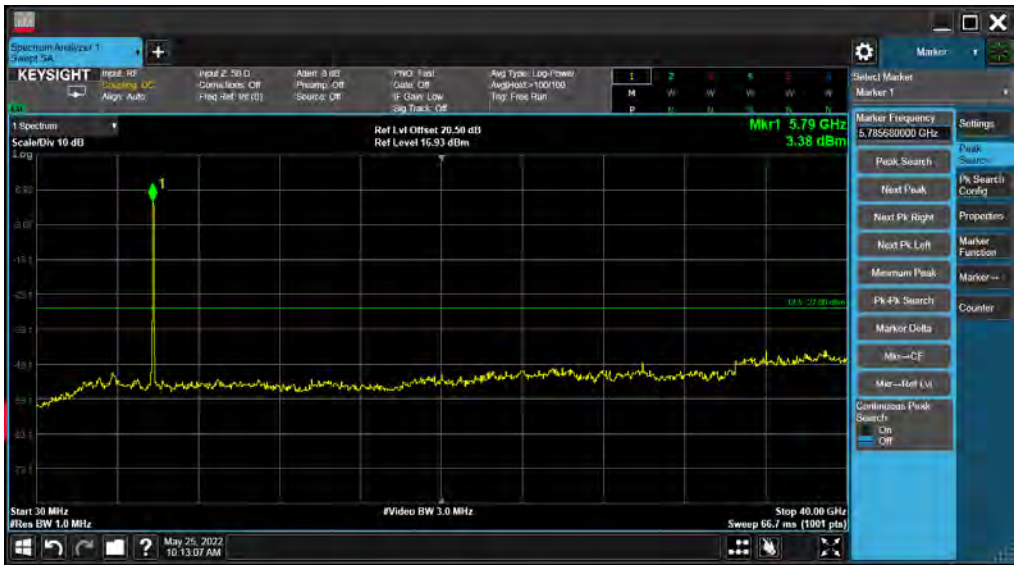
802.11ac40 ch38



802.11nac40 ch46



802.11 ac40 ch151



802.11ac ch159

11ax 40

802.11ax40 ch38