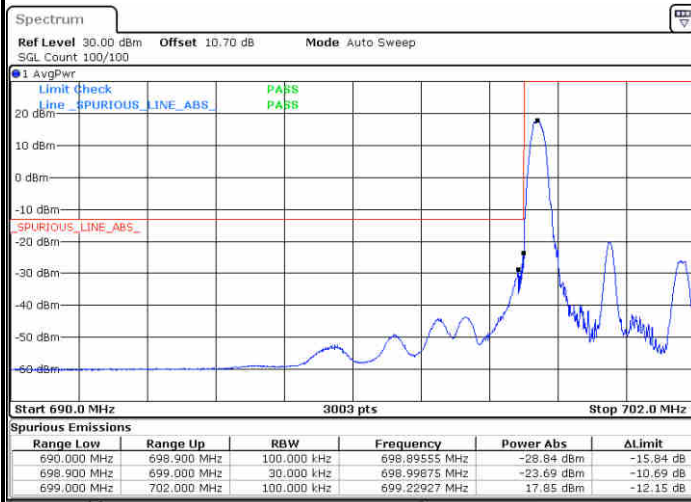


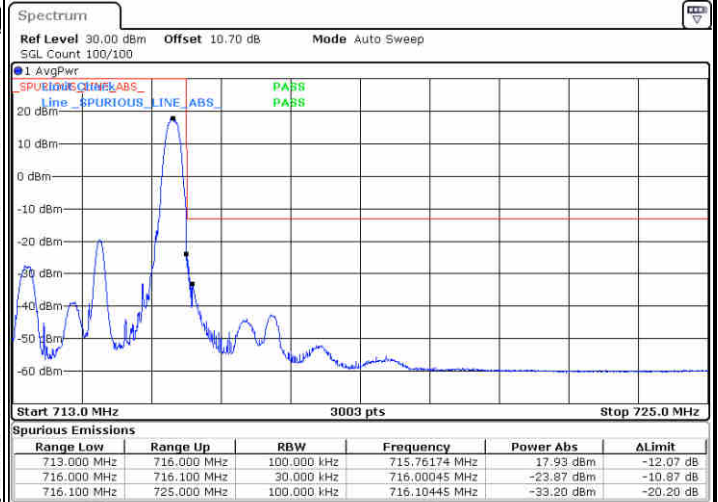


LTE Band 12 / 3MHz / 64QAM

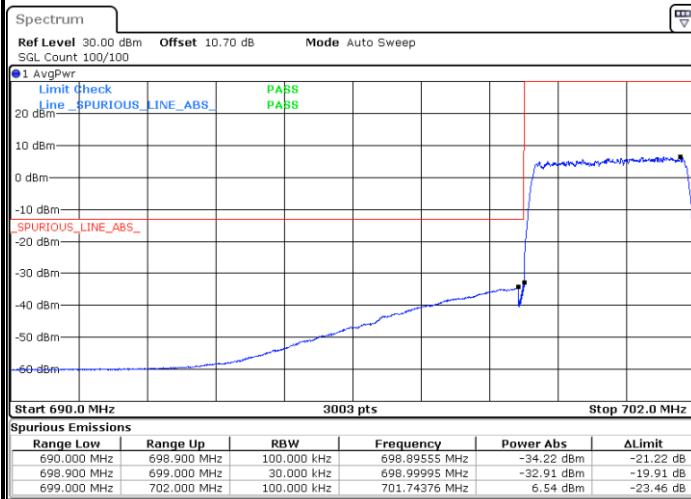
Lowest Band Edge / 1 RB



Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



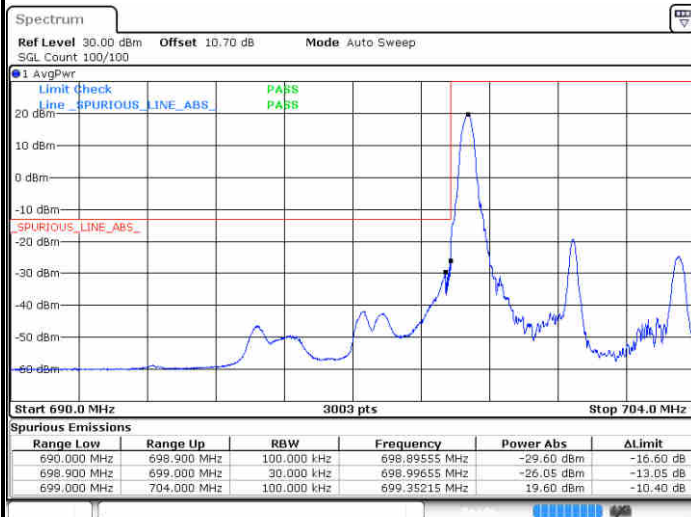
Highest Band Edge / Full RB



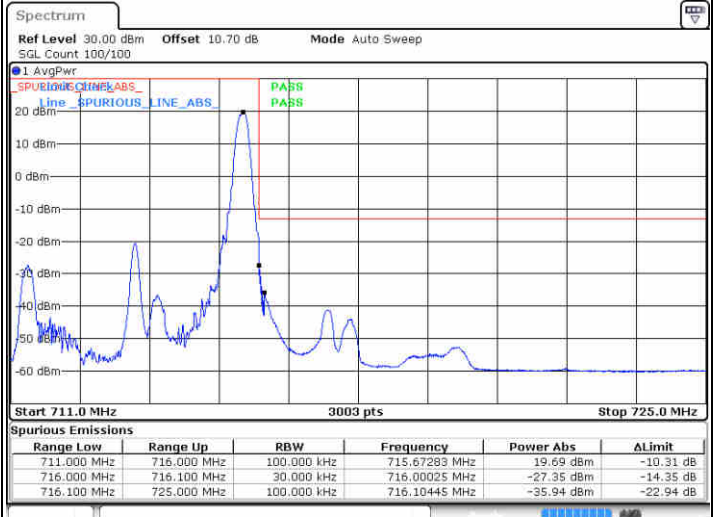


LTE Band 12 / 5MHz / QPSK

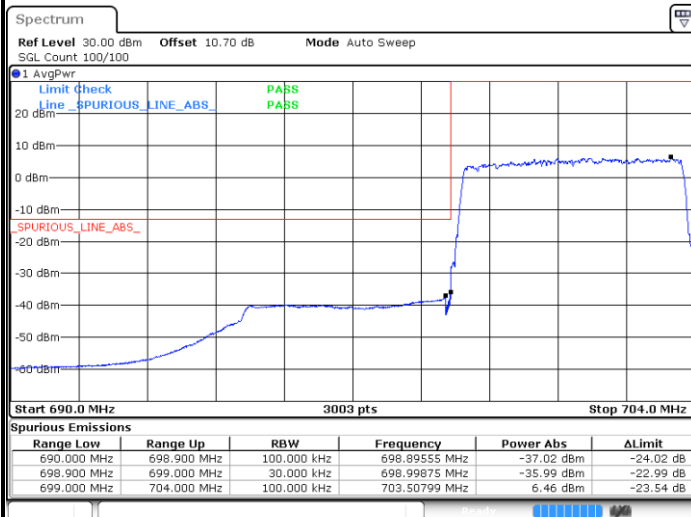
Lowest Band Edge / 1 RB



Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



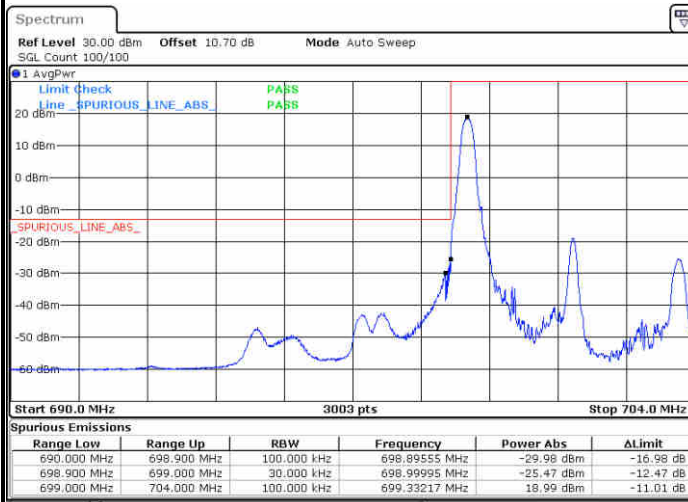
Highest Band Edge / Full RB



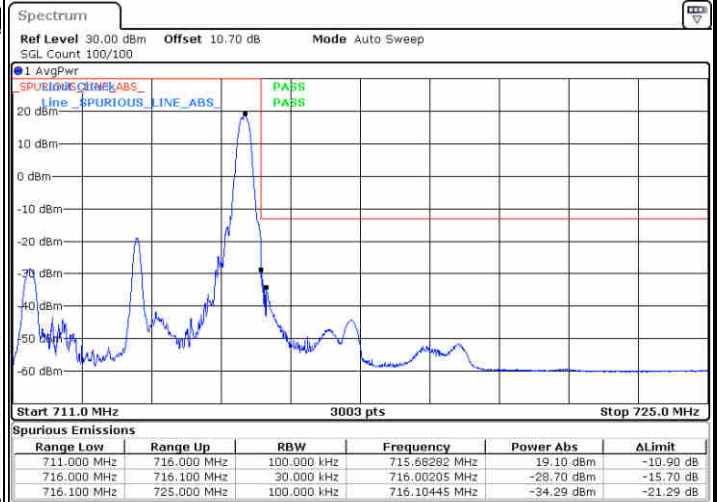


LTE Band 12 / 5MHz / 16QAM

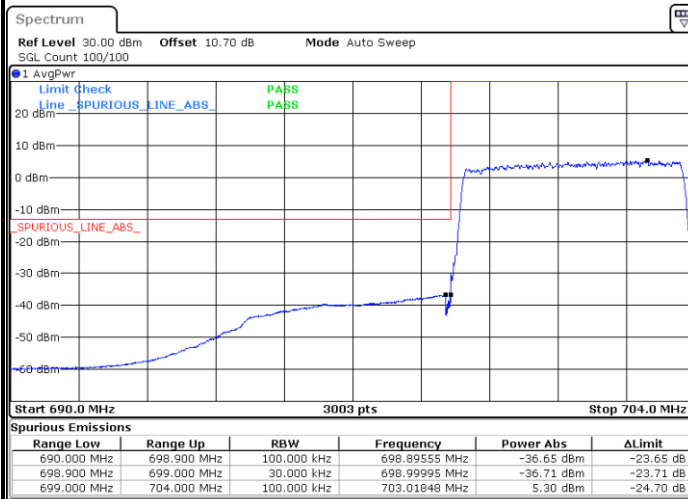
Lowest Band Edge / 1RB



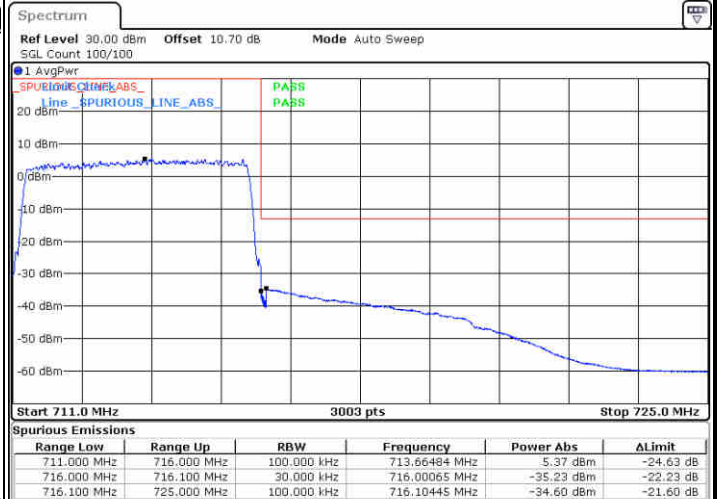
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



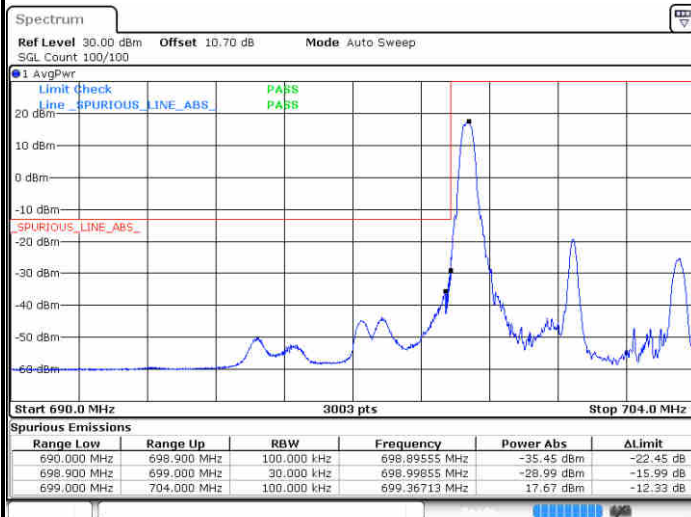
Highest Band Edge / Full RB



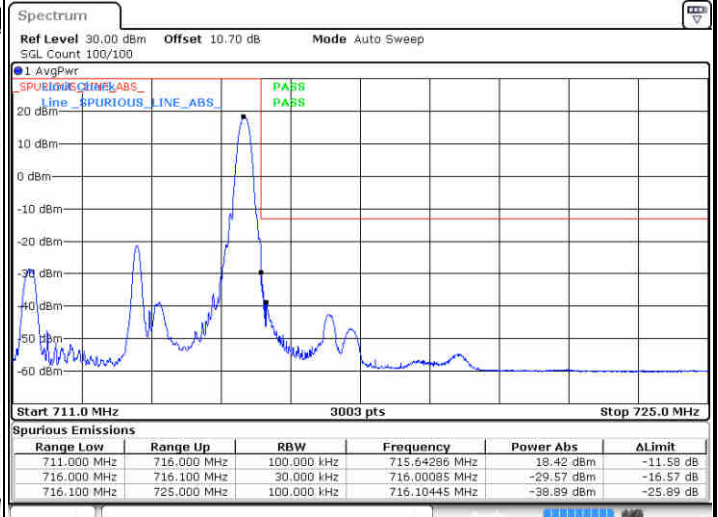


LTE Band 12 / 5MHz / 64QAM

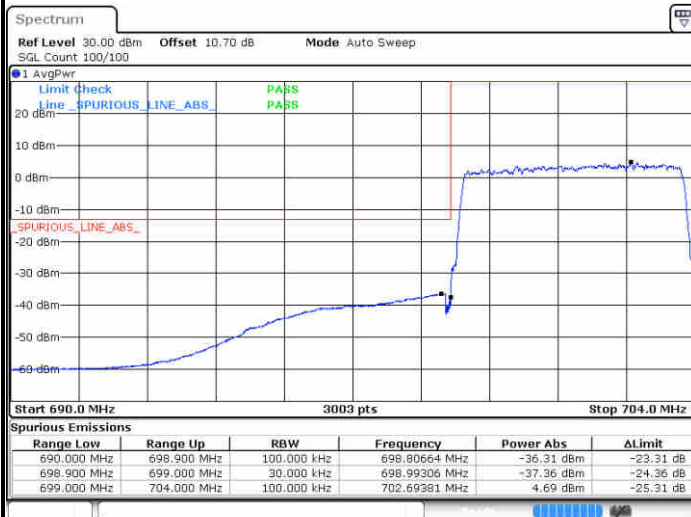
Lowest Band Edge / 1RB



Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



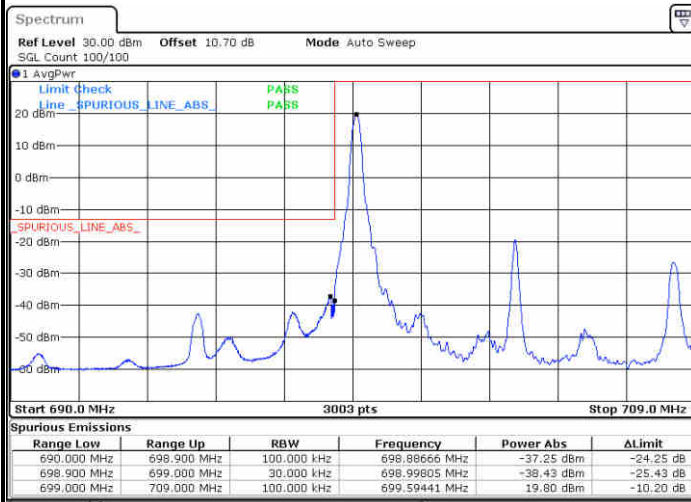
Highest Band Edge / Full RB



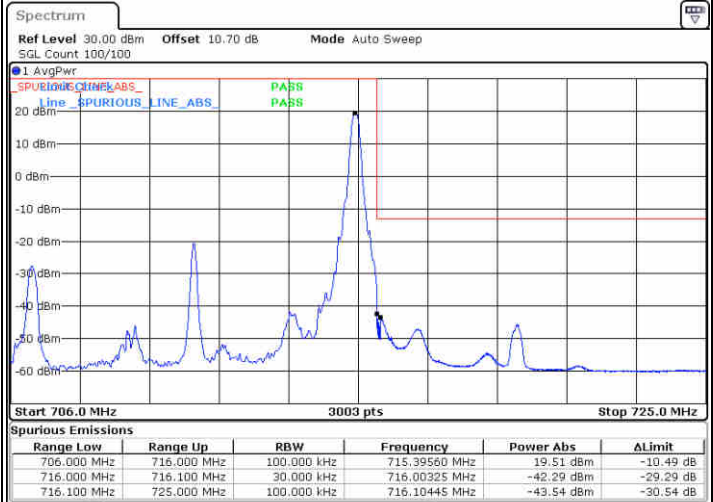


LTE Band 12 / 10MHz / QPSK

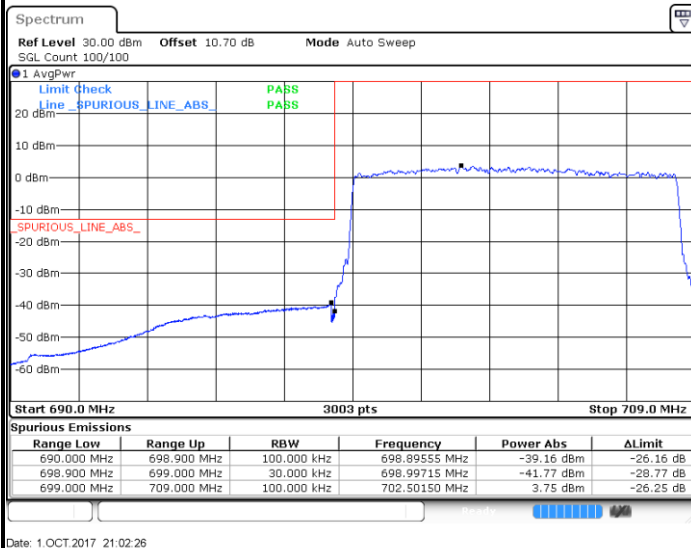
Lowest Band Edge / 1 RB



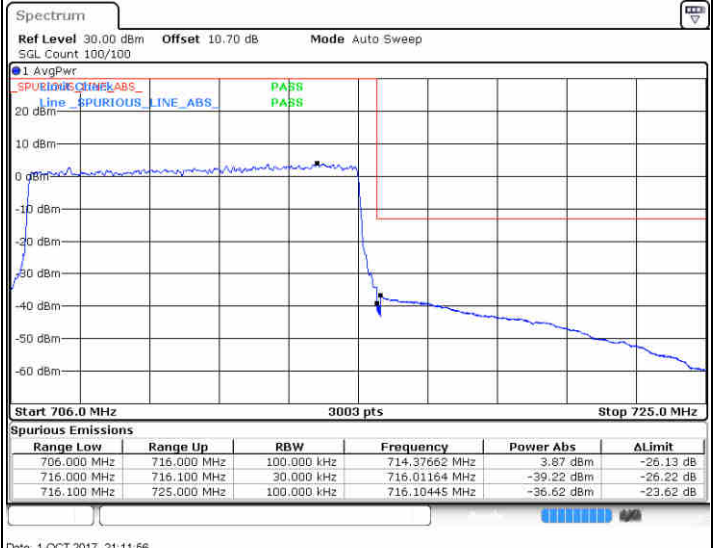
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



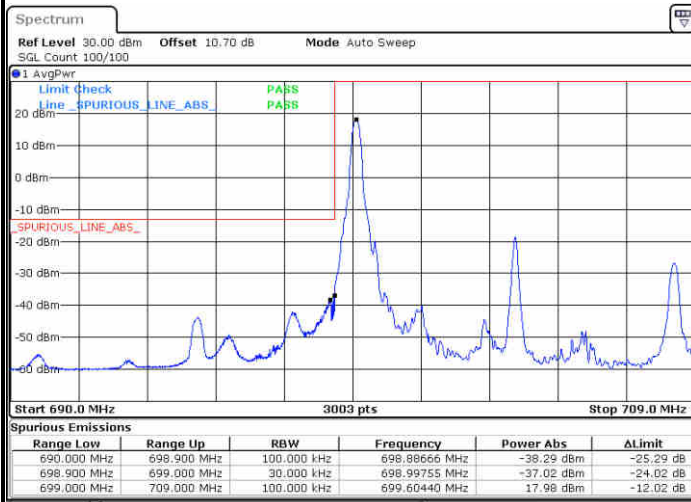
Highest Band Edge / Full RB



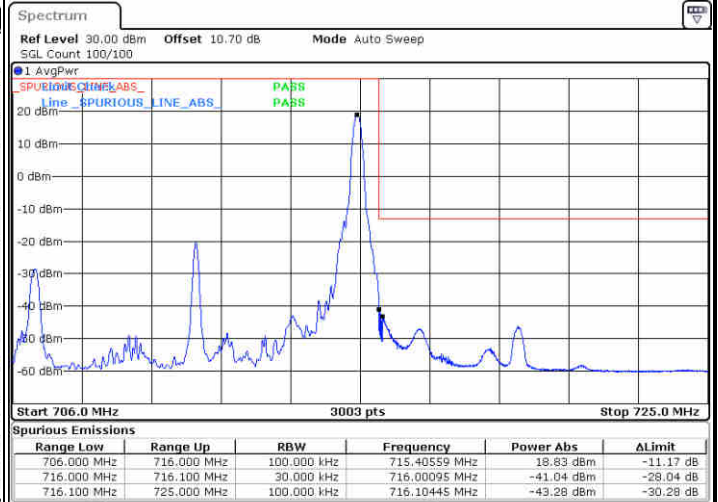


LTE Band 12 / 10MHz / 16QAM

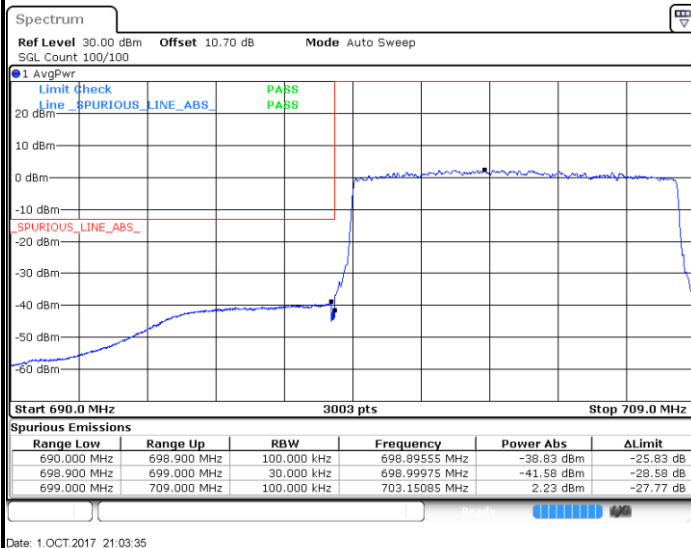
Lowest Band Edge / 1 RB



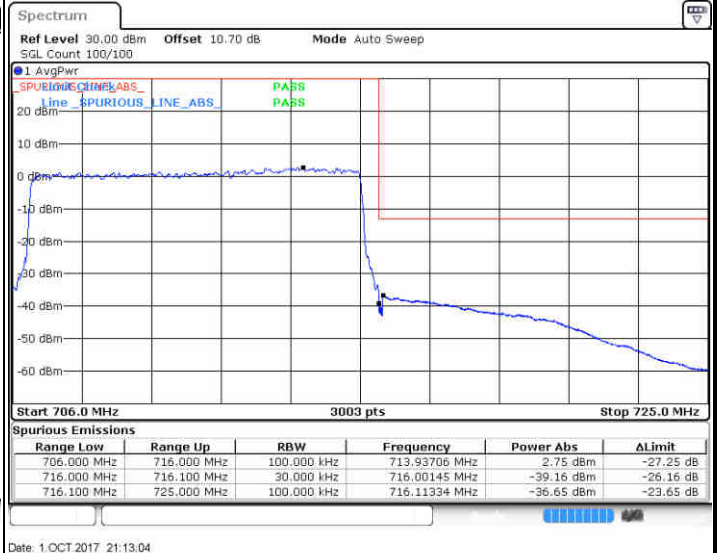
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



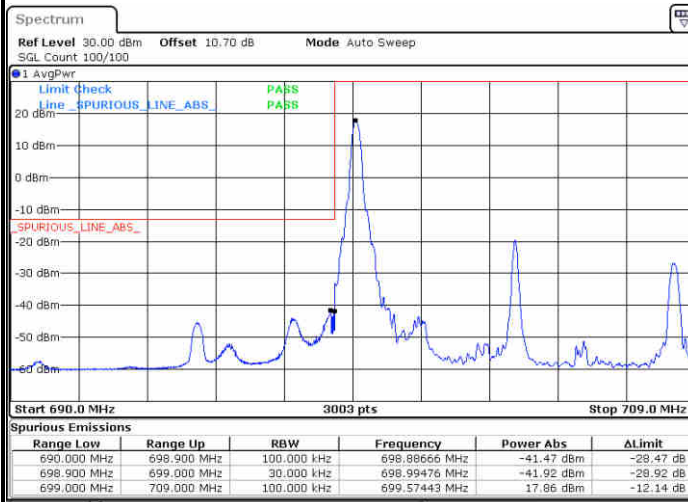
Highest Band Edge / Full RB



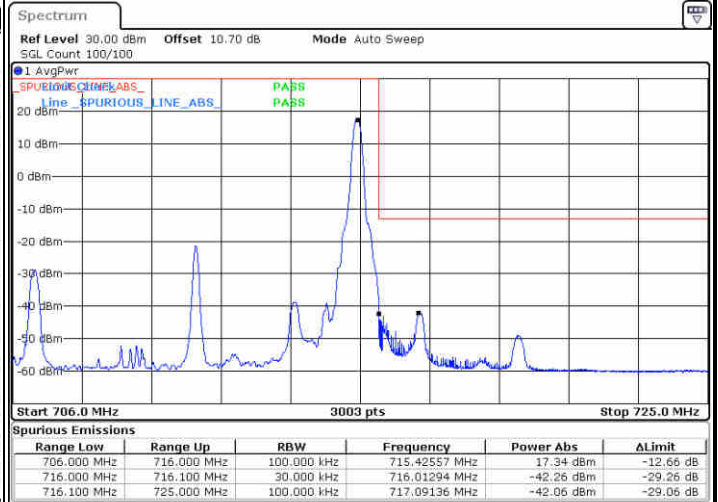


LTE Band 12 / 10MHz / 64QAM

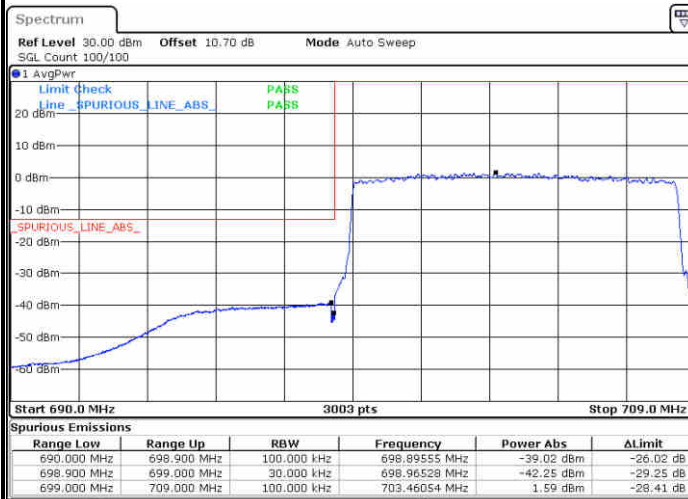
Lowest Band Edge / 1 RB



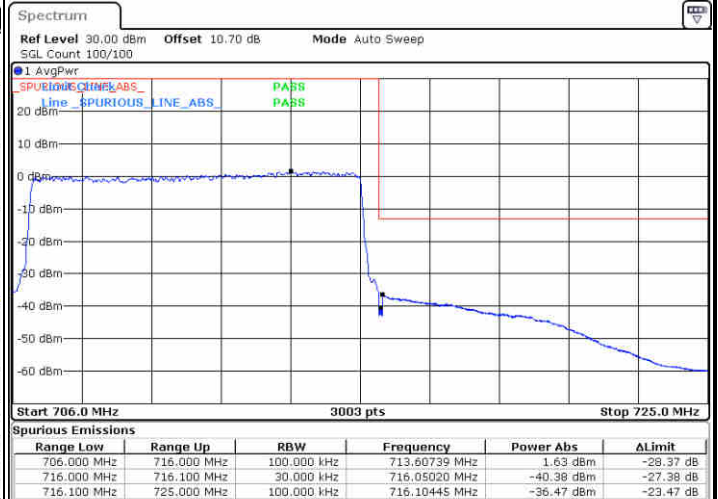
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

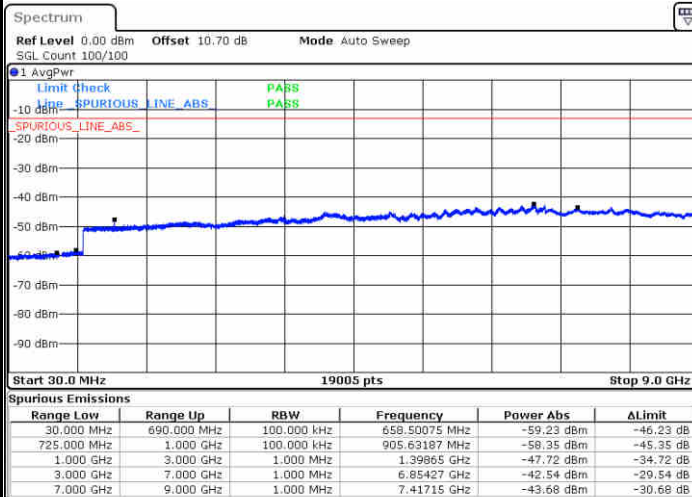




Conducted Spurious Emission

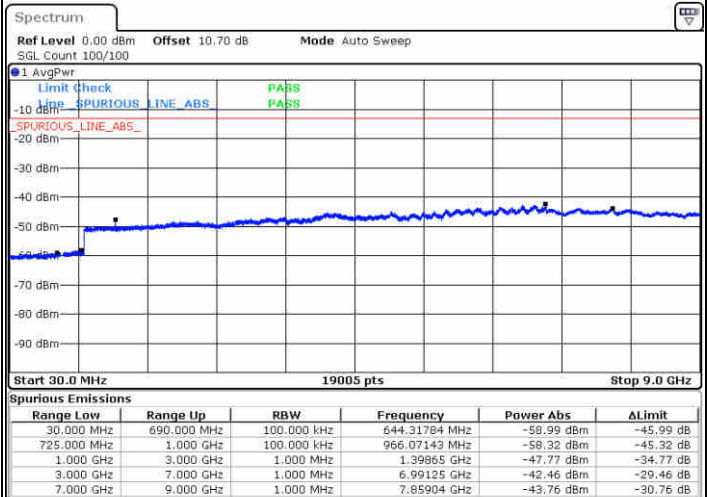
LTE Band 12 / 1.4MHz

Lowest Channel / QPSK



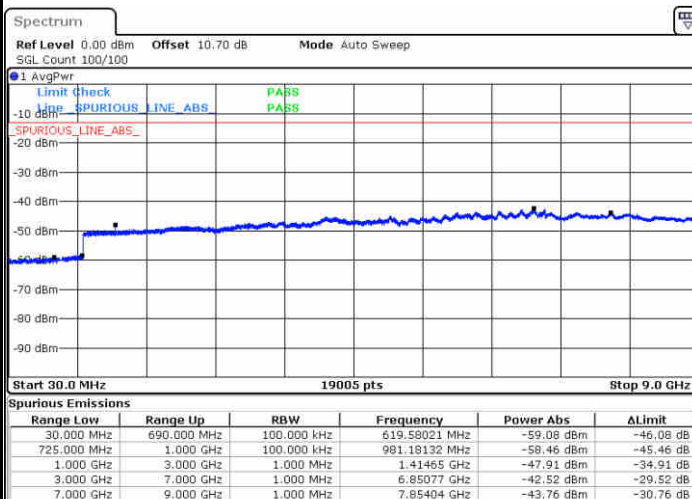
Date: 1.OCT.2017 22:18:16

Lowest Channel / 16QAM



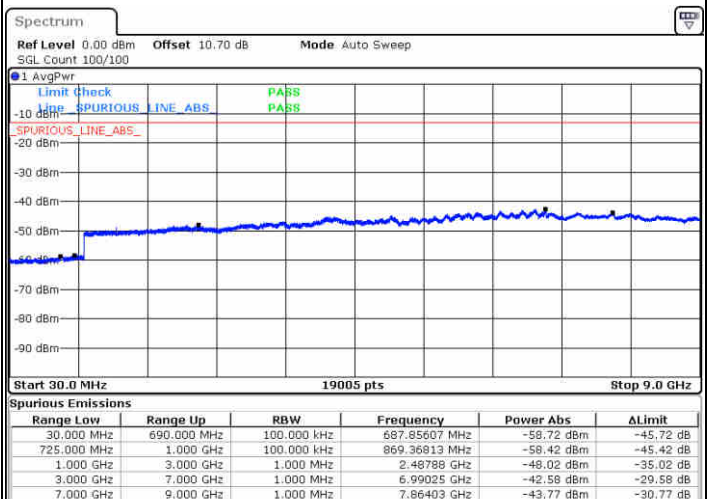
Date: 1.OCT.2017 22:19:10

Middle Channel / QPSK



Date: 1.OCT.2017 22:21:37

Middle Channel / 16QAM

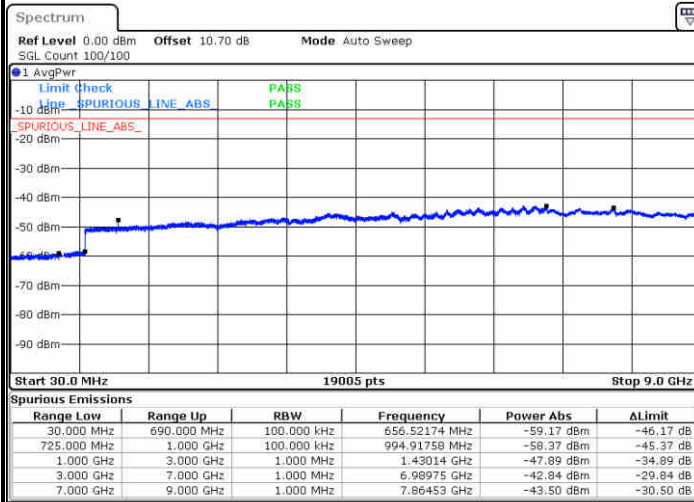


Date: 1.OCT.2017 22:20:44



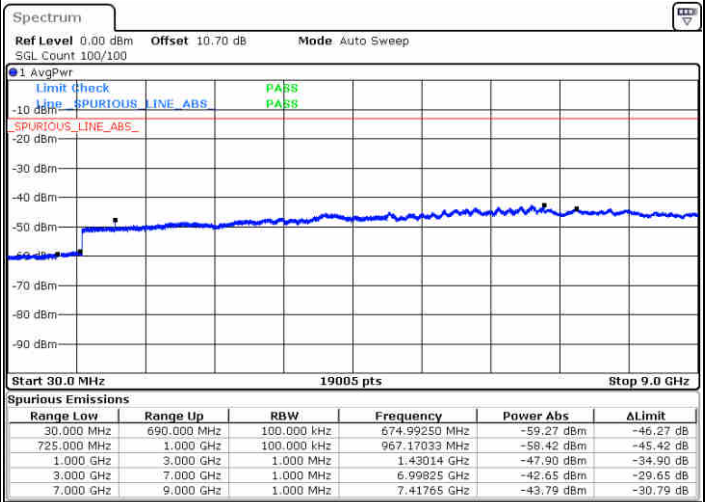
LTE Band 12 / 1.4MHz

Highest Channel / QPSK



Date: 1.OCT.2017 22:27:46

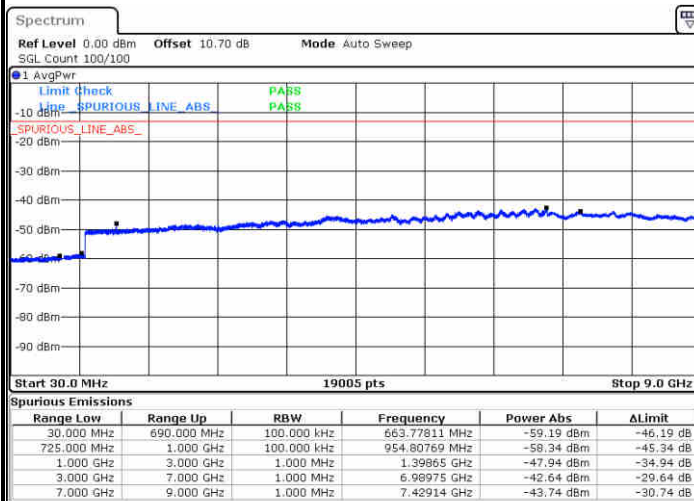
Highest Channel / 16QAM



Date: 1.OCT.2017 22:28:39

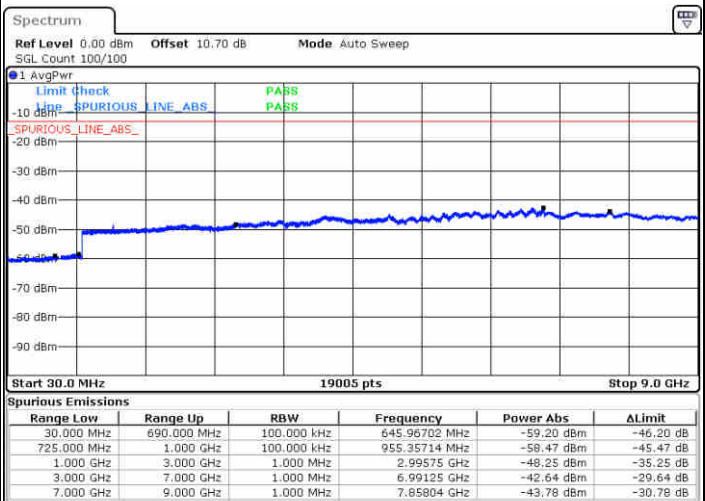
LTE Band 12 / 3MHz

Lowest Channel / QPSK



Date: 1.OCT.2017 20:33:42

Lowest Channel / 16QAM

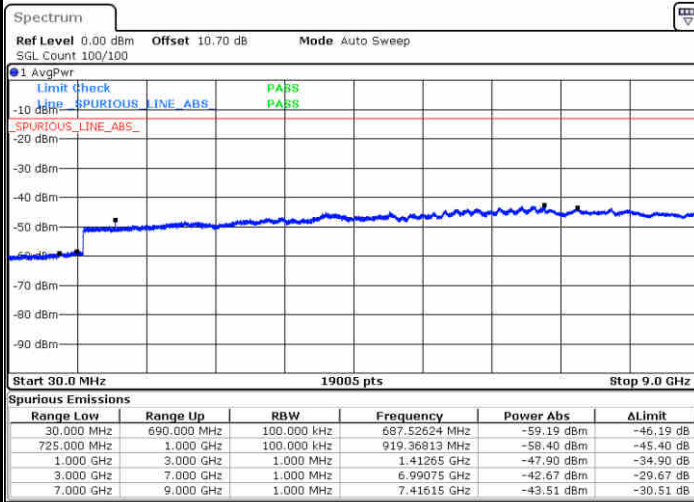


Date: 1.OCT.2017 20:34:35



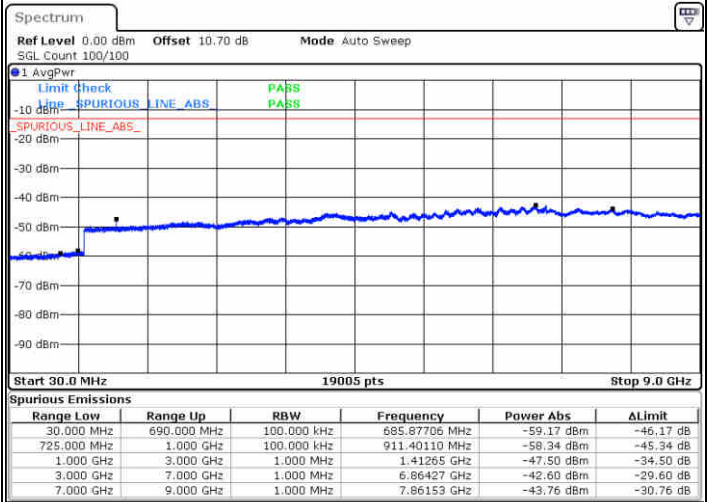
LTE Band 12 / 3MHz

Middle Channel / QPSK



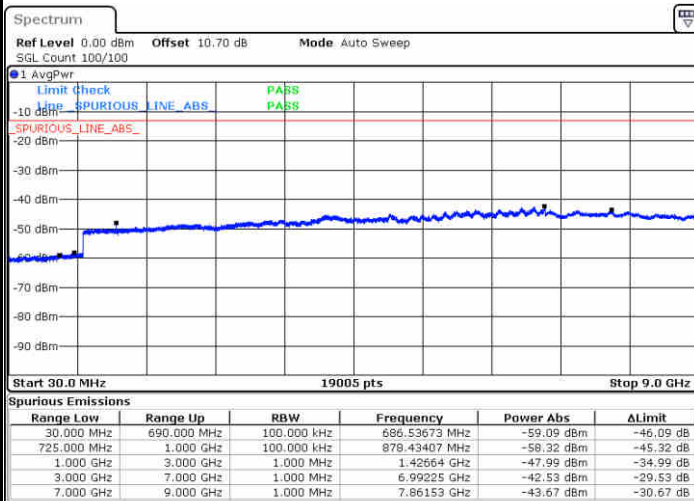
Date: 1.OCT.2017 20:37:03

Middle Channel / 16QAM



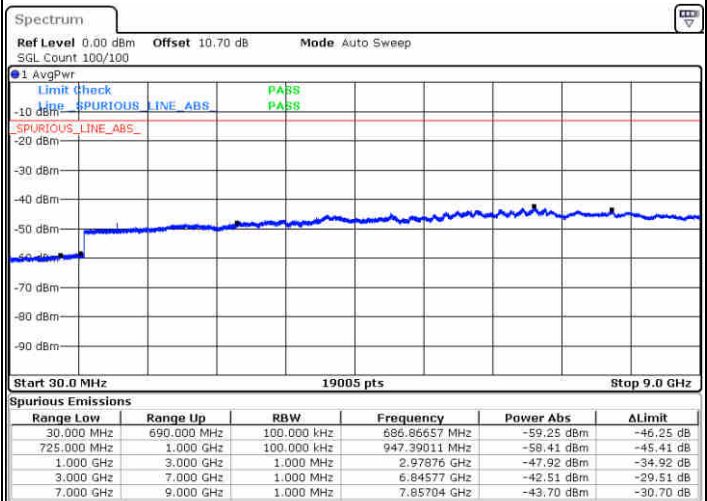
Date: 1.OCT.2017 20:38:09

Highest Channel / QPSK



Date: 1.OCT.2017 20:43:12

Highest Channel / 16QAM

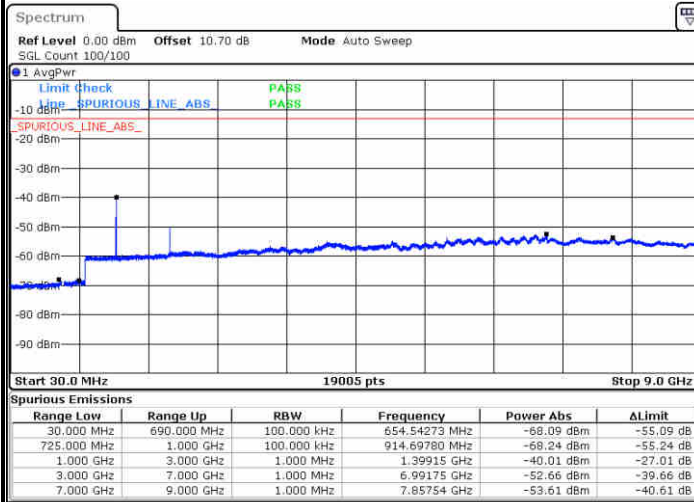


Date: 1.OCT.2017 20:44:05



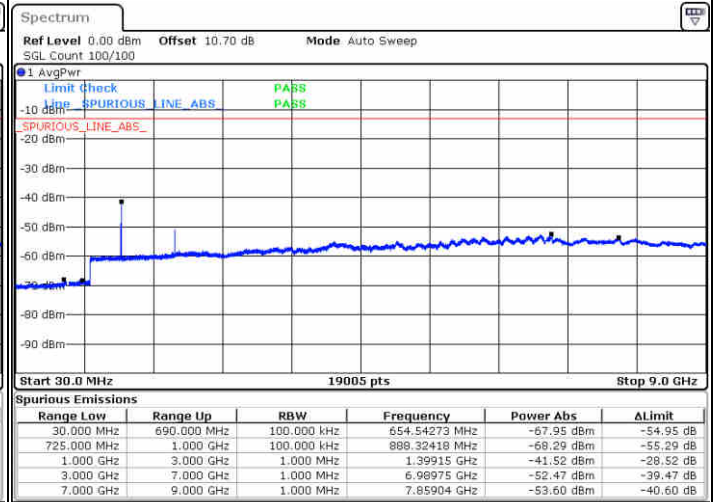
LTE Band 12 / 5MHz

Lowest Channel / QPSK



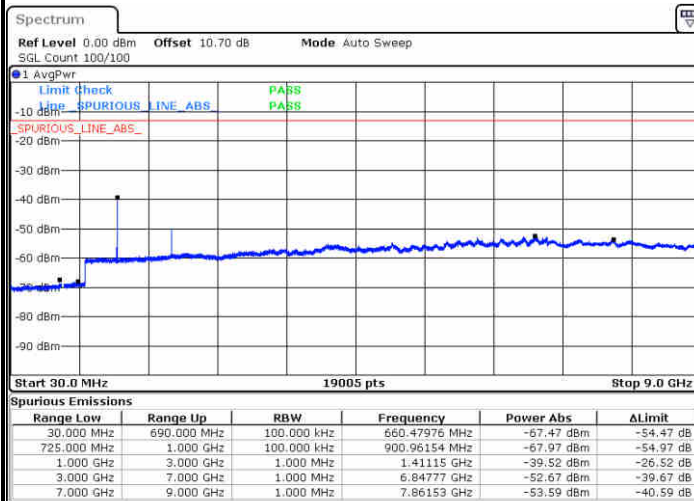
Date: 1.OCT.2017 20:50:14

Lowest Channel / 16QAM



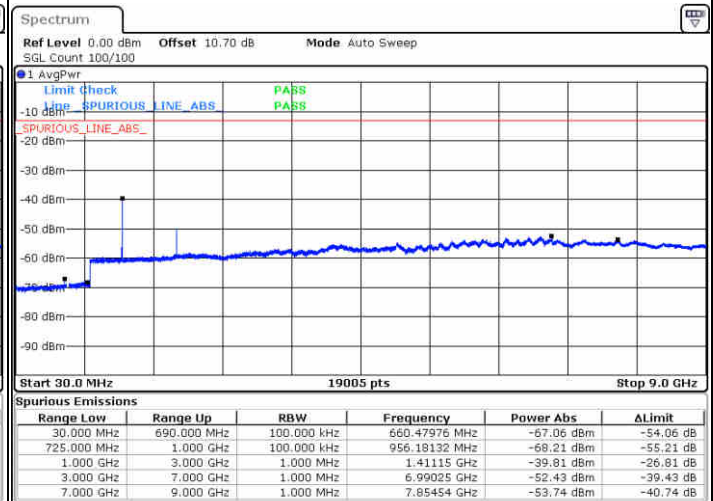
Date: 1.OCT.2017 20:51:08

Middle Channel / QPSK



Date: 1.OCT.2017 20:53:35

Middle Channel / 16QAM

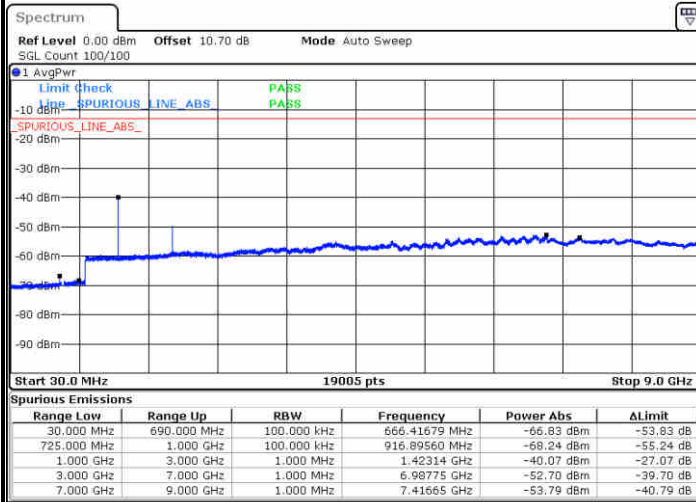


Date: 1.OCT.2017 20:52:42



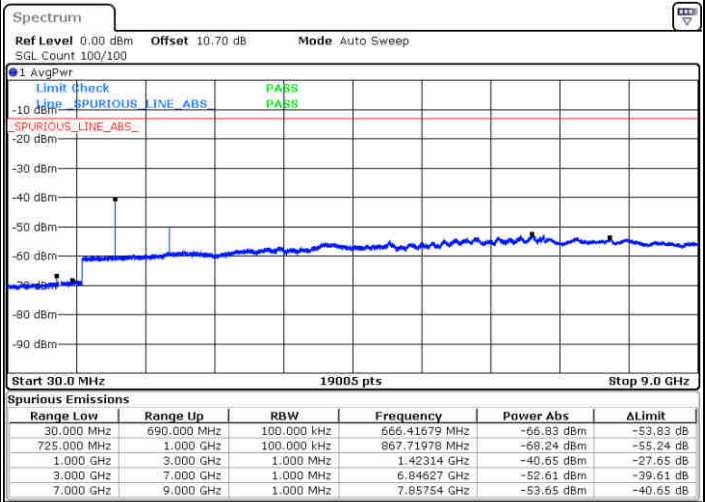
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 1.OCT.2017 21:00:38

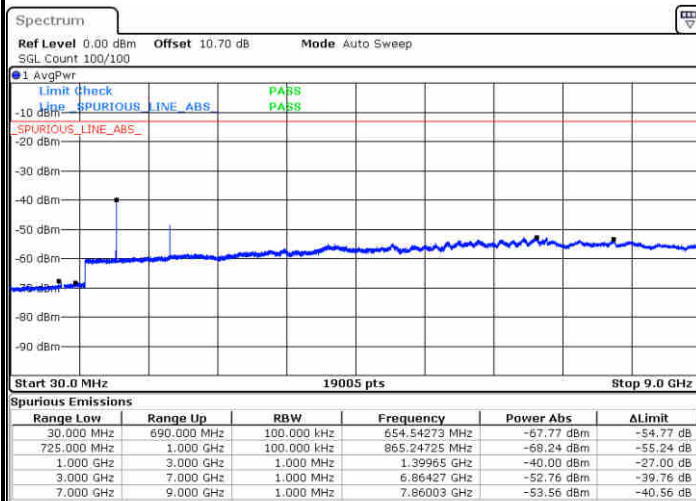
Highest Channel / 16QAM



Date: 1.OCT.2017 20:58:44

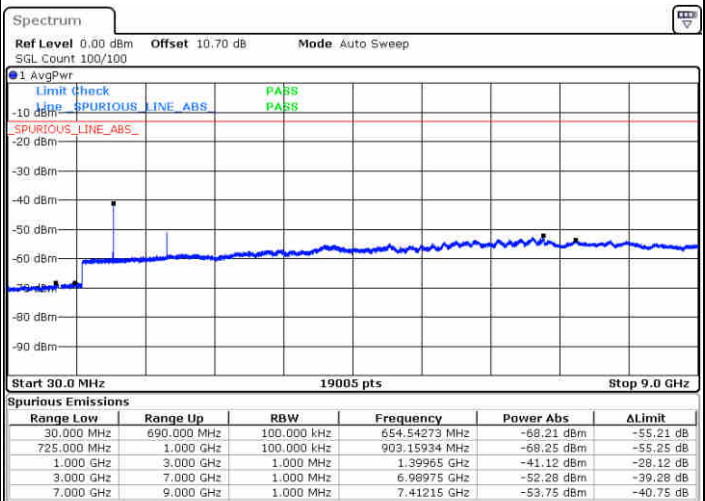
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 1.OCT.2017 21:06:46

Lowest Channel / 16QAM

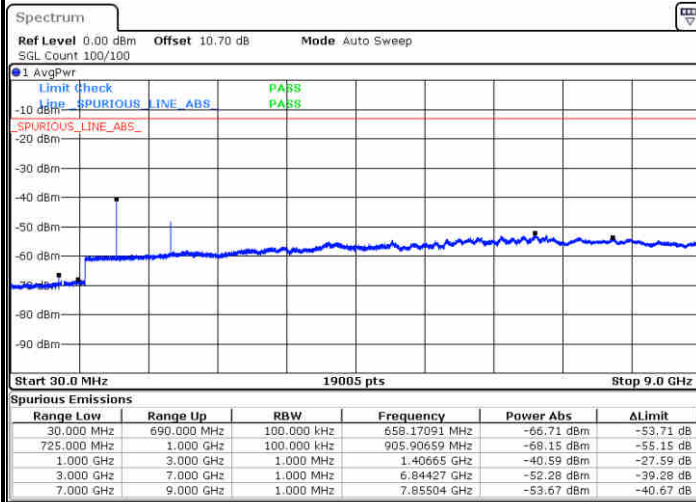


Date: 1.OCT.2017 21:07:40



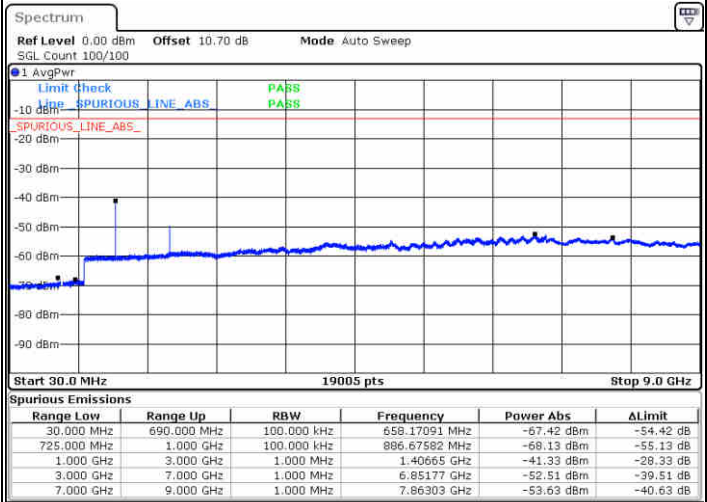
LTE Band 12 / 10MHz

Middle Channel / QPSK



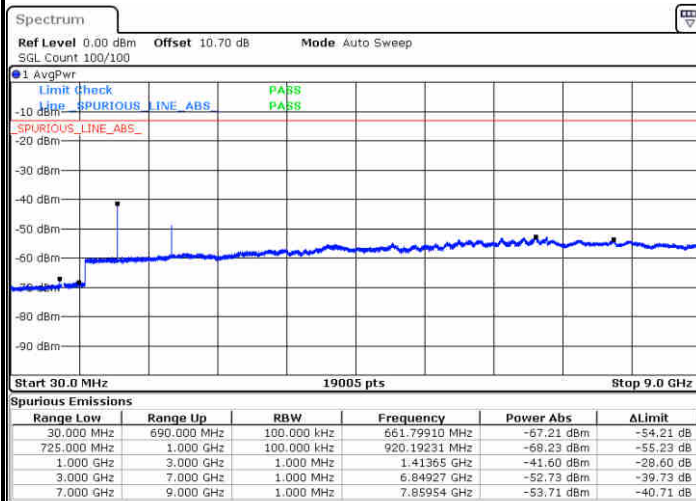
Date: 1.OCT.2017 21:10:07

Middle Channel / 16QAM



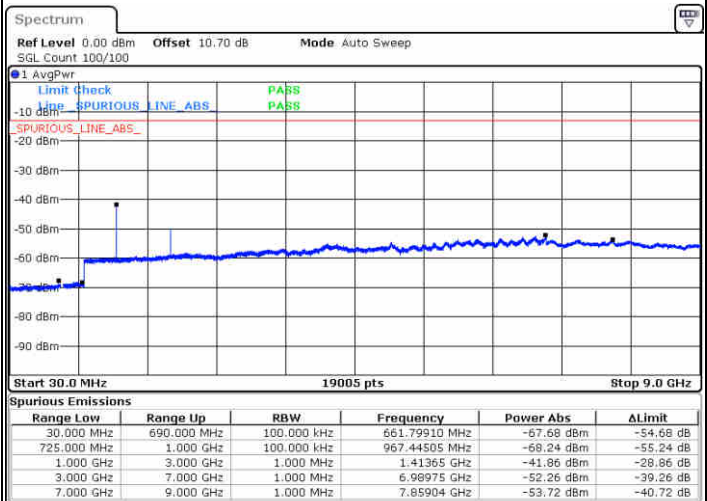
Date: 1.OCT.2017 21:09:14

Highest Channel / QPSK



Date: 1.OCT.2017 21:16:16

Highest Channel / 16QAM

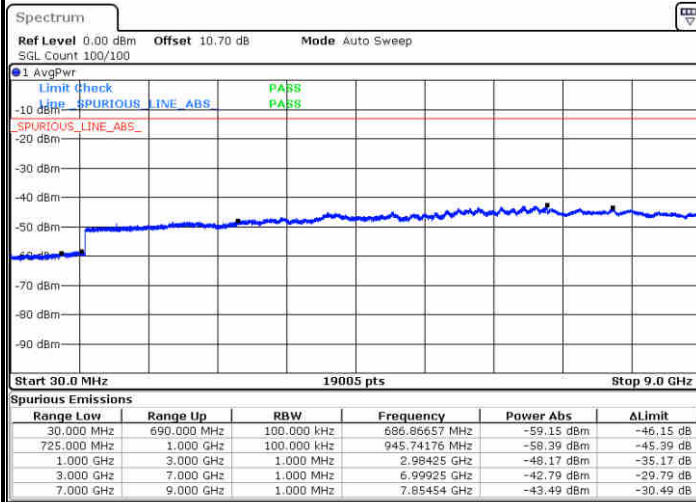


Date: 1.OCT.2017 21:17:10



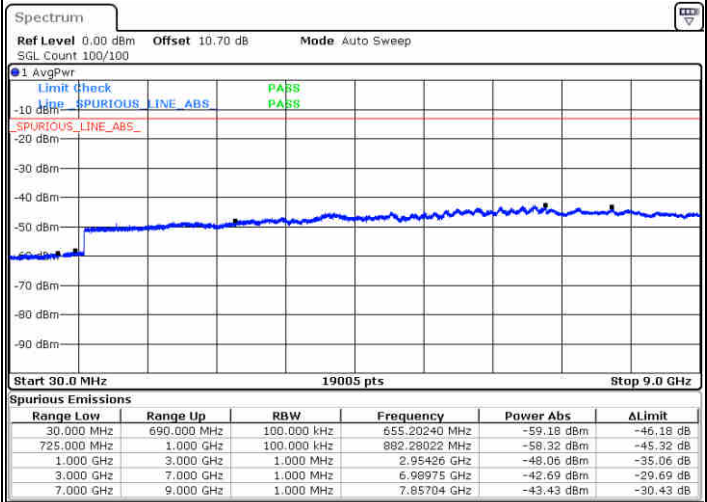
LTE Band 12 / 1.4MHz

Lowest Channel / 64QAM



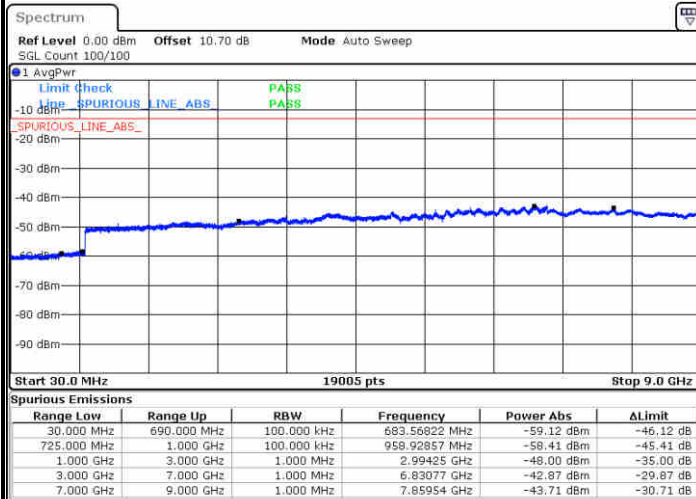
Date: 2.OCT.2017 01:04:46

Middle Channel / 64QAM



Date: 2.OCT.2017 01:05:58

Highest Channel / 64QAM

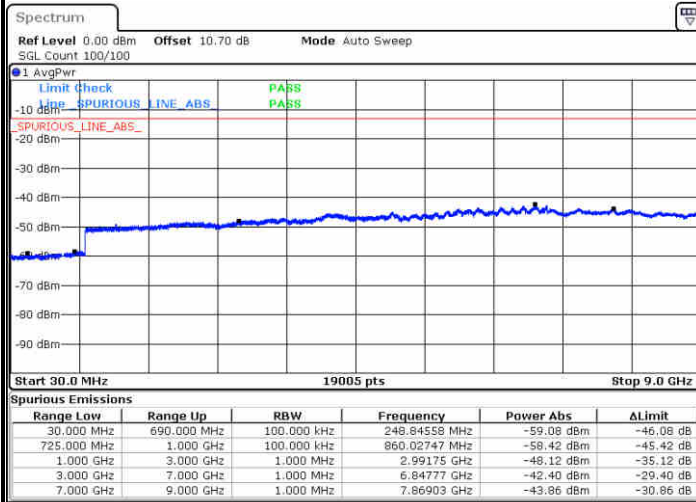


Date: 2.OCT.2017 01:09:31



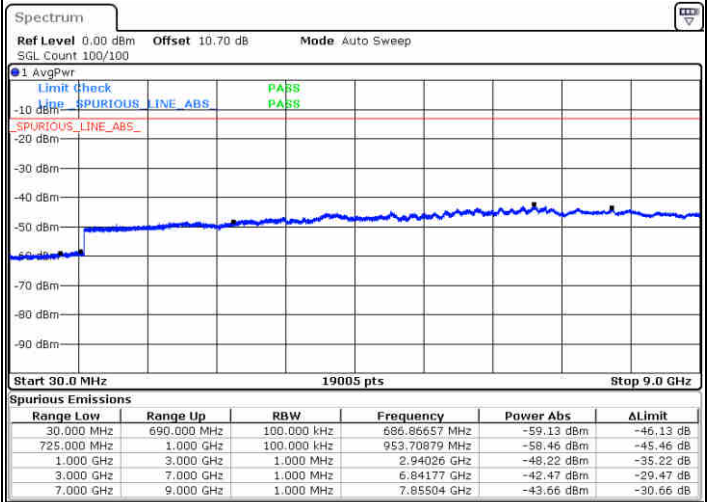
LTE Band 12 / 3MHz

Lowest Channel / 64QAM



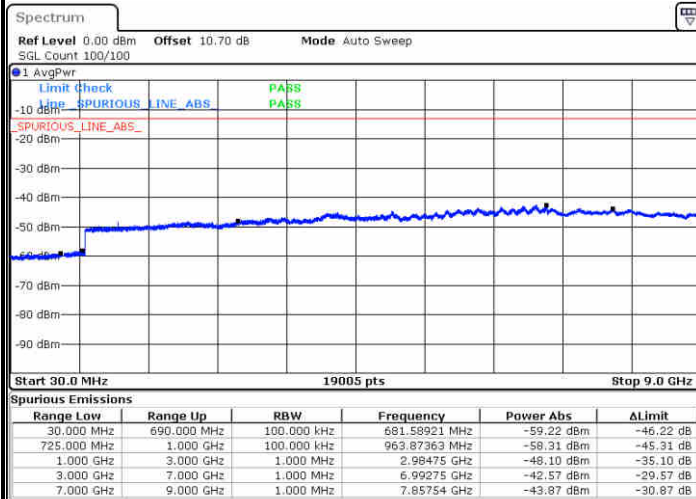
Date: 2.OCT.2017 00:39:57

Middle Channel / 64QAM



Date: 2.OCT.2017 00:41:11

Highest Channel / 64QAM

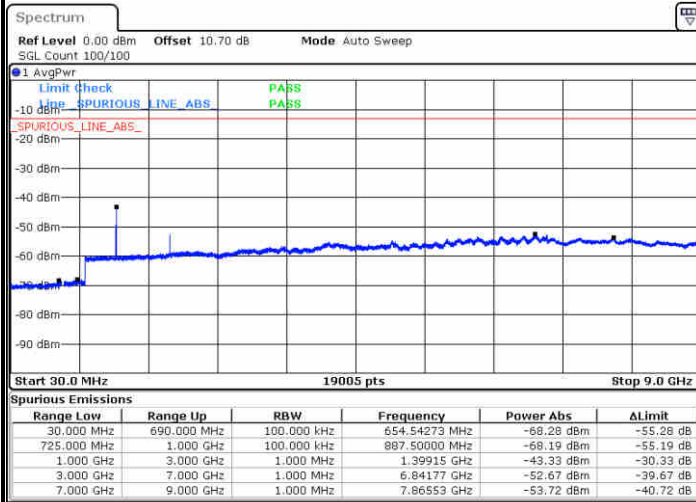


Date: 2.OCT.2017 00:44:42



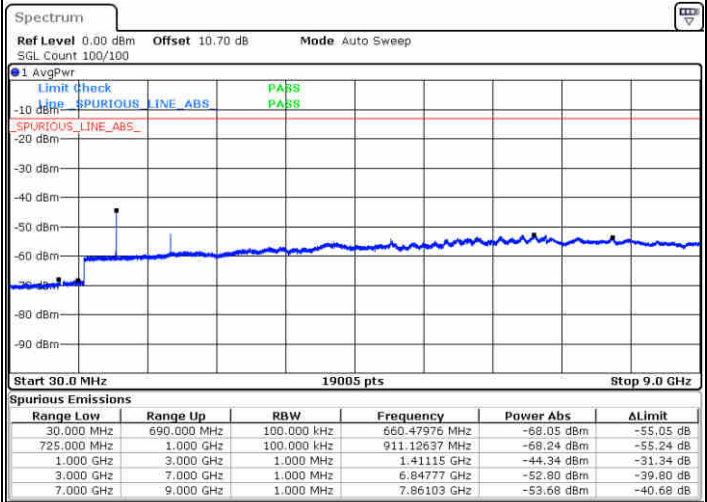
LTE Band 12 / 5MHz

Lowest Channel / 64QAM



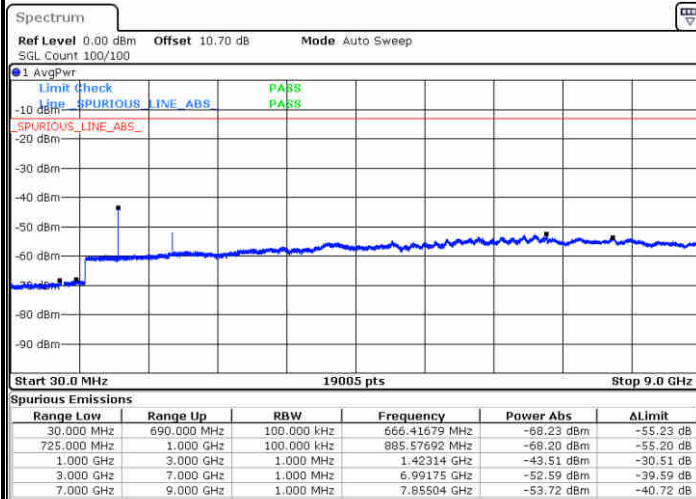
Date: 2.OCT.2017 00:48:14

Middle Channel / 64QAM



Date: 2.OCT.2017 00:49:27

Highest Channel / 64QAM

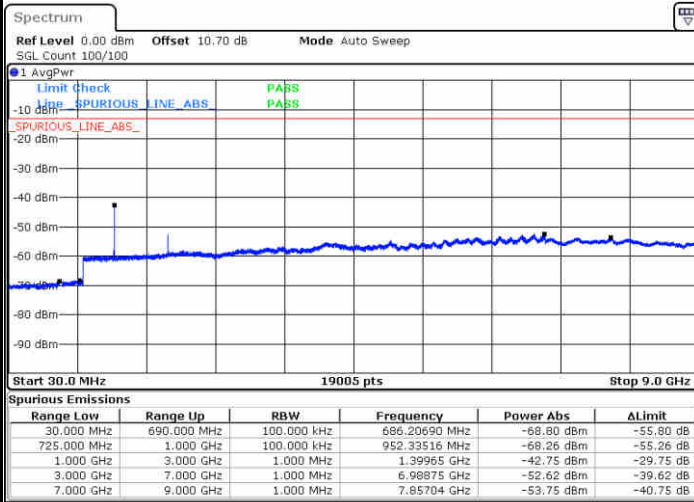


Date: 2.OCT.2017 00:52:59



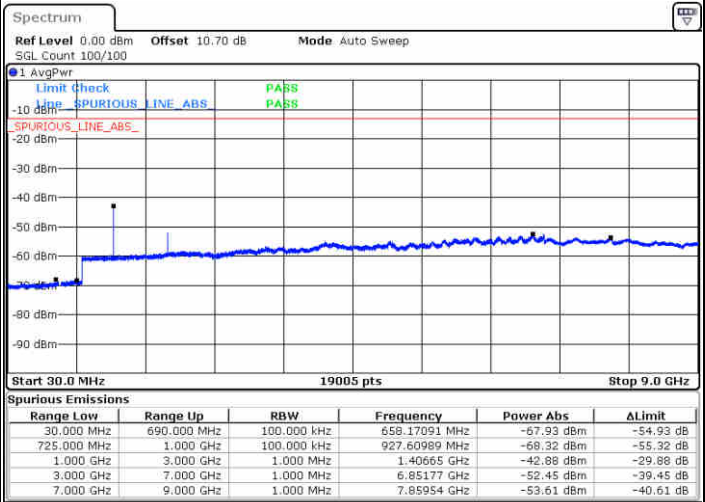
LTE Band 12 / 10MHz

Lowest Channel / 64QAM



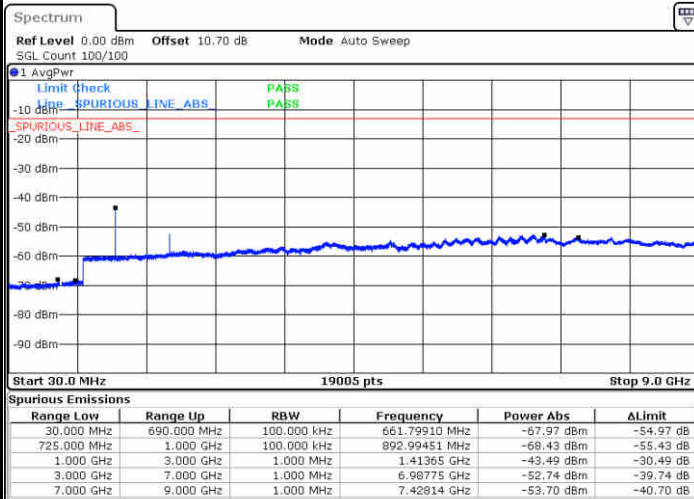
Date: 2.OCT.2017 00:56:30

Middle Channel / 64QAM



Date: 2.OCT.2017 00:57:43

Highest Channel / 64QAM



Date: 2.OCT.2017 01:01:15

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	0.0021	PASS
40	Normal Voltage	0.0085	
30	Normal Voltage	0.0083	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0134	
0	Normal Voltage	0.0021	
-10	Normal Voltage	0.0003	
-20	Normal Voltage	0.0007	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0107	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0004	

Note:

1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3.135 V. ; Maximum Voltage =4.4 V.
2. 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 (Δf) (Hz)	Result
50	Normal Voltage	-1.5	PASS
40	Normal Voltage	6	
30	Normal Voltage	5.9	
20(Ref.)	Normal Voltage	0	
10	Normal Voltage	9.5	
0	Normal Voltage	-1.5	
-10	Normal Voltage	-0.2	
-20	Normal Voltage	-0.5	
-30	Normal Voltage	-1.5	
20	Maximum Voltage	7.6	
20	Normal Voltage	0	
20	Battery End Point	0.3	

$|\text{MAX}(\Delta f)| = 9.5\text{Hz}$

Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - \text{MAX}(\Delta f) $	699.038691	$\geq 699 \text{ MHz}$	PASS
$f_H + \text{MAX}(\Delta f) $	715.960710	$\leq 716 \text{ MHz}$	



LTE Band 13

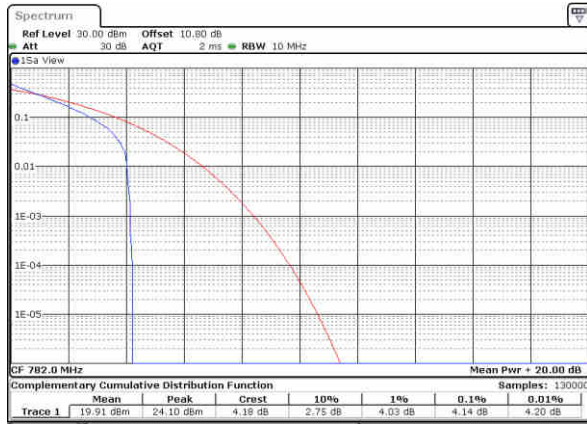
Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	4.14	4.96	5.16	6	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	PASS
Middle CH	6	6.43	-	-	
Highest CH	-	-	-	-	



LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 2.OCT.2017 05:16:27

Middle Channel / Full RB



Date: 2.OCT.2017 05:16:47

LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 2.OCT.2017 05:16:08

Middle Channel / Full RB



Date: 2.OCT.2017 05:16:18

LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 2.OCT.2017 05:15:50

Middle Channel / Full RB



Date: 2.OCT.2017 05:15:59

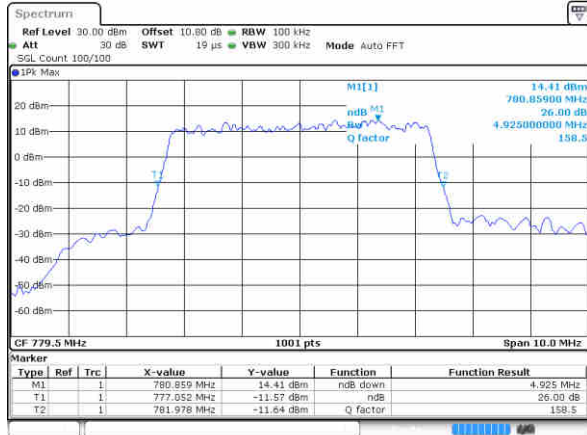
**26dB Bandwidth**

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	-	-	-	-	4.925	4.915	-	-	-	-	-	-
Middle CH	-	-	-	-	4.845	4.925	9.81	9.63	-	-	-	-
Highest CH	-	-	-	-	4.905	4.855	-	-	-	-	-	-
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.93	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.93	-	9.65	-	-	-	-	-
Highest CH	-	-	-	-	4.86	-	-	-	-	-	-	-

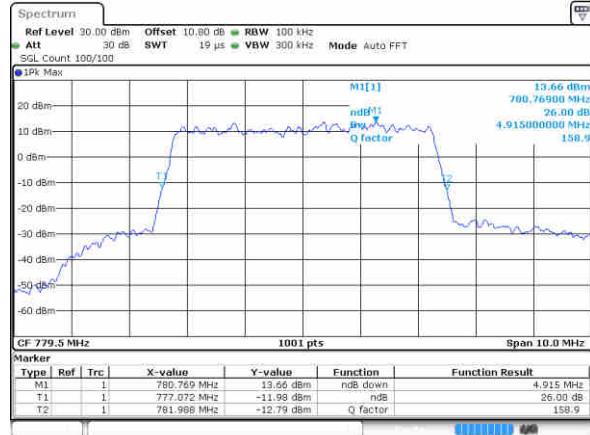


LTE Band 13

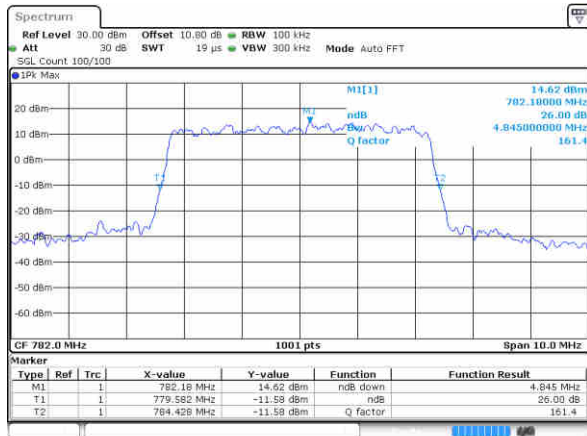
Lowest Channel / 5MHz / QPSK



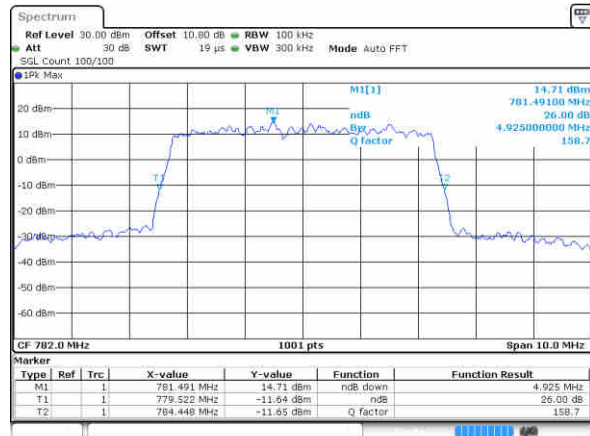
Lowest Channel / 5MHz / 16QAM



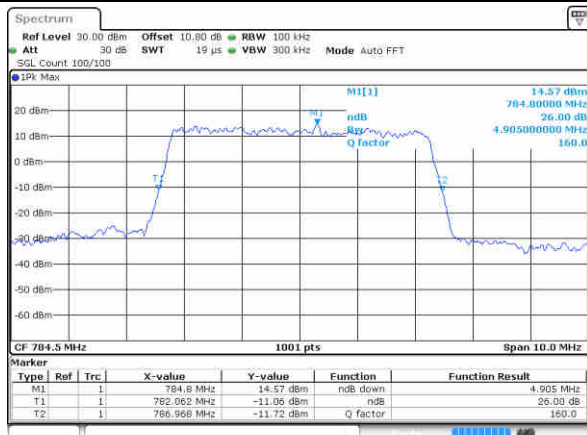
Middle Channel / 5MHz / QPSK



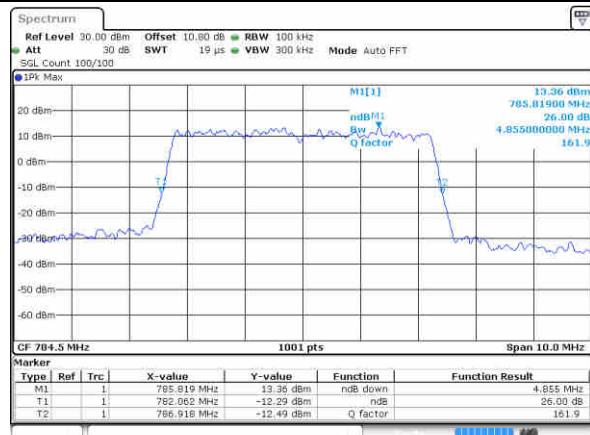
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



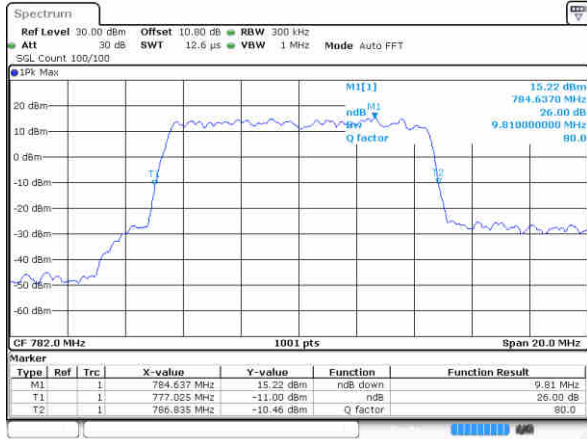
Highest Channel / 5MHz / 16QAM



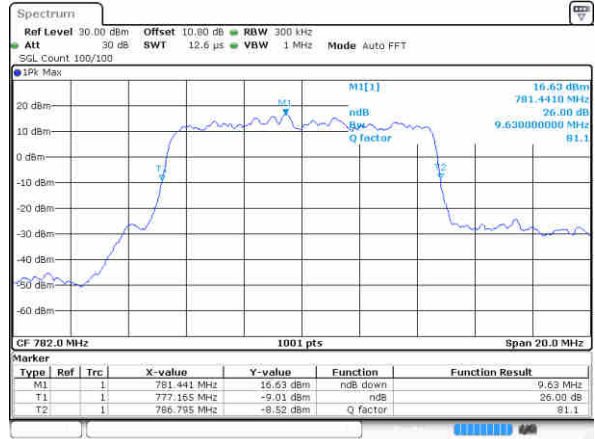


LTE Band 13

Middle Channel / 10MHz / QPSK



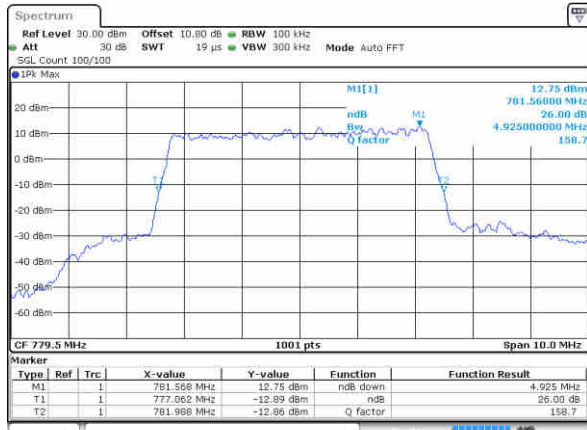
Middle Channel / 10MHz / 16QAM



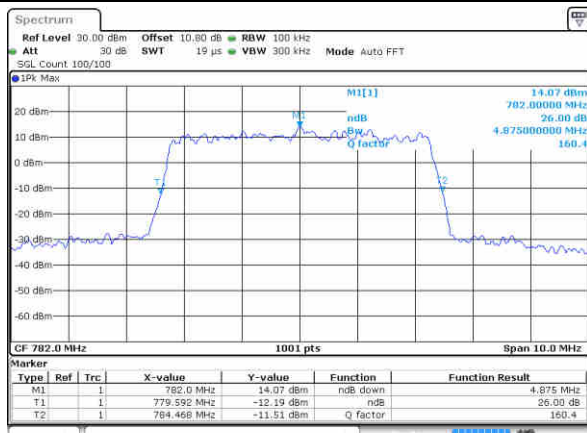


LTE Band 13

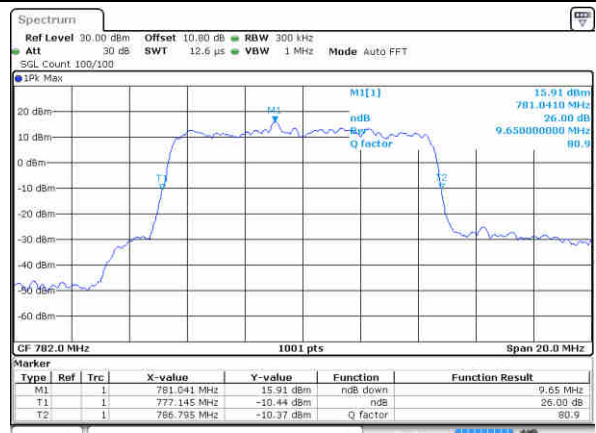
Lowest Channel / 5MHz / 64QAM



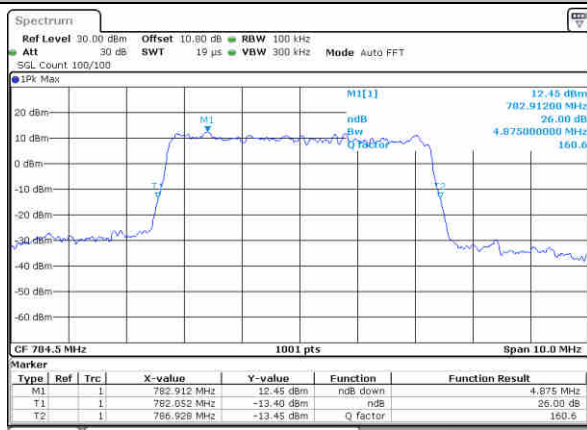
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



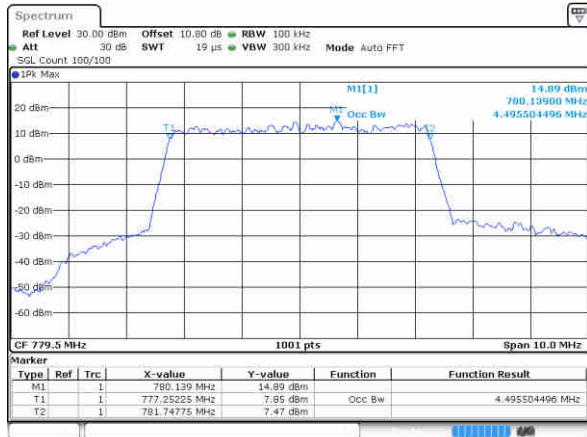
**Occupied Bandwidth**

Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.5	4.5	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	4.47	8.97	9.01	-	-	-	-
Highest CH	-	-	-	-	4.5	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	-	-	-	-	4.51	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	-	8.95	-	-	-	-	-
Highest CH	-	-	-	-	4.51	-	-	-	-	-	-	-

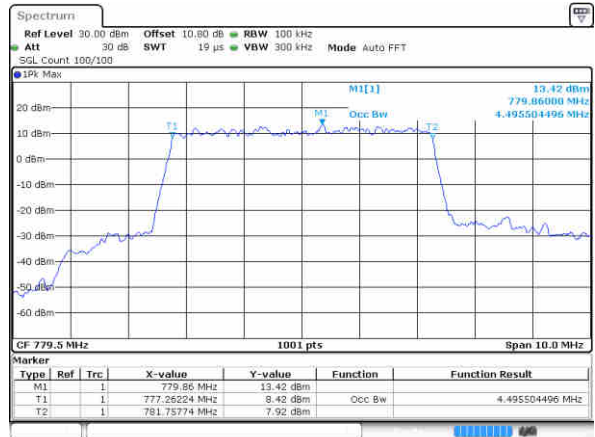


LTE Band 13

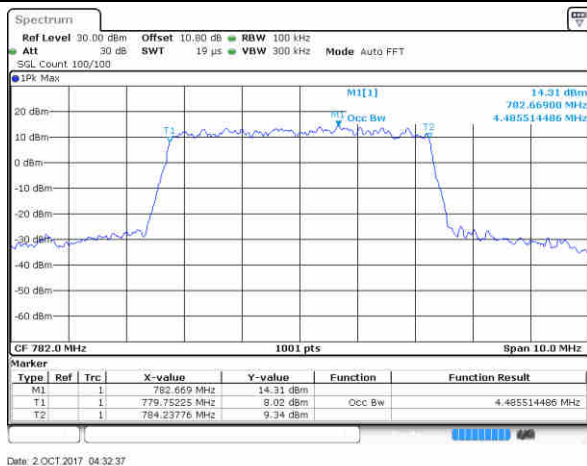
Lowest Channel / 5MHz / QPSK



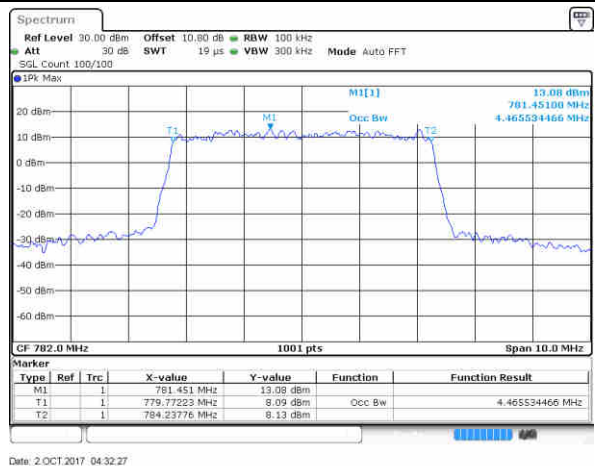
Lowest Channel / 5MHz / 16QAM



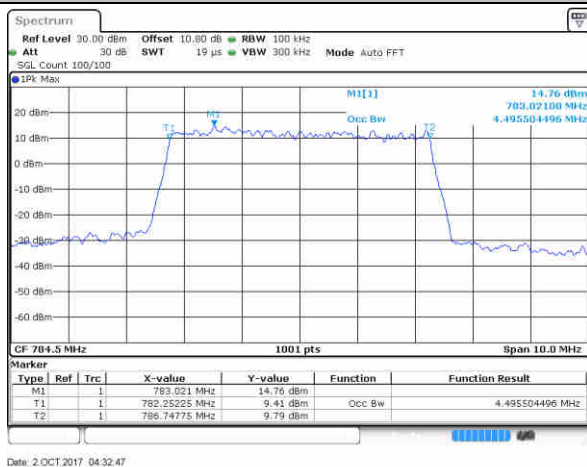
Middle Channel / 5MHz / QPSK



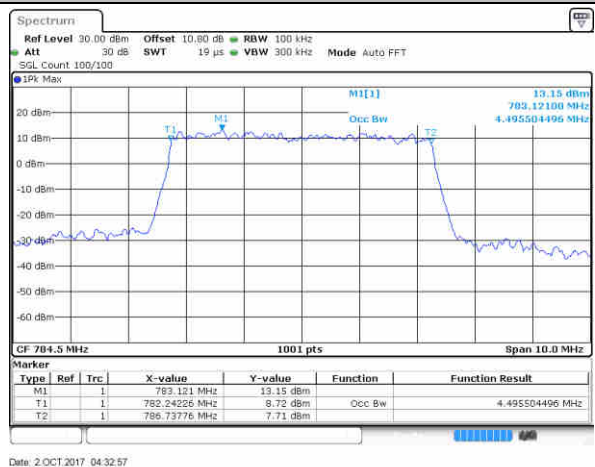
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM





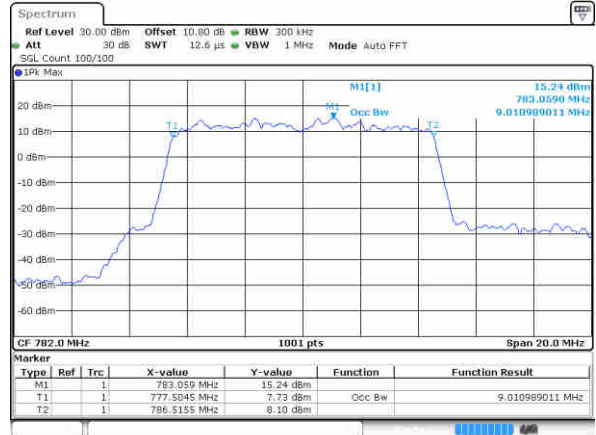
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 2.OCT.2017 04:52:06

Middle Channel / 10MHz / 16QAM

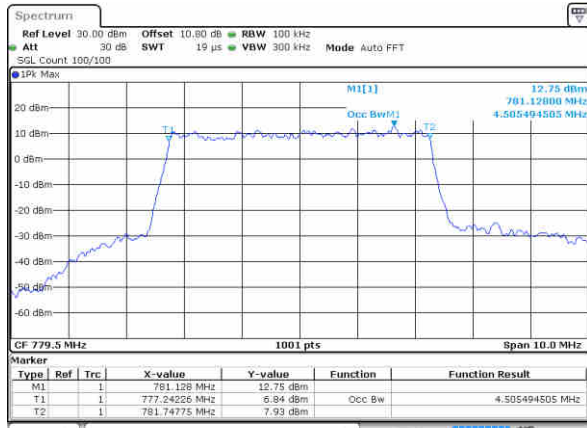


Date: 2.OCT.2017 04:52:16

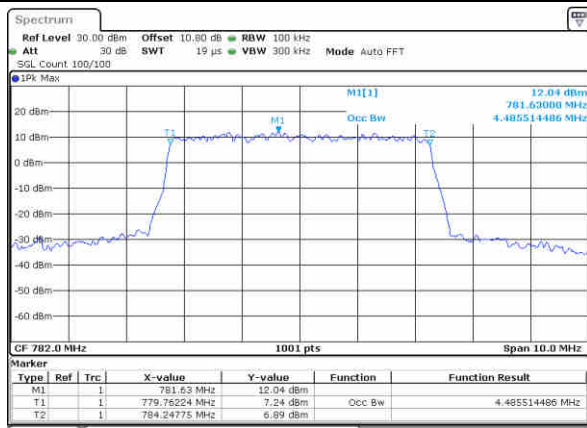


LTE Band 13

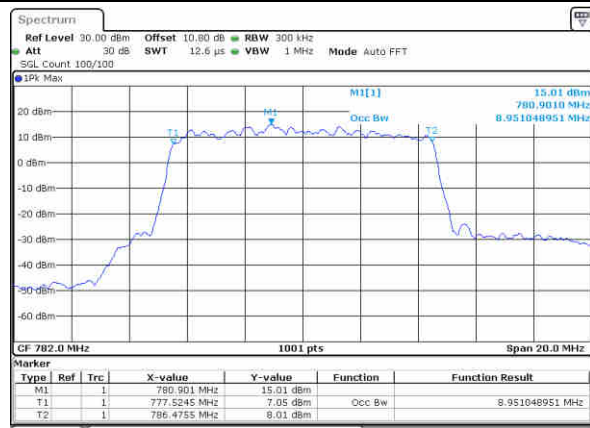
Lowest Channel / 5MHz / 64QAM



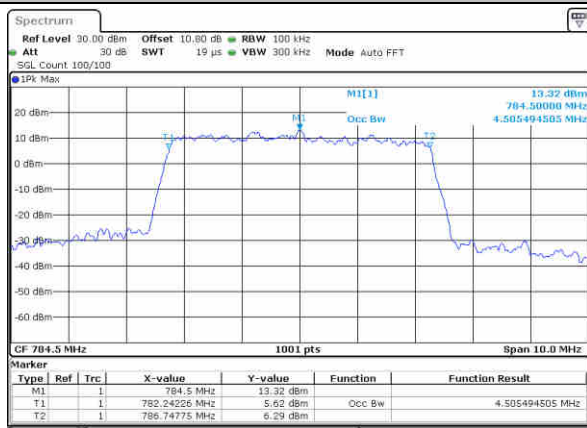
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM

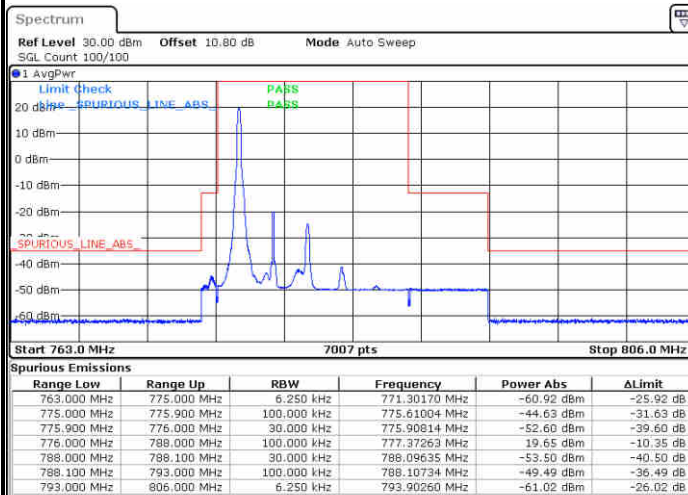




Conducted Band Edge

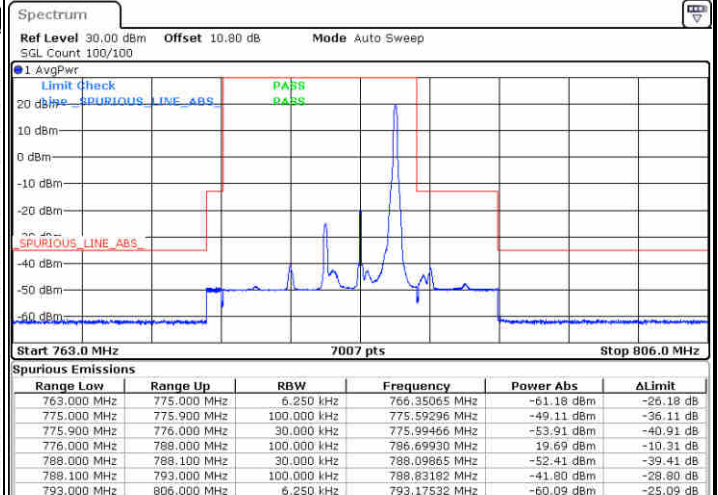
LTE Band 13 / 5MHz / QPSK

Lowest Band Edge / 1 RB



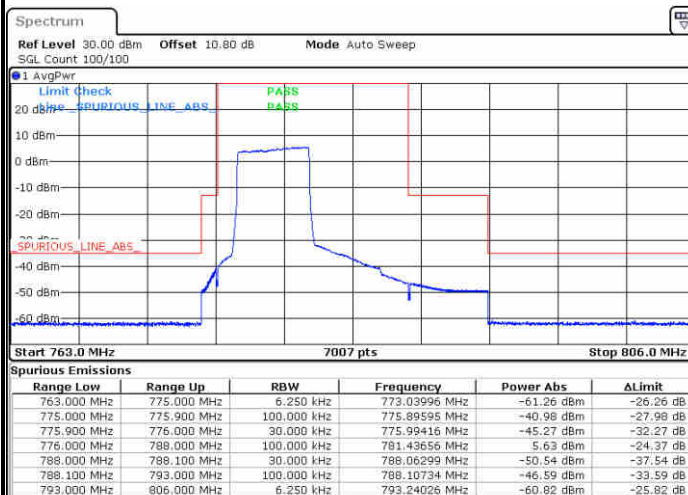
Date: 2.OCT.2017 04:28:23

Highest Band Edge / 1 RB



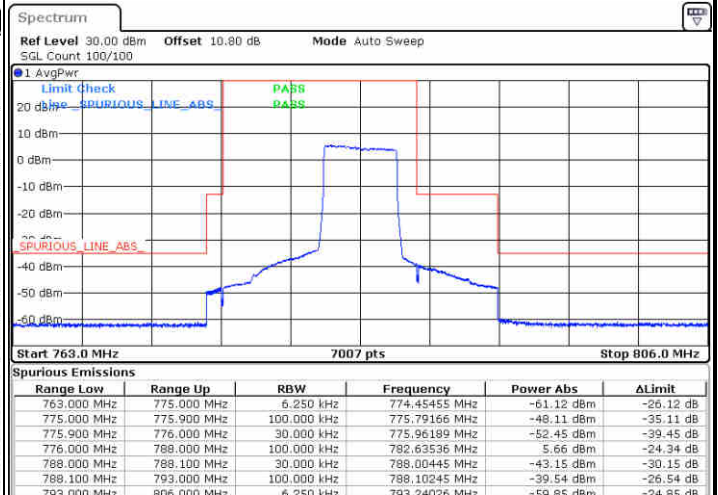
Date: 2.OCT.2017 04:39:52

Lowest Band Edge / Full RB



Date: 2.OCT.2017 04:23:26

Highest Band Edge / Full RB

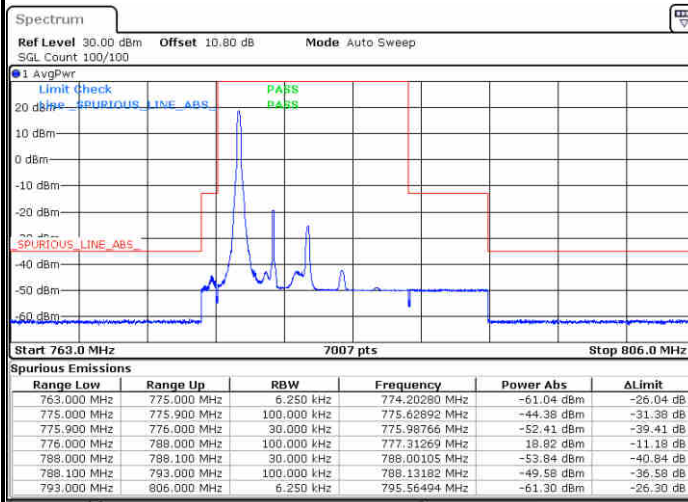


Date: 2.OCT.2017 04:34:56

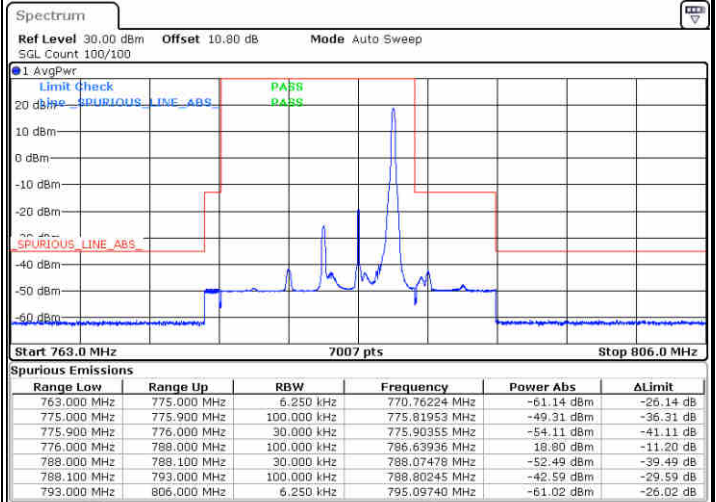


LTE Band 13 / 5MHz / 16QAM

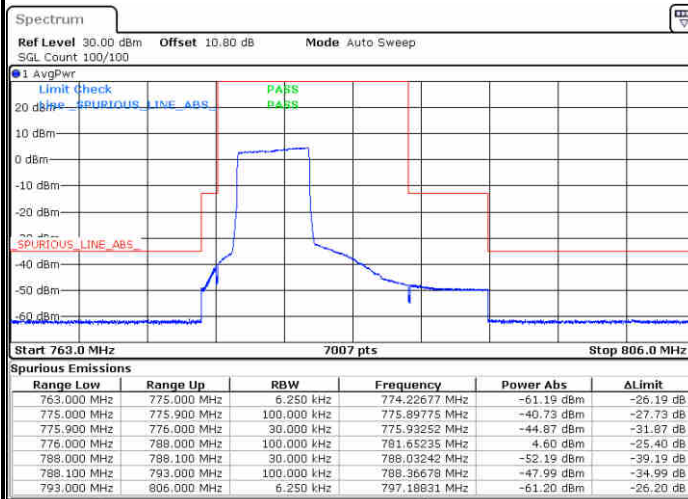
Lowest Band Edge / 1 RB



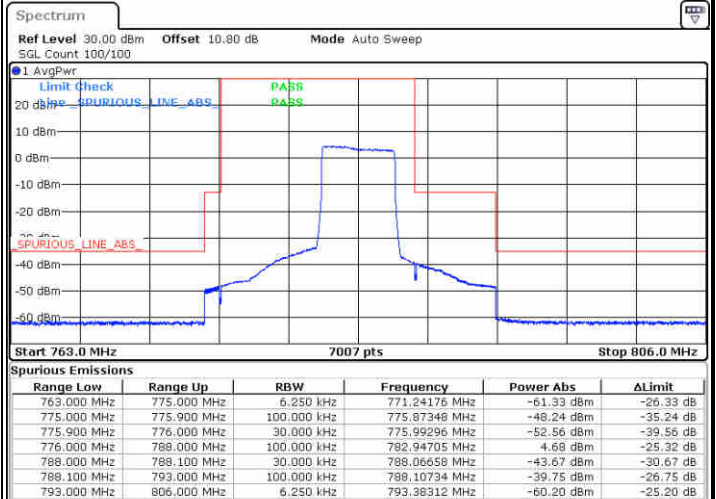
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



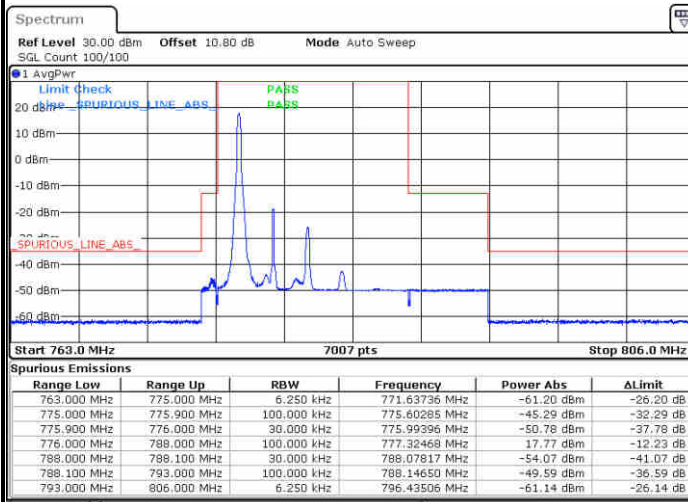
Highest Band Edge / Full RB



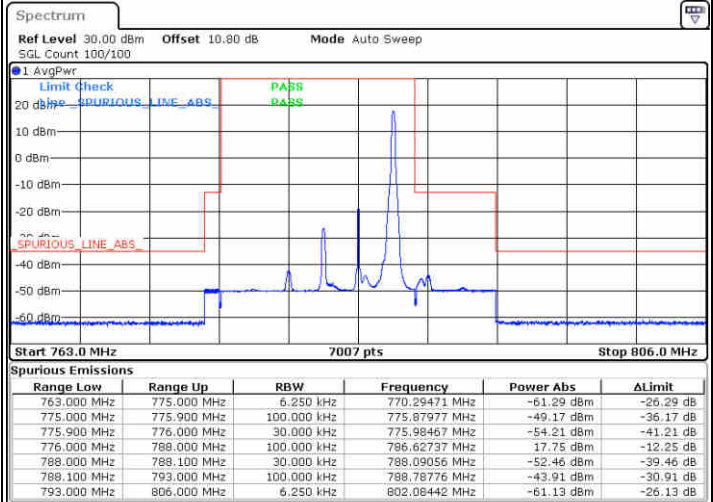


LTE Band 13 / 5MHz / 64QAM

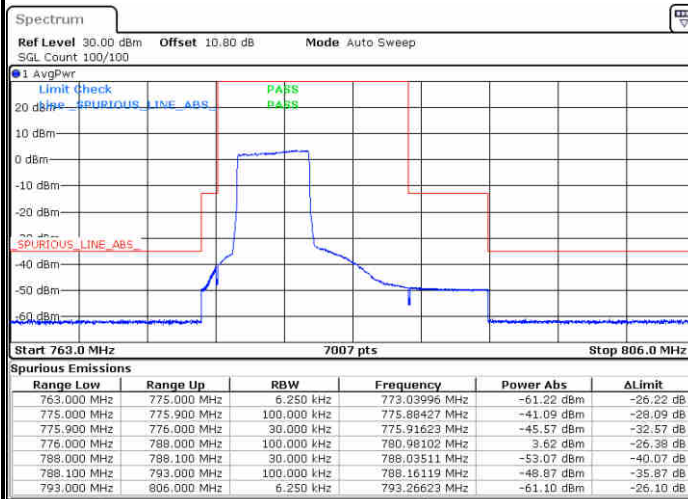
Lowest Band Edge / 1 RB



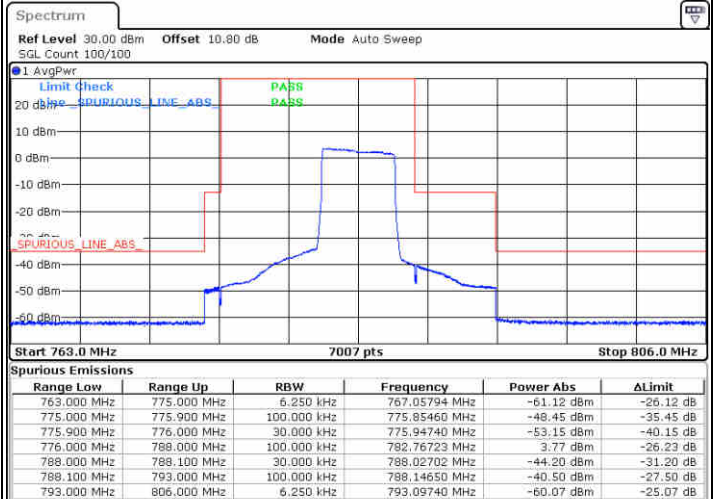
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



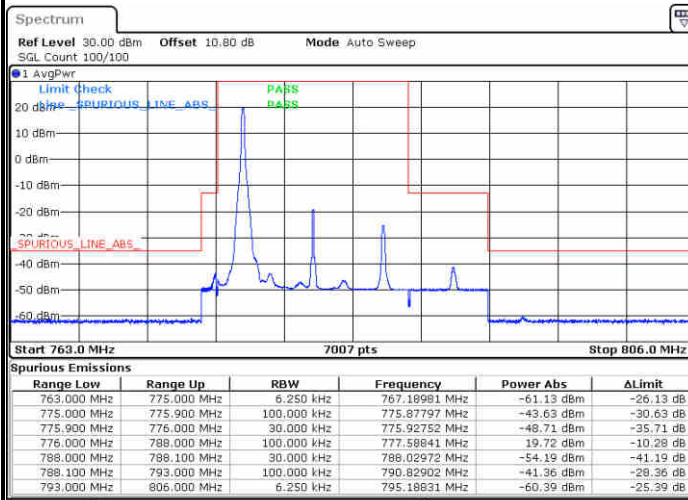
Highest Band Edge / Full RB





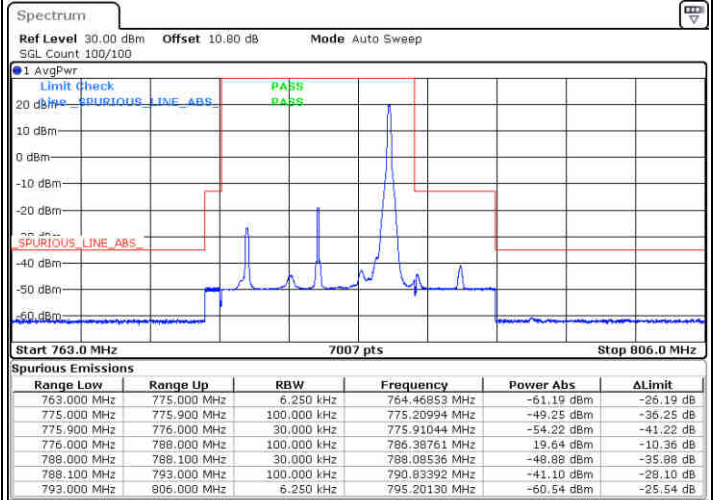
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB



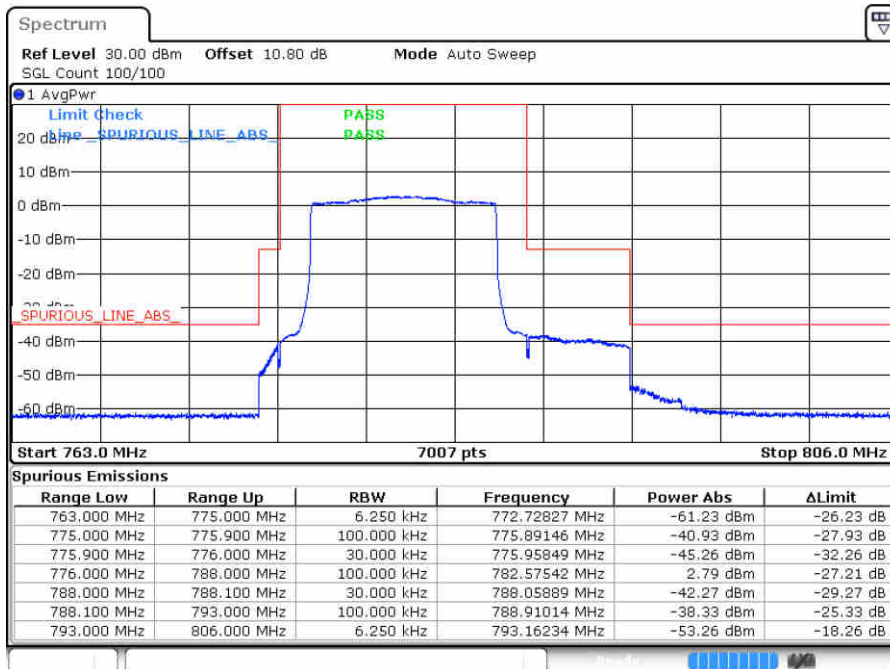
Date: 2.OCT.2017 04:59:11

Highest Band Edge / 1 RB



Date: 2.OCT.2017 05:00:49

Band Edge / Full RB



Date: 2.OCT.2017 04:54:14