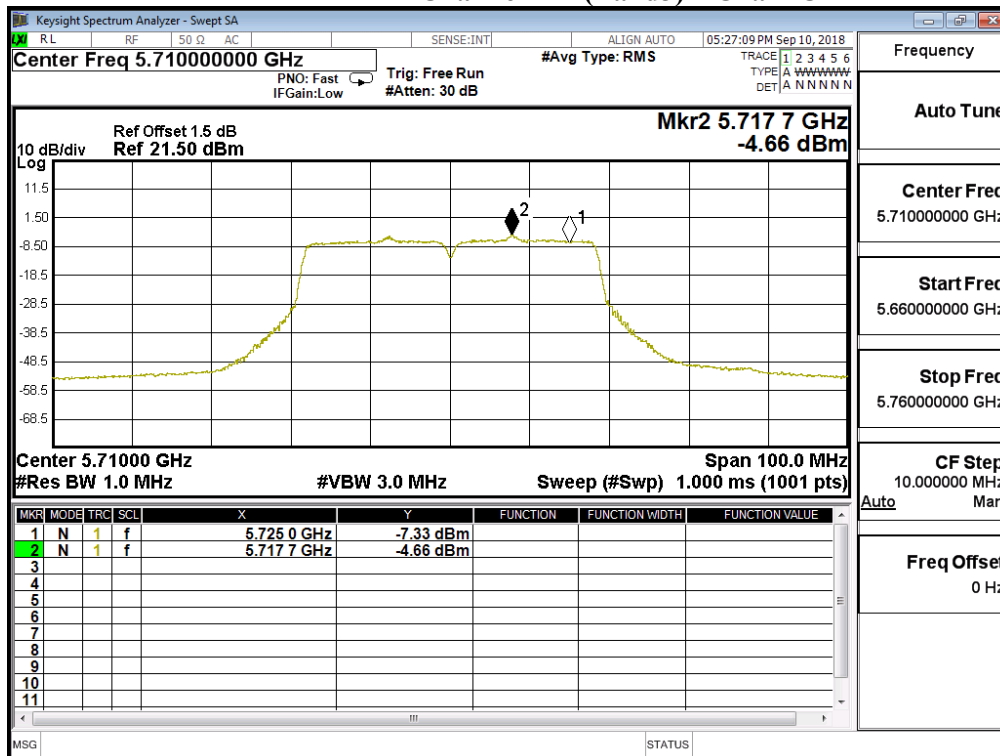
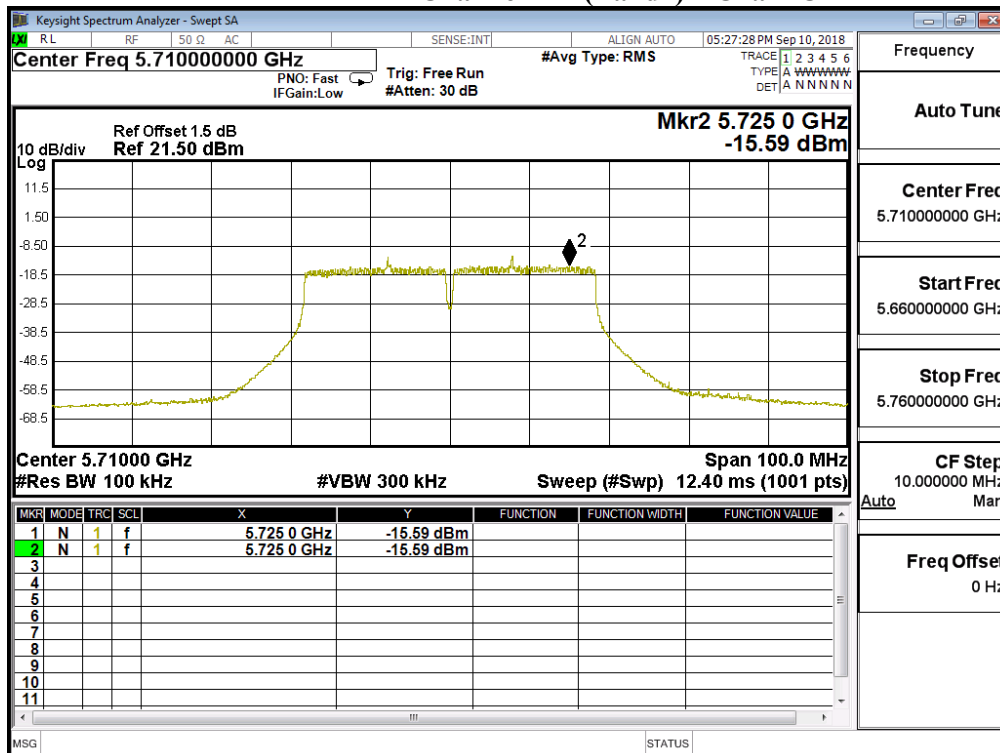


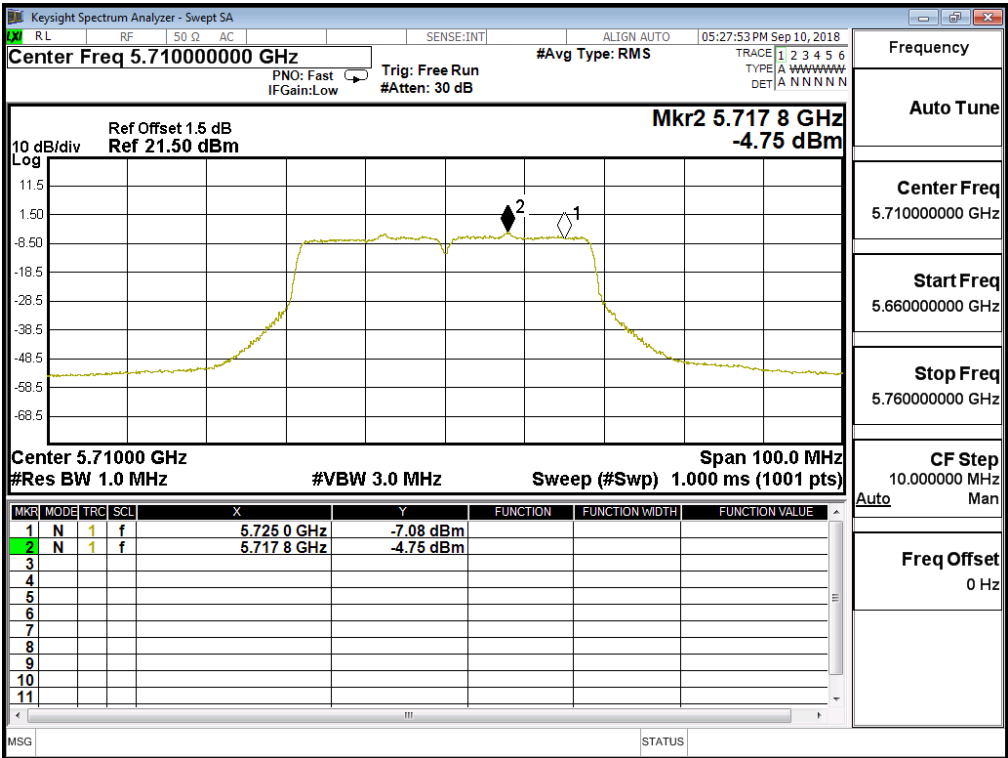
Channel 142 (Band3) – Chain C



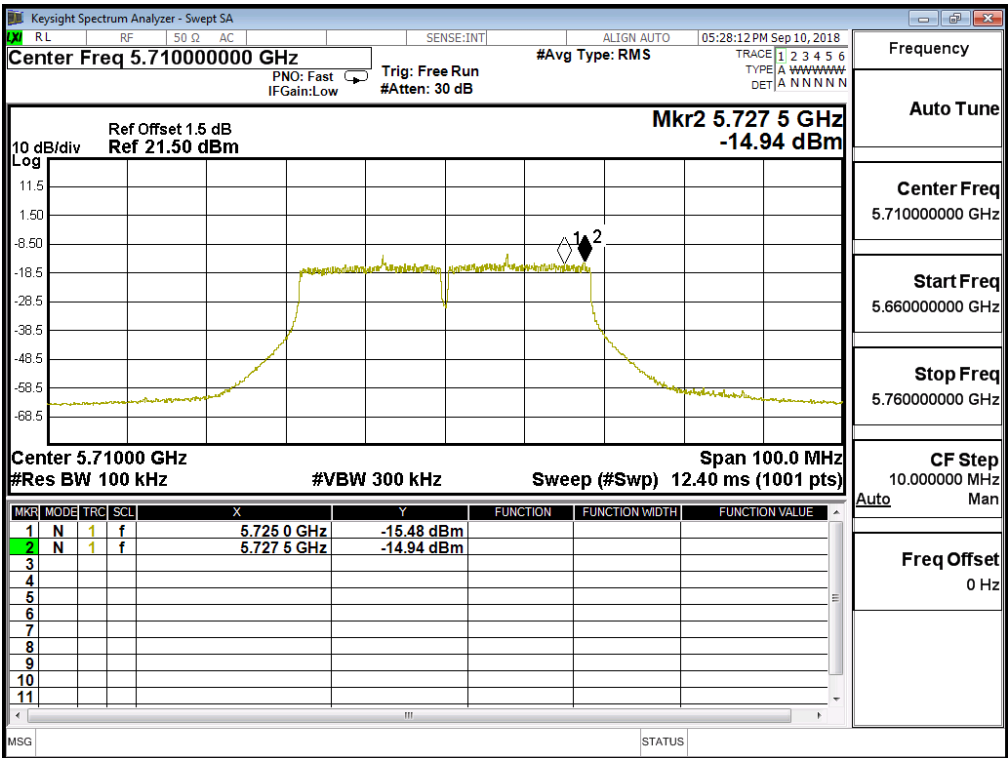
Channel 142 (Band4) – Chain C



Channel 142 (Band3) – Chain D



Channel 142 (Band4) – Chain D



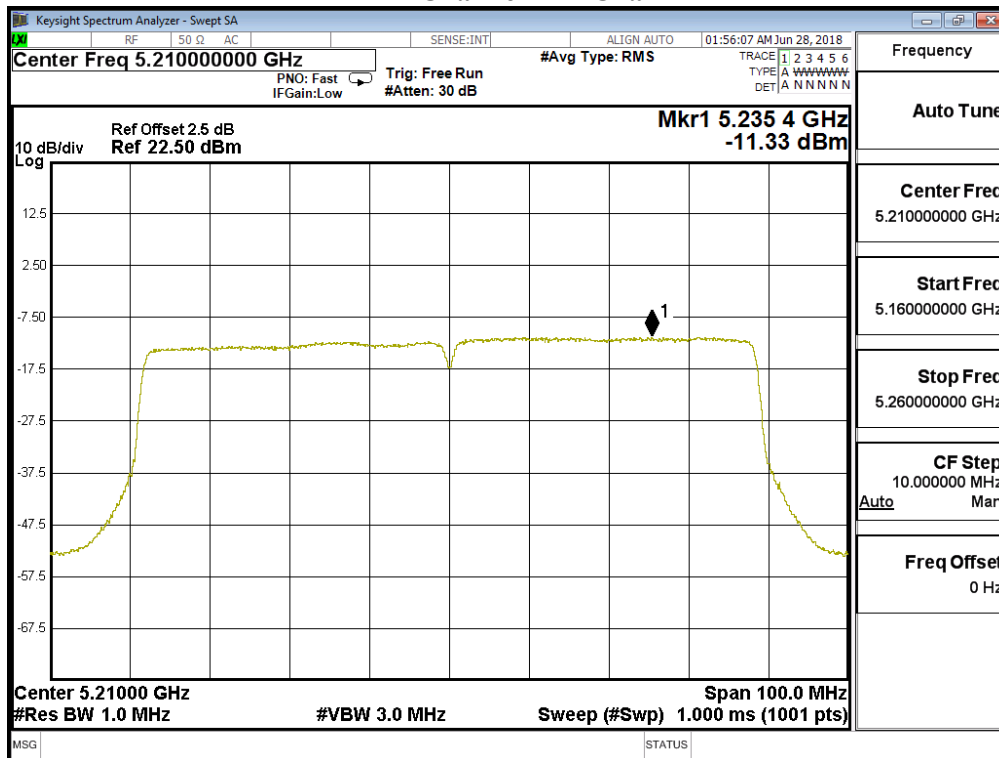
Product : MOXA IEEE 802.11a/n/ac 4*4 module
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Date : 2018/07/20
 Test Mode : Mode 6: Transmit (802.11ac-80BW-130Mbps) (Antenna No.18)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PSD (dBm)	Required Limit (dBm)	Result
42	5210	A	-11.330	-5.310	<2	Pass
		B	-12.120	-6.100	<2	Pass
		C	-11.420	-5.400	<2	Pass
		D	-11.090	-5.070	<2	Pass
58	5290	A	-12.850	-6.830	<2	Pass
		B	-12.130	-6.110	<2	Pass
		C	-12.050	-6.030	<2	Pass
		D	-12.250	-6.230	<2	Pass
106	5530	A	-10.820	-4.800	<2	Pass
		B	-12.010	-5.990	<2	Pass
		C	-11.780	-5.760	<2	Pass
		D	-8.930	-2.910	<2	Pass
122	5610	A	-10.300	-4.280	<2	Pass
		B	-11.560	-5.540	<2	Pass
		C	-12.090	-6.070	<2	Pass
		D	-8.140	-2.120	<2	Pass
138	5690 (Band3)	A	-10.030	-4.010	<2	Pass
		B	-6.840	-0.820	<2	Pass
		C	-8.450	-2.430	<2	Pass
		D	-8.130	-2.110	<2	Pass

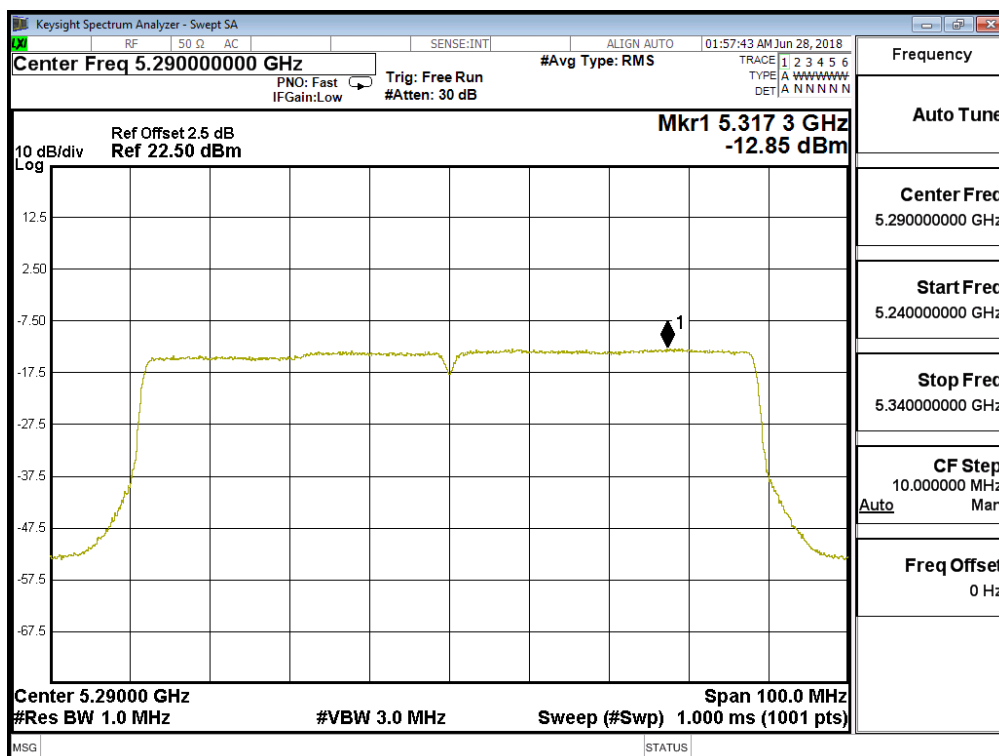
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	BWCF (dB)	Total PSD (dBm) ₁	Required Limit (dBm)	Result
138	5690 (Band4)	A	-19.080	6.98	-6.080	<21	Pass
		B	-15.860	6.98	-2.860	<21	Pass
		C	-17.990	6.98	-4.990	<21	Pass
		D	-17.550	6.98	-4.550	<21	Pass
155	5775	A	-10.770	6.98	2.230	<21	Pass
		B	-10.610	6.98	2.390	<21	Pass
		C	-12.160	6.98	0.840	<21	Pass
		D	-8.540	6.98	4.460	<21	Pass

Note 1: The quantity $10 \cdot \log 4$ (four antennas) is added to the spectrum peak value according to document 662911 D01.

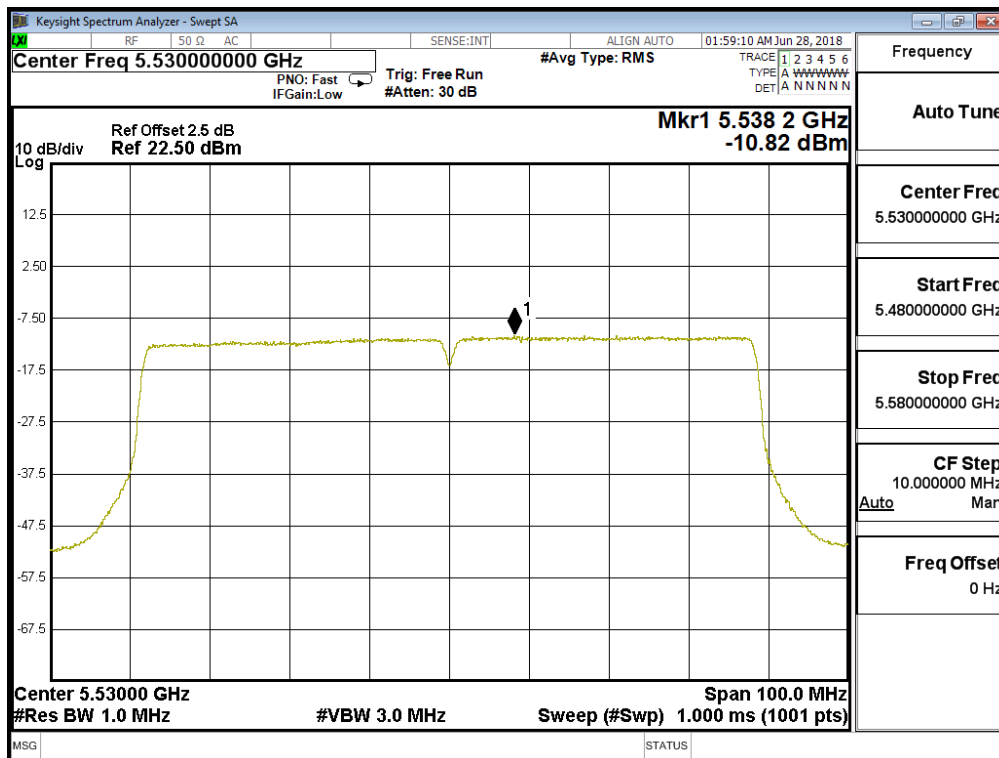
Channel 42 – Chain A



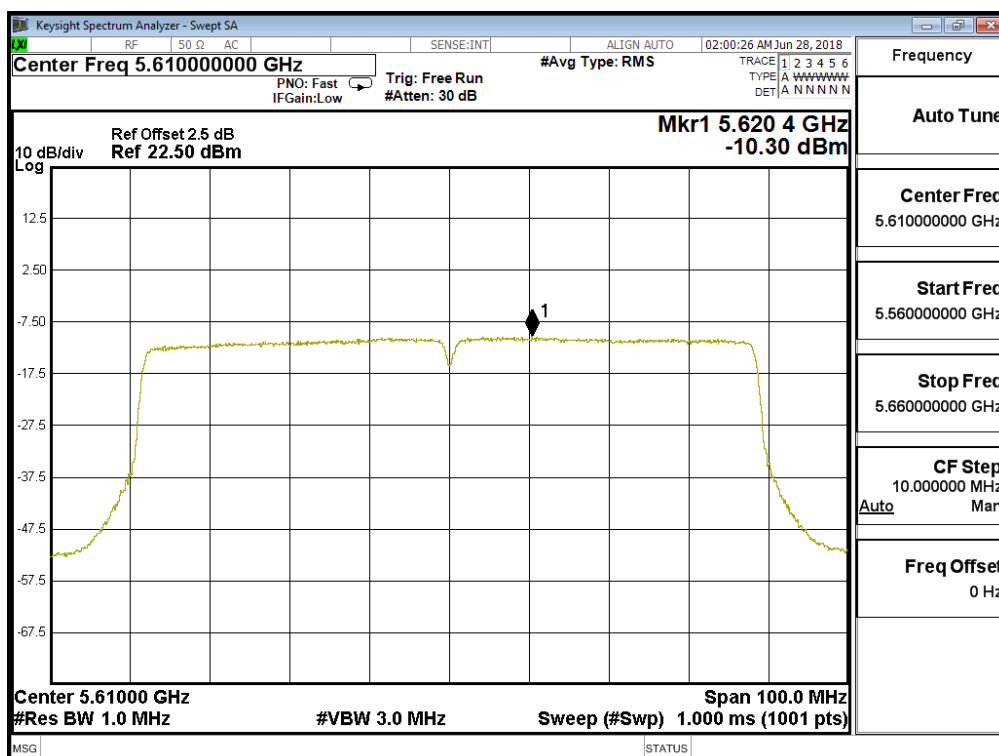
Channel 58 – Chain A



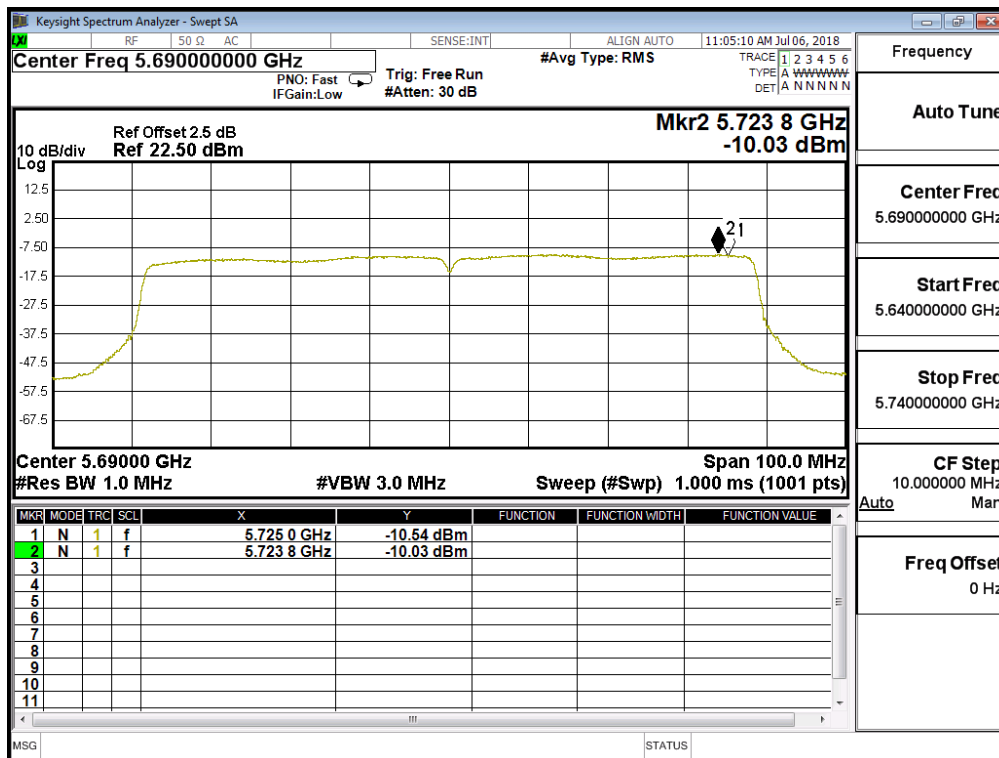
Channel 106 – Chain A



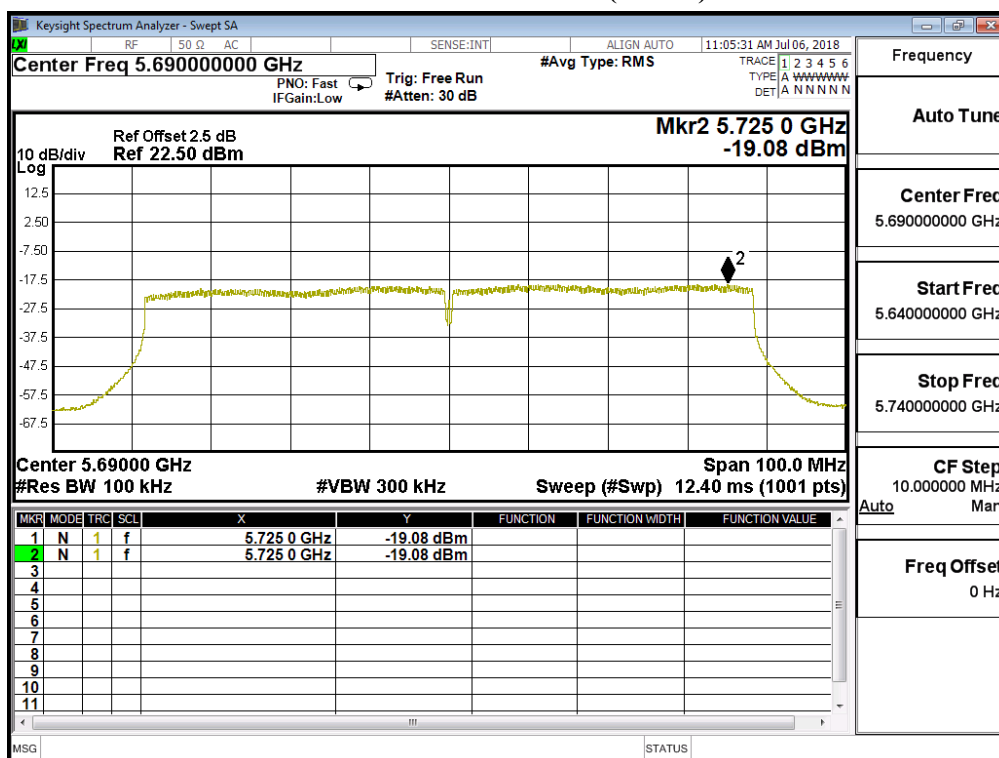
Channel 122 – Chain A



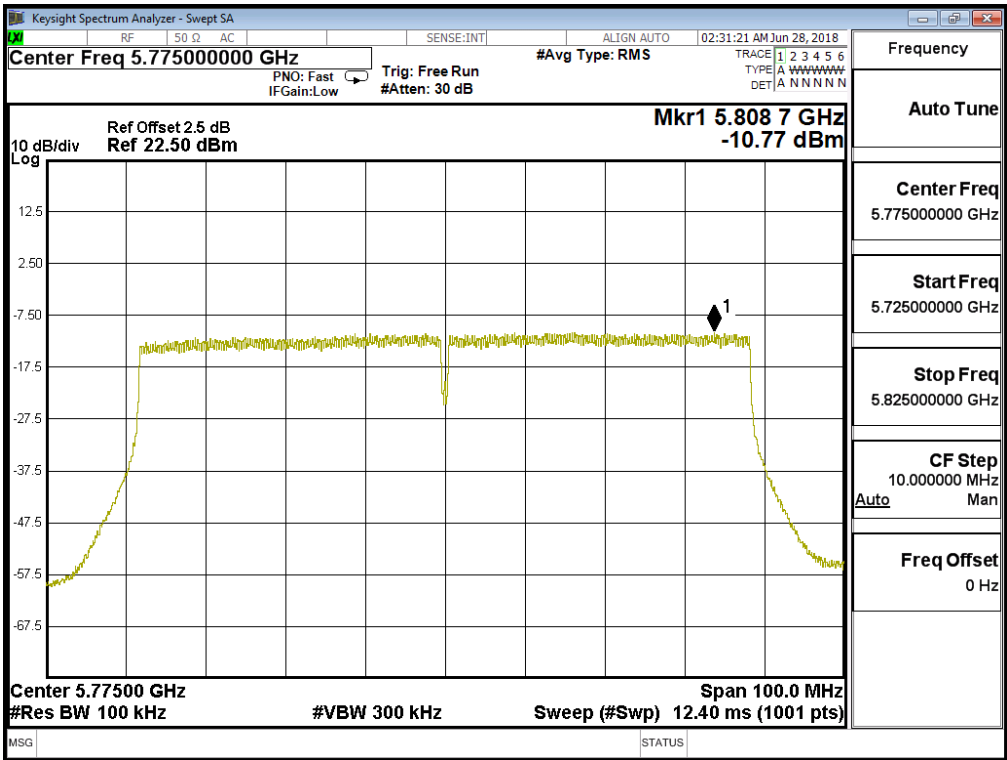
Channel 138(Band3) – Chain A



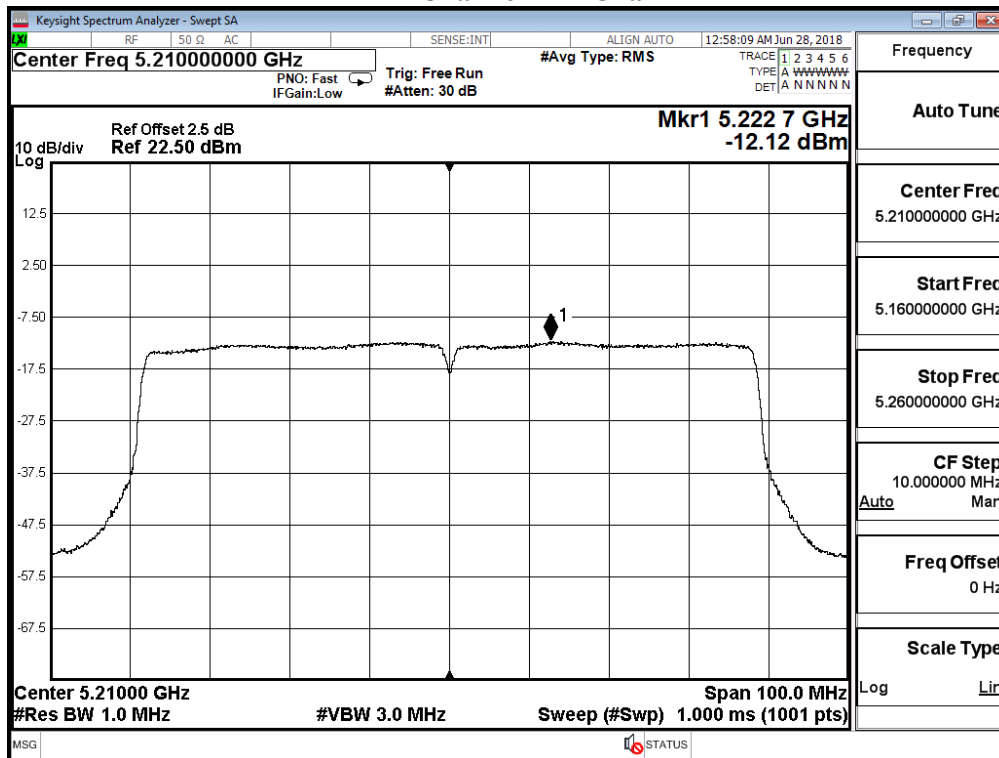
Channel 138(Band4) – Chain A



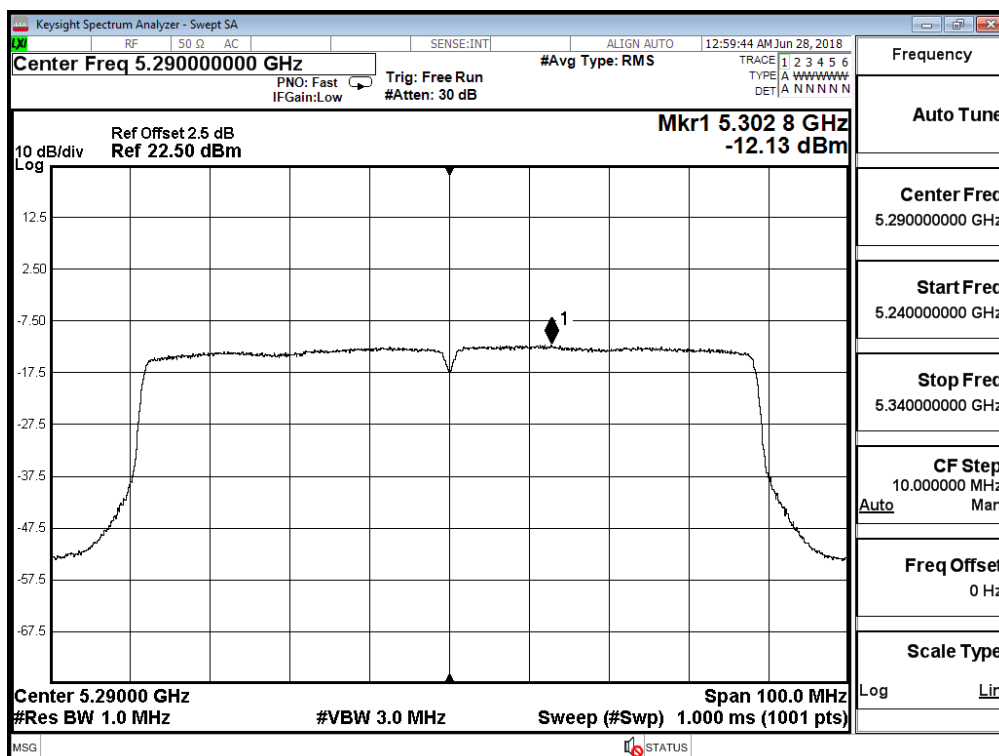
Channel 155: CHAIN A



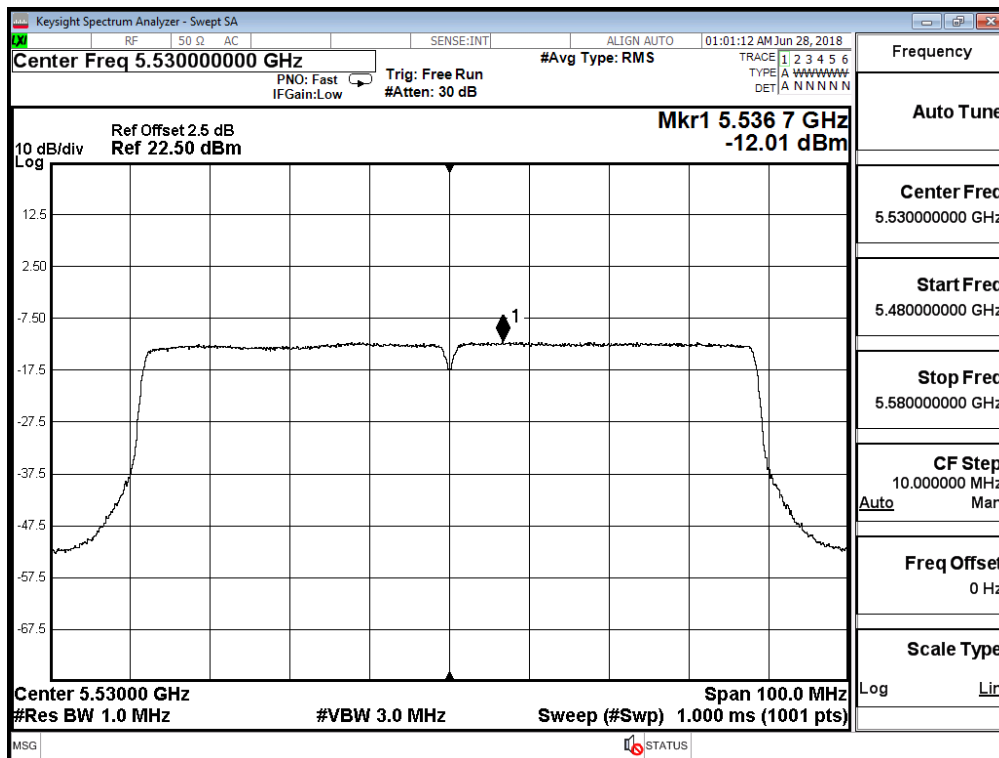
Channel 42 – Chain B



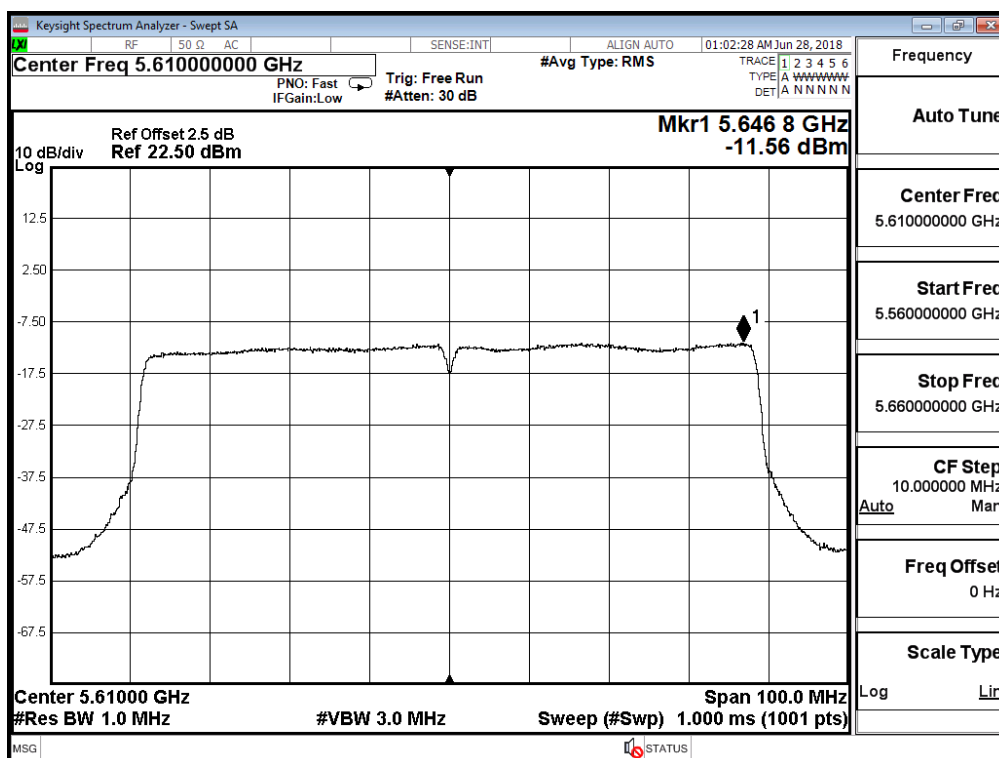
Channel 58 – Chain B



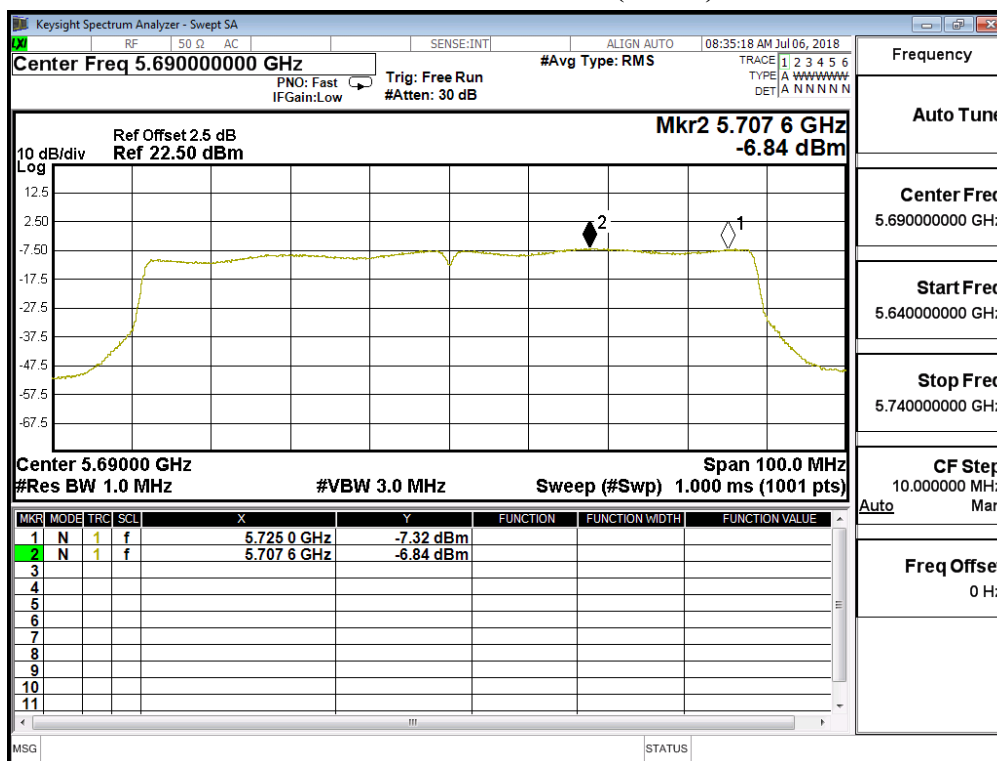
Channel 106 – Chain B



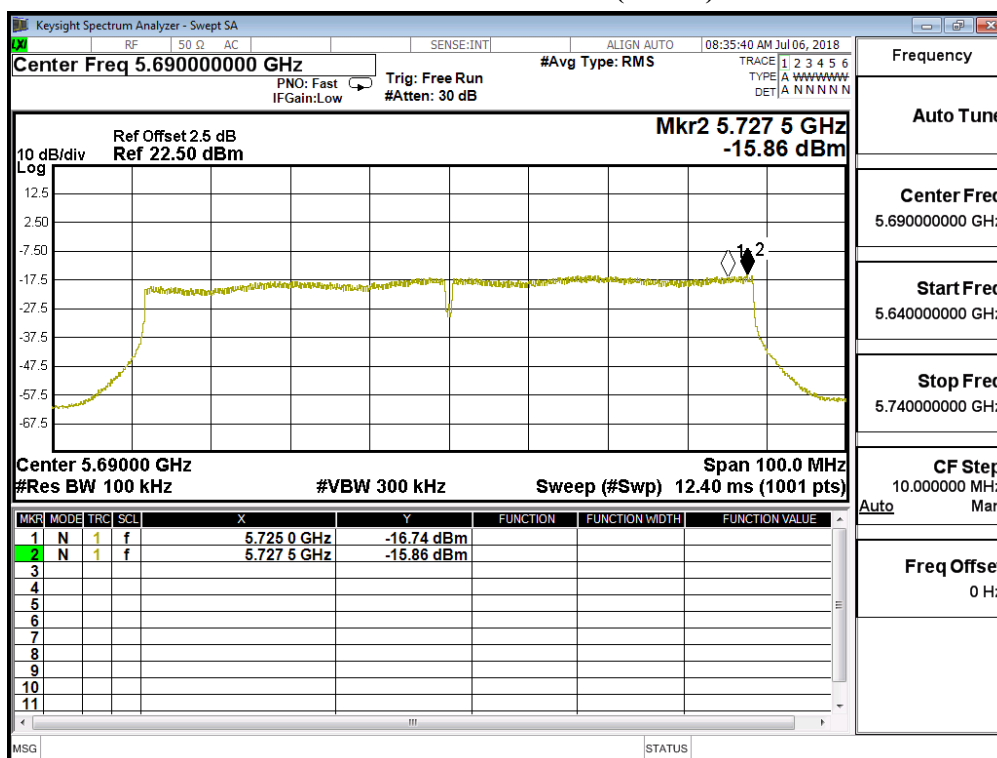
Channel 122 – Chain B



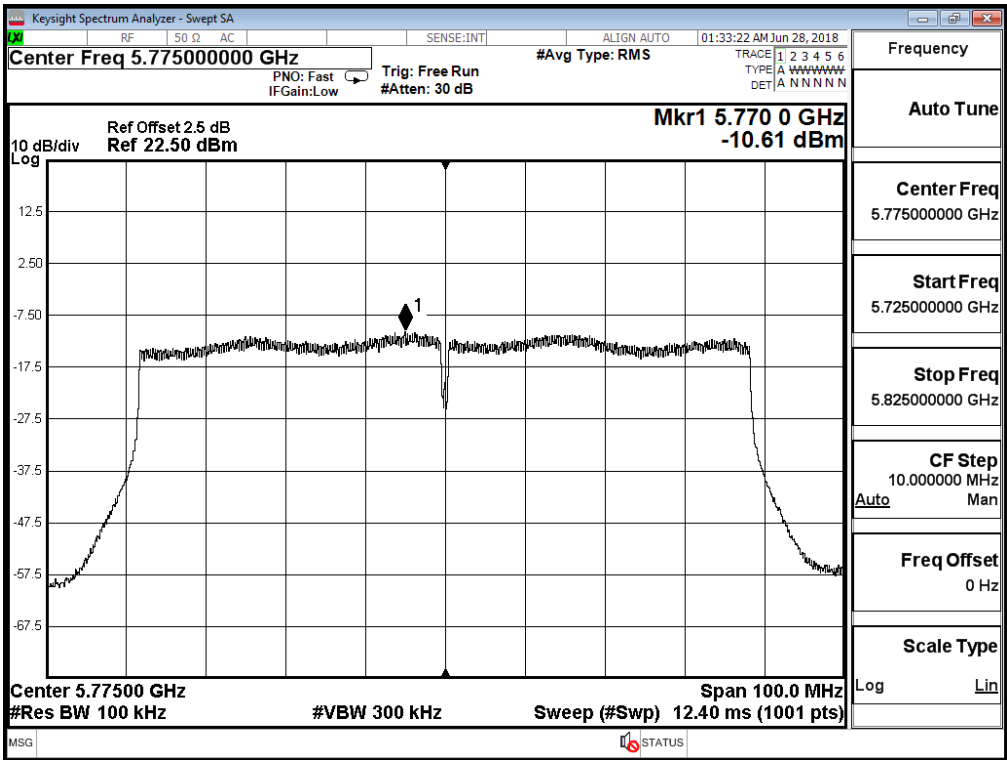
Channel 138 (Band3) – Chain B



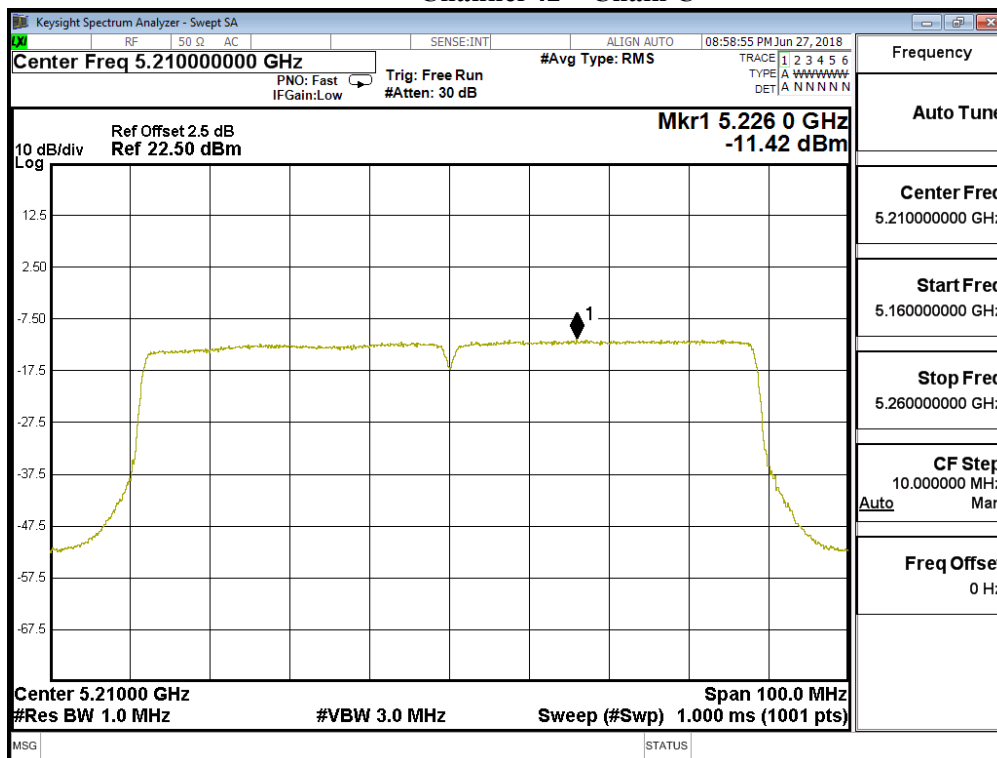
Channel 138 (Band4) – Chain B



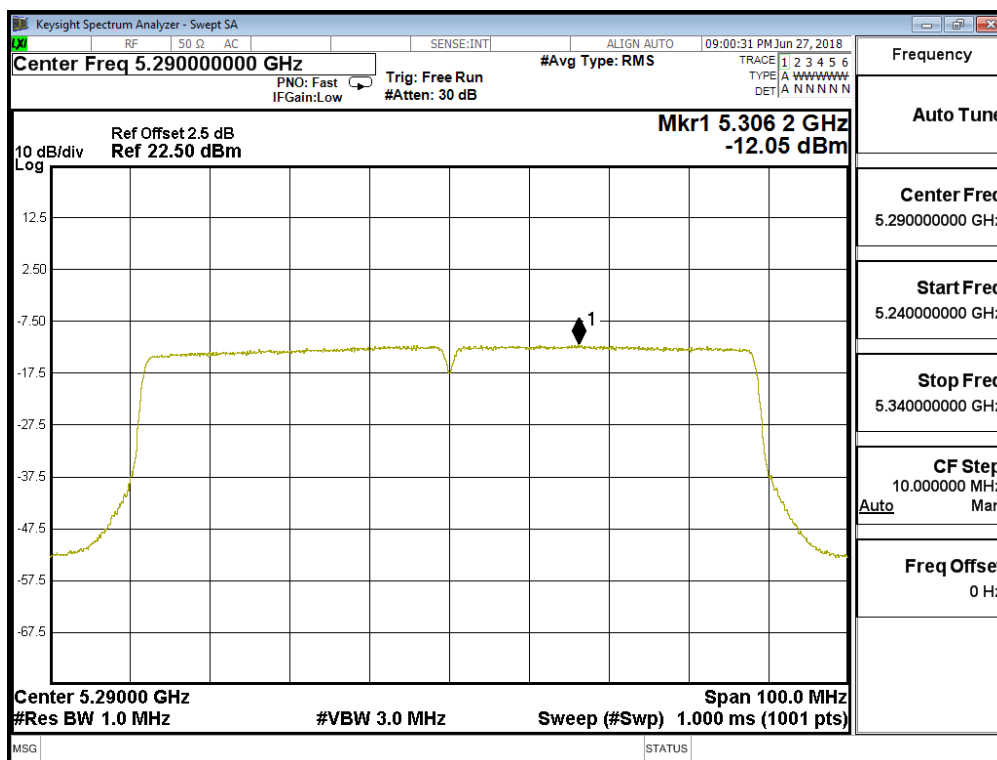
Channel 155: CHAIN B



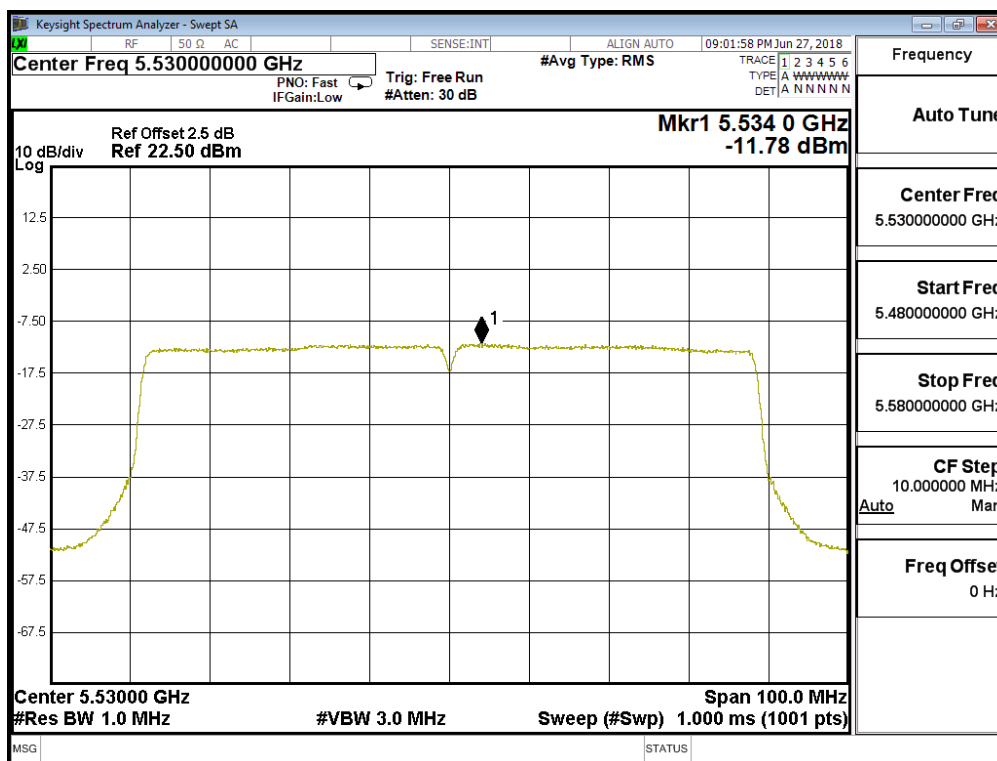
Channel 42 – Chain C



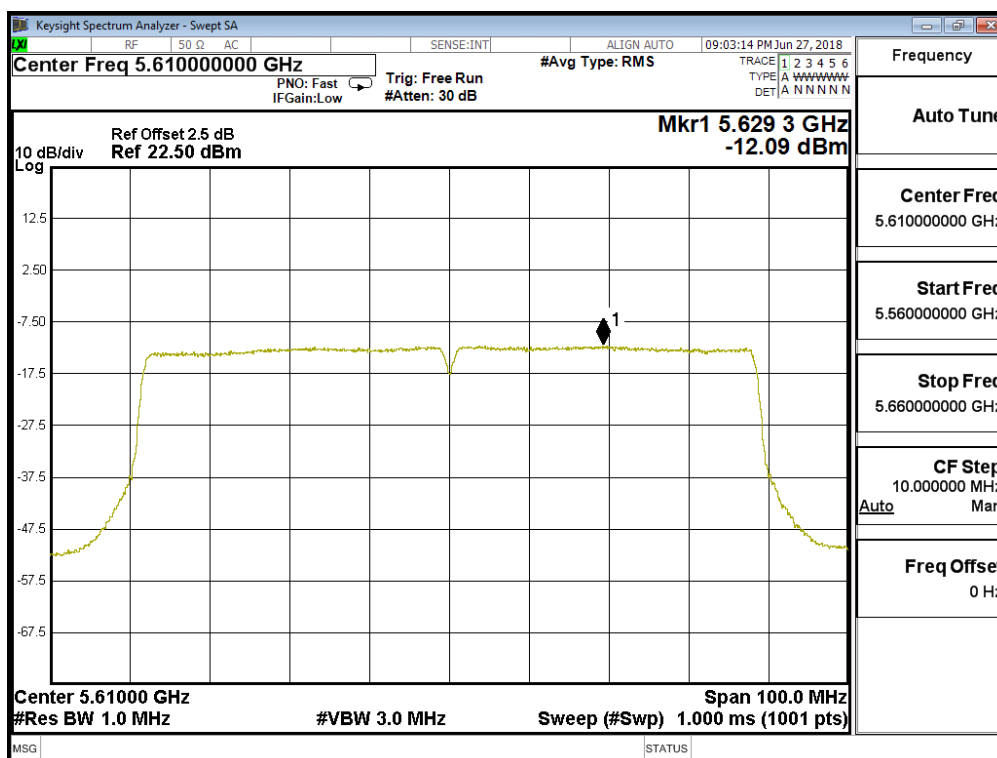
Channel 58 – Chain C



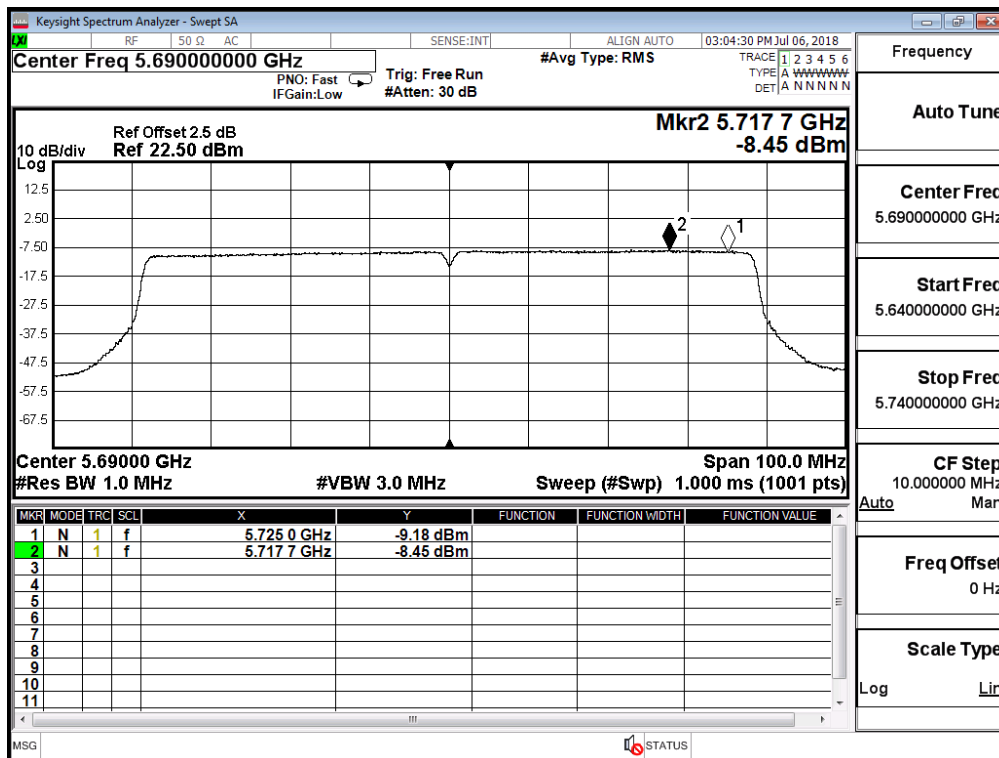
Channel 106 – Chain C



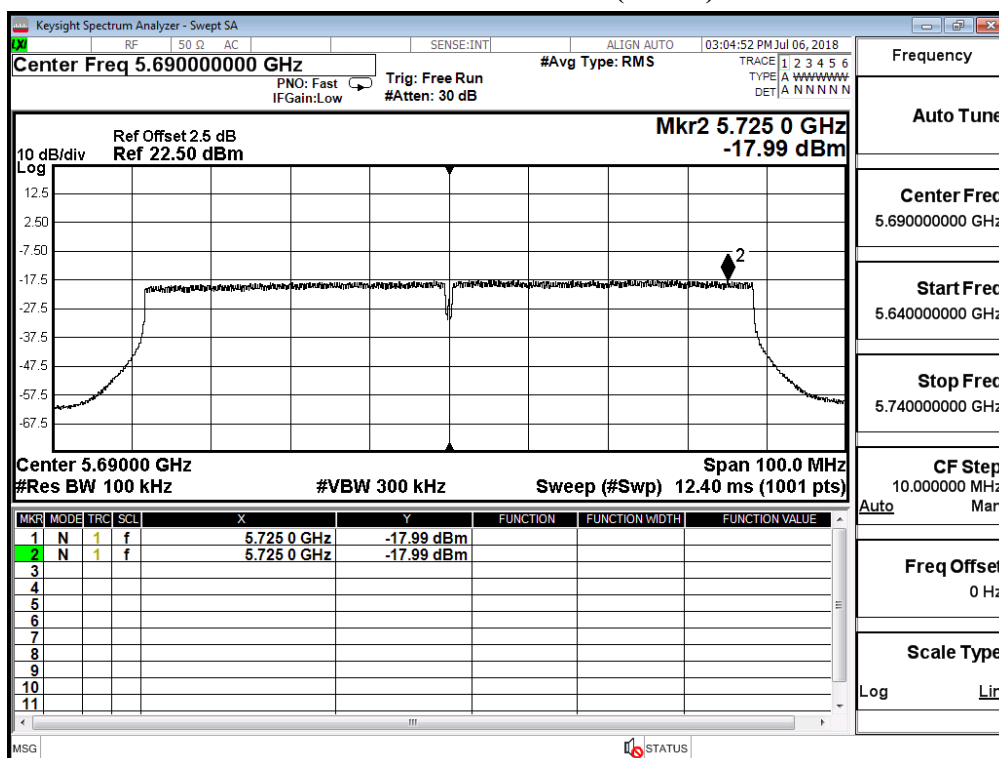
Channel 122 – Chain C



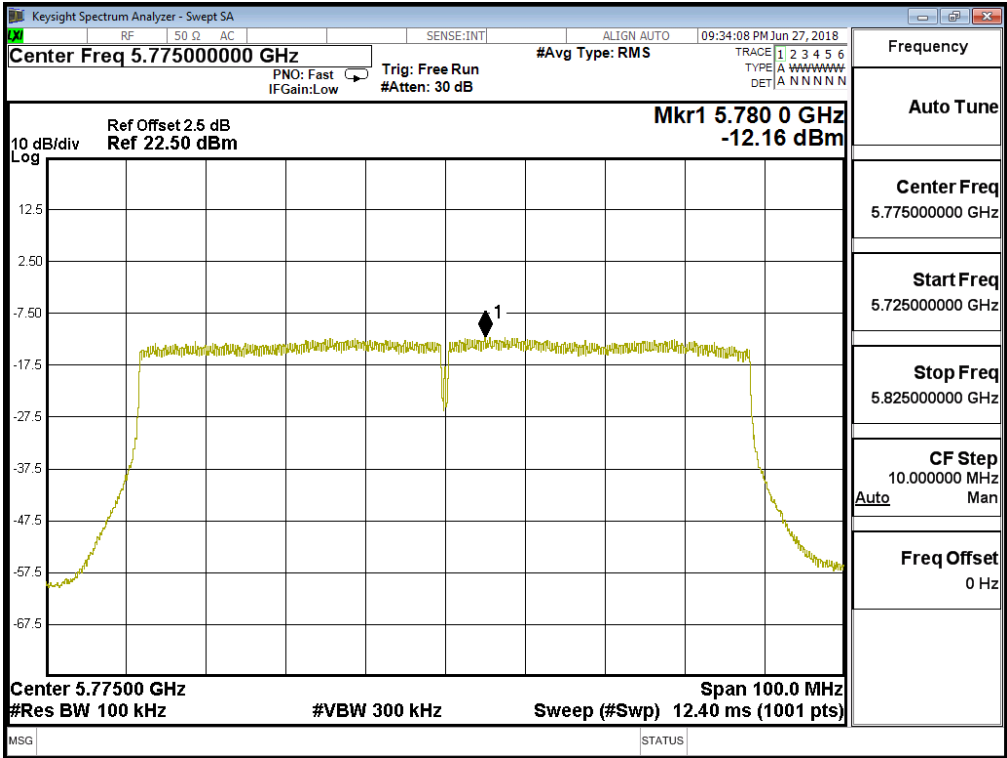
Channel 138 (Band3) – Chain C



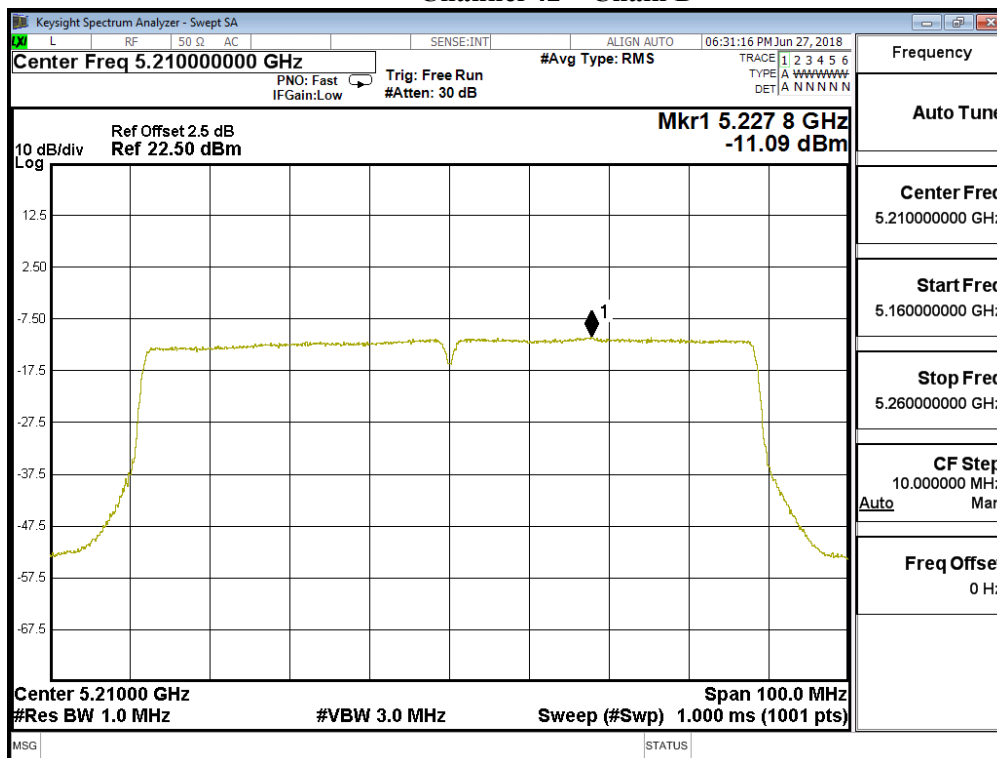
Channel 138 (Band4) – Chain C



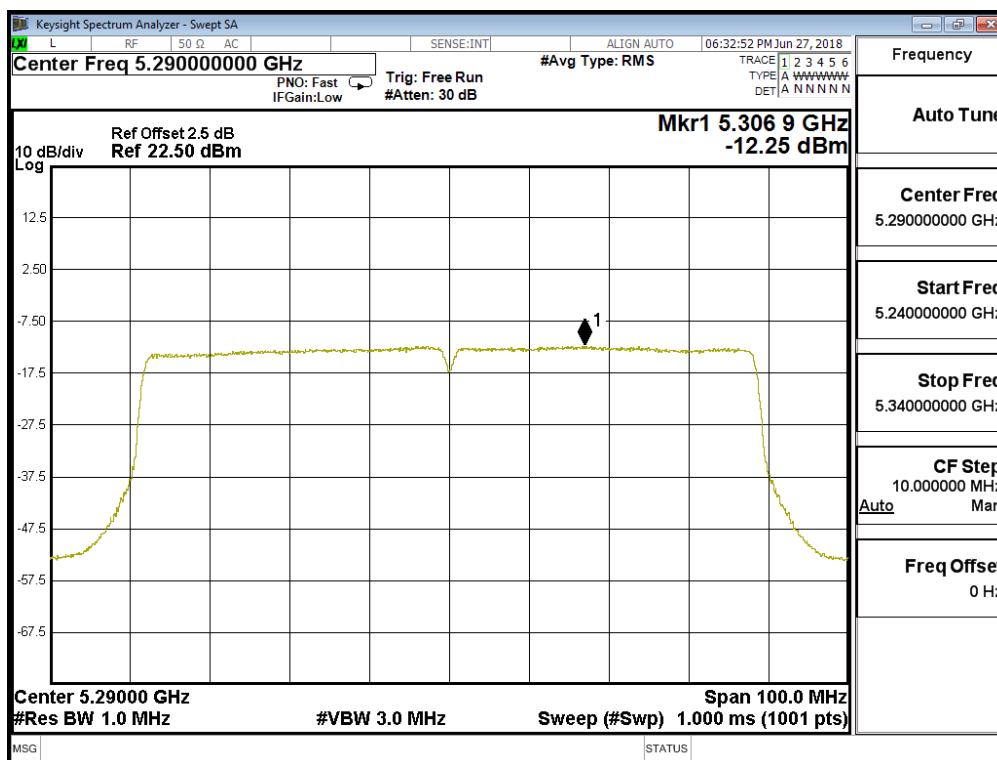
Channel 155: CHAIN C



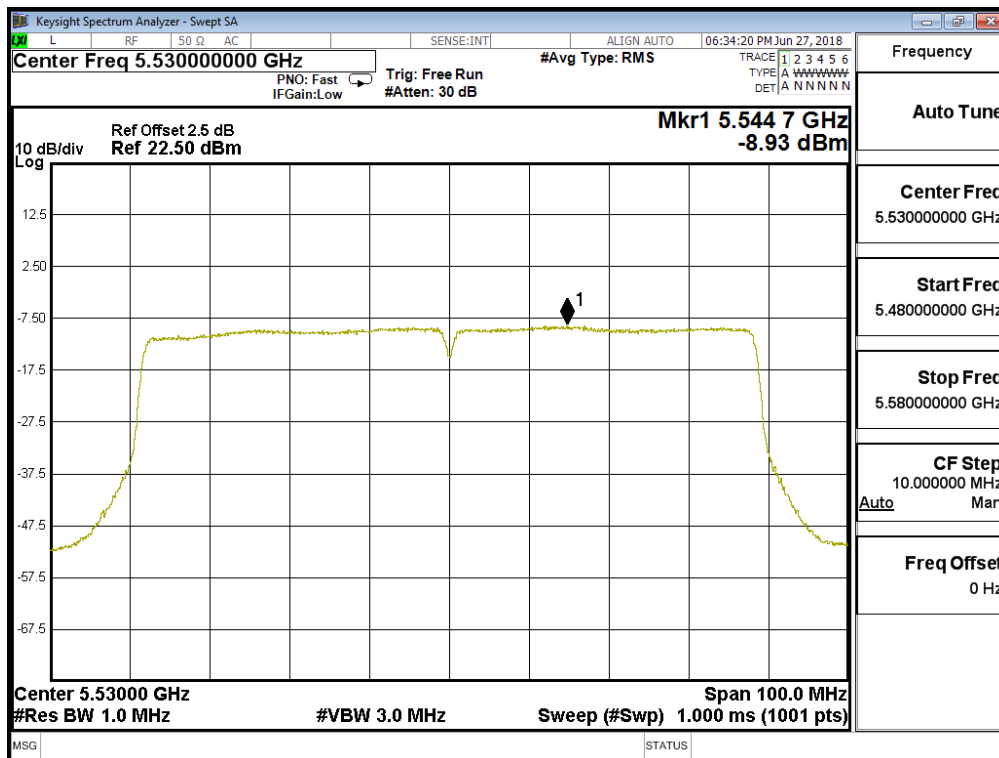
Channel 42 – Chain D



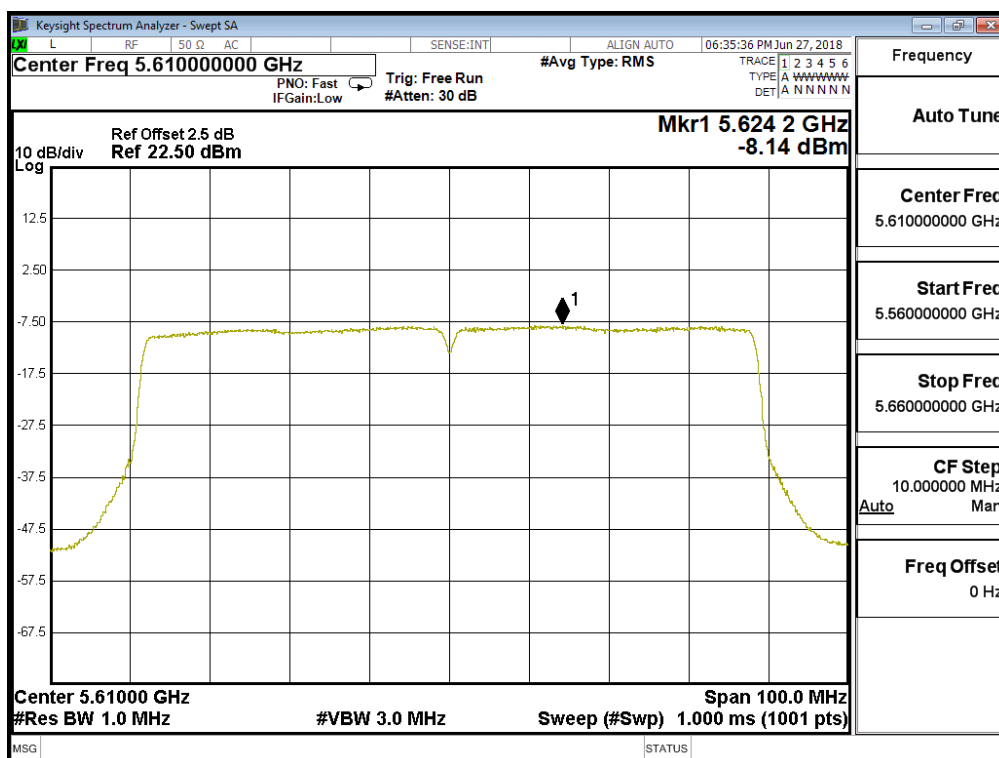
Channel 58 – Chain D



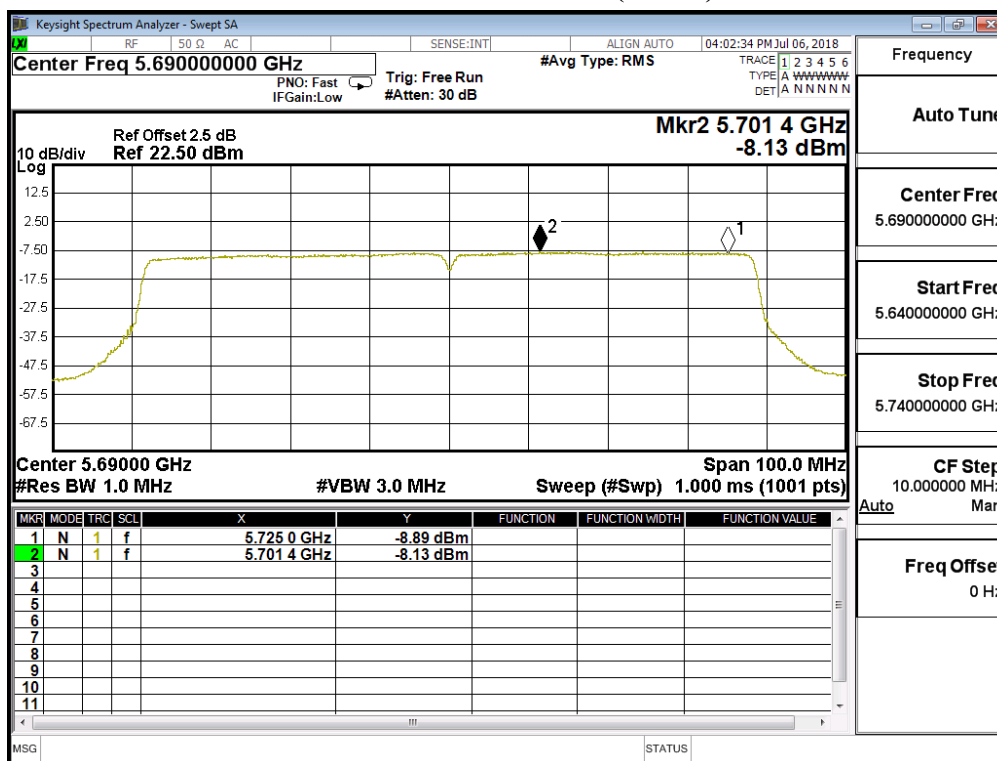
Channel 106 – Chain D



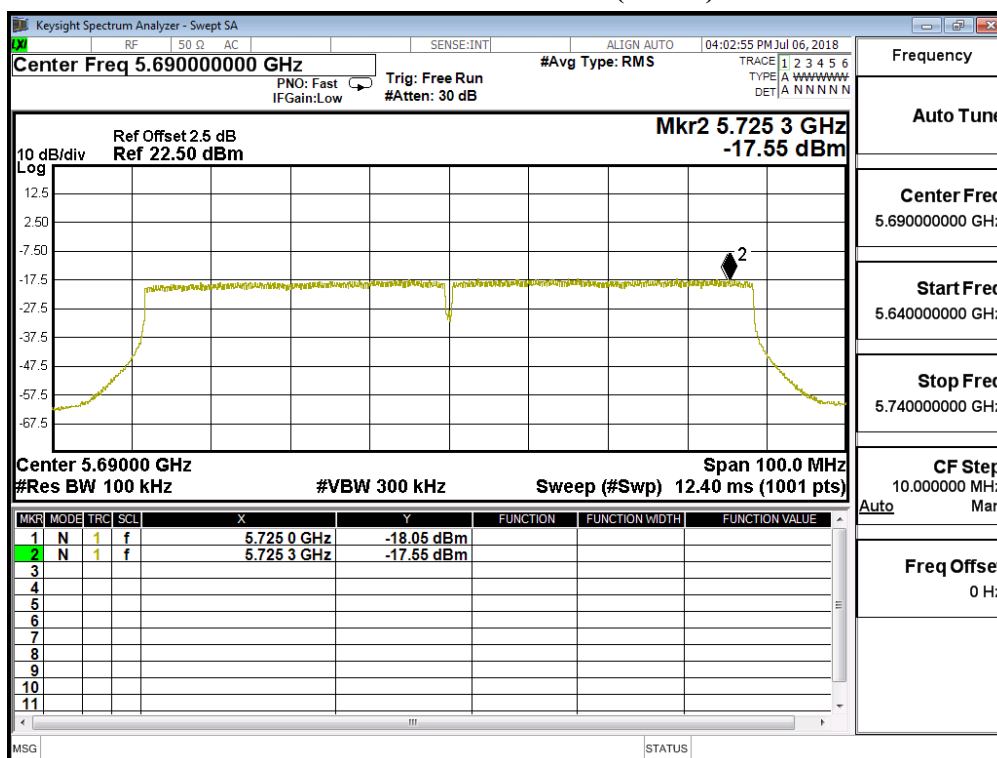
Channel 122 – Chain D



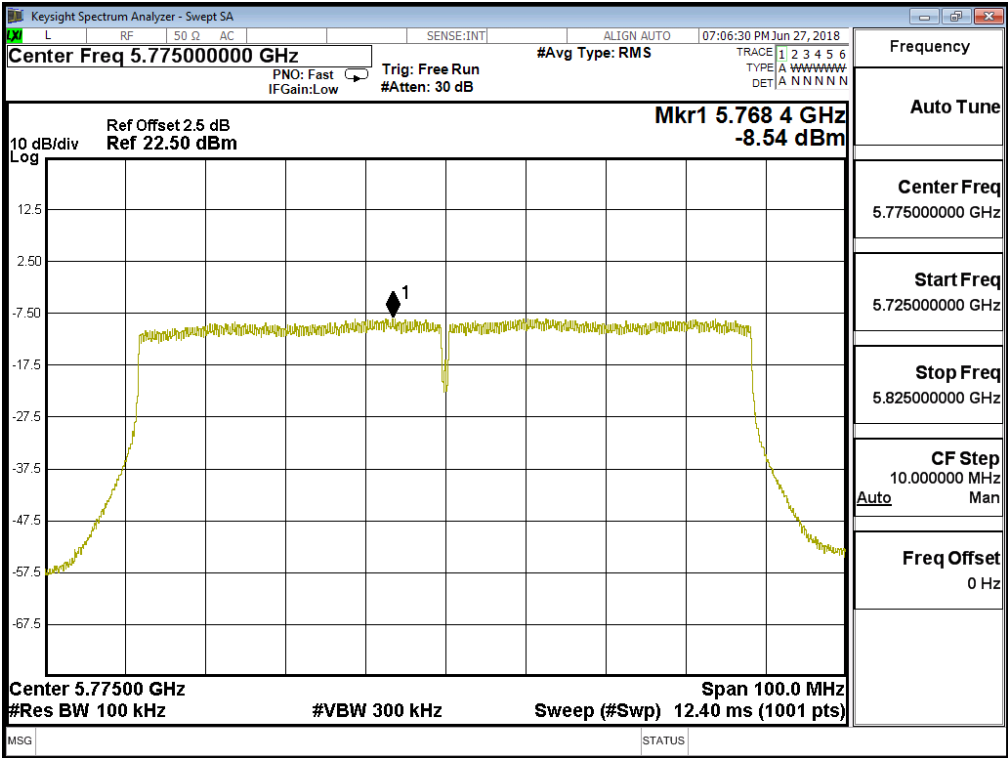
Channel 138 (Band3) – Chain D



Channel 138 (Band4) – Chain D



Channel 155: CHAIN D

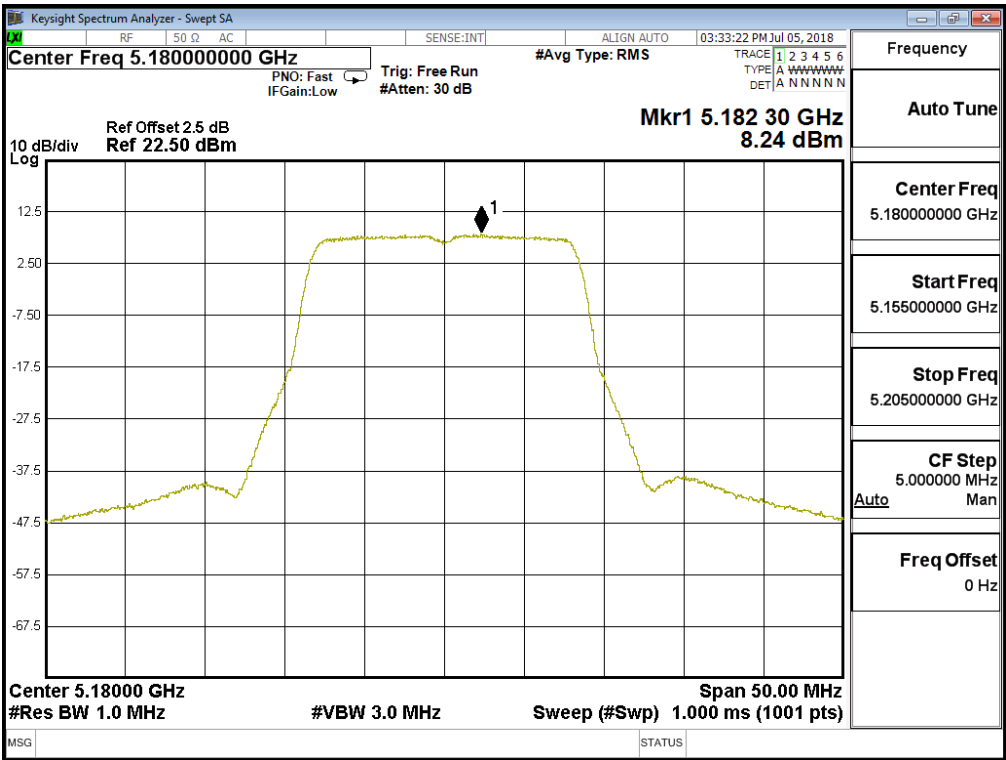


Product : MOXA IEEE 802.11a/n/ac 4*4 module
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Date : 2018/06/14
 Test Mode : Mode 1: Transmit (802.11a-6Mbps) (Antenna No.19)

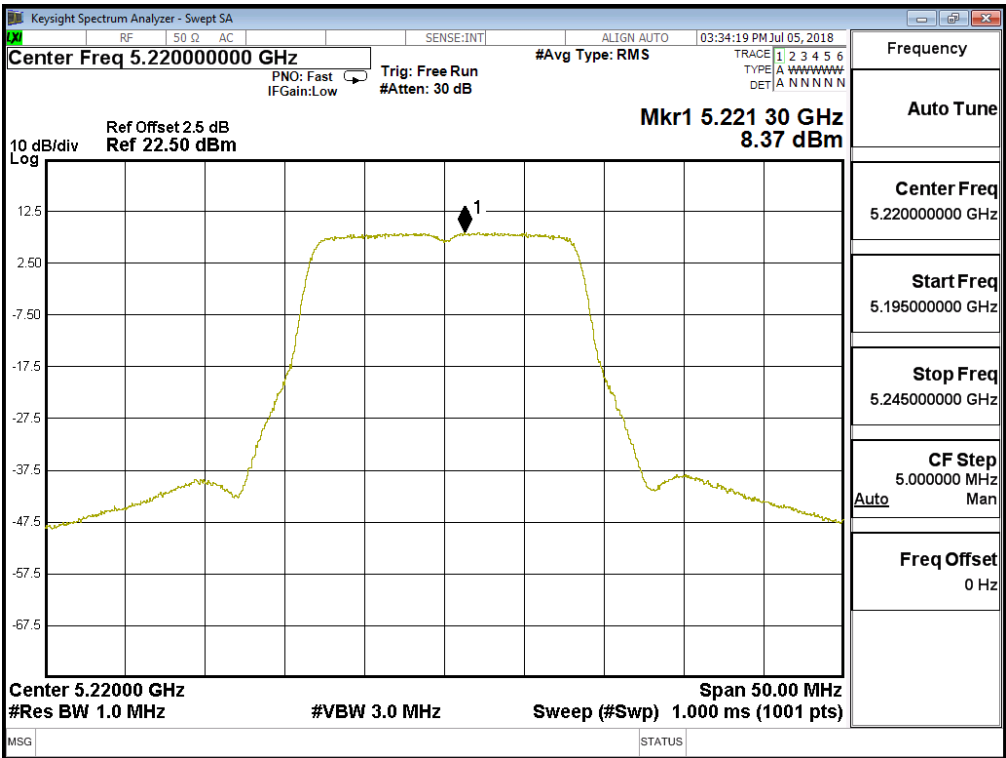
Channel Number	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	8.24	8.5	Pass
44	5220	6	8.37	8.5	Pass
48	5240	6	8.10	8.5	Pass
52	5260	6	8.19	8.5	Pass
60	5300	6	7.81	8.5	Pass
64	5320	6	7.88	8.5	Pass
100	5500	6	8.28	8.5	Pass
116	5580	6	8.31	8.5	Pass
140	5700	6	7.97	8.5	Pass

Channel Number	Frequency (MHz)	Data Rate (Mbps)	PPSD (dBm)	BWCF (dB)	Total PSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-0.27	6.98	12.73	<27.5	Pass
157	5785	6	-0.08	6.98	12.92	<27.5	Pass
165	5825	6	-0.28	6.98	12.72	<27.5	Pass

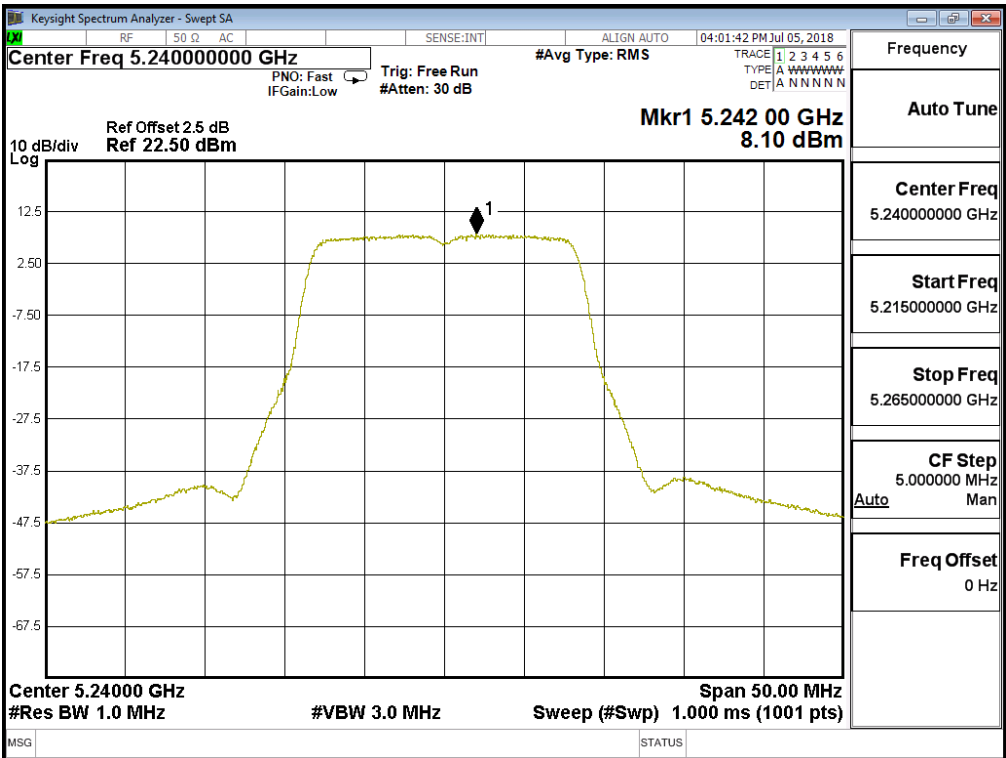
Channel 36:



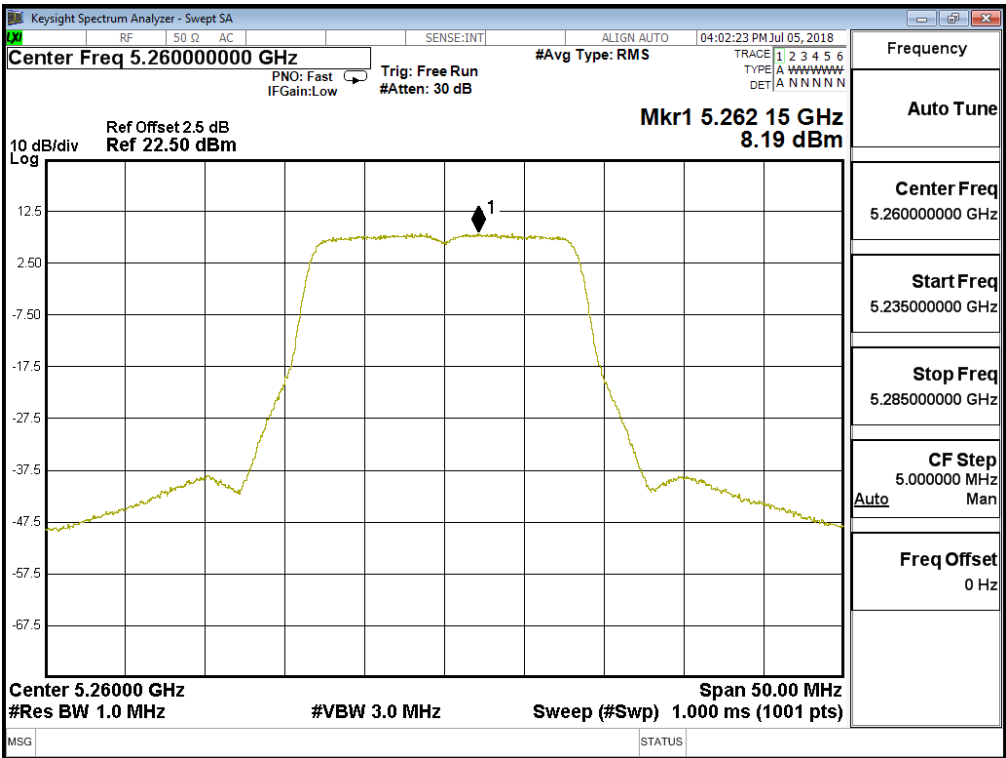
Channel 44:



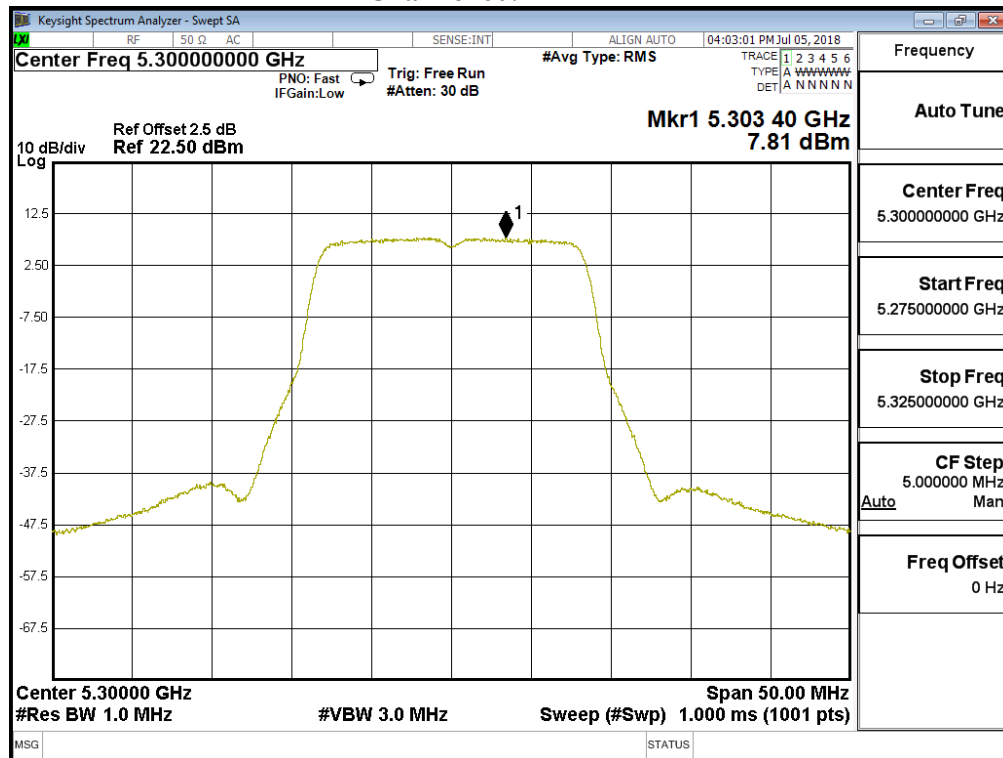
Channel 48:



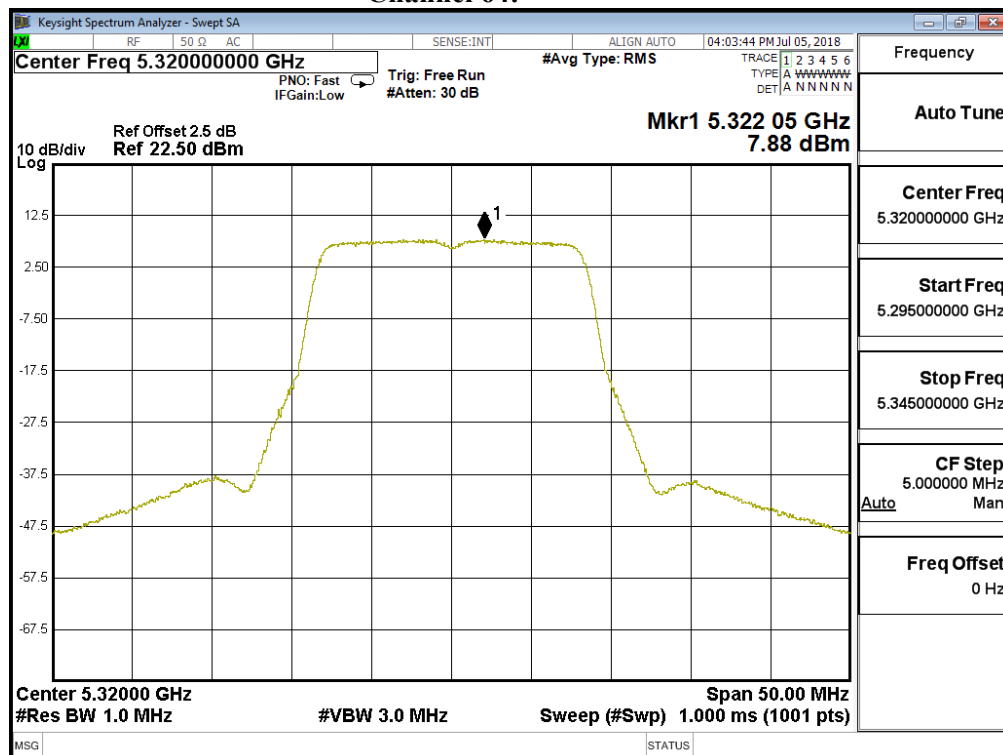
Channel 52:



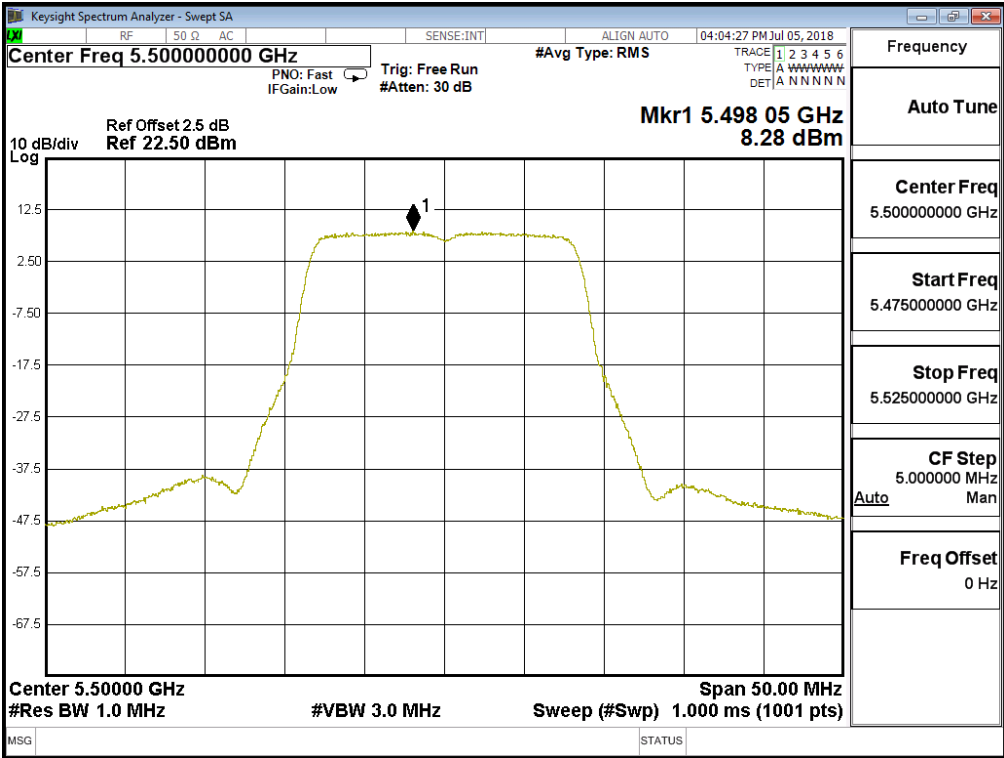
Channel 60:



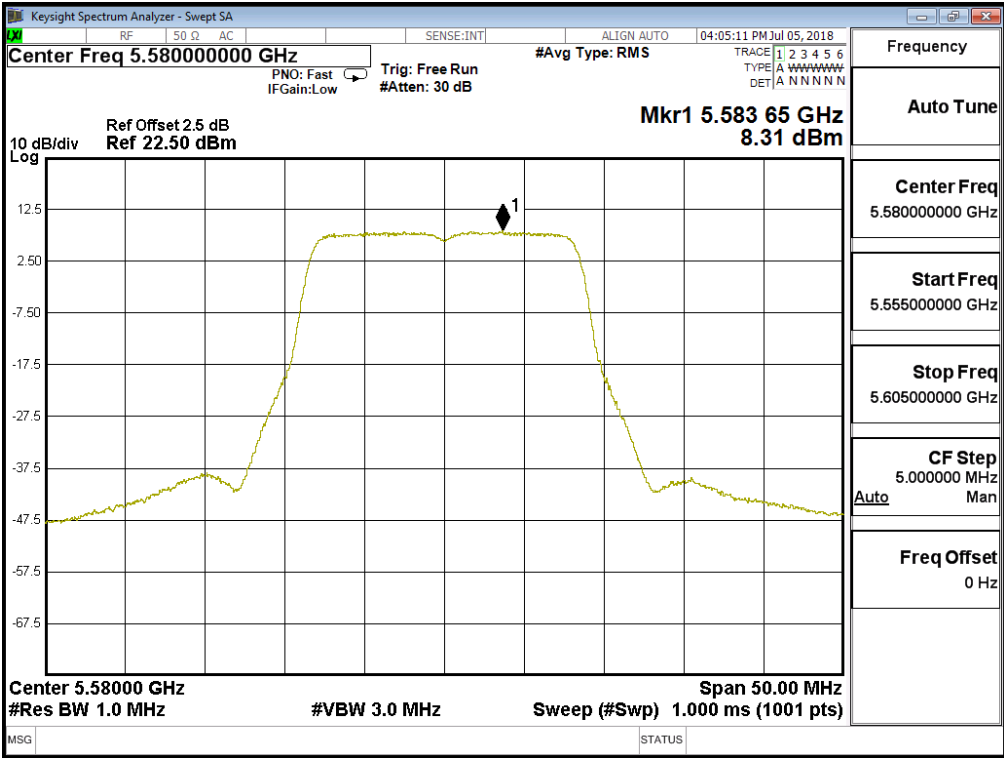
Channel 64:



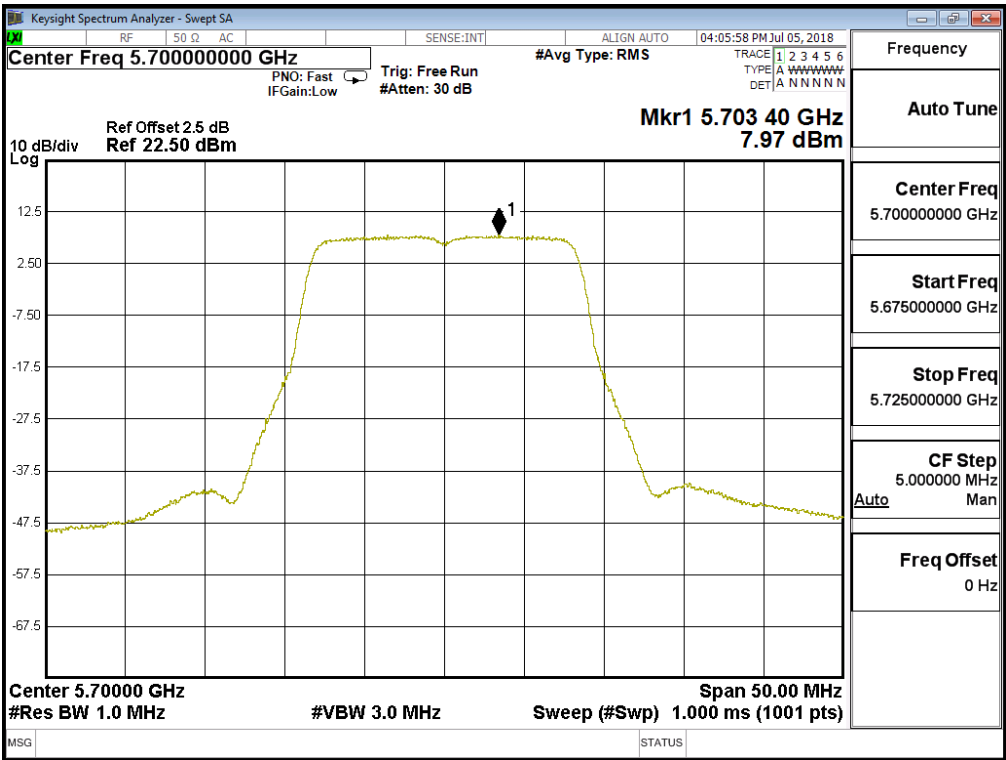
Channel 100:



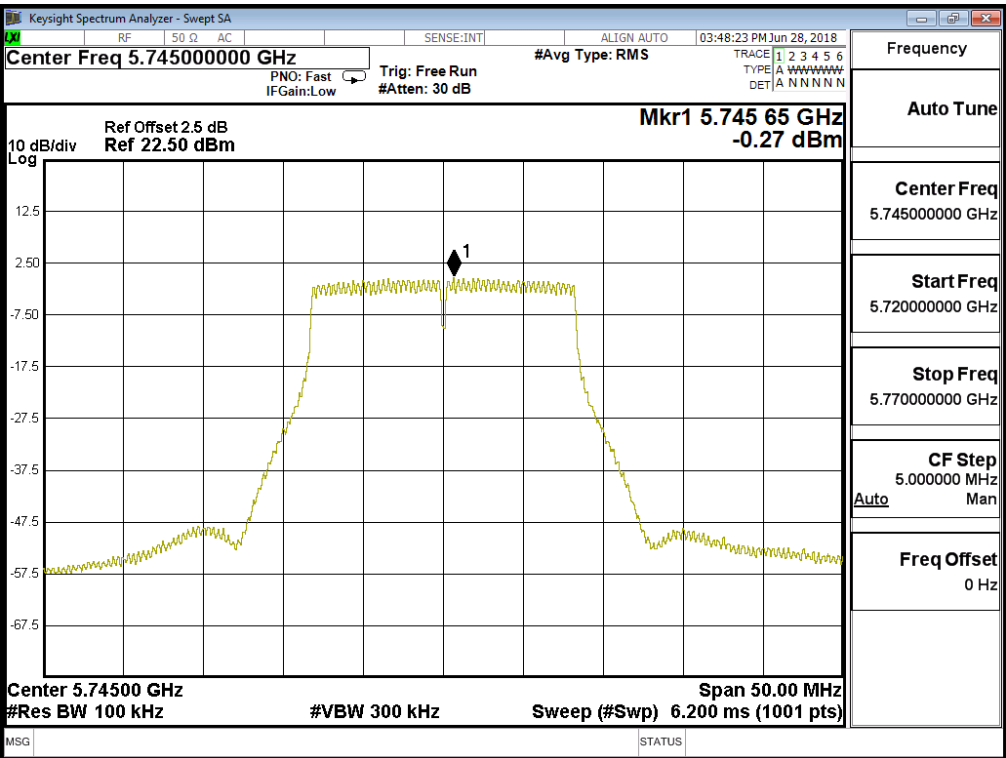
Channel 116:



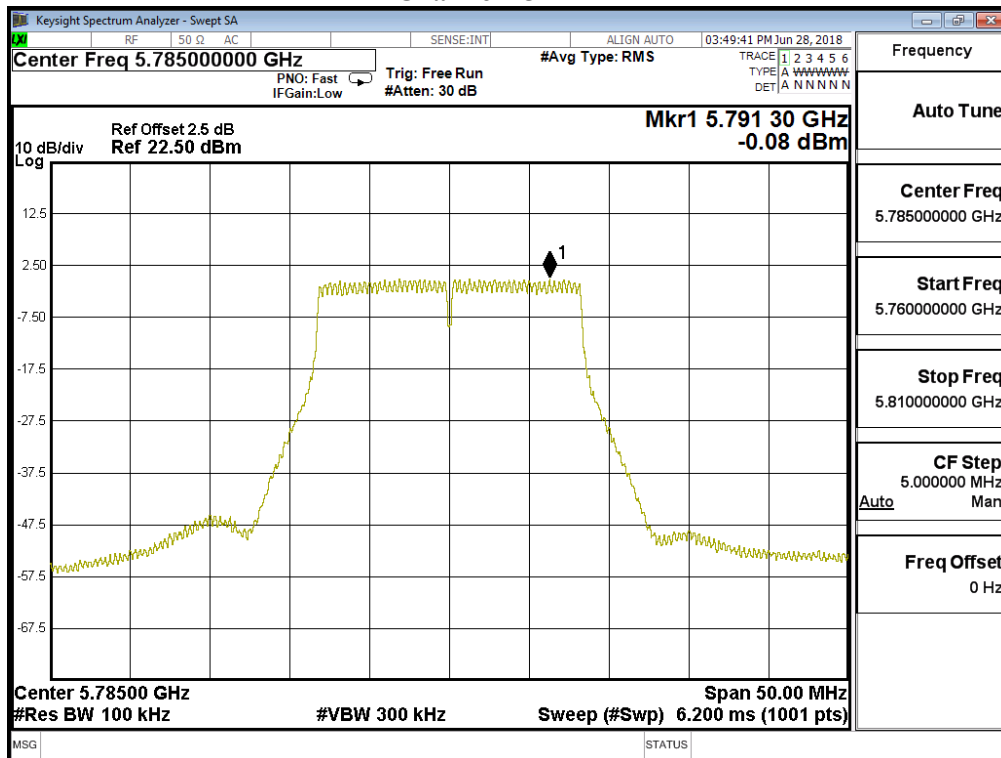
Channel 140:



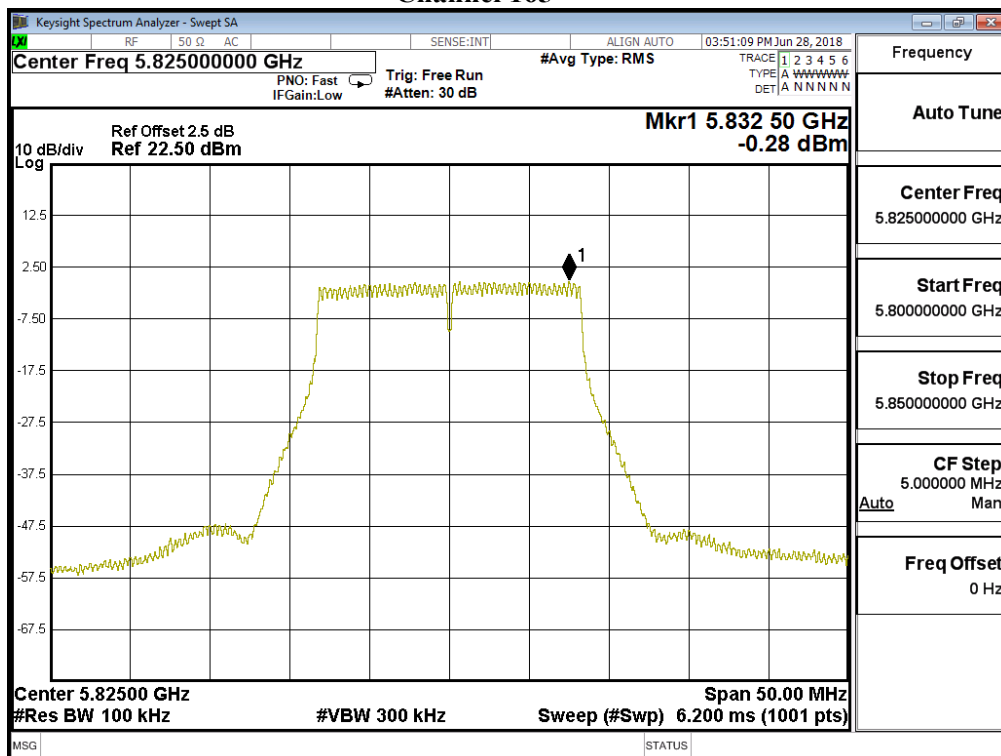
Channel 149



Channel 157



Channel 165



Product : MOXA IEEE 802.11a/n/ac 4*4 module
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Date : 2018/06/14
 Test Mode : Mode 2: Transmit (802.11n-20BW 28.8Mbps) (Antenna No.19)

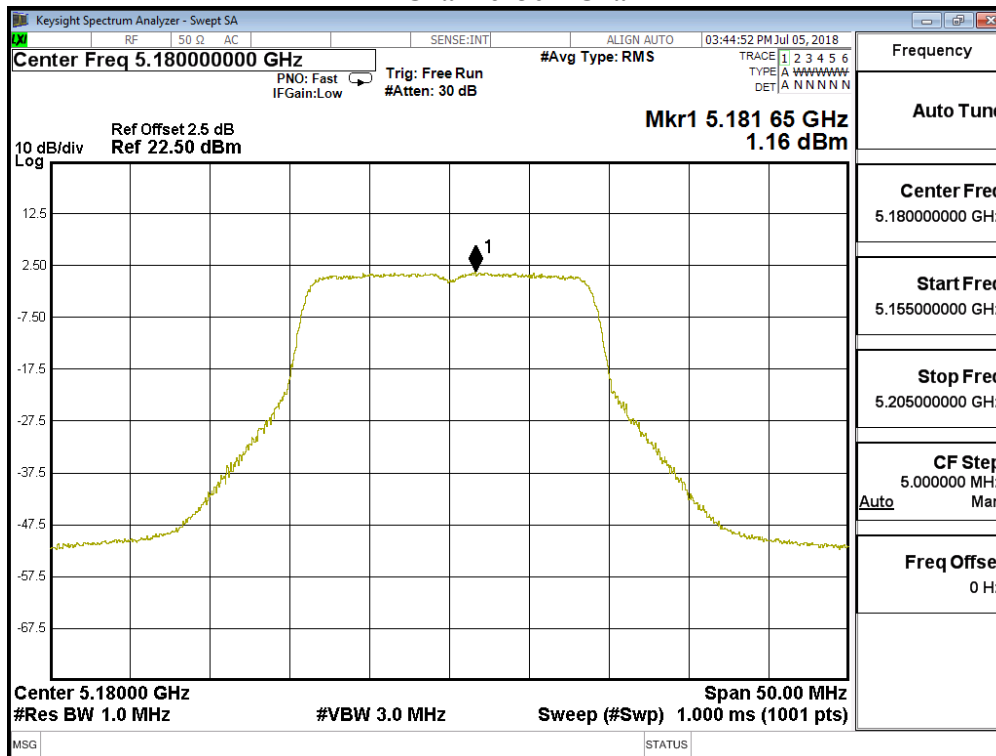
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
36	5180	A	1.16	7.18	8.5	Pass
		B	1.64	7.66	8.5	Pass
		C	1.76	7.78	8.5	Pass
		D	1.77	7.79	8.5	Pass
44	5220	A	2.00	8.02	8.5	Pass
		B	2.10	8.12	8.5	Pass
		C	2.06	8.08	8.5	Pass
		D	2.28	8.30	8.5	Pass
48	5240	A	2.37	8.39	8.5	Pass
		B	1.81	7.83	8.5	Pass
		C	2.43	8.45	8.5	Pass
		D	2.19	8.21	8.5	Pass
52	5260	A	1.44	7.46	8.5	Pass
		B	0.90	6.92	8.5	Pass
		C	1.90	7.92	8.5	Pass
		D	1.10	7.12	8.5	Pass
60	5300	A	0.76	6.78	8.5	Pass
		B	1.31	7.33	8.5	Pass
		C	2.00	8.02	8.5	Pass
		D	0.90	6.92	8.5	Pass
64	5320	A	0.27	6.29	8.5	Pass
		B	1.09	7.11	8.5	Pass
		C	1.89	7.91	8.5	Pass
		D	1.02	7.04	8.5	Pass
100	5500	A	0.98	7.00	8.5	Pass
		B	1.48	7.50	8.5	Pass
		C	0.87	6.89	8.5	Pass

		D	1.73	7.75	8.5	Pass
116	5580	A	-0.28	5.74	8.5	Pass
		B	1.35	7.37	8.5	Pass
		C	0.89	6.91	8.5	Pass
		D	2.16	8.18	8.5	Pass
140	5700	A	-0.49	5.53	8.5	Pass
		B	1.94	7.96	8.5	Pass
		C	-0.53	5.49	8.5	Pass
		D	1.65	7.67	8.5	Pass

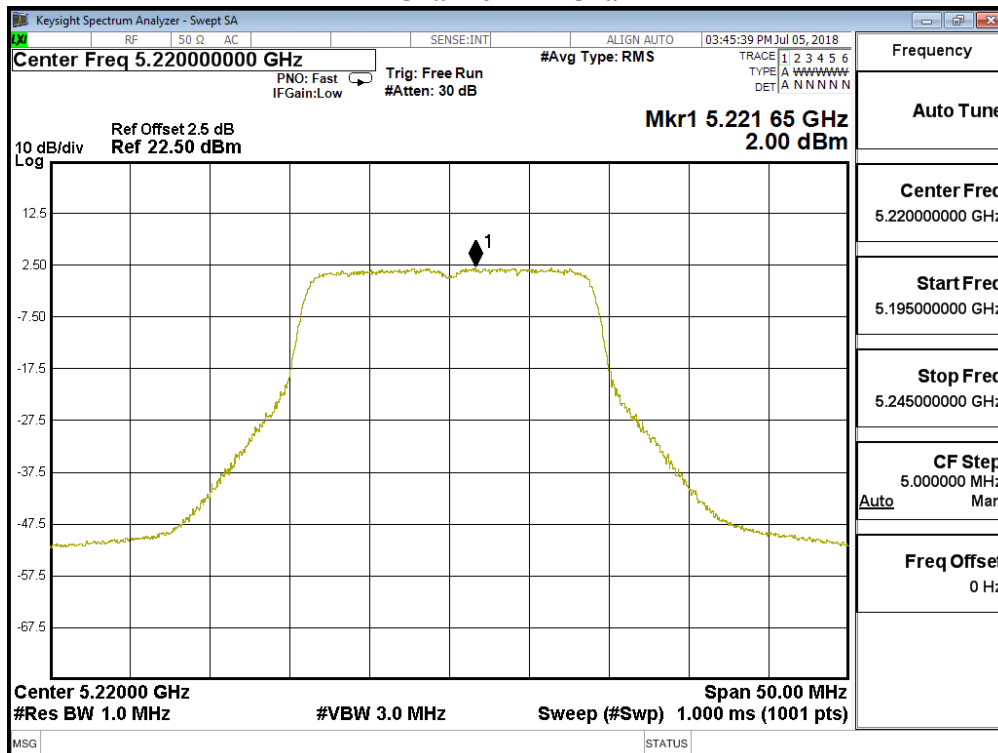
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	BWCF (dB)	Total PSD (dBm) ₁	Required Limit (dBm)	Result
149	5745	A	-2.26	6.98	10.74	<27.5	Pass
		B	-2.39	6.98	10.61	<27.5	Pass
		C	-3.37	6.98	9.63	<27.5	Pass
		D	0.61	6.98	13.61	<27.5	Pass
157	5785	A	-1.27	6.98	11.73	<27.5	Pass
		B	-2.07	6.98	10.93	<27.5	Pass
		C	-3.25	6.98	9.75	<27.5	Pass
		D	0.70	6.98	13.70	<27.5	Pass
165	5825	A	-1.98	6.98	11.02	<27.5	Pass
		B	-2.98	6.98	10.02	<27.5	Pass
		C	-3.74	6.98	9.26	<27.5	Pass
		D	0.17	6.98	13.17	<27.5	Pass

Note 1: The quantity $10 \cdot \log 4$ (four antennas) is added to the spectrum peak value according to document 662911 D01.

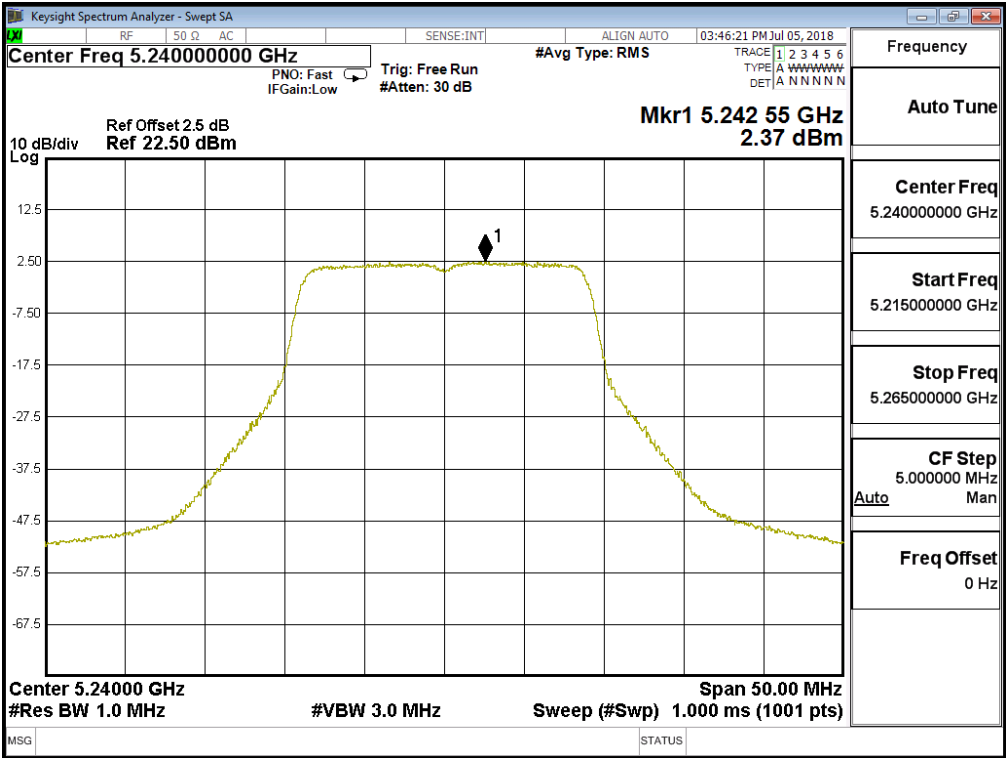
Channel 36 – Chain A



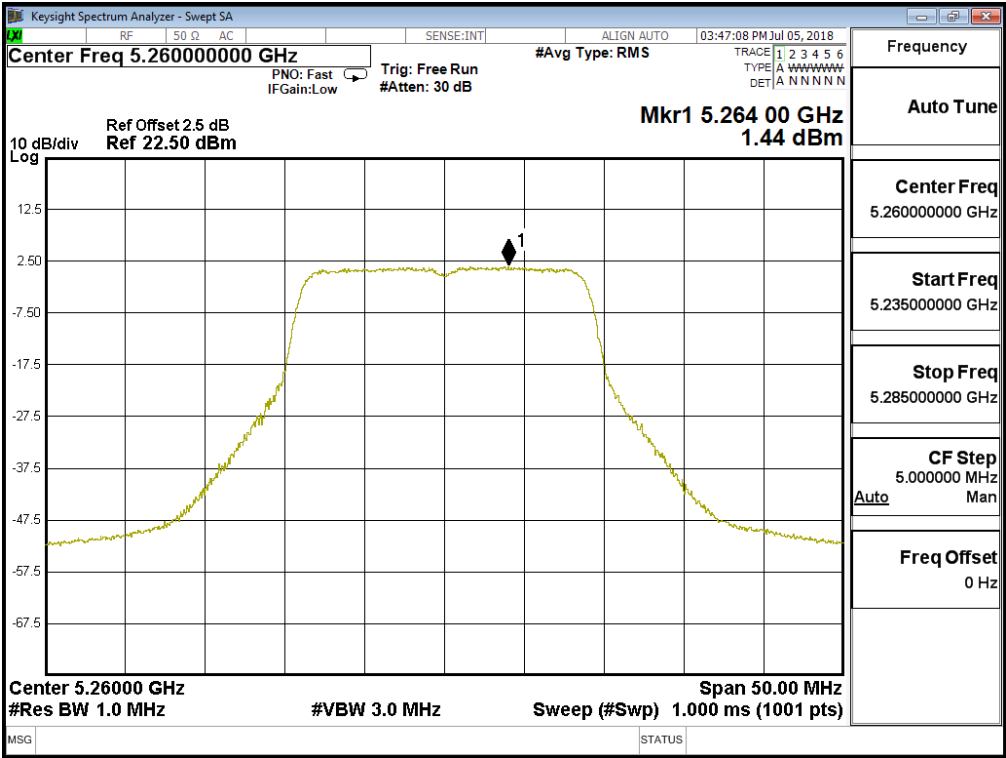
Channel 44 – Chain A



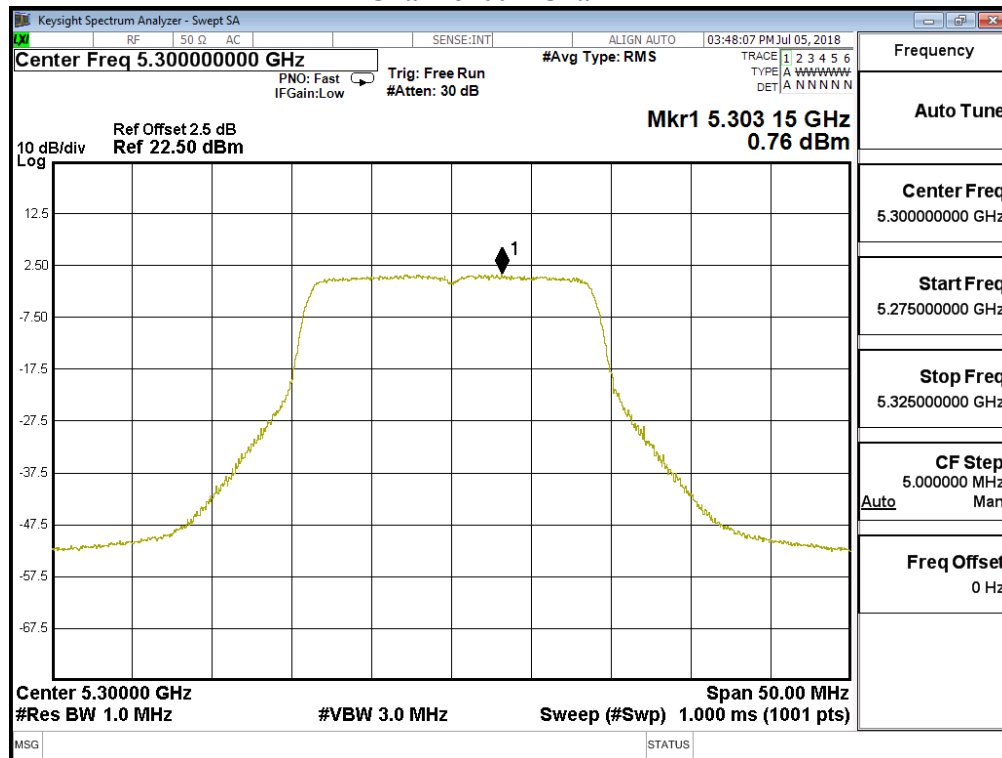
Channel 48 – Chain A



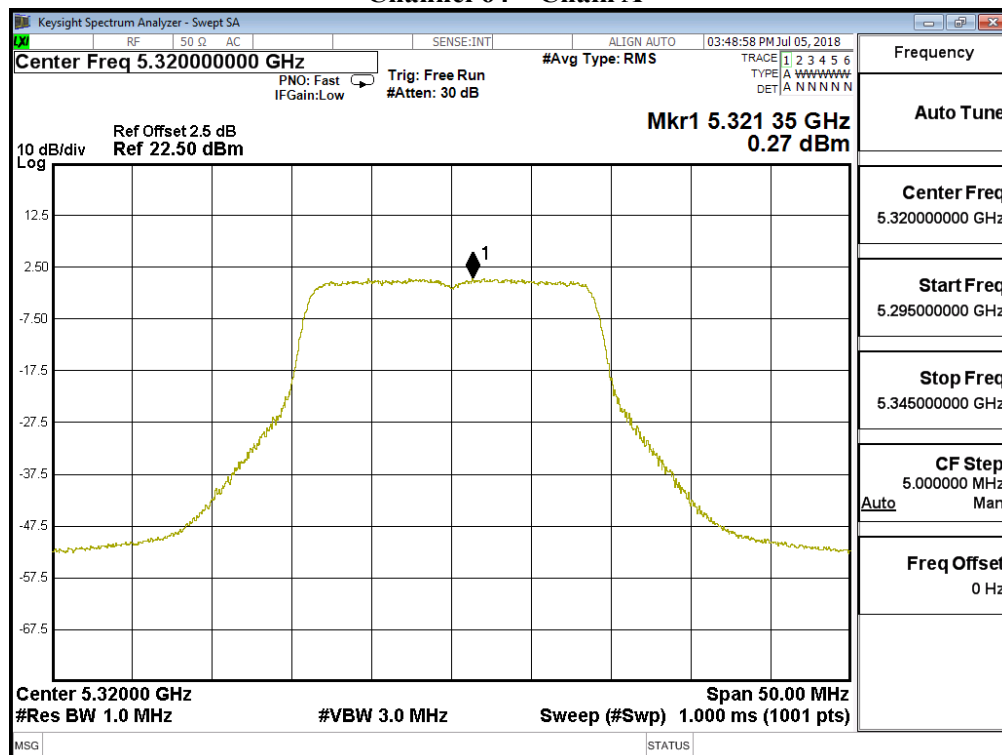
Channel 52 – Chain A



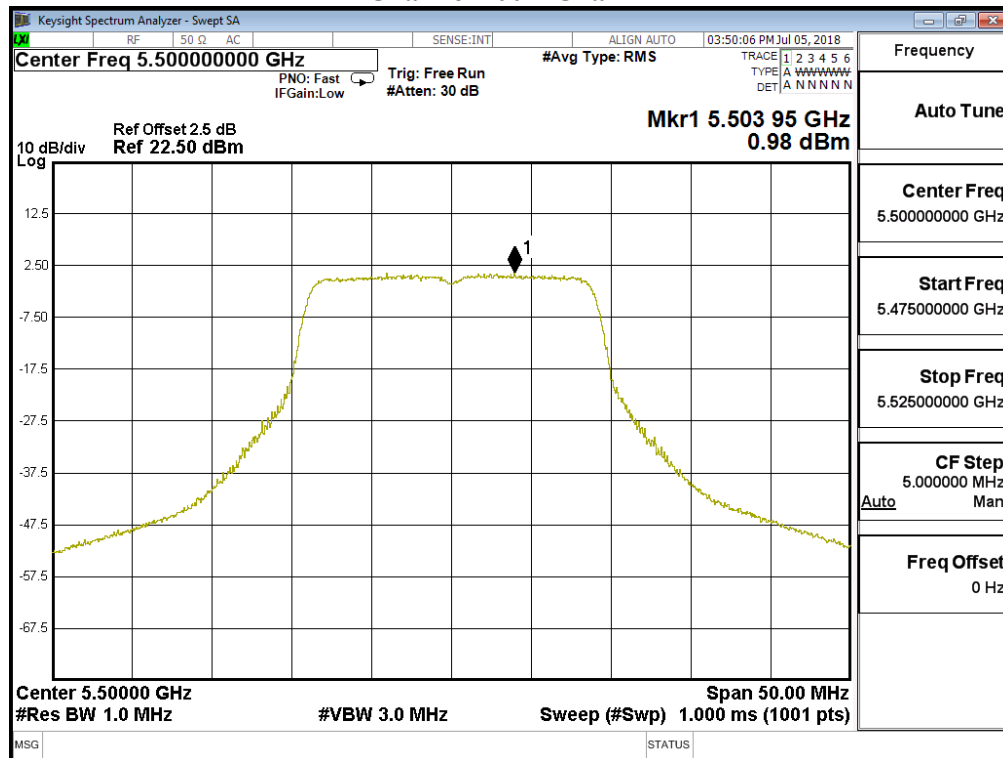
Channel 60 – Chain A



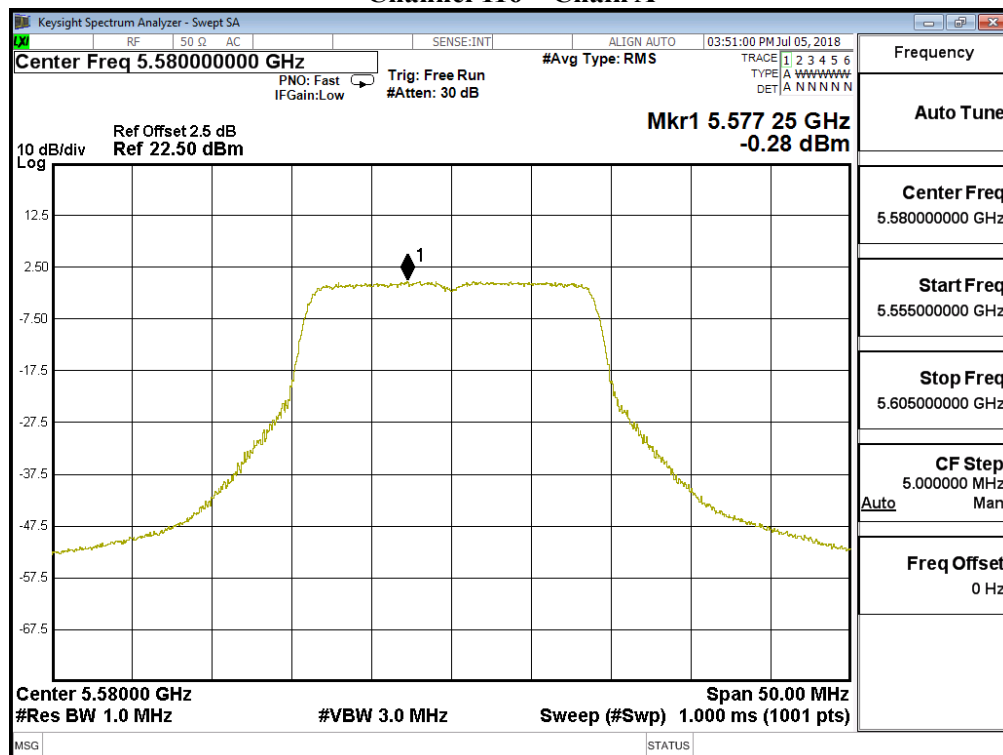
Channel 64 – Chain A



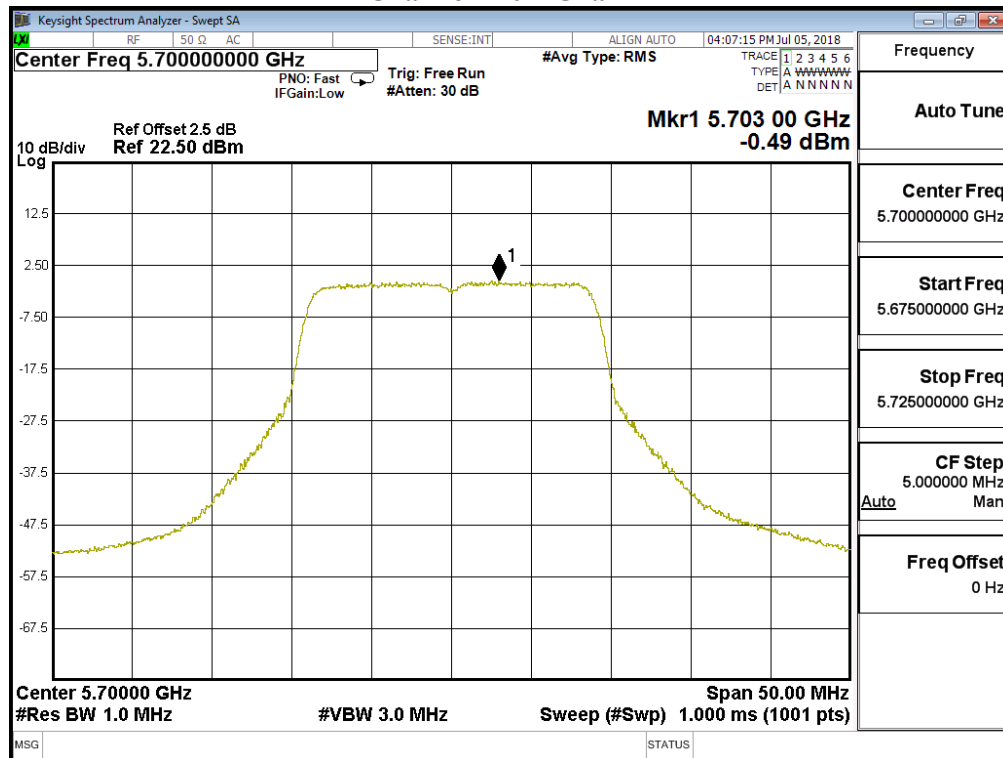
Channel 100 – Chain A



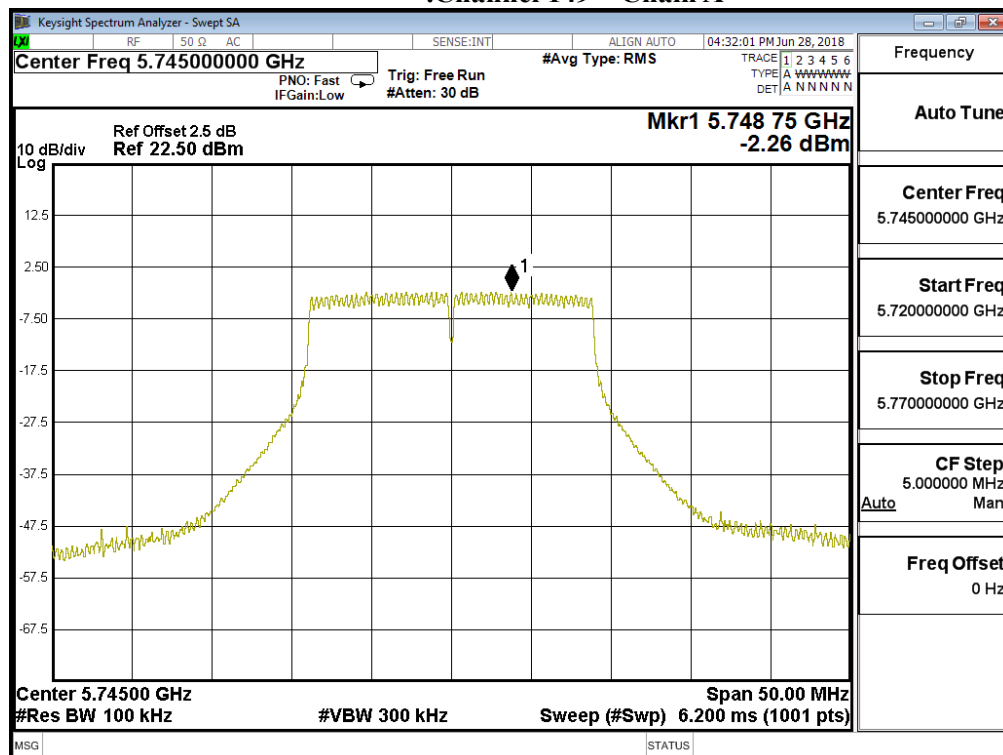
Channel 116 – Chain A



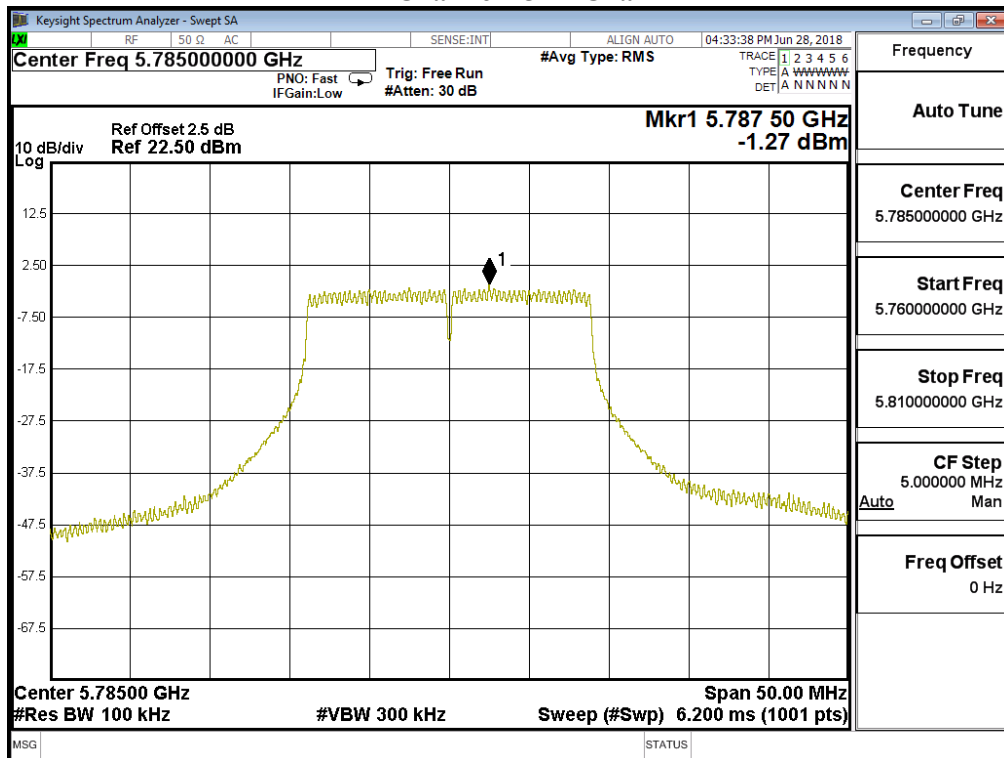
Channel 140 – Chain A



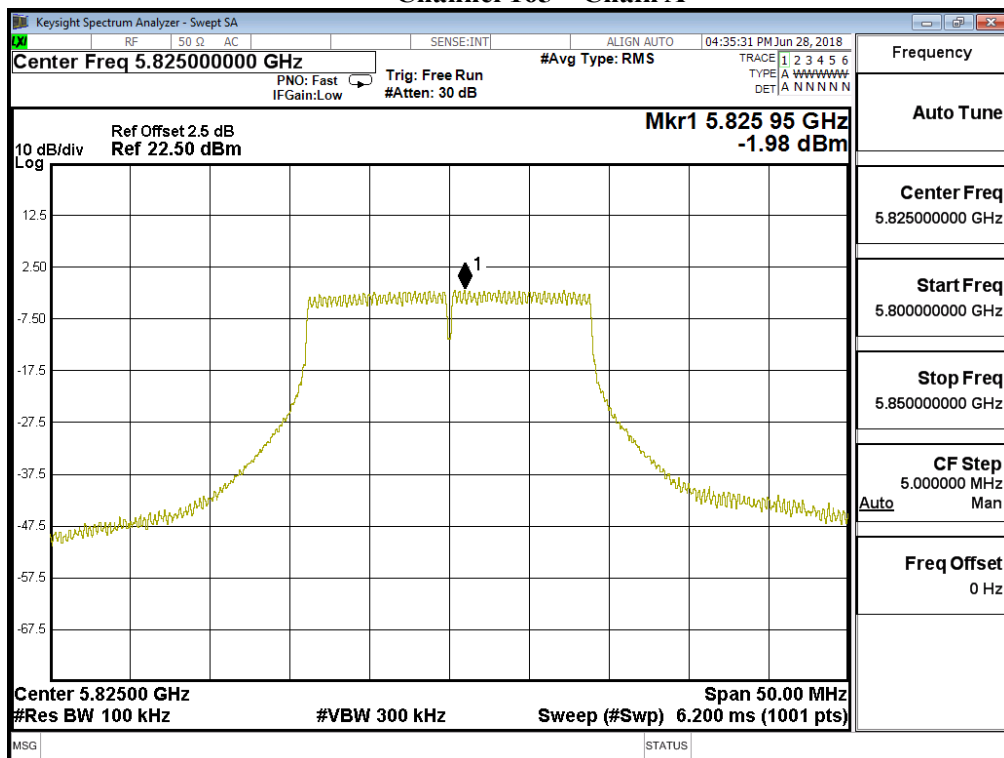
Channel 149 – Chain A



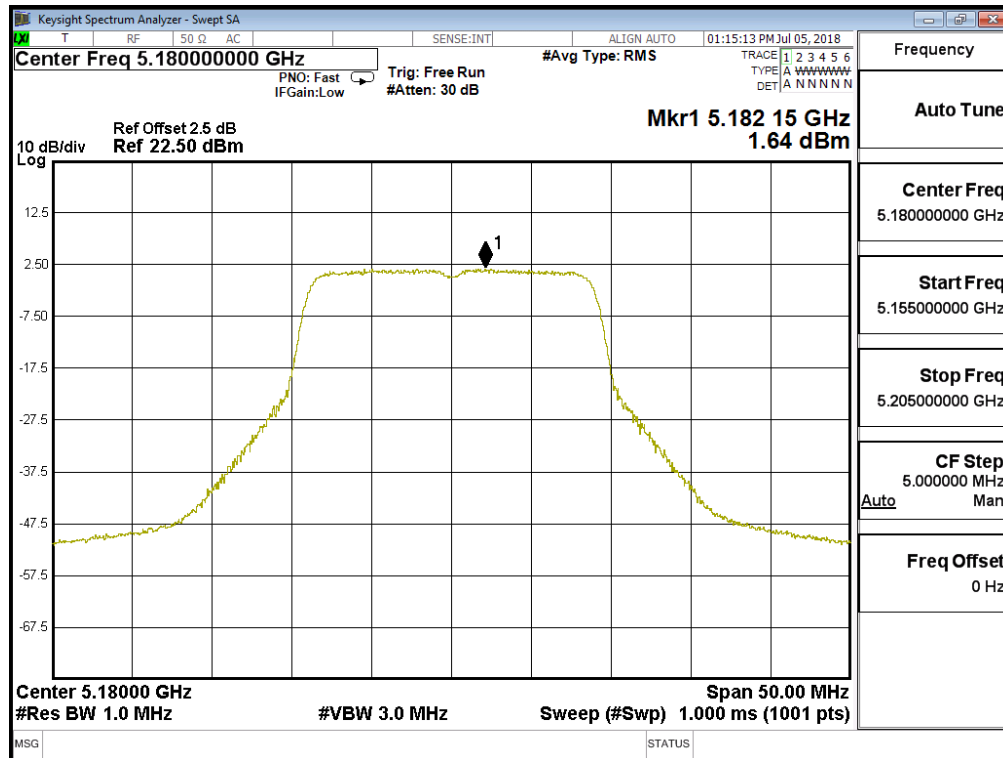
Channel 157 – Chain A



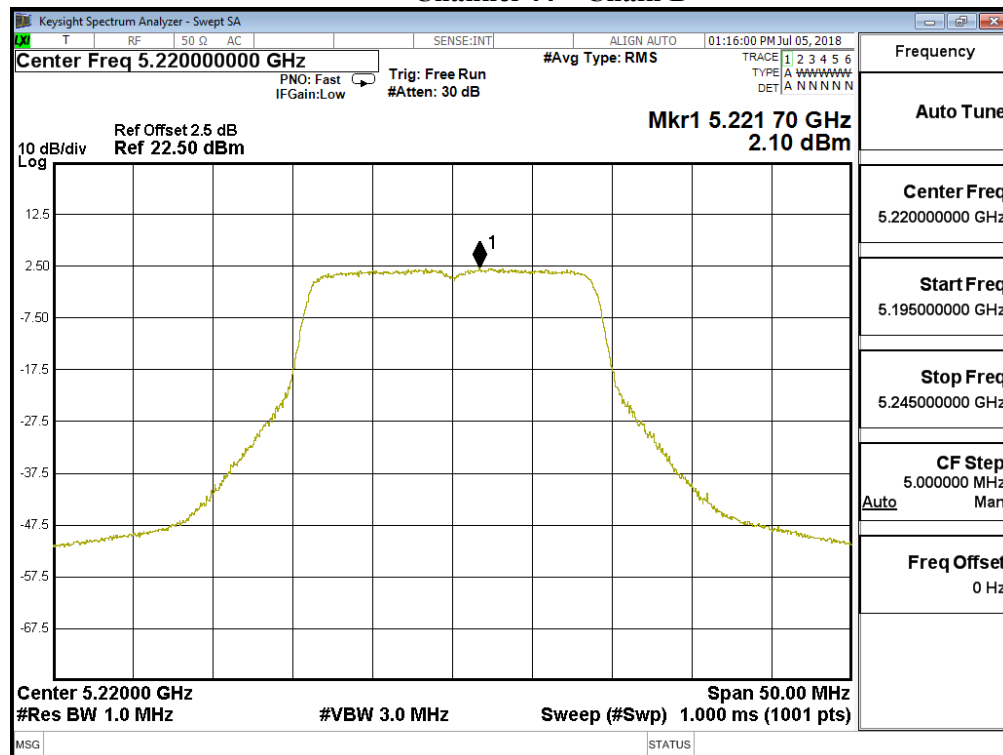
Channel 165 – Chain A



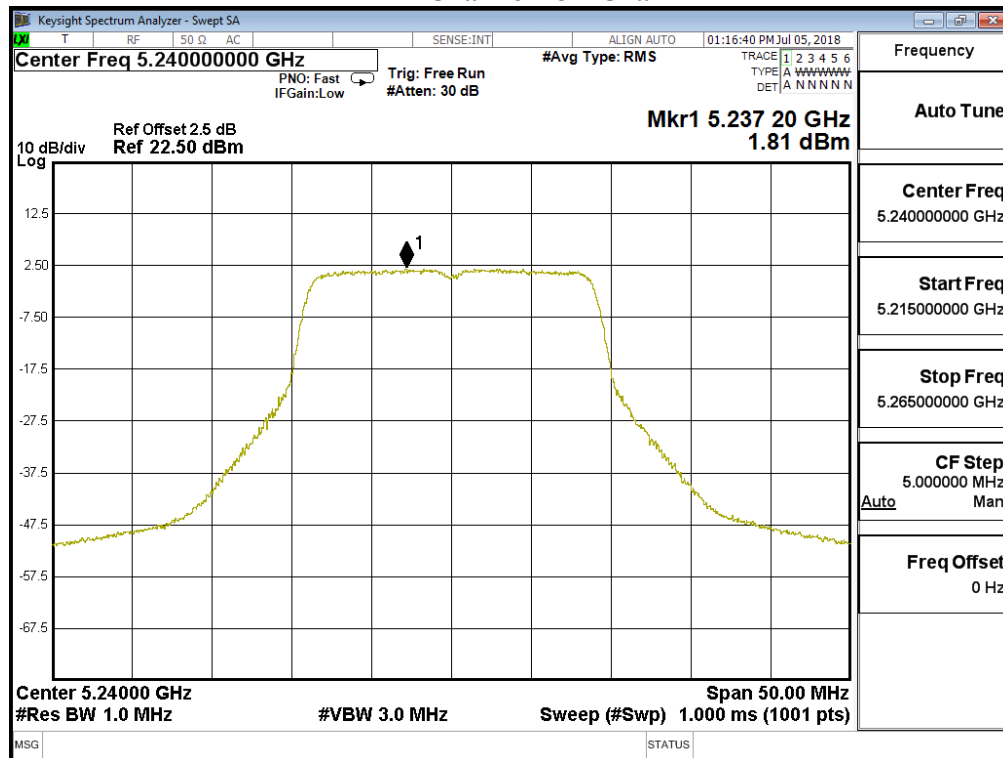
Channel 36 – Chain B



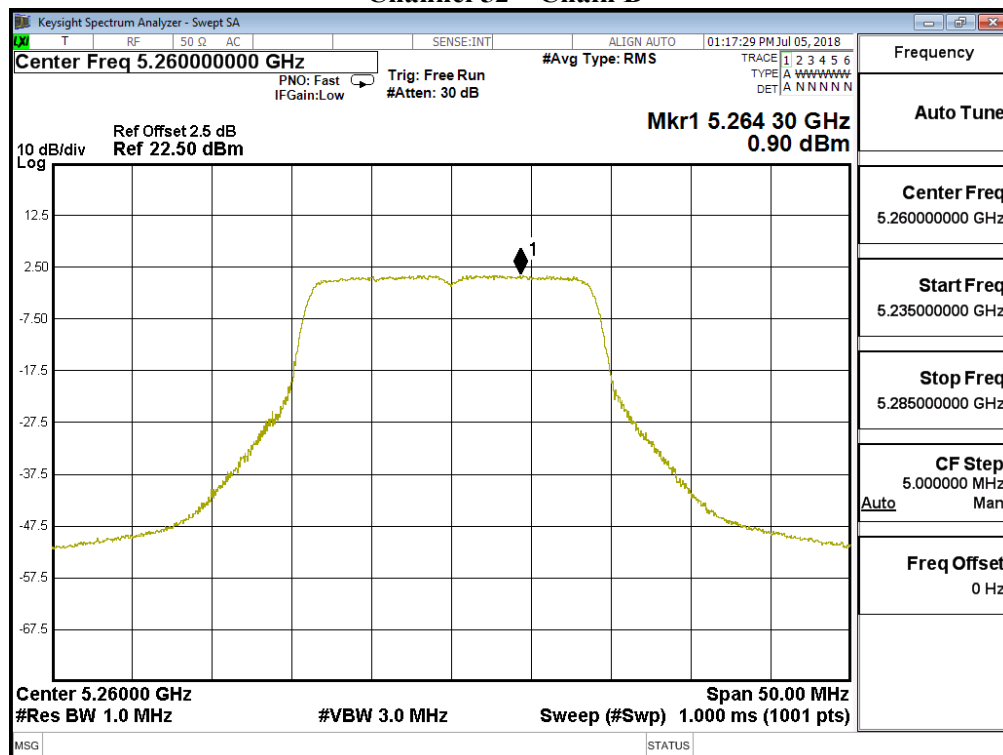
Channel 44 – Chain B



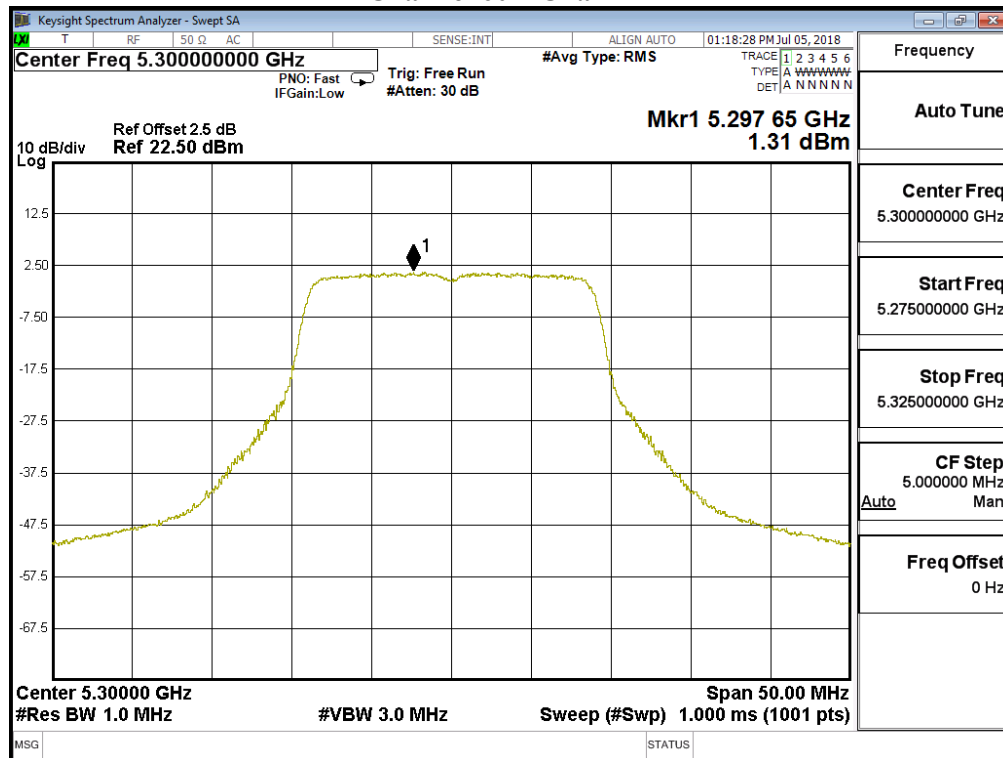
Channel 48 – Chain B



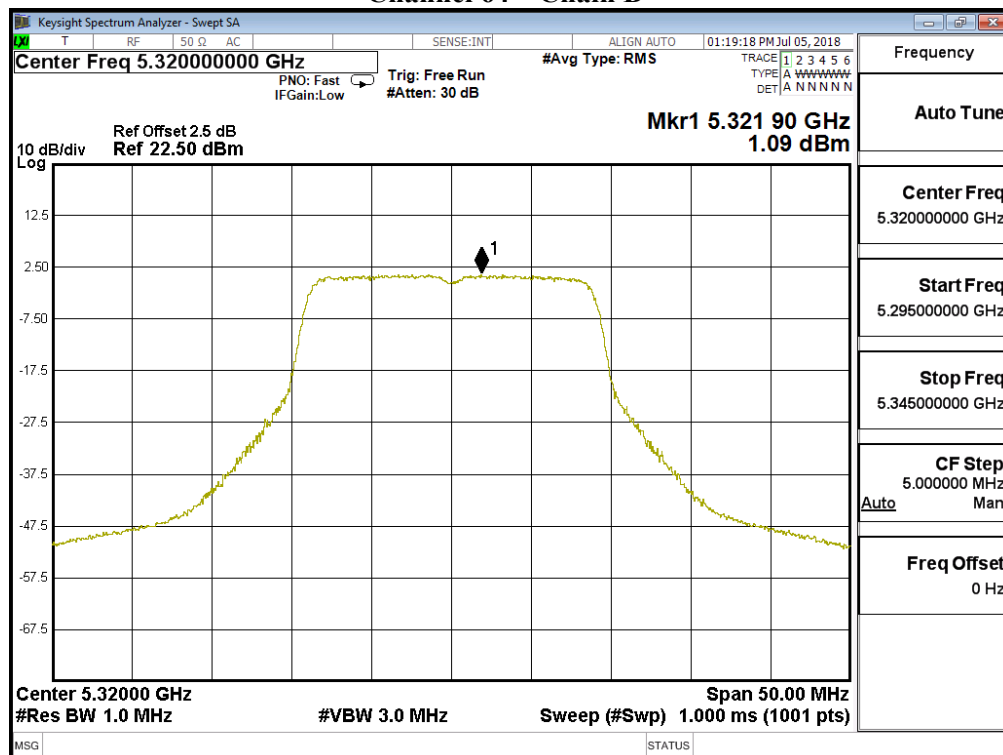
Channel 52 – Chain B



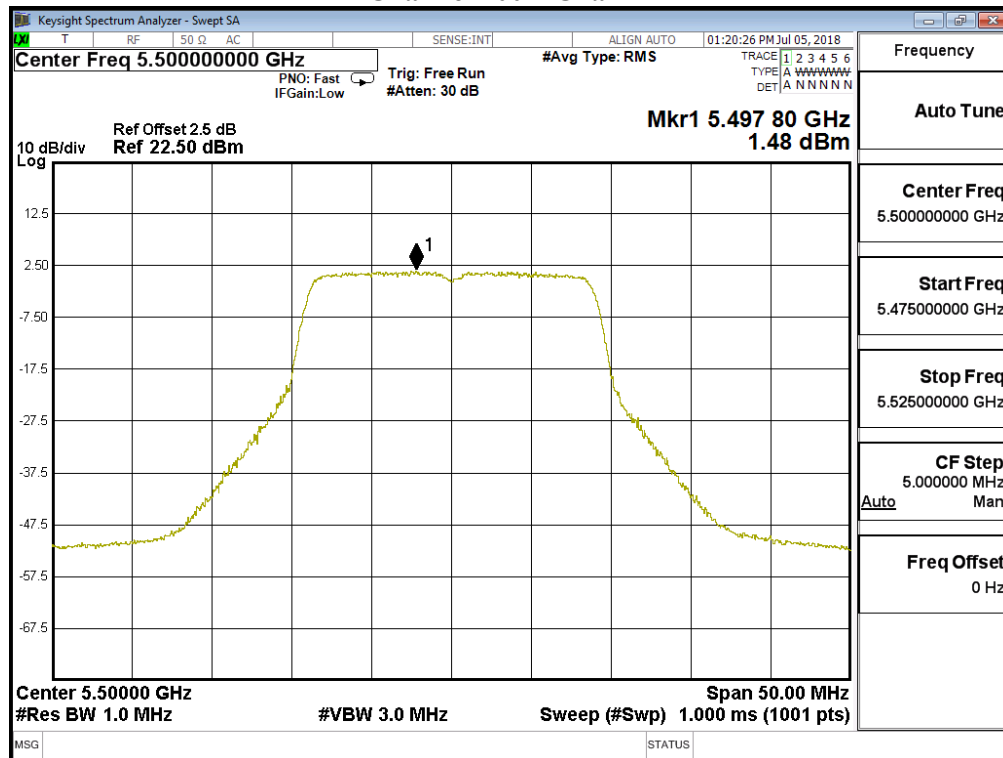
Channel 60 – Chain B



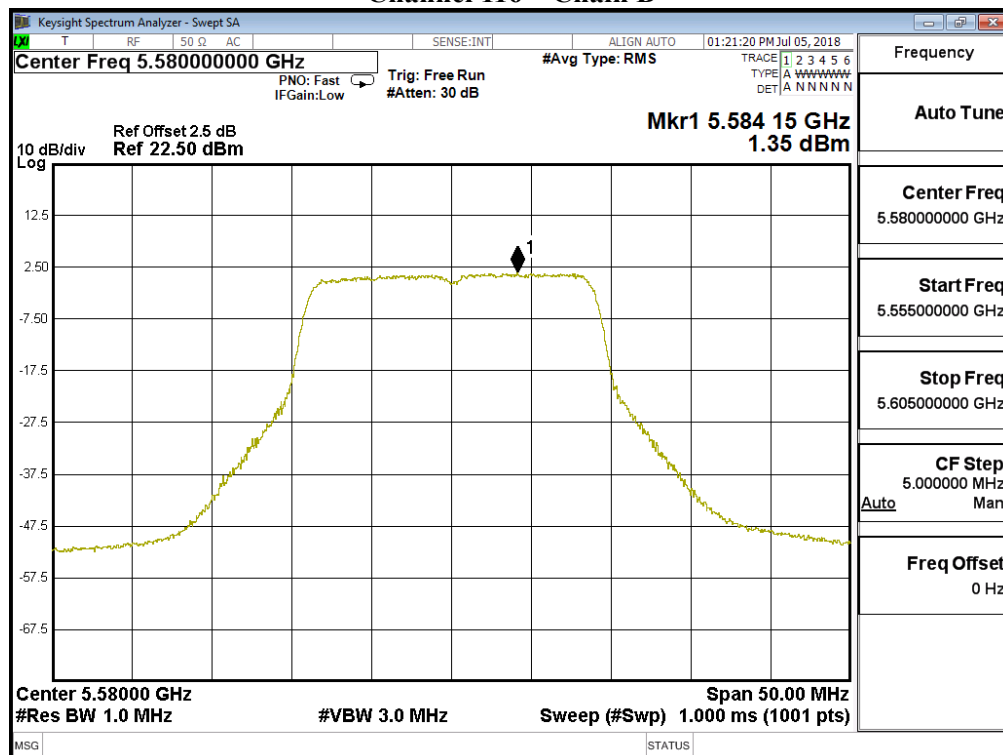
Channel 64 – Chain B



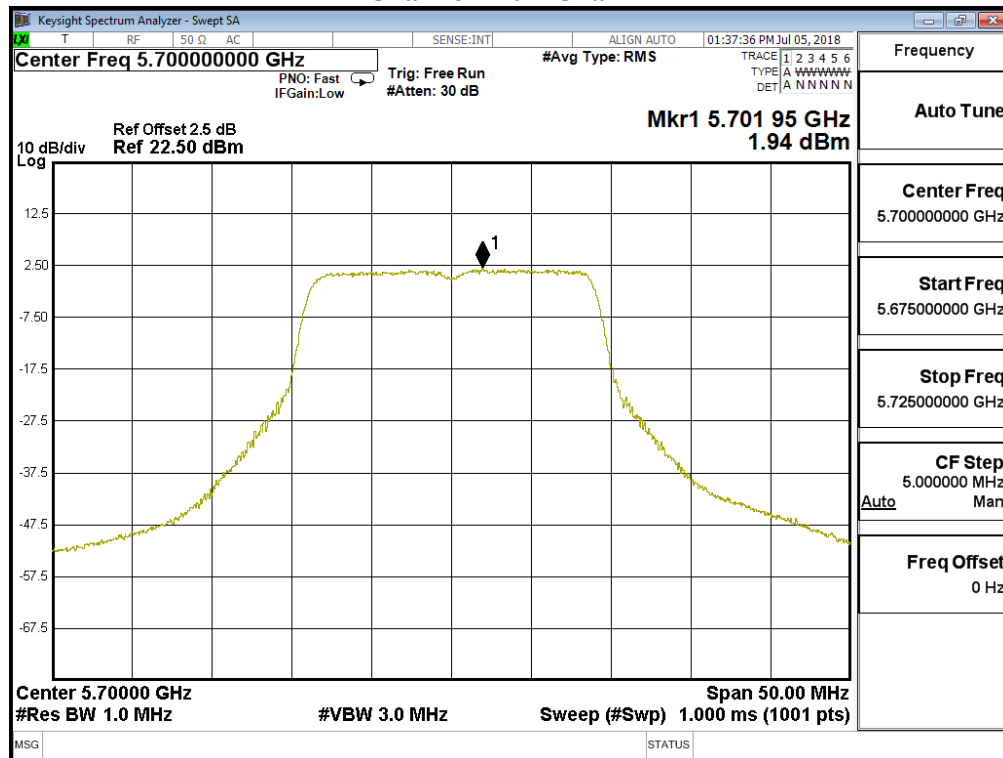
Channel 100 – Chain B



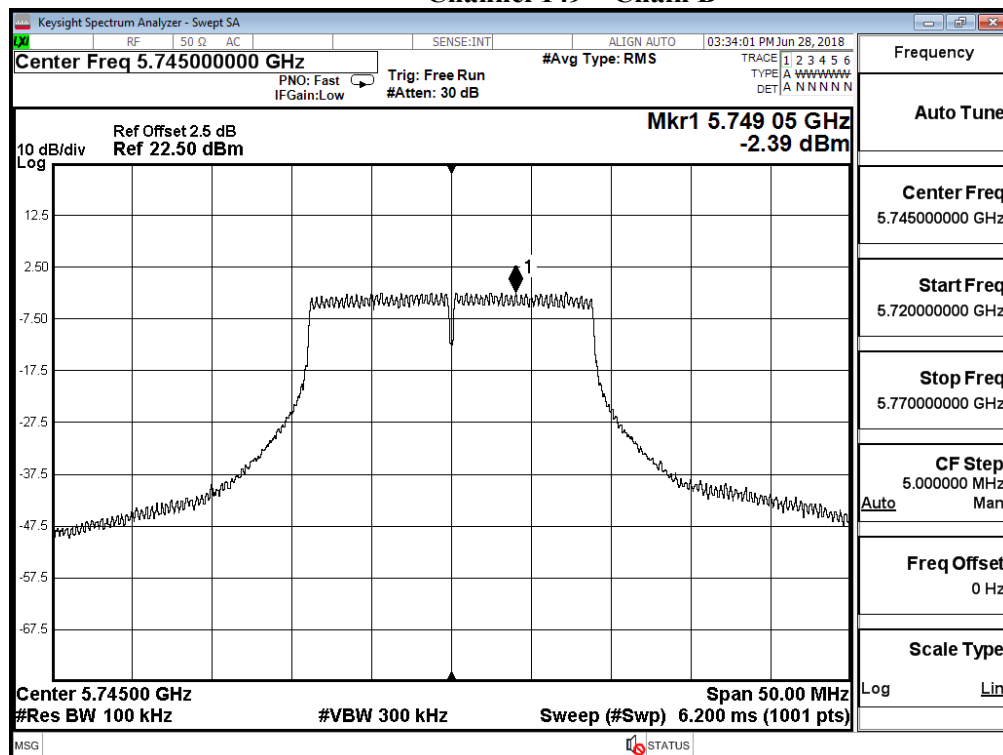
Channel 116 – Chain B



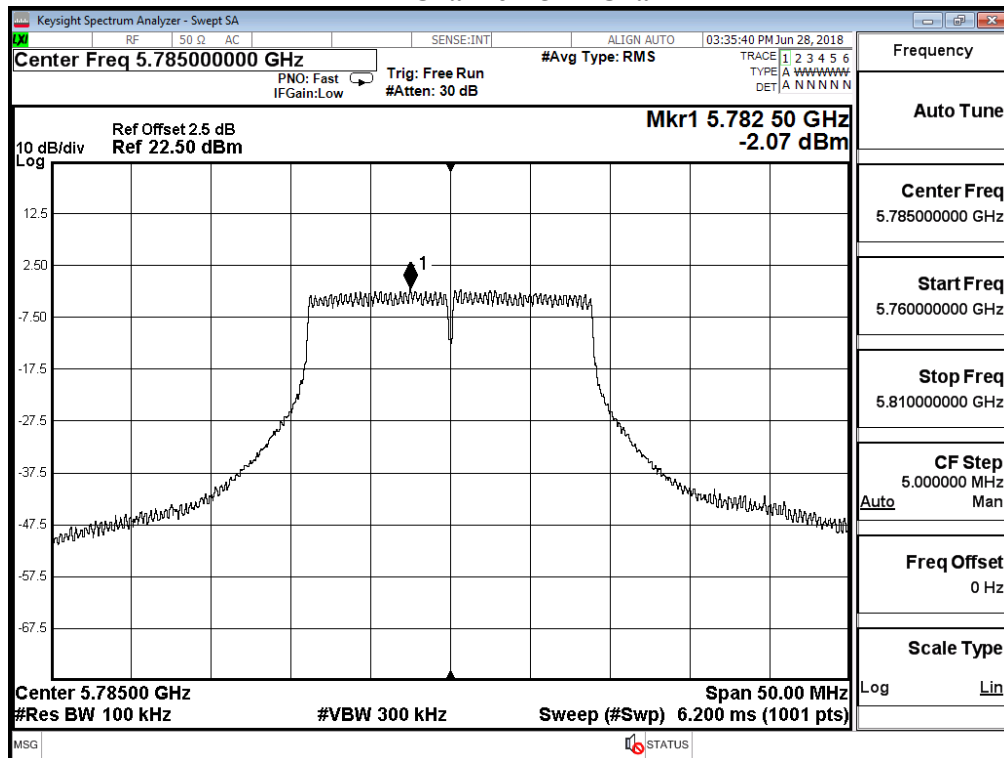
Channel 140 – Chain B



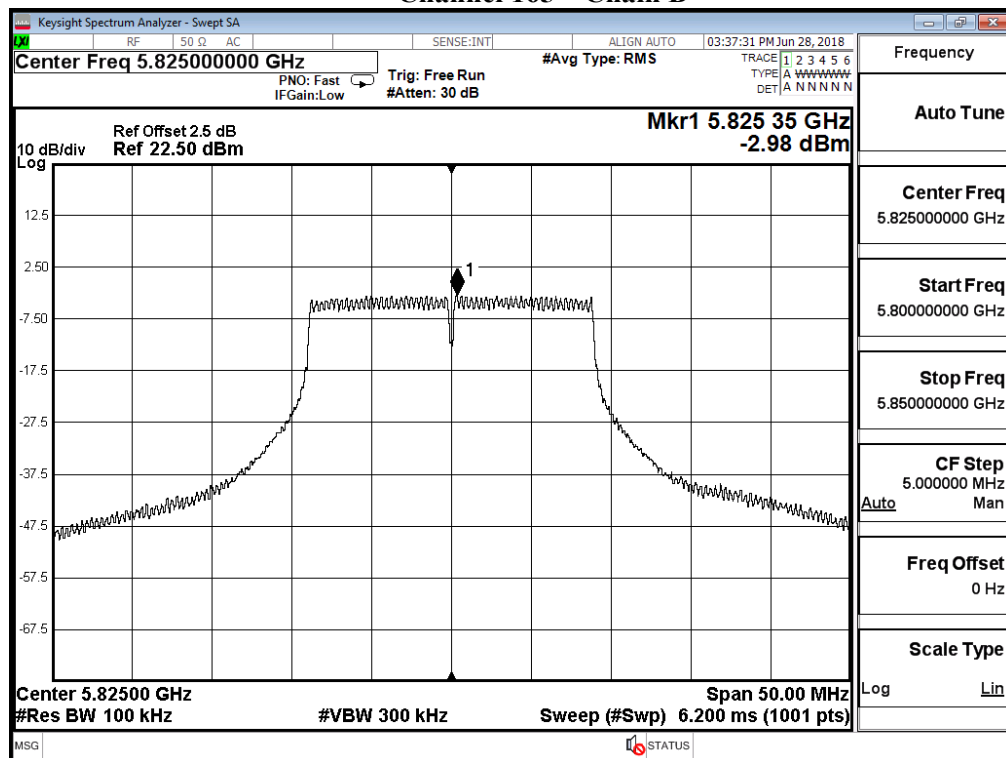
Channel 149 – Chain B



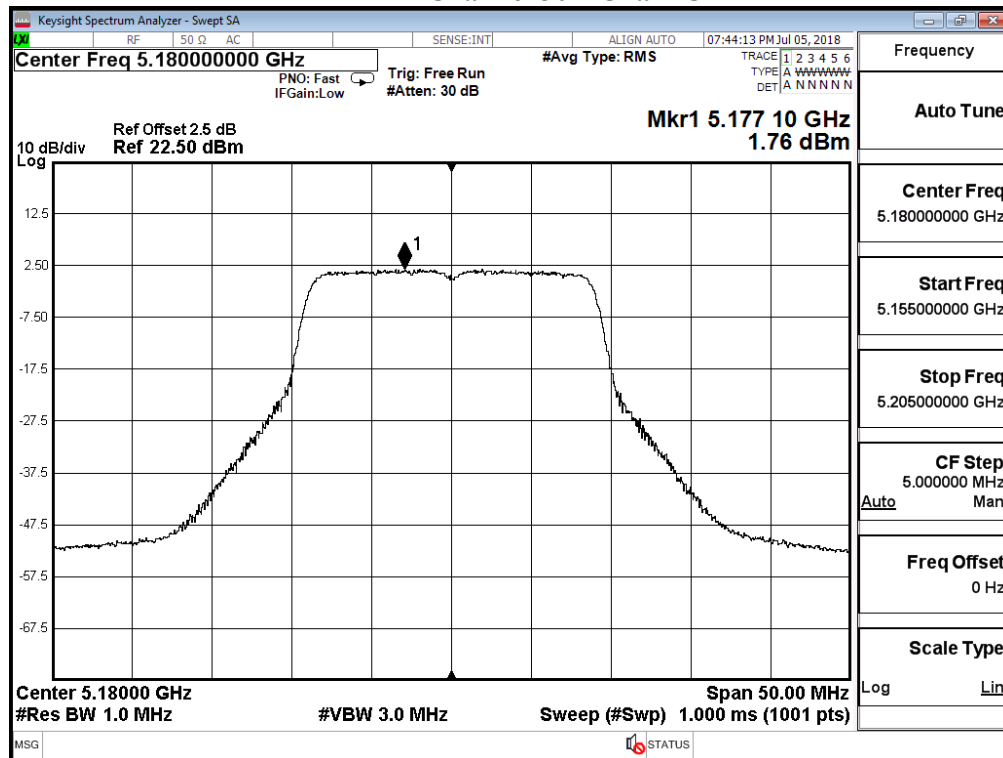
Channel 157 – Chain B



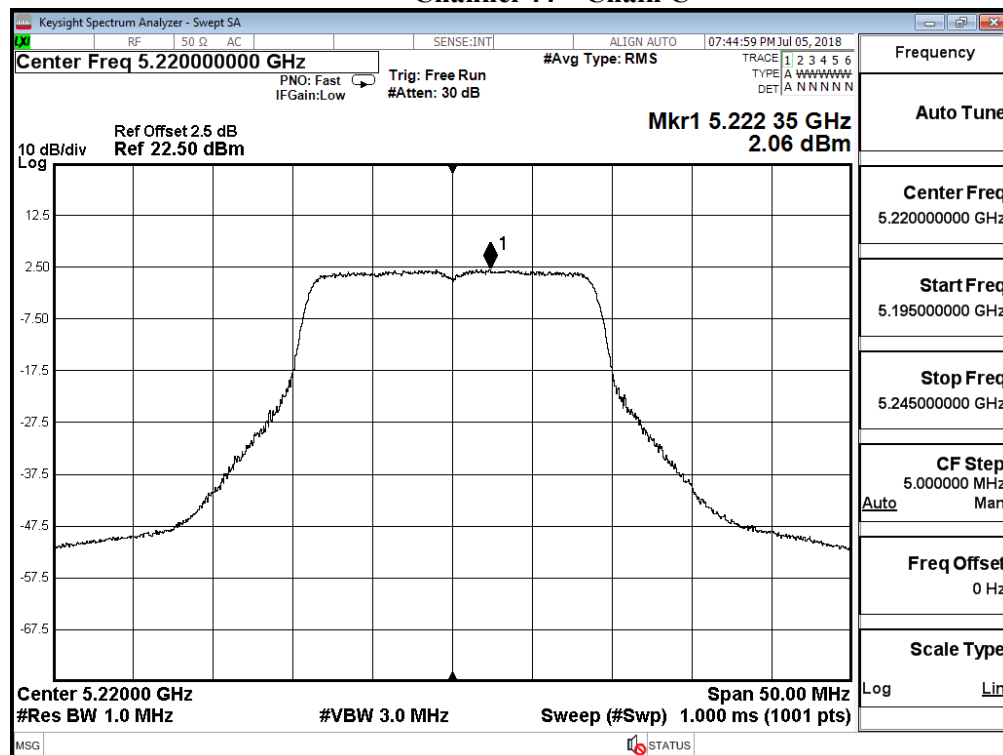
Channel 165 – Chain B



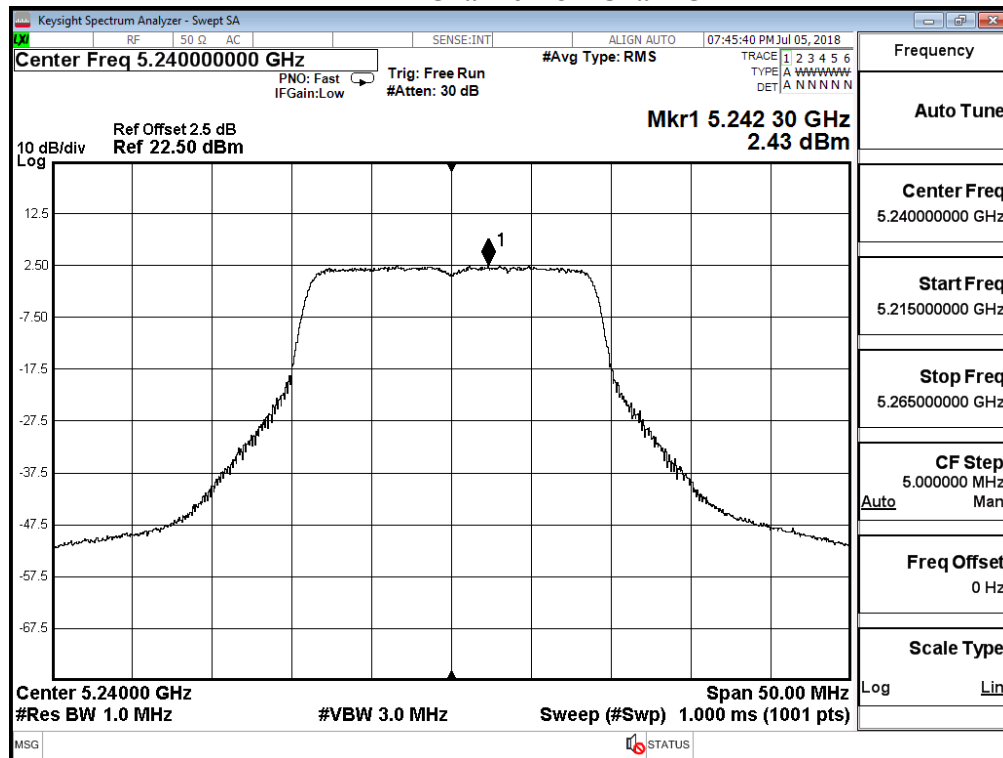
Channel 36 – Chain C



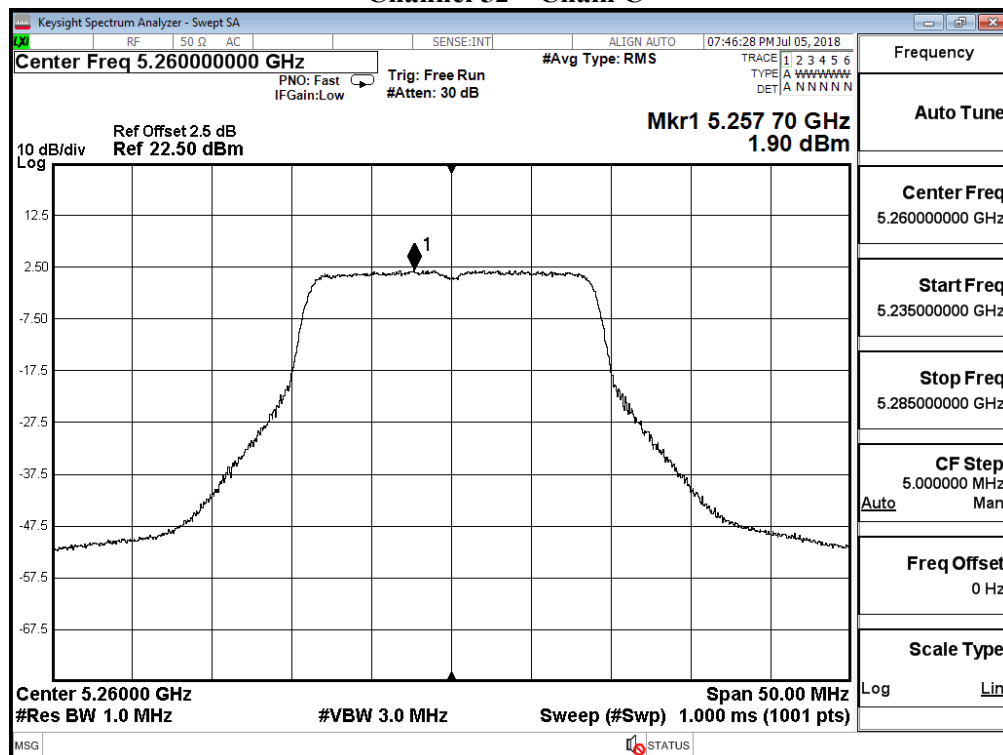
Channel 44 – Chain C



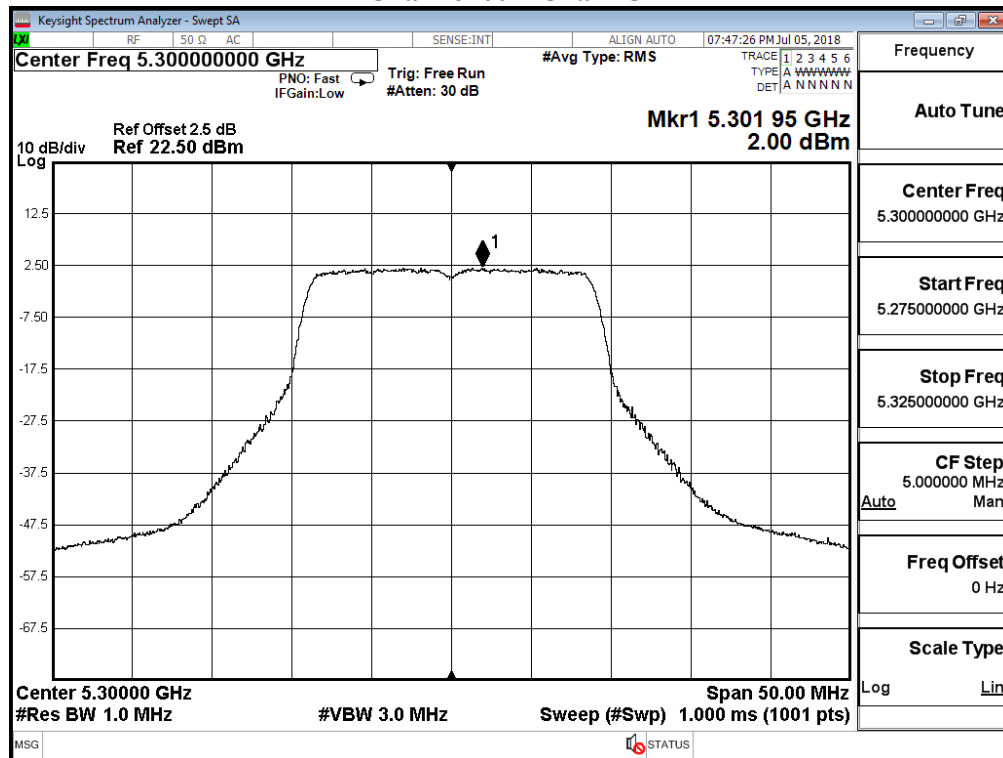
Channel 48 – Chain C



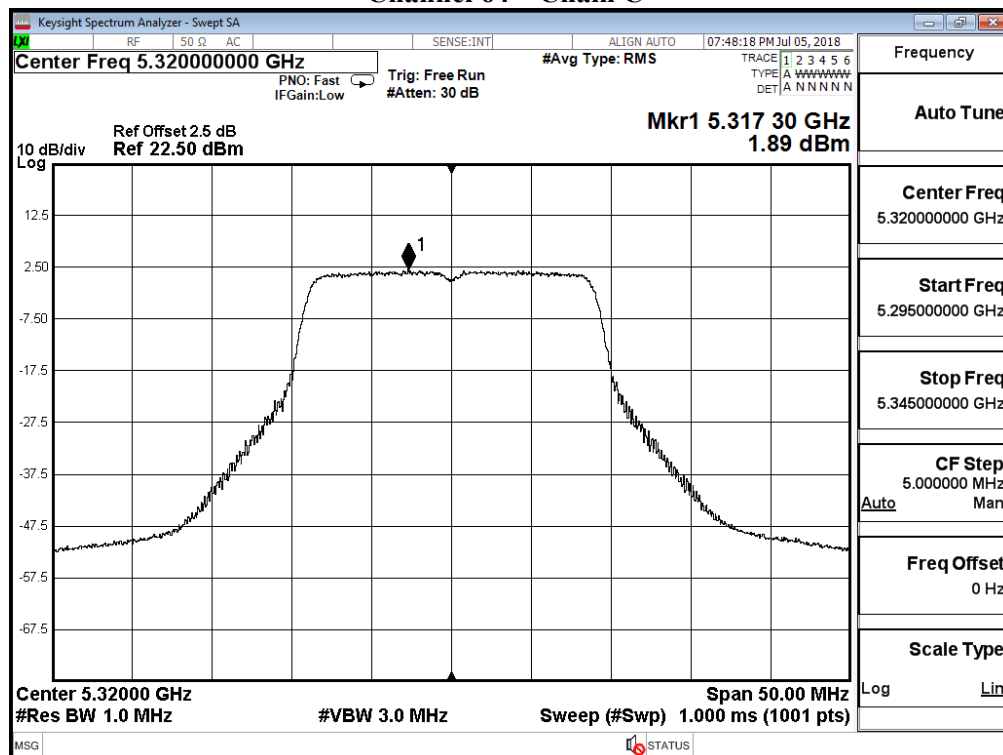
Channel 52 – Chain C



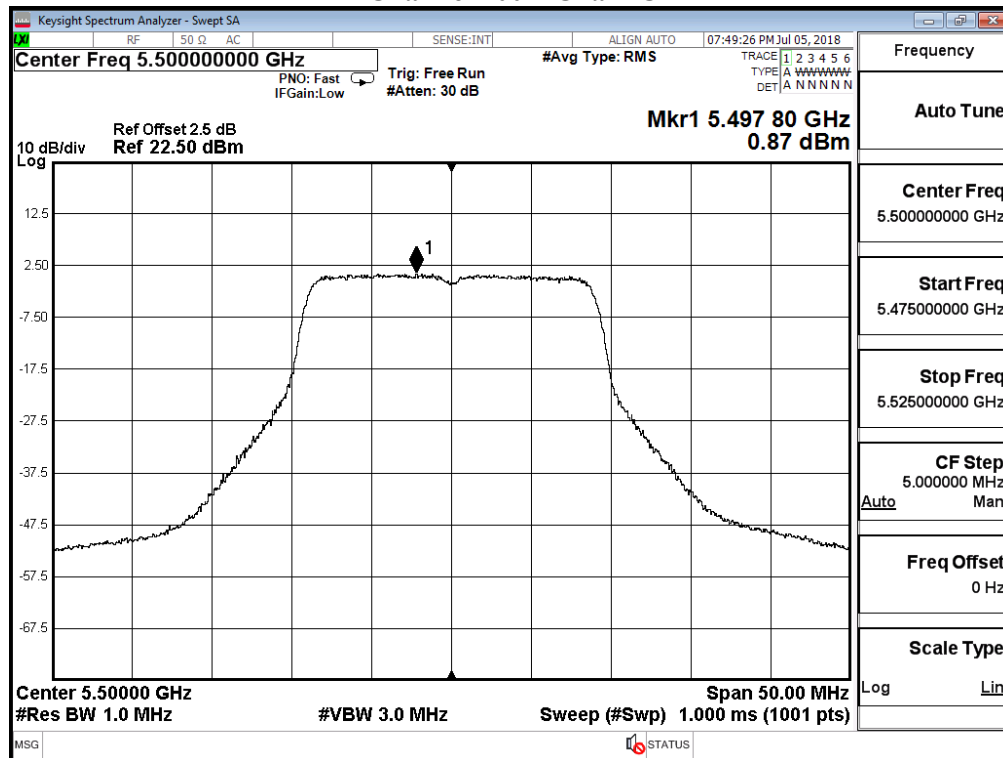
Channel 60 – Chain C



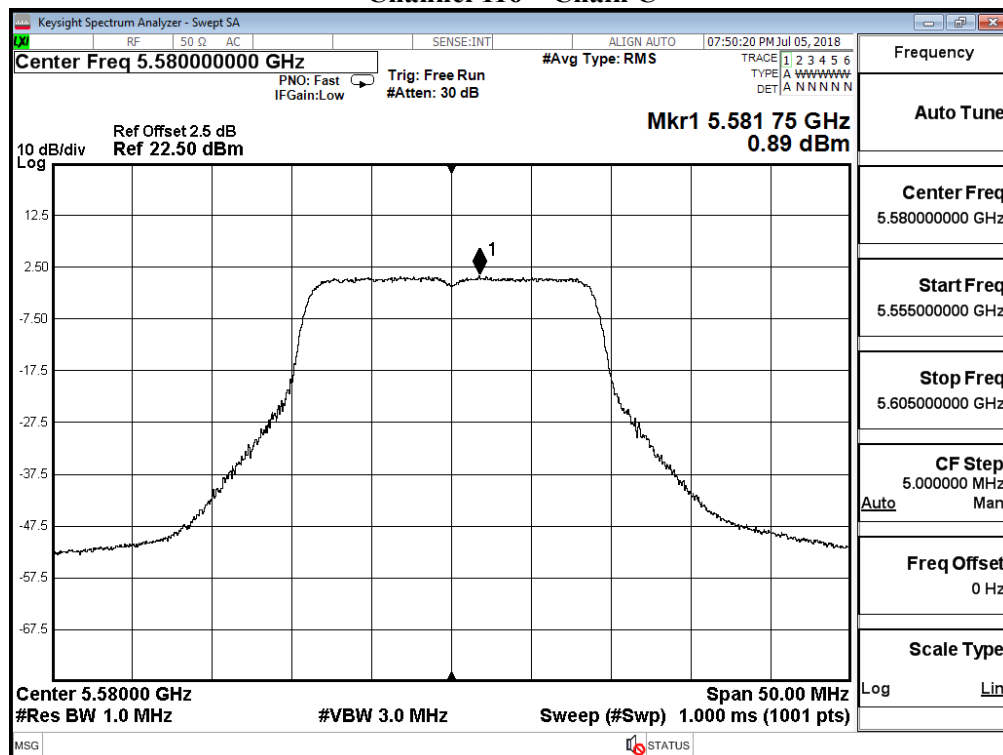
Channel 64 – Chain C



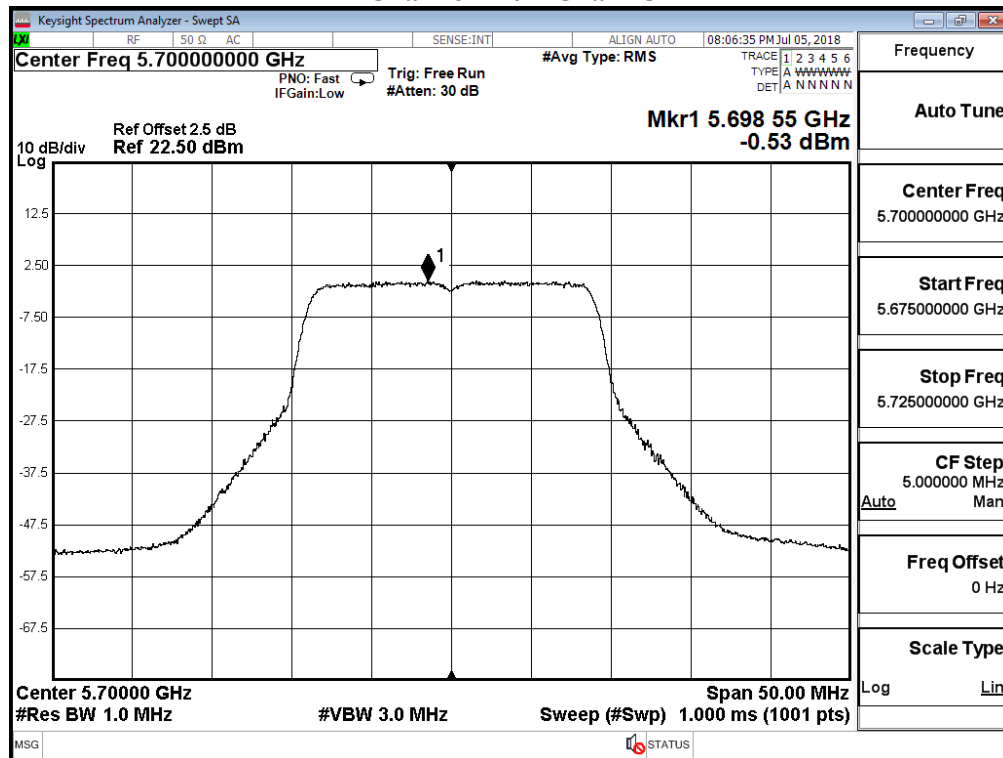
Channel 100 – Chain C



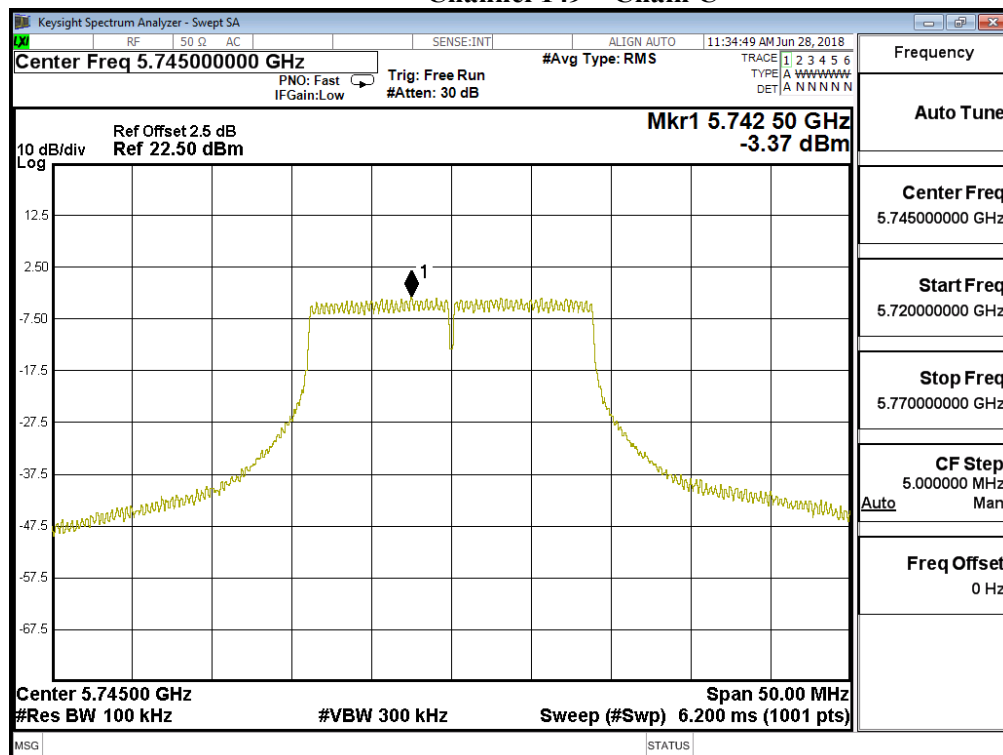
Channel 116 – Chain C



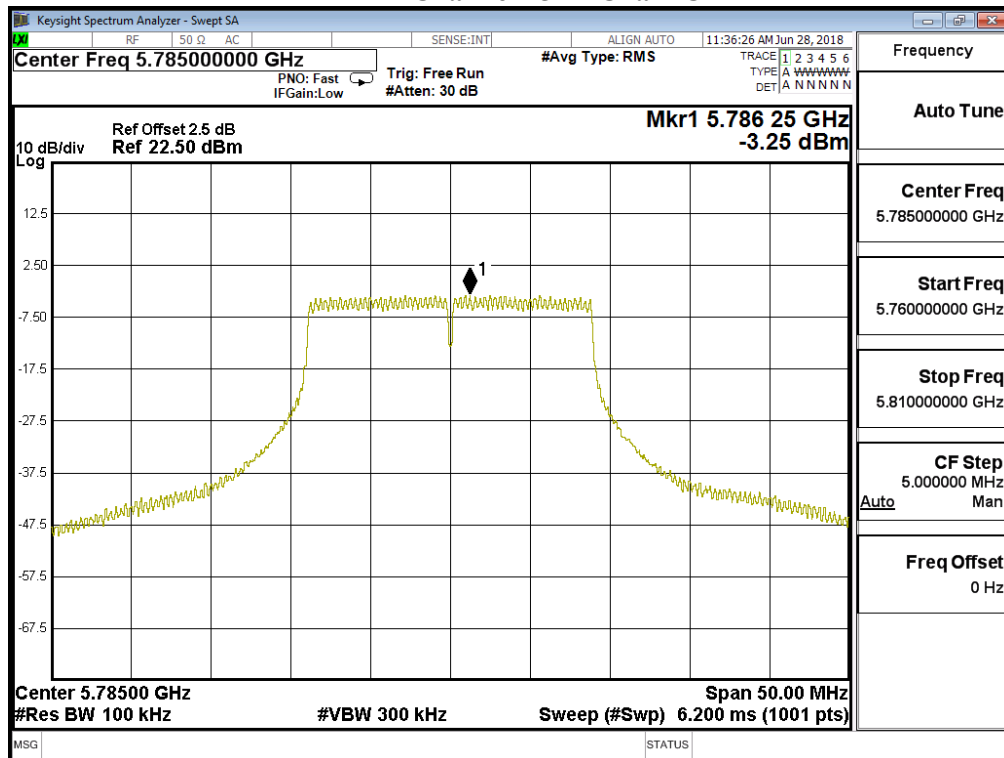
Channel 140 – Chain C



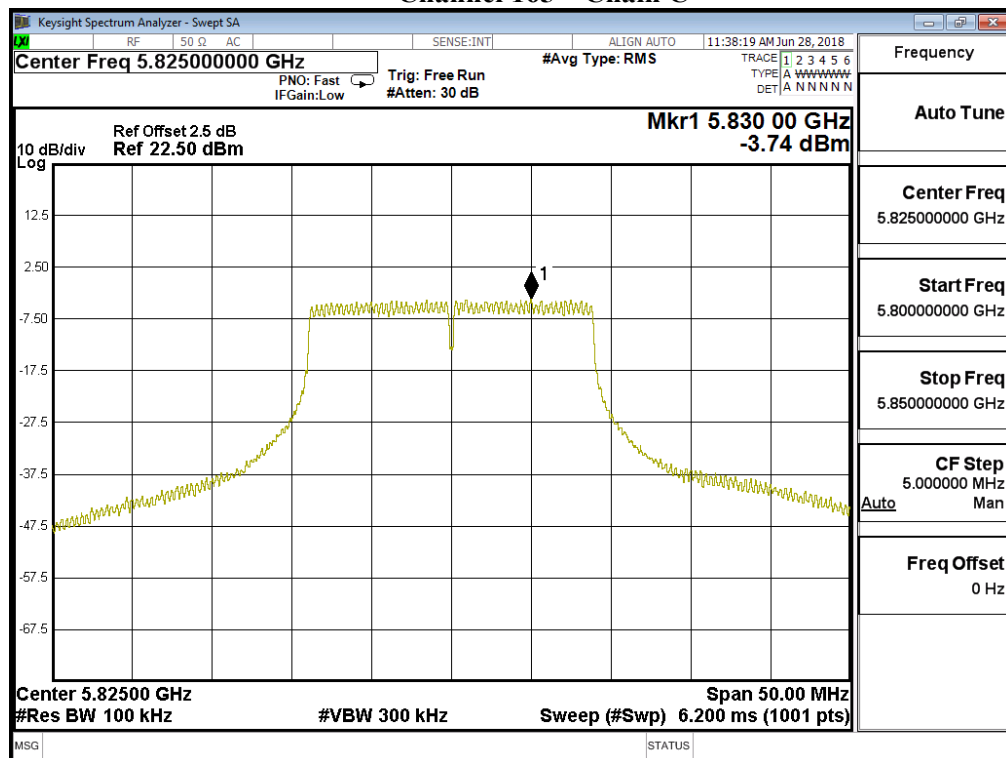
Channel 149 – Chain C



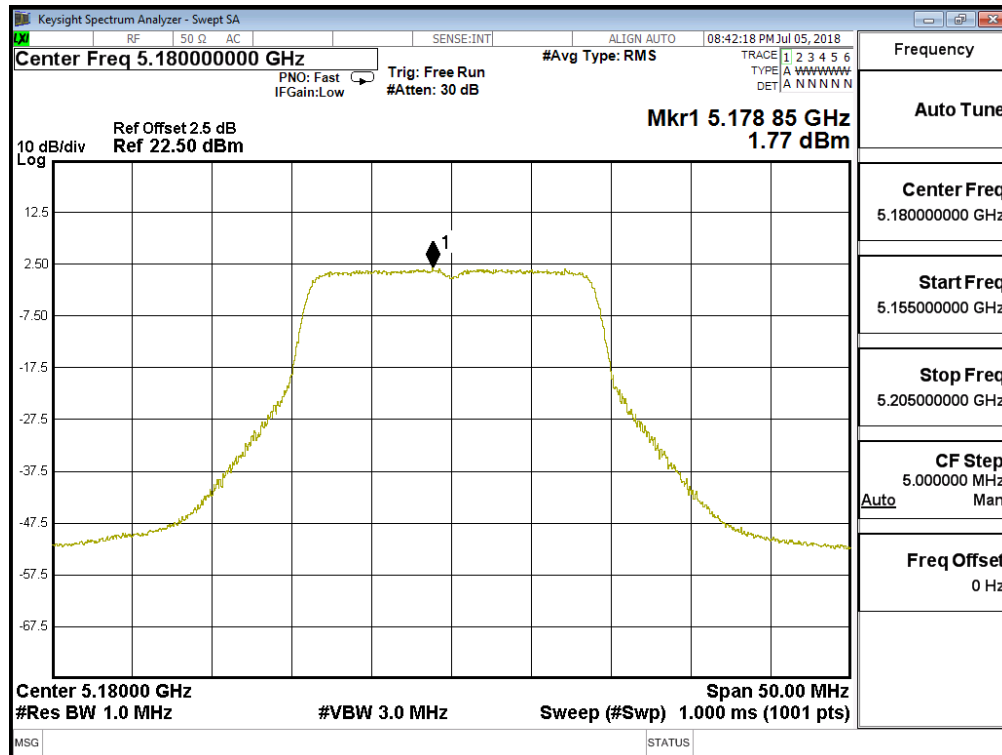
Channel 157 – Chain C



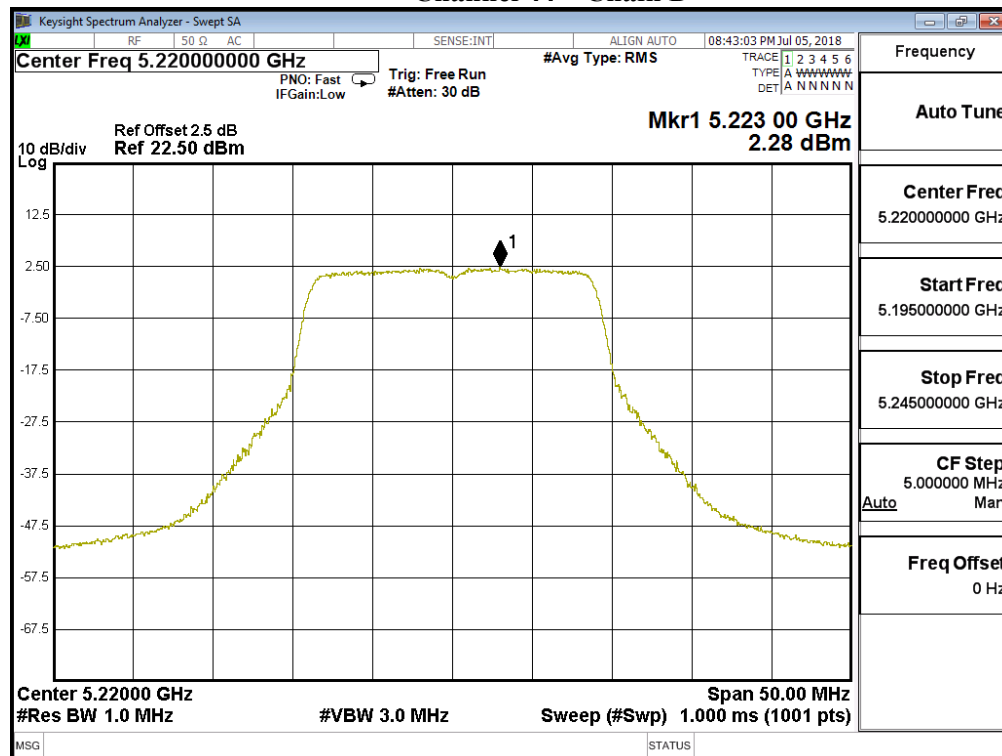
Channel 165 – Chain C



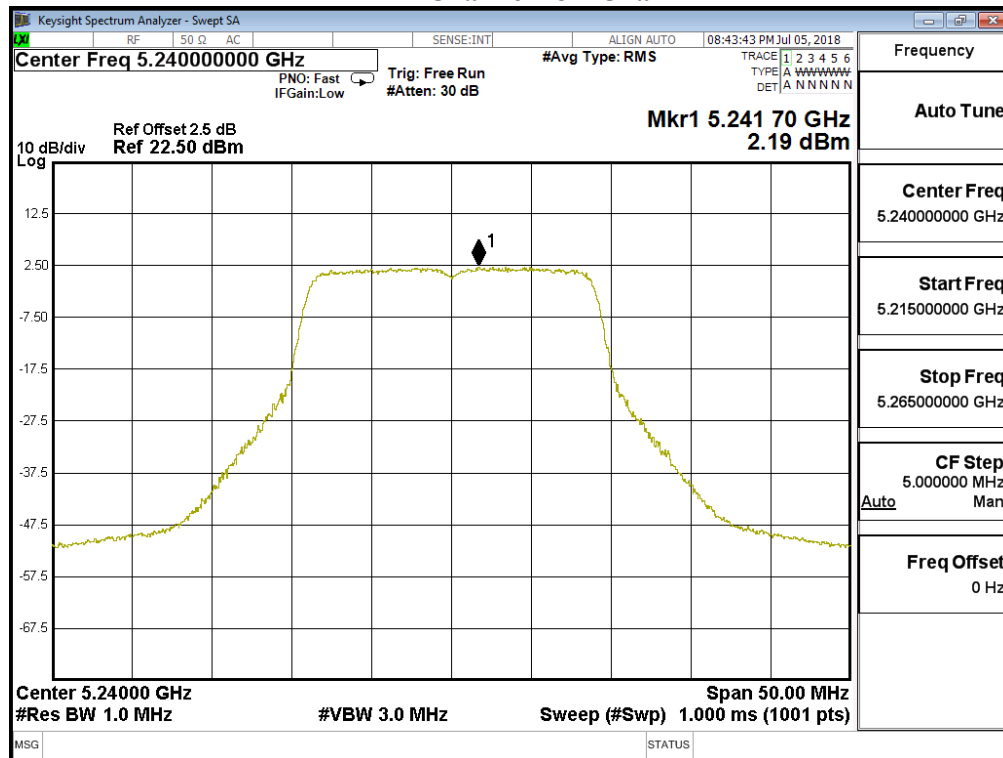
Channel 36 – Chain D



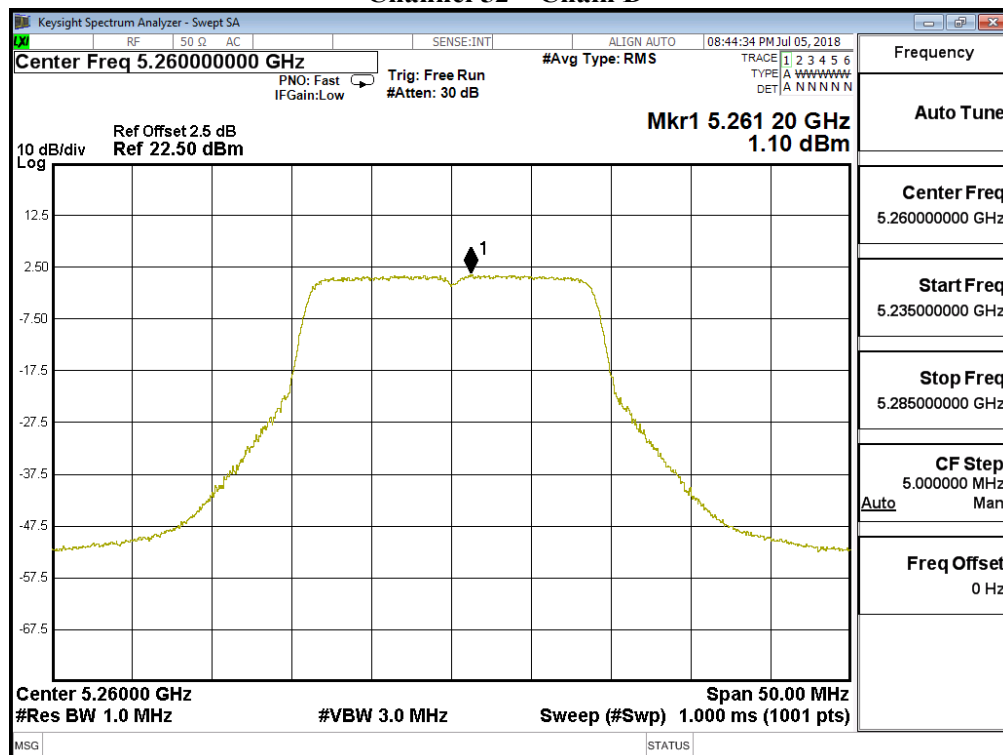
Channel 44 – Chain D



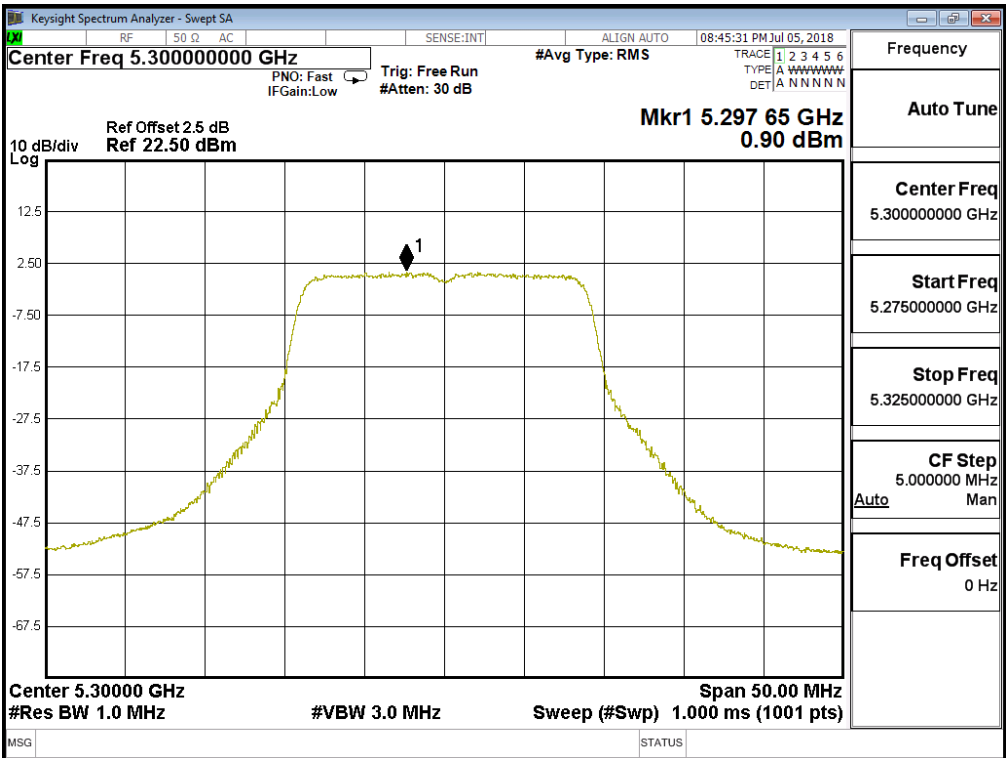
Channel 48 – Chain D



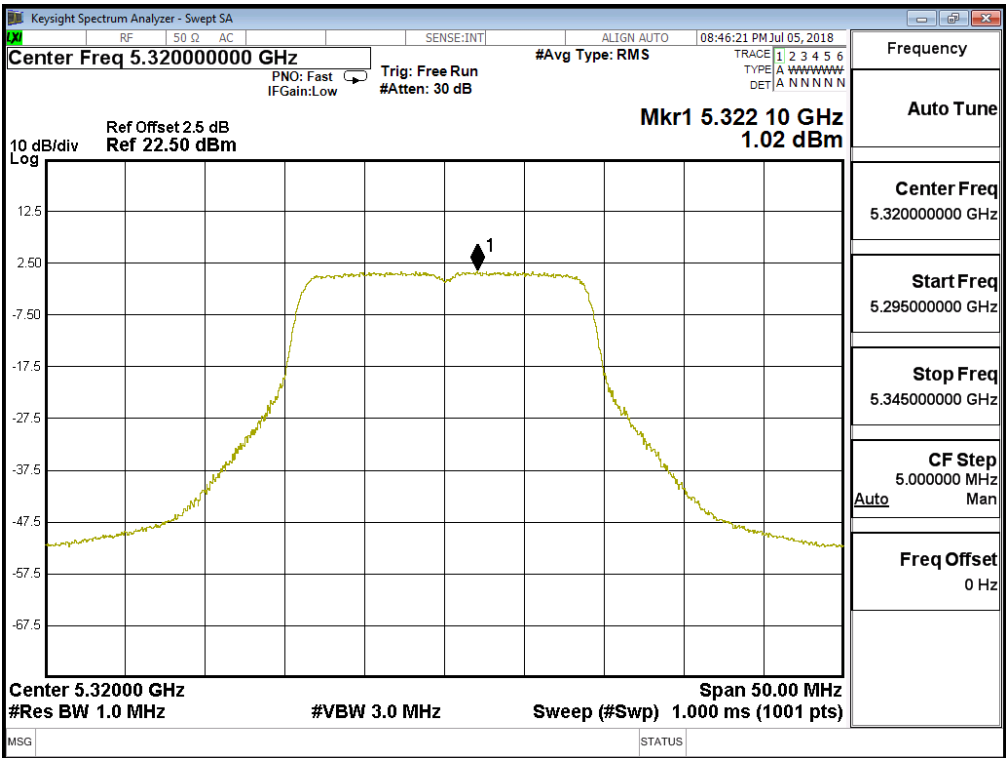
Channel 52 – Chain D



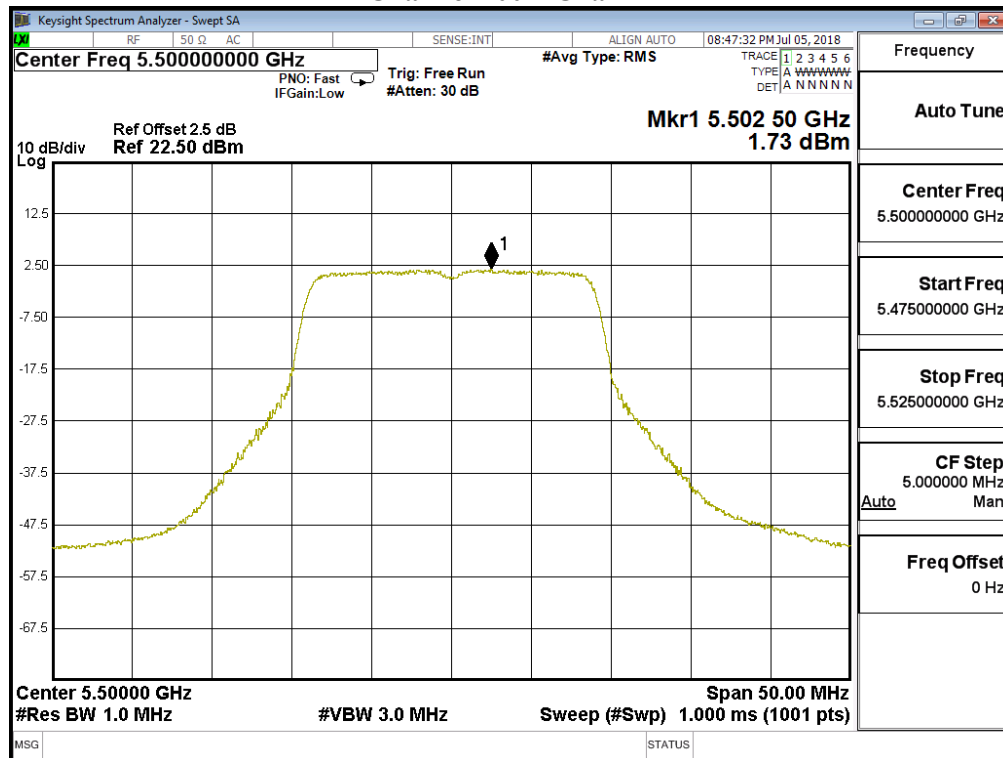
Channel 60 – Chain D



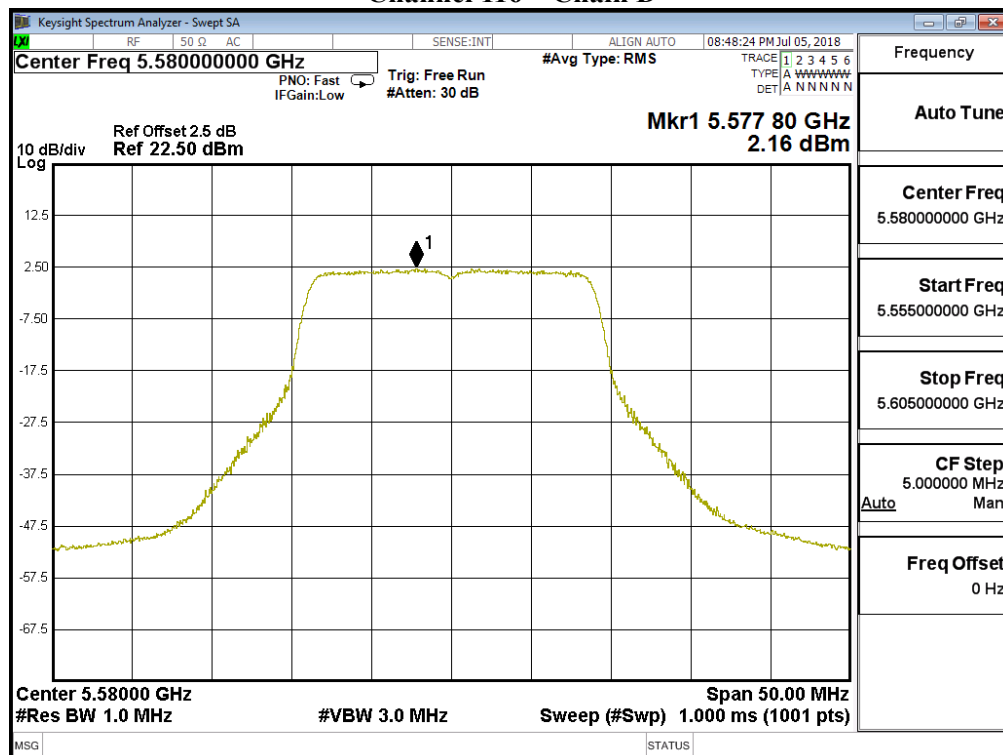
Channel 64 – Chain D



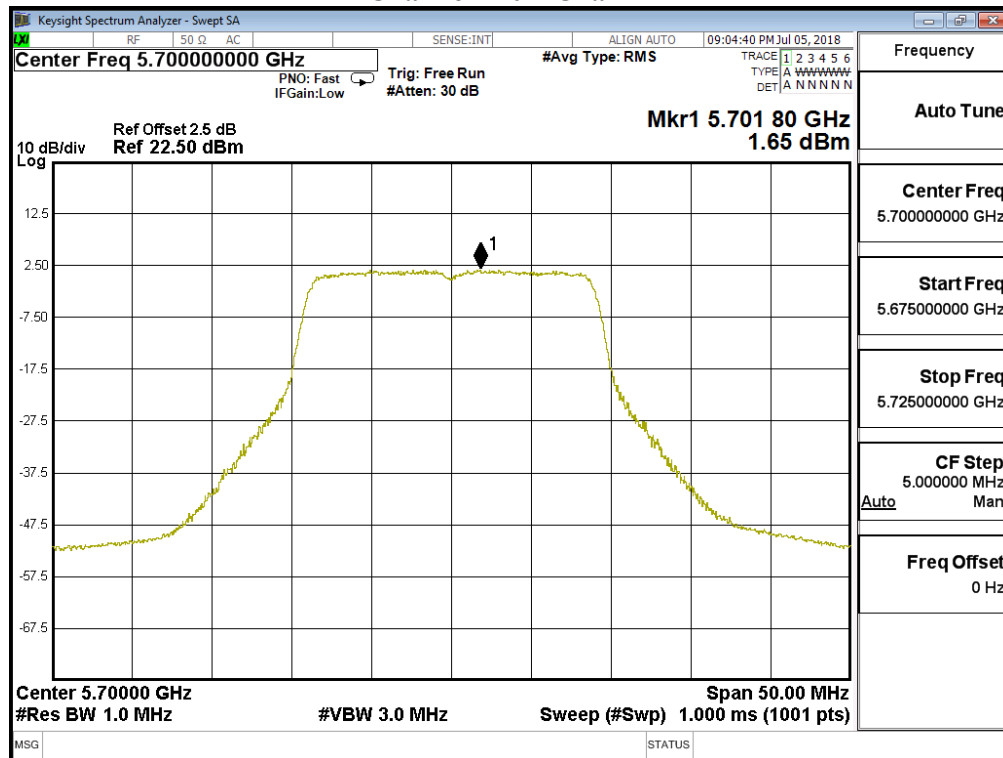
Channel 100 – Chain D



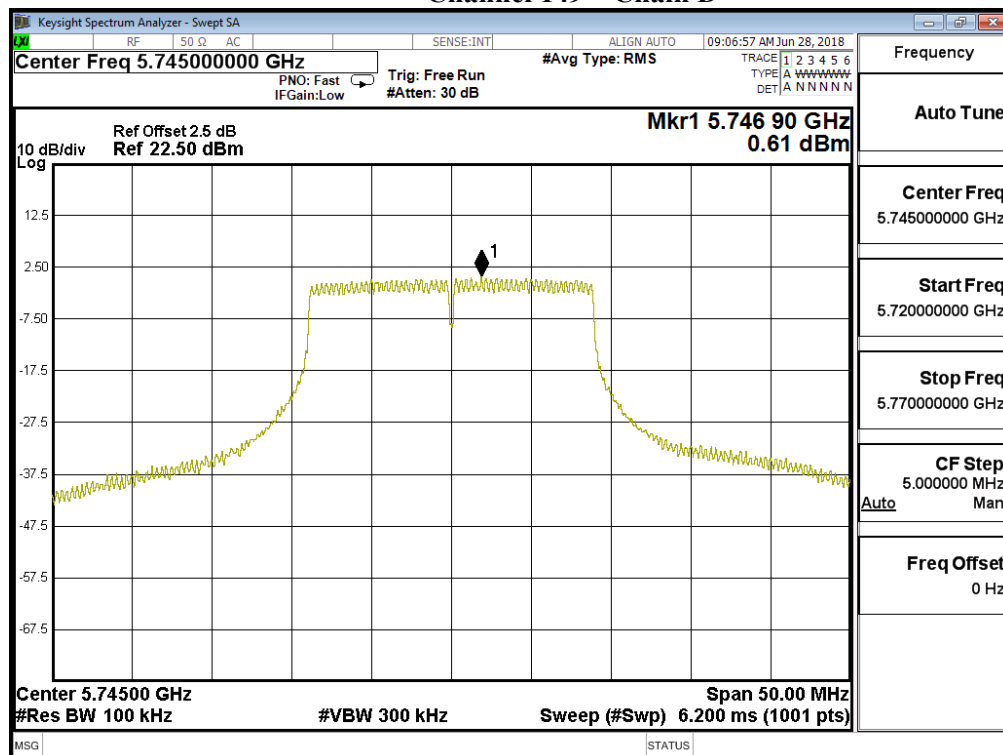
Channel 116 – Chain D



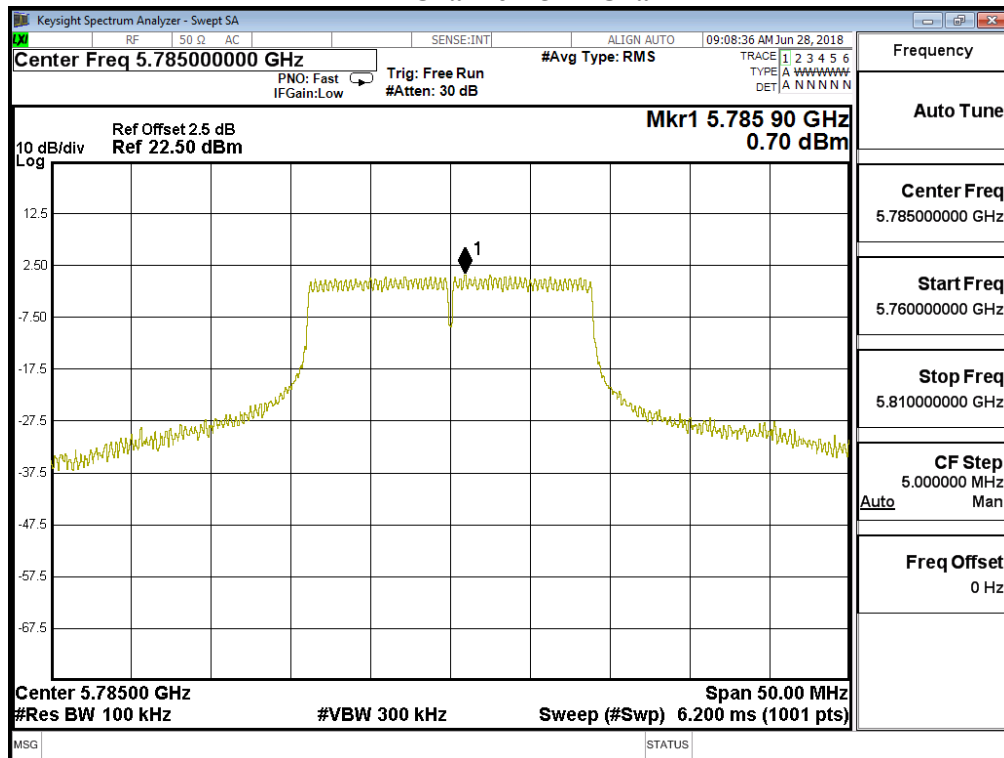
Channel 140 – Chain D



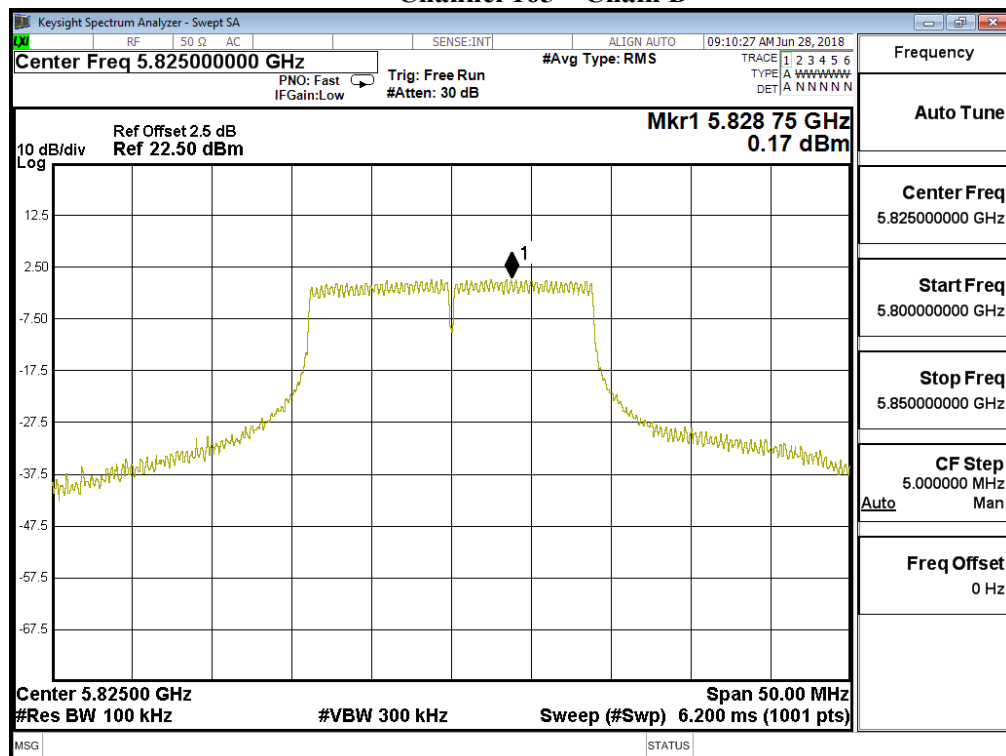
Channel 149 – Chain D



Channel 157 – Chain D



Channel 165 – Chain D



Product : MOXA IEEE 802.11a/n/ac 4*4 module
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Date : 2018/06/14
 Test Mode : Mode 3: Transmit (802.11n-40BW 60Mbps) (Antenna No.19)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PSD (dBm) ¹	Required Limit (dBm)	Result
38	5190	A	1.39	7.41	8.5	Pass
		B	1.86	7.88	8.5	Pass
		C	1.87	7.89	8.5	Pass
		D	1.80	7.82	8.5	Pass
46	5230	A	2.09	8.11	8.5	Pass
		B	2.00	8.02	8.5	Pass
		C	1.95	7.97	8.5	Pass
		D	2.15	8.17	8.5	Pass
54	5270	A	1.82	7.84	8.5	Pass
		B	1.36	7.38	8.5	Pass
		C	1.90	7.92	8.5	Pass
		D	1.00	7.02	8.5	Pass
62	5310	A	1.18	7.20	8.5	Pass
		B	1.13	7.15	8.5	Pass
		C	2.16	8.18	8.5	Pass
		D	0.63	6.65	8.5	Pass
102	5510	A	0.78	6.80	8.5	Pass
		B	1.22	7.24	8.5	Pass
		C	1.08	7.10	8.5	Pass
		D	1.78	7.80	8.5	Pass
110	5550	A	0.50	6.52	8.5	Pass
		B	1.61	7.63	8.5	Pass
		C	0.85	6.87	8.5	Pass
		D	2.04	8.06	8.5	Pass
134	5670	A	-0.19	5.83	8.5	Pass
		B	2.46	8.48	8.5	Pass
		C	0.55	6.57	8.5	Pass
		D	2.25	8.27	8.5	Pass

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	BWCF (dB)	Total PSD (dBm) ₁	Required Limit (dBm)	Result
151	5755	A	-5.67	6.98	7.33	<27.5	Pass
		B	-5.36	6.98	7.64	<27.5	Pass
		C	-6.58	6.98	6.42	<27.5	Pass
		D	-3.09	6.98	9.91	<27.5	Pass
159	5795	A	-5.02	6.98	7.98	<27.5	Pass
		B	-5.71	6.98	7.29	<27.5	Pass
		C	-6.93	6.98	6.07	<27.5	Pass
		D	-3.25	6.98	9.75	<27.5	Pass

Note 1: The quantity $10 \cdot \log 4$ (four antennas) is added to the spectrum peak value according to document 662911 D01.

Keysight Spectrum Analyzer - Swept SA

RF 50 Ω AC SENSE:INT ALIGN AUTO 03:53:25 PM Jul 05, 2018

Center Freq 5.19000000 GHz #Avg Type: RMS

PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB

TRACE 1 2 3 4 5 6
TYPE A W W W W W W
DET A N N N N N N

Ref Offset 2.5 dB
Ref 22.50 dBm

Mkr1 5.197 8 GHz
1.39 dBm

10 dB/div
Log

Center 5.19000 GHz
#Res BW 1.0 MHz

#VBW 3.0 MHz

Span 100.0 MHz
Sweep (#Swp) 1.000 ms (1001 pts)

MSG STATUS

Keysight Spectrum Analyzer - Swept SA

RF 50 Ω AC SENSE:INT ALIGN AUTO 03:54:28 PM Jul 05, 2018

Center Freq 5.23000000 GHz

PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS

TRACE 1 2 3 4 5 6
TYPE A WWWW
DET A N N N N

Ref Offset 2.5 dB
Ref 22.50 dBm

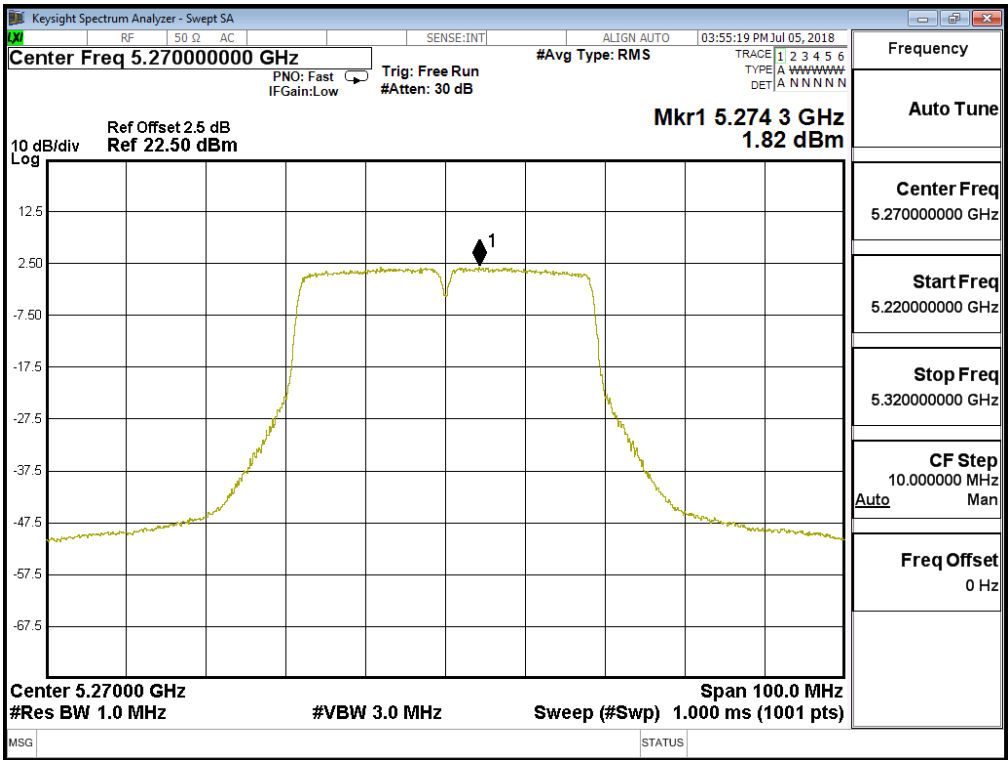
Mkr1 5.234 6 GHz
2.09 dBm

10 dB/div
Log

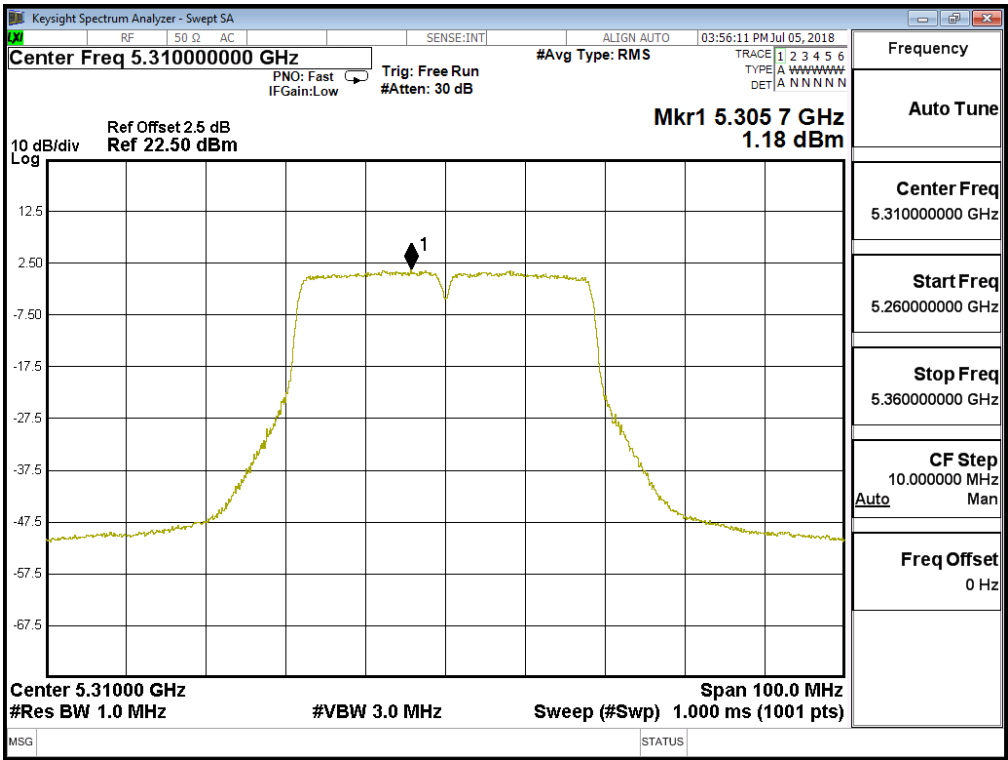
Center 5.23000 GHz
#Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz
Sweep (#Swp) 1.000 ms (1001 pts)

Frequency
Auto Tune
Center Freq
5.23000000 GHz
Start Freq
5.18000000 GHz
Stop Freq
5.28000000 GHz
CF Step
10.000000 MHz
Auto Mar
Freq Offset
0 Hz

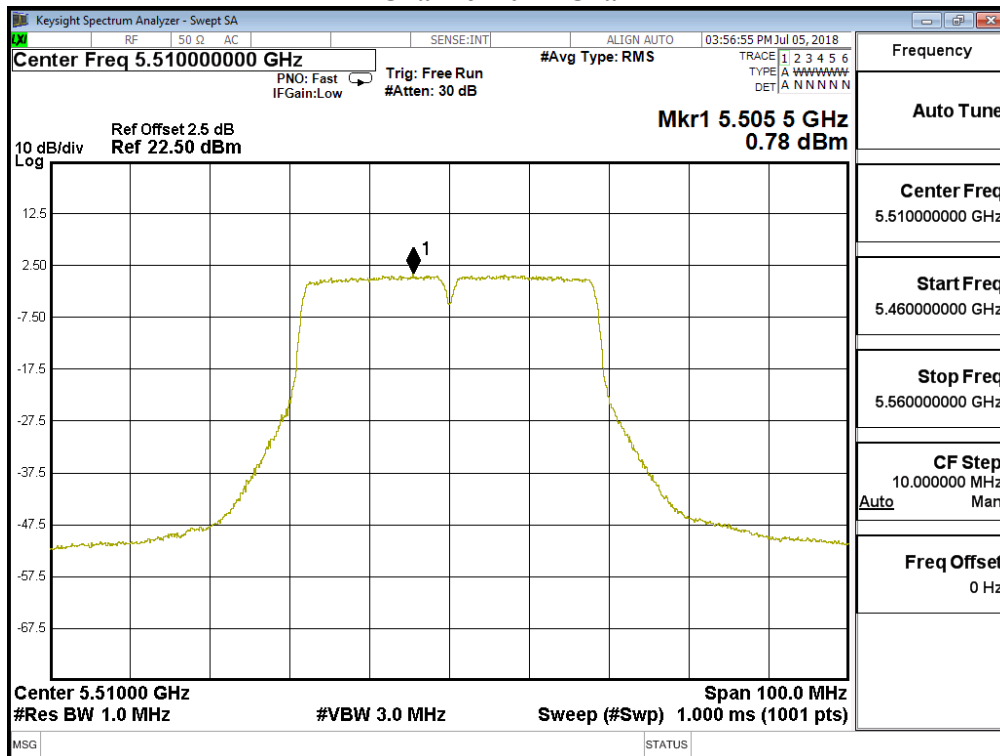
Channel 54 – Chain A



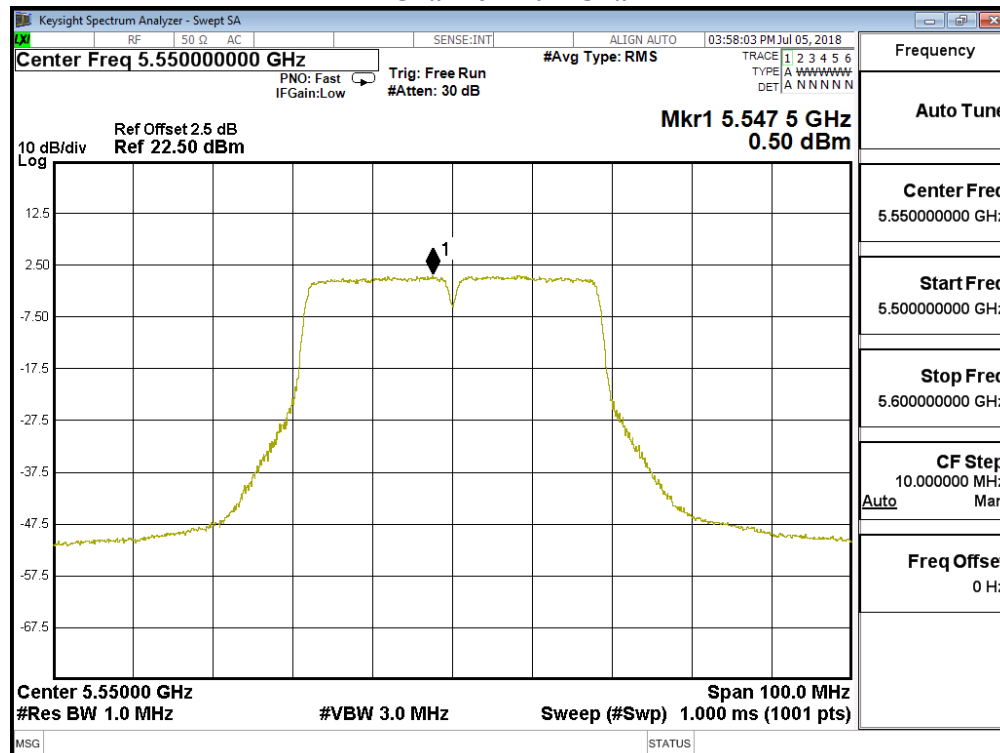
Channel 62 – Chain A



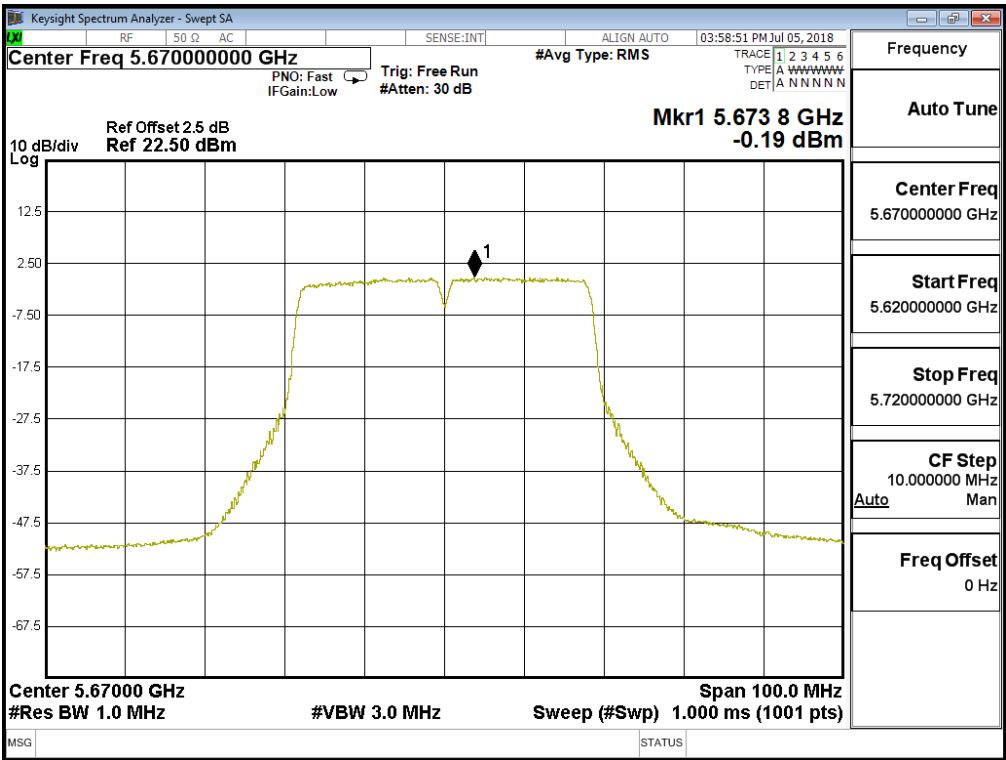
Channel 102 – Chain A



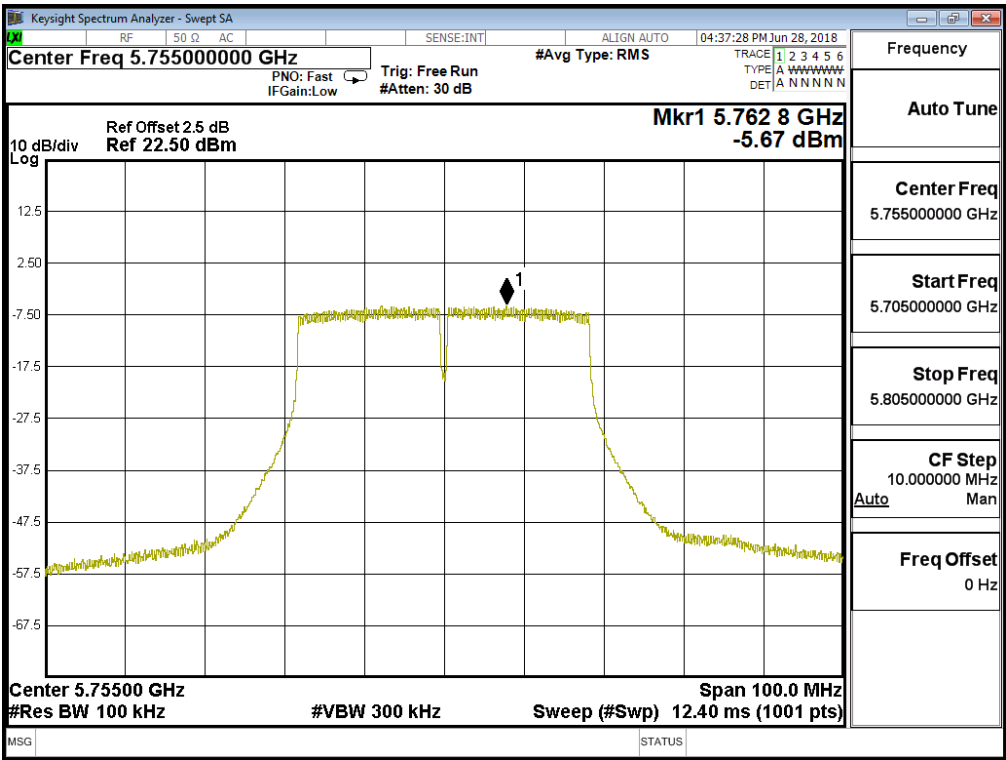
Channel 110 – Chain A



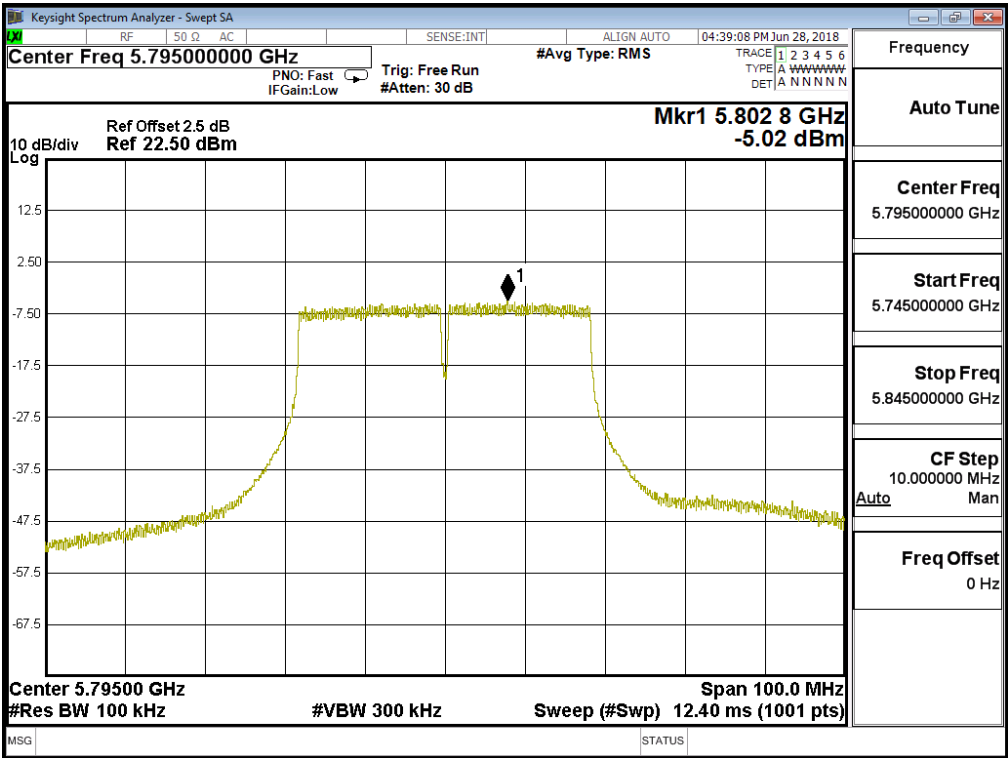
Channel 134 – Chain A



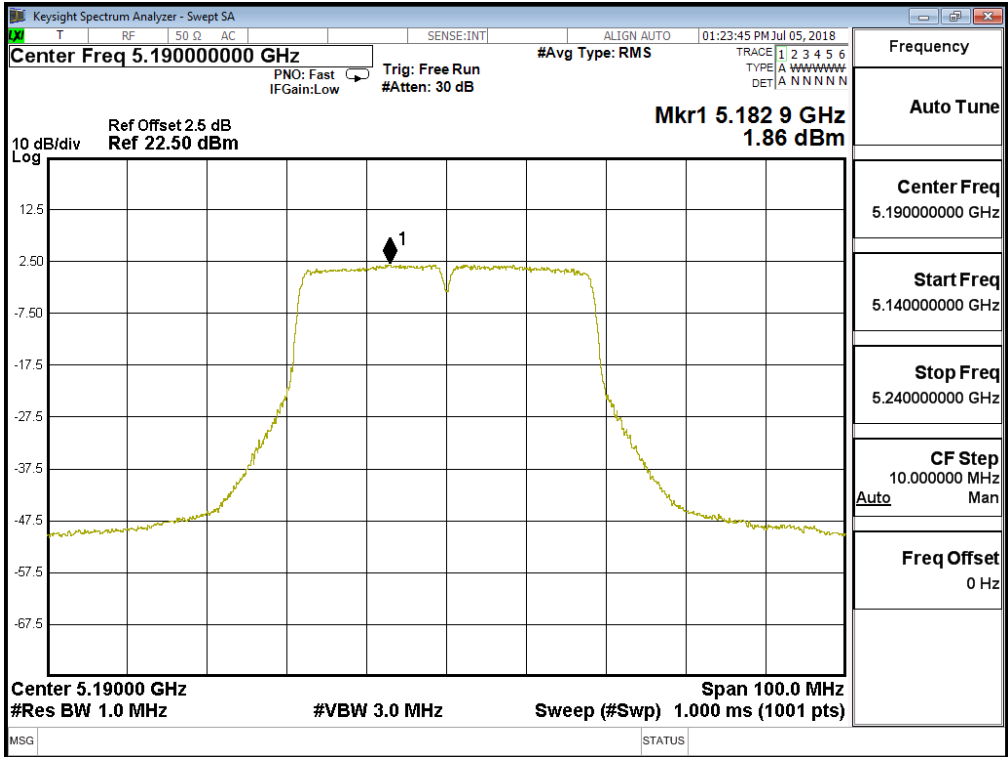
Channel 151 – Chain A



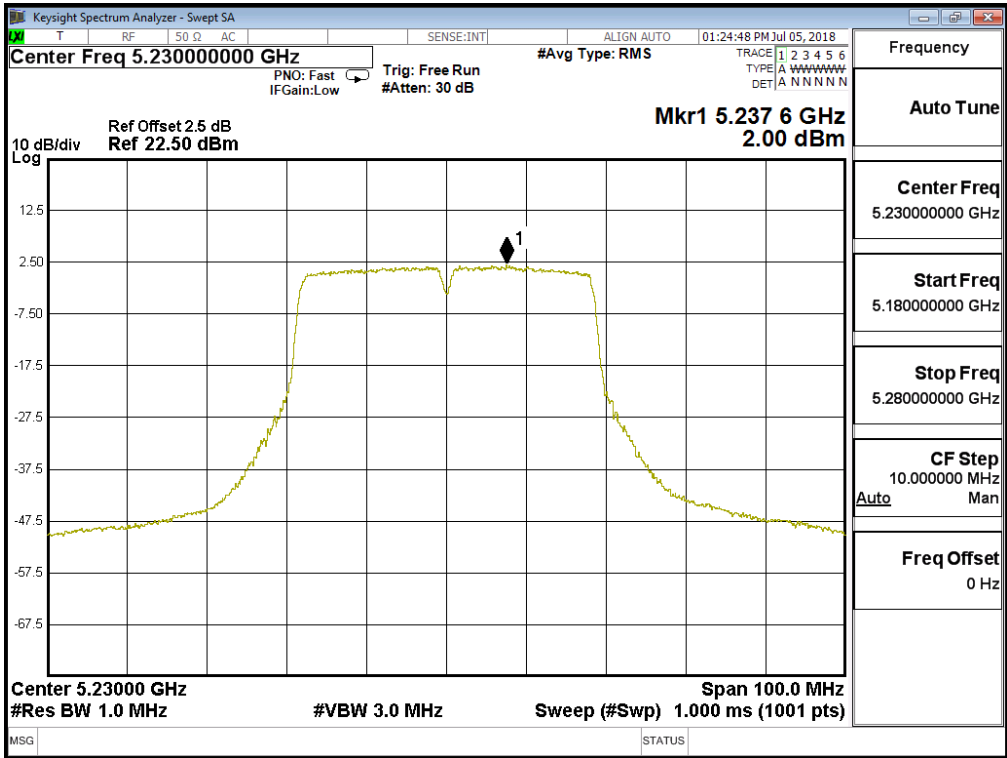
Channel 159 – Chain A



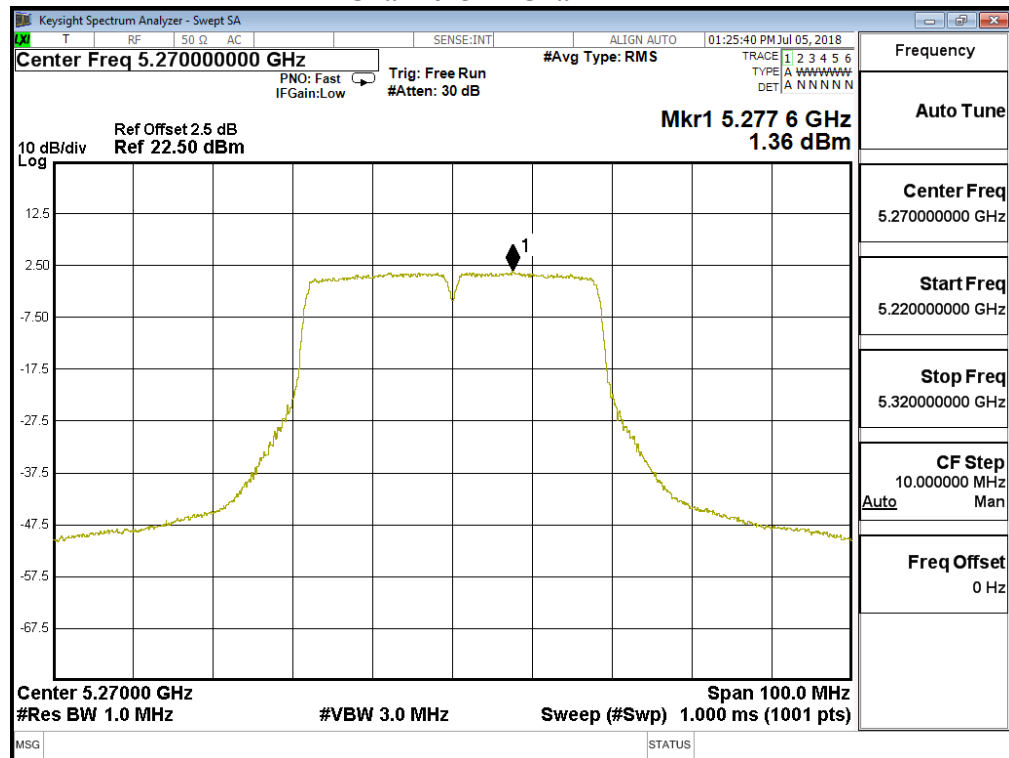
Channel 38 – Chain B



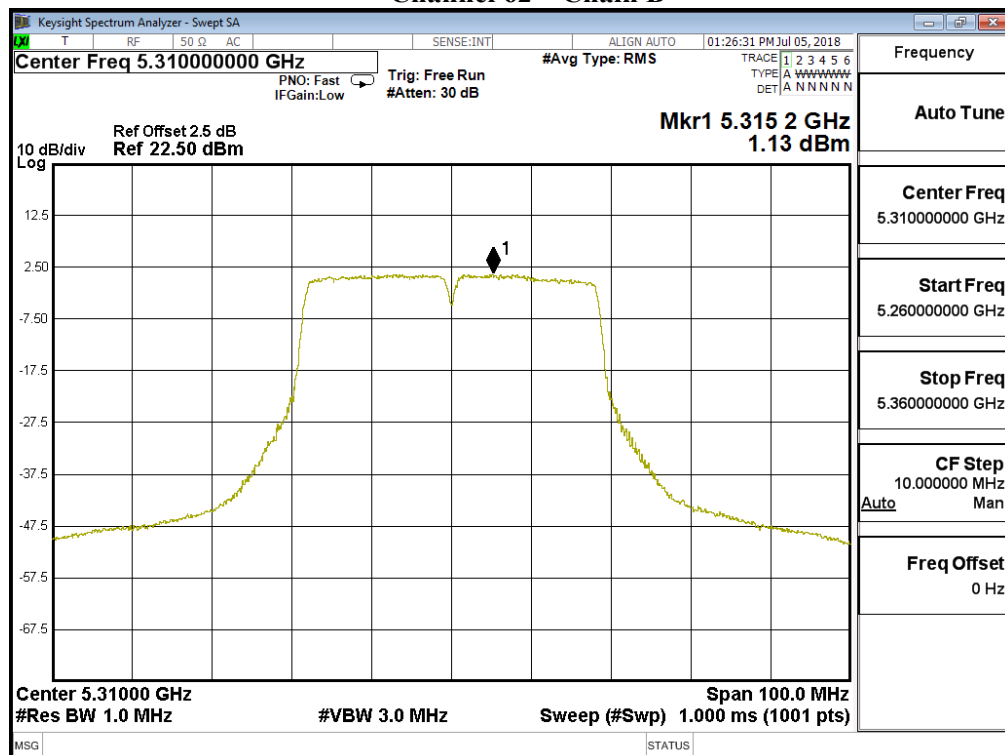
Channel 46 – Chain B



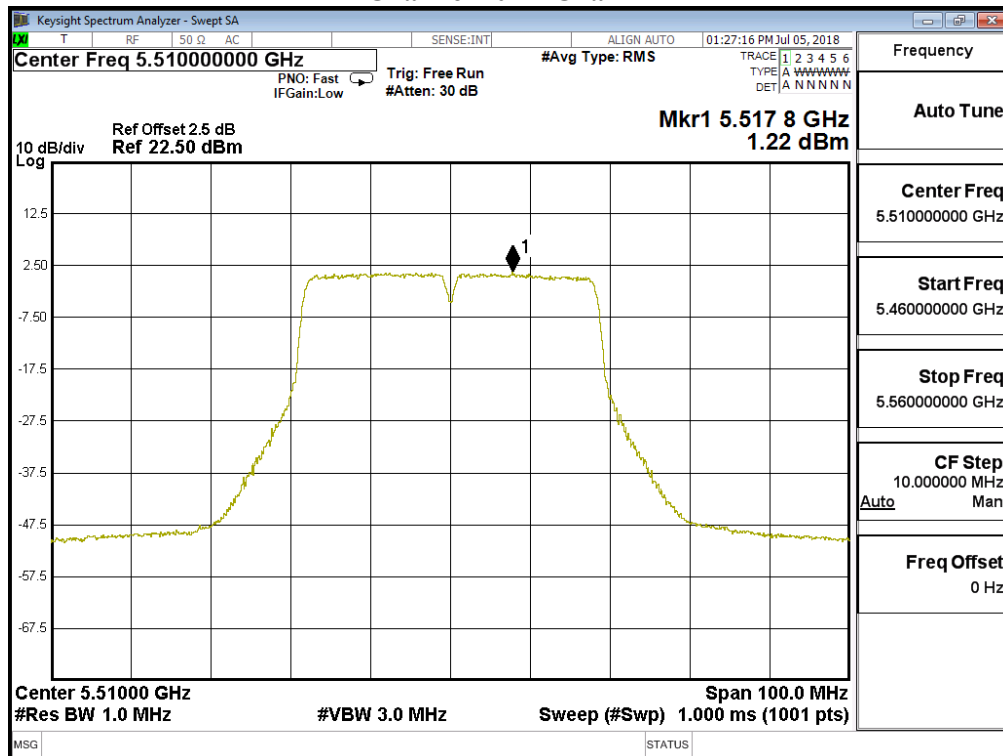
Channel 54 – Chain B



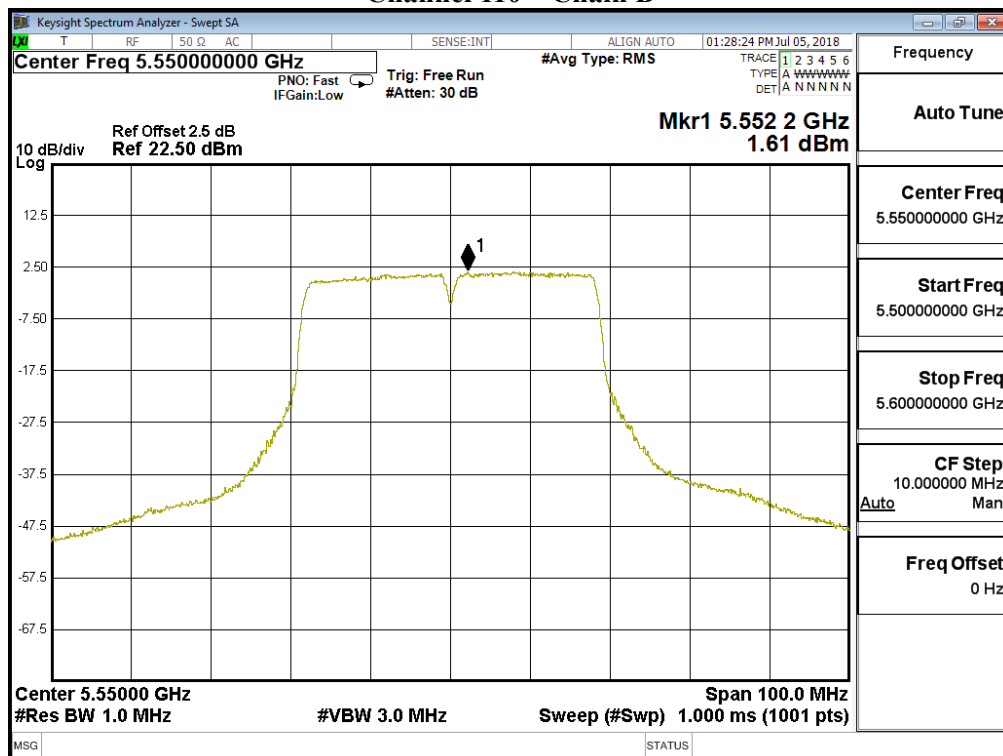
Channel 62 – Chain B



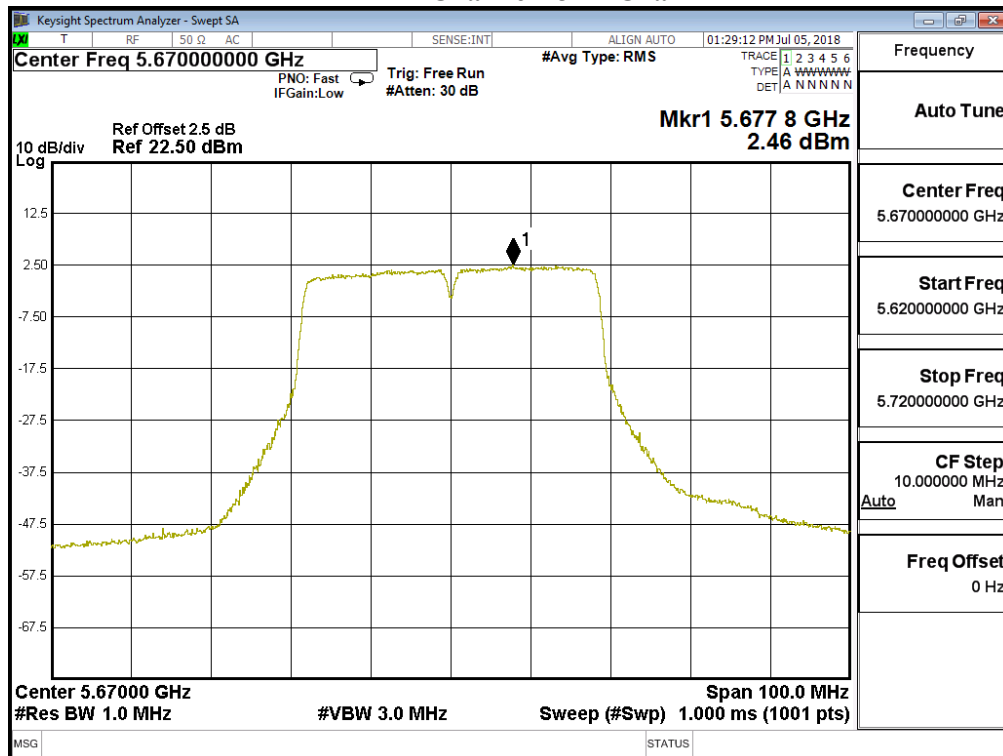
Channel 102 – Chain B



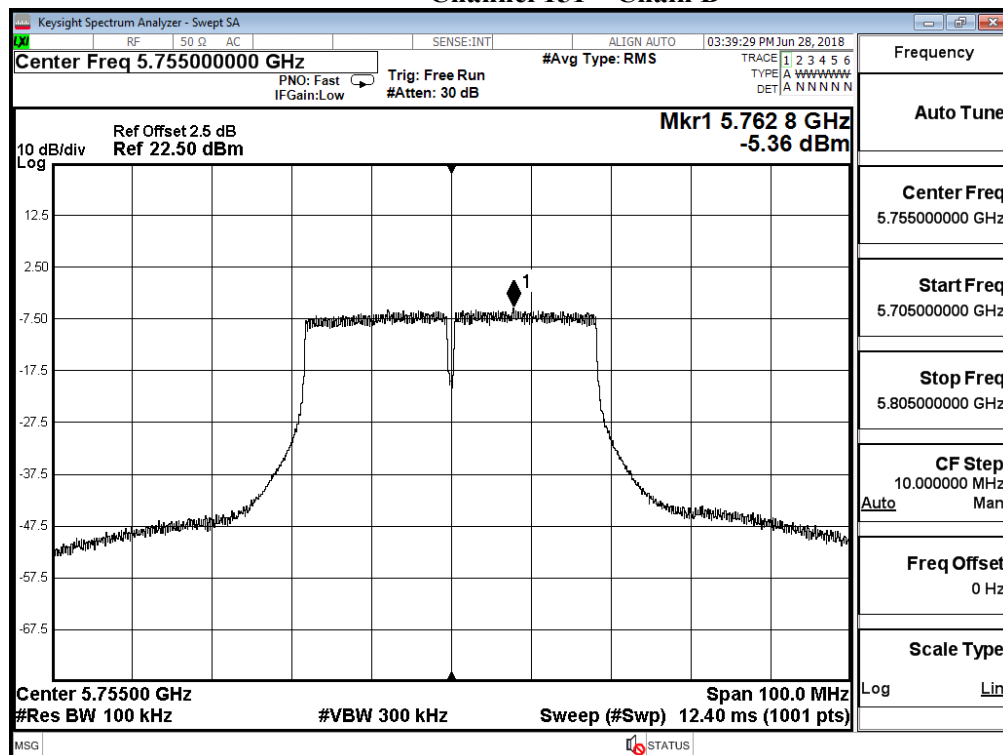
Channel 110 – Chain B



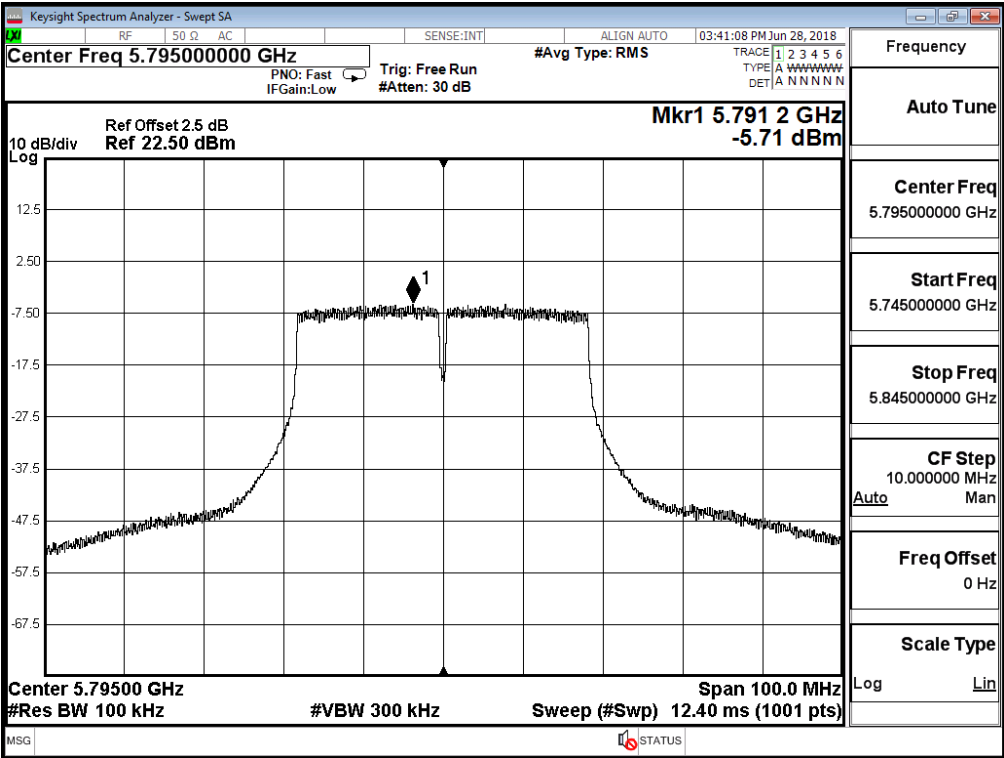
Channel 134 – Chain B



Channel 151 – Chain B



Channel 159 – Chain B



Keysight Spectrum Analyzer - Sweet SA

RF 50 Ω AC SENSE:INT ALIGN AUTO 07:52:45 PM Jul 05, 2018

Center Freq 5.19000000 GHz #Avg Type: RMS

PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB

TRACE 1 2 3 4 5 6
TYPE A W W W W W W
DET A N N N N N

Ref Offset 2.5 dB
Ref 22.50 dBm

Mkr1 5.192 0 GHz
1.87 dBm

10 dB/div
Log

Center 5.19000 GHz Span 100.0 MHz
#Res BW 1.0 MHz #VBW 3.0 MHz Sweep (#Swp) 1.000 ms (1001 pts)

The spectrum shows a wideband signal with a sharp notch at 5.1920 GHz. The notch depth is approximately 1.87 dBm. The signal is centered at 5.19000 GHz with a span of 100.0 MHz. The resolution bandwidth (Res BW) is 1.0 MHz and the video bandwidth (VBW) is 3.0 MHz. The sweep time is 1.000 ms (1001 pts). The signal level is 10 dB/div on a logarithmic scale.

Keysight Spectrum Analyzer - Swept SA

RF 50 Ω AC SENSE:INT ALIGN AUTO 07:53:47 PM Jul 05, 2018

Center Freq 5.23000000 GHz #Avg Type: RMS

PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB

TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N

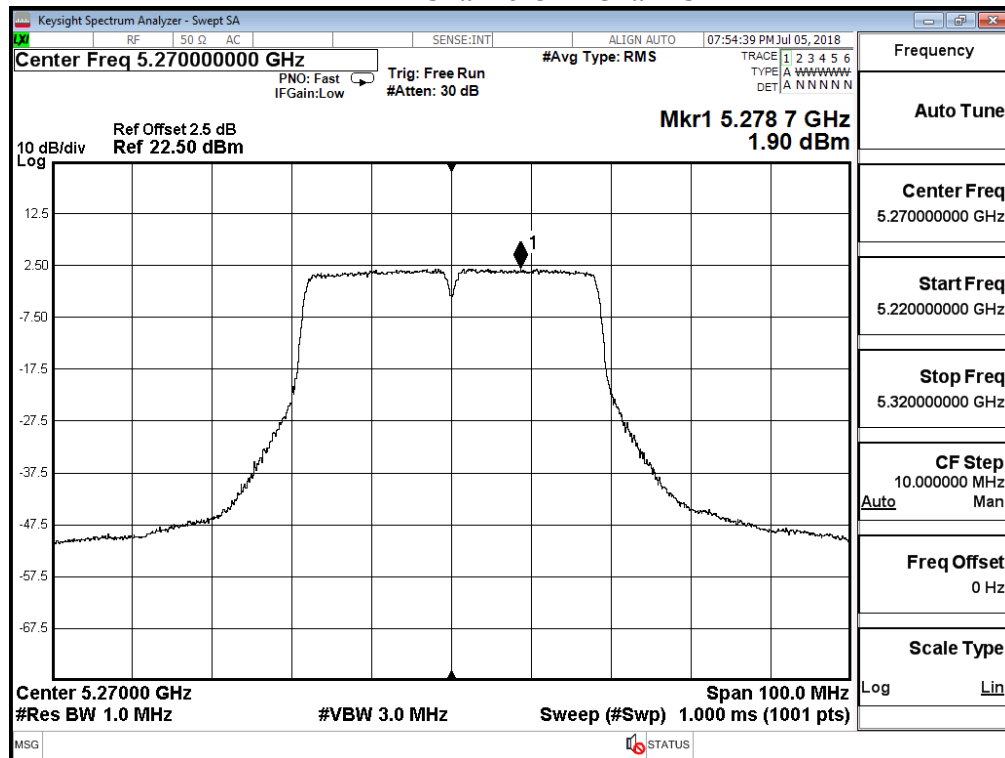
Ref Offset 2.5 dB Mkr1 5.227 5 GHz Ref 22.50 dBm 1.95 dBm

10 dB/div Log

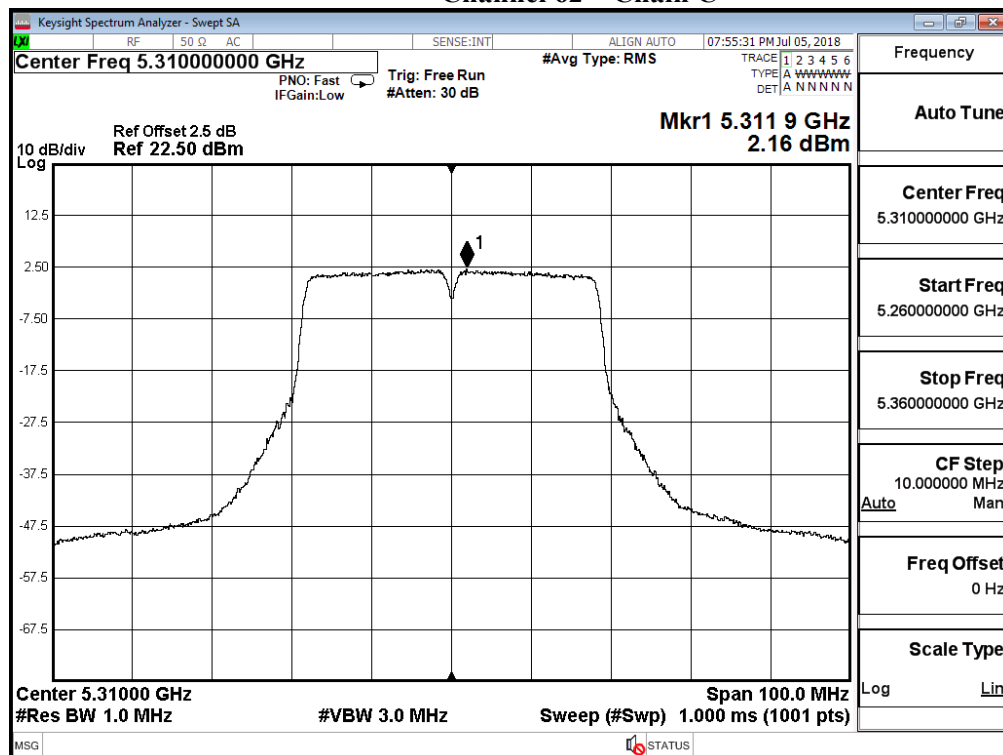
Center 5.23000 GHz Span 100.0 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep (#Swp) 1.000 ms (1001 pts)

MSG STATUS

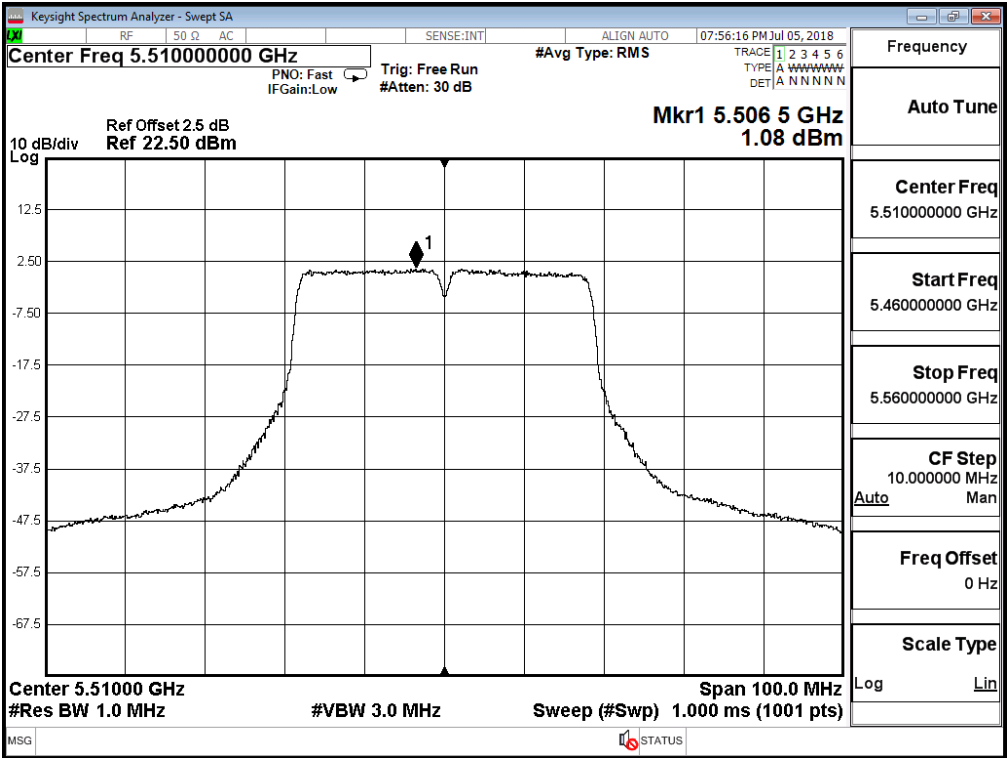
Channel 54 – Chain C



Channel 62 – Chain C



Channel 102 – Chain C



Channel 110 – Chain C

