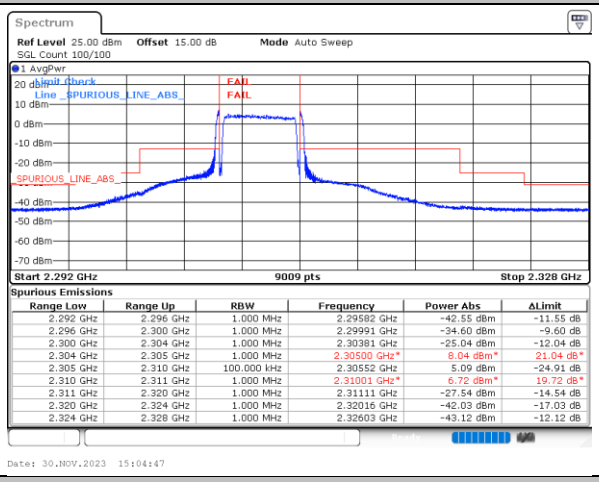
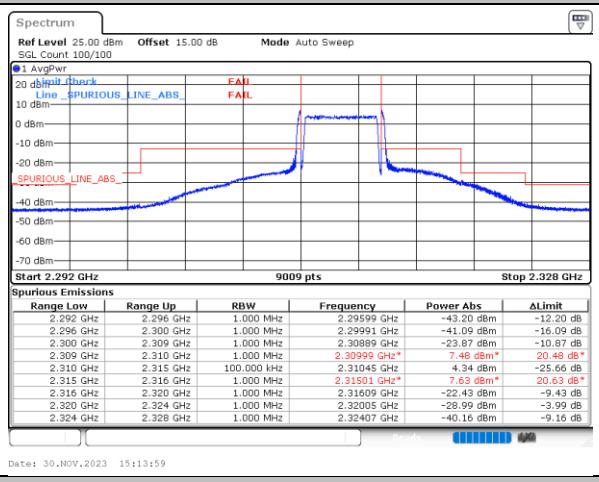
LTE Band 30 / 5MHz / 16QAM

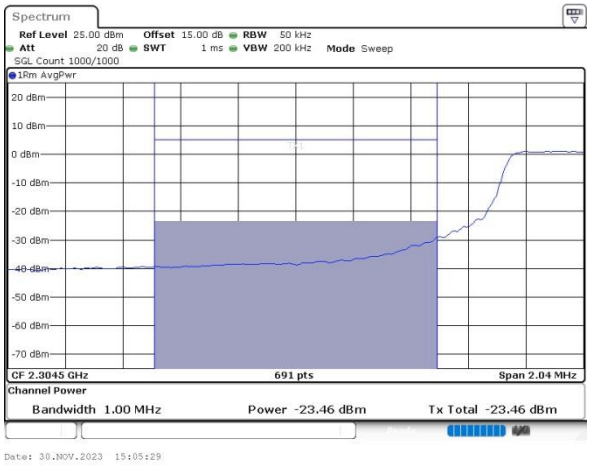
Lowest Band Edge / Full RB



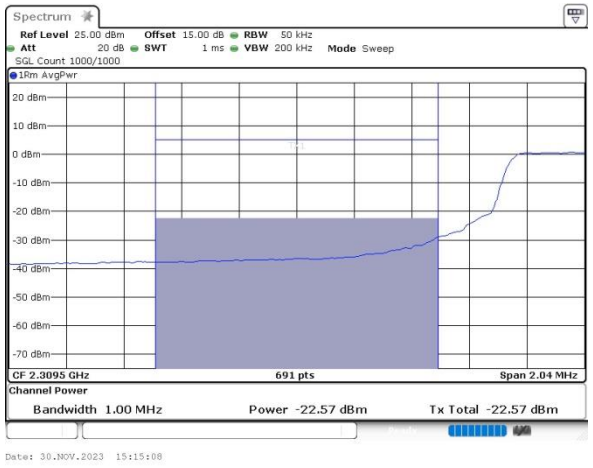
Highest Band Edge / Full RB



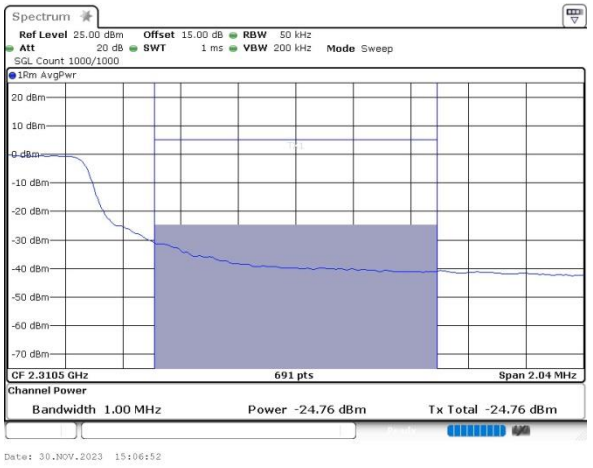
Lowest Band Edge / Full RB-CP1



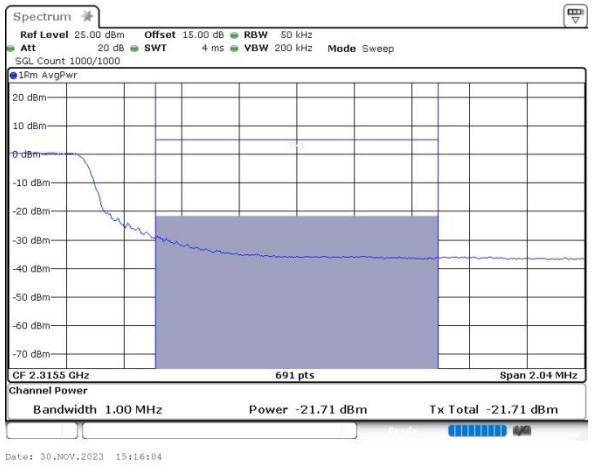
Highest Band Edge / Full RB-CP1



Lowest Band Edge / Full RB-CP2

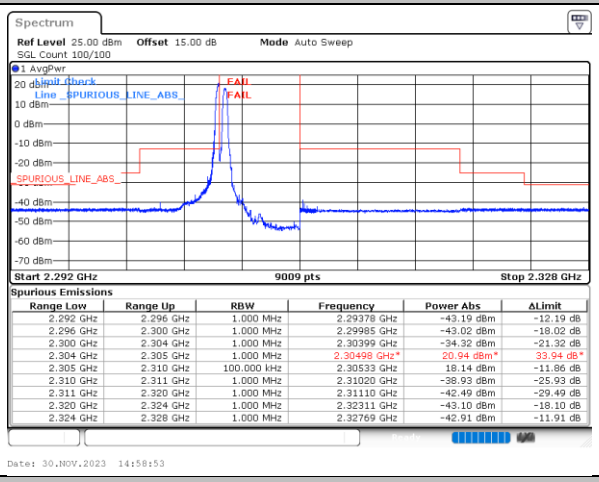


Highest Band Edge / Full RB-CP2

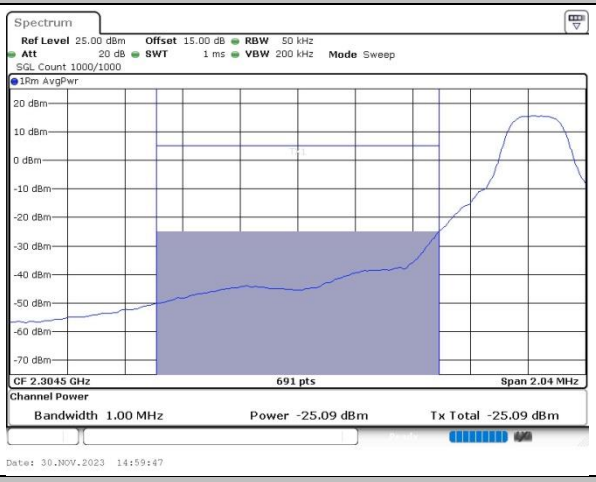


LTE Band 30 / 5MHz / 64QAM

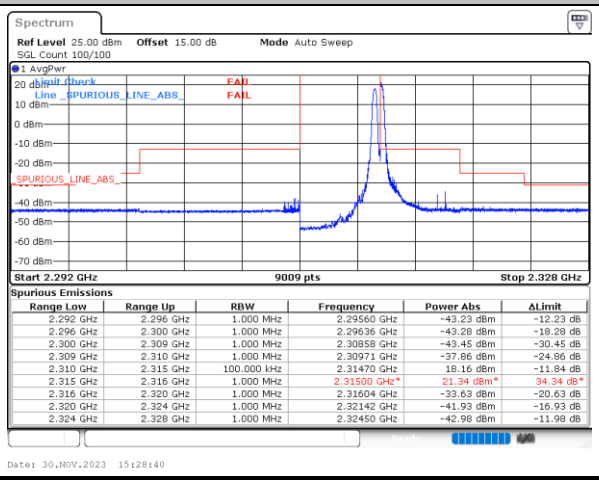
Lowest Band Edge / 1 RB



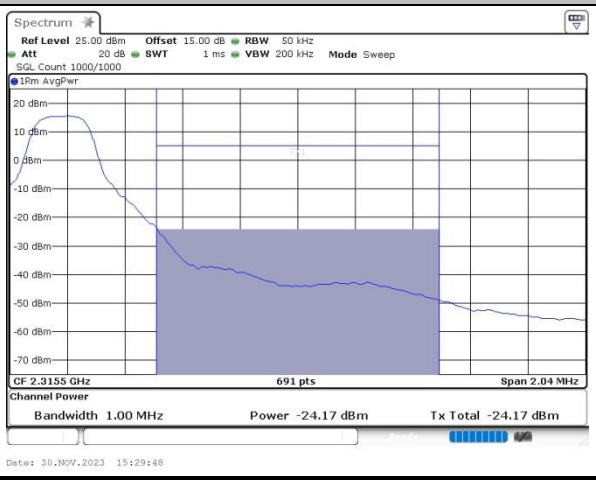
Lowest Band Edge / 1 RB-CP



Highest Band Edge / 1 RB

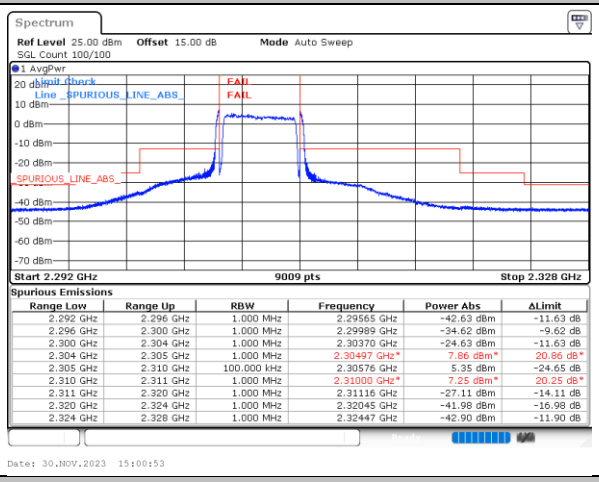


Highest Band Edge / 1 RB-CP

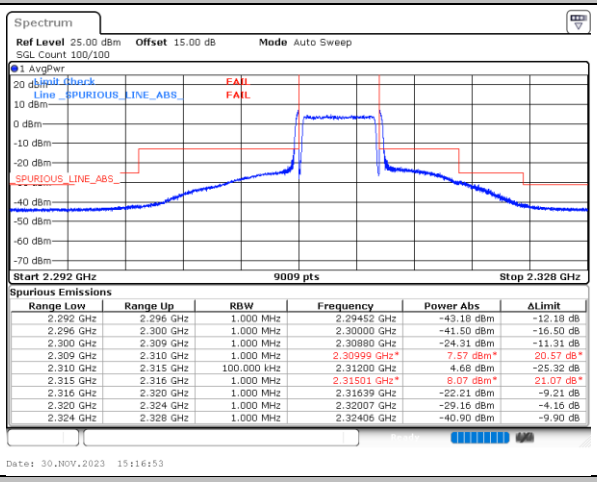


LTE Band 30 / 5MHz / 64QAM

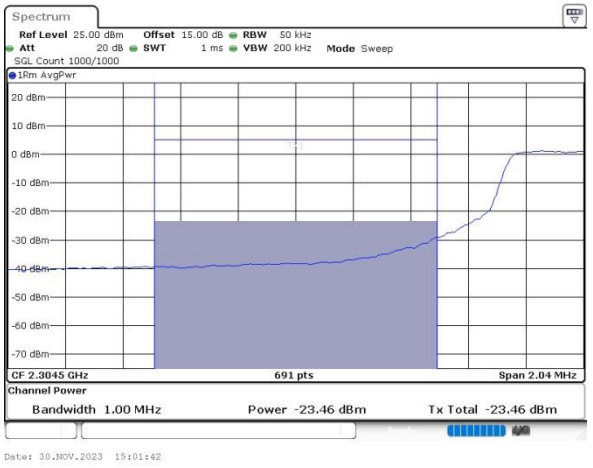
Lowest Band Edge / Full RB



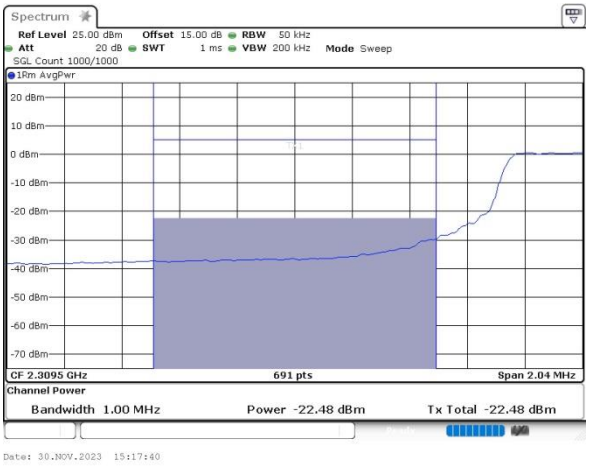
Highest Band Edge / Full RB



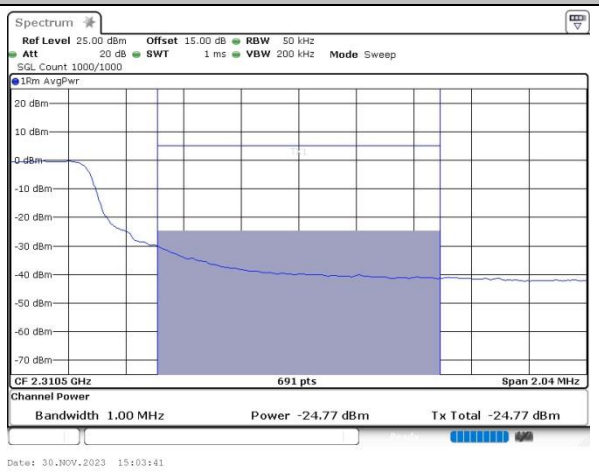
Lowest Band Edge / Full RB-CP1



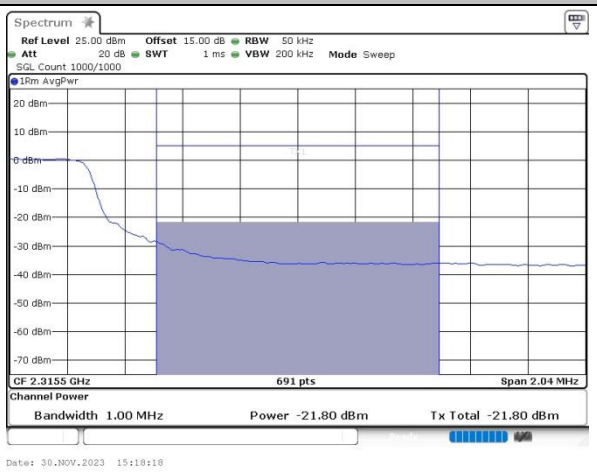
Highest Band Edge / Full RB-CP1



Lowest Band Edge / Full RB-CP2

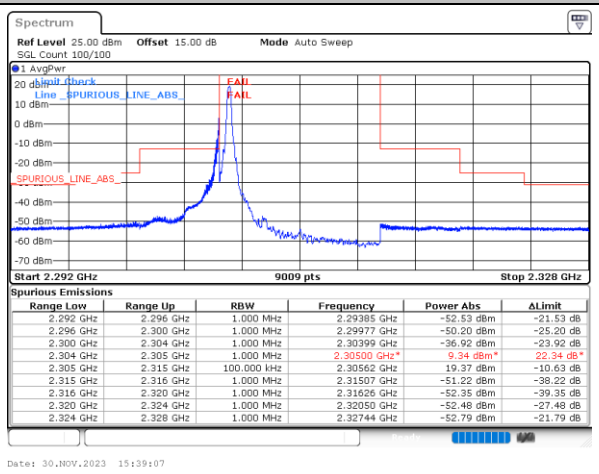


Highest Band Edge / Full RB-CP2



LTE Band 30 / 10MHz / QPSK

Lowest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29385 GHz	-52.53 dBm	-21.53 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29977 GHz	-50.20 dBm	-25.20 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30399 GHz	-36.92 dBm	-23.92 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30500 GHz*	9.34 dBm*	22.34 dB*
2.305 GHz	2.315 GHz	100.000 kHz	2.30562 GHz	19.37 dBm	-10.63 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31507 GHz	-51.22 dBm	-38.22 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31626 GHz	-52.35 dBm	-39.35 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32050 GHz	-52.48 dBm	-27.48 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32744 GHz	-52.79 dBm	-21.79 dB

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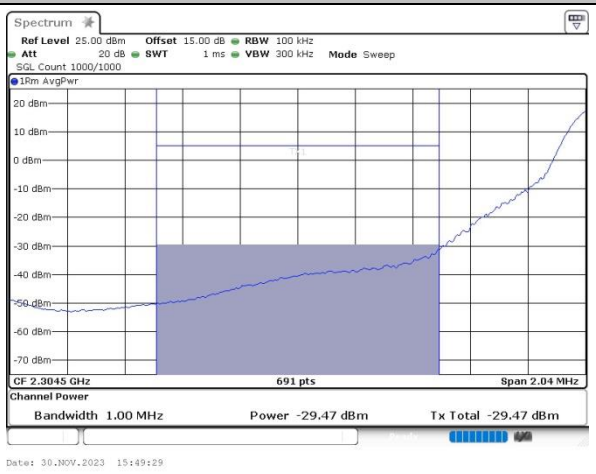
Lowest Band Edge / 1 RB-CP



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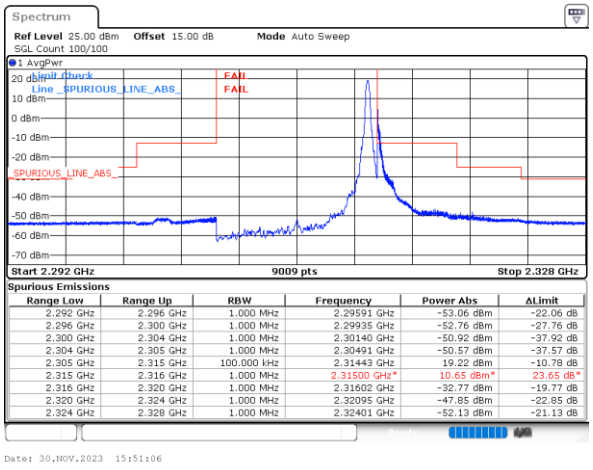
Highest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29591 GHz	-53.06 dBm	-22.06 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29935 GHz	-52.76 dBm	-27.76 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30140 GHz	-50.92 dBm	-37.92 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30491 GHz	-50.57 dBm	-37.57 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31443 GHz	19.22 dBm	-10.78 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31500 GHz*	10.65 dBm*	23.65 dB*
2.316 GHz	2.320 GHz	1.000 MHz	2.31602 GHz	-32.77 dBm	-19.77 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32095 GHz	-47.85 dBm	-22.85 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-52.13 dBm	-21.13 dB

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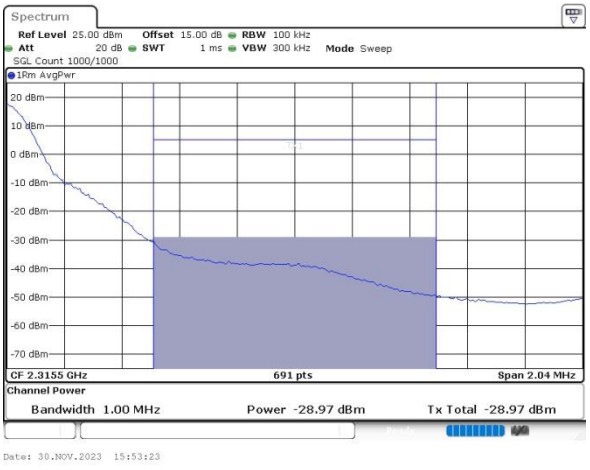
Highest Band Edge / 1 RB-CP



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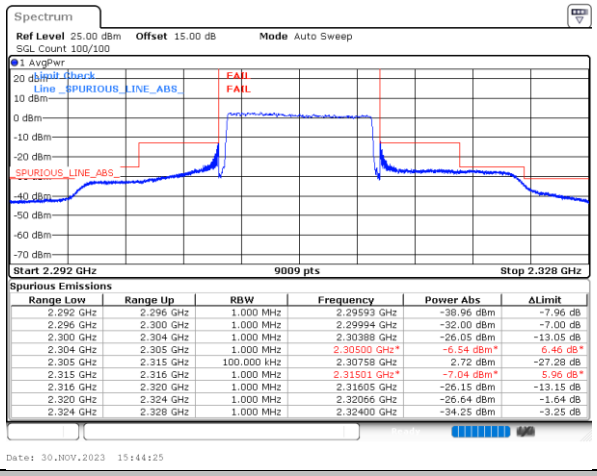
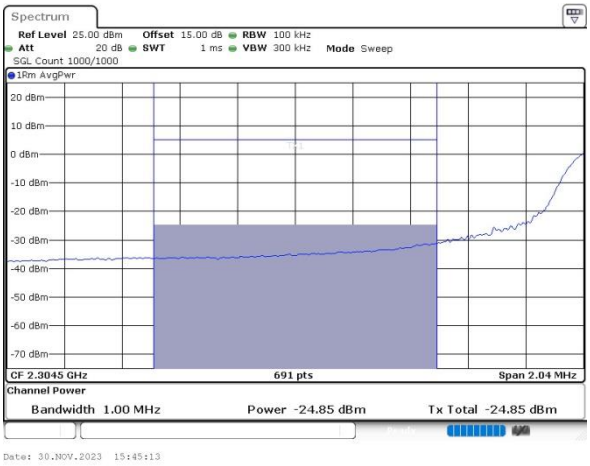
LTE Band 30 / 10MHz / QPSK

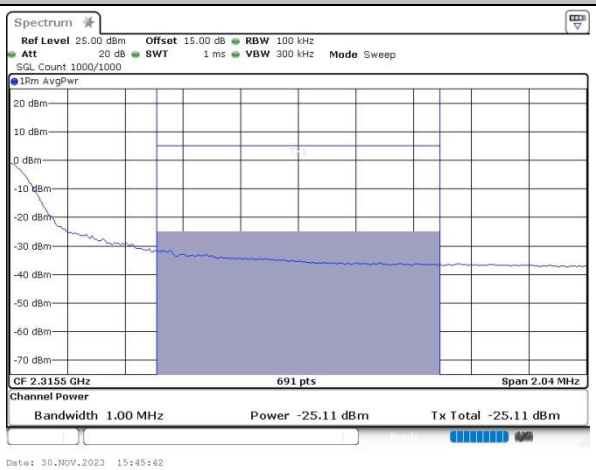
Lowest Band Edge / Full RB



Lowest Band Edge / Full RB-CP1

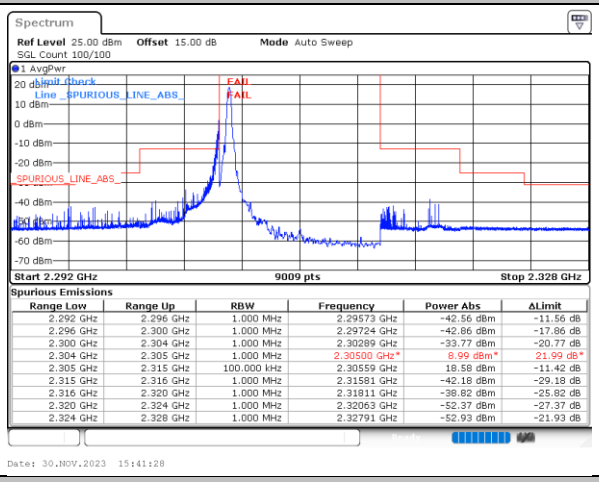


Lowest Band Edge / Full RB-CP1



LTE Band 30 / 10MHz / 16QAM

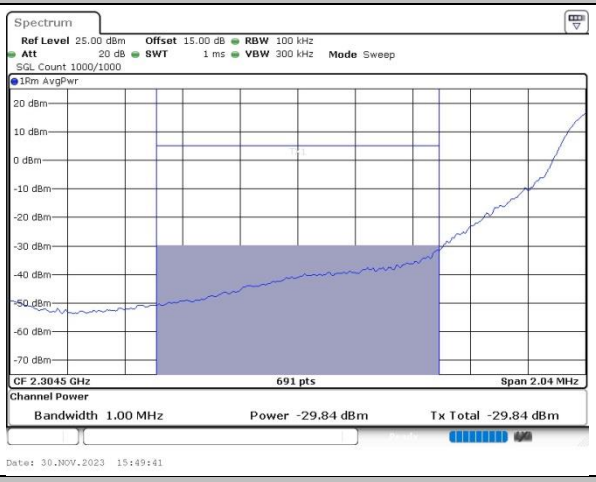
Lowest Band Edge / 1 RB



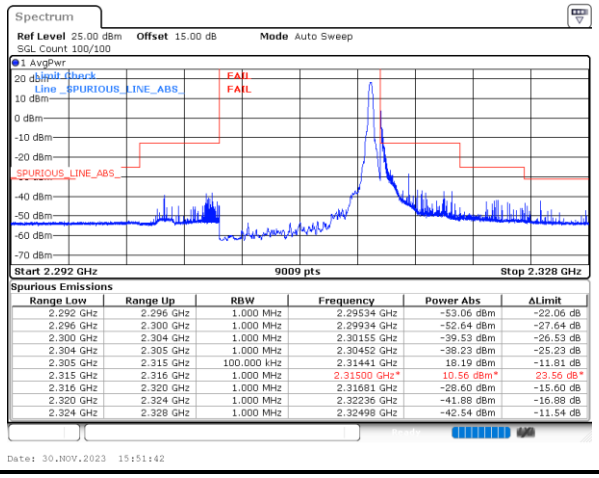
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29573 GHz	-42.56 dBm	-11.56 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29724 GHz	-42.86 dBm	-17.86 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30289 GHz	-33.77 dBm	-20.77 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30500 GHz*	8.99 dBm*	21.99 dB*
2.305 GHz	2.315 GHz	100.000 kHz	2.30559 GHz	18.58 dBm	-11.42 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31581 GHz	-42.18 dBm	-29.18 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31811 GHz	-38.82 dBm	-25.82 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32063 GHz	-52.37 dBm	-27.37 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32791 GHz	-52.93 dBm	-21.93 dB

Lowest Band Edge / 1 RB-CP



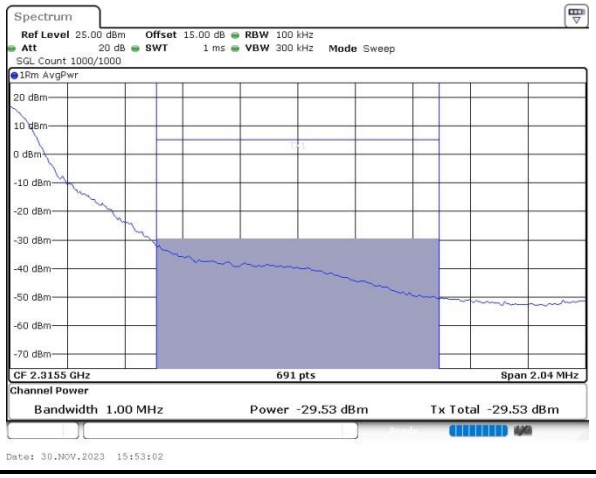
Highest Band Edge / 1 RB



Spurious Emissions

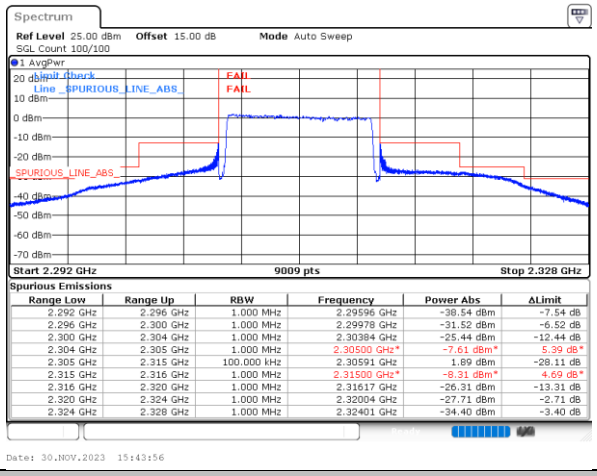
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29534 GHz	-53.06 dBm	-22.06 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29934 GHz	-52.64 dBm	-27.64 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30155 GHz	-39.53 dBm	-26.53 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30452 GHz	-38.23 dBm	-25.23 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	18.19 dBm	-11.81 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31500 GHz*	10.56 dBm*	23.56 dB*
2.316 GHz	2.320 GHz	1.000 MHz	2.31681 GHz	-28.60 dBm	-15.60 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32236 GHz	-41.88 dBm	-16.88 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32498 GHz	-42.54 dBm	-11.54 dB

Highest Band Edge / 1 RB-CP

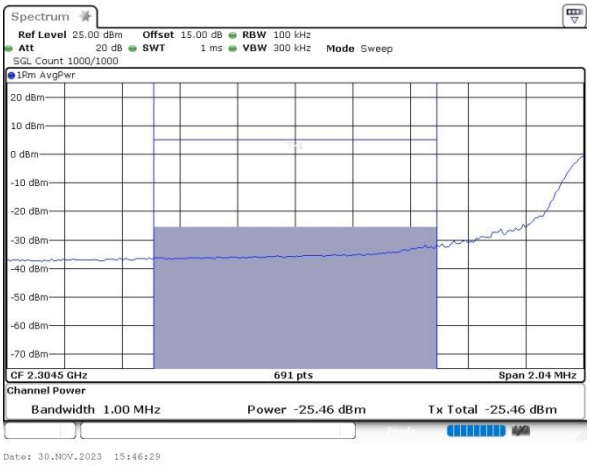


LTE Band 30 / 10MHz / 16QAM

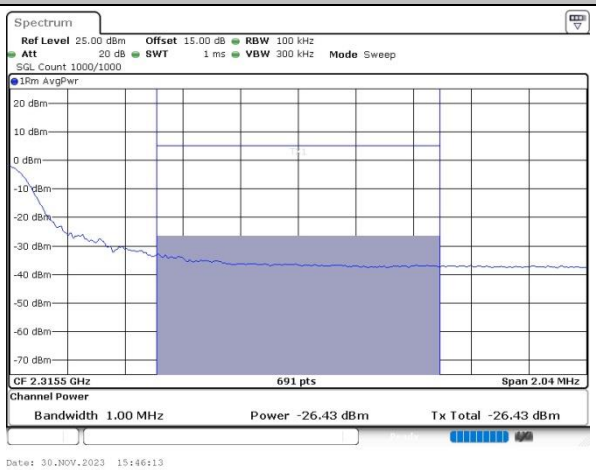
Lowest Band Edge / Full RB



Lowest Band Edge / Full RB-CP1

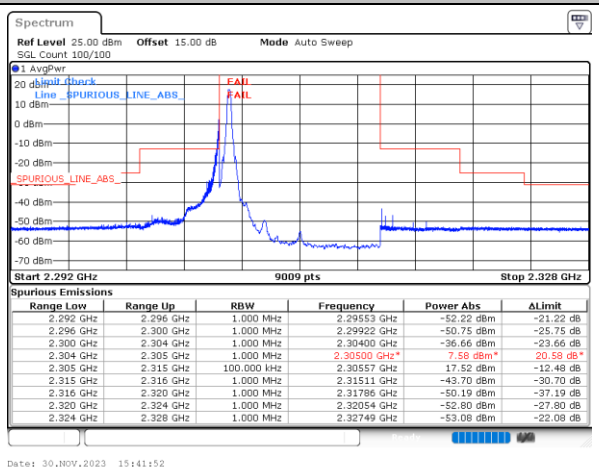


Lowest Band Edge / Full RB-CP2



LTE Band 30 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29553 GHz	-52.22 dBm	-21.22 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29922 GHz	-50.75 dBm	-25.75 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30400 GHz	-36.66 dBm	-23.66 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30500 GHz*	7.58 dBm*	20.58 dB*
2.305 GHz	2.315 GHz	100.000 kHz	2.30557 GHz	17.52 dBm	-12.48 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31511 GHz	-43.70 dBm	-30.70 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31786 GHz	-50.19 dBm	-37.19 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32054 GHz	-52.80 dBm	-27.80 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32749 GHz	-53.08 dBm	-22.08 dB

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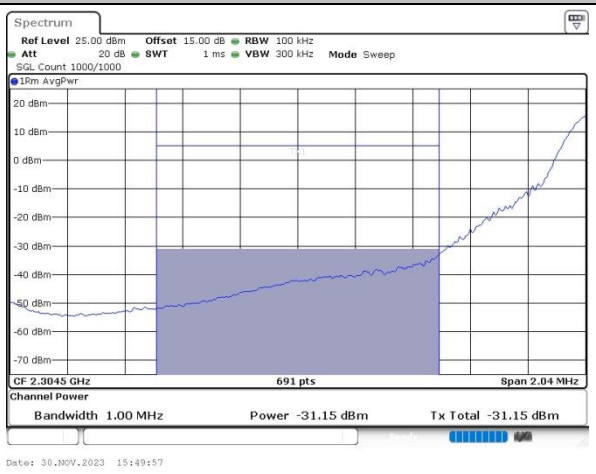
Lowest Band Edge / 1 RB-CP



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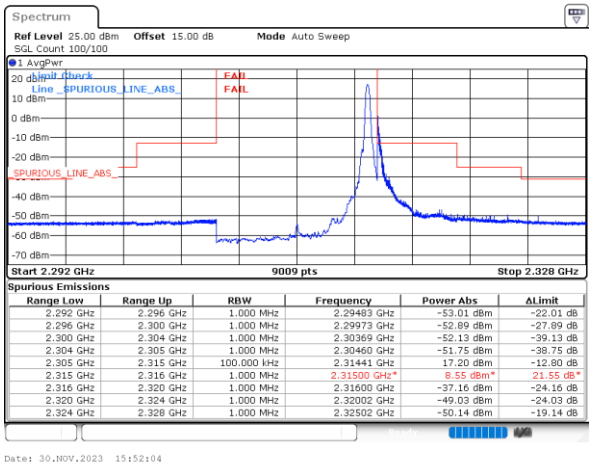
Highest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29483 GHz	-53.01 dBm	-22.01 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29973 GHz	-52.89 dBm	-27.89 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30369 GHz	-52.13 dBm	-39.13 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30460 GHz	-51.75 dBm	-38.75 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	17.20 dBm	-12.80 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31500 GHz*	8.55 dBm*	21.55 dB*
2.316 GHz	2.320 GHz	1.000 MHz	2.31600 GHz	-37.16 dBm	-24.16 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32002 GHz	-49.03 dBm	-24.03 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32502 GHz	-50.14 dBm	-19.14 dB

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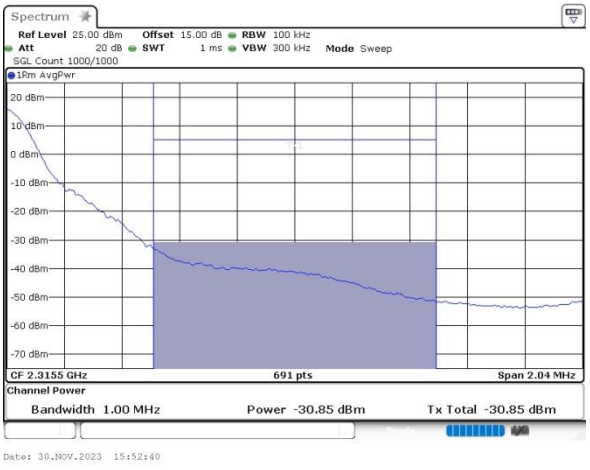
Highest Band Edge / 1 RB-CP



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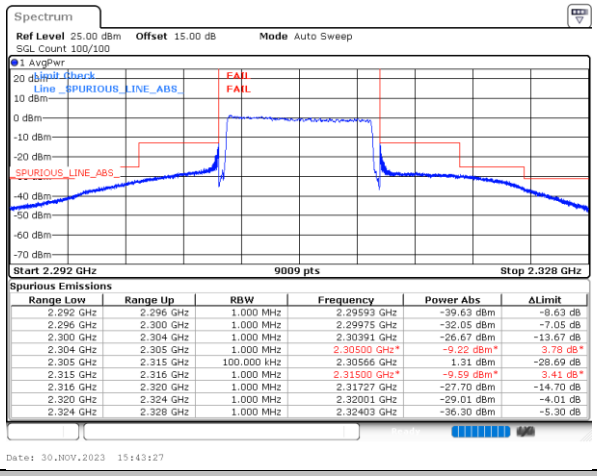
LTE Band 30 / 10MHz / 64QAM

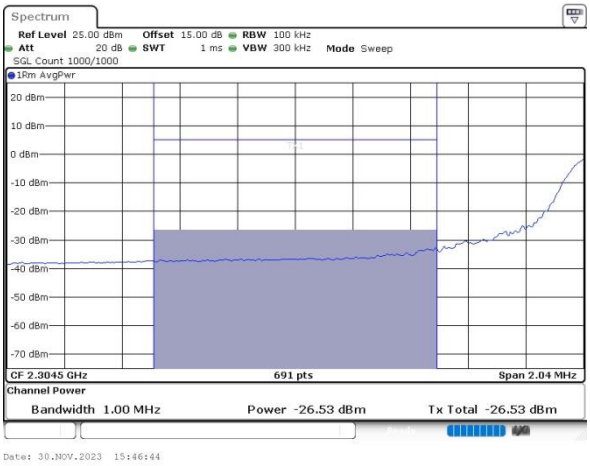
Lowest Band Edge / Full RB



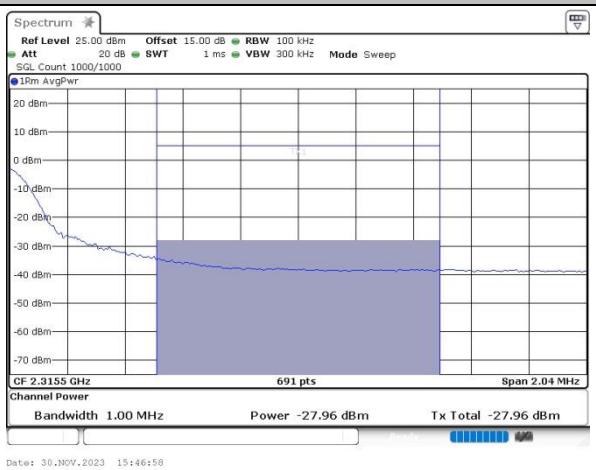
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-39.63 dBm	-8.63 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29975 GHz	-32.05 dBm	-7.05 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30391 GHz	-26.67 dBm	-13.67 dB
2.304 GHz	2.305 GHz	1.000 MHz	2.30500 GHz*	-9.22 dBm*	3.78 dB*
2.305 GHz	2.315 GHz	100.000 kHz	2.30566 GHz	1.31 dBm	-28.69 dB
2.315 GHz	2.316 GHz	1.000 MHz	2.31500 GHz*	-9.59 dBm*	3.41 dB*
2.316 GHz	2.320 GHz	1.000 MHz	2.31727 GHz	-27.70 dBm	-14.70 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-29.01 dBm	-4.01 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32403 GHz	-36.30 dBm	-5.30 dB

Lowest Band Edge / Full RB-CP1



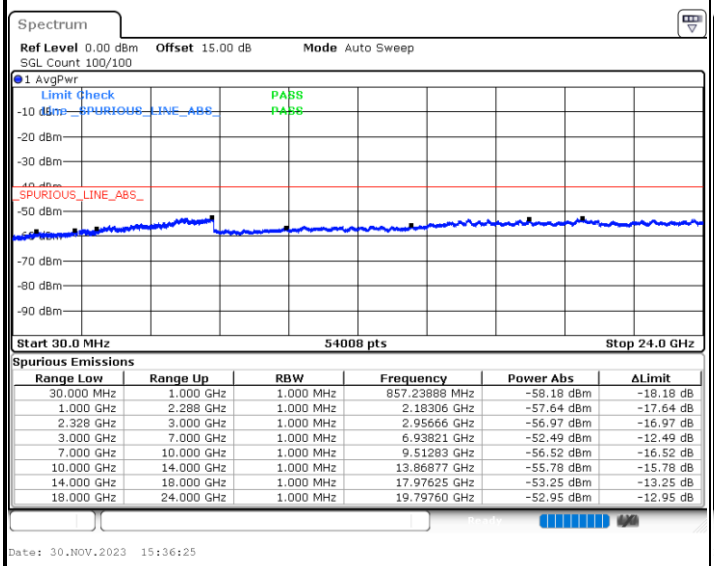
Lowest Band Edge / Full RB-CP2



Conducted Spurious Emission

LTE Band 30 / 5MHz

Lowest Channel / QPSK

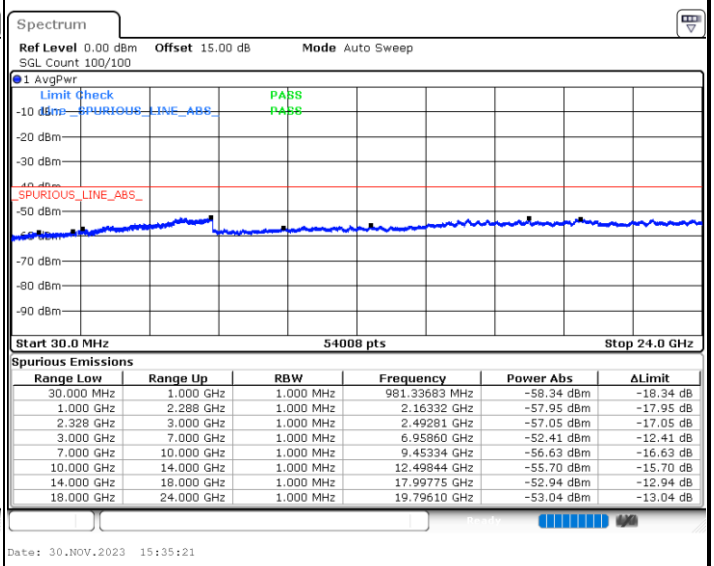


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	857.23888 MHz	-58.18 dBm	-18.18 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.18306 GHz	-57.64 dBm	-17.64 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.95666 GHz	-56.97 dBm	-16.97 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93821 GHz	-52.49 dBm	-12.49 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.51283 GHz	-56.52 dBm	-16.52 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.86877 GHz	-55.78 dBm	-15.78 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.97625 GHz	-53.25 dBm	-13.25 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.79760 GHz	-52.95 dBm	-12.95 dB

Date: 30.NOV.2023 15:36:25

Middle Channel / QPSK

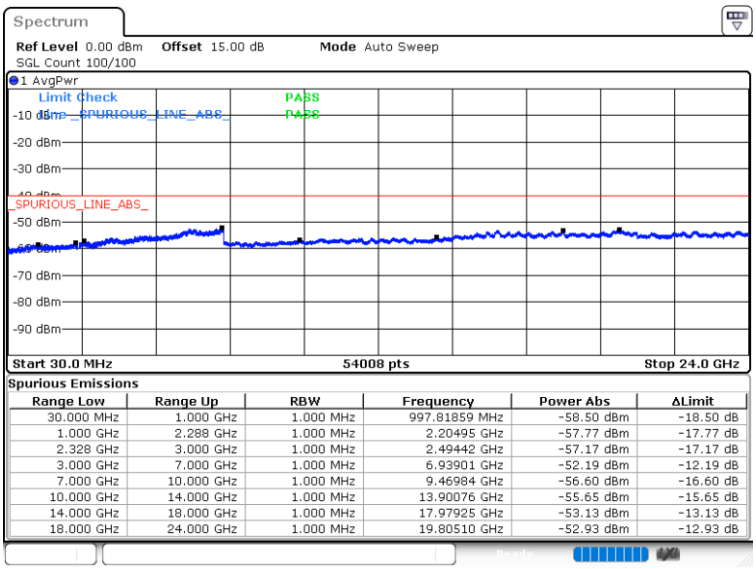


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	981.33683 MHz	-58.34 dBm	-18.34 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.16332 GHz	-57.95 dBm	-17.95 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.49281 GHz	-57.05 dBm	-17.05 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95860 GHz	-52.41 dBm	-12.41 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.45334 GHz	-56.63 dBm	-16.63 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.49844 GHz	-55.70 dBm	-15.70 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.99775 GHz	-52.94 dBm	-12.94 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.79610 GHz	-53.04 dBm	-13.04 dB

Date: 30.NOV.2023 15:35:21

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	997.81859 MHz	-58.50 dBm	-18.50 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.20495 GHz	-57.77 dBm	-17.77 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.49442 GHz	-57.17 dBm	-17.17 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93901 GHz	-52.19 dBm	-12.19 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.46984 GHz	-56.60 dBm	-16.60 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.90076 GHz	-55.65 dBm	-15.65 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.97925 GHz	-53.13 dBm	-13.13 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.80510 GHz	-52.93 dBm	-12.93 dB

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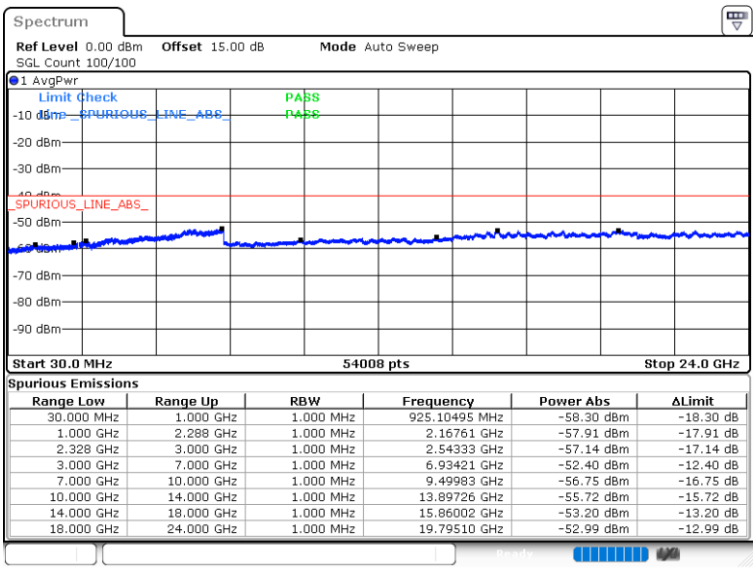
LTE Band 30 / 10MHz
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	925.10495 MHz	-58.30 dBm	-18.30 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.16761 GHz	-57.91 dBm	-17.91 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.54333 GHz	-57.14 dBm	-17.14 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93421 GHz	-52.40 dBm	-12.40 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.49983 GHz	-56.75 dBm	-16.75 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.89726 GHz	-55.72 dBm	-15.72 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.86002 GHz	-53.20 dBm	-13.20 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.79510 GHz	-52.99 dBm	-12.99 dB

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Frequency Stability

Test Conditions		LTE Band 30 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0003	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0004	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0001	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0013	
-30	Normal Voltage	0.0000	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

Note:

3. Normal Voltage = 7.78 V. ; Battery End Point (BEP) = 7.3 V. ; Maximum Voltage = 8.7 V.
4. The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Reid Huang	Temperature :	22~25℃
		Relative Humidity :	48~52%

RSE Pretest all the supported antennas, only the worst results are shown in the report.

Sample 1:

LTE Band 30 / 10MHz / QPSK / RB Size 1 Offset 0 / Ant.1									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4611.50	-63.46	-40	-23.46	-56.25	-69.71	6.45	12.70	H
	6916.50	-42.07	-40	-2.07	-37.46	-45.47	8.40	11.80	H
	9222.00	-55.32	-40	-15.32	-56.40	-57.67	9.65	12.00	H
	4611.50	-63.72	-40	-23.72	-56.36	-69.97	6.45	12.70	V
	6916.50	-47.25	-40	-7.25	-42.6	-50.65	8.40	11.80	V
	9222.00	-55.85	-40	-15.85	-56.51	-58.20	9.65	12.00	V

LTE Band 30 / 10MHz / QPSK / RB Size 1 Offset 0 / Ant.7 (Other PA)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4611.50	-62.53	-40	-22.53	-55.32	-68.78	6.45	12.70	H
	6916.50	-42.47	-40	-2.47	-37.86	-45.87	8.40	11.80	H
	9222.00	-55.65	-40	-15.65	-56.73	-58.00	9.65	12.00	H
	4611.50	-63.14	-40	-23.14	-55.78	-69.39	6.45	12.70	V
	6916.50	-46.87	-40	-6.87	-42.22	-50.27	8.40	11.80	V
	9222.00	-55.85	-40	-15.85	-56.51	-58.20	9.65	12.00	V

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

Sample 2:

LTE Band 30 / 10MHz / QPSK / RB Size 1 Offset 0 / Ant.1									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4611.50	-57.69	-40	-17.69	-50.48	-63.94	6.45	12.70	H
	6916.50	-42.49	-40	-2.49	-37.88	-45.89	8.40	11.80	H
	9222.00	-55.04	-40	-15.04	-56.12	-57.39	9.65	12.00	H
	4611.50	-57.00	-40	-17.00	-49.64	-63.25	6.45	12.70	V
	6916.50	-45.93	-40	-5.93	-41.28	-49.33	8.40	11.80	V
	9222.00	-55.15	-40	-15.15	-55.81	-57.50	9.65	12.00	V

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