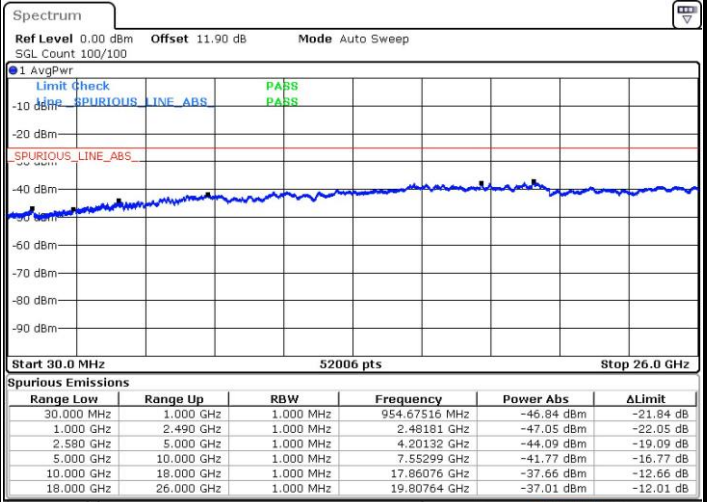
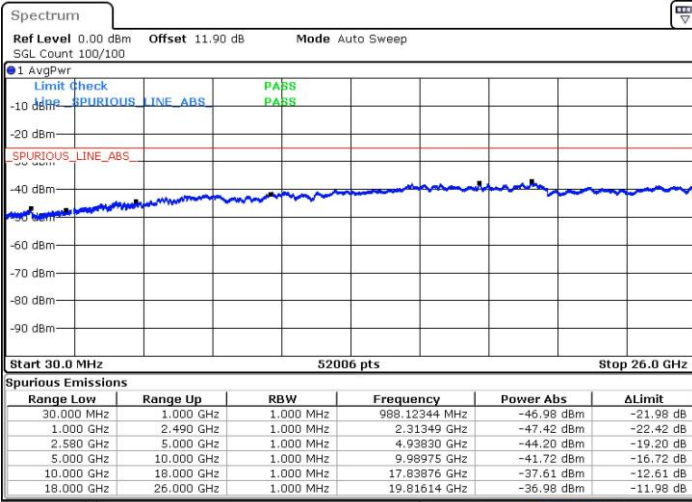




LTE Band 7 / 15MHz

Highest Channel / QPSK

Highest Channel / 16QAM



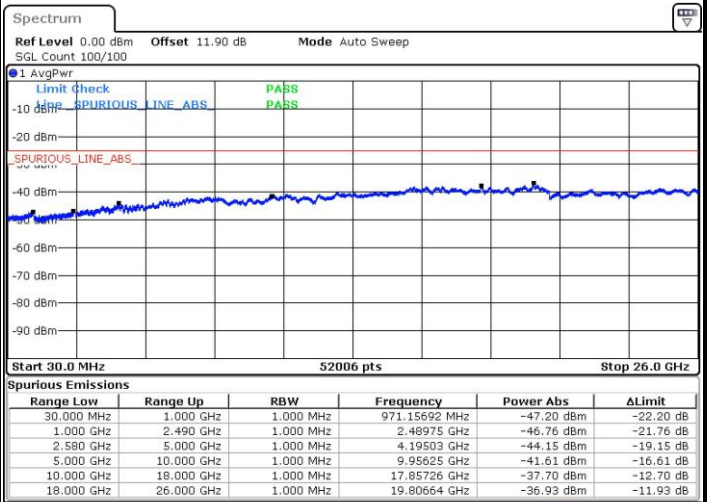
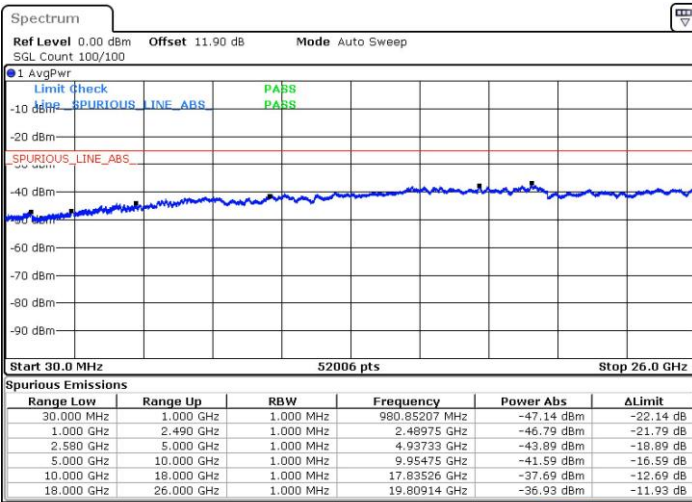
Date: 15.AUG.2018 16:59:24

Date: 15.AUG.2018 17:00:33

LTE Band 7 / 20MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



Date: 15.AUG.2018 17:16:31

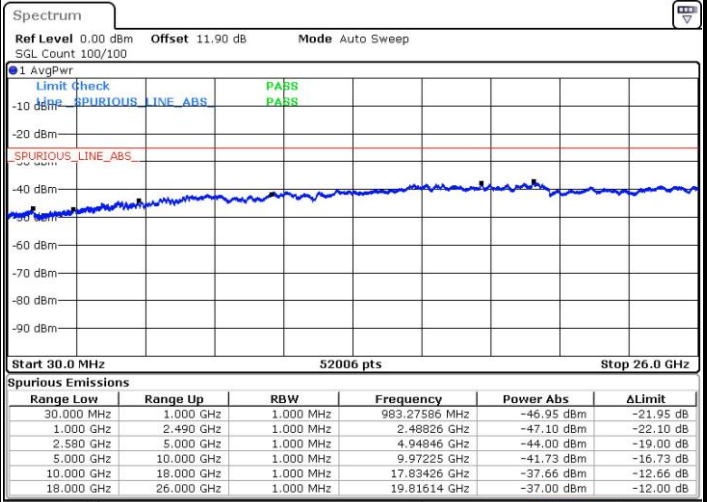
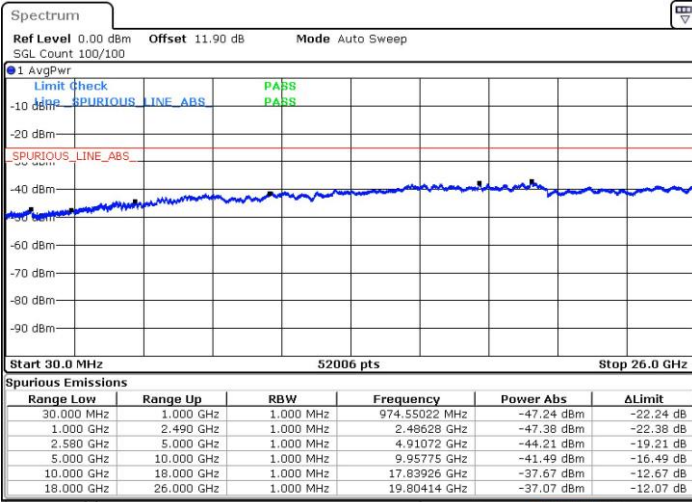
Date: 15.AUG.2018 17:17:41



LTE Band 7 / 20MHz

Middle Channel / QPSK

Middle Channel / 16QAM

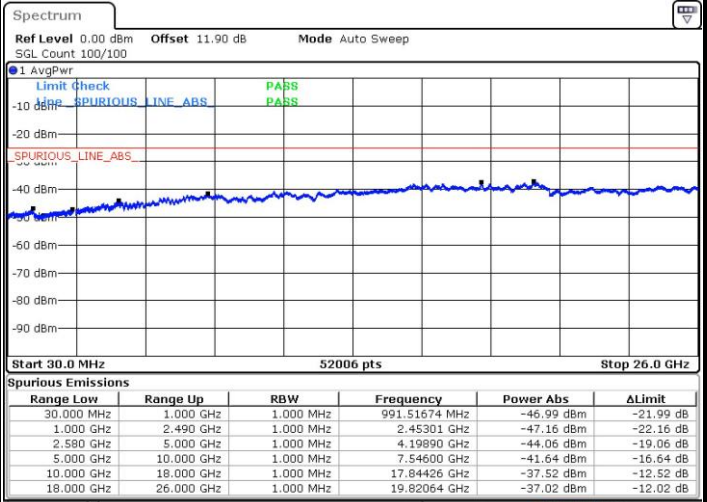
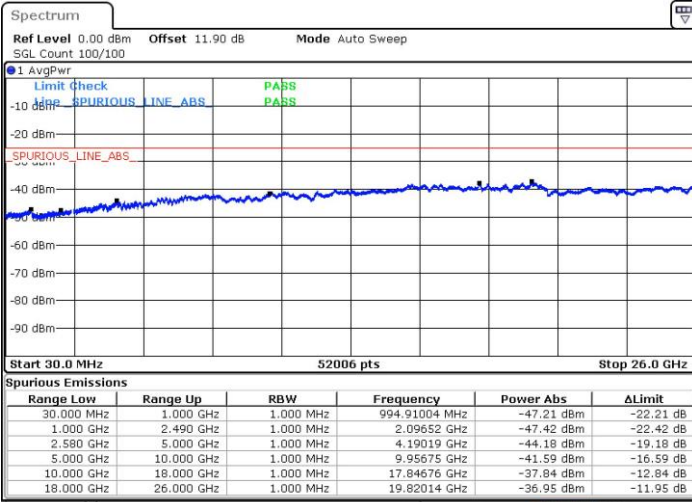


Date: 15.AUG.2018 17:19:36

Date: 15.AUG.2018 17:20:46

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 15.AUG.2018 17:27:24

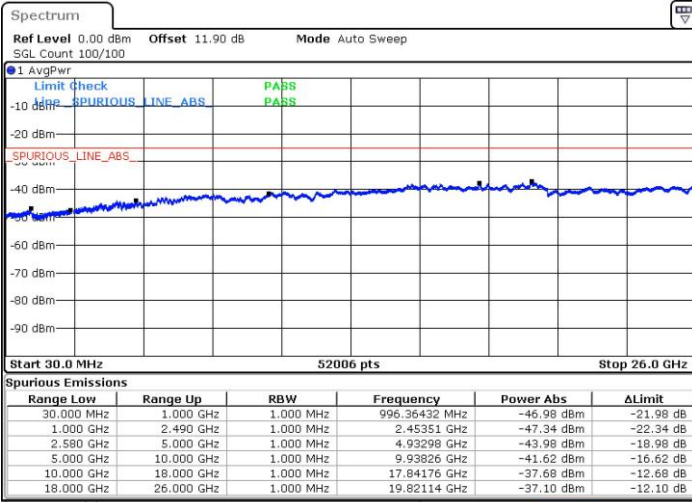
Date: 15.AUG.2018 17:28:33



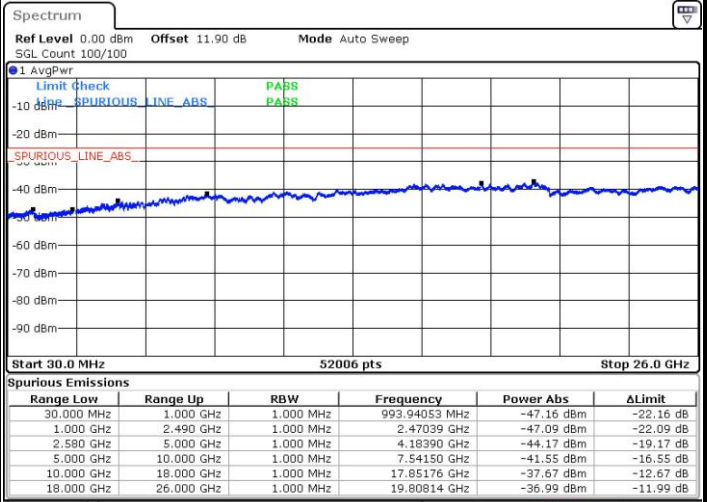
LTE Band 7 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

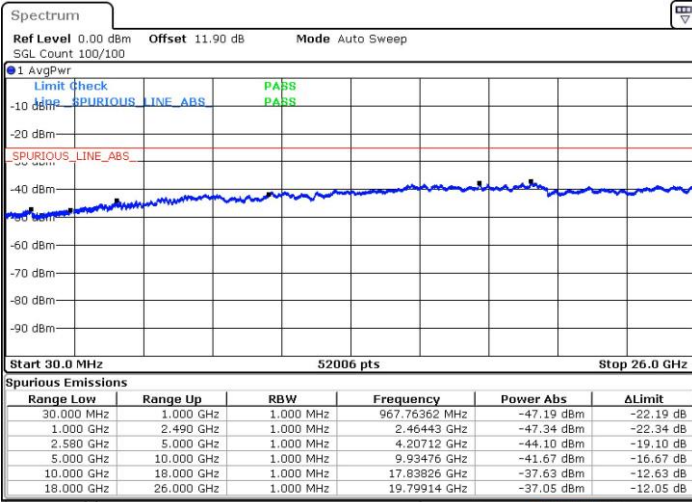


Date: 15.AUG.2018 16:08:26



Date: 15.AUG.2018 16:09:59

Highest Channel / 64QAM

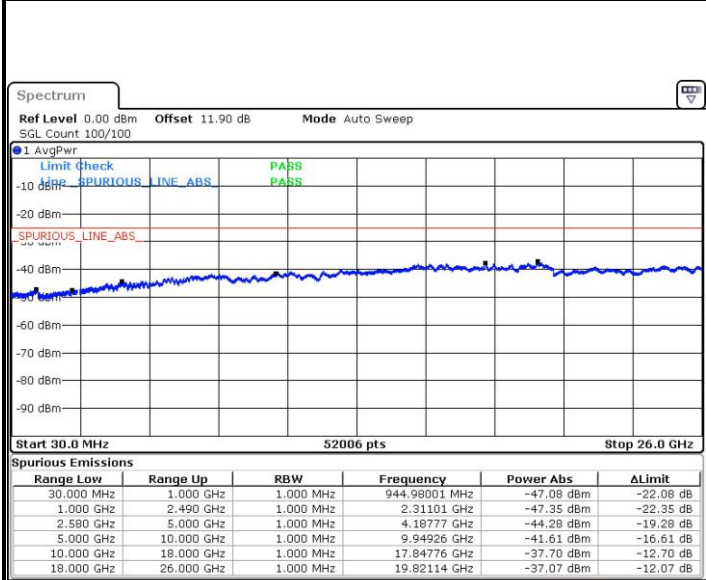


Date: 15.AUG.2018 16:13:53



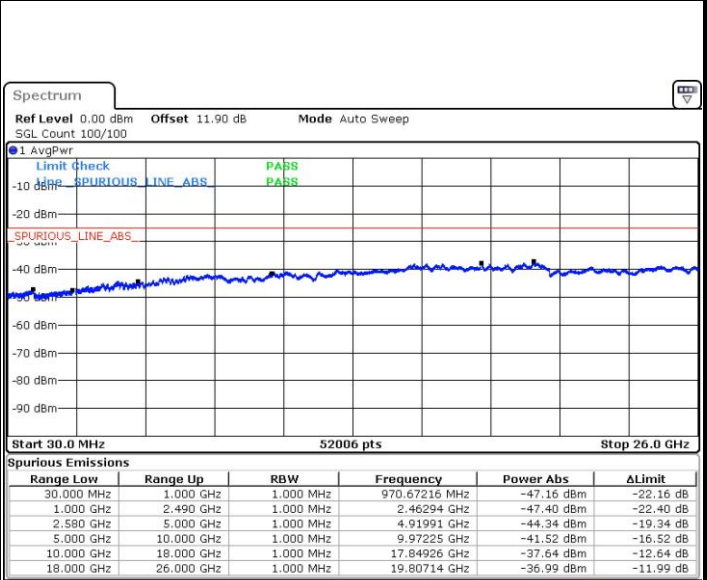
**LTE Band 7 / 10MHz**

**Lowest Channel / 64QAM**



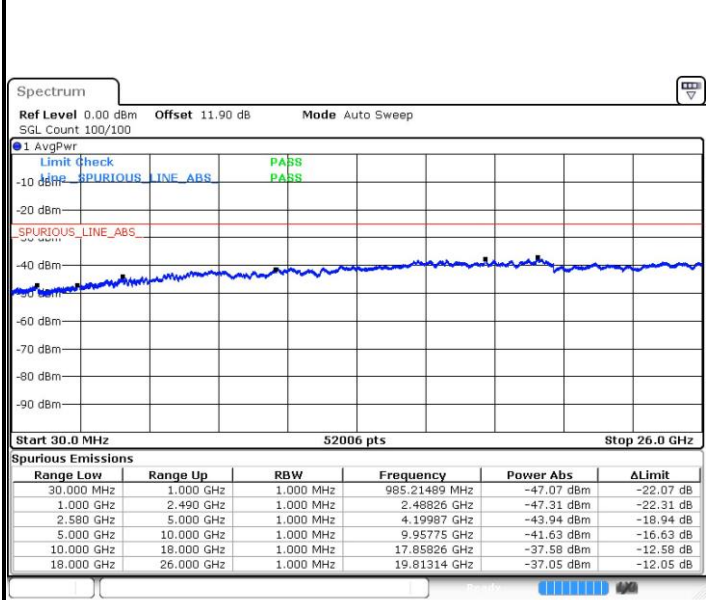
Date: 15.AUG.2018 16:36:26

**Middle Channel / 64QAM**



Date: 15.AUG.2018 16:37:59

**Highest Channel / 64QAM**



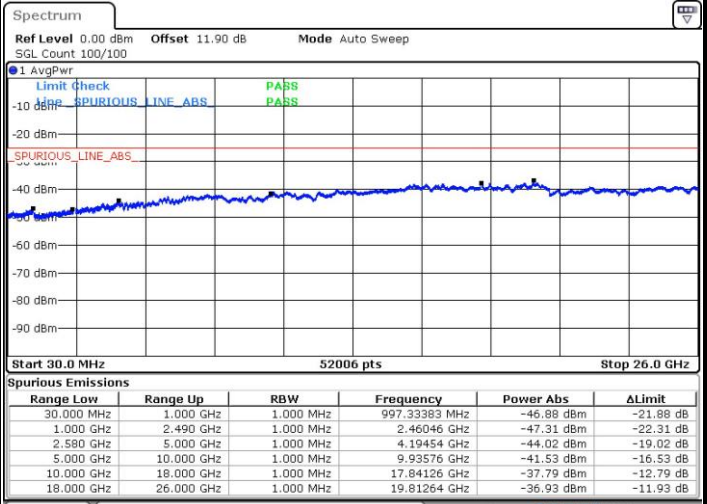
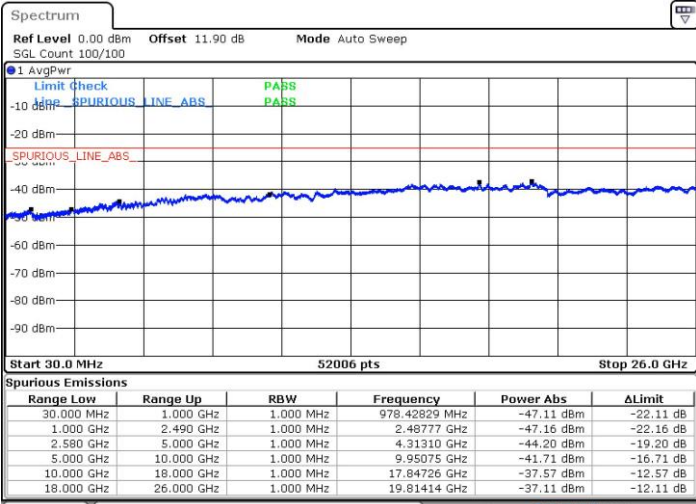
Date: 15.AUG.2018 16:41:53



LTE Band 7 / 15MHz

Lowest Channel / 64QAM

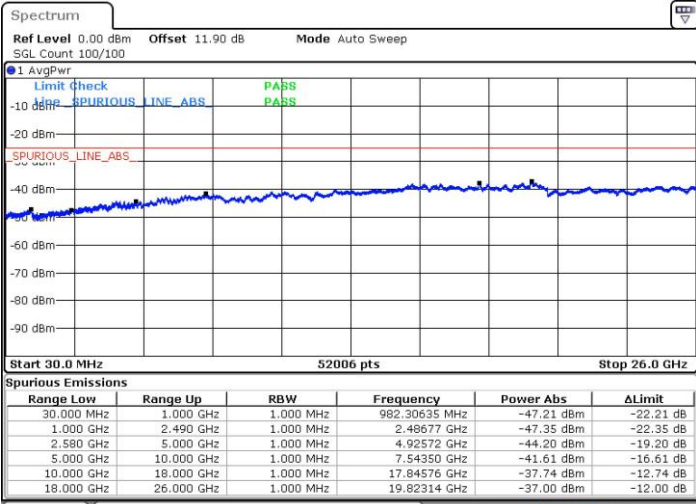
Middle Channel / 64QAM



Date: 15.AUG.2018 17:04:27

Date: 15.AUG.2018 17:05:59

Highest Channel / 64QAM



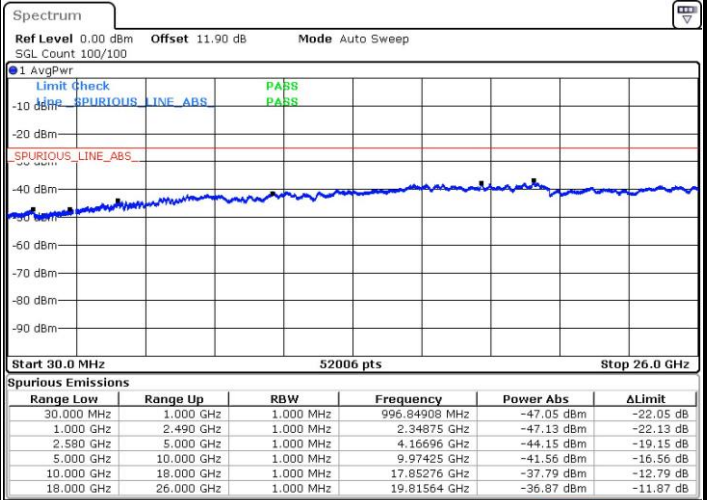
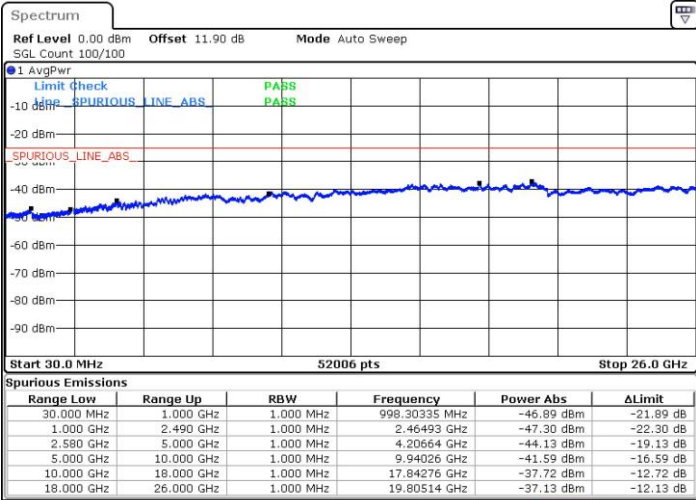
Date: 15.AUG.2018 17:09:53



LTE Band 7 / 20MHz

Lowest Channel / 64QAM

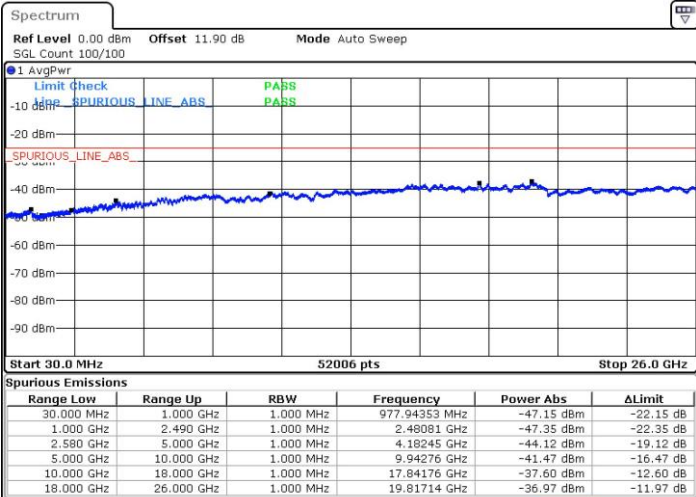
Middle Channel / 64QAM



Date: 15.AUG.2018 17:32:27

Date: 15.AUG.2018 17:33:59

Highest Channel / 64QAM



Date: 15.AUG.2018 17:37:53



**Frequency Stability**

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0082	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0088	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0092	
0	Normal Voltage	0.0003	
-10	Normal Voltage	0.0004	
-20	Normal Voltage	0.0090	
-30	Normal Voltage	0.0084	
20	Maximum Voltage	0.0003	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

**Note:**

- 1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.5 V. ; Maximum Voltage =4.2 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



## LTE Band 12

### Peak-to-Average Ratio

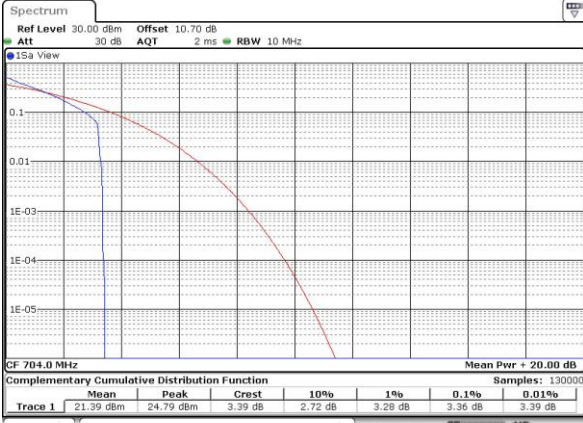
Mode	LTE Band 12 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.36	4.9	4.38	6.12	<b>PASS</b>
Middle CH	3.77	4.75	4.99	6.03	
Highest CH	3.68	4.61	4.9	5.94	
Mode	LTE Band 12 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.57	6.75	-	-	<b>PASS</b>
Middle CH	6.84	6.58	-	-	
Highest CH	6.46	6.61	-	-	





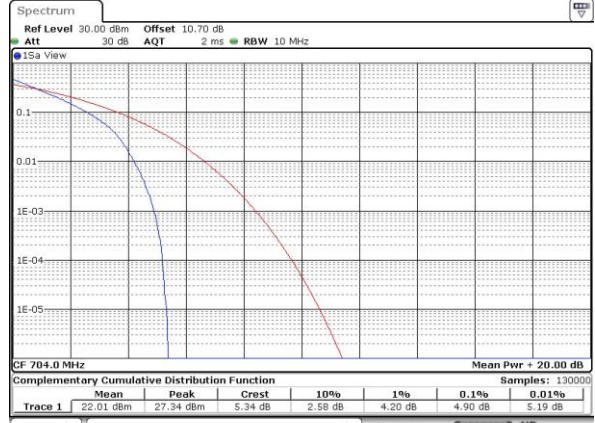
LTE Band 12 / 10MHz / QPSK

Lowest Channel / 1RB



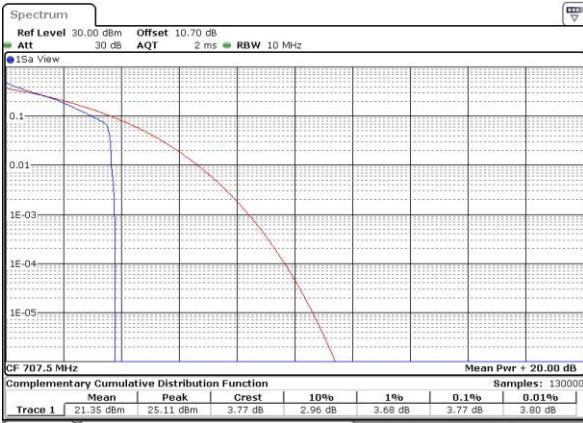
Date: 19 AUG 2018 20:04:53

Lowest Channel / Full RB



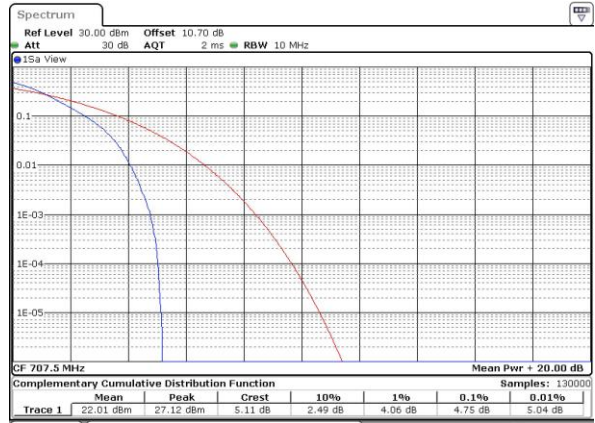
Date: 19 AUG 2018 20:04:42

Middle Channel / 1RB



Date: 19 AUG 2018 20:05:08

Middle Channel / Full RB



Date: 19 AUG 2018 20:05:19

Highest Channel / 1RB



Date: 19 AUG 2018 20:05:41

Highest Channel / Full RB



Date: 19 AUG 2018 20:05:31



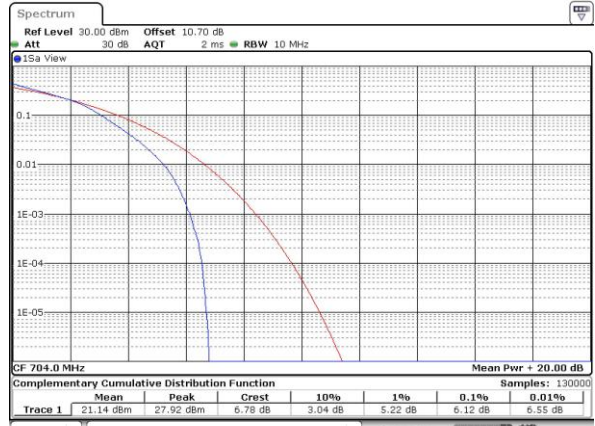
LTE Band 12 / 10MHz / 16QAM

Lowest Channel / 1RB



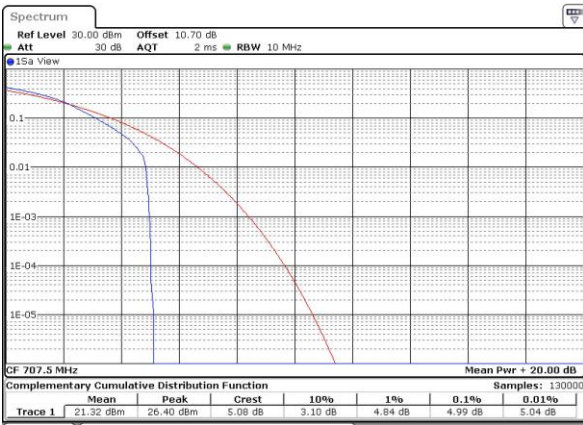
Date: 19 AUG 2018 20:03:48

Lowest Channel / Full RB



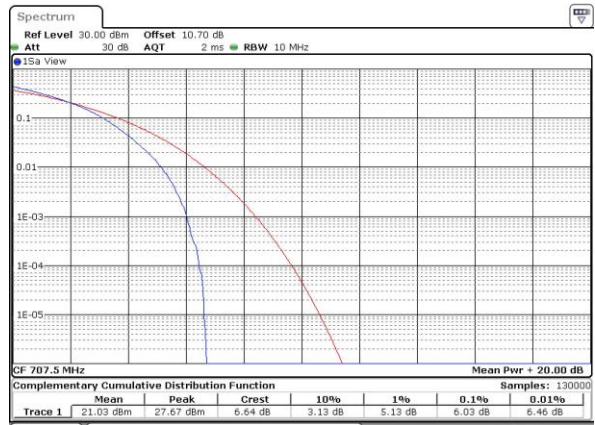
Date: 19 AUG 2018 20:03:37

Middle Channel / 1RB



Date: 19 AUG 2018 20:03:58

Middle Channel / Full RB



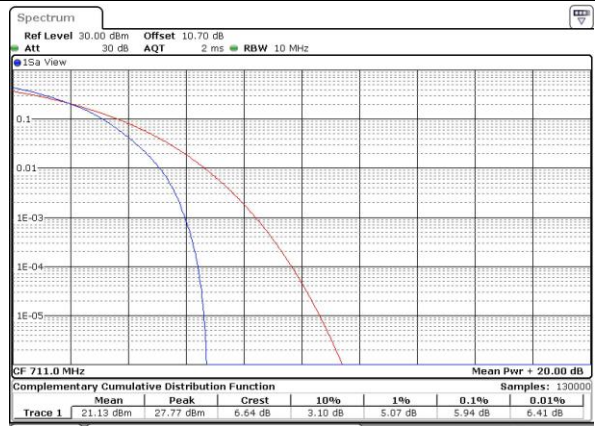
Date: 19 AUG 2018 20:04:09

Highest Channel / 1RB



Date: 19 AUG 2018 20:04:31

Highest Channel / Full RB

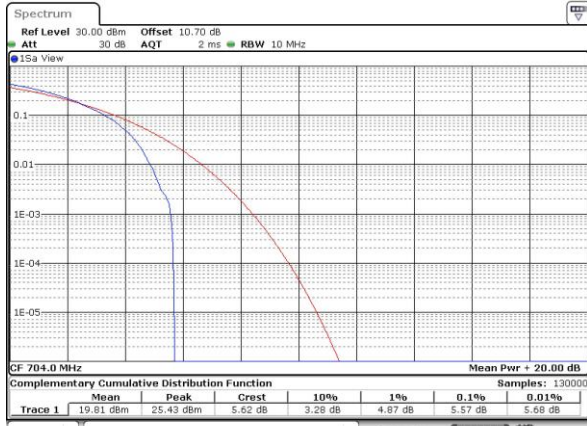


Date: 19 AUG 2018 20:04:20



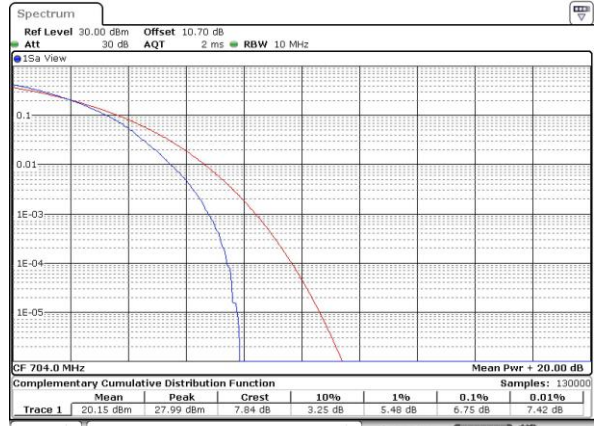
LTE Band 12 / 10MHz / 64QAM

Lowest Channel / 1RB



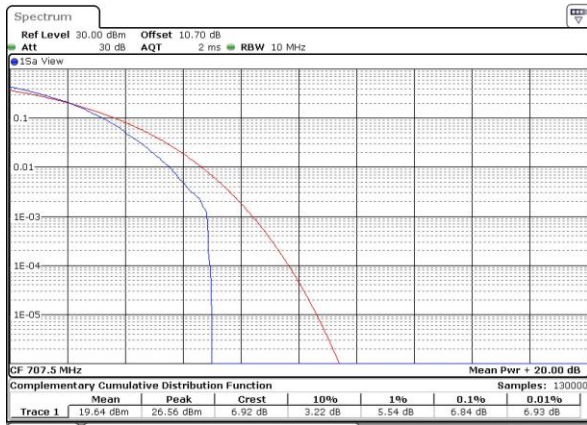
Date: 19 AUG 2018 20:02:43

Lowest Channel / Full RB



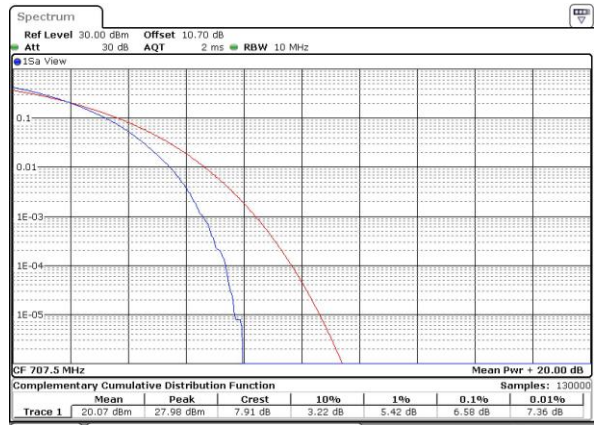
Date: 19 AUG 2018 20:02:32

Middle Channel / 1RB



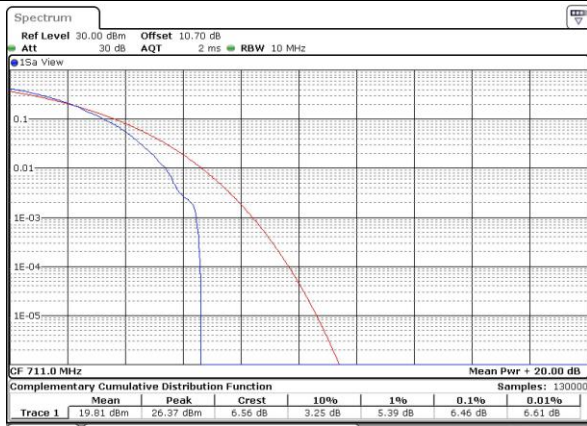
Date: 19 AUG 2018 20:02:54

Middle Channel / Full RB



Date: 19 AUG 2018 20:03:05

Highest Channel / 1RB



Date: 19 AUG 2018 20:03:26

Highest Channel / Full RB



Date: 19 AUG 2018 20:03:15



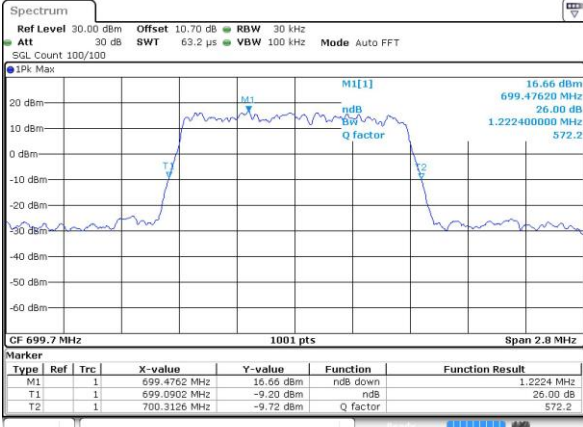
**26dB Bandwidth**

Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.22	1.23	3.02	3.00	4.86	4.89	9.77	9.77	-	-	-	-
Middle CH	1.22	1.22	3.01	3.06	4.87	4.90	9.85	9.93	-	-	-	-
Highest CH	1.23	1.21	3.03	2.96	4.91	4.86	9.73	9.73	-	-	-	-
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.21	-	3.01	-	4.85	-	9.99	-	-	-	-	-
Middle CH	1.22	-	2.99	-	4.89	-	9.83	-	-	-	-	-
Highest CH	1.23	-	3.03	-	4.87	-	9.85	-	-	-	-	-



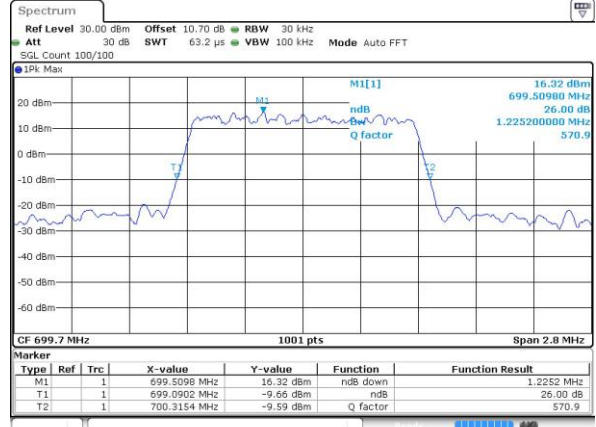
LTE Band 12

Lowest Channel / 1.4MHz / QPSK



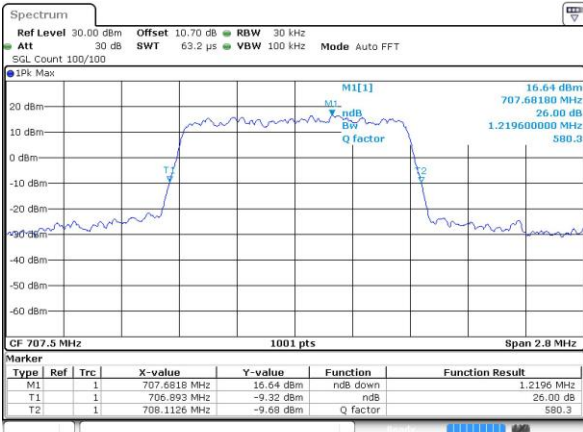
Date: 19 AUG 2018 19:12:32

Lowest Channel / 1.4MHz / 16QAM



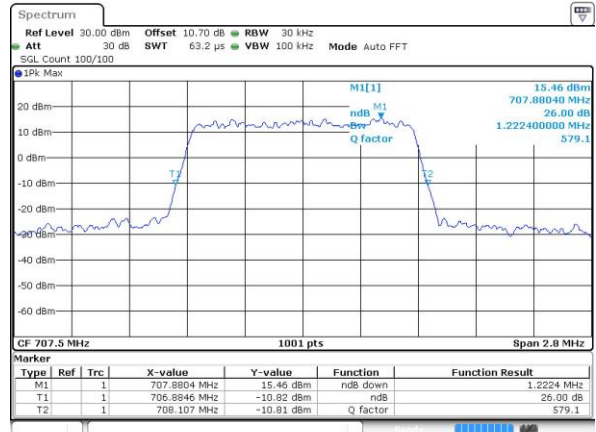
Date: 19 AUG 2018 19:12:21

Middle Channel / 1.4MHz / QPSK



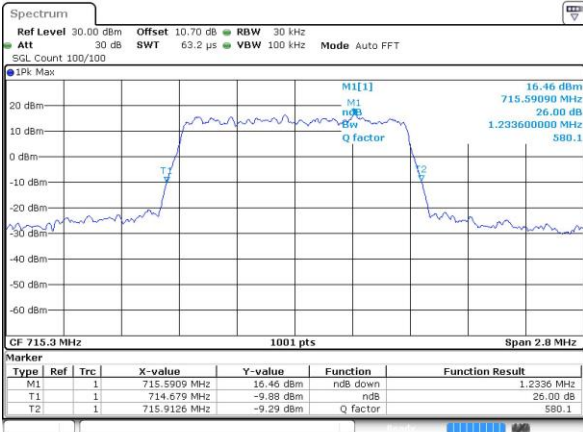
Date: 19 AUG 2018 19:18:28

Middle Channel / 1.4MHz / 16QAM



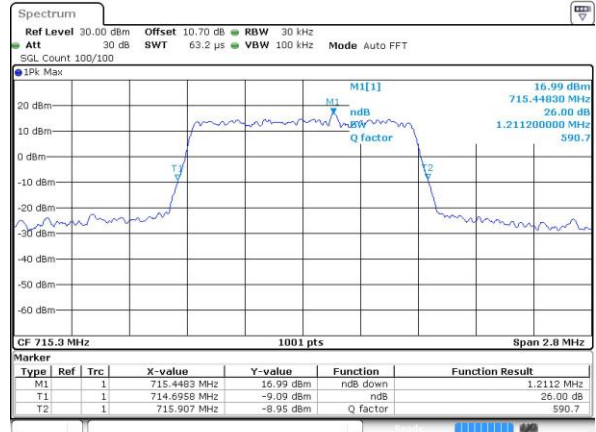
Date: 19 AUG 2018 19:18:39

Highest Channel / 1.4MHz / QPSK



Date: 19 AUG 2018 19:21:25

Highest Channel / 1.4MHz / 16QAM

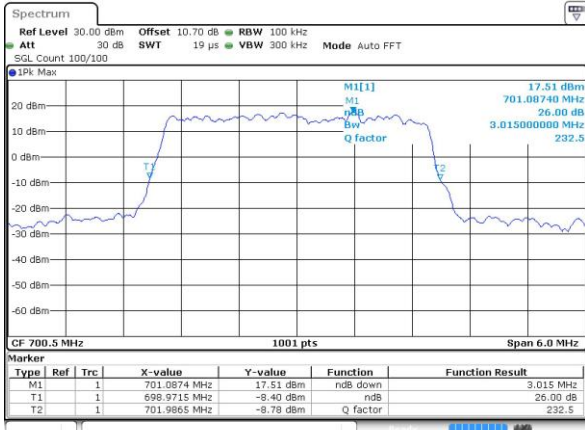


Date: 19 AUG 2018 19:21:14



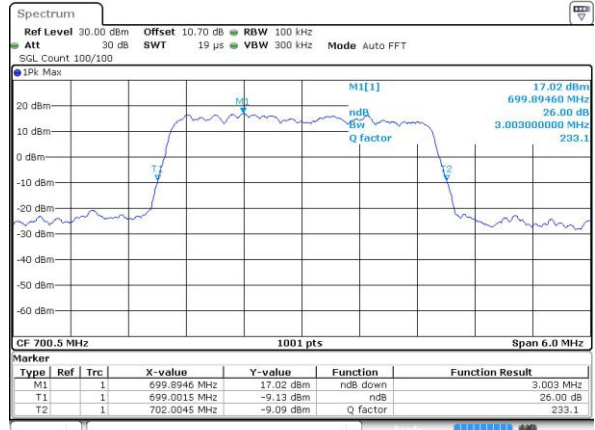
LTE Band 12

Lowest Channel / 3MHz / QPSK



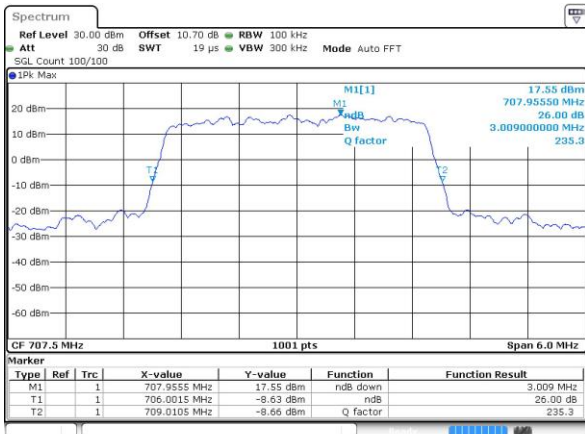
Date: 19 AUG 2018 18:13:01

Lowest Channel / 3MHz / 16QAM



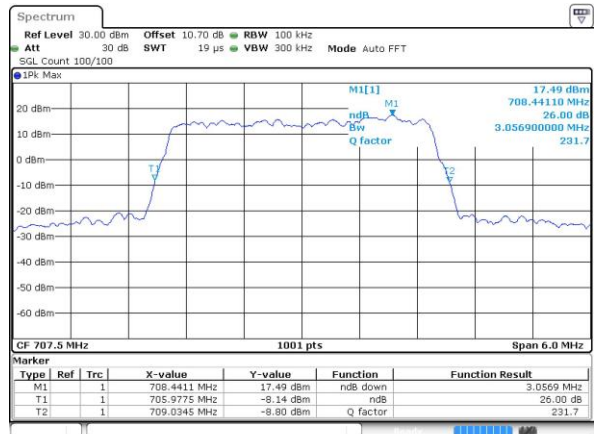
Date: 19 AUG 2018 18:12:49

Middle Channel / 3MHz / QPSK



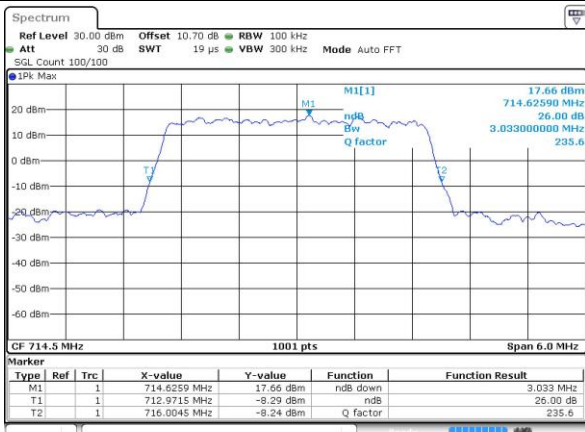
Date: 19 AUG 2018 18:19:12

Middle Channel / 3MHz / 16QAM



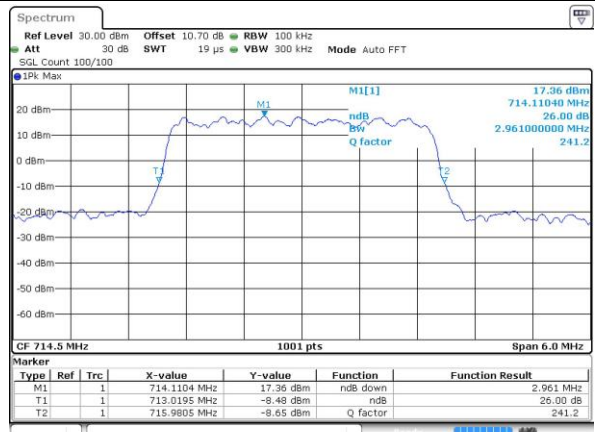
Date: 19 AUG 2018 18:19:24

Highest Channel / 3MHz / QPSK



Date: 19 AUG 2018 18:22:10

Highest Channel / 3MHz / 16QAM

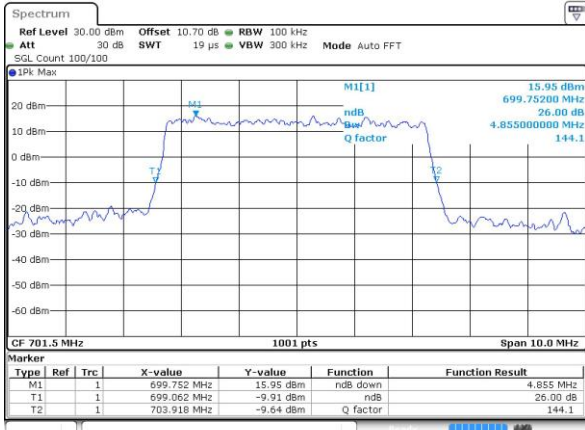


Date: 19 AUG 2018 18:21:58



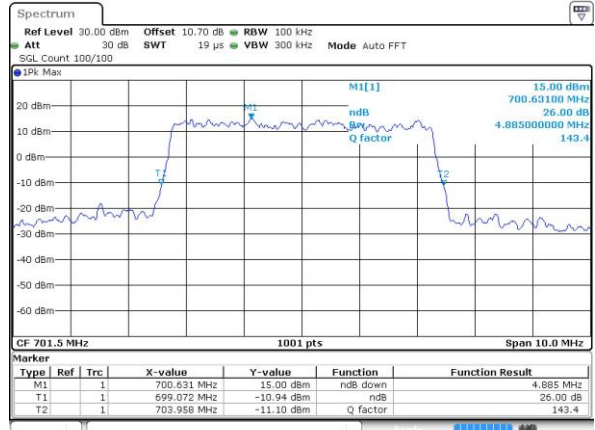
LTE Band 12

Lowest Channel / 5MHz / QPSK



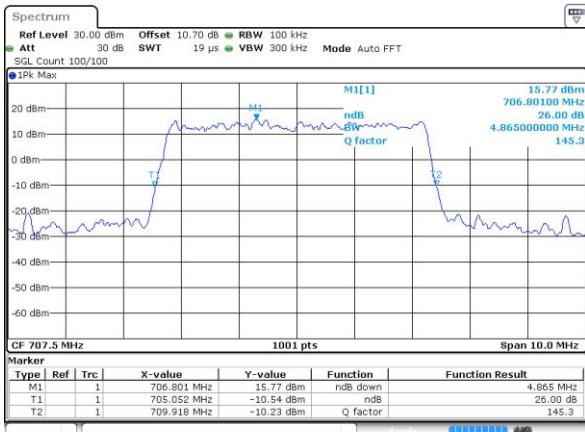
Date: 19 AUG 2018 18:28:16

Lowest Channel / 5MHz / 16QAM



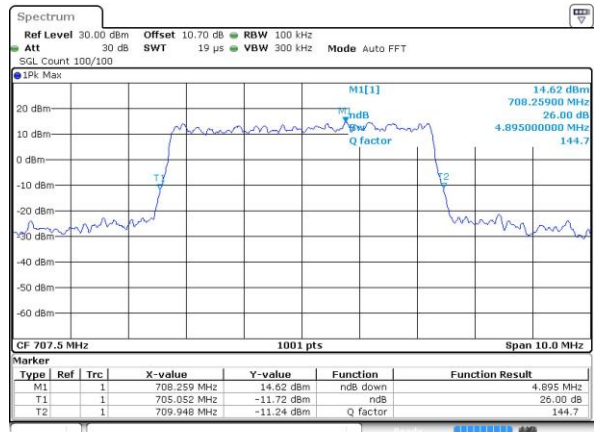
Date: 19 AUG 2018 18:28:05

Middle Channel / 5MHz / QPSK



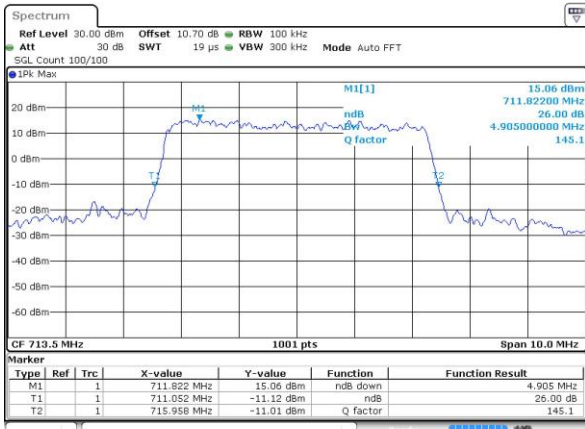
Date: 19 AUG 2018 18:34:11

Middle Channel / 5MHz / 16QAM



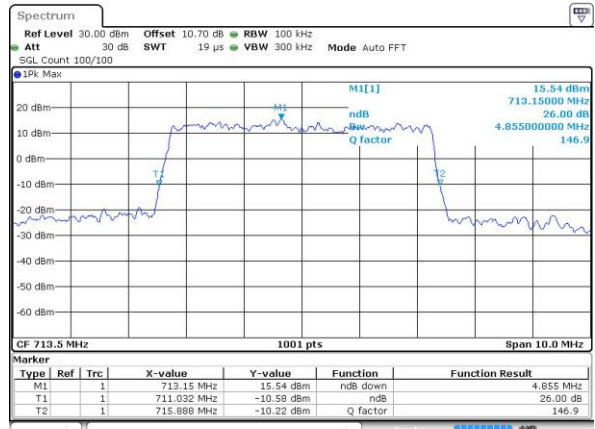
Date: 19 AUG 2018 18:34:22

Highest Channel / 5MHz / QPSK



Date: 19 AUG 2018 18:37:08

Highest Channel / 5MHz / 16QAM

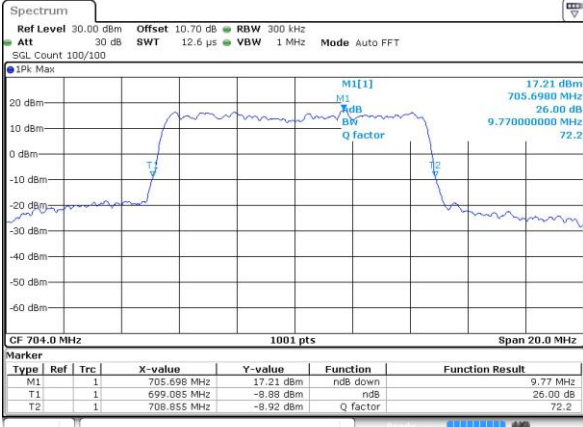


Date: 19 AUG 2018 18:36:57



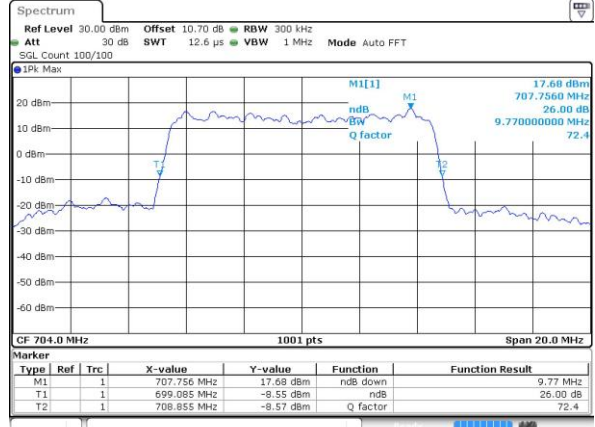
LTE Band 12

Lowest Channel / 10MHz / QPSK



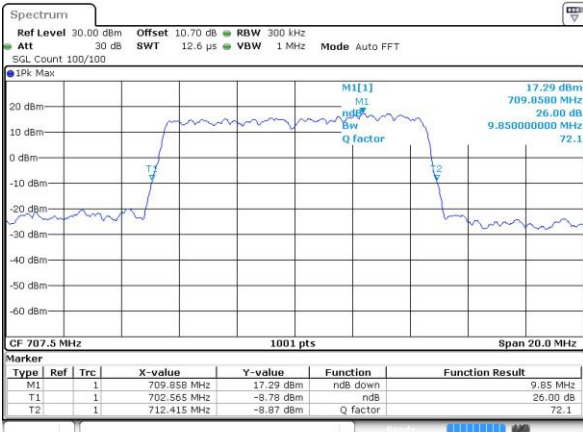
Date: 19 AUG 2018 18:43:15

Lowest Channel / 10MHz / 16QAM



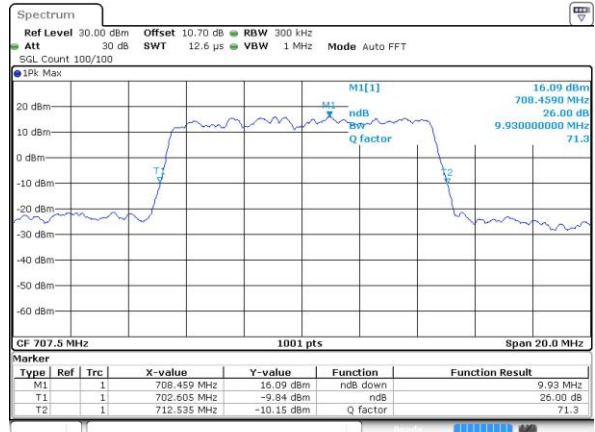
Date: 19 AUG 2018 18:43:04

Middle Channel / 10MHz / QPSK



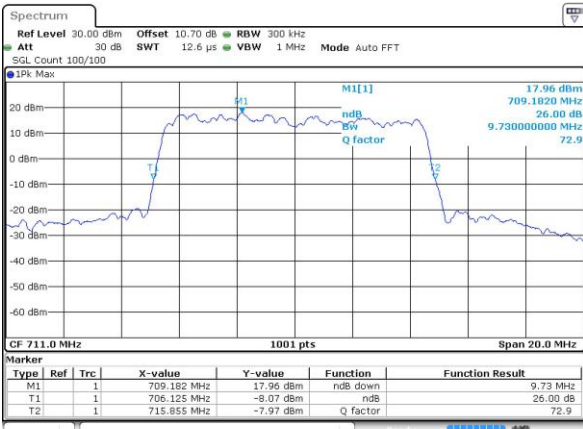
Date: 19 AUG 2018 18:49:10

Middle Channel / 10MHz / 16QAM



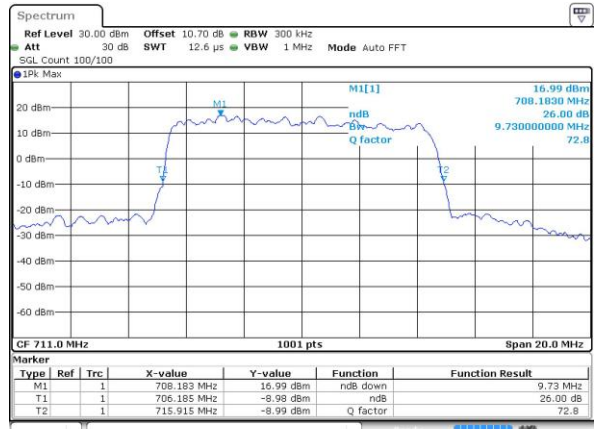
Date: 19 AUG 2018 18:49:22

Highest Channel / 10MHz / QPSK



Date: 19 AUG 2018 18:52:08

Highest Channel / 10MHz / 16QAM



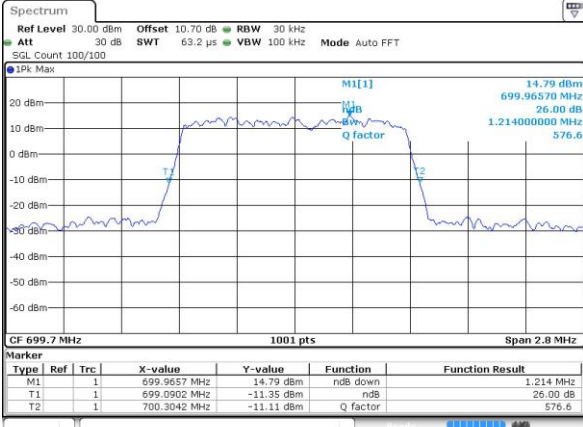
Date: 19 AUG 2018 18:51:56





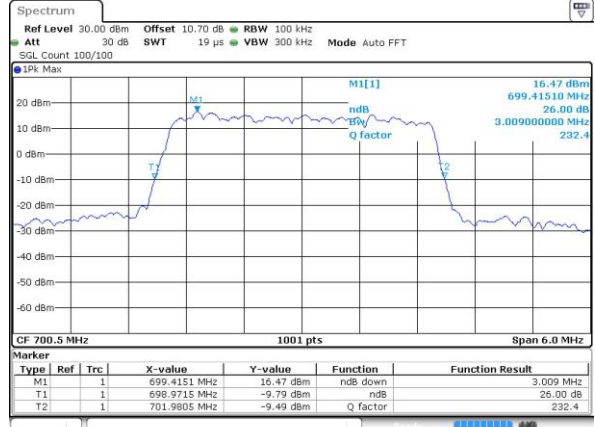
LTE Band 12

Lowest Channel / 1.4MHz / 64QAM



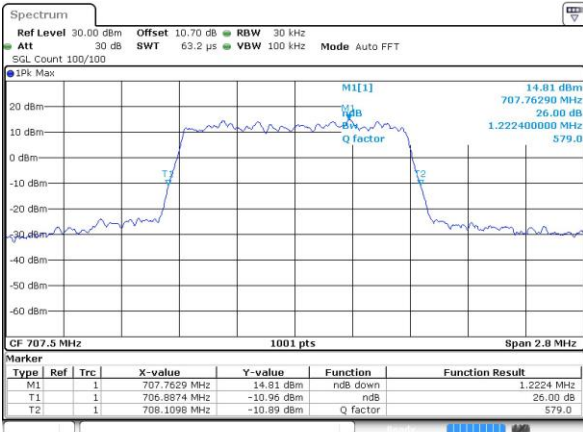
Date: 19 AUG 2018 19:49:39

Lowest Channel / 3MHz / 64QAM



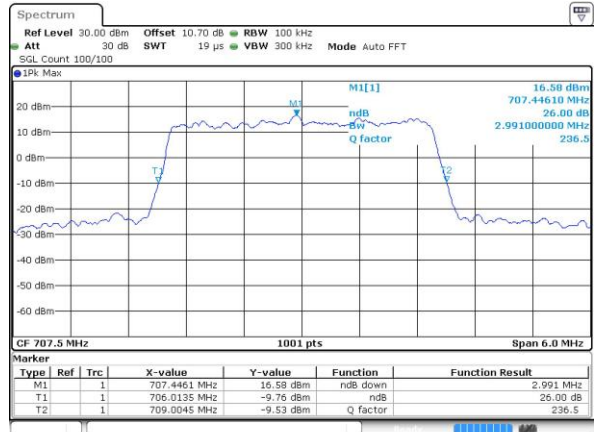
Date: 19 AUG 2018 19:27:09

Middle Channel / 1.4MHz / 64QAM



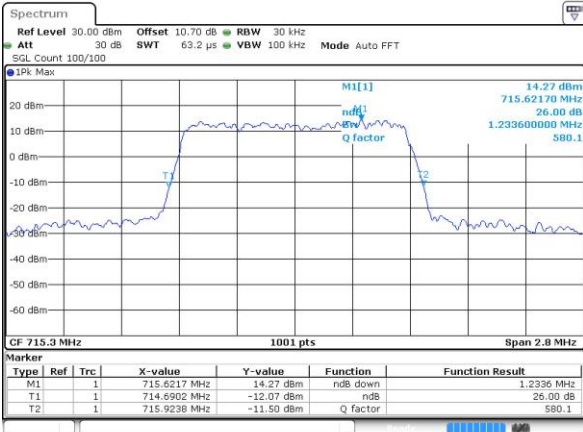
Date: 19 AUG 2018 19:52:43

Middle Channel / 3MHz / 64QAM



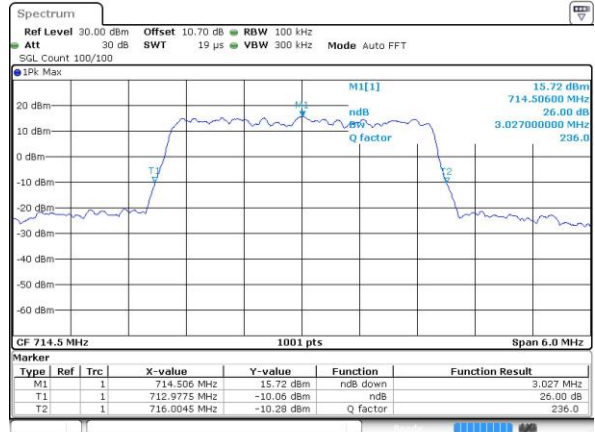
Date: 19 AUG 2018 19:30:12

Highest Channel / 1.4MHz / 64QAM



Date: 19 AUG 2018 19:54:06

Highest Channel / 3MHz / 64QAM

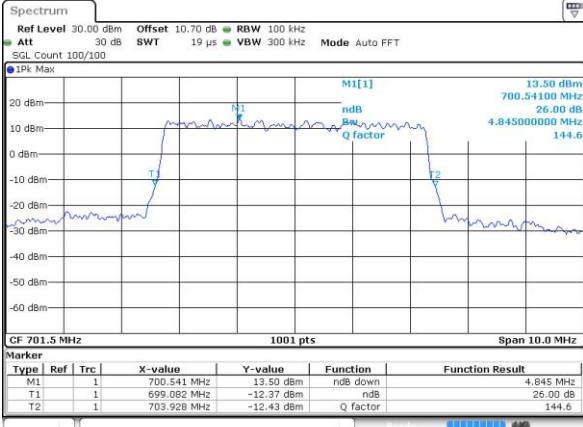


Date: 19 AUG 2018 19:31:36



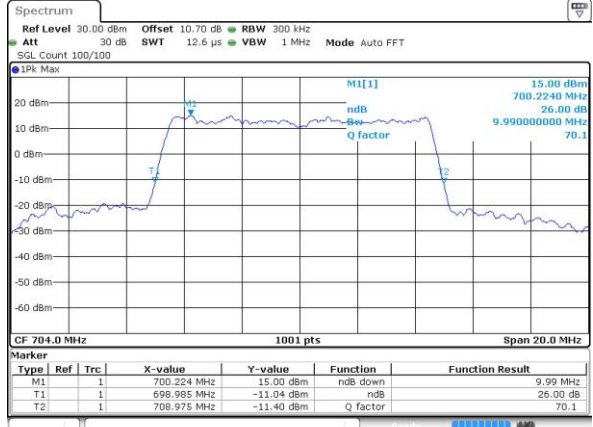
LTE Band 12

Lowest Channel / 5MHz / 64QAM



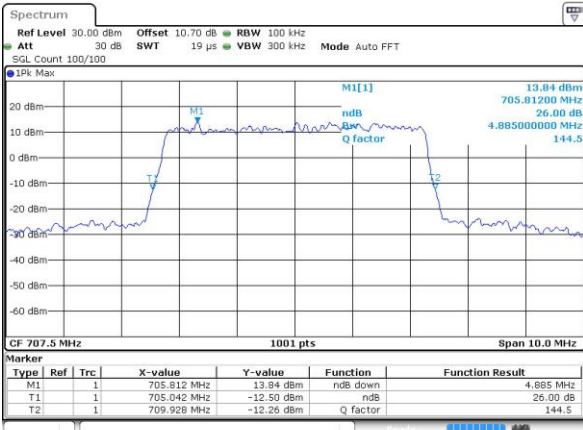
Date: 19 AUG 2018 19:34:39

Lowest Channel / 10MHz / 64QAM



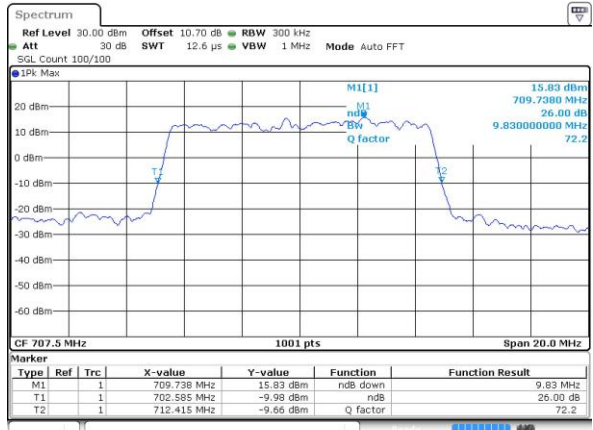
Date: 19 AUG 2018 19:42:09

Middle Channel / 5MHz / 64QAM



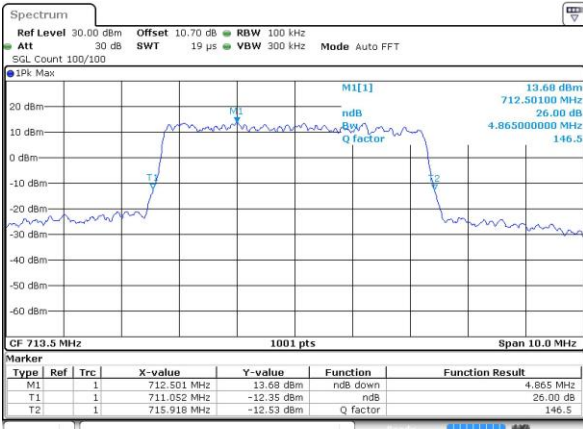
Date: 19 AUG 2018 19:37:42

Middle Channel / 10MHz / 64QAM



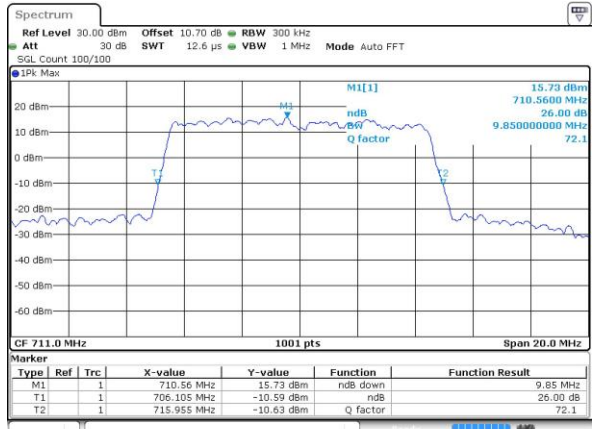
Date: 19 AUG 2018 19:45:12

Highest Channel / 5MHz / 64QAM



Date: 19 AUG 2018 19:39:05

Highest Channel / 10MHz / 64QAM



Date: 19 AUG 2018 19:46:36



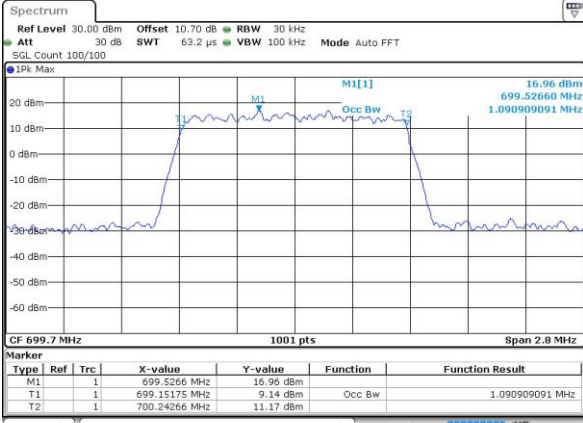
Occupied Bandwidth

Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.09	1.09	2.72	2.71	4.49	4.48	9.03	9.07	-	-	-	-
Middle CH	1.09	1.09	2.72	2.72	4.48	4.49	8.97	9.05	-	-	-	-
Highest CH	1.09	1.1	2.72	2.73	4.51	4.49	9.03	9.03	-	-	-	-
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.72	-	4.50	-	9.07	-	-	-	-	-
Middle CH	1.09	-	2.72	-	4.51	-	8.99	-	-	-	-	-
Highest CH	1.09	-	2.73	-	4.51	-	8.99	-	-	-	-	-



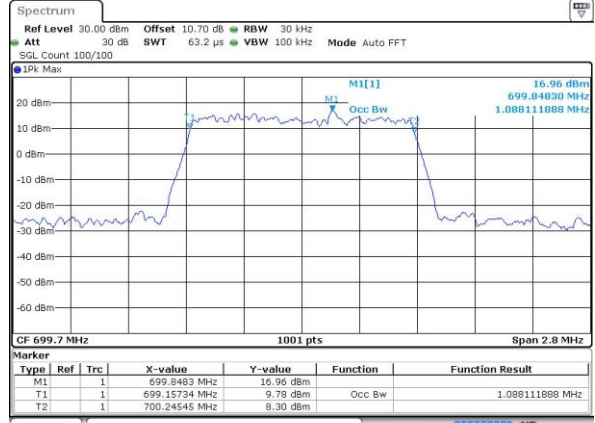
LTE Band 12

Lowest Channel / 1.4MHz / QPSK



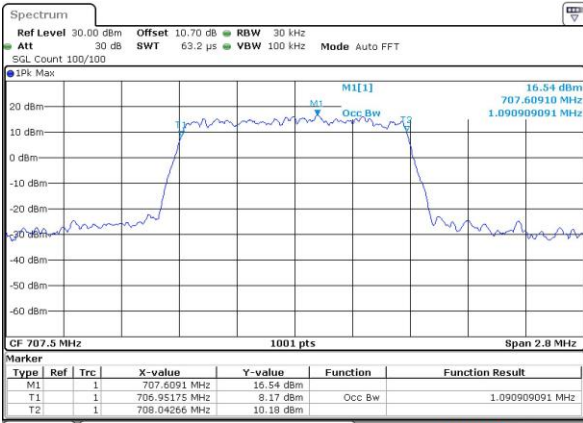
Date: 19 AUG 2018 19:11:58

Lowest Channel / 1.4MHz / 16QAM



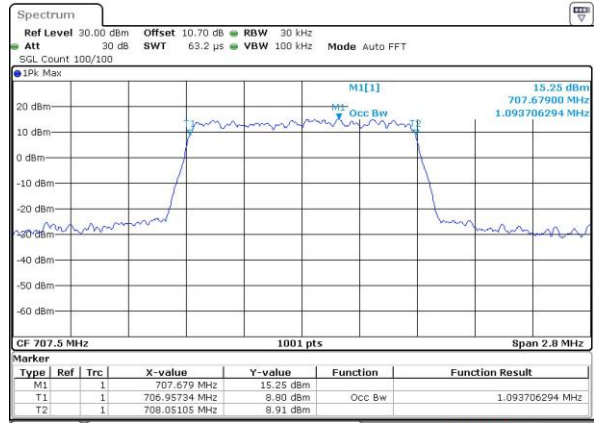
Date: 19 AUG 2018 19:12:10

Middle Channel / 1.4MHz / QPSK



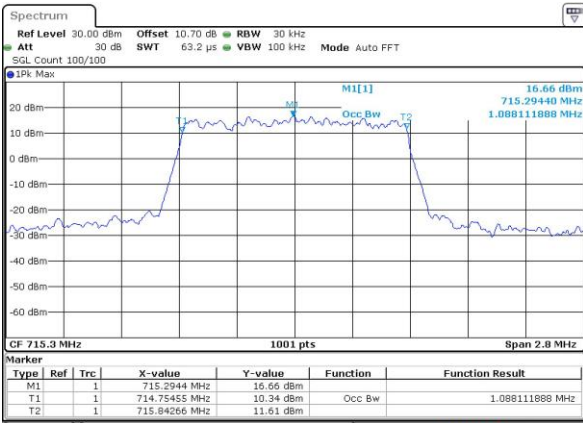
Date: 19 AUG 2018 19:18:16

Middle Channel / 1.4MHz / 16QAM



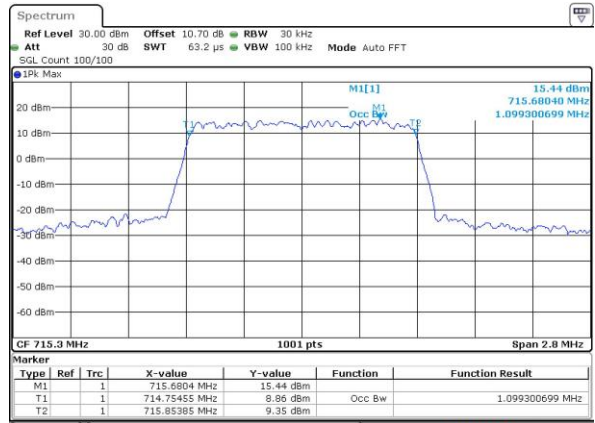
Date: 19 AUG 2018 19:18:05

Highest Channel / 1.4MHz / QPSK



Date: 19 AUG 2018 19:20:51

Highest Channel / 1.4MHz / 16QAM



Date: 19 AUG 2018 19:21:03