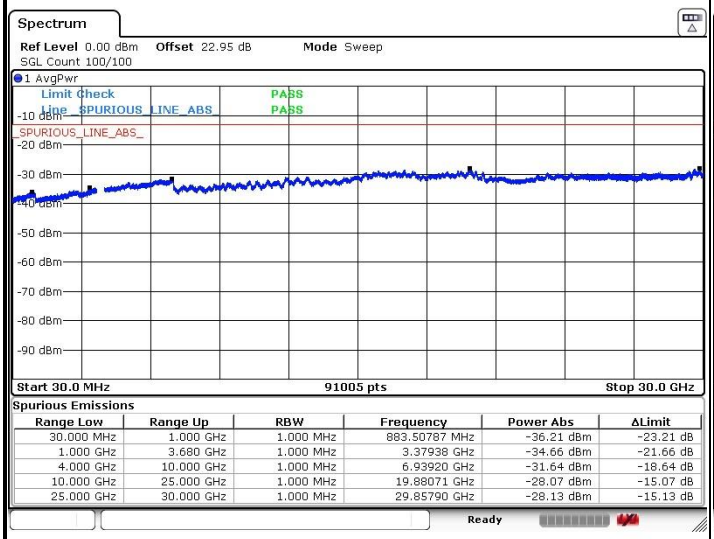
FR1 n77 / 30MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB0



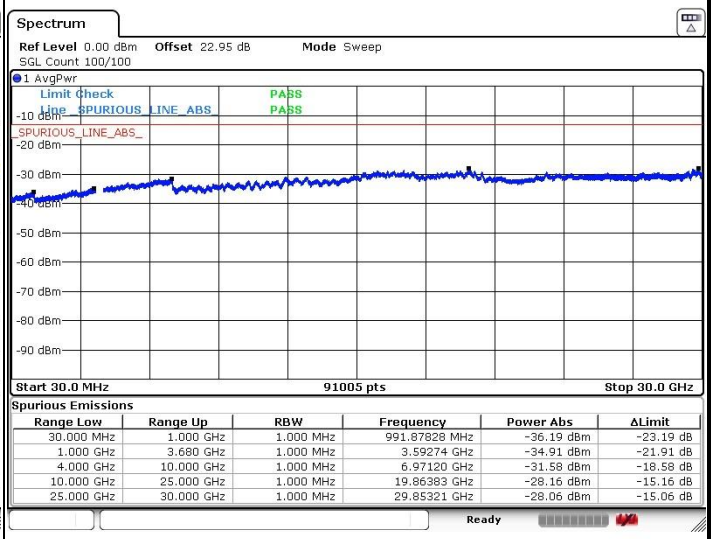
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	883.50787 MHz	-36.21 dBm	-23.21 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.37938 GHz	-34.66 dBm	-21.66 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.93920 GHz	-31.64 dBm	-18.64 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.88071 GHz	-28.07 dBm	-15.07 dB
25.000 GHz	30.000 GHz	1.000 MHz	29.85790 GHz	-28.13 dBm	-15.13 dB

Ready

Date: 9.DEC.2020 14:31:22

Middle Channel / 1RB0



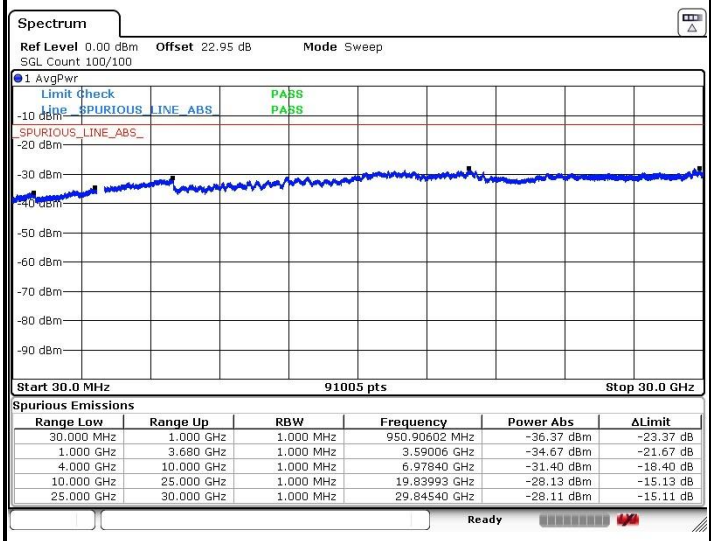
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.87828 MHz	-36.19 dBm	-23.19 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.59274 GHz	-34.91 dBm	-21.91 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.97120 GHz	-31.58 dBm	-18.58 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86383 GHz	-28.16 dBm	-15.16 dB
25.000 GHz	30.000 GHz	1.000 MHz	29.85321 GHz	-28.06 dBm	-15.06 dB

Ready

Date: 9.DEC.2020 14:30:28

Highest Channel / 1RB0



Spurious Emissions

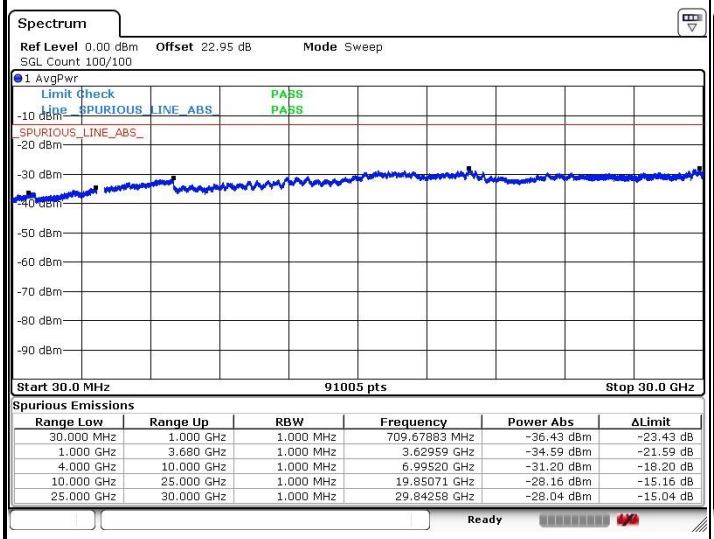
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	950.90602 MHz	-36.37 dBm	-23.37 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.59006 GHz	-34.67 dBm	-21.67 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.97840 GHz	-31.40 dBm	-18.40 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.83993 GHz	-28.13 dBm	-15.13 dB
25.000 GHz	30.000 GHz	1.000 MHz	29.84540 GHz	-28.11 dBm	-15.11 dB

Ready

Date: 9.DEC.2020 14:29:28

FR1 n77 / 40MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB0



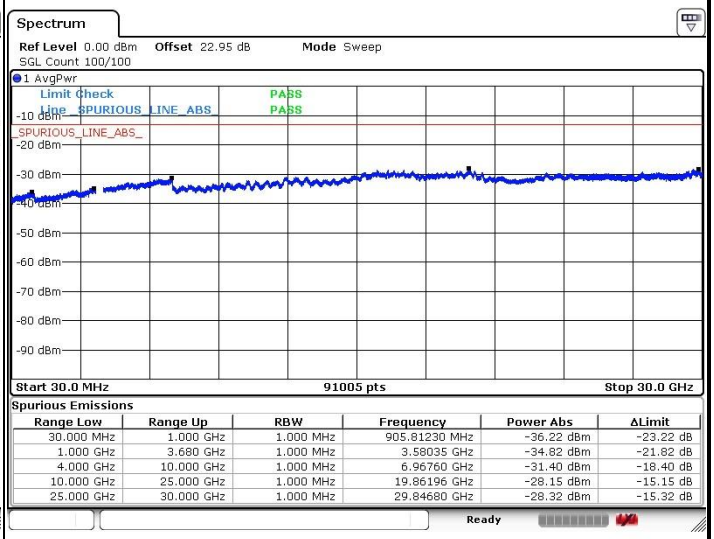
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	709.67883 MHz	-36.43 dBm	-23.43 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.62959 GHz	-34.59 dBm	-21.59 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.99520 GHz	-31.20 dBm	-18.20 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.85071 GHz	-28.16 dBm	-15.16 dB
25.000 GHz	30.000 GHz	1.000 MHz	29.84258 GHz	-28.04 dBm	-15.04 dB

Ready

Date: 9.DEC.2020 14:15:25

Middle Channel / 1RB0



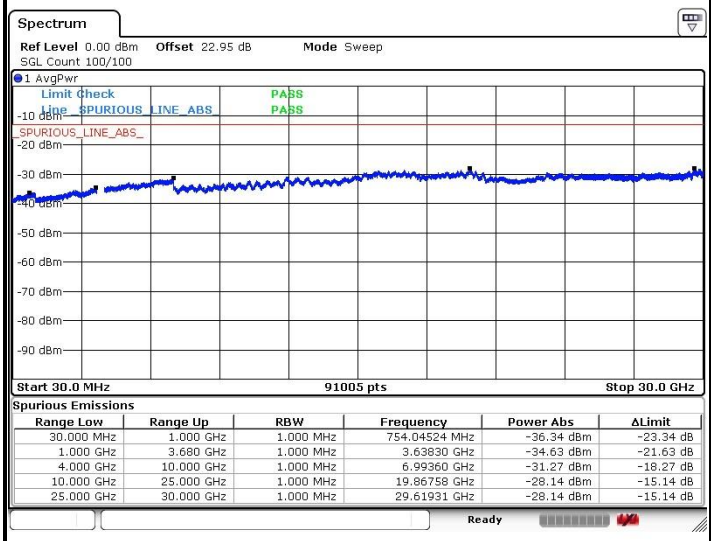
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	905.81230 MHz	-36.22 dBm	-23.22 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.58035 GHz	-34.82 dBm	-21.82 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.96760 GHz	-31.40 dBm	-18.40 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86196 GHz	-28.15 dBm	-15.15 dB
25.000 GHz	30.000 GHz	1.000 MHz	29.84680 GHz	-28.32 dBm	-15.32 dB

Ready

Date: 9.DEC.2020 14:17:15

Highest Channel / 1RB0



Spurious Emissions

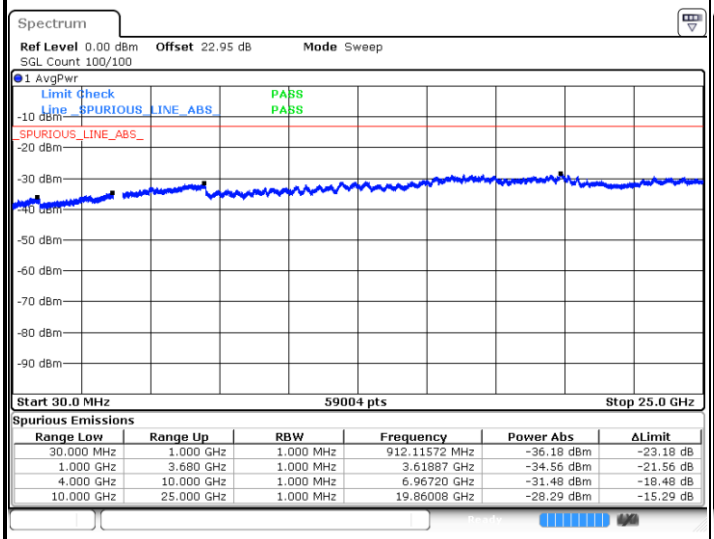
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	754.04524 MHz	-36.34 dBm	-23.34 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.63830 GHz	-34.63 dBm	-21.63 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.99360 GHz	-31.27 dBm	-18.27 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86758 GHz	-28.14 dBm	-15.14 dB
25.000 GHz	30.000 GHz	1.000 MHz	29.61931 GHz	-28.14 dBm	-15.14 dB

Ready

Date: 9.DEC.2020 14:18:10

FR1 n77 / 60MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB0

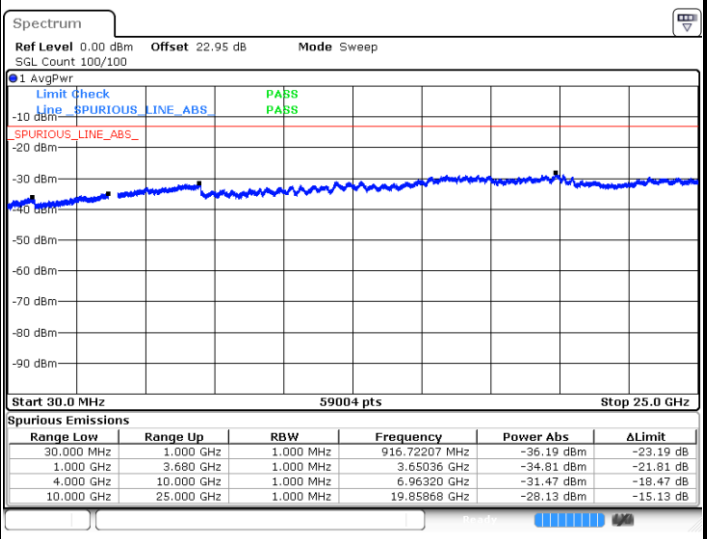


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	912.11572 MHz	-36.18 dBm	-23.18 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.61887 GHz	-34.56 dBm	-21.56 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.96720 GHz	-31.48 dBm	-18.48 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86008 GHz	-28.29 dBm	-15.29 dB

Date: 9.DEC.2020 13:47:47

Middle Channel / 1RB0

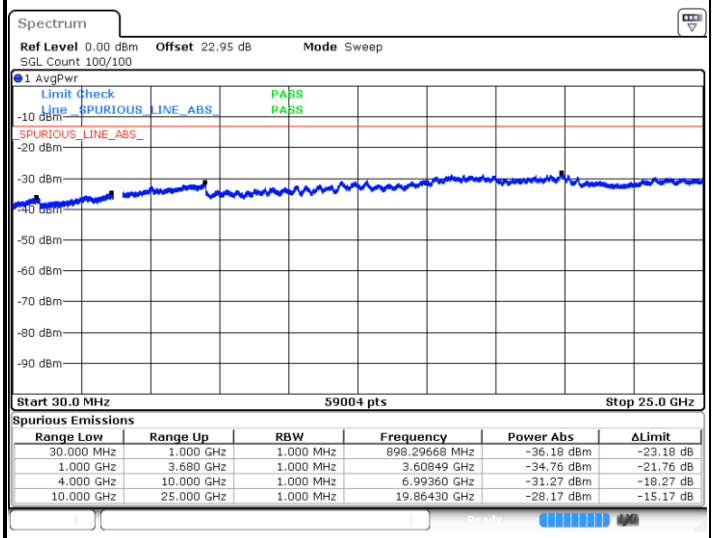


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	916.72207 MHz	-36.19 dBm	-23.19 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.65036 GHz	-34.81 dBm	-21.81 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.96320 GHz	-31.47 dBm	-18.47 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.85868 GHz	-28.13 dBm	-15.13 dB

Date: 9.DEC.2020 13:49:30

Highest Channel / 1RB0



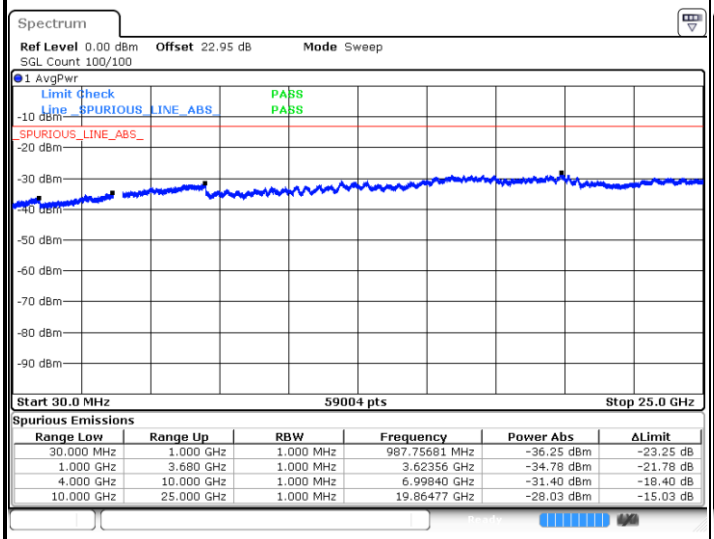
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	898.29668 MHz	-36.18 dBm	-23.18 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.60849 GHz	-34.76 dBm	-21.76 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.99360 GHz	-31.27 dBm	-18.27 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86430 GHz	-28.17 dBm	-15.17 dB

Date: 9.DEC.2020 13:51:13

FR1 n77 / 80MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB0

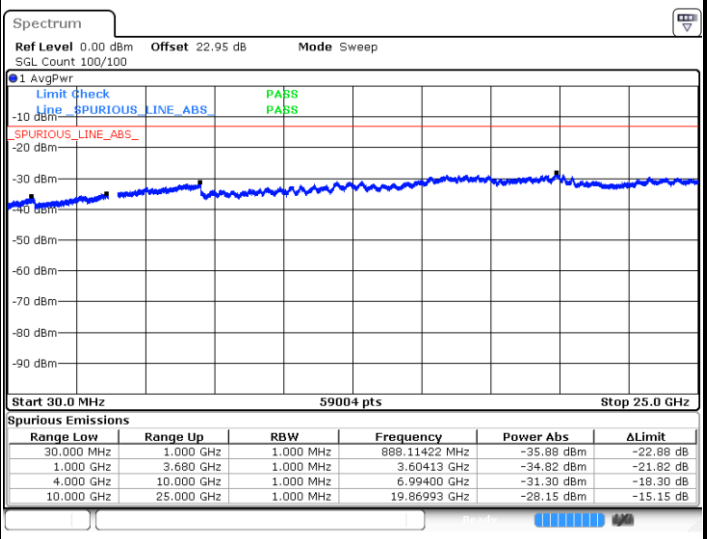


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	987.75681 MHz	-36.25 dBm	-23.25 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.62356 GHz	-34.78 dBm	-21.78 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.99840 GHz	-31.40 dBm	-18.40 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86477 GHz	-28.03 dBm	-15.03 dB

Date: 9.DEC.2020 11:01:04

Middle Channel / 1RB0

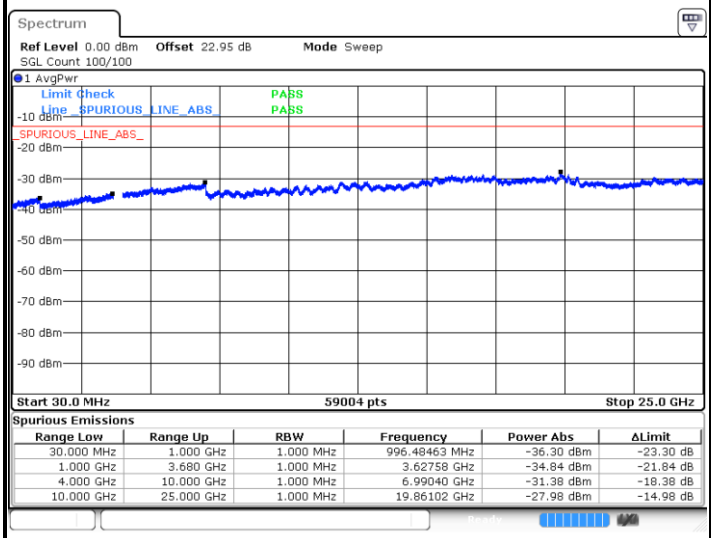


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	888.11422 MHz	-35.88 dBm	-22.88 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.60413 GHz	-34.82 dBm	-21.82 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.99400 GHz	-31.30 dBm	-18.30 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86993 GHz	-28.15 dBm	-15.15 dB

Date: 9.DEC.2020 10:59:18

Highest Channel / 1RB0



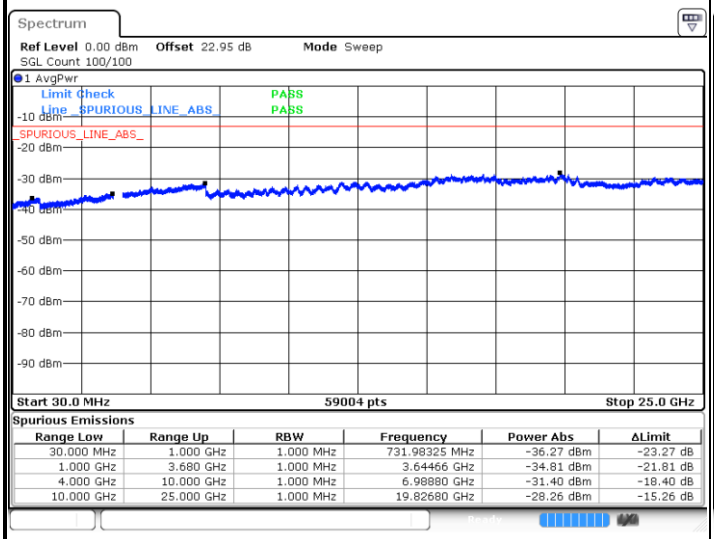
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.48463 MHz	-36.30 dBm	-23.30 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.62758 GHz	-34.84 dBm	-21.84 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.99040 GHz	-31.38 dBm	-18.38 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86102 GHz	-27.98 dBm	-14.98 dB

Date: 9.DEC.2020 10:57:31

FR1 n77 / 100MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB0

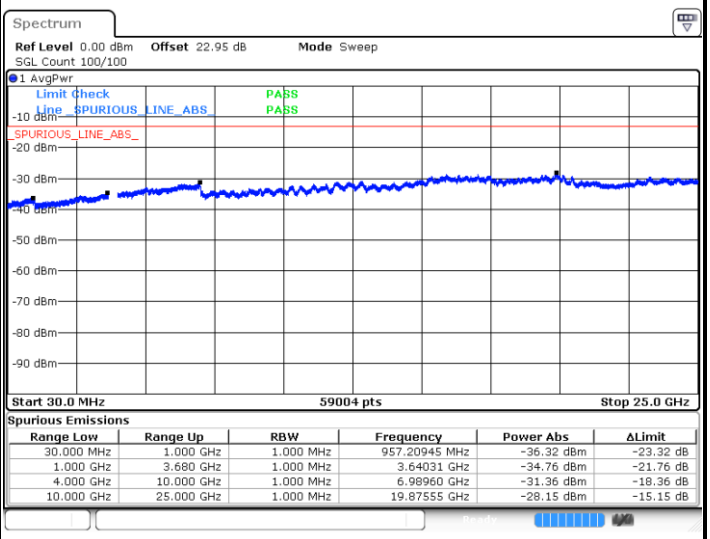


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	731.98325 MHz	-36.27 dBm	-23.27 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.64466 GHz	-34.81 dBm	-21.81 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.98880 GHz	-31.40 dBm	-18.40 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.82680 GHz	-28.26 dBm	-15.26 dB

Date: 9.DEC.2020 10:27:18

Middle Channel / 1RB0

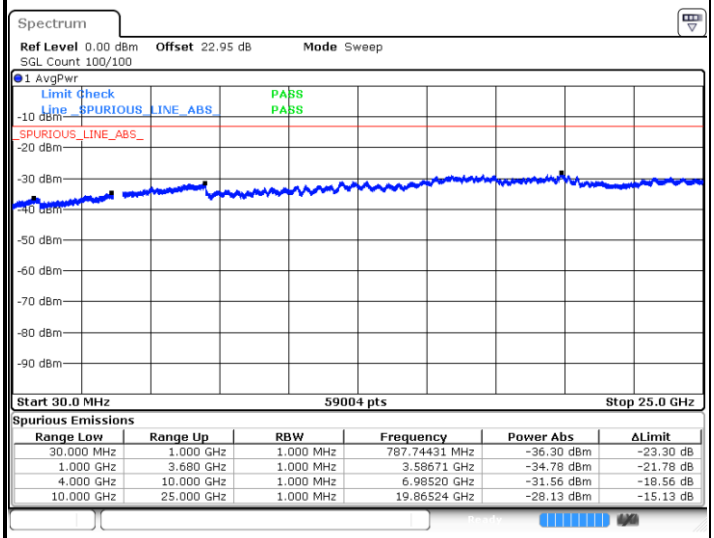


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	957.20945 MHz	-36.32 dBm	-23.32 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.64031 GHz	-34.76 dBm	-21.76 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.98960 GHz	-31.36 dBm	-18.36 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.87555 GHz	-28.15 dBm	-15.15 dB

Date: 9.DEC.2020 10:25:14

Highest Channel / 1RB0



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	787.74431 MHz	-36.30 dBm	-23.30 dB
1.000 GHz	3.680 GHz	1.000 MHz	3.58671 GHz	-34.78 dBm	-21.78 dB
4.000 GHz	10.000 GHz	1.000 MHz	6.98520 GHz	-31.56 dBm	-18.56 dB
10.000 GHz	25.000 GHz	1.000 MHz	19.86524 GHz	-28.13 dBm	-15.13 dB

Date: 9.DEC.2020 10:22:33

Frequency Stability

Test Conditions		FR1 n77 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0022	PASS
40	Normal Voltage	0.0015	
30	Normal Voltage	0.0002	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0031	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0012	
-20	Normal Voltage	0.0026	
-30	Normal Voltage	0.0015	
20	Maximum Voltage	0.0013	
20	Normal Voltage	0.0004	
20	Battery End Point	0.0001	

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. .Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

5G NR n41 / 100MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5096	-62.02	-25	-37.02	-72.23	3.03	13.24	H
	7644	-60.85	-25	-35.85	-70.30	3.56	13.01	H
	10190	-58.90	-25	-33.90	-68.42	3.92	13.44	H
	5096	-62.63	-25	-37.63	-72.84	3.03	13.24	V
	7644	-61.06	-25	-36.06	-70.51	3.56	13.01	V
	10190	-59.40	-25	-34.40	-68.92	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

5G NR n41_UL_MIMO / 100MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5096	-60.73	-25	-35.73	-70.94	3.03	13.24	H
	7644	-61.01	-25	-36.01	-70.46	3.56	13.01	H
	10190	-58.58	-25	-33.58	-68.10	3.92	13.44	H
	5096	-61.77	-25	-36.77	-71.98	3.03	13.24	V
	7644	-60.94	-25	-35.94	-70.39	3.56	13.01	V
	10190	-58.84	-25	-33.84	-68.36	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

5G NR n77 / 100MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	7590	-61.03	-13	-48.03	-71.77	2.604	13.34	H
	11388	-58.27	-13	-45.27	-68.78	3.011	13.52	H
	15180	-58.09	-13	-45.09	-68.29	3.271	13.47	H
	7590	-60.90	-13	-47.90	-71.64	2.604	13.34	V
	11388	-58.30	-13	-45.30	-68.81	3.011	13.52	V
	15180	-58.31	-13	-45.31	-68.51	3.271	13.47	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

5G NR n77_UL_MIMO / 100MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	7590	-61.12	-13	-48.12	-71.86	2.604	13.34	H
	11388	-56.21	-13	-43.21	-66.72	3.011	13.52	H
	15180	-55.89	-13	-42.89	-66.09	3.271	13.47	H
	7590	-61.25	-13	-48.25	-71.99	2.604	13.34	V
	11388	-57.60	-13	-44.60	-68.11	3.011	13.52	V
	15180	-55.84	-13	-42.84	-66.04	3.271	13.47	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.