

# 1. Frequency Stability

## 1.1 B48\_5MHz

### 1.1.1 Test Result

Band: 48 / Bandwidth: 5MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VAC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	3552.5	25	0	20	102	-2.890	-0.0008	-2.5 to 2.5	Pass
					120	-8.326	-0.0023	-2.5 to 2.5	Pass
					138	-2.718	-0.0008	-2.5 to 2.5	Pass
				-30	120	-6.008	-0.0017	-2.5 to 2.5	Pass
					-20	120	-10.843	-0.0031	-2.5 to 2.5
				-10	120	-7.410	-0.0021	-2.5 to 2.5	Pass
					0	120	-12.345	-0.0035	-2.5 to 2.5
				10	120	-6.967	-0.0020	-2.5 to 2.5	Pass
				30	120	-7.639	-0.0022	-2.5 to 2.5	Pass
				40	120	-8.597	-0.0024	-2.5 to 2.5	Pass
	50	120	-11.444	-0.0032	-2.5 to 2.5	Pass			
	3625	25	0	20	102	-8.254	-0.0023	-2.5 to 2.5	Pass
					120	-8.898	-0.0025	-2.5 to 2.5	Pass
					138	-6.852	-0.0019	-2.5 to 2.5	Pass
				-30	120	-9.027	-0.0025	-2.5 to 2.5	Pass
					-20	120	-6.008	-0.0017	-2.5 to 2.5
				-10	120	-9.570	-0.0026	-2.5 to 2.5	Pass
					0	120	-7.310	-0.0020	-2.5 to 2.5
				10	120	-11.616	-0.0032	-2.5 to 2.5	Pass
				30	120	-7.625	-0.0021	-2.5 to 2.5	Pass
				40	120	-9.685	-0.0027	-2.5 to 2.5	Pass
	50	120	-11.230	-0.0031	-2.5 to 2.5	Pass			
	3697.5	25	0	20	102	-17.366	-0.0047	-2.5 to 2.5	Pass
					120	-21.515	-0.0058	-2.5 to 2.5	Pass
					138	-18.024	-0.0049	-2.5 to 2.5	Pass
				-30	120	-16.150	-0.0044	-2.5 to 2.5	Pass
					-20	120	-19.169	-0.0052	-2.5 to 2.5
				-10	120	-17.767	-0.0048	-2.5 to 2.5	Pass
					0	120	-17.524	-0.0047	-2.5 to 2.5
				10	120	-17.924	-0.0048	-2.5 to 2.5	Pass
30				120	-14.706	-0.0040	-2.5 to 2.5	Pass	
40				120	-15.078	-0.0041	-2.5 to 2.5	Pass	
50	120	-18.353	-0.0050	-2.5 to 2.5	Pass				
16QAM	3552.5	25	0	20	102	-8.769	-0.0025	-2.5 to 2.5	Pass
					120	-12.403	-0.0035	-2.5 to 2.5	Pass
					138	-3.233	-0.0009	-2.5 to 2.5	Pass
				-30	120	-8.469	-0.0024	-2.5 to 2.5	Pass
					-20	120	-10.529	-0.0030	-2.5 to 2.5
				-10	120	-7.639	-0.0022	-2.5 to 2.5	Pass
					0	120	-8.698	-0.0024	-2.5 to 2.5
				10	120	-6.523	-0.0018	-2.5 to 2.5	Pass
				30	120	-6.809	-0.0019	-2.5 to 2.5	Pass
				40	120	-5.322	-0.0015	-2.5 to 2.5	Pass
	50	120	-8.984	-0.0025	-2.5 to 2.5	Pass			
	3625	25	0	20	102	-7.181	-0.0020	-2.5 to 2.5	Pass
					120	-12.331	-0.0034	-2.5 to 2.5	Pass

					138	-11.587	-0.0032	-2.5 to 2.5	Pass			
				-30	120	-8.554	-0.0024	-2.5 to 2.5	Pass			
				-20	120	-13.232	-0.0037	-2.5 to 2.5	Pass			
				-10	120	-9.484	-0.0026	-2.5 to 2.5	Pass			
				0	120	-8.225	-0.0023	-2.5 to 2.5	Pass			
				10	120	-7.625	-0.0021	-2.5 to 2.5	Pass			
				30	120	-9.599	-0.0026	-2.5 to 2.5	Pass			
				40	120	-6.938	-0.0019	-2.5 to 2.5	Pass			
				50	120	-8.726	-0.0024	-2.5 to 2.5	Pass			
	3697.5	25	0	20	102	-13.132	-0.0036	-2.5 to 2.5	Pass			
120					-17.552	-0.0047	-2.5 to 2.5	Pass				
138					-17.953	-0.0049	-2.5 to 2.5	Pass				
							-30	120	-12.960	-0.0035	-2.5 to 2.5	Pass
							-20	120	-18.024	-0.0049	-2.5 to 2.5	Pass
							-10	120	-15.163	-0.0041	-2.5 to 2.5	Pass
							0	120	-20.270	-0.0055	-2.5 to 2.5	Pass
							10	120	-12.631	-0.0034	-2.5 to 2.5	Pass
							30	120	-13.332	-0.0036	-2.5 to 2.5	Pass
							40	120	-18.783	-0.0051	-2.5 to 2.5	Pass
							50	120	-17.996	-0.0049	-2.5 to 2.5	Pass

## 1.2 B48\_10MHz

### 1.2.1 Test Result

Band: 48 / Bandwidth: 10MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VAC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	3555	50	0	20	102	-11.730	-0.0033	-2.5 to 2.5	Pass
					120	-12.159	-0.0034	-2.5 to 2.5	Pass
					138	-10.571	-0.0030	-2.5 to 2.5	Pass
				-30	120	-6.838	-0.0019	-2.5 to 2.5	Pass
				-20	120	-9.041	-0.0025	-2.5 to 2.5	Pass
				-10	120	-5.994	-0.0017	-2.5 to 2.5	Pass
				0	120	-6.895	-0.0019	-2.5 to 2.5	Pass
				10	120	-10.529	-0.0030	-2.5 to 2.5	Pass
				30	120	-4.106	-0.0012	-2.5 to 2.5	Pass
				40	120	-5.765	-0.0016	-2.5 to 2.5	Pass
	50	120	-8.869	-0.0025	-2.5 to 2.5	Pass			
	3625	50	0	20	102	-17.552	-0.0048	-2.5 to 2.5	Pass
					120	-6.537	-0.0018	-2.5 to 2.5	Pass
					138	-5.064	-0.0014	-2.5 to 2.5	Pass
				-30	120	-4.506	-0.0012	-2.5 to 2.5	Pass
				-20	120	-10.228	-0.0028	-2.5 to 2.5	Pass
				-10	120	-10.085	-0.0028	-2.5 to 2.5	Pass
				0	120	-8.469	-0.0023	-2.5 to 2.5	Pass
				10	120	-11.272	-0.0031	-2.5 to 2.5	Pass
				30	120	-9.885	-0.0027	-2.5 to 2.5	Pass
				40	120	-7.811	-0.0022	-2.5 to 2.5	Pass
	50	120	-9.584	-0.0026	-2.5 to 2.5	Pass			
	3695	50	0	20	102	-11.330	-0.0031	-2.5 to 2.5	Pass
					120	-10.757	-0.0029	-2.5 to 2.5	Pass
					138	-18.125	-0.0049	-2.5 to 2.5	Pass
				-30	120	-13.862	-0.0038	-2.5 to 2.5	Pass
				-20	120	-10.042	-0.0027	-2.5 to 2.5	Pass
				-10	120	-13.976	-0.0038	-2.5 to 2.5	Pass
				0	120	-17.152	-0.0046	-2.5 to 2.5	Pass
				10	120	-13.390	-0.0036	-2.5 to 2.5	Pass
30				120	-12.202	-0.0033	-2.5 to 2.5	Pass	
40				120	-15.006	-0.0041	-2.5 to 2.5	Pass	
50	120	-11.559	-0.0031	-2.5 to 2.5	Pass				
16QAM	3555	50	0	20	102	-9.542	-0.0027	-2.5 to 2.5	Pass
					120	-5.536	-0.0016	-2.5 to 2.5	Pass
					138	-9.212	-0.0026	-2.5 to 2.5	Pass
				-30	120	-10.343	-0.0029	-2.5 to 2.5	Pass
				-20	120	-10.958	-0.0031	-2.5 to 2.5	Pass
				-10	120	-12.746	-0.0036	-2.5 to 2.5	Pass
				0	120	-6.294	-0.0018	-2.5 to 2.5	Pass
				10	120	-12.946	-0.0036	-2.5 to 2.5	Pass
				30	120	-6.938	-0.0020	-2.5 to 2.5	Pass
				40	120	-11.315	-0.0032	-2.5 to 2.5	Pass
	50	120	-7.124	-0.0020	-2.5 to 2.5	Pass			
	3625	50	0	20	102	-11.158	-0.0031	-2.5 to 2.5	Pass
					120	-7.410	-0.0020	-2.5 to 2.5	Pass
					138	-5.879	-0.0016	-2.5 to 2.5	Pass
-30				120	-7.710	-0.0021	-2.5 to 2.5	Pass	
-20	120	-1.602	-0.0004	-2.5 to 2.5	Pass				

				-10	120	-5.164	-0.0014	-2.5 to 2.5	Pass
				0	120	-6.523	-0.0018	-2.5 to 2.5	Pass
				10	120	-4.807	-0.0013	-2.5 to 2.5	Pass
				30	120	-10.786	-0.0030	-2.5 to 2.5	Pass
				40	120	-7.725	-0.0021	-2.5 to 2.5	Pass
				50	120	-9.212	-0.0025	-2.5 to 2.5	Pass
	3695	50	0	20	102	-18.668	-0.0051	-2.5 to 2.5	Pass
					120	-16.451	-0.0045	-2.5 to 2.5	Pass
					138	-13.990	-0.0038	-2.5 to 2.5	Pass
				-30	120	-15.392	-0.0042	-2.5 to 2.5	Pass
				-20	120	-17.009	-0.0046	-2.5 to 2.5	Pass
				-10	120	-17.338	-0.0047	-2.5 to 2.5	Pass
				0	120	-19.698	-0.0053	-2.5 to 2.5	Pass
				10	120	-20.428	-0.0055	-2.5 to 2.5	Pass
				30	120	-14.033	-0.0038	-2.5 to 2.5	Pass
				40	120	-17.538	-0.0047	-2.5 to 2.5	Pass
				50	120	-17.338	-0.0047	-2.5 to 2.5	Pass

### 1.3 B48\_15MHz

#### 1.3.1 Test Result

Band: 48 / Bandwidth: 15MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VAC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	3557.5	75	0	20	102	-6.480	-0.0018	-2.5 to 2.5	Pass
					120	-6.924	-0.0019	-2.5 to 2.5	Pass
					138	-10.901	-0.0031	-2.5 to 2.5	Pass
				-30	120	-6.294	-0.0018	-2.5 to 2.5	Pass
				-20	120	-11.716	-0.0033	-2.5 to 2.5	Pass
				-10	120	-7.753	-0.0022	-2.5 to 2.5	Pass
				0	120	-5.493	-0.0015	-2.5 to 2.5	Pass
				10	120	-8.068	-0.0023	-2.5 to 2.5	Pass
				30	120	-7.010	-0.0020	-2.5 to 2.5	Pass
				40	120	-6.337	-0.0018	-2.5 to 2.5	Pass
	50	120	-8.926	-0.0025	-2.5 to 2.5	Pass			
	3625	75	0	20	102	-14.949	-0.0041	-2.5 to 2.5	Pass
					120	-4.706	-0.0013	-2.5 to 2.5	Pass
					138	-10.085	-0.0028	-2.5 to 2.5	Pass
				-30	120	-5.965	-0.0016	-2.5 to 2.5	Pass
				-20	120	-9.999	-0.0028	-2.5 to 2.5	Pass
				-10	120	-9.484	-0.0026	-2.5 to 2.5	Pass
				0	120	-7.739	-0.0021	-2.5 to 2.5	Pass
				10	120	-7.567	-0.0021	-2.5 to 2.5	Pass
				30	120	-9.055	-0.0025	-2.5 to 2.5	Pass
				40	120	-4.792	-0.0013	-2.5 to 2.5	Pass
	50	120	-7.181	-0.0020	-2.5 to 2.5	Pass			
	3692.5	75	0	20	102	-8.898	-0.0024	-2.5 to 2.5	Pass
					120	-11.673	-0.0032	-2.5 to 2.5	Pass
					138	-6.709	-0.0018	-2.5 to 2.5	Pass
				-30	120	-5.422	-0.0015	-2.5 to 2.5	Pass
				-20	120	-16.680	-0.0045	-2.5 to 2.5	Pass
				-10	120	-17.924	-0.0049	-2.5 to 2.5	Pass
				0	120	-11.673	-0.0032	-2.5 to 2.5	Pass
				10	120	-13.518	-0.0037	-2.5 to 2.5	Pass
30				120	-14.505	-0.0039	-2.5 to 2.5	Pass	
40				120	-10.371	-0.0028	-2.5 to 2.5	Pass	
50	120	-7.854	-0.0021	-2.5 to 2.5	Pass				
16QAM	3557.5	75	0	20	102	-10.729	-0.0030	-2.5 to 2.5	Pass
					120	-11.015	-0.0031	-2.5 to 2.5	Pass
					138	-9.127	-0.0026	-2.5 to 2.5	Pass
				-30	120	-12.259	-0.0034	-2.5 to 2.5	Pass
				-20	120	-8.383	-0.0024	-2.5 to 2.5	Pass
				-10	120	-11.373	-0.0032	-2.5 to 2.5	Pass
				0	120	-9.656	-0.0027	-2.5 to 2.5	Pass
				10	120	-10.257	-0.0029	-2.5 to 2.5	Pass
				30	120	-13.475	-0.0038	-2.5 to 2.5	Pass
				40	120	-14.205	-0.0040	-2.5 to 2.5	Pass
	50	120	-11.787	-0.0033	-2.5 to 2.5	Pass			
	3625	75	0	20	102	-12.946	-0.0036	-2.5 to 2.5	Pass
					120	-8.683	-0.0024	-2.5 to 2.5	Pass
					138	-11.330	-0.0031	-2.5 to 2.5	Pass
-30				120	-10.486	-0.0029	-2.5 to 2.5	Pass	
-20	120	-11.172	-0.0031	-2.5 to 2.5	Pass				

				-10	120	-10.414	-0.0029	-2.5 to 2.5	Pass
				0	120	-12.116	-0.0033	-2.5 to 2.5	Pass
				10	120	-11.873	-0.0033	-2.5 to 2.5	Pass
				30	120	-4.764	-0.0013	-2.5 to 2.5	Pass
				40	120	-6.409	-0.0018	-2.5 to 2.5	Pass
				50	120	-12.245	-0.0034	-2.5 to 2.5	Pass
	3692.5	75	0	20	102	-12.603	-0.0034	-2.5 to 2.5	Pass
					120	-15.635	-0.0042	-2.5 to 2.5	Pass
					138	-14.434	-0.0039	-2.5 to 2.5	Pass
				-30	120	-14.491	-0.0039	-2.5 to 2.5	Pass
				-20	120	-11.745	-0.0032	-2.5 to 2.5	Pass
				-10	120	-14.091	-0.0038	-2.5 to 2.5	Pass
				0	120	-14.963	-0.0041	-2.5 to 2.5	Pass
				10	120	-20.914	-0.0057	-2.5 to 2.5	Pass
				30	120	-13.089	-0.0035	-2.5 to 2.5	Pass
				40	120	-25.420	-0.0069	-2.5 to 2.5	Pass
				50	120	-12.288	-0.0033	-2.5 to 2.5	Pass

## 1.4 B48\_20MHz

### 1.4.1 Test Result

Band: 48 / Bandwidth: 20MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VAC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	3560	100	0	20	102	-6.423	-0.0018	-2.5 to 2.5	Pass
					120	-7.796	-0.0022	-2.5 to 2.5	Pass
					138	-3.605	-0.0010	-2.5 to 2.5	Pass
				-30	120	-9.212	-0.0026	-2.5 to 2.5	Pass
				-20	120	-6.537	-0.0018	-2.5 to 2.5	Pass
				-10	120	-6.037	-0.0017	-2.5 to 2.5	Pass
				0	120	-7.539	-0.0021	-2.5 to 2.5	Pass
				10	120	-8.612	-0.0024	-2.5 to 2.5	Pass
				30	120	-8.082	-0.0023	-2.5 to 2.5	Pass
				40	120	-8.426	-0.0024	-2.5 to 2.5	Pass
	50	120	-8.540	-0.0024	-2.5 to 2.5	Pass			
	3625	100	0	20	102	-8.626	-0.0024	-2.5 to 2.5	Pass
					120	-10.600	-0.0029	-2.5 to 2.5	Pass
					138	-4.549	-0.0013	-2.5 to 2.5	Pass
				-30	120	-11.802	-0.0033	-2.5 to 2.5	Pass
				-20	120	-5.550	-0.0015	-2.5 to 2.5	Pass
				-10	120	-8.955	-0.0025	-2.5 to 2.5	Pass
				0	120	-5.536	-0.0015	-2.5 to 2.5	Pass
				10	120	-8.183	-0.0023	-2.5 to 2.5	Pass
				30	120	-10.929	-0.0030	-2.5 to 2.5	Pass
				40	120	-13.533	-0.0037	-2.5 to 2.5	Pass
	50	120	-9.356	-0.0026	-2.5 to 2.5	Pass			
	3690	100	0	20	102	-14.591	-0.0040	-2.5 to 2.5	Pass
					120	-18.854	-0.0051	-2.5 to 2.5	Pass
					138	-16.208	-0.0044	-2.5 to 2.5	Pass
				-30	120	-15.564	-0.0042	-2.5 to 2.5	Pass
				-20	120	-8.941	-0.0024	-2.5 to 2.5	Pass
				-10	120	-12.546	-0.0034	-2.5 to 2.5	Pass
				0	120	-8.812	-0.0024	-2.5 to 2.5	Pass
				10	120	-17.438	-0.0047	-2.5 to 2.5	Pass
30				120	-7.753	-0.0021	-2.5 to 2.5	Pass	
40				120	-11.659	-0.0032	-2.5 to 2.5	Pass	
50	120	-7.682	-0.0021	-2.5 to 2.5	Pass				
16QAM	3560	100	0	20	102	-12.403	-0.0035	-2.5 to 2.5	Pass
					120	-9.670	-0.0027	-2.5 to 2.5	Pass
					138	-8.583	-0.0024	-2.5 to 2.5	Pass
				-30	120	-9.756	-0.0027	-2.5 to 2.5	Pass
				-20	120	-18.568	-0.0052	-2.5 to 2.5	Pass
				-10	120	-13.018	-0.0037	-2.5 to 2.5	Pass
				0	120	-9.899	-0.0028	-2.5 to 2.5	Pass
				10	120	-9.098	-0.0026	-2.5 to 2.5	Pass
				30	120	-9.570	-0.0027	-2.5 to 2.5	Pass
				40	120	-20.571	-0.0058	-2.5 to 2.5	Pass
	50	120	-9.055	-0.0025	-2.5 to 2.5	Pass			
	3625	100	0	20	102	-16.251	-0.0045	-2.5 to 2.5	Pass
					120	-11.101	-0.0031	-2.5 to 2.5	Pass
					138	-9.699	-0.0027	-2.5 to 2.5	Pass
-30				120	-8.740	-0.0024	-2.5 to 2.5	Pass	
-20	120	-7.725	-0.0021	-2.5 to 2.5	Pass				

				-10	120	-4.835	-0.0013	-2.5 to 2.5	Pass
				0	120	-11.358	-0.0031	-2.5 to 2.5	Pass
				10	120	-10.886	-0.0030	-2.5 to 2.5	Pass
				30	120	-10.958	-0.0030	-2.5 to 2.5	Pass
				40	120	-8.512	-0.0023	-2.5 to 2.5	Pass
				50	120	-16.522	-0.0046	-2.5 to 2.5	Pass
	3690	100	0	20	102	-22.130	-0.0060	-2.5 to 2.5	Pass
					120	-34.204	-0.0093	-2.5 to 2.5	Pass
					138	-12.116	-0.0033	-2.5 to 2.5	Pass
				-30	120	-17.209	-0.0047	-2.5 to 2.5	Pass
				-20	120	-18.811	-0.0051	-2.5 to 2.5	Pass
				-10	120	-18.497	-0.0050	-2.5 to 2.5	Pass
				0	120	-29.197	-0.0079	-2.5 to 2.5	Pass
				10	120	-27.423	-0.0074	-2.5 to 2.5	Pass
				30	120	-33.417	-0.0091	-2.5 to 2.5	Pass
				40	120	-25.549	-0.0069	-2.5 to 2.5	Pass
				50	120	-14.920	-0.0040	-2.5 to 2.5	Pass

- End of the Appendix -