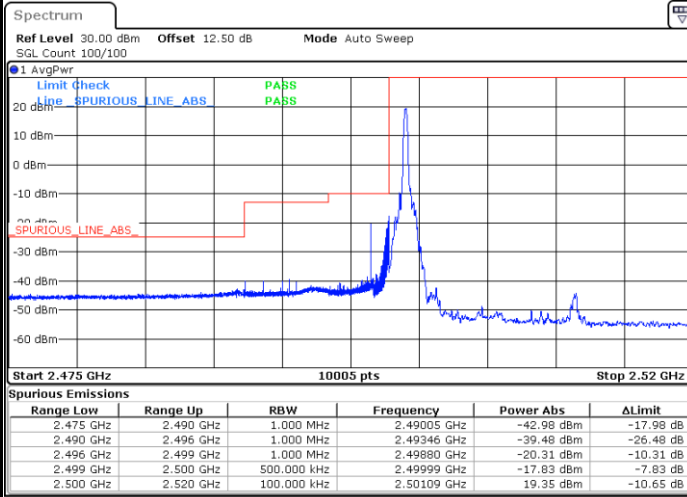




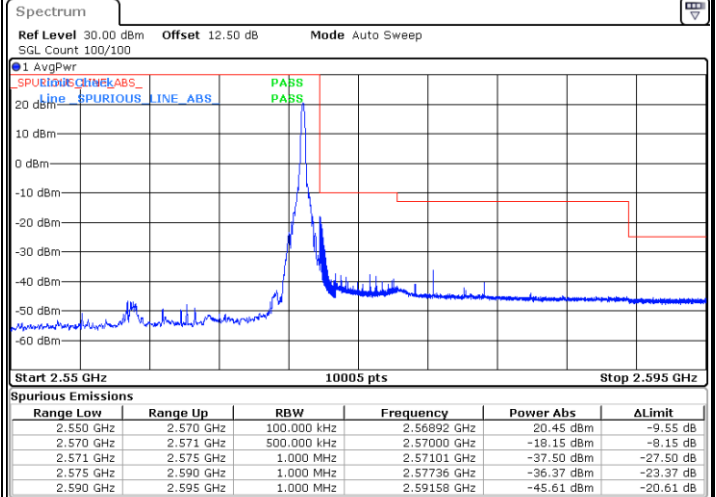
LTE Band 7 / 20MHz / 16QAM

Lowest Band Edge / 1 RB



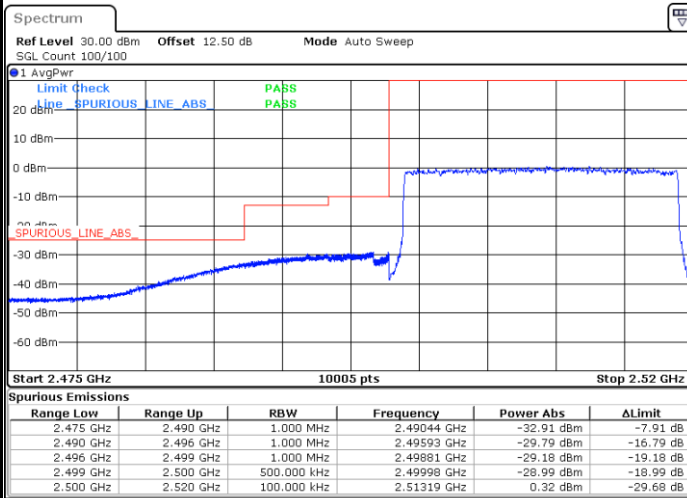
Date: 24.DEC.2021 09:57:50

Highest Band Edge / 1 RB



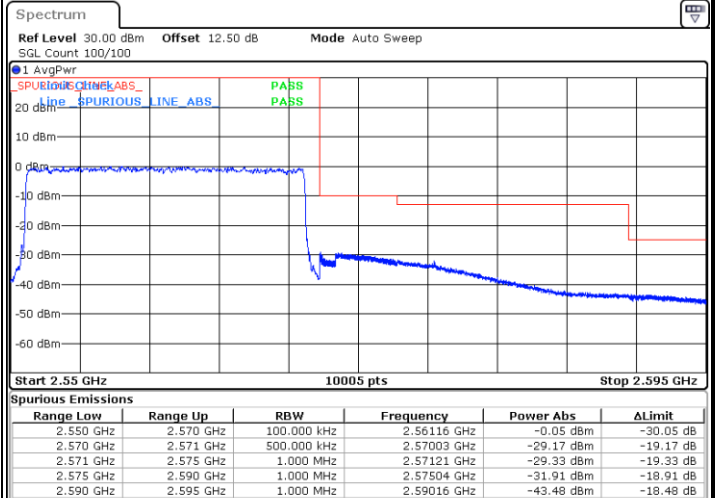
Date: 24.DEC.2021 10:07:50

Lowest Band Edge / Full RB



Date: 24.DEC.2021 10:02:29

Highest Band Edge / Full RB

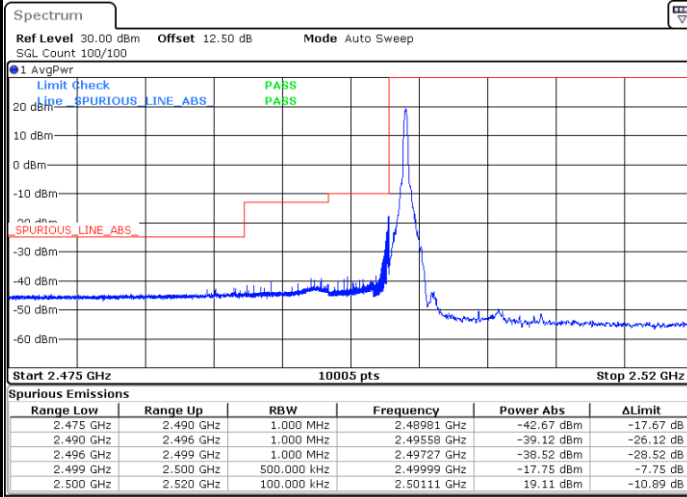


Date: 24.DEC.2021 10:08:15



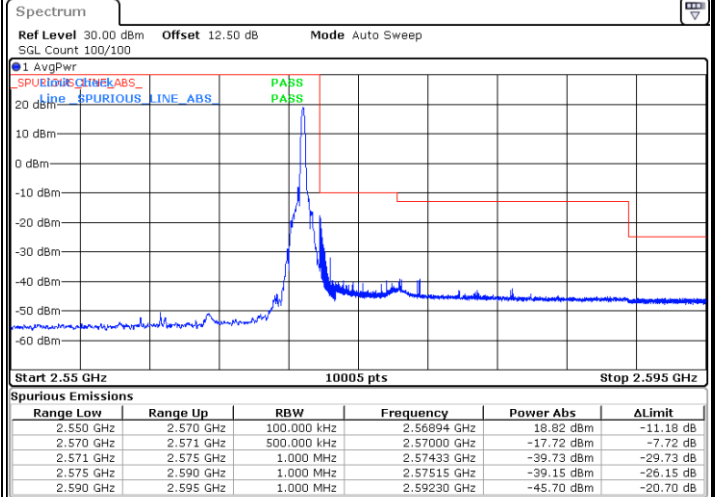
LTE Band 7 / 20MHz / 64QAM

Lowest Band Edge / 1 RB



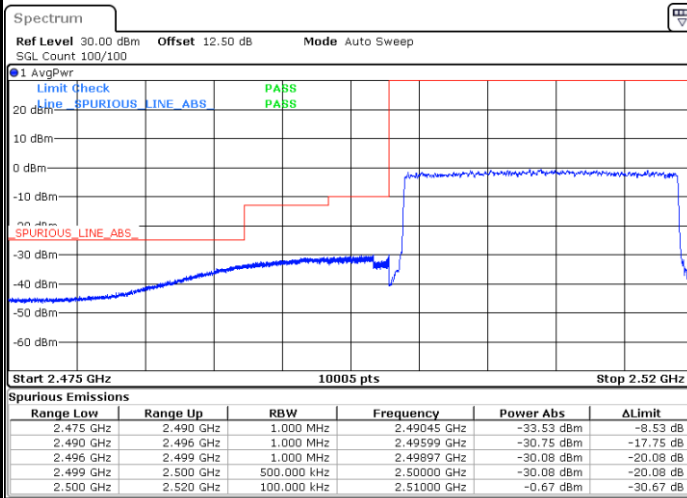
Date: 24.DEC.2021 10:12:05

Highest Band Edge / 1 RB



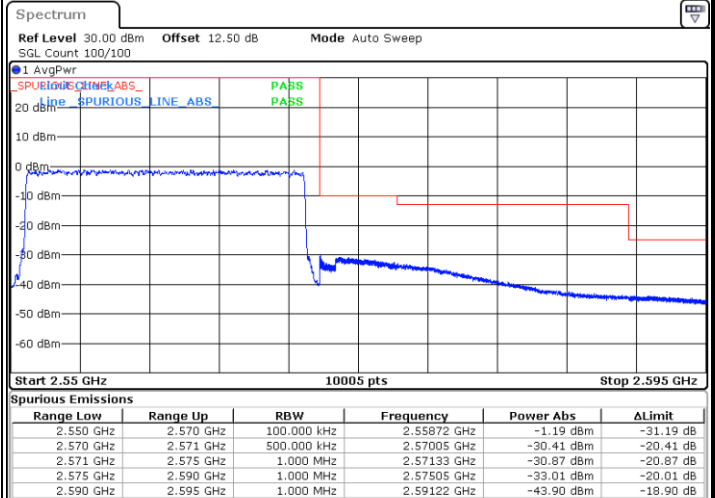
Date: 24.DEC.2021 10:14:47

Lowest Band Edge / Full RB



Date: 24.DEC.2021 10:13:40

Highest Band Edge / Full RB



Date: 24.DEC.2021 10:15:13



Conducted Spurious Emission

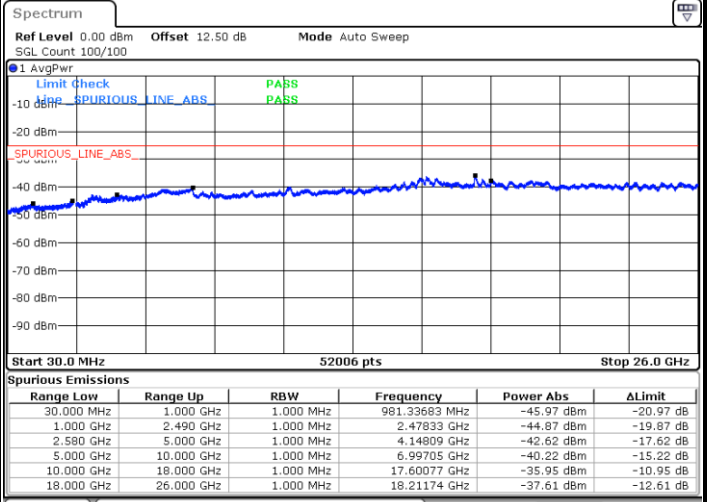
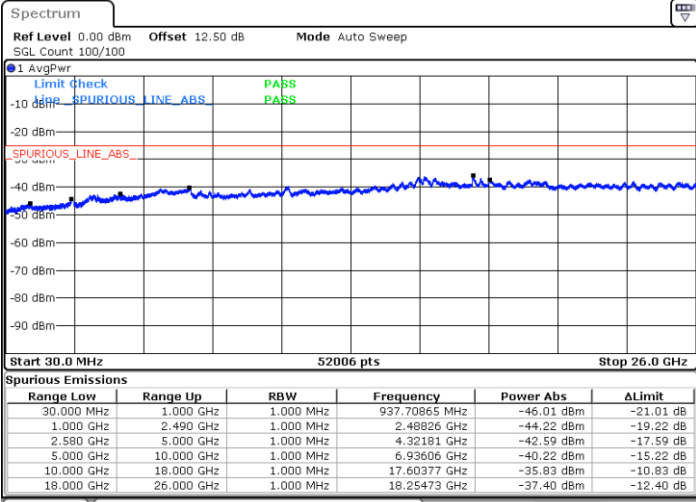




LTE Band 7 / 10MHz

Lowest Channel / QPSK

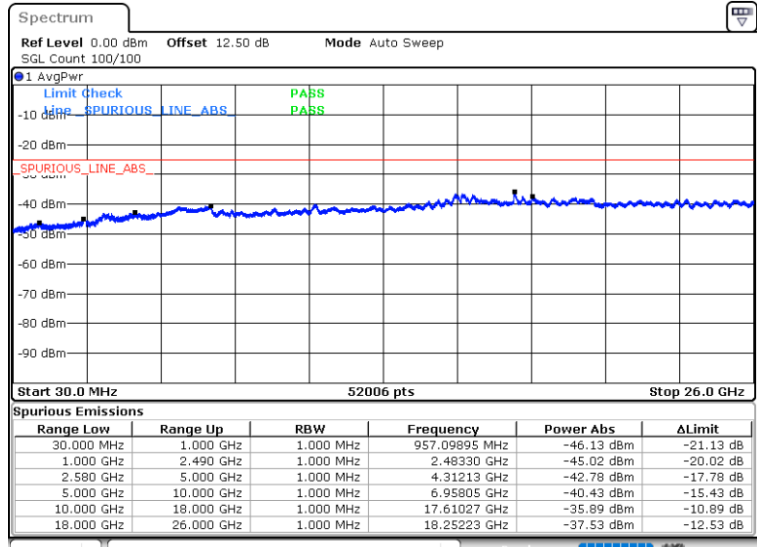
Middle Channel / QPSK



Date: 21.DEC.2021 13:36:25

Date: 21.DEC.2021 13:38:48

Highest Channel / QPSK



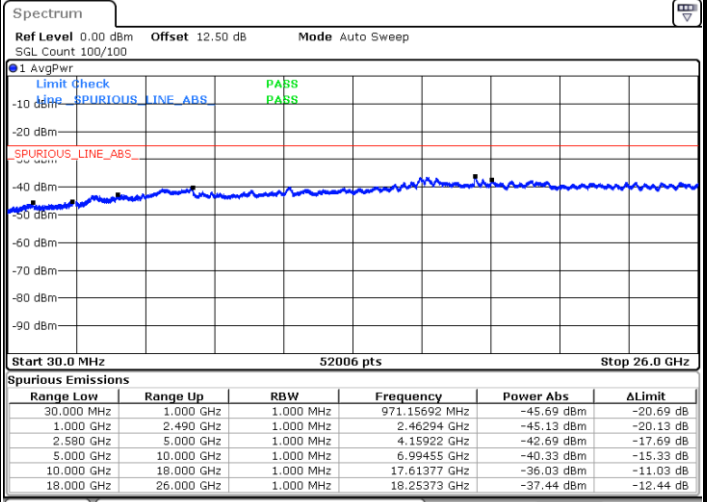
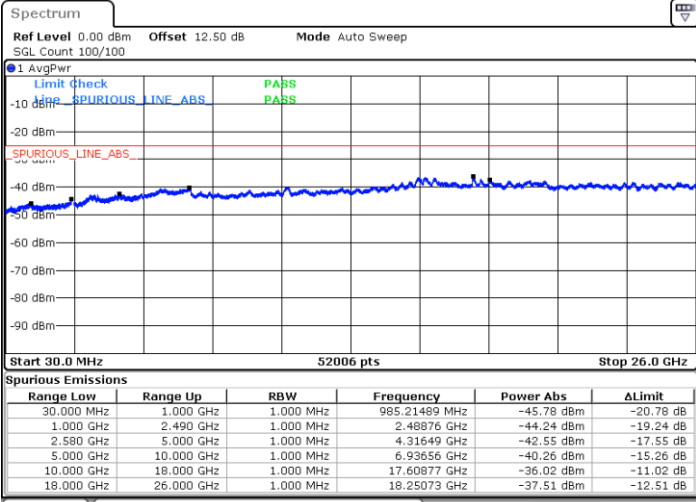
Date: 21.DEC.2021 14:25:58



LTE Band 7 / 15MHz

Lowest Channel / QPSK

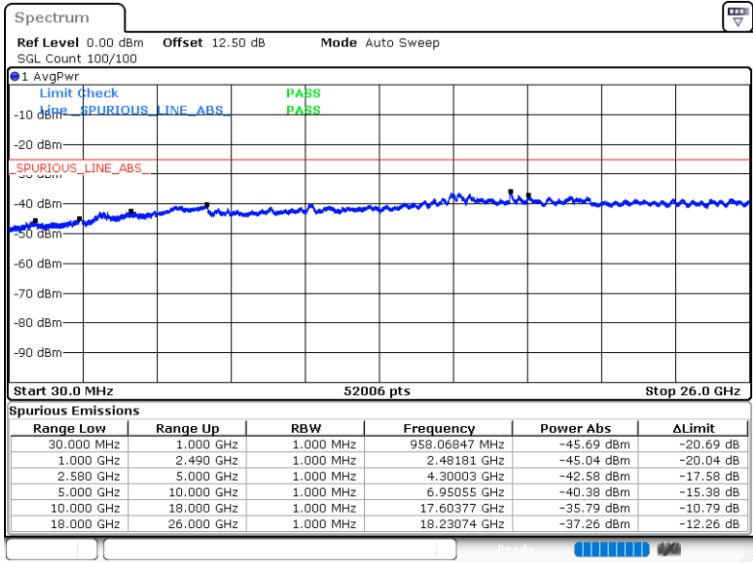
Middle Channel / QPSK



Date: 24.DEC.2021 09:22:35

Date: 24.DEC.2021 09:25:51

Highest Channel / QPSK



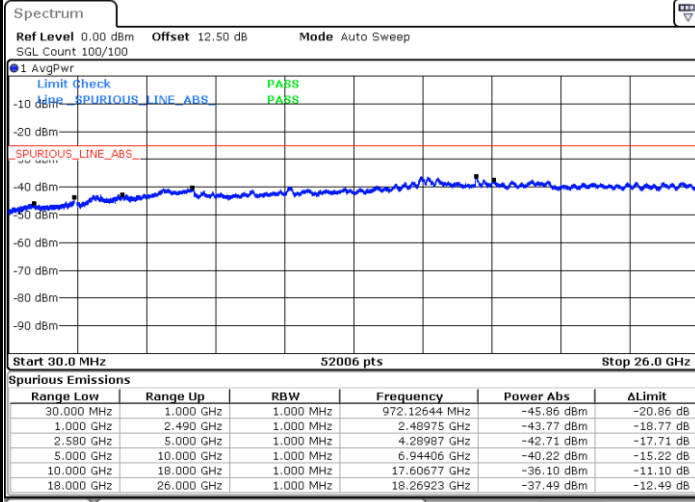
Date: 24.DEC.2021 09:30:20



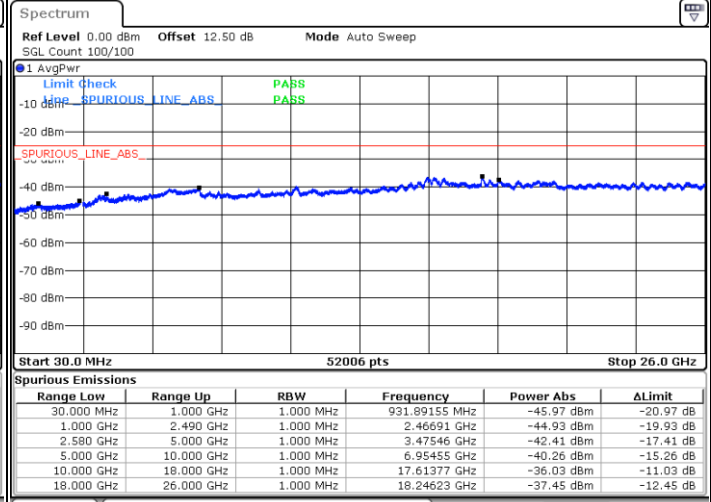
LTE Band 7 / 20MHz

Lowest Channel / QPSK

Middle Channel / QPSK

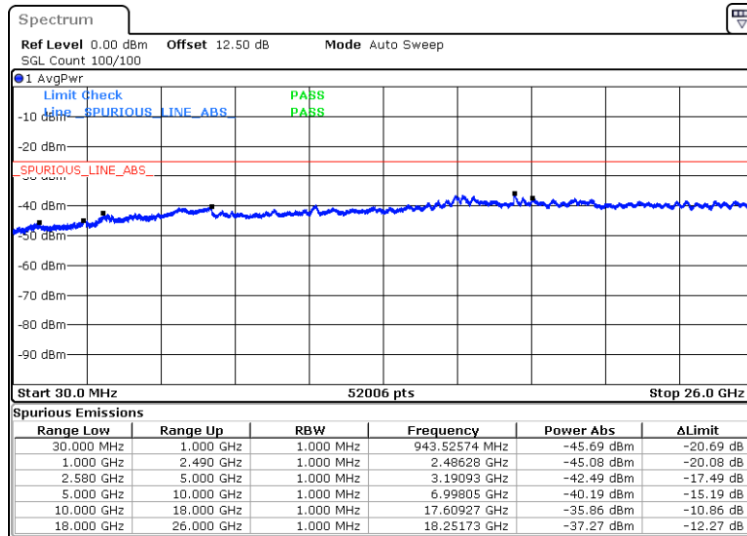


Date: 24.DEC.2021 10:04:35



Date: 24.DEC.2021 10:06:59

Highest Channel / QPSK



Date: 24.DEC.2021 10:09:39



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	0.0018	PASS
40	Normal Voltage	0.0009	
30	Normal Voltage	0.0047	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0007	
0	Normal Voltage	0.0001	
-10	Normal Voltage	0.0006	
-20	Normal Voltage	0.0011	
-30	Normal Voltage	0.0008	
20	Maximum Voltage	0.0019	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0020	

Note:

- 1. Normal Voltage =14 V. ; Battery End Point (BEP) =12 V. ; Maximum Voltage =16 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 12

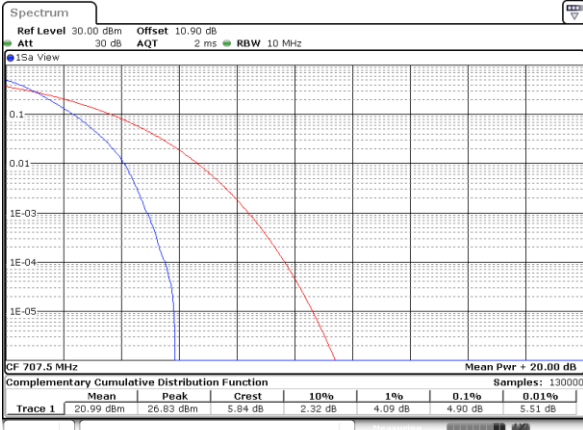
Peak-to-Average Ratio

Mode	LTE Band 12 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	4.90	5.86	6.43	PASS



LTE Band 12 / 10MHz / QPSK

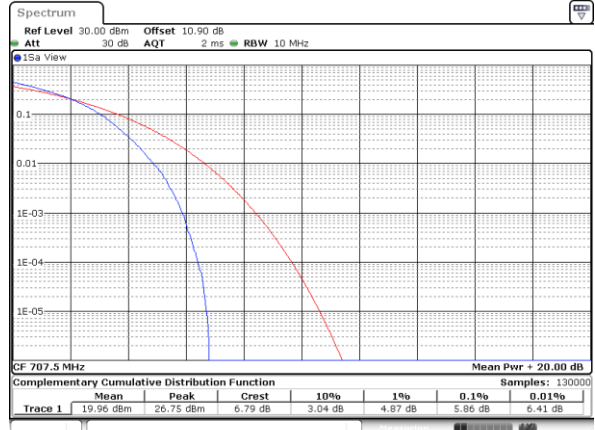
Middle Channel / Full RB



Date: 21.DEC.2021 15:23:19

LTE Band 12 / 10MHz / 16QAM

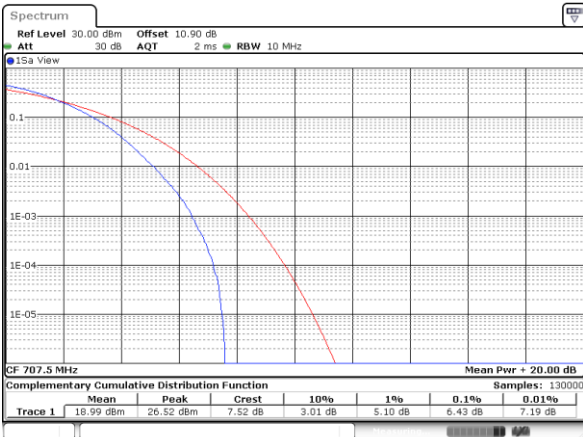
Middle Channel / Full RB



Date: 21.DEC.2021 15:22:57

LTE Band 12 / 10MHz / 64QAM

Middle Channel / Full RB



Date: 21.DEC.2021 15:22:35



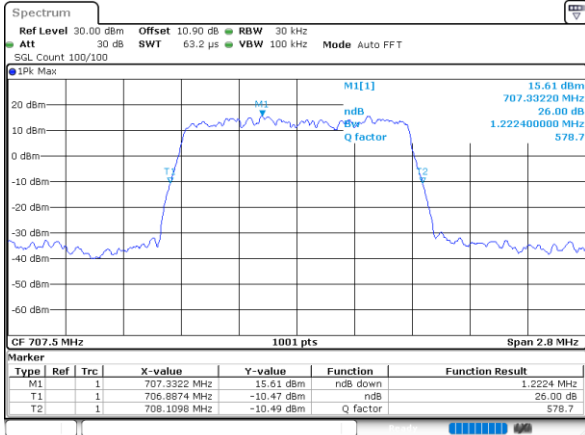
26dB Bandwidth

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	1.22	1.23	2.98	2.99	4.88	4.91	9.69	9.75	-	-	-	-
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	1.21	-	2.99	-	4.91	-	9.71	-	-	-	-	-



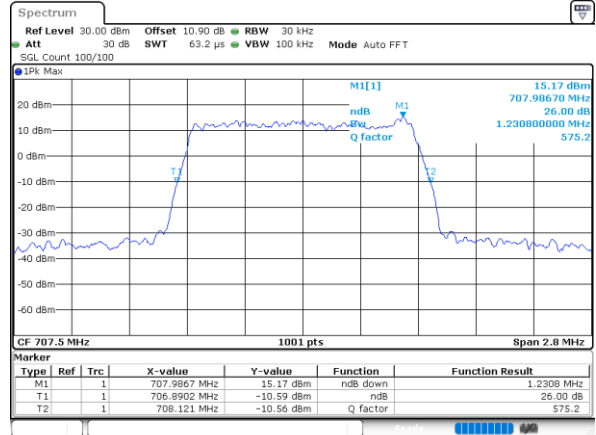
LTE Band 12

Middle Channel / 1.4MHz / QPSK



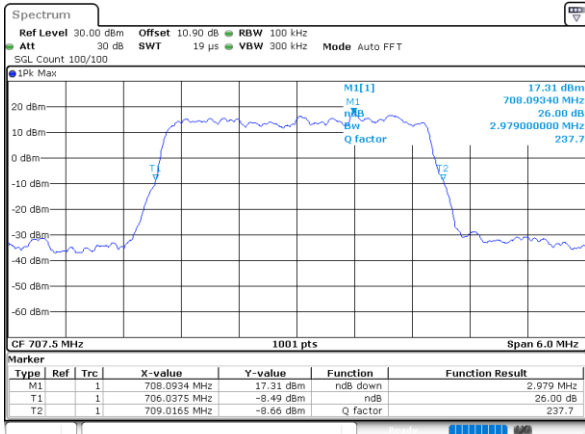
Date: 21.DEC.2021 14:33:52

Middle Channel / 1.4MHz / 16QAM



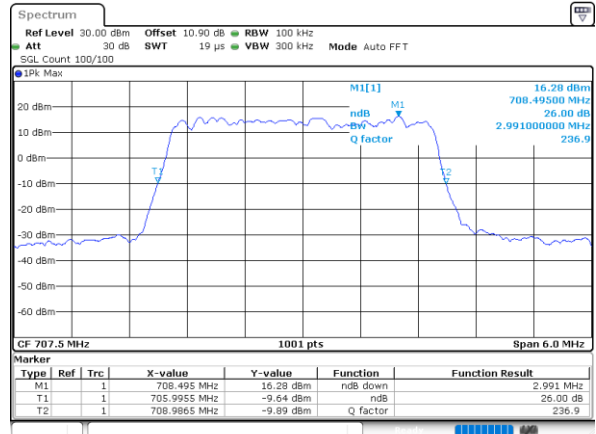
Date: 21.DEC.2021 14:34:13

Middle Channel / 3MHz / QPSK



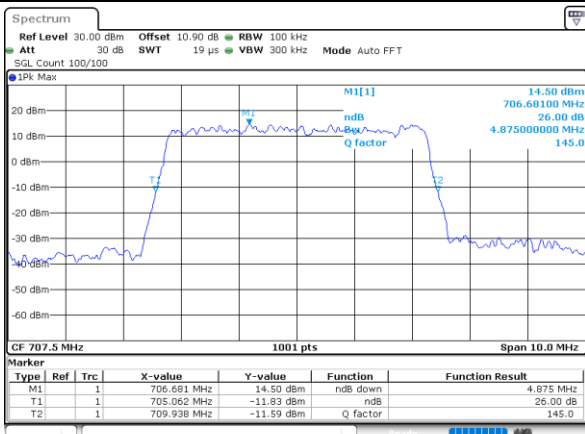
Date: 21.DEC.2021 14:45:50

Middle Channel / 3MHz / 16QAM



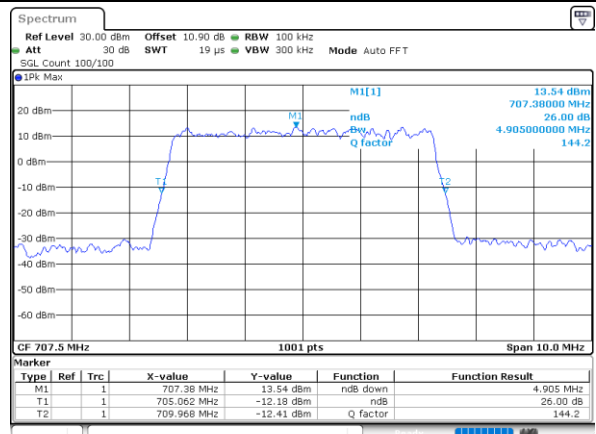
Date: 21.DEC.2021 14:46:11

Middle Channel / 5MHz / QPSK



Date: 21.DEC.2021 15:04:22

Middle Channel / 5MHz / 16QAM

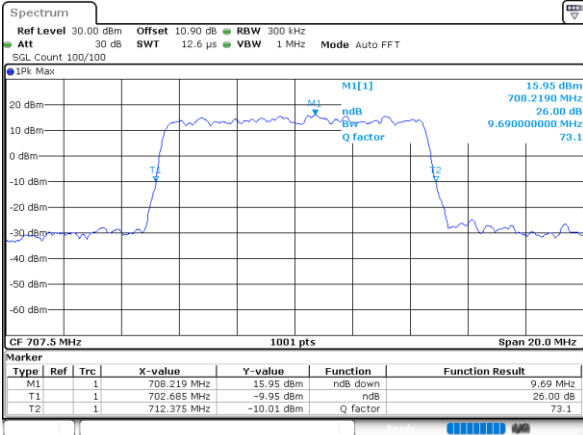


Date: 21.DEC.2021 15:04:43



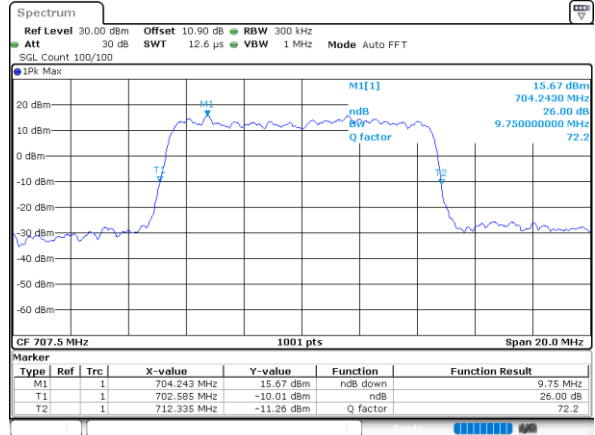
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 21.DEC.2021 15:14:33

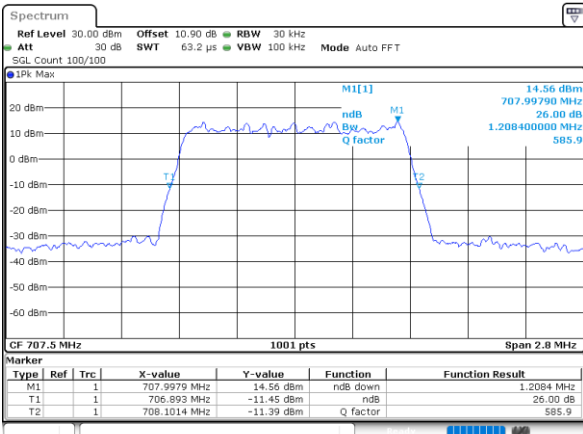
Middle Channel / 10MHz / 16QAM



Date: 21.DEC.2021 15:14:54

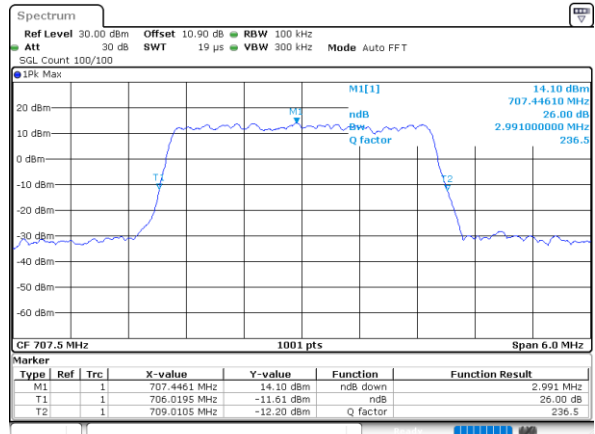
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



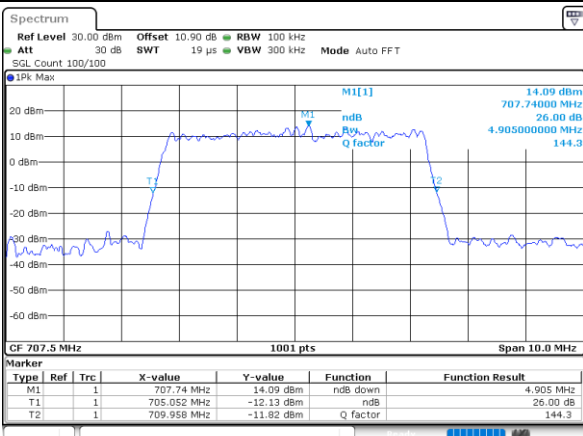
Date: 21.DEC.2021 14:40:09

Middle Channel / 3MHz / 64QAM



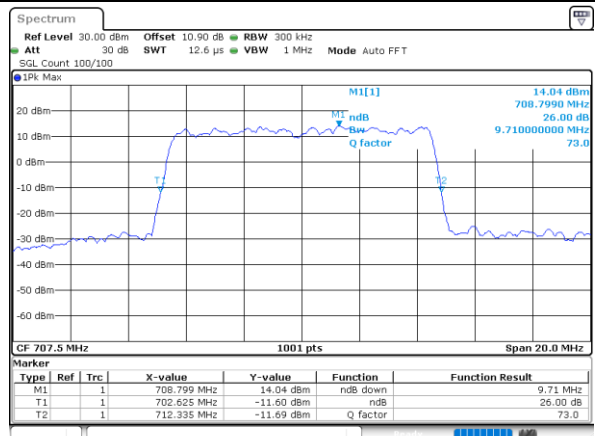
Date: 21.DEC.2021 14:53:18

Middle Channel / 5MHz / 64QAM



Date: 21.DEC.2021 14:56:42

Middle Channel / 10MHz / 64QAM



Date: 21.DEC.2021 15:20:51



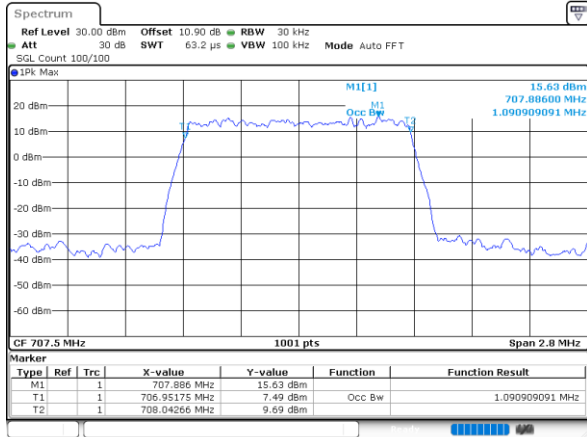
Occupied Bandwidth

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	1.09	2.73	2.74	4.48	4.49	8.97	9.05	-	-	-	-
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	-	2.72	-	4.49	-	9.05	-	-	-	-	-



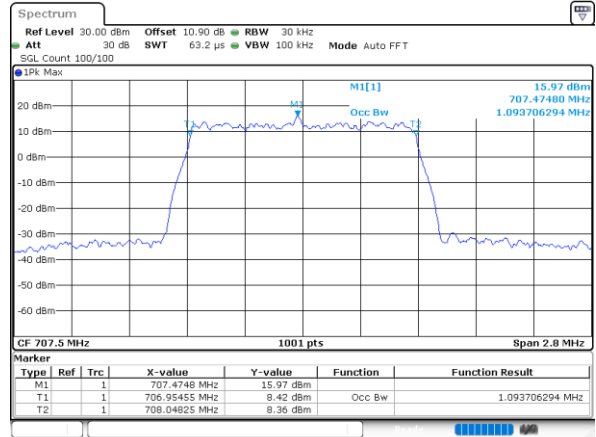
LTE Band 12

Middle Channel / 1.4MHz / QPSK



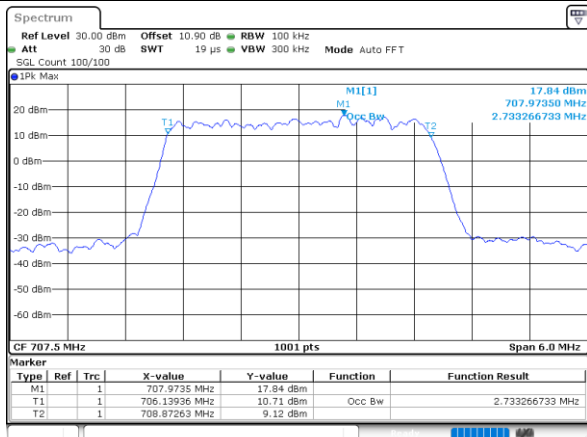
Date: 21.DEC.2021 14:33:32

Middle Channel / 1.4MHz / 16QAM



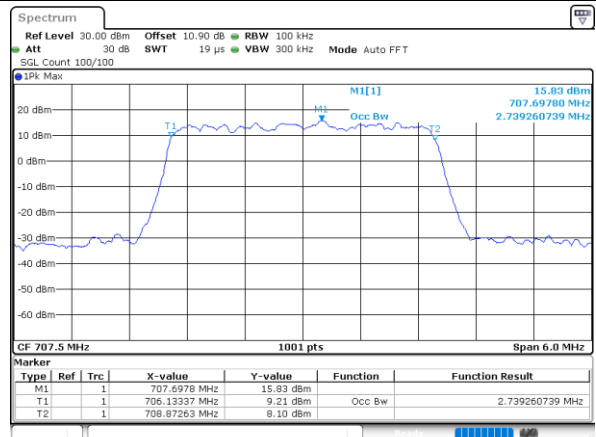
Date: 21.DEC.2021 14:33:11

Middle Channel / 3MHz / QPSK



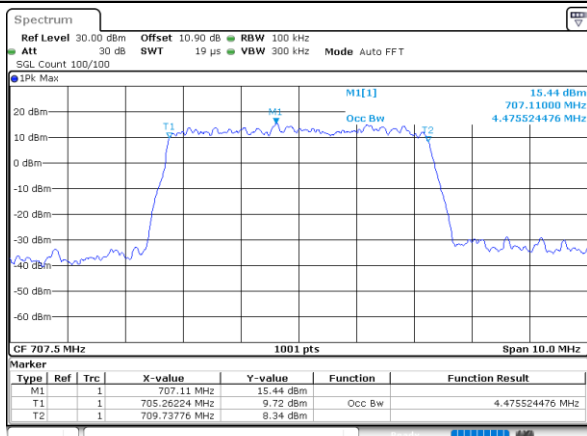
Date: 21.DEC.2021 14:45:29

Middle Channel / 3MHz / 16QAM



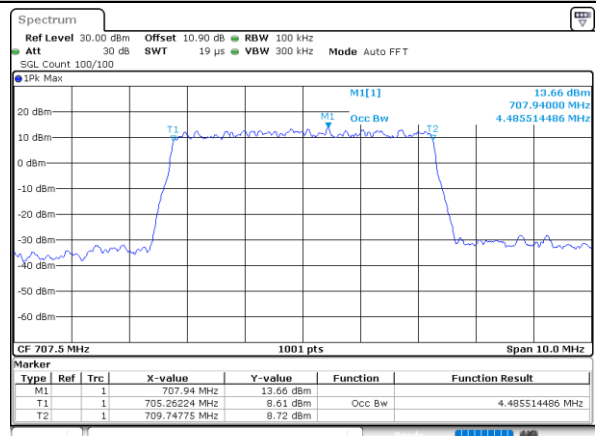
Date: 21.DEC.2021 14:45:08

Middle Channel / 5MHz / QPSK



Date: 21.DEC.2021 15:04:02

Middle Channel / 5MHz / 16QAM

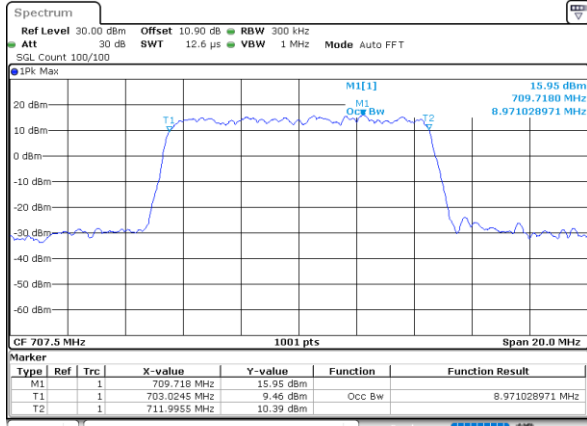


Date: 21.DEC.2021 15:03:41



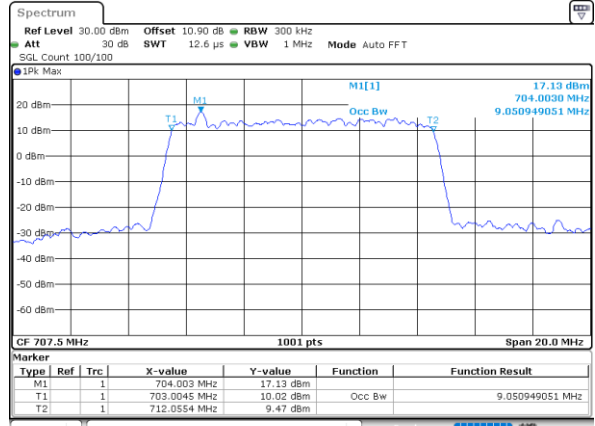
LTE Band 12

Middle Channel / 10MHz / QPSK



Date: 21.DEC.2021 15:14:13

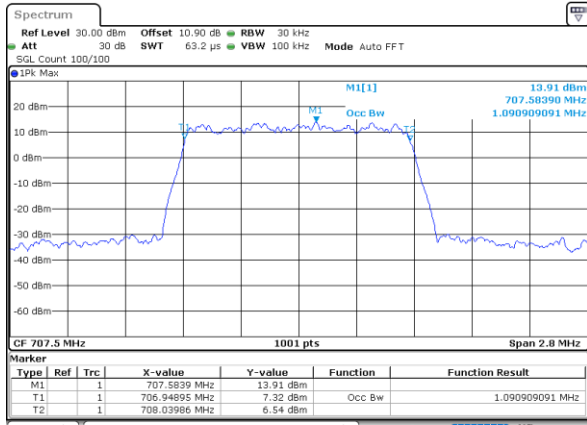
Middle Channel / 10MHz / 16QAM



Date: 21.DEC.2021 15:13:52

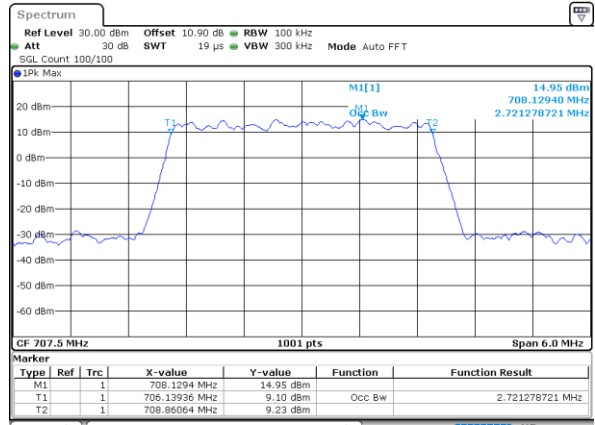
LTE Band 12

Middle Channel / 1.4MHz / 64QAM



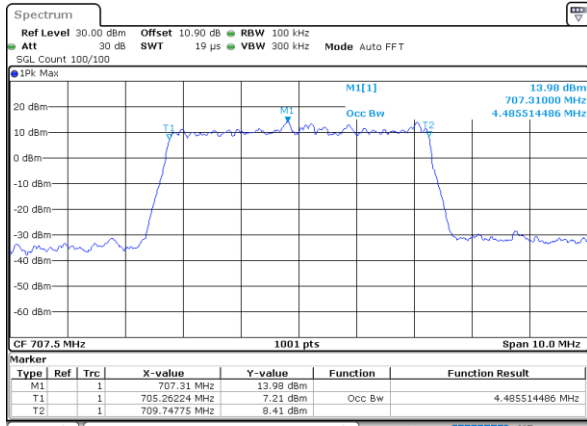
Date: 21.DEC.2021 14:39:48

Middle Channel / 3MHz / 64QAM



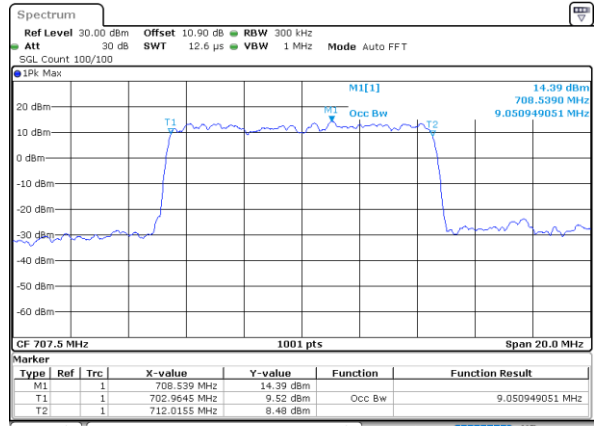
Date: 21.DEC.2021 14:52:57

Middle Channel / 5MHz / 64QAM



Date: 21.DEC.2021 14:56:22

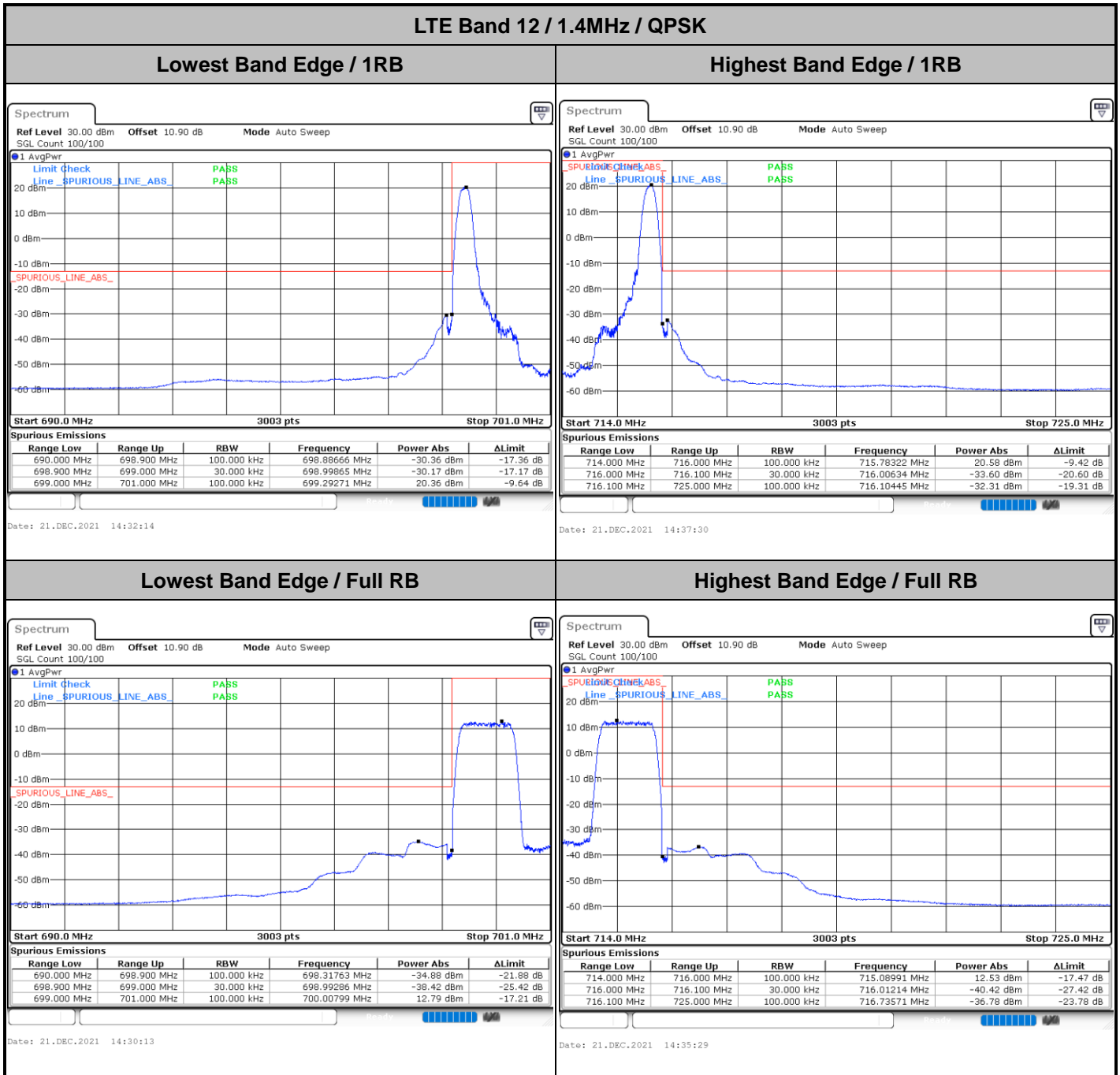
Middle Channel / 10MHz / 64QAM



Date: 21.DEC.2021 15:20:31



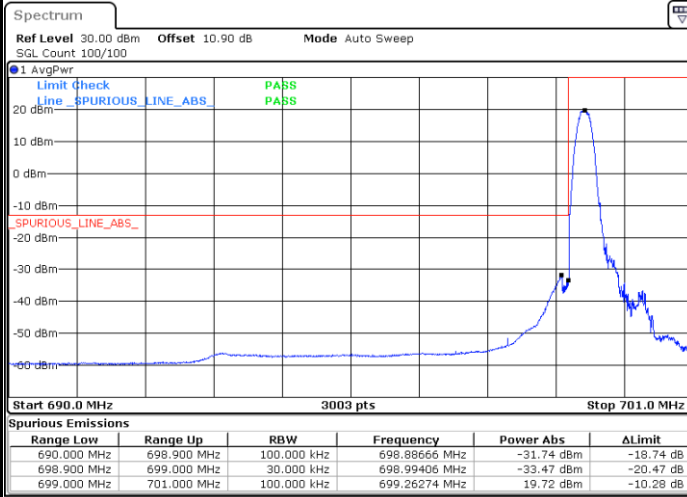
Conducted Band Edge





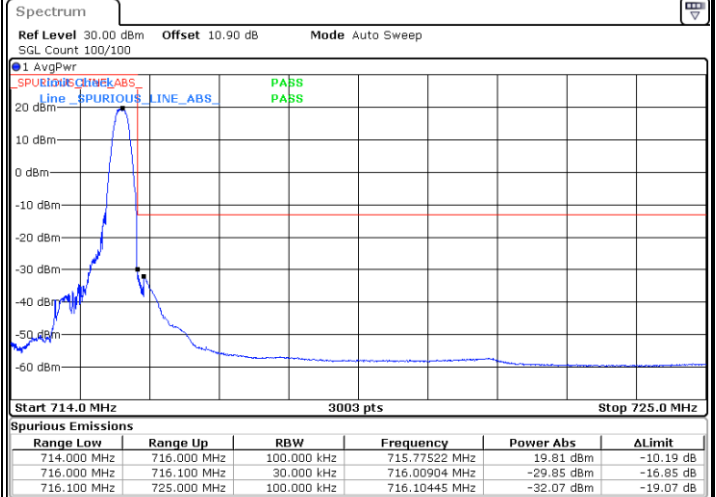
LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



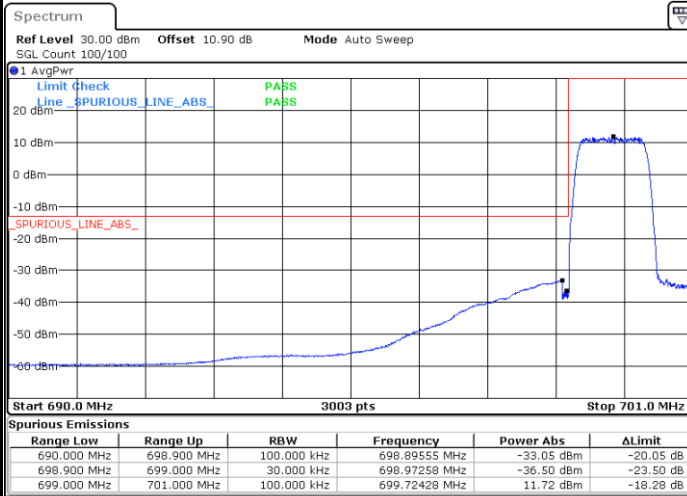
Date: 21.DEC.2021 14:31:34

Highest Band Edge / 1 RB



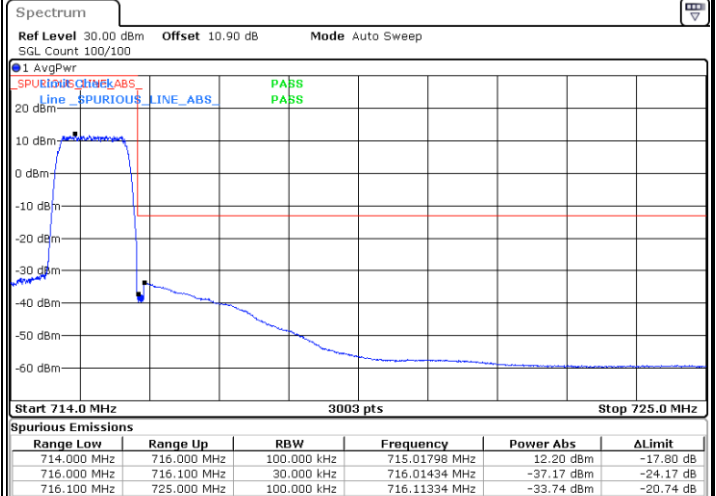
Date: 21.DEC.2021 14:36:50

Lowest Band Edge / Full RB



Date: 21.DEC.2021 14:30:53

Highest Band Edge / Full RB

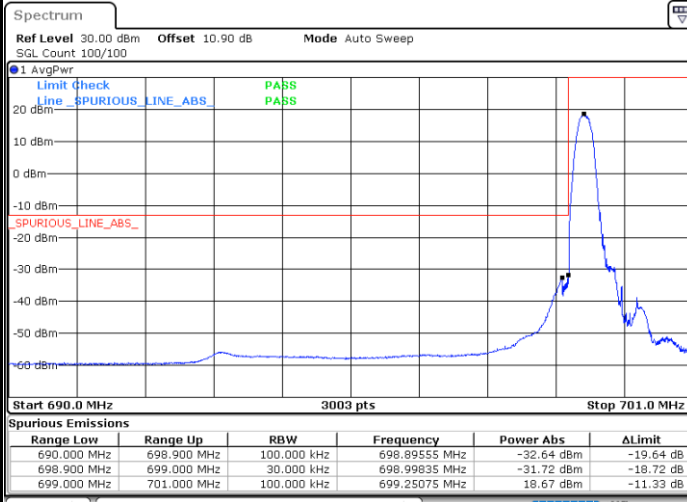


Date: 21.DEC.2021 14:36:09



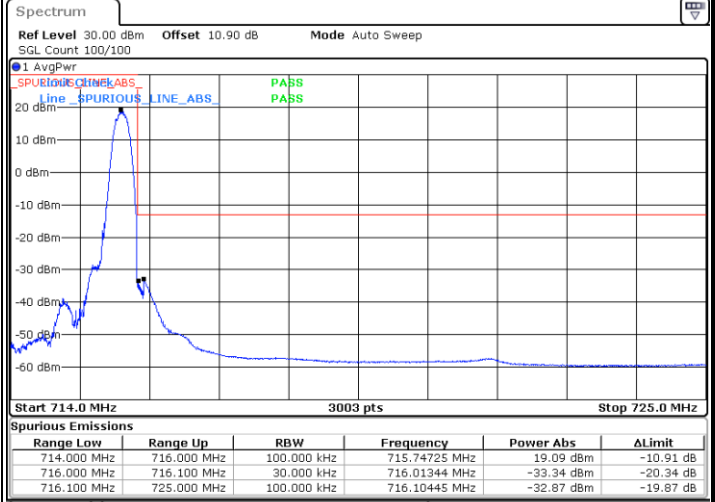
LTE Band 12 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB



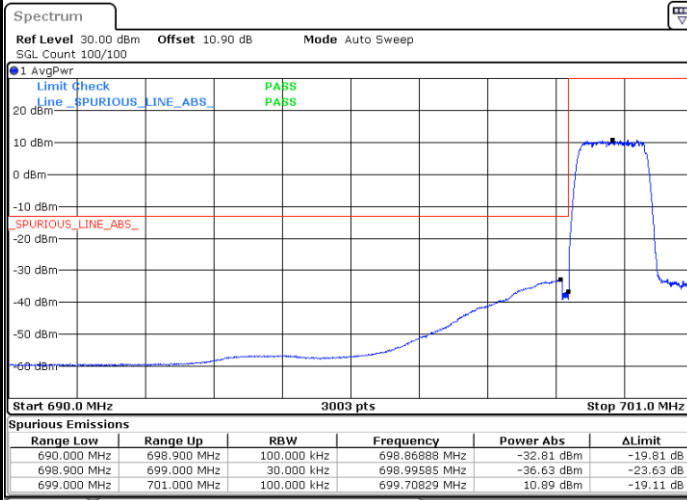
Date: 21.DEC.2021 14:39:27

Highest Band Edge / 1 RB



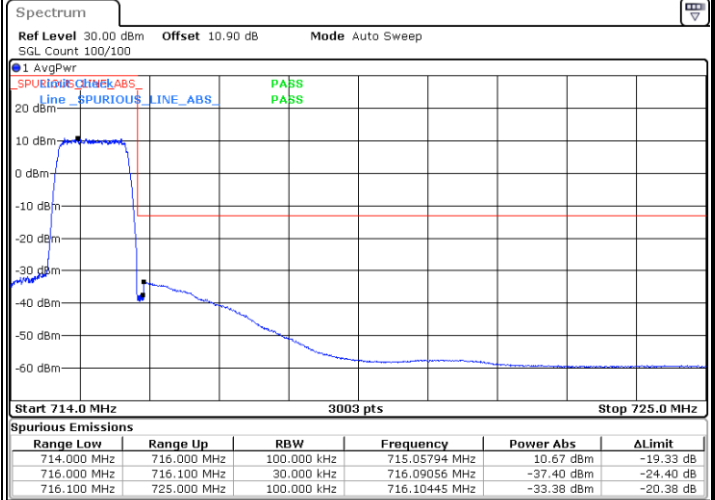
Date: 21.DEC.2021 14:41:29

Lowest Band Edge / Full RB



Date: 21.DEC.2021 14:38:46

Highest Band Edge / Full RB



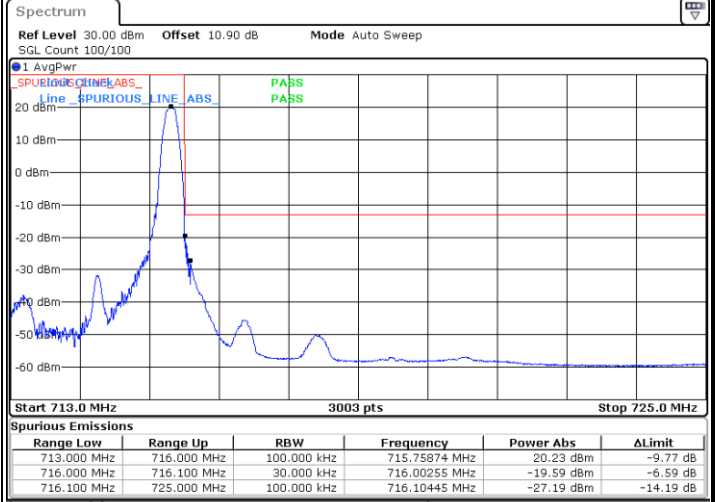
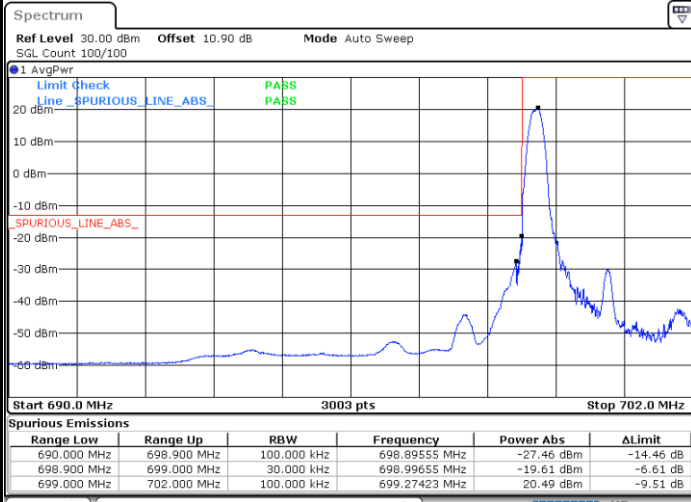
Date: 21.DEC.2021 14:40:49



LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / 1RB

Highest Band Edge / 1 RB

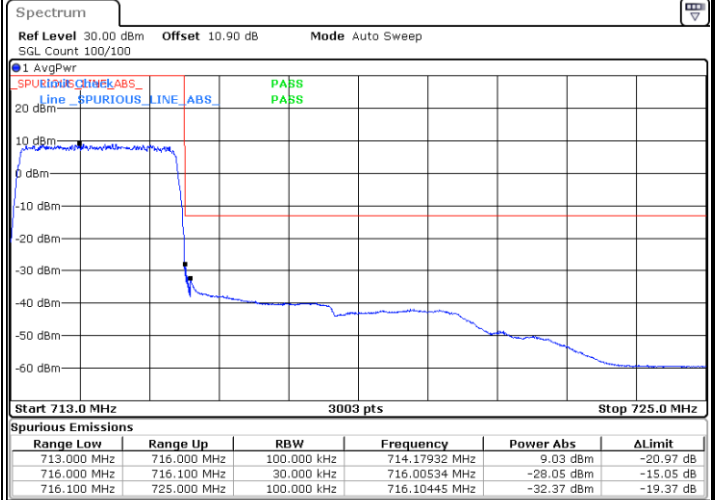
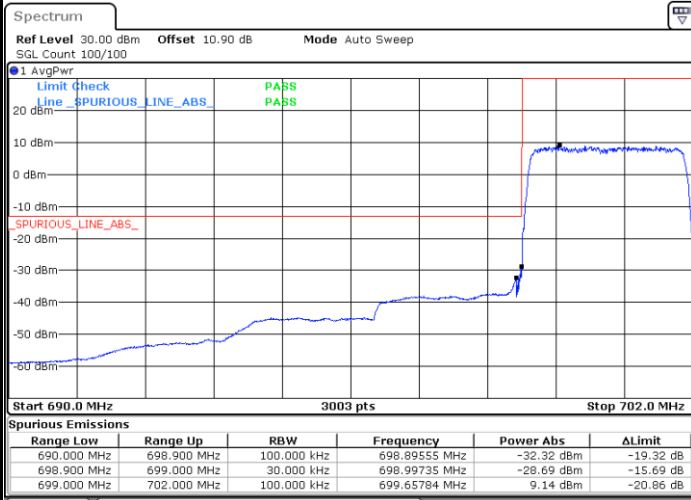


Date: 21.DEC.2021 14:44:12

Date: 21.DEC.2021 14:49:28

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



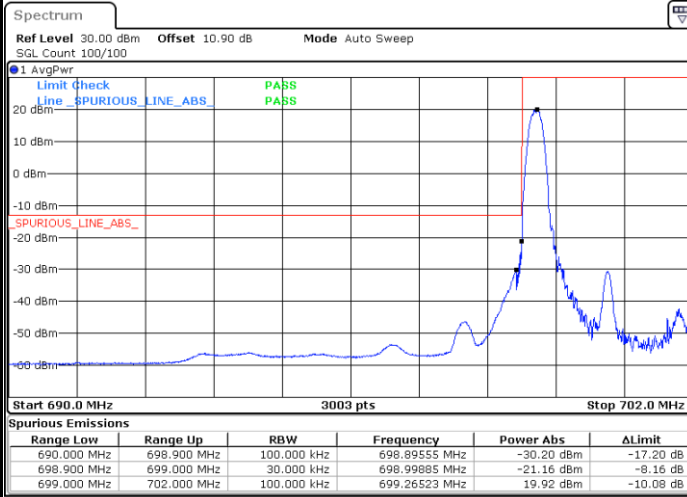
Date: 21.DEC.2021 14:42:10

Date: 21.DEC.2021 14:47:26



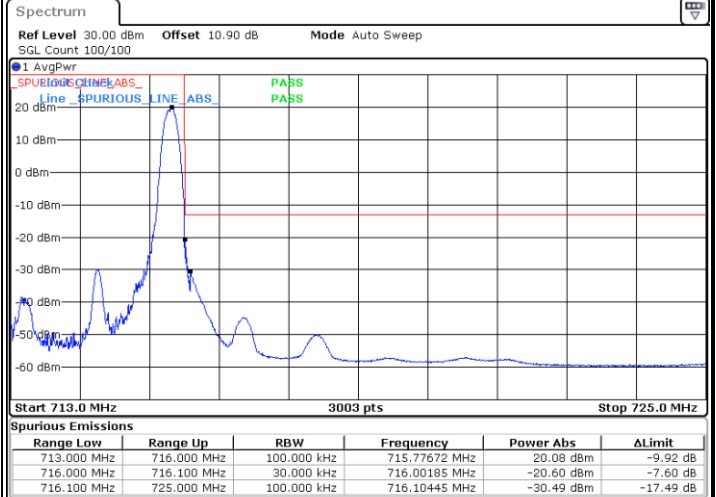
LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / 1 RB



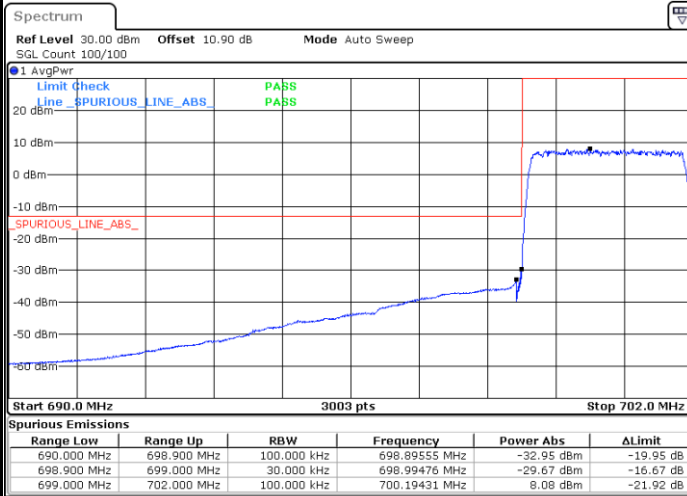
Date: 21.DEC.2021 14:43:32

Highest Band Edge / 1 RB



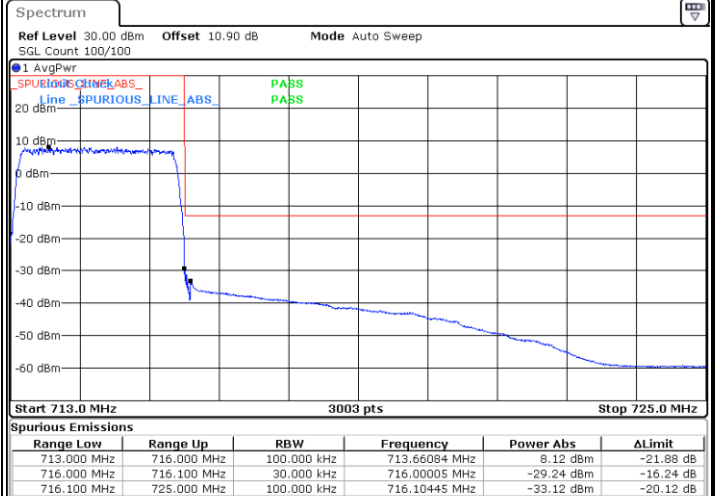
Date: 21.DEC.2021 14:48:48

Lowest Band Edge / Full RB



Date: 21.DEC.2021 14:42:51

Highest Band Edge / Full RB

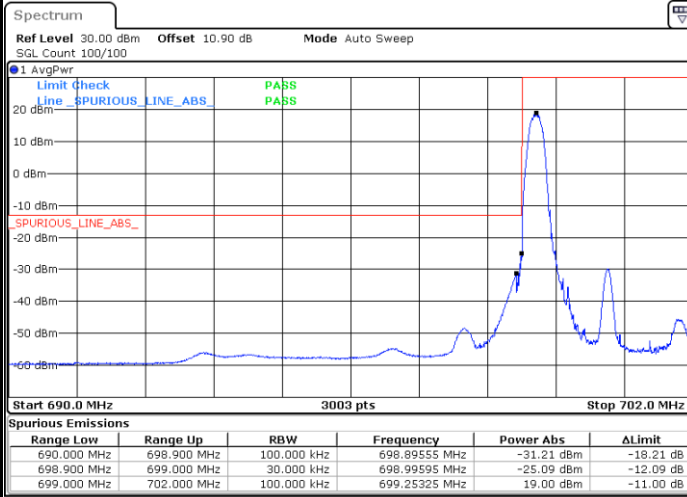


Date: 21.DEC.2021 14:48:07

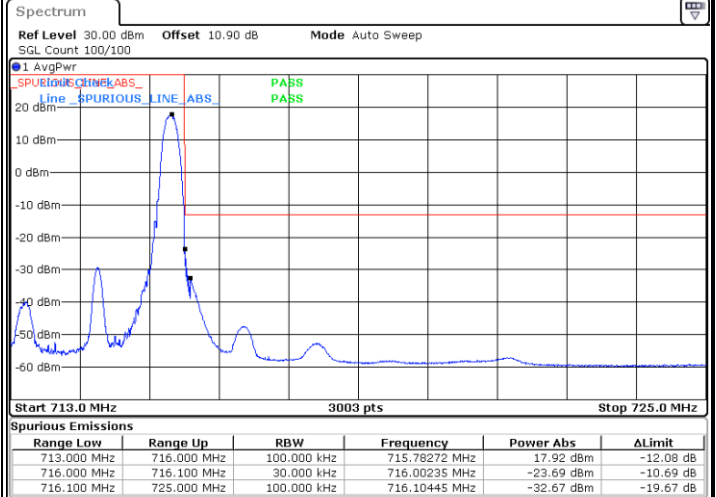


LTE Band 12 / 3MHz / 64QAM

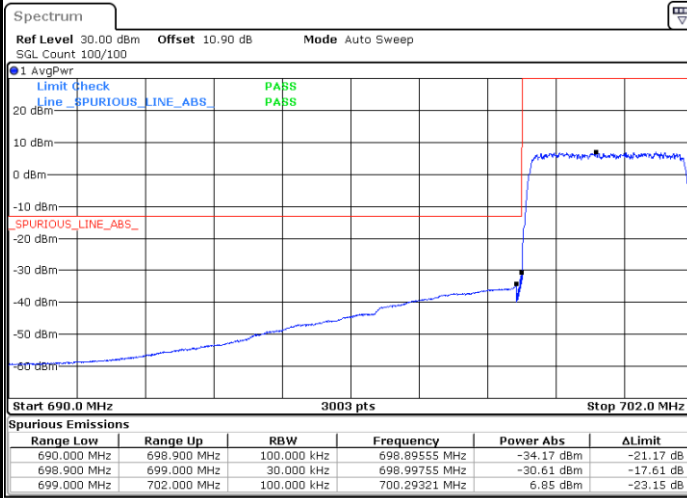
Lowest Band Edge / 1 RB



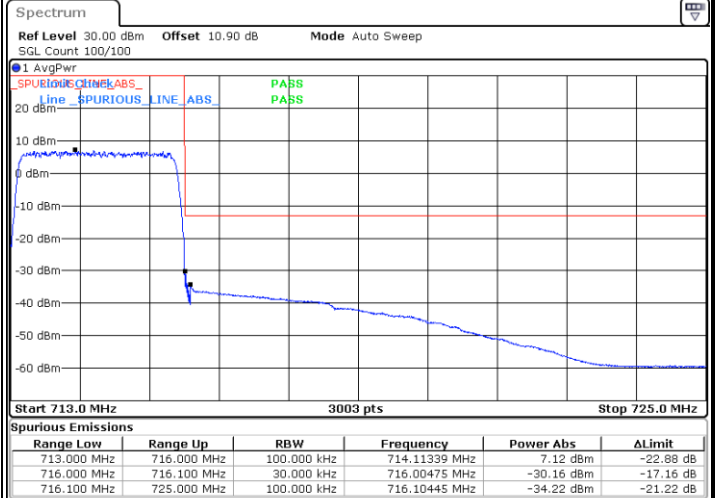
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



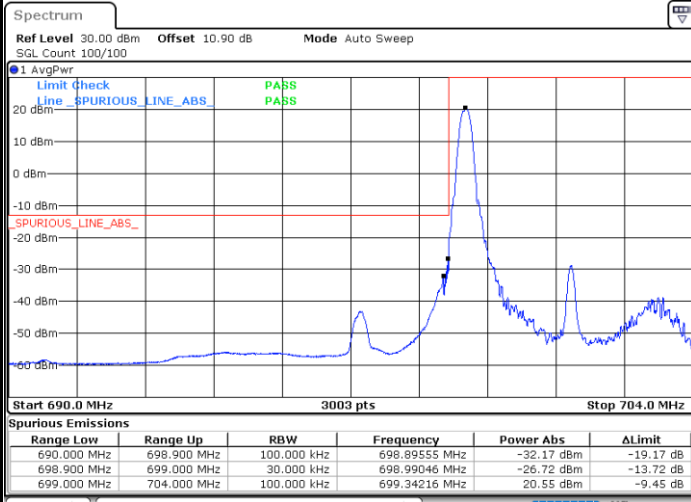
Highest Band Edge / Full RB





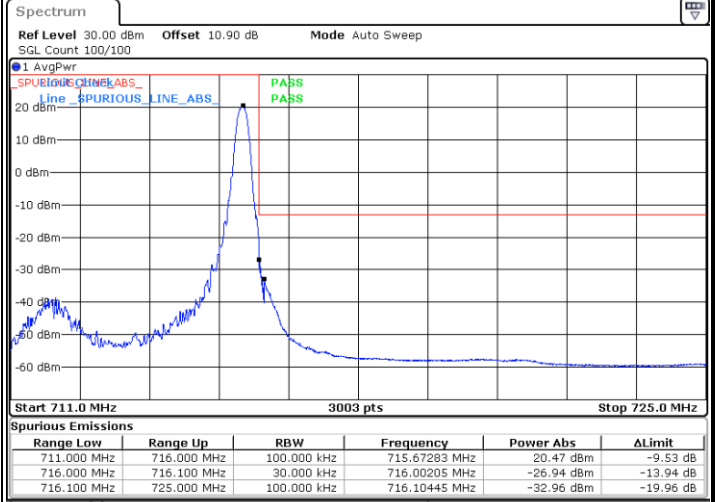
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / 1 RB



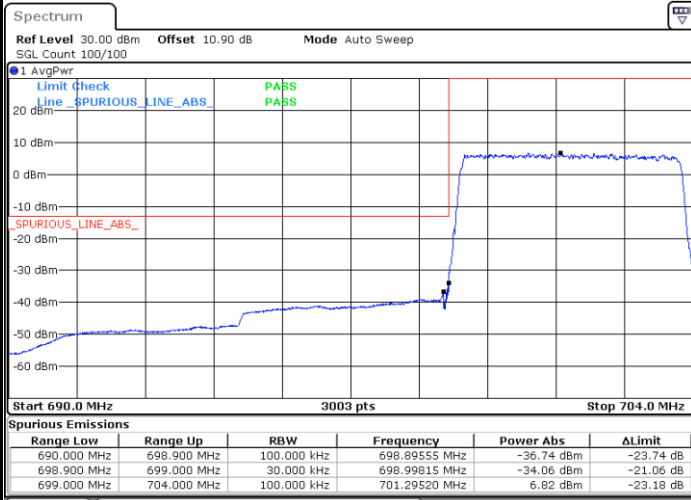
Date: 21.DEC.2021 15:02:44

Highest Band Edge / 1 RB



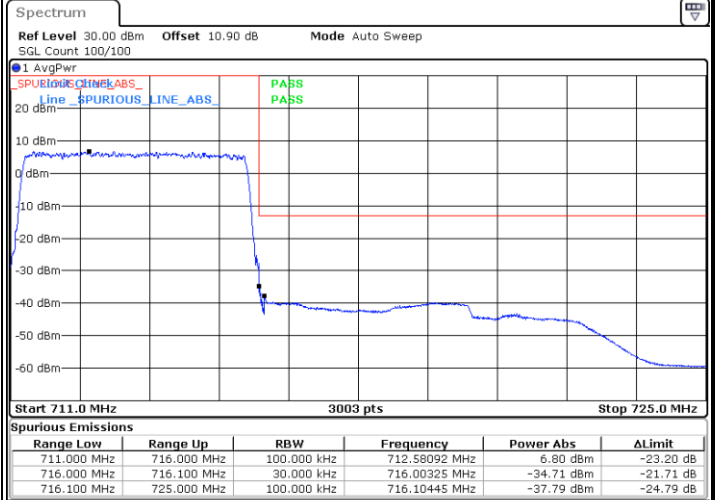
Date: 21.DEC.2021 15:07:19

Lowest Band Edge / Full RB



Date: 21.DEC.2021 15:00:42

Highest Band Edge / Full RB

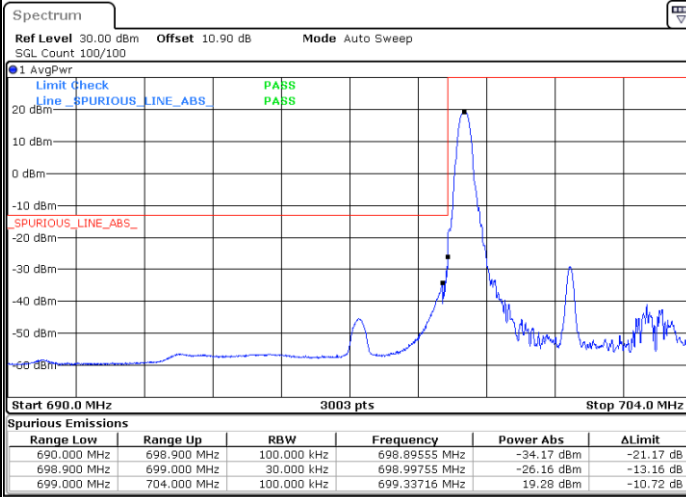


Date: 21.DEC.2021 15:05:58



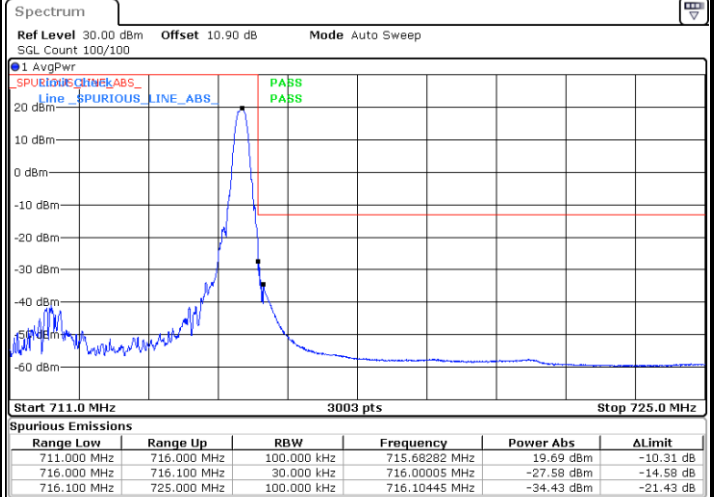
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1RB



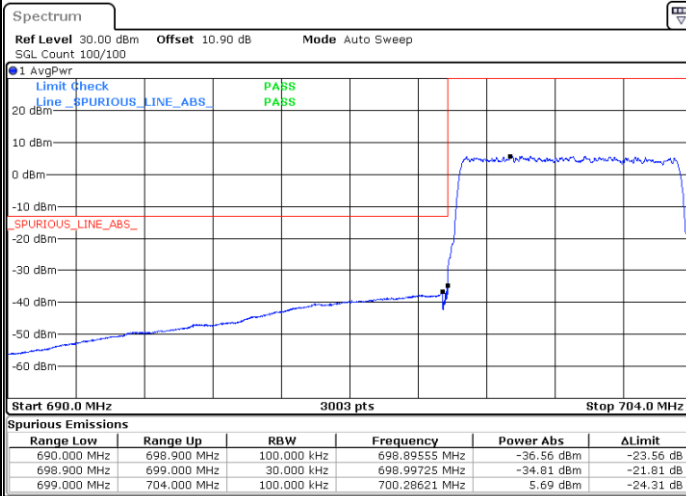
Date: 21.DEC.2021 15:02:04

Highest Band Edge / 1 RB



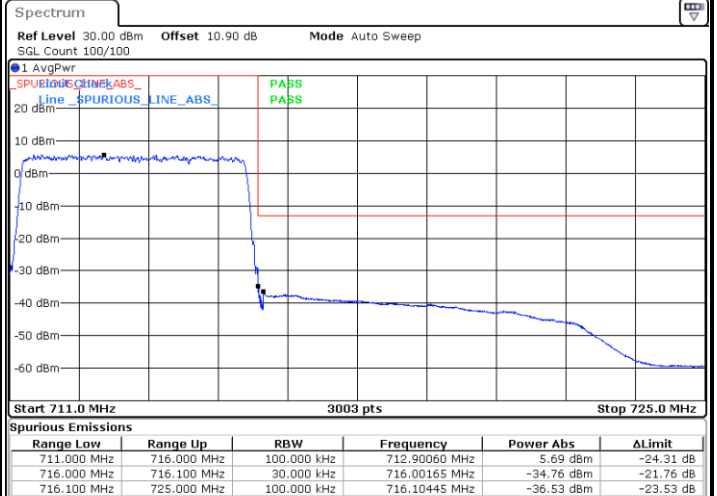
Date: 21.DEC.2021 15:08:00

Lowest Band Edge / Full RB



Date: 21.DEC.2021 15:01:23

Highest Band Edge / Full RB

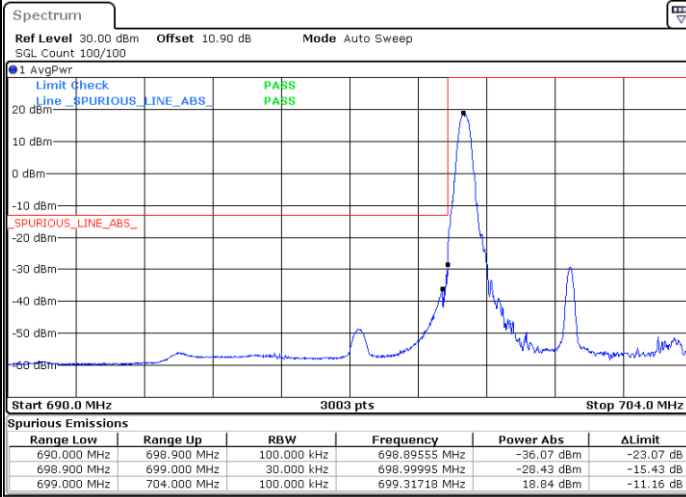


Date: 21.DEC.2021 15:06:39



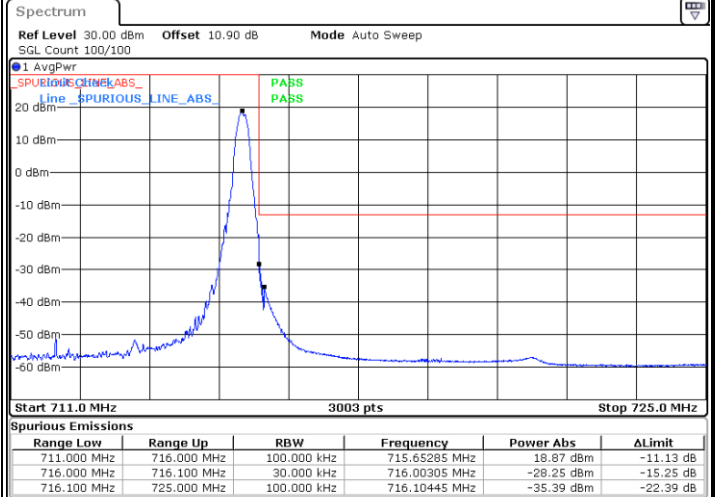
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1RB



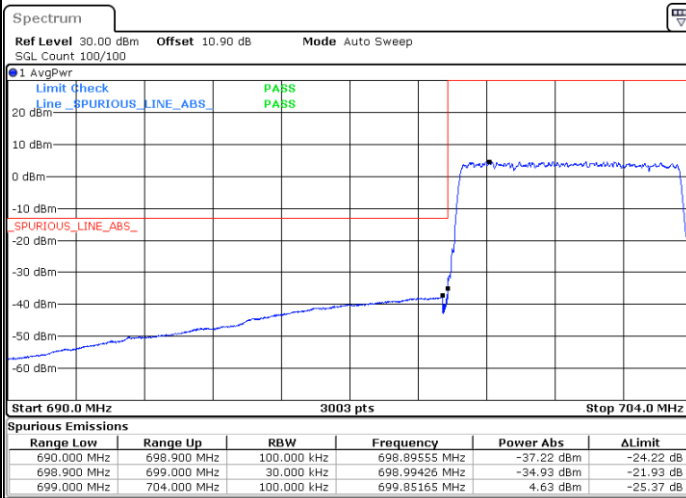
Date: 21.DEC.2021 14:56:01

Highest Band Edge / 1 RB



Date: 21.DEC.2021 15:00:02

Lowest Band Edge / Full RB



Date: 21.DEC.2021 14:55:20

Highest Band Edge / Full RB

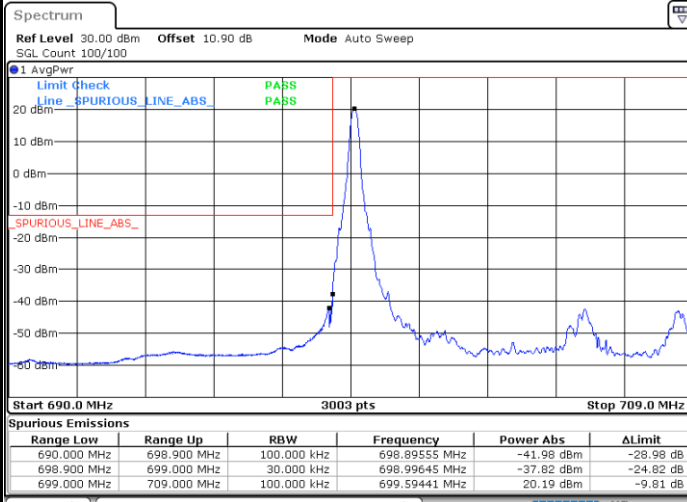


Date: 21.DEC.2021 14:57:23



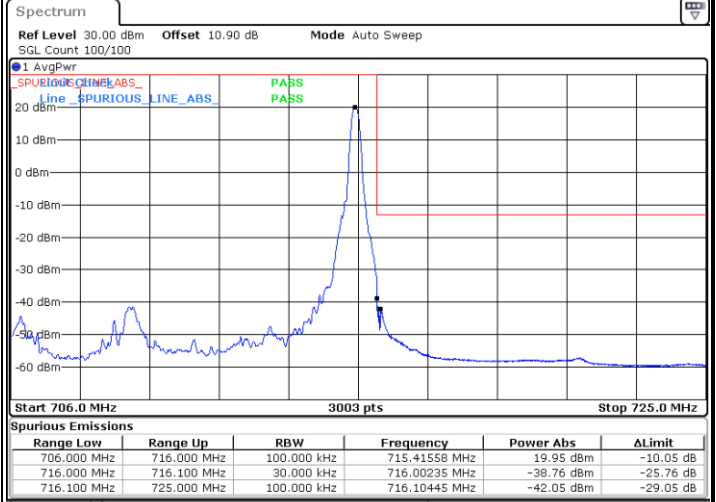
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



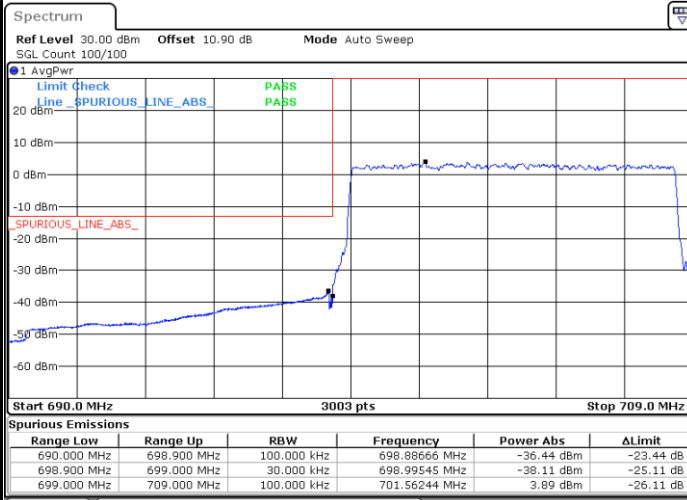
Date: 21.DEC.2021 15:12:55

Highest Band Edge / 1 RB



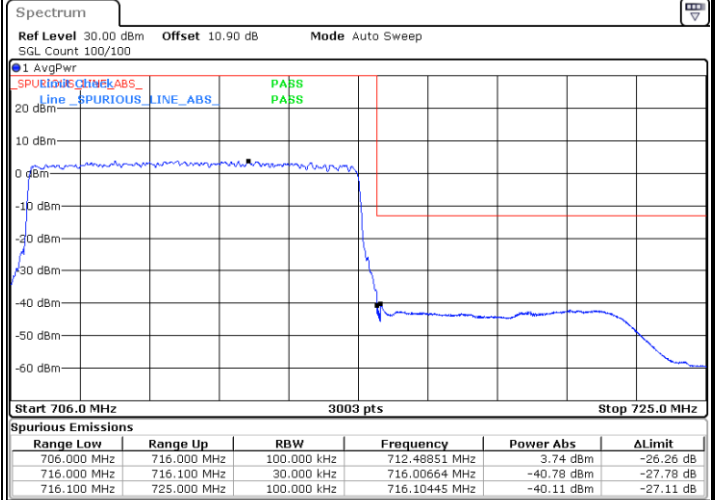
Date: 21.DEC.2021 15:18:12

Lowest Band Edge / Full RB



Date: 21.DEC.2021 15:09:17

Highest Band Edge / Full RB

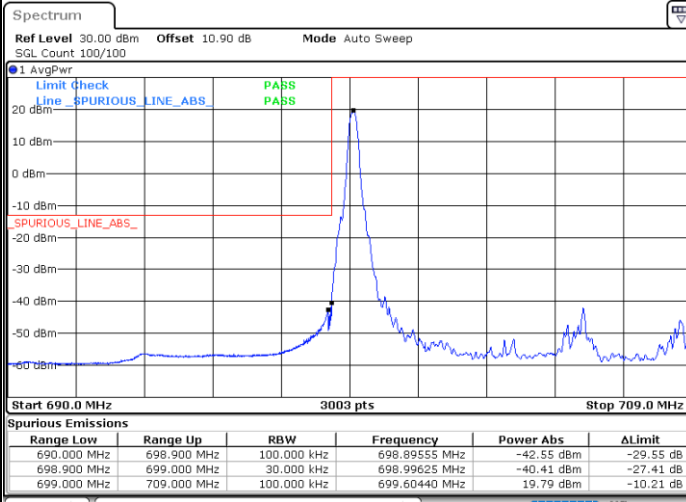


Date: 21.DEC.2021 15:16:09



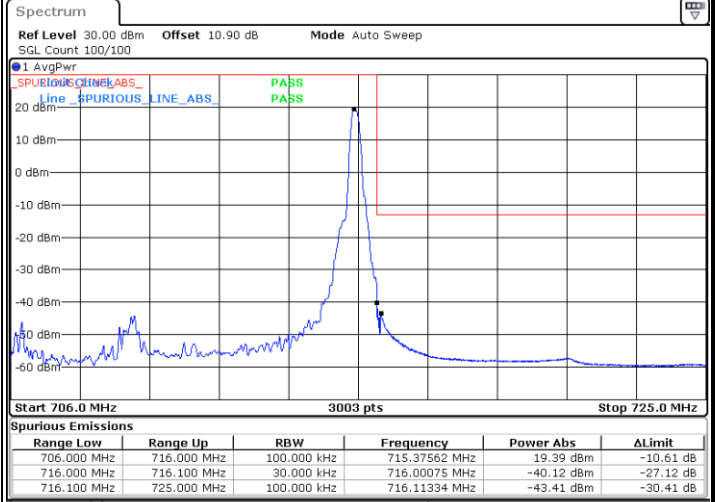
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



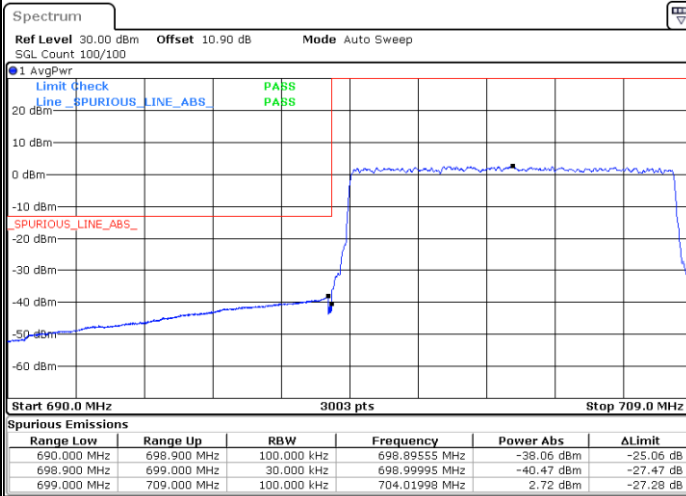
Date: 21.DEC.2021 15:12:14

Highest Band Edge / 1 RB



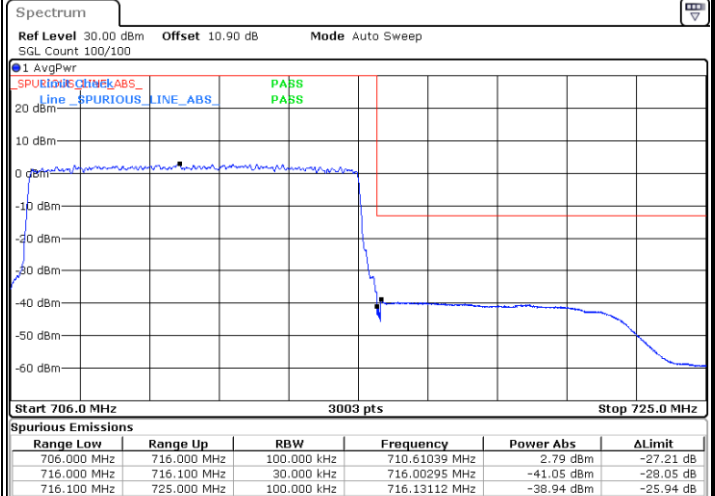
Date: 21.DEC.2021 15:17:31

Lowest Band Edge / Full RB



Date: 21.DEC.2021 15:11:33

Highest Band Edge / Full RB

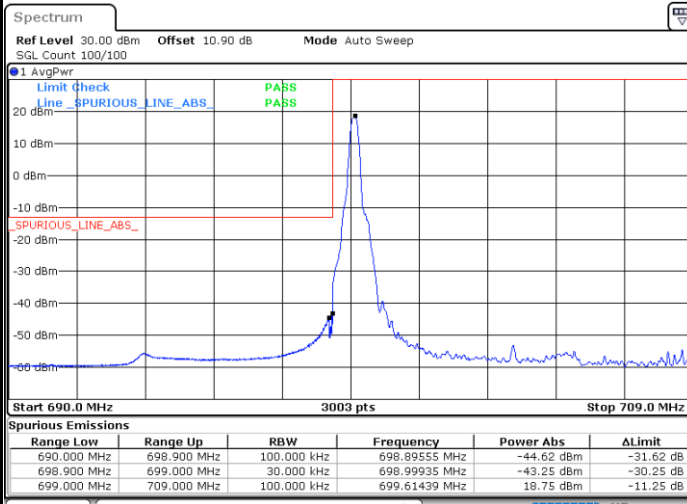


Date: 21.DEC.2021 15:16:50



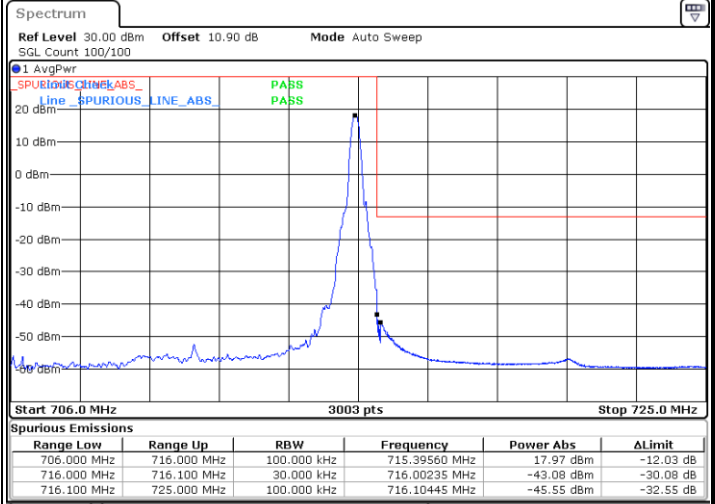
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



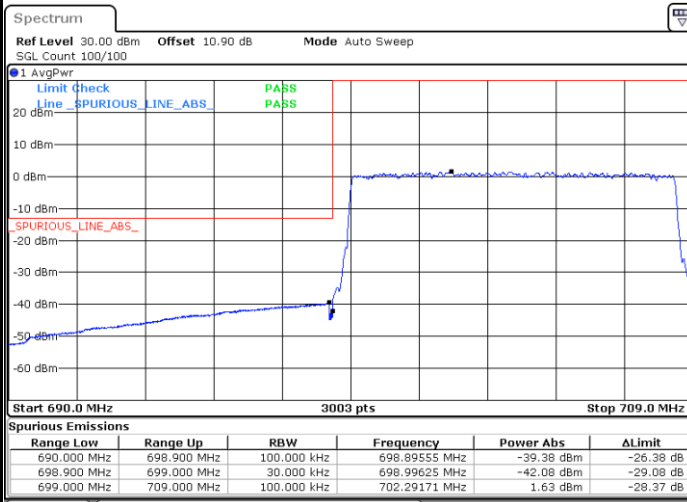
Date: 21.DEC.2021 15:20:10

Highest Band Edge / 1 RB



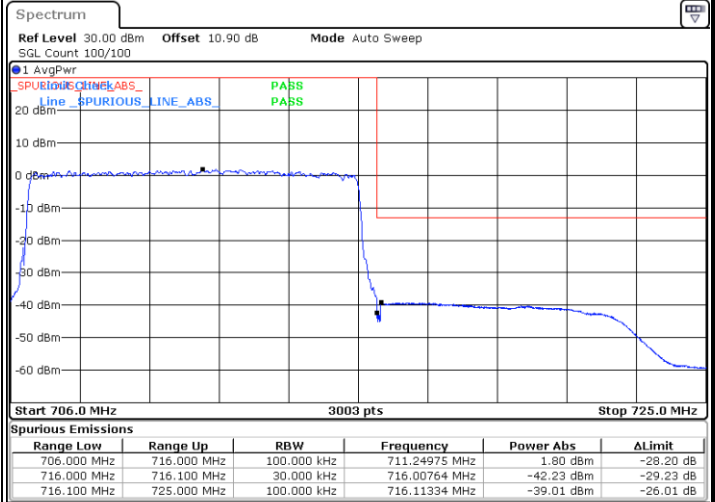
Date: 21.DEC.2021 15:22:13

Lowest Band Edge / Full RB



Date: 21.DEC.2021 15:19:29

Highest Band Edge / Full RB



Date: 21.DEC.2021 15:21:32

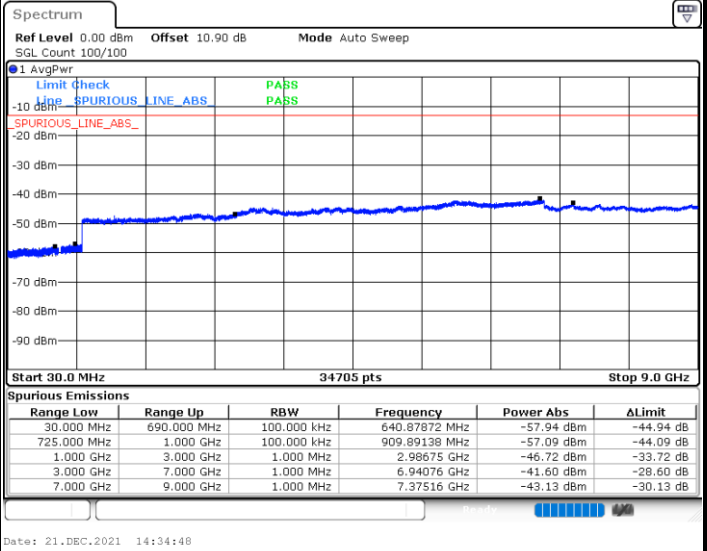
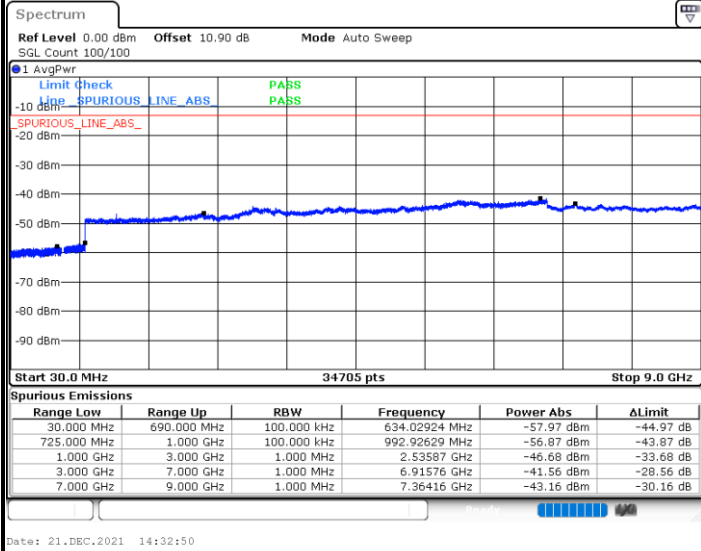


Conducted Spurious Emission

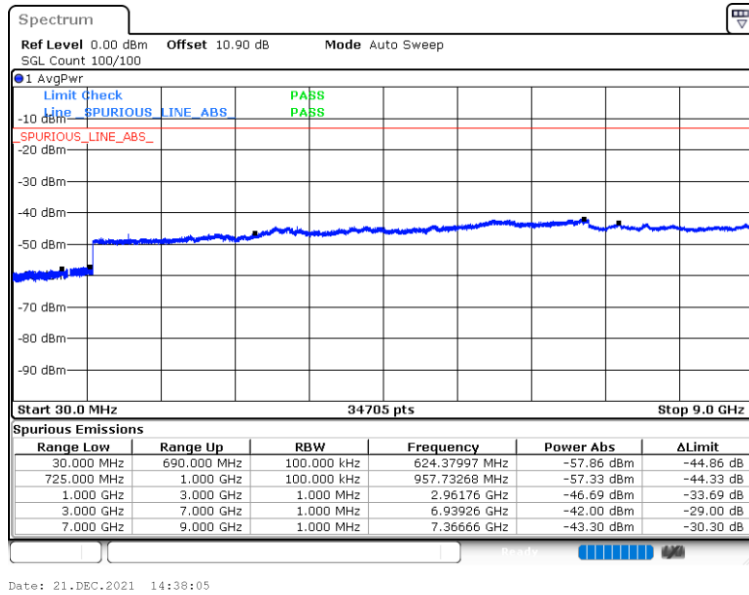
LTE Band 12 / 1.4MHz

Lowest Channel / QPSK

Middle Channel / QPSK



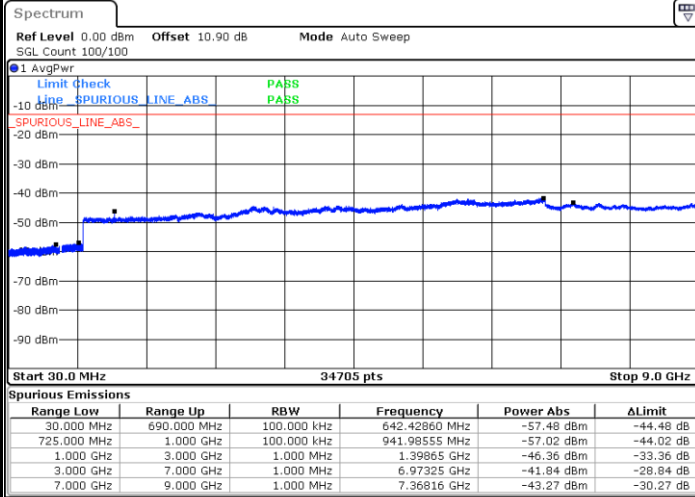
Highest Channel / QPSK





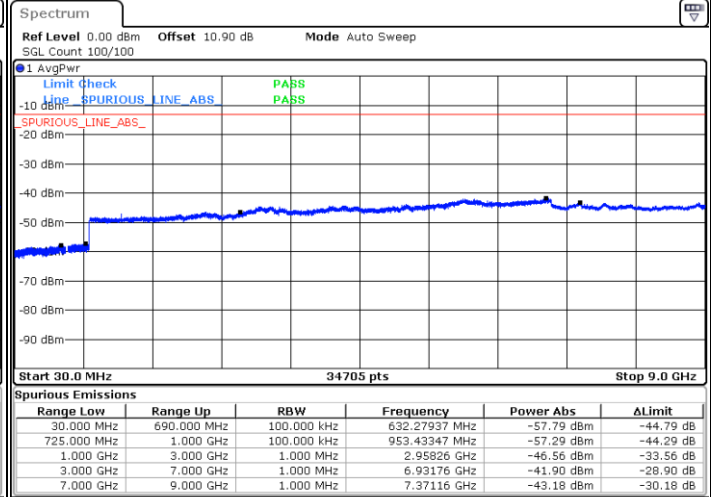
LTE Band 12 / 3MHz

Lowest Channel / QPSK



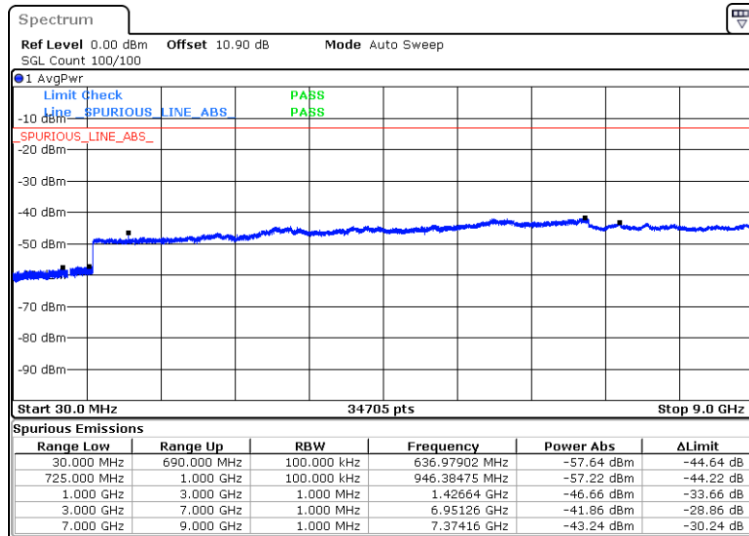
Date: 21.DEC.2021 14:44:47

Middle Channel / QPSK



Date: 21.DEC.2021 14:46:46

Highest Channel / QPSK



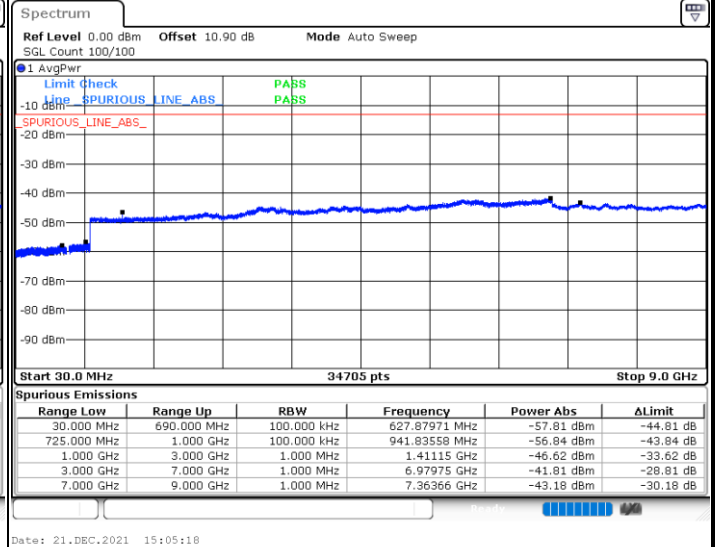
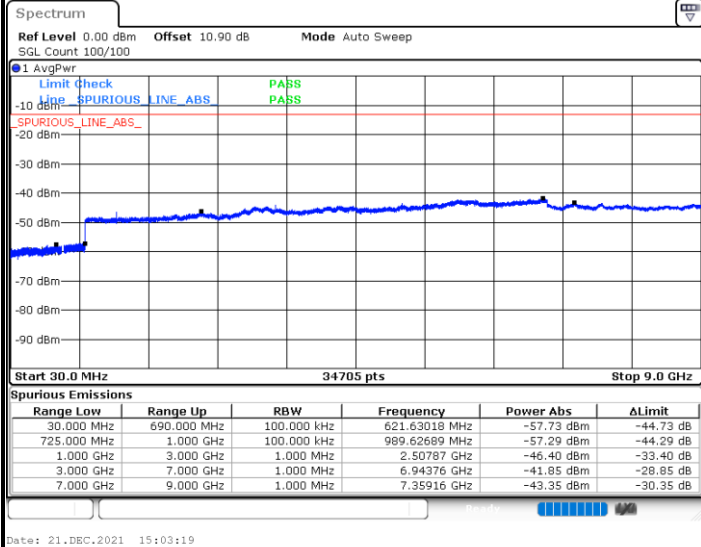
Date: 21.DEC.2021 14:51:15



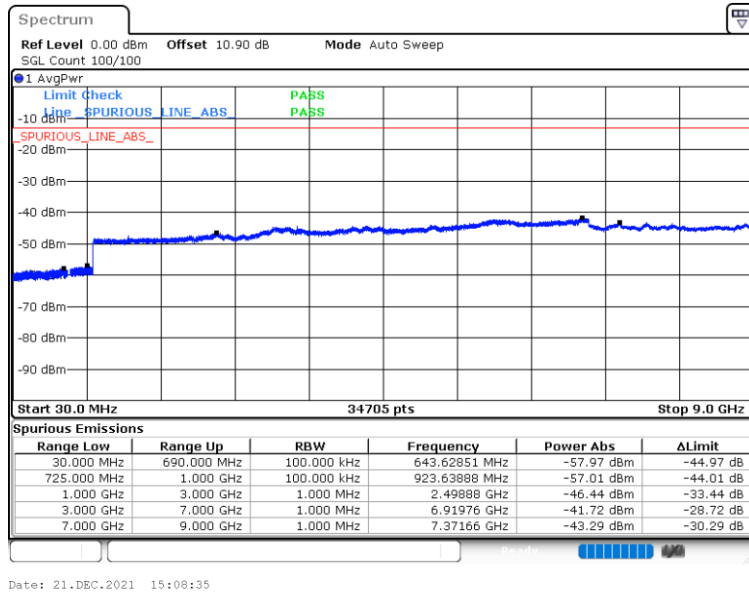
LTE Band 12 / 5MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

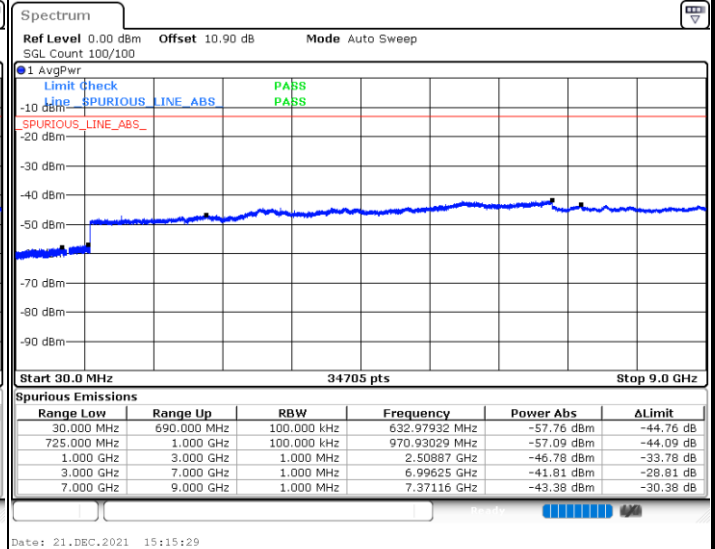
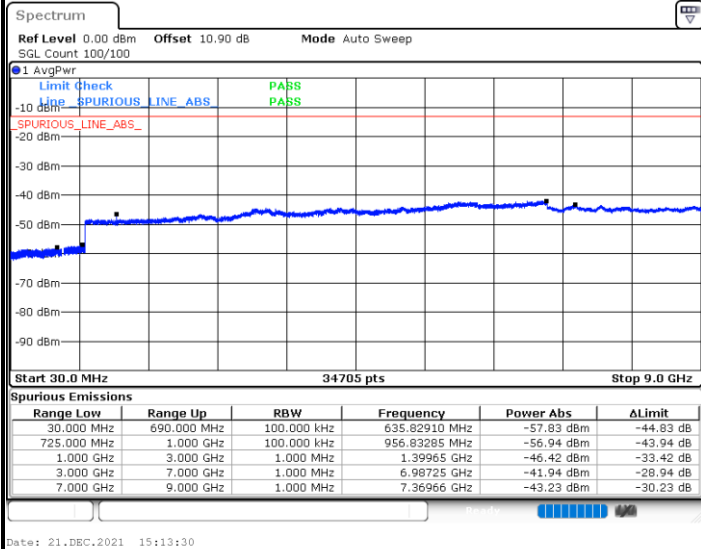




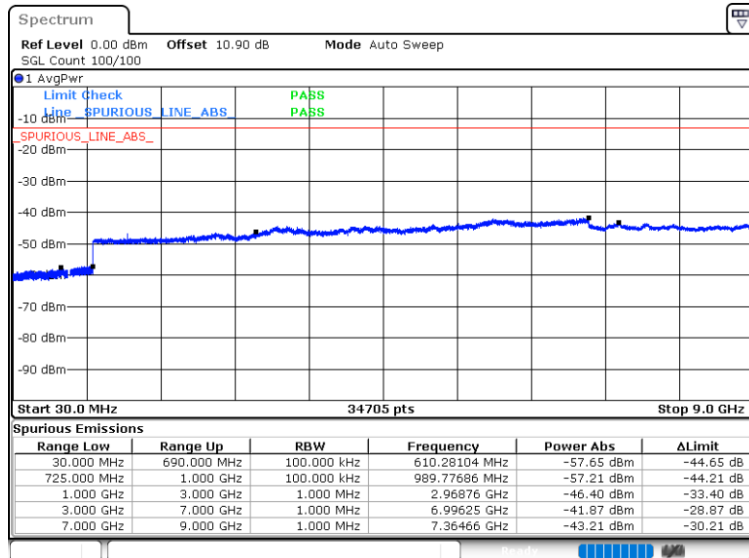
LTE Band 12 / 10MHz

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	0.0191	PASS
40	Normal Voltage	0.0163	
30	Normal Voltage	0.0057	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0198	
0	Normal Voltage	0.0199	
-10	Normal Voltage	0.0189	
-20	Normal Voltage	0.0006	
-30	Normal Voltage	0.0155	
20	Maximum Voltage	0.0078	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0219	

Note:

- 1. Normal Voltage =14 V. ; Battery End Point (BEP) =12 V. ; Maximum Voltage =16 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	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	4.87	5.97	6.35	PASS