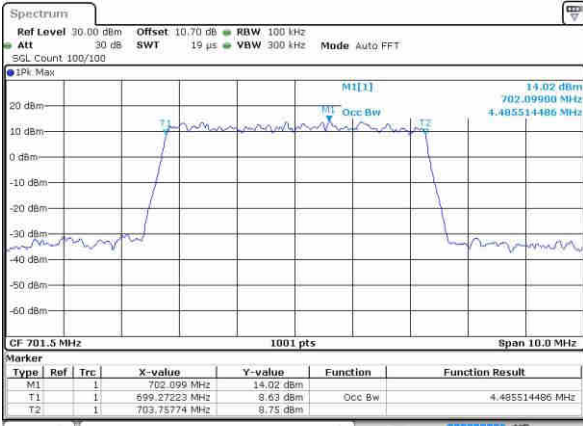




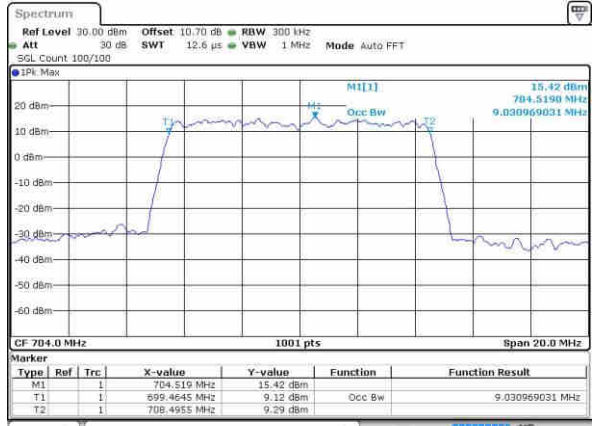
LTE Band 12

Lowest Channel / 5MHz / 64QAM



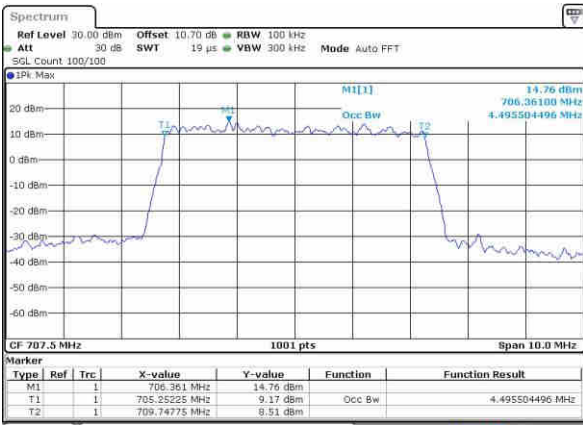
Date: 14 APR 2019 17:20:29

Lowest Channel / 10MHz / 64QAM



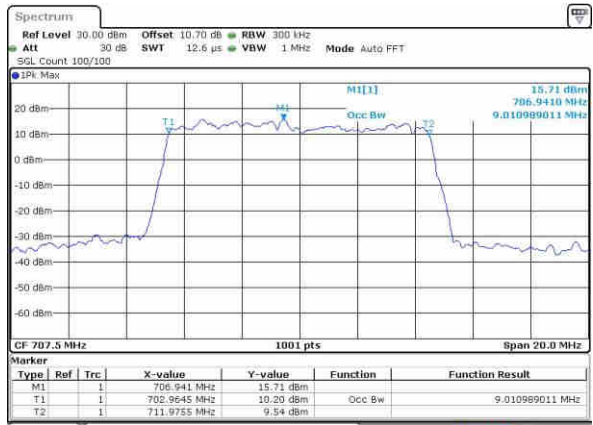
Date: 14 APR 2019 17:59:50

Middle Channel / 5MHz / 64QAM



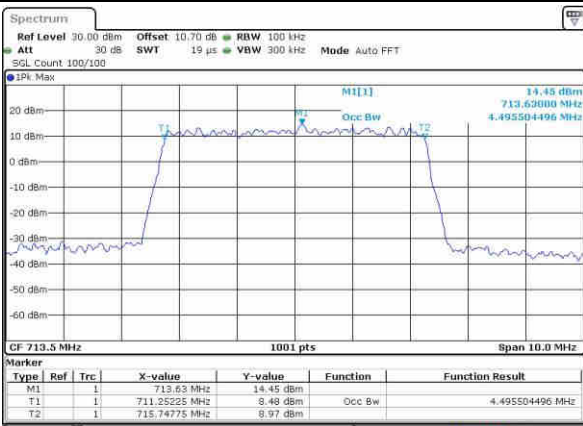
Date: 14 APR 2019 17:23:36

Middle Channel / 10MHz / 64QAM



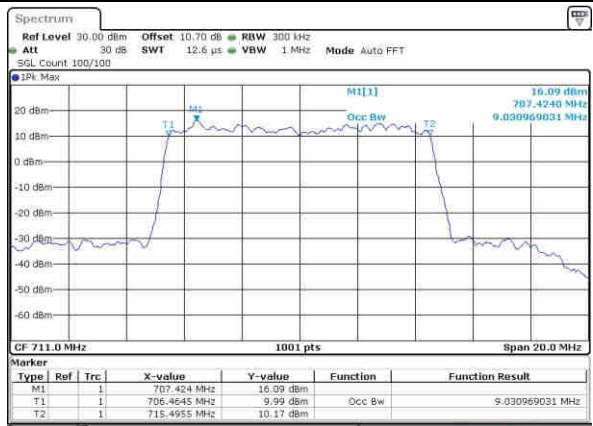
Date: 14 APR 2019 18:02:57

Highest Channel / 5MHz / 64QAM



Date: 14 APR 2019 17:24:40

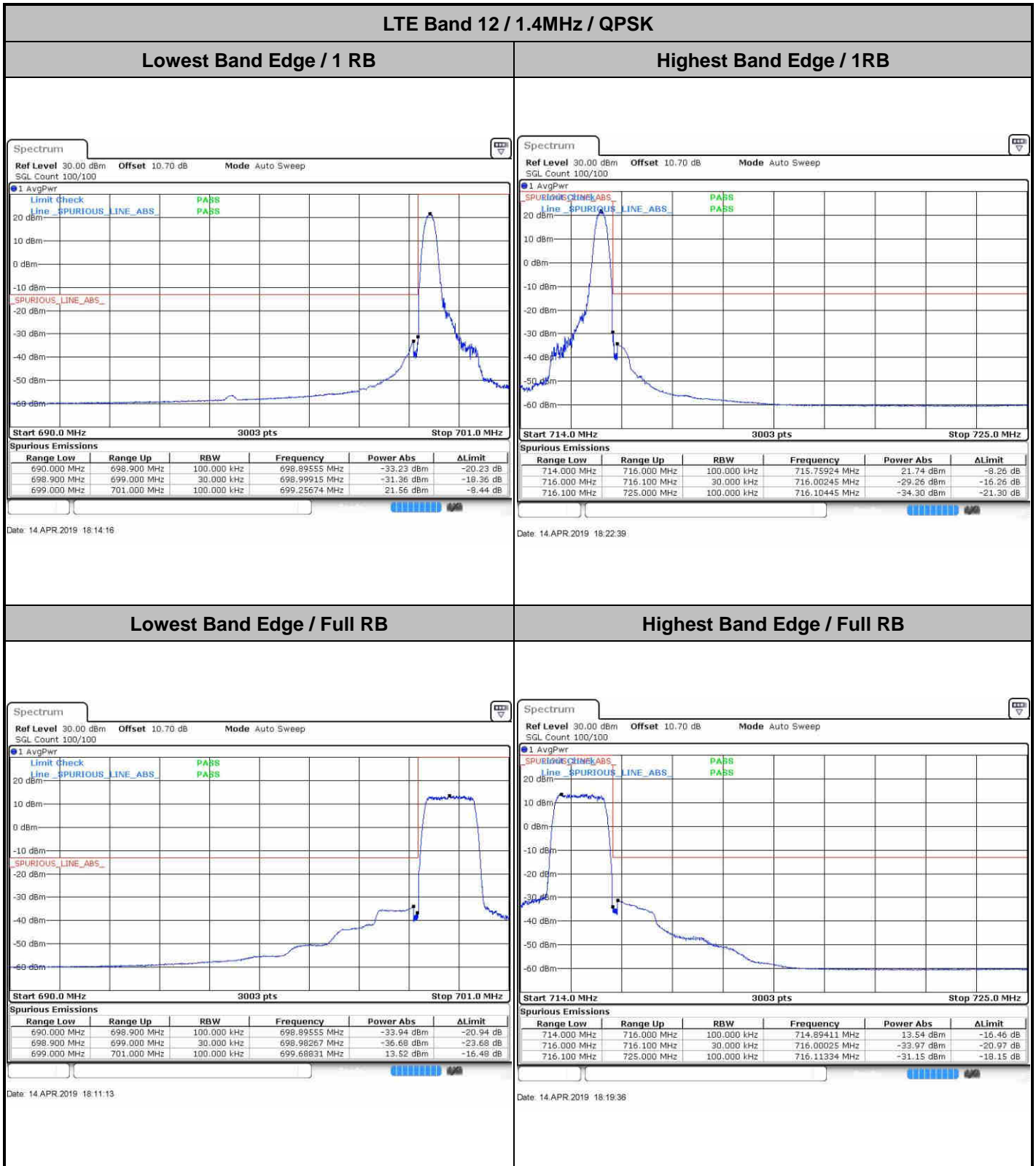
Highest Channel / 10MHz / 64QAM



Date: 14 APR 2019 18:04:01



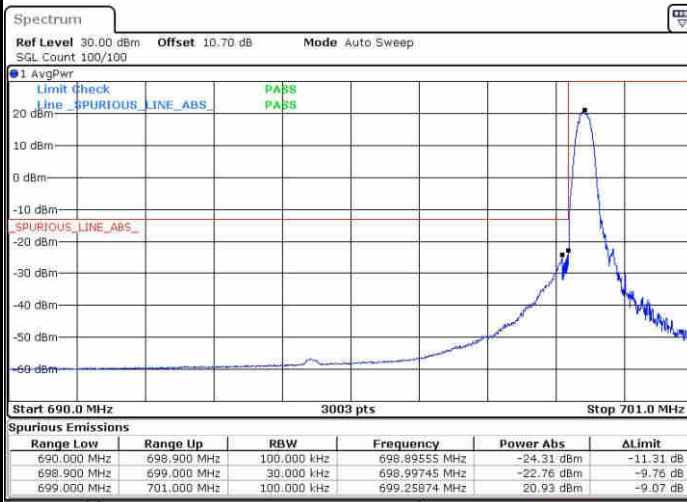
# Conducted Band Edge





LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



Date: 14 APR 2019 18:13:15

Highest Band Edge / 1 RB



Date: 14 APR 2019 18:21:38

Lowest Band Edge / Full RB



Date: 14 APR 2019 18:12:14

Highest Band Edge / Full RB

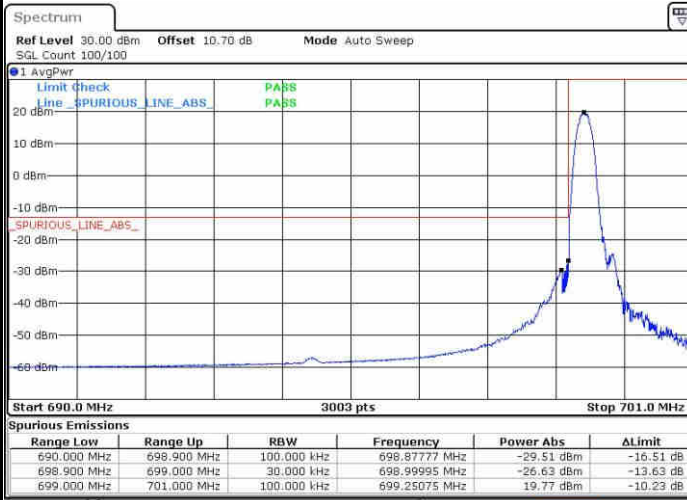


Date: 14 APR 2019 18:20:37



LTE Band 12 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB



Date: 14 APR 2019 18:26:27

Highest Band Edge / 1 RB



Date: 14 APR 2019 18:30:38

Lowest Band Edge / Full RB



Date: 14 APR 2019 18:25:26

Highest Band Edge / Full RB

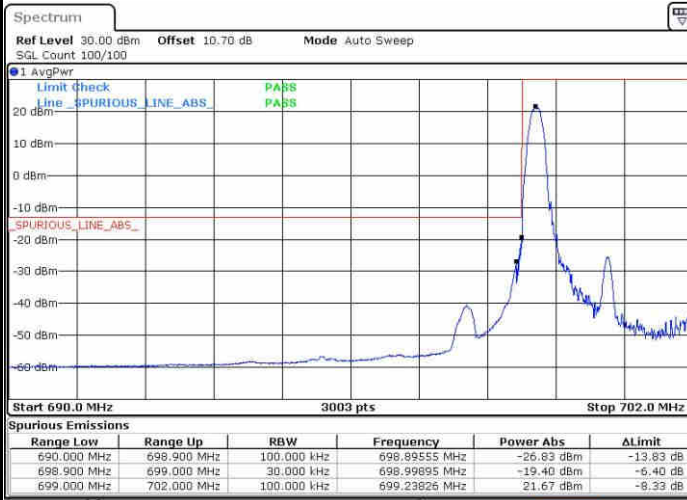


Date: 14 APR 2019 18:29:37



LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / 1RB



Date: 14 APR 2019 17:03:13

Highest Band Edge / 1 RB



Date: 14 APR 2019 17:11:36

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:00:11

Highest Band Edge / Full RB

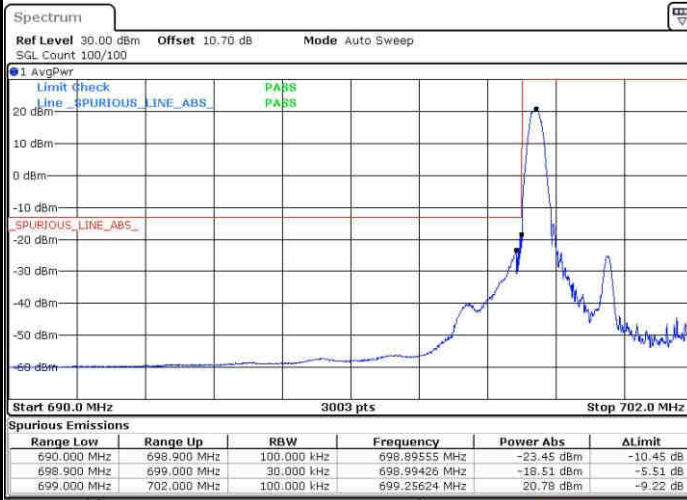


Date: 14 APR 2019 17:08:33



LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / 1 RB



Date: 14 APR 2019 17:02:12

Highest Band Edge / 1 RB



Date: 14 APR 2019 17:10:35

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:01:11

Highest Band Edge / Full RB

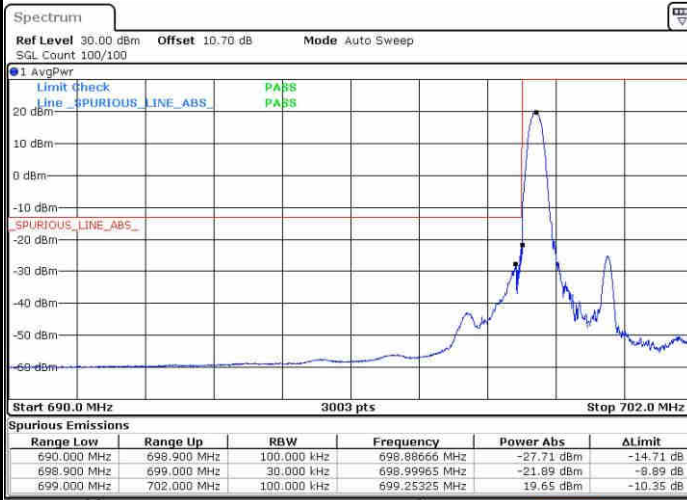


Date: 14 APR 2019 17:09:34



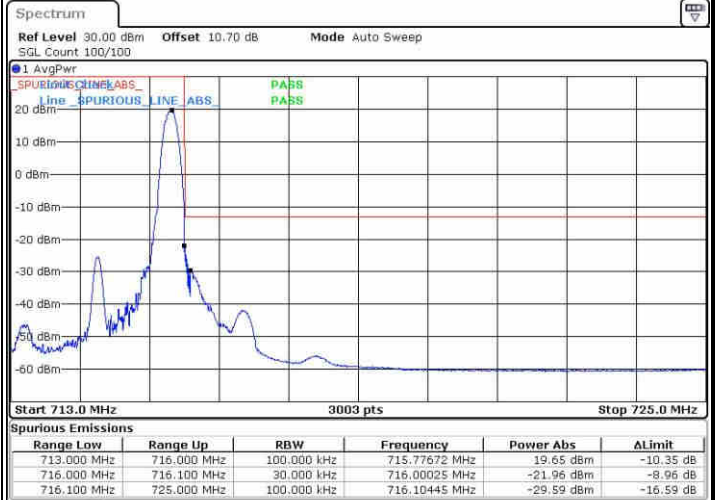
LTE Band 12 / 3MHz / 64QAM

Lowest Band Edge / 1 RB



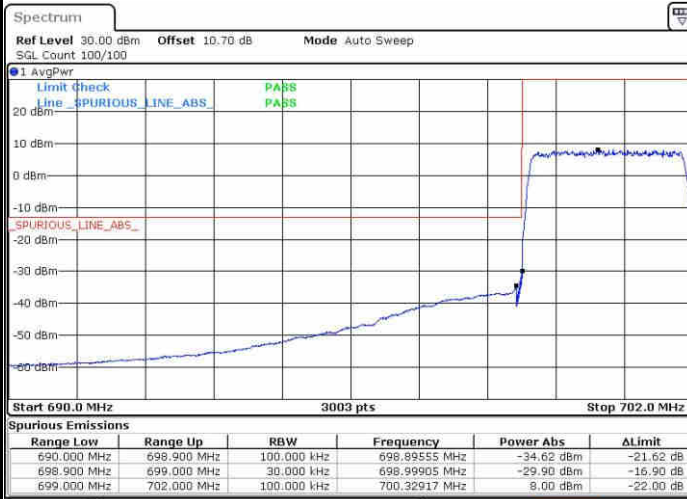
Date: 14 APR 2019 17:15:24

Highest Band Edge / 1 RB



Date: 14 APR 2019 17:19:35

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:14:23

Highest Band Edge / Full RB

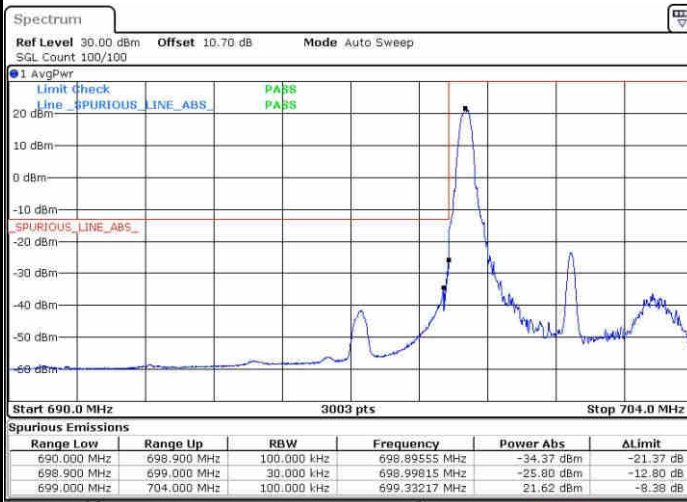


Date: 14 APR 2019 17:18:34



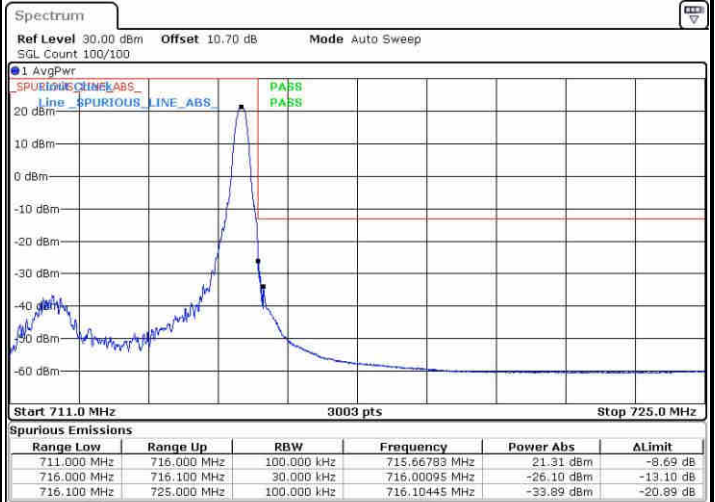
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / 1 RB



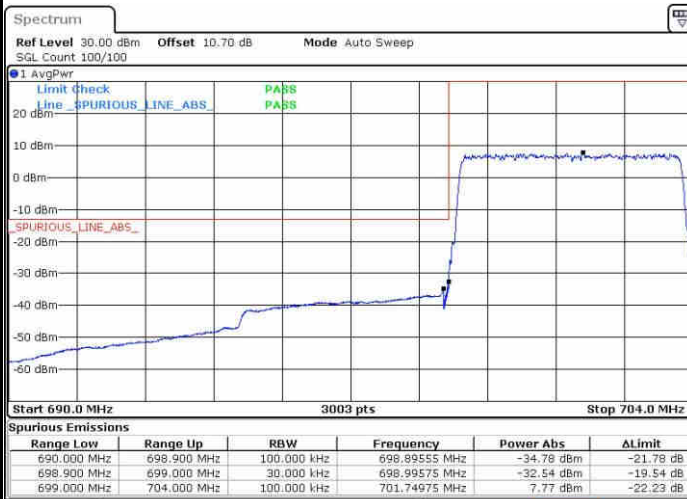
Date: 14 APR 2019 17:32:27

Highest Band Edge / 1 RB



Date: 14 APR 2019 17:42:36

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:29:25

Highest Band Edge / Full RB



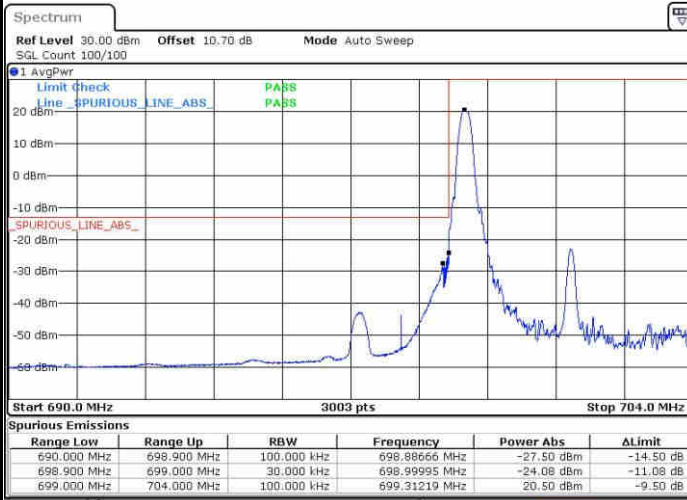
Date: 14 APR 2019 17:40:34





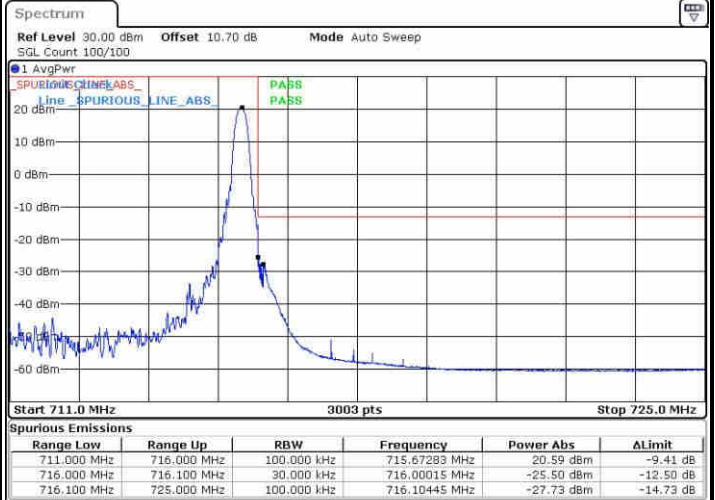
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1RB



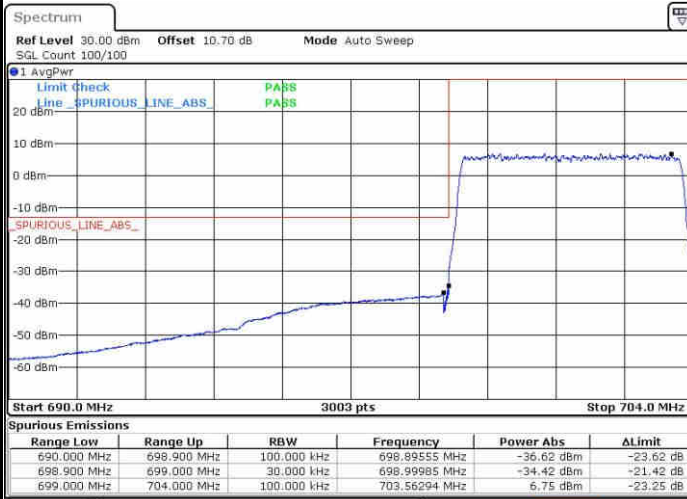
Date: 14 APR 2019 17:31:26

Highest Band Edge / 1 RB



Date: 14 APR 2019 17:43:37

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:30:25

Highest Band Edge / Full RB

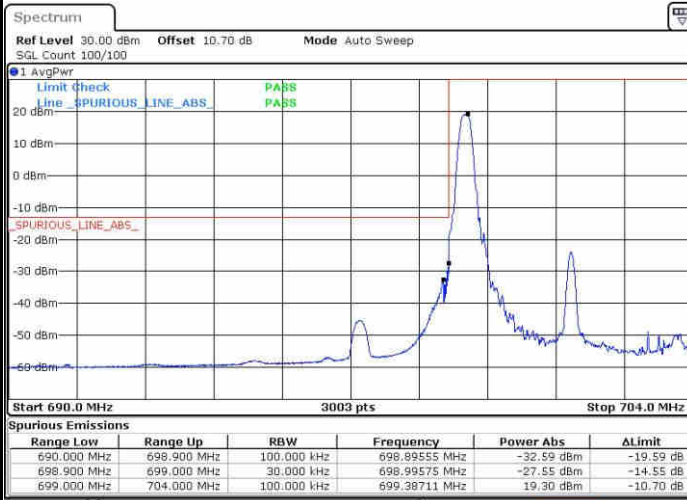


Date: 14 APR 2019 17:41:35



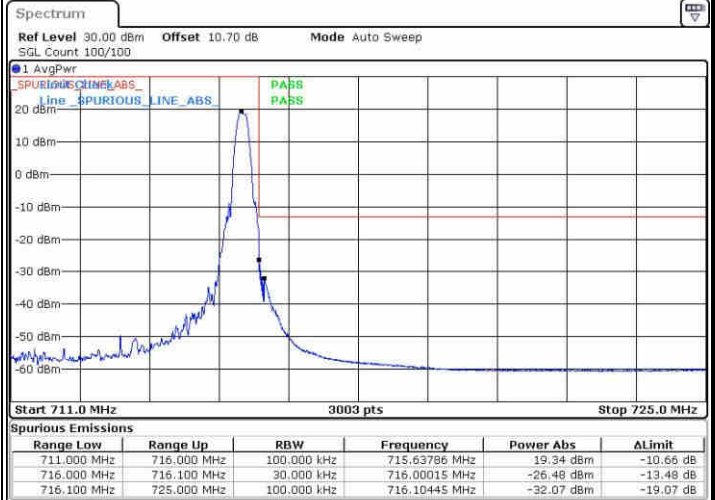
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1RB



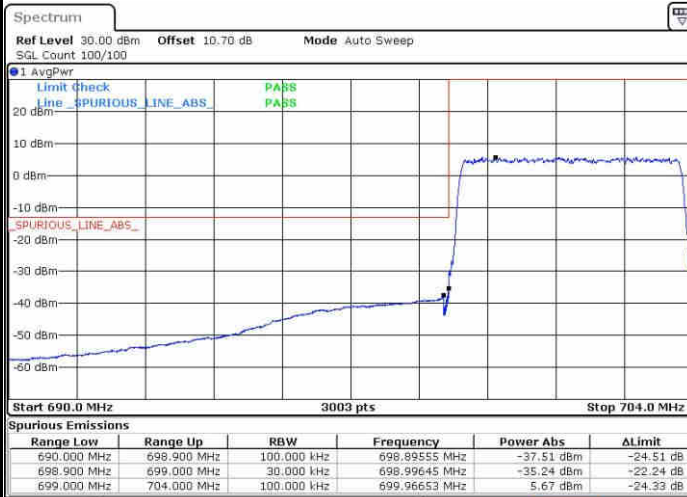
Date: 14 APR 2019 17:22:43

Highest Band Edge / 1 RB



Date: 14 APR 2019 17:26:54

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:21:42

Highest Band Edge / Full RB

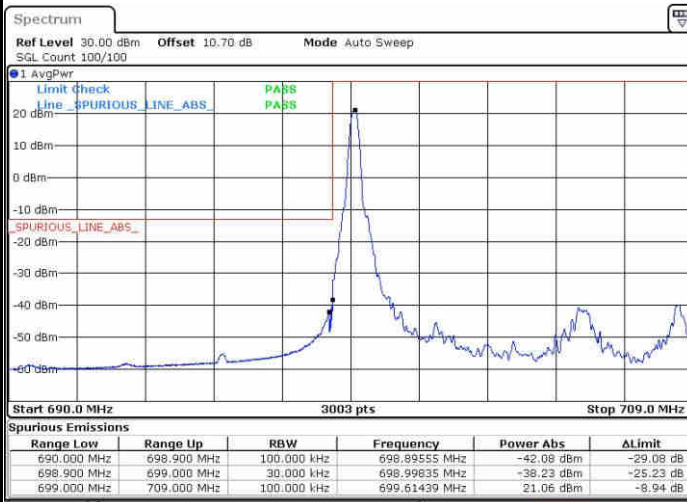


Date: 14 APR 2019 17:25:53



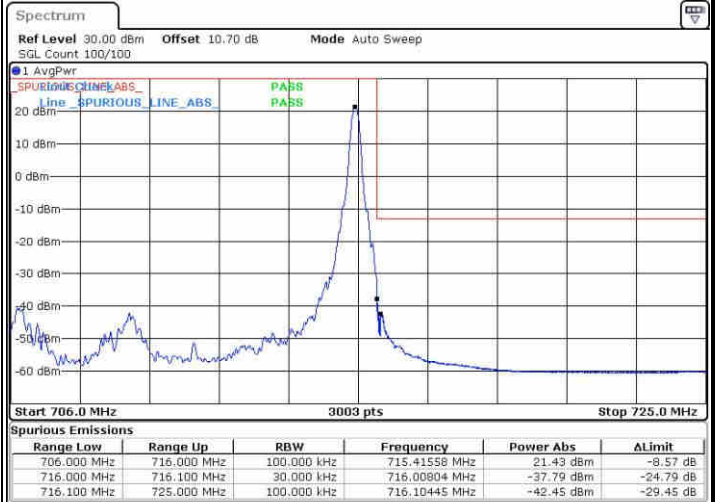
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



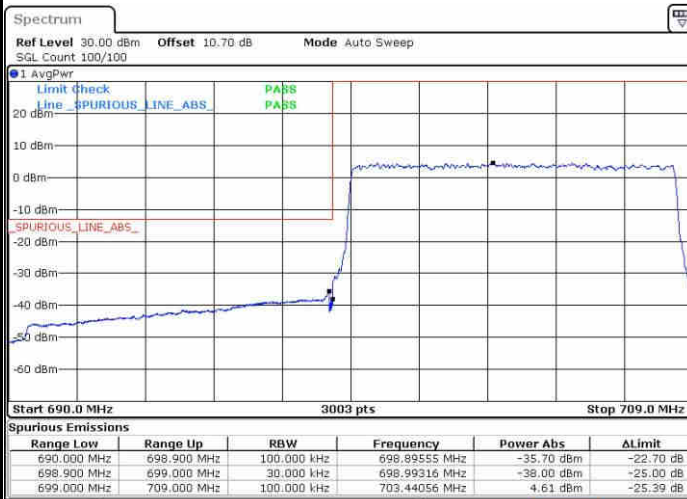
Date: 14 APR 2019 17:49:52

Highest Band Edge / 1 RB



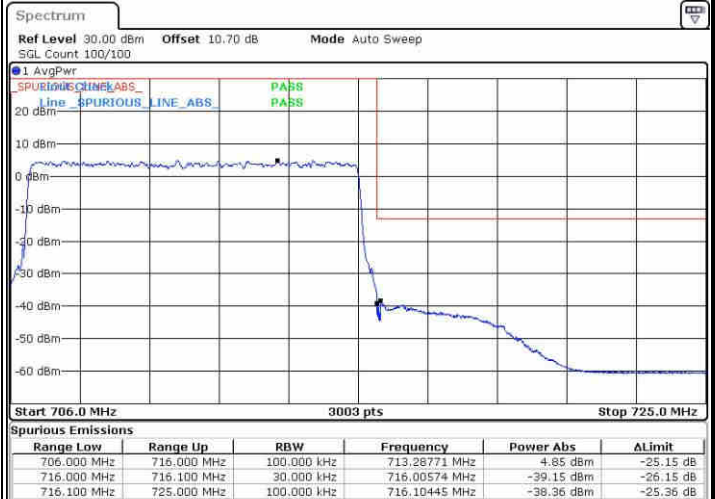
Date: 14 APR 2019 17:58:15

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:46:49

Highest Band Edge / Full RB

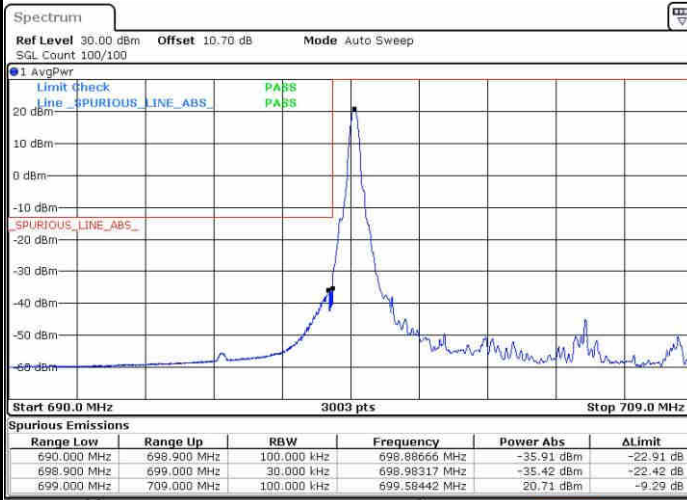


Date: 14 APR 2019 17:55:12



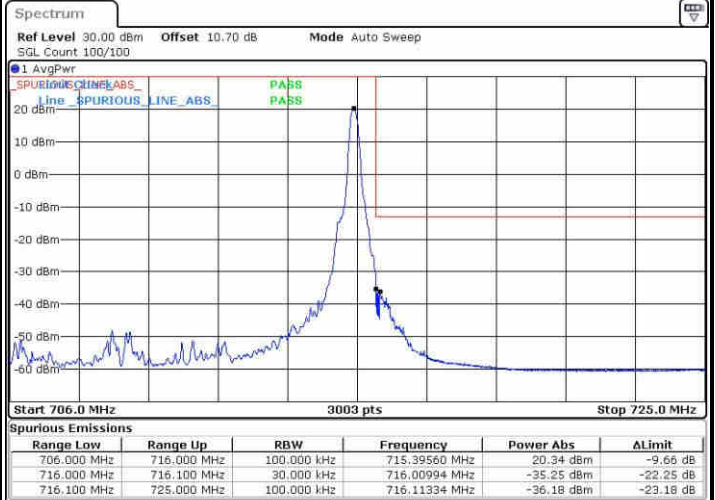
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



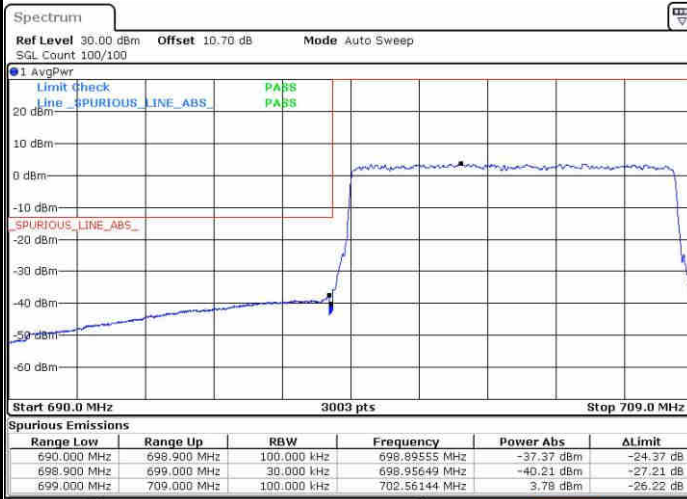
Date: 14 APR 2019 17:48:51

Highest Band Edge / 1 RB



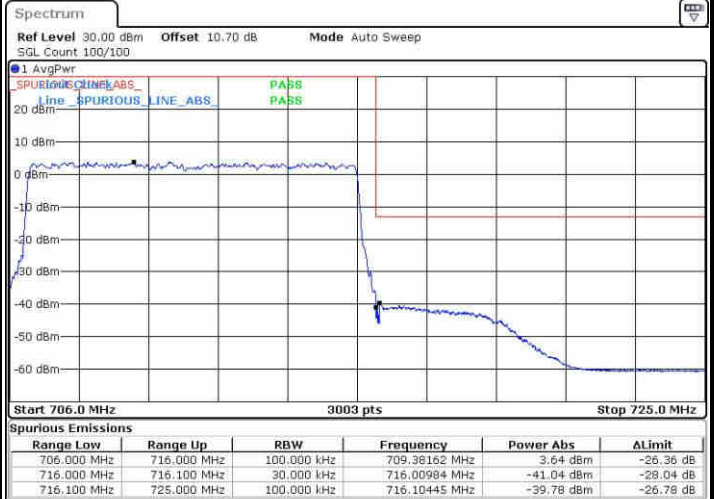
Date: 14 APR 2019 17:57:14

Lowest Band Edge / Full RB



Date: 14 APR 2019 17:47:50

Highest Band Edge / Full RB

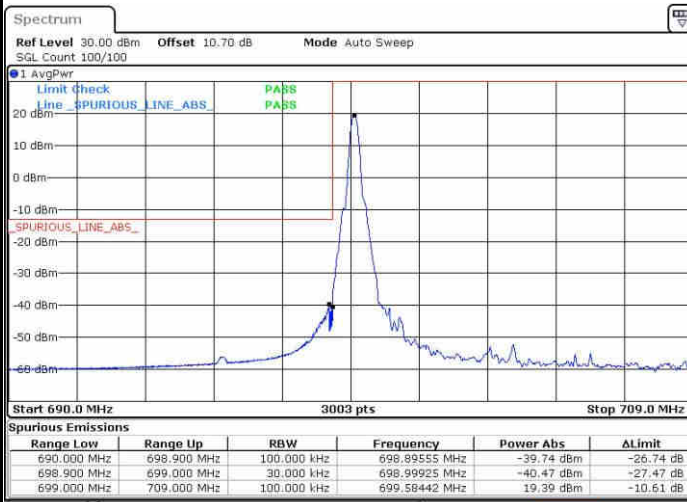


Date: 14 APR 2019 17:56:13



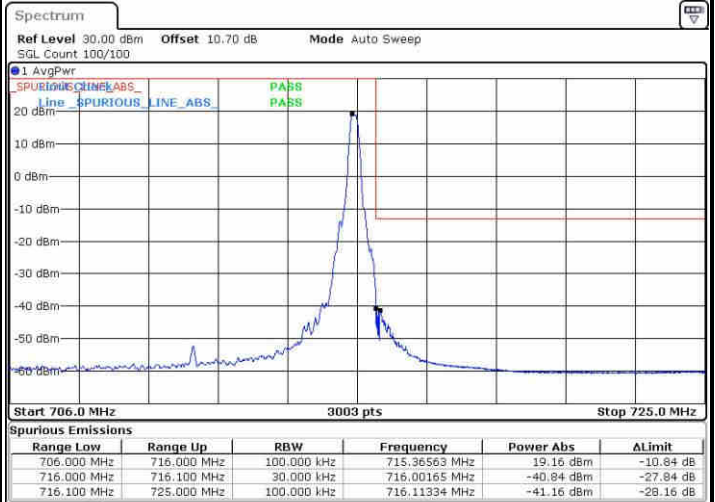
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



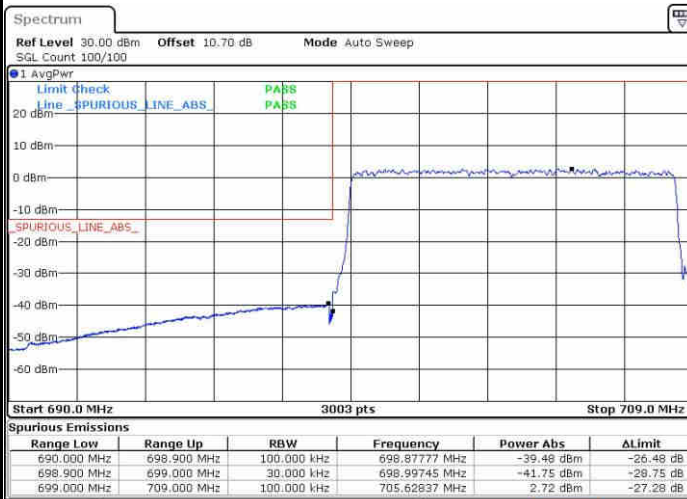
Date: 14 APR 2019 18:02:04

Highest Band Edge / 1 RB



Date: 14 APR 2019 18:06:15

Lowest Band Edge / Full RB



Date: 14 APR 2019 18:01:03

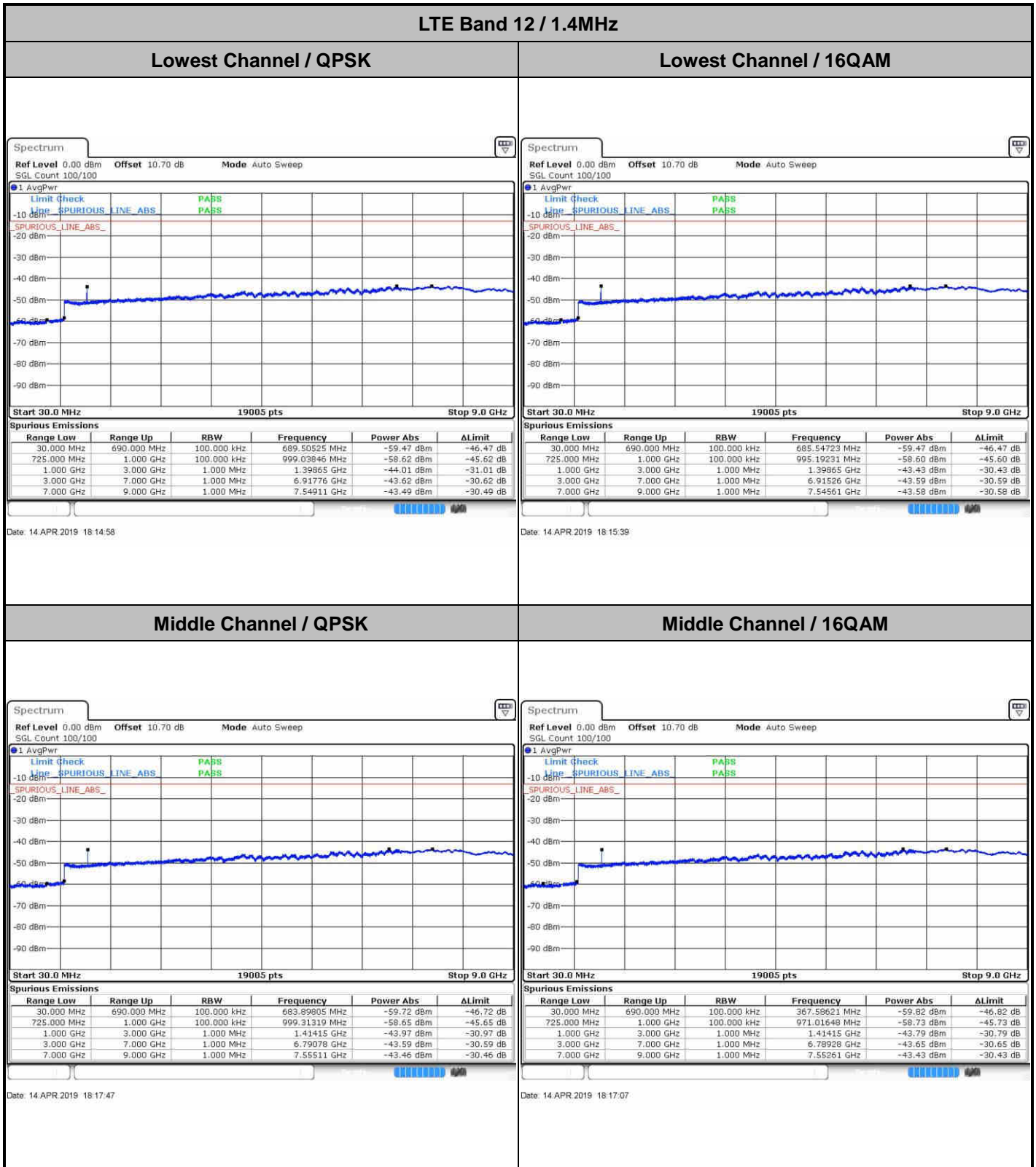
Highest Band Edge / Full RB



Date: 14 APR 2019 18:05:14



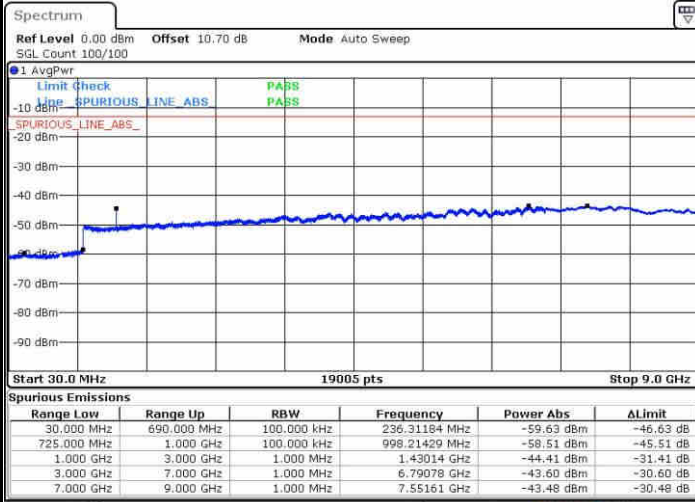
# Conducted Spurious Emission





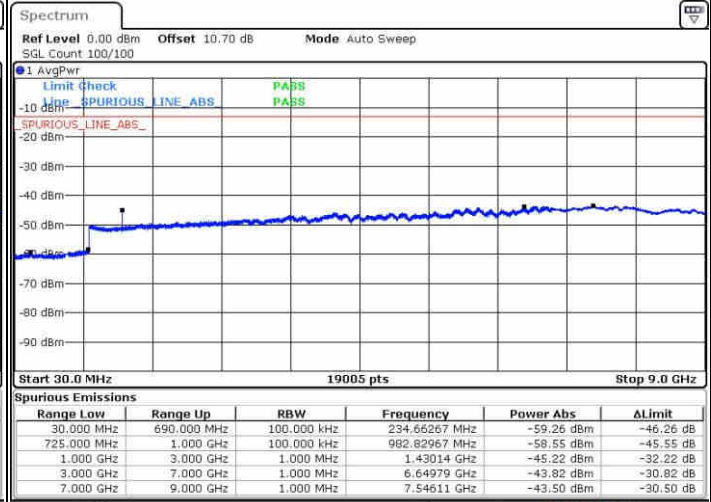
LTE Band 12 / 1.4MHz

Highest Channel / QPSK



Date: 14 APR 2019 18:23:20

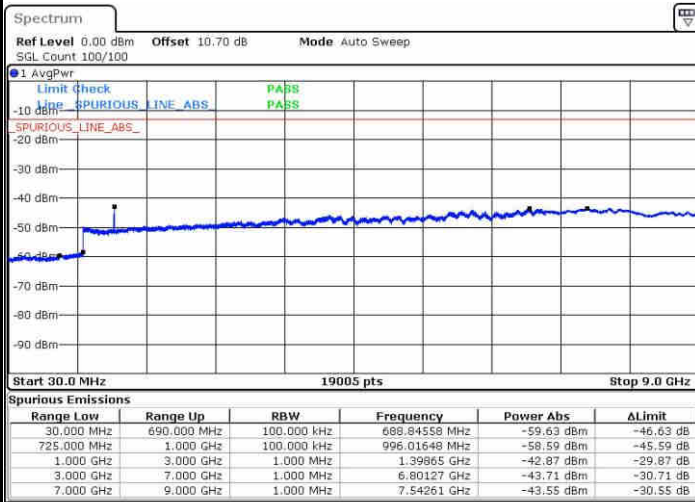
Highest Channel / 16QAM



Date: 14 APR 2019 18:24:01

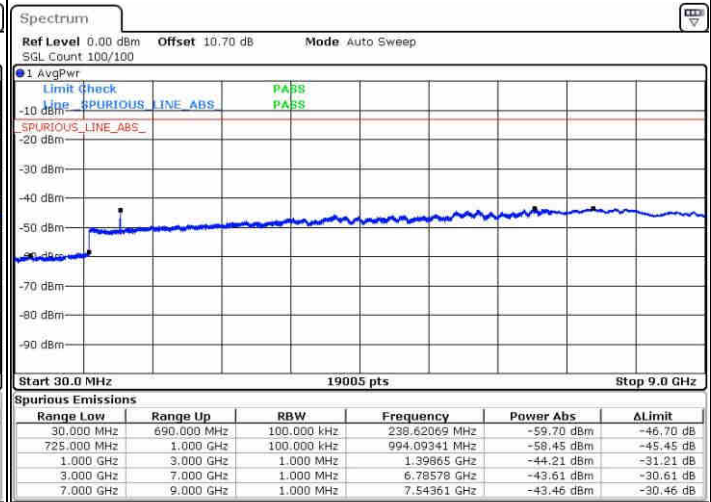
LTE Band 12 / 3MHz

Lowest Channel / QPSK



Date: 14 APR 2019 17:03:55

Lowest Channel / 16QAM



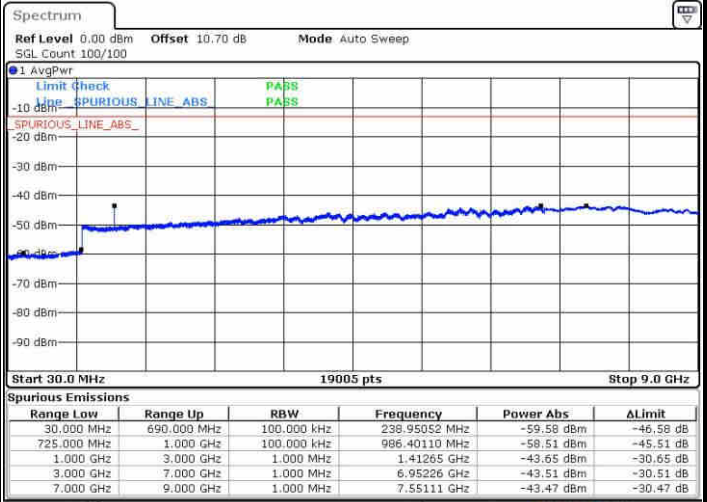
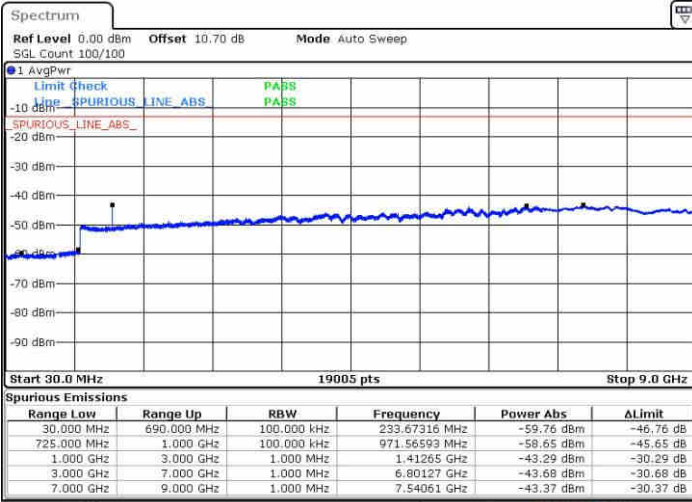
Date: 14 APR 2019 17:04:36



LTE Band 12 / 3MHz

Middle Channel / QPSK

Middle Channel / 16QAM

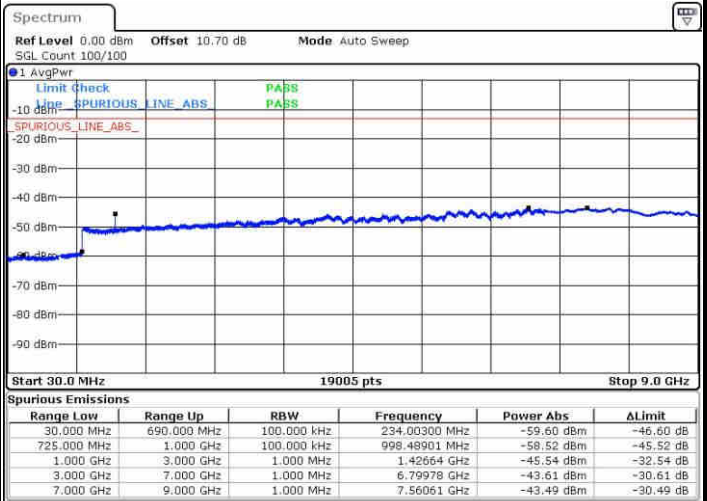
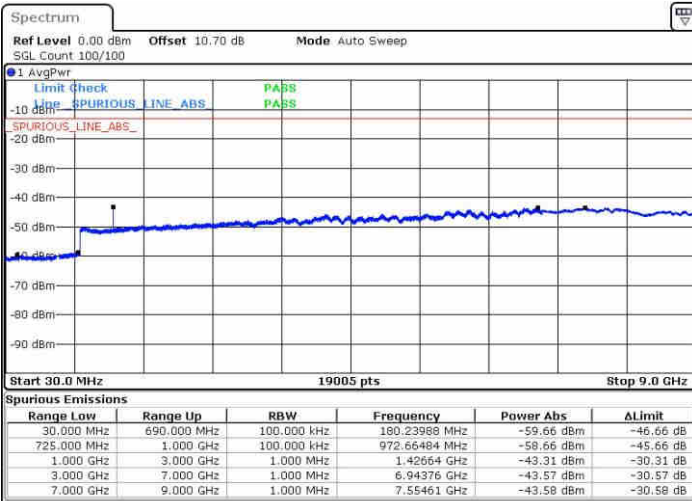


Date: 14 APR 2019 17:06:44

Date: 14 APR 2019 17:06:03

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 14 APR 2019 17:12:17

Date: 14 APR 2019 17:12:58

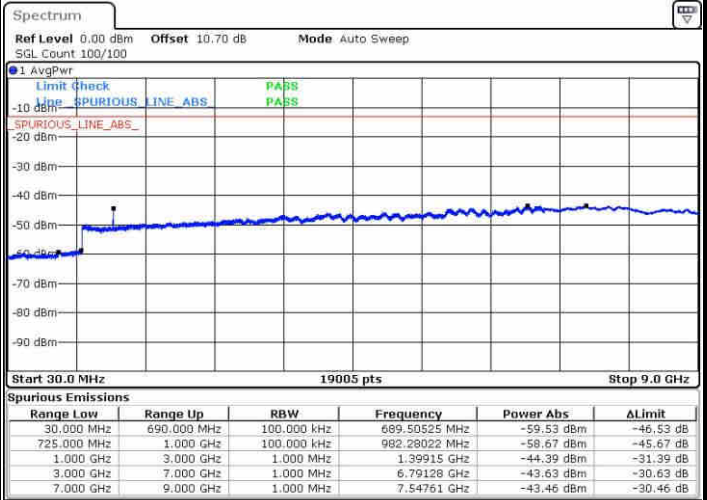
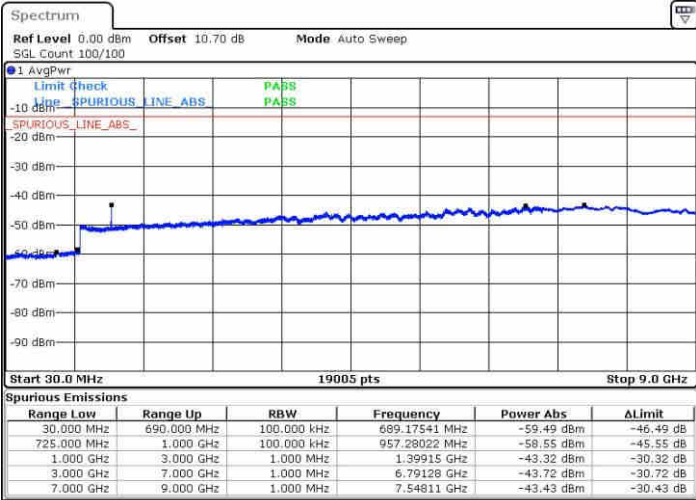




LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

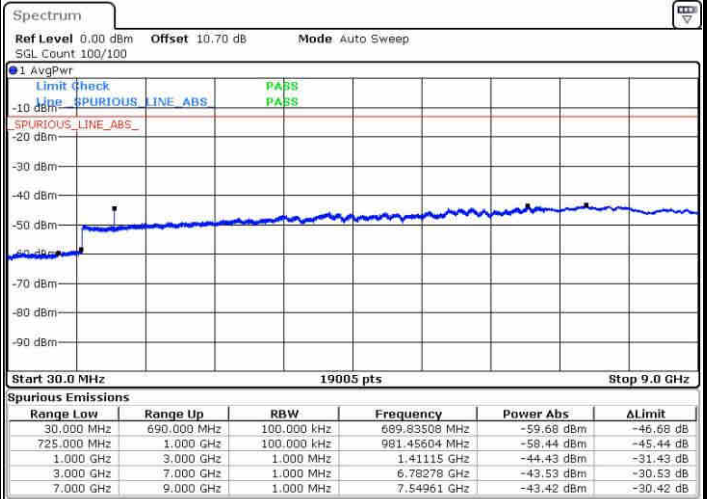
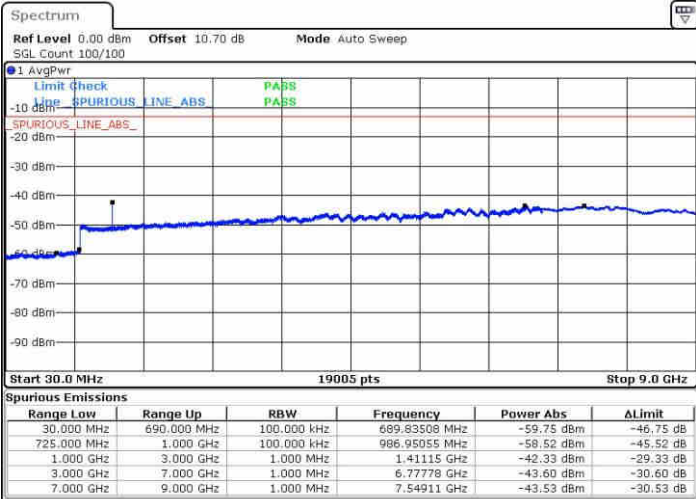


Date: 14 APR 2019 17:33:09

Date: 14 APR 2019 17:33:50

Middle Channel / QPSK

Middle Channel / 16QAM



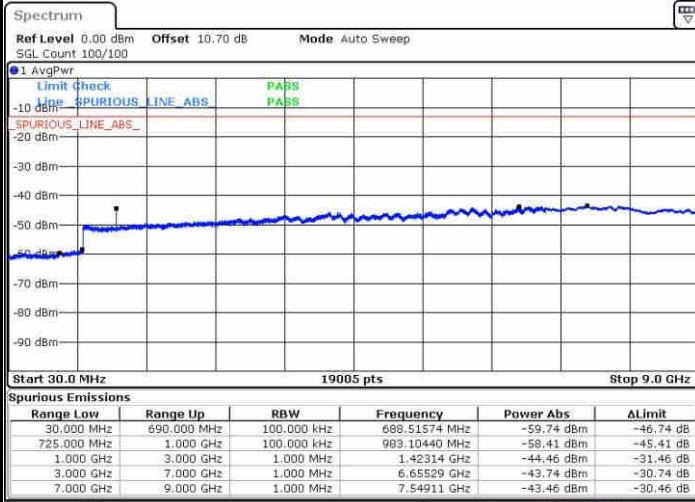
Date: 14 APR 2019 17:35:58

Date: 14 APR 2019 17:35:18



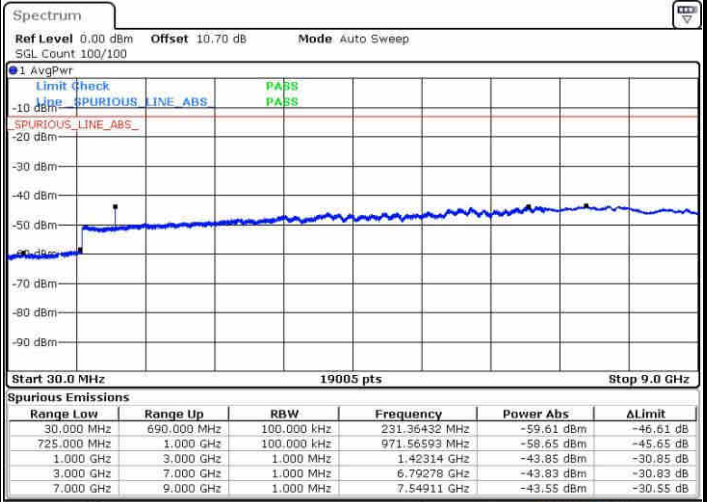
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 14 APR 2019 17:45:00

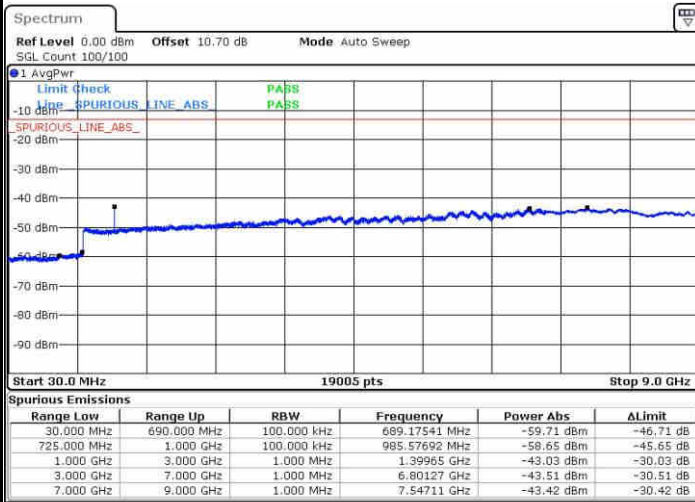
Highest Channel / 16QAM



Date: 14 APR 2019 17:44:19

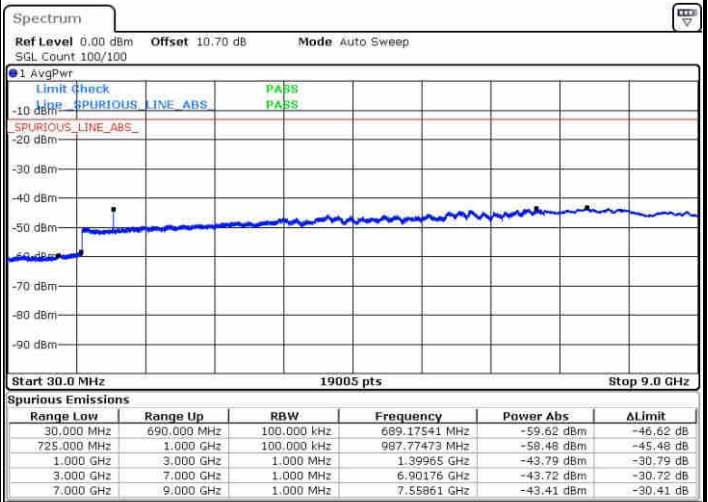
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 14 APR 2019 17:50:34

Lowest Channel / 16QAM



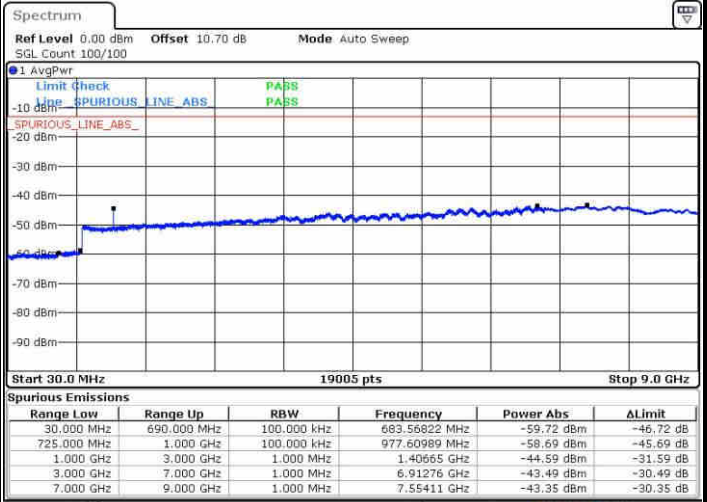
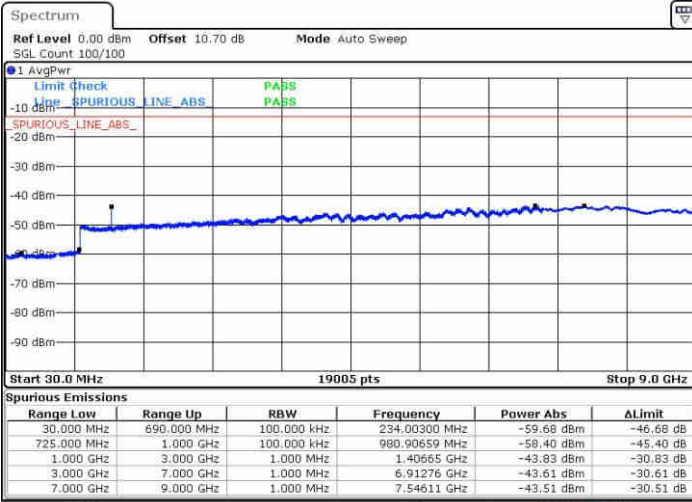
Date: 14 APR 2019 17:51:15



LTE Band 12 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM

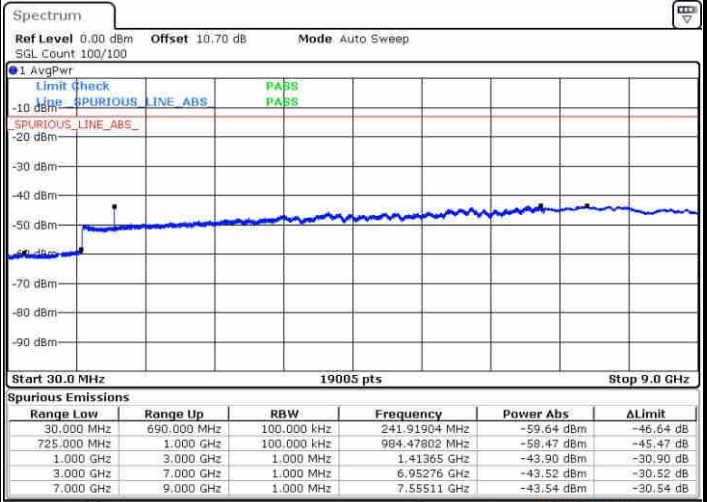
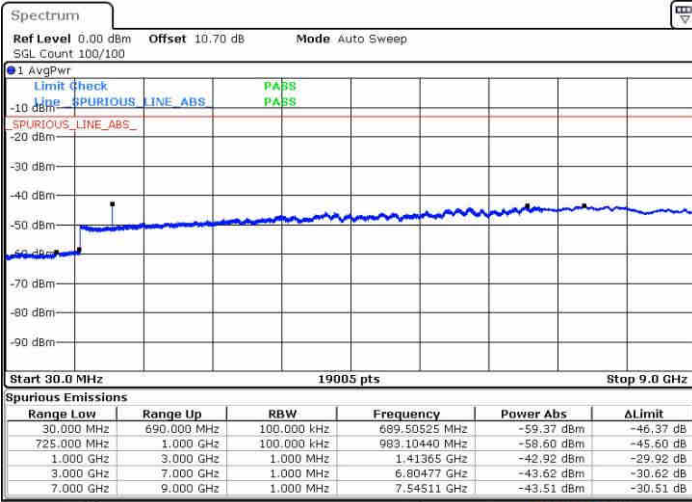


Date: 14 APR 2019 17:53:23

Date: 14 APR 2019 17:52:42

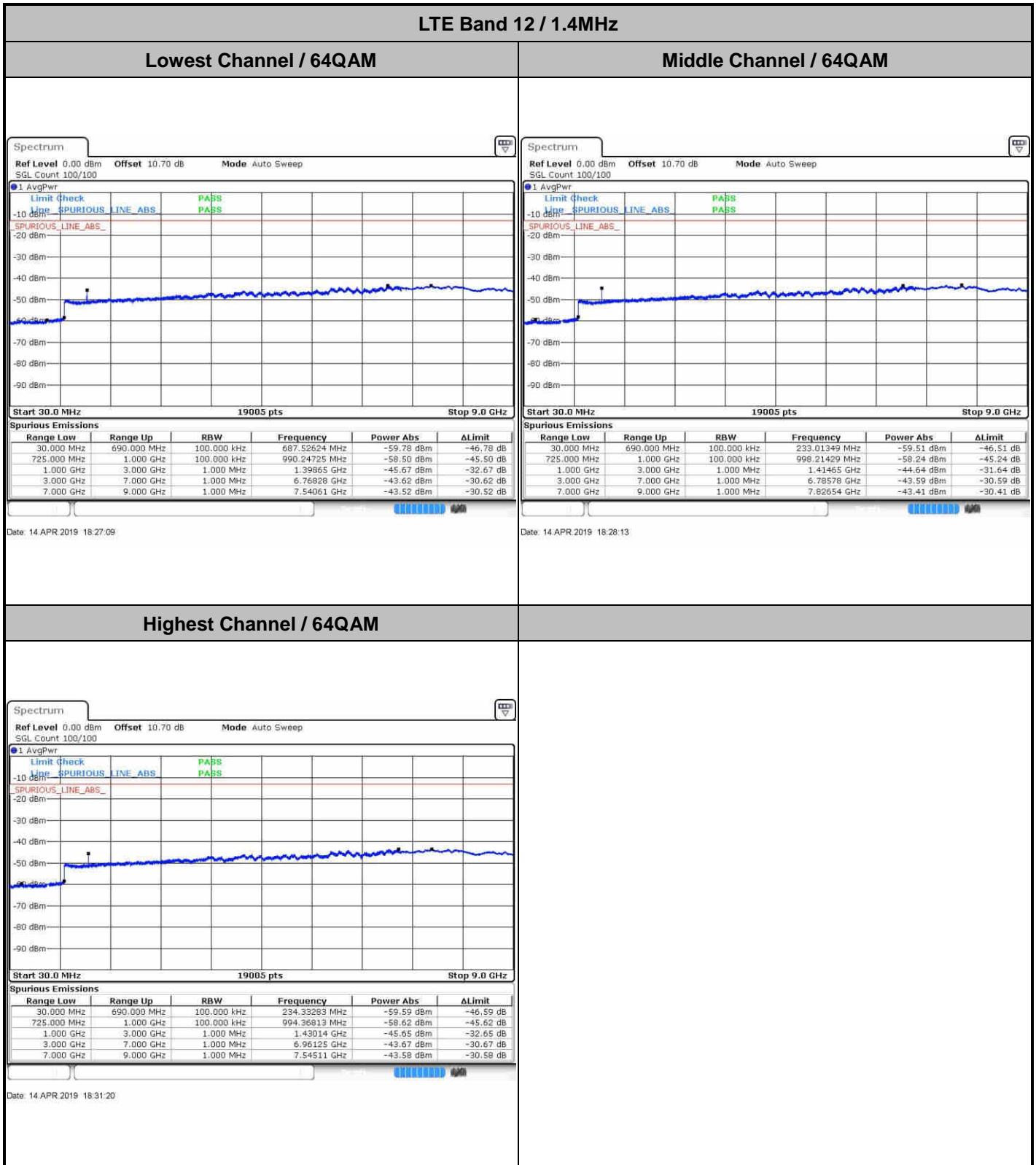
Highest Channel / QPSK

Highest Channel / 16QAM



Date: 14 APR 2019 17:58:57

Date: 14 APR 2019 17:59:38

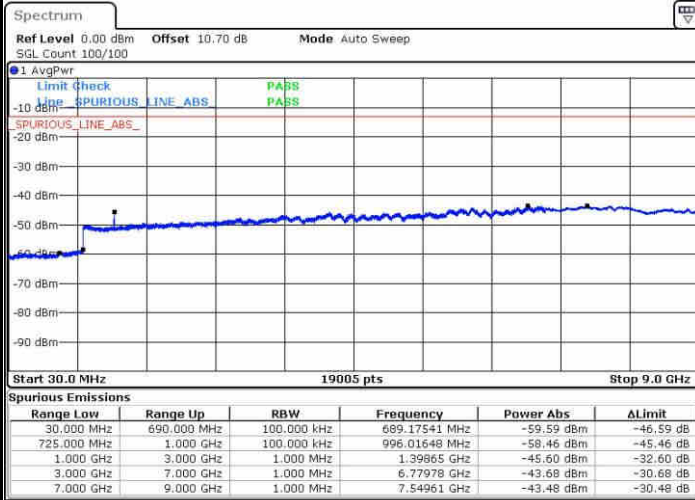




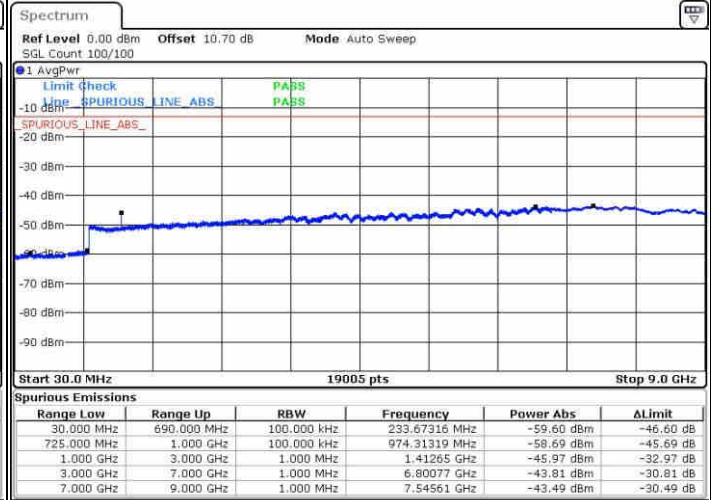
LTE Band 12 / 3MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

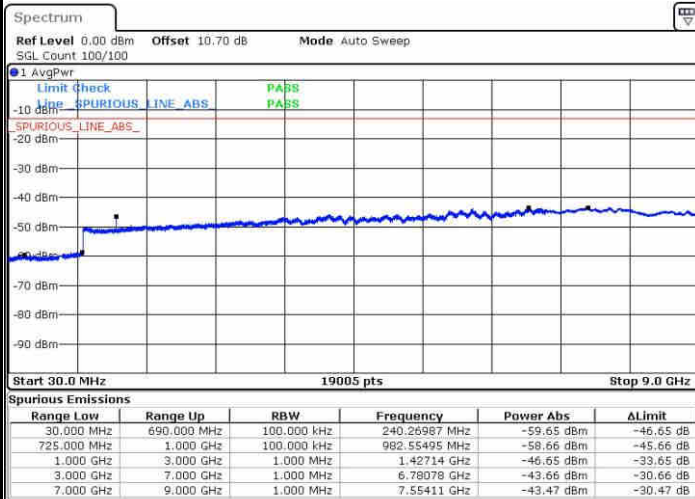


Date: 14 APR 2019 17:16:06



Date: 14 APR 2019 17:17:10

Highest Channel / 64QAM



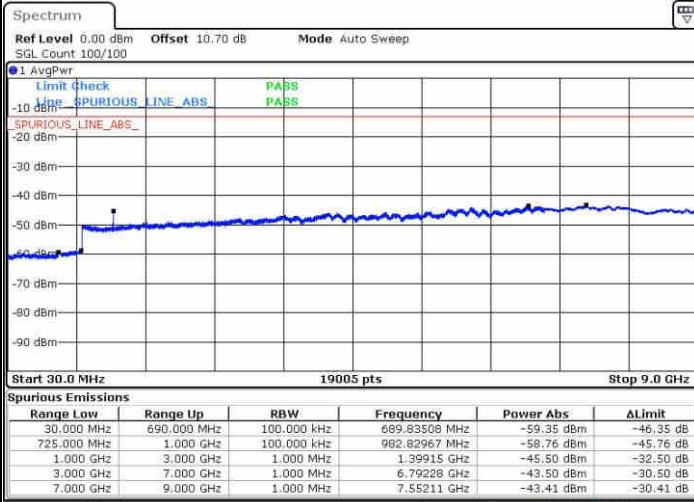
Date: 14 APR 2019 17:20:17



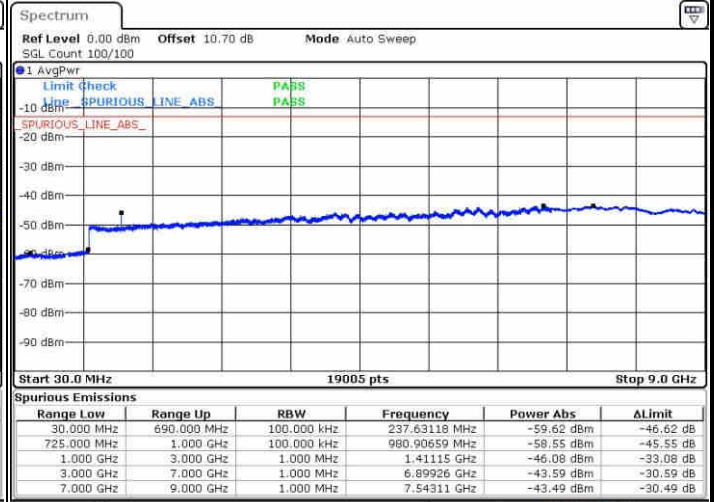
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

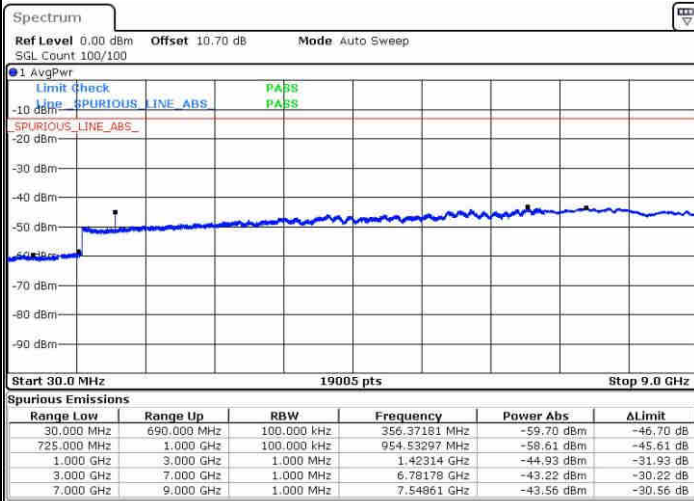


Date: 14 APR 2019 17:23:24



Date: 14 APR 2019 17:24:28

Highest Channel / 64QAM

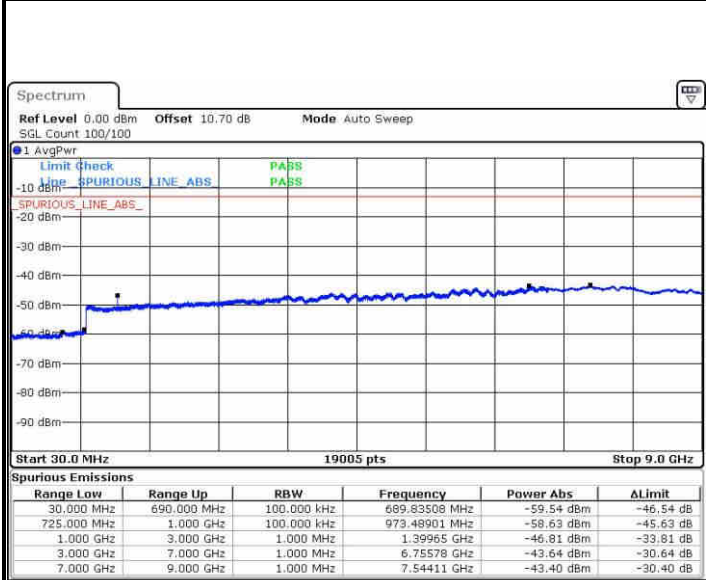


Date: 14 APR 2019 17:27:35



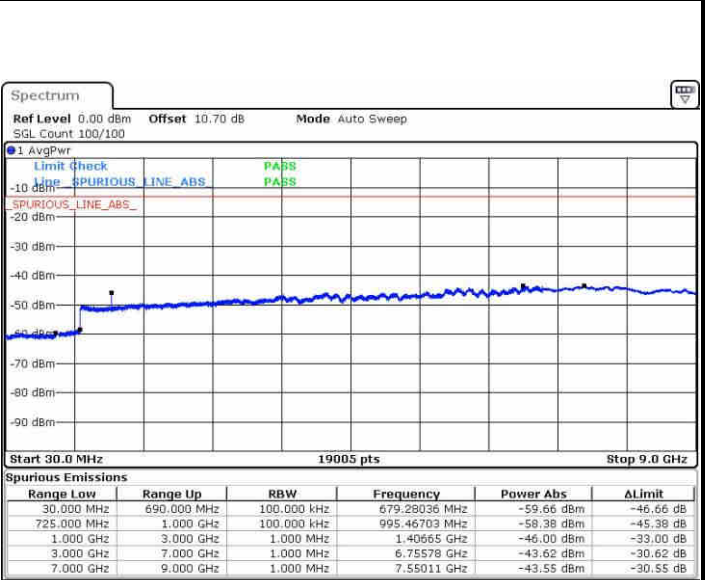
**LTE Band 12 / 10MHz**

**Lowest Channel / 64QAM**



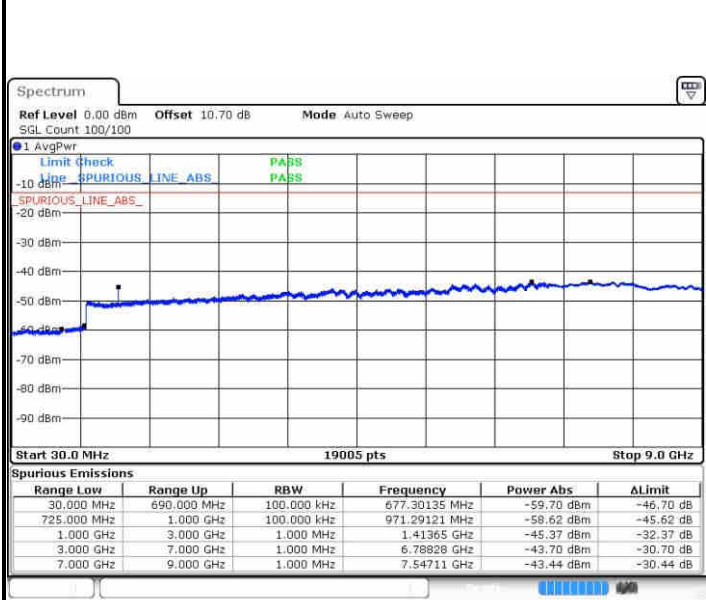
Date: 14 APR 2019 18:02:45

**Middle Channel / 64QAM**



Date: 14 APR 2019 18:03:50

**Highest Channel / 64QAM**



Date: 14 APR 2019 18:06:57



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	0.0055	PASS
40	Normal Voltage	0.0047	
30	Normal Voltage	0.0010	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0014	
-10	Normal Voltage	0.0042	
-20	Normal Voltage	0.0059	
-30	Normal Voltage	0.0042	
20	Maximum Voltage	0.0017	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0010	

Note:

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.5 V. ; Maximum Voltage =4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.





# LTE Band 13

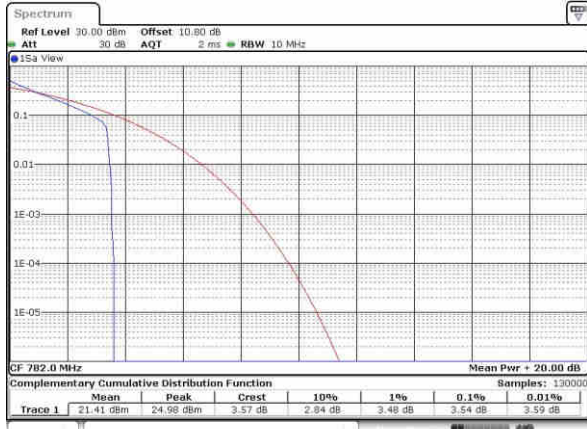
## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	3.54	5.01	4.06	5.83	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	PASS
Middle CH	5.25	6.26	-	-	
Highest CH	-	-	-	-	



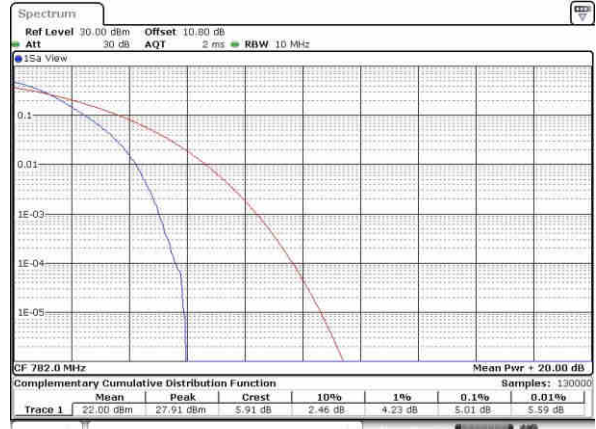
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 14 APR 2019 16:08:21

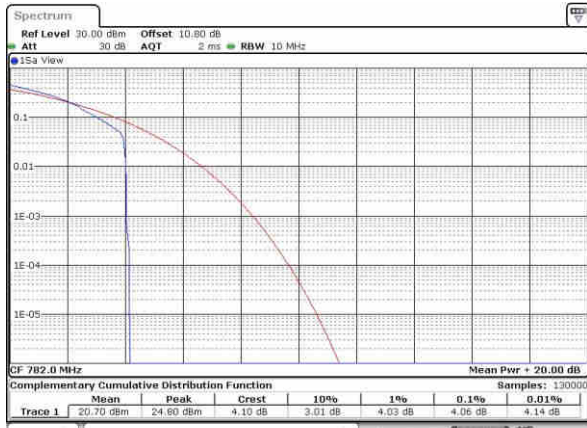
Middle Channel / Full RB



Date: 14 APR 2019 16:08:32

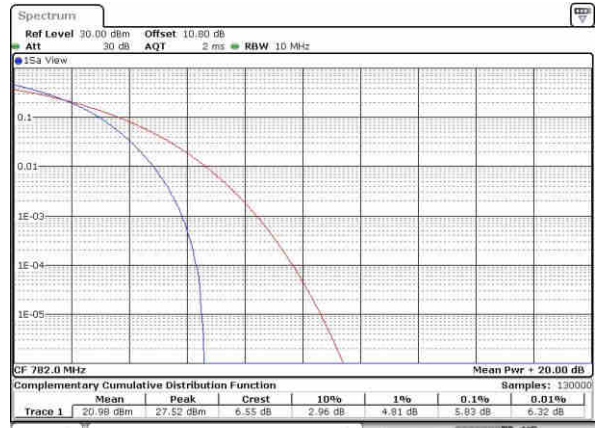
LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 14 APR 2019 16:07:55

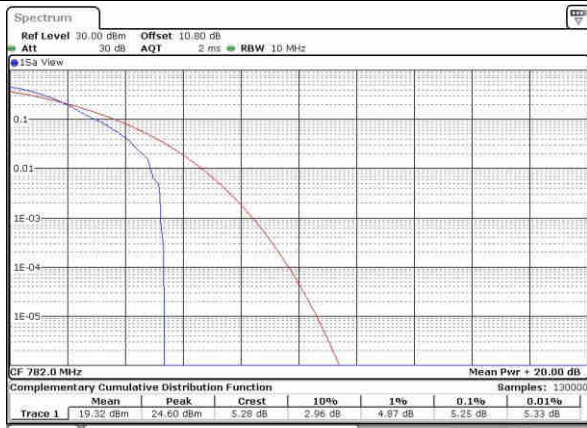
Middle Channel / Full RB



Date: 14 APR 2019 16:08:09

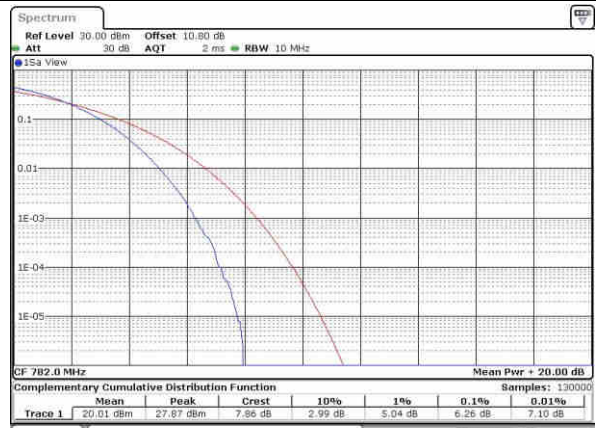
LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 14 APR 2019 16:07:33

Middle Channel / Full RB



Date: 14 APR 2019 16:07:44



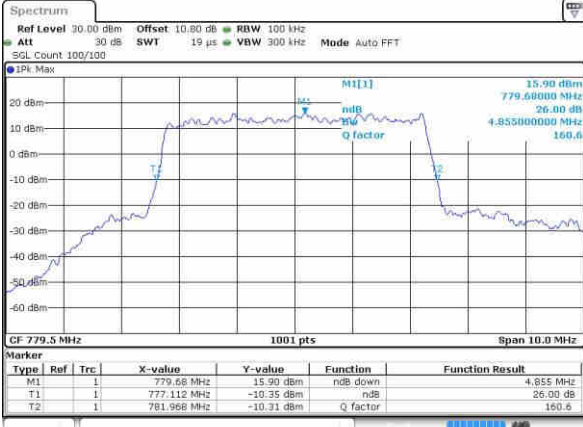
**26dB Bandwidth**

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	-	-	-	-	4.86	4.82	-	-	-	-	-	-
Middle CH	-	-	-	-	4.90	4.94	9.73	9.63	-	-	-	-
Highest CH	-	-	-	-	4.91	4.88	-	-	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.89	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.92	-	9.77	-	-	-	-	-
Highest CH	-	-	-	-	4.87	-	-	-	-	-	-	-



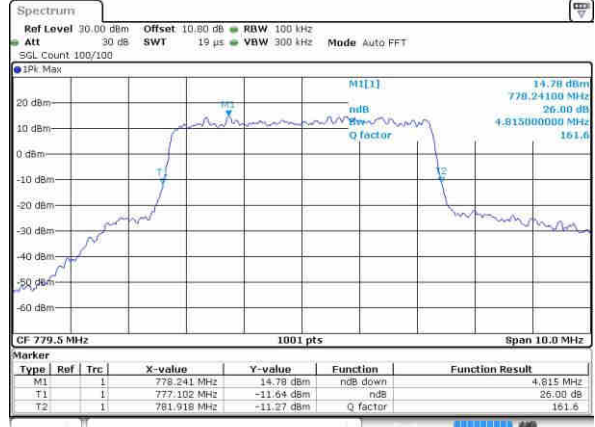
LTE Band 13

Lowest Channel / 5MHz / QPSK



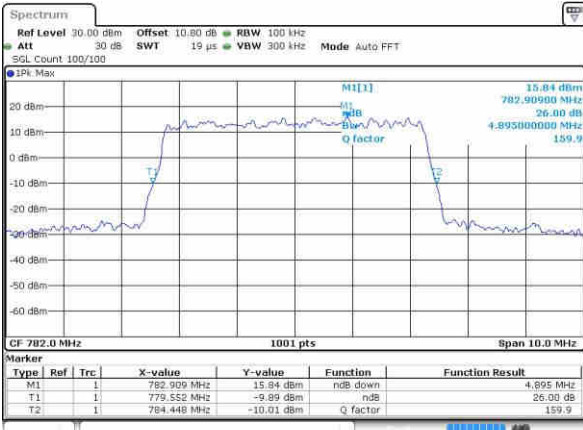
Date: 14 APR 2019 15:18:56

Lowest Channel / 5MHz / 16QAM



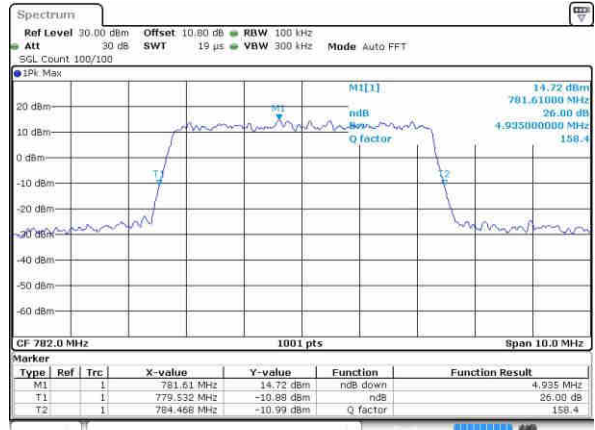
Date: 14 APR 2019 15:18:43

Middle Channel / 5MHz / QPSK



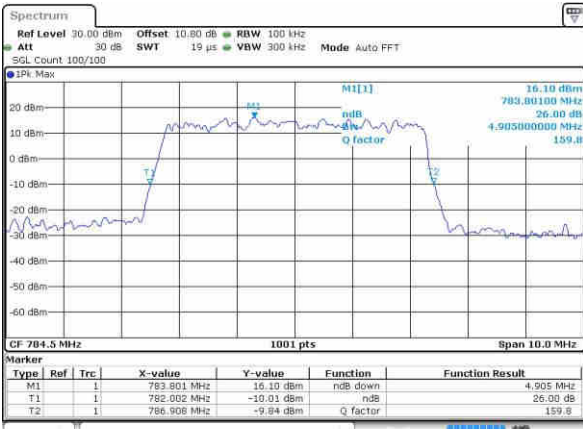
Date: 14 APR 2019 15:28:34

Middle Channel / 5MHz / 16QAM



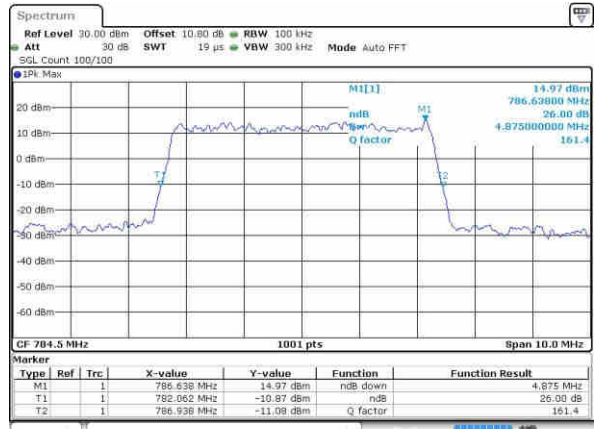
Date: 14 APR 2019 15:28:46

Highest Channel / 5MHz / QPSK



Date: 14 APR 2019 15:29:57

Highest Channel / 5MHz / 16QAM

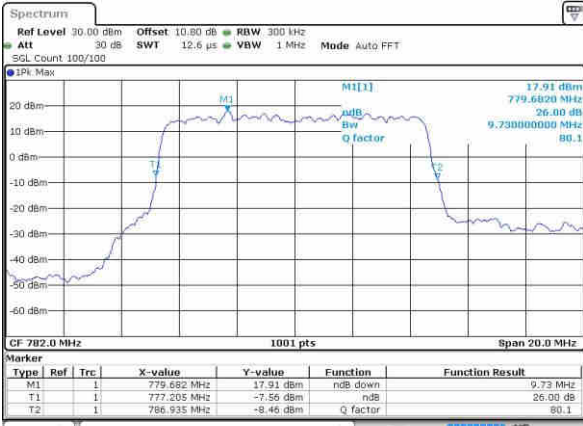


Date: 14 APR 2019 15:29:45



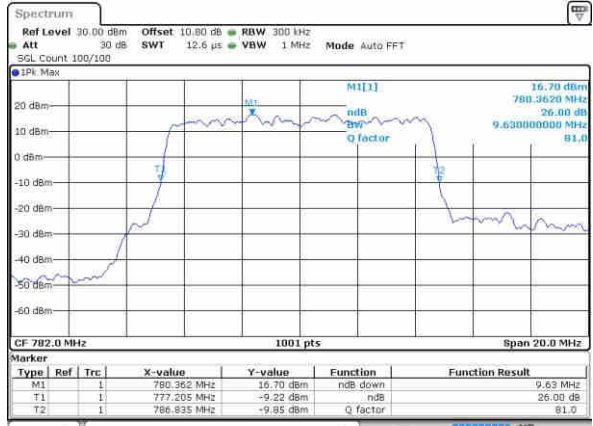
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 14 APR 2019 15:48:49

Middle Channel / 10MHz / 16QAM

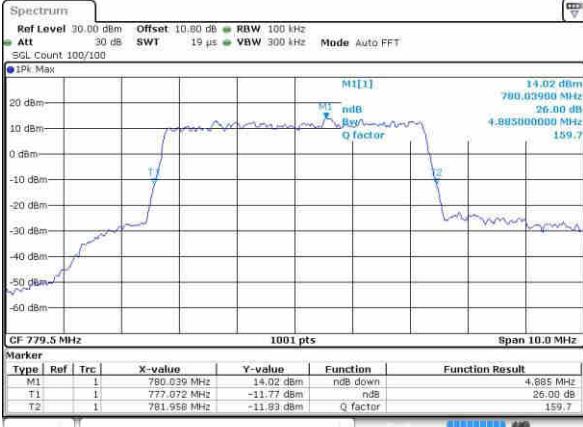


Date: 14 APR 2019 15:48:37



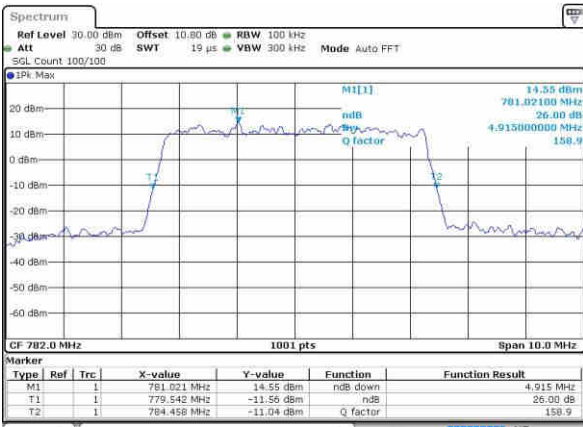
LTE Band 13

Lowest Channel / 5MHz / 64QAM



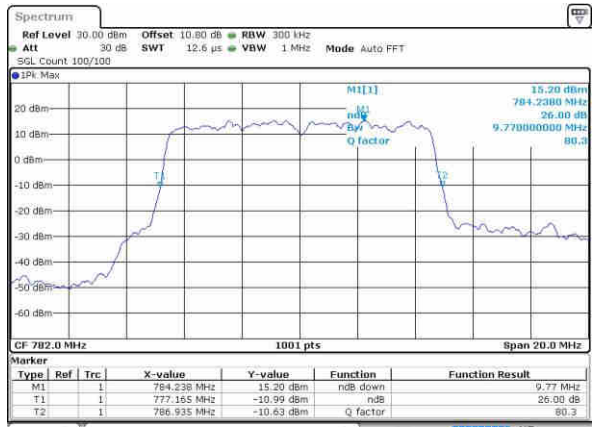
Date: 14 APR 2019 15:38:28

Middle Channel / 5MHz / 64QAM



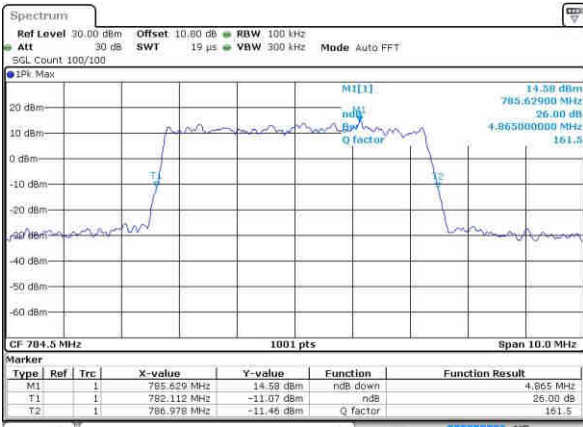
Date: 14 APR 2019 15:43:23

Middle Channel / 10MHz / 64QAM



Date: 14 APR 2019 16:00:36

Highest Channel / 5MHz / 64QAM



Date: 14 APR 2019 15:43:59



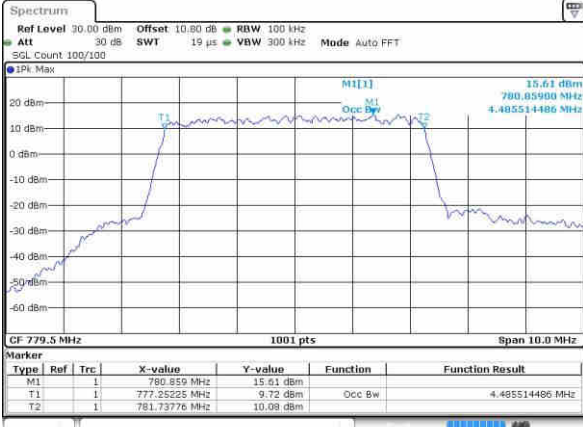
**Occupied Bandwidth**

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	4.47	-	-	-	-	-	-
Middle CH	-	-	-	-	4.5	4.5	9.05	9.07	-	-	-	-
Highest CH	-	-	-	-	4.51	4.5	-	-	-	-	-	-
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	-	-	-	-	4.49	-	8.99	-	-	-	-	-
Highest CH	-	-	-	-	4.49	-	-	-	-	-	-	-

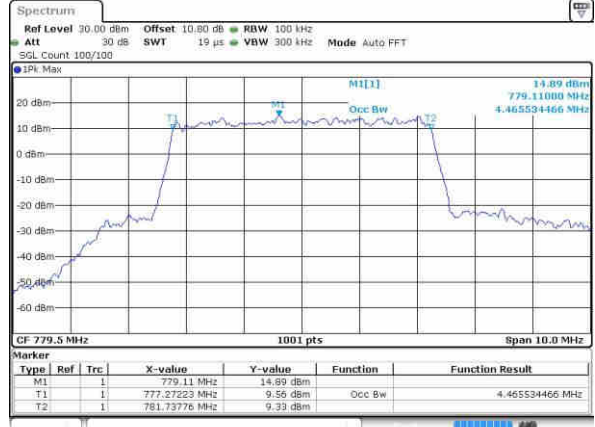


LTE Band 13

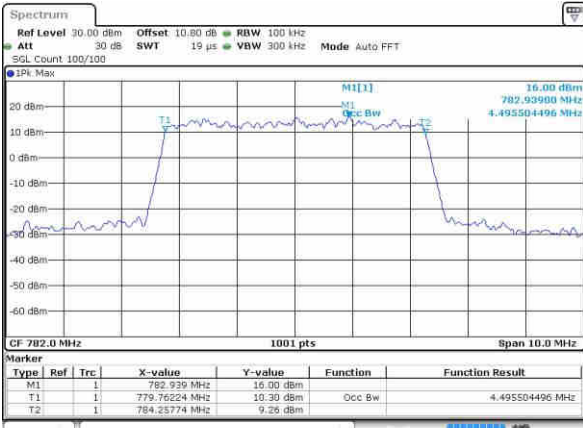
Lowest Channel / 5MHz / QPSK



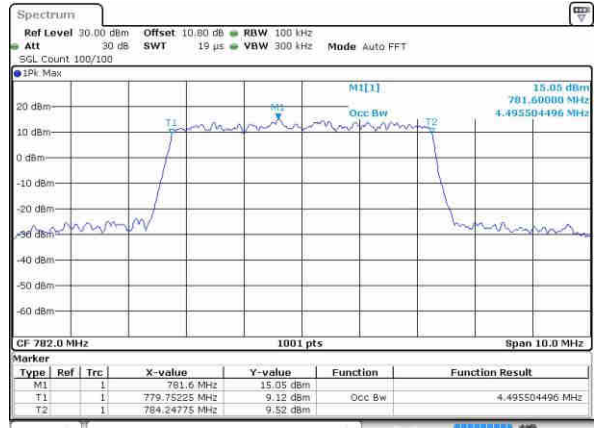
Lowest Channel / 5MHz / 16QAM



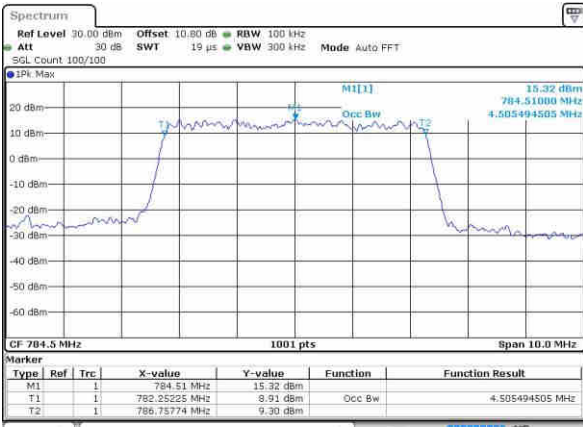
Middle Channel / 5MHz / QPSK



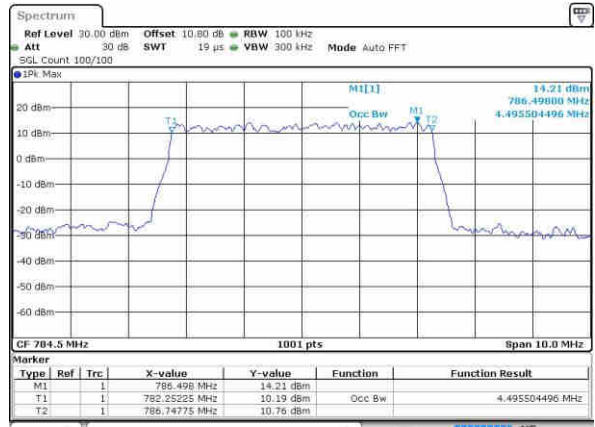
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM

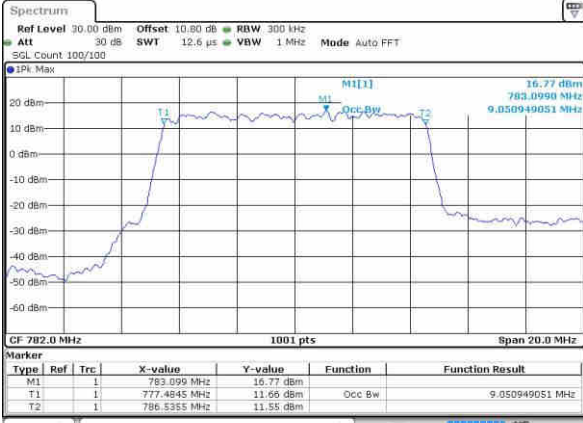






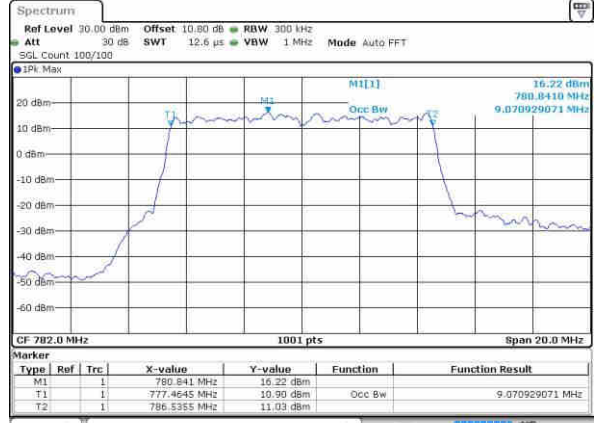
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 14 APR 2019 15:48:14

Middle Channel / 10MHz / 16QAM

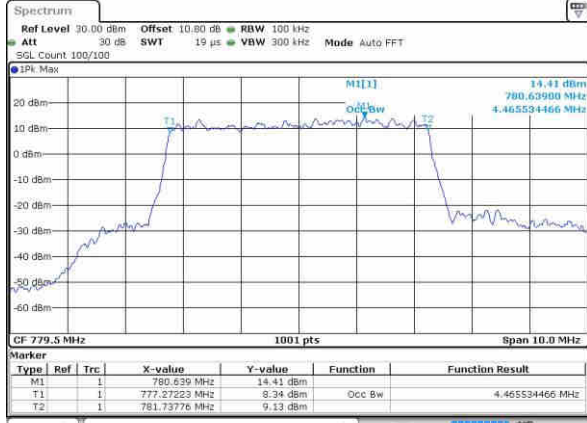


Date: 14 APR 2019 15:48:26



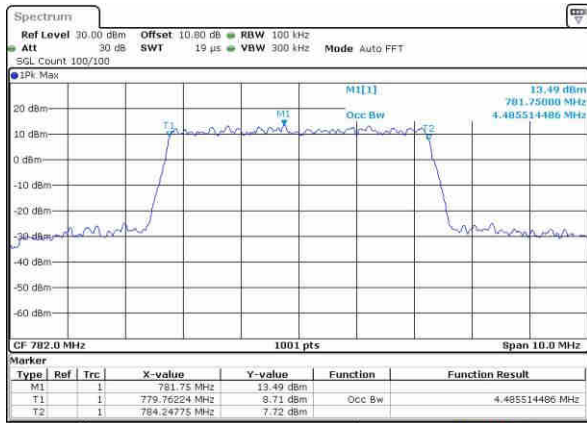
LTE Band 13

Lowest Channel / 5MHz / 64QAM



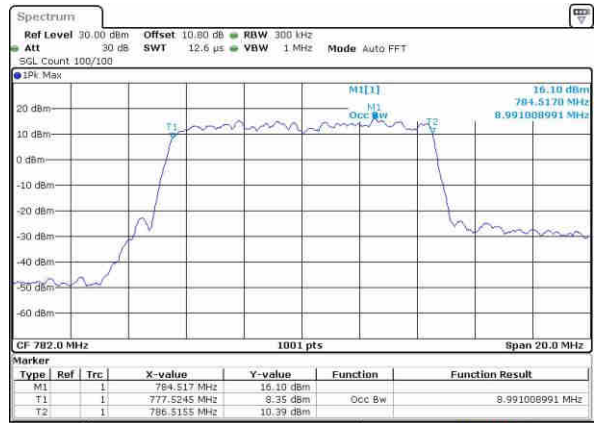
Date: 14 APR 2019 15:38:16

Middle Channel / 5MHz / 64QAM



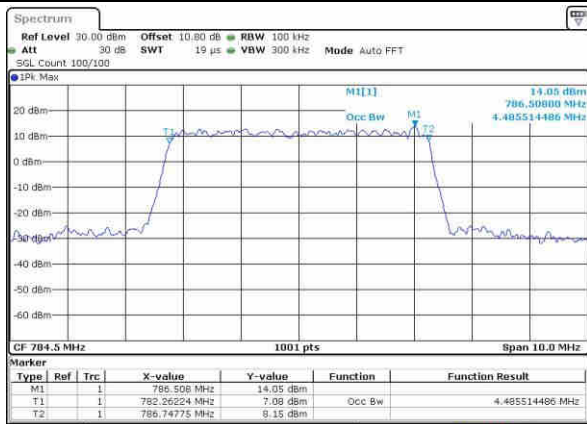
Date: 14 APR 2019 15:43:35

Middle Channel / 10MHz / 64QAM



Date: 14 APR 2019 16:00:24

Highest Channel / 5MHz / 64QAM



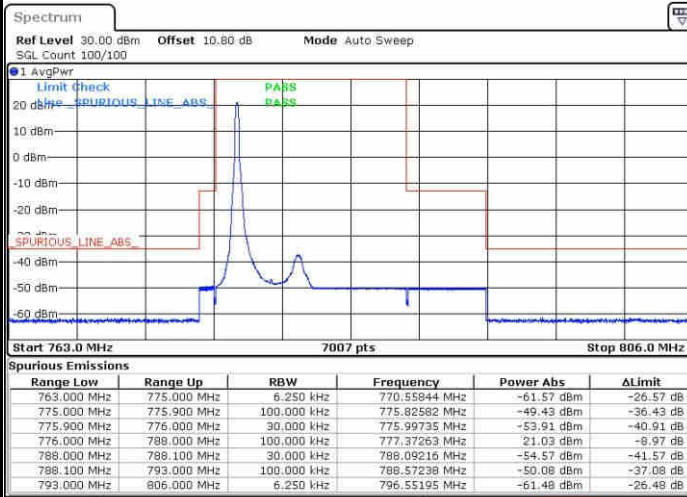
Date: 14 APR 2019 15:43:46



# Conducted Band Edge

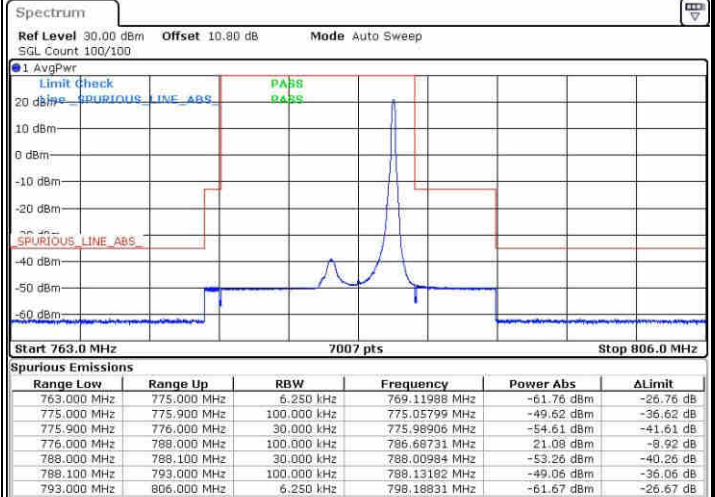
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



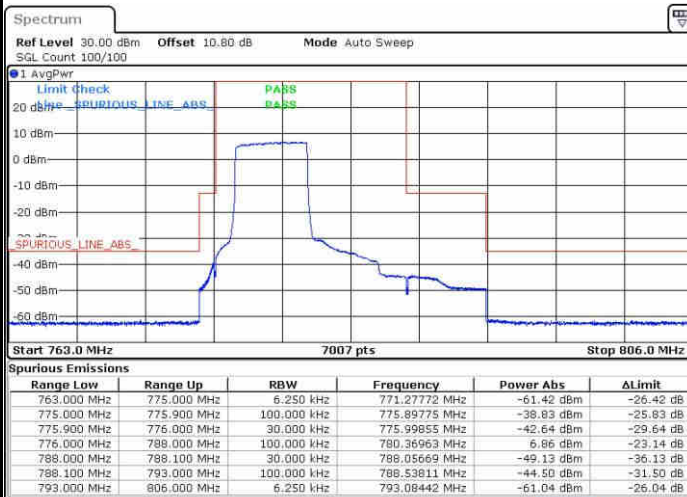
Date: 14 APR 2019 15:25:40

### Highest Band Edge / 1 RB



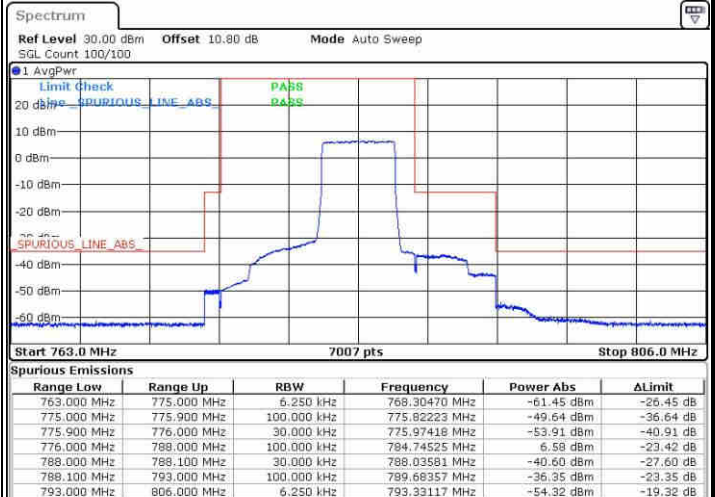
Date: 14 APR 2019 15:36:41

### Lowest Band Edge / Full RB



Date: 14 APR 2019 15:20:36

### Highest Band Edge / Full RB



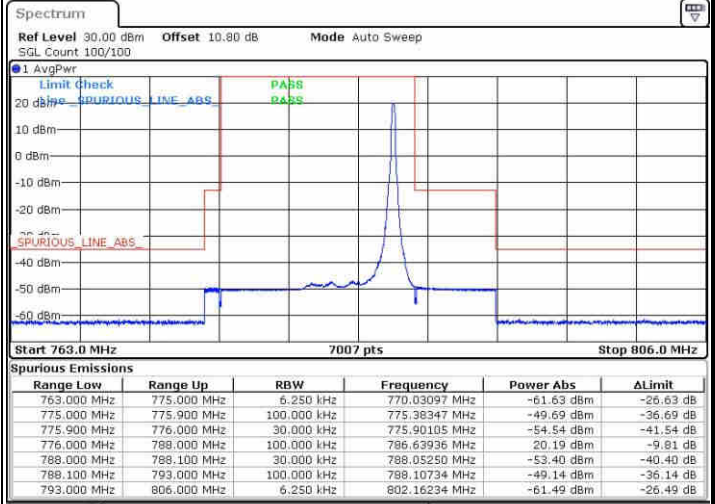
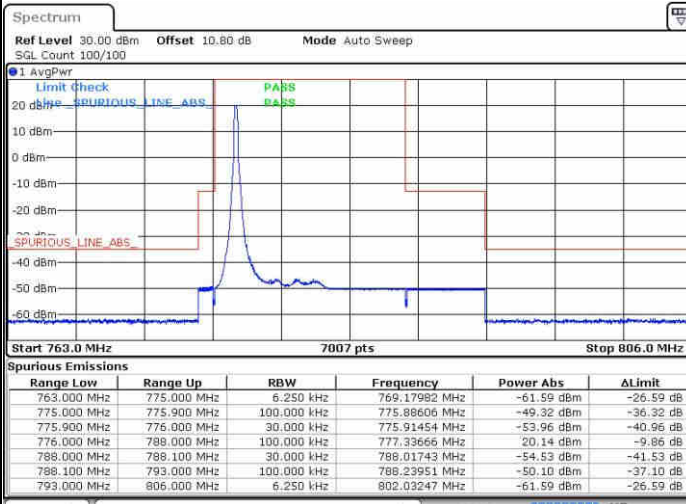
Date: 14 APR 2019 15:31:38



LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

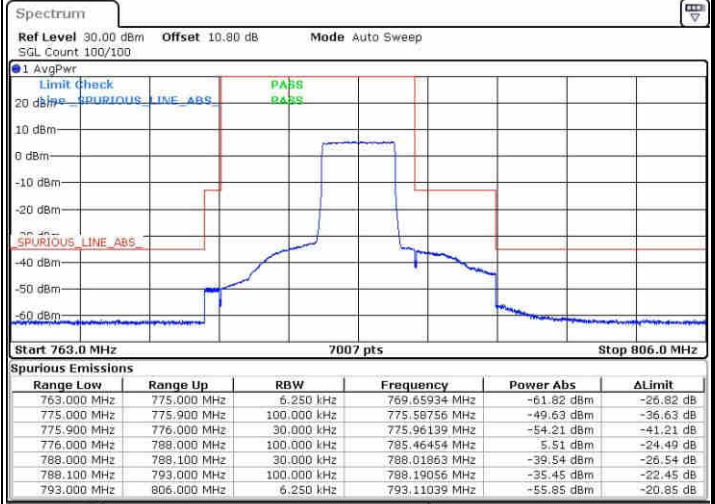
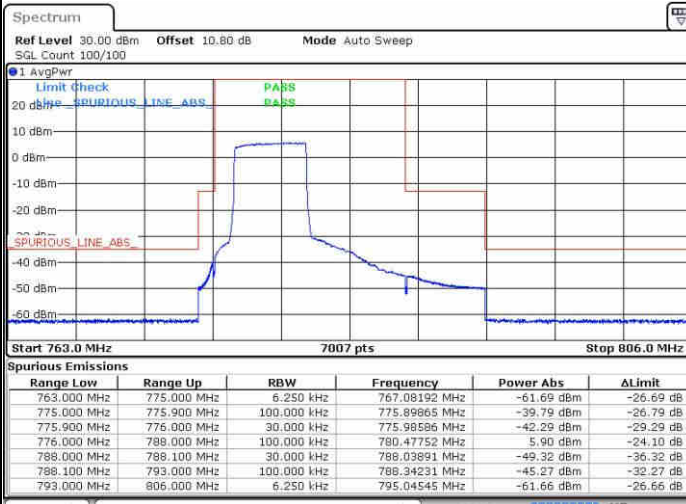


Date: 14 APR 2019 15:23:58

Date: 14 APR 2019 15:35:00

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 14 APR 2019 15:22:17

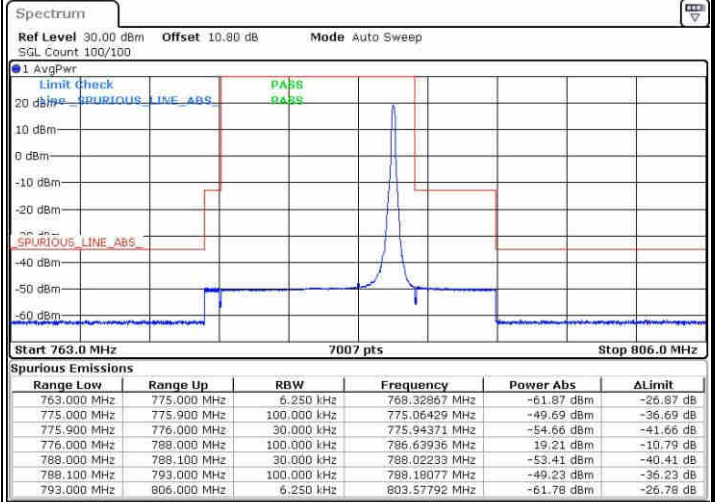
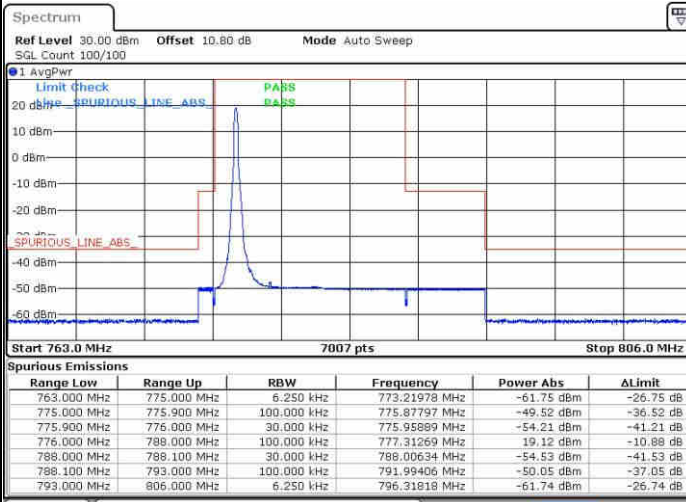
Date: 14 APR 2019 15:33:19



LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

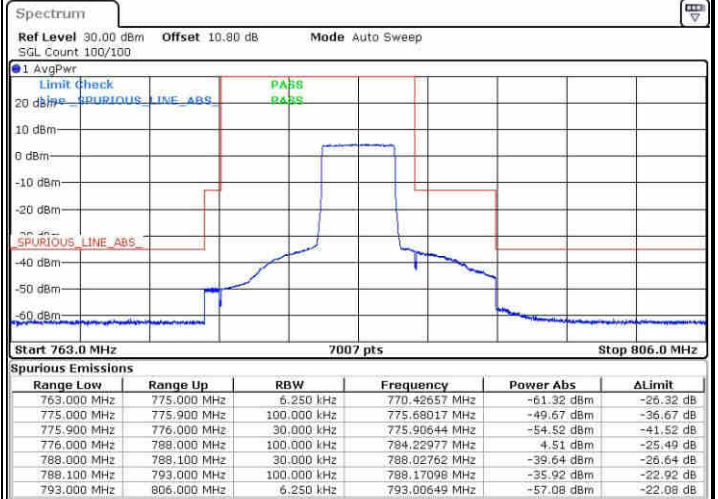
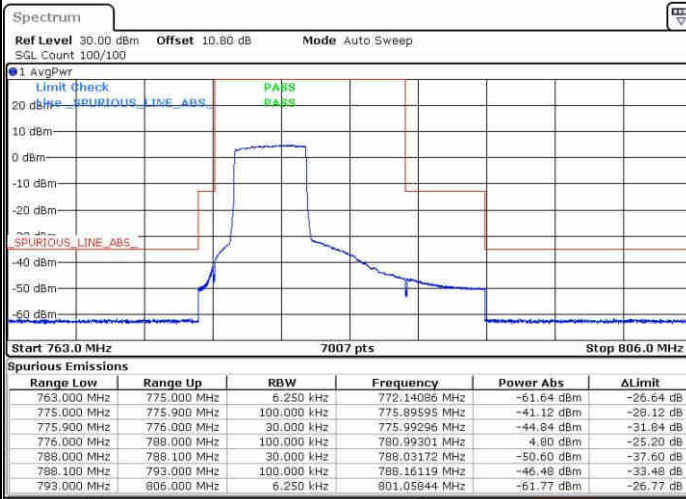


Date: 14 APR 2019 15:41:49

Date: 14 APR 2019 15:47:20

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



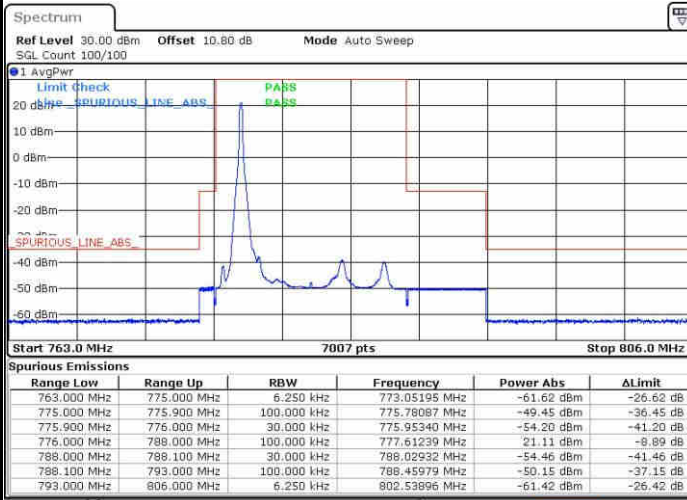
Date: 14 APR 2019 15:40:08

Date: 14 APR 2019 15:45:38



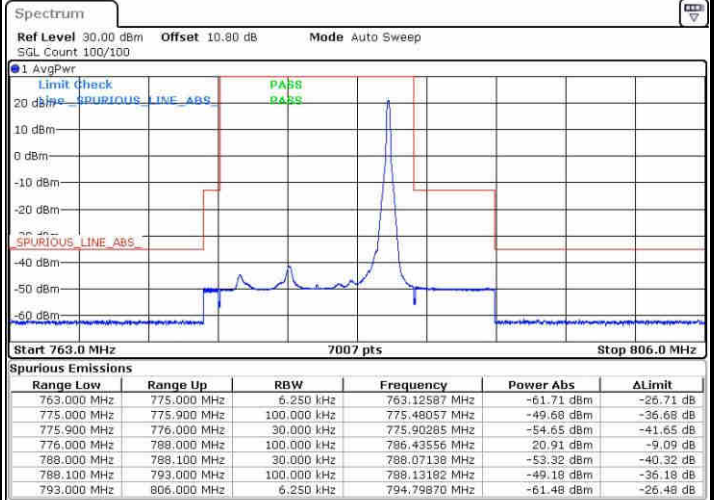
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB



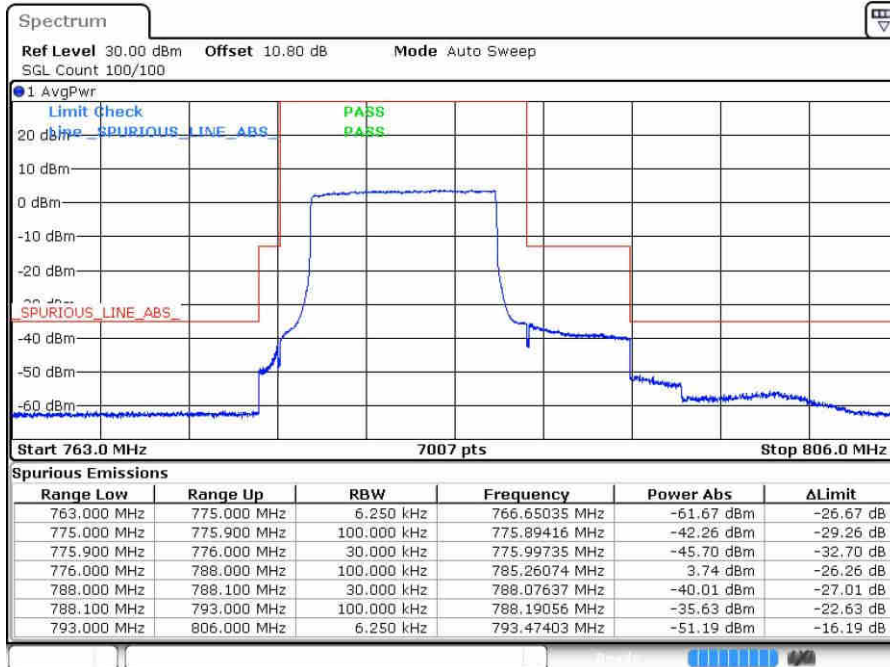
Date: 14 APR 2019 15:55:31

Highest Band Edge / 1 RB



Date: 14 APR 2019 15:57:11

Band Edge / Full RB



Date: 14 APR 2019 15:50:29