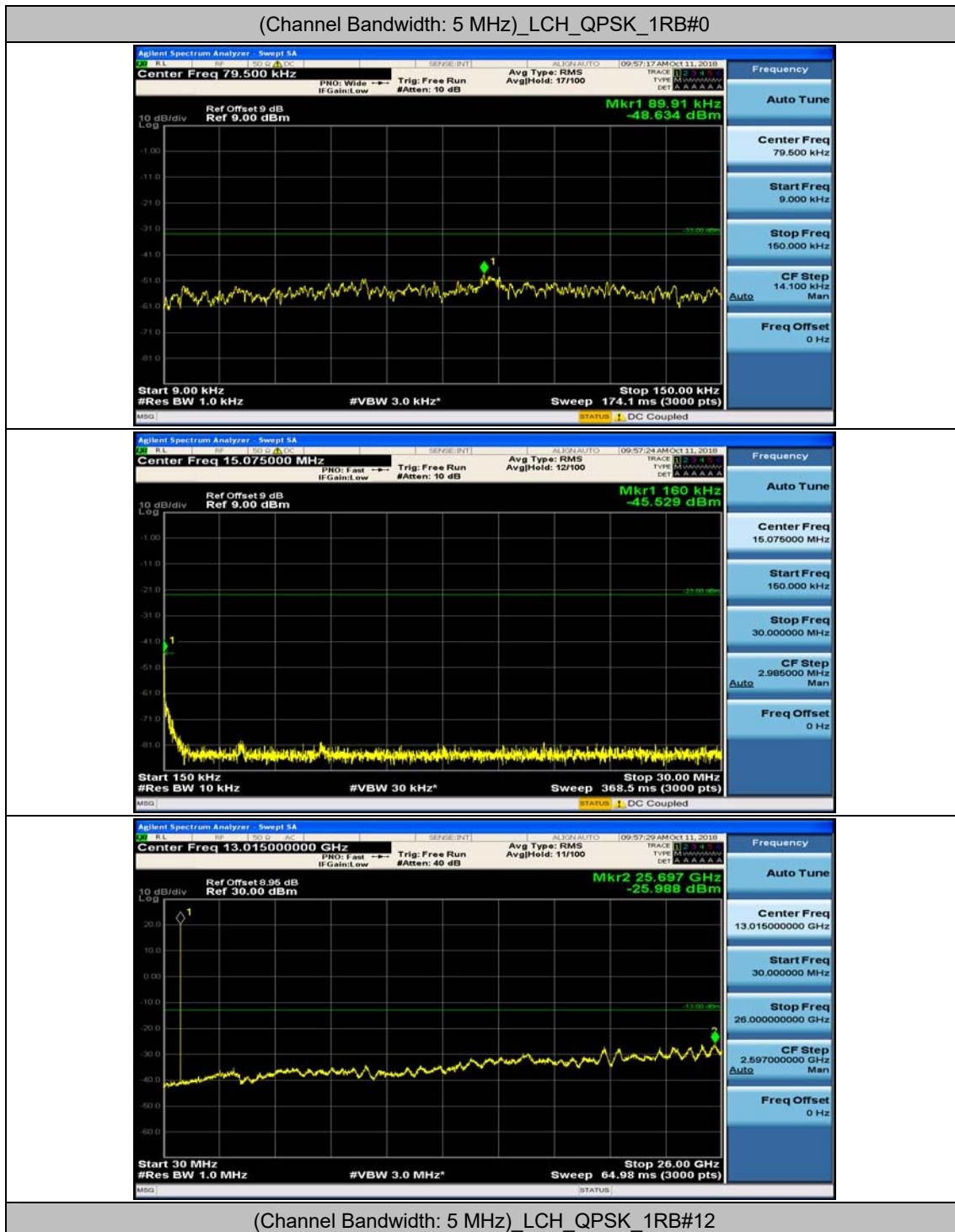
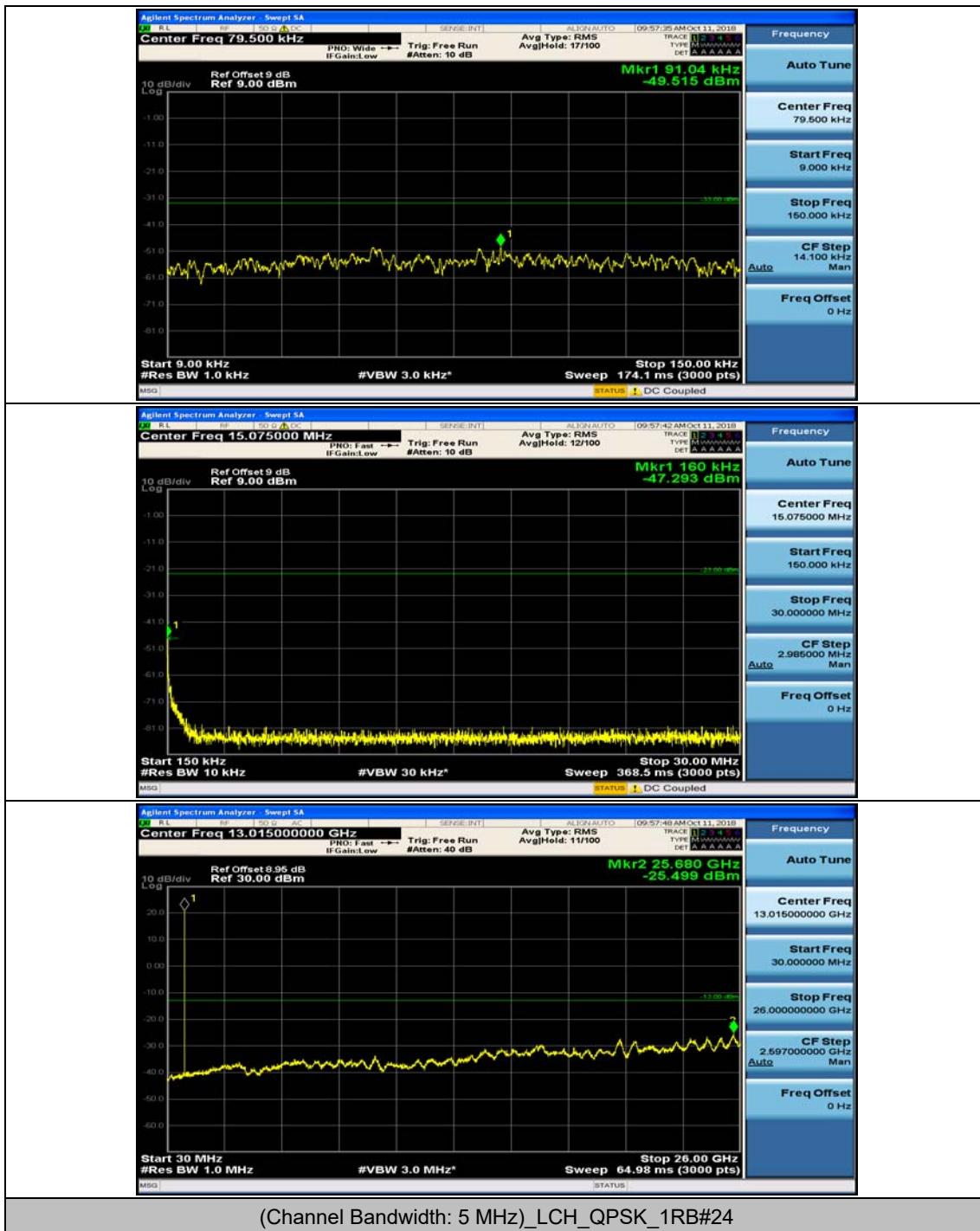
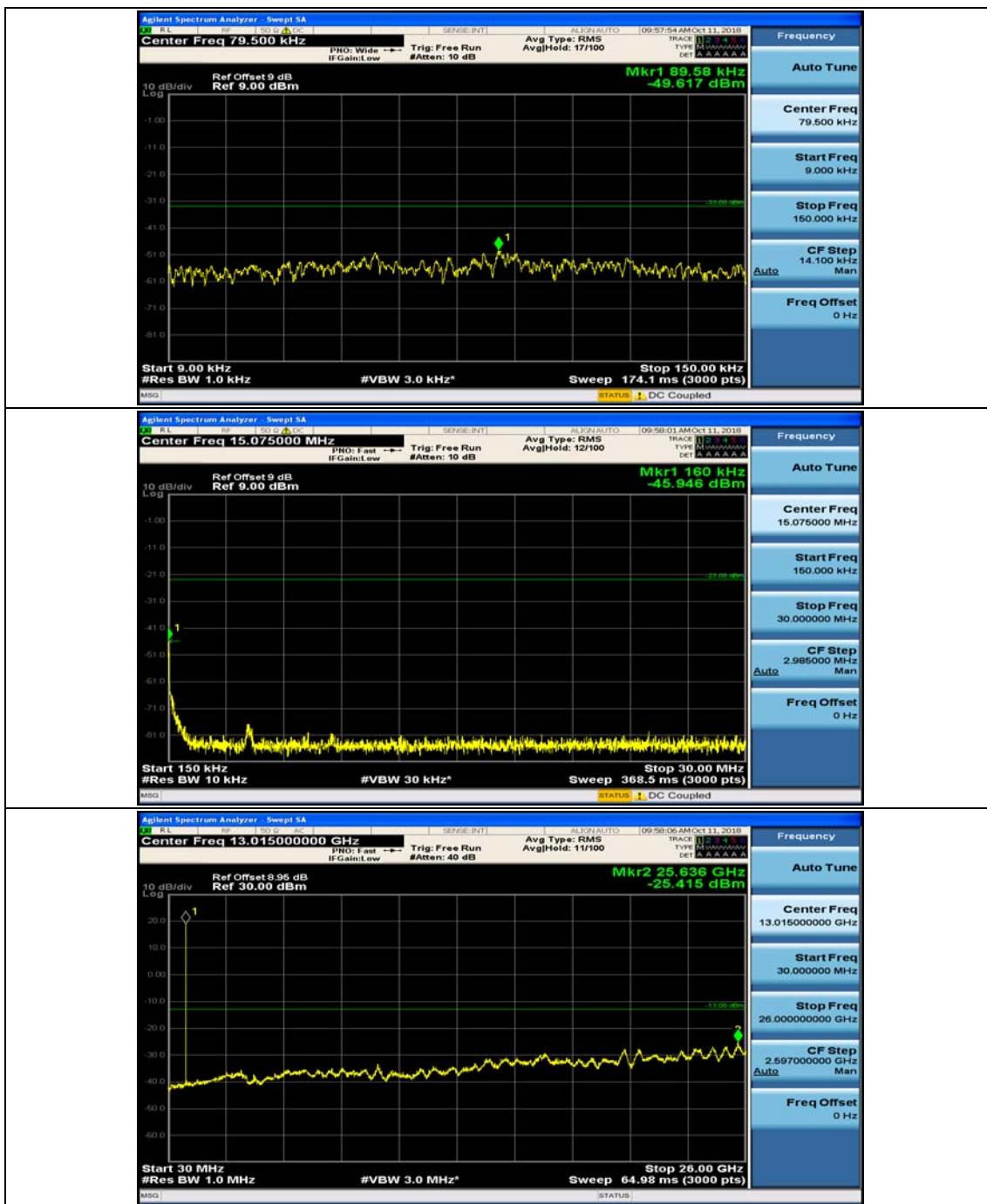
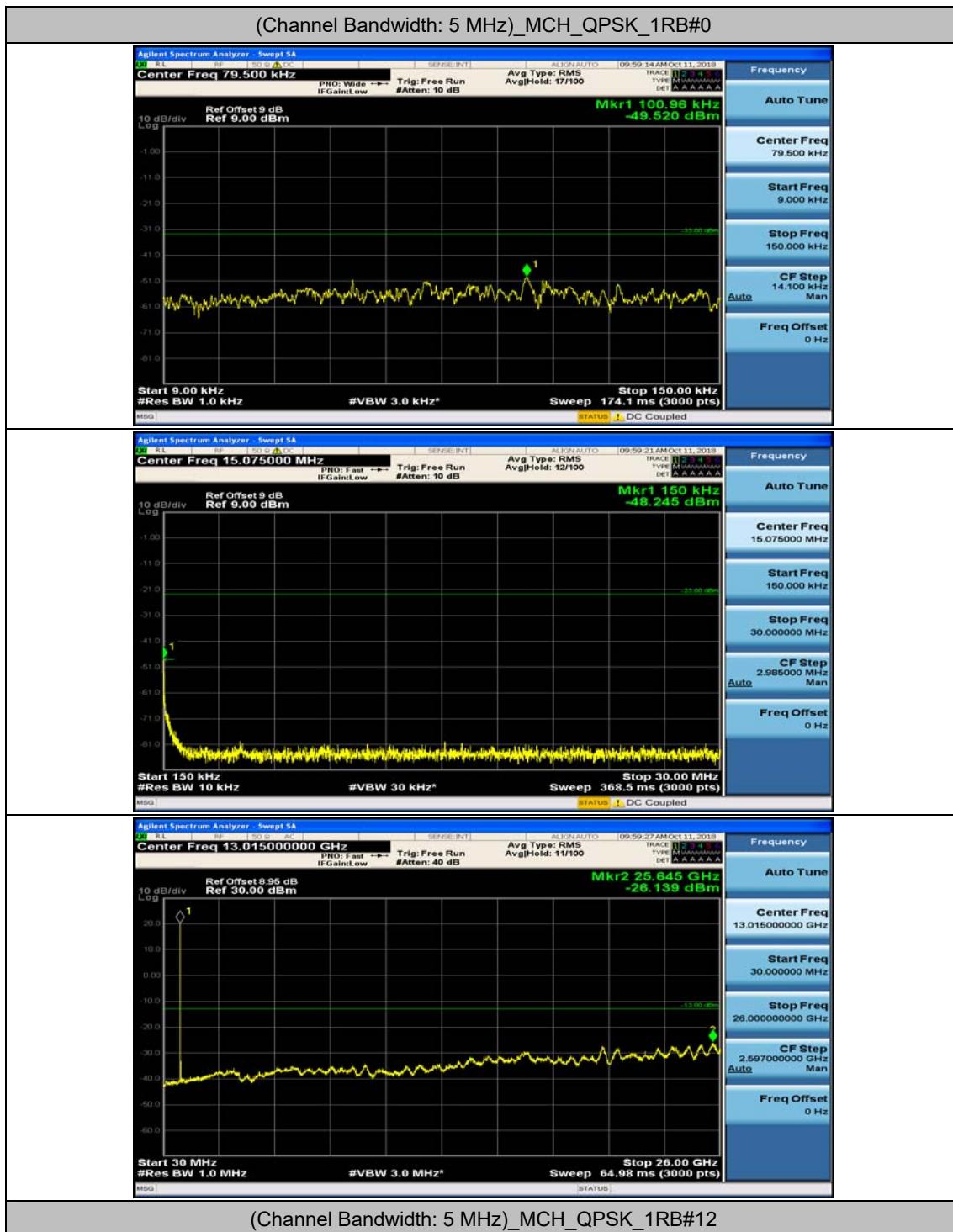


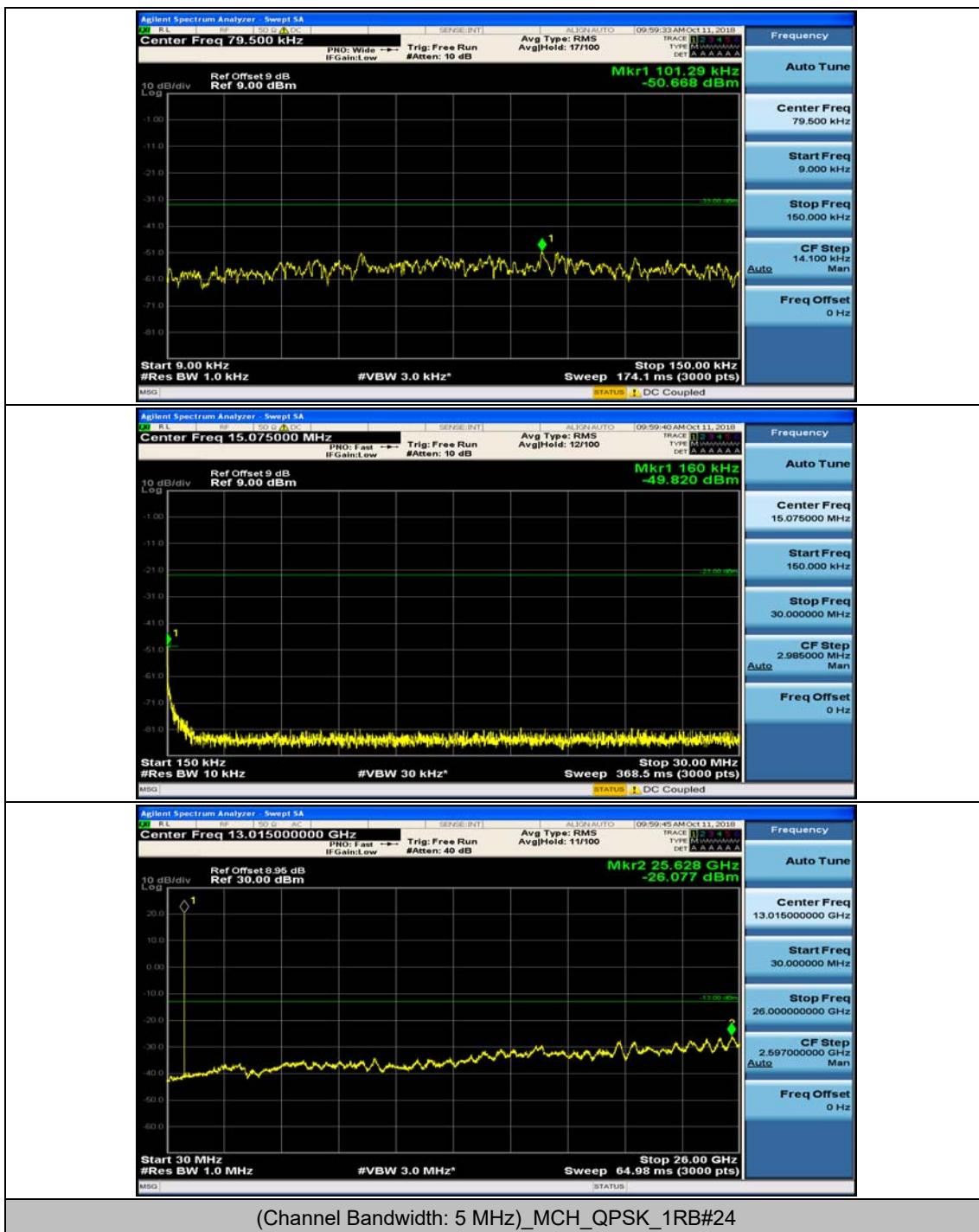
## Channel Bandwidth: 5 MHz

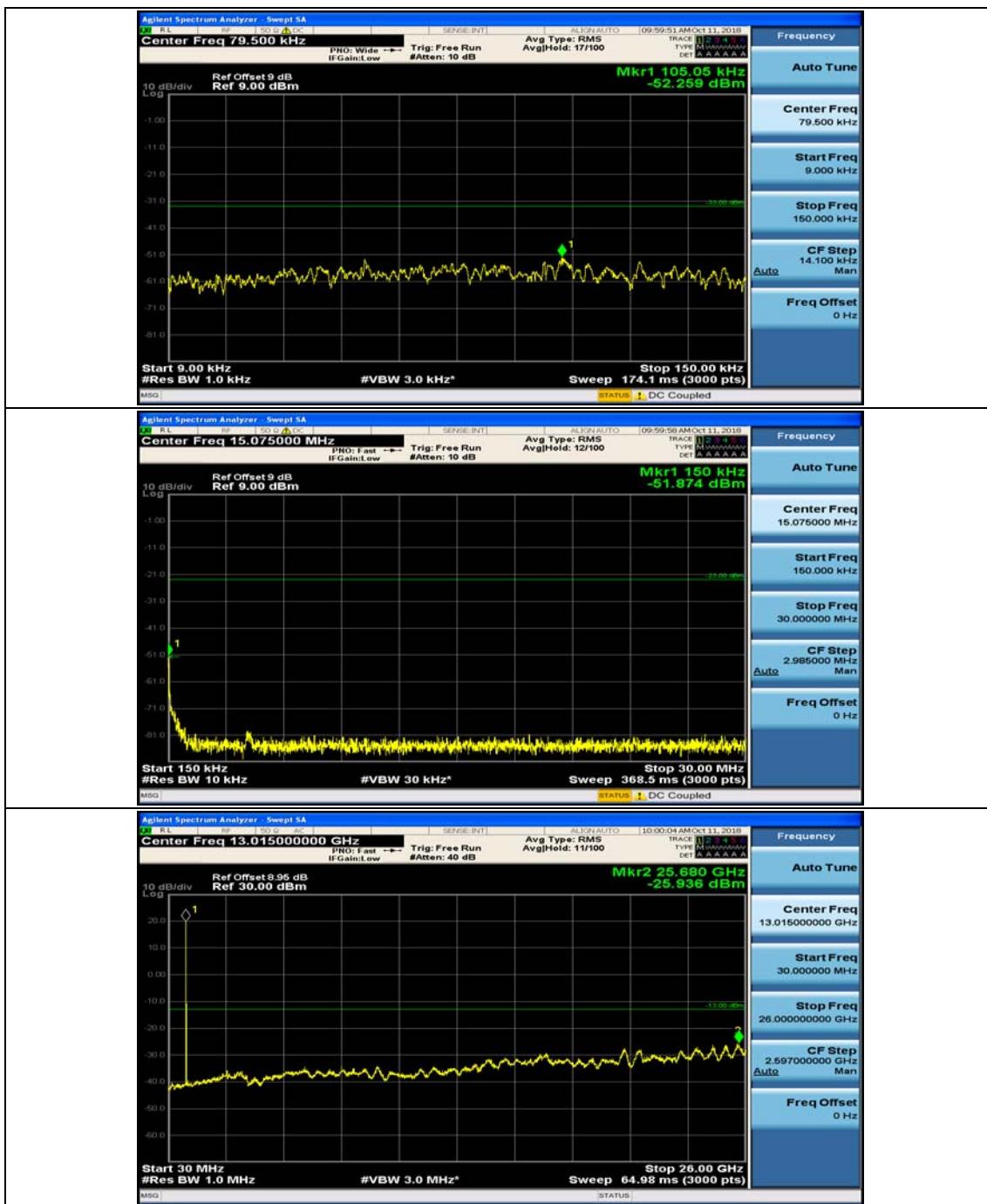


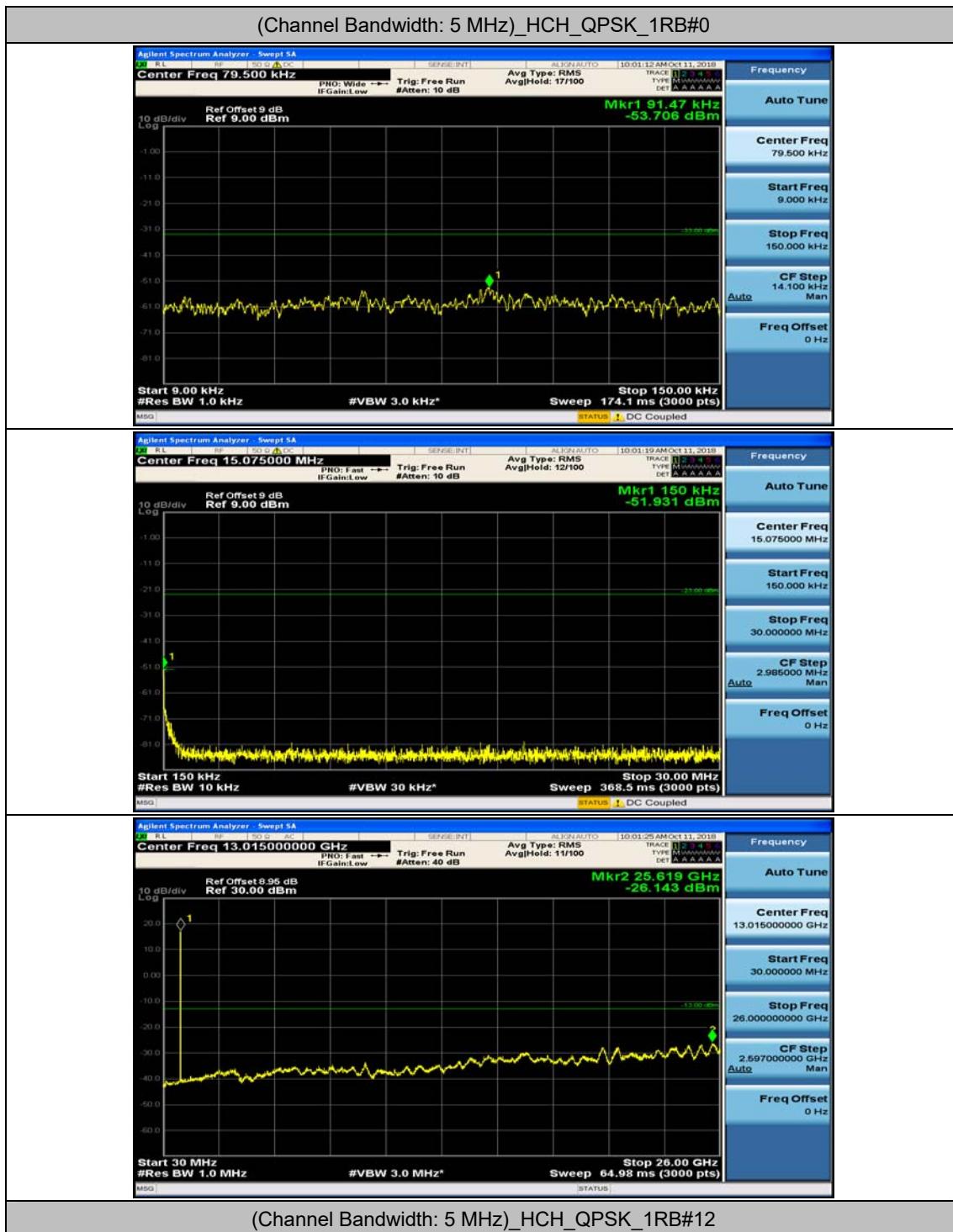


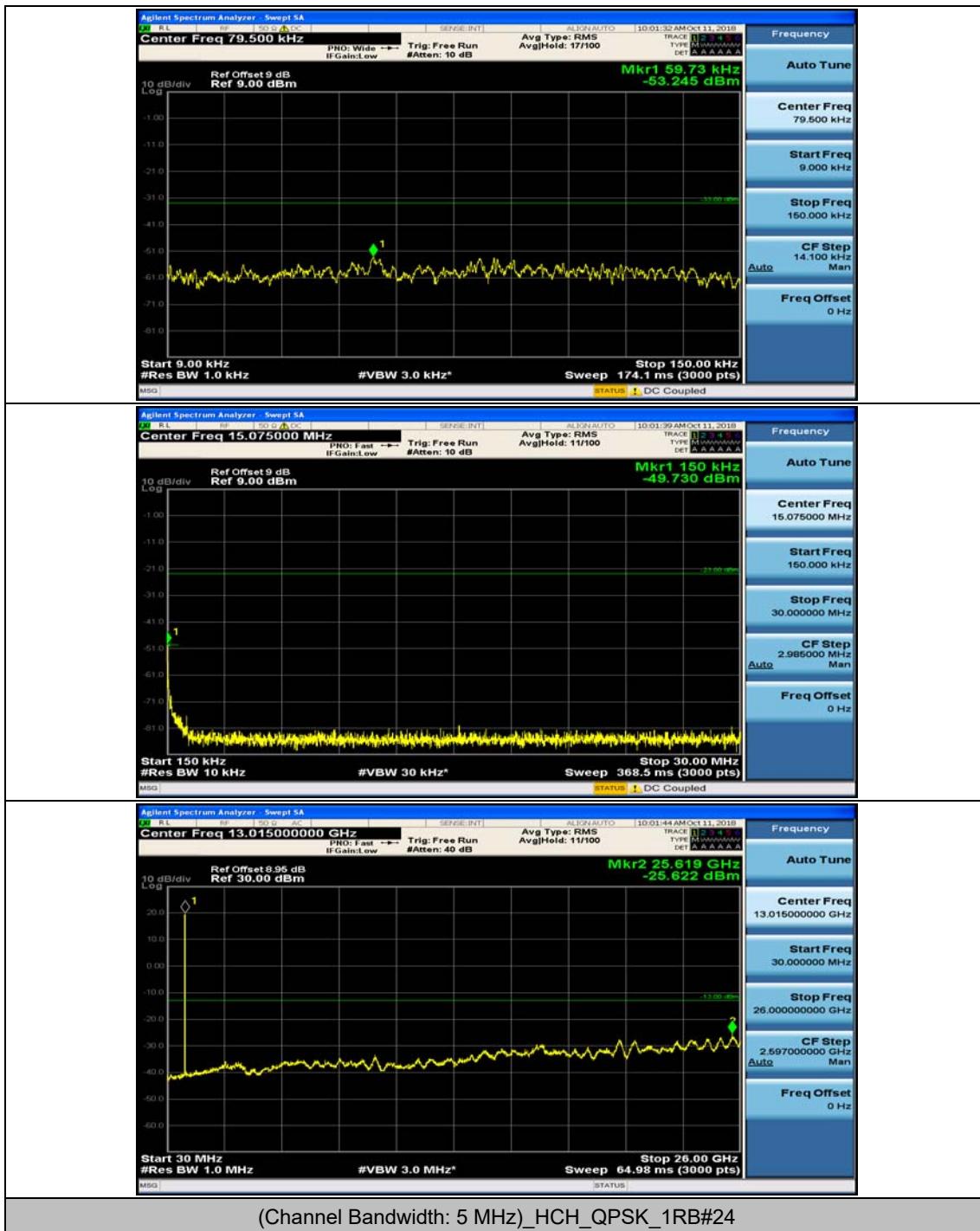


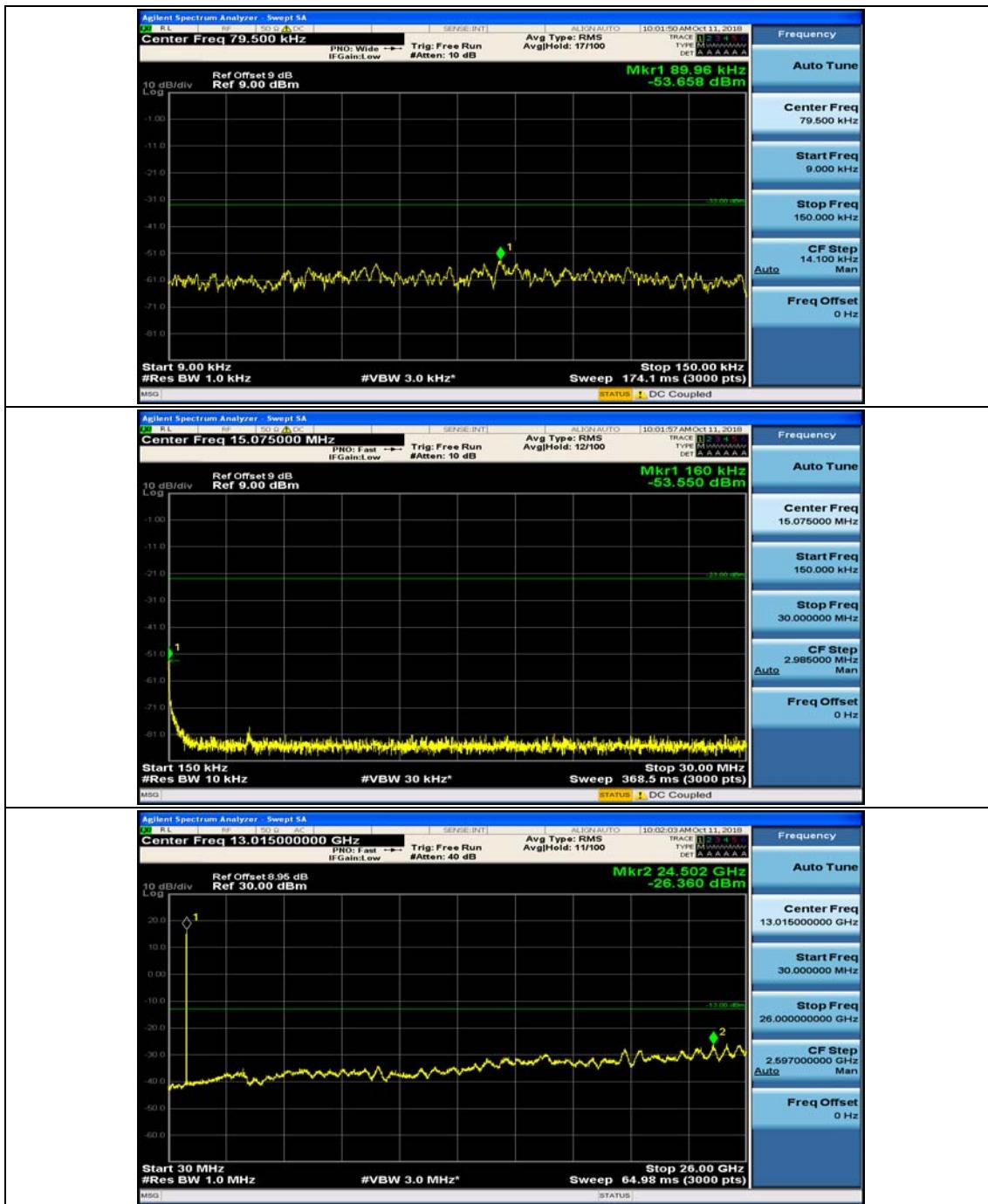


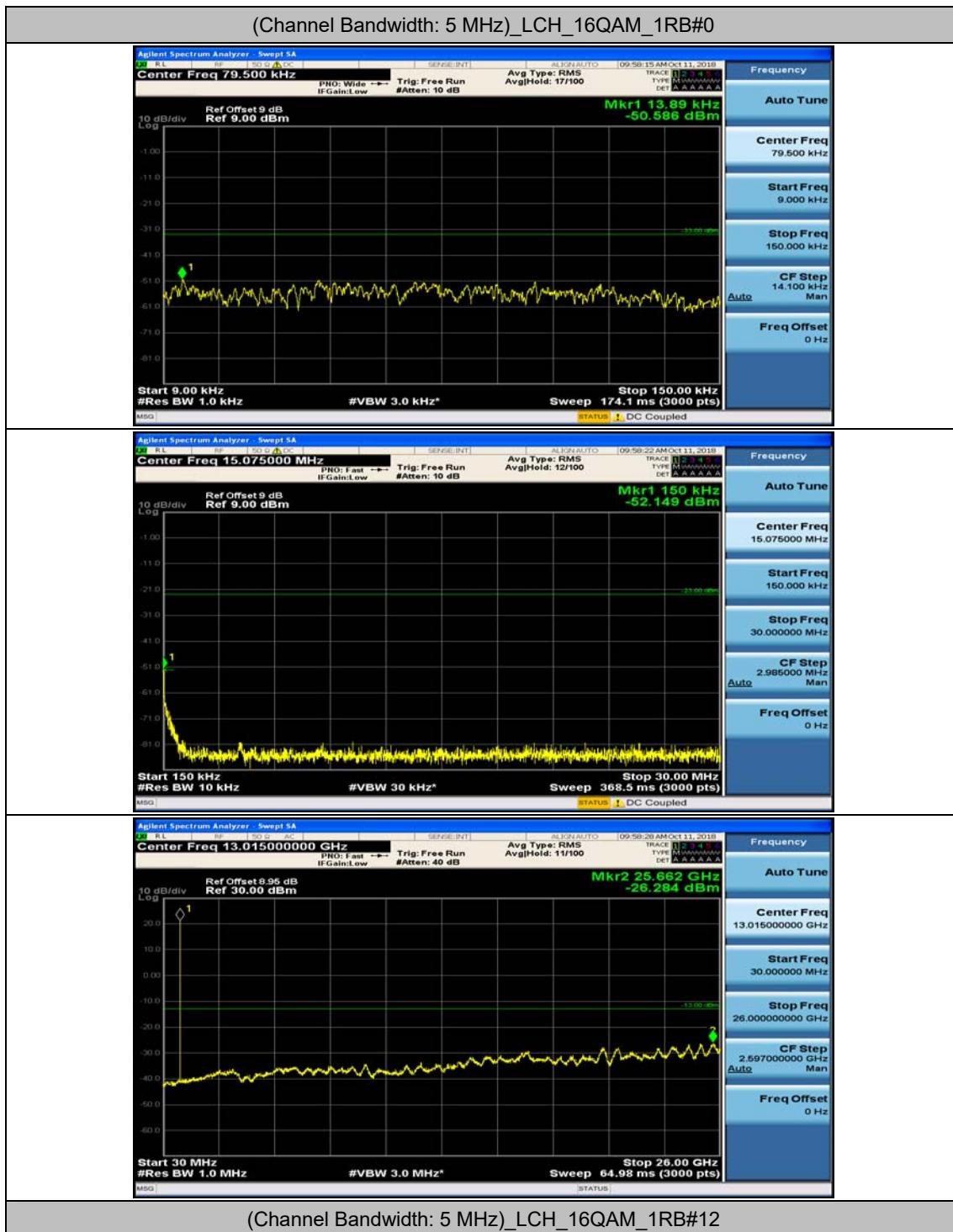


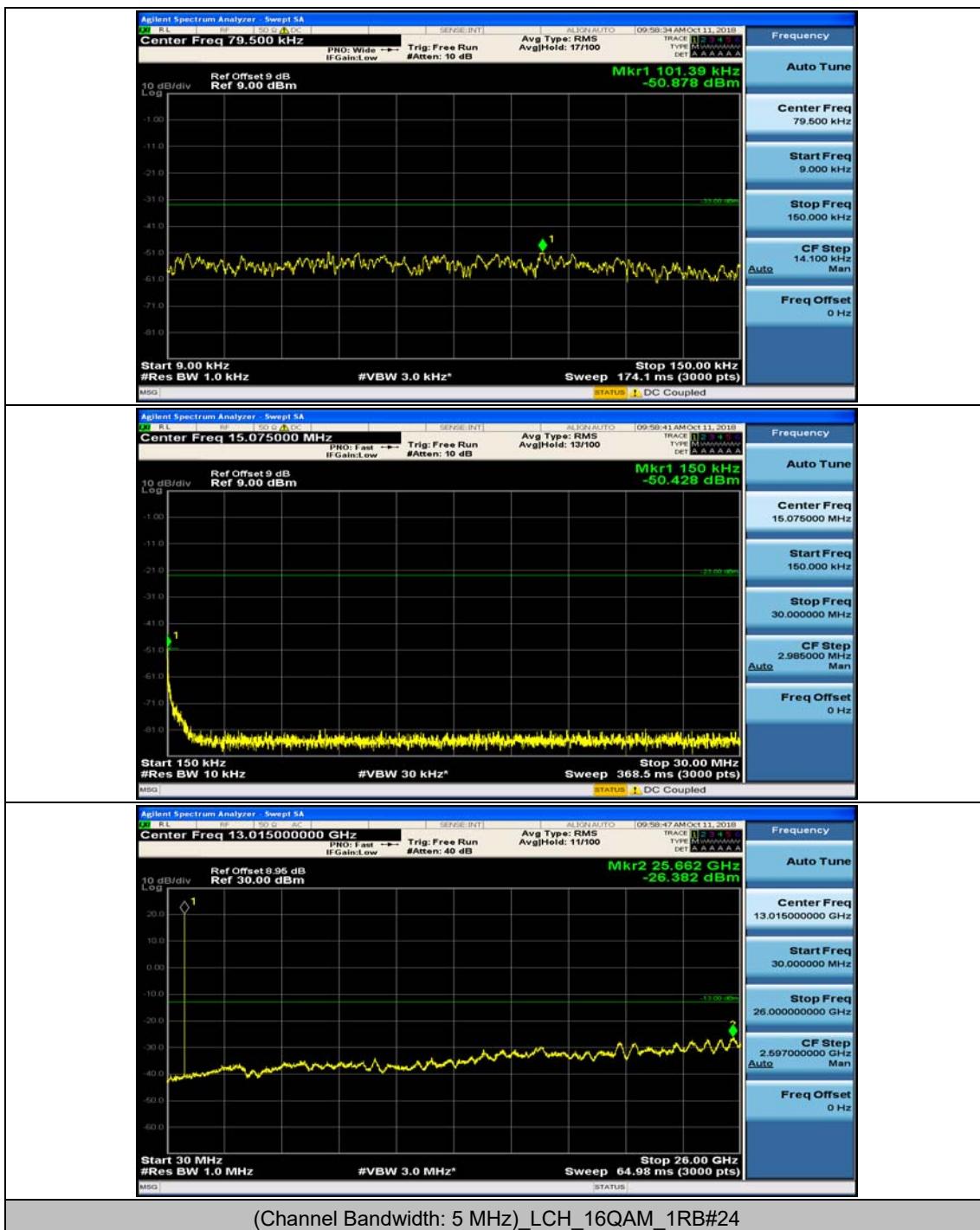


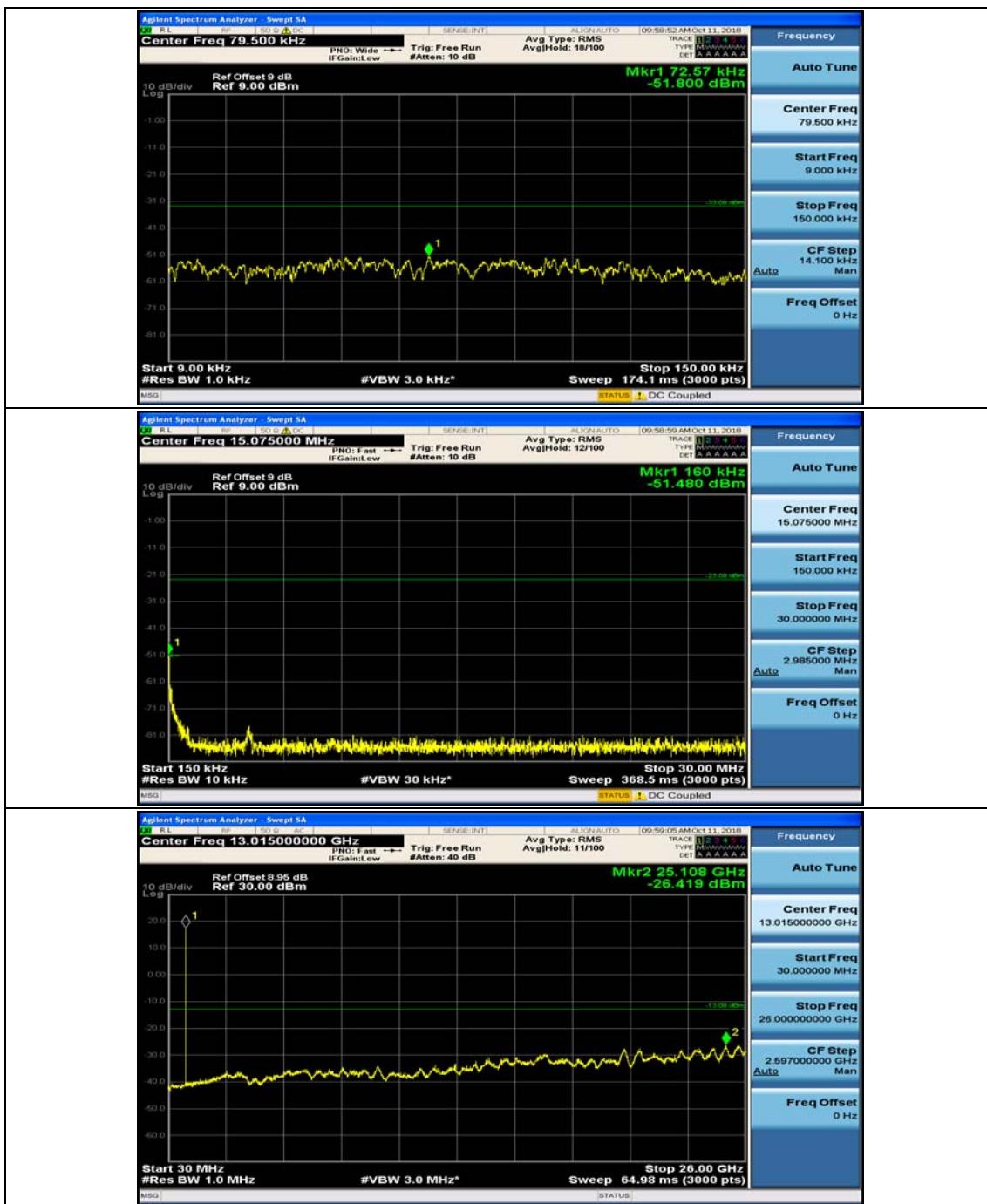


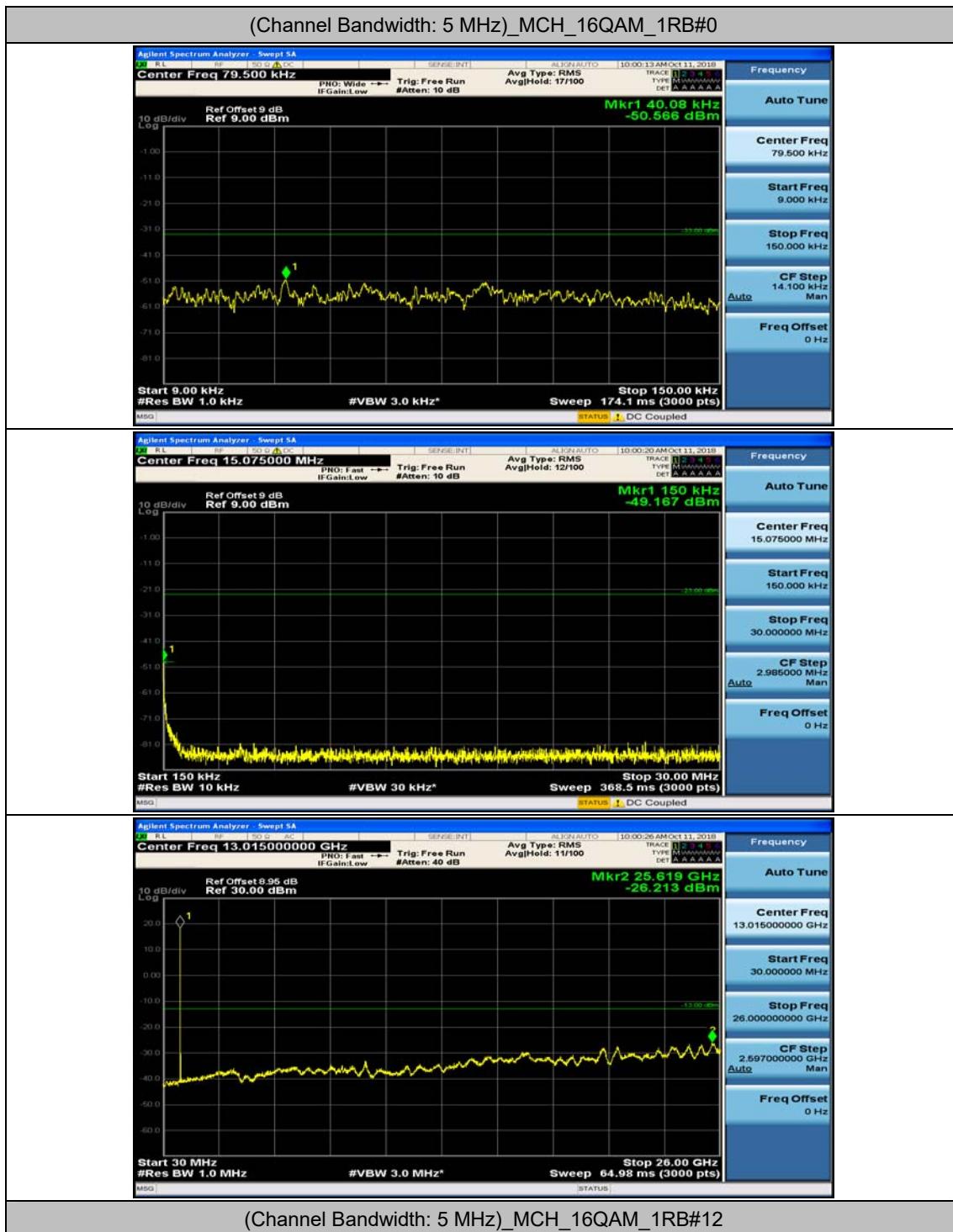


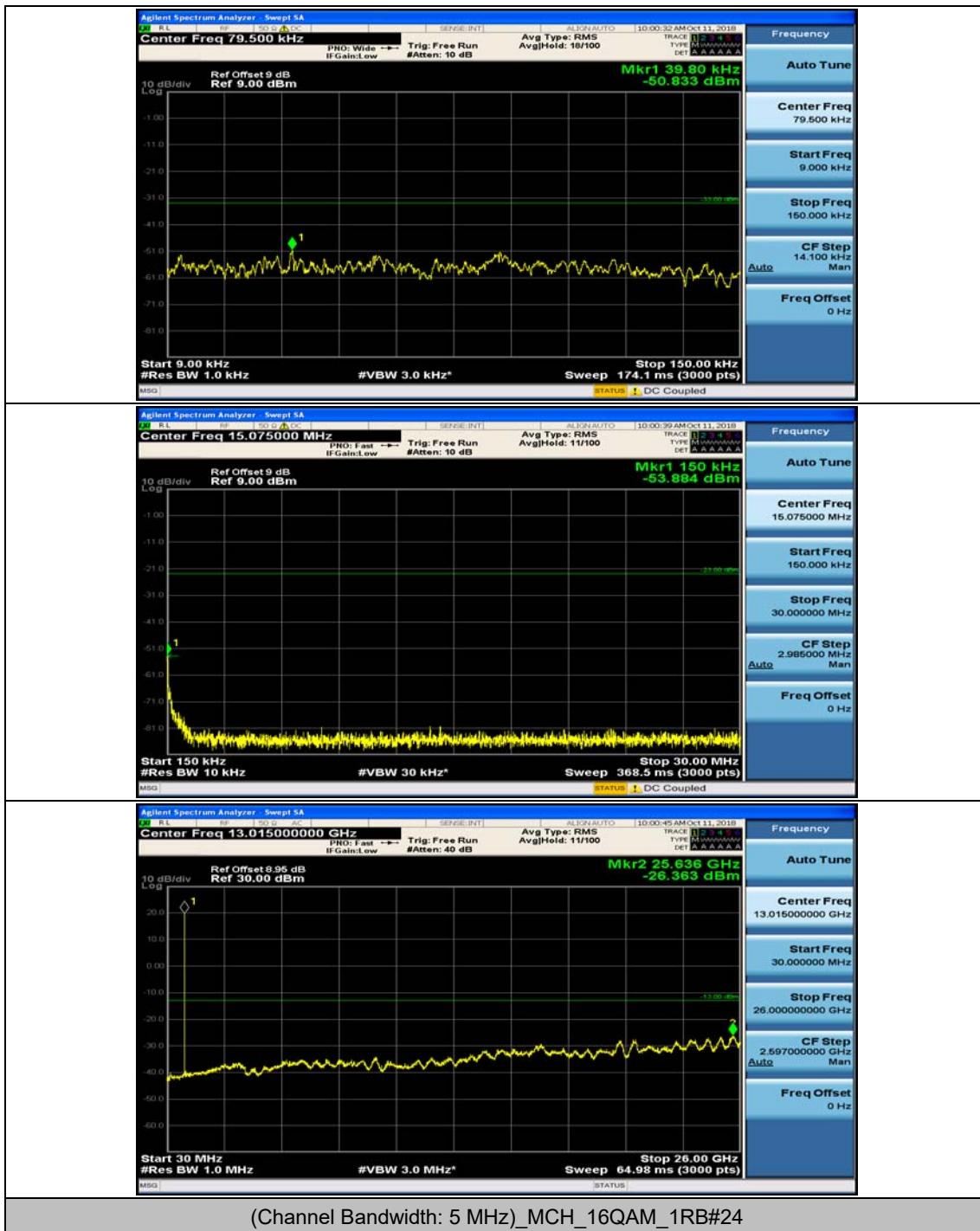


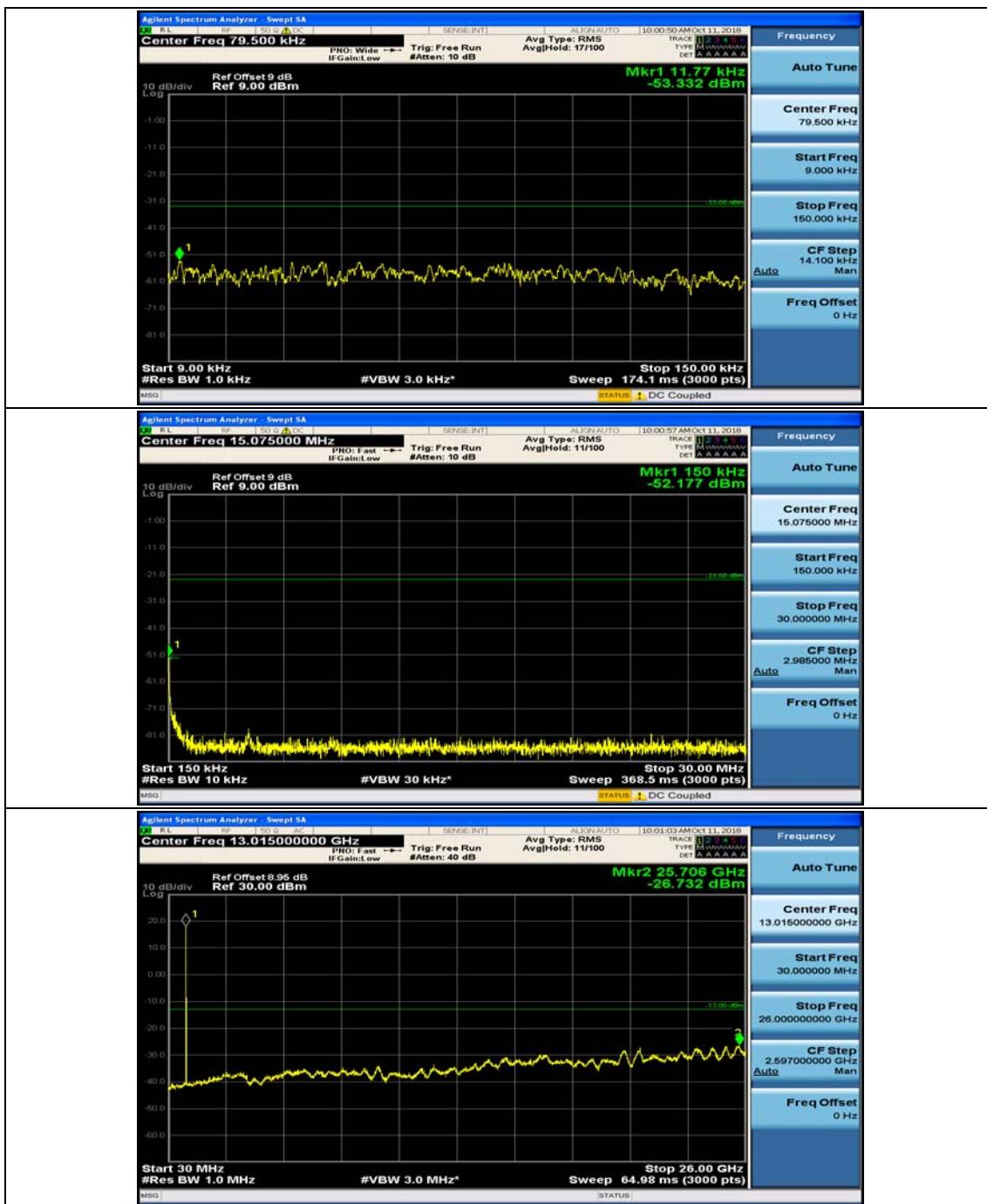


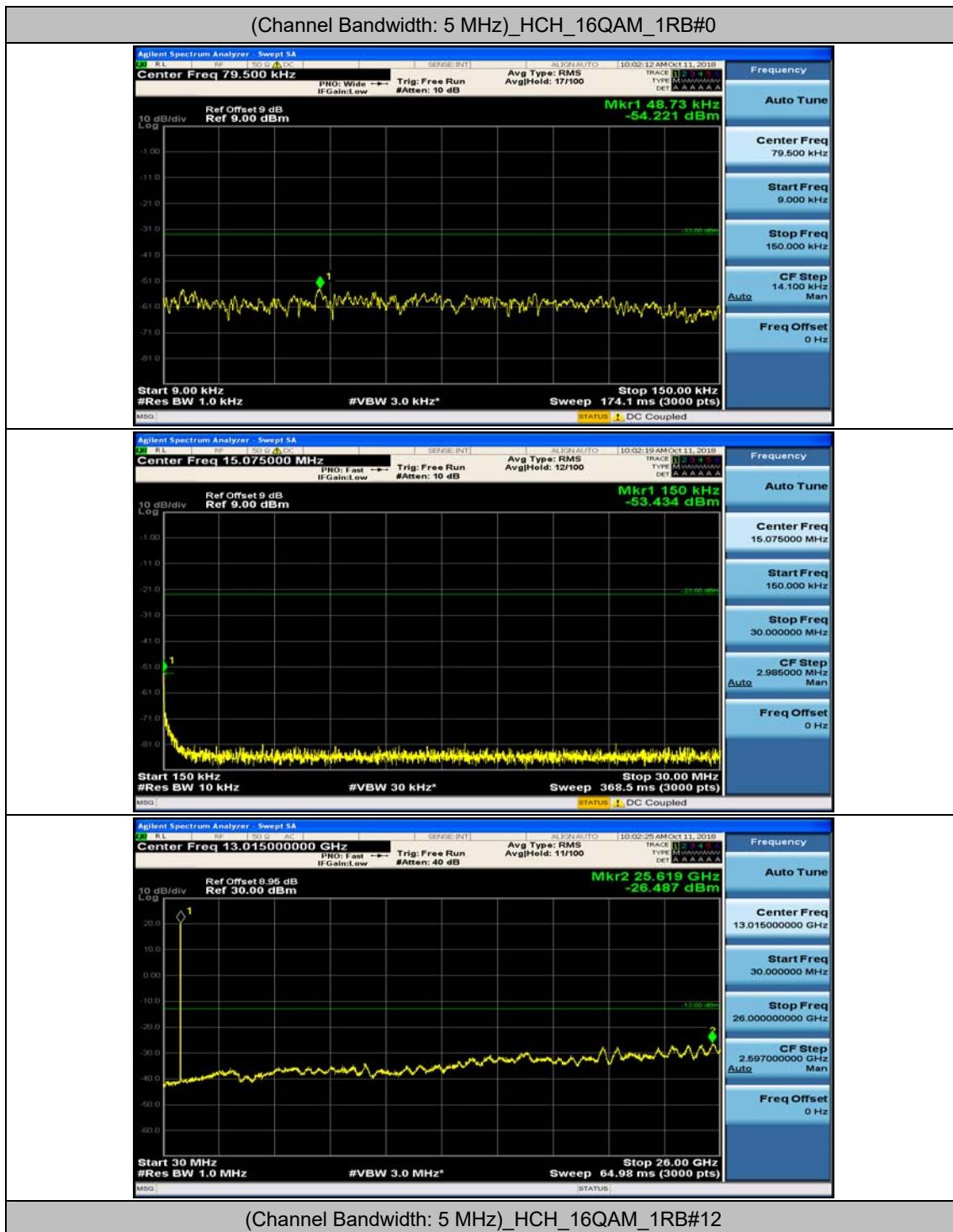


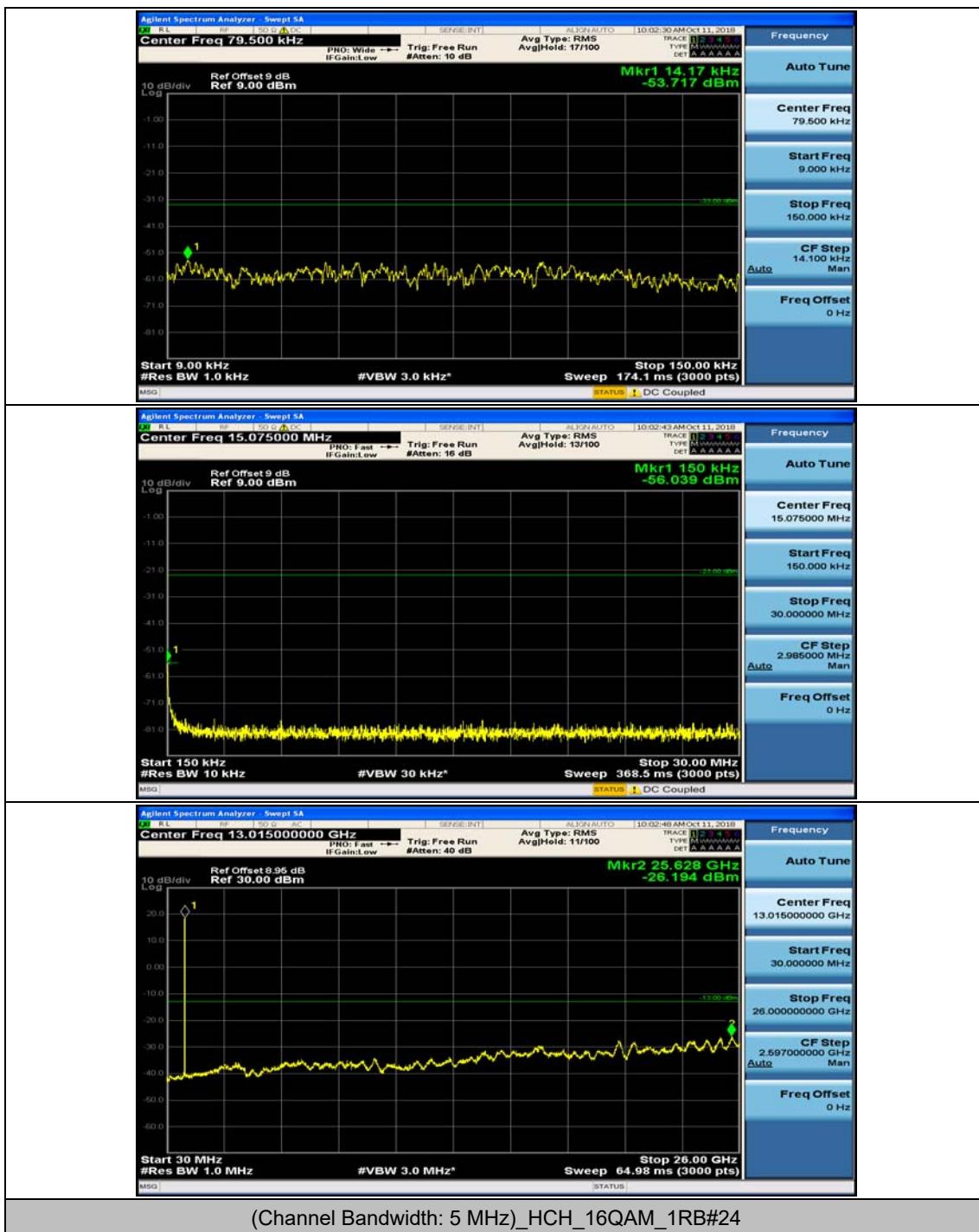


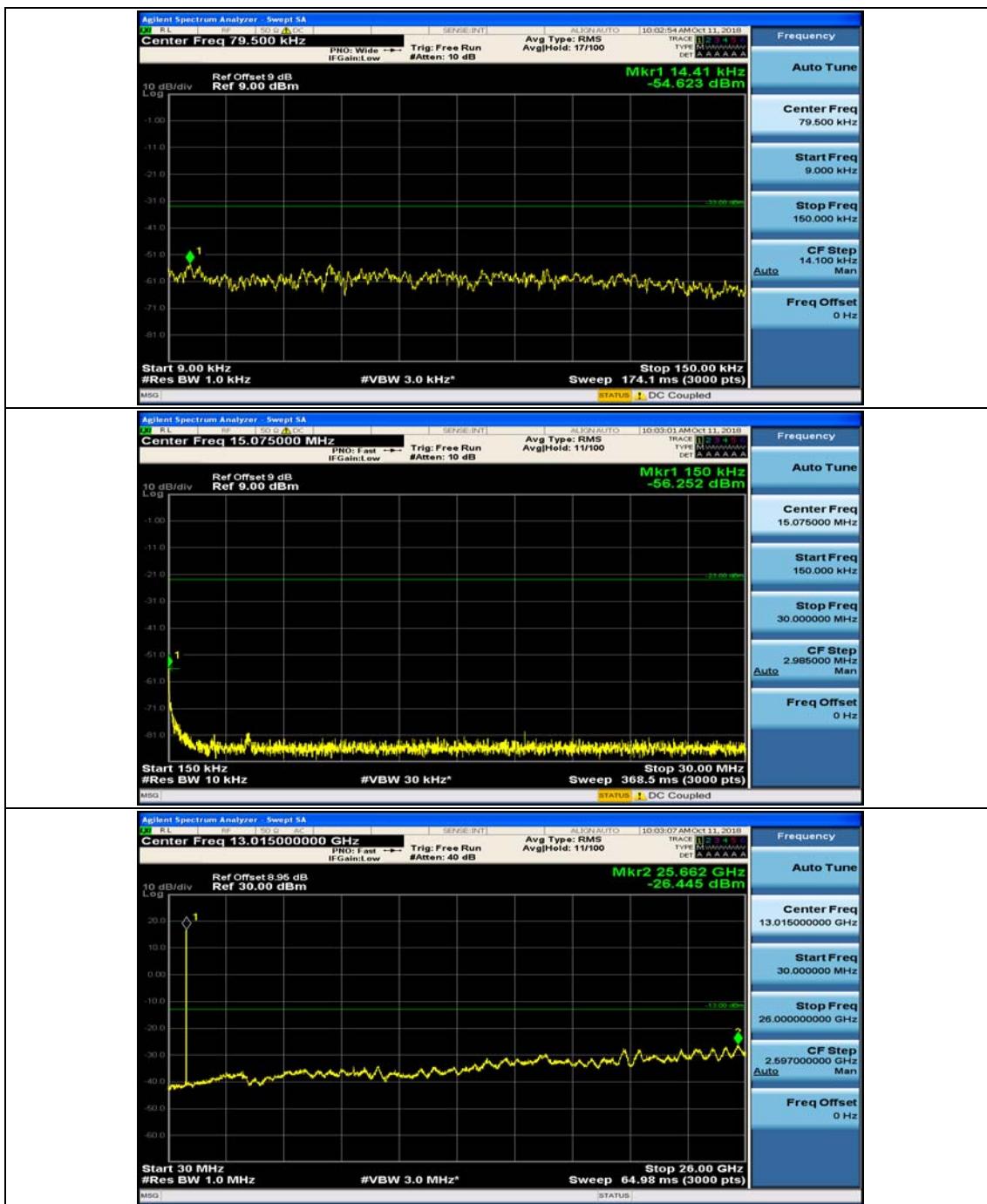




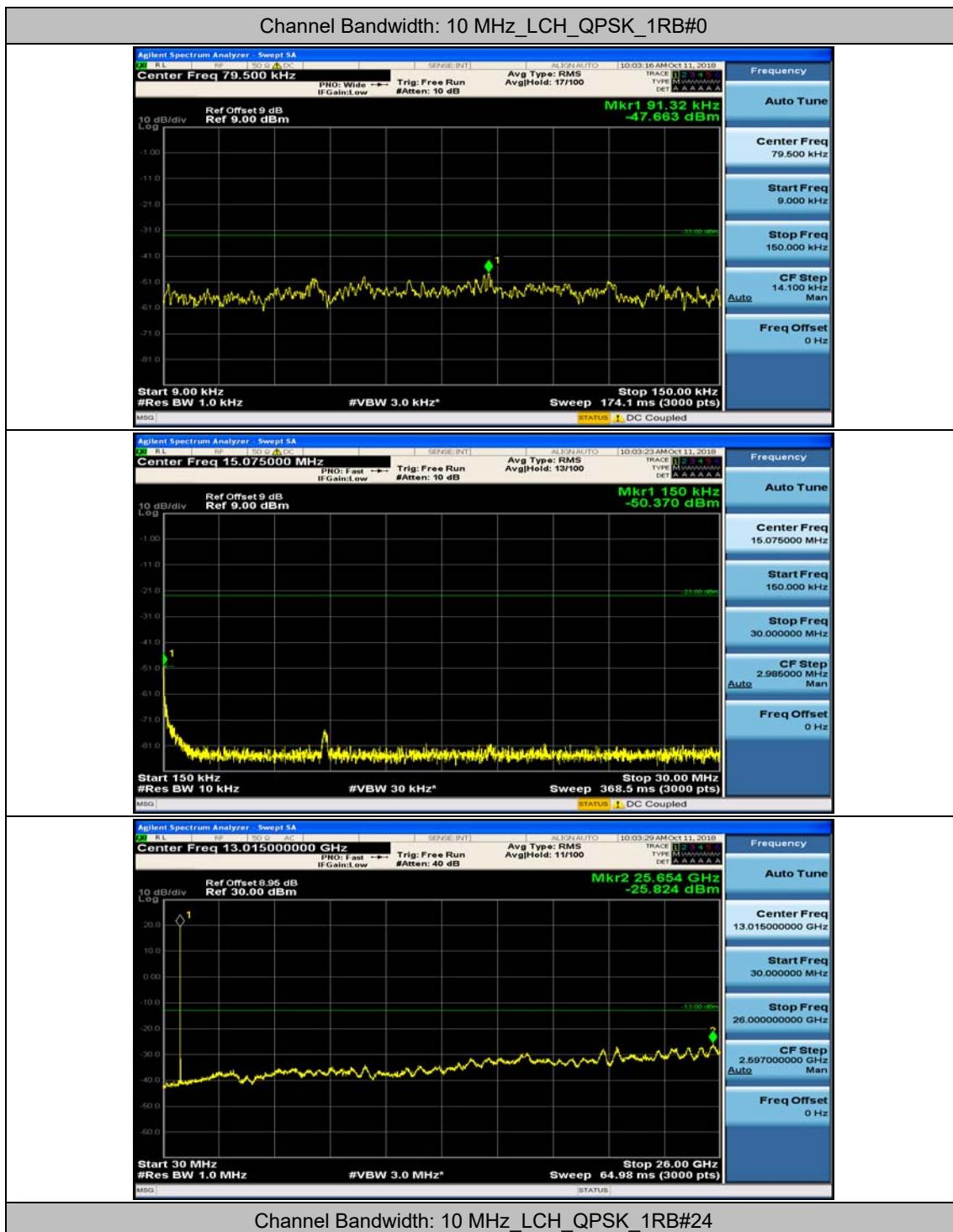


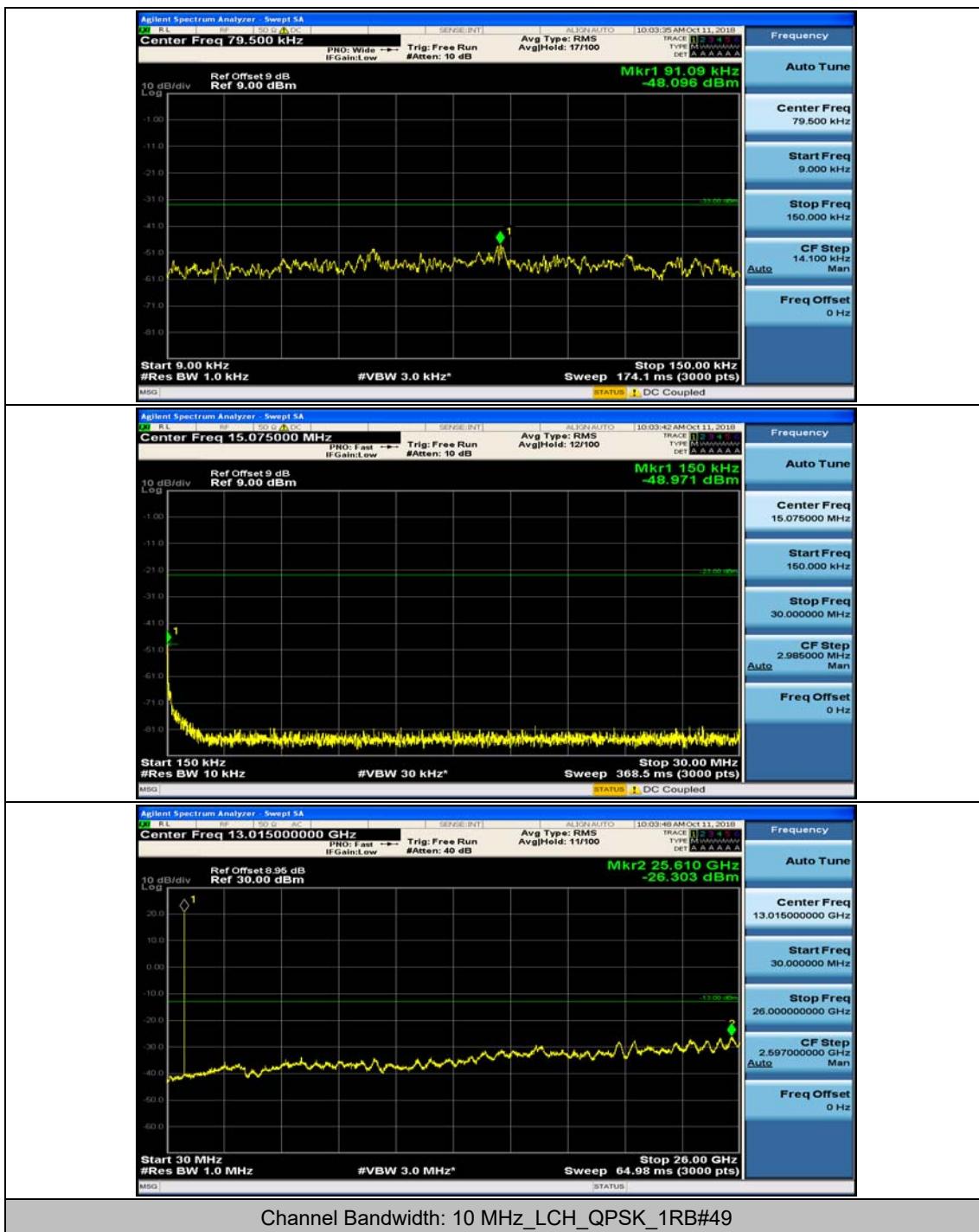


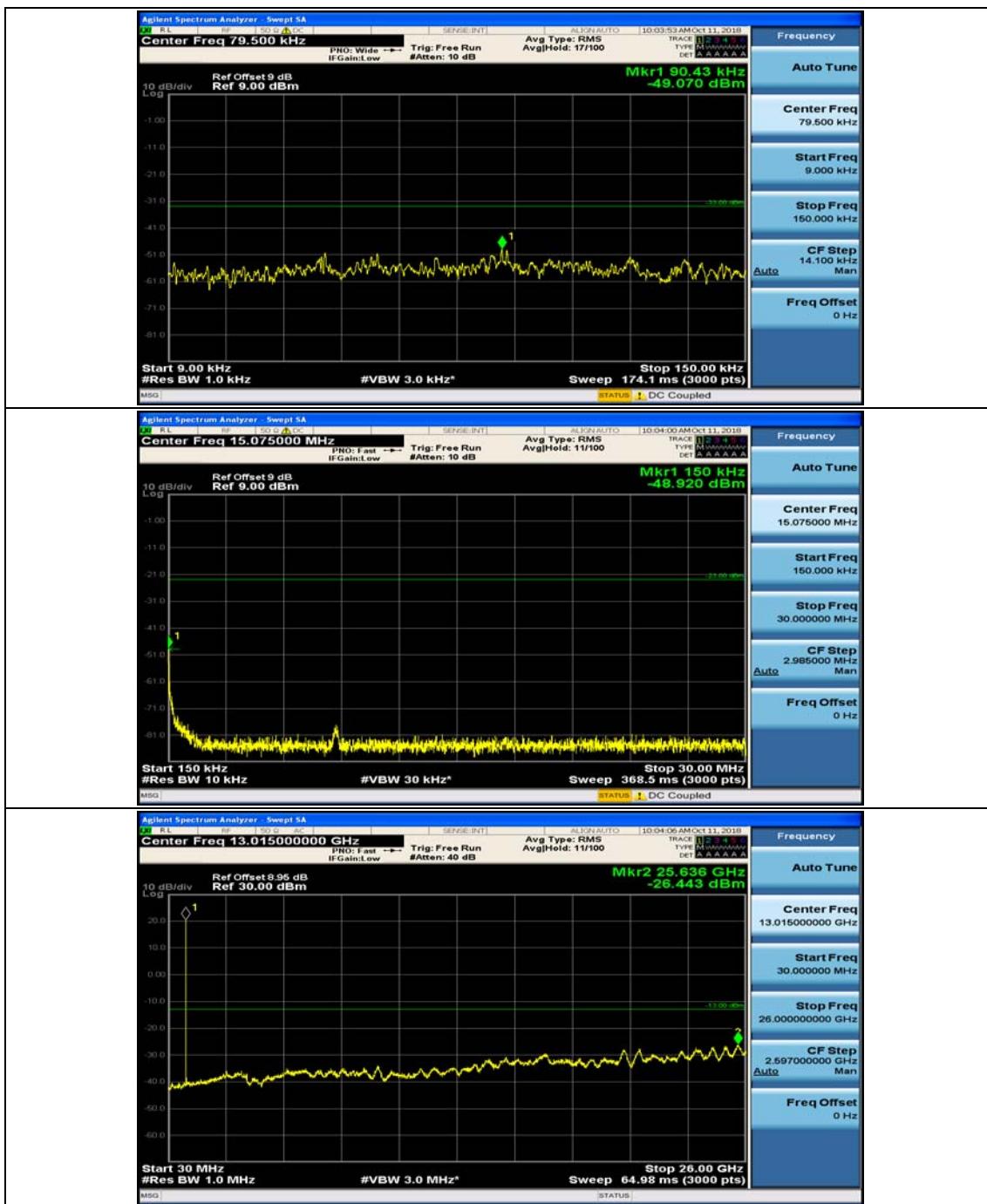


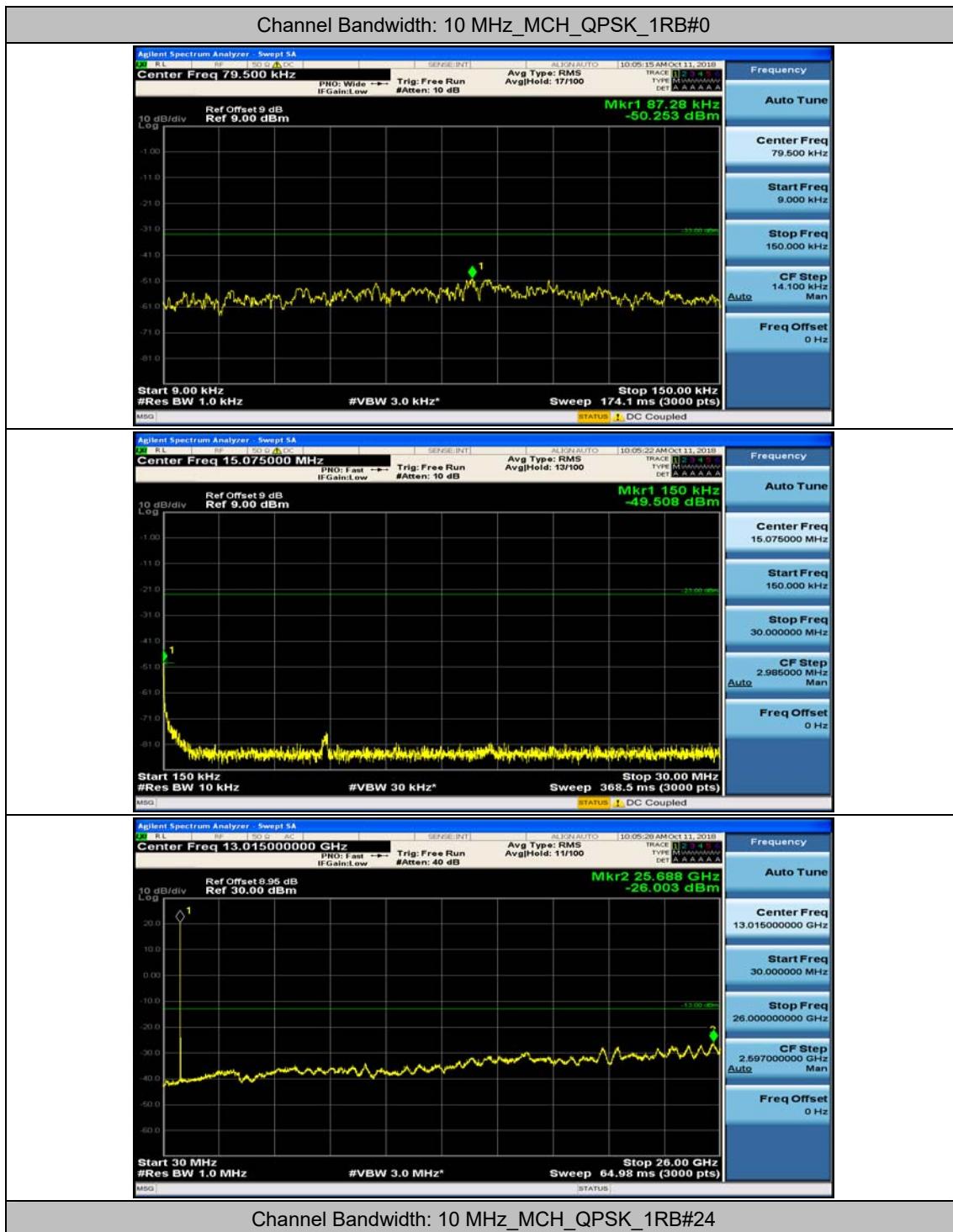


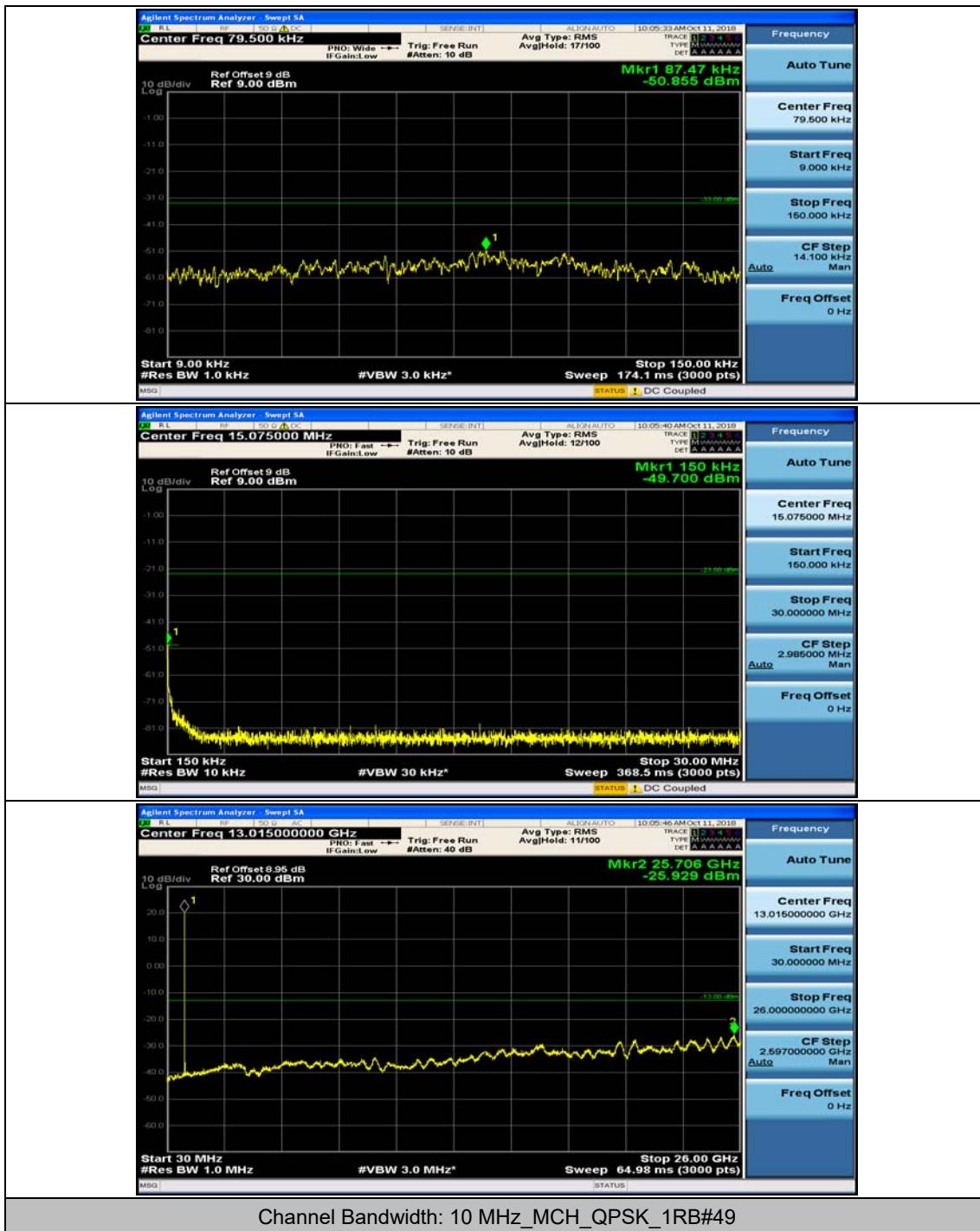
## Channel Bandwidth: 10 MHz

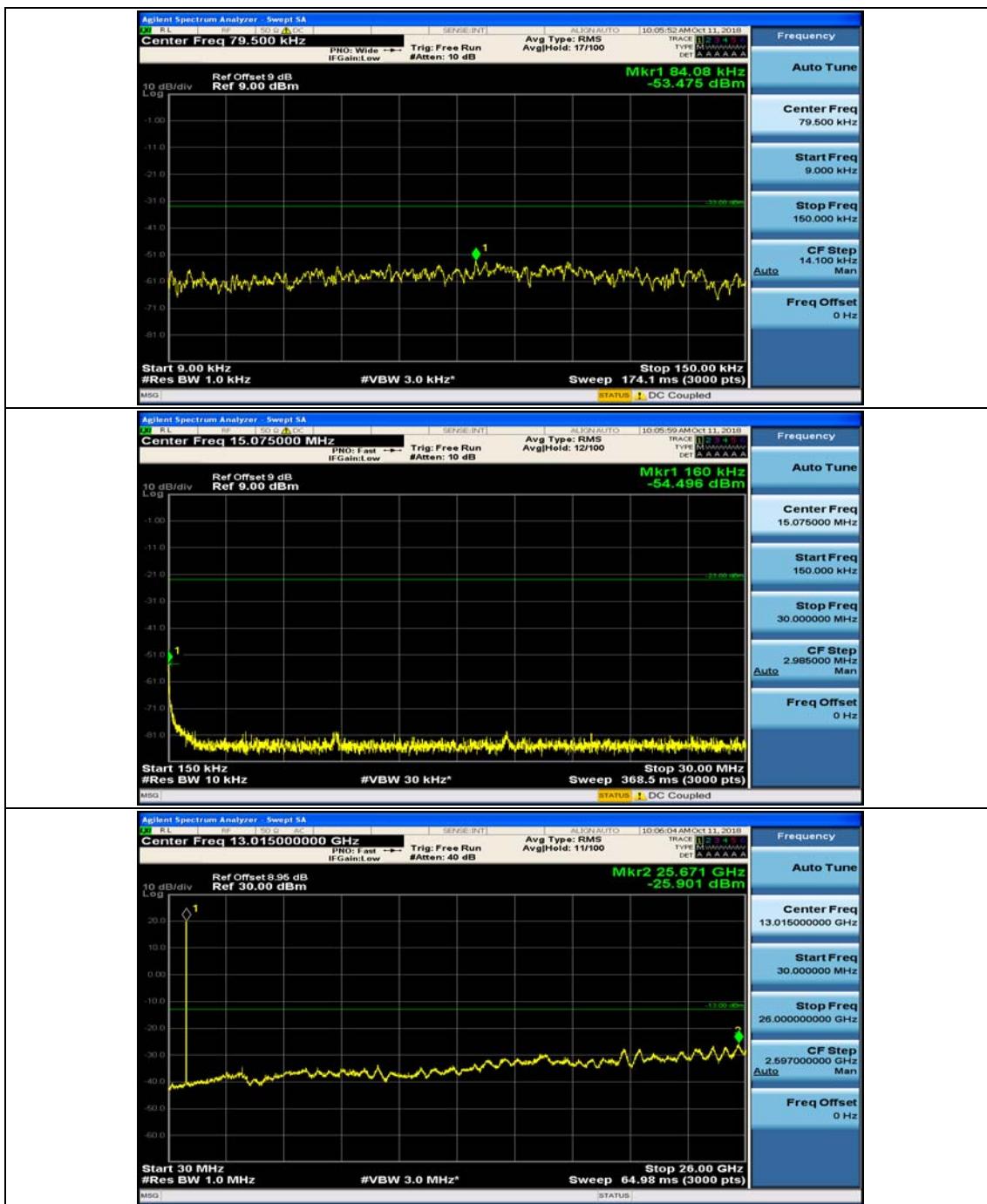


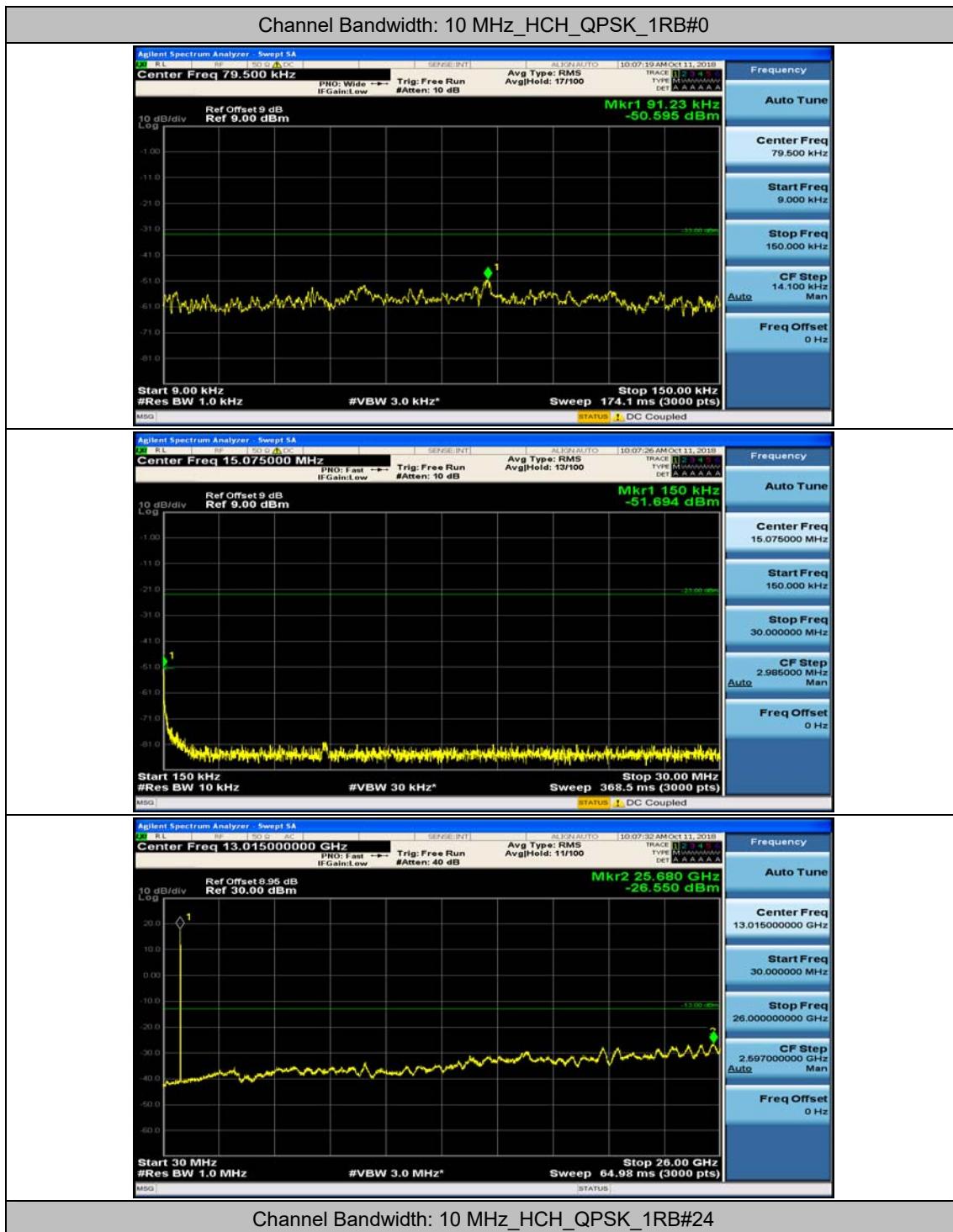


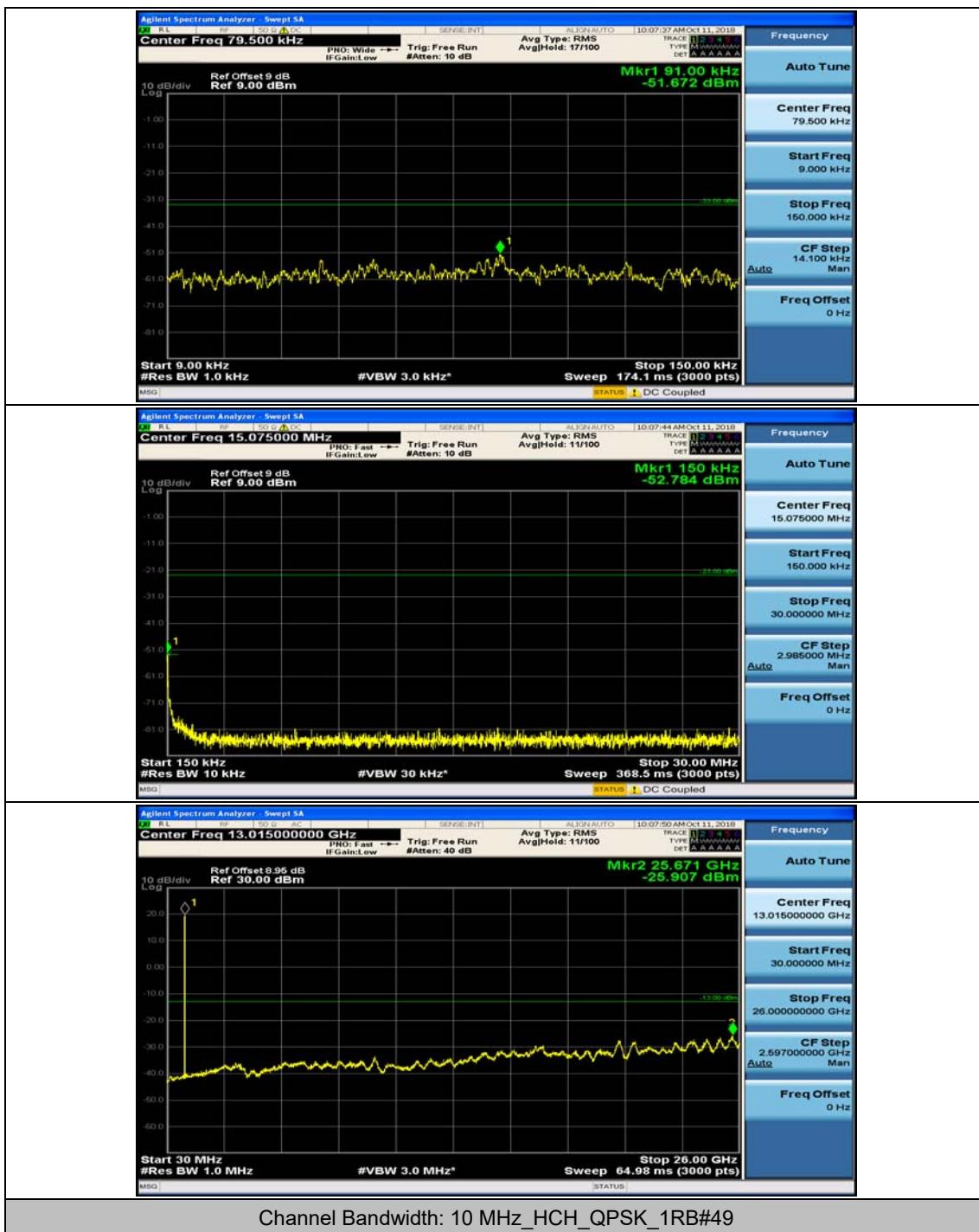


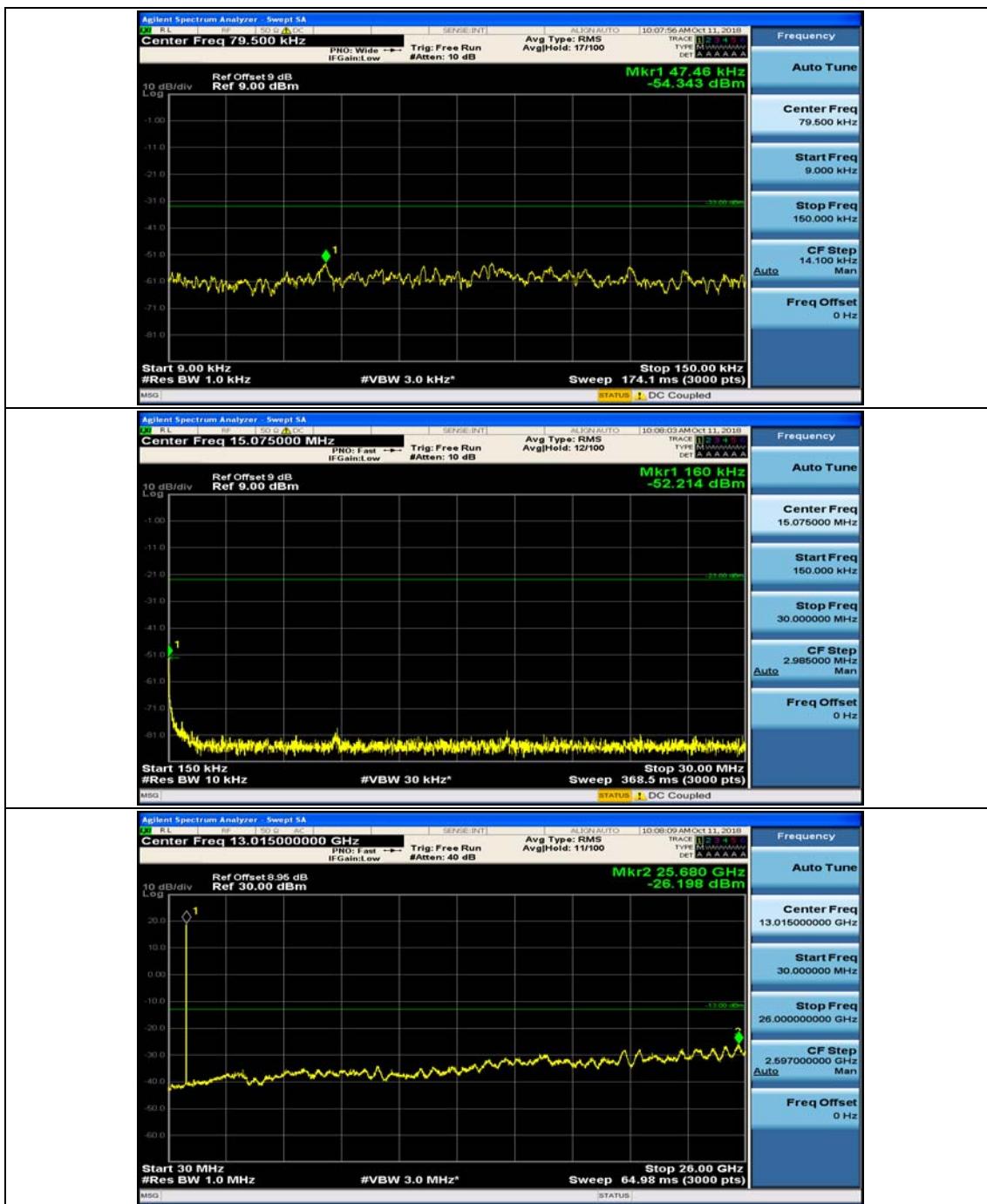


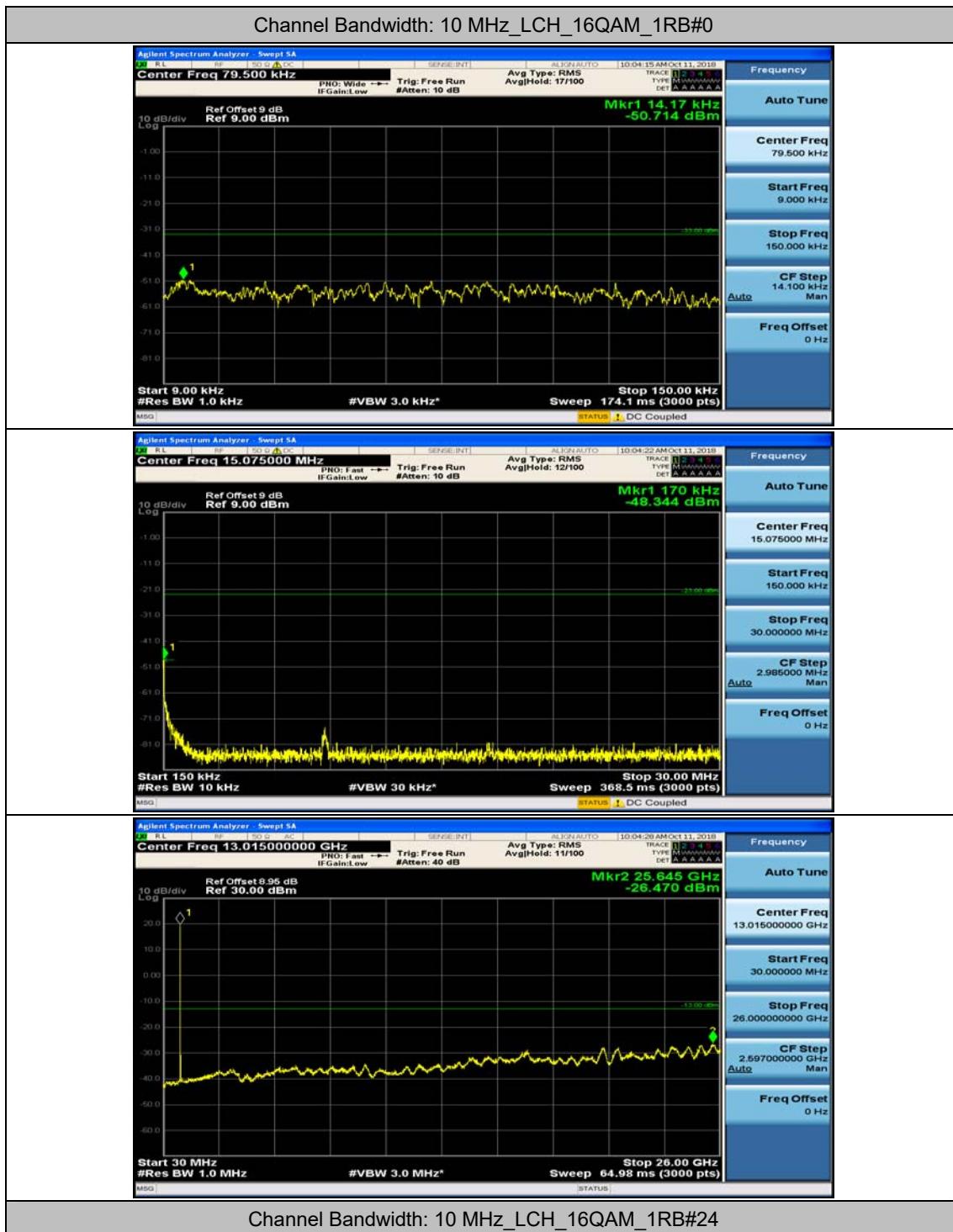


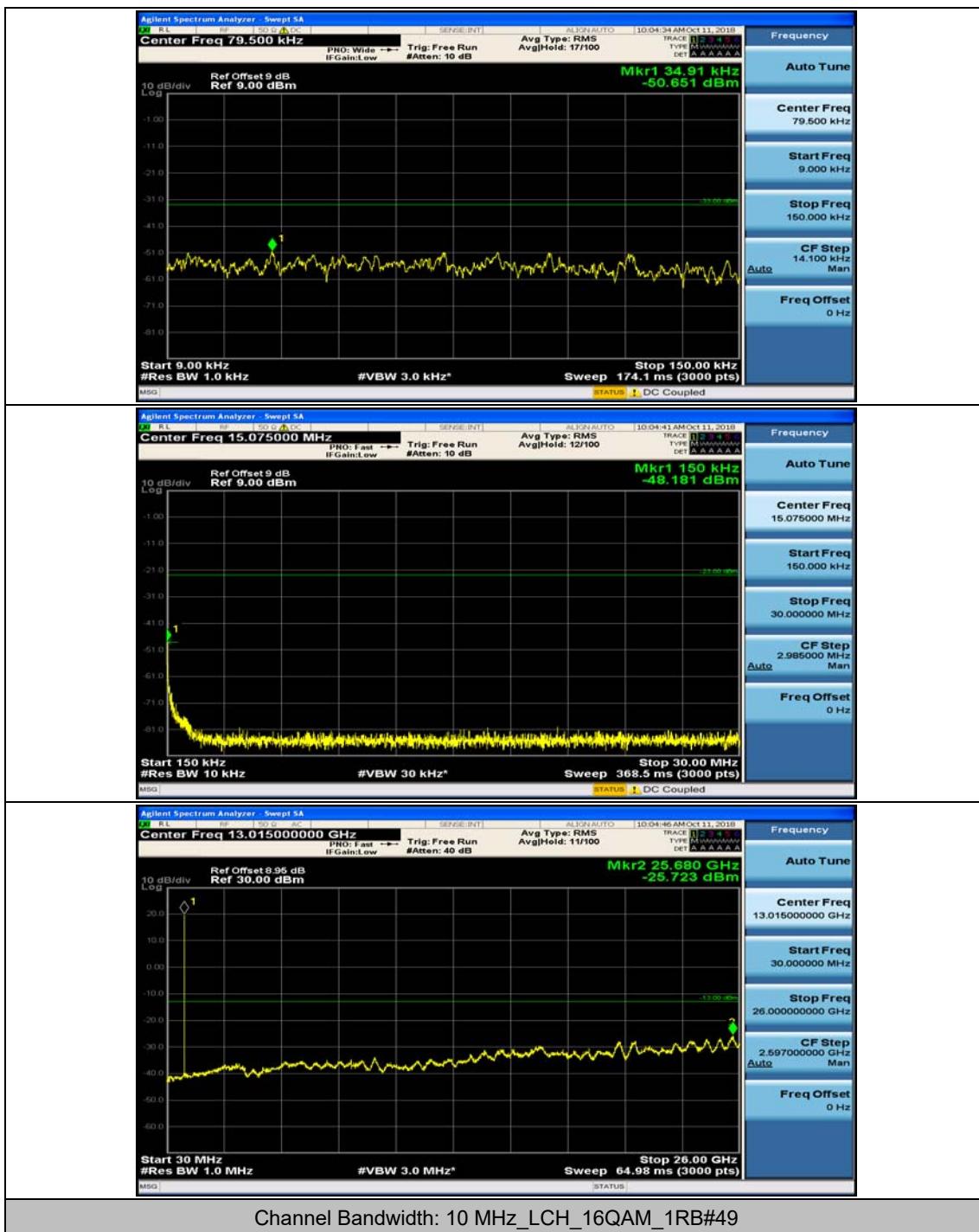


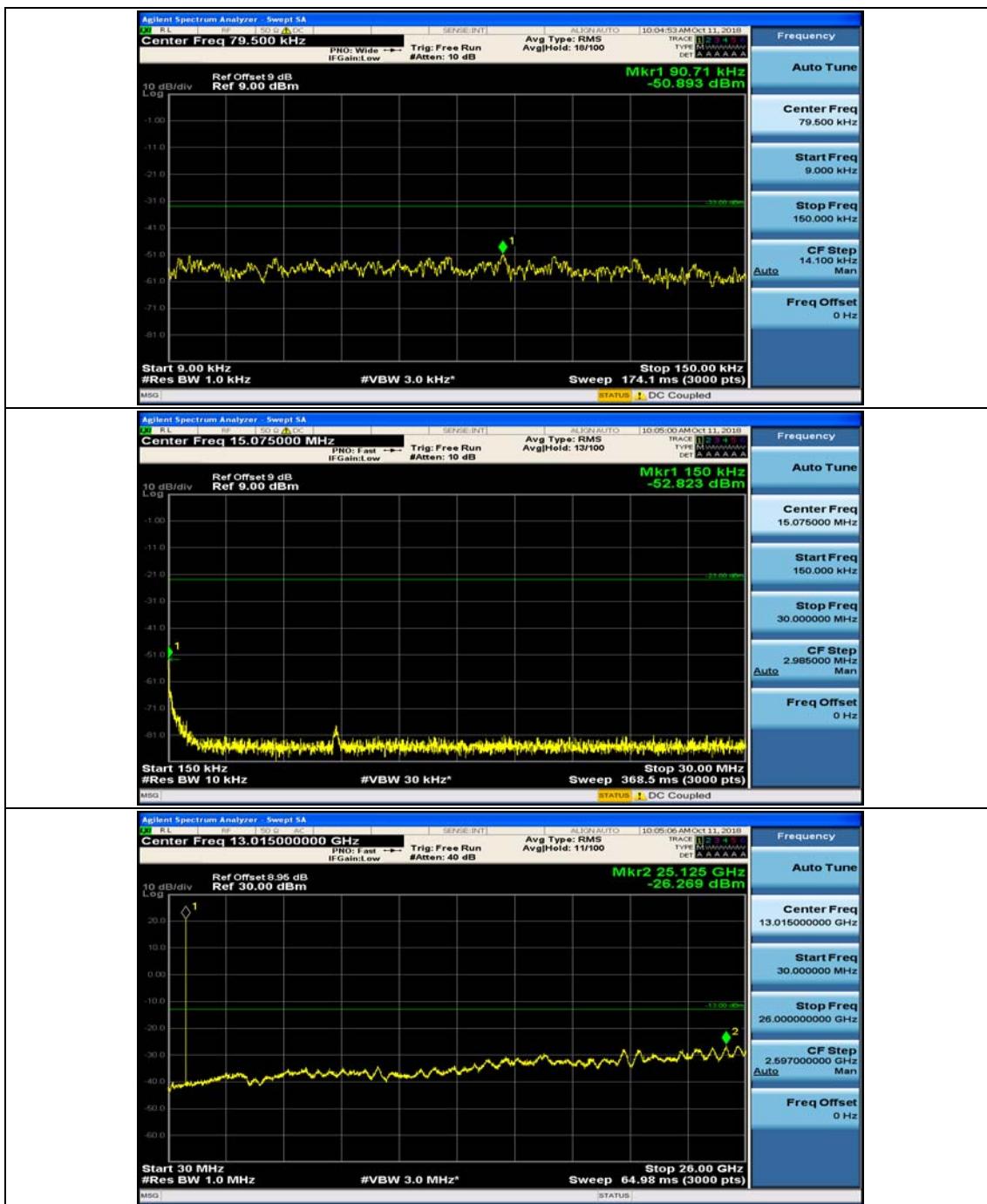


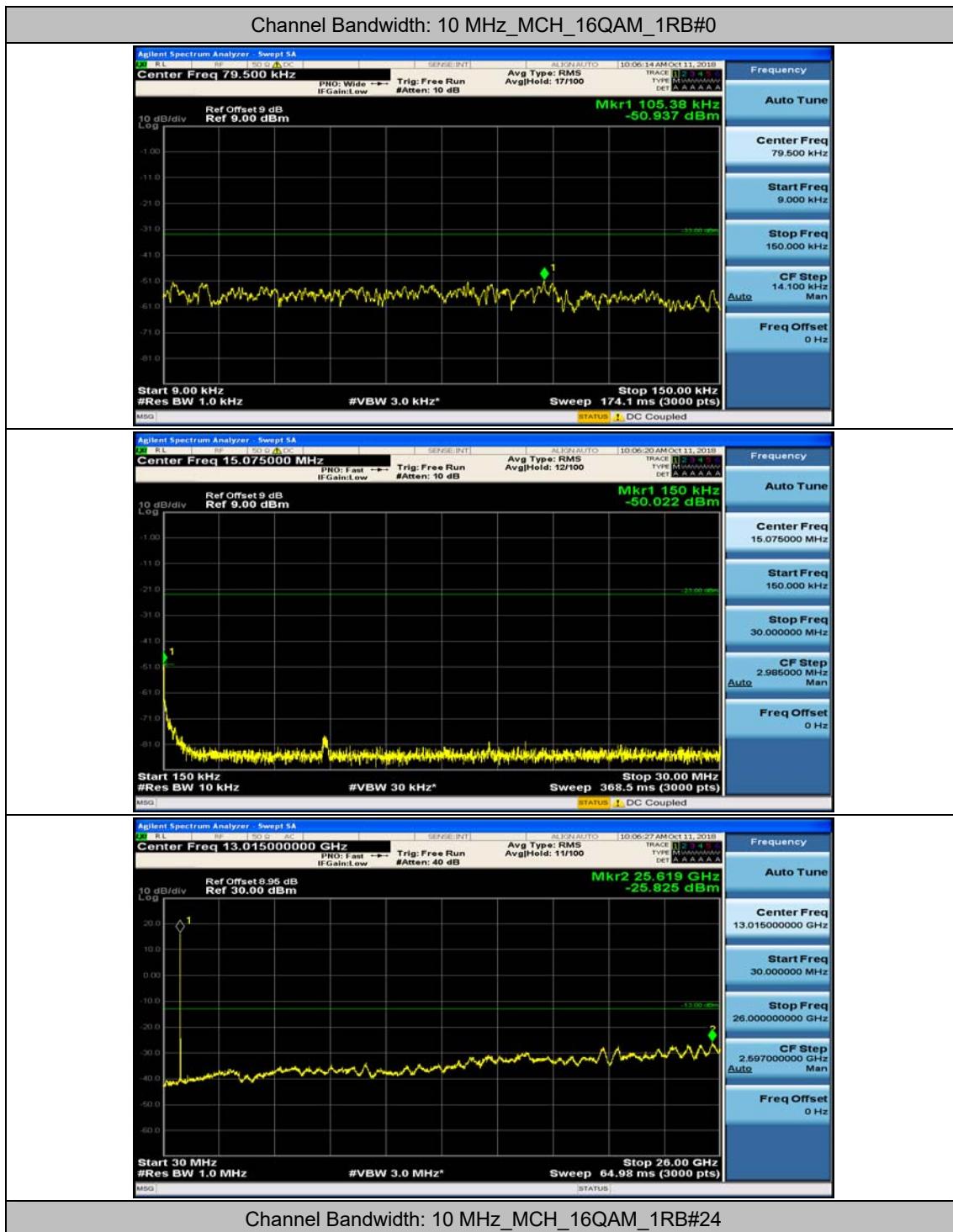


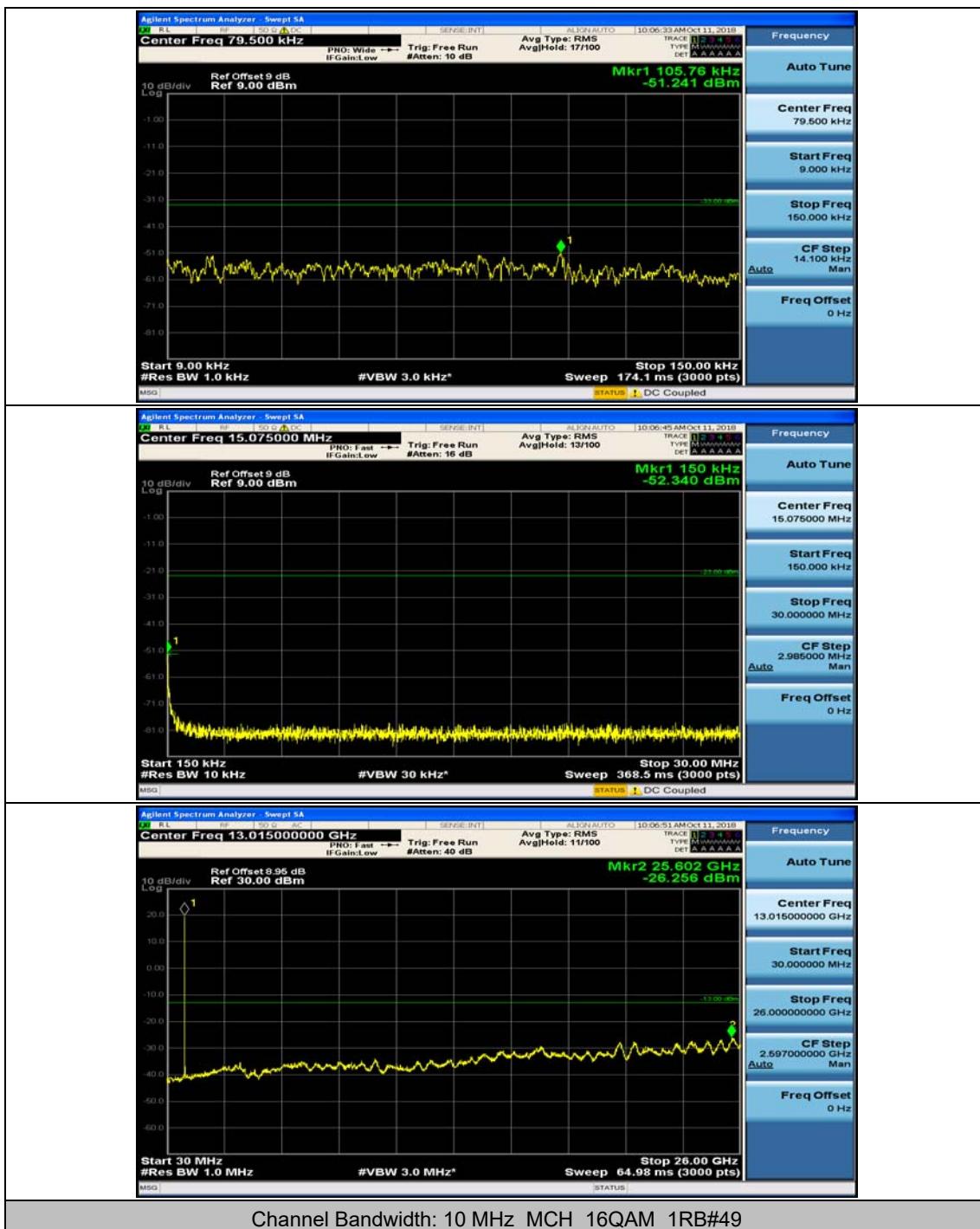


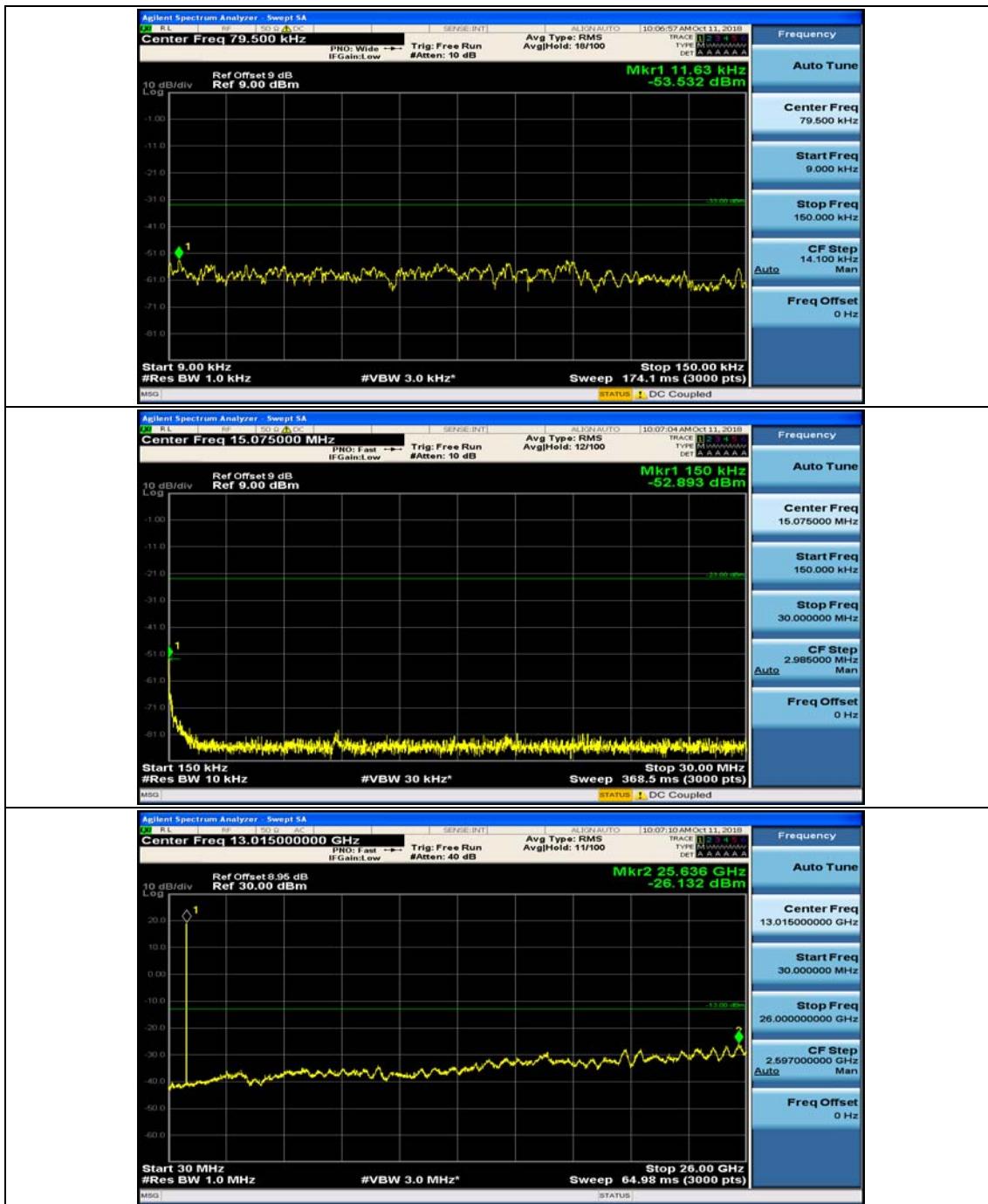


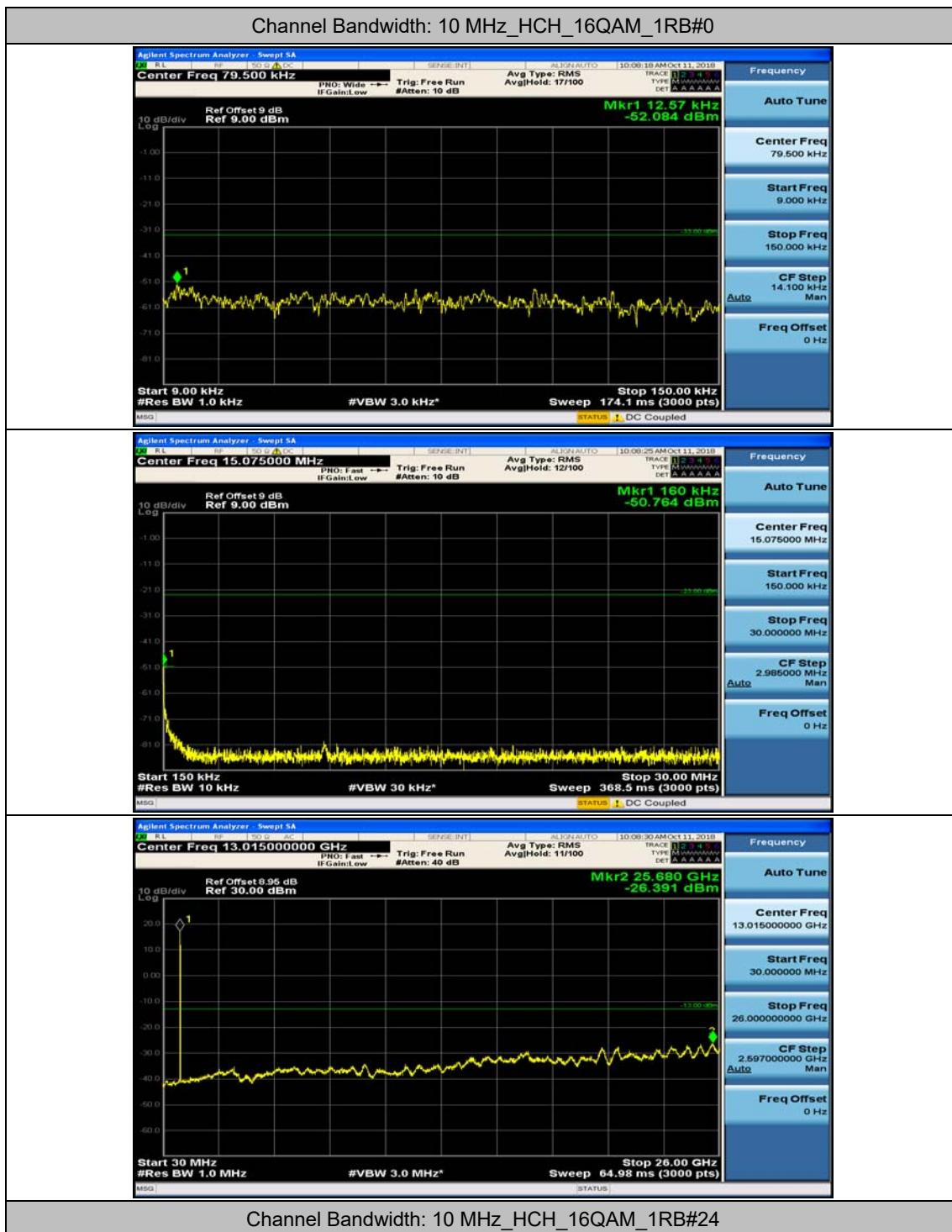


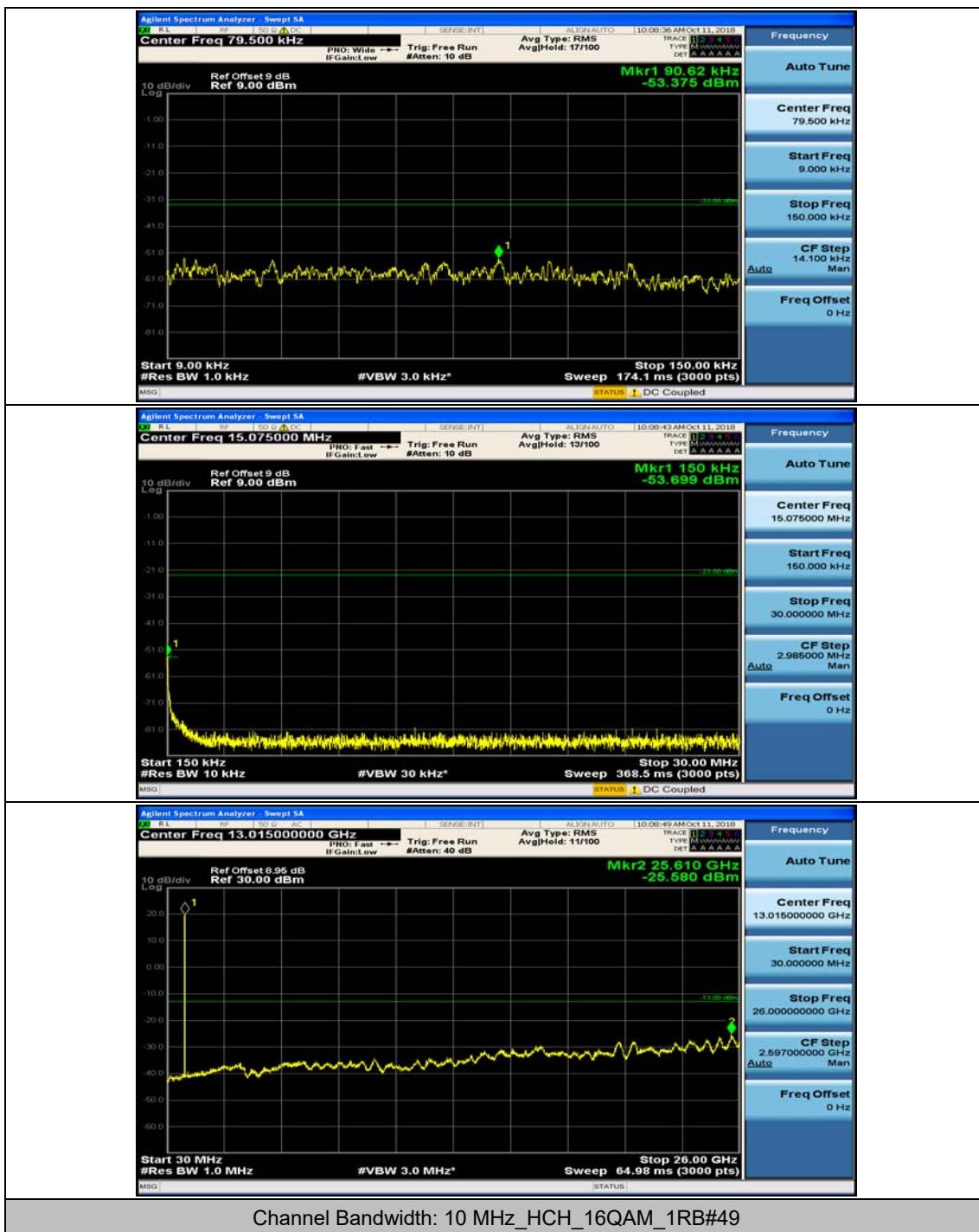


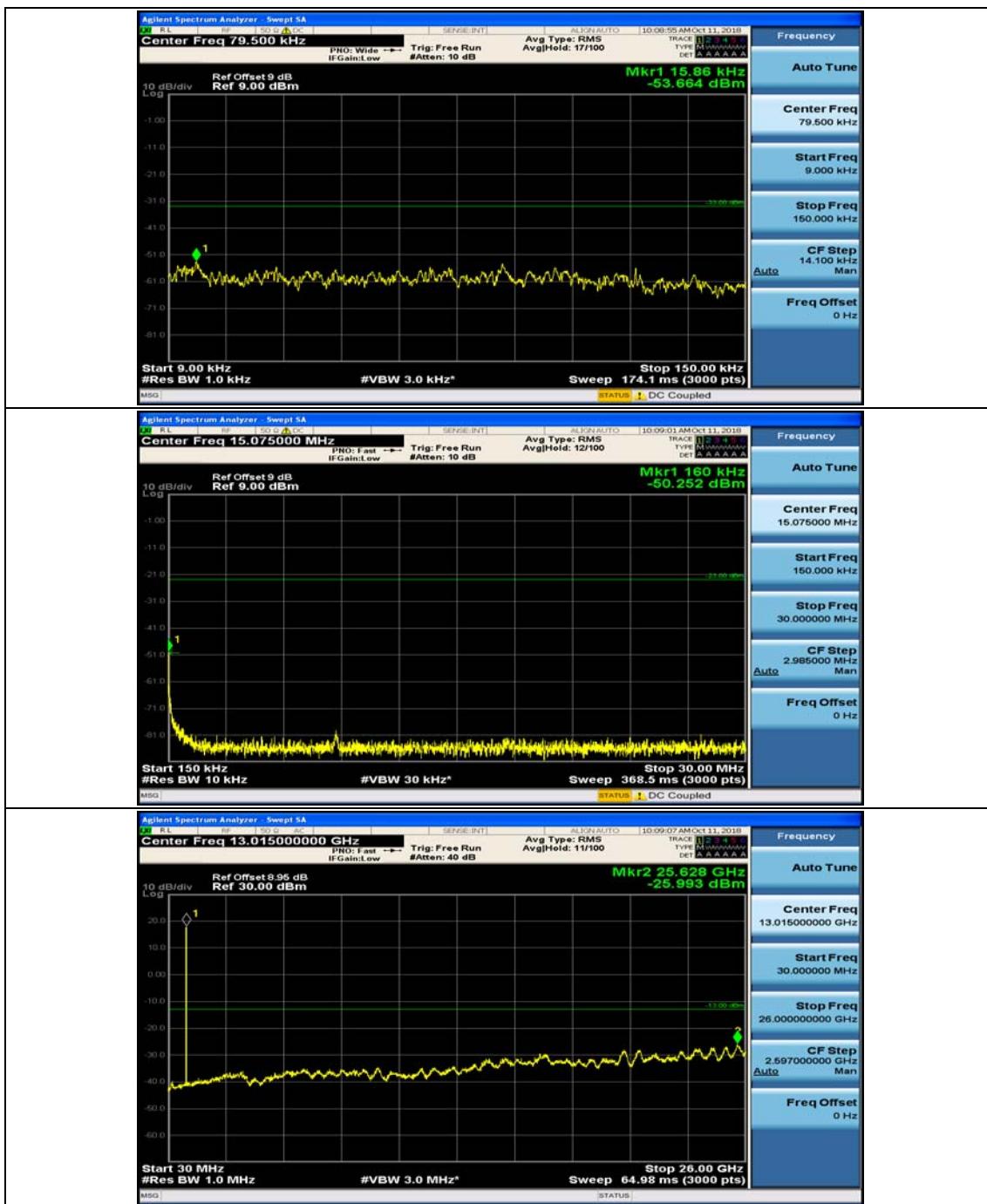












## Appendix F: Frequency Stability

### Test Result

#### Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.1	0.000121	± 2.5	PASS
		VN	TN	3.07	0.003723	± 2.5	PASS
		VH	TN	0.87	0.001055	± 2.5	PASS
	MCH	VL	TN	2.59	0.003096	± 2.5	PASS
		VN	TN	2.19	0.002618	± 2.5	PASS
		VH	TN	4.85	0.005798	± 2.5	PASS
	HCH	VL	TN	2.81	0.003313	± 2.5	PASS
		VN	TN	-1.2	-0.001415	± 2.5	PASS
		VH	TN	0.65	0.000766	± 2.5	PASS
16QAM	LCH	VL	TN	3.23	0.003917	± 2.5	PASS
		VN	TN	3.77	0.004571	± 2.5	PASS
		VH	TN	2.56	0.003104	± 2.5	PASS
	MCH	VL	TN	1.53	0.001829	± 2.5	PASS
		VN	TN	2.87	0.003431	± 2.5	PASS
		VH	TN	3.82	0.004567	± 2.5	PASS
	HCH	VL	TN	4.55	0.005364	± 2.5	PASS
		VN	TN	4.27	0.005034	± 2.5	PASS
		VH	TN	2.32	0.002735	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.33	0.001613	± 2.5	PASS
		VN	-20	1.34	0.001625	± 2.5	PASS
		VN	-10	1.72	0.002086	± 2.5	PASS
		VN	0	-0.99	-0.001200	± 2.5	PASS
		VN	10	1.88	0.002280	± 2.5	PASS
		VN	20	0.47	0.000570	± 2.5	PASS
		VN	30	3.61	0.004377	± 2.5	PASS
		VN	40	0.64	0.000776	± 2.5	PASS
		VN	50	1.08	0.001310	± 2.5	PASS
	MCH	VN	-30	0.16	0.000191	± 2.5	PASS

	HCH	VN	-20	4.77	0.005702	$\pm 2.5$	PASS	
		VN	-10	4.3	0.005140	$\pm 2.5$	PASS	
		VN	0	1.37	0.001638	$\pm 2.5$	PASS	
		VN	10	2.82	0.003371	$\pm 2.5$	PASS	
		VN	20	2.29	0.002738	$\pm 2.5$	PASS	
		VN	30	1.68	0.002008	$\pm 2.5$	PASS	
		VN	40	-1.8	-0.002152	$\pm 2.5$	PASS	
		VN	50	0.64	0.000765	$\pm 2.5$	PASS	
	LCH	VN	-30	-1.88	-0.002216	$\pm 2.5$	PASS	
		VN	-20	4.57	0.005387	$\pm 2.5$	PASS	
		VN	-10	4.2	0.004951	$\pm 2.5$	PASS	
		VN	0	-1.61	-0.001898	$\pm 2.5$	PASS	
		VN	10	1.52	0.001792	$\pm 2.5$	PASS	
		VN	20	3.04	0.003584	$\pm 2.5$	PASS	
		VN	30	1.07	0.001261	$\pm 2.5$	PASS	
		VN	40	2.33	0.002747	$\pm 2.5$	PASS	
	16QAM	MCH	VN	-30	-1.64	-0.001989	$\pm 2.5$	PASS
			VN	-20	2.69	0.003262	$\pm 2.5$	PASS
			VN	-10	4.3	0.005214	$\pm 2.5$	PASS
			VN	0	-1.05	-0.001273	$\pm 2.5$	PASS
			VN	10	3.51	0.004256	$\pm 2.5$	PASS
			VN	20	4.72	0.005723	$\pm 2.5$	PASS
			VN	30	-1.39	-0.001685	$\pm 2.5$	PASS
			VN	40	0.11	0.000133	$\pm 2.5$	PASS
			VN	50	4.05	0.004911	$\pm 2.5$	PASS
		HCH	VN	-30	2.14	0.002523	$\pm 2.5$	PASS
			VN	-20	2.65	0.003124	$\pm 2.5$	PASS
			VN	-10	0.35	0.000413	$\pm 2.5$	PASS
			VN	0	-0.77	-0.000908	$\pm 2.5$	PASS
			VN	10	1.76	0.002075	$\pm 2.5$	PASS
			VN	20	3.89	0.004586	$\pm 2.5$	PASS
			VN	30	-0.21	-0.000248	$\pm 2.5$	PASS
		HCH	VN	40	4.99	0.005882	$\pm 2.5$	PASS
			VN	50	-1.82	-0.002145	$\pm 2.5$	PASS
			VN	-30	3.61	0.004256	$\pm 2.5$	PASS
			VN	-20	0.55	0.000648	$\pm 2.5$	PASS
			VN	-10	-1.82	-0.002145	$\pm 2.5$	PASS
			VN	0	3.84	0.004527	$\pm 2.5$	PASS
			VN	10	2.46	0.002900	$\pm 2.5$	PASS
			VN	20	2.3	0.002711	$\pm 2.5$	PASS

		VN	30	1.18	0.001391	$\pm 2.5$	PASS
		VN	40	0.71	0.000837	$\pm 2.5$	PASS
		VN	50	4.23	0.004986	$\pm 2.5$	PASS

### Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz+							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.36	0.000436	$\pm 2.5$	PASS
		VN	TN	4.88	0.005912	$\pm 2.5$	PASS
		VH	TN	1.26	0.001526	$\pm 2.5$	PASS
	MCH	VL	TN	-0.3	-0.000359	$\pm 2.5$	PASS
		VN	TN	-0.52	-0.000622	$\pm 2.5$	PASS
		VH	TN	2.79	0.003335	$\pm 2.5$	PASS
	HCH	VL	TN	4.74	0.005593	$\pm 2.5$	PASS
		VN	TN	-1.09	-0.001286	$\pm 2.5$	PASS
		VH	TN	3.49	0.004118	$\pm 2.5$	PASS
16QAM	LCH	VL	TN	3.51	0.004252	$\pm 2.5$	PASS
		VN	TN	3.21	0.003889	$\pm 2.5$	PASS
		VH	TN	4.82	0.005839	$\pm 2.5$	PASS
	MCH	VL	TN	-0.39	-0.000466	$\pm 2.5$	PASS
		VN	TN	0.49	0.000586	$\pm 2.5$	PASS
		VH	TN	1.1	0.001315	$\pm 2.5$	PASS
	HCH	VL	TN	5	0.005900	$\pm 2.5$	PASS
		VN	TN	-0.24	-0.000283	$\pm 2.5$	PASS
		VH	TN	0.02	0.000024	$\pm 2.5$	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.7	-0.000848	$\pm 2.5$	PASS
		VN	-20	-0.88	-0.001066	$\pm 2.5$	PASS
		VN	-10	0.87	0.001054	$\pm 2.5$	PASS
		VN	0	4.14	0.005015	$\pm 2.5$	PASS
		VN	10	-1.66	-0.002011	$\pm 2.5$	PASS
		VN	20	-0.16	-0.000194	$\pm 2.5$	PASS
		VN	30	-0.63	-0.000763	$\pm 2.5$	PASS
		VN	40	2.08	0.002520	$\pm 2.5$	PASS
		VN	50	-0.26	-0.000315	$\pm 2.5$	PASS
	MCH	VN	-30	3.62	0.004328	$\pm 2.5$	PASS
		VN	-20	-0.06	-0.000072	$\pm 2.5$	PASS

	HCH	VN	-10	-0.71	-0.000849	$\pm 2.5$	PASS
		VN	0	0.41	0.000490	$\pm 2.5$	PASS
		VN	10	-1.71	-0.002044	$\pm 2.5$	PASS
		VN	20	-1.65	-0.001973	$\pm 2.5$	PASS
		VN	30	4.18	0.004997	$\pm 2.5$	PASS
		VN	40	-0.22	-0.000263	$\pm 2.5$	PASS
		VN	50	-0.51	-0.000610	$\pm 2.5$	PASS
		VN	-30	4.15	0.004897	$\pm 2.5$	PASS
		VN	-20	-0.72	-0.000850	$\pm 2.5$	PASS
		VN	-10	2.28	0.002690	$\pm 2.5$	PASS
16QAM	LCH	VN	0	3.35	0.003953	$\pm 2.5$	PASS
		VN	10	1.66	0.001959	$\pm 2.5$	PASS
		VN	20	-1.2	-0.001416	$\pm 2.5$	PASS
		VN	30	-0.42	-0.000496	$\pm 2.5$	PASS
		VN	40	0.81	0.000956	$\pm 2.5$	PASS
		VN	50	4.3	0.005074	$\pm 2.5$	PASS
		VN	-30	-0.61	-0.000729	$\pm 2.5$	PASS
		VN	-20	1.95	0.002331	$\pm 2.5$	PASS
		VN	-10	0.24	0.000287	$\pm 2.5$	PASS
	MCH	VN	0	1.15	0.001375	$\pm 2.5$	PASS
		VN	10	-1.17	-0.001399	$\pm 2.5$	PASS
		VN	20	3.87	0.004626	$\pm 2.5$	PASS
		VN	30	-0.54	-0.000646	$\pm 2.5$	PASS
		VN	40	1.11	0.001327	$\pm 2.5$	PASS
		VN	50	-1.12	-0.001339	$\pm 2.5$	PASS
		VN	-30	2.22	0.002619	$\pm 2.5$	PASS
		VN	-20	1.68	0.001982	$\pm 2.5$	PASS
		VN	-10	-0.87	-0.001027	$\pm 2.5$	PASS
		VN	0	1.51	0.001782	$\pm 2.5$	PASS
	HCH	VN	10	-1.36	-0.001605	$\pm 2.5$	PASS
		VN	20	-1.53	-0.001805	$\pm 2.5$	PASS
		VN	30	2.23	0.002631	$\pm 2.5$	PASS
		VN	40	3	0.003540	$\pm 2.5$	PASS
		VN	50	-0.51	-0.000602	$\pm 2.5$	PASS
		VN	-30	-0.34	-0.000401	$\pm 2.5$	PASS
		VN	-20	2.15	0.002537	$\pm 2.5$	PASS

		VN	40	3.53	0.004165	$\pm 2.5$	PASS
		VN	50	4.84	0.005711	$\pm 2.5$	PASS

## Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.48	0.001791	$\pm 2.5$	PASS
		VN	TN	-1.58	-0.001912	$\pm 2.5$	PASS
		VH	TN	-1.17	-0.001416	$\pm 2.5$	PASS
	MCH	VL	TN	1.94	0.002319	$\pm 2.5$	PASS
		VN	TN	1.04	0.001243	$\pm 2.5$	PASS
		VH	TN	-0.9	-0.001076	$\pm 2.5$	PASS
	HCH	VL	TN	0.52	0.000614	$\pm 2.5$	PASS
		VN	TN	1.6	0.001890	$\pm 2.5$	PASS
		VH	TN	0.28	0.000331	$\pm 2.5$	PASS
16QAM	LCH	VL	TN	3.75	0.004537	$\pm 2.5$	PASS
		VN	TN	1.4	0.001694	$\pm 2.5$	PASS
		VH	TN	1.4	0.001694	$\pm 2.5$	PASS
	MCH	VL	TN	3.8	0.004543	$\pm 2.5$	PASS
		VN	TN	0.99	0.001184	$\pm 2.5$	PASS
		VH	TN	4.94	0.005906	$\pm 2.5$	PASS
	HCH	VL	TN	-0.09	-0.000106	$\pm 2.5$	PASS
		VN	TN	4.08	0.004820	$\pm 2.5$	PASS
		VH	TN	2.58	0.003048	$\pm 2.5$	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.37	0.002868	$\pm 2.5$	PASS
		VN	-20	2.48	0.003001	$\pm 2.5$	PASS
		VN	-10	4.83	0.005844	$\pm 2.5$	PASS
		VN	0	0.47	0.000569	$\pm 2.5$	PASS
		VN	10	0.41	0.000496	$\pm 2.5$	PASS
		VN	20	1.63	0.001972	$\pm 2.5$	PASS
		VN	30	-0.44	-0.000532	$\pm 2.5$	PASS
		VN	40	-0.13	-0.000157	$\pm 2.5$	PASS
		VN	50	-1.3	-0.001573	$\pm 2.5$	PASS
	MCH	VN	-30	1.6	0.001913	$\pm 2.5$	PASS
		VN	-20	1.06	0.001267	$\pm 2.5$	PASS
		VN	-10	-0.15	-0.000179	$\pm 2.5$	PASS

	HCH	VN	0	-1.27	-0.001518	$\pm 2.5$	PASS
		VN	10	0.77	0.000921	$\pm 2.5$	PASS
		VN	20	4.26	0.005093	$\pm 2.5$	PASS
		VN	30	1.23	0.001470	$\pm 2.5$	PASS
		VN	40	2.56	0.003060	$\pm 2.5$	PASS
		VN	50	-0.28	-0.000335	$\pm 2.5$	PASS
		VN	-30	1.32	0.001559	$\pm 2.5$	PASS
		VN	-20	-0.4	-0.000473	$\pm 2.5$	PASS
		VN	-10	4.96	0.005859	$\pm 2.5$	PASS
		VN	0	1.25	0.001477	$\pm 2.5$	PASS
		VN	10	1.35	0.001595	$\pm 2.5$	PASS
		VN	20	3.36	0.003969	$\pm 2.5$	PASS
		VN	30	1.55	0.001831	$\pm 2.5$	PASS
		VN	40	2.13	0.002516	$\pm 2.5$	PASS
		VN	50	1.11	0.001311	$\pm 2.5$	PASS
16QAM	LCH	VN	-30	4.43	0.005296	$\pm 2.5$	PASS
		VN	-20	0.39	0.000466	$\pm 2.5$	PASS
		VN	-10	-0.03	-0.000036	$\pm 2.5$	PASS
		VN	0	-0.26	-0.000311	$\pm 2.5$	PASS
		VN	10	-0.64	-0.000765	$\pm 2.5$	PASS
		VN	20	-0.25	-0.000299	$\pm 2.5$	PASS
		VN	30	2.05	0.002451	$\pm 2.5$	PASS
		VN	40	-0.92	-0.001100	$\pm 2.5$	PASS
		VN	50	4.5	0.005380	$\pm 2.5$	PASS
	MCH	VN	-30	4.19	0.004950	$\pm 2.5$	PASS
		VN	-20	4.03	0.004761	$\pm 2.5$	PASS
		VN	-10	2.3	0.002717	$\pm 2.5$	PASS
		VN	0	2.37	0.002800	$\pm 2.5$	PASS
		VN	10	1.49	0.001760	$\pm 2.5$	PASS
		VN	20	0.56	0.000662	$\pm 2.5$	PASS
		VN	30	-1.74	-0.002056	$\pm 2.5$	PASS
		VN	40	0.6	0.000709	$\pm 2.5$	PASS
		VN	50	-1.14	-0.001347	$\pm 2.5$	PASS
	HCH	VN	-30	1.78	0.002103	$\pm 2.5$	PASS
		VN	-20	4.27	0.005044	$\pm 2.5$	PASS
		VN	-10	-1.55	-0.001831	$\pm 2.5$	PASS
		VN	0	-0.29	-0.000343	$\pm 2.5$	PASS
		VN	10	4.71	0.005564	$\pm 2.5$	PASS
		VN	20	-1.1	-0.001299	$\pm 2.5$	PASS
		VN	30	1.66	0.001961	$\pm 2.5$	PASS
		VN	40	0.06	0.000071	$\pm 2.5$	PASS

		VN	50	1.61	0.001902	± 2.5	PASS
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## Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.06	0.001279	± 2.5	PASS
		VN	TN	-1.12	-0.001351	± 2.5	PASS
		VH	TN	2.23	0.002690	± 2.5	PASS
	MCH	VL	TN	0.91	0.001088	± 2.5	PASS
		VN	TN	1.32	0.001578	± 2.5	PASS
		VH	TN	2.38	0.002845	± 2.5	PASS
	HCH	VL	TN	3.11	0.003685	± 2.5	PASS
		VN	TN	4.49	0.005320	± 2.5	PASS
		VH	TN	2.75	0.003258	± 2.5	PASS
16QAM	LCH	VL	TN	1.37	0.001653	± 2.5	PASS
		VN	TN	4.87	0.005875	± 2.5	PASS
		VH	TN	2.1	0.002533	± 2.5	PASS
	MCH	VL	TN	1.69	0.002020	± 2.5	PASS
		VN	TN	1.73	0.002068	± 2.5	PASS
		VH	TN	1.78	0.002128	± 2.5	PASS
	HCH	VL	TN	0.05	0.000059	± 2.5	PASS
		VN	TN	1.68	0.001991	± 2.5	PASS
		VH	TN	2.62	0.003104	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	2	0.002413	± 2.5	PASS
		VN	-20	-1.86	-0.002244	± 2.5	PASS
		VN	-10	0.09	0.000109	± 2.5	PASS
		VN	0	-0.41	-0.000495	± 2.5	PASS
		VN	10	2.09	0.002521	± 2.5	PASS
		VN	20	-1.18	-0.001423	± 2.5	PASS
		VN	30	3.67	0.004427	± 2.5	PASS
		VN	40	1.66	0.002002	± 2.5	PASS
		VN	50	0.47	0.000567	± 2.5	PASS
	MCH	VN	-30	1.33	0.001590	± 2.5	PASS
		VN	-20	2	0.002391	± 2.5	PASS
		VN	-10	1.13	0.001351	± 2.5	PASS
		VN	0	2.93	0.003503	± 2.5	PASS

		VN	10	2.61	0.003120	$\pm 2.5$	PASS
		VN	20	3.31	0.003957	$\pm 2.5$	PASS
		VN	30	-0.31	-0.000371	$\pm 2.5$	PASS
		VN	40	2.05	0.002451	$\pm 2.5$	PASS
		VN	50	-0.52	-0.000622	$\pm 2.5$	PASS
		VN	-30	-1.95	-0.002310	$\pm 2.5$	PASS
		VN	-20	4.9	0.005806	$\pm 2.5$	PASS
		VN	-10	4.21	0.004988	$\pm 2.5$	PASS
		VN	0	-0.12	-0.000142	$\pm 2.5$	PASS
		VN	10	3.07	0.003637	$\pm 2.5$	PASS
		VN	20	1.97	0.002334	$\pm 2.5$	PASS
		VN	30	-0.47	-0.000557	$\pm 2.5$	PASS
		VN	40	4.37	0.005178	$\pm 2.5$	PASS
		VN	50	0.06	0.000071	$\pm 2.5$	PASS
		VN	-30	-1.41	-0.001686	$\pm 2.5$	PASS
		VN	-20	-1.05	-0.001255	$\pm 2.5$	PASS
		VN	-10	3.47	0.004148	$\pm 2.5$	PASS
		VN	0	-1.84	-0.002200	$\pm 2.5$	PASS
		VN	10	3.25	0.003885	$\pm 2.5$	PASS
		VN	20	2.28	0.002726	$\pm 2.5$	PASS
		VN	30	3.68	0.004399	$\pm 2.5$	PASS
		VN	40	1.31	0.001566	$\pm 2.5$	PASS
		VN	50	0.3	0.000359	$\pm 2.5$	PASS
		VN	-30	2.32	0.002749	$\pm 2.5$	PASS
		VN	-20	-1.13	-0.001339	$\pm 2.5$	PASS
		VN	-10	-1.86	-0.002204	$\pm 2.5$	PASS
		VN	0	0.9	0.001066	$\pm 2.5$	PASS
		VN	10	-1.42	-0.001682	$\pm 2.5$	PASS
		VN	20	1.61	0.001908	$\pm 2.5$	PASS
		VN	30	3.37	0.003993	$\pm 2.5$	PASS
		VN	40	4.35	0.005154	$\pm 2.5$	PASS
		VN	50	3.11	0.003685	$\pm 2.5$	PASS
		VN	-30	2.83	0.003353	$\pm 2.5$	PASS
		VN	-20	4.36	0.005166	$\pm 2.5$	PASS
		VN	-10	0.93	0.001102	$\pm 2.5$	PASS
		VN	0	-1.07	-0.001268	$\pm 2.5$	PASS
		VN	10	1.71	0.002026	$\pm 2.5$	PASS
		VN	20	3.47	0.004111	$\pm 2.5$	PASS
		VN	30	1.07	0.001268	$\pm 2.5$	PASS
		VN	40	4.8	0.005687	$\pm 2.5$	PASS
		VN	50	-0.48	-0.000569	$\pm 2.5$	PASS