

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 PI/2 BPSK	3624.99	Outer_Full	20	LV	5.50	0.0015	>=-2.5 & <=2.5	Pass
				HV	-12.40	-0.0034	>=-2.5 & <=2.5	Pass
			-30	NV	2.90	0.0008	>=-2.5 & <=2.5	Pass
			-20	NV	-10.90	-0.0030	>=-2.5 & <=2.5	Pass
			-10	NV	-5.20	-0.0014	>=-2.5 & <=2.5	Pass
			0	NV	-4.30	-0.0012	>=-2.5 & <=2.5	Pass
			10	NV	-19.60	-0.0054	>=-2.5 & <=2.5	Pass
			20	NV	-13.20	-0.0036	>=-2.5 & <=2.5	Pass
			30	NV	-6.70	-0.0018	>=-2.5 & <=2.5	Pass
			40	NV	-20.30	-0.0056	>=-2.5 & <=2.5	Pass
			50	NV	-13.10	-0.0036	>=-2.5 & <=2.5	Pass
DFT-s-OFDM QPSK	3624.99	Outer_Full	20	LV	-10.80	-0.0030	>=-2.5 & <=2.5	Pass
				HV	-20.90	-0.0058	>=-2.5 & <=2.5	Pass
			-30	NV	-9.10	-0.0025	>=-2.5 & <=2.5	Pass
			-20	NV	-16.70	-0.0046	>=-2.5 & <=2.5	Pass
			-10	NV	-10.30	-0.0028	>=-2.5 & <=2.5	Pass
			0	NV	-5.60	-0.0015	>=-2.5 & <=2.5	Pass
			10	NV	-23.60	-0.0065	>=-2.5 & <=2.5	Pass
			20	NV	-10.60	-0.0029	>=-2.5 & <=2.5	Pass
			30	NV	-11.90	-0.0033	>=-2.5 & <=2.5	Pass
			40	NV	-14.50	-0.0040	>=-2.5 & <=2.5	Pass
			50	NV	-4.40	-0.0012	>=-2.5 & <=2.5	Pass
DFT-s-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-21.40	-0.0059	>=-2.5 & <=2.5	Pass
				HV	-25.00	-0.0069	>=-2.5 & <=2.5	Pass
			-30	NV	-11.40	-0.0031	>=-2.5 & <=2.5	Pass
			-20	NV	-17.90	-0.0049	>=-2.5 & <=2.5	Pass
			-10	NV	-7.80	-0.0022	>=-2.5 & <=2.5	Pass
			0	NV	-8.20	-0.0023	>=-2.5 & <=2.5	Pass
			10	NV	-31.30	-0.0086	>=-2.5 & <=2.5	Pass
			20	NV	-37.50	-0.0103	>=-2.5 & <=2.5	Pass
			30	NV	-12.20	-0.0034	>=-2.5 & <=2.5	Pass
			40	NV	-22.80	-0.0063	>=-2.5 & <=2.5	Pass
			50	NV	-14.40	-0.0040	>=-2.5 & <=2.5	Pass
DFT-s-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-14.40	-0.0040	>=-2.5 & <=2.5	Pass
				HV	-12.80	-0.0035	>=-2.5 & <=2.5	Pass
			-30	NV	-10.10	-0.0028	>=-2.5 & <=2.5	Pass
			-20	NV	-14.00	-0.0039	>=-2.5 & <=2.5	Pass
			-10	NV	-5.90	-0.0016	>=-2.5 & <=2.5	Pass
			0	NV	-15.70	-0.0043	>=-2.5 & <=2.5	Pass
			10	NV	-21.00	-0.0058	>=-2.5 & <=2.5	Pass
			20	NV	-21.60	-0.0060	>=-2.5 & <=2.5	Pass
			30	NV	-12.80	-0.0035	>=-2.5 & <=2.5	Pass
			40	NV	-18.40	-0.0051	>=-2.5 & <=2.5	Pass
			50	NV	-3.60	-0.0010	>=-2.5 & <=2.5	Pass
CP-OFDM QPSK	3624.99	Outer_Full	20	LV	-21.00	-0.0058	>=-2.5 & <=2.5	Pass
				HV	1.40	0.0004	>=-2.5 & <=2.5	Pass
			-30	NV	-1.60	-0.0004	>=-2.5 & <=2.5	Pass
			-20	NV	-21.90	-0.0060	>=-2.5 & <=2.5	Pass
			-10	NV	-23.10	-0.0064	>=-2.5 & <=2.5	Pass

			0	NV	-10.50	-0.0029	>=-2.5 & <=2.5	Pass
			10	NV	-17.90	-0.0049	>=-2.5 & <=2.5	Pass
			20	NV	-14.40	-0.0040	>=-2.5 & <=2.5	Pass
			30	NV	-3.90	-0.0011	>=-2.5 & <=2.5	Pass
			40	NV	-18.30	-0.0050	>=-2.5 & <=2.5	Pass
			50	NV	5.90	0.0016	>=-2.5 & <=2.5	Pass
CP-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-7.10	-0.0020	>=-2.5 & <=2.5	Pass
				HV	-17.70	-0.0049	>=-2.5 & <=2.5	Pass
			-30	NV	-8.20	-0.0023	>=-2.5 & <=2.5	Pass
			-20	NV	-19.20	-0.0053	>=-2.5 & <=2.5	Pass
			-10	NV	-12.20	-0.0034	>=-2.5 & <=2.5	Pass
			0	NV	-26.80	-0.0074	>=-2.5 & <=2.5	Pass
			10	NV	-4.10	-0.0011	>=-2.5 & <=2.5	Pass
			20	NV	-3.30	-0.0009	>=-2.5 & <=2.5	Pass
			30	NV	-9.30	-0.0026	>=-2.5 & <=2.5	Pass
			40	NV	-15.90	-0.0044	>=-2.5 & <=2.5	Pass
			50	NV	-9.20	-0.0025	>=-2.5 & <=2.5	Pass
			CP-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-2.10
HV	-16.50	-0.0046					>=-2.5 & <=2.5	Pass
-30	NV	-5.90				-0.0016	>=-2.5 & <=2.5	Pass
-20	NV	-22.60				-0.0062	>=-2.5 & <=2.5	Pass
-10	NV	-2.30				-0.0006	>=-2.5 & <=2.5	Pass
0	NV	4.20				0.0012	>=-2.5 & <=2.5	Pass
10	NV	19.80				0.0055	>=-2.5 & <=2.5	Pass
20	NV	-7.40				-0.0020	>=-2.5 & <=2.5	Pass
30	NV	-18.80				-0.0052	>=-2.5 & <=2.5	Pass
40	NV	-6.40				-0.0018	>=-2.5 & <=2.5	Pass
50	NV	-22.10				-0.0061	>=-2.5 & <=2.5	Pass

1.2 30k_SISO_20MHz

1.2.1 Test Result

5G NR n48 SCS=30kHz SISO 20MHz								
Modulation	Frequency (MHz)	RB Allocation	Temp. (°C)	Volt.	Freq. Error (Hz)	Freq. vs. rated (ppm)		Verdict
						Result	Limit	
DFT-s-OFDM PI/2 BPSK	3624.99	Outer_Full	20	LV	-20.60	-0.0057	>=-2.5 & <=2.5	Pass
				HV	5.80	0.0016	>=-2.5 & <=2.5	Pass
			-30	NV	-26.60	-0.0073	>=-2.5 & <=2.5	Pass
			-20	NV	-30.10	-0.0083	>=-2.5 & <=2.5	Pass
			-10	NV	-30.20	-0.0083	>=-2.5 & <=2.5	Pass
			0	NV	-11.30	-0.0031	>=-2.5 & <=2.5	Pass
			10	NV	-19.20	-0.0053	>=-2.5 & <=2.5	Pass
			20	NV	-15.50	-0.0043	>=-2.5 & <=2.5	Pass
			30	NV	-29.40	-0.0081	>=-2.5 & <=2.5	Pass
			40	NV	-11.90	-0.0033	>=-2.5 & <=2.5	Pass
DFT-s-OFDM QPSK	3624.99	Outer_Full	20	LV	-15.50	-0.0043	>=-2.5 & <=2.5	Pass
				HV	-11.80	-0.0033	>=-2.5 & <=2.5	Pass
			-30	NV	-7.70	-0.0021	>=-2.5 & <=2.5	Pass
			-20	NV	-34.30	-0.0095	>=-2.5 & <=2.5	Pass
			-10	NV	-36.70	-0.0101	>=-2.5 & <=2.5	Pass
			0	NV	-20.10	-0.0055	>=-2.5 & <=2.5	Pass
			10	NV	-9.20	-0.0025	>=-2.5 & <=2.5	Pass
			20	NV	-13.40	-0.0037	>=-2.5 & <=2.5	Pass
			30	NV	-28.60	-0.0079	>=-2.5 & <=2.5	Pass
			40	NV	-26.40	-0.0073	>=-2.5 & <=2.5	Pass
DFT-s-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-23.50	-0.0065	>=-2.5 & <=2.5	Pass
				HV	-3.70	-0.0010	>=-2.5 & <=2.5	Pass
			-30	NV	-33.00	-0.0091	>=-2.5 & <=2.5	Pass
			-20	NV	-11.10	-0.0031	>=-2.5 & <=2.5	Pass
			-10	NV	-18.50	-0.0051	>=-2.5 & <=2.5	Pass
			0	NV	-18.90	-0.0052	>=-2.5 & <=2.5	Pass
			10	NV	-14.40	-0.0040	>=-2.5 & <=2.5	Pass
			20	NV	-20.80	-0.0057	>=-2.5 & <=2.5	Pass
			30	NV	-15.60	-0.0043	>=-2.5 & <=2.5	Pass
			40	NV	-18.80	-0.0052	>=-2.5 & <=2.5	Pass
DFT-s-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-9.30	-0.0026	>=-2.5 & <=2.5	Pass
				HV	-20.40	-0.0056	>=-2.5 & <=2.5	Pass
			-30	NV	-15.60	-0.0043	>=-2.5 & <=2.5	Pass
			-20	NV	-10.50	-0.0029	>=-2.5 & <=2.5	Pass
			-10	NV	-21.60	-0.0060	>=-2.5 & <=2.5	Pass
			0	NV	-18.30	-0.0050	>=-2.5 & <=2.5	Pass
			10	NV	-20.70	-0.0057	>=-2.5 & <=2.5	Pass
			20	NV	-13.80	-0.0038	>=-2.5 & <=2.5	Pass
			30	NV	-13.20	-0.0036	>=-2.5 & <=2.5	Pass
			40	NV	-10.90	-0.0030	>=-2.5 & <=2.5	Pass
CP-OFDM QPSK	3624.99	Outer_Full	20	LV	-29.60	-0.0082	>=-2.5 & <=2.5	Pass
				HV	-33.00	-0.0091	>=-2.5 & <=2.5	Pass
			-30	NV	-21.20	-0.0058	>=-2.5 & <=2.5	Pass
			-20	NV	-20.00	-0.0055	>=-2.5 & <=2.5	Pass
			-10	NV	-30.20	-0.0083	>=-2.5 & <=2.5	Pass
			0	NV	-29.70	-0.0082	>=-2.5 & <=2.5	Pass
			10	NV	-23.40	-0.0065	>=-2.5 & <=2.5	Pass

			20	NV	-22.80	-0.0063	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-19.00	-0.0052	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-28.90	-0.0080	≥ -2.5 & ≤ 2.5	Pass
			50	NV	-12.10	-0.0033	≥ -2.5 & ≤ 2.5	Pass
CP-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-23.90	-0.0066	≥ -2.5 & ≤ 2.5	Pass
				HV	-22.10	-0.0061	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-18.00	-0.0050	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-19.60	-0.0054	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-28.80	-0.0079	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-23.70	-0.0065	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-23.30	-0.0064	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-28.30	-0.0078	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-6.00	-0.0017	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-6.20	-0.0017	≥ -2.5 & ≤ 2.5	Pass
CP-OFDM 256 QAM	3624.99	Outer_Full	50	NV	-16.20	-0.0045	≥ -2.5 & ≤ 2.5	Pass
			20	LV	-31.40	-0.0087	≥ -2.5 & ≤ 2.5	Pass
				HV	-17.10	-0.0047	≥ -2.5 & ≤ 2.5	Pass
			-30	NV	-33.00	-0.0091	≥ -2.5 & ≤ 2.5	Pass
			-20	NV	-4.60	-0.0013	≥ -2.5 & ≤ 2.5	Pass
			-10	NV	-11.40	-0.0031	≥ -2.5 & ≤ 2.5	Pass
			0	NV	-28.00	-0.0077	≥ -2.5 & ≤ 2.5	Pass
			10	NV	-14.50	-0.0040	≥ -2.5 & ≤ 2.5	Pass
			20	NV	-29.30	-0.0081	≥ -2.5 & ≤ 2.5	Pass
			30	NV	-4.90	-0.0014	≥ -2.5 & ≤ 2.5	Pass
			40	NV	-22.80	-0.0063	≥ -2.5 & ≤ 2.5	Pass
			50	NV	-12.70	-0.0035	≥ -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 PI/2 BPSK	3624.99	Outer_Full	20	LV	-29.70	-0.0082	>=-2.5 & <=2.5	Pass
				HV	-6.00	-0.0017	>=-2.5 & <=2.5	Pass
			-30	NV	-31.00	-0.0086	>=-2.5 & <=2.5	Pass
			-20	NV	-26.10	-0.0072	>=-2.5 & <=2.5	Pass
			-10	NV	-8.30	-0.0023	>=-2.5 & <=2.5	Pass
			0	NV	-9.90	-0.0027	>=-2.5 & <=2.5	Pass
			10	NV	-8.30	-0.0023	>=-2.5 & <=2.5	Pass
			20	NV	-4.60	-0.0013	>=-2.5 & <=2.5	Pass
			30	NV	-31.10	-0.0086	>=-2.5 & <=2.5	Pass
			40	NV	-11.50	-0.0032	>=-2.5 & <=2.5	Pass
DFT-s-OFDM QPSK	3624.99	Outer_Full	20	LV	-3.40	-0.0009	>=-2.5 & <=2.5	Pass
				HV	-20.80	-0.0057	>=-2.5 & <=2.5	Pass
			-30	NV	-17.40	-0.0048	>=-2.5 & <=2.5	Pass
			-20	NV	-20.90	-0.0058	>=-2.5 & <=2.5	Pass
			-10	NV	-8.50	-0.0023	>=-2.5 & <=2.5	Pass
			0	NV	-11.90	-0.0033	>=-2.5 & <=2.5	Pass
			10	NV	-9.50	-0.0026	>=-2.5 & <=2.5	Pass
			20	NV	-18.50	-0.0051	>=-2.5 & <=2.5	Pass
			30	NV	-12.90	-0.0036	>=-2.5 & <=2.5	Pass
			40	NV	-17.50	-0.0048	>=-2.5 & <=2.5	Pass
DFT-s-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-11.10	-0.0031	>=-2.5 & <=2.5	Pass
				HV	-10.50	-0.0029	>=-2.5 & <=2.5	Pass
			-30	NV	-13.60	-0.0038	>=-2.5 & <=2.5	Pass
			-20	NV	-7.40	-0.0020	>=-2.5 & <=2.5	Pass
			-10	NV	-28.00	-0.0077	>=-2.5 & <=2.5	Pass
			0	NV	-19.70	-0.0054	>=-2.5 & <=2.5	Pass
			10	NV	-4.70	-0.0013	>=-2.5 & <=2.5	Pass
			20	NV	-12.10	-0.0033	>=-2.5 & <=2.5	Pass
			30	NV	-7.80	-0.0022	>=-2.5 & <=2.5	Pass
			40	NV	-36.50	-0.0101	>=-2.5 & <=2.5	Pass
DFT-s-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-15.50	-0.0043	>=-2.5 & <=2.5	Pass
				HV	-14.60	-0.0040	>=-2.5 & <=2.5	Pass
			-30	NV	-46.20	-0.0127	>=-2.5 & <=2.5	Pass
			-20	NV	-3.40	-0.0009	>=-2.5 & <=2.5	Pass
			-10	NV	-36.00	-0.0099	>=-2.5 & <=2.5	Pass
			0	NV	-21.10	-0.0058	>=-2.5 & <=2.5	Pass
			10	NV	-20.30	-0.0056	>=-2.5 & <=2.5	Pass
			20	NV	-16.50	-0.0046	>=-2.5 & <=2.5	Pass
			30	NV	4.90	0.0014	>=-2.5 & <=2.5	Pass
			40	NV	-11.10	-0.0031	>=-2.5 & <=2.5	Pass
CP-OFDM QPSK	3624.99	Outer_Full	20	LV	-10.00	-0.0028	>=-2.5 & <=2.5	Pass
				HV	-18.80	-0.0052	>=-2.5 & <=2.5	Pass
			-30	NV	-29.80	-0.0082	>=-2.5 & <=2.5	Pass
			-20	NV	-31.10	-0.0086	>=-2.5 & <=2.5	Pass
			-10	NV	-20.00	-0.0055	>=-2.5 & <=2.5	Pass
			0	NV	-20.10	-0.0055	>=-2.5 & <=2.5	Pass
CP-OFDM QPSK	3624.99	Outer_Full	10	NV	-13.80	-0.0038	>=-2.5 & <=2.5	Pass

			20	NV	-35.80	-0.0099	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			30	NV	-22.30	-0.0062	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			40	NV	-13.30	-0.0037	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			50	NV	-11.30	-0.0031	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
CP-OFDM 64 QAM	3624.99	Outer_Full	20	LV	-24.00	-0.0066	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
				HV	-8.50	-0.0023	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			-30	NV	-20.40	-0.0056	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			-20	NV	-14.90	-0.0041	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			-10	NV	-23.00	-0.0063	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			0	NV	-36.20	-0.0100	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			10	NV	-23.30	-0.0064	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			20	NV	-27.80	-0.0077	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			30	NV	-21.10	-0.0058	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			40	NV	-7.40	-0.0020	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
CP-OFDM 256 QAM	3624.99	Outer_Full	20	LV	-29.80	-0.0082	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
				HV	-24.80	-0.0068	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			-30	NV	-28.30	-0.0078	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			-20	NV	-21.20	-0.0058	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			-10	NV	-12.10	-0.0033	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			0	NV	-16.70	-0.0046	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			10	NV	-20.50	-0.0057	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			20	NV	-21.00	-0.0058	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			30	NV	-22.50	-0.0062	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			40	NV	-25.10	-0.0069	$\geq -2.5 \text{ \& } \leq 2.5$	Pass
			50	NV	-23.50	-0.0065	$\geq -2.5 \text{ \& } \leq 2.5$	Pass