

5G NR N48

1. Frequency Stability

1.1 30k_SISO_10MHz

1.1.1 Test Result

5G NR n48 SCS=30kHz SISO 10MHz								
Modulation	Frequency (MHz)	RB Allocation	Temp. (°C)	Volt.	Freq. Error (Hz)	Freq. vs. rated (ppm)		Verdict
						Result	Limit	
DFT-s-OFDM QPSK	3624.99	Outer_Full	20	LV	-2.80	-0.0008	>=-2.5 & <=2.5	Pass
				HV	-10.30	-0.0028	>=-2.5 & <=2.5	Pass
			-30	NV	-16.60	-0.0046	>=-2.5 & <=2.5	Pass
			-20	NV	-8.60	-0.0024	>=-2.5 & <=2.5	Pass
			-10	NV	-10.20	-0.0028	>=-2.5 & <=2.5	Pass
			0	NV	-5.40	-0.0015	>=-2.5 & <=2.5	Pass
			10	NV	-9.60	-0.0026	>=-2.5 & <=2.5	Pass
			20	NV	-3.70	-0.0010	>=-2.5 & <=2.5	Pass
			30	NV	3.60	0.0010	>=-2.5 & <=2.5	Pass
			40	NV	-5.60	-0.0015	>=-2.5 & <=2.5	Pass
50	NV	-10.60	-0.0029	>=-2.5 & <=2.5	Pass			
DFT-s-OFDM 16 QAM	3624.99	Outer_Full	20	LV	12.00	0.0033	>=-2.5 & <=2.5	Pass
				HV	-12.90	-0.0036	>=-2.5 & <=2.5	Pass
			-30	NV	-13.70	-0.0038	>=-2.5 & <=2.5	Pass
			-20	NV	9.40	0.0026	>=-2.5 & <=2.5	Pass
			-10	NV	13.00	0.0036	>=-2.5 & <=2.5	Pass
			0	NV	-14.80	-0.0041	>=-2.5 & <=2.5	Pass
			10	NV	-9.90	-0.0027	>=-2.5 & <=2.5	Pass
			20	NV	-10.50	-0.0029	>=-2.5 & <=2.5	Pass
			30	NV	-5.60	-0.0015	>=-2.5 & <=2.5	Pass
			40	NV	6.60	0.0018	>=-2.5 & <=2.5	Pass
50	NV	-7.70	-0.0021	>=-2.5 & <=2.5	Pass			
DFT-s-OFDM 64 QAM	3624.99	Outer_Full	20	LV	4.90	0.0014	>=-2.5 & <=2.5	Pass
				HV	-6.20	-0.0017	>=-2.5 & <=2.5	Pass
			-30	NV	8.40	0.0023	>=-2.5 & <=2.5	Pass
			-20	NV	-4.20	-0.0012	>=-2.5 & <=2.5	Pass
			-10	NV	6.60	0.0018	>=-2.5 & <=2.5	Pass
			0	NV	-9.40	-0.0026	>=-2.5 & <=2.5	Pass
			10	NV	-7.10	-0.0020	>=-2.5 & <=2.5	Pass
			20	NV	-16.60	-0.0046	>=-2.5 & <=2.5	Pass
			30	NV	-9.70	-0.0027	>=-2.5 & <=2.5	Pass
			40	NV	-6.60	-0.0018	>=-2.5 & <=2.5	Pass
50	NV	10.00	0.0028	>=-2.5 & <=2.5	Pass			
DFT-s-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-4.70	-0.0013	>=-2.5 & <=2.5	Pass
				HV	-11.40	-0.0031	>=-2.5 & <=2.5	Pass
			-30	NV	-8.80	-0.0024	>=-2.5 & <=2.5	Pass
			-20	NV	-11.60	-0.0032	>=-2.5 & <=2.5	Pass
			-10	NV	-6.90	-0.0019	>=-2.5 & <=2.5	Pass
			0	NV	-16.70	-0.0046	>=-2.5 & <=2.5	Pass
			10	NV	-7.10	-0.0020	>=-2.5 & <=2.5	Pass
			20	NV	-4.50	-0.0012	>=-2.5 & <=2.5	Pass
			30	NV	16.10	0.0044	>=-2.5 & <=2.5	Pass
			40	NV	7.40	0.0020	>=-2.5 & <=2.5	Pass
50	NV	7.20	0.0020	>=-2.5 & <=2.5	Pass			
CP-OFDM QPSK	3624.99	Outer_Full	20	LV	-19.40	-0.0054	>=-2.5 & <=2.5	Pass
				HV	7.10	0.0020	>=-2.5 & <=2.5	Pass

			20	NV	-13.60	-0.0038	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-10.90	-0.0030	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-13.80	-0.0038	≥ -2.5 & ≤ 2.5	Pass
			50	NV	-17.00	-0.0047	≥ -2.5 & ≤ 2.5	Pass
DFT-s-OFDM 16 QAM	3624.99	Outer_Full	20	LV	-19.50	-0.0054	≥ -2.5 & ≤ 2.5	Pass
				HV	-18.00	-0.0050	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-17.50	-0.0048	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-9.10	-0.0025	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-15.80	-0.0044	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-20.70	-0.0057	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-16.20	-0.0045	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-9.80	-0.0027	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-16.90	-0.0047	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-12.90	-0.0036	≥ -2.5 & ≤ 2.5	Pass
50	NV	-30.30	-0.0084	≥ -2.5 & ≤ 2.5	Pass			
DFT-s-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-10.70	-0.0030	≥ -2.5 & ≤ 2.5	Pass
				HV	-16.70	-0.0046	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-11.90	-0.0033	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-15.80	-0.0044	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-17.90	-0.0049	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-5.90	-0.0016	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-18.50	-0.0051	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-18.30	-0.0050	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-21.00	-0.0058	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-13.60	-0.0038	≥ -2.5 & ≤ 2.5	Pass
50	NV	-13.60	-0.0038	≥ -2.5 & ≤ 2.5	Pass			
DFT-s-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-14.50	-0.0040	≥ -2.5 & ≤ 2.5	Pass
				HV	-10.00	-0.0028	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-25.80	-0.0071	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-17.80	-0.0049	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-8.30	-0.0023	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-15.60	-0.0043	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-14.80	-0.0041	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-12.40	-0.0034	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-15.90	-0.0044	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-20.30	-0.0056	≥ -2.5 & ≤ 2.5	Pass
50	NV	-16.10	-0.0044	≥ -2.5 & ≤ 2.5	Pass			
CP-OFDM QPSK	3624.99	Outer_Full	20	LV	-10.10	-0.0028	≥ -2.5 & ≤ 2.5	Pass
				HV	-13.00	-0.0036	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-16.90	-0.0047	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-8.50	-0.0023	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-18.90	-0.0052	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-8.10	-0.0022	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-10.20	-0.0028	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-12.70	-0.0035	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-14.80	-0.0041	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-9.30	-0.0026	≥ -2.5 & ≤ 2.5	Pass
50	NV	-9.00	-0.0025	≥ -2.5 & ≤ 2.5	Pass			
CP-OFDM 16 QAM	3624.99	Outer_Full	20	LV	-18.00	-0.0050	≥ -2.5 & ≤ 2.5	Pass
				HV	-16.70	-0.0046	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-22.80	-0.0063	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-14.70	-0.0041	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-9.10	-0.0025	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-10.20	-0.0028	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-14.40	-0.0040	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-13.60	-0.0038	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-13.90	-0.0038	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-15.40	-0.0042	≥ -2.5 & ≤ 2.5	Pass
50	NV	-18.10	-0.0050	≥ -2.5 & ≤ 2.5	Pass			

CP-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-5.20	-0.0014	>=-2.5 & <=2.5	Pass
				HV	-6.90	-0.0019	>=-2.5 & <=2.5	Pass
			-30	NV	-13.10	-0.0036	>=-2.5 & <=2.5	Pass
			-20	NV	-13.60	-0.0038	>=-2.5 & <=2.5	Pass
			-10	NV	-16.70	-0.0046	>=-2.5 & <=2.5	Pass
			0	NV	-25.80	-0.0071	>=-2.5 & <=2.5	Pass
			10	NV	-17.00	-0.0047	>=-2.5 & <=2.5	Pass
			20	NV	-12.20	-0.0034	>=-2.5 & <=2.5	Pass
			30	NV	-15.20	-0.0042	>=-2.5 & <=2.5	Pass
40	NV	-13.30	-0.0037	>=-2.5 & <=2.5	Pass			
50	NV	-11.60	-0.0032	>=-2.5 & <=2.5	Pass			
CP-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-11.30	-0.0031	>=-2.5 & <=2.5	Pass
				HV	-14.30	-0.0039	>=-2.5 & <=2.5	Pass
			-30	NV	-11.60	-0.0032	>=-2.5 & <=2.5	Pass
			-20	NV	-20.00	-0.0055	>=-2.5 & <=2.5	Pass
			-10	NV	-17.20	-0.0047	>=-2.5 & <=2.5	Pass
			0	NV	-11.30	-0.0031	>=-2.5 & <=2.5	Pass
			10	NV	-9.60	-0.0026	>=-2.5 & <=2.5	Pass
			20	NV	-10.20	-0.0028	>=-2.5 & <=2.5	Pass
			30	NV	-15.40	-0.0042	>=-2.5 & <=2.5	Pass
40	NV	-20.90	-0.0058	>=-2.5 & <=2.5	Pass			
50	NV	-13.20	-0.0036	>=-2.5 & <=2.5	Pass			

1.3 30k_SISO_40MHz

1.3.1 Test Result

5G NR n48 SCS=30kHz SISO 40MHz								
Modulation	Frequency (MHz)	RB Allocation	Temp. (°C)	Volt.	Freq. Error (Hz)	Freq. vs. rated (ppm)		Verdict
						Result	Limit	
DFT-s-OFDM QPSK	3624.99	Outer_Full	20	LV	-11.00	-0.0030	>=-2.5 & <=2.5	Pass
				HV	-16.50	-0.0046	>=-2.5 & <=2.5	Pass
			-30	NV	-11.50	-0.0032	>=-2.5 & <=2.5	Pass
			-20	NV	-9.70	-0.0027	>=-2.5 & <=2.5	Pass
			-10	NV	-17.00	-0.0047	>=-2.5 & <=2.5	Pass
			0	NV	-9.20	-0.0025	>=-2.5 & <=2.5	Pass
			10	NV	-12.00	-0.0033	>=-2.5 & <=2.5	Pass
			20	NV	-27.70	-0.0076	>=-2.5 & <=2.5	Pass
			30	NV	-15.10	-0.0042	>=-2.5 & <=2.5	Pass
40	NV	-12.70	-0.0035	>=-2.5 & <=2.5	Pass			
50	NV	-5.10	-0.0014	>=-2.5 & <=2.5	Pass			
DFT-s-OFDM 16 QAM	3624.99	Outer_Full	20	LV	-21.20	-0.0058	>=-2.5 & <=2.5	Pass
				HV	-9.80	-0.0027	>=-2.5 & <=2.5	Pass
			-30	NV	-7.40	-0.0020	>=-2.5 & <=2.5	Pass
			-20	NV	-11.30	-0.0031	>=-2.5 & <=2.5	Pass
			-10	NV	-8.50	-0.0023	>=-2.5 & <=2.5	Pass
			0	NV	-16.20	-0.0045	>=-2.5 & <=2.5	Pass
			10	NV	-17.30	-0.0048	>=-2.5 & <=2.5	Pass
			20	NV	-2.20	-0.0006	>=-2.5 & <=2.5	Pass
			30	NV	3.80	0.0010	>=-2.5 & <=2.5	Pass
40	NV	-19.10	-0.0053	>=-2.5 & <=2.5	Pass			
50	NV	-11.70	-0.0032	>=-2.5 & <=2.5	Pass			
DFT-s-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-15.30	-0.0042	>=-2.5 & <=2.5	Pass
				HV	-13.70	-0.0038	>=-2.5 & <=2.5	Pass
			-30	NV	-18.40	-0.0051	>=-2.5 & <=2.5	Pass
			-20	NV	-11.40	-0.0031	>=-2.5 & <=2.5	Pass
-10	NV	-6.70	-0.0018	>=-2.5 & <=2.5	Pass			

			0	NV	-7.70	-0.0021	≥ -2.5 & ≤ 2.5	Pass			
			10	NV	-7.00	-0.0019	≥ -2.5 & ≤ 2.5	Pass			
			20	NV	-7.80	-0.0022	≥ -2.5 & ≤ 2.5	Pass			
			30	NV	-20.00	-0.0055	≥ -2.5 & ≤ 2.5	Pass			
			40	NV	-14.10	-0.0039	≥ -2.5 & ≤ 2.5	Pass			
DFT-s-OFDM 256 QAM	3624.99	Outer_Full	50	NV	-12.30	-0.0034	≥ -2.5 & ≤ 2.5	Pass			
			20	LV	-21.40	-0.0059	≥ -2.5 & ≤ 2.5	Pass			
				HV	-12.30	-0.0034	≥ -2.5 & ≤ 2.5	Pass			
			-30	NV	-16.00	-0.0044	≥ -2.5 & ≤ 2.5	Pass			
			-20	NV	-12.50	-0.0034	≥ -2.5 & ≤ 2.5	Pass			
			-10	NV	7.80	0.0022	≥ -2.5 & ≤ 2.5	Pass			
			0	NV	-7.50	-0.0021	≥ -2.5 & ≤ 2.5	Pass			
			10	NV	-17.00	-0.0047	≥ -2.5 & ≤ 2.5	Pass			
			20	NV	-20.60	-0.0057	≥ -2.5 & ≤ 2.5	Pass			
			30	NV	-13.10	-0.0036	≥ -2.5 & ≤ 2.5	Pass			
			40	NV	-3.20	-0.0009	≥ -2.5 & ≤ 2.5	Pass			
			50	NV	-13.20	-0.0036	≥ -2.5 & ≤ 2.5	Pass			
			CP-OFDM QPSK	3624.99	Outer_Full	20	LV	-12.10	-0.0033	≥ -2.5 & ≤ 2.5	Pass
	HV	-17.30				-0.0048	≥ -2.5 & ≤ 2.5	Pass			
-30	NV	-9.80				-0.0027	≥ -2.5 & ≤ 2.5	Pass			
-20	NV	-9.60				-0.0026	≥ -2.5 & ≤ 2.5	Pass			
-10	NV	-9.80				-0.0027	≥ -2.5 & ≤ 2.5	Pass			
0	NV	6.50				0.0018	≥ -2.5 & ≤ 2.5	Pass			
10	NV	-8.20				-0.0023	≥ -2.5 & ≤ 2.5	Pass			
20	NV	5.30				0.0015	≥ -2.5 & ≤ 2.5	Pass			
30	NV	-15.40				-0.0042	≥ -2.5 & ≤ 2.5	Pass			
40	NV	-8.60				-0.0024	≥ -2.5 & ≤ 2.5	Pass			
50	NV	-6.70				-0.0018	≥ -2.5 & ≤ 2.5	Pass			
CP-OFDM 16 QAM	3624.99	Outer_Full				20	LV	-12.10	-0.0033	≥ -2.5 & ≤ 2.5	Pass
							HV	17.50	0.0048	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-12.60	-0.0035	≥ -2.5 & ≤ 2.5	Pass			
			-20	NV	-6.10	-0.0017	≥ -2.5 & ≤ 2.5	Pass			
			-10	NV	-9.90	-0.0027	≥ -2.5 & ≤ 2.5	Pass			
			0	NV	-5.60	-0.0015	≥ -2.5 & ≤ 2.5	Pass			
			10	NV	-8.00	-0.0022	≥ -2.5 & ≤ 2.5	Pass			
			20	NV	-8.70	-0.0024	≥ -2.5 & ≤ 2.5	Pass			
			30	NV	-9.10	-0.0025	≥ -2.5 & ≤ 2.5	Pass			
			40	NV	-4.50	-0.0012	≥ -2.5 & ≤ 2.5	Pass			
			50	NV	-6.40	-0.0018	≥ -2.5 & ≤ 2.5	Pass			
			CP-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-14.20	-0.0039	≥ -2.5 & ≤ 2.5	Pass
							HV	-13.60	-0.0038	≥ -2.5 & ≤ 2.5	Pass
-30	NV	-14.10				-0.0039	≥ -2.5 & ≤ 2.5	Pass			
-20	NV	-10.40				-0.0029	≥ -2.5 & ≤ 2.5	Pass			
-10	NV	-12.60				-0.0035	≥ -2.5 & ≤ 2.5	Pass			
0	NV	-10.40				-0.0029	≥ -2.5 & ≤ 2.5	Pass			
10	NV	-4.20				-0.0012	≥ -2.5 & ≤ 2.5	Pass			
20	NV	-9.70				-0.0027	≥ -2.5 & ≤ 2.5	Pass			
30	NV	-9.50				-0.0026	≥ -2.5 & ≤ 2.5	Pass			
40	NV	-12.70				-0.0035	≥ -2.5 & ≤ 2.5	Pass			
50	NV	-15.40				-0.0042	≥ -2.5 & ≤ 2.5	Pass			
CP-OFDM 256 QAM	3624.99	Outer_Full				20	LV	12.00	0.0033	≥ -2.5 & ≤ 2.5	Pass
							HV	-11.60	-0.0032	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-12.90	-0.0036	≥ -2.5 & ≤ 2.5	Pass			
			-20	NV	-12.60	-0.0035	≥ -2.5 & ≤ 2.5	Pass			
			-10	NV	-7.30	-0.0020	≥ -2.5 & ≤ 2.5	Pass			
			0	NV	9.50	0.0026	≥ -2.5 & ≤ 2.5	Pass			
			10	NV	-15.50	-0.0043	≥ -2.5 & ≤ 2.5	Pass			
			20	NV	-8.70	-0.0024	≥ -2.5 & ≤ 2.5	Pass			
			30	NV	-12.70	-0.0035	≥ -2.5 & ≤ 2.5	Pass			

			40	NV	-11.40	-0.0031	≥ -2.5 & ≤ 2.5	Pass
			50	NV	-14.40	-0.0040	≥ -2.5 & ≤ 2.5	Pass