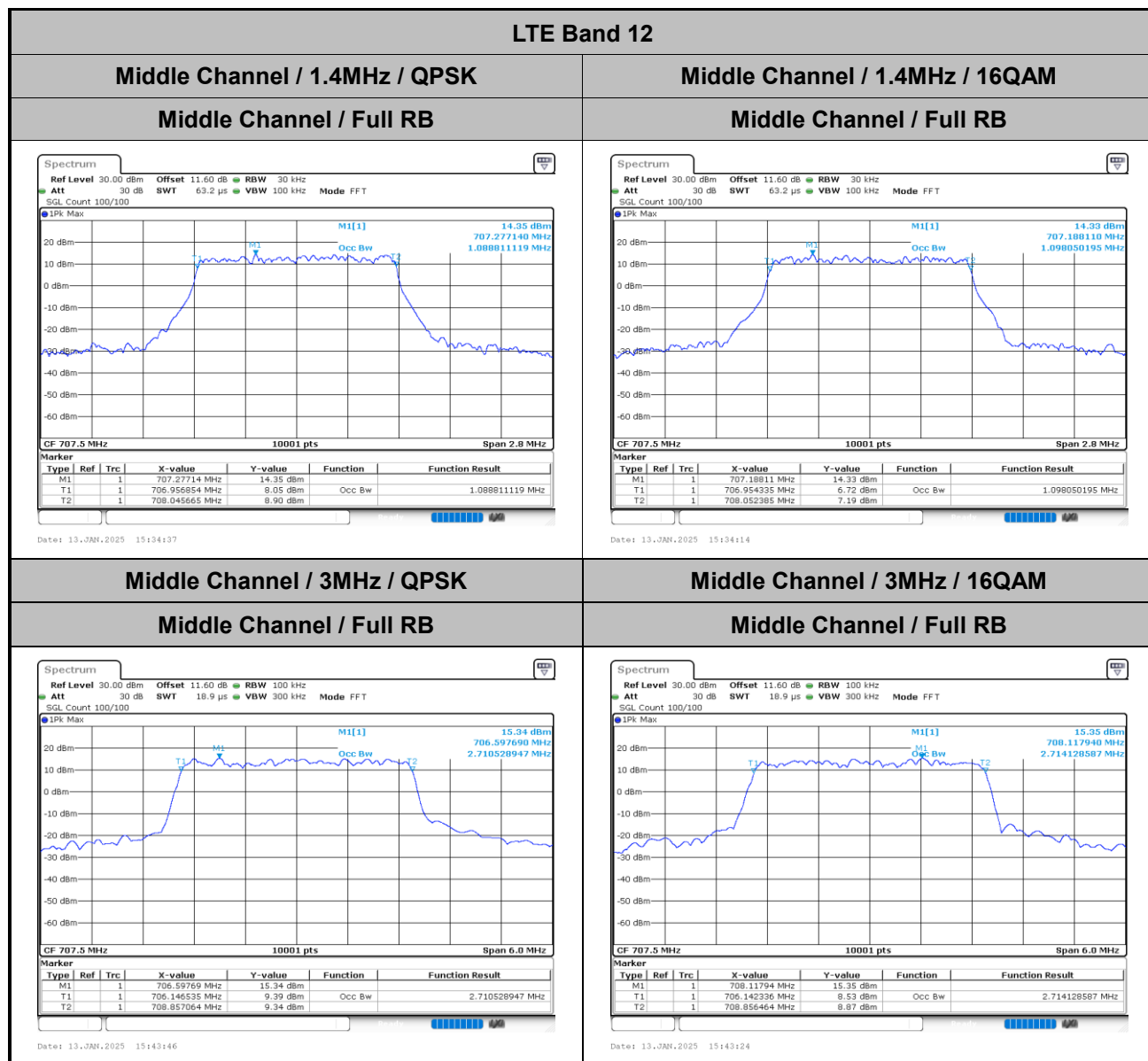




Occupied Bandwidth

Mode	LTE Band 12 : 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	1.08	1.09	2.71	2.71	4.49	4.50	9.02	4.87	-	-	-	-

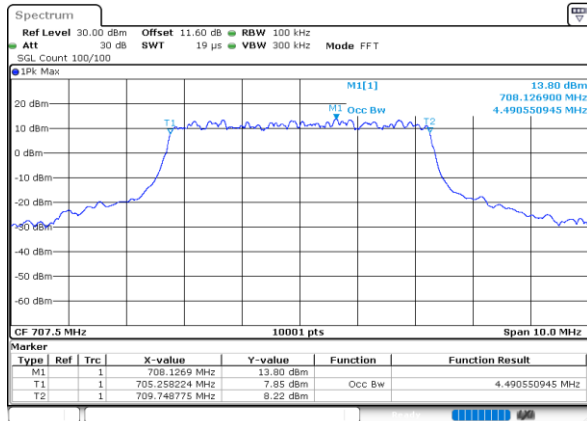




LTE Band 12

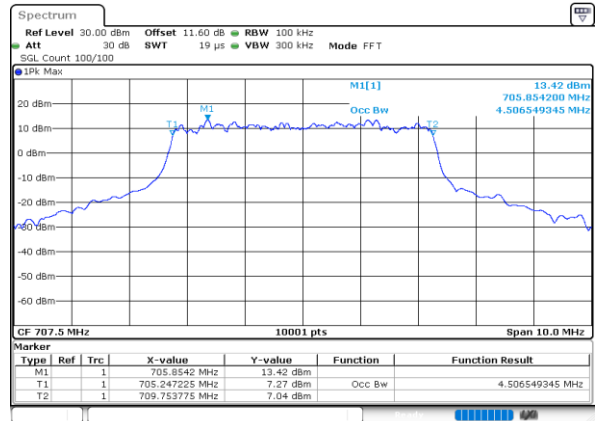
Middle Channel / 5MHz / QPSK

Middle Channel / Full RB



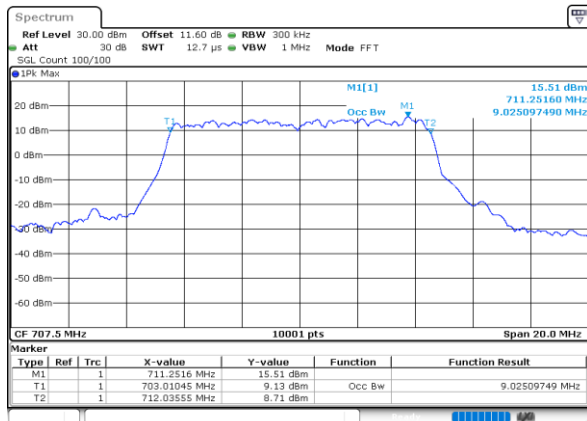
Middle Channel / 5MHz / 16QAM

Middle Channel / Full RB



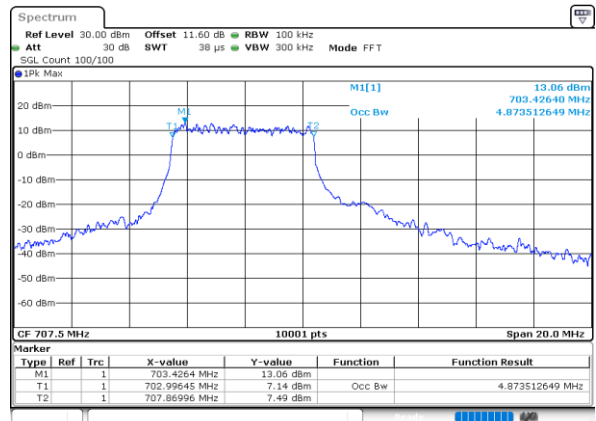
Middle Channel / 10MHz / QPSK

Middle Channel / Full RB



Middle Channel / 10MHz / 16QAM

Middle Channel / 27RB0



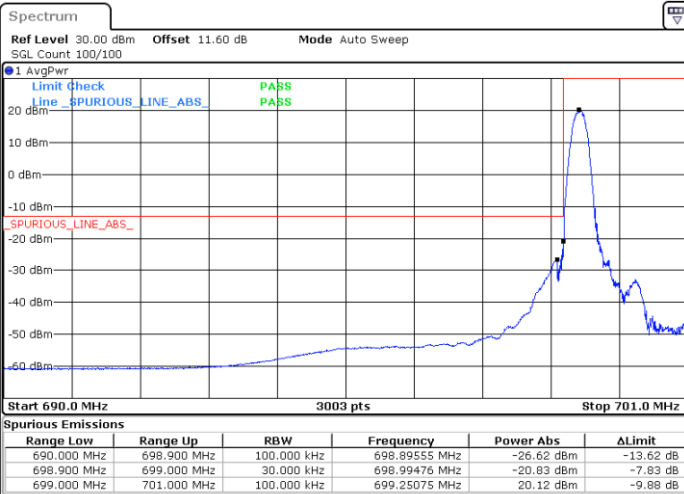


Conducted Band Edge

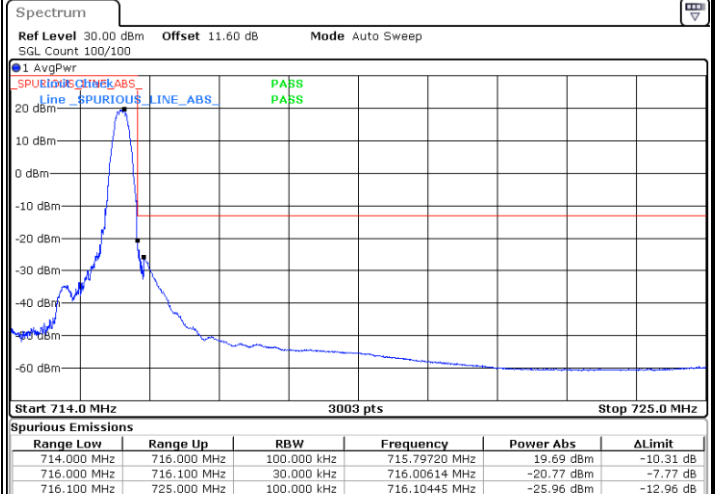
LTE Band 12 / 1.4MHz / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



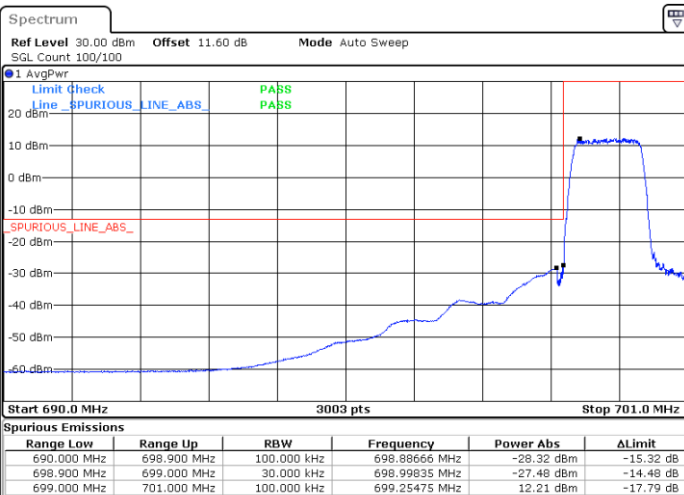
Date: 13.JAN.2025 15:32:38



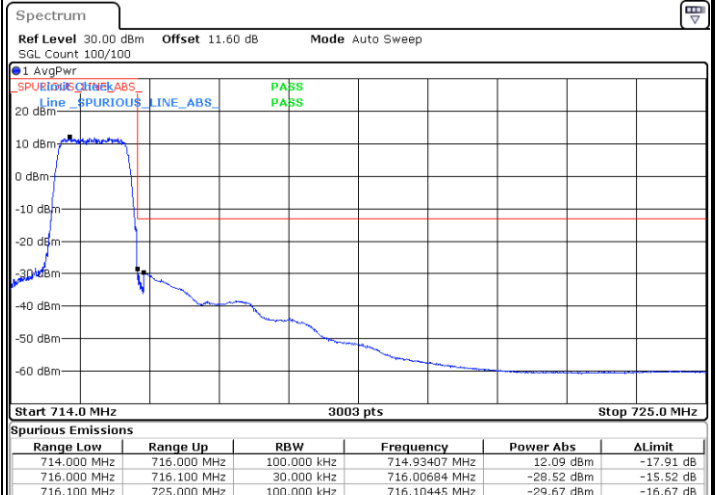
Date: 13.JAN.2025 15:40:02

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 13.JAN.2025 15:30:01



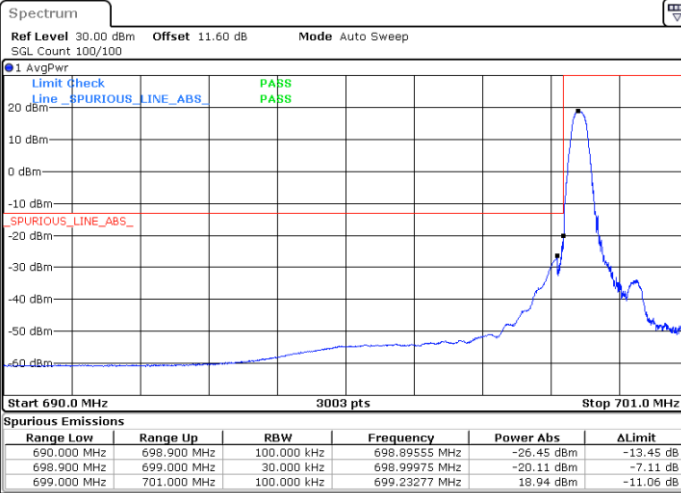
Date: 13.JAN.2025 15:37:25



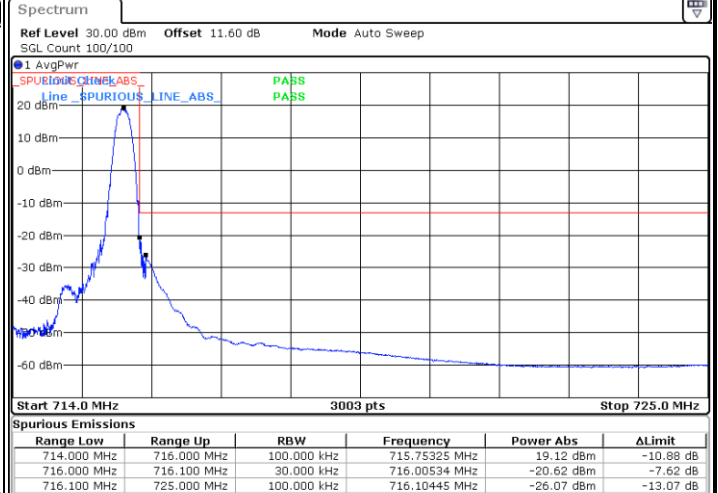
LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB0

Highest Band Edge / 1 RBmax



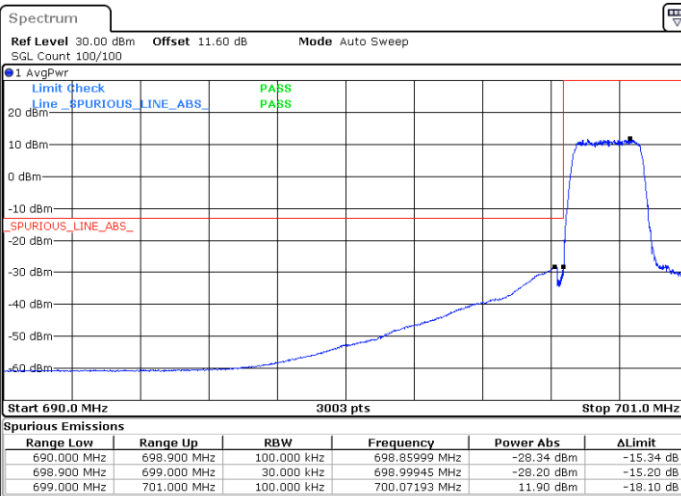
Date: 13.JAN.2025 15:31:45



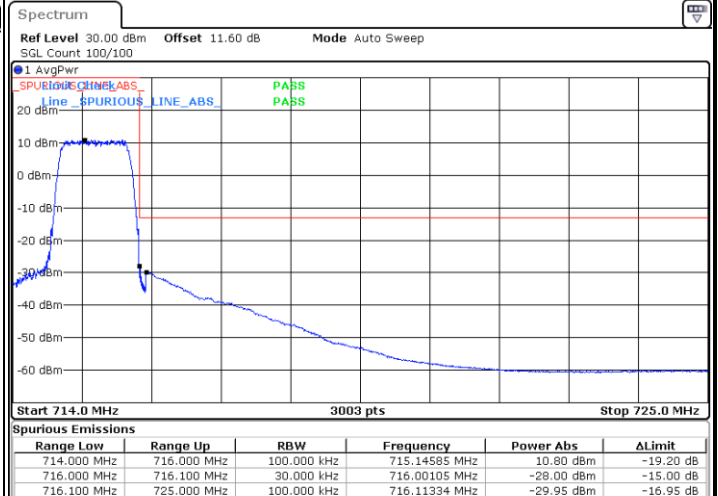
Date: 13.JAN.2025 15:39:10

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 13.JAN.2025 15:30:53

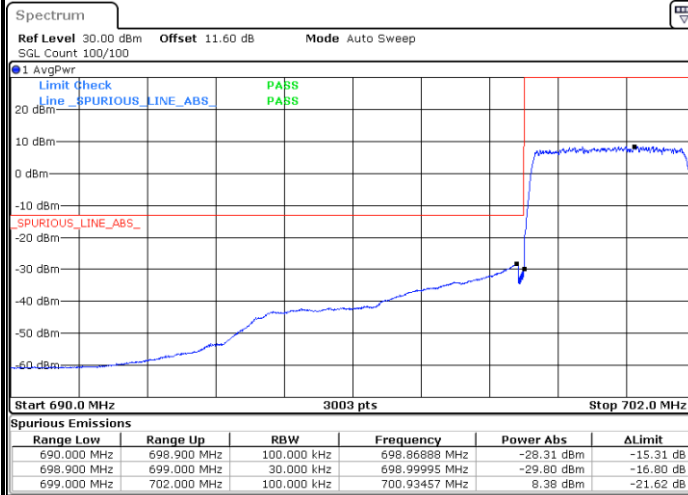


Date: 13.JAN.2025 15:38:17

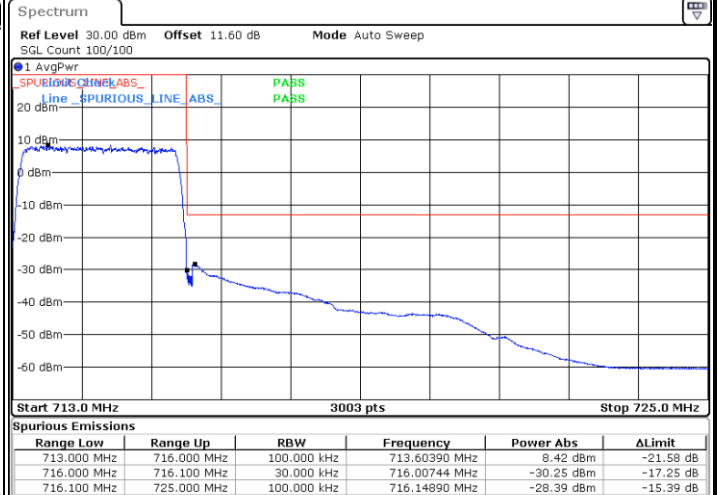


LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / Full RB

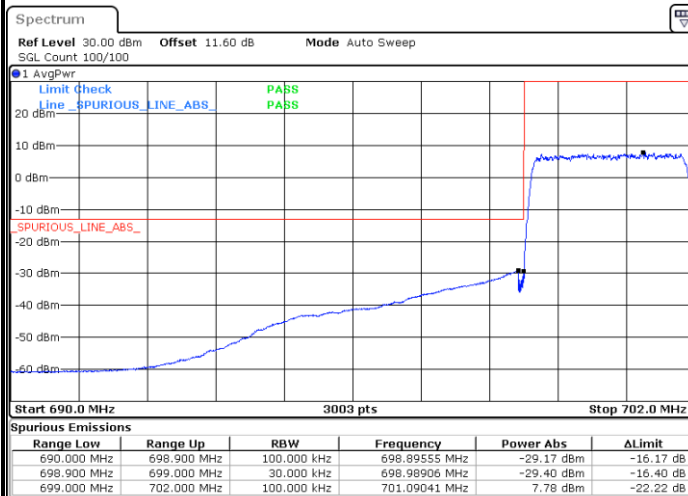


Highest Band Edge / Full RB

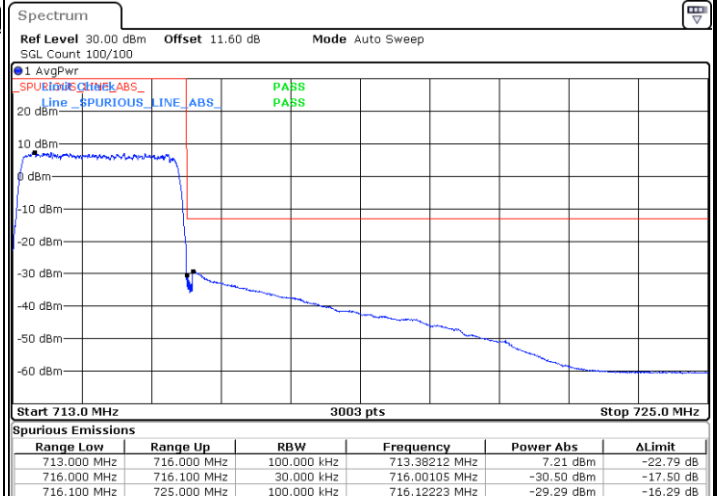


LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / Full RB



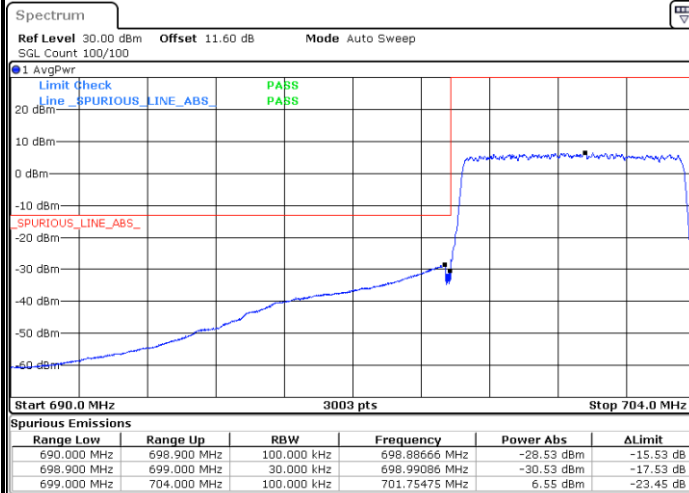
Highest Band Edge / Full RB



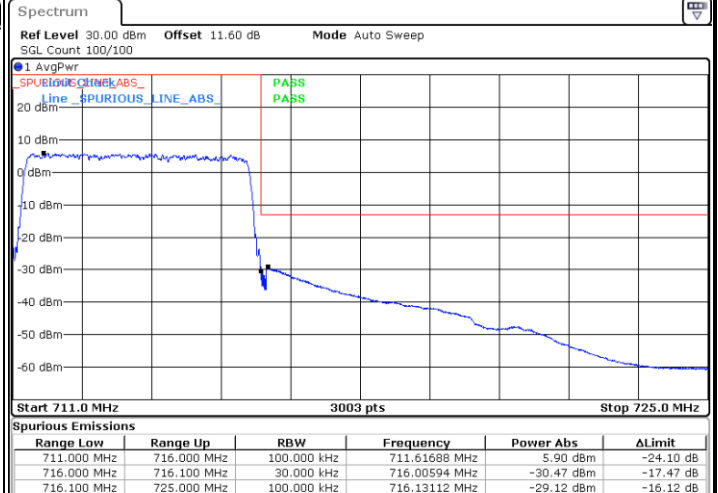


LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / Full RB

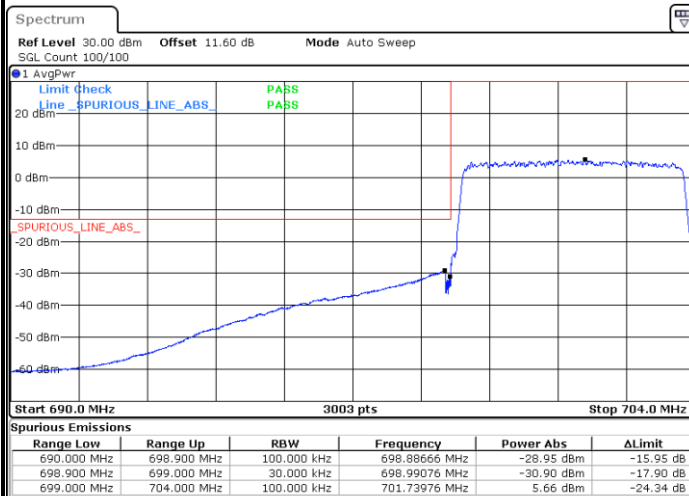


Highest Band Edge / Full RB

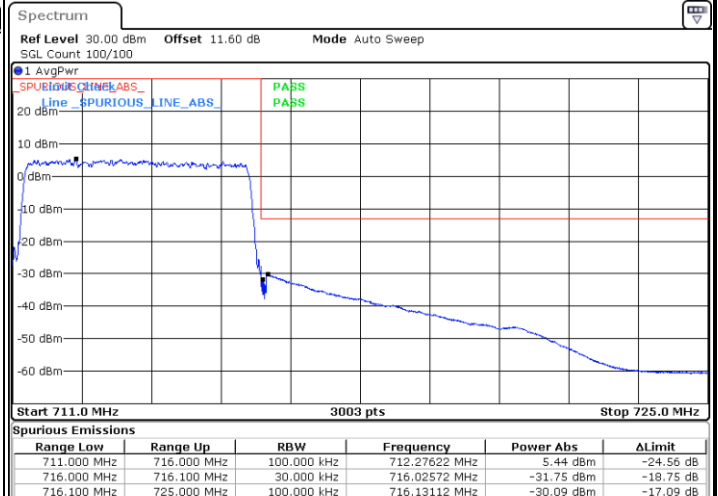


LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / Full RB



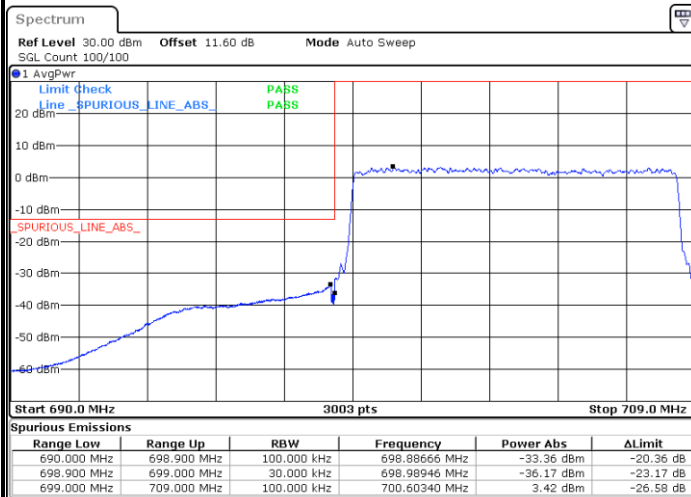
Highest Band Edge / Full RB



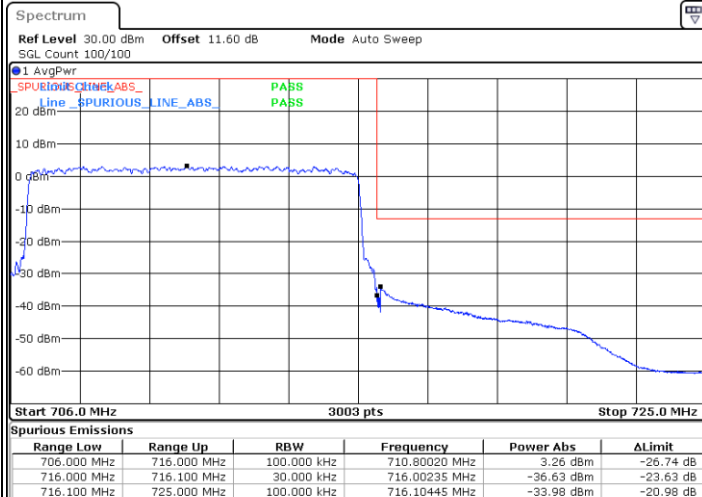


LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / Full RB

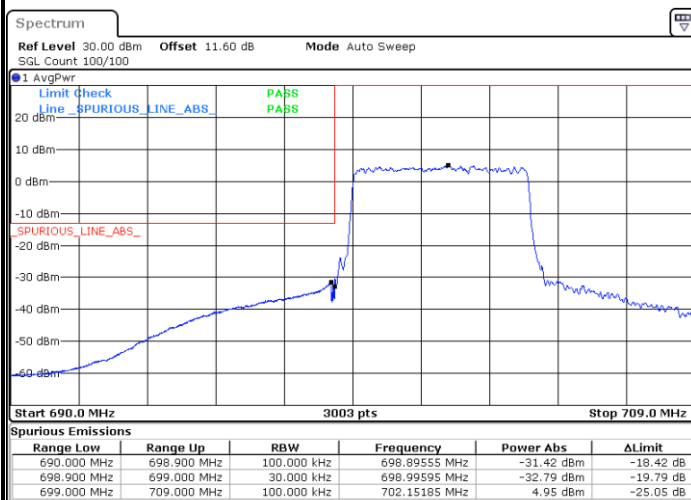


Highest Band Edge / Full RB

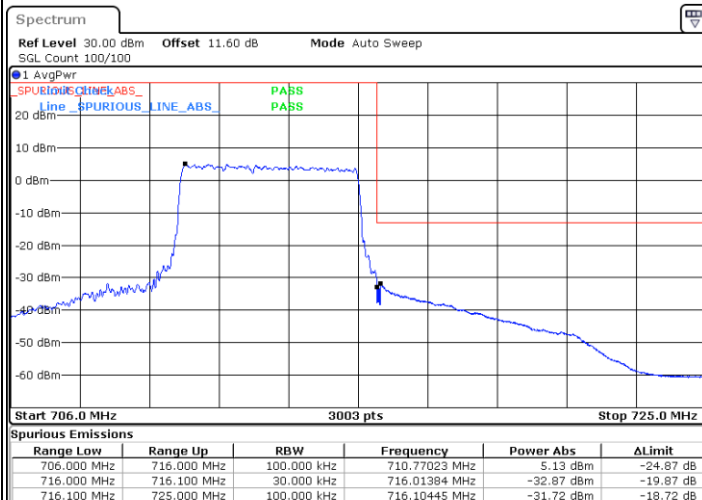


LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 27 RB0



Highest Band Edge / 27 RBmax

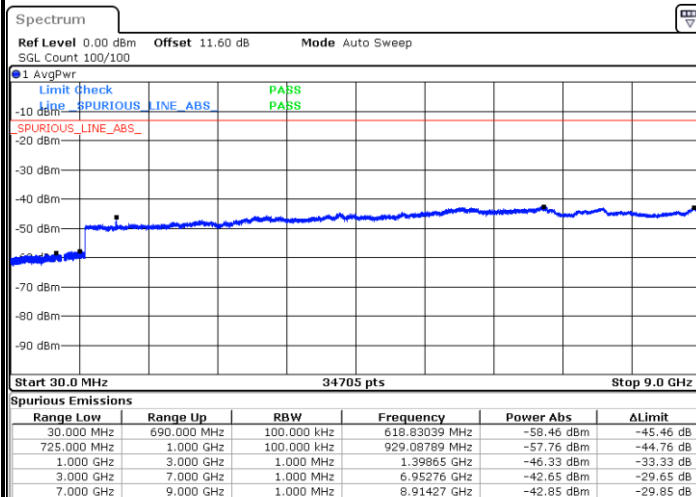




Conducted Spurious Emission

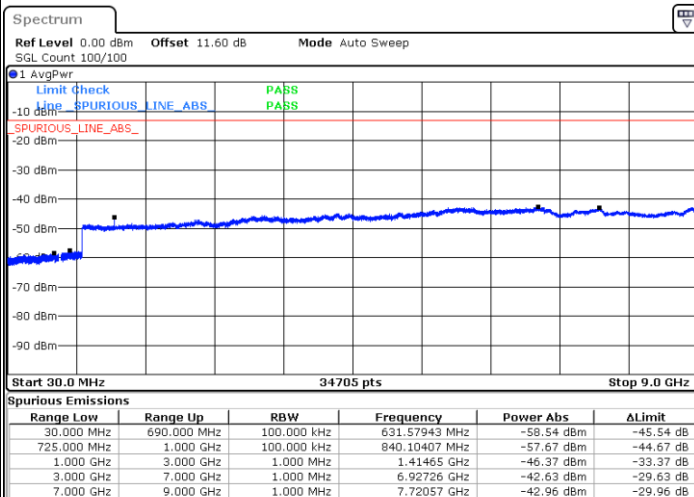
LTE Band 12 / 1.4MHz

Lowest Channel / QPSK



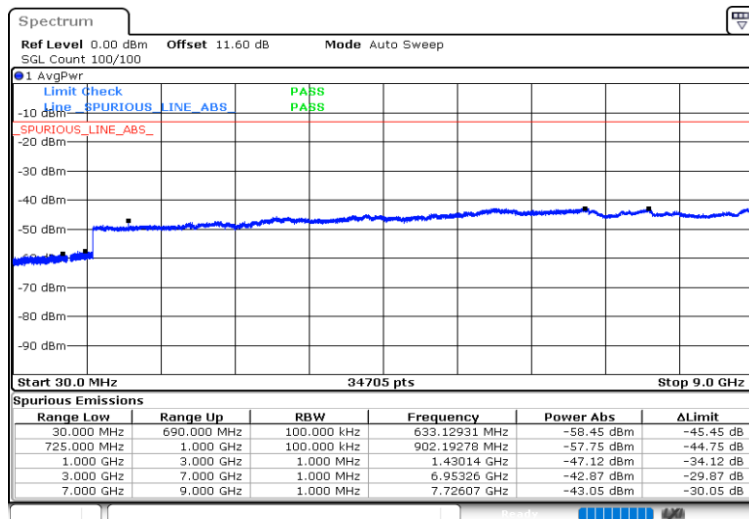
Date: 13.JAN.2025 15:33:50

Middle Channel / QPSK



Date: 13.JAN.2025 15:36:32

Highest Channel / QPSK

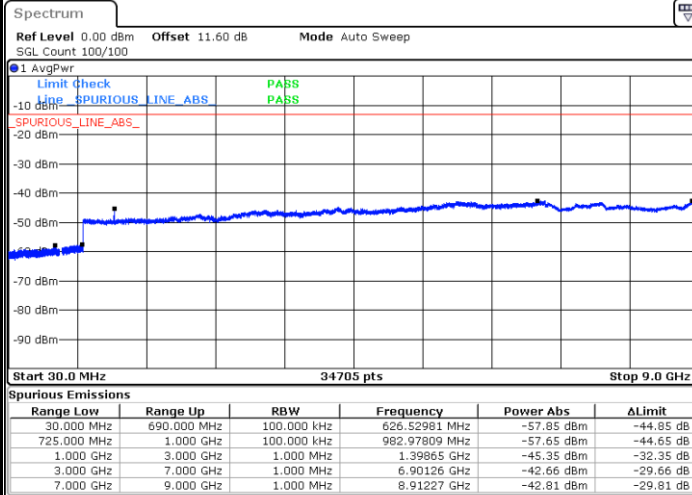


Date: 13.JAN.2025 15:41:14



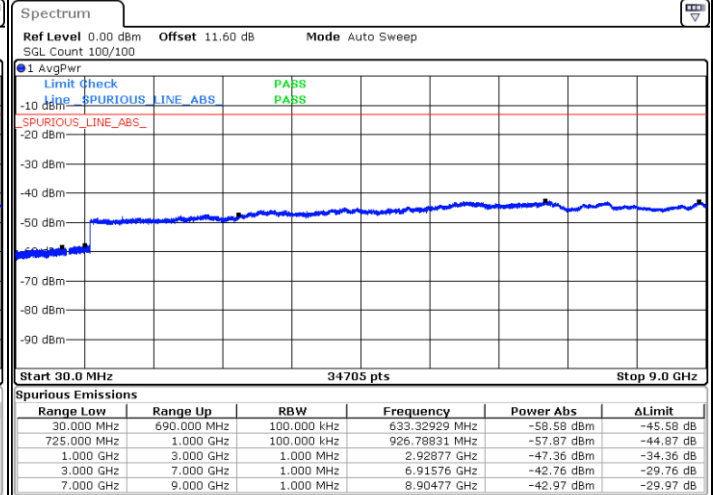
LTE Band 12 / 3MHz

Lowest Channel / QPSK



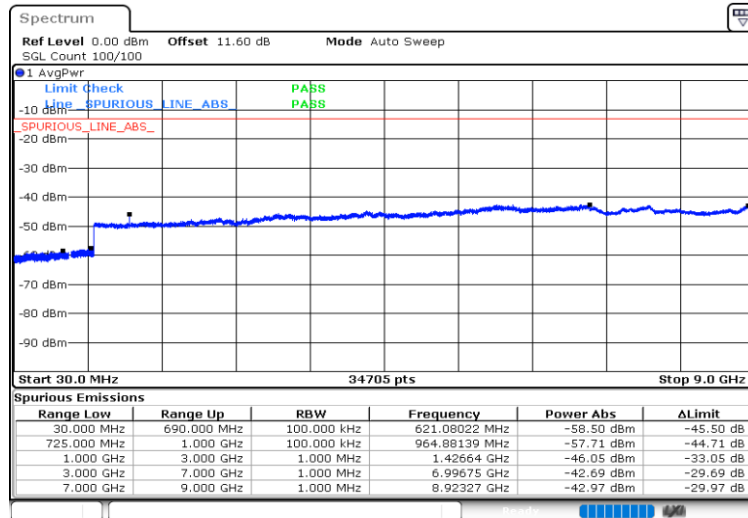
Date: 13.JAN.2025 16:00:44

Middle Channel / QPSK



Date: 13.JAN.2025 16:01:56

Highest Channel / QPSK

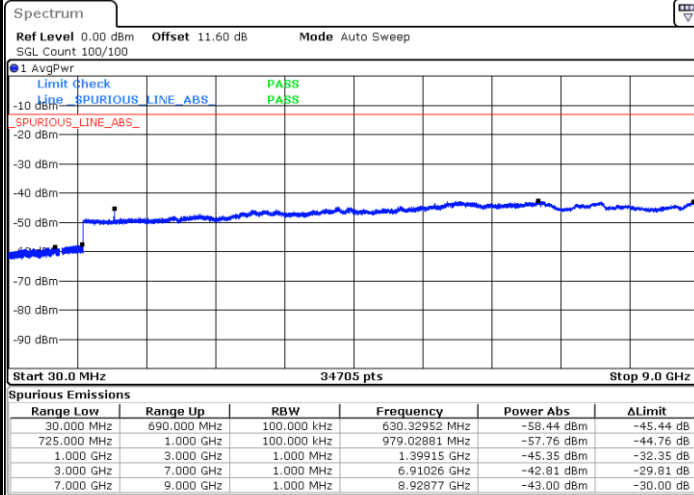


Date: 13.JAN.2025 16:03:08



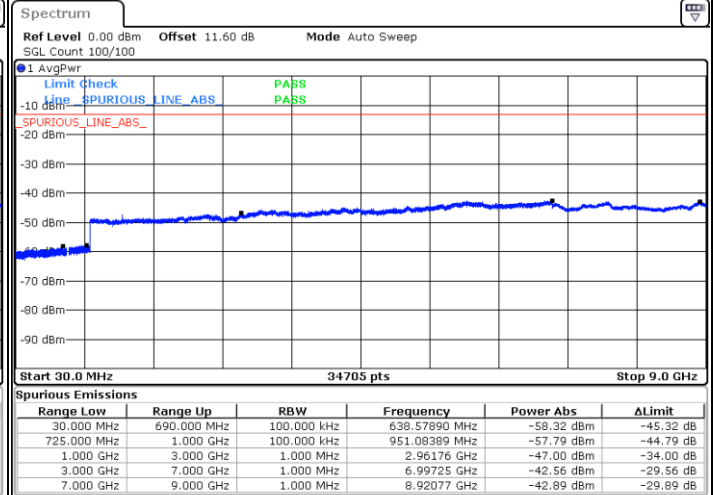
LTE Band 12 / 5MHz

Lowest Channel / QPSK



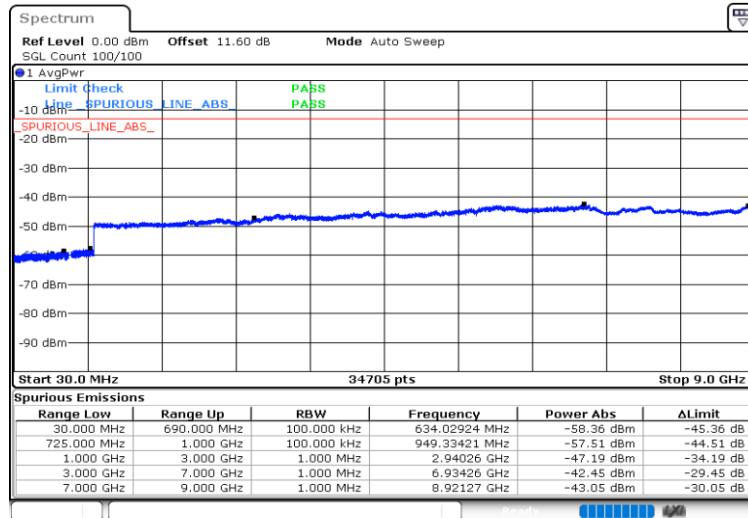
Date: 13.JAN.2025 16:04:21

Middle Channel / QPSK



Date: 13.JAN.2025 16:05:33

Highest Channel / QPSK

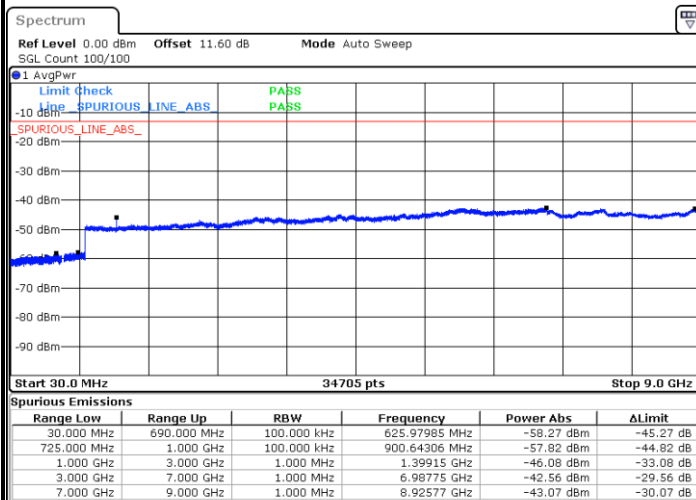


Date: 13.JAN.2025 16:06:45



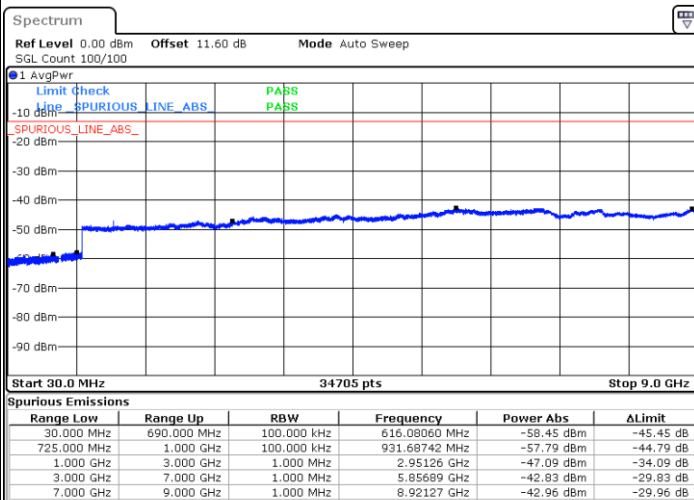
LTE Band 12 / 10MHz

Lowest Channel / QPSK



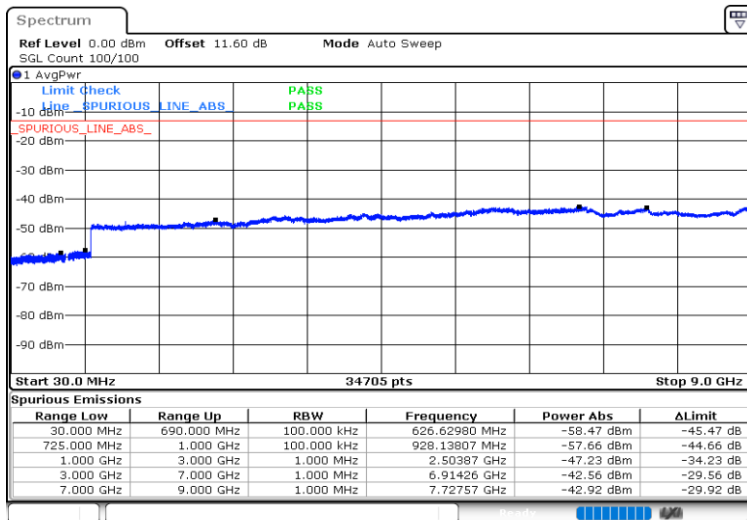
Date: 13.JAN.2025 16:07:59

Middle Channel / QPSK



Date: 13.JAN.2025 16:09:11

Highest Channel / QPSK



Date: 13.JAN.2025 16:10:23

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	0.0146	PASS
40	Normal Voltage	0.0195	
30	Normal Voltage	0.0192	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0051	
0	Normal Voltage	0.0001	
-10	Normal Voltage	0.0236	
-20	Normal Voltage	0.0140	
-30	Normal Voltage	0.0006	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0051	

Note:

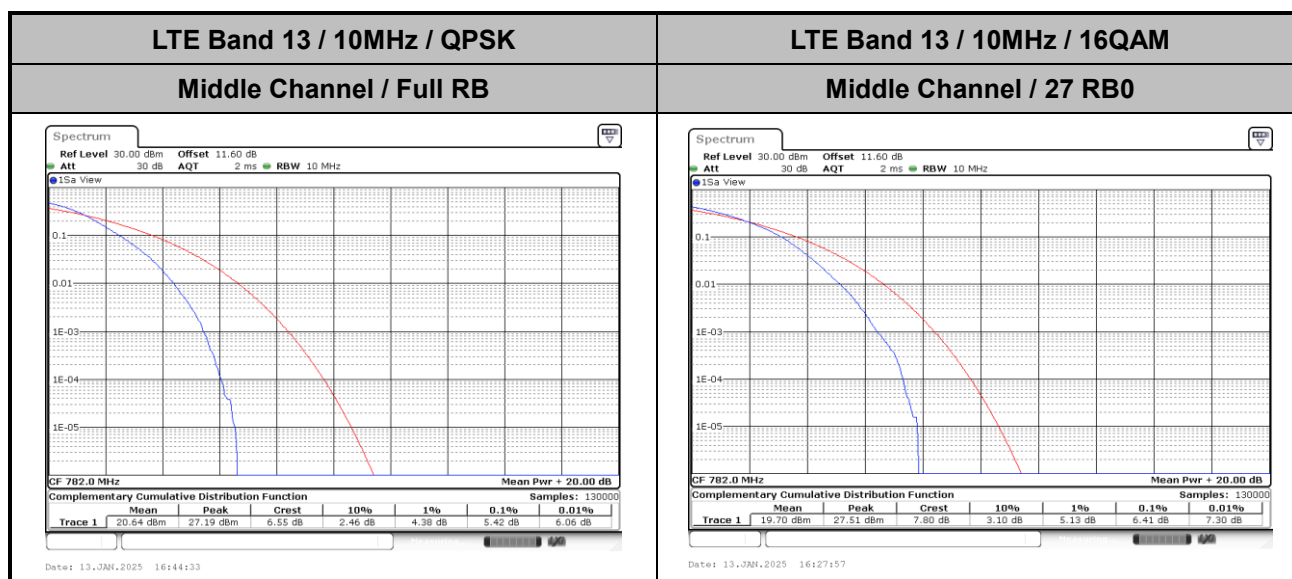
1. Normal Voltage = 3.8 V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage = 4.2 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 13

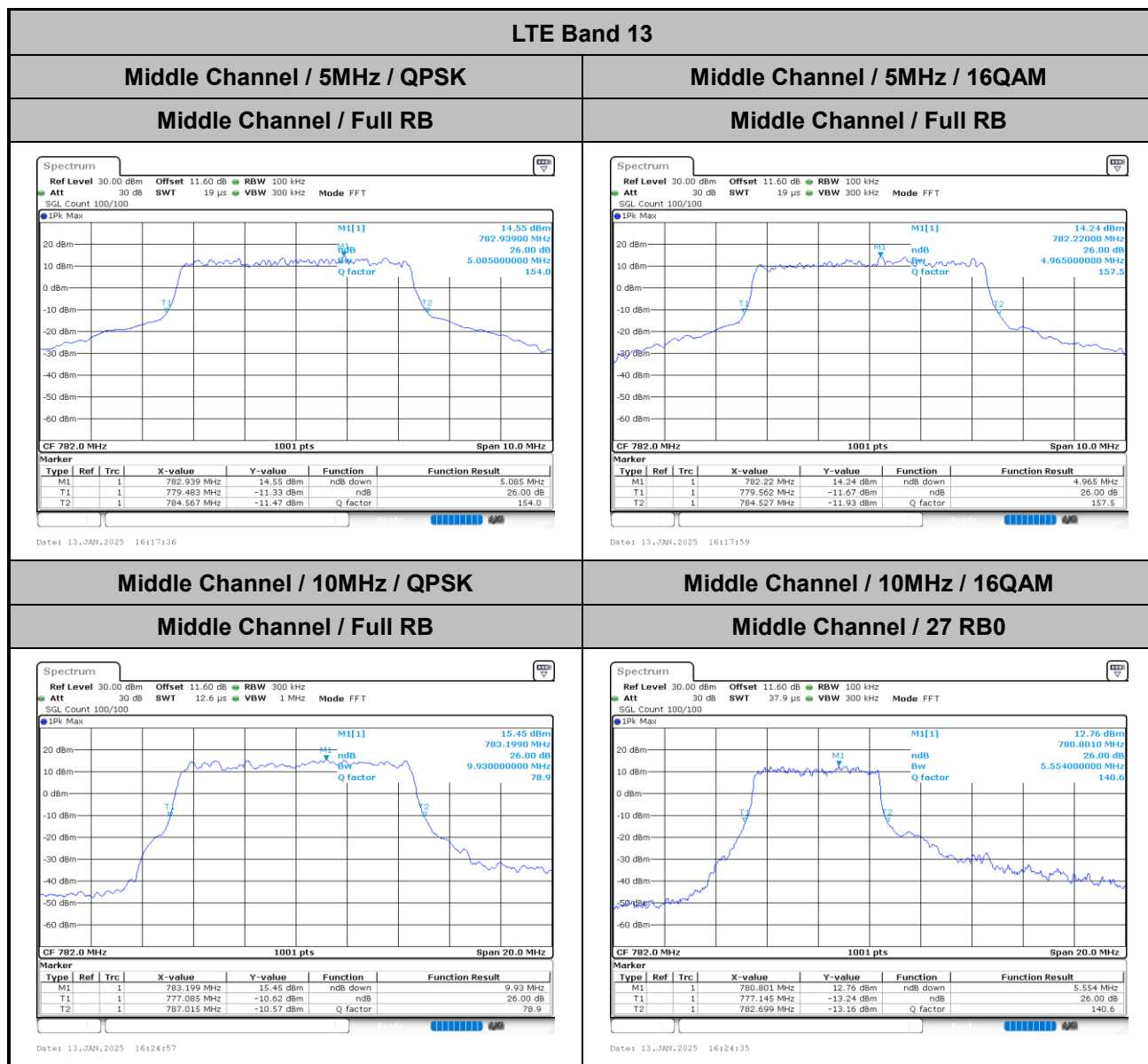
Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	27 RB	Result
Middle CH	5.42	6.41	PASS



**26dB Bandwidth**

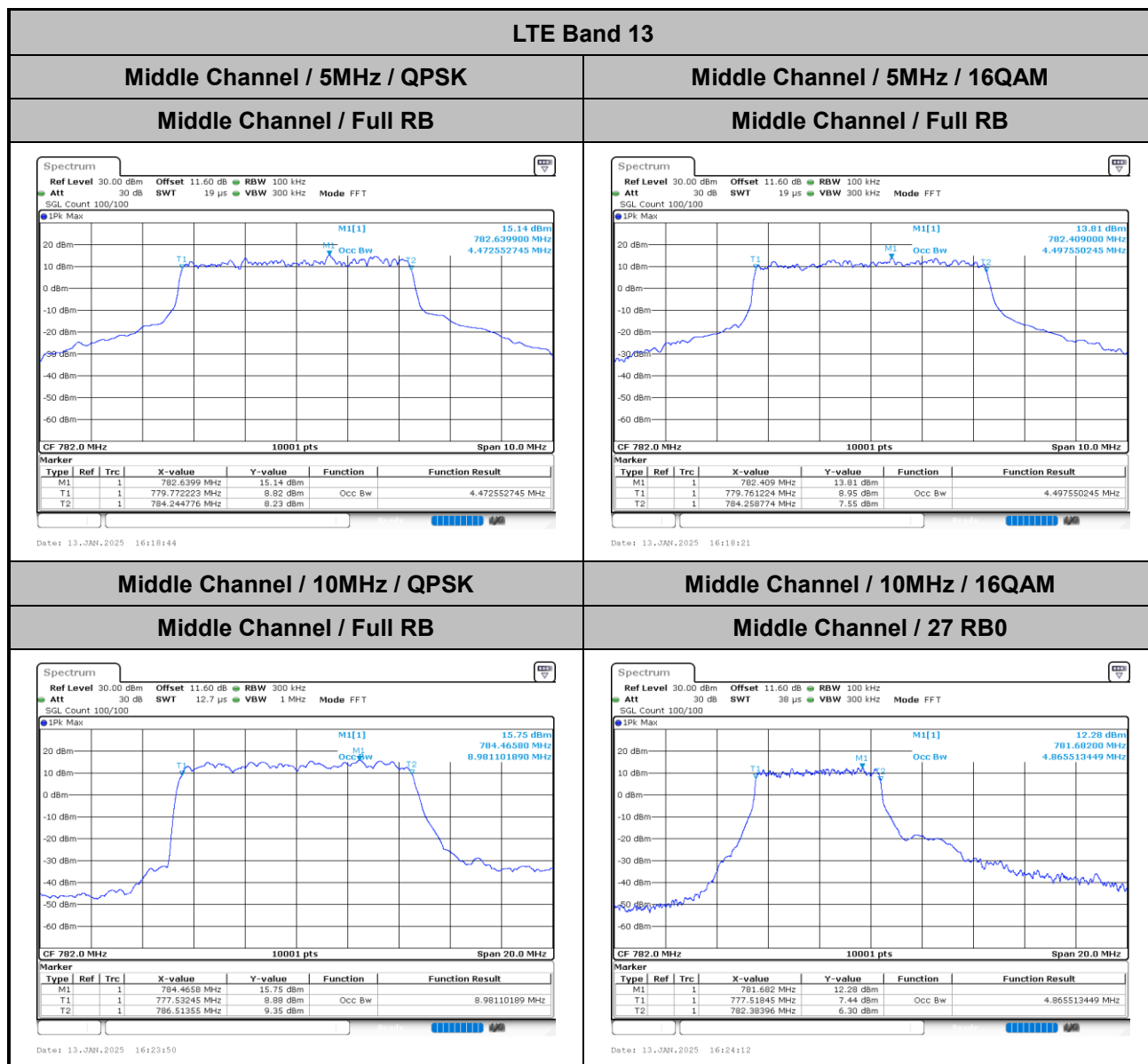
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	5.08	4.96	9.92	5.55	-	-	-	-

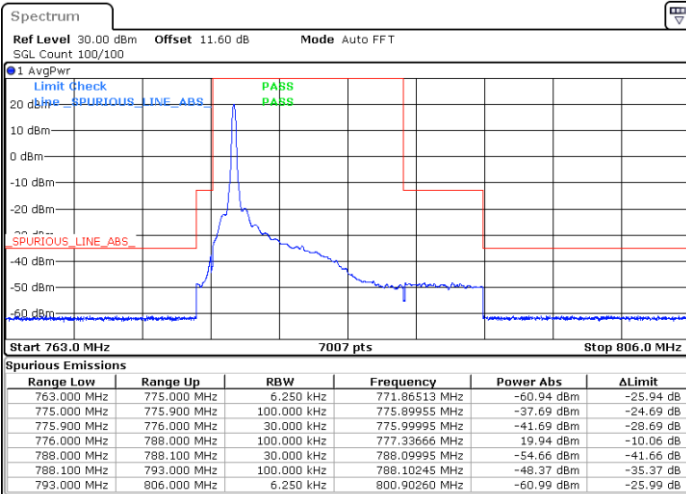




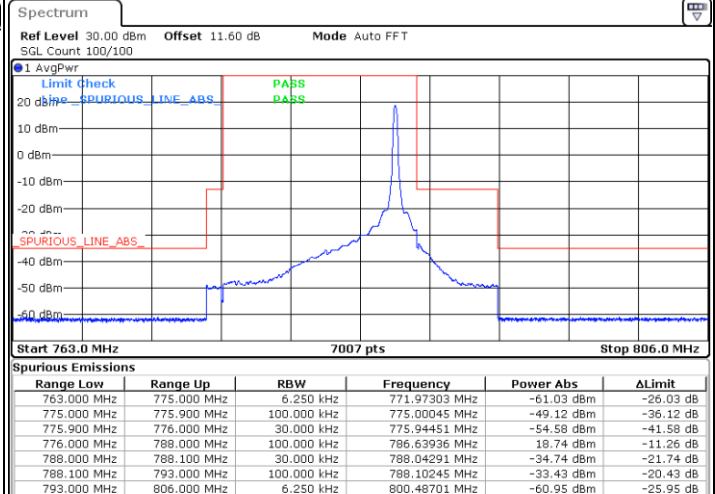
Occupied Bandwidth

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	-	-	-	-	4.47	4.49	8.98	4.86	-	-	-	-

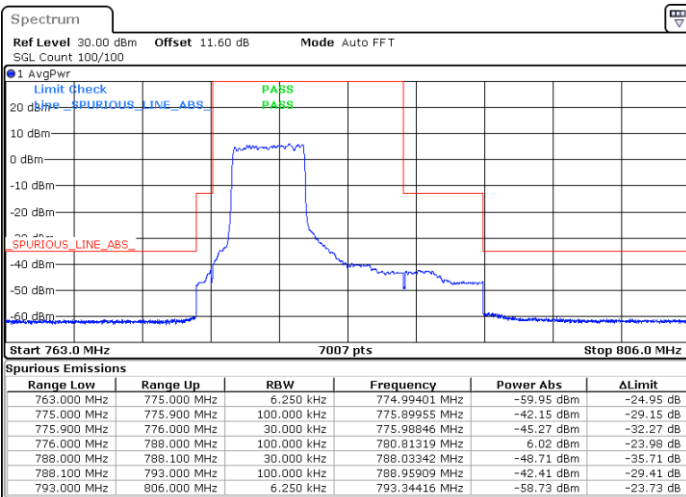


**Conducted Band Edge****LTE Band 13 / 5MHz / QPSK****Lowest Band Edge / 1 RB 0**

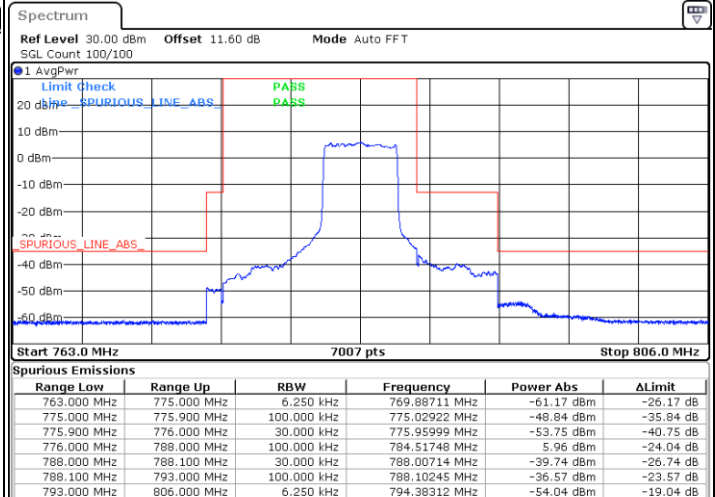
Date: 13.JAN.2025 16:14:48

Highest Band Edge / 1 RB max

Date: 13.JAN.2025 16:22:13

Lowest Band Edge / Full RB

Date: 13.JAN.2025 16:12:10

Highest Band Edge / Full RB

Date: 13.JAN.2025 16:19:35

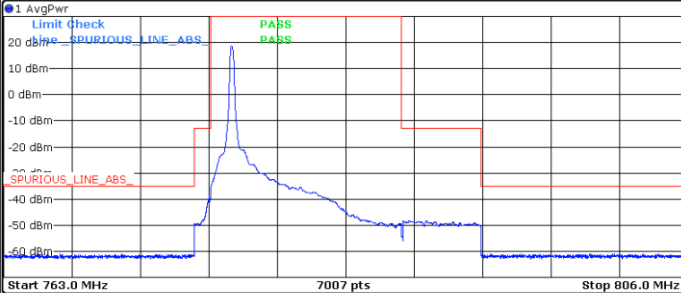


LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB0

Highest Band Edge / 1 RBmax

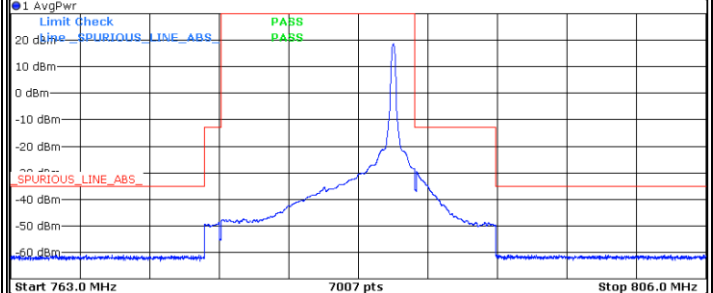
Spectrum

Ref Level 30.00 dBm Offset 11.60 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	765.17582 MHz	-61.02 dBm	-26.02 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-39.38 dBm	-26.38 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.99995 MHz	-39.24 dBm	-26.24 dB
776.000 MHz	788.000 MHz	100.000 kHz	777.31269 MHz	18.69 dBm	-11.31 dB
778.000 MHz	788.100 MHz	30.000 kHz	788.00055 MHz	-54.34 dBm	-41.34 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-48.31 dBm	-35.31 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.56494 MHz	-60.99 dBm	-25.99 dB

Date: 13.JAN.2025 16:13:55

Spectrum

Ref Level 30.00 dBm Offset 11.60 dB Mode Auto FFT
SGL Count 100/100

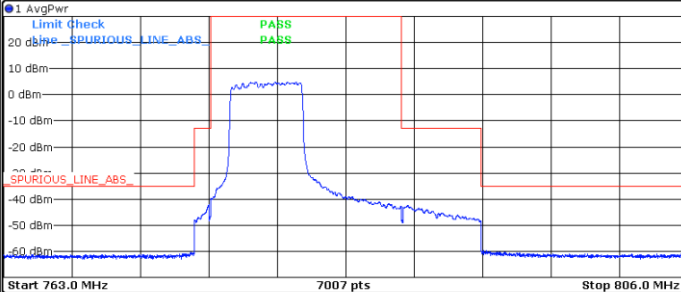
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	769.23976 MHz	-60.95 dBm	-25.95 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89067 MHz	-48.84 dBm	-35.84 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.96728 MHz	-54.96 dBm	-41.96 dB
776.000 MHz	788.000 MHz	100.000 kHz	786.65135 MHz	18.54 dBm	-11.46 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.00005 MHz	-36.46 dBm	-23.46 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-29.63 dBm	-16.63 dB
793.000 MHz	806.000 MHz	6.250 kHz	803.44805 MHz	-60.89 dBm	-25.89 dB

Date: 13.JAN.2025 16:21:20

Lowest Band Edge / Full RB

Highest Band Edge / Full RB

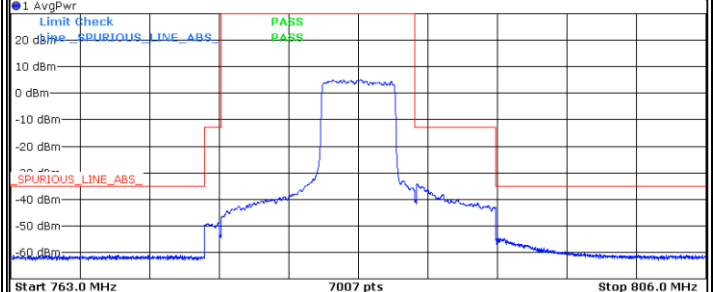
Spectrum

Ref Level 30.00 dBm Offset 11.60 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	774.99401 MHz	-60.17 dBm	-25.17 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-42.05 dBm	-29.05 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.99995 MHz	-46.24 dBm	-33.24 dB
776.000 MHz	788.000 MHz	100.000 kHz	778.85914 MHz	4.91 dBm	-25.09 dB
778.000 MHz	788.100 MHz	30.000 kHz	788.01474 MHz	-48.18 dBm	-35.18 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.37657 MHz	-42.51 dBm	-29.51 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.13636 MHz	-59.72 dBm	-24.72 dB

Date: 13.JAN.2025 16:13:03

Spectrum

Ref Level 30.00 dBm Offset 11.60 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	766.25475 MHz	-61.00 dBm	-26.00 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.88247 MHz	-48.84 dBm	-35.84 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.95679 MHz	-53.52 dBm	-40.52 dB
776.000 MHz	788.000 MHz	100.000 kHz	784.61339 MHz	4.99 dBm	-25.01 dB
778.000 MHz	788.100 MHz	30.000 kHz	788.03661 MHz	-40.13 dBm	-27.13 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.15140 MHz	-34.19 dBm	-21.19 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.30519 MHz	-54.72 dBm	-19.72 dB

Date: 13.JAN.2025 16:20:27



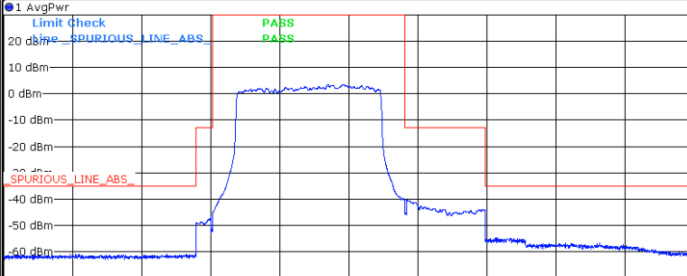
LTE Band 13 / 10MHz / QPSK

Band Edge / Full RB

LTE Band 13 / 10MHz / 16QAM

Band Edge / 27 RB 0

Spectrum

Ref Level 30.00 dBm Offset 11.60 dB Mode Auto FFT
SGL Count 100/100

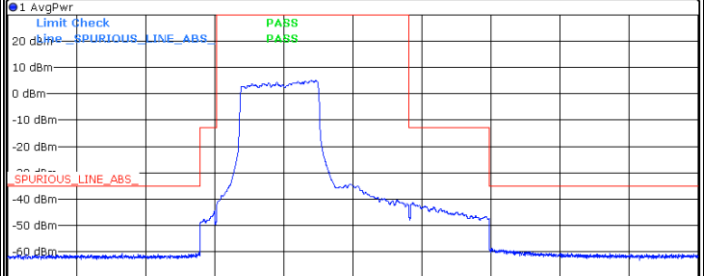
Start 763.0 MHz 7007 pts Stop 806.0 MHz

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	774.93407 MHz	-61.03 dBm	-26.03 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-46.88 dBm	-33.88 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.93851 MHz	-51.53 dBm	-38.53 dB
776.000 MHz	788.000 MHz	100.000 kHz	783.19880 MHz	3.50 dBm	-26.50 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.04610 MHz	-45.37 dBm	-32.37 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-40.56 dBm	-27.56 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.64286 MHz	-54.71 dBm	-19.71 dB

Date: 13.JAN.2025 16:25:48

Spectrum

Ref Level 30.00 dBm Offset 11.60 dB Mode Auto FFT
SGL Count 100/100

Start 763.0 MHz 7007 pts Stop 806.0 MHz

Spurious Emissions

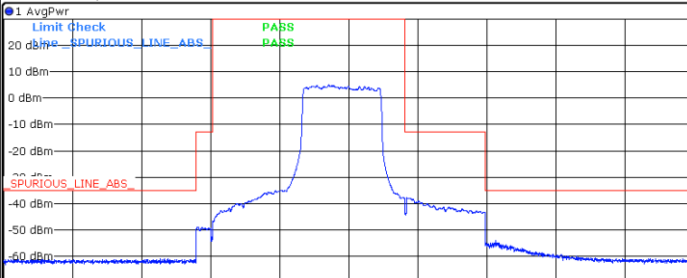
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	774.91009 MHz	-60.53 dBm	-25.53 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-44.47 dBm	-31.47 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.99575 MHz	-48.43 dBm	-35.43 dB
776.000 MHz	788.000 MHz	100.000 kHz	781.90410 MHz	5.08 dBm	-24.92 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.07068 MHz	-47.00 dBm	-34.00 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.23951 MHz	-41.44 dBm	-28.44 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.16234 MHz	-58.76 dBm	-23.76 dB

Date: 13.JAN.2025 16:26:41

Band Edge /27 RB Max

N/A

Spectrum

Ref Level 30.00 dBm Offset 11.60 dB Mode Auto FFT
SGL Count 100/100

Start 763.0 MHz 7007 pts Stop 806.0 MHz

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	773.21978 MHz	-60.97 dBm	-25.97 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.08317 MHz	-49.06 dBm	-36.06 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.97148 MHz	-52.83 dBm	-39.83 dB
776.000 MHz	788.000 MHz	100.000 kHz	783.25874 MHz	4.93 dBm	-25.07 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.09545 MHz	-43.40 dBm	-30.40 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.10245 MHz	-37.80 dBm	-24.80 dB
793.000 MHz	806.000 MHz	6.250 kHz	793.66883 MHz	-54.20 dBm	-19.20 dB

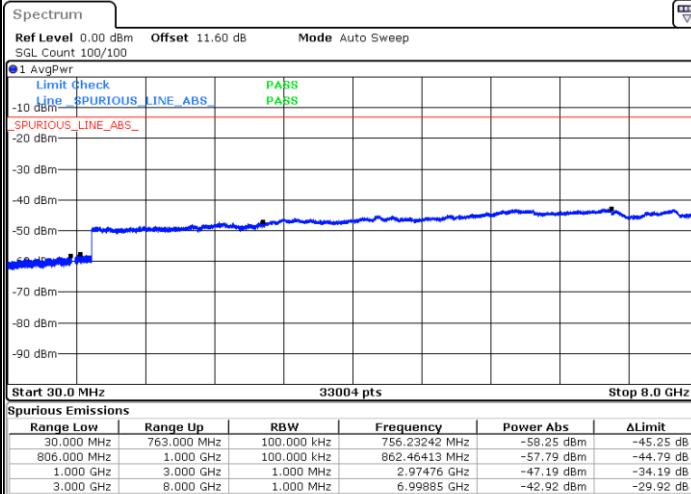
Date: 13.JAN.2025 16:27:32



Conducted Spurious Emission

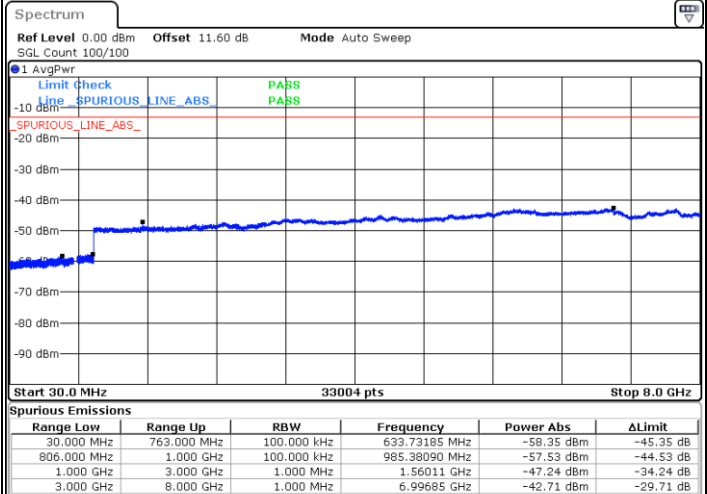
LTE Band 13 / 5MHz

Lowest Channel / QPSK



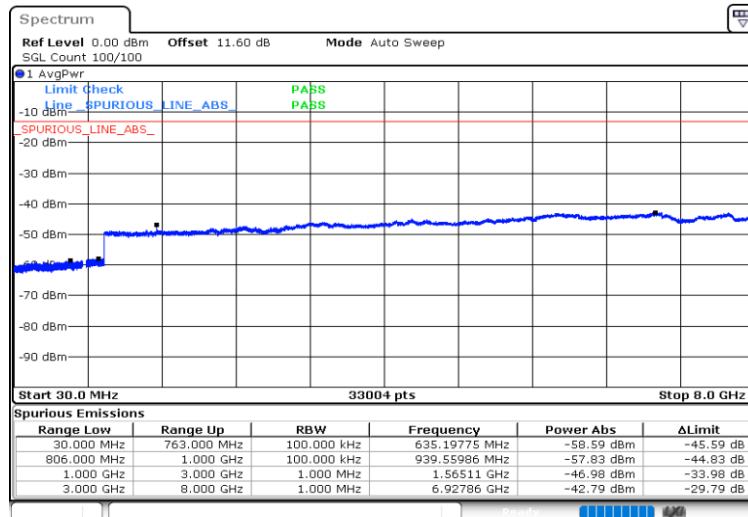
Date: 13.JAN.2025 16:16:00

Middle Channel / QPSK



Date: 13.JAN.2025 16:17:12

Highest Channel / QPSK

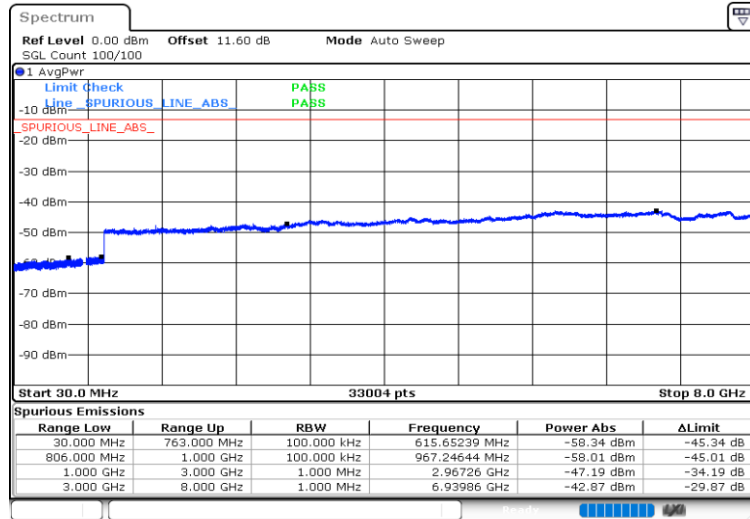


Date: 13.JAN.2025 16:23:25



LTE Band 13 / 10MHz

Middle Channel / QPSK



**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	0.0125	PASS
40	Normal Voltage	0.0101	
30	Normal Voltage	0.0109	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0153	
0	Normal Voltage	0.0115	
-10	Normal Voltage	0.0159	
-20	Normal Voltage	0.0031	
-30	Normal Voltage	0.0170	
20	Maximum Voltage	0.0068	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0028	

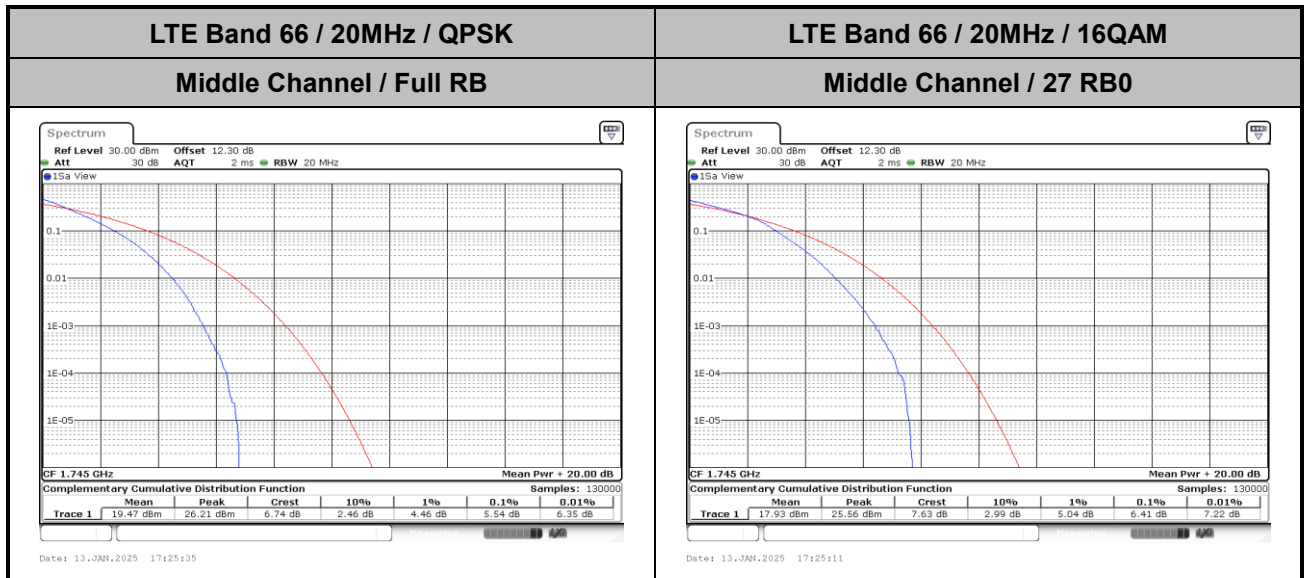
Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.2 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

LTE Band 66

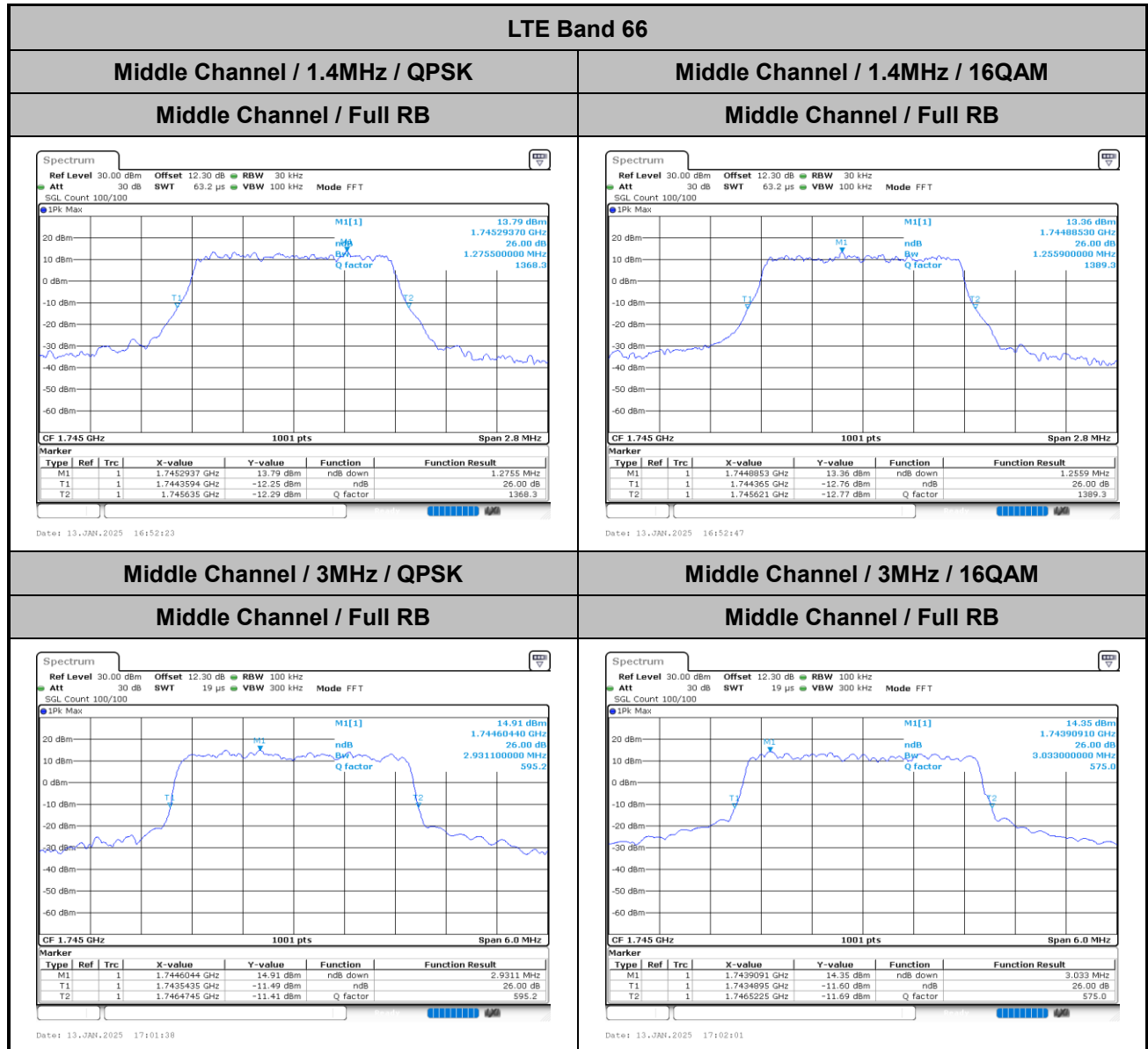
Peak-to-Average Ratio

Mode	LTE Band 66 / 20MHz		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	27 RB	Result
Middle CH	5.54	6.41	PASS



**26dB Bandwidth**

Mode	LTE Band 66 : 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	1.27	1.25	2.93	3.03	5.20	5.06	9.89	5.59	14.53	6.05	19.22	5.63

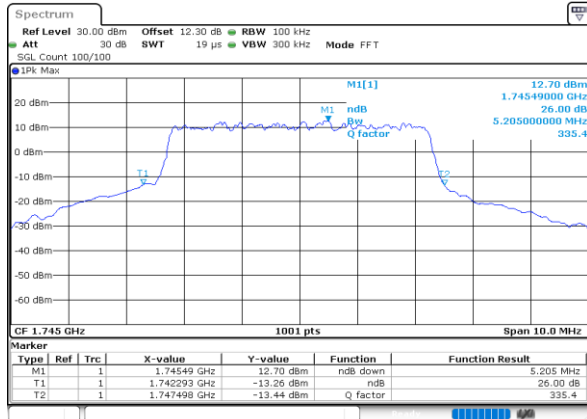




LTE Band 66

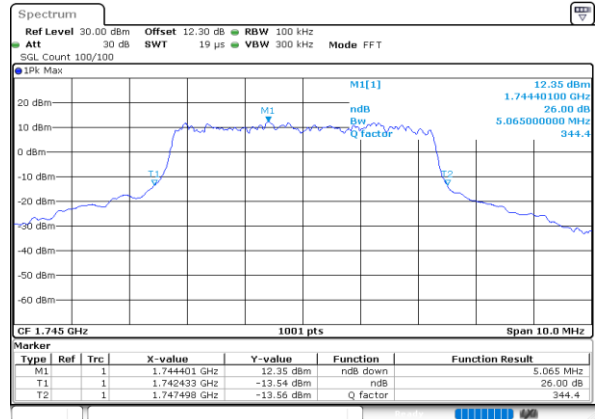
Middle Channel / 5MHz / QPSK

Middle Channel / Full RB



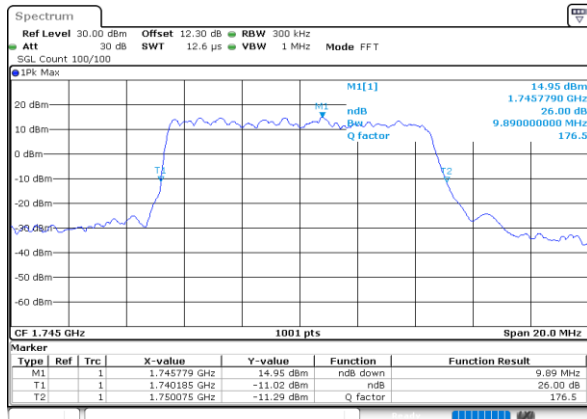
Middle Channel / 5MHz / 16QAM

Middle Channel / Full RB



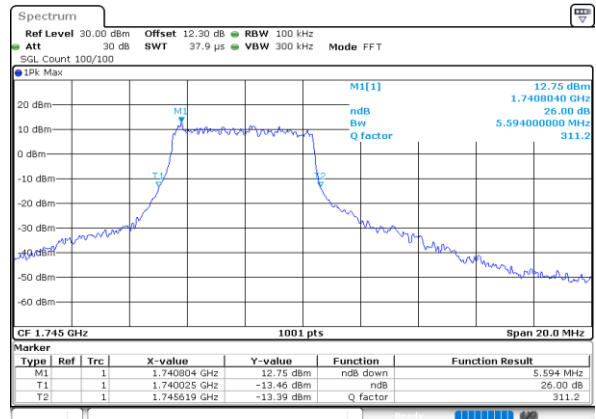
Middle Channel / 10MHz / QPSK

Middle Channel / Full RB



Middle Channel / 10MHz / 16QAM

Middle Channel / 27 RB0

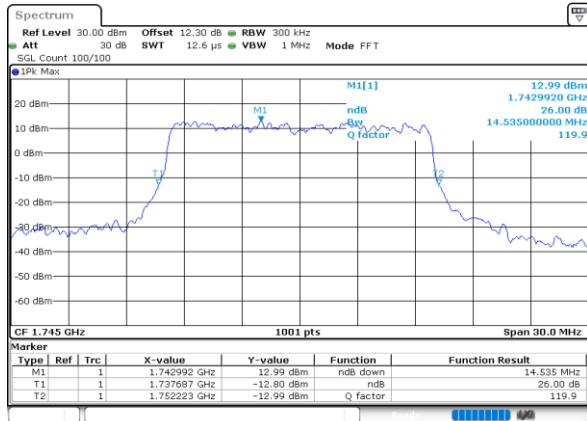




LTE Band 66

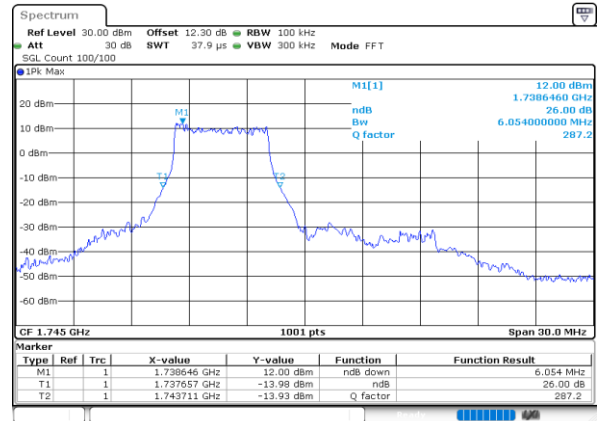
Middle Channel / 15MHz / QPSK

Middle Channel / Full RB



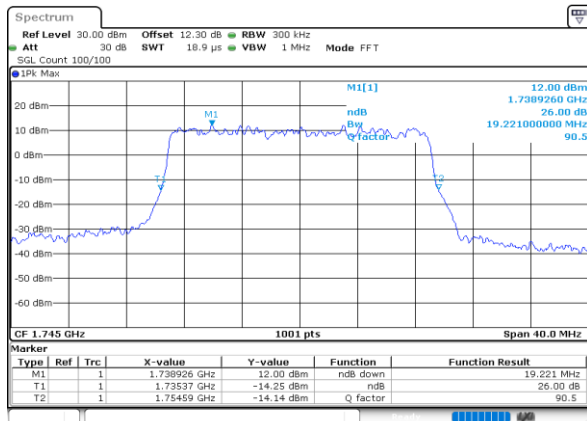
Middle Channel / 15MHz / 16QAM

Middle Channel / 27 RB0



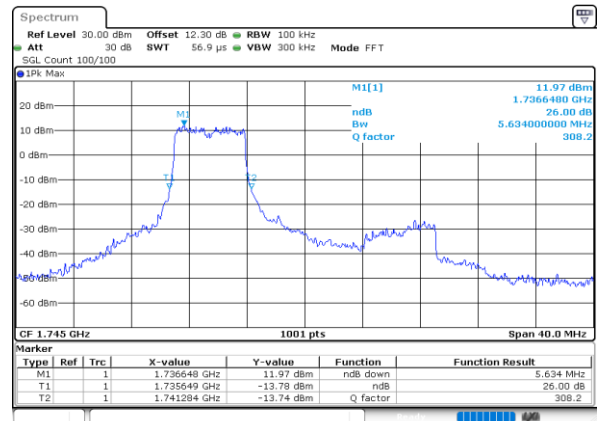
Middle Channel / 20MHz / QPSK

Middle Channel / Full RB



Middle Channel / 20MHz / 16QAM

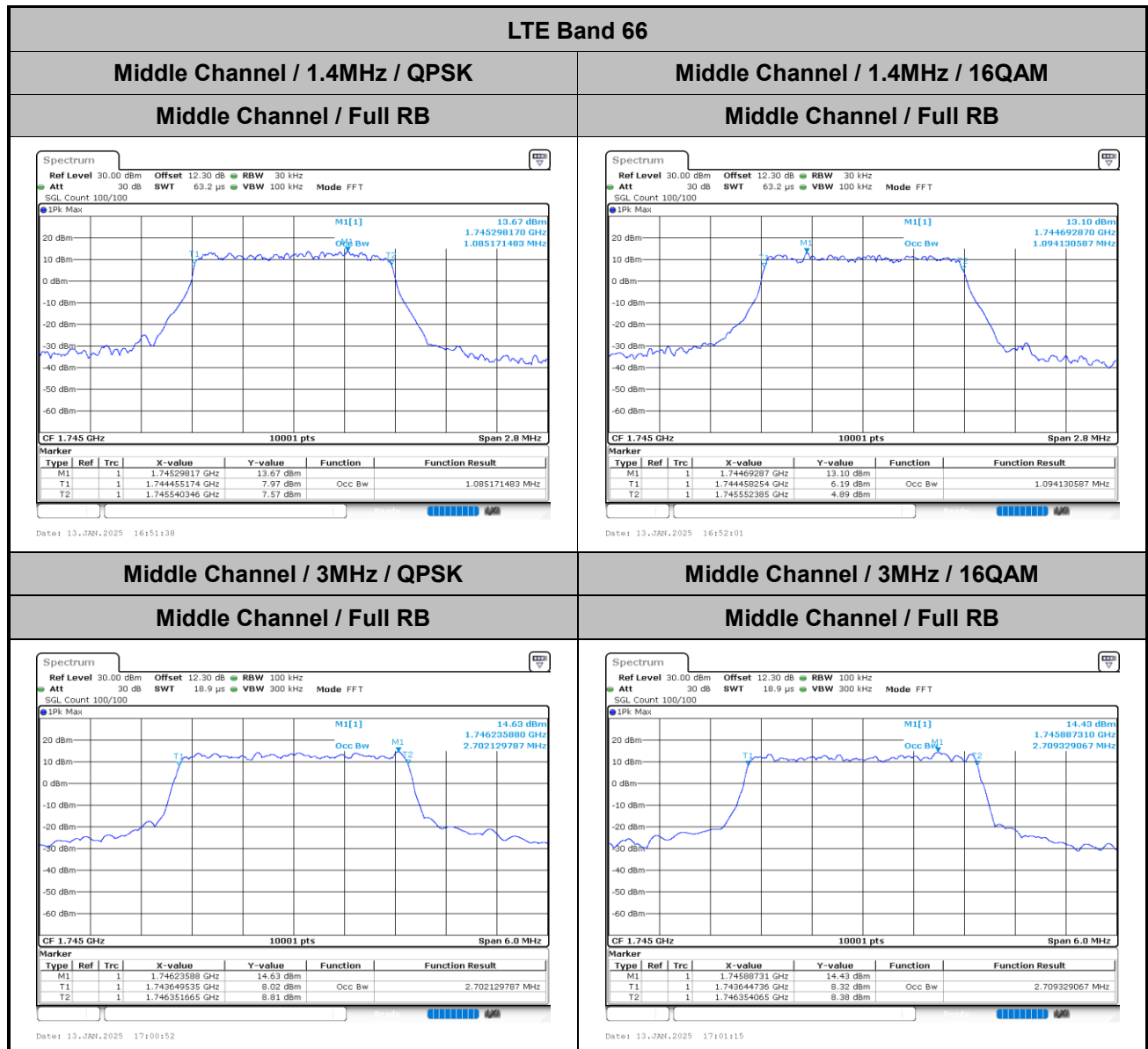
Middle Channel / 27 RB0





Occupied Bandwidth

Mode	LTE Band 66 : 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	1.08	1.09	2.70	2.70	4.49	4.49	9.03	4.87	13.46	4.86	17.87	4.93

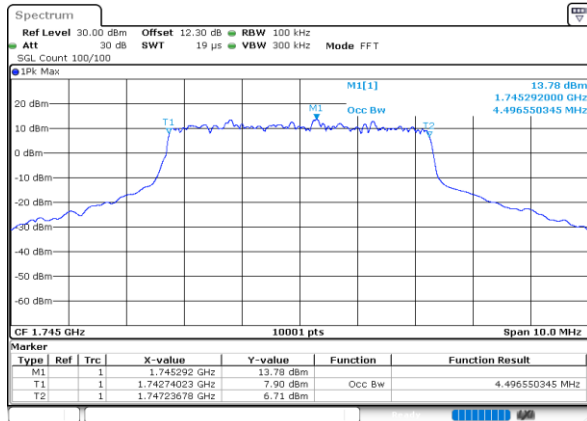




LTE Band 66

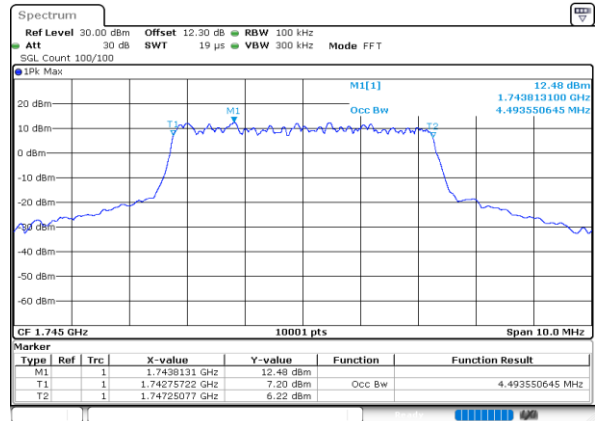
Middle Channel / 5MHz / QPSK

Middle Channel / Full RB



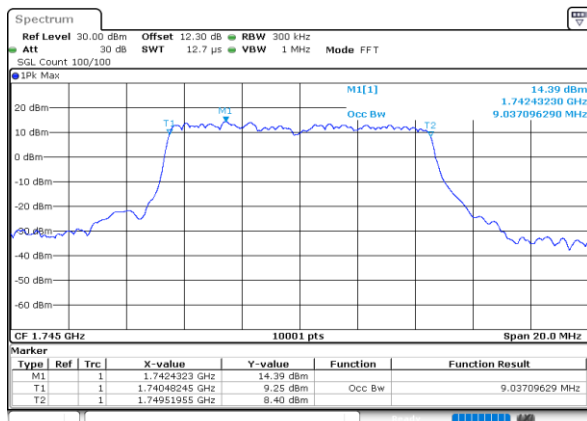
Middle Channel / 5MHz / 16QAM

Middle Channel / Full RB



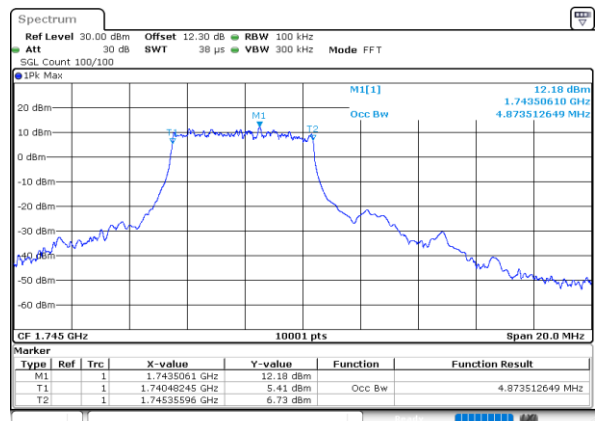
Middle Channel / 10MHz / QPSK

Middle Channel / Full RB



Middle Channel / 10MHz / 16QAM

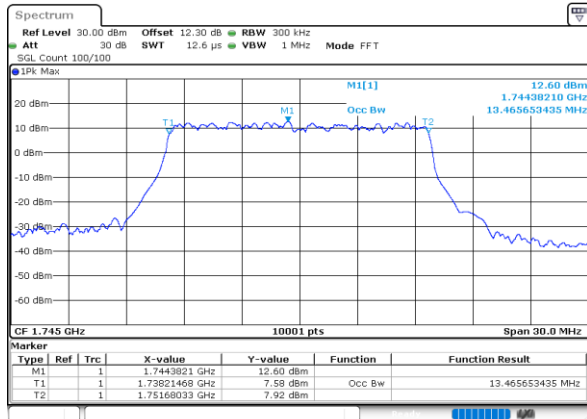
Middle Channel / 27 RB0





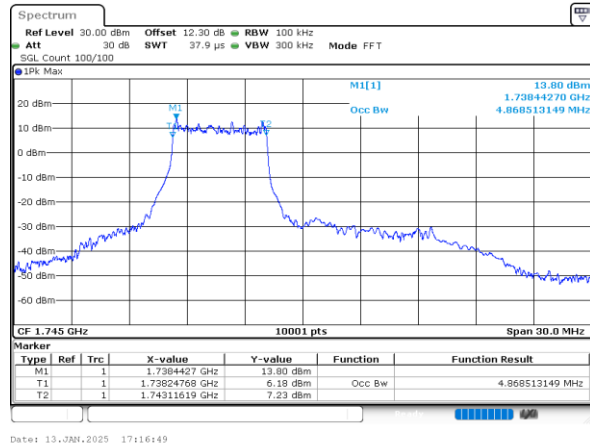
Middle Channel / 15MHz / QPSK

Middle Channel / Full RB



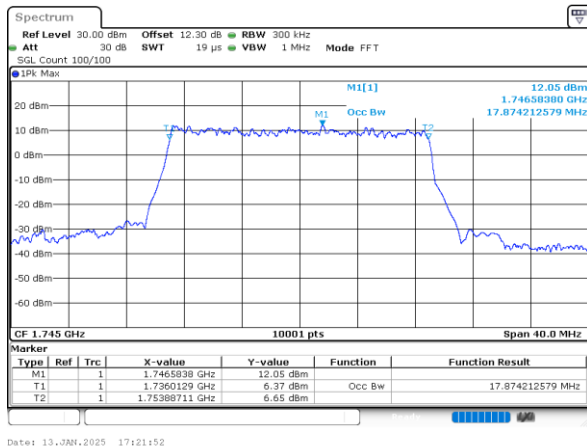
Middle Channel / 15MHz / 16QAM

Middle Channel / 27 RB0



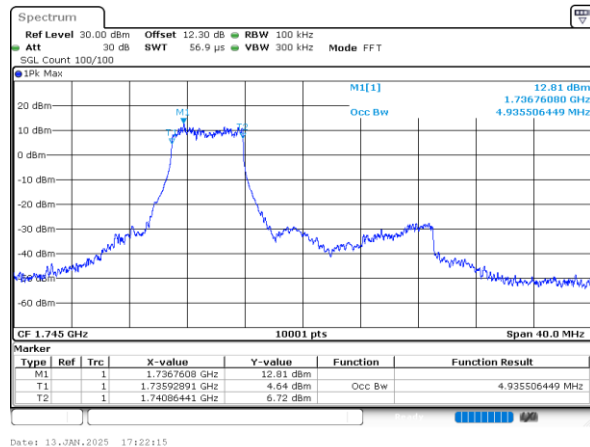
Middle Channel / 20MHz / QPSK

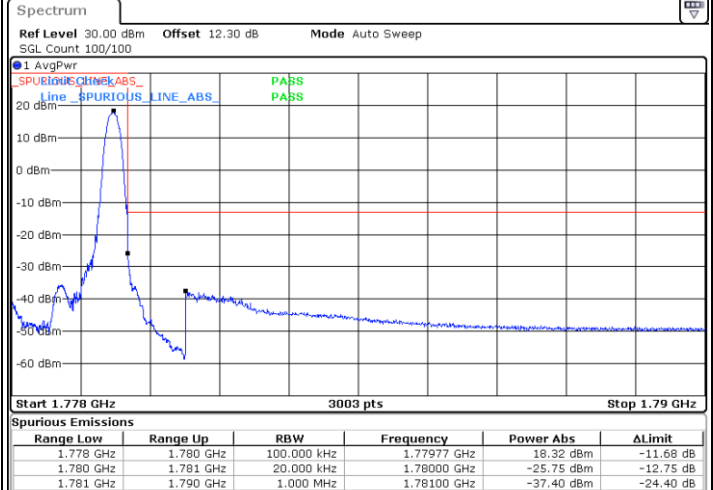
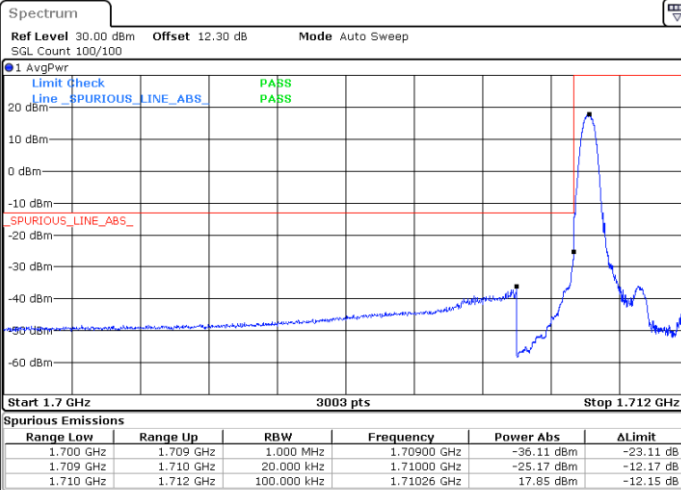
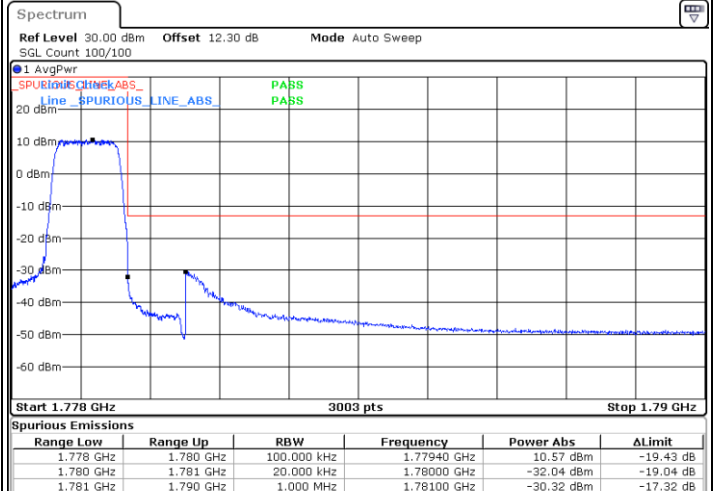
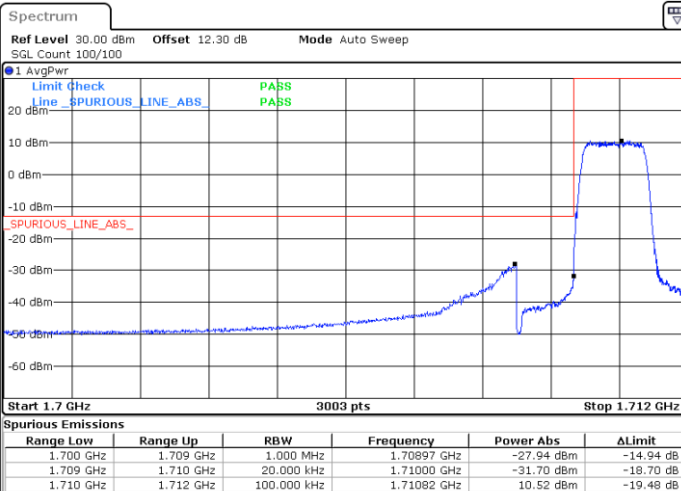
Middle Channel / Full RB



Middle Channel / 20MHz / 16QAM

Middle Channel / 27 RB0



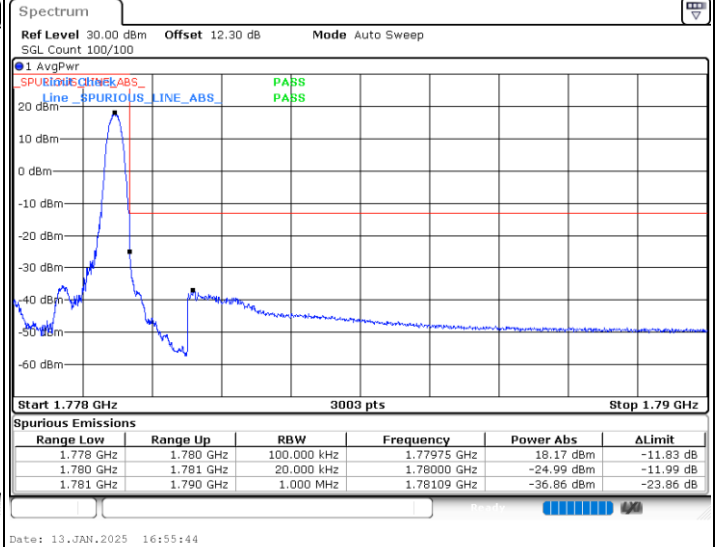
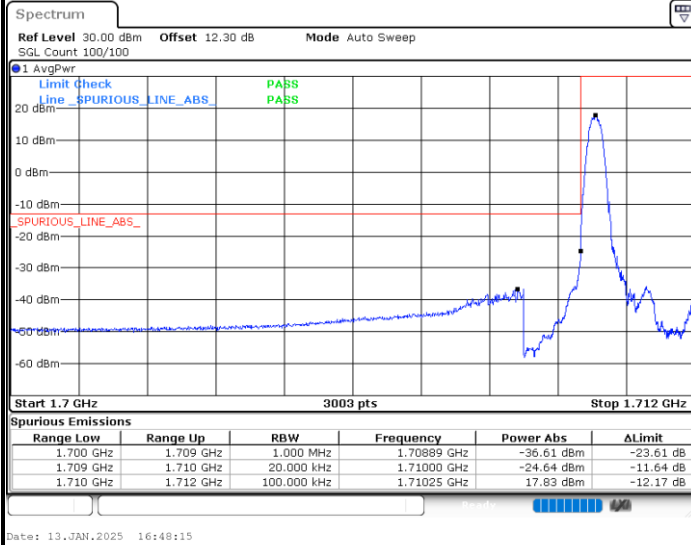
**Conducted Band Edge****LTE Band 66 / 1.4MHz / QPSK****Lowest Band Edge / 1RB0****Highest Band Edge / 1RBmax****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**



LTE Band 66 / 1.4MHz / 16QAM

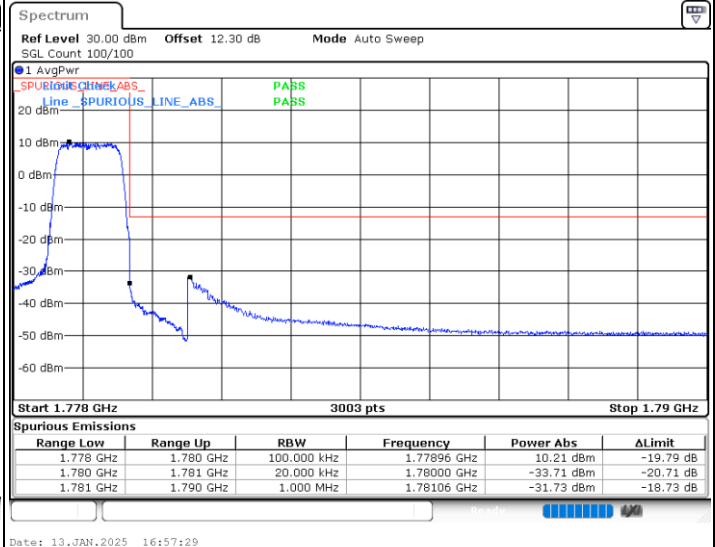
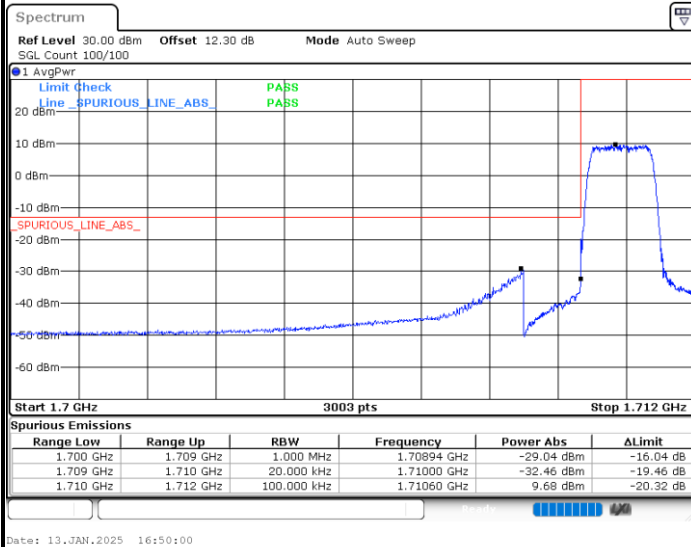
Lowest Band Edge / 1 RB0

Highest Band Edge / 1 RBmax



Lowest Band Edge / Full RB

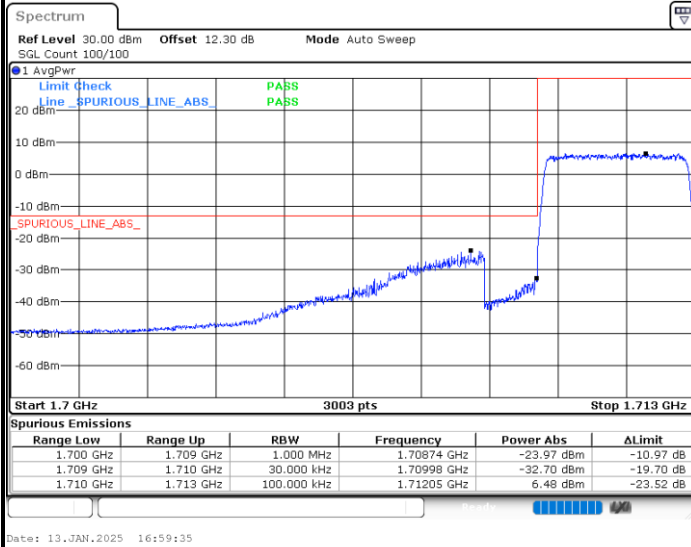
Highest Band Edge / Full RB



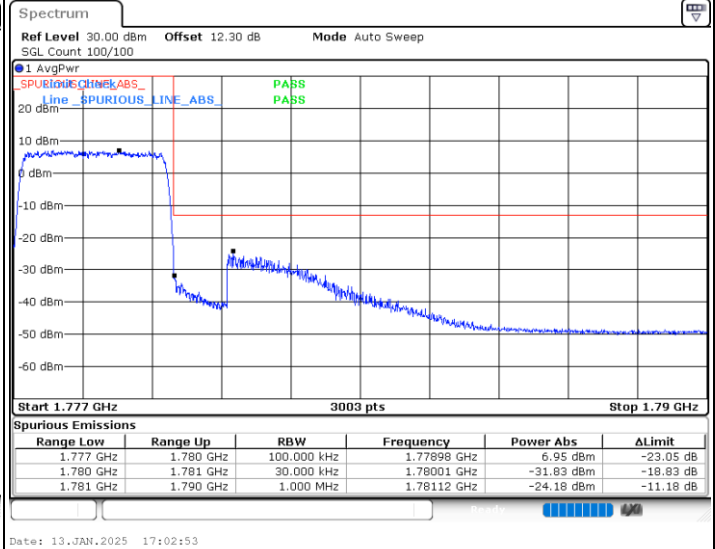


LTE Band 66 / 3MHz / QPSK

Lowest Band Edge / Full RB

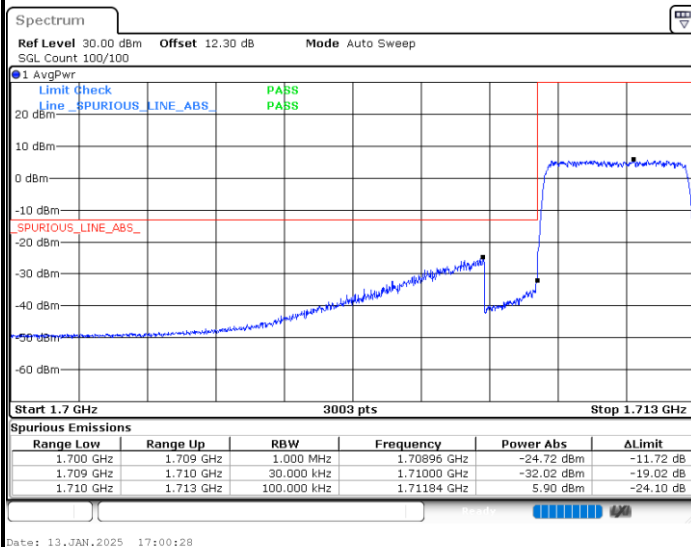


Highest Band Edge / Full RB

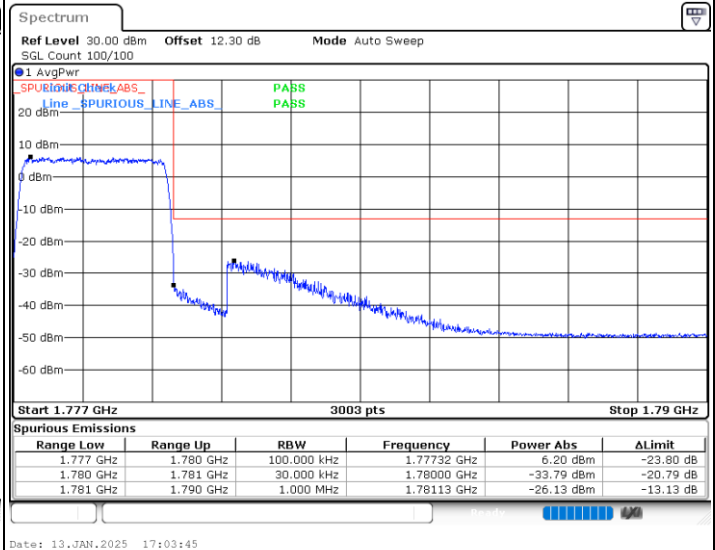


LTE Band 66 / 3MHz / 16QAM

Lowest Band Edge / Full RB



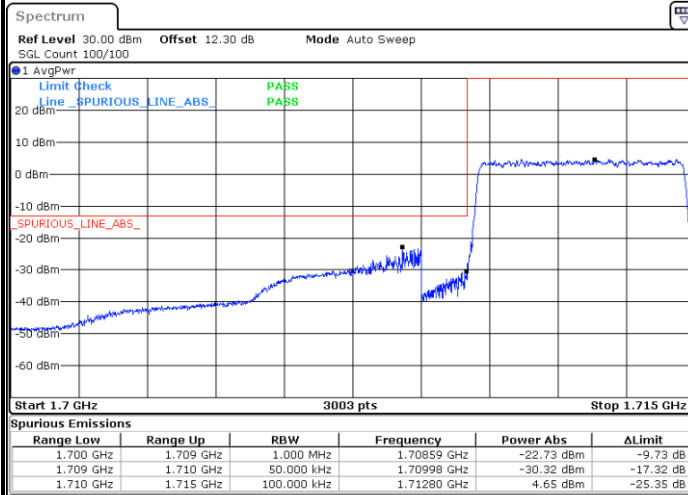
Highest Band Edge / Full RB



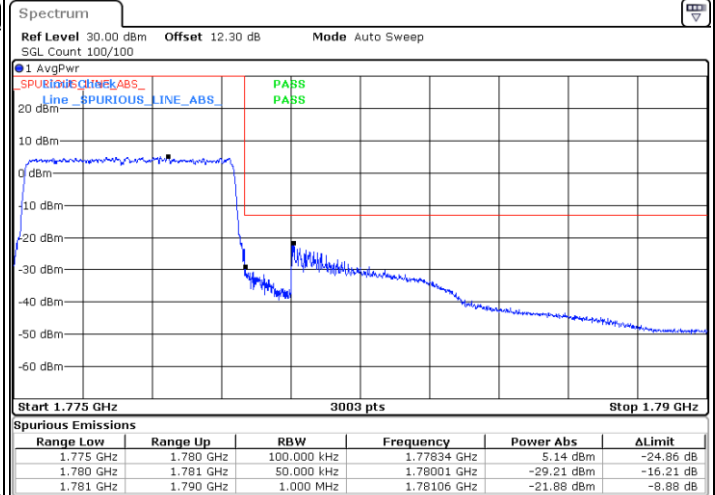


LTE Band 66 / 5MHz / QPSK

Lowest Band Edge / Full RB

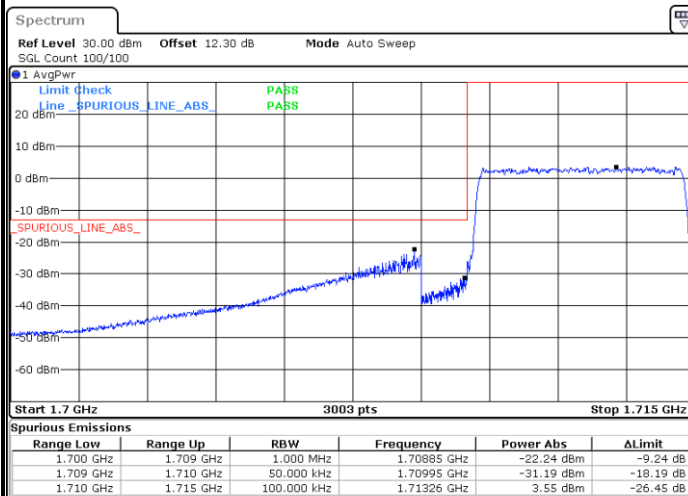


Highest Band Edge / Full RB



LTE Band 66 / 5MHz / 16QAM

Lowest Band Edge / Full RB



Highest Band Edge / Full RB

