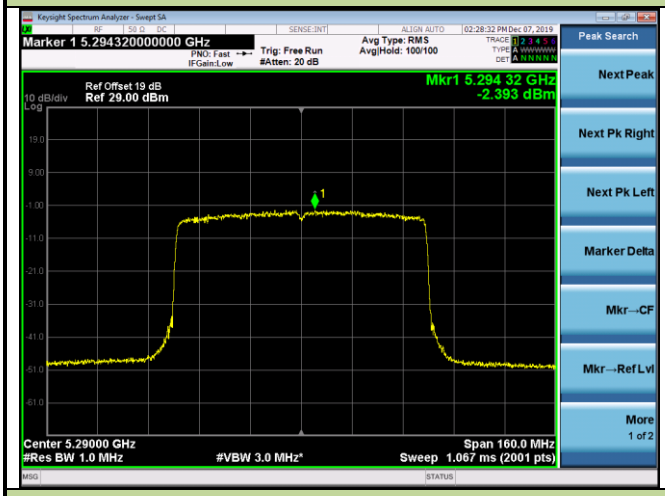
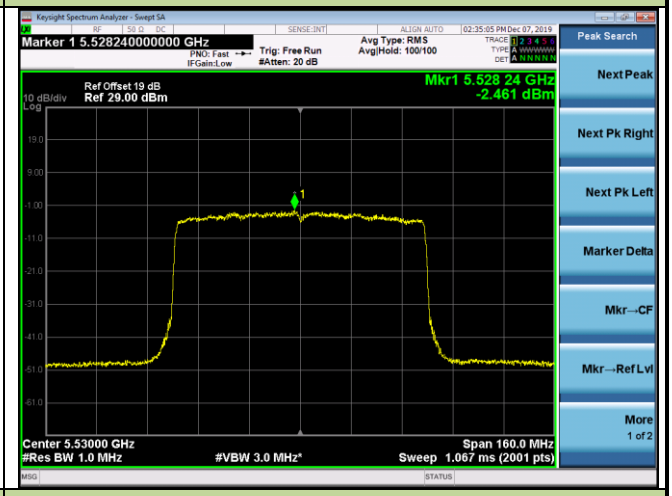
802.11ax-HE80 Power Spectral Density - Ant 3 / Ant 0 + 1 + 2 + 3

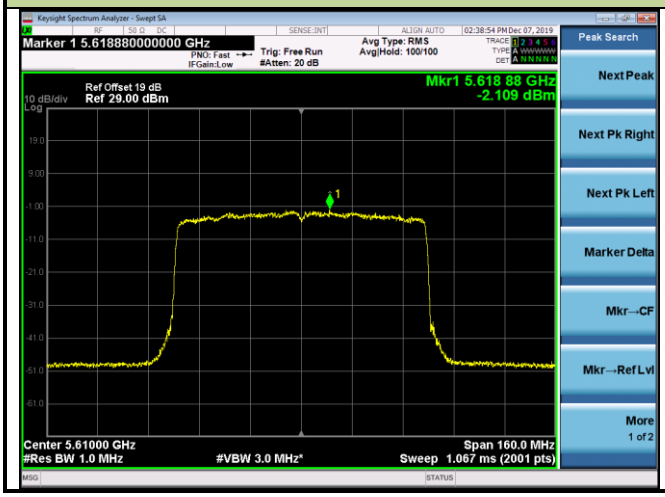
Channel 58 (5290MHz)



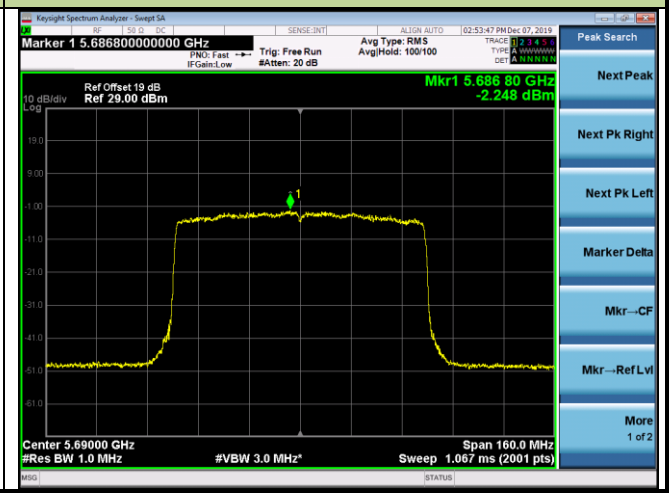
Channel 106 (5530MHz)

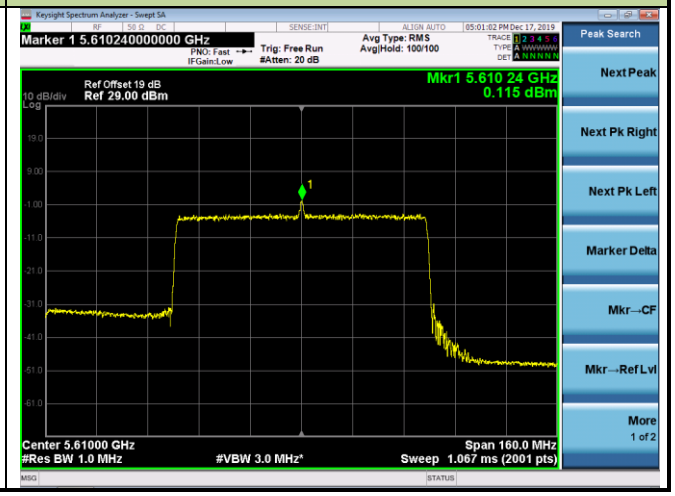


Channel 122 (5610MHz)



Channel 138 (5690MHz)



802.11ax-HE80 + 80 Power Spectral Density - Ant 3 / Ant 0 + 1 + 2 + 3	
Channel 58 (5290MHz)	Channel 122 (5610MHz)
	

Product	HAN Access Point	Temperature	22 ~ 25°C
Test Engineer	David Lv	Relative Humidity	46 ~ 54%
Test Site	TR3	Test Date	2019/10/12 ~ 2020/03/02
Model No.	AP361D	Test Item	Power Spectral Density

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Ant 2 PSD (dBm/ MHz)	Ant 3 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
Ant 0 + 1 + 2 + 3											
11a	6Mbps	52	5260	-3.95	-2.49	-4.30	-2.14	92.14	3.25	≤ 3.58	Pass
11a	6Mbps	60	5300	-3.53	-2.44	-3.33	-3.42	92.14	3.22	≤ 3.58	Pass
11a	6Mbps	64	5320	-3.90	-2.70	-2.91	-3.62	92.14	3.12	≤ 3.58	Pass
11a	6Mbps	100	5500	-3.83	-2.98	-3.51	-2.46	92.14	3.21	≤ 3.58	Pass
11a	6Mbps	120	5600	-3.03	-3.75	-2.32	-2.63	92.14	3.48	≤ 3.58	Pass
11a	6Mbps	140	5700	-3.01	-3.96	-2.14	-2.81	92.14	3.44	≤ 3.58	Pass
11a	6Mbps	144	5720	-3.55	-3.70	-3.92	-2.97	92.14	2.86	≤ 3.58	Pass
11n-HT20	MCS0	52	5260	-2.42	-3.86	-2.97	-2.46	95.80	3.32	≤ 3.58	Pass
11n-HT20	MCS0	60	5300	-3.49	-3.96	-3.70	-3.55	95.80	2.54	≤ 3.58	Pass
11n-HT20	MCS0	64	5320	-3.15	-3.58	-3.97	-3.01	95.80	2.80	≤ 3.58	Pass
11n-HT20	MCS0	100	5500	-2.31	-4.14	-2.63	-3.25	95.80	3.18	≤ 3.58	Pass
11n-HT20	MCS0	120	5600	-3.09	-3.38	-3.46	-2.51	95.80	3.11	≤ 3.58	Pass
11n-HT20	MCS0	140	5700	-3.10	-3.14	-2.34	-2.55	95.80	3.44	≤ 3.58	Pass
11n-HT20	MCS0	144	5720	-3.49	-3.66	-3.31	-3.51	95.80	2.72	≤ 3.58	Pass
11n-HT40	MCS0	54	5270	-2.68	-3.81	-2.45	-2.93	93.70	3.37	≤ 3.58	Pass
11n-HT40	MCS0	62	5310	-2.52	-3.97	-3.52	-2.41	93.70	3.25	≤ 3.58	Pass
11n-HT40	MCS0	102	5510	-2.67	-2.75	-3.67	-3.17	93.70	3.26	≤ 3.58	Pass
11n-HT40	MCS0	118	5590	-3.03	-3.70	-2.40	-2.66	93.70	3.38	≤ 3.58	Pass
11n-HT40	MCS0	134	5670	-3.44	-3.52	-2.70	-3.19	93.70	3.10	≤ 3.58	Pass
11n-HT40	MCS0	142	5710	-3.32	-2.98	-3.59	-2.62	93.70	3.19	≤ 3.58	Pass
11ax-HE20	MCS0	52	5260	-2.72	-2.21	-3.80	-3.31	95.77	3.24	≤ 3.58	Pass
11ax-HE20	MCS0	60	5300	-2.86	-2.93	-2.77	-3.44	95.77	3.22	≤ 3.58	Pass
11ax-HE20	MCS0	64	5320	-2.93	-2.61	-3.42	-2.78	95.77	3.28	≤ 3.58	Pass
11ax-HE20	MCS0	100	5500	-2.70	-3.21	-3.26	-3.27	95.77	3.10	≤ 3.58	Pass
11ax-HE20	MCS0	120	5600	-3.35	-3.40	-3.18	-3.38	95.77	2.88	≤ 3.58	Pass
11ax-HE20	MCS0	140	5700	-3.47	-3.17	-2.79	-3.07	95.77	3.09	≤ 3.58	Pass
11ax-HE20	MCS0	144	5720	-3.45	-3.07	-3.13	-3.26	95.77	2.98	≤ 3.58	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Ant 2 PSD (dBm/ MHz)	Ant 3 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
Ant 0 + 1 + 2 + 3 (CDD Mode)											
11ax-HE40	MCS0	54	5270	-3.18	-2.73	-2.41	-3.23	95.41	3.35	≤ 3.58	Pass
11ax-HE40	MCS0	62	5310	-2.85	-3.32	-3.09	-2.96	95.41	3.17	≤ 3.58	Pass
11ax-HE40	MCS0	102	5510	-3.94	-3.18	-3.27	-3.24	95.41	2.83	≤ 3.58	Pass
11ax-HE40	MCS0	118	5590	-2.61	-2.98	-2.66	-2.72	95.41	3.48	≤ 3.58	Pass
11ax-HE40	MCS0	134	5670	-3.21	-2.77	-2.91	-2.90	95.41	3.28	≤ 3.58	Pass
11ax-HE40	MCS0	142	5710	-3.24	-2.62	-3.64	-3.24	95.41	3.06	≤ 3.58	Pass
11ax-HE80	MCS0	58	5290	-2.58	-3.09	-2.84	-2.69	94.49	3.47	≤ 3.58	Pass
11ax-HE80	MCS0	106	5530	-3.31	-3.79	-3.07	-3.23	94.49	2.92	≤ 3.58	Pass
11ax-HE80	MCS0	122	5610	-3.11	-3.27	-2.82	-3.20	94.49	3.17	≤ 3.58	Pass
11ax-HE80	MCS0	138	5690	-3.57	-3.13	-2.81	-2.98	94.49	3.15	≤ 3.58	Pass
11ax-HE80 + 80	MCS0	42	5210	-2.59	-2.74			94.49	0.59	≤ 9.58	Pass
		58	5290			-3.48	-2.95	94.49	0.05	≤ 3.58	Pass
11ax-HE80 + 80	MCS0	106	5530	-3.58	-3.48			94.49	-0.27	≤ 3.58	Pass
		122	5610			-2.97	-3.27	94.49	0.14	≤ 3.58	Pass

Note 1: When EUT duty cycle ≥ 98%, the total PSD (dBm/MHz) = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$

Note 2: When EUT duty cycle < 98%, the total PSD (dBm/MHz) = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\} + 10*\log(1/\text{duty cycle})$

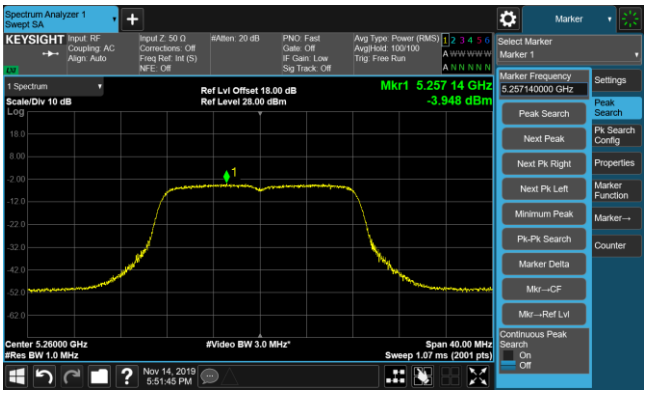
Note 3: For ax-HE80+80 Contiguous Mode

5210MHz and 5530MHz: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$.

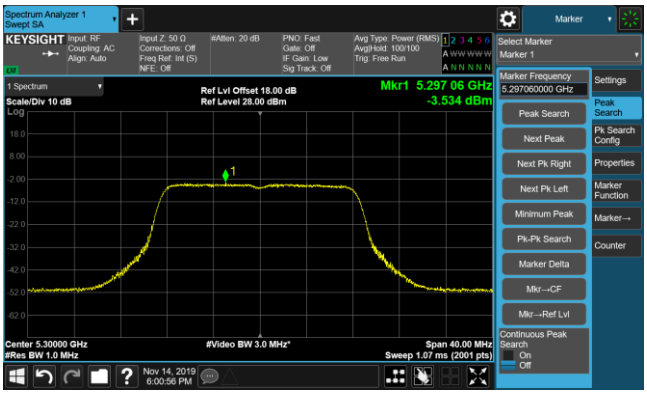
5290MHz and 5610MHz: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$.

802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

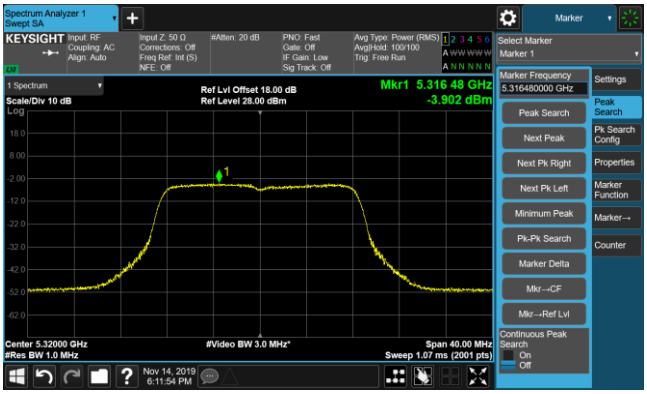
Channel 52 (5260MHz)



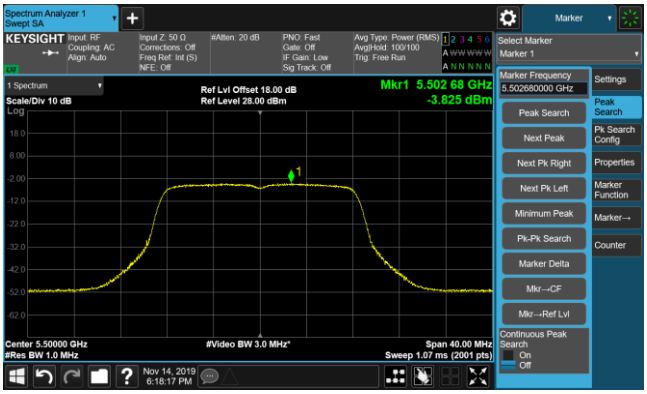
Channel 60 (5300MHz)



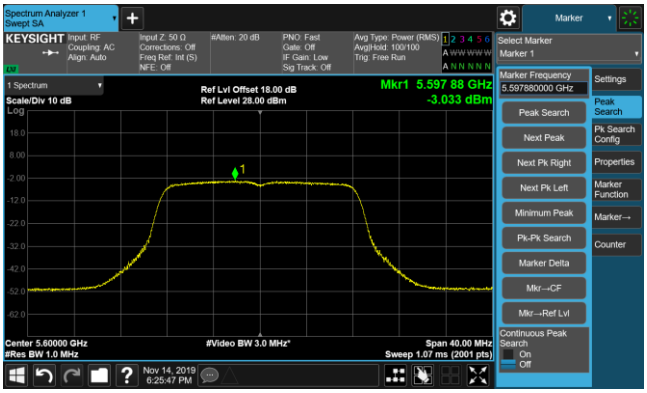
Channel 64 (5320MHz)



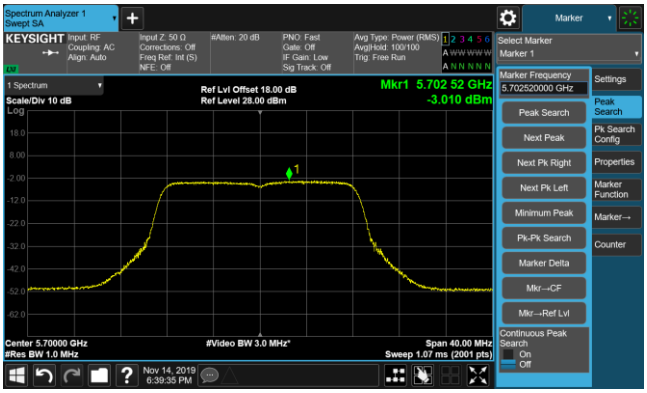
Channel 100 (5500MHz)



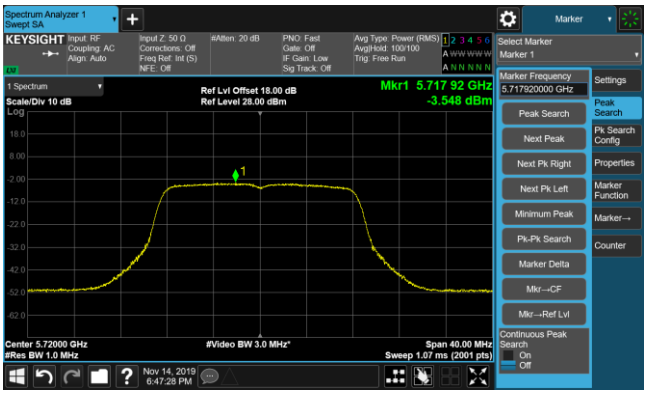
Channel 120 (5600MHz)



Channel 140 (5700MHz)

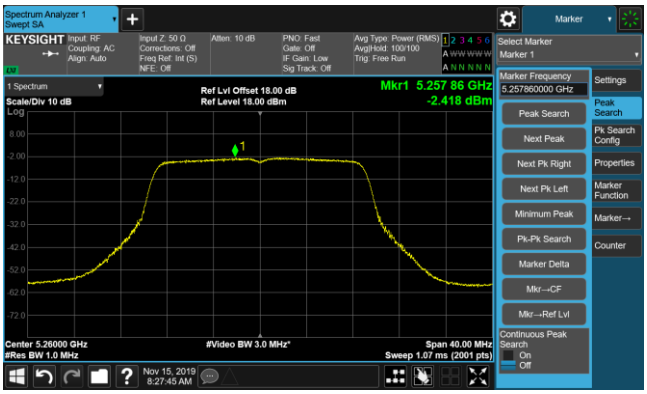


Channel 144 (5720MHz)

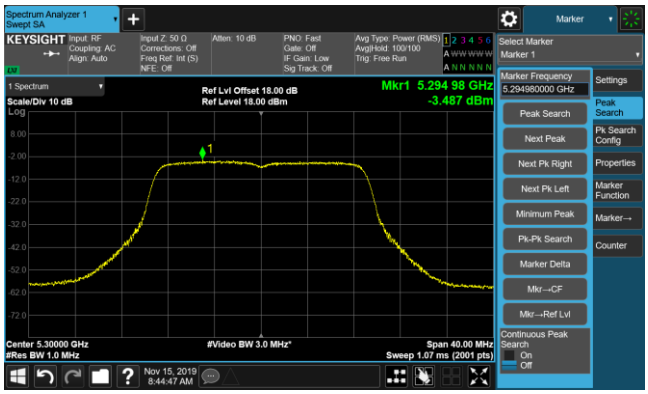

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Off
#Atten: 20 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 18.00 dB
Ref Level 28.00 dBm
Mkr1 5.717 92 GHz
-3.548 dBm
Marker Frequency
5.717920000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Center 5.72000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 40.00 MHz
Sweep 1.07 ms (2001 pts)
Nov 14, 2019
6:47:28 PM

802.11n-HT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

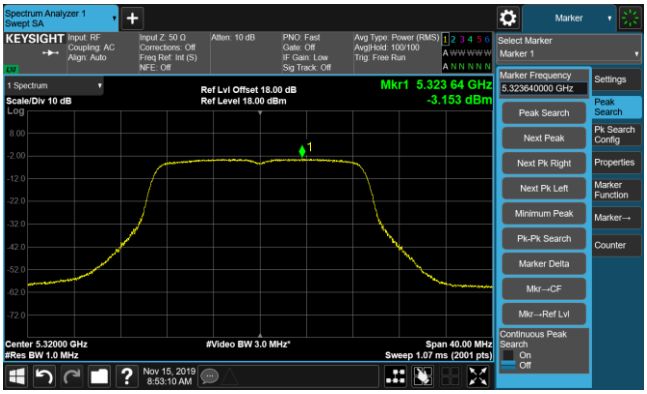
Channel 52 (5260MHz)



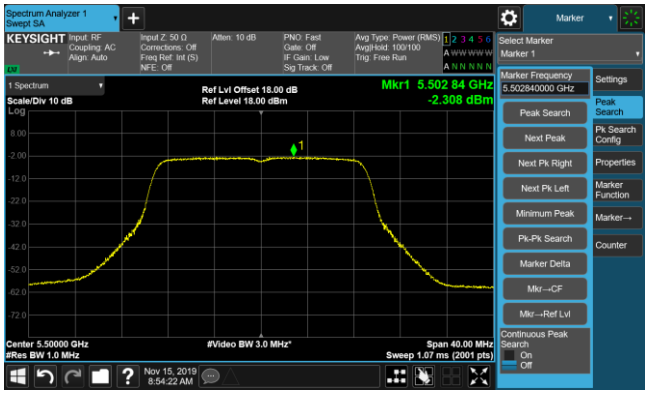
Channel 60 (5300MHz)



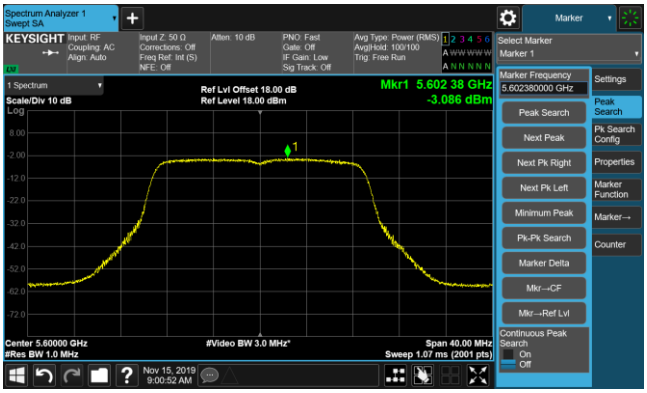
Channel 64 (5320MHz)



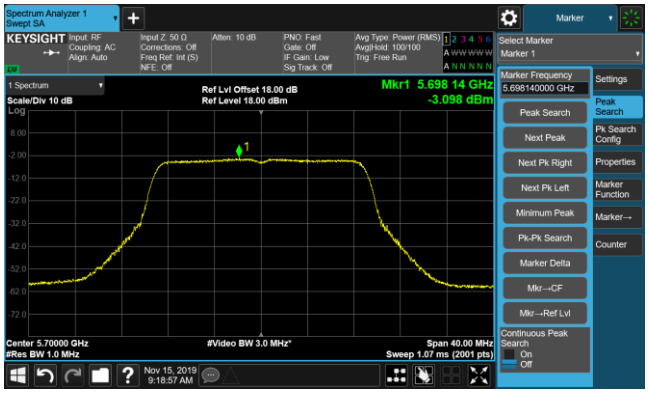
Channel 100 (5500MHz)



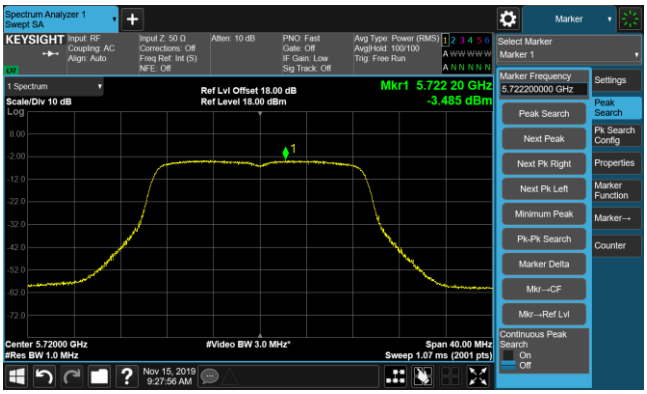
Channel 120 (5600MHz)



Channel 140 (5700MHz)

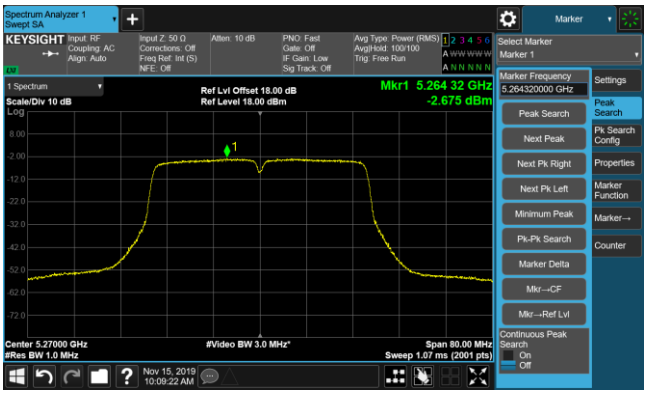


Channel 144 (5720MHz)

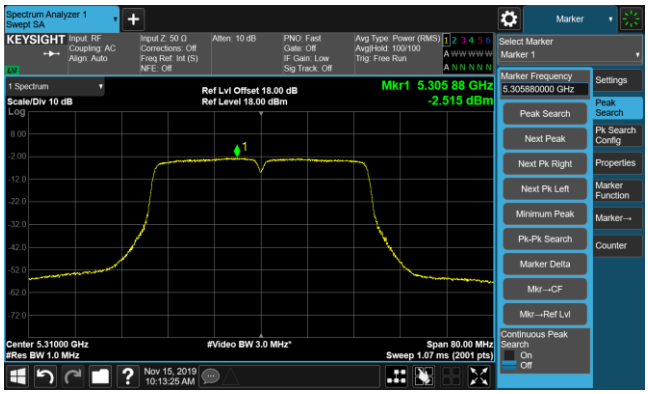

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Off
Atten: 10 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 18.00 dB
Ref Level 18.00 dBm
Mkr1 5.722 20 GHz
-3.485 dBm
Marker Frequency
5.722200000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Center 5.72000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 40.00 MHz
Sweep 1.07 ms (2001 pts)
Nov 15, 2019
9:27:56 AM

802.11n-HT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

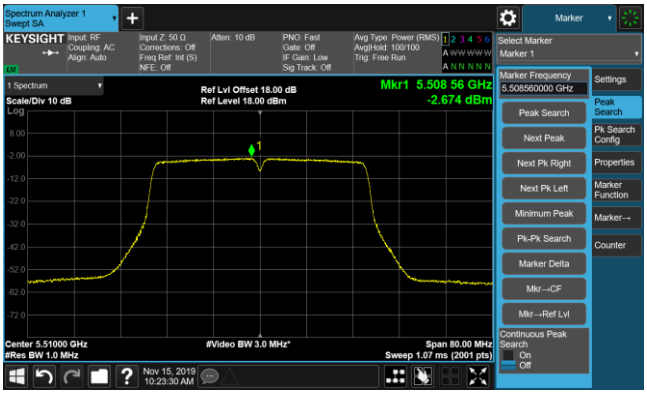
Channel 54 (5270MHz)



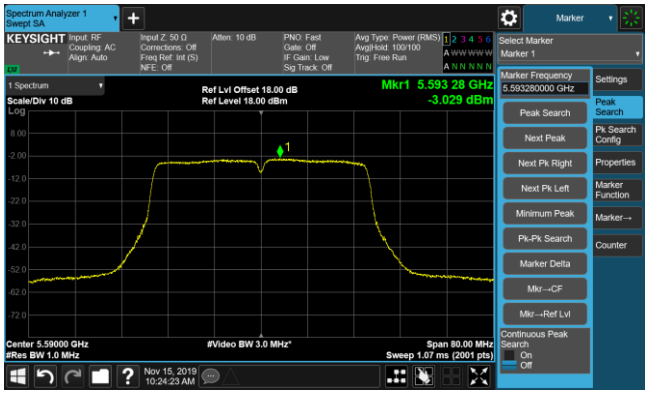
Channel 62 (5310MHz)



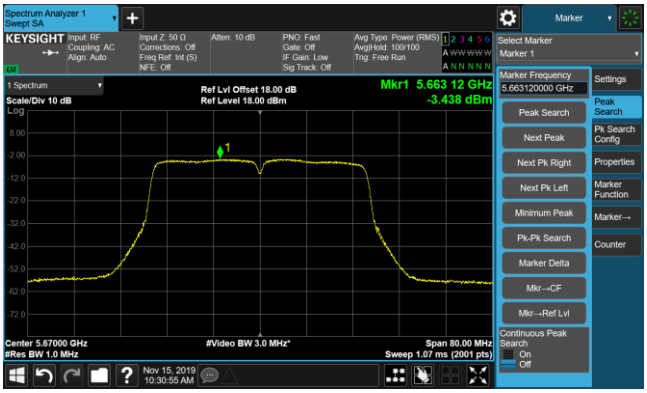
Channel 102 (5510MHz)



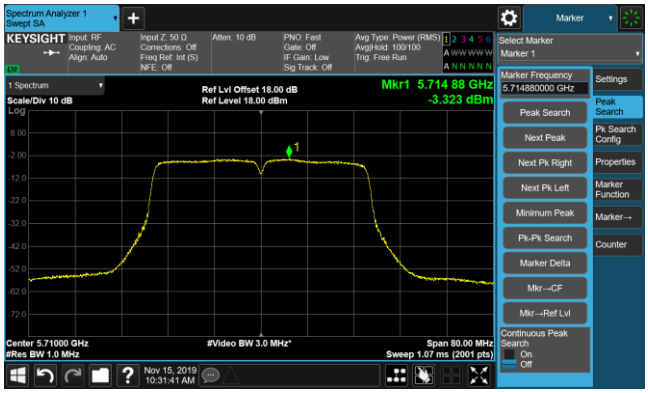
Channel 118 (5590MHz)



Channel 134 (5670MHz)

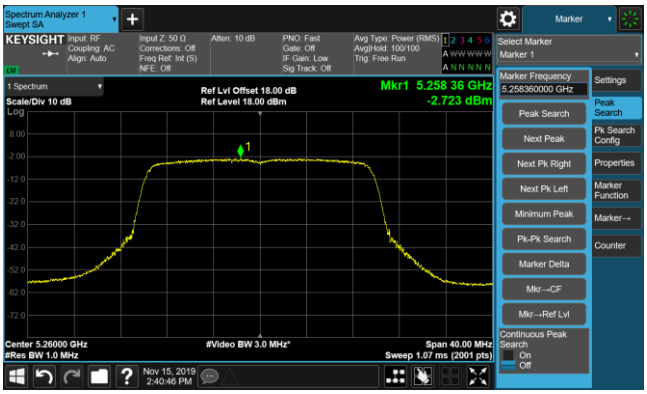


Channel 142 (5710MHz)

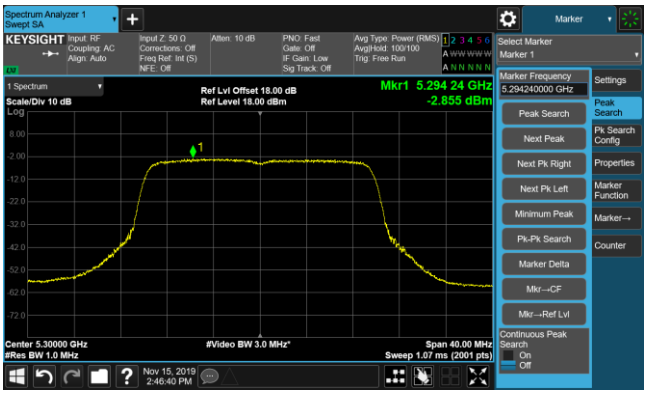


802.11ax-HE20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

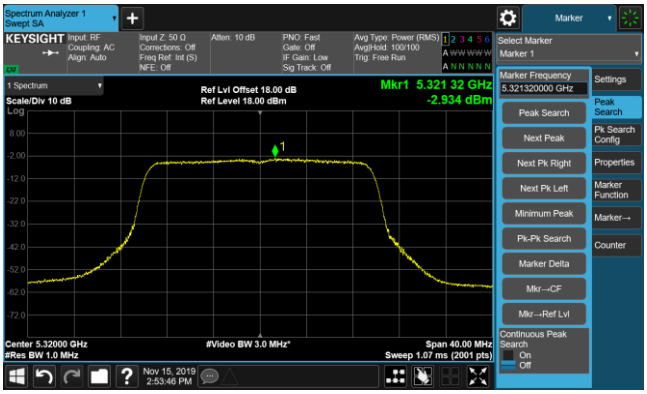
Channel 52 (5260MHz)



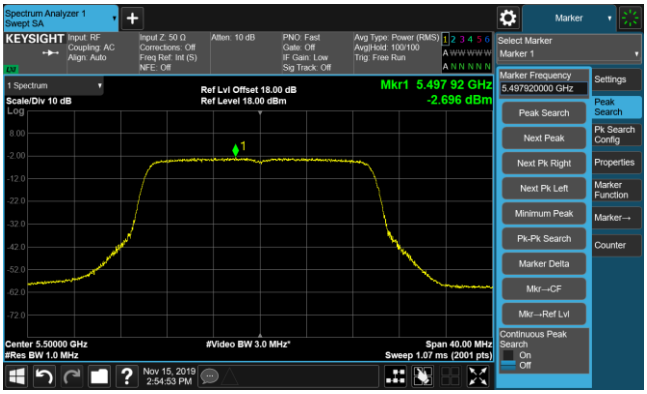
Channel 60 (5300MHz)



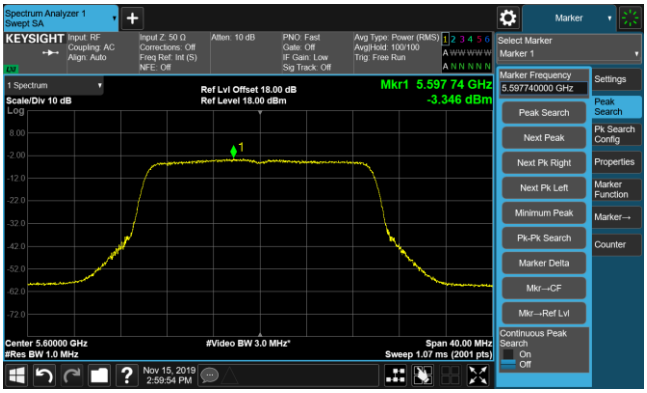
Channel 64 (5320MHz)



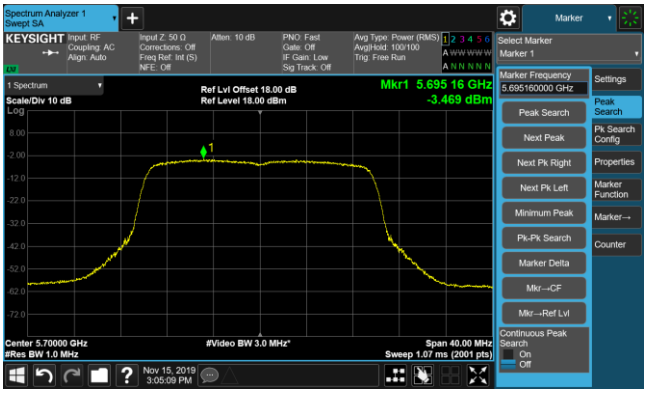
Channel 100 (5500MHz)



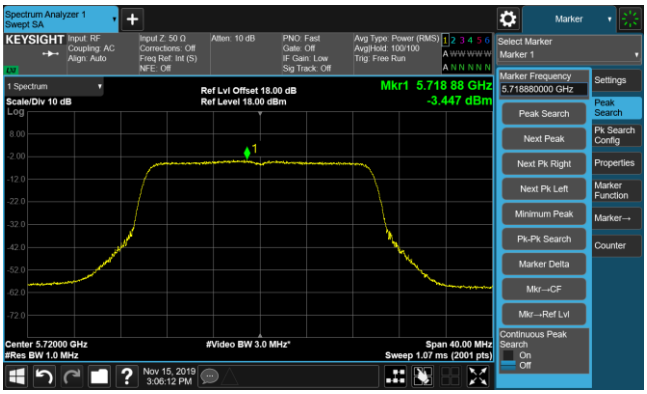
Channel 120 (5600MHz)



Channel 140 (5700MHz)

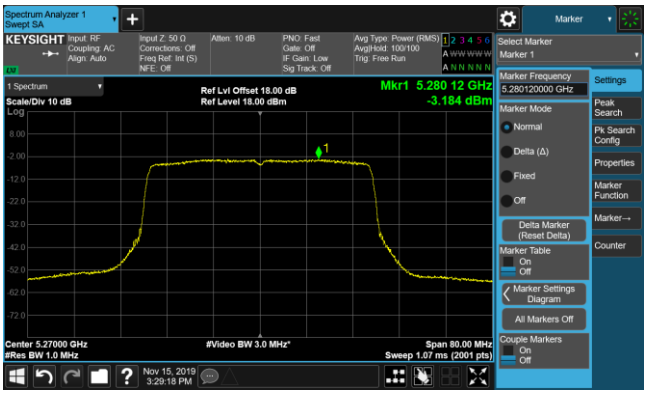


Channel 144 (5720MHz)

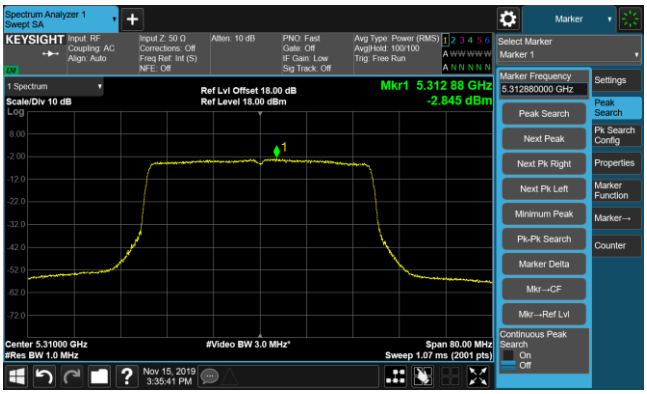

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Off
Atten: 10 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
AvgHold: 100/100
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 18.00 dB
Ref Level 18.00 dBm
Mkr1 5.718 88 GHz
-3.447 dBm
Marker Frequency
5.718880000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Center 5.72000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 40.00 MHz
Sweep 1.07 ms (2001 pts)
Nov 15, 2019
3:06:12 PM

802.11ax-HE40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

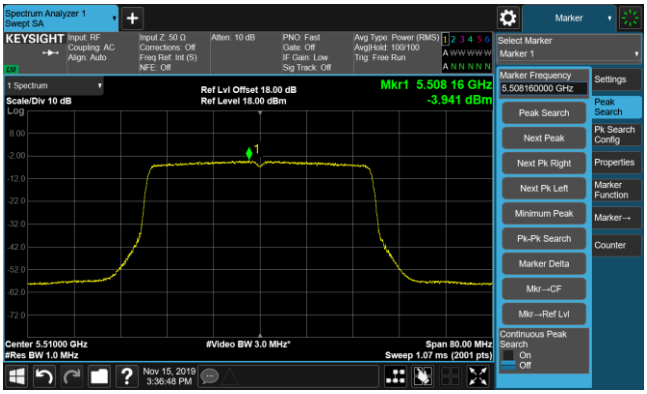
Channel 54 (5270MHz)



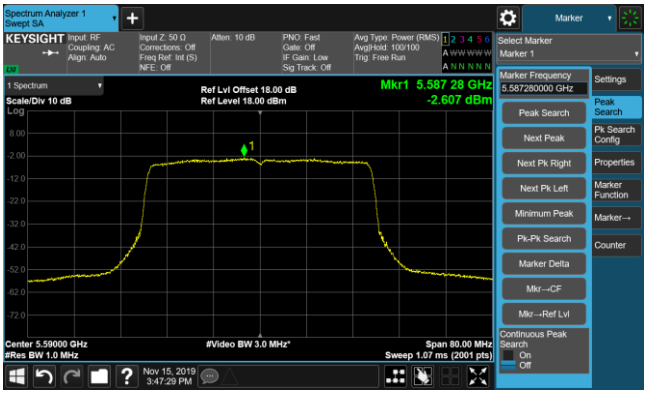
Channel 62 (5310MHz)



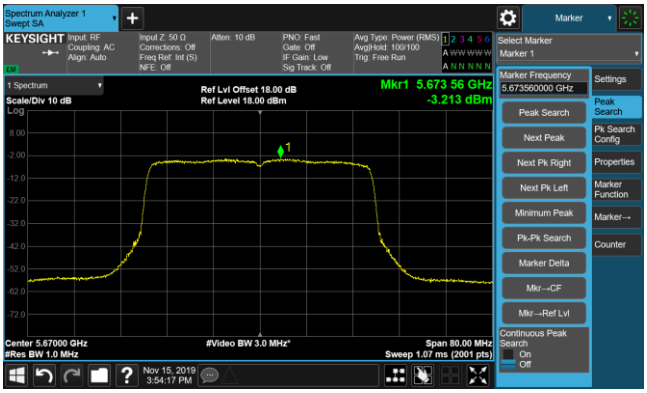
Channel 102 (5510MHz)



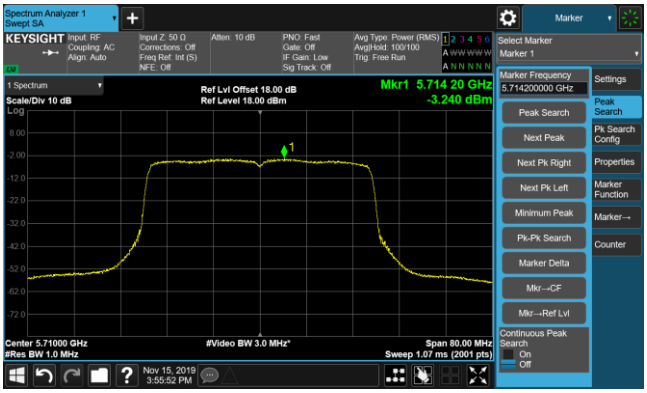
Channel 118 (5590MHz)

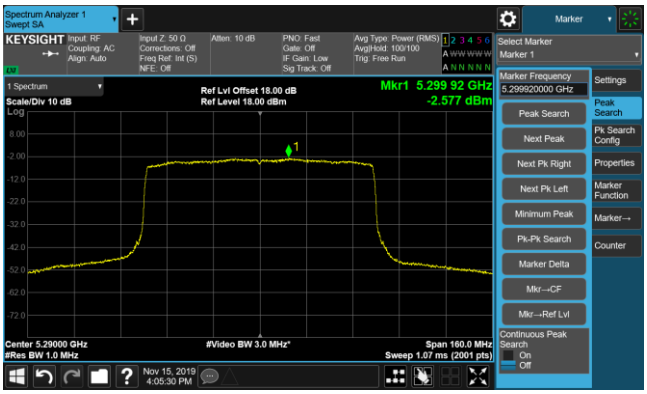
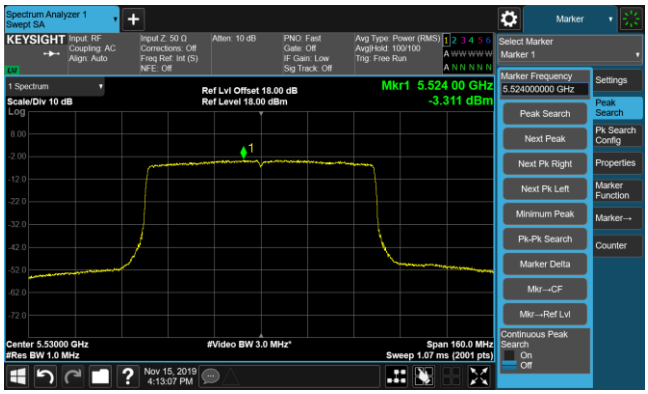
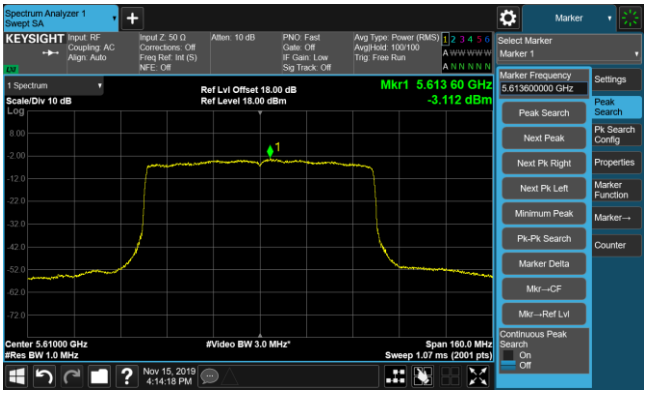
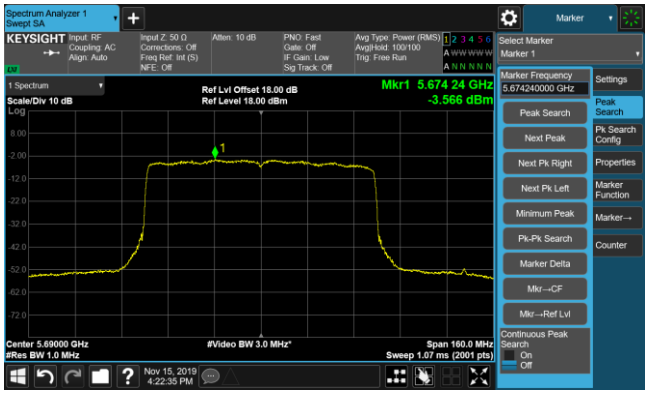


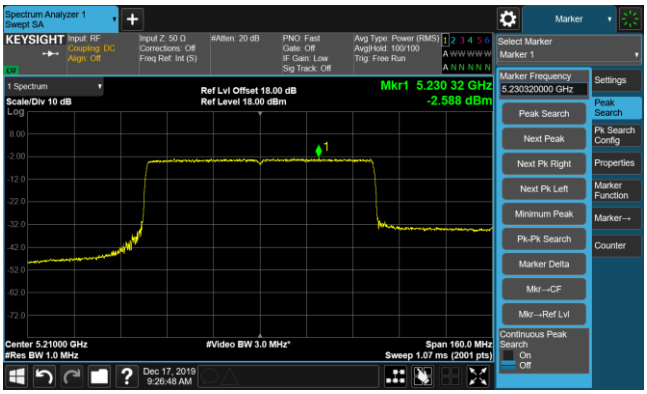
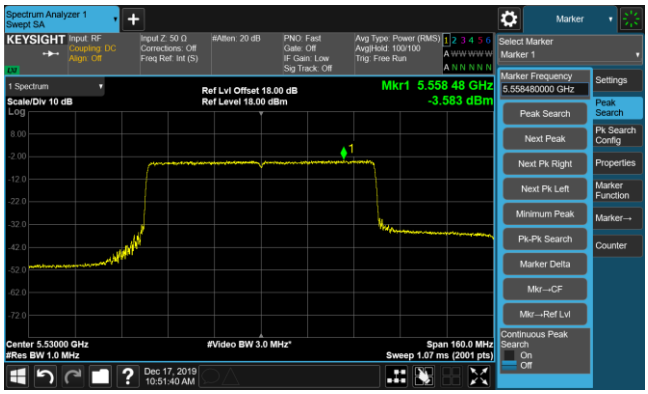
Channel 134 (5670MHz)



Channel 142 (5710MHz)

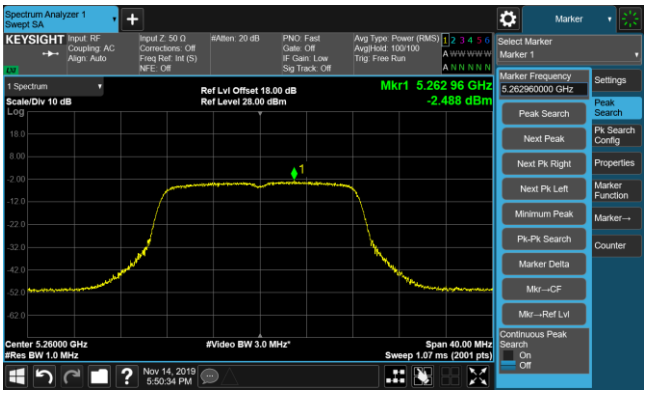


802.11ax-HE80 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3	
Channel 58 (5290MHz)	Channel 106 (5530MHz)
	
Channel 122 (5610MHz)	Channel 138 (5690MHz)
	

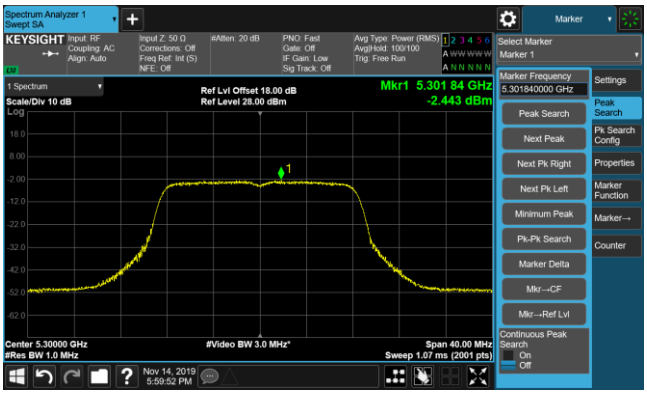
802.11ax-HE80 + 80 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3	
Channel 42 (5210MHz)	Channel 106 (5530MHz)
	

802.11a Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3

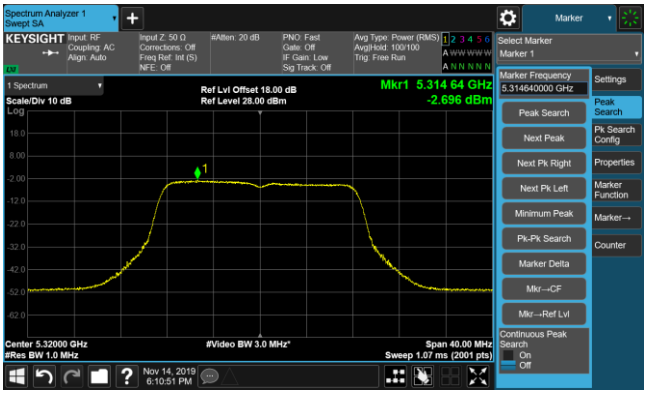
Channel 52 (5260MHz)



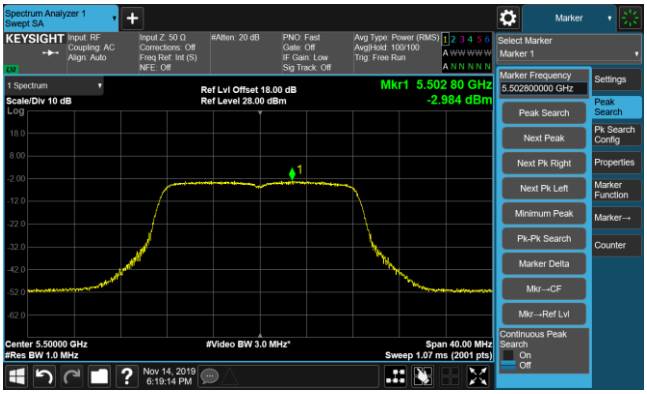
Channel 60 (5300MHz)



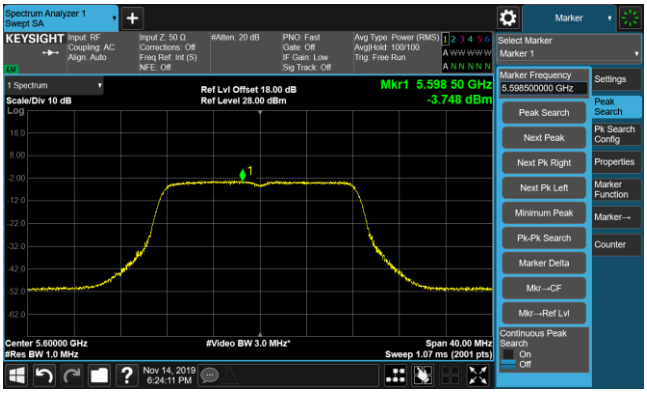
Channel 64 (5320MHz)



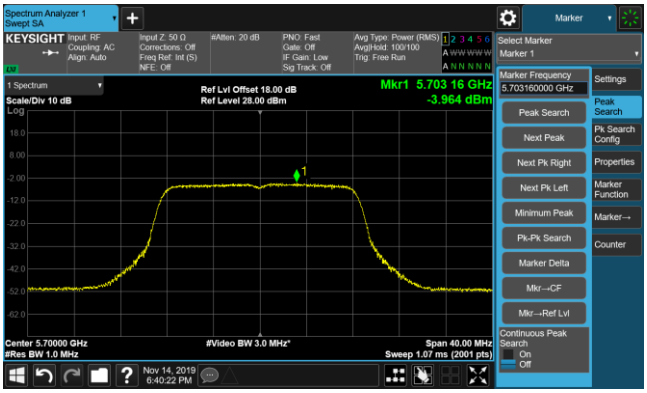
Channel 100 (5500MHz)



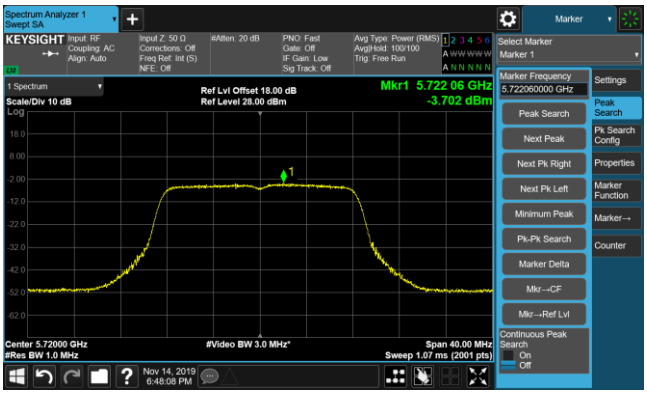
Channel 120 (5600MHz)



Channel 140 (5700MHz)

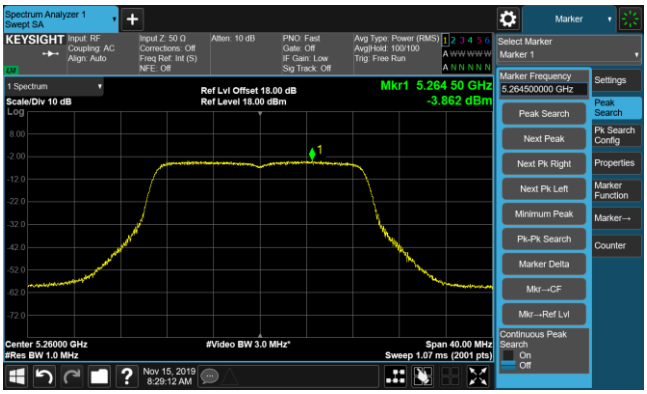


Channel 144 (5720MHz)

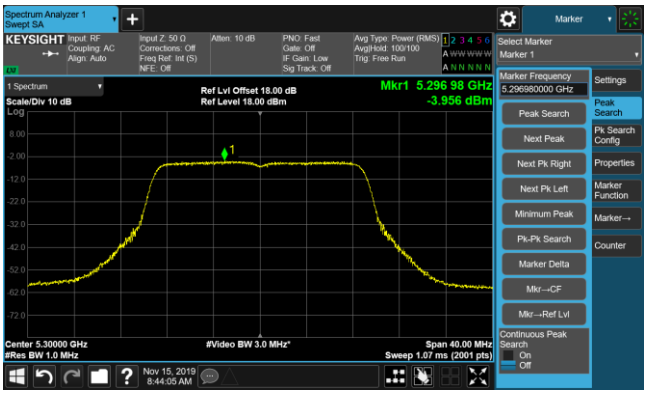

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Off
#Atten: 20 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 18.00 dB
Ref Level 28.00 dBm
Mkr1 5.722 06 GHz
-3.702 dBm
Marker Frequency
5.722060000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Center 5.72000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 40.00 MHz
Sweep 1.07 ms (2001 pts)
Nov 14, 2019
6:48:08 PM

802.11n-HT20 Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3

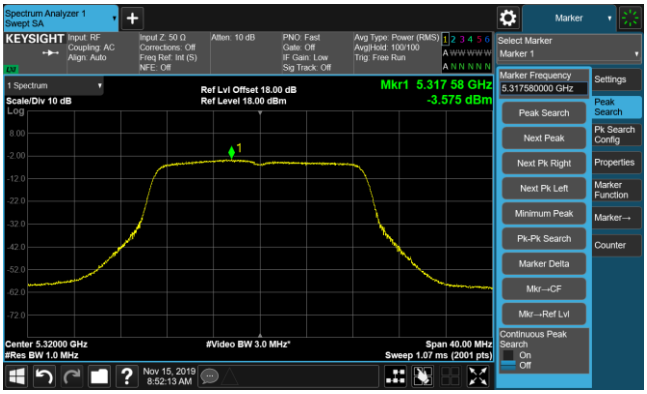
Channel 52 (5260MHz)



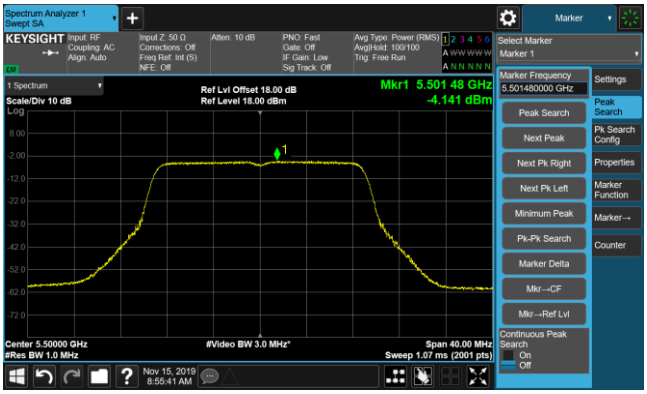
Channel 60 (5300MHz)



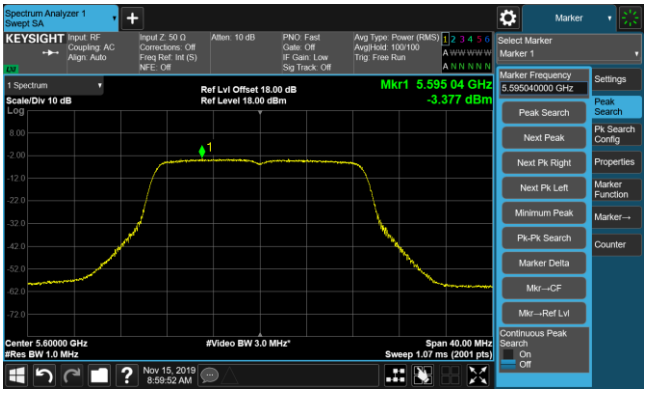
Channel 64 (5320MHz)



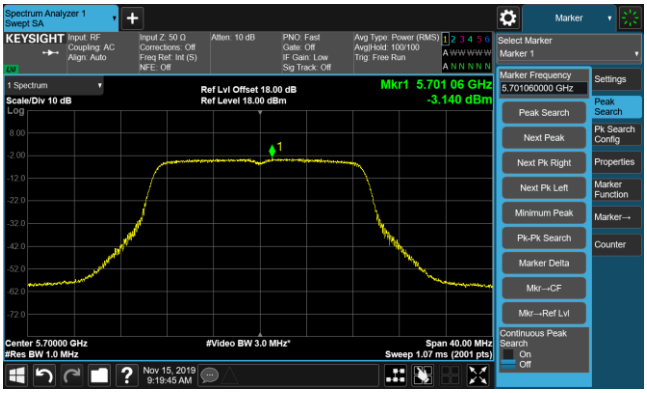
Channel 100 (5500MHz)



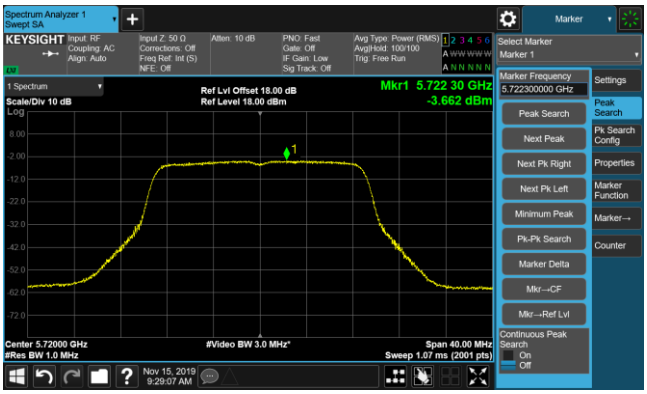
Channel 120 (5600MHz)



Channel 140 (5700MHz)

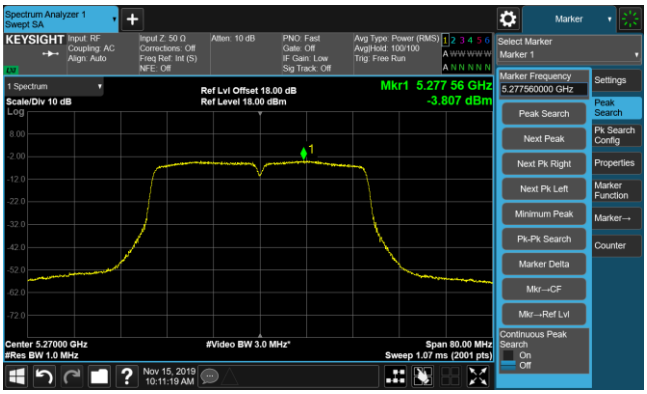


Channel 144 (5720MHz)

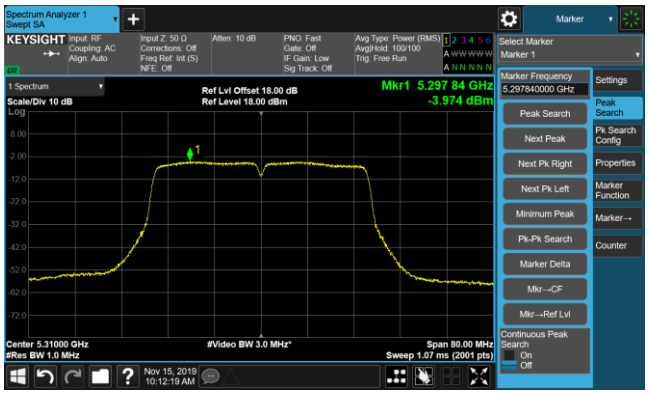

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Off
Atten: 10 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 18.00 dB
Ref Level 18.00 dBm
Mkr1 5.722 30 GHz
-3.662 dBm
Marker Frequency
5.722300000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Center 5.72000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 40.00 MHz
Sweep 1.07 ms (2001 pts)
Nov 15, 2019
9:29:07 AM

802.11n-HT40 Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3

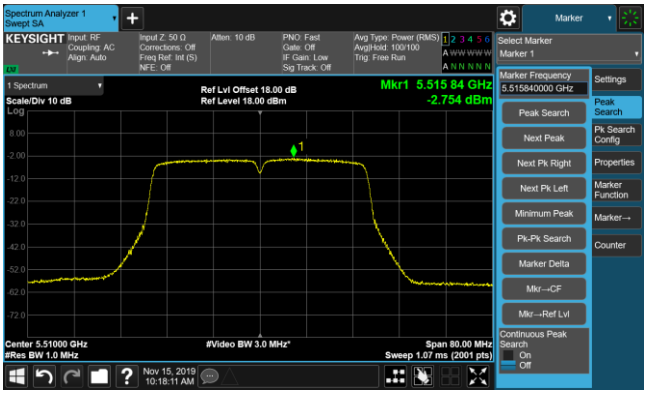
Channel 54 (5270MHz)



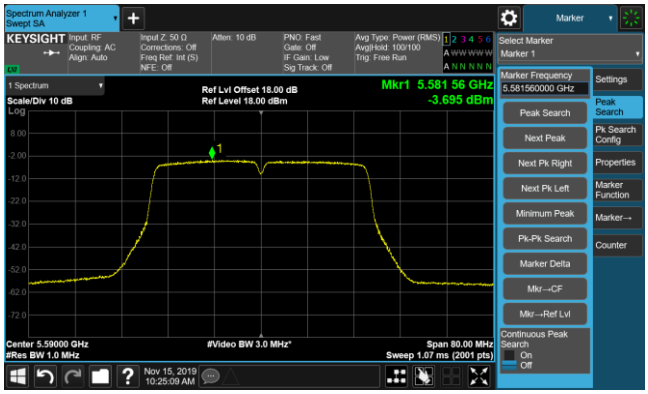
Channel 62 (5310MHz)



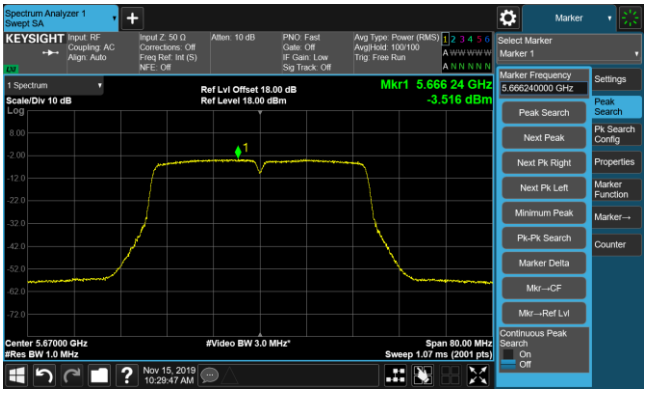
Channel 102 (5510MHz)



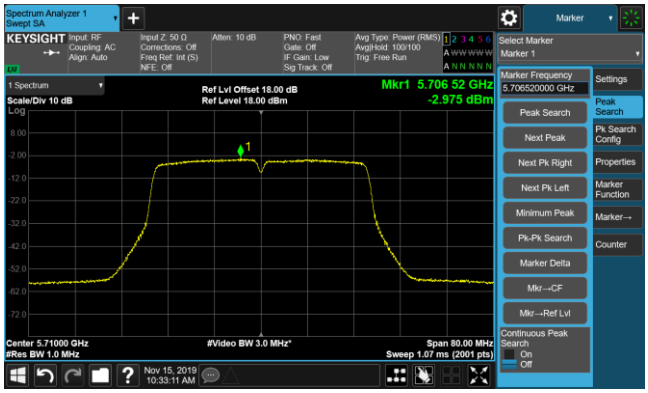
Channel 118 (5590MHz)



Channel 134 (5670MHz)

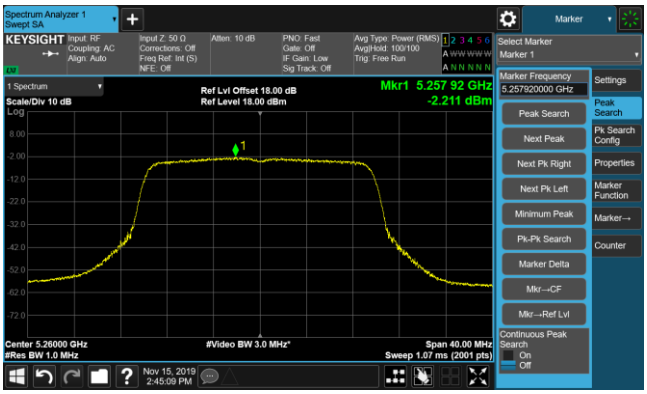


Channel 142 (5710MHz)

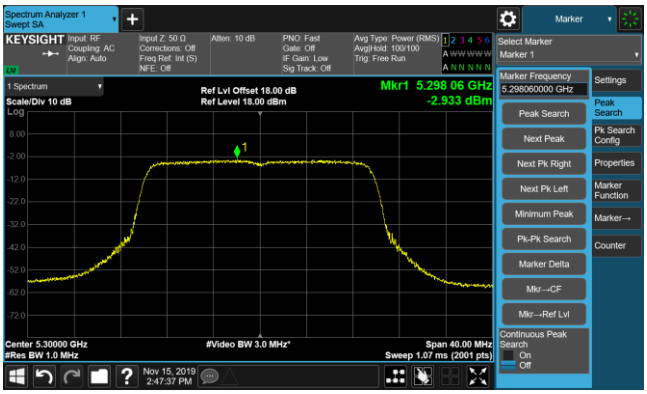


802.11ax-HE20 Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3

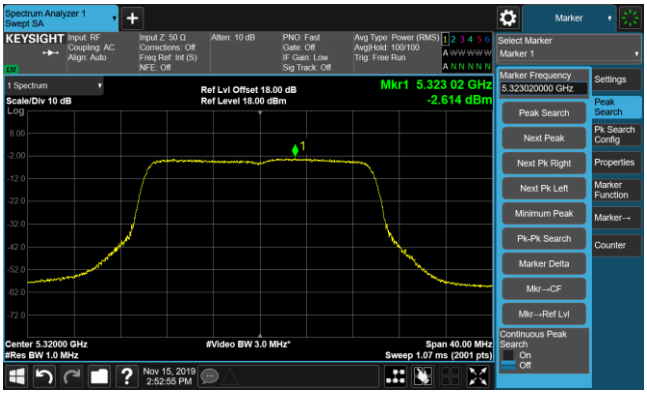
Channel 52 (5260MHz)



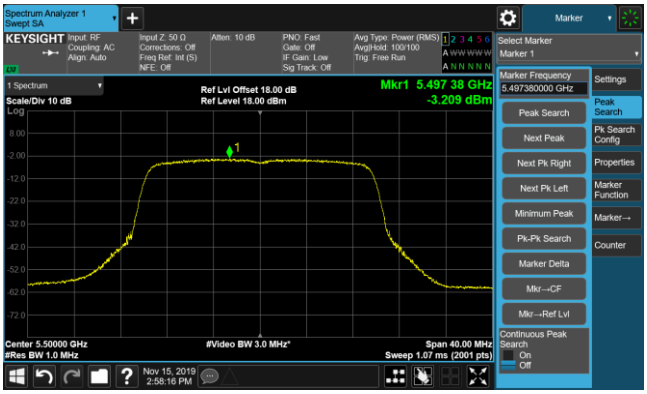
Channel 60 (5300MHz)



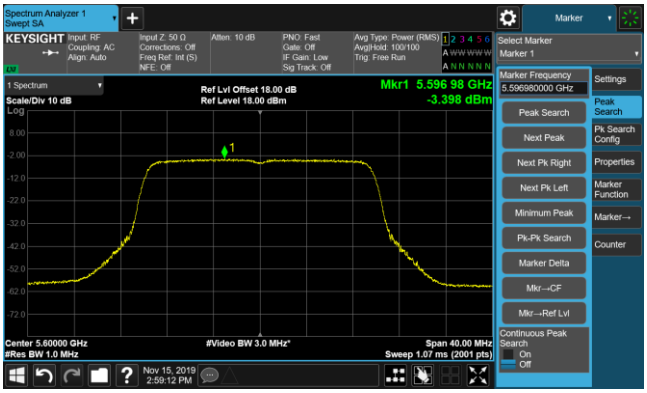
Channel 64 (5320MHz)



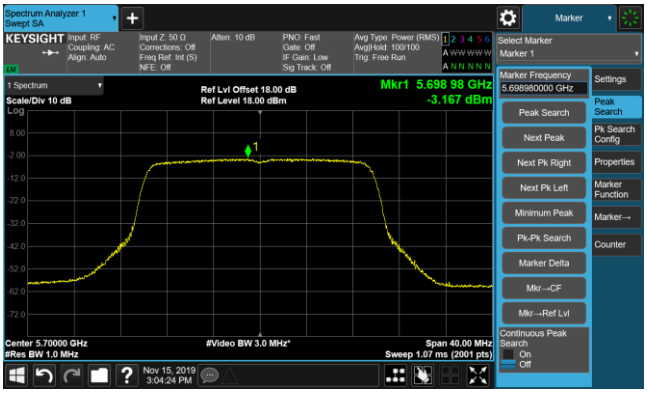
Channel 100 (5500MHz)



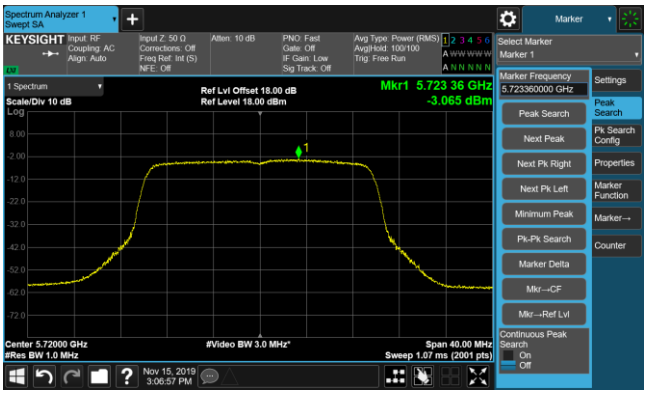
Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
NFE: Off
Atten: 10 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
Marker
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 18.00 dB
Ref Level 18.00 dBm
Mkr1 5.723 36 GHz
-3.065 dBm
Marker Frequency
5.723360000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Center 5.72000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 40.00 MHz
Sweep 1.07 ms (2001 pts)
Nov 15, 2019
3:06:57 PM