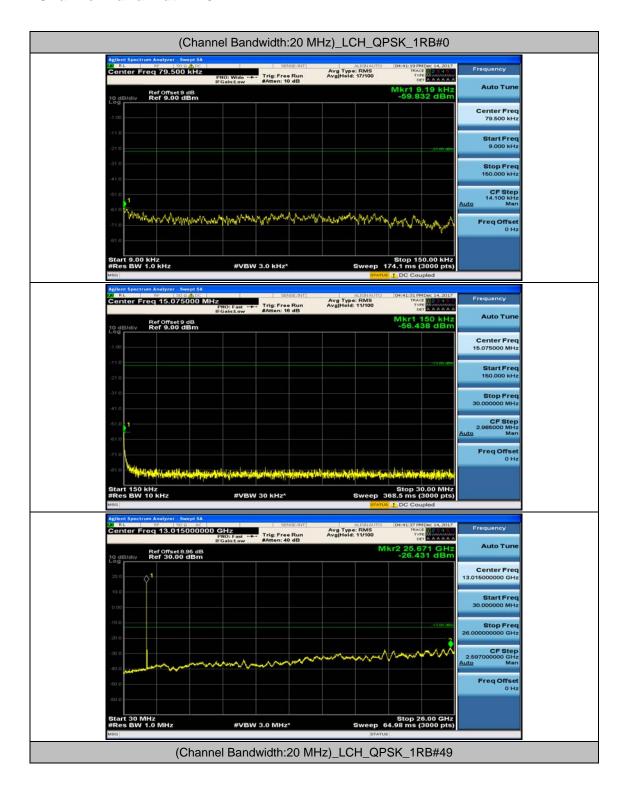




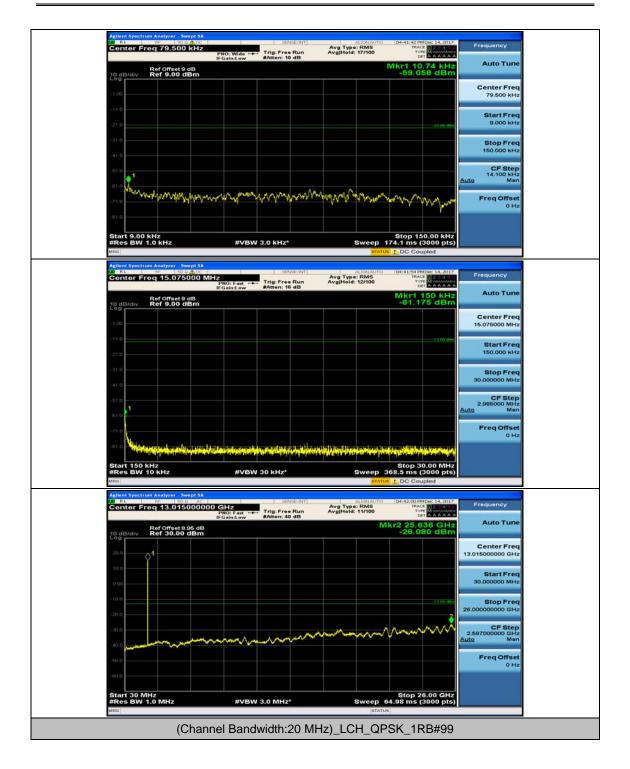


#### **Channel Bandwidth: 20 MHz**



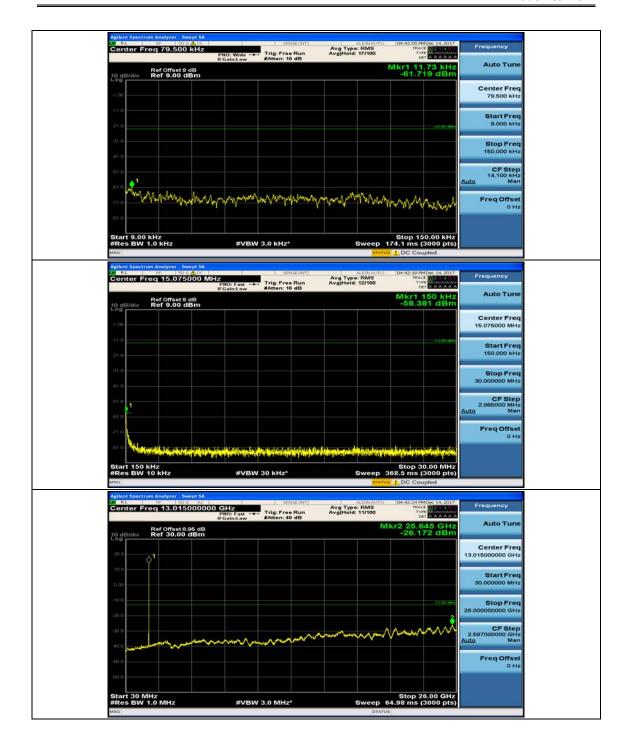




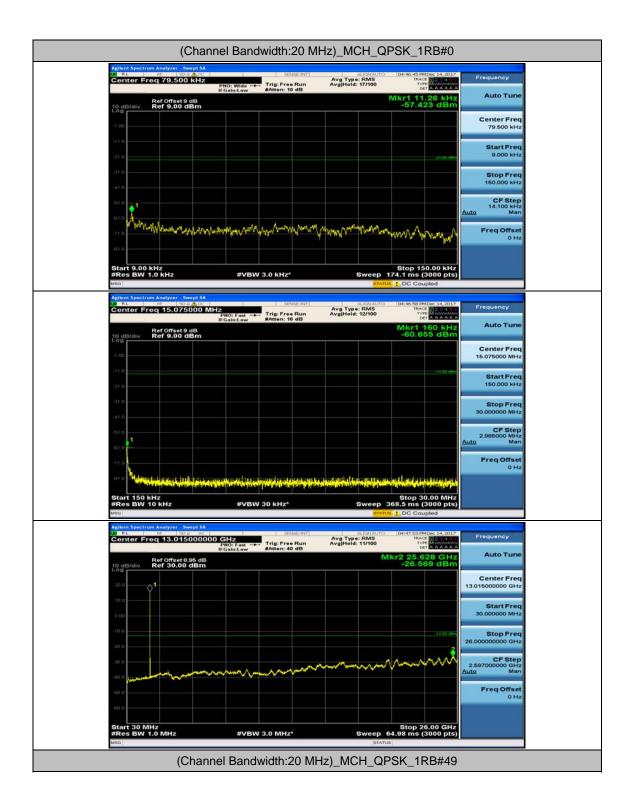






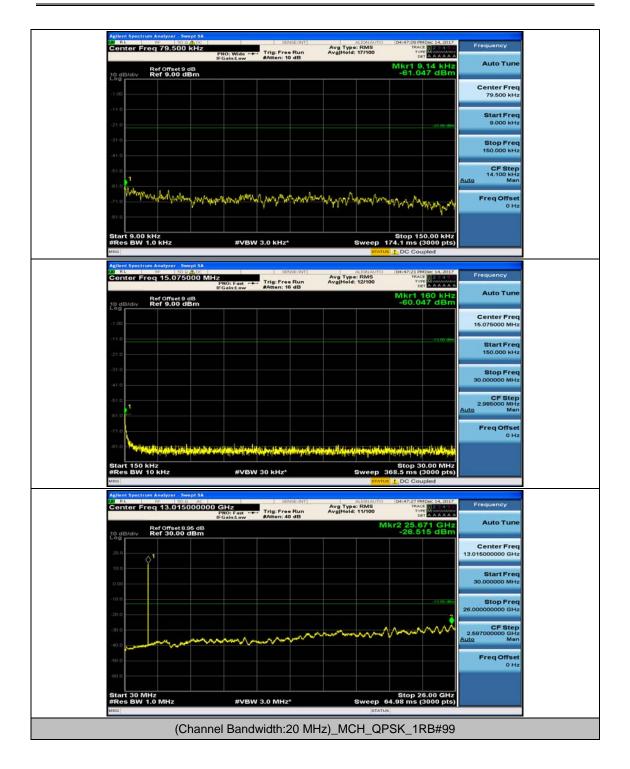






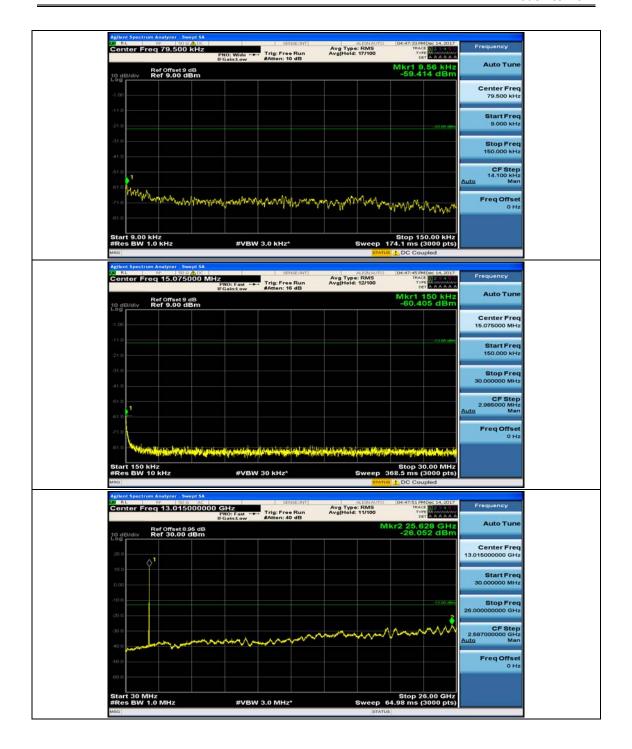




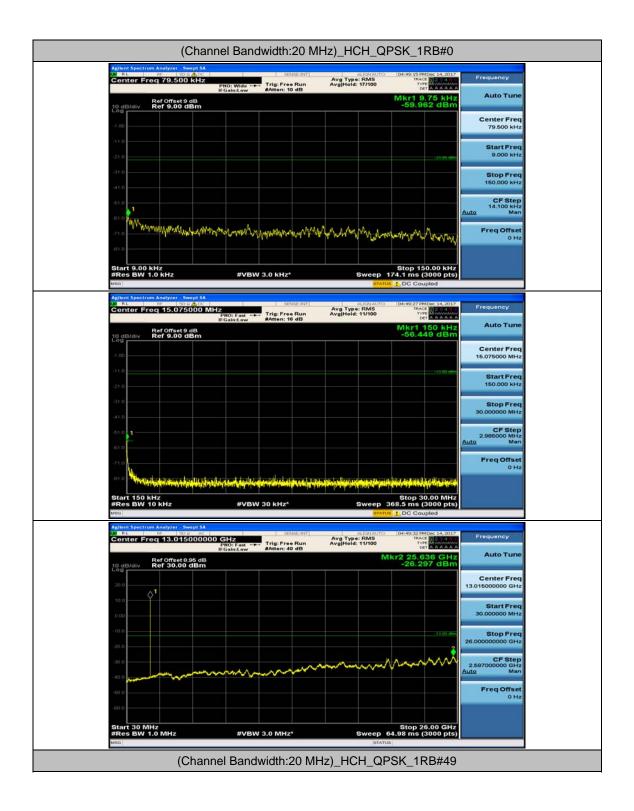






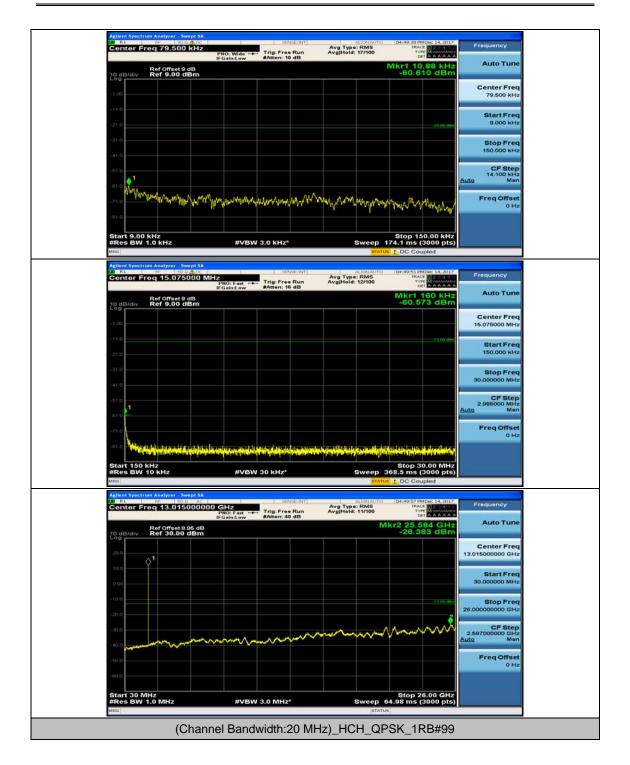






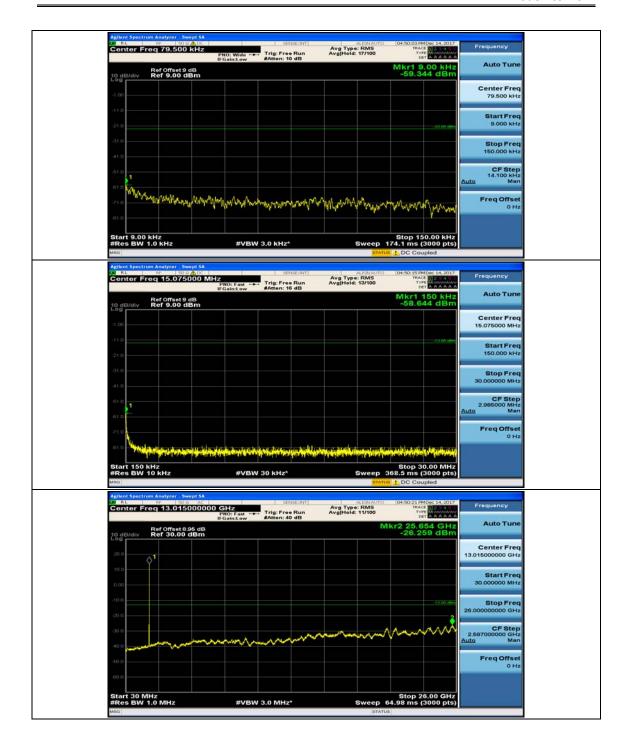




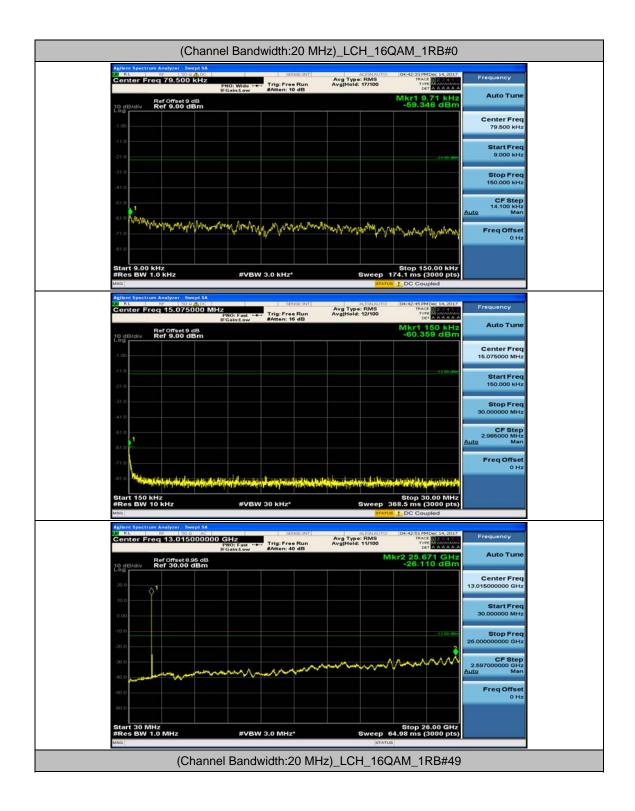






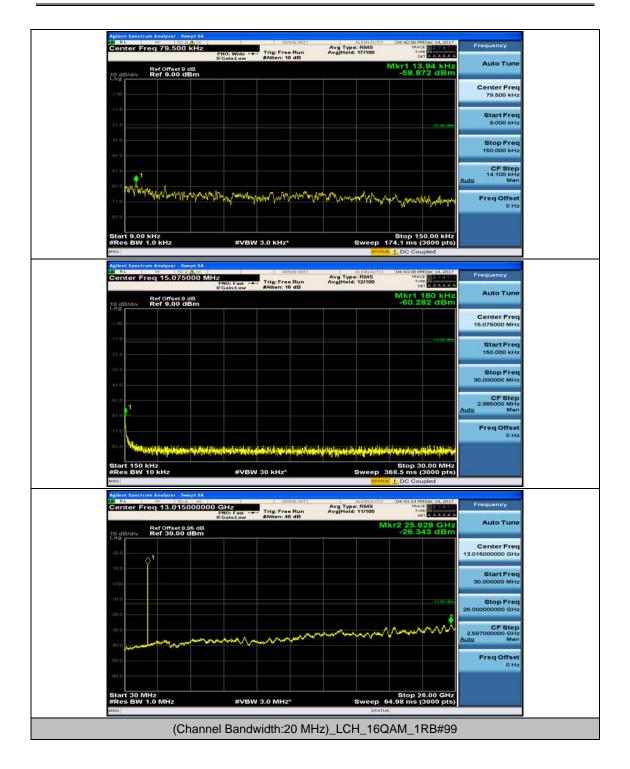






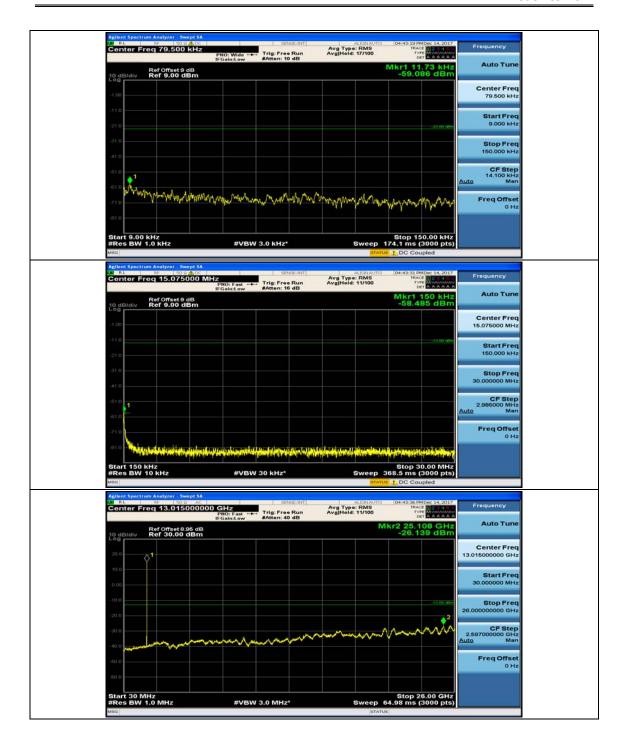






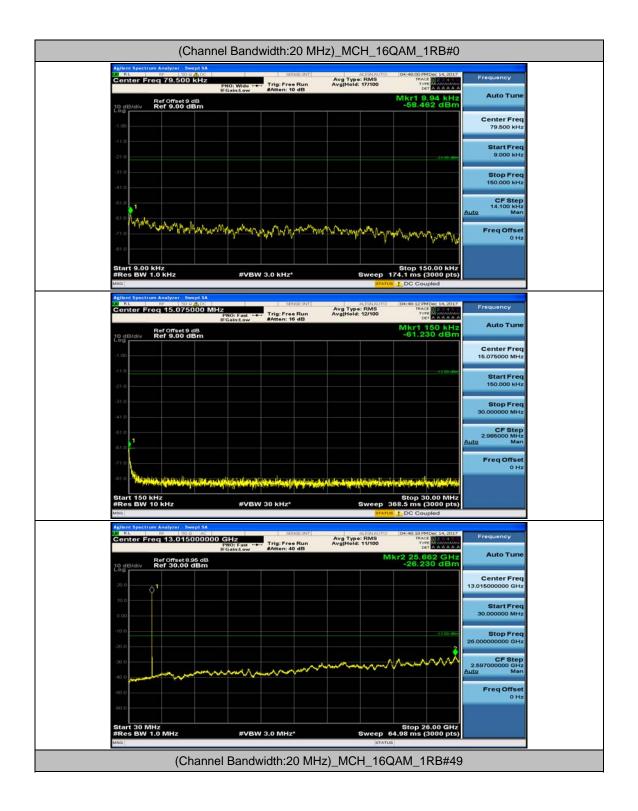






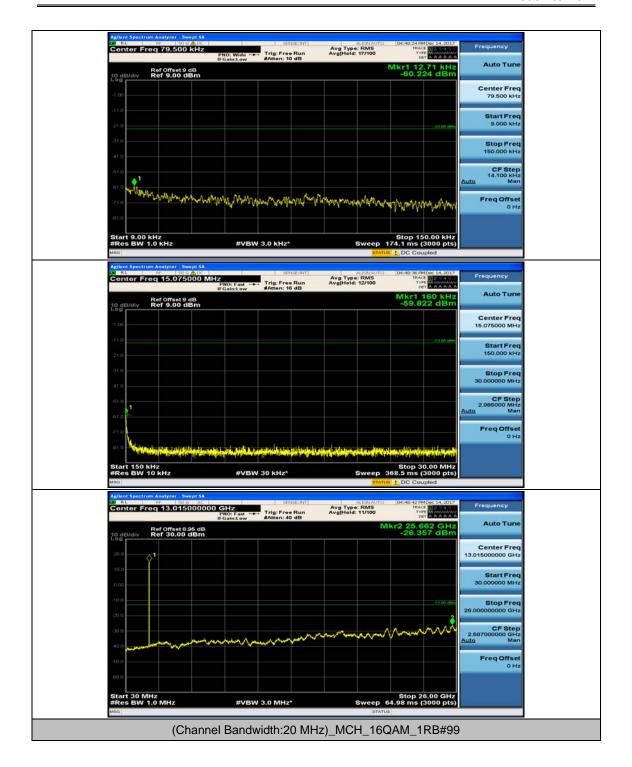






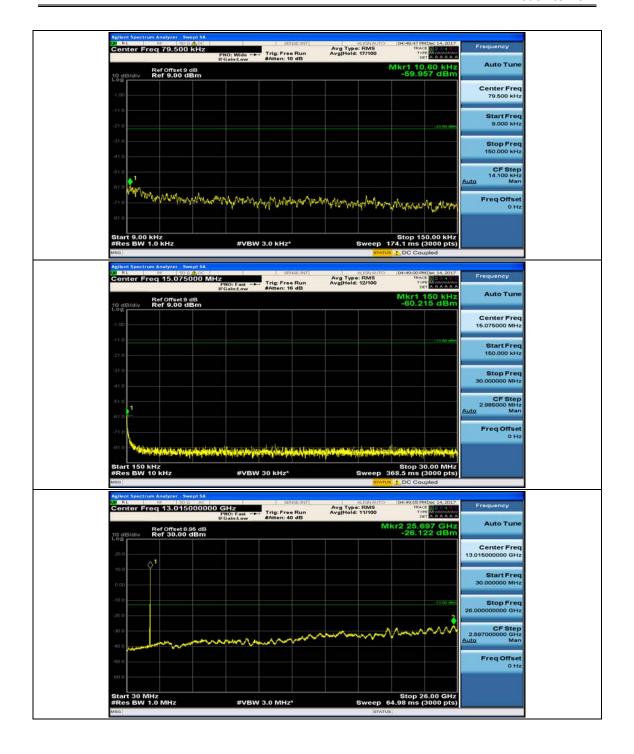




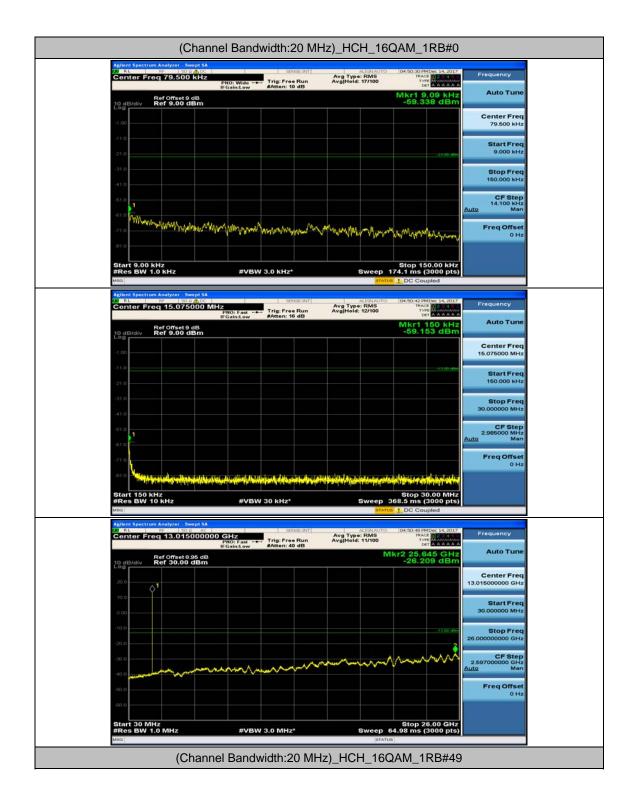






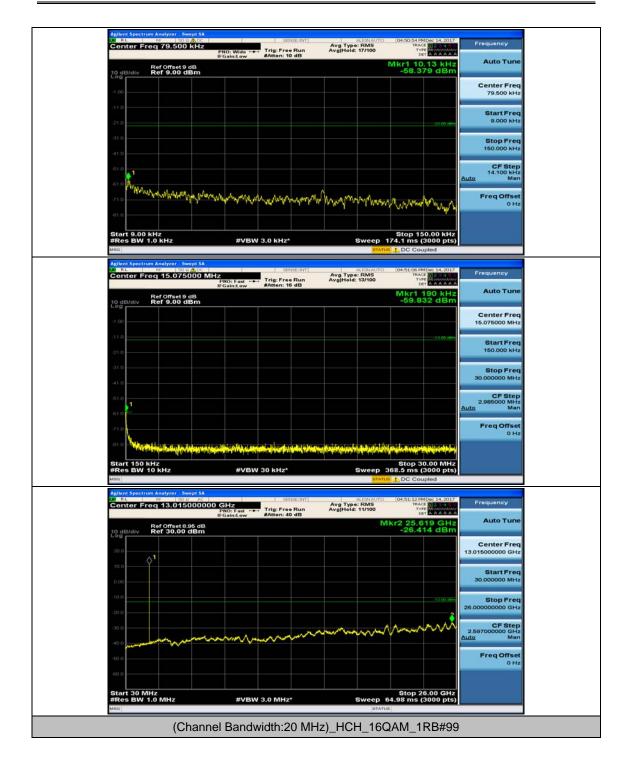






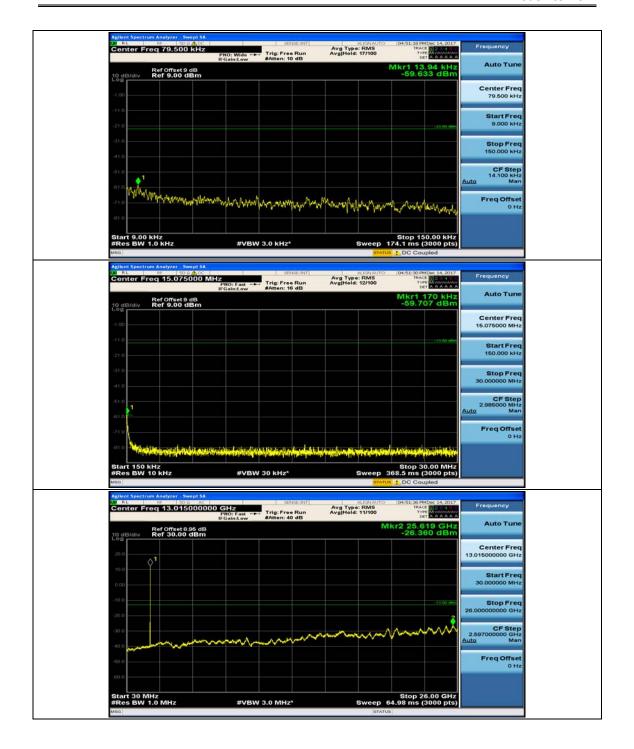
















# **Appendix F: Frequency Stability**

### **Test Result**

**Channel Bandwidth: 1.4 MHz** 

			Channel Band	width: 1.4 MHz								
	Voltage											
Modulation	Channel	Voltage [Vdc]	Temperature (°ℂ)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict					
		VL	TN	1.81	0.000978	± 2.5	PASS					
	LCH	VN	TN	4.16	0.002248	± 2.5	PASS					
		VH	TN	1.71	0.000924	± 2.5	PASS					
		VL	TN	2.06	0.001096	± 2.5	PASS					
QPSK	MCH	VN	TN	0.64	0.000340	± 2.5	PASS					
		VH	TN	-0.63	-0.000335	± 2.5	PASS					
		VL	TN	-1.05	-0.000550	± 2.5	PASS					
	HCH	VN	TN	1.46	0.000765	± 2.5	PASS					
		VH	TN	-0.22	-0.000115	± 2.5	PASS					
		VL	TN	-0.04	-0.000022	± 2.5	PASS					
	LCH	VN	TN	4.52	0.002442	± 2.5	PASS					
		VH	TN	-0.13	-0.000070	± 2.5	PASS					
	MCH	VL	TN	-1.1	-0.000585	± 2.5	PASS					
16QAM		VN	TN	3.18	0.001691	± 2.5	PASS					
100,111		VH	TN	2.86	0.001521	± 2.5	PASS					
	нсн	VL	TN	-1.84	-0.000964	± 2.5	PASS					
		VN	TN	-1.68	-0.000880	± 2.5	PASS					
		VH	TN	4.9	0.002566	± 2.5	PASS					
			Tempe	erature	•							
Modulation	Channe I	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict					
		VN	-30	3.56	0.001924	± 2.5	PASS					
		VN	-20	2.51	0.001356	± 2.5	PASS					
		VN	-10	2.84	0.001535	± 2.5	PASS					
		VN	0	-0.01	-0.000005	± 2.5	PASS					
	LCH	VN	10	2.44	0.001318	± 2.5	PASS					
QPSK		VN	20	-0.78	-0.000421	± 2.5	PASS					
		VN	30	3.58	0.001934	± 2.5	PASS					
		VN	40	4.91	0.002653	± 2.5	PASS					
		VN	50	4.94	0.002669	± 2.5	PASS					
	MCH	VN	-30	1.96	0.001043	± 2.5	PASS					
	MCH	VN	-20	3.85	0.002048	± 2.5	PASS					

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Model: CS22SA

		VN VN VN	-10 0	-1.08 -0.01	-0.000574	± 2.5	PASS
			0	<sub>ε</sub> Λ Λ1	0.000005	0.5	
		\/NI		-0.01	-0.000005	± 2.5	PASS
		VIN	10	-1.98	-0.001053	± 2.5	PASS
		VN	20	1.27	0.000676	± 2.5	PASS
		VN	30	3.15	0.001676	± 2.5	PASS
		VN	40	-0.92	-0.000489	± 2.5	PASS
		VN	50	-0.15	-0.000080	± 2.5	PASS
		VN	-30	4.41	0.002310	± 2.5	PASS
		VN	-20	-1.57	-0.000822	± 2.5	PASS
		VN	-10	0.13	0.000068	± 2.5	PASS
		VN	0	-0.76	-0.000398	± 2.5	PASS
	HCH	VN	10	-0.24	-0.000126	± 2.5	PASS
		VN	20	0.82	0.000429	± 2.5	PASS
		VN	30	1.89	0.000990	± 2.5	PASS
		VN	40	4.51	0.002362	± 2.5	PASS
		VN	50	1.52	0.000796	± 2.5	PASS
		VN	-30	3.62	0.001956	± 2.5	PASS
		VN	-20	2.25	0.001216	± 2.5	PASS
		VN	-10	-1.5	-0.000811	± 2.5	PASS
		VN	0	2.06	0.001113	± 2.5	PASS
	LCH	VN	10	-0.38	-0.000205	± 2.5	PASS
		VN	20	0.14	0.000076	± 2.5	PASS
		VN	30	0.23	0.000124	± 2.5	PASS
		VN	40	0.61	0.000330	± 2.5	PASS
		VN	50	-1.49	-0.000805	± 2.5	PASS
		VN	-30	0.12	0.000064	± 2.5	PASS
		VN	-20	2.29	0.001218	± 2.5	PASS
		VN	-10	2.76	0.001468	± 2.5	PASS
16QAM		VN	0	2.81	0.001495	± 2.5	PASS
	MCH	VN	10	3.98	0.002117	± 2.5	PASS
		VN	20	5	0.002660	± 2.5	PASS
		VN	30	4.96	0.002638	± 2.5	PASS
		VN	40	-1.72	-0.000915	± 2.5	PASS
		VN	50	1.29	0.000686	± 2.5	PASS
		VN	-30	0.84	0.000440	± 2.5	PASS
		VN	-20	2.32	0.001215	± 2.5	PASS
		VN	-10	2.6	0.001362	± 2.5	PASS
	HCH	VN	0	0.89	0.000466	± 2.5	PASS
		VN	10	0.54	0.000283	± 2.5	PASS
		VN	20	4.28	0.002242	± 2.5	PASS
		VN	30	3.53	0.001849	± 2.5	PASS



	VN	40	1.15	0.000602	± 2.5	PASS
	VN	50	2.17	0.001137	± 2.5	PASS

### **Channel Bandwidth: 3 MHz**

			Channel Band	lwidth: 3 MHz+								
	Voltage											
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict					
		VL	TN	-1.74	-0.000940	± 2.5	PASS					
	LCH	VN	TN	2.27	0.001226	± 2.5	PASS					
		VH	TN	4.5	0.002430	± 2.5	PASS					
		VL	TN	3.57	0.001899	± 2.5	PASS					
QPSK	MCH	VN	TN	-1.03	-0.000548	± 2.5	PASS					
		VH	TN	3.54	0.001883	± 2.5	PASS					
		VL	TN	3.81	0.001996	± 2.5	PASS					
	HCH	VN	TN	1.31	0.000686	± 2.5	PASS					
		VH	TN	0.45	0.000236	± 2.5	PASS					
		VL	TN	-0.06	-0.000032	± 2.5	PASS					
	LCH	VN	TN	1.62	0.000875	± 2.5	PASS					
		VH	TN	0.02	0.000011	± 2.5	PASS					
	MCH	VL	TN	-1.15	-0.000612	± 2.5	PASS					
16QAM		VN	TN	1.05	0.000559	± 2.5	PASS					
		VH	TN	2.46	0.001309	± 2.5	PASS					
		VL	TN	0.97	0.000508	± 2.5	PASS					
	HCH	VN	TN	0.19	0.000100	± 2.5	PASS					
		VH	TN	0.33	0.000173	± 2.5	PASS					
			Tempe	erature		•						
Modulation	Channel	Voltage [Vdc]	Temperature $(^{\mathbb{C}})$	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict					
		VN	-30	-0.57	-0.000308	± 2.5	PASS					
		VN	-20	3.1	0.001674	± 2.5	PASS					
		VN	-10	2.59	0.001399	± 2.5	PASS					
		VN	0	2.11	0.001140	± 2.5	PASS					
	LCH	VN	10	1.53	0.000826	± 2.5	PASS					
QPSK		VN	20	-1.39	-0.000751	± 2.5	PASS					
QI OIN		VN	30	4.96	0.002679	± 2.5	PASS					
		VN	40	1.67	0.000902	± 2.5	PASS					
		VN	50	4.3	0.002322	± 2.5	PASS					
		VN	-30	4.78	0.002543	± 2.5	PASS					
	MCH	VN	-20	-0.71	-0.000378	± 2.5	PASS					
		VN	-10	-1.01	-0.000537	± 2.5	PASS					

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		_					
		VN	0	-0.52	-0.000277	± 2.5	PASS
		VN	10	1.32	0.000702	± 2.5	PASS
		VN	20	2	0.001064	± 2.5	PASS
		VN	30	-1.65	-0.000878	± 2.5	PASS
		VN	40	0.57	0.000303	± 2.5	PASS
		VN	50	1.19	0.000633	± 2.5	PASS
		VN	-30	4.17	0.002185	± 2.5	PASS
		VN	-20	-1.76	-0.000922	± 2.5	PASS
		VN	-10	-1.14	-0.000597	± 2.5	PASS
		VN	0	2.21	0.001158	± 2.5	PASS
	HCH	VN	10	-0.53	-0.000278	± 2.5	PASS
		VN	20	4.42	0.002316	± 2.5	PASS
		VN	30	-1.4	-0.000734	± 2.5	PASS
		VN	40	-1.35	-0.000707	± 2.5	PASS
		VN	50	4.13	0.002164	± 2.5	PASS
		VN	-30	-0.23	-0.000124	± 2.5	PASS
		VN	-20	-1.63	-0.000880	± 2.5	PASS
		VN	-10	-0.25	-0.000135	± 2.5	PASS
	LCH	VN	0	3.48	0.001880	± 2.5	PASS
		VN	10	1.35	0.000729	± 2.5	PASS
		VN	20	-0.94	-0.000508	± 2.5	PASS
		VN	30	0.32	0.000173	± 2.5	PASS
		VN	40	4.35	0.002349	± 2.5	PASS
		VN	50	2.78	0.001501	± 2.5	PASS
		VN	-30	3.25	0.001729	± 2.5	PASS
		VN	-20	0.25	0.000133	± 2.5	PASS
		VN	-10	4.85	0.002580	± 2.5	PASS
QPSK		VN	0	4.33	0.002303	± 2.5	PASS
QFSK	MCH	VN	10	0.08	0.000043	± 2.5	PASS
		VN	20	0.03	0.000016	± 2.5	PASS
		VN	30	0.33	0.000176	± 2.5	PASS
		VN	40	0.32	0.000170	± 2.5	PASS
		VN	50	3.59	0.001910	± 2.5	PASS
		VN	-30	0.33	0.000173	± 2.5	PASS
		VN	-20	-1.39	-0.000728	± 2.5	PASS
		VN	-10	2.09	0.001095	± 2.5	PASS
	ПСП	VN	0	2.5	0.001310	± 2.5	PASS
	HCH	VN	10	3.46	0.001813	± 2.5	PASS
		VN	20	4.92	0.002578	± 2.5	PASS
		VN	30	0.65	0.000341	± 2.5	PASS
	<u> </u>	VN	40	0.71	0.000372	± 2.5	PASS



	VN	50	4 12	0.002159	+ 2.5	PASS
	VIN	30	4.12	0.002139	± 2.0	PASS

### **Channel Bandwidth: 5 MHz**

	Channel Bandwidth: 5 MHz										
			Vol	tage							
Modulation	Channel	Voltage [Vdc]	Temperature $(^{\circ}\!\mathbb{C})$	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
		VL	TN	2.93	0.001582	± 2.5	PASS				
	LCH	VN	TN	4.52	0.002440	± 2.5	PASS				
		VH	TN	3.91	0.002111	± 2.5	PASS				
		VL	TN	-1.07	-0.000569	± 2.5	PASS				
QPSK	MCH	VN	TN	-1.67	-0.000888	± 2.5	PASS				
		VH	TN	-1.93	-0.001027	± 2.5	PASS				
		VL	TN	2.93	0.001536	± 2.5	PASS				
	HCH	VN	TN	-1.85	-0.000970	± 2.5	PASS				
		VH	TN	4.2	0.002202	± 2.5	PASS				
		VL	TN	-0.27	-0.000146	± 2.5	PASS				
	LCH	VN	TN	-1.7	-0.000918	± 2.5	PASS				
		VH	TN	2.31	0.001247	± 2.5	PASS				
		VL	TN	-0.81	-0.000431	± 2.5	PASS				
16QAM	МСН	VN	TN	4.68	0.002489	± 2.5	PASS				
		VH	TN	0.46	0.000245	± 2.5	PASS				
		VL	TN	1.52	0.000797	± 2.5	PASS				
	HCH	VN	TN	0	0.000000	± 2.5	PASS				
		VH	TN	4.49	0.002354	± 2.5	PASS				
			Tempe	erature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
		VN	-30	4.62	0.002494	± 2.5	PASS				
		VN	-20	0.14	0.000076	± 2.5	PASS				
		VN	-10	3.34	0.001803	± 2.5	PASS				
		VN	0	4.89	0.002640	± 2.5	PASS				
	LCH	VN	10	3.2	0.001727	± 2.5	PASS				
		VN	20	-0.21	-0.000113	± 2.5	PASS				
QPSK		VN	30	4	0.002159	± 2.5	PASS				
		VN	40	1.9	0.001026	± 2.5	PASS				
		VN	50	-1.3	-0.000702	± 2.5	PASS				
		VN	-30	3.53	0.001878	± 2.5	PASS				
	MCH	VN	-20	2.74	0.001457	± 2.5	PASS				
	IVICH	VN	-10	4.33	0.002303	± 2.5	PASS				
		VN	0	-1.71	-0.000910	± 2.5	PASS				



		VN	10	-1.44	-0.000766	± 2.5	PASS
		VN	20	1.9	0.001011	± 2.5	PASS
		VN	30	3.84	0.002043	± 2.5	PASS
		VN	40	-1.56	-0.000830	± 2.5	PASS
		VN	50	-1.96	-0.001043	± 2.5	PASS
		VN	-30	-1.66	-0.000870	± 2.5	PASS
		VN	-20	-1.28	-0.000671	± 2.5	PASS
		VN	-10	3.01	0.001578	± 2.5	PASS
		VN	0	4.32	0.002265	± 2.5	PASS
	HCH	VN	10	1.74	0.000912	± 2.5	PASS
		VN	20	3.12	0.001636	± 2.5	PASS
		VN	30	4.23	0.002218	± 2.5	PASS
		VN	40	1	0.000524	± 2.5	PASS
		VN	50	4.49	0.002354	± 2.5	PASS
		VN	-30	-1.96	-0.001058	± 2.5	PASS
		VN	-20	-1.04	-0.000561	± 2.5	PASS
		VN	-10	2.45	0.001323	± 2.5	PASS
		VN	0	2.62	0.001414	± 2.5	PASS
	LCH	VN	10	1.02	0.000551	± 2.5	PASS
		VN	20	2.32	0.001252	± 2.5	PASS
		VN	30	0.69	0.000372	± 2.5	PASS
		VN	40	-1.67	-0.000901	± 2.5	PASS
		VN	50	4.77	0.002575	± 2.5	PASS
		VN	-30	2.99	0.001590	± 2.5	PASS
		VN	-20	3.17	0.001686	± 2.5	PASS
		VN	-10	4.06	0.002160	± 2.5	PASS
		VN	0	-1.87	-0.000995	± 2.5	PASS
16QAM	MCH	VN	10	3.29	0.001750	± 2.5	PASS
		VN	20	-0.33	-0.000176	± 2.5	PASS
		VN	30	1.51	0.000803	± 2.5	PASS
		VN	40	0.22	0.000117	± 2.5	PASS
		VN	50	4.69	0.002495	± 2.5	PASS
		VN	-30	0.24	0.000126	± 2.5	PASS
		VN	-20	1.85	0.000970	± 2.5	PASS
		VN	-10	0.3	0.000157	± 2.5	PASS
		VN	0	-1.14	-0.000598	± 2.5	PASS
	нсн	VN	10	3.15	0.001651	± 2.5	PASS
		VN	20	1	0.000524	± 2.5	PASS
		VN	30	4.02	0.002107	± 2.5	PASS
		VN	40	-0.74	-0.000388	± 2.5	PASS
		VN	50	2.54	0.001332	± 2.5	PASS
<u> </u>		<u>!</u>	<u> </u>	<u> </u>	Į		



# **Channel Bandwidth: 10 MHz**

Channel Bandwidth: 10 MHz											
				tage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
		VL	TN	3.84	0.002070	± 2.5	PASS				
	LCH	VN	TN	3.91	0.002108	± 2.5	PASS				
		VH	TN	-1.81	-0.000976	± 2.5	PASS				
		VL	TN	4.7	0.002500	± 2.5	PASS				
QPSK	MCH	VN	TN	2.42	0.001287	± 2.5	PASS				
		VH	TN	-1.6	-0.000851	± 2.5	PASS				
		VL	TN	-0.86	-0.000451	± 2.5	PASS				
	HCH	VN	TN	-1.13	-0.000593	± 2.5	PASS				
		VH	TN	2.03	0.001066	± 2.5	PASS				
		VL	TN	-1.51	-0.000814	± 2.5	PASS				
	LCH	VN	TN	2.1	0.001132	± 2.5	PASS				
		VH	TN	4.25	0.002291	± 2.5	PASS				
		VL	TN	3.45	0.001835	± 2.5	PASS				
16QAM	MCH	VN	TN	1.56	0.000830	± 2.5	PASS				
		VH	TN	1.97	0.001048	± 2.5	PASS				
		VL	TN	4.04	0.002121	± 2.5	PASS				
	HCH	VN	TN	0.57	0.000299	± 2.5	PASS				
		VH	TN	-0.8	-0.000420	± 2.5	PASS				
			Tempe	erature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
		VN	-30	1.04	0.000561	± 2.5	PASS				
		VN	-20	-0.1	-0.000054	± 2.5	PASS				
		VN	-10	-1.04	-0.000561	± 2.5	PASS				
		VN	0	-1.46	-0.000787	± 2.5	PASS				
	LCH	VN	10	-0.24	-0.000129	± 2.5	PASS				
		VN	20	2	0.001078	± 2.5	PASS				
		VN	30	-0.31	-0.000167	± 2.5	PASS				
16QAM		VN	40	-0.08	-0.000043	± 2.5	PASS				
		VN	50	1.69	0.000911	± 2.5	PASS				
		VN	-30	0.86	0.000457	± 2.5	PASS				
		VN	-20	0.42	0.000223	± 2.5	PASS				
	MCH	VN	-10	0.23	0.000122	± 2.5	PASS				
	IVICIT	VN	0	-0.24	-0.000128	± 2.5	PASS				
		VN	10	-1.73	-0.000920	± 2.5	PASS				
1		VN	20	3.94	0.002096	± 2.5	PASS				

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	ı	1		1			
		VN	30	1.92	0.001021	± 2.5	PASS
		VN	40	2.1	0.001117	± 2.5	PASS
		VN	50	0.46	0.000245	± 2.5	PASS
		VN	-30	-1.76	-0.000924	± 2.5	PASS
		VN	-20	-1.26	-0.000661	± 2.5	PASS
		VN	-10	-0.45	-0.000236	± 2.5	PASS
		VN	0	1.88	0.000987	± 2.5	PASS
	HCH	VN	10	4.69	0.002462	± 2.5	PASS
		VN	20	1.8	0.000945	± 2.5	PASS
		VN	30	2.97	0.001559	± 2.5	PASS
		VN	40	-0.67	-0.000352	± 2.5	PASS
		VN	50	3.78	0.001984	± 2.5	PASS
		VN	-30	1.55	0.000836	± 2.5	PASS
		VN	-20	-1.51	-0.000814	± 2.5	PASS
		VN	-10	-0.38	-0.000205	± 2.5	PASS
		VN	0	3.84	0.002070	± 2.5	PASS
	LCH	VN	10	-1.3	-0.000701	± 2.5	PASS
		VN	20	-0.13	-0.000070	± 2.5	PASS
		VN	30	4.23	0.002280	± 2.5	PASS
		VN	40	0.22	0.000119	± 2.5	PASS
		VN	50	-1.15	-0.000620	± 2.5	PASS
		VN	-30	3.54	0.001883	± 2.5	PASS
		VN	-20	2.64	0.001404	± 2.5	PASS
		VN	-10	2.42	0.001287	± 2.5	PASS
		VN	0	2.64	0.001404	± 2.5	PASS
QPSK	MCH	VN	10	-0.79	-0.000420	± 2.5	PASS
		VN	20	2.42	0.001287	± 2.5	PASS
		VN	30	-0.8	-0.000426	± 2.5	PASS
		VN	40	1.91	0.001016	± 2.5	PASS
		VN	50	-1.03	-0.000548	± 2.5	PASS
		VN	-30	1.34	0.000703	± 2.5	PASS
		VN	-20	1.77	0.000929	± 2.5	PASS
		VN	-10	-1.91	-0.001003	± 2.5	PASS
		VN	0	2.67	0.001402	± 2.5	PASS
	нсн	VN	10	0.18	0.000094	± 2.5	PASS
		VN	20	3.82	0.002005	± 2.5	PASS
		VN	30	4.93	0.002588	± 2.5	PASS
		VN	40	1.16	0.000609	± 2.5	PASS
		VN	50	-0.42	-0.000220	± 2.5	PASS



# **Channel Bandwidth: 15 MHz**

Voltage	Channel Bandwidth: 15 MHz											
Modulation   Channel   Voltage   Temperature (TC)   Deviation (Hz)   Deviation (ppm)   Verdict (ppm)   Verdi												
CH	Modulation	Channel						Verdict				
QPSK     MCH     TN     2.61     0.001405     ± 2.5     PASS       QPSK     MCH     VL     TN     -1.47     -0.000782     ± 2.5     PASS       VH     TN     0.92     0.000489     ± 2.5     PASS       VH     TN     -0.32     -0.000170     ± 2.5     PASS       VL     TN     4.43     0.002329     ± 2.5     PASS       VH     TN     1.92     0.001009     ± 2.5     PASS       VH     TN     1.172     -0.000904     ± 2.5     PASS       VL     TN     3.39     0.001825     ± 2.5     PASS       VL     TN     1.173     -0.000941     ± 2.5     PASS       VH     TN     -1.173     -0.000888     ± 2.5     PASS       VH     TN     1.167     -0.000888     ± 2.5     PASS       VH     TN     1.66     0.000315     ± 2.5     PASS       VH     TN     1.65     -0.000867     ± 2.5     PASS <td></td> <td></td> <td>VL</td> <td>TN</td> <td>3.24</td> <td>0.001744</td> <td>± 2.5</td> <td>PASS</td>			VL	TN	3.24	0.001744	± 2.5	PASS				
APSK     MCH     VL     TN     -1.47     -0.000782     ± 2.5     PASS       VH     TN     0.92     0.000489     ± 2.5     PASS       VH     TN     -0.32     -0.00170     ± 2.5     PASS       VL     TN     4.43     0.002329     ± 2.5     PASS       VH     TN     -1.72     -0.000904     ± 2.5     PASS       VH     TN     -1.72     -0.000904     ± 2.5     PASS       VH     TN     -3.39     0.001825     ± 2.5     PASS       VH     TN     -1.67     -0.000931     ± 2.5     PASS       VH     TN     -1.67     -0.00088     ± 2.5     PASS       VH     TN     -1.67     -0.00088     ± 2.5     PASS       VH     TN     -1.65     -0.000312     ± 2.5     PASS       VH     TN     -1.65     -0.000342     ± 2.5     PASS       VH     TN     -1.65     -0.000867     ± 2.5     PASS <t< td=""><td></td><td rowspan="2">LCH</td><td>VN</td><td>TN</td><td>-0.26</td><td>-0.000140</td><td>± 2.5</td><td>PASS</td></t<>		LCH	VN	TN	-0.26	-0.000140	± 2.5	PASS				
QPSK     MCH     VN     TN     0.92     0.000489     ± 2.5     PASS       VH     TN     -0.32     -0.000170     ± 2.5     PASS       WL     TN     4.43     0.002329     ± 2.5     PASS       VH     TN     1.92     0.001009     ± 2.5     PASS       VH     TN     -1.72     -0.000904     ± 2.5     PASS       VH     TN     3.39     0.001825     ± 2.5     PASS       VH     TN     -1.67     -0.000931     ± 2.5     PASS       VH     TN     -1.67     -0.000888     ± 2.5     PASS       VH     TN     -1.67     -0.000888     ± 2.5     PASS       VH     TN     -2.8     0.001489     ± 2.5     PASS       VH     TN     -0.65     -0.000315     ± 2.5     PASS       VH     TN     -1.65     -0.000315     ± 2.5     PASS       Modulation     Chanel     Voltage (Vdc)     Temperature (°C)     Deviation (ht/2)			VH	TN	2.61	0.001405	± 2.5	PASS				
VH			VL	TN	-1.47	-0.000782	± 2.5	PASS				
HCH	QPSK	MCH	VN	TN	0.92	0.000489	± 2.5	PASS				
HCH			VH	TN	-0.32	-0.000170	± 2.5	PASS				
VH			VL	TN	4.43	0.002329	± 2.5	PASS				
LCH		HCH	VN	TN	1.92	0.001009	± 2.5	PASS				
LCH			VH	TN	-1.72	-0.000904	± 2.5	PASS				
Notation   Notation			VL	TN	3.39	0.001825	± 2.5	PASS				
NCH		LCH	VN	TN	3.46	0.001863	± 2.5	PASS				
MCH			VH	TN	-1.73	-0.000931	± 2.5	PASS				
VH			VL	TN	-1.67	-0.000888	± 2.5	PASS				
Note	16QAM	МСН	VN	TN	4.36	0.002319	± 2.5	PASS				
HCH			VH	TN	2.8	0.001489	± 2.5	PASS				
VH			VL	TN	-0.65	-0.000342	± 2.5	PASS				
Nodulation   Channel   Voltage   Temperature   Deviation (Hz)   Deviation (ppm)   Verdict (p		HCH	VN	TN	0.6	0.000315	± 2.5	PASS				
Modulation     Channel     Voltage [Vdc]     Temperature (°C)     Deviation (Hz)     Deviation (ppm)     Limit (ppm)     Verdict (ppm)       VN     -30     -0.74     -0.000398     ± 2.5     PASS       VN     -20     1.55     0.000834     ± 2.5     PASS       VN     -10     -1.83     -0.000985     ± 2.5     PASS       VN     0     4.44     0.002390     ± 2.5     PASS       VN     10     2.83     0.001524     ± 2.5     PASS       VN     20     -1.22     -0.000657     ± 2.5     PASS       VN     30     0.75     0.000404     ± 2.5     PASS       VN     40     3.32     0.001787     ± 2.5     PASS       VN     50     0     0.000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043			VH	TN	-1.65	-0.000867	± 2.5	PASS				
VN				Tempe	erature							
VN	Modulation	Channel						Verdict				
VN			VN	-30	-0.74	-0.000398	± 2.5	PASS				
LCH     VN     0     4.44     0.002390     ± 2.5     PASS       VN     10     2.83     0.001524     ± 2.5     PASS       VN     20     -1.22     -0.000657     ± 2.5     PASS       VN     30     0.75     0.000404     ± 2.5     PASS       VN     40     3.32     0.001787     ± 2.5     PASS       VN     50     0     0.000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	-20	1.55	0.000834	± 2.5	PASS				
QPSK     VN     10     2.83     0.001524     ± 2.5     PASS       VN     20     -1.22     -0.000657     ± 2.5     PASS       VN     30     0.75     0.000404     ± 2.5     PASS       VN     40     3.32     0.001787     ± 2.5     PASS       VN     50     0     0.000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	-10	-1.83	-0.000985	± 2.5	PASS				
VN     20     -1.22     -0.000657     ± 2.5     PASS       VN     30     0.75     0.000404     ± 2.5     PASS       VN     40     3.32     0.001787     ± 2.5     PASS       VN     50     0     0.000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	0	4.44	0.002390	± 2.5	PASS				
VN     30     0.75     0.000404     ± 2.5     PASS       VN     40     3.32     0.001787     ± 2.5     PASS       VN     50     0     0.000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS		LCH	VN	10	2.83	0.001524	± 2.5	PASS				
VN     40     3.32     0.001787     ± 2.5     PASS       VN     50     0     0.000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	20	-1.22	-0.000657	± 2.5	PASS				
VN     50     0     0.0000000     ± 2.5     PASS       VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	30	0.75	0.000404	± 2.5	PASS				
VN     -30     3.36     0.001787     ± 2.5     PASS       VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS	QPSK		VN	40	3.32	0.001787	± 2.5	PASS				
VN     -20     4.4     0.002340     ± 2.5     PASS       VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	50	0	0.000000	± 2.5	PASS				
VN     -10     0.08     0.000043     ± 2.5     PASS       VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	-30	3.36	0.001787	± 2.5	PASS				
MCH     VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS			VN	-20	4.4	0.002340	± 2.5	PASS				
VN     0     3.65     0.001941     ± 2.5     PASS       VN     10     0.33     0.000176     ± 2.5     PASS		МСП	VN	-10	0.08	0.000043	± 2.5	PASS				
		IVICH	VN	0	3.65	0.001941	± 2.5	PASS				
VN 20 4.1 0.002181 ± 2.5 PASS			VN	10	0.33	0.000176	± 2.5	PASS				
			VN	20	4.1	0.002181	± 2.5	PASS				

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		VN	30	0.55	0.000293	± 2.5	PASS
		VN	40	-1.41	-0.000750	± 2.5	PASS
		VN	50	0.7	0.000730	± 2.5	PASS
		VN	-30	0.86	0.000372	± 2.5	PASS
		VN	-20	1.45	0.000432	± 2.5	PASS
		VN	-10	0.18			PASS
					0.000095	± 2.5	PASS
	ПСП	VN	0	1.24	0.000652	± 2.5	
	HCH	VN	10	2.14	0.001125	± 2.5	PASS
		VN	20	-0.33	-0.000173	± 2.5	PASS
		VN	30	2.12	0.001114	± 2.5	PASS
		VN	40	1.76	0.000925	± 2.5	PASS
		VN	50	-0.94	-0.000494	± 2.5	PASS
		VN	-30	-0.35	-0.000188	± 2.5	PASS
		VN	-20	0.44	0.000237	± 2.5	PASS
		VN	-10	2.74	0.001475	± 2.5	PASS
		VN	0	4.96	0.002670	± 2.5	PASS
	LCH	VN	10	4.37	0.002353	± 2.5	PASS
		VN	20	4.22	0.002272	± 2.5	PASS
		VN	30	-1.13	-0.000608	± 2.5	PASS
		VN	40	2.58	0.001389	± 2.5	PASS
		VN	50	-0.22	-0.000118	± 2.5	PASS
		VN	-30	1.5	0.000798	± 2.5	PASS
		VN	-20	-0.64	-0.000340	± 2.5	PASS
		VN	-10	0.23	0.000122	± 2.5	PASS
		VN	0	3.63	0.001931	± 2.5	PASS
QPSK	MCH	VN	10	-1.23	-0.000654	± 2.5	PASS
		VN	20	-1.11	-0.000590	± 2.5	PASS
		VN	30	1.58	0.000840	± 2.5	PASS
		VN	40	0.72	0.000383	± 2.5	PASS
		VN	50	2.49	0.001324	± 2.5	PASS
		VN	-30	4.46	0.002344	± 2.5	PASS
		VN	-20	1.31	0.000689	± 2.5	PASS
		VN	-10	-1.91	-0.001004	± 2.5	PASS
		VN	0	0.72	0.000378	± 2.5	PASS
	нсн	VN	10	0.69	0.000363	± 2.5	PASS
		VN	20	2.87	0.001509	± 2.5	PASS
		VN	30	-0.01	-0.000005	± 2.5	PASS
		VN	40	0.86	0.000452	± 2.5	PASS
		VN	50	-0.74	-0.000389	± 2.5	PASS
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# **Channel Bandwidth: 20 MHz**

Channel Bandwidth: 20 MHz											
Voltage											
Modulation	Channel	Voltage [Vdc]	Temperature (°ℂ)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
QPSK	LCH	VL	TN	4.98	0.002677	± 2.5	PASS				
		VN	TN	3.91	0.002102	± 2.5	PASS				
		VH	TN	0.91	0.000489	± 2.5	PASS				
	MCH	VL	TN	3.7	0.001968	± 2.5	PASS				
		VN	TN	3.22	0.001713	± 2.5	PASS				
		VH	TN	-1.83	-0.000973	± 2.5	PASS				
	НСН	VL	TN	1.62	0.000853	± 2.5	PASS				
		VN	TN	0.67	0.000353	± 2.5	PASS				
		VH	TN	-0.14	-0.000074	± 2.5	PASS				
	LCH	VL	TN	1.6	0.000860	± 2.5	PASS				
		VN	TN	-1.89	-0.001016	± 2.5	PASS				
		VH	TN	-0.31	-0.000167	± 2.5	PASS				
	MCH	VL	TN	2.87	0.001527	± 2.5	PASS				
16QAM		VN	TN	-1.62	-0.000862	± 2.5	PASS				
		VH	TN	-0.92	-0.000489	± 2.5	PASS				
	НСН	VL	TN	-0.78	-0.000411	± 2.5	PASS				
		VN	TN	1.55	0.000816	± 2.5	PASS				
		VH	TN	1.22	0.000642	± 2.5	PASS				
			Tempe	erature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict				
	LCH	VN	-30	-1.09	-0.000586	± 2.5	PASS				
		VN	-20	2.98	0.001602	± 2.5	PASS				
		VN	-10	0.74	0.000398	± 2.5	PASS				
		VN	0	2.46	0.001323	± 2.5	PASS				
		VN	10	2.39	0.001285	± 2.5	PASS				
		VN	20	2.38	0.001280	± 2.5	PASS				
		VN	30	0.93	0.000500	± 2.5	PASS				
QPSK		VN	40	3.1	0.001667	± 2.5	PASS				
		VN	50	0.24	0.000129	± 2.5	PASS				
	мсн	VN	-30	1.1	0.000585	± 2.5	PASS				
		VN	-20	4.08	0.002170	± 2.5	PASS				
		VN	-10	-1.73	-0.000920	± 2.5	PASS				
		VN	0	-0.95	-0.000505	± 2.5	PASS				
		VN	10	4.11	0.002186	± 2.5	PASS				
		VN	20	3.96	0.002106	± 2.5	PASS				

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		VN	30	4.71	0.002505	± 2.5	PASS
		VN	40	4.69	0.002495	± 2.5	PASS
		VN	50	3.26	0.001734	± 2.5	PASS
	нсн	VN	-30	1.85	0.000974	± 2.5	PASS
		VN	-20	0.24	0.000126	± 2.5	PASS
		VN	-10	-0.24	-0.000126	± 2.5	PASS
		VN	0	4.75	0.002500	± 2.5	PASS
		VN	10	-1.32	-0.000695	± 2.5	PASS
		VN	20	1.62	0.000853	± 2.5	PASS
		VN	30	3.55	0.001868	± 2.5	PASS
		VN	40	4.95	0.002605	± 2.5	PASS
		VN	50	-0.16	-0.000084	± 2.5	PASS
		VN	-30	-1.77	-0.000952	± 2.5	PASS
		VN	-20	2.6	0.001398	± 2.5	PASS
		VN	-10	0.53	0.000285	± 2.5	PASS
		VN	0	2.2	0.001183	± 2.5	PASS
	LCH	VN	10	-1.22	-0.000656	± 2.5	PASS
QPSK		VN	20	1.67	0.000898	± 2.5	PASS
		VN	30	1.2	0.000645	± 2.5	PASS
		VN	40	2.7	0.001452	± 2.5	PASS
		VN	50	1.91	0.001027	± 2.5	PASS
	МСН	VN	-30	1.32	0.000702	± 2.5	PASS
		VN	-20	-1.38	-0.000734	± 2.5	PASS
		VN	-10	0.09	0.000048	± 2.5	PASS
		VN	0	-0.93	-0.000495	± 2.5	PASS
		VN	10	1.05	0.000559	± 2.5	PASS
		VN	20	4.45	0.002367	± 2.5	PASS
		VN	30	-0.96	-0.000511	± 2.5	PASS
		VN	40	2.77	0.001473	± 2.5	PASS
		VN	50	4.29	0.002282	± 2.5	PASS
	НСН	VN	-30	-1.87	-0.000984	± 2.5	PASS
		VN	-20	1.32	0.000695	± 2.5	PASS
		VN	-10	2.09	0.001100	± 2.5	PASS
		VN	0	-1.66	-0.000874	± 2.5	PASS
		VN	10	3.83	0.002016	± 2.5	PASS
		VN	20	1.79	0.000942	± 2.5	PASS
		VN	30	1.91	0.001005	± 2.5	PASS
		VN	40	-0.67	-0.000353	± 2.5	PASS
		VN	50	4.89	0.002574	± 2.5	PASS