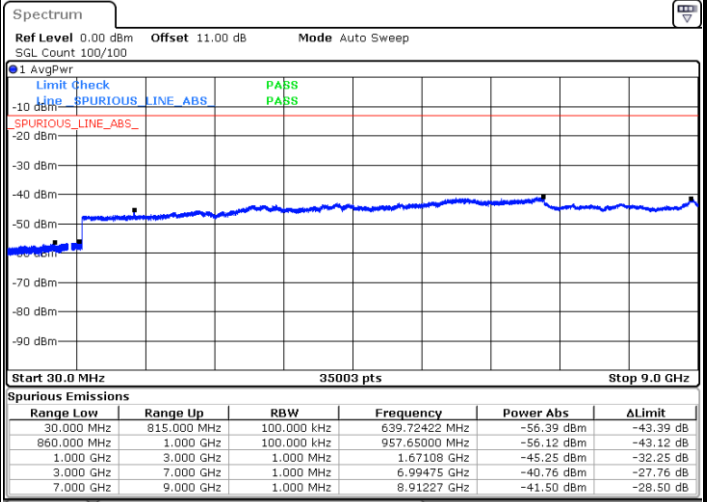
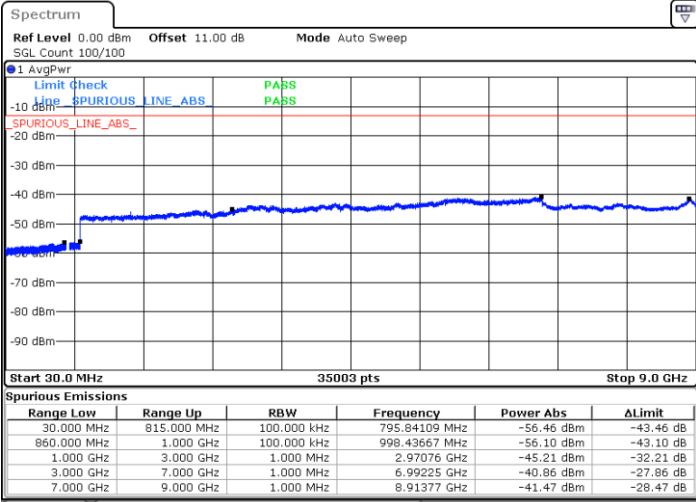




LTE Band 5 / 3MHz

Lowest Channel / QPSK

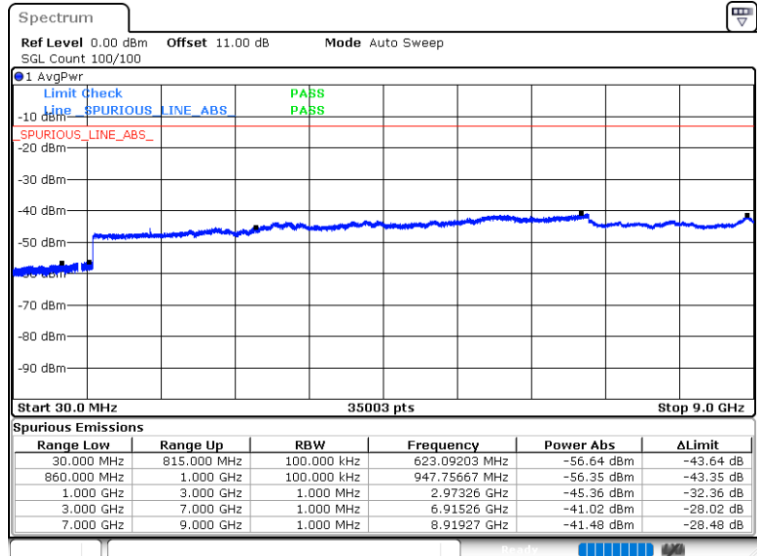
Middle Channel / QPSK



Date: 22.SEP.2021 13:45:09

Date: 22.SEP.2021 13:47:11

Highest Channel / QPSK



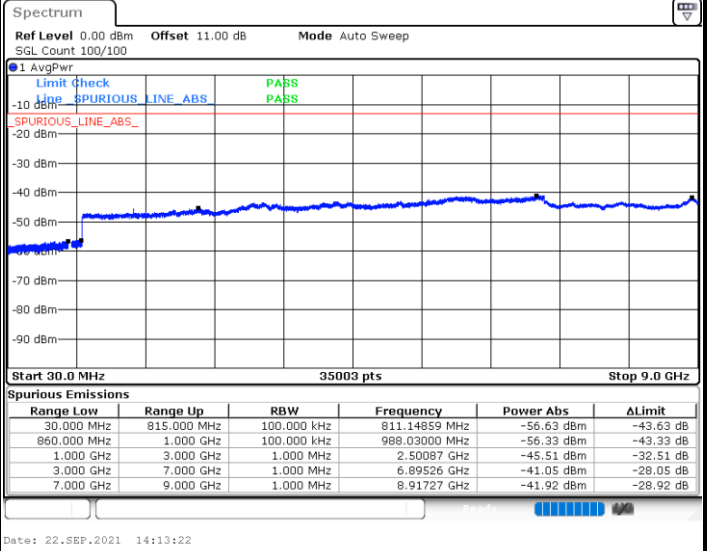
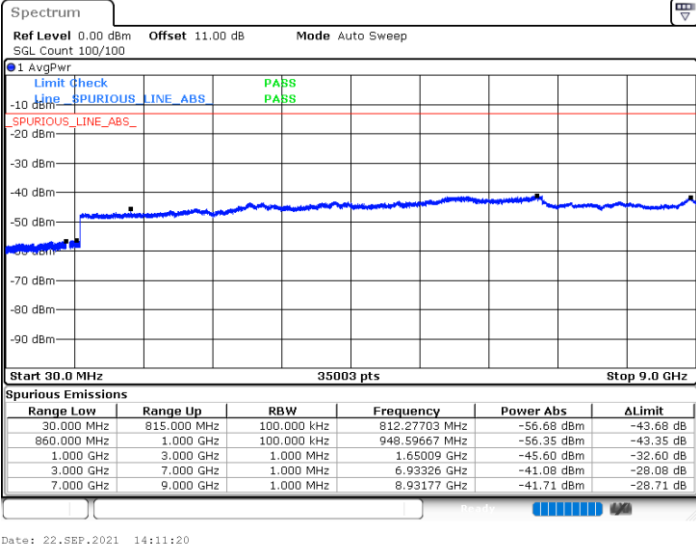
Date: 22.SEP.2021 13:55:11



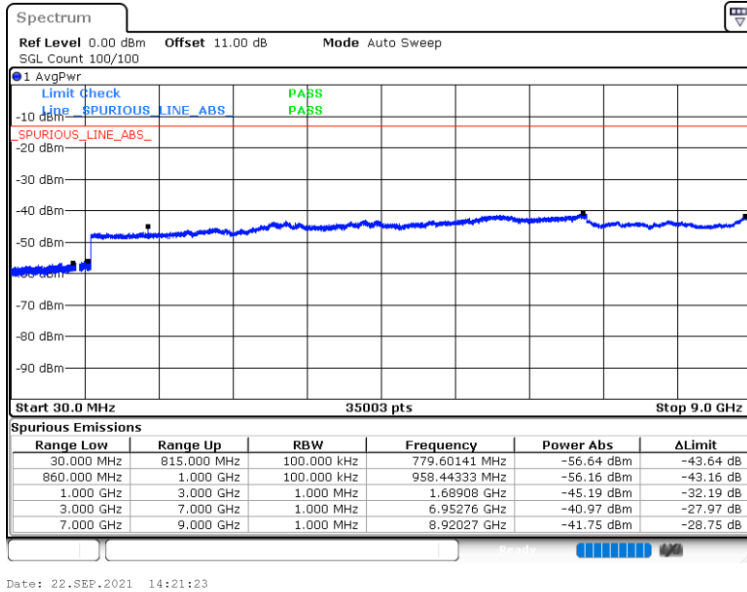
LTE Band 5 / 5MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

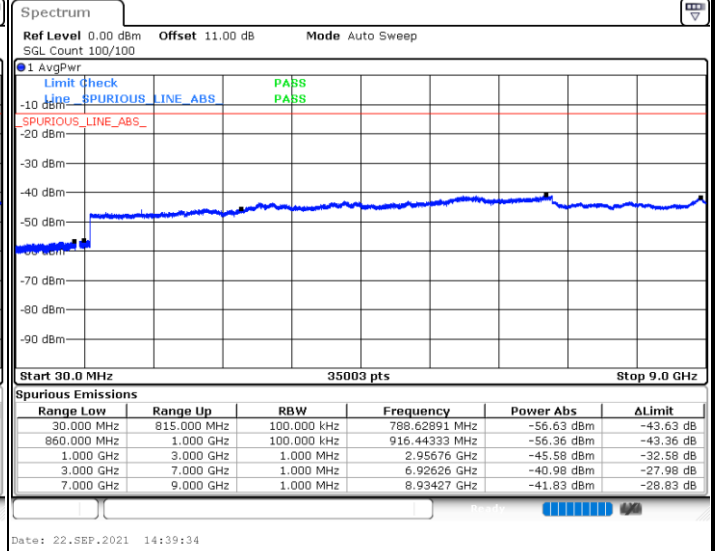
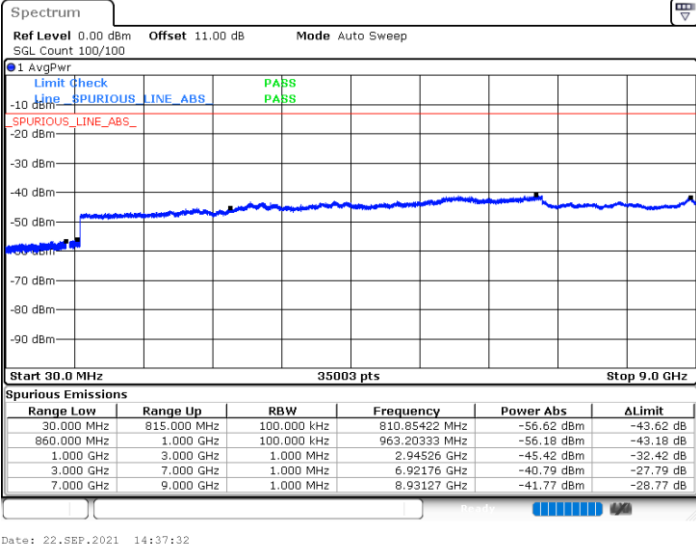




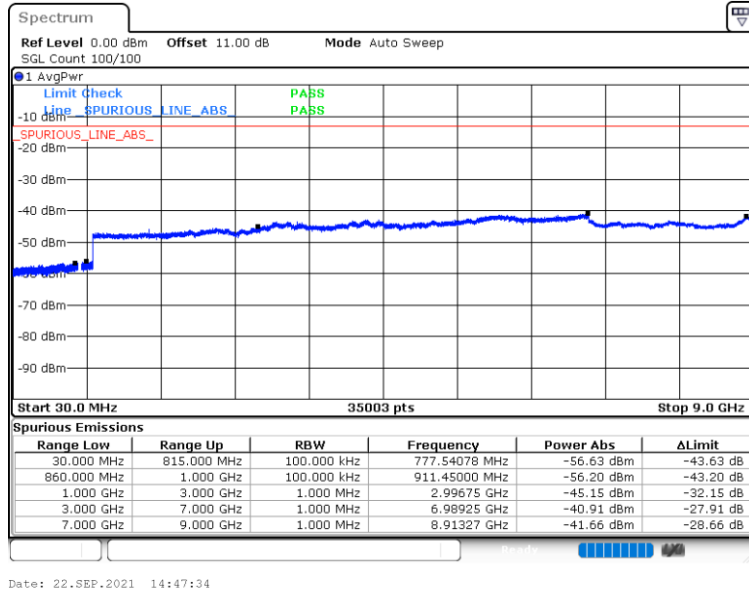
LTE Band 5 / 10MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK





### Frequency Stability

Test Conditions		LTE Band 5 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0014	PASS
40	Normal Voltage	0.0054	
30	Normal Voltage	0.0096	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0080	
0	Normal Voltage	0.0005	
-10	Normal Voltage	0.0049	
-20	Normal Voltage	0.0013	
-30	Normal Voltage	0.0105	
20	Maximum Voltage	0.0153	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0072	

**Note:**

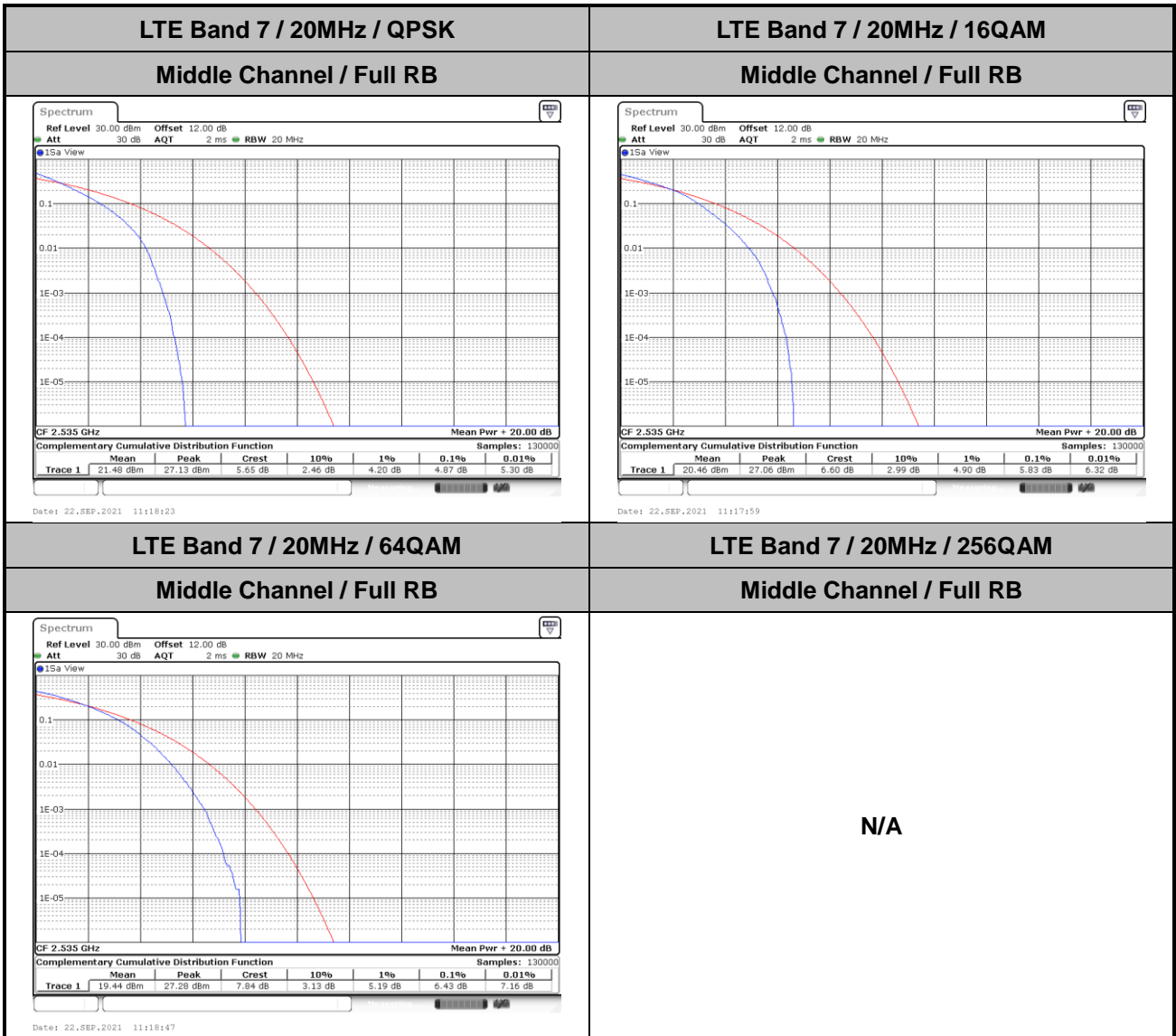
- 1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.2 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 7

## Peak-to-Average Ratio

Mode	LTE Band 7 / 20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.87	5.83	6.43	-	PASS





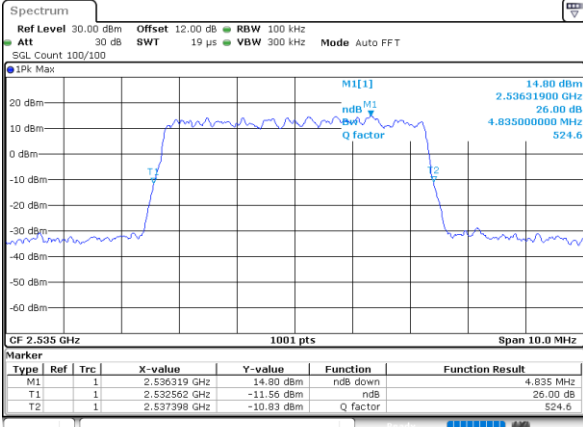
**26dB Bandwidth**

Mode	LTE Band 7 : 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	-	-	-	-	4.84	4.84	9.77	9.87	14.30	14.33	19.10	19.06
Mode	LTE Band 7 : 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	-	-	-	-	4.93	-	9.77	-	14.51	-	19.02	-



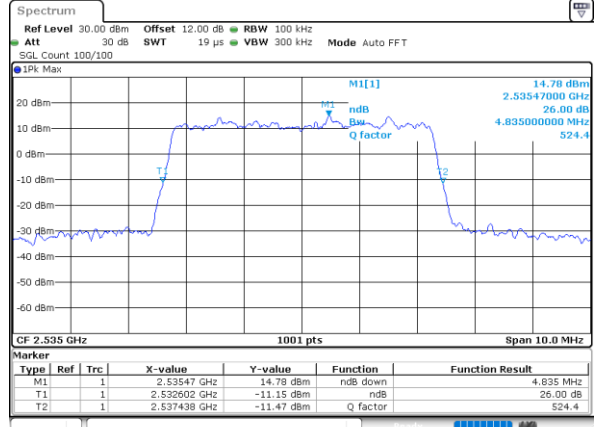
LTE Band 7

Middle Channel / 5MHz / QPSK



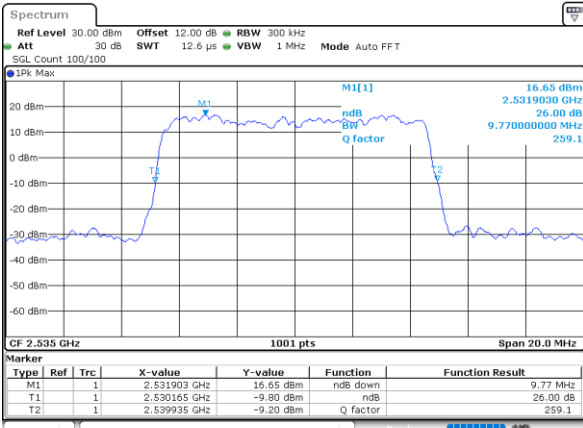
Date: 22\_SEP.2021 10:40:09

Middle Channel / 5MHz / 16QAM



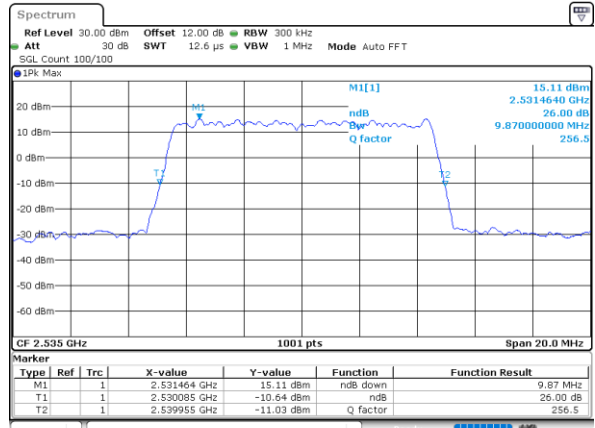
Date: 22\_SEP.2021 10:40:30

Middle Channel / 10MHz / QPSK



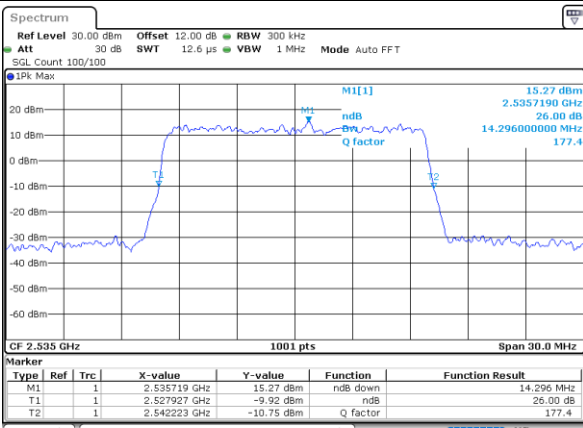
Date: 22\_SEP.2021 10:50:28

Middle Channel / 10MHz / 16QAM



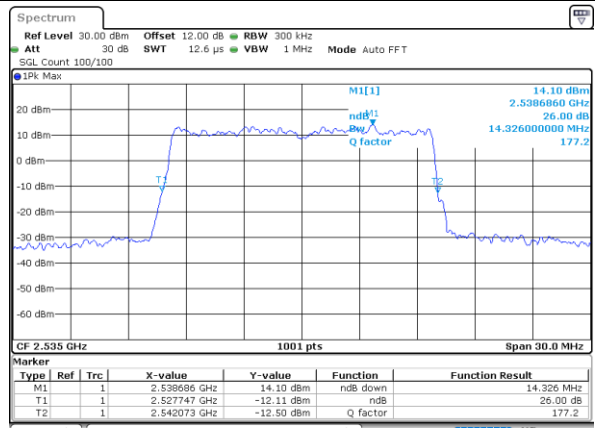
Date: 22\_SEP.2021 10:50:49

Middle Channel / 15MHz / QPSK



Date: 22\_SEP.2021 11:00:48

Middle Channel / 15MHz / 16QAM

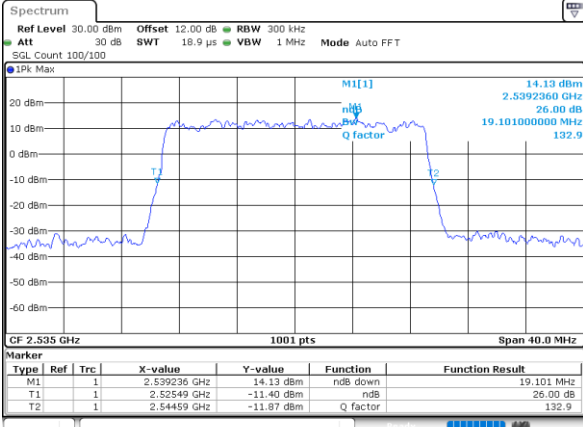


Date: 22\_SEP.2021 11:01:09



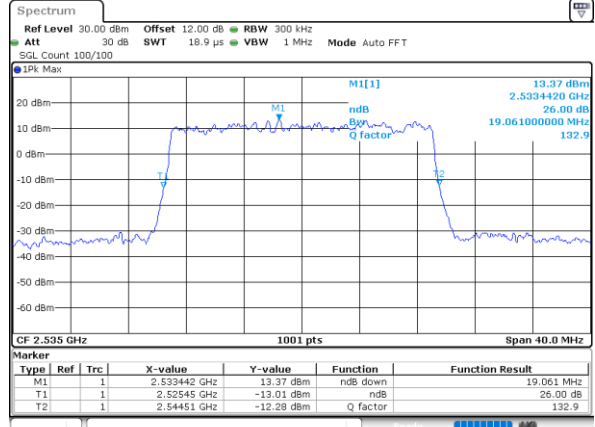
LTE Band 7

Middle Channel / 20MHz / QPSK



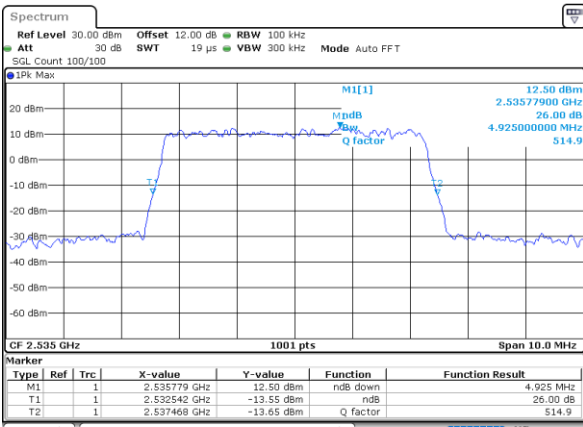
Date: 22\_SEP.2021 11:11:08

Middle Channel / 20MHz / 16QAM



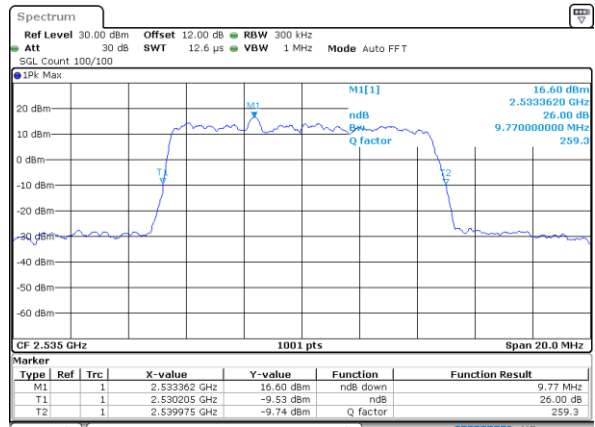
Date: 22\_SEP.2021 11:11:29

Middle Channel / 5MHz / 64QAM



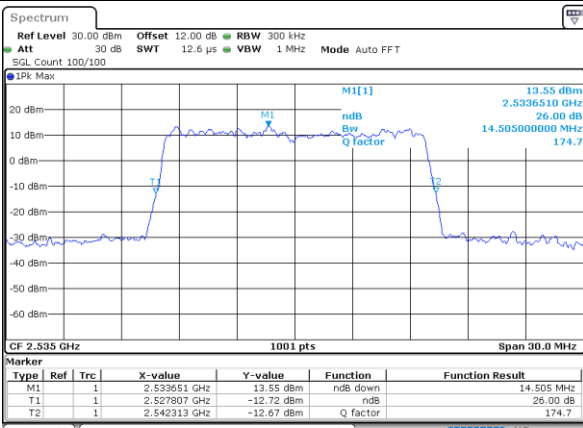
Date: 22\_SEP.2021 10:45:47

Middle Channel / 10MHz / 64QAM



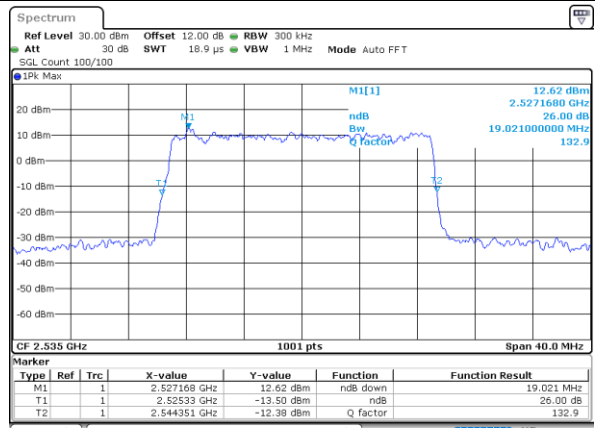
Date: 22\_SEP.2021 10:56:06

Middle Channel / 15MHz / 64QAM



Date: 22\_SEP.2021 11:06:26

Middle Channel / 20MHz / 64QAM



Date: 22\_SEP.2021 11:16:46





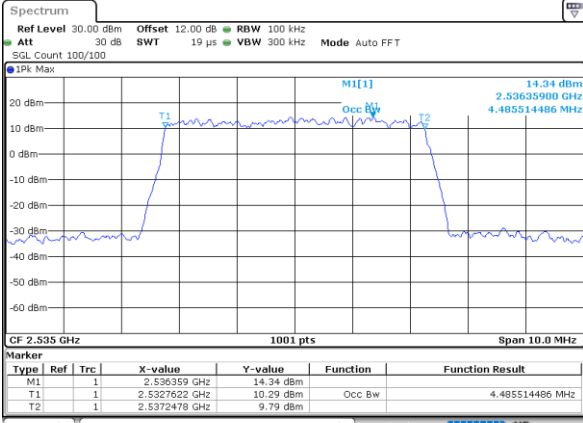
**Occupied Bandwidth**

Mode	LTE Band 7 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.49	4.49	9.05	9.07	13.46	13.43	17.94	17.86
Mode	LTE Band 7 : 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	-	-	-	-	4.50	-	9.03	-	13.40	-	17.90	-



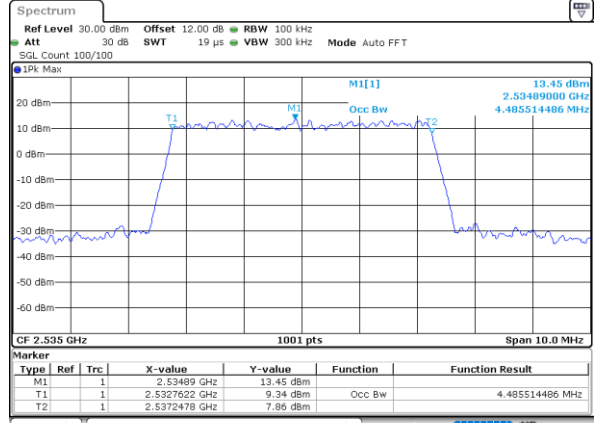
LTE Band 7

Middle Channel / 5MHz / QPSK



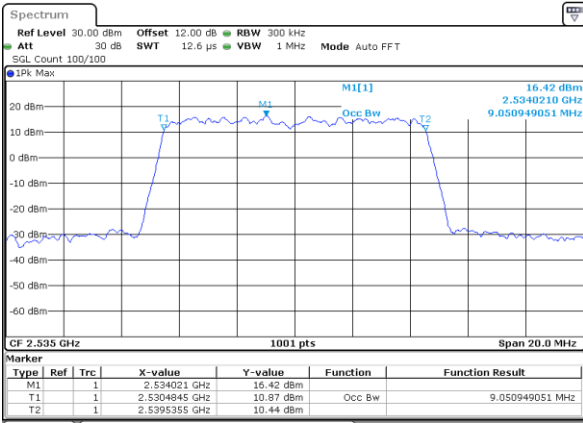
Date: 22\_SEP.2021 10:39:24

Middle Channel / 5MHz / 16QAM



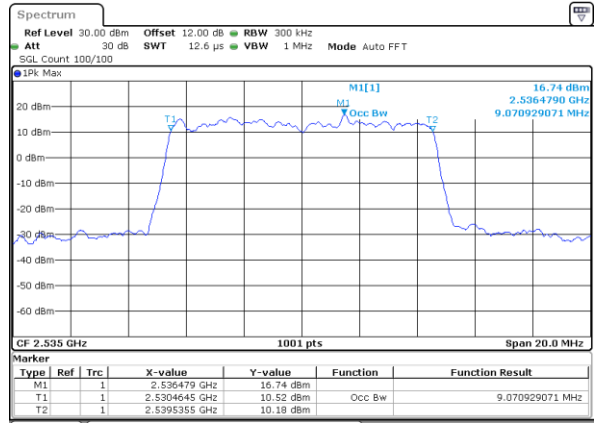
Date: 22\_SEP.2021 10:39:47

Middle Channel / 10MHz / QPSK



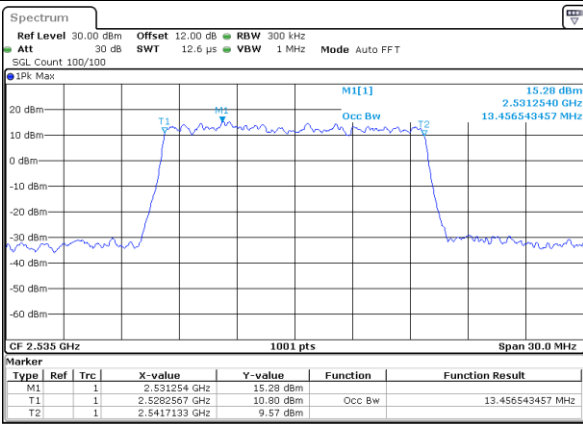
Date: 22\_SEP.2021 10:49:43

Middle Channel / 10MHz / 16QAM



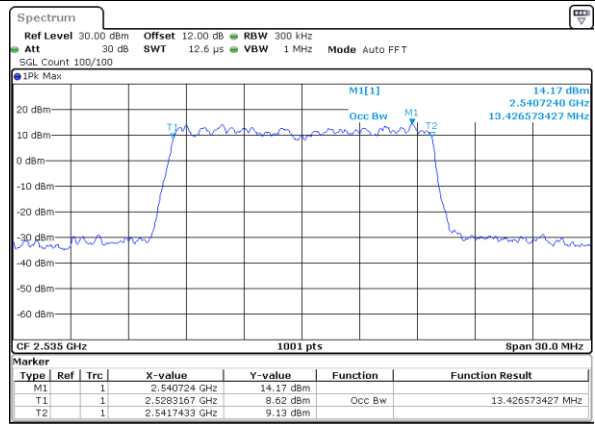
Date: 22\_SEP.2021 10:50:06

Middle Channel / 15MHz / QPSK



Date: 22\_SEP.2021 11:00:03

Middle Channel / 15MHz / 16QAM

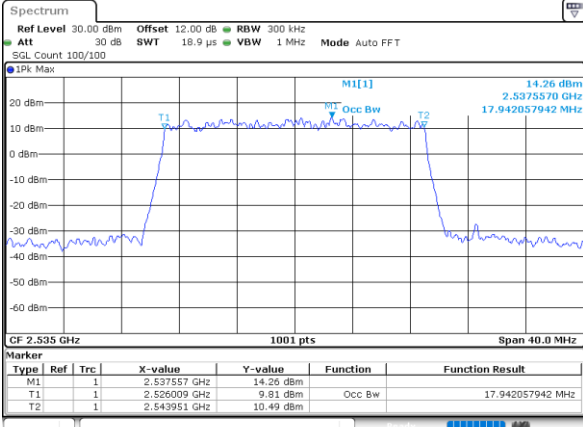


Date: 22\_SEP.2021 11:00:25



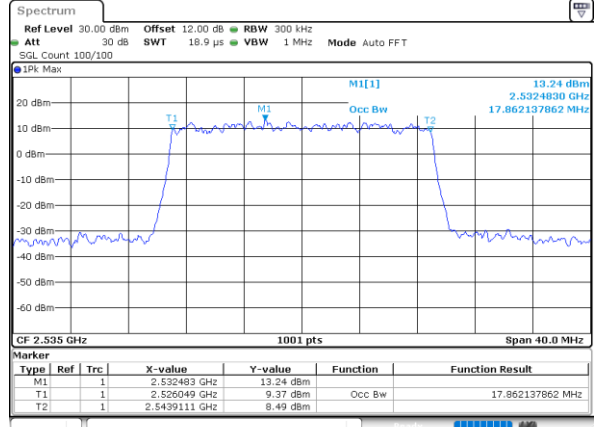
LTE Band 7

Middle Channel / 20MHz / QPSK



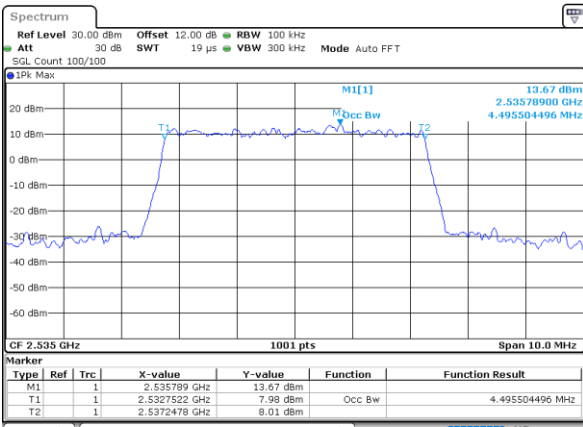
Date: 22\_SEP.2021 11:10:23

Middle Channel / 20MHz / 16QAM



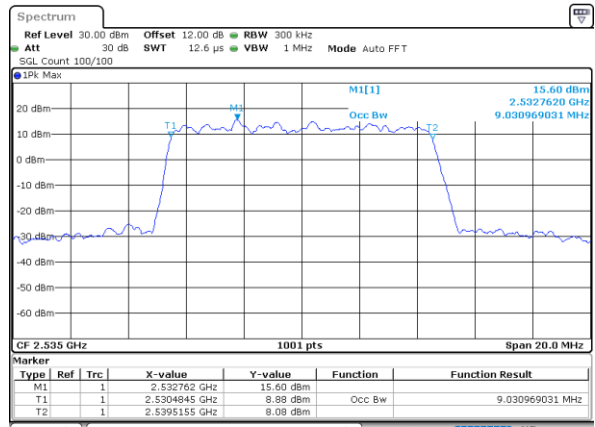
Date: 22\_SEP.2021 11:10:46

Middle Channel / 5MHz / 64QAM



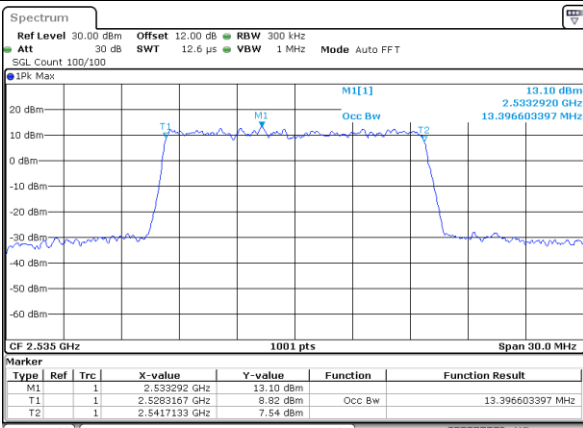
Date: 22\_SEP.2021 10:45:25

Middle Channel / 10MHz / 64QAM



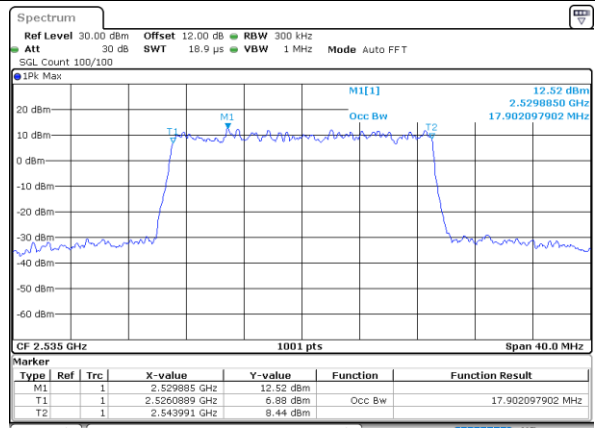
Date: 22\_SEP.2021 10:55:43

Middle Channel / 15MHz / 64QAM



Date: 22\_SEP.2021 11:06:04

Middle Channel / 20MHz / 64QAM



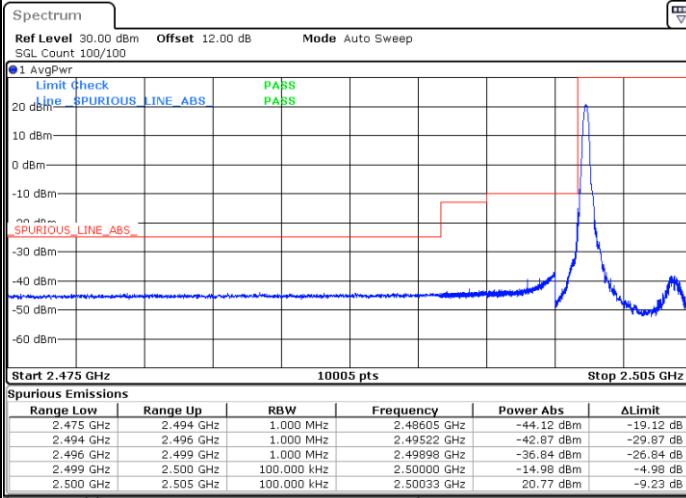
Date: 22\_SEP.2021 11:16:23



# Conducted Band Edge

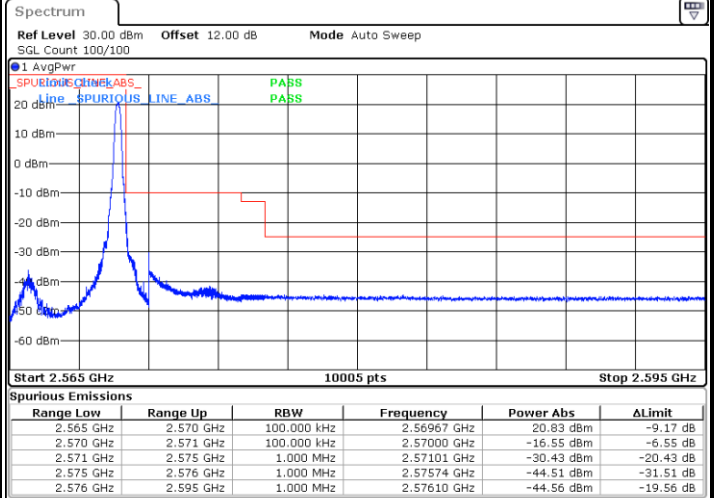
## LTE Band 7 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



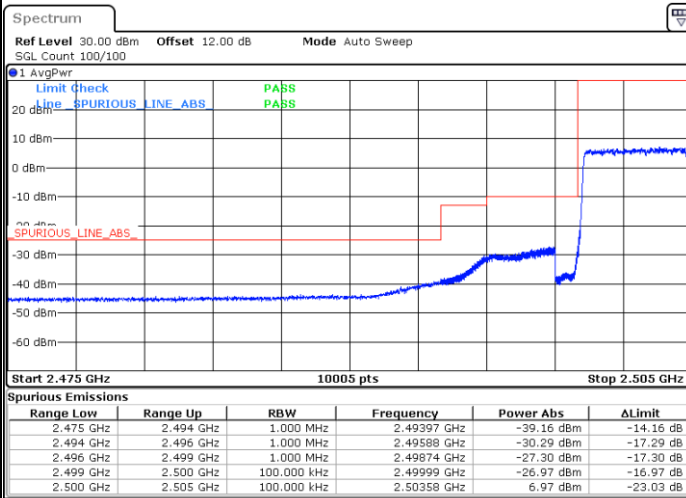
Date: 22.SEP.2021 10:36:43

### Highest Band Edge / 1 RB



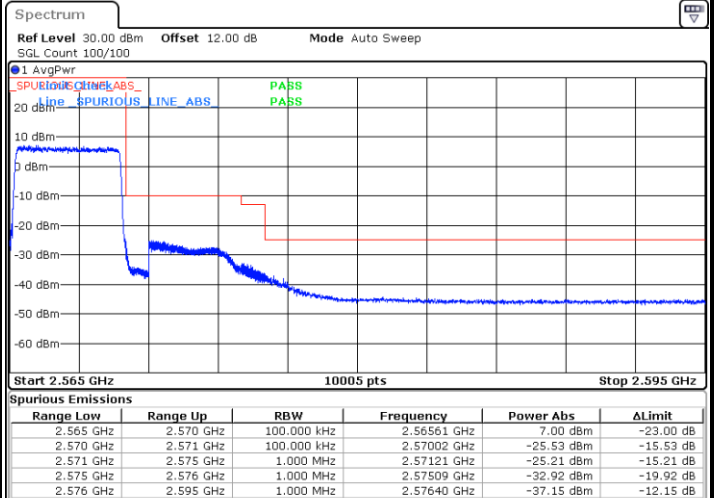
Date: 22.SEP.2021 10:41:55

### Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:37:37

### Highest Band Edge / Full RB

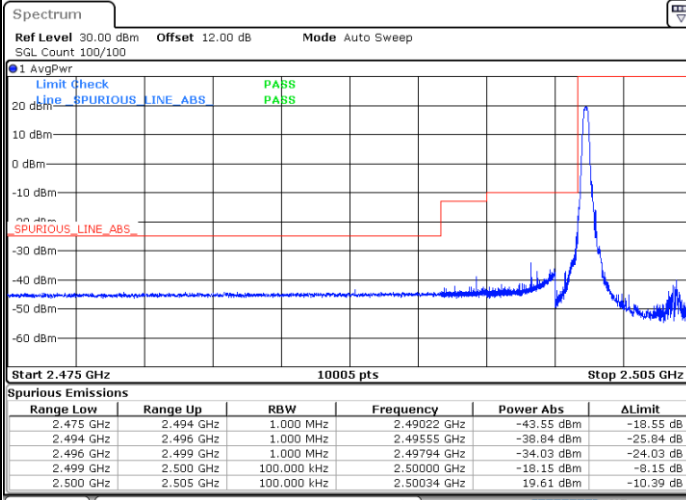


Date: 22.SEP.2021 10:42:46



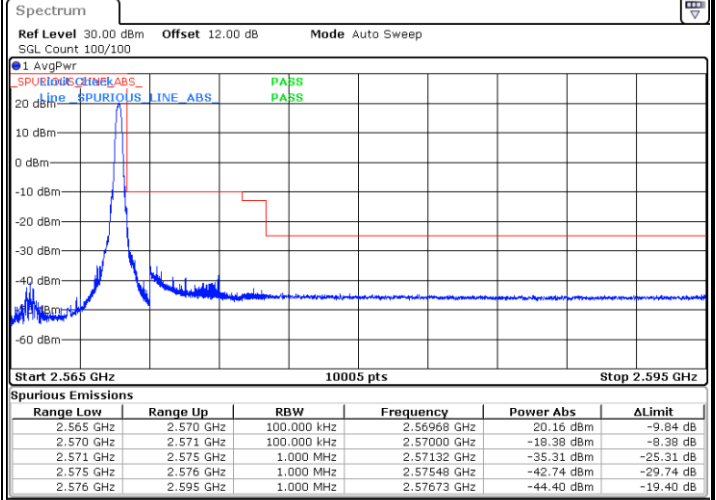
LTE Band 7 / 5MHz / 16QAM

Lowest Band Edge / 1RB



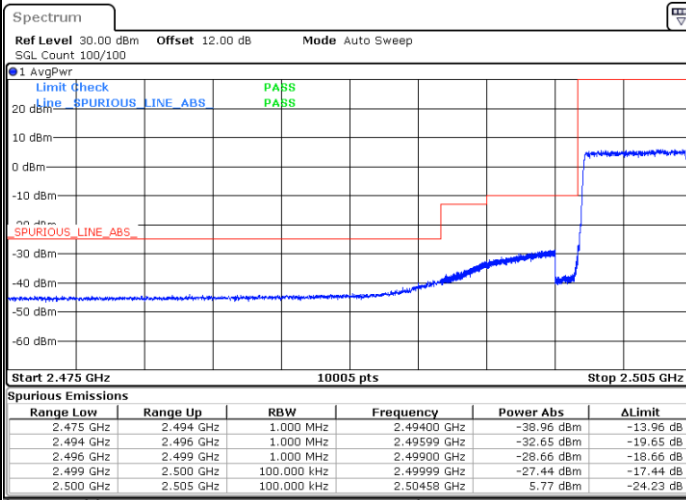
Date: 22.SEP.2021 10:37:10

Highest Band Edge / 1 RB



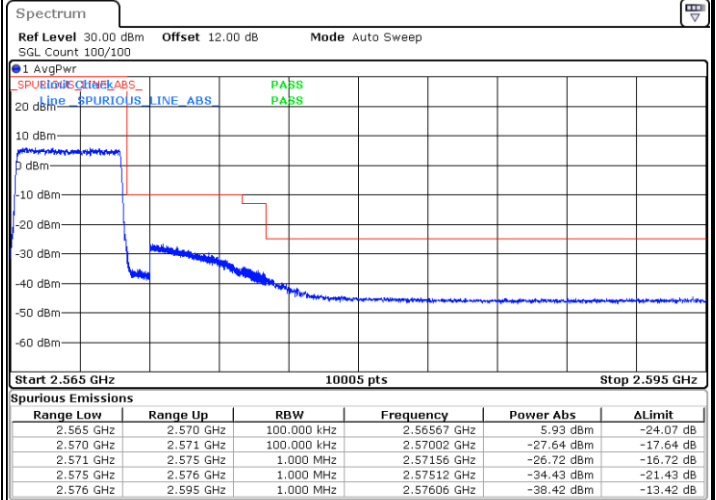
Date: 22.SEP.2021 10:42:20

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:38:03

Highest Band Edge / Full RB

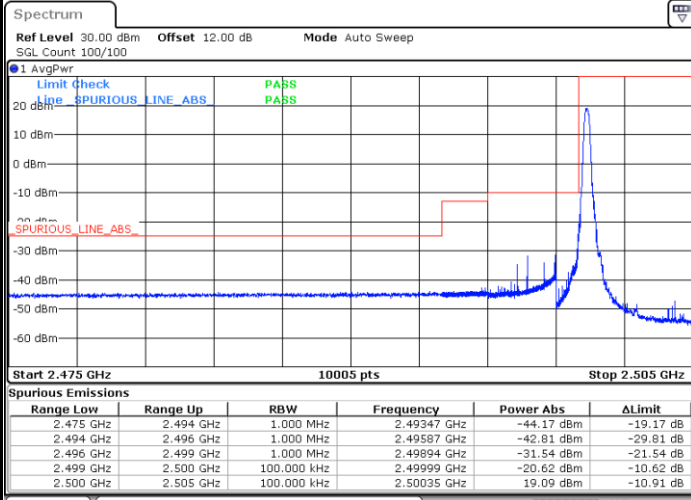


Date: 22.SEP.2021 10:43:12



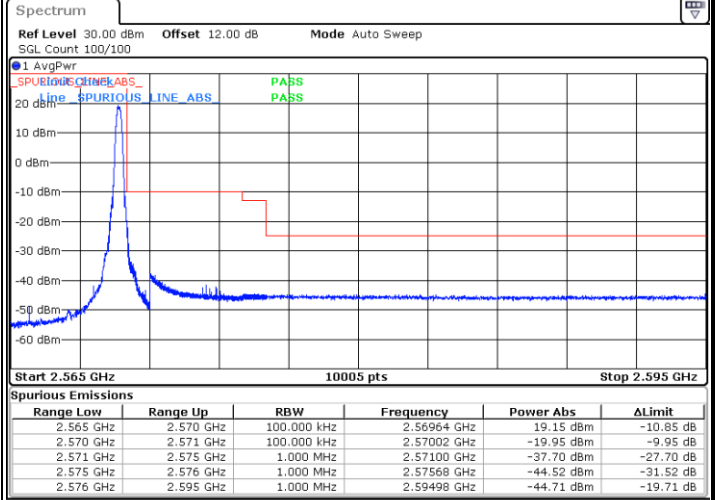
LTE Band 7 / 5MHz / 64QAM

Lowest Band Edge / 1RB



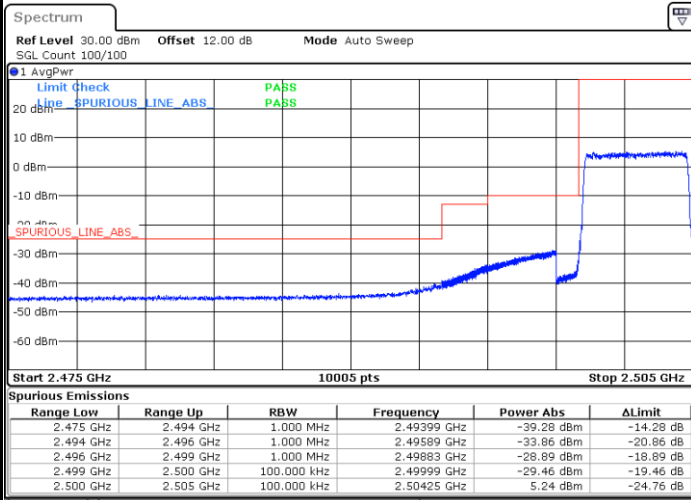
Date: 22.SEP.2021 10:44:38

Highest Band Edge / 1 RB



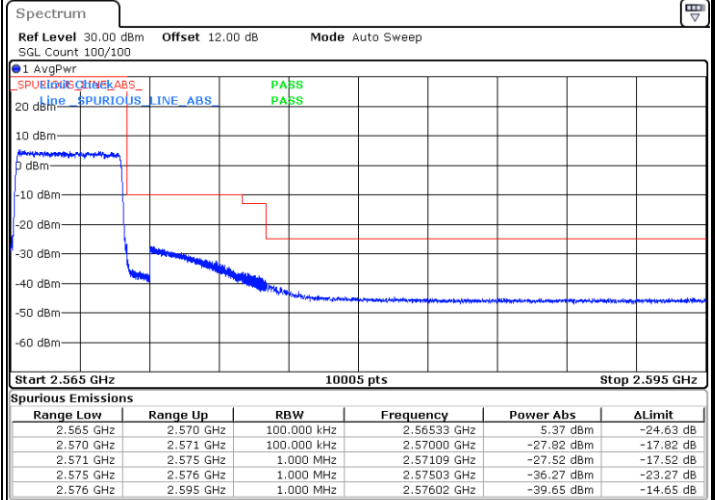
Date: 22.SEP.2021 10:46:13

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:45:04

Highest Band Edge / Full RB

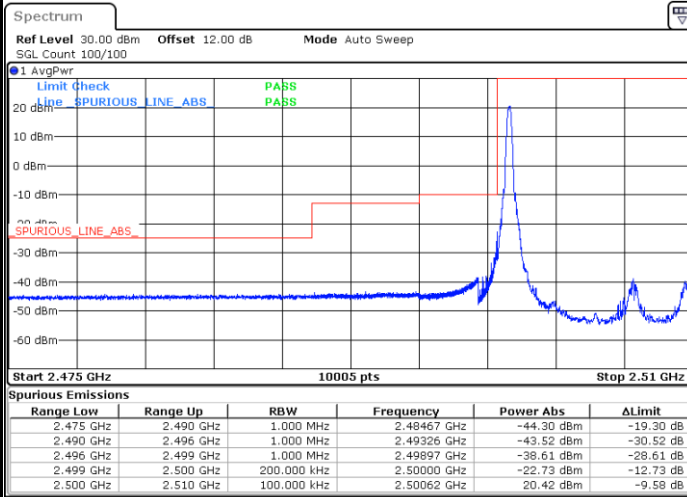


Date: 22.SEP.2021 10:46:38



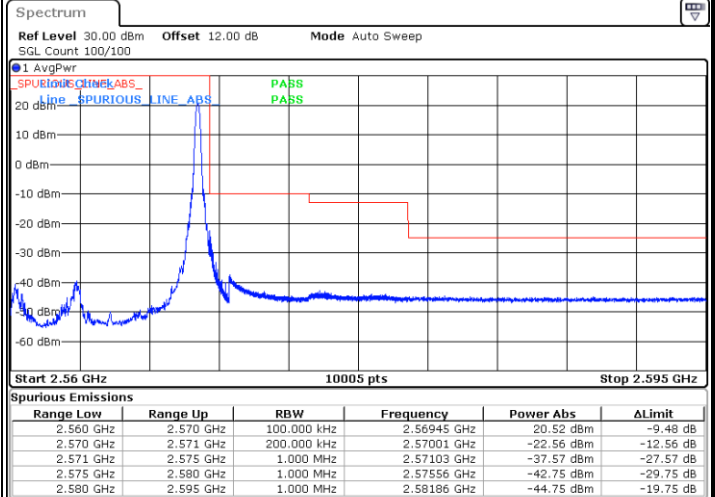
LTE Band 7 / 10MHz / QPSK

Lowest Band Edge / 1 RB



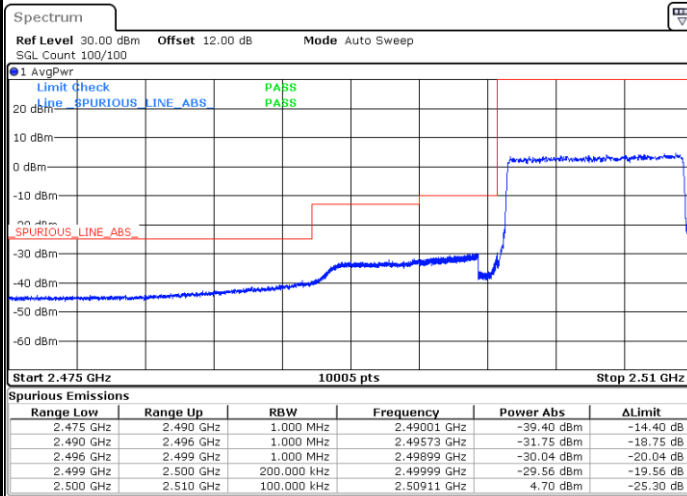
Date: 22.SEP.2021 10:47:04

Highest Band Edge / 1 RB



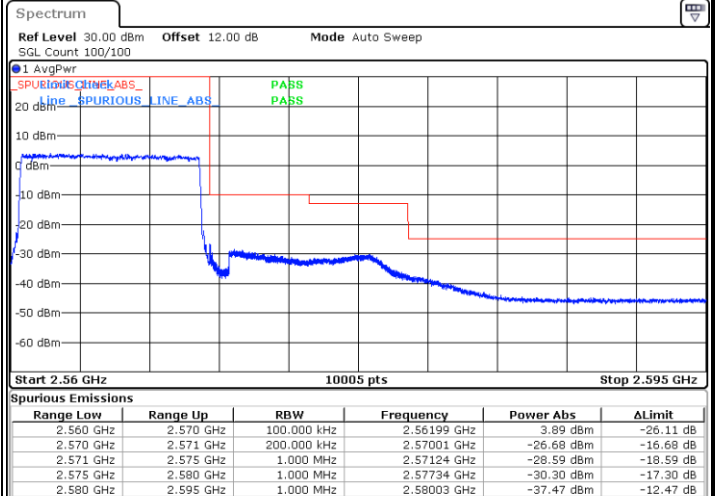
Date: 22.SEP.2021 10:52:13

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:47:55

Highest Band Edge / Full RB

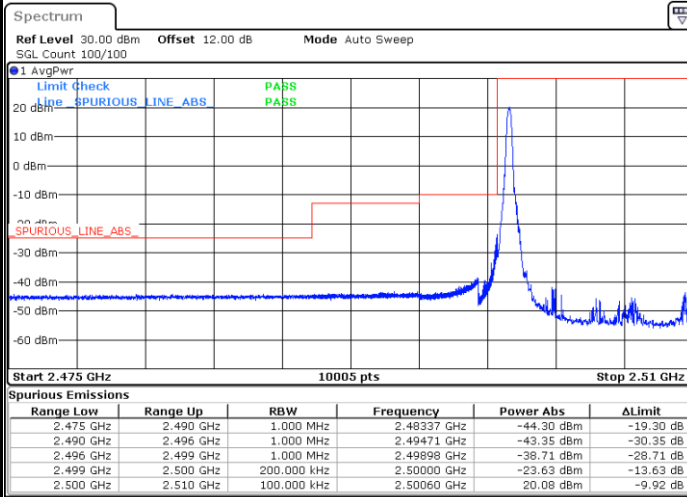


Date: 22.SEP.2021 10:53:05



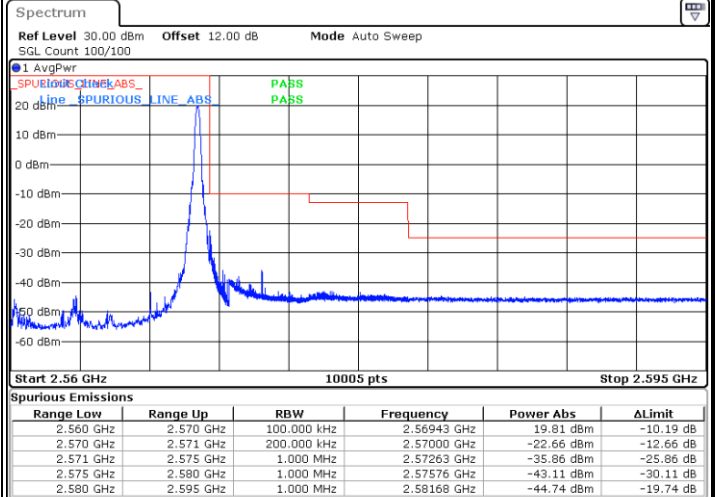
LTE Band 7 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



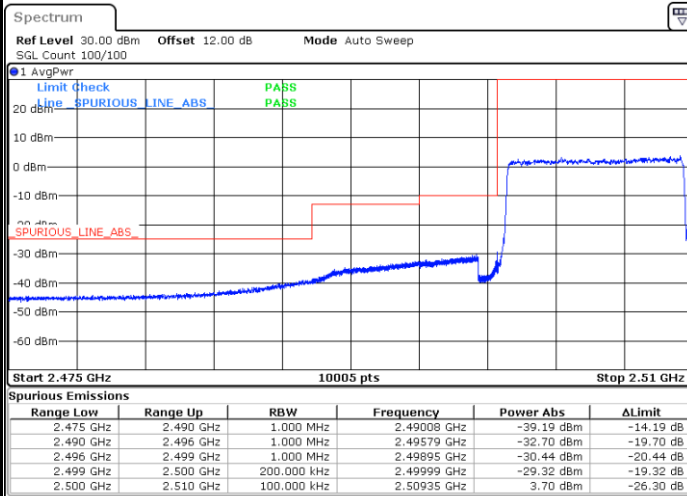
Date: 22.SEP.2021 10:47:30

Highest Band Edge / 1 RB



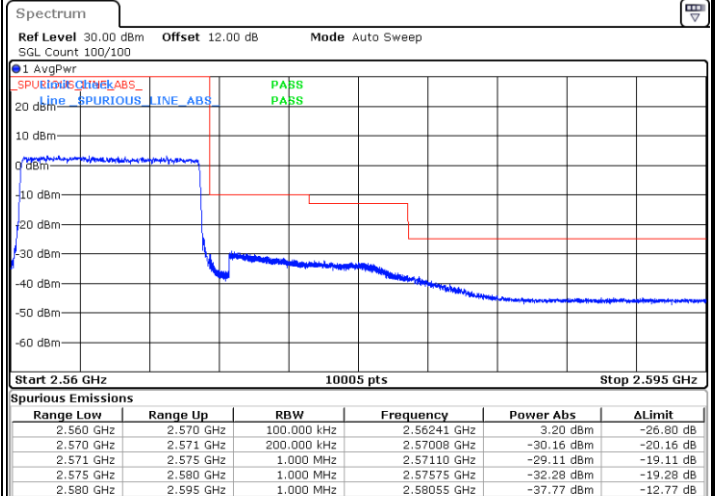
Date: 22.SEP.2021 10:52:39

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:48:21

Highest Band Edge / Full RB



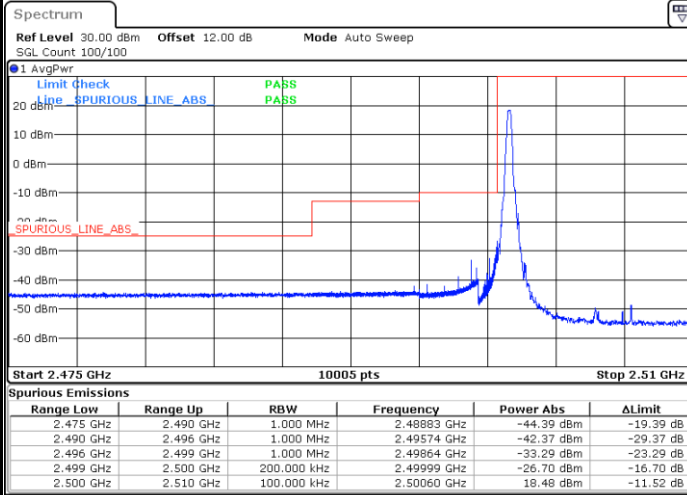
Date: 22.SEP.2021 10:53:30





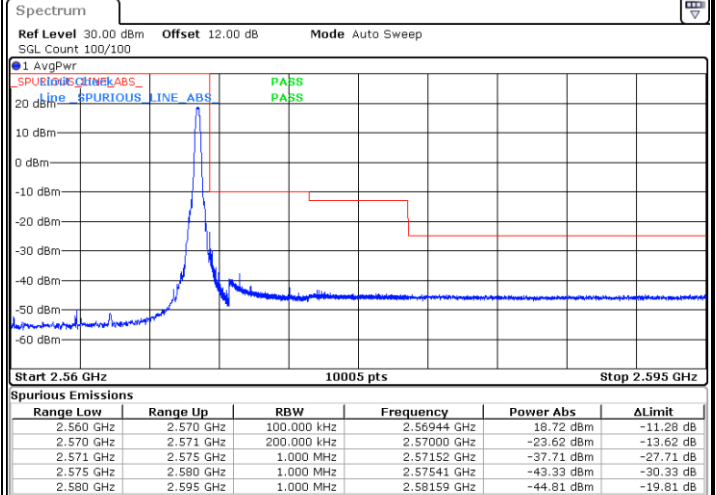
LTE Band 7 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



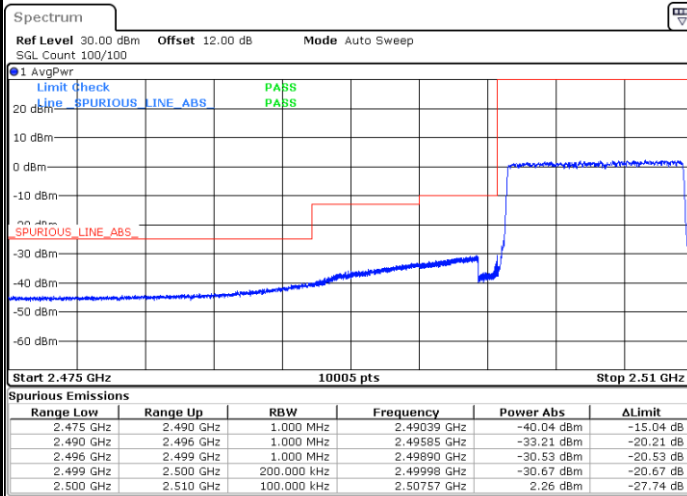
Date: 22.SEP.2021 10:54:56

Highest Band Edge / 1 RB



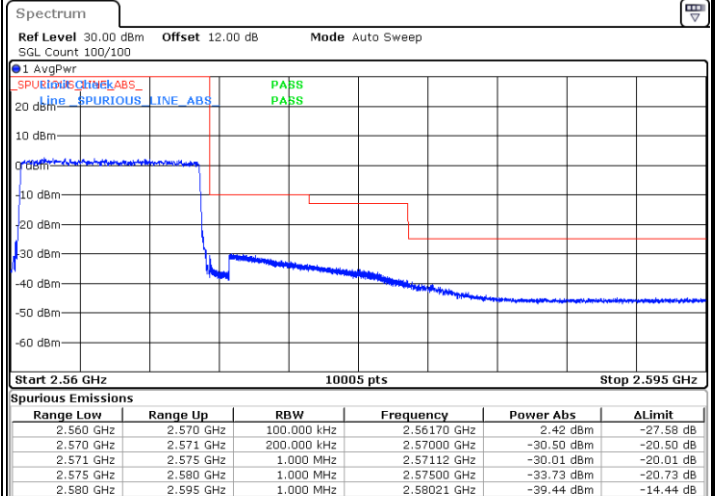
Date: 22.SEP.2021 10:56:31

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:55:22

Highest Band Edge / Full RB

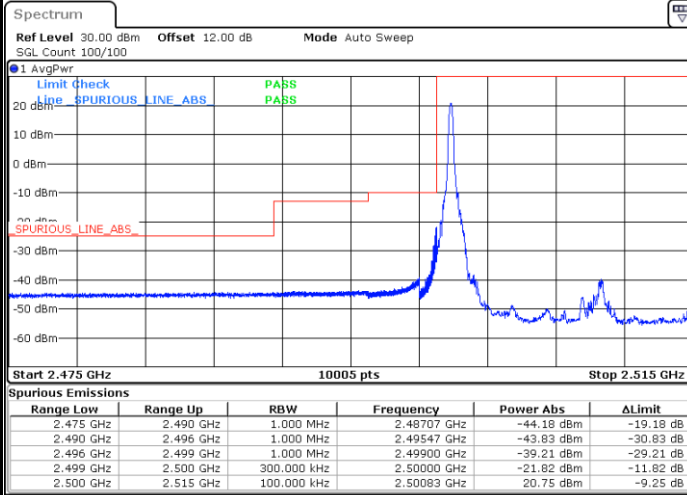


Date: 22.SEP.2021 10:56:57



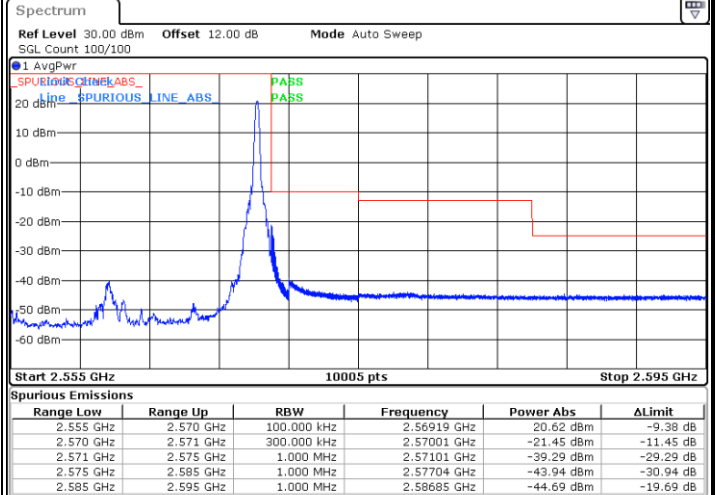
LTE Band 7 / 15MHz / QPSK

Lowest Band Edge / 1 RB



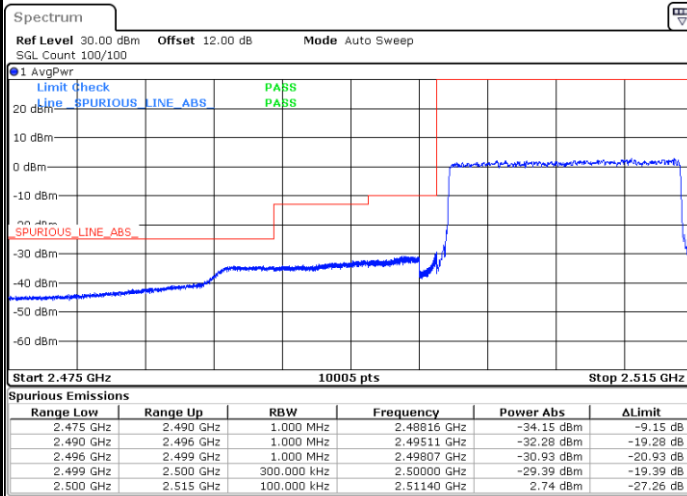
Date: 22.SEP.2021 10:57:23

Highest Band Edge / 1 RB



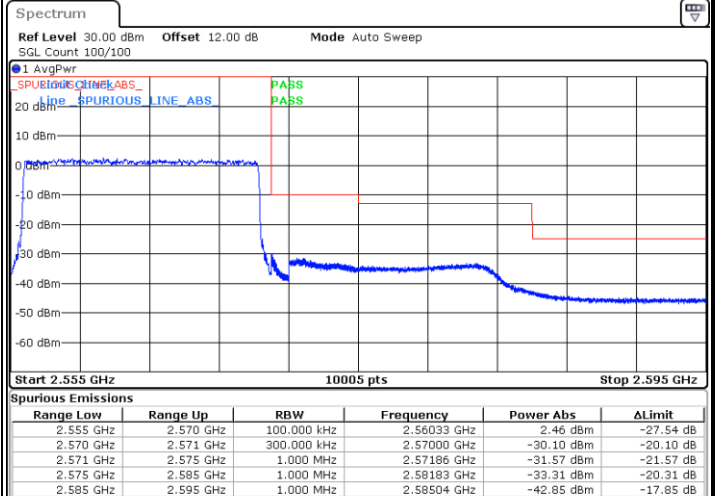
Date: 22.SEP.2021 11:02:33

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:58:15

Highest Band Edge / Full RB

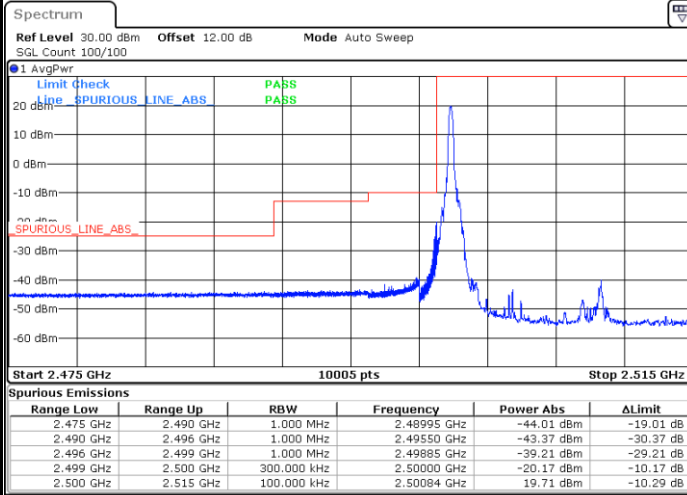


Date: 22.SEP.2021 11:03:24



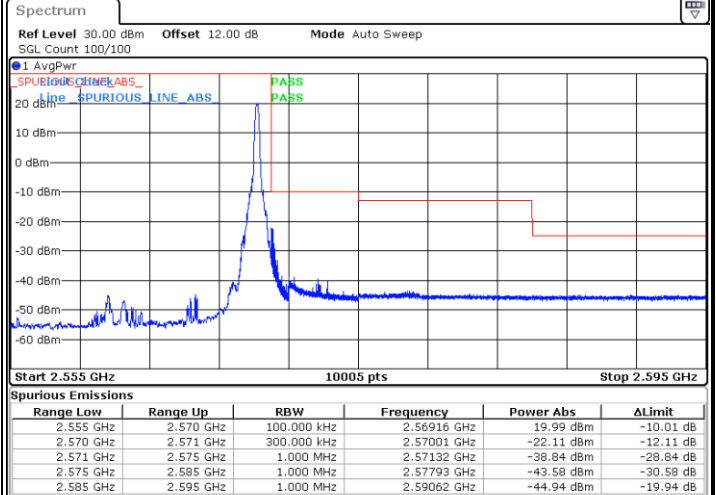
LTE Band 7 / 15MHz / 16QAM

Lowest Band Edge / 1 RB



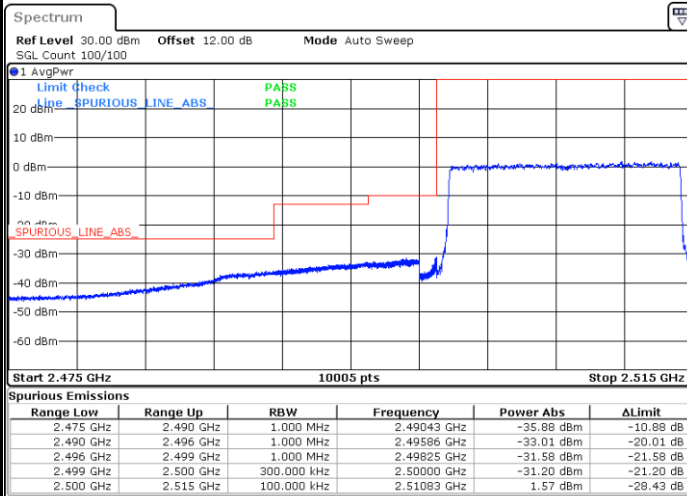
Date: 22.SEP.2021 10:57:49

Highest Band Edge / 1 RB



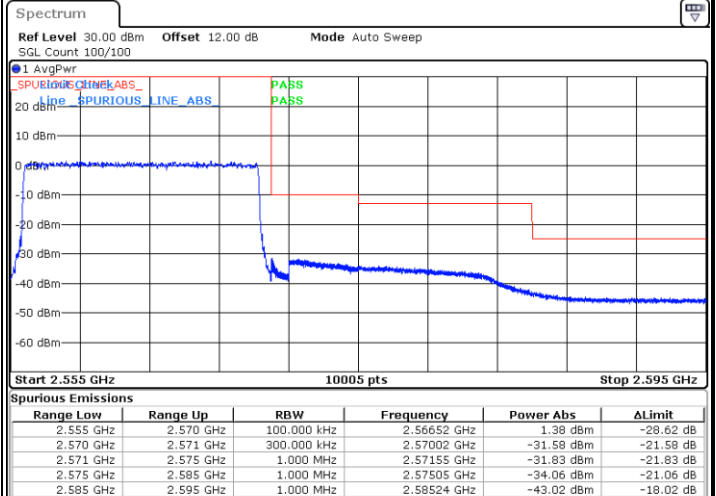
Date: 22.SEP.2021 11:02:59

Lowest Band Edge / Full RB



Date: 22.SEP.2021 10:58:41

Highest Band Edge / Full RB

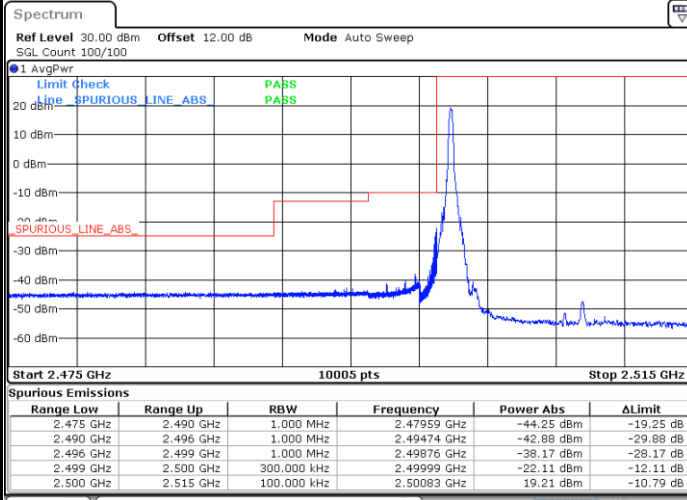


Date: 22.SEP.2021 11:03:50



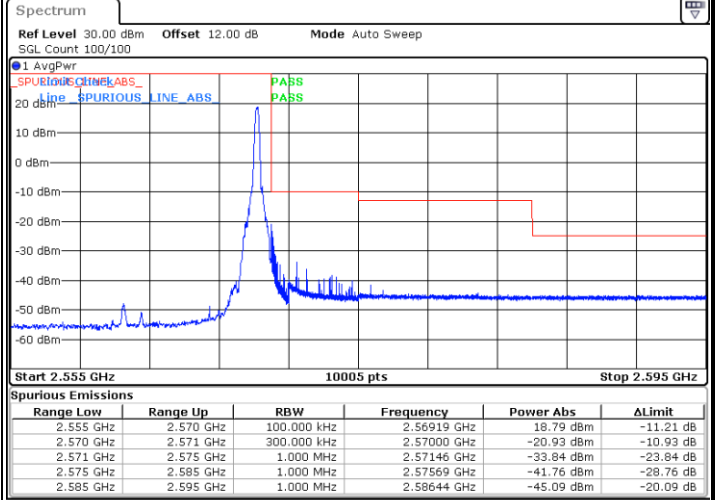
LTE Band 7 / 15MHz / 64QAM

Lowest Band Edge / 1 RB



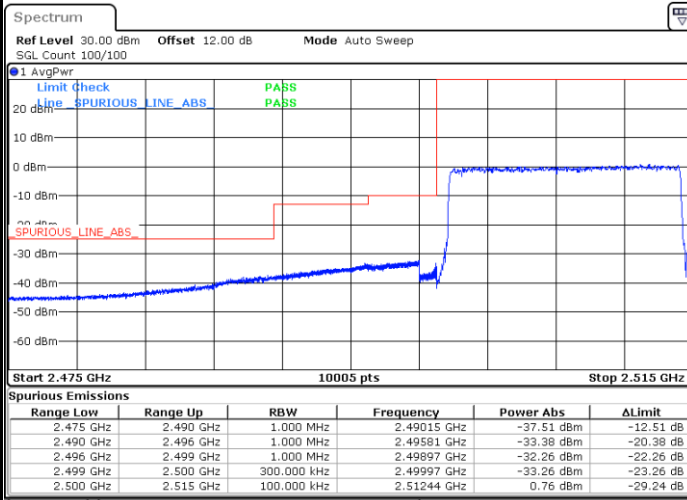
Date: 22.SEP.2021 11:05:16

Highest Band Edge / 1 RB



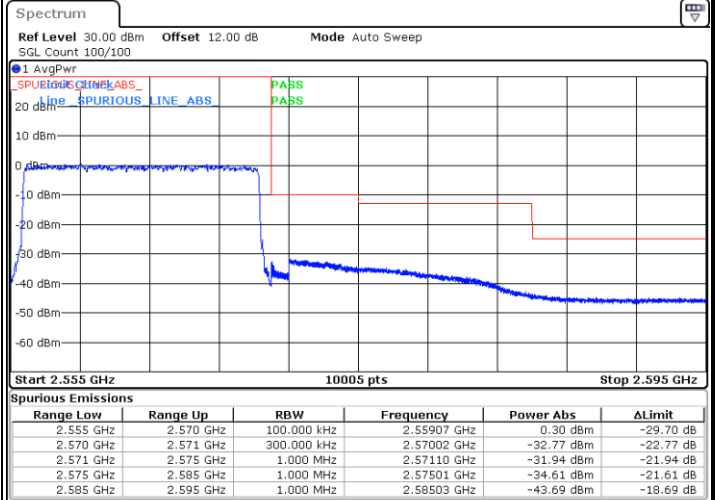
Date: 22.SEP.2021 11:06:52

Lowest Band Edge / Full RB



Date: 22.SEP.2021 11:05:42

Highest Band Edge / Full RB

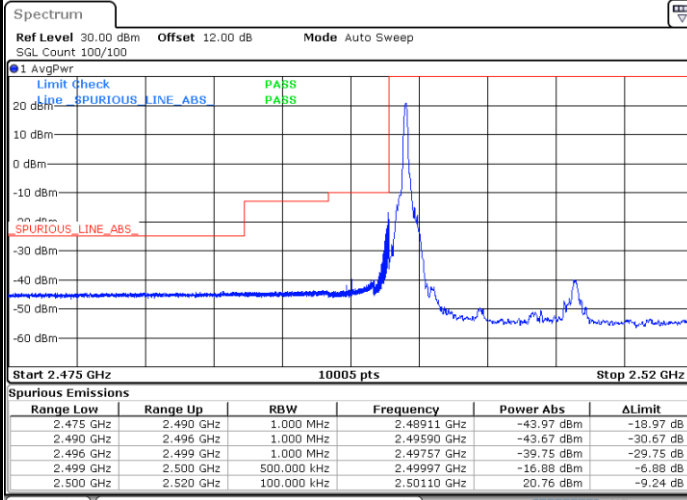


Date: 22.SEP.2021 11:07:17



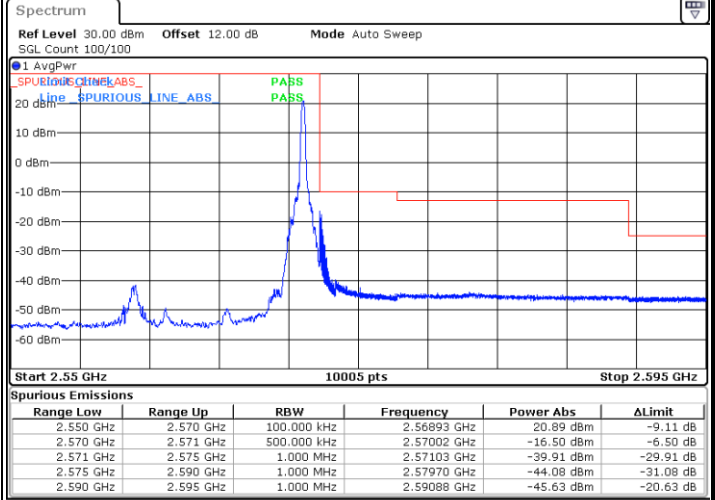
LTE Band 7 / 20MHz / QPSK

Lowest Band Edge / 1 RB



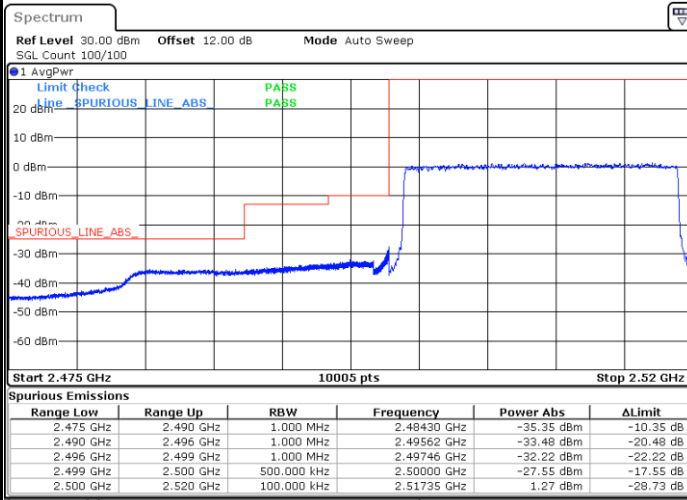
Date: 22.SEP.2021 11:07:44

Highest Band Edge / 1 RB



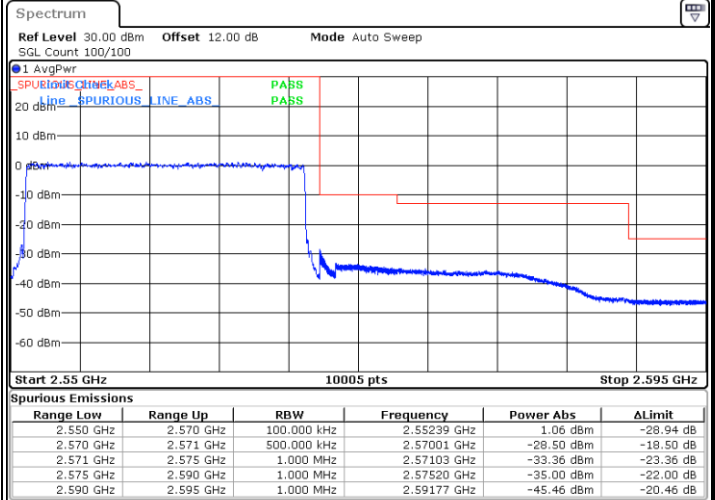
Date: 22.SEP.2021 11:12:53

Lowest Band Edge / Full RB



Date: 22.SEP.2021 11:08:36

Highest Band Edge / Full RB

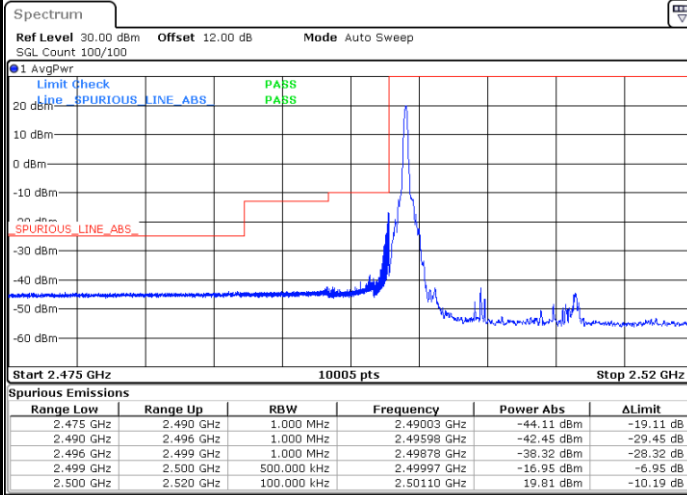


Date: 22.SEP.2021 11:14:10



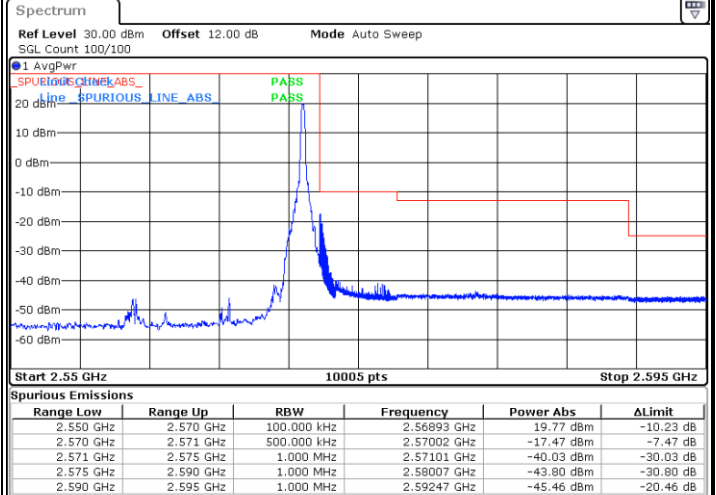
LTE Band 7 / 20MHz / 16QAM

Lowest Band Edge / 1 RB



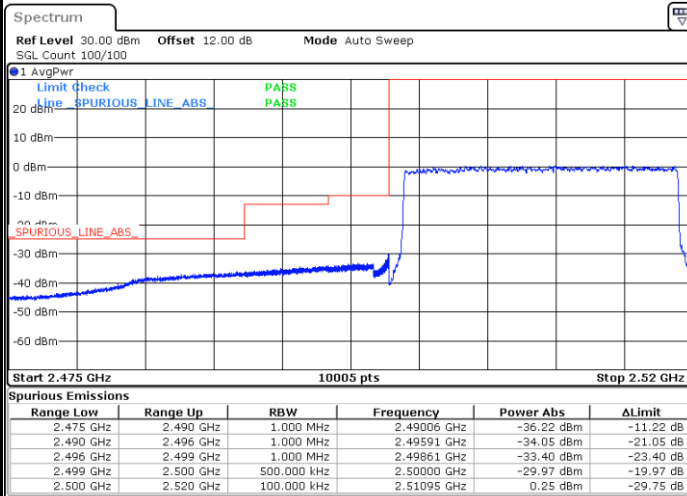
Date: 22.SEP.2021 11:08:10

Highest Band Edge / 1 RB



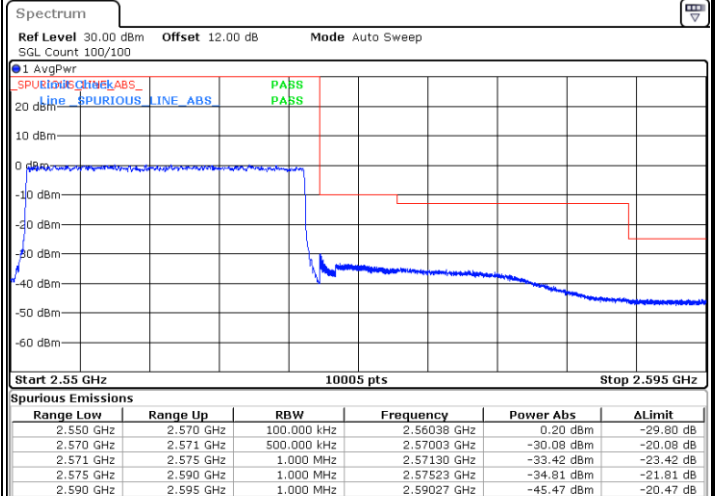
Date: 22.SEP.2021 11:13:19

Lowest Band Edge / Full RB



Date: 22.SEP.2021 11:09:02

Highest Band Edge / Full RB

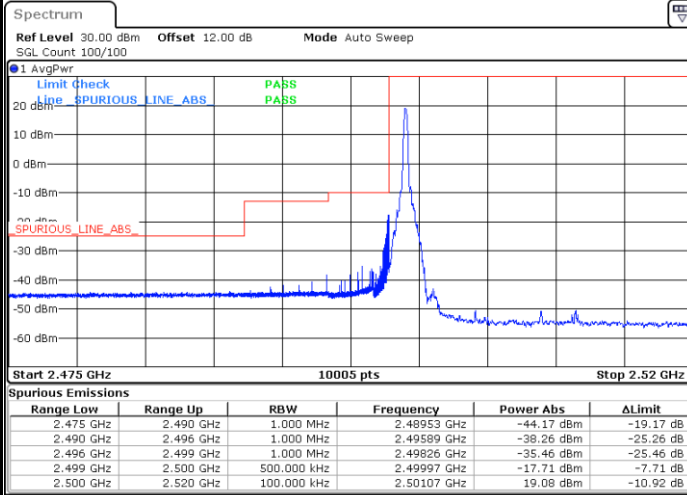


Date: 22.SEP.2021 11:13:45



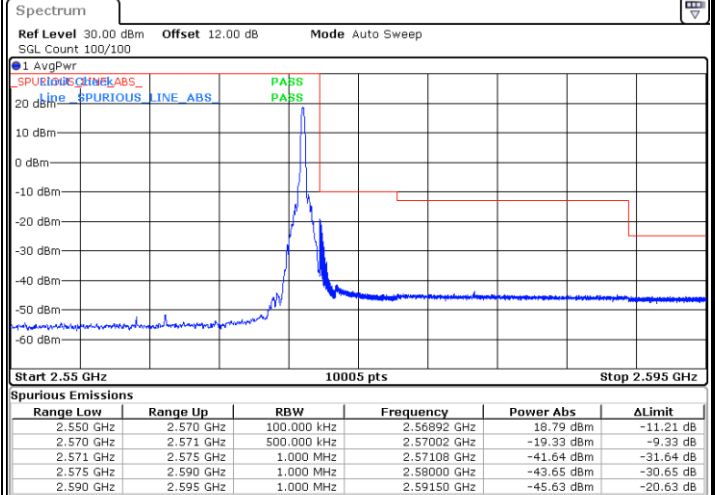
LTE Band 7 / 20MHz / 64QAM

Lowest Band Edge / 1 RB



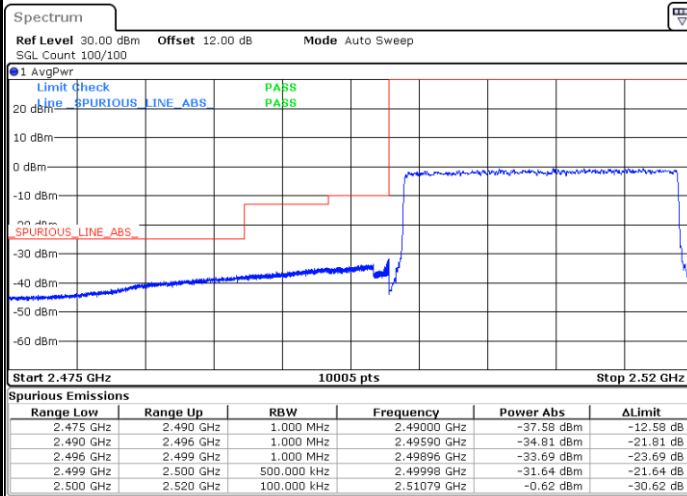
Date: 22.SEP.2021 11:15:36

Highest Band Edge / 1 RB



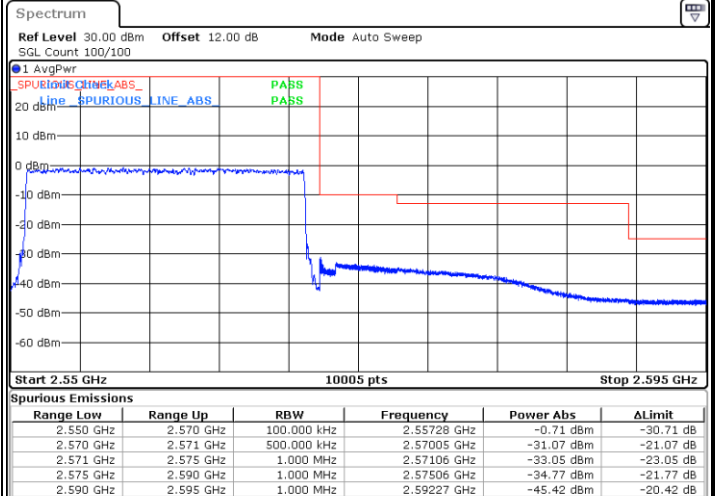
Date: 22.SEP.2021 11:17:11

Lowest Band Edge / Full RB



Date: 22.SEP.2021 11:16:02

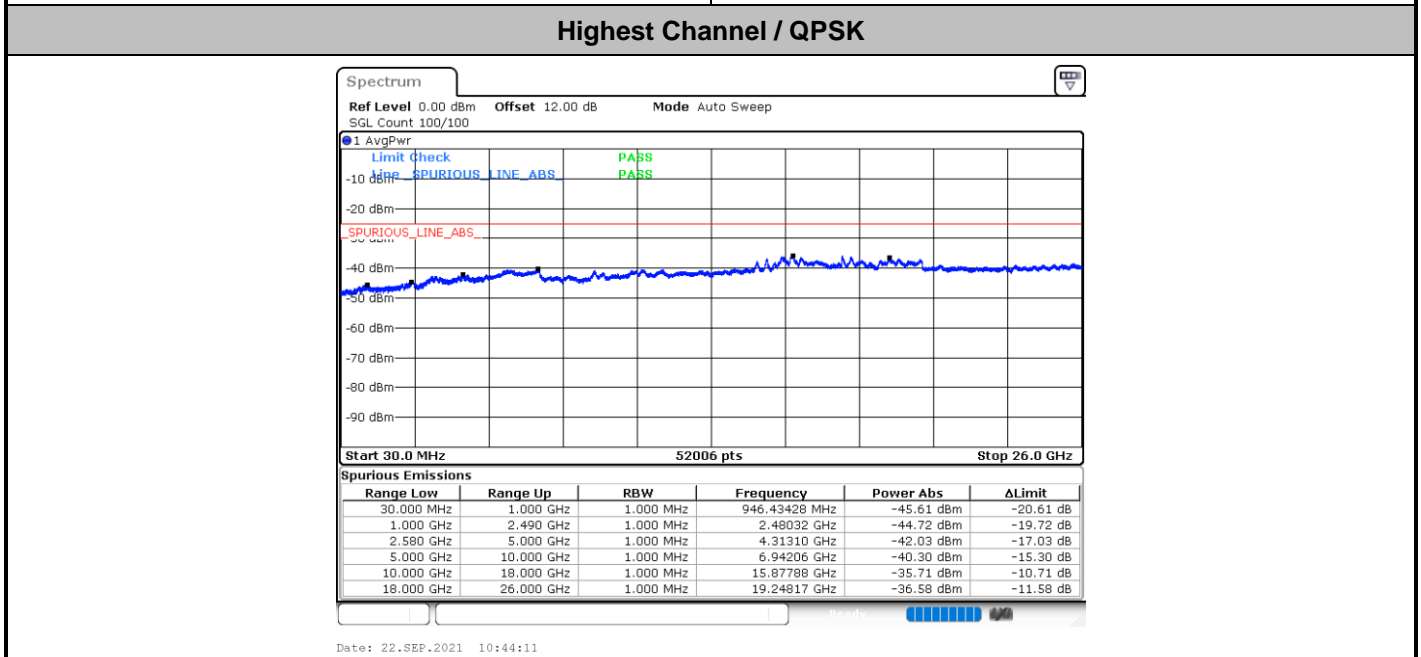
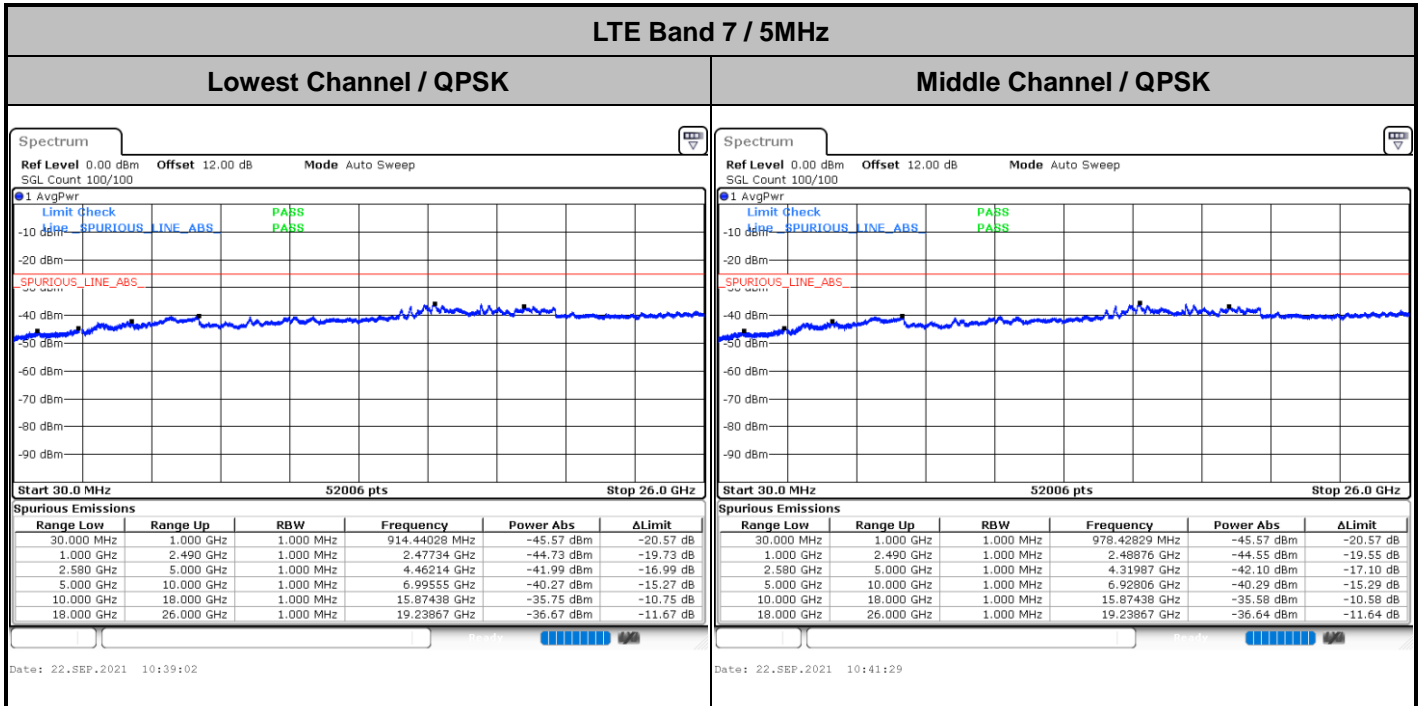
Highest Band Edge / Full RB



Date: 22.SEP.2021 11:17:37



# Conducted Spurious Emission



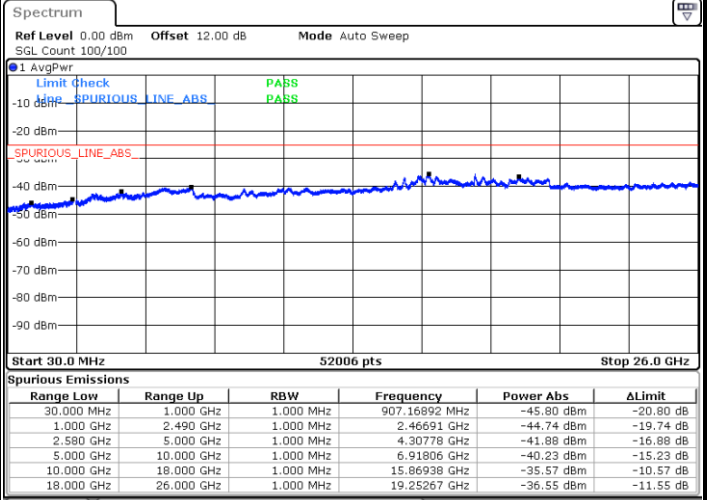
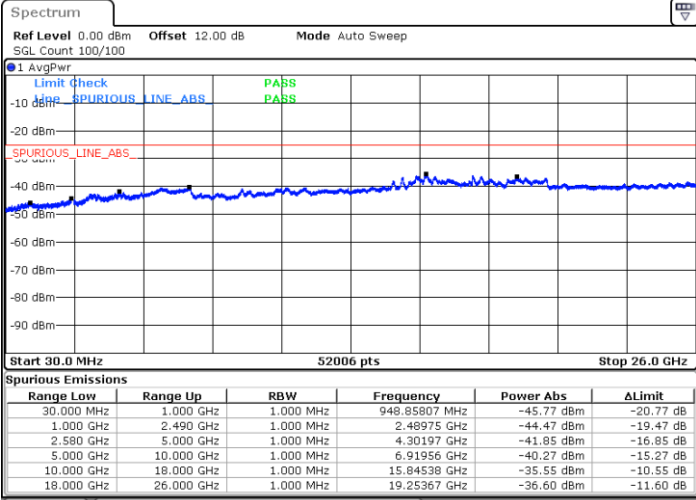




LTE Band 7 / 10MHz

Lowest Channel / QPSK

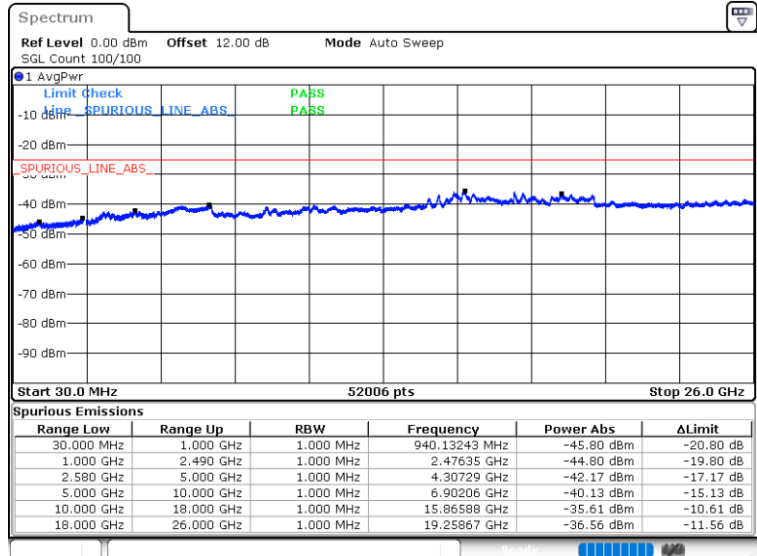
Middle Channel / QPSK



Date: 22.SEP.2021 10:49:21

Date: 22.SEP.2021 10:51:47

Highest Channel / QPSK



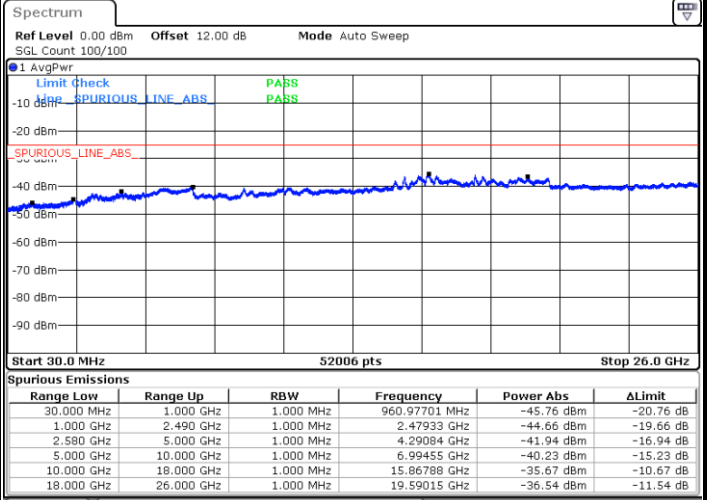
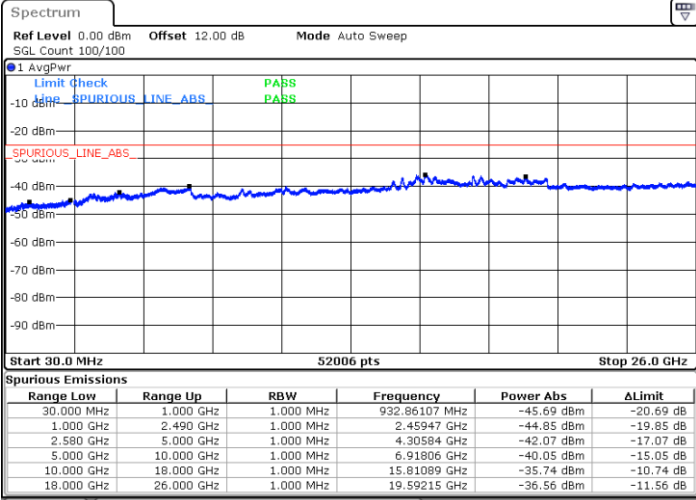
Date: 22.SEP.2021 10:54:30



LTE Band 7 / 15MHz

Lowest Channel / QPSK

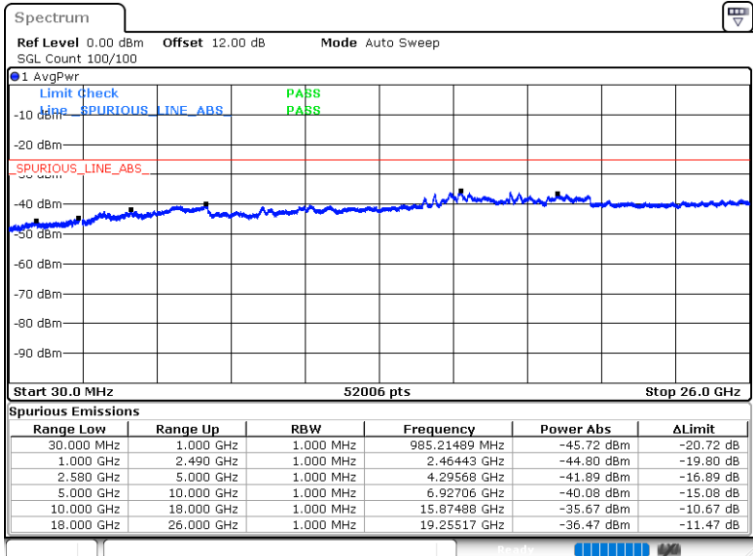
Middle Channel / QPSK



Date: 22.SEP.2021 10:59:41

Date: 22.SEP.2021 11:02:07

Highest Channel / QPSK



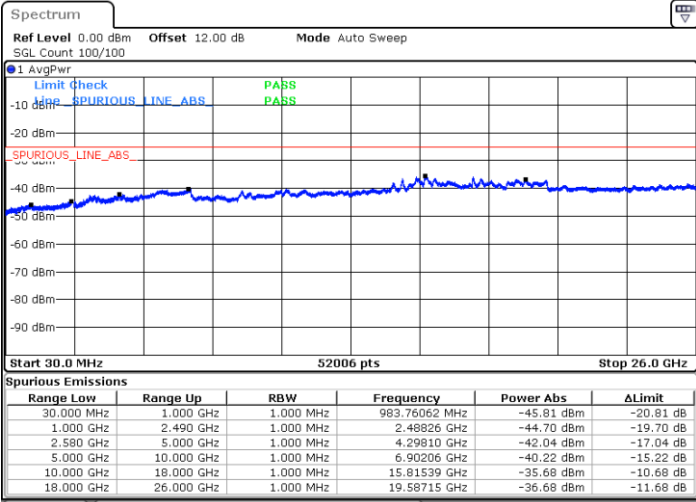
Date: 22.SEP.2021 11:04:49



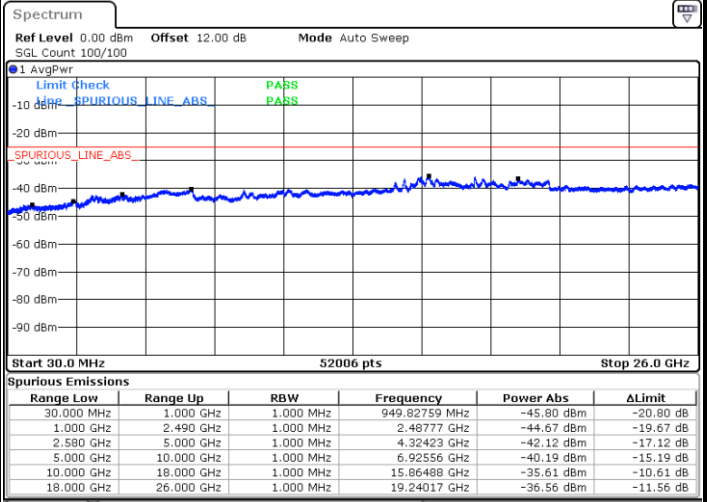
LTE Band 7 / 20MHz

Lowest Channel / QPSK

Middle Channel / QPSK

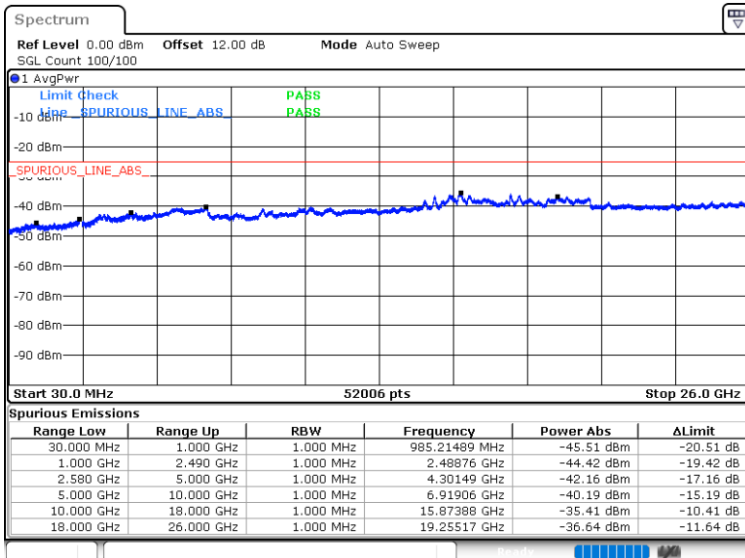


Date: 22.SEP.2021 11:10:01



Date: 22.SEP.2021 11:12:27

Highest Channel / QPSK



Date: 22.SEP.2021 11:15:10



### 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	0.0031	PASS
40	Normal Voltage	0.0050	
30	Normal Voltage	0.0038	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0080	
0	Normal Voltage	0.0060	
-10	Normal Voltage	0.0071	
-20	Normal Voltage	0.0041	
-30	Normal Voltage	0.0065	
20	Maximum Voltage	0.0084	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0077	

**Note:**

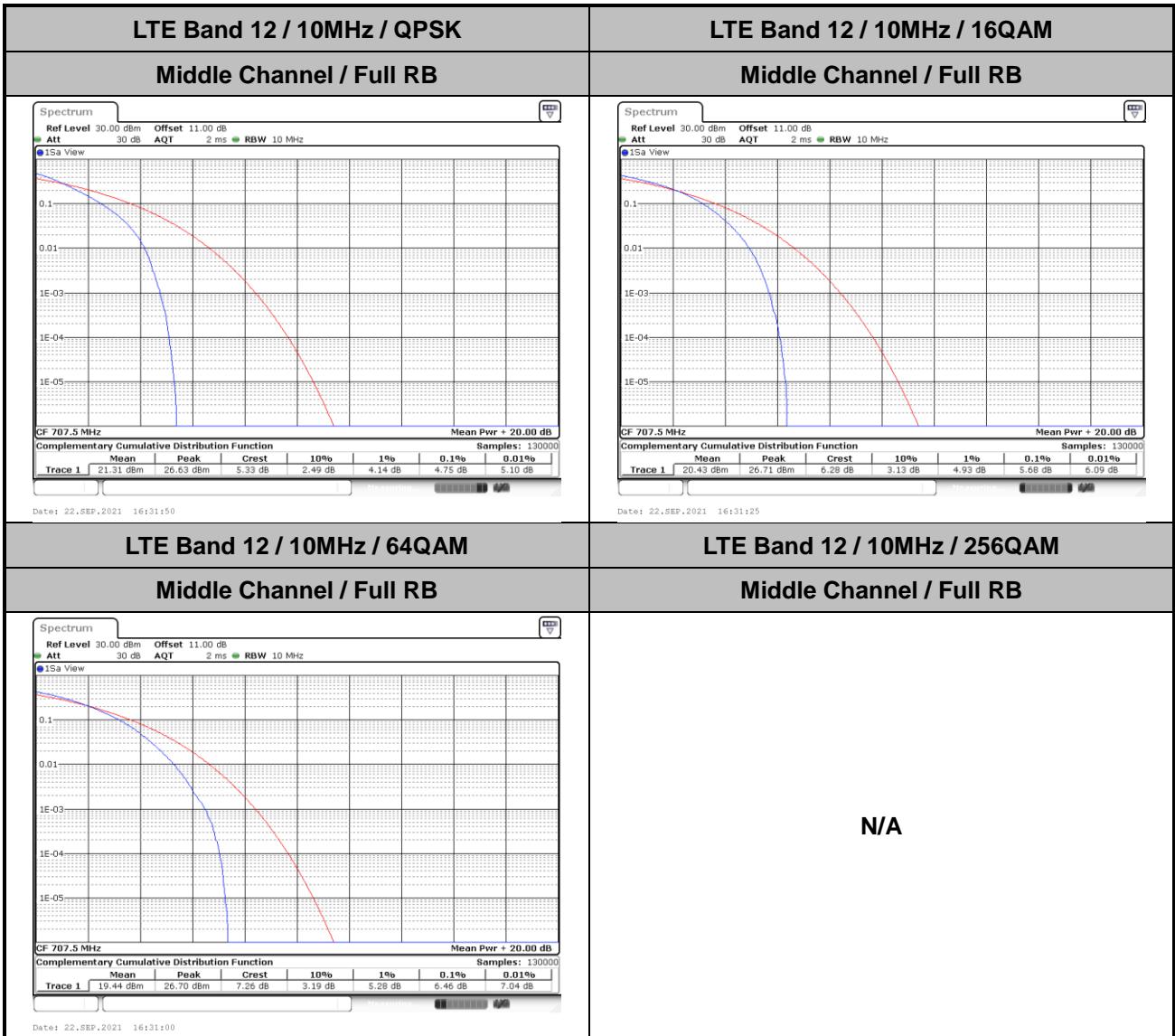
- 1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.2 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



# 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	4.75	5.68	6.46	-	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	2.98	3.02	4.90	4.89	9.65	9.79	-	-	-	-
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	1.23	-	3.05	-	4.96	-	9.75	-	-	-	-	-