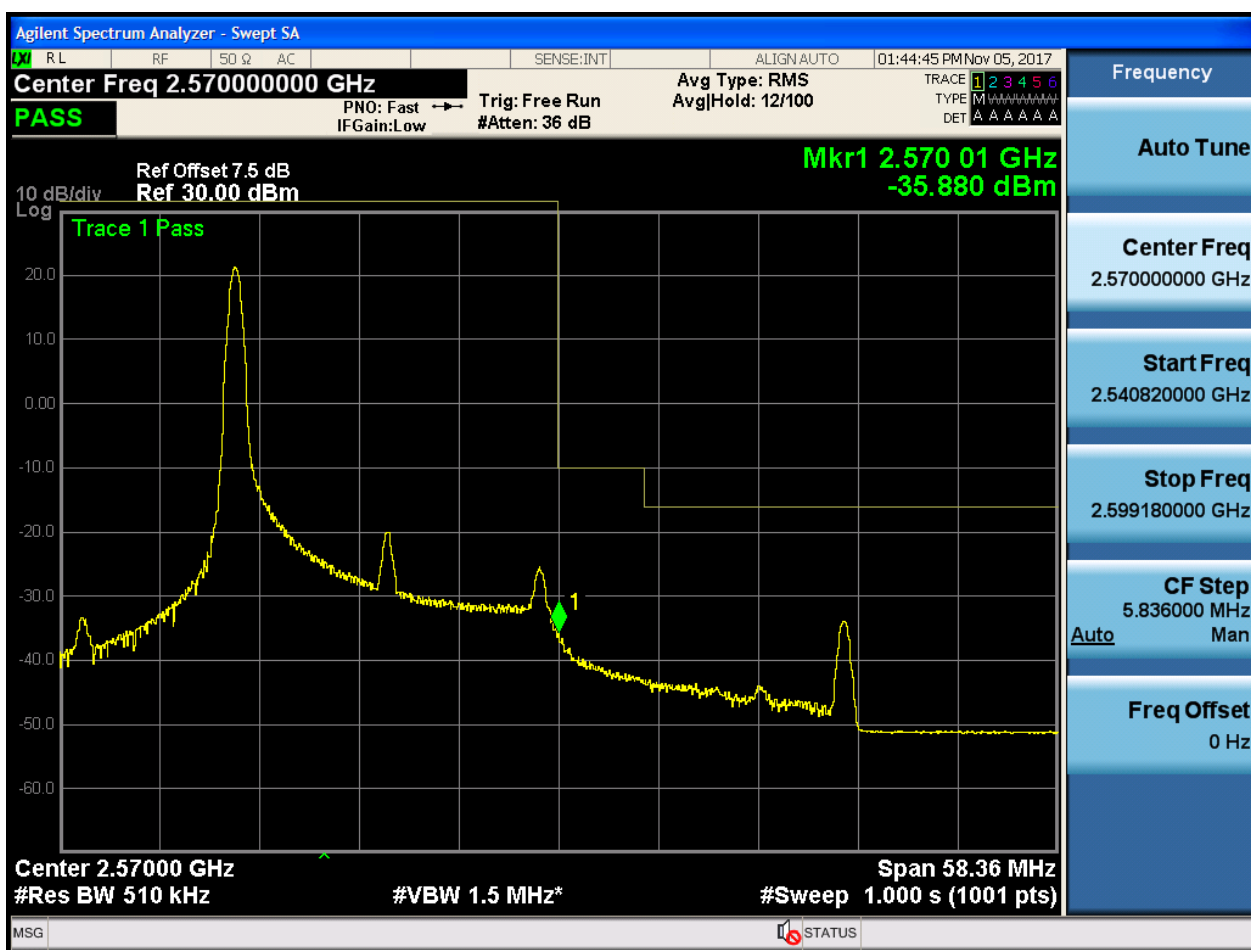




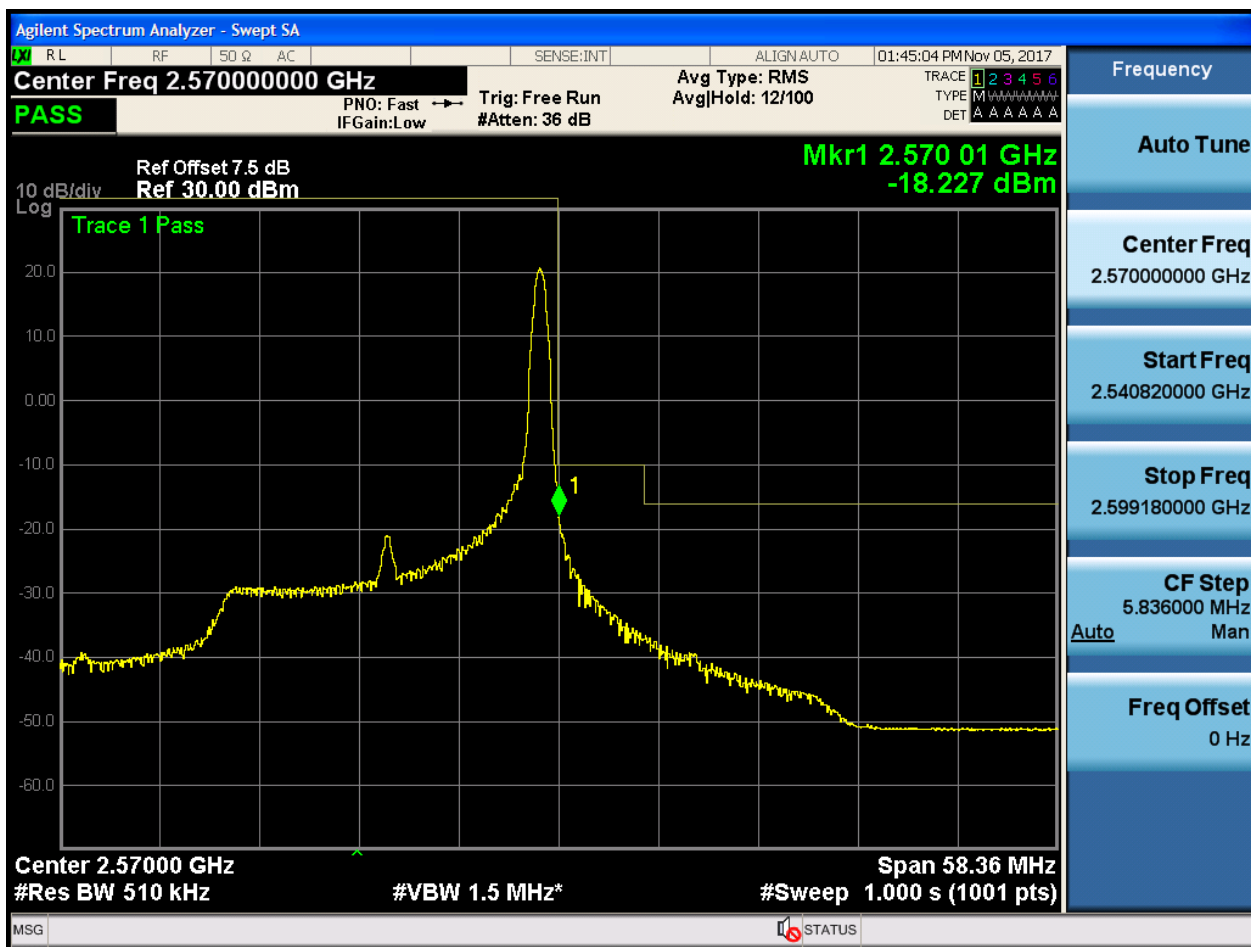
5.1.1.2.4.2 Test Channel = HCH

5.1.1.2.4.2.1 Test RB = RB1#0



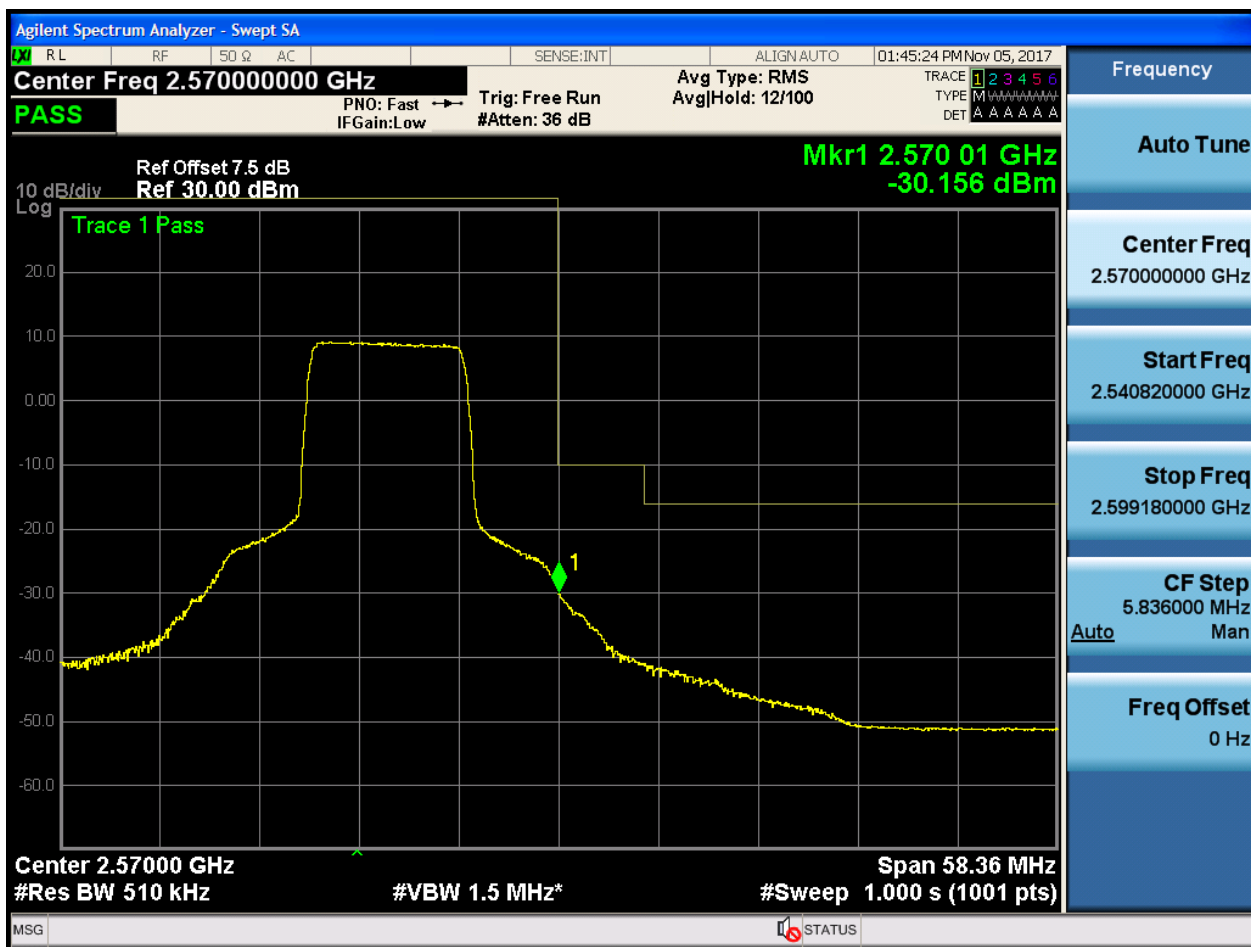


5.1.1.2.4.2.2 Test RB = RB1#99





5.1.1.2.4.2.3 Test RB = RB50#25





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 01:45:43 PM Nov 05, 2017

Center Freq 2.57000000 GHz Avg Type: RMS
PASS PNO: Fast Trig: Free Run AvgHold: 12/100
IFGain: Low #Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 7.5 dB
Ref 30.00 dBm

Mkr1 2.570 01 GHz
-27.152 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.57000 GHz Span 58.36 MHz
#Res BW 510 kHz #VBW 1.5 MHz* #Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.57000000 GHz

Start Freq
2.540820000 GHz

Stop Freq
2.599180000 GHz

CF Step
5.836000 MHz
Auto Man

Freq Offset
0 Hz

6Appendix_F: Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Part I - Test Plots

6.1 For LTE

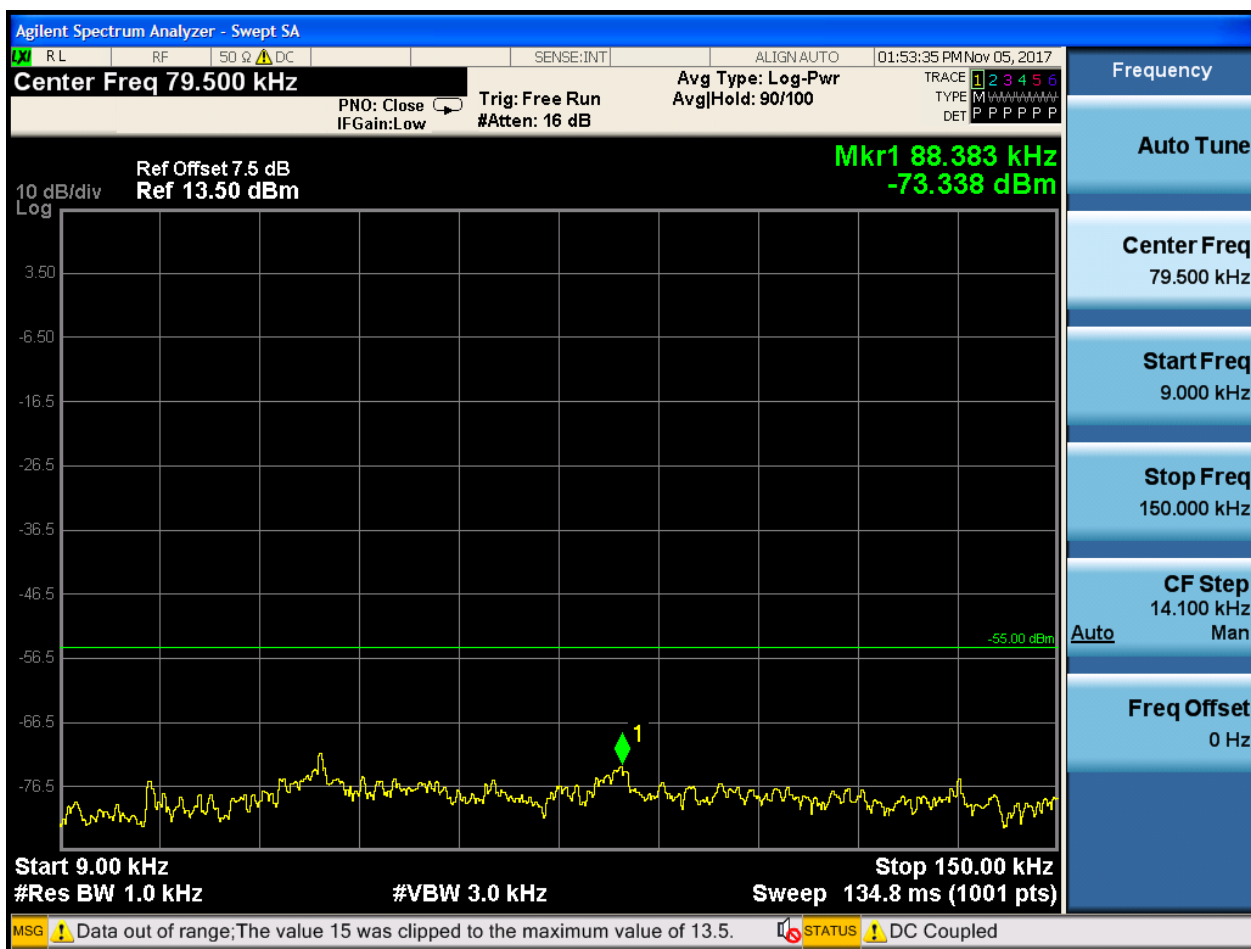
6.1.1 Test Band = BAND7

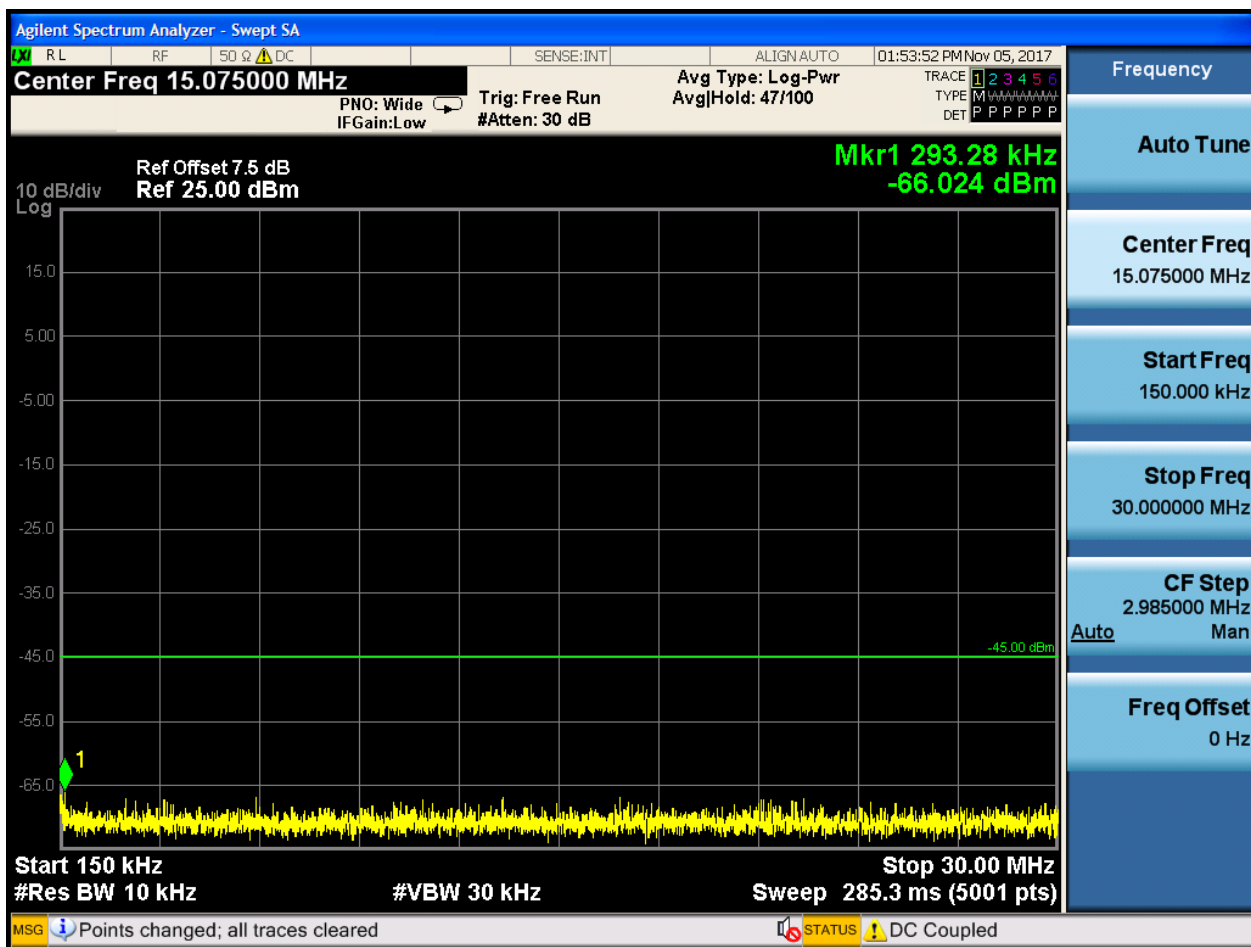
6.1.1.1 Test Mode = LTE/TM1

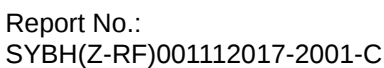
6.1.1.1.1 Test Bandwidth = 5

6.1.1.1.1.1 Test Channel = LCH

6.1.1.1.1.1.1 Test RB = RB1#0



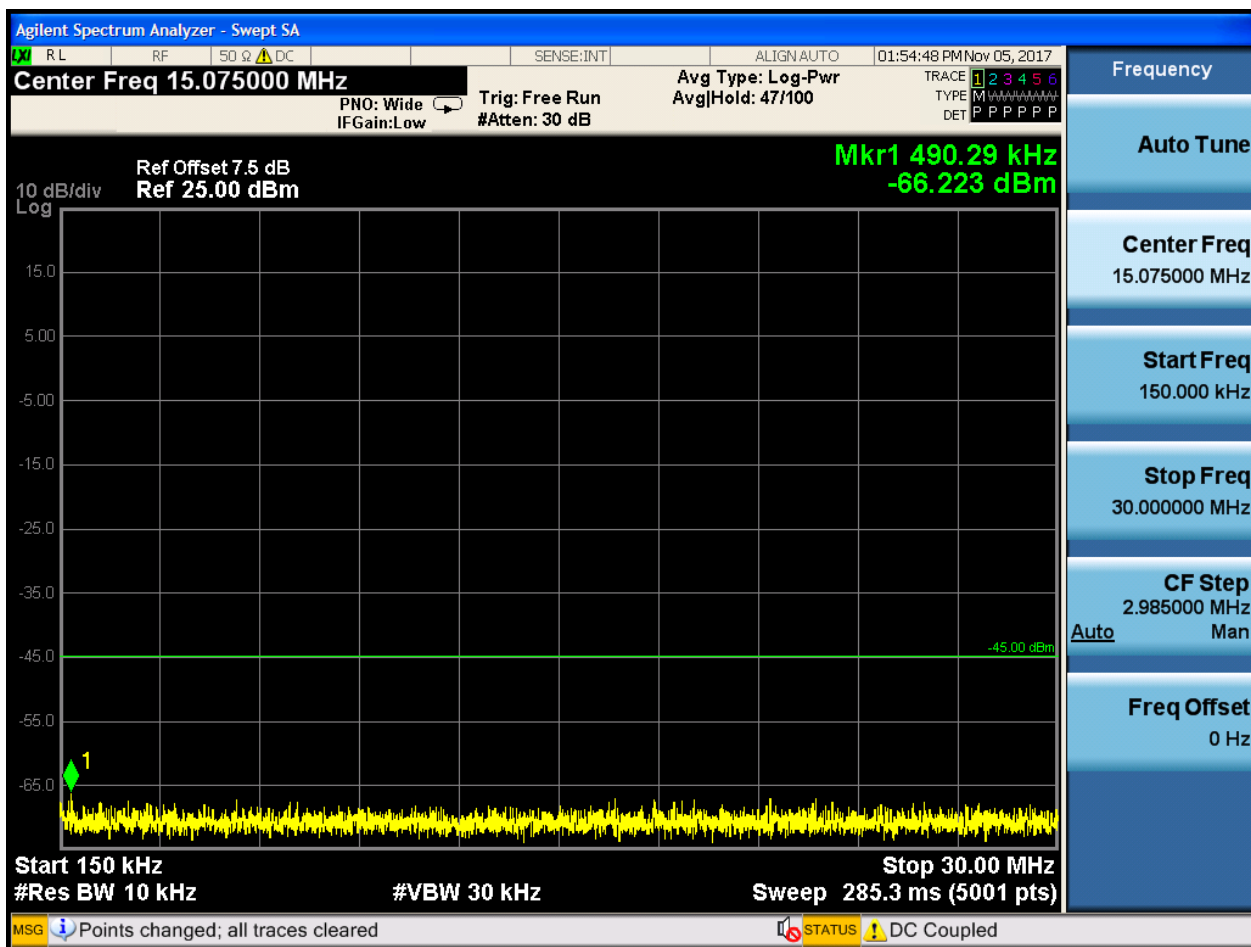


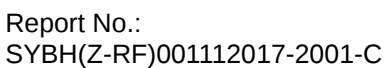


6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0

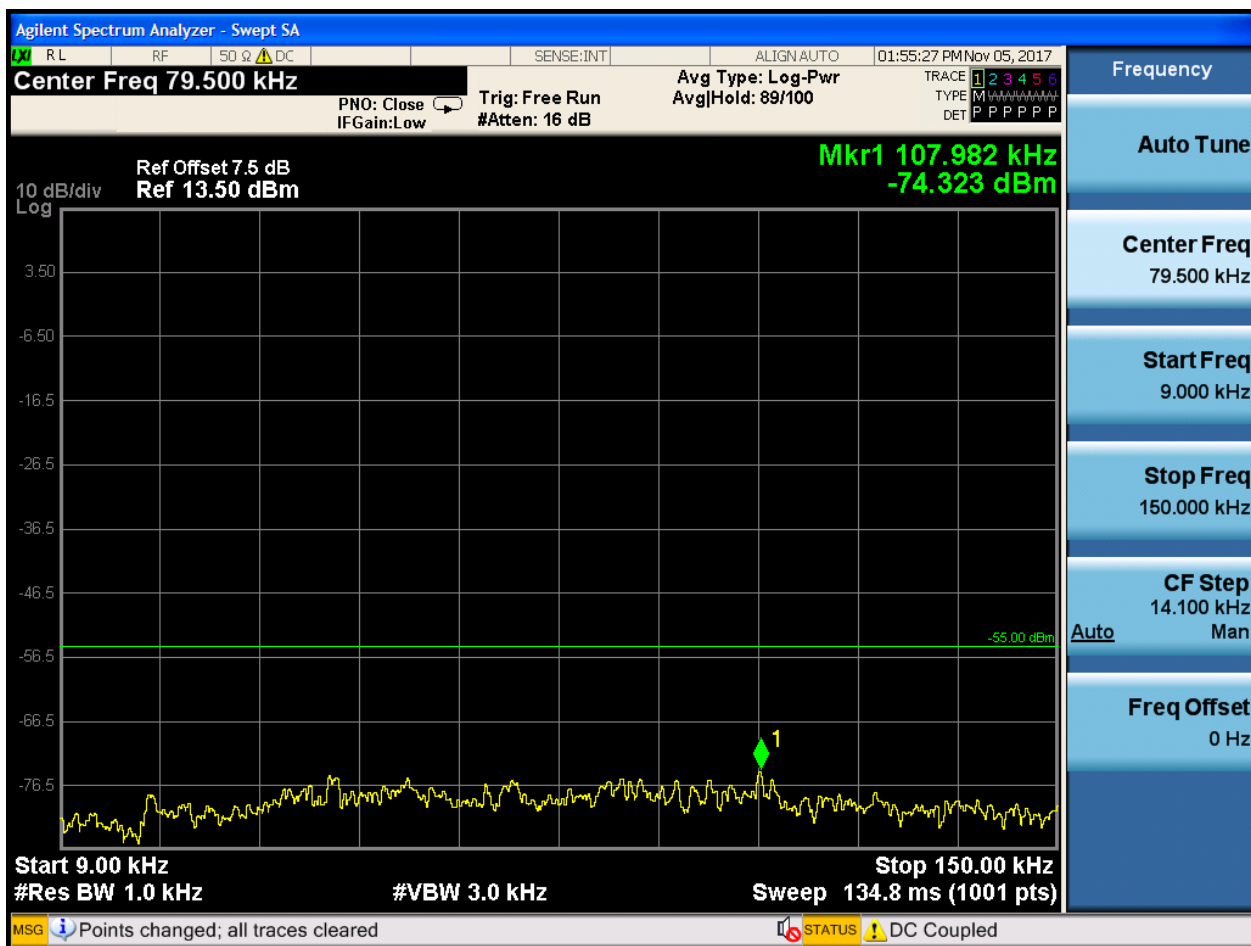


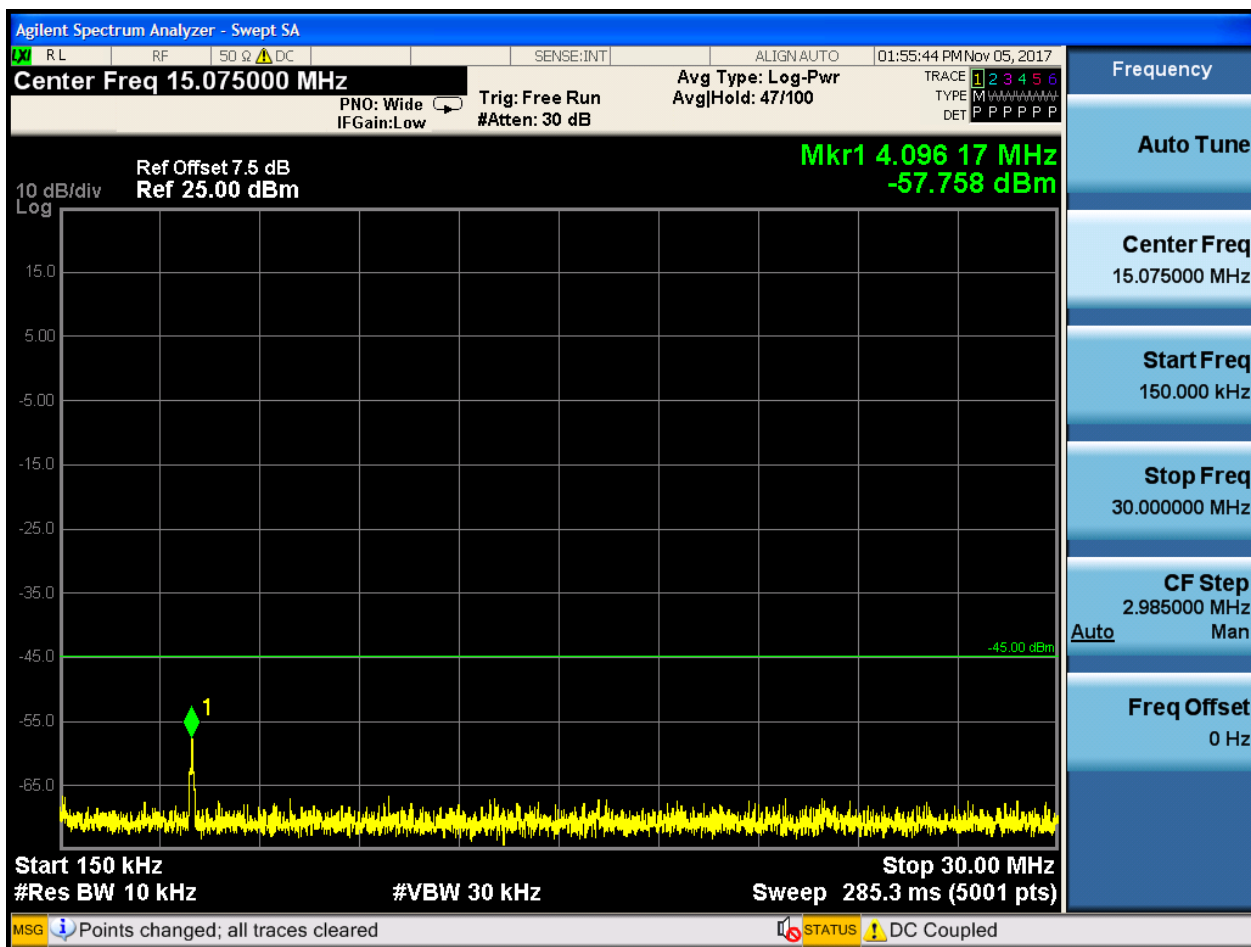


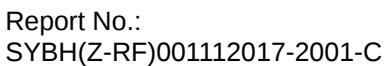


6.1.1.1.1.3 Test Channel = HCH

6.1.1.1.1.3.1 Test RB = RB1#0



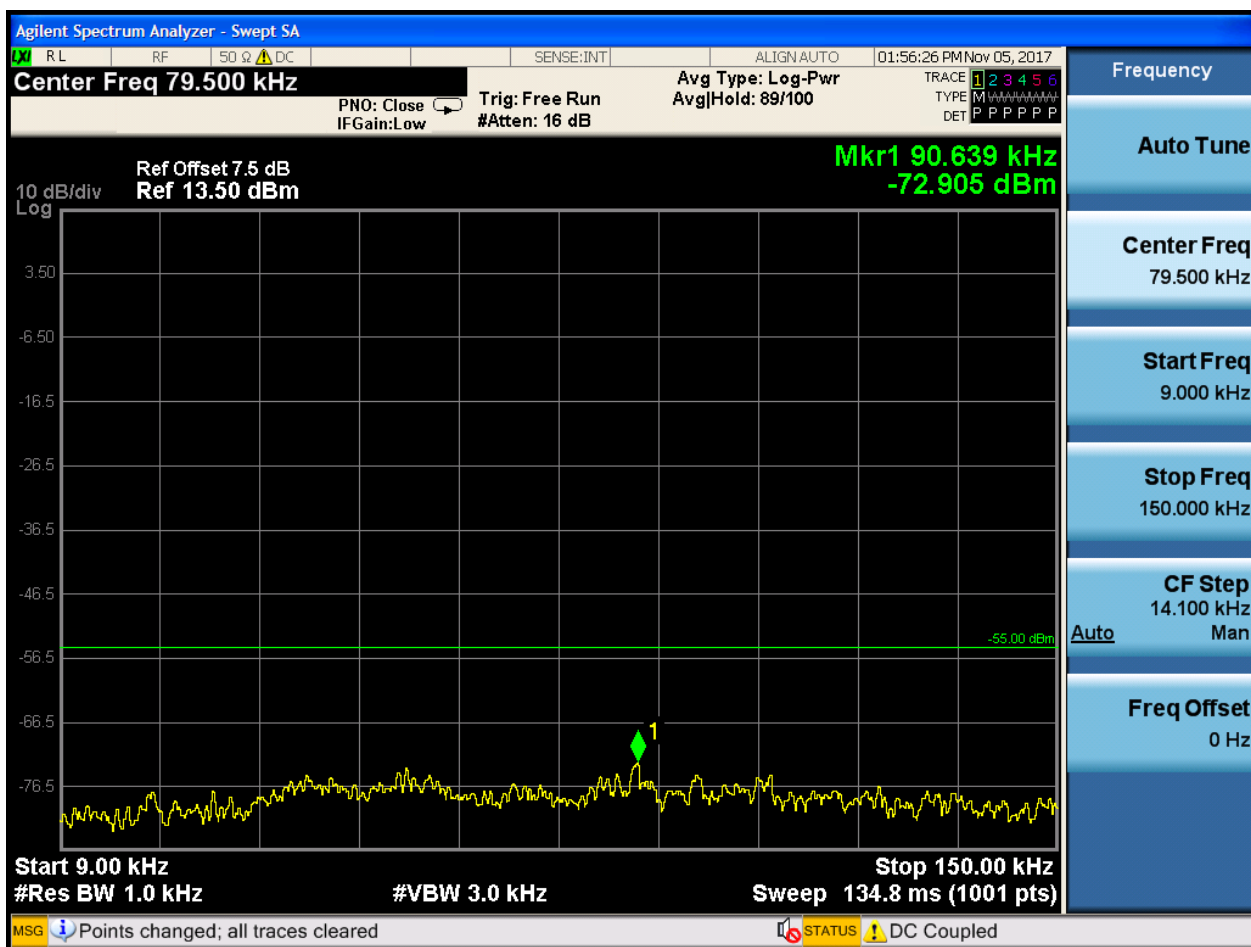


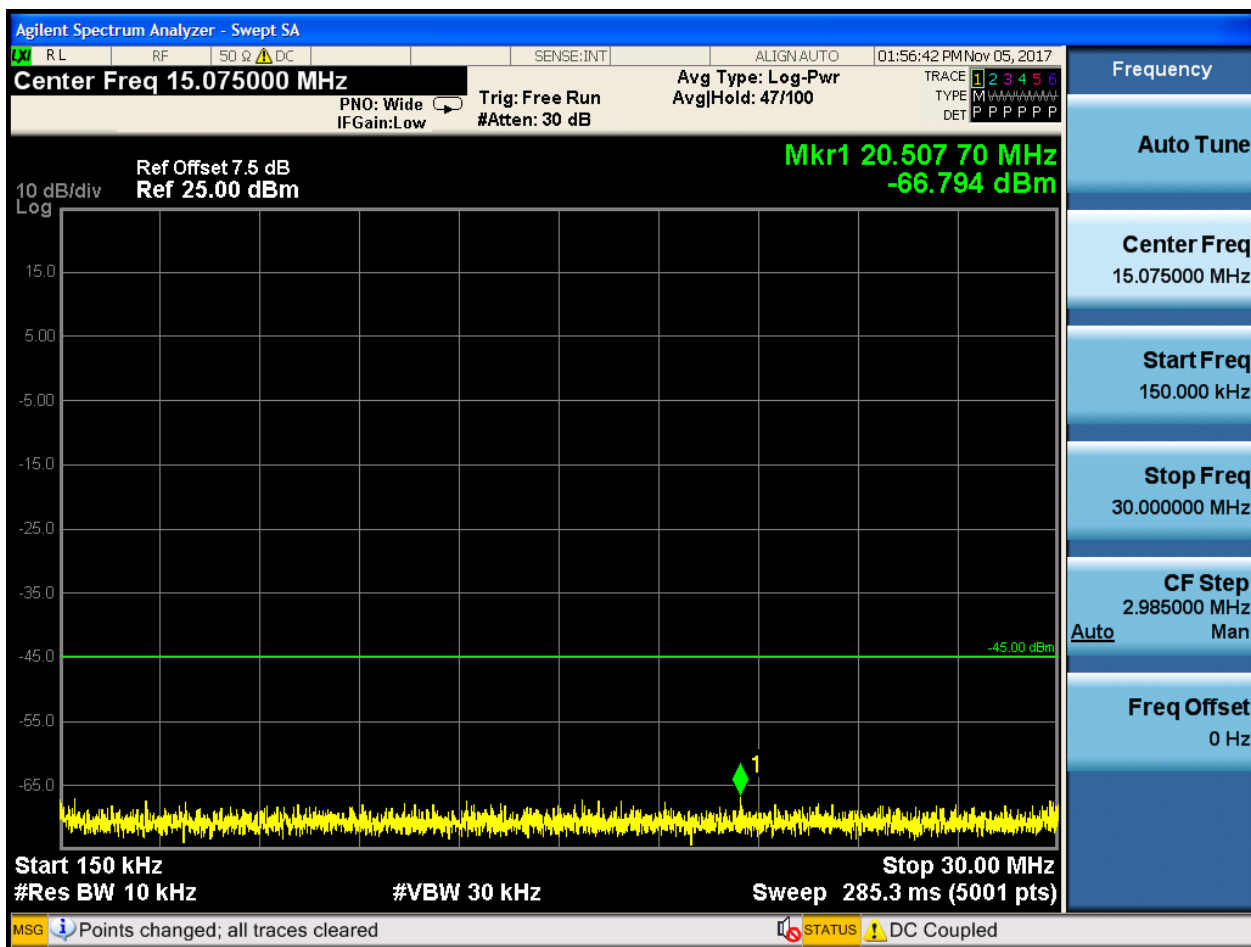


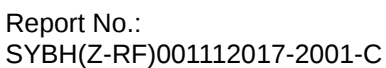
6.1.1.1.2 Test Bandwidth = 10

6.1.1.1.2.1 Test Channel = LCH

6.1.1.1.2.1.1 Test RB = RB1#0



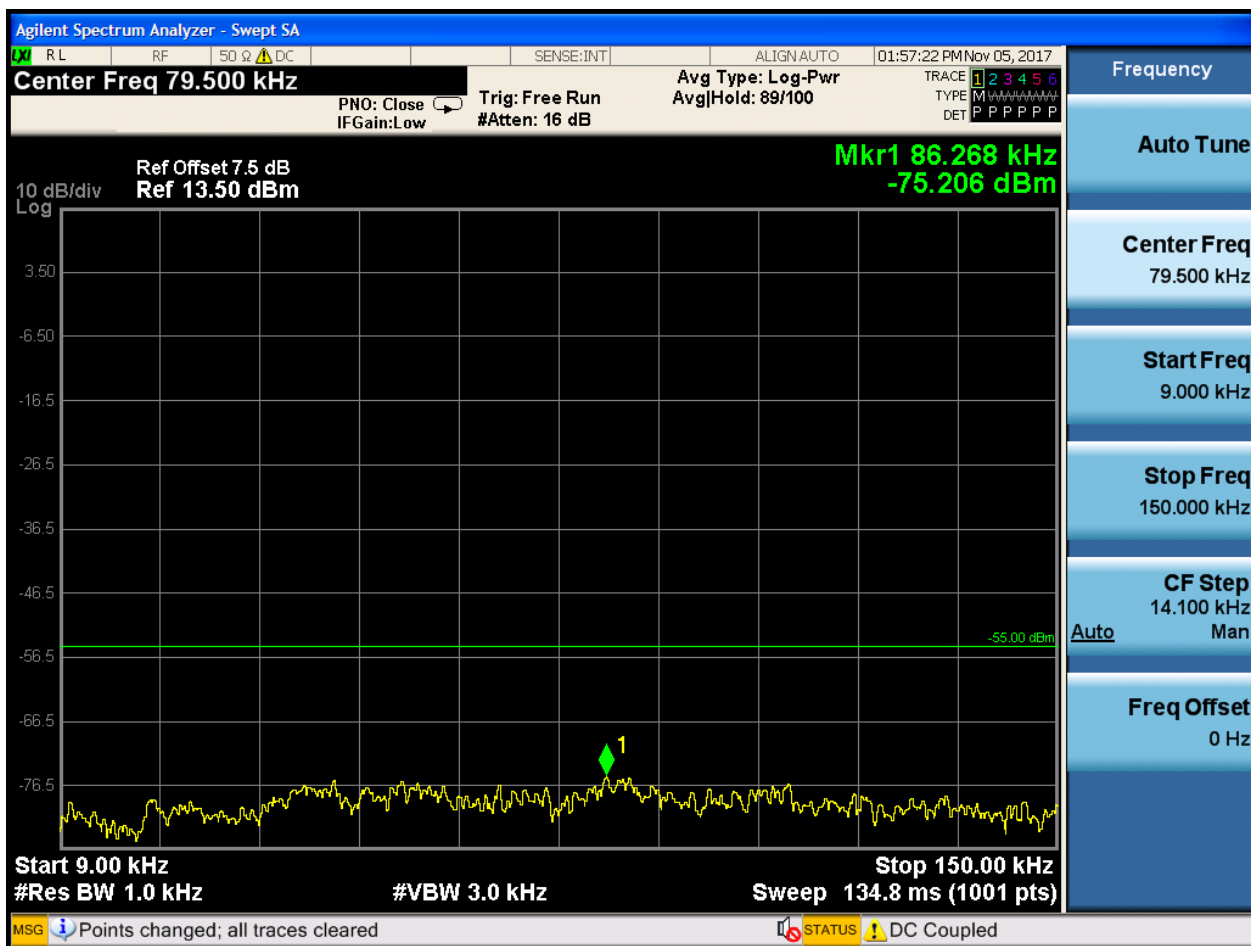


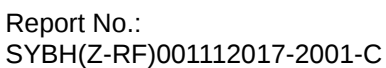


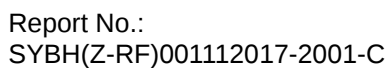


6.1.1.1.2.2 Test Channel = MCH

6.1.1.1.2.2.1 Test RB = RB1#0



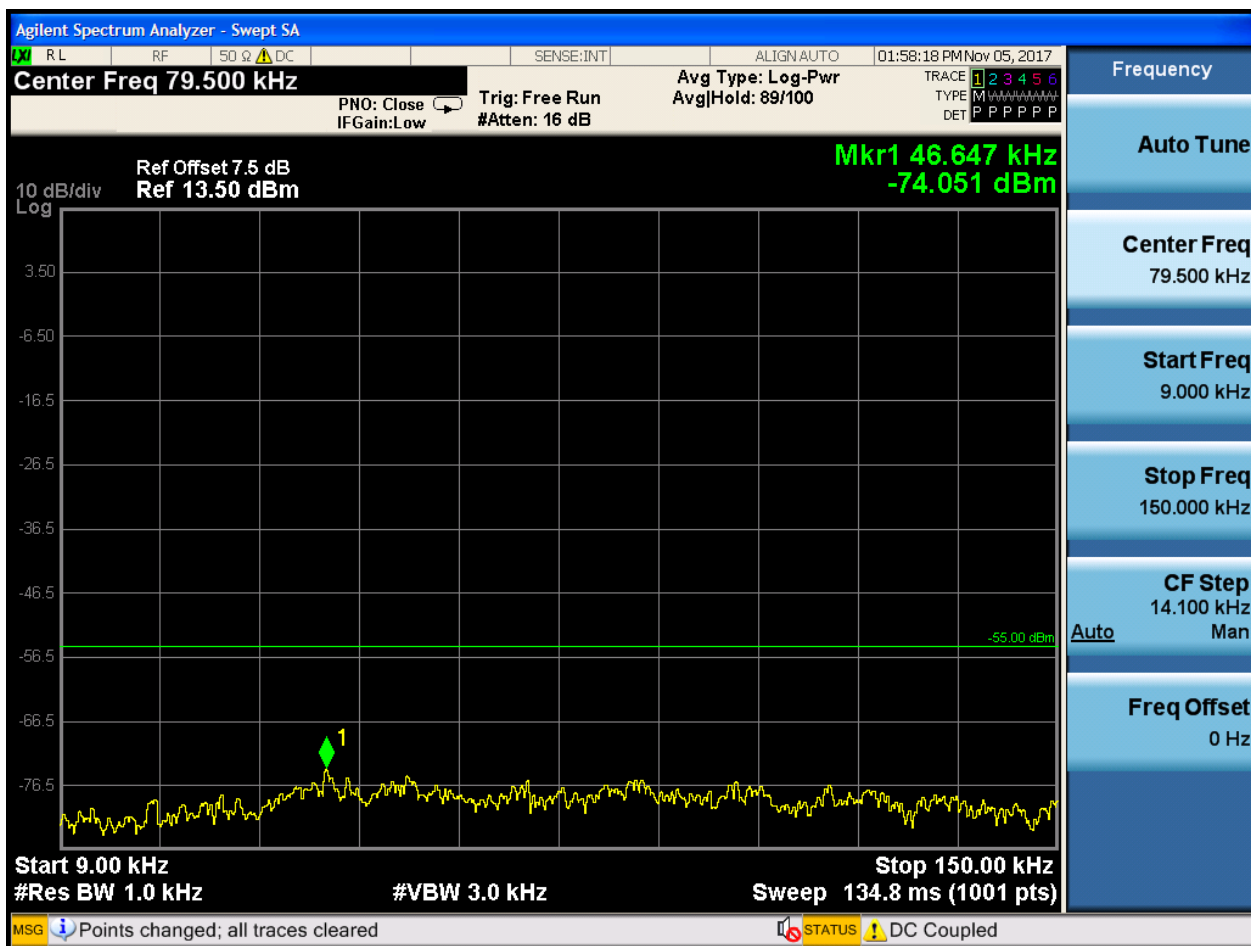


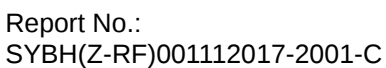


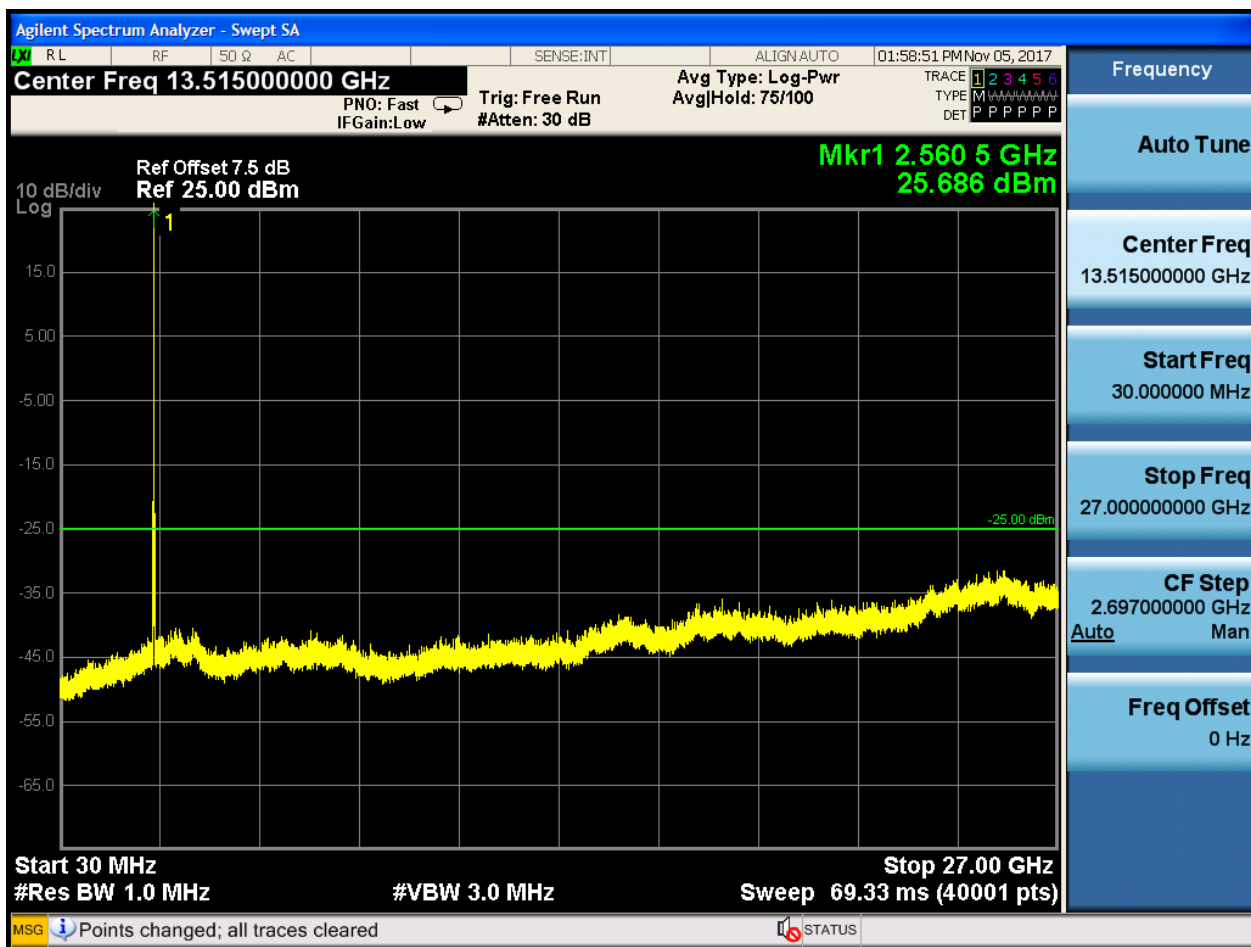


6.1.1.1.2.3 Test Channel = HCH

6.1.1.1.2.3.1 Test RB = RB1#0



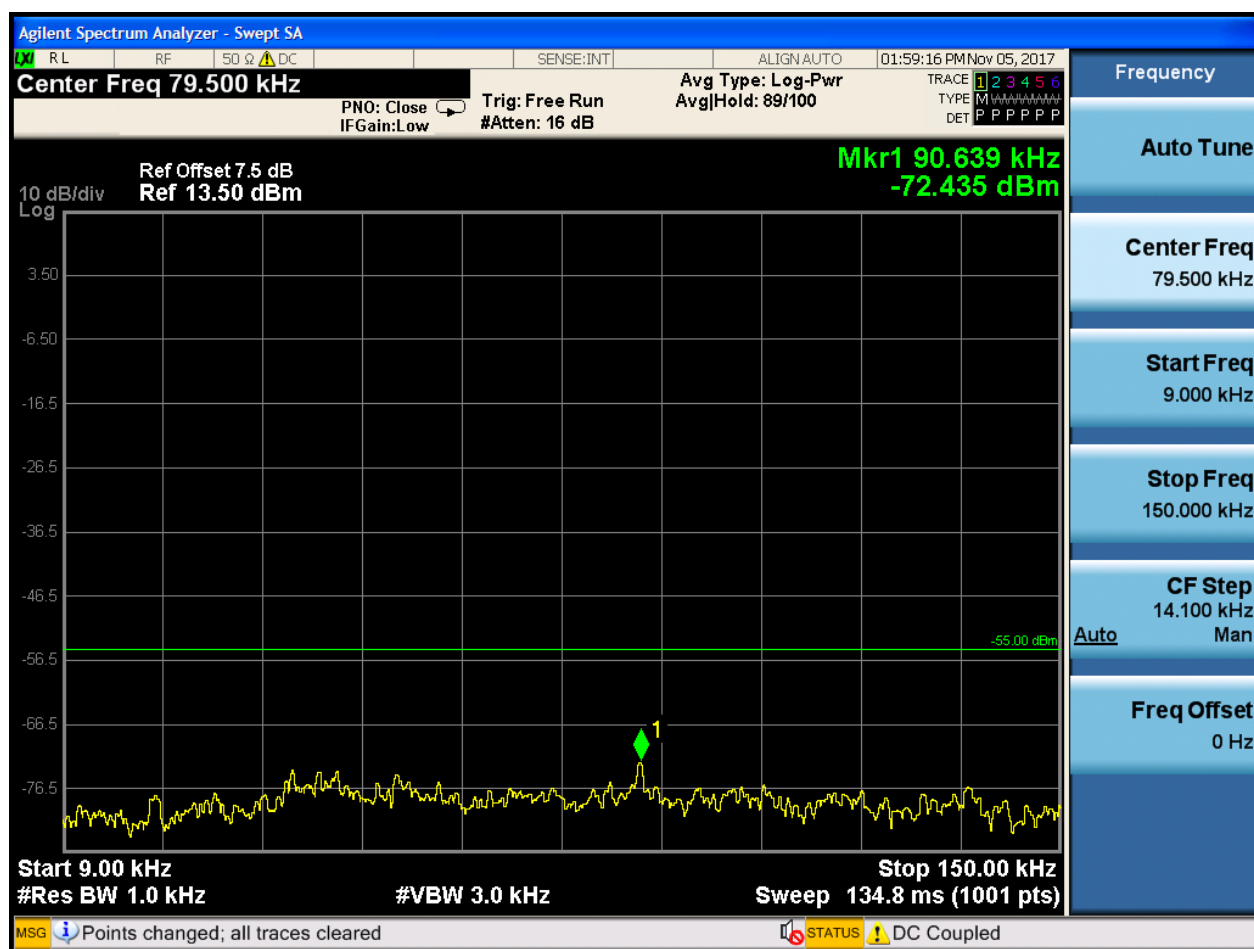


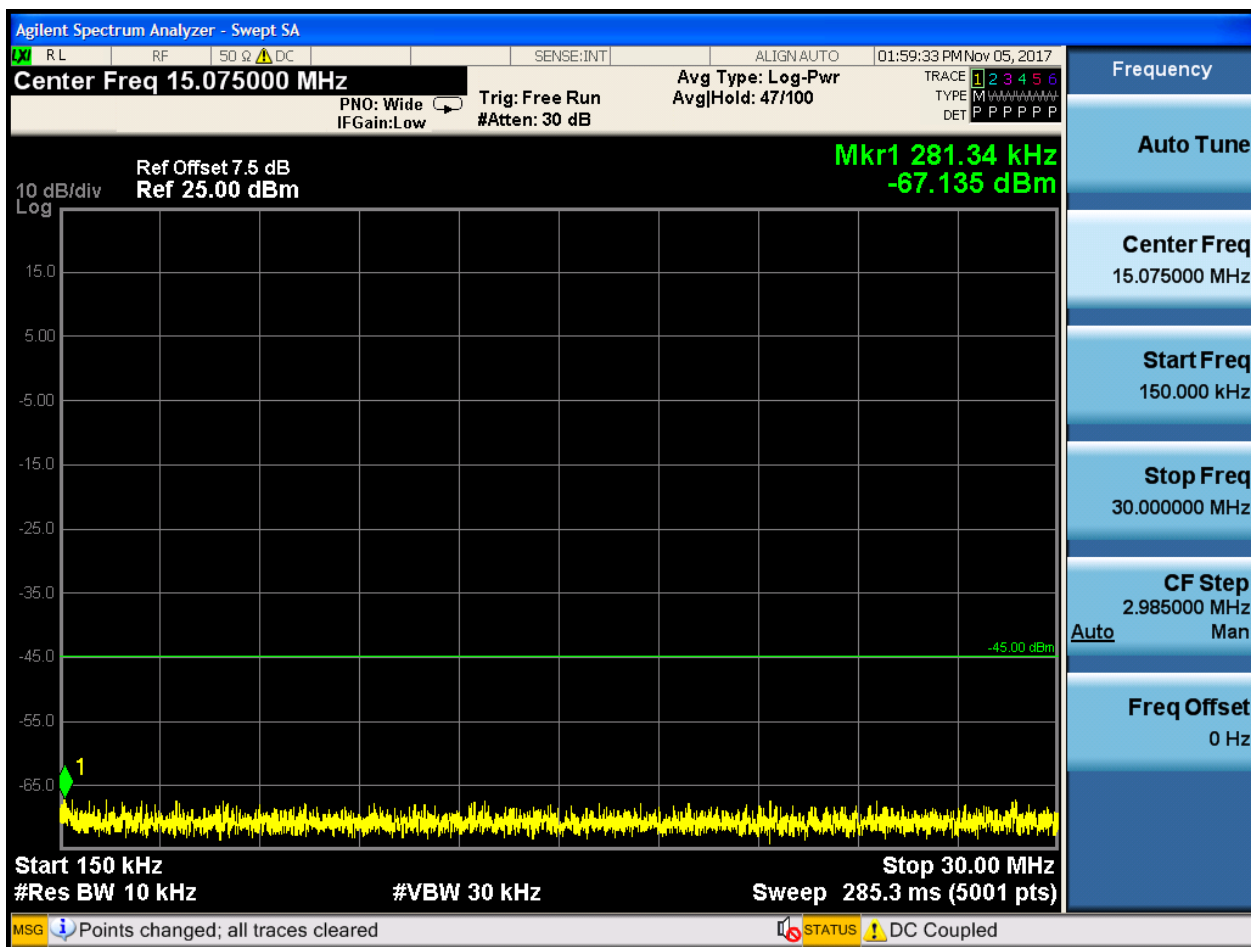


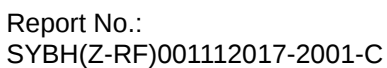
6.1.1.1.3 Test Bandwidth = 15

6.1.1.1.3.1 Test Channel = LCH

6.1.1.1.3.1.1 Test RB = RB1#0

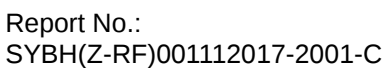








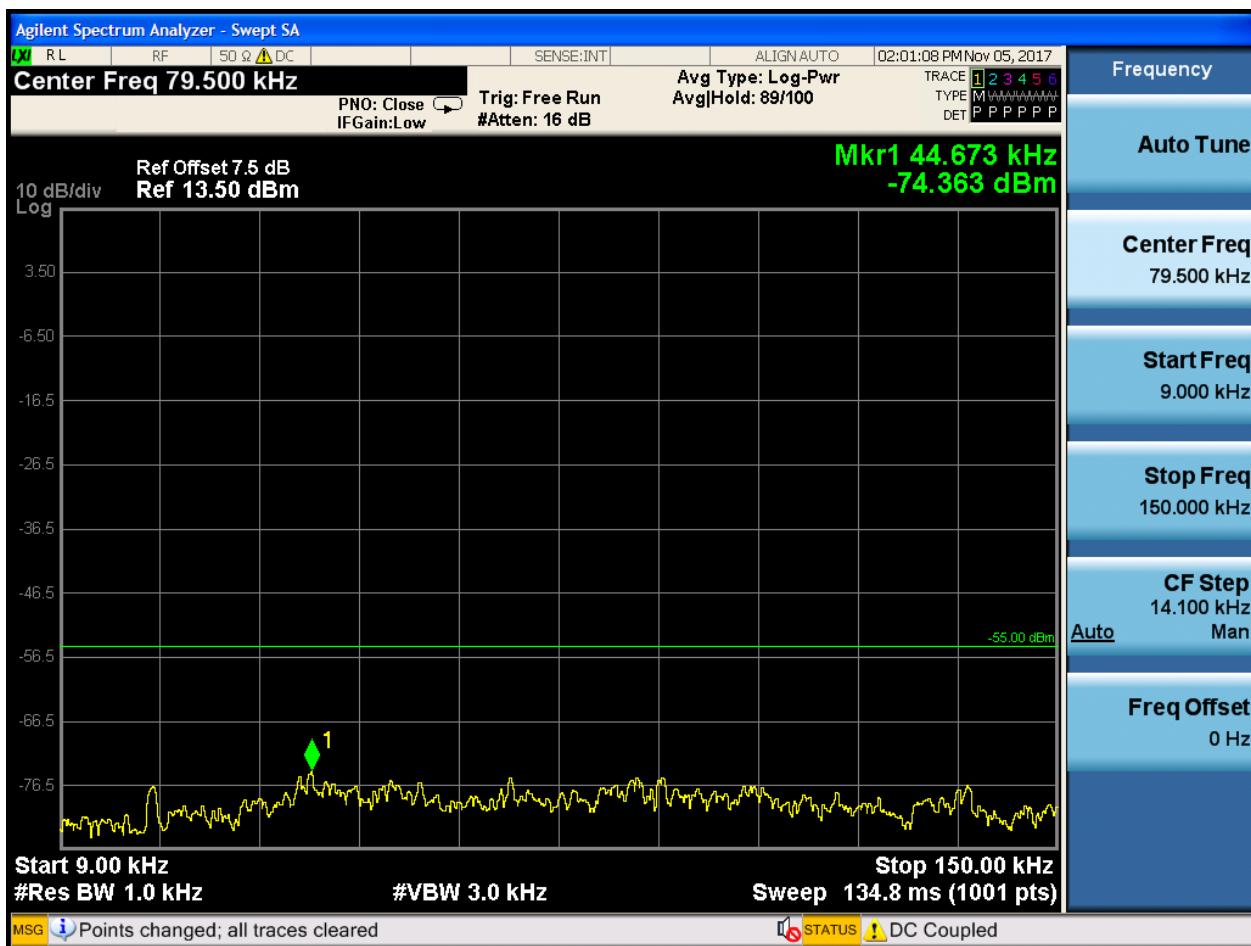


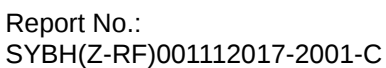


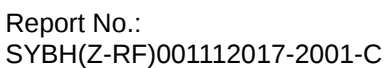


6.1.1.1.3.3 Test Channel = HCH

6.1.1.1.3.3.1 Test RB = RB1#0



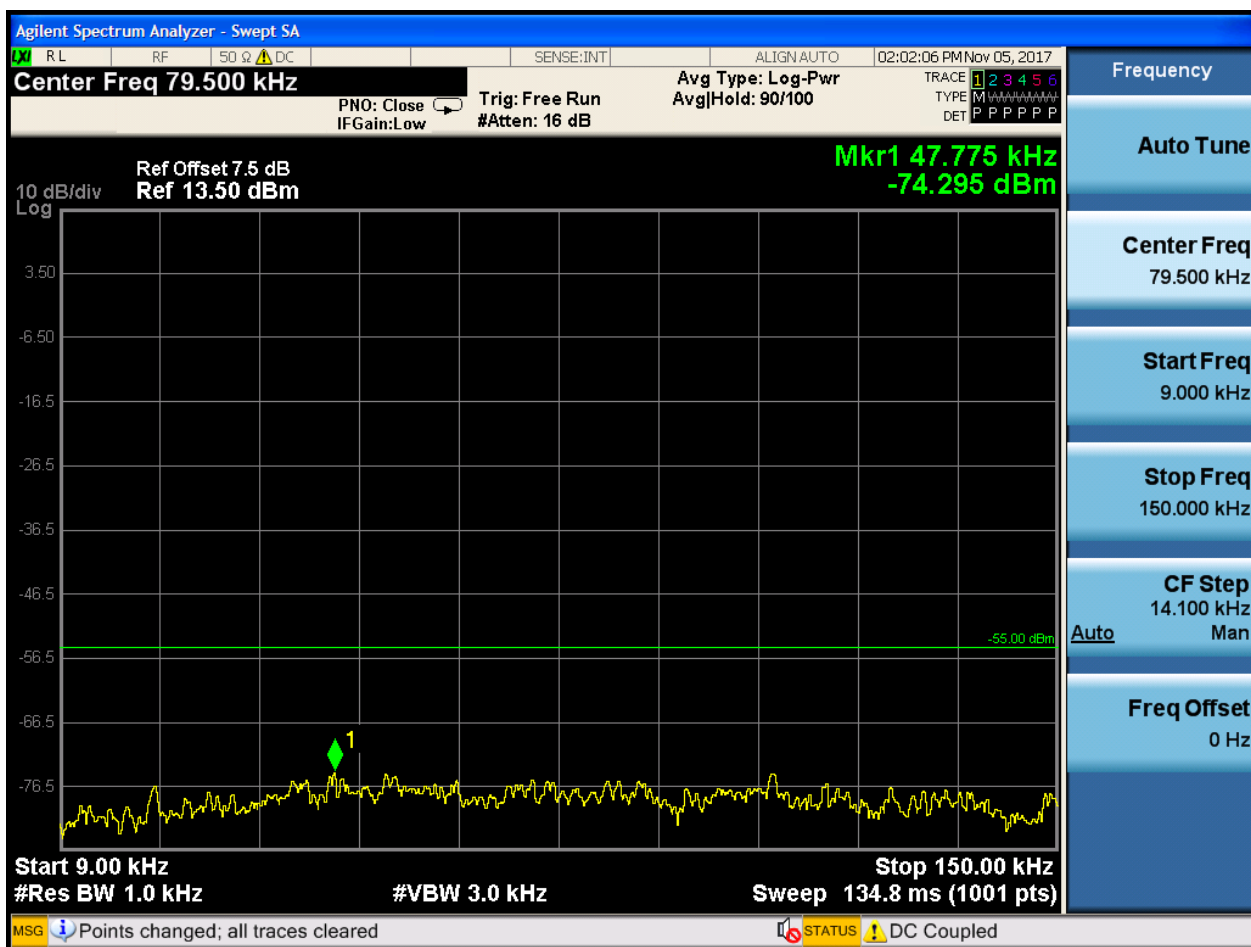




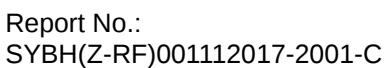
6.1.1.1.4 Test Bandwidth = 20

6.1.1.1.4.1 Test Channel = LCH

6.1.1.1.4.1.1 Test RB = RB1#0



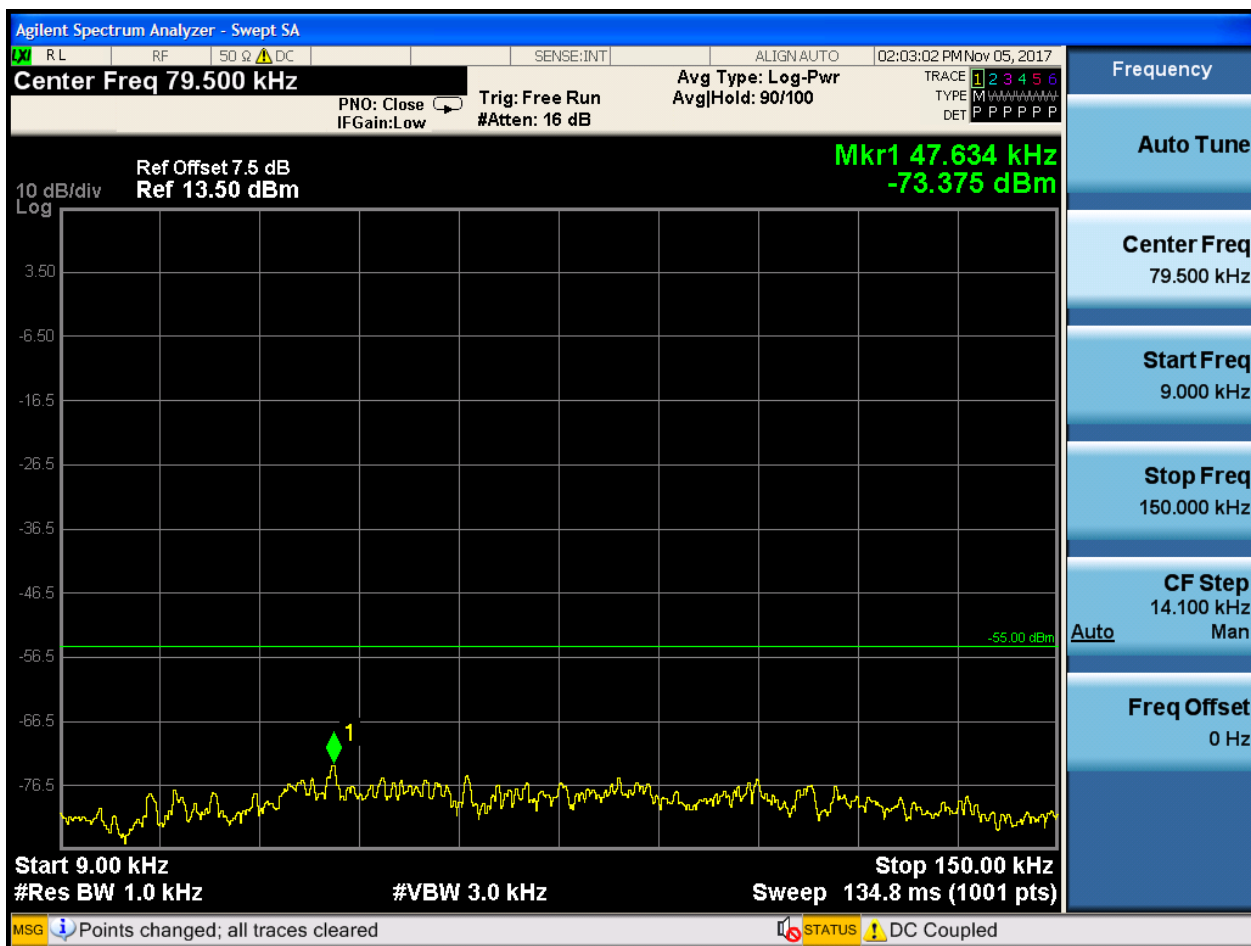


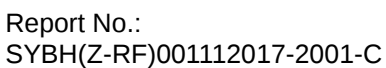


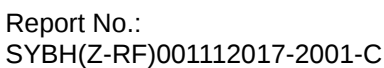


6.1.1.1.4.2 Test Channel = MCH

6.1.1.1.4.2.1 Test RB = RB1#0



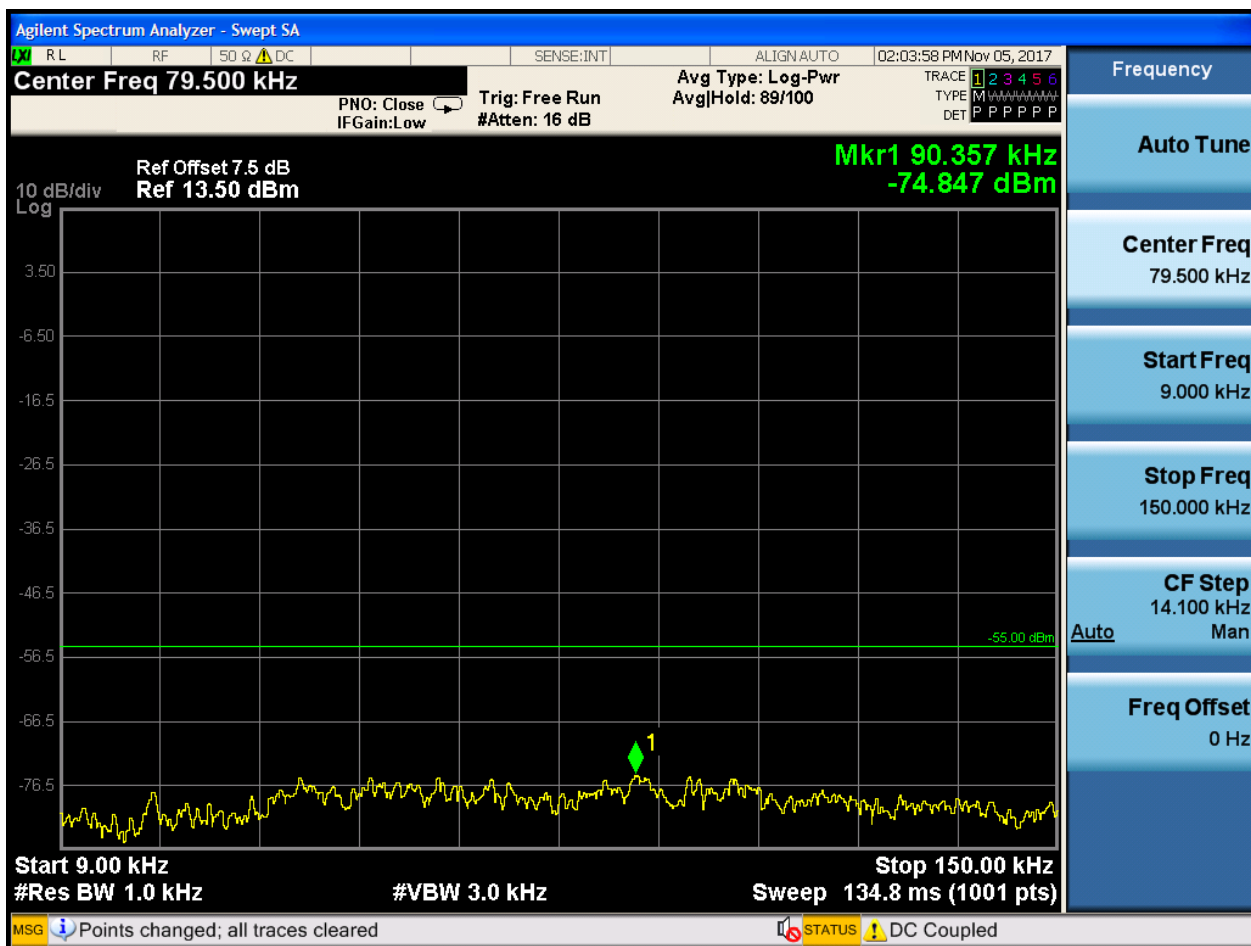


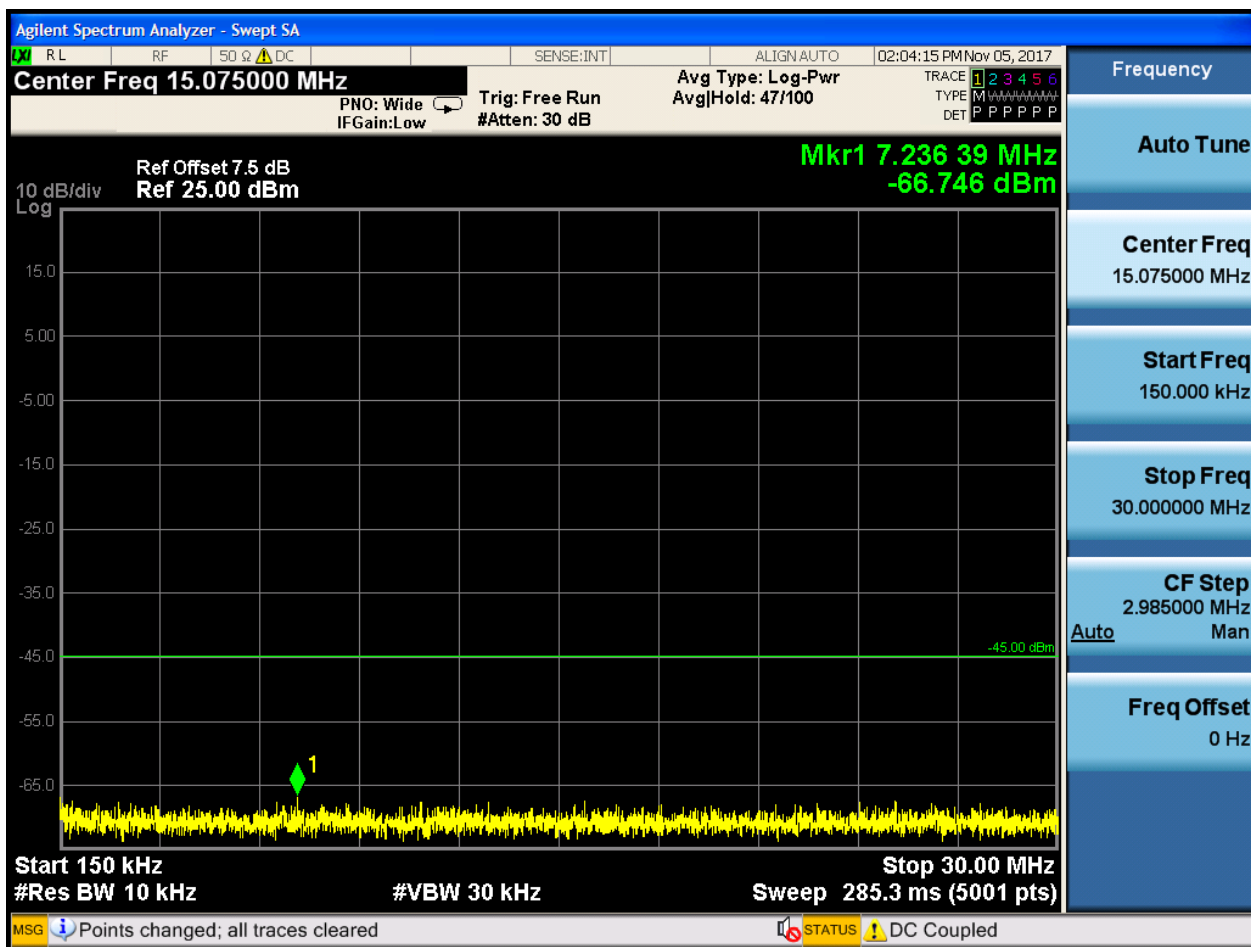




6.1.1.1.4.3 Test Channel = HCH

6.1.1.1.4.3.1 Test RB = RB1#0







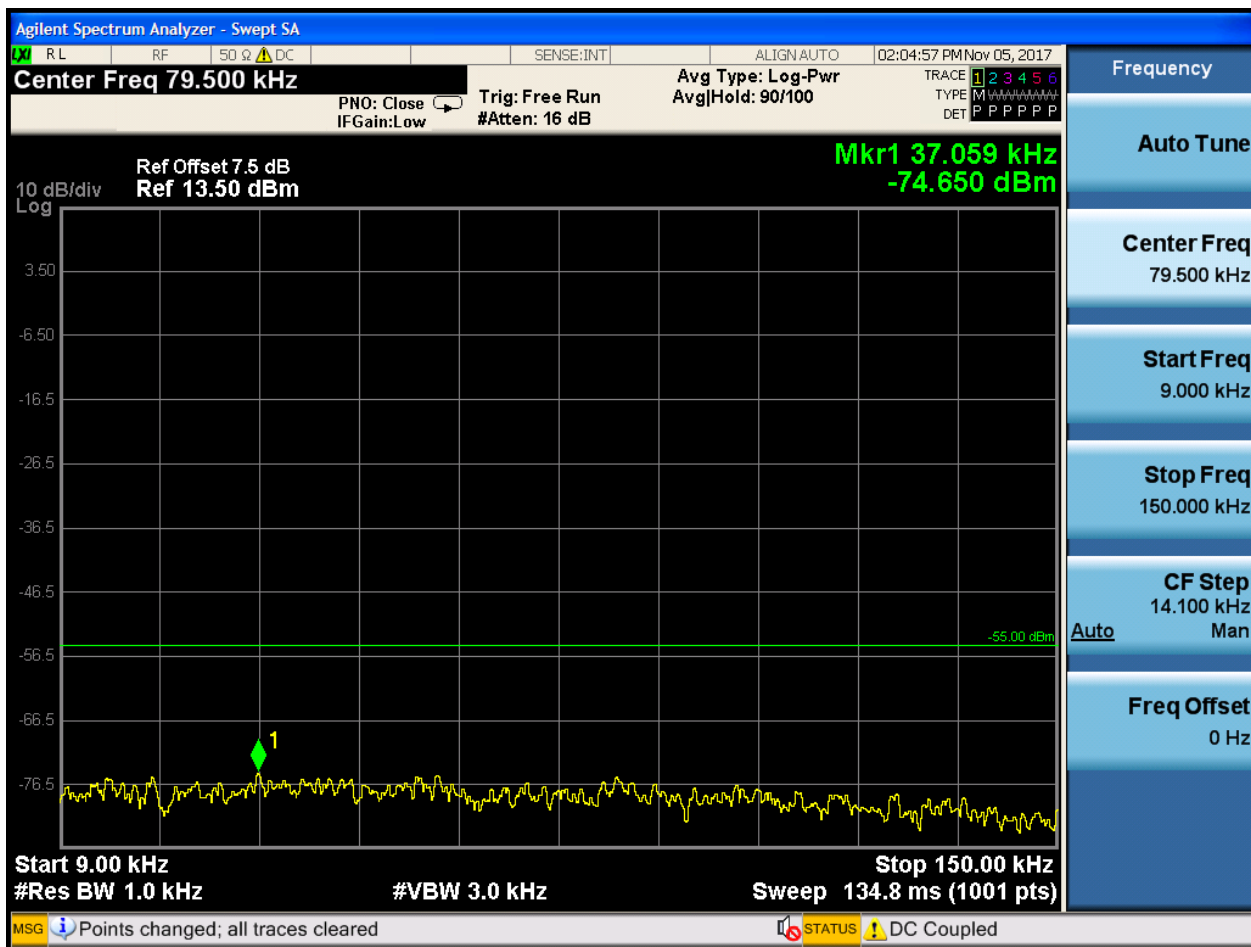


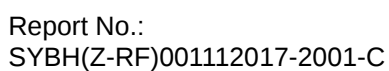
6.1.1.2 Test Mode = LTE/TM2

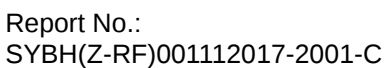
6.1.1.2.1 Test Bandwidth = 5

6.1.1.2.1.1 Test Channel = LCH

6.1.1.2.1.1.1 Test RB = RB1#0



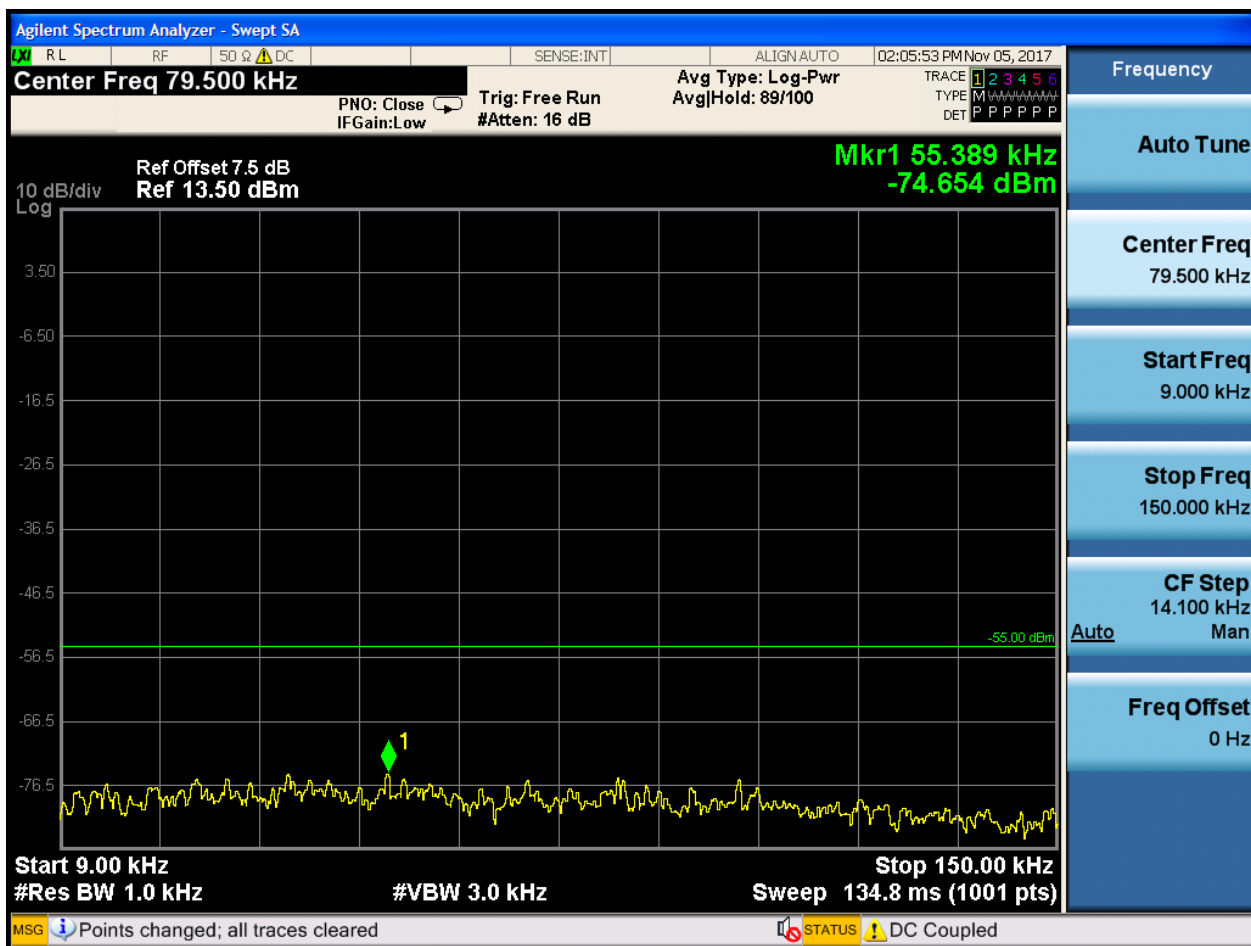


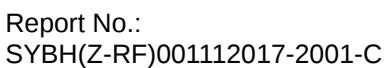


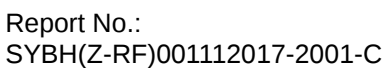


6.1.1.2.1.2 Test Channel = MCH

6.1.1.2.1.2.1 Test RB = RB1#0



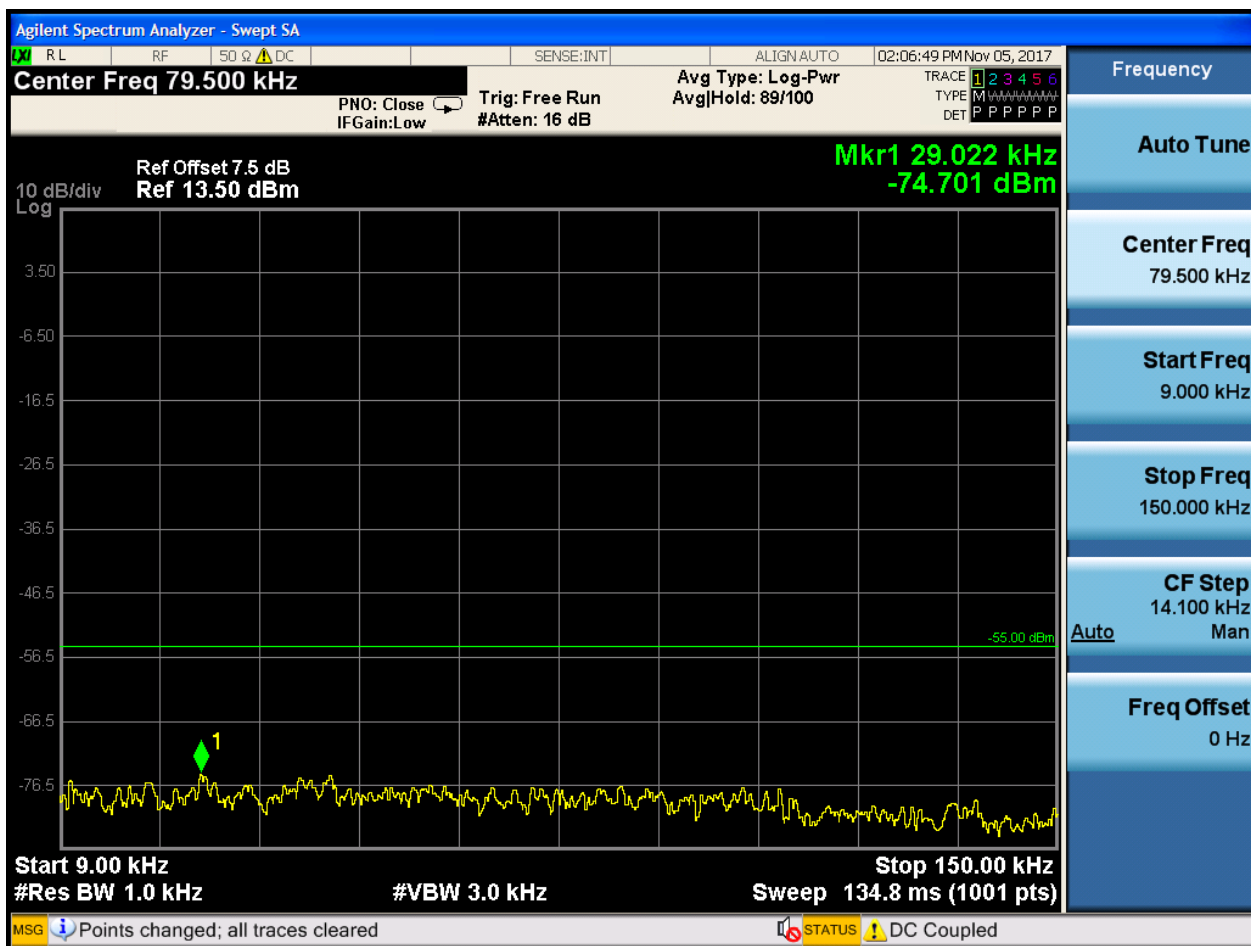


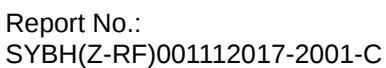


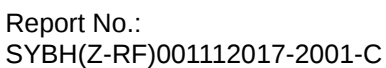


6.1.1.2.1.3 Test Channel = HCH

6.1.1.2.1.3.1 Test RB = RB1#0



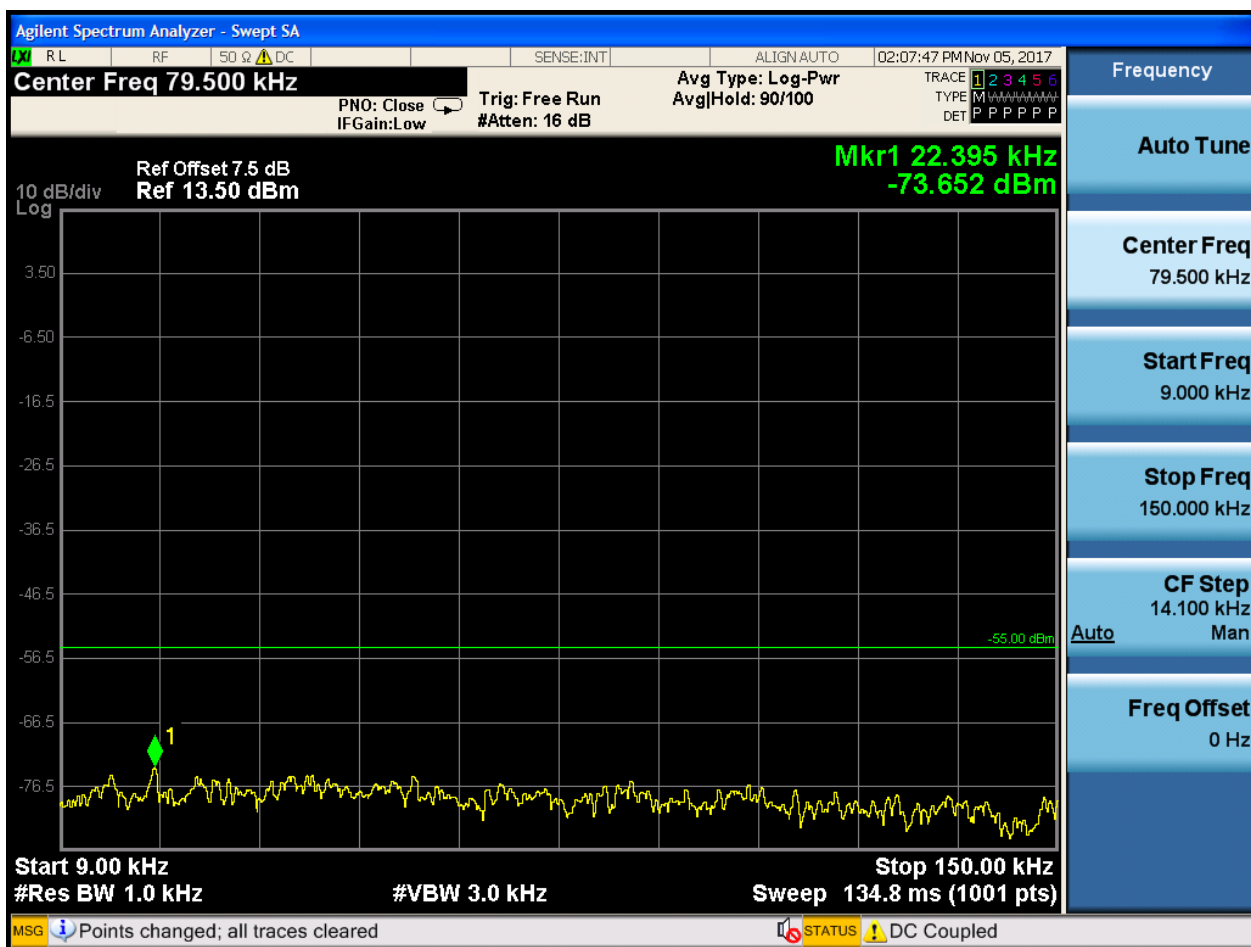


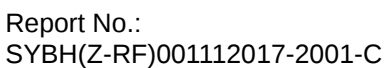


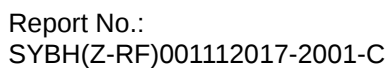
6.1.1.2.2 Test Bandwidth = 10

6.1.1.2.2.1 Test Channel = LCH

6.1.1.2.2.1.1 Test RB = RB1#0

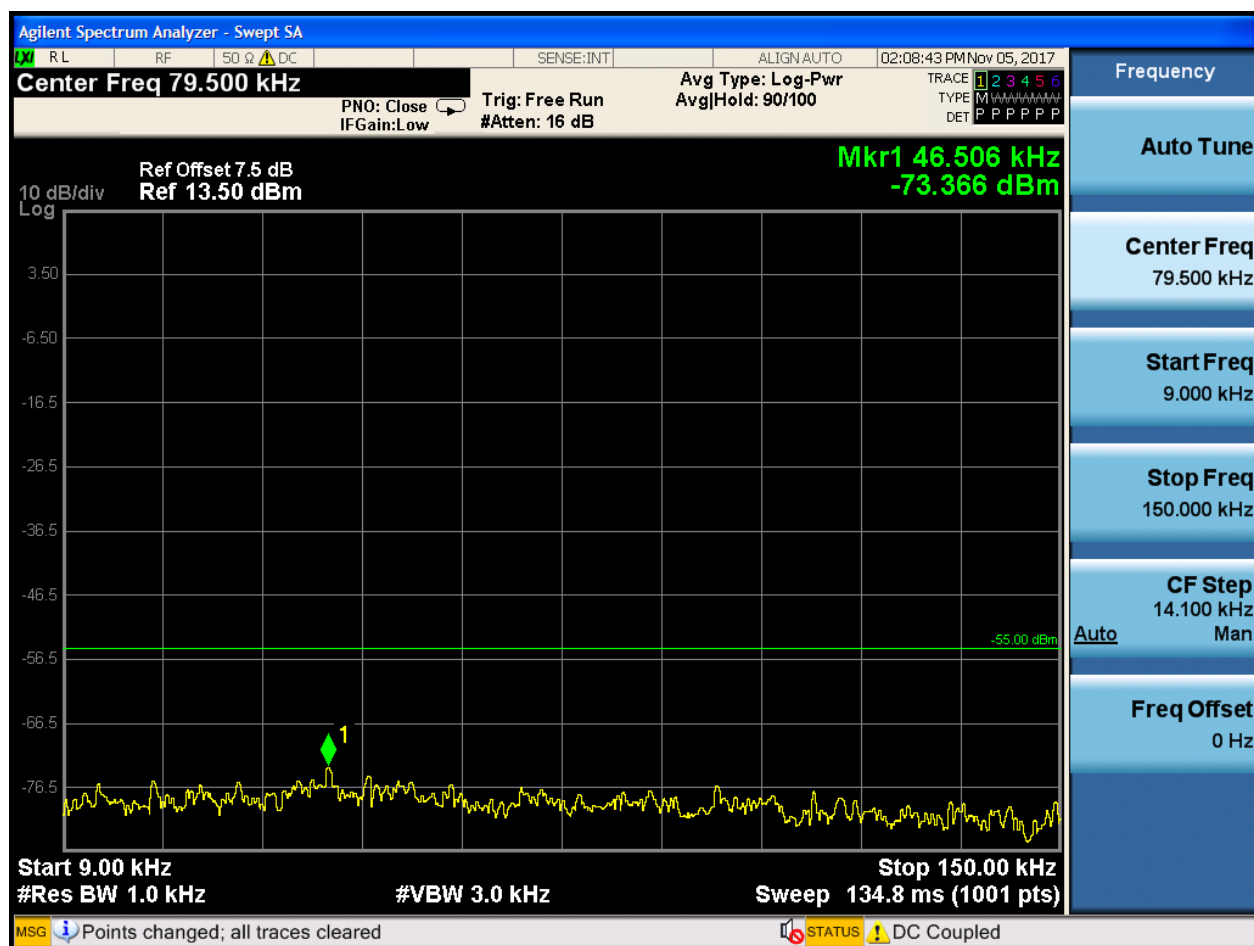




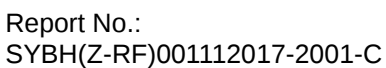


6.1.1.2.2.2 Test Channel = MCH

6.1.1.2.2.2.1 Test RB = RB1#0



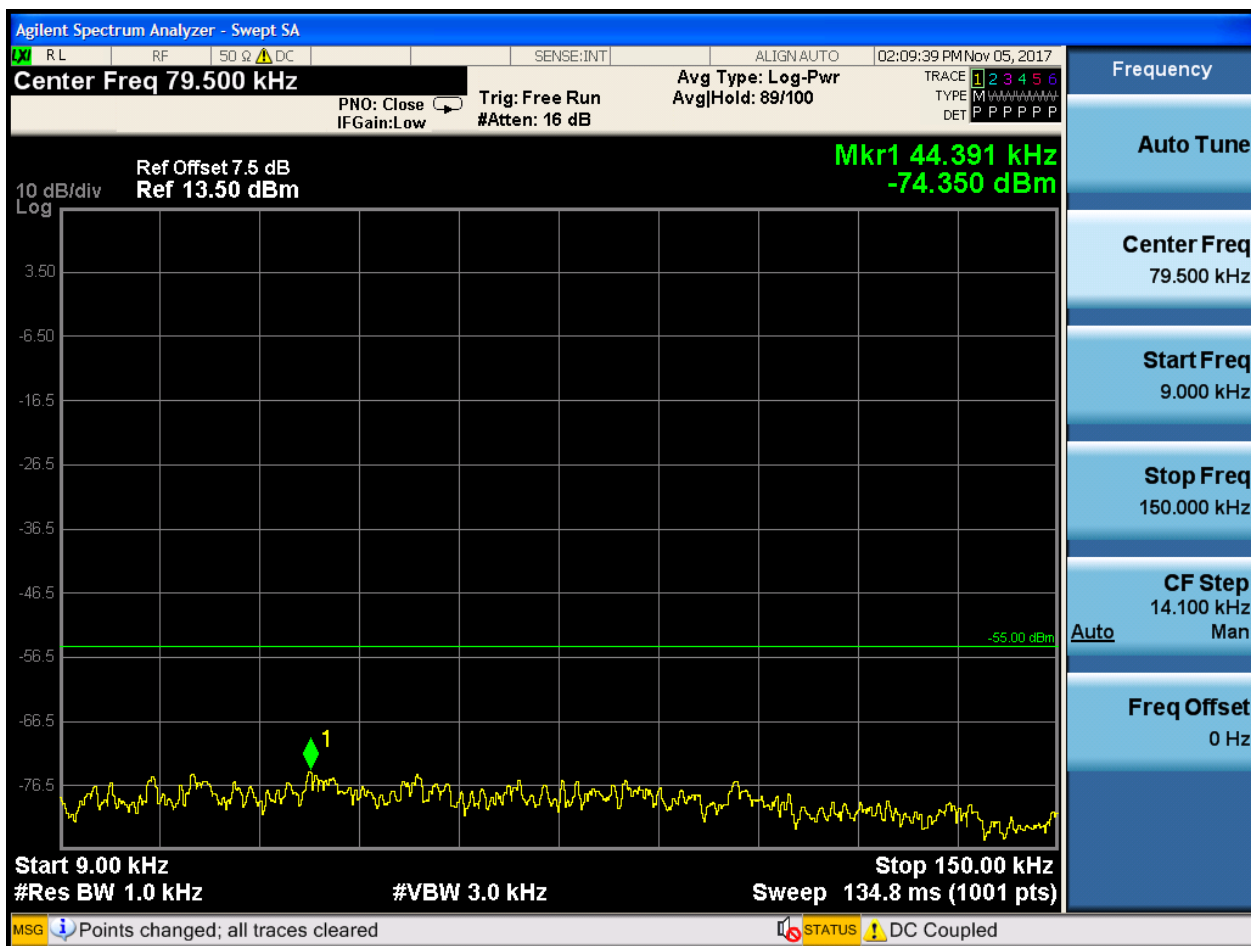




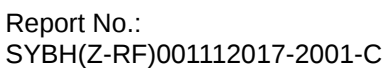


6.1.1.2.2.3 Test Channel = HCH

6.1.1.2.2.3.1 Test RB = RB1#0





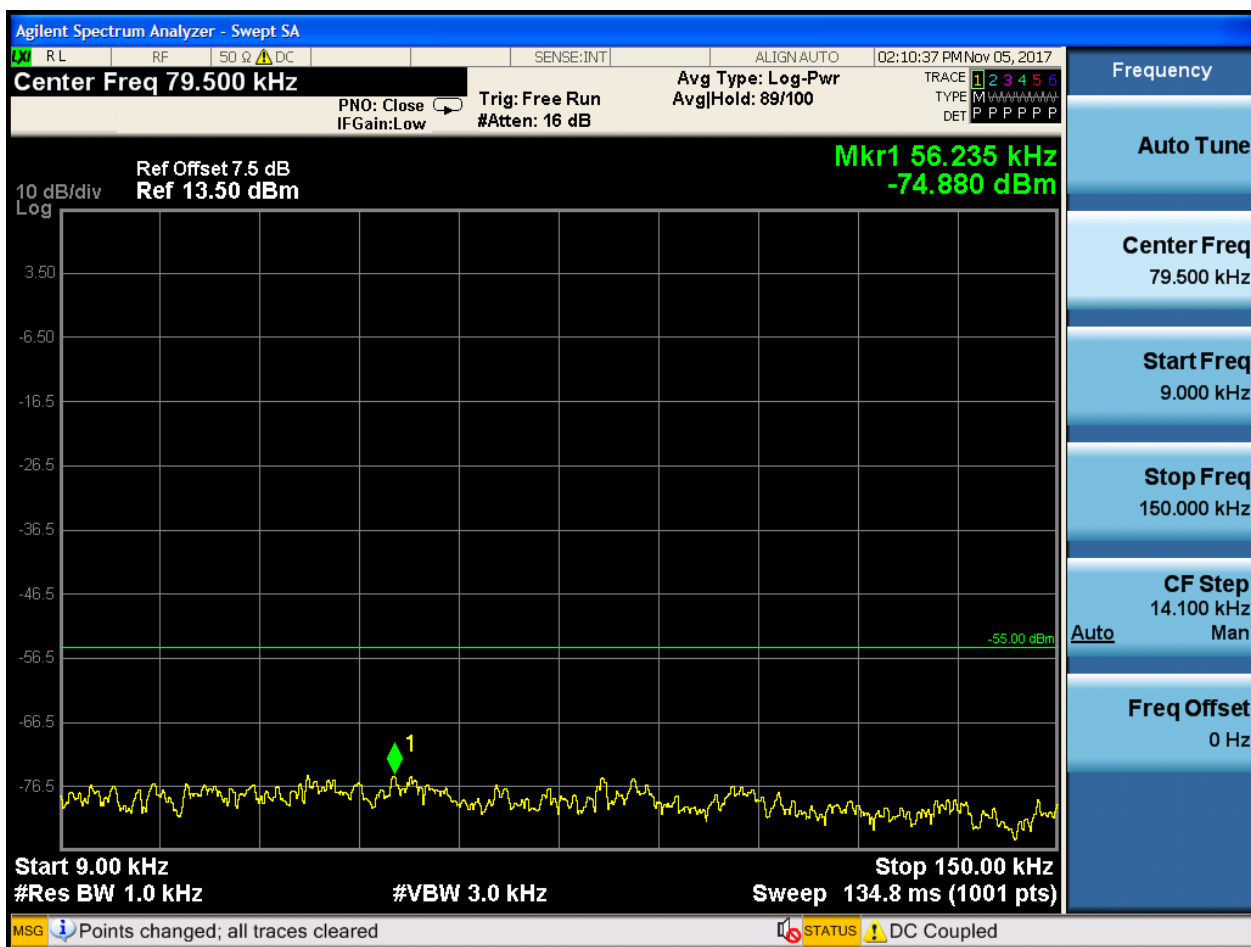


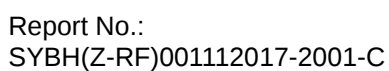


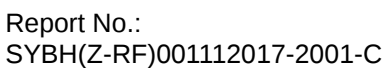
6.1.1.2.3 Test Bandwidth = 15

6.1.1.2.3.1 Test Channel = LCH

6.1.1.2.3.1.1 Test RB = RB1#0



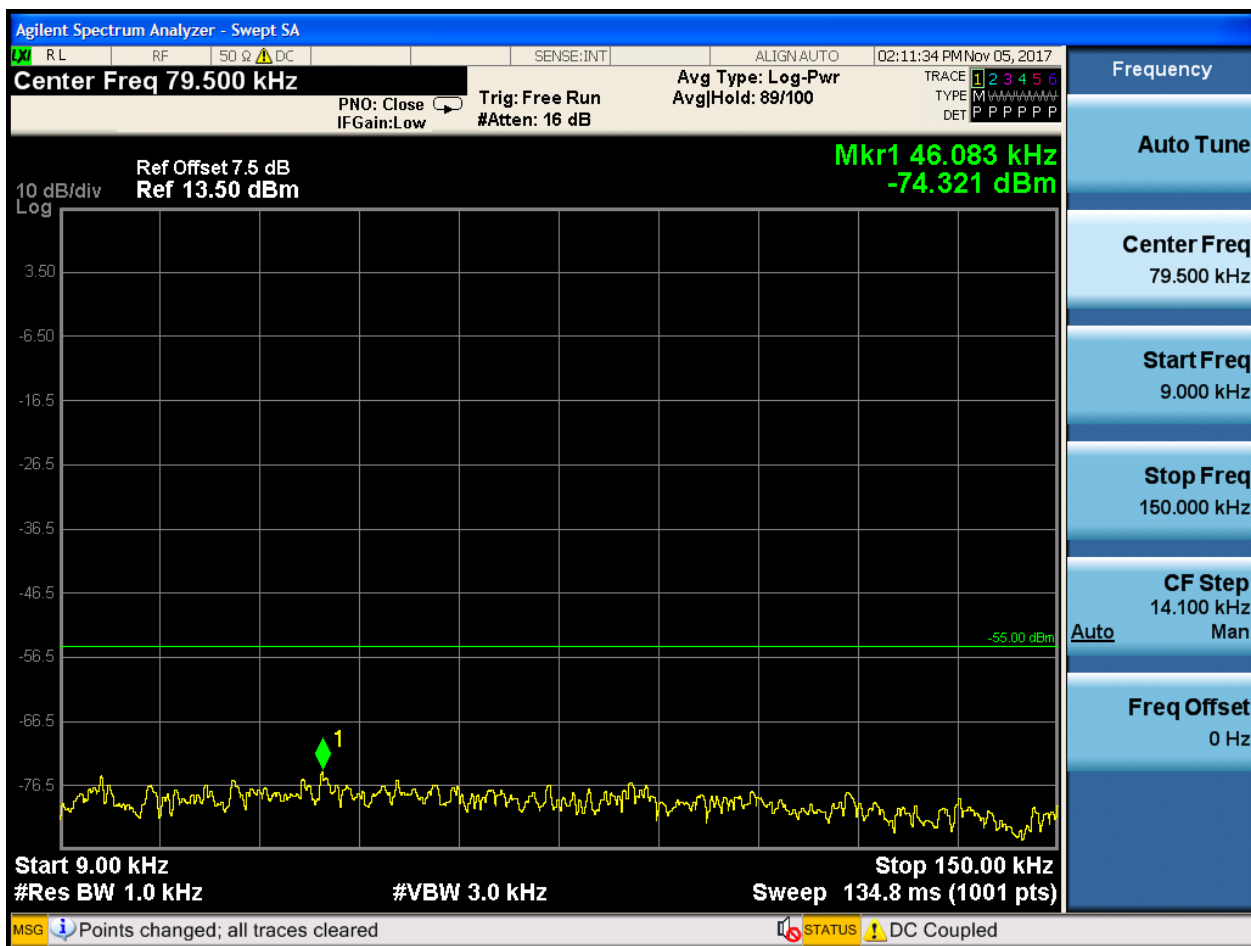


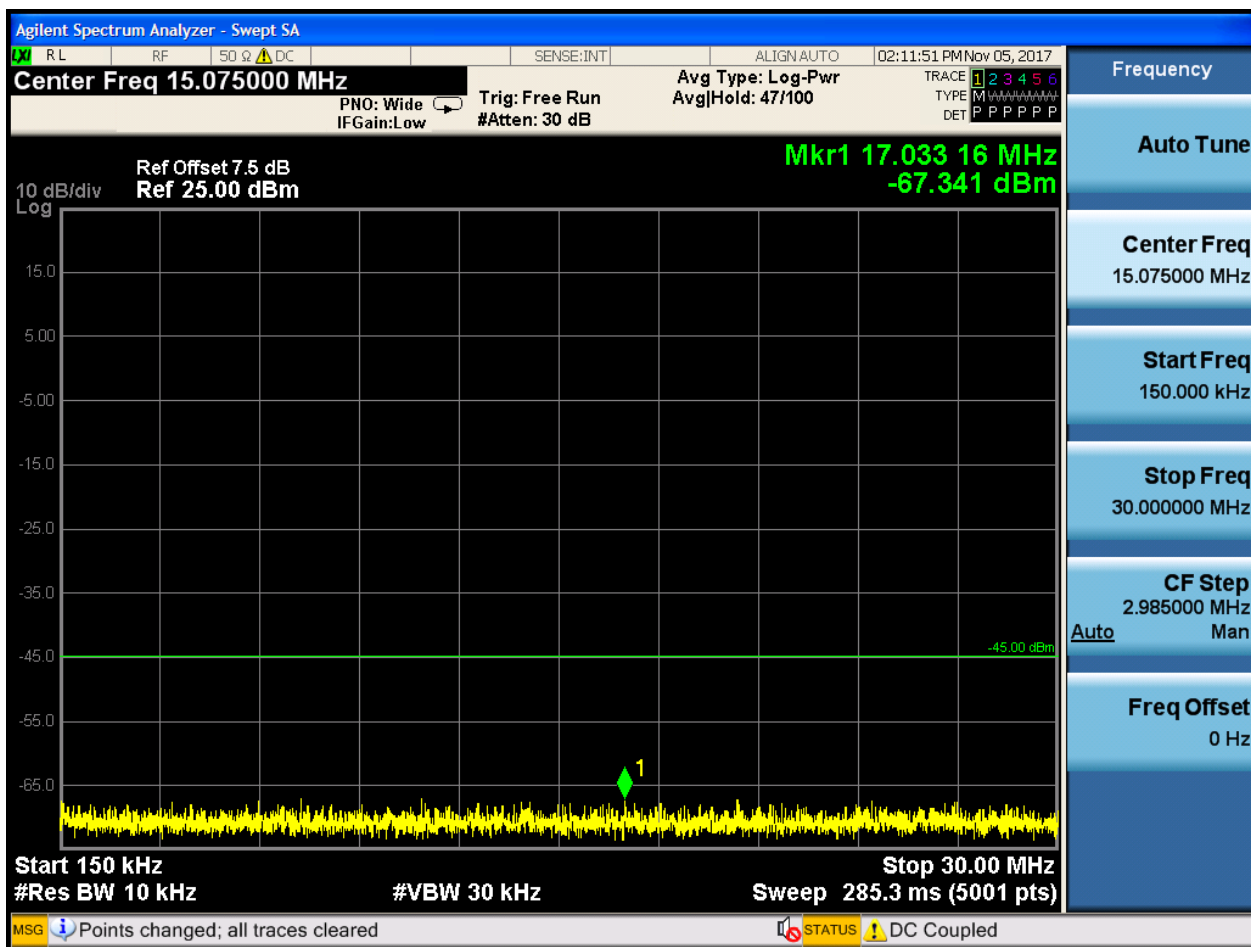


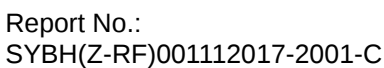


6.1.1.2.3.2 Test Channel = MCH

6.1.1.2.3.2.1 Test RB = RB1#0



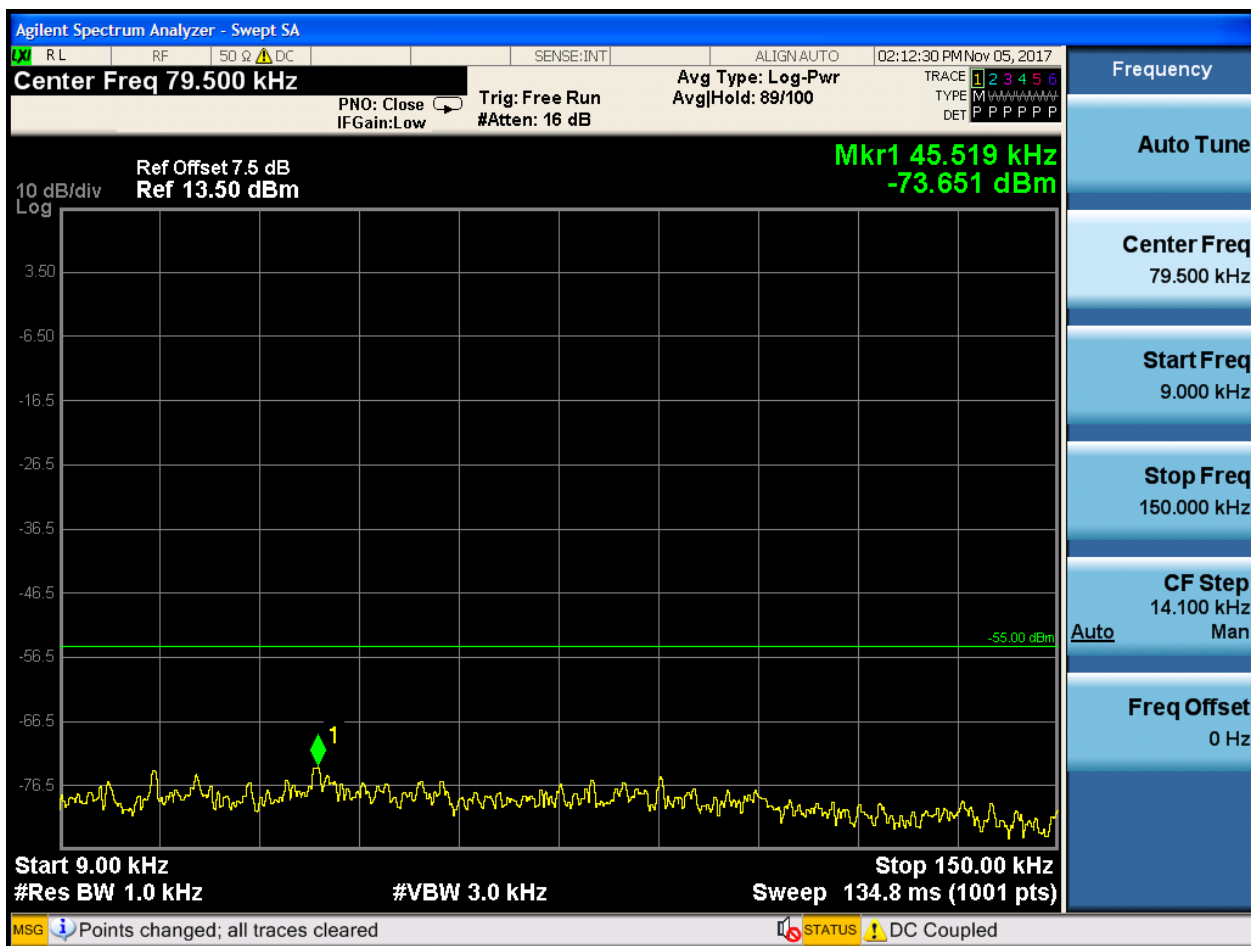


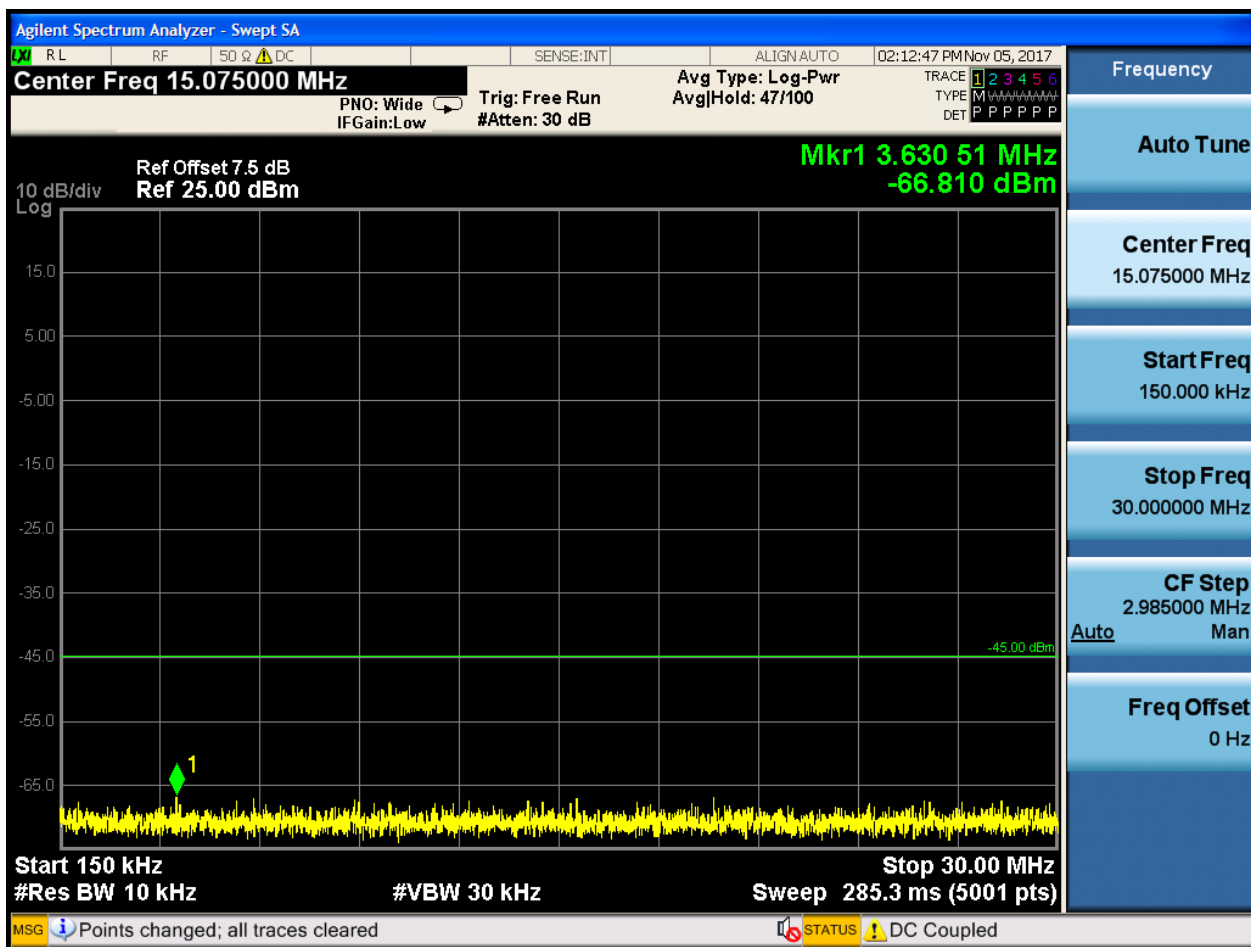


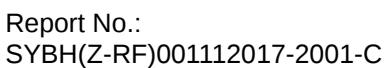


6.1.1.2.3.3 Test Channel = HCH

6.1.1.2.3.3.1 Test RB = RB1#0



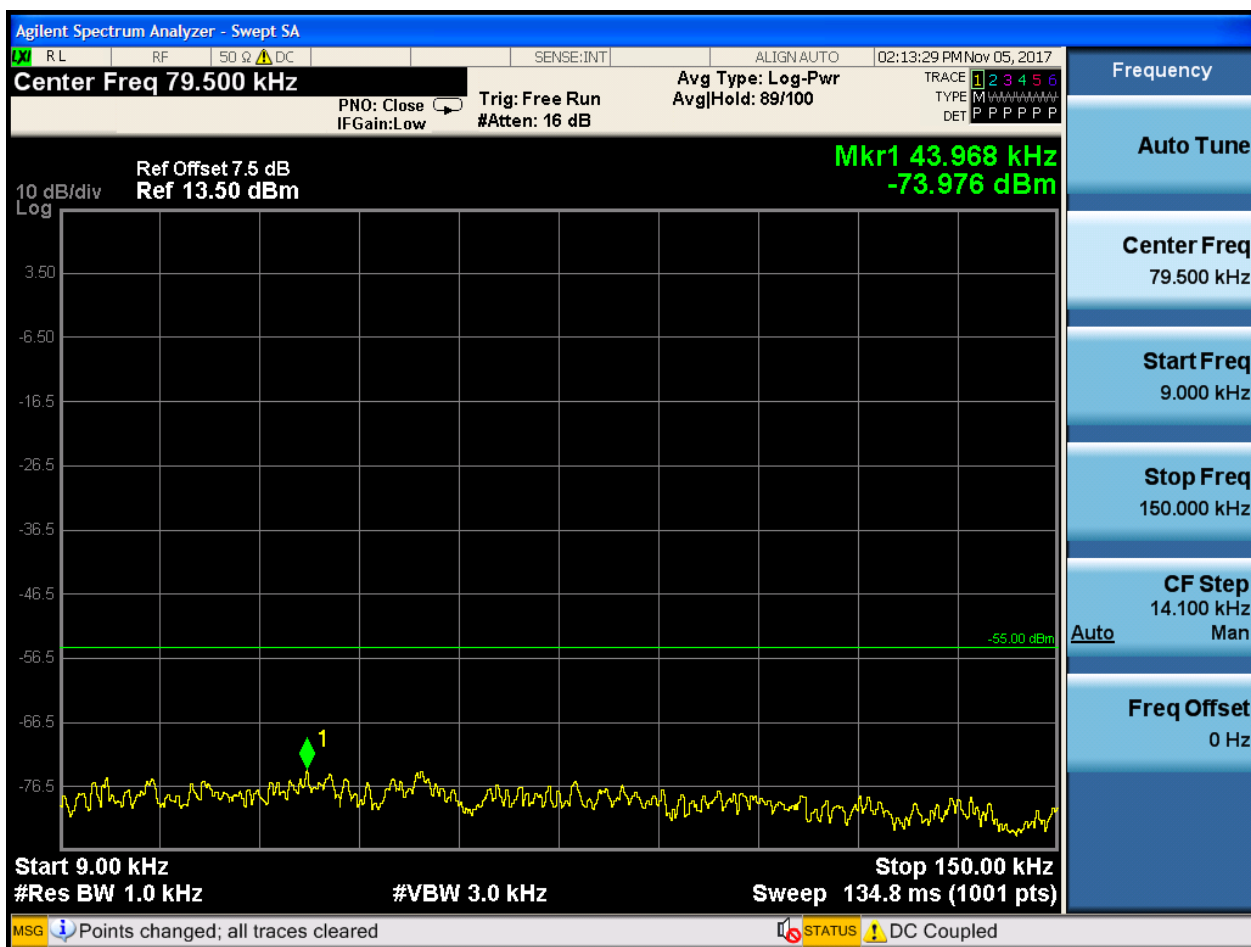


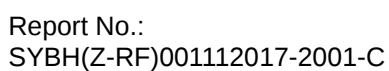


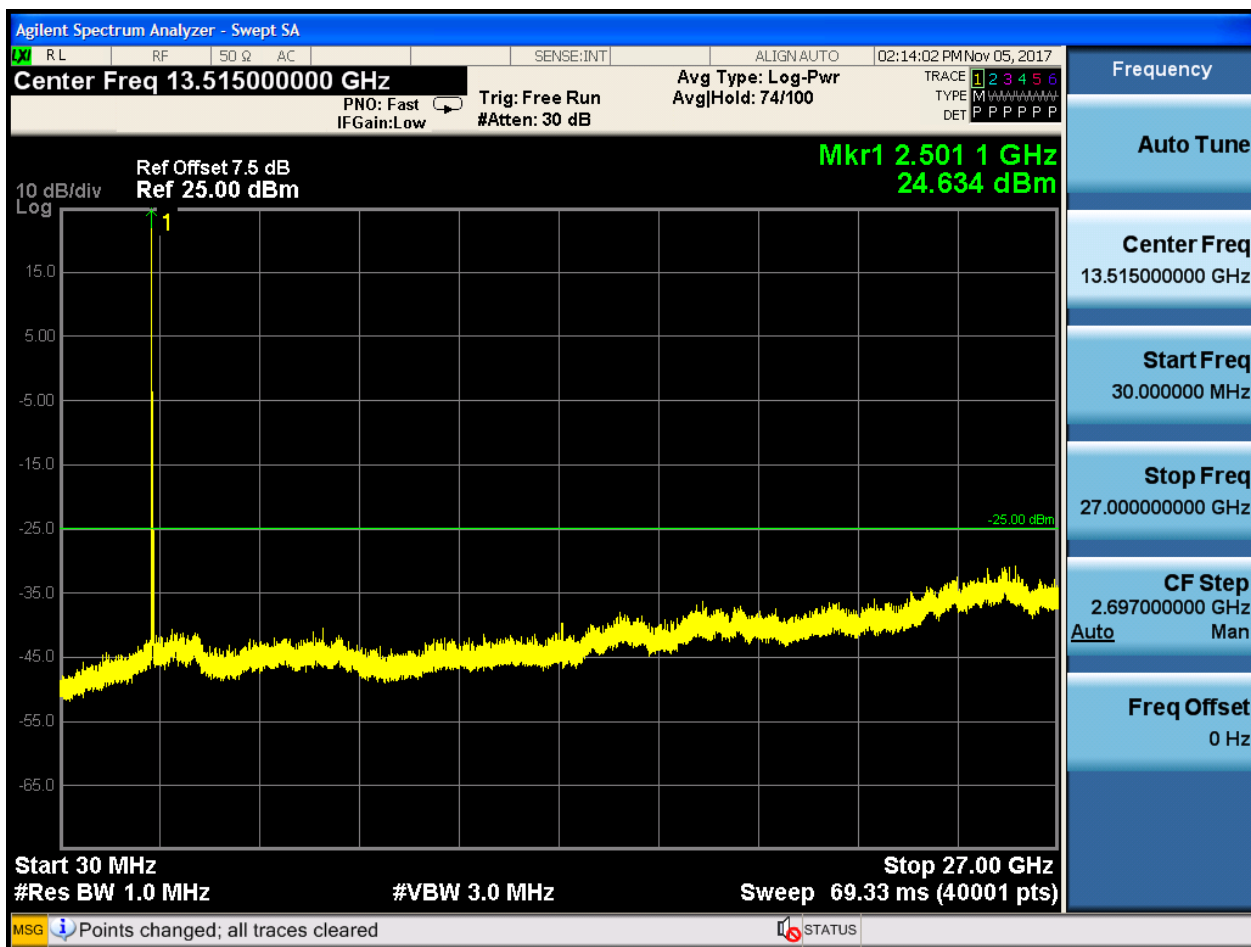
6.1.1.2.4 Test Bandwidth = 20

6.1.1.2.4.1 Test Channel = LCH

6.1.1.2.4.1.1 Test RB = RB1#0

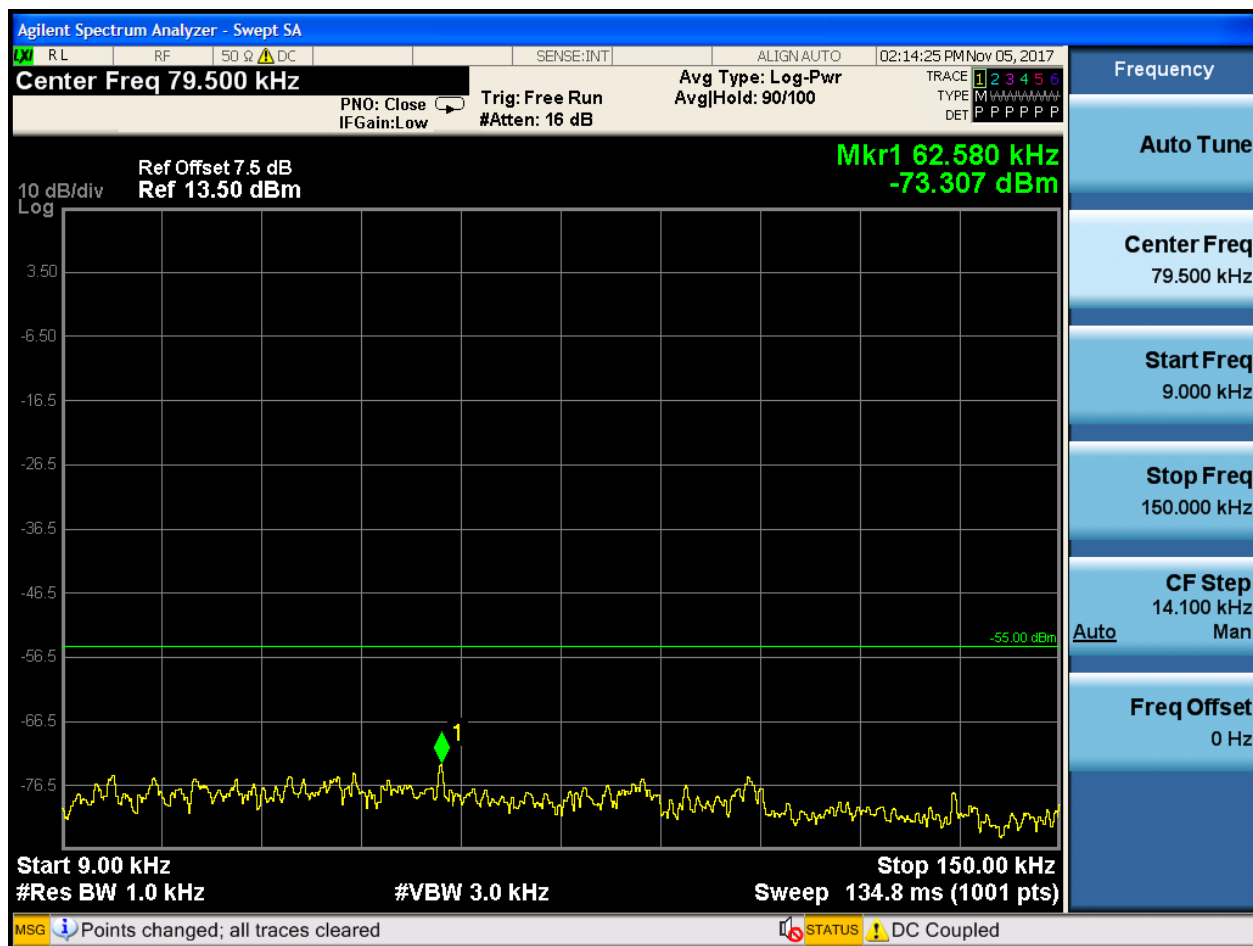


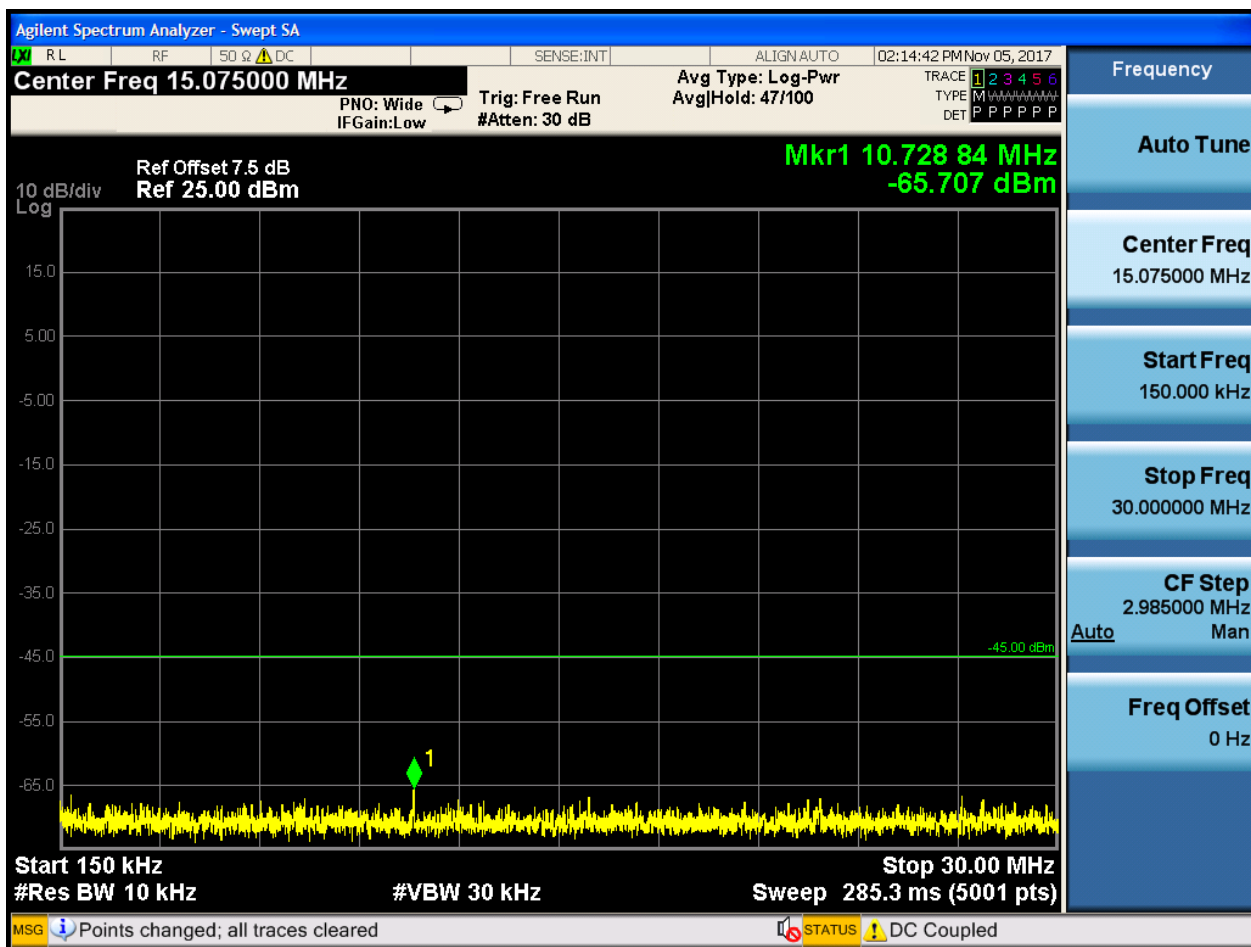


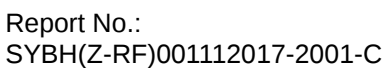


6.1.1.2.4.2 Test Channel = MCH

6.1.1.2.4.2.1 Test RB = RB1#0



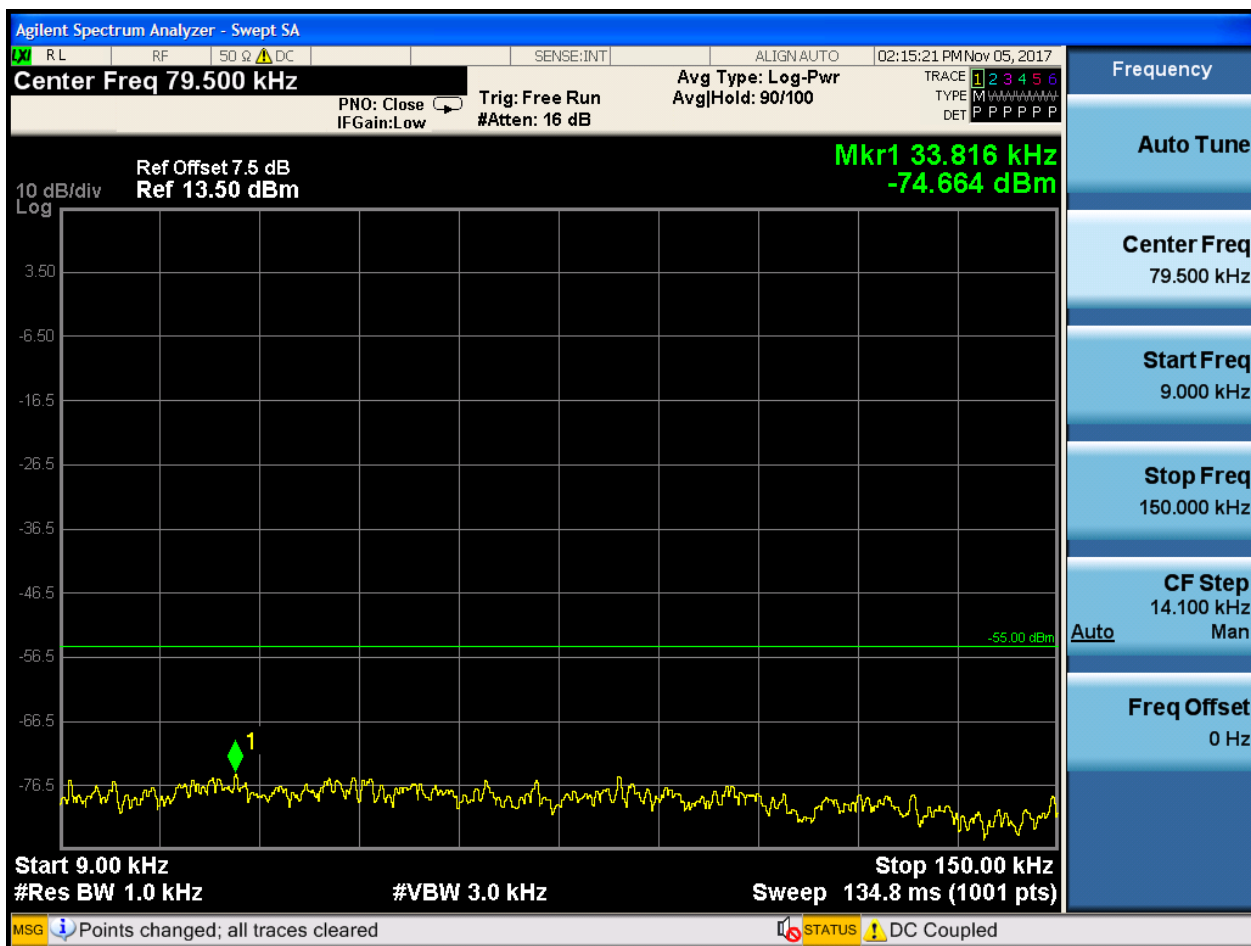


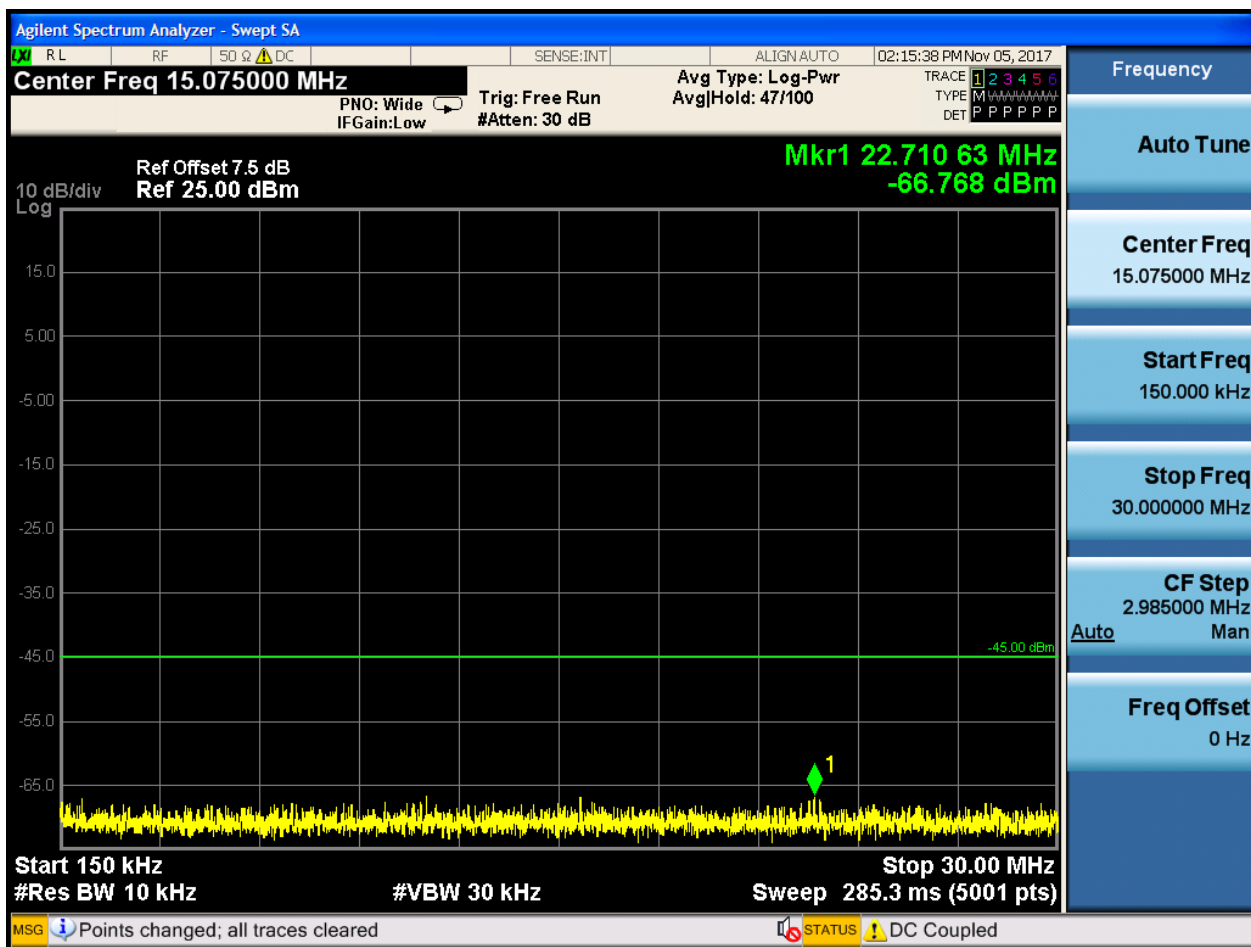


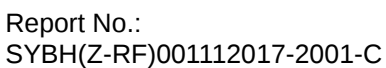


6.1.1.2.4.3 Test Channel = HCH

6.1.1.2.4.3.1 Test RB = RB1#0







7Appendix_G: Field Strength of Spurious Radiation

Note: We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, RBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, RBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

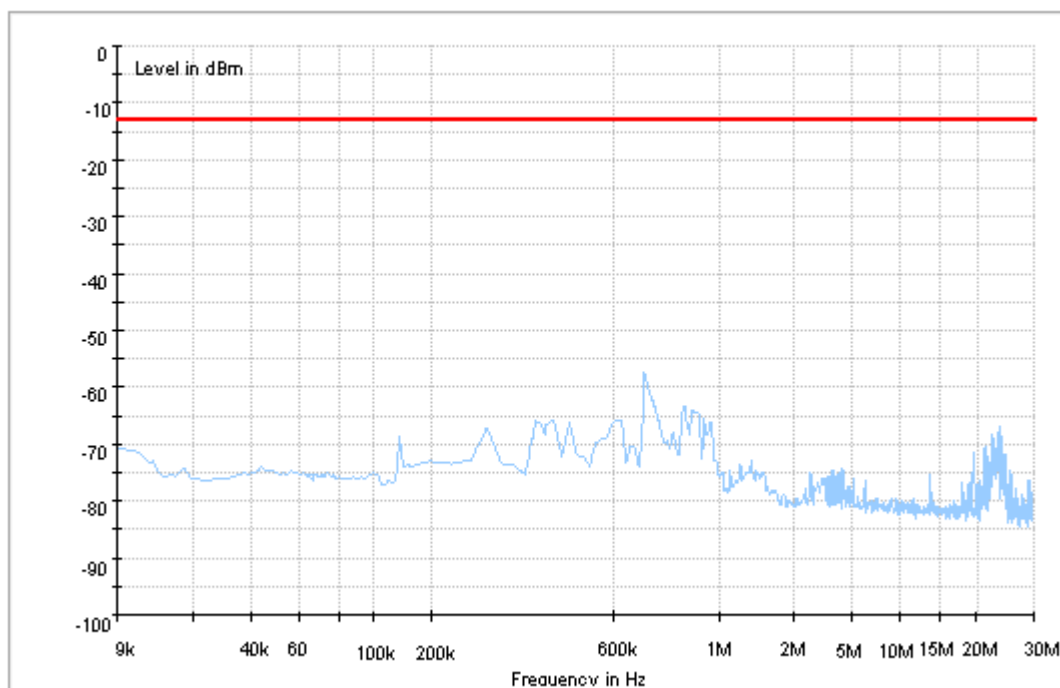
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

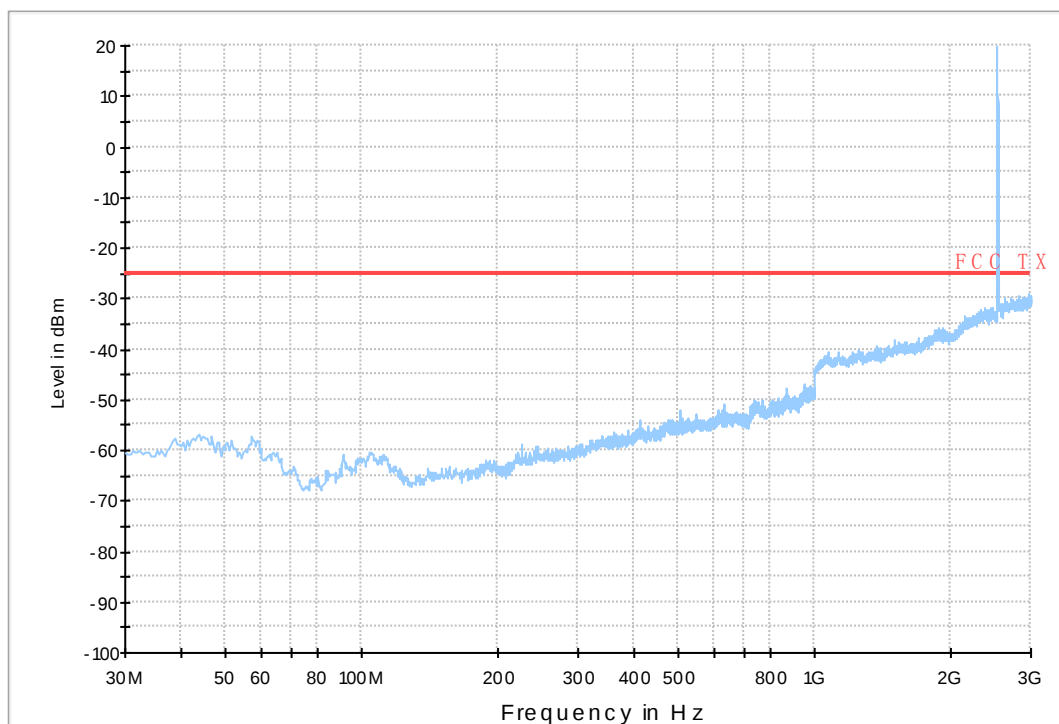
7.1 For LTE

7.1.1 Test Band = BAND7_ANT1

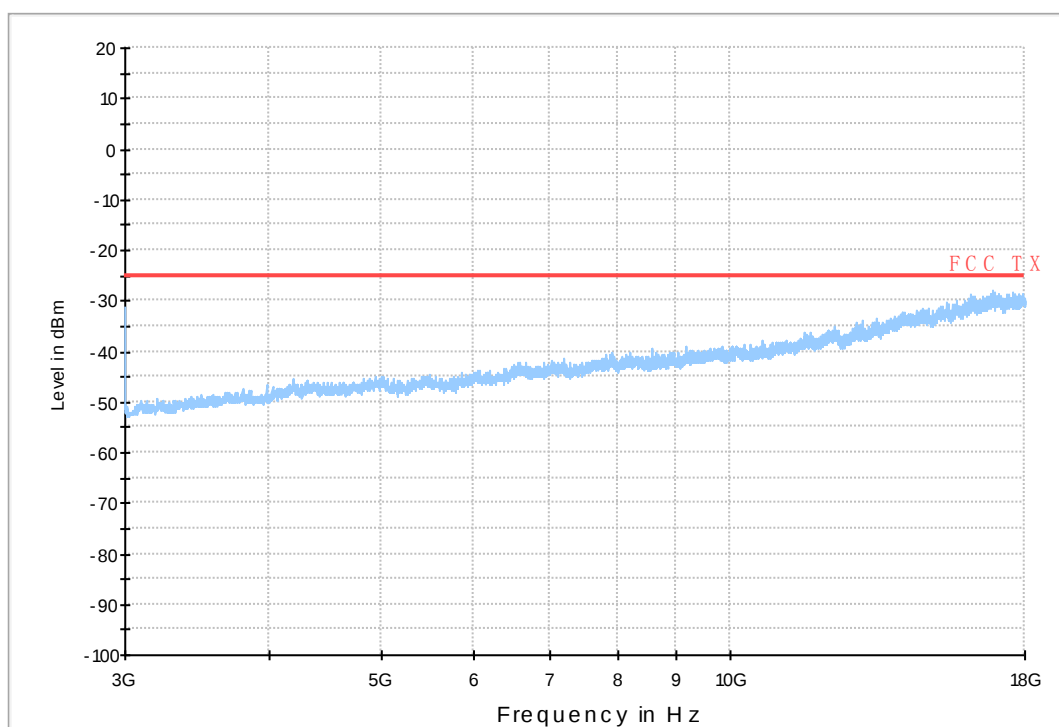
7.1.1.1 Test Bandwidth = 5

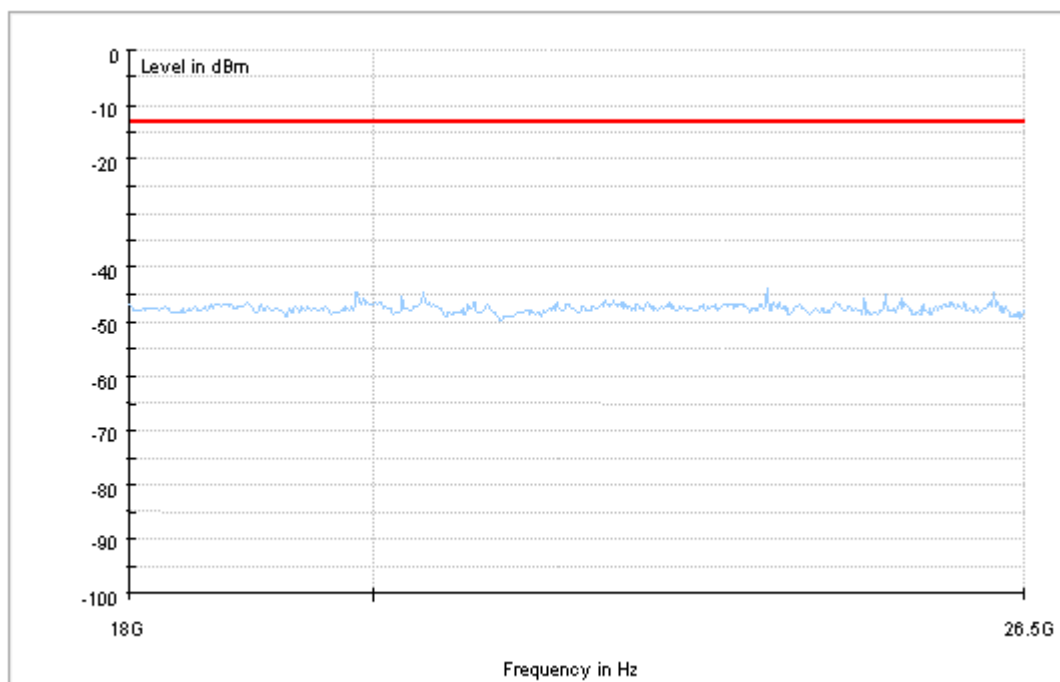


RSE-TX-DIRECTOR LTE 7 38 41_L

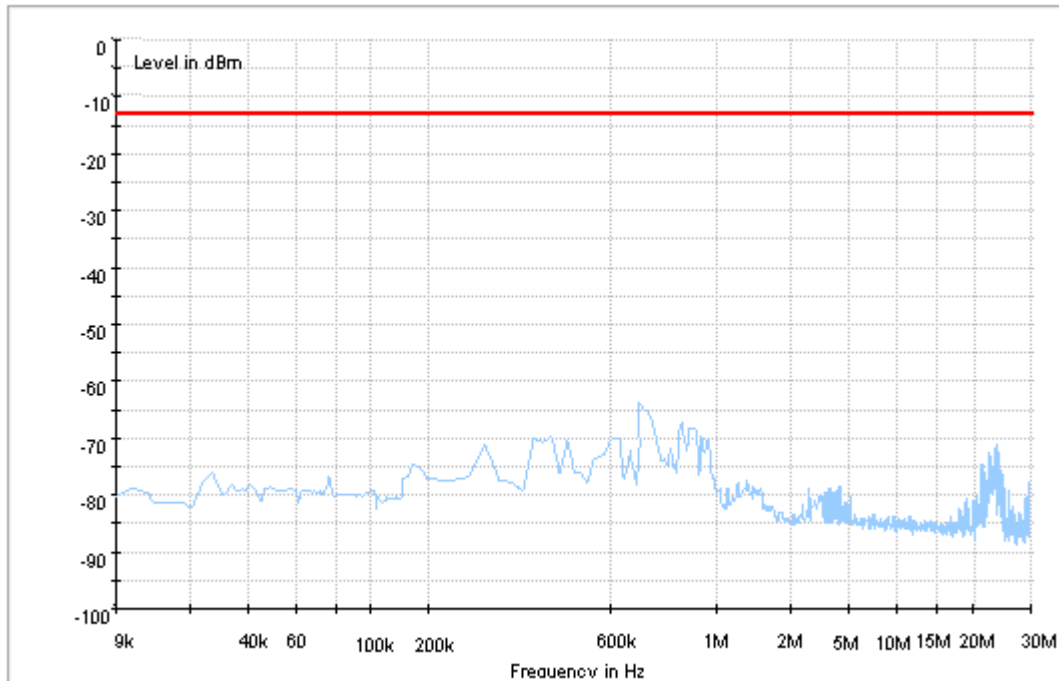


RSE-TX-DIRECTOR LTE7 38 41_H

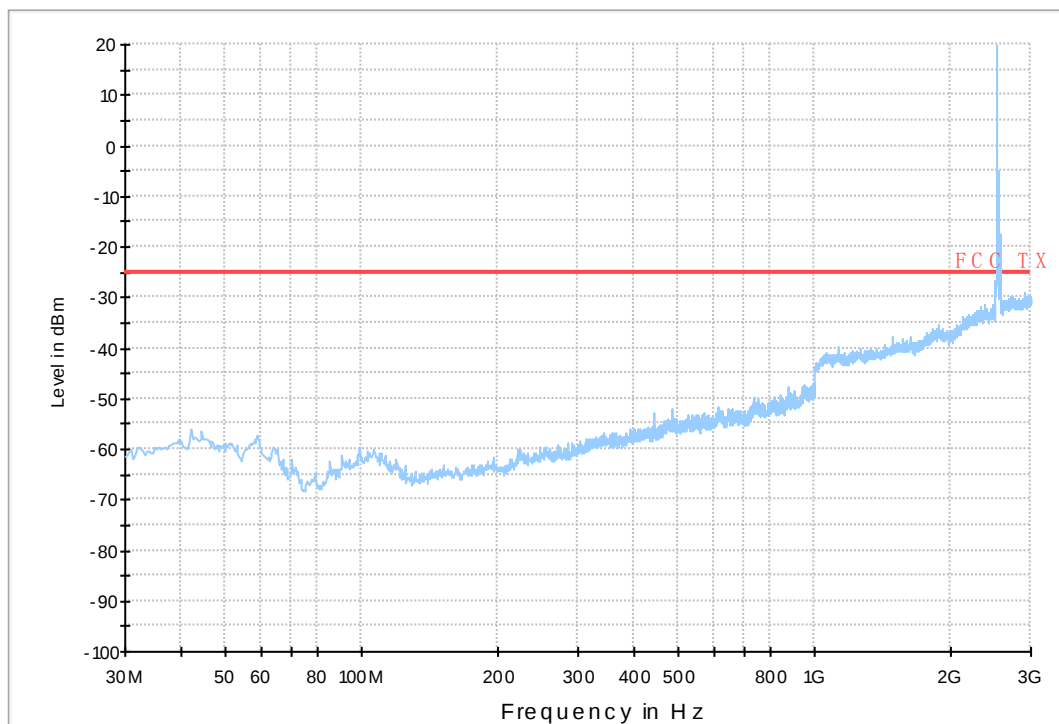




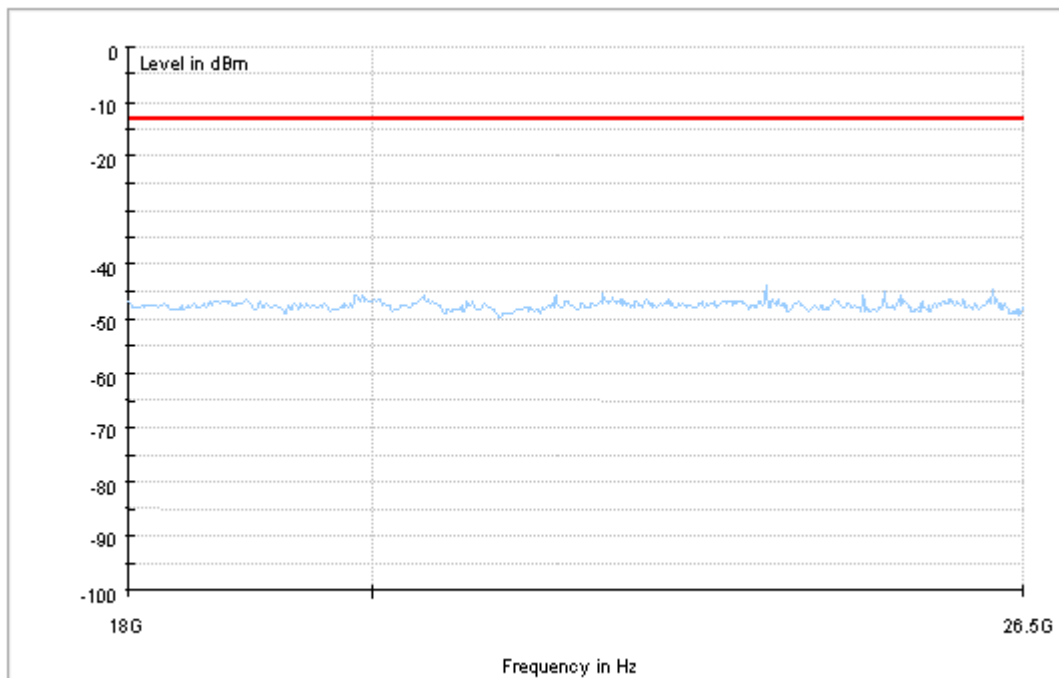
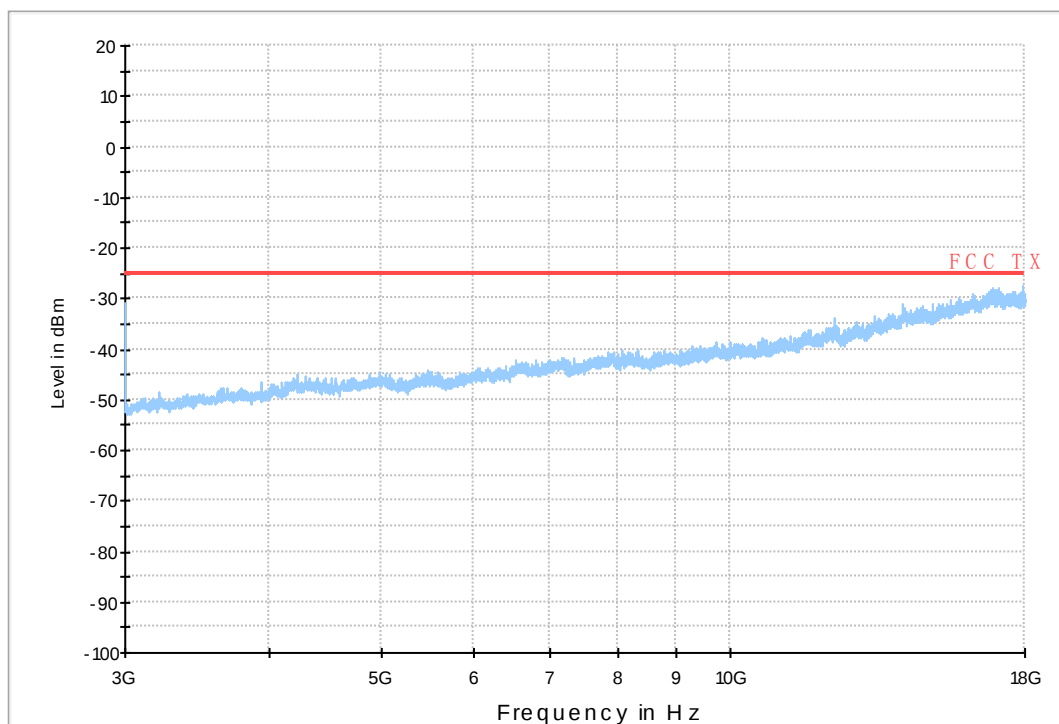
7.1.1.2 Test Bandwidth = 20



RSE-TX-DIRECTOR LTE 7 38 41_L

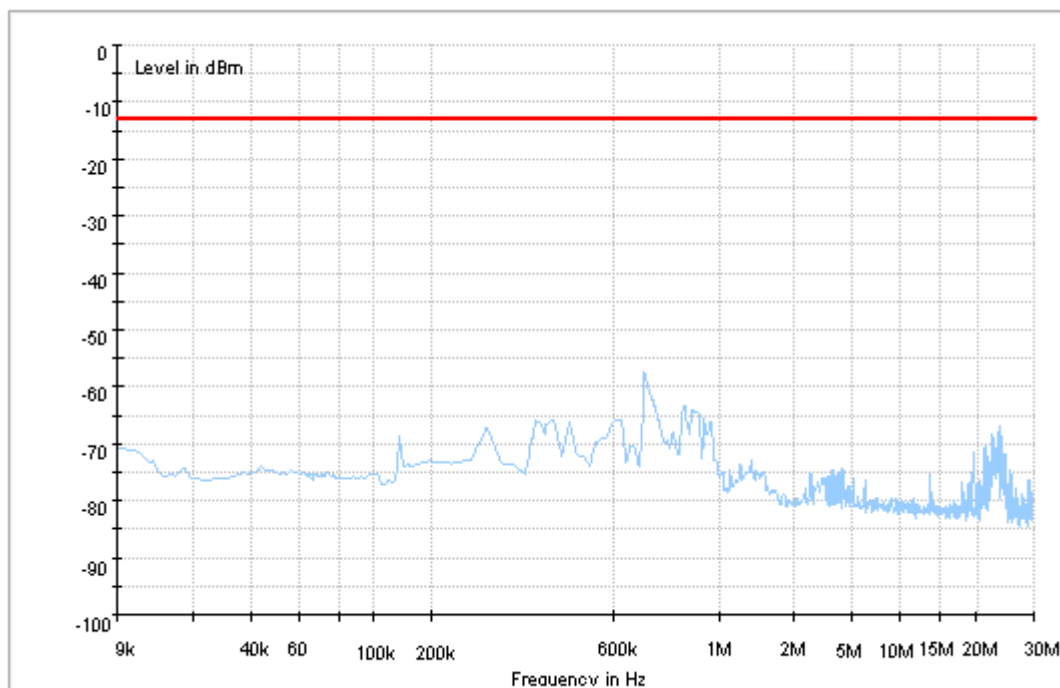


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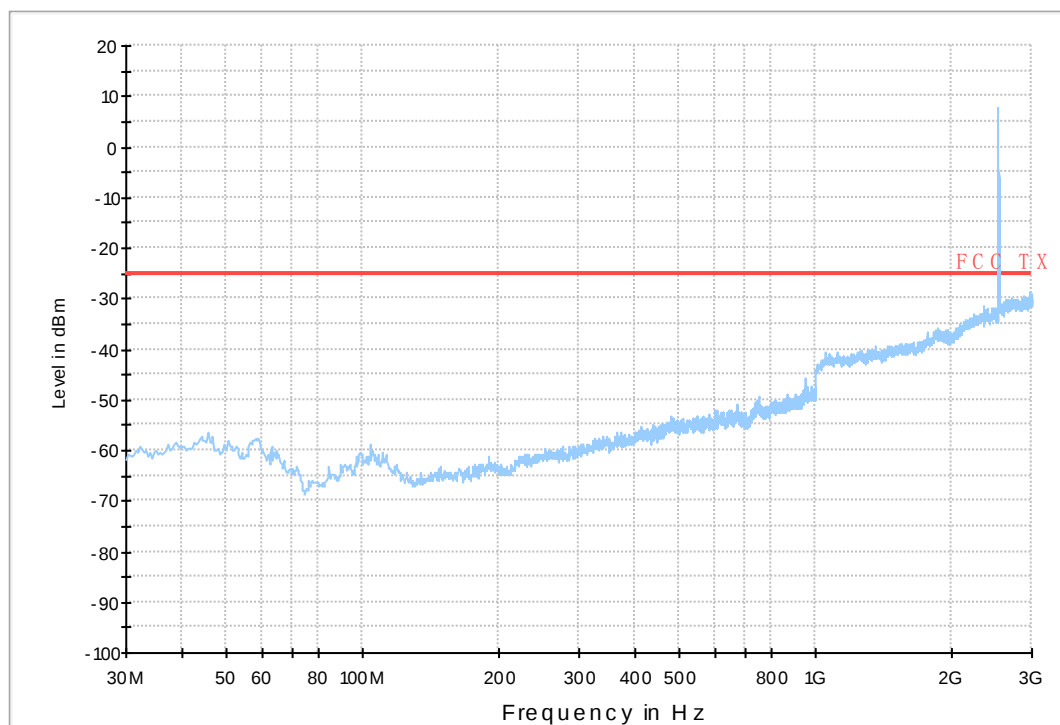


7.2.1 Test Band = BAND7_ANT2

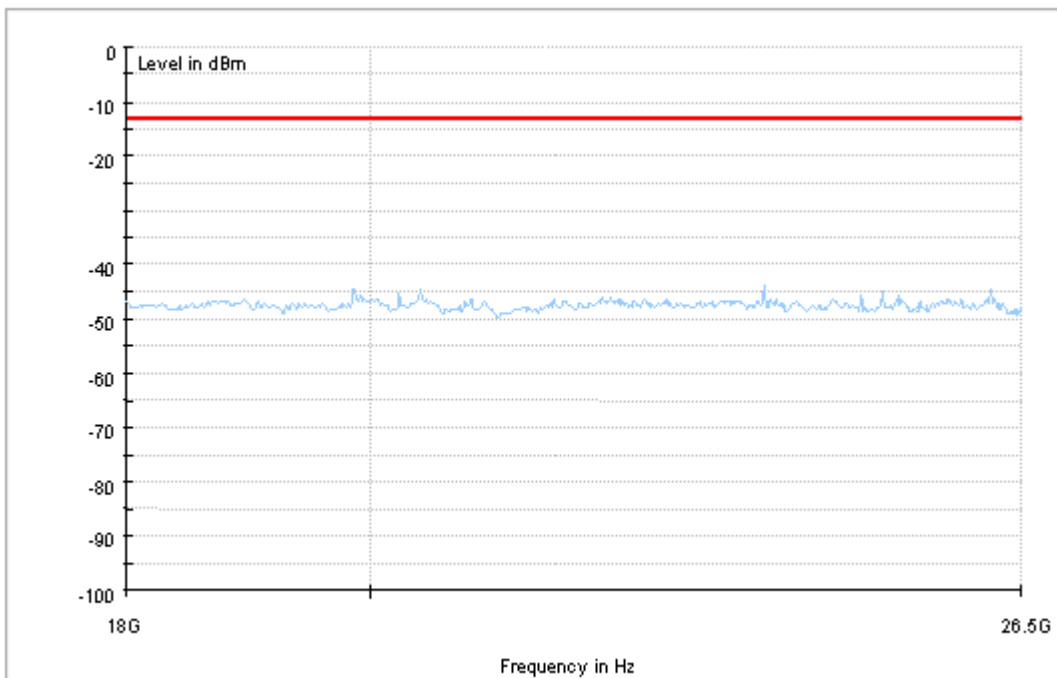
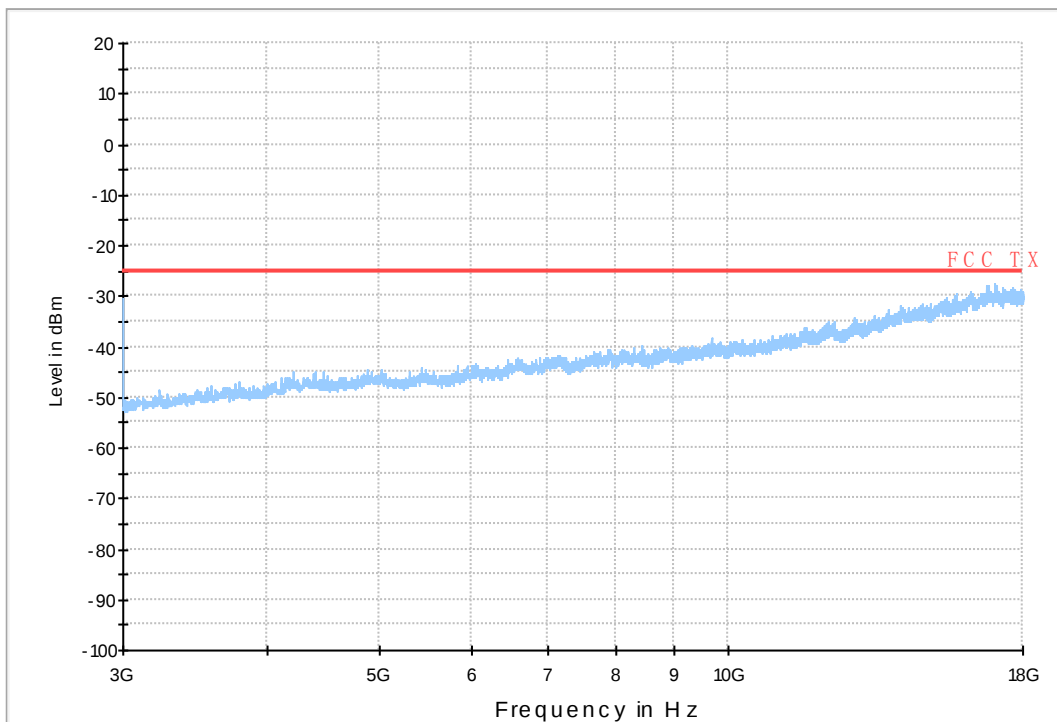
7.2.1.1 Test Bandwidth = 5



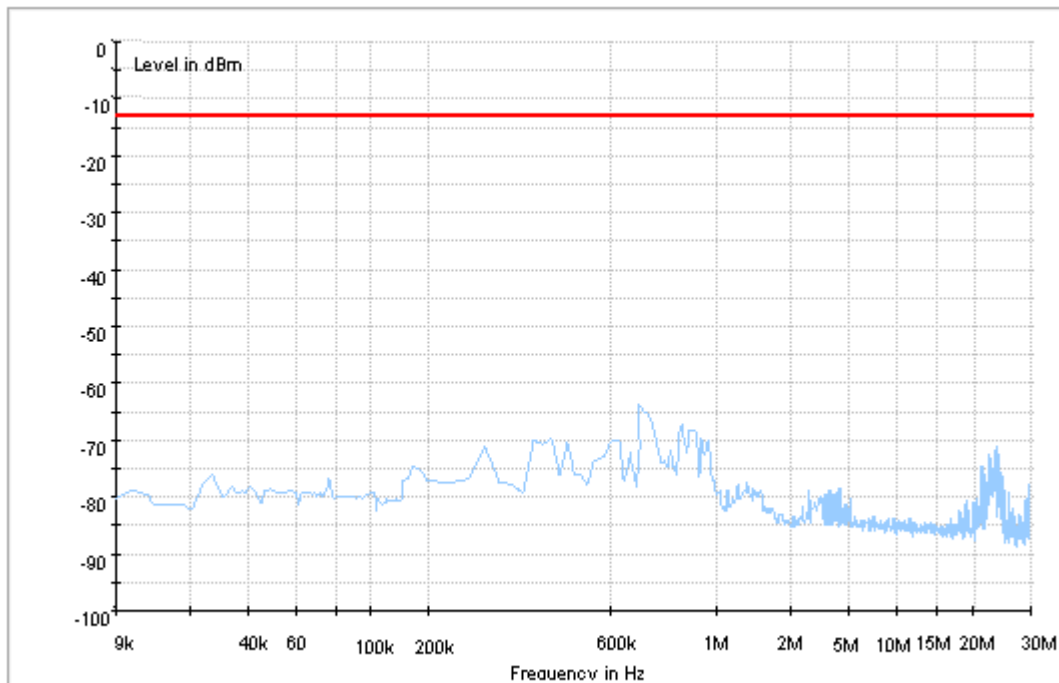
RSE-TX-DIRECTOR LTE 7 38 41_L



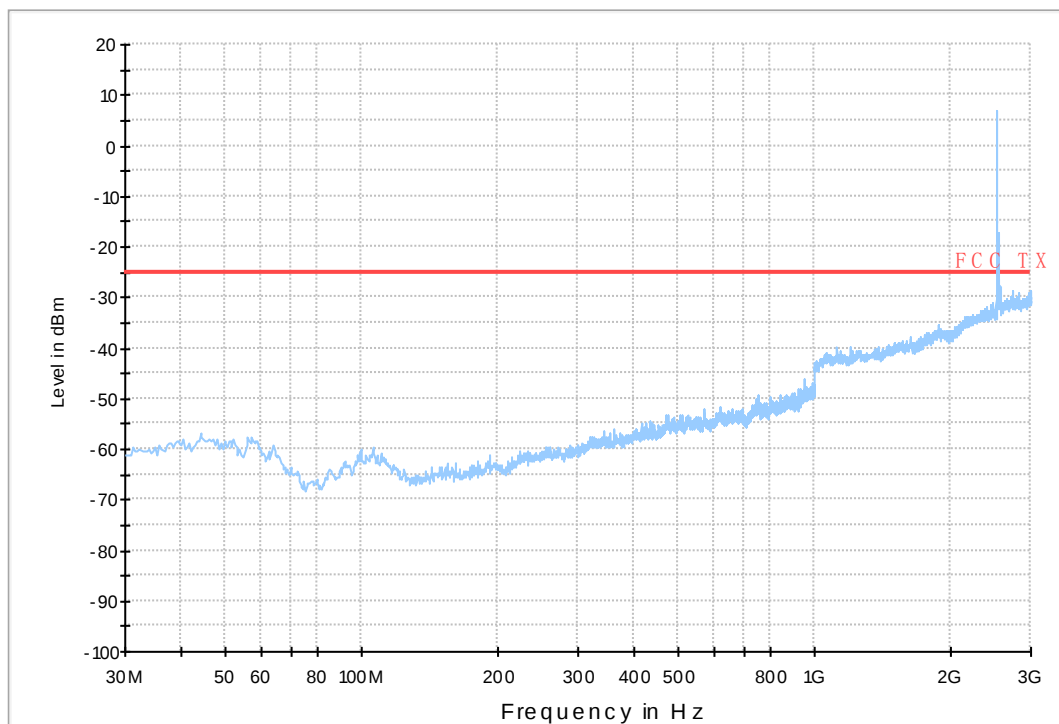
RSE-TX-DIRECTOR LTE7 38 41_H



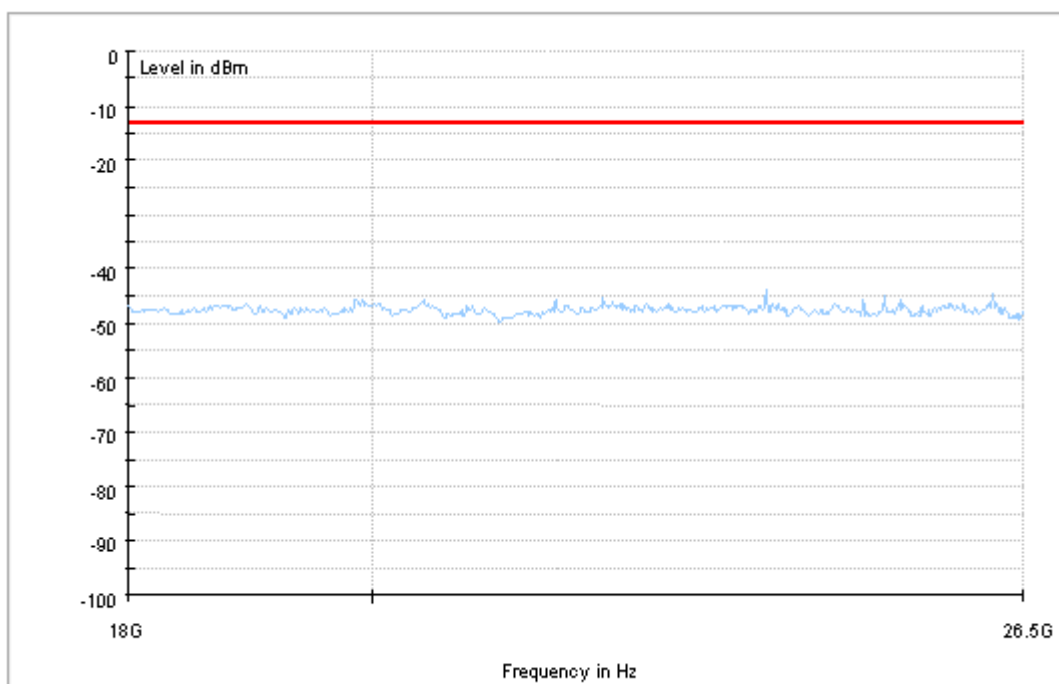
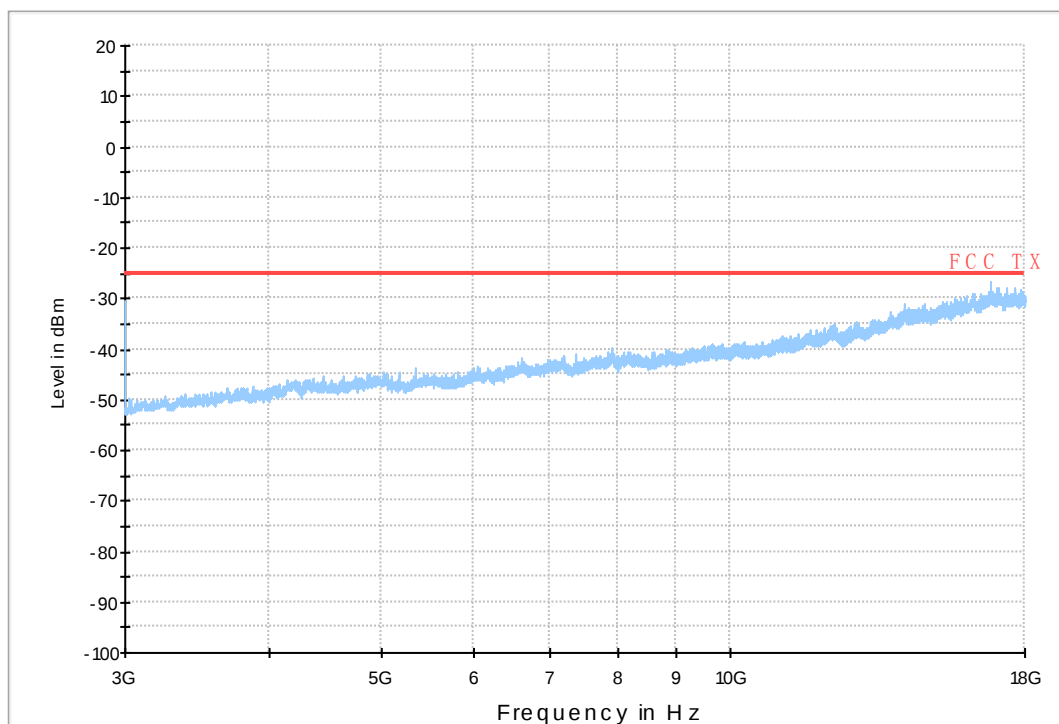
7.2.1.2 Test Bandwidth = 20



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8Appendix_H: Frequency Stability

8.1 For LTE

8.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
BAND7	LTE/TM1	5	LCH	TN	VL	-0.39	-0.00016	PASS
					VN	-0.67	-0.00027	PASS
					VH	-3.81	-0.00152	PASS
			MCH	TN	VL	-0.66	-0.00026	PASS
					VN	3.45	0.00136	PASS
					VH	3.3	0.0013	PASS
			HCH	TN	VL	-4.63	-0.0018	PASS
					VN	2.7	0.00105	PASS
					VH	1.13	0.00044	PASS
		10	LCH	TN	VL	0.37	0.00015	PASS
					VN	-3.56	-0.00142	PASS
					VH	-0.26	-0.0001	PASS
			MCH	TN	VL	0.93	0.00037	PASS
					VN	-1.39	-0.00055	PASS
					VH	-0.64	-0.00025	PASS
			HCH	TN	VL	-1.56	-0.00061	PASS
					VN	-0.7	-0.00027	PASS
					VH	-0.79	-0.00031	PASS
		15	LCH	TN	VL	0.77	0.00031	PASS
					VN	-0.89	-0.00035	PASS
					VH	2.33	0.00093	PASS
			MCH	TN	VL	1.44	0.00057	PASS
					VN	0.67	0.00026	PASS
					VH	0.4	0.00016	PASS
			HCH	TN	VL	-1.03	-0.0004	PASS
					VN	-2.22	-0.00087	PASS
					VH	-1.67	-0.00065	PASS
		20	LCH	TN	VL	-0.3	-0.00012	PASS
					VN	-1.42	-0.00057	PASS
					VH	-0.21	-0.00008	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
	LTE/TM2		MCH	TN	VL	1.29	0.00051	PASS
					VN	-1.5	-0.00059	PASS
					VH	0.57	0.00022	PASS
			HCH	TN	VL	1.06	0.00041	PASS
					VN	0.09	0.00004	PASS
					VH	0.24	0.00009	PASS
		5	LCH	TN	VL	-4.78	-0.00191	PASS
					VN	-2.05	-0.00082	PASS
					VH	1.2	0.00048	PASS
			MCH	TN	VL	-0.13	-0.00005	PASS
					VN	2.06	0.00081	PASS
					VH	1.95	0.00077	PASS
			HCH	TN	VL	0.92	0.00036	PASS
					VN	-2.07	-0.00081	PASS
					VH	0.63	0.00025	PASS
		10	LCH	TN	VL	-1.03	-0.00041	PASS
					VN	-2.56	-0.00102	PASS
					VH	-1.59	-0.00063	PASS
			MCH	TN	VL	-0.3	-0.00012	PASS
					VN	1.53	0.0006	PASS
					VH	-0.37	-0.00015	PASS
			HCH	TN	VL	-3.73	-0.00145	PASS
					VN	0.34	0.00013	PASS
					VH	0.37	0.00014	PASS
		15	LCH	TN	VL	0.14	0.00006	PASS
					VN	-0.8	-0.00032	PASS
					VH	-0.8	-0.00032	PASS
			MCH	TN	VL	-1.77	-0.0007	PASS
					VN	0.21	0.00008	PASS
					VH	-1.53	-0.0006	PASS
			HCH	TN	VL	-0.31	-0.00012	PASS
					VN	-3.16	-0.00123	PASS
					VH	0.56	0.00022	PASS
		20	LCH	TN	VL	-0.96	-0.00038	PASS
					VN	-1.03	-0.00041	PASS
					VH	0.51	0.0002	PASS
			MCH	TN	VL	-1.47	-0.00058	PASS
					VN	-1.26	-0.0005	PASS
					VH	-1.26	-0.0005	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			HCH	TN	VH	1.63	0.00064	PASS
					VL	-1.69	-0.00066	PASS
					VN	0.64	0.00025	PASS
					VH	-1.7	-0.00066	PASS

8.1.2 Frequency Error vs. Temperature:

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
BAND7	LTE/TM1	5	LCH	VN	-30	-2.82	-0.00113	PASS
					-20	-3.5	-0.0014	PASS
					-10	0.09	0.00004	PASS
					0	-5.54	-0.00221	PASS
					10	-4.26	-0.0017	PASS
					20	-0.39	-0.00016	PASS
					30	1.57	0.00063	PASS
					40	-6.55	-0.00262	PASS
					50	-0.82	-0.00033	PASS
			MCH	VN	-30	1.32	0.00052	PASS
					-20	0.03	0.00001	PASS
					-10	-1.92	-0.00076	PASS
					0	-1.7	-0.00067	PASS
					10	-1.77	-0.0007	PASS
					20	-1.75	-0.00069	PASS
					30	-0.53	-0.00021	PASS
					40	-0.17	-0.00007	PASS
					50	1.32	0.00052	PASS
			HCH	VN	-30	-0.09	-0.00004	PASS
					-20	-3.58	-0.00139	PASS
					-10	3.52	0.00137	PASS
					0	-3.6	-0.0014	PASS
					10	-2.09	-0.00081	PASS
					20	-0.7	-0.00027	PASS
					30	-1.9	-0.00074	PASS
					40	-1.83	-0.00071	PASS
					50	1.65	0.00064	PASS
		10	LCH	VN	-30	-0.24	-0.0001	PASS
					-20	-0.14	-0.00006	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-10	-2.66	-0.00106	PASS
					0	-2.79	-0.00111	PASS
					10	2.68	0.00107	PASS
					20	0.47	0.00019	PASS
					30	1.07	0.00043	PASS
					40	-15.46	-0.00617	PASS
					50	-6.34	-0.00253	PASS
			MCH	VN	-30	1.54	0.00061	PASS
					-20	-1.3	-0.00051	PASS
					-10	-3.6	-0.00142	PASS
					0	-2.17	-0.00086	PASS
					10	-3.59	-0.00142	PASS
					20	-3.83	-0.00151	PASS
					30	-0.62	-0.00024	PASS
					40	0.53	0.00021	PASS
					50	-3.76	-0.00148	PASS
			HCH	VN	-30	-0.89	-0.00035	PASS
					-20	-3.13	-0.00122	PASS
					-10	-0.43	-0.00017	PASS
					0	-13.5	-0.00526	PASS
					10	-1.43	-0.00056	PASS
					20	-5.76	-0.00225	PASS
					30	0.11	0.00004	PASS
					40	-0.49	-0.00019	PASS
					50	-0.4	-0.00016	PASS
		15	LCH	VN	-30	3.43	0.00137	PASS
					-20	0.41	0.00016	PASS
					-10	-0.49	-0.0002	PASS
					0	-0.94	-0.00037	PASS
					10	-0.09	-0.00004	PASS
					20	-0.17	-0.00007	PASS
					30	-2.78	-0.00111	PASS
					40	0.31	0.00012	PASS
					50	1.65	0.00066	PASS
			MCH	VN	-30	-1.04	-0.00041	PASS
					-20	1.8	0.00071	PASS
					-10	2.96	0.00117	PASS
					0	1.54	0.00061	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					10	0.49	0.00019	PASS
					20	-0.82	-0.00032	PASS
					30	0.72	0.00028	PASS
					40	-0.37	-0.00015	PASS
					50	-0.37	-0.00015	PASS
			HCH	VN	-30	-1.27	-0.0005	PASS
					-20	0.86	0.00034	PASS
					-10	-0.19	-0.00007	PASS
					0	0.31	0.00012	PASS
					10	-2.36	-0.00092	PASS
					20	1.2	0.00047	PASS
					30	2.1	0.00082	PASS
					40	2.17	0.00085	PASS
					50	-3.83	-0.00149	PASS
		20	LCH	VN	-30	0.54	0.00022	PASS
					-20	0.93	0.00037	PASS
					-10	1.2	0.00048	PASS
					0	-1.83	-0.00073	PASS
					10	-0.53	-0.00021	PASS
					20	-0.7	-0.00028	PASS
					30	-0.64	-0.00025	PASS
					40	-1.22	-0.00049	PASS
					50	-1.32	-0.00053	PASS
			MCH	VN	-30	1.23	0.00049	PASS
					-20	0.82	0.00032	PASS
					-10	0.03	0.00001	PASS
					0	-0.17	-0.00007	PASS
					10	-0.16	-0.00006	PASS
					20	3.09	0.00122	PASS
					30	-0.36	-0.00014	PASS
					40	-2.25	-0.00089	PASS
					50	-3.33	-0.00131	PASS
			HCH	VN	-30	-0.06	-0.00002	PASS
					-20	0.21	0.00008	PASS
					-10	-1.26	-0.00049	PASS
					0	-0.21	-0.00008	PASS
					10	-1.72	-0.00067	PASS
					20	-0.62	-0.00024	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
	LTE/TM2	5			30	-3.29	-0.00129	PASS
					40	0.49	0.00019	PASS
					50	-1.73	-0.00068	PASS
			LCH	VN	-30	0.6	0.00024	PASS
					-20	1.12	0.00045	PASS
					-10	-1.44	-0.00058	PASS
					0	-2.19	-0.00088	PASS
					10	-0.7	-0.00028	PASS
					20	-4.16	-0.00166	PASS
					30	-1.93	-0.00077	PASS
					40	-5.56	-0.00222	PASS
					50	-4.16	-0.00166	PASS
			MCH	VN	-30	-0.86	-0.00034	PASS
					-20	-1.3	-0.00051	PASS
					-10	-1.76	-0.00069	PASS
					0	0.64	0.00025	PASS
					10	-0.92	-0.00036	PASS
					20	-3.91	-0.00154	PASS
					30	-0.56	-0.00022	PASS
					40	-0.89	-0.00035	PASS
					50	-2.68	-0.00106	PASS
			HCH	VN	-30	-2.62	-0.00102	PASS
					-20	-4.82	-0.00188	PASS
					-10	-1.36	-0.00053	PASS
					0	-1.39	-0.00054	PASS
					10	1.34	0.00052	PASS
					20	-0.29	-0.00011	PASS
					30	1.56	0.00061	PASS
					40	-3.92	-0.00153	PASS
					50	1.42	0.00055	PASS
		10	LCH	VN	-30	0.33	0.00013	PASS
					-20	1.77	0.00071	PASS
					-10	-0.01	0	PASS
					0	1.99	0.00079	PASS
					10	-9.11	-0.00364	PASS
					20	0.69	0.00028	PASS
					30	-2.99	-0.00119	PASS
					40	-1.53	-0.00061	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			MCH	VN	50	-4.39	-0.00175	PASS
					-30	-0.92	-0.00036	PASS
					-20	-0.03	-0.00001	PASS
					-10	0.62	0.00024	PASS
					0	3.03	0.0012	PASS
					10	1.52	0.0006	PASS
					20	-1.96	-0.00077	PASS
					30	-0.39	-0.00015	PASS
					40	-0.62	-0.00024	PASS
					50	1.44	0.00057	PASS
			HCH	VN	-30	1.14	0.00044	PASS
					-20	-1.12	-0.00044	PASS
					-10	0.07	0.00003	PASS
					0	0.09	0.00004	PASS
					10	0	0	PASS
					20	1.23	0.00048	PASS
					30	-0.97	-0.00038	PASS
					40	-3.98	-0.00155	PASS
					50	1.4	0.00055	PASS
		15	LCH	VN	-30	-0.84	-0.00033	PASS
					-20	-1.37	-0.00055	PASS
					-10	-16.12	-0.00643	PASS
					0	0.21	0.00008	PASS
					10	1.39	0.00055	PASS
					20	0.69	0.00028	PASS
					30	-0.9	-0.00036	PASS
					40	-0.33	-0.00013	PASS
					50	0.4	0.00016	PASS
			MCH	VN	-30	2.57	0.00101	PASS
					-20	0.84	0.00033	PASS
					-10	2.93	0.00116	PASS
					0	-0.41	-0.00016	PASS
					10	-0.49	-0.00019	PASS
					20	-5.01	-0.00198	PASS
					30	-0.33	-0.00013	PASS
					40	-0.41	-0.00016	PASS
					50	0.33	0.00013	PASS
			HCH	VN	-30	-2.2	-0.00086	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-20	-1.9	-0.00074	PASS
					-10	0.69	0.00027	PASS
					0	-2.12	-0.00083	PASS
					10	-1.5	-0.00059	PASS
					20	-0.41	-0.00016	PASS
					30	-4.38	-0.00171	PASS
					40	-1.02	-0.0004	PASS
					50	-1.42	-0.00055	PASS
		20	LCH	VN	-30	0.6	0.00024	PASS
					-20	0.1	0.00004	PASS
					-10	1.39	0.00055	PASS
					0	0.24	0.0001	PASS
					10	-2.26	-0.0009	PASS
					20	-1.14	-0.00045	PASS
					30	1.2	0.00048	PASS
					40	-2.17	-0.00086	PASS
					50	-3.62	-0.00144	PASS
			MCH	VN	-30	-0.73	-0.00029	PASS
					-20	-0.89	-0.00035	PASS
					-10	-1.12	-0.00044	PASS
					0	-0.54	-0.00021	PASS
					10	2.22	0.00088	PASS
					20	-1.79	-0.00071	PASS
					30	-0.36	-0.00014	PASS
					40	1.06	0.00042	PASS
					50	-0.47	-0.00019	PASS
			HCH	VN	-30	-0.29	-0.00011	PASS
					-20	0.5	0.0002	PASS
					-10	-1.04	-0.00041	PASS
					0	1.36	0.00053	PASS
					10	-0.03	-0.00001	PASS
					20	-2.59	-0.00101	PASS
					30	-2.93	-0.00114	PASS
					40	-2.1	-0.00082	PASS
					50	-0.5	-0.0002	PASS

END