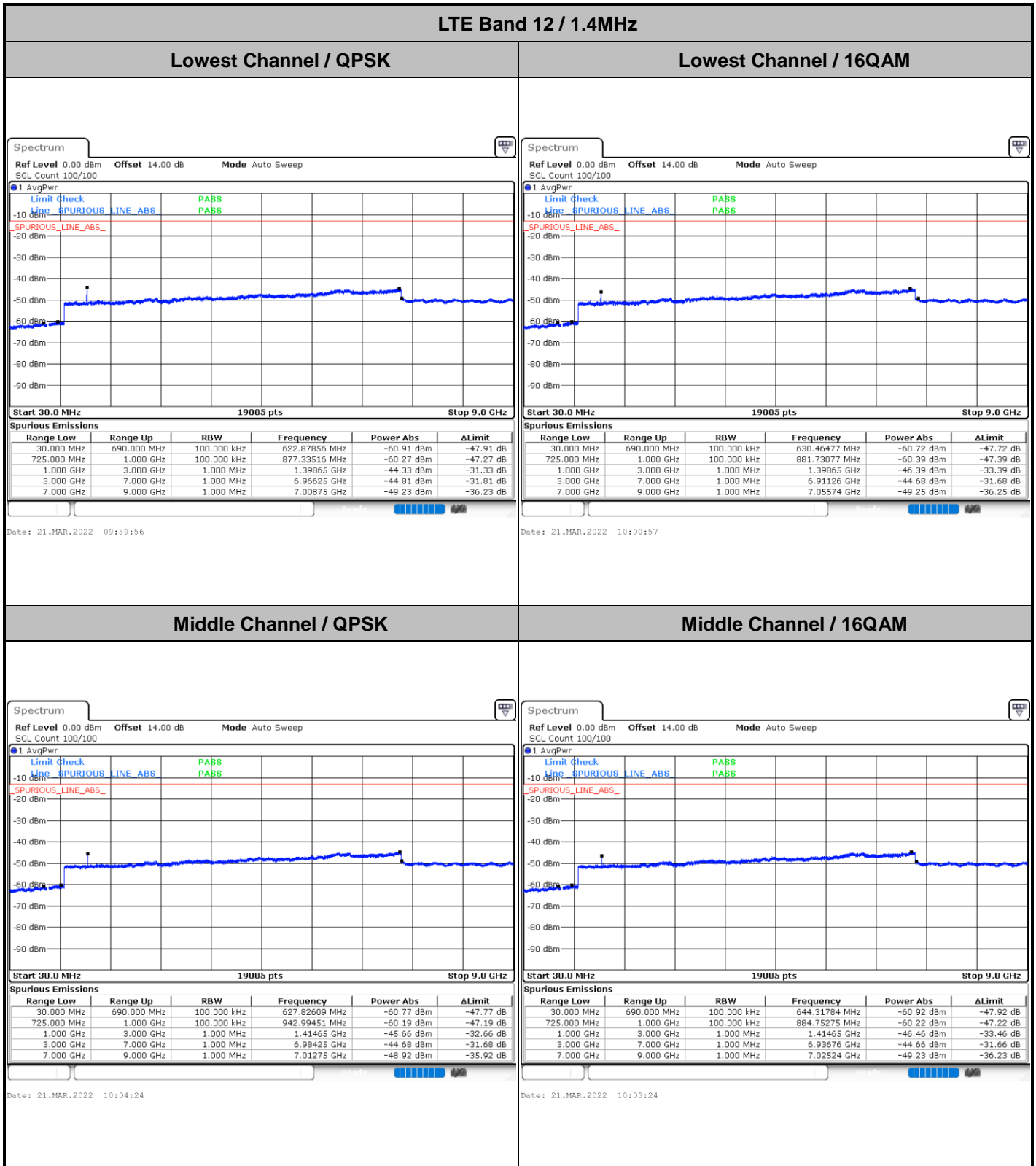




# Conducted Spurious Emission

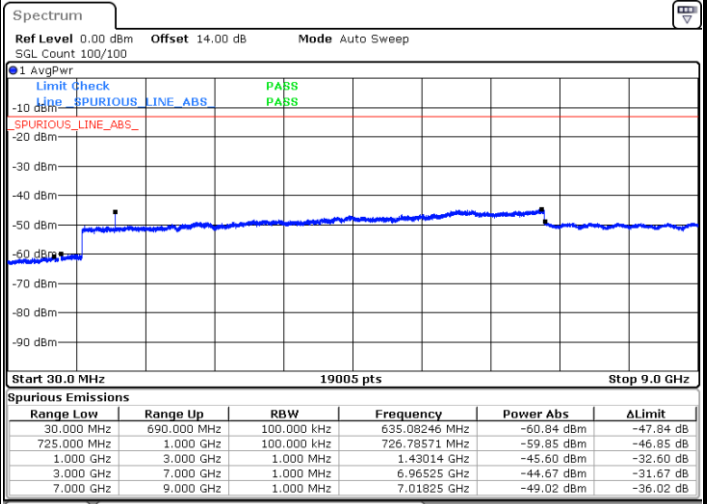
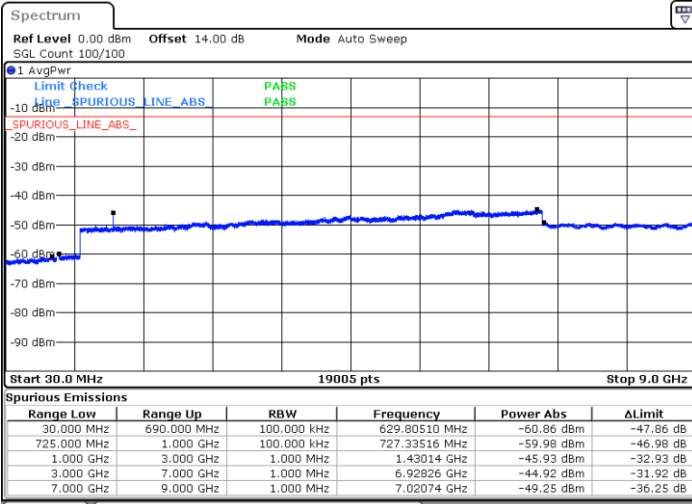




LTE Band 12 / 1.4MHz

Highest Channel / QPSK

Highest Channel / 16QAM



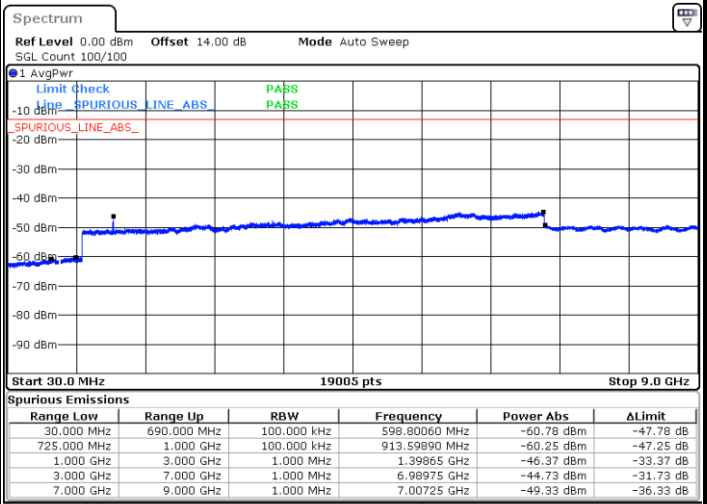
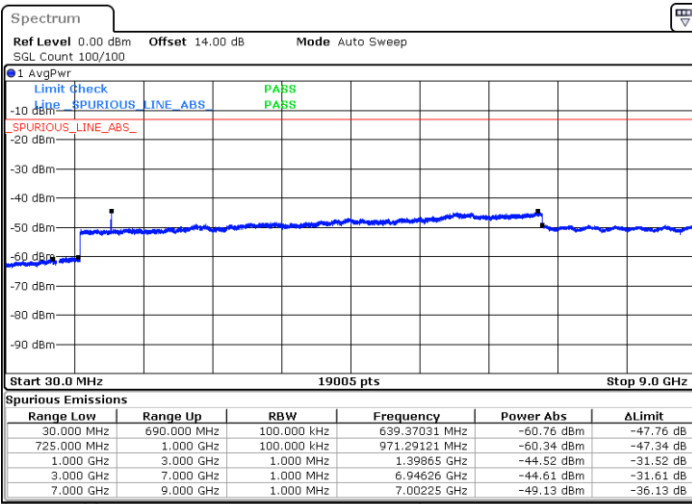
Date: 21.MAR.2022 10:11:54

Date: 21.MAR.2022 10:12:55

LTE Band 12 / 3MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



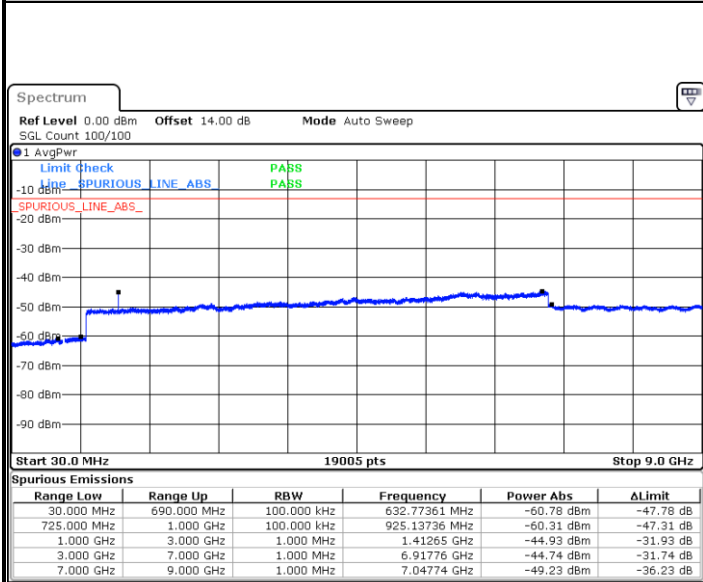
Date: 21.MAR.2022 10:30:00

Date: 21.MAR.2022 10:31:01



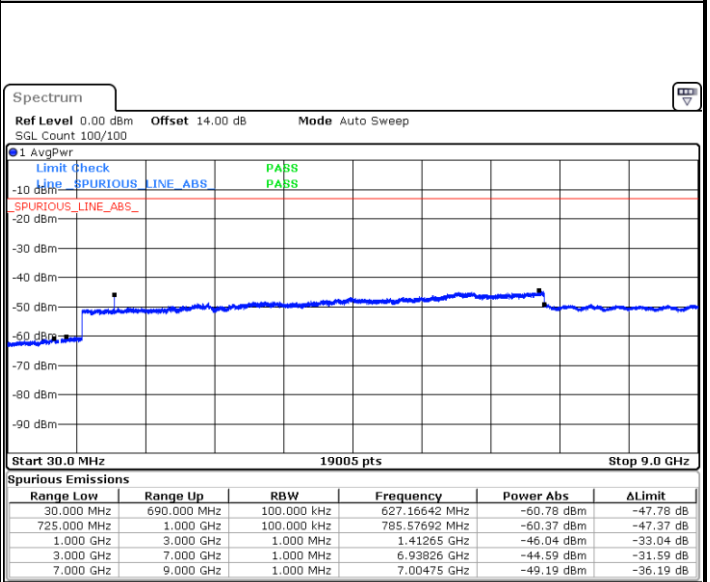
**LTE Band 12 / 3MHz**

**Middle Channel / QPSK**



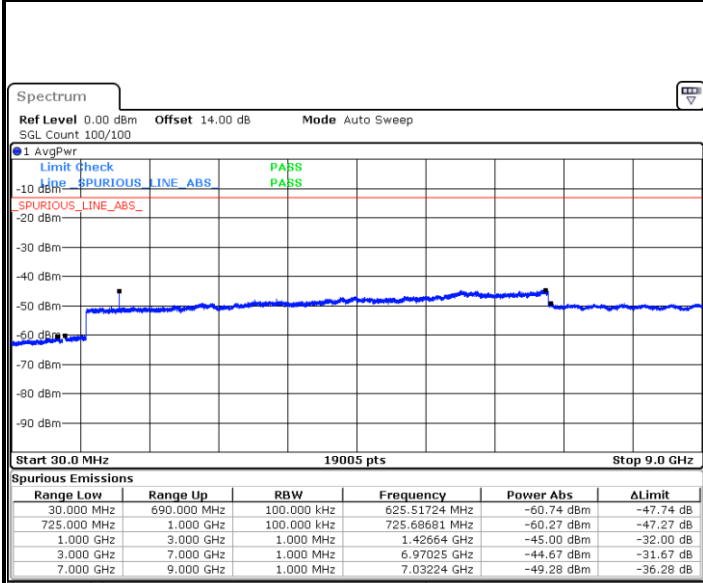
Date: 21.MAR.2022 10:34:28

**Middle Channel / 16QAM**



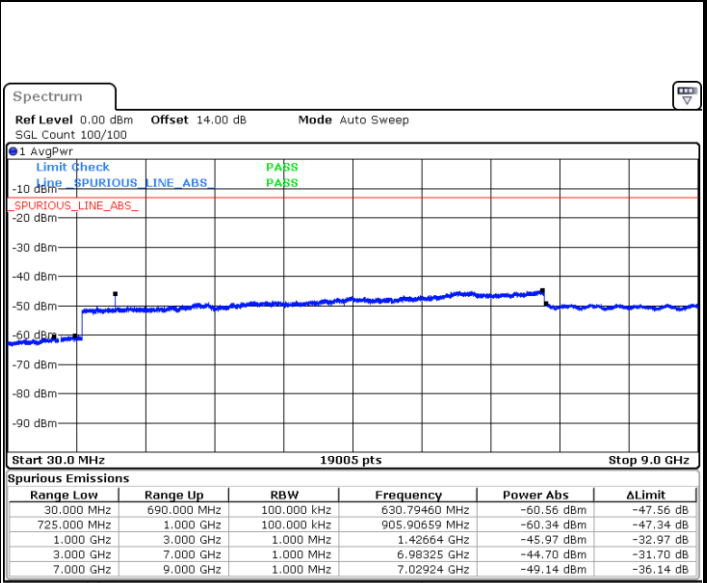
Date: 21.MAR.2022 10:33:27

**Highest Channel / QPSK**



Date: 21.MAR.2022 10:41:37

**Highest Channel / 16QAM**



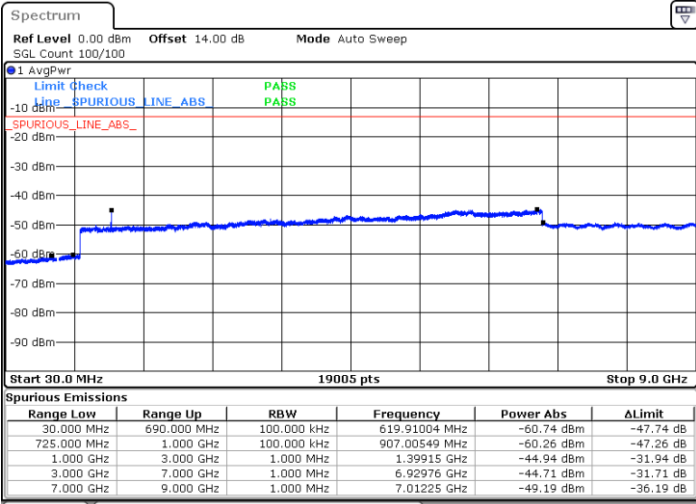
Date: 21.MAR.2022 10:42:38



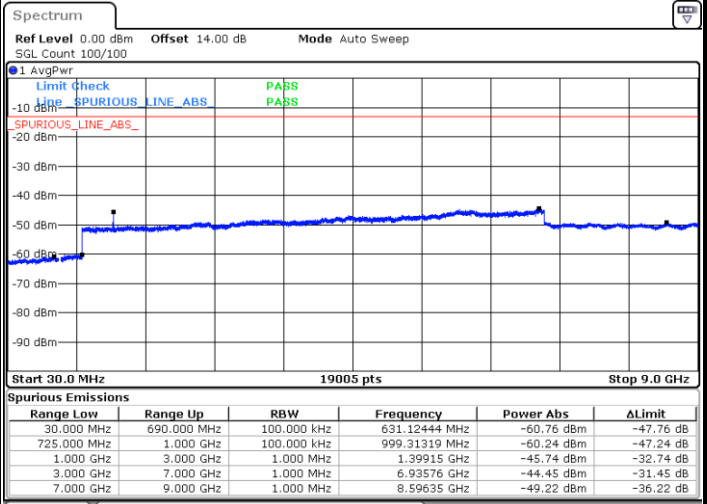
LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



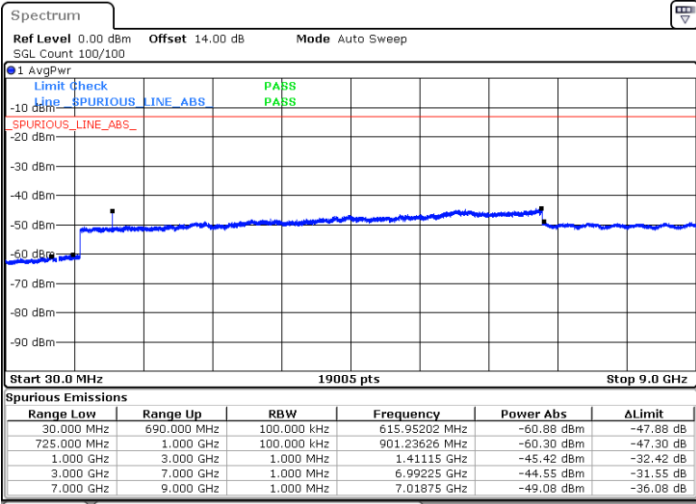
Date: 21.MAR.2022 11:09:36



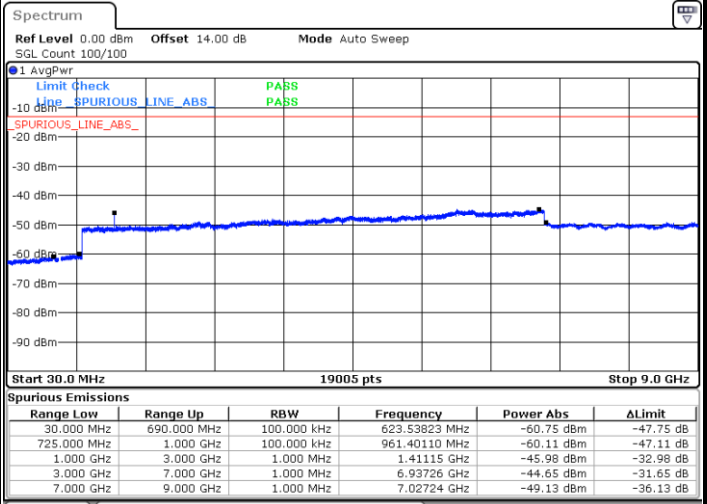
Date: 21.MAR.2022 11:10:37

Middle Channel / QPSK

Middle Channel / 16QAM



Date: 21.MAR.2022 11:14:04



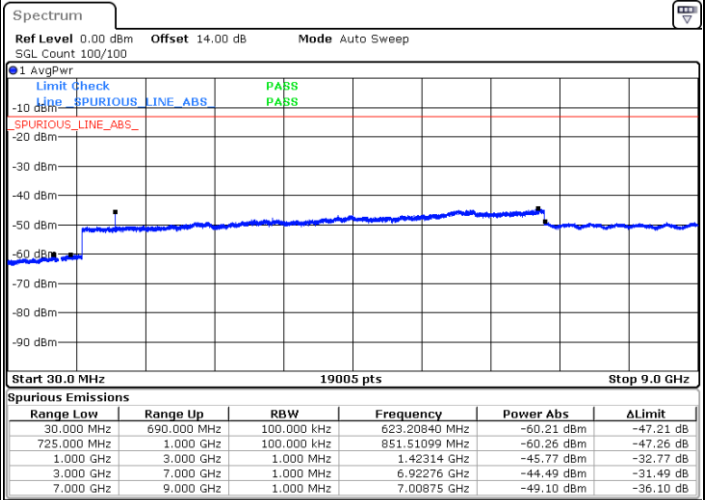
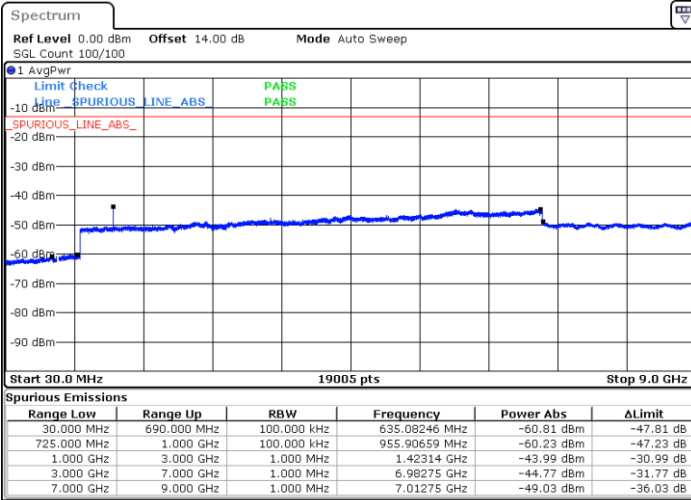
Date: 21.MAR.2022 11:13:03



LTE Band 12 / 5MHz

Highest Channel / QPSK

Highest Channel / 16QAM



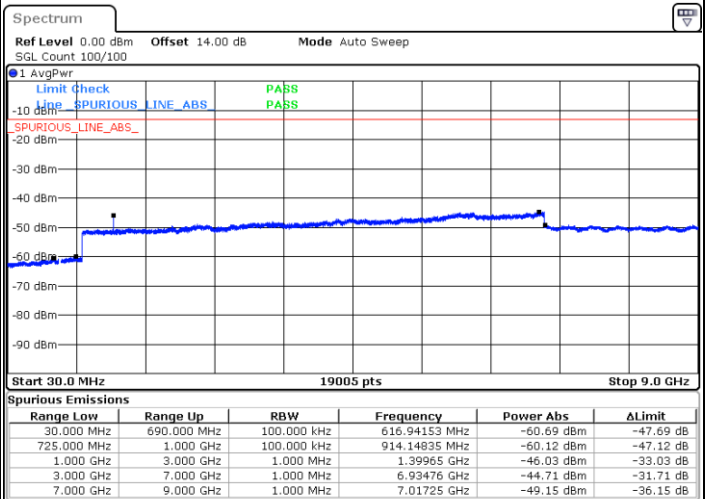
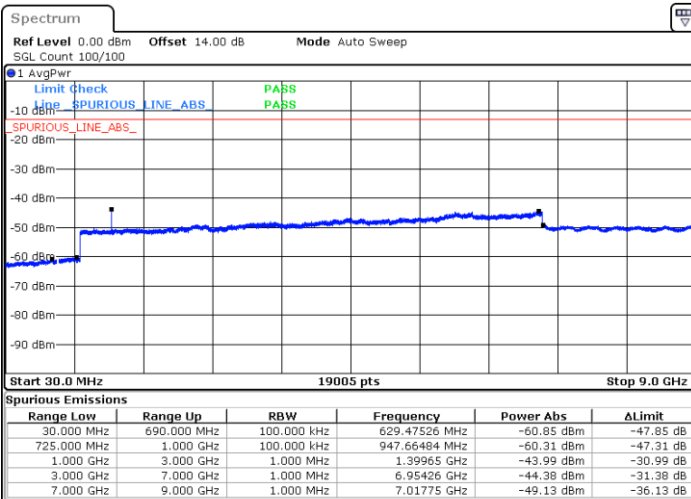
Date: 21.MAR.2022 11:22:15

Date: 21.MAR.2022 11:21:14

LTE Band 12 / 10MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



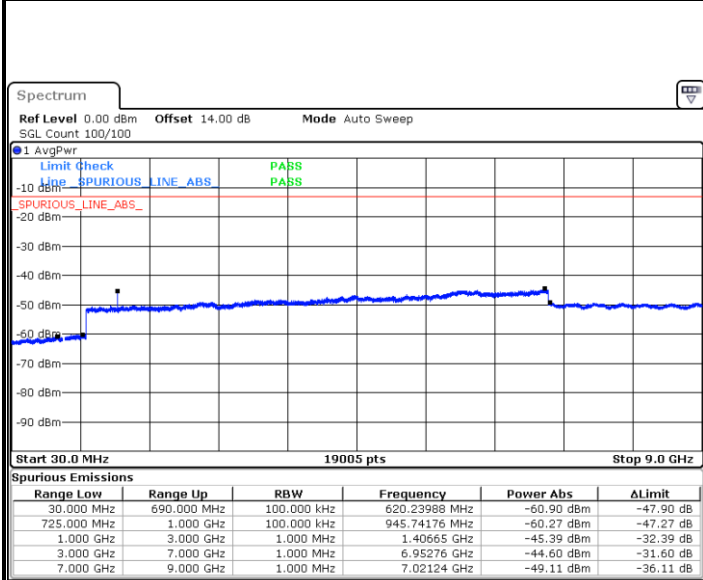
Date: 21.MAR.2022 11:29:25

Date: 21.MAR.2022 11:30:16



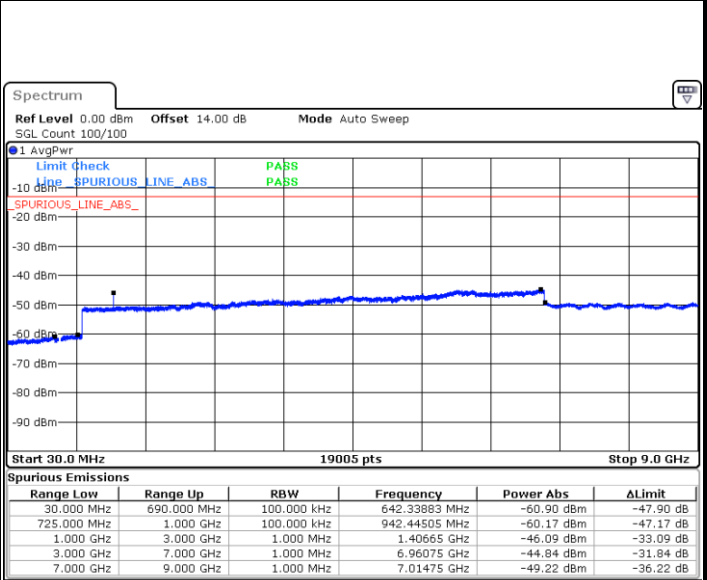
LTE Band 12 / 10MHz

Middle Channel / QPSK



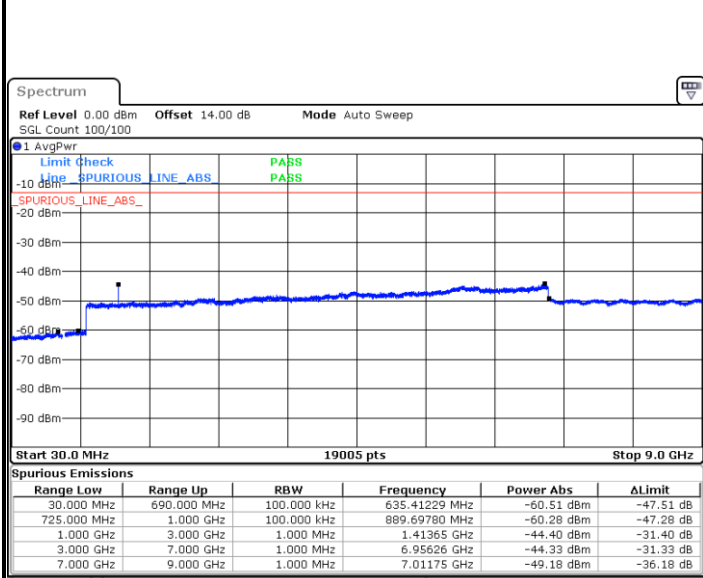
Date: 21.MAR.2022 11:33:23

Middle Channel / 16QAM



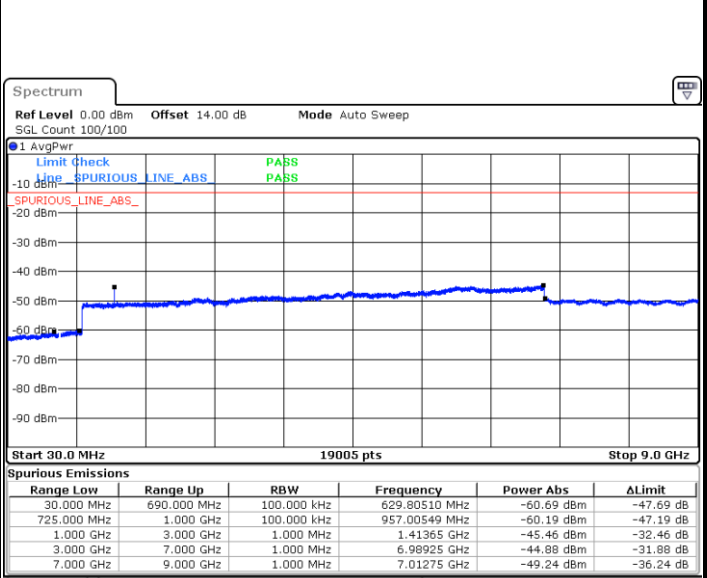
Date: 21.MAR.2022 11:32:33

Highest Channel / QPSK



Date: 21.MAR.2022 11:39:43

Highest Channel / 16QAM



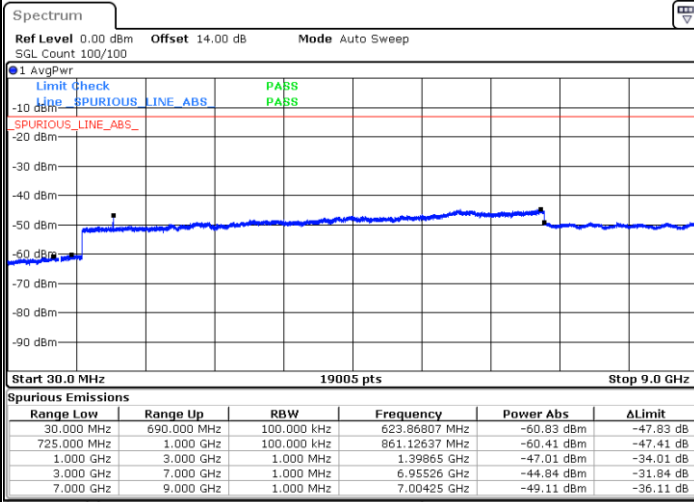
Date: 21.MAR.2022 11:40:34



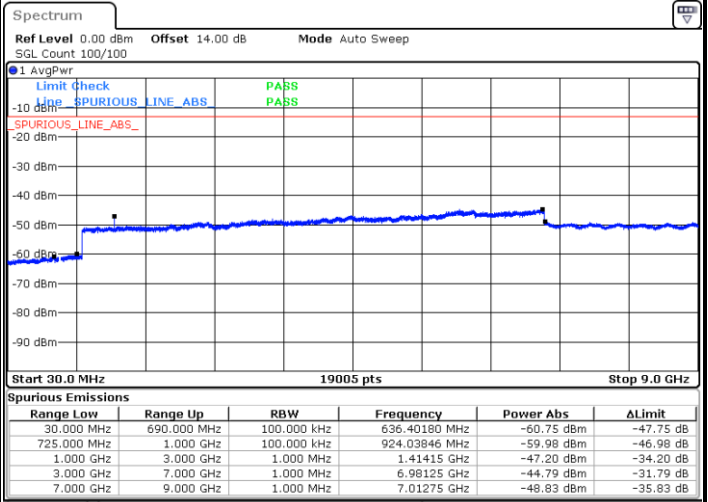
LTE Band 12 / 1.4MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

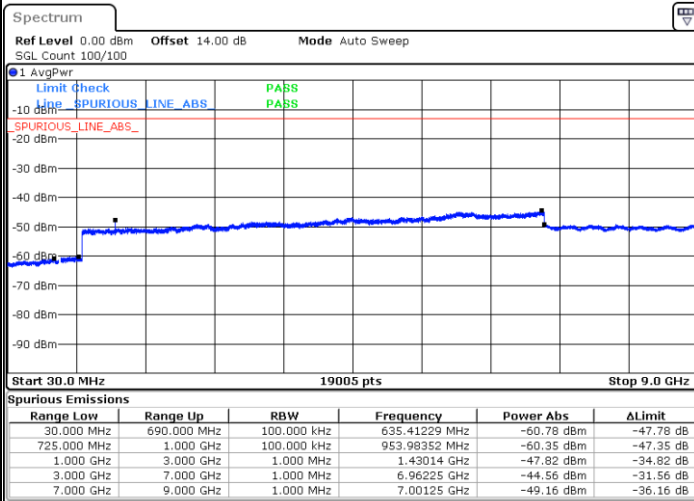


Date: 21.MAR.2022 10:17:00



Date: 21.MAR.2022 10:18:44

Highest Channel / 64QAM



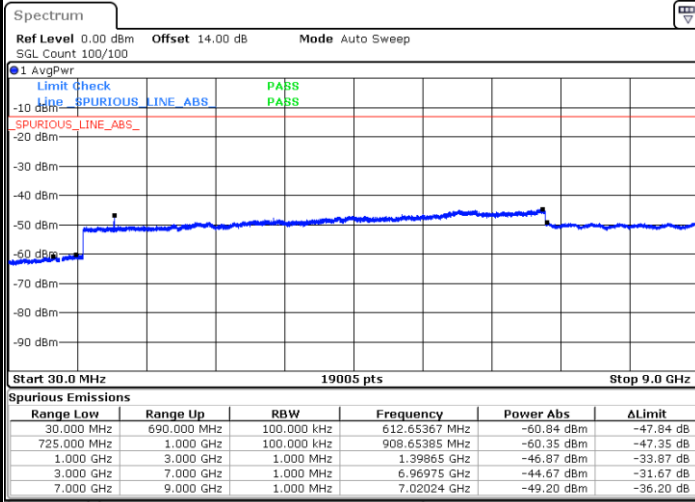
Date: 21.MAR.2022 10:22:50



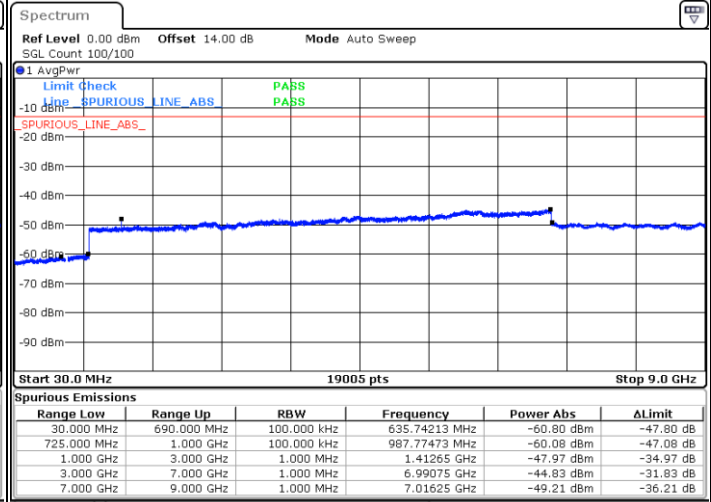
LTE Band 12 / 3MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

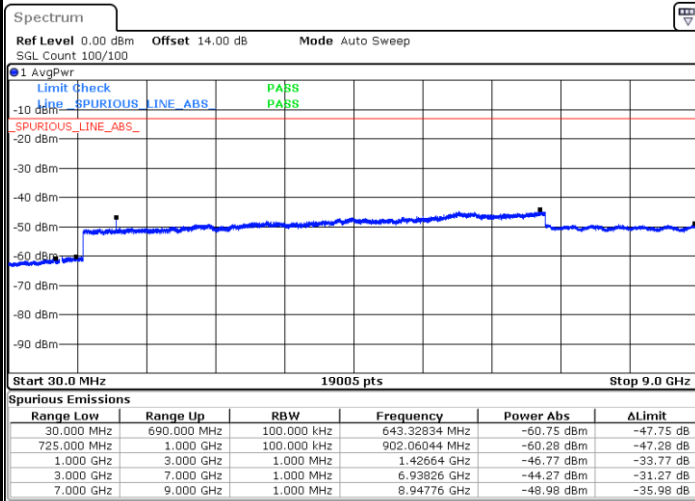


Date: 21.MAR.2022 10:46:43



Date: 21.MAR.2022 10:48:27

Highest Channel / 64QAM



Date: 21.MAR.2022 10:52:32

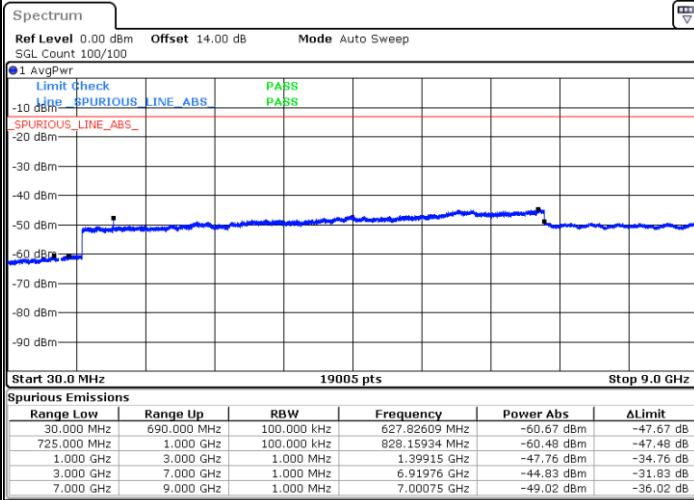




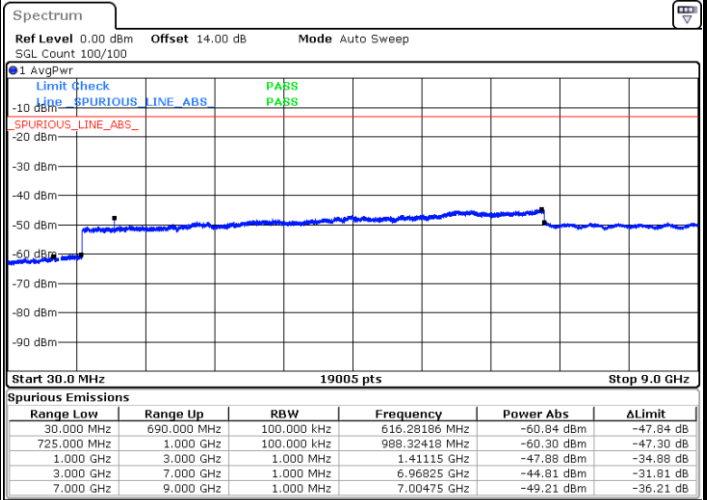
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

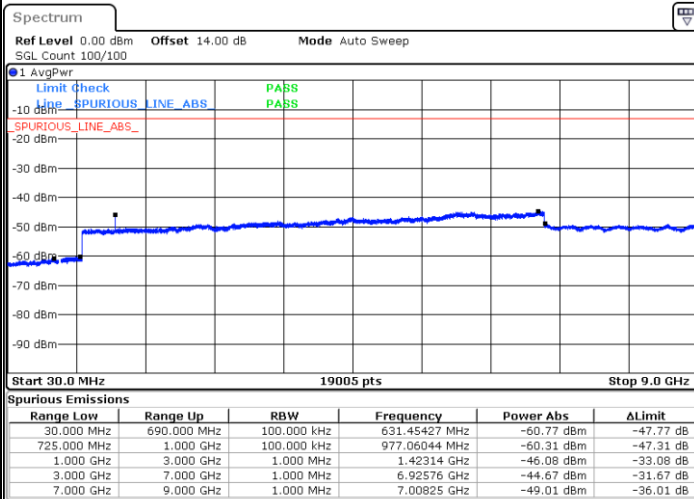


Date: 21.MAR.2022 10:56:38



Date: 21.MAR.2022 10:58:21

Highest Channel / 64QAM



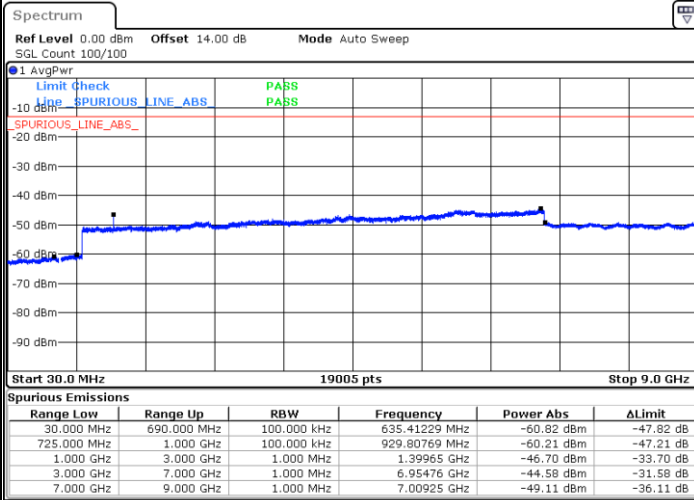
Date: 21.MAR.2022 11:02:26



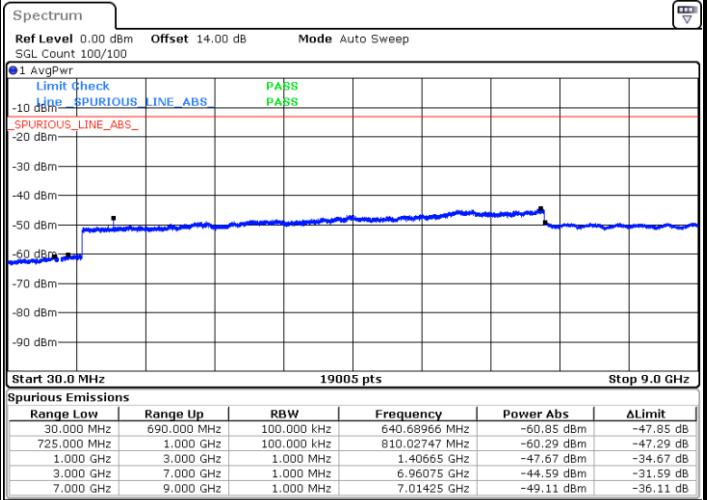
LTE Band 12 / 10MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

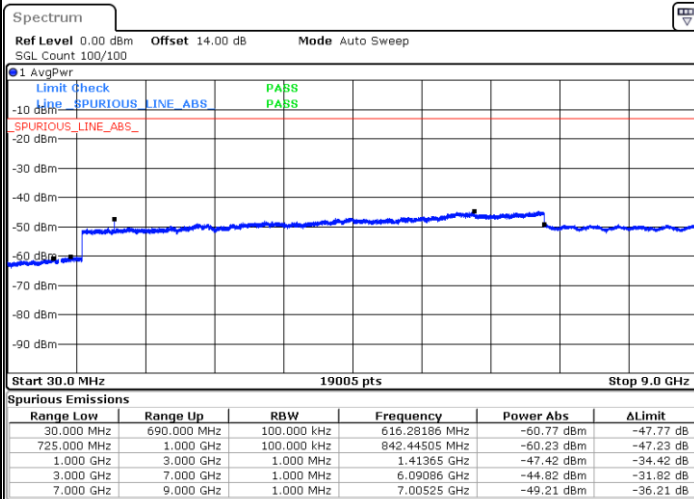


Date: 21.MAR.2022 11:44:09



Date: 21.MAR.2022 11:45:43

Highest Channel / 64QAM



Date: 21.MAR.2022 11:49:18



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	0.0069	PASS
40	Normal Voltage	0.0079	
30	Normal Voltage	0.0025	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0081	
0	Normal Voltage	0.0075	
-10	Normal Voltage	0.0072	
-20	Normal Voltage	0.0081	
-30	Normal Voltage	0.0098	
20	Maximum Voltage	0.0018	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0021	

Note:

1. Normal Voltage =7.78 V. ; Battery End Point (BEP) =7.2 V. ; Maximum Voltage =8.96 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 13

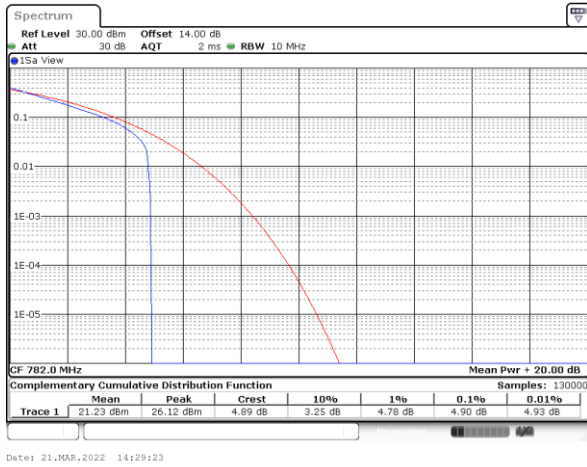
## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	4.90	5.01	5.68	6.06	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	PASS
Middle CH	6.72	6.55	-	-	
Highest CH	-	-	-	-	



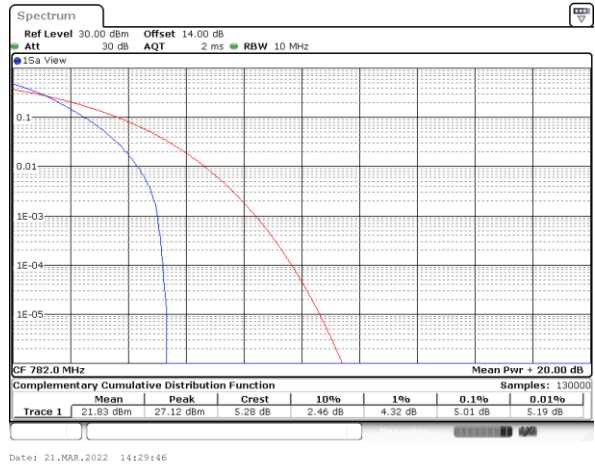
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 21.MAR.2022 14:29:23

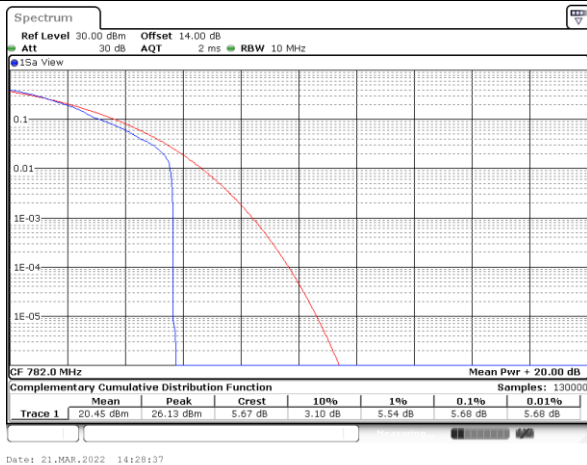
Middle Channel / Full RB



Date: 21.MAR.2022 14:29:46

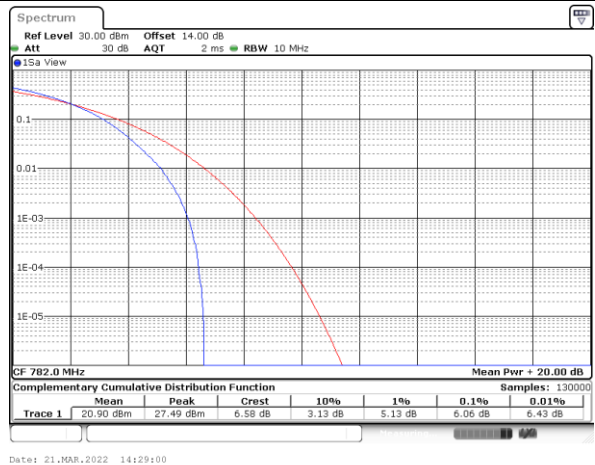
LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 21.MAR.2022 14:28:37

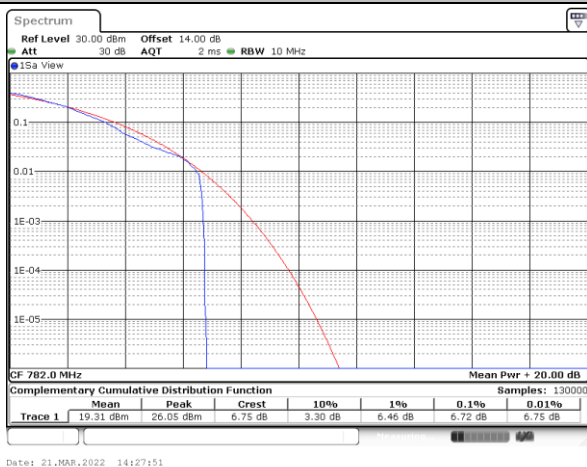
Middle Channel / Full RB



Date: 21.MAR.2022 14:29:00

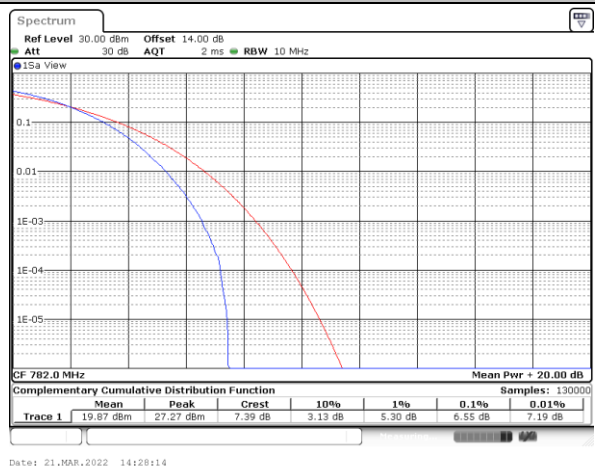
LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 21.MAR.2022 14:27:51

Middle Channel / Full RB



Date: 21.MAR.2022 14:28:14



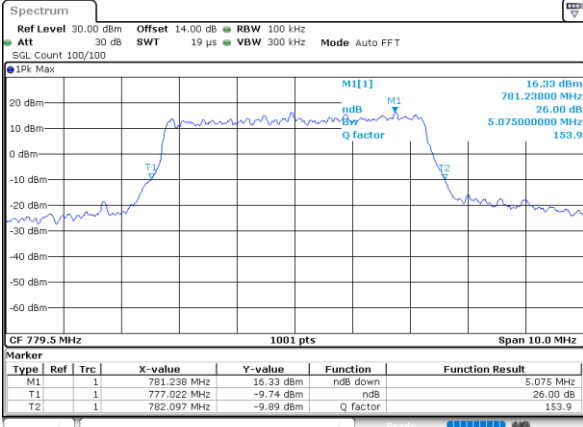
**26dB Bandwidth**

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
Lowest CH	-	-	-	-	5.08	4.92	-	-	-	-	-	-
Middle CH	-	-	-	-	5.03	4.96	10.07	9.77	-	-	-	-
Highest CH	-	-	-	-	5.01	4.88	-	-	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	5.04	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.95	-	9.67	-	-	-	-	-
Highest CH	-	-	-	-	5.09	-	-	-	-	-	-	-



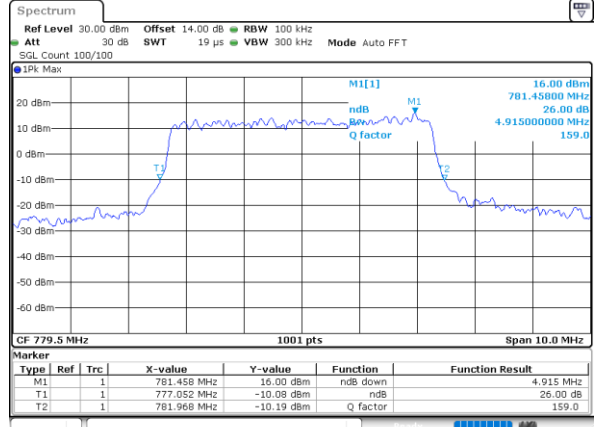
LTE Band 13

Lowest Channel / 5MHz / QPSK



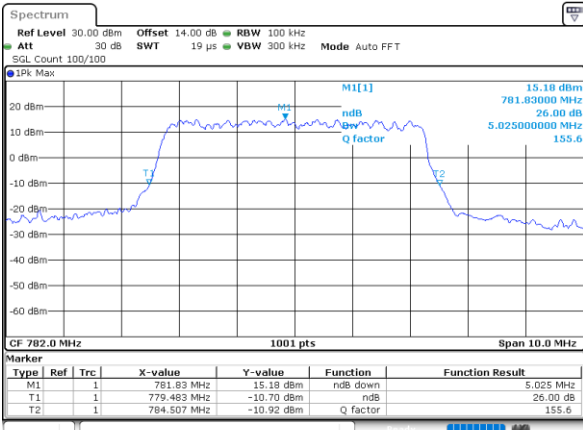
Date: 21.MAR.2022 13:31:37

Lowest Channel / 5MHz / 16QAM



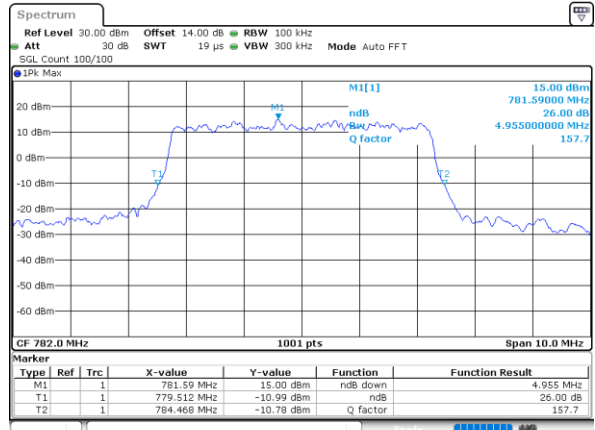
Date: 21.MAR.2022 13:31:15

Middle Channel / 5MHz / QPSK



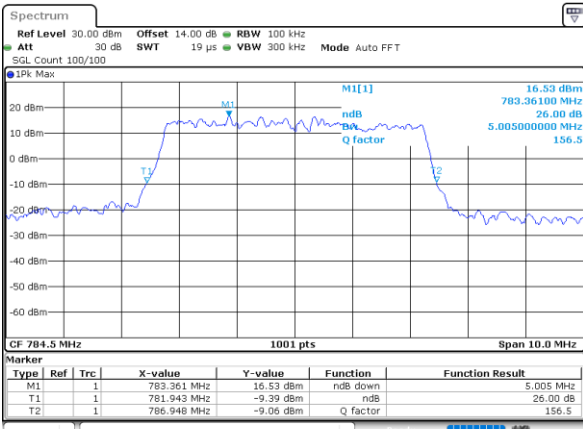
Date: 21.MAR.2022 13:42:41

Middle Channel / 5MHz / 16QAM



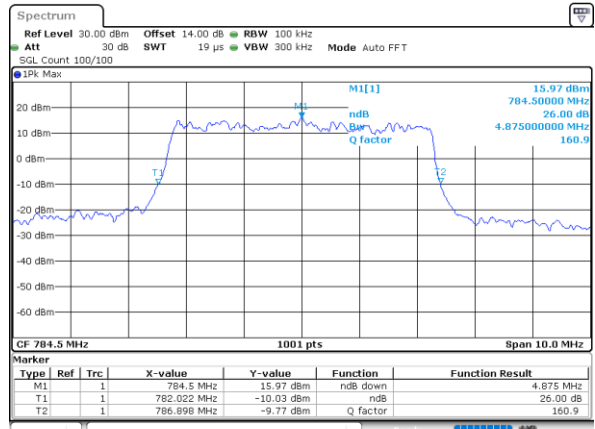
Date: 21.MAR.2022 13:43:03

Highest Channel / 5MHz / QPSK



Date: 21.MAR.2022 13:45:13

Highest Channel / 5MHz / 16QAM

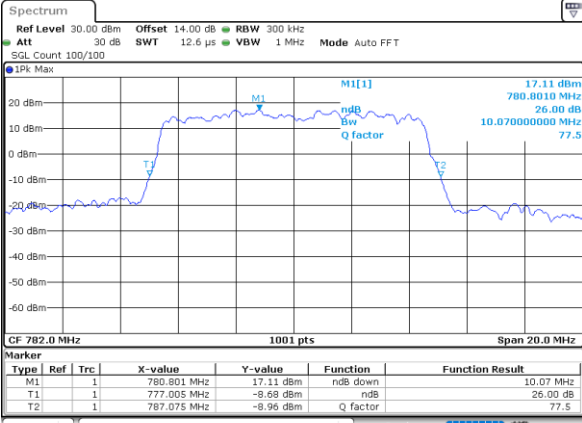


Date: 21.MAR.2022 13:44:51



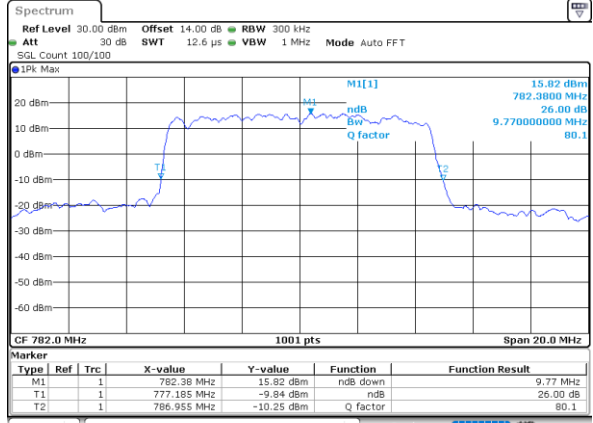
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 21.MAR.2022 14:07:47

Middle Channel / 10MHz / 16QAM



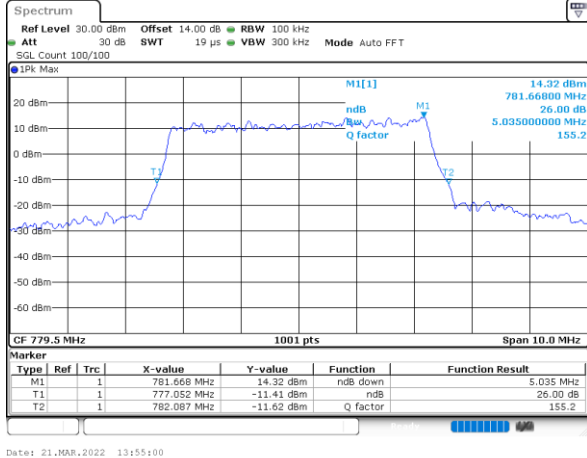
Date: 21.MAR.2022 14:07:25





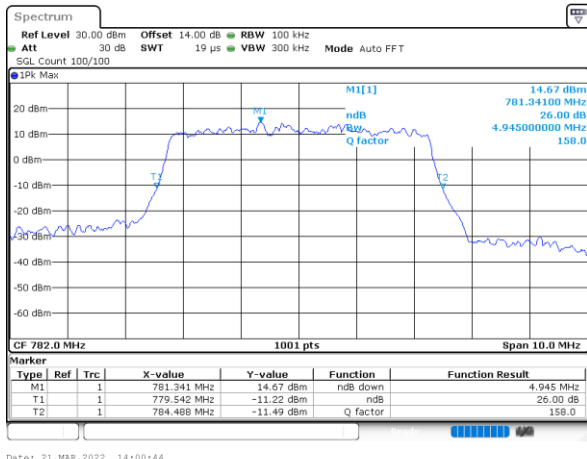
LTE Band 13

Lowest Channel / 5MHz / 64QAM



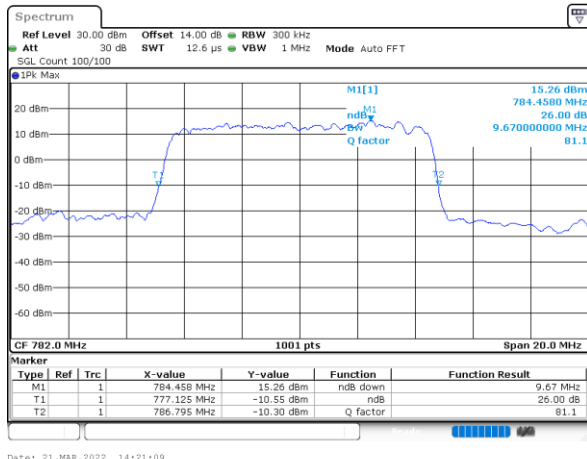
Date: 21.MAR.2022 13:55:00

Middle Channel / 5MHz / 64QAM



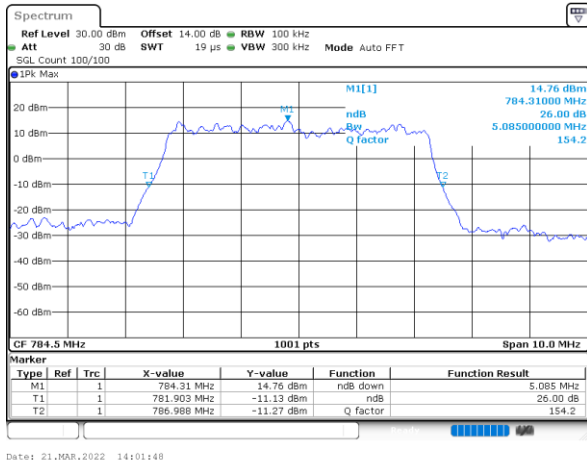
Date: 21.MAR.2022 14:00:44

Middle Channel / 10MHz / 64QAM



Date: 21.MAR.2022 14:21:09

Highest Channel / 5MHz / 64QAM



Date: 21.MAR.2022 14:01:48



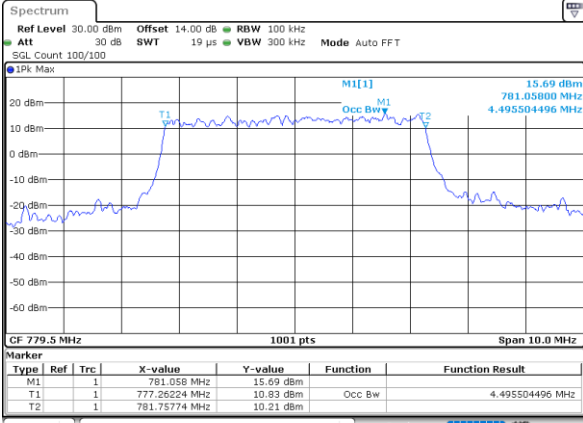
Occupied Bandwidth

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
Lowest CH	-	-	-	-	4.50	4.49	-	-	-	-	-	-
Middle CH	-	-	-	-	4.52	4.52	8.93	9.01	-	-	-	-
Highest CH	-	-	-	-	4.53	4.51	-	-	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.49	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.50	-	9.05	-	-	-	-	-
Highest CH	-	-	-	-	4.48	-	-	-	-	-	-	-



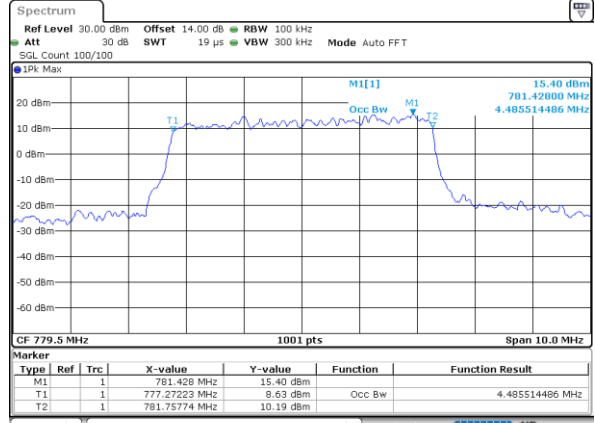
LTE Band 13

Lowest Channel / 5MHz / QPSK



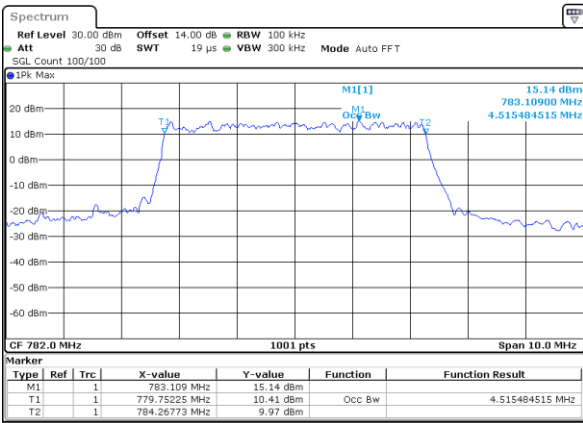
Date: 21.MAR.2022 13:30:33

Lowest Channel / 5MHz / 16QAM



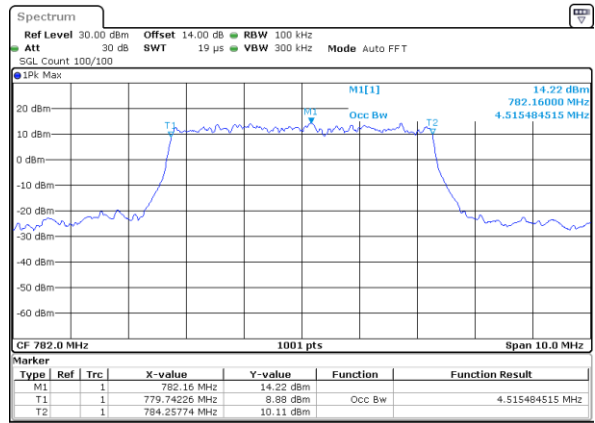
Date: 21.MAR.2022 13:30:53

Middle Channel / 5MHz / QPSK



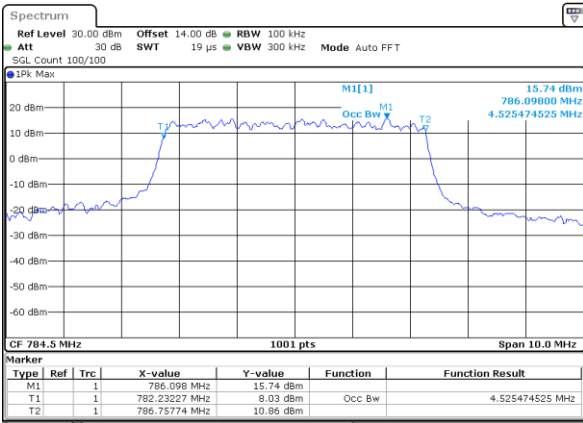
Date: 21.MAR.2022 13:43:46

Middle Channel / 5MHz / 16QAM



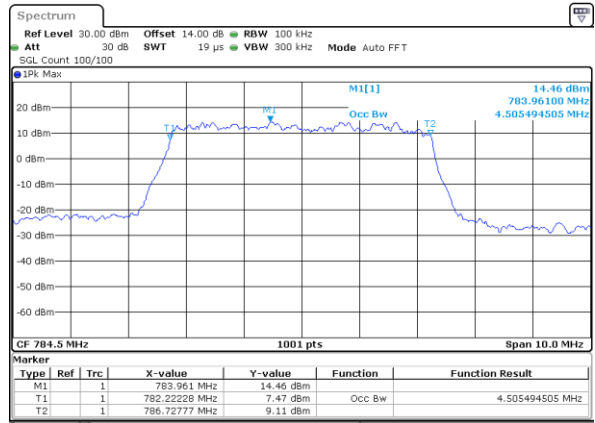
Date: 21.MAR.2022 13:43:24

Highest Channel / 5MHz / QPSK



Date: 21.MAR.2022 13:44:07

Highest Channel / 5MHz / 16QAM

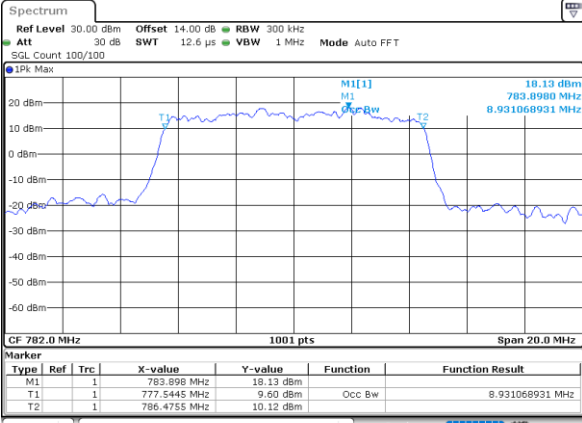


Date: 21.MAR.2022 13:44:29



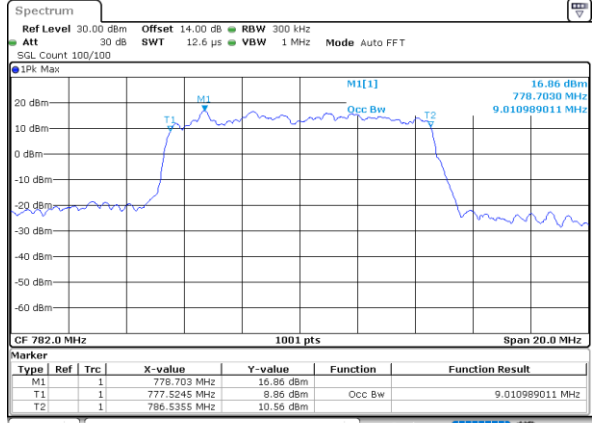
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 21.MAR.2022 14:06:42

Middle Channel / 10MHz / 16QAM

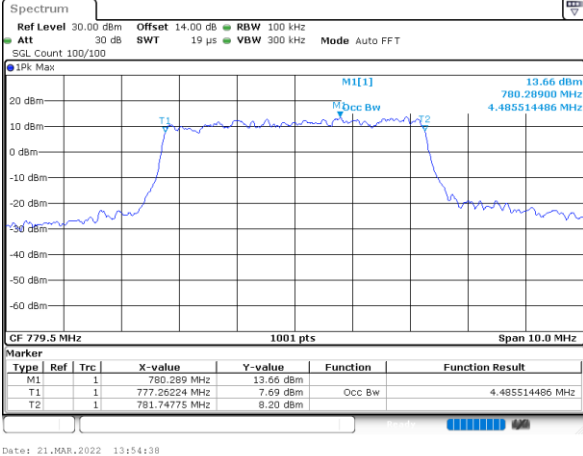


Date: 21.MAR.2022 14:07:04



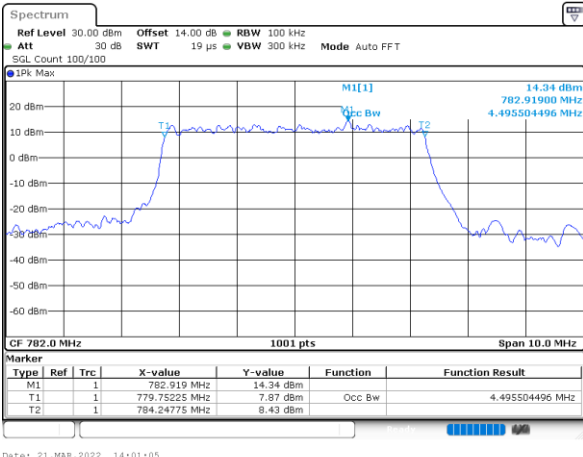
LTE Band 13

Lowest Channel / 5MHz / 64QAM



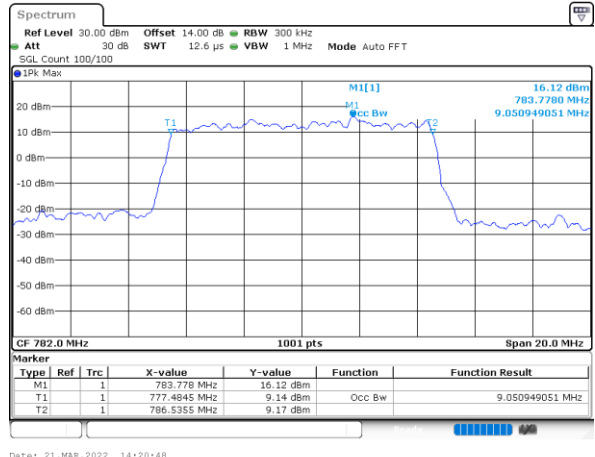
Date: 21.MAR.2022 13:54:38

Middle Channel / 5MHz / 64QAM



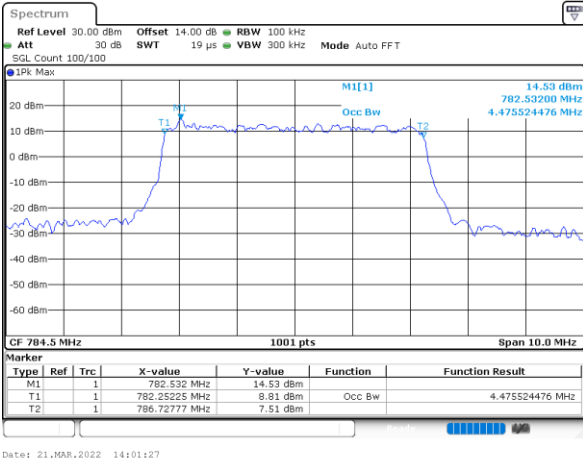
Date: 21.MAR.2022 14:01:05

Middle Channel / 10MHz / 64QAM



Date: 21.MAR.2022 14:20:48

Highest Channel / 5MHz / 64QAM



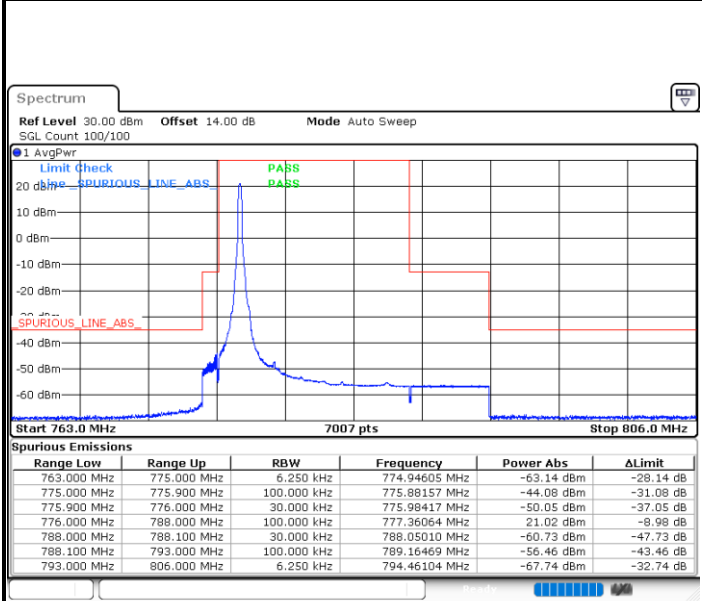
Date: 21.MAR.2022 14:01:27



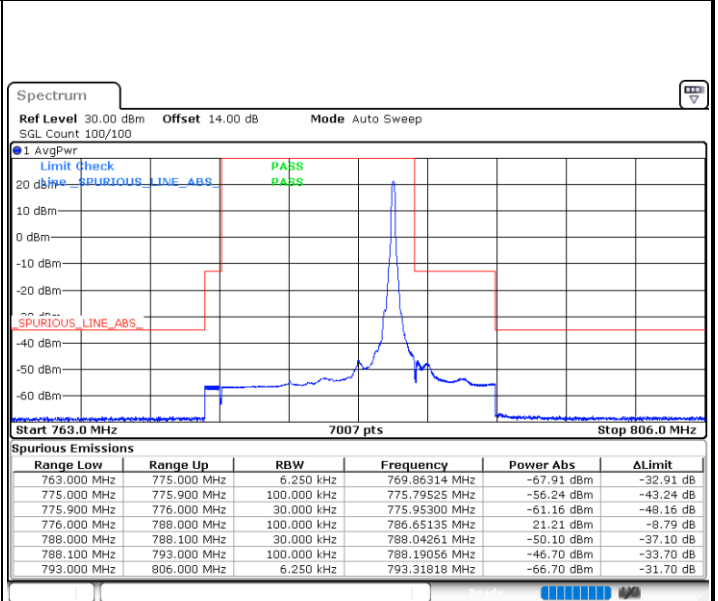
# Conducted Band Edge

## LTE Band 13 / 5MHz / QPSK

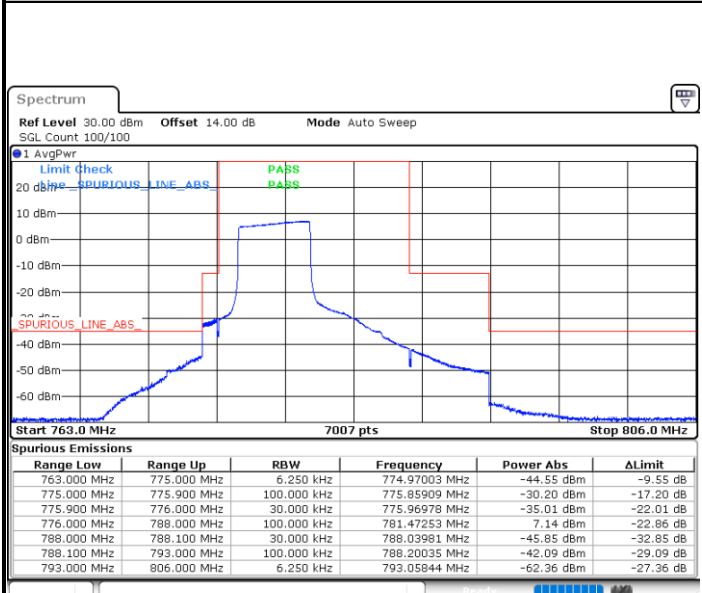
### Lowest Band Edge / 1 RB



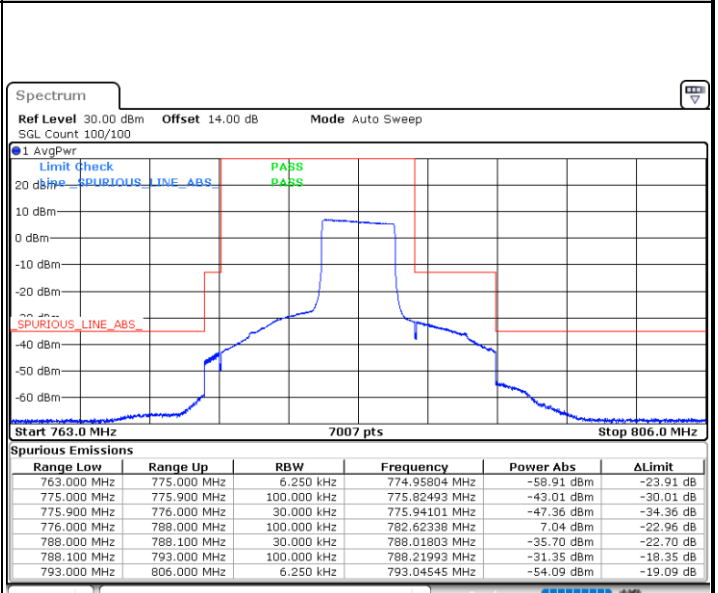
### Highest Band Edge / 1 RB



### Lowest Band Edge / Full RB



### Highest Band Edge / Full RB

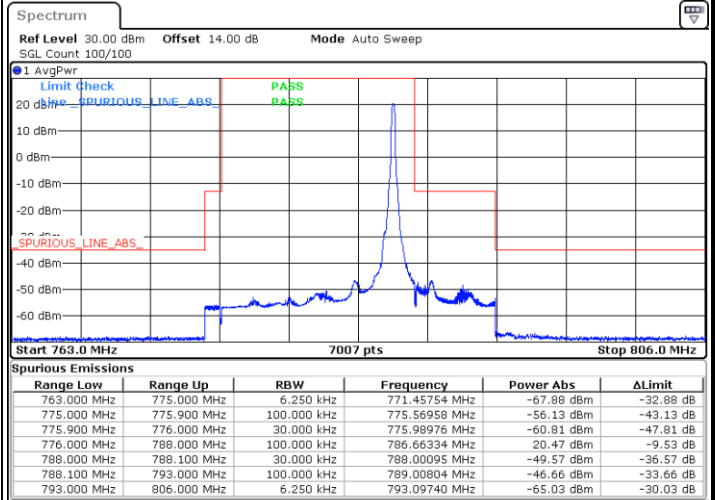
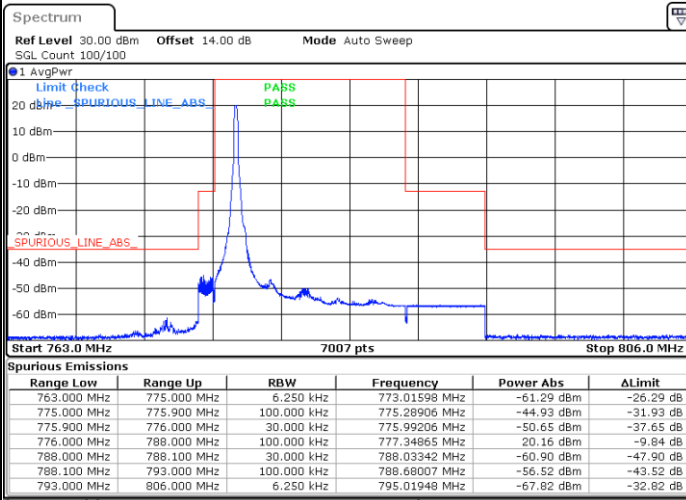




LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

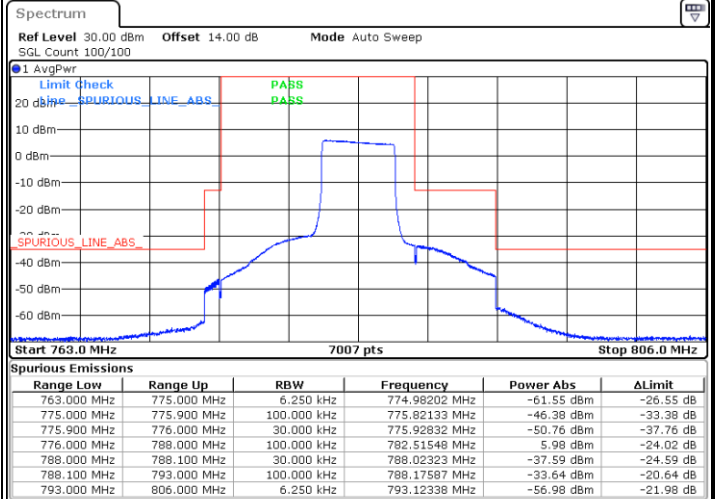
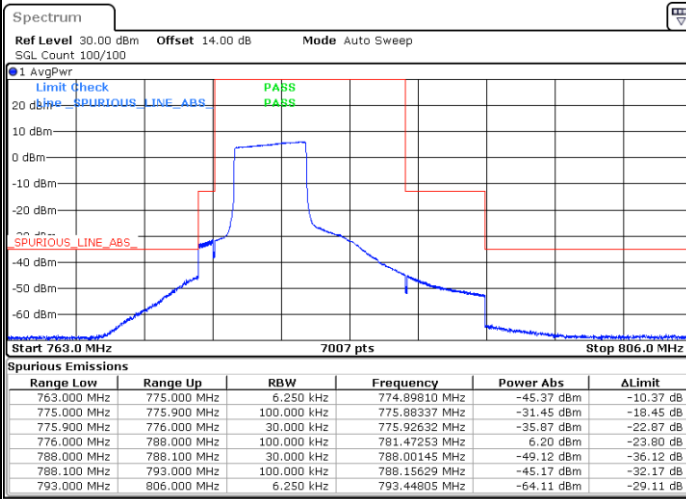


Date: 21.MAR.2022 13:37:09

Date: 21.MAR.2022 13:50:45

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 21.MAR.2022 13:35:18

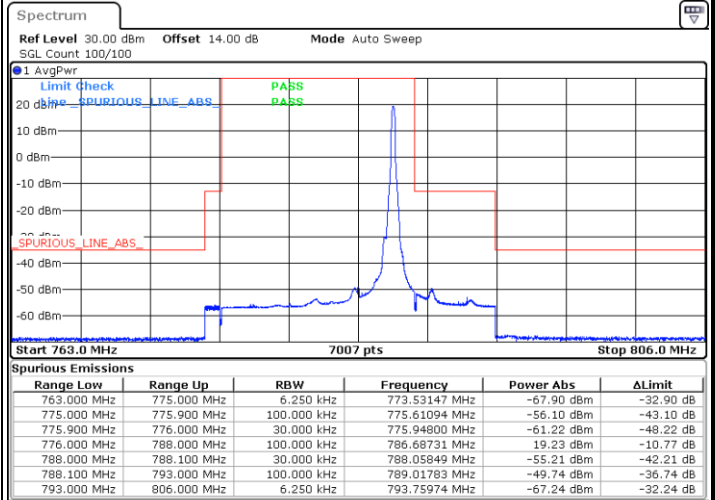
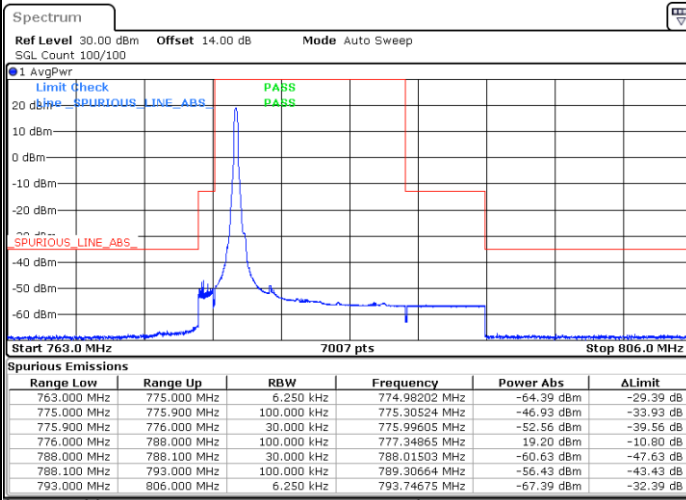
Date: 21.MAR.2022 13:48:54



LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

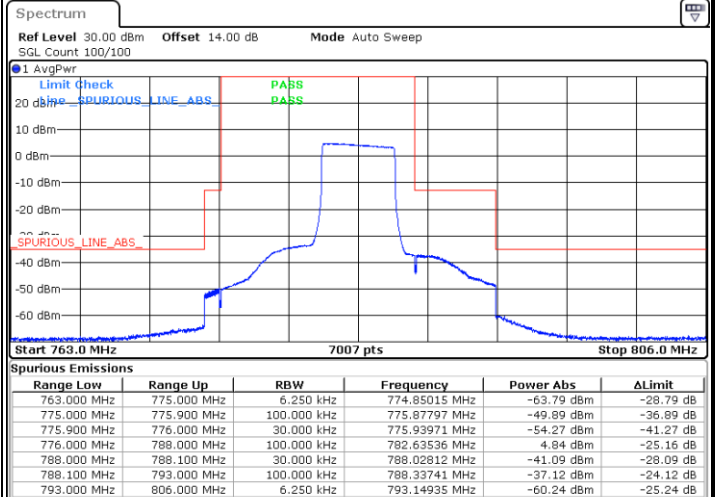
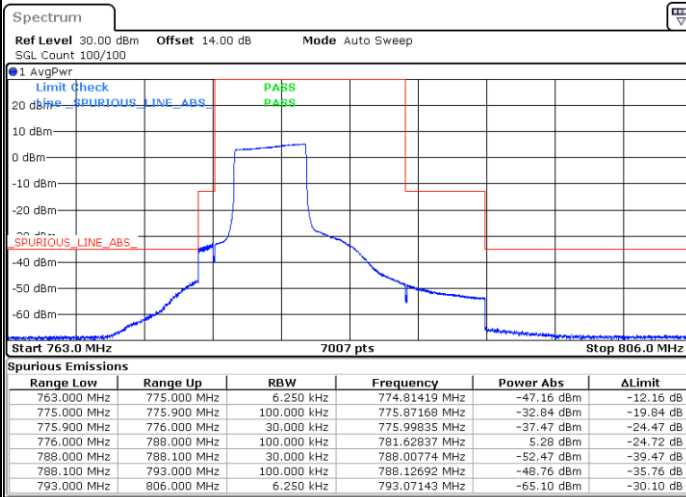


Date: 21.MAR.2022 13:58:41

Date: 21.MAR.2022 14:05:30

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 21.MAR.2022 13:56:51

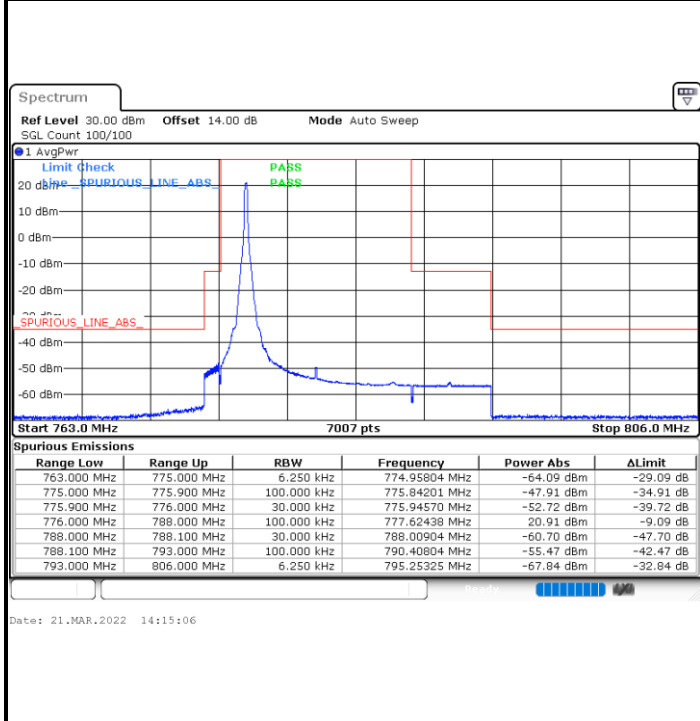
Date: 21.MAR.2022 14:03:39



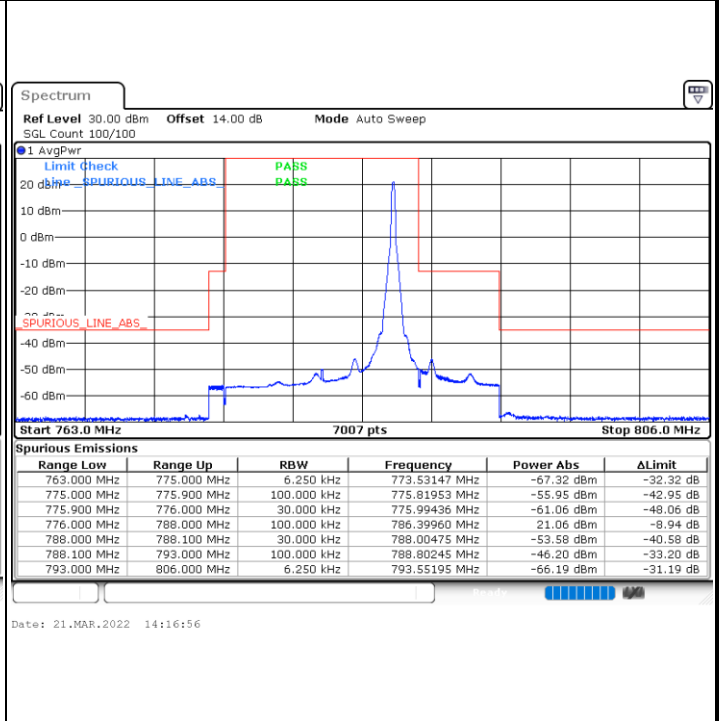


**LTE Band 13 / 10MHz / QPSK**

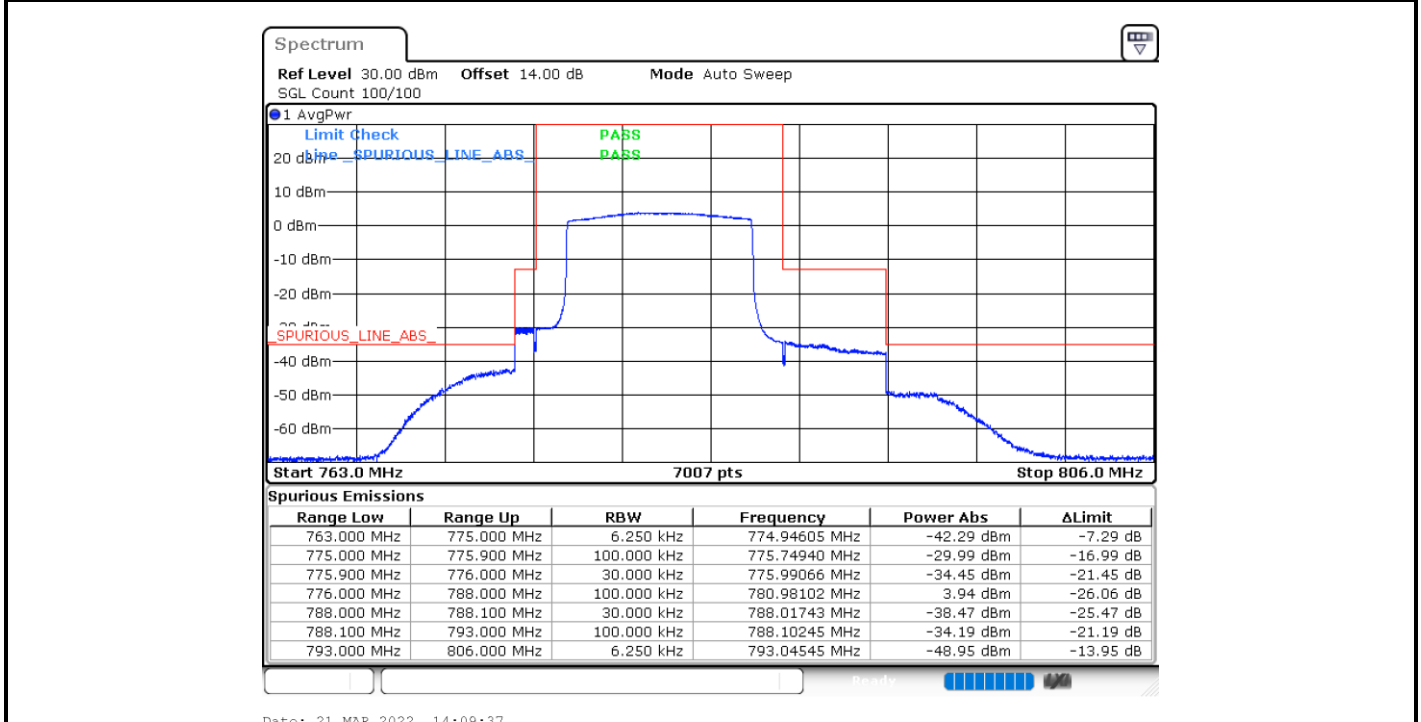
**Lowest Band Edge / 1 RB**



**Highest Band Edge / 1 RB**



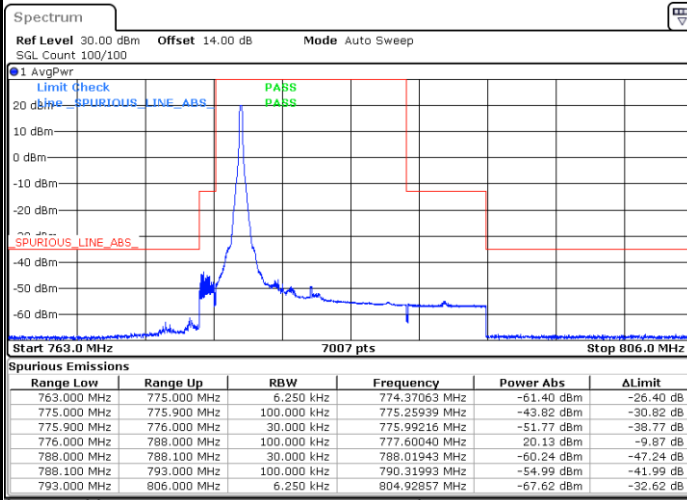
**Band Edge / Full RB**





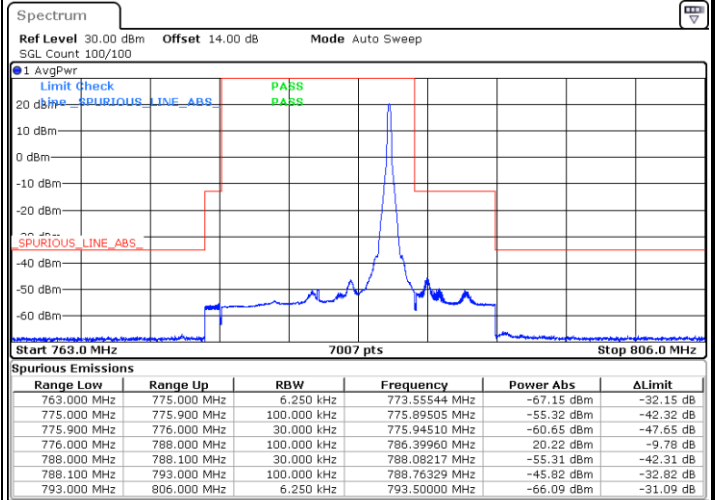
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



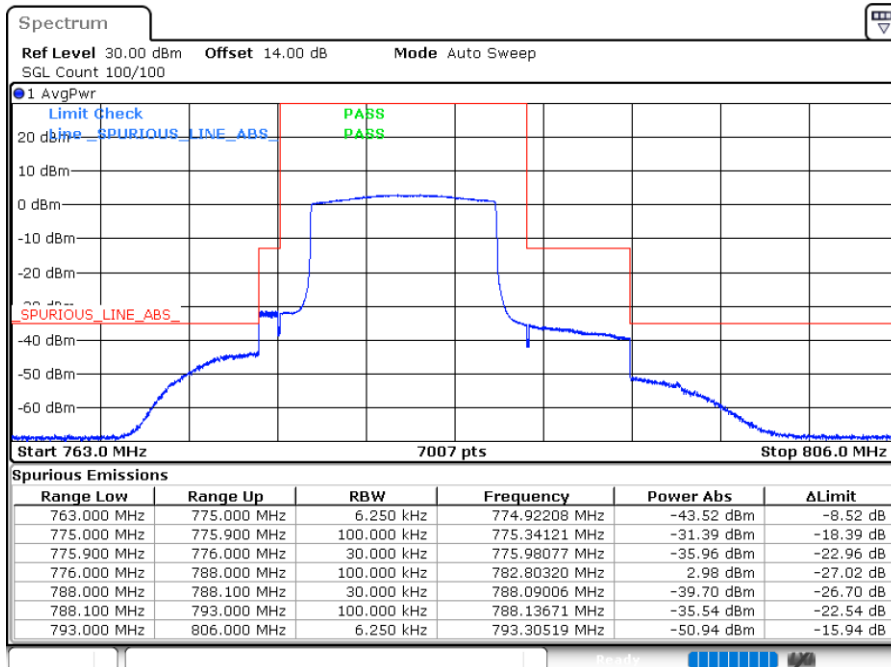
Date: 21.MAR.2022 14:13:16

Highest Band Edge / 1 RB



Date: 21.MAR.2022 14:18:46

Band Edge / Full RB



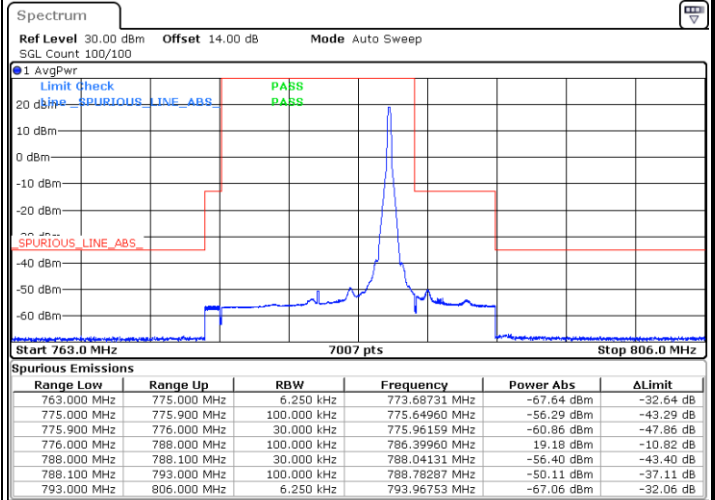
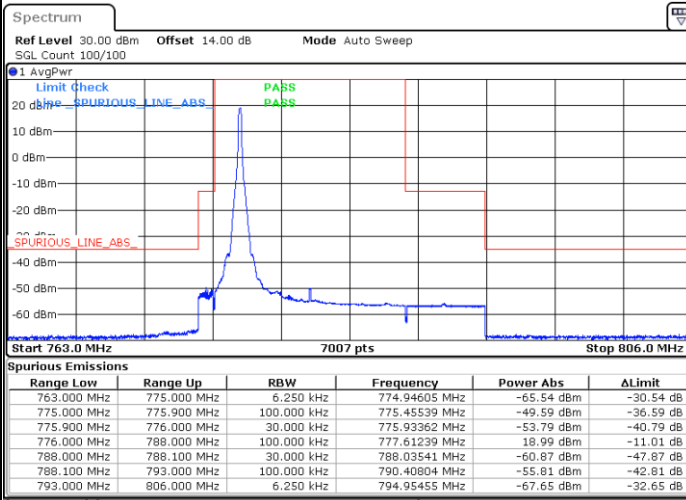
Date: 21.MAR.2022 14:11:27



LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

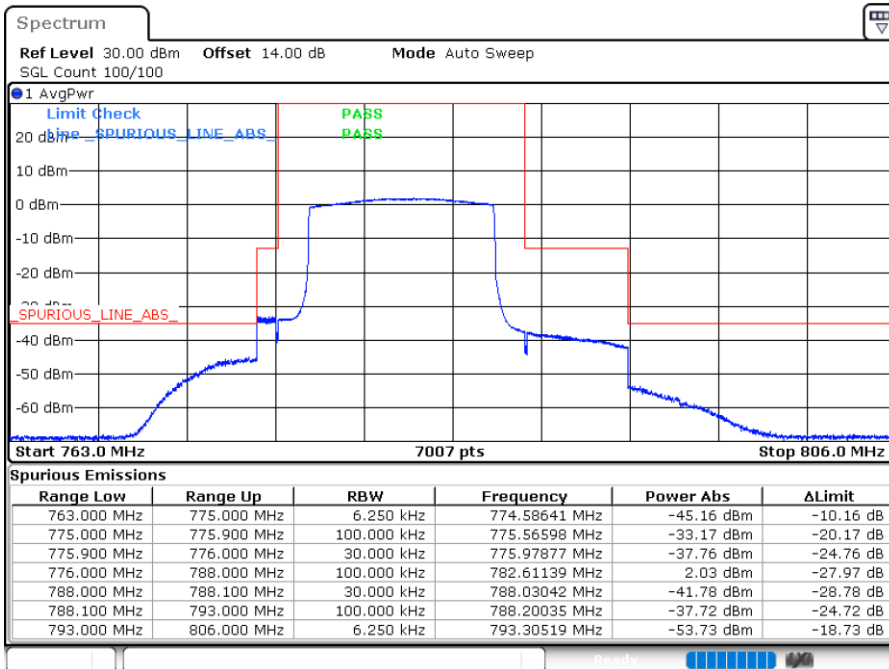
Highest Band Edge / 1 RB



Date: 21.MAR.2022 14:24:49

Date: 21.MAR.2022 14:26:39

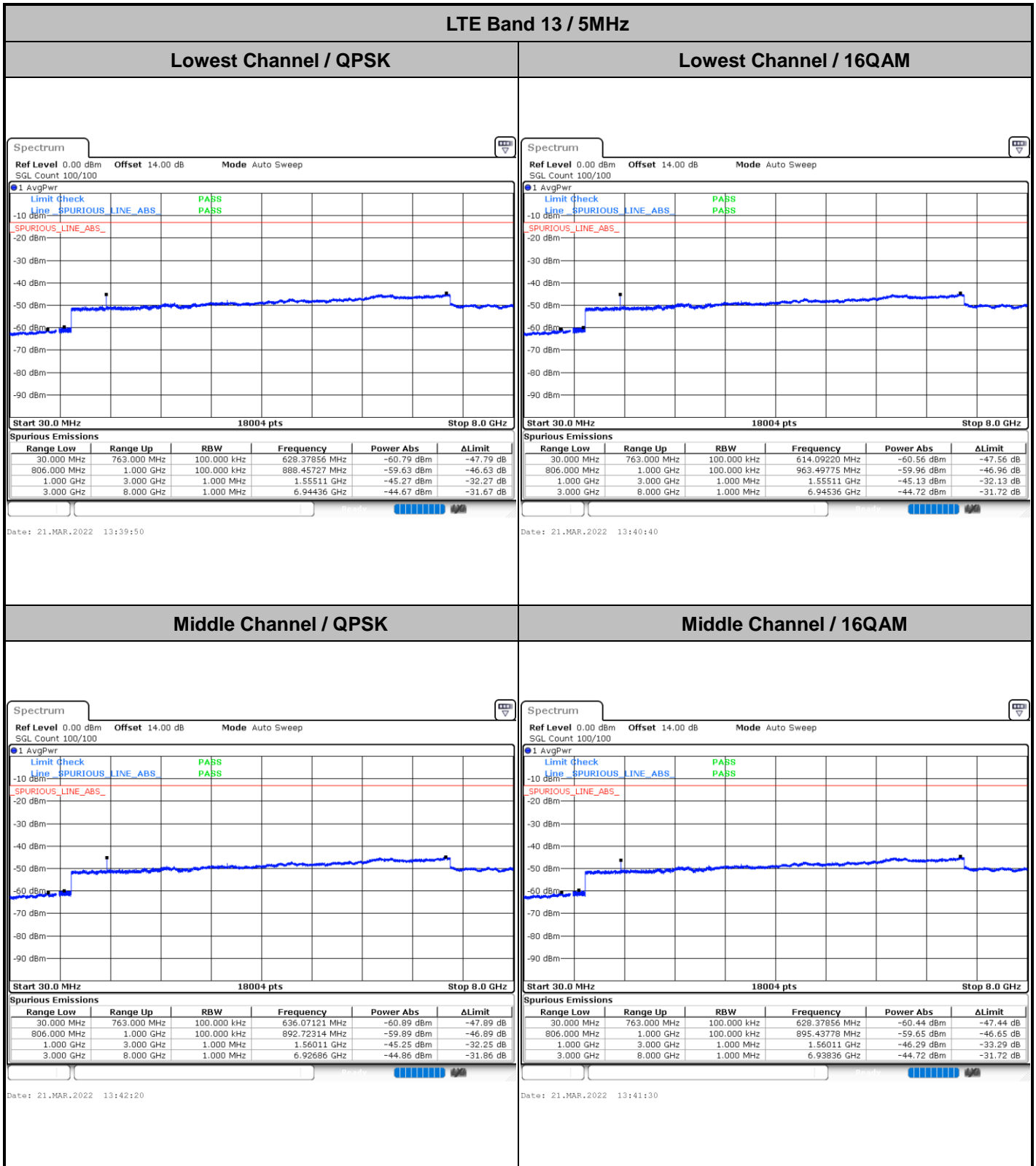
Band Edge / Full RB



Date: 21.MAR.2022 14:22:59



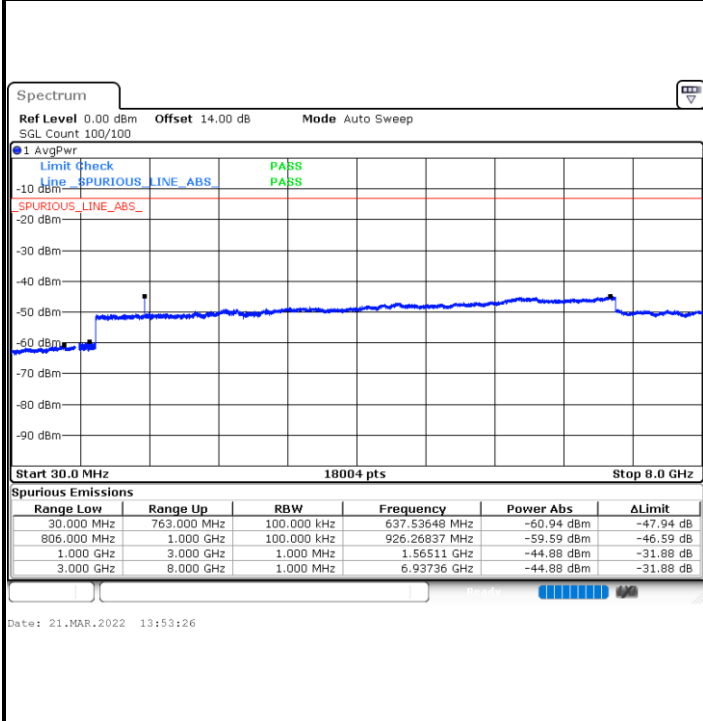
# Conducted Spurious Emission



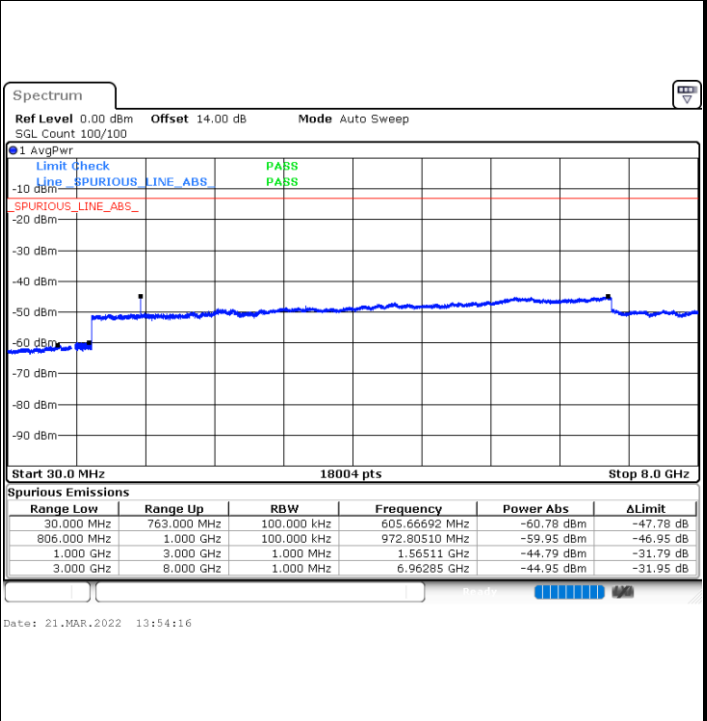


LTE Band 13 / 5MHz

Highest Channel / QPSK

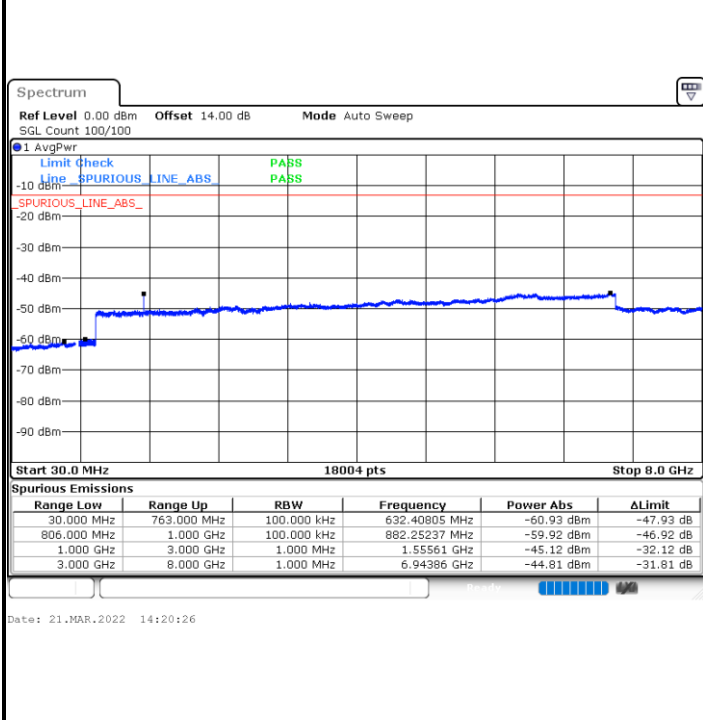


Highest Channel / 16QAM

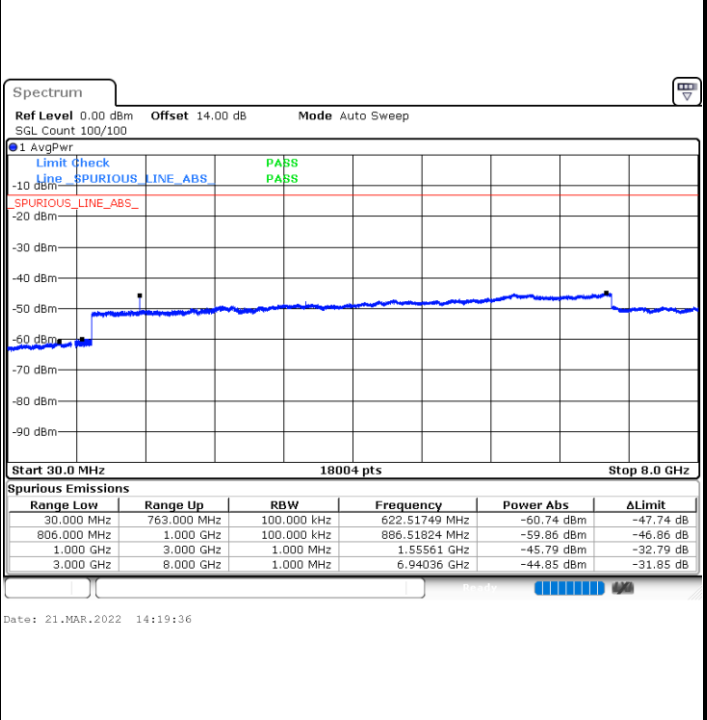


LTE Band 13 / 10MHz

Middle Channel / QPSK



Middle Channel / 16QAM

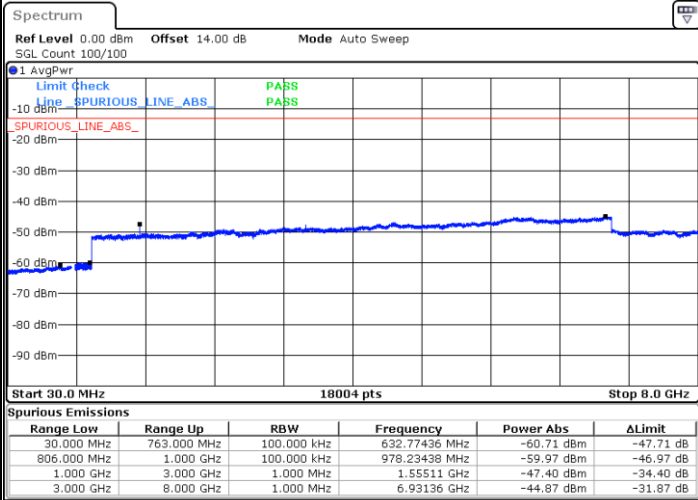




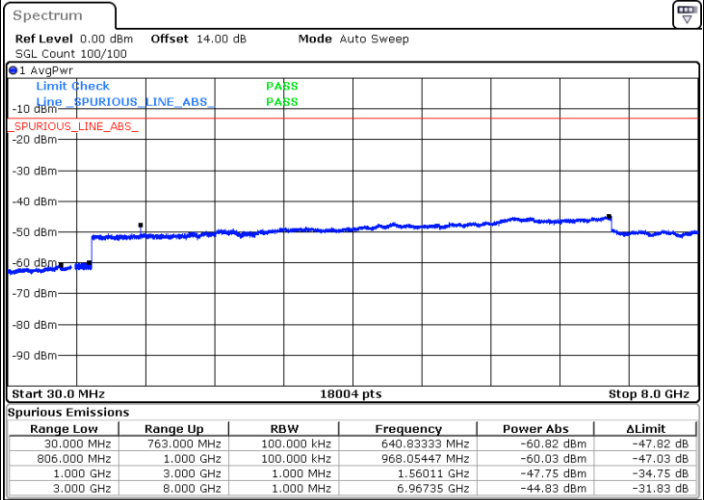
LTE Band 13 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

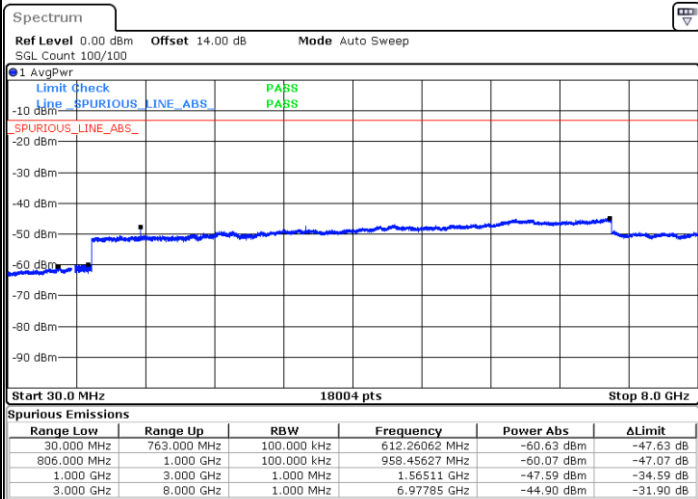


Date: 21.MAR.2022 13:59:32



Date: 21.MAR.2022 14:00:22

Highest Channel / 64QAM

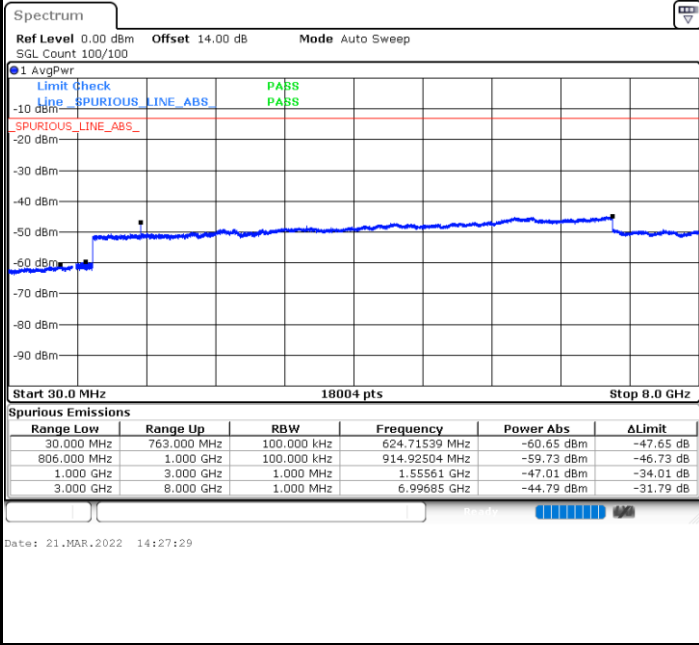


Date: 21.MAR.2022 14:06:20



LTE Band 13 / 10MHz

Middle Channel / 64QAM





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	0.0015	PASS
40	Normal Voltage	0.0058	
30	Normal Voltage	0.0051	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0014	
0	Normal Voltage	0.0023	
-10	Normal Voltage	0.0019	
-20	Normal Voltage	0.0006	
-30	Normal Voltage	0.0003	
20	Maximum Voltage	0.0008	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0006	

Note:

1. Normal Voltage =7.78 V. ; Battery End Point (BEP) =7.2V. ; Maximum Voltage =8.96 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.





# LTE Band 18

## Peak-to-Average Ratio

Mode	LTE Band 18 / 5MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.57	4.41	4.29	5.51	PASS
Middle CH	3.54	4.43	4.17	5.54	
Highest CH	3.54	4.43	4.26	5.57	
Mode	LTE Band 18 / 5MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.01	6.12	-	-	PASS
Middle CH	5.10	6.03	-	-	
Highest CH	5.07	6.12	-	-	