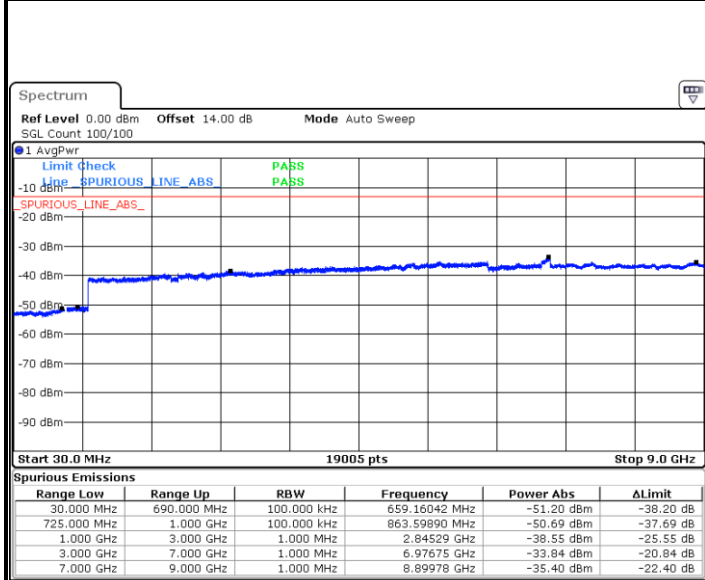




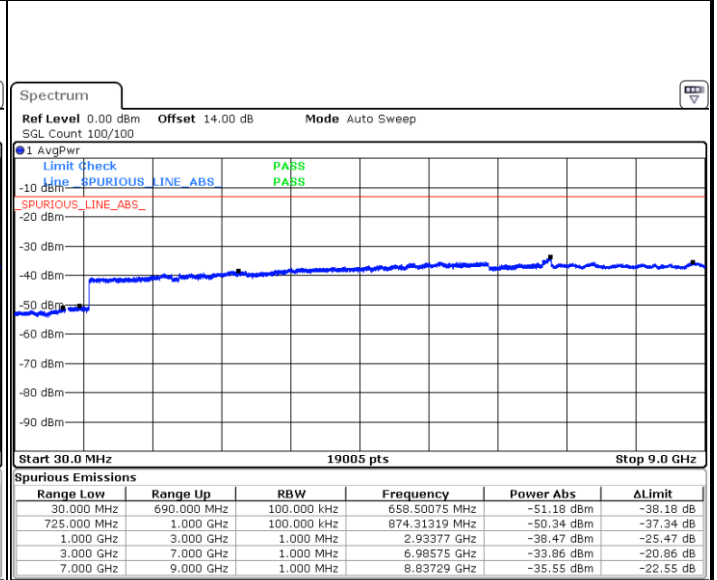
LTE Band 12 / 10MHz

Middle Channel / QPSK



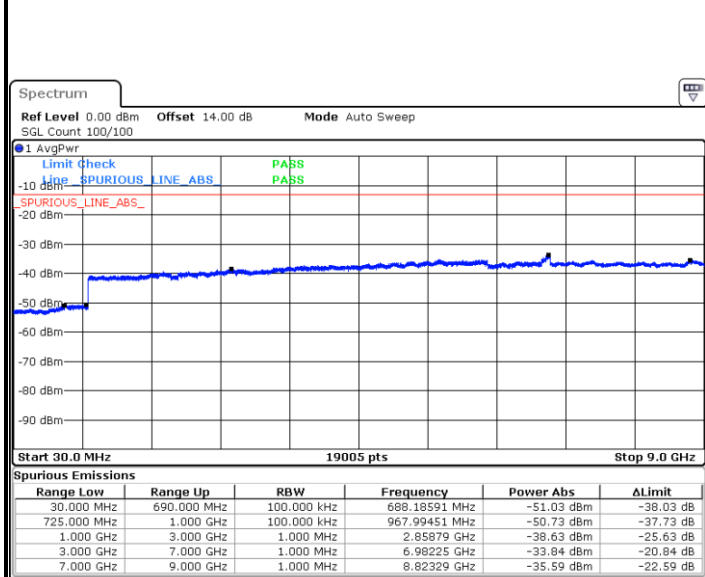
Date: 29.NOV.2019 20:27:02

Middle Channel / 16QAM



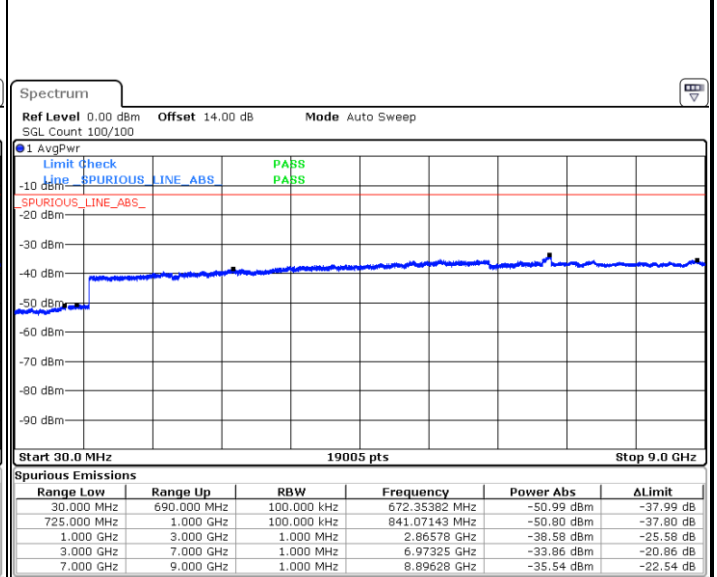
Date: 29.NOV.2019 20:26:21

Highest Channel / QPSK



Date: 29.NOV.2019 20:32:27

Highest Channel / 16QAM



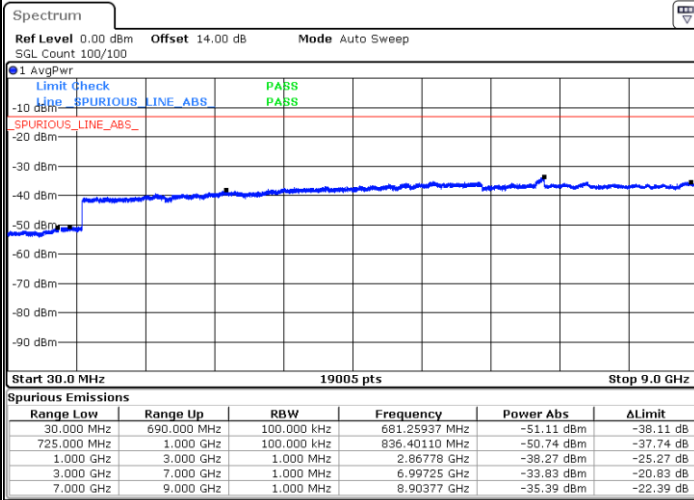
Date: 29.NOV.2019 20:33:08



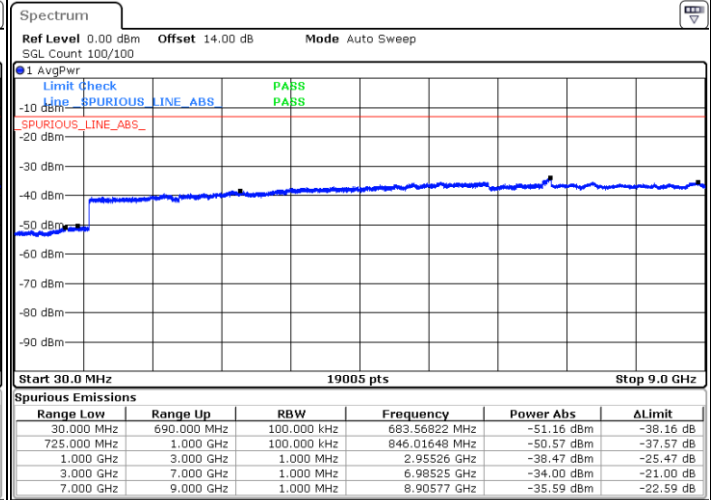
LTE Band 12 / 1.4MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

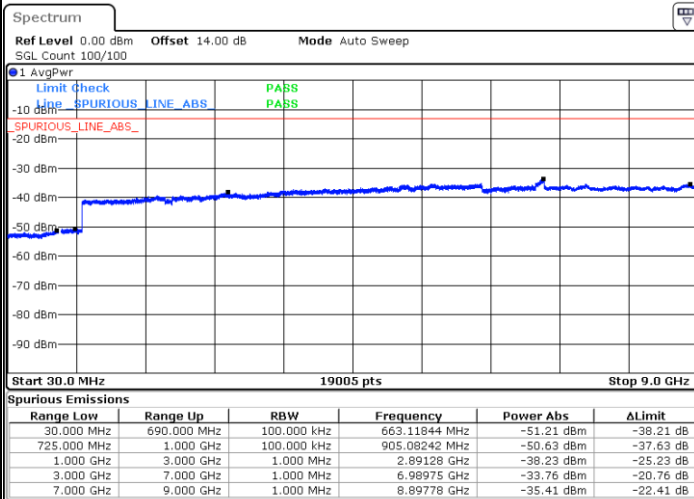


Date: 29.NOV.2019 21:01:48



Date: 29.NOV.2019 21:02:51

Highest Channel / 64QAM



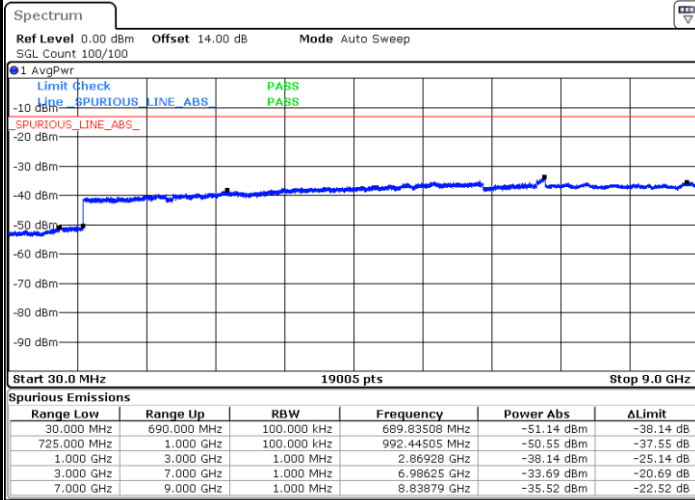
Date: 29.NOV.2019 21:05:55



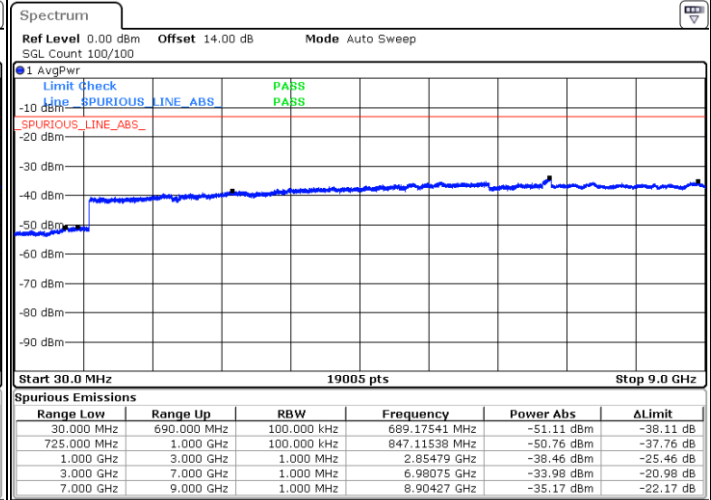
LTE Band 12 / 3MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

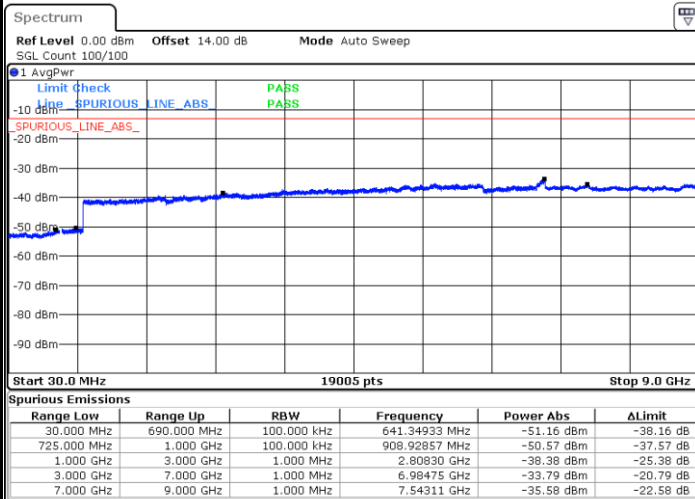


Date: 29.NOV.2019 19:53:07



Date: 29.NOV.2019 19:54:10

Highest Channel / 64QAM



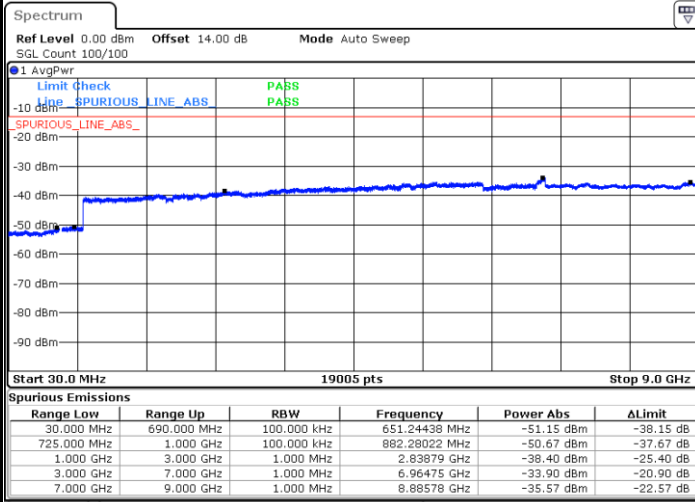
Date: 29.NOV.2019 19:57:14



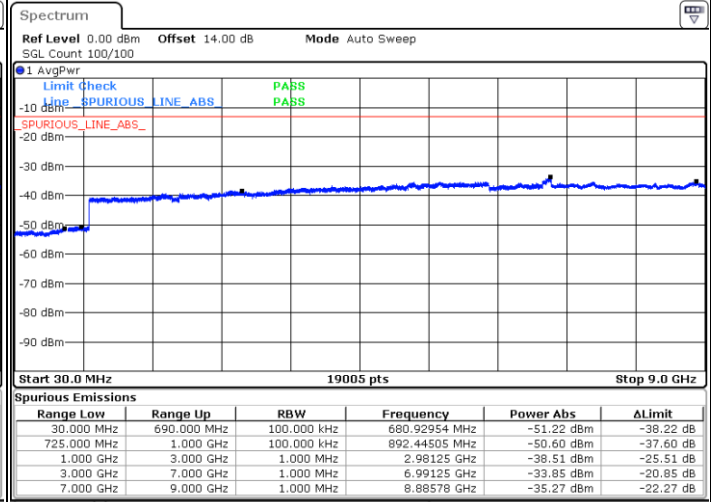
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

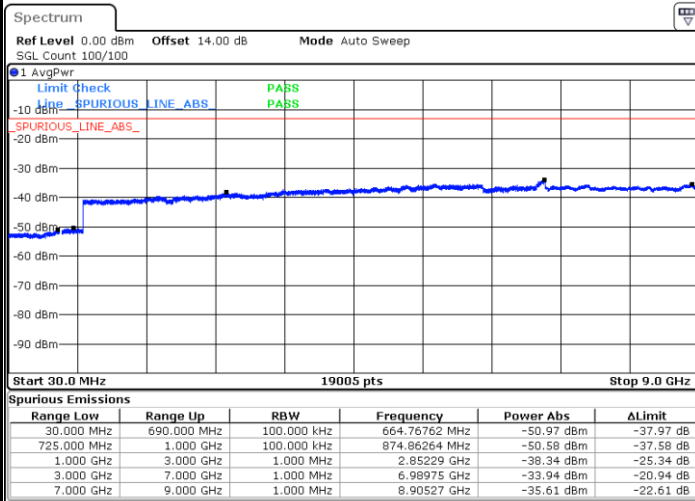


Date: 29.NOV.2019 20:00:18



Date: 29.NOV.2019 20:01:21

Highest Channel / 64QAM



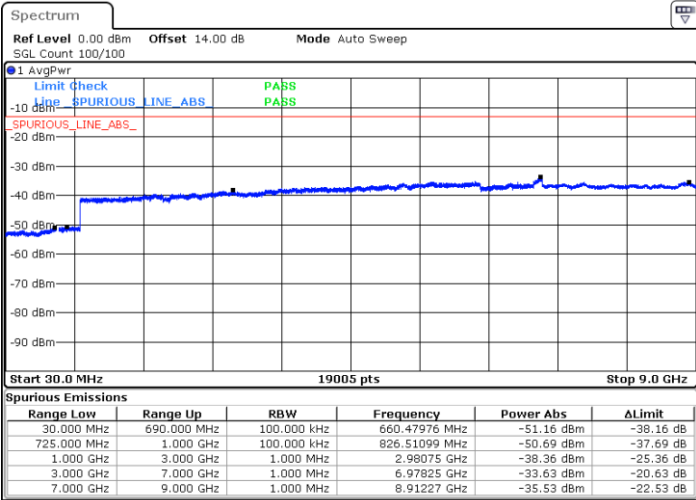
Date: 29.NOV.2019 20:04:25



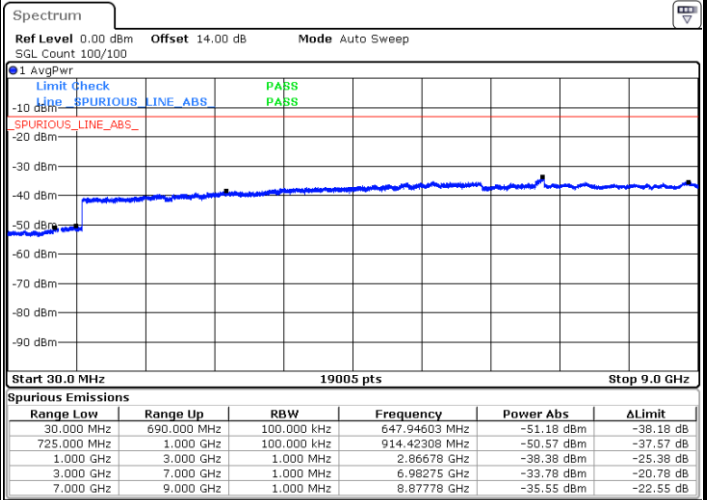
LTE Band 12 / 10MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

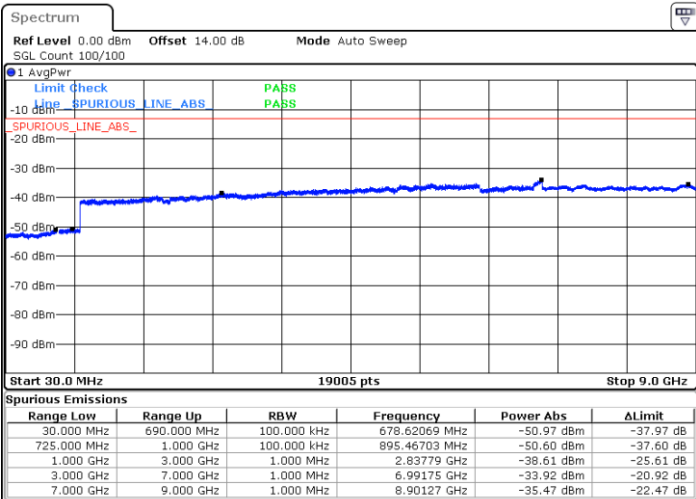


Date: 29.NOV.2019 20:36:11



Date: 29.NOV.2019 20:37:15

Highest Channel / 64QAM



Date: 29.NOV.2019 20:40:18



Frequency Stability

Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0047	PASS
40	Normal Voltage	0.0002	
30	Normal Voltage	0.0002	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0020	
-10	Normal Voltage	0.0039	
-20	Normal Voltage	0.0026	
-30	Normal Voltage	0.0038	
20	Maximum Voltage	0.0068	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0012	

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 13

## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	3.39	4.84	4.06	5.74	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM		-		Limit: 13dB
RB Size	1RB	Full RB	-	-	Result
Lowest CH	-	-	-	-	PASS
Middle CH	4.06	5.74	-	-	
Highest CH	-	-	-	-	

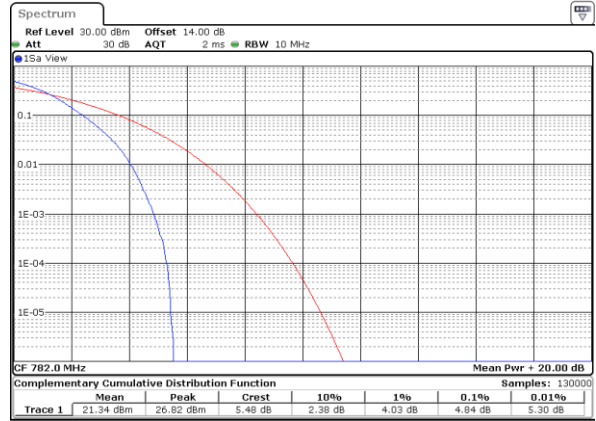


LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB

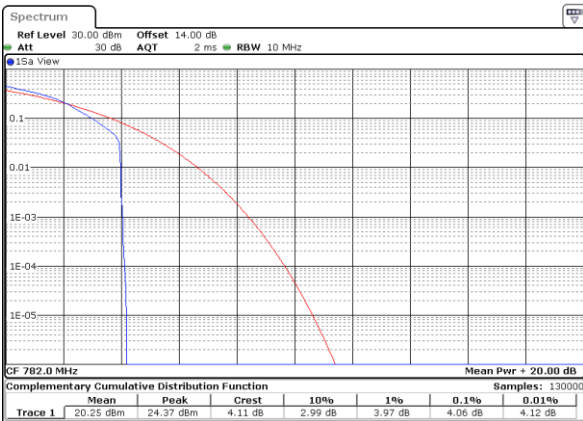


Middle Channel / Full RB

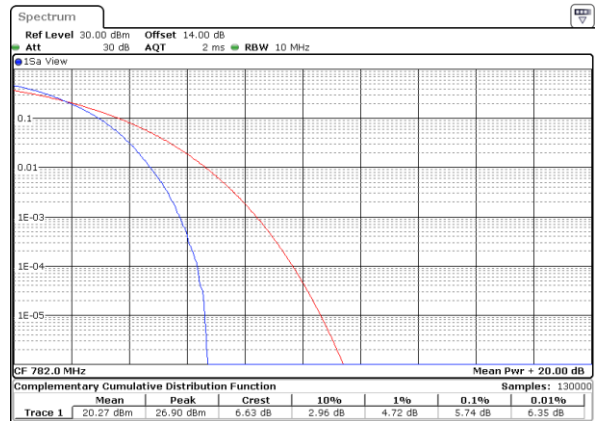


LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Middle Channel / Full RB

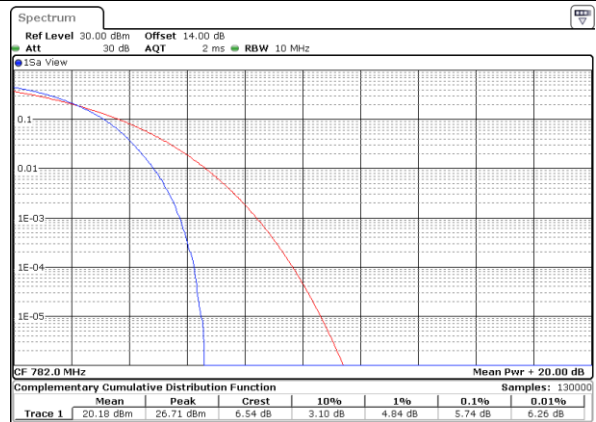


LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Middle Channel / Full RB



Date: 3.DEC.2019 14:19:52

Date: 3.DEC.2019 14:20:02





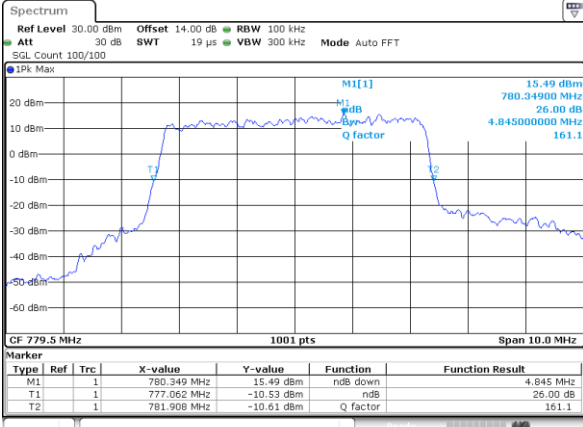
26dB Bandwidth

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	-	-	-	-	4.85	4.89	-	-	-	-	-	-
Middle CH	-	-	-	-	4.87	4.95	9.89	9.67	-	-	-	-
Highest CH	-	-	-	-	4.93	4.85	-	-	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-		-		4.93		-		-		-	
Middle CH	-		-		4.82		9.83		-		-	
Highest CH	-		-		4.85		-		-		-	



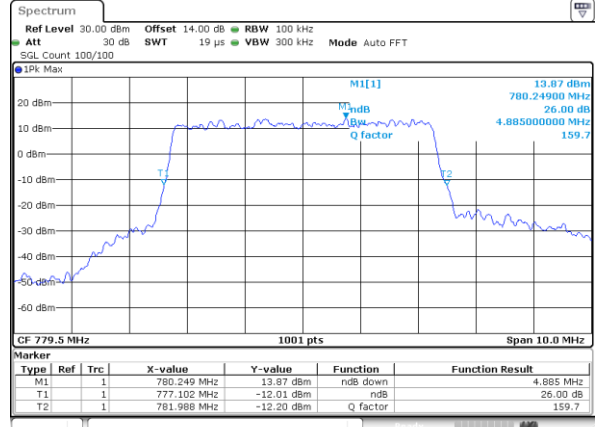
LTE Band 13

Lowest Channel / 5MHz / QPSK



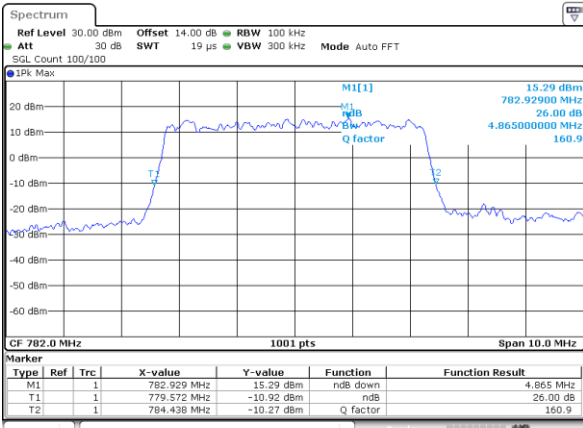
Date: 3,DEC,2019 13:22:46

Lowest Channel / 5MHz / 16QAM



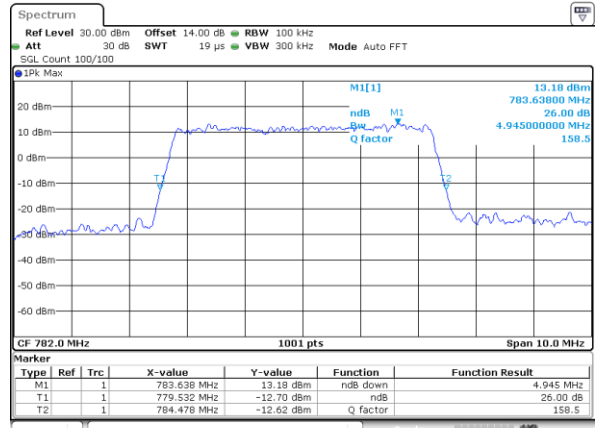
Date: 3,DEC,2019 13:22:35

Middle Channel / 5MHz / QPSK



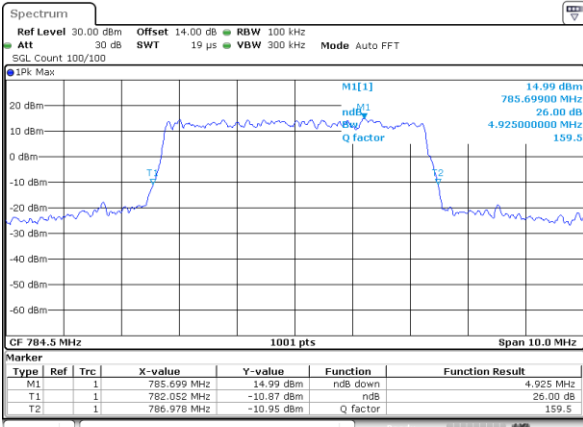
Date: 3,DEC,2019 13:32:23

Middle Channel / 5MHz / 16QAM



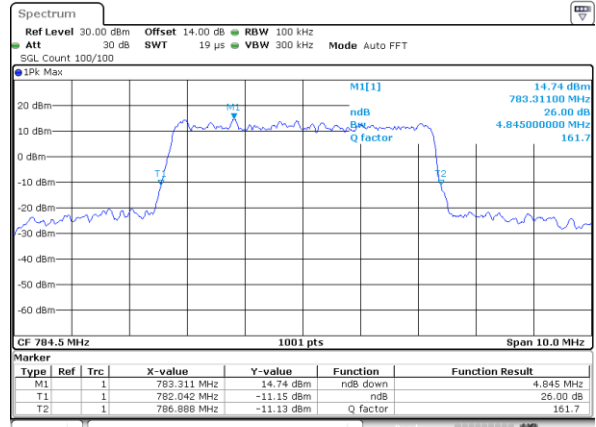
Date: 3,DEC,2019 13:32:34

Highest Channel / 5MHz / QPSK



Date: 3,DEC,2019 13:33:41

Highest Channel / 5MHz / 16QAM

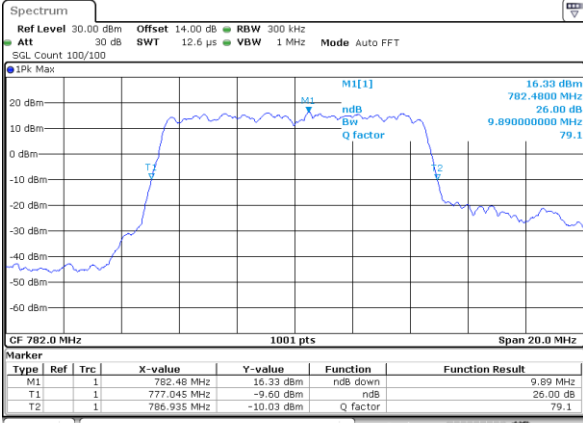


Date: 3,DEC,2019 13:33:30



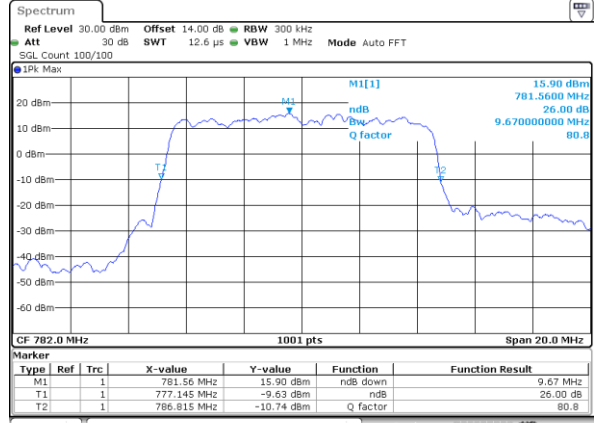
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 3,DEC,2019 13:52:18

Middle Channel / 10MHz / 16QAM

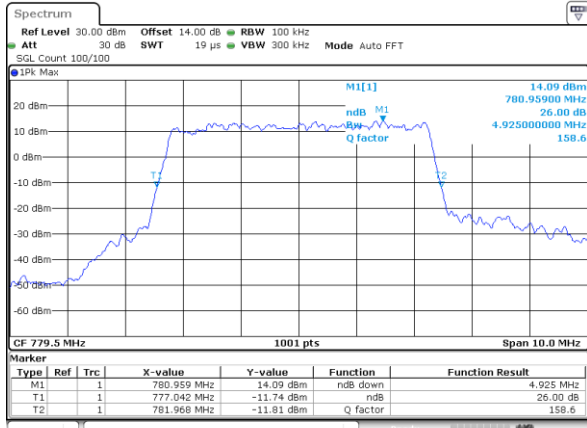


Date: 3,DEC,2019 13:52:07

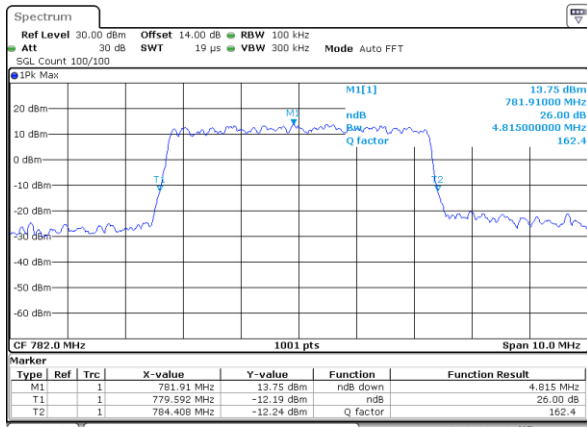


LTE Band 13

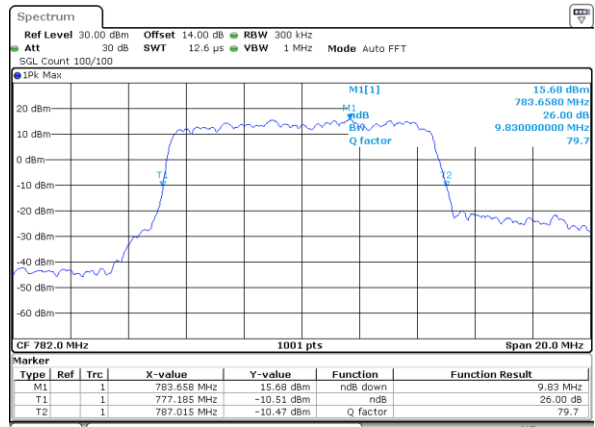
Lowest Channel / 5MHz / 64QAM



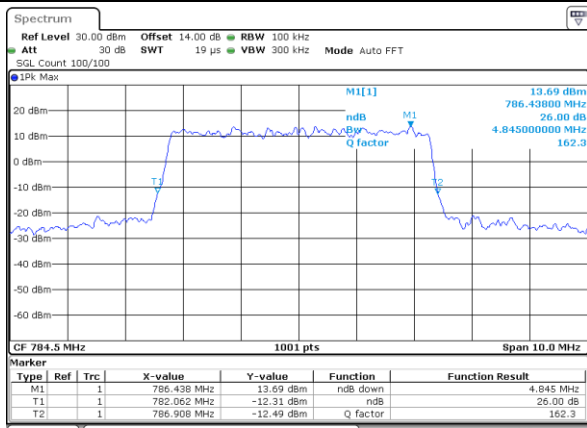
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM





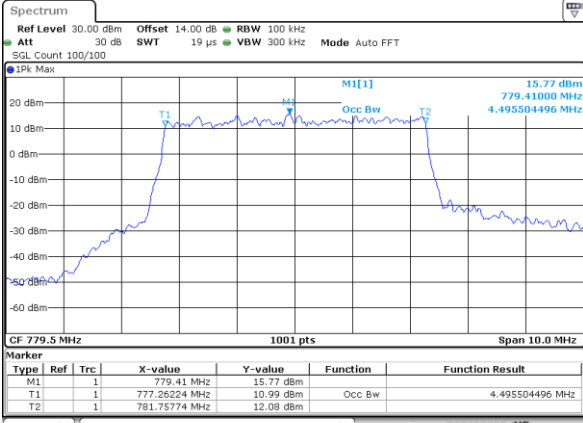
Occupied Bandwidth

Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.50	4.48	-	-	-	-	-	-
Middle CH	-	-	-	-	4.46	4.49	8.99	9.01	-	-	-	-
Highest CH	-	-	-	-	4.50	4.49	-	-	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-		-		4.49		-		-		-	
Middle CH	-		-		4.50		8.95		-		-	
Highest CH	-		-		4.49		-		-		-	



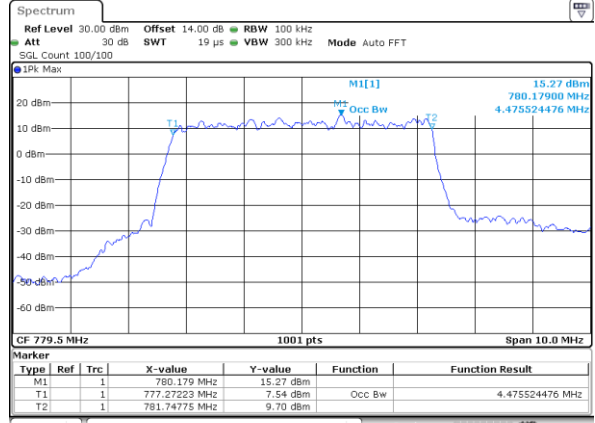
LTE Band 13

Lowest Channel / 5MHz / QPSK



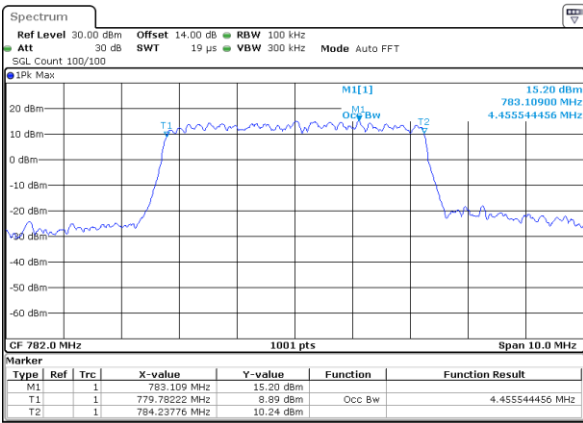
Date: 3,DEC,2019 13:22:12

Lowest Channel / 5MHz / 16QAM



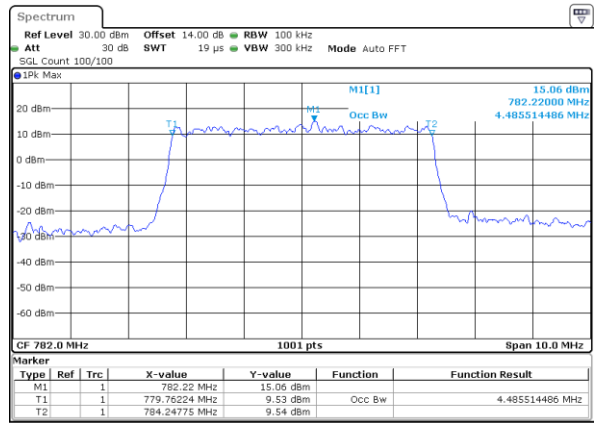
Date: 3,DEC,2019 13:22:23

Middle Channel / 5MHz / QPSK



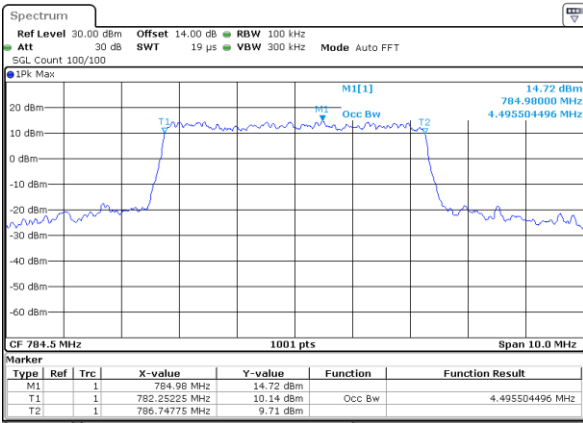
Date: 3,DEC,2019 13:32:56

Middle Channel / 5MHz / 16QAM



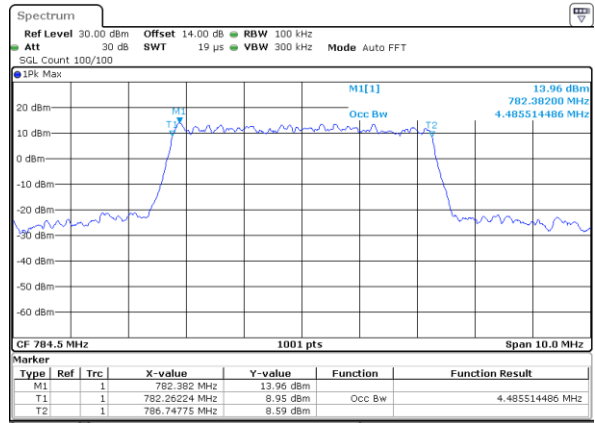
Date: 3,DEC,2019 13:32:45

Highest Channel / 5MHz / QPSK



Date: 3,DEC,2019 13:33:08

Highest Channel / 5MHz / 16QAM

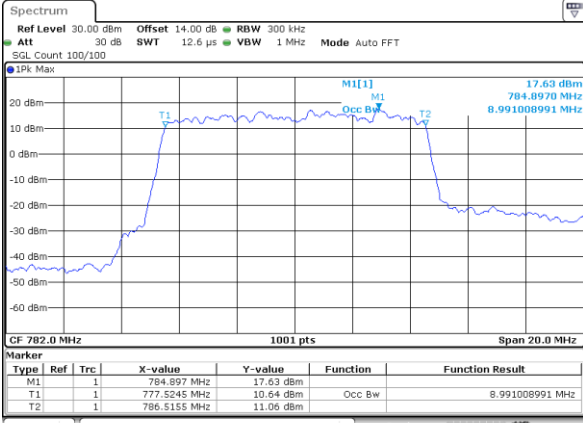


Date: 3,DEC,2019 13:33:19



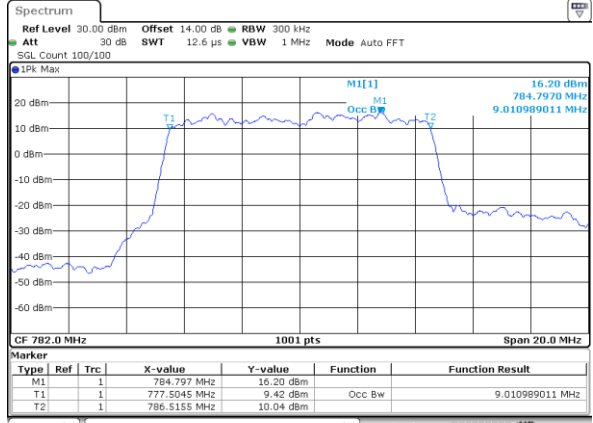
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 3.DEC.2019 13:51:45

Middle Channel / 10MHz / 16QAM

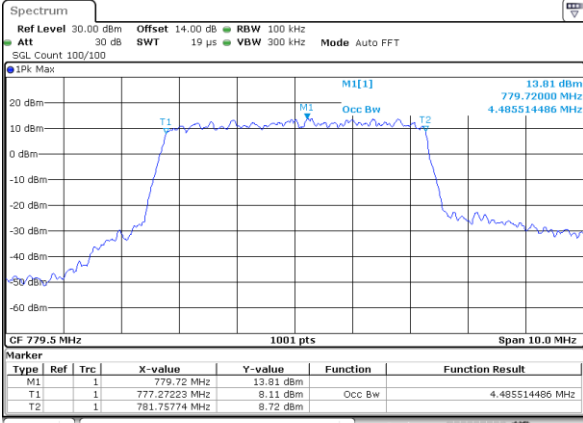


Date: 3.DEC.2019 13:51:56



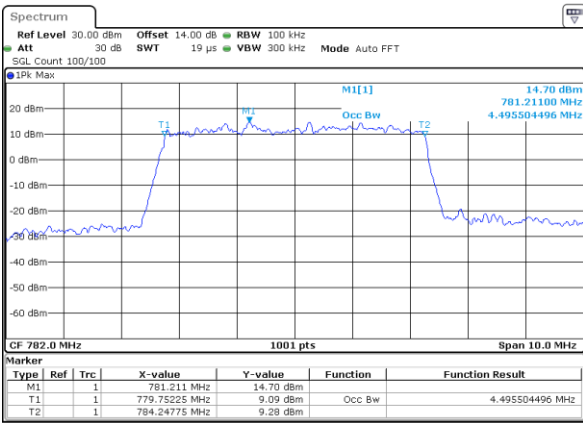
LTE Band 13

Lowest Channel / 5MHz / 64QAM



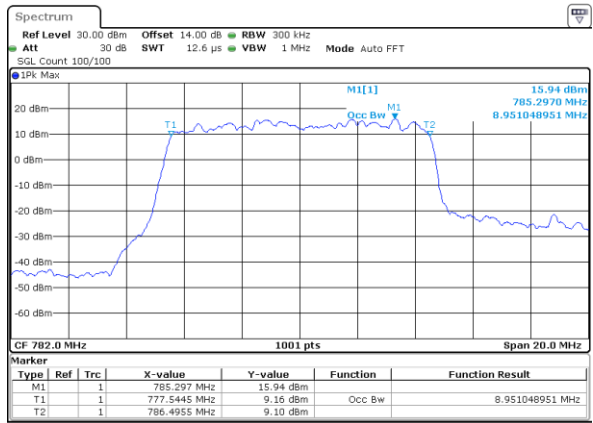
Date: 3,DEC,2019 13:41:54

Middle Channel / 5MHz / 64QAM



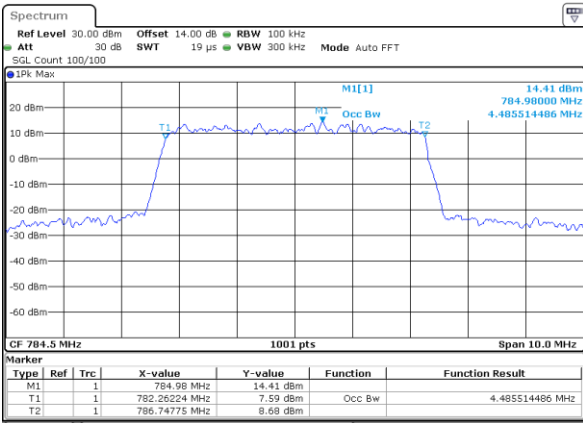
Date: 3,DEC,2019 13:47:10

Middle Channel / 10MHz / 64QAM



Date: 3,DEC,2019 14:03:51

Highest Channel / 5MHz / 64QAM



Date: 3,DEC,2019 13:47:21

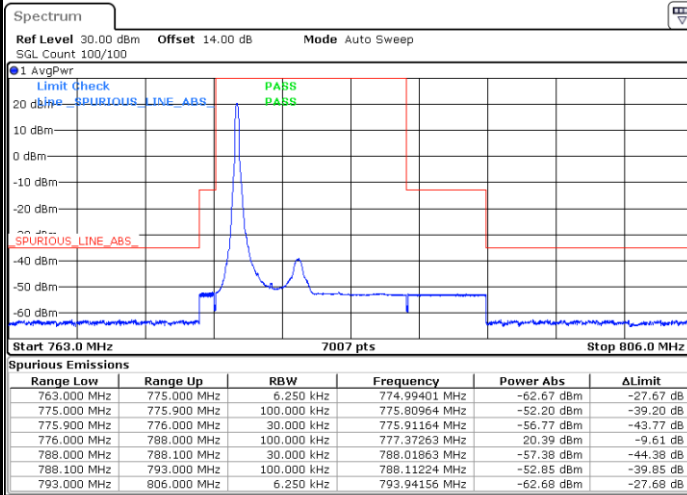




# Conducted Band Edge

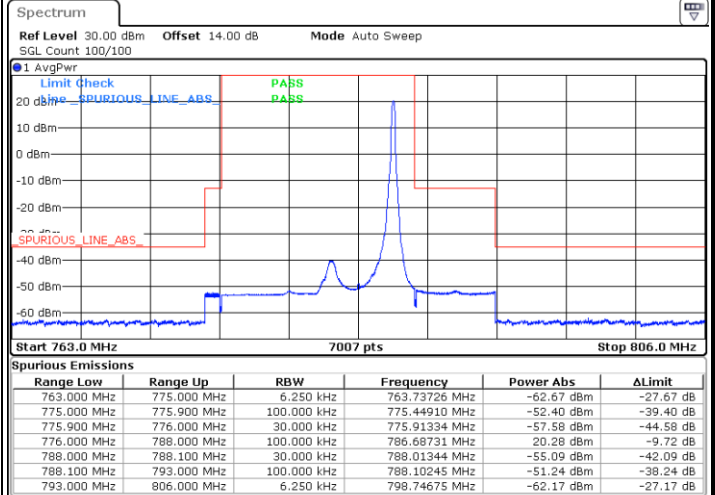
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



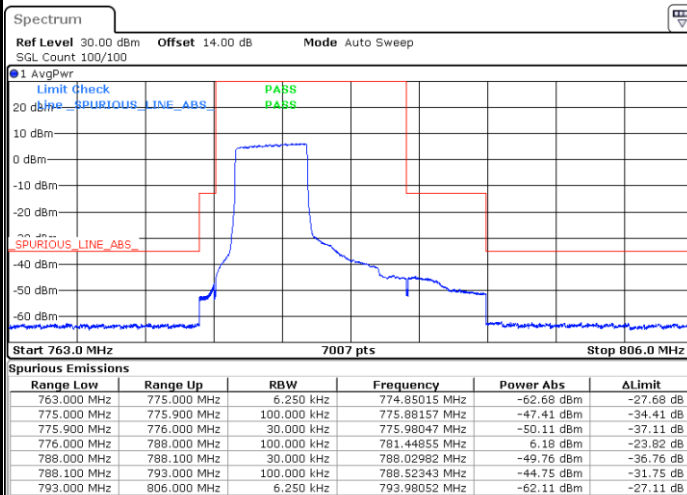
Date: 3.DEC.2019 13:29:26

### Highest Band Edge / 1 RB



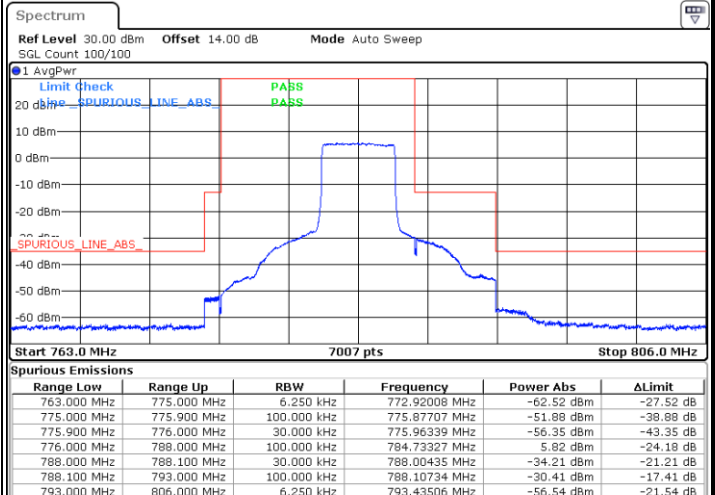
Date: 3.DEC.2019 13:40:21

### Lowest Band Edge / Full RB



Date: 3.DEC.2019 13:24:25

### Highest Band Edge / Full RB



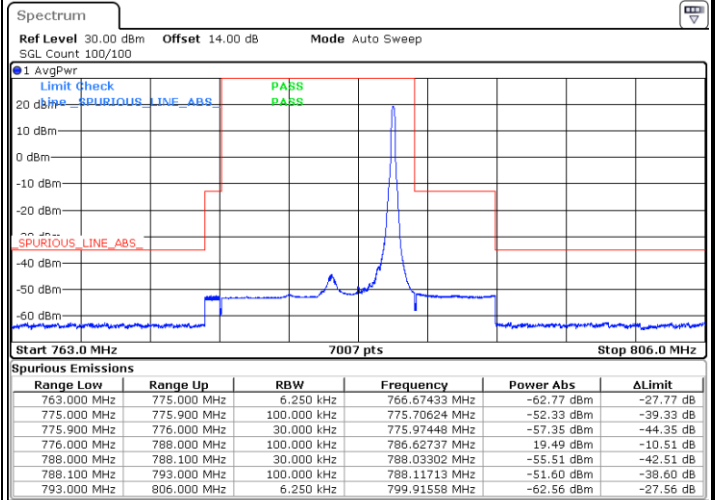
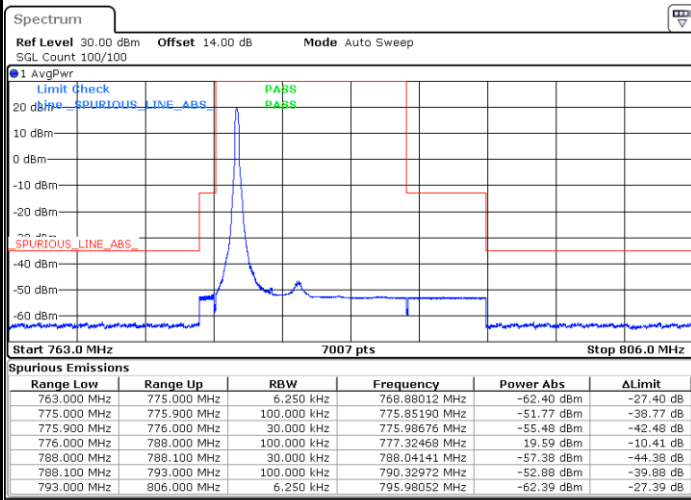
Date: 3.DEC.2019 13:35:20



LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

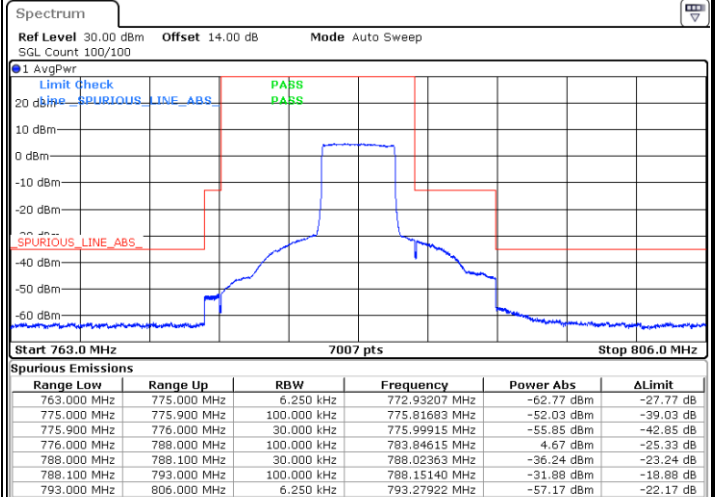
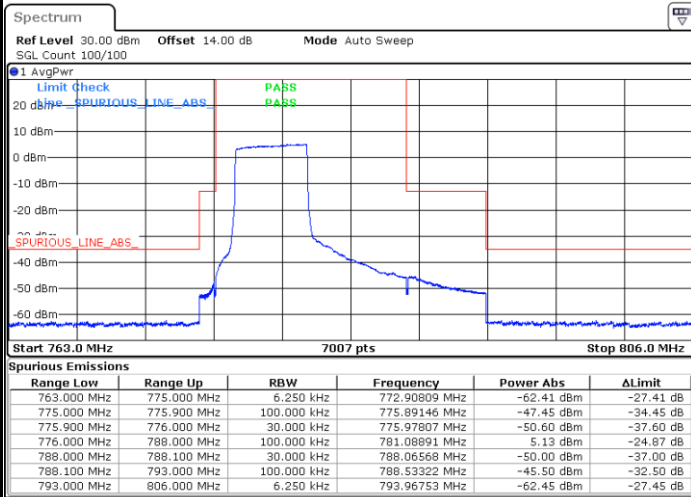


Date: 3.DEC.2019 13:27:46

Date: 3.DEC.2019 13:38:41

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 3.DEC.2019 13:26:05

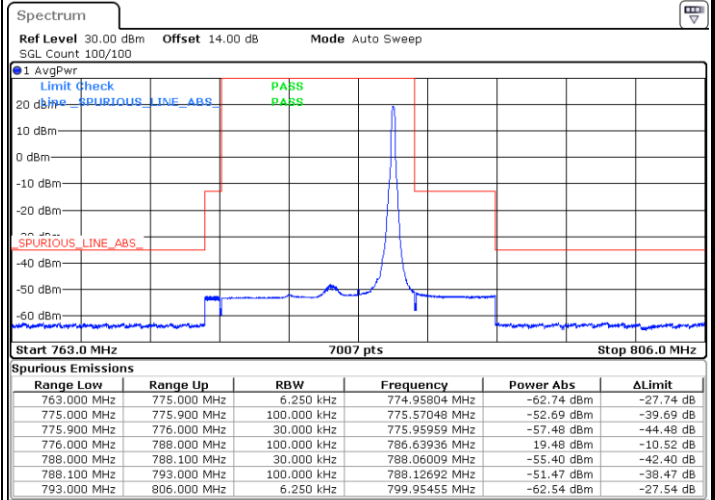
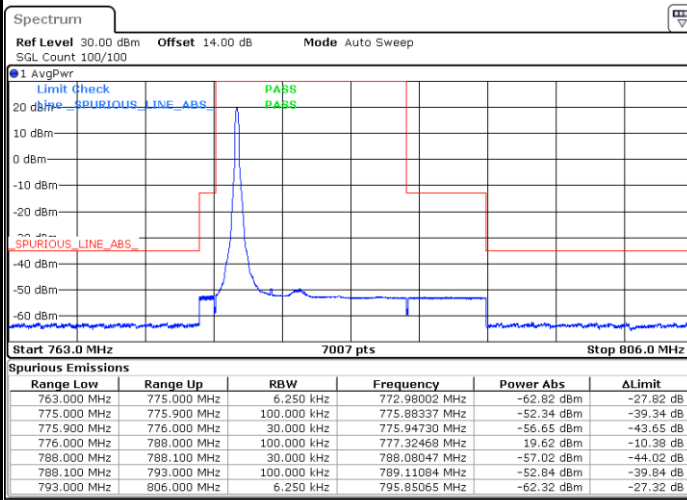
Date: 3.DEC.2019 13:37:00



LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

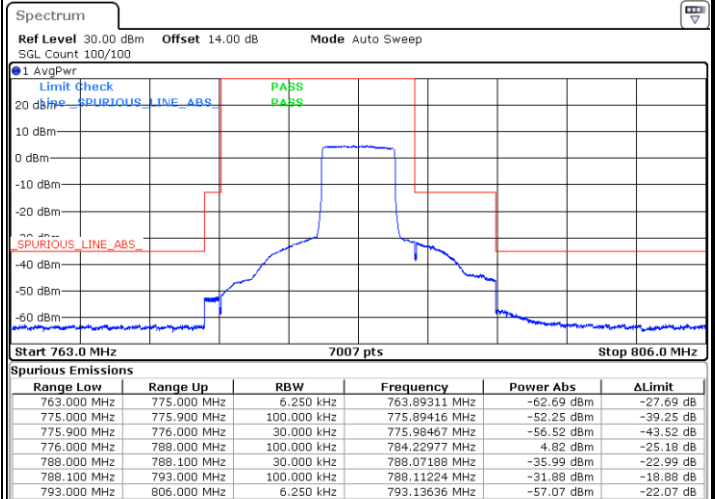
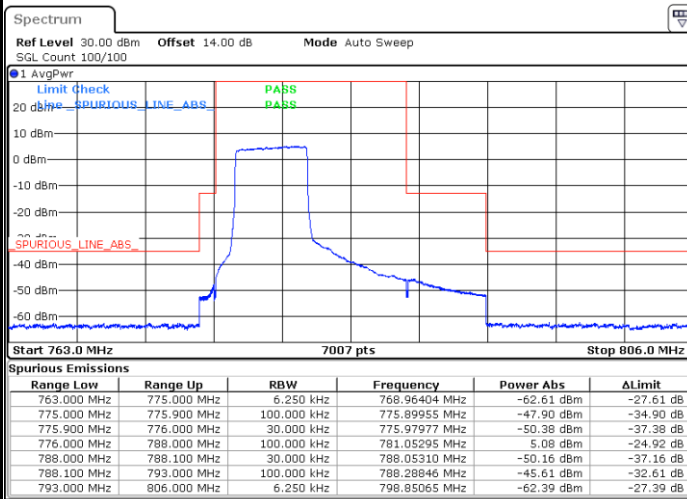


Date: 3.DEC.2019 13:45:25

Date: 3.DEC.2019 13:50:52

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 3.DEC.2019 13:43:45

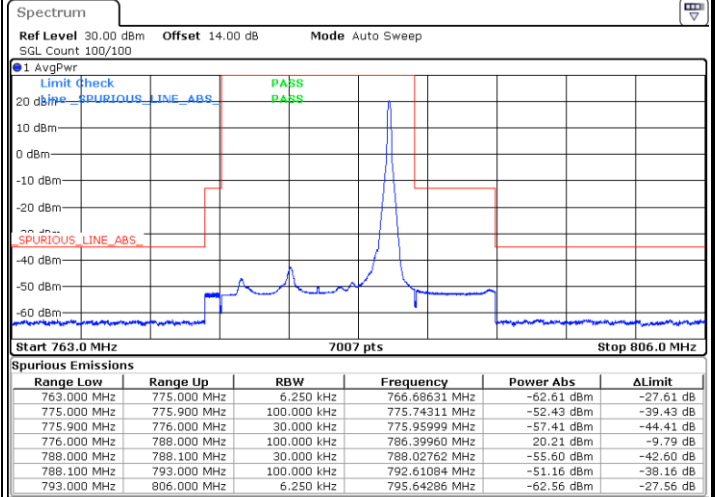
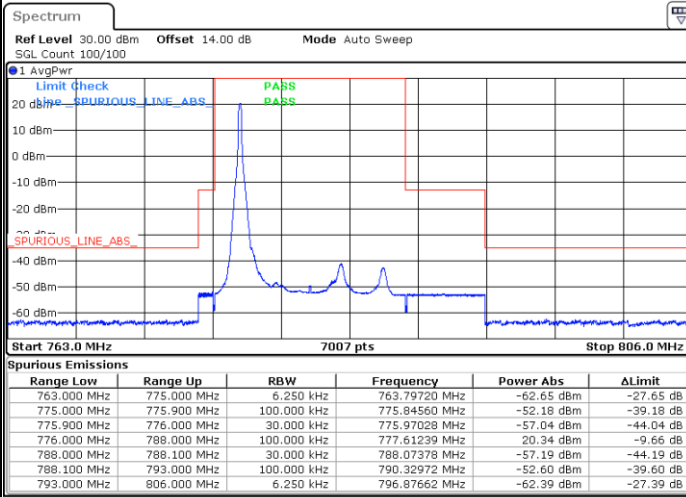
Date: 3.DEC.2019 13:49:12



LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB

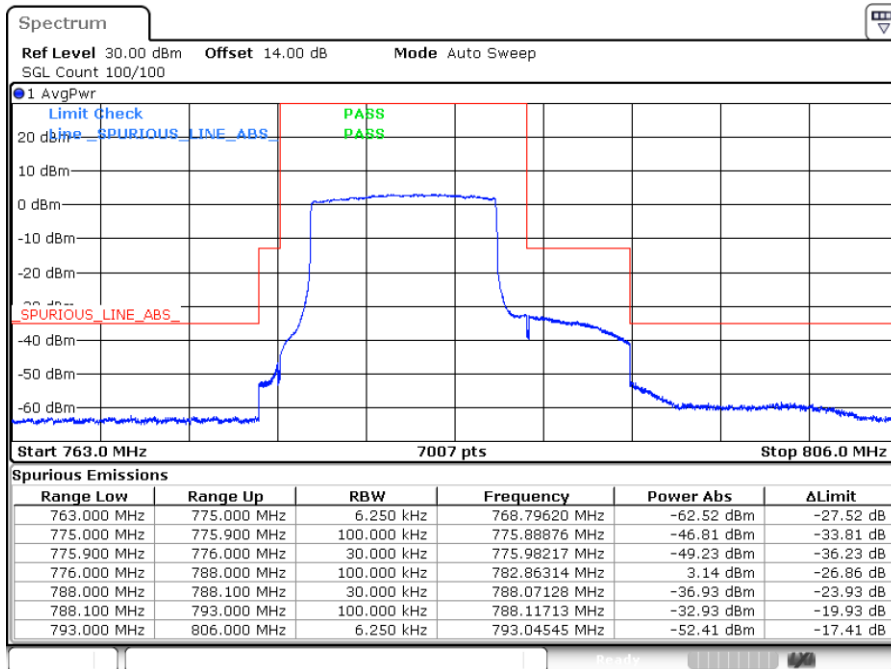
Highest Band Edge / 1 RB



Date: 3.DEC.2019 13:58:58

Date: 3.DEC.2019 14:00:38

Band Edge / Full RB

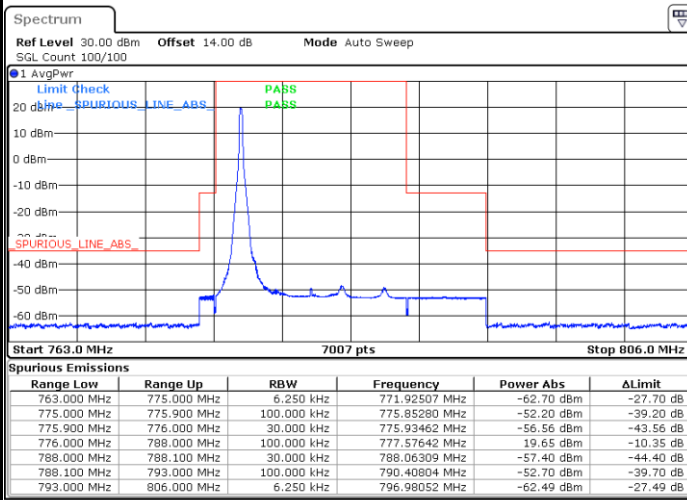


Date: 3.DEC.2019 13:53:57



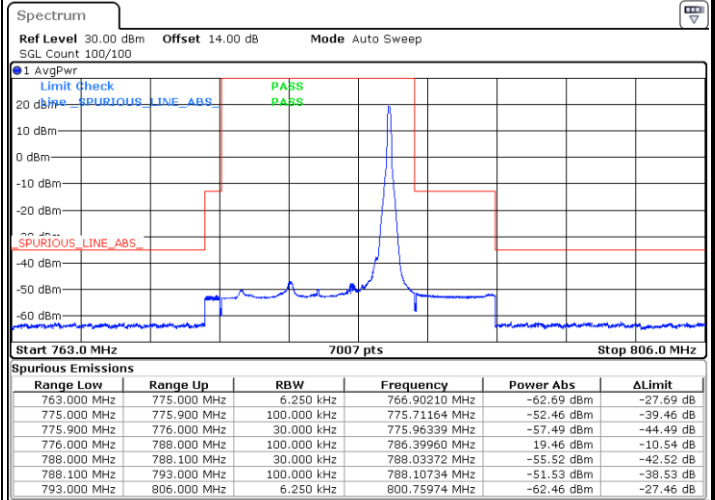
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



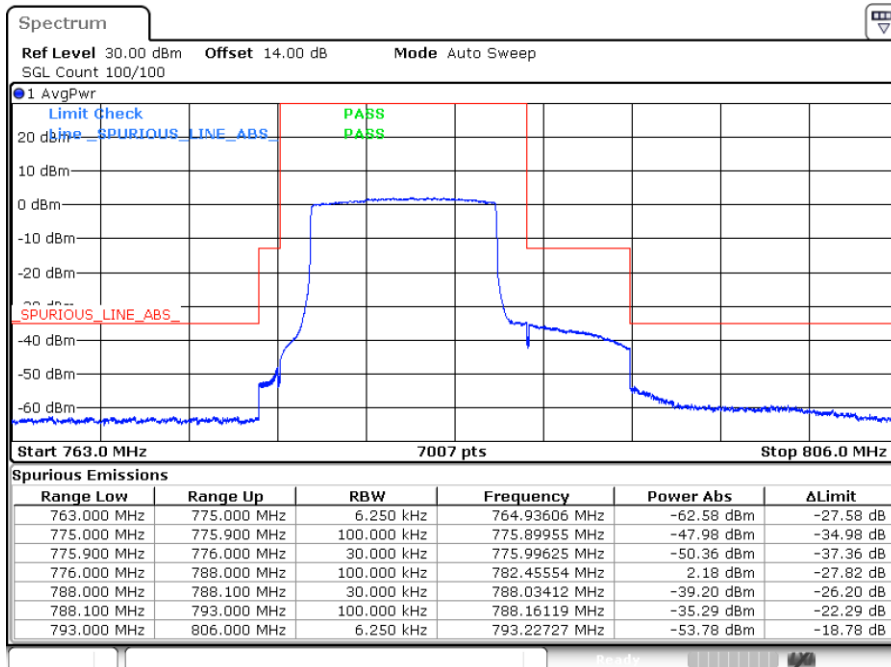
Date: 3.DEC.2019 13:57:17

Highest Band Edge / 1 RB



Date: 3.DEC.2019 14:02:18

Band Edge / Full RB

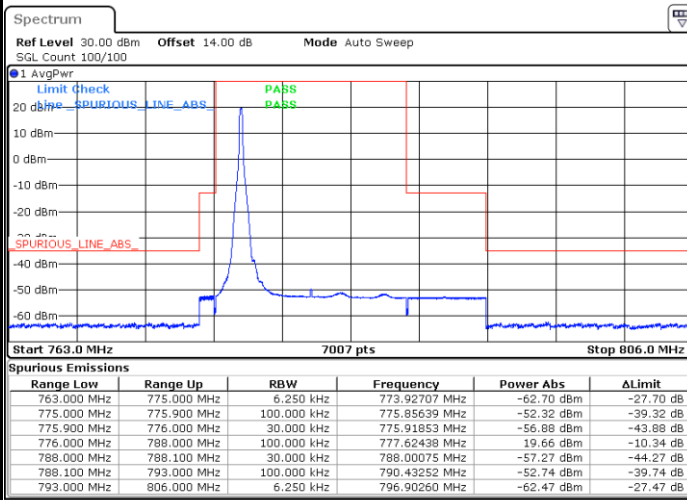


Date: 3.DEC.2019 13:55:37



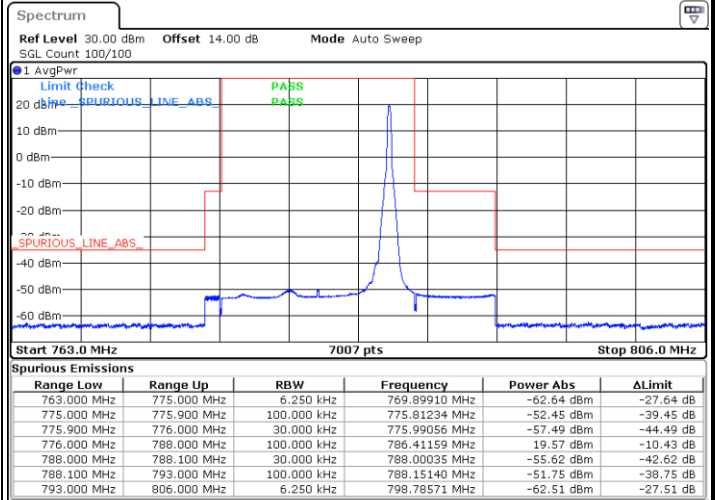
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



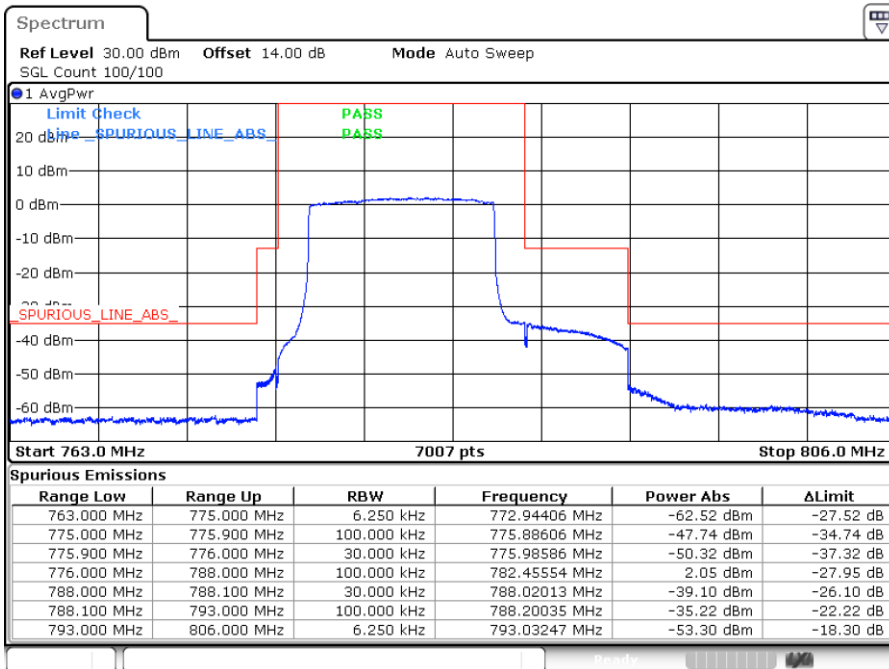
Date: 3. DEC. 2019 14:07:22

Highest Band Edge / 1 RB



Date: 3. DEC. 2019 14:09:02

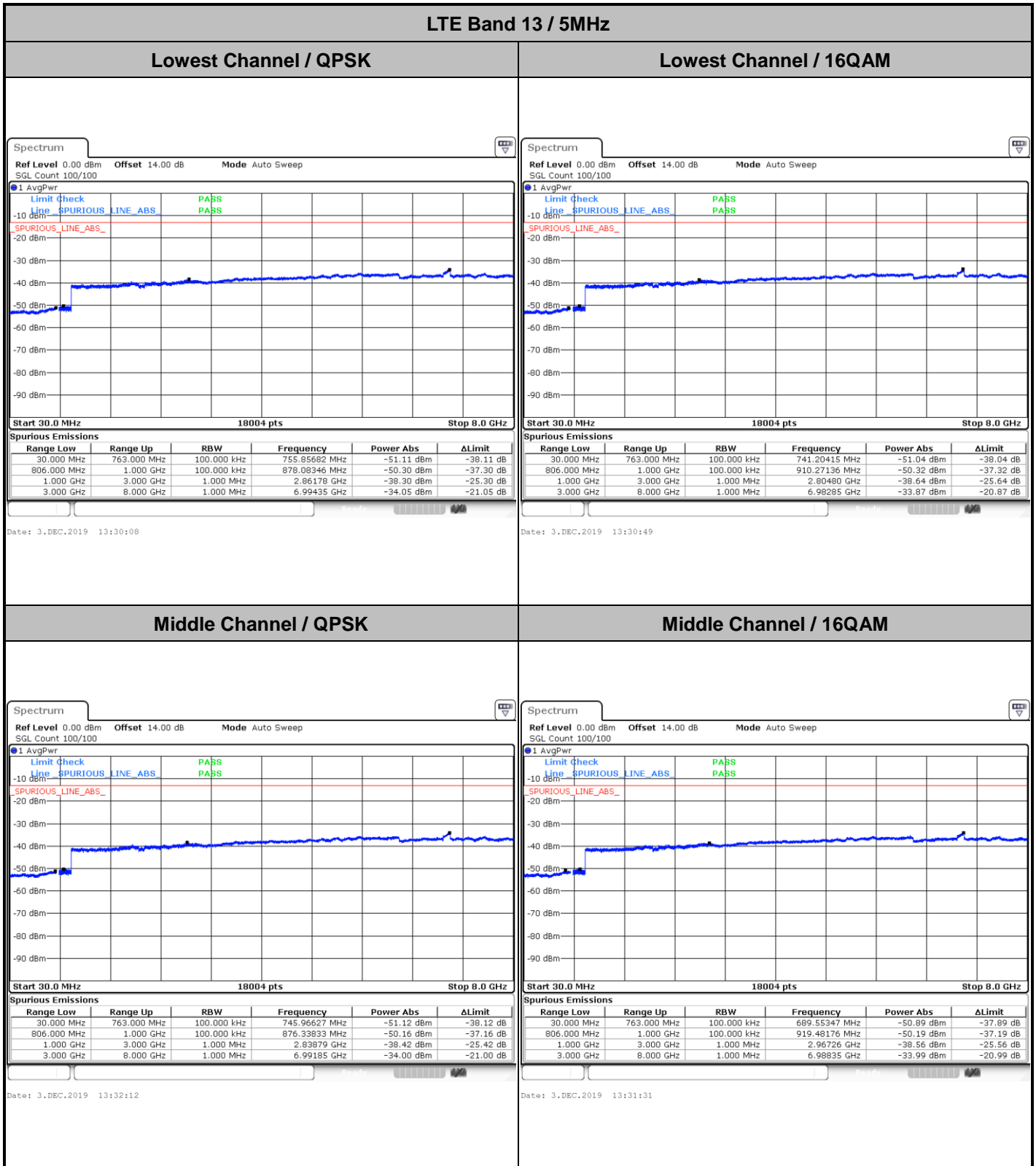
Band Edge / Full RB



Date: 3. DEC. 2019 14:05:42



# Conducted Spurious Emission

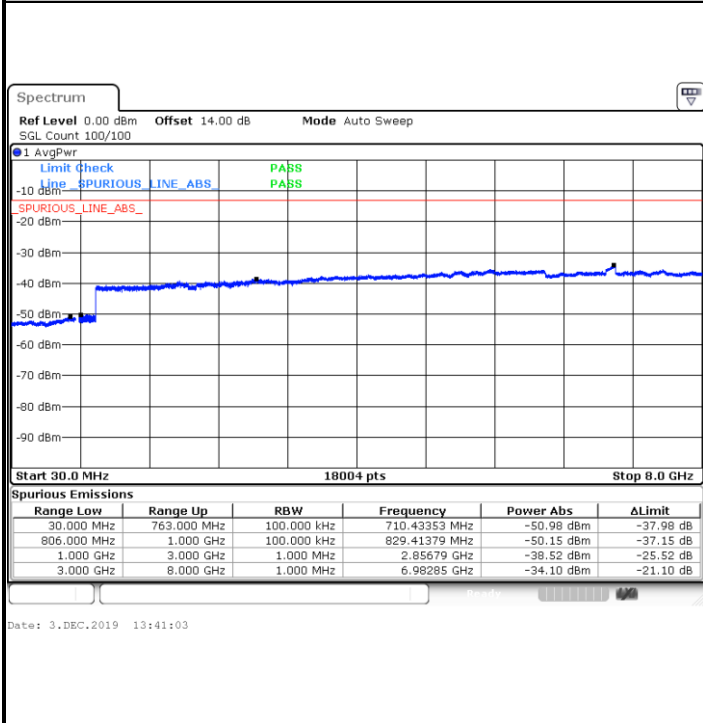




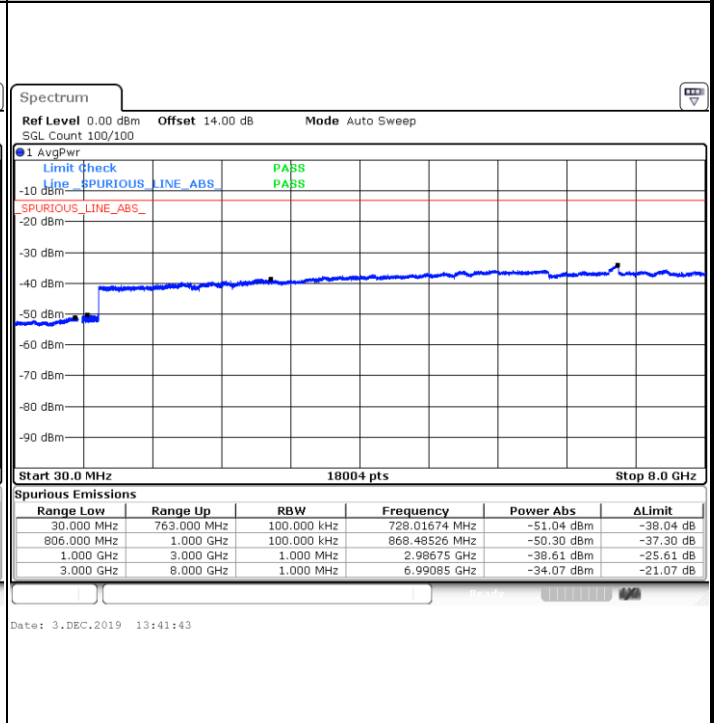


LTE Band 13 / 5MHz

Highest Channel / QPSK

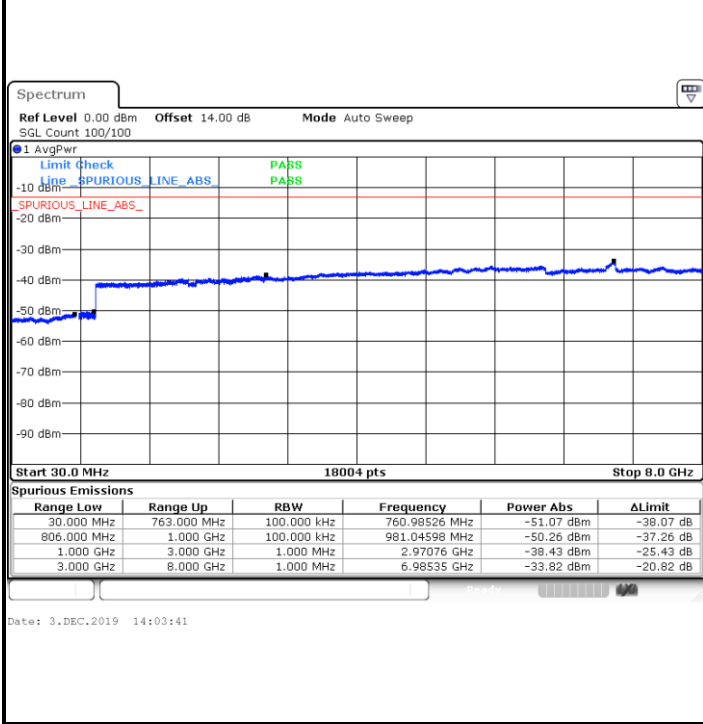


Highest Channel / 16QAM

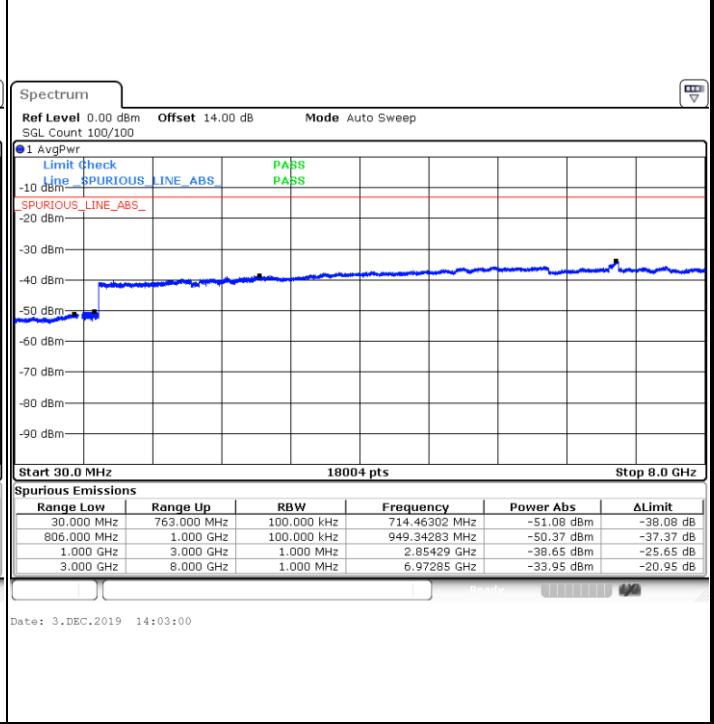


LTE Band 13 / 10MHz

Middle Channel / QPSK



Middle Channel / 16QAM



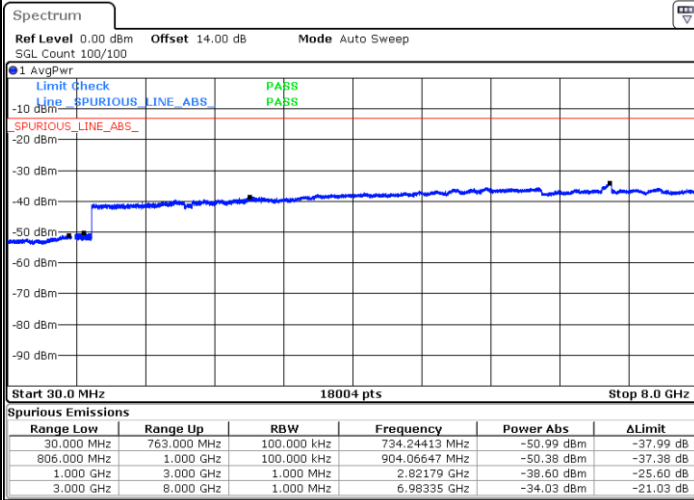




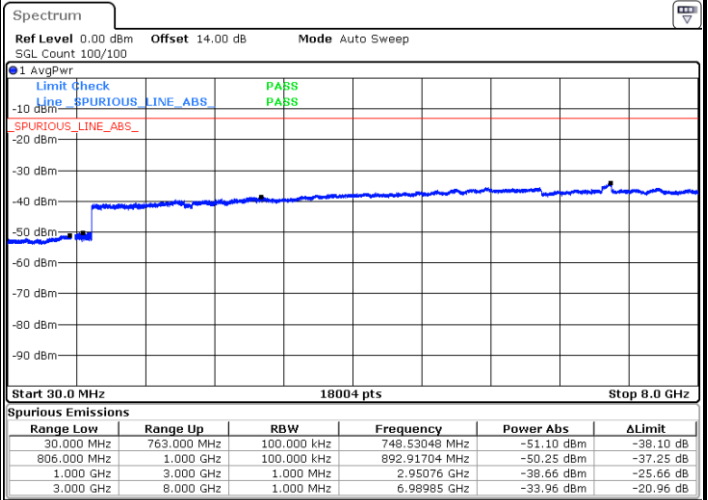
LTE Band 13 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

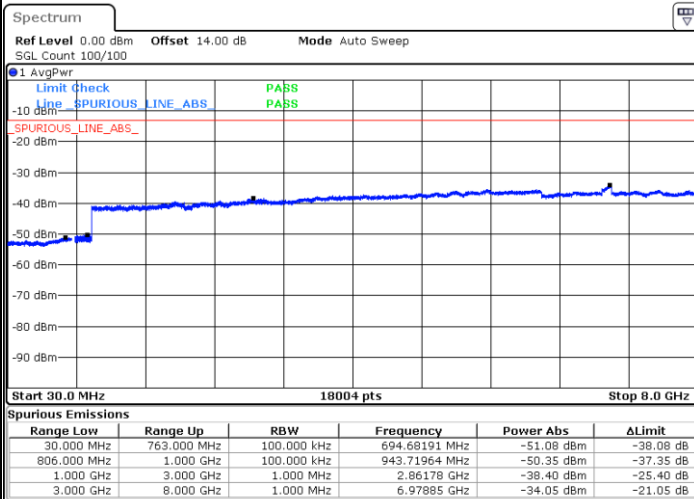


Date: 3.DEC.2019 13:46:07



Date: 3.DEC.2019 13:46:48

Highest Channel / 64QAM

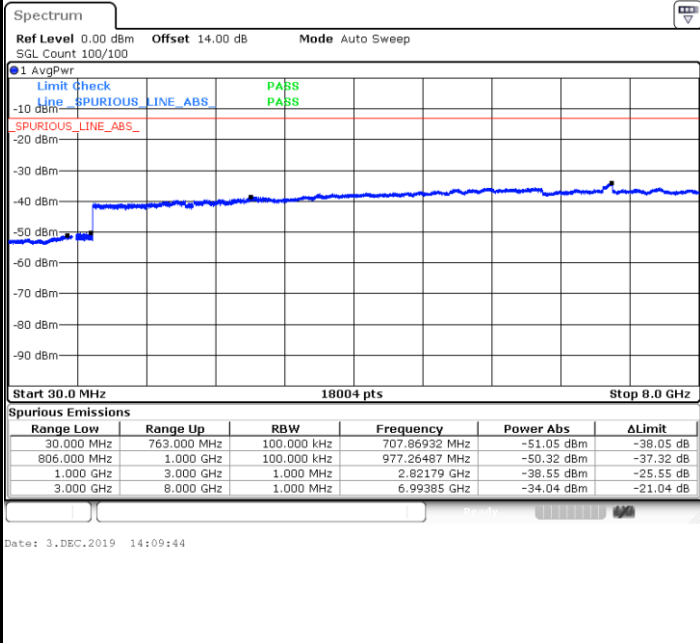


Date: 3.DEC.2019 13:51:33



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	0.0022	PASS
40	Normal Voltage	0.0007	
30	Normal Voltage	0.0086	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0077	
0	Normal Voltage	0.0080	
-10	Normal Voltage	0.0014	
-20	Normal Voltage	0.0012	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0006	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0029	

**Note:**

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 17

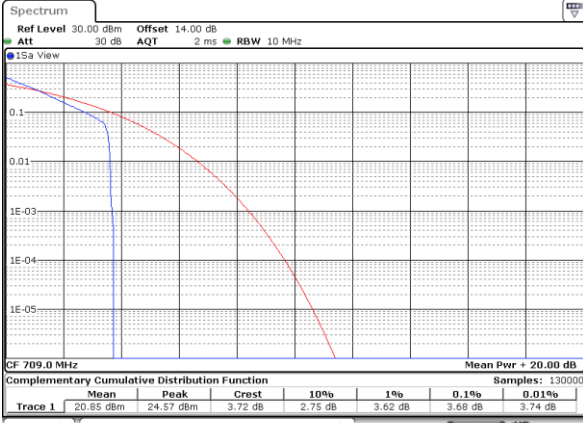
## Peak-to-Average Ratio

Mode	LTE Band 17 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.68	5.04	5.65	5.83	<b>PASS</b>
Middle CH	3.68	4.96	5.33	5.86	
Highest CH	3.74	5.07	5.57	5.88	
Mode	LTE Band 17 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.45	5.91	-	-	<b>PASS</b>
Middle CH	5.51	5.88	-	-	
Highest CH	5.48	5.88	-	-	



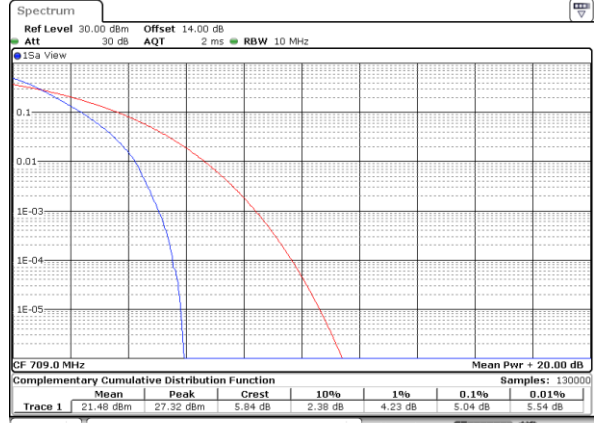
LTE Band 17 / 10MHz / QPSK

Lowest Channel / 1RB



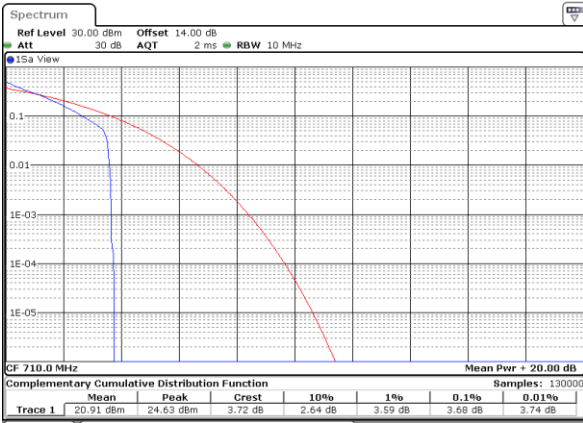
Date: 29.NOV.2019 22:05:53

Lowest Channel / Full RB



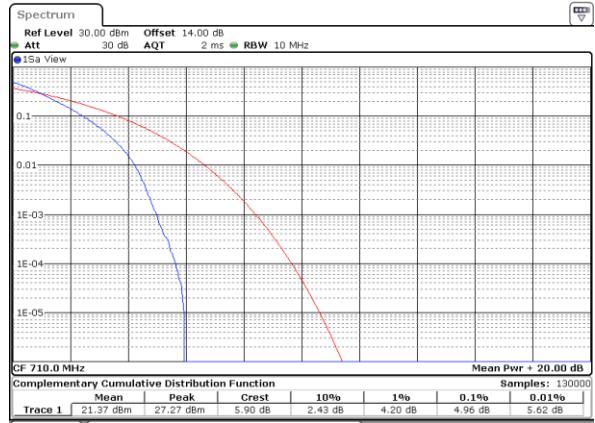
Date: 29.NOV.2019 22:06:04

Middle Channel / 1RB



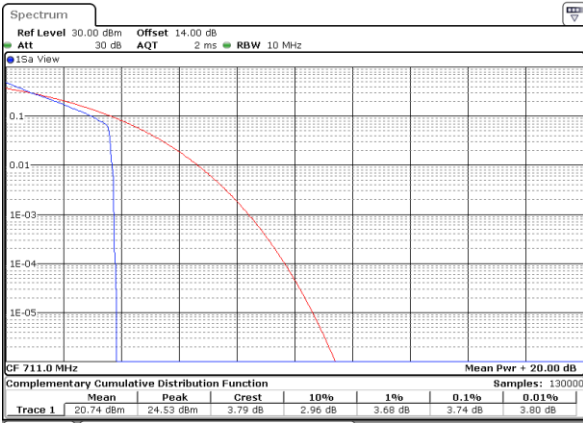
Date: 29.NOV.2019 22:06:14

Middle Channel / Full RB



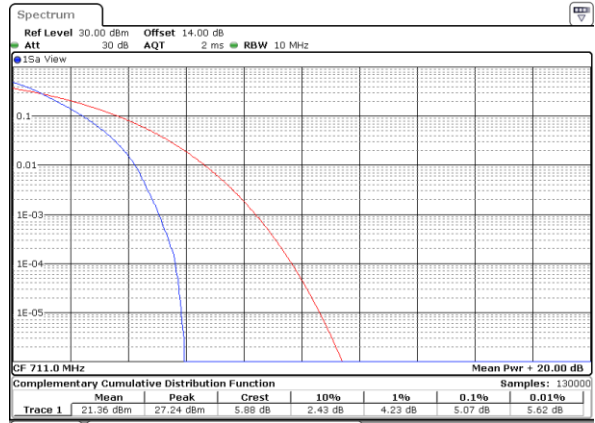
Date: 29.NOV.2019 22:06:13

Highest Channel / 1RB



Date: 29.NOV.2019 22:06:43

Highest Channel / Full RB

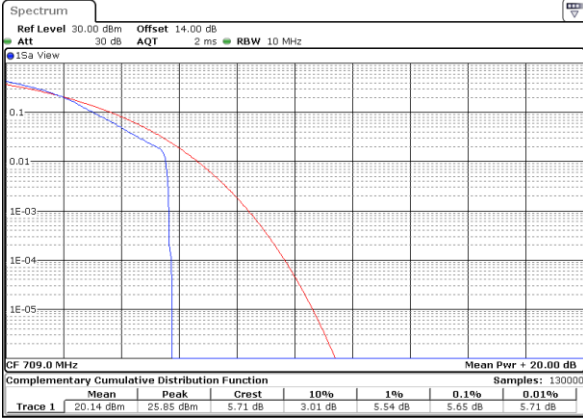


Date: 29.NOV.2019 22:06:53



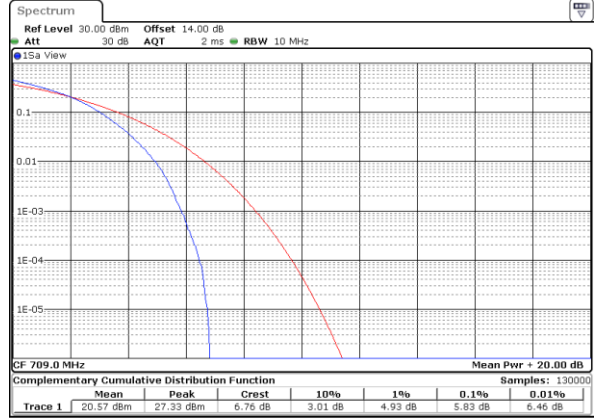
LTE Band 17 / 10MHz / 16QAM

Lowest Channel / 1RB



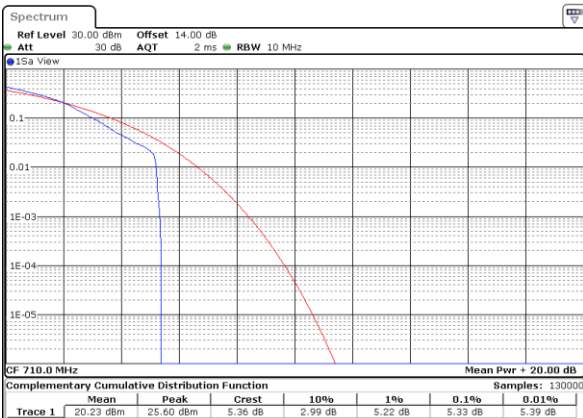
Date: 29.NOV.2019 22:04:51

Lowest Channel / Full RB



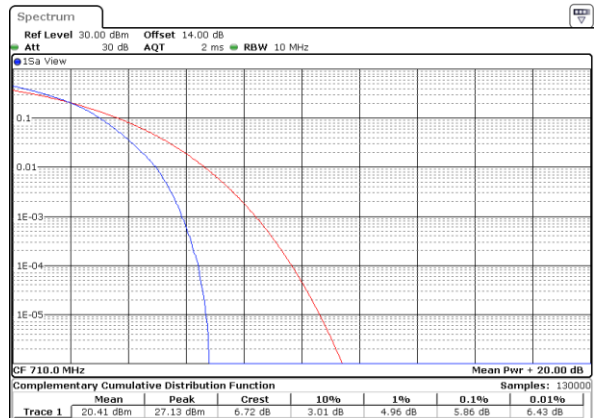
Date: 29.NOV.2019 22:05:02

Middle Channel / 1RB



Date: 29.NOV.2019 22:05:12

Middle Channel / Full RB



Date: 29.NOV.2019 22:05:22

Highest Channel / 1RB



Date: 29.NOV.2019 22:05:32

Highest Channel / Full RB



Date: 29.NOV.2019 22:05:43