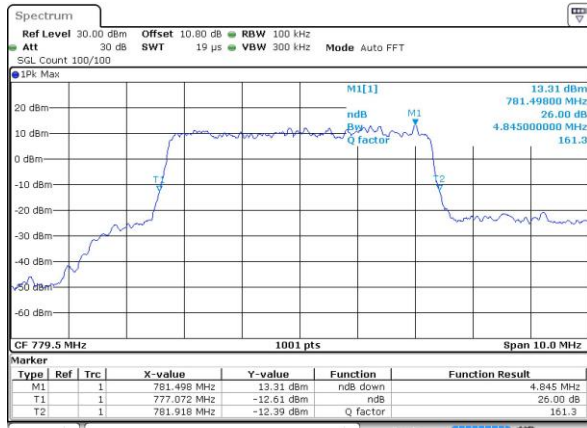


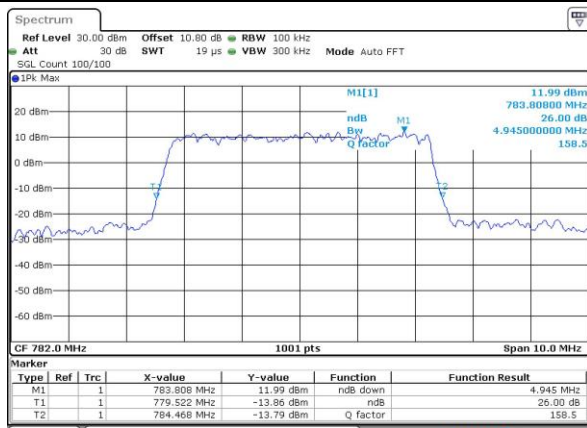


LTE Band 13

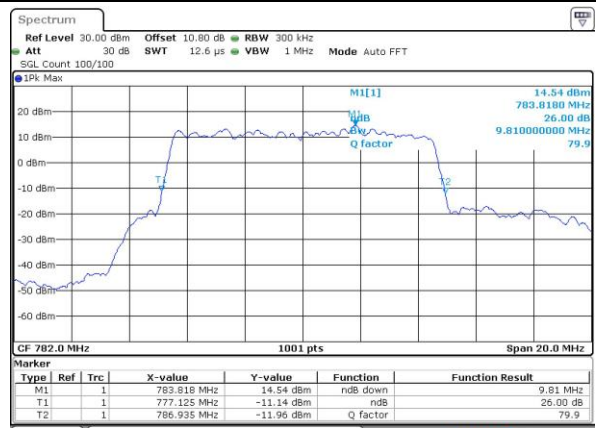
Lowest Channel / 5MHz / 64QAM



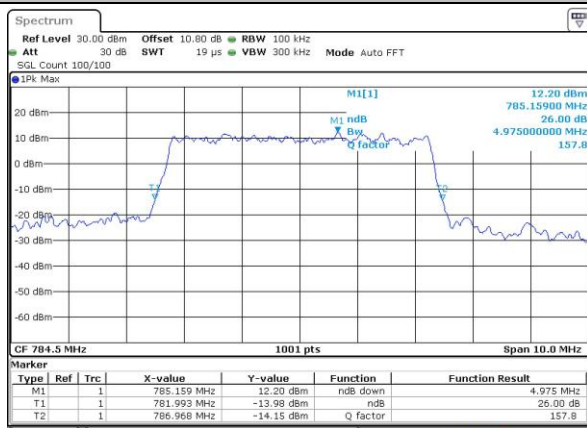
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



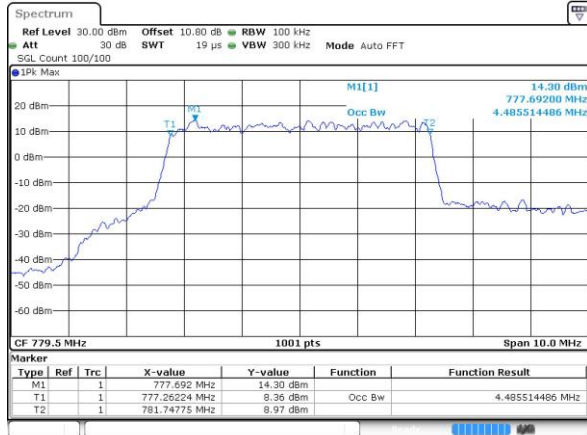
**Occupied Bandwidth**

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	-	-	-	-	4.49	4.5	-	-	-	-	-	-
Middle CH	-	-	-	-	4.5	4.5	8.99	9.05	-	-	-	-
Highest CH	-	-	-	-	4.49	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	-	-	-	-	4.49	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	-	9.05	-	-	-	-	-
Highest CH	-	-	-	-	4.50	-	-	-	-	-	-	-



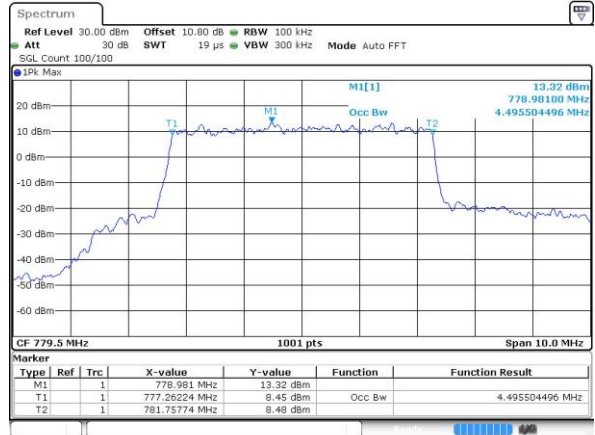
LTE Band 13

Lowest Channel / 5MHz / QPSK



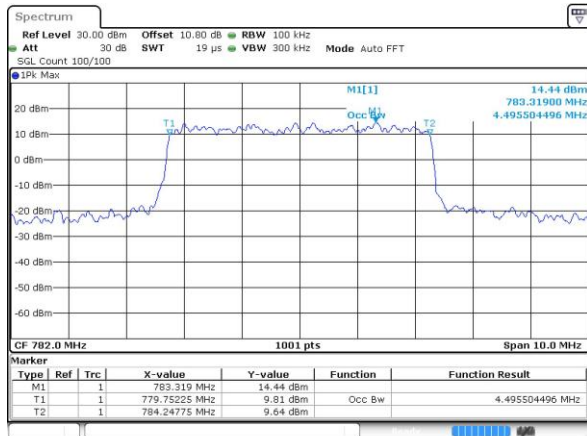
Date: 16.OCT.2018 09:14:37

Lowest Channel / 5MHz / 16QAM



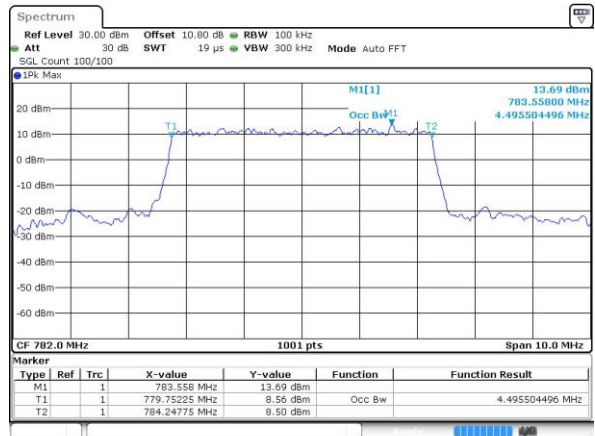
Date: 16.OCT.2018 09:14:48

Middle Channel / 5MHz / QPSK



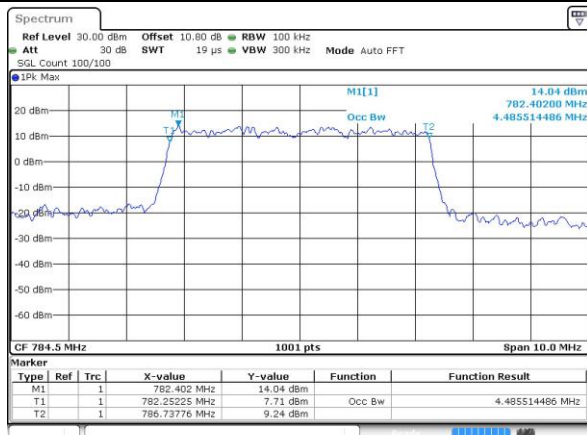
Date: 16.OCT.2018 09:25:58

Middle Channel / 5MHz / 16QAM



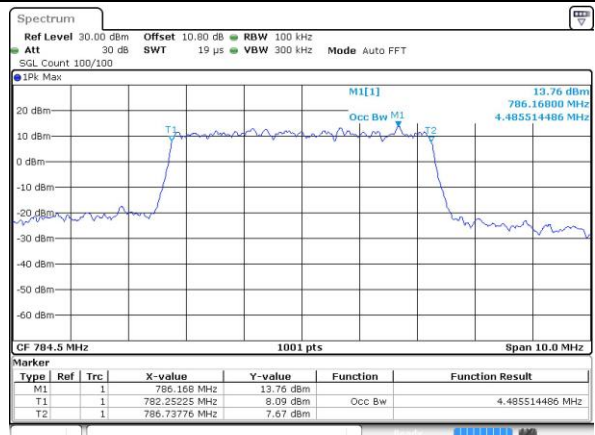
Date: 16.OCT.2018 09:25:47

Highest Channel / 5MHz / QPSK



Date: 16.OCT.2018 09:26:10

Highest Channel / 5MHz / 16QAM

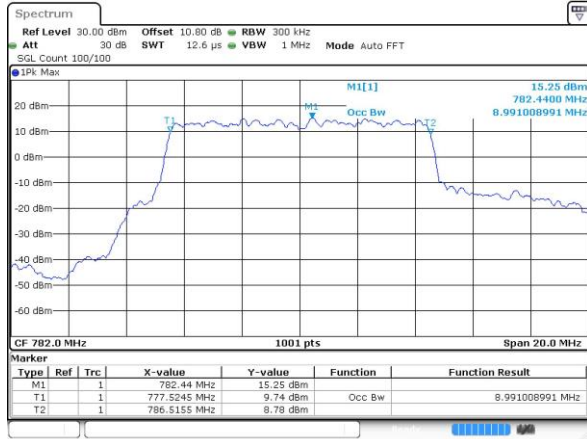


Date: 16.OCT.2018 09:26:21



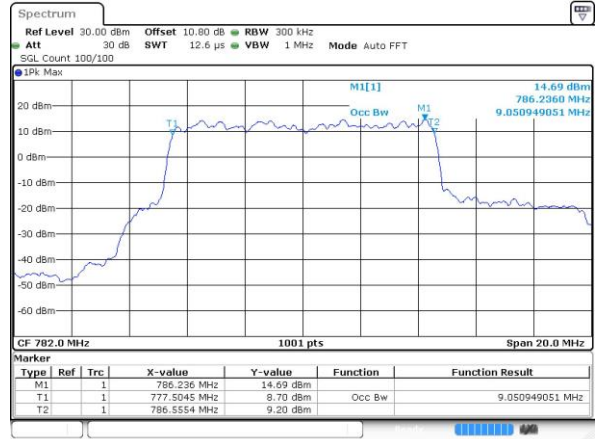
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 16.OCT.2018 09:35:16

Middle Channel / 10MHz / 16QAM

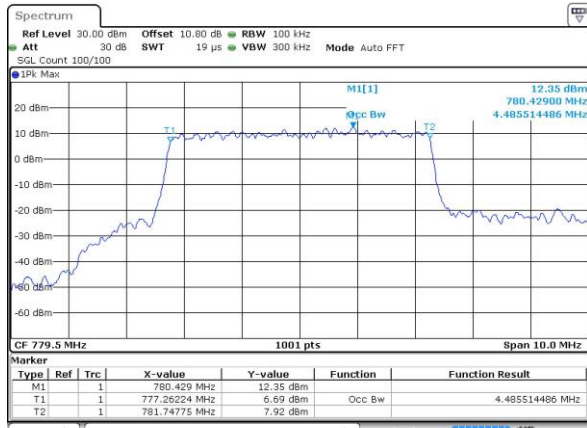


Date: 16.OCT.2018 09:35:27

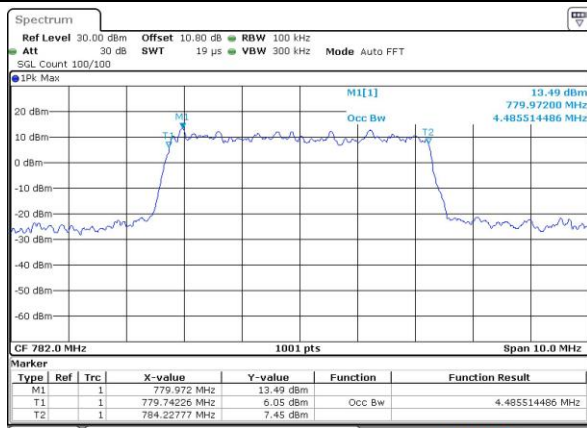


LTE Band 13

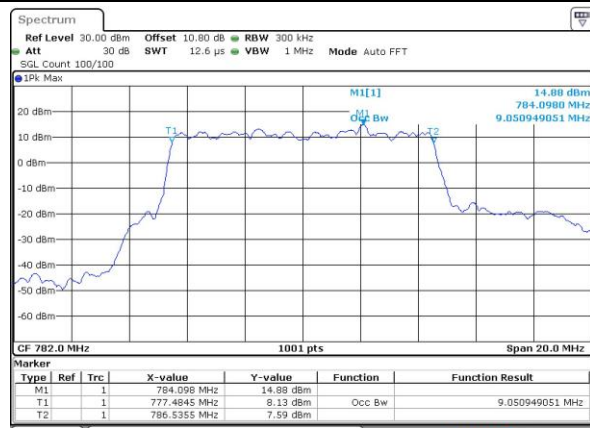
Lowest Channel / 5MHz / 64QAM



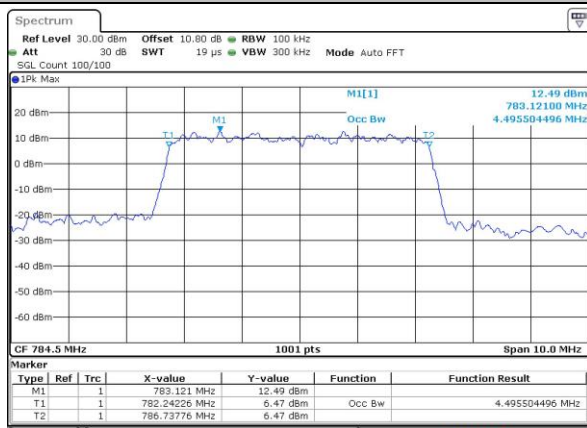
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



Conducted Band Edge

Mode			LTE Band 13 / 5MHz					
Mod.			QPSK		16QAM		64QAM	
Limit (dBm)		RB Size	1RB	Full RB	1RB	Full RB	1RB	Full RB
Lowest CH	≤ -13	0~100kHz	-53.22	-41.81	-53.34	-42.32	-54.14	-43.86
	≤ -13	>100kHz	-49.24	-37.05	-49.57	-38.3	-49.97	-39.75
	≤ -35	763~775MHz	-61.91	-60.26	-62.06	-61.2	-61.89	-61.58
	≤ -35	793~805MHz	-62.12	-61.45	-61.96	-61.75	-62.02	-62.14
Highest CH	≤ -13	0~100kHz	-52.66	-35.32	-53.49	-36.38	-52.95	-38.05
	≤ -13	>100kHz	-27.87	-31.22	-29.18	-32.51	-30.09	-21.06
	≤ -35	763~775MHz	-61.95	-62.08	-62.05	-61.88	-62.33	-62.14
	≤ -35	793~805MHz	-62.06	-61.18	-61.65	-60.4	-62.2	-60.55
Result			Compliance					

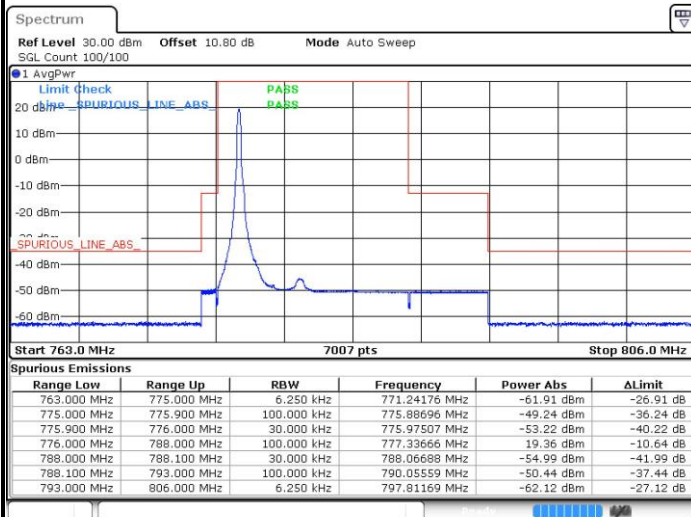
Mode			LTE Band 13 / 10MHz					
Mod.			QPSK		16QAM		64QAM	
Limit (dBm)		RB Size	1RB	Full RB	1RB	Full RB	1RB	Full RB
Middle CH	≤ -13	0~100kHz	-54.32	-30.42	-54.25	-32.77	-54.33	-34.75
	≤ -13	>100kHz	-49.82	-26.62	-49.68	-28.84	-49.98	-30.73
	≤ -35	763~775MHz	-61.94	-59.54	-61.97	-60.67	-62.39	-61.25
	≤ -35	793~805MHz	-61.9	-52.01	-61.93	-55.47	-62.19	-56.85
Result		Compliance						

Mode			LTE Band 13 / 10MHz		
Mod.			QPSK	16QAM	64QAM
Limit (dBm)		RB Size	1RB Max	1RB Max	1RB Max
Middle CH	≤-13	0~100kHz	-52.9	-52.7	-54.14
	≤-13	>100kHz	-29.2	-30.43	-31
	≤-35	763~775MHz	-61.86	-61.88	-62.28
	≤-35	793~805MHz	-61.99	-62.04	-62.13
Result		Compliance			

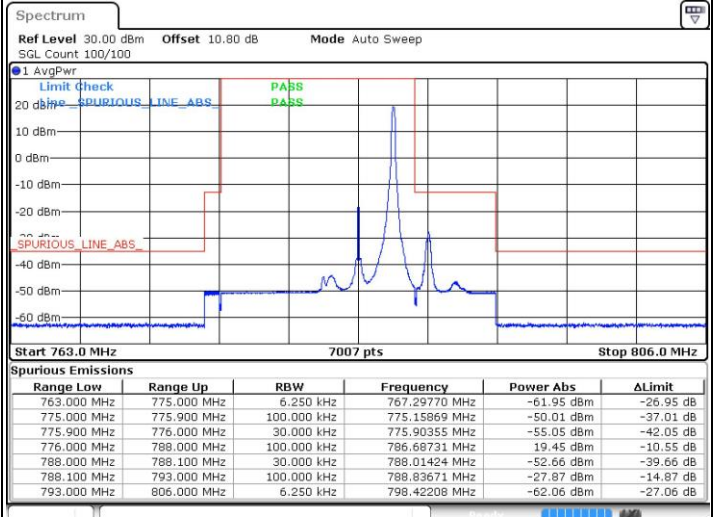


LTE Band 13 / 5MHz / QPSK

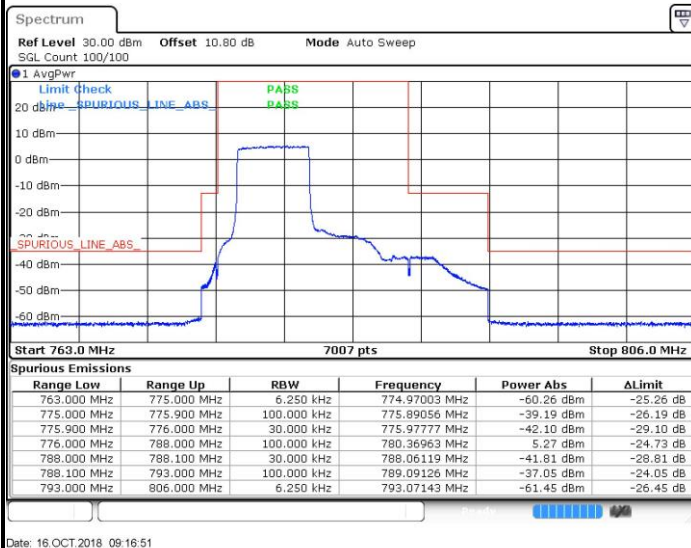
Lowest Band Edge / 1 RB



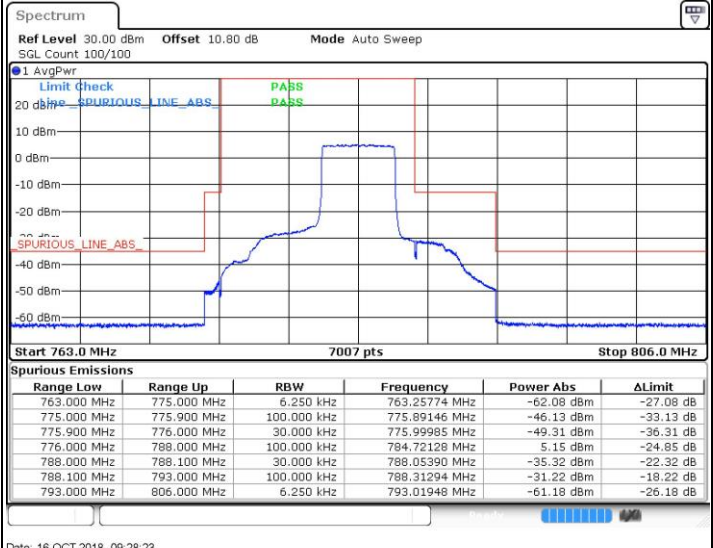
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



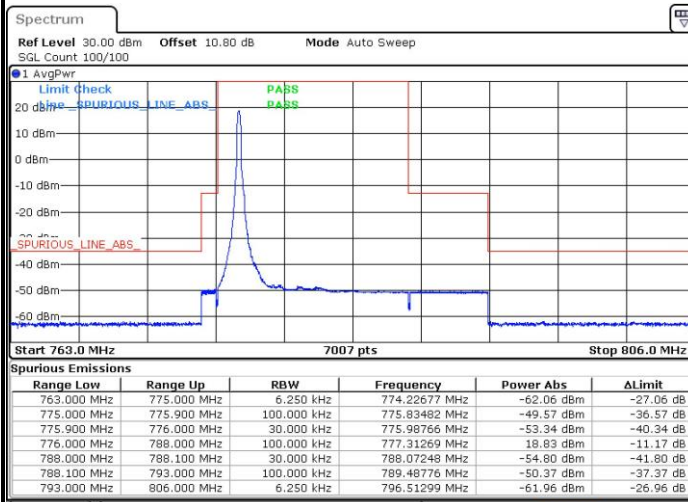
Highest Band Edge / Full RB



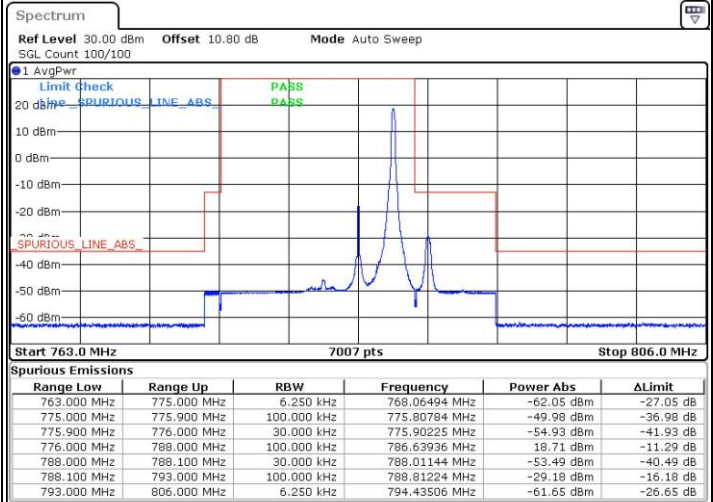


LTE Band 13 / 5MHz / 16QAM

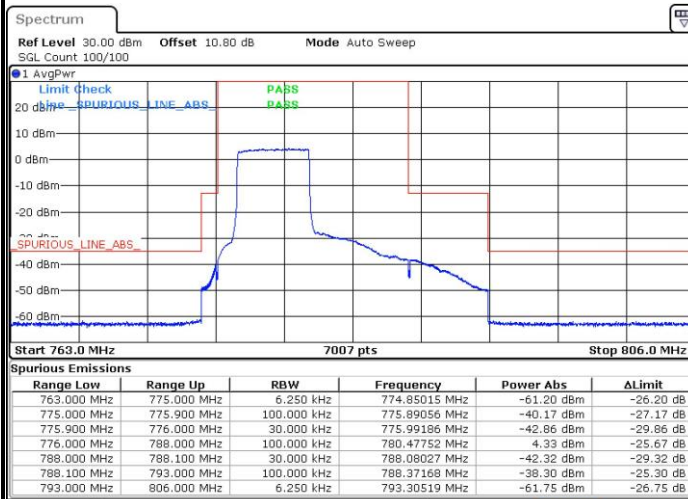
Lowest Band Edge / 1 RB



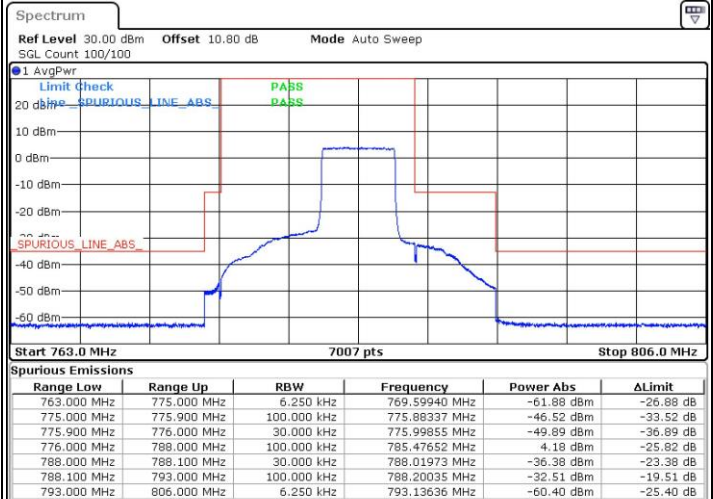
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



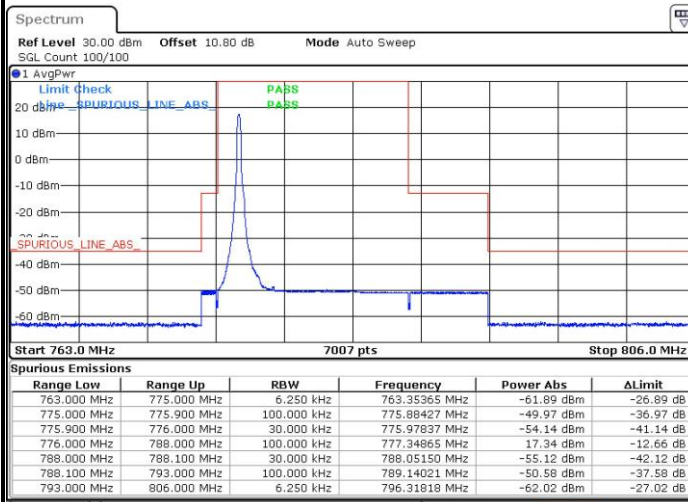
Highest Band Edge / Full RB



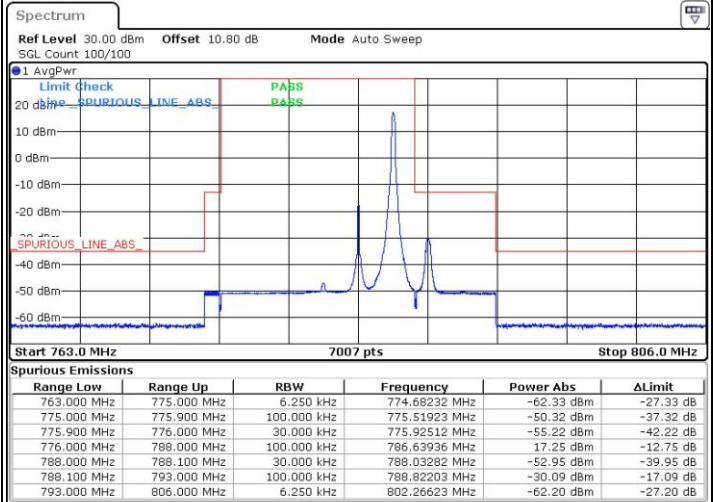


LTE Band 13 / 5MHz / 64QAM

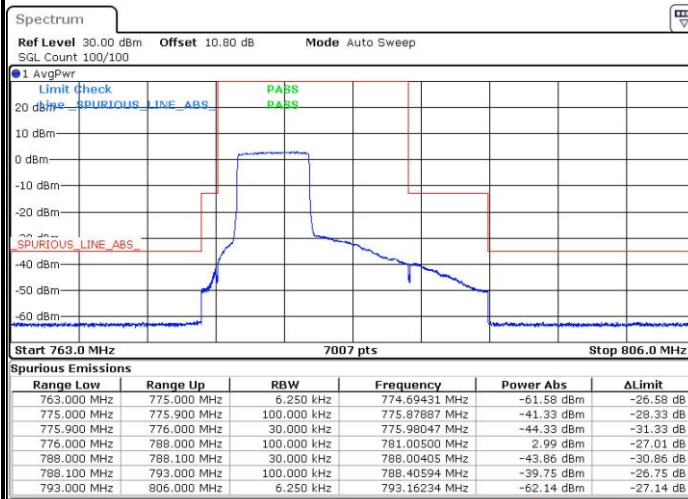
Lowest Band Edge / 1 RB



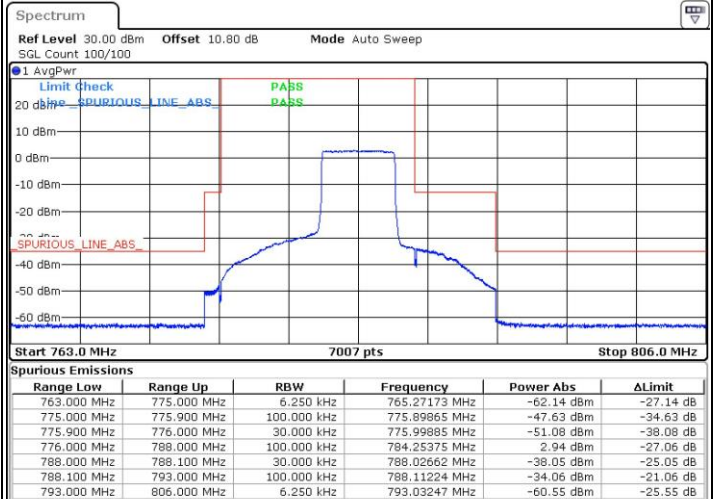
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



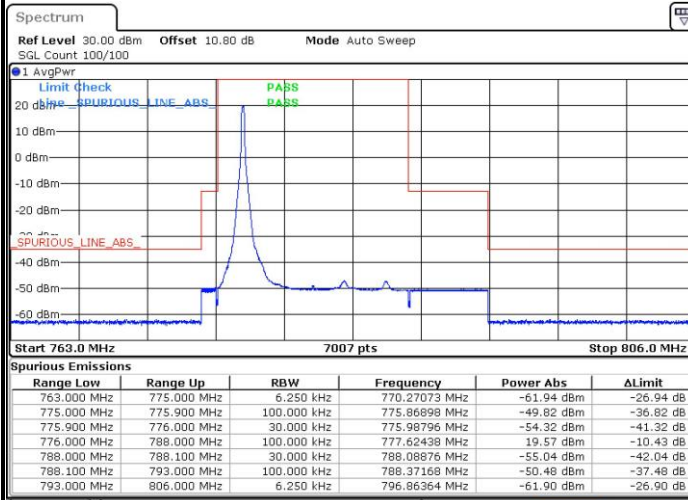
Highest Band Edge / Full RB





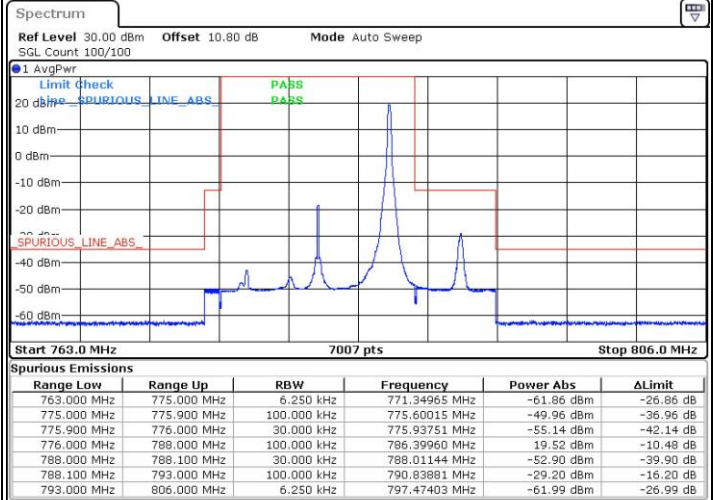
LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB



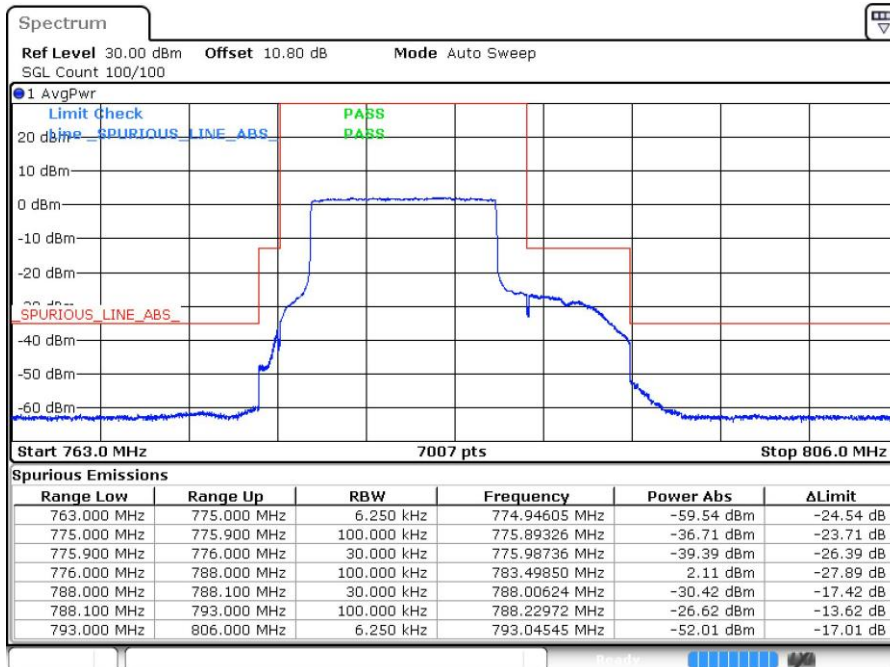
Date: 16.OCT.2018 09:42:30

Highest Band Edge / 1 RB



Date: 16.OCT.2018 09:44:11

Band Edge / Full RB

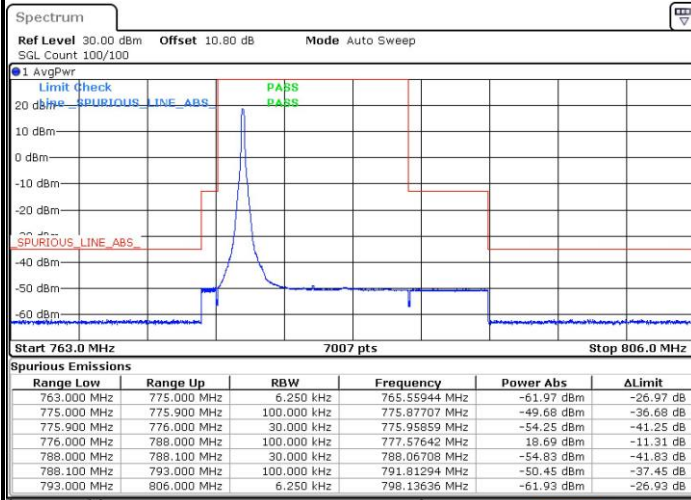


Date: 16.OCT.2018 09:37:30



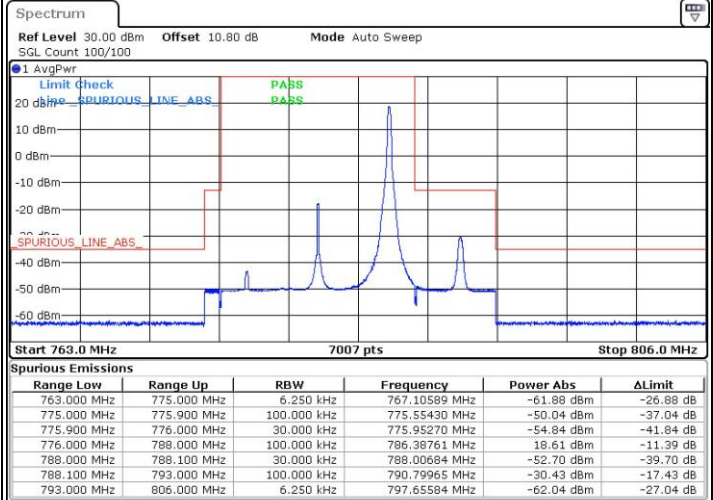
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



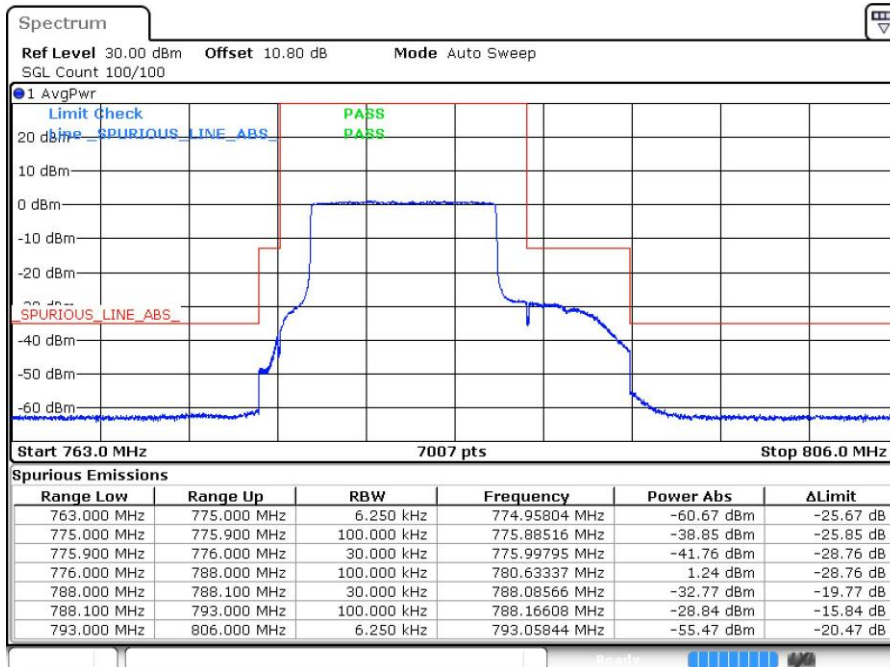
Date: 16.OCT.2018 09:40:50

Highest Band Edge / 1 RB



Date: 16.OCT.2018 09:45:51

Band Edge / Full RB

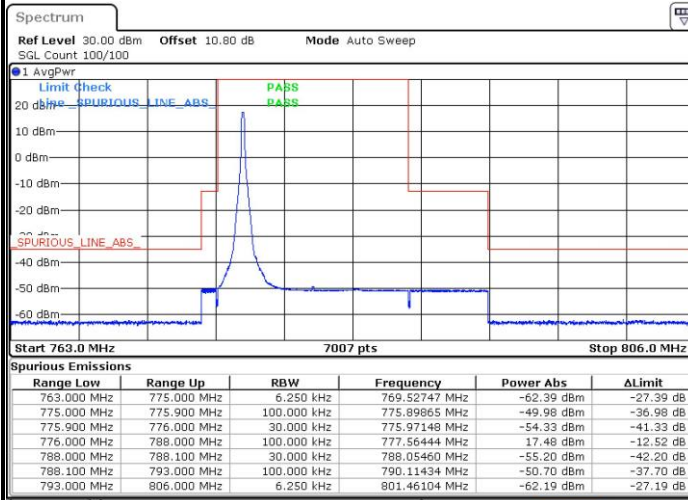


Date: 16.OCT.2018 09:39:10



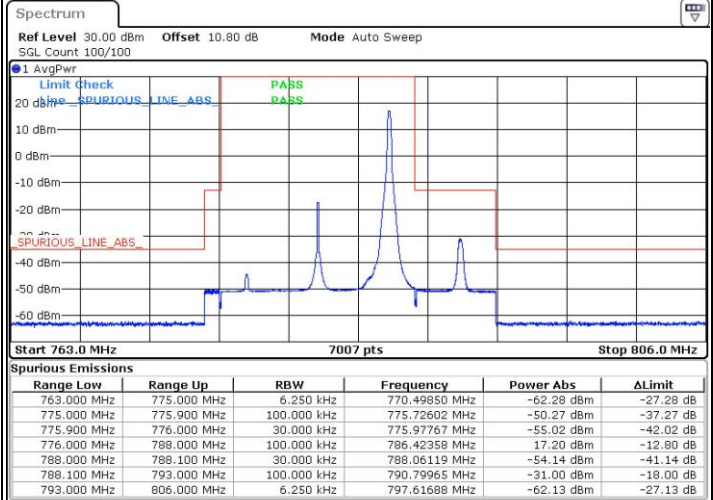
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



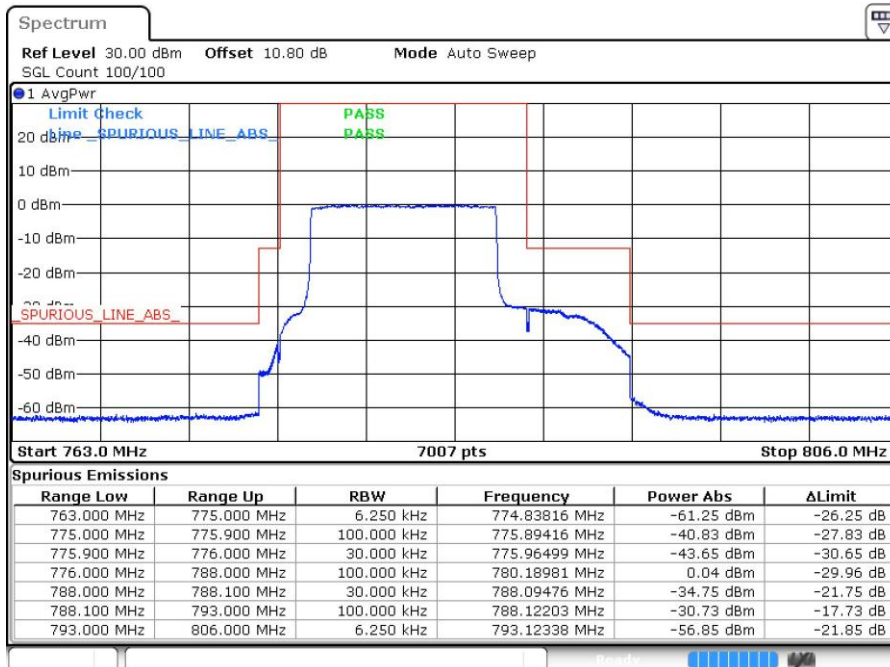
Date: 18.OCT.2018 21:50:43

Highest Band Edge / 1 RB



Date: 18.OCT.2018 21:52:23

Band Edge / Full RB



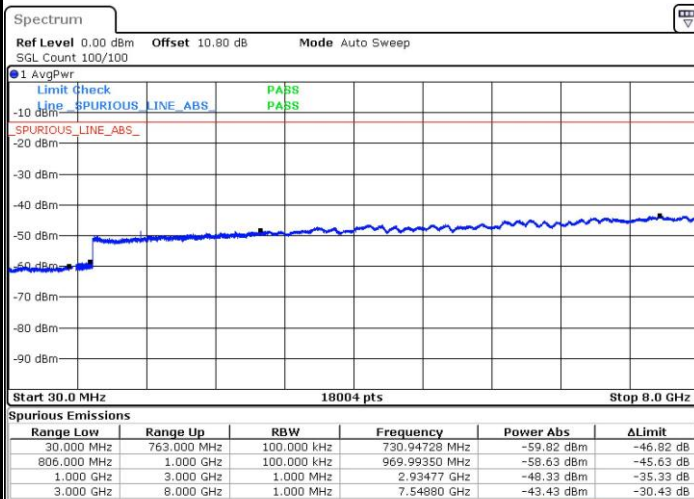
Date: 18.OCT.2018 21:49:03



Conducted Spurious Emission

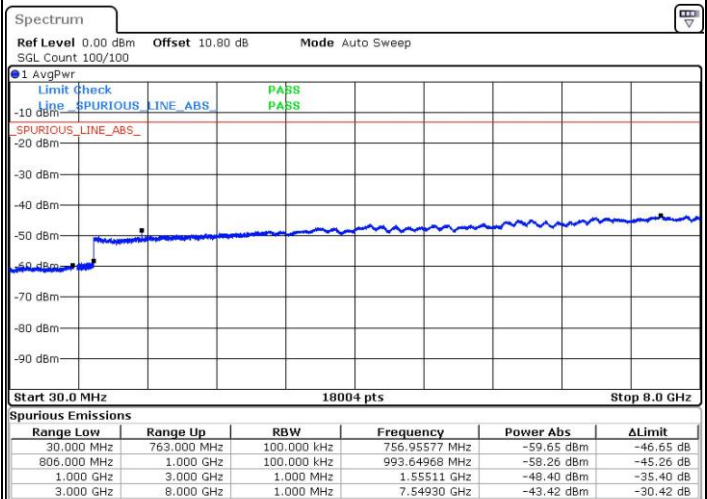
LTE Band 13 / 5MHz

Lowest Channel / QPSK



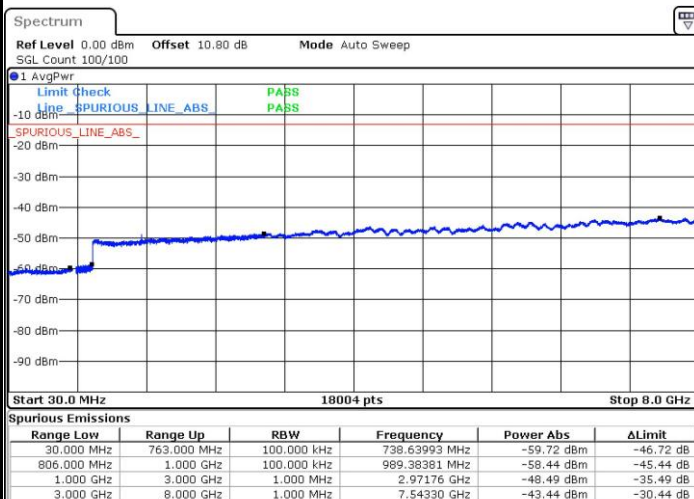
Date: 16.OCT.2018 09:22:43

Lowest Channel / 16QAM



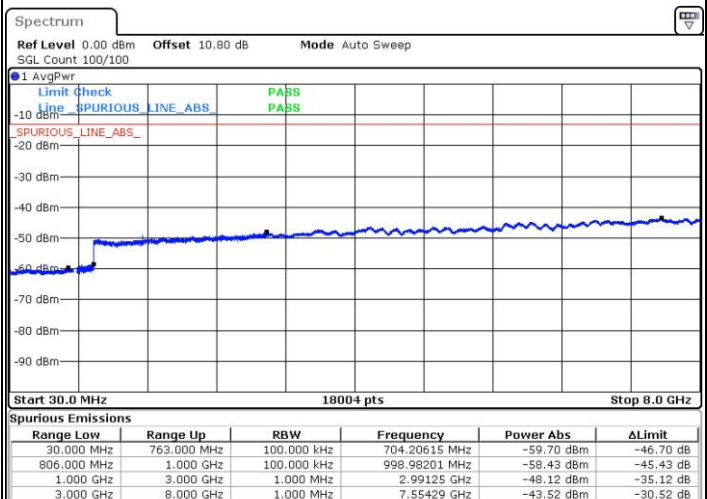
Date: 16.OCT.2018 09:23:33

Middle Channel / QPSK



Date: 16.OCT.2018 09:25:13

Middle Channel / 16QAM

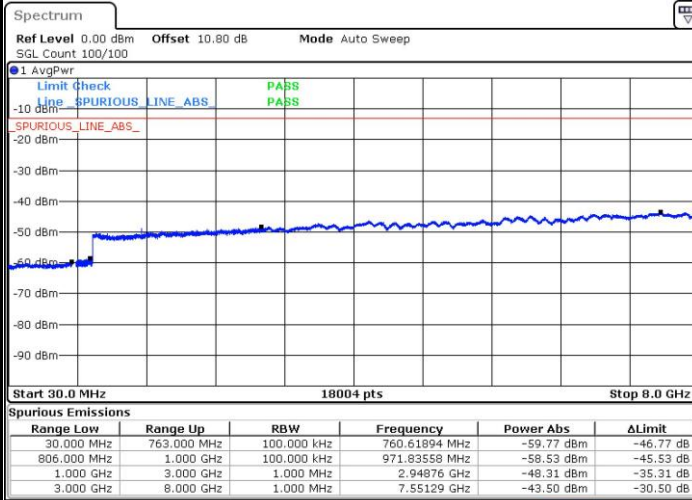


Date: 16.OCT.2018 09:24:23



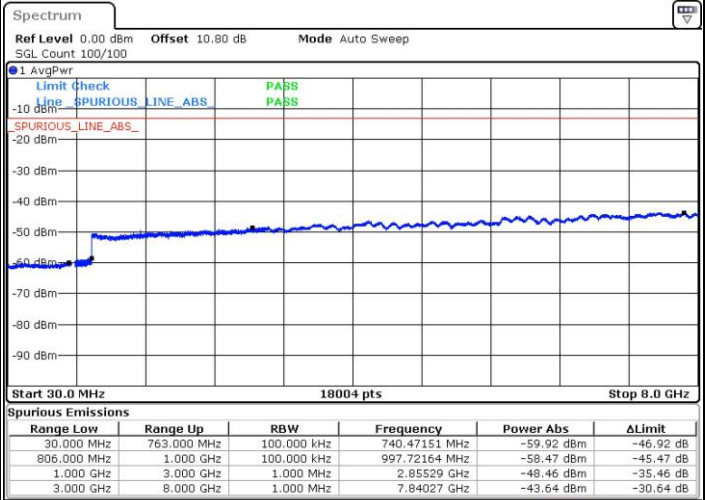
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 16.OCT.2018 09:34:15

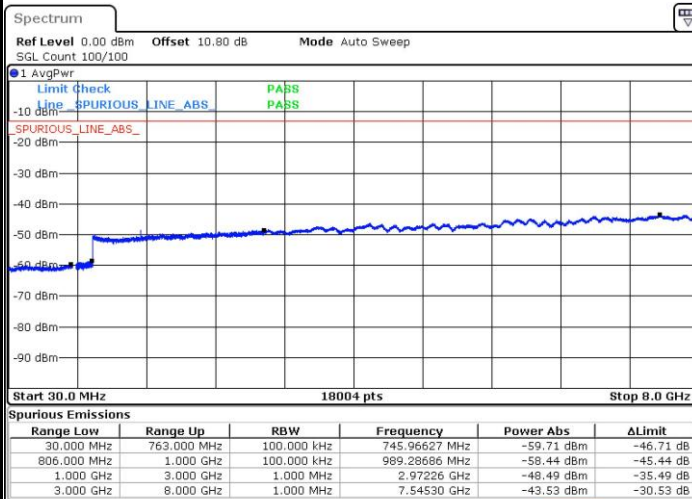
Highest Channel / 16QAM



Date: 16.OCT.2018 09:35:05

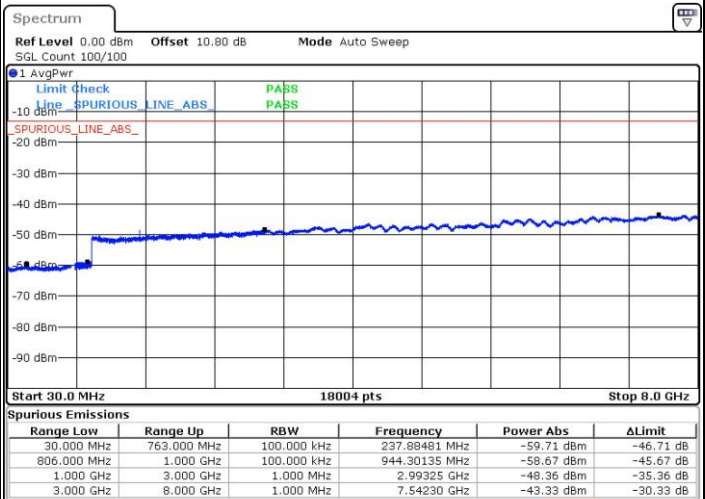
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 16.OCT.2018 09:47:31

Middle Channel / 16QAM

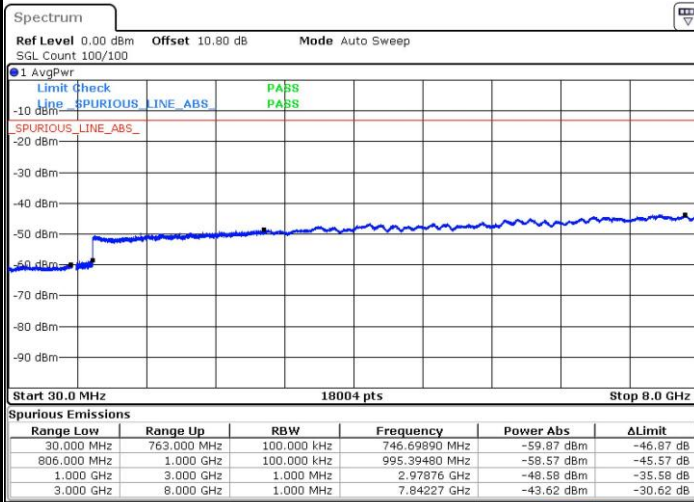


Date: 16.OCT.2018 09:46:41



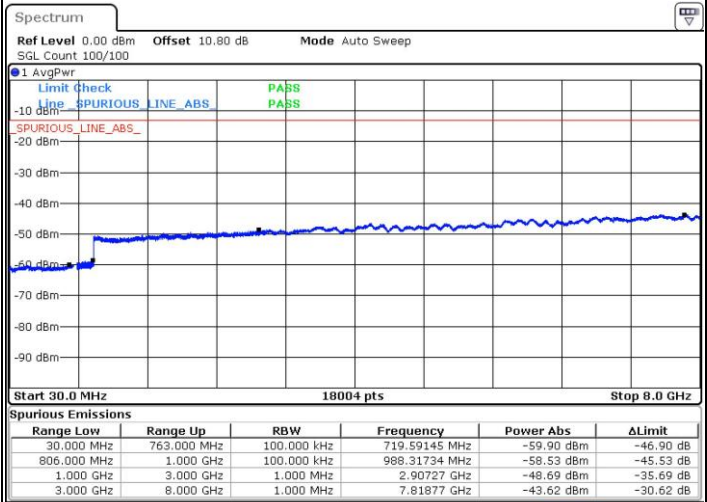
LTE Band 13 / 5MHz

Lowest Channel / 64QAM



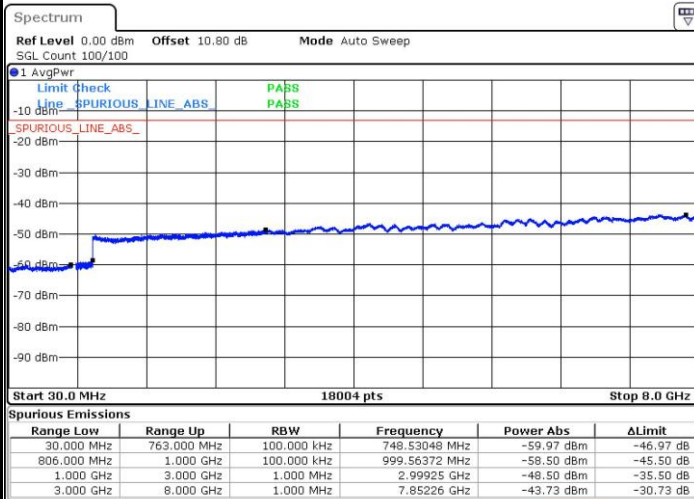
Date: 18.OCT.2018 21:41:34

Middle Channel / 64QAM



Date: 18.OCT.2018 21:42:14

Highest Channel / 64QAM

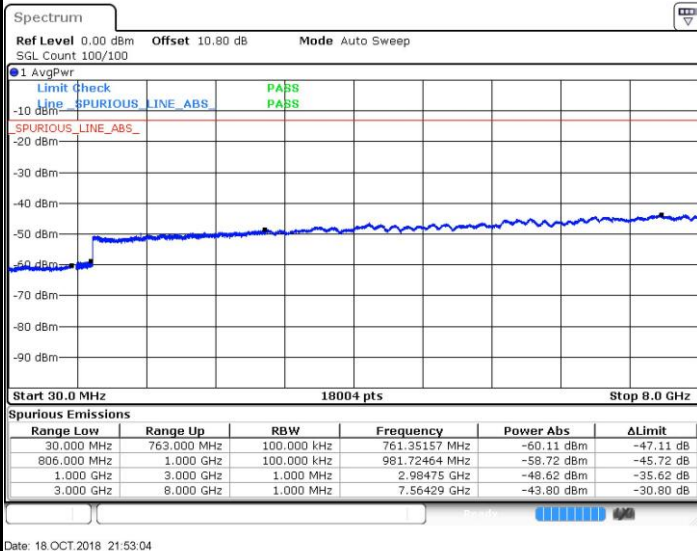


Date: 18.OCT.2018 21:47:00



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	0.0155	PASS
40	Normal Voltage	0.0075	
30	Normal Voltage	0.0022	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0009	
0	Normal Voltage	0.0171	
-10	Normal Voltage	0.0155	
-20	Normal Voltage	0.0180	
-30	Normal Voltage	0.0000	
20	Maximum Voltage	0.0155	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0173	

Note:

1. Normal Voltage =3.9 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

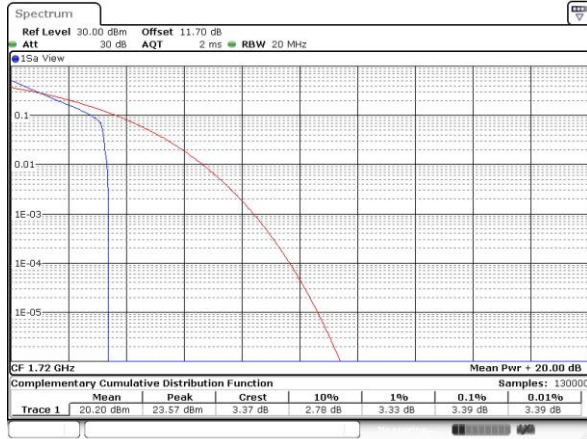
LTE Band 66

Peak-to-Average Ratio

Mode	LTE Band 66 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.39	4.38	4.26	5.39	PASS
Middle CH	3.25	4.52	4.09	5.45	
Highest CH	3.33	4.43	4.06	5.57	
Mode	LTE Band 66 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.10	6.03	-	-	PASS
Middle CH	6.23	6.12	-	-	
Highest CH	4.90	6.06	-	-	

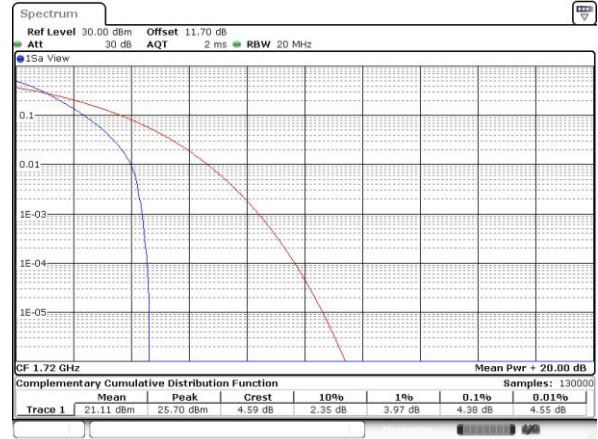
LTE Band 66 / 20MHz / QPSK

Lowest Channel / 1RB



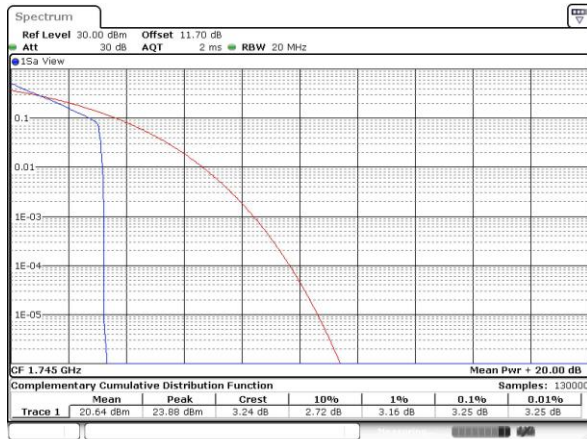
Date: 16.OCT.2018 11:39:24

Lowest Channel / Full RB



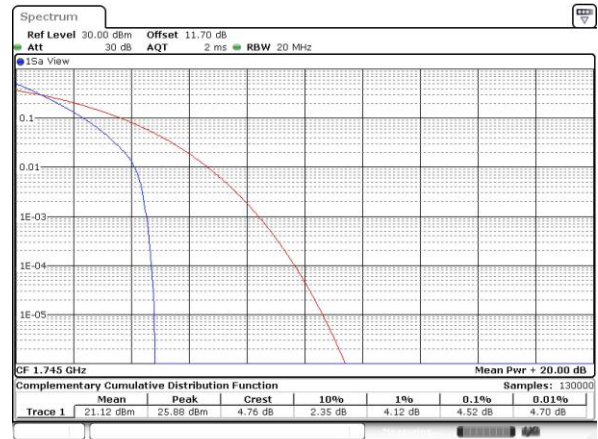
Date: 16.OCT.2018 11:39:34

Middle Channel / 1RB



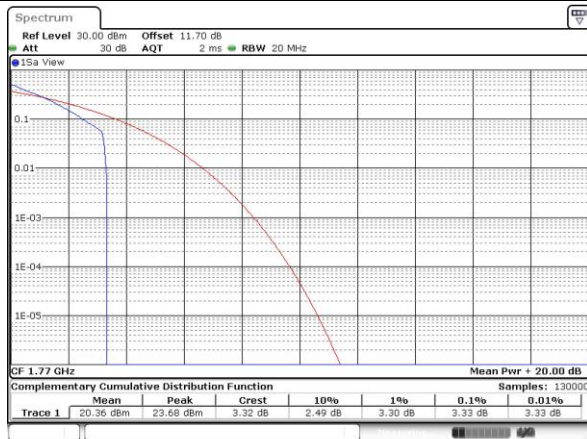
Date: 16.OCT.2018 11:39:44

Middle Channel / Full RB



Date: 16.OCT.2018 11:39:54

Highest Channel / 1RB

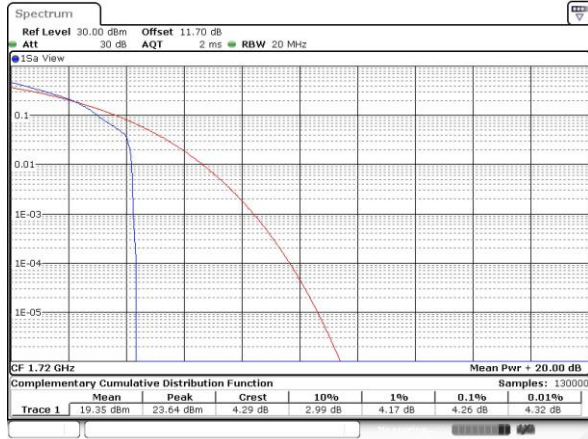


Date: 16.OCT.2018 11:40:03

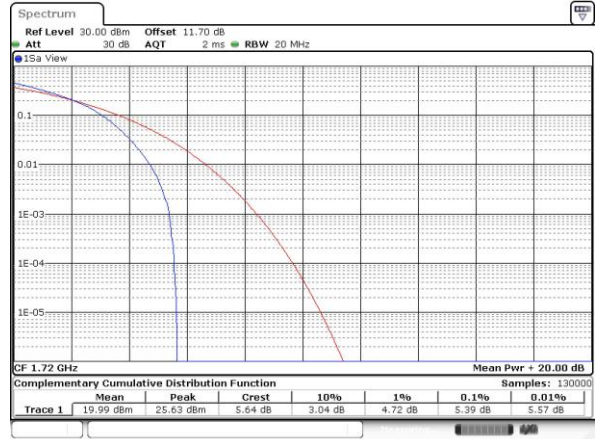
Highest Channel / Full RB



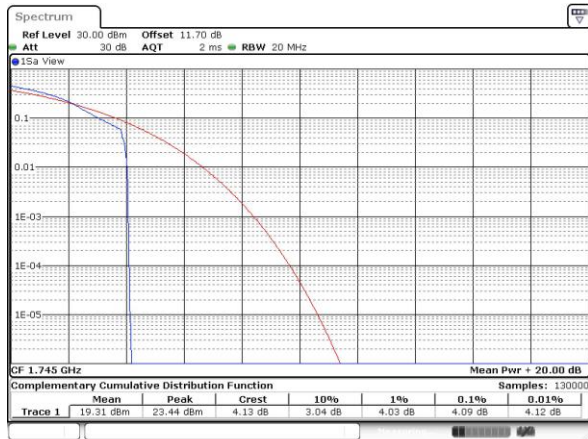
Date: 16.OCT.2018 11:40:13

LTE Band 66 / 20MHz / 16QAM
Lowest Channel / 1RB


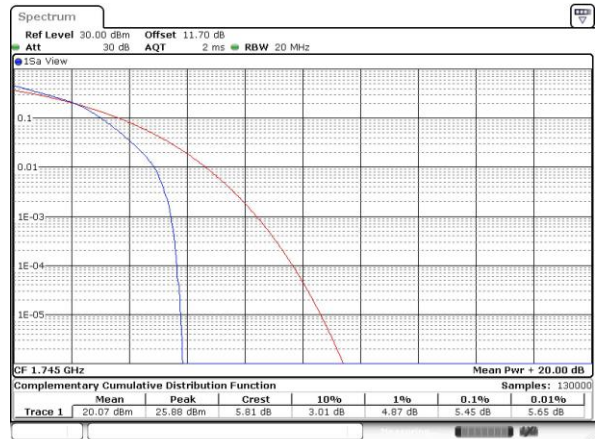
Date: 16.OCT.2018 11:38:24

Lowest Channel / Full RB


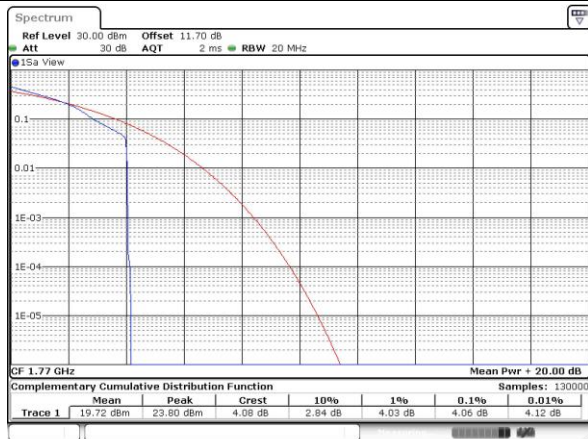
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Middle Channel / 1RB


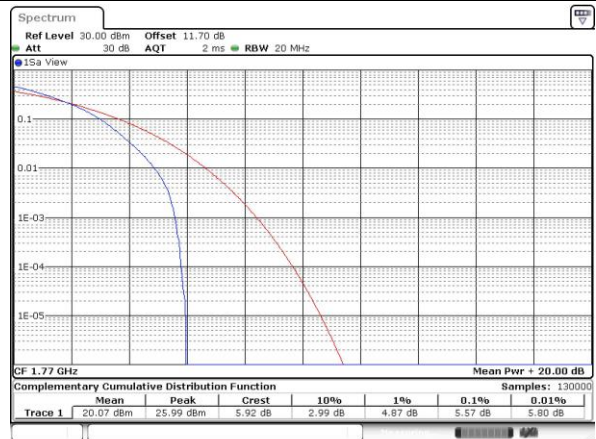
Date: 16.OCT.2018 11:38:44

Middle Channel / Full RB


Date: 16.OCT.2018 11:38:54

Highest Channel / 1RB


Date: 16.OCT.2018 11:39:04

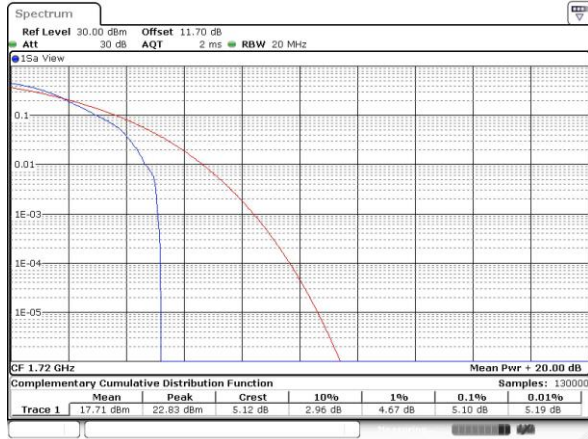
Highest Channel / Full RB


Date: 16.OCT.2018 11:39:14

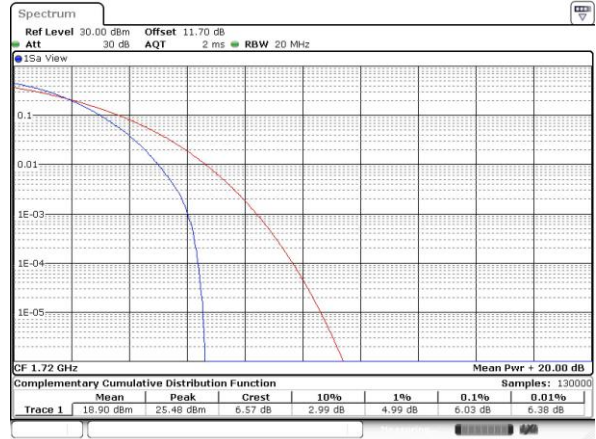


LTE Band 66 / 20MHz / 64QAM

Lowest Channel / 1RB



Lowest Channel / Full RB



Middle Channel / 1RB



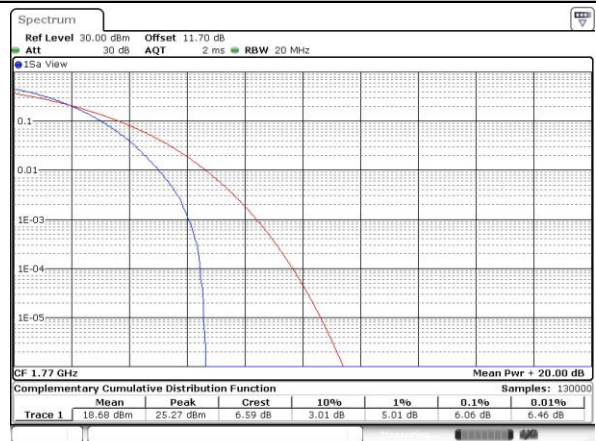
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



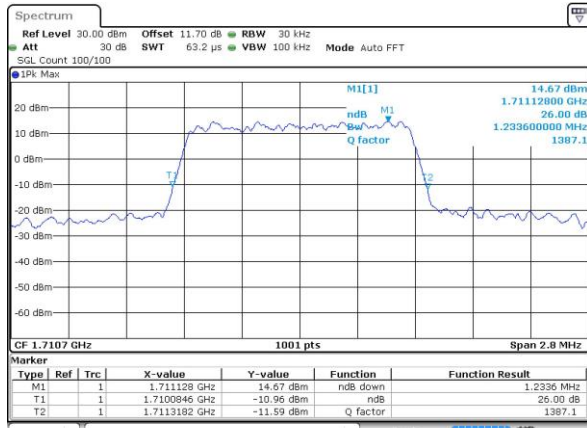
**26dB Bandwidth**

Mode	LTE Band 66 : 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	1.23	1.23	3.01	2.99	4.93	4.89	9.83	9.87	14.39	14.42	20.26	20.06
Middle CH	1.22	1.23	3.05	2.97	4.95	4.87	9.81	9.81	14.33	14.27	20.46	20.38
Highest CH	1.24	1.24	3.02	3.02	4.96	4.81	9.77	9.71	14.63	14.30	20.14	20.10
Mode	LTE Band 66 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.22	-	2.99	-	4.94	-	9.89	-	14.36	-	20.26	-
Middle CH	1.23	-	3.05	-	4.73	-	9.81	-	14.63	-	20.22	-
Highest CH	1.23	-	2.99	-	4.83	-	9.81	-	14.45	-	20.22	-



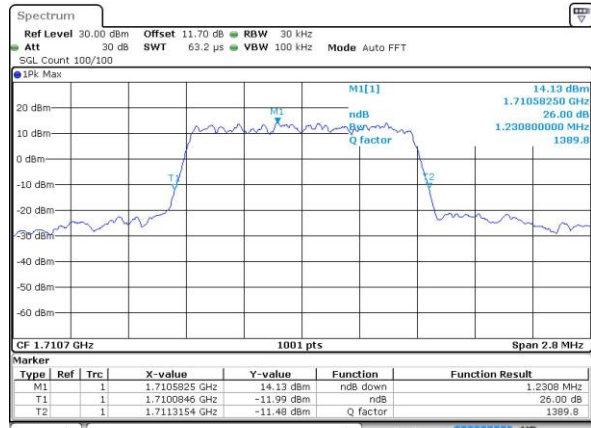
LTE Band 66

Lowest Channel / 1.4MHz / QPSK



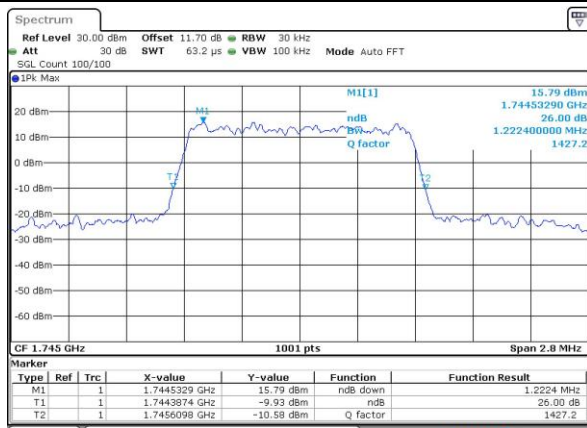
Date: 16.OCT.2018 15:41:57

Lowest Channel / 1.4MHz / 16QAM



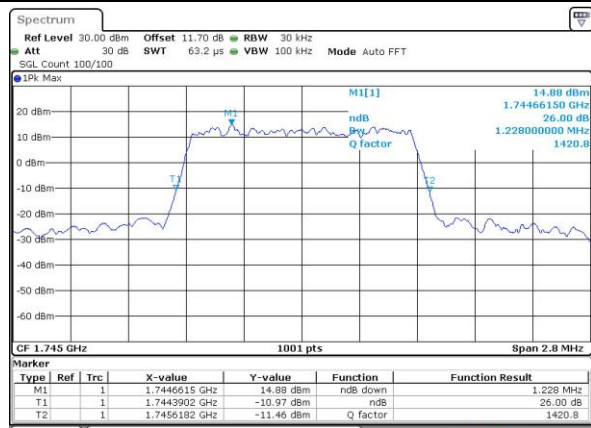
Date: 16.OCT.2018 15:42:09

Middle Channel / 1.4MHz / QPSK



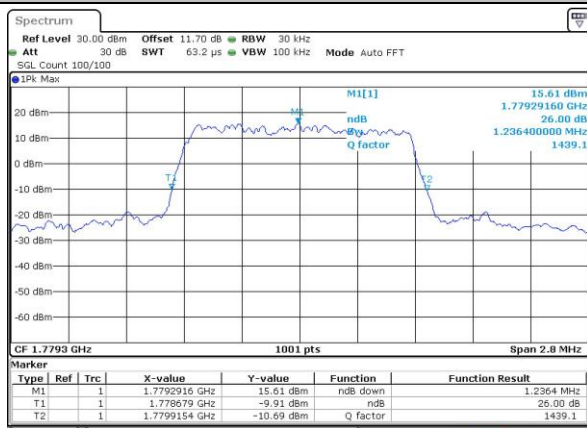
Date: 16.OCT.2018 15:53:51

Middle Channel / 1.4MHz / 16QAM



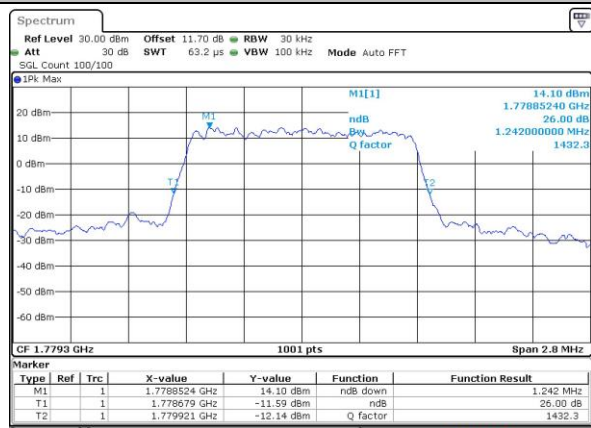
Date: 16.OCT.2018 15:54:02

Highest Channel / 1.4MHz / QPSK



Date: 16.OCT.2018 15:55:59

Highest Channel / 1.4MHz / 16QAM

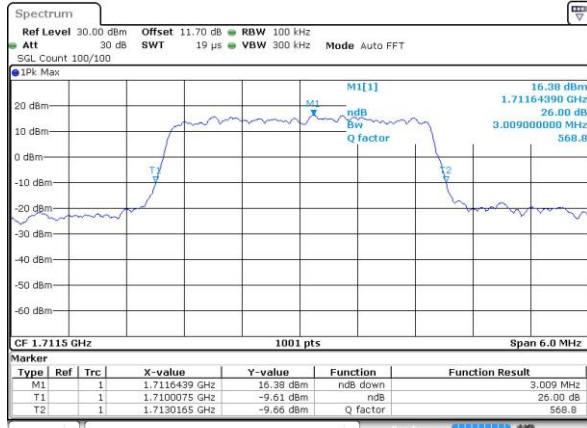


Date: 16.OCT.2018 15:56:10



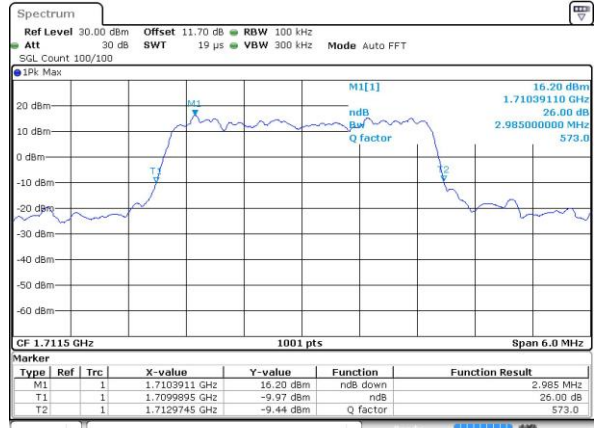
LTE Band 66

Lowest Channel / 3MHz / QPSK



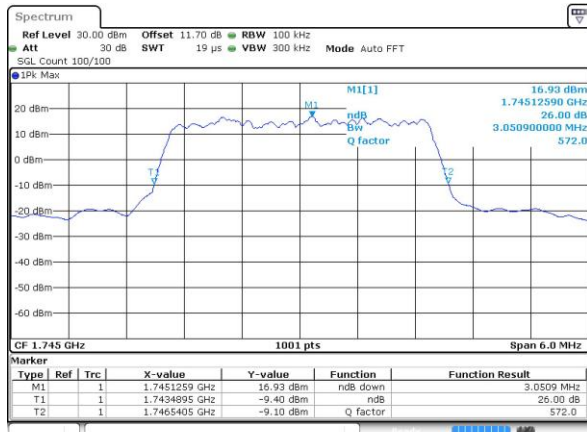
Date: 16.OCT.2018 10:00:16

Lowest Channel / 3MHz / 16QAM



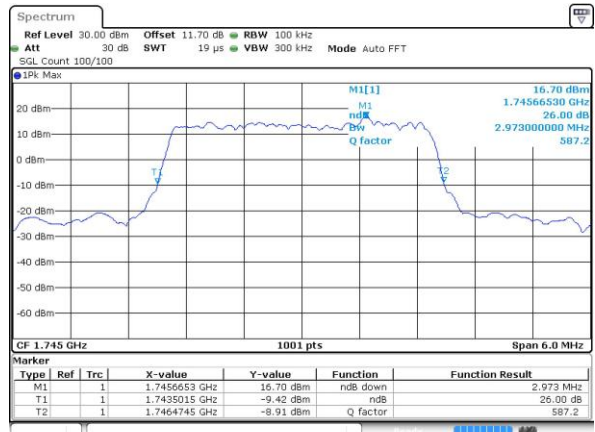
Date: 16.OCT.2018 10:00:28

Middle Channel / 3MHz / QPSK



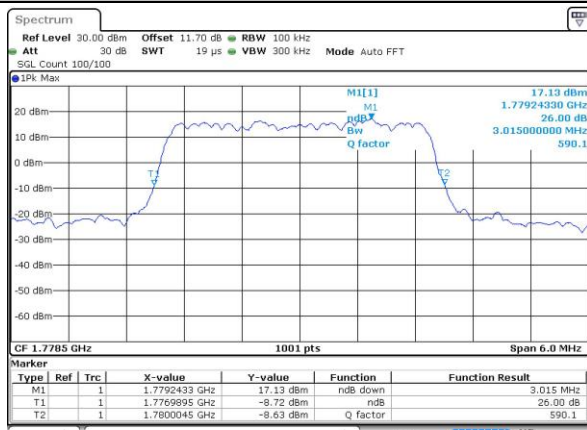
Date: 16.OCT.2018 10:06:04

Middle Channel / 3MHz / 16QAM



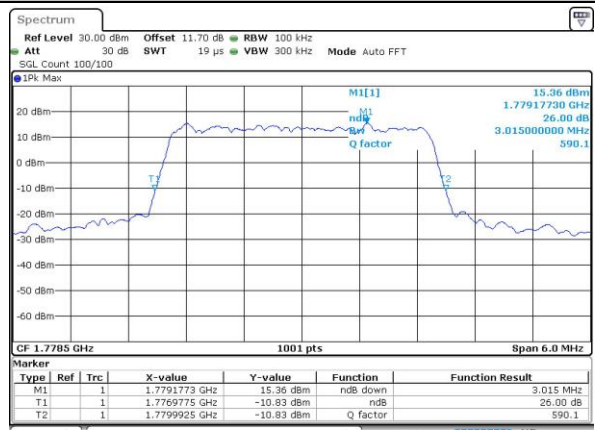
Date: 16.OCT.2018 10:06:15

Highest Channel / 3MHz / QPSK



Date: 16.OCT.2018 10:08:32

Highest Channel / 3MHz / 16QAM

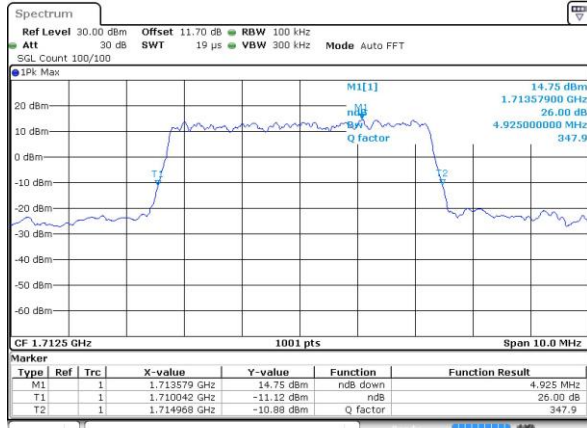


Date: 16.OCT.2018 11:42:10



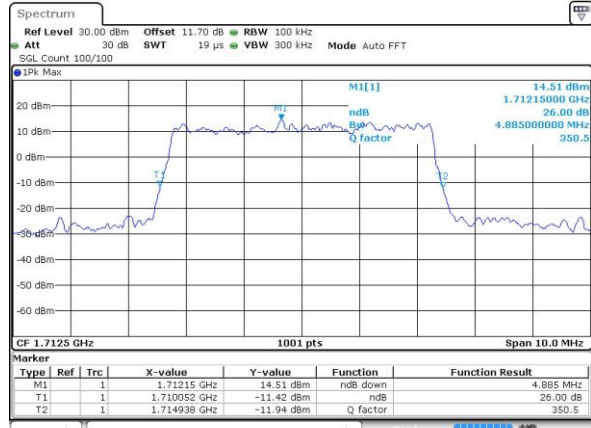
LTE Band 66

Lowest Channel / 5MHz / QPSK



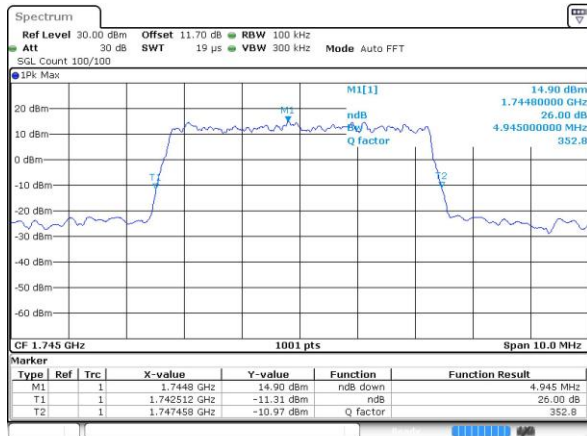
Date: 16.OCT.2018 10:14:19

Lowest Channel / 5MHz / 16QAM



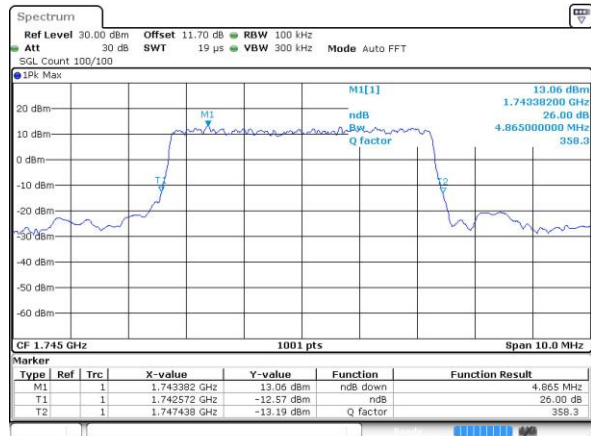
Date: 16.OCT.2018 10:14:30

Middle Channel / 5MHz / QPSK



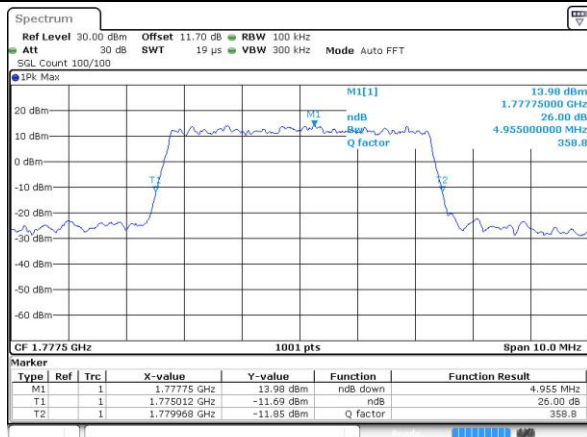
Date: 16.OCT.2018 11:43:01

Middle Channel / 5MHz / 16QAM



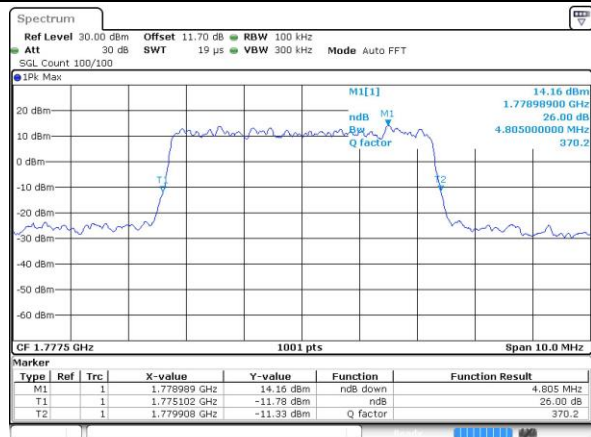
Date: 16.OCT.2018 10:20:18

Highest Channel / 5MHz / QPSK



Date: 16.OCT.2018 10:22:34

Highest Channel / 5MHz / 16QAM



Date: 16.OCT.2018 10:22:46