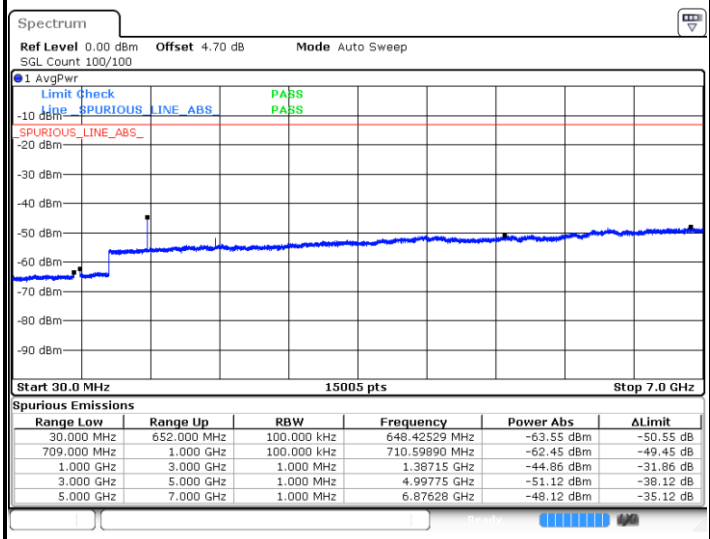
LTE Band 71 / 5MHz

Highest Channel / QPSK

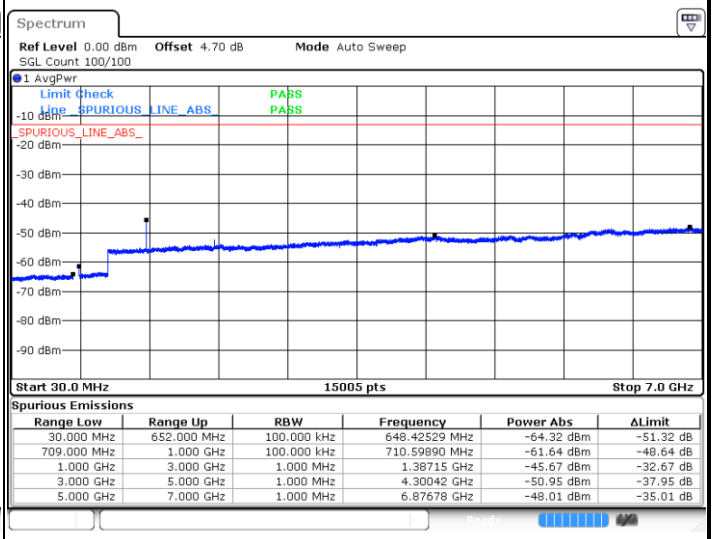


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	648.42529 MHz	-63.55 dBm	-50.55 dB
709.000 MHz	1.000 GHz	100.000 kHz	710.59890 MHz	-62.45 dBm	-49.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.38715 GHz	-44.86 dBm	-31.86 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.99775 GHz	-51.12 dBm	-38.12 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.87628 GHz	-48.12 dBm	-35.12 dB

Date: 5.FEB.2020 23:27:42

Highest Channel / 16QAM



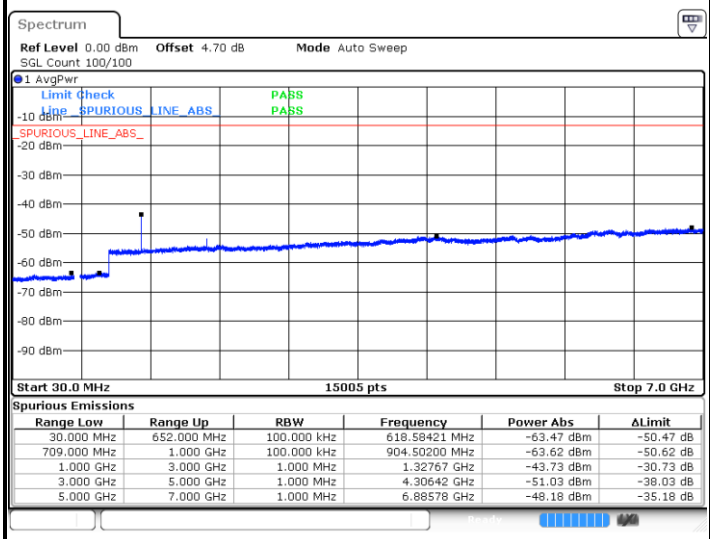
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	648.42529 MHz	-64.32 dBm	-51.32 dB
709.000 MHz	1.000 GHz	100.000 kHz	710.59890 MHz	-61.64 dBm	-48.64 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.38715 GHz	-45.67 dBm	-32.67 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.30042 GHz	-50.95 dBm	-37.95 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.87678 GHz	-48.01 dBm	-35.01 dB

Date: 5.FEB.2020 23:26:57

LTE Band 71 / 10MHz

Lowest Channel / QPSK

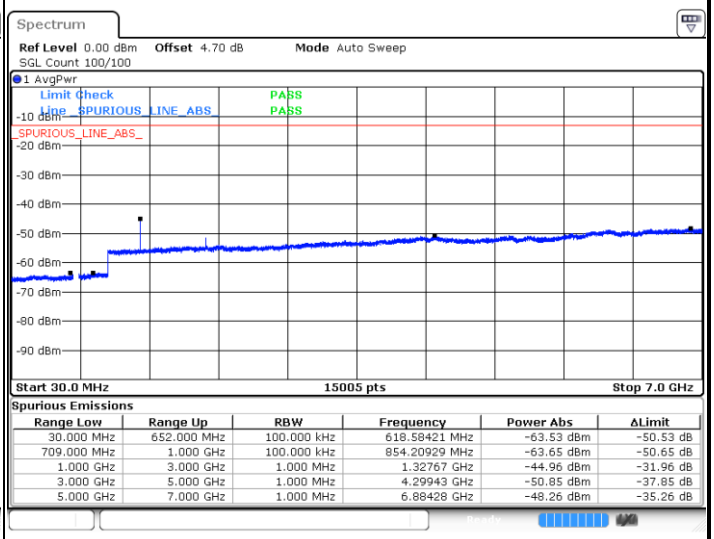


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	618.58421 MHz	-63.47 dBm	-50.47 dB
709.000 MHz	1.000 GHz	100.000 kHz	904.50200 MHz	-63.62 dBm	-50.62 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.32767 GHz	-43.73 dBm	-30.73 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.30642 GHz	-51.03 dBm	-38.03 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.88578 GHz	-48.18 dBm	-35.18 dB

Date: 5.FEB.2020 23:34:11

Lowest Channel / 16QAM



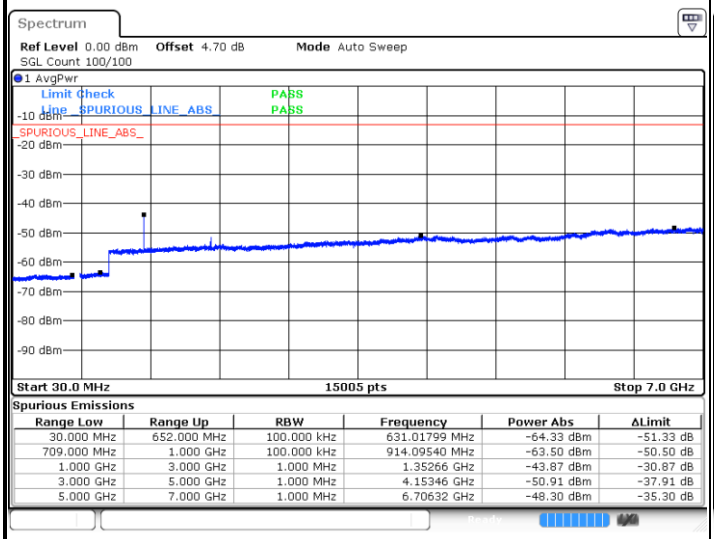
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	618.58421 MHz	-63.53 dBm	-50.53 dB
709.000 MHz	1.000 GHz	100.000 kHz	854.20929 MHz	-63.65 dBm	-50.65 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.32767 GHz	-44.96 dBm	-31.96 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.29943 GHz	-50.85 dBm	-37.85 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.88428 GHz	-48.26 dBm	-35.26 dB

Date: 5.FEB.2020 23:35:35

LTE Band 71 / 10MHz

Middle Channel / QPSK

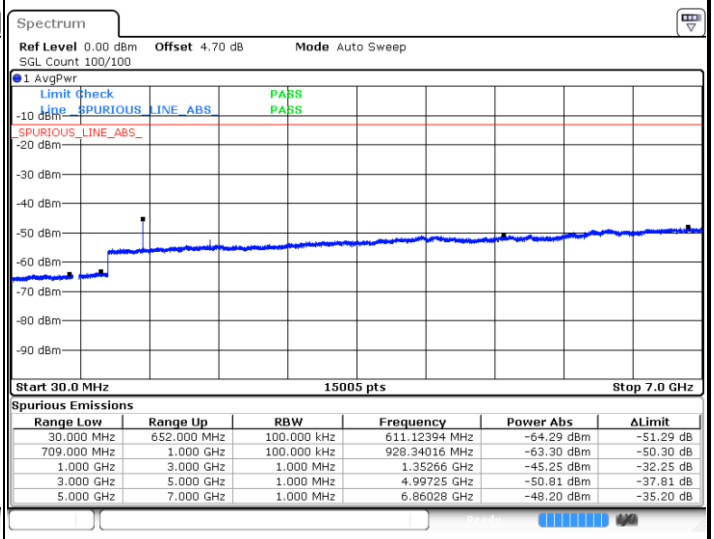


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	631.01799 MHz	-64.33 dBm	-51.33 dB
709.000 MHz	1.000 GHz	100.000 kHz	914.09540 MHz	-63.50 dBm	-50.50 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.35266 GHz	-43.87 dBm	-30.87 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.15346 GHz	-50.91 dBm	-37.91 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.70632 GHz	-48.30 dBm	-35.30 dB

Date: 5.FEB.2020 23:37:17

Middle Channel / 16QAM

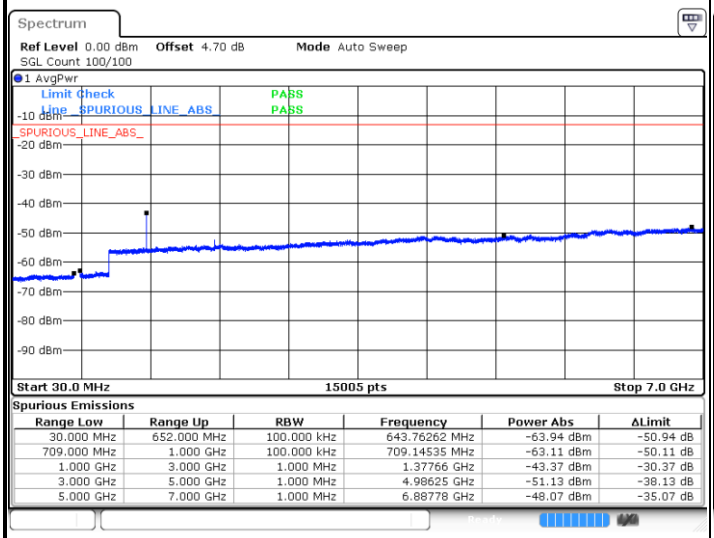


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	611.12394 MHz	-64.29 dBm	-51.29 dB
709.000 MHz	1.000 GHz	100.000 kHz	928.34016 MHz	-63.30 dBm	-50.30 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.35266 GHz	-45.25 dBm	-32.25 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.99725 GHz	-50.81 dBm	-37.81 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.86028 GHz	-48.20 dBm	-35.20 dB

Date: 5.FEB.2020 23:36:33

Highest Channel / QPSK

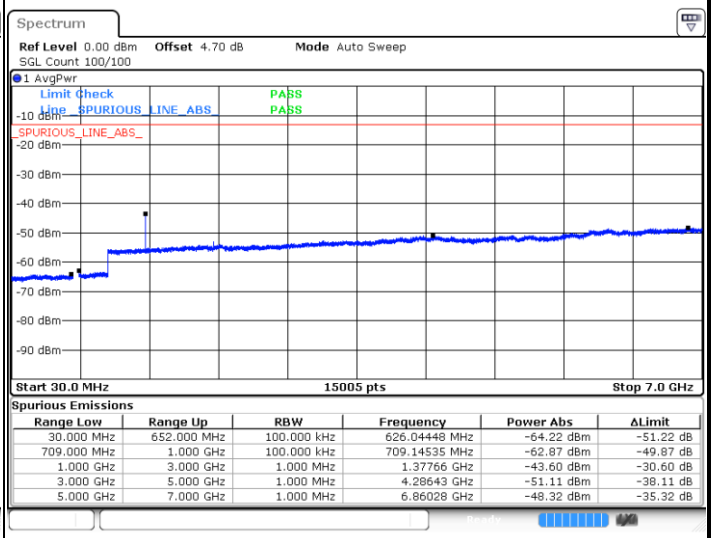


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	643.76262 MHz	-63.94 dBm	-50.94 dB
709.000 MHz	1.000 GHz	100.000 kHz	709.14535 MHz	-63.11 dBm	-50.11 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.37766 GHz	-43.37 dBm	-30.37 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.98625 GHz	-51.13 dBm	-38.13 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.88778 GHz	-48.07 dBm	-35.07 dB

Date: 5.FEB.2020 23:41:02

Highest Channel / 16QAM



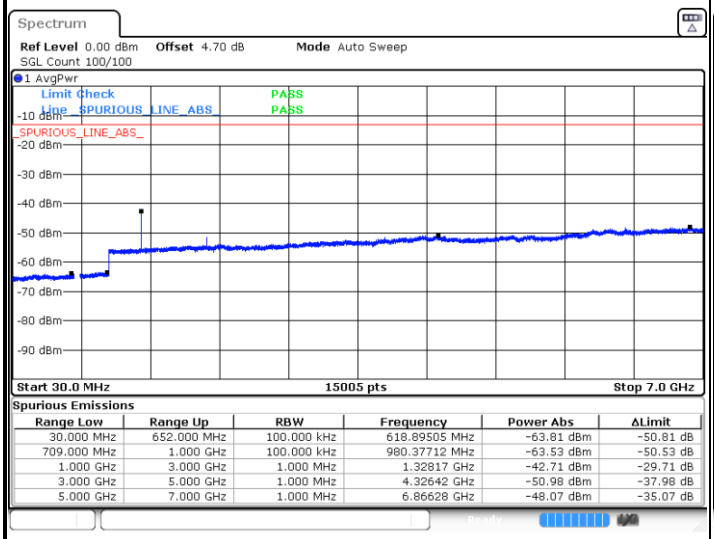
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	626.04448 MHz	-64.22 dBm	-51.22 dB
709.000 MHz	1.000 GHz	100.000 kHz	709.14535 MHz	-62.87 dBm	-49.87 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.37766 GHz	-43.60 dBm	-30.60 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.28643 GHz	-51.11 dBm	-38.11 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.86028 GHz	-48.32 dBm	-35.32 dB

Date: 5.FEB.2020 23:41:25

LTE Band 71 / 15MHz

Lowest Channel / QPSK

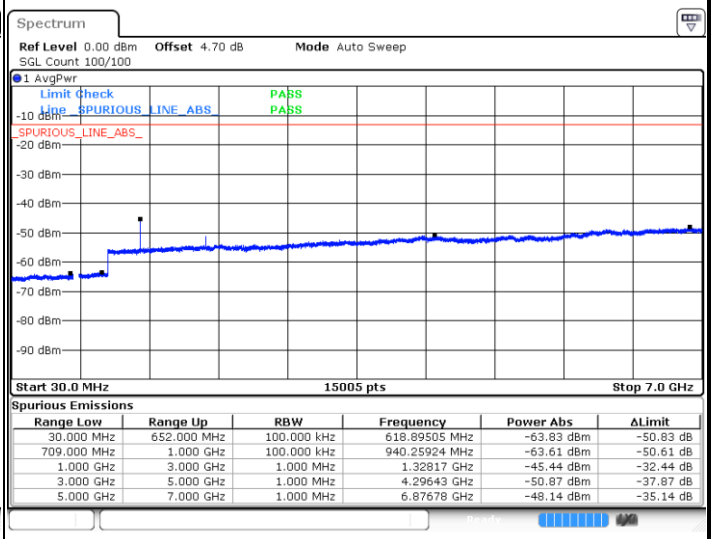


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	618.89505 MHz	-63.81 dBm	-50.81 dB
709.000 MHz	1.000 GHz	100.000 kHz	980.37712 MHz	-63.53 dBm	-50.53 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.32817 GHz	-42.71 dBm	-29.71 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.32642 GHz	-50.98 dBm	-37.98 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.86628 GHz	-48.07 dBm	-35.07 dB

Date: 6.FEB.2020 00:11:20

Lowest Channel / 16QAM

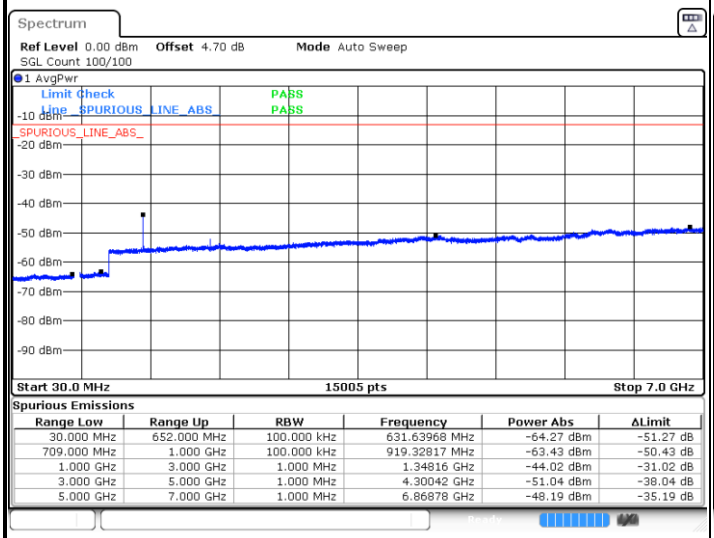


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	618.89505 MHz	-63.83 dBm	-50.83 dB
709.000 MHz	1.000 GHz	100.000 kHz	940.25924 MHz	-63.61 dBm	-50.61 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.32817 GHz	-45.44 dBm	-32.44 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.29643 GHz	-50.87 dBm	-37.87 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.87678 GHz	-48.14 dBm	-35.14 dB

Date: 5.FEB.2020 23:45:58

Middle Channel / QPSK

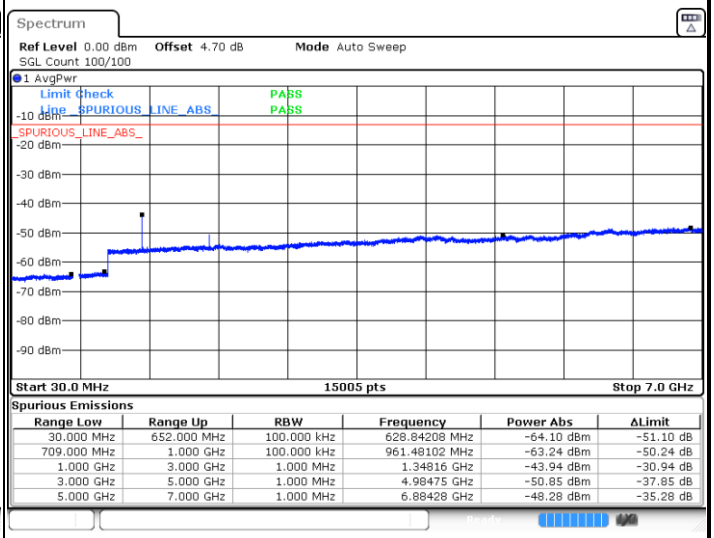


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	631.63968 MHz	-64.27 dBm	-51.27 dB
709.000 MHz	1.000 GHz	100.000 kHz	919.32817 MHz	-63.43 dBm	-50.43 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.34816 GHz	-44.02 dBm	-31.02 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.30042 GHz	-51.04 dBm	-38.04 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.86878 GHz	-48.19 dBm	-35.19 dB

Date: 6.FEB.2020 00:11:49

Middle Channel / 16QAM



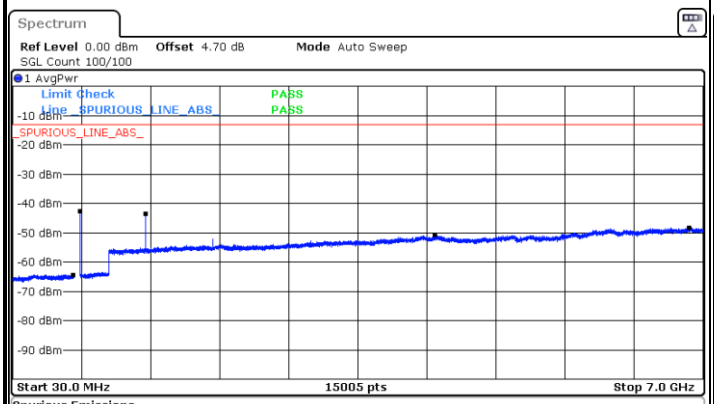
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	628.84208 MHz	-64.10 dBm	-51.10 dB
709.000 MHz	1.000 GHz	100.000 kHz	961.48102 MHz	-63.24 dBm	-50.24 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.34816 GHz	-43.94 dBm	-30.94 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.98475 GHz	-50.85 dBm	-37.85 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.88428 GHz	-48.28 dBm	-35.28 dB

Date: 6.FEB.2020 00:12:10

LTE Band71 / 15MHz

Highest Channel / QPSK

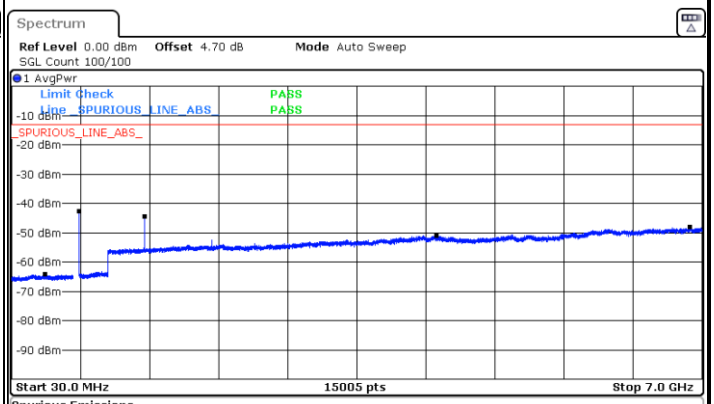


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	638.78911 MHz	-64.39 dBm	-51.39 dB
709.000 MHz	1.000 GHz	100.000 kHz	710.59890 MHz	-42.64 dBm	-29.64 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.36816 GHz	-43.57 dBm	-30.57 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.29093 GHz	-50.89 dBm	-37.89 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.85429 GHz	-48.33 dBm	-35.33 dB

Date: 6.FEB.2020 00:16:36

Highest Channel / 16QAM



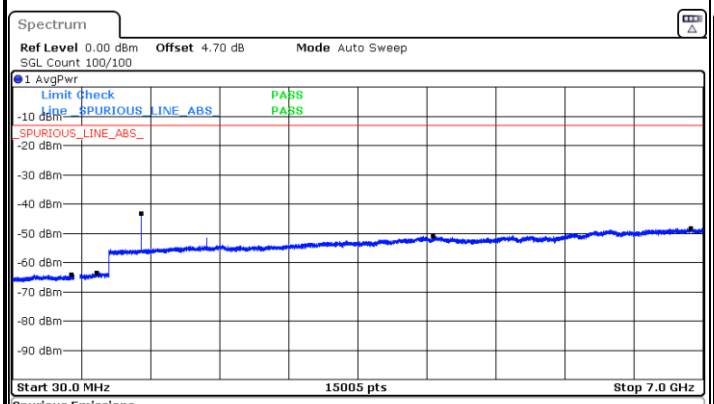
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	366.80010 MHz	-64.23 dBm	-51.23 dB
709.000 MHz	1.000 GHz	100.000 kHz	710.59890 MHz	-42.77 dBm	-29.77 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.36816 GHz	-44.47 dBm	-31.47 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.31742 GHz	-51.09 dBm	-38.09 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.87978 GHz	-48.09 dBm	-35.09 dB

Date: 6.FEB.2020 00:16:16

LTE Band 71 / 20MHz

Lowest Channel / QPSK

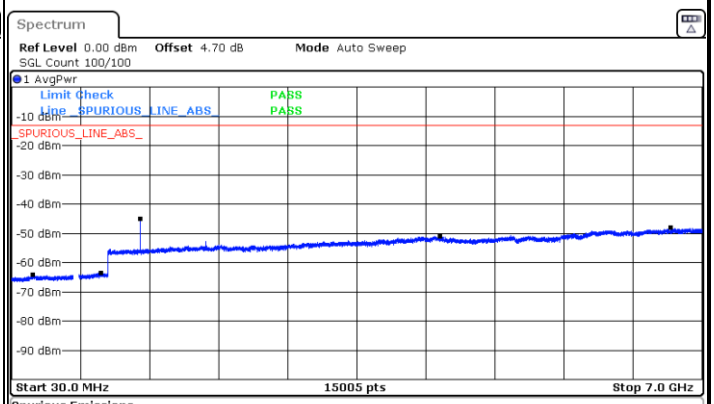


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	619.20590 MHz	-64.07 dBm	-51.07 dB
709.000 MHz	1.000 GHz	100.000 kHz	876.59391 MHz	-63.44 dBm	-50.44 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.32867 GHz	-43.21 dBm	-30.21 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.27693 GHz	-51.05 dBm	-38.05 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.87428 GHz	-48.25 dBm	-35.25 dB

Date: 6.FEB.2020 00:21:43

Lowest Channel / 16QAM



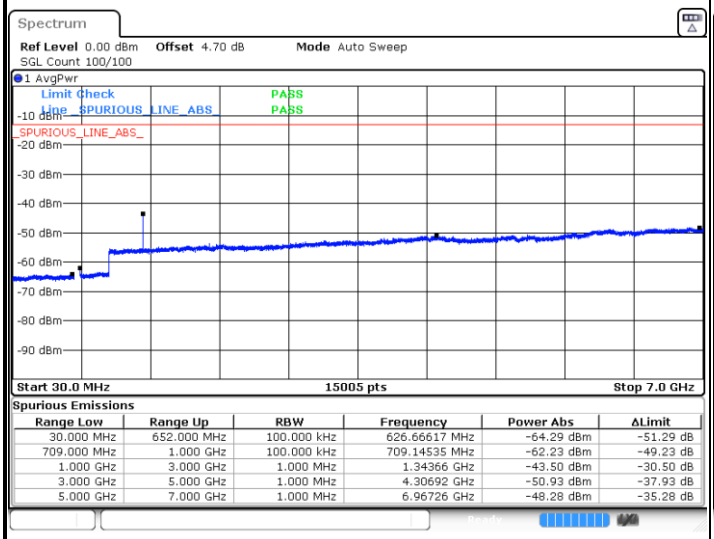
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	245.25987 MHz	-64.09 dBm	-51.09 dB
709.000 MHz	1.000 GHz	100.000 kHz	931.82867 MHz	-63.61 dBm	-50.61 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.32867 GHz	-45.14 dBm	-32.14 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.34891 GHz	-51.13 dBm	-38.13 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.67883 GHz	-48.14 dBm	-35.14 dB

Date: 6.FEB.2020 00:22:57

LTE Band 71 / 20MHz

Middle Channel / QPSK

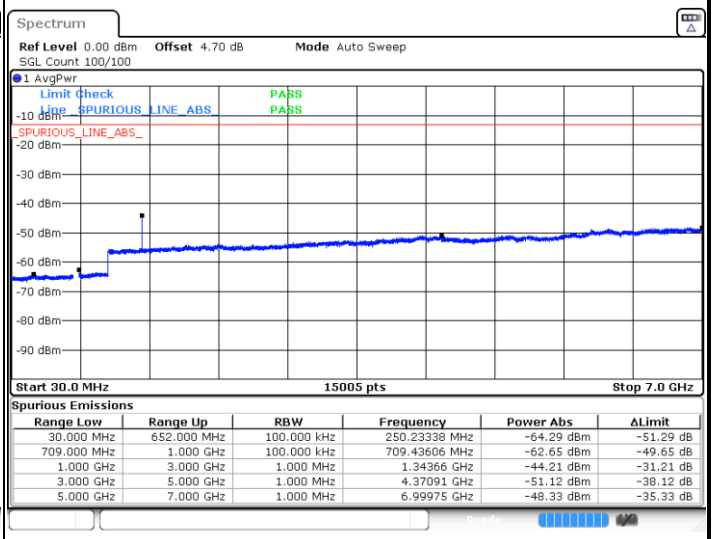


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	626.66617 MHz	-64.29 dBm	-51.29 dB
709.000 MHz	1.000 GHz	100.000 kHz	709.14535 MHz	-62.23 dBm	-49.23 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.34366 GHz	-43.50 dBm	-30.50 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.30692 GHz	-50.93 dBm	-37.93 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.96726 GHz	-48.28 dBm	-35.28 dB

Date: 6.FEB.2020 00:24:14

Middle Channel / 16QAM

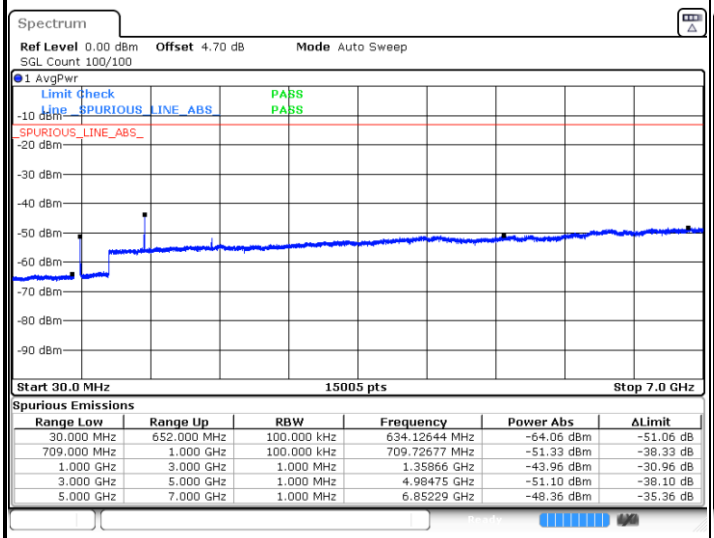


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	250.23338 MHz	-64.29 dBm	-51.29 dB
709.000 MHz	1.000 GHz	100.000 kHz	709.43606 MHz	-62.65 dBm	-49.65 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.34366 GHz	-44.21 dBm	-31.21 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.37091 GHz	-51.12 dBm	-38.12 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.99975 GHz	-48.33 dBm	-35.33 dB

Date: 6.FEB.2020 00:23:35

Highest Channel / QPSK

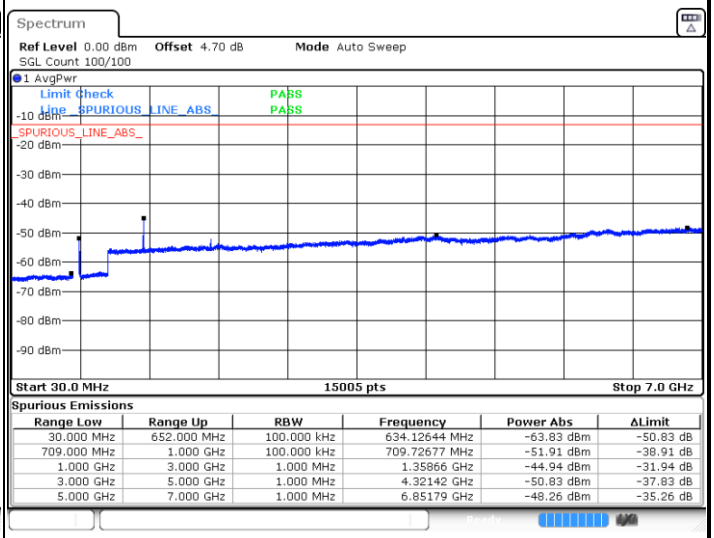


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	634.12644 MHz	-64.06 dBm	-51.06 dB
709.000 MHz	1.000 GHz	100.000 kHz	709.72677 MHz	-51.33 dBm	-38.33 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.35866 GHz	-43.96 dBm	-30.96 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.98475 GHz	-51.10 dBm	-38.10 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.85229 GHz	-48.36 dBm	-35.36 dB

Date: 6.FEB.2020 00:28:08

Highest Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	652.000 MHz	100.000 kHz	634.12644 MHz	-63.83 dBm	-50.83 dB
709.000 MHz	1.000 GHz	100.000 kHz	709.72677 MHz	-51.91 dBm	-38.91 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.35866 GHz	-44.94 dBm	-31.94 dB
3.000 GHz	5.000 GHz	1.000 MHz	4.32142 GHz	-50.83 dBm	-37.83 dB
5.000 GHz	7.000 GHz	1.000 MHz	6.85179 GHz	-48.26 dBm	-35.26 dB

Date: 6.FEB.2020 00:28:37

Frequency Stability

Test Conditions		LTE Band 71 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0023	PASS
40	Normal Voltage	0.0016	
30	Normal Voltage	0.0021	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0008	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0018	
-20	Normal Voltage	0.0020	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0032	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0004	

Note:

1. Normal Voltage =3.7 V. ; Battery End Point (BEP) =3.5 V. ; Maximum Voltage =4.2 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 2 / 20MHz / 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	3742.18	-56.89	-13	-43.89	-69.15	2.64	14.90	H
	5613	-44.40	-13	-31.40	-56.26	2.94	14.80	H
	7488	-44.55	-13	-31.55	-54.32	3.39	13.16	H
	3741	-56.85	-13	-43.85	-69.11	2.64	14.90	V
	5613.27	-51.35	-13	-38.35	-63.21	2.94	14.80	V
	7488	-47.70	-13	-34.70	-57.47	3.39	13.16	V

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

LTE Band 5 / 10MHz / QPSK								
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	1664	-61.07	-13	-48.07	-68.04	1.58	10.70	H
	2496	-44.23	-13	-31.23	-52.48	2.102	12.50	H
	3330	-61.49	-13	-48.49	-70.38	2.856	13.90	H
	1664	-61.88	-13	-48.88	-68.85	1.58	10.70	V
	2496	-45.61	-13	-32.61	-53.86	2.10	12.50	V
	3330	-61.09	-13	-48.09	-69.98	2.86	13.90	V

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

LTE Band 12 / 10MHz / QPSK								
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	-59.01	-13	-46.01	-65.98	1.58	10.70	H
	2110	-51.44	-13	-38.44	-59.69	2.102	12.50	H
	2812	-60.63	-13	-47.63	-69.52	2.856	13.90	H
	1406	-60.37	-13	-47.37	-67.34	1.58	10.70	V
	2110	-58.08	-13	-45.08	-66.33	2.10	12.50	V
	2812	-61.01	-13	-48.01	-69.90	2.86	13.90	V

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

LTE Band 41 / 20MHz / 16QAM								
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	5166	-55.81	-25	-30.81	-66.02	3.03	13.24	H
	7752	-36.64	-25	-11.64	-46.09	3.56	13.01	H
	10332	-46.03	-25	-21.03	-55.55	3.92	13.44	H
	12924	-32.21	-25	-7.21	-42.13	4.44	14.36	H
	5166	-56.19	-25	-31.19	-66.40	3.03	13.24	V
	7752	-41.06	-25	-16.06	-50.51	3.56	13.01	V
	10332	-45.90	-25	-20.90	-55.42	3.92	13.44	V
	12924	-38.63	-25	-13.63	-48.55	4.44	14.36	V

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

LTE Band 66 / 20MHz / 16QAM								
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	3741	-56.92	-13	-43.92	-67.66	2.604	13.34	H
	5208	-46.04	-13	-33.04	-56.55	3.011	13.52	H
	6948	-45.29	-13	-32.29	-55.49	3.271	13.47	H
	8676	-42.67	-13	-29.67	-49.64	5.527	12.5	H
	3741	-56.83	-13	-43.83	-67.57	2.604	13.34	V
	5208	-49.07	-13	-36.07	-59.58	3.011	13.52	V
	6948	-47.56	-13	-34.56	-57.76	3.271	13.47	V
	8676	-40.28	-13	-27.28	-47.25	5.527	12.50	V

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

LTE Band 71 / 20MHz / 16QAM								
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	1348	-64.39	-13	-51.39	-66.14	1.02	4.92	H
	2022	-59.46	-13	-46.46	-61.43	1.27	5.39	H
	2696	-62.54	-13	-49.54	-65.47	1.49	6.57	H
	1348	-64.73	-13	-51.73	-66.48	1.02	4.92	V
	2022	-60.58	-13	-47.58	-62.55	1.27	5.39	V
	2696	-62.76	-13	-49.76	-65.69	1.49	6.57	V

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