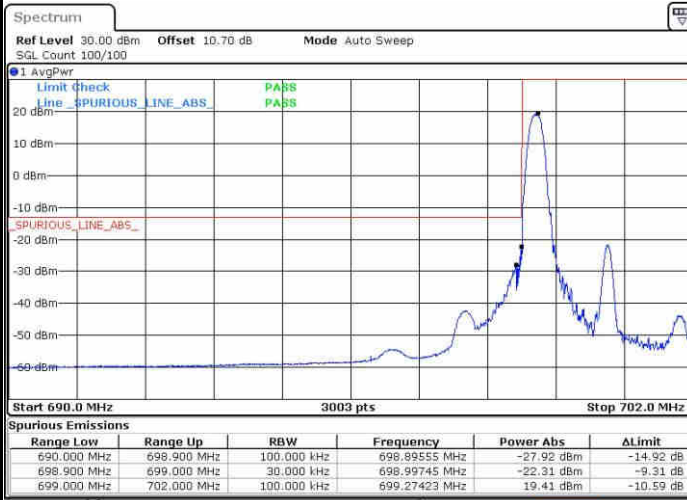




LTE Band 12 / 3MHz / 64QAM

Lowest Band Edge / 1 RB



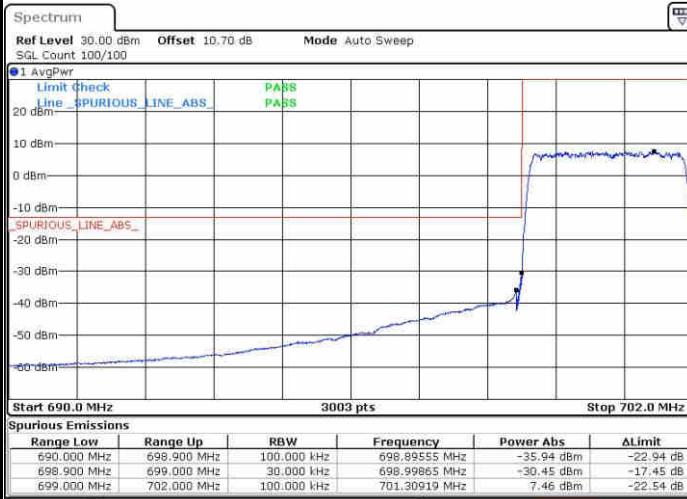
Date: 29 APR 2019 17:38:06

Highest Band Edge / 1 RB



Date: 29 APR 2019 17:42:07

Lowest Band Edge / Full RB



Date: 29 APR 2019 17:37:05

Highest Band Edge / Full RB

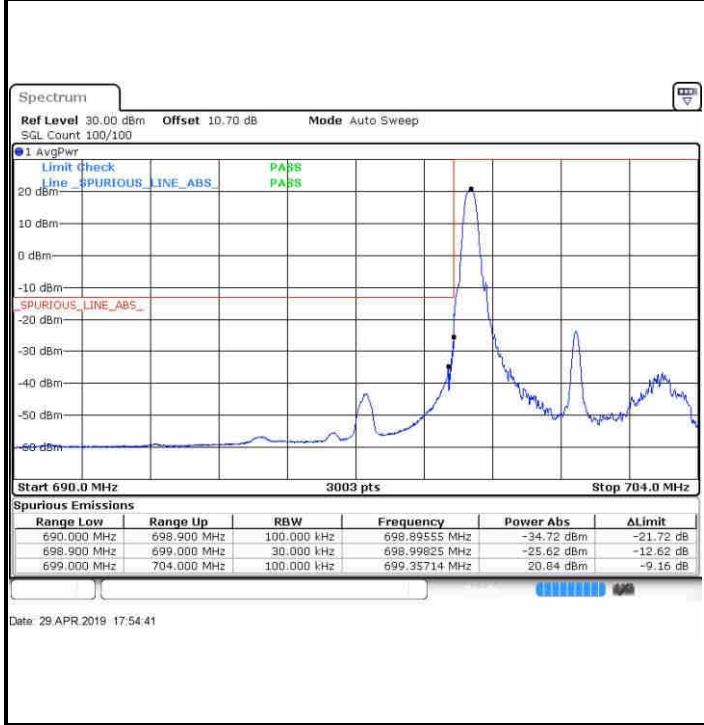


Date: 29 APR 2019 17:41:06

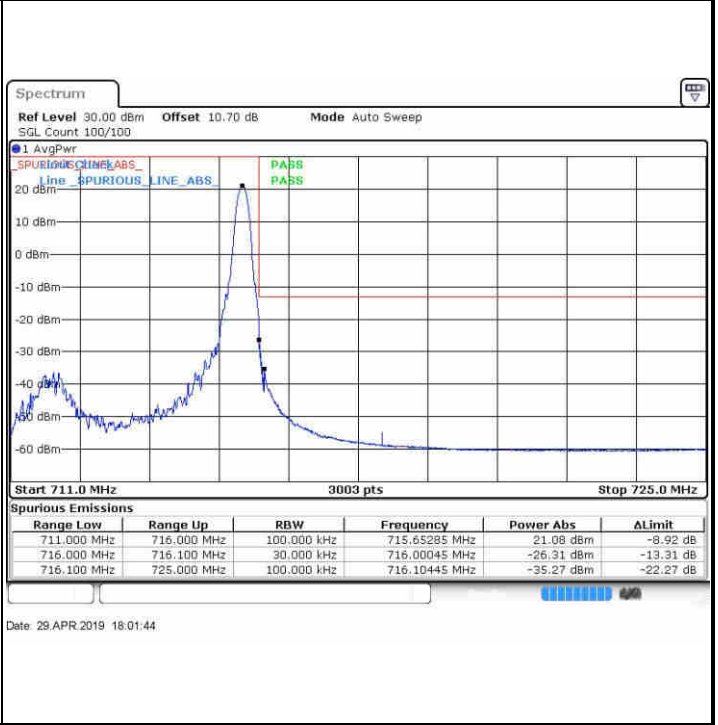


**LTE Band 12 / 5MHz / QPSK**

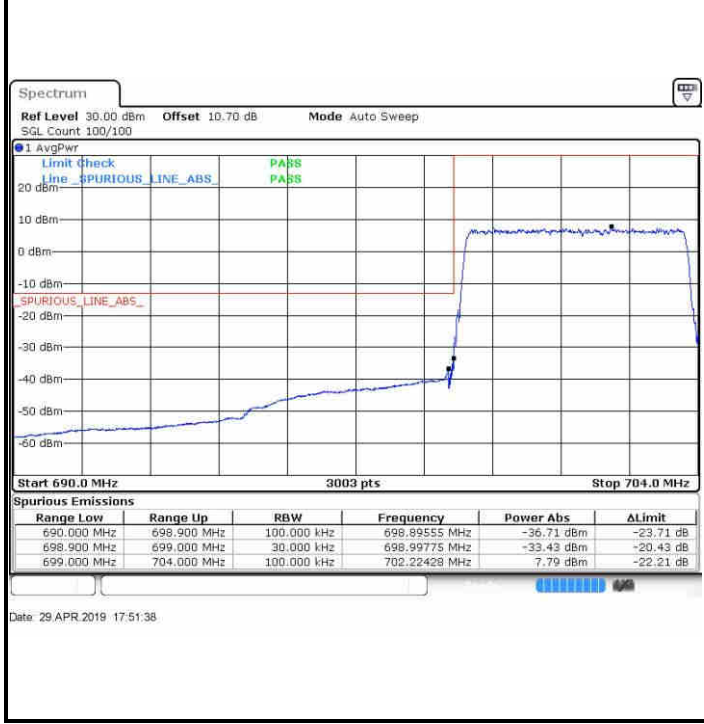
**Lowest Band Edge / 1 RB**



**Highest Band Edge / 1 RB**



**Lowest Band Edge / Full RB**



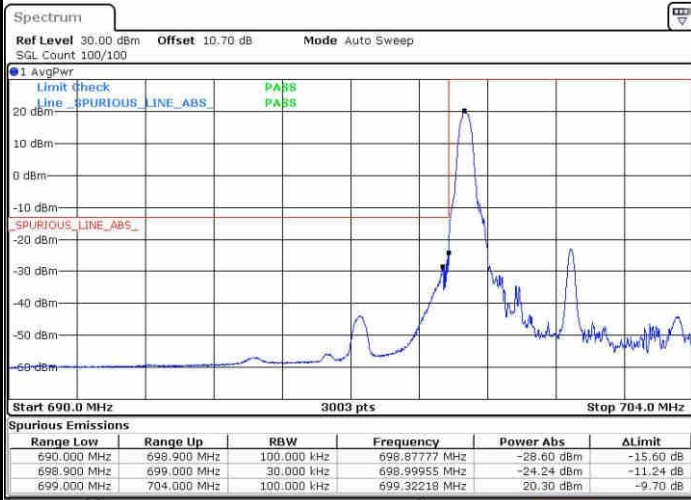
**Highest Band Edge / Full RB**





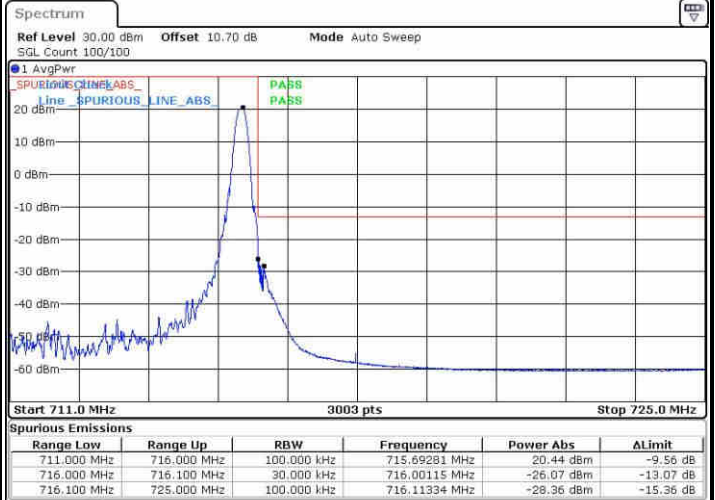
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1RB



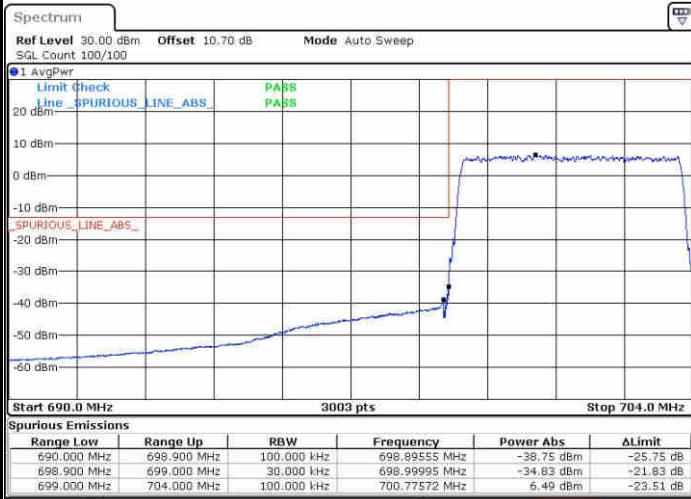
Date: 29 APR 2019 17:53:40

Highest Band Edge / 1 RB



Date: 29 APR 2019 18:02:45

Lowest Band Edge / Full RB



Date: 29 APR 2019 17:52:39

Highest Band Edge / Full RB

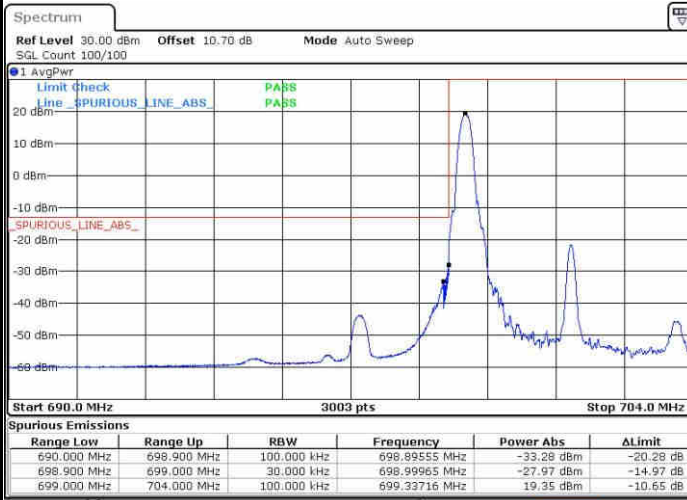


Date: 29 APR 2019 18:00:43



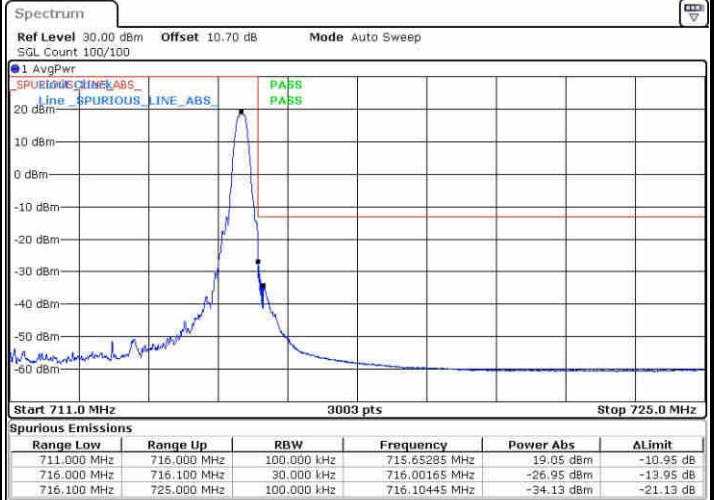
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1RB



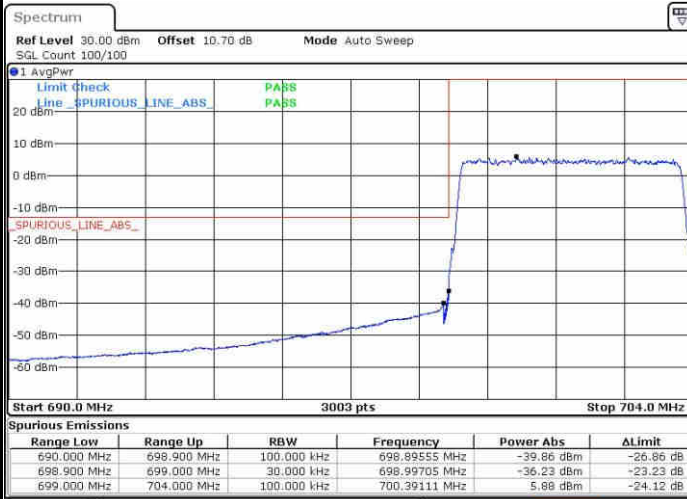
Date: 29 APR 2019 17:45:10

Highest Band Edge / 1 RB



Date: 29 APR 2019 17:48:12

Lowest Band Edge / Full RB



Date: 29 APR 2019 17:44:09

Highest Band Edge / Full RB



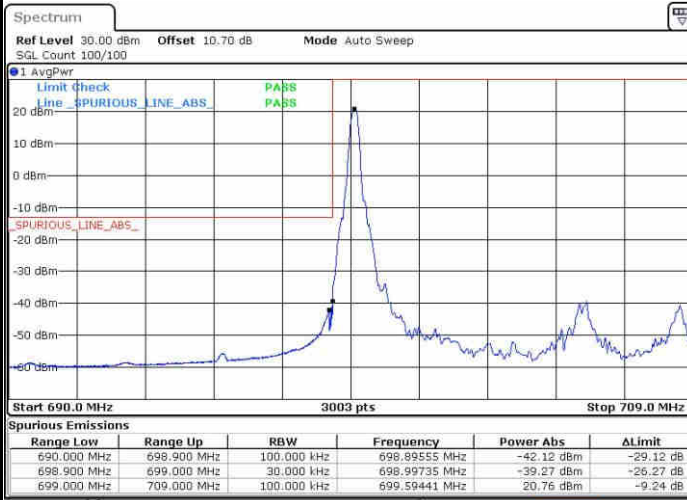
Date: 29 APR 2019 17:48:11





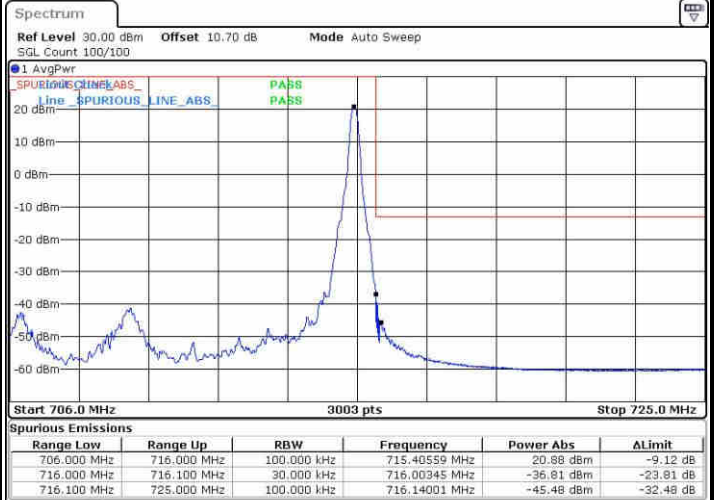
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



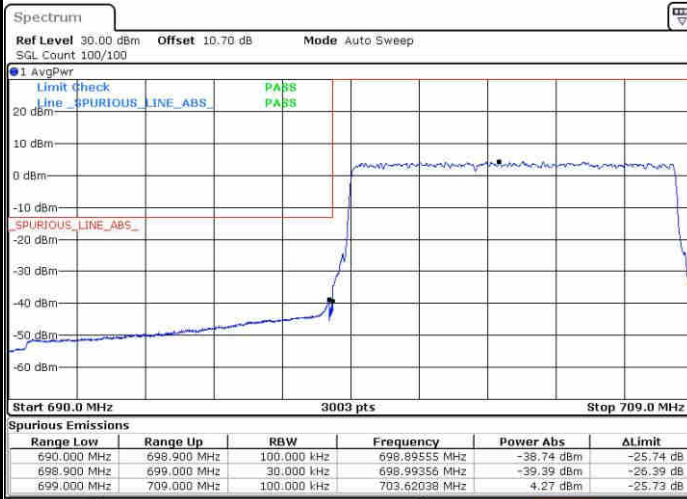
Date: 29 APR 2019 18:41:16

Highest Band Edge / 1 RB



Date: 29 APR 2019 18:48:19

Lowest Band Edge / Full RB



Date: 29 APR 2019 18:38:13

Highest Band Edge / Full RB

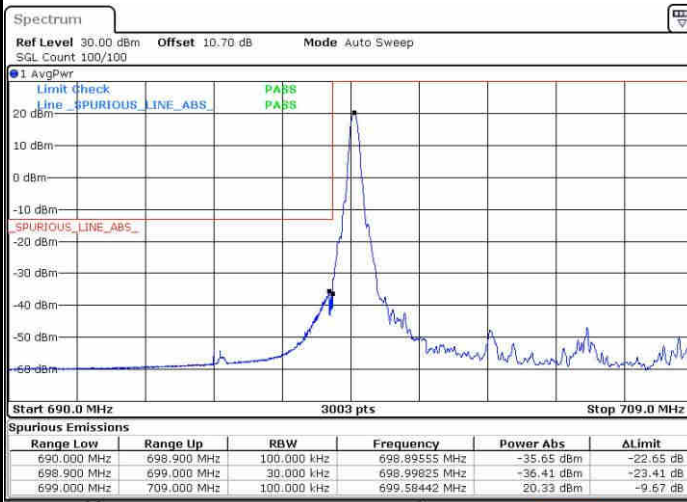


Date: 29 APR 2019 18:46:16



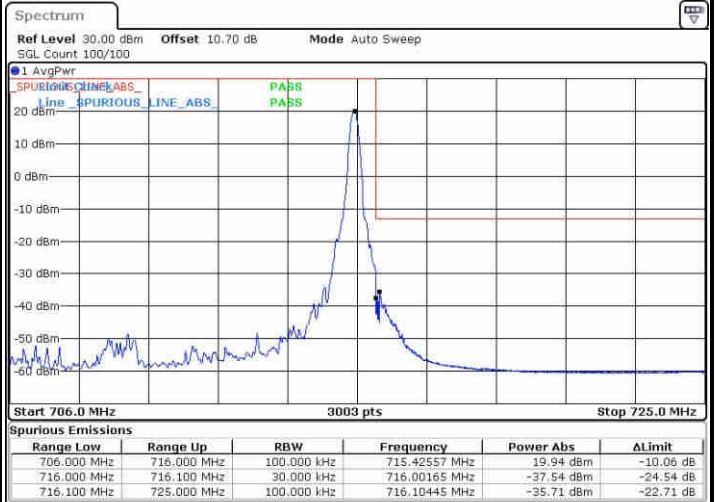
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



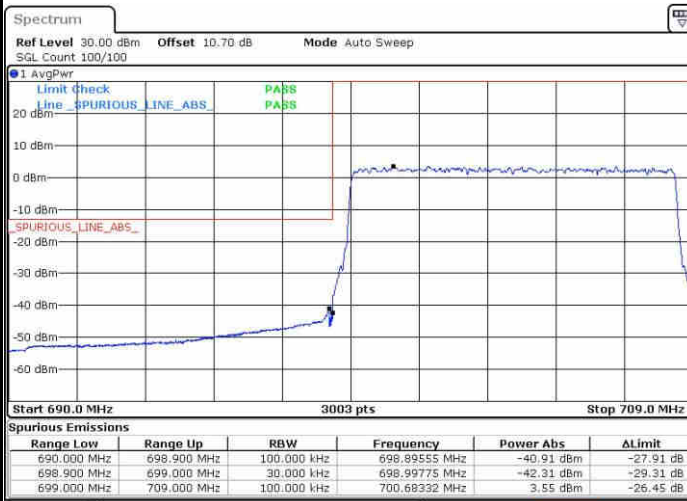
Date: 29 APR 2019 18:40:15

Highest Band Edge / 1 RB



Date: 29 APR 2019 18:48:18

Lowest Band Edge / Full RB



Date: 29 APR 2019 18:39:14

Highest Band Edge / Full RB

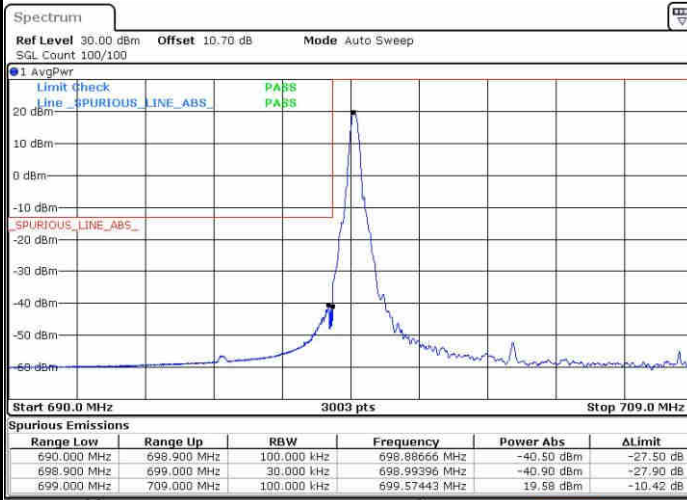


Date: 29 APR 2019 18:47:17



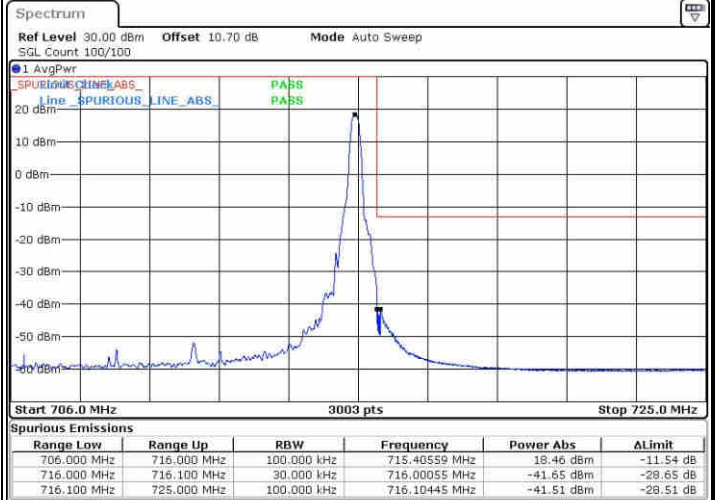
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



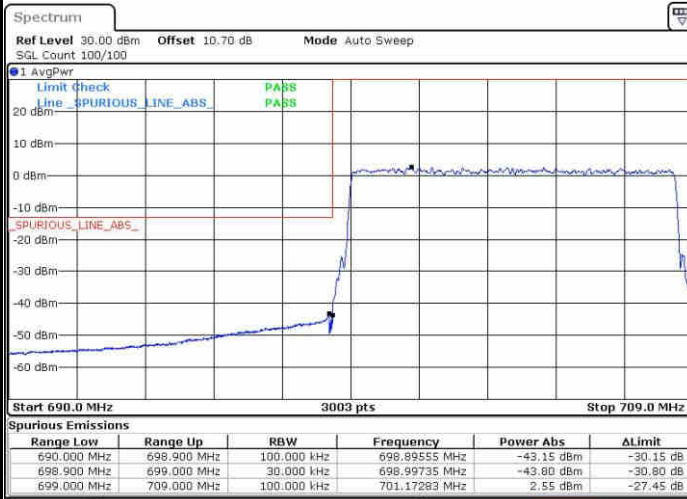
Date: 29 APR 2019 18:52:59

Highest Band Edge / 1 RB



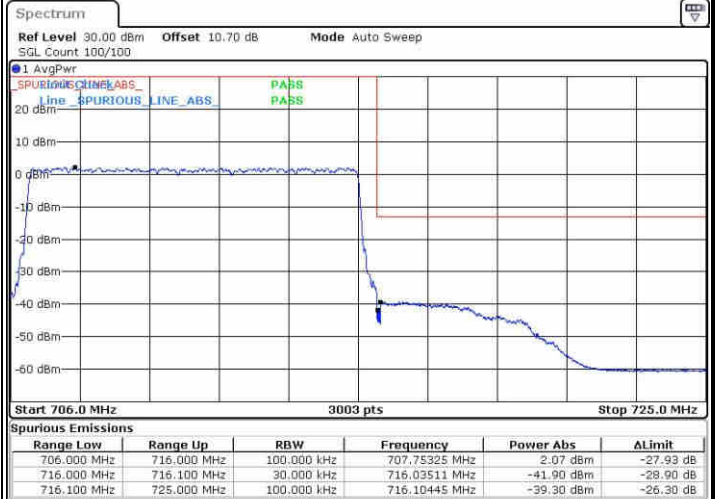
Date: 29 APR 2019 18:57:00

Lowest Band Edge / Full RB



Date: 29 APR 2019 18:51:57

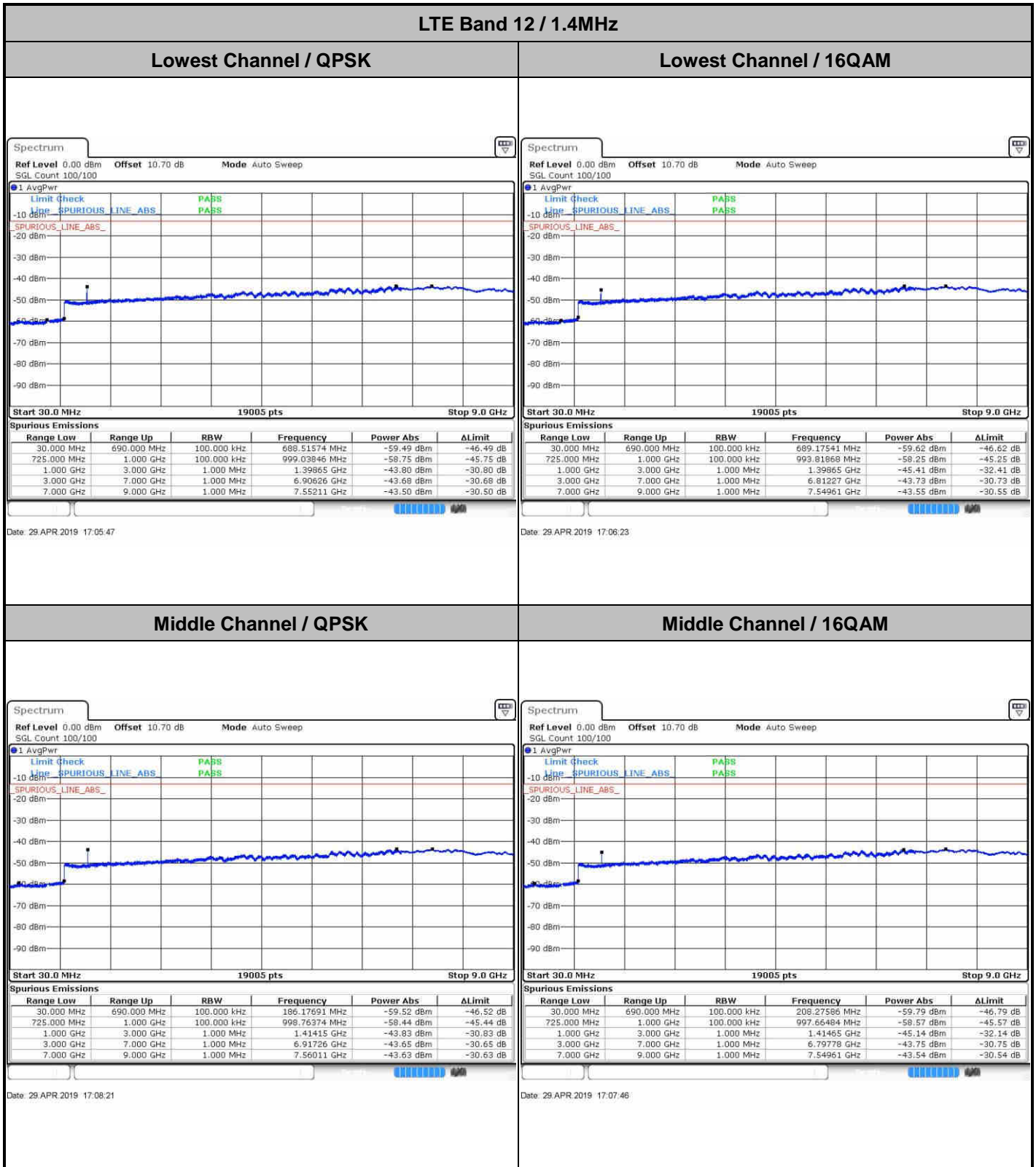
Highest Band Edge / Full RB



Date: 29 APR 2019 18:55:59



# Conducted Spurious Emission

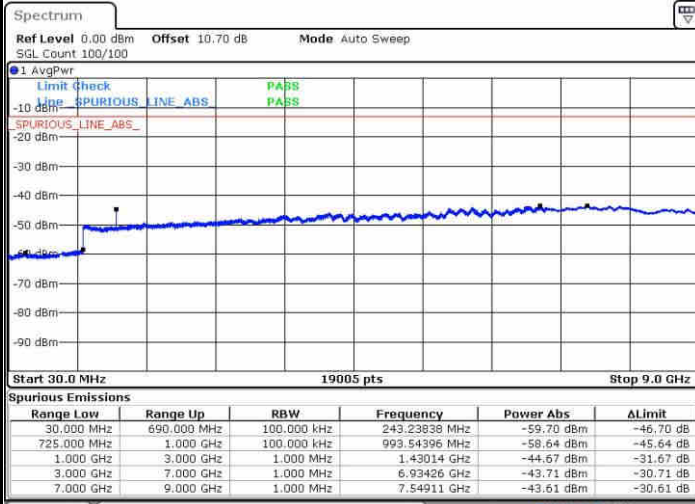






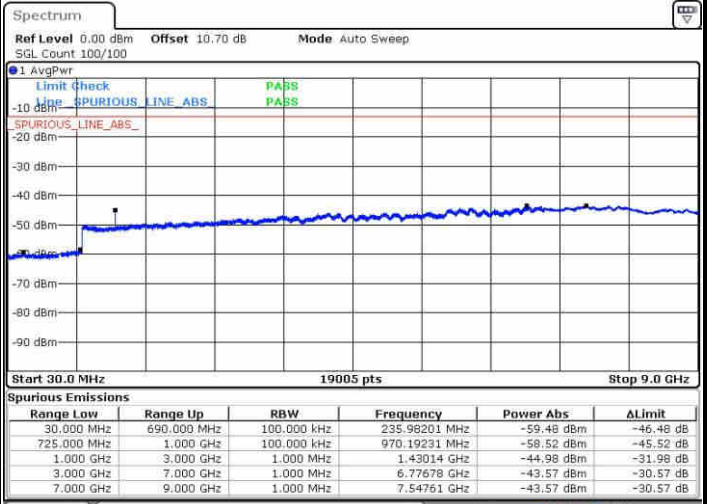
LTE Band 12 / 1.4MHz

Highest Channel / QPSK



Date: 29 APR 2019 17:13:50

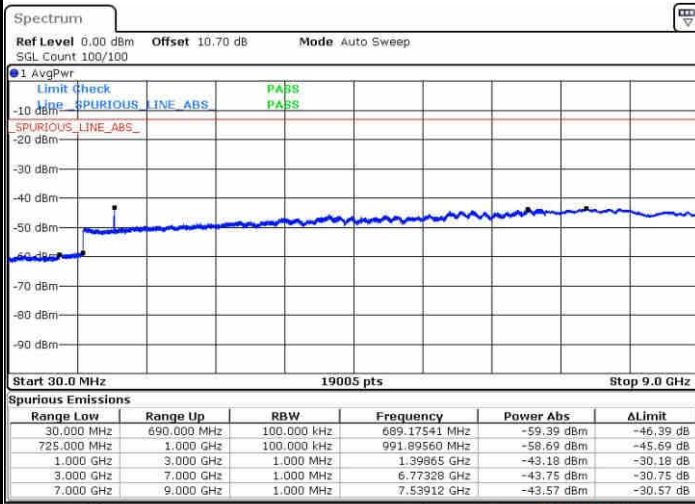
Highest Channel / 16QAM



Date: 29 APR 2019 17:14:26

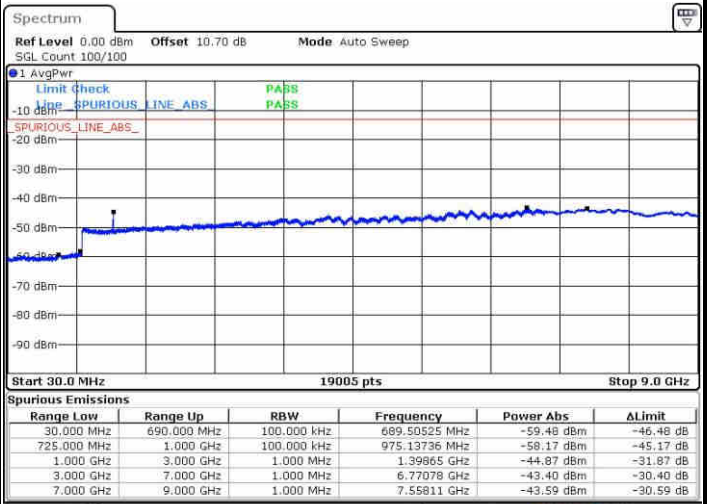
LTE Band 12 / 3MHz

Lowest Channel / QPSK



Date: 29 APR 2019 17:27:00

Lowest Channel / 16QAM



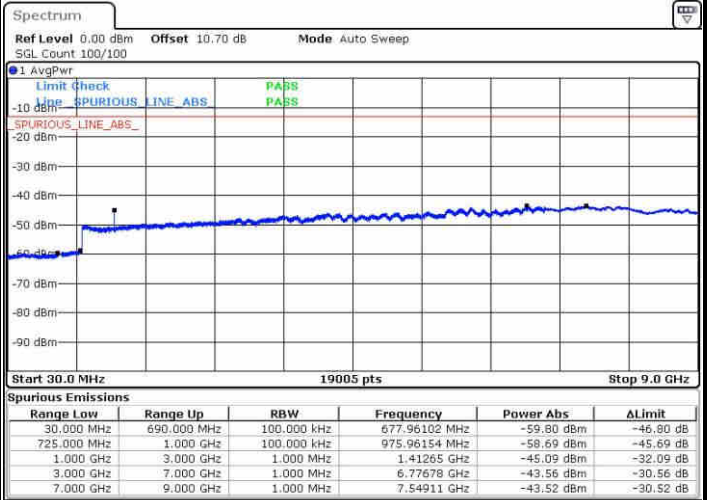
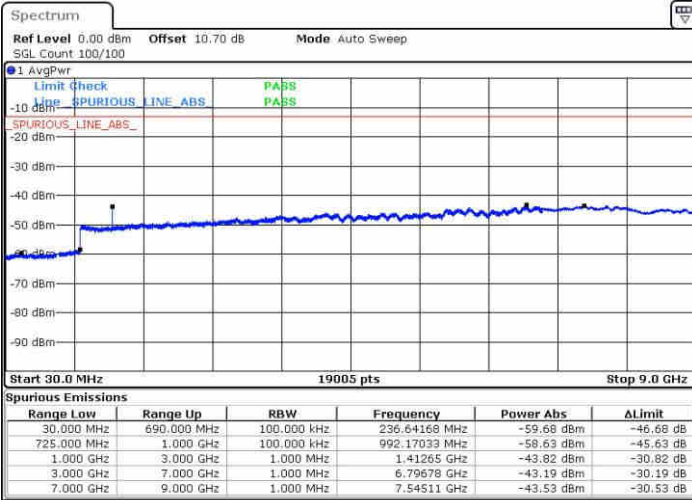
Date: 29 APR 2019 17:27:36



LTE Band 12 / 3MHz

Middle Channel / QPSK

Middle Channel / 16QAM

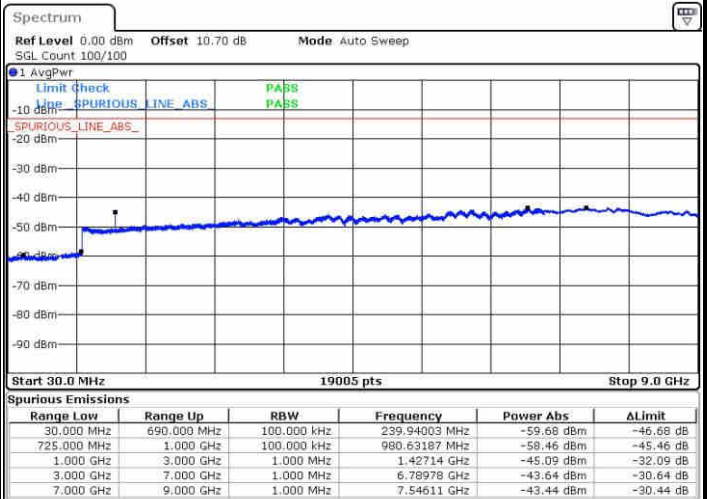
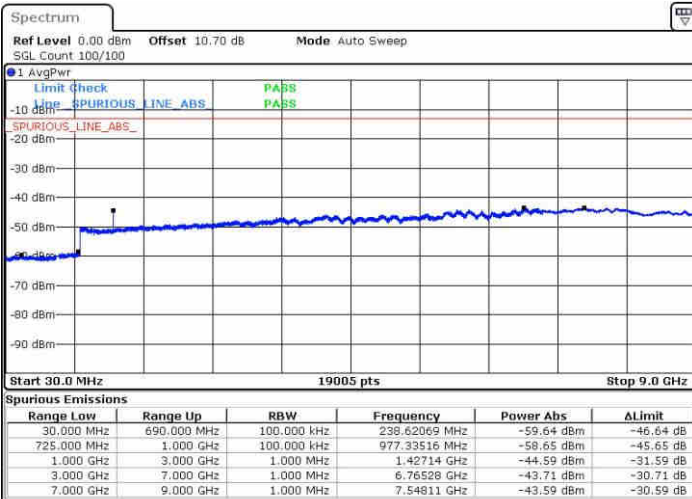


Date: 29 APR 2019 17:29:35

Date: 29 APR 2019 17:28:59

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 29 APR 2019 17:35:03

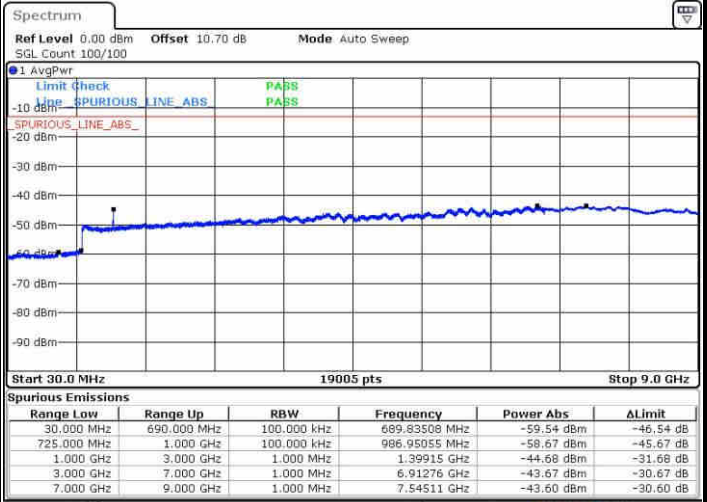
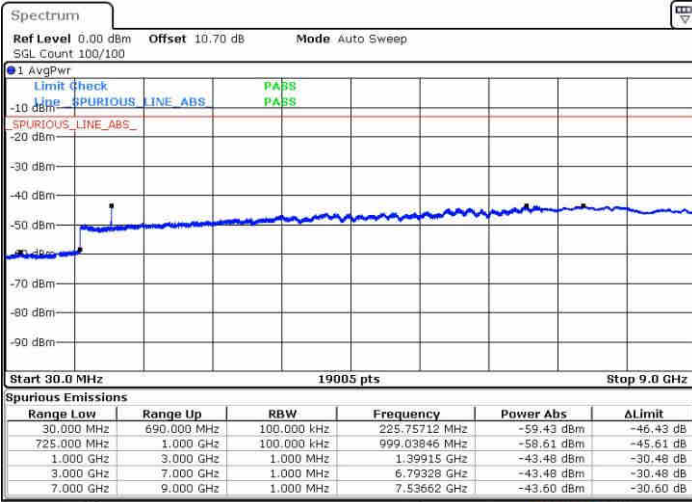
Date: 29 APR 2019 17:35:40



LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

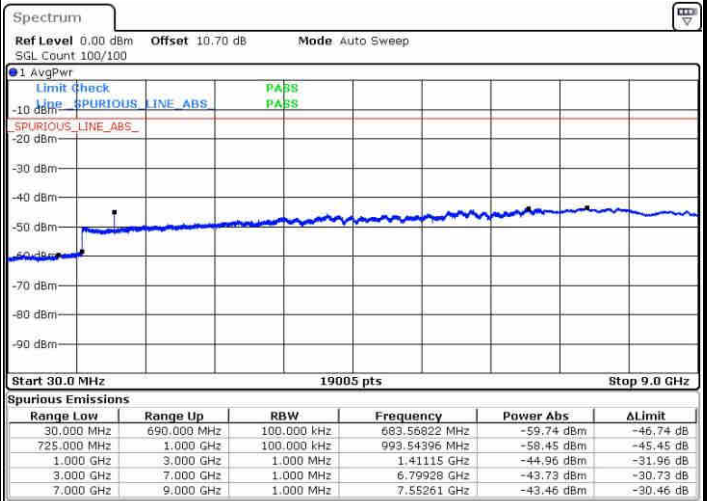
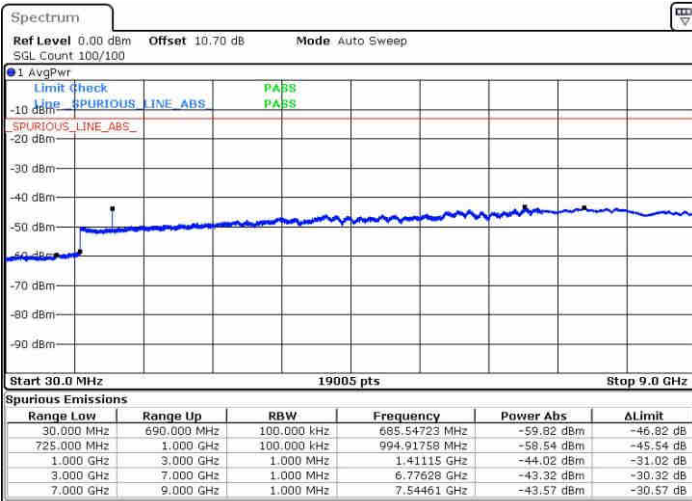


Date: 29 APR 2019 17:55:18

Date: 29 APR 2019 17:55:54

Middle Channel / QPSK

Middle Channel / 16QAM



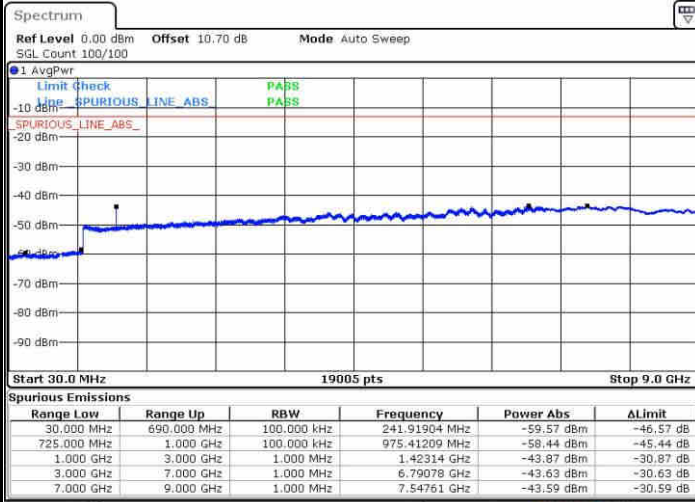
Date: 29 APR 2019 17:57:52

Date: 29 APR 2019 17:57:17



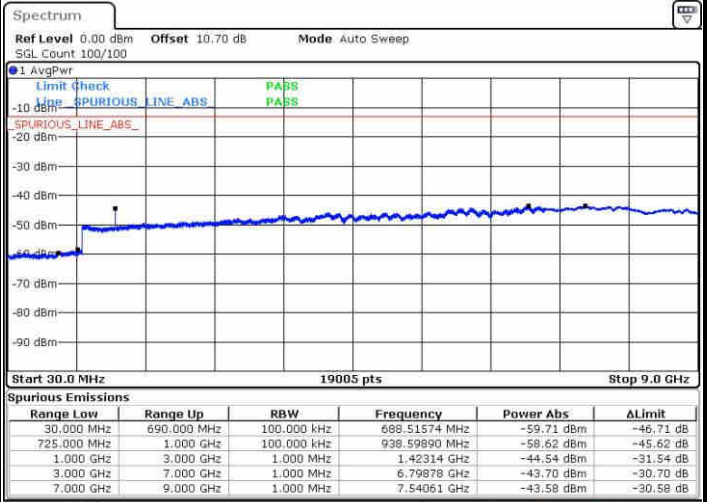
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 29 APR 2019 18:03:57

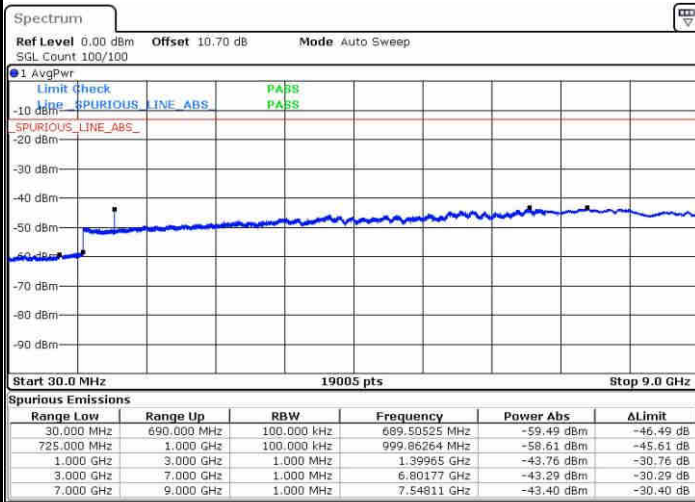
Highest Channel / 16QAM



Date: 29 APR 2019 18:03:21

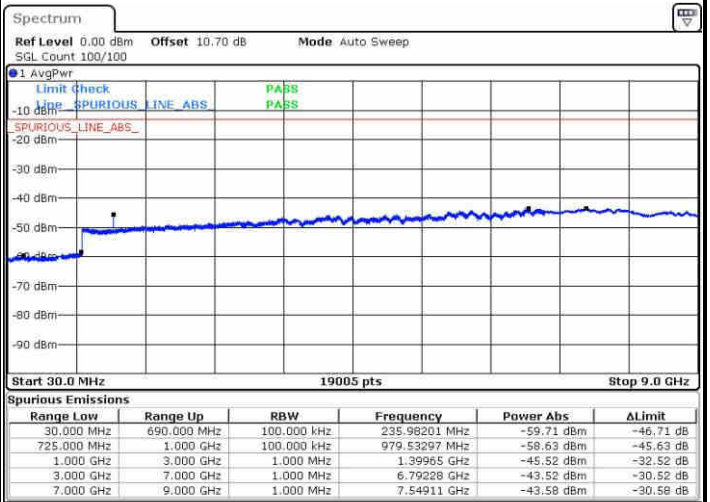
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 29 APR 2019 18:41:53

Lowest Channel / 16QAM



Date: 29 APR 2019 18:42:29

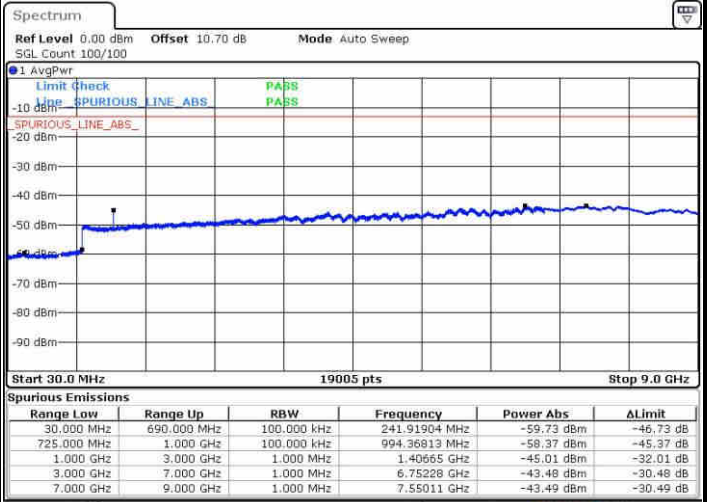
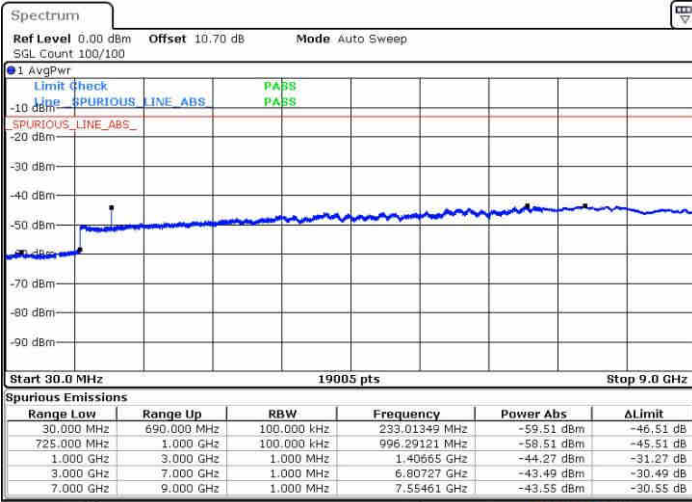




LTE Band 12 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM

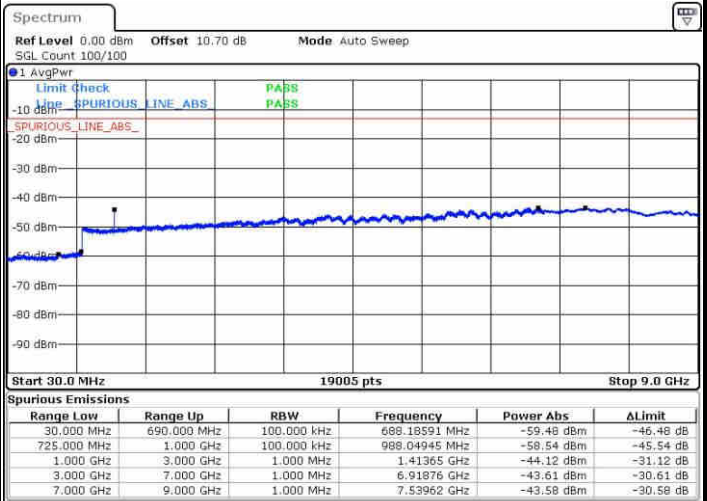
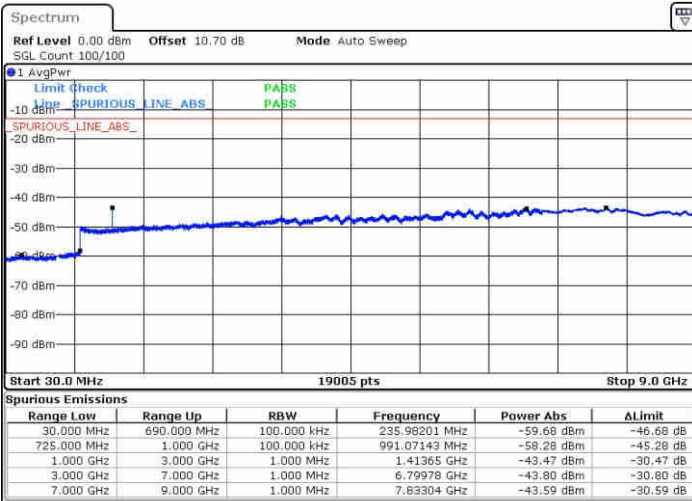


Date: 29 APR 2019 18:44:27

Date: 29 APR 2019 18:43:51

Highest Channel / QPSK

Highest Channel / 16QAM

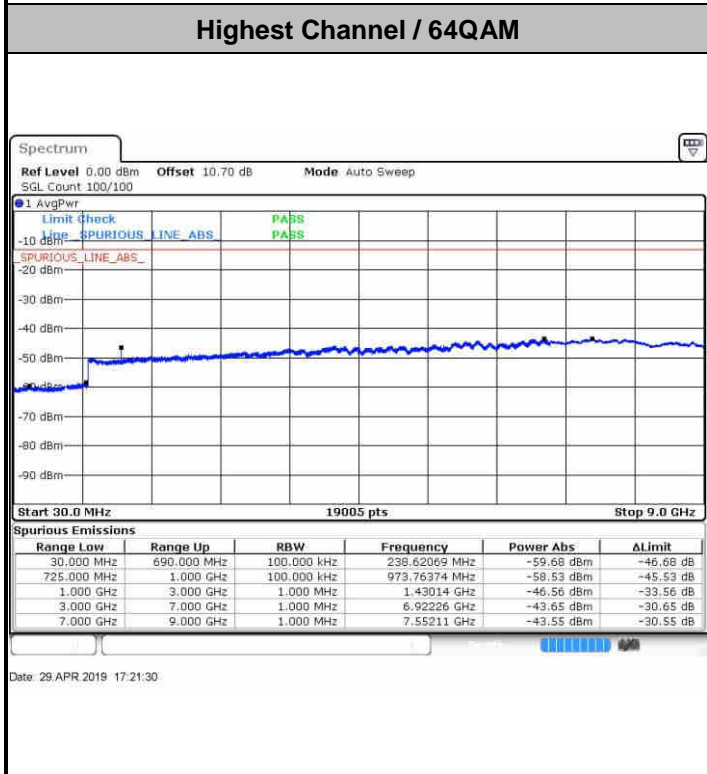
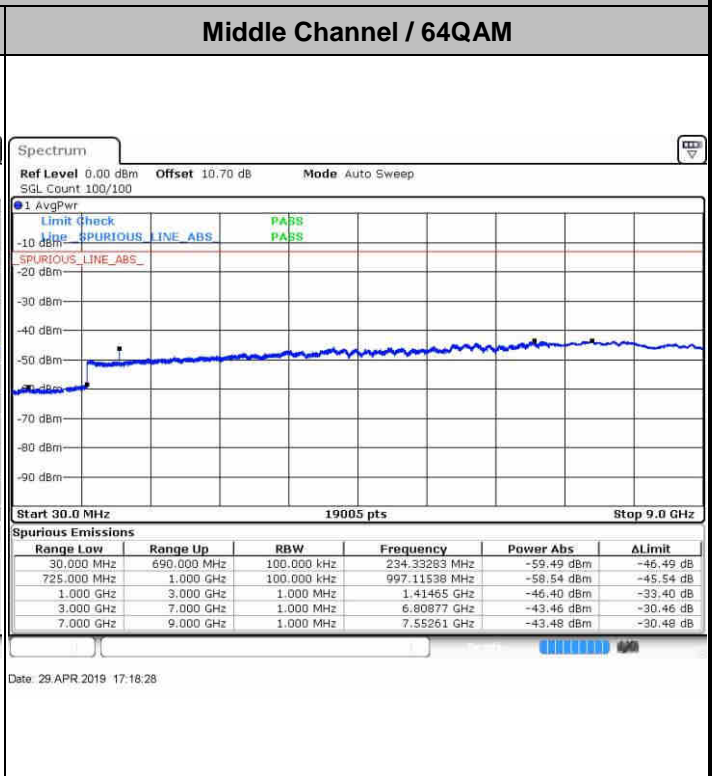
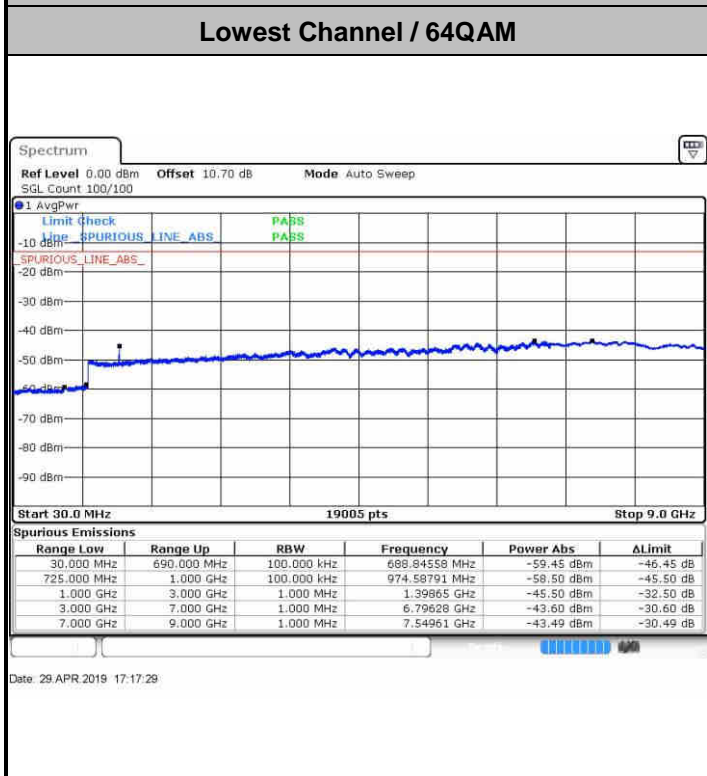


Date: 29 APR 2019 18:49:56

Date: 29 APR 2019 18:50:32



**LTE Band 12 / 1.4MHz**

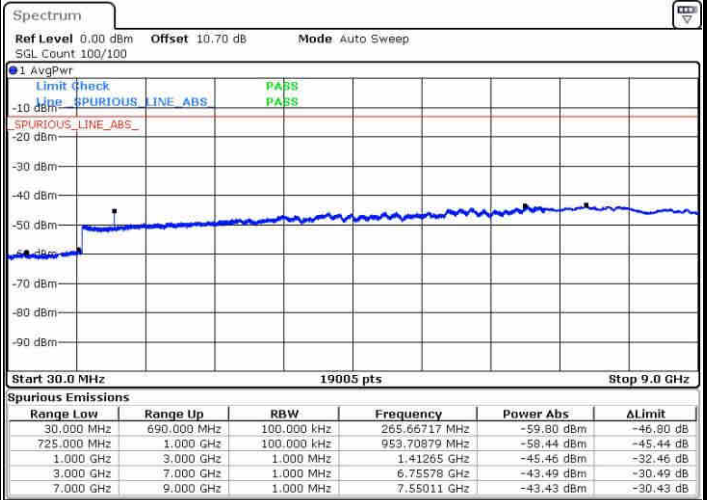
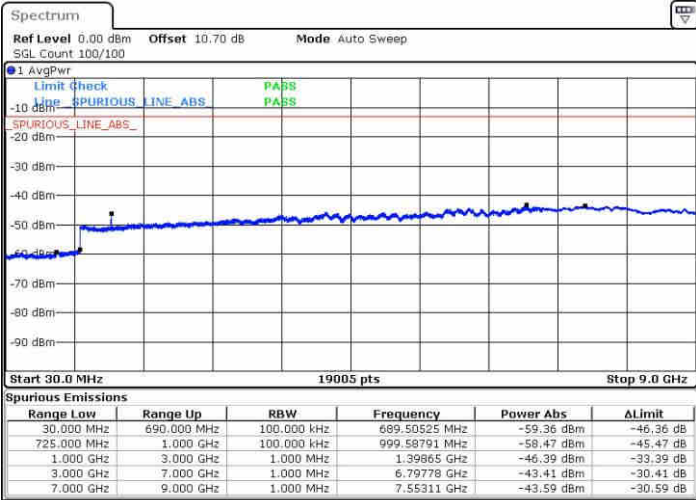




LTE Band 12 / 3MHz

Lowest Channel / 64QAM

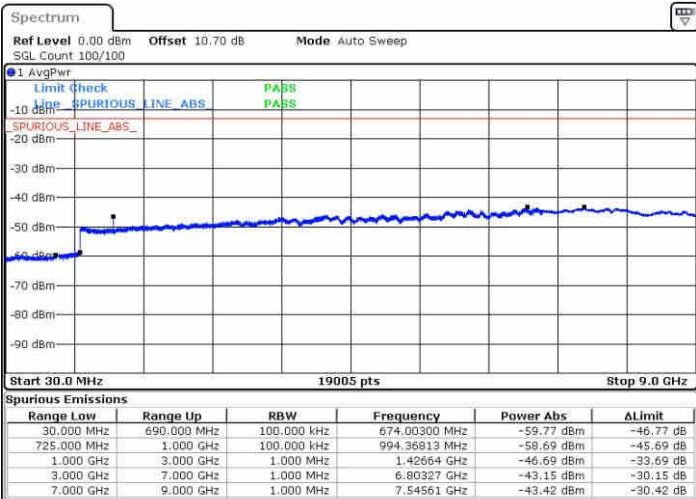
Middle Channel / 64QAM



Date: 29 APR 2019 17:38:42

Date: 29 APR 2019 17:39:42

Highest Channel / 64QAM



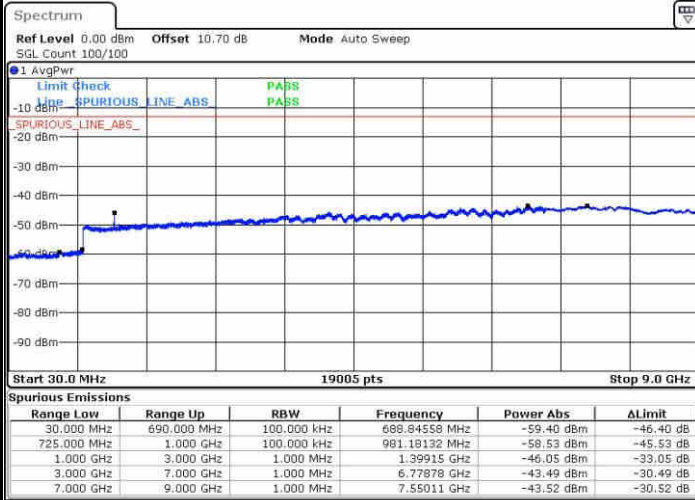
Date: 29 APR 2019 17:42:44



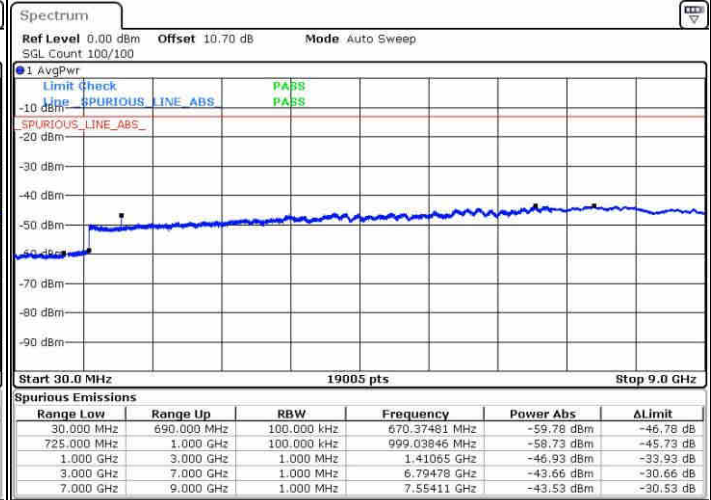
LTE Band 12 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

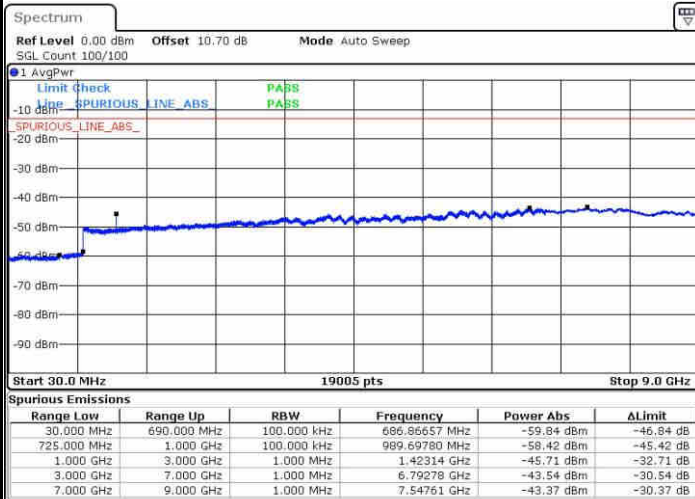


Date: 29 APR 2019 17:45:47



Date: 29 APR 2019 17:46:46

Highest Channel / 64QAM



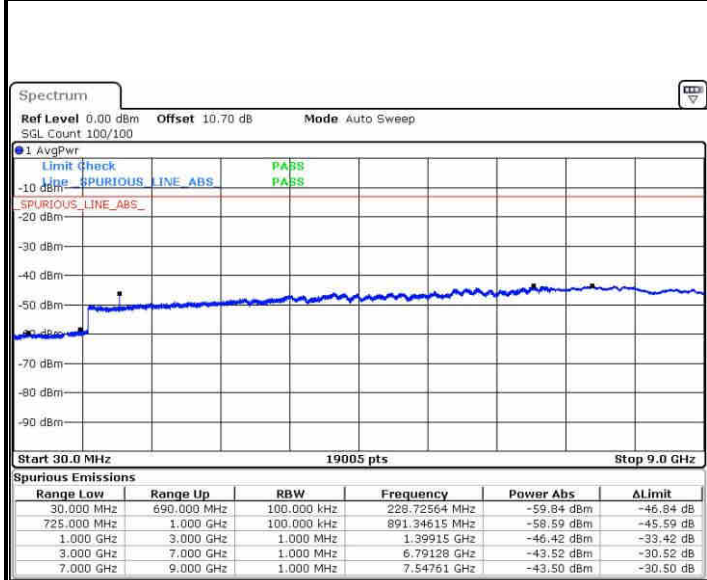
Date: 29 APR 2019 17:48:48





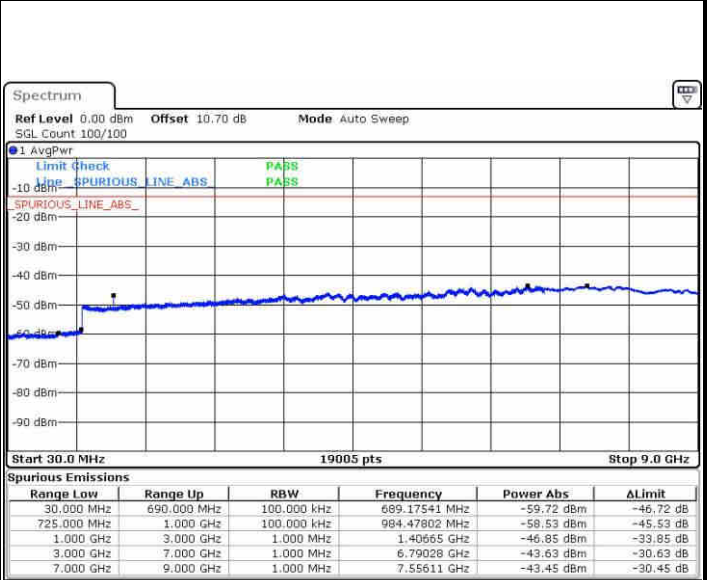
**LTE Band 12 / 10MHz**

**Lowest Channel / 64QAM**



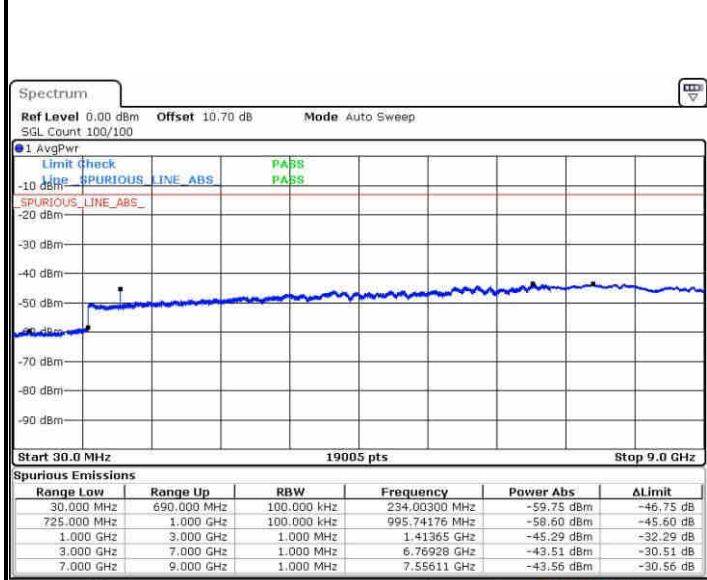
Date: 29 APR 2019 18:53:35

**Middle Channel / 64QAM**



Date: 29 APR 2019 18:54:35

**Highest Channel / 64QAM**



Date: 29 APR 2019 18:57:37



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	0.0035	PASS
40	Normal Voltage	0.0014	
30	Normal Voltage	0.0023	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0025	
0	Normal Voltage	0.0014	
-10	Normal Voltage	0.0068	
-20	Normal Voltage	0.0028	
-30	Normal Voltage	0.0024	
20	Maximum Voltage	0.0013	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0040	

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

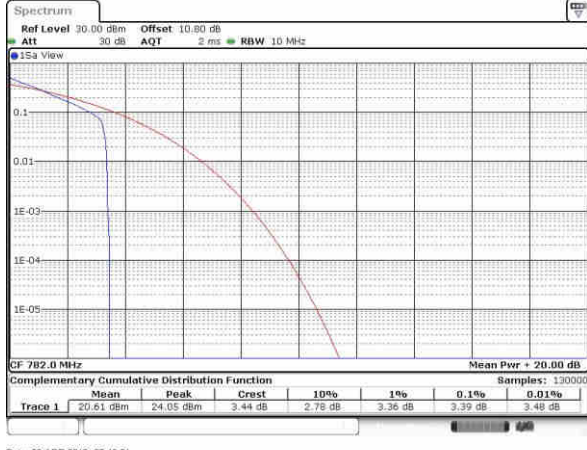
### Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	<b>PASS</b>
Middle CH	3.39	5.01	3.86	5.83	
Highest CH	-	-	-	-	
Mode	LTE Band 13 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	<b>PASS</b>
Middle CH	5.19	6.49	-	-	
Highest CH	-	-	-	-	



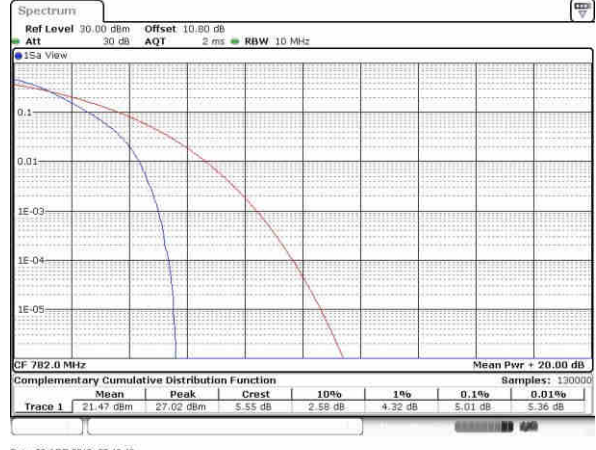
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 29 APR 2019 07:48:31

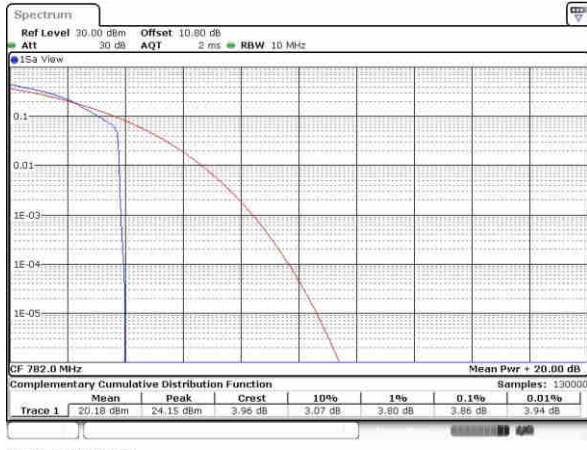
Middle Channel / Full RB



Date: 29 APR 2019 07:48:43

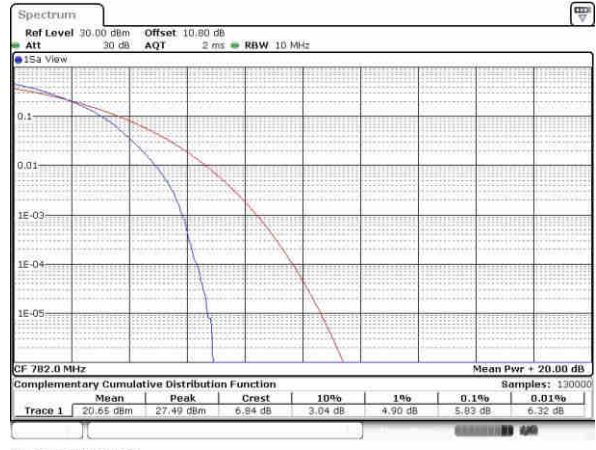
LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 29 APR 2019 07:48:09

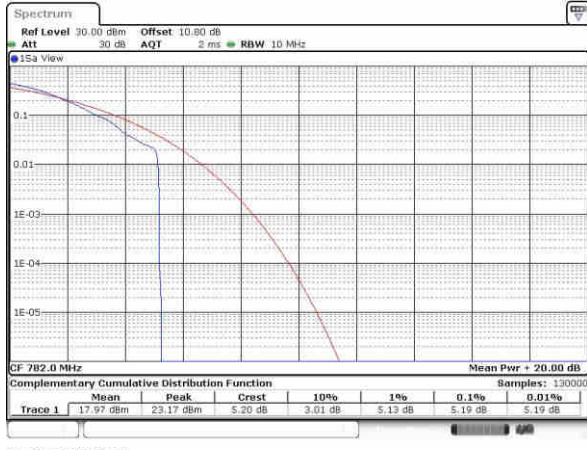
Middle Channel / Full RB



Date: 29 APR 2019 07:48:20

LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 29 APR 2019 07:47:44

Middle Channel / Full RB



Date: 29 APR 2019 07:47:55



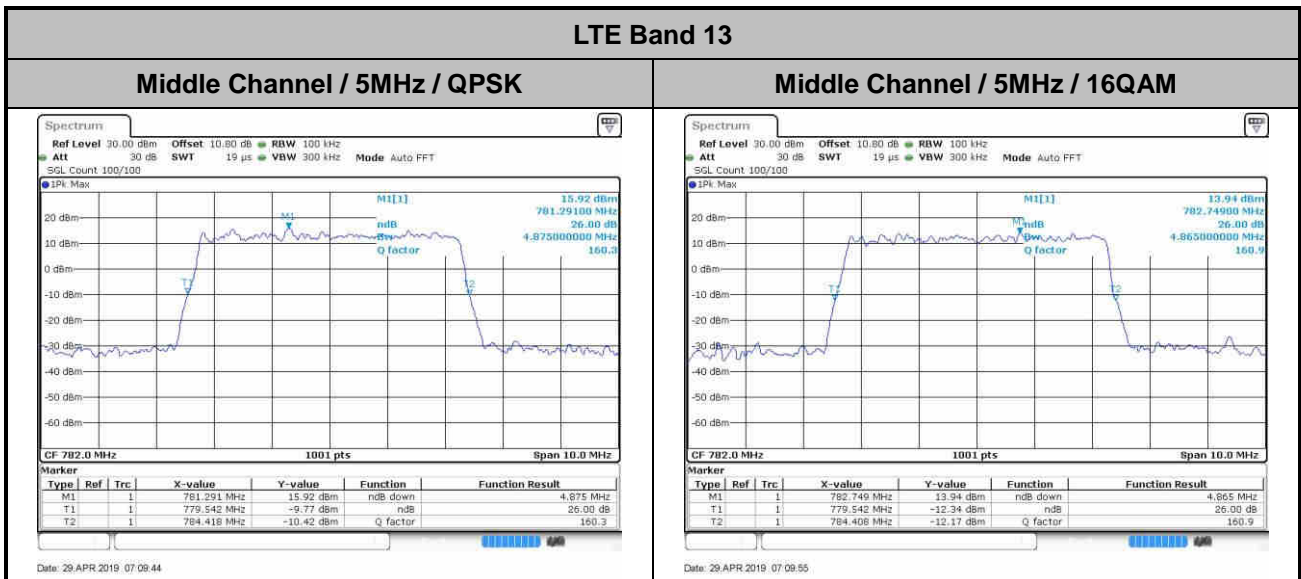


**26dB Bandwidth**

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	-	-	-	-	4.92	4.84	-	-	-	-	-	-
Middle CH	-	-	-	-	4.88	4.87	9.73	9.79	-	-	-	-
Highest CH	-	-	-	-	4.96	4.91	-	-	-	-	-	-

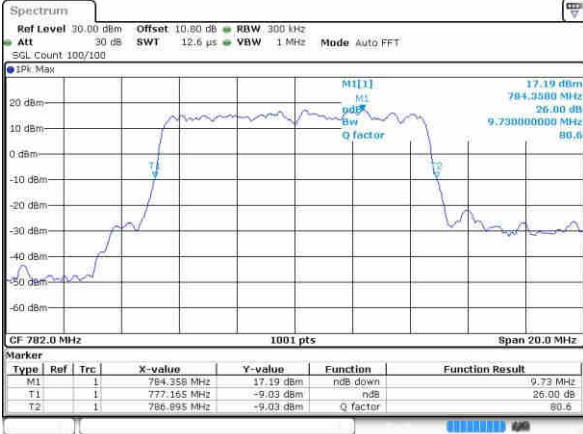
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.96	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.95	-	9.79	-	-	-	-	-
Highest CH	-	-	-	-	4.88	-	-	-	-	-	-	-





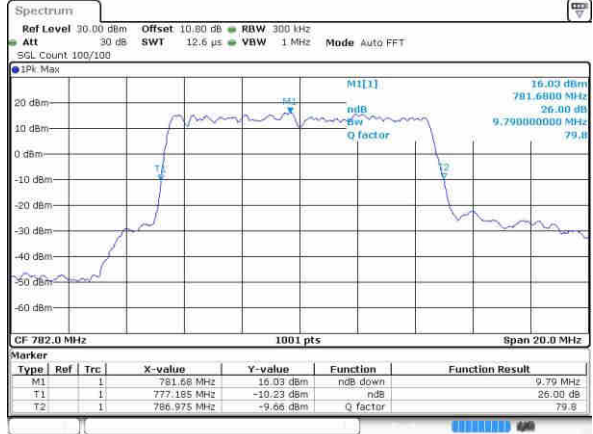
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 29 APR 2019 07:30:00

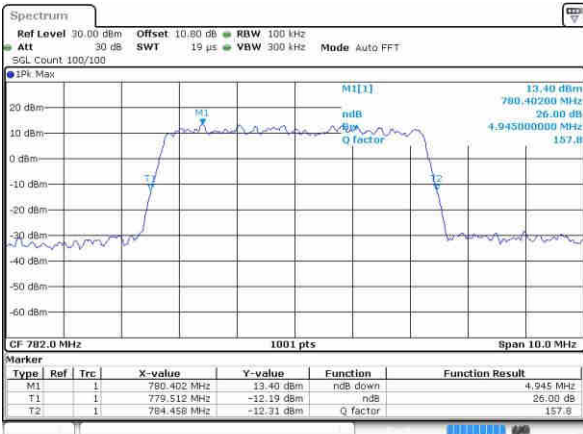
Middle Channel / 10MHz / 16QAM



Date: 29 APR 2019 07:29:49

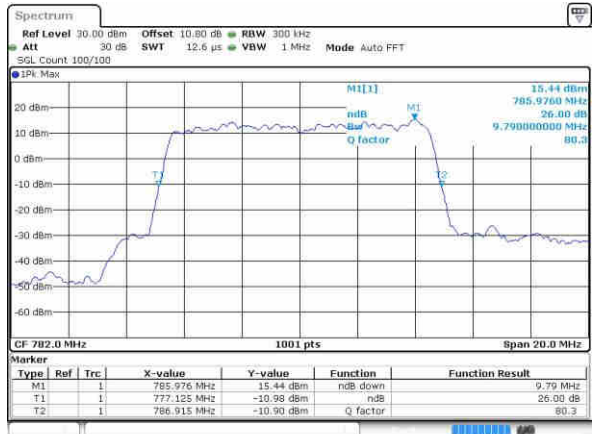
LTE Band 13

Middle Channel / 5MHz / 64QAM



Date: 29 APR 2019 07:24:34

Middle Channel / 10MHz / 64QAM



Date: 29 APR 2019 07:41:49

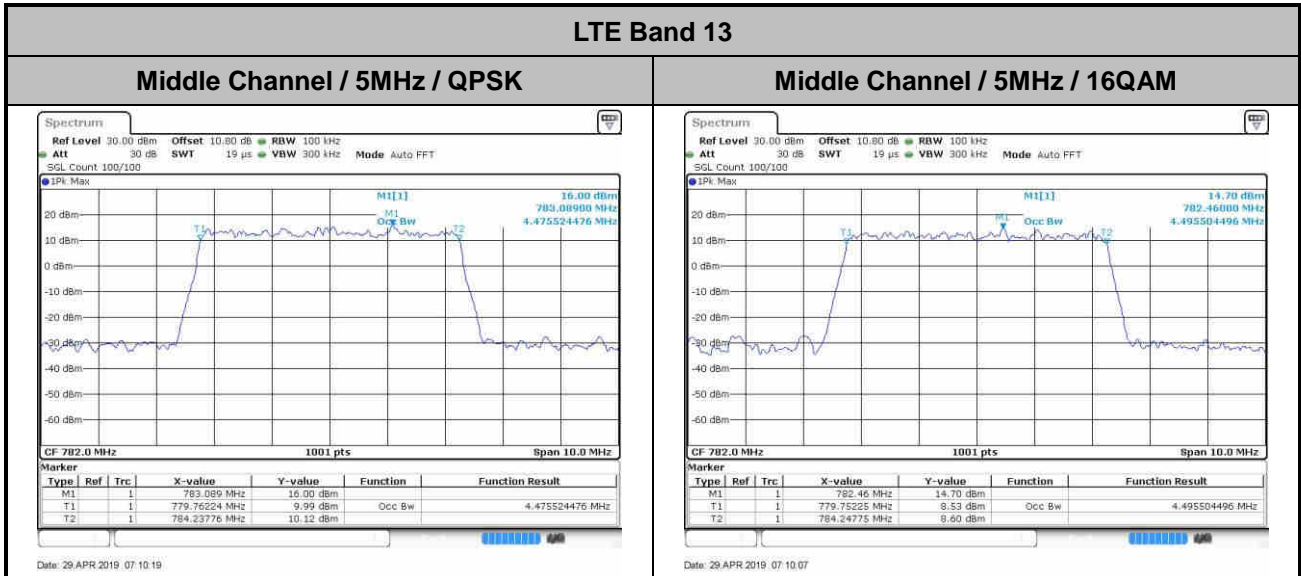


# Occupied Bandwidth

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	-	-	-	-	4.48	4.48	-	-	-	-	-	-	
Middle CH	-	-	-	-	4.48	4.50	9.03	9.01	-	-	-	-	
Highest CH	-	-	-	-	4.50	4.48	-	-	-	-	-	-	

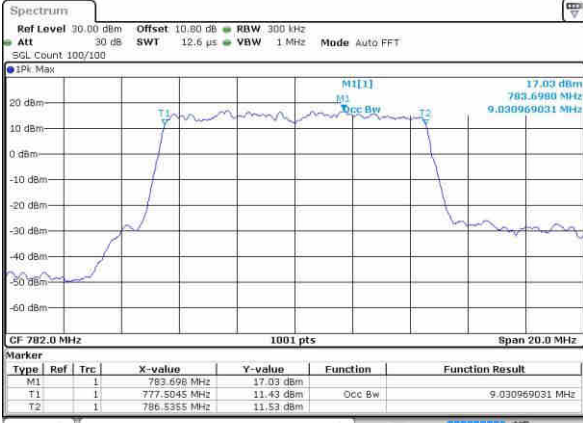
Mode		LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz		
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM		
Lowest CH	-	-	-	-	4.47	-	-	-	-	-	-	-	
Middle CH	-	-	-	-	4.48	-	9.03	-	-	-	-	-	
Highest CH	-	-	-	-	4.48	-	-	-	-	-	-	-	





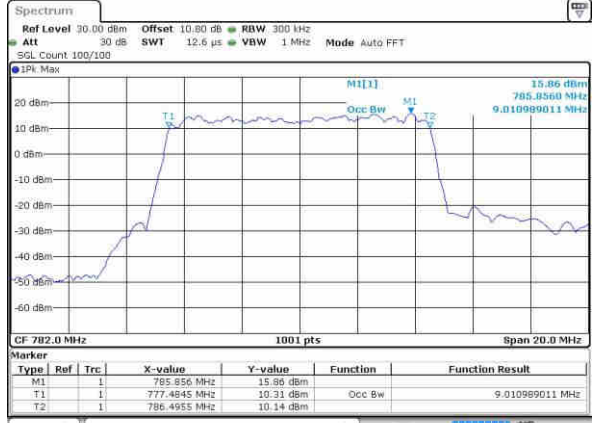
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 29 APR 2019 07:29:25

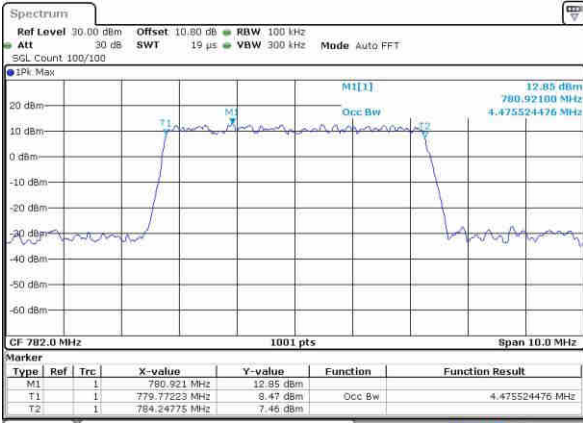
Middle Channel / 10MHz / 16QAM



Date: 29 APR 2019 07:29:37

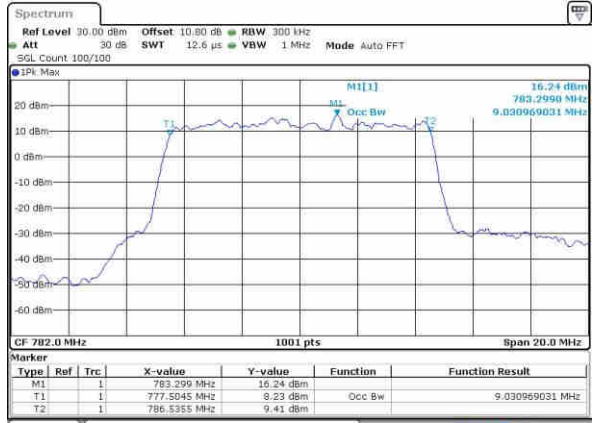
LTE Band 13

Middle Channel / 5MHz / 64QAM



Date: 29 APR 2019 07:24:45

Middle Channel / 10MHz / 64QAM



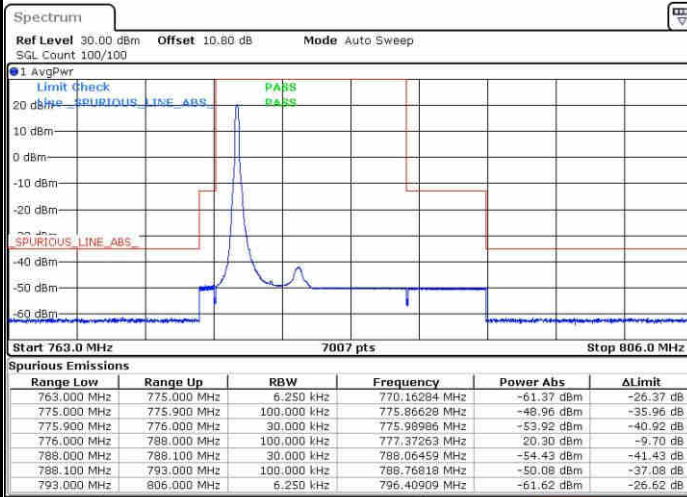
Date: 29 APR 2019 07:41:37



# Conducted Band Edge

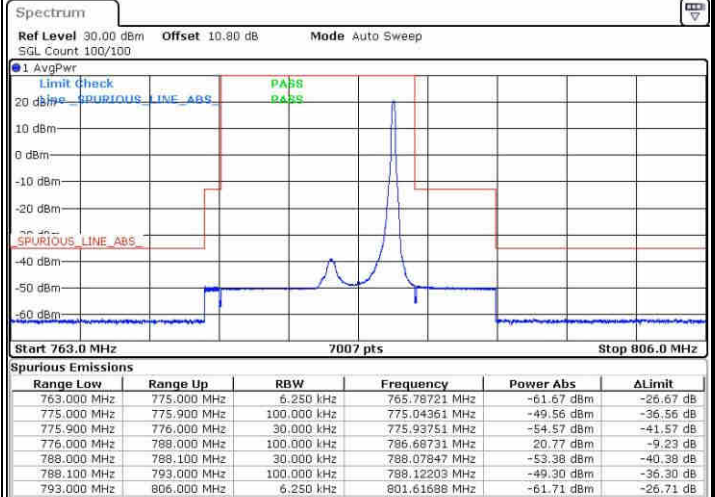
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



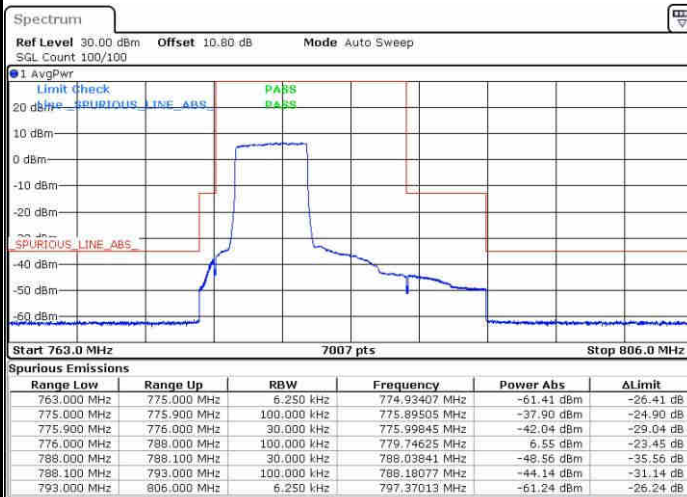
Date: 29 APR 2019 07:06:49

### Highest Band Edge / 1 RB



Date: 29 APR 2019 07:17:51

### Lowest Band Edge / Full RB



Date: 29 APR 2019 07:01:45

### Highest Band Edge / Full RB



Date: 29 APR 2019 07:12:48

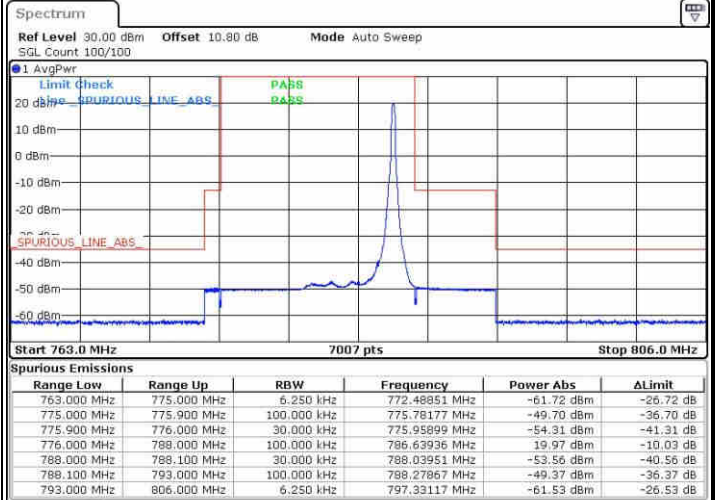
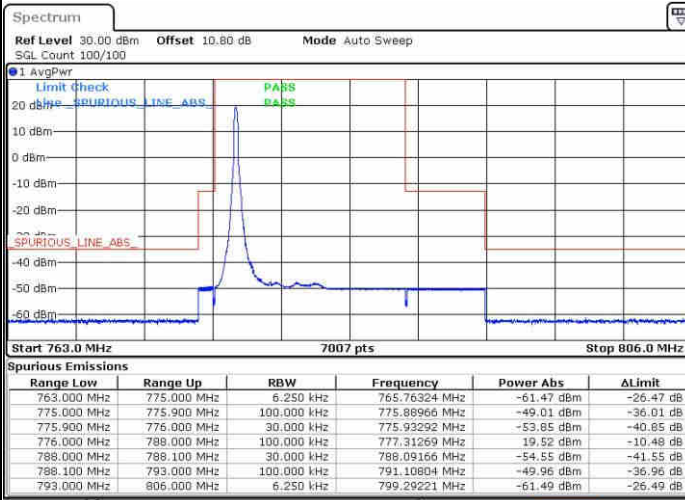




LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

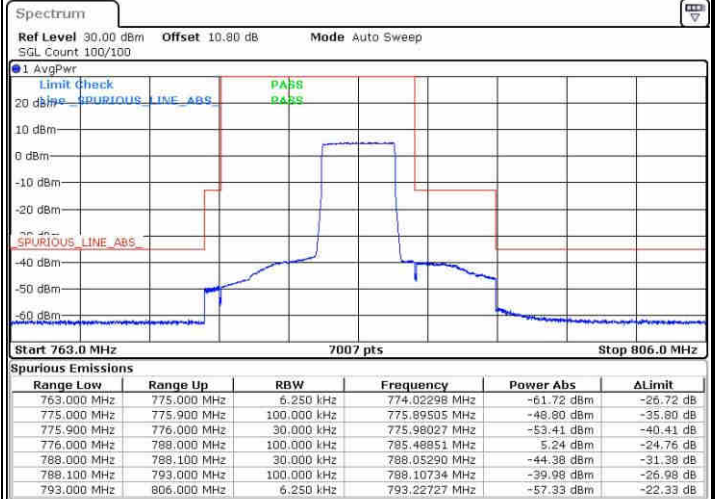
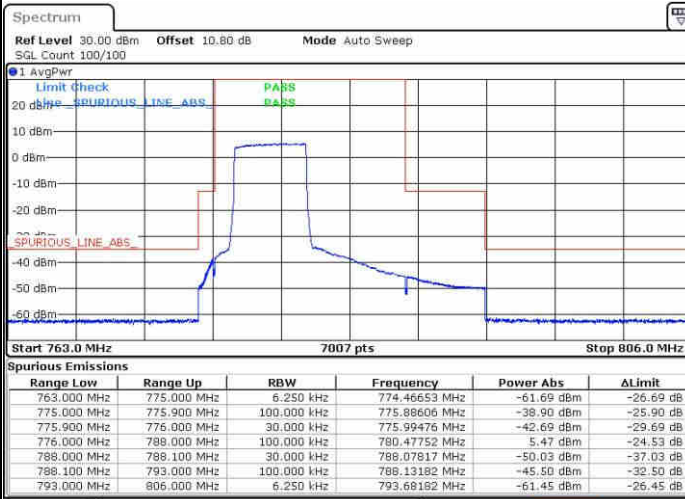


Date: 29 APR 2019 07:05:08

Date: 29 APR 2019 07:16:10

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 29 APR 2019 07:03:26

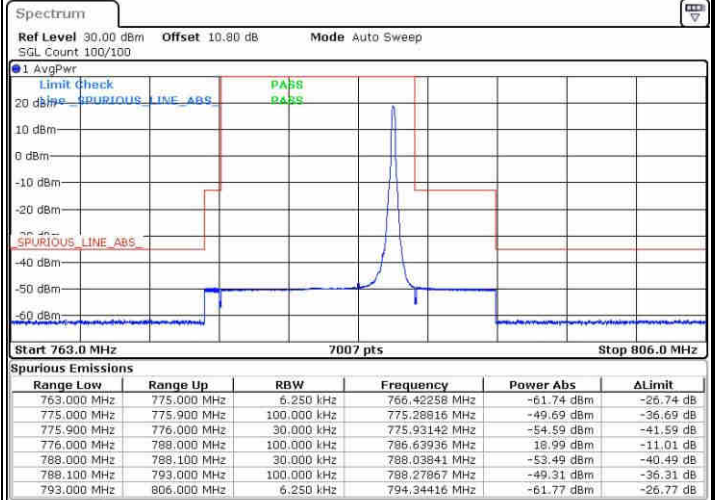
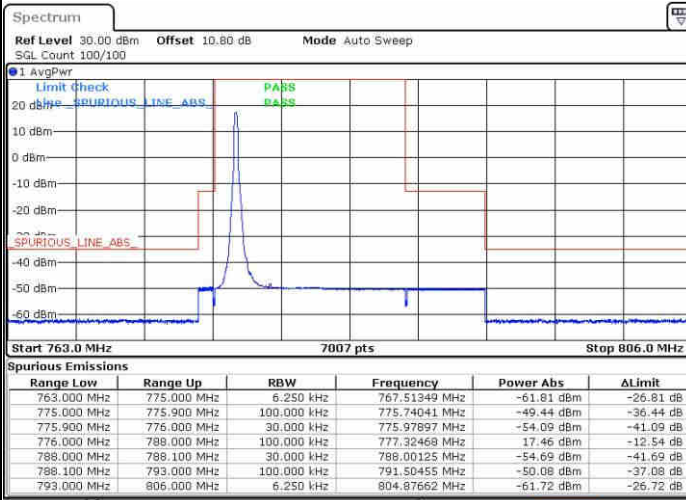
Date: 29 APR 2019 07:14:28



LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

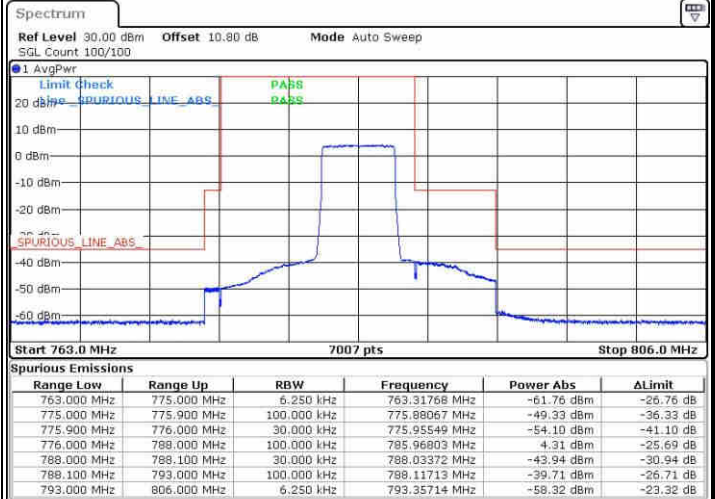
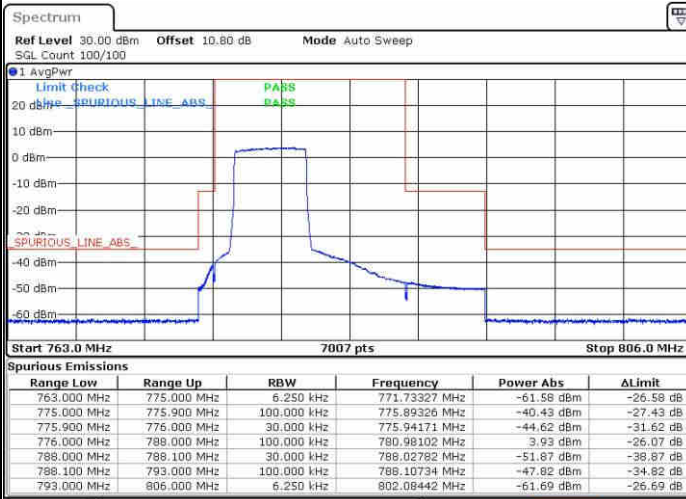


Date: 29 APR 2019 07:23:00

Date: 29 APR 2019 07:28:31

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



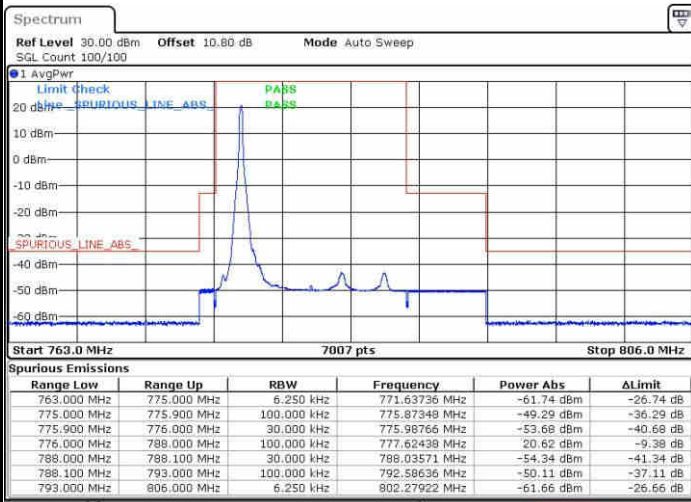
Date: 29 APR 2019 07:21:19

Date: 29 APR 2019 07:26:50



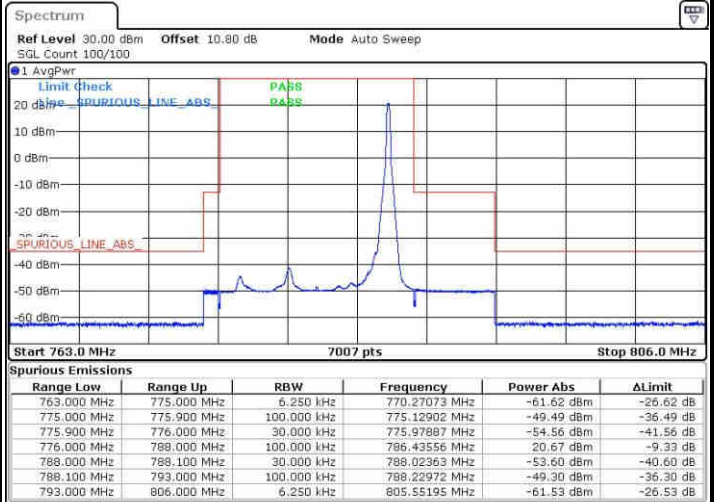
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB



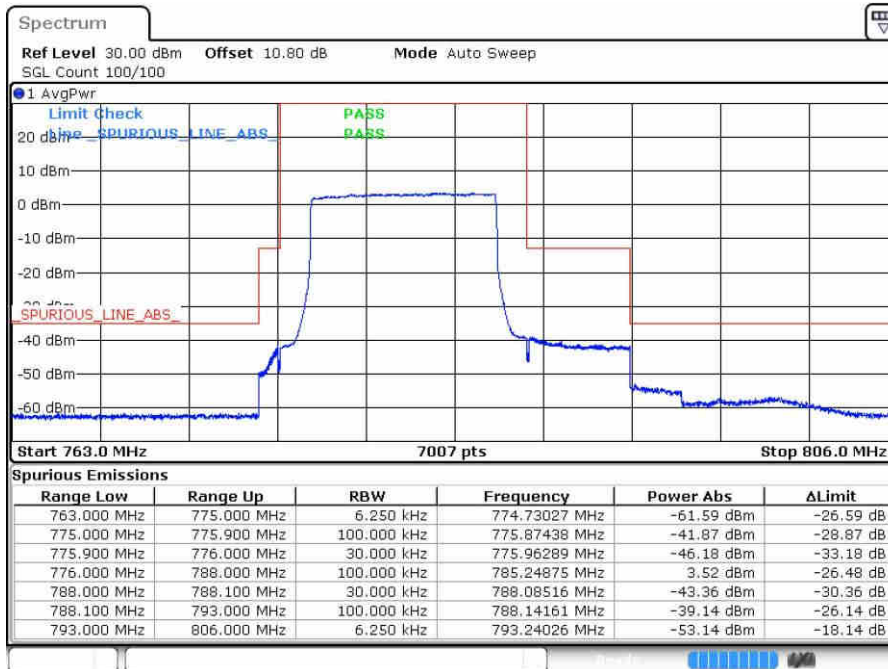
Date: 29 APR 2019 07:36:43

Highest Band Edge / 1 RB



Date: 29 APR 2019 07:38:23

Band Edge / Full RB

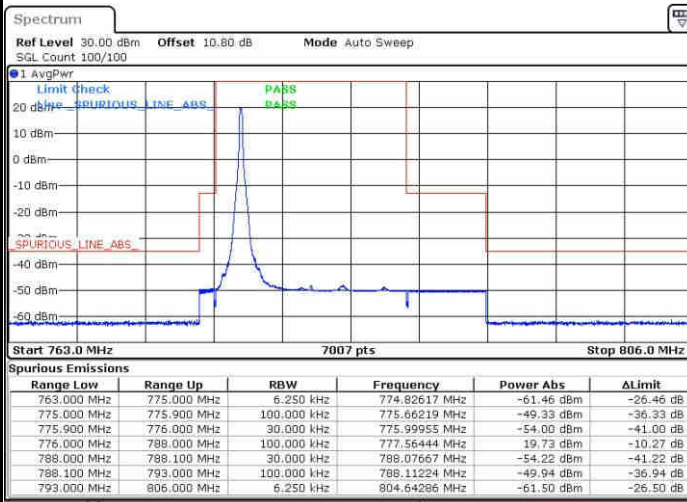


Date: 29 APR 2019 07:31:40



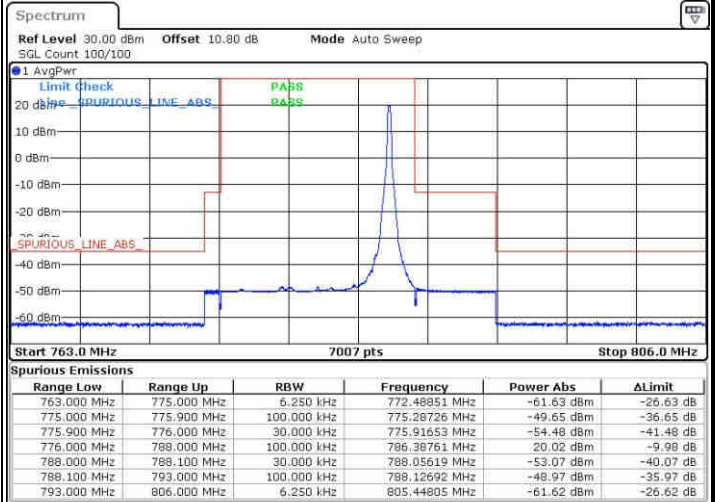
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



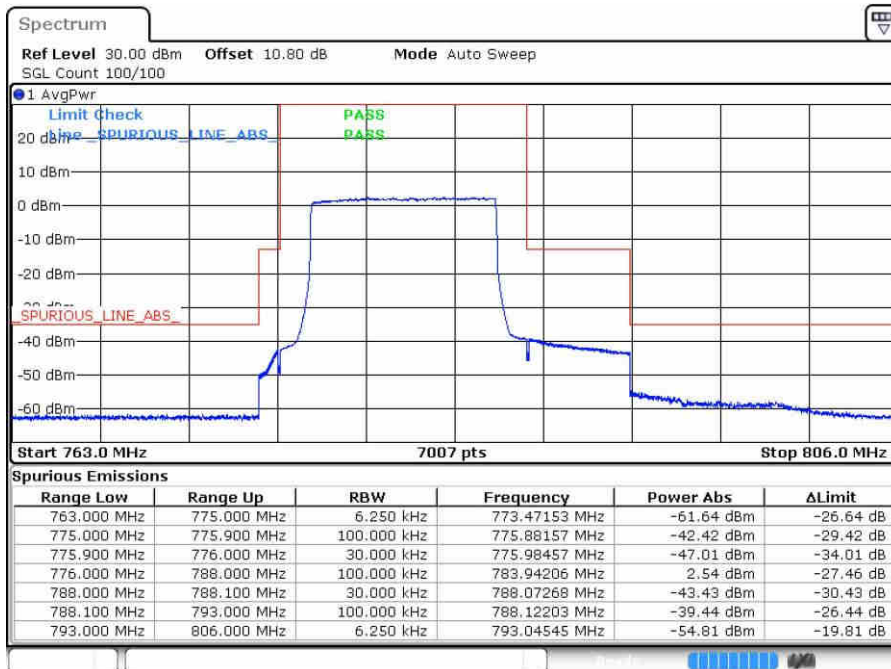
Date: 29 APR 2019 07:35:02

Highest Band Edge / 1 RB



Date: 29 APR 2019 07:40:04

Band Edge / Full RB



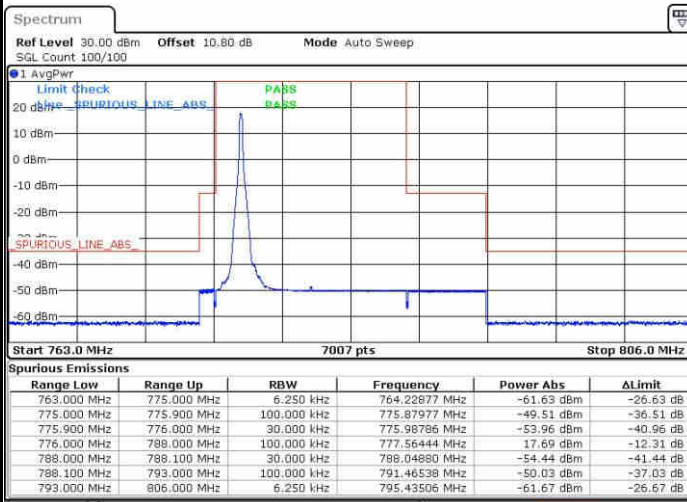
Date: 29 APR 2019 07:33:21





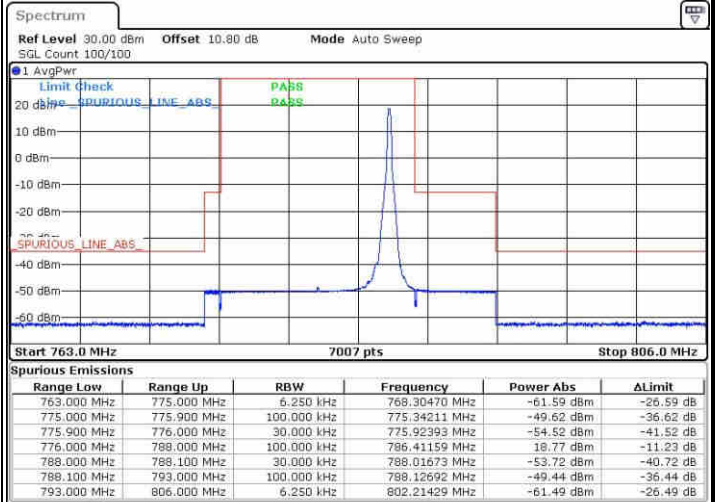
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



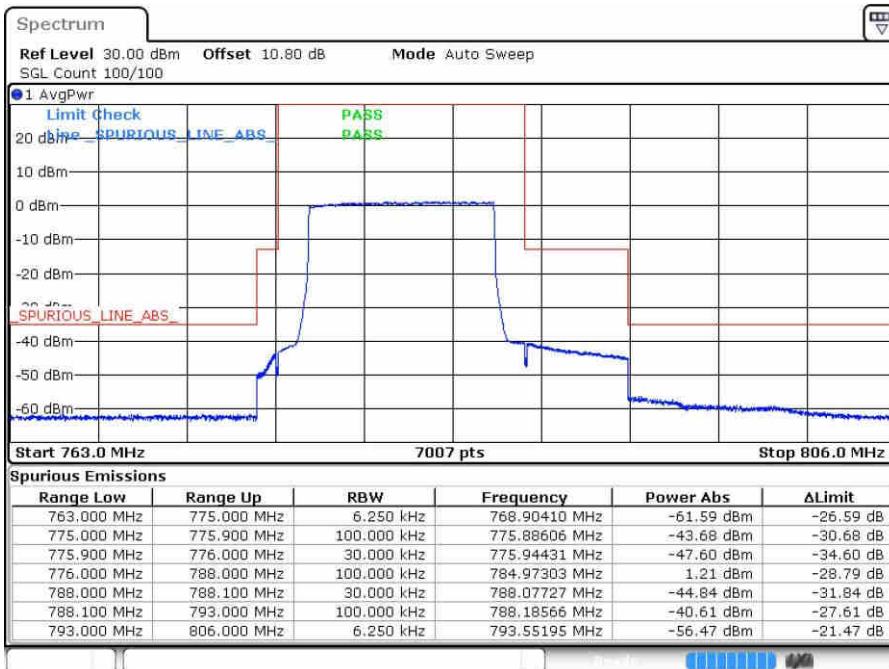
Date: 29 APR 2019 07:45:09

Highest Band Edge / 1 RB



Date: 29 APR 2019 07:46:50

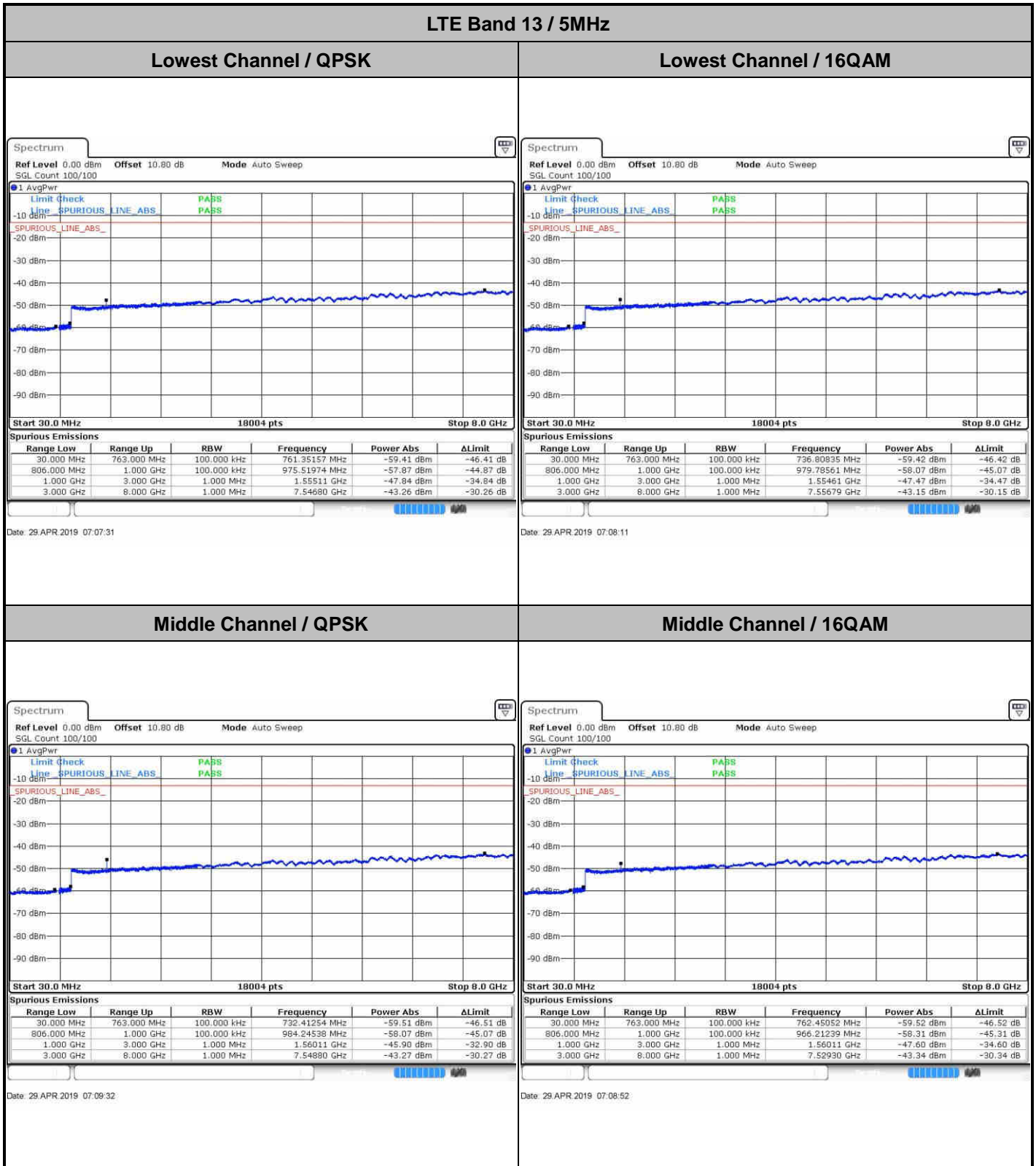
Band Edge / Full RB



Date: 29 APR 2019 07:43:29



# Conducted Spurious Emission

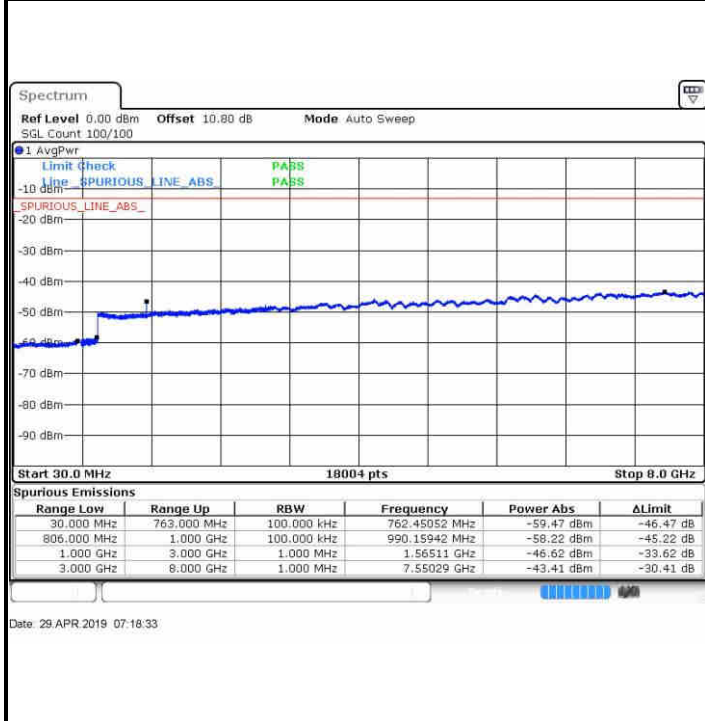




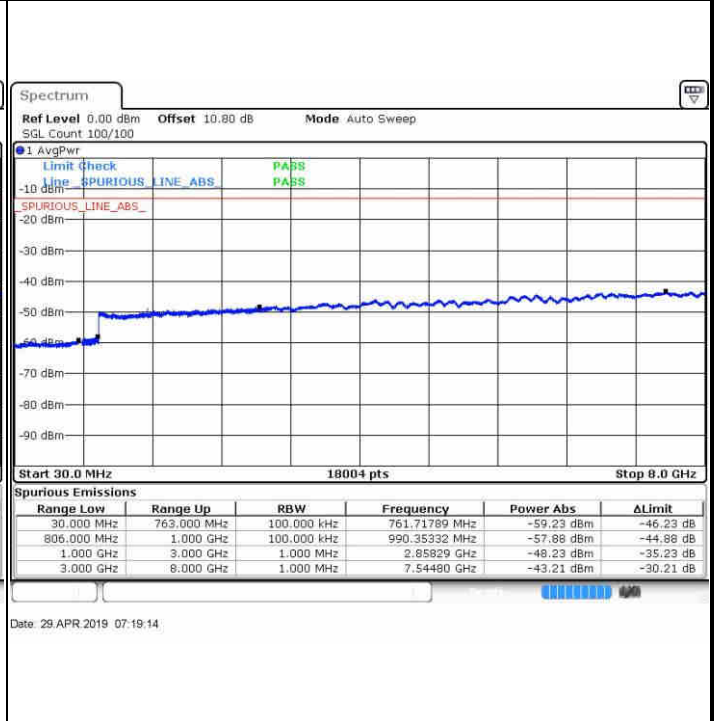


**LTE Band 13 / 5MHz**

**Highest Channel / QPSK**

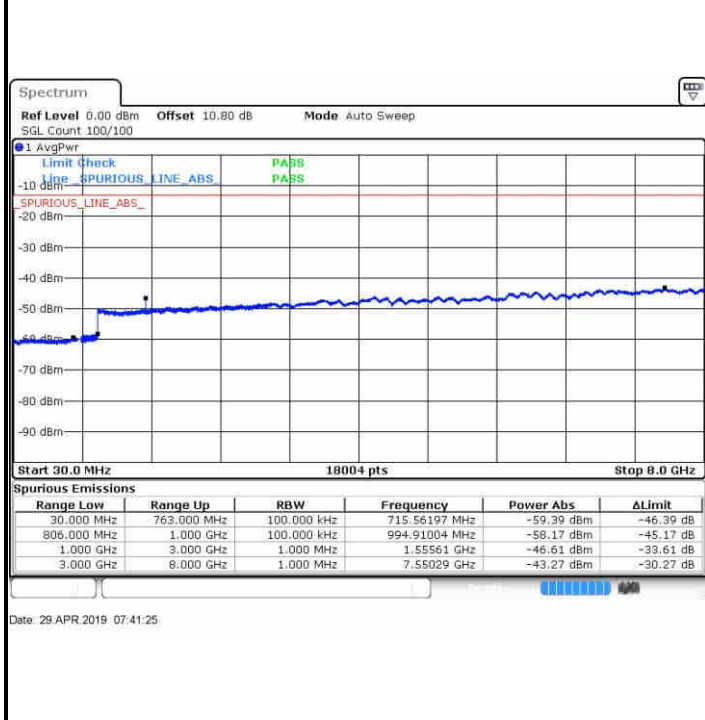


**Highest Channel / 16QAM**

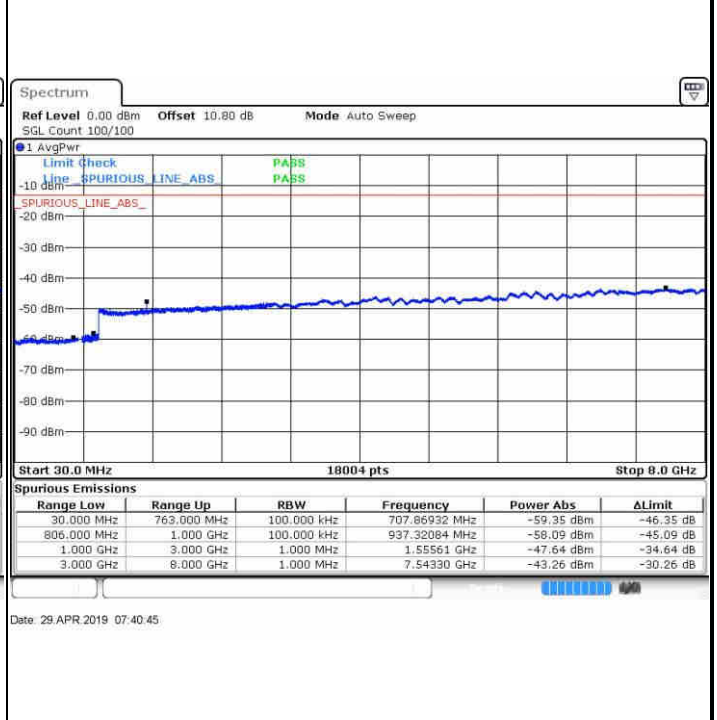


**LTE Band 13 / 10MHz**

**Middle Channel / QPSK**



**Middle Channel / 16QAM**

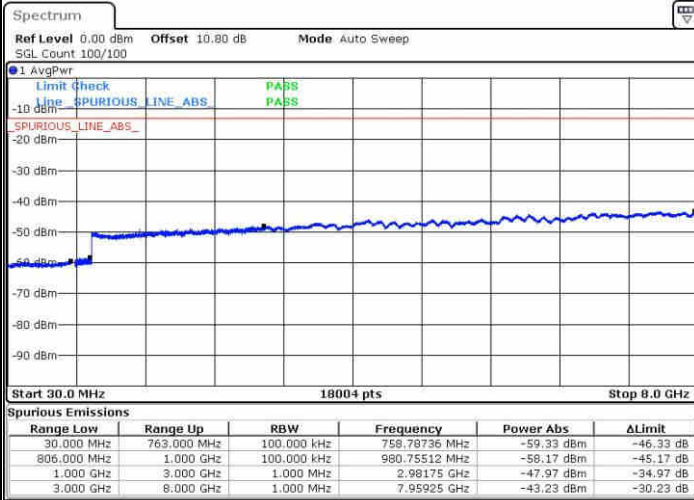




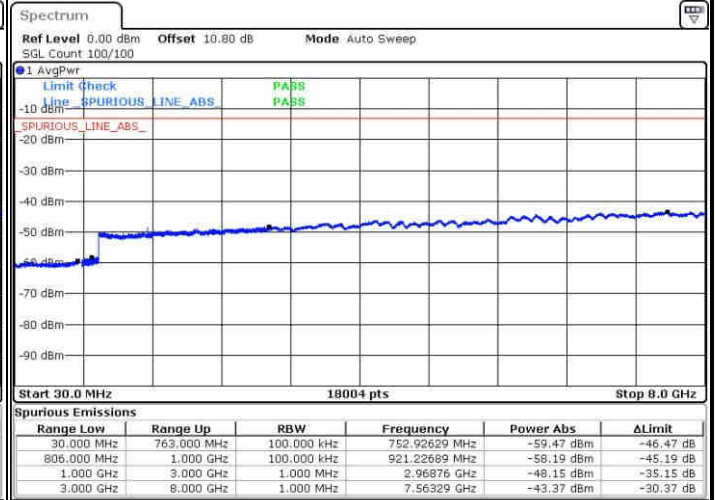
LTE Band 13 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

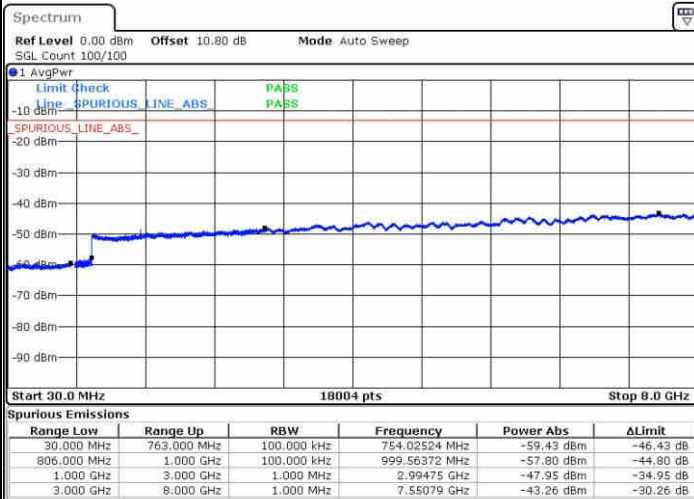


Date: 29 APR 2019 07:23:42



Date: 29 APR 2019 07:24:22

Highest Channel / 64QAM

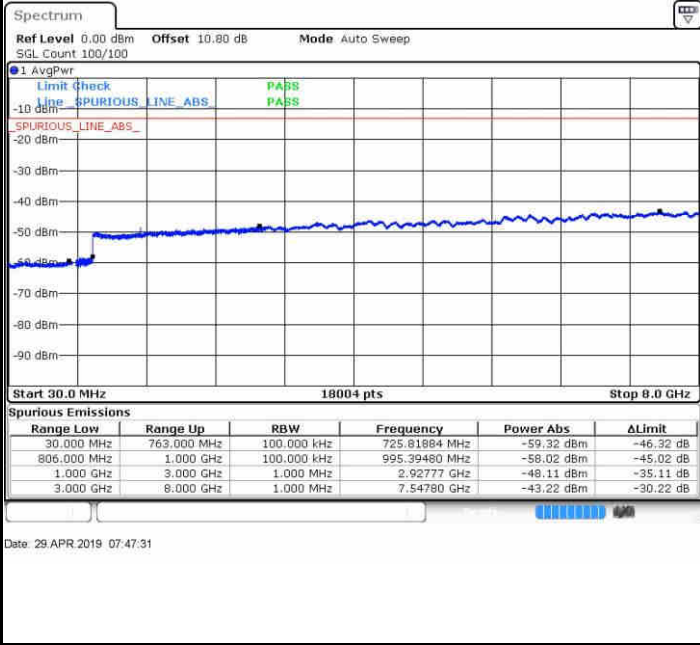


Date: 29 APR 2019 07:29:13



LTE Band 13 / 10MHz

Middle Channel / 64QAM





Frequency Stability

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0026	PASS
40	Normal Voltage	0.0014	
30	Normal Voltage	0.0047	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0068	
0	Normal Voltage	0.0079	
-10	Normal Voltage	0.0049	
-20	Normal Voltage	0.0024	
-30	Normal Voltage	0.0164	
20	Maximum Voltage	0.0272	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0017	

Note:

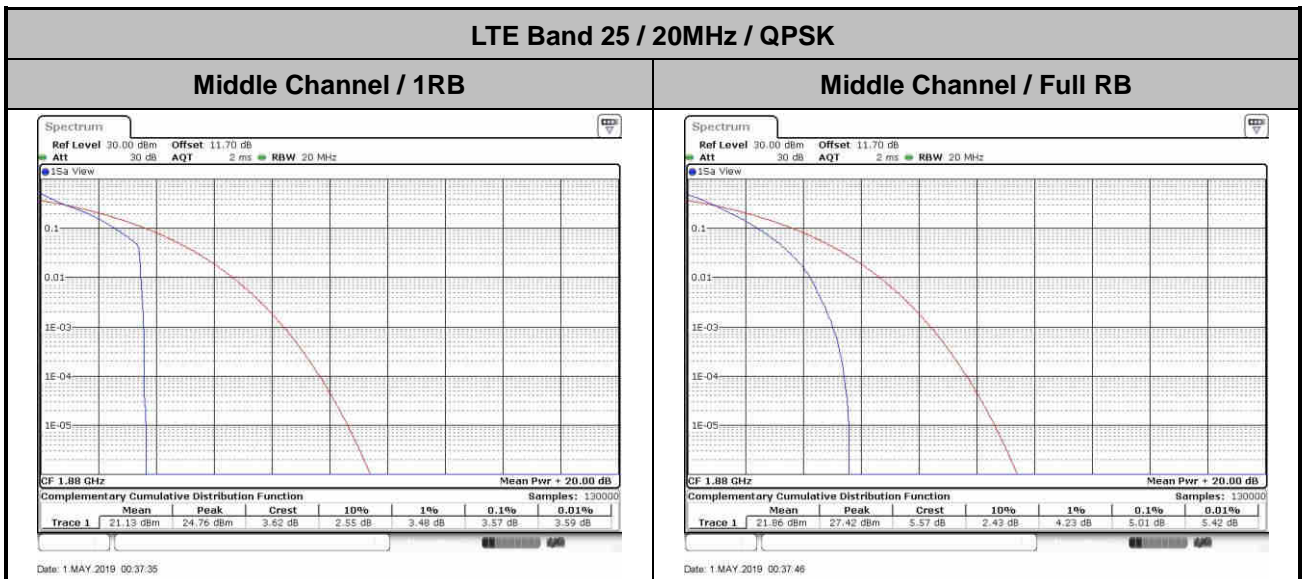
1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.5 V. ; Maximum Voltage =4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 25

## Peak-to-Average Ratio

Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.57	5.04	4.38	6.00	PASS
Middle CH	3.57	5.01	4.03	5.97	
Highest CH	3.59	4.99	4.43	6.06	
Mode	LTE Band 25 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.07	6.55	-	-	PASS
Middle CH	5.10	6.46	-	-	
Highest CH	5.33	6.55	-	-	





LTE Band 25 / 20MHz / 16QAM

Middle Channel / 1RB



Date: 1 MAY 2019 00:37:12

Middle Channel / Full RB



Date: 1 MAY 2019 00:37:23

LTE Band 25 / 20MHz / 64QAM

Middle Channel / 1RB



Date: 1 MAY 2019 00:35:38

Middle Channel / Full RB



Date: 1 MAY 2019 00:35:49





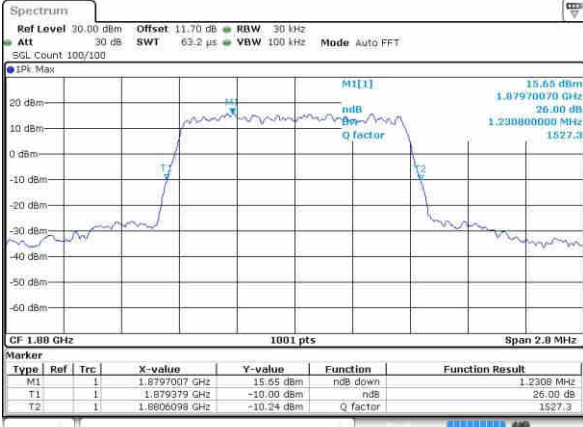
**26dB Bandwidth**

Mode	LTE Band 25 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.24	1.25	3.02	3.03	4.96	4.87	9.67	9.77	14.39	14.39	19.10	18.94
Middle CH	1.23	1.23	3.08	3.00	4.94	4.87	9.73	9.81	14.45	14.36	19.18	19.14
Highest CH	1.23	1.22	2.99	3.06	4.91	4.91	9.73	9.71	14.27	14.42	19.06	18.66
Mode	LTE Band 25 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.23	-	3.05	-	4.87	-	9.81	-	14.24	-	18.98	-
Middle CH	1.21	-	2.99	-	4.88	-	9.73	-	14.36	-	18.86	-
Highest CH	1.23	-	3.03	-	4.83	-	9.87	-	14.33	-	18.98	-



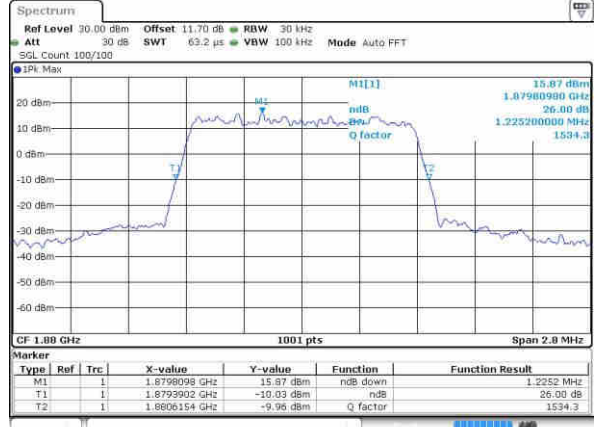
LTE Band 25

Middle Channel / 1.4MHz / QPSK



Date: 30 APR 2019 22:16:58

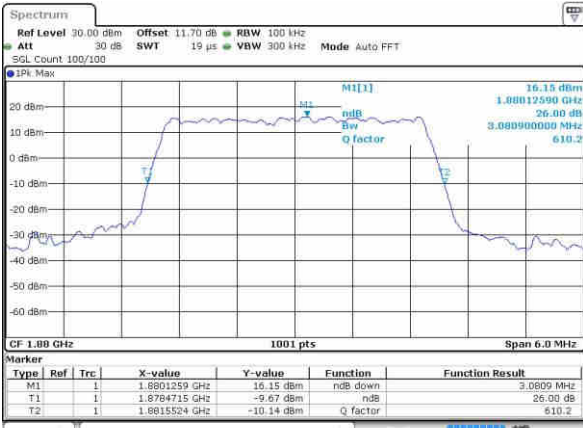
Middle Channel / 1.4MHz / 16QAM



Date: 30 APR 2019 22:17:10

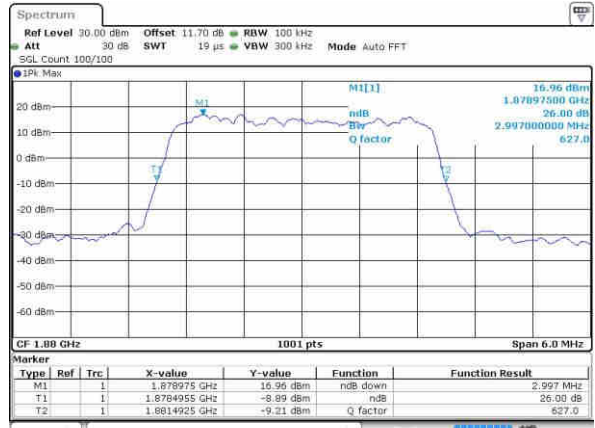
LTE Band 25

Middle Channel / 3MHz / QPSK



Date: 30 APR 2019 22:47:22

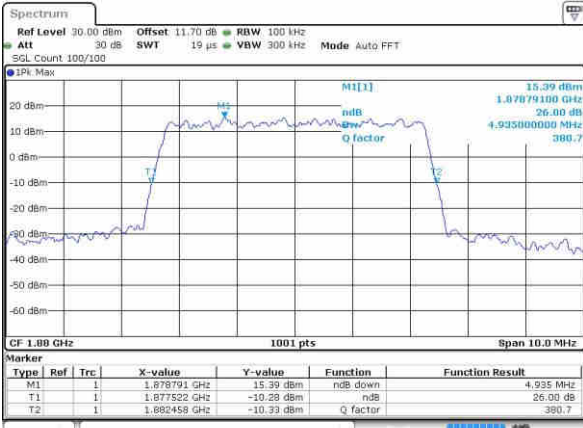
Middle Channel / 3MHz / 16QAM



Date: 30 APR 2019 22:47:34

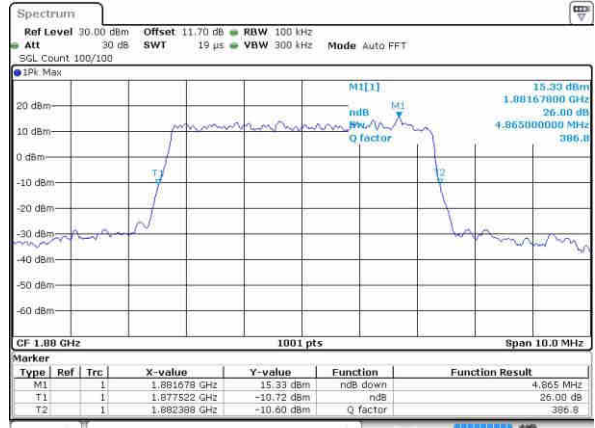
LTE Band 25

Middle Channel / 5MHz / QPSK



Date: 30 APR 2019 23:02:05

Middle Channel / 5MHz / 16QAM



Date: 30 APR 2019 23:02:20