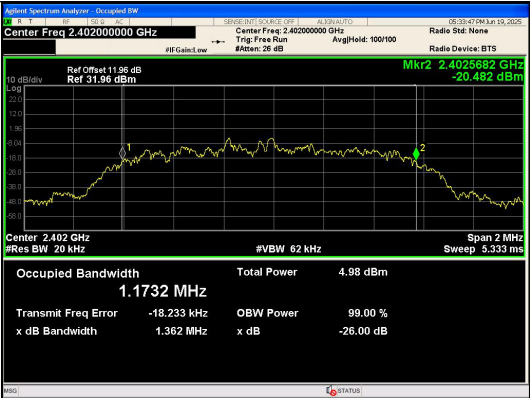


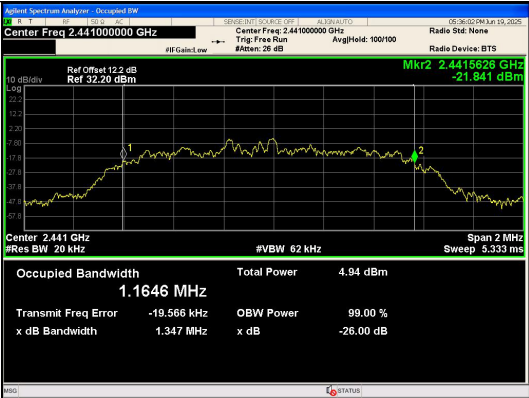
Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.86843
	39	2441	0.88542
	78	2480	0.89217
π /4DQPSK	0	2402	1.1838
	39	2441	1.1816
	78	2480	1.1881
8DPSK	0	2402	1.1732
	39	2441	1.1646
	78	2480	1.1748

The figure displays eight Agilent Spectrum Analyzer screenshots arranged in a 4x2 grid. The left column shows GFSK signals, and the right column shows $\pi/4$ DQPSK signals. The rows correspond to different DH5 channels: Channel 0, Channel 39, and Channel 78. Each screenshot includes a frequency spectrum plot with a peak marker (Mkr2) and a summary table of signal parameters.

Channel	Modulation	Center Freq (GHz)	Res BW (kHz)	Span (MHz)	Occupied Bandwidth (kHz)	Total Power (dBm)	Transmit Freq Error (kHz)	x dB Bandwidth (MHz)	OBW Power (dB)
0	GFSK	2.402000000	20	2	868.43	3.71	-17.280	1.125	-26.00
0	$\pi/4$ DQPSK	2.402000000	20	2	1.1838	5.47	-12.808	1.356	-26.00
39	GFSK	2.441000000	20	2	885.42	5.55	-15.934	1.185	-26.00
39	$\pi/4$ DQPSK	2.441000000	20	2	1.1816	5.15	-15.578	1.364	-26.00
78	GFSK	2.480000000	20	2	892.17	5.18	-14.574	1.132	-26.00
78	$\pi/4$ DQPSK	2.480000000	20	2	1.1881	4.70	-13.386	1.351	-26.00



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



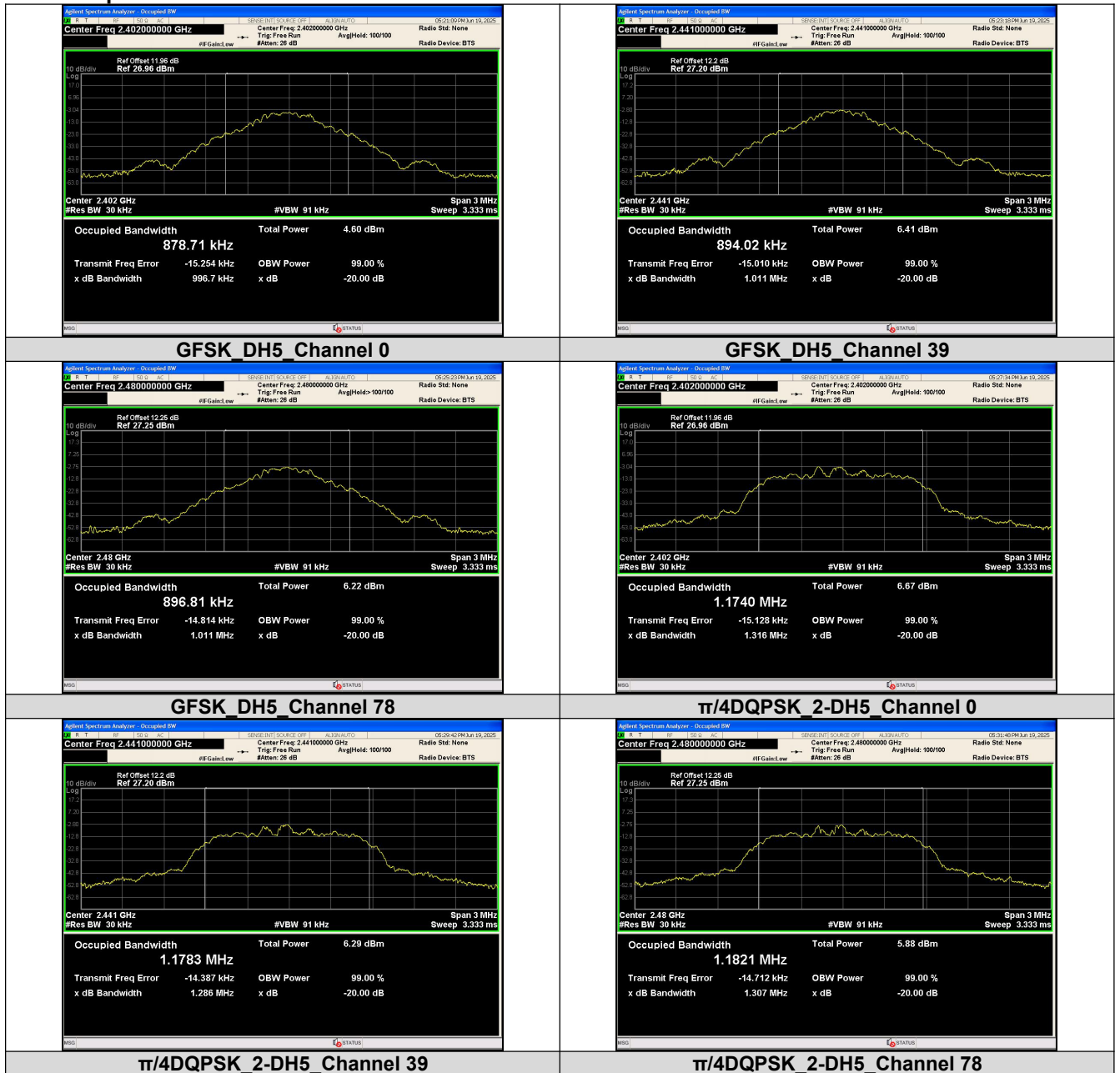
8DPSK_3-DH5_Channel 78

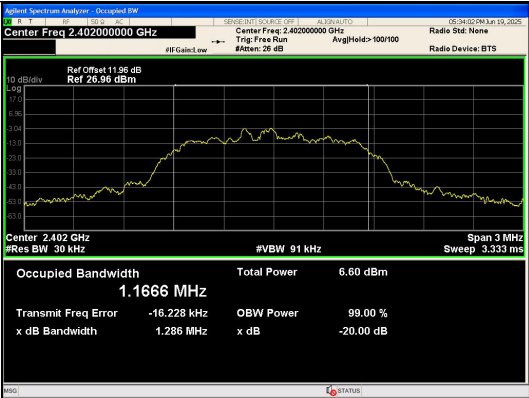
APPENDIX IV. 20dB Bandwidth

Test Result

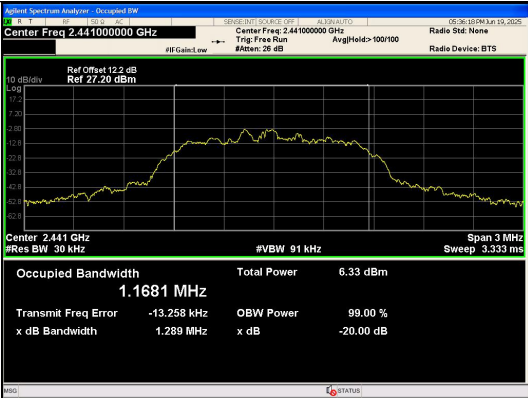
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9967
	39	2441 MHz	1.011
	78	2480 MHz	1.011
$\pi/4$ DQPSK	0	2402 MHz	1.316
	39	2441 MHz	1.286
	78	2480 MHz	1.307
8DPSK	0	2402 MHz	1.286
	39	2441 MHz	1.289
	78	2480 MHz	1.313

Test Graphs





8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



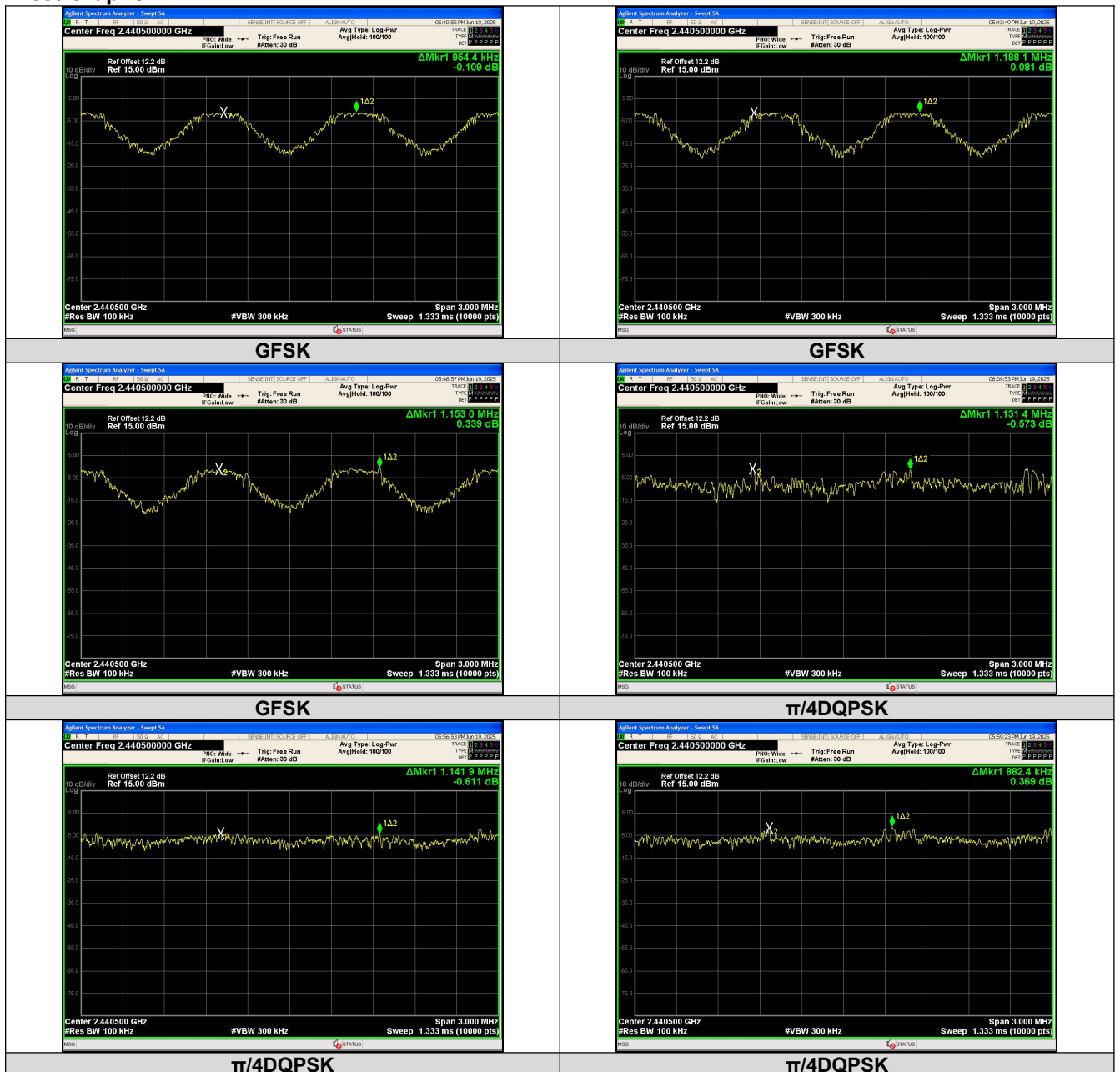
8DPSK_3-DH5_Channel 78

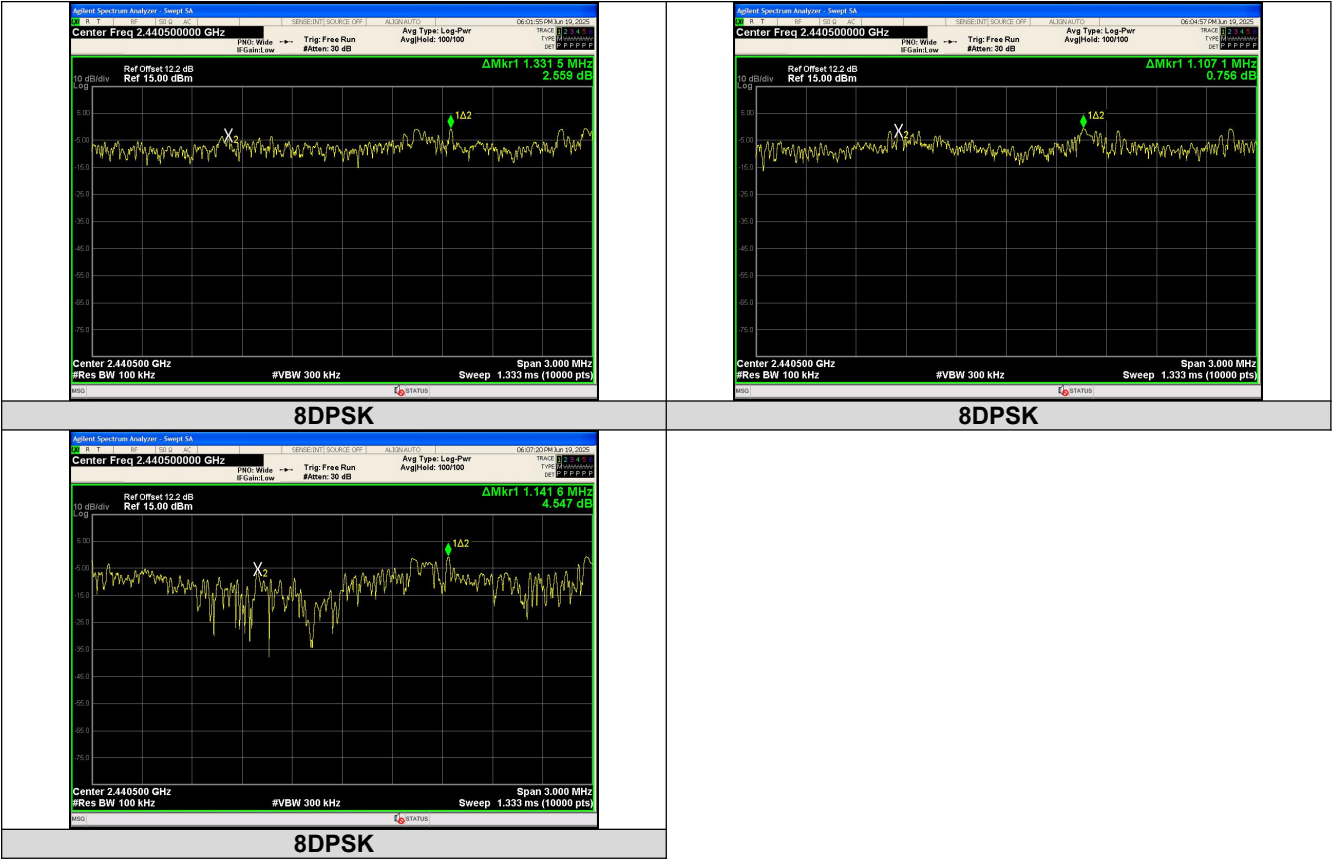
APPENDIX V. Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2440.0261	2440.9805	0.9544	0.674	PASS
GFSK	DH5	2439.8575	2441.0456	1.1881	0.674	PASS
GFSK	DH5	2439.9916	2441.1446	1.1530	0.674	PASS
$\pi/4$ DQPSK	2-DH5	2439.8485	2440.9799	1.1314	0.877	PASS
$\pi/4$ DQPSK	2-DH5	2440.0039	2441.1458	1.1419	0.877	PASS
$\pi/4$ DQPSK	2-DH5	2439.967	2440.8494	0.8824	0.877	PASS
8DPSK	3-DH5	2439.8176	2441.1491	1.3315	0.875	PASS
8DPSK	3-DH5	2439.8542	2440.9613	1.1071	0.875	PASS
8DPSK	3-DH5	2439.9922	2441.1338	1.1416	0.875	PASS

Test Graphs





APPENDIX VI. Conducted Out Of Band Emission**Test Result****Non-Hopping**

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-50.607	-20.22	-30.387	PASS
			4804.26	-46.614	-20.22	-26.394	PASS
			7205.75	-47.739	-20.22	-27.519	PASS
			9607.87	-35.620	-20.22	-15.400	PASS
		39	4881.67	-47.325	-20.6	-26.725	PASS
			7323.11	-45.334	-20.6	-24.734	PASS
			9763.93	-36.519	-20.6	-15.919	PASS
			2483.50	-51.896	-20.93	-30.966	PASS
		78	4960.33	-49.911	-20.93	-28.981	PASS
			7439.85	-44.361	-20.93	-23.431	PASS
			9919.99	-36.063	-20.93	-15.133	PASS
			2398.80	-51.047	-20.83	-30.217	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-51.374	-20.83	-30.544	PASS
			4803.60	-50.659	-20.83	-29.829	PASS
			7205.80	-48.796	-20.83	-27.966	PASS
			9607.90	-35.229	-20.83	-14.399	PASS
		39	4881.67	-51.123	-20.8	-30.323	PASS
			7323.11	-49.357	-20.8	-28.557	PASS
			9763.93	-35.923	-20.8	-15.123	PASS
			2483.50	-50.586	-20.86	-29.726	PASS
		78	4959.70	-52.109	-20.86	-31.249	PASS
			7439.85	-49.193	-20.86	-28.333	PASS
			9919.99	-35.775	-20.86	-14.915	PASS
			2398.94	-50.578	-20.03	-30.548	PASS
8DPSK	3-DH5	0	2400.00	-52.418	-20.03	-32.388	PASS
			4803.60	-46.256	-20.03	-26.226	PASS
			7205.80	-54.810	-20.03	-34.780	PASS
			9607.90	-35.232	-20.03	-15.202	PASS
		39	4882.30	-50.320	-20.52	-29.800	PASS
			7323.11	-46.167	-20.52	-25.647	PASS
			9763.93	-36.588	-20.52	-16.068	PASS
			2483.50	-51.991	-20.66	-31.331	PASS
		78	4960.33	-52.620	-20.66	-31.960	PASS
			7439.85	-45.304	-20.66	-24.644	PASS
			9919.99	-35.341	-20.66	-14.681	PASS
			2398.94	-50.578	-20.03	-30.548	PASS

Hopping

Hopping							
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2398.51	-48.999	-20.6	-28.399	PASS
			2400.00	-51.367	-20.6	-30.767	PASS
			2483.50	-50.934	-21.26	-29.674	PASS
			2398.70	-49.425	-20.23	-29.195	PASS
			2400.00	-51.493	-20.23	-31.263	PASS
			2483.50	-51.694	-21.24	-30.454	PASS
			2398.14	-49.804	-20.43	-29.374	PASS
			2400.00	-51.312	-20.43	-30.882	PASS
2483.50	-51.998		-21.13	-30.868	PASS		
π/4DQPSK	2-DH5		2398.53	-50.224	-20.42	-29.804	PASS
			2400.00	-51.072	-20.42	-30.652	PASS
			2483.50	-50.918	-22.11	-28.808	PASS
			2395.18	-49.398	-20.14	-29.258	PASS
			2400.00	-51.366	-20.14	-31.226	PASS
			2483.50	-51.188	-21.14	-30.048	PASS
			2395.21	-49.657	-21.69	-27.967	PASS
		2400.00	-51.947	-21.69	-30.257	PASS	
8DPSK	3-DH5	2483.50	-51.066	-21.04	-30.026	PASS	
		2398.07	-49.754	-20.33	-29.424	PASS	

			2400.00	-52.037	-20.33	-31.707	PASS
			2483.50	-51.345	-20.98	-30.365	PASS
			2396.60	-49.367	-20.34	-29.027	PASS
			2400.00	-51.317	-20.34	-30.977	PASS
			2483.50	-50.508	-24.67	-25.838	PASS
			2398.35	-50.130	-20.3	-29.830	PASS
			2400.00	-52.663	-20.3	-32.363	PASS
			2483.50	-51.877	-20.77	-31.107	PASS

Test Graphs

Agilent Spectrum Analyzer - Sweep 5A Center Freq 2.402000000 GHz PRD: Wide # Gain: Low Trig: Free Run #atten: 26 dB Avg Type: Log-Pwr AveHold: 100/100 05:26:45.94 Jun 10, 2025 TRACE 1 [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11] TIME 10.000 s DET P P P P P P P Center 2.402000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) Span 10.00 MHz <table><thead><tr><th>MN</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2400.00 GHz</td><td>-50.607 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2401.96 GHz</td><td>-0.221 dBm</td><td></td><td></td><td></td></tr></tbody></table> Model: [Status]	MN	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2400.00 GHz	-50.607 dBm				2	N	1	f	2401.96 GHz	-0.221 dBm				Agilent Spectrum Analyzer - Sweep 5A Center Freq 2.402000000 GHz PRD: Wide # Gain: Low Trig: Free Run #atten: 26 dB Avg Type: Log-Pwr AveHold: 100/100 05:26:10.94 Jun 10, 2025 TRACE 1 [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11] TIME 10.000 s DET P P P P P P P Center 2.402000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) Span 10.00 MHz <table><thead><tr><th>MN</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2398.80 GHz</td><td>-51.047 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2400.00 GHz</td><td>-51.974 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2401.96 GHz</td><td>-0.808 dBm</td><td></td><td></td><td></td></tr></tbody></table> Model: [Status]	MN	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2398.80 GHz	-51.047 dBm				2	N	1	f	2400.00 GHz	-51.974 dBm				3	N	1	f	2401.96 GHz	-0.808 dBm																														
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Agilent Spectrum Analyzer - Sweep 5A Center Freq 12.515000000 GHz PRD: Fast # Gain: Low Trig: Free Run #atten: 14 dB Avg Type: Log-Pwr AveHold: 10/10 05:20:20.94 Jun 10, 2025 TRACE 1 [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11] TIME 10.000 s DET P P P P P P P Center 12.515000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (40001 pts) Start 30 MHz Stop 25.00 GHz <table><thead><tr><th>MN</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>4804.3 GHz</td><td>-46.614 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>7205.8 GHz</td><td>-47.738 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>9607.9 GHz</td><td>-36.620 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2402.2 GHz</td><td>-1.181 dBm</td><td></td><td></td><td></td></tr></tbody></table> Model: [Status]	MN	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	4804.3 GHz	-46.614 dBm				2	N	1	f	7205.8 GHz	-47.738 dBm				3	N	1	f	9607.9 GHz	-36.620 dBm				4	N	1	f	2402.2 GHz	-1.181 dBm				Agilent Spectrum Analyzer - Sweep 5A Center Freq 12.515000000 GHz PRD: Fast # Gain: Low Trig: Free Run #atten: 14 dB Avg Type: Log-Pwr AveHold: 10/10 05:20:45.94 Jun 10, 2025 TRACE 1 [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11] TIME 10.000 s DET P P P P P P P Center 12.515000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (40001 pts) Start 30 MHz Stop 25.00 GHz <table><thead><tr><th>MN</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>4803.6 GHz</td><td>-50.659 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>7205.8 GHz</td><td>-46.795 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>9607.9 GHz</td><td>-36.226 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2401.5 GHz</td><td>-3.931 dBm</td><td></td><td></td><td></td></tr></tbody></table> Model: [Status]	MN	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	4803.6 GHz	-50.659 dBm				2	N	1	f	7205.8 GHz	-46.795 dBm				3	N	1	f	9607.9 GHz	-36.226 dBm				4	N	1	f	2401.5 GHz	-3.931 dBm			
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Agilent Spectrum Analyzer - Sweep 5A Center Freq 2.441000000 GHz PRD: Wide # Gain: Low Trig: Free Run #atten: 26 dB Avg Type: Log-Pwr AveHold: 100/100 05:20:40.94 Jun 10, 2025 TRACE 1 [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11] TIME 10.000 s DET P P P P P P P Center 2.441000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) Span 10.00 MHz <table><thead><tr><th>MN</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2440.96 GHz</td><td>-0.602 dBm</td><td></td><td></td><td></td></tr></tbody></table> Model: [Status]	MN	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2440.96 GHz	-0.602 dBm				Agilent Spectrum Analyzer - Sweep 5A Center Freq 2.441000000 GHz PRD: Wide # Gain: Low Trig: Free Run #atten: 26 dB Avg Type: Log-Pwr AveHold: 100/100 05:30:14.94 Jun 10, 2025 TRACE 1 [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11] TIME 10.000 s DET P P P P P P P Center 2.441000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) Span 10.00 MHz <table><thead><tr><th>MN</th><th>MODE</th><th>TRC</th><th>SOL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2440.84 GHz</td><td>-0.799 dBm</td><td></td><td></td><td></td></tr></tbody></table> Model: [Status]	MN	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2440.84 GHz	-0.799 dBm																																																									
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