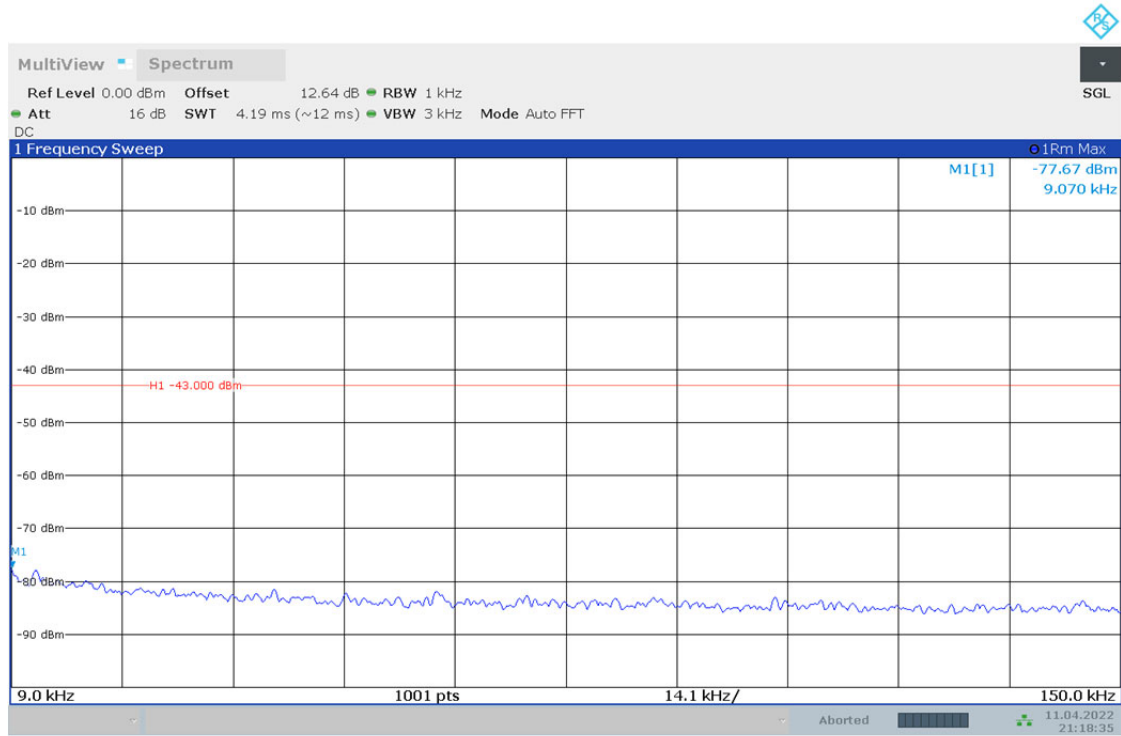
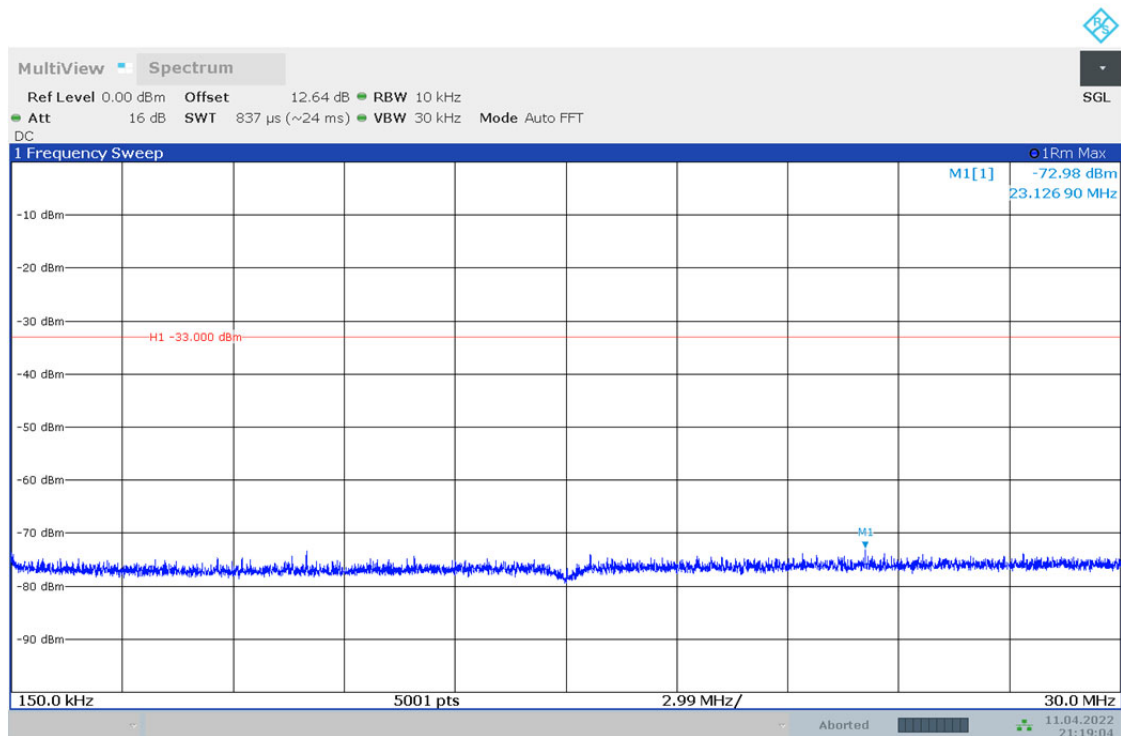


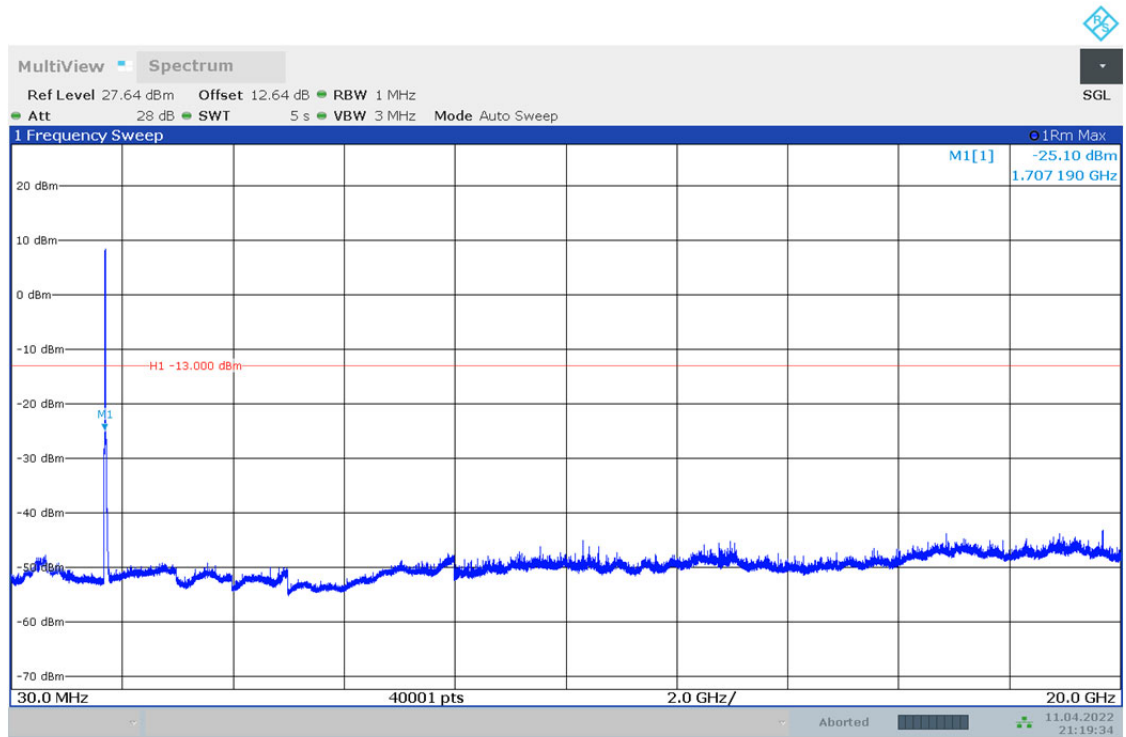
## 6.2.46 TM2\_20MHZ\_LCH\_RB100#0



21:18:35 11.04.2022

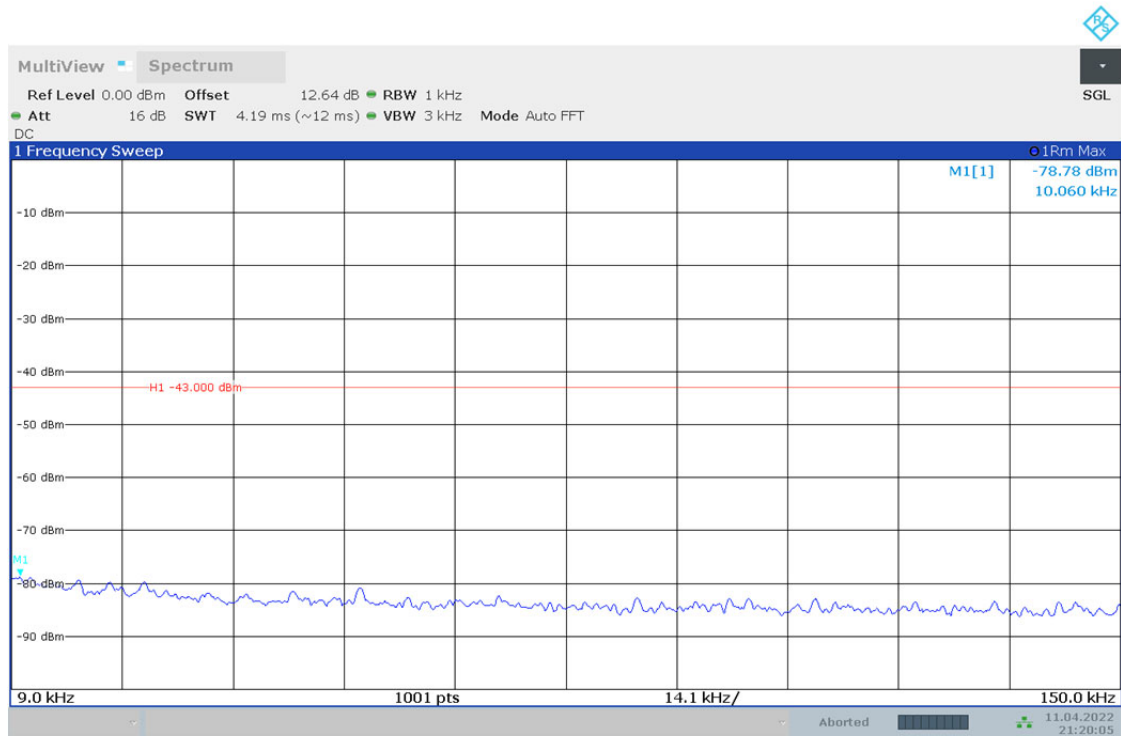


21:19:05 11.04.2022

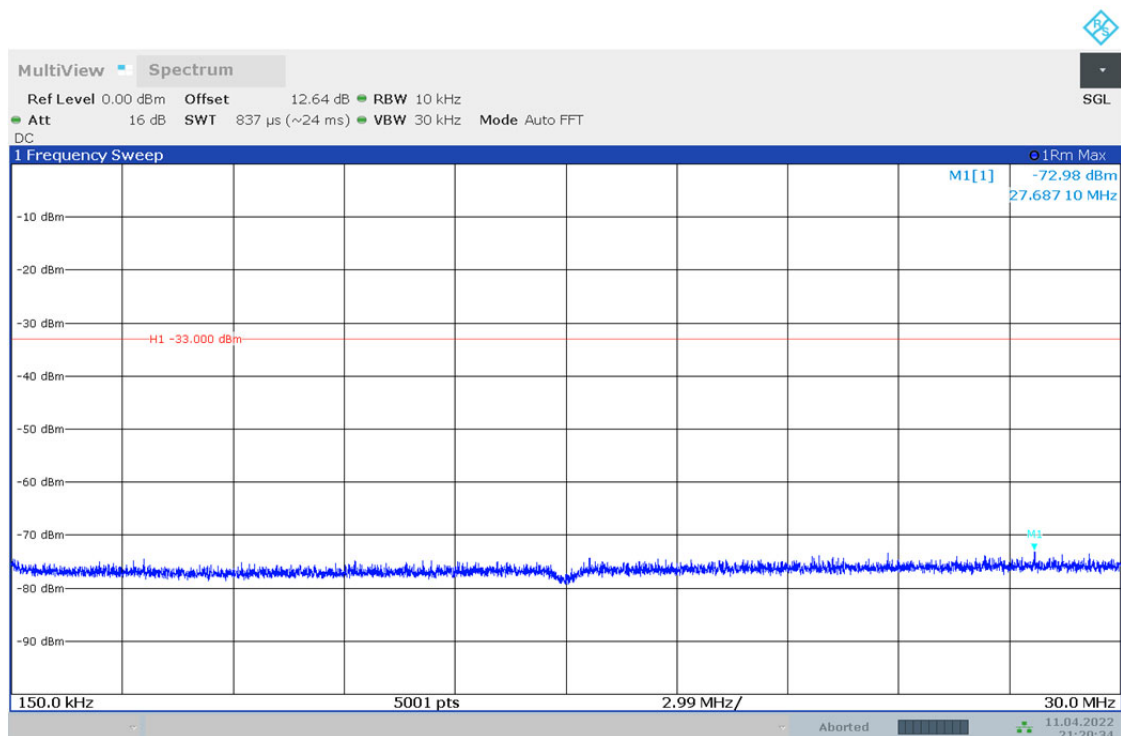


21:19:35 11.04.2022

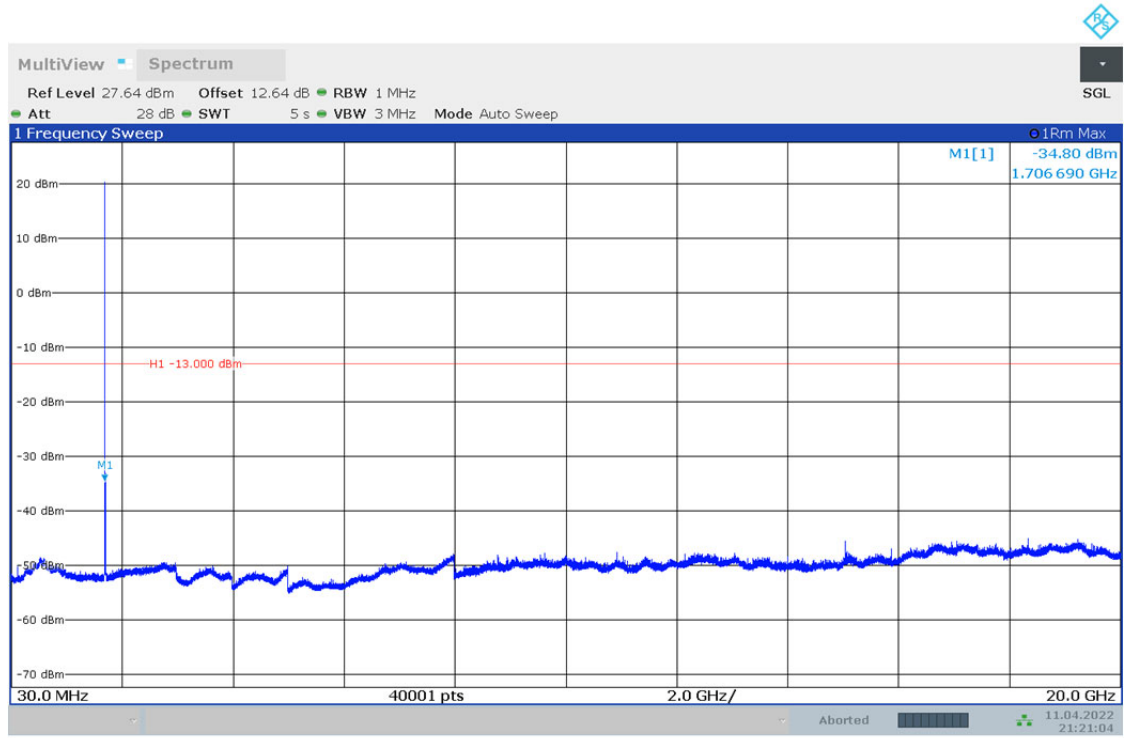
## 6.2.47 TM2\_20MHZ\_LCH\_RB1#0



21:20:05 11.04.2022

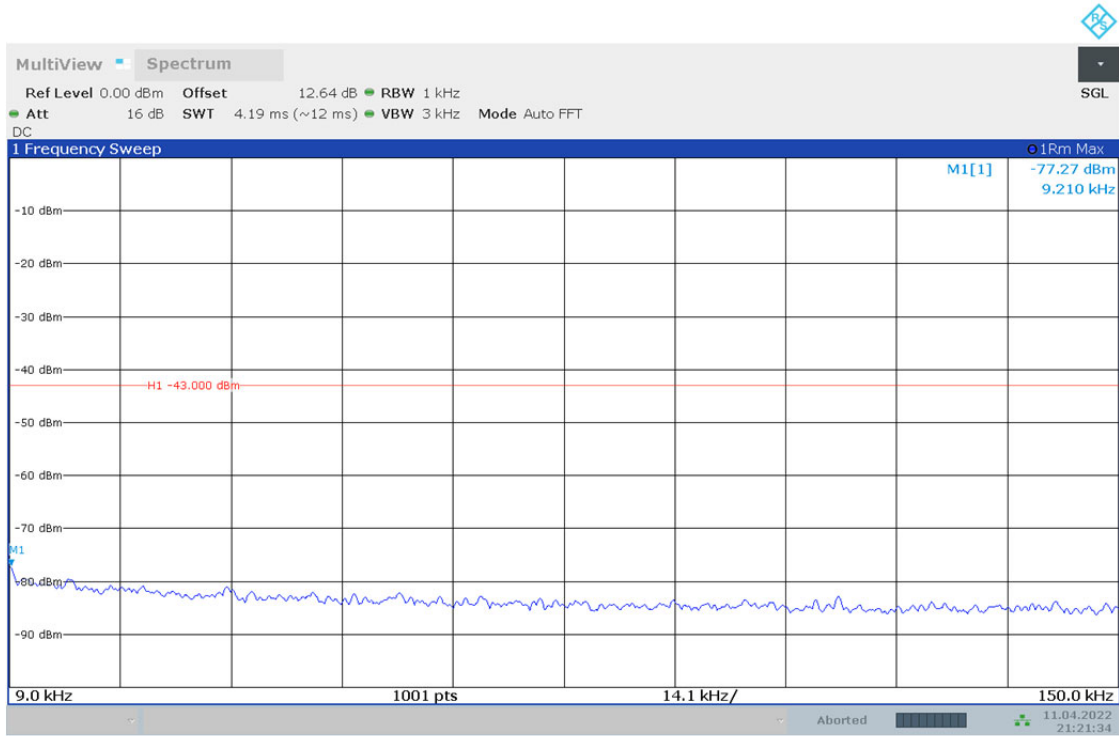


21:20:35 11.04.2022

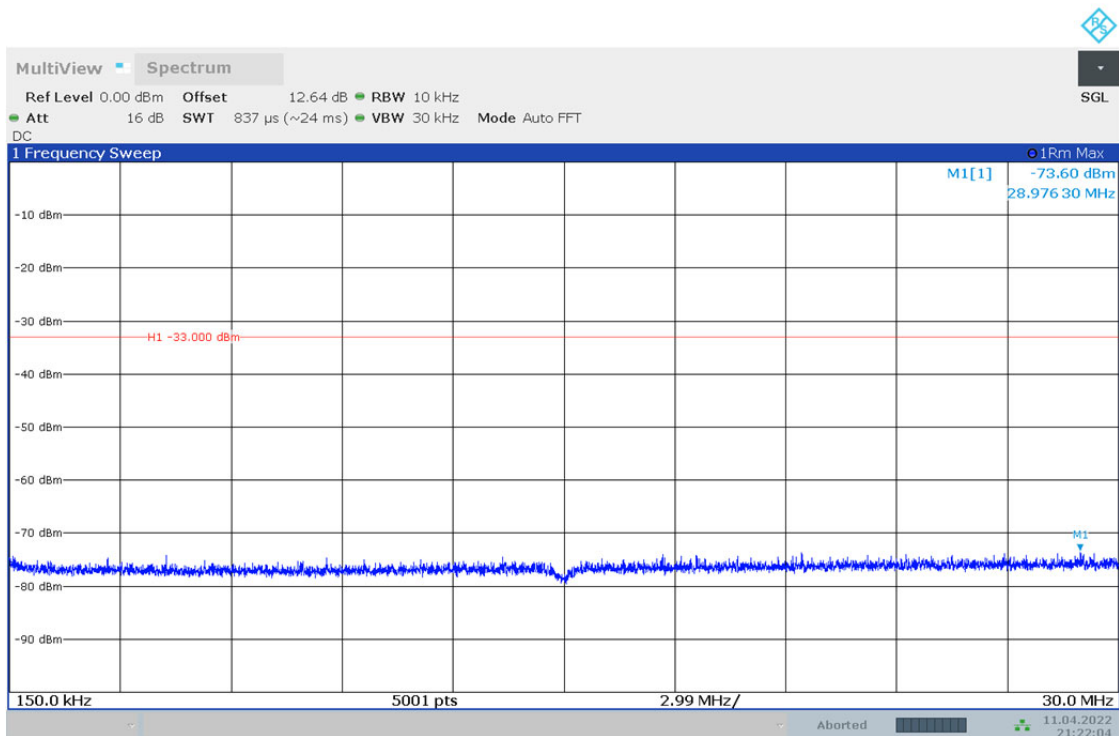


21:21:04 11.04.2022

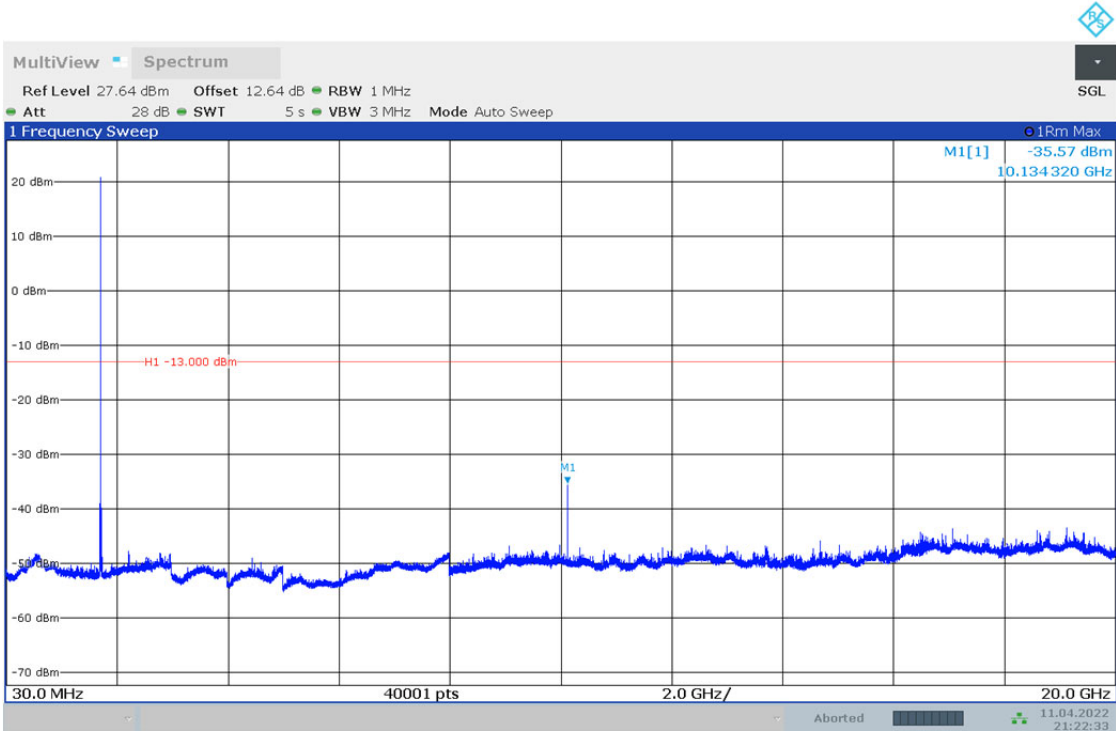
## 6.2.48 TM2\_20MHZ\_LCH\_RB1#99



21:21:35 11.04.2022

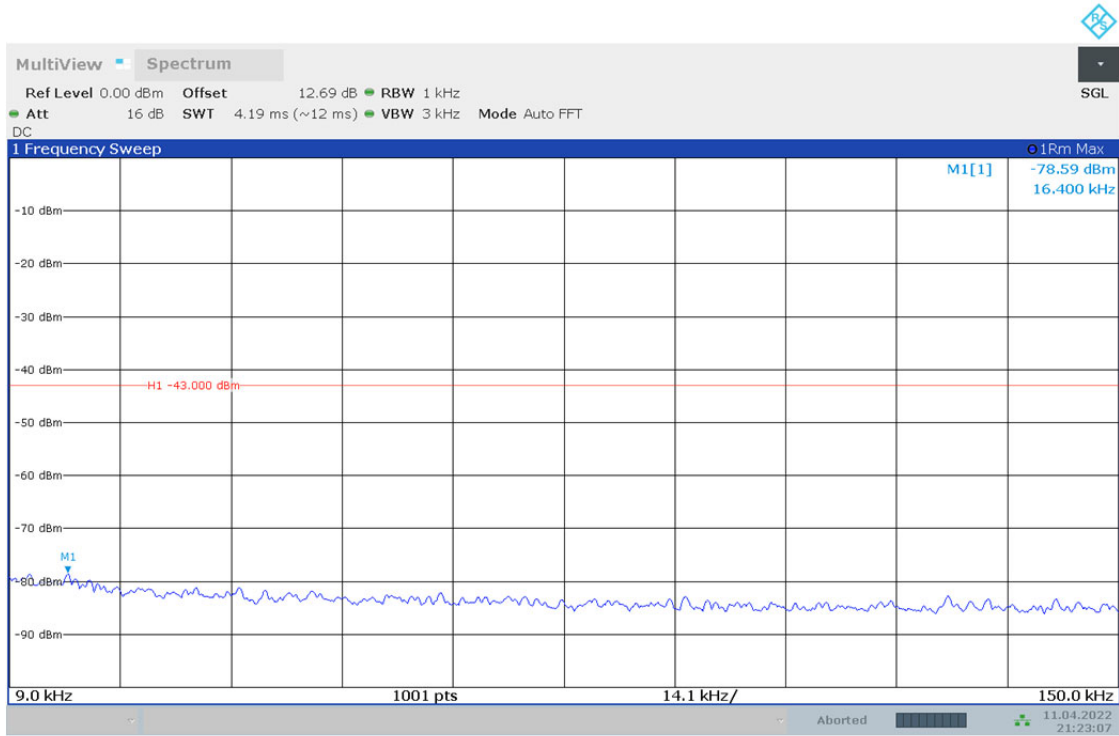


21:22:05 11.04.2022

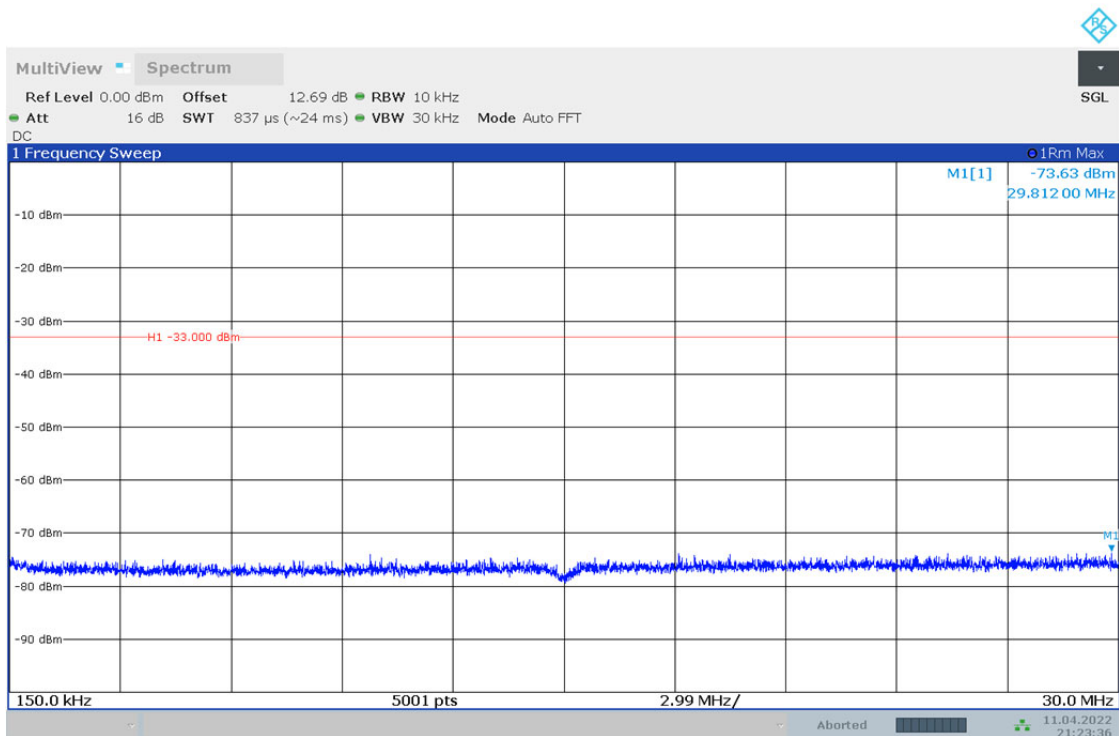


21:22:34 11.04.2022

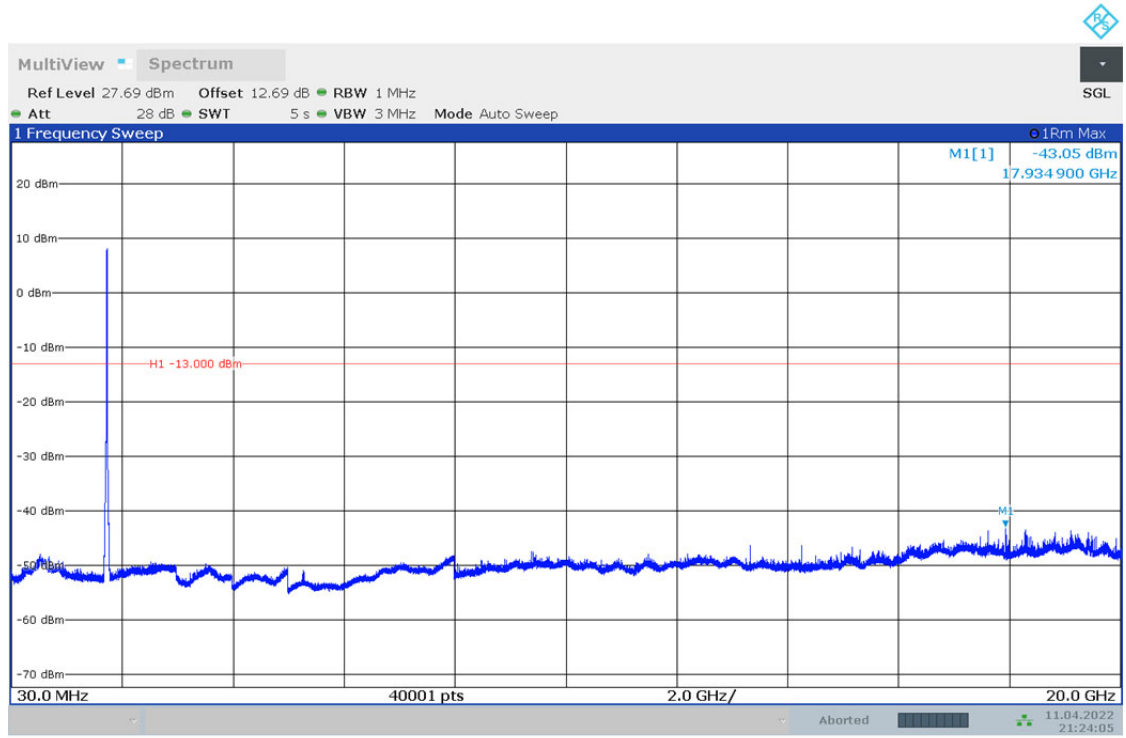
## 6.2.49 TM2\_20MHZ\_MCH\_RB100#0



21:23:08 11.04.2022



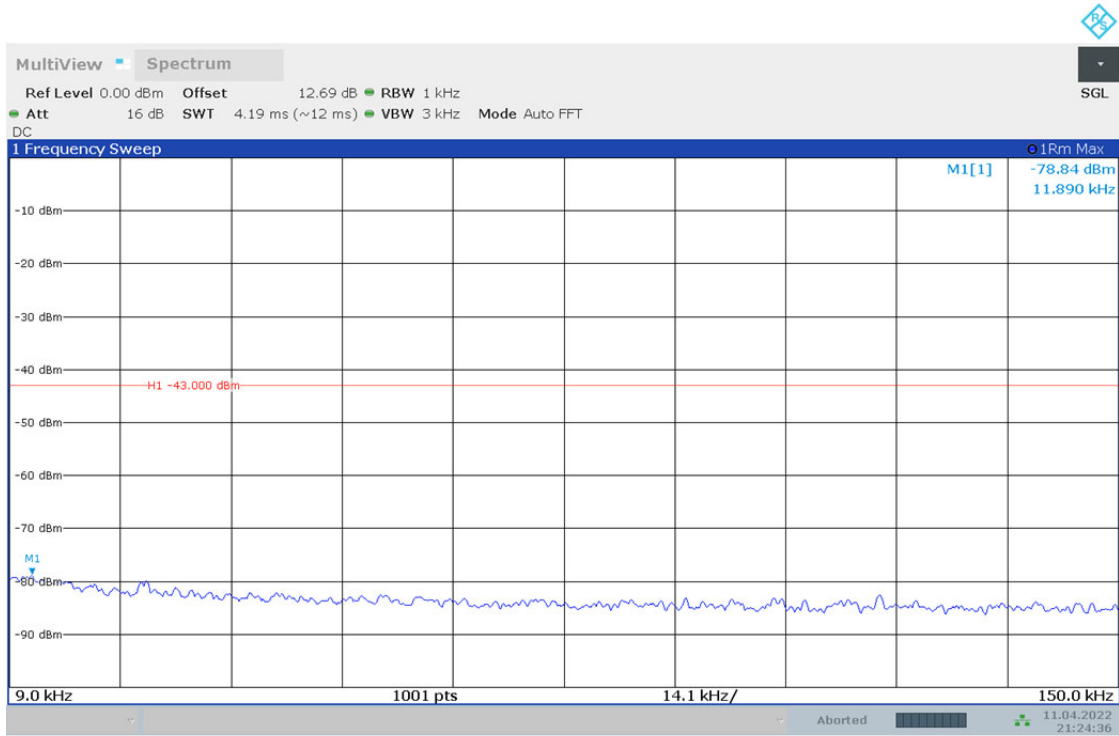
21:23:37 11.04.2022



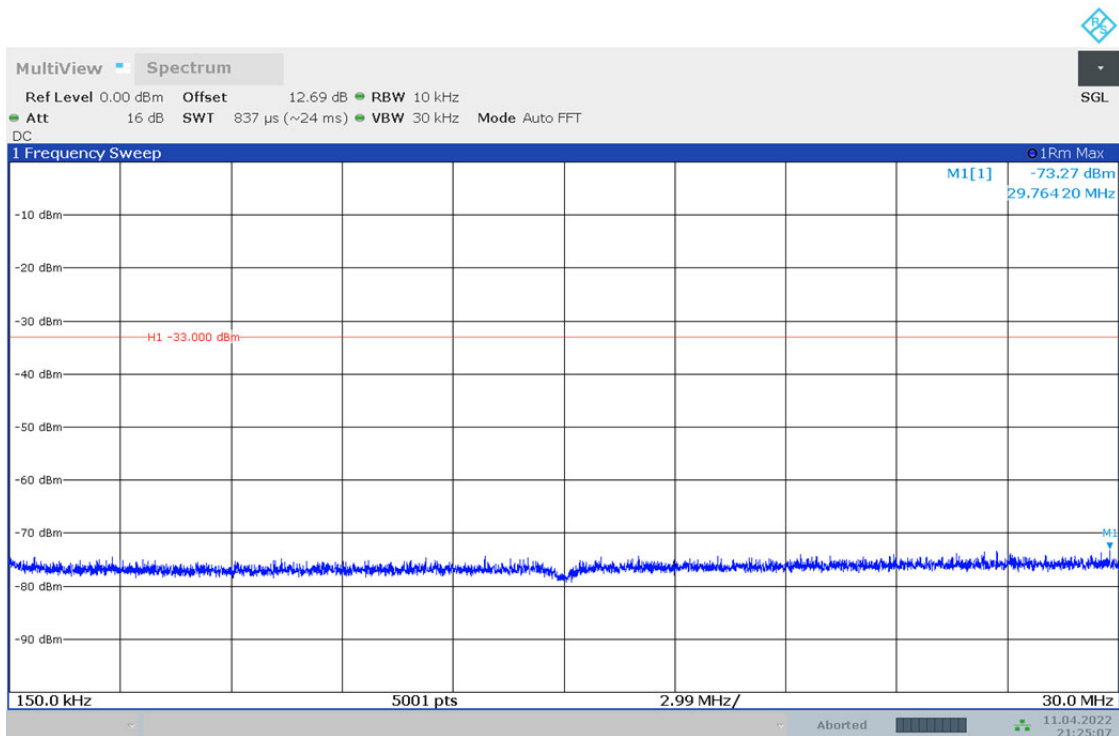
21:24:06 11.04.2022



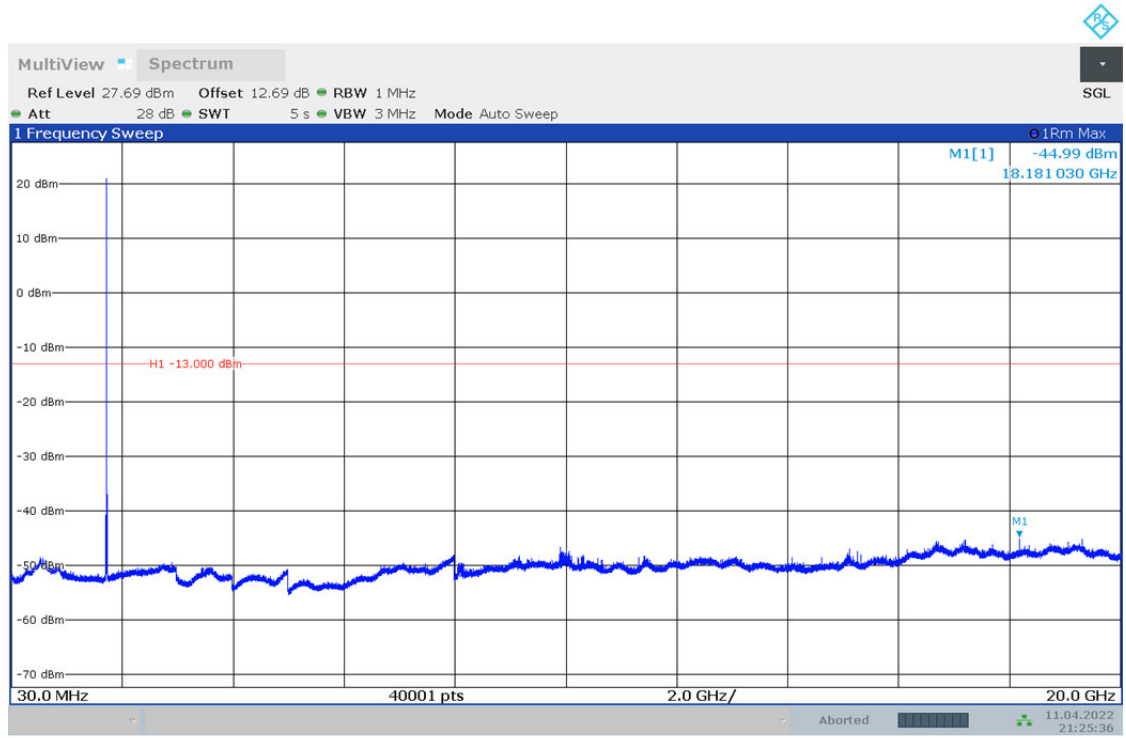
## 6.2.50 TM2\_20MHZ\_MCH\_RB1#0



21:24:37 11.04.2022

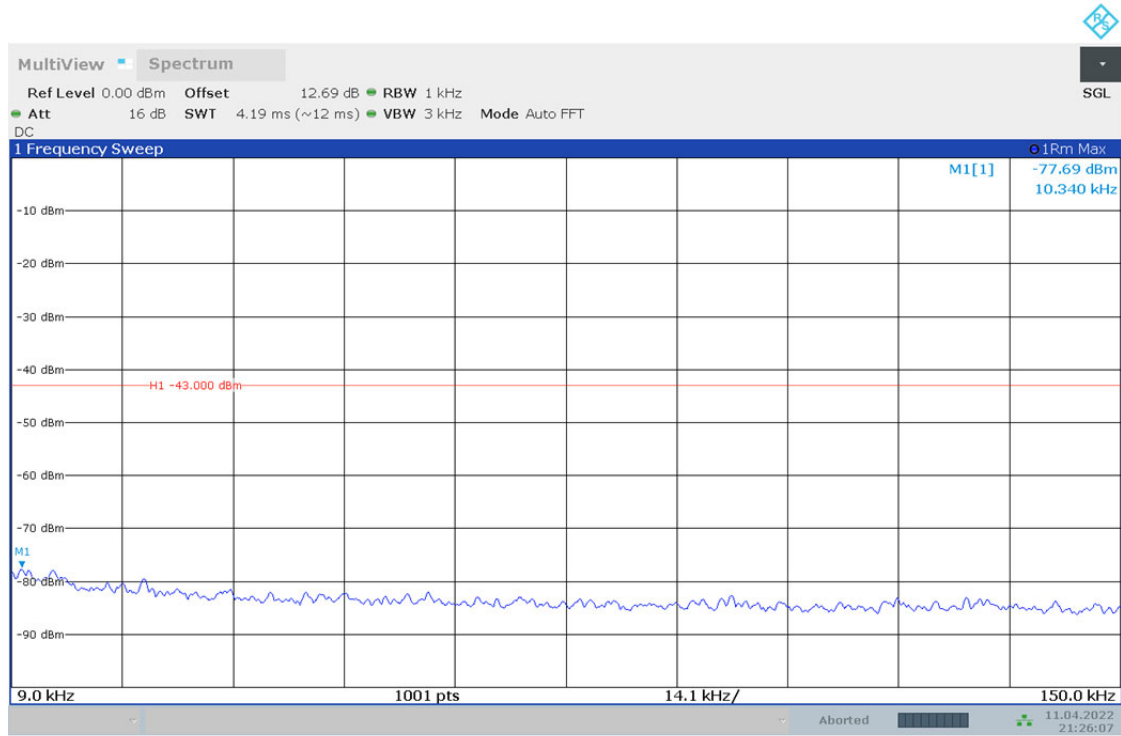


21:25:07 11.04.2022

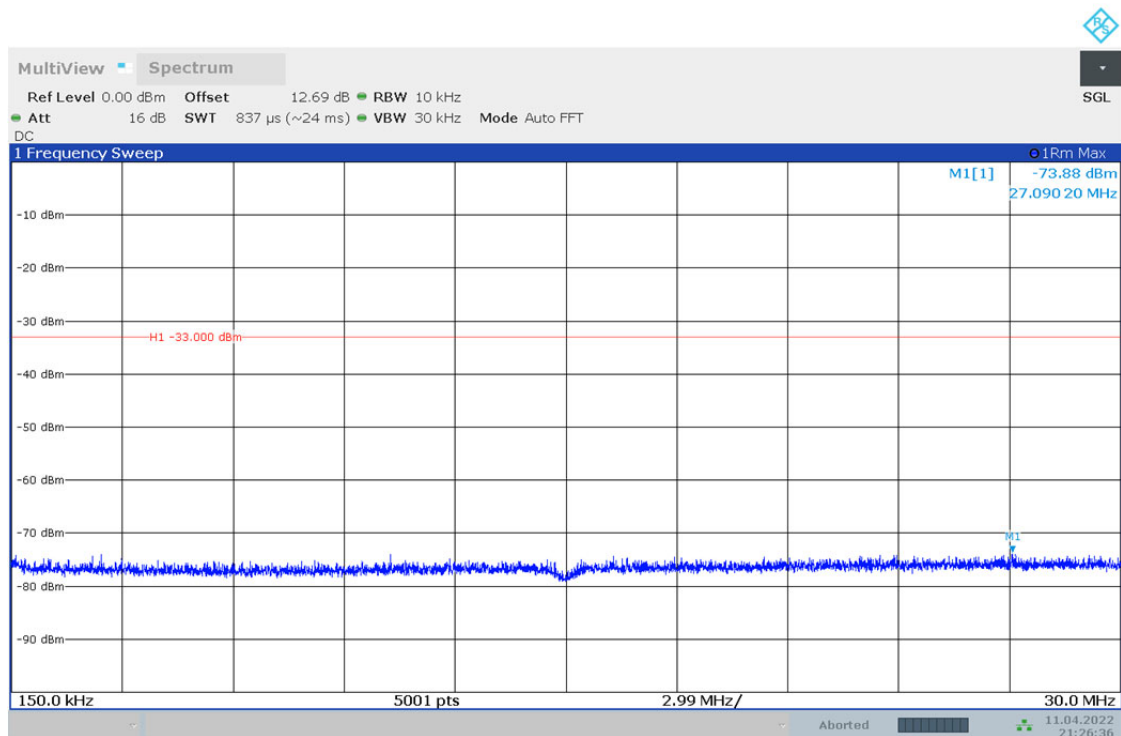


21:25:36 11.04.2022

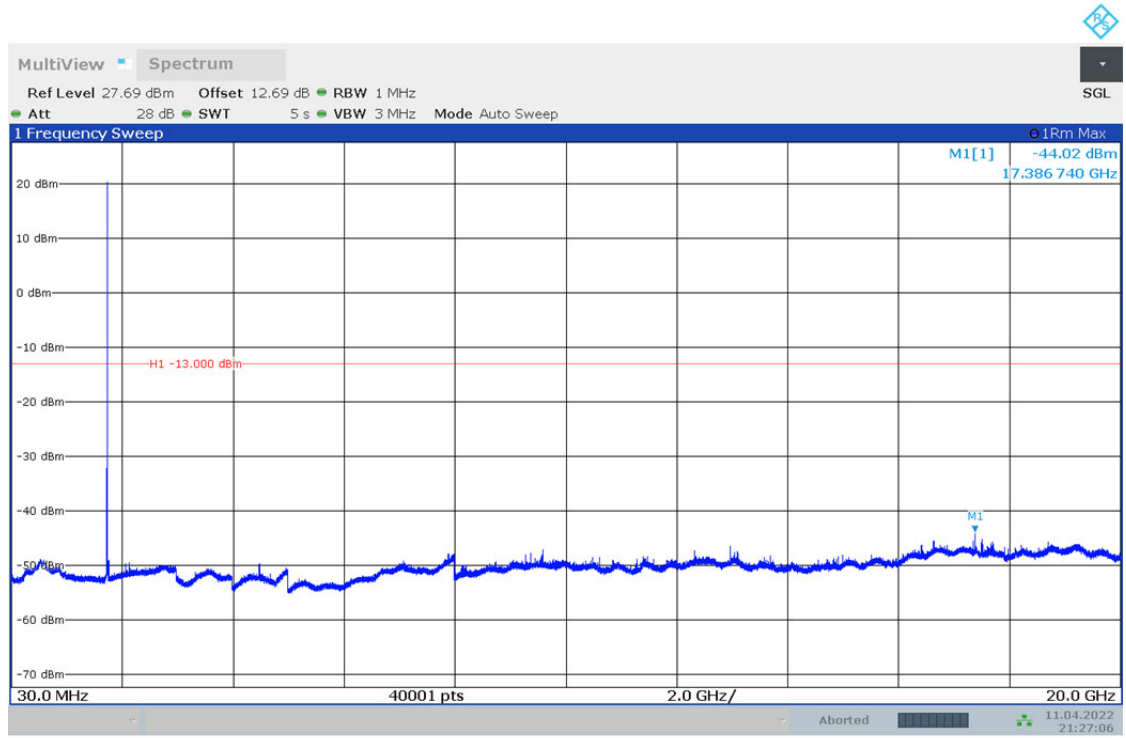
## 6.2.51 TM2\_20MHZ\_MCH\_RB1#99



21:26:07 11.04.2022

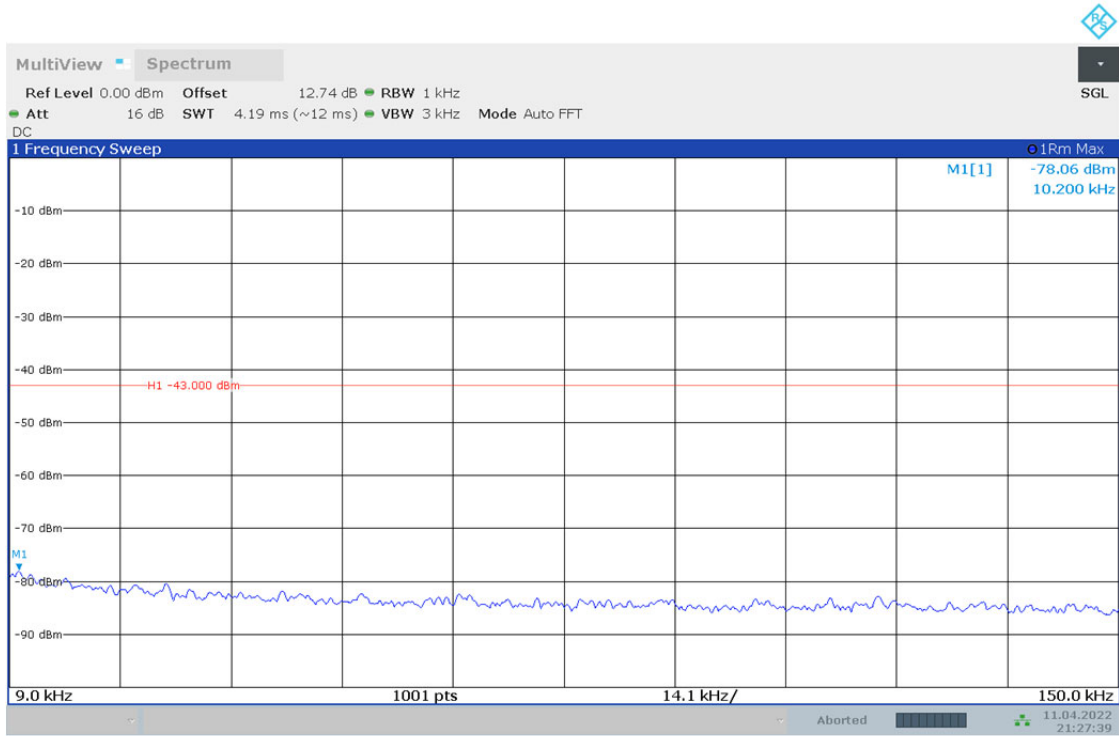


21:26:37 11.04.2022

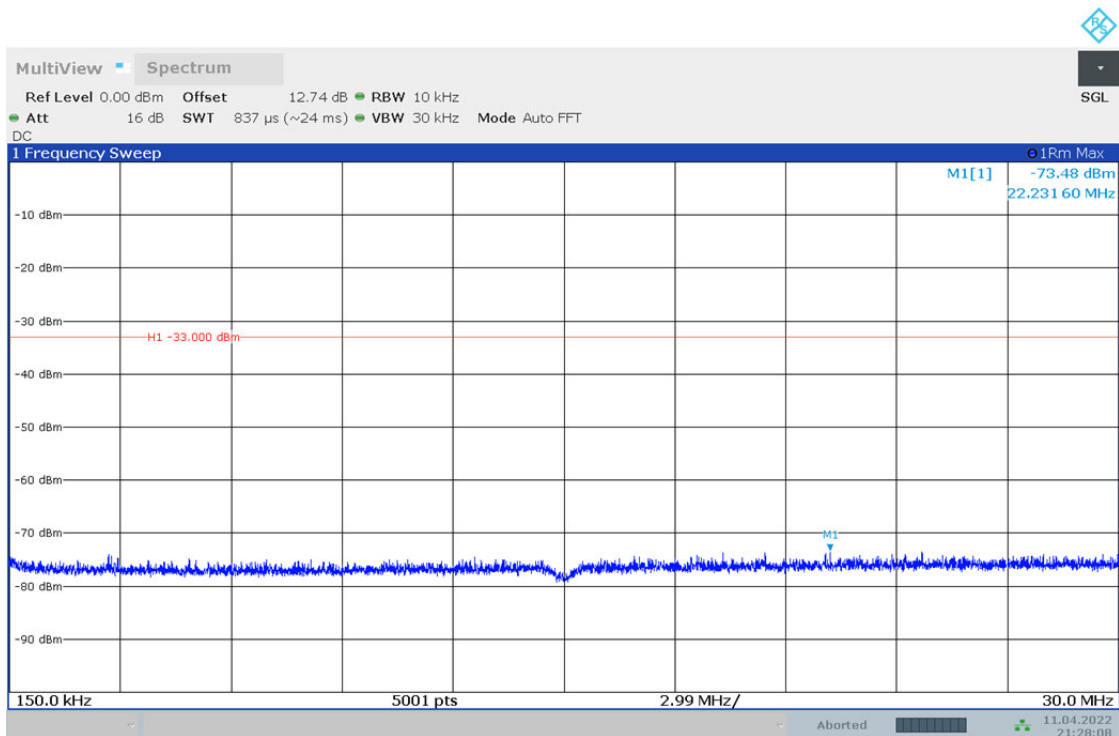


21:27:06 11.04.2022

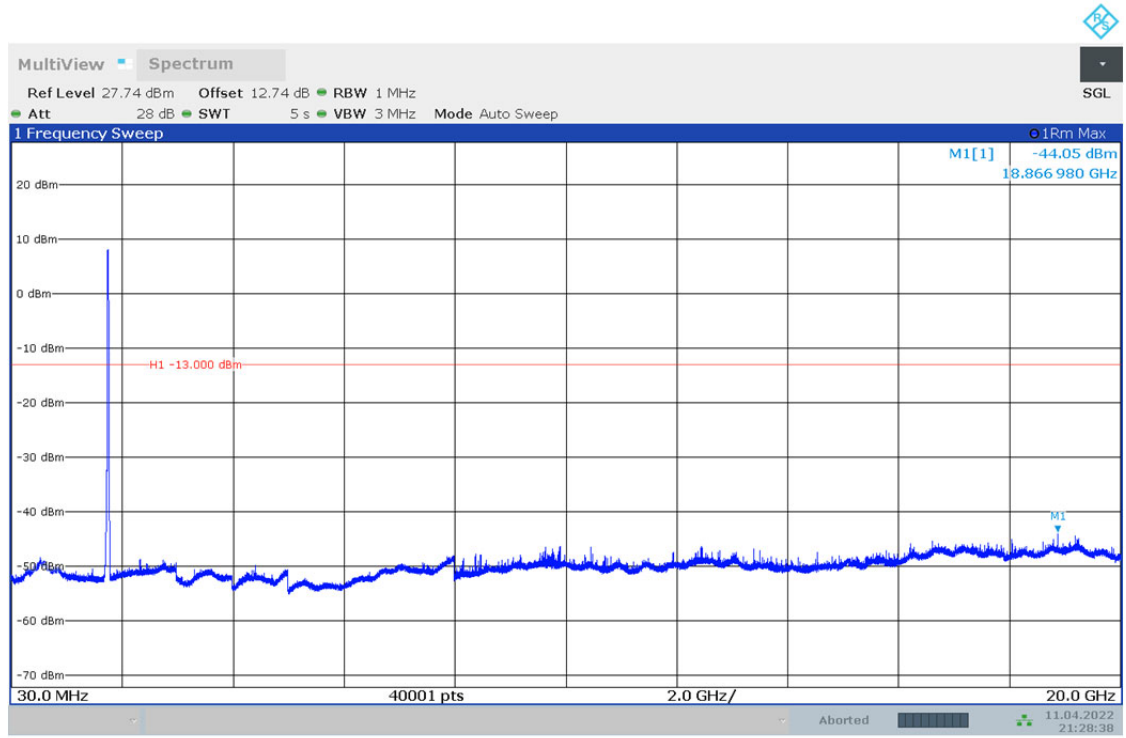
## 6.2.52 TM2\_20MHZ\_HCH\_RB100#0



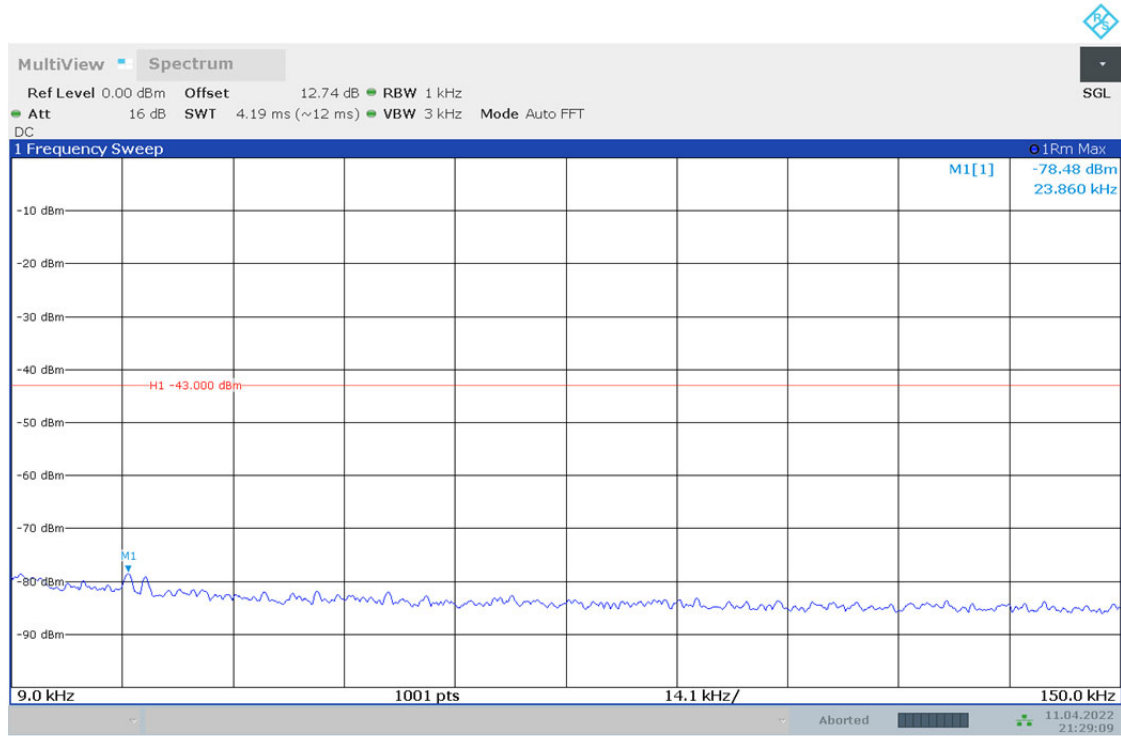
21:27:39 11.04.2022



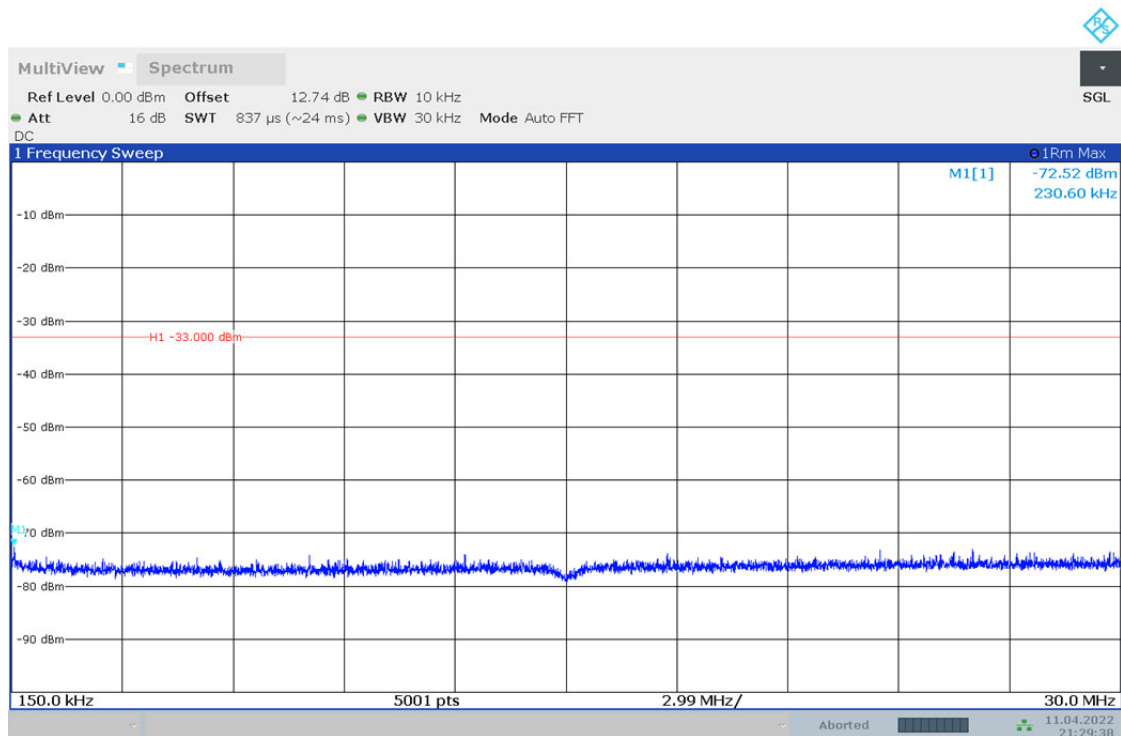
21:28:09 11.04.2022



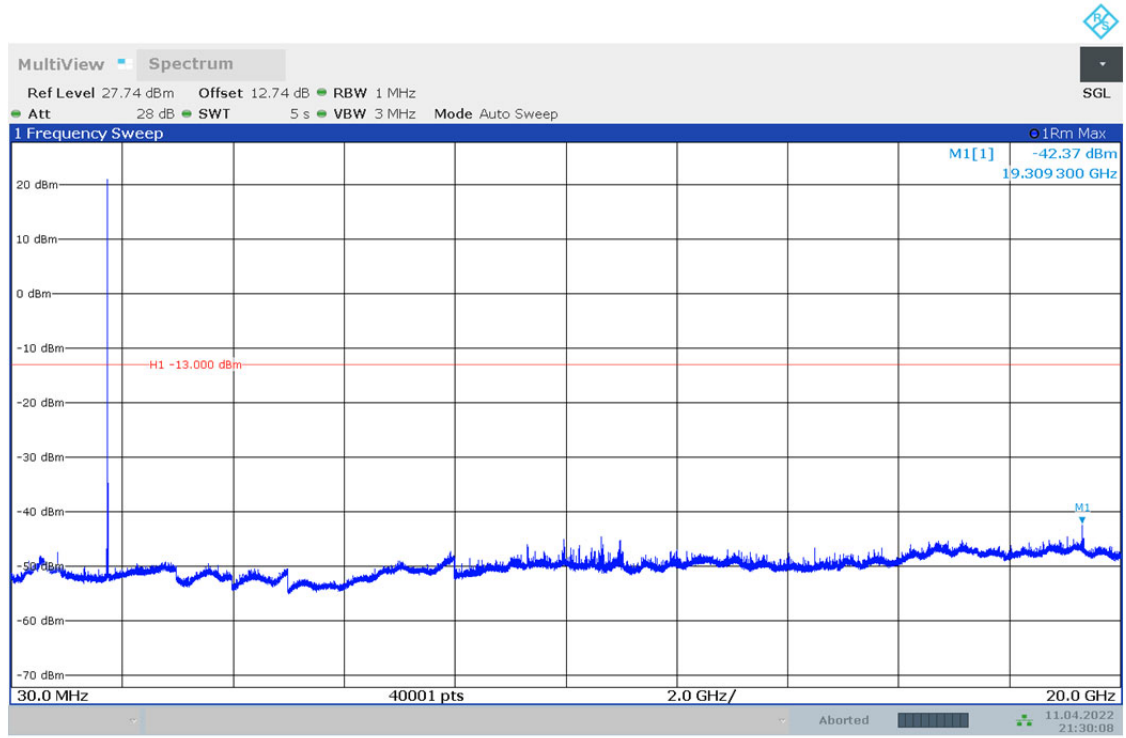
## 6.2.53 TM2\_20MHZ\_HCH\_RB1#0



21:29:09 11.04.2022



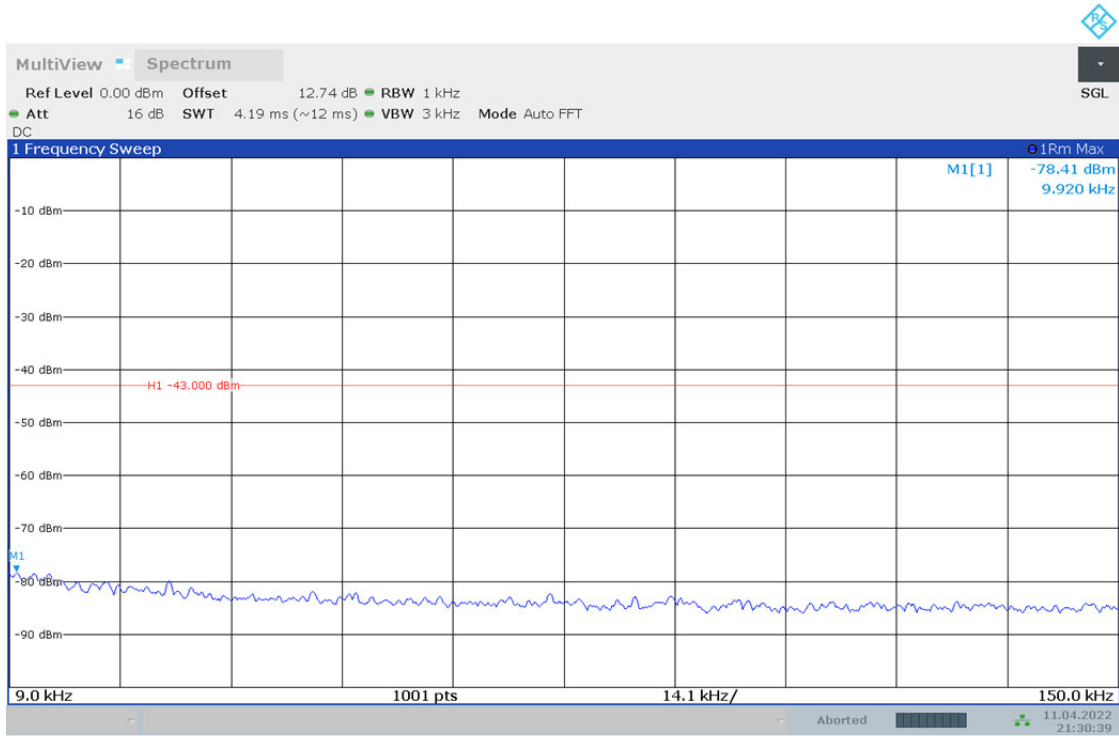
21:29:39 11.04.2022



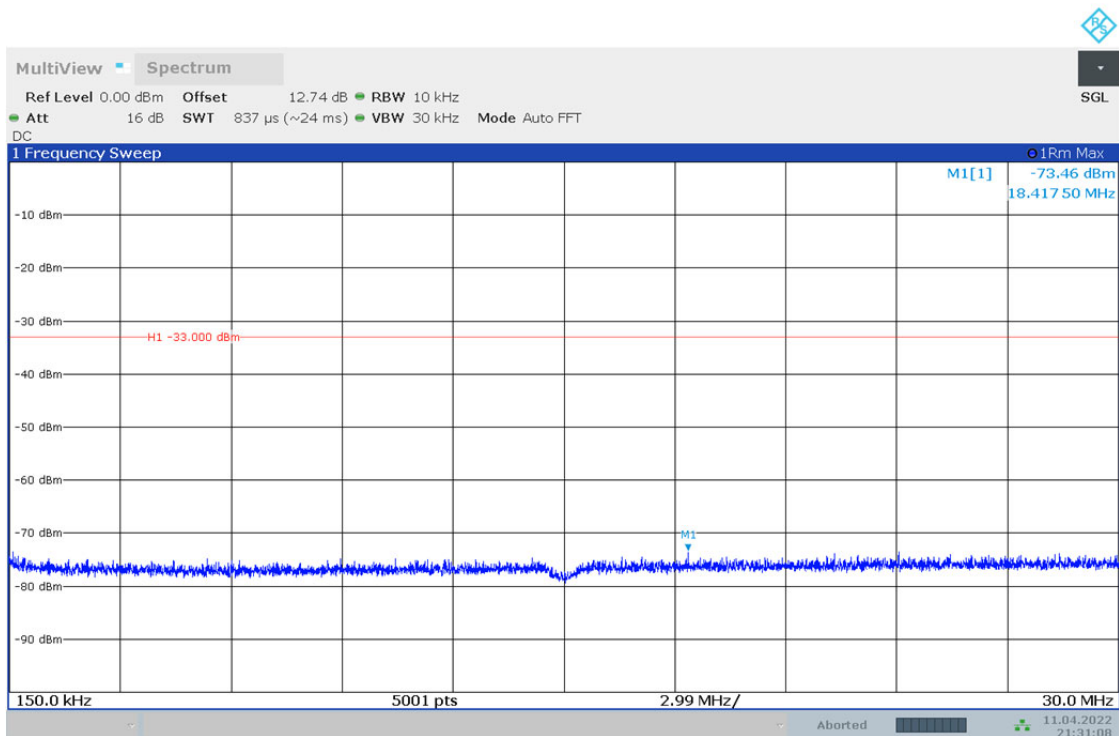
21:30:08 11.04.2022



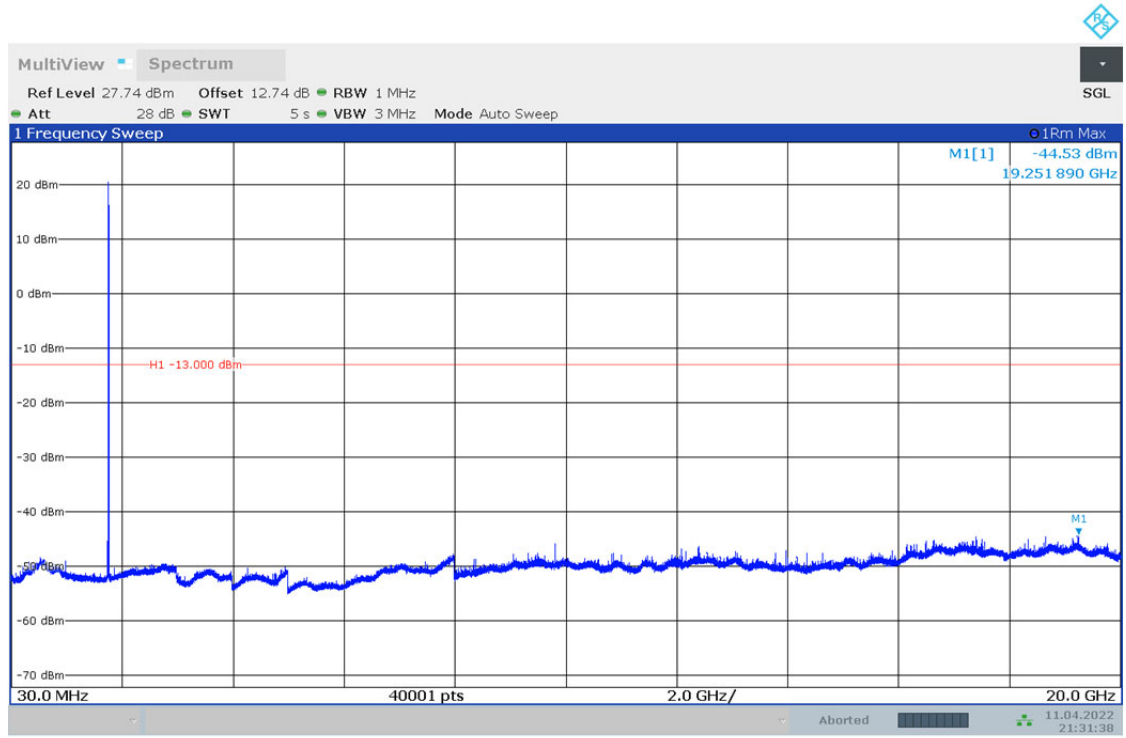
## 6.2.54 TM2\_20MHZ\_HCH\_RB1#99



21:30:39 11.04.2022



21:31:09 11.04.2022



21:31:38 11.04.2022

## 7 APPENDIX G: FREQUENCY STABILITY

### 7.1 TEST RESULTS

#### 7.1.1 FREQUENCY ERROR VS. VOLTAGE

Frequency Error vs. Voltage								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	1.4	LCH	QPSK	TN	VH	-4.90	0	PASS
			QPSK	TN	VN	37.50	0.02	PASS
			QPSK	TN	VL	60.72	0.04	PASS
		MCH	QPSK	TN	VH	21.76	0.01	PASS
			QPSK	TN	VN	-100.32	-0.06	PASS
			QPSK	TN	VL	87.14	0.05	PASS
		HCH	QPSK	TN	VH	162.88	0.09	PASS
			QPSK	TN	VN	71.33	0.04	PASS
			QPSK	TN	VL	-20.55	-0.01	PASS
	5	LCH	QPSK	TN	VH	-5.15	0	PASS
			QPSK	TN	VN	-1.27	0	PASS
			QPSK	TN	VL	-1.90	0	PASS
		MCH	QPSK	TN	VH	-12.75	-0.01	PASS
			QPSK	TN	VN	6.51	0	PASS
			QPSK	TN	VL	4.55	0	PASS
		HCH	QPSK	TN	VH	3.23	0	PASS
			QPSK	TN	VN	-1.25	0	PASS
			QPSK	TN	VL	1.87	0	PASS
	20	LCH	QPSK	TN	VH	-2.89	0	PASS
			QPSK	TN	VN	-2.91	0	PASS
			QPSK	TN	VL	-3.48	0	PASS
		MCH	QPSK	TN	VH	-3.50	0	PASS
			QPSK	TN	VN	0.67	0	PASS
			QPSK	TN	VL	-1.26	0	PASS
		HCH	QPSK	TN	VH	-3.76	0	PASS
			QPSK	TN	VN	2.79	0	PASS
			QPSK	TN	VL	-1.21	0	PASS

Frequency Error vs. Voltage								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM2	1.4	LCH	16QAM	TN	VH	10.96	0.01	PASS
			16QAM	TN	VN	-42.98	-0.03	PASS
			16QAM	TN	VL	27.20	0.02	PASS
		MCH	16QAM	TN	VH	-5.94	0	PASS
			16QAM	TN	VN	-32.39	-0.02	PASS
			16QAM	TN	VL	67.63	0.04	PASS
		HCH	16QAM	TN	VH	32.41	0.02	PASS
			16QAM	TN	VN	67.33	0.04	PASS
			16QAM	TN	VL	-27.30	-0.02	PASS
	5	LCH	16QAM	TN	VH	-5.13	0	PASS
			16QAM	TN	VN	7.41	0	PASS
			16QAM	TN	VL	5.92	0	PASS
		MCH	16QAM	TN	VH	-0.62	0	PASS
			16QAM	TN	VN	7.62	0	PASS
			16QAM	TN	VL	-4.03	0	PASS
		HCH	16QAM	TN	VH	0.67	0	PASS
			16QAM	TN	VN	10.26	0.01	PASS
			16QAM	TN	VL	-3.22	0	PASS
	20	LCH	16QAM	TN	VH	-2.81	0	PASS
			16QAM	TN	VN	-0.13	0	PASS
			16QAM	TN	VL	1.60	0	PASS
		MCH	16QAM	TN	VH	1.23	0	PASS
			16QAM	TN	VN	-0.83	0	PASS
			16QAM	TN	VL	-0.31	0	PASS
		HCH	16QAM	TN	VH	-0.83	0	PASS
			16QAM	TN	VN	-1.95	0	PASS
			16QAM	TN	VL	-2.58	0	PASS

**7.1.2 FREQUENCY ERROR VS. TEMPERATURE**

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	1.4	LCH	QPSK	VN	-30	-50.13	-0.03	PASS
			QPSK	VN	-20	-4.86	0	PASS
			QPSK	VN	-10	62.18	0.04	PASS
			QPSK	VN	0	7.60	0	PASS
			QPSK	VN	10	-20.80	-0.01	PASS
			QPSK	VN	20	41.65	0.02	PASS
			QPSK	VN	30	-89.69	-0.05	PASS
			QPSK	VN	40	-4.47	0	PASS
			QPSK	VN	50	-76.64	-0.04	PASS
		MCH	QPSK	VN	-30	-18.12	-0.01	PASS
			QPSK	VN	-20	-19.66	-0.01	PASS
			QPSK	VN	-10	-15.15	-0.01	PASS
			QPSK	VN	0	-42.97	-0.02	PASS
			QPSK	VN	10	-2.69	0	PASS
			QPSK	VN	20	6.63	0	PASS
			QPSK	VN	30	-7.37	0	PASS
			QPSK	VN	40	-76.35	-0.04	PASS
			QPSK	VN	50	-75.23	-0.04	PASS
		HCH	QPSK	VN	-30	183.19	0.1	PASS
			QPSK	VN	-20	239.41	0.13	PASS
			QPSK	VN	-10	287.22	0.16	PASS
			QPSK	VN	0	9.60	0.01	PASS
			QPSK	VN	10	53.43	0.03	PASS
			QPSK	VN	20	78.19	0.04	PASS
			QPSK	VN	30	9.66	0.01	PASS
			QPSK	VN	40	76.12	0.04	PASS
			QPSK	VN	50	4.23	0	PASS

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	5	LCH	QPSK	VN	-30	16.13	0.01	PASS
			QPSK	VN	-20	-7.95	0	PASS
			QPSK	VN	-10	-3.82	0	PASS
			QPSK	VN	0	4.87	0	PASS
			QPSK	VN	10	-7.13	0	PASS
			QPSK	VN	20	6.16	0	PASS
			QPSK	VN	30	10.71	0.01	PASS
			QPSK	VN	40	9.35	0.01	PASS
		QPSK	VN	50	-5.65	0	PASS	
		MCH	QPSK	VN	-30	7.28	0	PASS
			QPSK	VN	-20	-0.17	0	PASS
			QPSK	VN	-10	-9.31	-0.01	PASS
			QPSK	VN	0	-5.84	0	PASS
			QPSK	VN	10	-7.25	0	PASS
			QPSK	VN	20	7.84	0	PASS
			QPSK	VN	30	4.06	0	PASS
			QPSK	VN	40	5.37	0	PASS
		HCH	QPSK	VN	-30	-6.41	0	PASS
			QPSK	VN	-20	4.53	0	PASS
			QPSK	VN	-10	-6.37	0	PASS
			QPSK	VN	0	-3.74	0	PASS
			QPSK	VN	10	-4.27	0	PASS
			QPSK	VN	20	1.1	0	PASS
			QPSK	VN	30	-4.08	0	PASS
	QPSK		VN	40	-1.25	0	PASS	
	LCH	QPSK	VN	-30	-0.75	0	PASS	
		QPSK	VN	-20	-0.83	0	PASS	
		QPSK	VN	-10	-0.24	0	PASS	
		QPSK	VN	0	-0.28	0	PASS	
		QPSK	VN	10	0	0	PASS	
		QPSK	VN	20	2.17	0	PASS	
		QPSK	VN	30	-1.07	0	PASS	
QPSK		VN	40	4.59	0	PASS		
LCH	QPSK	VN	50	-3.22	0	PASS		

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM1	20	MCH	QPSK	VN	-30	0.32	0	PASS
			QPSK	VN	-20	0.49	0	PASS
			QPSK	VN	-10	1.56	0	PASS
			QPSK	VN	0	-1.73	0	PASS
			QPSK	VN	10	-0.53	0	PASS
			QPSK	VN	20	-0.89	0	PASS
			QPSK	VN	30	1.36	0	PASS
			QPSK	VN	40	-0.38	0	PASS
			QPSK	VN	50	-0.07	0	PASS
		HCH	QPSK	VN	-30	0.25	0	PASS
			QPSK	VN	-20	-2.28	0	PASS
			QPSK	VN	-10	-3.32	0	PASS
			QPSK	VN	0	-1.22	0	PASS
			QPSK	VN	10	0.41	0	PASS
			QPSK	VN	20	-2.61	0	PASS
			QPSK	VN	30	1.38	0	PASS
			QPSK	VN	40	-5.53	0	PASS
			QPSK	VN	50	-1.11	0	PASS
TM2	1.4	LCH	16QAM	VN	-30	46.25	0.03	PASS
			16QAM	VN	-20	2.44	0	PASS
			16QAM	VN	-10	-2.55	0	PASS
			16QAM	VN	0	-11.93	-0.01	PASS
			16QAM	VN	10	89.58	0.05	PASS
			16QAM	VN	20	-0.06	0	PASS
			16QAM	VN	30	149.07	0.09	PASS
			16QAM	VN	40	-44.62	-0.03	PASS
			16QAM	VN	50	0.91	0	PASS
		MCH	16QAM	VN	-30	1.20	0	PASS
			16QAM	VN	-20	-52.72	-0.03	PASS
			16QAM	VN	-10	-91.01	-0.05	PASS
			16QAM	VN	0	-91.07	-0.05	PASS
			16QAM	VN	10	15.11	0.01	PASS
			16QAM	VN	20	11.68	0.01	PASS
			16QAM	VN	30	-4.71	0	PASS
			16QAM	VN	40	-82.09	-0.05	PASS
			16QAM	VN	50	-9.18	-0.01	PASS

Frequency Error vs. Temperature								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM2	1.4	HCH	16QAM	VN	-30	32.26	0.02	PASS
			16QAM	VN	-20	82	0.05	PASS
			16QAM	VN	-10	146.8	0.08	PASS
			16QAM	VN	0	52.27	0.03	PASS
			16QAM	VN	10	-20.84	-0.01	PASS
			16QAM	VN	20	10.77	0.01	PASS
			16QAM	VN	30	4.41	0	PASS
			16QAM	VN	40	290.56	0.16	PASS
			16QAM	VN	50	292.65	0.16	PASS
	5	LCH	16QAM	VN	-30	-3.44	0	PASS
			16QAM	VN	-20	1.68	0	PASS
			16QAM	VN	-10	-0.71	0	PASS
			16QAM	VN	0	3.79	0	PASS
			16QAM	VN	10	-0.67	0	PASS
			16QAM	VN	20	0.27	0	PASS
			16QAM	VN	30	4.48	0	PASS
			16QAM	VN	40	5.54	0	PASS
			16QAM	VN	50	-5.75	0	PASS
		MCH	16QAM	VN	-30	5.96	0	PASS
			16QAM	VN	-20	2.95	0	PASS
			16QAM	VN	-10	-2.55	0	PASS
			16QAM	VN	0	2.34	0	PASS
			16QAM	VN	10	8.26	0	PASS
			16QAM	VN	20	3.88	0	PASS
			16QAM	VN	30	8.33	0	PASS
			16QAM	VN	40	7.07	0	PASS
			16QAM	VN	50	8.42	0	PASS
		HCH	16QAM	VN	-30	0.58	0	PASS
			16QAM	VN	-20	-3.8	0	PASS
			16QAM	VN	-10	-1.17	0	PASS
			16QAM	VN	0	1.30	0	PASS
			16QAM	VN	10	2.99	0	PASS
16QAM	VN		20	1.47	0	PASS		
16QAM	VN		30	0.71	0	PASS		
16QAM	VN		40	-1.71	0	PASS		
16QAM	VN	50	4.11	0	PASS			



Frequency Error vs. Temperature								
Test Mode	Test Bandwidth [MHz]	Test Channel	Modulation	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
TM2	20	LCH	16QAM	VN	-30	0.68	0	PASS
			16QAM	VN	-20	4.05	0	PASS
			16QAM	VN	-10	-1.03	0	PASS
			16QAM	VN	0	-4.51	0	PASS
			16QAM	VN	10	0.18	0	PASS
			16QAM	VN	20	-2.16	0	PASS
			16QAM	VN	30	0.11	0	PASS
			16QAM	VN	40	-3.15	0	PASS
		MCH	16QAM	VN	50	-0.10	0	PASS
			16QAM	VN	-30	-0.16	0	PASS
			16QAM	VN	-20	-0.22	0	PASS
			16QAM	VN	-10	-0.42	0	PASS
			16QAM	VN	0	-0.62	0	PASS
			16QAM	VN	10	-0.97	0	PASS
			16QAM	VN	20	-2.03	0	PASS
			16QAM	VN	30	-1.77	0	PASS
		HCH	16QAM	VN	40	-1.82	0	PASS
			16QAM	VN	50	-0.63	0	PASS
			16QAM	VN	-30	-3.91	0	PASS
			16QAM	VN	-20	-0.51	0	PASS
			16QAM	VN	-10	-1.62	0	PASS
			16QAM	VN	0	0.38	0	PASS
			16QAM	VN	10	-0.87	0	PASS
			16QAM	VN	20	1.49	0	PASS
		16QAM	VN	30	-1.77	0	PASS	
		16QAM	VN	40	-1.86	0	PASS	
		16QAM	VN	50	2.29	0	PASS	

End of Test Report