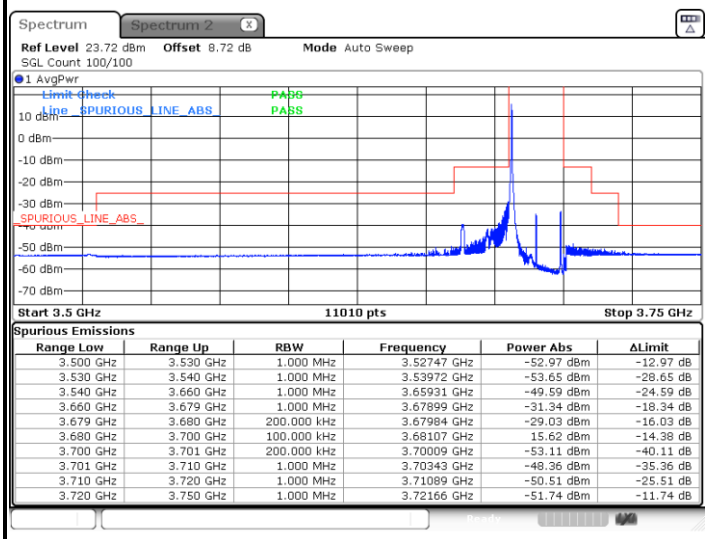
LTE Band 48 / 20MHz

256QAM

Highest Channel / 1RB0

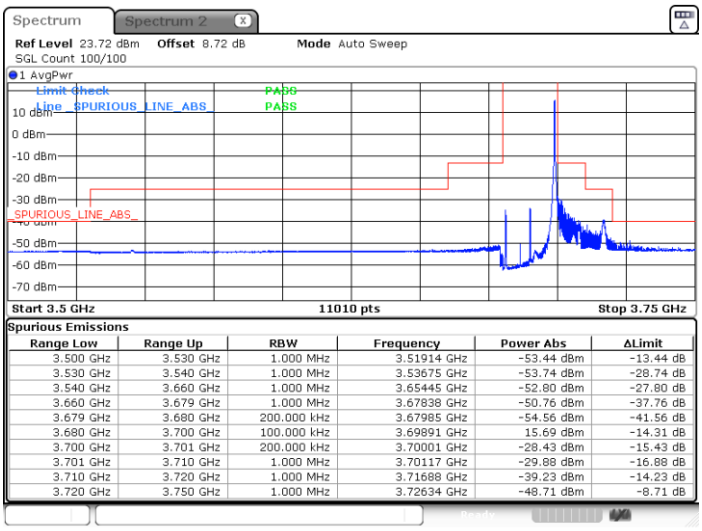


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.500 GHz	3.530 GHz	1.000 MHz	3.52747 GHz	-52.97 dBm	-12.97 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53972 GHz	-53.65 dBm	-28.65 dB
3.540 GHz	3.660 GHz	1.000 MHz	3.65931 GHz	-49.59 dBm	-24.59 dB
3.660 GHz	3.679 GHz	1.000 MHz	3.67899 GHz	-31.34 dBm	-18.34 dB
3.679 GHz	3.680 GHz	200.000 kHz	3.67984 GHz	-29.03 dBm	-16.03 dB
3.680 GHz	3.700 GHz	100.000 kHz	3.68107 GHz	15.62 dBm	-14.38 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70009 GHz	-53.11 dBm	-40.11 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70343 GHz	-48.36 dBm	-35.36 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71089 GHz	-50.51 dBm	-25.51 dB
3.720 GHz	3.750 GHz	1.000 MHz	3.72166 GHz	-51.74 dBm	-11.74 dB

Date: 13.NOV.2024 08:10:35

Highest Channel / 1RBmax

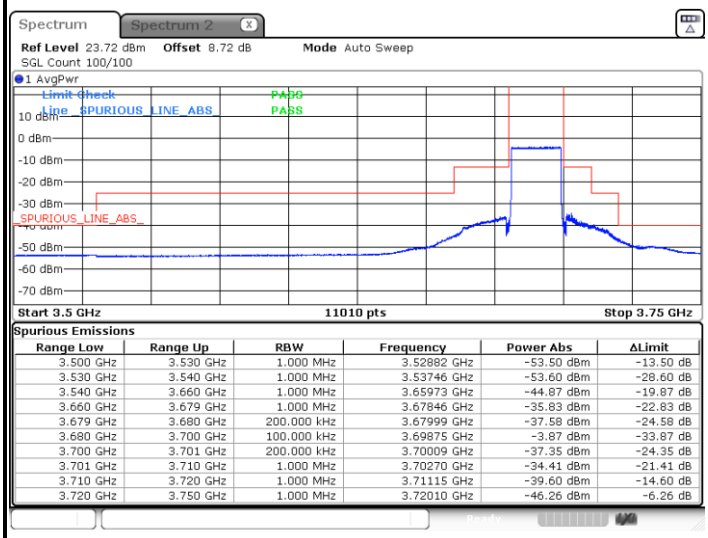


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.500 GHz	3.530 GHz	1.000 MHz	3.51914 GHz	-53.44 dBm	-13.44 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53675 GHz	-53.74 dBm	-28.74 dB
3.540 GHz	3.660 GHz	1.000 MHz	3.65445 GHz	-52.80 dBm	-27.80 dB
3.660 GHz	3.679 GHz	1.000 MHz	3.67838 GHz	-50.76 dBm	-37.76 dB
3.679 GHz	3.680 GHz	200.000 kHz	3.67985 GHz	-54.56 dBm	-41.56 dB
3.680 GHz	3.700 GHz	100.000 kHz	3.69891 GHz	15.69 dBm	-14.31 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70001 GHz	-28.43 dBm	-15.43 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70117 GHz	-29.88 dBm	-16.88 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71688 GHz	-39.23 dBm	-14.23 dB
3.720 GHz	3.750 GHz	1.000 MHz	3.72634 GHz	-48.71 dBm	-8.71 dB

Date: 13.NOV.2024 08:17:42

Highest Channel / FullRB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.500 GHz	3.530 GHz	1.000 MHz	3.52882 GHz	-53.50 dBm	-13.50 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53746 GHz	-53.60 dBm	-28.60 dB
3.540 GHz	3.660 GHz	1.000 MHz	3.65973 GHz	-44.87 dBm	-19.87 dB
3.660 GHz	3.679 GHz	1.000 MHz	3.67846 GHz	-35.83 dBm	-22.83 dB
3.679 GHz	3.680 GHz	200.000 kHz	3.67999 GHz	-37.58 dBm	-24.58 dB
3.680 GHz	3.700 GHz	100.000 kHz	3.69875 GHz	-3.87 dBm	-33.87 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70009 GHz	-37.35 dBm	-24.35 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70270 GHz	-34.41 dBm	-21.41 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71115 GHz	-39.60 dBm	-14.60 dB
3.720 GHz	3.750 GHz	1.000 MHz	3.72010 GHz	-46.26 dBm	-6.26 dB

Date: 13.NOV.2024 08:24:50

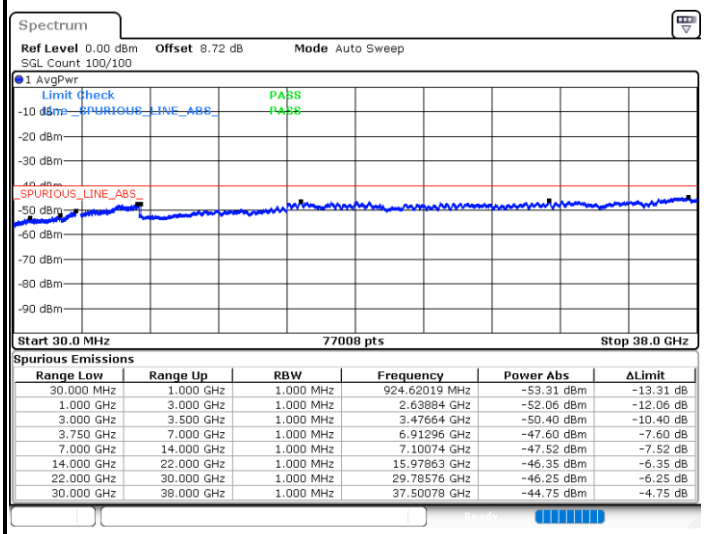
N/A

Conducted Spurious Emission

LTE Band 48 / 5MHz

QPSK / 1RB0

Lowest Channel

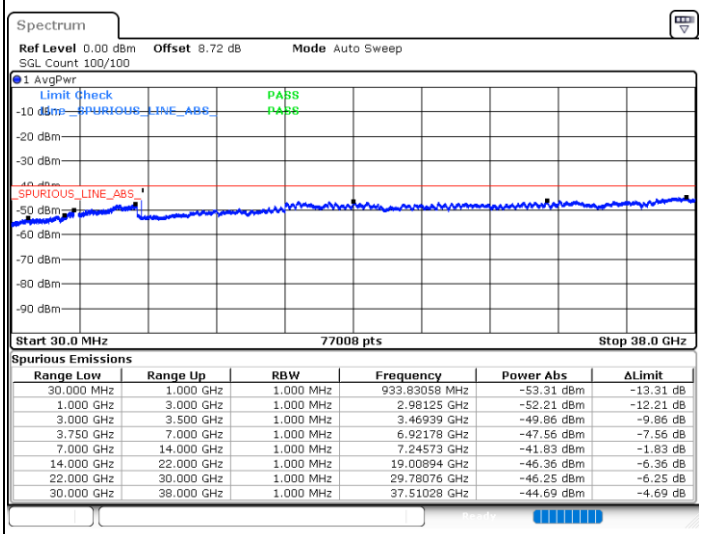


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	924.62019 MHz	-53.31 dBm	-13.31 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63884 GHz	-52.06 dBm	-12.06 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.47664 GHz	-50.40 dBm	-10.40 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.91296 GHz	-47.60 dBm	-7.60 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.10074 GHz	-47.52 dBm	-7.52 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.97863 GHz	-46.35 dBm	-6.35 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.78576 GHz	-46.25 dBm	-6.25 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.50078 GHz	-44.75 dBm	-4.75 dB

Date: 19.NOV.2024 16:52:08

Middle Channel

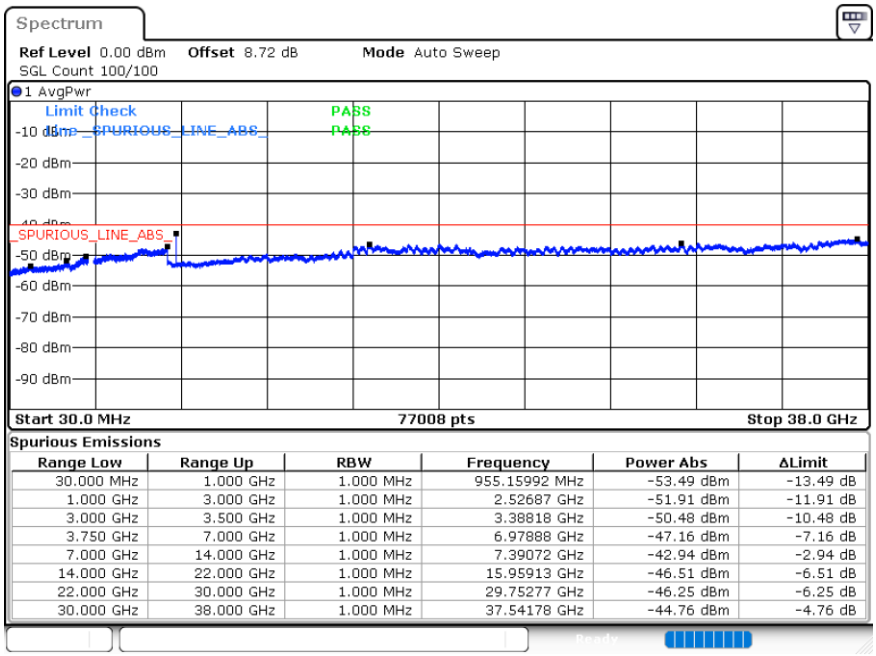


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	933.83058 MHz	-53.31 dBm	-13.31 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.98125 GHz	-52.21 dBm	-12.21 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.46939 GHz	-49.86 dBm	-9.86 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.92178 GHz	-47.56 dBm	-7.56 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.24573 GHz	-41.83 dBm	-1.83 dB
14.000 GHz	22.000 GHz	1.000 MHz	19.00894 GHz	-46.36 dBm	-6.36 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.78076 GHz	-46.25 dBm	-6.25 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.51028 GHz	-44.69 dBm	-4.69 dB

Date: 19.NOV.2024 16:53:29

Highest Channel



Spurious Emissions

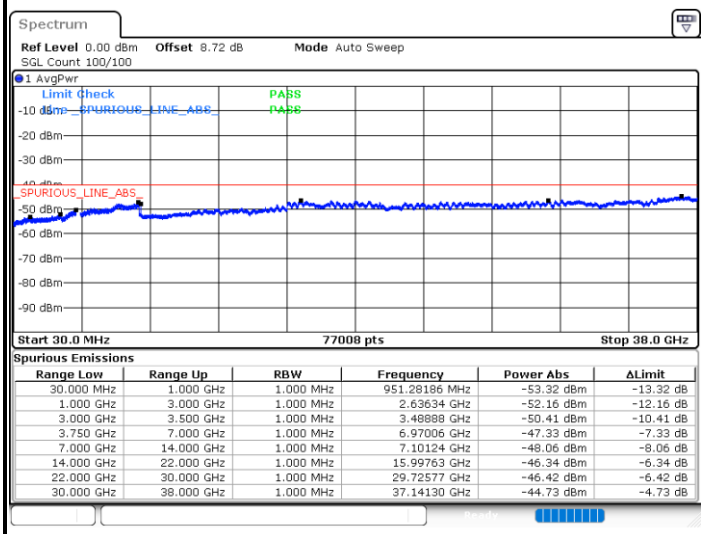
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	955.15992 MHz	-53.49 dBm	-13.49 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.52687 GHz	-51.91 dBm	-11.91 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.38818 GHz	-50.48 dBm	-10.48 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.97888 GHz	-47.16 dBm	-7.16 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.39072 GHz	-42.94 dBm	-2.94 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.95913 GHz	-46.51 dBm	-6.51 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.75277 GHz	-46.25 dBm	-6.25 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.54178 GHz	-44.76 dBm	-4.76 dB

Date: 19.NOV.2024 16:54:49

LTE Band 48 / 10MHz

QPSK / 1RB0

Lowest Channel

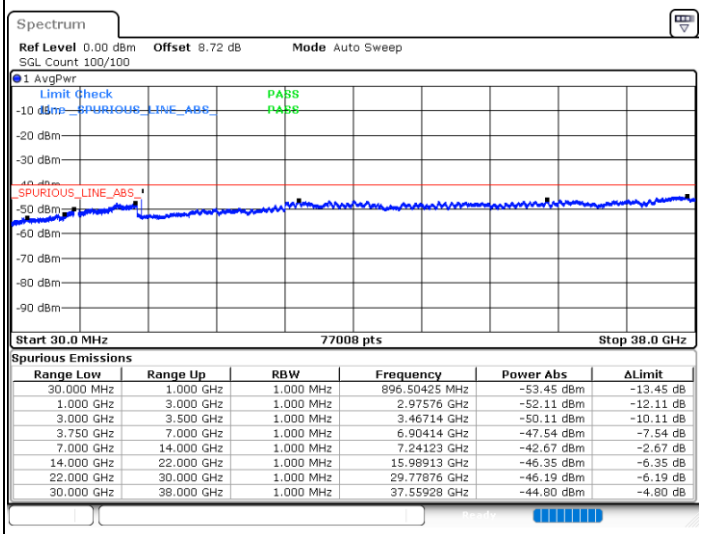


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-53.32 dBm	-13.32 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63634 GHz	-52.16 dBm	-12.16 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.48888 GHz	-50.41 dBm	-10.41 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.97006 GHz	-47.33 dBm	-7.33 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.10124 GHz	-48.06 dBm	-8.06 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.99763 GHz	-46.34 dBm	-6.34 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.72577 GHz	-46.42 dBm	-6.42 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.14130 GHz	-44.73 dBm	-4.73 dB

Date: 19.NOV.2024 16:56:11

Middle Channel

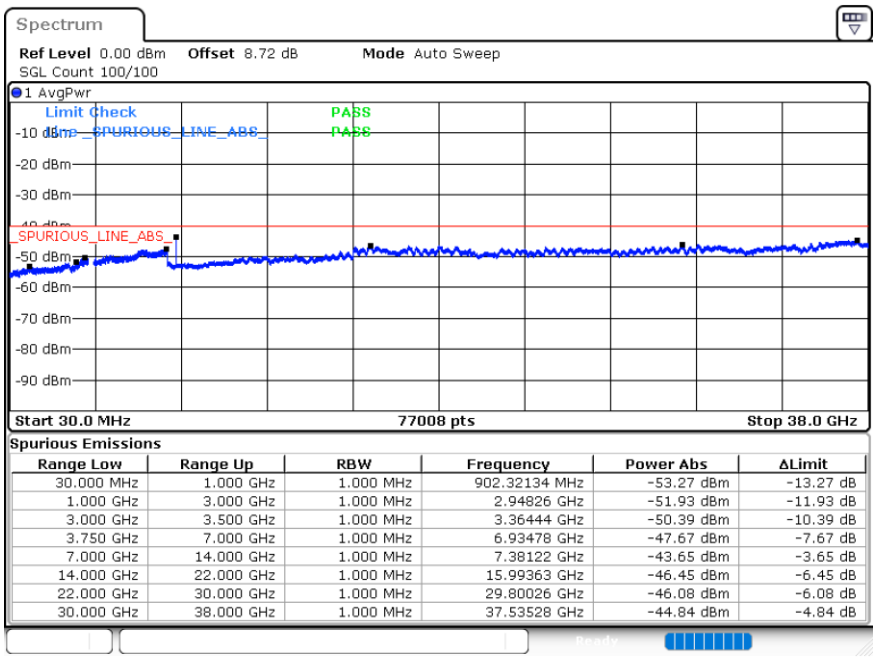


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	896.50425 MHz	-53.45 dBm	-13.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.97576 GHz	-52.11 dBm	-12.11 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.46714 GHz	-50.11 dBm	-10.11 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.90414 GHz	-47.54 dBm	-7.54 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.24123 GHz	-42.67 dBm	-2.67 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.98913 GHz	-46.35 dBm	-6.35 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.77876 GHz	-46.19 dBm	-6.19 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.55928 GHz	-44.80 dBm	-4.80 dB

Date: 19.NOV.2024 16:57:32

Highest Channel



Spurious Emissions

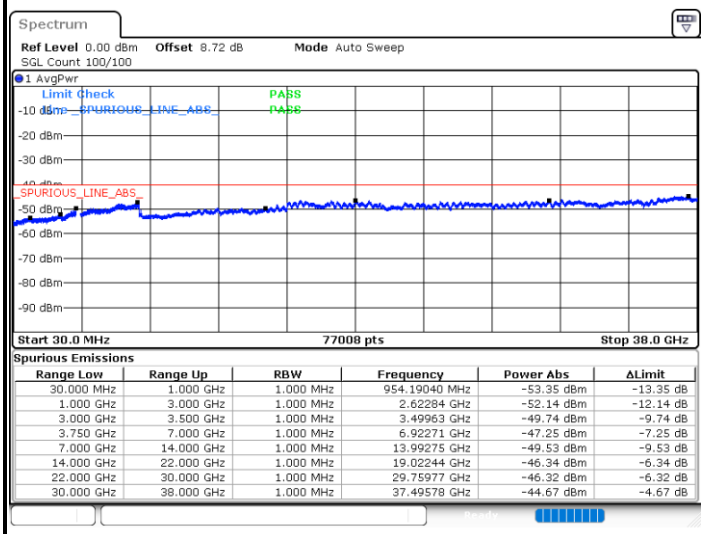
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	902.32134 MHz	-53.27 dBm	-13.27 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.94826 GHz	-51.93 dBm	-11.93 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.36444 GHz	-50.39 dBm	-10.39 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.93478 GHz	-47.67 dBm	-7.67 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.38122 GHz	-43.65 dBm	-3.65 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.99363 GHz	-46.45 dBm	-6.45 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.80026 GHz	-46.08 dBm	-6.08 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.53528 GHz	-44.84 dBm	-4.84 dB

Date: 19.NOV.2024 16:58:52

LTE Band 48 / 15MHz

QPSK / 1RB0

Lowest Channel

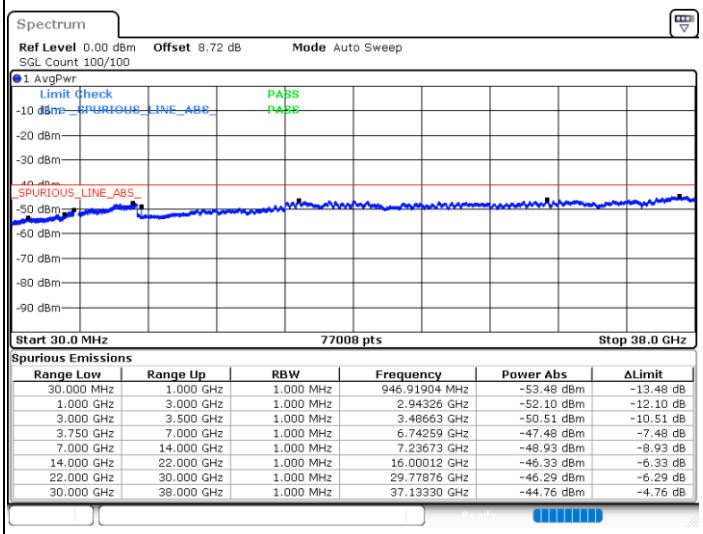


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	954.19040 MHz	-53.35 dBm	-13.35 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.62284 GHz	-52.14 dBm	-12.14 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.49963 GHz	-49.74 dBm	-9.74 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.92271 GHz	-47.25 dBm	-7.25 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.99275 GHz	-49.53 dBm	-9.53 dB
14.000 GHz	22.000 GHz	1.000 MHz	19.02244 GHz	-46.34 dBm	-6.34 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.75977 GHz	-46.32 dBm	-6.32 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.49578 GHz	-44.67 dBm	-4.67 dB

Date: 19.NOV.2024 17:00:14

Middle Channel

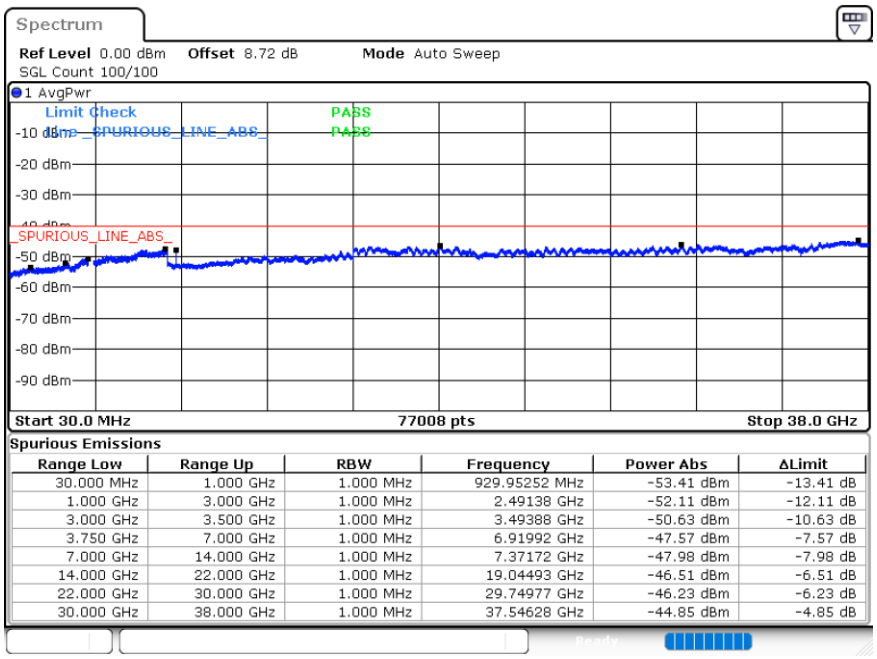


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	946.91904 MHz	-53.48 dBm	-13.48 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.94326 GHz	-52.10 dBm	-12.10 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.48663 GHz	-50.51 dBm	-10.51 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.74259 GHz	-47.48 dBm	-7.48 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.23673 GHz	-48.93 dBm	-8.93 dB
14.000 GHz	22.000 GHz	1.000 MHz	16.00012 GHz	-46.33 dBm	-6.33 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.77876 GHz	-46.29 dBm	-6.29 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.13330 GHz	-44.76 dBm	-4.76 dB

Date: 19.NOV.2024 17:01:34

Highest Channel



Spurious Emissions

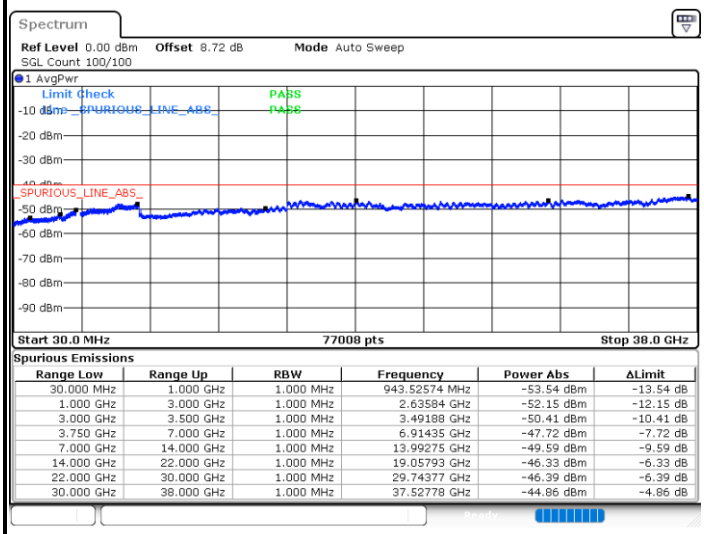
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	929.95252 MHz	-53.41 dBm	-13.41 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.49138 GHz	-52.11 dBm	-12.11 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.49388 GHz	-50.63 dBm	-10.63 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.91992 GHz	-47.57 dBm	-7.57 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.37172 GHz	-47.98 dBm	-7.98 dB
14.000 GHz	22.000 GHz	1.000 MHz	19.04493 GHz	-46.51 dBm	-6.51 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.74977 GHz	-46.23 dBm	-6.23 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.54628 GHz	-44.85 dBm	-4.85 dB

Date: 19.NOV.2024 17:02:55

LTE Band 48 / 20MHz

QPSK / 1RB0

Lowest Channel

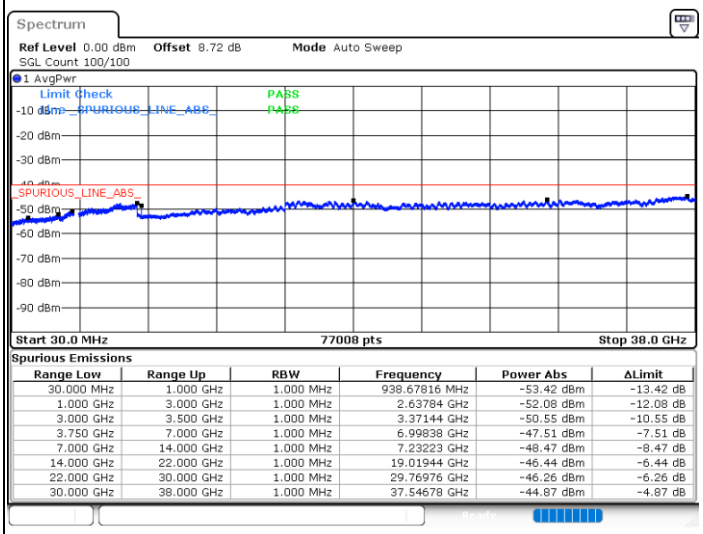


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	943.52574 MHz	-53.54 dBm	-13.54 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63584 GHz	-52.15 dBm	-12.15 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.49188 GHz	-50.41 dBm	-10.41 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.91435 GHz	-47.72 dBm	-7.72 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.99275 GHz	-49.59 dBm	-9.59 dB
14.000 GHz	22.000 GHz	1.000 MHz	19.05793 GHz	-46.33 dBm	-6.33 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.74377 GHz	-46.39 dBm	-6.39 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.52778 GHz	-44.86 dBm	-4.86 dB

Date: 19.NOV.2024 17:04:16

Middle Channel

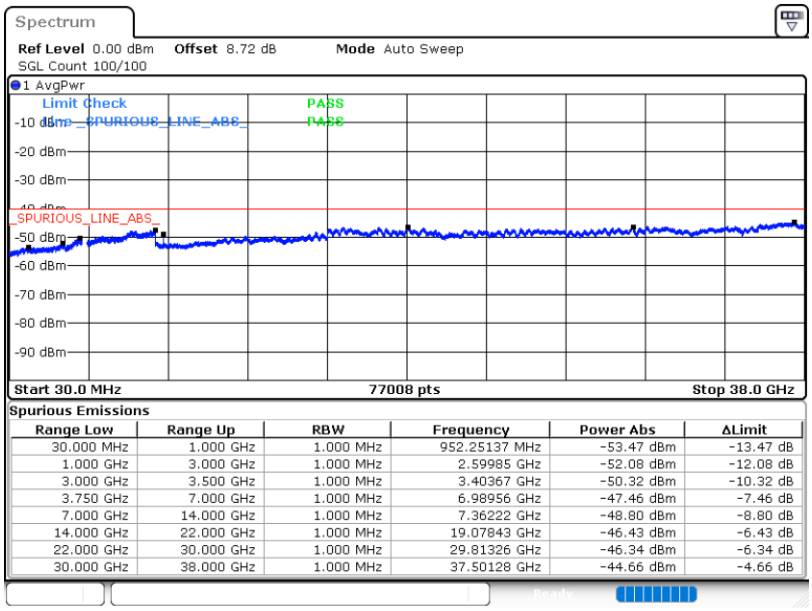


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	938.67816 MHz	-53.42 dBm	-13.42 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63784 GHz	-52.08 dBm	-12.08 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.37144 GHz	-50.55 dBm	-10.55 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.99838 GHz	-47.51 dBm	-7.51 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.23223 GHz	-48.47 dBm	-8.47 dB
14.000 GHz	22.000 GHz	1.000 MHz	19.01944 GHz	-46.44 dBm	-6.44 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.76976 GHz	-46.26 dBm	-6.26 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.54678 GHz	-44.87 dBm	-4.87 dB

Date: 19.NOV.2024 17:05:37

Highest Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	952.25137 MHz	-53.47 dBm	-13.47 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.59985 GHz	-52.08 dBm	-12.08 dB
3.000 GHz	3.500 GHz	1.000 MHz	3.40367 GHz	-50.32 dBm	-10.32 dB
3.750 GHz	7.000 GHz	1.000 MHz	6.98956 GHz	-47.46 dBm	-7.46 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.36222 GHz	-48.80 dBm	-8.80 dB
14.000 GHz	22.000 GHz	1.000 MHz	19.07843 GHz	-46.43 dBm	-6.43 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.81326 GHz	-46.34 dBm	-6.34 dB
30.000 GHz	38.000 GHz	1.000 MHz	37.50128 GHz	-44.66 dBm	-4.66 dB

Date: 19.NOV.2024 17:06:57

Frequency Stability

Test Conditions		LTE Band 48 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0033	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0055	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0048	
0	Normal Voltage	0.0073	
-10	Normal Voltage	0.0008	
-20	Normal Voltage	0.0012	
-30	Normal Voltage	0.0029	
20	Maximum Voltage	0.0026	
20	Normal Voltage	0.0014	
20	Battery End Point	0.0038	

Note:

1. Normal Voltage =3.69 V. ; Battery End Point (BEP) =3.3V. ; Maximum Voltage =4.1 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 :	Bruce	Temperature :	23~25℃
		Relative Humidity :	41~42%

Note: Pre-scanned harmonic for the different antennas, we choose the worst antenna mode to perform final test and record in the report.

LTE Band 48 / 20MHz / QPSK / Ant.10								
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	7231	-60.06	-40	-20.06	-71.52	2.84	14.30	H
	10850	-59.34	-40	-19.34	-69.28	3.49	13.43	H
	14469	-59.46	-40	-19.46	-69.70	3.85	14.09	H
	7231	-60.62	-40	-20.62	-72.08	2.84	14.30	V
	10850	-59.75	-40	-19.75	-69.69	3.49	13.43	V
	14469	-59.52	-40	-19.52	-69.76	3.85	14.09	V

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

LTE Band 48 / 20MHz / QPSK / Ant. 4 - other PA								
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	7231	-62.62	-40	-22.62	-74.08	2.84	14.30	H
	10850	-59.46	-40	-19.46	-69.40	3.49	13.43	H
	14469	-59.50	-40	-19.50	-69.74	3.85	14.09	H
	7231	-62.53	-40	-22.53	-73.99	2.84	14.30	V
	10850	-59.58	-40	-19.58	-69.52	3.49	13.43	V
	14469	-59.45	-40	-19.45	-69.69	3.85	14.09	V

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