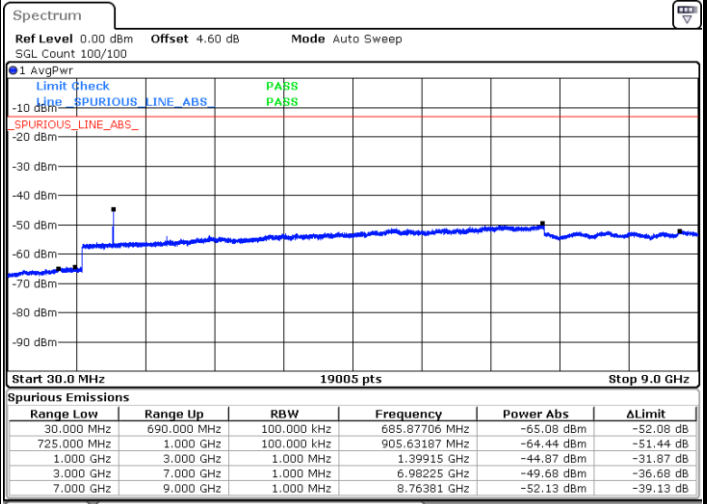
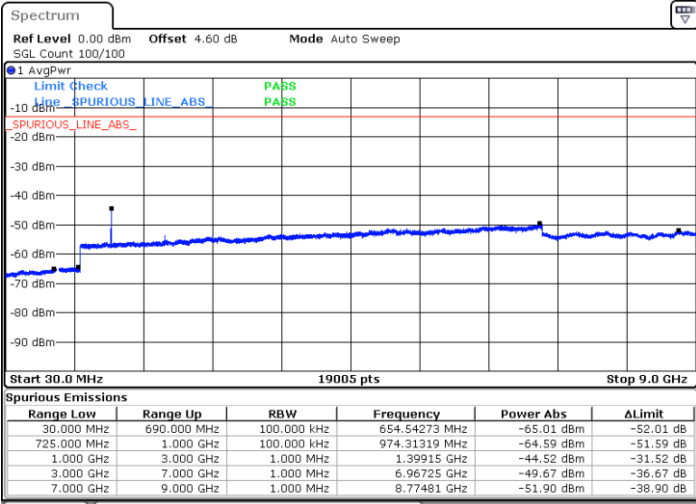




LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

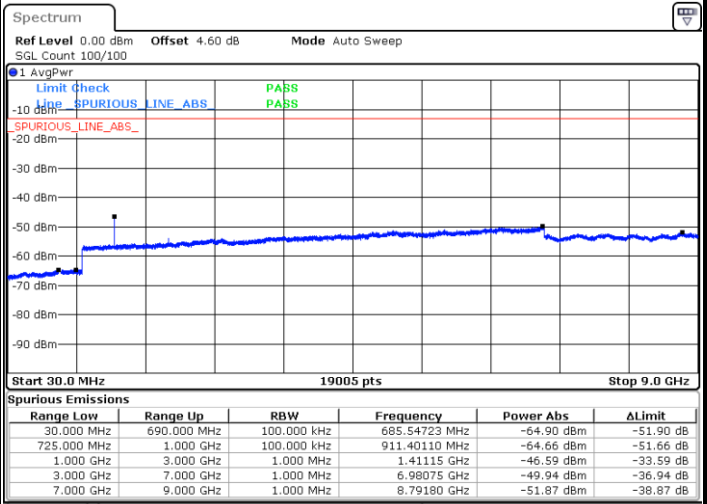
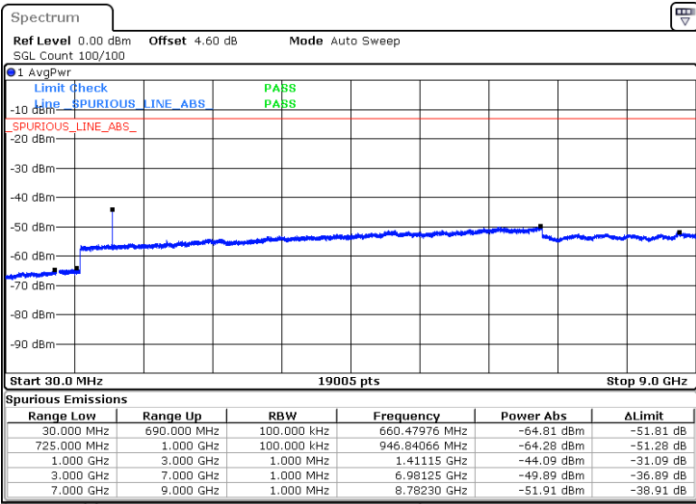


Date: 12 AUG.2020 05:34:29

Date: 12 AUG.2020 05:35:24

Middle Channel / QPSK

Middle Channel / 16QAM



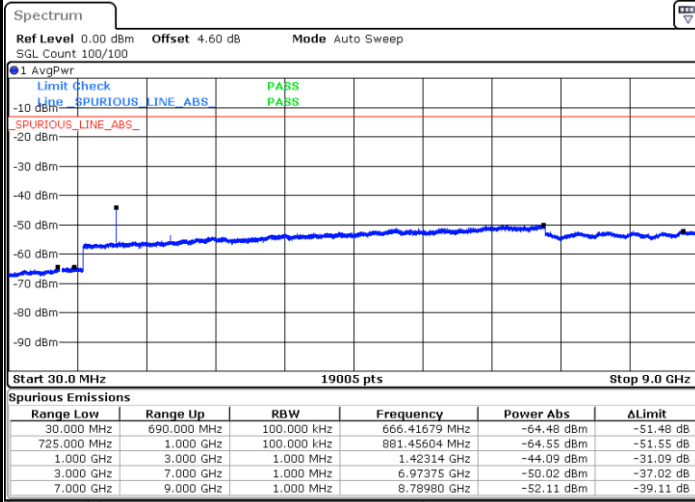
Date: 12 AUG.2020 05:37:13

Date: 12 AUG.2020 05:36:19



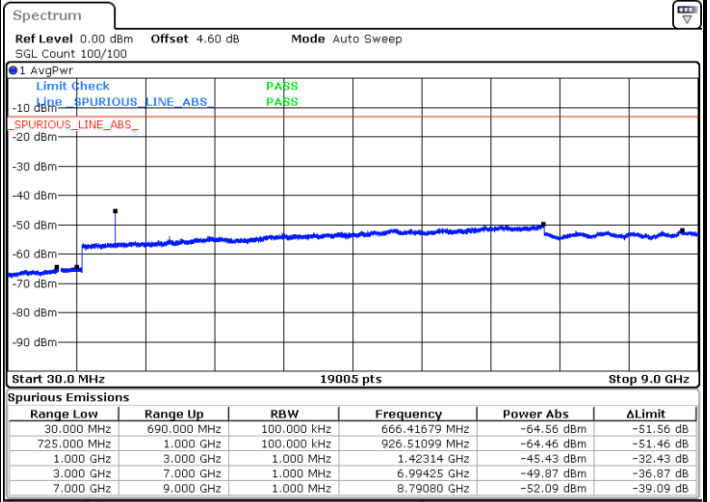
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 12 AUG 2020 05:38:08

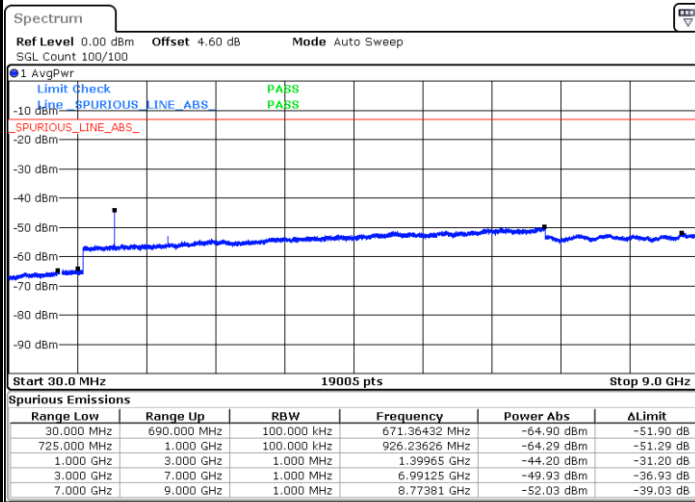
Highest Channel / 16QAM



Date: 12 AUG 2020 05:39:02

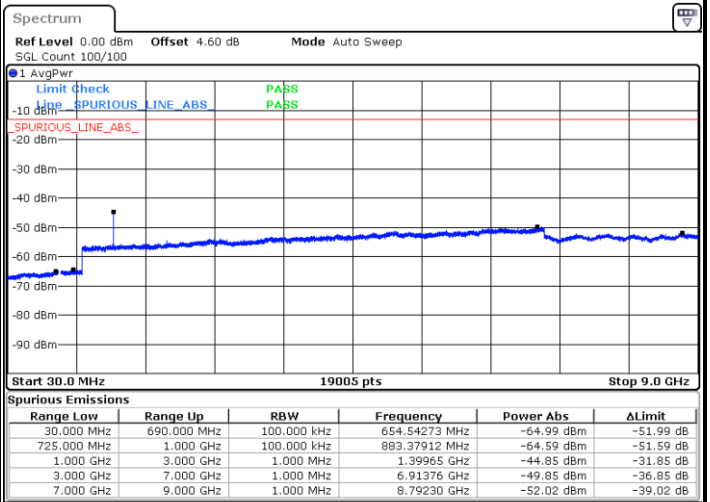
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 12 AUG 2020 05:50:59

Lowest Channel / 16QAM

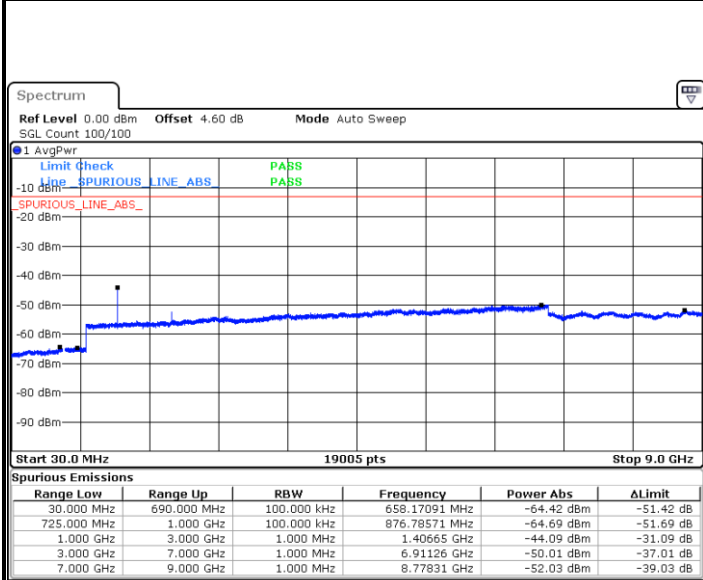


Date: 12 AUG 2020 05:51:53



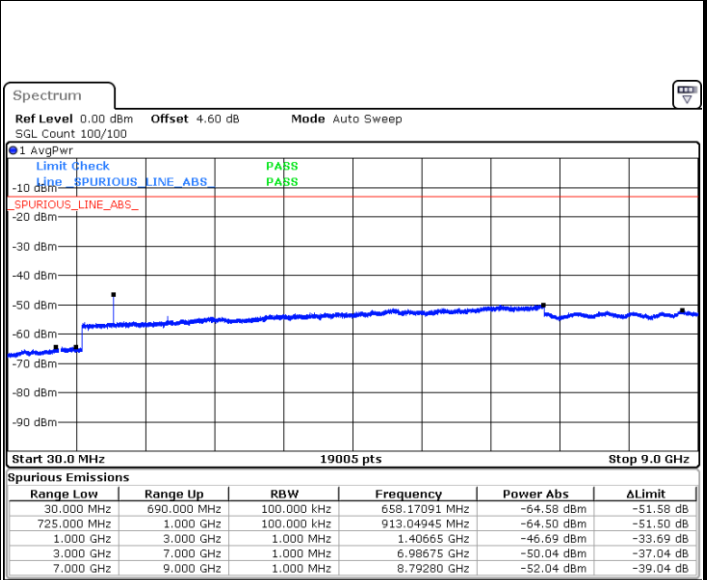
LTE Band 12 / 10MHz

Middle Channel / QPSK



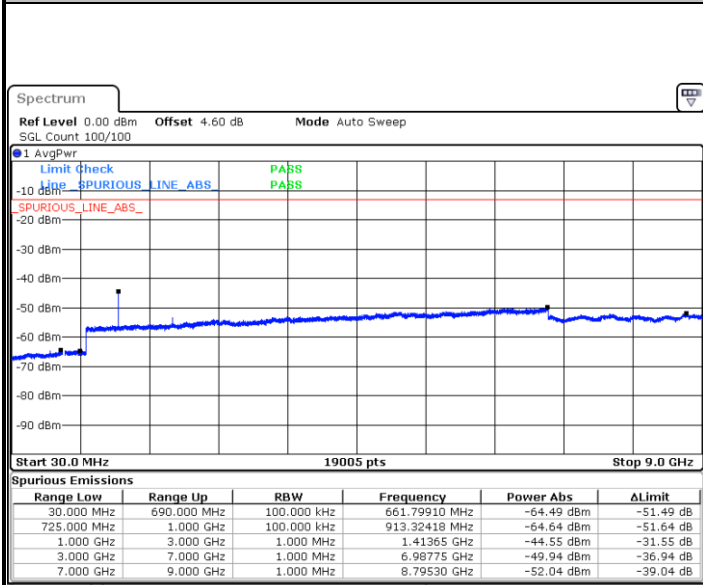
Date: 12 AUG.2020 05:53:43

Middle Channel / 16QAM



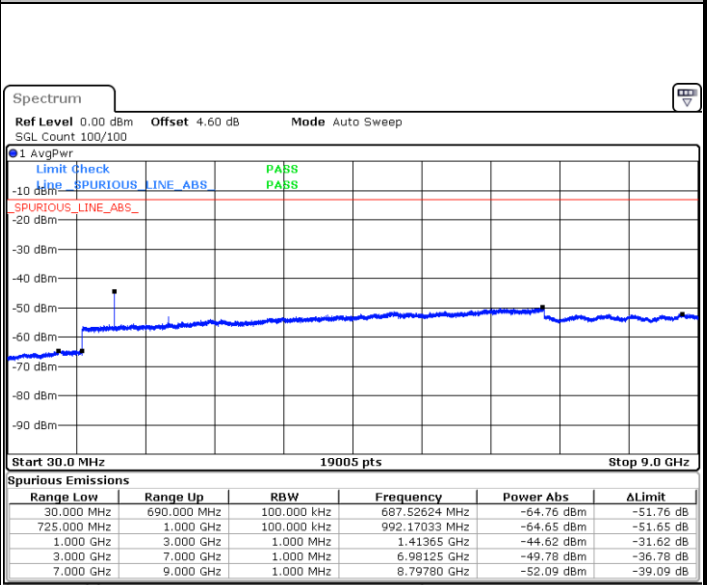
Date: 12 AUG.2020 05:52:48

Highest Channel / QPSK



Date: 12 AUG.2020 05:54:37

Highest Channel / 16QAM



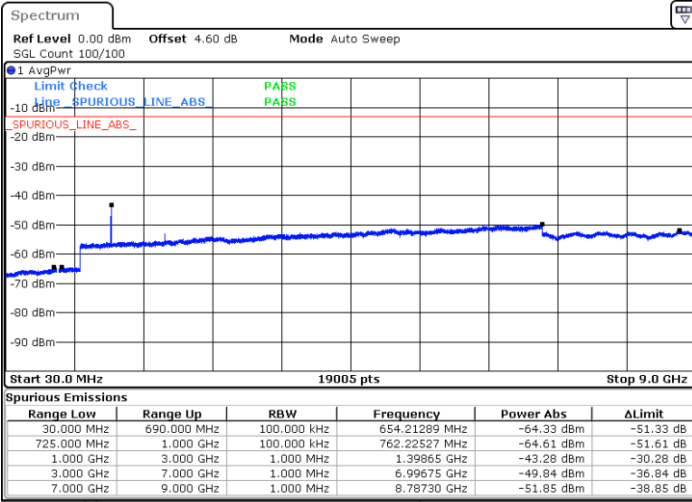
Date: 12 AUG.2020 05:55:32



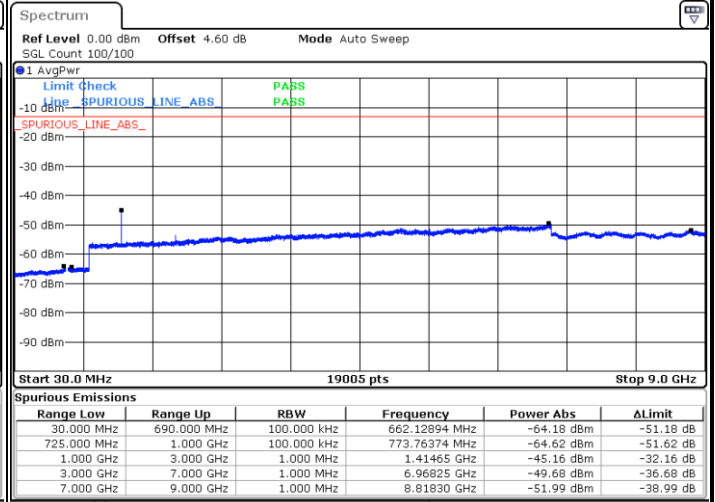
LTE Band 12 / 1.4MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

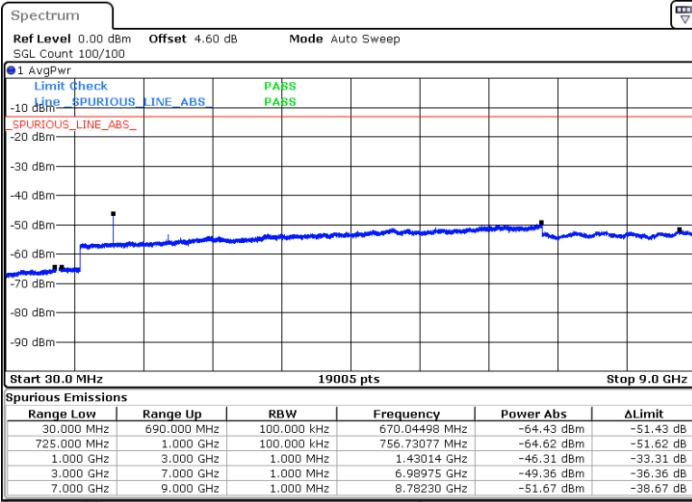


Date: 12 AUG.2020 04:26:57



Date: 12 AUG.2020 04:27:52

Highest Channel / 64QAM

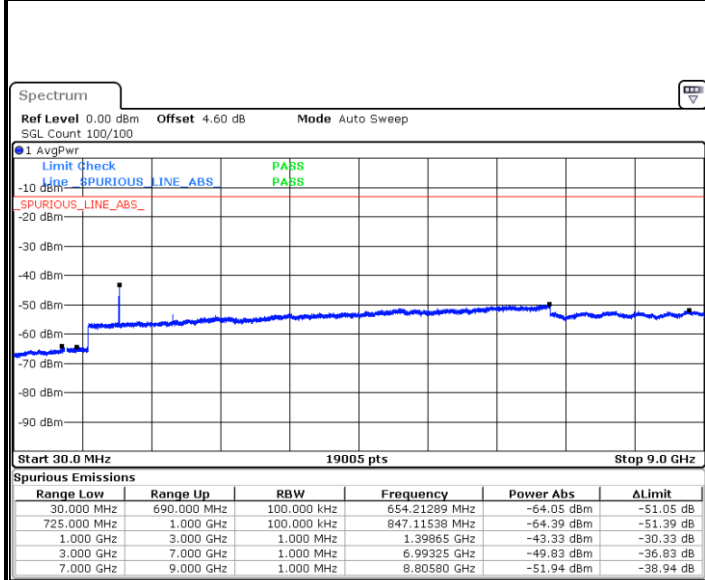


Date: 12 AUG.2020 04:28:47



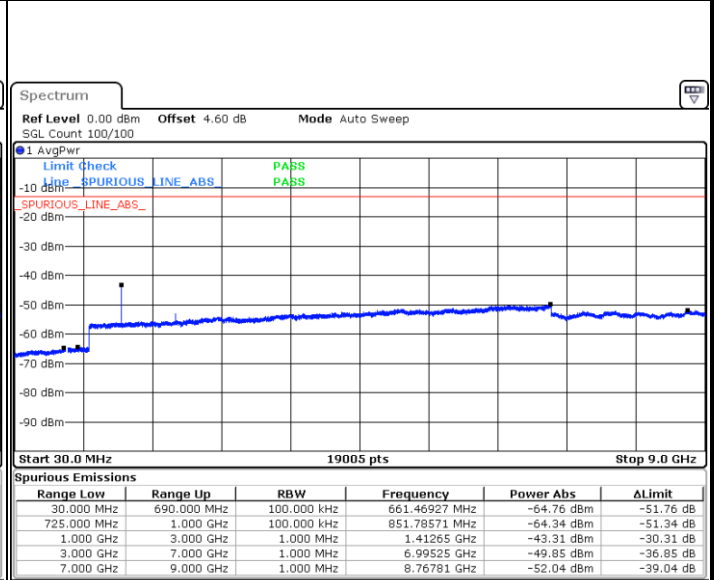
**LTE Band 12 / 3MHz**

**Lowest Channel / 64QAM**



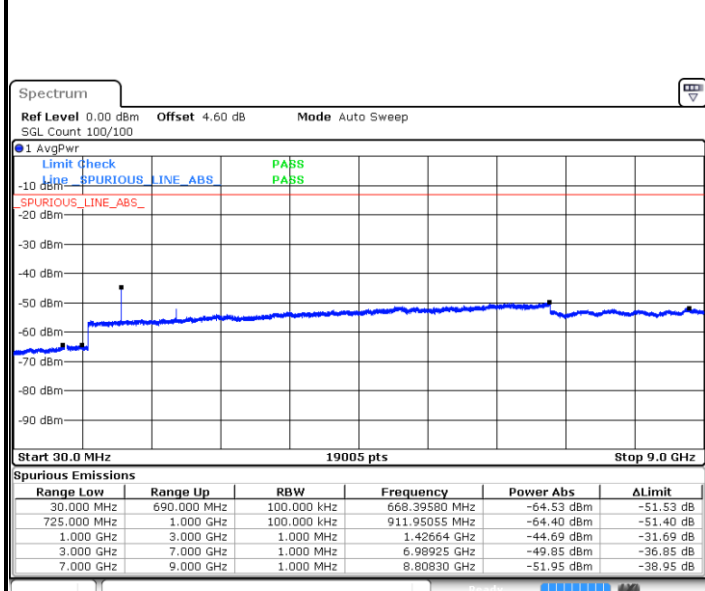
Date: 12 AUG.2020 04:29:42

**Middle Channel / 64QAM**



Date: 12 AUG.2020 04:30:36

**Highest Channel / 64QAM**



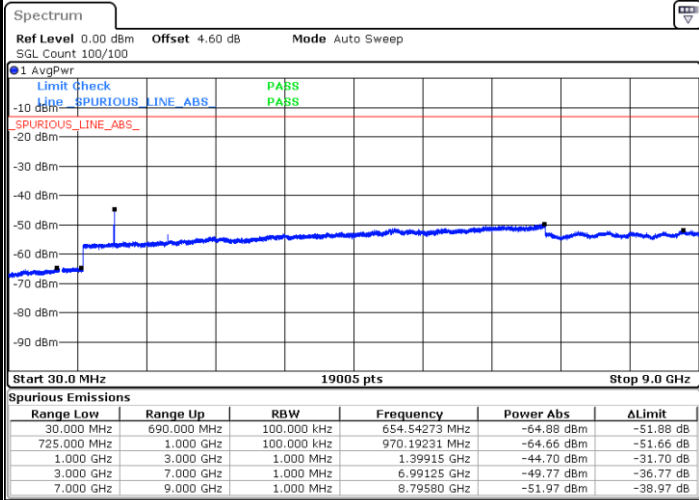
Date: 12 AUG.2020 04:31:31



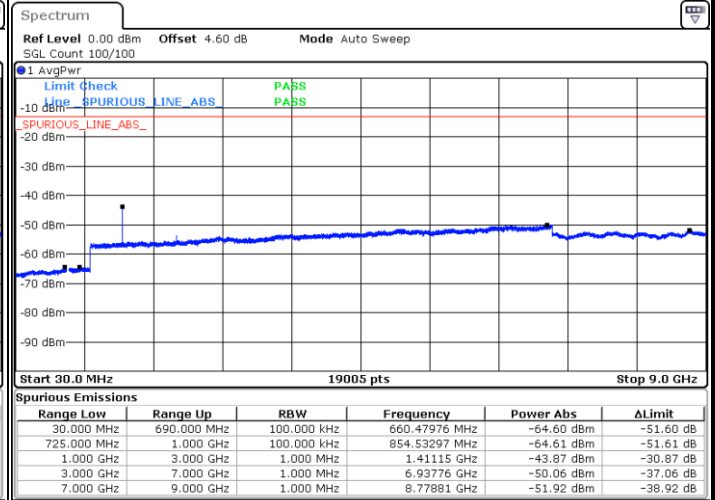
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

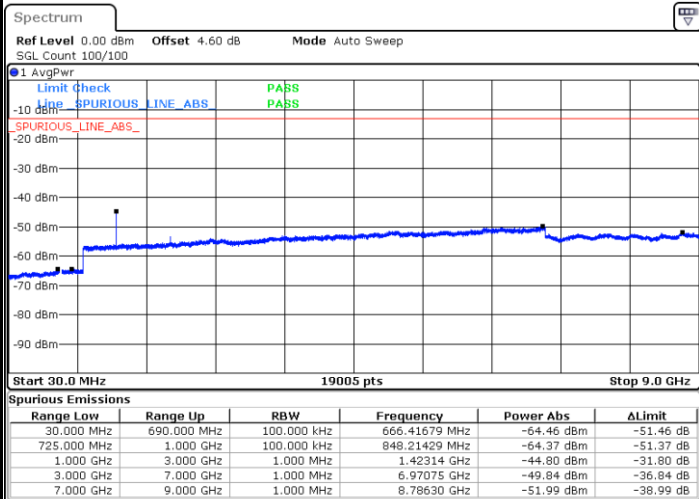


Date: 12 AUG.2020 04:43:27



Date: 12 AUG.2020 04:44:22

Highest Channel / 64QAM



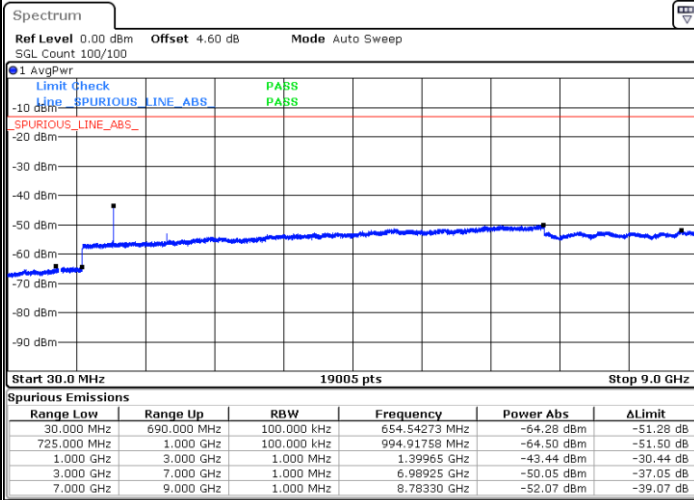
Date: 12 AUG.2020 04:45:16



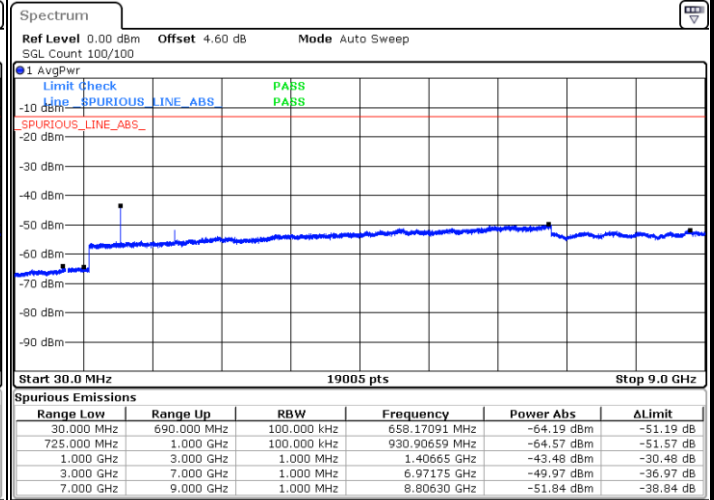
LTE Band 12 / 10MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

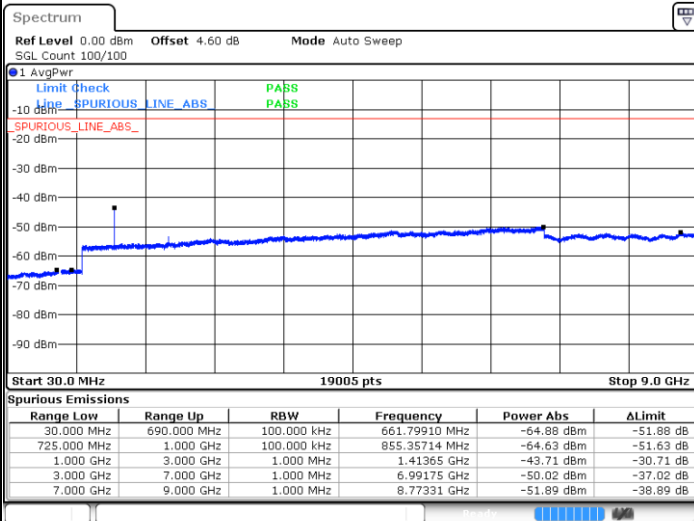


Date: 12 AUG.2020 04:46:11



Date: 12 AUG.2020 04:47:06

Highest Channel / 64QAM



Date: 12 AUG.2020 04:48:00



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	0.0025	PASS
40	Normal Voltage	0.0023	
30	Normal Voltage	0.0013	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0047	
-10	Normal Voltage	0.0033	
-20	Normal Voltage	0.0009	
-30	Normal Voltage	0.0022	
20	Maximum Voltage	0.0031	
20	Normal Voltage	0.0025	
20	Battery End Point	0.0004	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.





# LTE Band 13

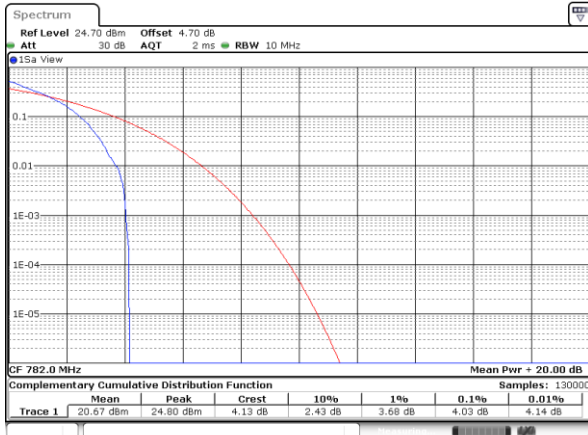
## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	<b>PASS</b>
Middle CH	4.03	5.33	5.04	6.29	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	<b>PASS</b>
Middle CH	4.46	6.75	-	-	
Highest CH	-	-	-	-	



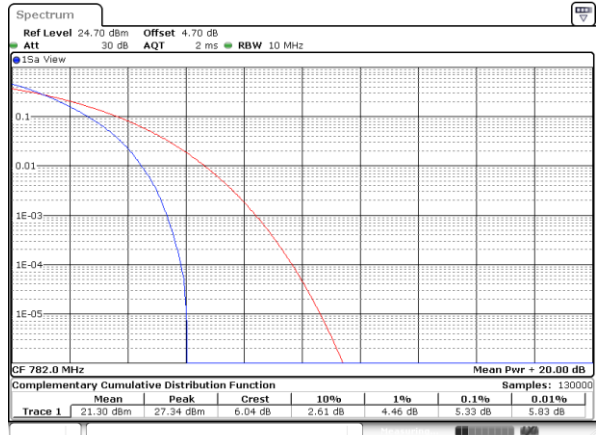
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 13 AUG 2020 10:37:25

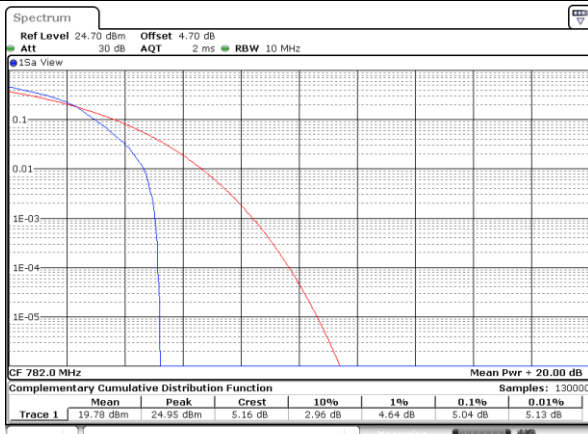
Middle Channel / Full RB



Date: 13 AUG 2020 10:37:44

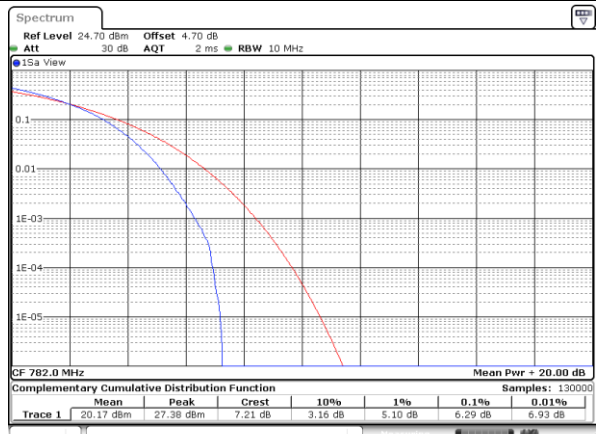
LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 13 AUG 2020 10:39:53

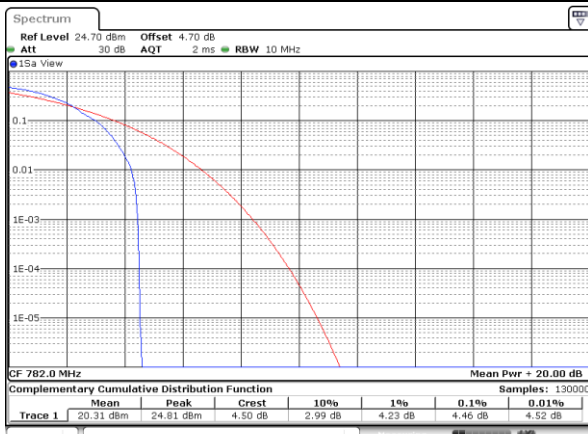
Middle Channel / Full RB



Date: 13 AUG 2020 10:38:01

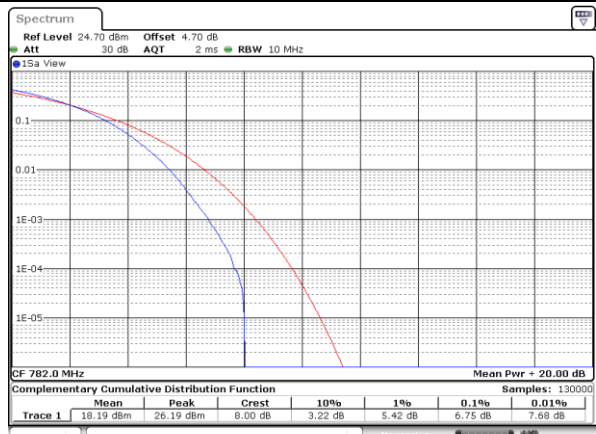
LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 13 AUG 2020 10:36:39

Middle Channel / Full RB



Date: 13 AUG 2020 10:38:22



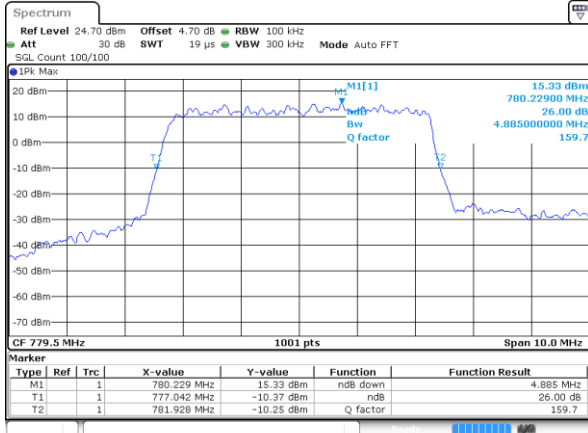
**26dB Bandwidth**

Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.89	4.96	-	-	-	-	-	-
Middle CH	-	-	-	-	5.00	4.93	9.81	9.77	-	-	-	-
Highest CH	-	-	-	-	4.92	4.87	-	-	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.86	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.94	-	9.69	-	-	-	-	-
Highest CH	-	-	-	-	4.92	-	-	-	-	-	-	-



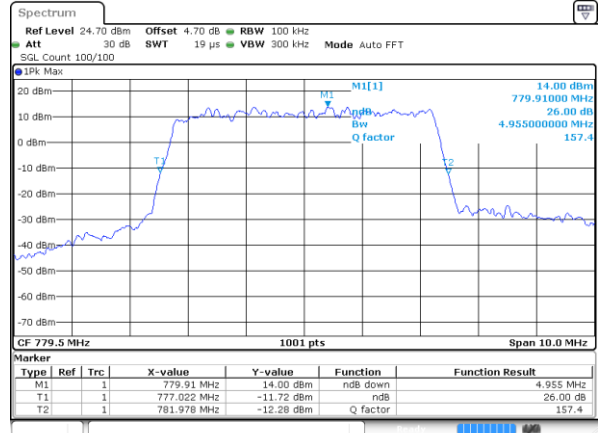
LTE Band 13

Lowest Channel / 5MHz / QPSK



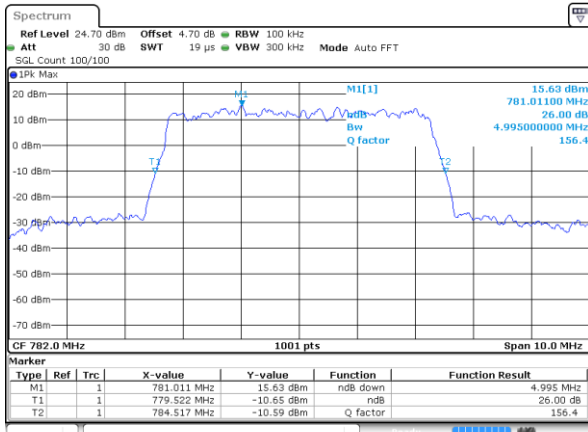
Date: 13 AUG 2020 09:50:07

Lowest Channel / 5MHz / 16QAM



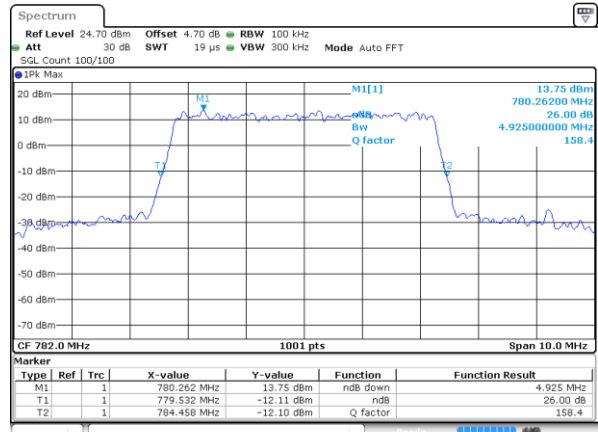
Date: 13 AUG 2020 09:51:39

Middle Channel / 5MHz / QPSK



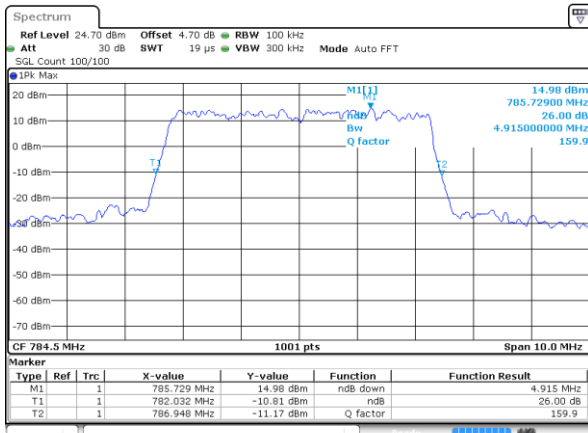
Date: 13 AUG 2020 10:11:17

Middle Channel / 5MHz / 16QAM



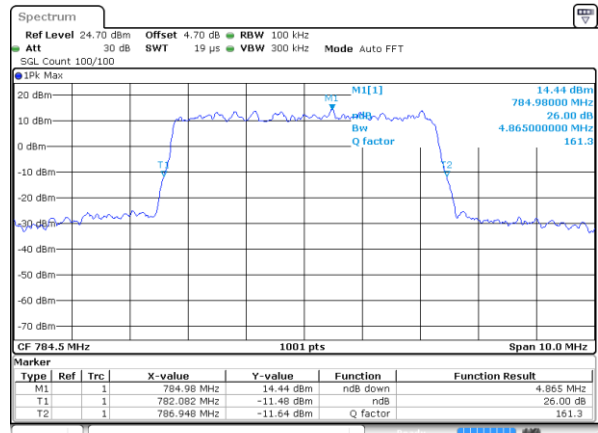
Date: 13 AUG 2020 10:08:51

Highest Channel / 5MHz / QPSK



Date: 13 AUG 2020 10:12:52

Highest Channel / 5MHz / 16QAM

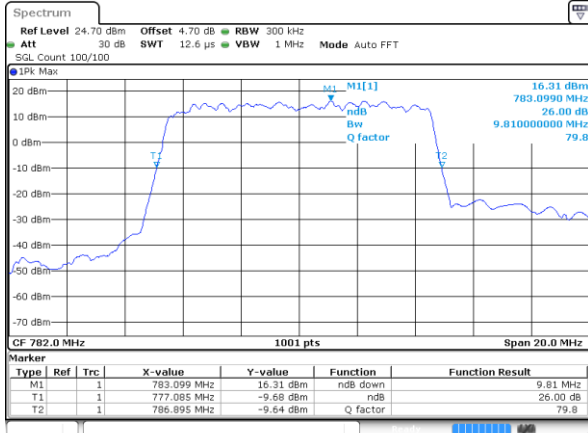


Date: 13 AUG 2020 10:14:24



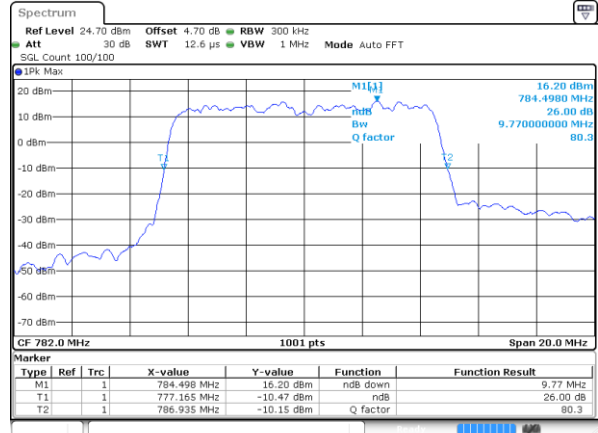
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 13 AUG 2020 10:28:38

Middle Channel / 10MHz / 16QAM

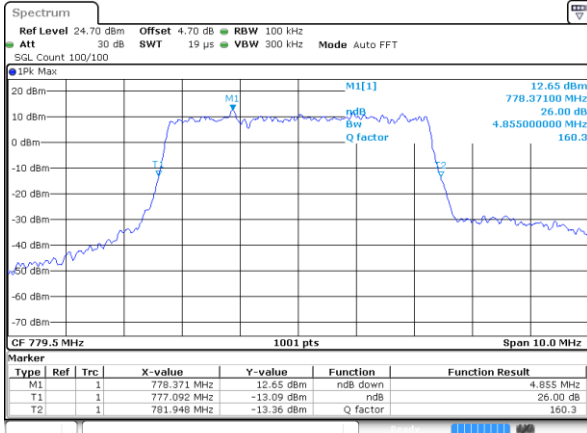


Date: 13 AUG 2020 10:27:51



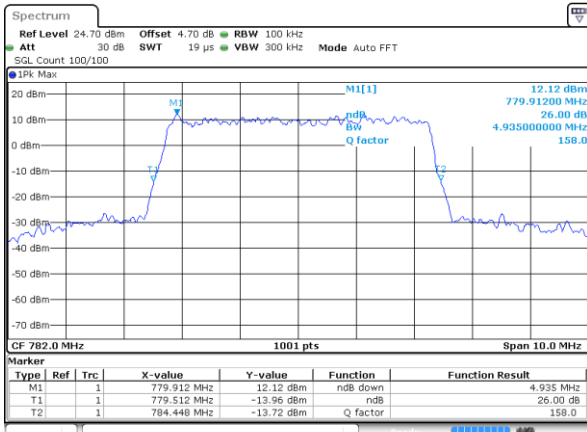
LTE Band 13

Lowest Channel / 5MHz / 64QAM



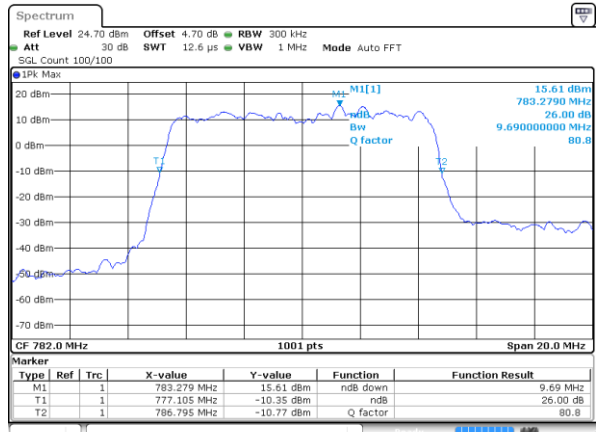
Date: 13 AUG 2020 09:53:16

Middle Channel / 5MHz / 64QAM



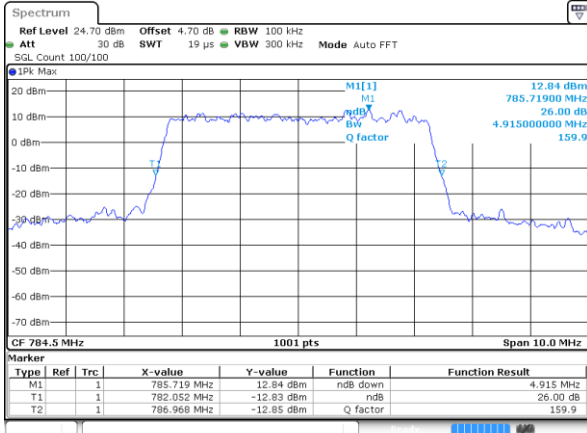
Date: 13 AUG 2020 10:08:22

Middle Channel / 10MHz / 64QAM



Date: 13 AUG 2020 10:27:11

Highest Channel / 5MHz / 64QAM



Date: 13 AUG 2020 10:16:05



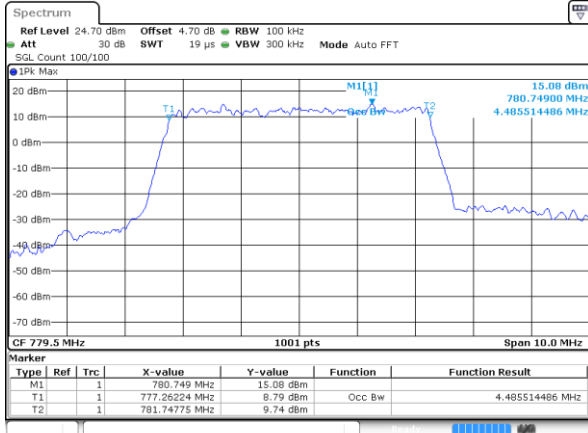
Occupied Bandwidth

Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.49	4.49	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	4.50	8.99	9.05	-	-	-	-
Highest CH	-	-	-	-	4.49	4.48	-	-	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.47	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.52	-	8.99	-	-	-	-	-
Highest CH	-	-	-	-	4.51	-	-	-	-	-	-	-



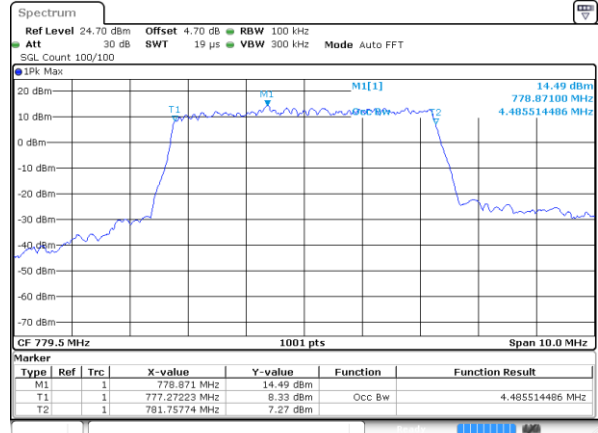
LTE Band 13

Lowest Channel / 5MHz / QPSK



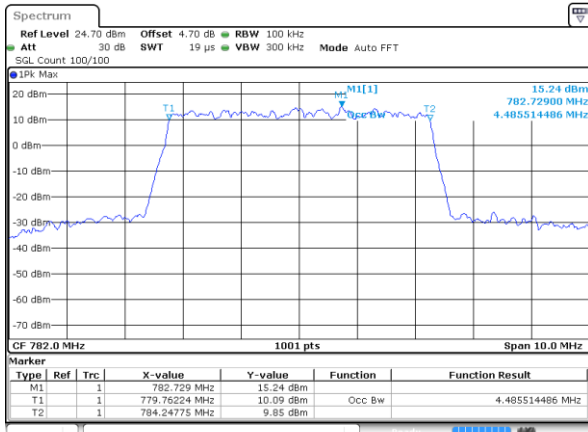
Date: 13 AUG 2020 09:50:00

Lowest Channel / 5MHz / 16QAM



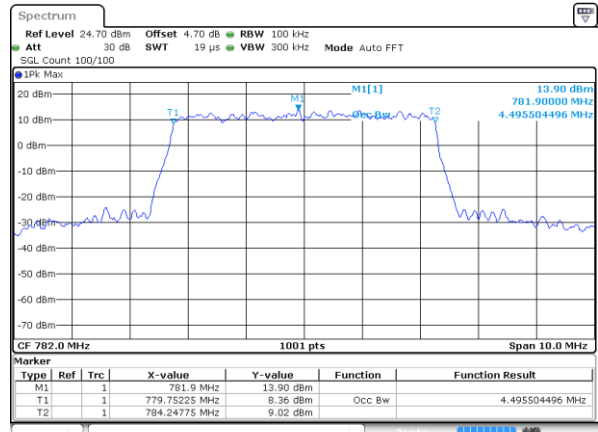
Date: 13 AUG 2020 09:51:32

Middle Channel / 5MHz / QPSK



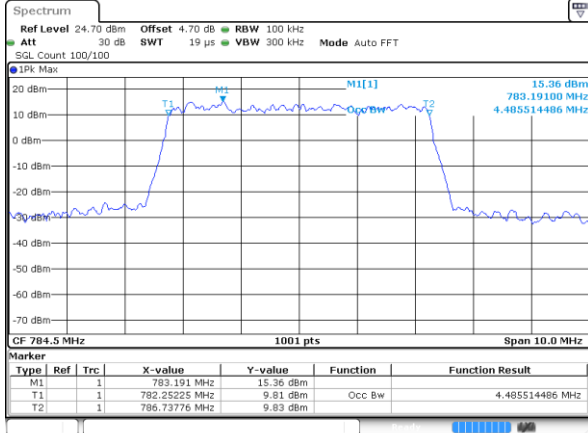
Date: 13 AUG 2020 10:09:47

Middle Channel / 5MHz / 16QAM



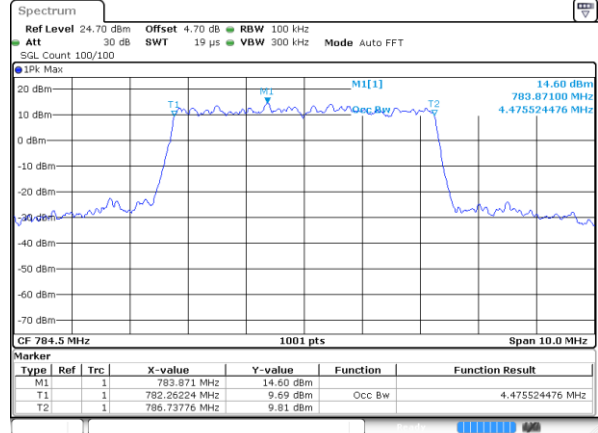
Date: 13 AUG 2020 10:08:44

Highest Channel / 5MHz / QPSK



Date: 13 AUG 2020 10:12:42

Highest Channel / 5MHz / 16QAM



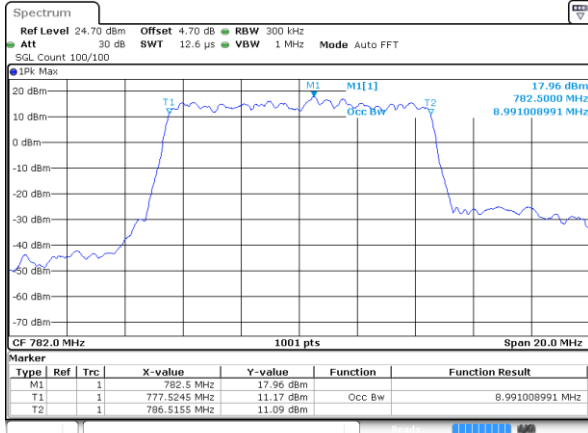
Date: 13 AUG 2020 10:14:13





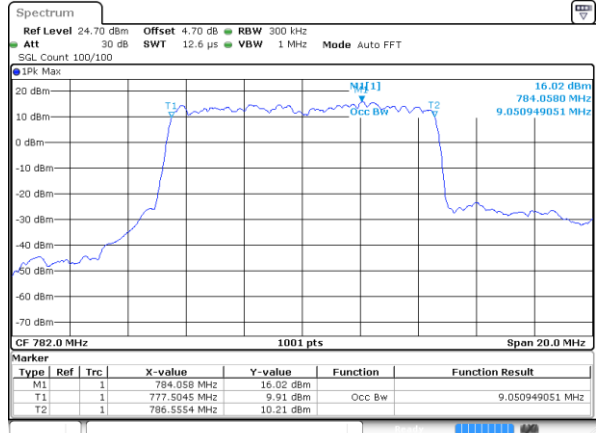
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 13 AUG 2020 10:28:20

Middle Channel / 10MHz / 16QAM

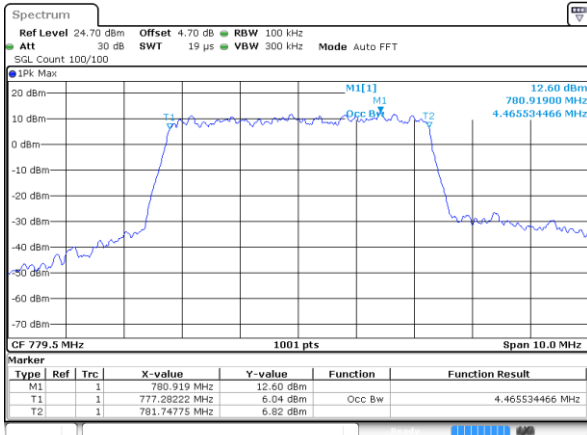


Date: 13 AUG 2020 10:27:43



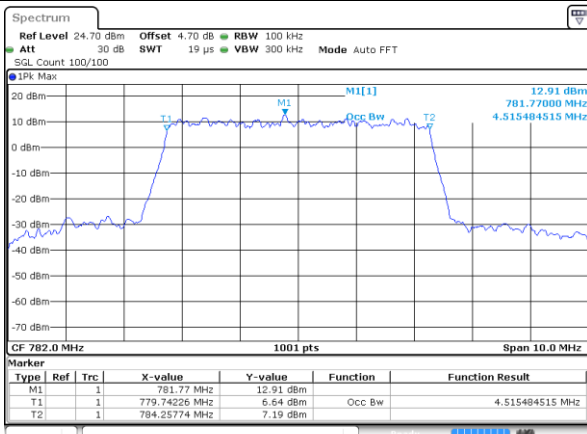
LTE Band 13

Lowest Channel / 5MHz / 64QAM



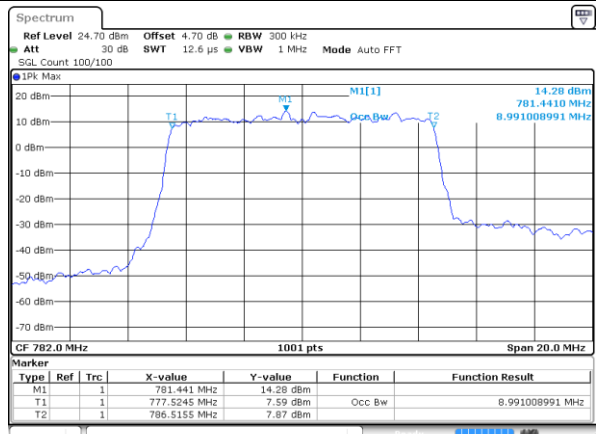
Date: 13 AUG 2020 09:53:09

Middle Channel / 5MHz / 64QAM



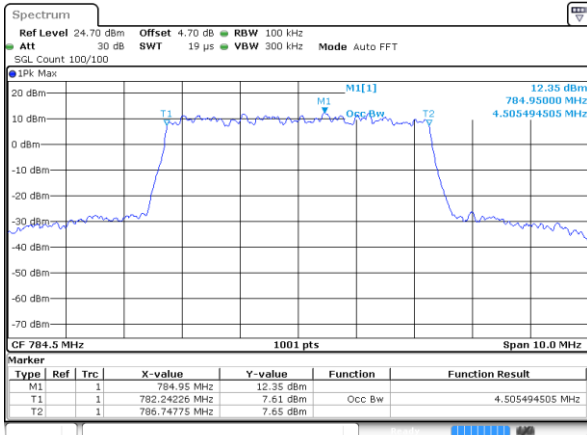
Date: 13 AUG 2020 10:08:15

Middle Channel / 10MHz / 64QAM



Date: 13 AUG 2020 10:26:14

Highest Channel / 5MHz / 64QAM



Date: 13 AUG 2020 10:15:58

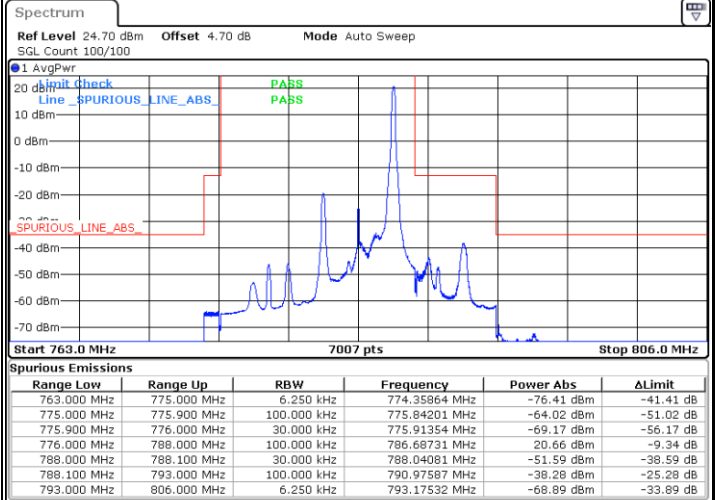
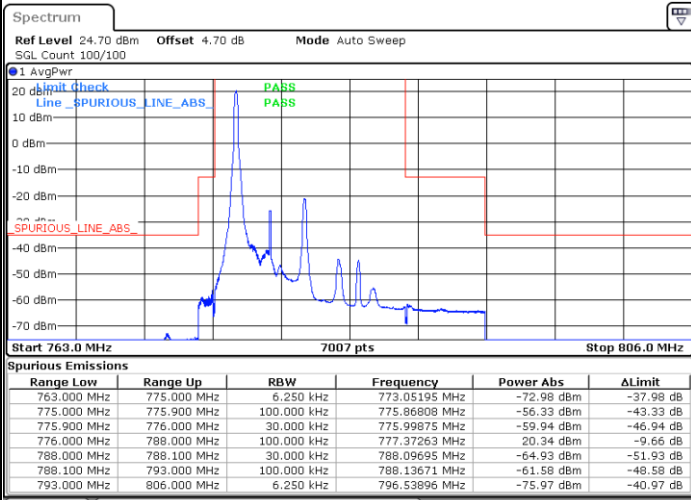


# Conducted Band Edge

## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB

### Highest Band Edge / 1 RBMAX

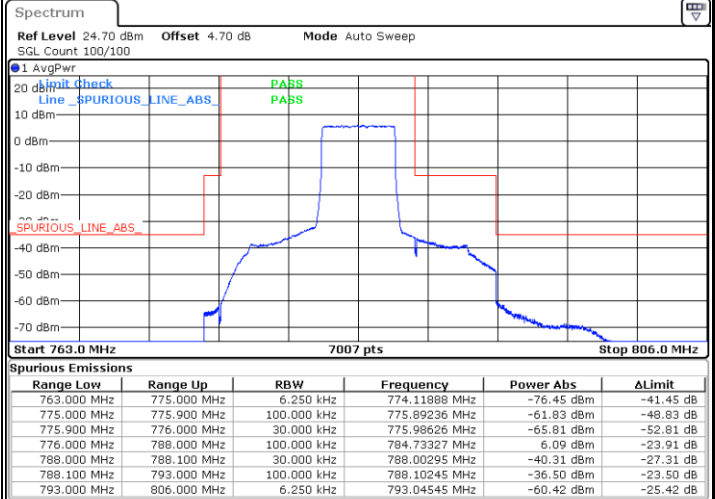
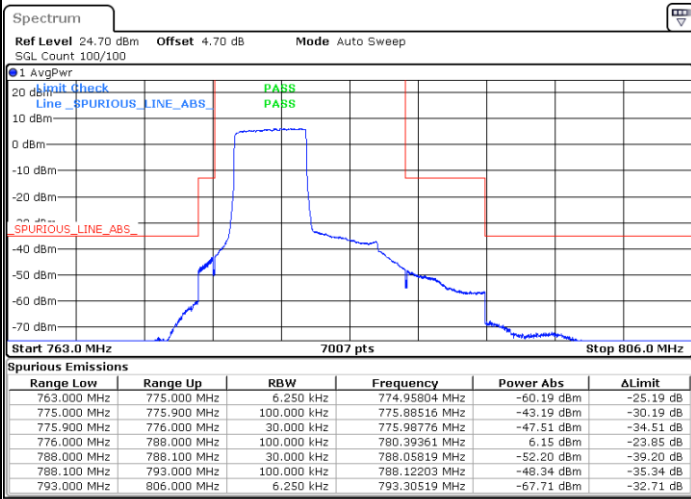


Date: 13.AUG.2020 10:04:49

Date: 13.AUG.2020 10:20:39

### Lowest Band Edge / Full RB

### Highest Band Edge / Full RB



Date: 13.AUG.2020 09:51:10

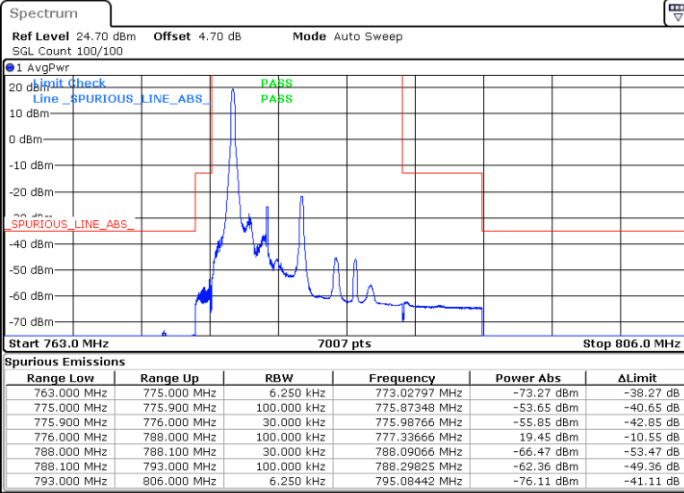
Date: 13.AUG.2020 10:14:00



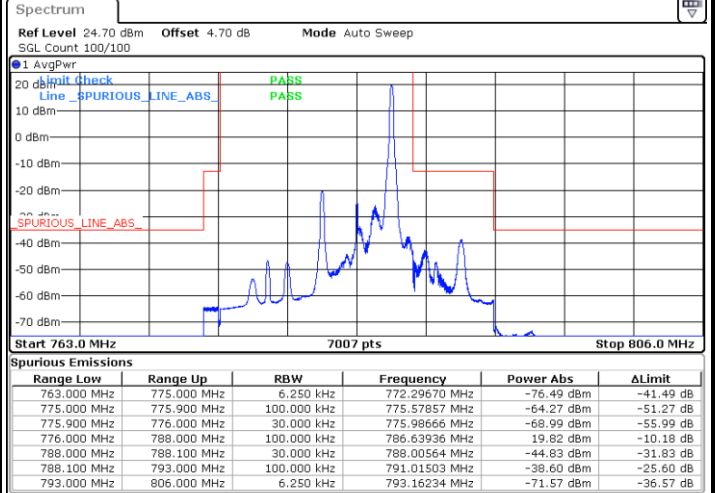
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



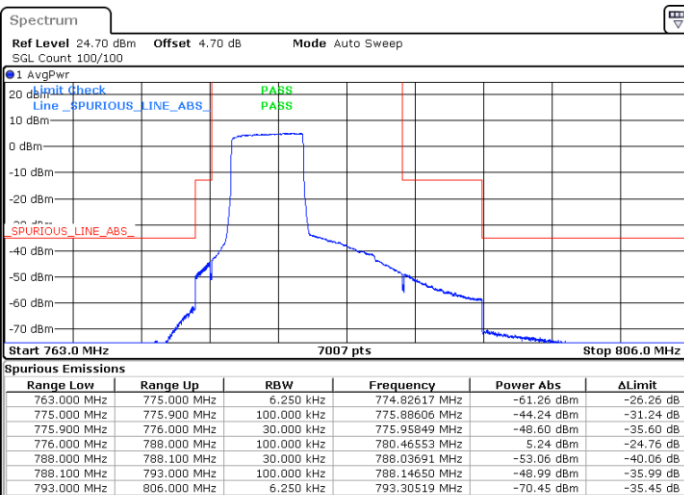
Date: 13 AUG 2020 10:03:36



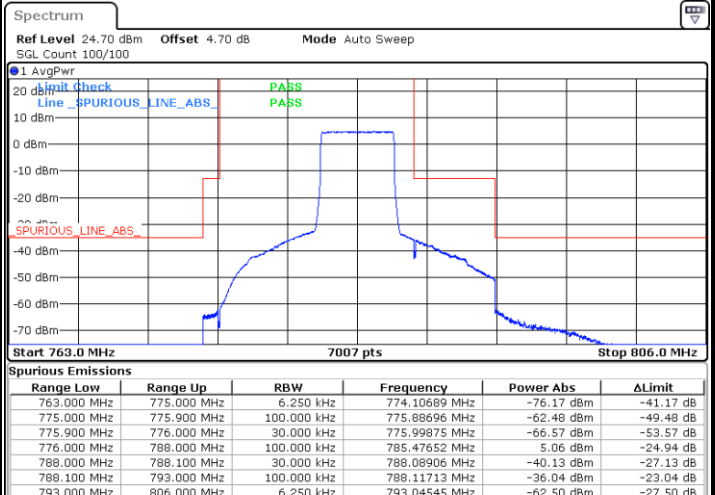
Date: 13 AUG 2020 10:22:58

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 13 AUG 2020 09:52:53

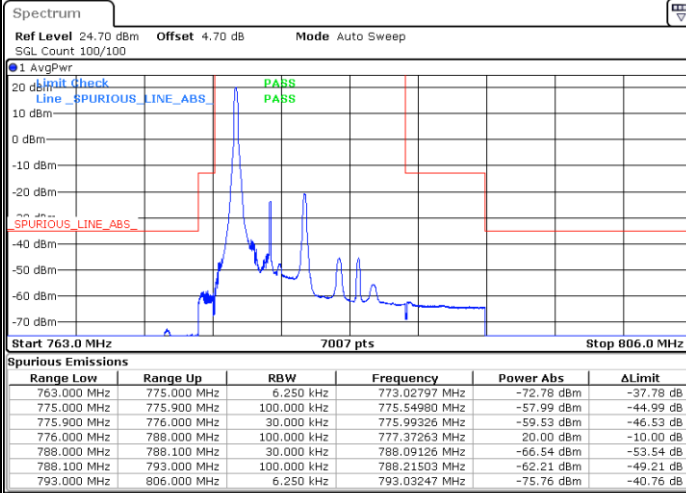


Date: 13 AUG 2020 10:15:40



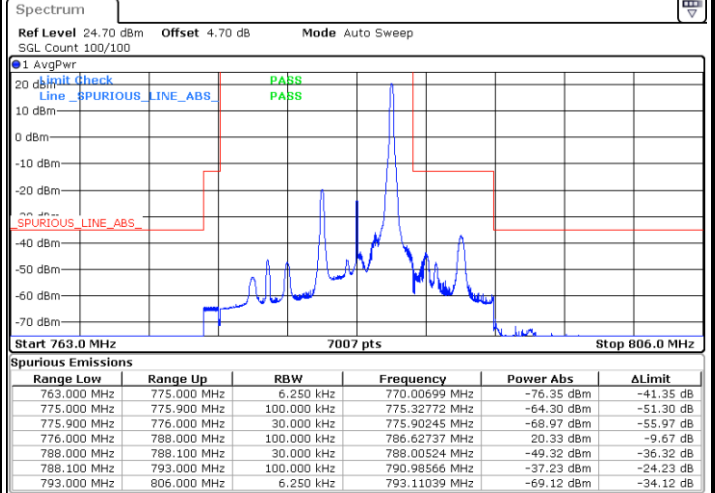
LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB



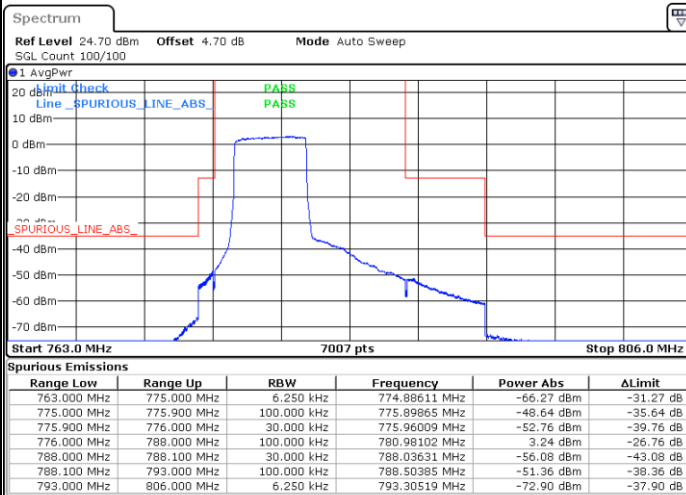
Date: 13 AUG 2020 09:55:39

Highest Band Edge / 1 RB



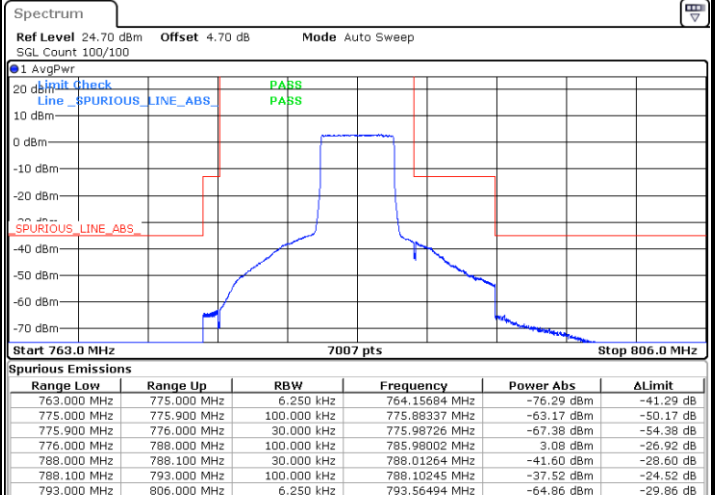
Date: 13 AUG 2020 10:24:45

Lowest Band Edge / Full RB



Date: 13 AUG 2020 09:54:27

Highest Band Edge / Full RB



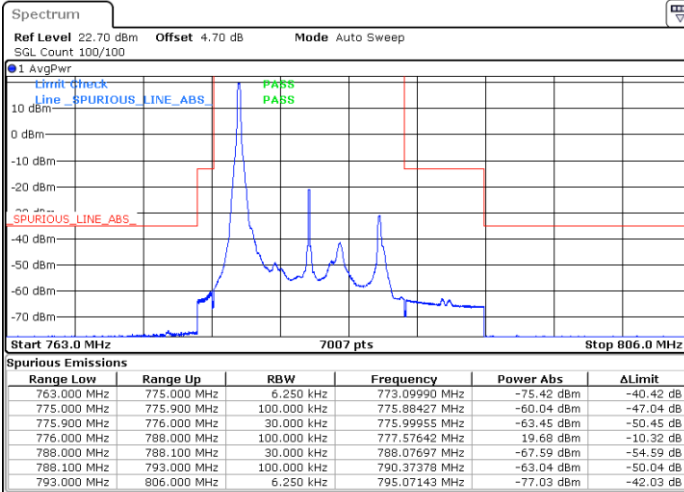
Date: 13 AUG 2020 10:17:07



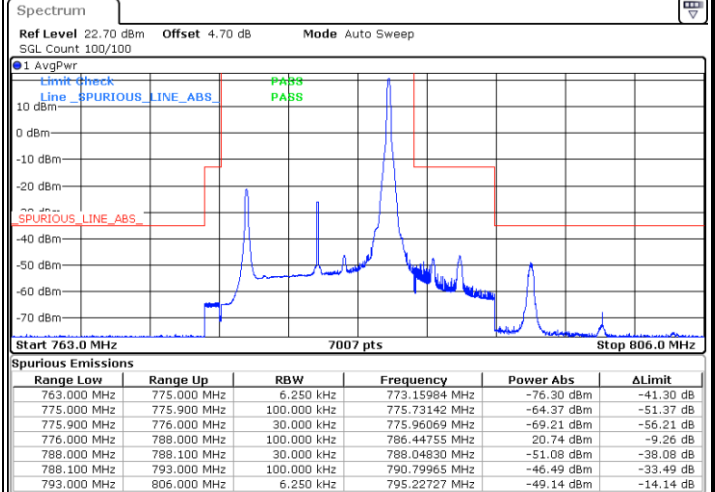
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

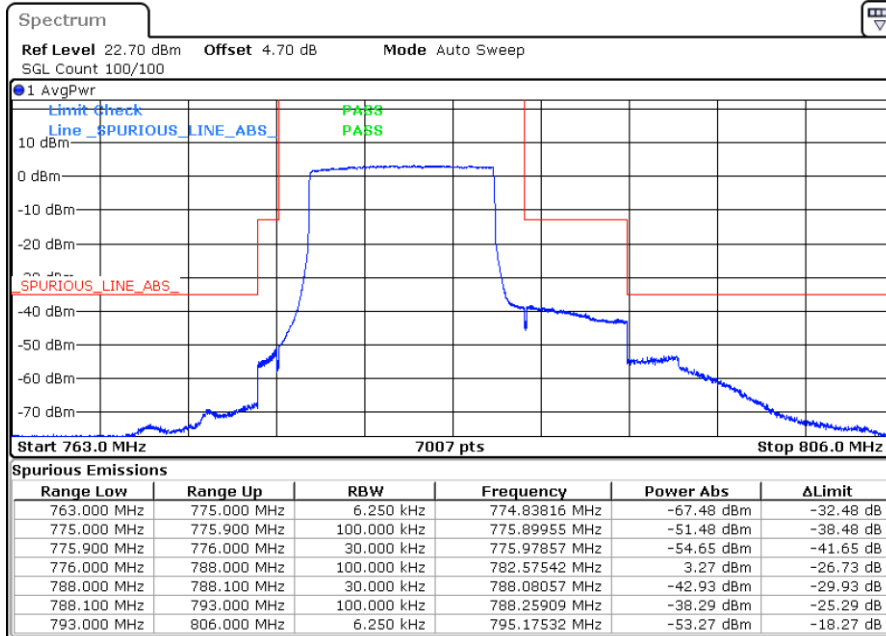


Date: 13.AUG.2020 10:47:02



Date: 13.AUG.2020 10:43:02

Band Edge / Full RB



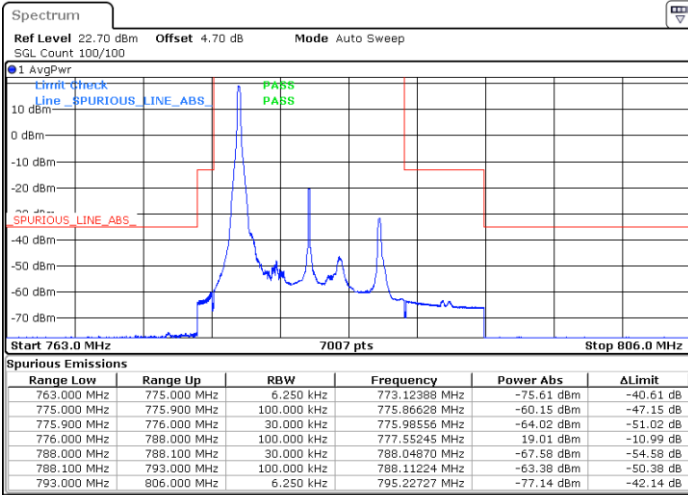
Date: 13.AUG.2020 10:31:12



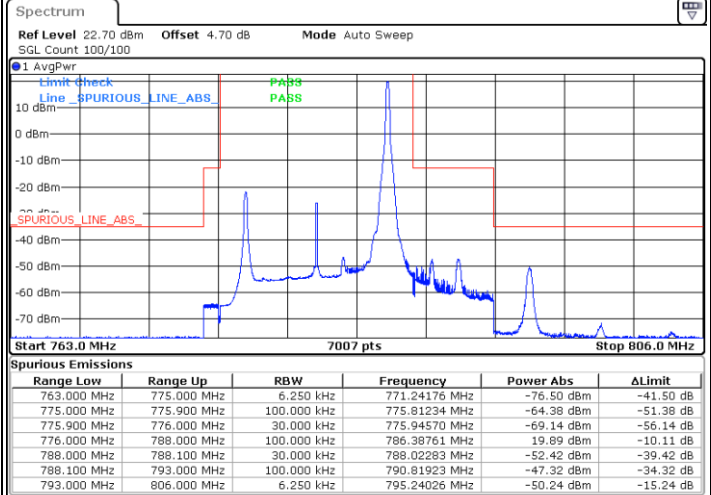
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

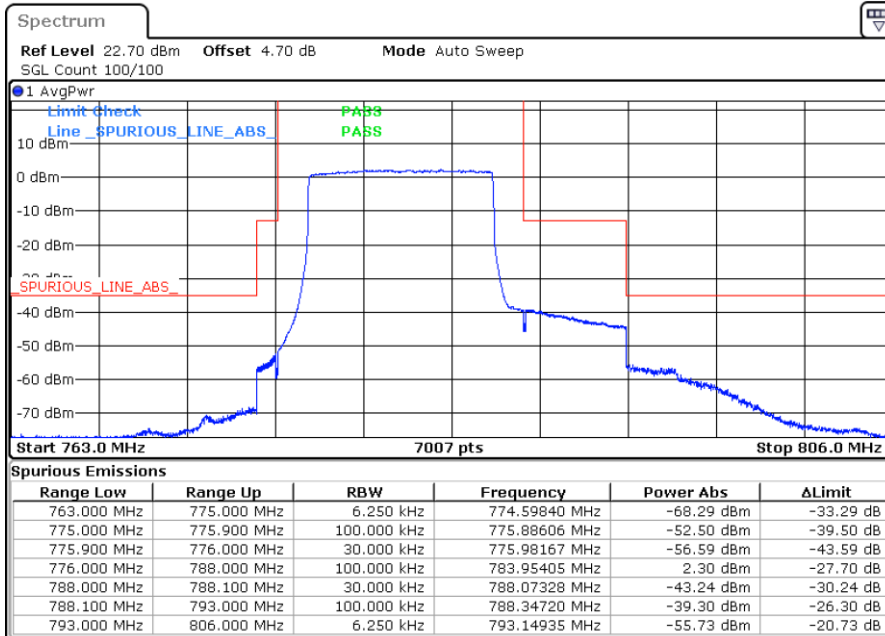


Date: 13.AUG.2020 10:48:02



Date: 13.AUG.2020 10:44:11

Band Edge / Full RB



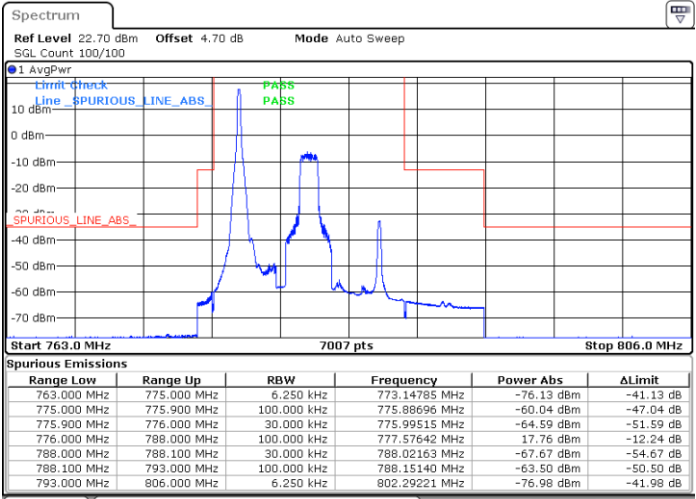
Date: 13.AUG.2020 10:33:24



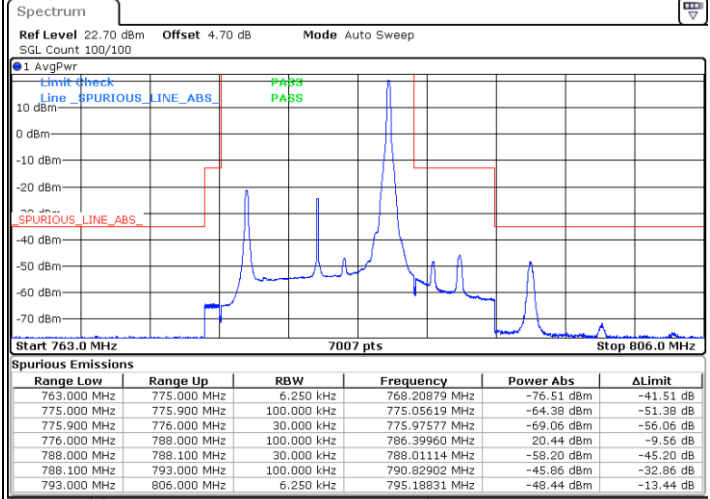
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

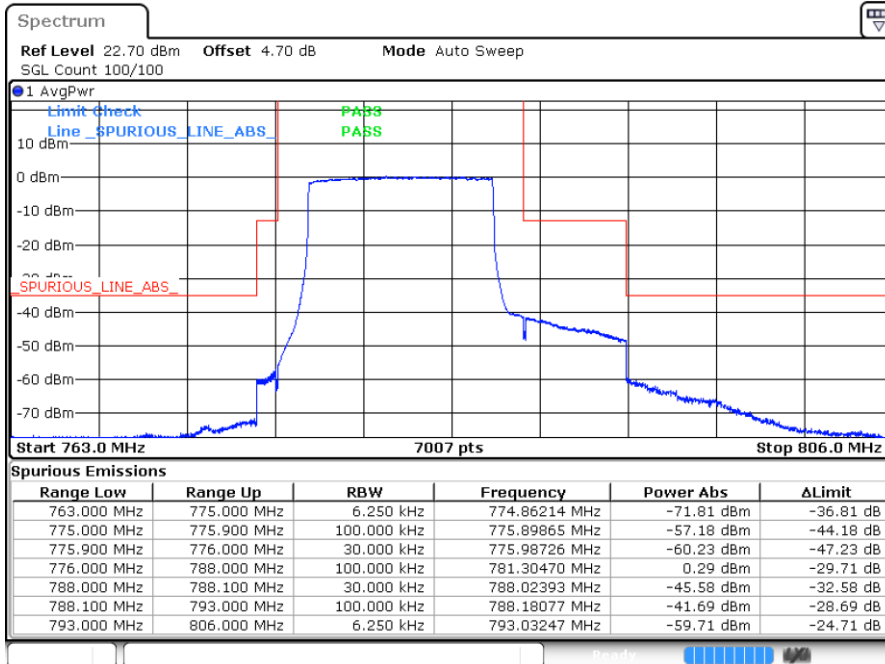


Date: 13.AUG.2020 10:49:02



Date: 13.AUG.2020 10:45:28

Band Edge / Full RB

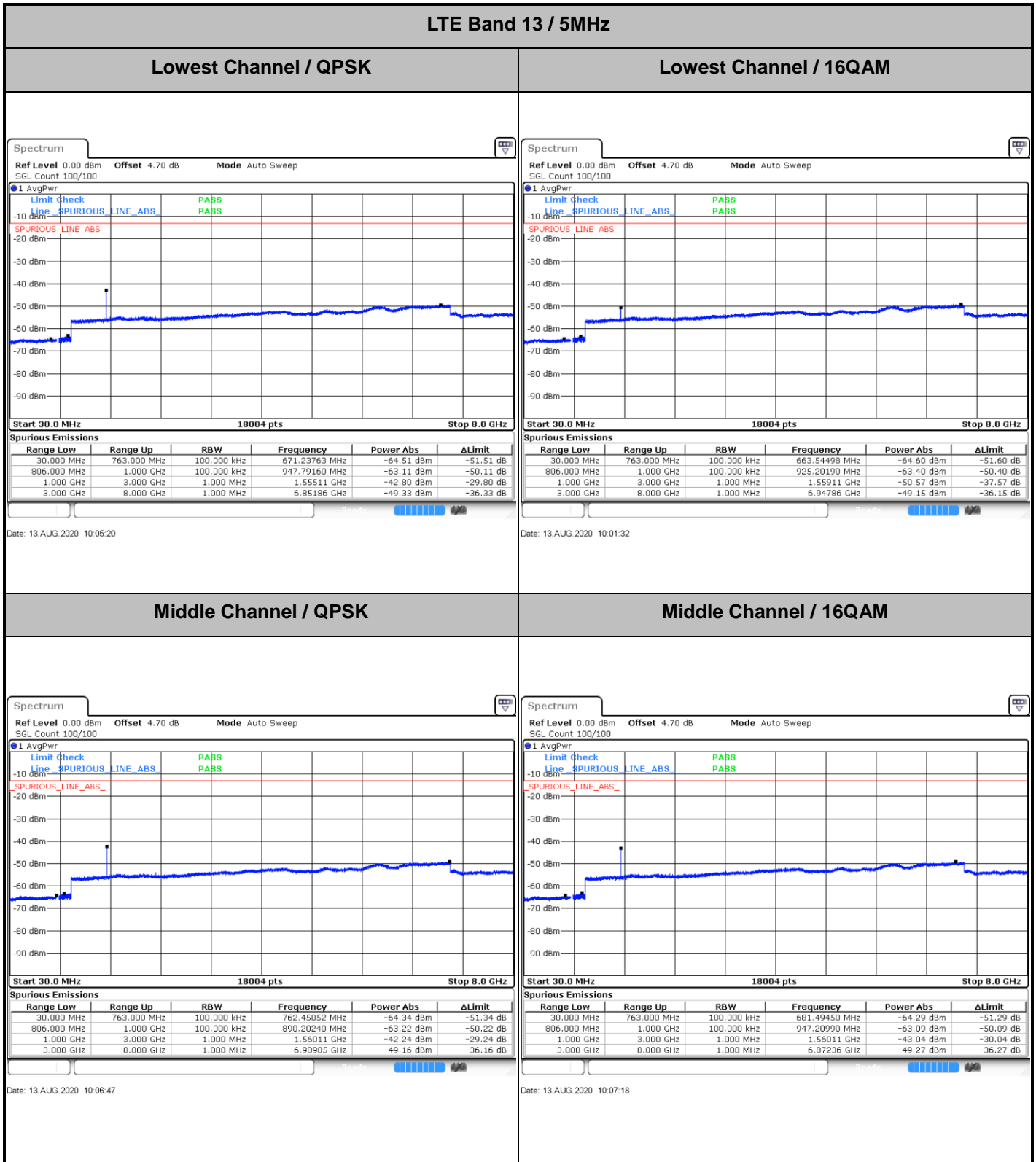


Date: 13.AUG.2020 10:34:36





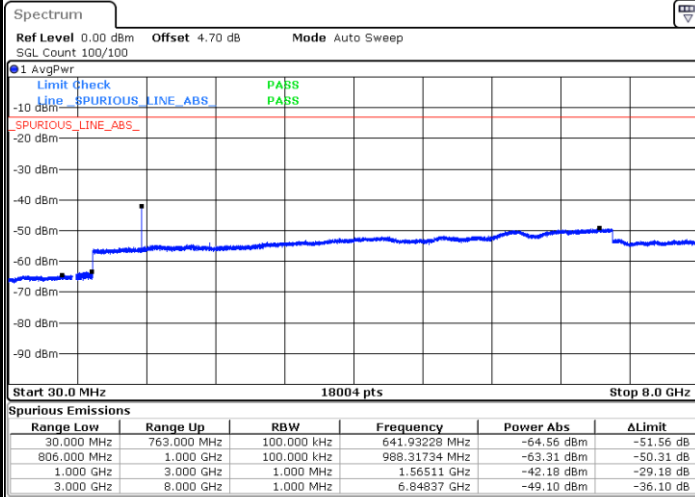
# Conducted Spurious Emission





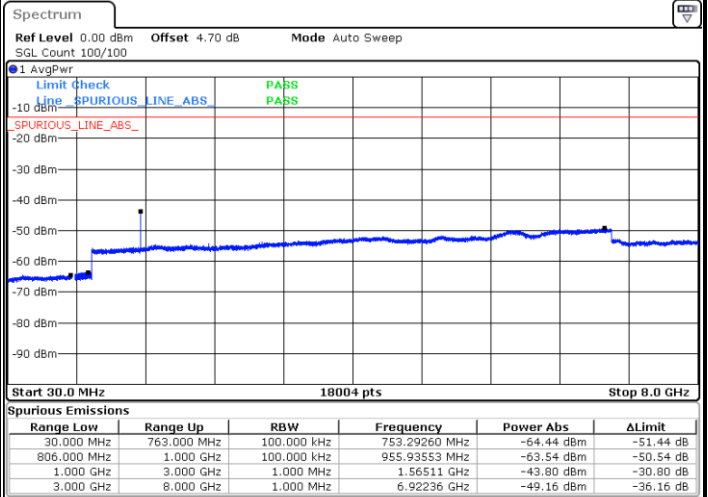
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 13 AUG 2020 10:19:12

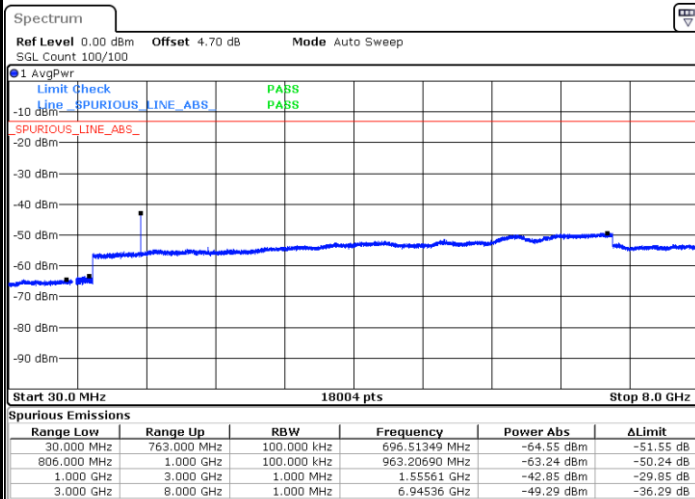
Highest Channel / 16QAM



Date: 13.AUG 2020 10:18:18

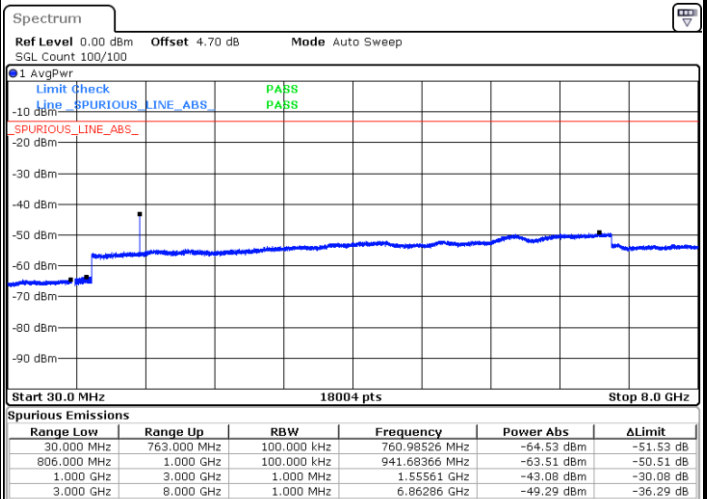
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 13 AUG 2020 10:41:06

Middle Channel / 16QAM



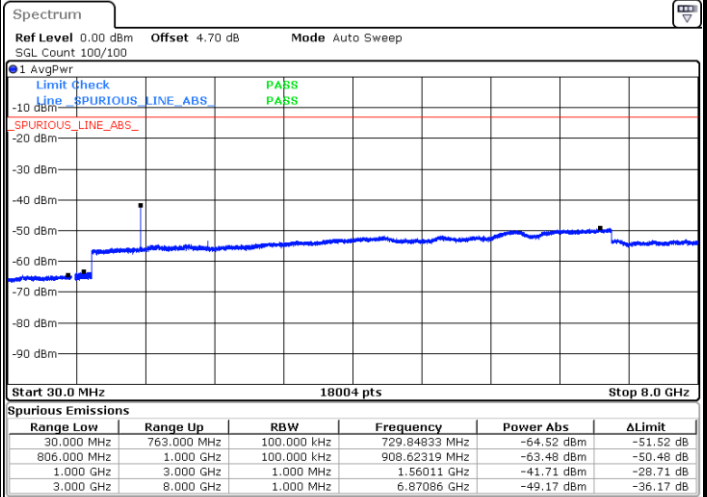
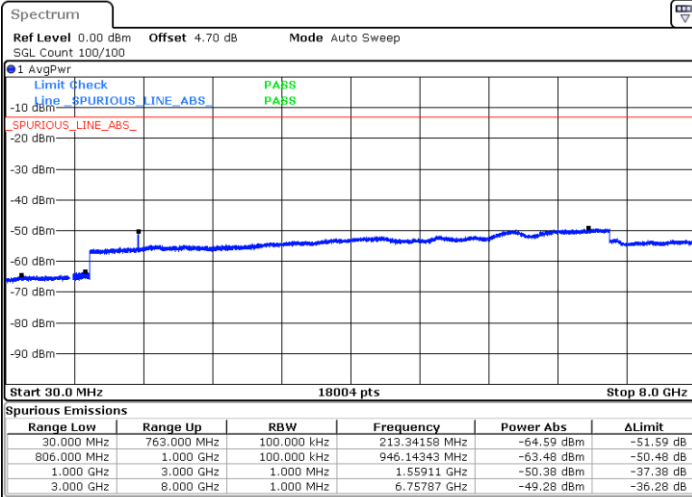
Date: 13.AUG 2020 10:40:32



LTE Band 13 / 5MHz

Lowest Channel / 64QAM

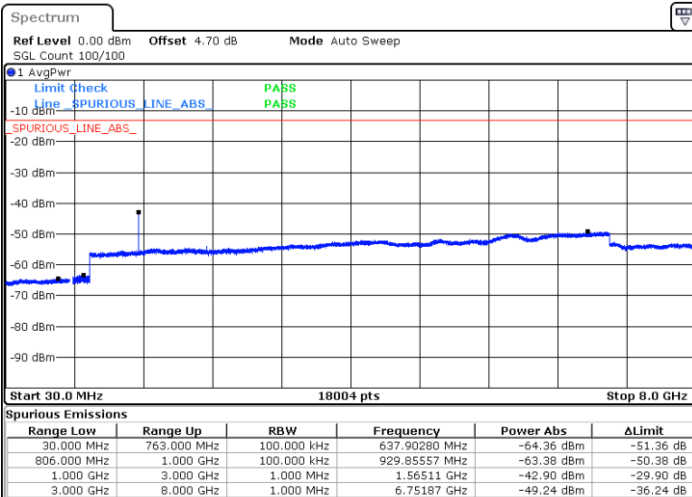
Middle Channel / 64QAM



Date: 13.AUG.2020 09:59:00

Date: 13.AUG.2020 10:07:55

Highest Channel / 64QAM

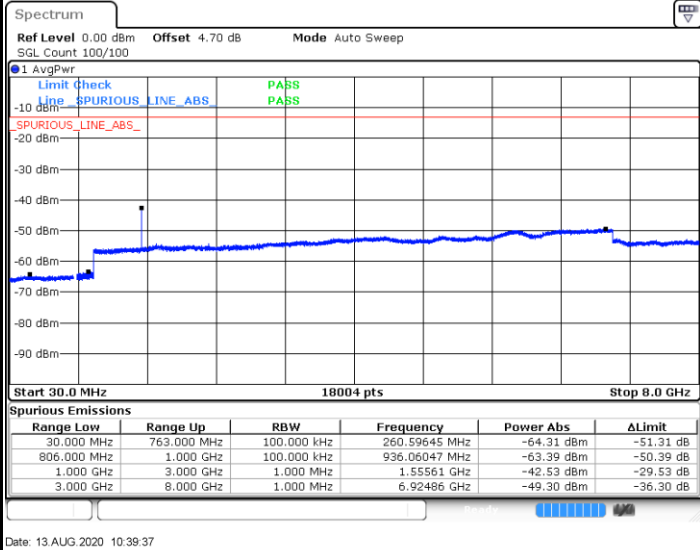


Date: 13.AUG.2020 10:17:47



LTE Band 13 / 10MHz

Middle Channel / 64QAM





### Frequency Stability

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0020	PASS
40	Normal Voltage	0.0013	
30	Normal Voltage	0.0003	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0022	
0	Normal Voltage	0.0007	
-10	Normal Voltage	0.0003	
-20	Normal Voltage	0.0008	
-30	Normal Voltage	0.0013	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0020	
20	Battery End Point	0.0014	

**Note:**

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 38

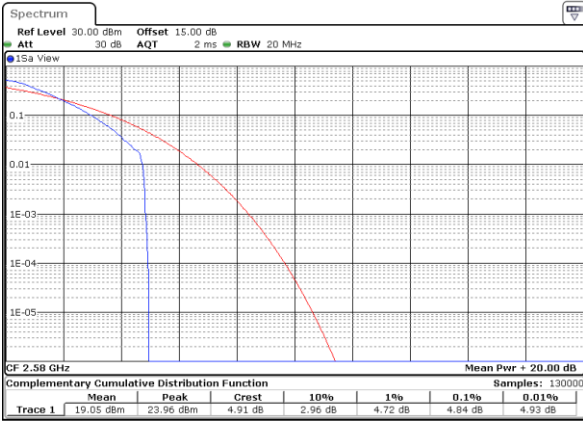
## Peak-to-Average Ratio

Mode	LTE Band 38 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.84	5.22	5.16	6.17	<b>PASS</b>
Middle CH	4.52	5.94	5.19	5.86	
Highest CH	5.04	5.28	5.77	6.46	
Mode	LTE Band 38 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.26	5.88	-	-	<b>PASS</b>
Middle CH	5.80	5.77	-	-	
Highest CH	5.36	6.12	-	-	



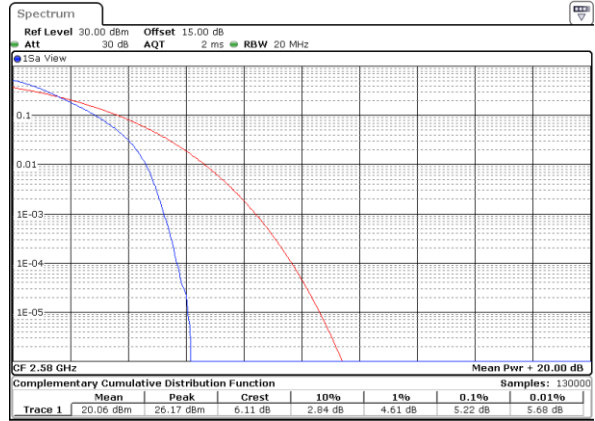
LTE Band 38 / 20MHz / QPSK

Lowest Channel / 1RB



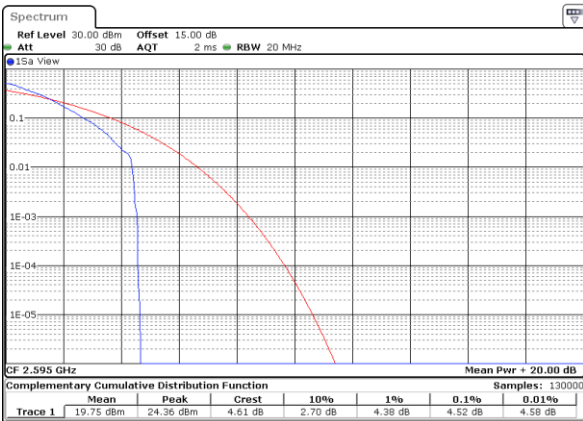
Date: 18\_AUG.2020 23:33:53

Lowest Channel / Full RB



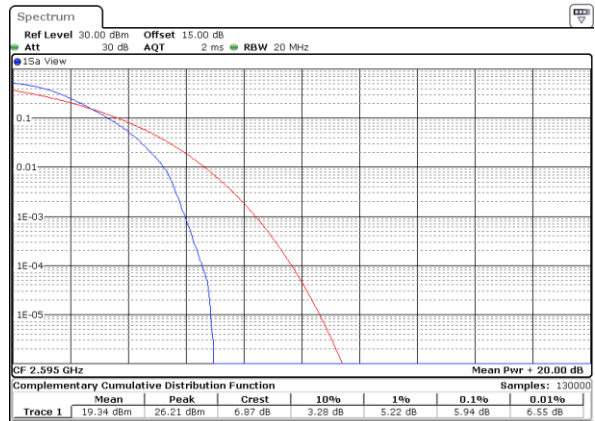
Date: 18\_AUG.2020 23:34:04

Middle Channel / 1RB



Date: 18\_AUG.2020 23:34:22

Middle Channel / Full RB



Date: 18\_AUG.2020 23:34:38

Highest Channel / 1RB



Date: 18\_AUG.2020 23:34:49

Highest Channel / Full RB

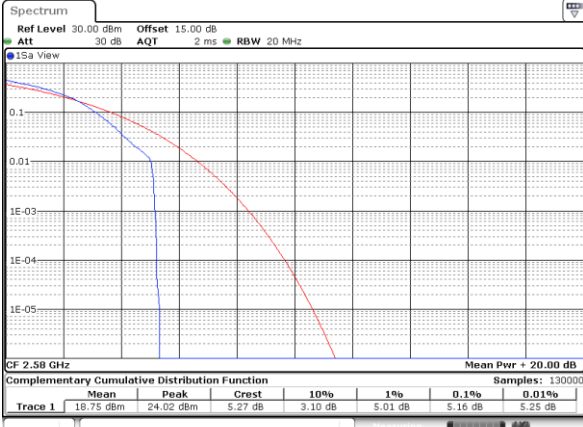


Date: 18\_AUG.2020 23:35:10



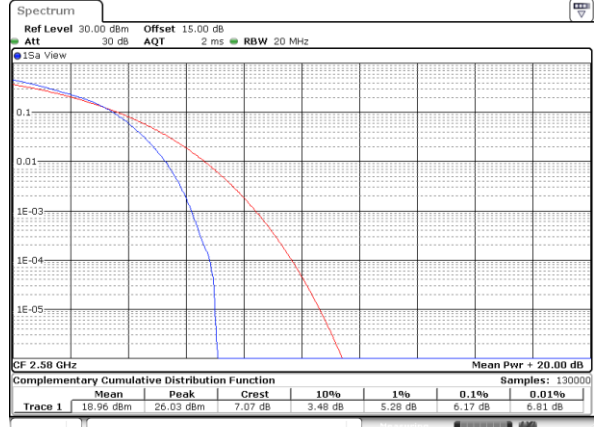
LTE Band 38 / 20MHz / 16QAM

Lowest Channel / 1RB



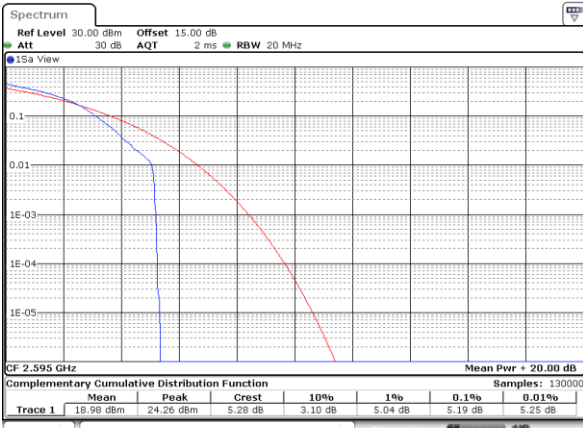
Date: 18\_AUG.2020 23:31:43

Lowest Channel / Full RB



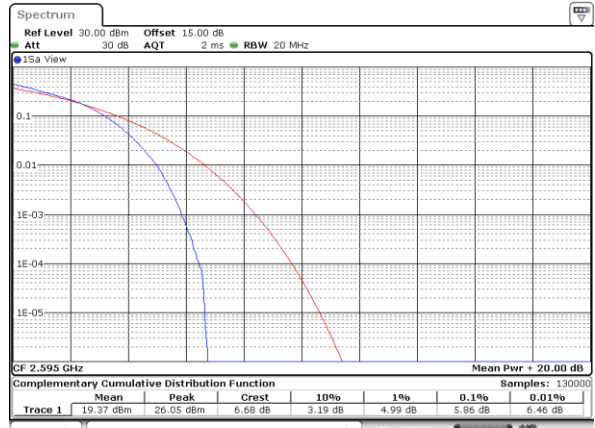
Date: 18\_AUG.2020 23:32:16

Middle Channel / 1RB



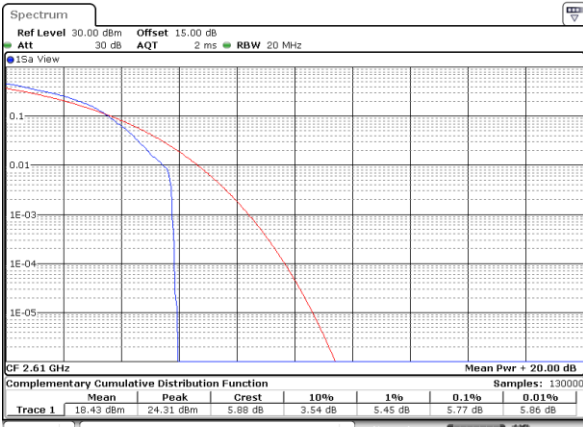
Date: 18\_AUG.2020 23:32:53

Middle Channel / Full RB



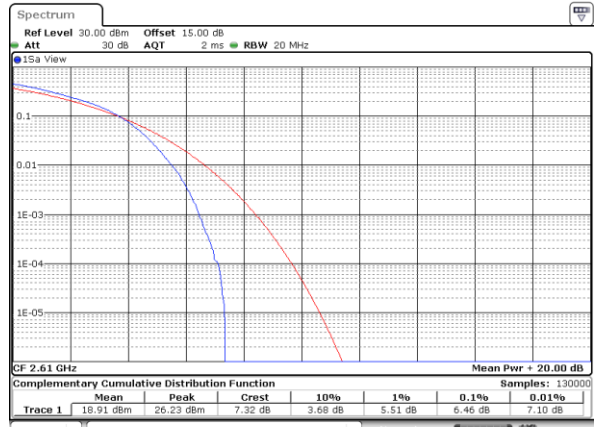
Date: 18\_AUG.2020 23:33:04

Highest Channel / 1RB



Date: 18\_AUG.2020 23:33:20

Highest Channel / Full RB



Date: 18\_AUG.2020 23:33:37