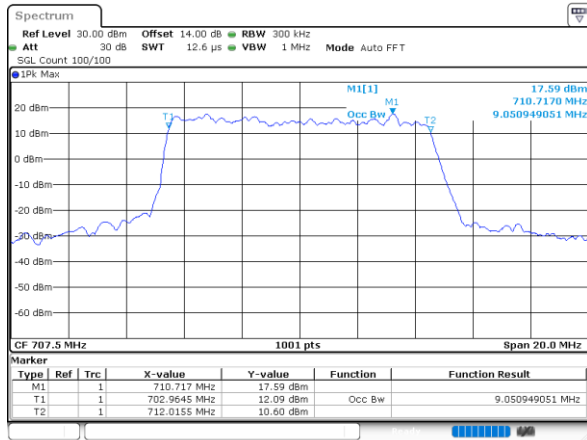


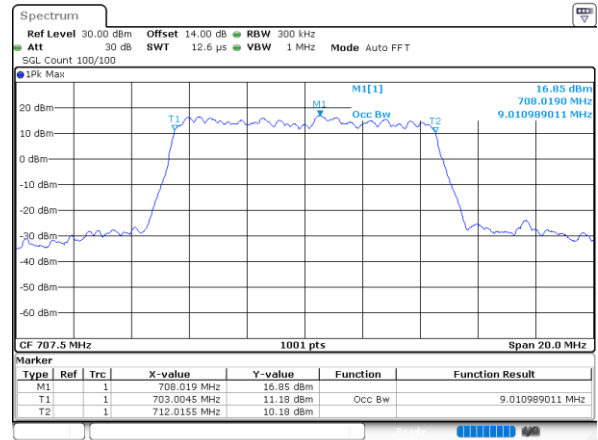


LTE Band 12

Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM

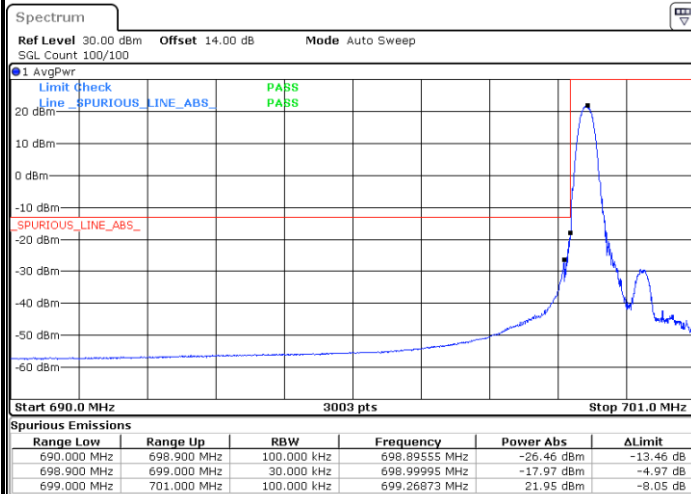




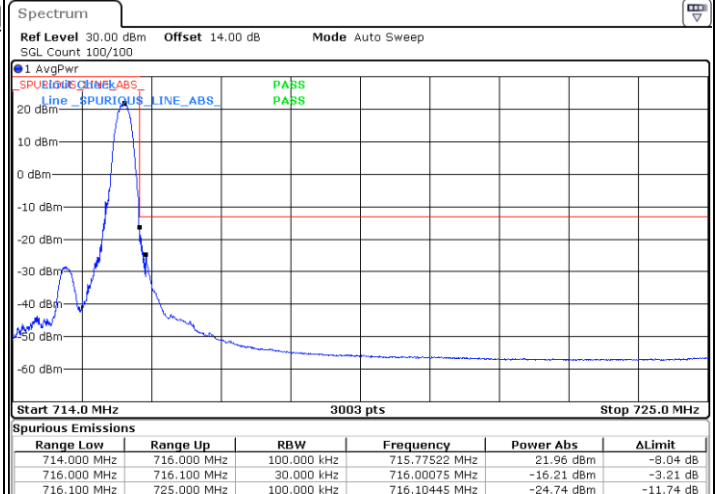
Conducted Band Edge

LTE Band 12 / 1.4MHz / QPSK

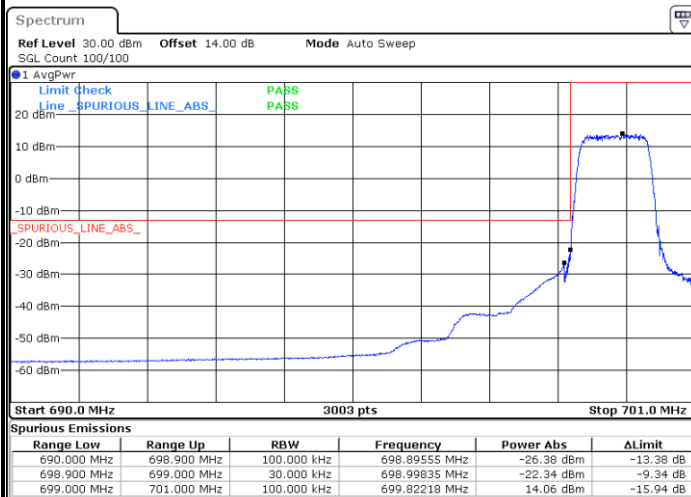
Lowest Band Edge / 1RB



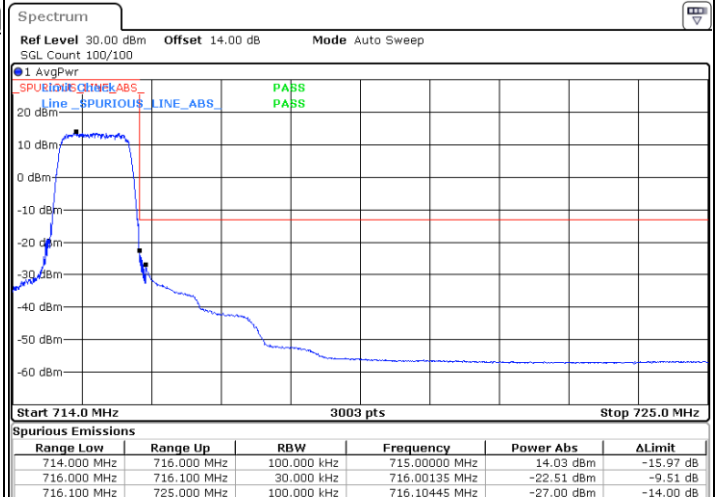
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



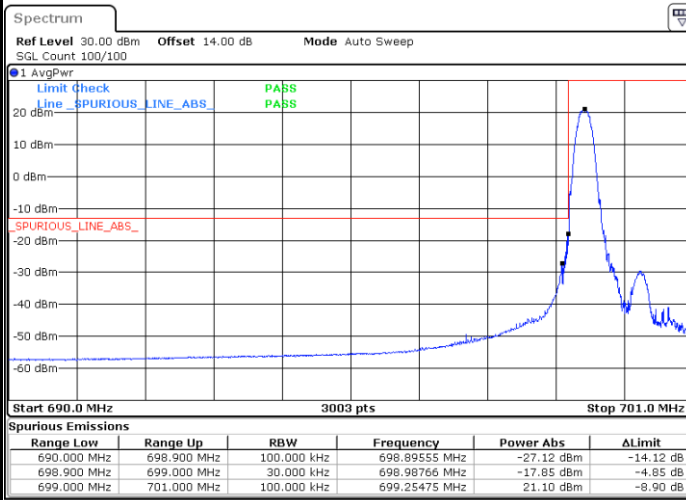
Highest Band Edge / Full RB



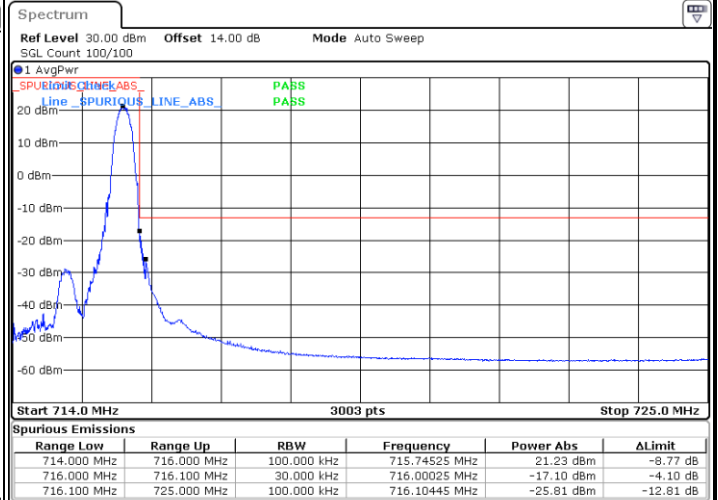


LTE Band 12 / 1.4MHz / 16QAM

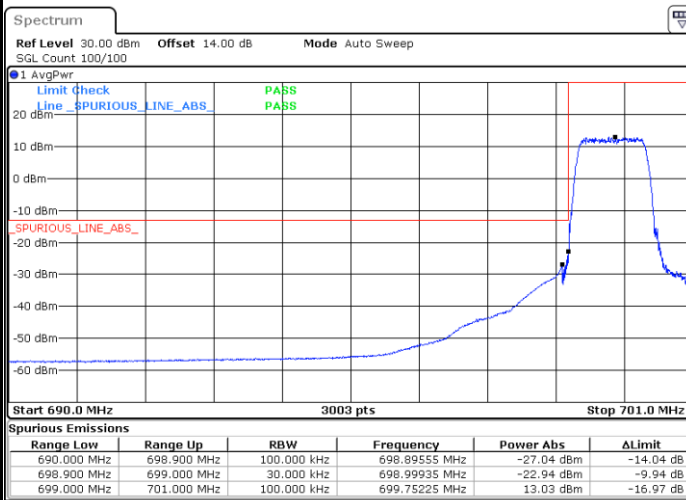
Lowest Band Edge / 1 RB



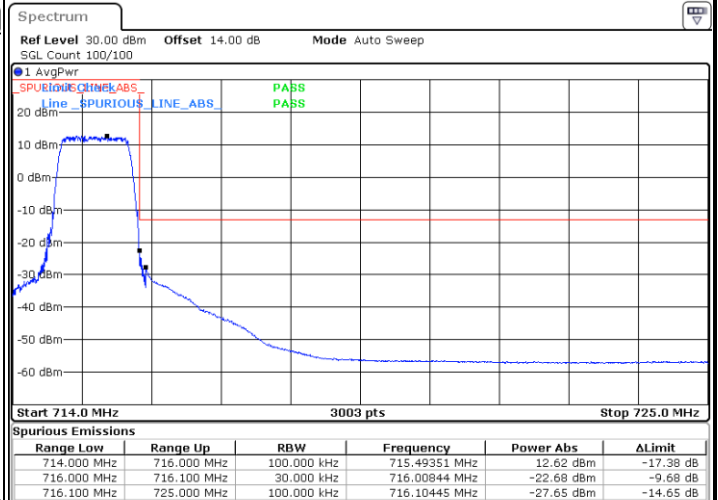
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



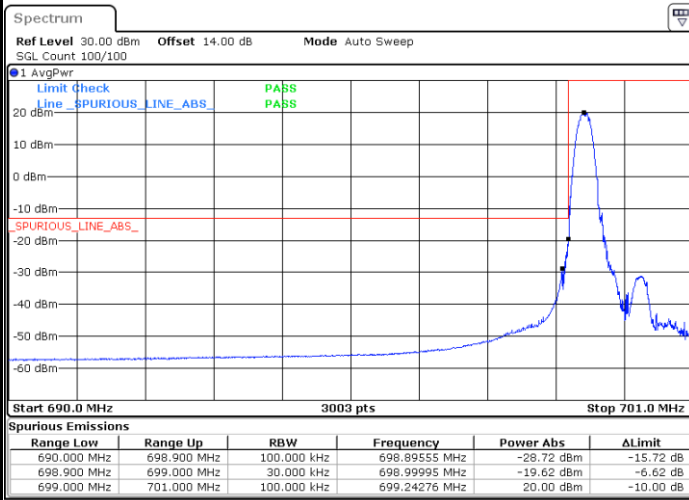
Highest Band Edge / Full RB



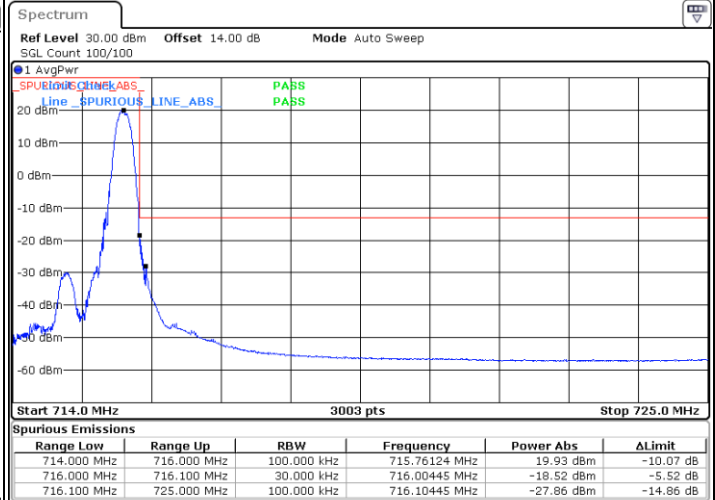


LTE Band 12 / 1.4MHz / 64QAM

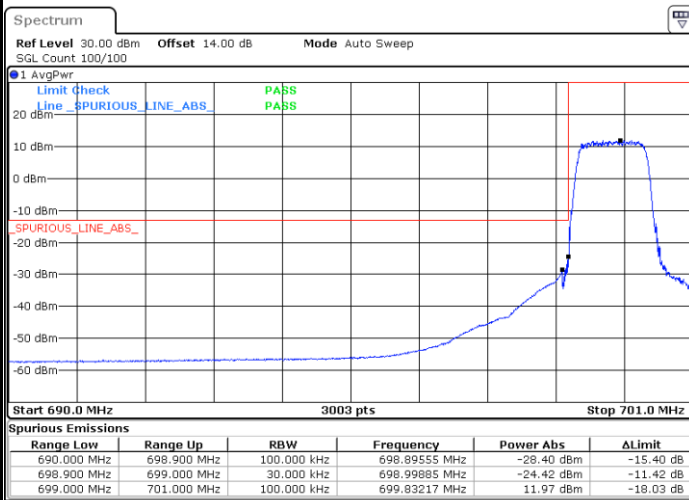
Lowest Band Edge / 1 RB



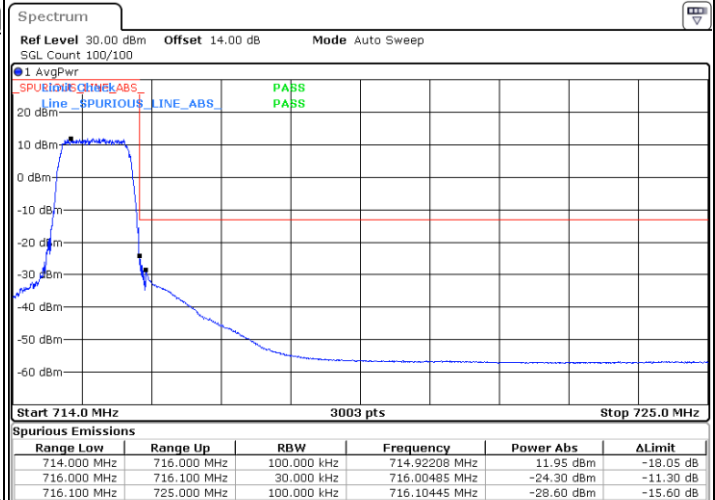
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



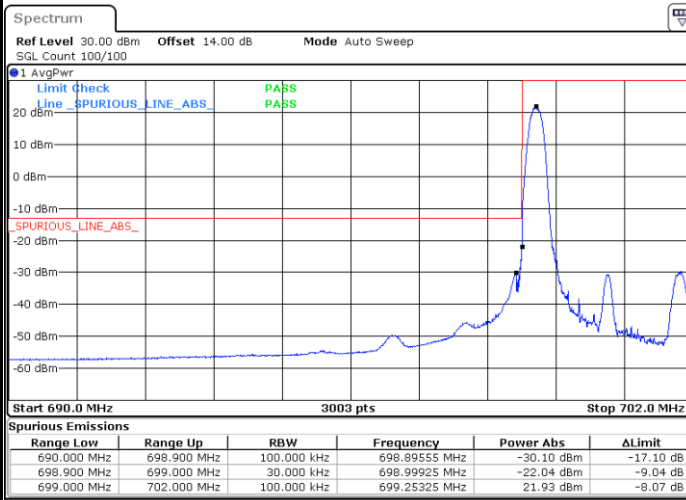
Highest Band Edge / Full RB



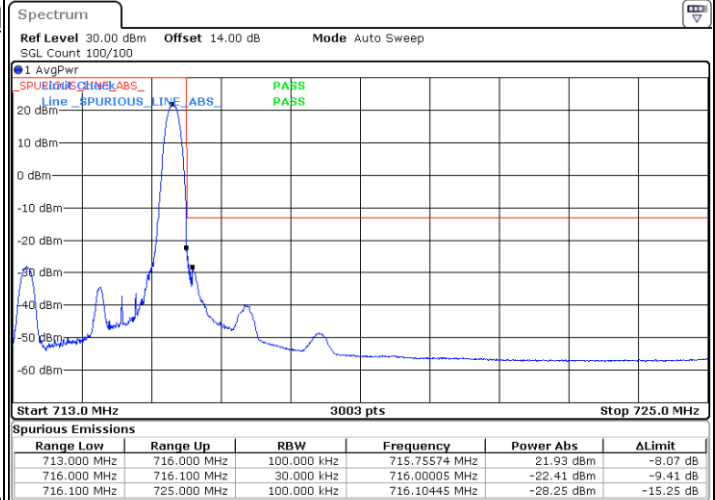


LTE Band 12 / 3MHz / QPSK

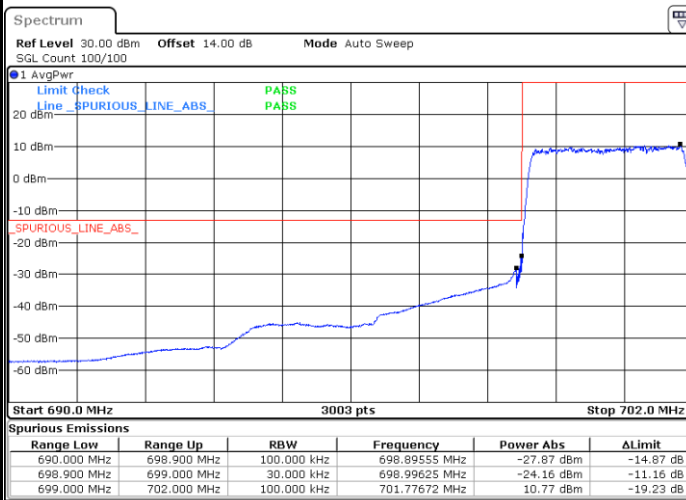
Lowest Band Edge / 1RB



Highest Band Edge / 1RB



Lowest Band Edge / Full RB



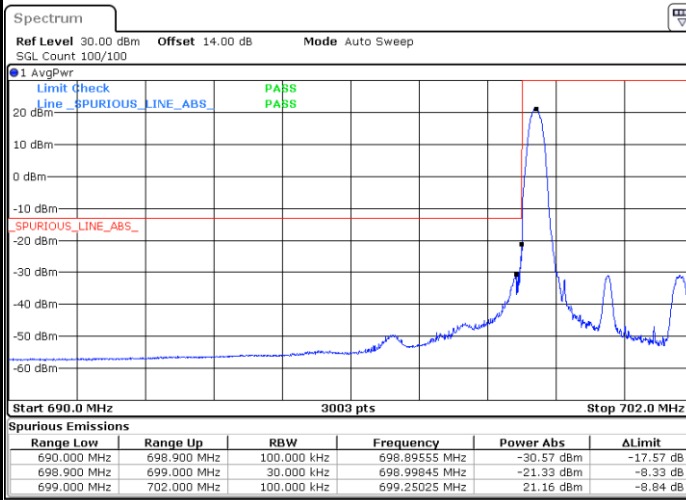
Highest Band Edge / Full RB



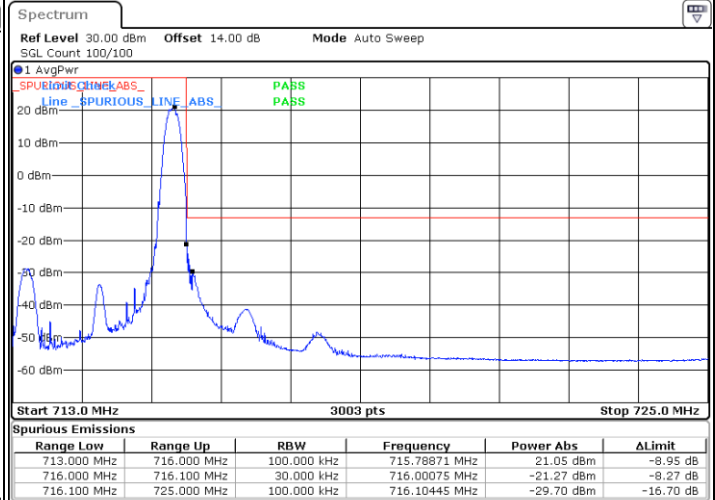


LTE Band 12 / 3MHz / 16QAM

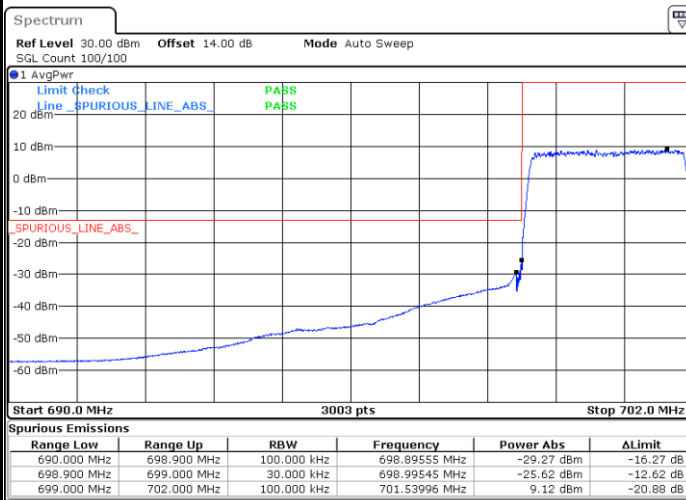
Lowest Band Edge / 1 RB



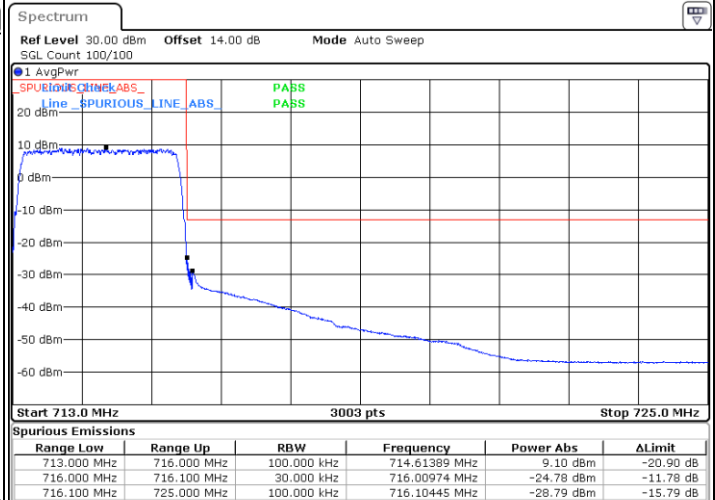
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



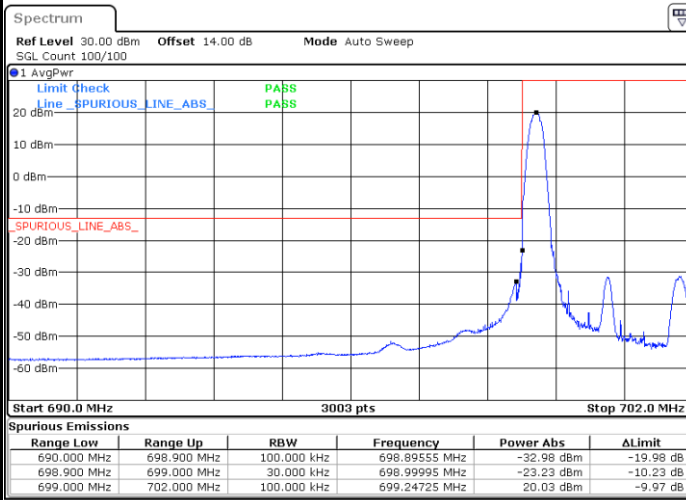
Highest Band Edge / Full RB



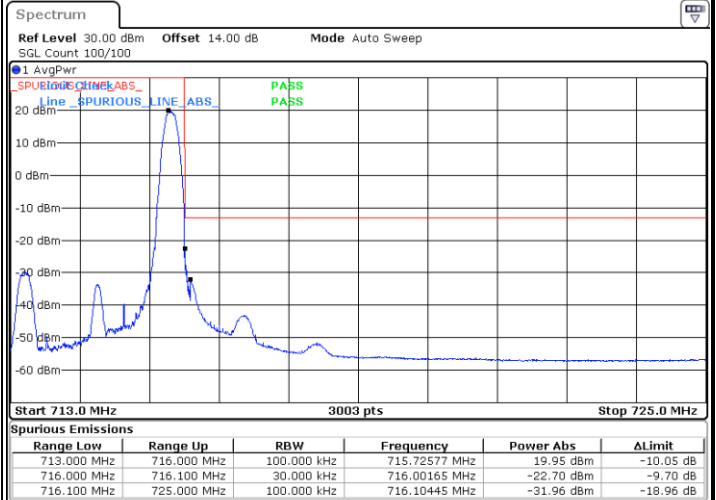


LTE Band 12 / 3MHz / 64QAM

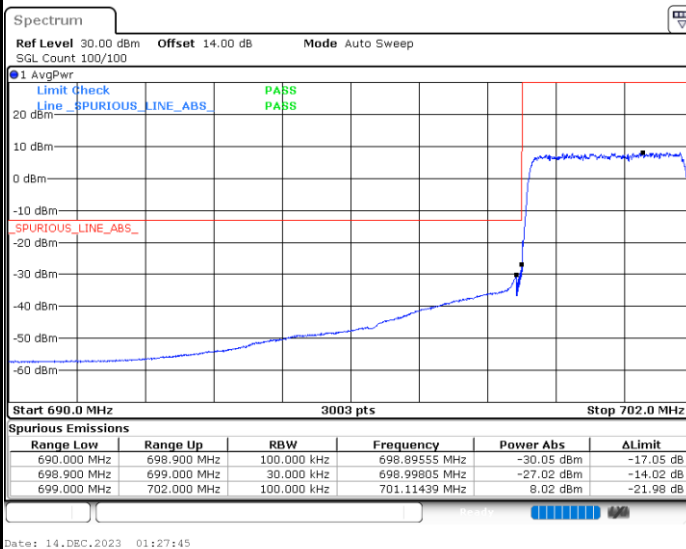
Lowest Band Edge / 1 RB



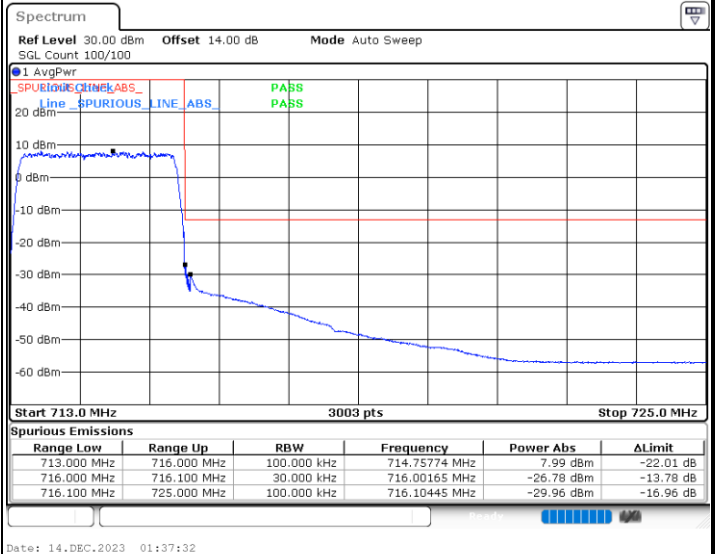
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



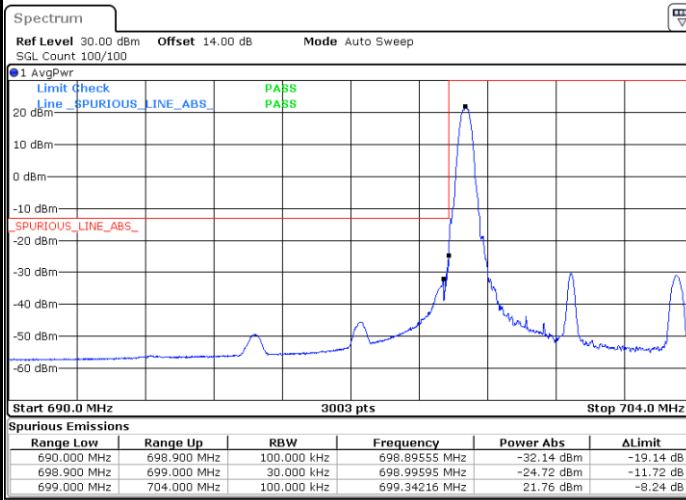
Highest Band Edge / Full RB



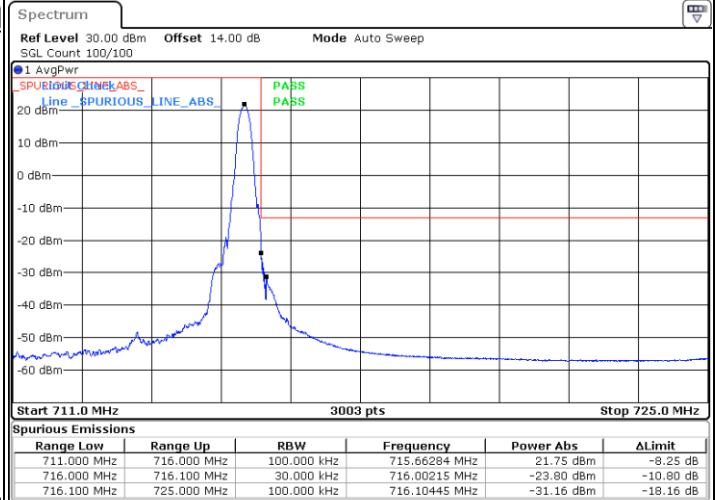


LTE Band 12 / 5MHz / QPSK

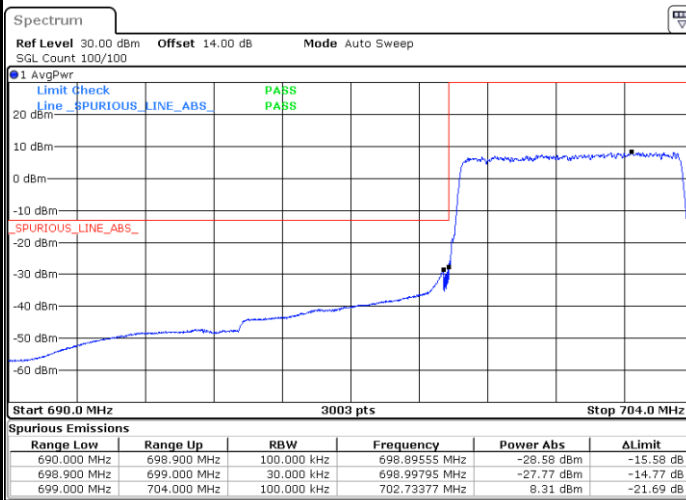
Lowest Band Edge / 1RB



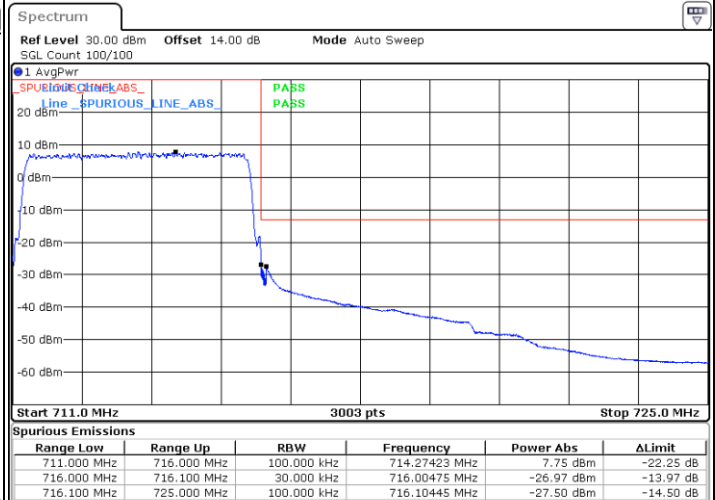
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



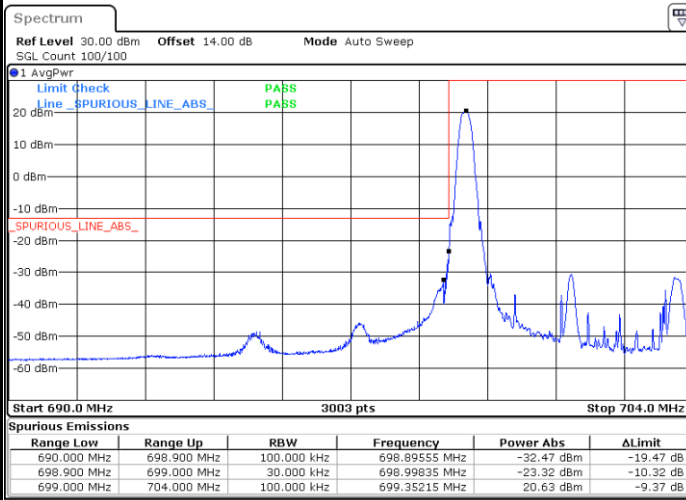
Highest Band Edge / Full RB



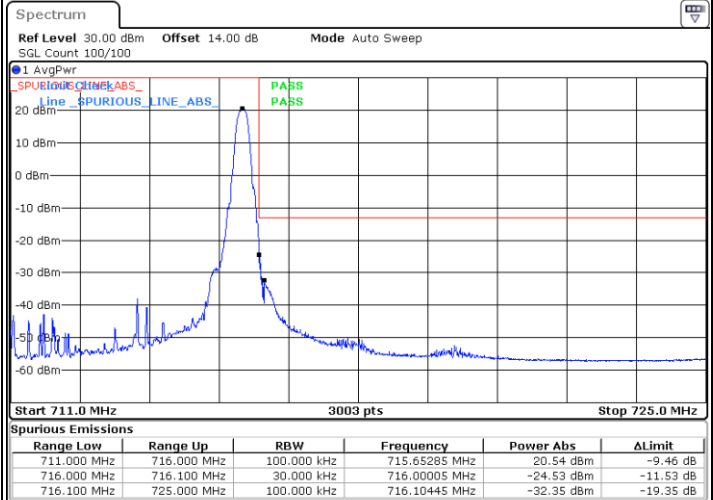


LTE Band 12 / 5MHz / 16QAM

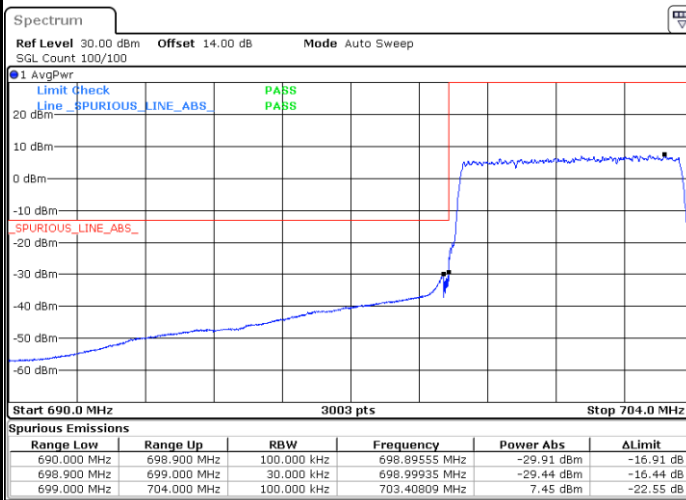
Lowest Band Edge / 1 RB



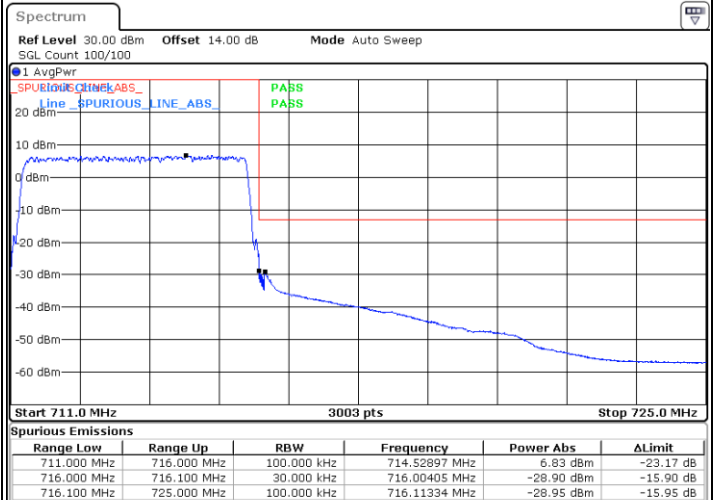
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



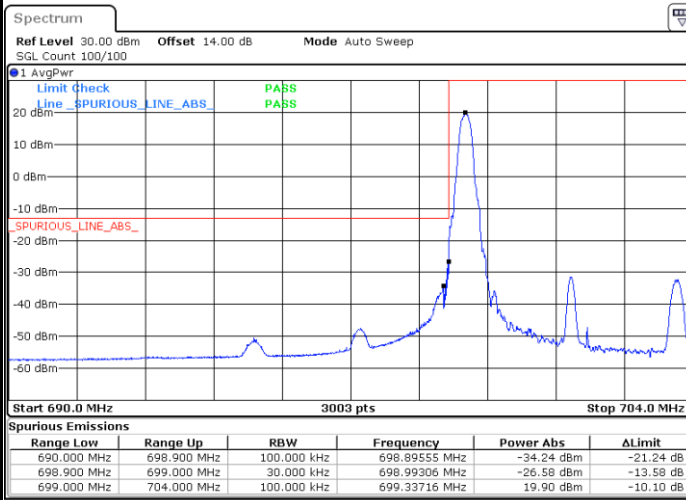
Highest Band Edge / Full RB



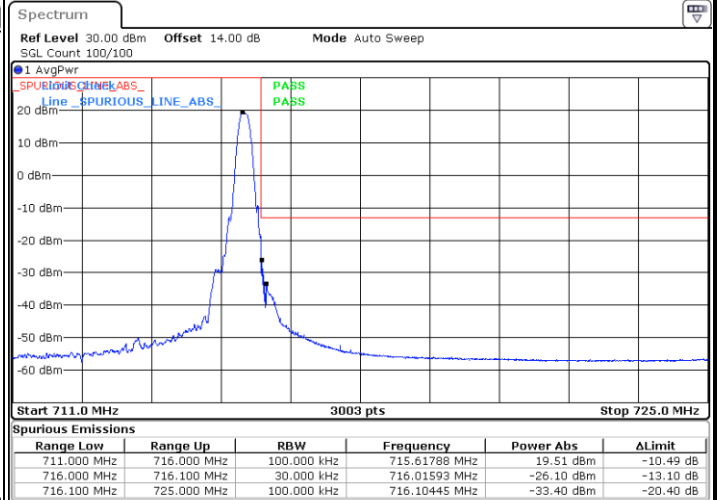


LTE Band 12 / 5MHz / 64QAM

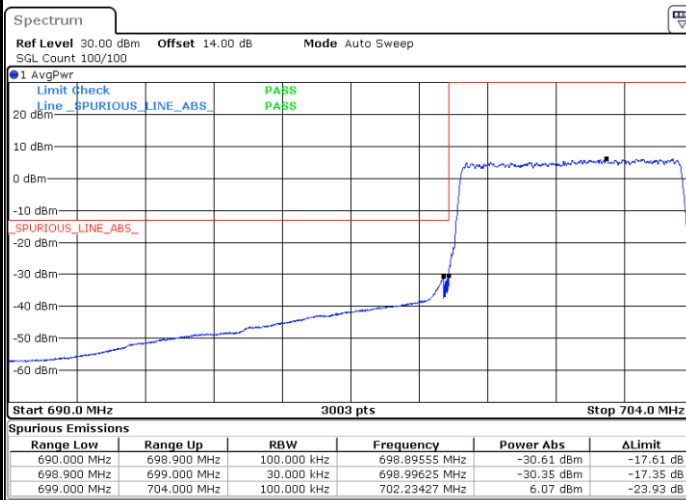
Lowest Band Edge / 1 RB



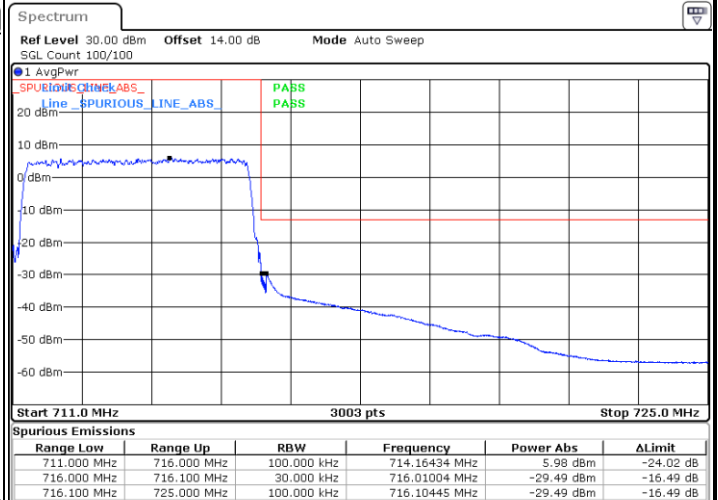
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



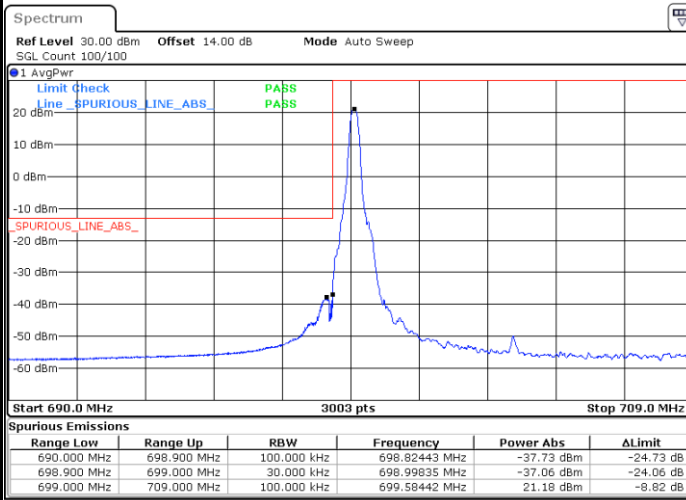
Highest Band Edge / Full RB



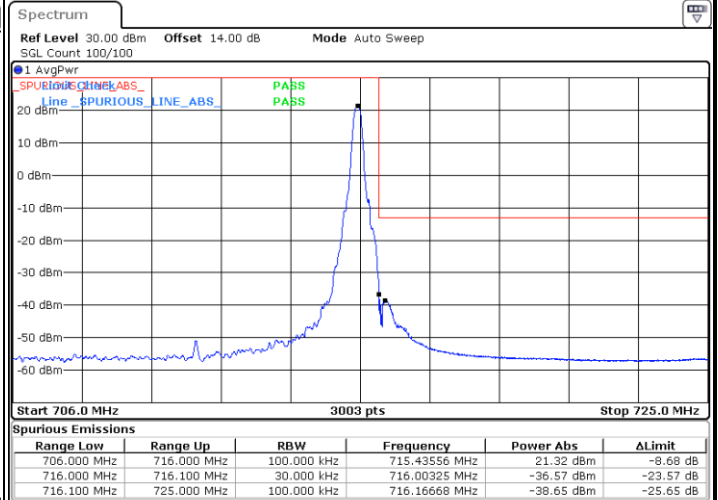


LTE Band 12 / 10MHz / QPSK

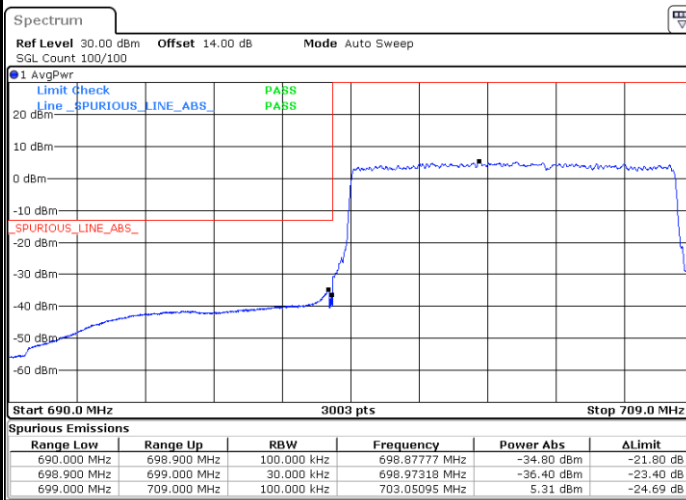
Lowest Band Edge / 1RB



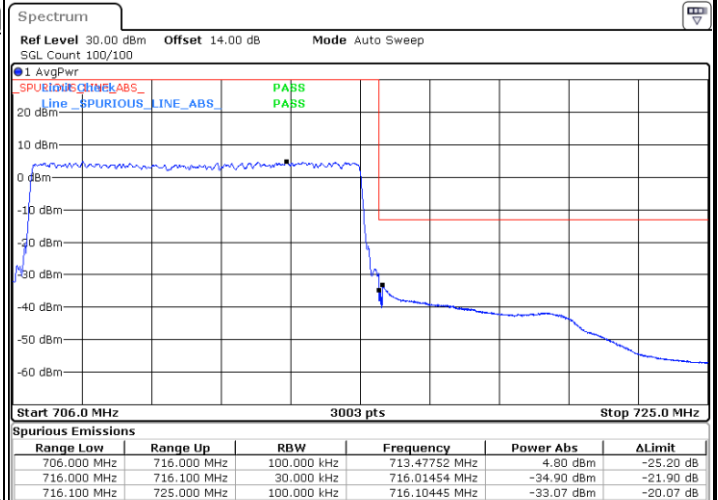
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



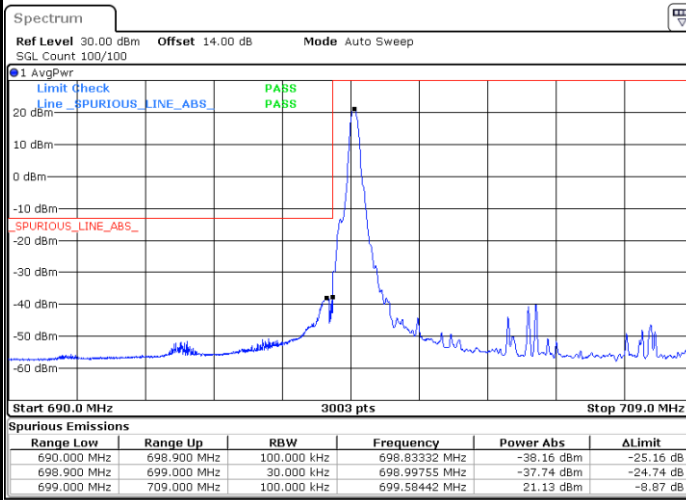
Highest Band Edge / Full RB



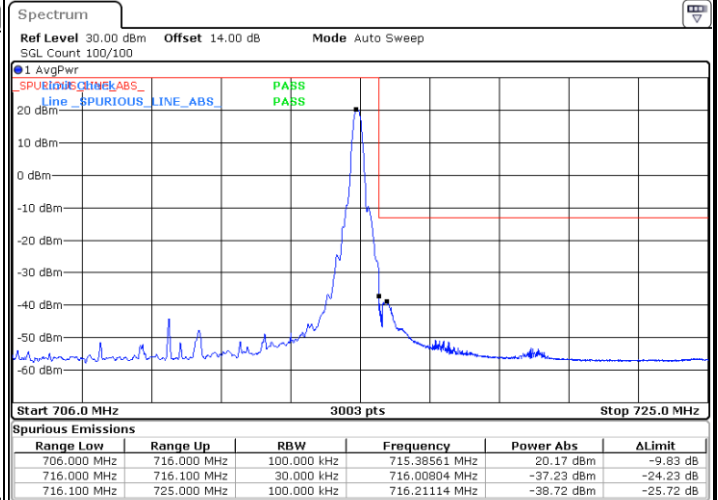


LTE Band 12 / 10MHz / 16QAM

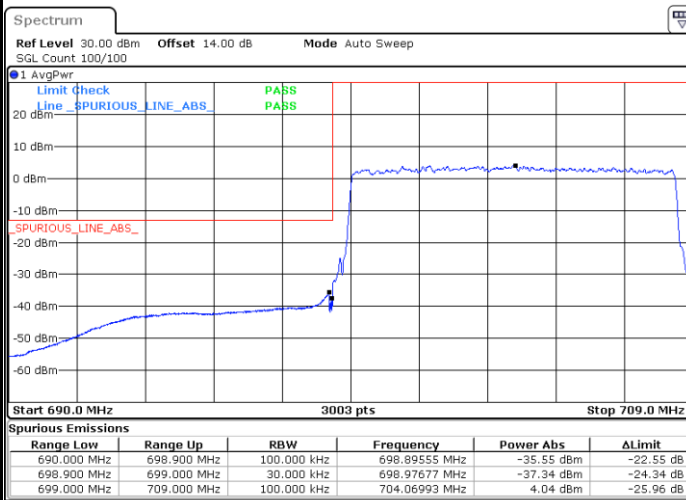
Lowest Band Edge / 1 RB



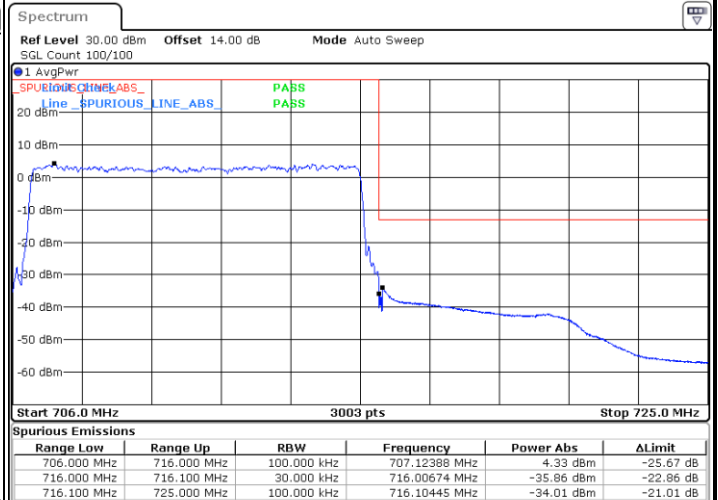
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



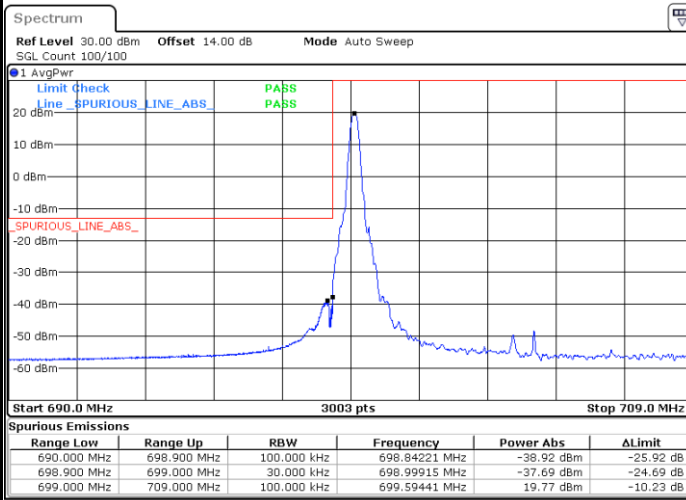
Highest Band Edge / Full RB



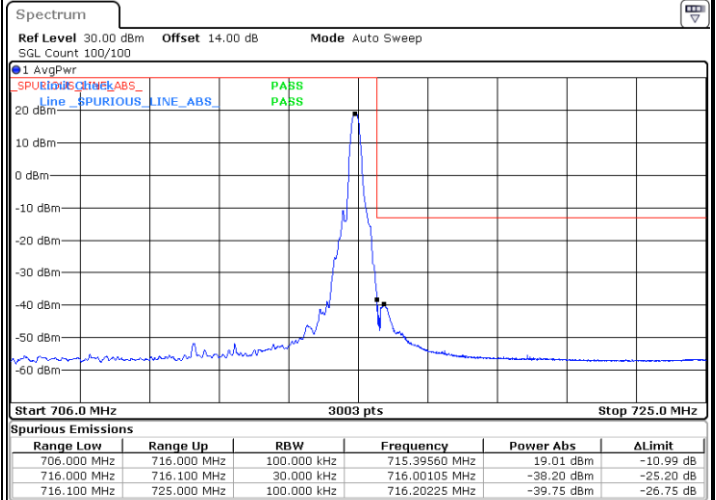


LTE Band 12 / 10MHz / 64QAM

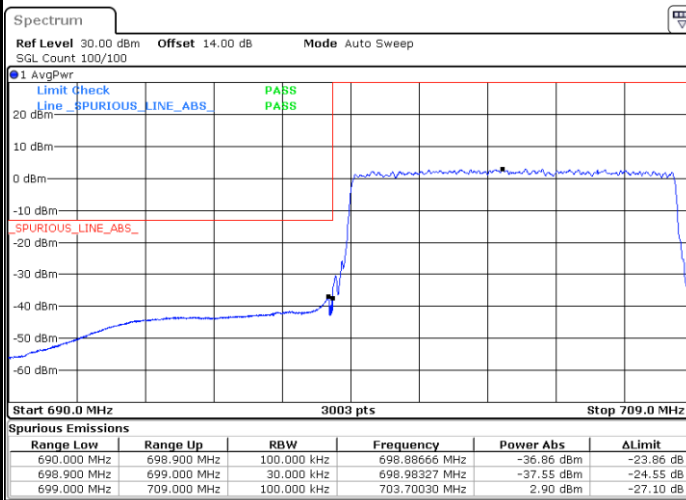
Lowest Band Edge / 1 RB



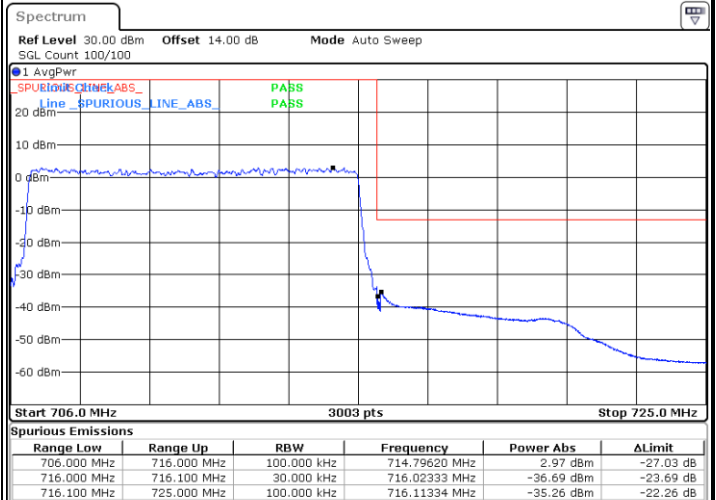
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

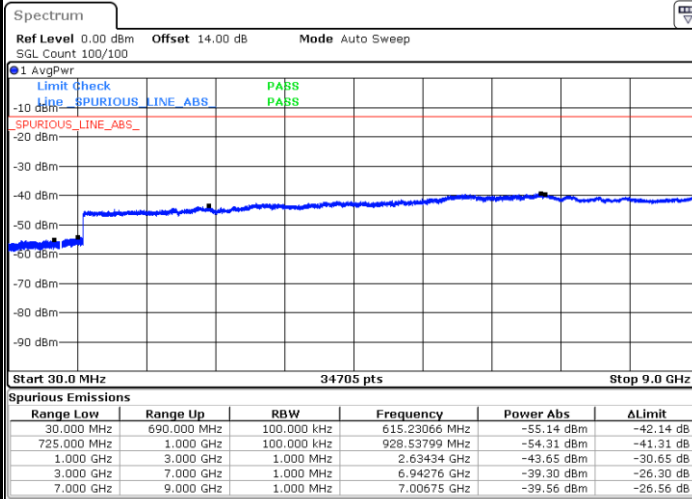




Conducted Spurious Emission

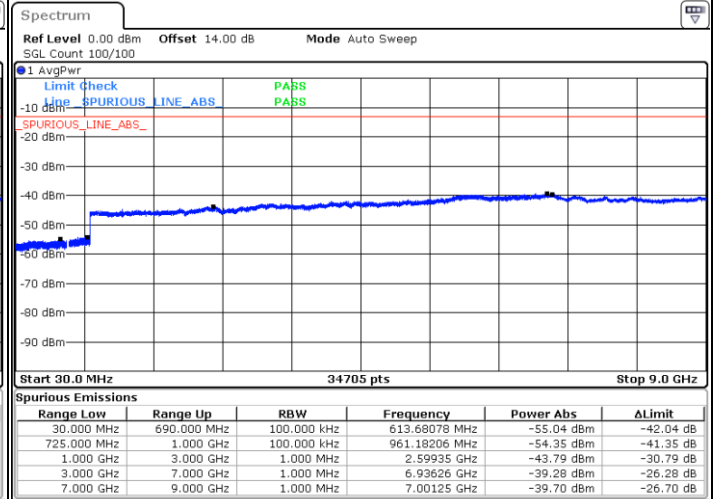
LTE Band 12 / 1.4MHz

Lowest Channel / QPSK



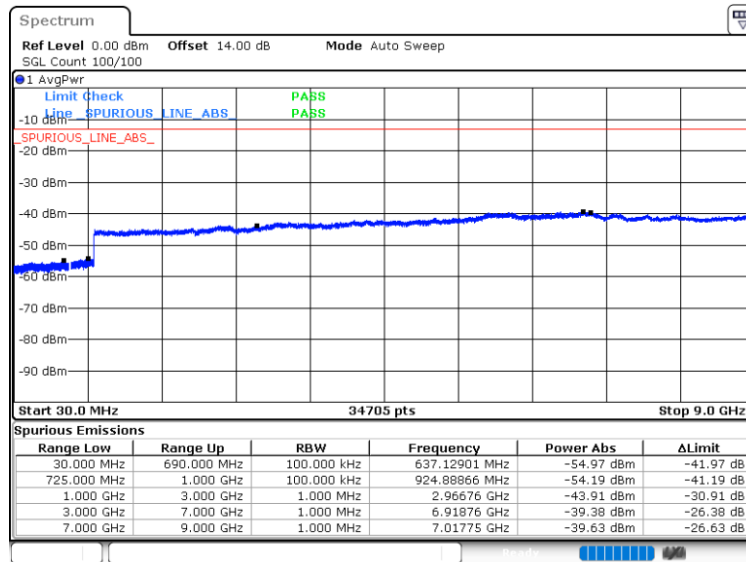
Date: 14.DEC.2023 01:11:10

Middle Channel / QPSK



Date: 14.DEC.2023 01:12:22

Highest Channel / QPSK



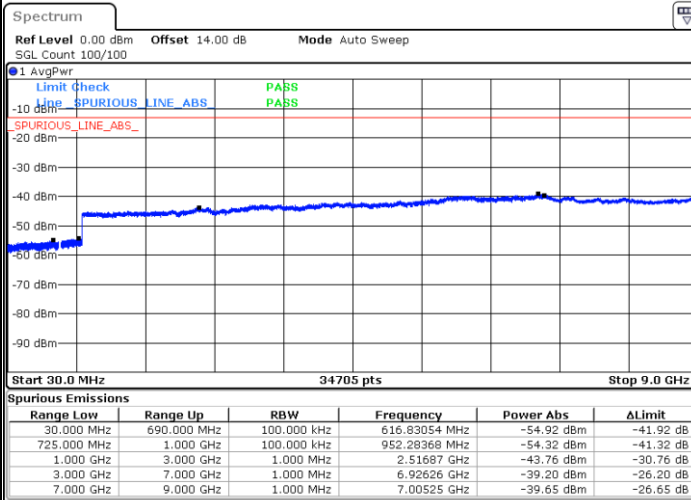
Date: 14.DEC.2023 01:20:59



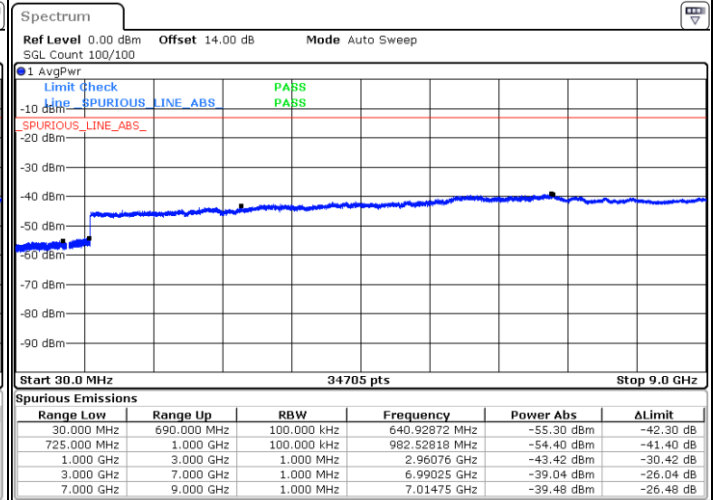
LTE Band 12 / 3MHz

Lowest Channel / QPSK

Middle Channel / QPSK

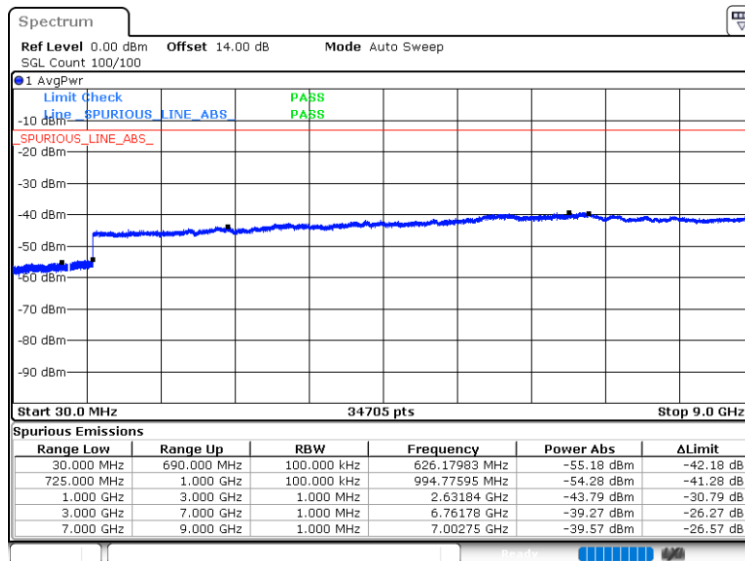


Date: 14.DEC.2023 01:28:59



Date: 14.DEC.2023 01:30:11

Highest Channel / QPSK

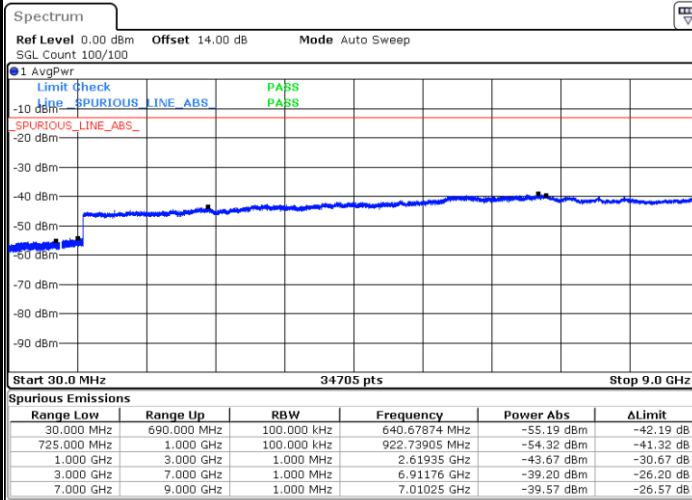


Date: 14.DEC.2023 01:38:45



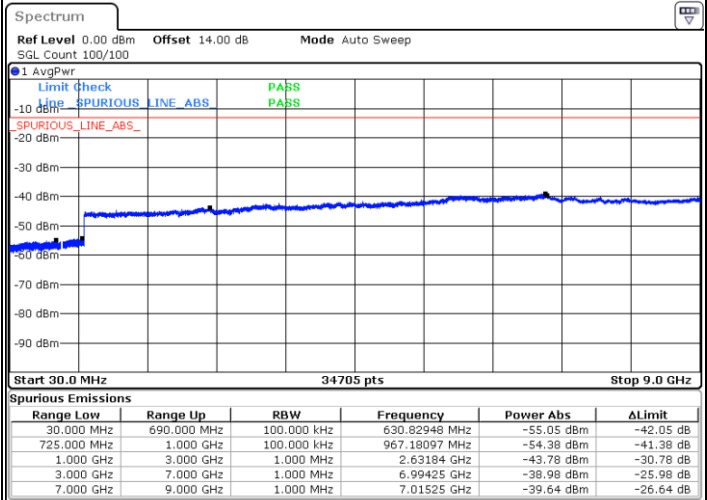
LTE Band 12 / 5MHz

Lowest Channel / QPSK



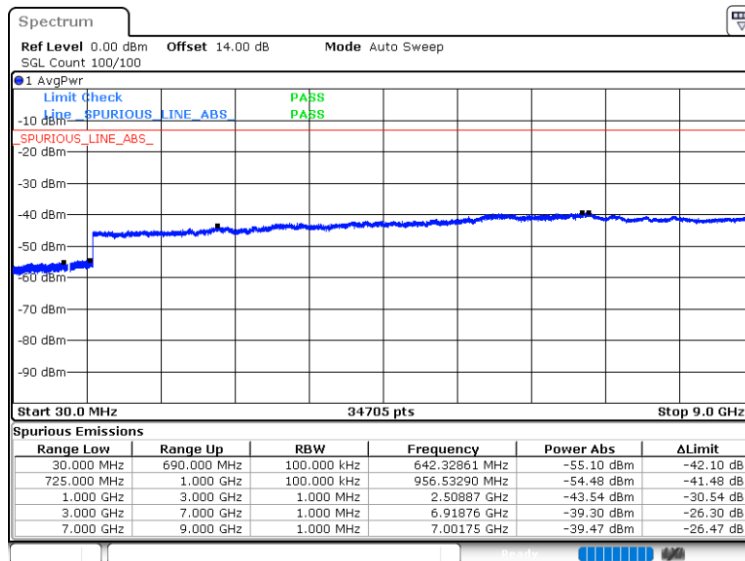
Date: 14.DEC.2023 01:46:51

Middle Channel / QPSK



Date: 14.DEC.2023 01:48:03

Highest Channel / QPSK

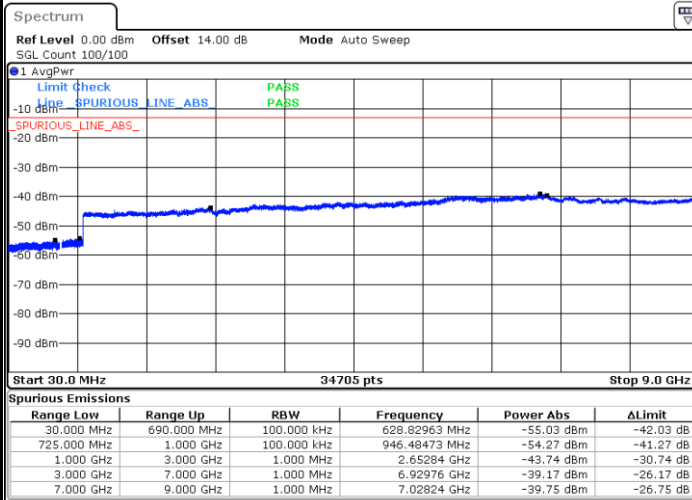


Date: 14.DEC.2023 01:56:37



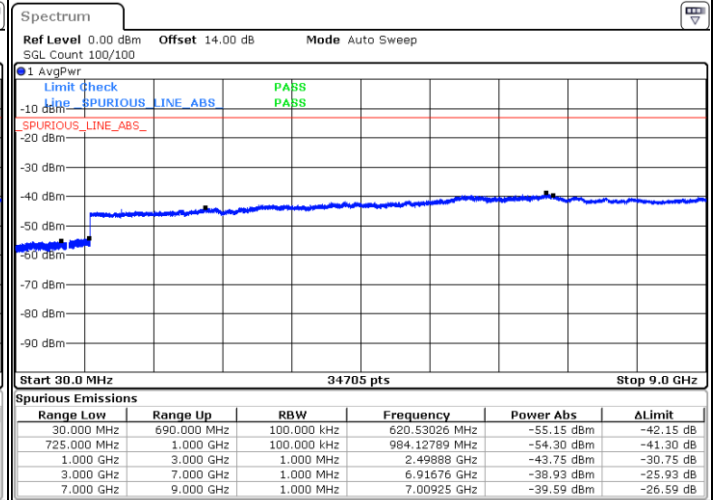
LTE Band 12 / 10MHz

Lowest Channel / QPSK



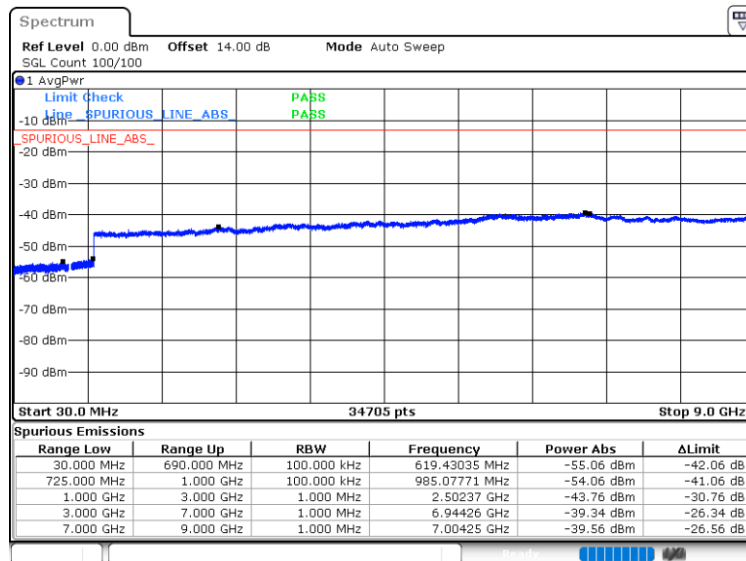
Date: 14.DEC.2023 02:04:41

Middle Channel / QPSK



Date: 14.DEC.2023 02:05:53

Highest Channel / QPSK



Date: 14.DEC.2023 02:15:27

**Frequency Stability**

Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0001	PASS
40	Normal Voltage	0.0001	
30	Normal Voltage	0.0007	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0011	
0	Normal Voltage	0.0010	
-10	Normal Voltage	0.0004	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0007	
20	Maximum Voltage	0.0003	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0007	

Note:

1. Normal Voltage = 3.85 V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 13

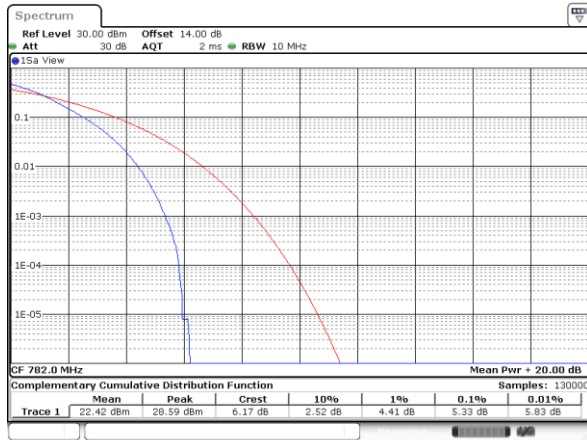
Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.33	6.09	6.46	PASS



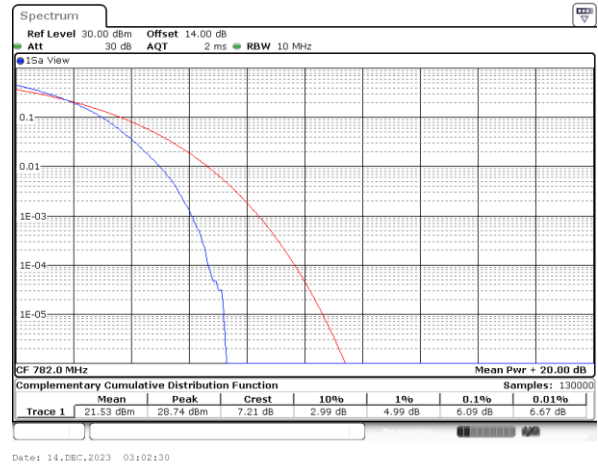
LTE Band 13 / 10MHz / QPSK

Middle Channel / Full RB



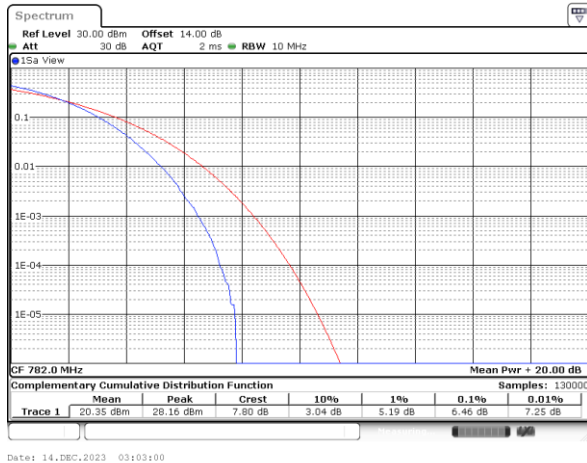
LTE Band 13 / 10MHz / 16QAM

Middle Channel / Full RB



LTE Band 13 / 10MHz / 64QAM

Middle Channel / Full RB





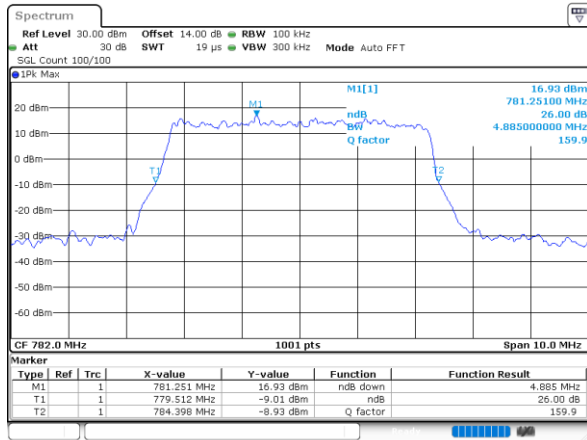
26dB Bandwidth

Mode	LTE Band 13 : 26dB BW(MHz)											
BW					5MHz		10MHz					
Mod.					QPSK	16QAM	QPSK	16QAM				
Middle CH					4.89	5.13	9.89	9.79				

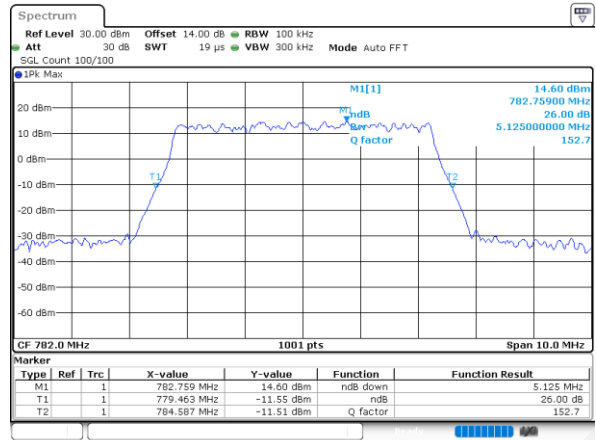


LTE Band 13

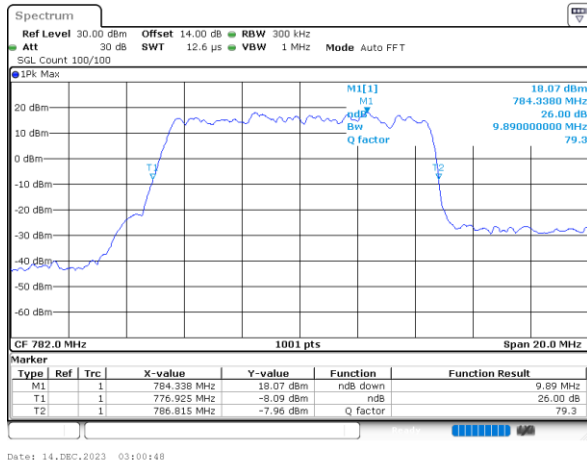
Middle Channel / 5MHz / QPSK



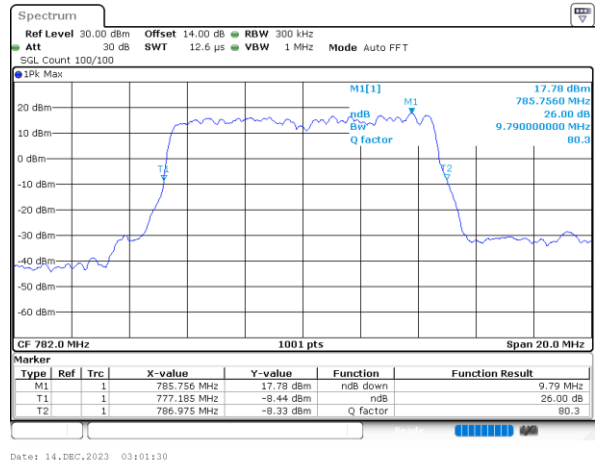
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM





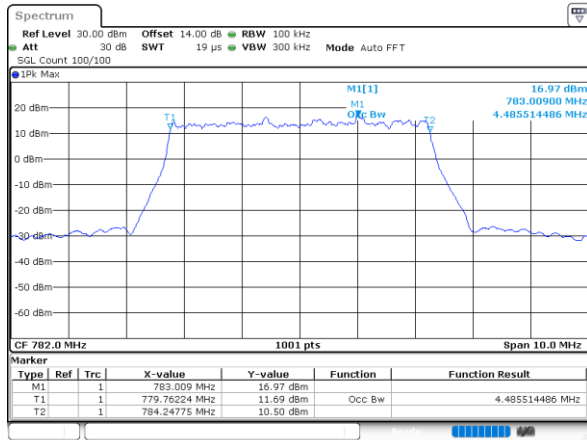
Occupied Bandwidth

Mode	LTE Band 13 : 99%OBW(MHz)											
BW					5MHz		10MHz					
Mod.					QPSK	16QAM	QPSK	16QAM				
Middle CH					4.49	4.48	9.03	9.01				

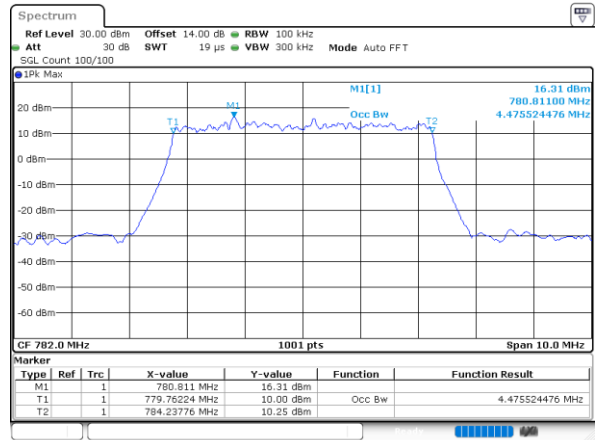


LTE Band 13

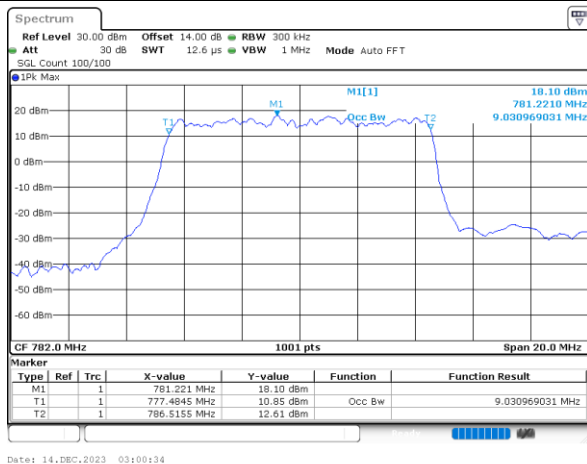
Middle Channel / 5MHz / QPSK



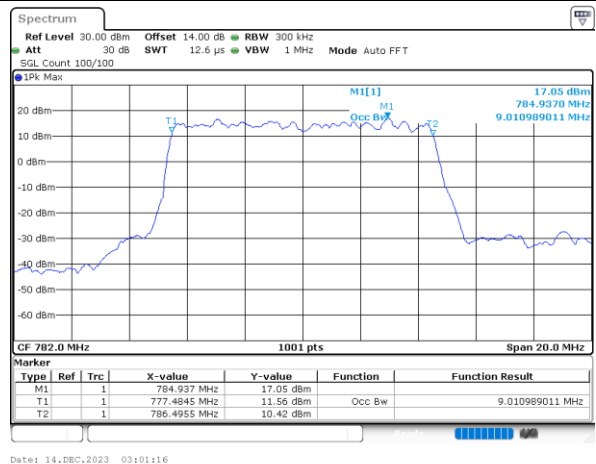
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM

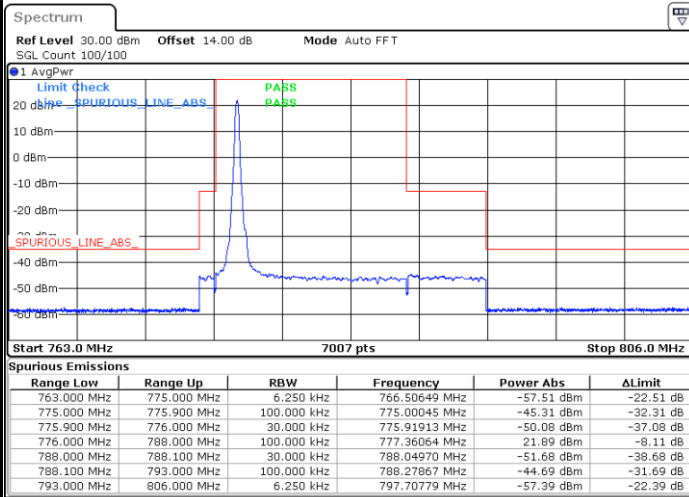




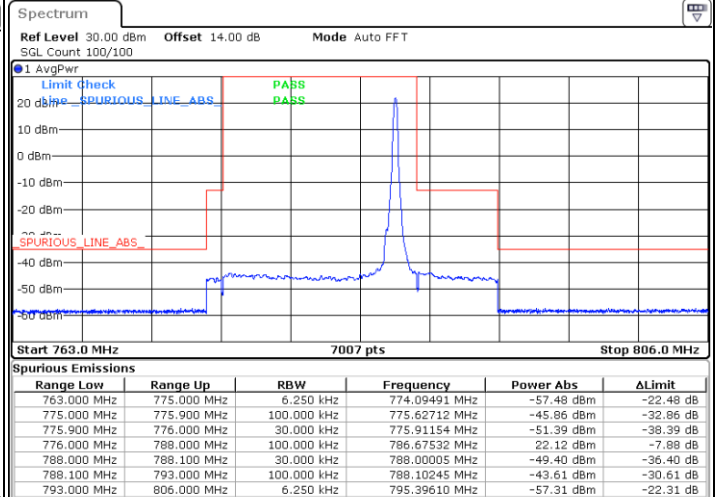
Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

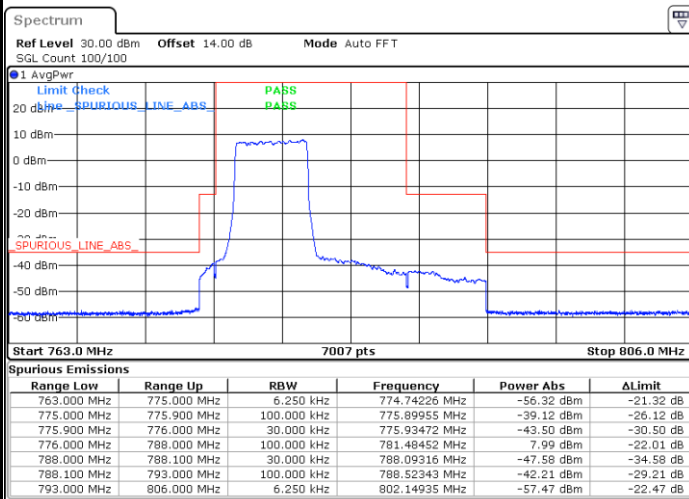
Lowest Band Edge / 1 RB



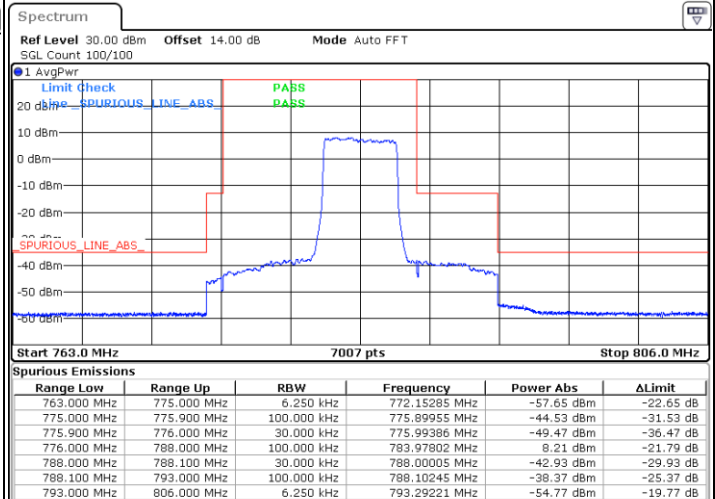
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



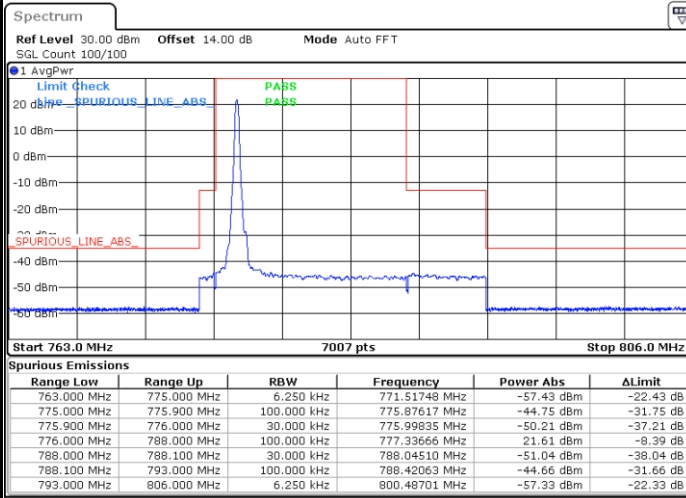
Highest Band Edge / Full RB





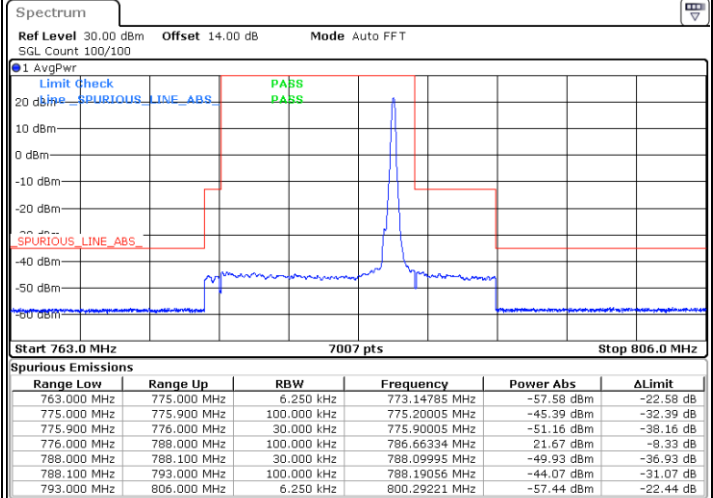
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB



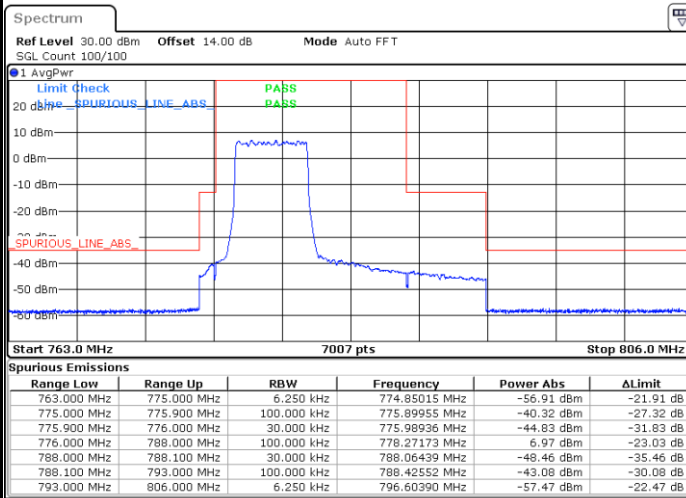
Date: 14.DEC.2023 10:50:26

Highest Band Edge / 1 RB



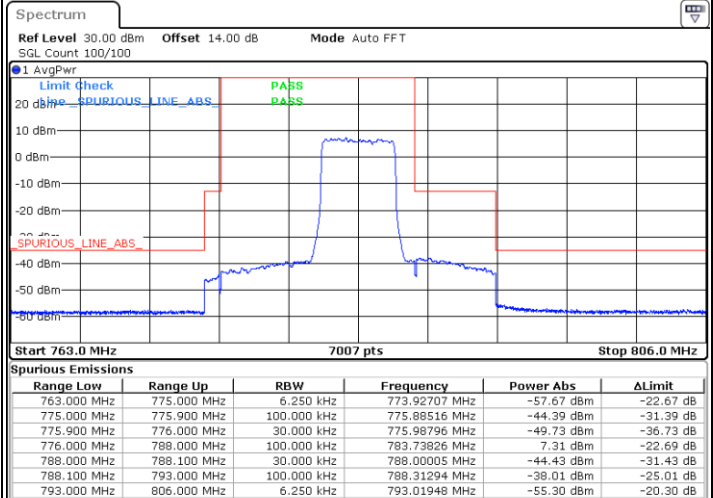
Date: 14.DEC.2023 02:43:56

Lowest Band Edge / Full RB



Date: 14.DEC.2023 02:35:24

Highest Band Edge / Full RB

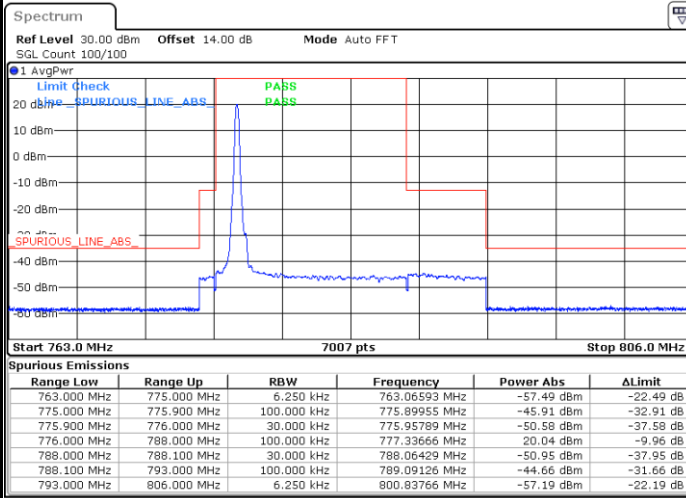


Date: 14.DEC.2023 02:47:50



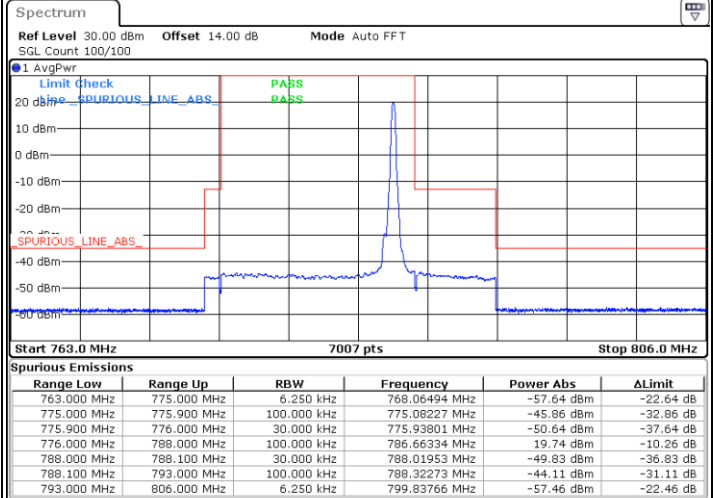
LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB



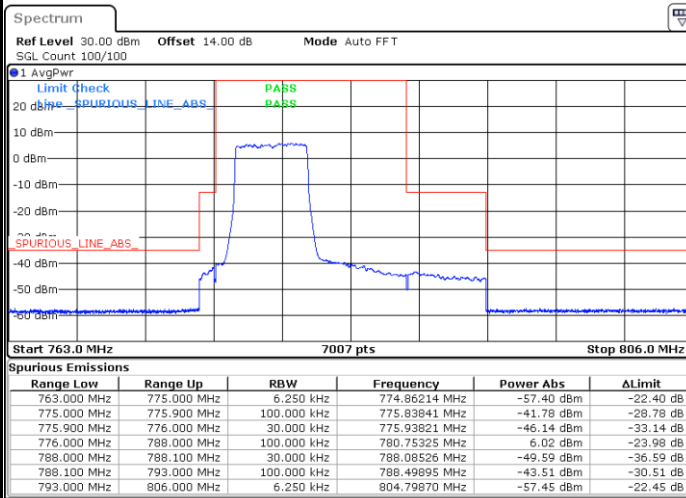
Date: 14.DEC.2023 02:33:23

Highest Band Edge / 1 RB



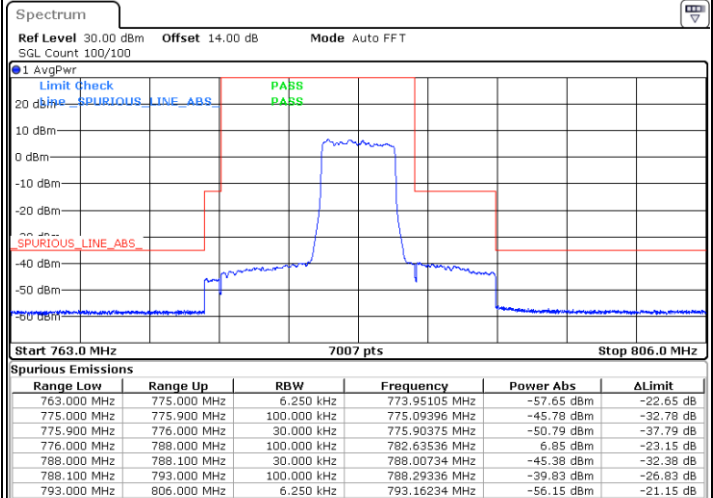
Date: 14.DEC.2023 02:44:58

Lowest Band Edge / Full RB



Date: 14.DEC.2023 02:36:25

Highest Band Edge / Full RB

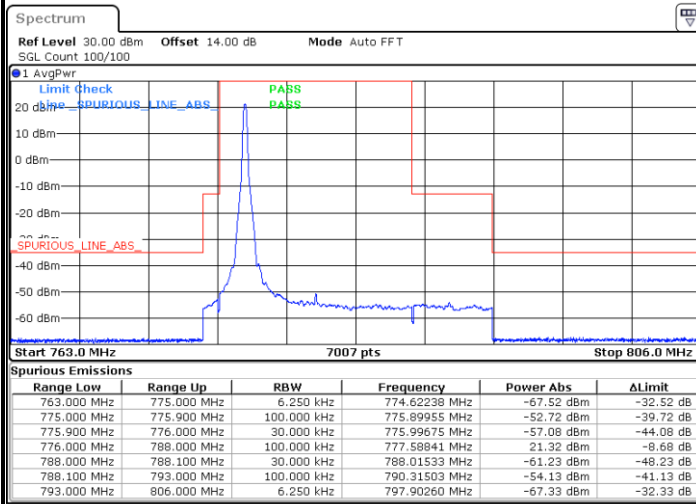


Date: 14.DEC.2023 02:48:52



LTE Band 13 / 10MHz / QPSK

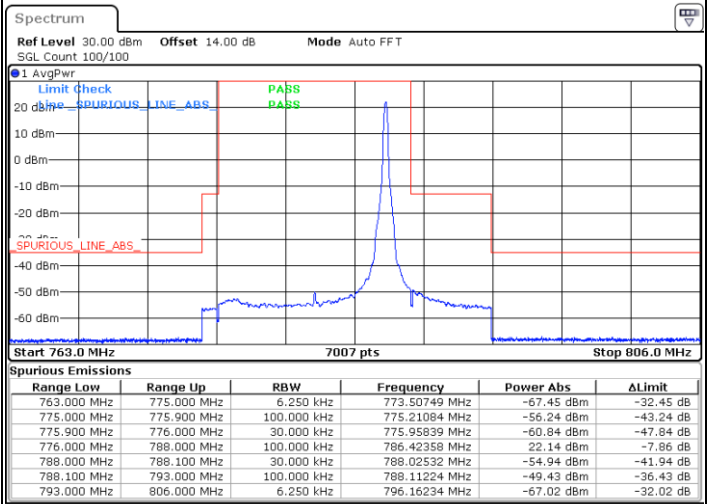
Band Edge / 1 RB



Date: 14.DEC.2023 02:51:06

LTE Band 13 / 10MHz / QPSK

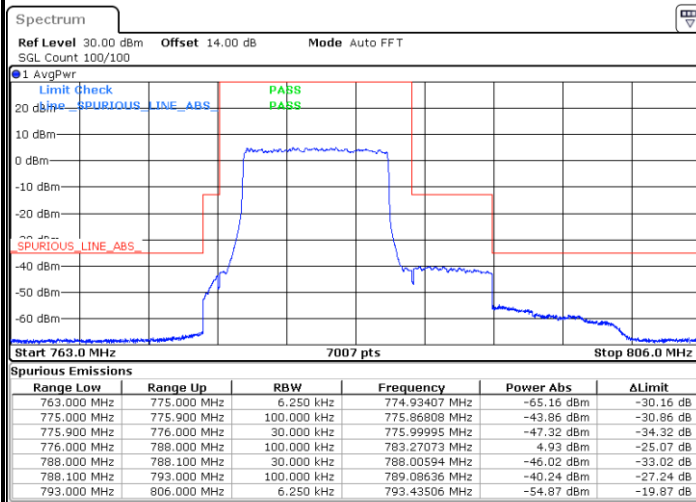
Band Edge / 1 RB



Date: 14.DEC.2023 02:54:01

LTE Band 13 / 10MHz / QPSK

Band Edge / Full RB



Date: 14.DEC.2023 02:56:56



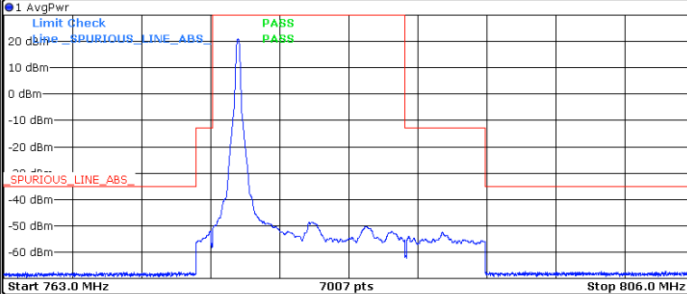
LTE Band 13 / 10MHz / 16QAM

Band Edge / 1 RB

LTE Band 13 / 10MHz / 16QAM

Band Edge / 1 RB

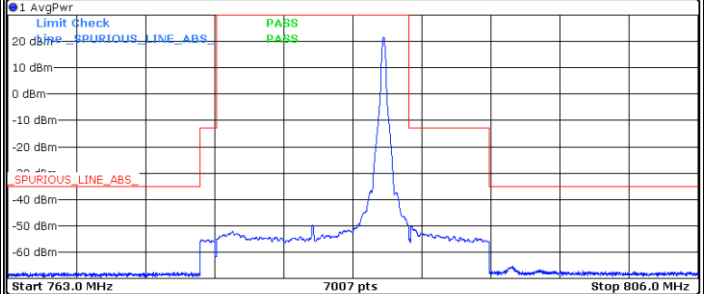
Spectrum

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	774.03497 MHz	-67.59 dBm	-32.59 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.87527 MHz	-52.01 dBm	-39.01 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.94580 MHz	-56.81 dBm	-43.81 dB
776.000 MHz	788.000 MHz	100.000 kHz	777.60040 MHz	-20.96 dBm	-9.04 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.04770 MHz	-61.39 dBm	-48.39 dB
788.100 MHz	793.000 MHz	100.000 kHz	790.32972 MHz	-52.53 dBm	-39.53 dB
793.000 MHz	806.000 MHz	6.250 kHz	804.26623 MHz	-67.37 dBm	-32.37 dB

Date: 14.DEC.2023 02:52:04

Spectrum

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

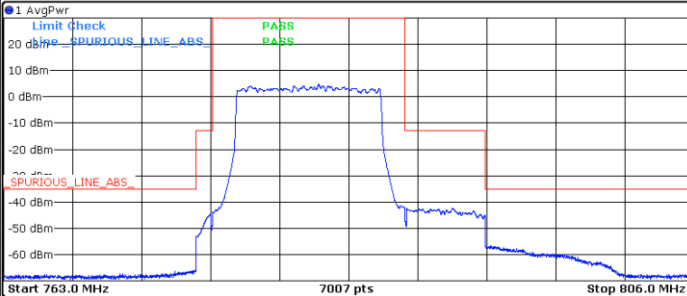
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	773.35165 MHz	-67.51 dBm	-32.51 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.08766 MHz	-55.24 dBm	-42.24 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.90005 MHz	-60.56 dBm	-47.56 dB
776.000 MHz	788.000 MHz	100.000 kHz	786.41159 MHz	-21.57 dBm	-8.43 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.02852 MHz	-55.15 dBm	-42.15 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.13182 MHz	-50.26 dBm	-37.26 dB
793.000 MHz	806.000 MHz	6.250 kHz	794.44805 MHz	-65.38 dBm	-30.38 dB

Date: 14.DEC.2023 02:54:59

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	774.95804 MHz	-65.83 dBm	-30.83 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-44.61 dBm	-31.61 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.99176 MHz	-48.96 dBm	-35.96 dB
776.000 MHz	788.000 MHz	100.000 kHz	782.62338 MHz	-4.69 dBm	-25.31 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.00005 MHz	-47.29 dBm	-34.29 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-42.40 dBm	-29.40 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.31818 MHz	-56.71 dBm	-21.71 dB

Date: 14.DEC.2023 02:57:54



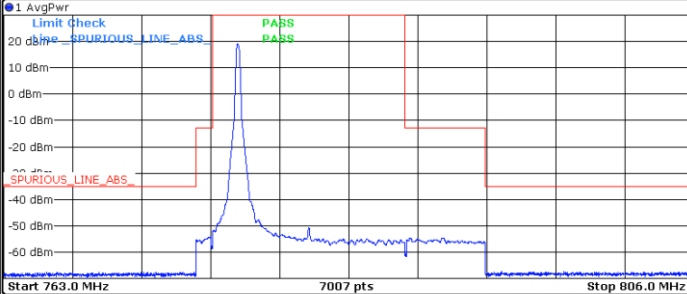
LTE Band 13 / 10MHz / 64QAM

Band Edge / 1 RB

LTE Band 13 / 10MHz / 64QAM

Band Edge / 1 RB

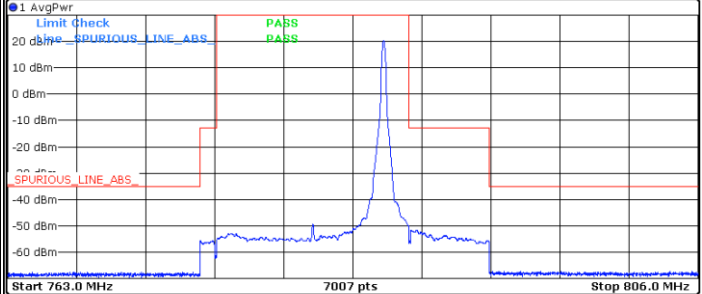
Spectrum

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	774.15485 MHz	-67.62 dBm	-32.62 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-54.37 dBm	-41.37 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.90005 MHz	-57.50 dBm	-44.50 dB
776.000 MHz	788.000 MHz	100.000 kHz	777.56444 MHz	-18.95 dBm	-11.05 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.03482 MHz	-60.63 dBm	-47.63 dB
788.100 MHz	793.000 MHz	100.000 kHz	790.32483 MHz	-54.57 dBm	-41.57 dB
793.000 MHz	806.000 MHz	6.250 kHz	797.86364 MHz	-67.38 dBm	-32.38 dB

Date: 14.DEC.2023 02:53:02

Spectrum

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

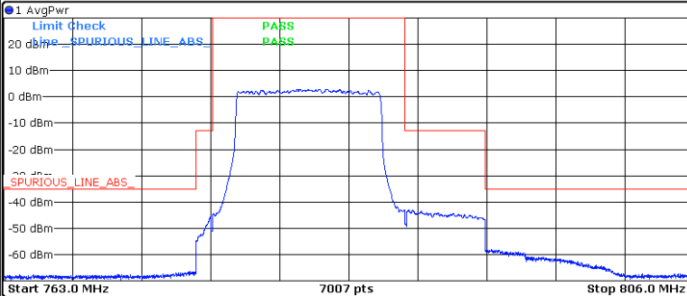
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	774.15485 MHz	-67.63 dBm	-32.63 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-55.68 dBm	-42.68 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.96828 MHz	-61.21 dBm	-48.21 dB
776.000 MHz	788.000 MHz	100.000 kHz	786.41159 MHz	-20.20 dBm	-9.80 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.03132 MHz	-55.83 dBm	-42.83 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.47448 MHz	-51.61 dBm	-38.61 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.59091 MHz	-67.36 dBm	-32.36 dB

Date: 14.DEC.2023 02:55:57

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	774.57443 MHz	-66.51 dBm	-31.51 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-45.72 dBm	-32.72 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.98916 MHz	-51.00 dBm	-38.00 dB
776.000 MHz	788.000 MHz	100.000 kHz	781.46054 MHz	-2.90 dBm	-27.10 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.03212 MHz	-48.24 dBm	-35.24 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.22972 MHz	-43.12 dBm	-30.12 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.12338 MHz	-58.06 dBm	-23.06 dB

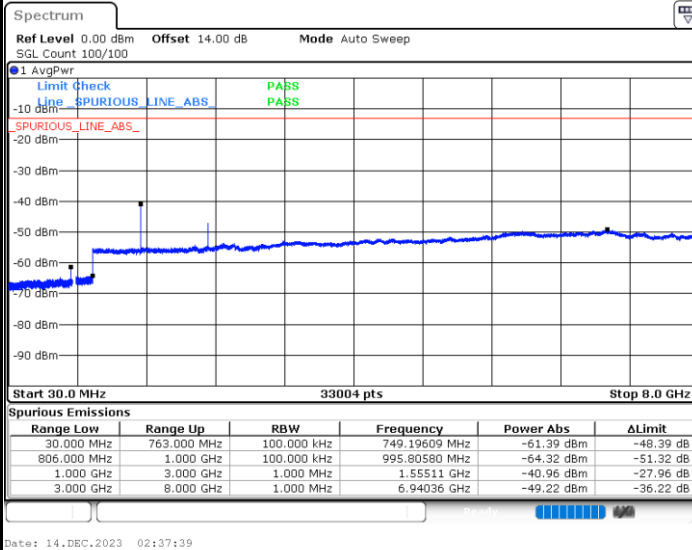
Date: 14.DEC.2023 02:58:52



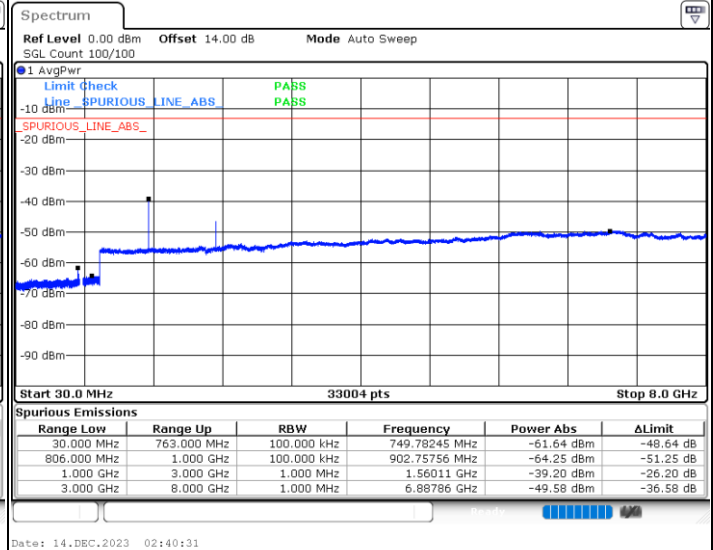
Conducted Spurious Emission

LTE Band 13 / 5MHz

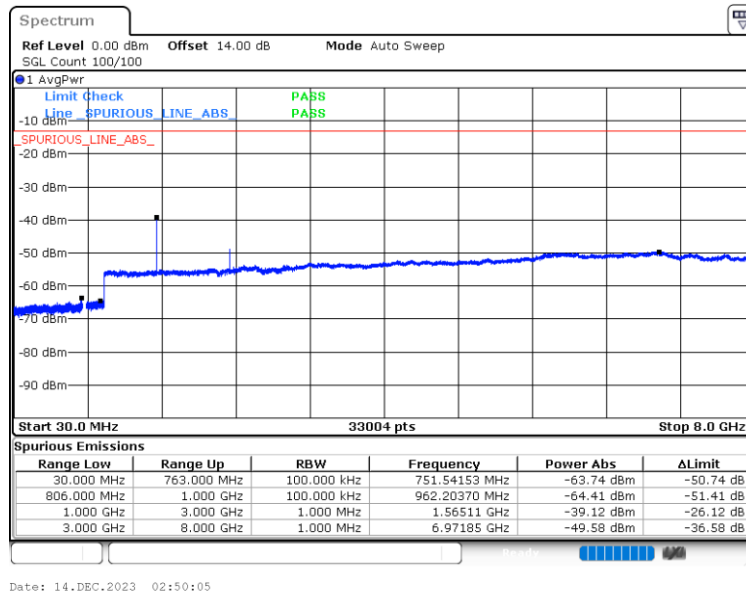
Lowest Channel / QPSK



Middle Channel / QPSK



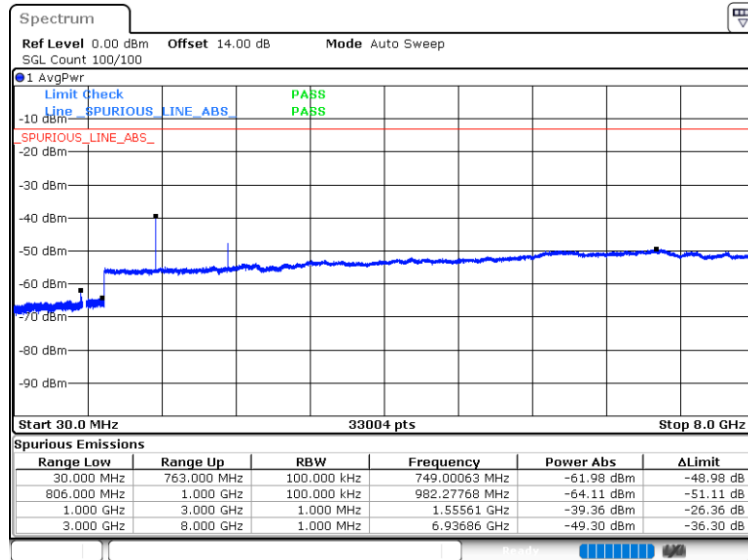
Highest Channel / QPSK





LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 14.DEC.2023 03:00:05

**Frequency Stability**

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0001	PASS
40	Normal Voltage	0.0006	
30	Normal Voltage	0.0003	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0001	
0	Normal Voltage	0.0000	
-10	Normal Voltage	0.0009	
-20	Normal Voltage	0.0017	
-30	Normal Voltage	0.0004	
20	Maximum Voltage	0.0000	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0005	

Note:

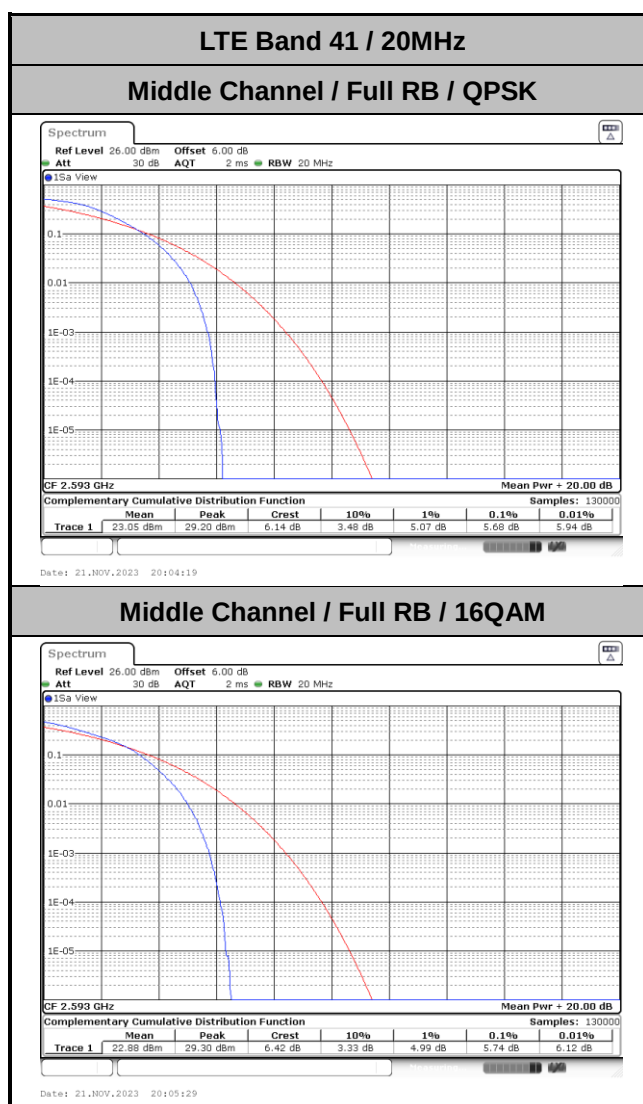
1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

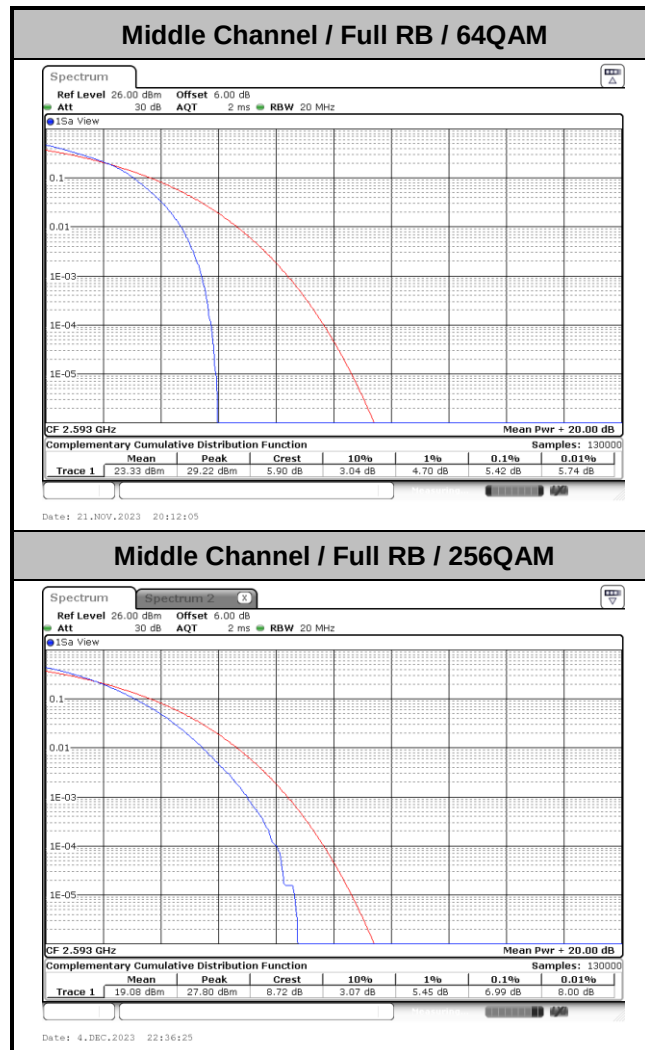


LTE Band 41

Peak-to-Average Ratio

Mode	LTE Band 41 / 20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.68	5.74	5.42	6.99	PASS





**26dB Bandwidth**

Mode	LTE Band 41 : 26dB BW(MHz)	
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	5.08	4.97
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.91	9.81
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	14.18	14.24
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	19.02	19.26

