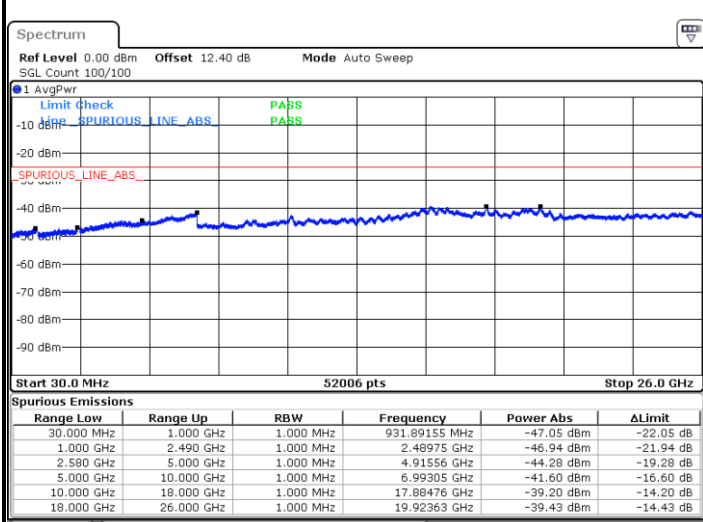




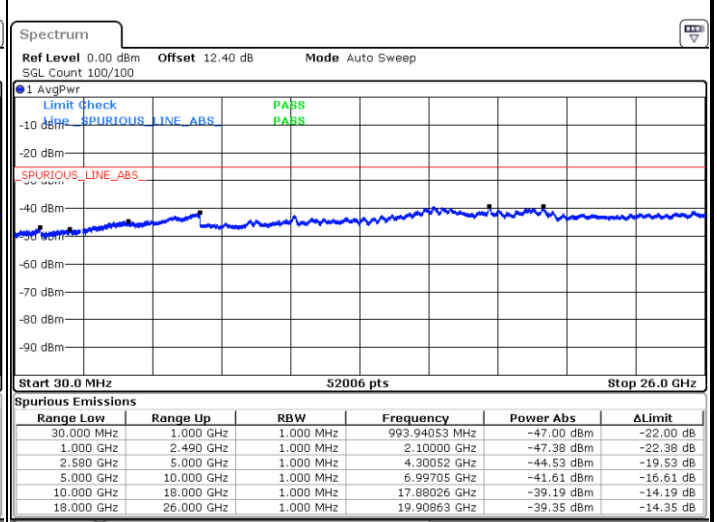
**LTE Band 7 / 20MHz**

**Lowest Channel / QPSK**



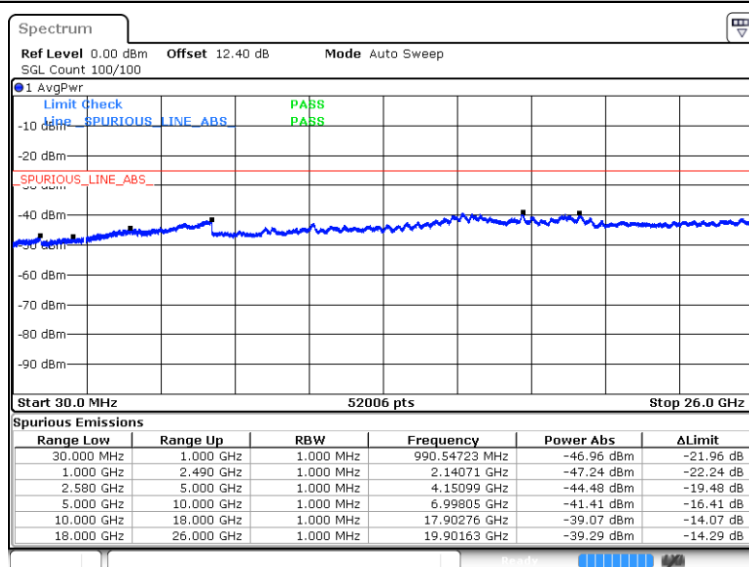
Date: 23.FEB.2021 02:58:40

**Middle Channel / QPSK**



Date: 23.FEB.2021 03:01:38

**Highest Channel / QPSK**



Date: 23.FEB.2021 03:05:30



### Frequency Stability

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0039	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0004	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0000	
0	Normal Voltage	0.0025	
-10	Normal Voltage	0.0023	
-20	Normal Voltage	0.0022	
-30	Normal Voltage	0.0061	
20	Maximum Voltage	0.0040	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0068	

**Note:**

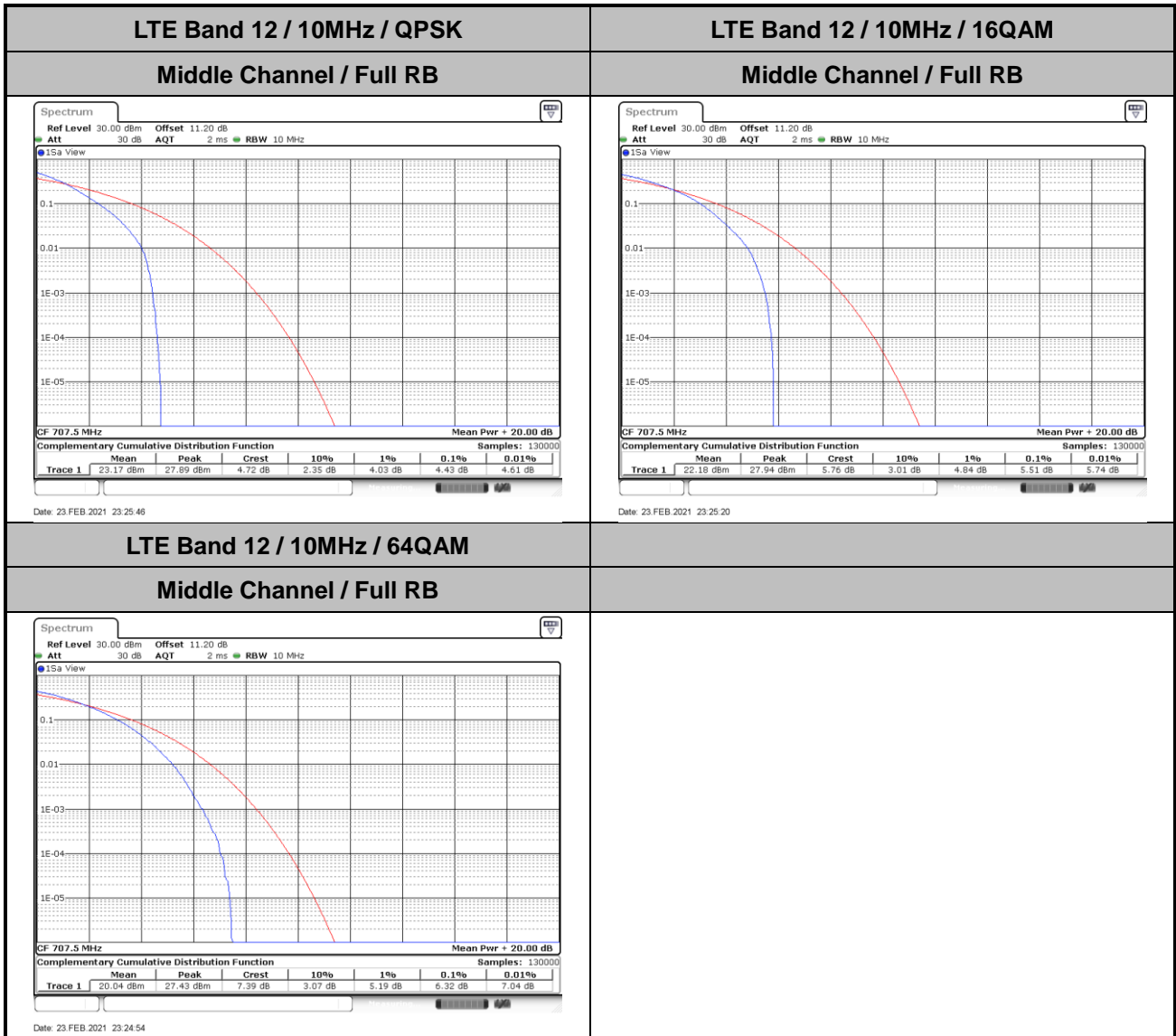
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.67 V. ; Maximum Voltage =4.26 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



## 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	4.43	5.51	6.32	-	PASS





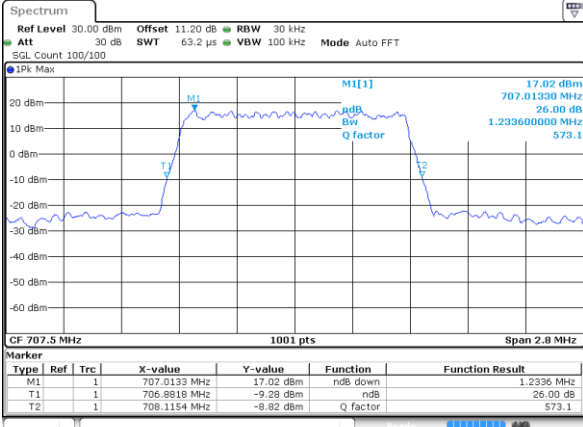
**26dB Bandwidth**

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	1.23	1.22	3.01	3.05	4.86	4.84	9.65	9.73	-	-	-	-
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM
Middle CH	1.22	-	2.94	-	4.89	-	9.91	-	-	-	-	-



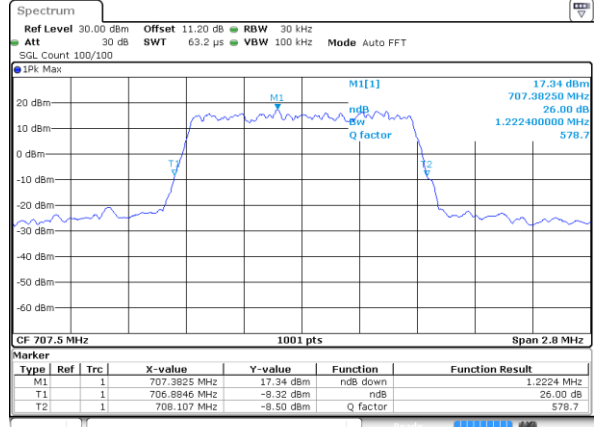
LTE Band 12

Middle Channel / 1.4MHz / QPSK



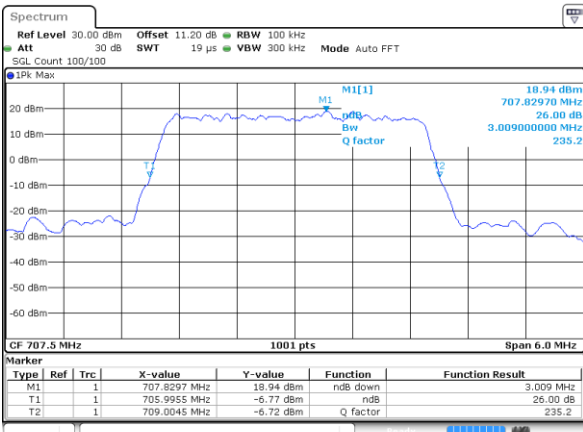
Date: 23 FEB 2021 04:24:59

Middle Channel / 1.4MHz / 16QAM



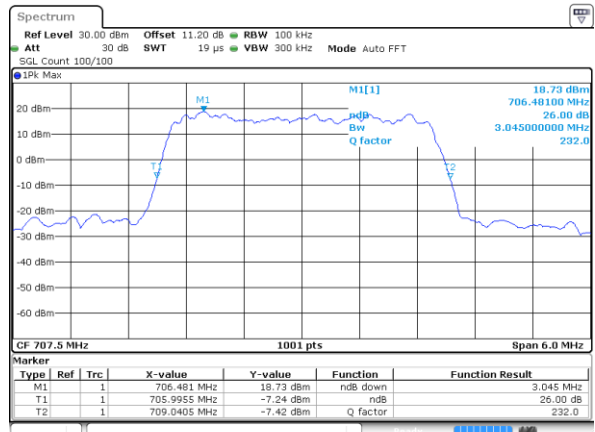
Date: 23 FEB 2021 04:25:22

Middle Channel / 3MHz / QPSK



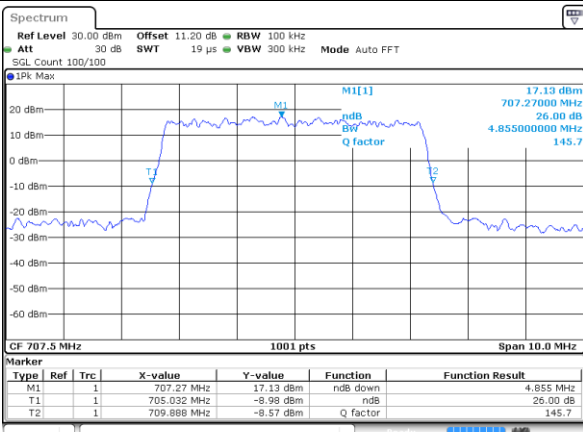
Date: 23 FEB 2021 04:44:29

Middle Channel / 3MHz / 16QAM



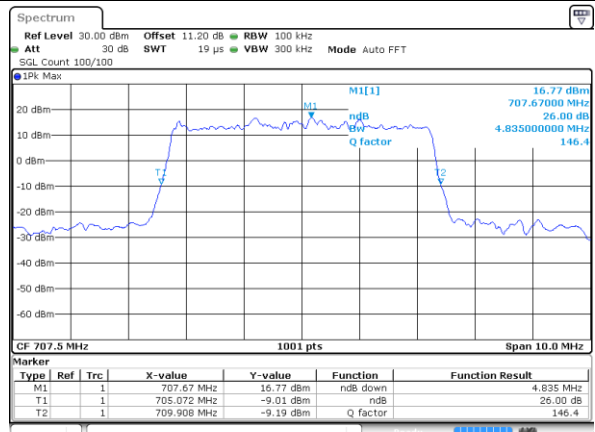
Date: 23 FEB 2021 04:44:52

Middle Channel / 5MHz / QPSK



Date: 23 FEB 2021 22:33:01

Middle Channel / 5MHz / 16QAM

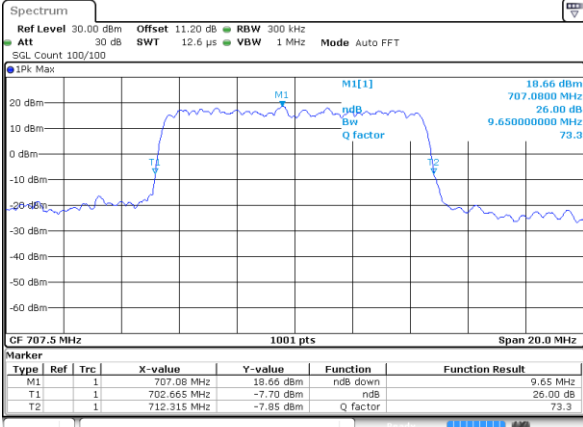


Date: 23 FEB 2021 22:33:24



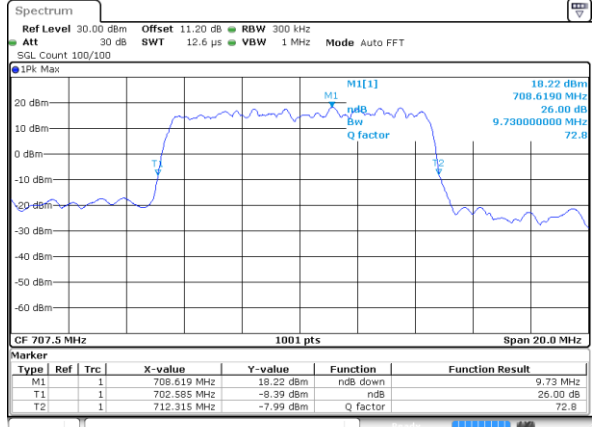
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 23 FEB 2021 23:14:58

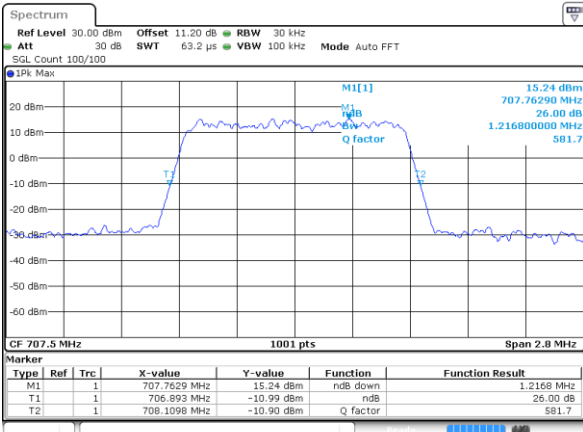
Middle Channel / 10MHz / 16QAM



Date: 23 FEB 2021 23:15:21

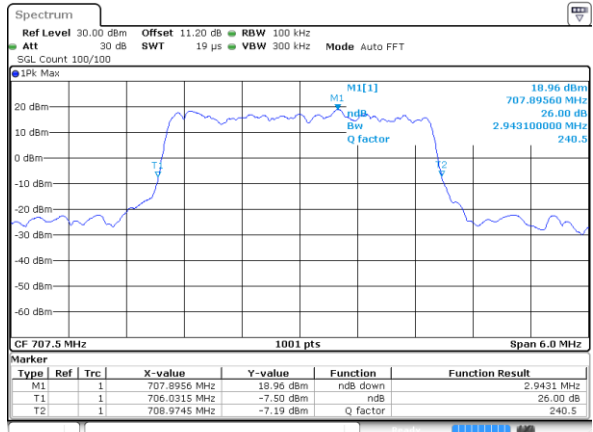
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



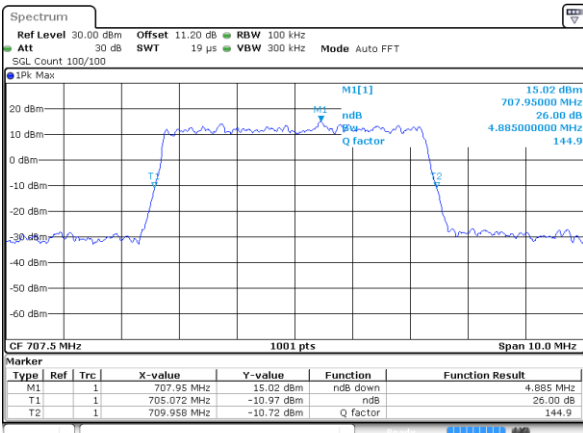
Date: 23 FEB 2021 04:33:03

Middle Channel / 3MHz / 64QAM



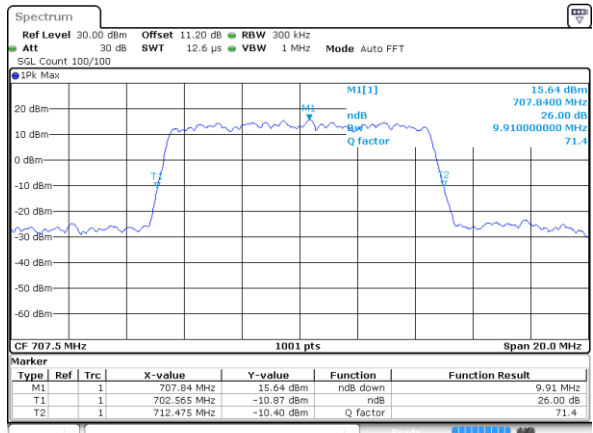
Date: 23 FEB 2021 04:52:34

Middle Channel / 5MHz / 64QAM



Date: 23 FEB 2021 22:26:25

Middle Channel / 10MHz / 64QAM



Date: 23 FEB 2021 23:23:03



**Occupied Bandwidth**

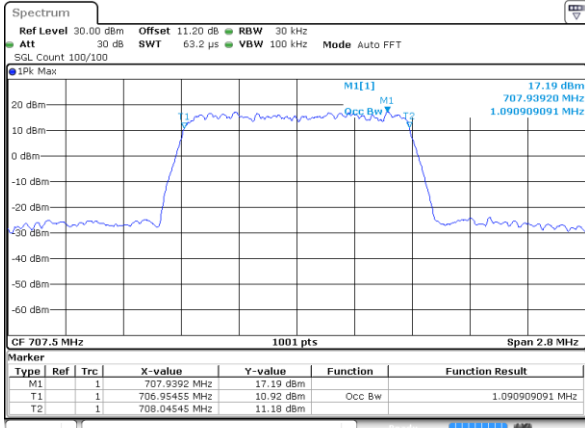
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.09	2.71	2.71	4.49	4.48	8.99	9.03	-	-	-	-
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM
Middle CH	1.09	-	2.73	-	4.50	-	9.01	-	-	-	-	-



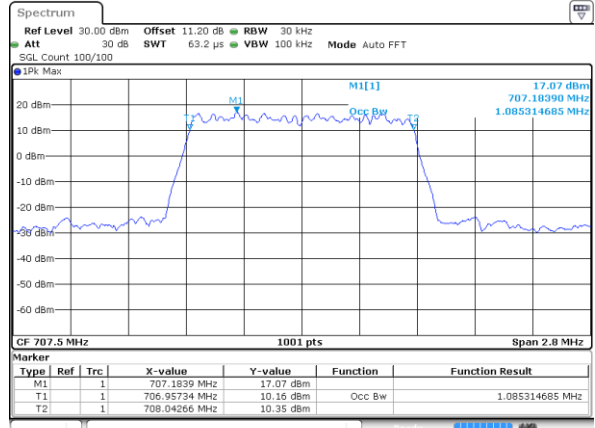


LTE Band 12

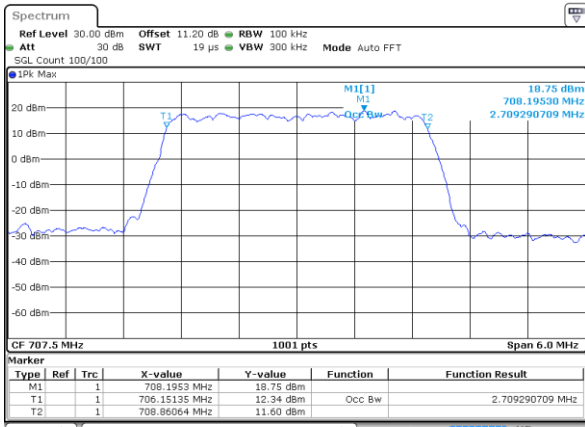
Middle Channel / 1.4MHz / QPSK



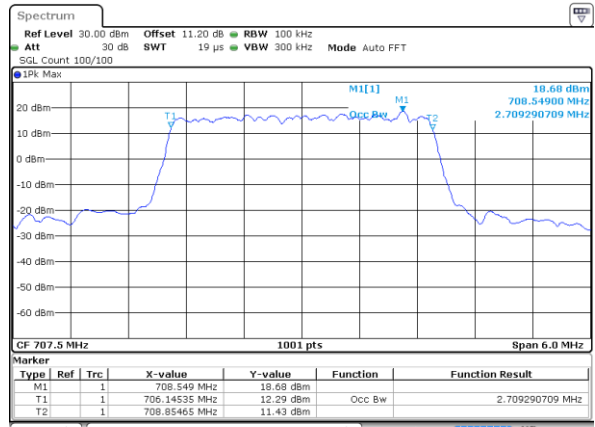
Middle Channel / 1.4MHz / 16QAM



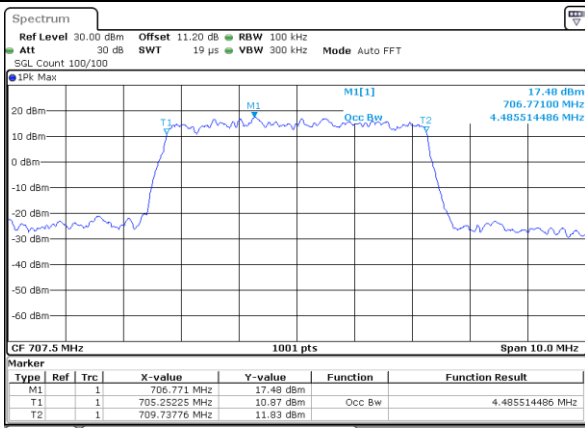
Middle Channel / 3MHz / QPSK



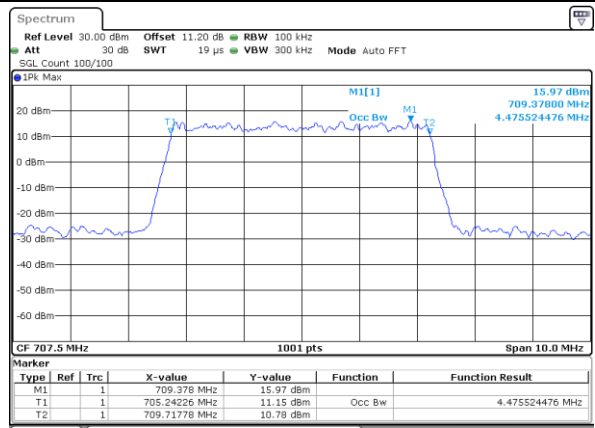
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK



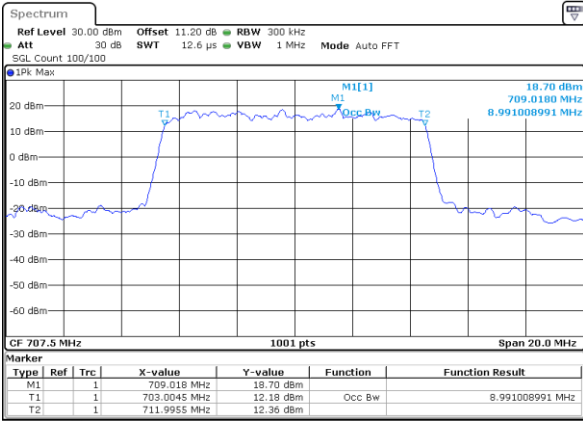
Middle Channel / 5MHz / 16QAM





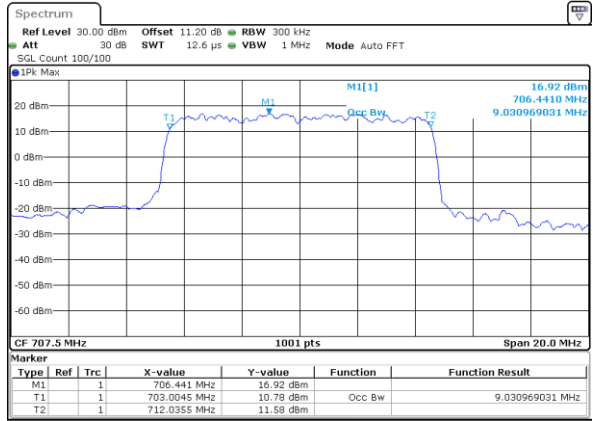
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 23 FEB 2021 23:14:42

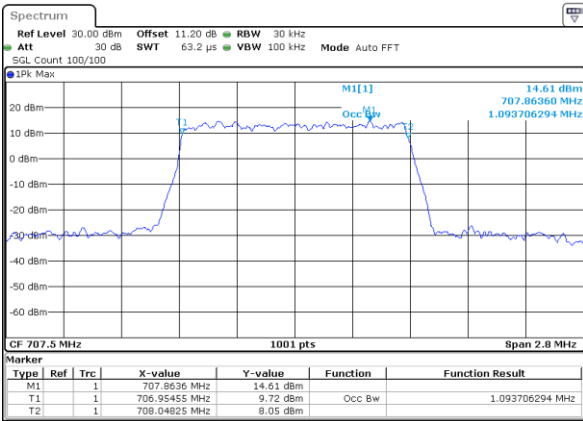
Middle Channel / 10MHz / 16QAM



Date: 23 FEB 2021 23:14:17

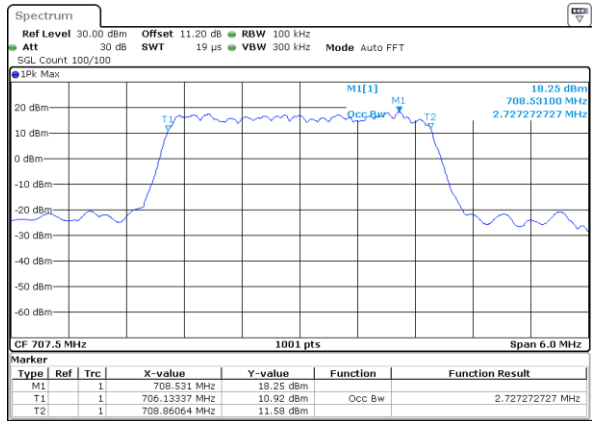
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



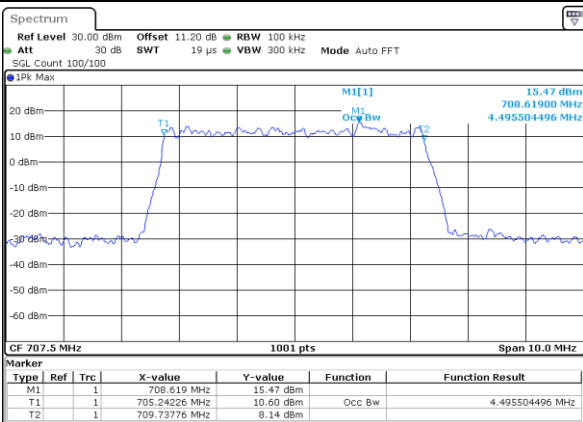
Date: 23 FEB 2021 04:32:47

Middle Channel / 3MHz / 64QAM



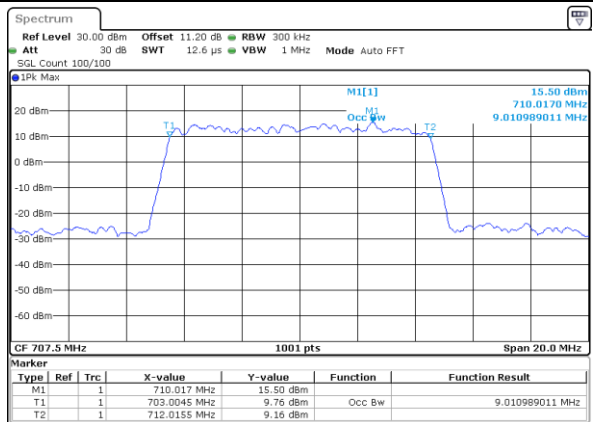
Date: 23 FEB 2021 04:52:18

Middle Channel / 5MHz / 64QAM



Date: 23 FEB 2021 22:26:08

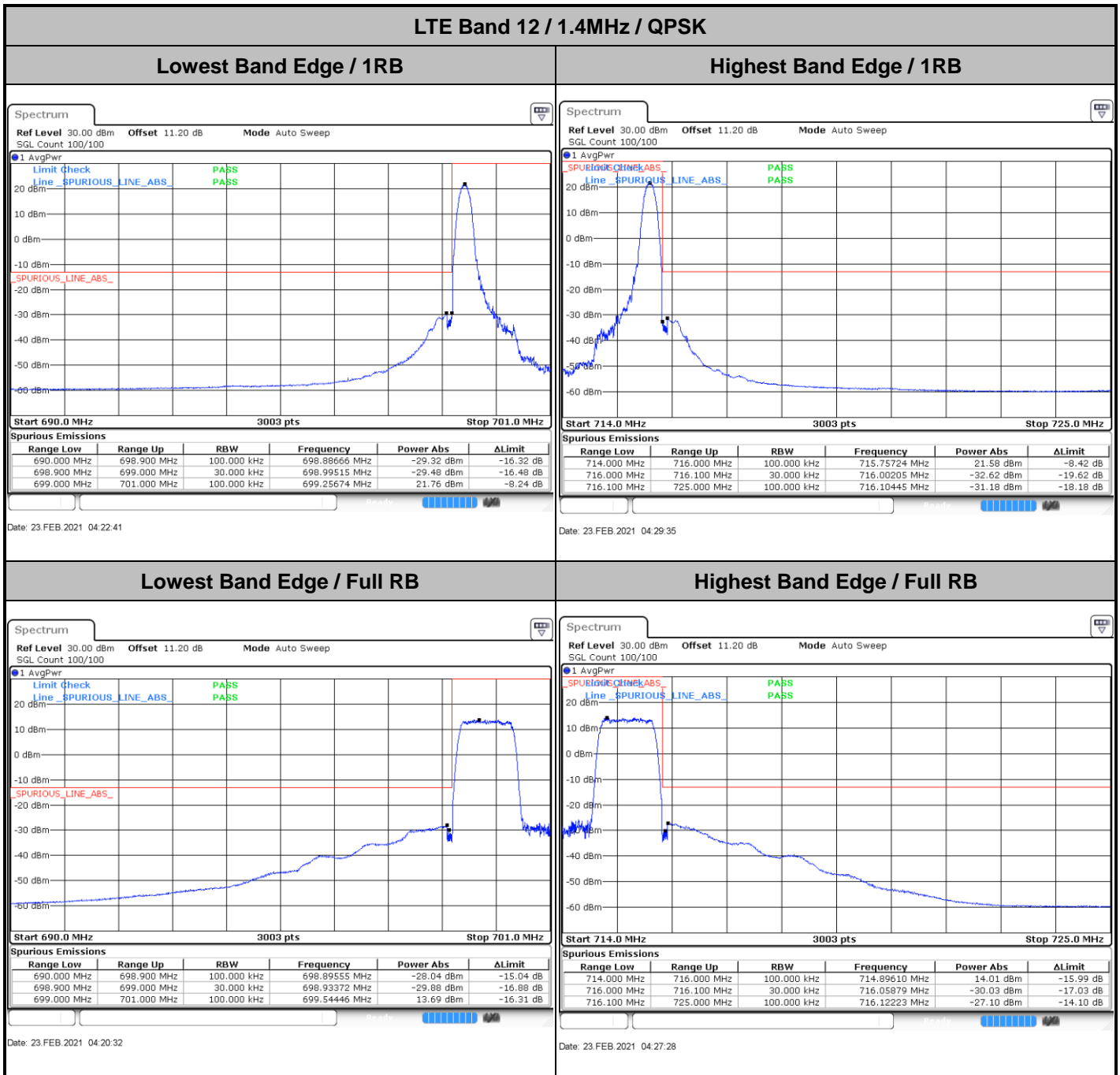
Middle Channel / 10MHz / 64QAM



Date: 23 FEB 2021 23:22:47



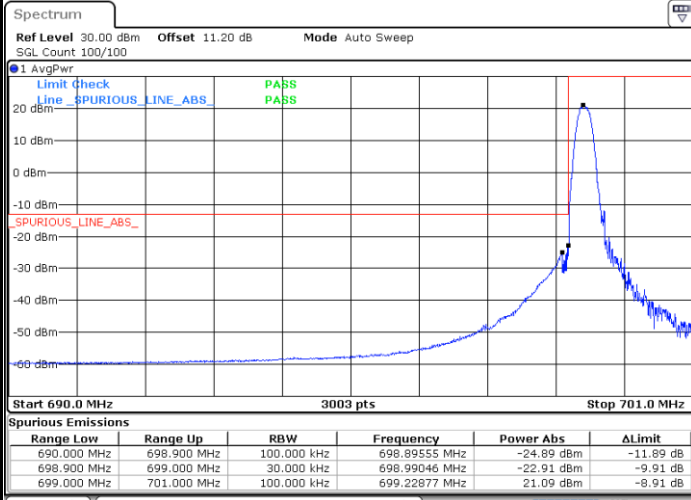
# Conducted Band Edge





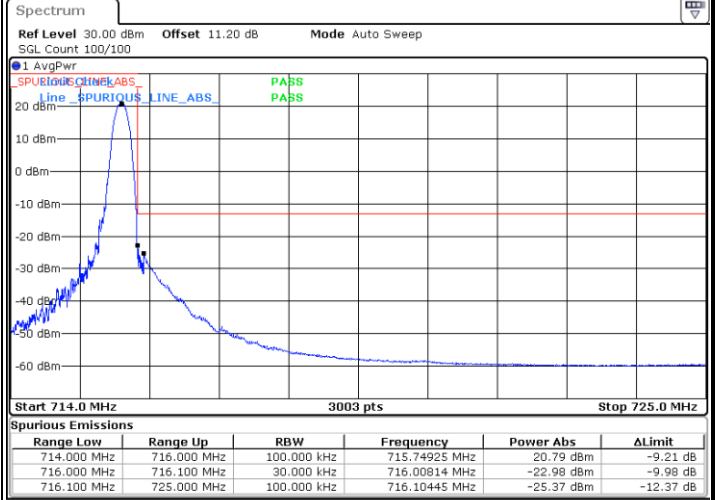
LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



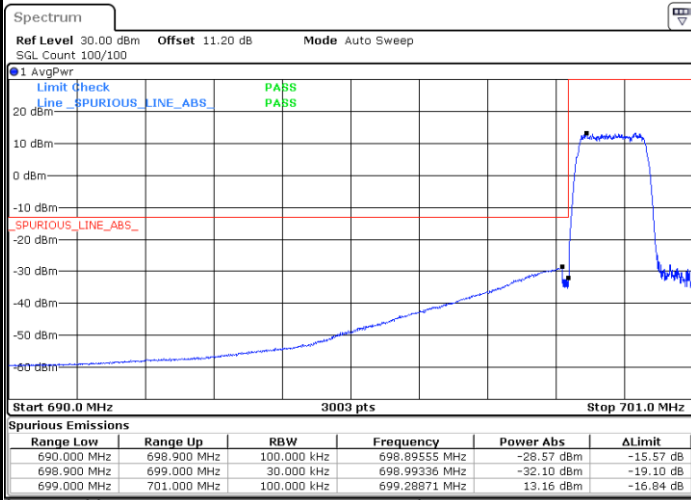
Date: 23 FEB 2021 04:21:58

Highest Band Edge / 1 RB



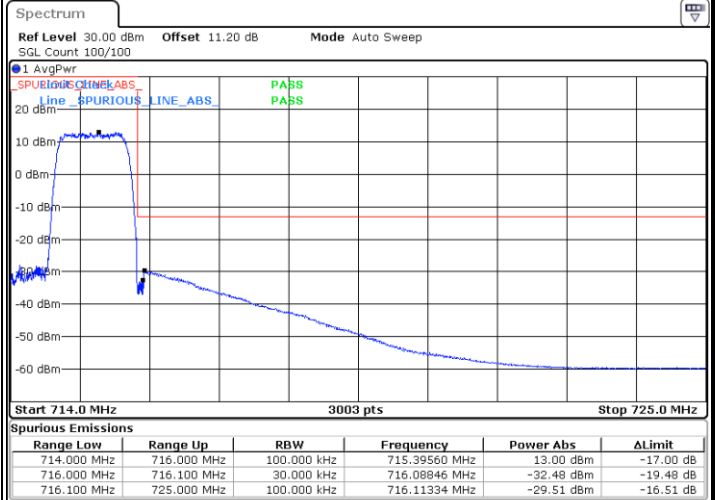
Date: 23 FEB 2021 04:28:53

Lowest Band Edge / Full RB



Date: 23 FEB 2021 04:21:15

Highest Band Edge / Full RB

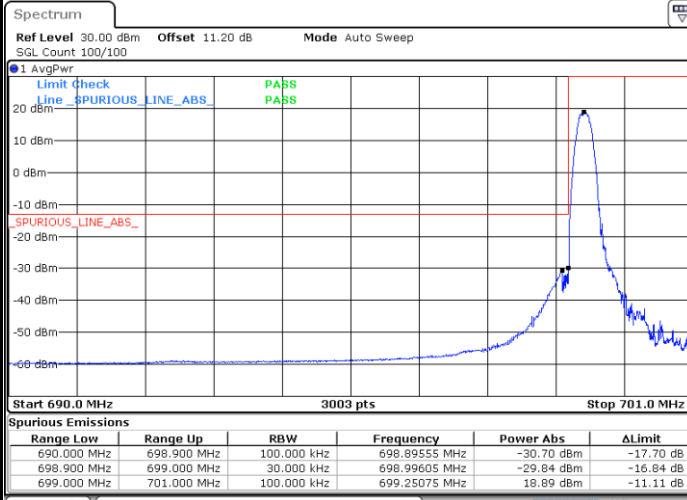


Date: 23 FEB 2021 04:28:10



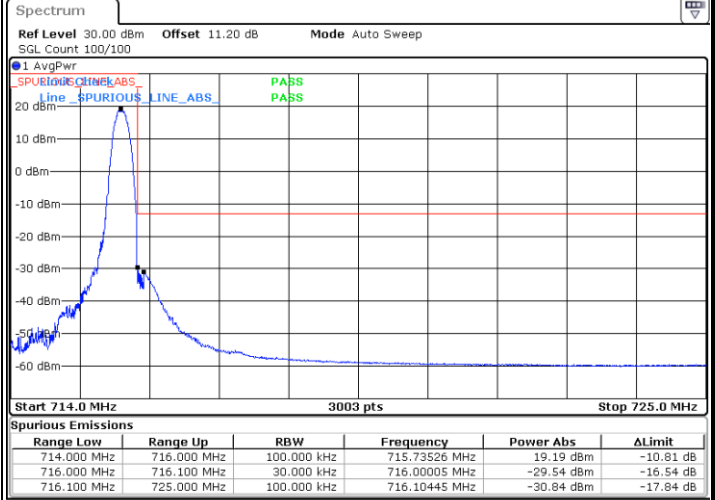
LTE Band 12 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB



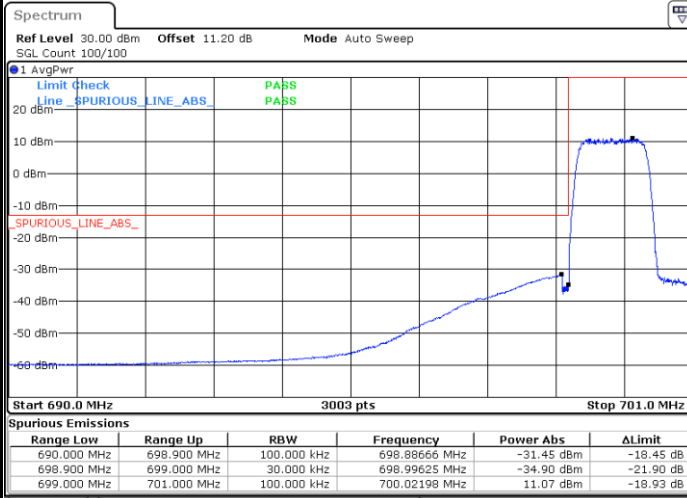
Date: 23 FEB 2021 04:32:24

Highest Band Edge / 1 RB



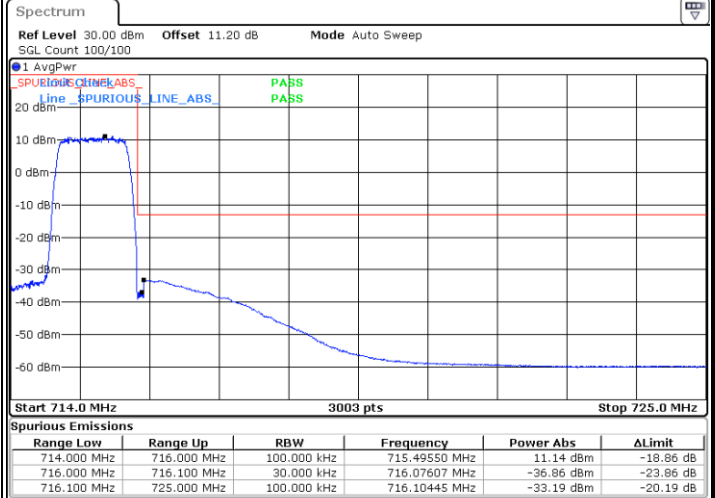
Date: 23 FEB 2021 04:34:30

Lowest Band Edge / Full RB



Date: 23 FEB 2021 04:31:41

Highest Band Edge / Full RB

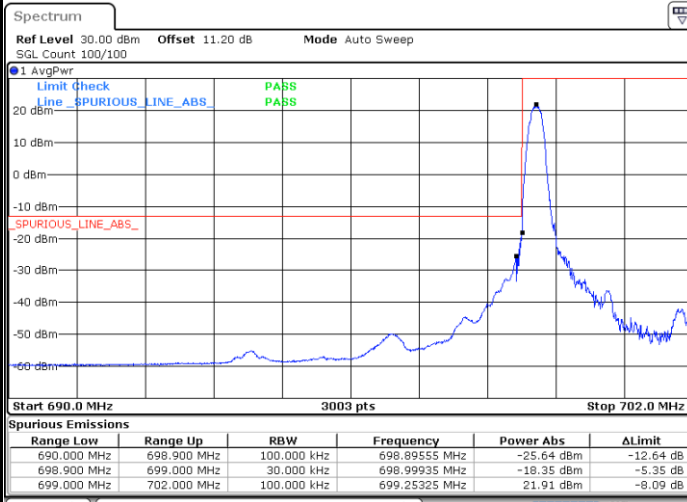


Date: 23 FEB 2021 04:33:47



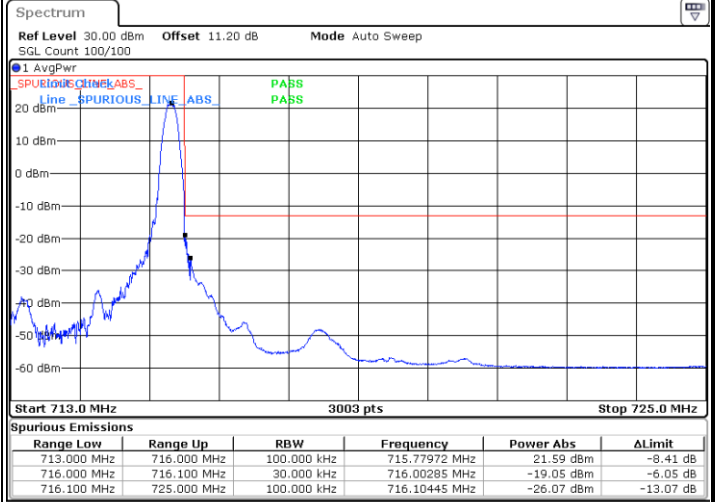
LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / 1RB



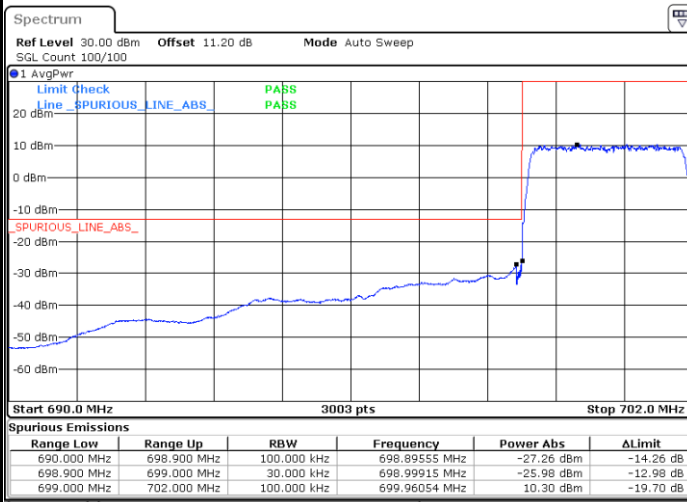
Date: 23 FEB 2021 04:42:11

Highest Band Edge / 1 RB



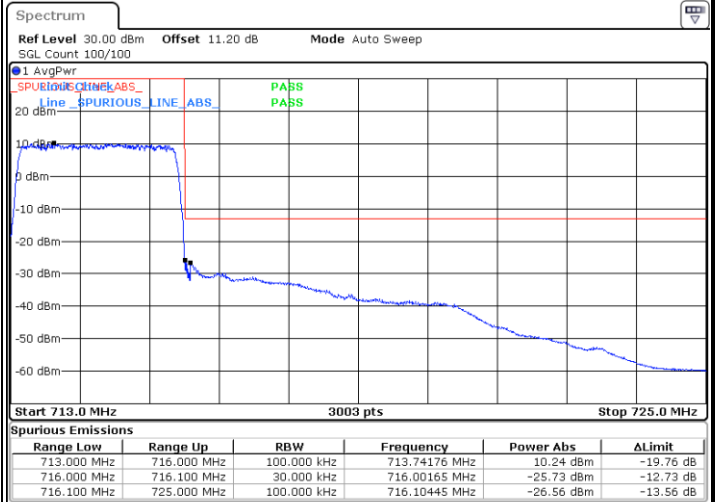
Date: 23 FEB 2021 04:49:06

Lowest Band Edge / Full RB



Date: 23 FEB 2021 04:40:02

Highest Band Edge / Full RB

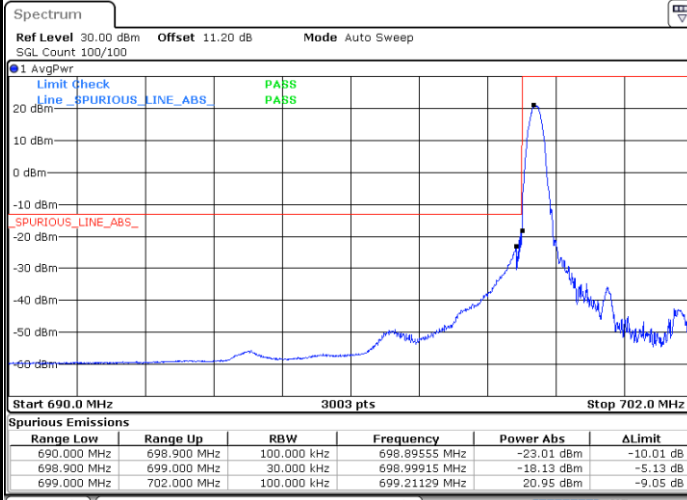


Date: 23 FEB 2021 04:46:57



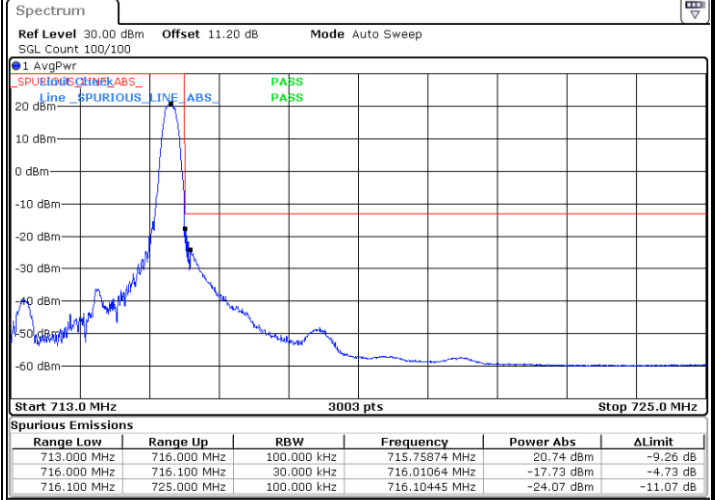
LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / 1 RB



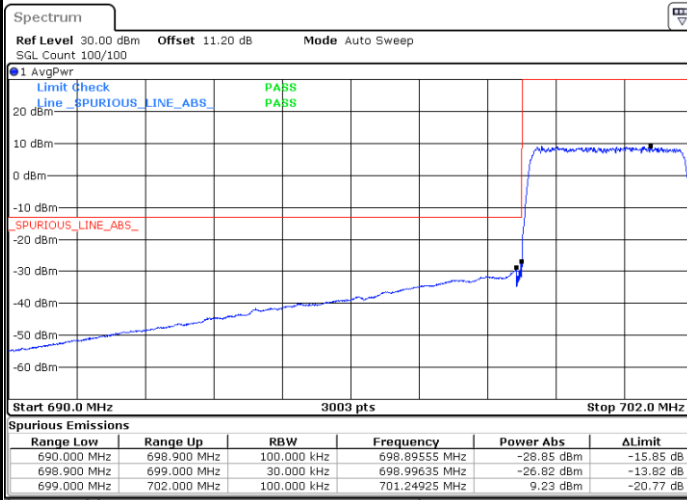
Date: 23 FEB 2021 04:41:28

Highest Band Edge / 1 RB



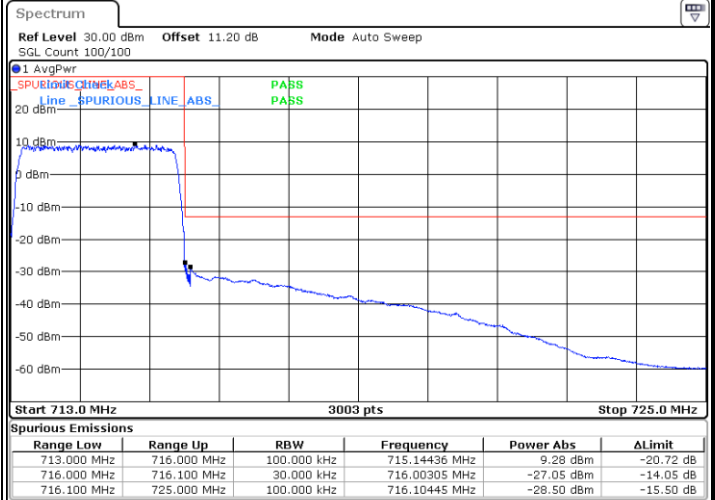
Date: 23 FEB 2021 04:48:23

Lowest Band Edge / Full RB



Date: 23 FEB 2021 04:40:45

Highest Band Edge / Full RB

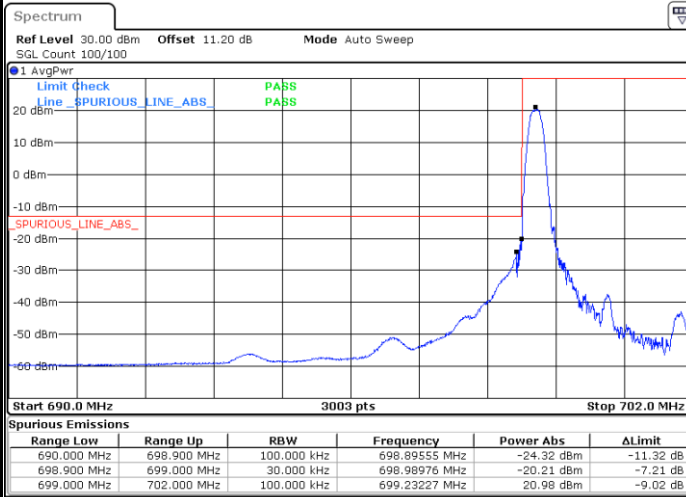


Date: 23 FEB 2021 04:47:40



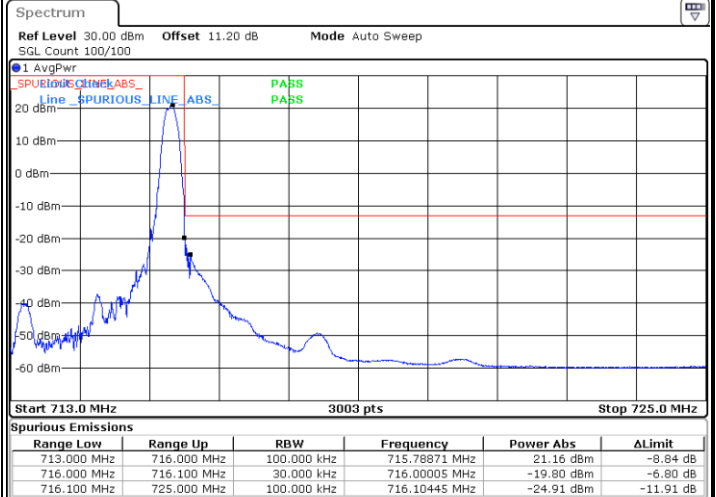
LTE Band 12 / 3MHz / 64QAM

Lowest Band Edge / 1 RB



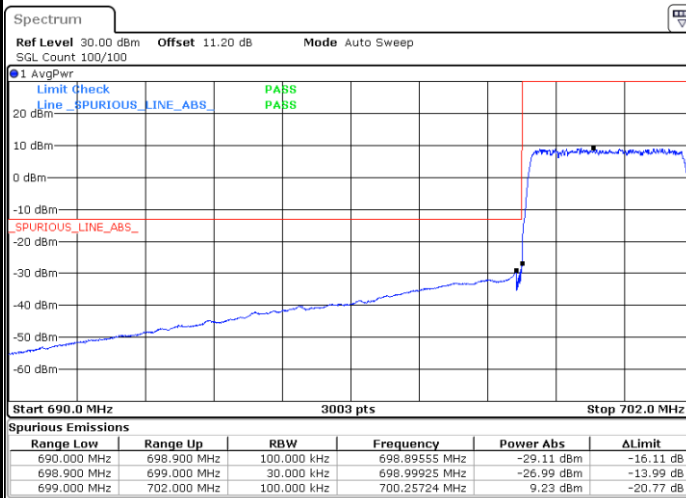
Date: 23 FEB 2021 04:51:55

Highest Band Edge / 1 RB



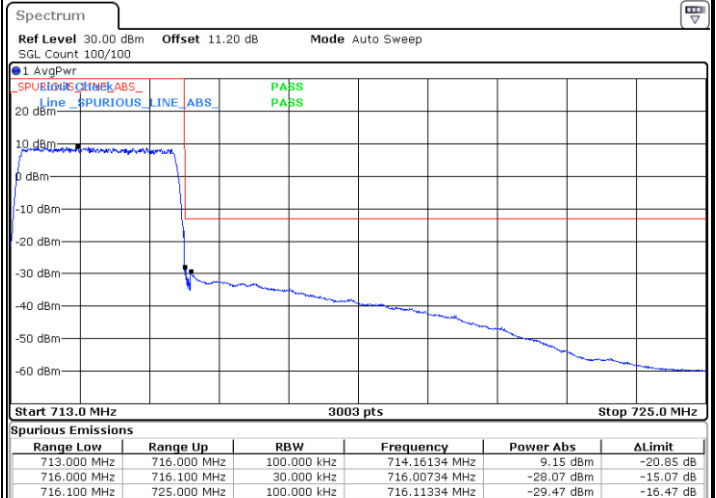
Date: 23 FEB 2021 04:54:01

Lowest Band Edge / Full RB



Date: 23 FEB 2021 04:51:12

Highest Band Edge / Full RB



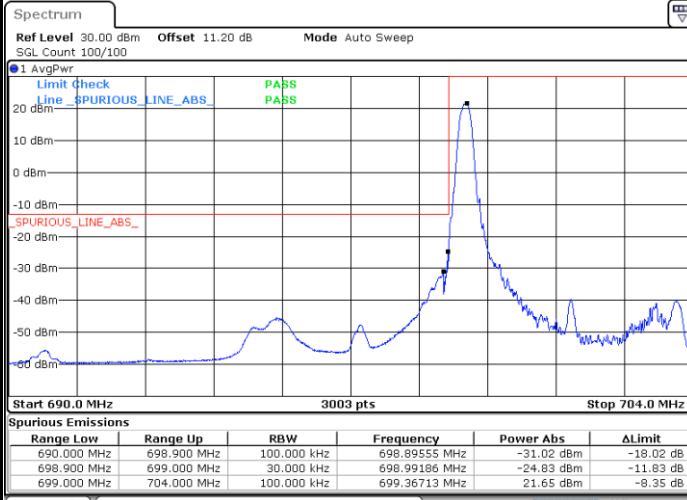
Date: 23 FEB 2021 04:53:18





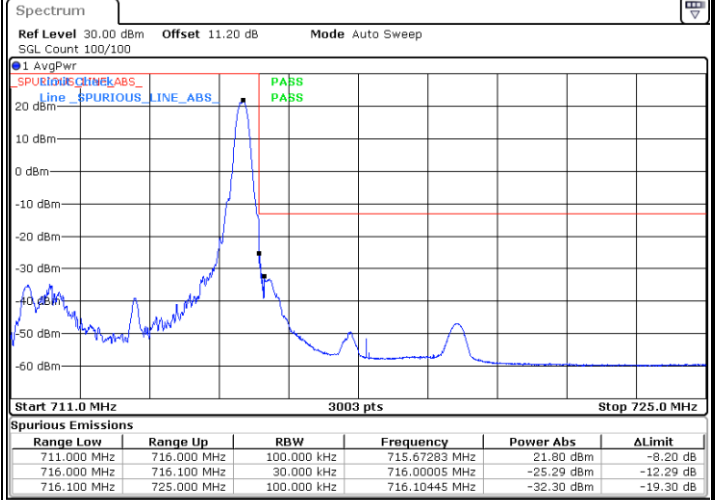
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / 1 RB



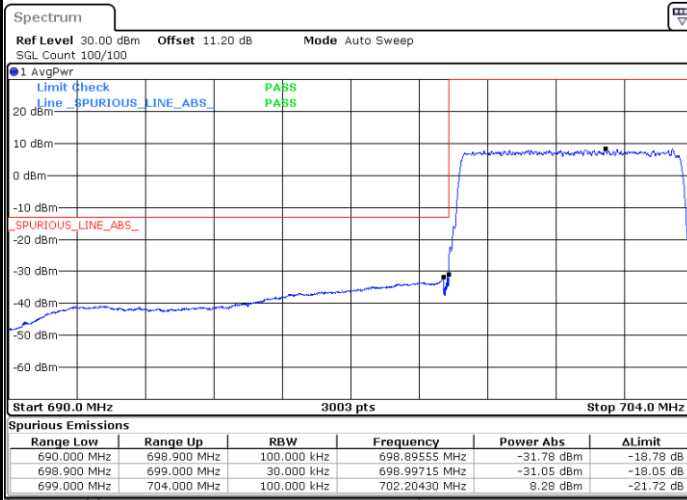
Date: 23 FEB 2021 22:30:42

Highest Band Edge / 1 RB



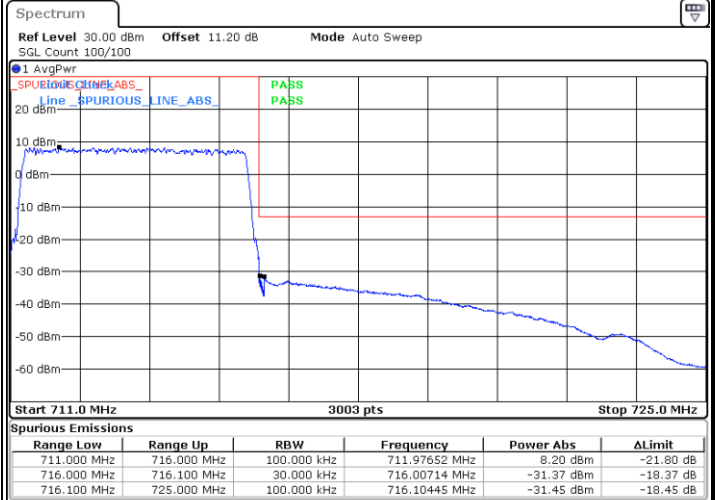
Date: 23 FEB 2021 22:36:55

Lowest Band Edge / Full RB



Date: 23 FEB 2021 22:28:34

Highest Band Edge / Full RB

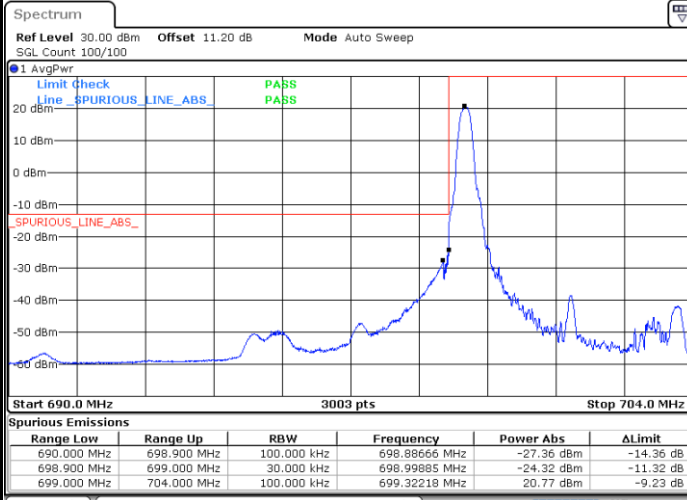


Date: 23 FEB 2021 22:35:30



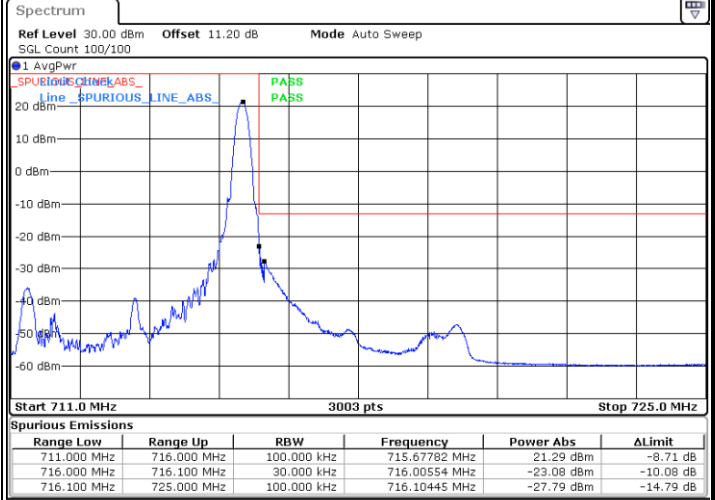
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1RB



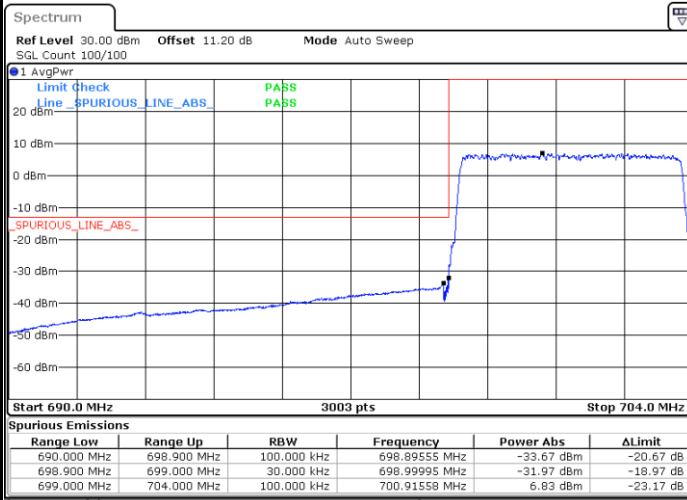
Date: 23 FEB 2021 22:29:59

Highest Band Edge / 1 RB



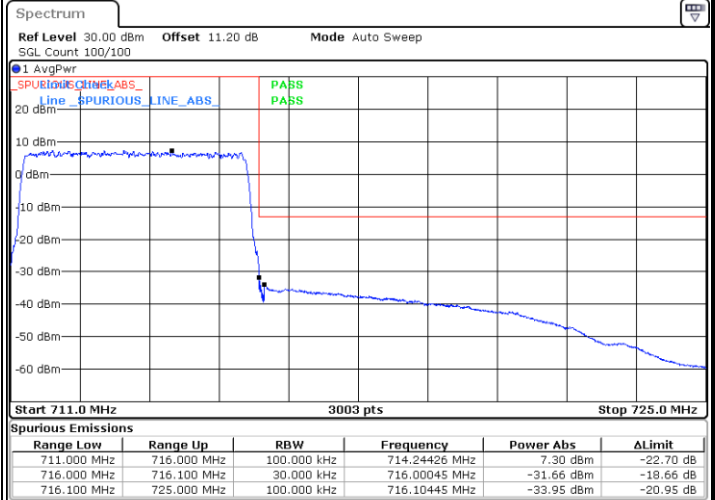
Date: 23 FEB 2021 22:37:38

Lowest Band Edge / Full RB



Date: 23 FEB 2021 22:29:17

Highest Band Edge / Full RB

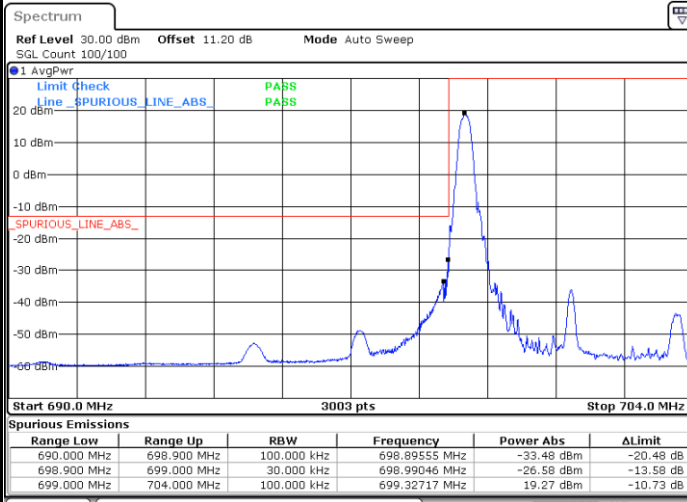


Date: 23 FEB 2021 22:36:12



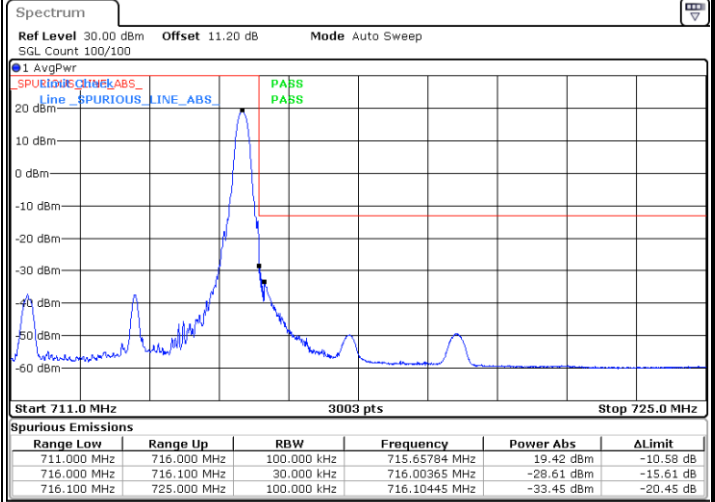
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1RB



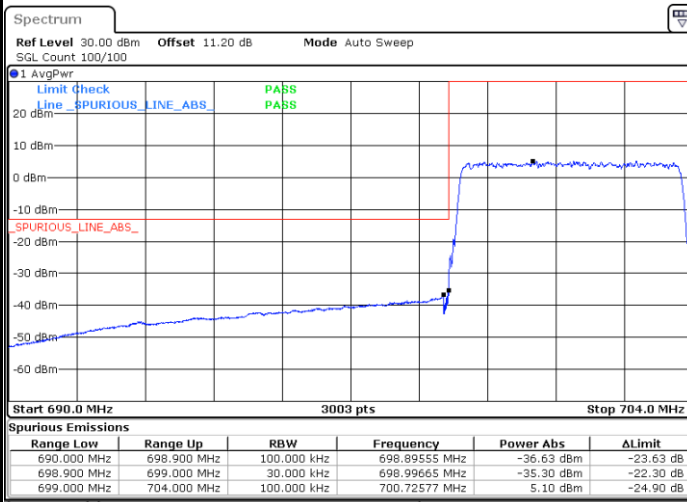
Date: 23 FEB 2021 22:25:45

Highest Band Edge / 1 RB



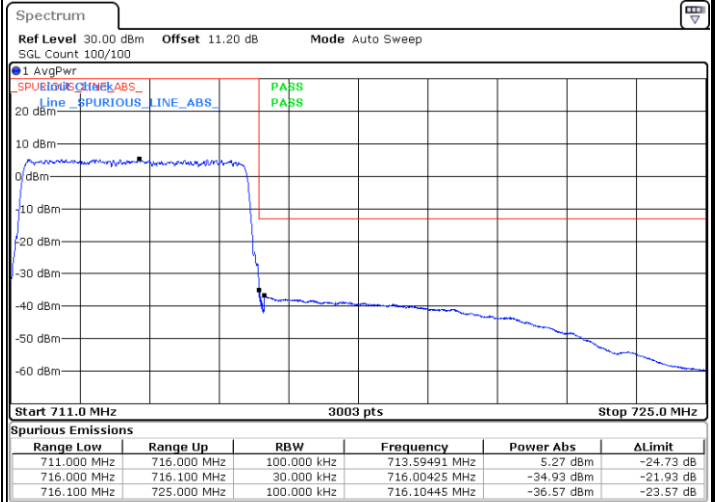
Date: 23 FEB 2021 22:27:51

Lowest Band Edge / Full RB



Date: 23 FEB 2021 22:25:02

Highest Band Edge / Full RB

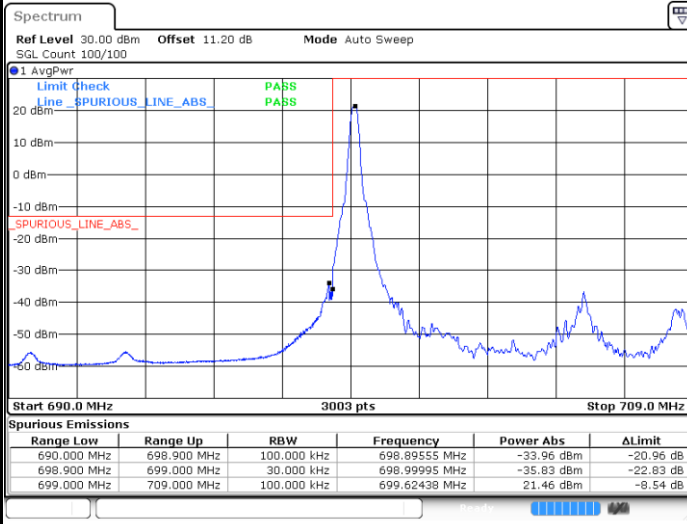


Date: 23 FEB 2021 22:27:08



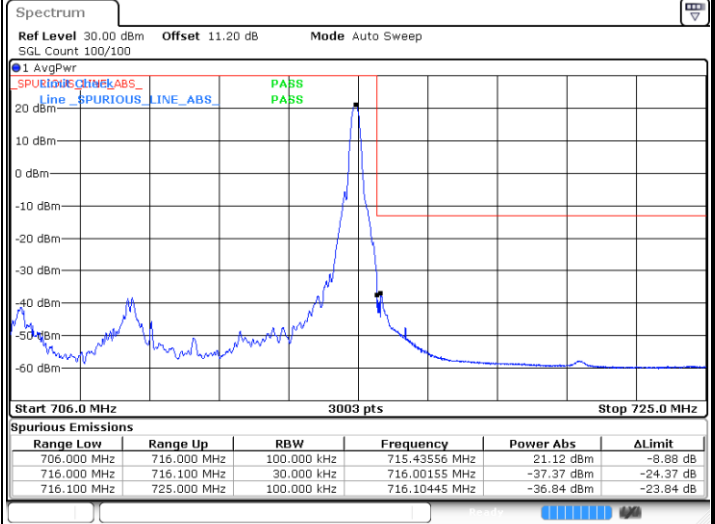
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



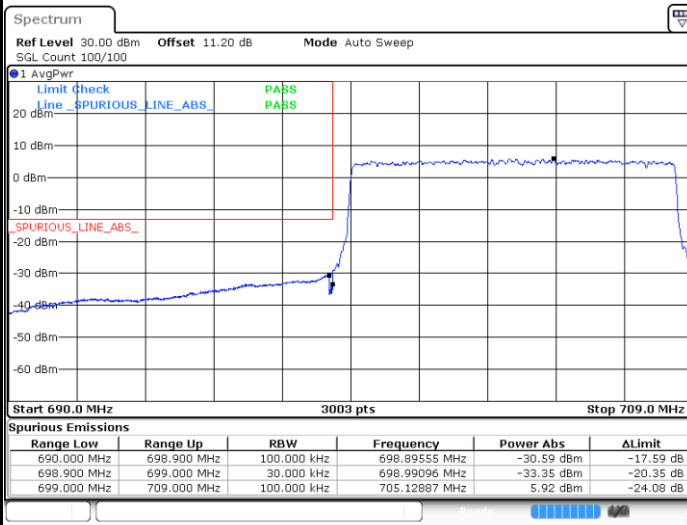
Date: 23 FEB 2021 23:12:40

Highest Band Edge / 1 RB



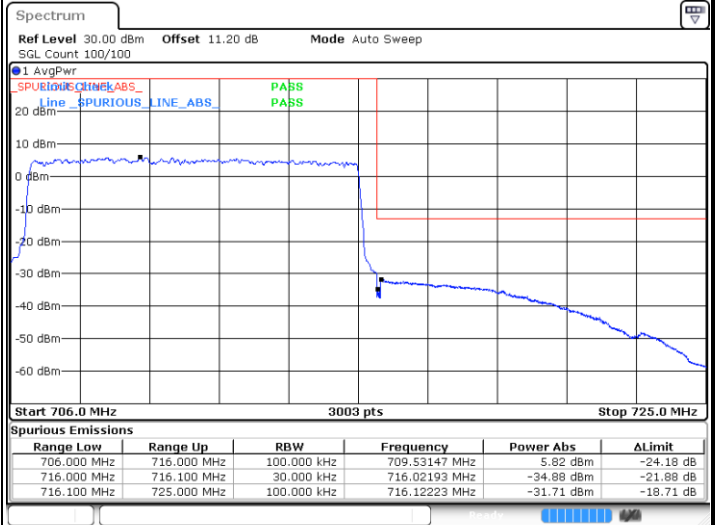
Date: 23 FEB 2021 23:19:35

Lowest Band Edge / Full RB



Date: 23 FEB 2021 23:10:31

Highest Band Edge / Full RB

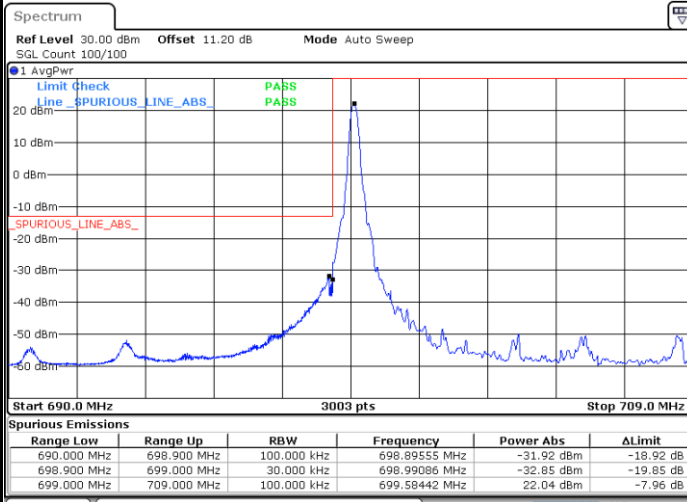


Date: 23 FEB 2021 23:17:27



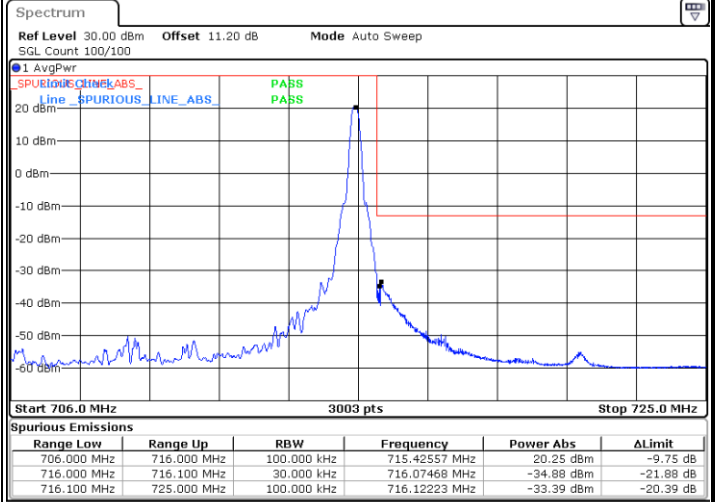
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



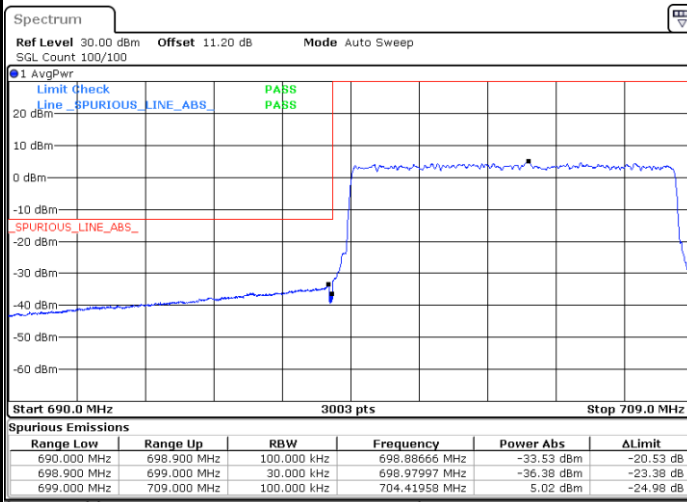
Date: 23 FEB 2021 23:11:57

Highest Band Edge / 1 RB



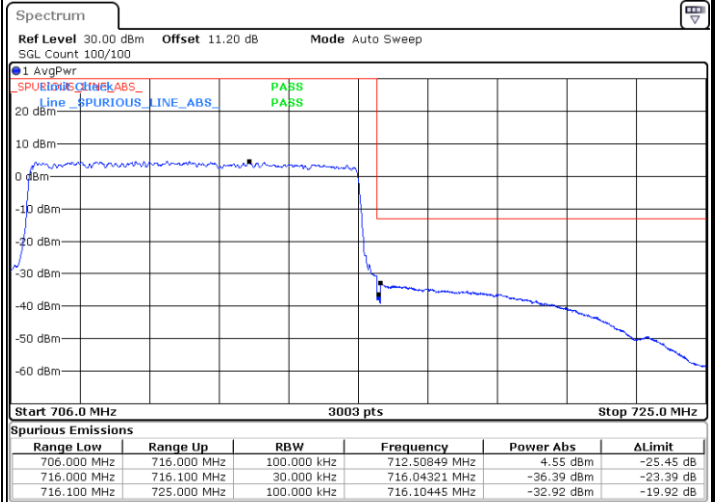
Date: 23 FEB 2021 23:18:53

Lowest Band Edge / Full RB



Date: 23 FEB 2021 23:11:14

Highest Band Edge / Full RB

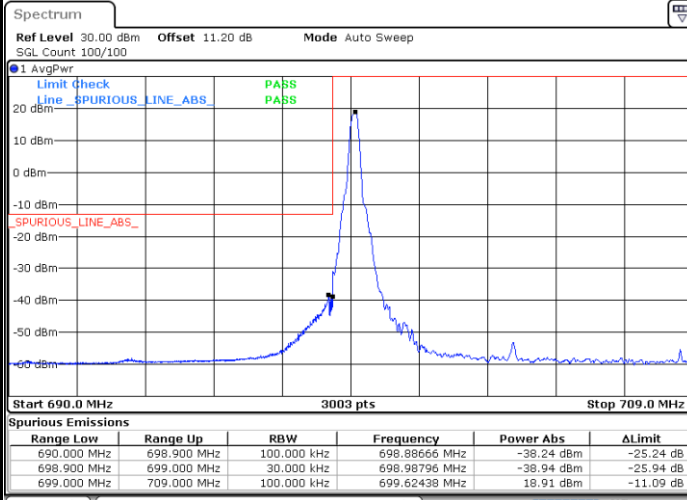


Date: 23 FEB 2021 23:18:10



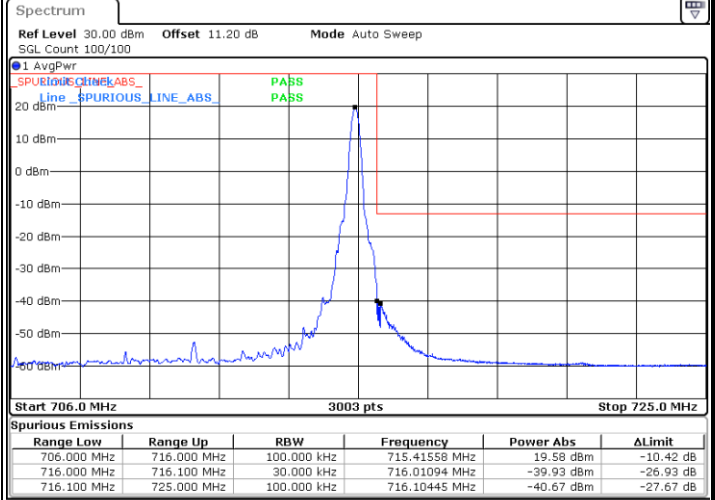
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



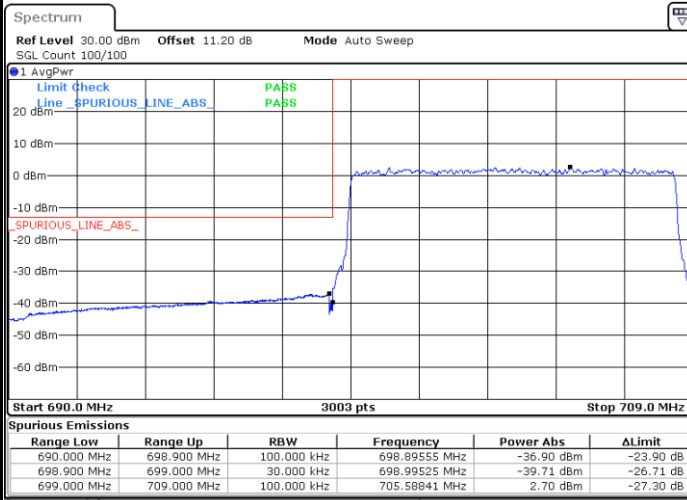
Date: 23 FEB 2021 23:22:24

Highest Band Edge / 1 RB



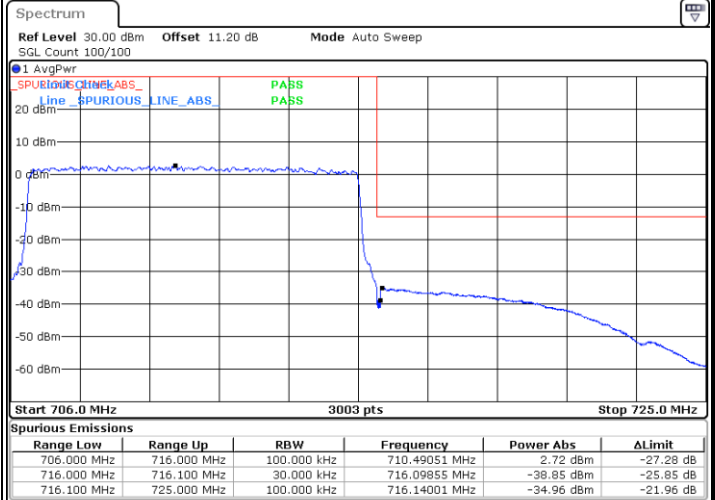
Date: 23 FEB 2021 23:24:30

Lowest Band Edge / Full RB



Date: 23 FEB 2021 23:21:41

Highest Band Edge / Full RB



Date: 23 FEB 2021 23:23:47

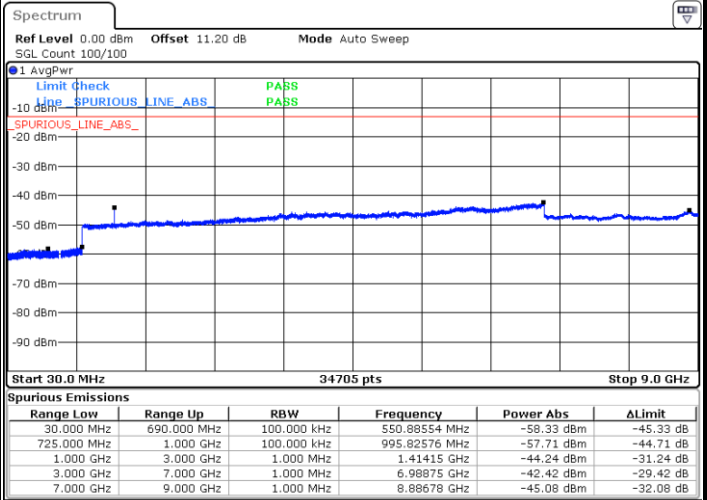
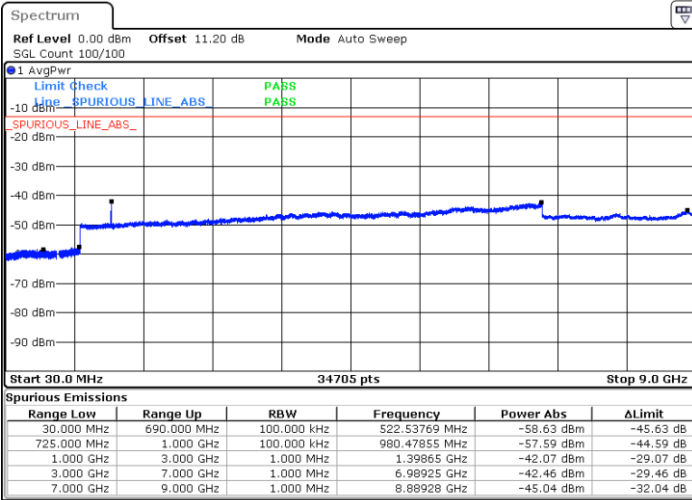


# Conducted Spurious Emission

## LTE Band 12 / 1.4MHz

### Lowest Channel / QPSK

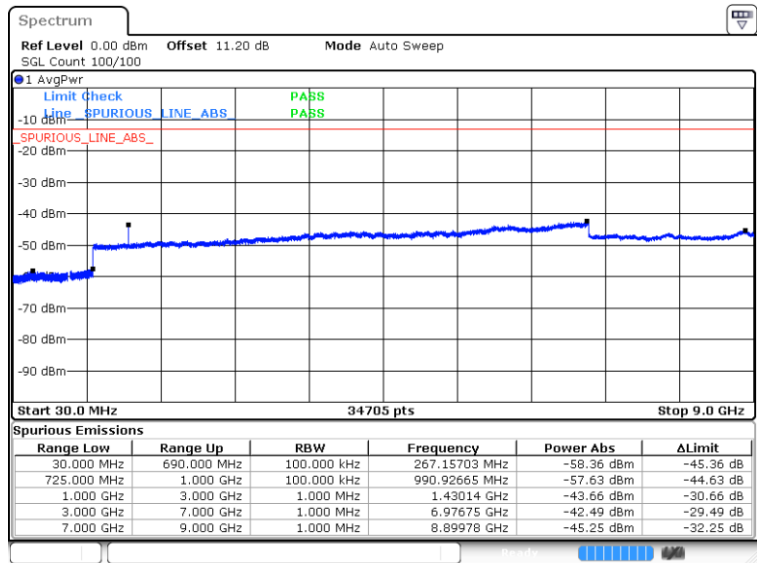
### Middle Channel / QPSK



Date: 23.FEB.2021 04:23:54

Date: 23.FEB.2021 04:26:44

### Highest Channel / QPSK



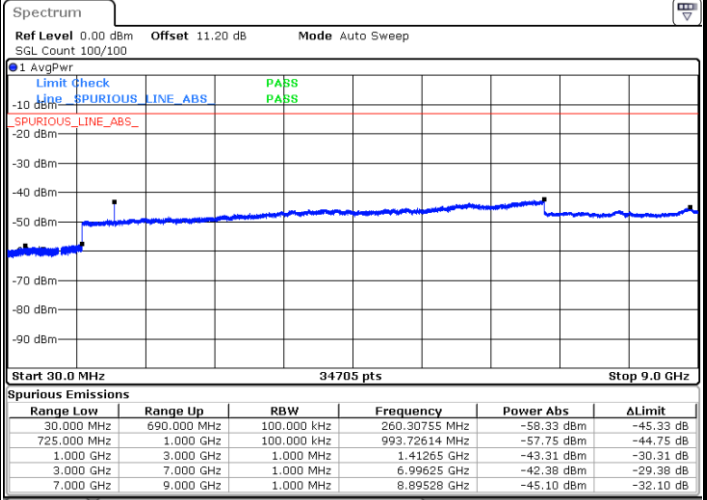
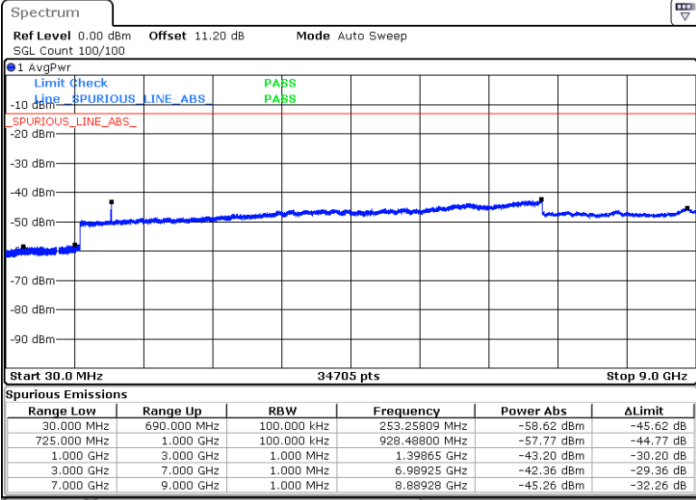
Date: 23.FEB.2021 04:30:57



LTE Band 12 / 3MHz

Lowest Channel / QPSK

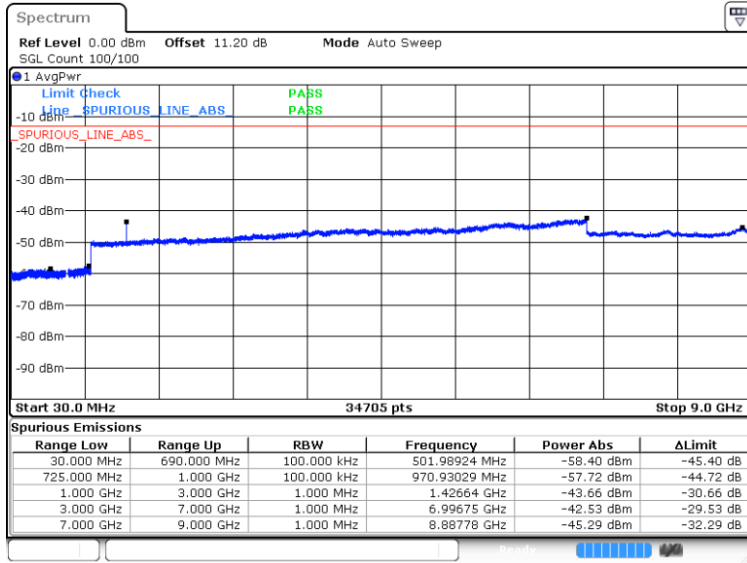
Middle Channel / QPSK



Date: 23.FEB.2021 04:43:24

Date: 23.FEB.2021 04:46:14

Highest Channel / QPSK



Date: 23.FEB.2021 04:50:27

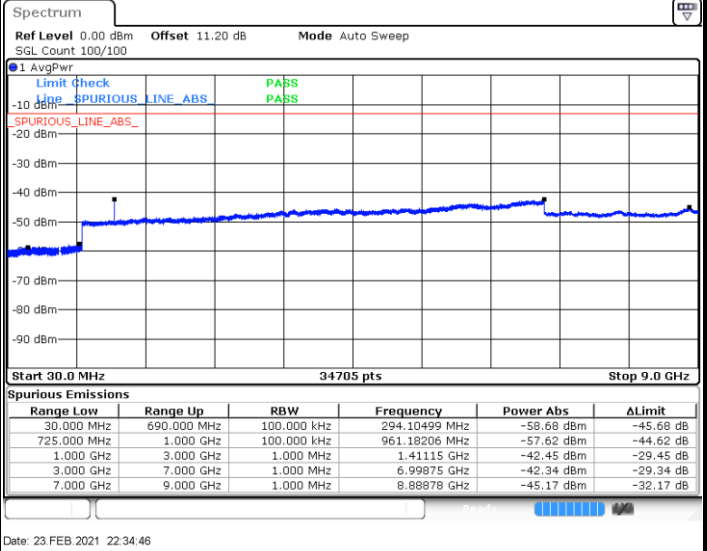
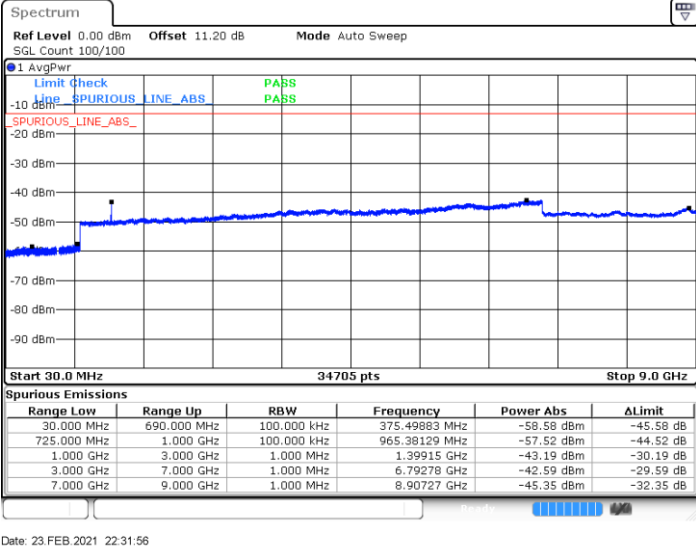




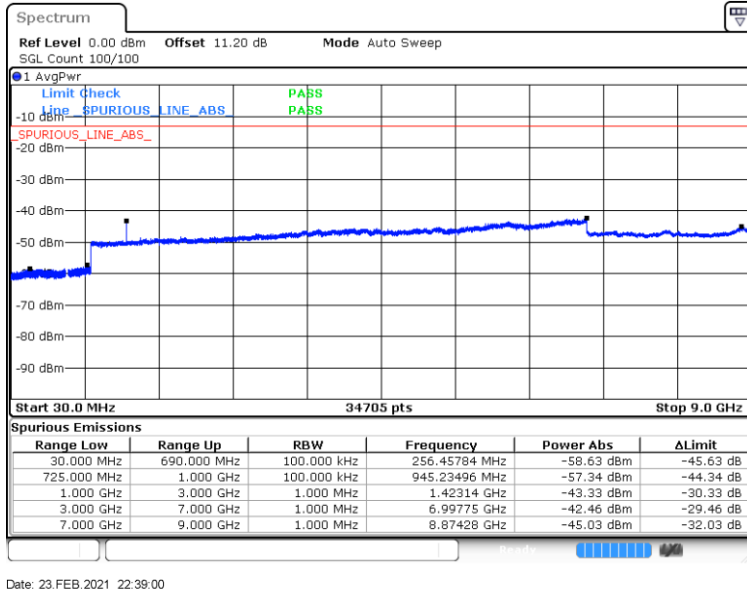
LTE Band 12 / 5MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

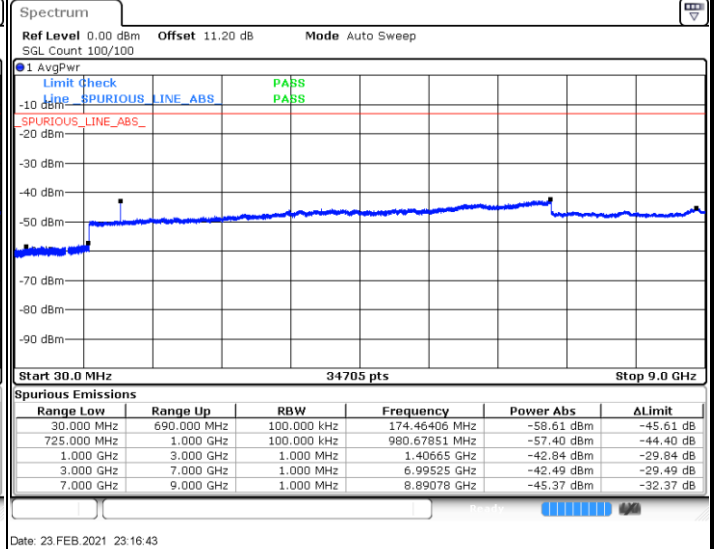
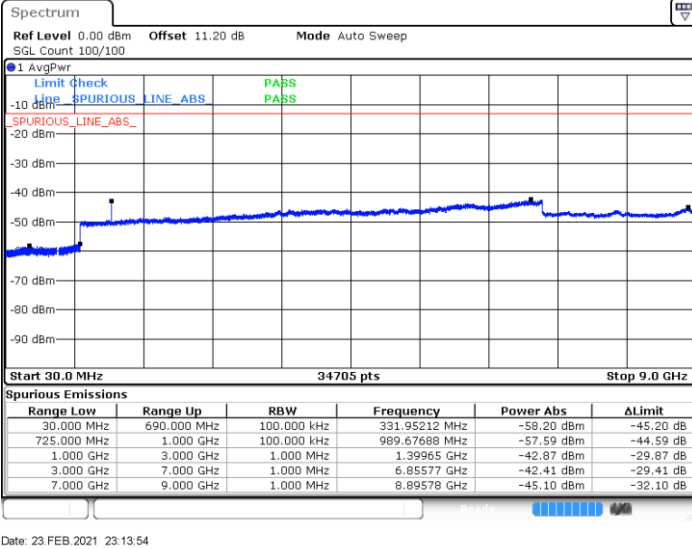




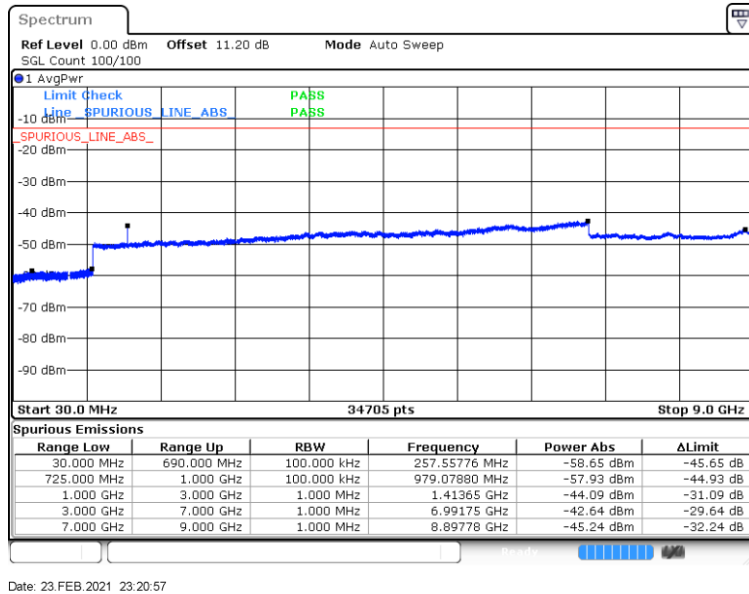
LTE Band 12 / 10MHz

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	0.0110	PASS
40	Normal Voltage	0.0178	
30	Normal Voltage	0.0027	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0054	
0	Normal Voltage	0.0126	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0120	
-30	Normal Voltage	0.0047	
20	Maximum Voltage	0.0124	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0030	

**Note:**

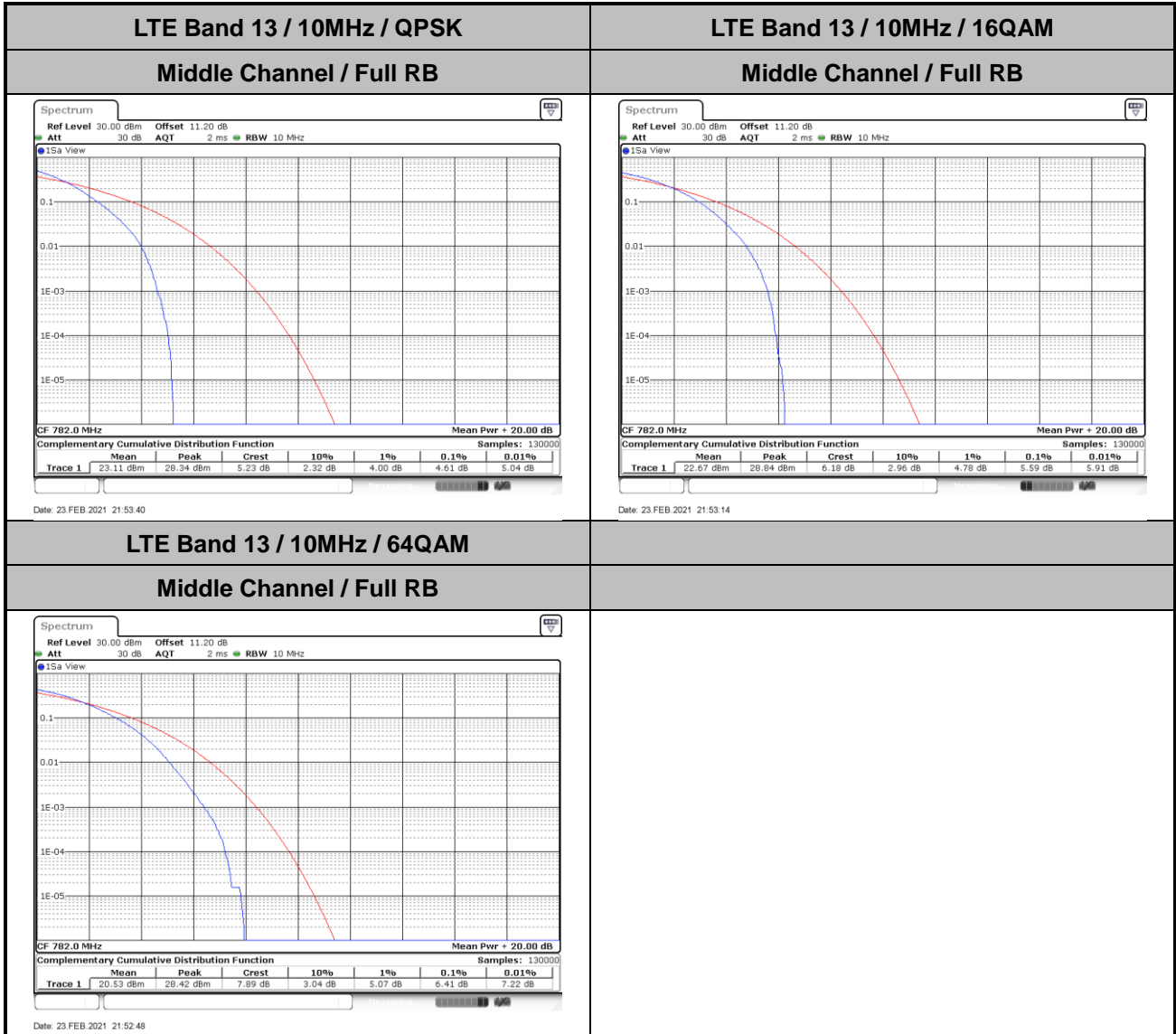
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.67 V. ; Maximum Voltage =4.26 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



## 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	4.61	5.59	6.41	-	PASS





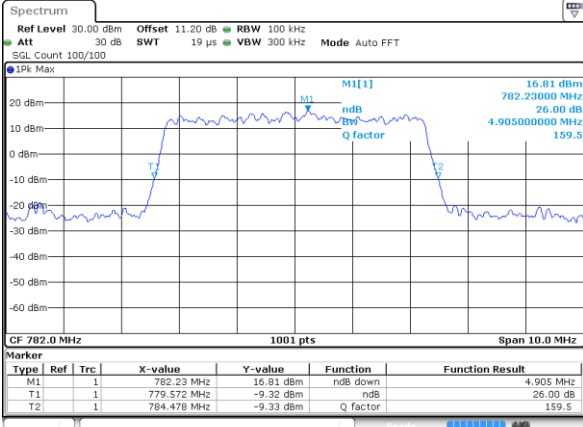
**26dB Bandwidth**

Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.91	4.92	9.73	9.67	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM
Middle CH	-	-	-	-	4.81	-	9.81	-	-	-	-	-



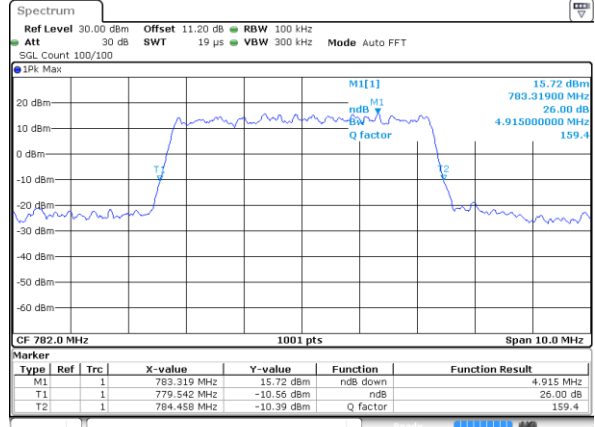
LTE Band 13

Middle Channel / 5MHz / QPSK



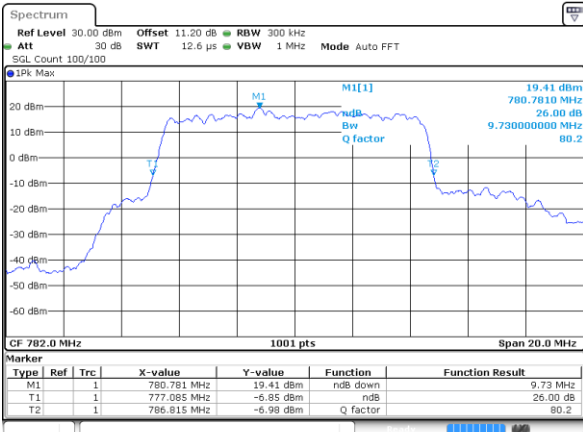
Date: 23 FEB 2021 03:33:51

Middle Channel / 5MHz / 16QAM



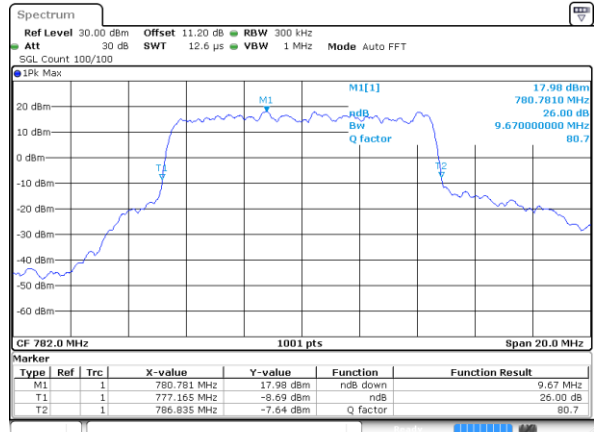
Date: 23 FEB 2021 03:34:14

Middle Channel / 10MHz / QPSK



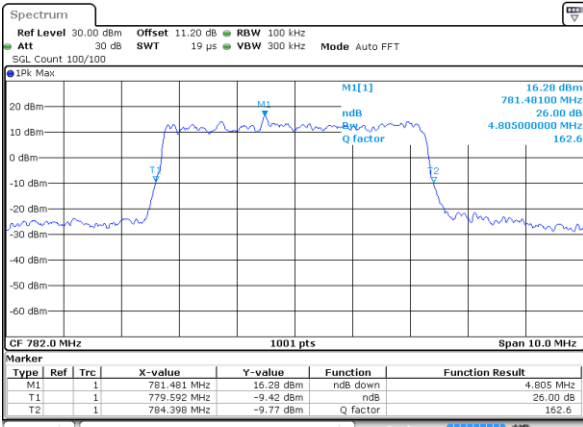
Date: 23 FEB 2021 21:33:47

Middle Channel / 10MHz / 16QAM



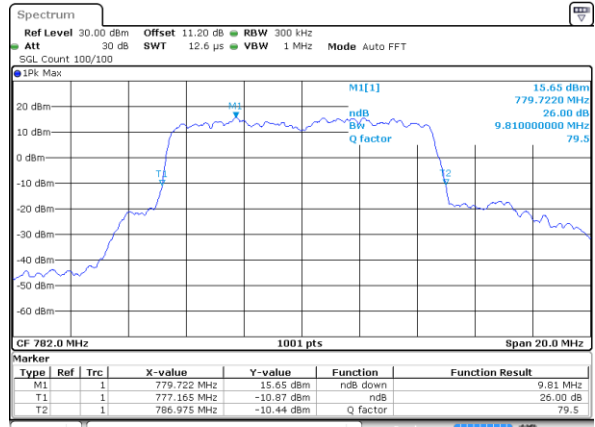
Date: 23 FEB 2021 21:33:24

Middle Channel / 5MHz / 64QAM



Date: 23 FEB 2021 21:27:40

Middle Channel / 10MHz / 64QAM



Date: 23 FEB 2021 21:46:55



**Occupied Bandwidth**

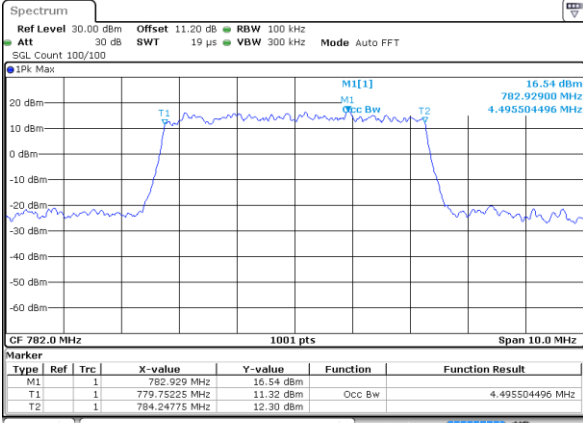
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.50	4.48	9.03	8.97	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM
Middle CH	-	-	-	-	4.49	-	8.93	-	-	-	-	-





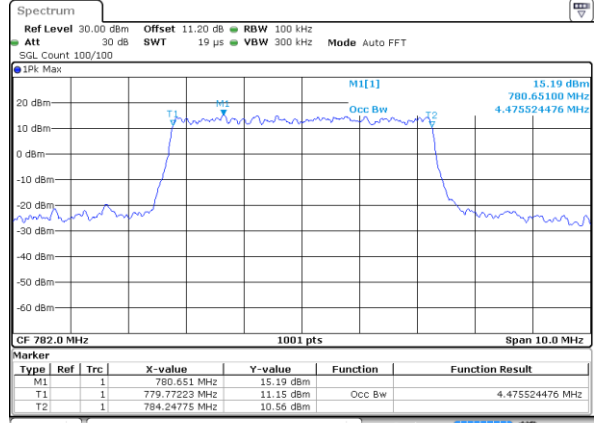
LTE Band 13

Middle Channel / 5MHz / QPSK



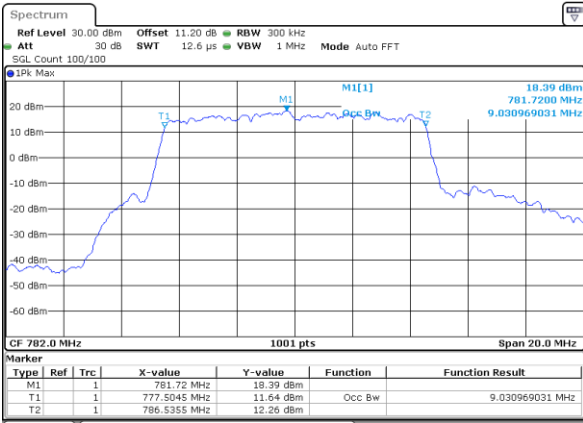
Date: 23 FEB 2021 03:34:54

Middle Channel / 5MHz / 16QAM



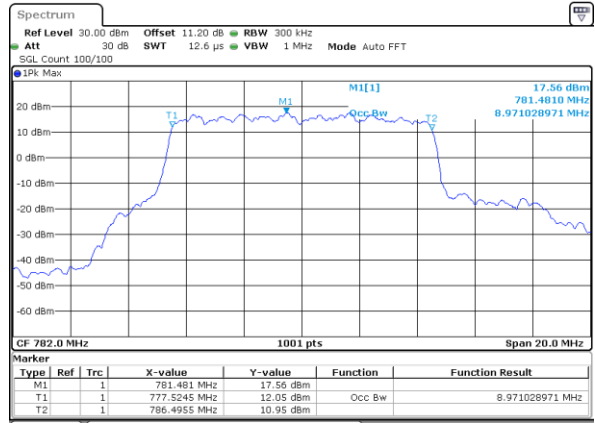
Date: 23 FEB 2021 03:34:29

Middle Channel / 10MHz / QPSK



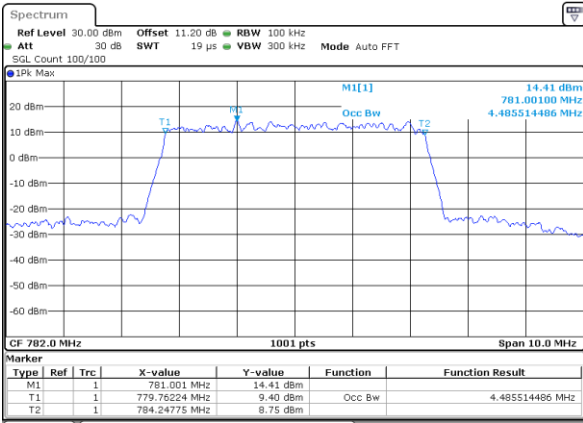
Date: 23 FEB 2021 21:32:42

Middle Channel / 10MHz / 16QAM



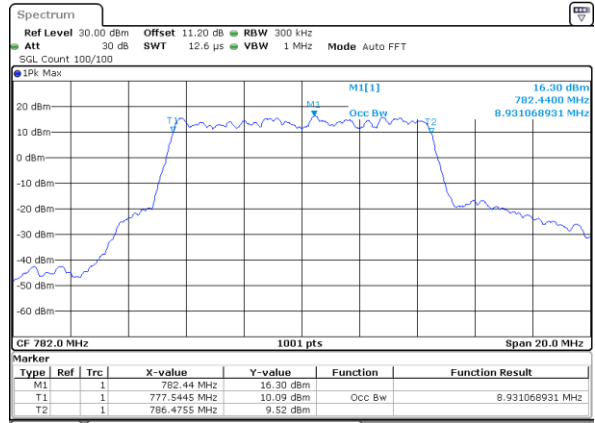
Date: 23 FEB 2021 21:33:07

Middle Channel / 5MHz / 64QAM



Date: 23 FEB 2021 21:27:55

Middle Channel / 10MHz / 64QAM



Date: 23 FEB 2021 21:46:38

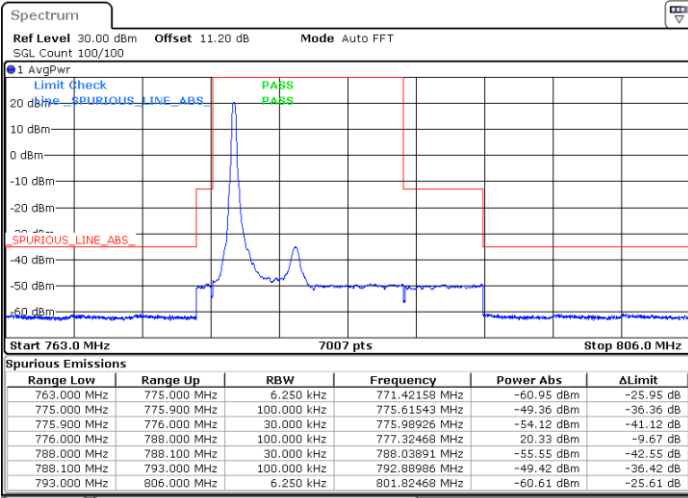


# Conducted Band Edge

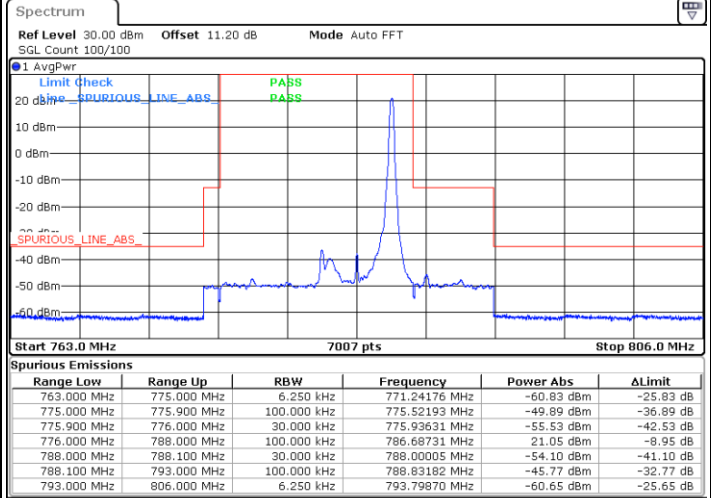
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB

### Highest Band Edge / 1 RB



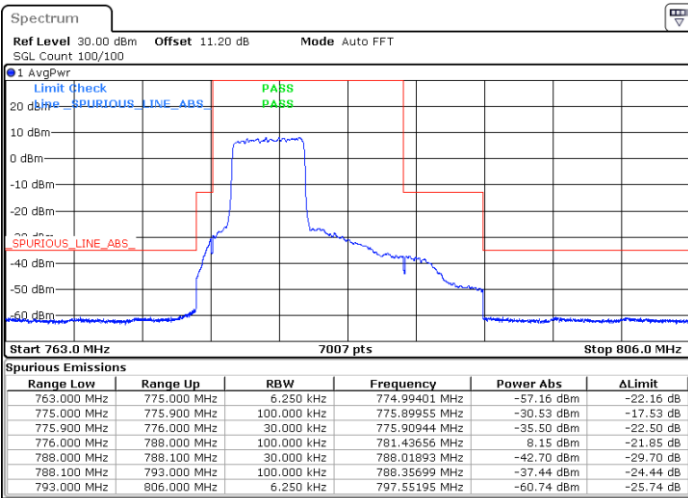
Date: 23 FEB 2021 03:30:52



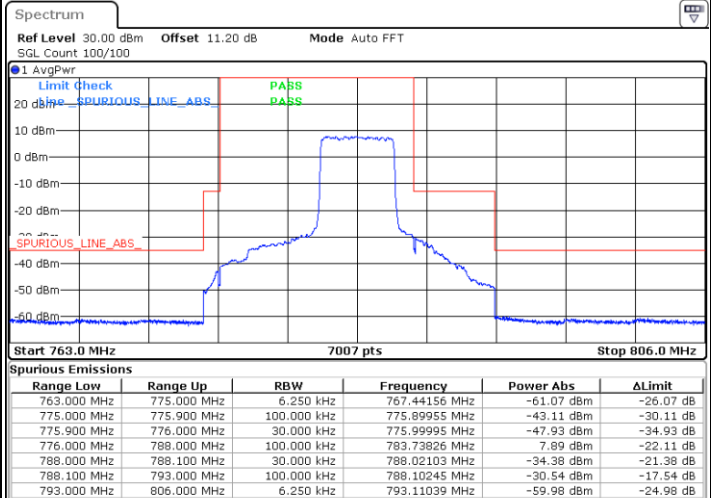
Date: 23 FEB 2021 21:22:08

### Lowest Band Edge / Full RB

### Highest Band Edge / Full RB



Date: 23 FEB 2021 03:25:15



Date: 23 FEB 2021 03:36:49