

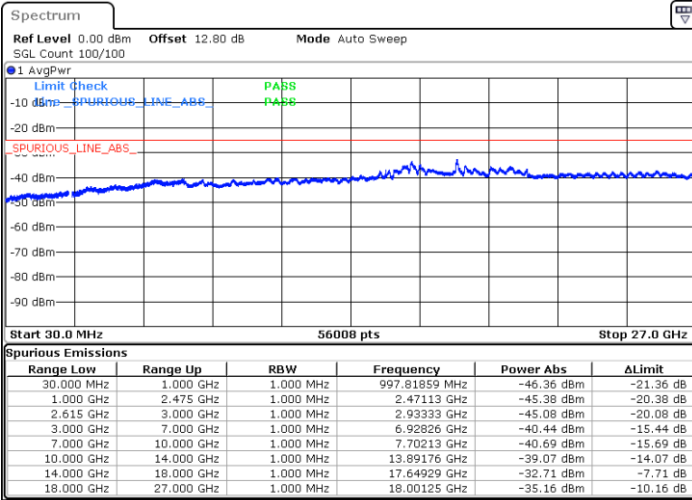


LTE Band 7C / 20MHz+20MHz

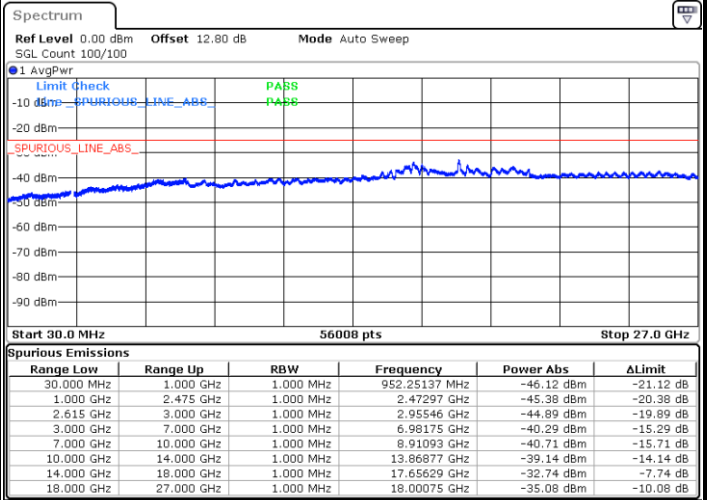
QPSK

Highest Channel / 1RB0 and 1RB99

Highest Channel / 1RB99 and 1RB0



Date: 22.AUG.2023 11:22:58



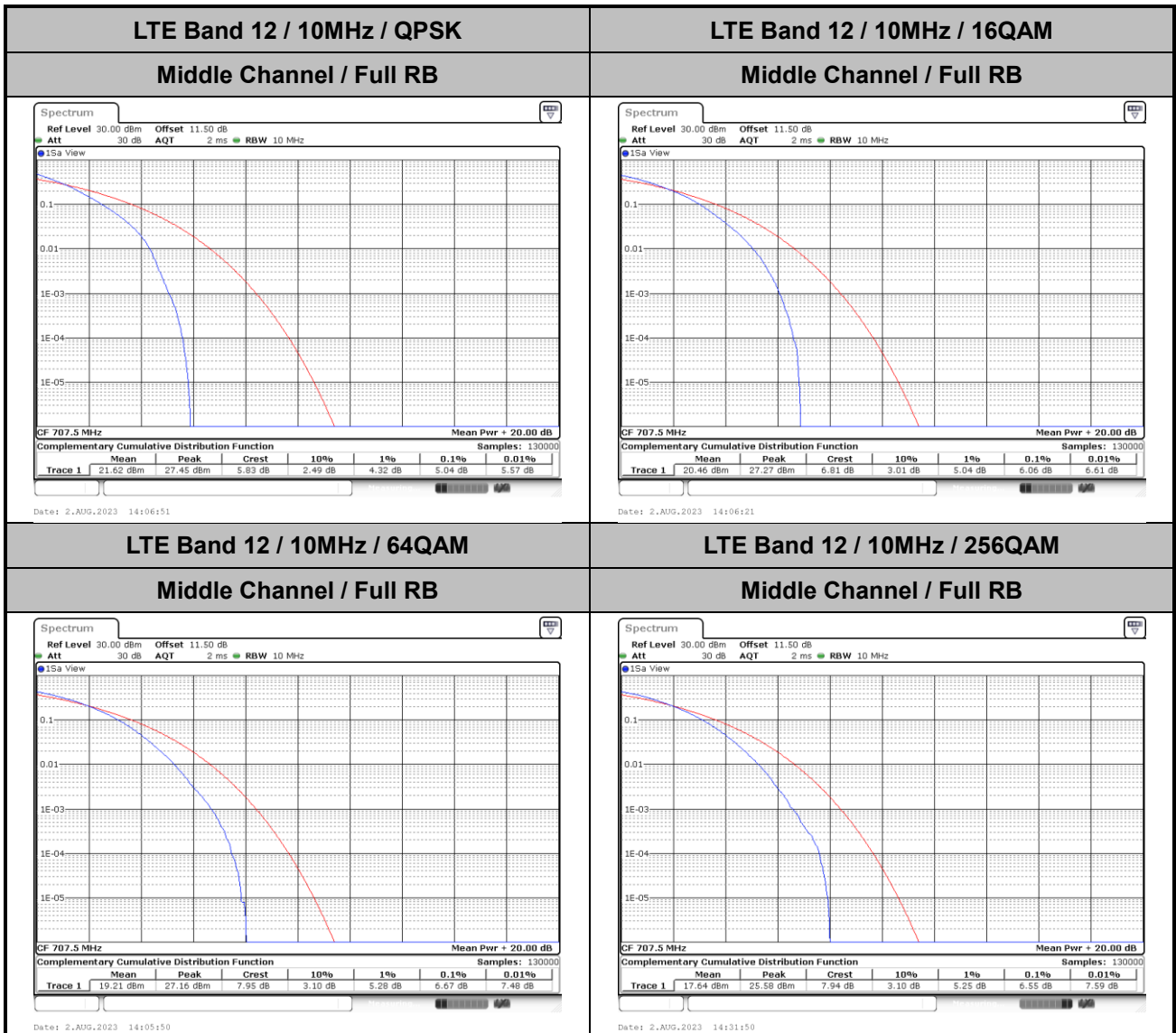
Date: 22.AUG.2023 11:21:36



# LTE Band 12

## Peak-to-Average Ratio

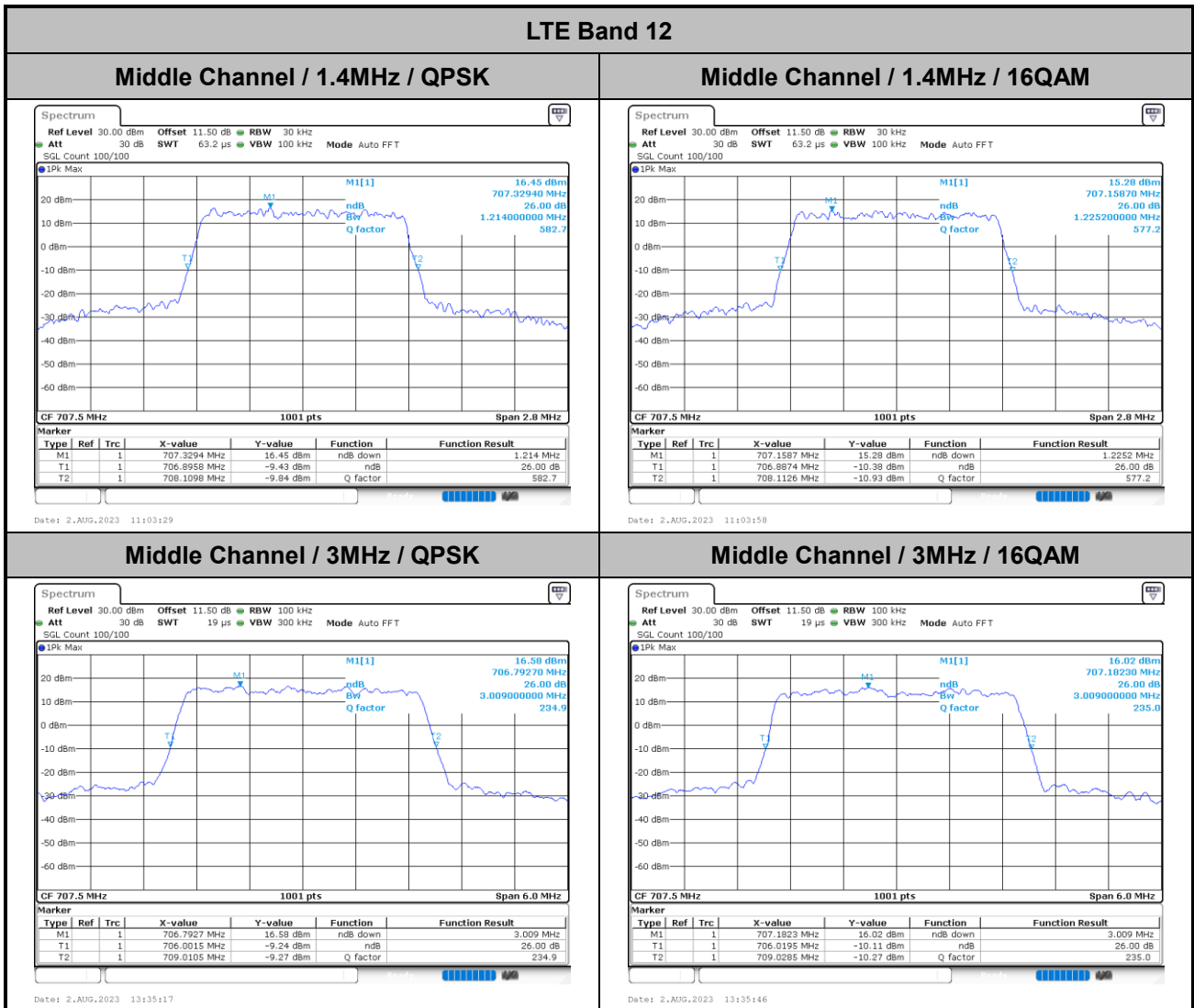
Mode	LTE Band 12 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.04	6.06	6.67	6.55	PASS





## 26dB Bandwidth

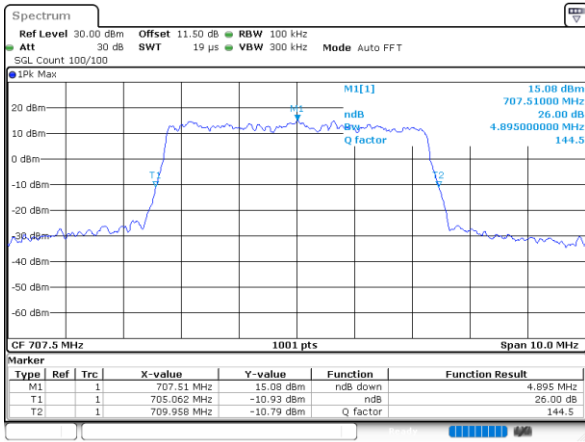
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.21	1.23	3.01	3.01	4.90	4.95	9.71	9.59	-	-	-	-
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	1.23	1.22	2.96	2.97	4.87	4.86	9.83	9.73	-	-	-	-





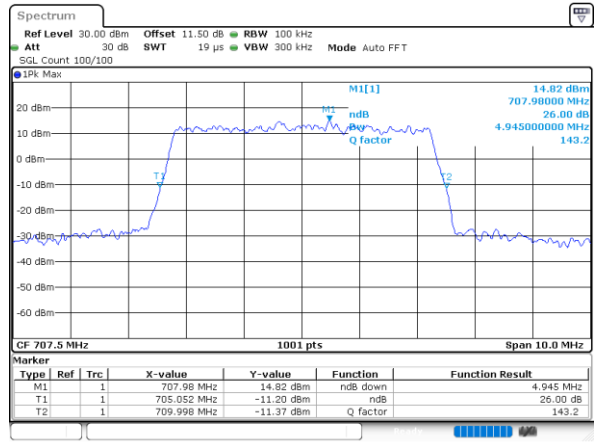
LTE Band 12

Middle Channel / 5MHz / QPSK



Date: 2.AUG.2023 13:50:27

Middle Channel / 5MHz / 16QAM

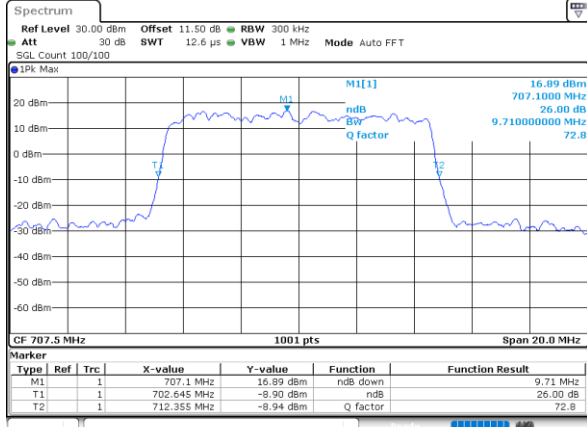


Date: 2.AUG.2023 13:50:56



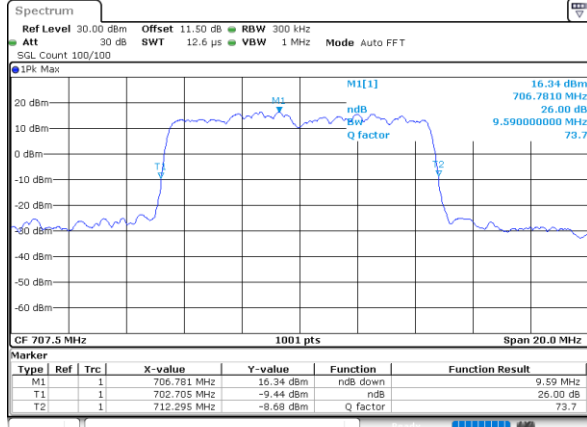
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 2.AUG.2023 13:58:11

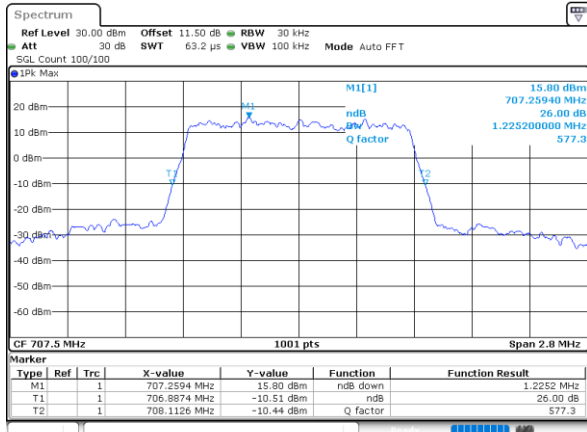
Middle Channel / 10MHz / 16QAM



Date: 2.AUG.2023 13:58:40

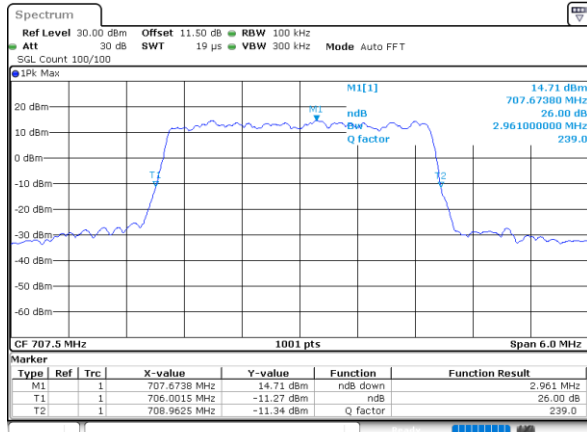
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



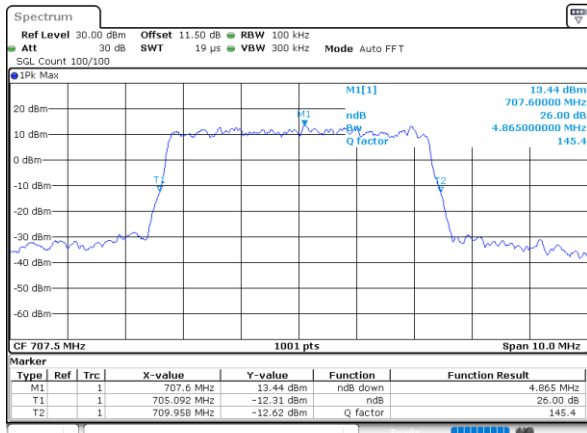
Date: 2.AUG.2023 13:16:19

Middle Channel / 3MHz / 64QAM



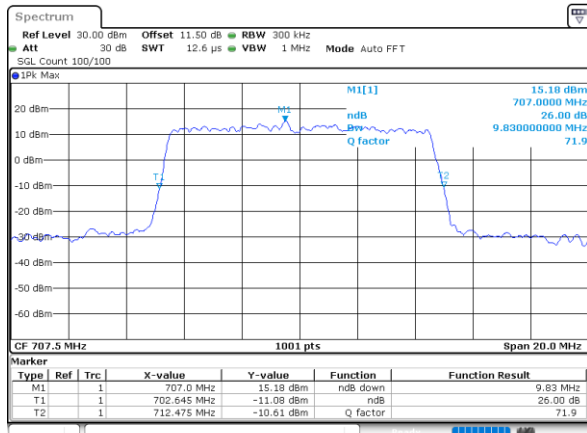
Date: 2.AUG.2023 13:41:00

Middle Channel / 5MHz / 64QAM



Date: 2.AUG.2023 13:44:47

Middle Channel / 10MHz / 64QAM

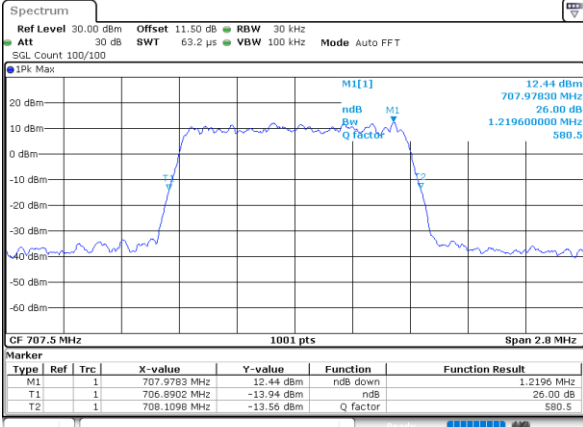


Date: 2.AUG.2023 14:03:51



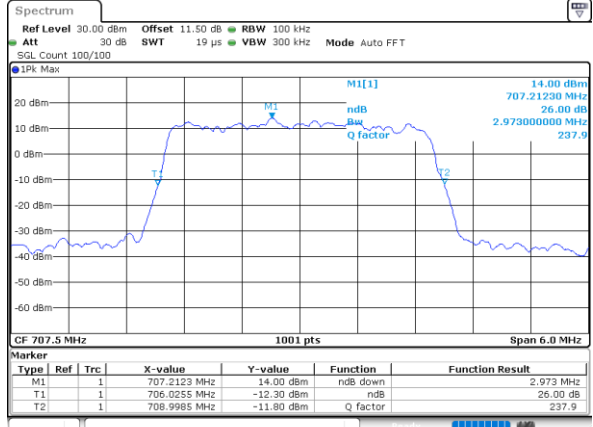
LTE Band 12

Middle Channel / 1.4MHz / 256QAM



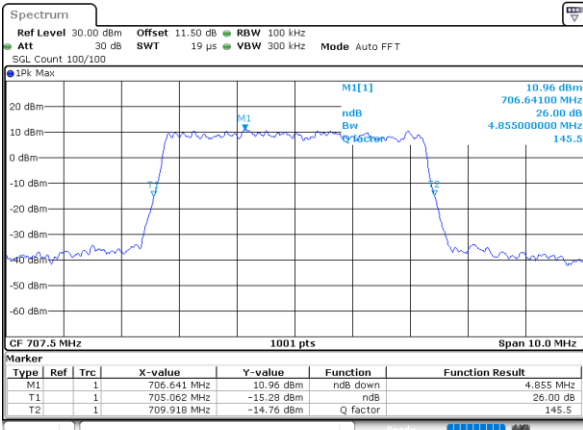
Date: 2,AUG,2023 14:16:58

Middle Channel / 3MHz / 256QAM



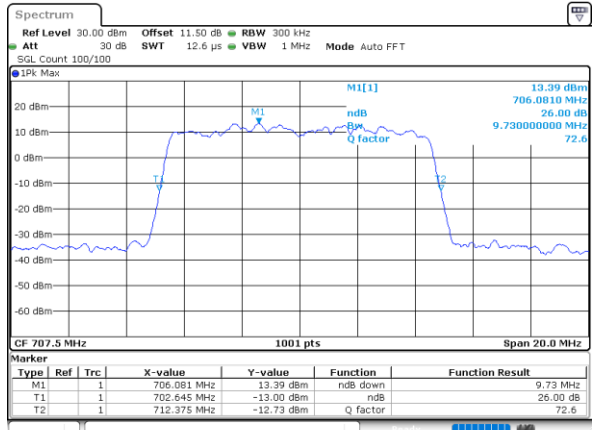
Date: 2,AUG,2023 14:22:17

Middle Channel / 5MHz / 256QAM



Date: 2,AUG,2023 14:26:04

Middle Channel / 10MHz / 256QAM

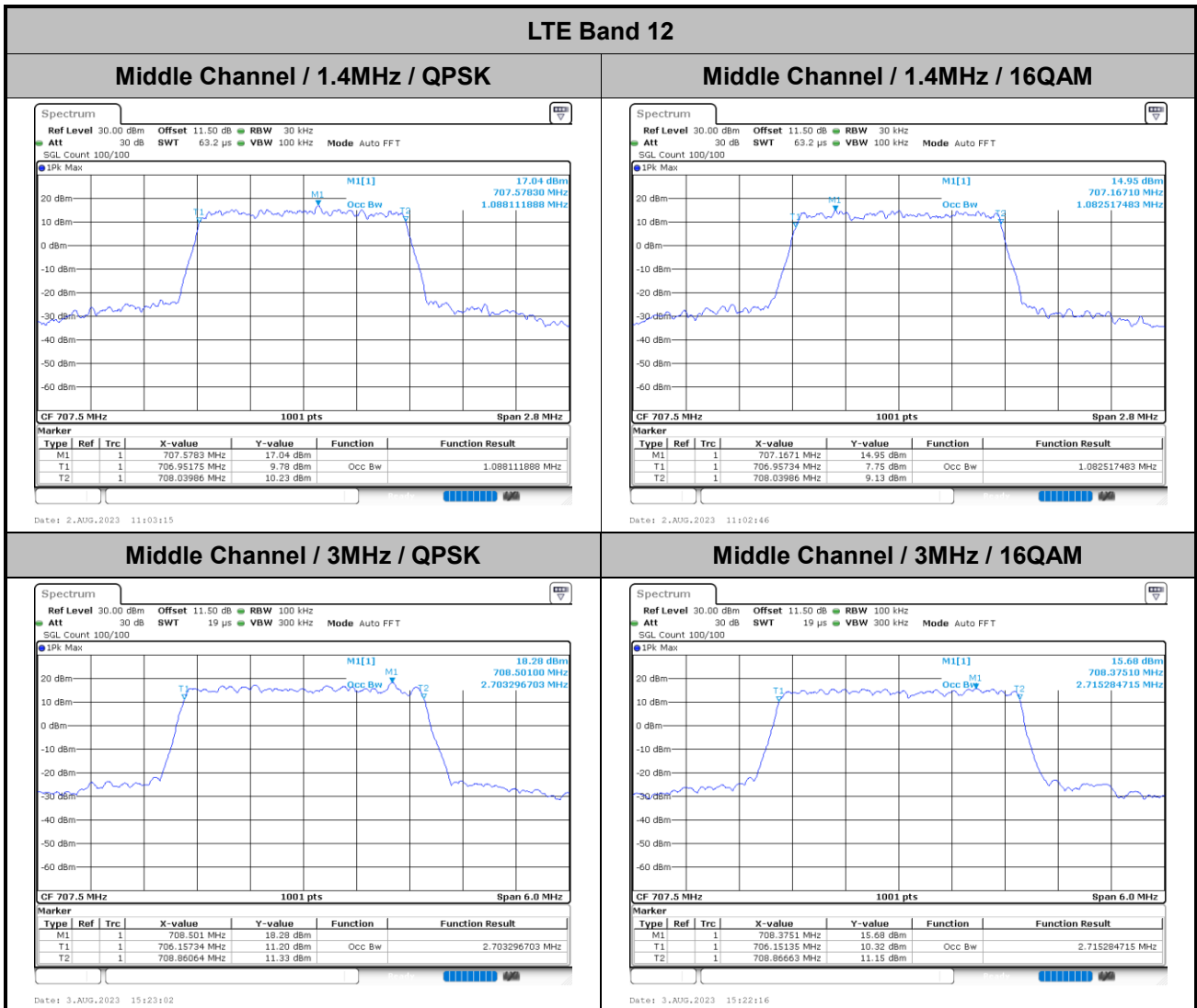


Date: 2,AUG,2023 14:29:51



# Occupied Bandwidth

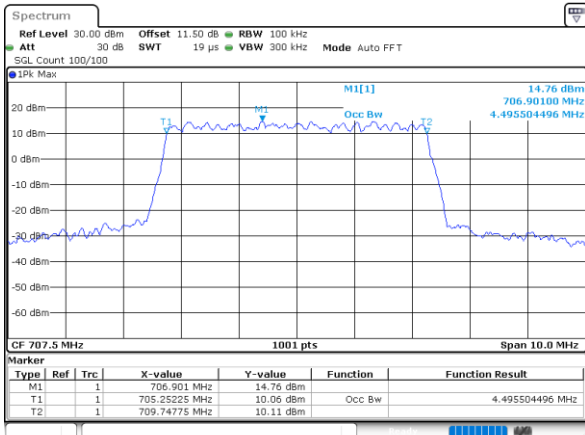
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.08	2.70	2.72	4.50	4.49	8.97	8.93	-	-	-	-
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	1.08	1.09	2.72	2.72	4.49	4.50	8.97	8.91	-	-	-	-





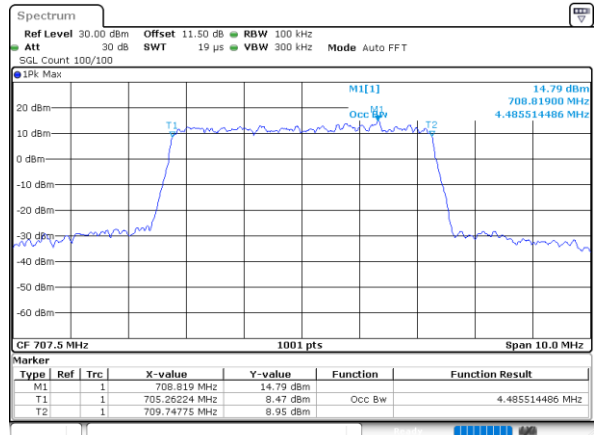
LTE Band 12

Middle Channel / 5MHz / QPSK



Date: 2.AUG.2023 13:50:13

Middle Channel / 5MHz / 16QAM



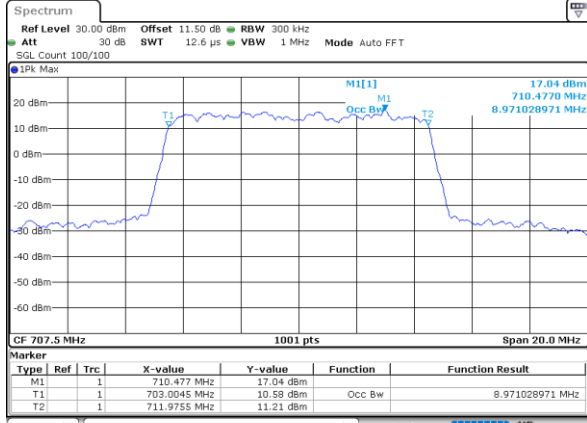
Date: 2.AUG.2023 13:49:44





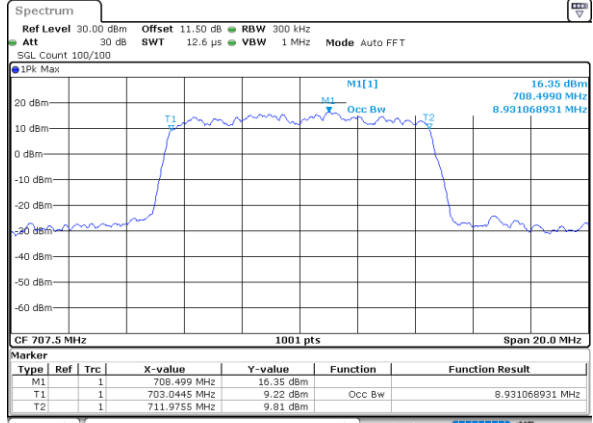
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 2.AUG.2023 13:57:57

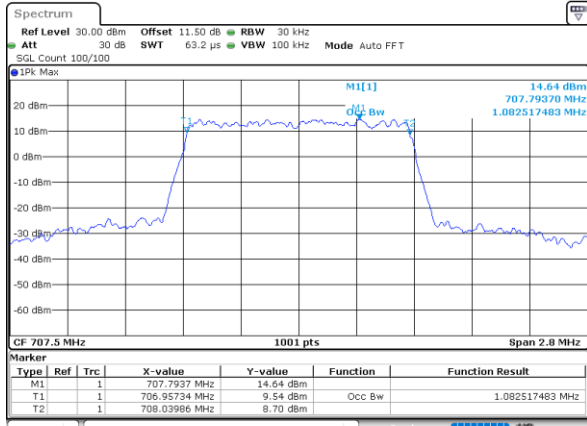
Middle Channel / 10MHz / 16QAM



Date: 2.AUG.2023 13:57:28

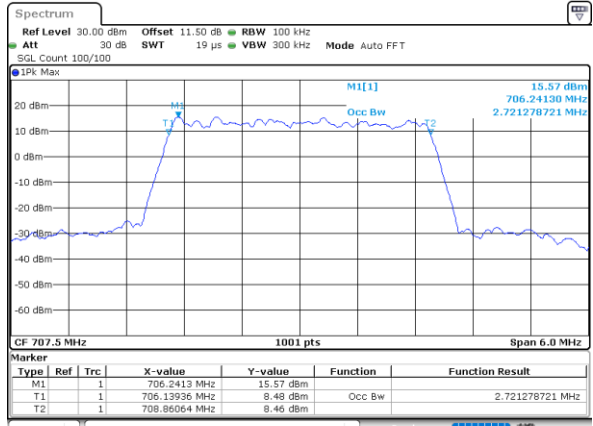
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



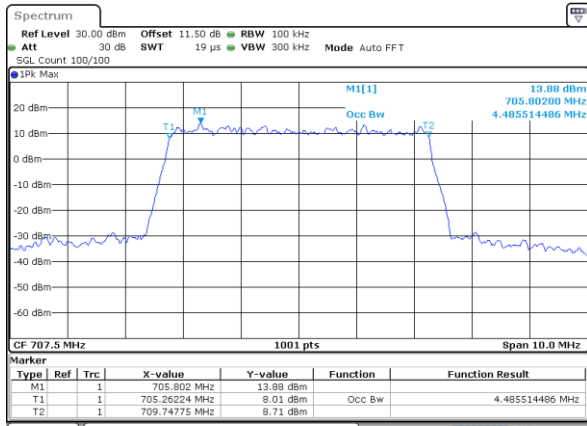
Date: 2.AUG.2023 11:16:05

Middle Channel / 3MHz / 64QAM



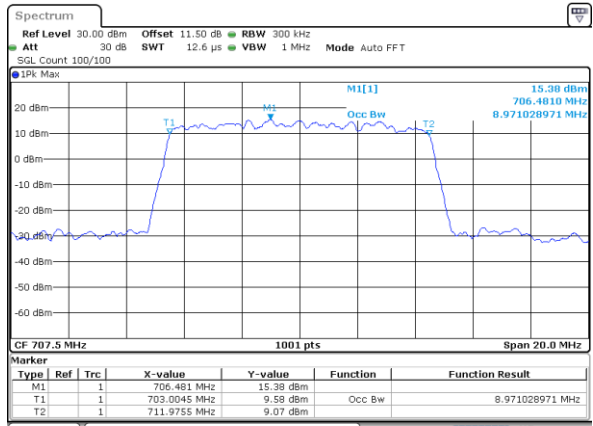
Date: 2.AUG.2023 13:40:46

Middle Channel / 5MHz / 64QAM



Date: 2.AUG.2023 13:44:33

Middle Channel / 10MHz / 64QAM

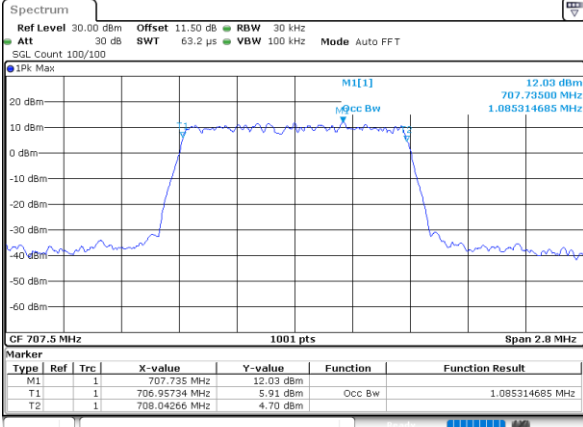


Date: 2.AUG.2023 14:03:37



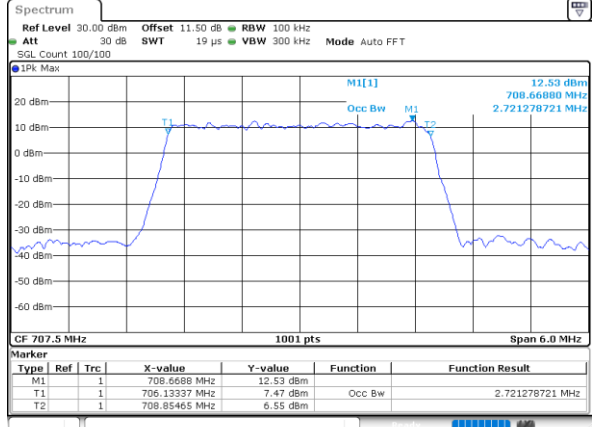
LTE Band 12

Middle Channel / 1.4MHz / 256QAM



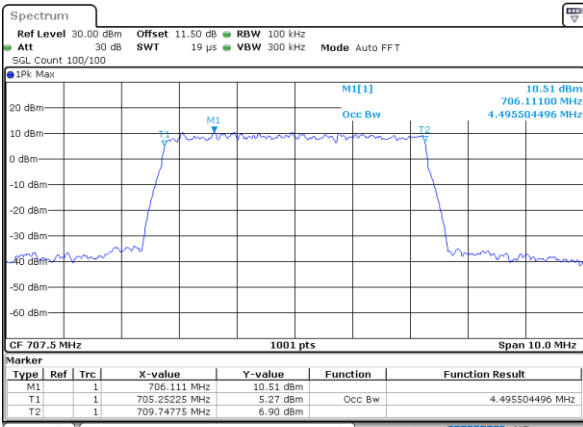
Date: 2.AUG.2023 14:16:44

Middle Channel / 3MHz / 256QAM



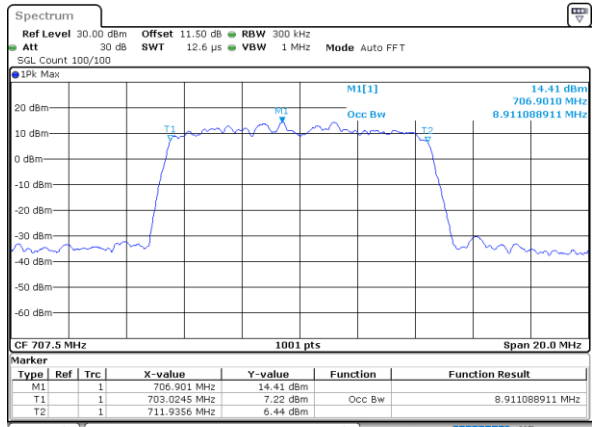
Date: 2.AUG.2023 14:22:03

Middle Channel / 5MHz / 256QAM



Date: 2.AUG.2023 14:25:50

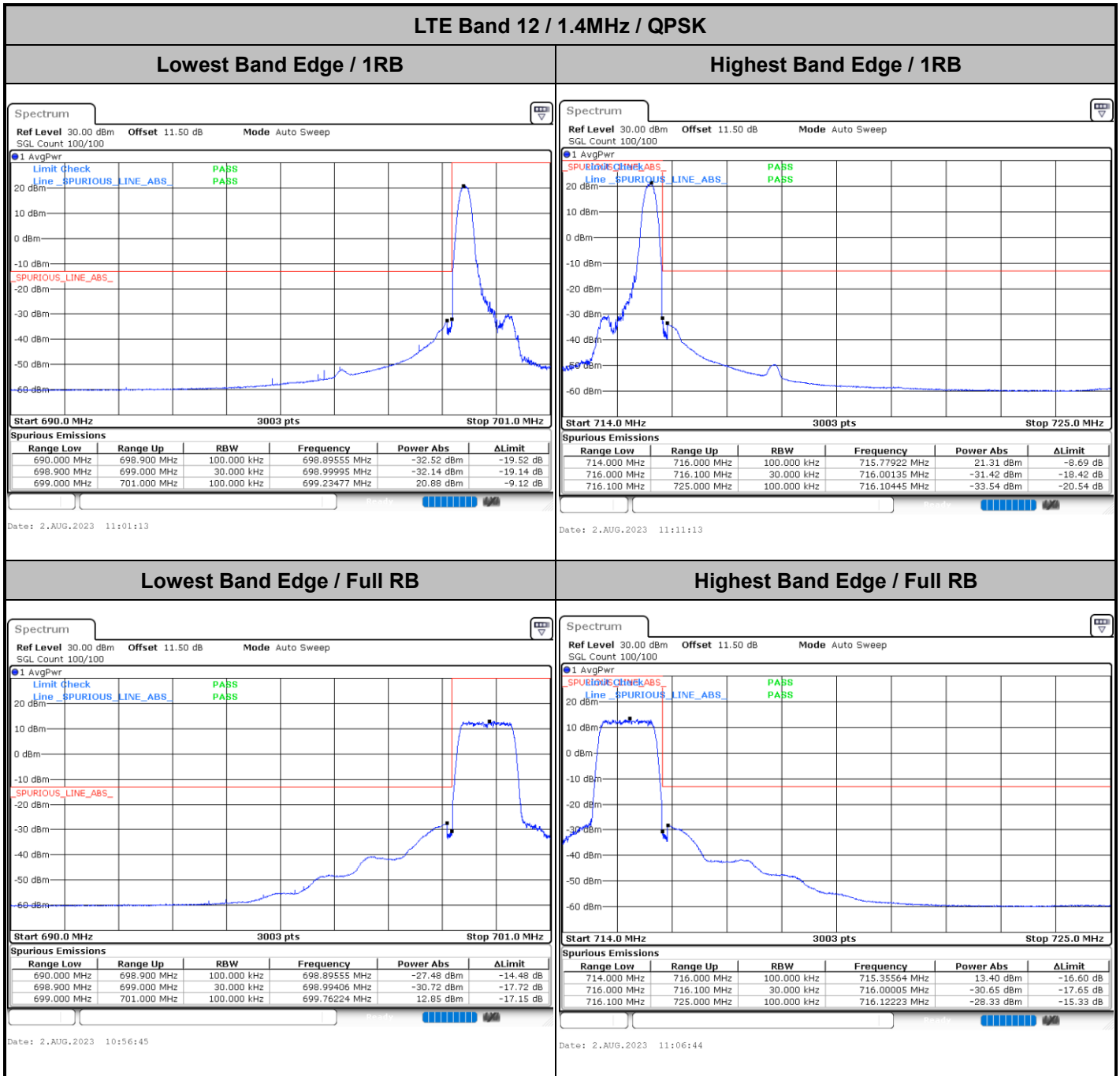
Middle Channel / 10MHz / 256QAM



Date: 2.AUG.2023 14:29:57



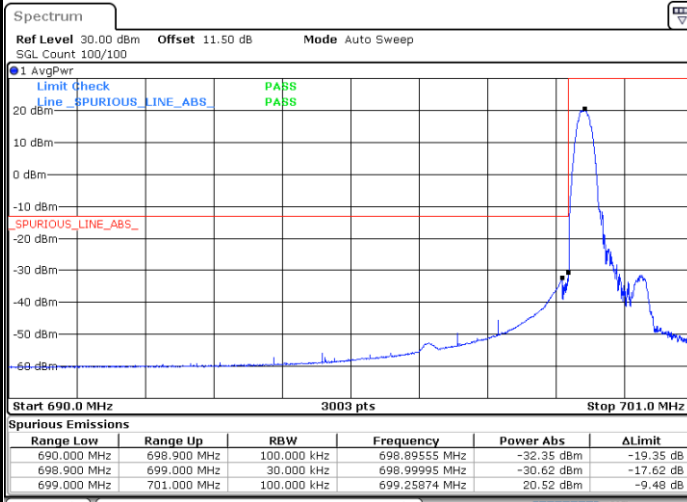
# Conducted Band Edge





LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



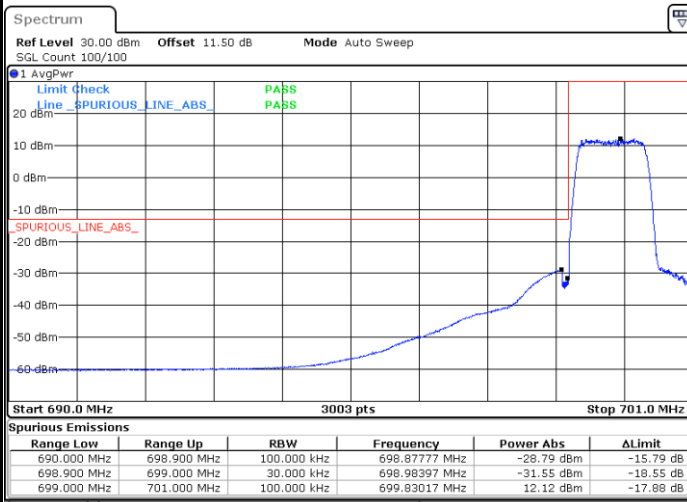
Date: 2.AUG.2023 10:59:44

Highest Band Edge / 1 RB



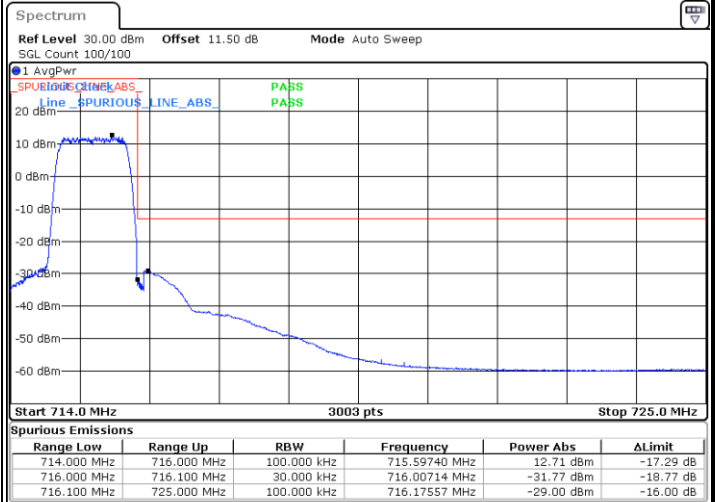
Date: 2.AUG.2023 11:09:44

Lowest Band Edge / Full RB



Date: 2.AUG.2023 10:58:15

Highest Band Edge / Full RB

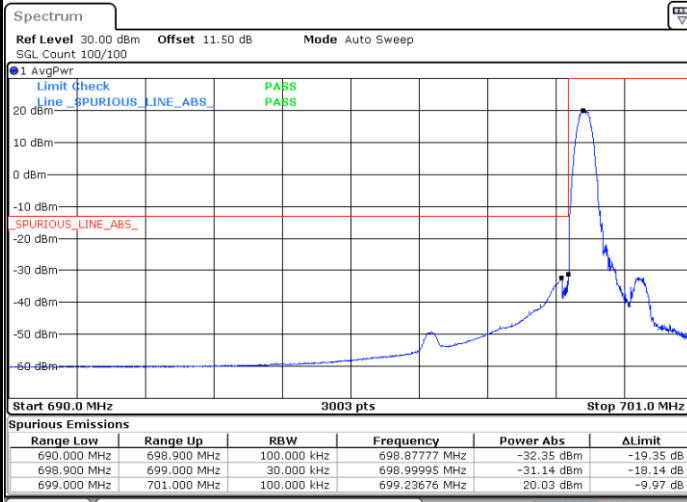


Date: 2.AUG.2023 11:08:14



LTE Band 12 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB



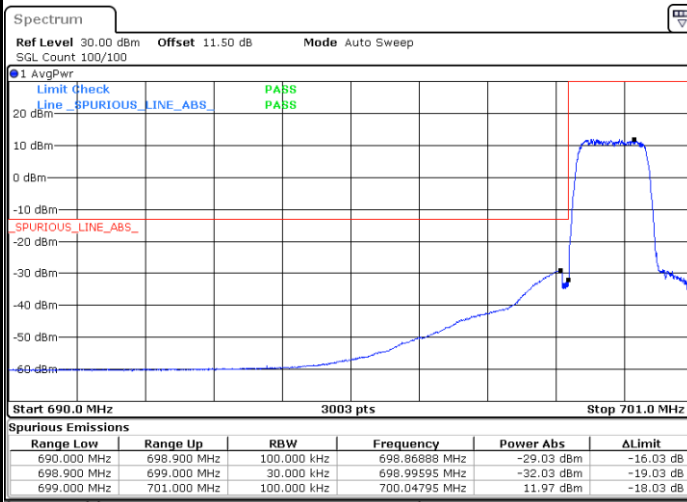
Date: 2.AUG.2023 11:15:31

Highest Band Edge / 1 RB



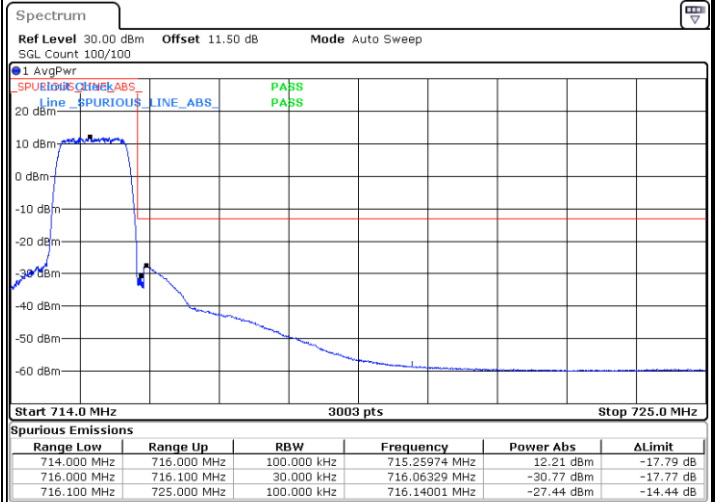
Date: 2.AUG.2023 11:19:16

Lowest Band Edge / Full RB



Date: 2.AUG.2023 11:14:01

Highest Band Edge / Full RB

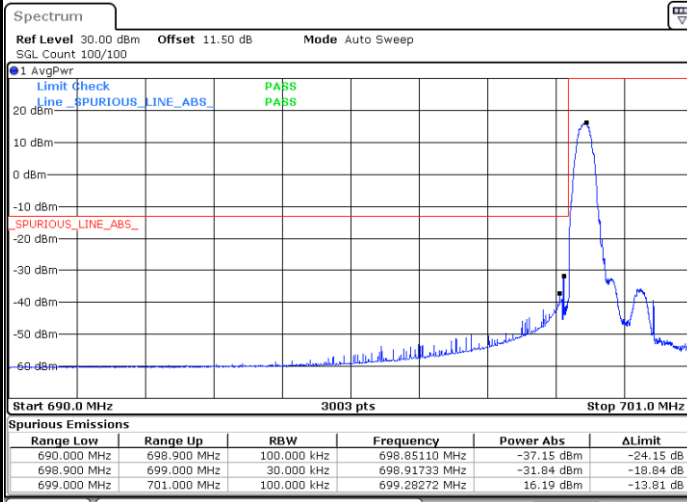


Date: 2.AUG.2023 11:17:47



LTE Band 12 / 1.4MHz / 256QAM

Lowest Band Edge / 1 RB



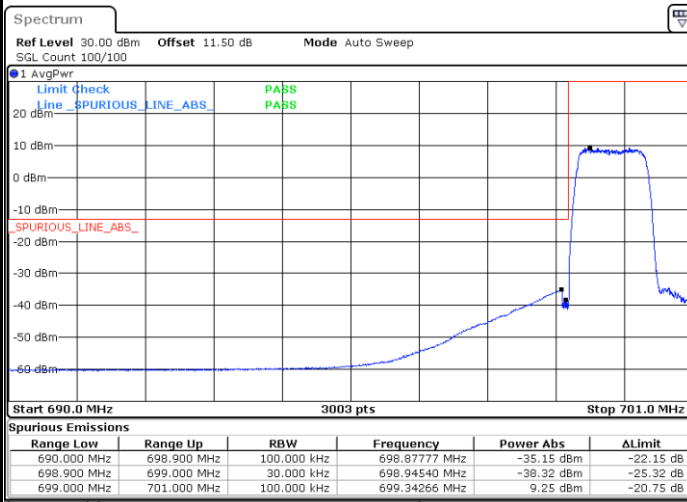
Date: 2.AUG.2023 14:16:14

Highest Band Edge / 1 RB



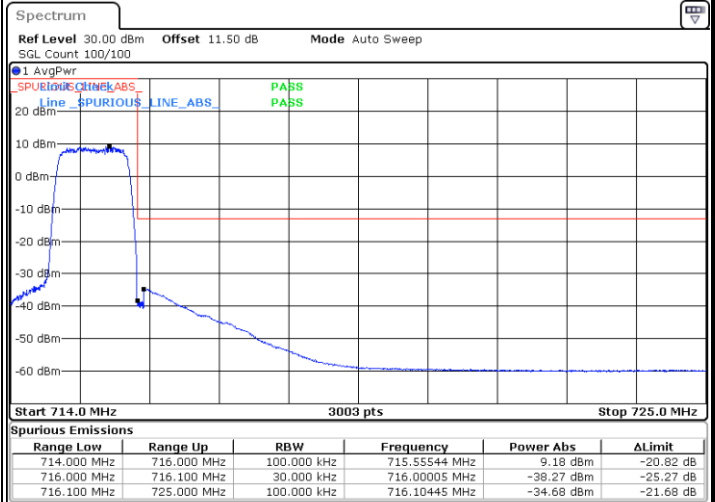
Date: 2.AUG.2023 14:19:59

Lowest Band Edge / Full RB



Date: 2.AUG.2023 14:14:42

Highest Band Edge / Full RB

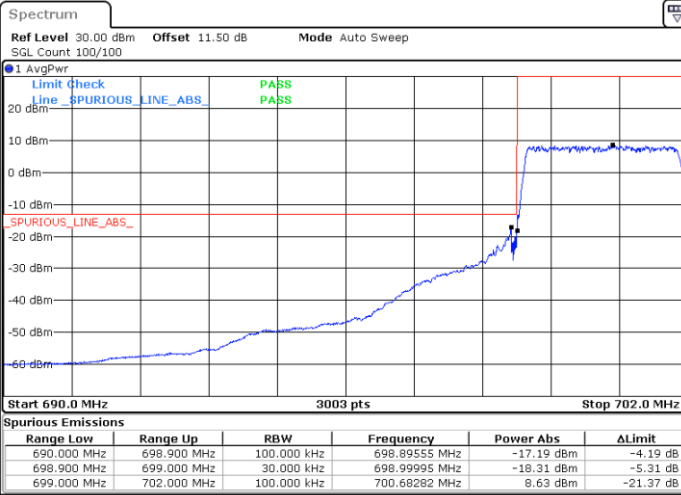


Date: 2.AUG.2023 14:18:26



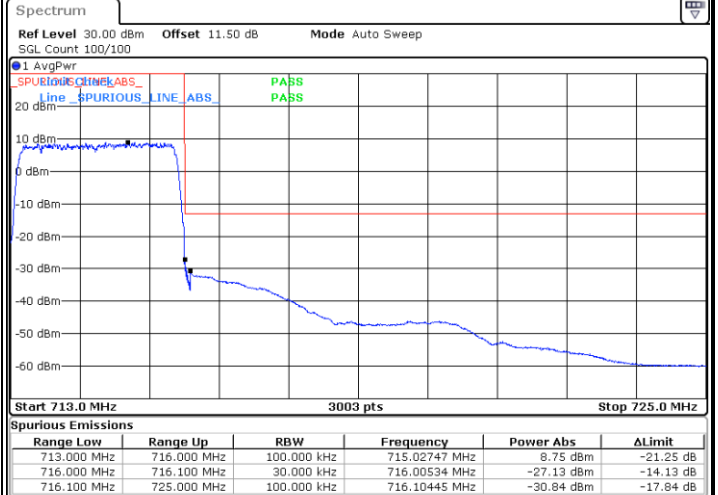
LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / Full RB



Date: 2.AUG.2023 11:20:51

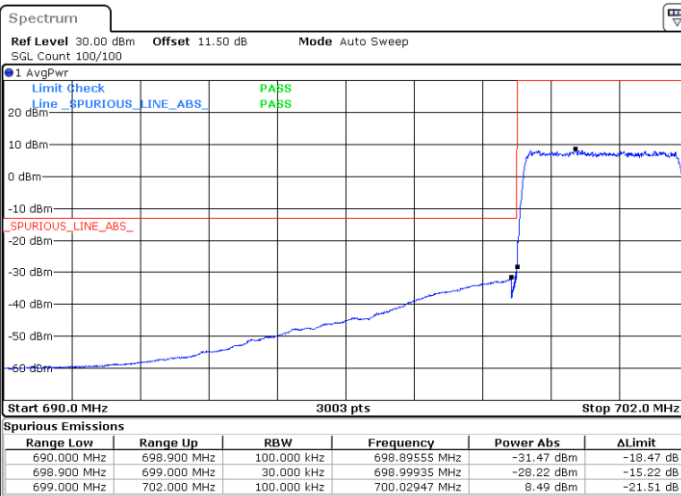
Highest Band Edge / Full RB



Date: 2.AUG.2023 13:37:15

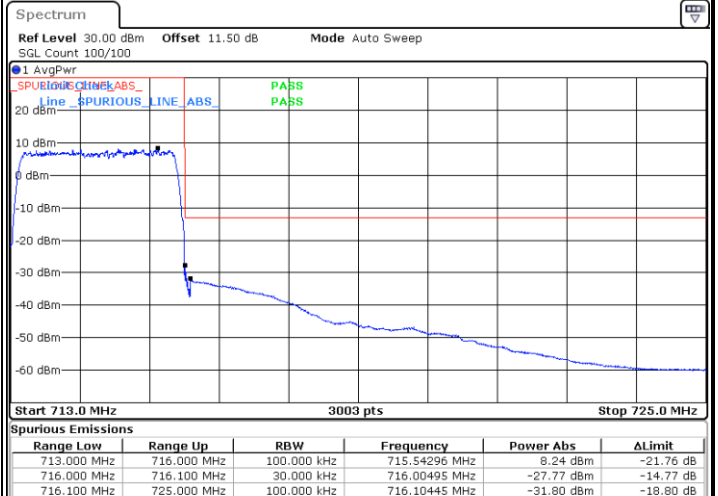
LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / Full RB



Date: 3.AUG.2023 15:21:19

Highest Band Edge / Full RB

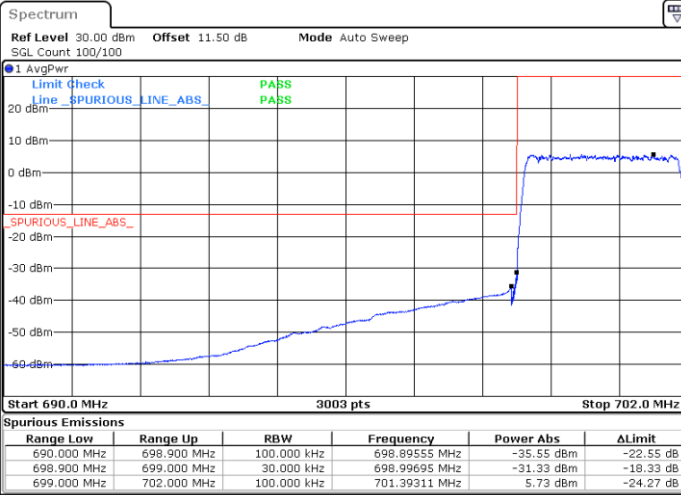


Date: 2.AUG.2023 13:38:47



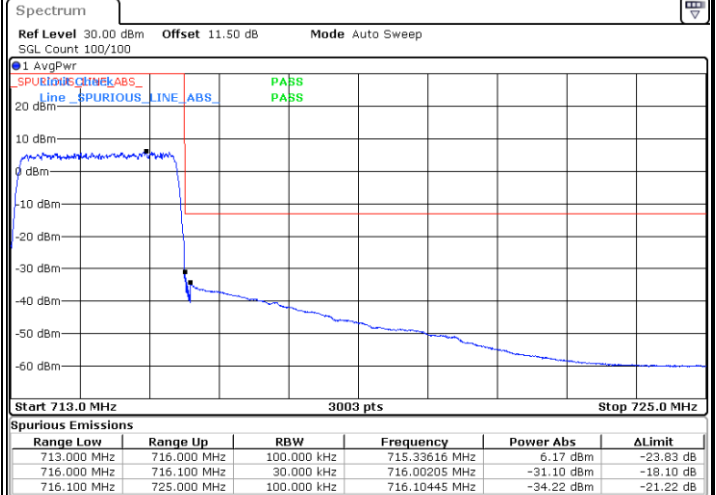
LTE Band 12 / 3MHz / 64QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 13:40:16

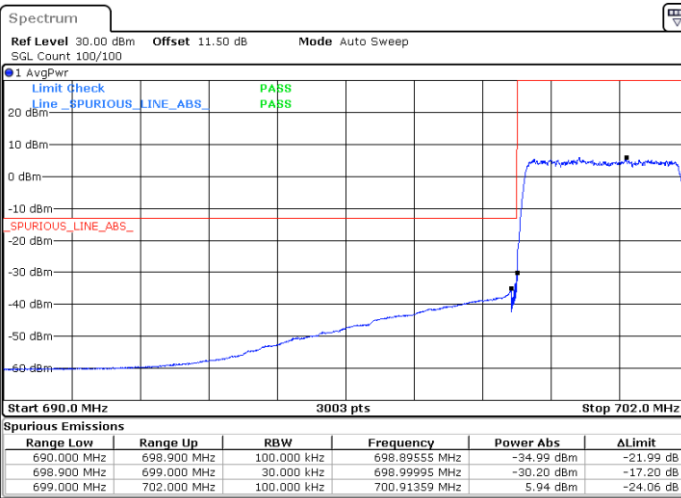
Highest Band Edge / Full RB



Date: 2.AUG.2023 13:42:29

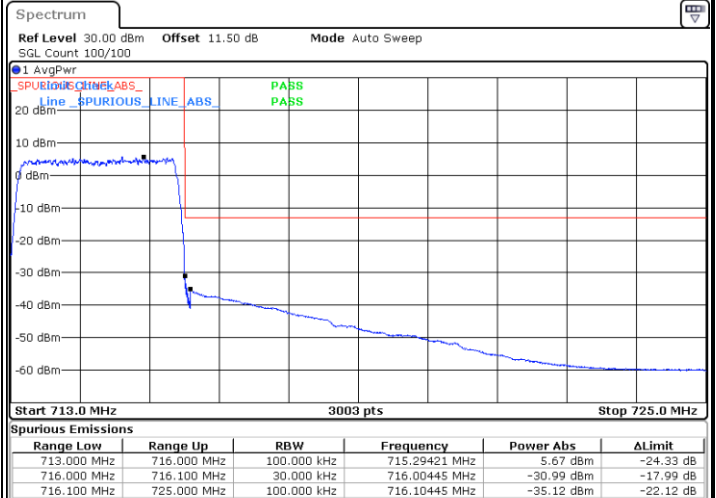
LTE Band 12 / 3MHz / 256QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 14:21:33

Highest Band Edge / Full RB



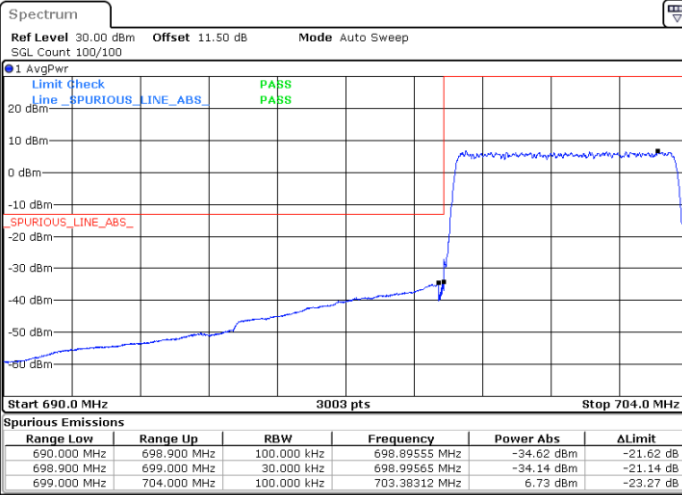
Date: 2.AUG.2023 14:23:45





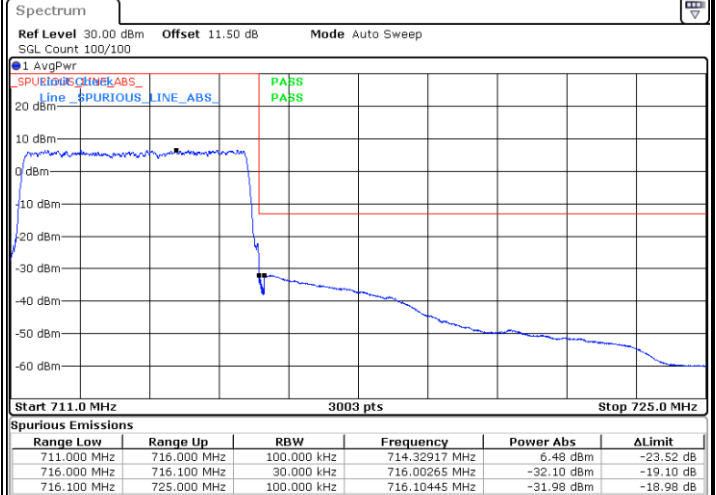
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / Full RB



Date: 2.AUG.2023 13:47:45

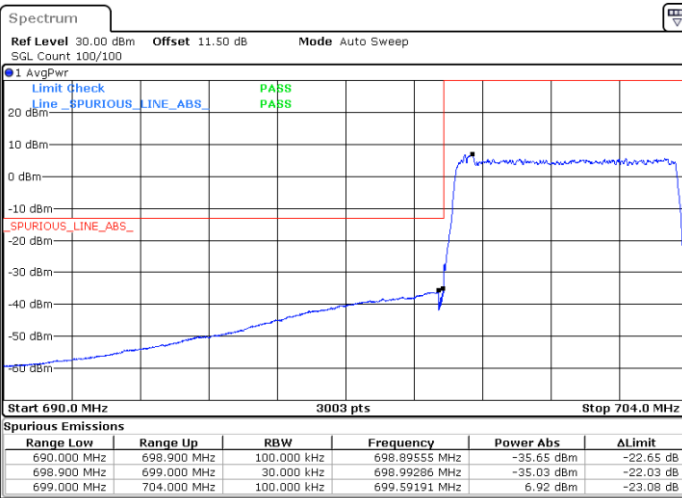
Highest Band Edge / Full RB



Date: 2.AUG.2023 13:52:24

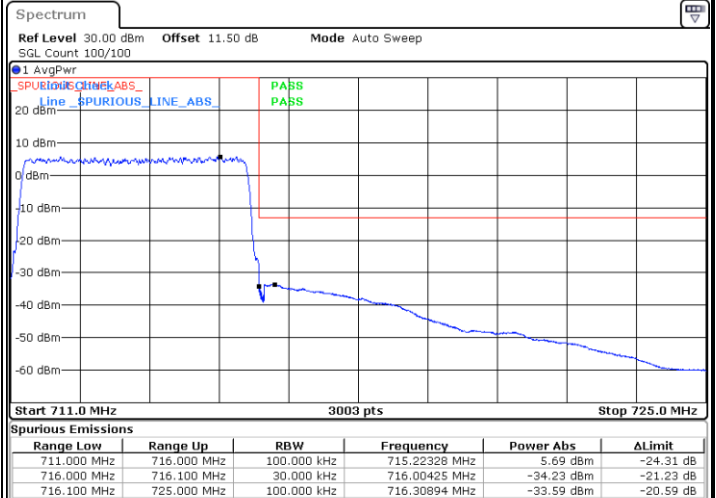
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 13:49:14

Highest Band Edge / Full RB

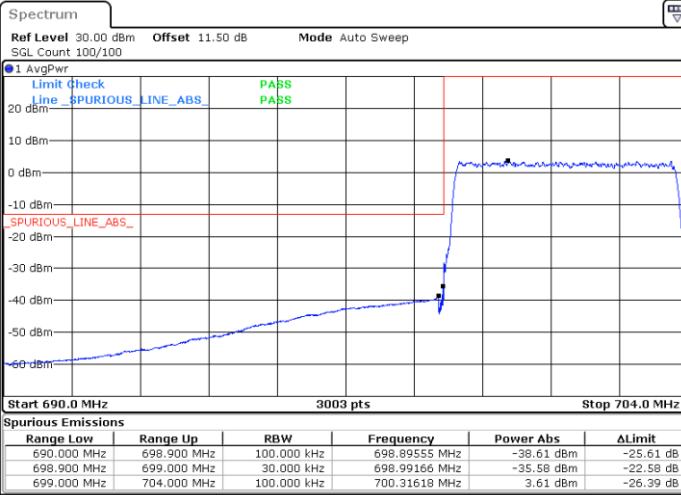


Date: 2.AUG.2023 13:53:54



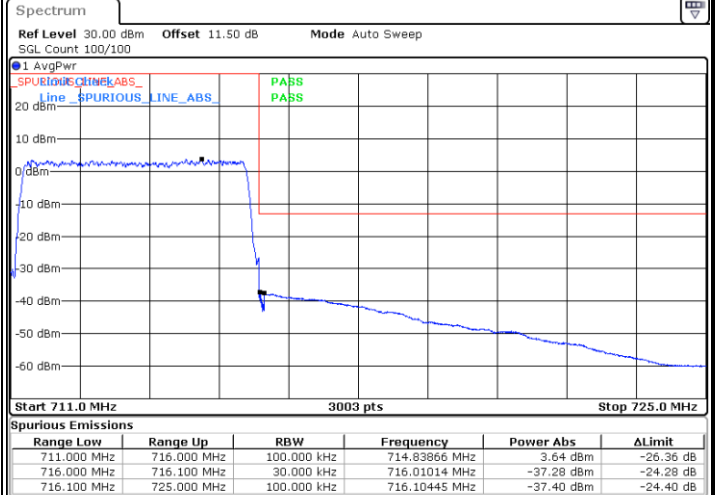
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 13:44:03

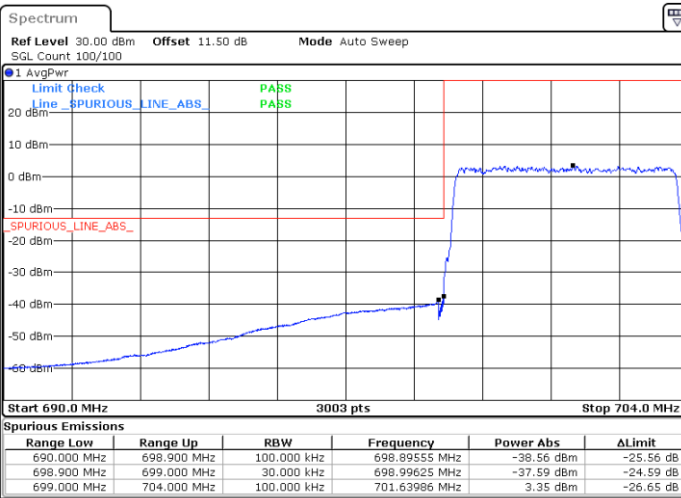
Highest Band Edge / Full RB



Date: 2.AUG.2023 13:46:15

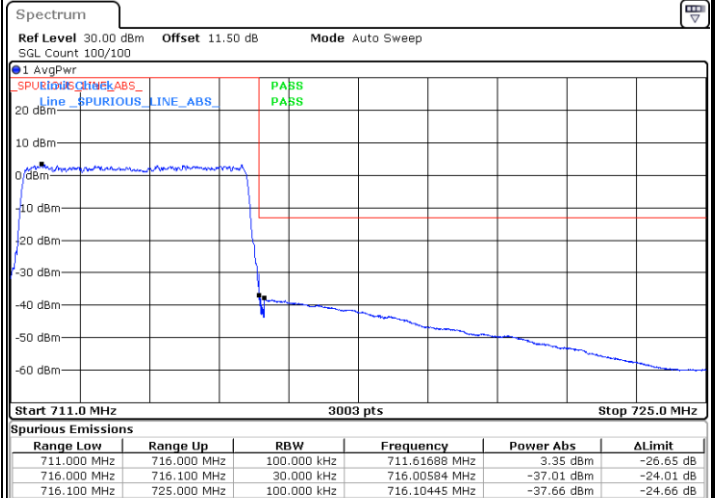
LTE Band 12 / 5MHz / 256QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 14:25:20

Highest Band Edge / Full RB

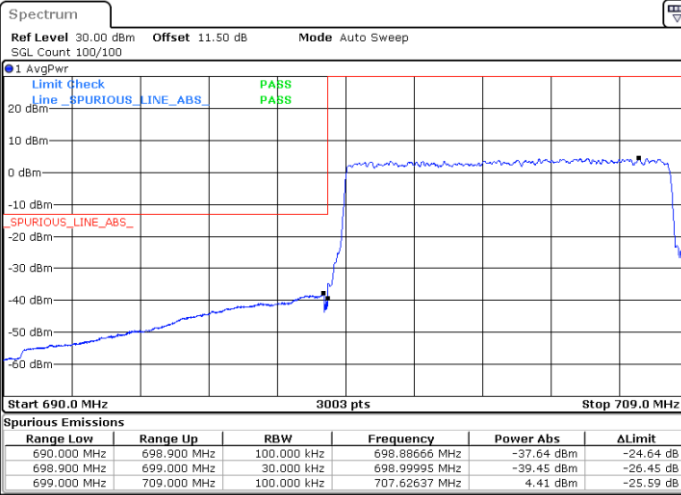


Date: 2.AUG.2023 14:27:32



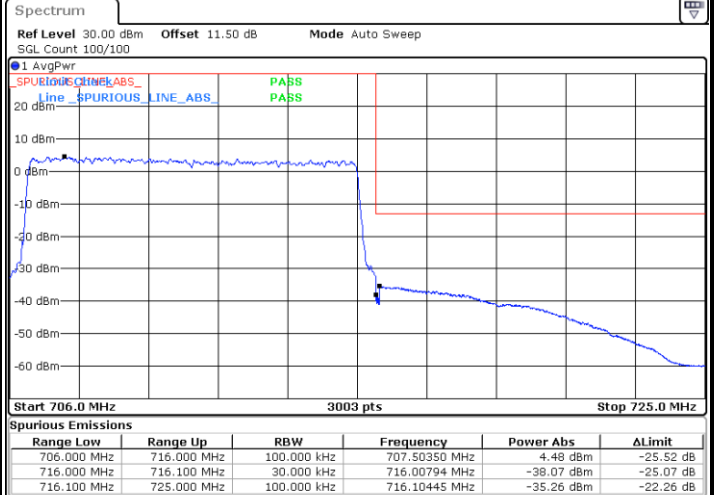
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / Full RB



Date: 2.AUG.2023 13:55:29

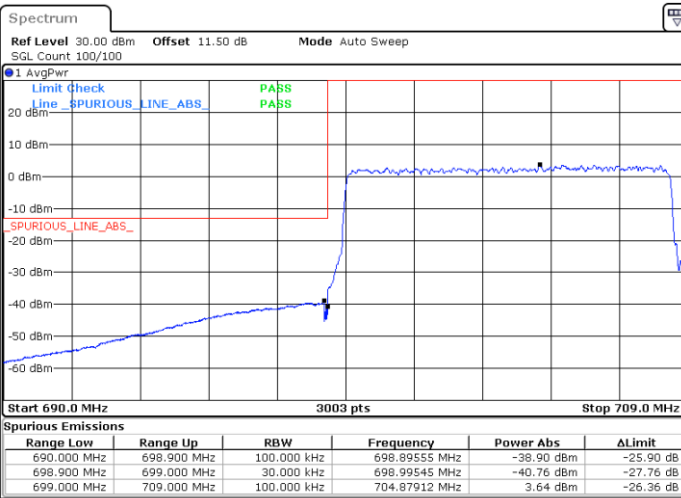
Highest Band Edge / Full RB



Date: 2.AUG.2023 14:00:08

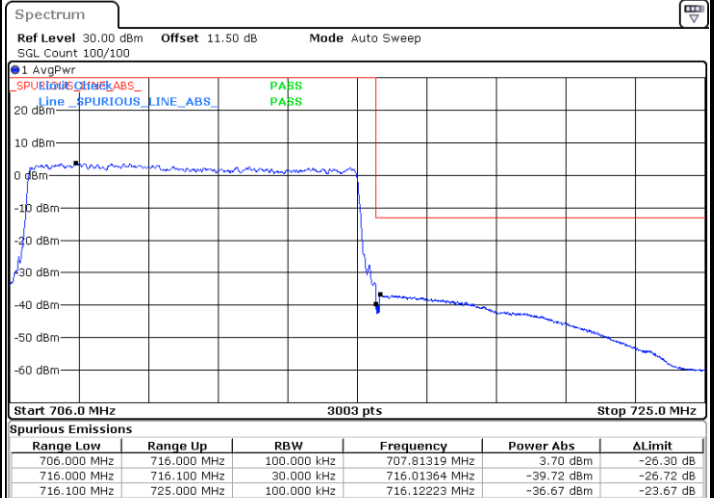
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 13:56:58

Highest Band Edge / Full RB

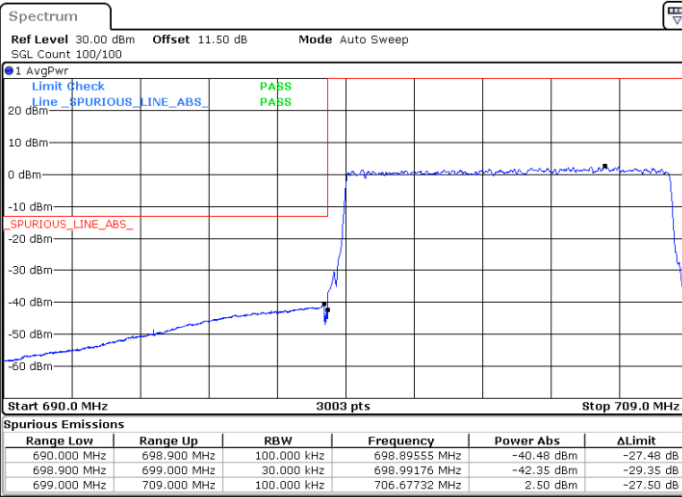


Date: 2.AUG.2023 14:01:38



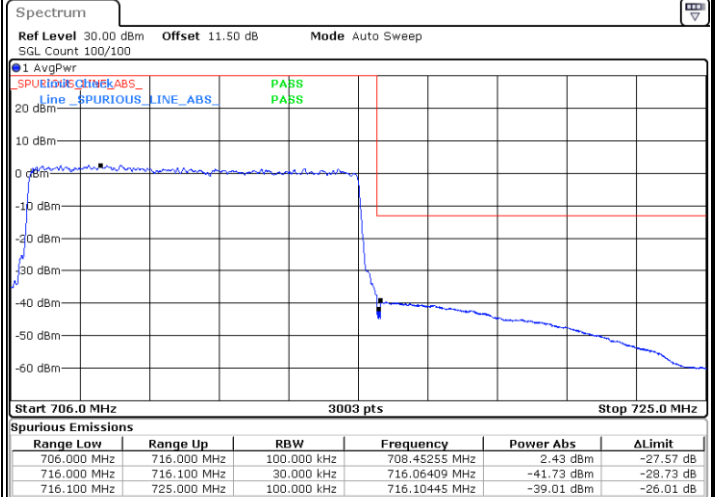
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 14:03:07

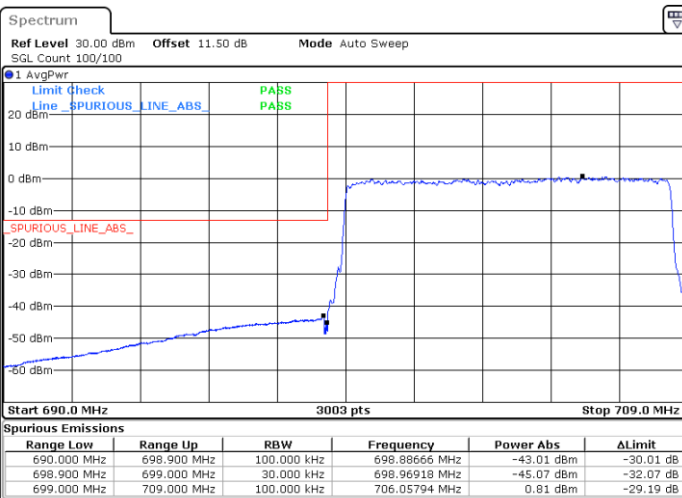
Highest Band Edge / Full RB



Date: 2.AUG.2023 14:05:19

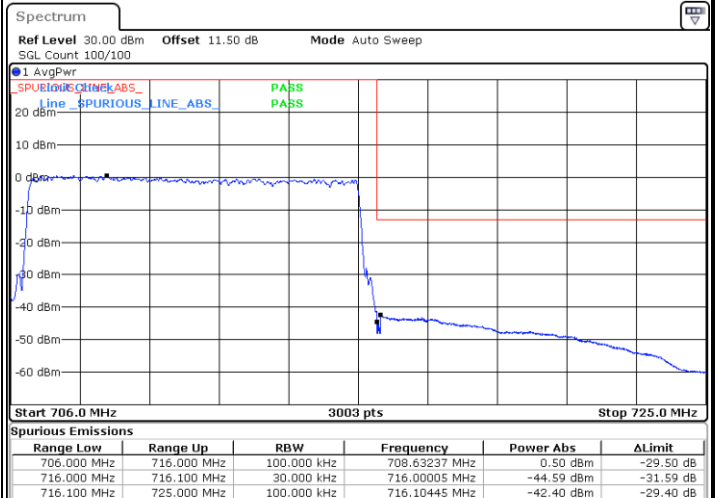
LTE Band 12 / 10MHz / 256QAM

Lowest Band Edge / Full RB



Date: 2.AUG.2023 14:29:07

Highest Band Edge / Full RB



Date: 2.AUG.2023 14:31:19



# Conducted Spurious Emission

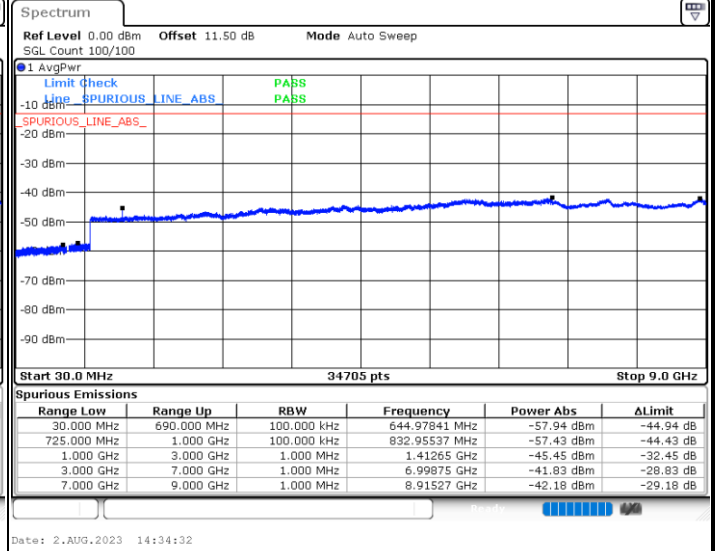
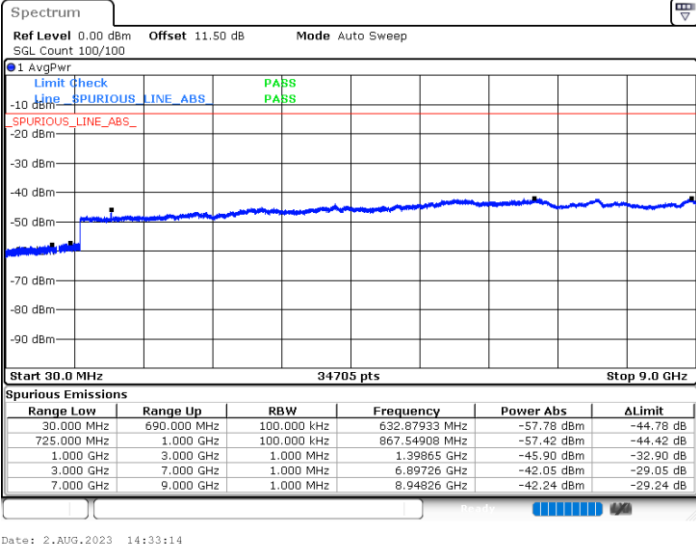




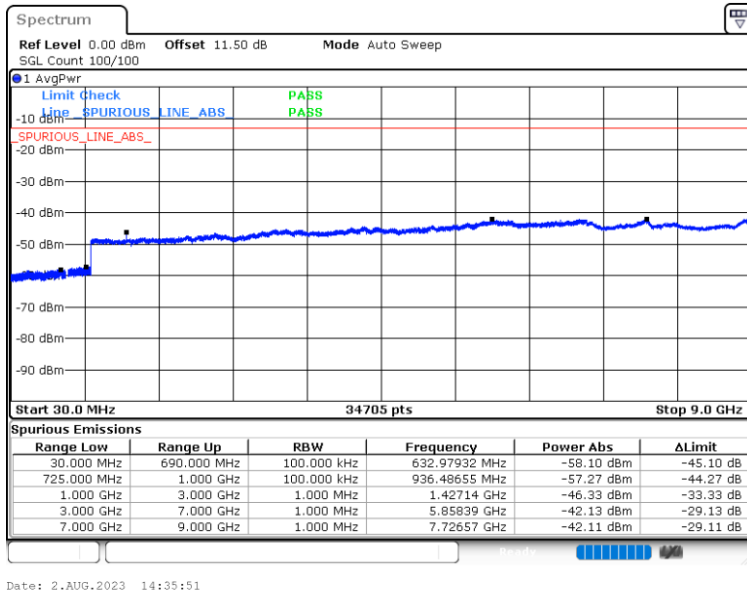
LTE Band 12 / 3MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

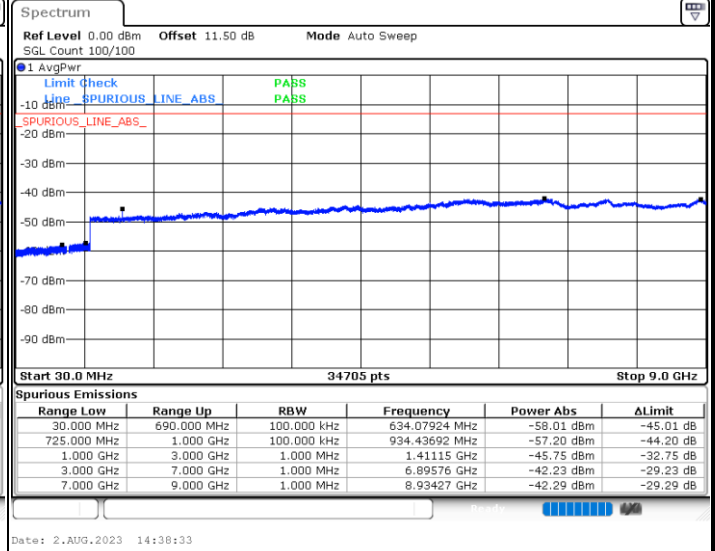
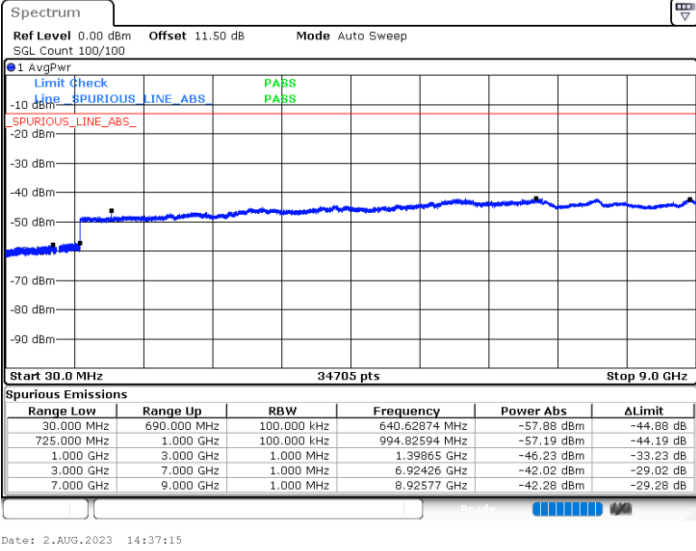




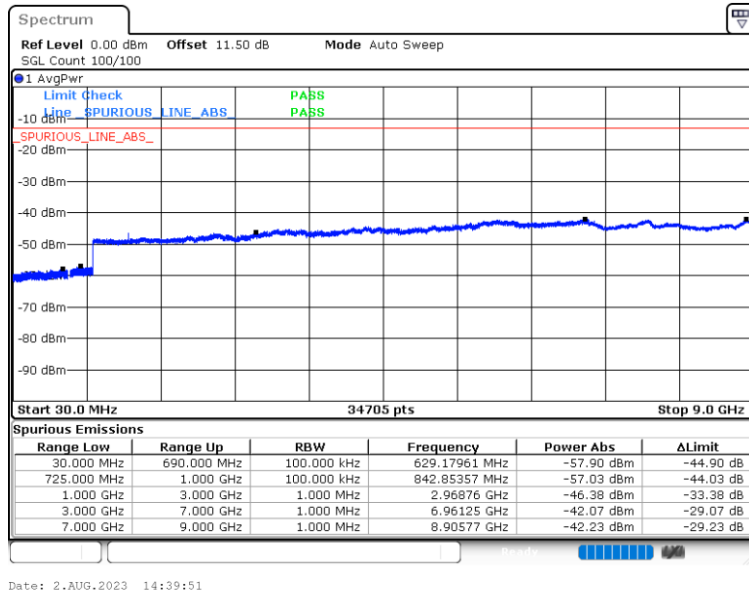
LTE Band 12 / 5MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

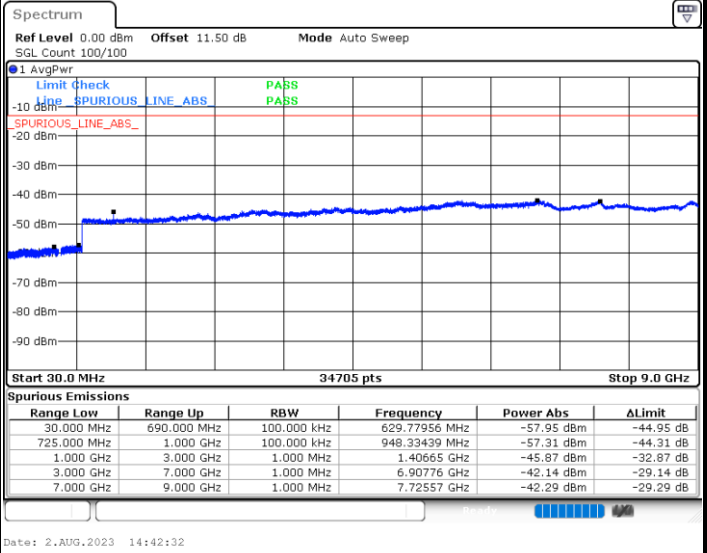
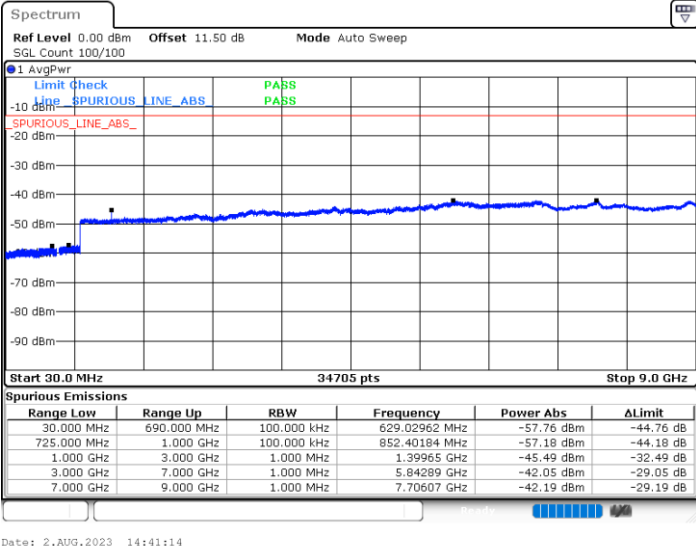




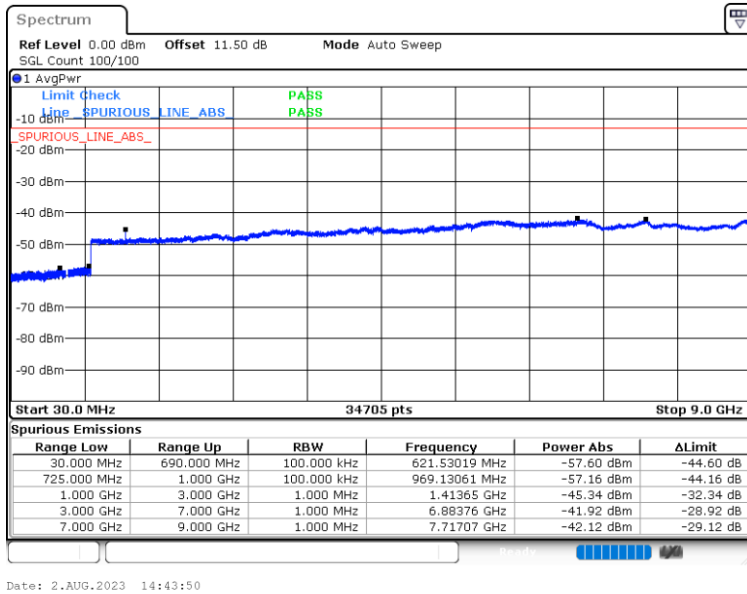
LTE Band 12 / 10MHz

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	0.0123	PASS
40	Normal Voltage	0.0110	
30	Normal Voltage	0.0141	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0123	
0	Normal Voltage	0.0085	
-10	Normal Voltage	0.0095	
-20	Normal Voltage	0.0073	
-30	Normal Voltage	0.0054	
20	Maximum Voltage	0.0073	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0076	

Note:

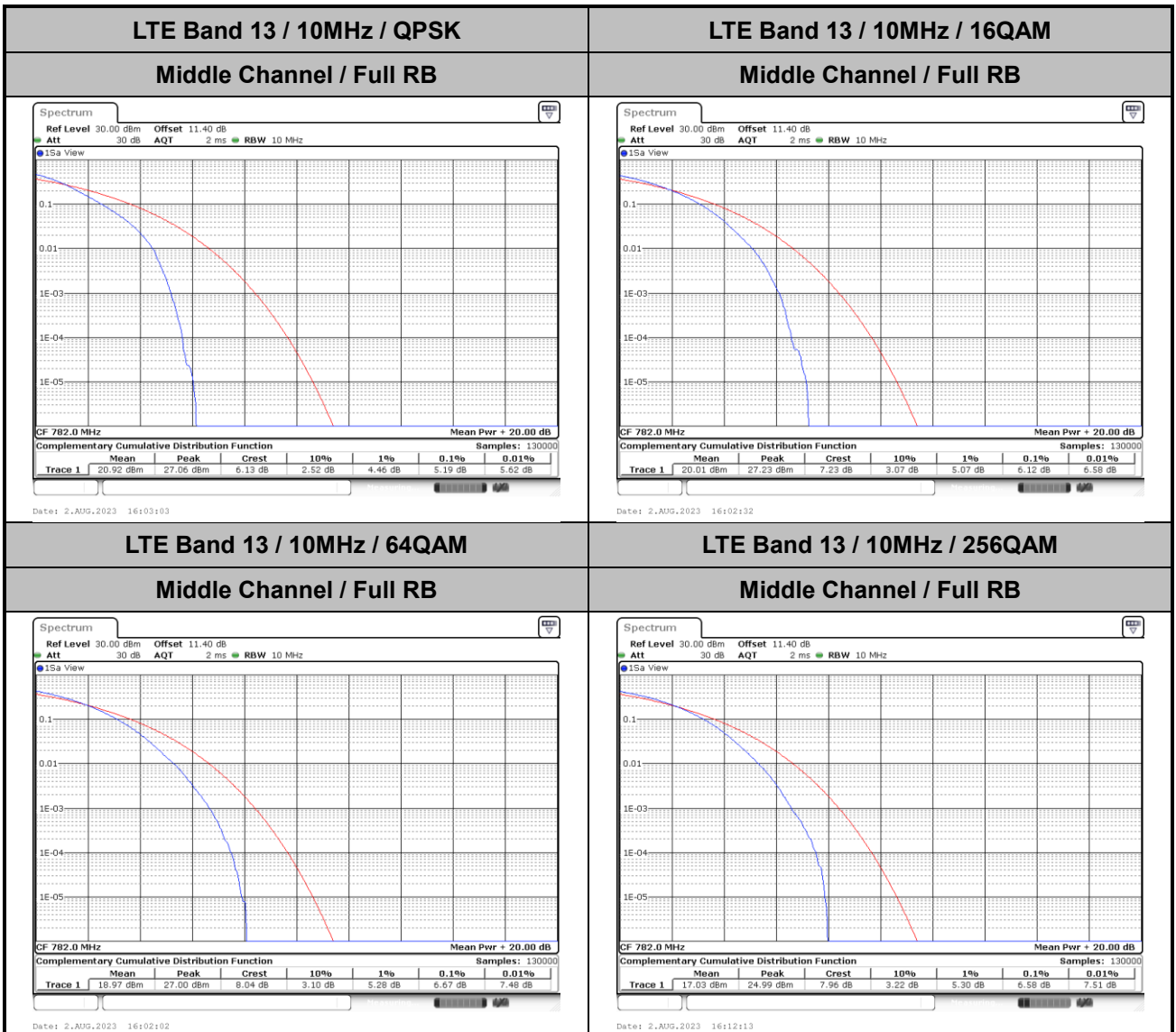
1. Normal Voltage = 4.05 V. ; Battery End Point (BEP) = 3.85 V. ; Maximum Voltage = 4.35 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 13

## Peak-to-Average Ratio

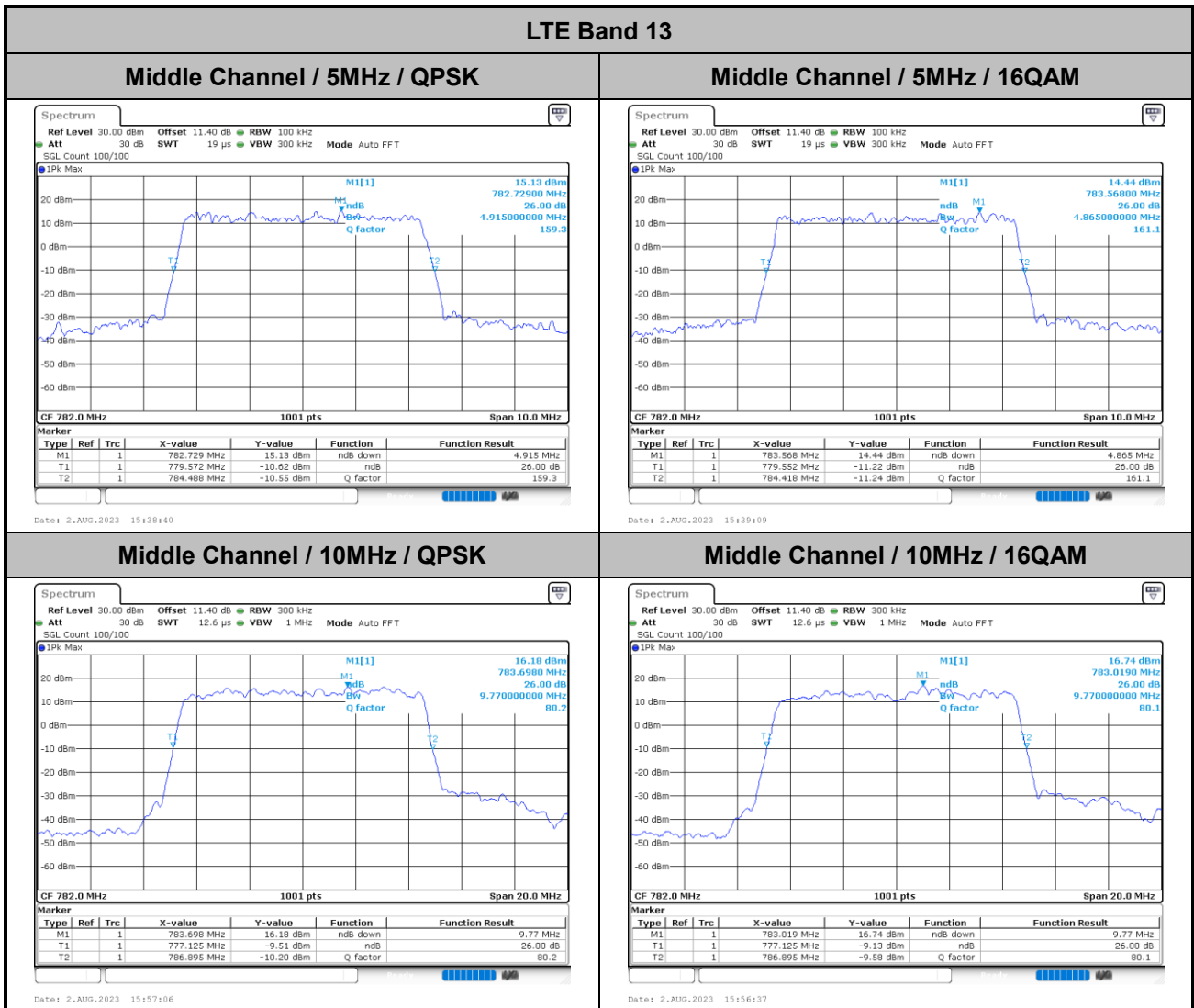
Mode	LTE Band 13 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.19	6.12	6.67	6.58	PASS





## 26dB Bandwidth

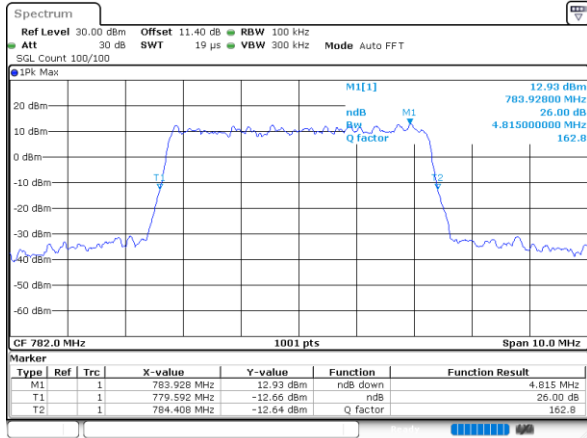
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.92	4.87	9.77	9.77	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	-	-	-	-	4.82	4.90	9.73	9.73	-	-	-	-





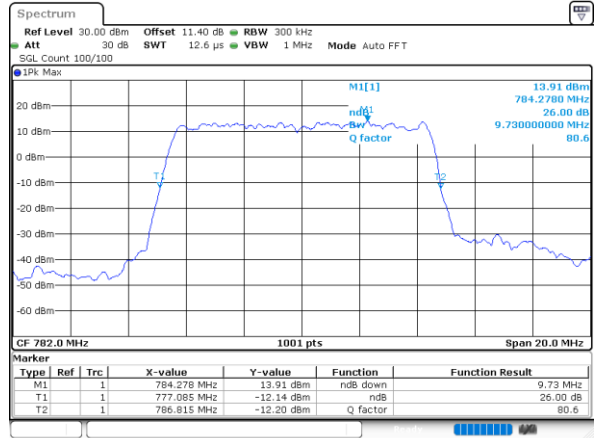
LTE Band 13

Middle Channel / 5MHz / 64QAM



Date: 2.AUG.2023 15:52:06

Middle Channel / 10MHz / 64QAM



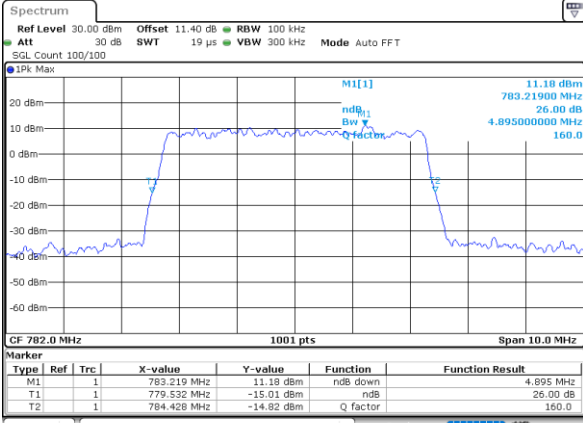
Date: 2.AUG.2023 16:00:32



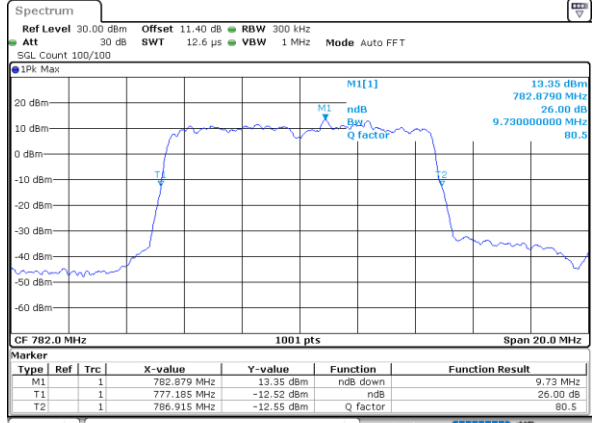
LTE Band 13

Middle Channel / 5MHz / 256QAM

Middle Channel / 10MHz / 256QAM



Date: 2.AUG.2023 16:10:139

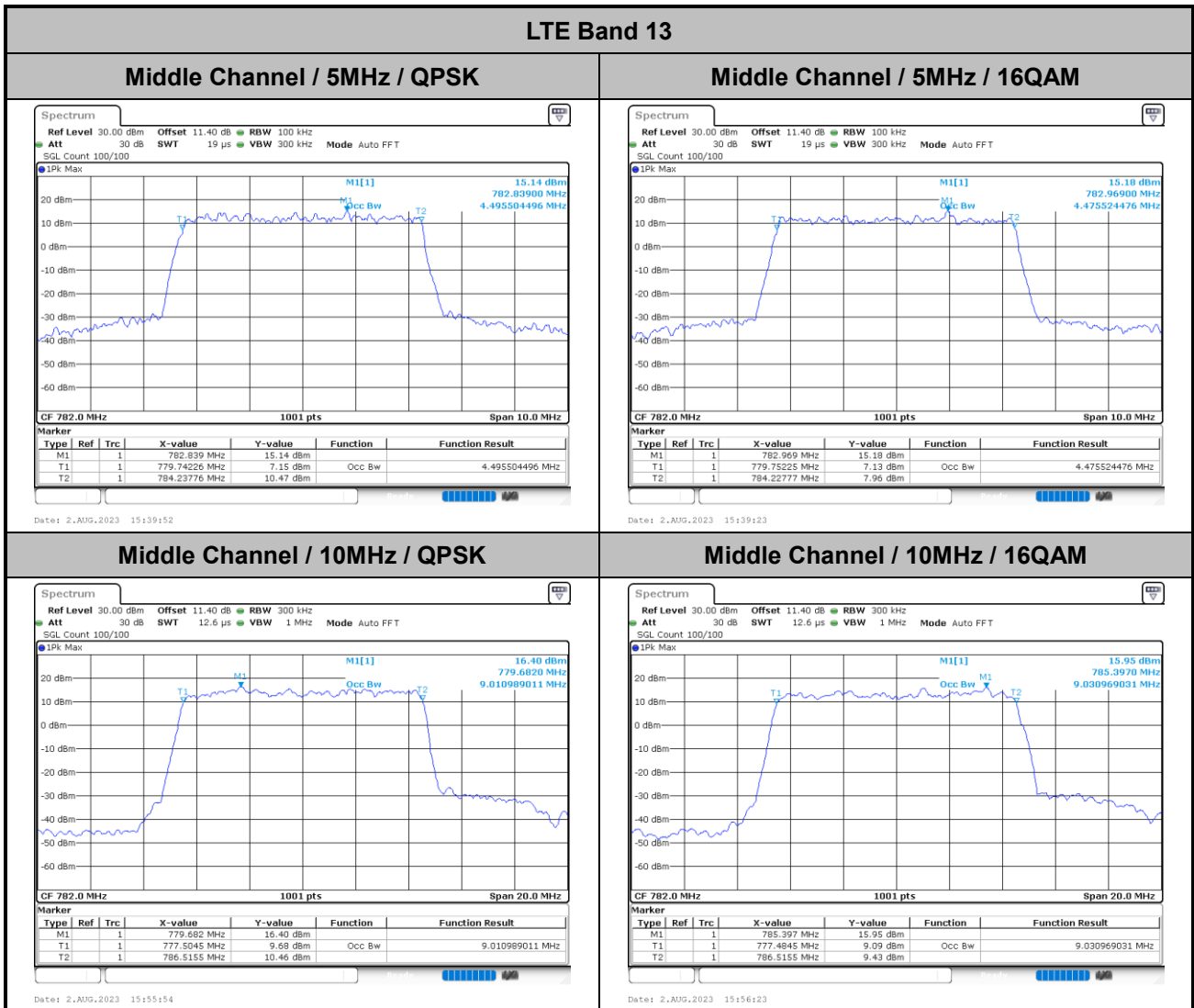


Date: 2.AUG.2023 16:10:43



# Occupied Bandwidth

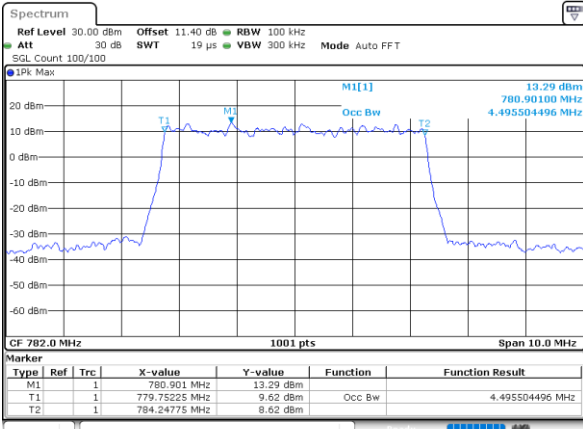
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.50	4.48	9.01	9.03	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	-	-	-	-	4.50	4.50	8.99	8.95	-	-	-	-





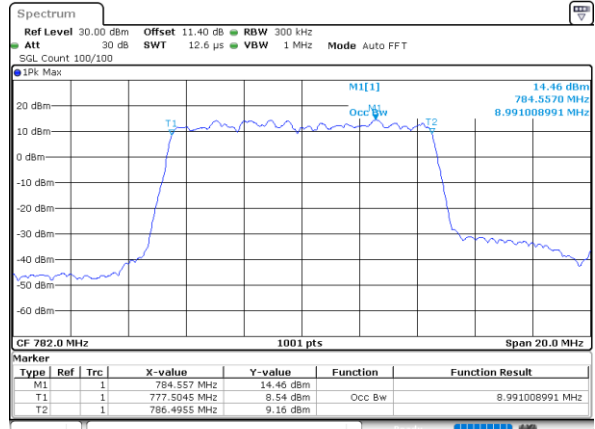
LTE Band 13

Middle Channel / 5MHz / 64QAM



Date: 2.AUG.2023 15:52:20

Middle Channel / 10MHz / 64QAM



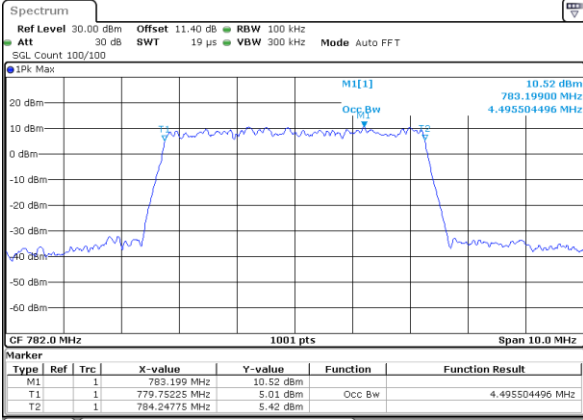
Date: 2.AUG.2023 16:00:18



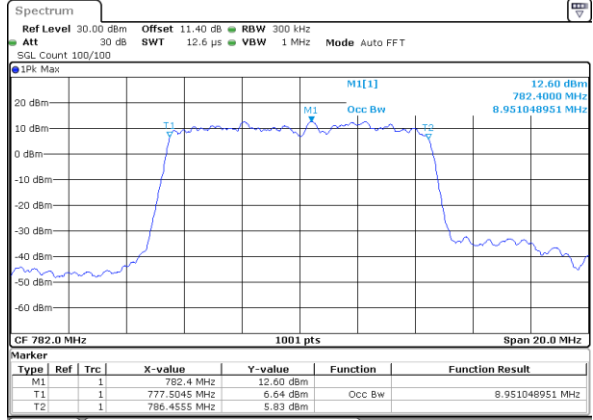
LTE Band 13

Middle Channel / 5MHz / 256QAM

Middle Channel / 10MHz / 256QAM



Date: 2.AUG.2023 16:10:53



Date: 2.AUG.2023 16:10:29