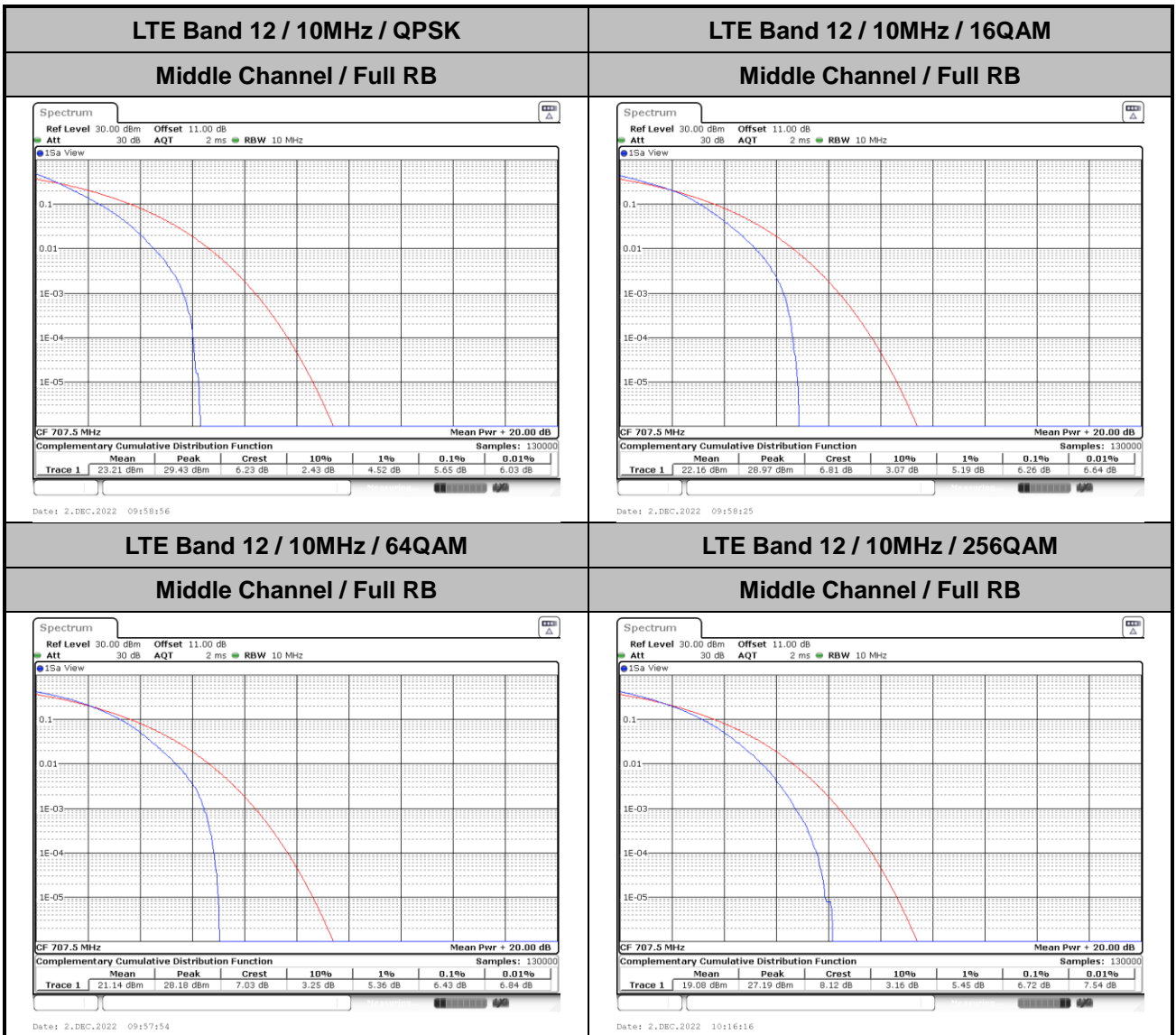




# LTE Band 12

## Peak-to-Average Ratio

Mode	LTE Band 12 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.65	6.26	6.43	6.72	PASS





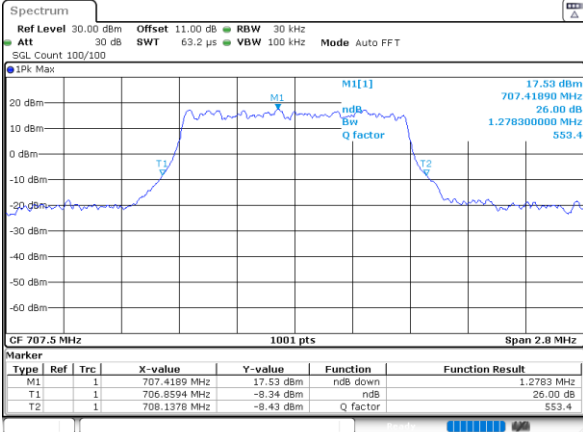
**26dB Bandwidth**

Mode	LTE Band 12 : 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	1.28	1.31	3.21	3.07	5.20	5.20	9.97	10.01	-	-	-	-
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	1.30	1.28	3.15	3.12	5.08	5.11	10.11	9.99	-	-	-	-



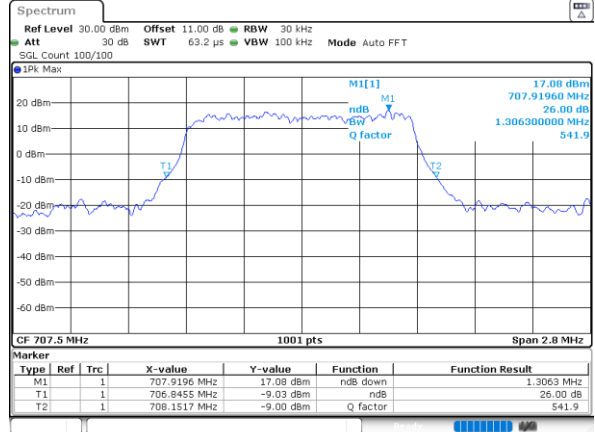
LTE Band 12

Middle Channel / 1.4MHz / QPSK



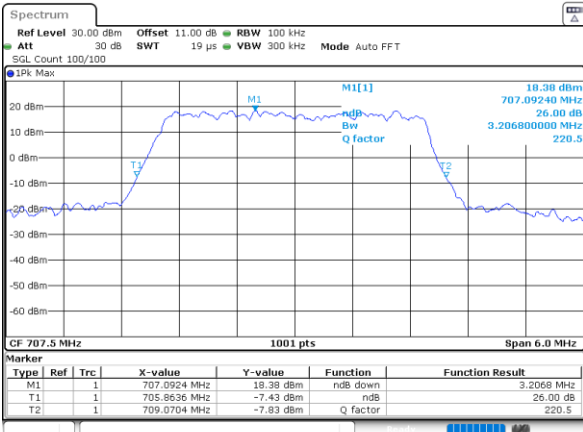
Date: 2.DEC.2022 09:11:00

Middle Channel / 1.4MHz / 16QAM



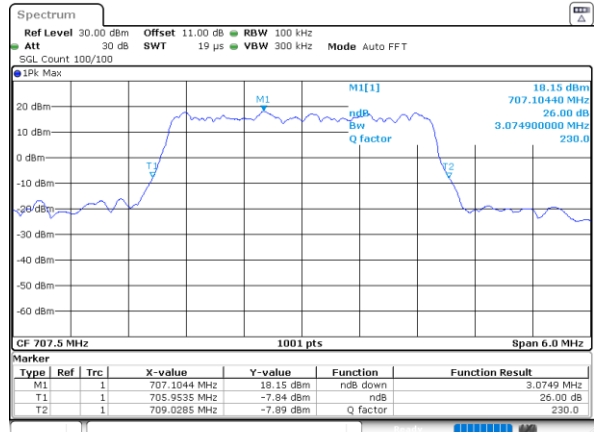
Date: 2.DEC.2022 09:15:29

Middle Channel / 3MHz / QPSK



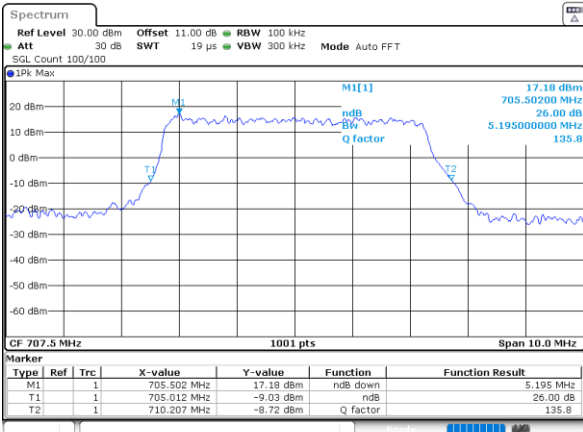
Date: 2.DEC.2022 09:11:52

Middle Channel / 3MHz / 16QAM



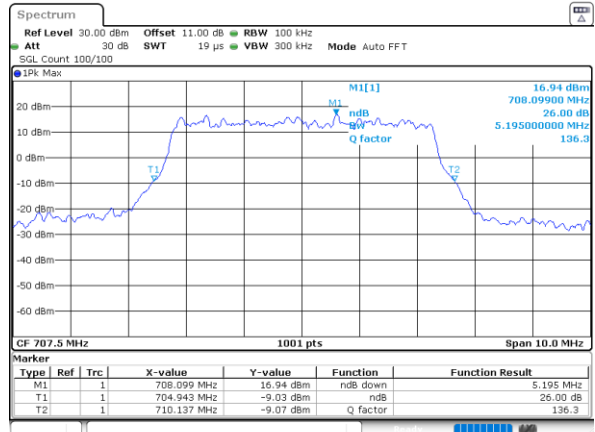
Date: 2.DEC.2022 09:12:21

Middle Channel / 5MHz / QPSK



Date: 2.DEC.2022 09:14:44

Middle Channel / 5MHz / 16QAM

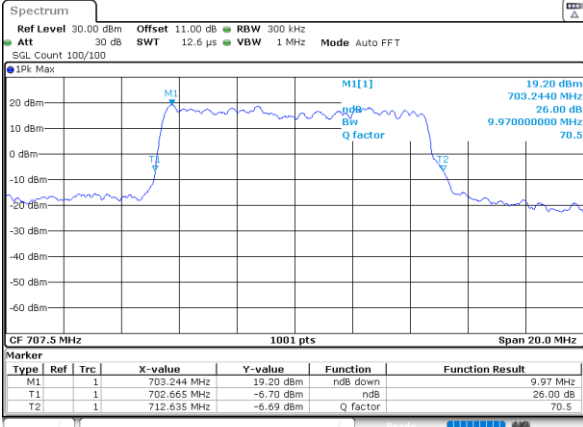


Date: 2.DEC.2022 09:15:13



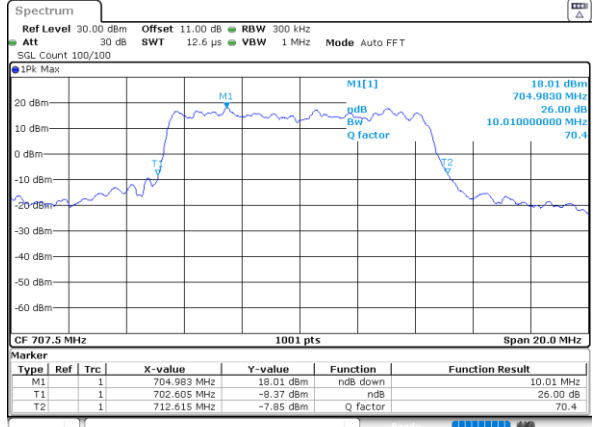
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 2.DEC.2022 09:52:13

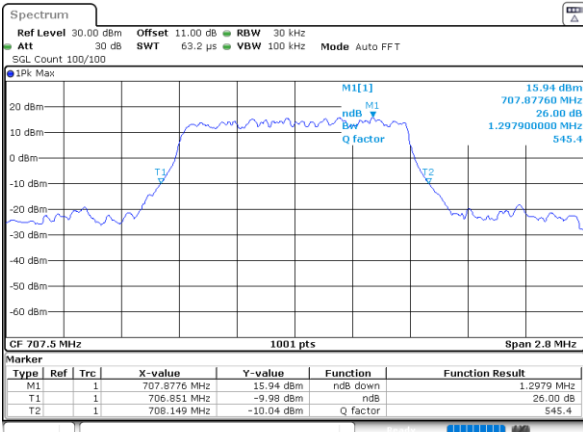
Middle Channel / 10MHz / 16QAM



Date: 2.DEC.2022 09:52:42

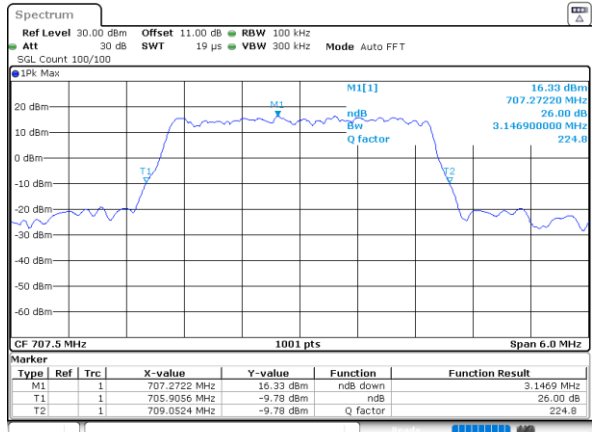
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



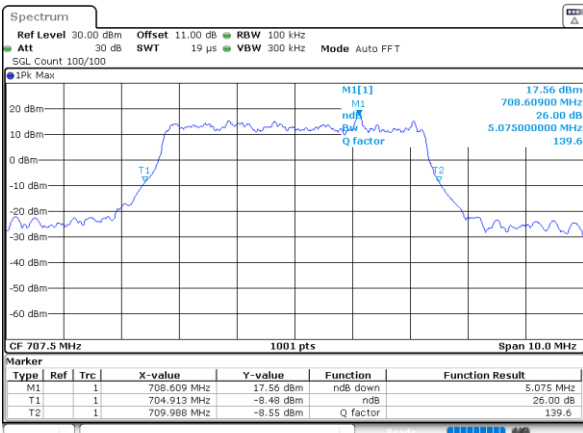
Date: 2.DEC.2022 09:24:51

Middle Channel / 3MHz / 64QAM



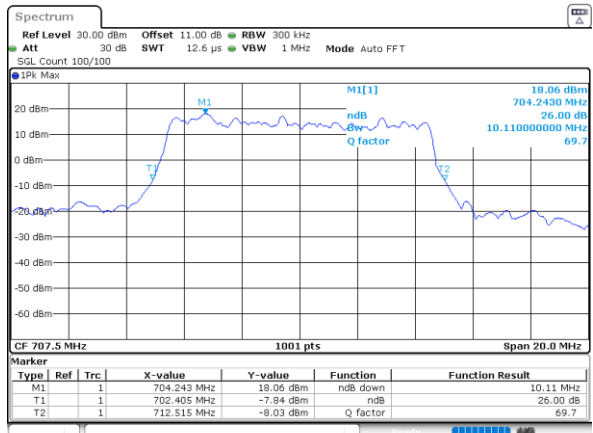
Date: 2.DEC.2022 09:36:03

Middle Channel / 5MHz / 64QAM



Date: 2.DEC.2022 09:40:34

Middle Channel / 10MHz / 64QAM

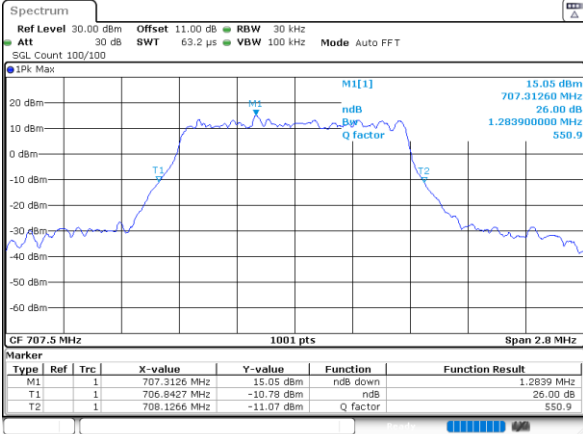


Date: 2.DEC.2022 09:56:25



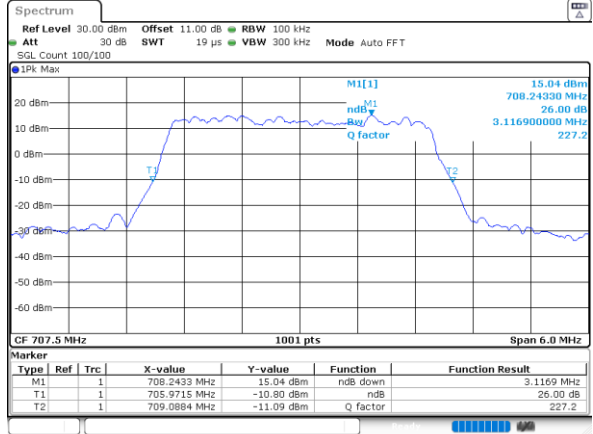
LTE Band 12

Middle Channel / 1.4MHz / 256QAM



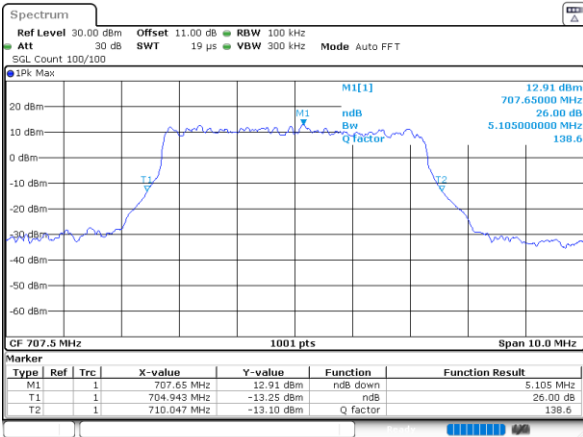
Date: 2,DEC,2022 10:05:24

Middle Channel / 3MHz / 256QAM



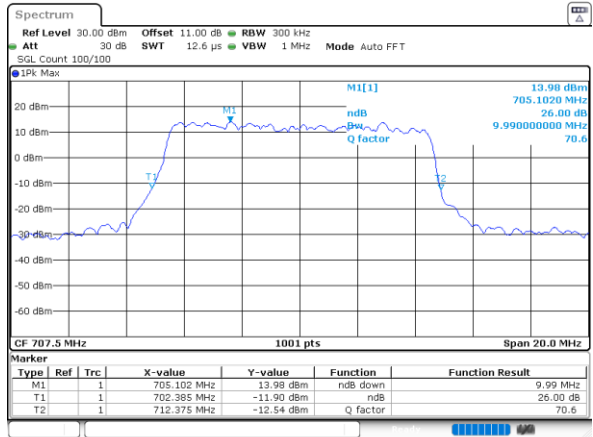
Date: 2,DEC,2022 10:09:11

Middle Channel / 5MHz / 256QAM



Date: 2,DEC,2022 10:11:58

Middle Channel / 10MHz / 256QAM



Date: 2,DEC,2022 10:14:46



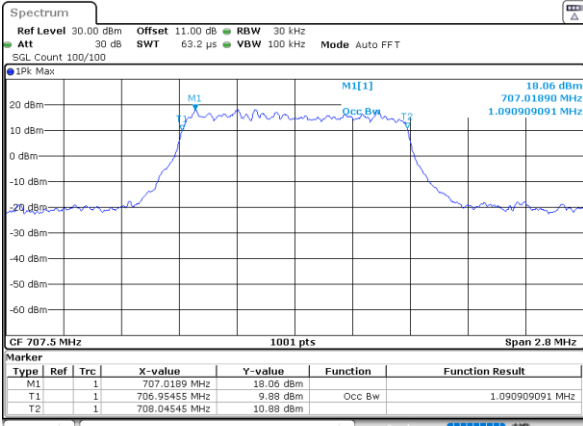
**Occupied Bandwidth**

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	1.09	1.10	2.73	2.73	4.49	4.50	9.05	9.07	-	-	-	-
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	1.10	1.10	2.73	2.73	4.55	4.51	9.05	9.03	-	-	-	-



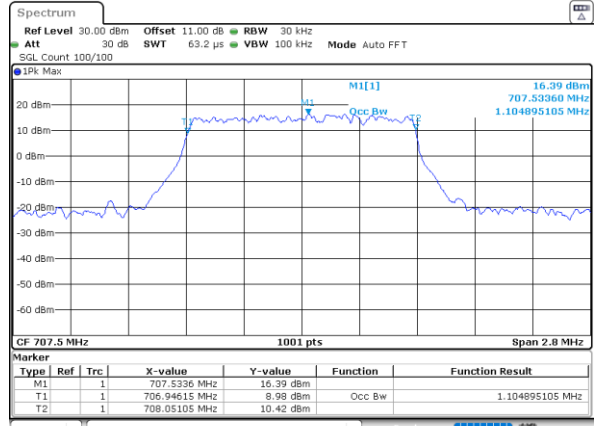
LTE Band 12

Middle Channel / 1.4MHz / QPSK



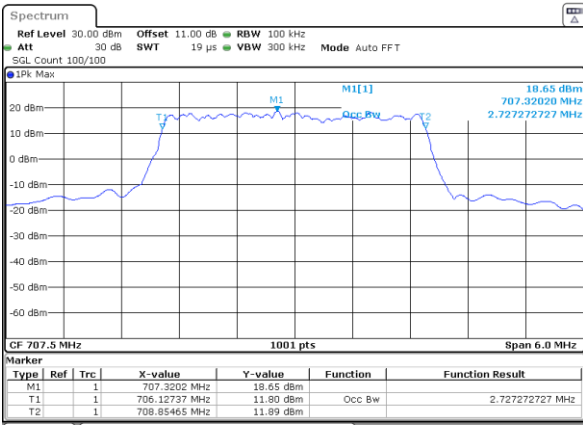
Date: 2.DEC.2022 09:14:46

Middle Channel / 1.4MHz / 16QAM



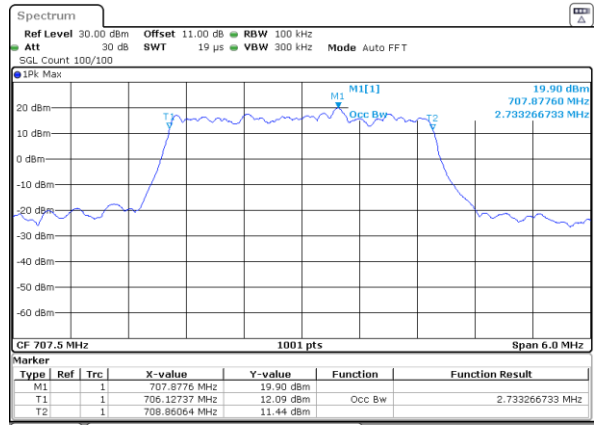
Date: 2.DEC.2022 09:14:17

Middle Channel / 3MHz / QPSK



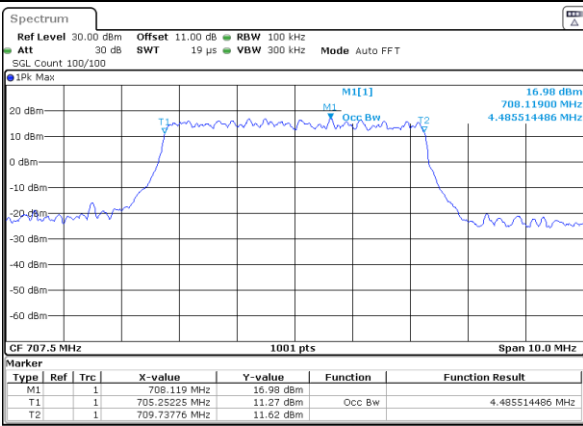
Date: 2.DEC.2022 09:31:38

Middle Channel / 3MHz / 16QAM



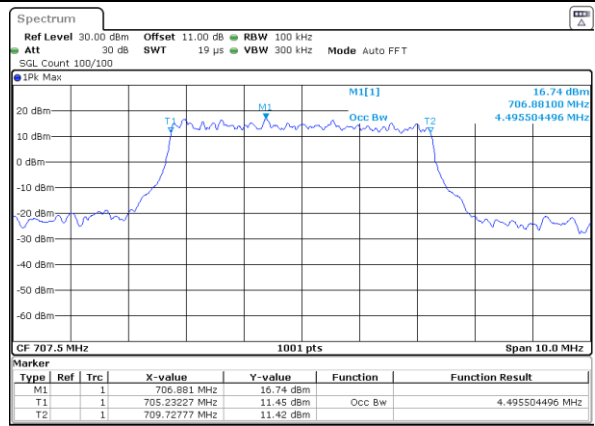
Date: 2.DEC.2022 09:31:09

Middle Channel / 5MHz / QPSK



Date: 2.DEC.2022 09:44:30

Middle Channel / 5MHz / 16QAM

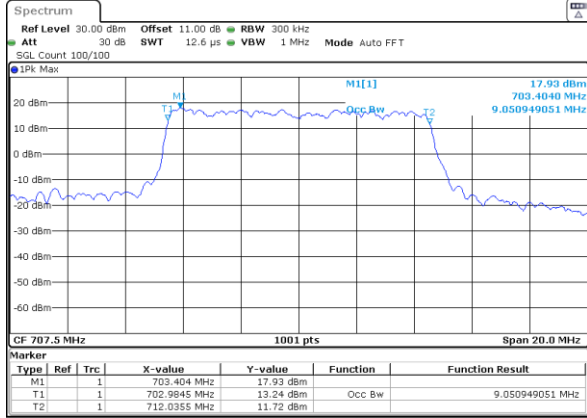


Date: 2.DEC.2022 09:44:01



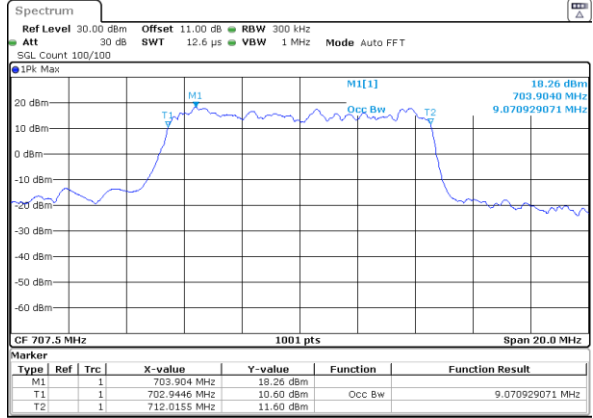
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 2.DEC.2022 09:51:59

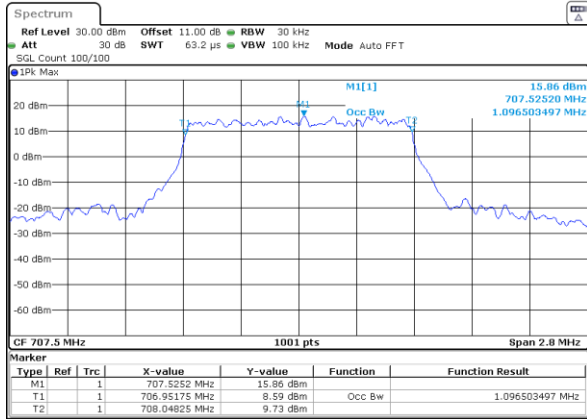
Middle Channel / 10MHz / 16QAM



Date: 2.DEC.2022 09:51:30

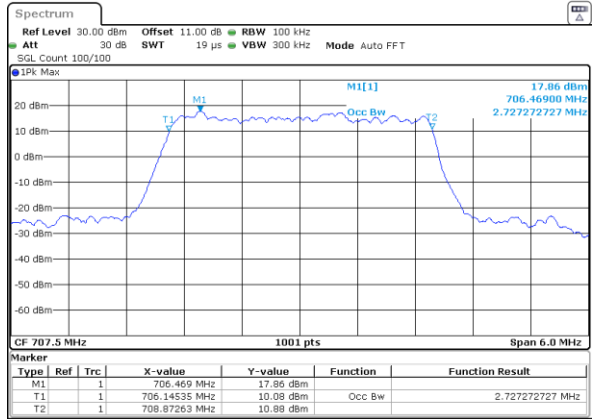
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



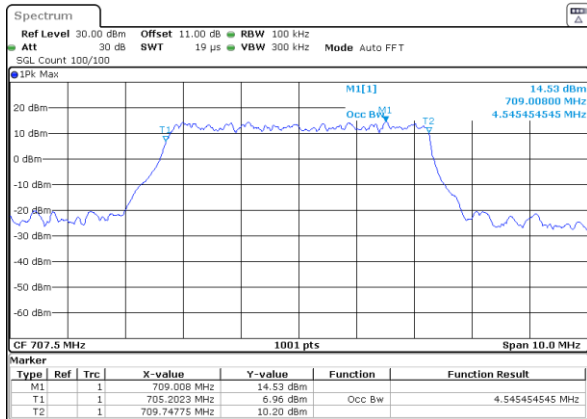
Date: 2.DEC.2022 09:24:37

Middle Channel / 3MHz / 64QAM



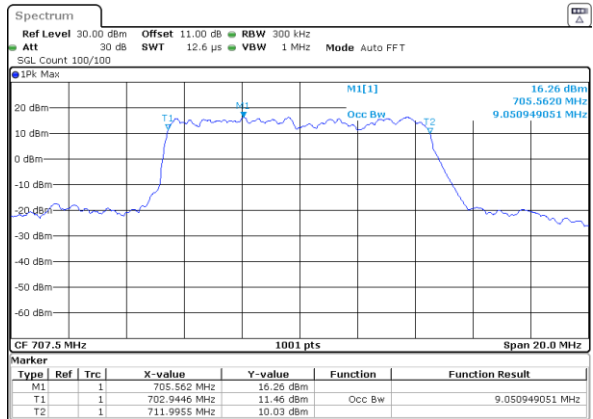
Date: 2.DEC.2022 09:35:49

Middle Channel / 5MHz / 64QAM



Date: 2.DEC.2022 09:40:20

Middle Channel / 10MHz / 64QAM



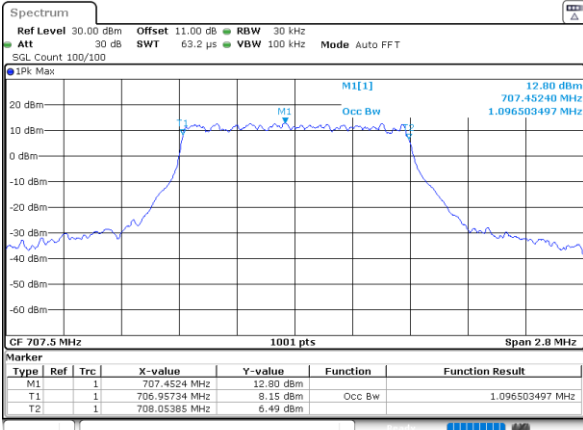
Date: 2.DEC.2022 09:56:11





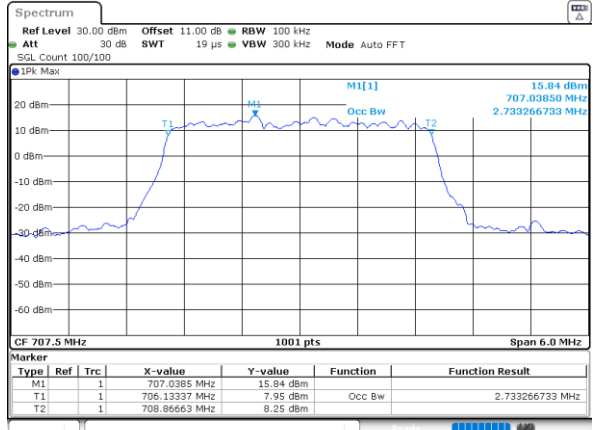
LTE Band 12

Middle Channel / 1.4MHz / 256QAM



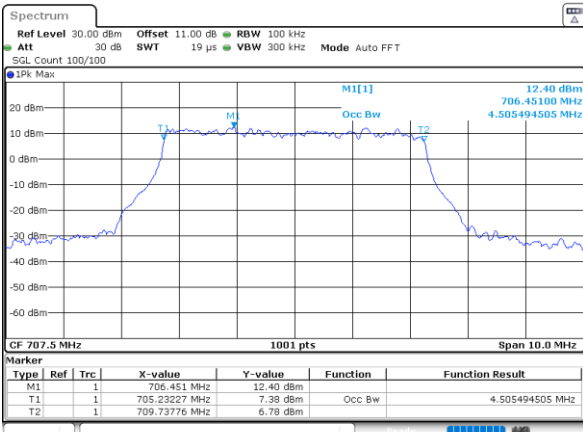
Date: 2,DEC,2022 10:05:10

Middle Channel / 3MHz / 256QAM



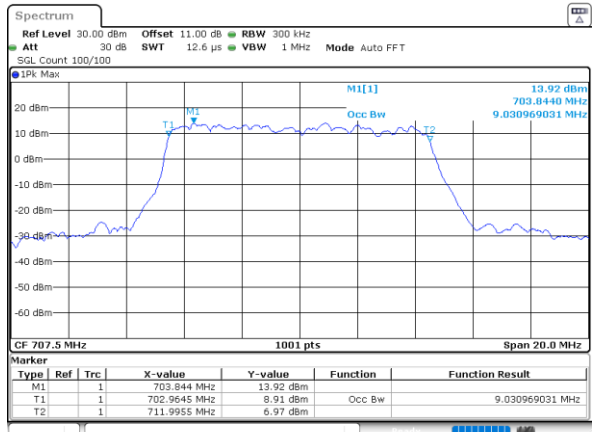
Date: 2,DEC,2022 10:08:58

Middle Channel / 5MHz / 256QAM



Date: 2,DEC,2022 10:11:44

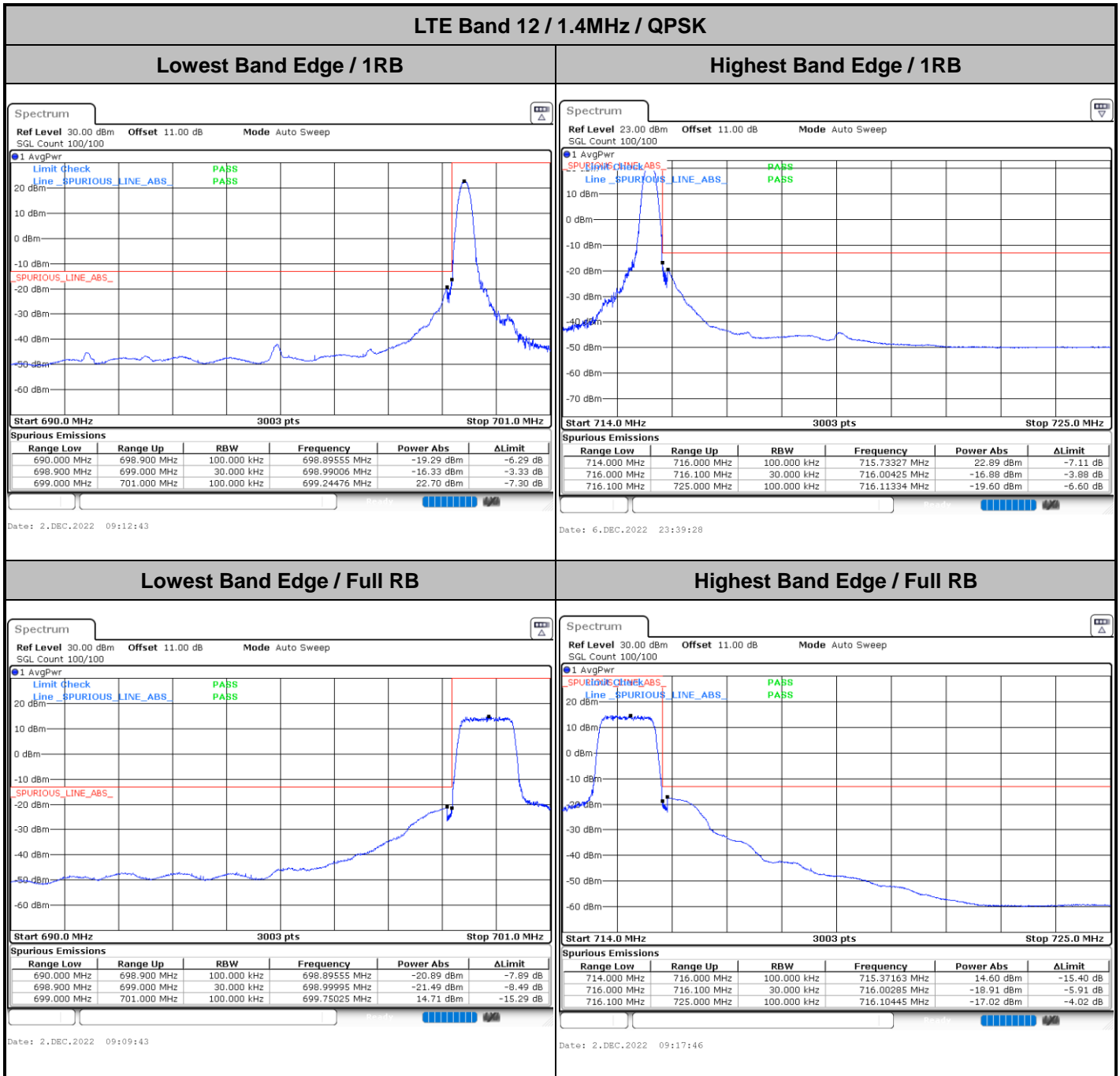
Middle Channel / 10MHz / 256QAM



Date: 2,DEC,2022 10:14:32



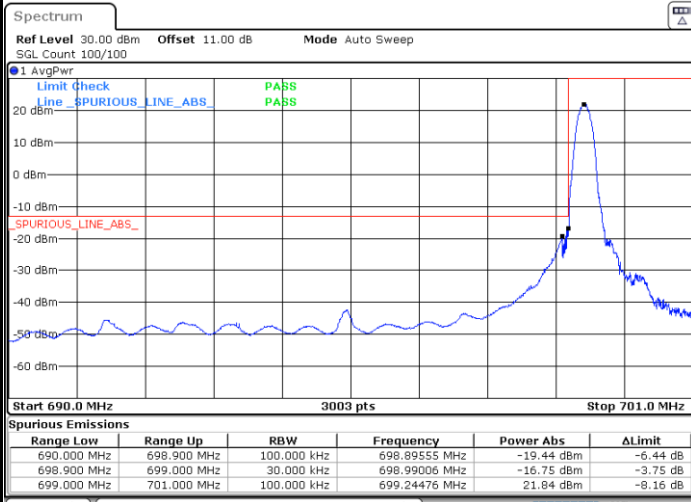
# Conducted Band Edge





LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



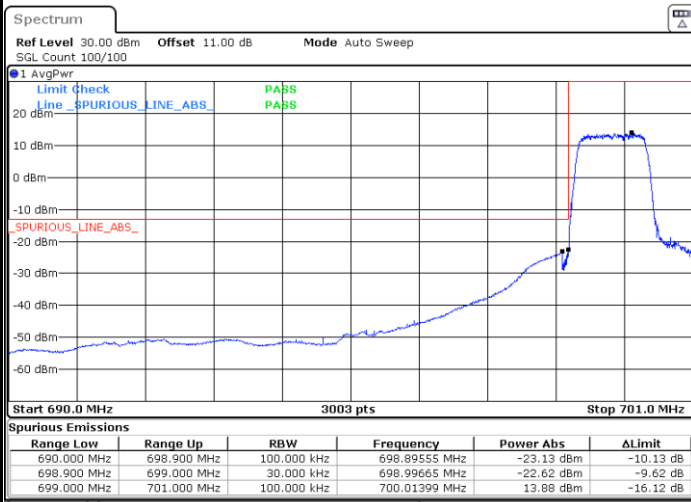
Date: 2.DEC.2022 09:11:43

Highest Band Edge / 1 RB



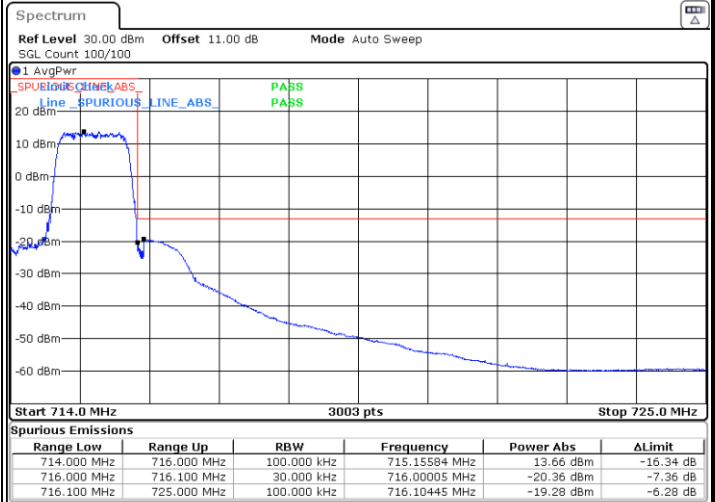
Date: 2.DEC.2022 09:19:46

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:10:43

Highest Band Edge / Full RB

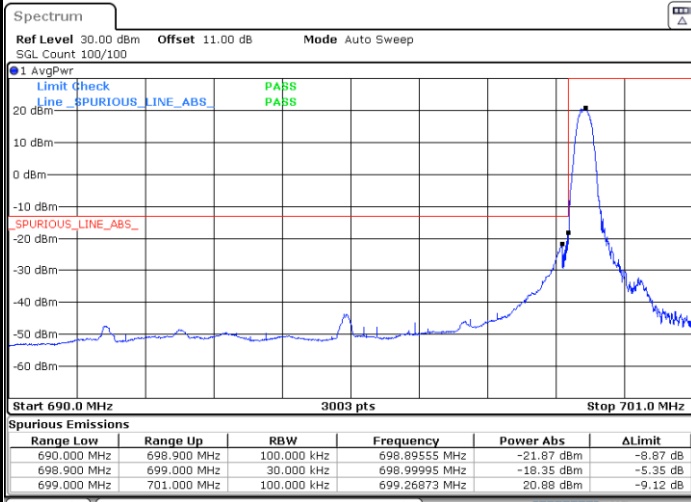


Date: 2.DEC.2022 09:18:46



LTE Band 12 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB



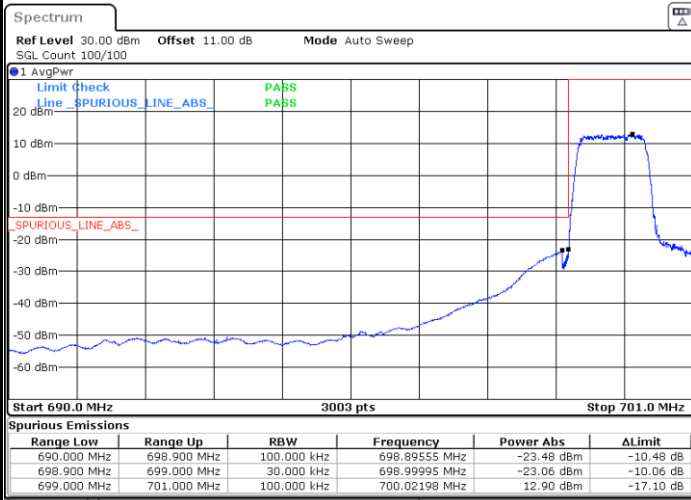
Date: 2.DEC.2022 09:24:06

Highest Band Edge / 1 RB



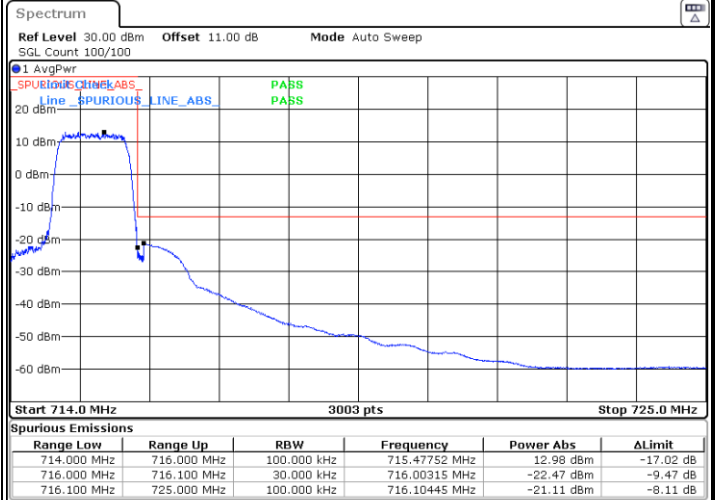
Date: 2.DEC.2022 09:26:49

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:23:07

Highest Band Edge / Full RB

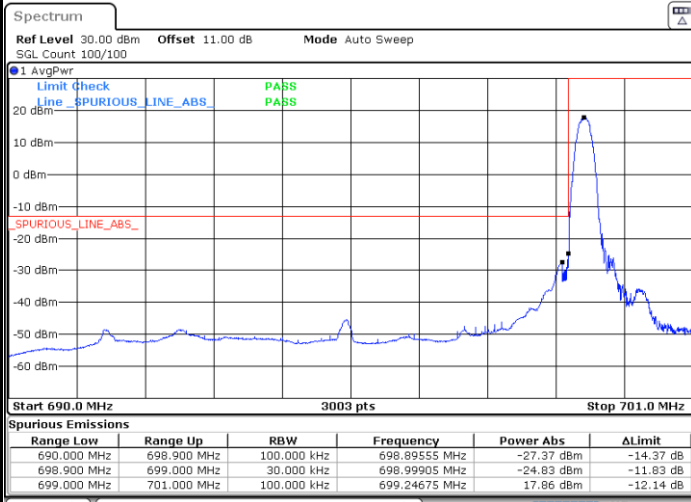


Date: 2.DEC.2022 09:25:49



LTE Band 12 / 1.4MHz / 256QAM

Lowest Band Edge / 1 RB



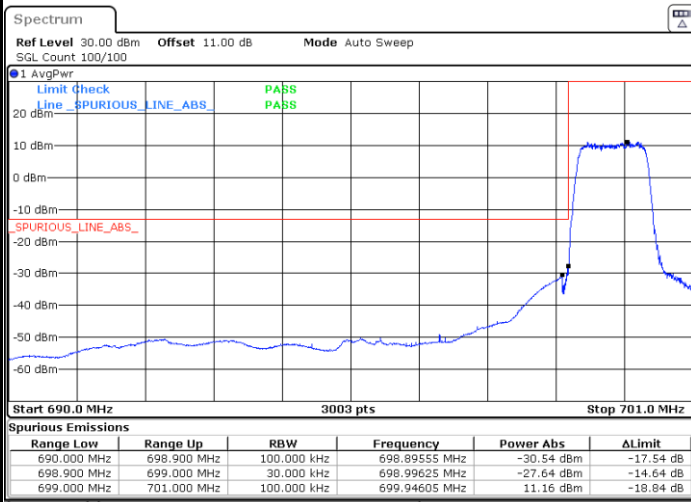
Date: 2.DEC.2022 10:04:40

Highest Band Edge / 1 RB



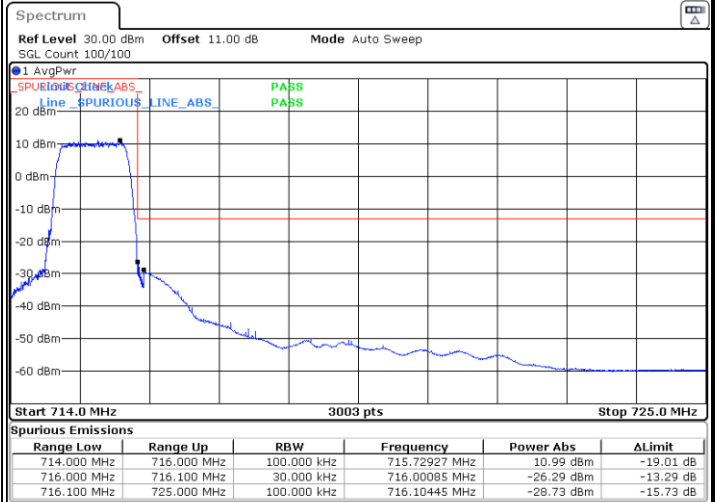
Date: 2.DEC.2022 10:07:22

Lowest Band Edge / Full RB



Date: 2.DEC.2022 10:01:50

Highest Band Edge / Full RB

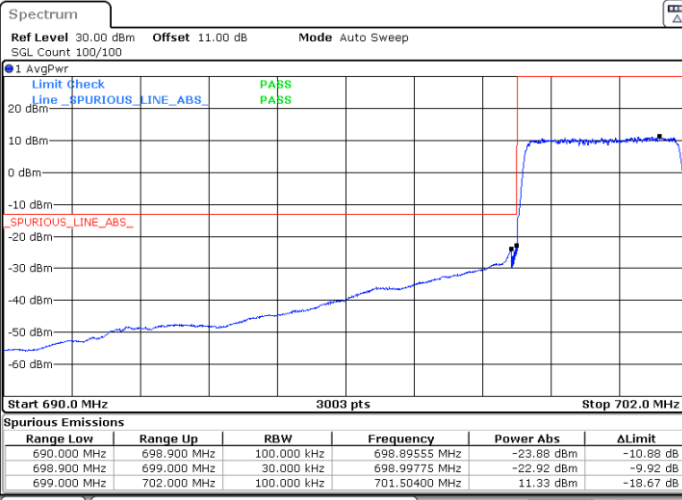


Date: 2.DEC.2022 10:06:22



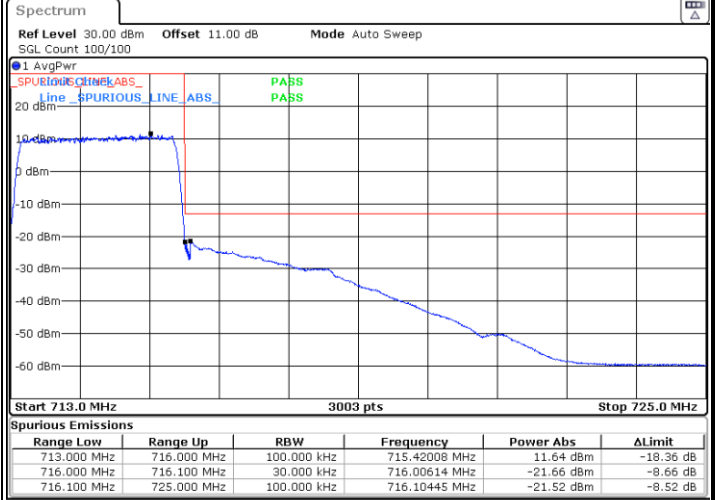
LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:29:39

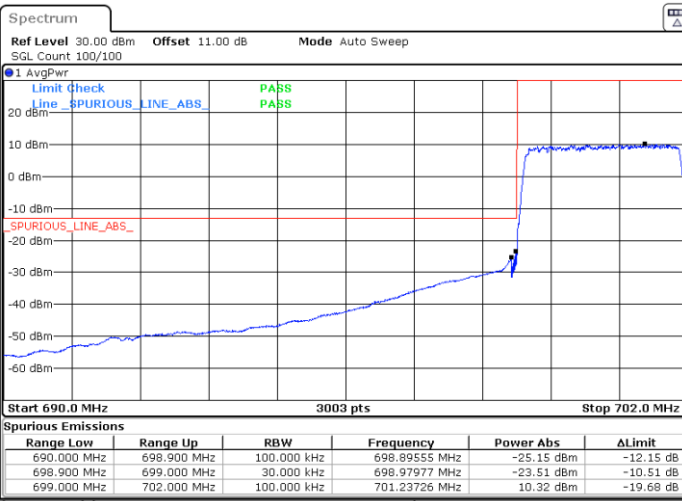
Highest Band Edge / Full RB



Date: 2.DEC.2022 09:33:19

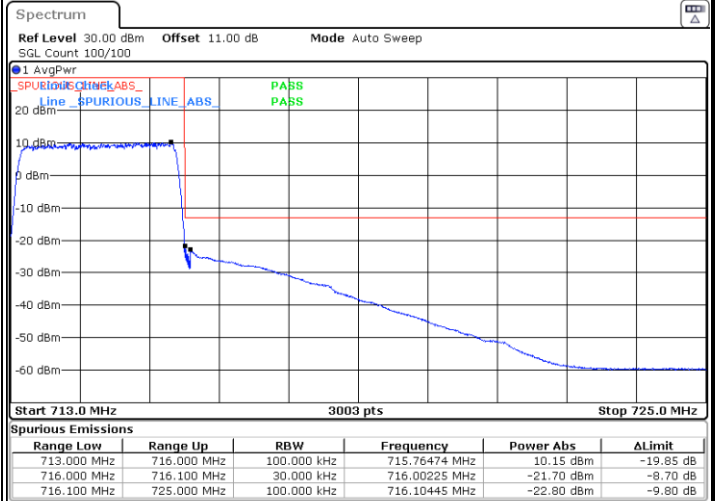
LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:30:38

Highest Band Edge / Full RB

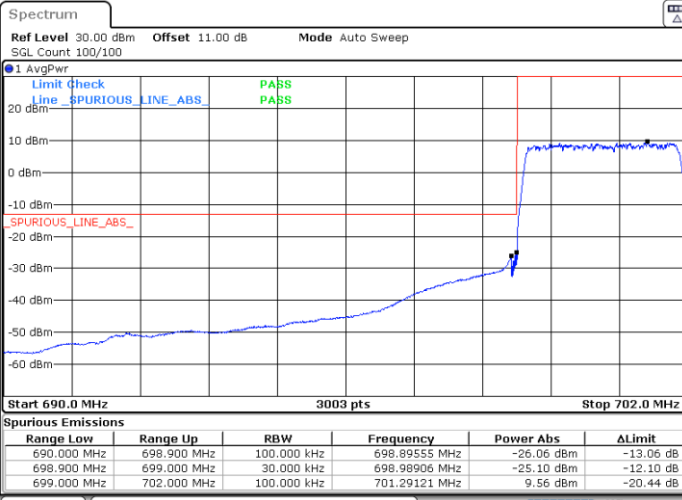


Date: 2.DEC.2022 09:34:19



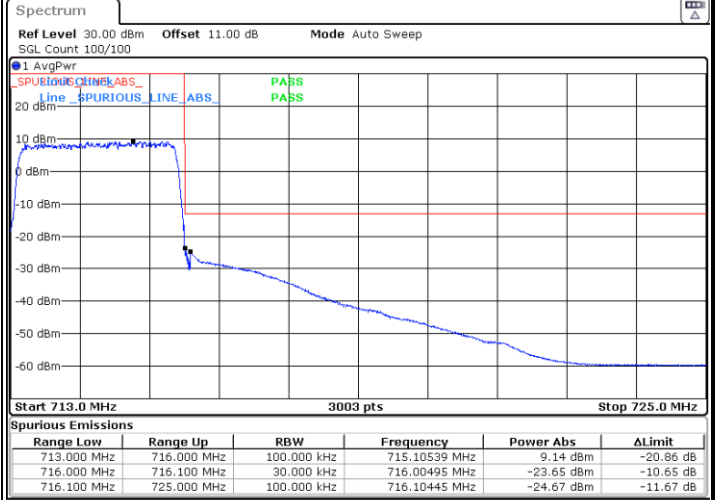
LTE Band 12 / 3MHz / 64QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:35:18

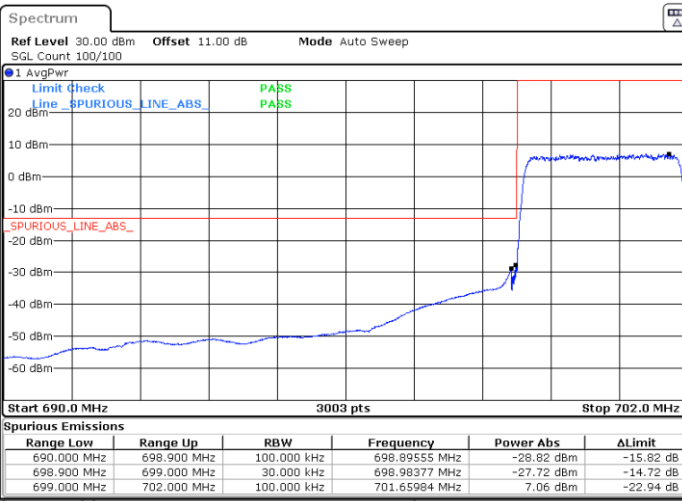
Highest Band Edge / Full RB



Date: 2.DEC.2022 09:37:01

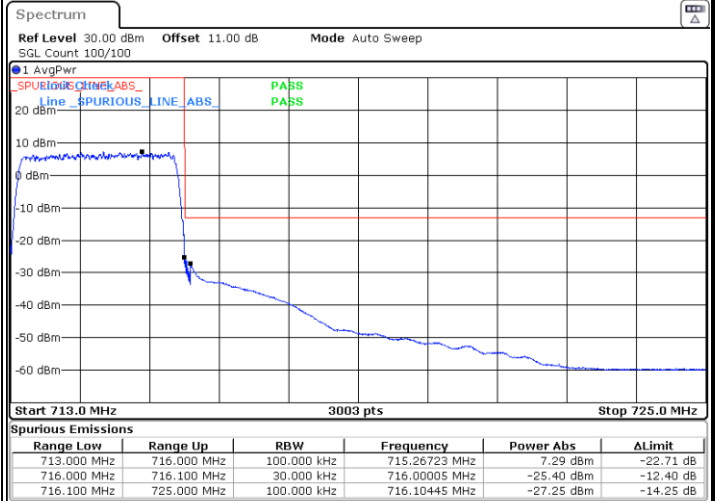
LTE Band 12 / 3MHz / 256QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 10:08:27

Highest Band Edge / Full RB

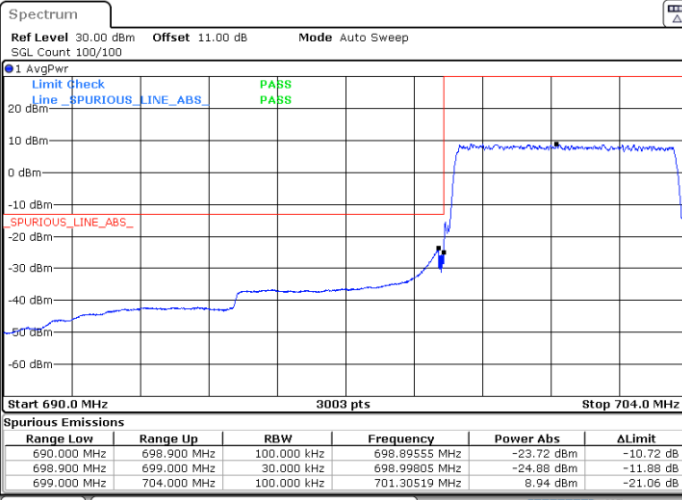


Date: 2.DEC.2022 10:10:10



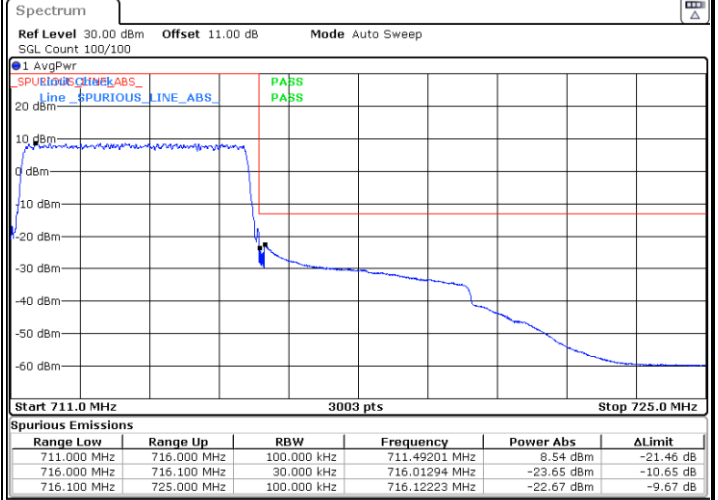
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:42:32

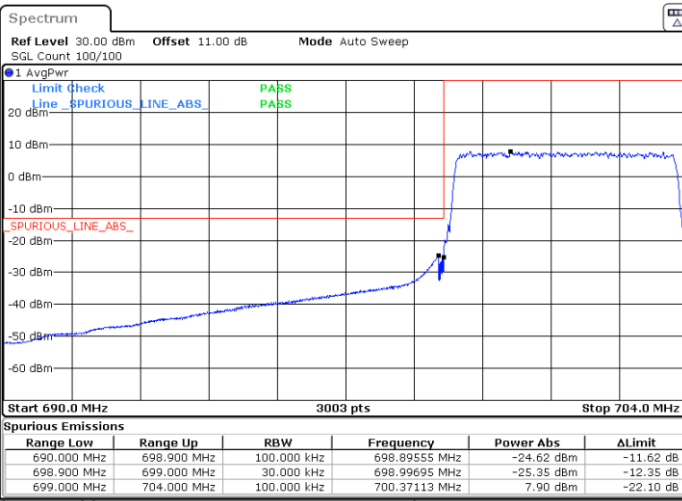
Highest Band Edge / Full RB



Date: 2.DEC.2022 09:46:11

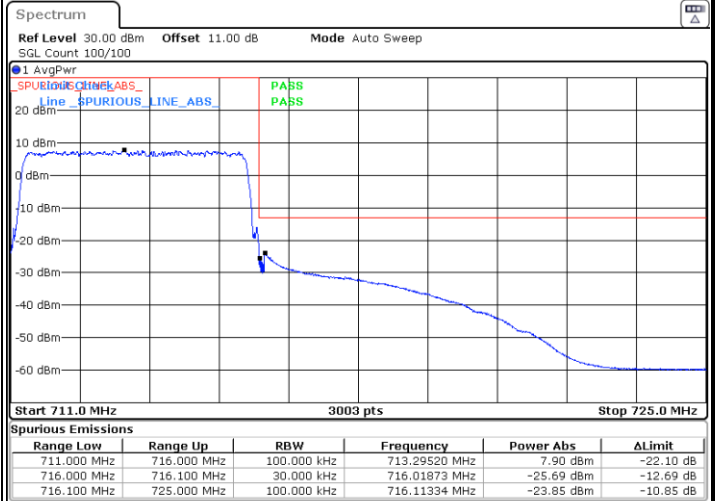
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:43:31

Highest Band Edge / Full RB



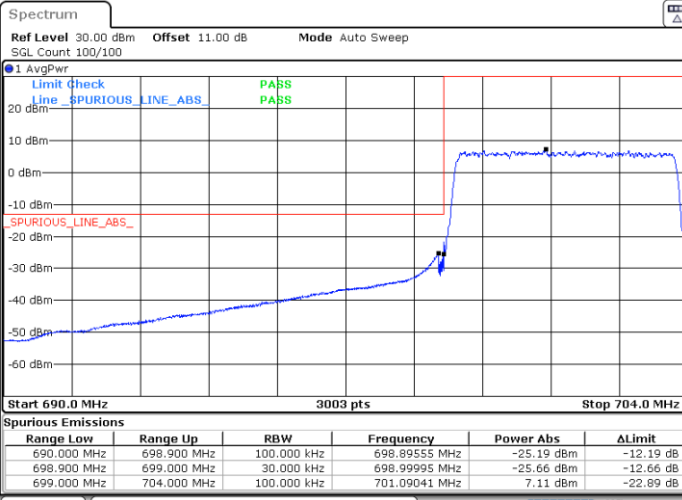
Date: 2.DEC.2022 09:47:11





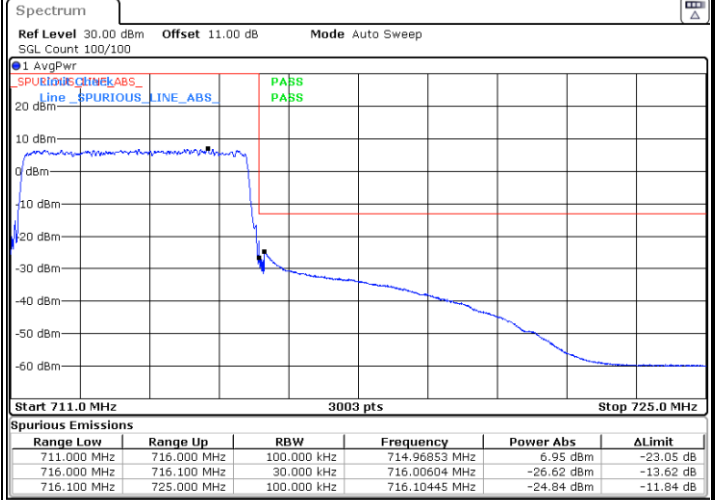
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:39:50

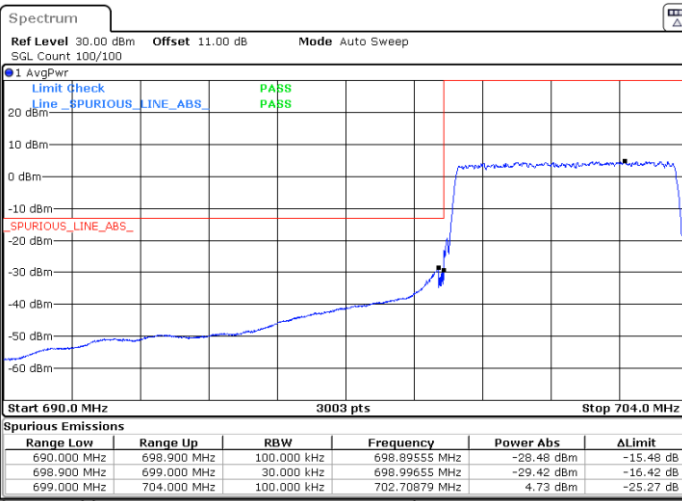
Highest Band Edge / Full RB



Date: 2.DEC.2022 09:41:32

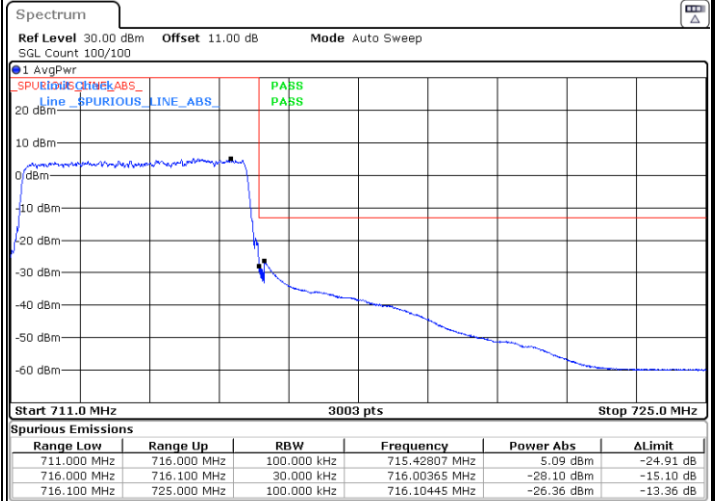
LTE Band 12 / 5MHz / 256QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 10:11:14

Highest Band Edge / Full RB

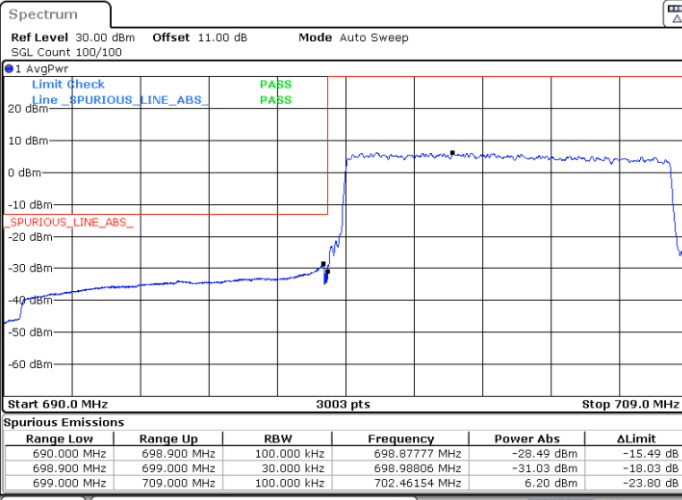


Date: 2.DEC.2022 10:12:57



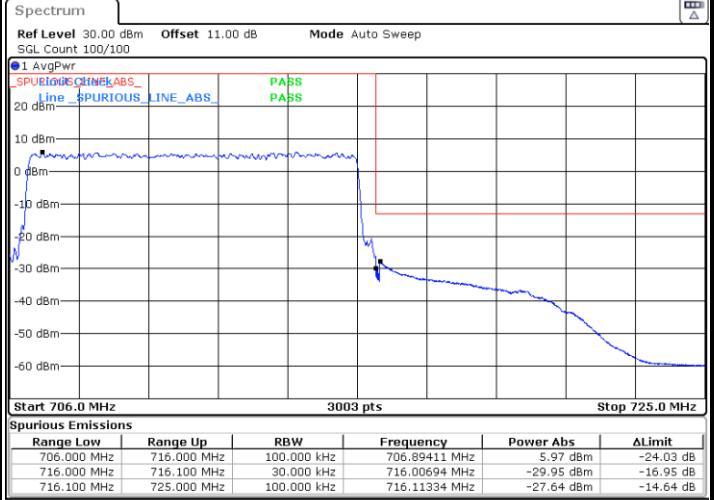
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:50:01

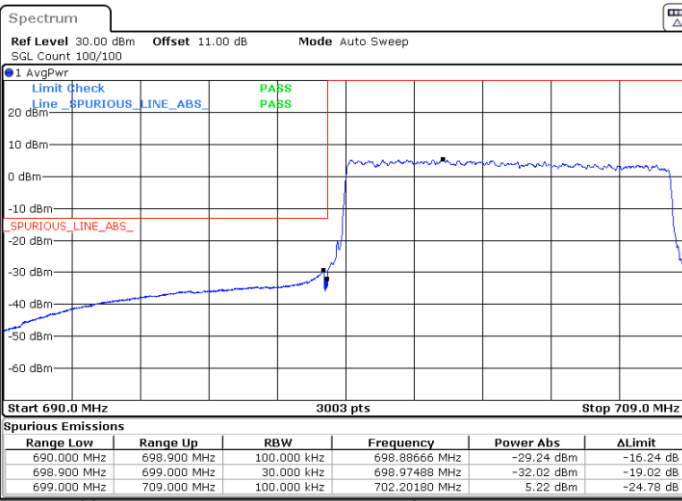
Highest Band Edge / Full RB



Date: 2.DEC.2022 09:53:41

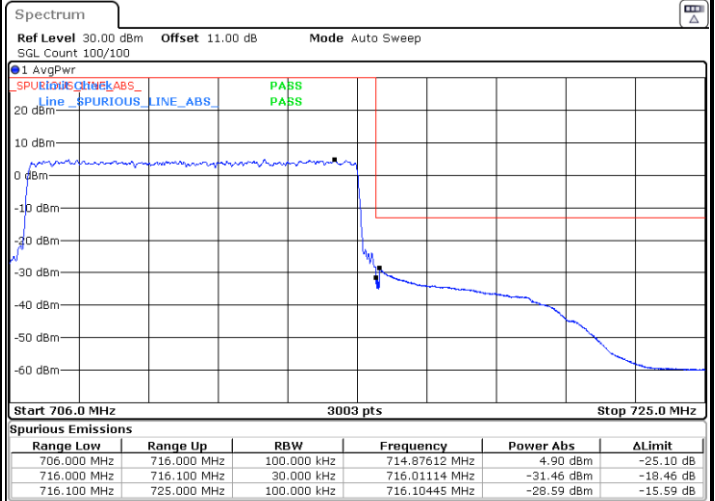
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:51:00

Highest Band Edge / Full RB

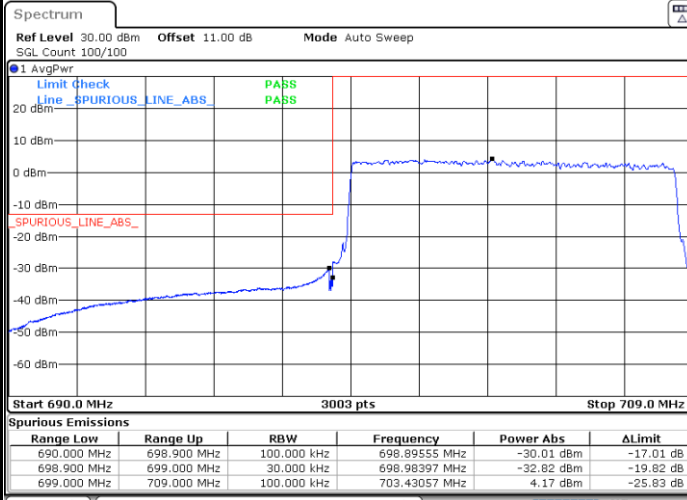


Date: 2.DEC.2022 09:54:41



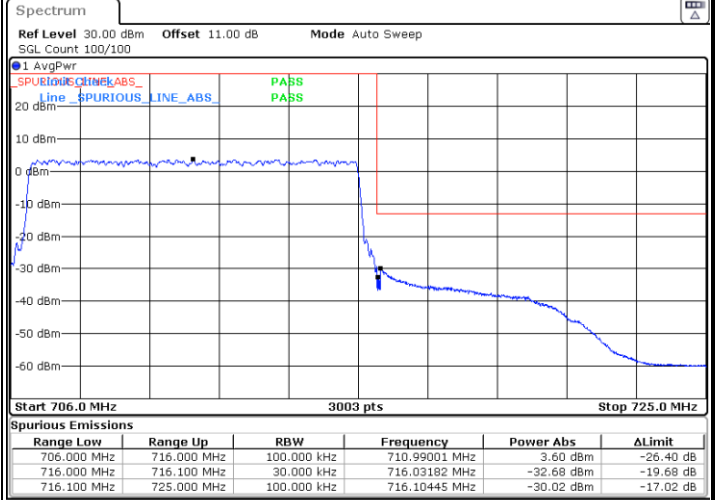
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 09:55:41

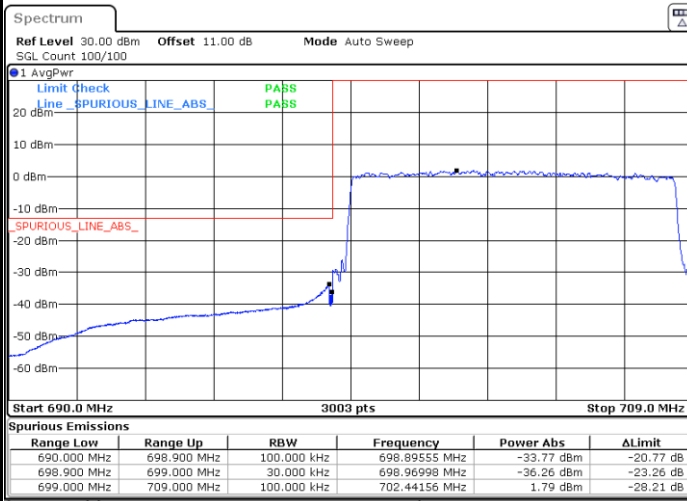
Highest Band Edge / Full RB



Date: 2.DEC.2022 09:57:23

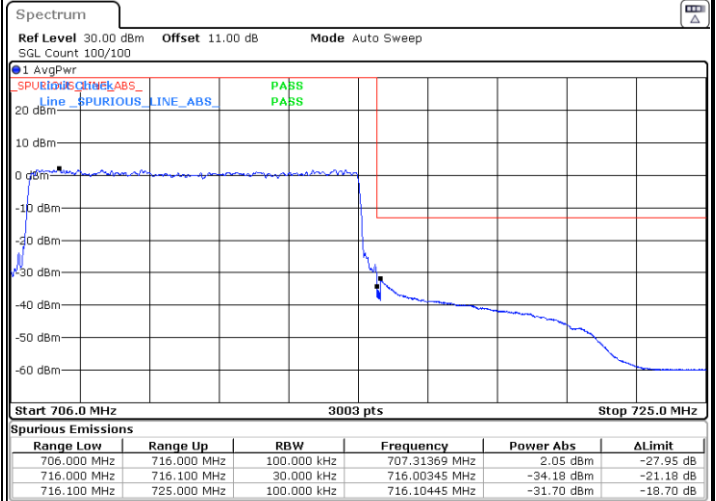
LTE Band 12 / 10MHz / 256QAM

Lowest Band Edge / Full RB



Date: 2.DEC.2022 10:14:02

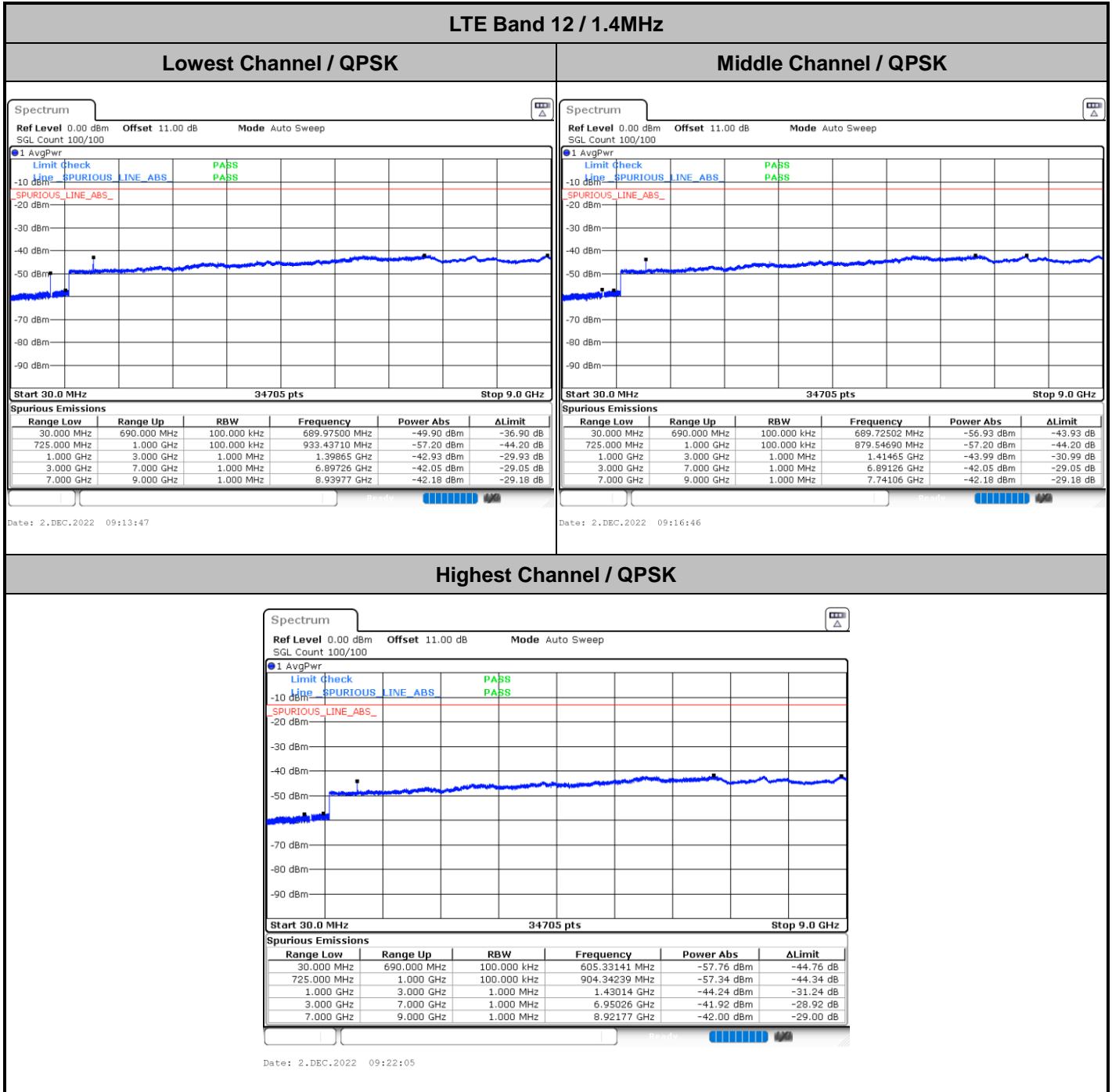
Highest Band Edge / Full RB



Date: 2.DEC.2022 10:15:44



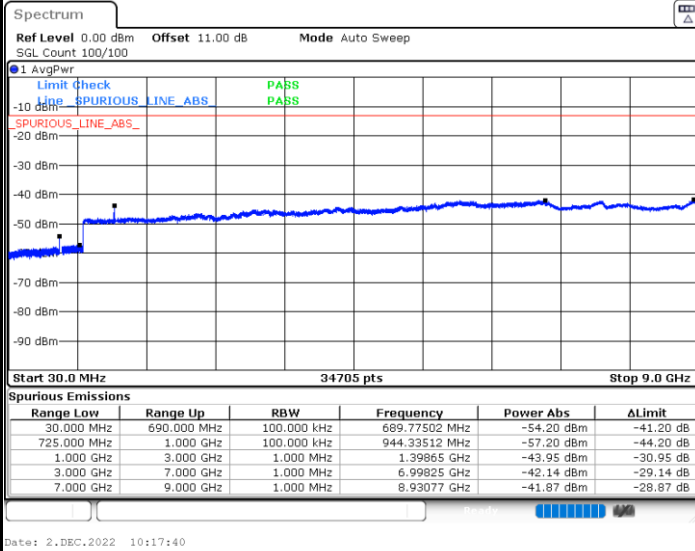
# Conducted Spurious Emission



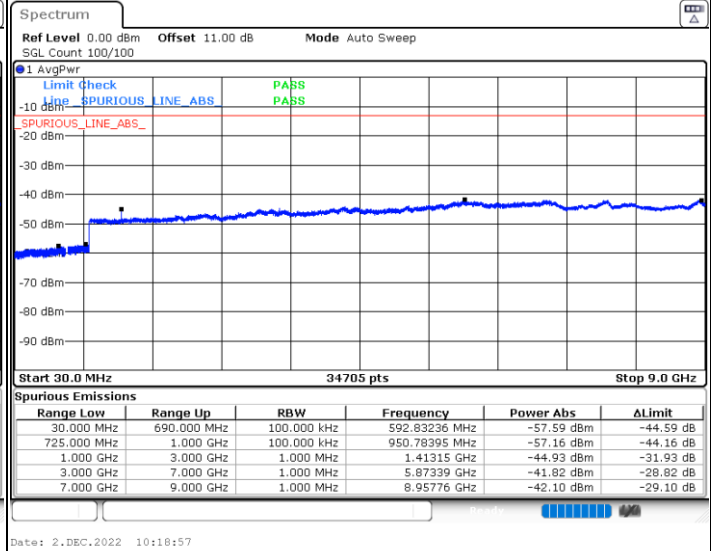


LTE Band 12 / 3MHz

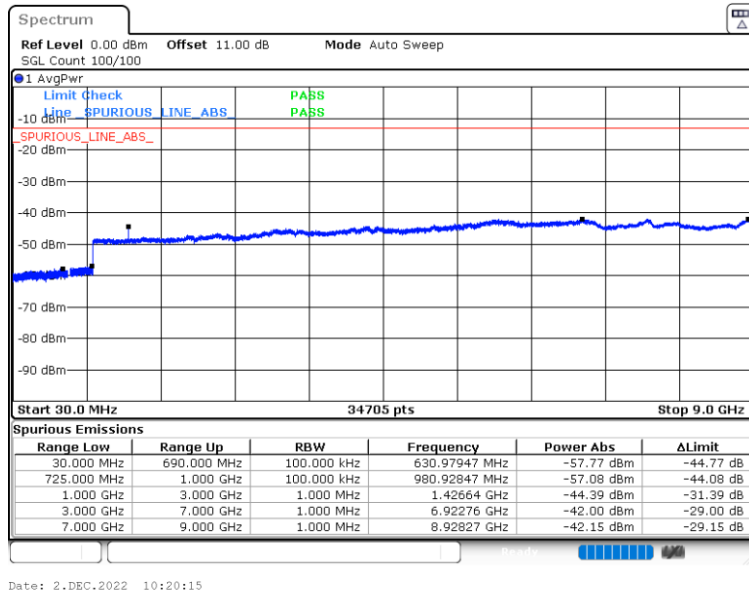
Lowest Channel / QPSK



Middle Channel / QPSK



Highest Channel / QPSK

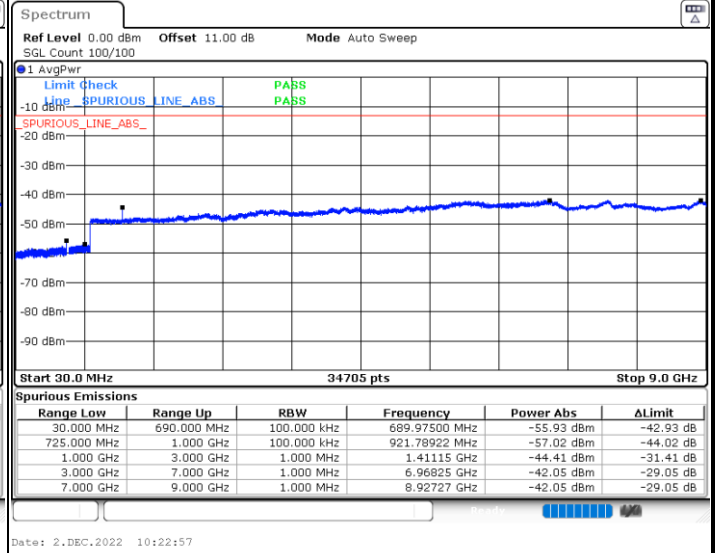
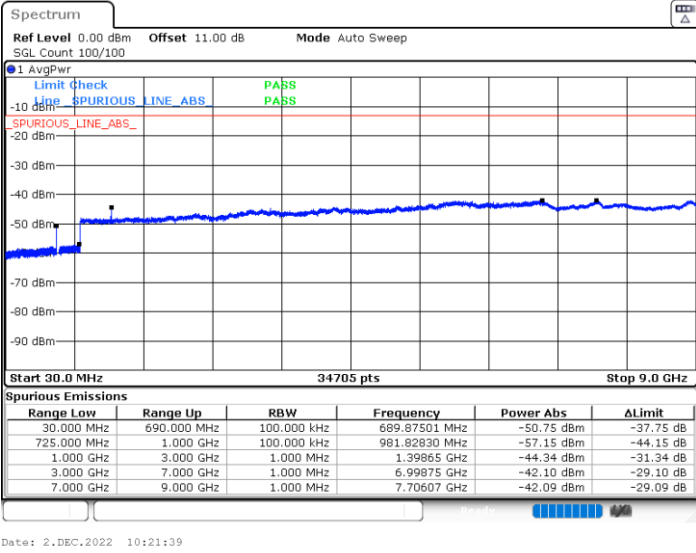




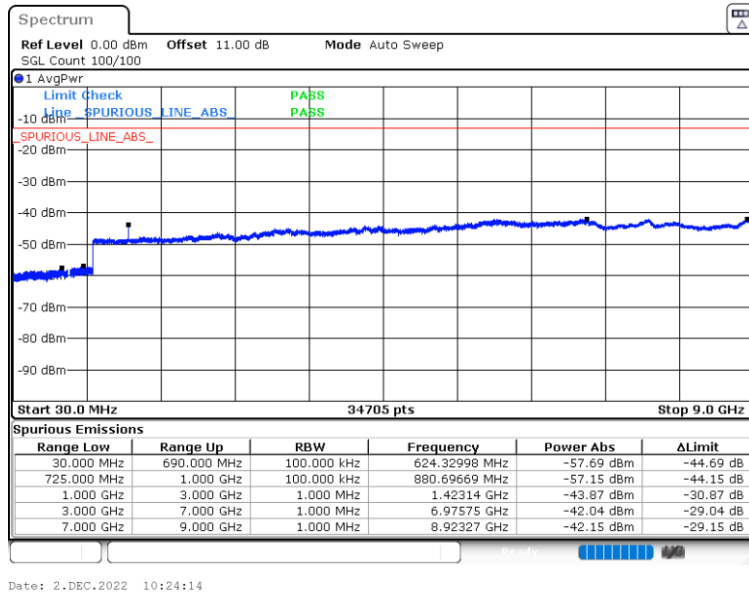
LTE Band 12 / 5MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

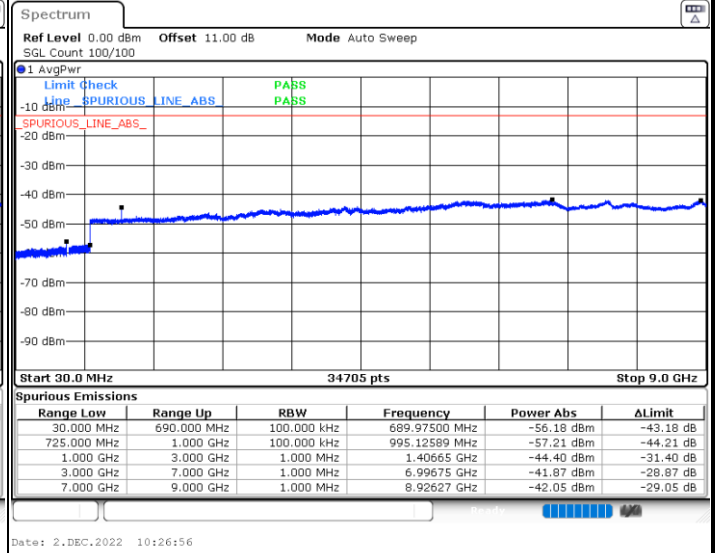
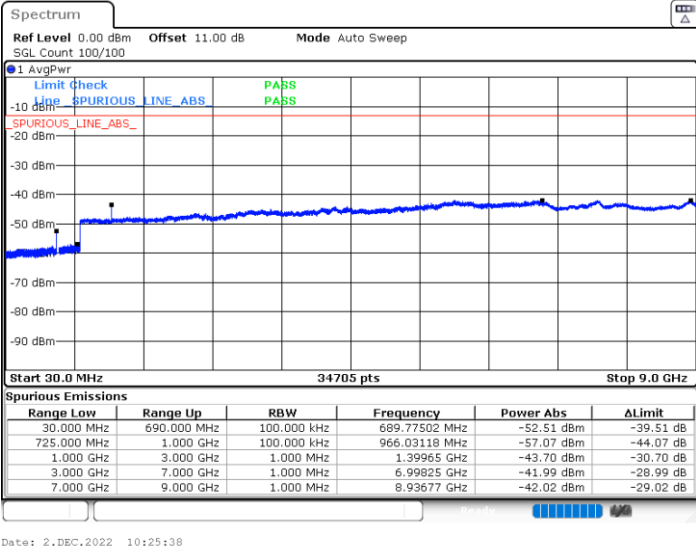




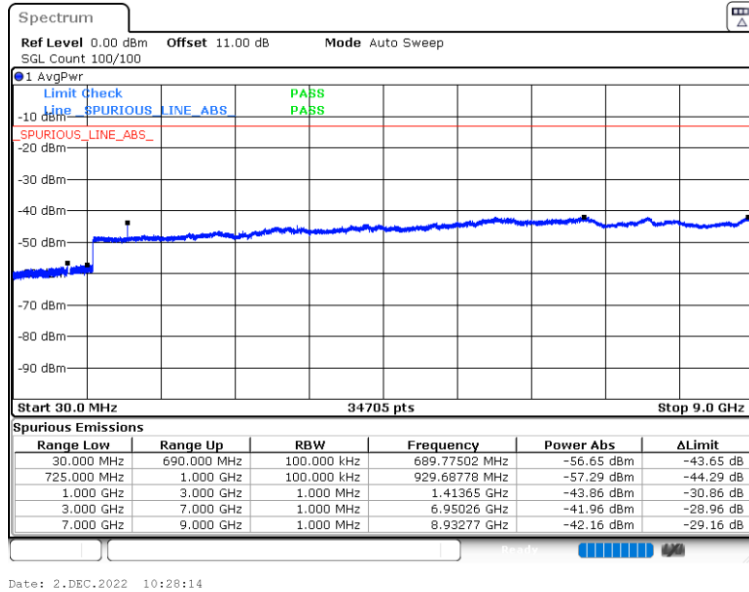
LTE Band 12 / 10MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK





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	0.0013	PASS
40	Normal Voltage	0.0158	
30	Normal Voltage	0.0013	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0131	
0	Normal Voltage	0.0008	
-10	Normal Voltage	0.0088	
-20	Normal Voltage	0.0059	
-30	Normal Voltage	0.0052	
20	Maximum Voltage	0.0093	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0110	

Note:

1. Normal Voltage = 3.88 V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

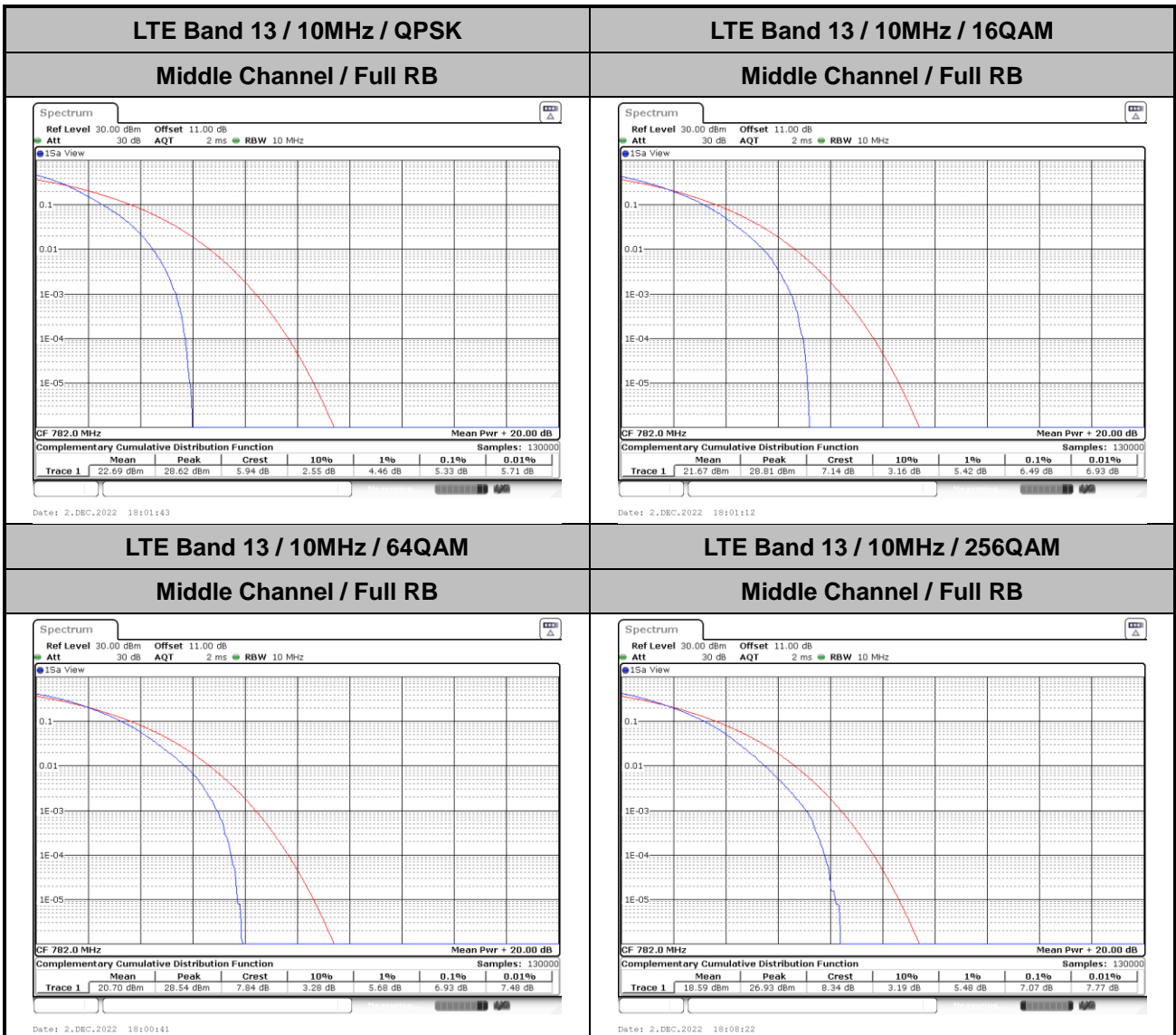




# LTE Band 13

## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.33	6.49	6.93	7.07	PASS





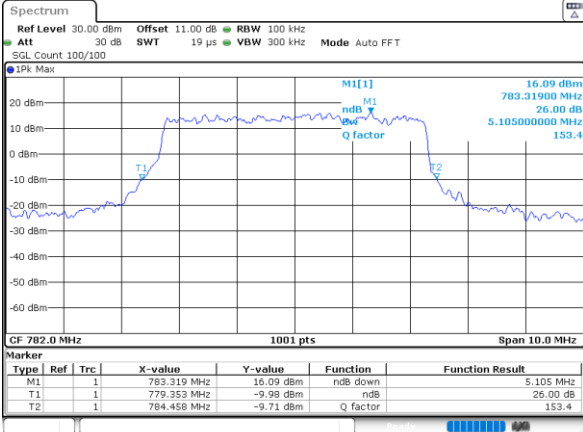
**26dB Bandwidth**

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	-	-	-	-	5.11	5.02	9.99	9.75	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	-	-	-	-	5.28	5.08	10.39	9.81	-	-	-	-



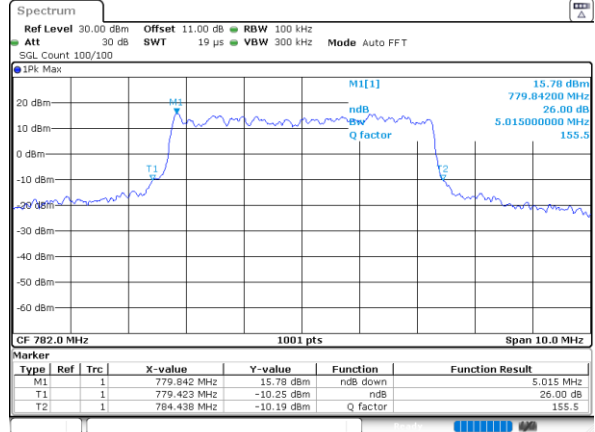
LTE Band 13

Middle Channel / 5MHz / QPSK



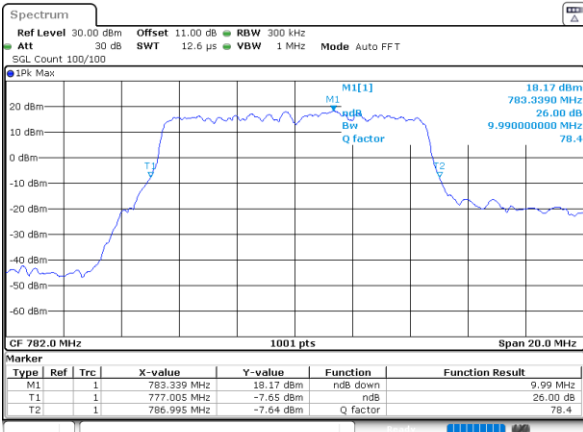
Date: 2,DEC,2022 17:44:13

Middle Channel / 5MHz / 16QAM



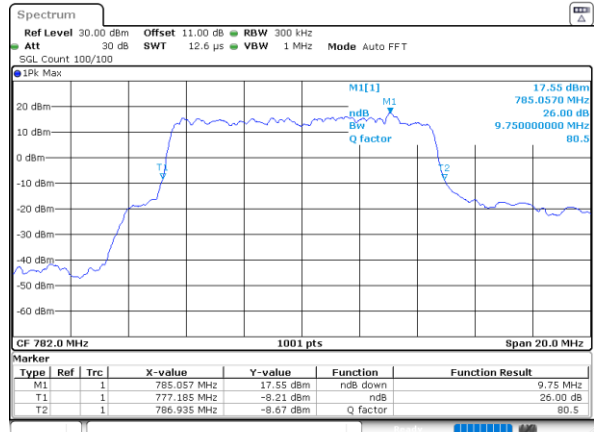
Date: 2,DEC,2022 17:44:41

Middle Channel / 10MHz / QPSK



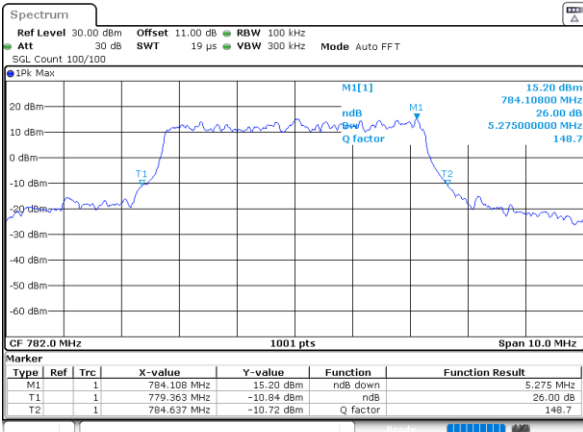
Date: 2,DEC,2022 17:57:14

Middle Channel / 10MHz / 16QAM



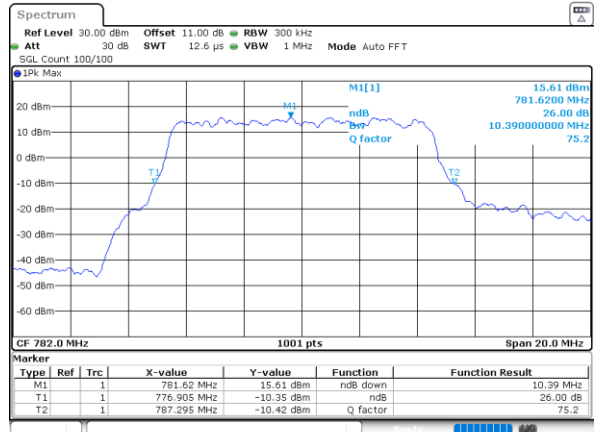
Date: 2,DEC,2022 17:56:45

Middle Channel / 5MHz / 64QAM



Date: 2,DEC,2022 17:53:13

Middle Channel / 10MHz / 64QAM



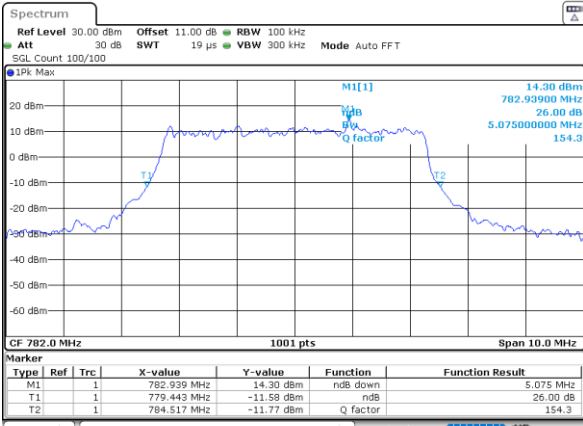
Date: 2,DEC,2022 17:59:41



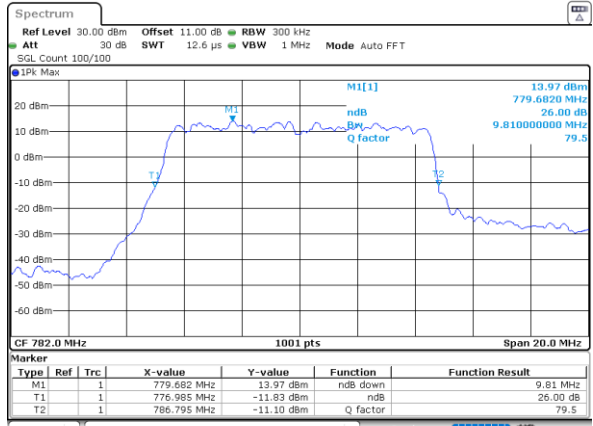
LTE Band 13

Middle Channel / 5MHz / 256QAM

Middle Channel / 10MHz / 256QAM



Date: 2.DEC.2022 18:04:19



Date: 2.DEC.2022 18:07:22



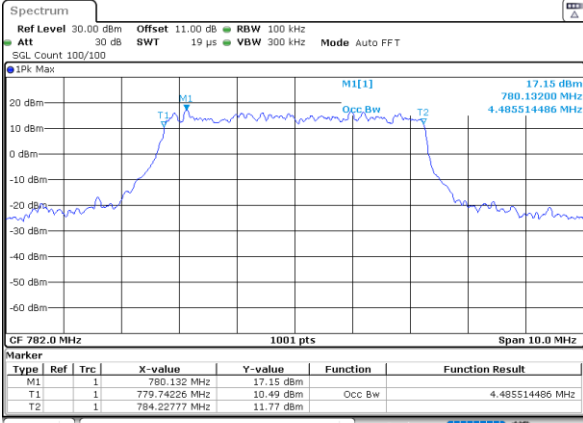
**Occupied Bandwidth**

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	4.50	9.07	8.99	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	-	-	-	-	4.50	4.50	9.03	9.11	-	-	-	-



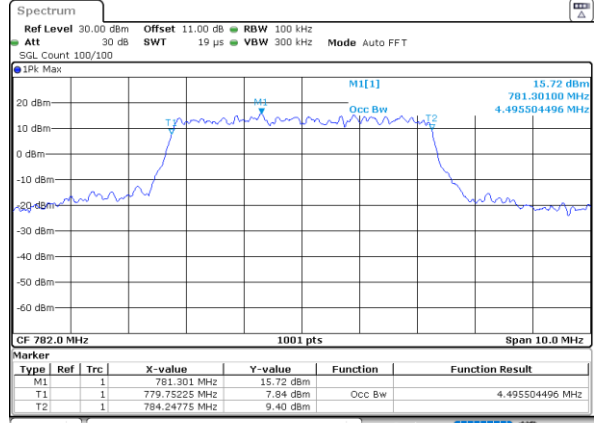
LTE Band 13

Middle Channel / 5MHz / QPSK



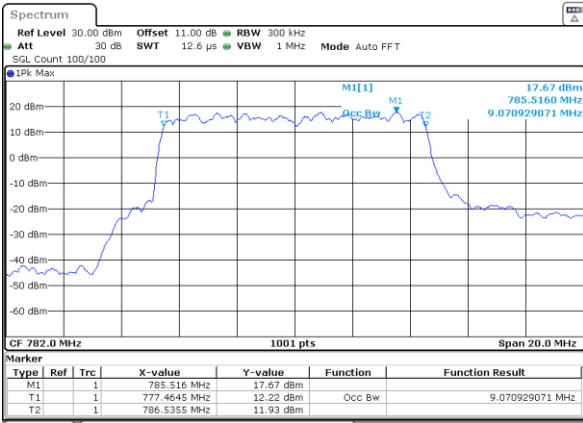
Date: 2,DEC,2022 17:45:24

Middle Channel / 5MHz / 16QAM



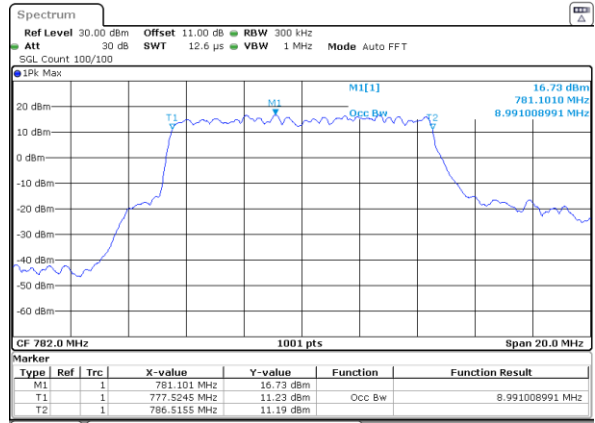
Date: 2,DEC,2022 17:44:55

Middle Channel / 10MHz / QPSK



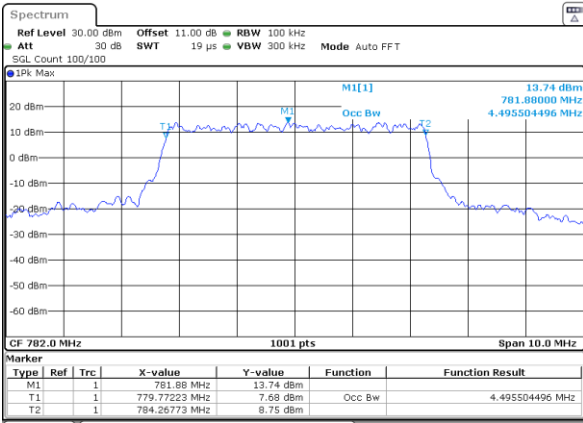
Date: 2,DEC,2022 17:56:02

Middle Channel / 10MHz / 16QAM



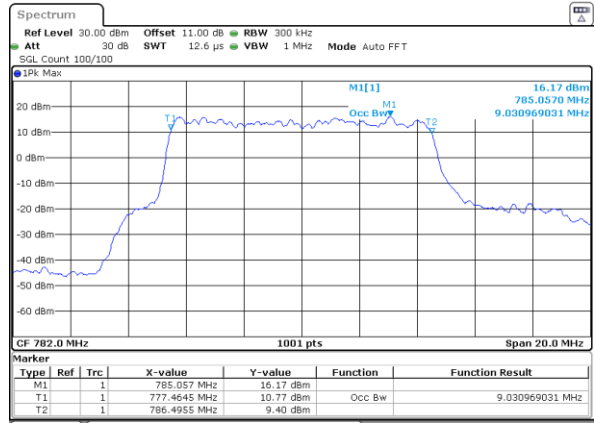
Date: 2,DEC,2022 17:56:31

Middle Channel / 5MHz / 64QAM



Date: 2,DEC,2022 17:53:27

Middle Channel / 10MHz / 64QAM



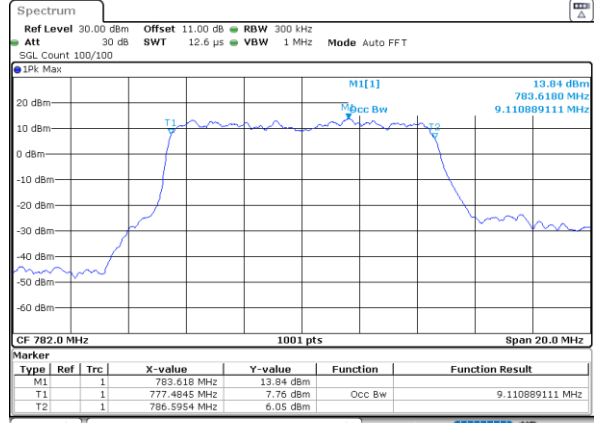
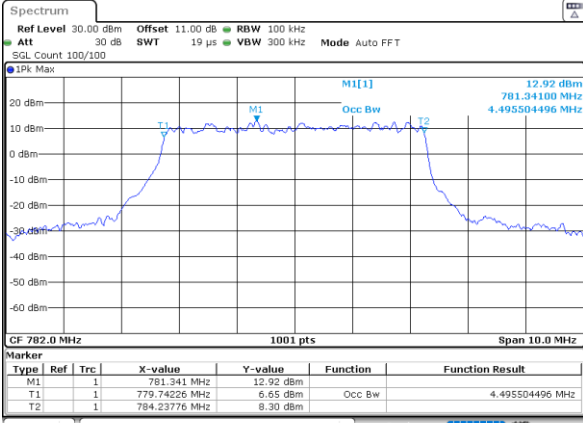
Date: 2,DEC,2022 17:59:27



LTE Band 13

Middle Channel / 5MHz / 256QAM

Middle Channel / 10MHz / 256QAM



Date: 2.DEC.2022 18:04:33

Date: 2.DEC.2022 18:07:08

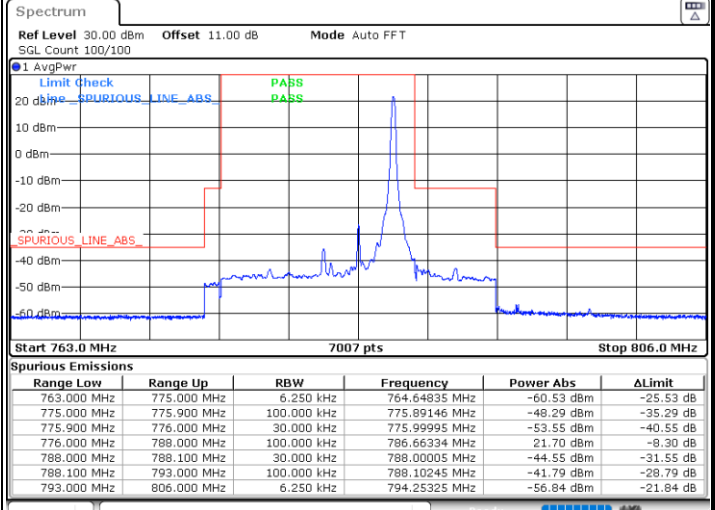
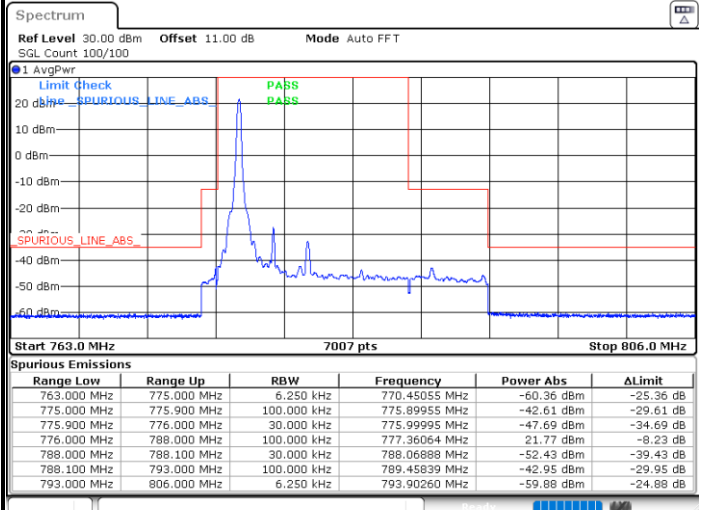


Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

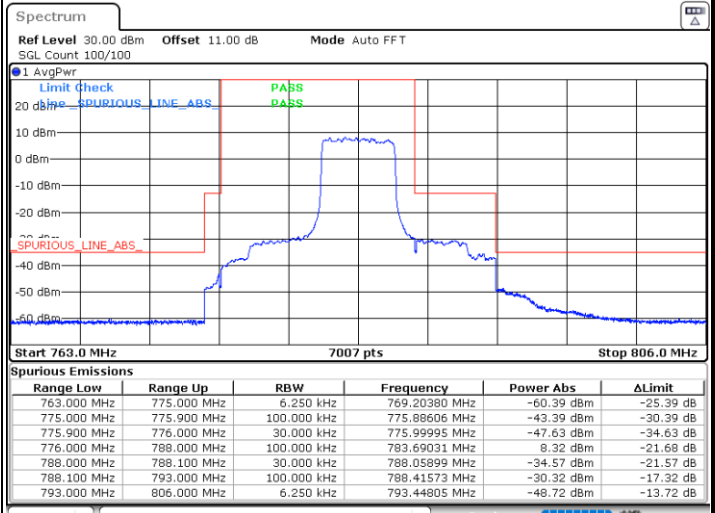
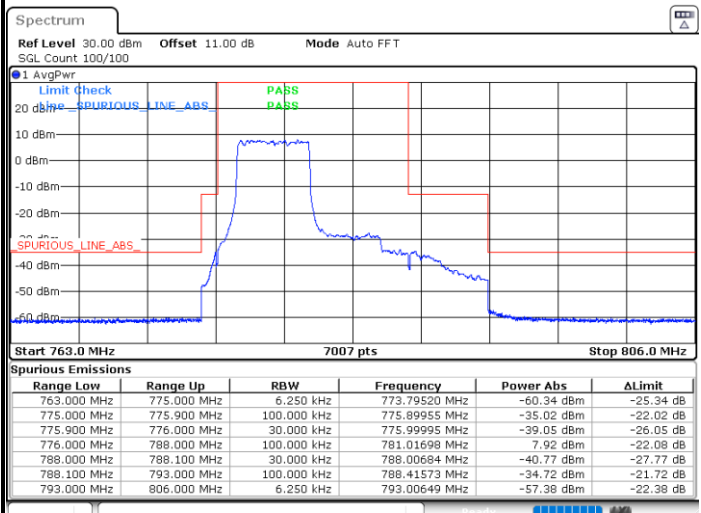


Date: 2.DEC.2022 17:41:21

Date: 2.DEC.2022 17:49:23

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 2.DEC.2022 17:38:20

Date: 2.DEC.2022 17:46:23