



**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	0.0003	PASS
40	Normal Voltage	0.0033	
30	Normal Voltage	0.0003	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0016	
0	Normal Voltage	0.0025	
-10	Normal Voltage	0.0004	
-20	Normal Voltage	0.0034	
-30	Normal Voltage	0.0004	
20	Maximum Voltage	0.0025	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0025	

**Note:**

- 1. Normal Voltage =7.6 V. ; Battery End Point (BEP) =6.8 V. ; Maximum Voltage =8.7 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



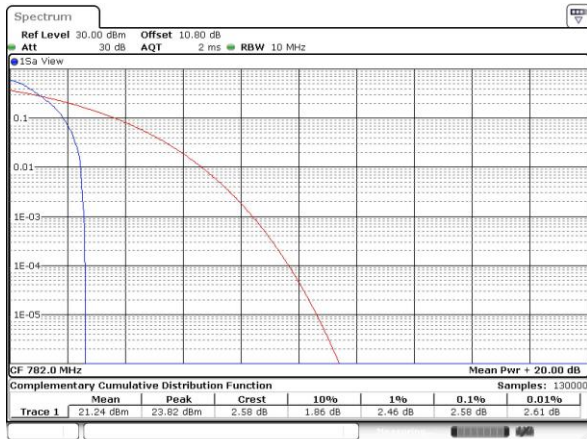
# LTE Band 13

## Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz				Limit: 13dB
Mod.	QPSK		16QAM		
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	2.58	4.61	3.16	5.36	
Highest CH	-	-	-	-	

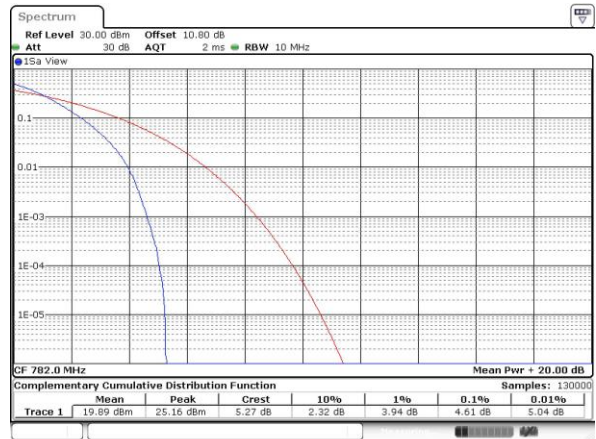
### LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 11.OCT.2018 07:31:52

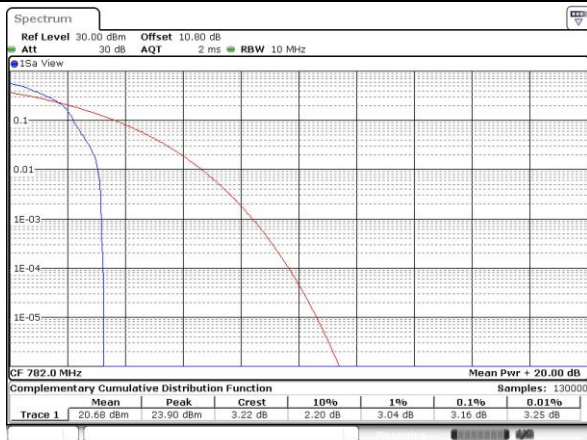
Middle Channel / Full RB



Date: 11.OCT.2018 07:32:03

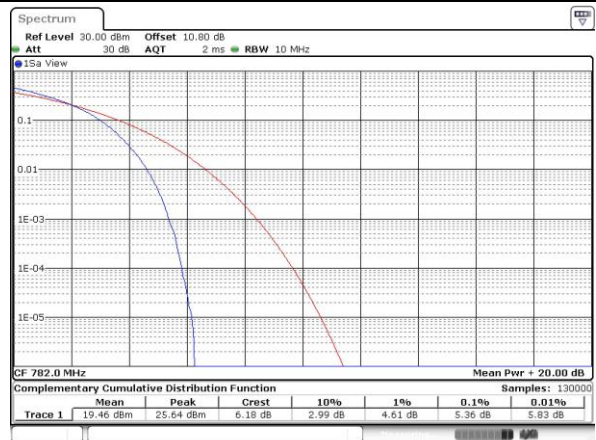
### LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 11.OCT.2018 07:31:32

Middle Channel / Full RB



Date: 11.OCT.2018 07:31:42



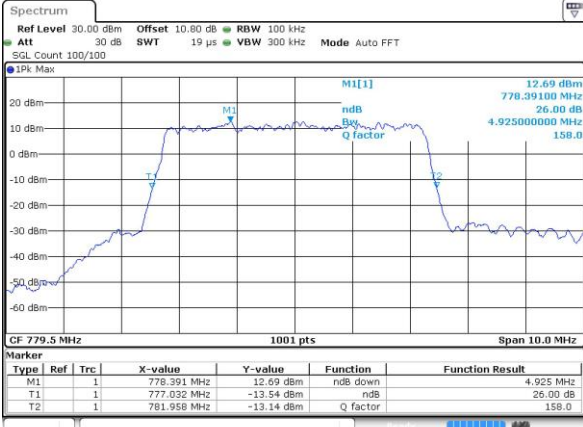
**26dB Bandwidth**

Mode	LTE Band 13 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.93	4.80	-	-	-	-	-	-
Middle CH	-	-	-	-	4.90	4.88	9.89	9.85	-	-	-	-
Highest CH	-	-	-	-	4.90	4.89	-	-	-	-	-	-



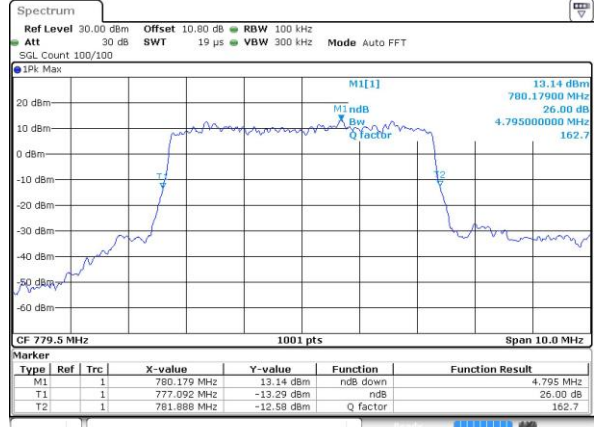
LTE Band 13

Lowest Channel / 5MHz / QPSK



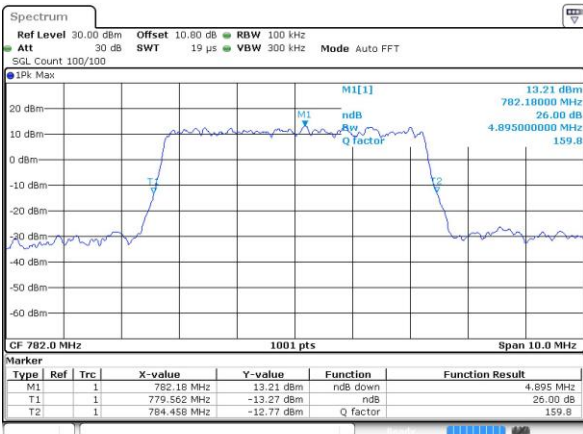
Date: 11.OCT.2018 06:59:47

Lowest Channel / 5MHz / 16QAM



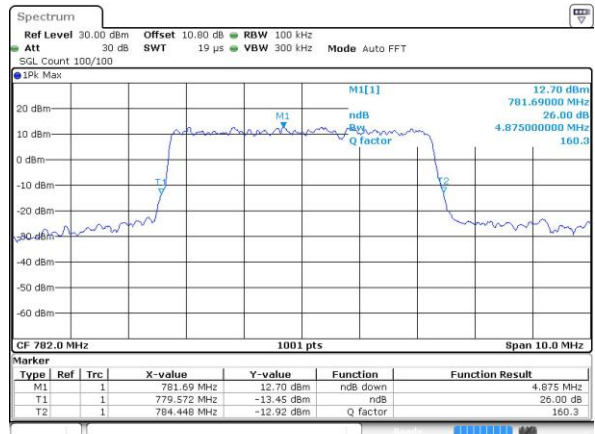
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Middle Channel / 5MHz / QPSK



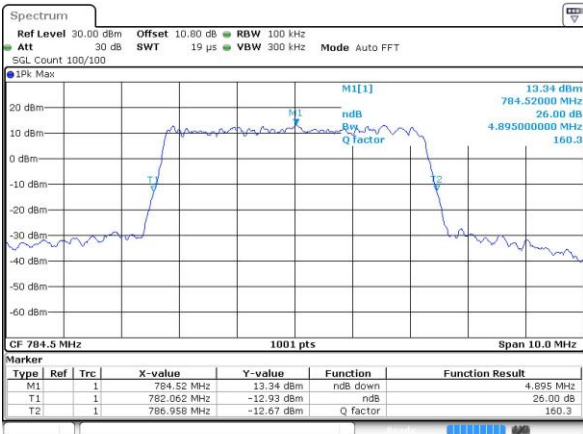
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Middle Channel / 5MHz / 16QAM



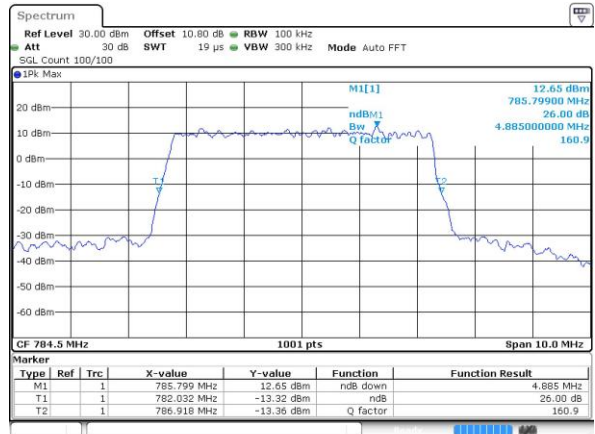
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Highest Channel / 5MHz / QPSK



Date: 11.OCT.2018 07:10:39

Highest Channel / 5MHz / 16QAM

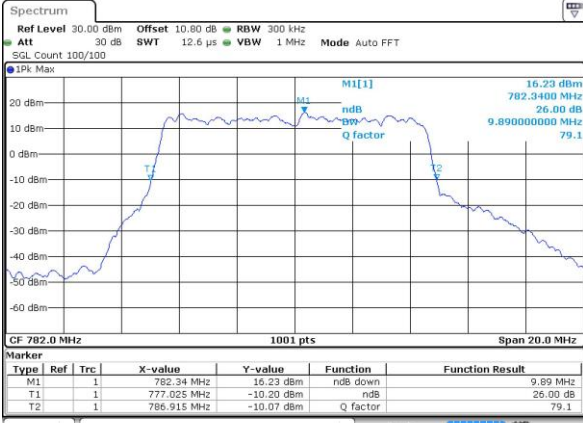


Date: 11.OCT.2018 07:10:27



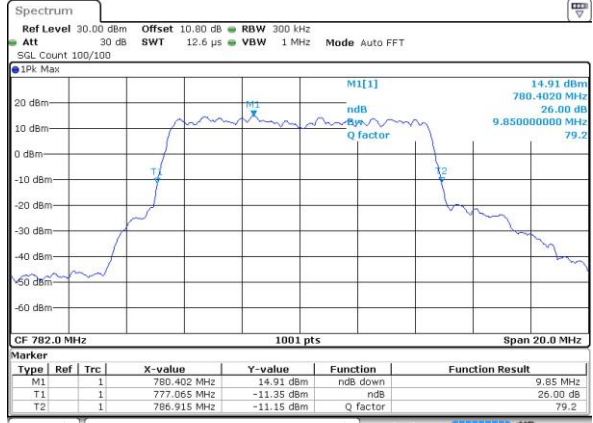
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 11.OCT.2018 07:19:25

Middle Channel / 10MHz / 16QAM



Date: 11.OCT.2018 07:19:14



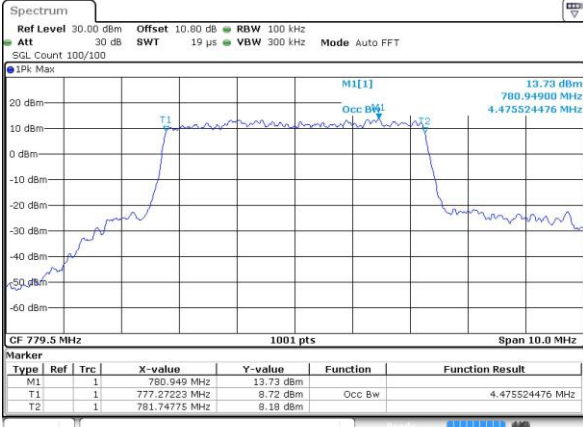
**Occupied Bandwidth**

Mode	LTE Band 13 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.48	4.51	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	4.51	8.99	9.01	-	-	-	-
Highest CH	-	-	-	-	4.49	4.49	-	-	-	-	-	-



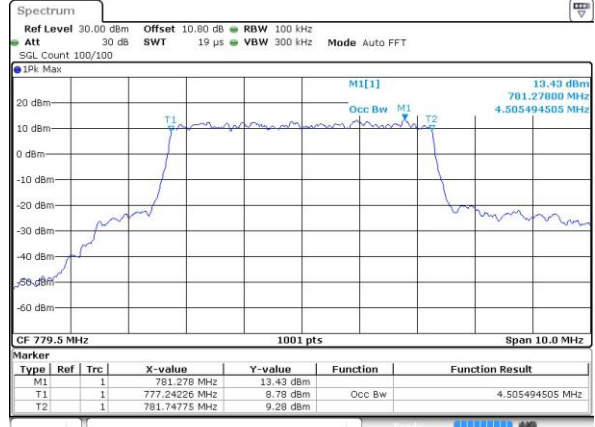
LTE Band 13

Lowest Channel / 5MHz / QPSK



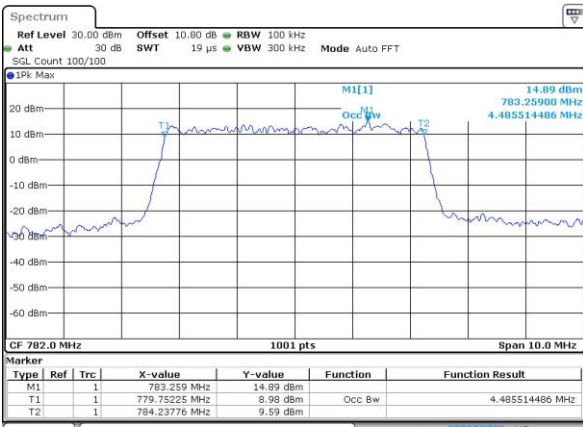
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Lowest Channel / 5MHz / 16QAM



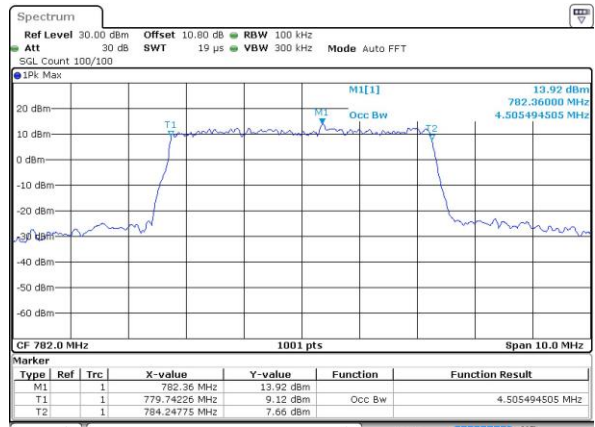
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Middle Channel / 5MHz / QPSK



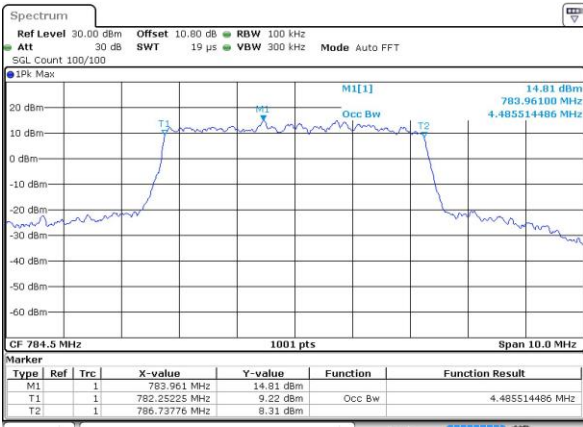
Date: 11.OCT.2018 07:09:53

Middle Channel / 5MHz / 16QAM



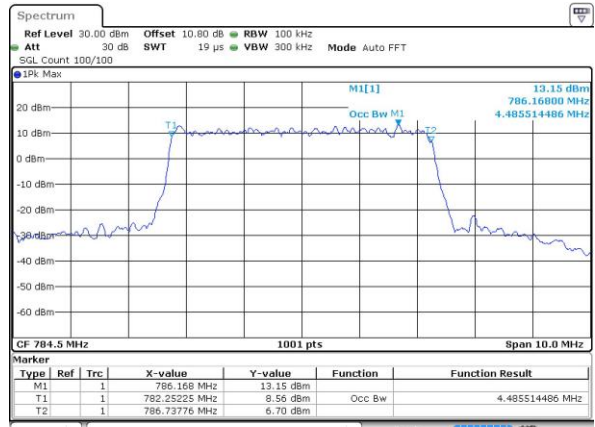
Date: 11.OCT.2018 07:09:42

Highest Channel / 5MHz / QPSK



Date: 11.OCT.2018 07:10:05

Highest Channel / 5MHz / 16QAM

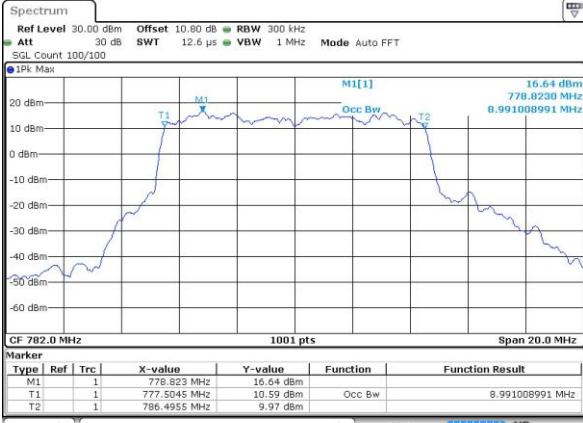


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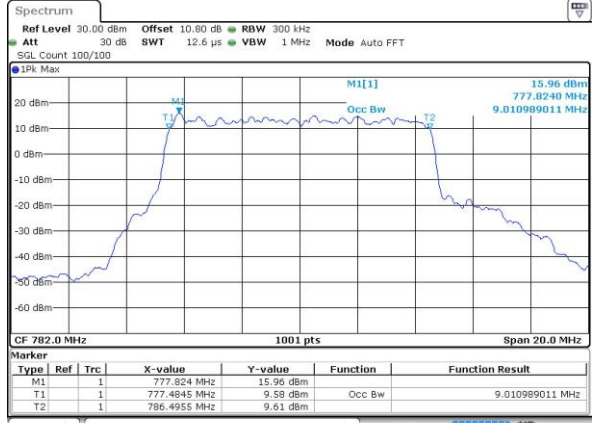
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 11.OCT.2018 07:18:51

Middle Channel / 10MHz / 16QAM



Date: 11.OCT.2018 07:19:02

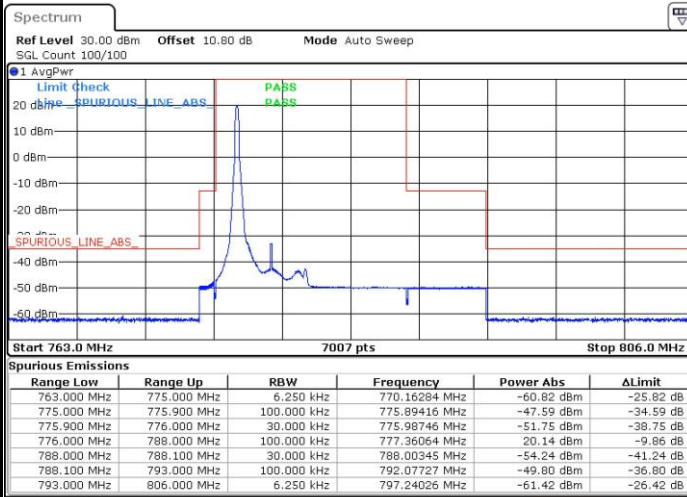




# Conducted Band Edge

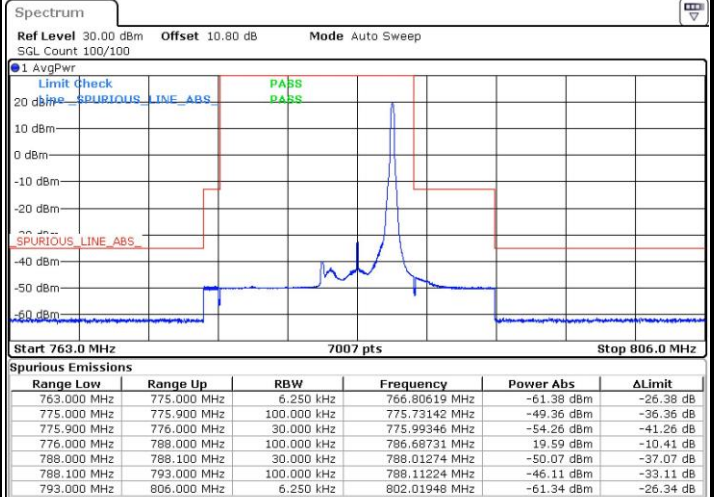
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



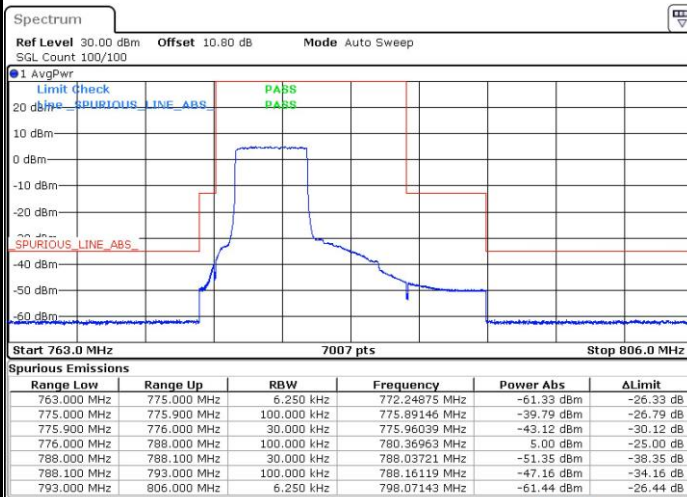
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### Highest Band Edge / 1 RB



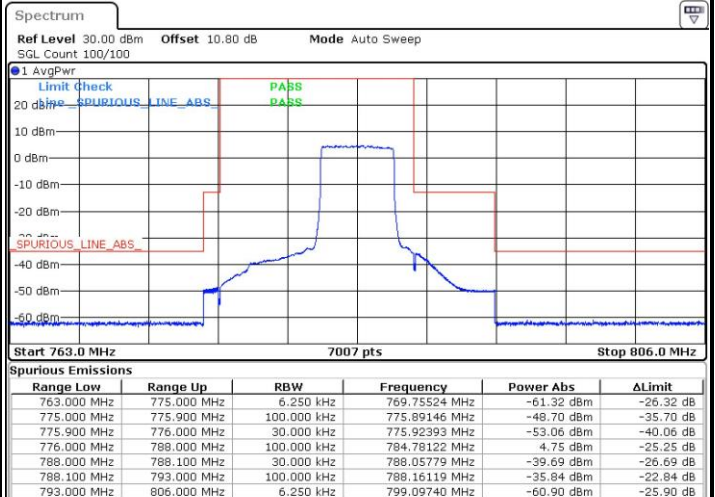
Date: 11.OCT.2018 07:17:19

### Lowest Band Edge / Full RB



Date: 11.OCT.2018 07:01:26

### Highest Band Edge / Full RB



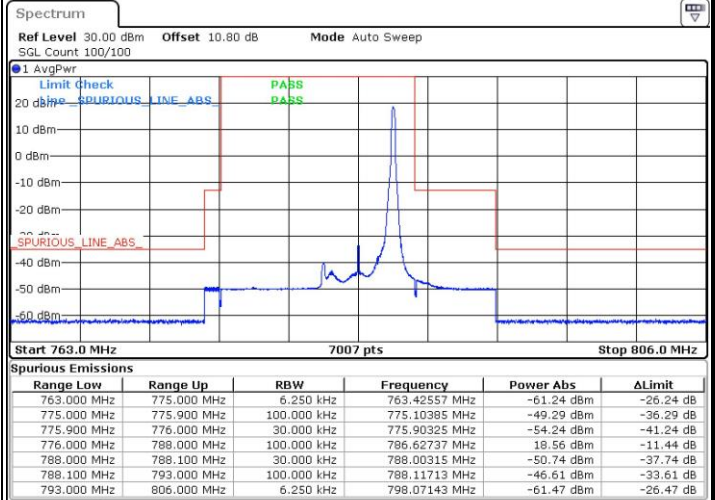
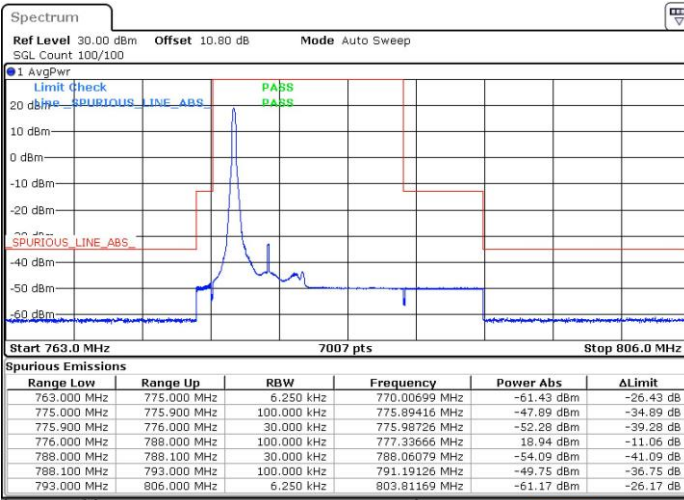
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LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

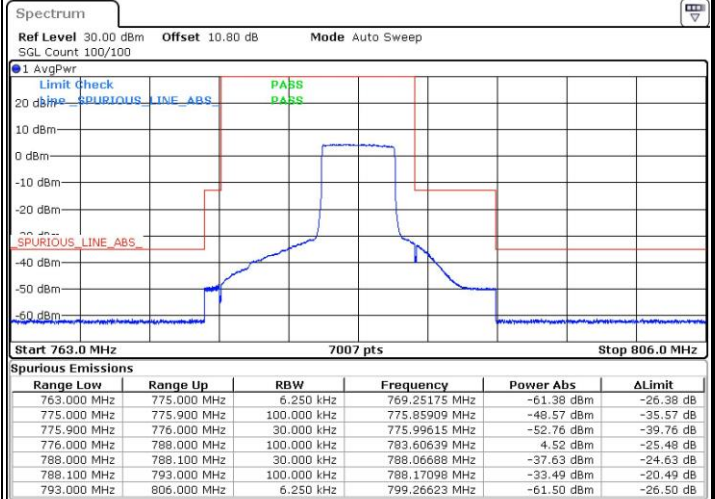
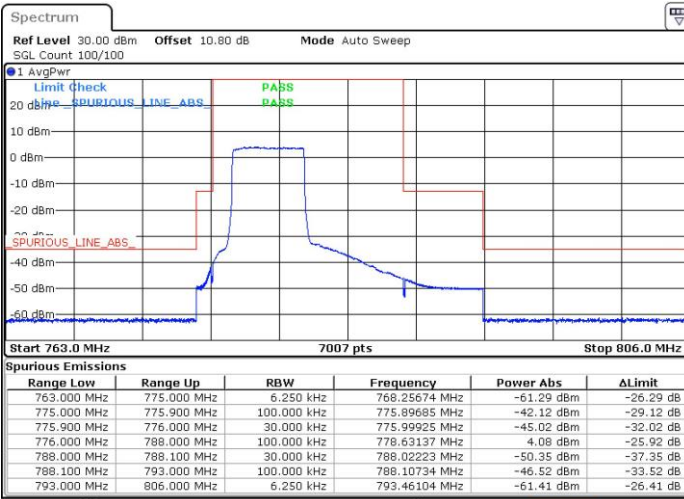


Date: 11.OCT.2018 07:04:47

Date: 11.OCT.2018 07:15:39

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 11.OCT.2018 07:03:07

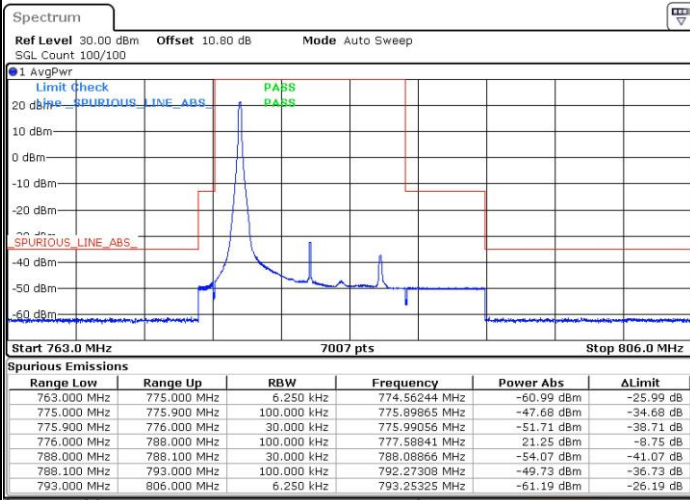
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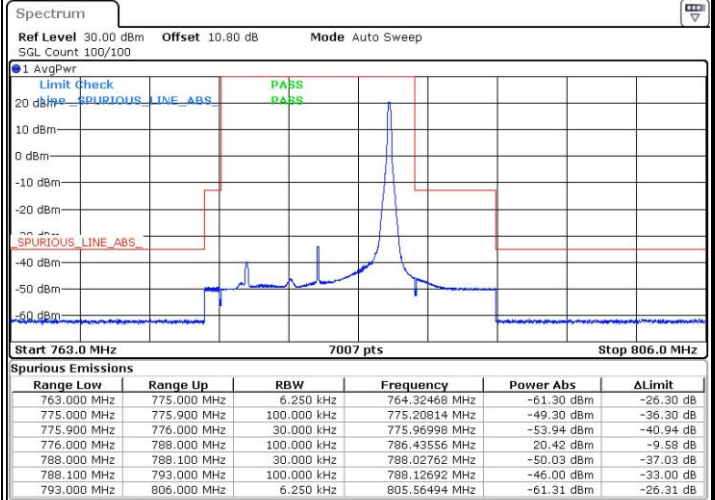
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

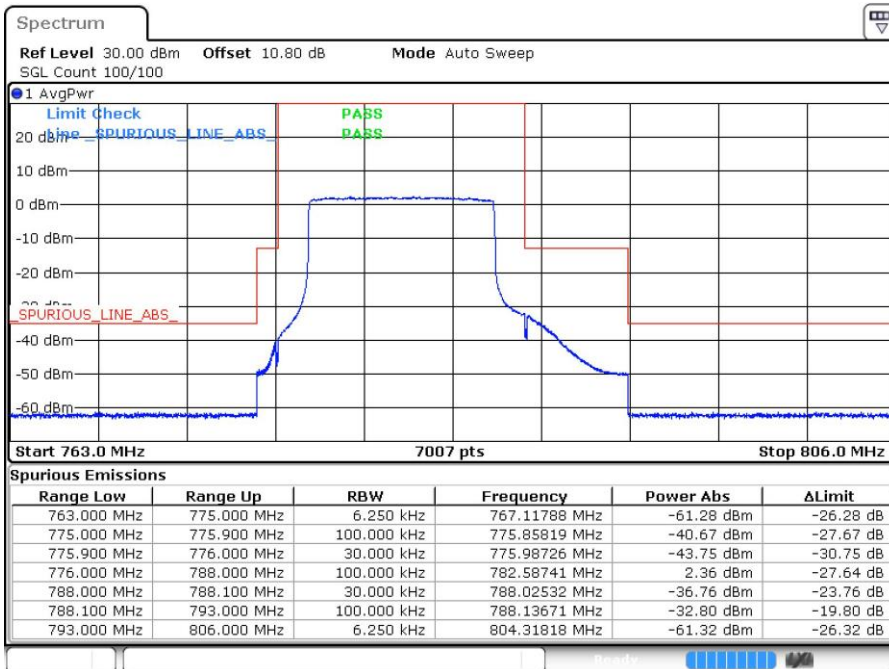


Date: 11.OCT.2018 07:26:06



Date: 11.OCT.2018 07:27:46

Band Edge / Full RB

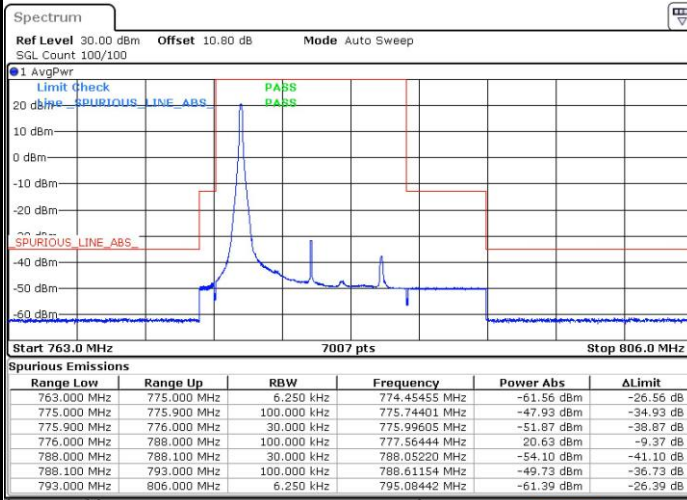


Date: 11.OCT.2018 07:21:05



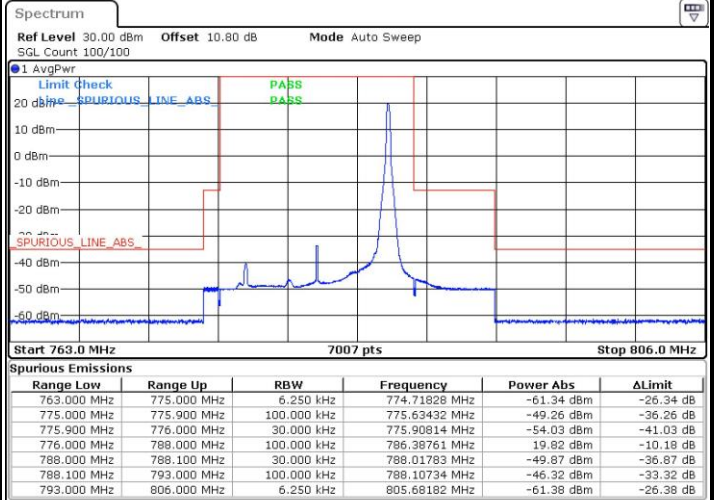
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



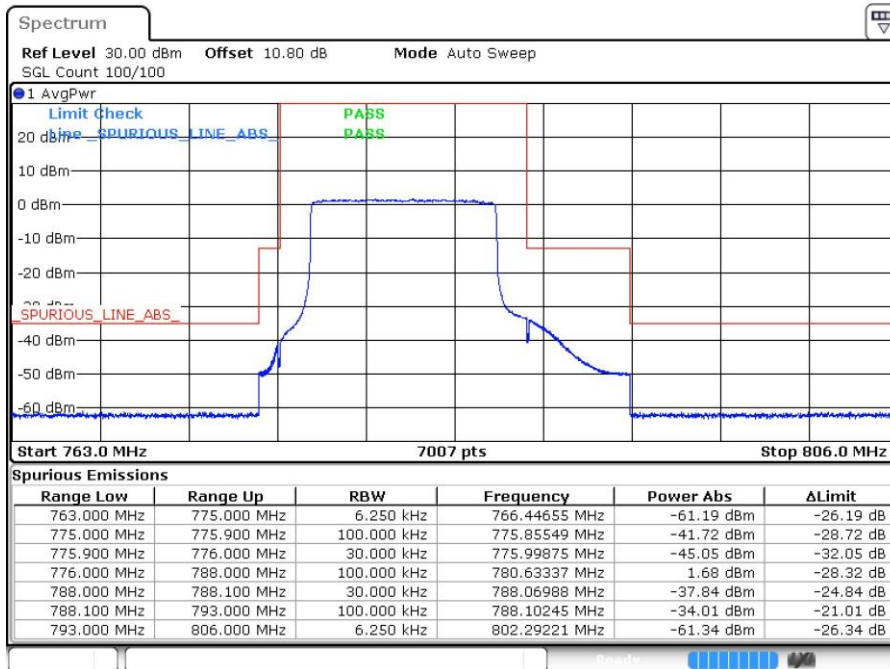
Date: 11.OCT.2018 07:24:25

Highest Band Edge / 1 RB



Date: 11.OCT.2018 07:29:26

Band Edge / Full RB



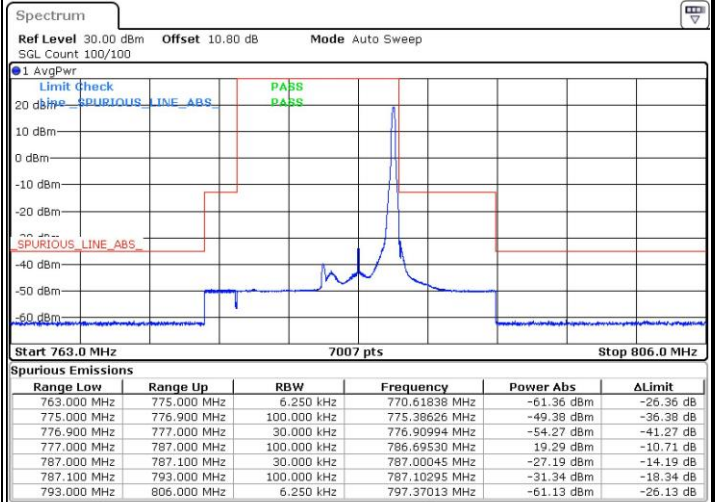
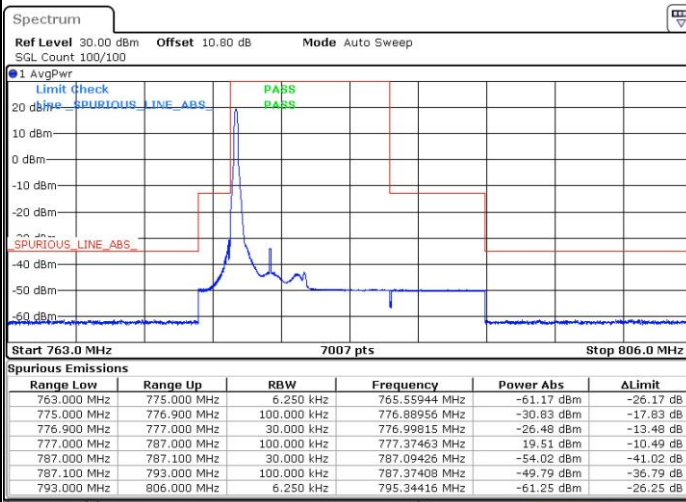
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IC LTE Band 13 / 5MHz / QPSK

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

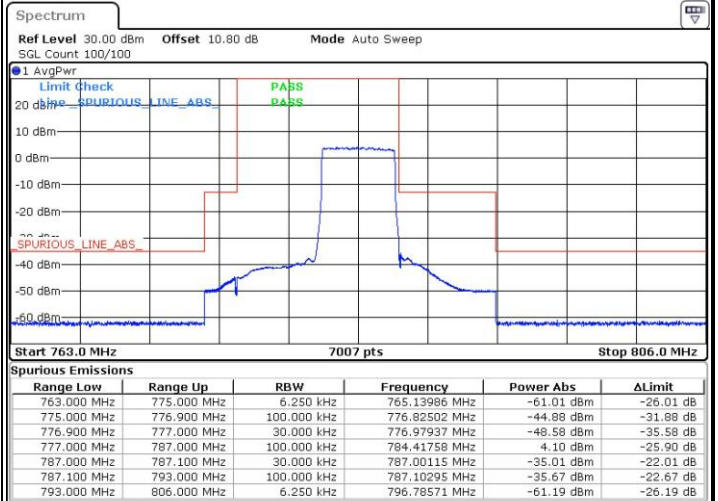
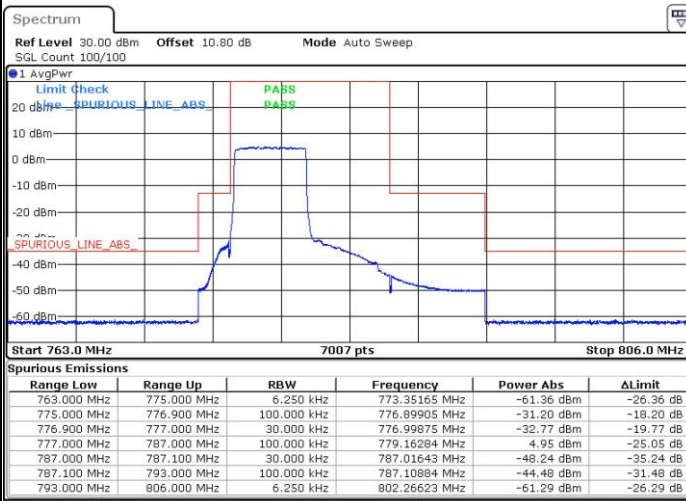


Date: 11.OCT.2018 07:40:41

Date: 11.OCT.2018 07:47:22

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 11.OCT.2018 07:35:40

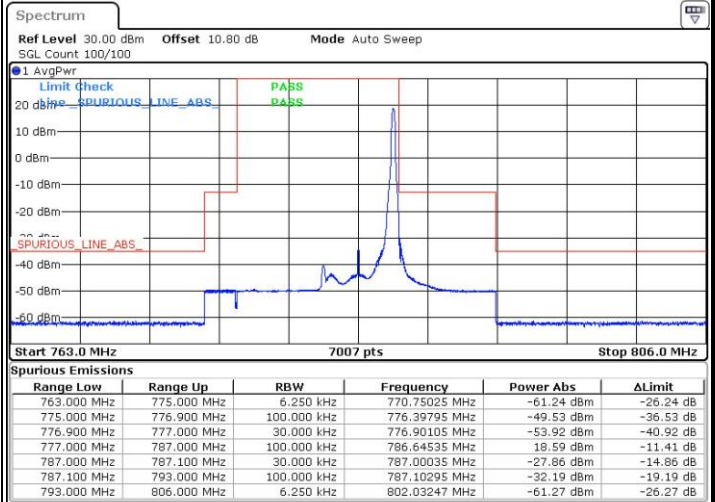
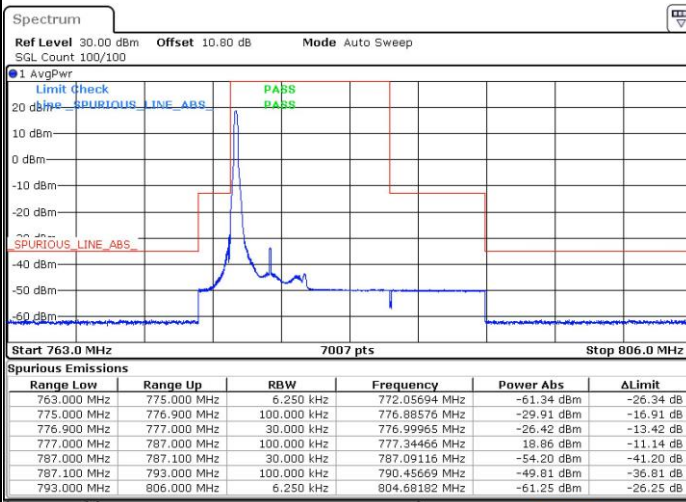
Date: 11.OCT.2018 07:42:21



IC LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

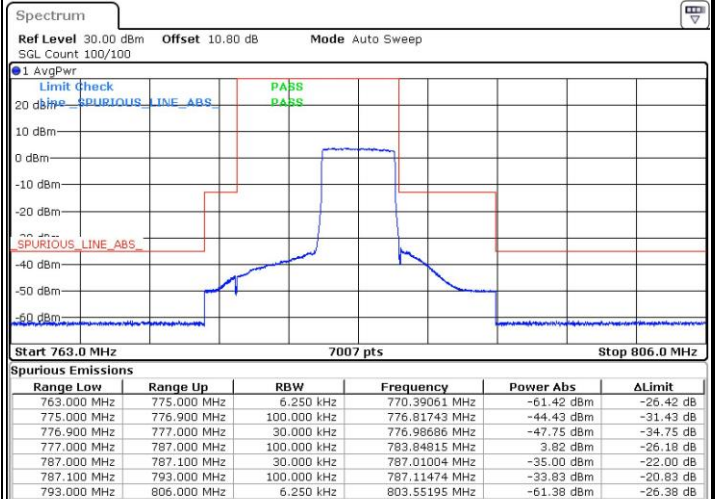
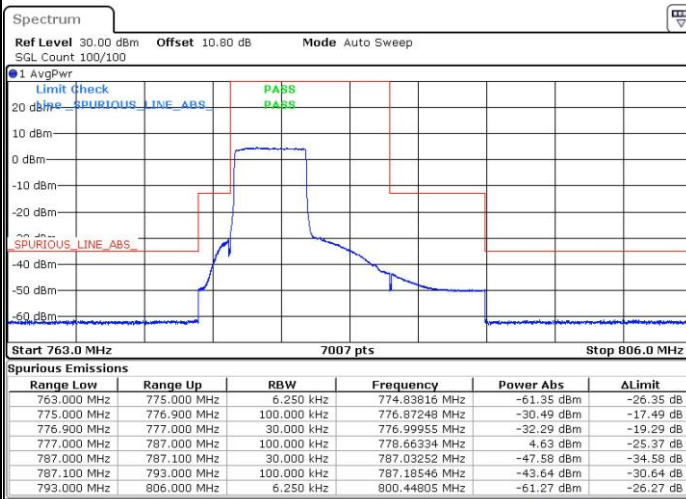


Date: 11.OCT.2018 07:39:01

Date: 11.OCT.2018 07:45:42

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



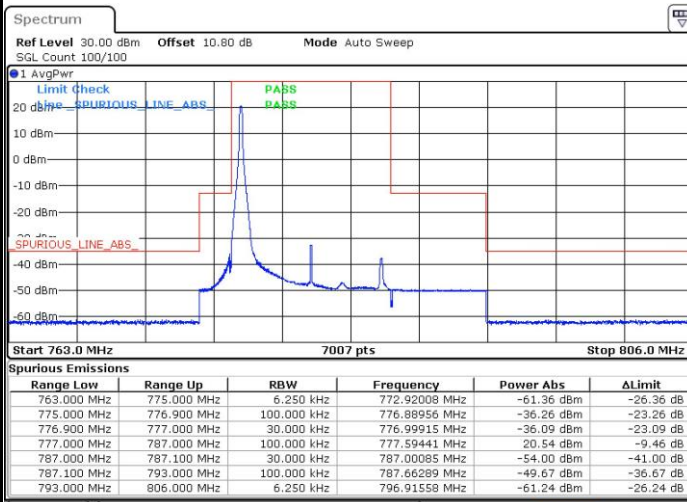
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Date: 11.OCT.2018 07:44:01



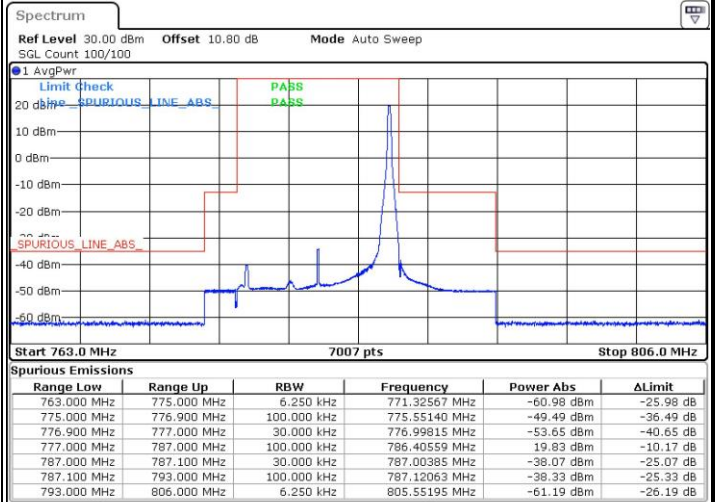
IC LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB



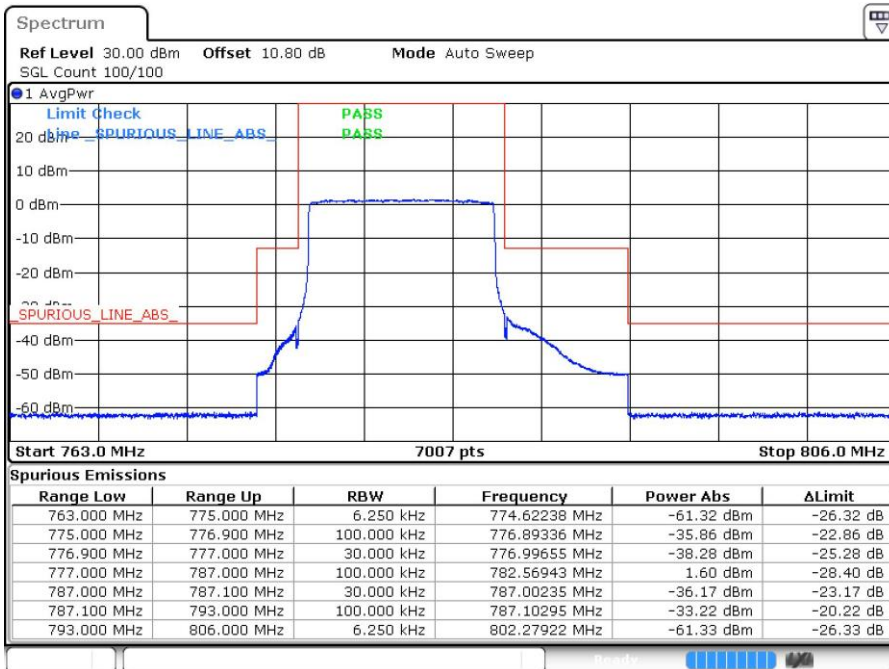
Date: 11.OCT.2018 07:54:03

Highest Band Edge / 1 RB



Date: 11.OCT.2018 07:55:44

Band Edge / Full RB



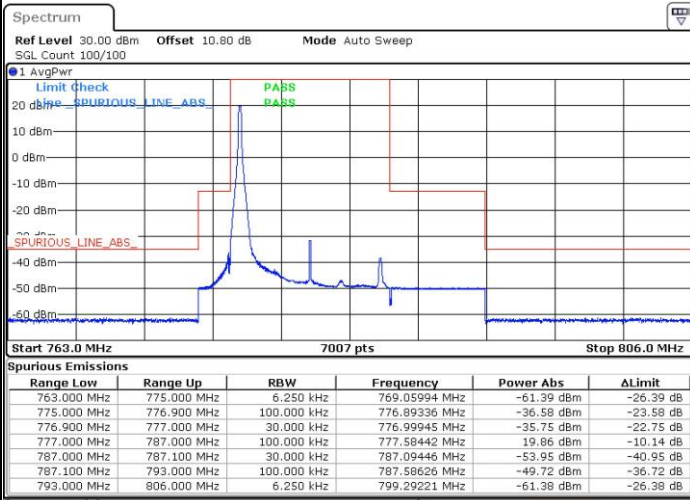
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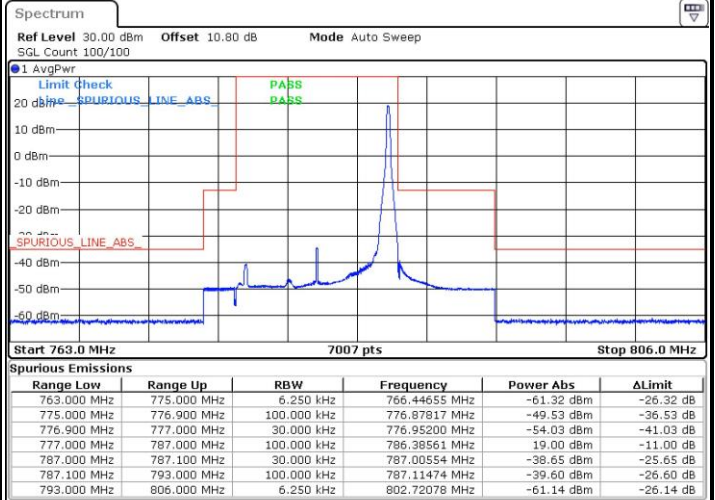
IC LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

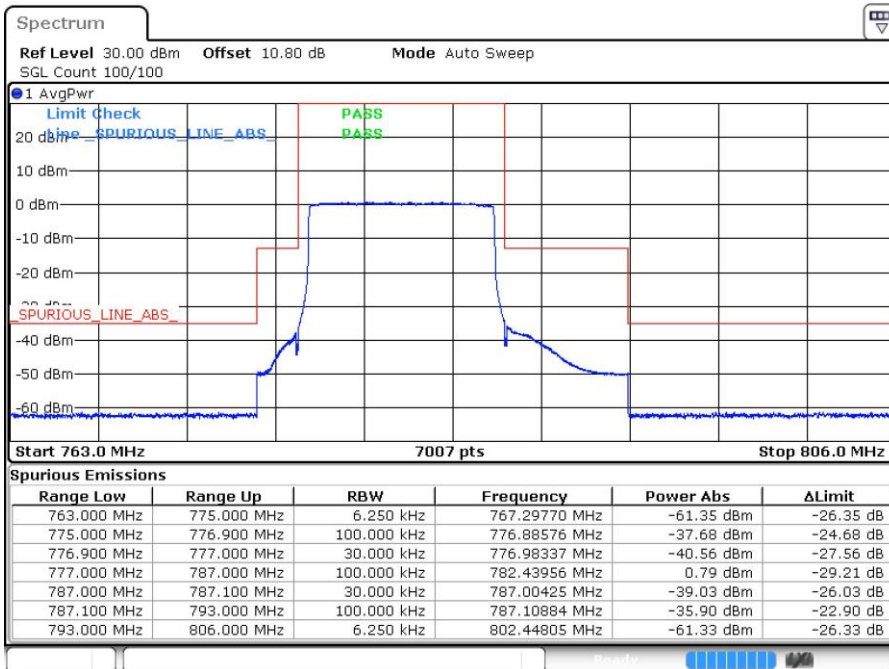


Date: 11.OCT.2018 07:52:23



Date: 11.OCT.2018 07:57:24

Band Edge / Full RB

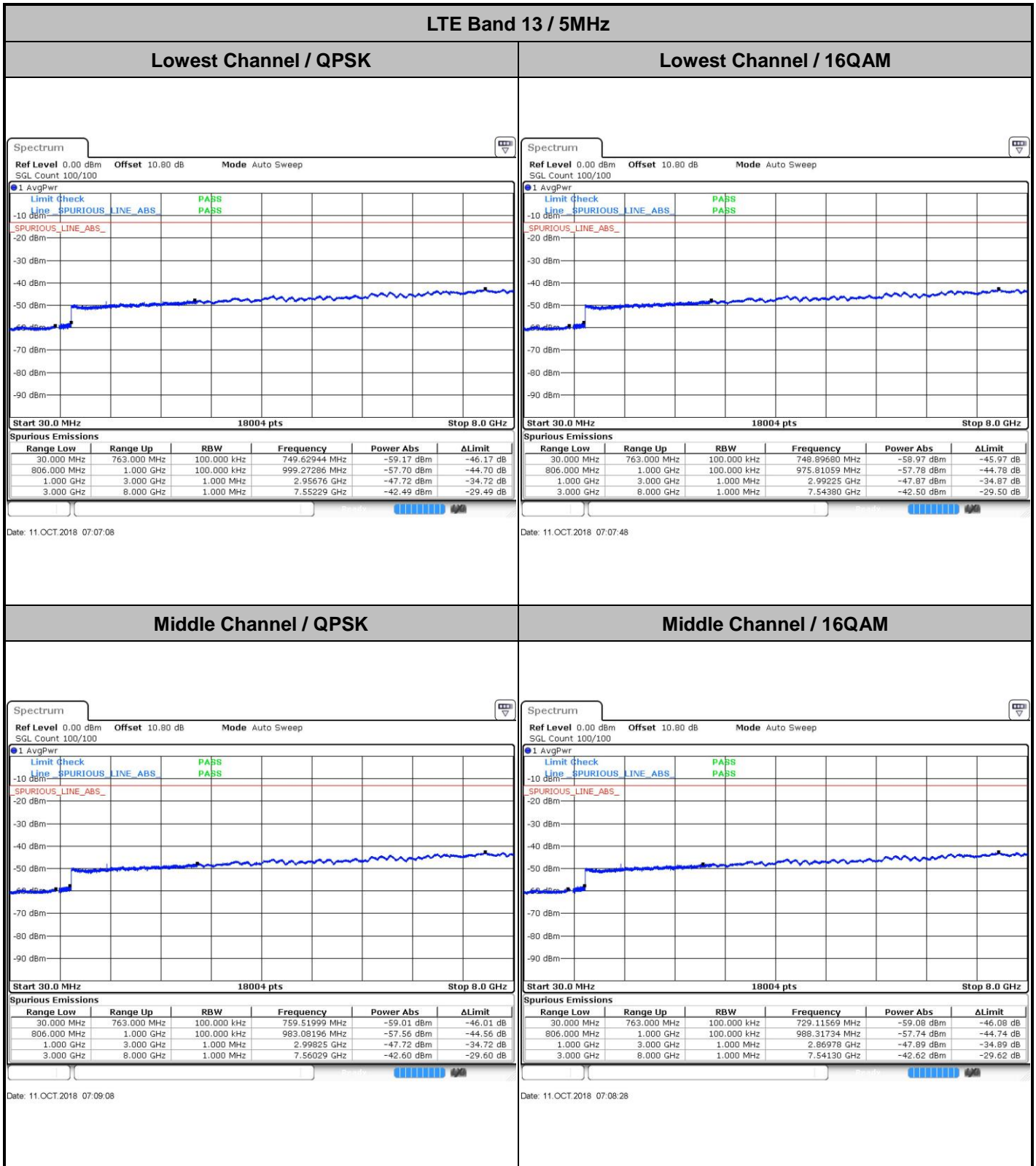


Date: 11.OCT.2018 07:50:43





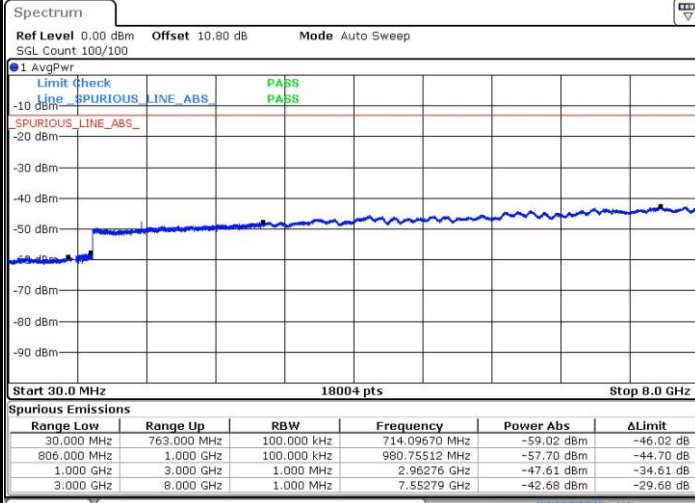
# Conducted Spurious Emission





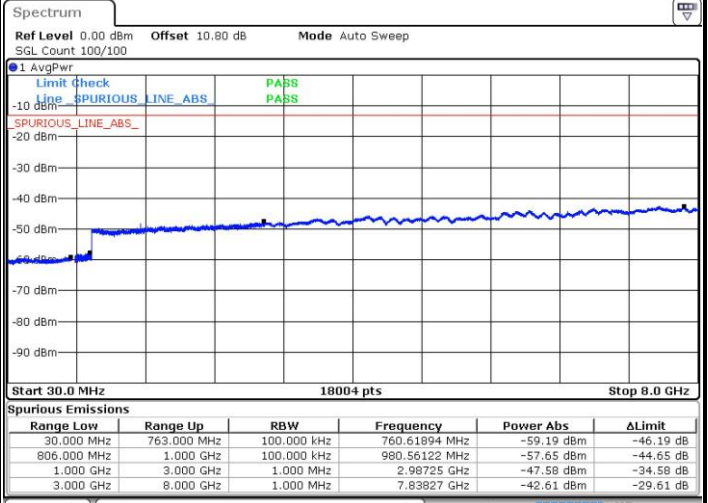
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 11.OCT.2018 07:18:00

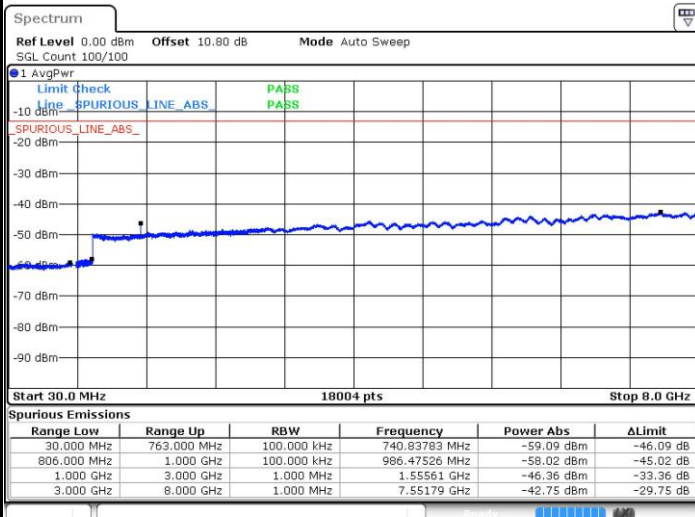
Highest Channel / 16QAM



Date: 11.OCT.2018 07:18:40

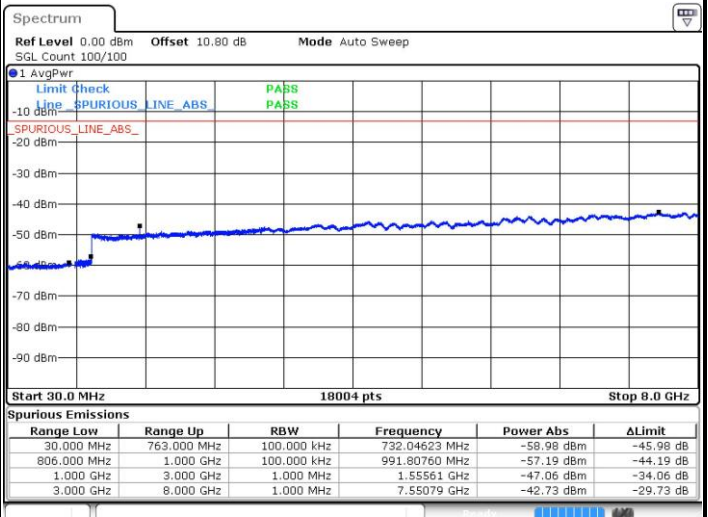
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 11.OCT.2018 07:30:47

Middle Channel / 16QAM



Date: 11.OCT.2018 07:30:07



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	0.0006	PASS
40	Normal Voltage	0.0020	
30	Normal Voltage	0.0013	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0027	
-10	Normal Voltage	0.0022	
-20	Normal Voltage	0.0000	
-30	Normal Voltage	0.0001	
20	Maximum Voltage	0.0018	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0028	

Note:

1. Normal Voltage =7.6 V. ; Battery End Point (BEP) =6.8 V. ; Maximum Voltage =8.7 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	4.61	4.87	5.48	5.91	<b>PASS</b>
Middle CH	4.67	4.72	5.28	5.77	
Highest CH	3.74	4.75	4.7	5.83	



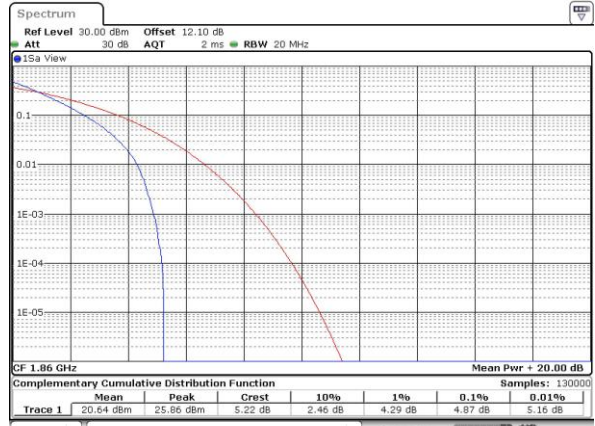
LTE Band 25 / 20MHz / QPSK

Lowest Channel / 1RB



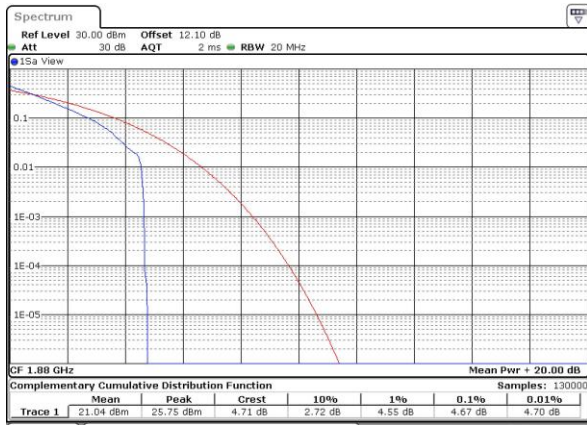
Date: 12.OCT.2018 07:10:31

Lowest Channel / Full RB



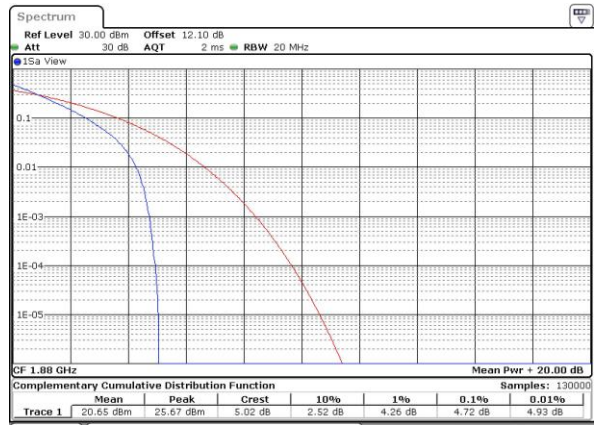
Date: 12.OCT.2018 07:10:41

Middle Channel / 1RB



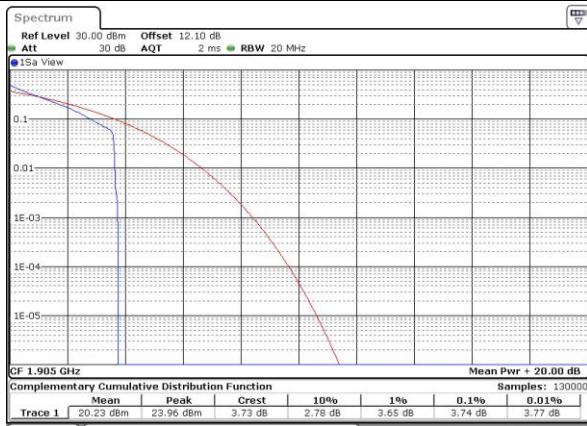
Date: 12.OCT.2018 07:11:13

Middle Channel / Full RB



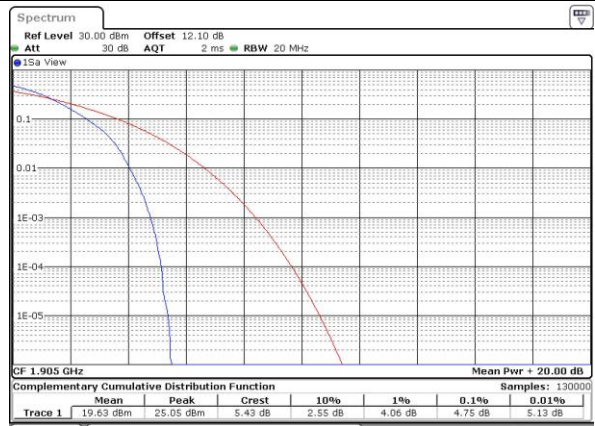
Date: 12.OCT.2018 07:11:23

Highest Channel / 1RB



Date: 12.OCT.2018 07:11:53

Highest Channel / Full RB

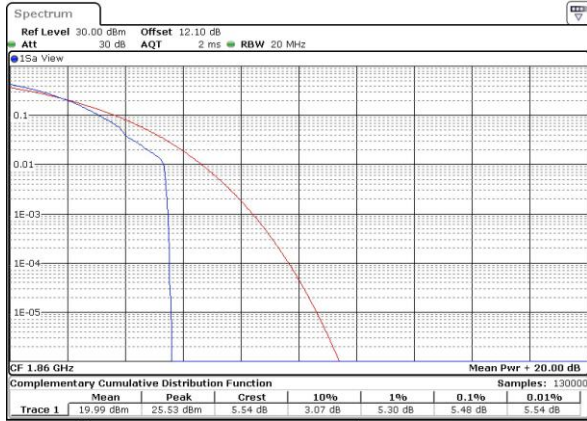


Date: 12.OCT.2018 07:12:03



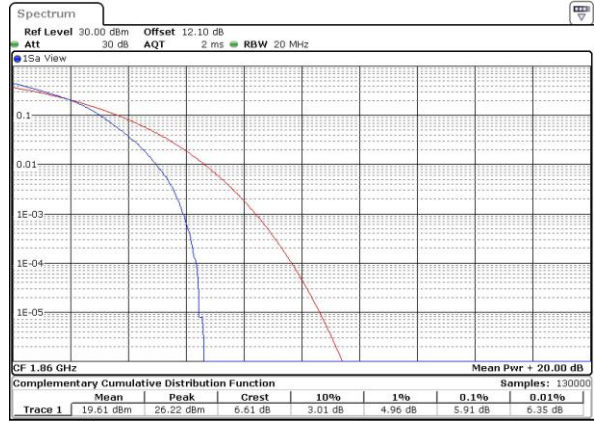
LTE Band 25 / 20MHz / 16QAM

Lowest Channel / 1RB



Date: 12.OCT.2018 07:10:10

Lowest Channel / Full RB



Date: 12.OCT.2018 07:11:21

Middle Channel / 1RB



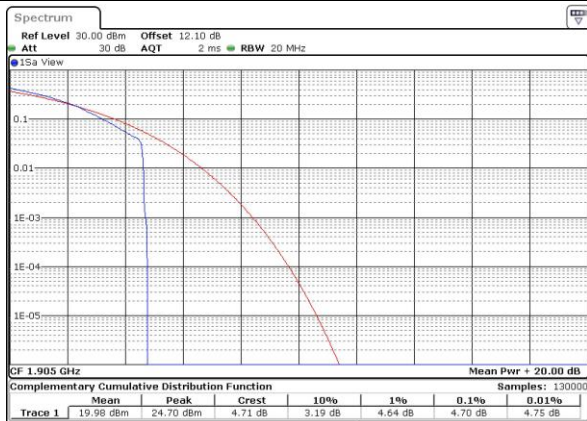
Date: 12.OCT.2018 07:10:51

Middle Channel / Full RB



Date: 12.OCT.2018 07:11:01

Highest Channel / 1RB



Date: 12.OCT.2018 07:11:33

Highest Channel / Full RB



Date: 12.OCT.2018 07:11:43