

Appendix A: Test Result of Conducted Test

20dB Occupied Bandwidth

Test Result

Mode	Channel.	20dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
GFSK	LCH	1.048	0.91400	PASS
GFSK	MCH	1.496	1.0120	PASS
GFSK	HCH	1.071	0.96035	PASS
$\pi/4$ DQPSK	LCH	1.189	1.0942	PASS
$\pi/4$ DQPSK	MCH	1.079	0.90598	PASS
$\pi/4$ DQPSK	HCH	1.255	1.1119	PASS
8DPSK	LCH	1.209	1.1275	PASS
8DPSK	MCH	1.264	1.1262	PASS
8DPSK	HCH	1.263	1.1041	PASS

Test Graph



GFSK/HCH



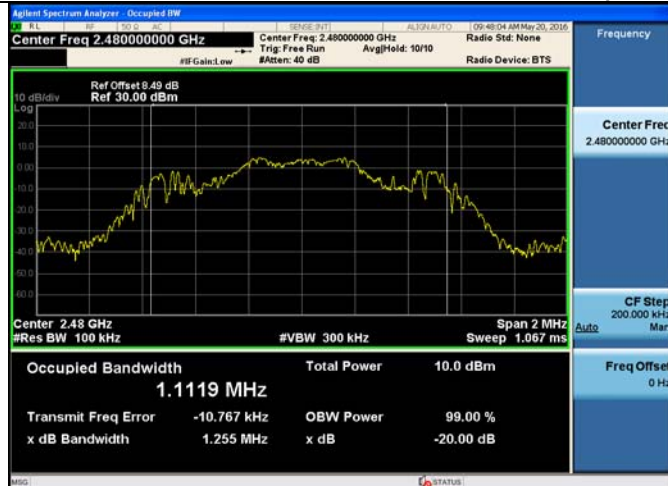
π /4DQPSK/LCH



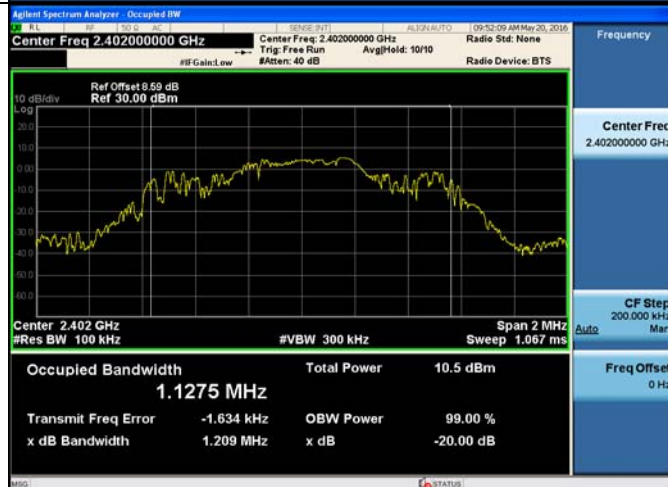
π /4DQPSK/MCH



π/4DQPSK/HCH



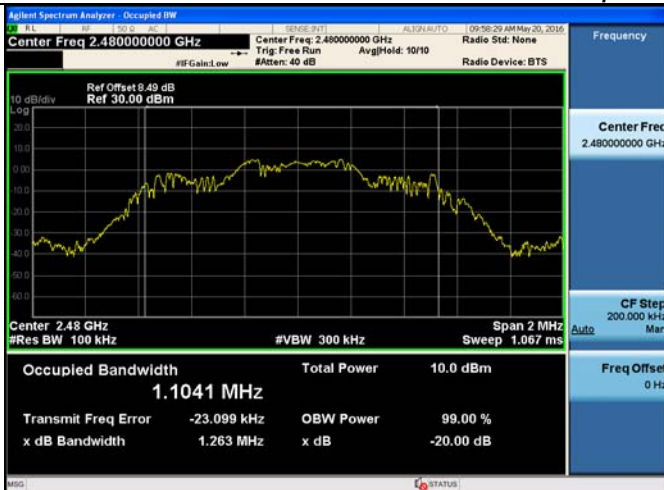
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

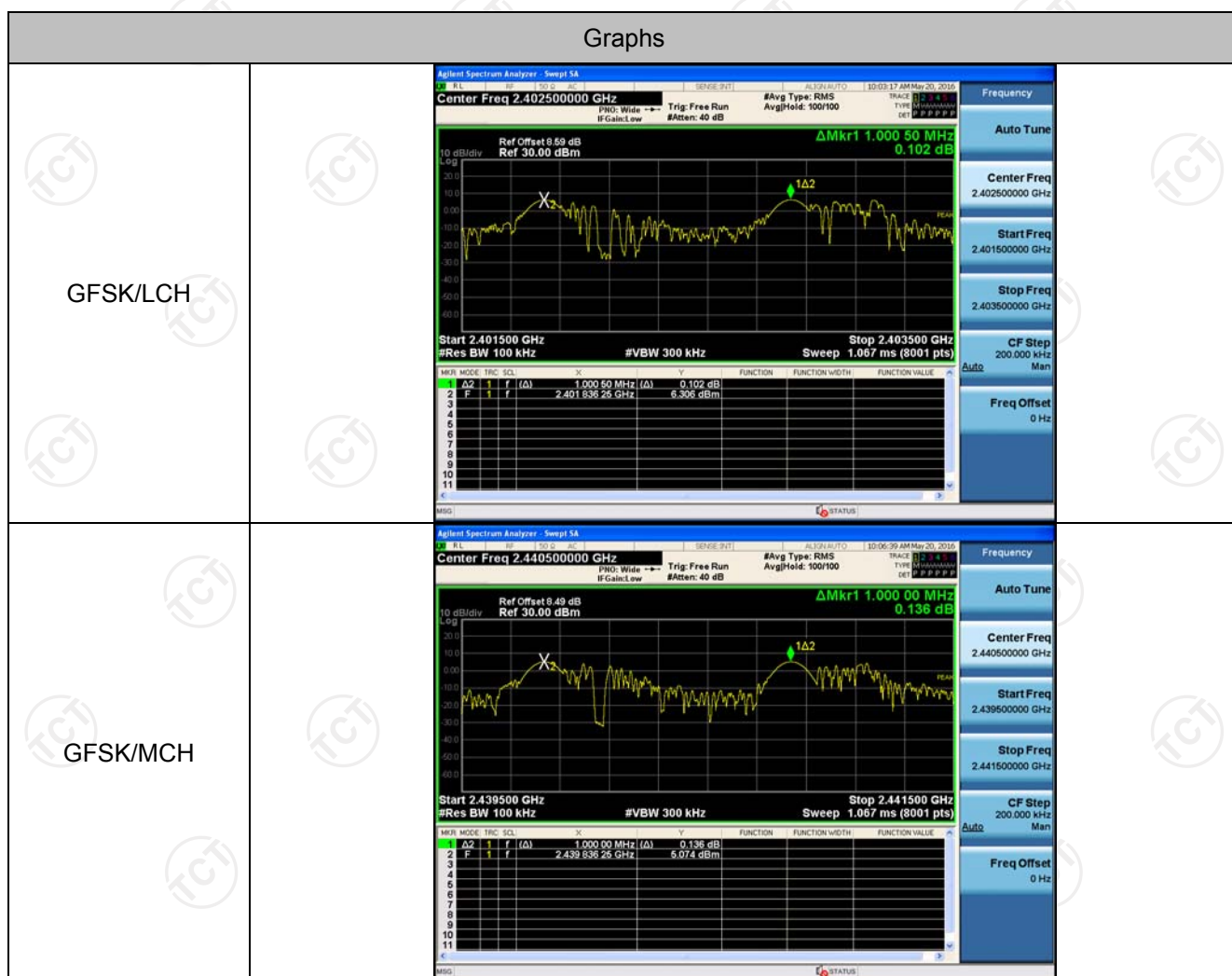


Carrier Frequency Separation

Result Table

Mode	Channel.	Carrier Frequency Separation [MHz]	Verdict
GFSK	LCH	1.001	PASS
GFSK	MCH	1.000	PASS
GFSK	HCH	1.001	PASS
$\pi/4$ DQPSK	LCH	1.007	PASS
$\pi/4$ DQPSK	MCH	0.999	PASS
$\pi/4$ DQPSK	HCH	0.996	PASS
8DPSK	LCH	0.837	PASS
8DPSK	MCH	0.854	PASS
8DPSK	HCH	0.978	PASS

Test Graph



GFSK/HCH



$\pi/4$ DQPSK/LCH



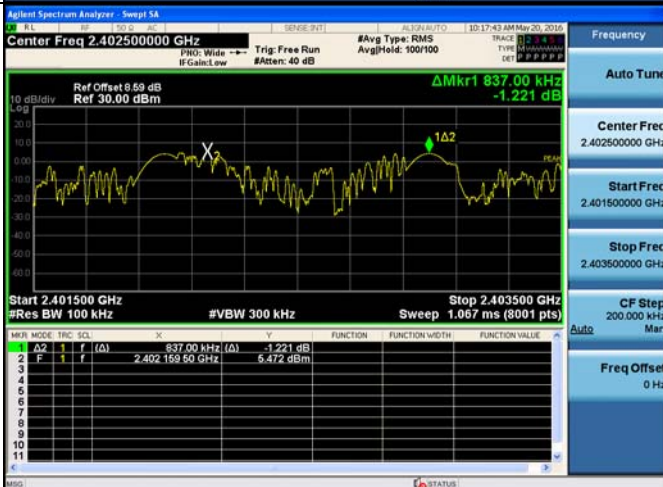
$\pi/4$ DQPSK/MCH



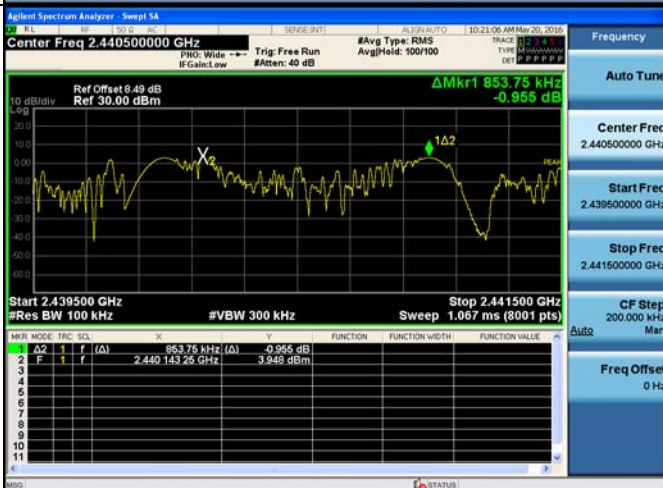
π/4DQPSK/HCH



8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



Dwell Time

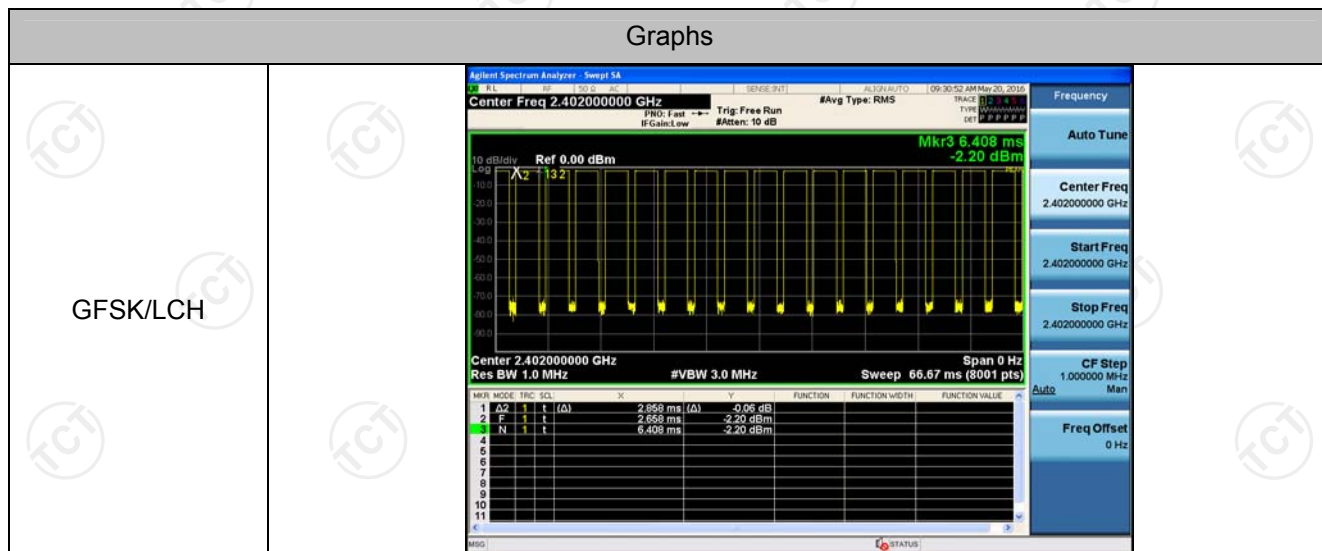
Result Table

The Dwell Time=Burst Width*Total Hops. The detailed calculations are showed as follows:

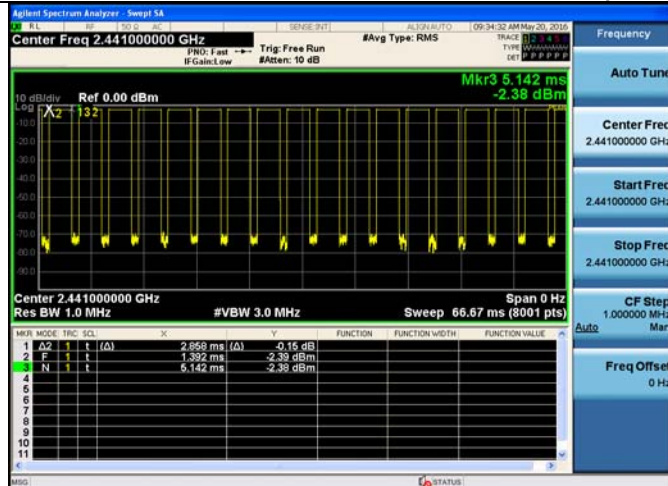
- The duration for dwell time calculation: $0.4[s] \times \text{hopping number} = 0.4[s] \times 79[\text{ch}] = 31.6[s \cdot \text{ch}]$;
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and a hopping rate of 1600 [ch*hop/s] for all channels. So the final hopping rate for all channels is $1600/6 = 266.67 [\text{ch} \cdot \text{hop/s}]$
- The hops per second on one channel: $266.67 [\text{ch} \cdot \text{hops/s}] / 79 [\text{ch}] = 3.38 [\text{hop/s}]$;
- The total hops for all channels within the dwell time calculation duration: $3.38 [\text{hop/s}] \times 31.6[s \cdot \text{ch}] = 106.67 [\text{hop} \cdot \text{ch}]$;
- The dwell time for all channels hopping: $106.67 [\text{hop} \cdot \text{ch}] \times \text{Burst Width} [\text{ms/hop/ch}]$.

Mode	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Duty Cycle [%]	Verdict
GFSK	LCH	2.858	106.7	0.305	76.22	PASS
GFSK	MCH	2.858	106.7	0.305	76.22	PASS
GFSK	HCH	2.858	106.7	0.305	76.22	PASS
$\pi/4$ DQPSK	LCH	2.867	106.7	0.306	76.44	PASS
$\pi/4$ DQPSK	MCH	2.858	106.7	0.305	76.22	PASS
$\pi/4$ DQPSK	HCH	2.858	106.7	0.305	76.22	PASS
8DPSK	LCH	2.867	106.7	0.306	76.44	PASS
8DPSK	MCH	2.867	106.7	0.306	76.44	PASS
8DPSK	HCH	2.867	106.7	0.306	76.44	PASS

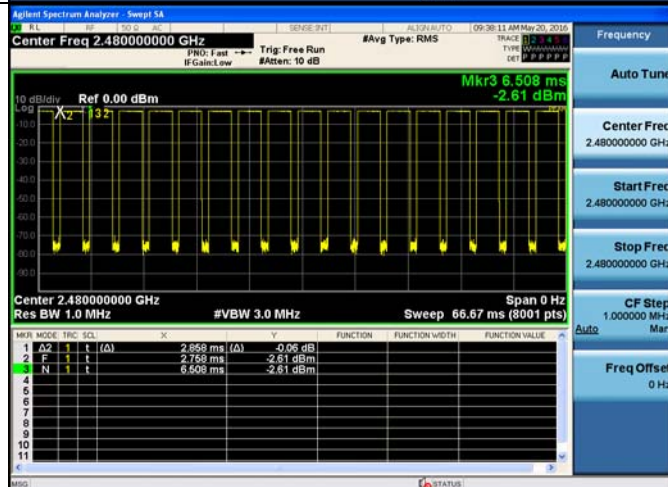
Test Graph



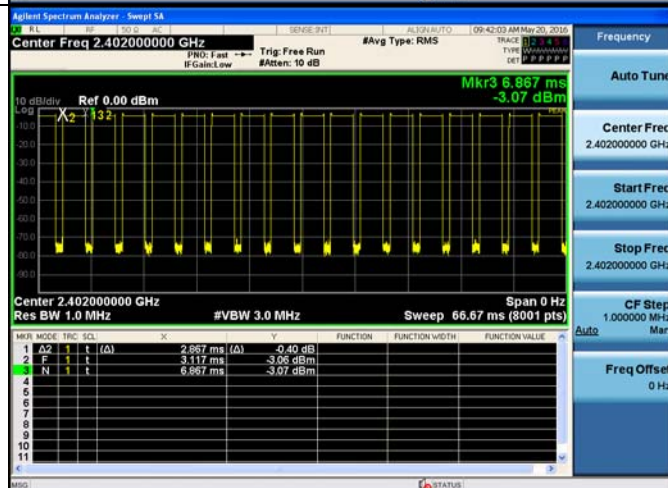
GFSK/MCH

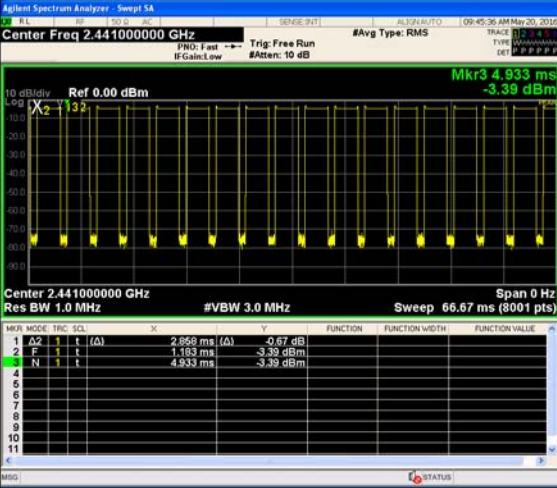
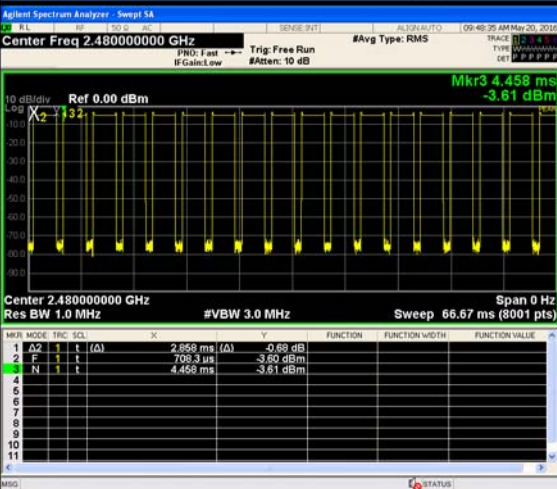
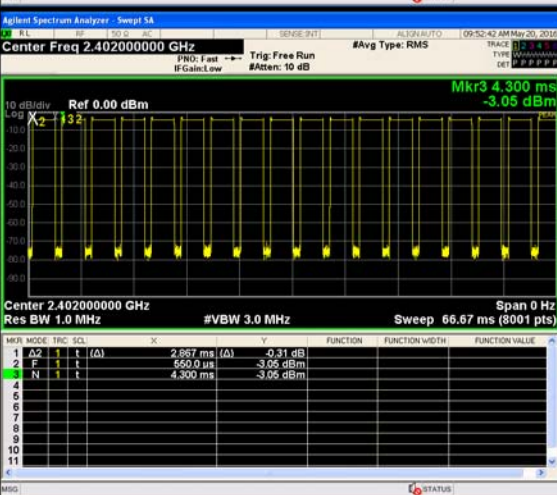


GFSK/HCH

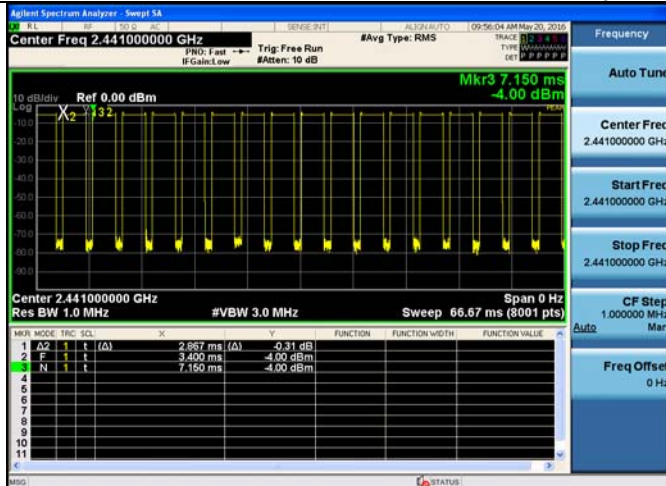


$\pi/4$ DQPSK/LCH

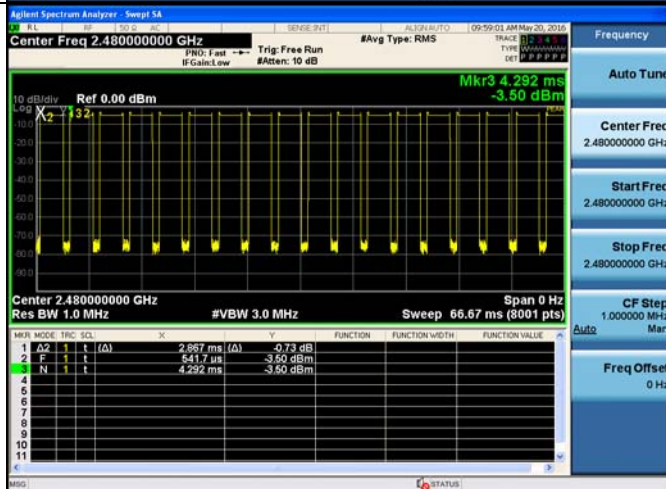


$\pi/4$DQPSK/MCH		Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.441000000 GHz Stop Freq 2.441000000 GHz CF Step 1.000000 MHz Freq Offset 0 Hz
$\pi/4$DQPSK/HCH		Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.480000000 GHz Stop Freq 2.480000000 GHz CF Step 1.000000 MHz Freq Offset 0 Hz
8DPSK/LCH		Frequency Auto Tune Center Freq 2.402000000 GHz Start Freq 2.402000000 GHz Stop Freq 2.402000000 GHz CF Step 1.000000 MHz Freq Offset 0 Hz

8DPSK/MCH



8DPSK/HCH

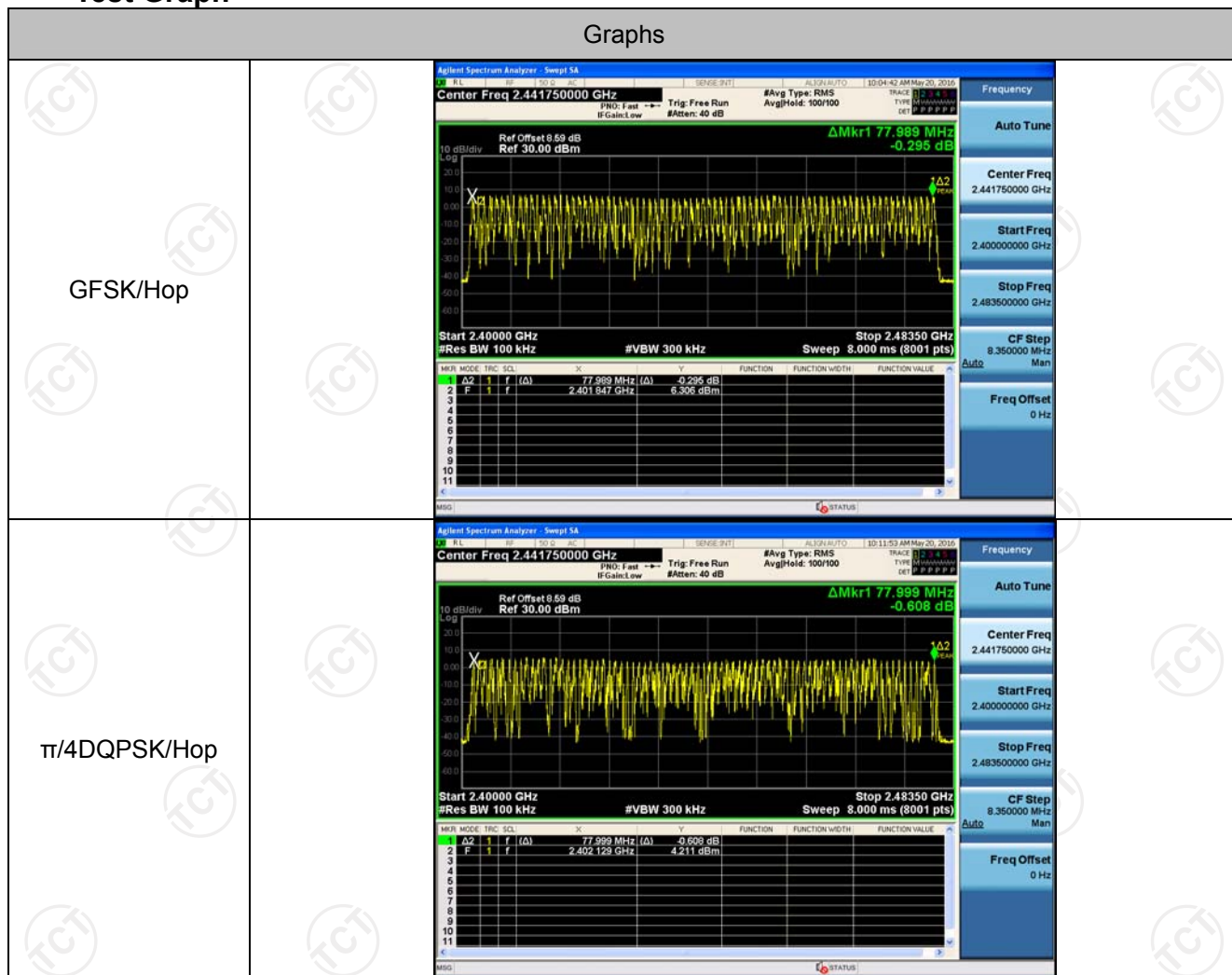


Hopping Channel Number

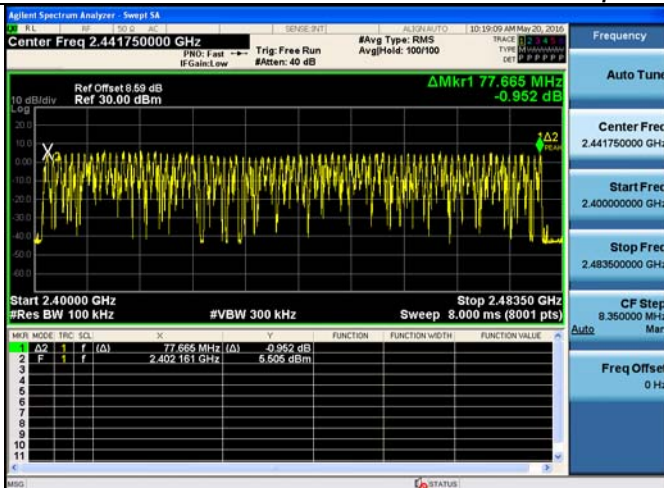
Result Table

Mode	Channel.	Number of Hopping Channel	Verdict
GFSK	Hop	79	PASS
$\pi/4$ DQPSK	Hop	79	PASS
8DPSK	Hop	79	PASS

Test Graph



8DPSK/Hop



Conducted Peak Output Power

Result Table

Mode	Channel.	Maximum Peak Output Power [dBm]	Verdict
GFSK	LCH	6.611	PASS
GFSK	MCH	6.303	PASS
GFSK	HCH	6.077	PASS
$\pi/4$ DQPSK	LCH	5.954	PASS
$\pi/4$ DQPSK	MCH	5.680	PASS
$\pi/4$ DQPSK	HCH	5.537	PASS
8DPSK	LCH	6.026	PASS
8DPSK	MCH	5.001	PASS
8DPSK	HCH	5.582	PASS

Test Graph



GFSK/HCH



$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



π/4DQPSK/HCH



8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

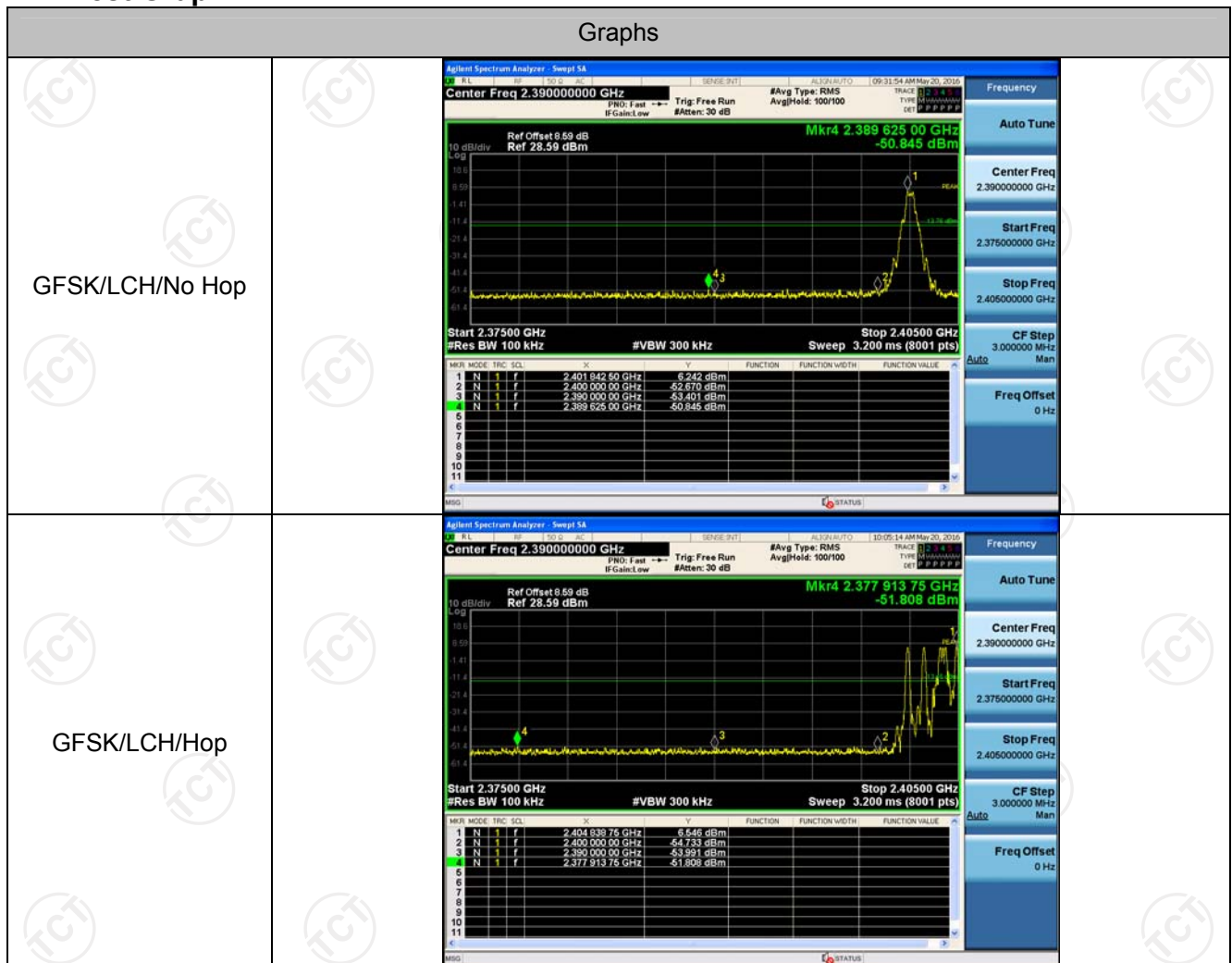


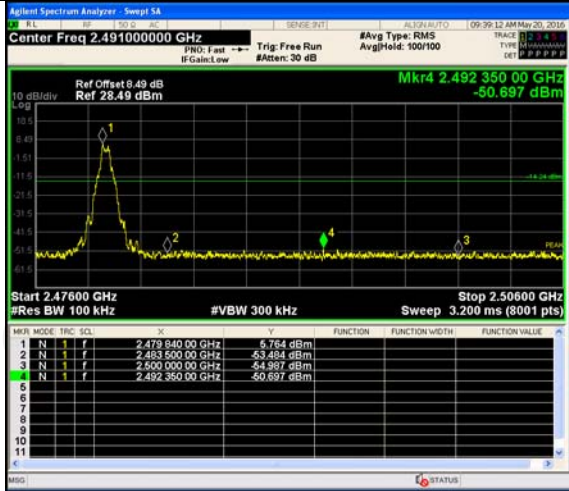
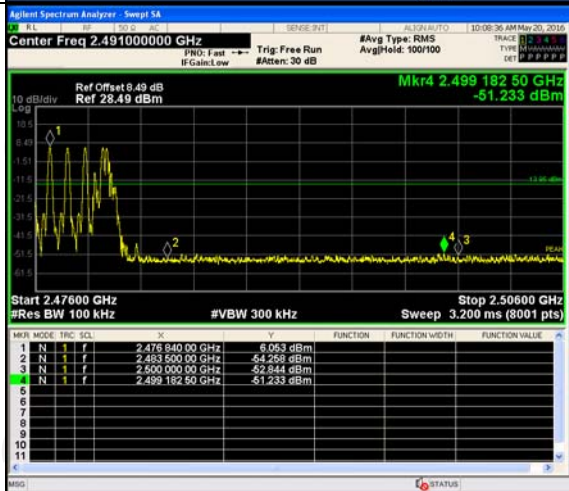
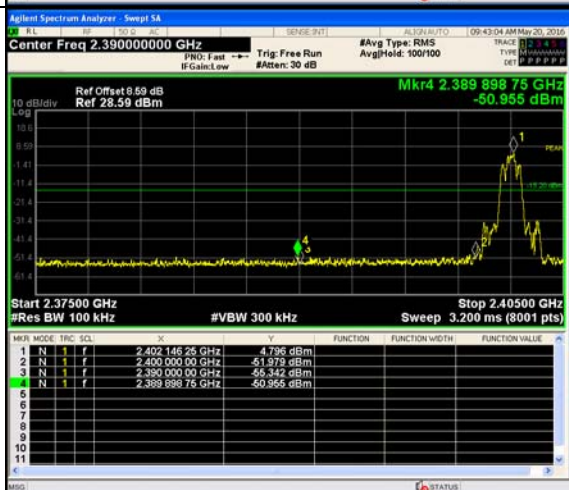
Band-edge for RF Conducted Emissions

Result Table

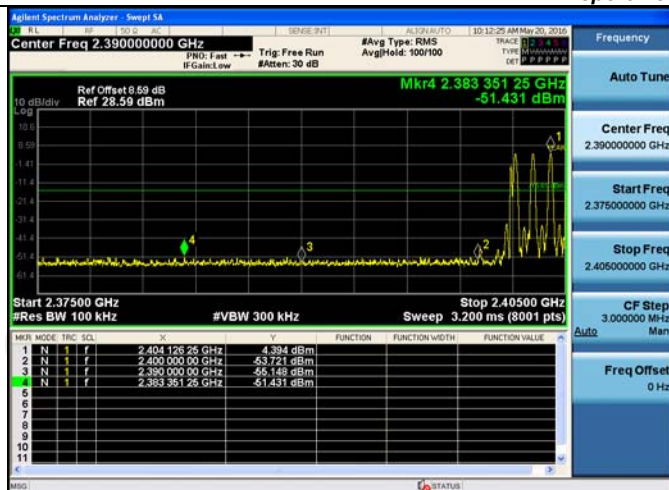
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	6.242	Off	-50.845	-13.76	PASS
			6.546	On	-51.808	-13.45	PASS
GFSK	HCH	2480	5.764	Off	-50.697	-14.24	PASS
			6.053	On	-51.233	-13.95	PASS
$\pi/4$ DQPSK	LCH	2402	4.796	Off	-50.955	-15.2	PASS
			4.394	On	-51.431	-15.61	PASS
$\pi/4$ DQPSK	HCH	2480	4.551	Off	-50.930	-15.45	PASS
			3.689	On	-51.405	-16.31	PASS
8DPSK	LCH	2402	4.711	Off	-50.515	-15.29	PASS
			4.402	On	-51.386	-15.6	PASS
8DPSK	HCH	2480	4.922	Off	-50.983	-15.08	PASS
			3.624	On	-50.185	-16.38	PASS

Test Graph

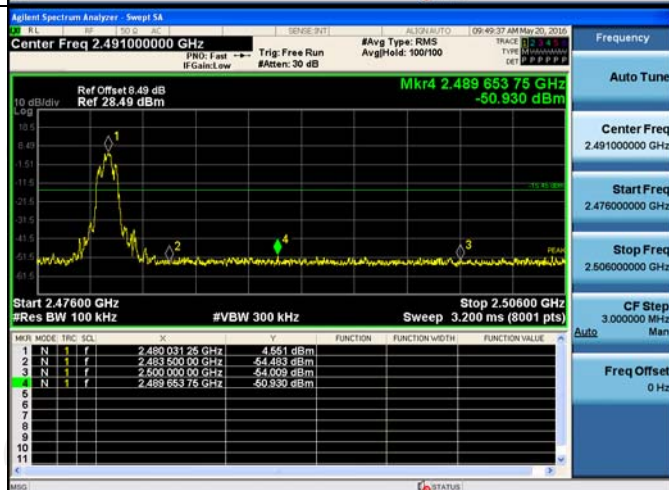


GFSK/HCH/No Hop	 <table><tr><th>MNR</th><th>MODE</th><th>TRF</th><th>SOL</th><th>F</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.479 840 00 GHz</td><td>5.764 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.483 500 00 GHz</td><td>-53.484 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.500 000 00 GHz</td><td>-54.987 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.492 350 00 GHz</td><td>-50.697 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	TRF	SOL	F	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.479 840 00 GHz	5.764 dBm				2	N	1	f	2.483 500 00 GHz	-53.484 dBm				3	N	1	f	2.500 000 00 GHz	-54.987 dBm				4	N	1	f	2.492 350 00 GHz	-50.697 dBm				<table><tr><td>Frequency</td><td></td></tr><tr><td>Auto Tune</td><td></td></tr><tr><td>Center Freq</td><td>2.491000000 GHz</td></tr><tr><td>Start Freq</td><td>2.476000000 GHz</td></tr><tr><td>Stop Freq</td><td>2.506000000 GHz</td></tr><tr><td>CF Step</td><td>3.000000 MHz</td></tr><tr><td>Auto</td><td>Man</td></tr><tr><td>Freq Offset</td><td>0 Hz</td></tr></table>	Frequency		Auto Tune		Center Freq	2.491000000 GHz	Start Freq	2.476000000 GHz	Stop Freq	2.506000000 GHz	CF Step	3.000000 MHz	Auto	Man	Freq Offset	0 Hz
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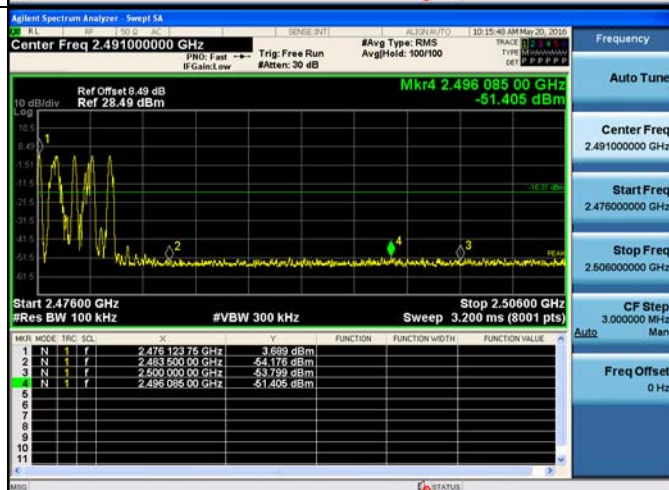
$\pi/4$ DQPSK/LCH/Hop



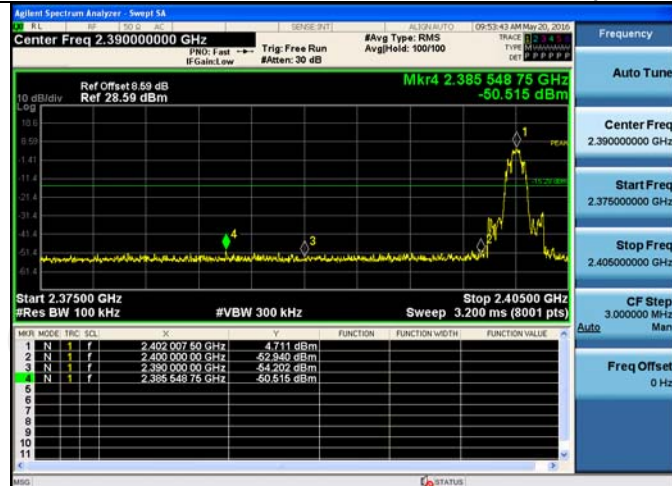
$\pi/4$ DQPSK/HCH/No Hop



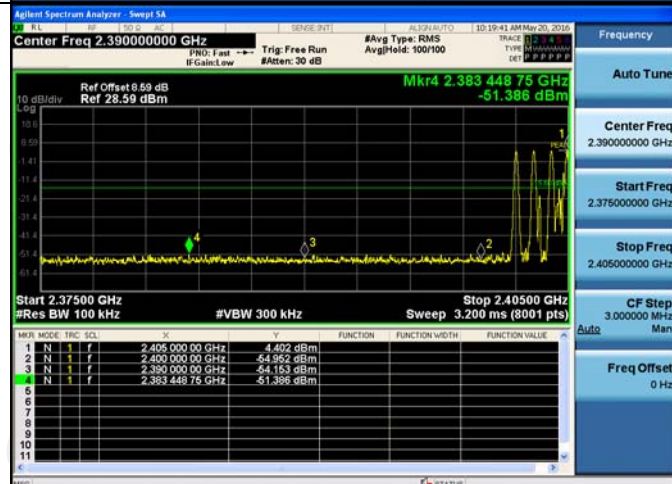
$\pi/4$ DQPSK/HCH/Hop



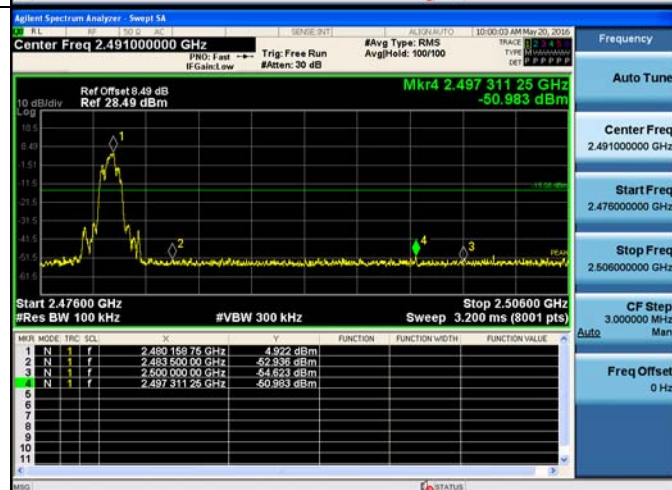
8DPSK/LCH/No Hop



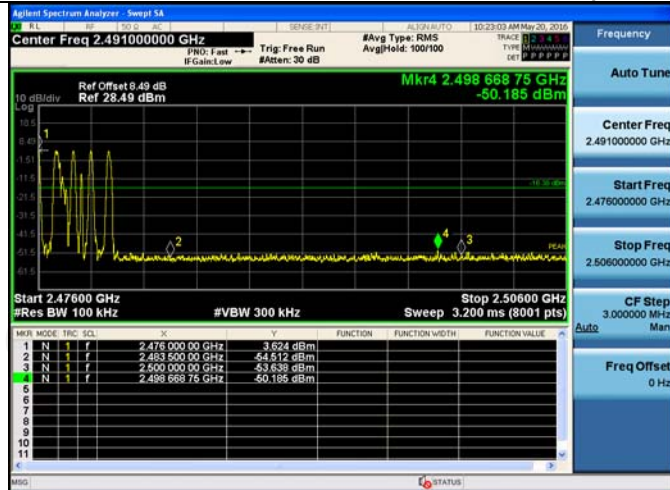
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



8DPSK/HCH/Hop

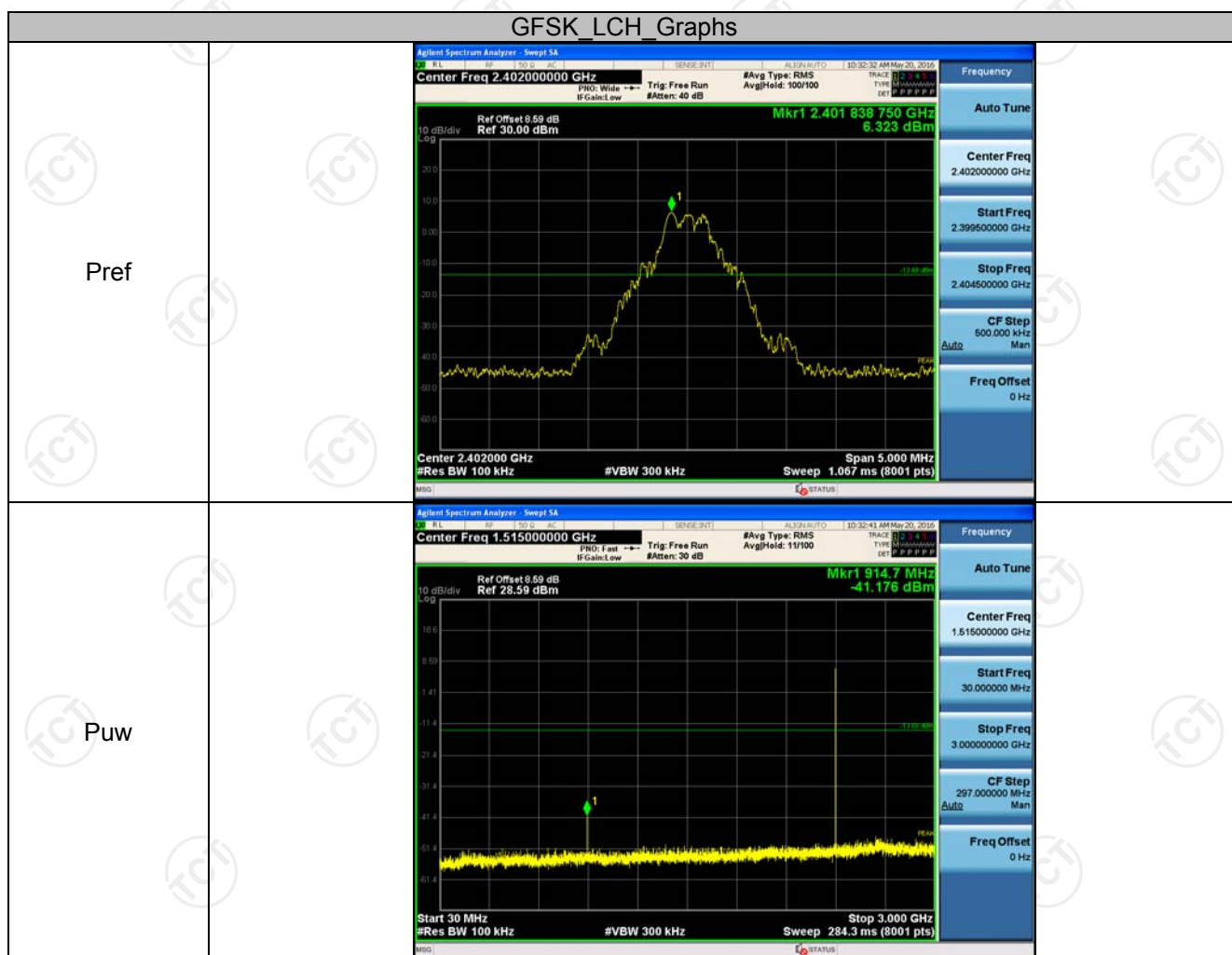


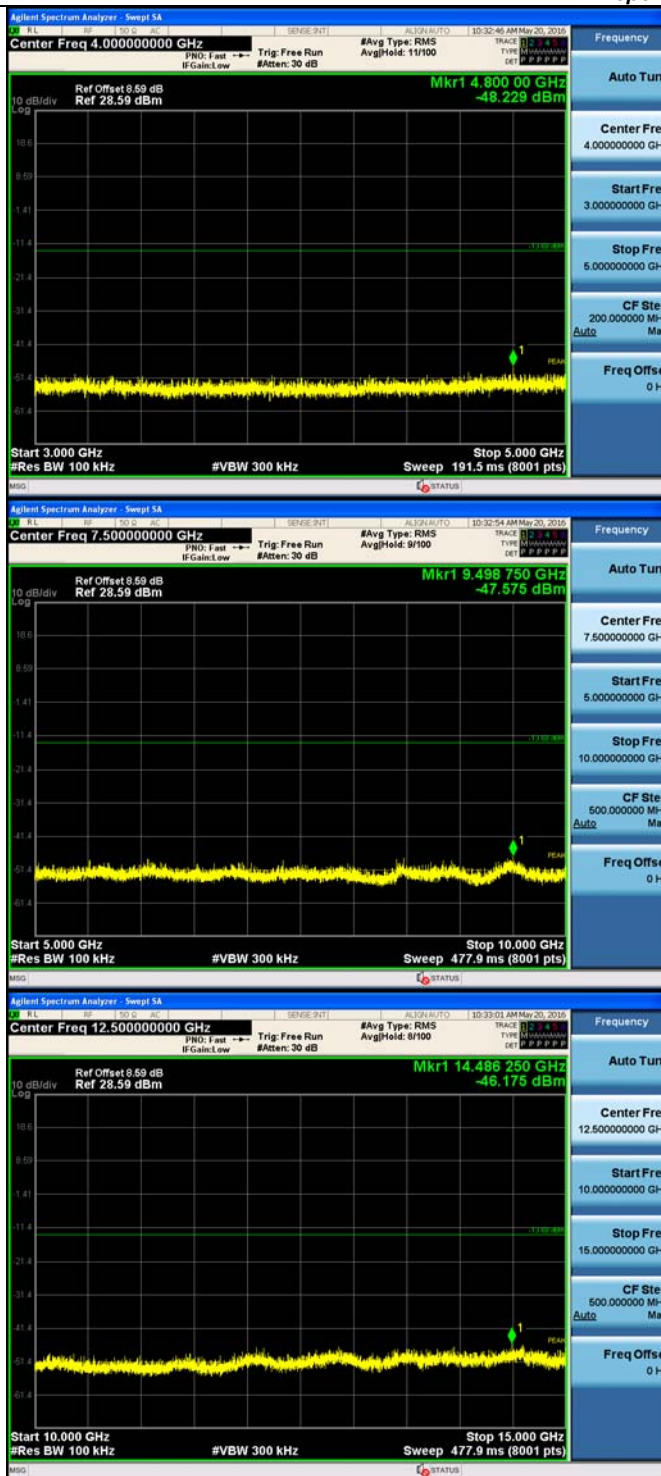
RF Conducted Spurious Emissions

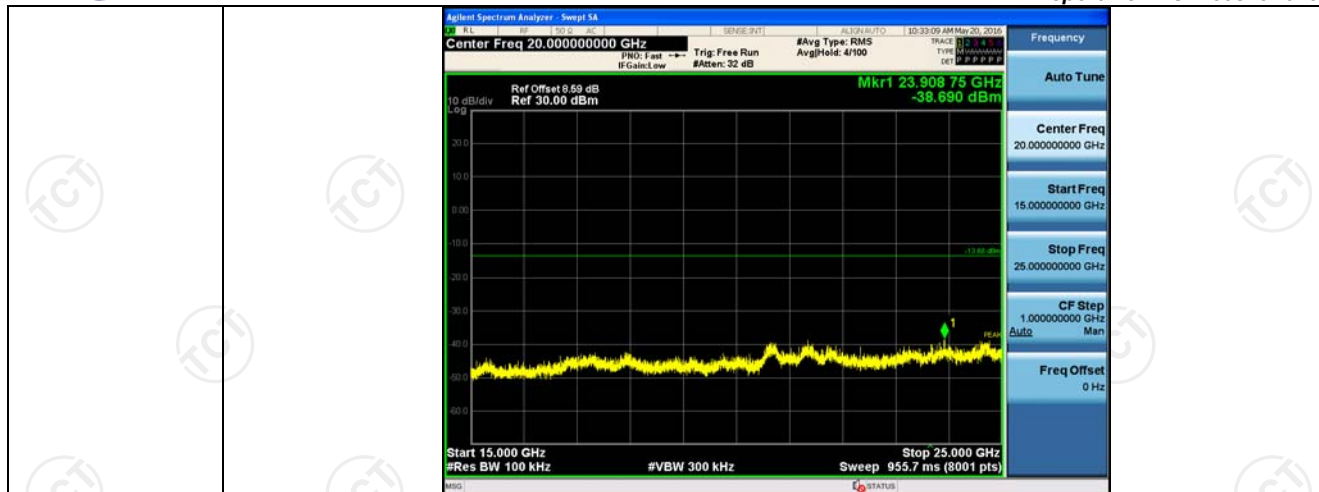
Result Table

Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
GFSK	LCH	6.323	<Limit	PASS
GFSK	MCH	5.981	<Limit	PASS
GFSK	HCH	5.762	<Limit	PASS
π /4DQPSK	LCH	4.665	<Limit	PASS
π /4DQPSK	MCH	4.938	<Limit	PASS
π /4DQPSK	HCH	4.172	<Limit	PASS
8DPSK	LCH	4.885	<Limit	PASS
8DPSK	MCH	3.678	<Limit	PASS
8DPSK	HCH	4.382	<Limit	PASS

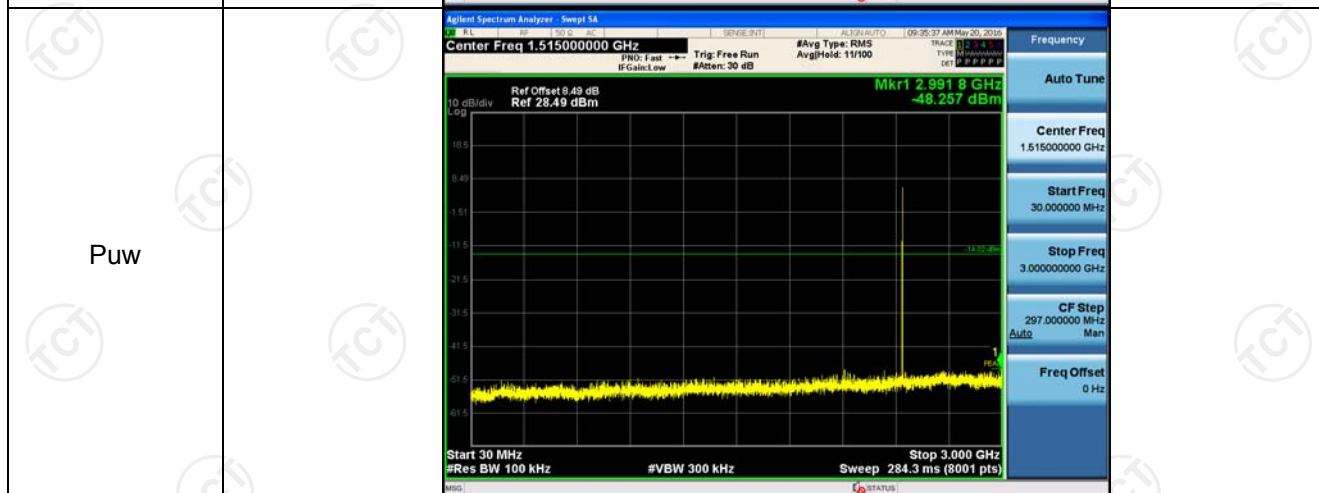
Test Graph

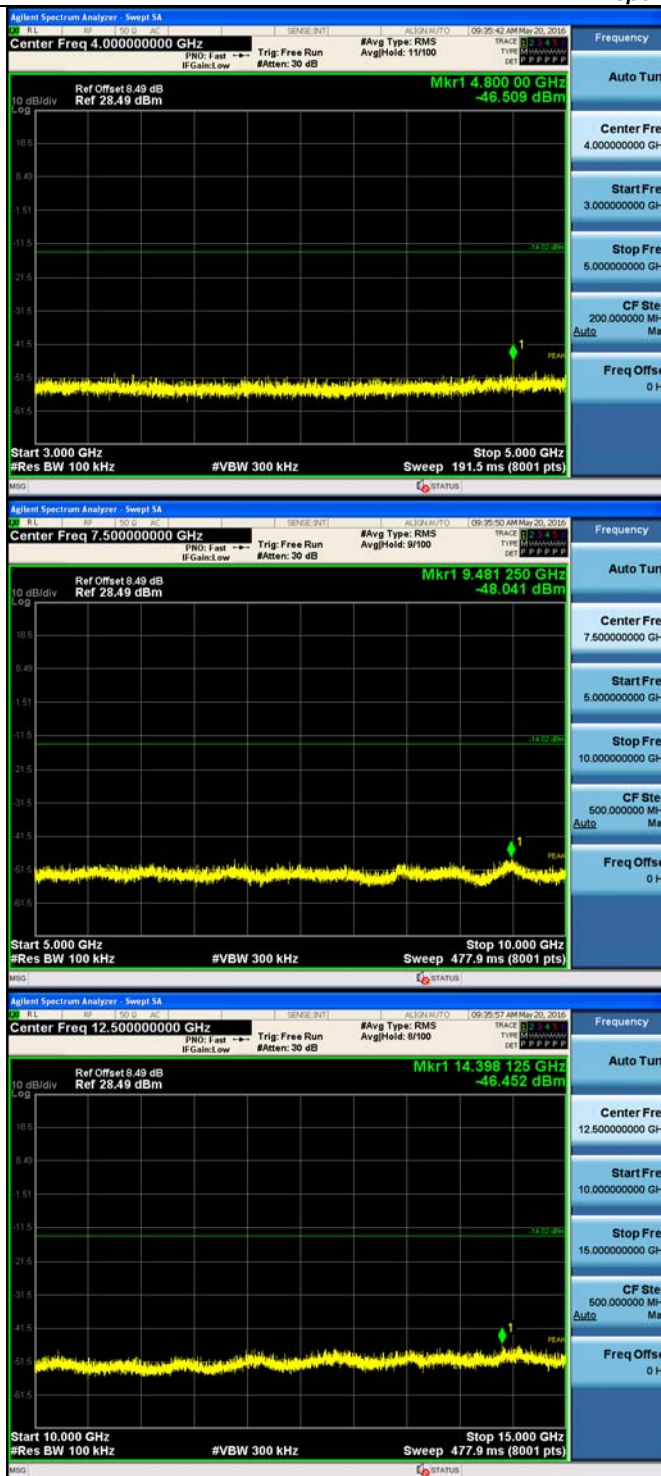


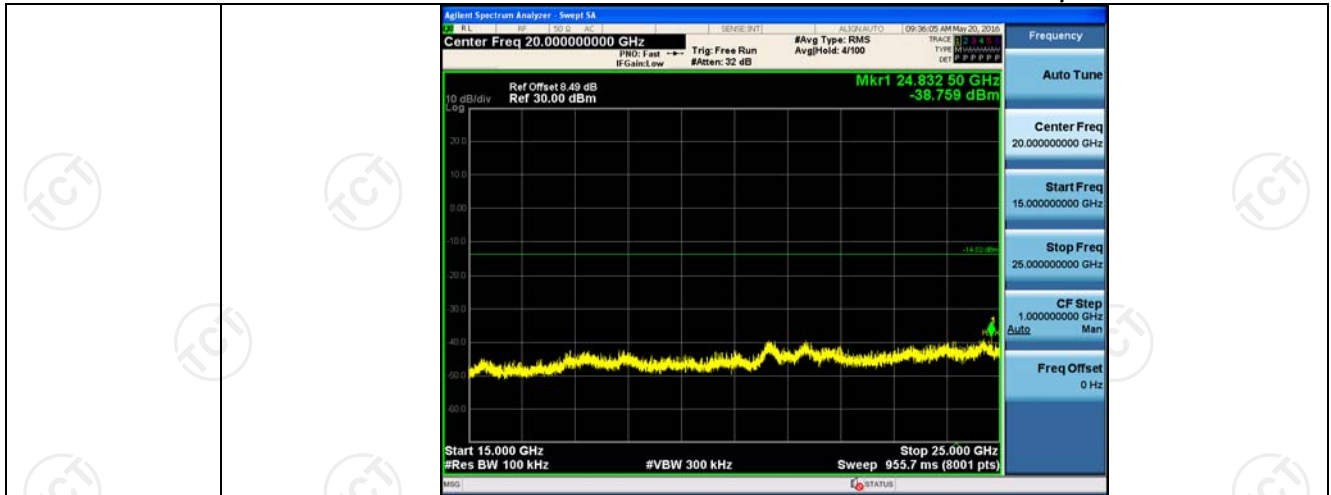




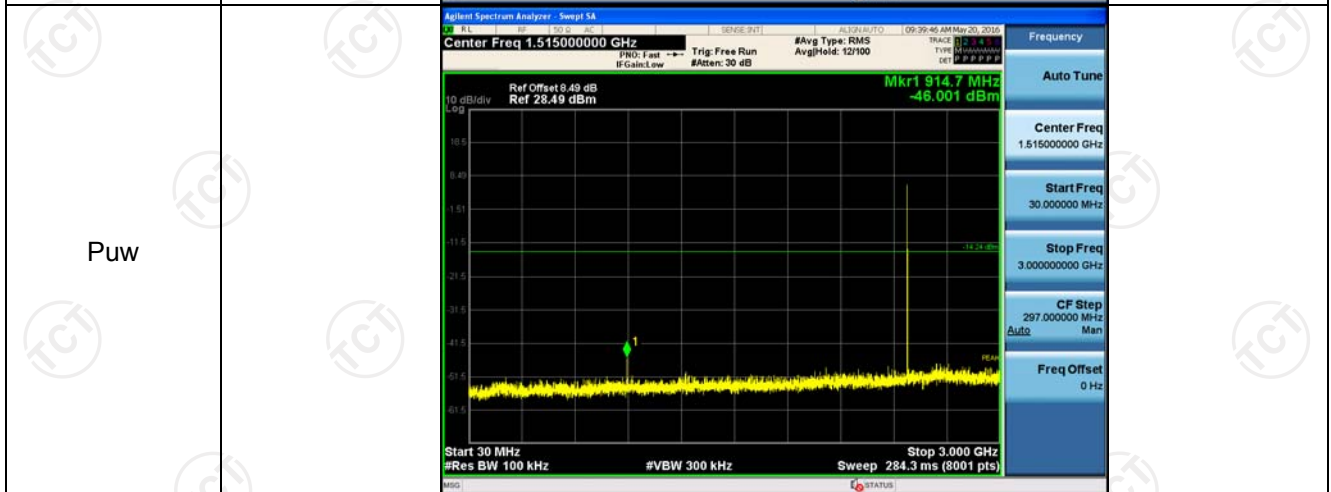
GFSK_MCH_Graphs

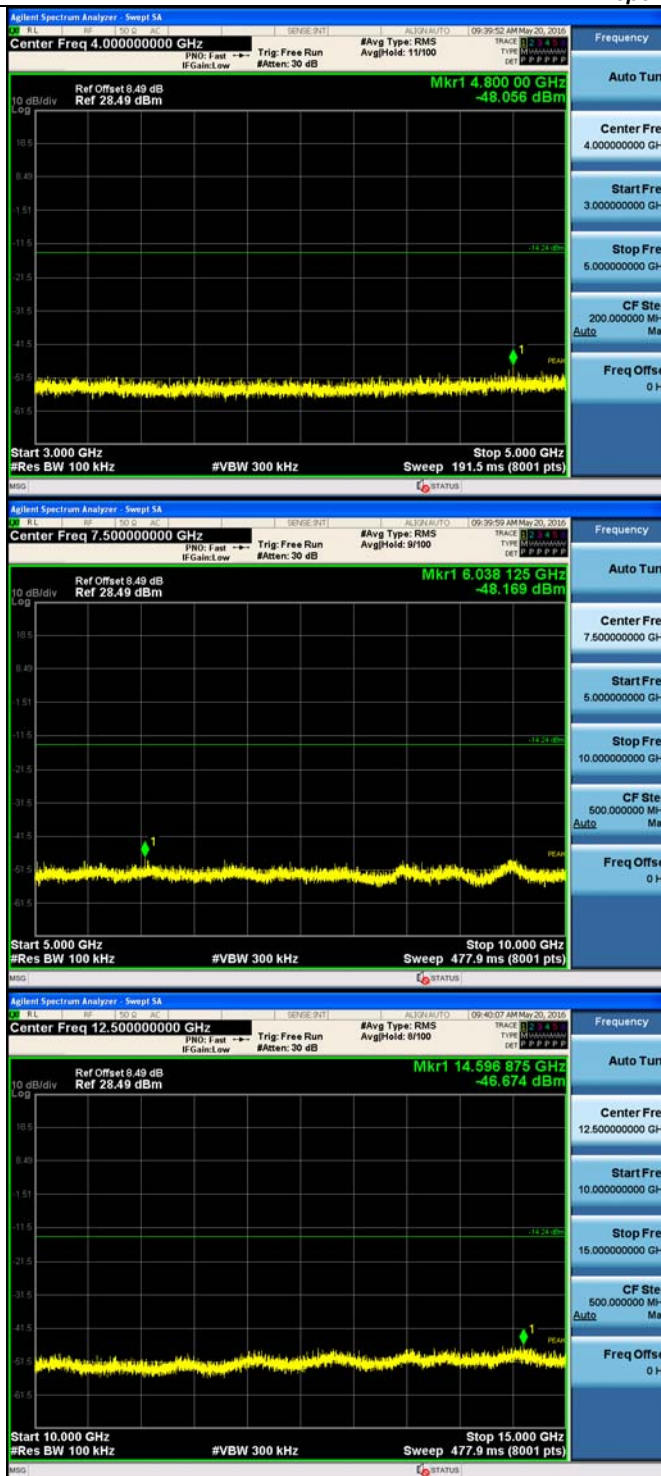


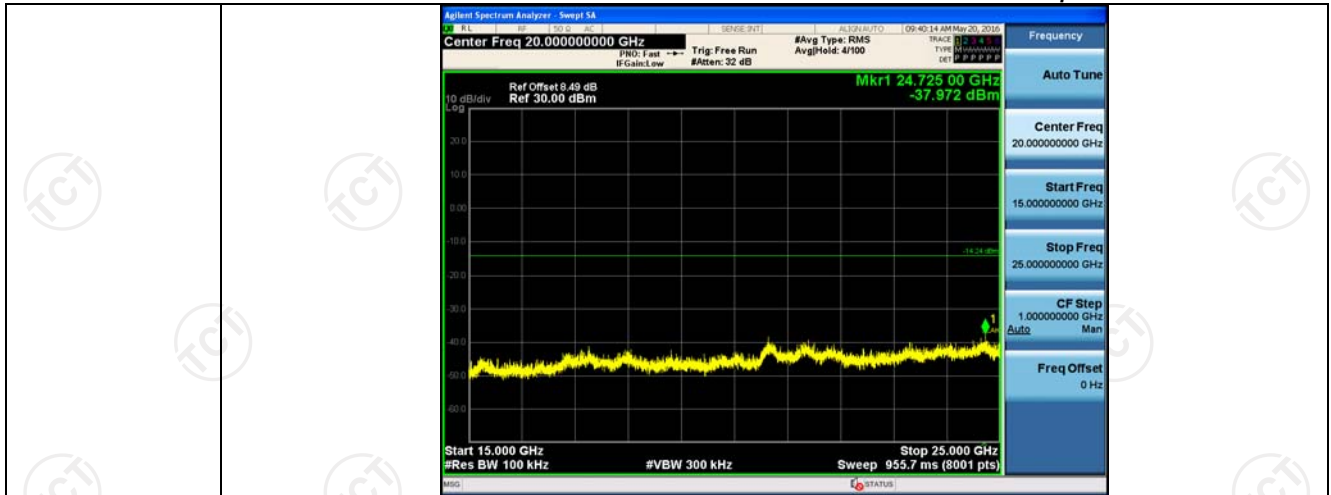




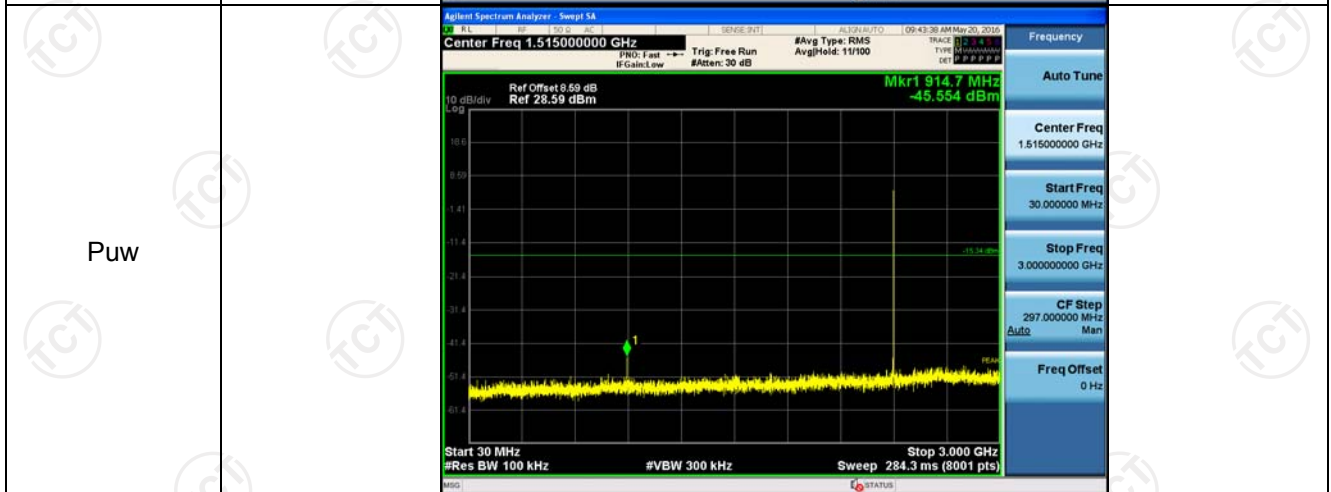
GFSK HCH_Graphs

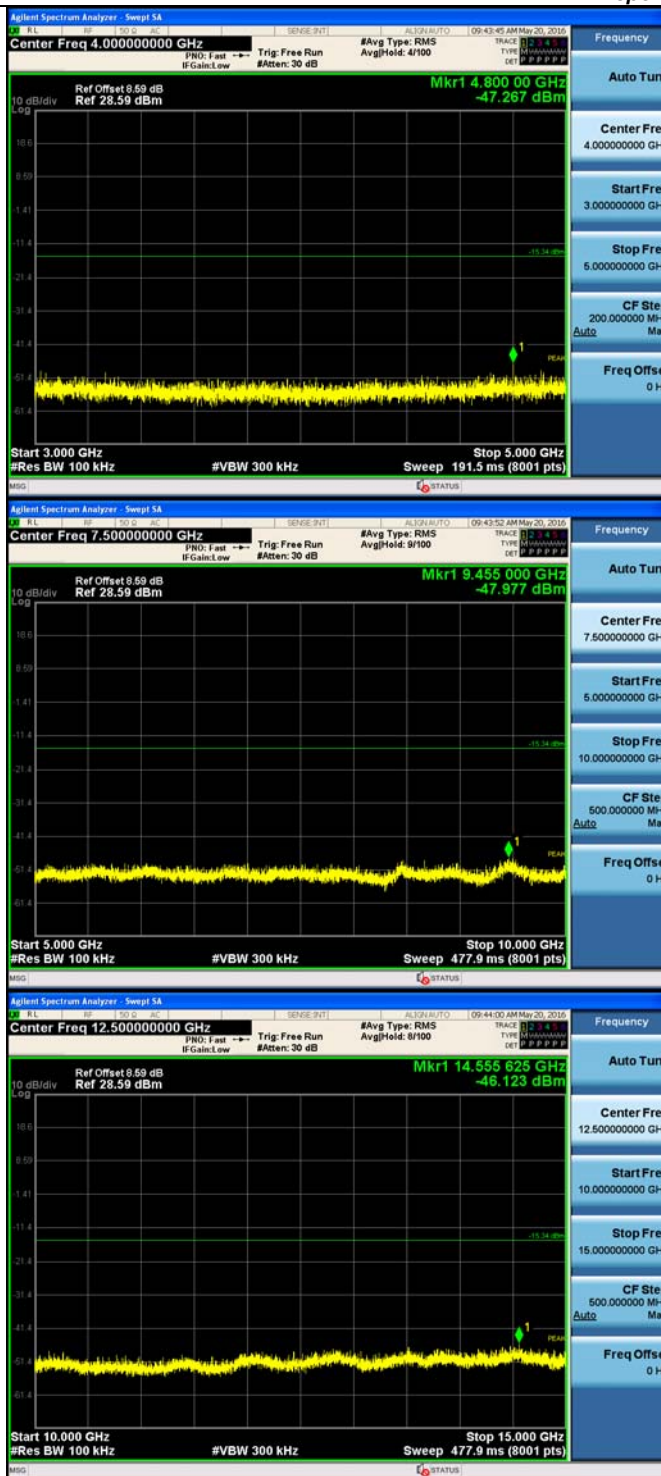


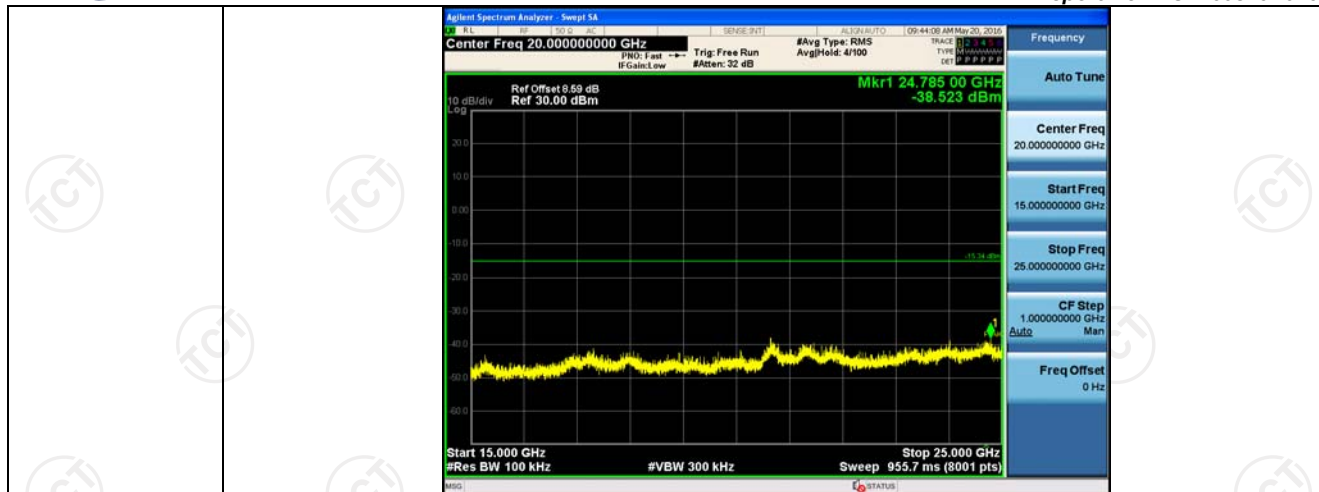




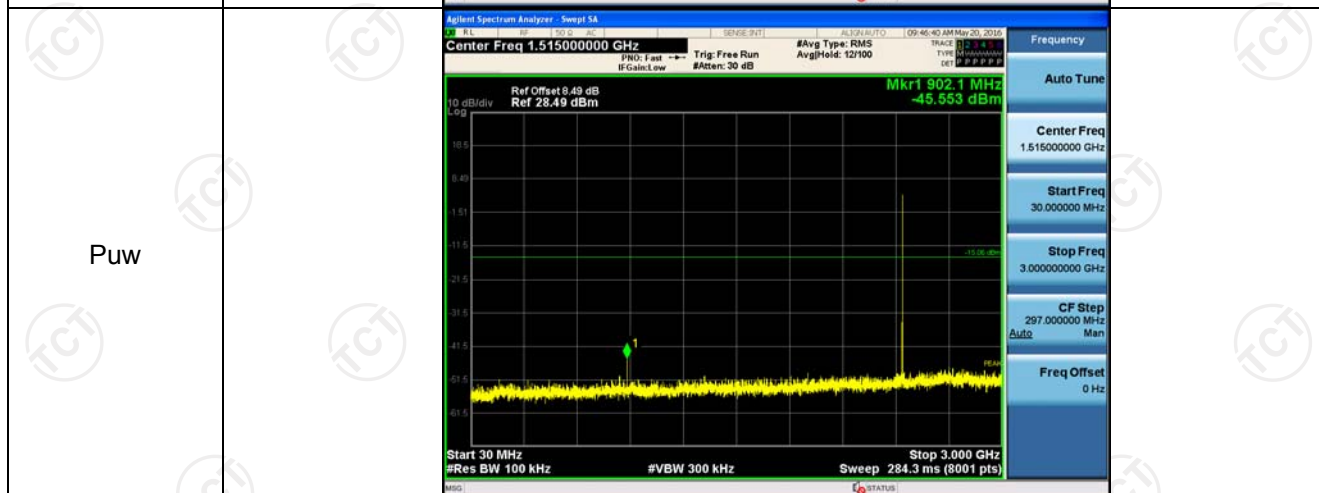
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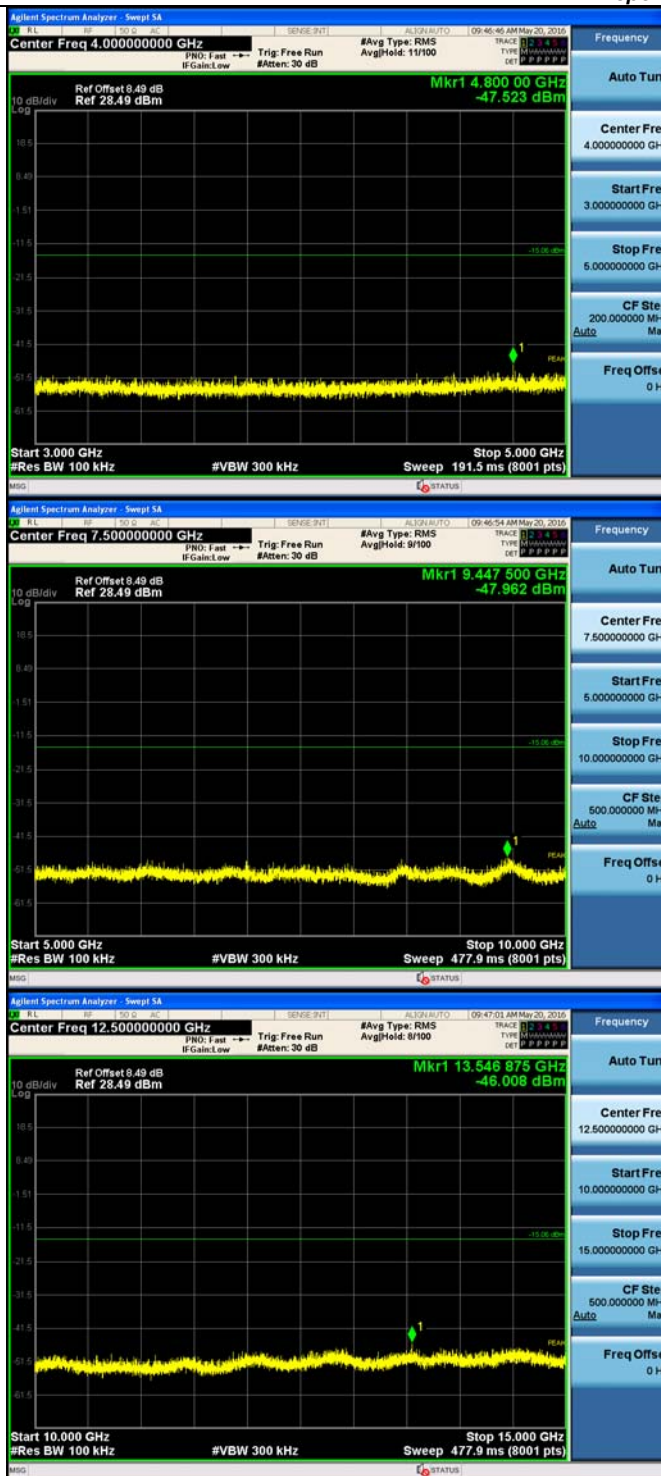


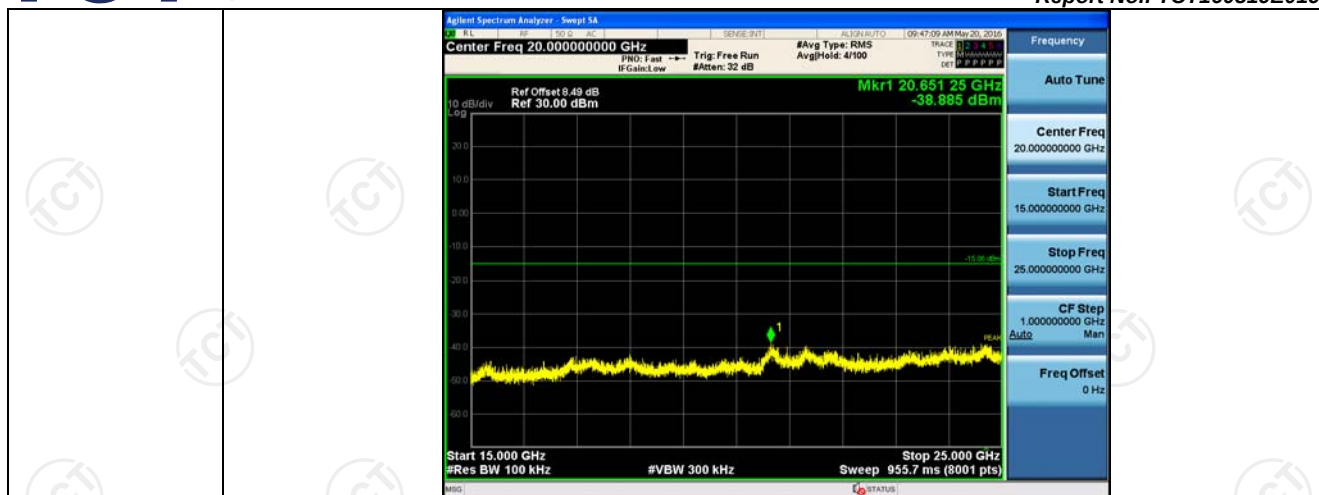




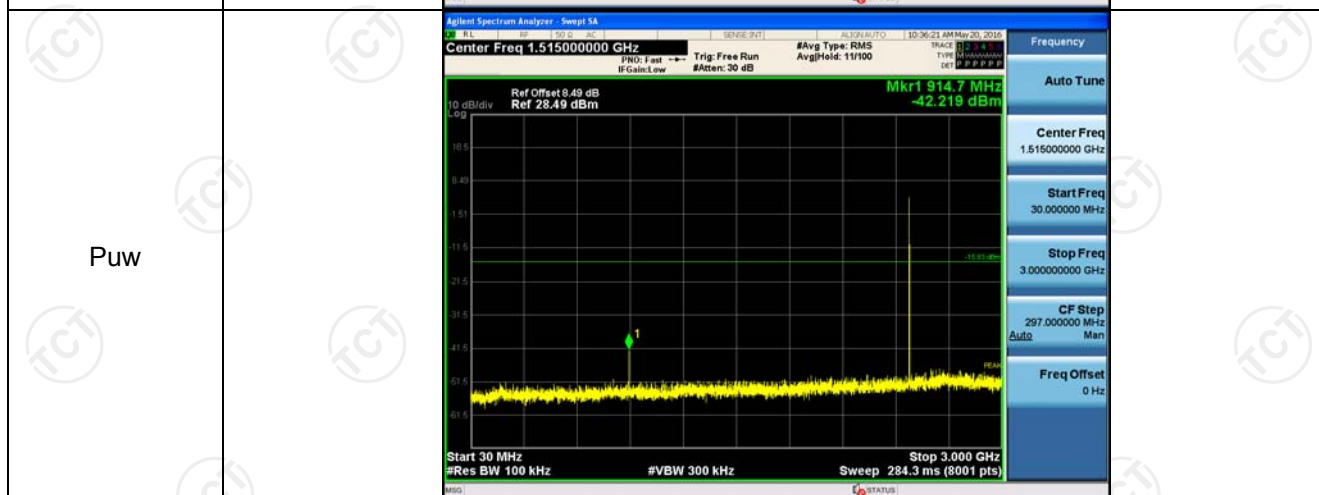
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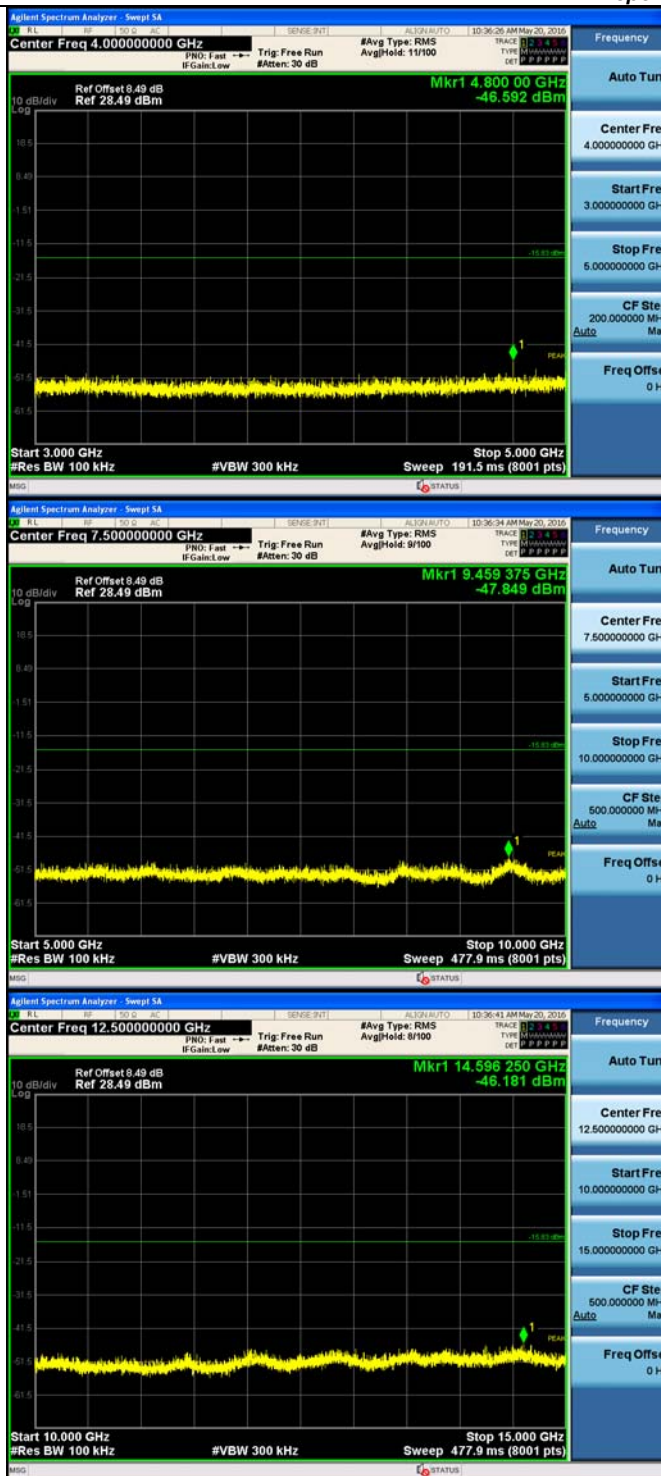


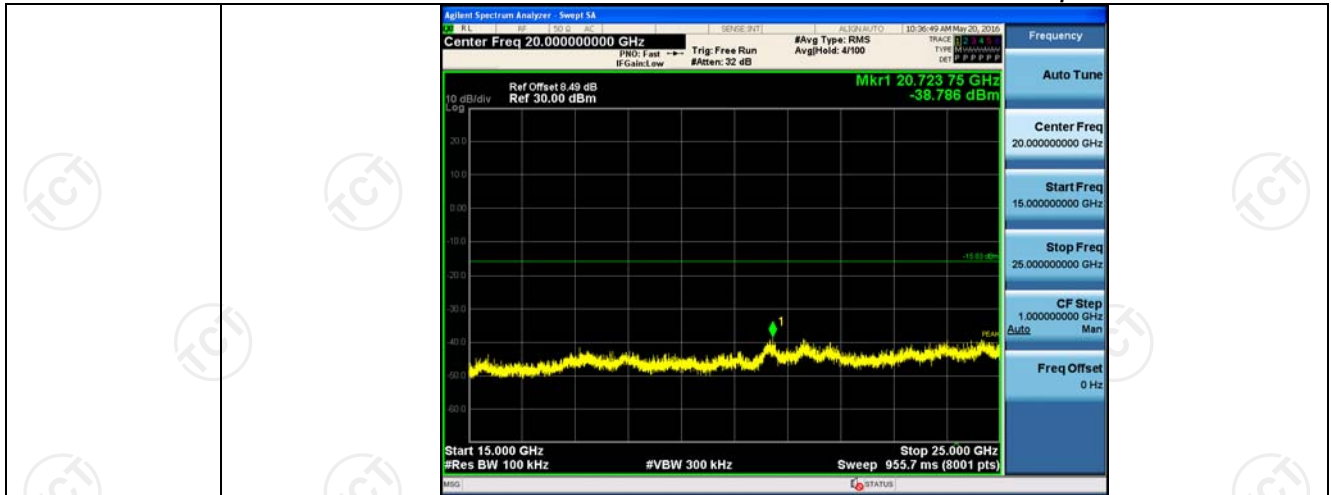




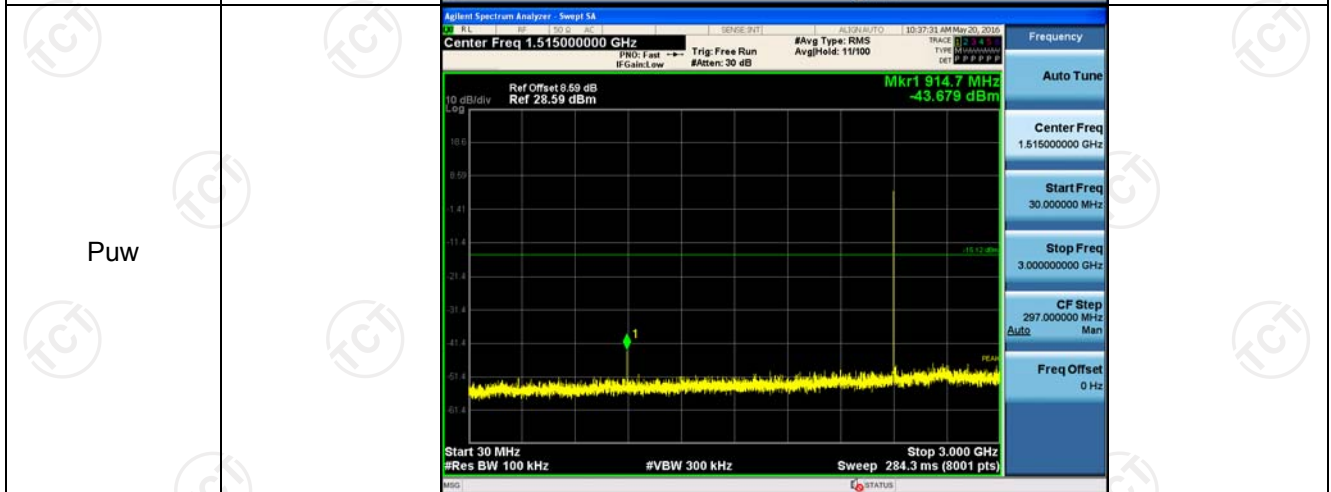
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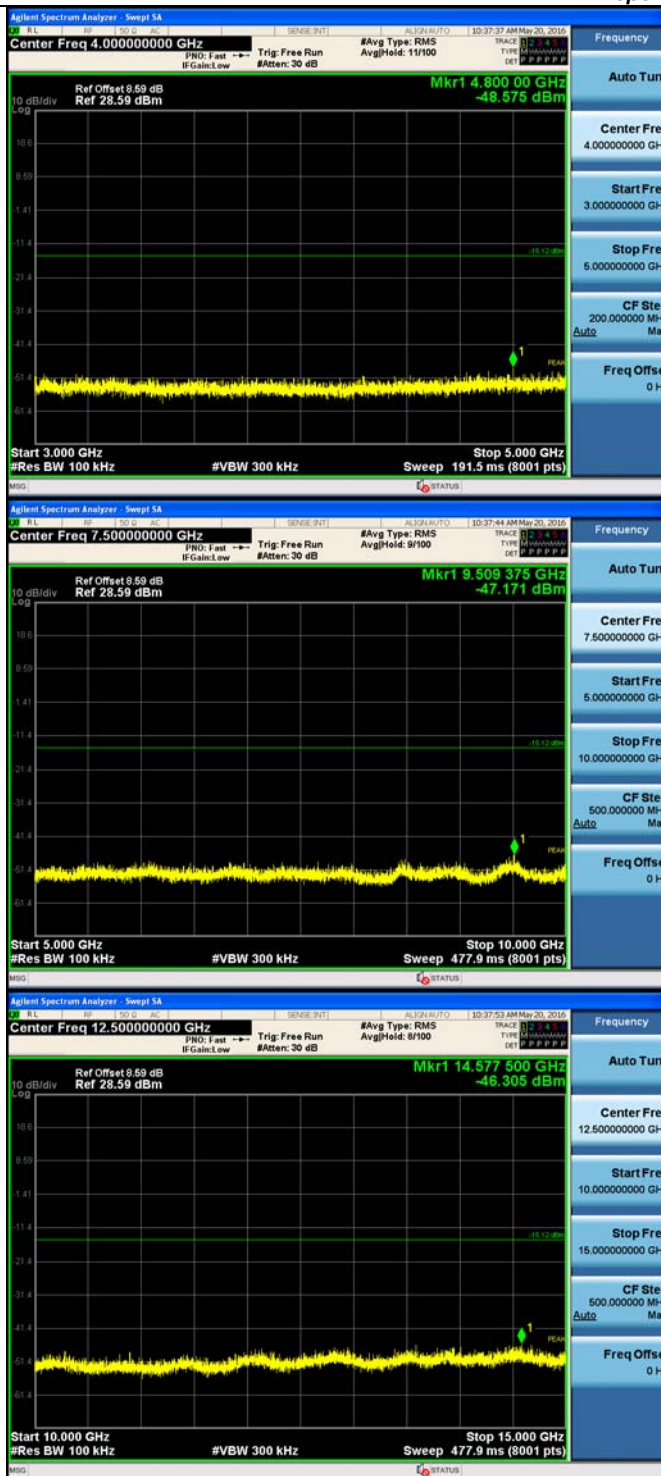


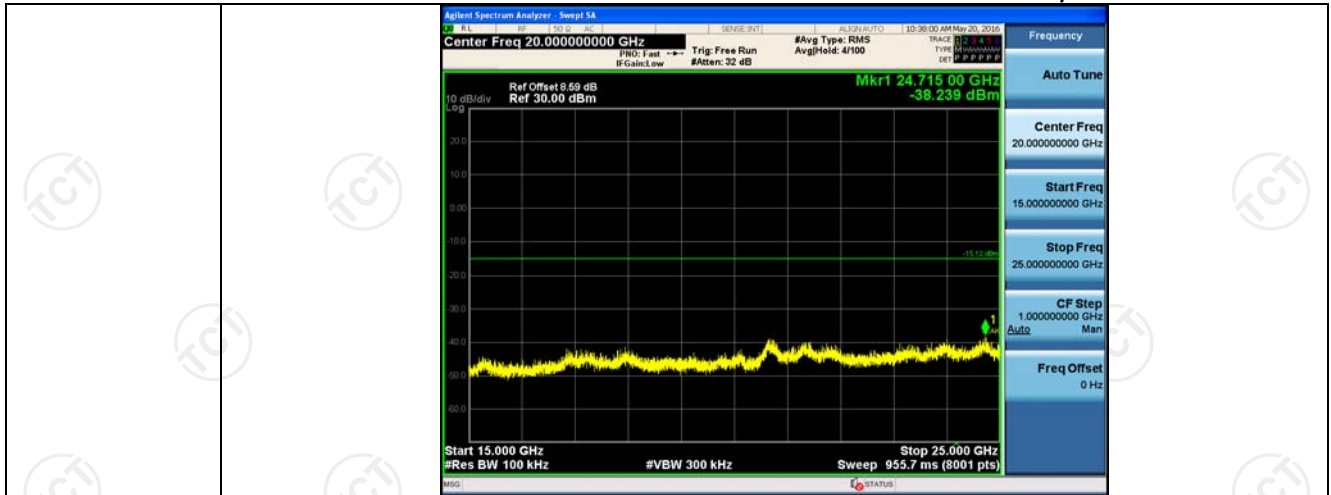




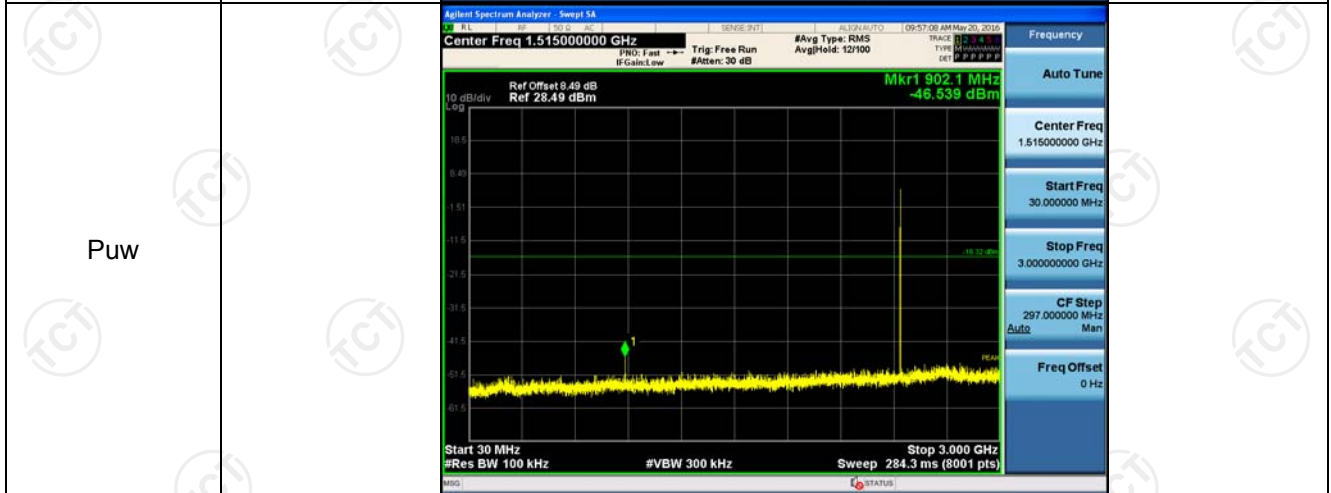
8DPSK_LCH_Graphs

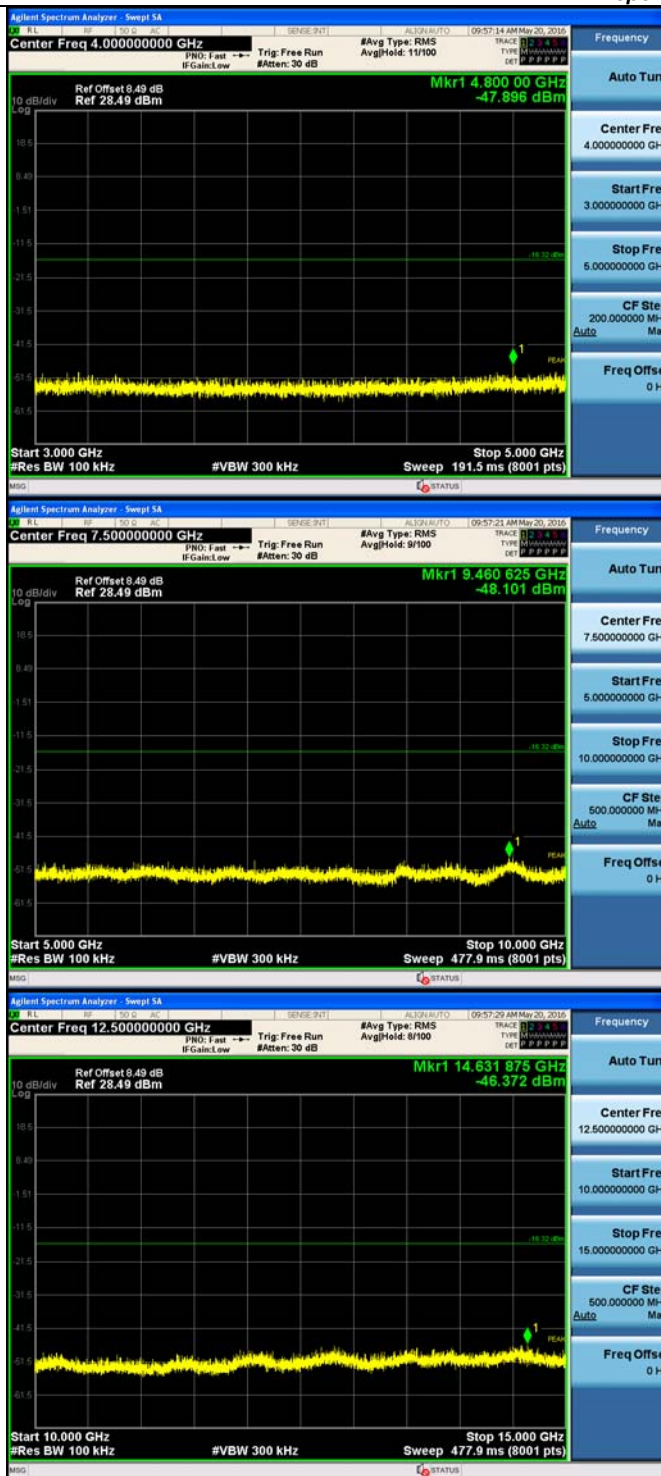


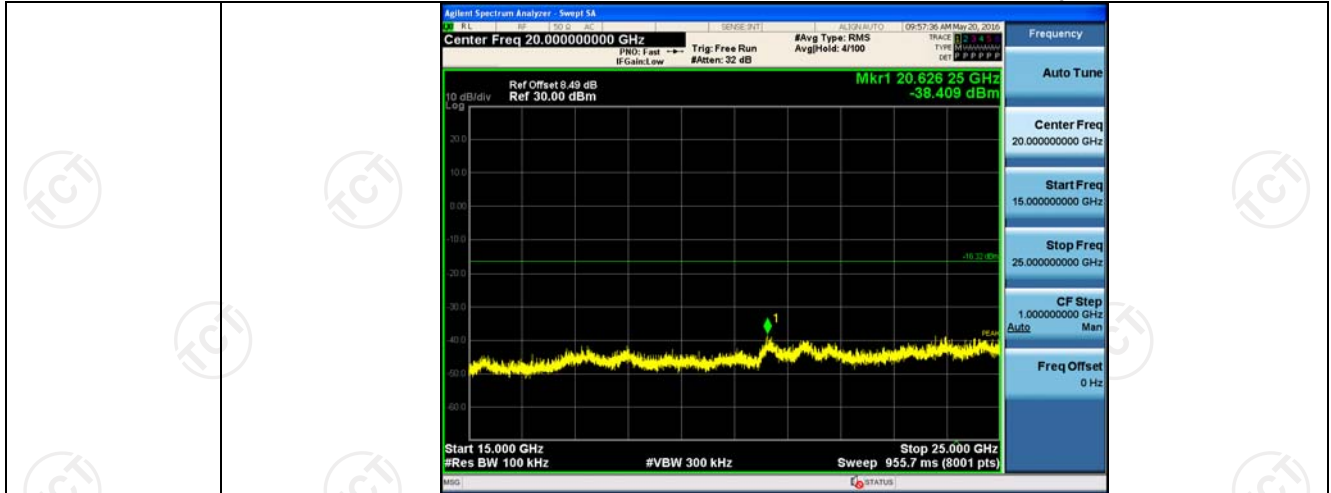




8DPSK_MCH_Graphs







8DPSK_HCH Graphs

