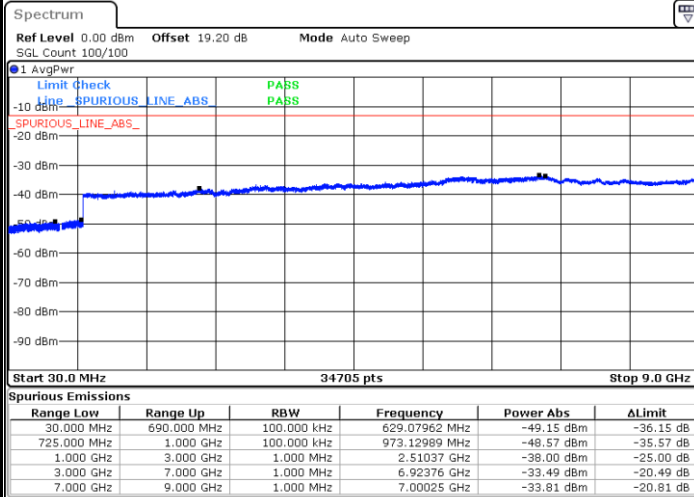




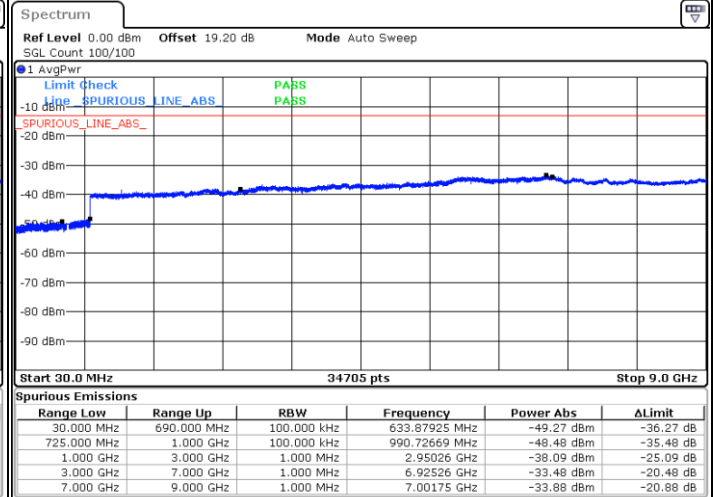
LTE Band 12 / 10MHz

Lowest Channel / QPSK



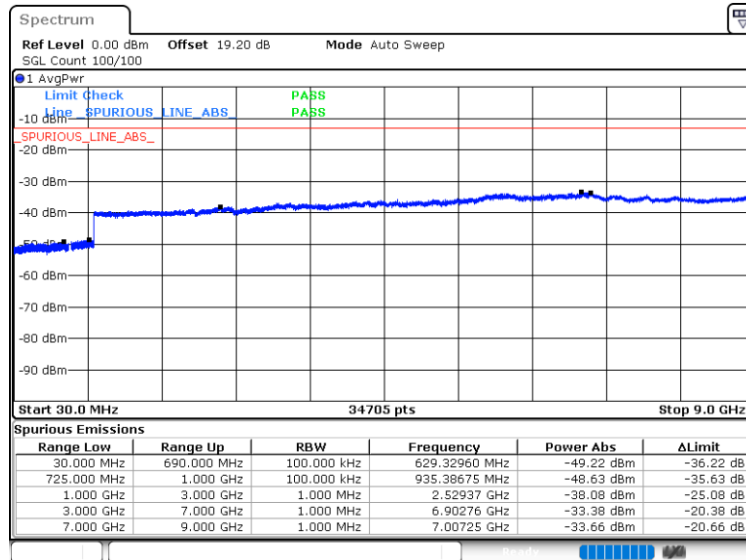
Date: 1.JUL.2025 10:13:15

Middle Channel / QPSK



Date: 1.JUL.2025 10:18:44

Highest Channel / QPSK



Date: 1.JUL.2025 10:20:04

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	1.3	PASS
40	Normal Voltage	-1.5	
30	Normal Voltage	1.7	
20(Ref.)	Normal Voltage	1.9	
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	1.9	
20	Minimum Voltage	-1.3	

Note:

1. Normal Voltage = 5 V. ; Minimum Voltage = 4.8 V. ; Maximum Voltage = 5 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

$$|\text{MAX}(\Delta f)| = 2.8 \text{ Hz}$$

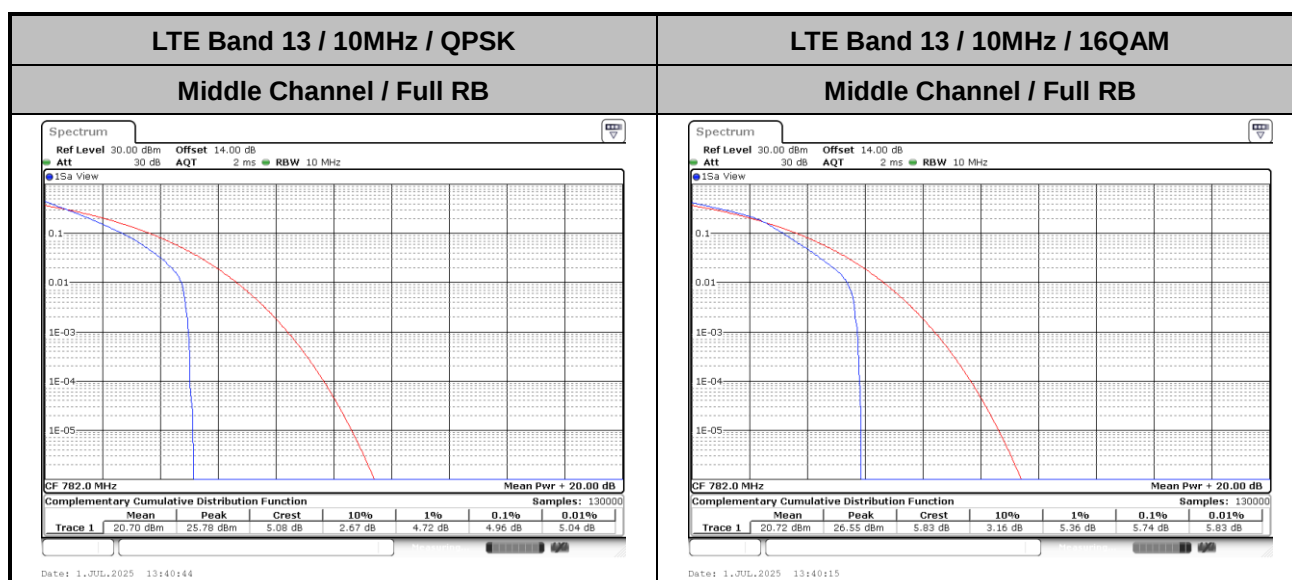
Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - \text{MAX}(\Delta f) $	699.154547	$\geq 699 \text{ MHz}$	PASS
$f_H + \text{MAX}(\Delta f) $	715.853853	$\leq 716 \text{ MHz}$	



LTE Band 13

Peak-to-Average Ratio

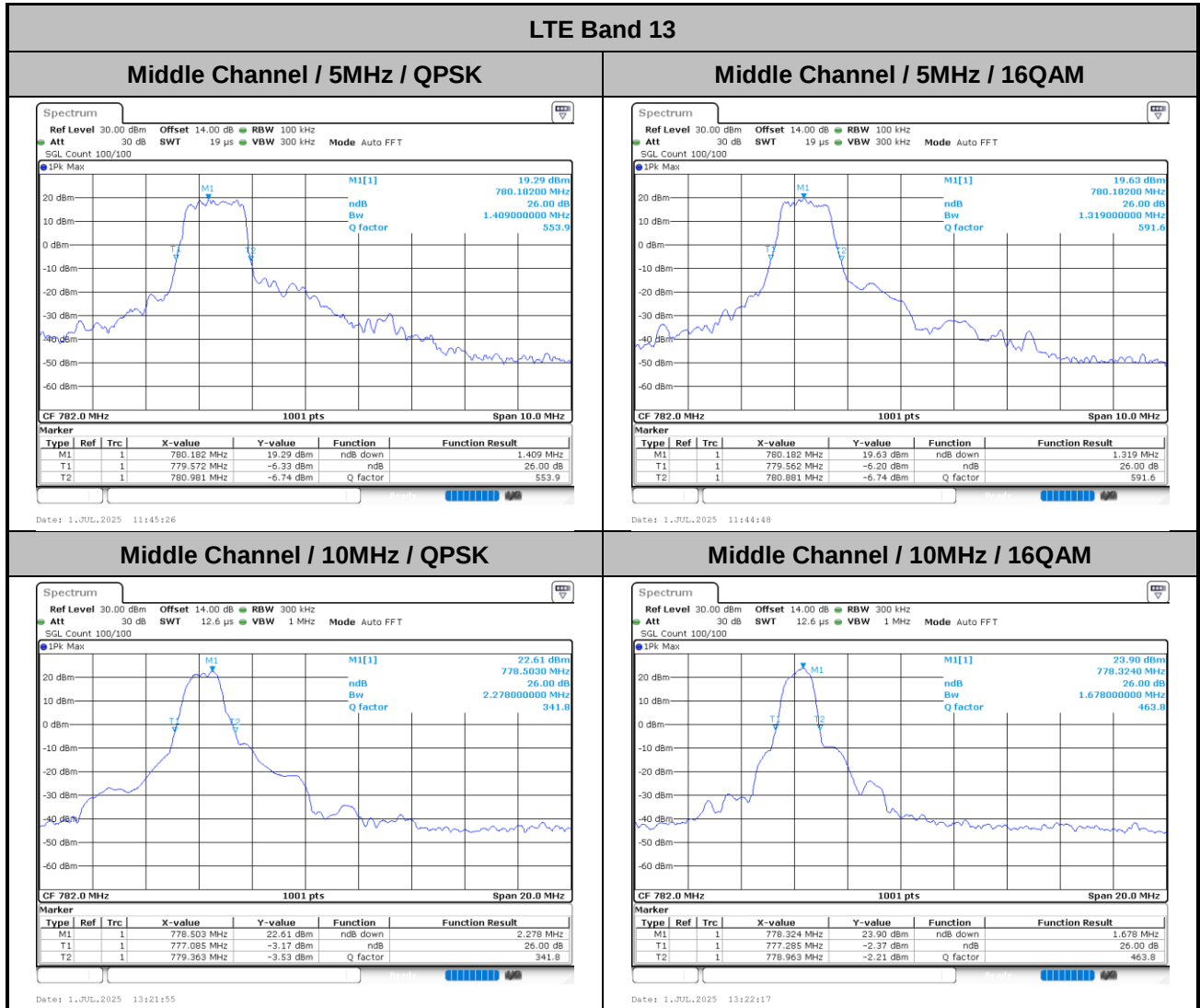
Mode	LTE Band 13 / 10MHz			
Mod.	QPSK	16QAM		Limit: 13dB
RB Size	Full RB	Full RB		Result
Middle CH	4.96	5.74		PASS





26dB Bandwidth

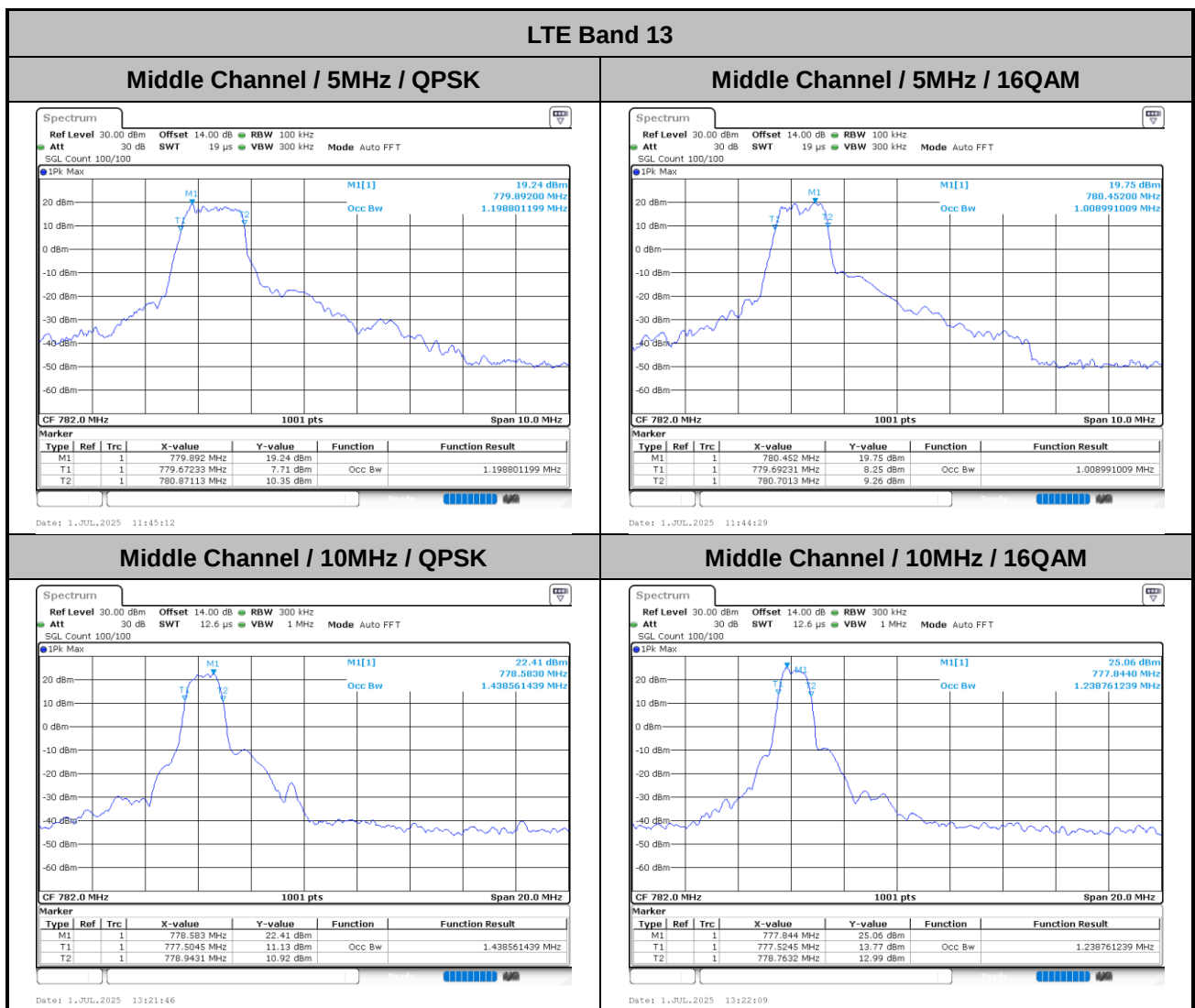
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	1.41	1.32	2.28	1.68	-	-	-	-





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	-	-	-	-	1.20	1.01	1.44	1.24	-	-	-	-

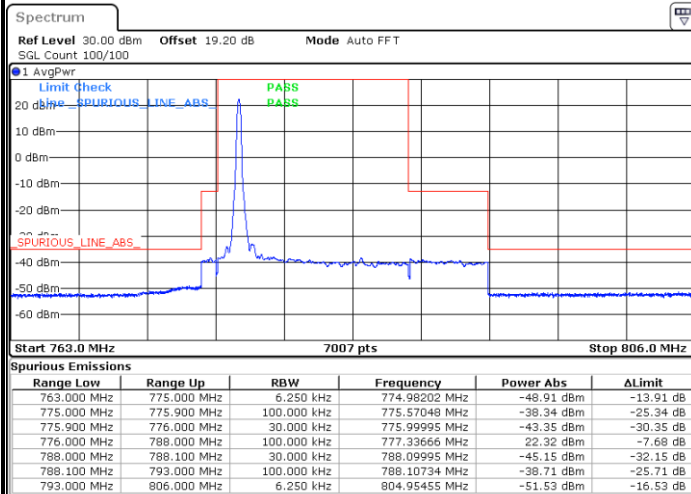




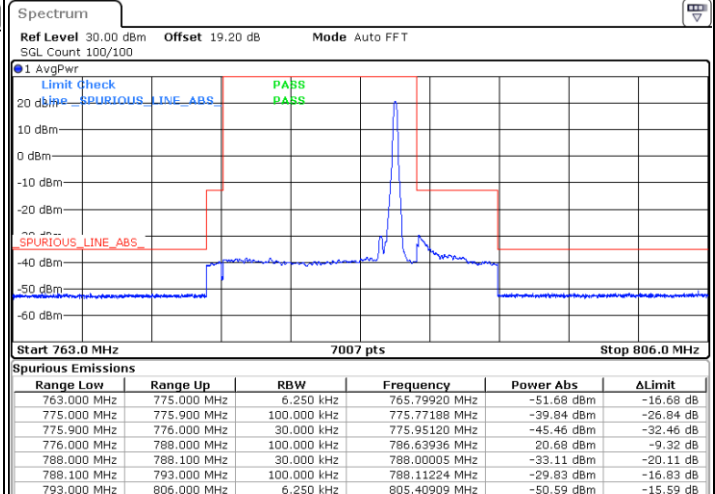
Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

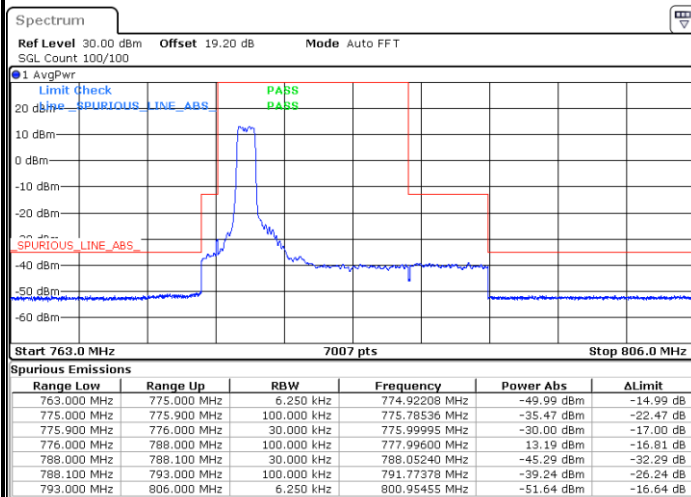
Lowest Band Edge / 1 RB



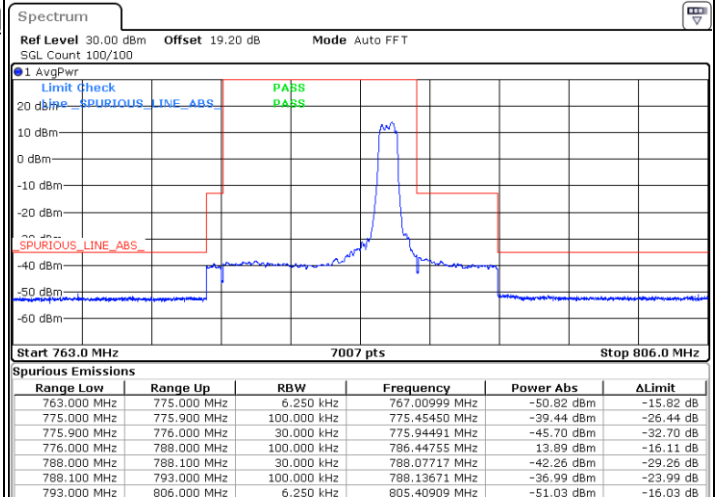
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



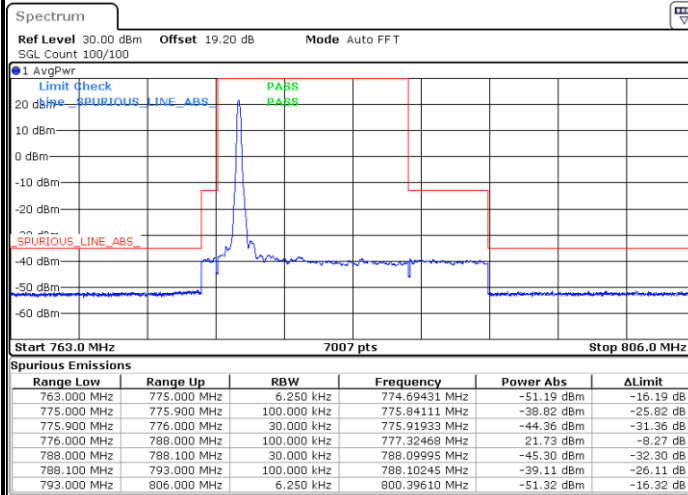
Highest Band Edge / Full RB





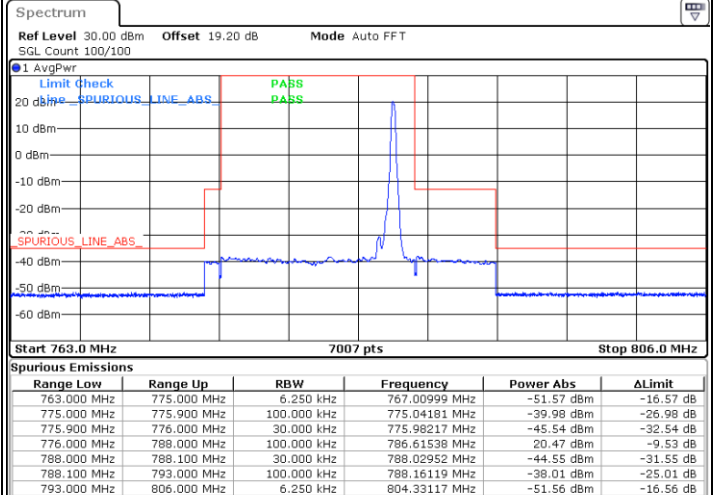
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB



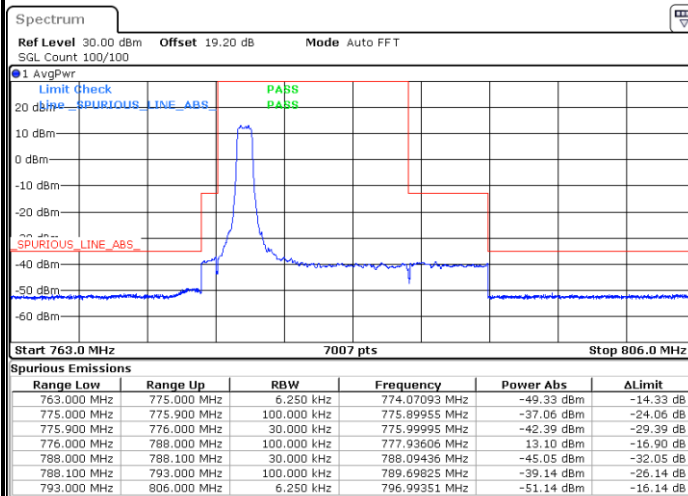
Date: 1.JUL.2025 11:41:11

Highest Band Edge / 1 RB



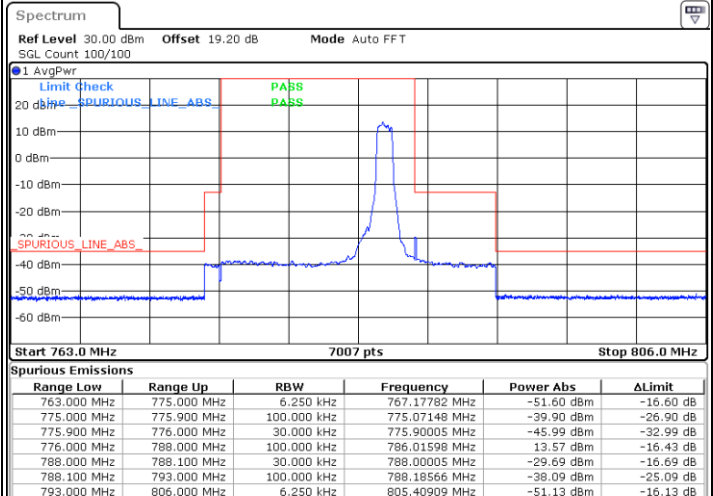
Date: 1.JUL.2025 13:09:38

Lowest Band Edge / Full RB



Date: 1.JUL.2025 11:43:18

Highest Band Edge / Full RB

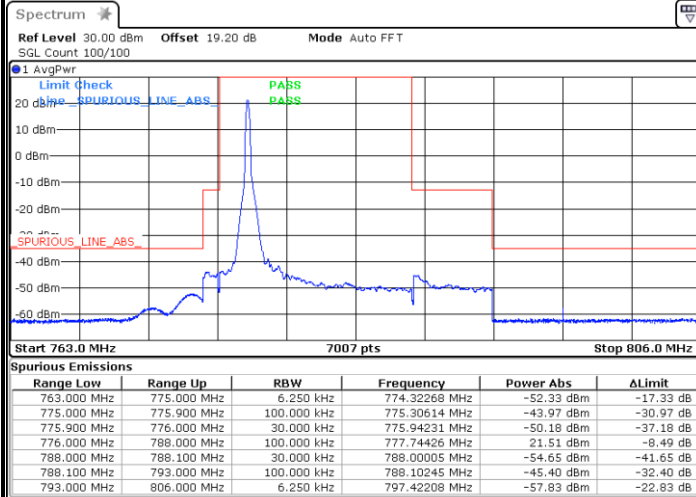


Date: 1.JUL.2025 13:10:03



LTE Band 13 / 10MHz / QPSK

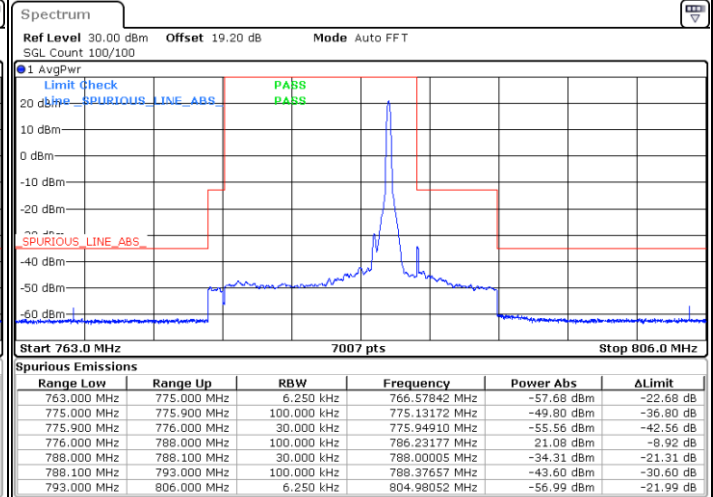
Band Edge / 1 RB



Date: 1.JUL.2025 13:35:05

LTE Band 13 / 10MHz / QPSK

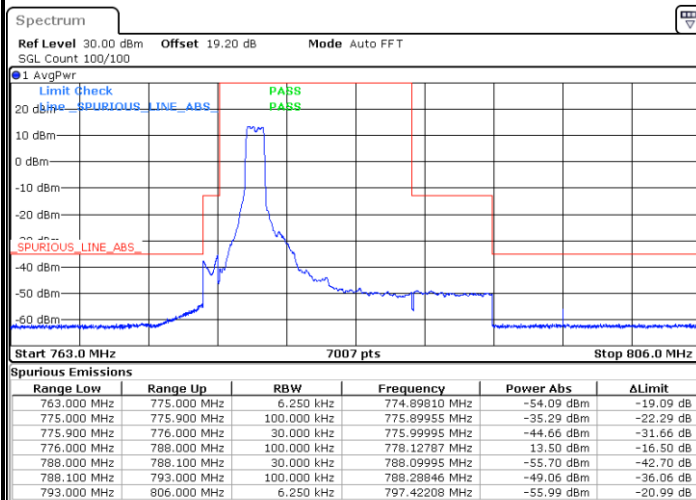
Band Edge / 1 RB



Date: 1.JUL.2025 13:34:44

LTE Band 13 / 10MHz / QPSK

Band Edge / Full RB



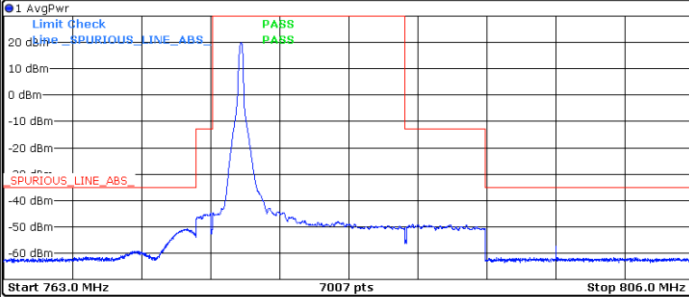
Date: 1.JUL.2025 13:39:08



LTE Band 13 / 10MHz / 16QAM

Band Edge / 1 RB

Spectrum

Ref Level 30.00 dBm Offset 19.20 dB Mode Auto FFT
SGL Count 100/100

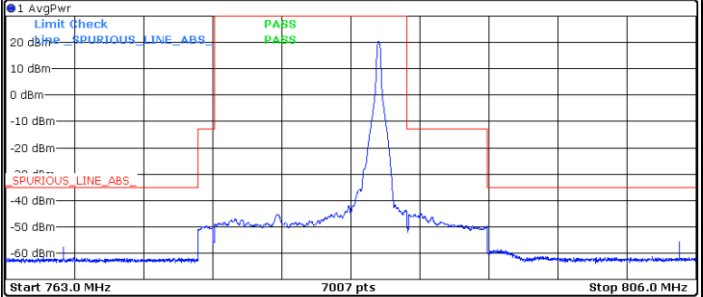
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	774.45455 MHz	-50.87 dBm	-15.87 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.89955 MHz	-44.67 dBm	-31.67 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.99286 MHz	-50.78 dBm	-37.78 dB
776.000 MHz	788.000 MHz	100.000 kHz	777.80420 MHz	20.01 dBm	-9.99 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.04870 MHz	-55.14 dBm	-42.14 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.46469 MHz	-49.12 dBm	-36.12 dB
793.000 MHz	806.000 MHz	6.250 kHz	797.42208 MHz	-57.46 dBm	-22.46 dB

Date: 1.JUL.2025 13:28:52

LTE Band 13 / 10MHz / 16QAM

Band Edge / 1 RB

Spectrum

Ref Level 30.00 dBm Offset 19.20 dB Mode Auto FFT
SGL Count 100/100

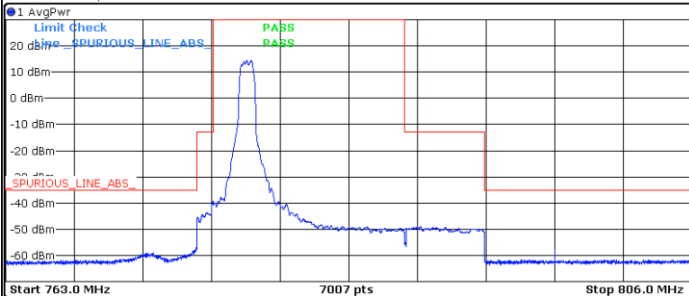
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	766.57842 MHz	-57.82 dBm	-22.82 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.48686 MHz	-49.61 dBm	-36.61 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.97438 MHz	-55.73 dBm	-42.73 dB
776.000 MHz	788.000 MHz	100.000 kHz	786.24376 MHz	20.34 dBm	-9.66 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.00005 MHz	-50.03 dBm	-37.03 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.86119 MHz	-45.07 dBm	-32.07 dB
793.000 MHz	806.000 MHz	6.250 kHz	804.98052 MHz	-55.61 dBm	-20.61 dB

Date: 1.JUL.2025 13:31:59

LTE Band 13 / 10MHz / 16QAM

Band Edge / Full RB

Spectrum

Ref Level 30.00 dBm Offset 19.20 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	774.93407 MHz	-56.92 dBm	-21.92 dB
775.000 MHz	775.900 MHz	100.000 kHz	775.58307 MHz	-43.63 dBm	-30.63 dB
775.900 MHz	776.000 MHz	30.000 kHz	775.98477 MHz	-39.42 dBm	-26.42 dB
776.000 MHz	788.000 MHz	100.000 kHz	778.39161 MHz	14.41 dBm	-15.59 dB
788.000 MHz	788.100 MHz	30.000 kHz	788.04111 MHz	-54.97 dBm	-41.97 dB
788.100 MHz	793.000 MHz	100.000 kHz	788.98846 MHz	-49.11 dBm	-36.11 dB
793.000 MHz	806.000 MHz	6.250 kHz	797.42208 MHz	-57.89 dBm	-22.89 dB

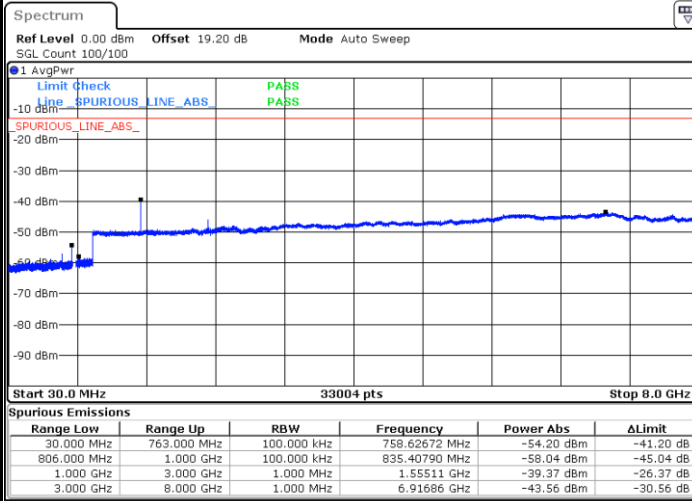
Date: 1.JUL.2025 13:25:03



Conducted Spurious Emission

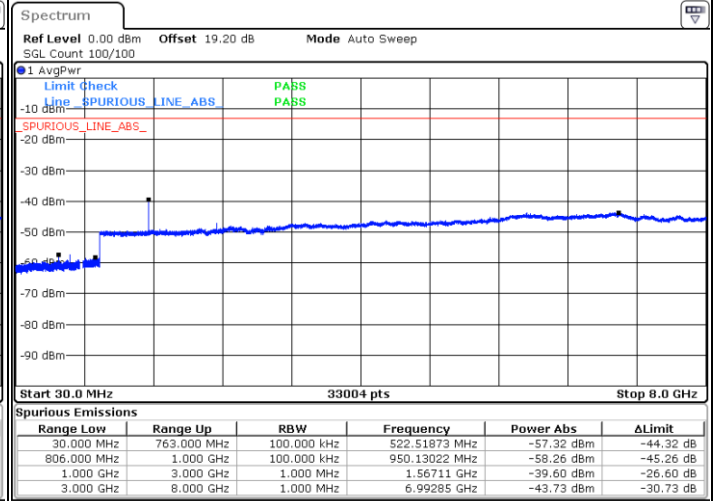
LTE Band 13 / 5MHz

Lowest Channel / QPSK



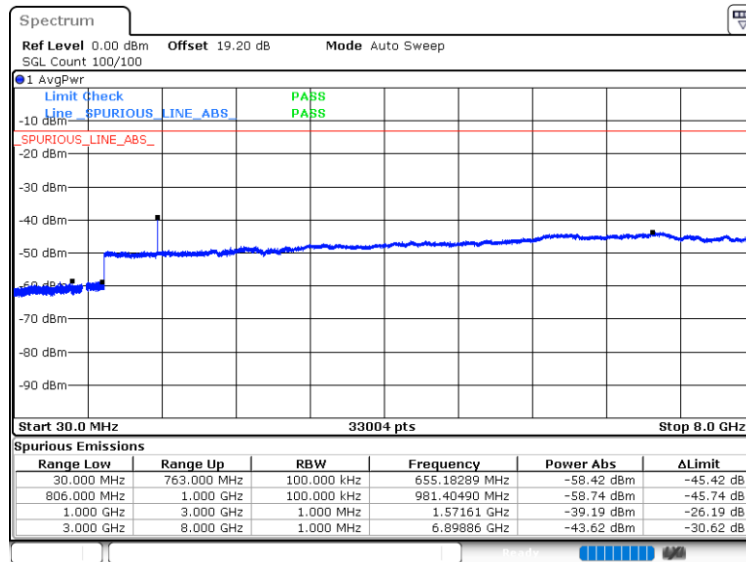
Date: 1.JUL.2025 11:39:28

Middle Channel / QPSK



Date: 1.JUL.2025 13:11:45

Highest Channel / QPSK

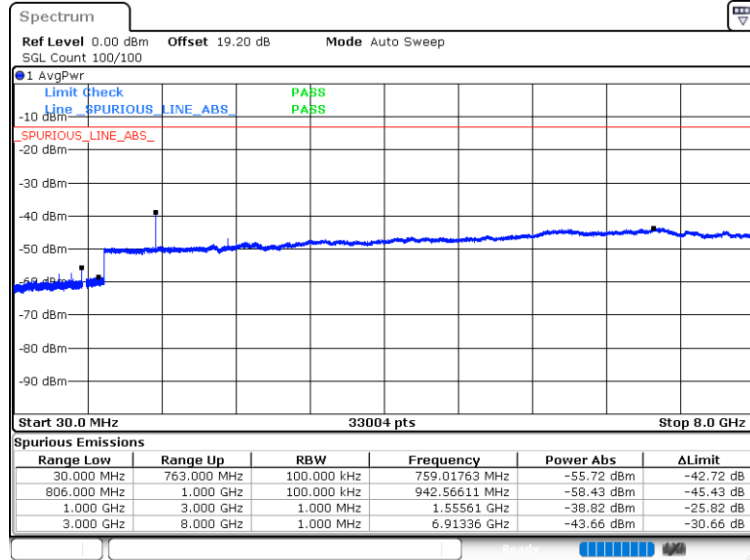


Date: 1.JUL.2025 13:12:23



LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 1-JUL-2025 13:35:40

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	2.2	PASS
40	Normal Voltage	2.5	
30	Normal Voltage	-1.7	
20(Ref.)	Normal Voltage	-3.1	
10	Normal Voltage	2.7	
0	Normal Voltage	1.9	
-10	Normal Voltage	1.4	
-20	Normal Voltage	2	
-30	Normal Voltage	1.8	
20	Maximum Voltage	1.6	
20	Normal Voltage	-3.1	
20	Minimum Voltage	2.3	

Note:

1. Normal Voltage =5 V. ; Minimun Voltage =4.8 V. ; Maximum Voltage =5 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

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

Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - \text{MAX}(\Delta f) $	777.182317	$\geq 777 \text{ MHz}$	PASS
$f_H + \text{MAX}(\Delta f) $	786.807693	$\leq 787 \text{ MHz}$	



NB-IOT:

LTE Band 2

Peak-to-Average Ratio

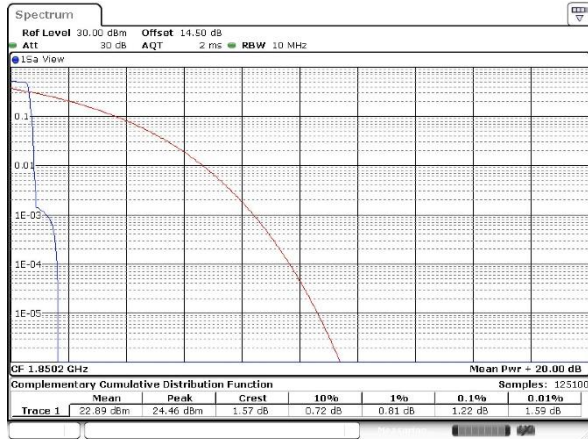
Mode	LTE Band 2 / 3.75K				
Mod.	BPSK		QPSK		Limit: 13dB
RB Size	1SCO	N/A	1SCO	N/A	Result
Lowest CH	1.22		0.72		PASS
Middle CH	0.49		0.75		
Highest CH	0.32		0.72		

Mode	LTE Band 2 / 15K				
Mod.	BPSK		QPSK		Limit: 13dB
RB Size	1SCO	N/A	1SCO	12SCO	Result
Lowest CH	1.48		1.54	5.10	PASS
Middle CH	1.48		1.54	5.51	
Highest CH	1.51		1.59	5.48	

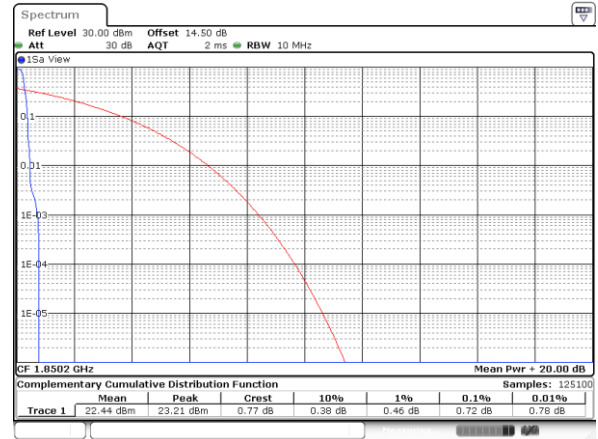


LTE Band 2 / 3.75K

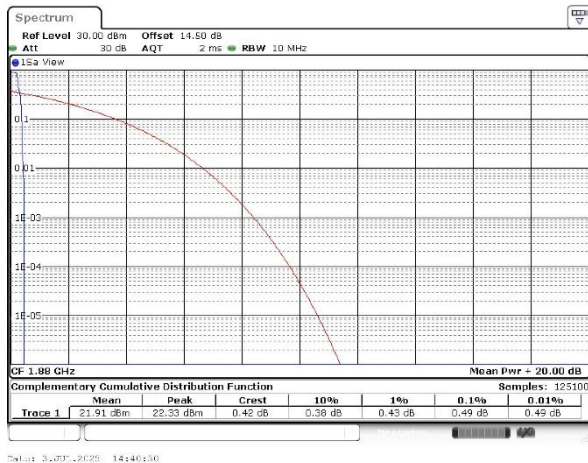
Lowest Channel / 1SCO / BPSK



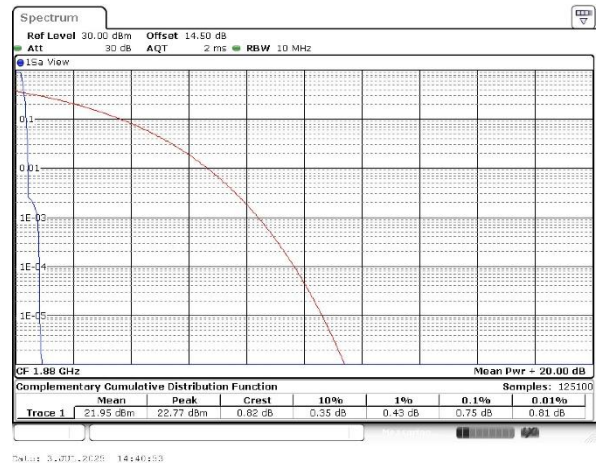
Lowest Channel / 1SCO / QPSK



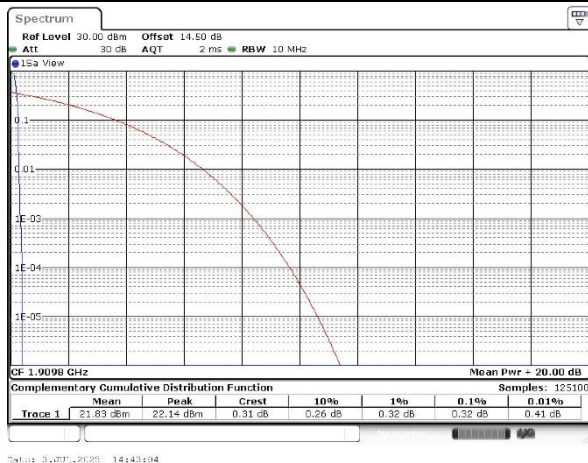
Middle Channel / 1SCO / BPSK



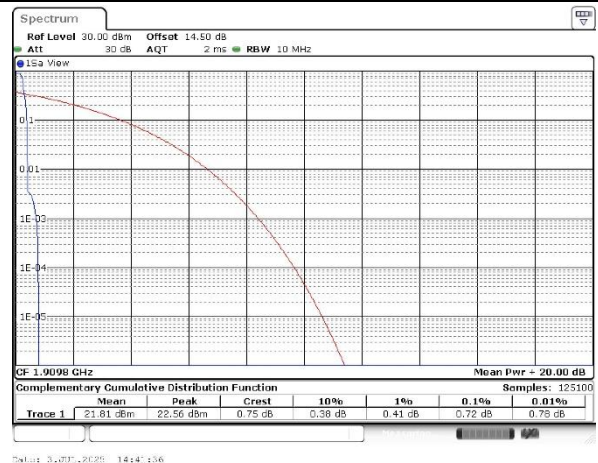
Middle Channel / 1SCO / QPSK



Highest Channel / 1SCO / BPSK



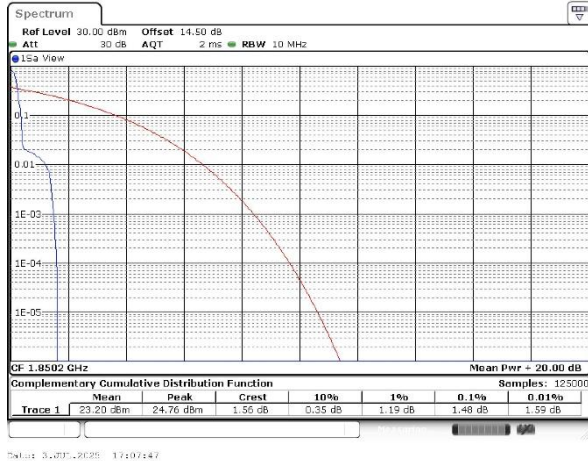
Highest Channel / 1SCO / QPSK



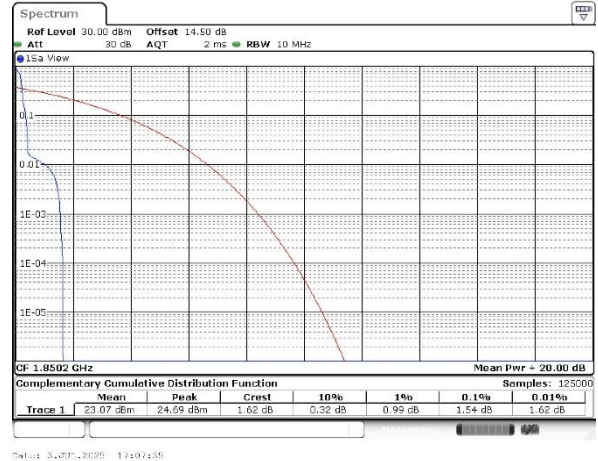


LTE Band 2 / 15K

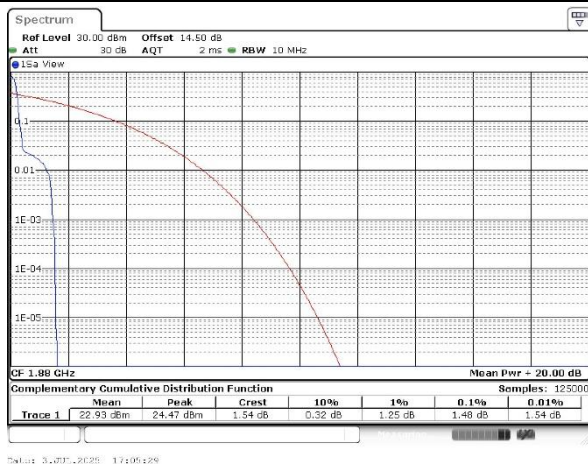
Lowest Channel / 1SC0 / BPSK



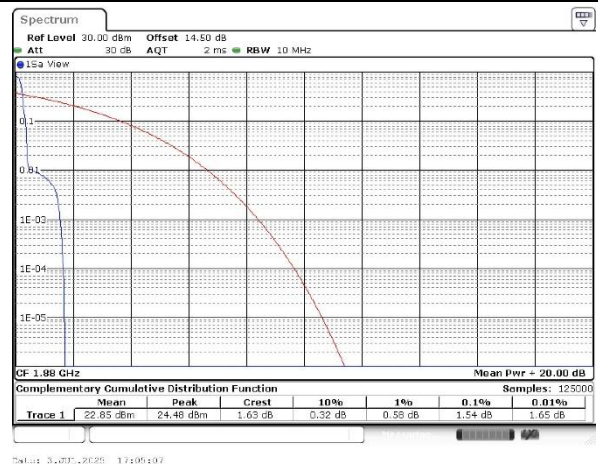
Lowest Channel / 1SC0 / QPSK



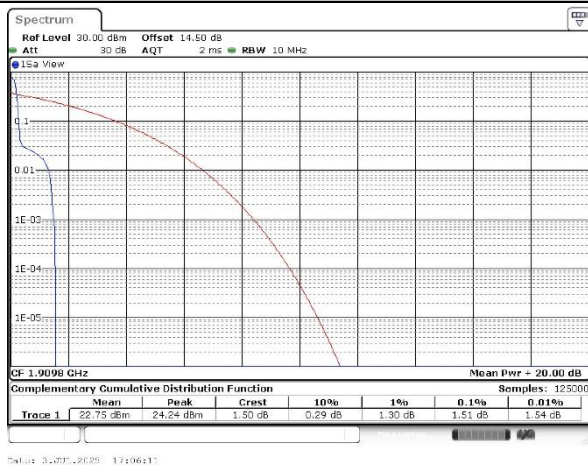
Middle Channel / 1SC0 / BPSK



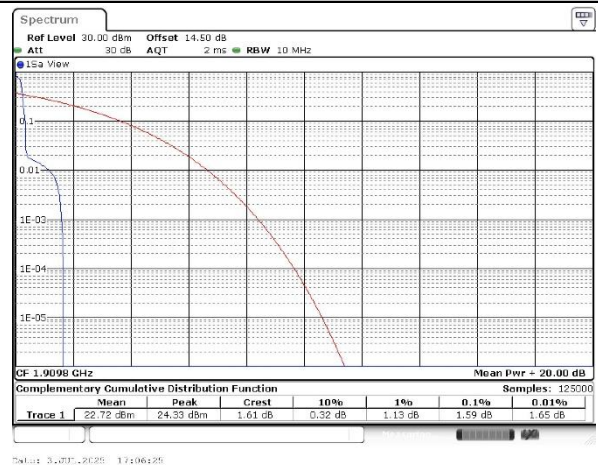
Middle Channel / 1SC0 / QPSK



Highest Channel / 1SC0 / BPSK



Highest Channel / 1SC0 / QPSK

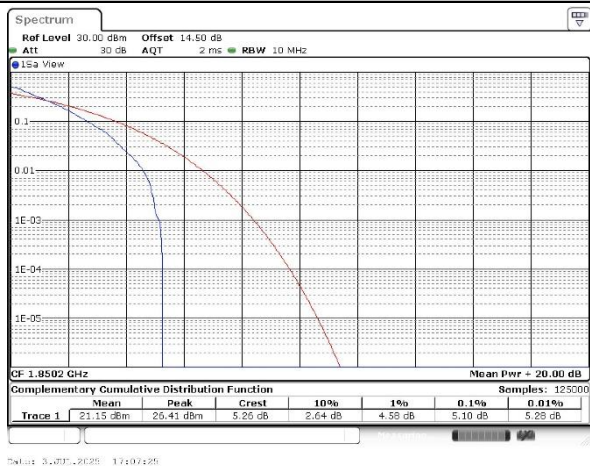




LTE Band 2 / 15K

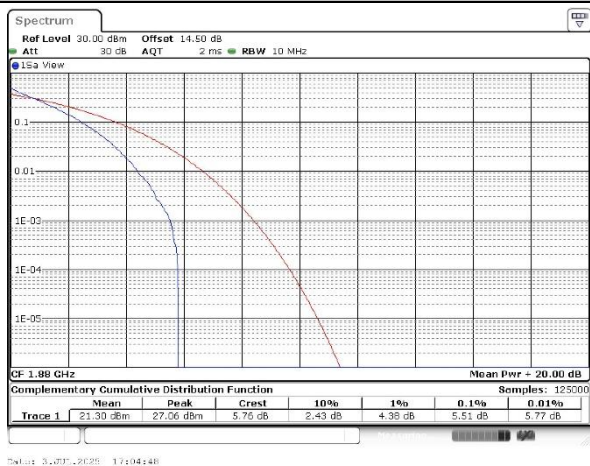
Lowest Channel / 12SC0 / QPSK

N/A



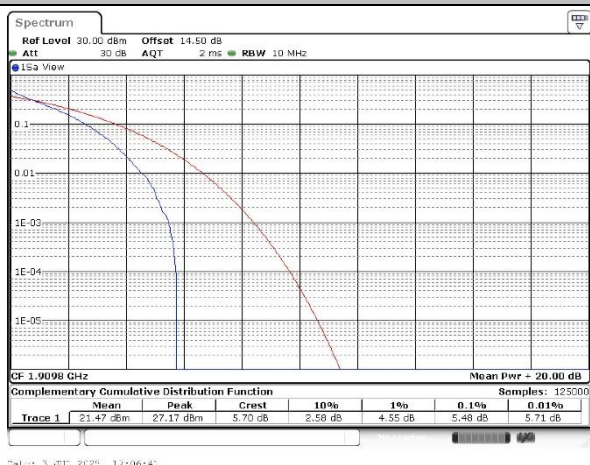
Middle Channel / 12SC0 / QPSK

N/A



Highest Channel / 12SC0 / QPSK

N/A





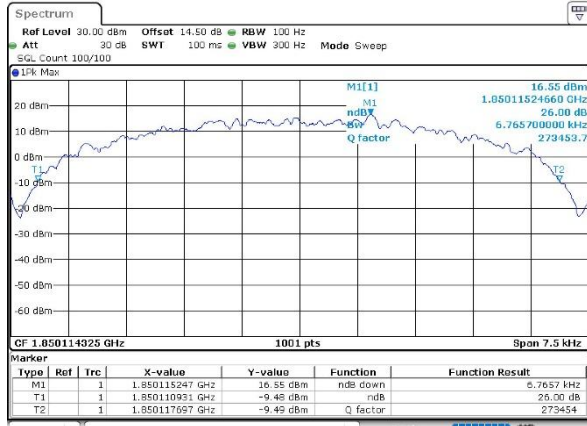
26dB Bandwidth

Mode	LTE Band 2 : 26dB BW(KHz)											
BW	3.75K		15K				N/A		N/A		N/A	
Mod.	BPSK	QPSK	BPSK	QPSK	QPSK							
RB Size	1SCO	1SCO	1SCO	1SCO	12SCO							
Lowest CH	6.77	6.81	26.01	26.43	240.88							
Middle CH	6.76	6.83	26.07	26.28	240.44							
Highest CH	6.77	6.85	26.28	26.40	242.2							

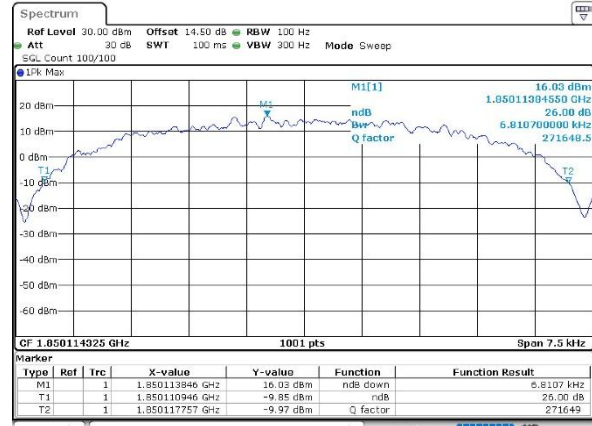


LTE Band 2 3.75K

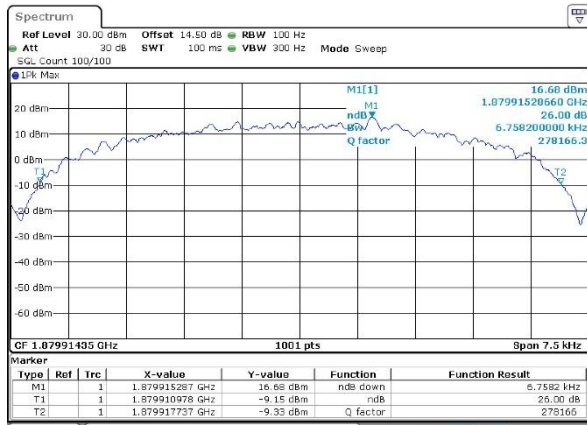
Lowest Channel / 1SC0 / BPSK



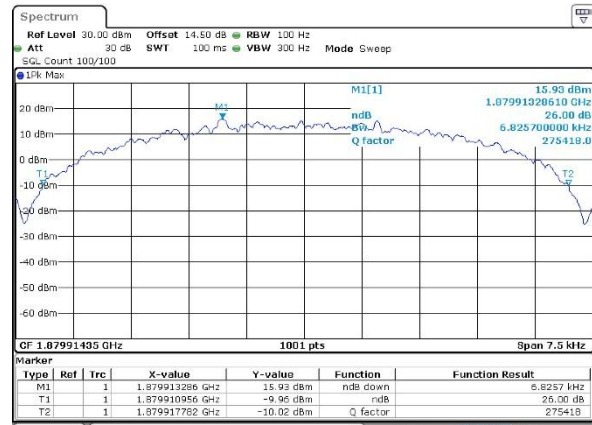
Lowest Channel / 1SC0 / QPSK



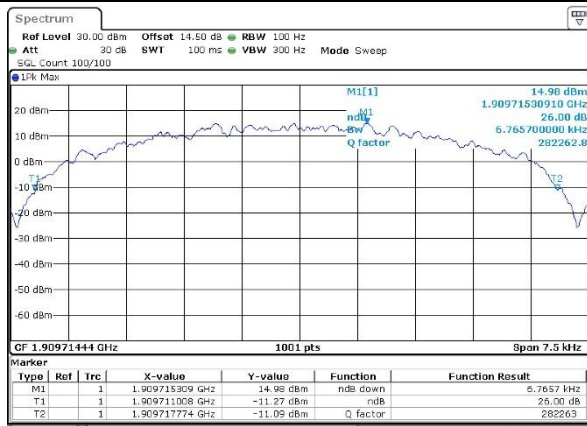
Middle Channel / 1SC0 / BPSK



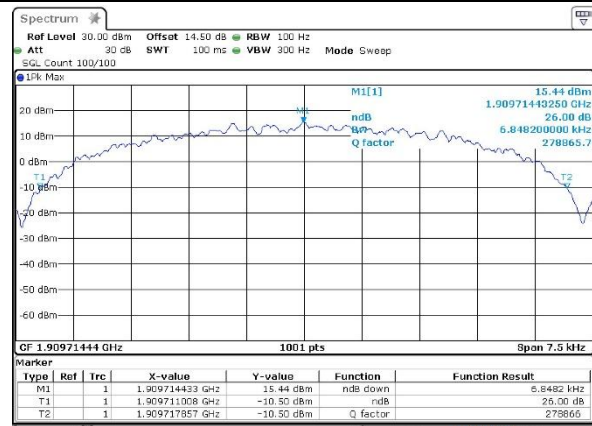
Middle Channel / 1SC0 / QPSK



Highest Channel / 1SC0 / BPSK



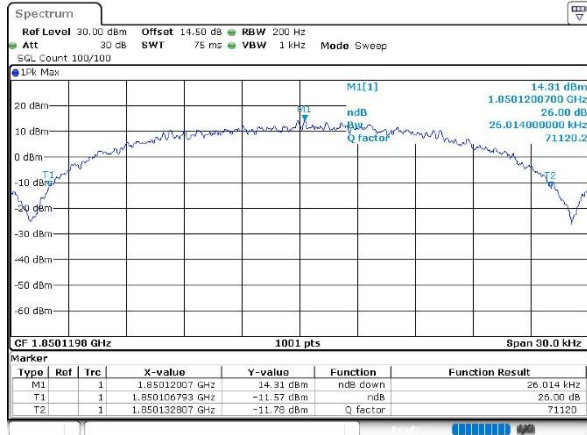
Highest Channel / 1SC0 / QPSK



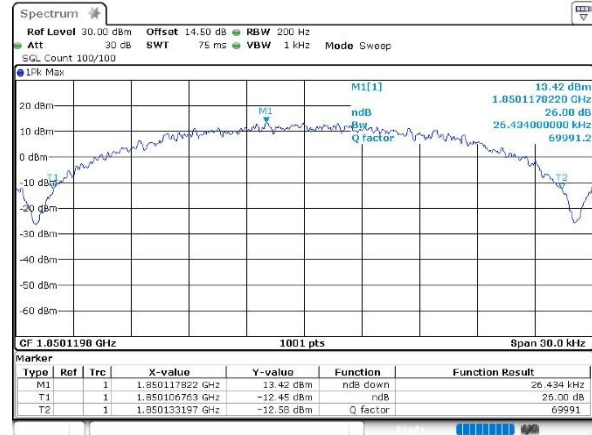


LTE Band 2 15K

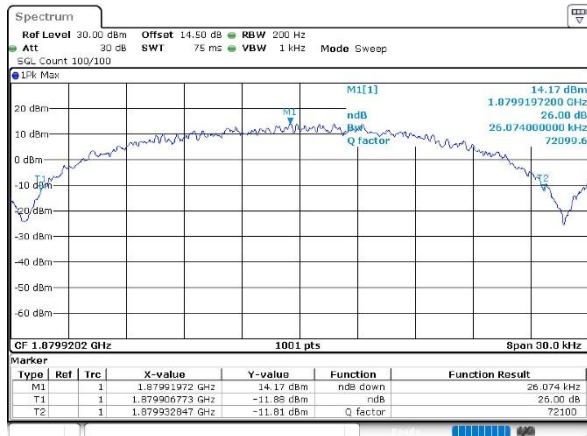
Lowest Channel / 1SC0 / BPSK



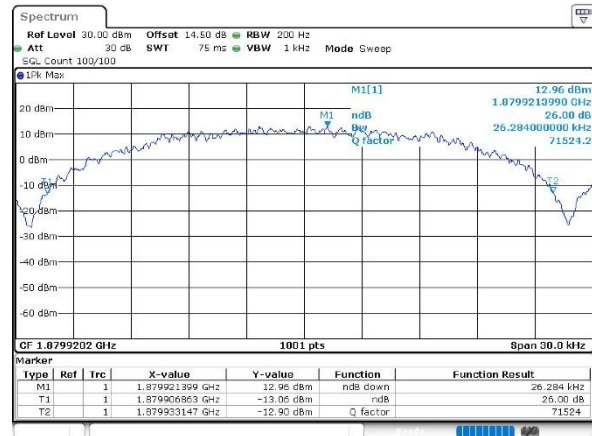
Lowest Channel / 1SC0 / QPSK



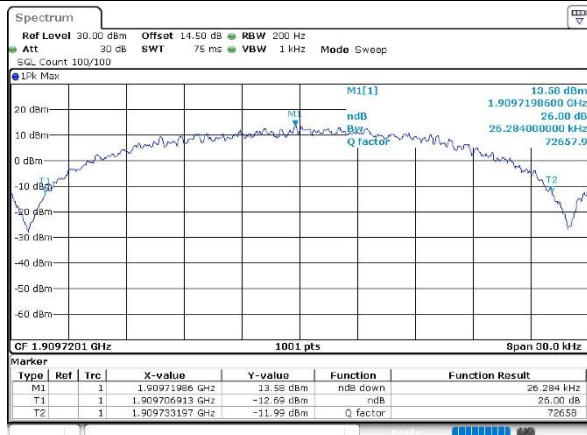
Middle Channel / 1SC0 / BPSK



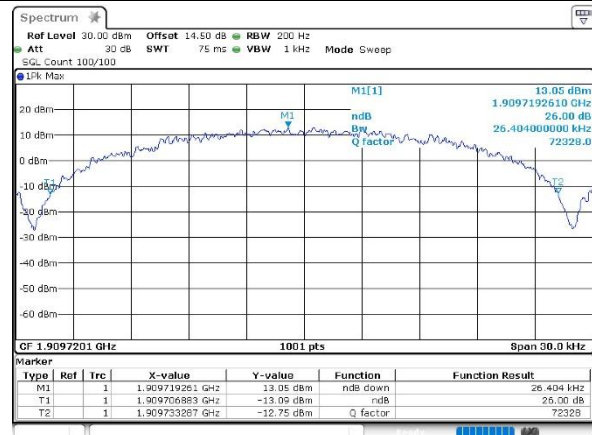
Middle Channel / 1SC0 / QPSK



Highest Channel / 1SC0 / BPSK



Highest Channel / 1SC0 / QPSK

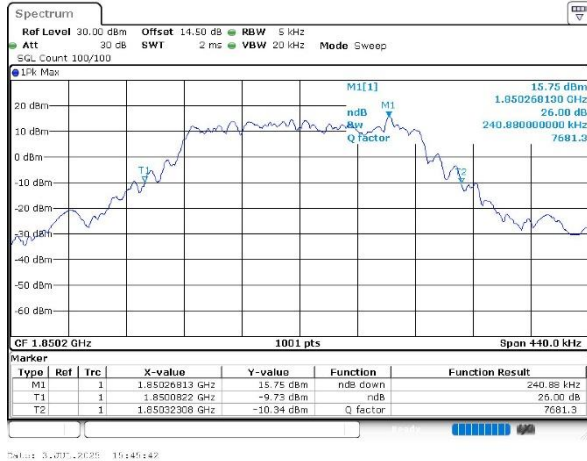




LTE Band 2 15K

Lowest Channel / 12SC0 / QPSK

N/A



Middle Channel / 12SC0 / QPSK

N/A



Highest Channel / 12SC0 / QPSK

N/A





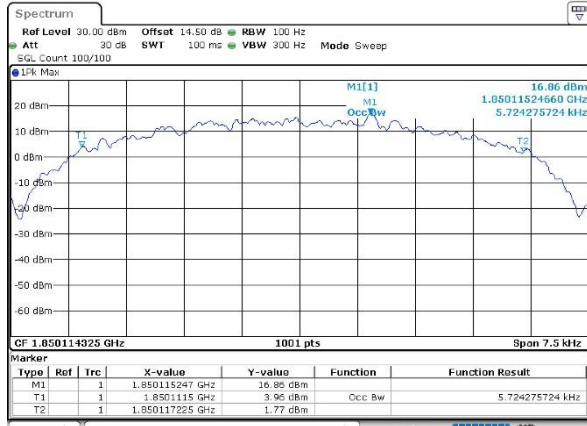
Occupied Bandwidth

Mode	LTE Band 2 : 99%OBW(KHz)											
BW	3.75K		15K				N/A		N/A		N/A	
Mod.	BPSK	QPSK	BPSK	QPSK	QPSK							
RB Size	1SCO	1SCO	1SCO	1SCO	12SCO							
Lowest CH	5.72	5.65	21.64	21.82	188.57							
Middle CH	5.72	5.68	21.76	21.88	191.21							
Highest CH	5.71	5.72	21.698	21.75	186.37							

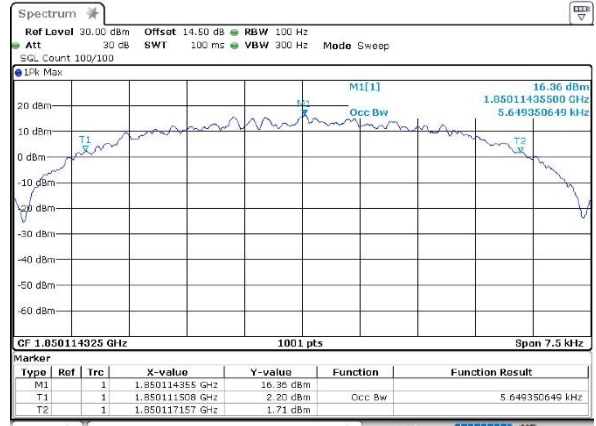


LTE Band 2 3.75K

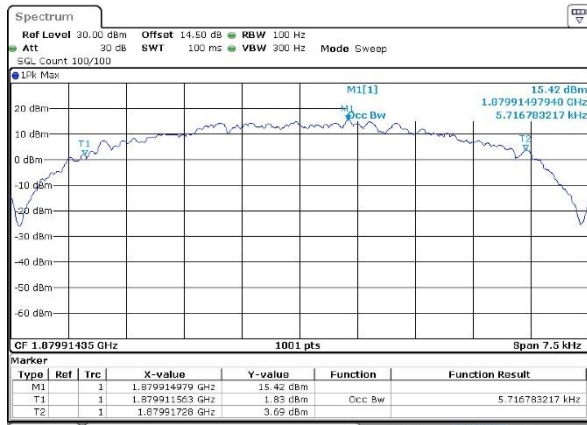
Lowest Channel / 1SCO / BPSK



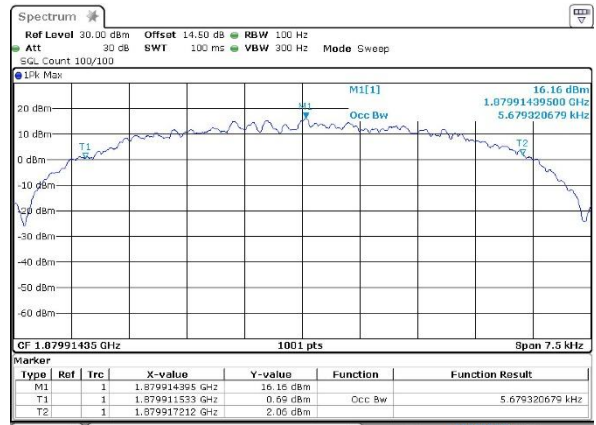
Lowest Channel / 1SCO / QPSK



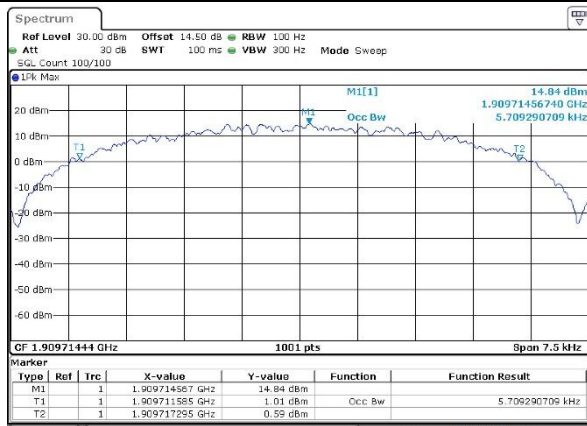
Middle Channel / 1SCO / BPSK



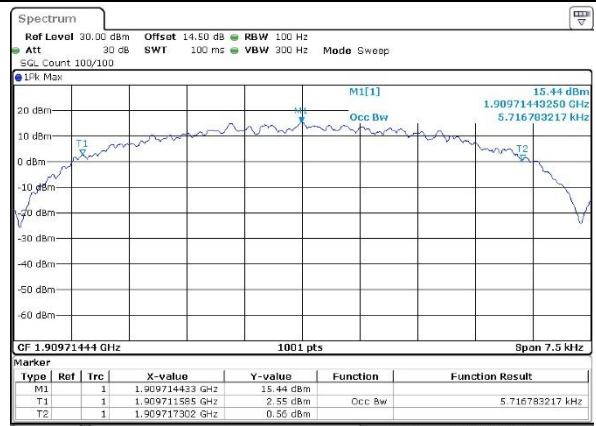
Middle Channel / 1SCO / QPSK



Highest Channel / 1SCO / BPSK



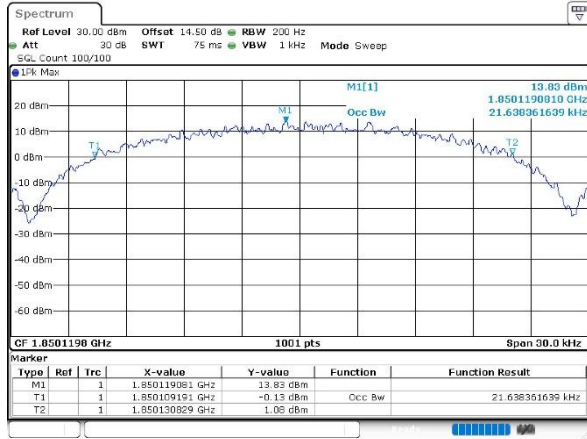
Highest Channel / 1SCO / QPSK



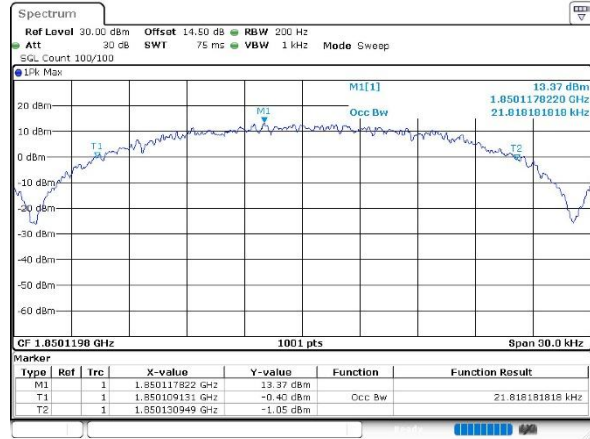


LTE Band 2 15K

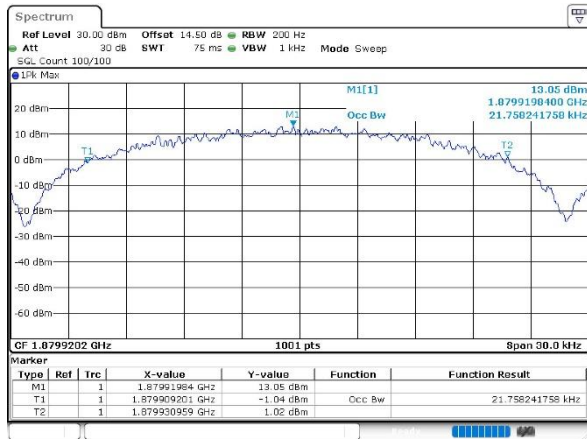
Lowest Channel / 1SCO / BPSK



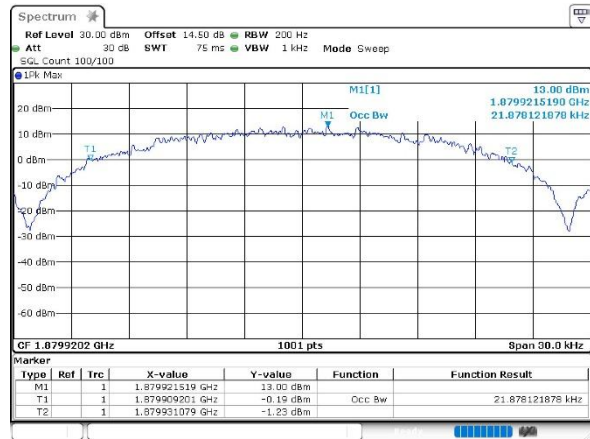
Lowest Channel / 1SCO / QPSK



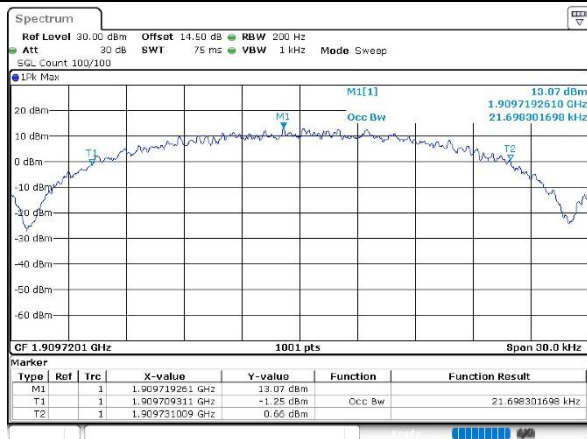
Middle Channel / 1SCO / BPSK



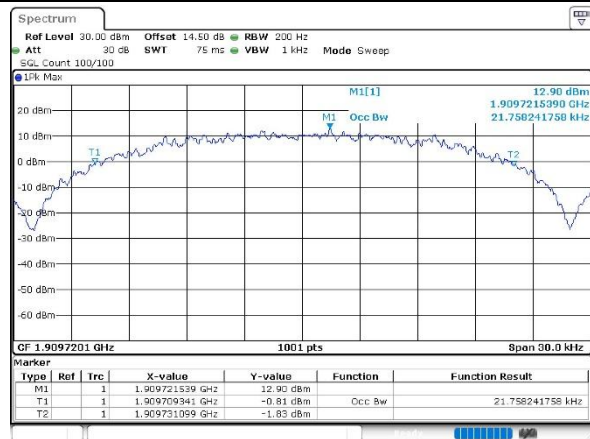
Middle Channel / 1SCO / QPSK



Highest Channel / 1SCO / BPSK



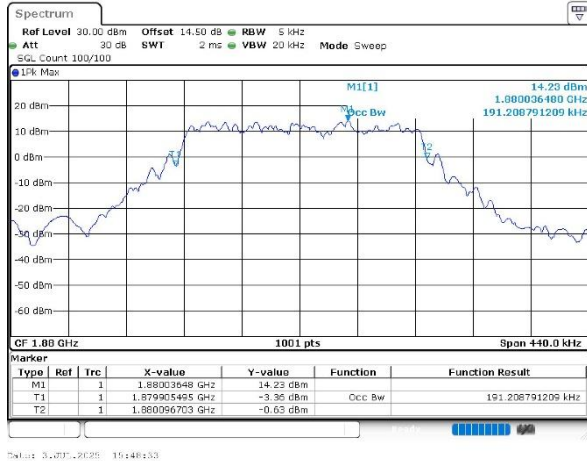
Highest Channel / 1SCO / QPSK



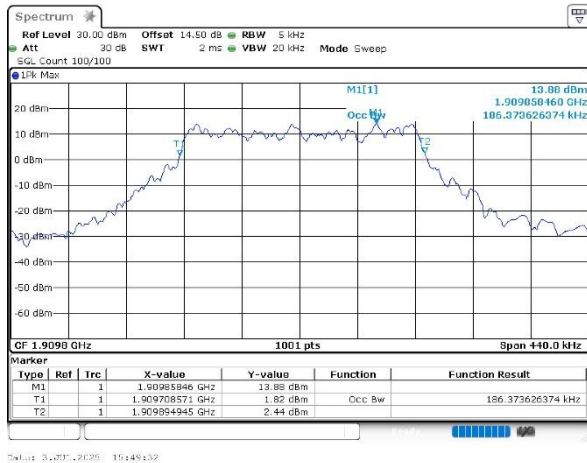


LTE Band 2 15K

Lowest Channel / 12SCO / QPSK



Middle Channel / 12SCO / QPSK



Highest Channel / 12SCO / QPSK

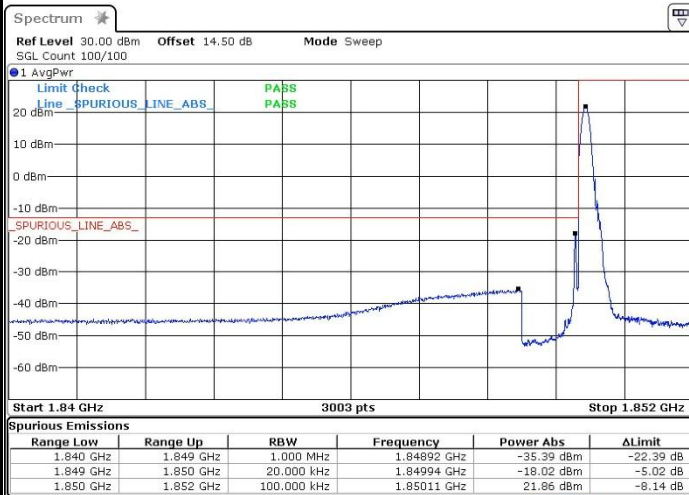




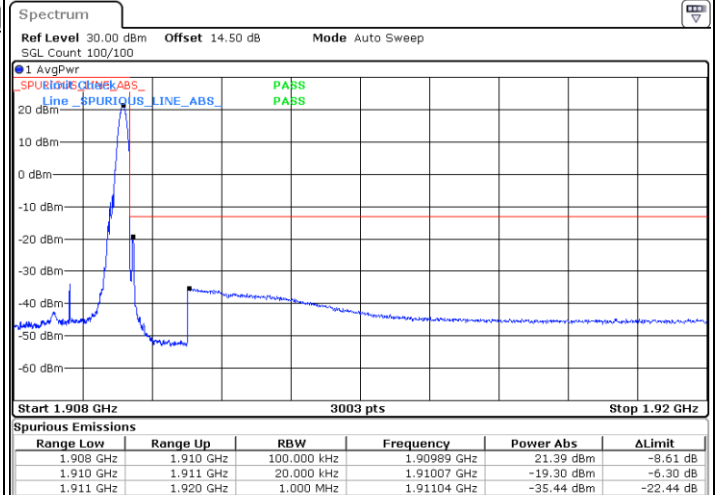
Conducted Band Edge

LTE Band 2 / 3.75K

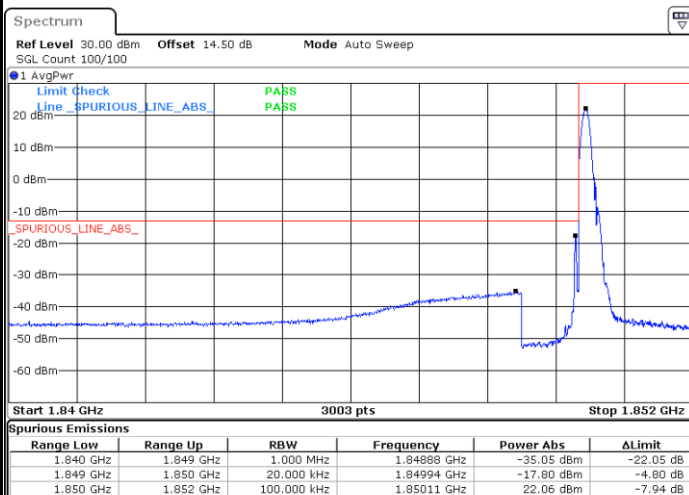
Lowest Band Edge / 1SC0 / BPSK



Highest Band Edge / 1SC47 / BPSK



Lowest Band Edge / 1SC0 / QPSK



Highest Band Edge / 1SC47 / QPSK

