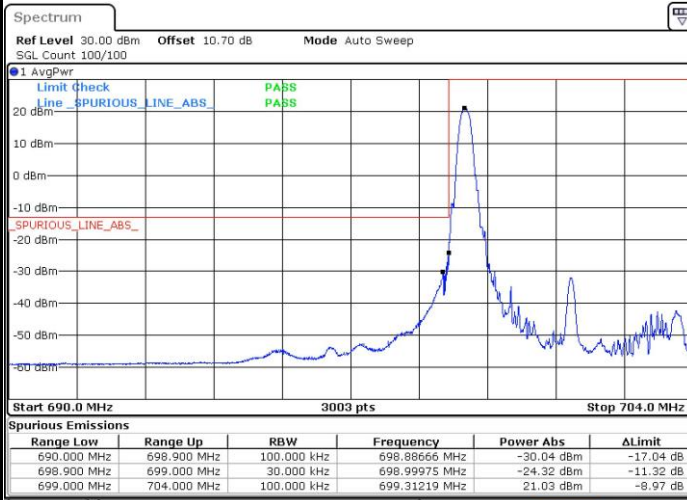




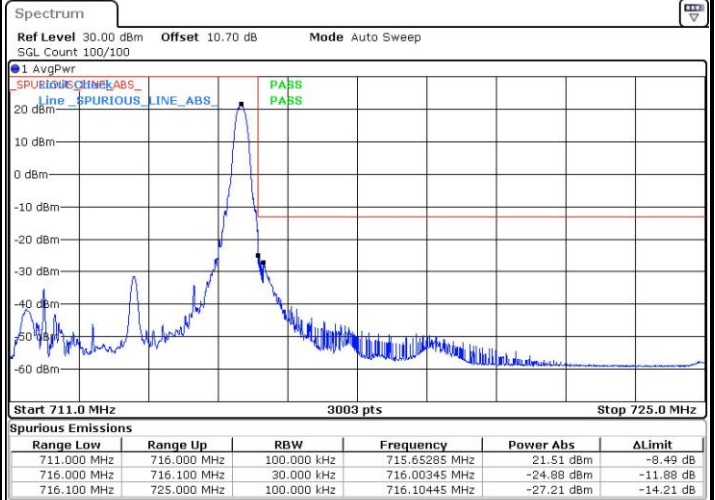
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1RB



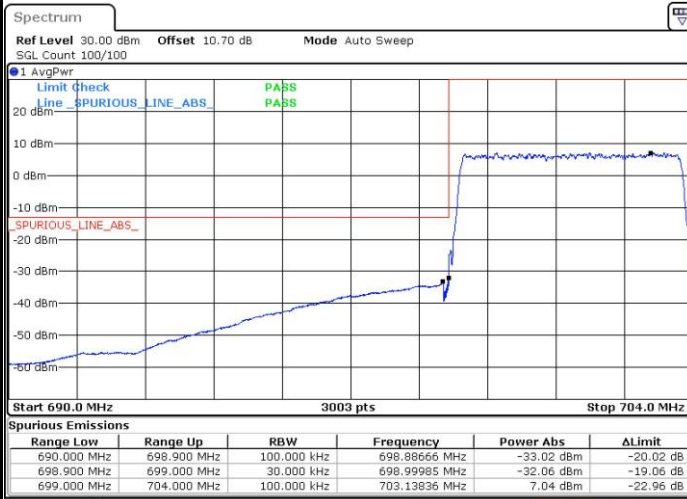
Date: 31.MAR.2018 03:04:01

Highest Band Edge / 1 RB



Date: 31.MAR.2018 03:14:42

Lowest Band Edge / Full RB



Date: 31.MAR.2018 03:02:53

Highest Band Edge / Full RB

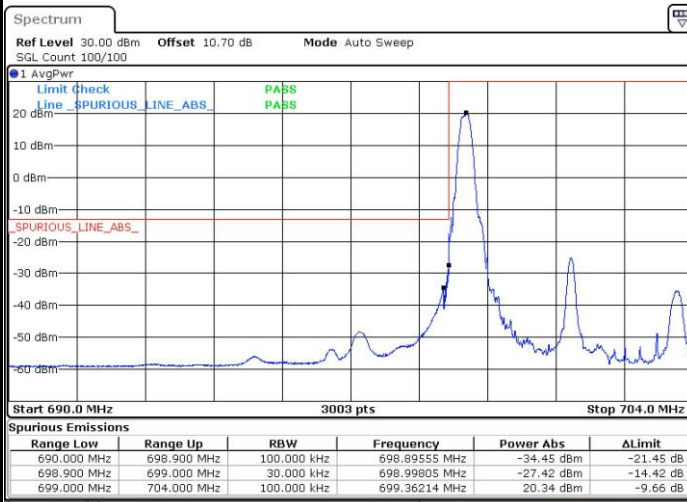


Date: 31.MAR.2018 03:12:27



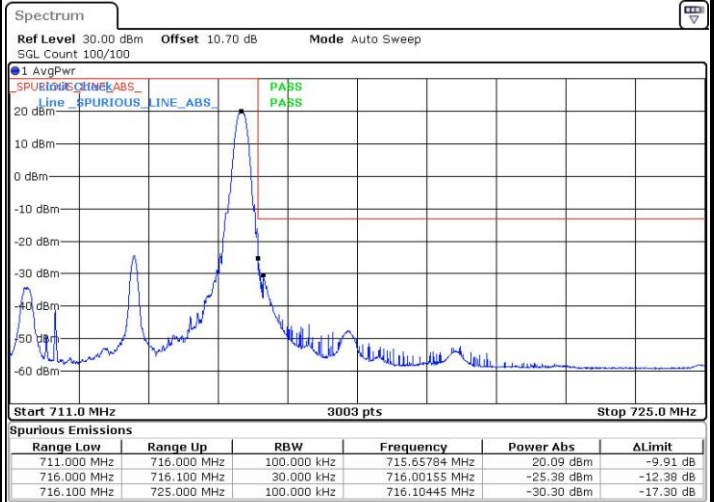
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1RB



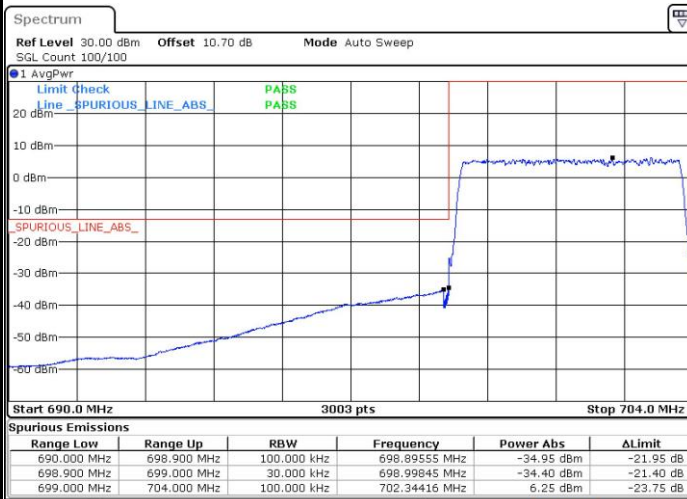
Date: 31.MAR.2018 04:46:06

Highest Band Edge / 1 RB



Date: 31.MAR.2018 04:50:55

Lowest Band Edge / Full RB



Date: 31.MAR.2018 04:44:58

Highest Band Edge / Full RB

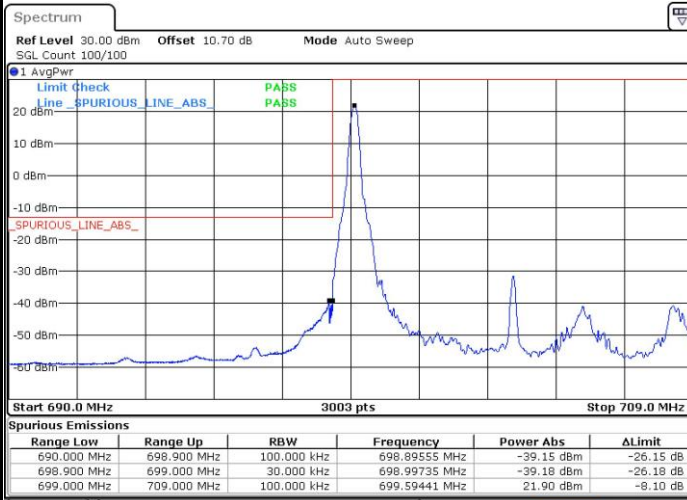


Date: 31.MAR.2018 04:49:47



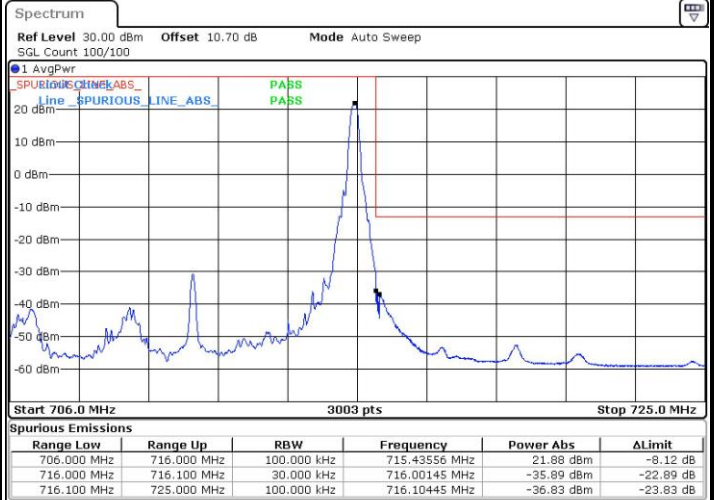
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



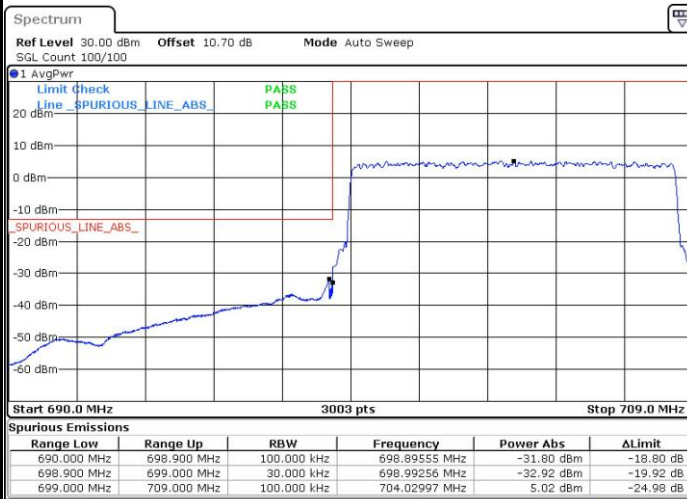
Date: 31.MAR.2018 03:21:43

Highest Band Edge / 1 RB



Date: 31.MAR.2018 03:31:13

Lowest Band Edge / Full RB



Date: 31.MAR.2018 03:18:20

Highest Band Edge / Full RB

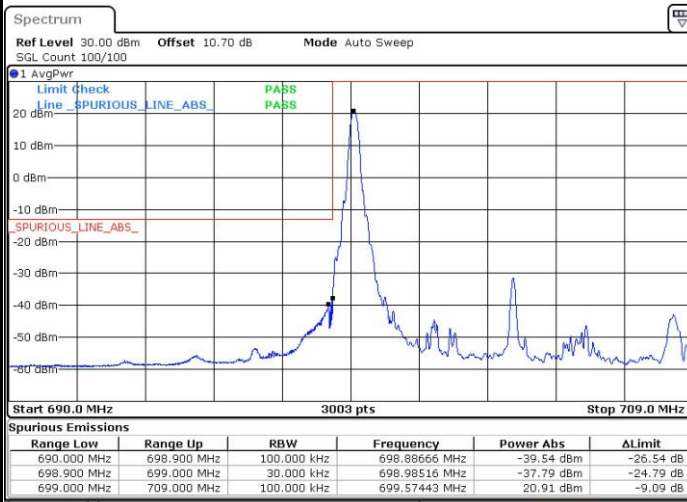


Date: 31.MAR.2018 03:27:50



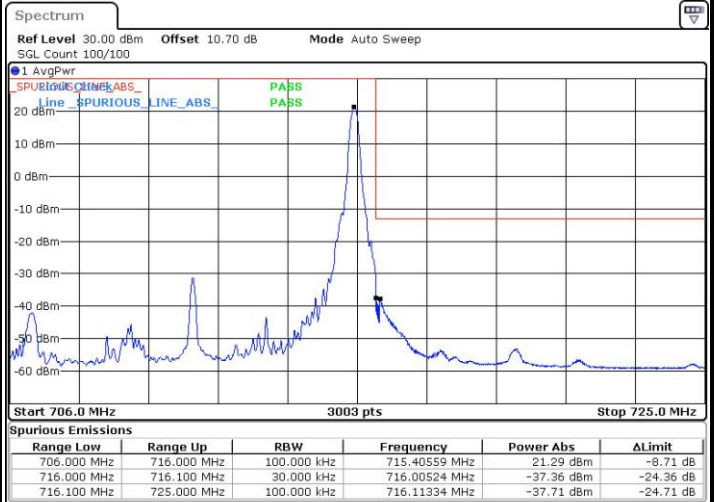
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



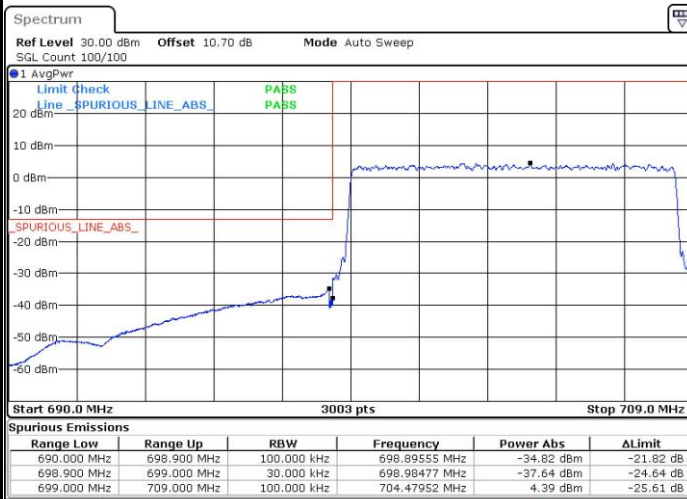
Date: 31.MAR.2018 03:20:35

Highest Band Edge / 1 RB



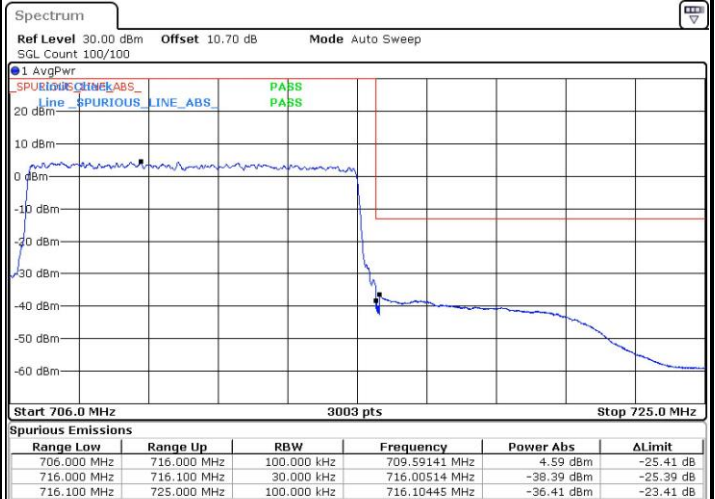
Date: 31.MAR.2018 03:30:06

Lowest Band Edge / Full RB



Date: 31.MAR.2018 03:19:27

Highest Band Edge / Full RB



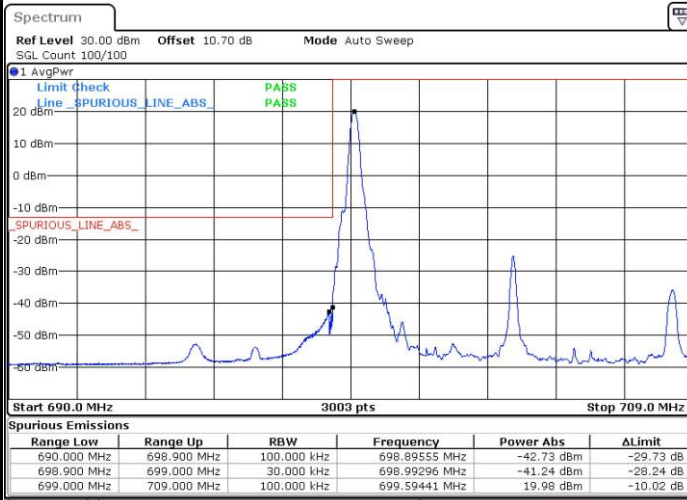
Date: 31.MAR.2018 03:28:58





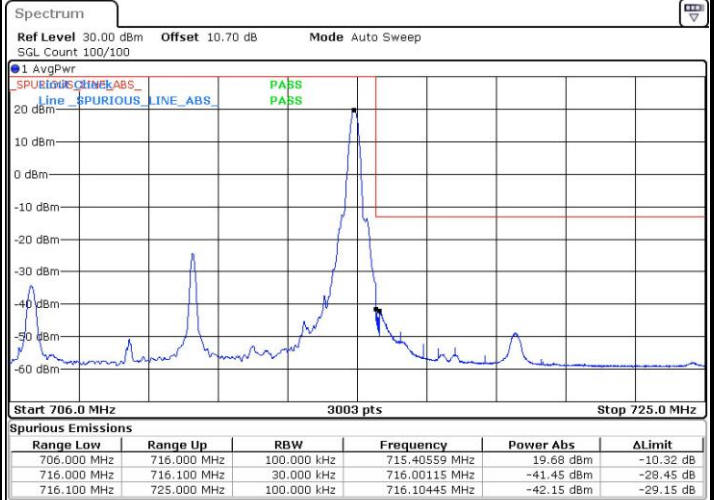
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



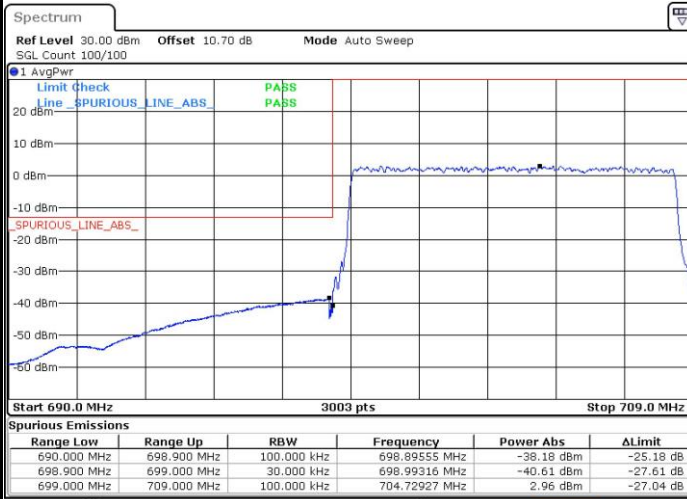
Date: 31.MAR.2018 04:54:26

Highest Band Edge / 1 RB



Date: 31.MAR.2018 04:59:12

Lowest Band Edge / Full RB



Date: 31.MAR.2018 04:53:18

Highest Band Edge / Full RB



Date: 31.MAR.2018 04:58:04



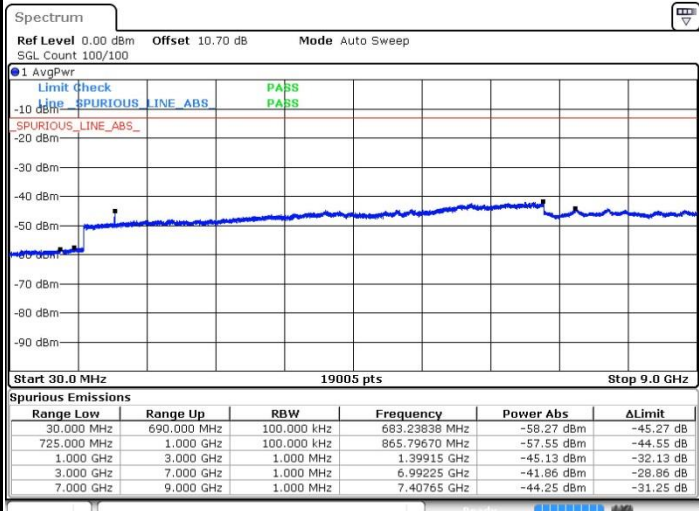
**Conducted Spurious Emission**



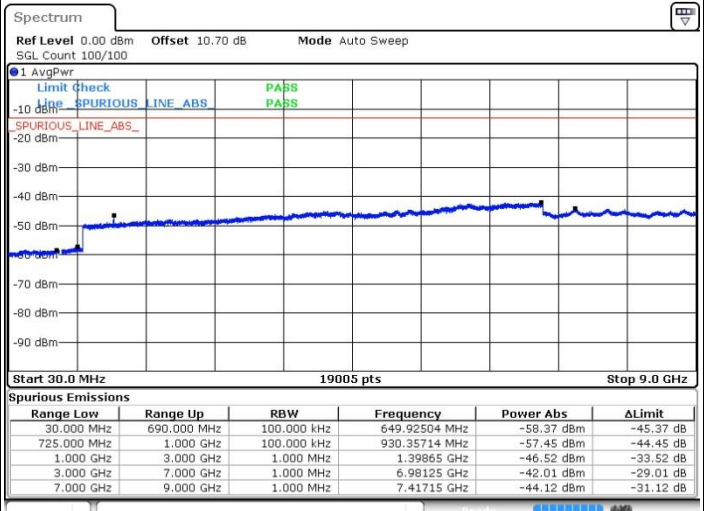
LTE Band 12 / 1.4MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



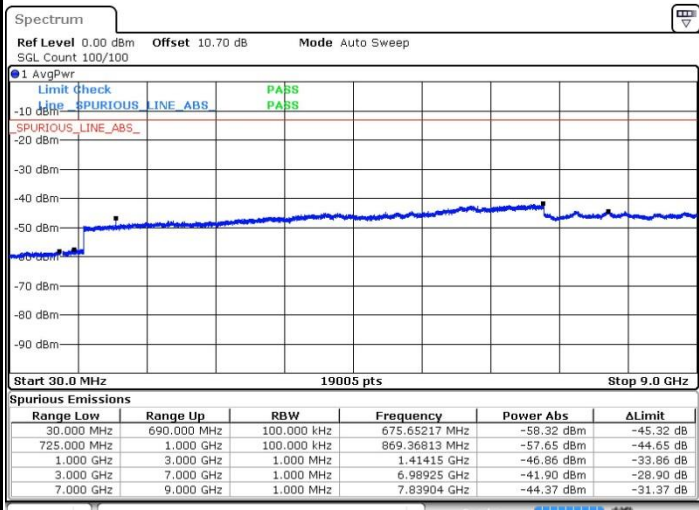
Date: 31.MAR.2018 03:46:14



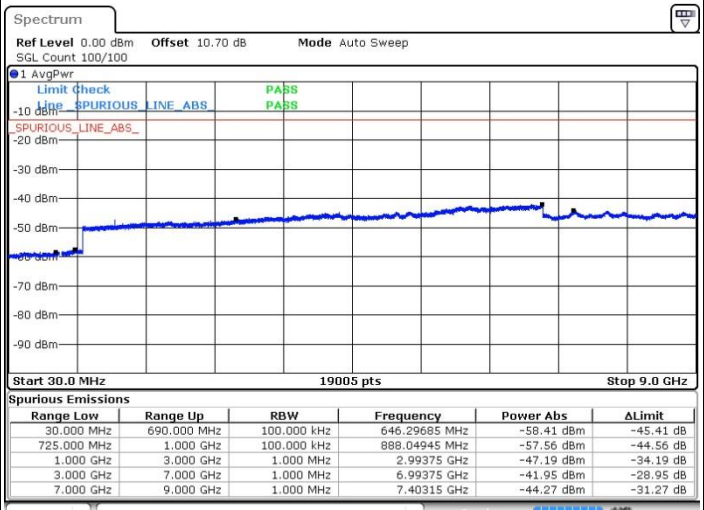
Date: 31.MAR.2018 03:47:08

Middle Channel / QPSK

Middle Channel / 16QAM



Date: 31.MAR.2018 03:49:39



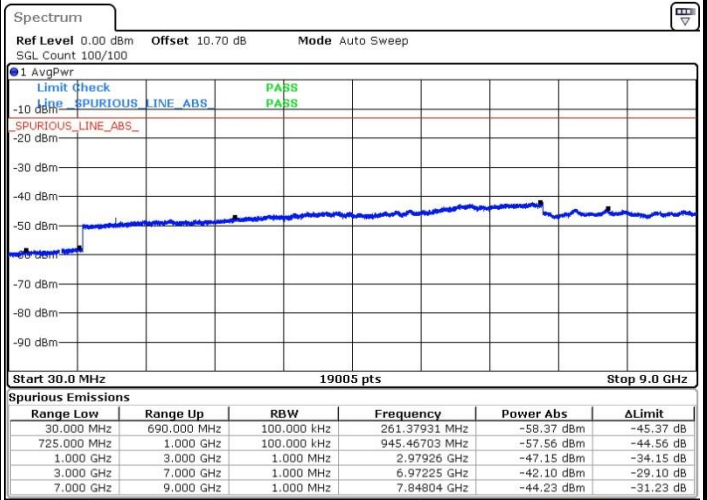
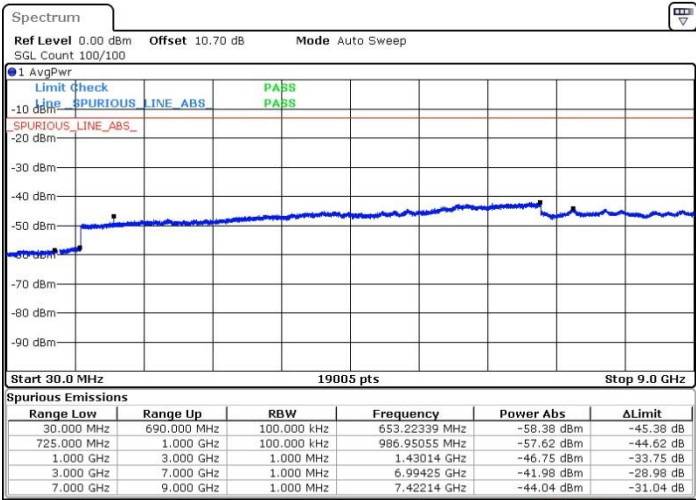
Date: 31.MAR.2018 03:48:44



LTE Band 12 / 1.4MHz

Highest Channel / QPSK

Highest Channel / 16QAM



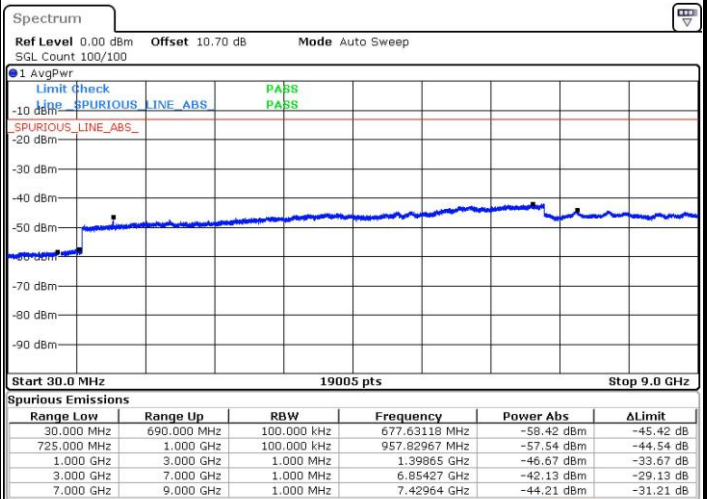
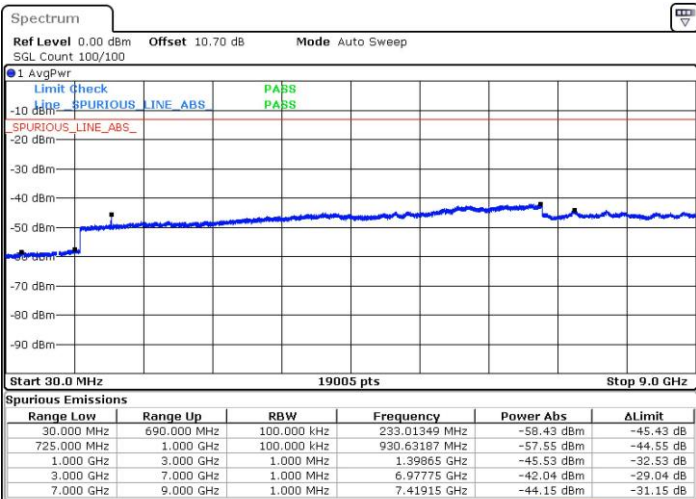
Date: 31.MAR.2018 03:55:46

Date: 31.MAR.2018 03:56:40

LTE Band 12 / 3MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



Date: 31.MAR.2018 02:49:28

Date: 31.MAR.2018 02:50:22

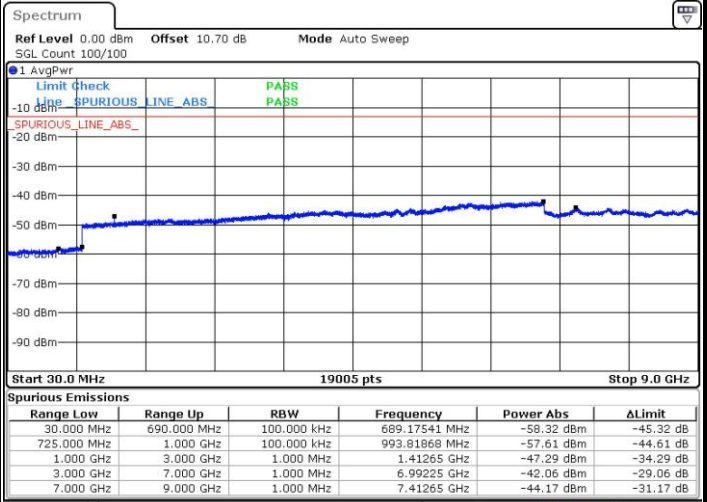
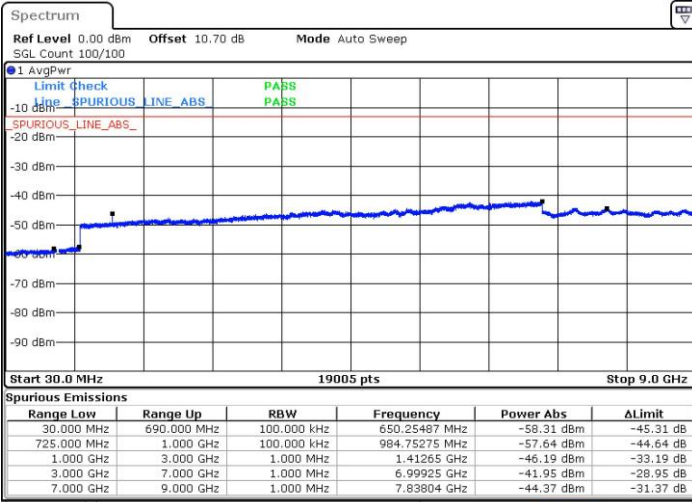




LTE Band 12 / 3MHz

Middle Channel / QPSK

Middle Channel / 16QAM

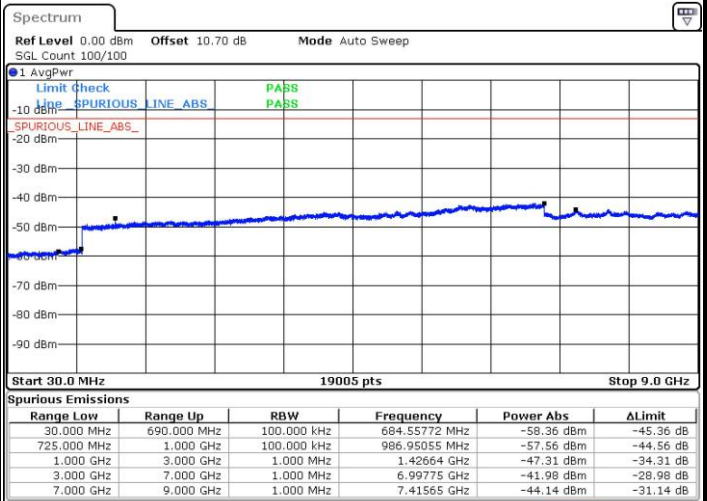
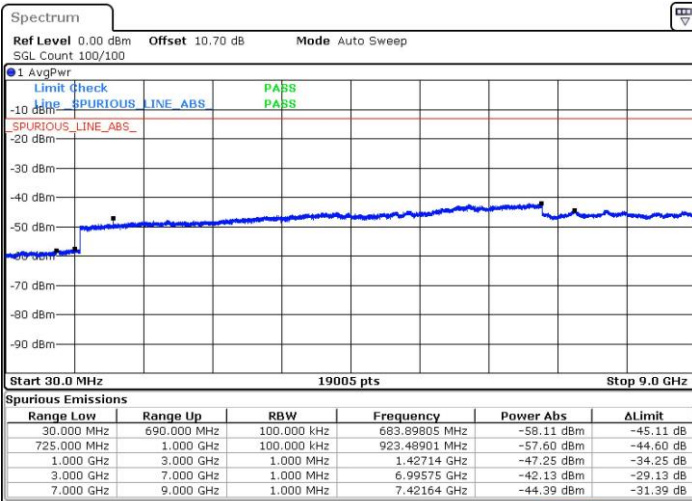


Date: 31.MAR.2018 02:52:52

Date: 31.MAR.2018 02:51:58

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 31.MAR.2018 02:59:00

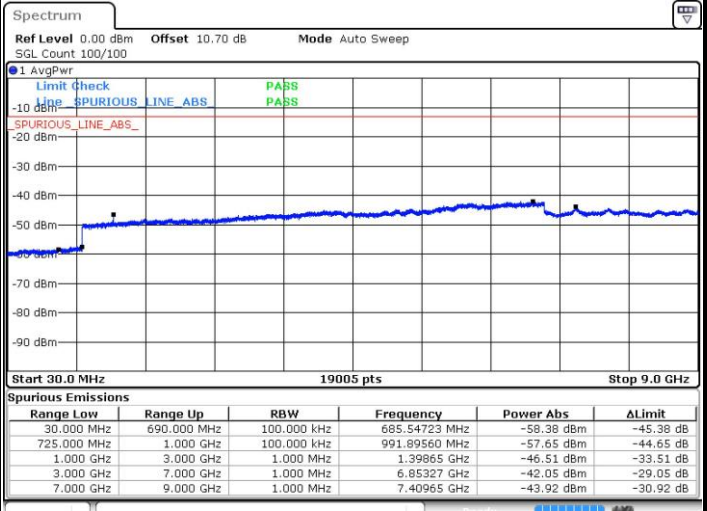
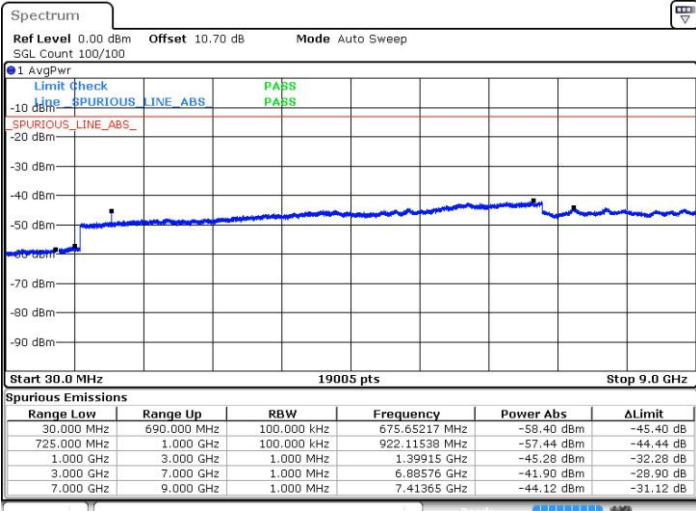
Date: 31.MAR.2018 02:59:54



LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

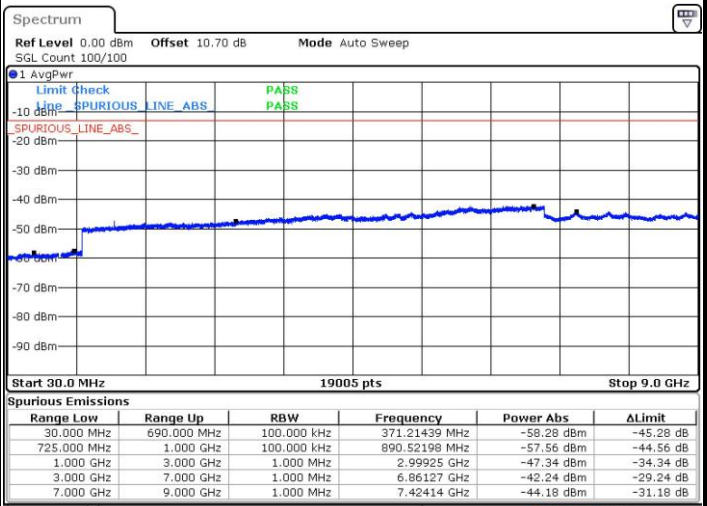
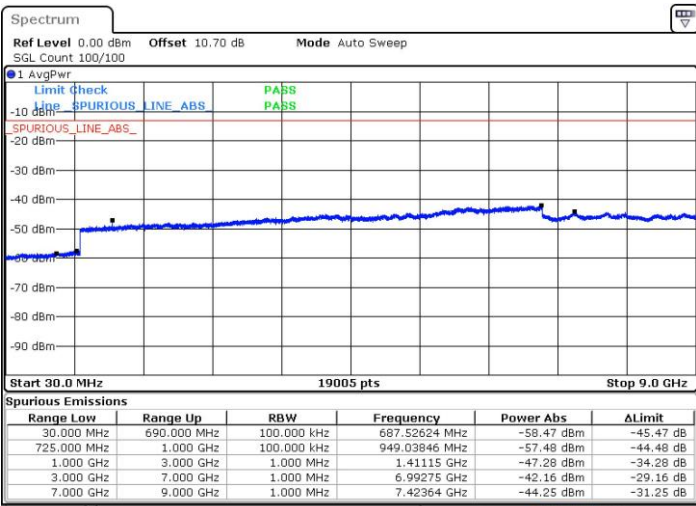


Date: 31.MAR.2018 03:06:02

Date: 31.MAR.2018 03:06:56

Middle Channel / QPSK

Middle Channel / 16QAM



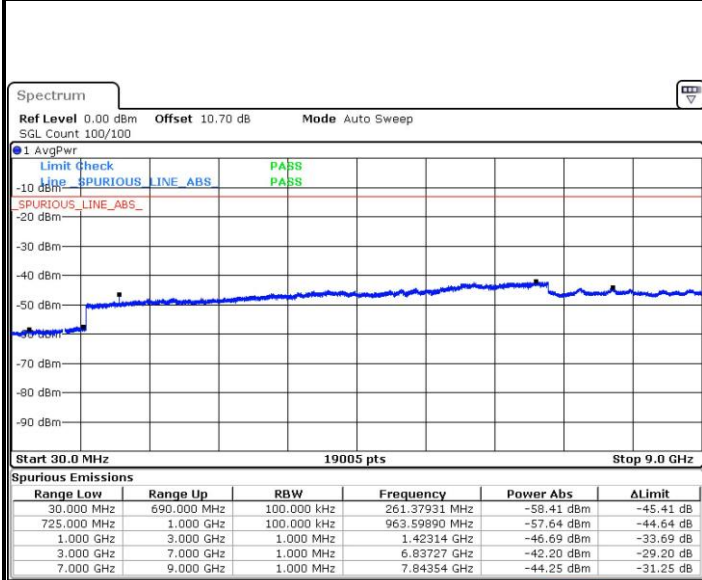
Date: 31.MAR.2018 03:09:27

Date: 31.MAR.2018 03:08:32



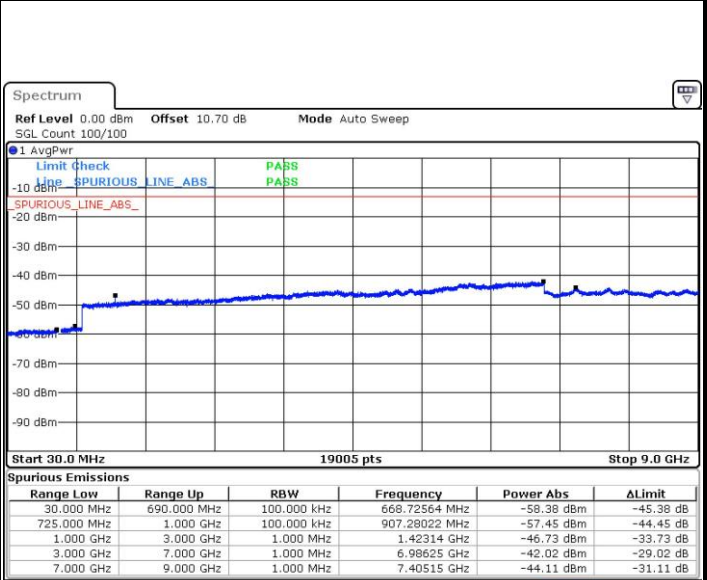
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 31.MAR.2018 03:16:30

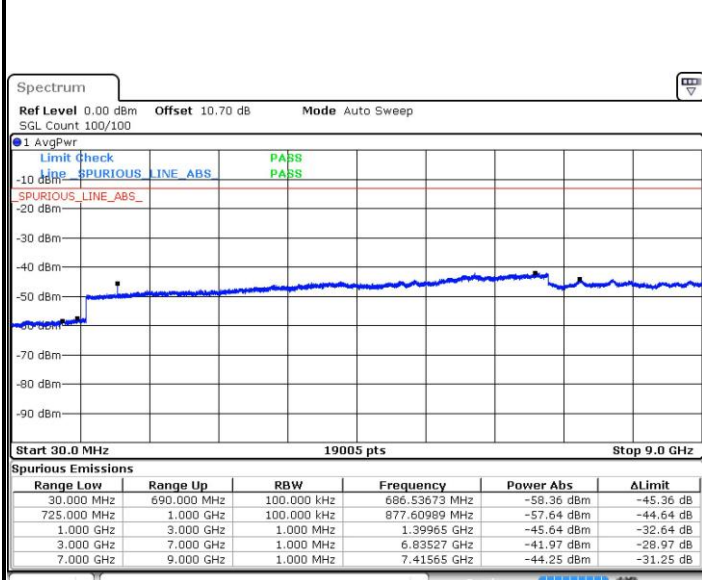
Highest Channel / 16QAM



Date: 31.MAR.2018 03:15:36

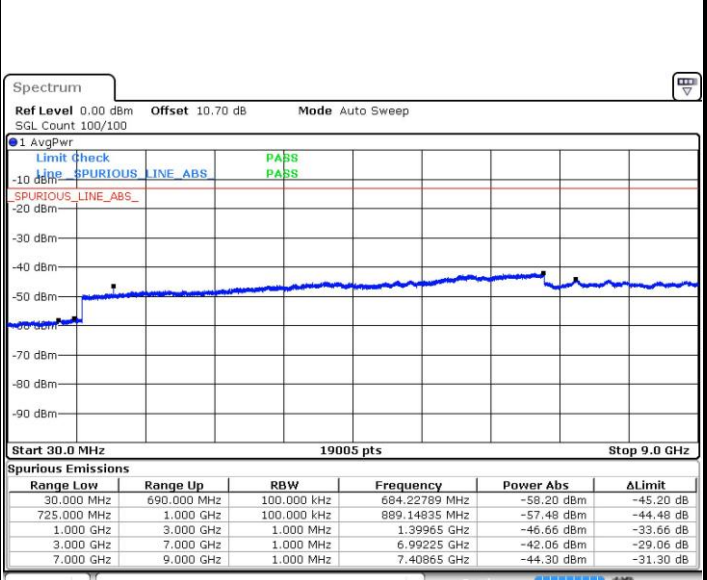
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 31.MAR.2018 03:22:36

Lowest Channel / 16QAM

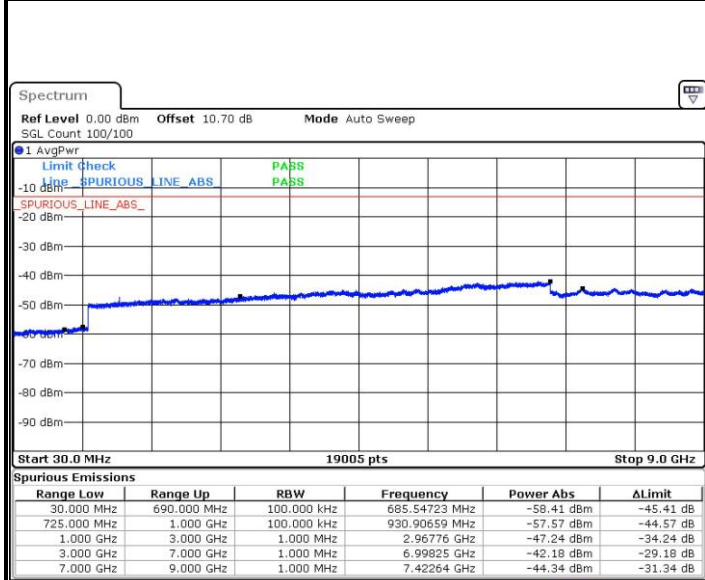


Date: 31.MAR.2018 03:23:31



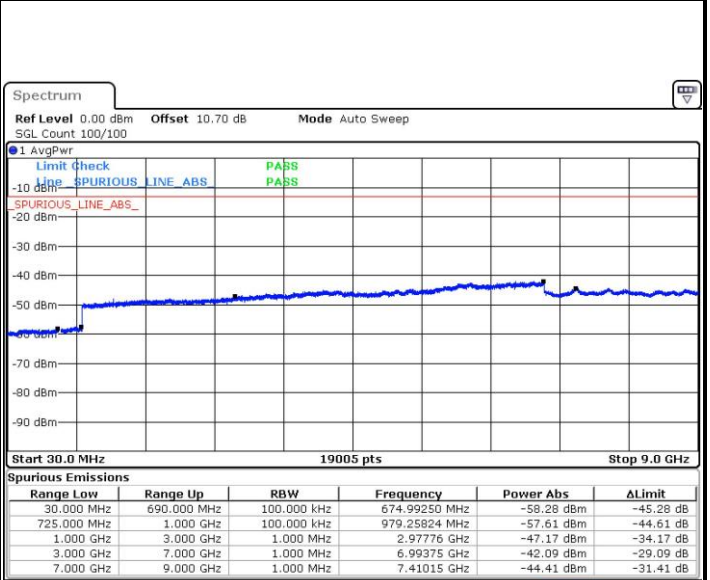
LTE Band 12 / 10MHz

Middle Channel / QPSK



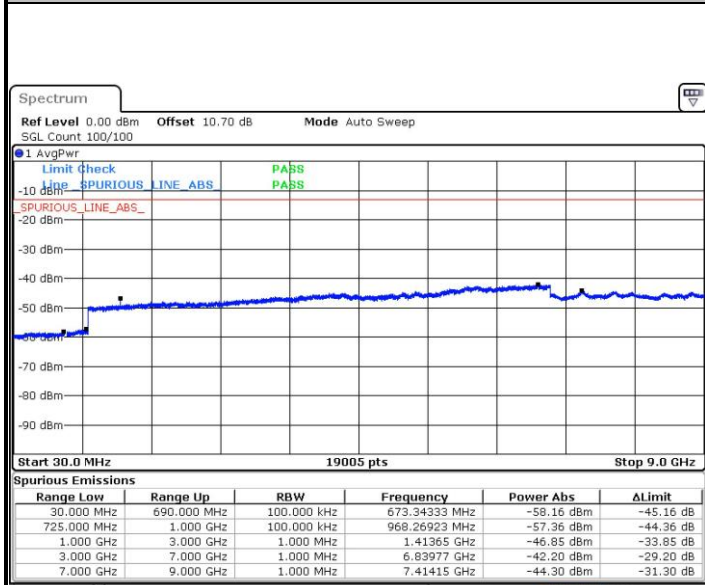
Date: 31.MAR.2018 03:26:00

Middle Channel / 16QAM



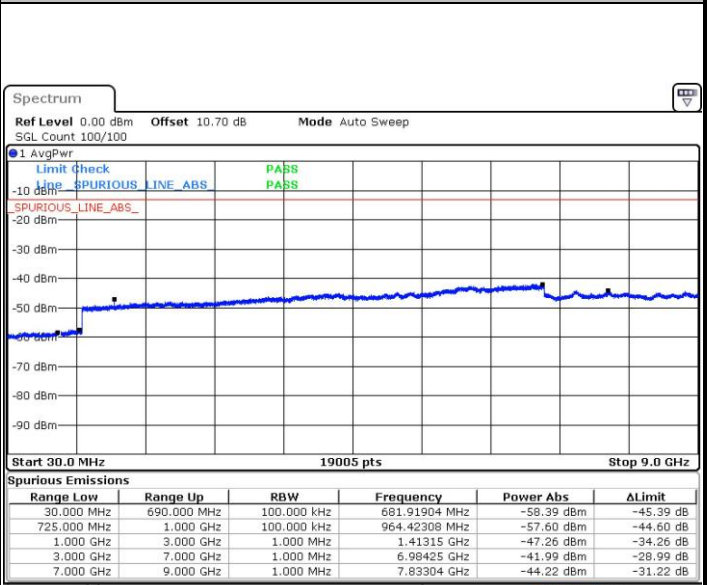
Date: 31.MAR.2018 03:25:06

Highest Channel / QPSK



Date: 31.MAR.2018 03:32:07

Highest Channel / 16QAM



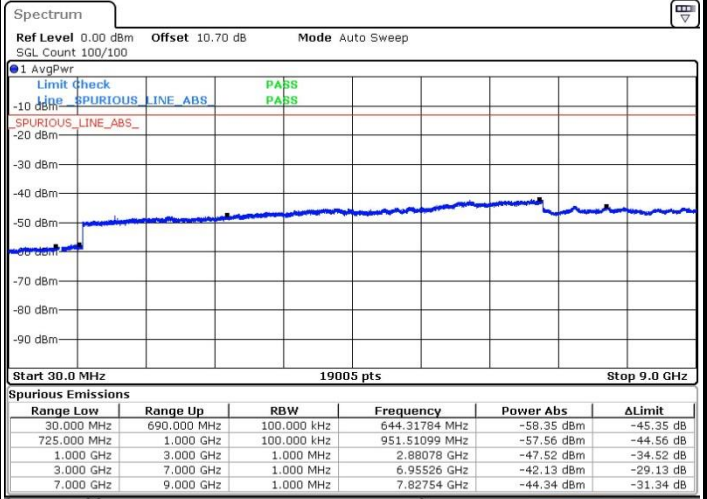
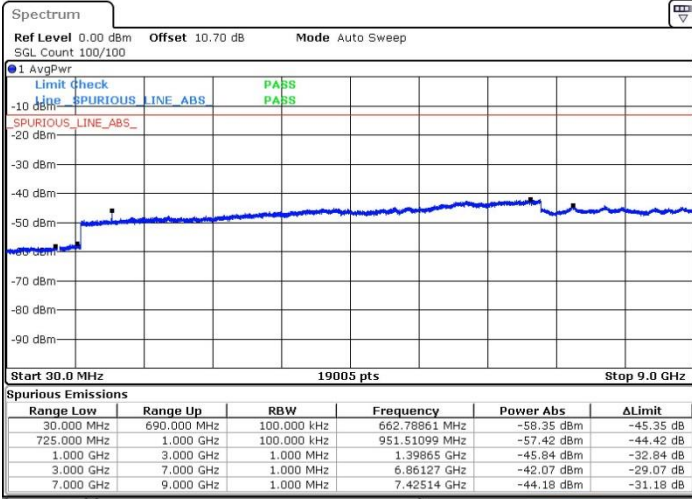
Date: 31.MAR.2018 03:33:01



LTE Band 12 / 1.4MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM



Date: 31.MAR.2018 05:03:38

Date: 31.MAR.2018 05:04:55

Highest Channel / 64QAM



Date: 31.MAR.2018 05:08:27

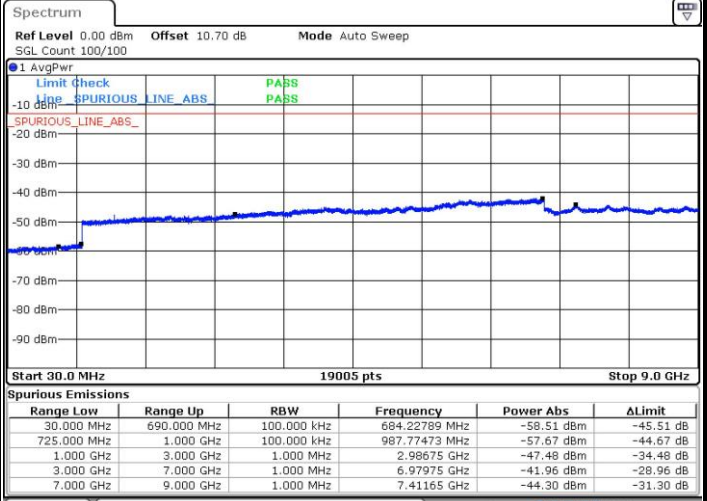
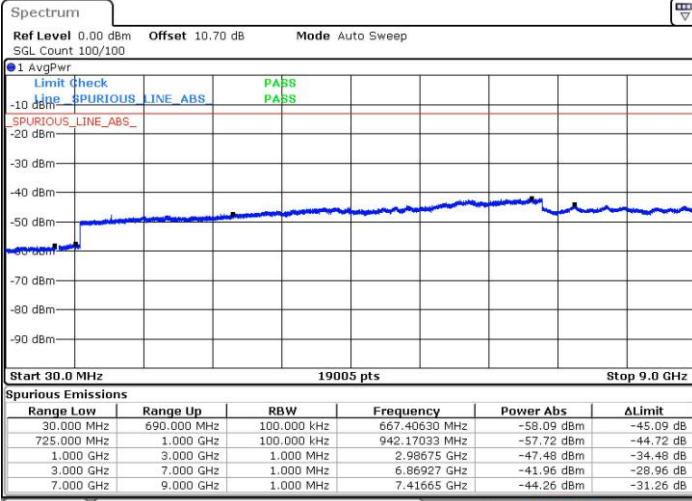




LTE Band 12 / 3MHz

Lowest Channel / 64QAM

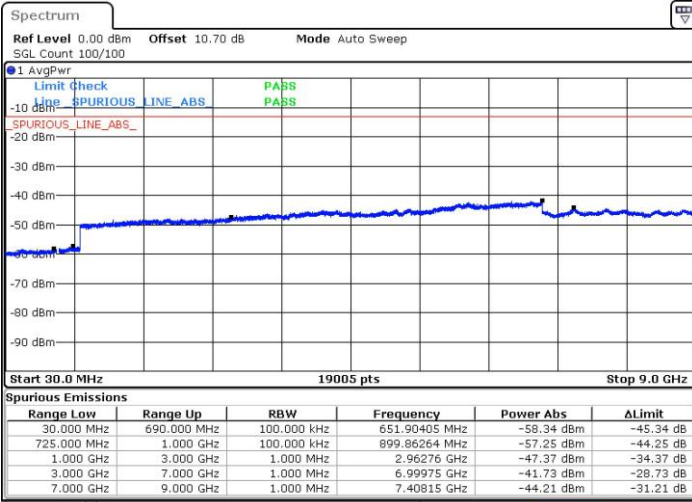
Middle Channel / 64QAM



Date: 31.MAR.2018 04:33:37

Date: 31.MAR.2018 04:34:52

Highest Channel / 64QAM



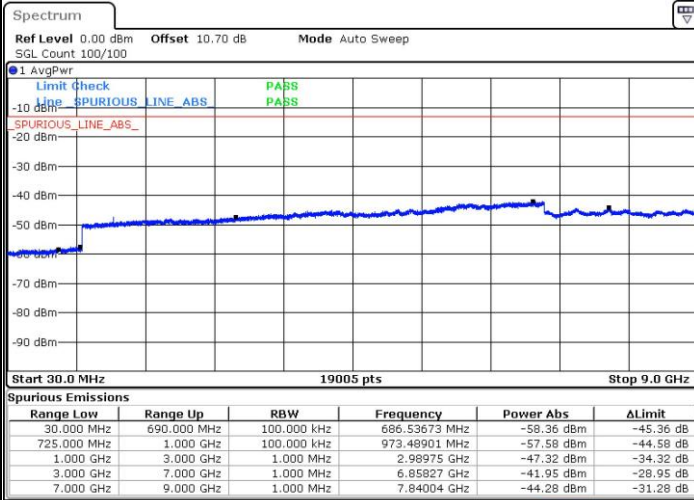
Date: 31.MAR.2018 04:43:29



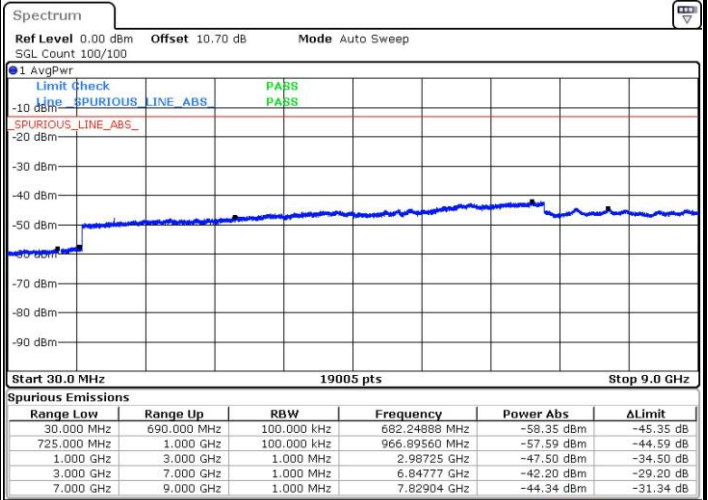
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

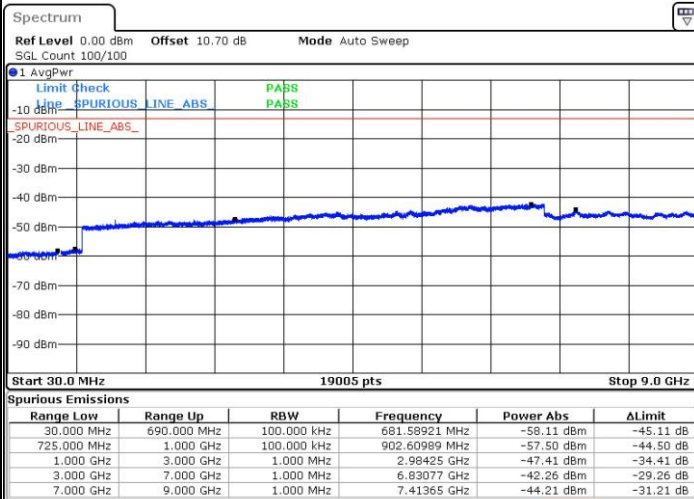


Date: 31.MAR.2018 04:47:02



Date: 31.MAR.2018 04:48:18

Highest Channel / 64QAM



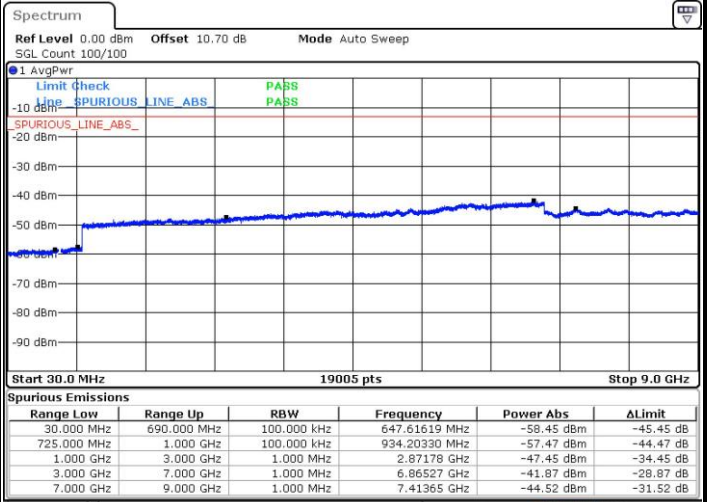
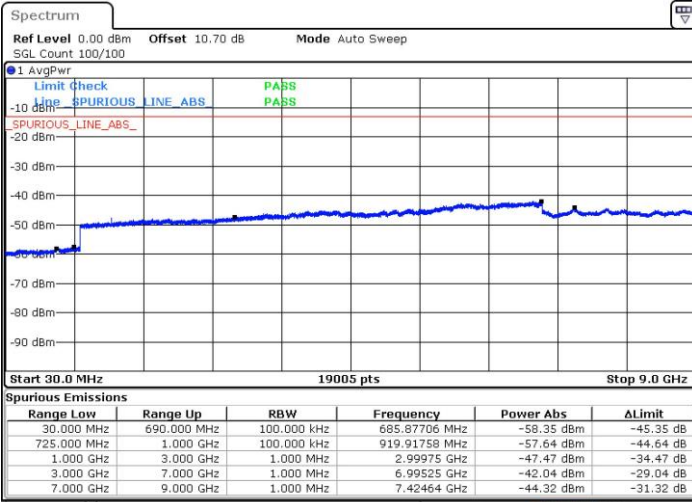
Date: 31.MAR.2018 04:51:48



LTE Band 12 / 10MHz

Lowest Channel / 64QAM

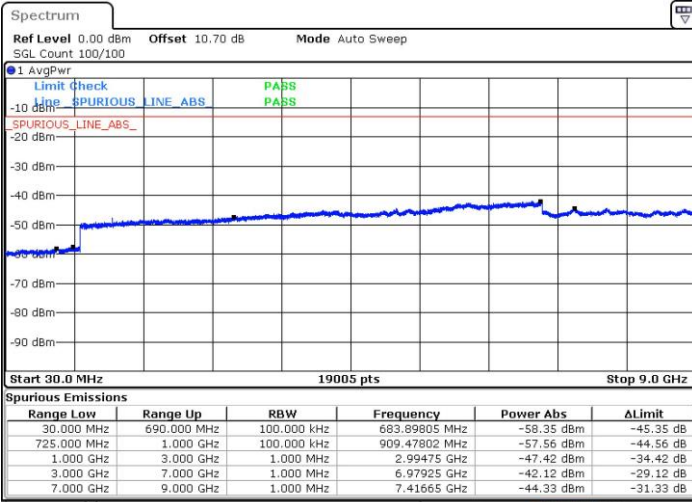
Middle Channel / 64QAM



Date: 31.MAR.2018 04:55:20

Date: 31.MAR.2018 04:56:35

Highest Channel / 64QAM



Date: 31.MAR.2018 05:00:06



**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	0.0006	PASS
40	Normal Voltage	0.0018	
30	Normal Voltage	0.0003	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0003	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0037	
-20	Normal Voltage	0.0010	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0028	
20	Normal Voltage	0.0163	
20	Battery End Point	0.0153	

**Note:**

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Within Band
		Frequency Offset ( $\Delta f$ ) (Hz)	Result
50	Normal Voltage	0.4	PASS
40	Normal Voltage	1.3	
30	Normal Voltage	-0.2	
20(Ref.)	Normal Voltage	0	
10	Normal Voltage	0.2	
0	Normal Voltage	-0.4	
-10	Normal Voltage	-2.6	
-20	Normal Voltage	-0.7	
-30	Normal Voltage	-1.5	
20	Maximum Voltage	-2	
20	Normal Voltage	11.5	
20	Battery End Point	10.8	

$|\text{MAX}(\Delta f)| = 11.5\text{Hz}$

Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L -  \text{MAX}(\Delta f) $	699.025689	$\geq 699 \text{ MHz}$	PASS
$f_H +  \text{MAX}(\Delta f) $	715.969612	$\leq 716 \text{ MHz}$	





# LTE Band 13

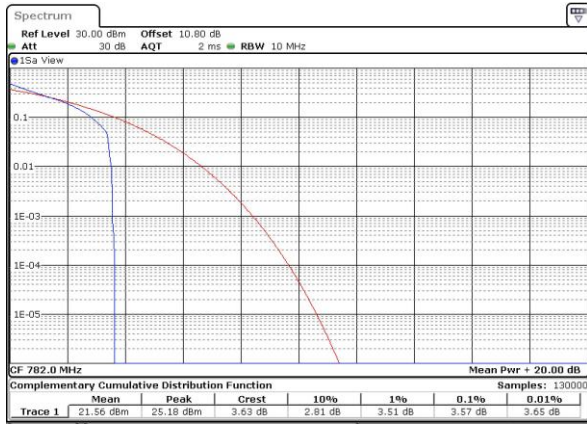
## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	3.57	4.67	4.78	5.91	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH			-	-	PASS
Middle CH	6.03	6.64	-	-	
Highest CH			-	-	



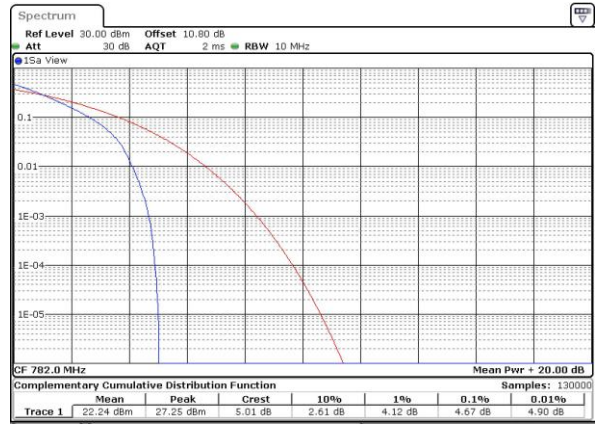
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 31 MAR 2018 05:28:52

Middle Channel / Full RB



Date: 31 MAR 2018 05:29:02

LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 31 MAR 2018 05:28:33

Middle Channel / Full RB



Date: 31 MAR 2018 05:28:42

LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 31 MAR 2018 05:35:32

Middle Channel / Full RB



Date: 31 MAR 2018 05:35:48



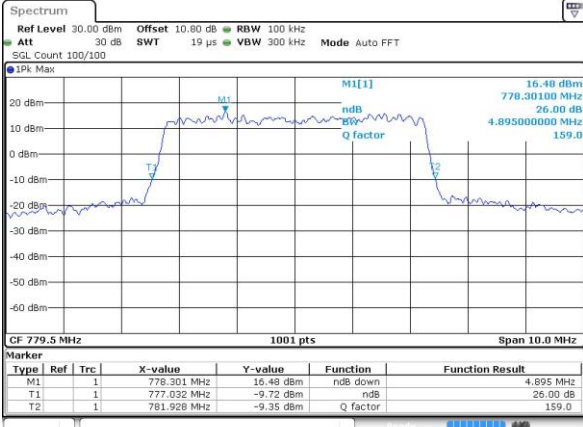
**26dB Bandwidth**

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	-	-	-	-	4.90	4.83	-	-	-	-	-	-
Middle CH	-	-	-	-	4.86	4.86	9.69	9.67	-	-	-	-
Highest CH	-	-	-	-	4.95	4.94	-	-	-	-	-	-
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	-	-	-	-	4.94	-	9.73	-	-	-	-	-
Highest CH	-	-	-	-	4.87	-	-	-	-	-	-	-



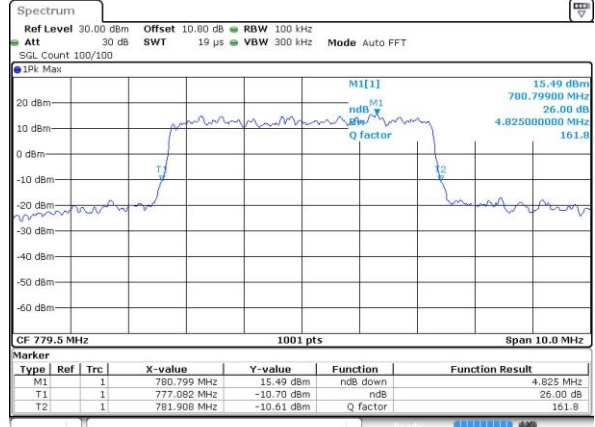
LTE Band 13

Lowest Channel / 5MHz / QPSK



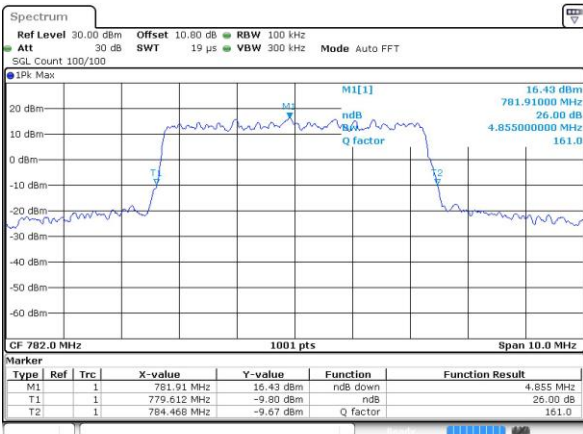
Date: 31 MAR 2018 05:17:58

Lowest Channel / 5MHz / 16QAM



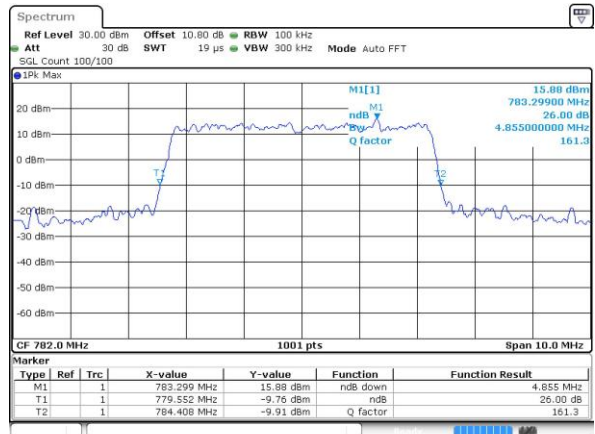
Date: 31 MAR 2018 05:17:47

Middle Channel / 5MHz / QPSK



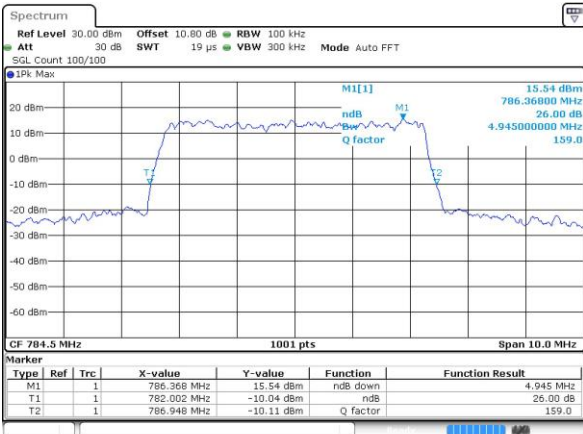
Date: 31 MAR 2018 05:21:44

Middle Channel / 5MHz / 16QAM



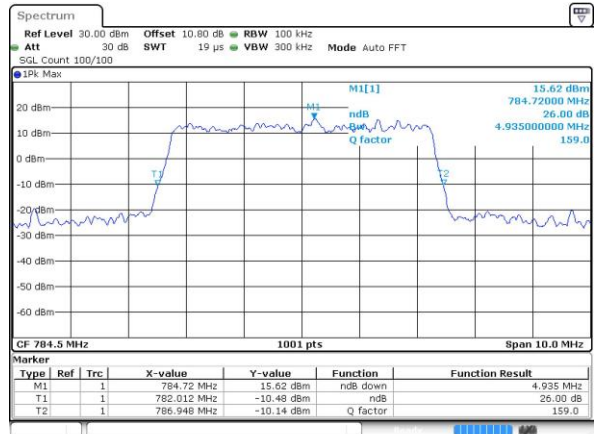
Date: 31 MAR 2018 05:21:54

Highest Channel / 5MHz / QPSK



Date: 31 MAR 2018 05:22:57

Highest Channel / 5MHz / 16QAM

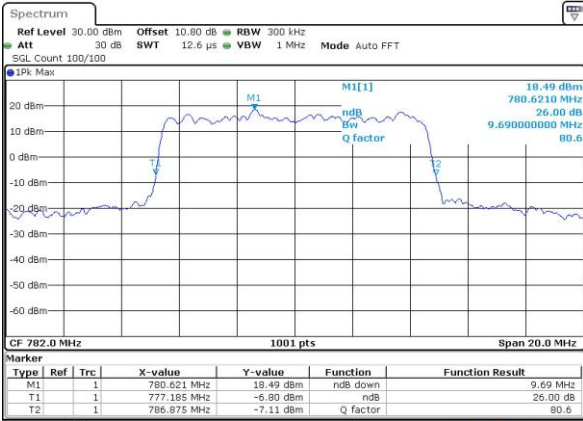


Date: 31 MAR 2018 05:22:46



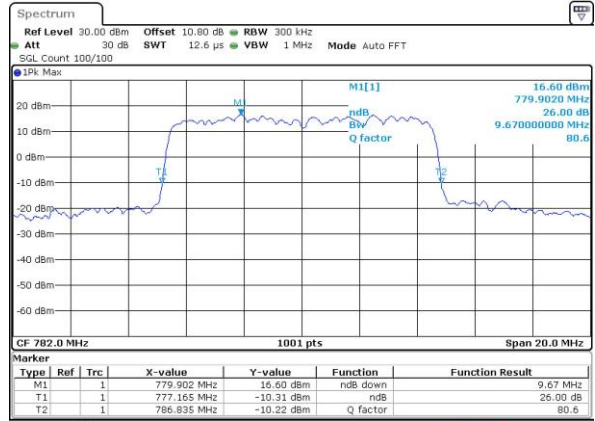
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 31 MAR 2018 05:25:27

Middle Channel / 10MHz / 16QAM



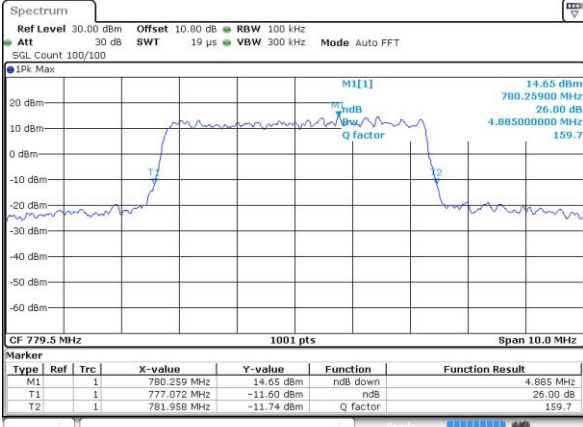
Date: 31 MAR 2018 05:25:17





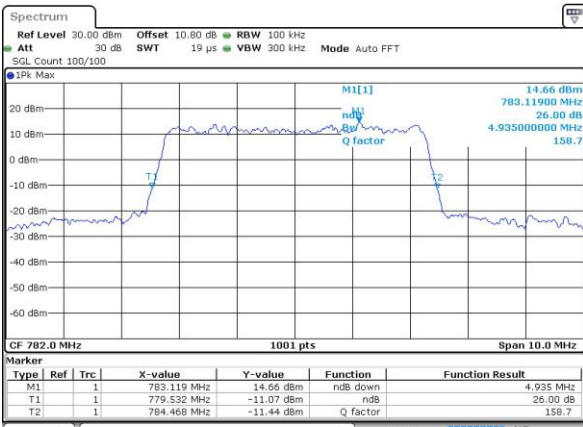
LTE Band 13

Lowest Channel / 5MHz / 64QAM



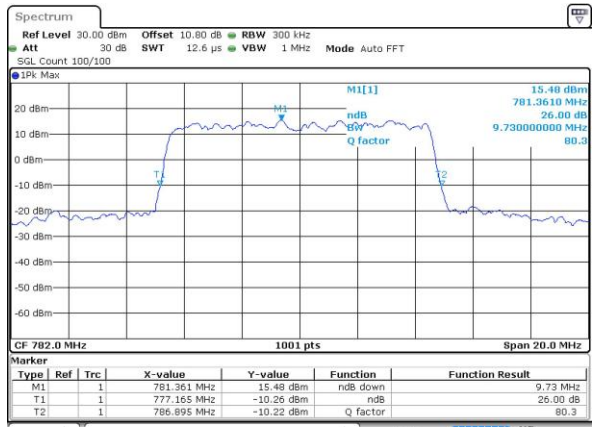
Date: 31 MAR 2018 05:30:36

Middle Channel / 5MHz / 64QAM



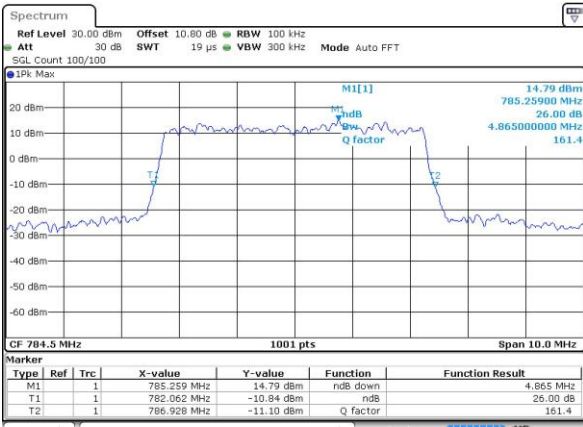
Date: 31 MAR 2018 05:32:34

Middle Channel / 10MHz / 64QAM



Date: 31 MAR 2018 05:34:20

Highest Channel / 5MHz / 64QAM



Date: 31 MAR 2018 05:33:05



**Occupied Bandwidth**

Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.51	4.51	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	4.51	9.03	8.99	-	-	-	-
Highest CH	-	-	-	-	4.5	4.49	-	-	-	-	-	-
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.50	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.50	-	8.99	-	-	-	-	-
Highest CH	-	-	-	-	4.51	-	-	-	-	-	-	-