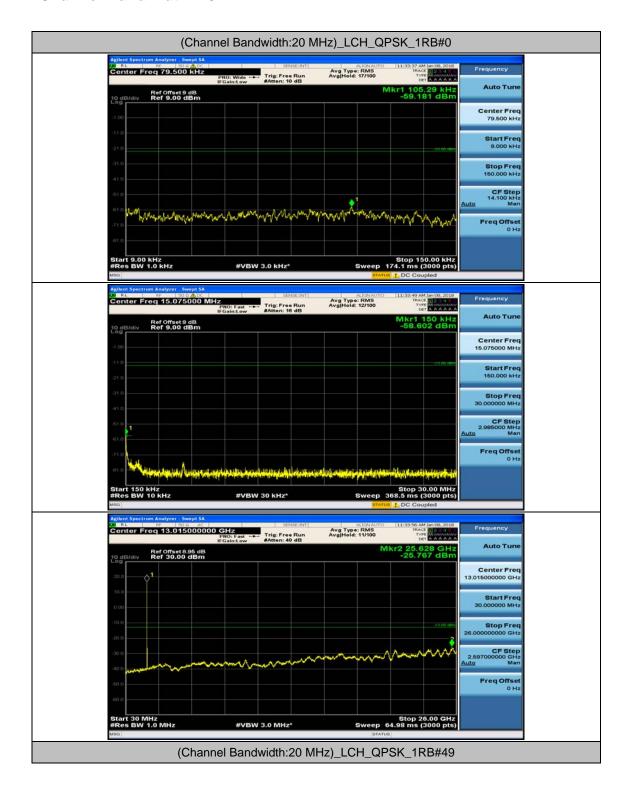
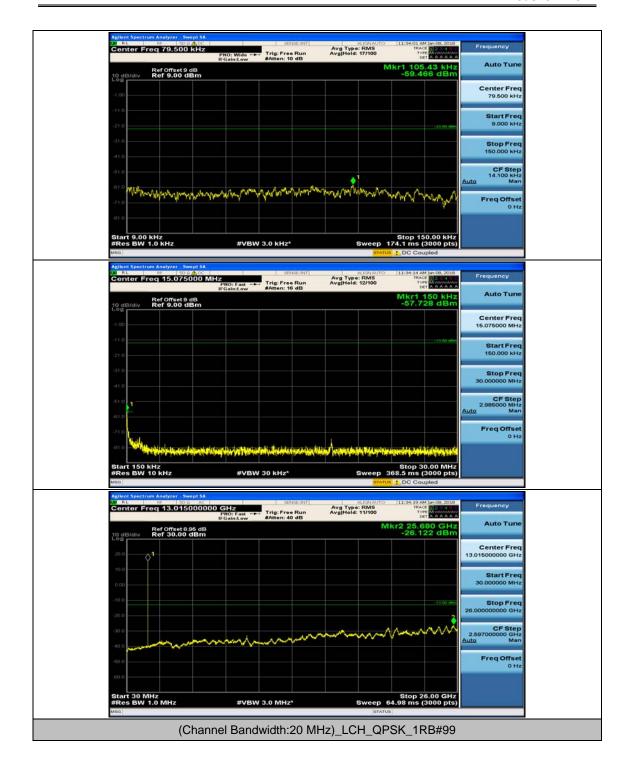




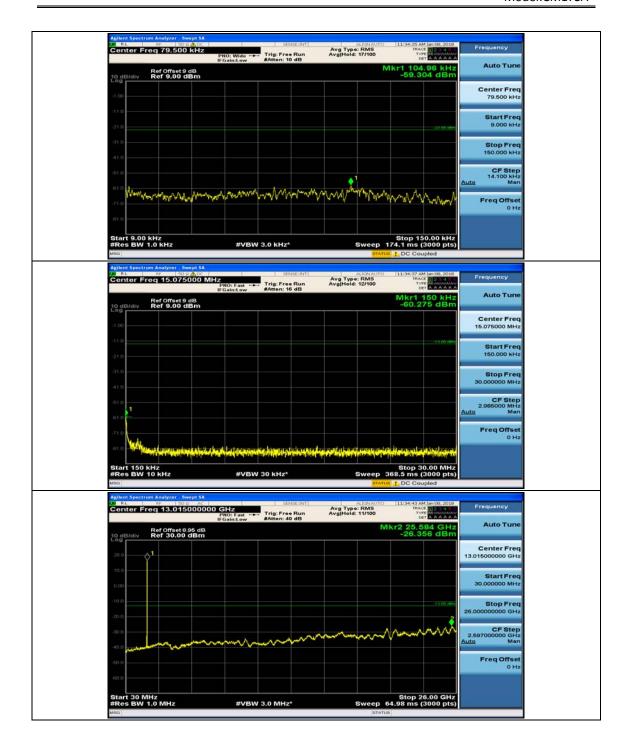
#### **Channel Bandwidth: 20 MHz**



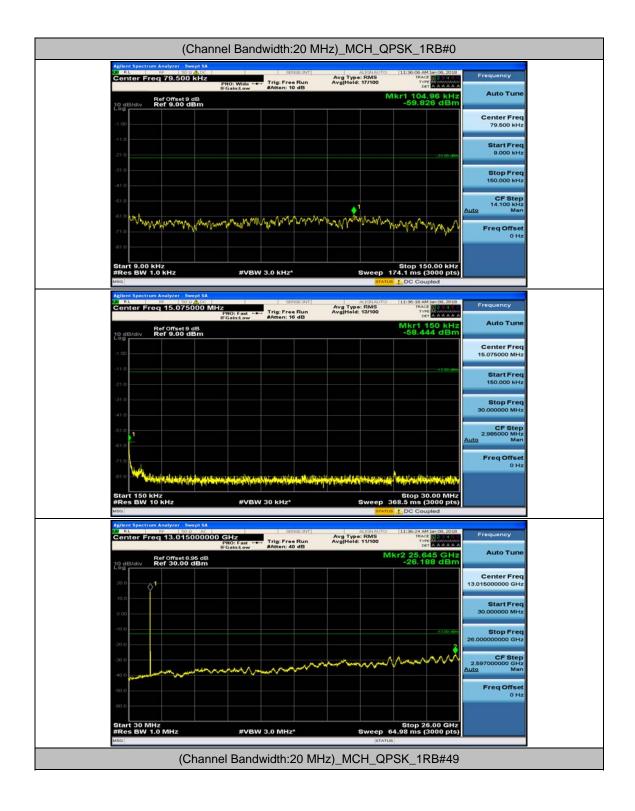




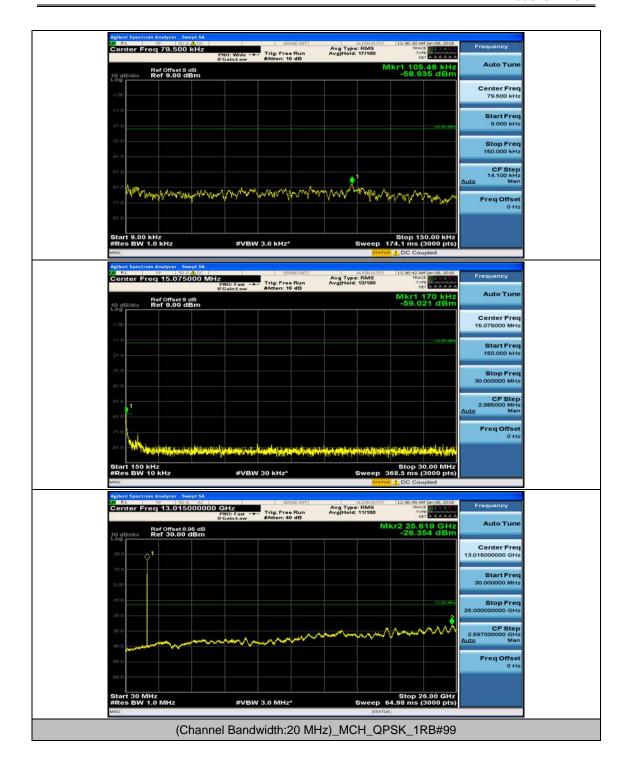




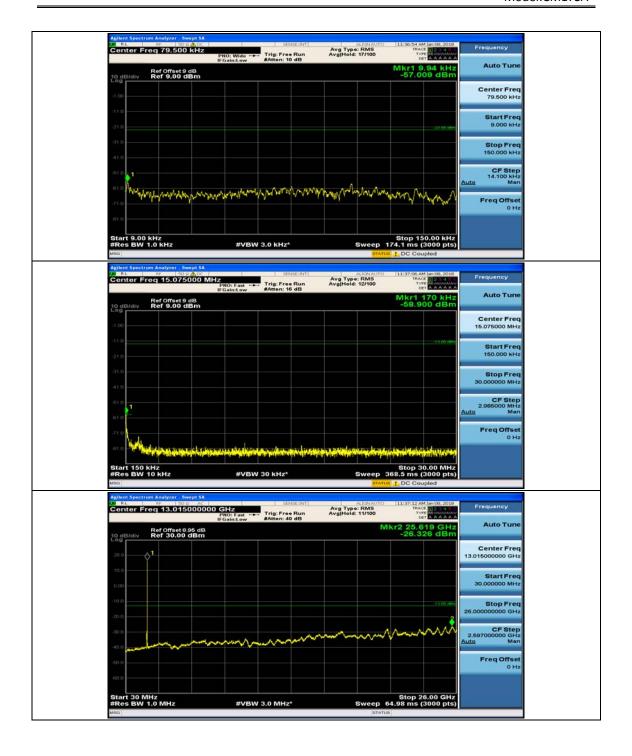




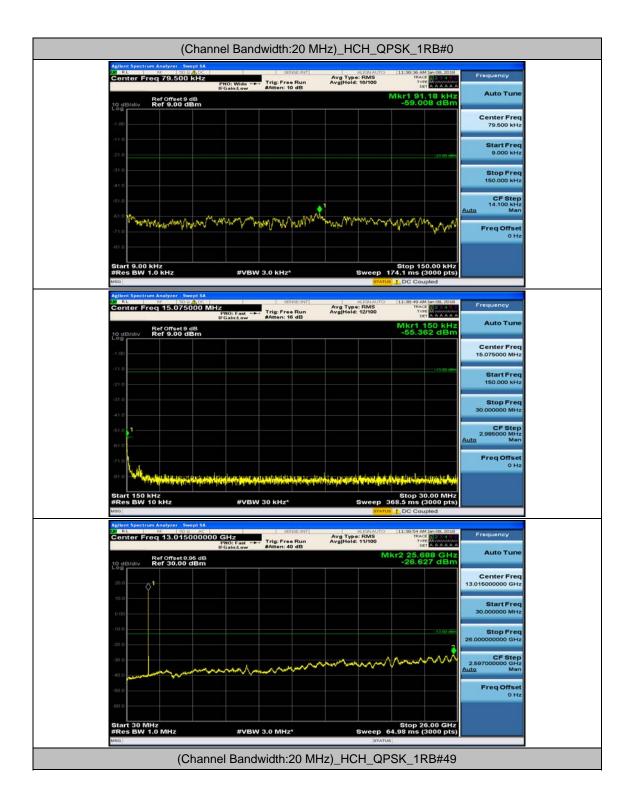




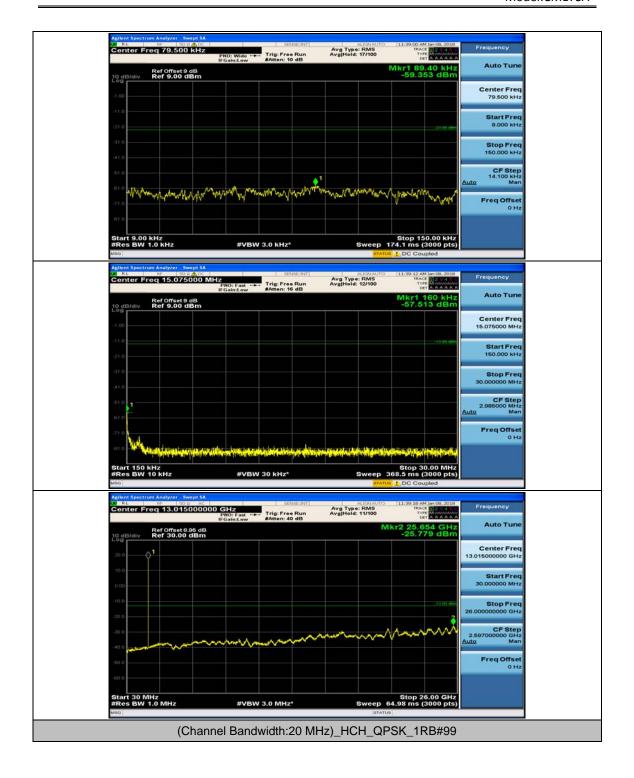




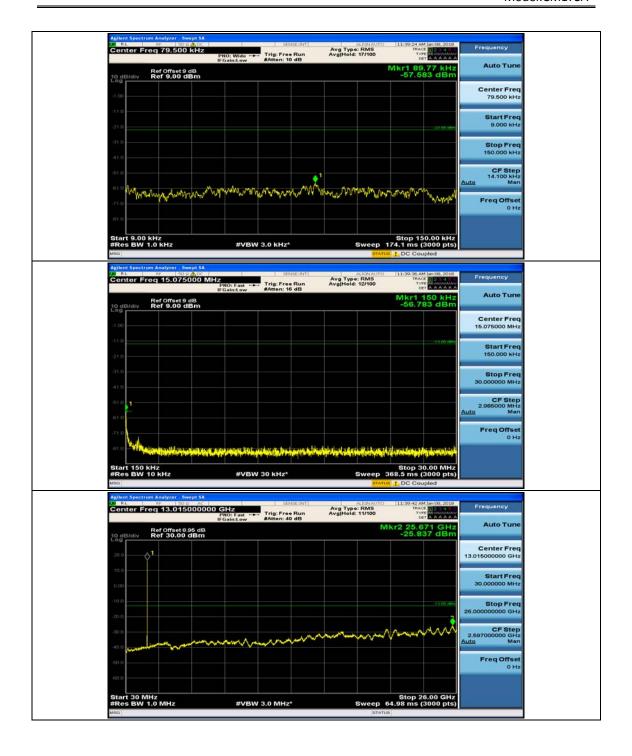




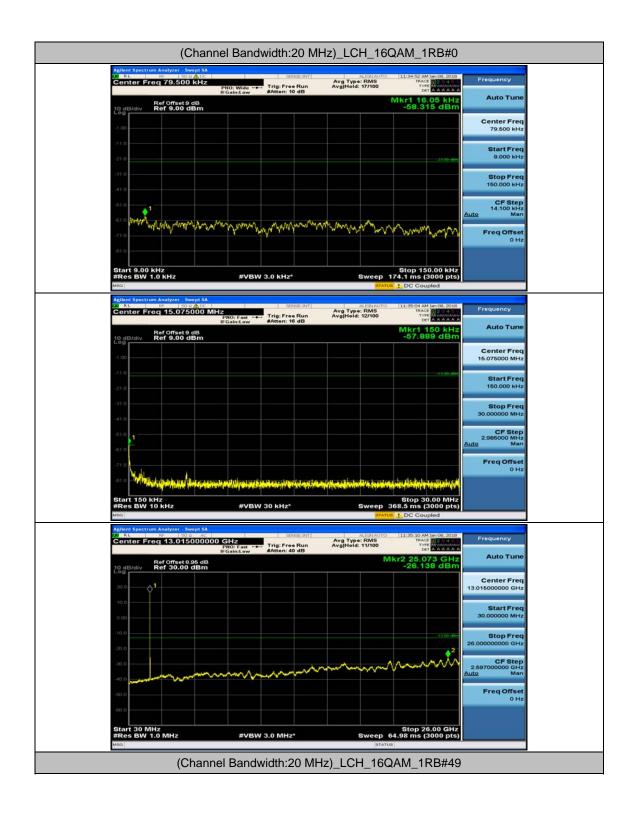




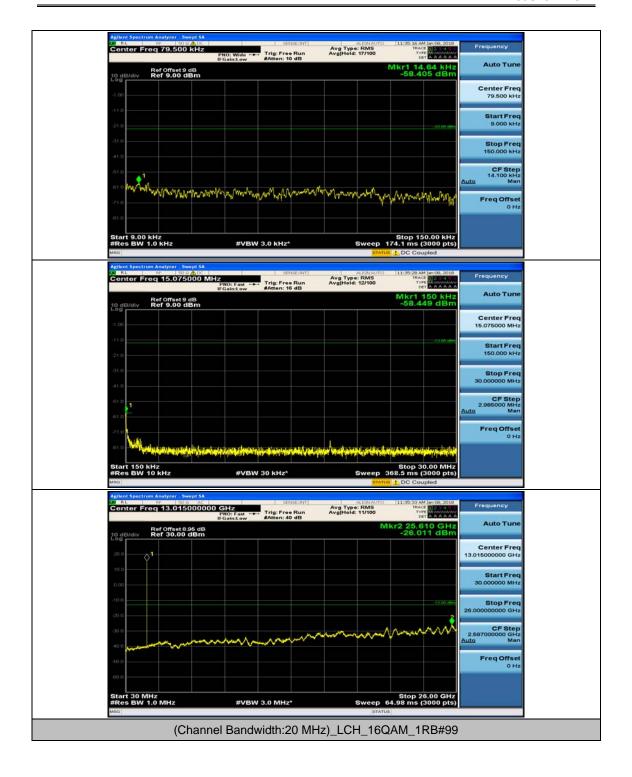




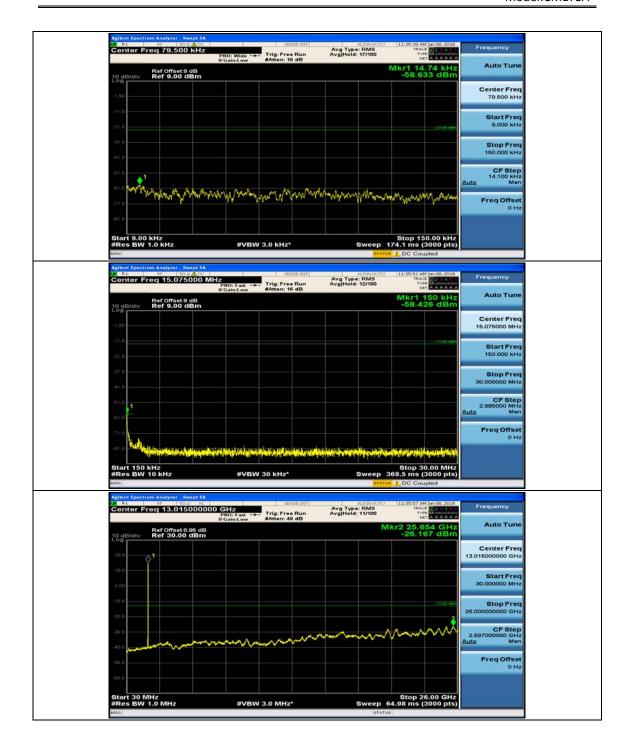




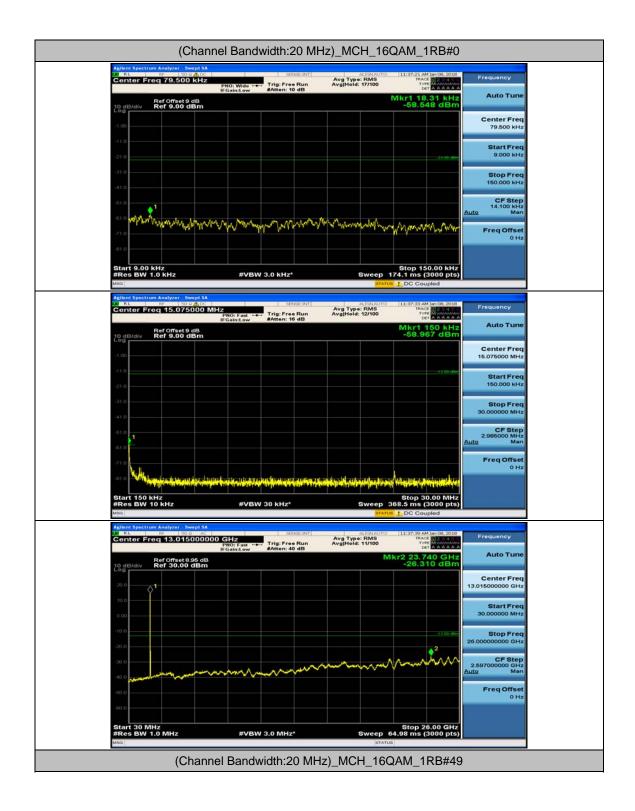




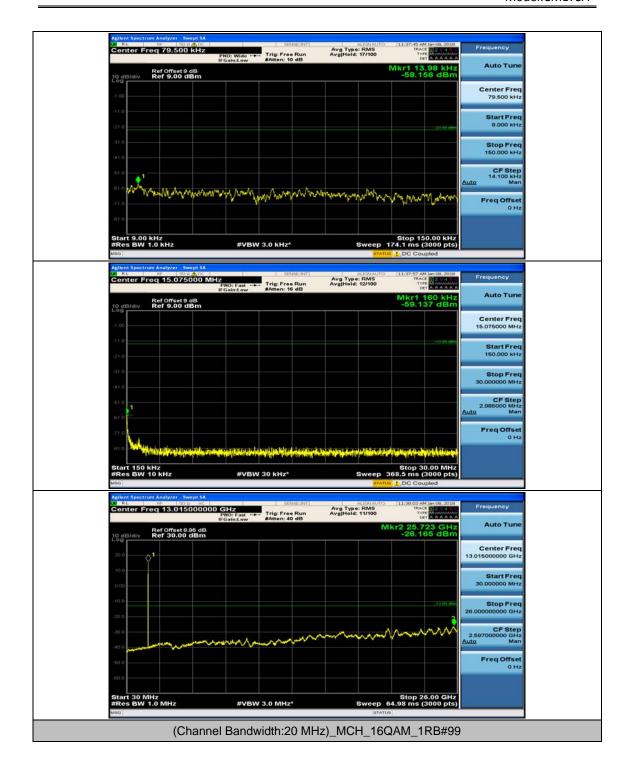




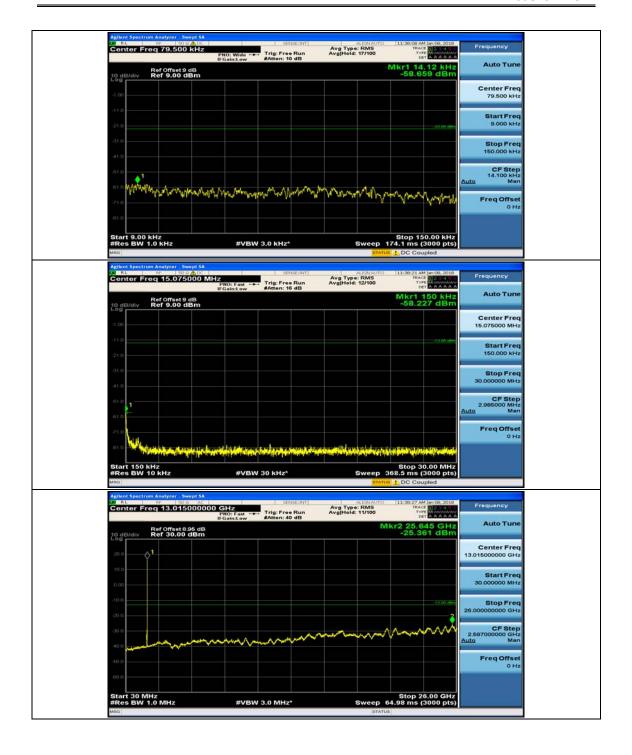




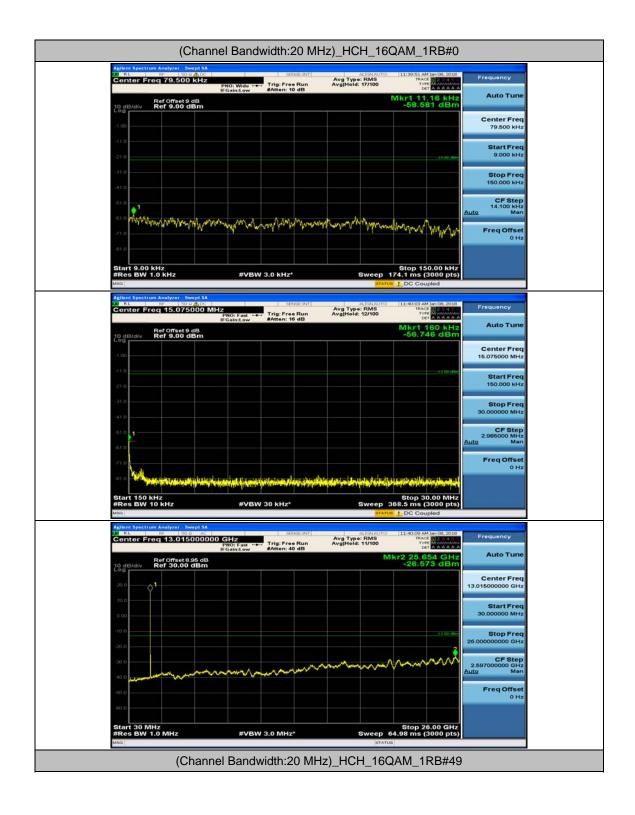




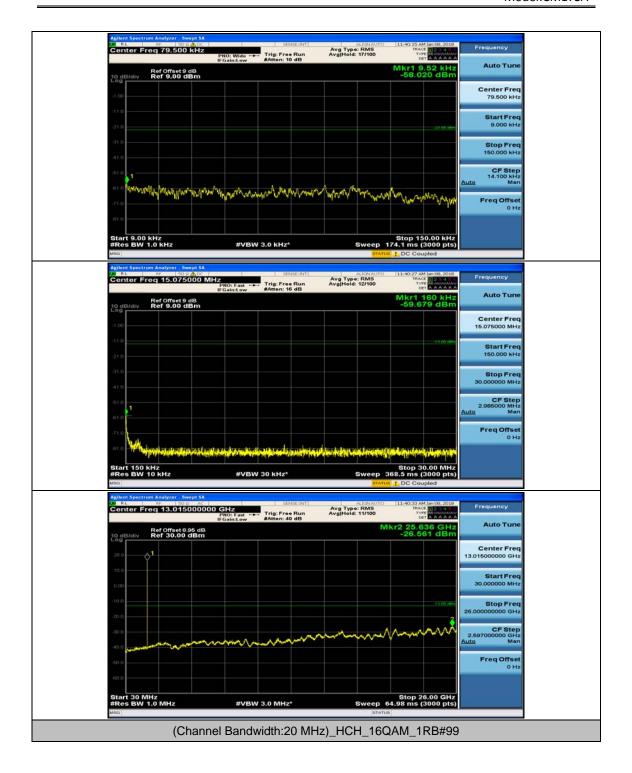




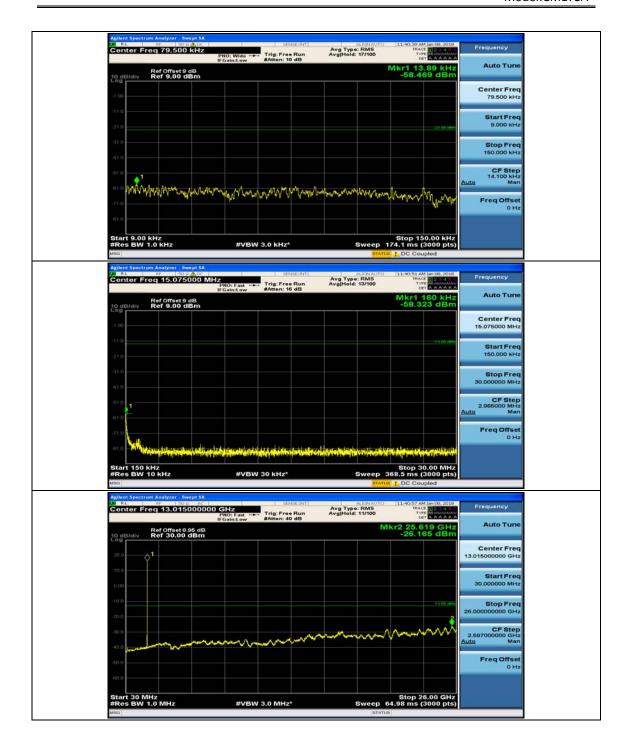














# **Appendix F: Frequency Stability**

# **Test Result**

**Channel Bandwidth: 1.4 MHz** 

			Channel Band	width: 1.4 MHz			
				tage			
Modulation	Channel	Voltage [Vdc]	Temperature (°ℂ)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
		VL	TN	2.41	0.001409	± 2.5	PASS
	LCH	VN	TN	-1.63	-0.000953	± 2.5	PASS
		VH	TN	-0.52	-0.000304	± 2.5	PASS
		VL	TN	4.54	0.002620	± 2.5	PASS
QPSK	MCH	VN	TN	-1.51	-0.000872	± 2.5	PASS
		VH	TN	1.58	0.000912	± 2.5	PASS
		VL	TN	3.37	0.001921	± 2.5	PASS
	HCH	VN	TN	-1.79	-0.001020	± 2.5	PASS
		VH	TN	-1.64	-0.000935	± 2.5	PASS
		VL	TN	4.23	0.002473	± 2.5	PASS
	LCH	VN	TN	1.73	0.001011	± 2.5	PASS
		VH	TN	4.1	0.002397	± 2.5	PASS
		VL	TN	-1.5	-0.000866	± 2.5	PASS
16QAM	MCH	VN	TN	-0.28	-0.000162	± 2.5	PASS
		VH	TN	4.39	0.002534	± 2.5	PASS
	нсн	VL	TN	4.94	0.002816	± 2.5	PASS
		VN	TN	4.16	0.002371	± 2.5	PASS
		VH	TN	2.21	0.001260	± 2.5	PASS
			Tempe	erature			
Modulation	Channe I	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
		VN	-30	2.59	0.001514	± 2.5	PASS
		VN	-20	4.92	0.002876	± 2.5	PASS
		VN	-10	-0.23	-0.000134	± 2.5	PASS
		VN	0	4.31	0.002519	± 2.5	PASS
	LCH	VN	10	2.69	0.001572	± 2.5	PASS
QPSK		VN	20	-1.95	-0.001140	± 2.5	PASS
		VN	30	2.73	0.001596	± 2.5	PASS
		VN	40	0.45	0.000263	± 2.5	PASS
		VN	50	0.24	0.000140	± 2.5	PASS
	МСП	VN	-30	1.89	0.001091	± 2.5	PASS
	MCH	VN	-20	-1.83	-0.001056	± 2.5	PASS

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		VN	-10	2.46	0.001420	± 2.5	PASS
		VN	0	1.33	0.000768	± 2.5	PASS
		VN	10	4.49	0.002592	± 2.5	PASS
		VN	20	1.06	0.000612	± 2.5	PASS
		VN	30	-1.46	-0.000843	± 2.5	PASS
		VN	40	1.74	0.001004	± 2.5	PASS
		VN	50	0.7	0.000404	± 2.5	PASS
		VN	-30	-0.14	-0.000080	± 2.5	PASS
		VN	-20	1.16	0.000661	± 2.5	PASS
		VN	-10	-0.95	-0.000542	± 2.5	PASS
		VN	0	0.2	0.000114	± 2.5	PASS
	HCH	VN	10	0.61	0.000348	± 2.5	PASS
		VN	20	-1.25	-0.000713	± 2.5	PASS
		VN	30	-0.11	-0.000063	± 2.5	PASS
		VN	40	4.57	0.002605	± 2.5	PASS
		VN	50	2.99	0.001704	± 2.5	PASS
		VN	-30	1.37	0.000801	± 2.5	PASS
		VN	-20	4.06	0.002373	± 2.5	PASS
		VN	-10	4.25	0.002484	± 2.5	PASS
		VN	0	2.52	0.001473	± 2.5	PASS
	LCH	VN	10	3.2	0.001871	± 2.5	PASS
		VN	20	1.8	0.001052	± 2.5	PASS
		VN	30	4.54	0.002654	± 2.5	PASS
		VN	40	-1.39	-0.000813	± 2.5	PASS
		VN	50	-0.2	-0.000117	± 2.5	PASS
		VN	-30	-0.39	-0.000222	± 2.5	PASS
		VN	-20	-0.43	-0.000245	± 2.5	PASS
		VN	-10	-0.83	-0.000473	± 2.5	PASS
16QAM		VN	0	0.38	0.000217	± 2.5	PASS
	мсн	VN	10	2.13	0.001214	± 2.5	PASS
		VN	20	-0.84	-0.000479	± 2.5	PASS
		VN	30	4.87	0.002776	± 2.5	PASS
		VN	40	1.24	0.000707	± 2.5	PASS
		VN	50	4.83	0.002753	± 2.5	PASS
		VN	-30	-1.73	-0.000986	± 2.5	PASS
		VN	-20	1.23	0.000701	± 2.5	PASS
		VN	-10	2.41	0.001374	± 2.5	PASS
	нсн	VN	0	1.7	0.000969	± 2.5	PASS
		VN	10	1.3	0.000741	± 2.5	PASS
		VN	20	3.16	0.001801	± 2.5	PASS
		VN	30	-0.87	-0.000496	± 2.5	PASS



	VN	40	1.99	0.001134	± 2.5	PASS
	VN	50	-1.68	-0.000958	± 2.5	PASS

# **Channel Bandwidth: 3 MHz**

			Channel Band	lwidth: 3 MHz+			
				tage			
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
	LCH	VL	TN	4.04	0.002361	± 2.5	PASS
		VN	TN	0.28	0.000164	± 2.5	PASS
		VH	TN	3.19	0.001864	± 2.5	PASS
		VL	TN	1.62	0.000935	± 2.5	PASS
QPSK	MCH	VN	TN	2.03	0.001172	± 2.5	PASS
		VH	TN	-0.25	-0.000144	± 2.5	PASS
		VL	TN	0.05	0.000029	± 2.5	PASS
	HCH	VN	TN	2.93	0.001671	± 2.5	PASS
		VH	TN	-1.63	-0.000930	± 2.5	PASS
		VL	TN	1.84	0.001075	± 2.5	PASS
	LCH	VN	TN	0.48	0.000280	± 2.5	PASS
		VH	TN	3.73	0.002179	± 2.5	PASS
	MCH	VL	TN	4.67	0.002696	± 2.5	PASS
16QAM		VN	TN	1.81	0.001045	± 2.5	PASS
		VH	TN	1.71	0.000987	± 2.5	PASS
		VL	TN	0.77	0.000439	± 2.5	PASS
	HCH	VN	TN	4.39	0.002504	± 2.5	PASS
		VH	TN	2	0.001141	± 2.5	PASS
			Tempe	erature	•		
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
		VN	-30	2.6	0.001519	± 2.5	PASS
		VN	-20	1.22	0.000713	± 2.5	PASS
		VN	-10	1.85	0.001081	± 2.5	PASS
		VN	0	0.43	0.000251	± 2.5	PASS
	LCH	VN	10	-1.5	-0.000876	± 2.5	PASS
OBSK		VN	20	1.85	0.001081	± 2.5	PASS
QPSK		VN	30	2.17	0.001268	± 2.5	PASS
		VN	40	4.58	0.002676	± 2.5	PASS
		VN	50	3.11	0.001817	± 2.5	PASS
		VN	-30	-0.82	-0.000473	± 2.5	PASS
	MCH	VN	-20	3.92	0.002263	± 2.5	PASS
		VN	-10	-0.03	-0.000017	± 2.5	PASS



		VN	0	2.03	0.001172	± 2.5	PASS
						1	. ,
		VN	10	-0.72	-0.000416	± 2.5	PASS
		VN	20	3.74	0.002159	± 2.5	PASS
		VN	30	4.91	0.002834	± 2.5	PASS
		VN	40	1.42	0.000820	± 2.5	PASS
		VN	50	-1.56	-0.000900	± 2.5	PASS
		VN	-30	-1.04	-0.000593	± 2.5	PASS
		VN	-20	0.12	0.000068	± 2.5	PASS
		VN	-10	2.5	0.001426	± 2.5	PASS
		VN	0	2.02	0.001152	± 2.5	PASS
	HCH	VN	10	2.74	0.001563	± 2.5	PASS
		VN	20	3.9	0.002224	± 2.5	PASS
		VN	30	2.58	0.001471	± 2.5	PASS
		VN	40	4.53	0.002583	± 2.5	PASS
		VN	50	-0.47	-0.000268	± 2.5	PASS
		VN	-30	1.36	0.000785	± 2.5	PASS
		VN	-20	0.36	0.000208	± 2.5	PASS
		VN	-10	4.4	0.002540	± 2.5	PASS
		VN	0	-0.17	-0.000098	± 2.5	PASS
	LCH	VN	10	0.59	0.000341	± 2.5	PASS
		VN	20	-0.9	-0.000519	± 2.5	PASS
		VN	30	-1.67	-0.000964	± 2.5	PASS
		VN	40	-1.03	-0.000595	± 2.5	PASS
		VN	50	3.23	0.001864	± 2.5	PASS
		VN	-30	-0.21	-0.000120	± 2.5	PASS
		VN	-20	1.38	0.000787	± 2.5	PASS
		VN	-10	2.25	0.001283	± 2.5	PASS
ODGIV		VN	0	-0.5	-0.000285	± 2.5	PASS
QPSK	MCH	VN	10	2.03	0.001158	± 2.5	PASS
		VN	20	2.26	0.001289	± 2.5	PASS
		VN	30	0.51	0.000291	± 2.5	PASS
		VN	40	1.02	0.000582	± 2.5	PASS
		VN	50	3.52	0.002007	± 2.5	PASS
		VN	-30	-0.5	-0.000285	± 2.5	PASS
		VN	-20	2.25	0.001283	± 2.5	PASS
		VN	-10	4.93	0.002812	± 2.5	PASS
	HOLL	VN	0	3.76	0.002144	± 2.5	PASS
	HCH	VN	10	2.55	0.001454	± 2.5	PASS
		VN	20	2.2	0.001255	± 2.5	PASS
		VN	30	1.75	0.000998	± 2.5	PASS
		VN	40	-0.76	-0.000433	± 2.5	PASS



VN	50	-0.31	-0.000177	± 2.5	PASS

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

			Channel Ban	dwidth: 5 MHz			
				tage			
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
	LCH	VL	TN	0.26	0.000152	± 2.5	PASS
		VN	TN	1.96	0.001145	± 2.5	PASS
		VH	TN	3.91	0.002283	± 2.5	PASS
		VL	TN	-0.46	-0.000266	± 2.5	PASS
QPSK	MCH	VN	TN	3.94	0.002274	± 2.5	PASS
		VH	TN	4.64	0.002678	± 2.5	PASS
		VL	TN	4.11	0.002345	± 2.5	PASS
	HCH	VN	TN	-1.07	-0.000611	± 2.5	PASS
		VH	TN	4.23	0.002414	± 2.5	PASS
		VL	TN	1.52	0.000888	± 2.5	PASS
	LCH	VN	TN	-0.87	-0.000508	± 2.5	PASS
		VH	TN	4.88	0.002850	± 2.5	PASS
		VL	TN	3.47	0.002003	± 2.5	PASS
16QAM	MCH	VN	TN	0.08	0.000046	± 2.5	PASS
		VH	TN	-1.64	-0.000947	± 2.5	PASS
		VL	TN	0.9	0.000514	± 2.5	PASS
	HCH	VN	TN	0.46	0.000262	± 2.5	PASS
		VH	TN	4.86	0.002773	± 2.5	PASS
	1		Tempe	erature		1	
Modulation	Channel	Voltage [Vdc]	Temperature $(^{\circ}\!$	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
		VN	-30	4.82	0.002815	± 2.5	PASS
		VN	-20	3.43	0.002003	± 2.5	PASS
		VN	-10	1.76	0.001028	± 2.5	PASS
		VN	0	2.16	0.001261	± 2.5	PASS
	LCH	VN	10	4.3	0.002511	± 2.5	PASS
		VN	20	-1.81	-0.001057	± 2.5	PASS
QPSK		VN	30	2.69	0.001571	± 2.5	PASS
		VN	40	3.04	0.001775	± 2.5	PASS
		VN	50	-1.34	-0.000782	± 2.5	PASS
		VN	-30	2.89	0.001668	± 2.5	PASS
	MCH	VN	-20	4.22	0.002436	± 2.5	PASS
	IVICH	VN	-10	-0.5	-0.000289	± 2.5	PASS
		VN	0	0.3	0.000173	± 2.5	PASS



			<u> </u>	1	ī	1	
		VN	10	2.33	0.001345	± 2.5	PASS
		VN	20	2.86	0.001651	± 2.5	PASS
		VN	30	-1.44	-0.000831	± 2.5	PASS
		VN	40	2.85	0.001645	± 2.5	PASS
		VN	50	-1.84	-0.001062	± 2.5	PASS
		VN	-30	-1.7	-0.000970	± 2.5	PASS
		VN	-20	3.44	0.001803	± 2.5	PASS
		VN	-10	-1.33	-0.000697	± 2.5	PASS
		VN	0	4.47	0.002343	± 2.5	PASS
	HCH	VN	10	-0.13	-0.000068	± 2.5	PASS
		VN	20	0.9	0.000472	± 2.5	PASS
		VN	30	2.82	0.001478	± 2.5	PASS
		VN	40	-1.86	-0.000975	± 2.5	PASS
		VN	50	2.1	0.001101	± 2.5	PASS
		VN	-30	1.57	0.000906	± 2.5	PASS
		VN	-20	1.92	0.001108	± 2.5	PASS
		VN	-10	2.21	0.001276	± 2.5	PASS
		VN	0	0.69	0.000398	± 2.5	PASS
	LCH	VN	10	1.31	0.000756	± 2.5	PASS
		VN	20	-0.84	-0.000485	± 2.5	PASS
		VN	30	4.14	0.002390	± 2.5	PASS
		VN	40	-1.03	-0.000595	± 2.5	PASS
		VN	50	2.66	0.001535	± 2.5	PASS
		VN	-30	3.18	0.001815	± 2.5	PASS
		VN	-20	1.16	0.000662	± 2.5	PASS
		VN	-10	2.03	0.001158	± 2.5	PASS
		VN	0	2.48	0.001415	± 2.5	PASS
16QAM	MCH	VN	10	1.88	0.001073	± 2.5	PASS
		VN	20	-0.24	-0.000137	± 2.5	PASS
		VN	30	4.06	0.002317	± 2.5	PASS
		VN	40	-1.4	-0.000799	± 2.5	PASS
		VN	50	-0.41	-0.000234	± 2.5	PASS
		VN	-30	1.93	0.001012	± 2.5	PASS
		VN	-20	0.83	0.000435	± 2.5	PASS
		VN	-10	2.28	0.001195	± 2.5	PASS
		VN	0	-0.97	-0.000509	± 2.5	PASS
	нсн	VN	10	-1.78	-0.000933	± 2.5	PASS
		VN	20	1.07	0.000561	± 2.5	PASS
		VN	30	3.03	0.001588	± 2.5	PASS
		VN	40	0.64	0.000336	± 2.5	PASS
		VN	50	-1.69	-0.000886	± 2.5	PASS
<u></u>		V.14	00	1.00	0.000000	12.0	17100



# **Channel Bandwidth: 10 MHz**

Nodulation   Channel   Voltage   Temperature   Channel   Voltage   Temperature   Channel   Channel   Channel   Voltage   Temperature   Channel				Channel Band	lwidth: 10 MHz			
Nodulation   Channel   Voltage   Temperature (°C)   Deviation (hz)   Deviation (ppm)   Verlict (ppm)   Verli								
CH	Modulation	Channel		Temperature	Deviation			Verdict
OPSK		LCH	VL	TN	-1.55	-0.000904	± 2.5	PASS
QPSK         MCH         VL         TN         -1.47         -0.000848         ± 2.5         PASS           VH         TN         -1.22         -0.000704         ± 2.5         PASS           VH         TN         4.17         0.002407         ± 2.5         PASS           VH         TN         -1.56         -0.000891         ± 2.5         PASS           VH         TN         4.71         0.002623         ± 2.5         PASS           VH         TN         4.59         0.002623         ± 2.5         PASS           VH         TN         -0.55         -0.000321         ± 2.5         PASS           VH         TN         -0.49         0.000266         ± 2.5         PASS           VH         TN         -0.49         0.000266         ± 2.5         PASS           VH         TN         -0.11         -0.000058         ± 2.5         PASS           VH         TN         -0.73         -0.00021         ± 2.5         PASS           VH         TN         -1.81         -0.00134         ± 2.5         PASS           VH         TN         0.36         -0.000333         ± 2.5         PASS			VN	TN	-0.56	-0.000327	± 2.5	PASS
OPSK         MCH         VN         TN         -1.22         -0.000704         ± 2.5         PASS           VH         TN         4.17         0.002407         ± 2.5         PASS           WL         TN         -1.56         -0.000891         ± 2.5         PASS           VH         TN         4.71         0.002693         ± 2.5         PASS           VH         TN         4.59         0.002623         ± 2.5         PASS           VL         TN         3.82         0.002227         ± 2.5         PASS           VH         TN         -0.55         -0.000321         ± 2.5         PASS           VH         TN         -0.49         0.000286         ± 2.5         PASS           VL         TN         -0.1         -0.000038         ± 2.5         PASS           VH         TN         -0.72         -0.000416         ± 2.5         PASS           VH         TN         -1.81         -0.001034         ± 2.5         PASS           VH         TN         -0.36         -0.000206         ± 2.5         PASS           Modulation         Channel         Voltage (Volg)         Temperature (°C)         Deviation (Hz)			VH	TN	4.37	0.002548	± 2.5	PASS
New Part			VL	TN	-1.47	-0.000848	± 2.5	PASS
HCH	QPSK	мсн	VN	TN	-1.22	-0.000704	± 2.5	PASS
HCH	-		VH	TN	4.17	0.002407	± 2.5	PASS
VH			VL	TN	-1.56	-0.000891	± 2.5	PASS
LCH		HCH	VN	TN	4.71	0.002691	± 2.5	PASS
LCH			VH	TN	4.59	0.002623	± 2.5	PASS
No.000286   ±2.5   PASS			VL	TN	3.82	0.002227	± 2.5	PASS
NCH	LCH	LCH	VN	TN	-0.55	-0.000321	± 2.5	PASS
16QAM   MCH			VH	TN	0.49	0.000286	± 2.5	PASS
VH			VL	TN	-0.1	-0.000058	± 2.5	PASS
HCH	16QAM	MCH	VN	TN	-0.73	-0.000421	± 2.5	PASS
HCH			VH	TN	-0.72	-0.000416	± 2.5	PASS
Note			VL	TN	-1.81	-0.001034	± 2.5	PASS
Nodulation   Channel   Voltage   Temperature   Deviation (Hz)   Deviation (ppm)   Verdict (p		HCH	VN	TN	-0.36	-0.000206	± 2.5	PASS
Modulation         Channel         Voltage [Vdc]         Temperature (°C)         Deviation (Hz)         Deviation (ppm)         Limit (ppm)         Verdict (ppm)           VN         -30         3.48         0.002029         ± 2.5         PASS           VN         -20         0.15         0.000087         ± 2.5         PASS           VN         -10         3.64         0.002122         ± 2.5         PASS           VN         0         1.07         0.000624         ± 2.5         PASS           VN         10         2.86         0.001668         ± 2.5         PASS           VN         20         -0.06         -0.00035         ± 2.5         PASS           VN         30         4.22         0.002461         ± 2.5         PASS           VN         40         4.82         0.002810         ± 2.5         PASS           VN         50         3.79         0.002210         ± 2.5         PASS           VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566			VH	TN	0.6	0.000343	± 2.5	PASS
Third contained   Third cont				Tempe	erature		Į.	
VN	Modulation	Channel						Verdict
VN			VN	-30	3.48	0.002029	± 2.5	PASS
LCH			VN	-20	0.15	0.000087	± 2.5	PASS
LCH         VN         10         2.86         0.001668         ± 2.5         PASS           VN         20         -0.06         -0.000035         ± 2.5         PASS           VN         30         4.22         0.002461         ± 2.5         PASS           VN         40         4.82         0.002810         ± 2.5         PASS           VN         50         3.79         0.002210         ± 2.5         PASS           VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	-10	3.64	0.002122	± 2.5	PASS
MCH         VN         20         -0.06         -0.000035         ± 2.5         PASS           VN         30         4.22         0.002461         ± 2.5         PASS           VN         40         4.82         0.002810         ± 2.5         PASS           VN         50         3.79         0.002210         ± 2.5         PASS           VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	0	1.07	0.000624	± 2.5	PASS
VN         30         4.22         0.002461         ± 2.5         PASS           VN         40         4.82         0.002810         ± 2.5         PASS           VN         50         3.79         0.002210         ± 2.5         PASS           VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS		LCH	VN	10	2.86	0.001668	± 2.5	PASS
VN         40         4.82         0.002810         ± 2.5         PASS           VN         50         3.79         0.002210         ± 2.5         PASS           VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	20	-0.06	-0.000035	± 2.5	PASS
VN         50         3.79         0.002210         ± 2.5         PASS           VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	30	4.22	0.002461	± 2.5	PASS
VN         -30         3.45         0.001991         ± 2.5         PASS           VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS	16QAM		VN	40	4.82	0.002810	± 2.5	PASS
VN         -20         -0.76         -0.000439         ± 2.5         PASS           VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	50	3.79	0.002210	± 2.5	PASS
VN         -10         0.98         0.000566         ± 2.5         PASS           VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	-30	3.45	0.001991	± 2.5	PASS
MCH         VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS			VN	-20	-0.76	-0.000439	± 2.5	PASS
VN         0         -0.9         -0.000519         ± 2.5         PASS           VN         10         1.8         0.001039         ± 2.5         PASS		MCH	VN	-10	0.98	0.000566	± 2.5	PASS
		IVICH	VN	0	-0.9	-0.000519	± 2.5	PASS
VN 20 1.14 0.000658 ± 2.5 PASS			VN	10	1.8	0.001039	± 2.5	PASS
			VN	20	1.14	0.000658	± 2.5	PASS



		VN	30	4.32	0.002494	± 2.5	PASS
		VN	40	1.96	0.001131	± 2.5	PASS
		VN	50	1.31	0.000756	± 2.5	PASS
		VN	-30	-0.76	-0.000434	± 2.5	PASS
		VN	-20	1.37	0.000783	± 2.5	PASS
		VN	-10	3.84	0.002194	± 2.5	PASS
		VN	0	1.2	0.000686	± 2.5	PASS
	HCH	VN	10	3.37	0.001926	± 2.5	PASS
		VN	20	-1.32	-0.000754	± 2.5	PASS
		VN	30	3.49	0.001994	± 2.5	PASS
		VN	40	-1.93	-0.001103	± 2.5	PASS
		VN	50	0.71	0.000406	± 2.5	PASS
		VN	-30	1.29	0.000745	± 2.5	PASS
		VN	-20	0.1	0.000058	± 2.5	PASS
		VN	-10	-0.38	-0.000219	± 2.5	PASS
		VN	0	-1.62	-0.000935	± 2.5	PASS
	LCH	VN	10	1.51	0.000872	± 2.5	PASS
		VN	20	3.56	0.002055	± 2.5	PASS
		VN	30	-0.97	-0.000560	± 2.5	PASS
		VN	40	1.62	0.000935	± 2.5	PASS
		VN	50	4.06	0.002343	± 2.5	PASS
		VN	-30	4.22	0.002411	± 2.5	PASS
		VN	-20	-1.15	-0.000657	± 2.5	PASS
		VN	-10	3.94	0.002251	± 2.5	PASS
		VN	0	0.59	0.000337	± 2.5	PASS
QPSK	MCH	VN	10	3.39	0.001937	± 2.5	PASS
		VN	20	4.51	0.002577	± 2.5	PASS
		VN	30	1	0.000571	± 2.5	PASS
		VN	40	1.15	0.000657	± 2.5	PASS
		VN	50	-0.03	-0.000017	± 2.5	PASS
		VN	-30	-1.62	-0.000926	± 2.5	PASS
		VN	-20	2.49	0.001423	± 2.5	PASS
		VN	-10	4.38	0.002503	± 2.5	PASS
		VN	0	1.19	0.000680	± 2.5	PASS
	HCH	VN	10	-1.53	-0.000874	± 2.5	PASS
		VN	20	-0.51	-0.000291	± 2.5	PASS
		VN	30	2.59	0.001480	± 2.5	PASS
		VN	40	0.39	0.000223	± 2.5	PASS
1		VN	50	2.9	0.001657	± 2.5	PASS



# **Channel Bandwidth: 15 MHz**

			Channel Band	lwidth: 15 MHz			
				tage			
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
	LCH	VL	TN	4.53	0.002638	± 2.5	PASS
		VN	TN	0.02	0.000012	± 2.5	PASS
		VH	TN	4.32	0.002515	± 2.5	PASS
		VL	TN	0.91	0.000525	± 2.5	PASS
QPSK	MCH	VN	TN	1.6	0.000924	± 2.5	PASS
		VH	TN	4.96	0.002863	± 2.5	PASS
		VL	TN	1.62	0.000927	± 2.5	PASS
	HCH	VN	TN	1.45	0.000830	± 2.5	PASS
		VH	TN	4.01	0.002295	± 2.5	PASS
		VL	TN	-0.45	-0.000262	± 2.5	PASS
LCH	LCH	VN	TN	-0.51	-0.000297	± 2.5	PASS
		VH	TN	-0.82	-0.000477	± 2.5	PASS
		VL	TN	-1.39	-0.000802	± 2.5	PASS
16QAM	MCH	VN	TN	1.83	0.001056	± 2.5	PASS
		VH	TN	1.29	0.000745	± 2.5	PASS
		VL	TN	1.28	0.000732	± 2.5	PASS
	HCH	VN	TN	2.22	0.001270	± 2.5	PASS
		VH	TN	2.88	0.001648	± 2.5	PASS
			Tempe	erature			
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
		VN	-30	0.63	0.000367	± 2.5	PASS
		VN	-20	4.91	0.002859	± 2.5	PASS
		VN	-10	1.02	0.000594	± 2.5	PASS
		VN	0	3.43	0.001997	± 2.5	PASS
	LCH	VN	10	-1.23	-0.000716	± 2.5	PASS
QPSK		VN	20	1.02	0.000594	± 2.5	PASS
		VN	30	4.15	0.002416	± 2.5	PASS
		VN	40	0.46	0.000268	± 2.5	PASS
		VN	50	-0.67	-0.000390	± 2.5	PASS
		VN	-30	-1.68	-0.000970	± 2.5	PASS
		VN	-20	4.92	0.002840	± 2.5	PASS
	MCH	VN	-10	1.82	0.001051	± 2.5	PASS
	IVICH	VN	0	-1.58	-0.000912	± 2.5	PASS
		VN	10	2.82	0.001628	± 2.5	PASS
		VN	20	2.6	0.001501	± 2.5	PASS



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		VN	30	1.87	0.001079	± 2.5	PASS
		VN	40	2.48	0.001431	± 2.5	PASS
		VN	50	-1.59	-0.000918	± 2.5	PASS
		VN	-30	2.66	0.001522	± 2.5	PASS
		VN	-20	3.5	0.002003	± 2.5	PASS
		VN	-10	4.93	0.002821	± 2.5	PASS
		VN	0	3.01	0.001722	± 2.5	PASS
	HCH	VN	10	0.22	0.000126	± 2.5	PASS
		VN	20	-1.06	-0.000607	± 2.5	PASS
		VN	30	3.14	0.001797	± 2.5	PASS
		VN	40	2.72	0.001557	± 2.5	PASS
		VN	50	-1.08	-0.000618	± 2.5	PASS
		VN	-30	3.79	0.002188	± 2.5	PASS
		VN	-20	3.11	0.001795	± 2.5	PASS
		VN	-10	4.33	0.002499	± 2.5	PASS
		VN	0	1.51	0.000872	± 2.5	PASS
	LCH	VN	10	4.3	0.002482	± 2.5	PASS
		VN	20	3.69	0.002130	± 2.5	PASS
		VN	30	-0.37	-0.000214	± 2.5	PASS
		VN	40	4.48	0.002586	± 2.5	PASS
		VN	50	3.02	0.001743	± 2.5	PASS
		VN	-30	3.04	0.001740	± 2.5	PASS
		VN	-20	0.78	0.000446	± 2.5	PASS
		VN	-10	0.81	0.000464	± 2.5	PASS
		VN	0	4.43	0.002535	± 2.5	PASS
QPSK	MCH	VN	10	0.89	0.000509	± 2.5	PASS
		VN	20	4.47	0.002558	± 2.5	PASS
		VN	30	2.03	0.001162	± 2.5	PASS
		VN	40	4.68	0.002678	± 2.5	PASS
		VN	50	3.89	0.002226	± 2.5	PASS
		VN	-30	4.62	0.002644	± 2.5	PASS
		VN	-20	2.91	0.001665	± 2.5	PASS
		VN	-10	2.05	0.001173	± 2.5	PASS
		VN	0	1.68	0.000961	± 2.5	PASS
	НСН	VN	10	3.8	0.002175	± 2.5	PASS
		VN	20	2.59	0.001482	± 2.5	PASS
		VN	30	-0.32	-0.000183	± 2.5	PASS
		VN	40	4.8	0.002747	± 2.5	PASS
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# **Channel Bandwidth: 20 MHz**

Voltage				Channel Band	width: 20 MHz									
Channel   Chan														
CH	Modulation	Channel						Verdict						
QPSK         WH         TN         -1.37         -0.000797         ± 2.5         PASS           QPSK         MCH         VL         TN         4.58         0.002644         ± 2.5         PASS           VH         TN         1.49         0.000860         ± 2.5         PASS           VH         TN         -1.25         -0.000722         ± 2.5         PASS           VL         TN         4.09         0.002344         ± 2.5         PASS           VH         TN         -1.86         -0.001066         ± 2.5         PASS           VH         TN         -1.86         -0.001066         ± 2.5         PASS           VH         TN         -1.99         0.002669         ± 2.5         PASS           VL         TN         1.27         0.000738         ± 2.5         PASS           VH         TN         1.27         0.000738         ± 2.5         PASS           VH         TN         1.37         0.000791         ± 2.5         PASS           VH         TN         1.37         0.000791         ± 2.5         PASS           VH         TN         1.12         -0.000688         ± 2.5         PASS	QPSK	LCH	VL	TN	4.8	0.002791	± 2.5	PASS						
QPSK         MCH         VL         TN         4.58         0.002644         ± 2.5         PASS           VH         TN         1.49         0.000860         ± 2.5         PASS           VH         TN         -1.25         -0.000722         ± 2.5         PASS           WL         TN         4.09         0.002344         ± 2.5         PASS           VH         TN         -1.86         -0.001066         ± 2.5         PASS           VH         TN         0.46         0.000264         ± 2.5         PASS           VL         TN         4.59         0.002669         ± 2.5         PASS           VH         TN         1.27         0.000738         ± 2.5         PASS           VH         TN         1.27         0.000264         ± 2.5         PASS           VH         TN         1.37         0.000269         ± 2.5         PASS           VH         TN         1.37         0.000264         ± 2.5         PASS           VH         TN         1.37         0.000264         ± 2.5         PASS           VH         TN         1.39         0.00264         ± 2.5         PASS			VN	TN	-1.18	-0.000686	± 2.5	PASS						
QPSK         MCH         VN         TN         1.49         0.000860         ± 2.5         PASS           VH         TN         -1.25         -0.000722         ± 2.5         PASS           WL         TN         4.09         0.002344         ± 2.5         PASS           VH         TN         -1.86         -0.001066         ± 2.5         PASS           VH         TN         0.46         0.000264         ± 2.5         PASS           VH         TN         4.59         0.002669         ± 2.5         PASS           VH         TN         1.27         0.000738         ± 2.5         PASS           VH         TN         1.37         0.000738         ± 2.5         PASS           VH         TN         1.37         0.000791         ± 2.5         PASS           VH         TN         1.37         0.000791         ± 2.5         PASS           VH         TN         1.12         -0.000684         ± 2.5         PASS           VH         TN         2.43         0.001393         ± 2.5         PASS           Modulation         Chanel         Voltage [Vdc]         Temperature (°C)         Deviation (°Hz)			VH	TN	-1.37	-0.000797	± 2.5	PASS						
New Part		MCH	VL	TN	4.58	0.002644	± 2.5	PASS						
HCH			VN	TN	1.49	0.000860	± 2.5	PASS						
HCH			VH	TN	-1.25	-0.000722	± 2.5	PASS						
VH			VL	TN	4.09	0.002344	± 2.5	PASS						
LCH		НСН	VN	TN	-1.86	-0.001066	± 2.5	PASS						
LCH			VH	TN	0.46	0.000264	± 2.5	PASS						
No		LCH	VL	TN	4.59	0.002669	± 2.5	PASS						
NCH			VN	TN	2.44	0.001419	± 2.5	PASS						
MCH			VH	TN	1.27	0.000738	± 2.5	PASS						
VH		MCH	VL	TN	0.74	0.000427	± 2.5	PASS						
No.   No.	16QAM		VN	TN	1.37	0.000791	± 2.5	PASS						
HCH			VH	TN	4.59	0.002649	± 2.5	PASS						
VH TN   3.95   0.002264   ± 2.5   PASS		нсн	VL	TN	-1.2	-0.000688	± 2.5	PASS						
Nodulation   Channel   Voltage   V			VN	TN	2.43	0.001393	± 2.5	PASS						
Modulation         Channel         Voltage [Vdc]         Temperature (°C)         Deviation (Hz)         Deviation (ppm)         Limit (ppm)         Verdict (ppm)           VN         -30         2.96         0.001721         ± 2.5         PASS           VN         -20         1.73         0.001006         ± 2.5         PASS           VN         -10         2.3         0.001337         ± 2.5         PASS           VN         0         4.19         0.002436         ± 2.5         PASS           VN         10         1.41         0.000820         ± 2.5         PASS           VN         20         3.8         0.002209         ± 2.5         PASS           VN         30         0.2         0.000116         ± 2.5         PASS           VN         40         4.6         0.002674         ± 2.5         PASS           VN         50         3.56         0.002070         ± 2.5         PASS           VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436 <t< td=""><td></td><td>VH</td><td>TN</td><td>3.95</td><td>0.002264</td><td>± 2.5</td><td>PASS</td></t<>			VH	TN	3.95	0.002264	± 2.5	PASS						
VN				Tempe	erature									
VN	Modulation	Channel						Verdict						
LCH	QPSK	LCH	VN	-30	2.96	0.001721	± 2.5	PASS						
LCH			VN	-20	1.73	0.001006	± 2.5	PASS						
QPSK         VN         10         1.41         0.000820         ± 2.5         PASS           VN         20         3.8         0.002209         ± 2.5         PASS           VN         30         0.2         0.000116         ± 2.5         PASS           VN         40         4.6         0.002674         ± 2.5         PASS           VN         50         3.56         0.002070         ± 2.5         PASS           VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	-10	2.3	0.001337	± 2.5	PASS						
VN         20         3.8         0.002209         ± 2.5         PASS           VN         30         0.2         0.000116         ± 2.5         PASS           VN         40         4.6         0.002674         ± 2.5         PASS           VN         50         3.56         0.002070         ± 2.5         PASS           VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	0	4.19	0.002436	± 2.5	PASS						
VN         30         0.2         0.000116         ± 2.5         PASS           VN         40         4.6         0.002674         ± 2.5         PASS           VN         50         3.56         0.002070         ± 2.5         PASS           VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	10	1.41	0.000820	± 2.5	PASS						
VN         40         4.6         0.002674         ± 2.5         PASS           VN         50         3.56         0.002070         ± 2.5         PASS           VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	20	3.8	0.002209	± 2.5	PASS						
VN         50         3.56         0.002070         ± 2.5         PASS           VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	30	0.2	0.000116	± 2.5	PASS						
VN         -30         2.63         0.001518         ± 2.5         PASS           VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	40	4.6	0.002674	± 2.5	PASS						
VN         -20         -1.77         -0.001022         ± 2.5         PASS           VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	50	3.56	0.002070	± 2.5	PASS						
VN         -10         4.22         0.002436         ± 2.5         PASS           VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS		мсн	VN	-30	2.63	0.001518	± 2.5	PASS						
MCH         VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	-20	-1.77	-0.001022	± 2.5	PASS						
VN         0         0.39         0.000225         ± 2.5         PASS           VN         10         0.83         0.000479         ± 2.5         PASS			VN	-10	4.22	0.002436	± 2.5	PASS						
			VN	0	0.39	0.000225	± 2.5	PASS						
VN 20 -0.7 -0.000404 ± 2.5 PASS			VN	10	0.83	0.000479	± 2.5	PASS						
			VN	20	-0.7	-0.000404	± 2.5	PASS						



	1	I	1	1	1	1	1
		VN	30	1.36	0.000785	± 2.5	PASS
		VN	40	3.54	0.002043	± 2.5	PASS
		VN	50	0.17	0.000098	± 2.5	PASS
	НСН	VN	-30	-0.73	-0.000418	± 2.5	PASS
		VN	-20	1.03	0.000590	± 2.5	PASS
		VN	-10	3.83	0.002195	± 2.5	PASS
		VN	0	1.25	0.000716	± 2.5	PASS
		VN	10	2.61	0.001496	± 2.5	PASS
		VN	20	4.43	0.002539	± 2.5	PASS
		VN	30	-1.77	-0.001014	± 2.5	PASS
		VN	40	4.3	0.002464	± 2.5	PASS
		VN	50	-0.55	-0.000315	± 2.5	PASS
		VN	-30	-1.42	-0.000820	± 2.5	PASS
		VN	-20	1.57	0.000906	± 2.5	PASS
		VN	-10	4.53	0.002615	± 2.5	PASS
	LCH	VN	0	-0.4	-0.000231	± 2.5	PASS
		VN	10	1.53	0.000883	± 2.5	PASS
		VN	20	0.63	0.000364	± 2.5	PASS
		VN	30	1.93	0.001114	± 2.5	PASS
		VN	40	4.55	0.002626	± 2.5	PASS
		VN	50	0	0.000000	± 2.5	PASS
	МСН	VN	-30	2.46	0.001410	± 2.5	PASS
		VN	-20	3.76	0.002155	± 2.5	PASS
		VN	-10	2	0.001146	± 2.5	PASS
		VN	0	0.46	0.000264	± 2.5	PASS
QPSK		VN	10	2.94	0.001685	± 2.5	PASS
		VN	20	4.31	0.002470	± 2.5	PASS
		VN	30	-1.12	-0.000642	± 2.5	PASS
		VN	40	3.78	0.002166	± 2.5	PASS
		VN	50	2.2	0.001261	± 2.5	PASS
	НСН	VN	-30	4.48	0.002567	± 2.5	PASS
		VN	-20	-1.04	-0.000596	± 2.5	PASS
		VN	-10	1.21	0.000693	± 2.5	PASS
		VN	0	2.95	0.001691	± 2.5	PASS
		VN	10	0.29	0.000166	± 2.5	PASS
		VN	20	-0.19	-0.000109	± 2.5	PASS
		VN	30	1.91	0.001095	± 2.5	PASS
		VN	40	2.59	0.001484	± 2.5	PASS
		VN	50	1.26	0.000722	± 2.5	PASS
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