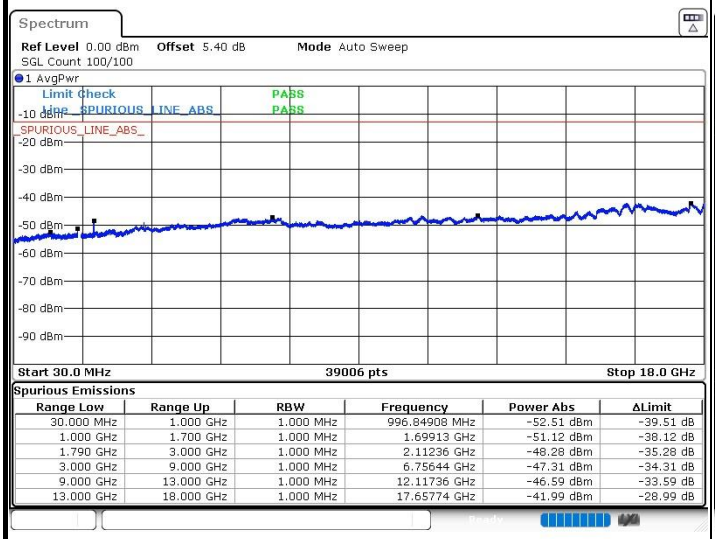
LTE Band 66 / 3MHz

Lowest Channel / QPSK

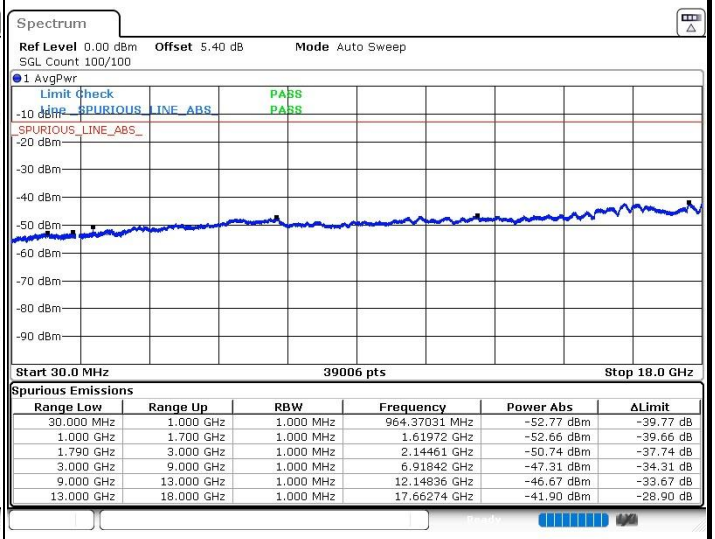


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.84908 MHz	-52.51 dBm	-39.51 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69913 GHz	-51.12 dBm	-38.12 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.11236 GHz	-48.28 dBm	-35.28 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.75644 GHz	-47.31 dBm	-34.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.11736 GHz	-46.59 dBm	-33.59 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.65774 GHz	-41.99 dBm	-28.99 dB

Date: 27.OCT.2021 14:53:09

Middle Channel / QPSK

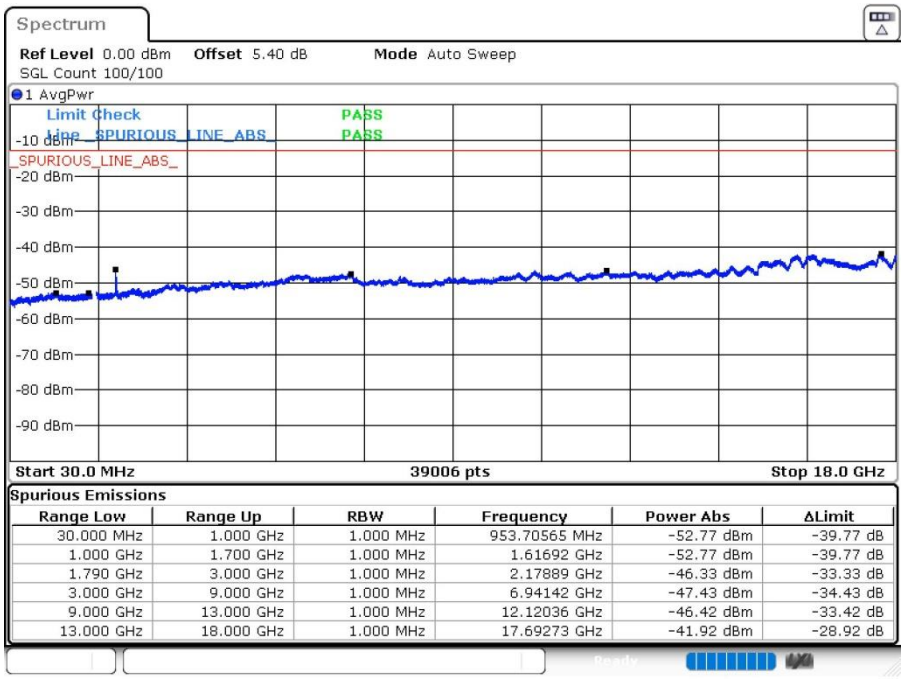


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.37031 MHz	-52.77 dBm	-39.77 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.61972 GHz	-52.66 dBm	-39.66 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.14461 GHz	-50.74 dBm	-37.74 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.91842 GHz	-47.31 dBm	-34.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.14836 GHz	-46.67 dBm	-33.67 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.66274 GHz	-41.90 dBm	-28.90 dB

Date: 27.OCT.2021 14:54:52

Highest Channel / QPSK



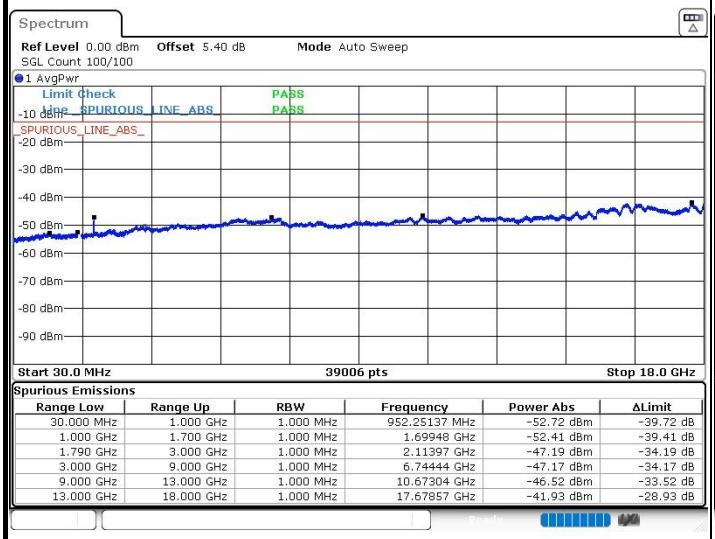
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	953.70565 MHz	-52.77 dBm	-39.77 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.61692 GHz	-52.77 dBm	-39.77 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.17889 GHz	-46.33 dBm	-33.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.94142 GHz	-47.43 dBm	-34.43 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.12036 GHz	-46.42 dBm	-33.42 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.69273 GHz	-41.92 dBm	-28.92 dB

Date: 27.OCT.2021 14:56:48

LTE Band 66 / 5MHz

Lowest Channel / QPSK

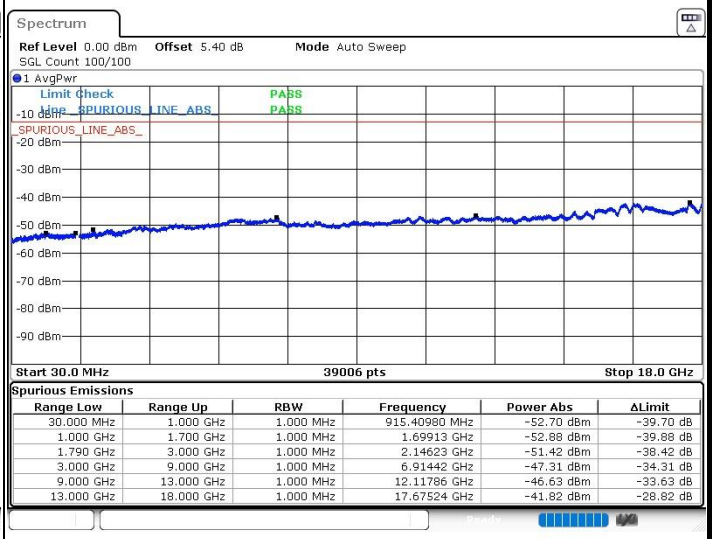


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	952.25137 MHz	-52.72 dBm	-39.72 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69948 GHz	-52.41 dBm	-39.41 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.11397 GHz	-47.19 dBm	-34.19 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.74444 GHz	-47.17 dBm	-34.17 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.67304 GHz	-46.52 dBm	-33.52 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.67857 GHz	-41.93 dBm	-28.93 dB

Date: 27.OCT.2021 15:06:50

Middle Channel / QPSK

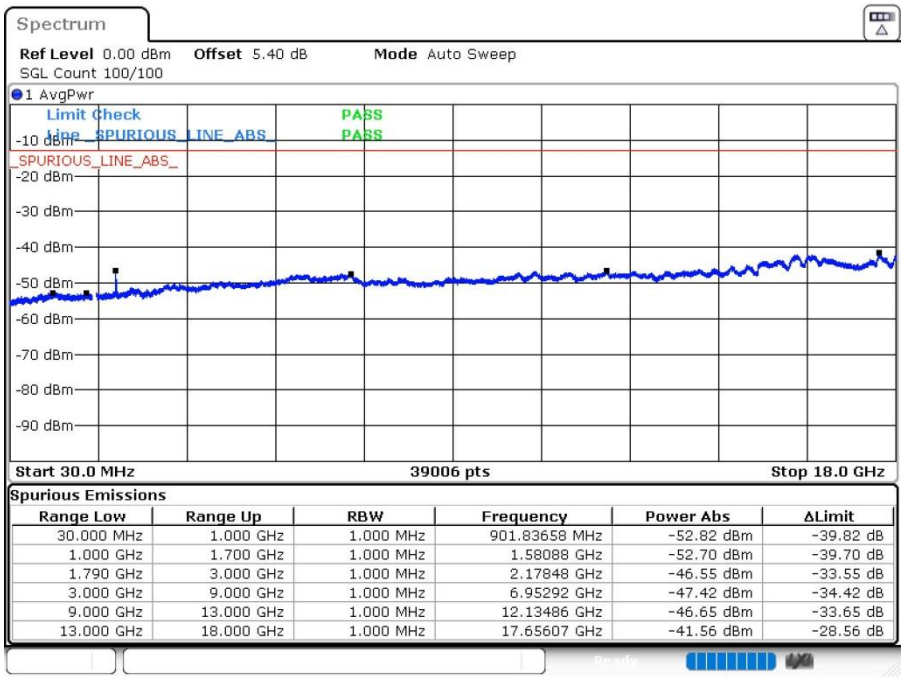


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	915.40980 MHz	-52.70 dBm	-39.70 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69913 GHz	-52.88 dBm	-39.88 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.14623 GHz	-51.42 dBm	-38.42 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.91442 GHz	-47.31 dBm	-34.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.11786 GHz	-46.63 dBm	-33.63 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.67524 GHz	-41.82 dBm	-28.82 dB

Date: 27.OCT.2021 15:08:45

Highest Channel / QPSK



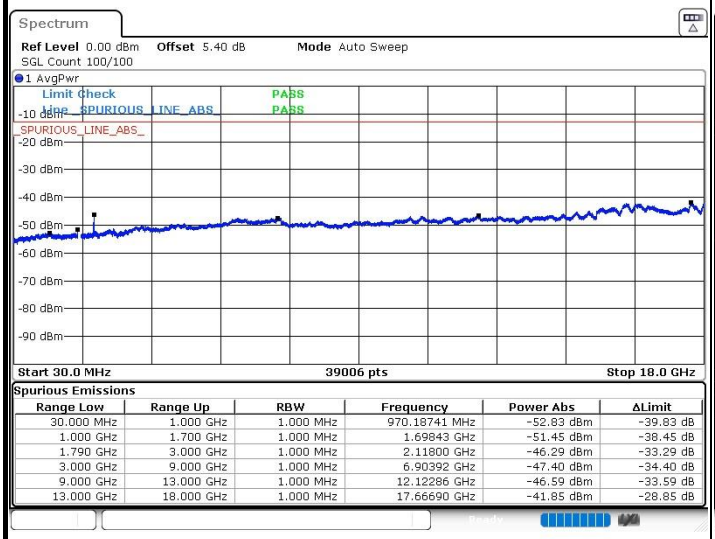
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	901.83658 MHz	-52.82 dBm	-39.82 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.58088 GHz	-52.70 dBm	-39.70 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.17848 GHz	-46.55 dBm	-33.55 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.95292 GHz	-47.42 dBm	-34.42 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.13486 GHz	-46.65 dBm	-33.65 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.65607 GHz	-41.56 dBm	-28.56 dB

Date: 27.OCT.2021 15:09:45

LTE Band 66 / 10MHz

Lowest Channel / QPSK

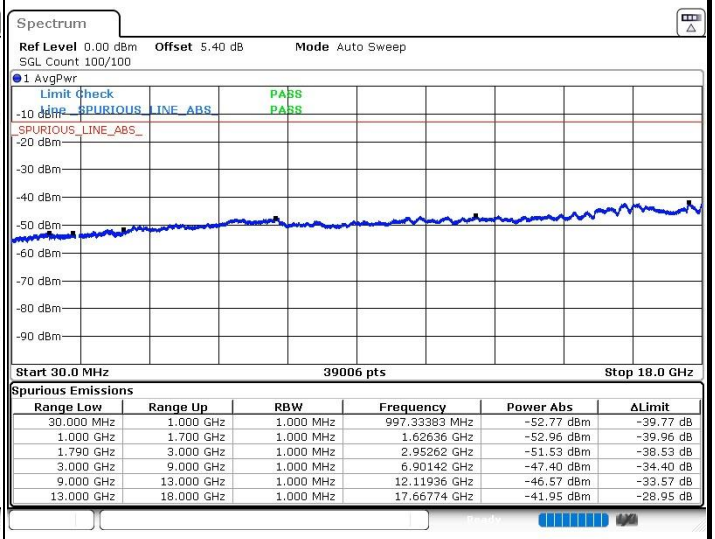


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	970.18741 MHz	-52.83 dBm	-39.83 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69843 GHz	-51.45 dBm	-38.45 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.11800 GHz	-46.29 dBm	-33.29 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.90392 GHz	-47.40 dBm	-34.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.12286 GHz	-46.59 dBm	-33.59 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.66690 GHz	-41.85 dBm	-28.85 dB

Date: 27.OCT.2021 15:18:10

Middle Channel / QPSK

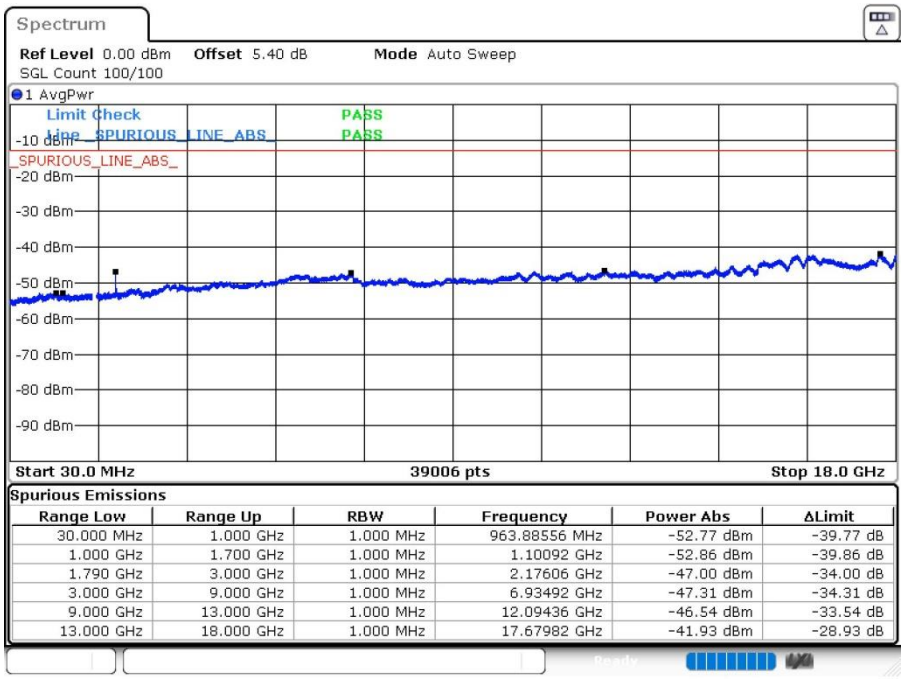


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	997.33383 MHz	-52.77 dBm	-39.77 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.62636 GHz	-52.96 dBm	-39.96 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.95262 GHz	-51.53 dBm	-38.53 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.90142 GHz	-47.40 dBm	-34.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.11936 GHz	-46.57 dBm	-33.57 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.66774 GHz	-41.95 dBm	-28.95 dB

Date: 27.OCT.2021 15:19:21

Highest Channel / QPSK



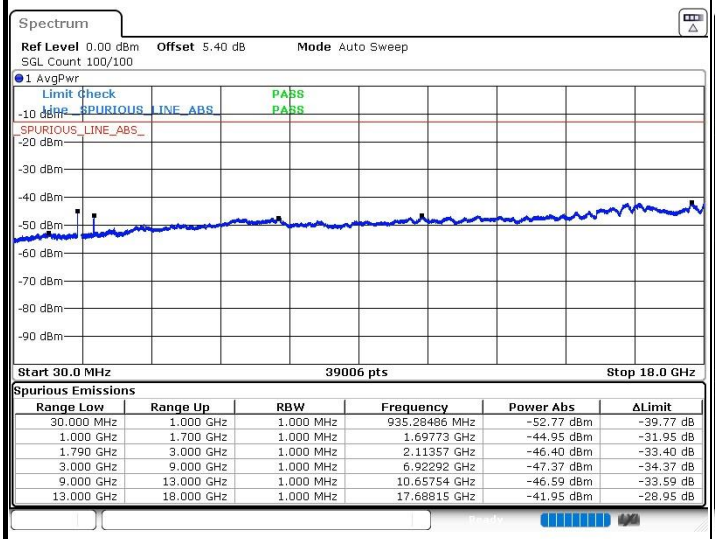
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	963.88556 MHz	-52.77 dBm	-39.77 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.10092 GHz	-52.86 dBm	-39.86 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.17606 GHz	-47.00 dBm	-34.00 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.93492 GHz	-47.31 dBm	-34.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.09436 GHz	-46.54 dBm	-33.54 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.67982 GHz	-41.93 dBm	-28.93 dB

Date: 27.OCT.2021 15:20:52

LTE Band 66 / 15MHz

Lowest Channel / QPSK

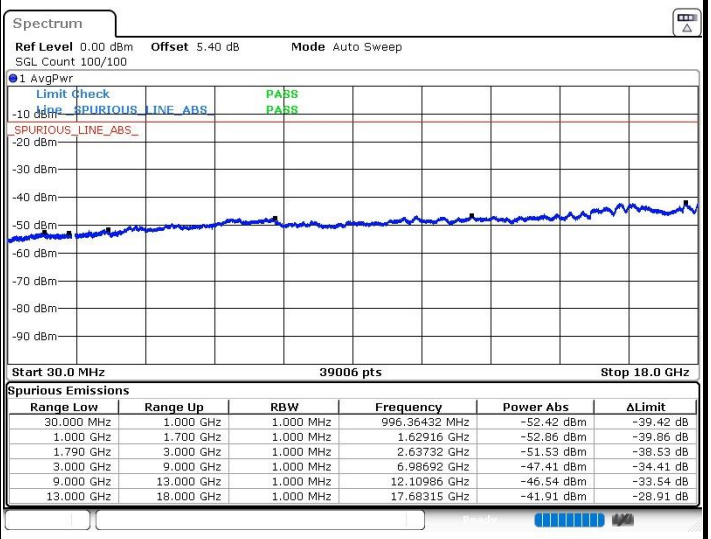


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	935.28486 MHz	-52.77 dBm	-39.77 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69773 GHz	-44.95 dBm	-31.95 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.11357 GHz	-46.40 dBm	-33.40 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.92292 GHz	-47.37 dBm	-34.37 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.65754 GHz	-46.59 dBm	-33.59 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.68815 GHz	-41.95 dBm	-28.95 dB

Date: 27.OCT.2021 15:27:12

Middle Channel / QPSK

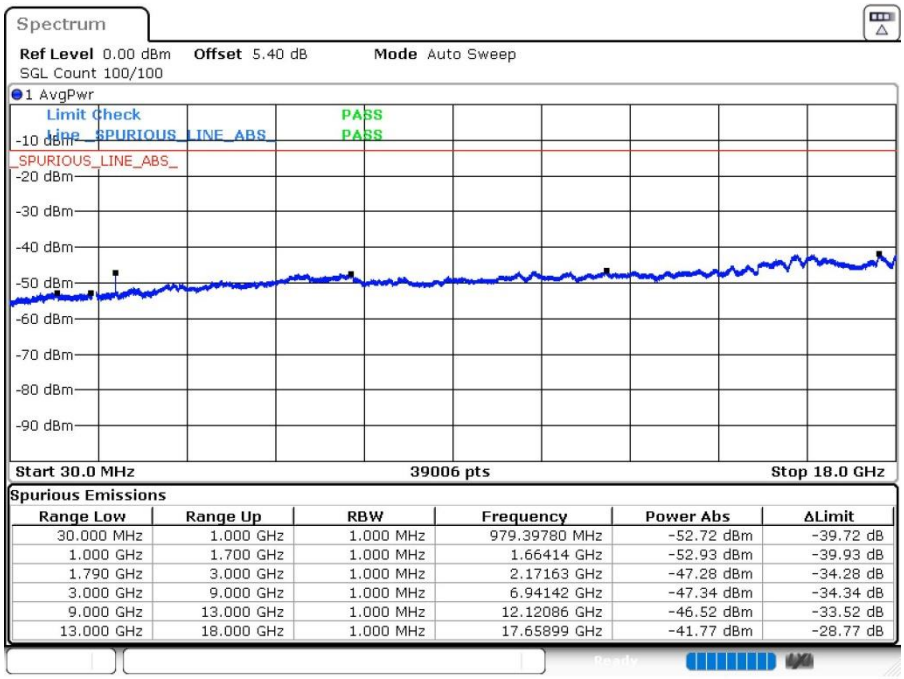


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.36432 MHz	-52.42 dBm	-39.42 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.62916 GHz	-52.86 dBm	-39.86 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.63732 GHz	-51.53 dBm	-38.53 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98692 GHz	-47.41 dBm	-34.41 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.10986 GHz	-46.54 dBm	-33.54 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.68315 GHz	-41.91 dBm	-28.91 dB

Date: 27.OCT.2021 15:28:48

Highest Channel / QPSK



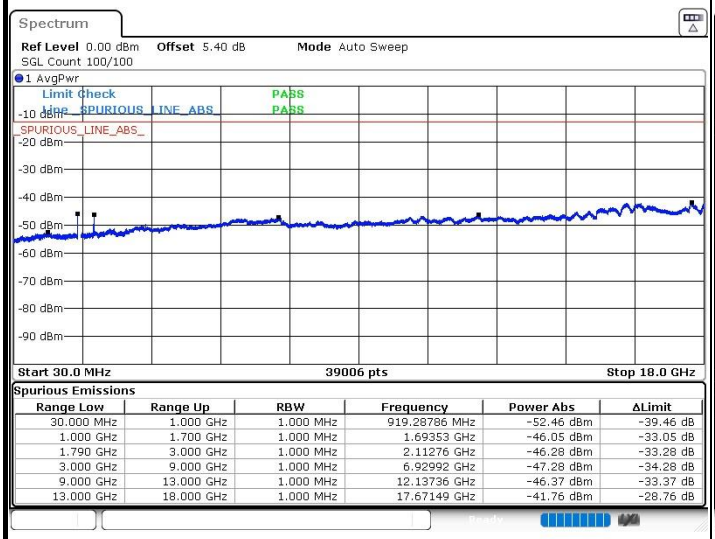
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	979.39780 MHz	-52.72 dBm	-39.72 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.66414 GHz	-52.93 dBm	-39.93 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.17163 GHz	-47.28 dBm	-34.28 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.94142 GHz	-47.34 dBm	-34.34 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.12086 GHz	-46.52 dBm	-33.52 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.65899 GHz	-41.77 dBm	-28.77 dB

Date: 27.OCT.2021 15:29:50

LTE Band 66 / 20MHz

Lowest Channel / QPSK

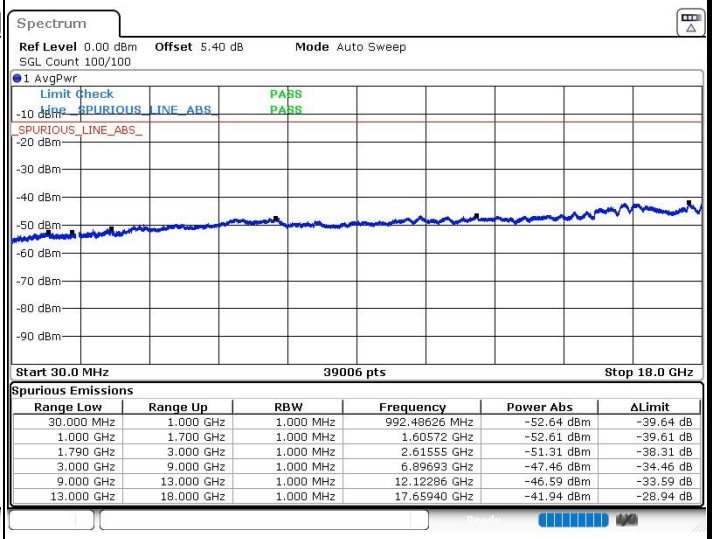


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	919.28786 MHz	-52.46 dBm	-39.46 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69353 GHz	-46.05 dBm	-33.05 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.11276 GHz	-46.28 dBm	-33.28 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.92992 GHz	-47.28 dBm	-34.28 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.13736 GHz	-46.37 dBm	-33.37 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.67149 GHz	-41.76 dBm	-28.76 dB

Date: 27.OCT.2021 15:36:59

Middle Channel / QPSK

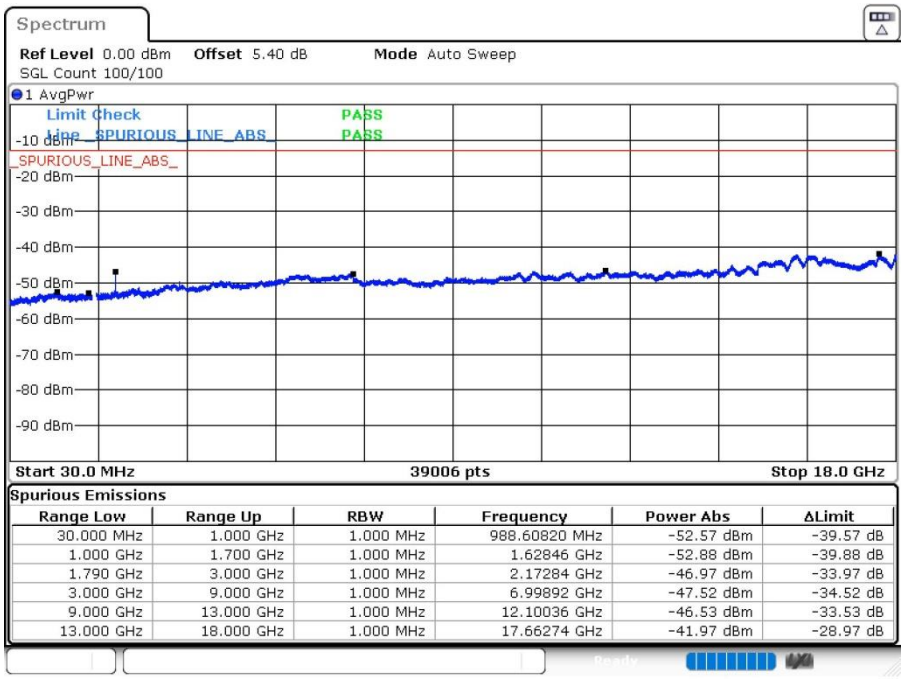


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.48626 MHz	-52.64 dBm	-39.64 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.60572 GHz	-52.61 dBm	-39.61 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.61555 GHz	-51.31 dBm	-38.31 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.89693 GHz	-47.46 dBm	-34.46 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.12286 GHz	-46.59 dBm	-33.59 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.65940 GHz	-41.94 dBm	-28.94 dB

Date: 27.OCT.2021 15:41:41

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	988.60820 MHz	-52.57 dBm	-39.57 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.62846 GHz	-52.88 dBm	-39.88 dB
1.790 GHz	3.000 GHz	1.000 MHz	2.17284 GHz	-46.97 dBm	-33.97 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99892 GHz	-47.52 dBm	-34.52 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.10036 GHz	-46.53 dBm	-33.53 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.66274 GHz	-41.97 dBm	-28.97 dB

Date: 27.OCT.2021 15:43:06

Frequency Stability

Test Conditions		LTE Band 66 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0015	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0014	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0022	
0	Normal Voltage	0.0011	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0005	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0012	
20	Normal Voltage	0.0005	
20	Battery End Point	0.0023	

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Chris Chen	Temperature :	22~23℃
		Relative Humidity :	41~42%

Note: Pre-scanned harmonic for the different antenna, we choose the worst antenna mode to test.

LTE Band 12 / 10MHz / QPSK for Ant.0								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1406	-68.43	-13	-55.43	-75.40	1.58	10.70	H
	2110	-63.00	-13	-50.00	-71.25	2.10	12.50	H
	2816	-60.84	-13	-47.84	-69.73	2.86	13.90	H
	3516	-61.50	-13	-48.50	-69.19	3.46	13.30	H
	1406	-68.62	-13	-55.62	-75.59	1.58	10.70	V
	2110	-63.84	-13	-50.84	-72.09	2.10	12.50	V
	2816	-61.18	-13	-48.18	-70.07	2.86	13.90	V
	3516	-60.91	-13	-47.91	-68.60	3.46	13.30	V

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

LTE Band 13 / 5MHz / QPSK for Ant.1								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1560	-67.99	-42.15	-25.84	-70.62	1.09	5.87	H
	2340	-61.50	-13	-48.50	-63.90	1.37	5.92	H
	3120	-61.32	-13	-48.32	-65.21	1.64	7.68	H
	1560	-67.53	-42.15	-25.38	-70.16	1.09	5.87	V
	2340	-57.65	-13	-44.65	-60.05	1.37	5.92	V
	3120	-61.17	-13	-48.17	-65.06	1.64	7.68	V

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

LTE Band 13 / 10MHz / QPSK for Ant.1								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1556	-68.23	-13	-55.23	-70.86	1.09	5.87	H
	2332	-60.21	-13	-47.21	-62.61	1.37	5.92	H
	3108	-60.78	-13	-47.78	-64.67	1.64	7.68	H
	1556	-67.56	-13	-54.56	-70.19	1.09	5.87	V
	2332	-55.65	-13	-42.65	-58.05	1.37	5.92	V
	3108	-60.59	-13	-47.59	-64.48	1.64	7.68	V

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

LTE Band 25 / 20MHz / QPSK for Ant.3								
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	3747	-54.34	-13	-41.34	-66.60	2.64	14.90	H
	5622	-57.26	-13	-44.26	-69.12	2.94	14.80	H
	7500	-54.92	-13	-41.92	-64.69	3.39	13.16	H
	3747	-54.16	-13	-41.16	-66.42	2.64	14.90	V
	5622	-57.86	-13	-44.86	-69.72	2.94	14.80	V
	7500	-54.88	-13	-41.88	-64.65	3.39	13.16	V

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

LTE Band 26 / 15MHz / 64QAM for Ant.0								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1660	-66.11	-13	-53.11	-73.08	1.58	10.70	H
	2490	-61.96	-13	-48.96	-70.21	2.102	12.50	H
	3318	-62.00	-13	-49.00	-70.89	2.856	13.90	H
	1660	-65.47	-13	-52.47	-72.44	1.58	10.70	V
	2490	-60.19	-13	-47.19	-68.44	2.10	12.50	V
	3318	-61.94	-13	-48.94	-70.83	2.86	13.90	V

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

LTE Band 66 / 20MHz / QPSK for Ant.3								
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	3492	-49.99	-13	-36.99	-60.73	2.604	13.34	H
	5238	-57.45	-13	-44.45	-67.96	3.011	13.52	H
	6984	-55.70	-13	-42.70	-65.90	3.271	13.47	H
	3492	-50.61	-13	-37.61	-61.35	2.604	13.34	V
	5238	-55.35	-13	-42.35	-65.86	3.011	13.52	V
	6984	-55.32	-13	-42.32	-65.52	3.271	13.47	V

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