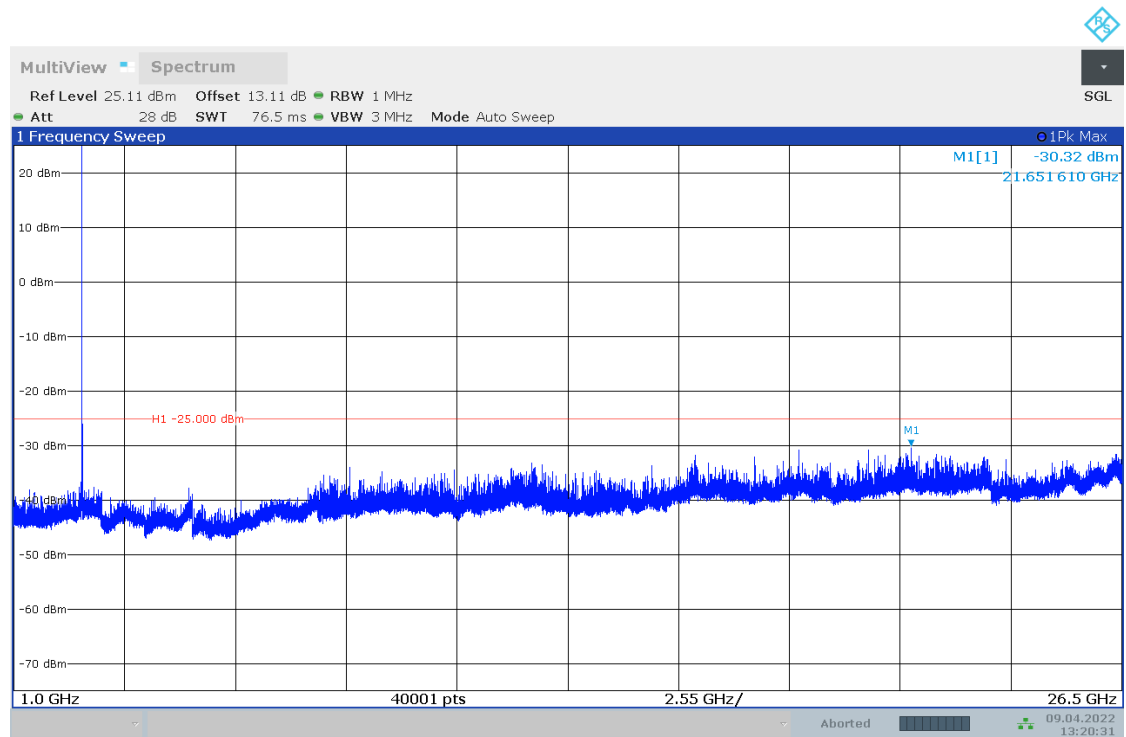
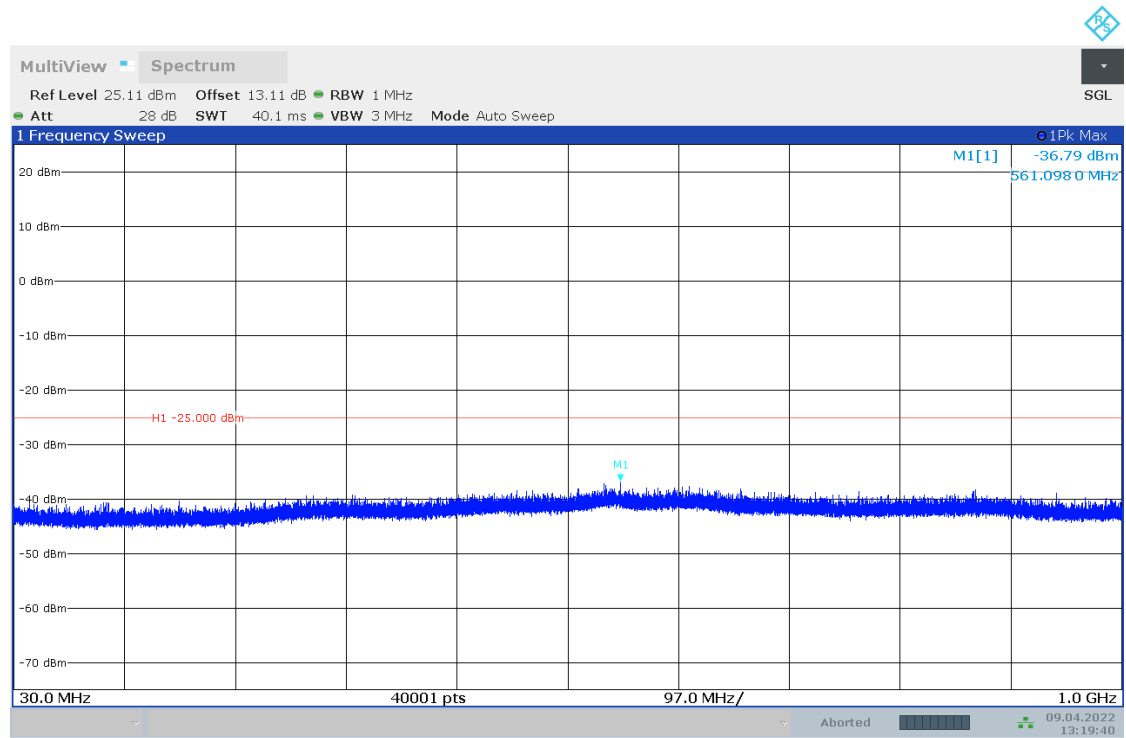




7. APPENDIX G - FREQUENCY STABILITY

7.1 TEST RESULTS

7.1.1 FREQUENCY ERROR VS. VOLTAGE

Frequency Error vs. Voltage								
Test Mode	Test Bandwidth	Test Channel	Modulation	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	5	LCH	QPSK	TN	VH	6.12	0	PASS
			QPSK	TN	VN	1.08	0	PASS
			QPSK	TN	VL	-5.85	0	PASS
		MCH	QPSK	TN	VH	4.54	0	PASS
			QPSK	TN	VN	7.44	0	PASS
			QPSK	TN	VL	0.18	0	PASS
		HCH	QPSK	TN	VH	-9.69	0	PASS
			QPSK	TN	VN	-8.79	0	PASS
			QPSK	TN	VL	-10.13	0	PASS
	20	LCH	QPSK	TN	VH	2.24	0	PASS
			QPSK	TN	VN	3.04	0	PASS
			QPSK	TN	VL	1.51	0	PASS
		MCH	QPSK	TN	VH	2.67	0	PASS
			QPSK	TN	VN	-0.52	0	PASS
			QPSK	TN	VL	-1.81	0	PASS
		HCH	QPSK	TN	VH	0.81	0	PASS
			QPSK	TN	VN	-0.17	0	PASS
			QPSK	TN	VL	1.27	0	PASS
TM2	5	LCH	16QAM	TN	VH	3.78	0	PASS
			16QAM	TN	VN	-5.75	0	PASS
			16QAM	TN	VL	13.45	0.01	PASS
		MCH	16QAM	TN	VH	0.73	0	PASS
			16QAM	TN	VN	7.52	0	PASS
			16QAM	TN	VL	3.16	0	PASS
		HCH	16QAM	TN	VH	-2.14	0	PASS
			16QAM	TN	VN	-3.25	0	PASS
			16QAM	TN	VL	-6.89	0	PASS
	20	LCH	16QAM	TN	VH	2.51	0	PASS
			16QAM	TN	VN	-0.31	0	PASS
			16QAM	TN	VL	1.58	0	PASS
		MCH	16QAM	TN	VH	1.71	0	PASS
			16QAM	TN	VN	1.55	0	PASS
			16QAM	TN	VL	-1.35	0	PASS
		HCH	16QAM	TN	VH	0.69	0	PASS
			16QAM	TN	VN	1.81	0	PASS
			16QAM	TN	VL	-0.94	0	PASS

7.1.2 FREQUENCY ERROR VS. TEMPERATURE

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	5	LCH	QPSK	VN	-30	-1.79	0	PASS
			QPSK	VN	-20	4.18	0	PASS
			QPSK	VN	-10	2.8	0	PASS
			QPSK	VN	0	-1.34	0	PASS
			QPSK	VN	10	-0.02	0	PASS
			QPSK	VN	20	-4.9	0	PASS
			QPSK	VN	30	3.95	0	PASS
			QPSK	VN	40	10.23	0	PASS
			QPSK	VN	50	-3.91	0	PASS
		MCH	QPSK	VN	-30	10.5	0	PASS
			QPSK	VN	-20	-8.58	0	PASS
			QPSK	VN	-10	-1.02	0	PASS
			QPSK	VN	0	2.9	0	PASS
			QPSK	VN	10	-1.66	0	PASS
			QPSK	VN	20	5.97	0	PASS
			QPSK	VN	30	9.07	0	PASS
			QPSK	VN	40	-1.04	0	PASS
			QPSK	VN	50	0.59	0	PASS
		HCH	QPSK	VN	-30	-5.87	0	PASS
			QPSK	VN	-20	1.26	0	PASS
			QPSK	VN	-10	-13.51	-0.01	PASS
			QPSK	VN	0	0.36	0	PASS
			QPSK	VN	10	-0.99	0	PASS
			QPSK	VN	20	-4.03	0	PASS
			QPSK	VN	30	-5.93	0	PASS
			QPSK	VN	40	-2.88	0	PASS
			QPSK	VN	50	-5.46	0	PASS

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	20	LCH	QPSK	VN	-30	0.76	0	PASS
			QPSK	VN	-20	2.65	0	PASS
			QPSK	VN	-10	3	0	PASS
			QPSK	VN	0	0.33	0	PASS
			QPSK	VN	10	0.26	0	PASS
			QPSK	VN	20	0.88	0	PASS
			QPSK	VN	30	2.19	0	PASS
			QPSK	VN	40	1.13	0	PASS
			QPSK	VN	50	3.47	0	PASS
		MCH	QPSK	VN	-30	3.31	0	PASS
			QPSK	VN	-20	1.46	0	PASS
			QPSK	VN	-10	-2.82	0	PASS
			QPSK	VN	0	3.52	0	PASS
			QPSK	VN	10	0.25	0	PASS
			QPSK	VN	20	-0.52	0	PASS
			QPSK	VN	30	0.55	0	PASS
			QPSK	VN	40	2.53	0	PASS
			QPSK	VN	50	4.01	0	PASS
		HCH	QPSK	VN	-30	5.21	0	PASS
			QPSK	VN	-20	-3.87	0	PASS
			QPSK	VN	-10	5.02	0	PASS
			QPSK	VN	0	1.63	0	PASS
			QPSK	VN	10	3.47	0	PASS
			QPSK	VN	20	-0.81	0	PASS
			QPSK	VN	30	0.41	0	PASS
			QPSK	VN	40	-0.03	0	PASS
			QPSK	VN	50	1.12	0	PASS

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM2	5	LCH	16QAM	VN	-30	-5.29	0	PASS
			16QAM	VN	-20	-4.56	0	PASS
			16QAM	VN	-10	4	0	PASS
			16QAM	VN	0	2.81	0	PASS
			16QAM	VN	10	9.16	0	PASS
			16QAM	VN	20	4.66	0	PASS
			16QAM	VN	30	2.53	0	PASS
			16QAM	VN	40	2.96	0	PASS
			16QAM	VN	50	10.76	0	PASS
		MCH	16QAM	VN	-30	2.36	0	PASS
			16QAM	VN	-20	-3.98	0	PASS
			16QAM	VN	-10	4.33	0	PASS
			16QAM	VN	0	3.81	0	PASS
			16QAM	VN	10	10.46	0	PASS
			16QAM	VN	20	0.12	0	PASS
			16QAM	VN	30	0.22	0	PASS
			16QAM	VN	40	-1.18	0	PASS
			16QAM	VN	50	1.85	0	PASS
		HCH	16QAM	VN	-30	-6.78	0	PASS
			16QAM	VN	-20	-11.89	0	PASS
			16QAM	VN	-10	-5.95	0	PASS
			16QAM	VN	0	-3.83	0	PASS
			16QAM	VN	10	-0.03	0	PASS
			16QAM	VN	20	10.61	0	PASS
			16QAM	VN	30	1.54	0	PASS
			16QAM	VN	40	3.16	0	PASS
			16QAM	VN	50	3.34	0	PASS

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM2	20	LCH	16QAM	VN	-30	2.55	0	PASS
			16QAM	VN	-20	2.95	0	PASS
			16QAM	VN	-10	4.55	0	PASS
			16QAM	VN	0	0.71	0	PASS
			16QAM	VN	10	2.87	0	PASS
			16QAM	VN	20	1.32	0	PASS
			16QAM	VN	30	2.35	0	PASS
			16QAM	VN	40	0.3	0	PASS
			16QAM	VN	50	1.93	0	PASS
		MCH	16QAM	VN	-30	0.32	0	PASS
			16QAM	VN	-20	0.54	0	PASS
			16QAM	VN	-10	4.18	0	PASS
			16QAM	VN	0	2.49	0	PASS
			16QAM	VN	10	1.72	0	PASS
			16QAM	VN	20	2.67	0	PASS
			16QAM	VN	30	0.38	0	PASS
			16QAM	VN	40	0.35	0	PASS
			16QAM	VN	50	1.4	0	PASS
		HCH	16QAM	VN	-30	1.06	0	PASS
			16QAM	VN	-20	-1.39	0	PASS
			16QAM	VN	-10	-1.47	0	PASS
			16QAM	VN	0	-1.5	0	PASS
			16QAM	VN	10	-0.17	0	PASS
			16QAM	VN	20	4.45	0	PASS
			16QAM	VN	30	0.49	0	PASS
			16QAM	VN	40	1.18	0	PASS
			16QAM	VN	50	-0.12	0	PASS

End of Test Report