

Frequency Stability

Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 1.4MHz	Note 2.
		Frequency Offset (Δf) (Hz)	Result
50	Normal Voltage	1.7	PASS
40	Normal Voltage	2.6	
30	Normal Voltage	3.1	
20(Ref.)	Normal Voltage	2.2	
10	Normal Voltage	-2.8	
0	Normal Voltage	-1.9	
-10	Normal Voltage	2.3	
-20	Normal Voltage	1.3	
-30	Normal Voltage	2.5	
20	Maximum Voltage	2.4	
20	Normal Voltage	2.2	
20	Battery End Point	-1.3	

Note:

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

$$|MAX(\Delta f)| = 3.1\text{Hz}$$

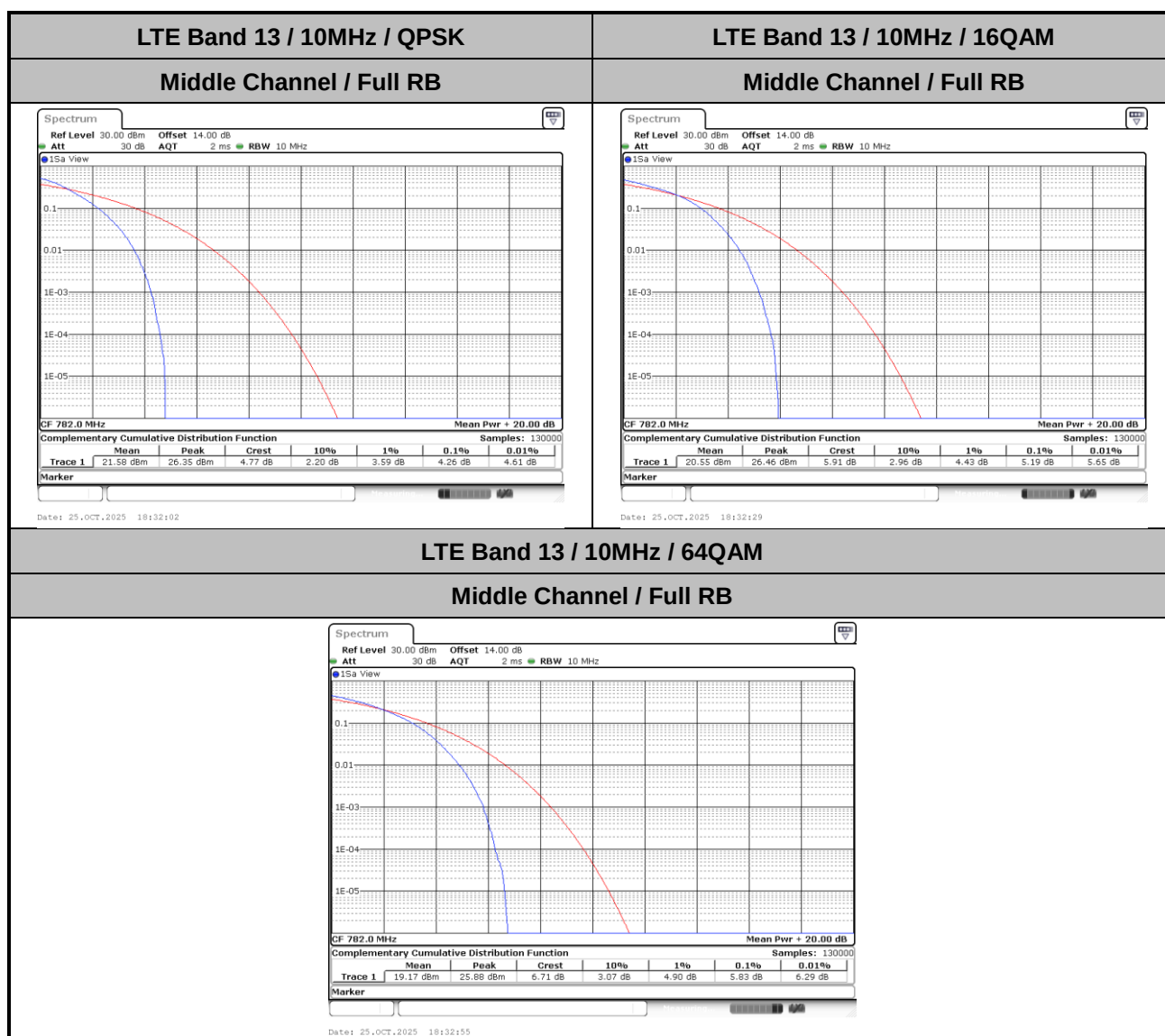
Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - MAX(\Delta f) $	699.151747	$\geq 699\text{ MHz}$	PASS
$f_H + MAX(\Delta f) $	715.845453	$\leq 716\text{ MHz}$	



LTE Band 13

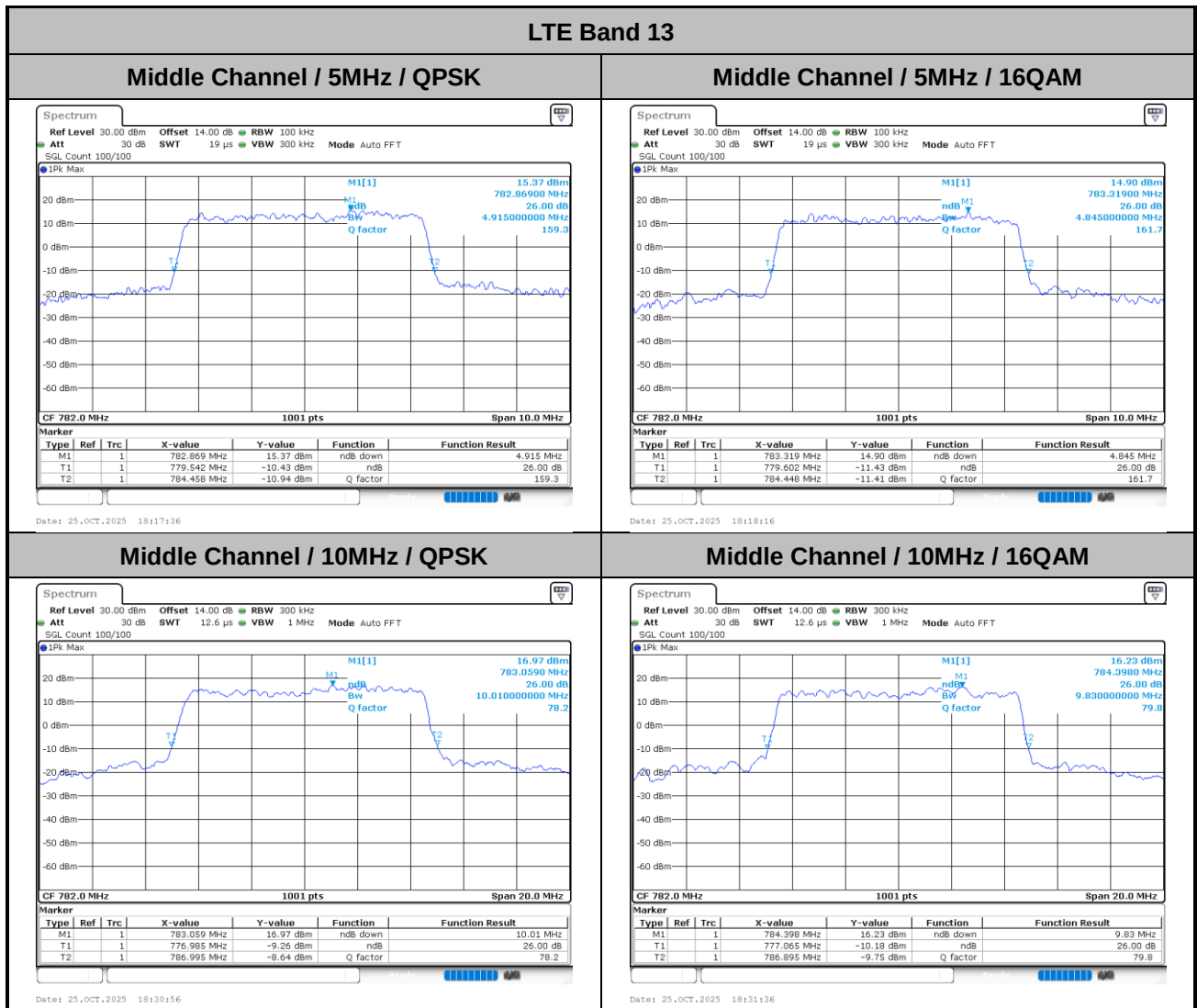
Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	4.26	5.19	5.83	PASS



**26dB Bandwidth**

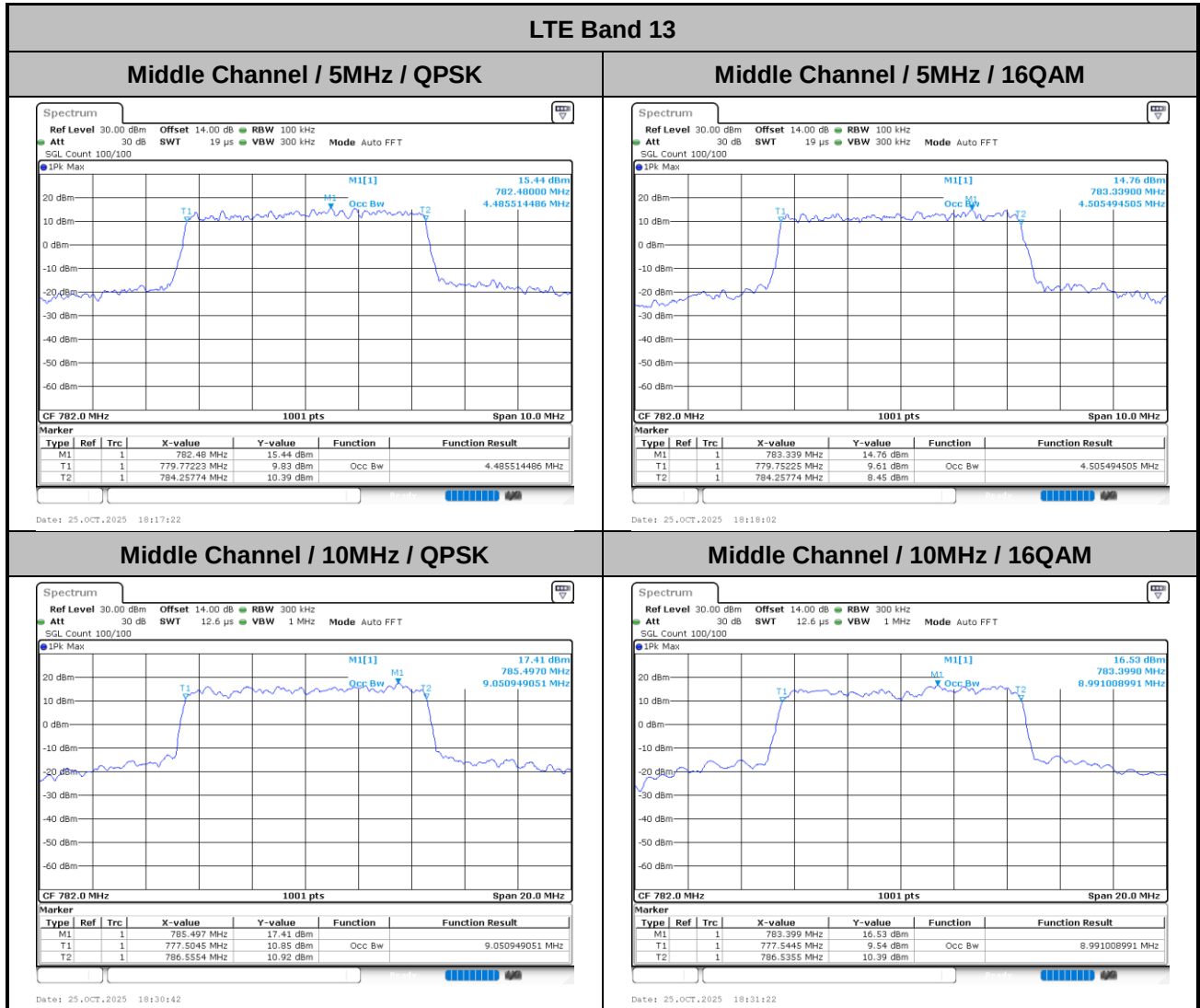
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.92	4.85	10.01	9.83	-	-	-	-





Occupied Bandwidth

Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.49	4.51	9.05	8.99	-	-	-	-

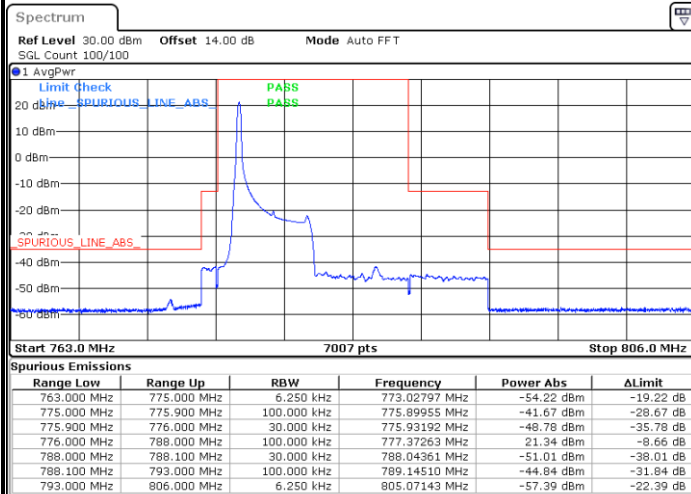




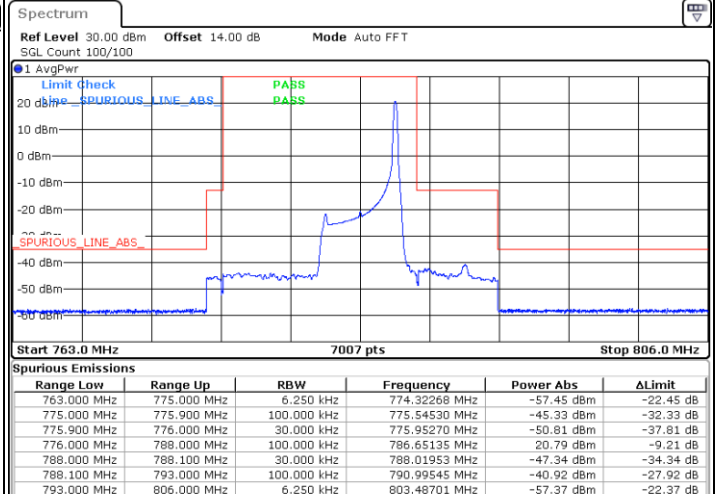
Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

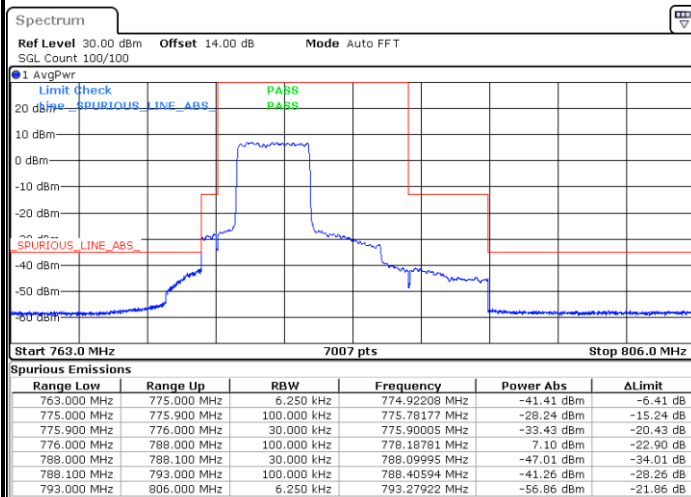
Lowest Band Edge / 1 RB



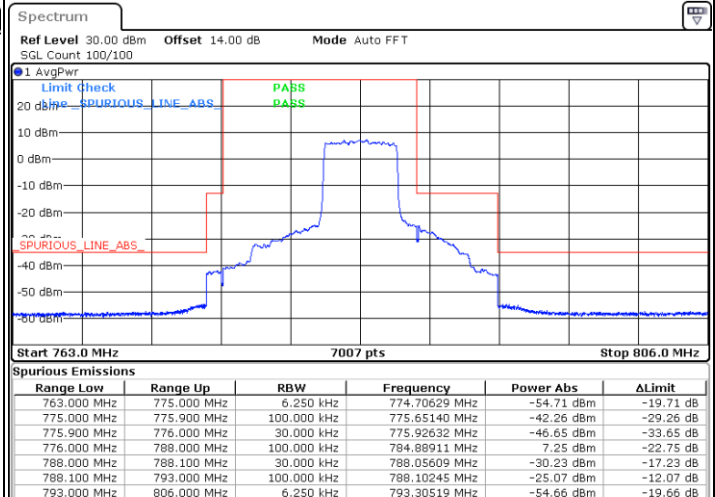
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



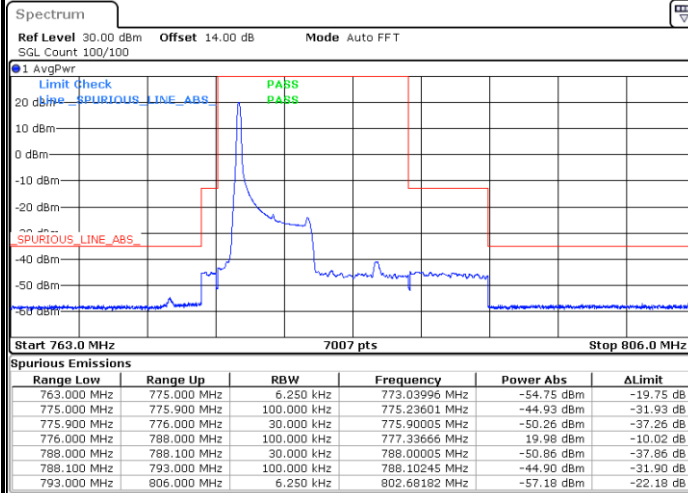
Highest Band Edge / Full RB





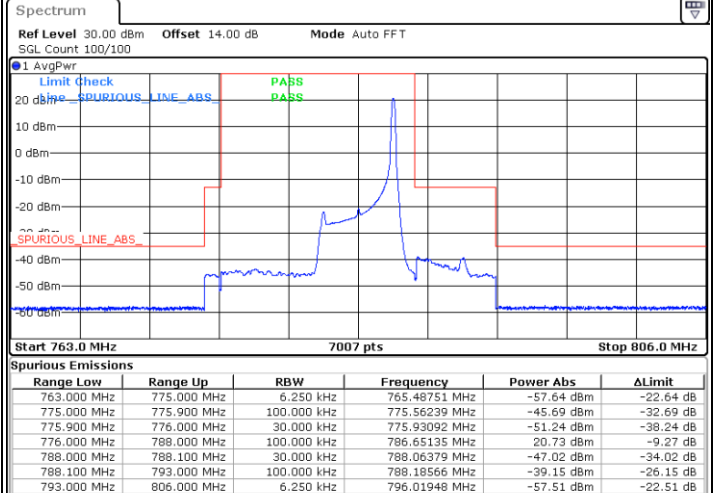
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB



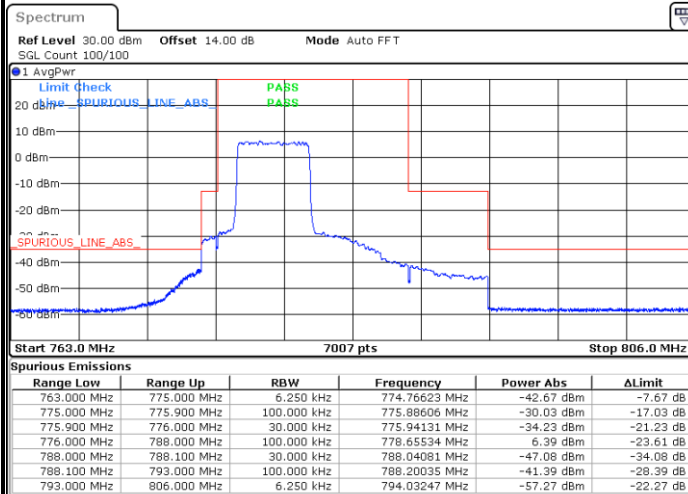
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Highest Band Edge / 1 RB



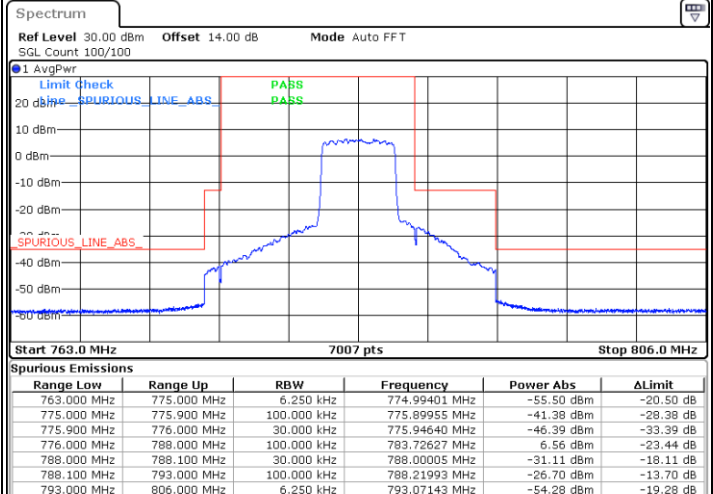
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Lowest Band Edge / Full RB



Date: 25.OCT.2025 18:13:02

Highest Band Edge / Full RB

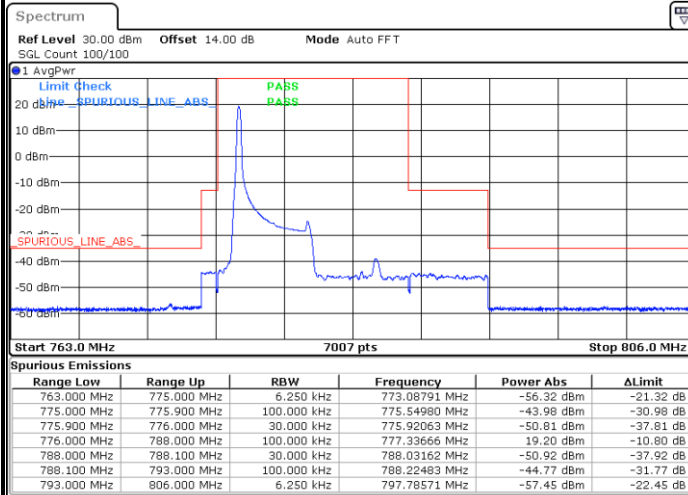


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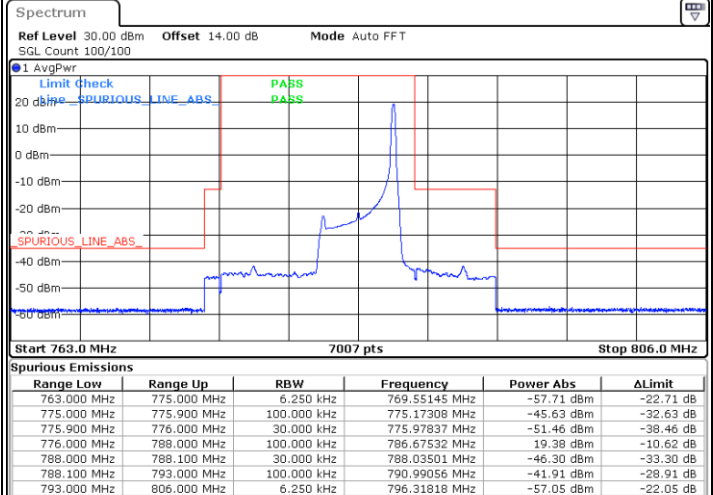
LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB



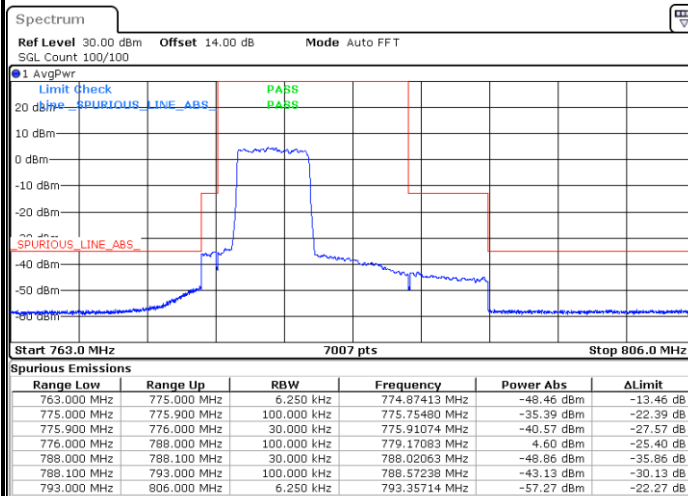
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Highest Band Edge / 1 RB



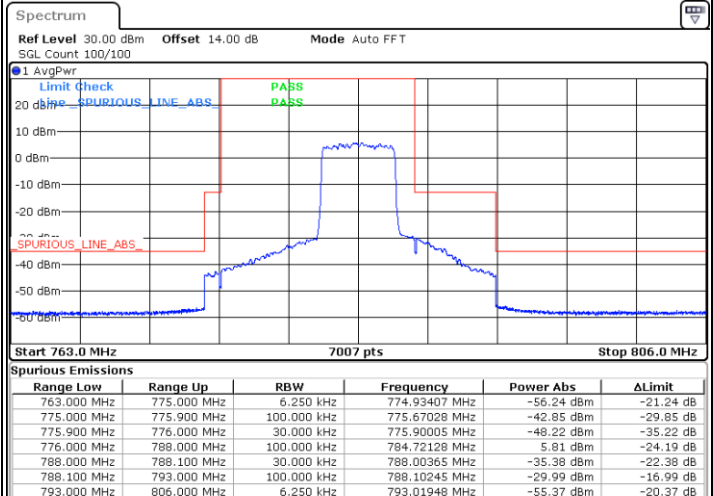
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Lowest Band Edge / Full RB



Date: 25.OCT.2025 18:14:40

Highest Band Edge / Full RB

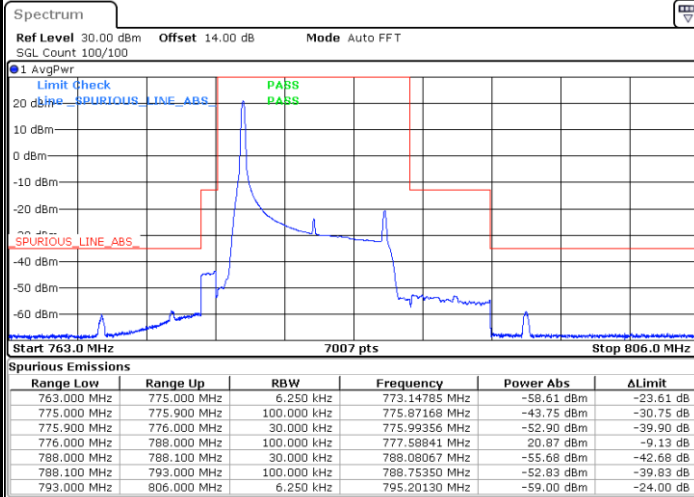


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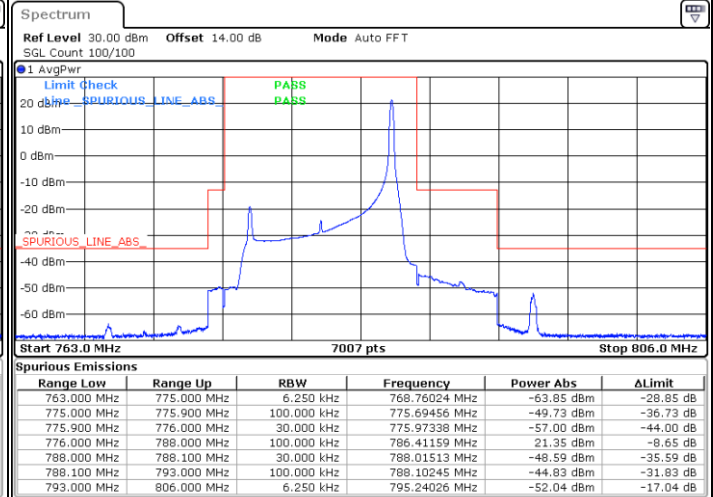
LTE Band 13 / 10MHz / QPSK

Band Edge / 1 RB



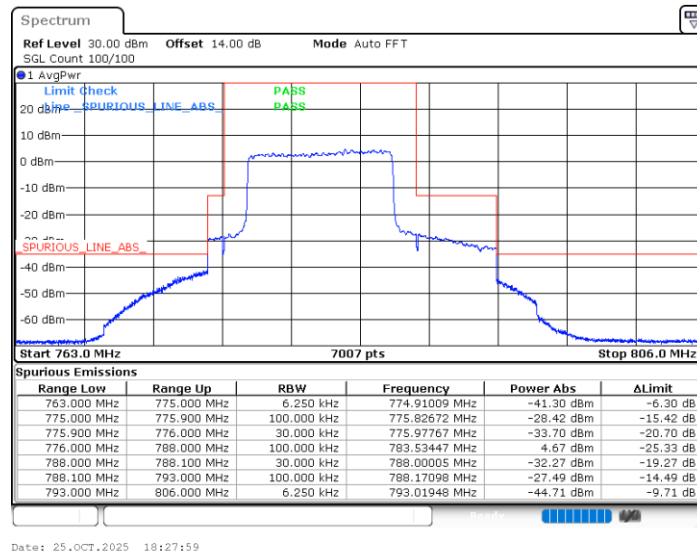
LTE Band 13 / 10MHz / QPSK

Band Edge / 1 RB



LTE Band 13 / 10MHz / QPSK

Band Edge / Full RB

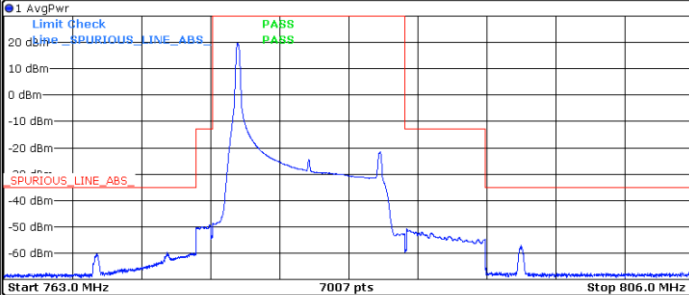




LTE Band 13 / 10MHz / 16QAM

Band Edge / 1 RB

Spectrum

Ref Level 30.00 dBm Offset 14.00 dB Mode Auto FFT
SGL Count 100/100

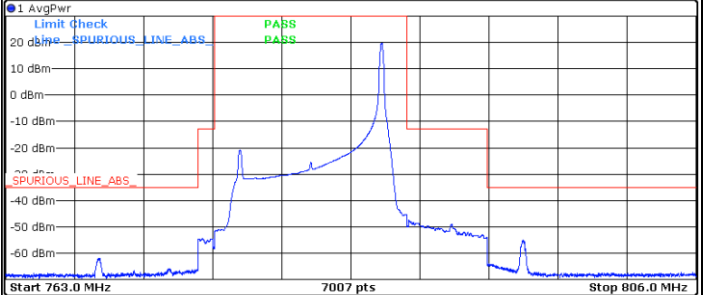
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	773.19580 MHz	-59.80 dBm	-24.80 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.83302 MHz	-49.49 dBm	-36.49 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.93382 MHz	-53.50 dBm	-40.50 dB
776.000 MHz	788.000 MHz	100.000 kHz	777.56444 MHz	-19.56 dBm	-10.44 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.08207 MHz	-58.53 dBm	-45.53 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-50.83 dBm	-37.83 dB
793.000 MHz	806.000 MHz	6.250 kHz	795.24026 MHz	-57.11 dBm	-22.11 dB

Date: 25.OCT.2025 18:25:04

LTE Band 13 / 10MHz / 16QAM

Band Edge / 1 RB

Spectrum

Ref Level 30.00 dBm Offset 14.00 dB Mode Auto FFT
SGL Count 100/100

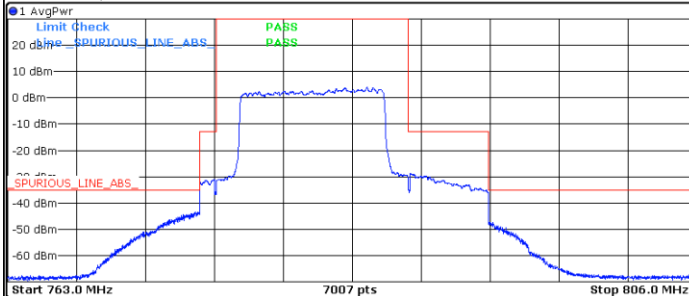
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	768.84416 MHz	-62.00 dBm	-27.00 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.23511 MHz	-54.52 dBm	-41.52 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.97198 MHz	-57.63 dBm	-44.63 dB
776.000 MHz	788.000 MHz	100.000 kHz	786.41159 MHz	-19.70 dBm	-10.30 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.04520 MHz	-49.79 dBm	-36.79 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-47.46 dBm	-34.46 dB
793.000 MHz	806.000 MHz	6.250 kHz	795.21429 MHz	-55.05 dBm	-20.05 dB

Date: 25.OCT.2025 18:26:49

LTE Band 13 / 10MHz / 16QAM

Band Edge / Full RB

Spectrum

Ref Level 30.00 dBm Offset 14.00 dB Mode Auto FFT
SGL Count 100/100

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	774.70629 MHz	-43.35 dBm	-8.35 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-31.18 dBm	-19.18 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.92273 MHz	-35.85 dBm	-22.85 dB
776.000 MHz	788.000 MHz	100.000 kHz	785.40460 MHz	3.92 dBm	-26.08 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.09166 MHz	-33.93 dBm	-20.93 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-28.68 dBm	-15.68 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.12338 MHz	-47.32 dBm	-12.32 dB

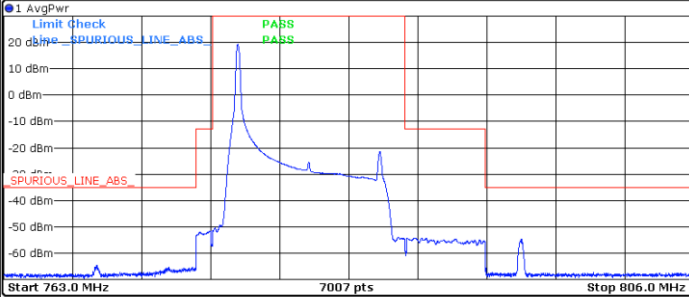
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LTE Band 13 / 10MHz / 64QAM

Band Edge / 1 RB

Spectrum

Ref Level 30.00 dBm Offset 14.00 dB Mode Auto FFT
SGL Count 100/100

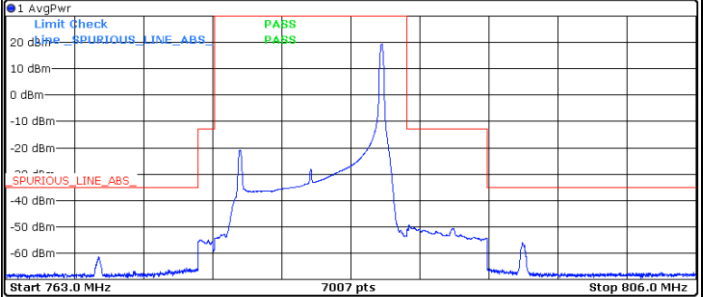
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	768.77223 MHz	-64.74 dBm	-29.74 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.87168 MHz	-51.63 dBm	-38.63 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.95260 MHz	-56.61 dBm	-43.61 dB
776.000 MHz	788.000 MHz	100.000 kHz	777.57642 MHz	19.32 dBm	-10.68 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.00844 MHz	-59.25 dBm	-46.25 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.65070 MHz	-54.29 dBm	-41.29 dB
793.000 MHz	806.000 MHz	6.250 kHz	795.27922 MHz	-54.78 dBm	-19.78 dB

Date: 25.OCT.2025 18:25:39

LTE Band 13 / 10MHz / 64QAM

Band Edge / 1 RB

Spectrum

Ref Level 30.00 dBm Offset 14.00 dB Mode Auto FFT
SGL Count 100/100

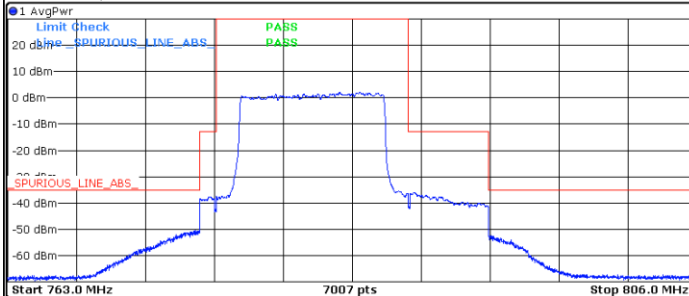
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	768.78422 MHz	-61.47 dBm	-26.47 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.13891 MHz	-54.99 dBm	-41.99 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.90005 MHz	-58.43 dBm	-45.43 dB
776.000 MHz	788.000 MHz	100.000 kHz	776.41159 MHz	19.51 dBm	-10.49 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.03372 MHz	-50.88 dBm	-37.88 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-49.24 dBm	-36.24 dB
793.000 MHz	806.000 MHz	6.250 kHz	795.16234 MHz	-56.20 dBm	-21.20 dB

Date: 25.OCT.2025 18:27:24

LTE Band 13 / 10MHz / 64QAM

Band Edge / Full RB

Spectrum

Ref Level 30.00 dBm Offset 14.00 dB Mode Auto FFT
SGL Count 100/100

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	774.95804 MHz	-50.10 dBm	-15.10 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.59925 MHz	-37.62 dBm	-24.62 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.95729 MHz	-42.48 dBm	-29.48 dB
776.000 MHz	788.000 MHz	100.000 kHz	784.97303 MHz	2.16 dBm	-27.84 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.06888 MHz	-41.55 dBm	-28.55 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.37657 MHz	-36.07 dBm	-23.07 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.14935 MHz	-52.31 dBm	-17.31 dB

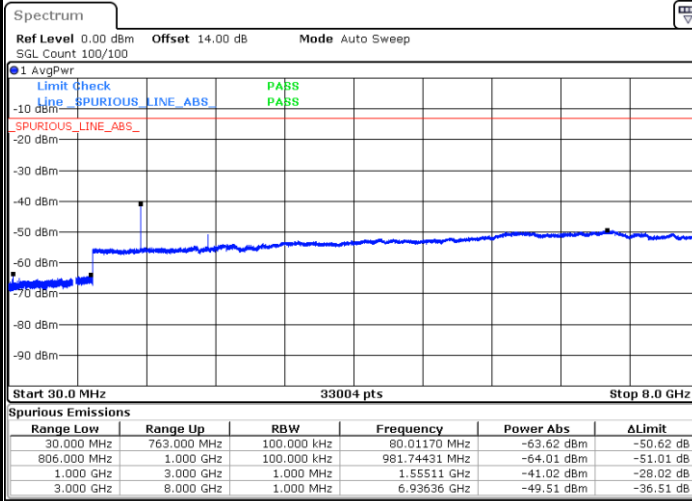
Date: 25.OCT.2025 18:29:10



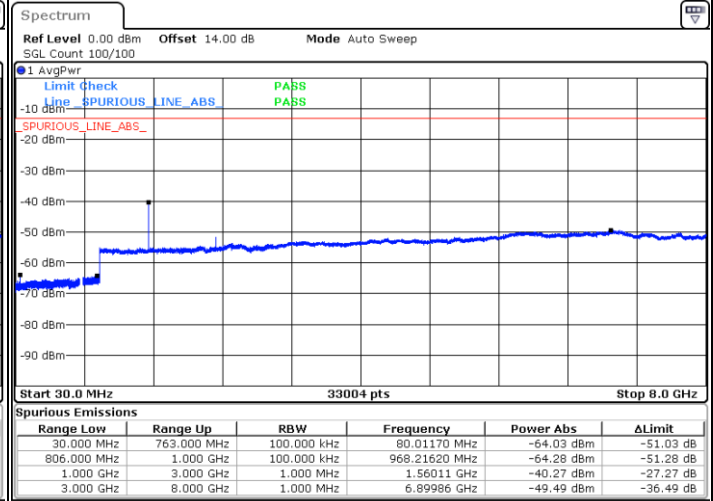
Conducted Spurious Emission

LTE Band 13 / 5MHz

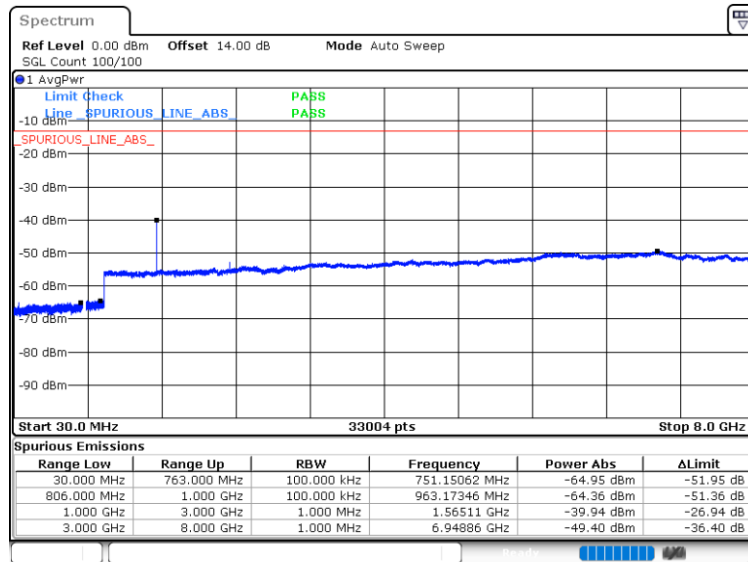
Lowest Channel / QPSK



Middle Channel / QPSK



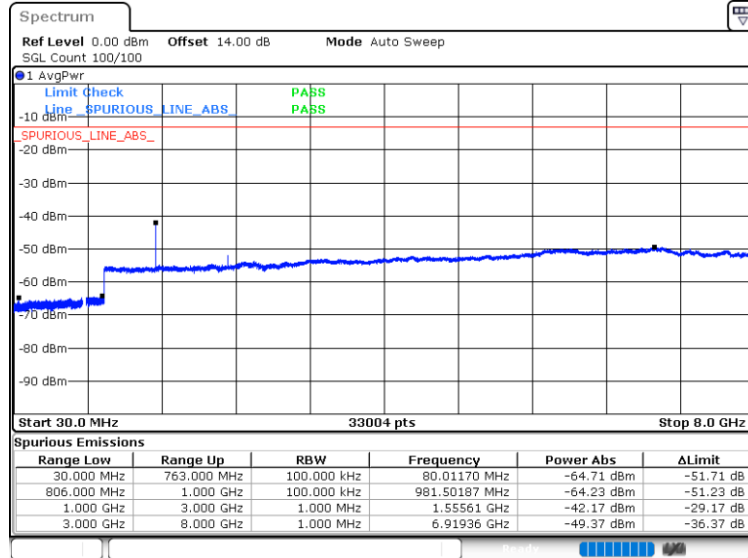
Highest Channel / QPSK





LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 25.OCT.2025 18:30:16

Frequency Stability

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Note 2.
		Frequency Offset (Δf) (Hz)	Result
50	Normal Voltage	1.7	PASS
40	Normal Voltage	1.2	
30	Normal Voltage	2.1	
20(Ref.)	Normal Voltage	1.6	
10	Normal Voltage	2.3	
0	Normal Voltage	1.9	
-10	Normal Voltage	1.4	
-20	Normal Voltage	2	
-30	Normal Voltage	1.8	
20	Maximum Voltage	2.5	
20	Normal Voltage	1.6	
20	Battery End Point	2.3	

Note:

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

$$|MAX(\Delta f)| = 2.5\text{Hz}$$

Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - MAX(\Delta f) $	777.252248	$\geq 777 \text{ MHz}$	PASS
$f_H + MAX(\Delta f) $	786.757743	$\leq 787 \text{ MHz}$	



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Wenbo Xiao	Temperature :	22~25℃
		Relative Humidity :	48~52%

LTE Band 2 / 20MHz / QPSK									
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)
Lowest	3702	-56.93	-13	-43.93	-74.95	-63.69	5.82	12.58	H
	5553	-59.97	-13	-46.97	-81.89	-65.69	7.28	13.00	H
	7404	-53.84	-13	-40.84	-79.98	-57.00	8.32	11.48	H
	3702	-56.15	-13	-43.15	-74.07	-62.91	5.82	12.58	V
	5553	-59.08	-13	-46.08	-81.18	-64.80	7.28	13.00	V
	7404	-49.50	-13	-36.50	-75.66	-52.66	8.32	11.48	V
Middle	3742	-56.93	-13	-43.93	-75.02	-63.68	5.85	12.60	H
	5613	-59.28	-13	-46.28	-81.29	-65.08	7.30	13.10	H
	7484	-55.33	-13	-42.33	-81.28	-58.48	8.35	11.50	H
	3742	-55.31	-13	-42.31	-73.32	-62.06	5.85	12.60	V
	5613	-59.53	-13	-46.53	-81.73	-65.33	7.30	13.10	V
	7484	-53.04	-13	-40.04	-78.98	-56.19	8.35	11.50	V
Highest	3782	-53.02	-13	-40.02	-71.20	-59.76	5.88	12.62	H
	5673	-58.62	-13	-45.62	-81.52	-64.43	7.32	13.13	H
	7564	-55.43	-13	-42.43	-81.18	-58.59	8.38	11.54	H
	3782	-50.69	-13	-37.69	-68.84	-57.43	5.88	12.62	V
	5673	-58.95	-13	-45.95	-81.33	-64.76	7.32	13.13	V
	7564	-55.72	-13	-42.72	-81.44	-58.88	8.38	11.54	V

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



LTE Band 4 / 20MHz / QPSK									
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)
Lowest	3422	-61.36	-13	-48.36	-77.56	-68.24	5.60	12.48	H
	5133	-59.81	-13	-46.81	-81.46	-65.49	7.10	12.78	H
	6844	-56.01	-13	-43.01	-81.09	-59.40	8.38	11.77	H
	3422	-59.67	-13	-46.67	-75.96	-66.55	5.60	12.48	V
	5133	-59.49	-13	-46.49	-81.36	-65.17	7.10	12.78	V
	6844	-52.98	-13	-39.98	-78.56	-56.37	8.38	11.77	V
Middle	3447	-60.92	-13	-47.92	-77.43	-67.77	5.65	12.50	H
	5170.5	-60.02	-13	-47.02	-81.62	-65.69	7.13	12.80	H
	6894	-56.58	-13	-43.58	-81.86	-59.98	8.40	11.80	H
	3447	-61.32	-13	-48.32	-77.87	-68.17	5.65	12.50	V
	5170.5	-59.85	-13	-46.85	-81.72	-65.52	7.13	12.80	V
	6894	-56.09	-13	-43.09	-81.85	-59.49	8.40	11.80	V
Highest	3472	-60.72	-13	-47.72	-77.39	-67.56	5.68	12.52	H
	5208	-60.21	-13	-47.21	-81.70	-65.88	7.15	12.82	H
	6944	-56.68	-13	-43.68	-82.15	-60.11	8.42	11.85	H
	3472	-59.70	-13	-46.70	-76.39	-66.54	5.68	12.52	V
	5208	-60.09	-13	-47.09	-81.83	-65.76	7.15	12.82	V
	6944	-55.83	-13	-42.83	-81.77	-59.26	8.42	11.85	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)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1649.18	-30.32	-13	-17.32	-39.83	-33.55	3.98	9.36	H
	2473.77	-62.10	-13	-49.10	-76.00	-65.65	4.85	10.55	H
	3298.36	-62.64	-13	-49.64	-78.70	-67.57	5.50	12.58	H
	1649.18	-46.76	-13	-33.76	-56.01	-49.99	3.98	9.36	V
	2473.77	-61.20	-13	-48.20	-75.07	-64.75	4.85	10.55	V
	3298.36	-61.93	-13	-48.93	-77.80	-66.86	5.50	12.58	V
Middle	1664	-39.99	-13	-26.99	-49.55	-43.24	4.00	9.40	H
	2496	-63.92	-13	-50.92	-77.77	-67.49	4.88	10.60	H
	3328	-62.57	-13	-49.57	-78.32	-67.50	5.52	12.60	H
	1664	-51.08	-13	-38.08	-60.24	-54.33	4.00	9.40	V
	2496	-62.67	-13	-49.67	-76.48	-66.24	4.88	10.60	V
	3328	-63.05	-13	-50.05	-78.56	-67.98	5.52	12.60	V
Highest	1679.18	-30.34	-13	-17.34	-39.95	-33.51	4.10	9.42	H
	2518.77	-63.82	-13	-50.82	-77.62	-67.40	4.90	10.63	H
	3358.36	-62.73	-13	-49.73	-78.46	-67.65	5.55	12.62	H
	1679.18	-47.40	-13	-34.40	-56.46	-50.57	4.10	9.42	V
	2518.77	-60.55	-13	-47.55	-74.31	-64.13	4.90	10.63	V
	3358.36	-62.99	-13	-49.99	-78.58	-67.91	5.55	12.62	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)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1399	-52.08	-13	-39.08	-62.03	-55.31	3.98	9.36	H
	2098.5	-61.07	-13	-48.07	-73.90	-64.62	4.85	10.55	H
	2798	-62.94	-13	-49.94	-78.21	-67.87	5.50	12.58	H
	1399	-59.15	-13	-46.15	-68.67	-62.38	3.98	9.36	V
	2098.5	-54.34	-13	-41.34	-67.12	-57.89	4.85	10.55	V
	2798	-62.44	-13	-49.44	-77.90	-67.37	5.50	12.58	V
Middle	1406	-54.64	-13	-41.64	-64.72	-57.89	4.00	9.40	H
	2109	-62.41	-13	-49.41	-75.24	-65.98	4.88	10.60	H
	2812	-62.53	-13	-49.53	-77.83	-67.46	5.52	12.60	H
	1406	-60.37	-13	-47.37	-70.01	-63.62	4.00	9.40	V
	2109	-57.22	-13	-44.22	-70.00	-60.79	4.88	10.60	V
	2812	-62.63	-13	-49.63	-78.12	-67.56	5.52	12.60	V
Highest	1413	-53.25	-13	-40.25	-63.33	-56.42	4.10	9.42	H
	2119.5	-59.41	-13	-46.41	-72.56	-62.99	4.90	10.63	H
	2826	-63.04	-13	-50.04	-78.35	-67.96	5.55	12.62	H
	1413	-60.80	-13	-47.80	-70.44	-63.97	4.10	9.42	V
	2119.5	-56.04	-13	-43.04	-69.15	-59.62	4.90	10.63	V
	2826	-62.76	-13	-49.76	-78.26	-67.68	5.55	12.62	V

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

LTE Band 13 / 5MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1554.5	-62.90	-13	-49.90	-72.45	-66.13	3.98	9.36	H
	2331.75	-55.09	-13	-42.09	-69.46	-58.64	4.85	10.55	H
	3109	-61.65	-13	-48.65	-78.03	-66.58	5.50	12.58	H
	1554.5	-64.11	-13	-51.11	-73.74	-67.34	3.98	9.36	V
	2331.75	-56.49	-13	-43.49	-70.86	-60.04	4.85	10.55	V
	3109	-61.89	-13	-48.89	-78.33	-66.82	5.50	12.58	V
Middle	1559.5	-57.58	-42.15	-15.43	-67.13	-60.83	4.00	9.40	H
	2339.25	-55.29	-13	-42.29	-69.61	-58.86	4.88	10.60	H
	3119	-62.13	-13	-49.13	-78.61	-67.06	5.52	12.60	H
	1559.5	-63.86	-42.15	-21.71	-73.49	-67.11	4.00	9.40	V
	2339.25	-58.94	-13	-45.94	-73.26	-62.51	4.88	10.60	V
	3119	-61.99	-13	-48.99	-78.51	-66.92	5.52	12.60	V
Highest	1564.5	-57.76	-42.15	-15.61	-67.31	-60.93	4.10	9.42	H
	2346.75	-56.46	-13	-43.46	-70.78	-60.04	4.90	10.63	H
	3129	-61.99	-13	-48.99	-78.47	-66.91	5.55	12.62	H
	1564.5	-61.71	-42.15	-19.56	-71.34	-64.88	4.10	9.42	V
	2346.75	-55.54	-13	-42.54	-69.86	-59.12	4.90	10.63	V
	3129	-62.42	-13	-49.42	-78.94	-67.34	5.55	12.62	V

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



LTE Band 13 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (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	1559.5	-63.59	-42.15	-21.44	-73.14	-66.84	4.00	9.40	H
	2339.25	-62.76	-13	-49.76	-77.08	-66.33	4.88	10.60	H
	3119	-62.00	-13	-49.00	-78.48	-66.93	5.52	12.60	H
	1559.5	-65.75	-42.15	-23.60	-75.38	-69.00	4.00	9.40	V
	2339.25	-62.70	-13	-49.70	-77.02	-66.27	4.88	10.60	V
	3119	-61.59	-13	-48.59	-78.11	-66.52	5.52	12.60	V

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