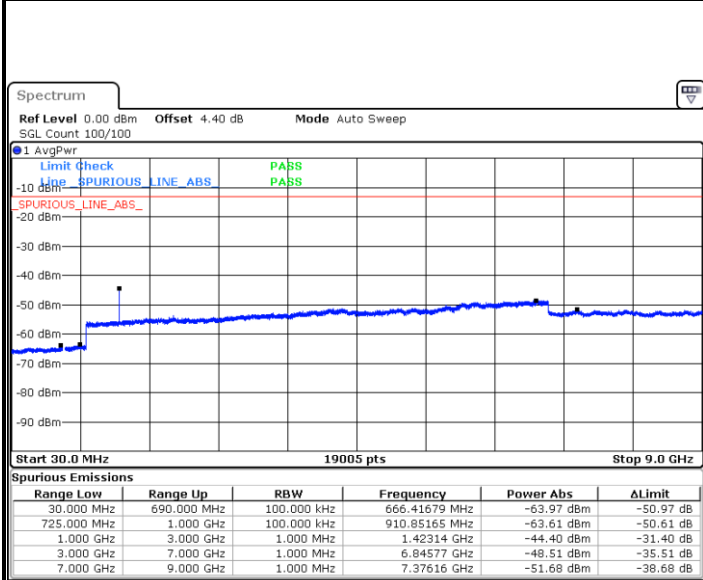




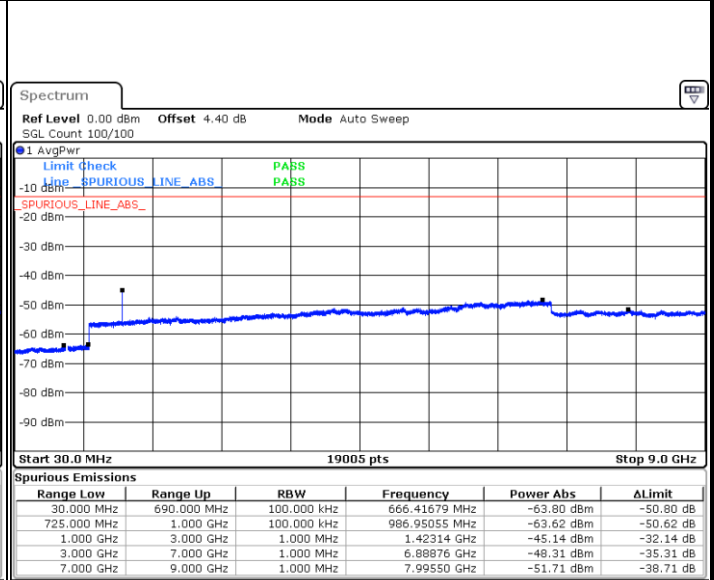
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 29 SEP 2018 14:13:48

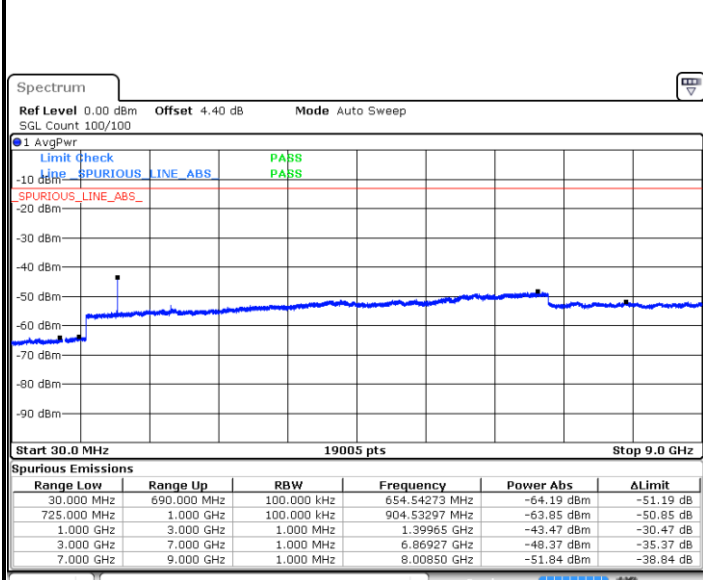
Highest Channel / 16QAM



Date: 29 SEP 2018 14:14:42

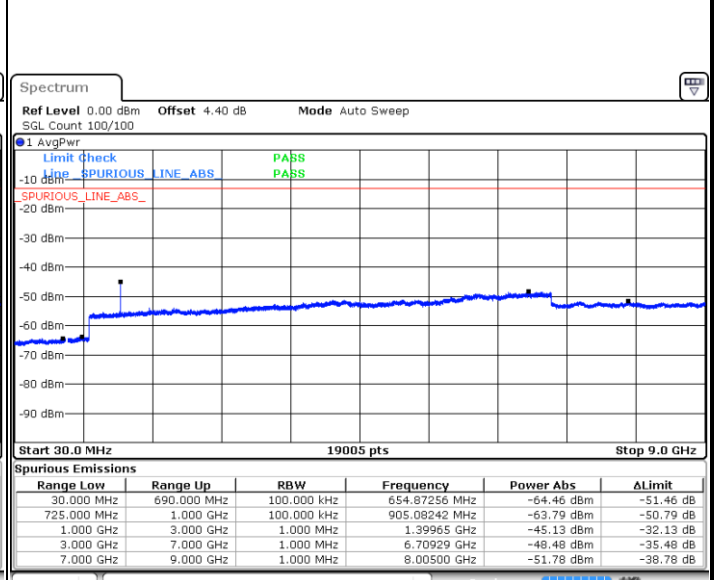
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 29 SEP 2018 14:26:33

Lowest Channel / 16QAM

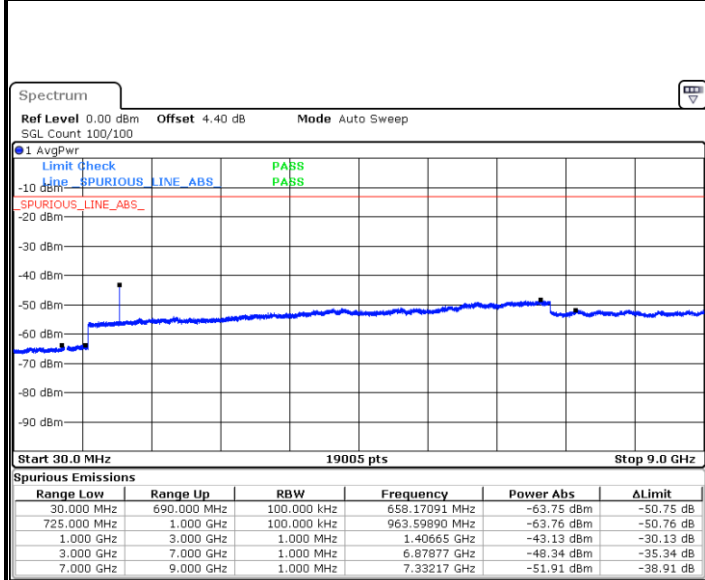


Date: 29 SEP 2018 14:27:27



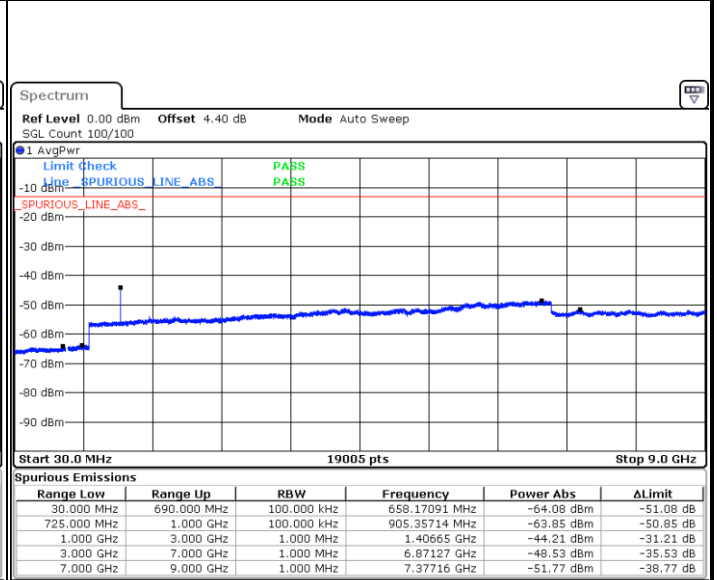
LTE Band 12 / 10MHz

Middle Channel / QPSK



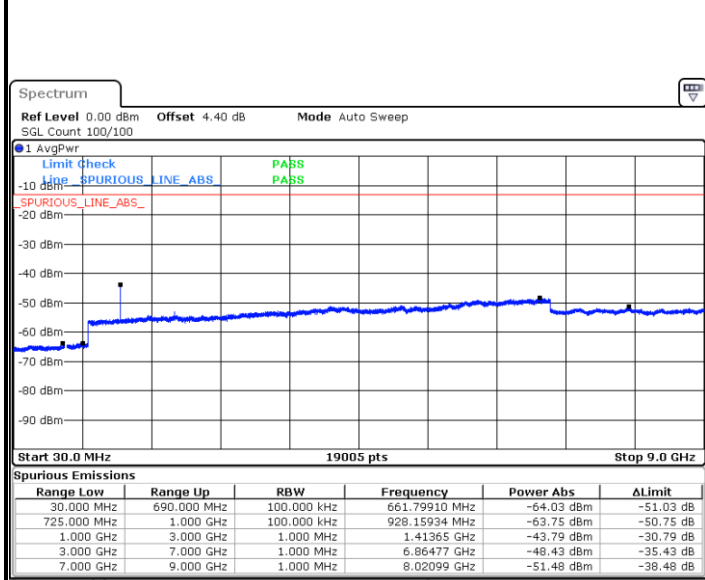
Date: 29 SEP. 2018 14:29:16

Middle Channel / 16QAM



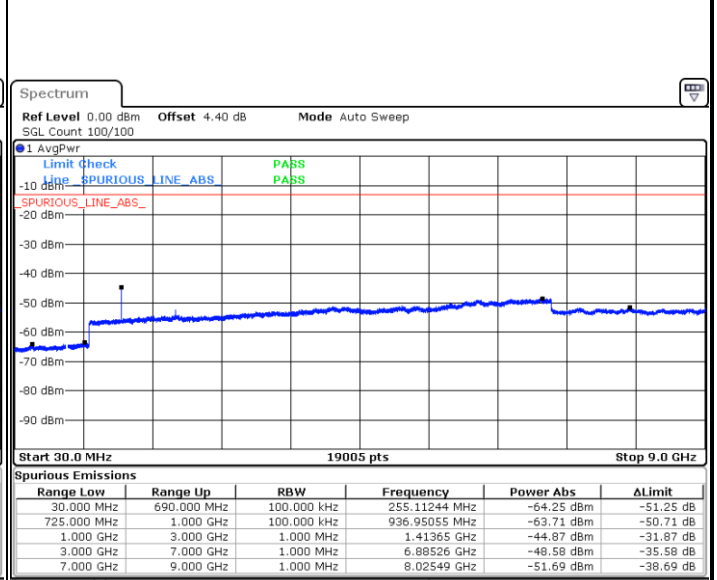
Date: 29 SEP. 2018 14:28:21

Highest Channel / QPSK



Date: 29 SEP. 2018 14:30:10

Highest Channel / 16QAM

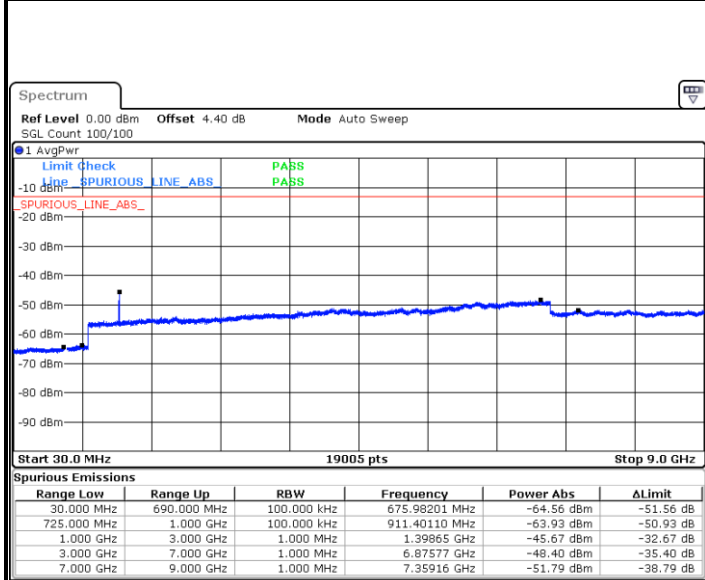


Date: 29 SEP. 2018 14:31:04



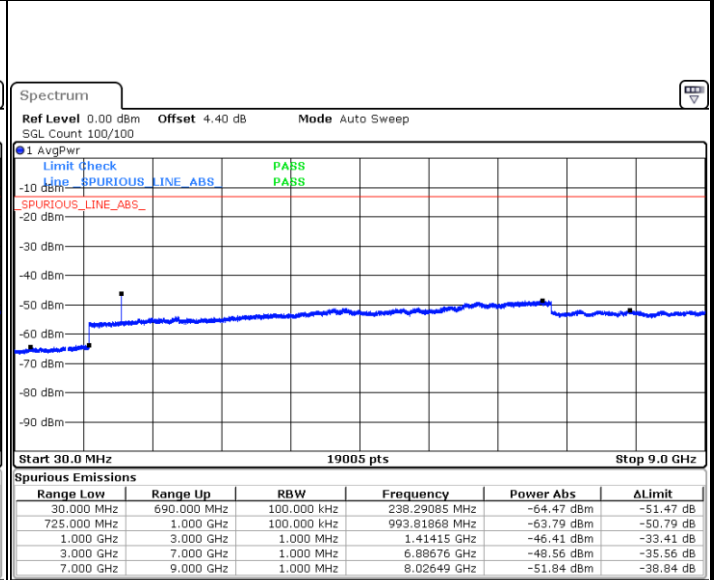
LTE Band 12 / 1.4MHz

Lowest Channel / 64QAM



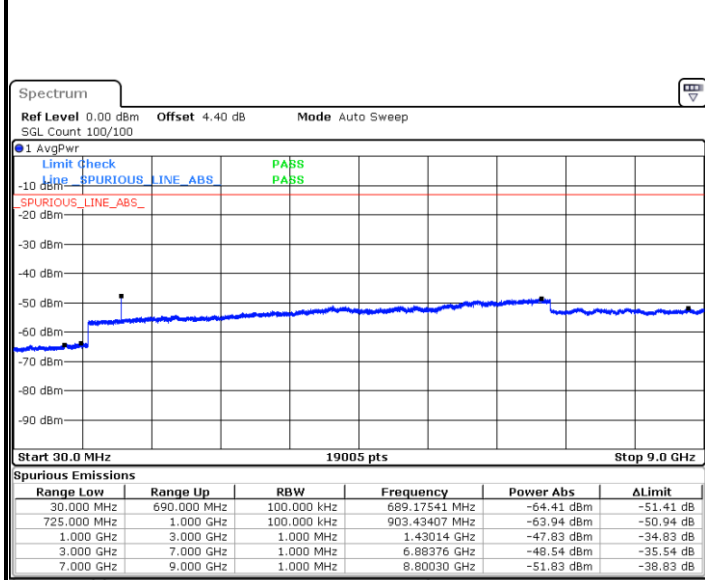
Date: 29 SEP.2018 14:50:15

Middle Channel / 64QAM



Date: 29 SEP.2018 14:51:09

Highest Channel / 64QAM

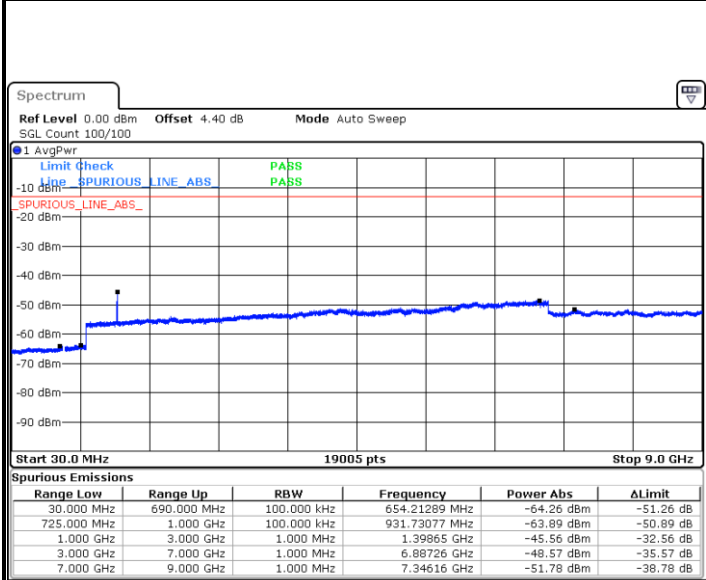


Date: 29 SEP.2018 14:52:03



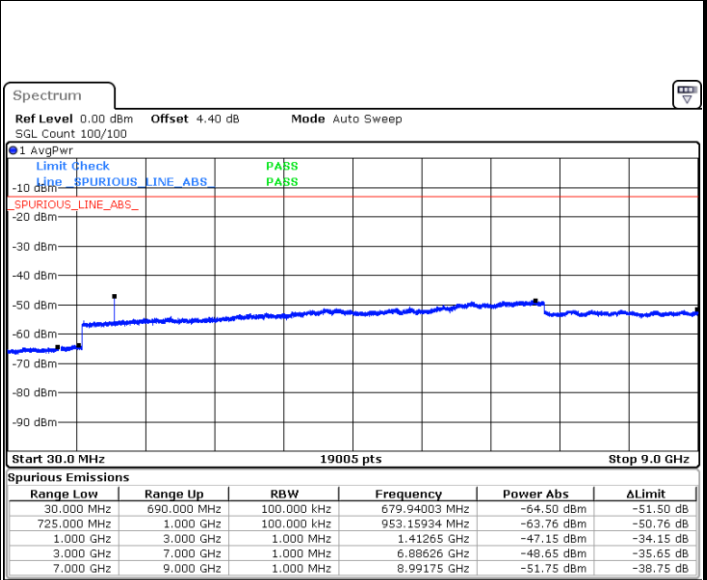
**LTE Band 12 / 3MHz**

**Lowest Channel / 64QAM**



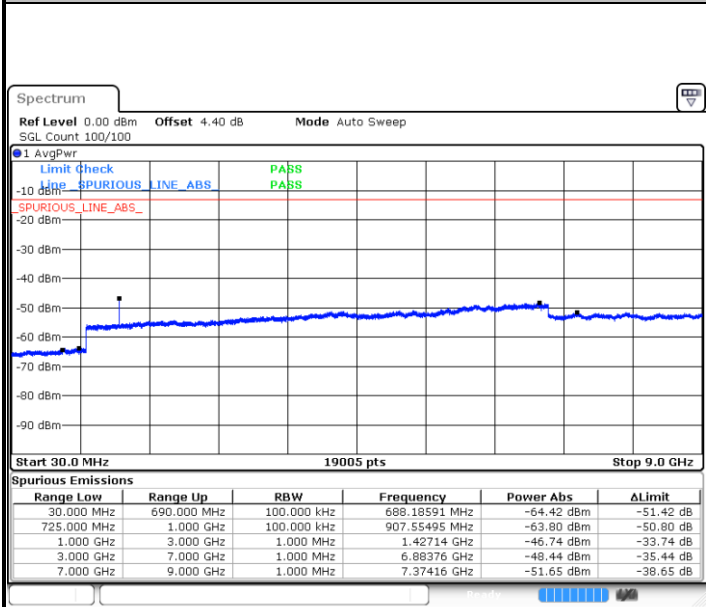
Date: 29 SEP.2018 14:58:26

**Middle Channel / 64QAM**



Date: 29 SEP.2018 14:59:21

**Highest Channel / 64QAM**



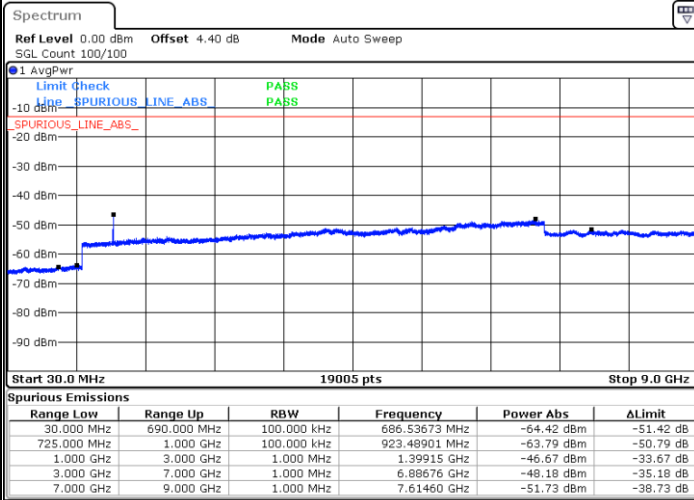
Date: 29 SEP.2018 15:00:15



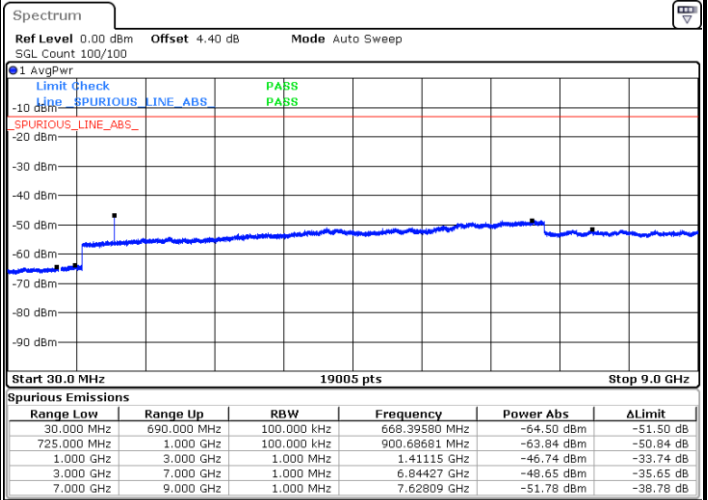
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

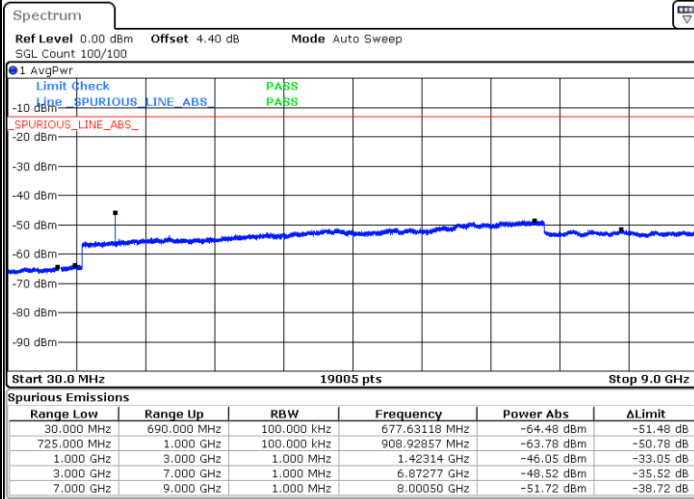


Date: 29 SEP.2018 15:06:38



Date: 29 SEP.2018 15:07:32

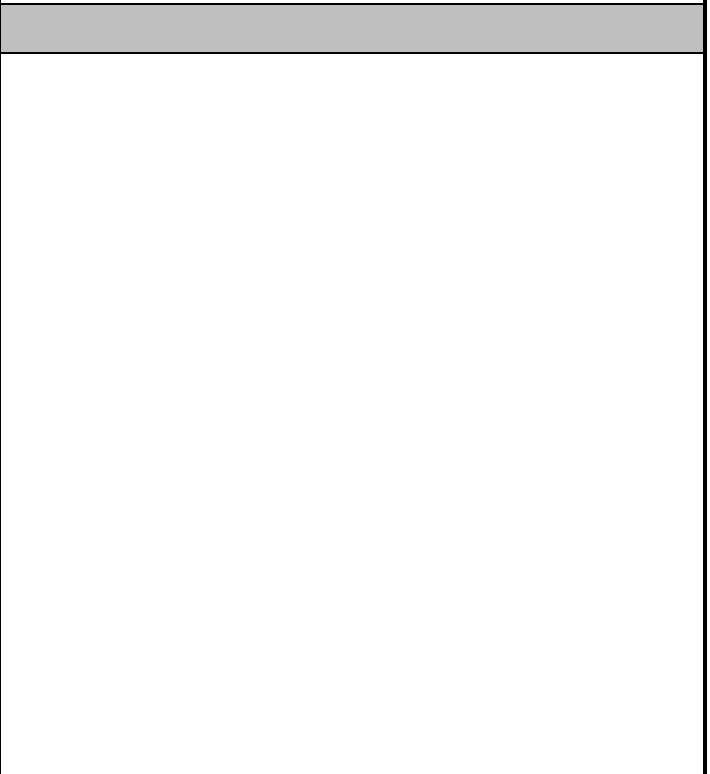
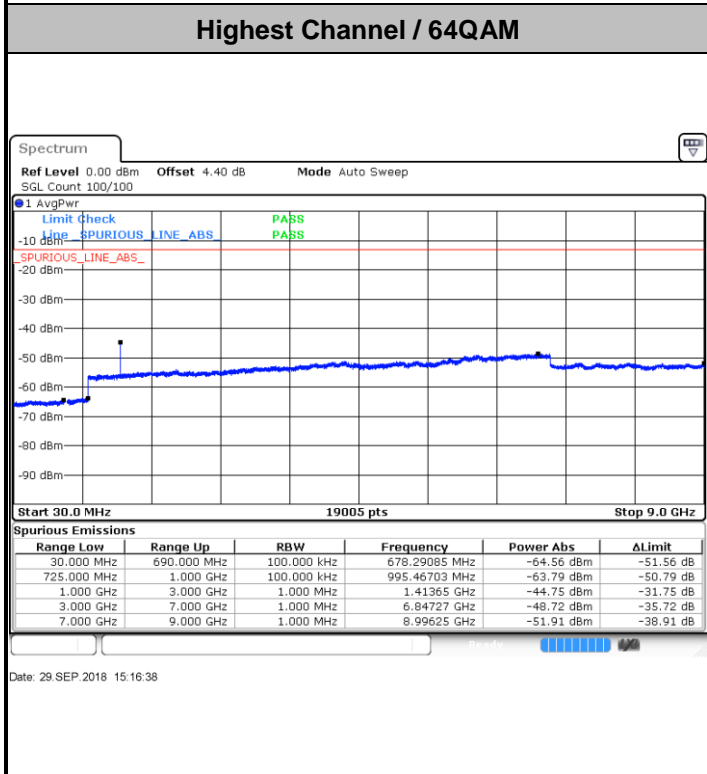
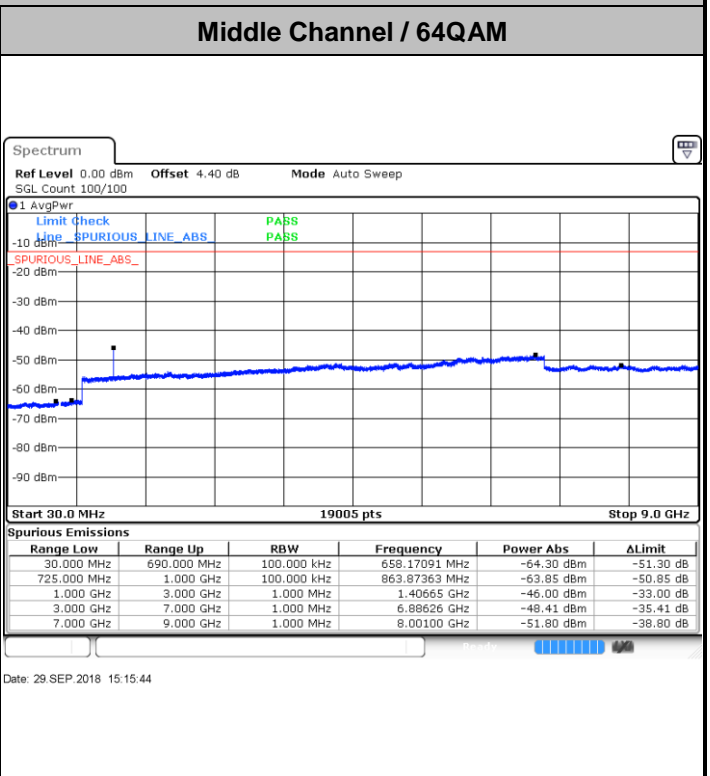
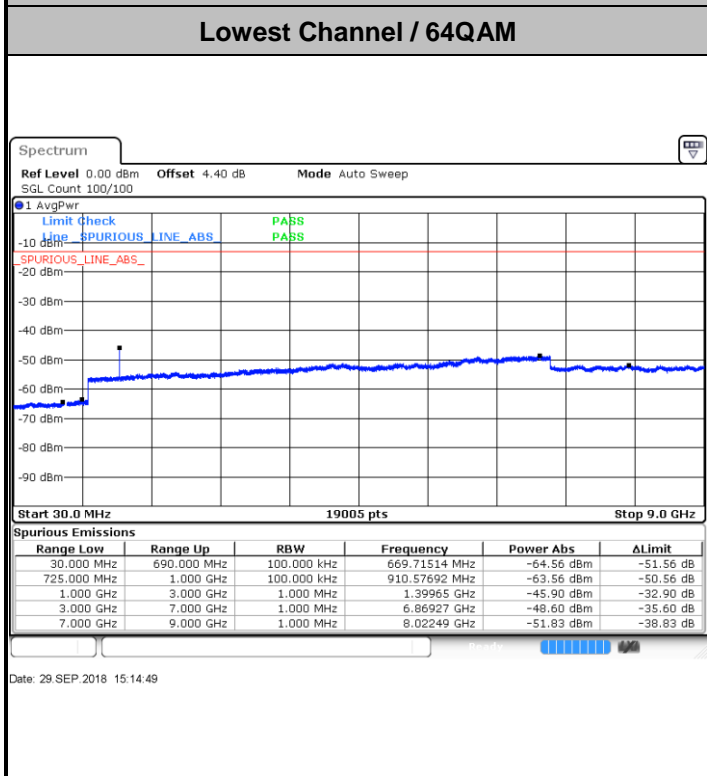
Highest Channel / 64QAM



Date: 29 SEP.2018 15:08:26



**LTE Band 12 / 10MHz**





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	0.0024	PASS
40	Normal Voltage	0.0066	
30	Normal Voltage	0.0016	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0058	
0	Normal Voltage	0.0076	
-10	Normal Voltage	0.0008	
-20	Normal Voltage	0.0003	
-30	Normal Voltage	0.0052	
20	Maximum Voltage	0.0013	
20	Normal Voltage	0.0069	
20	Battery End Point	0.0011	

Note:

1. Normal Voltage =4.0 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 13

## Peak-to-Average Ratio

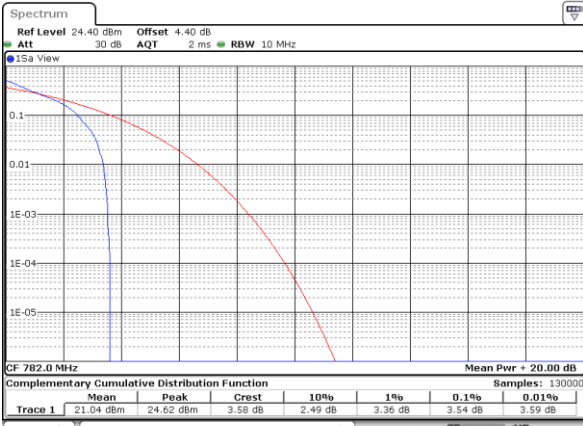
Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	<b>PASS</b>
Middle CH	3.54	4.96	4.38	5.86	
Highest CH	-	-	-	-	
Mod.	64QAM		Limit: 13dB		
RB Size	1RB	Full RB	Result		
Lowest CH			<b>PASS</b>		
Middle CH	5.28	6.35			
Highest CH					





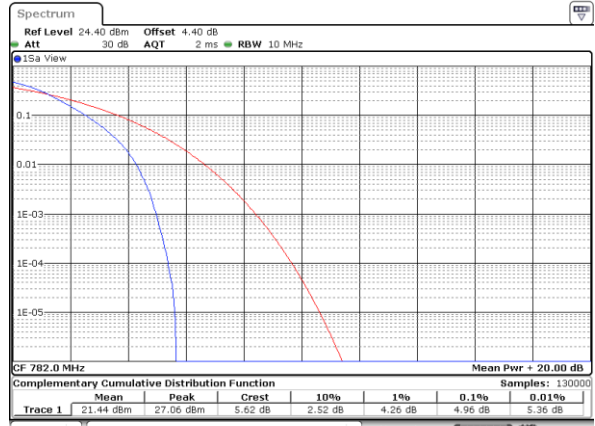
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 29 SEP 2016 17:18:55

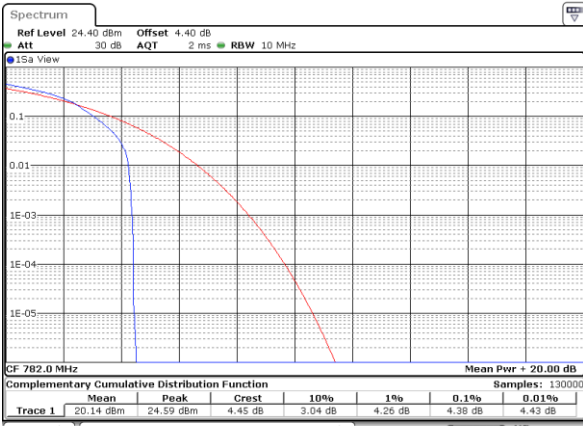
Middle Channel / Full RB



Date: 29 SEP 2016 17:18:45

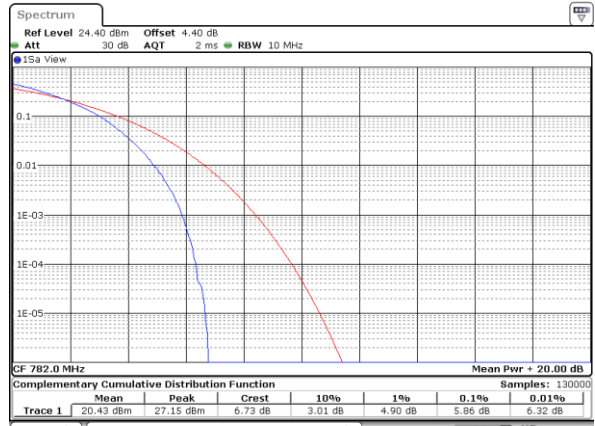
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 29 SEP 2016 17:19:04

Middle Channel / Full RB



Date: 29 SEP 2016 17:10:07



LTE Band 13 / 10MHz / 64QAM

Middle Channel/ 1RB



Date: 29 SEP 2016 17:19:13

Middle Channel / Full RB



Date: 29 SEP 2016 17:09:58



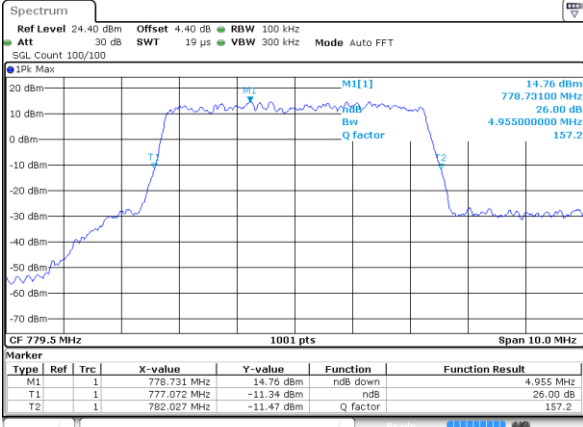
26dB Bandwidth

Mode	LTE Band 13 : 26dB BW(MHz)											
	5MHz		10MHz		5MHz	10MHz						
Mod.	QPSK	16QAM	QPSK	16QAM	64QAM	64QAM						
Lowest CH	4.955	4.955	-	-	4.845							
Middle CH	5.015	4.955	9.83	9.97	4.895	9.79						
Highest CH	4.965	4.925	-	-	4.875							



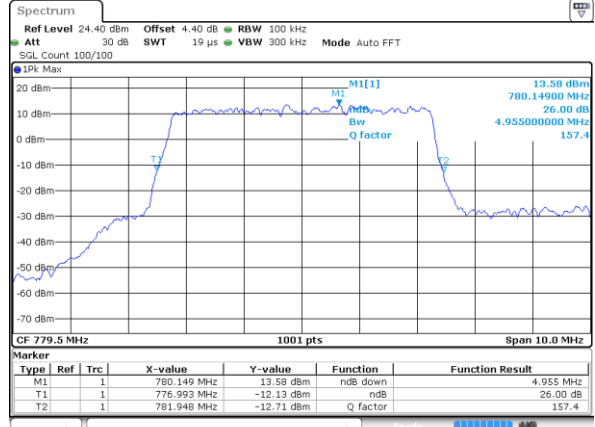
LTE Band 13

Lowest Channel / 5MHz / QPSK



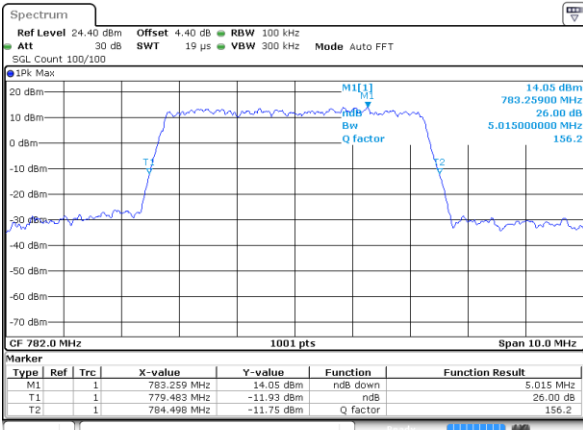
Date: 29 SEP 2018 16:20:48

Lowest Channel / 5MHz / 16QAM



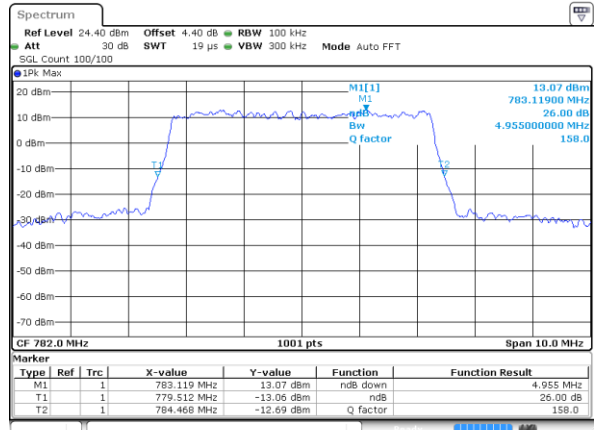
Date: 29 SEP 2018 16:21:08

Middle Channel / 5MHz / QPSK



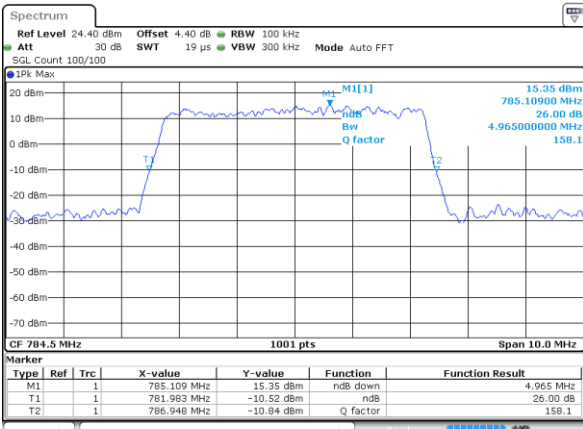
Date: 29 SEP 2018 16:22:27

Middle Channel / 5MHz / 16QAM



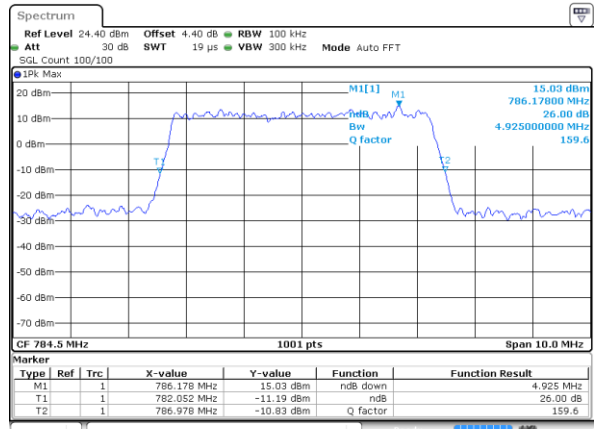
Date: 29 SEP 2018 16:22:07

Highest Channel / 5MHz / QPSK



Date: 29 SEP 2018 16:22:47

Highest Channel / 5MHz / 16QAM

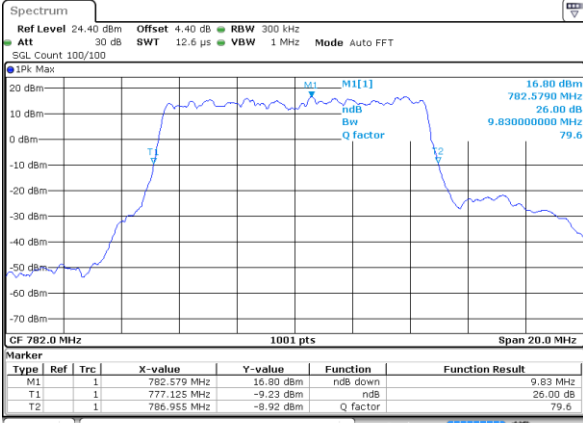


Date: 29 SEP 2018 16:23:07



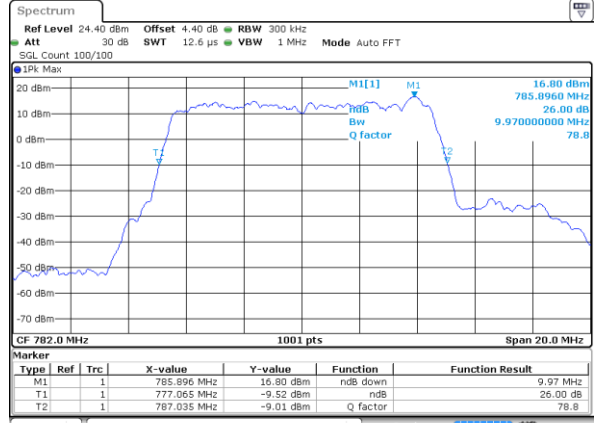
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 29 SEP 2018 16:24:26

Middle Channel / 10MHz / 16QAM

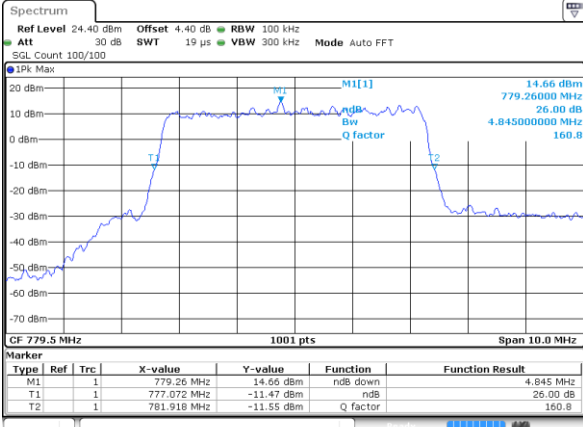


Date: 29 SEP 2018 16:24:06



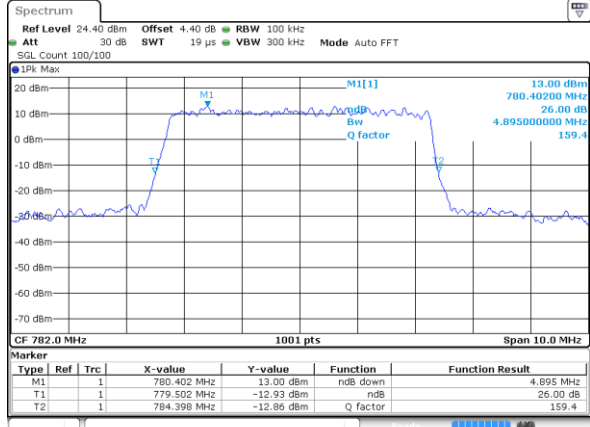
LTE Band 13

Lowest Channel / 5MHz / 64QAM



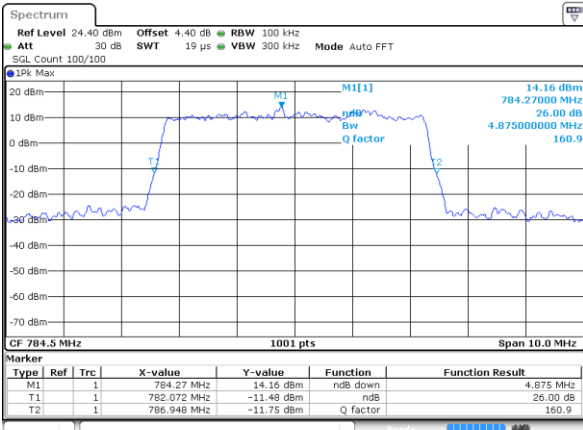
Date: 29 SEP 2018 16:21:28

Middle Channel / 5MHz / 64QAM



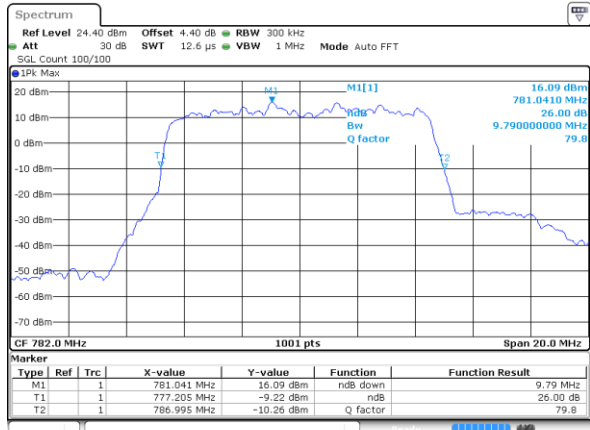
Date: 29 SEP 2018 16:21:47

Highest Channel / 5MHz / 64QAM



Date: 29 SEP 2018 16:23:27

Middle Channel / 10MHz / 64QAM



Date: 29 SEP 2018 16:23:46



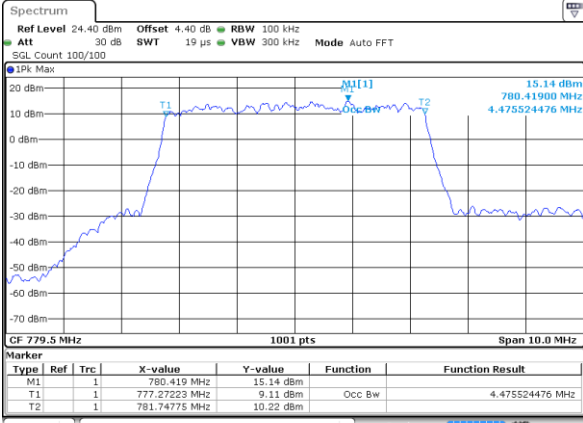
Occupied Bandwidth

Mode	LTE Band 13 : 99%OBW(MHz)											
BW	5MHz		10MHz		5MHz	10MHz						
Mod.	QPSK	16QAM	QPSK	16QAM	64QAM	64QAM						
Lowest CH	4.48	4.47	-	-	4.50							
Middle CH	4.49	4.51	9.01	9.01	4.47	8.99						
Highest CH	4.48	4.48	-	-	4.50							



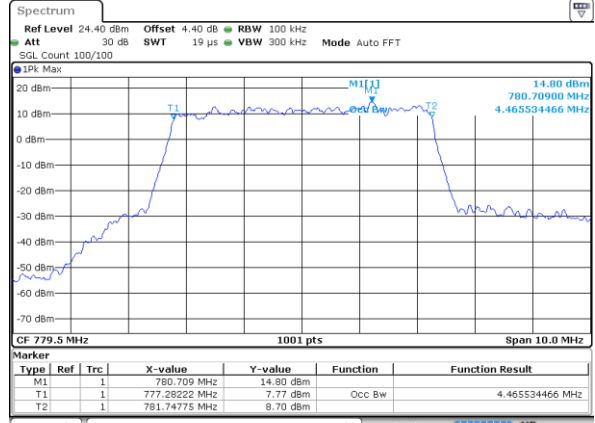
LTE Band 13

Lowest Channel / 5MHz / QPSK



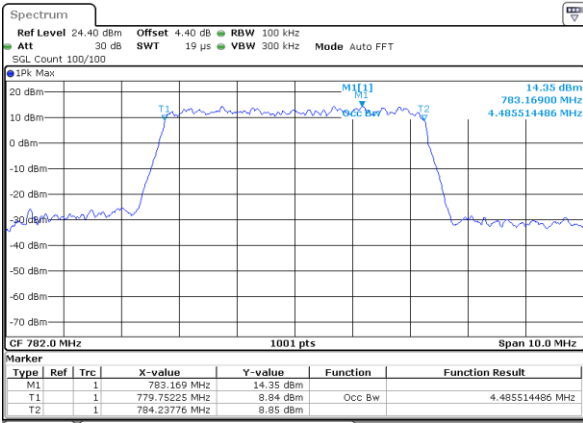
Date: 29 SEP 2018 16:20:38

Lowest Channel / 5MHz / 16QAM



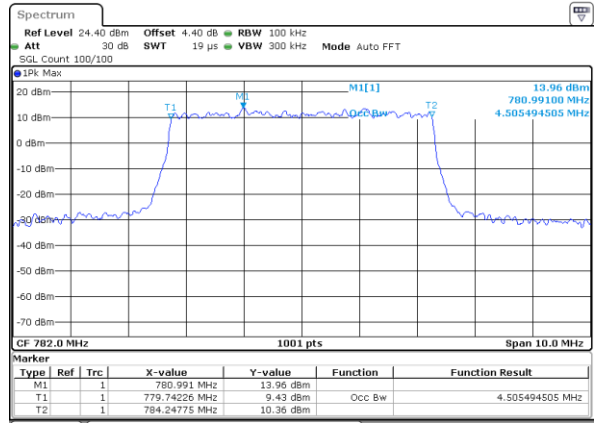
Date: 29 SEP 2018 16:20:58

Middle Channel / 5MHz / QPSK



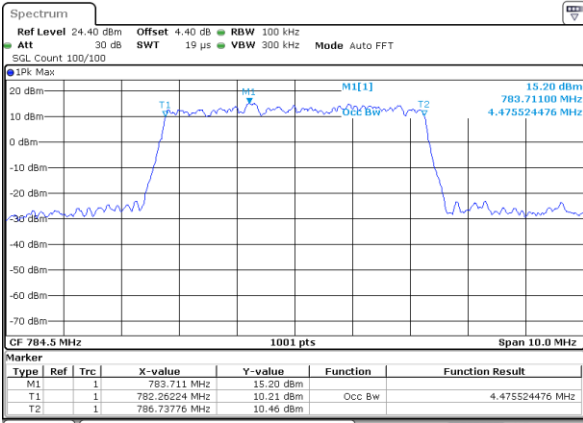
Date: 29 SEP 2018 16:22:17

Middle Channel / 5MHz / 16QAM



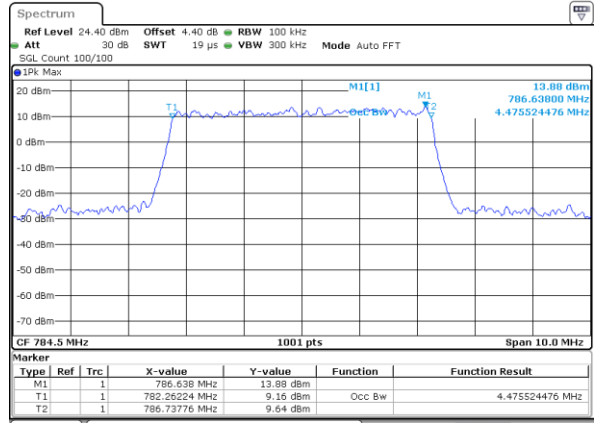
Date: 29 SEP 2018 16:21:57

Highest Channel / 5MHz / QPSK



Date: 29 SEP 2018 16:22:37

Highest Channel / 5MHz / 16QAM



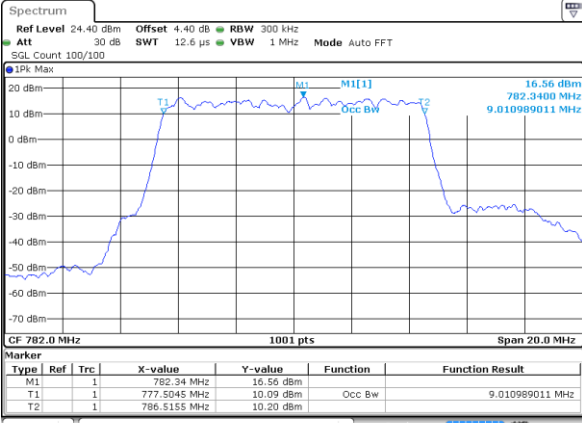
Date: 29 SEP 2018 16:22:57





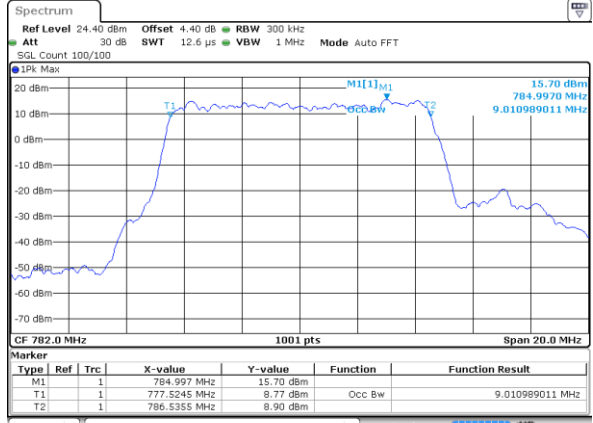
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 29 SEP 2018 16:24:16

Middle Channel / 10MHz / 16QAM

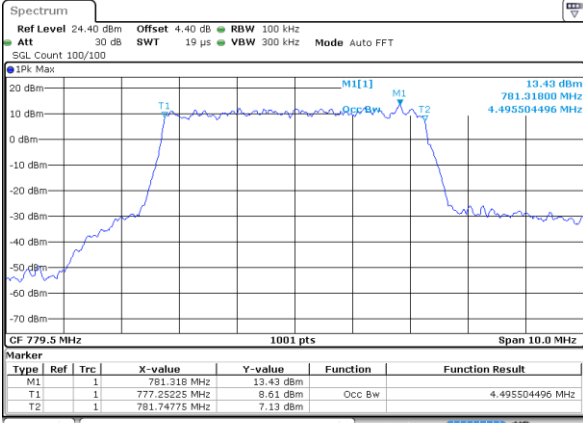


Date: 29 SEP 2018 16:23:56



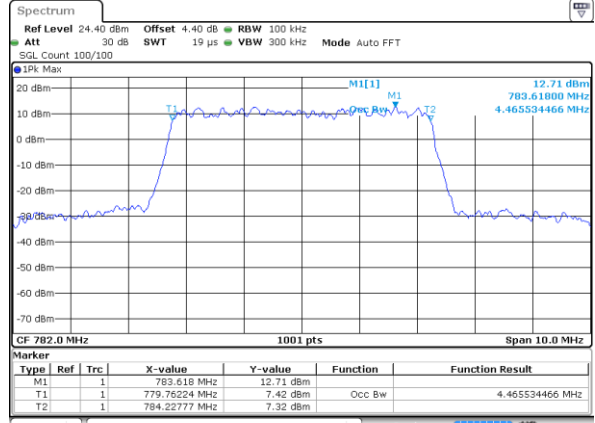
LTE Band 13

Lowest Channel / 5MHz / 64QAM



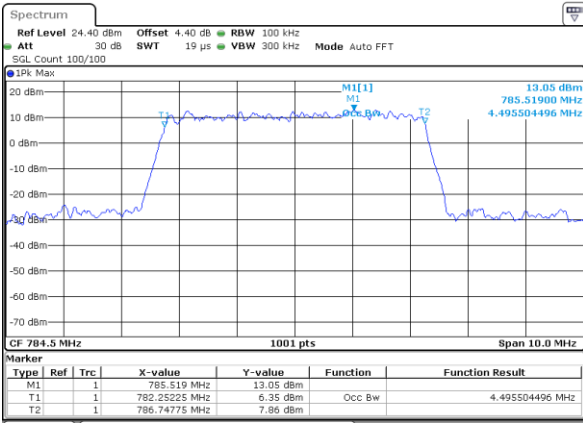
Date: 29 SEP 2018 16:21:18

Middle Channel / 5MHz / 64QAM



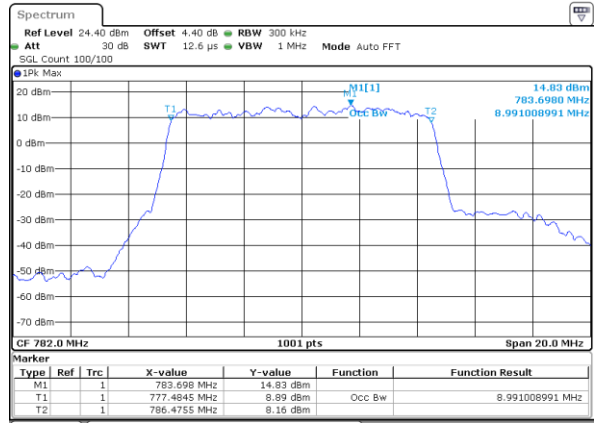
Date: 29 SEP 2018 16:21:37

Highest Channel / 5MHz / 64QAM



Date: 29 SEP 2018 16:23:17

Middle Channel / 10MHz / 64QAM



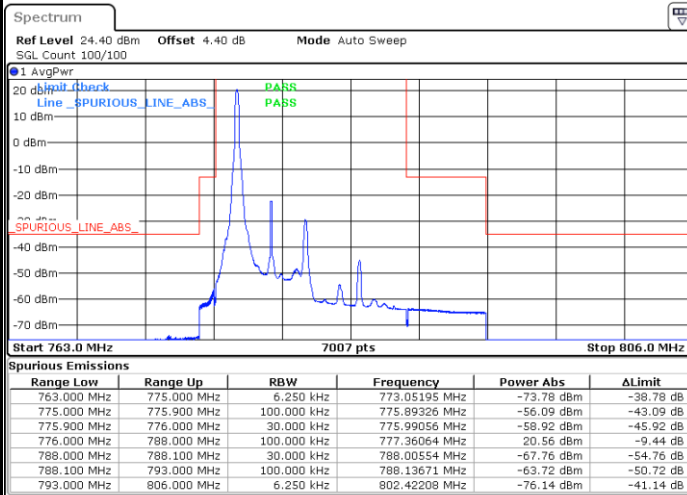
Date: 29 SEP 2018 16:23:36



# Conducted Band Edge

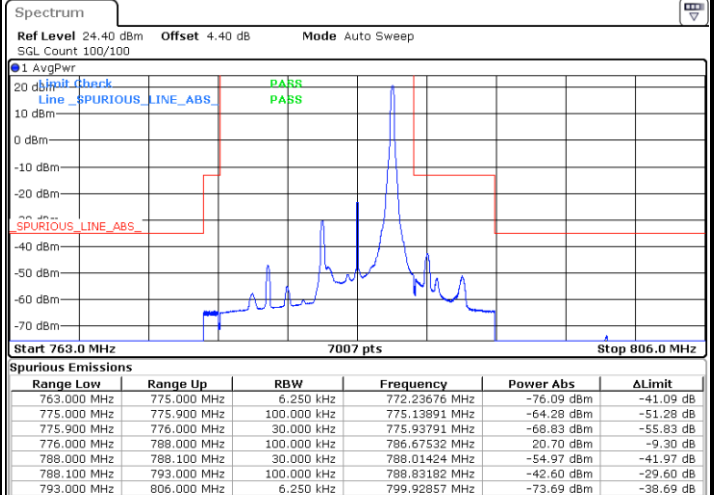
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



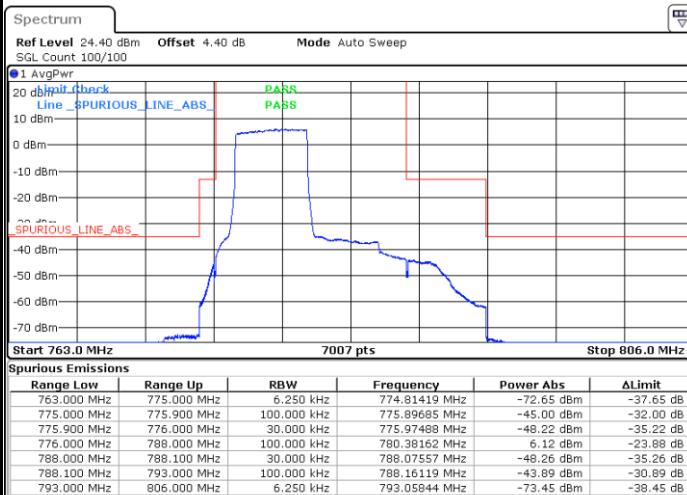
Date: 29 SEP 2018 16:34:11

### Highest Band Edge / 1 RB



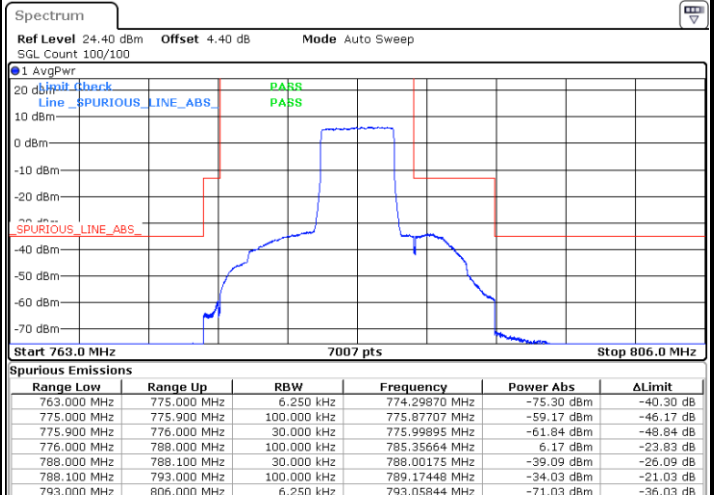
Date: 29 SEP 2018 16:35:49

### Lowest Band Edge / Full RB



Date: 29 SEP 2018 16:26:04

### Highest Band Edge / Full RB



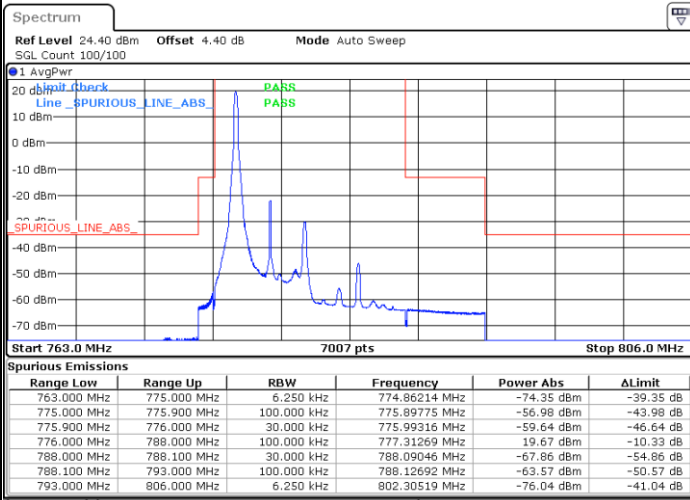
Date: 29 SEP 2018 16:43:56



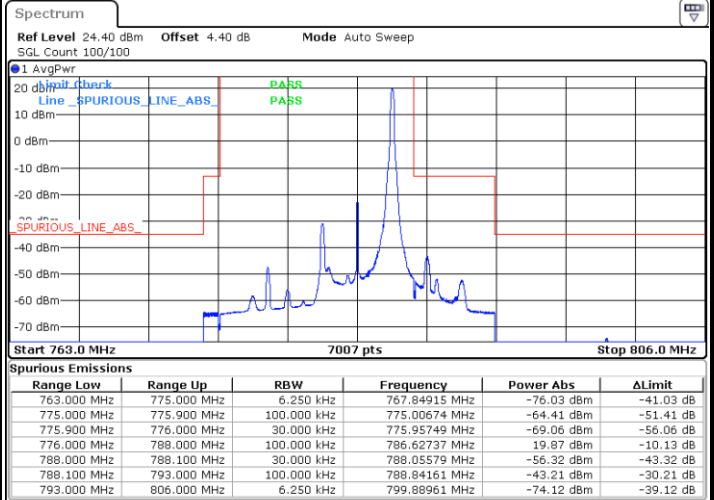
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



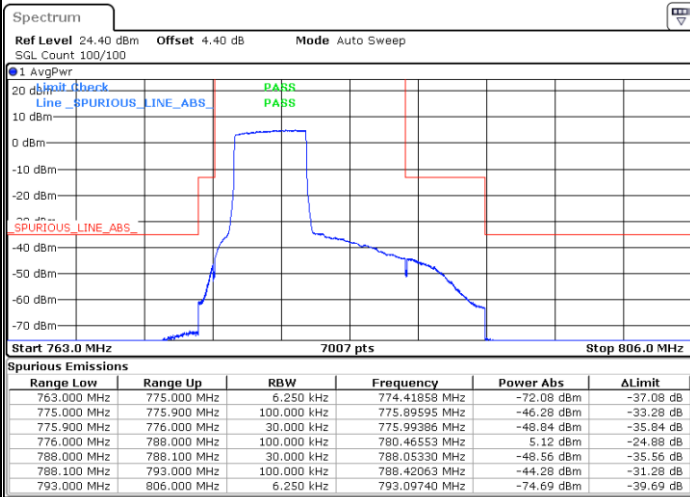
Date: 29 SEP 2018 16:32:34



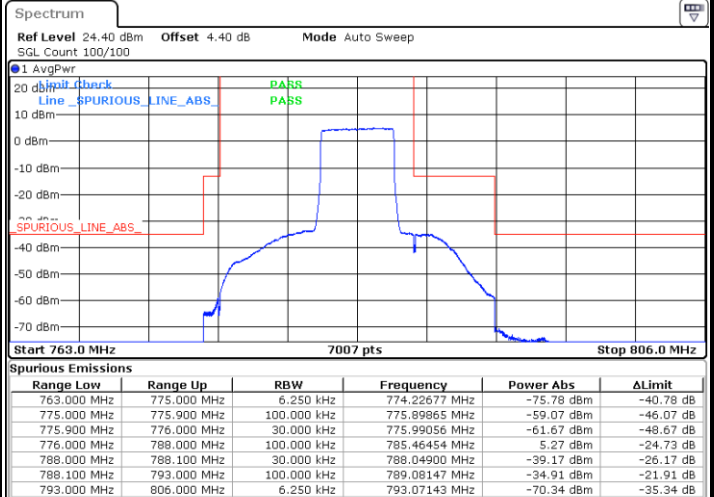
Date: 29 SEP 2018 16:37:26

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 29 SEP 2018 16:27:41

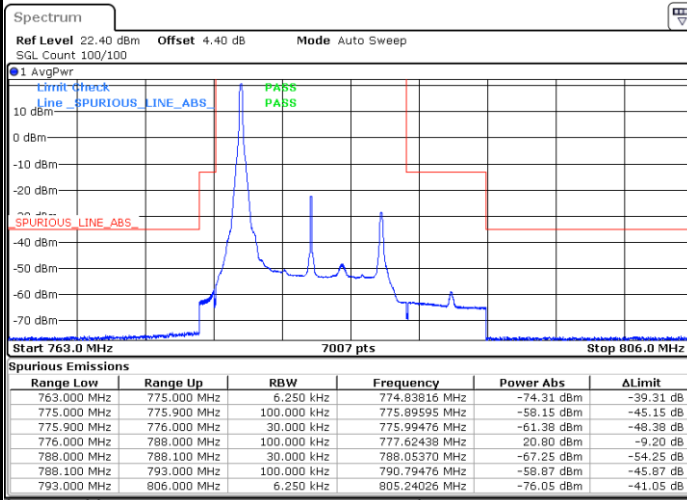


Date: 29 SEP 2018 16:42:18



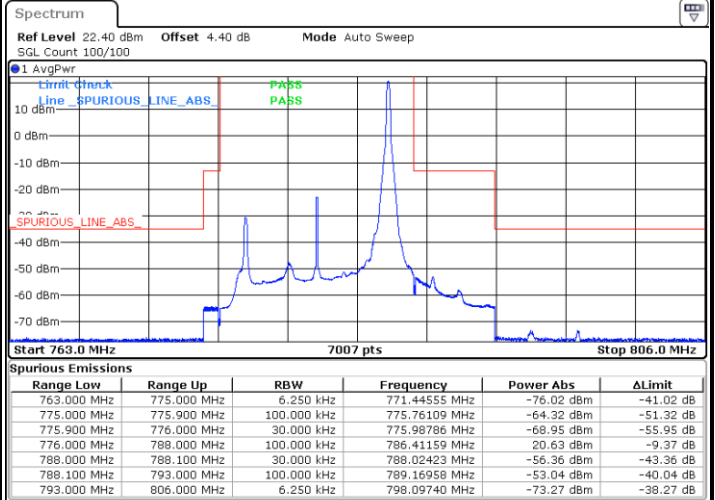
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB



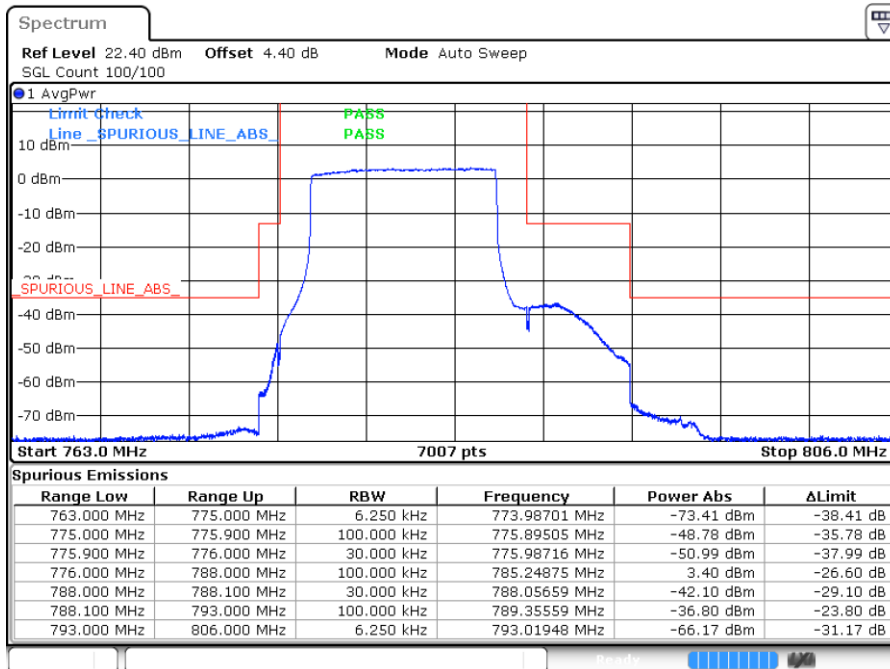
Date: 29 SEP 2018 16:56:22

Highest Band Edge / 1 RB



Date: 29 SEP 2018 17:04:29

Band Edge / Full RB

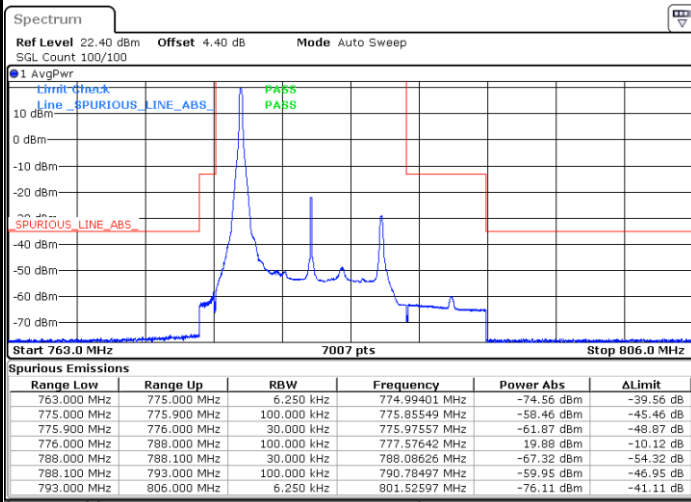


Date: 29 SEP 2018 17:06:06



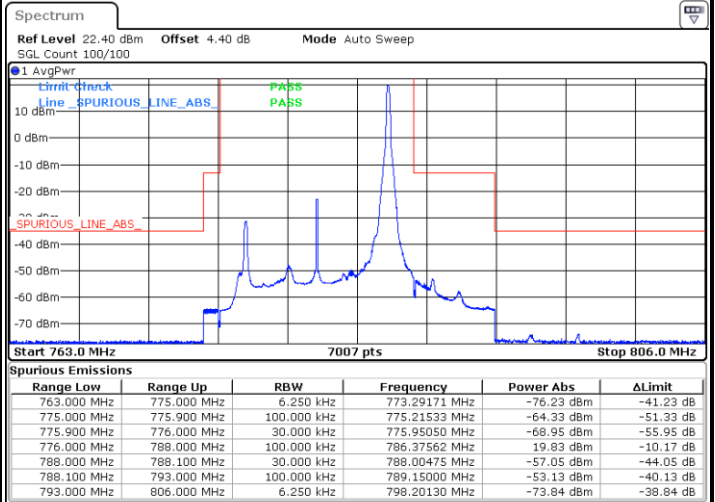
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



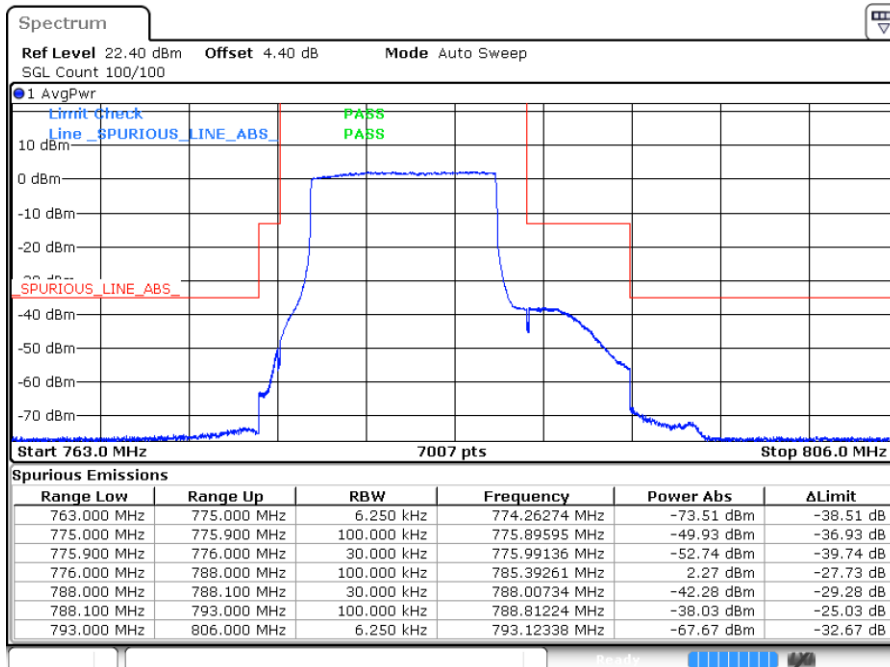
Date: 29 SEP 2018 16:57:59

Highest Band Edge / 1 RB



Date: 29 SEP 2018 17:02:51

Band Edge / Full RB

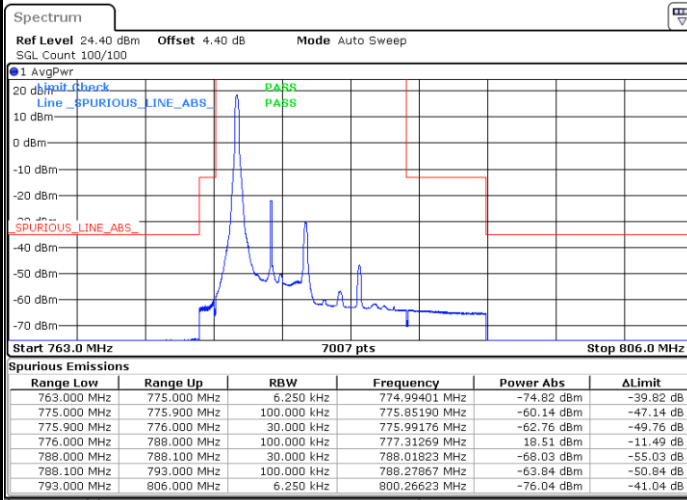


Date: 29 SEP 2018 17:07:44



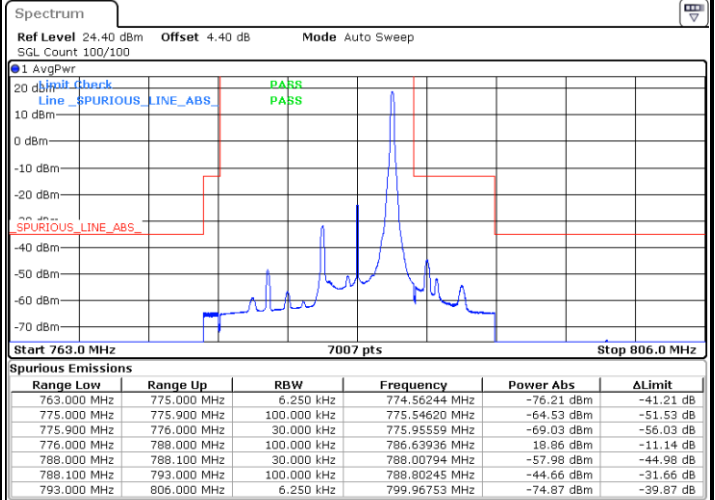
LTE Band 17 / 5MHz / 64QAM

Lowest Band Edge / 1 RB



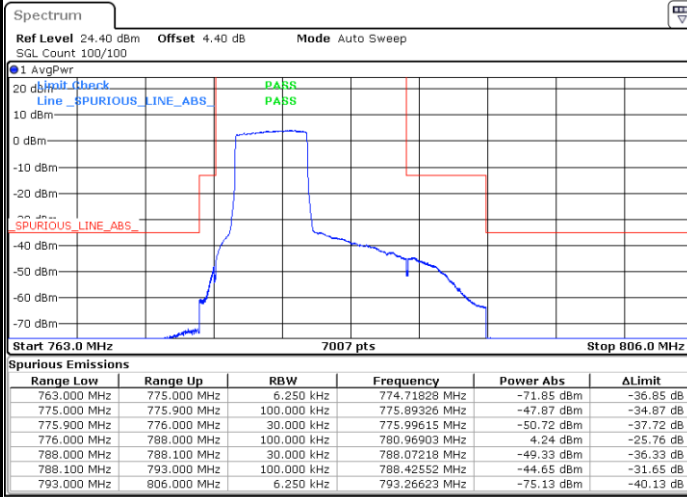
Date: 29 SEP 2018 16:30:56

Highest Band Edge / 1 RB



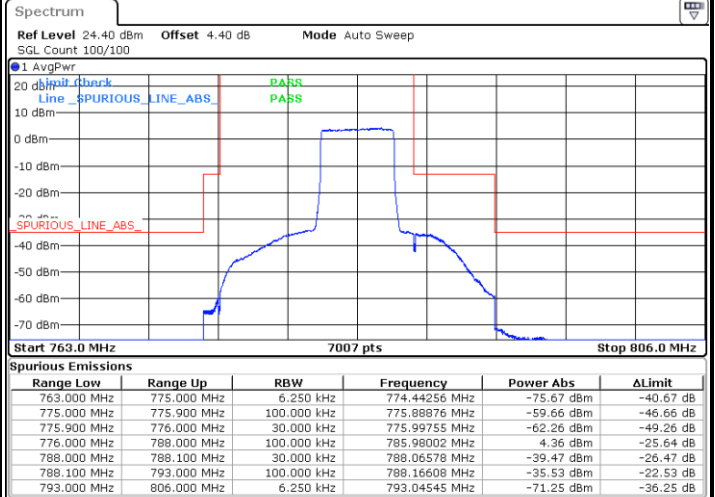
Date: 29 SEP 2018 16:39:03

Lowest Band Edge / Full RB



Date: 29 SEP 2018 16:29:19

Highest Band Edge / Full RB

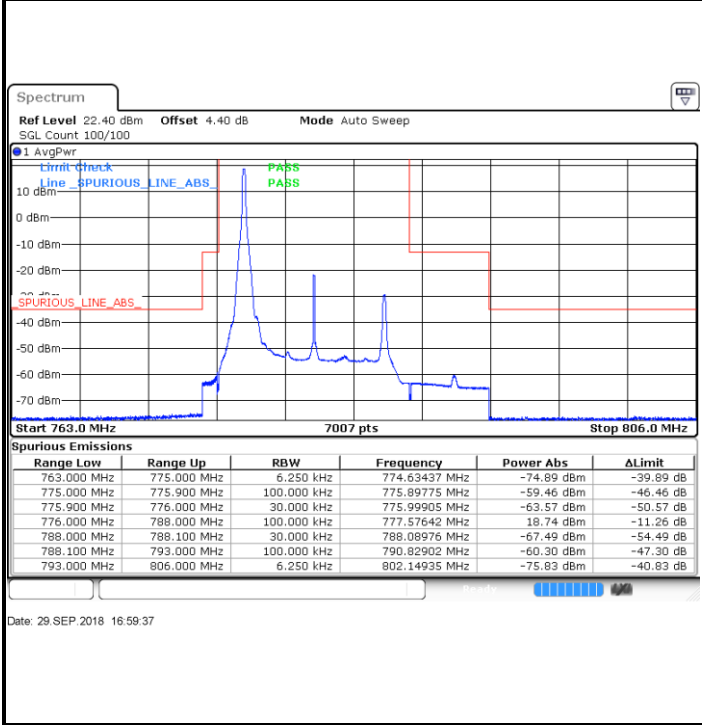


Date: 29 SEP 2018 16:40:41

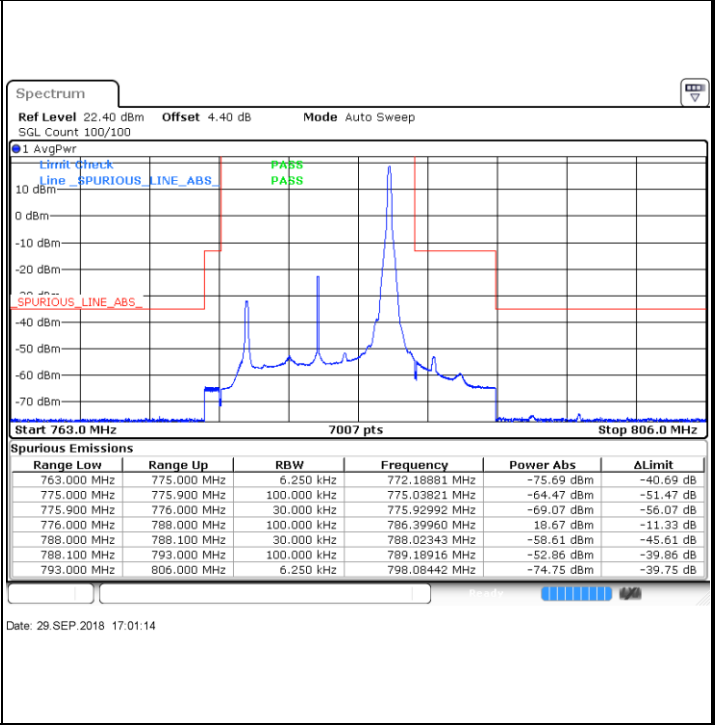


**LTE Band 13 / 10MHz / 64QAM**

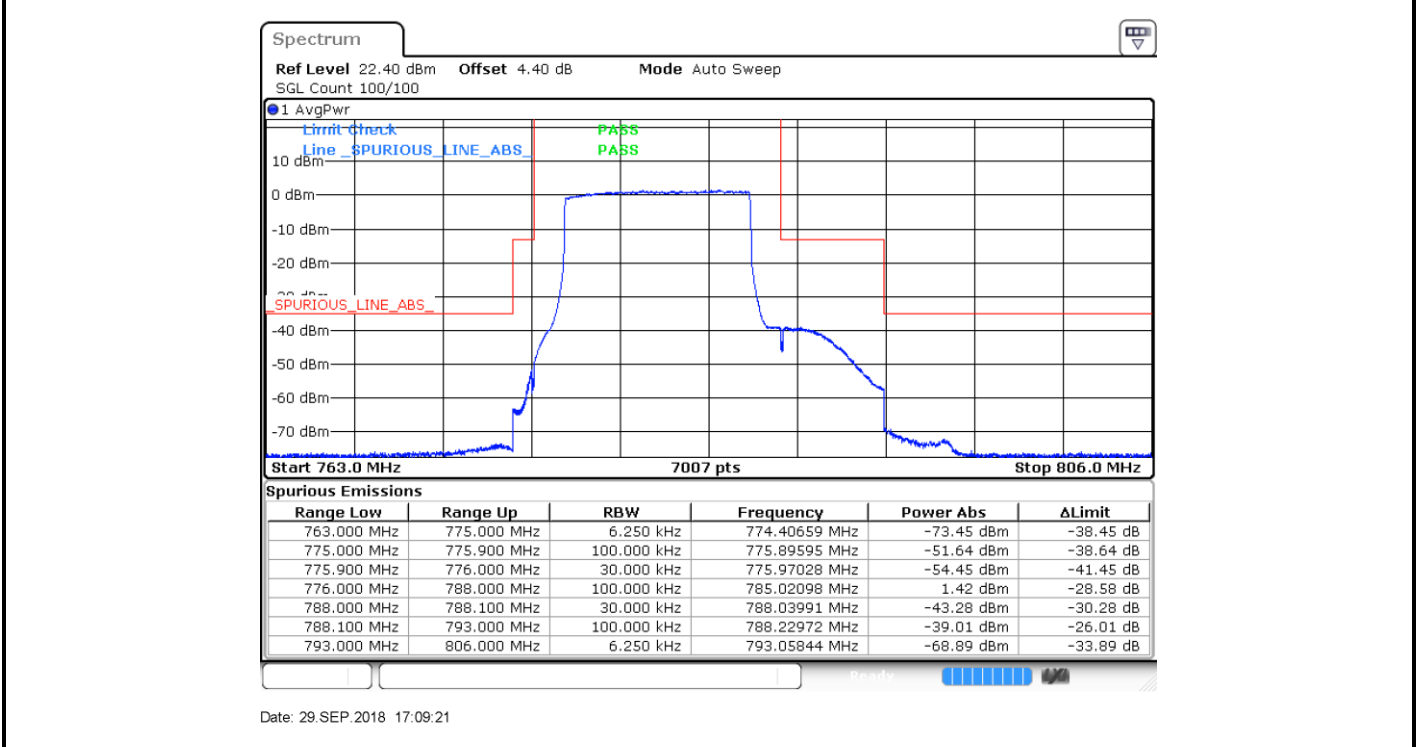
**Lowest Band Edge / 1 RB**



**Highest Band Edge / 1 RB**



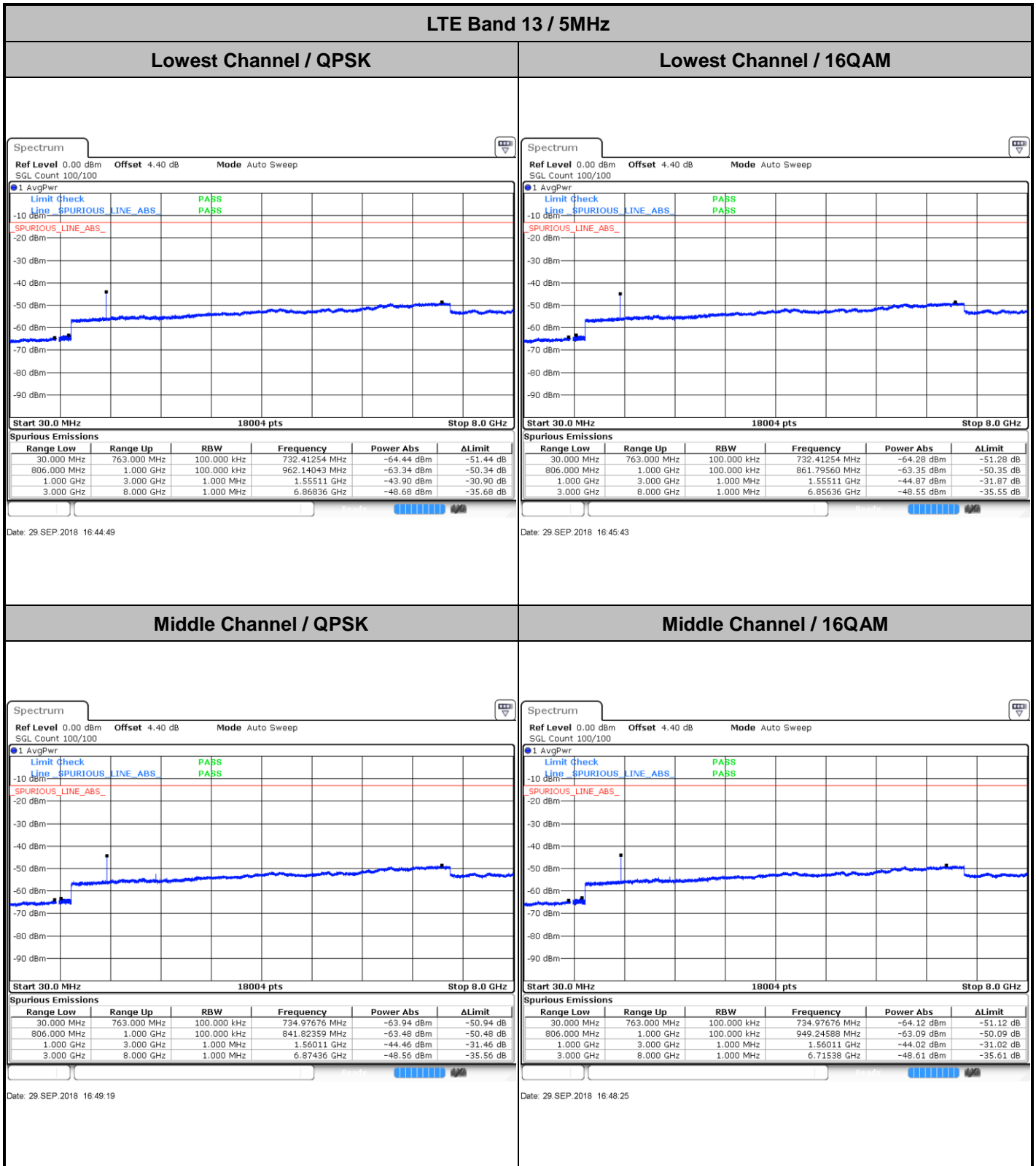
**Band Edge / Full RB**







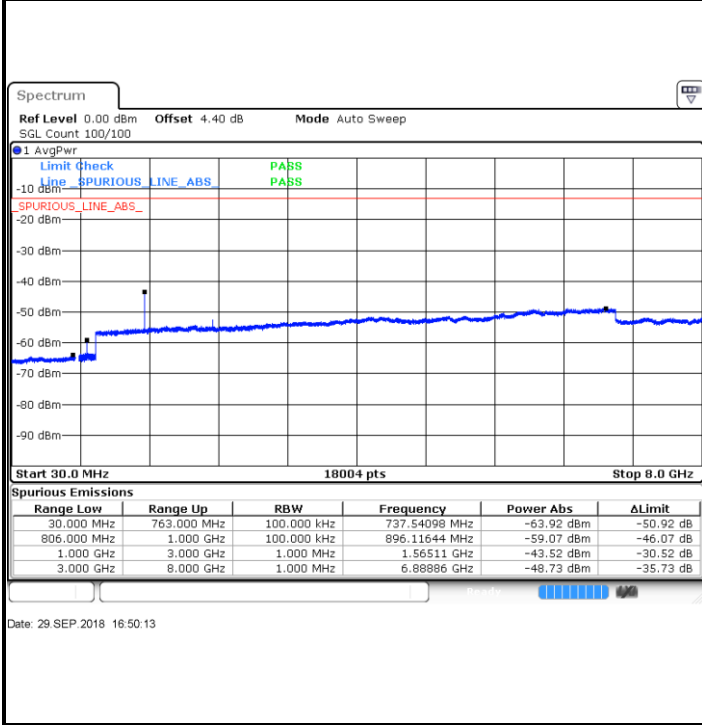
# Conducted Spurious Emission



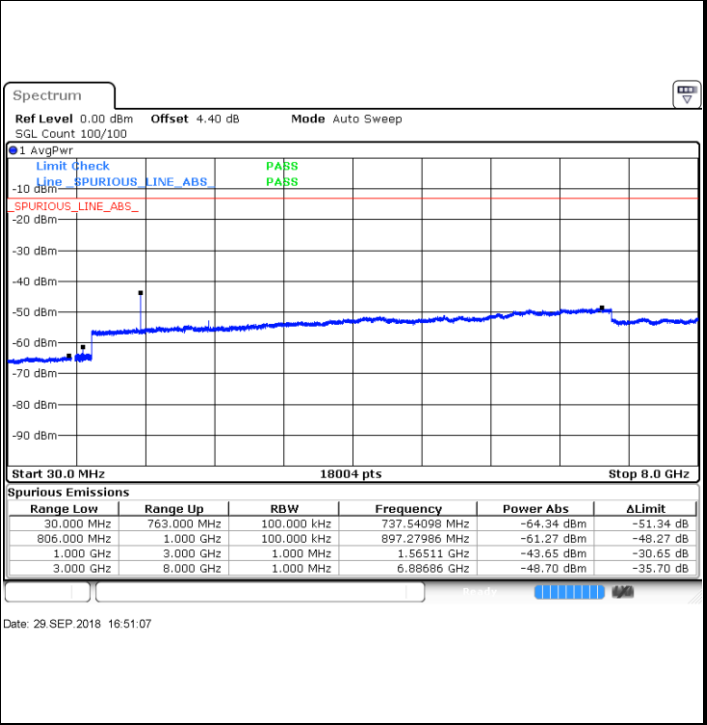


LTE Band 13 / 5MHz

Highest Channel / QPSK

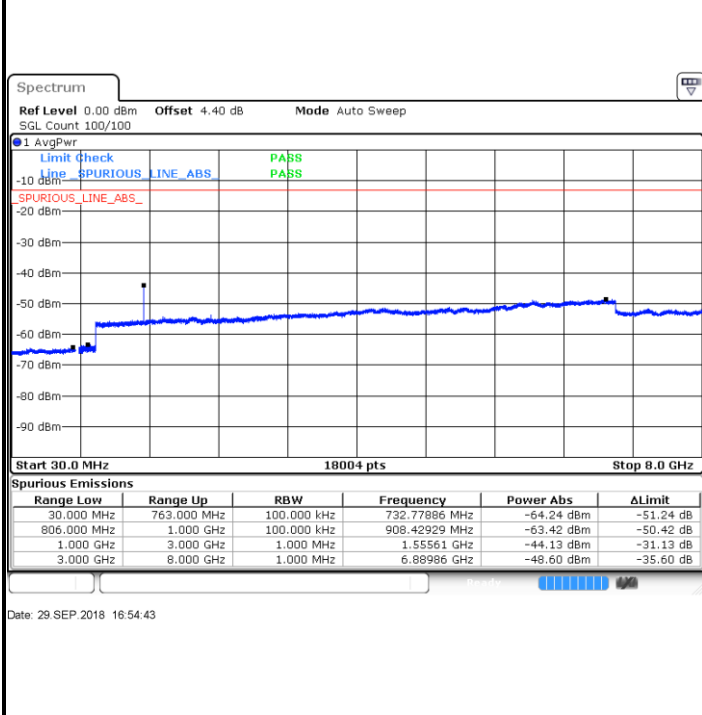


Highest Channel / 16QAM

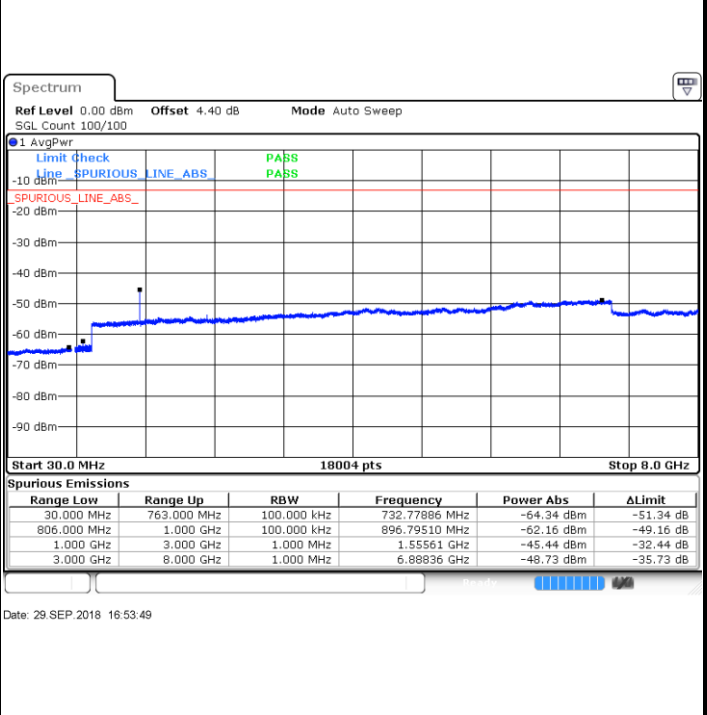


LTE Band 13 / 10MHz

Middle Channel / QPSK



Middle Channel / 16QAM

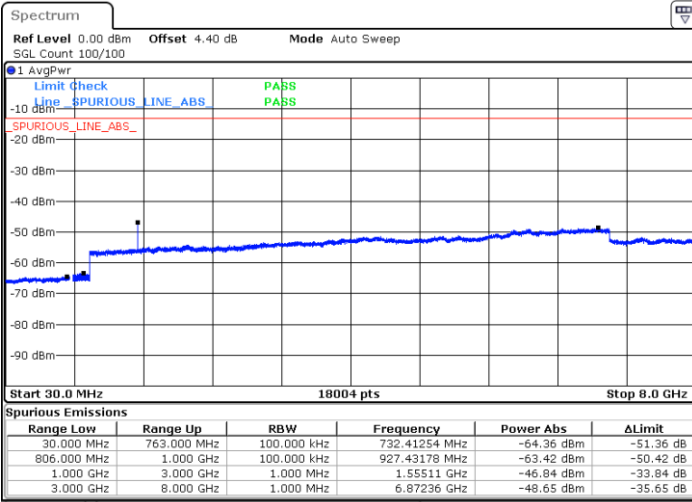




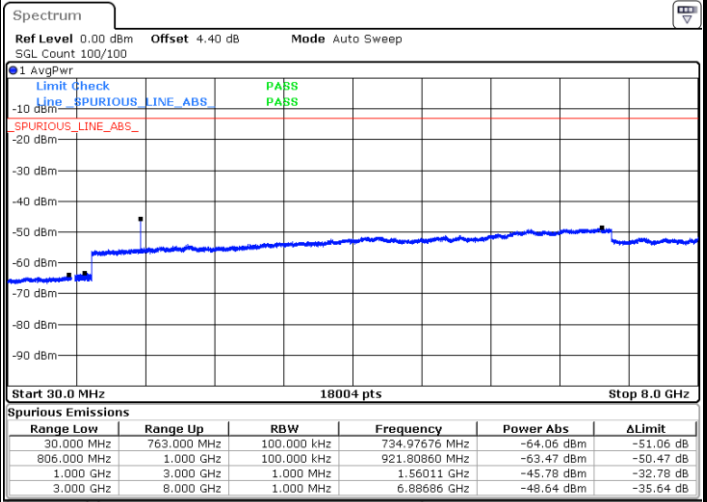
LTE Band 17 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

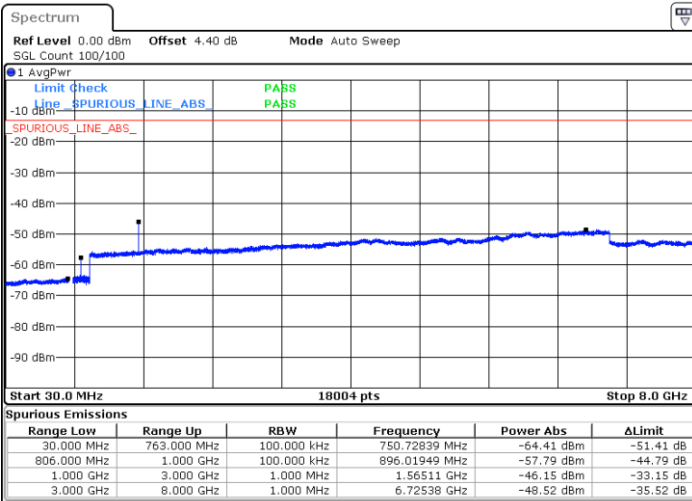


Date: 29 SEP.2018 16:46:37



Date: 29 SEP.2018 16:47:31

Highest Channel / 64QAM

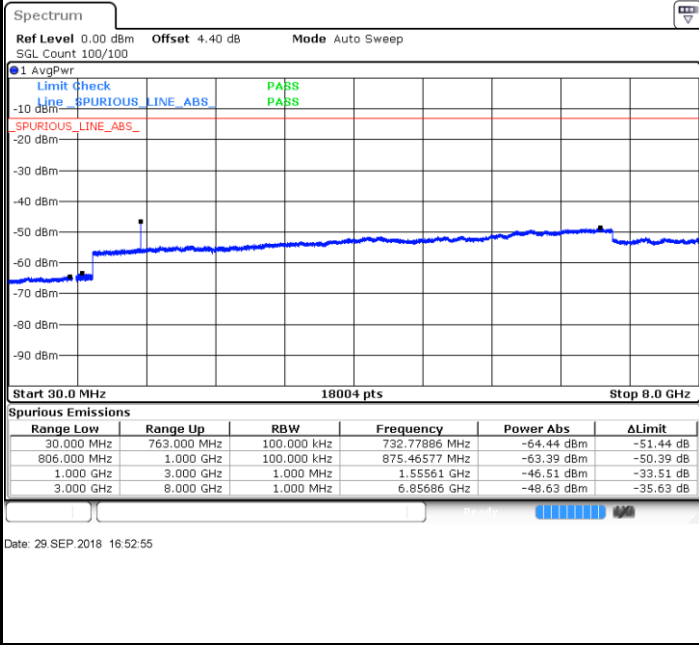


Date: 29 SEP.2018 16:52:01



LTE Band 17 / 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	0.0081	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0008	
0	Normal Voltage	0.0072	
-10	Normal Voltage	0.0069	
-20	Normal Voltage	0.0003	
-30	Normal Voltage	0.0055	
20	Maximum Voltage	0.0015	
20	Normal Voltage	0.0063	
20	Battery End Point	0.0004	

**Note:**

1. Normal Voltage =4.0 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 25

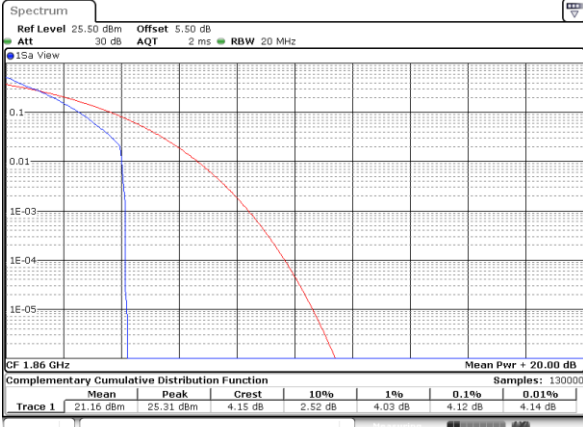
## Peak-to-Average Ratio

Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.12	4.75	4.72	5.62	PASS
Middle CH	4.55	4.72	5.1	5.74	
Highest CH	4.72	4.9	5.59	5.94	
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.97	6.12			PASS
Middle CH	6.52	6.29			
Highest CH	6.7	6.43			



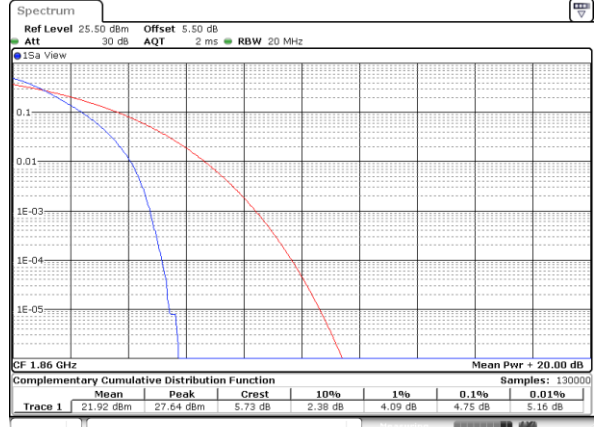
LTE Band 25 / 20MHz / QPSK

Lowest Channel / 1RB



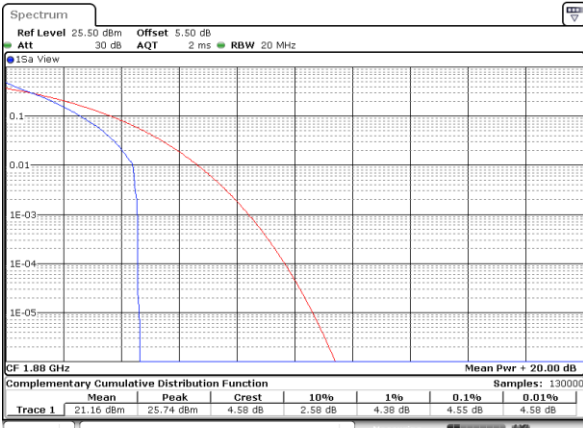
Date: 1.OCT.2018 22:45:14

Lowest Channel / Full RB



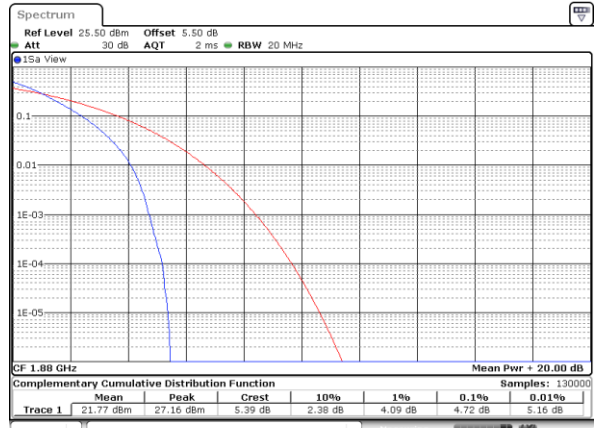
Date: 1.OCT.2018 22:46:07

Middle Channel / 1RB



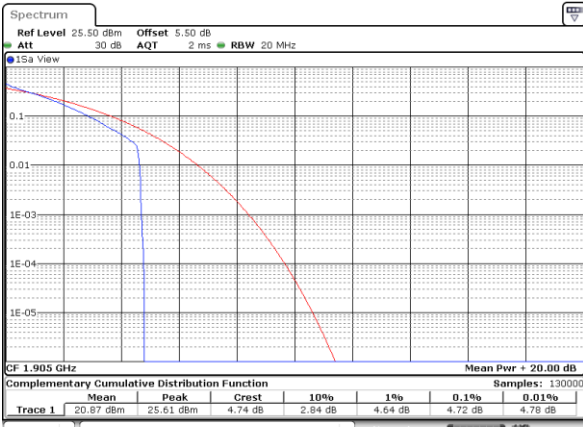
Date: 1.OCT.2018 22:47:15

Middle Channel / Full RB



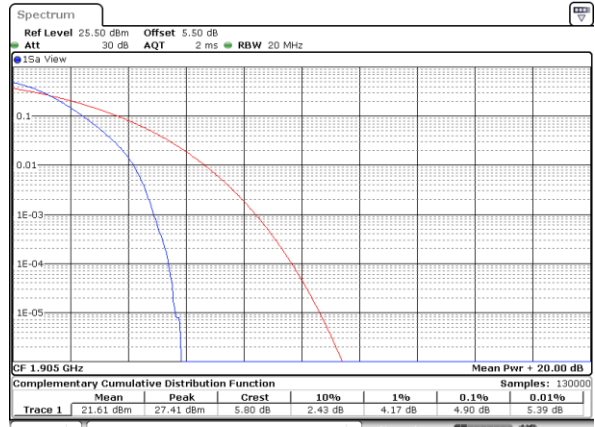
Date: 1.OCT.2018 22:46:28

Highest Channel / 1RB



Date: 1.OCT.2018 22:47:23

Highest Channel / Full RB

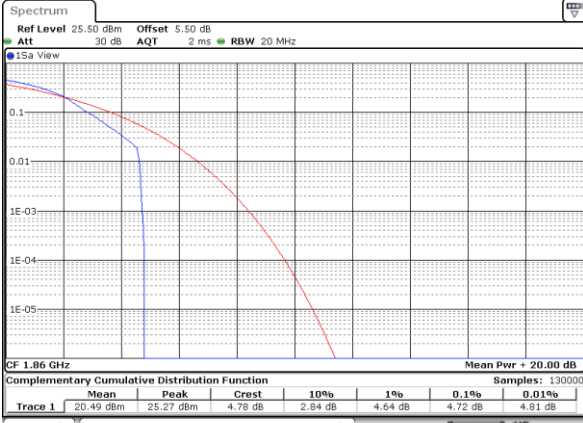


Date: 1.OCT.2018 22:48:09



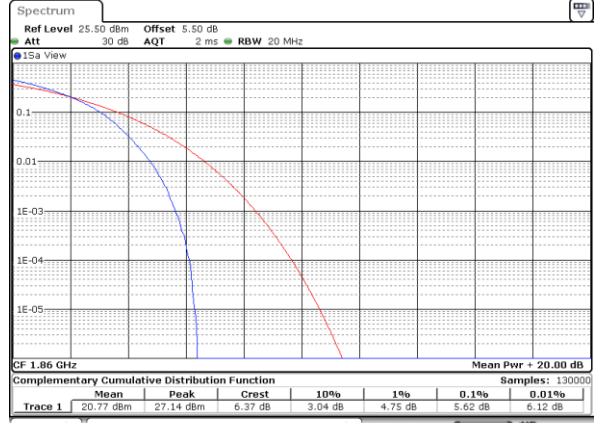
LTE Band 25 / 20MHz / 16QAM

Lowest Channel / 1RB



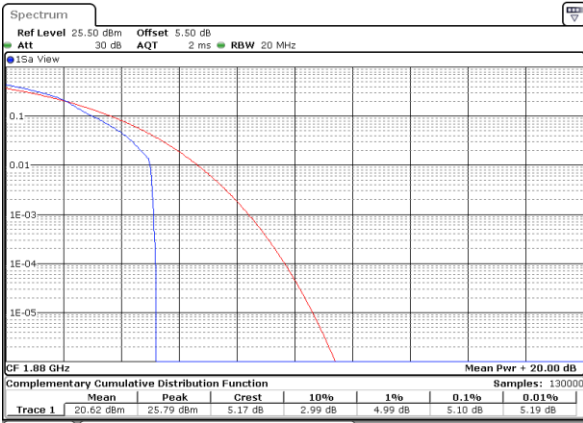
Date: 1.OCT.2018 22:45:23

Lowest Channel / Full RB



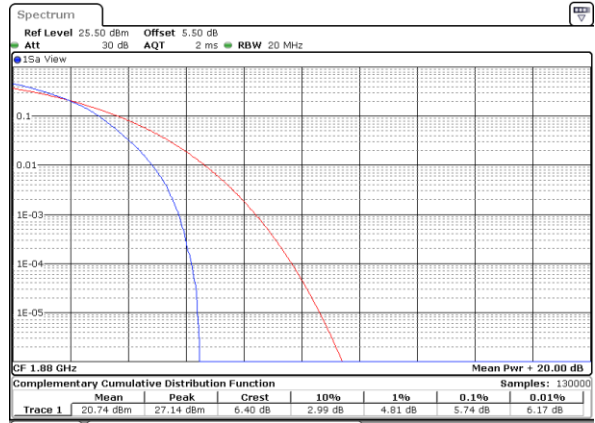
Date: 1.OCT.2018 22:45:57

Middle Channel / 1RB



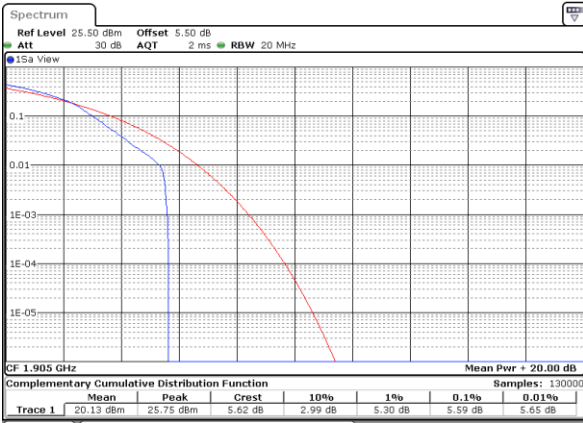
Date: 1.OCT.2018 22:47:04

Middle Channel / Full RB



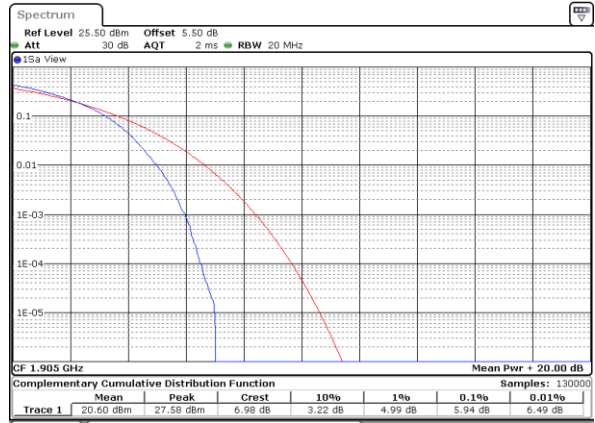
Date: 1.OCT.2018 22:46:38

Highest Channel / 1RB



Date: 1.OCT.2018 22:47:31

Highest Channel / Full RB



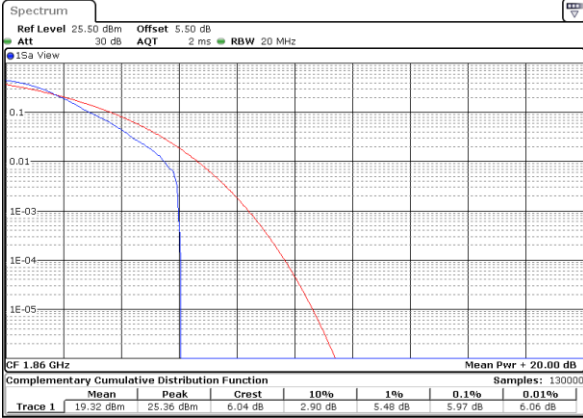
Date: 1.OCT.2018 22:47:59





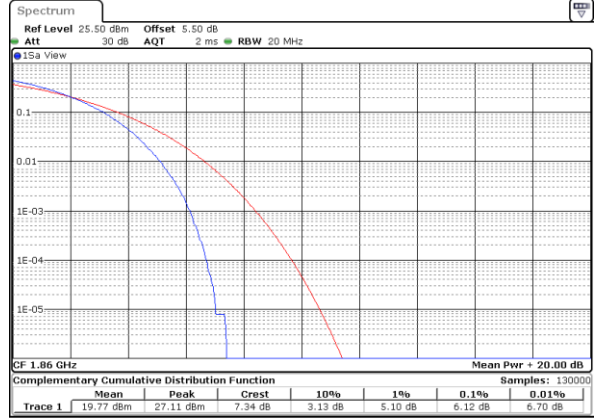
LTE Band 25 / 20MHz / 64QAM

Lowest Channel / 1RB



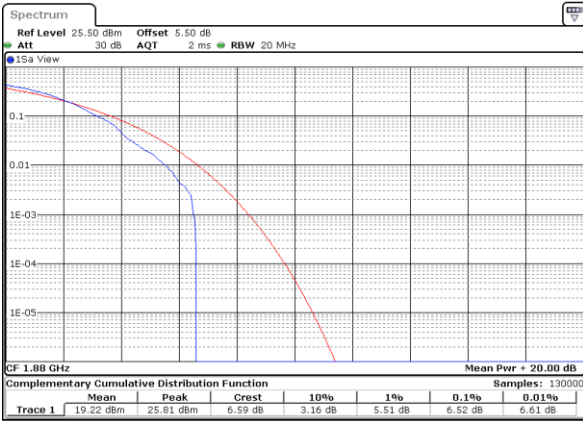
Date: 1.OCT.2018 22:45:32

Lowest Channel / Full RB



Date: 1.OCT.2018 22:45:43

Middle Channel / 1RB



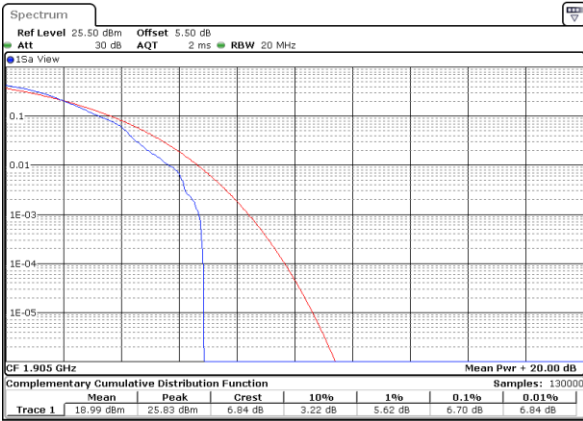
Date: 1.OCT.2018 22:46:55

Middle Channel / Full RB



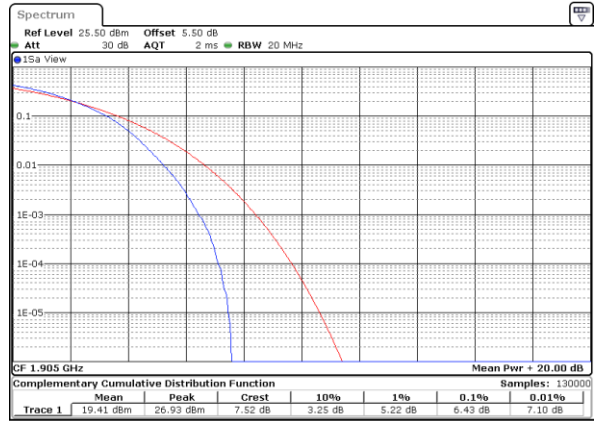
Date: 1.OCT.2018 22:46:47

Highest Channel / 1RB



Date: 1.OCT.2018 22:47:42

Highest Channel / Full RB



Date: 1.OCT.2018 22:47:50



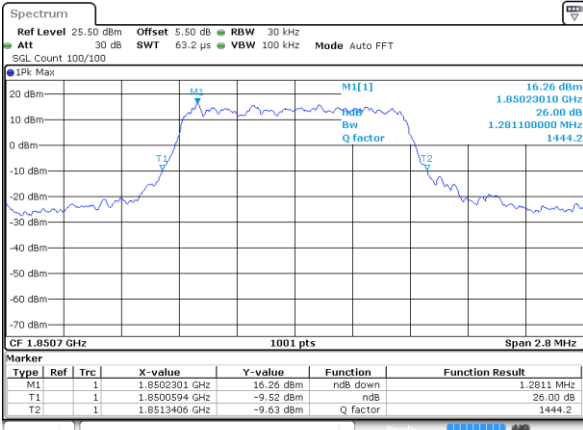
**26dB Bandwidth**

Mode	LTE Band 25 : 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	1.281	1.29	3.045	3.003	4.965	4.875	9.73	9.91	14.356	14.176	20.18	20.1
Middle CH	1.259	1.295	2.973	3.033	5.005	4.925	9.89	9.81	14.206	14.446	20.06	20.14
Highest CH	1.259	1.29	2.991	2.991	4.915	4.865	9.63	9.75	14.086	14.296	20.1	20.34
BW	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz						
Mod.	64QAM	64QAM	64QAM	64QAM	64QAM	64QAM						
Lowest CH	1.262	3.033	4.875	9.93	14.356	20.3						
Middle CH	1.287	2.997	4.975	9.85	14.296	20.14						
Highest CH	1.29	3.009	4.855	9.73	14.266	20.18						



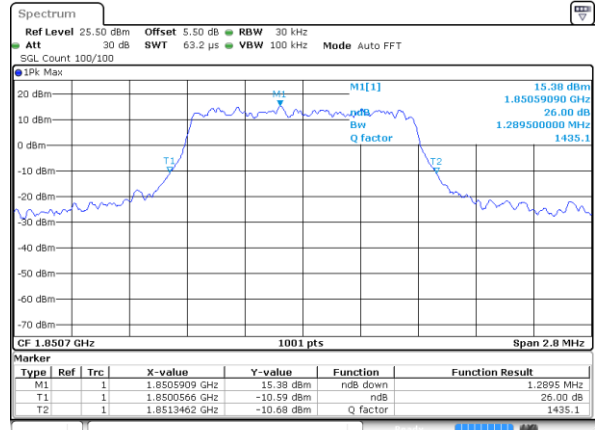
LTE Band 25

Lowest Channel / 1.4MHz / QPSK



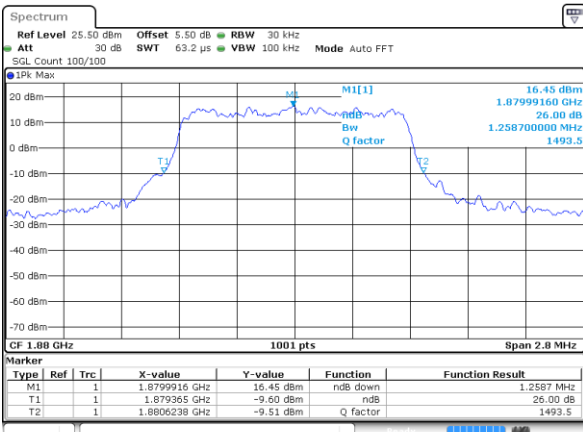
Date: 1.OCT.2018 22:52:46

Lowest Channel / 1.4MHz / 16QAM



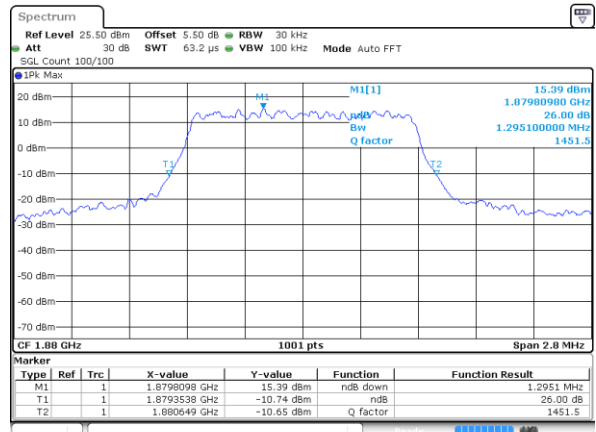
Date: 1.OCT.2018 22:52:56

Middle Channel / 1.4MHz / QPSK



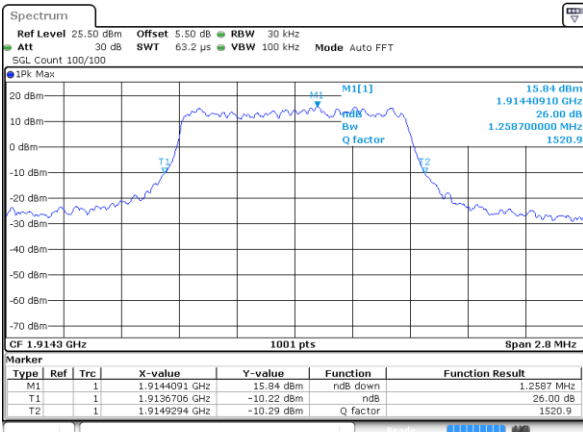
Date: 1.OCT.2018 22:53:16

Middle Channel / 1.4MHz / 16QAM



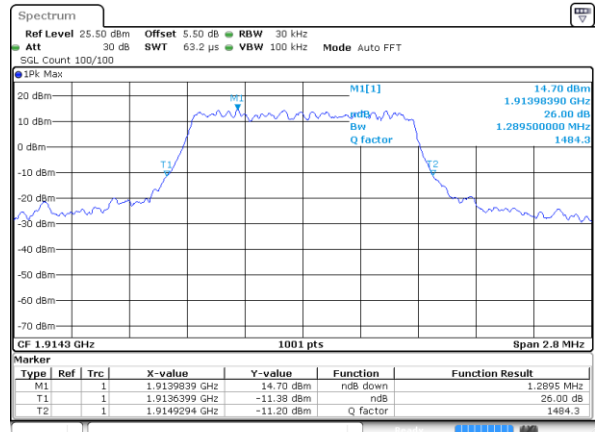
Date: 1.OCT.2018 22:53:26

Highest Channel / 1.4MHz / QPSK



Date: 1.OCT.2018 22:53:46

Highest Channel / 1.4MHz / 16QAM



Date: 1.OCT.2018 22:53:56