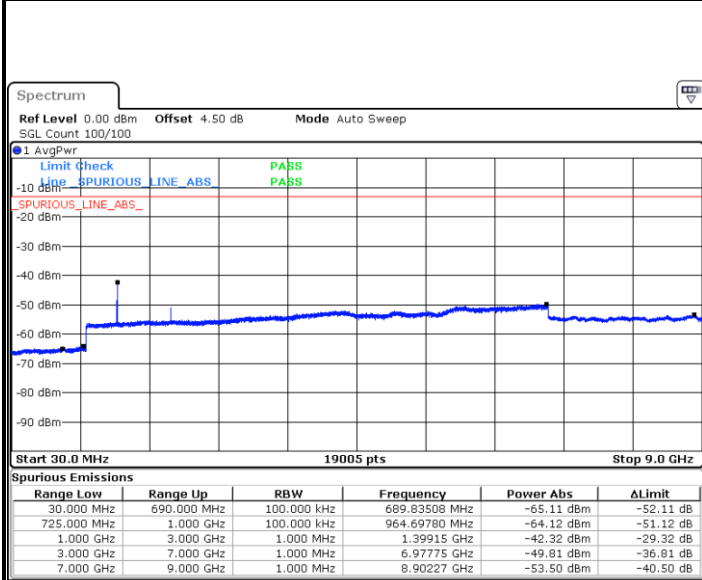




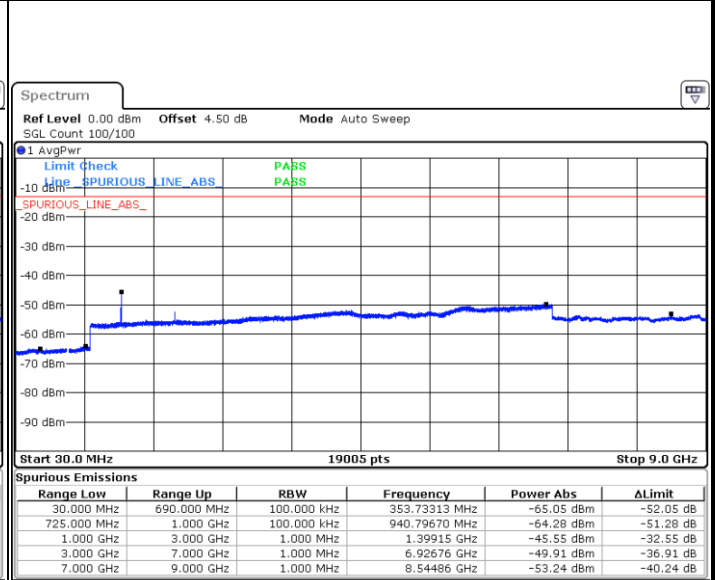
LTE Band 12 / 5MHz

Lowest Channel / QPSK



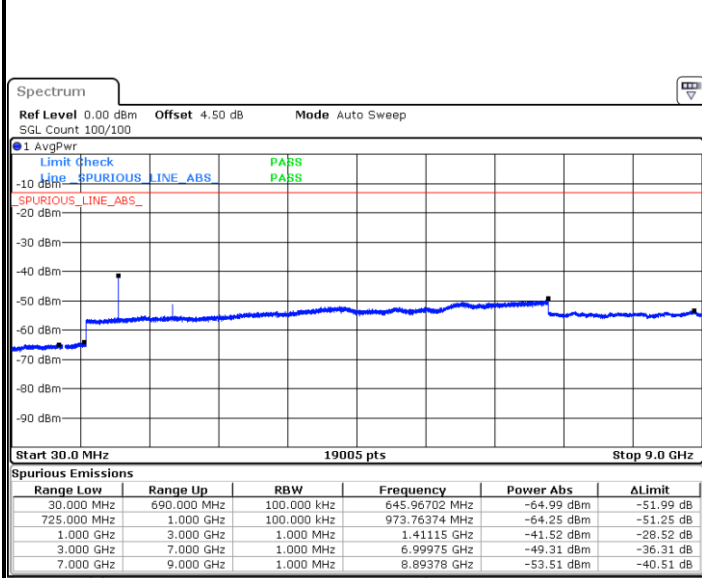
Date: 24.OCT.2019 16:50:55

Lowest Channel / 16QAM



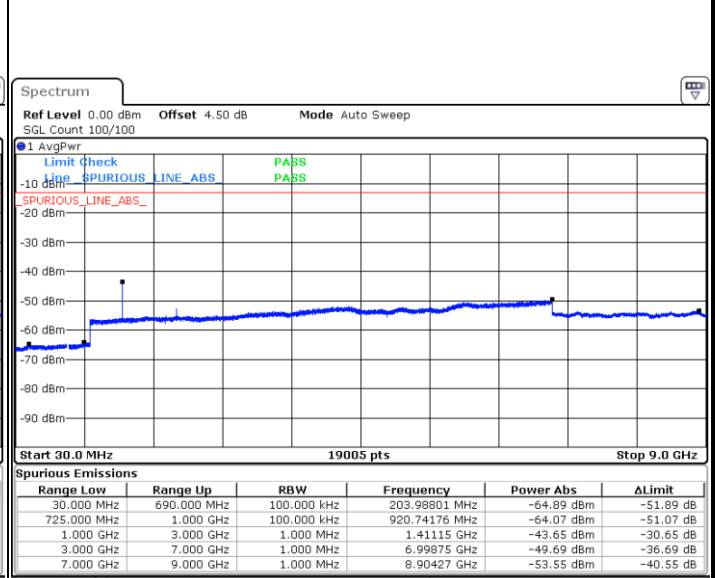
Date: 24.OCT.2019 16:51:48

Middle Channel / QPSK



Date: 24.OCT.2019 16:53:35

Middle Channel / 16QAM

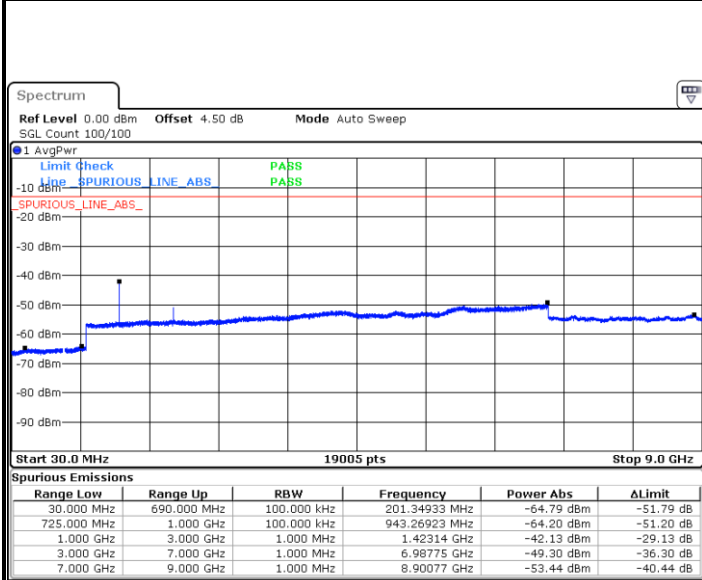


Date: 24.OCT.2019 16:52:42



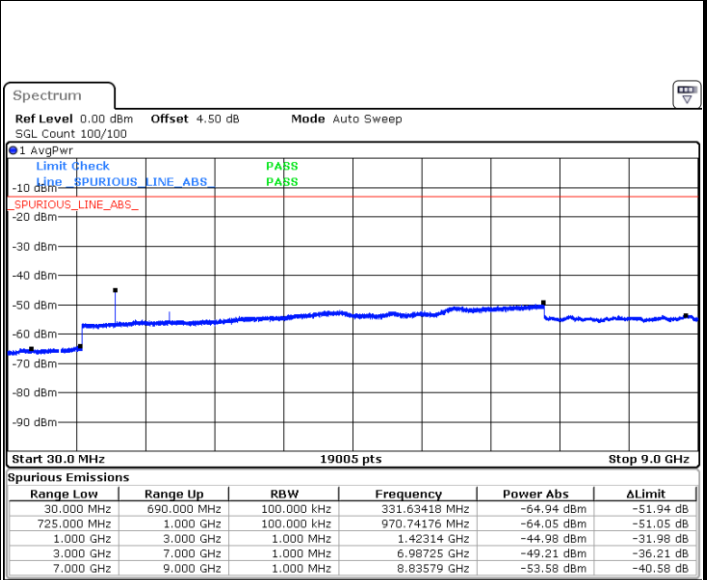
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 24.OCT.2019 16:54:29

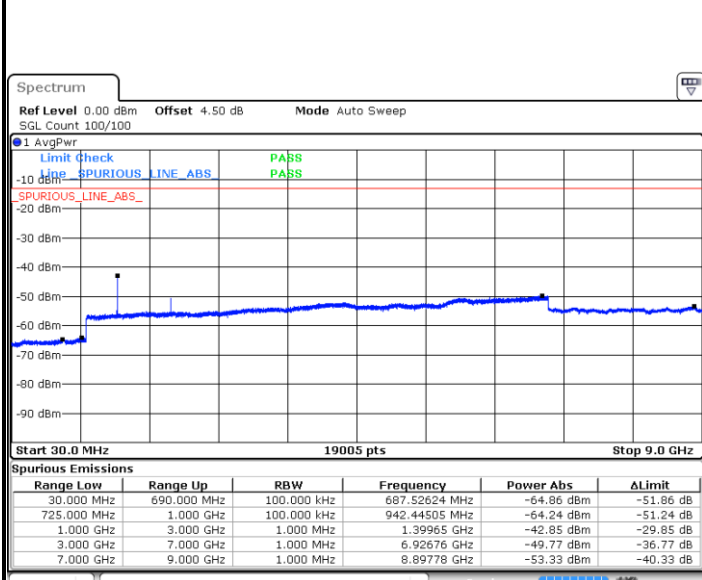
Highest Channel / 16QAM



Date: 24.OCT.2019 16:55:22

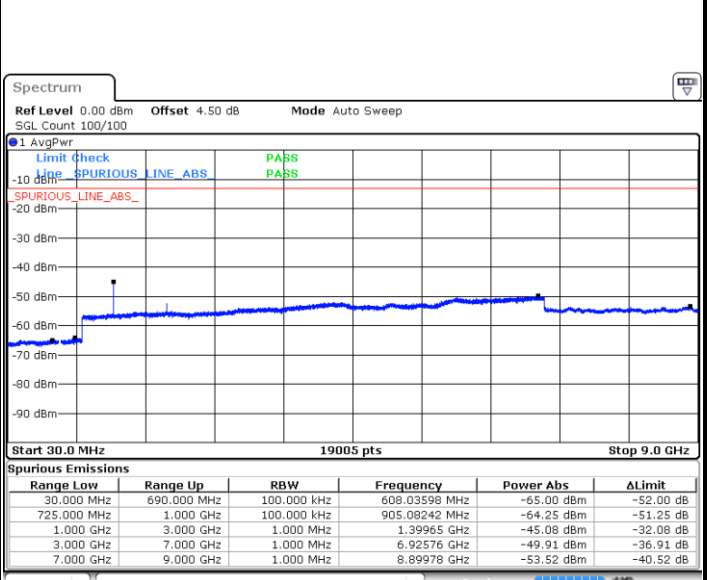
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 24.OCT.2019 17:07:24

Lowest Channel / 16QAM

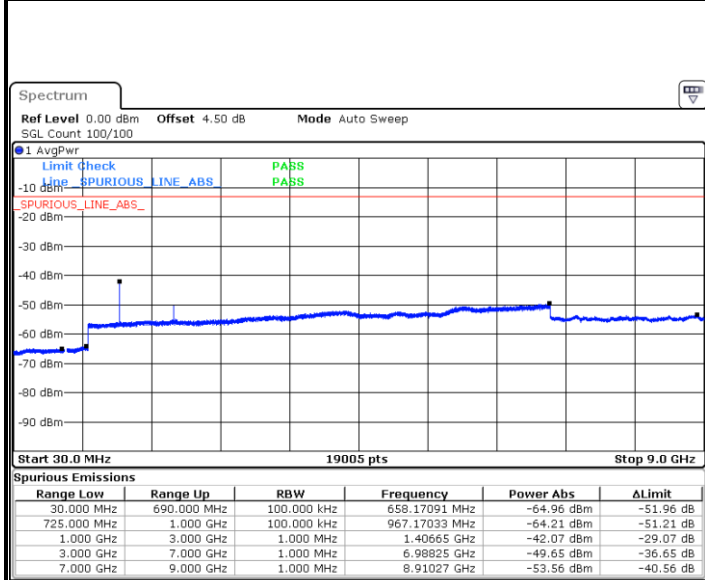


Date: 24.OCT.2019 17:08:18



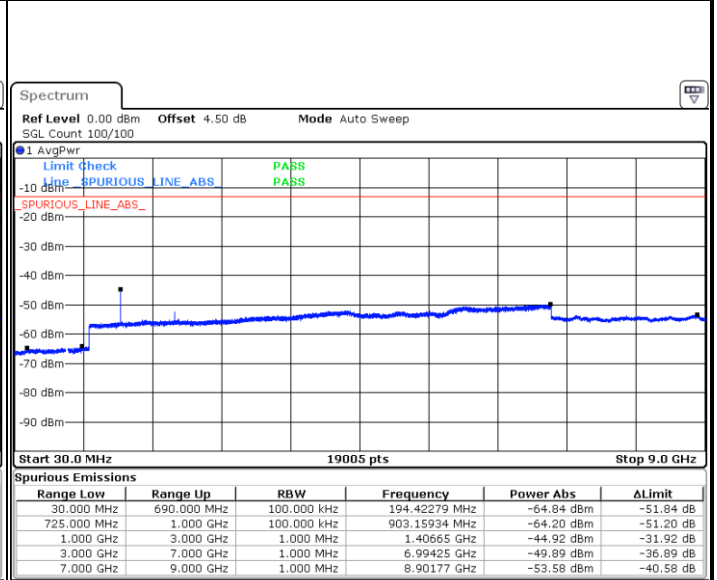
LTE Band 12 / 10MHz

Middle Channel / QPSK



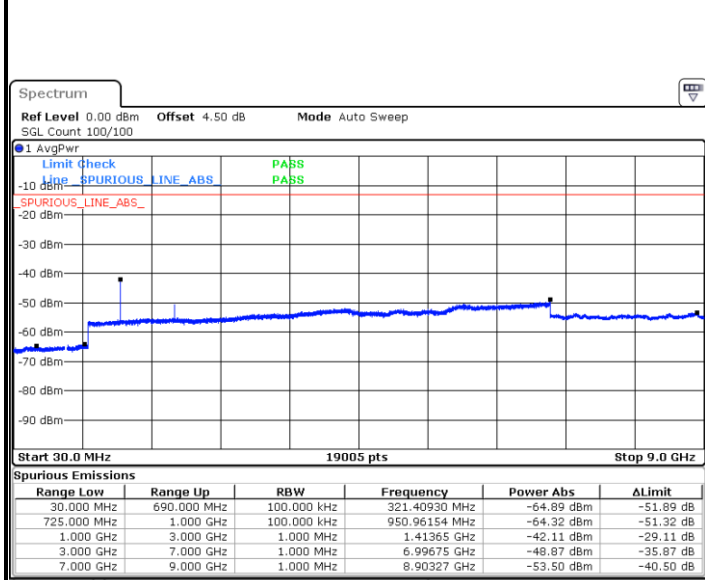
Date: 24.OCT.2019 17:10:04

Middle Channel / 16QAM



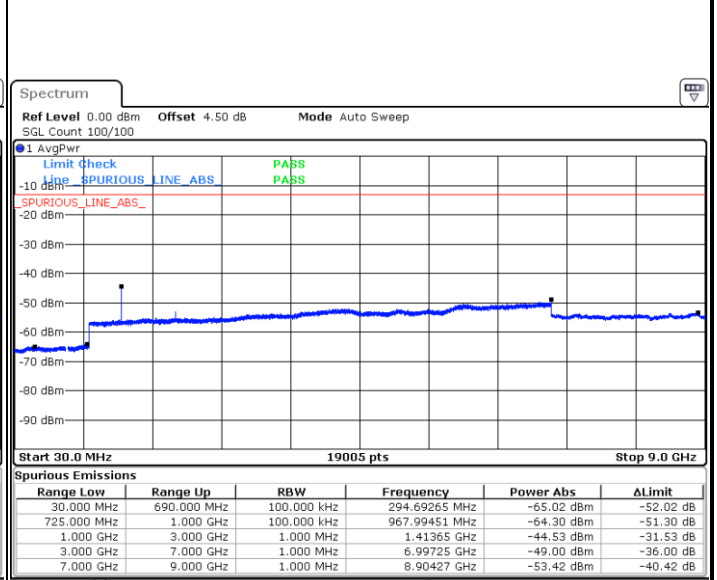
Date: 24.OCT.2019 17:09:11

Highest Channel / QPSK



Date: 24.OCT.2019 17:10:58

Highest Channel / 16QAM



Date: 24.OCT.2019 17:11:51



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	0.0001	PASS
40	Normal Voltage	0.0017	
30	Normal Voltage	0.0086	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0089	
0	Normal Voltage	0.0066	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0068	
-30	Normal Voltage	0.0059	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0095	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 13

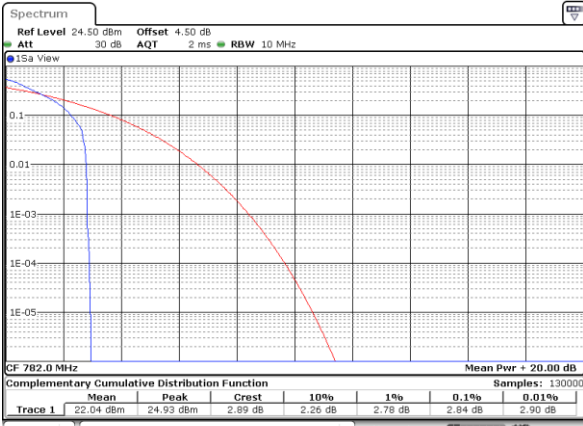
## Peak-to-Average Ratio

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	2.84	4.52	3.83	5.42	
Highest CH					



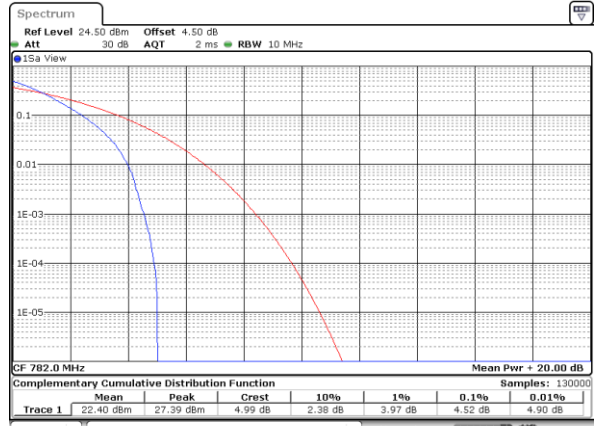
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 24.OCT.2019 16:03:21

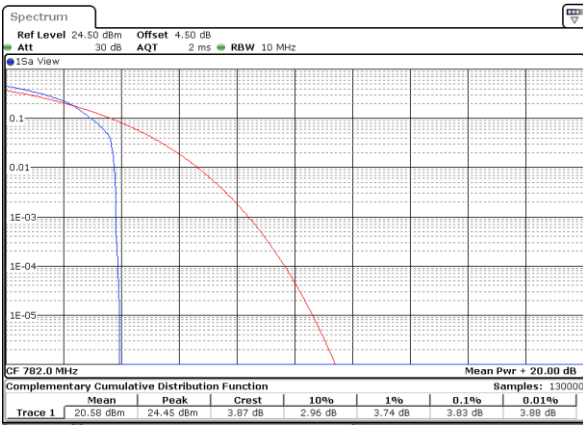
Middle Channel / Full RB



Date: 24.OCT.2019 16:03:55

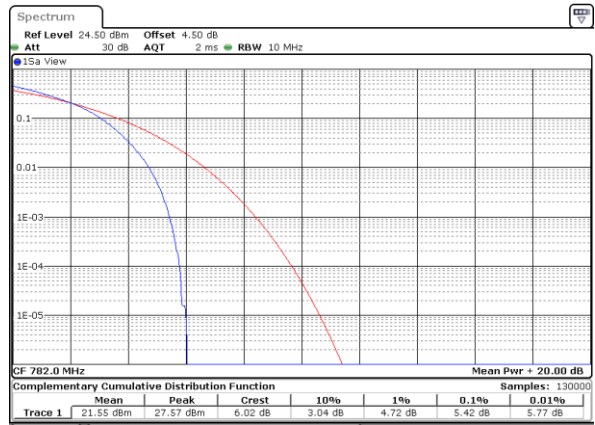
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 24.OCT.2019 16:03:34

Middle Channel / Full RB



Date: 24.OCT.2019 16:03:45



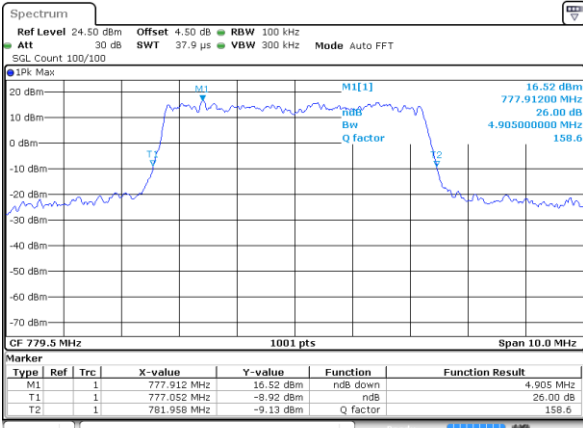
**26dB Bandwidth**

Mode	LTE Band 13 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW												
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.905	4.835						
Middle CH					4.985	5.015	9.73	9.75				
Highest CH					4.995	4.935						



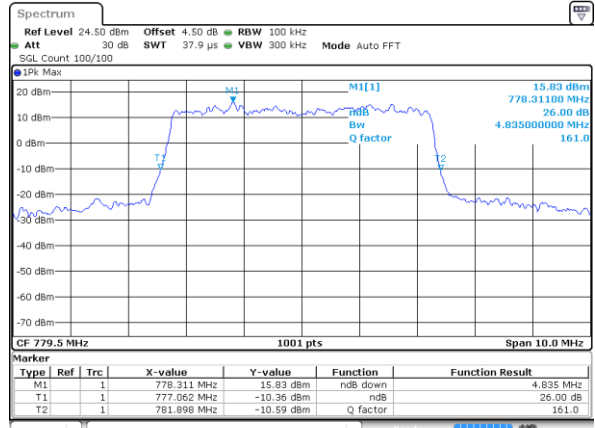
LTE Band 13

Lowest Channel / 5MHz / QPSK



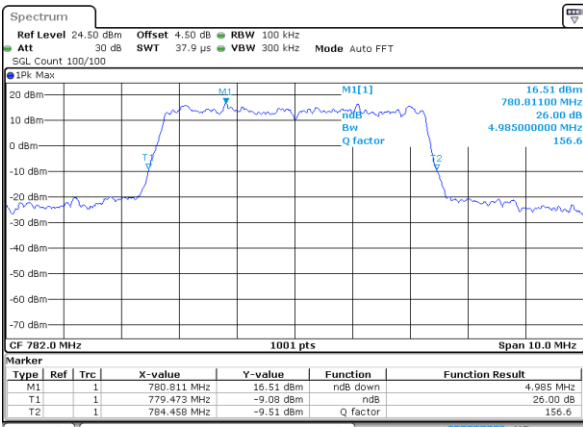
Date: 24.OCT.2019 15:25:24

Lowest Channel / 5MHz / 16QAM



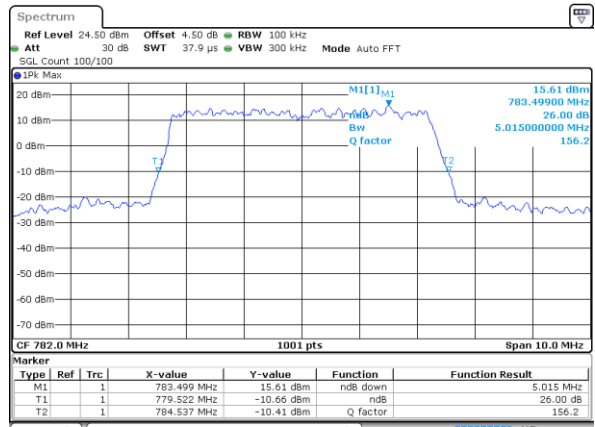
Date: 24.OCT.2019 15:25:34

Middle Channel / 5MHz / QPSK



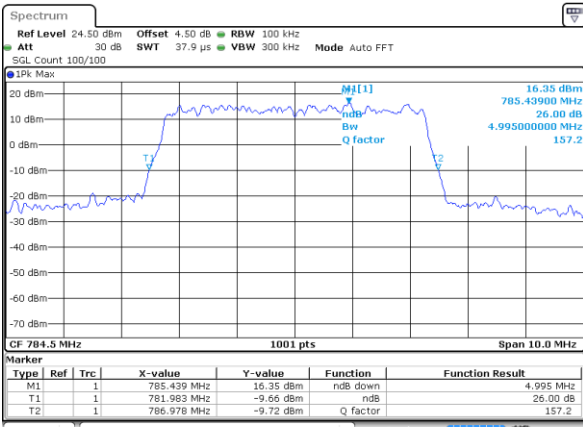
Date: 24.OCT.2019 15:34:26

Middle Channel / 5MHz / 16QAM



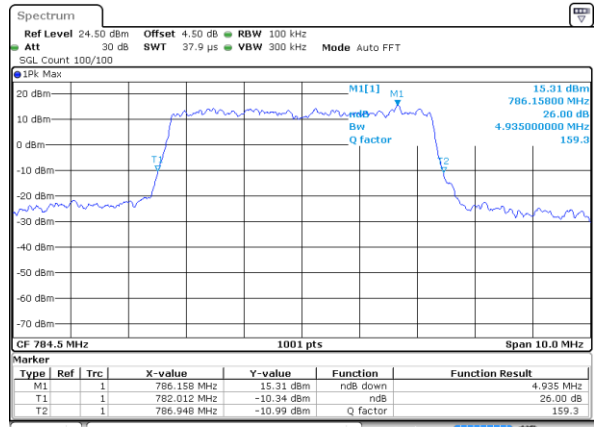
Date: 24.OCT.2019 15:34:36

Highest Channel / 5MHz / QPSK



Date: 24.OCT.2019 15:37:02

Highest Channel / 5MHz / 16QAM



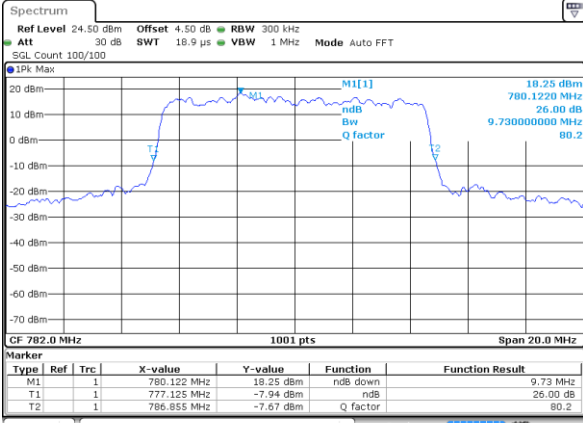
Date: 24.OCT.2019 15:38:52





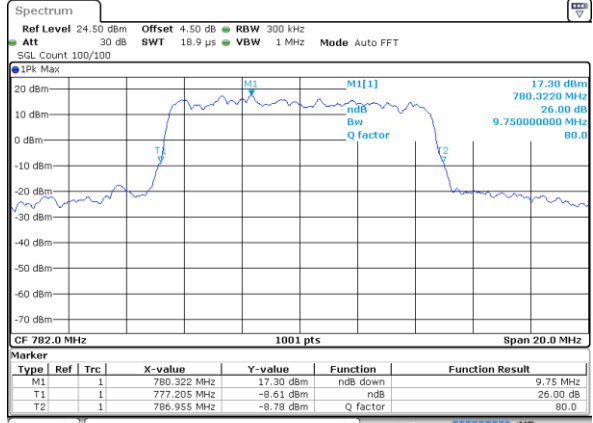
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 24.OCT.2019 15:47:50

Middle Channel / 10MHz / 16QAM



Date: 24.OCT.2019 15:47:40



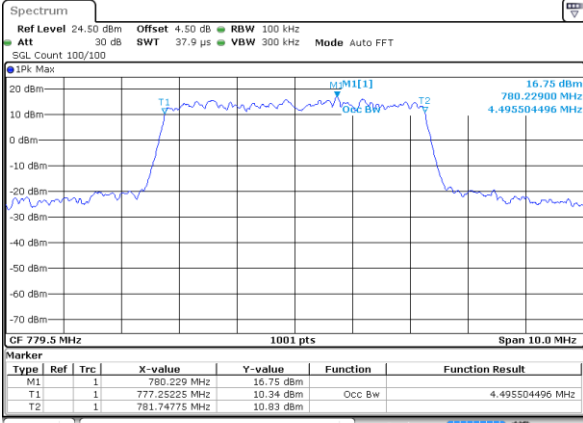
Occupied Bandwidth

Mode	LTE Band 13 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW												
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.50	4.48						
Middle CH					4.51	4.49	9.01	9.07				
Highest CH					4.48	4.48						



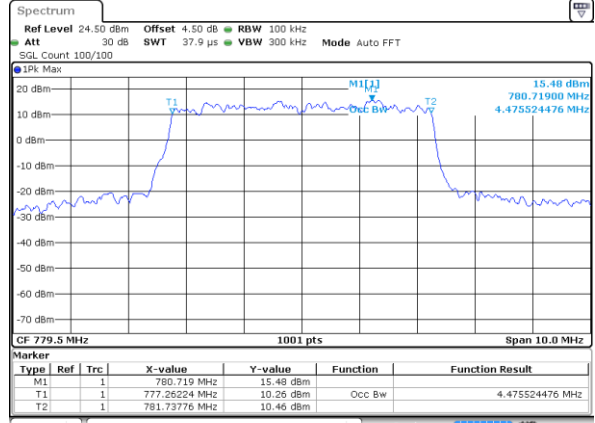
LTE Band 13

Lowest Channel / 5MHz / QPSK



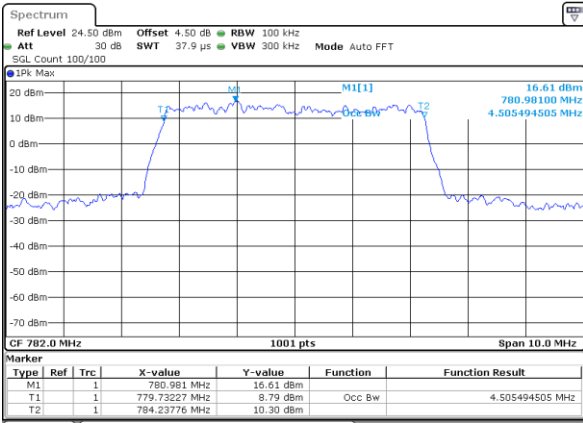
Date: 24.OCT.2019 15:25:54

Lowest Channel / 5MHz / 16QAM



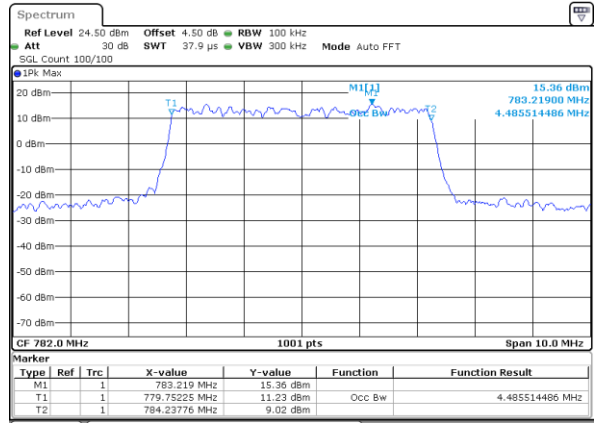
Date: 24.OCT.2019 15:25:44

Middle Channel / 5MHz / QPSK



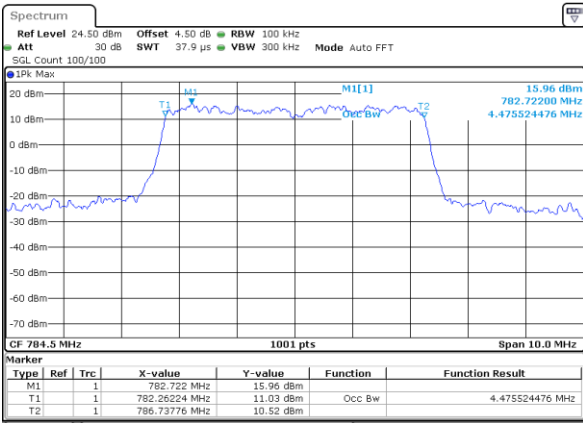
Date: 24.OCT.2019 15:34:48

Middle Channel / 5MHz / 16QAM



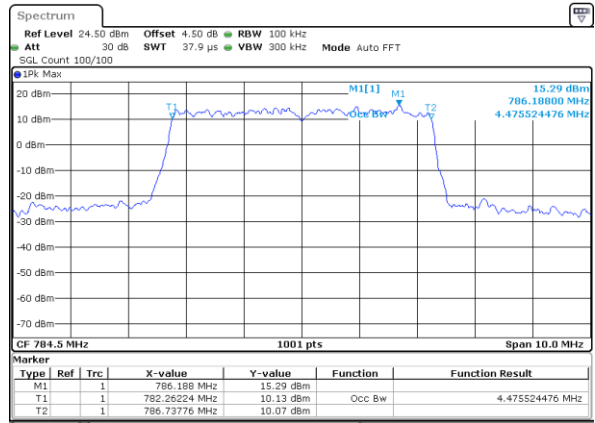
Date: 24.OCT.2019 15:34:56

Highest Channel / 5MHz / QPSK



Date: 24.OCT.2019 15:37:12

Highest Channel / 5MHz / 16QAM

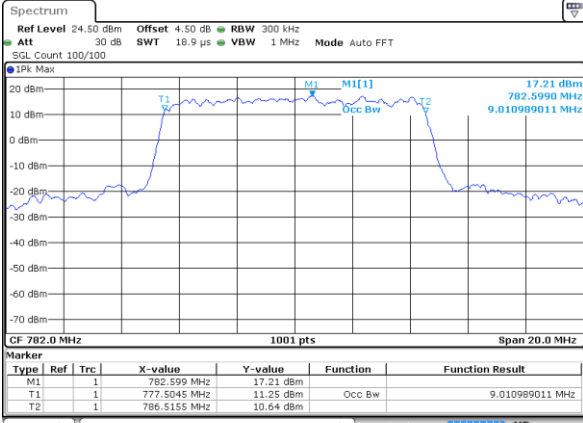


Date: 24.OCT.2019 15:37:22



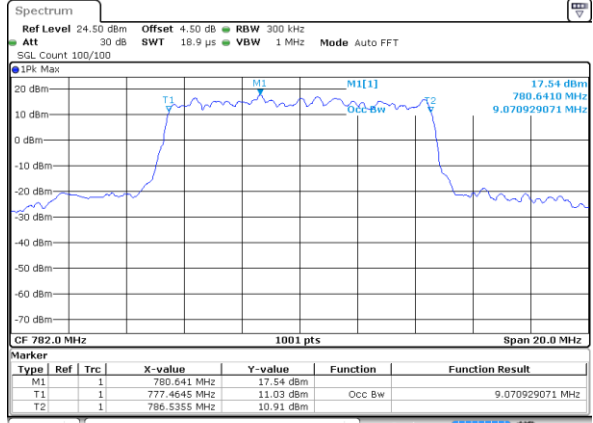
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 24.OCT.2019 15:48:00

Middle Channel / 10MHz / 16QAM



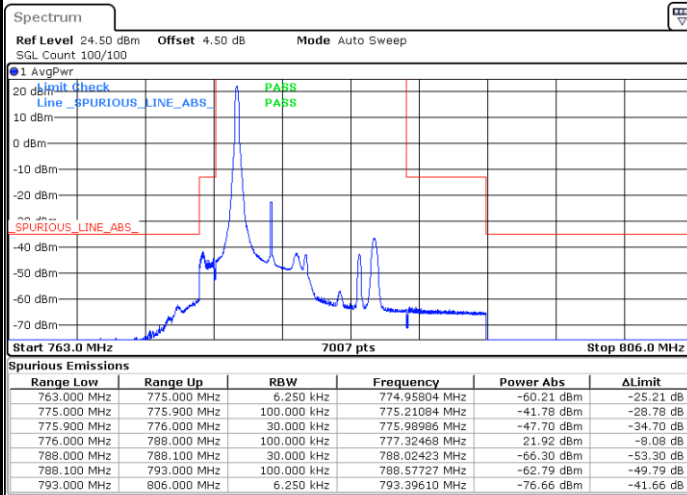
Date: 24.OCT.2019 15:48:10



# Conducted Band Edge

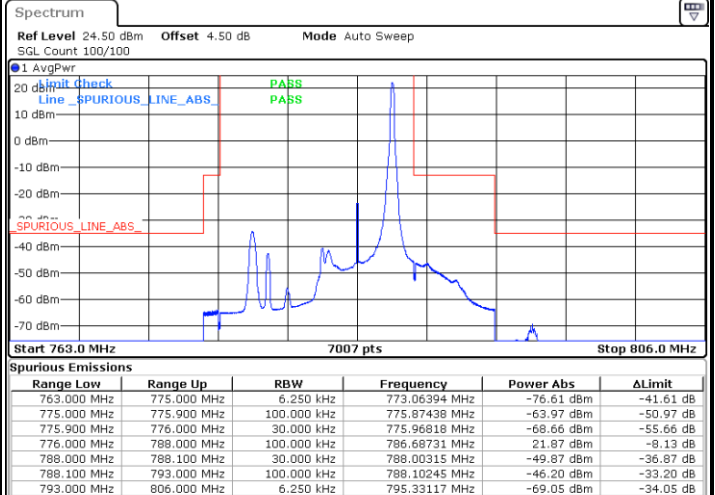
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



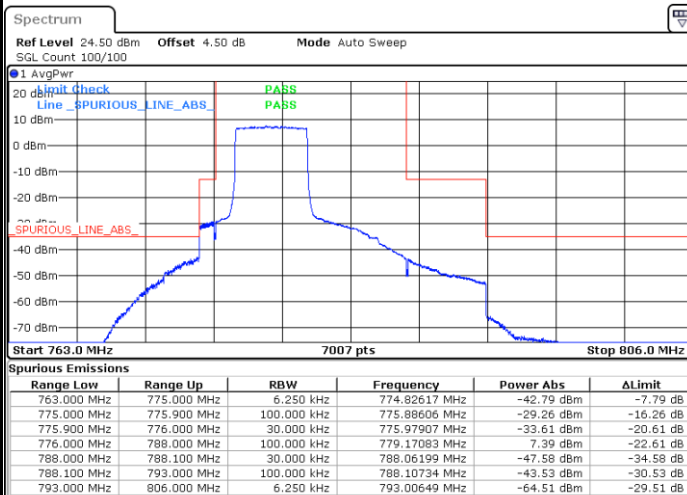
Date: 24.OCT.2019 15:30:50

### Highest Band Edge / 1 RB



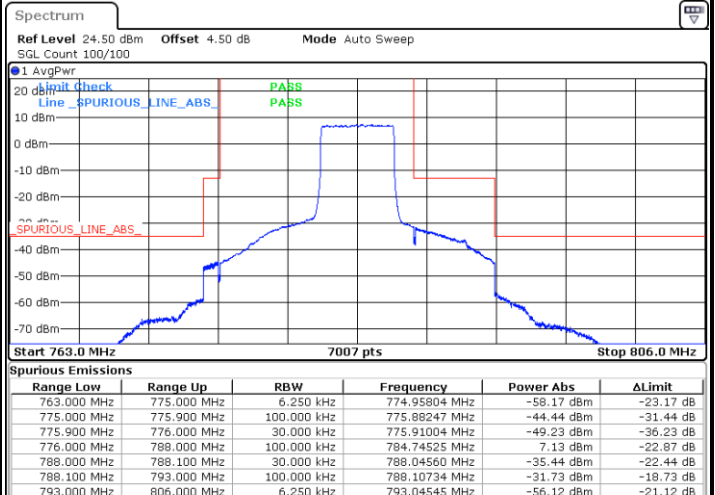
Date: 24.OCT.2019 15:42:18

### Lowest Band Edge / Full RB



Date: 24.OCT.2019 15:29:11

### Highest Band Edge / Full RB



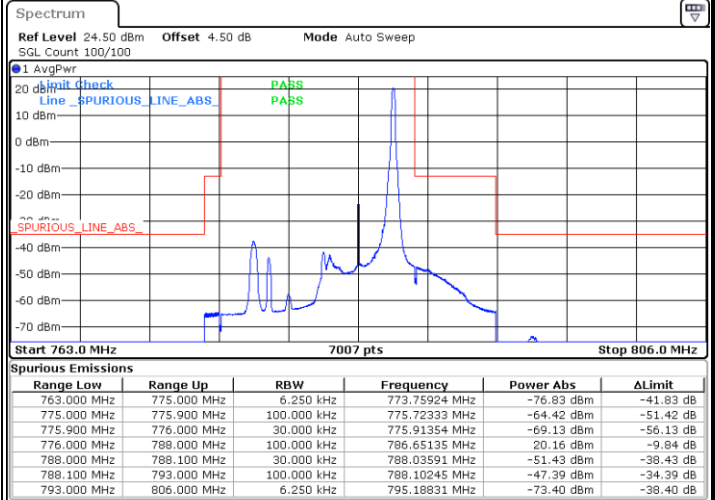
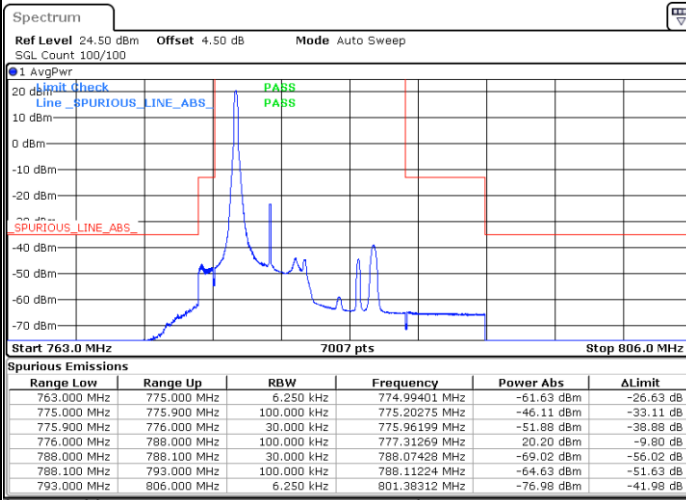
Date: 24.OCT.2019 15:40:39



LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

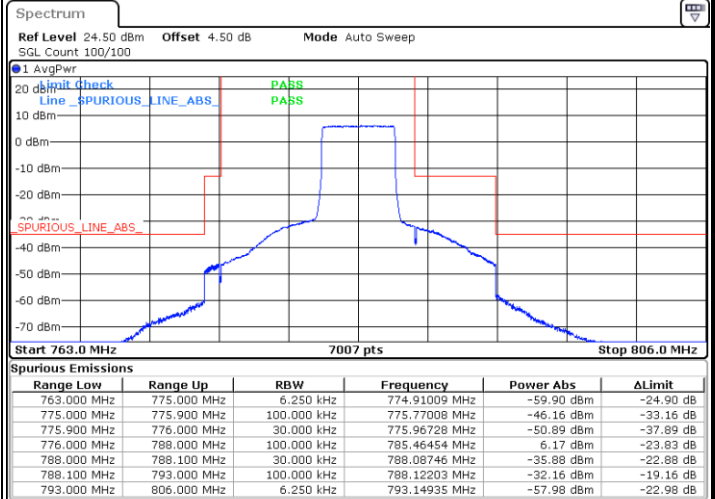
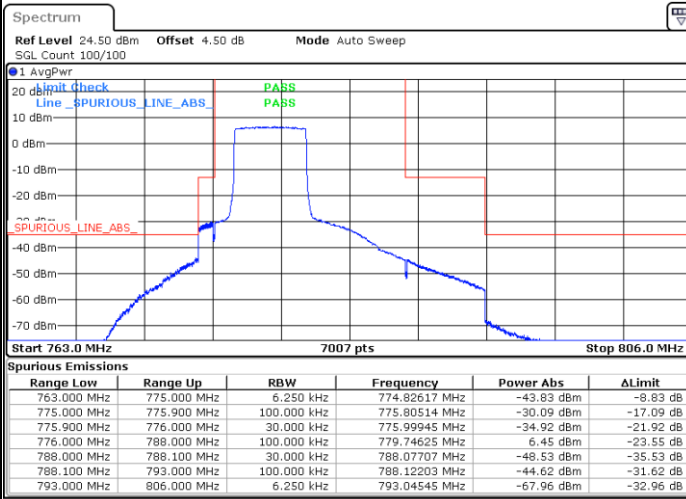


Date: 24.OCT.2019 15:32:29

Date: 24.OCT.2019 15:43:56

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



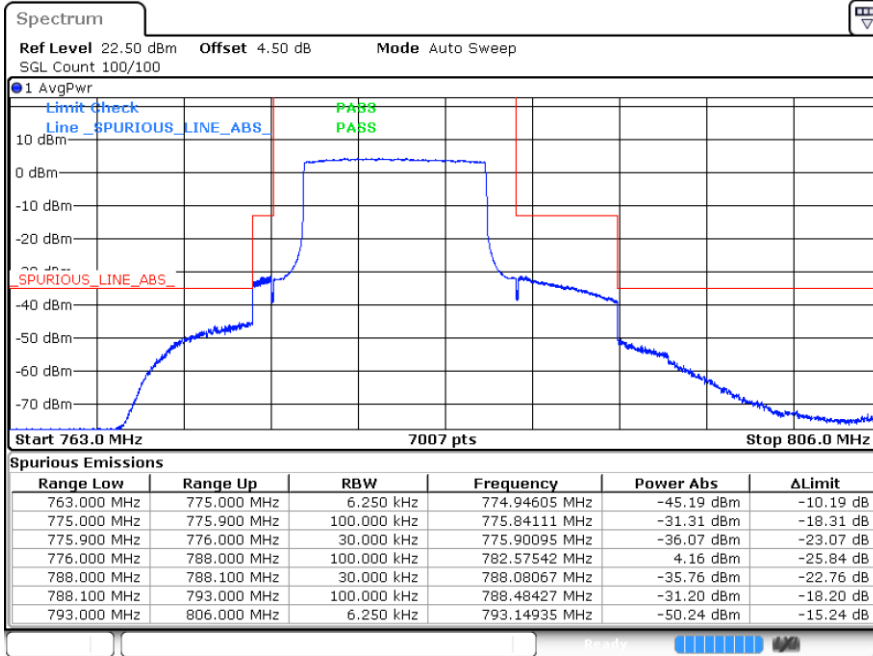
Date: 24.OCT.2019 15:27:33

Date: 24.OCT.2019 15:39:00



LTE Band 13 / 10MHz / QPSK

Band Edge / Full RB

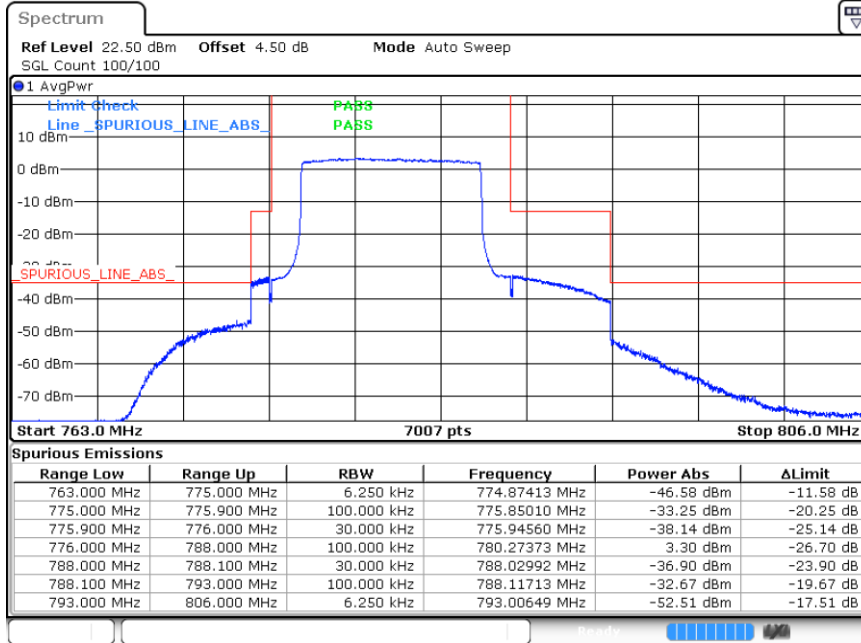


Date: 24.OCT.2019 15:53:06



LTE Band 13 / 10MHz / 16QAM

Band Edge / Full RB

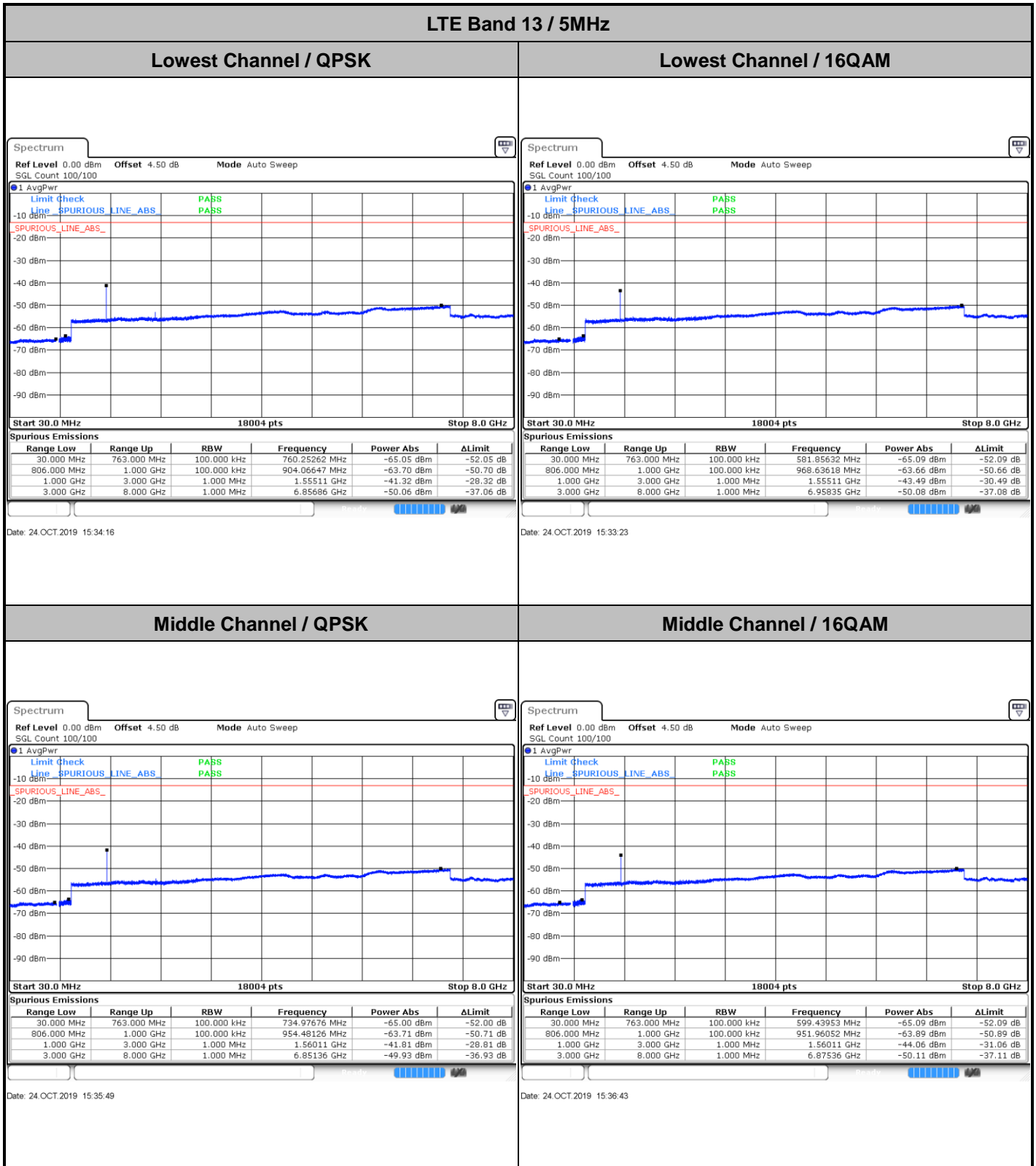


Date: 24.OCT.2019 15:54:44





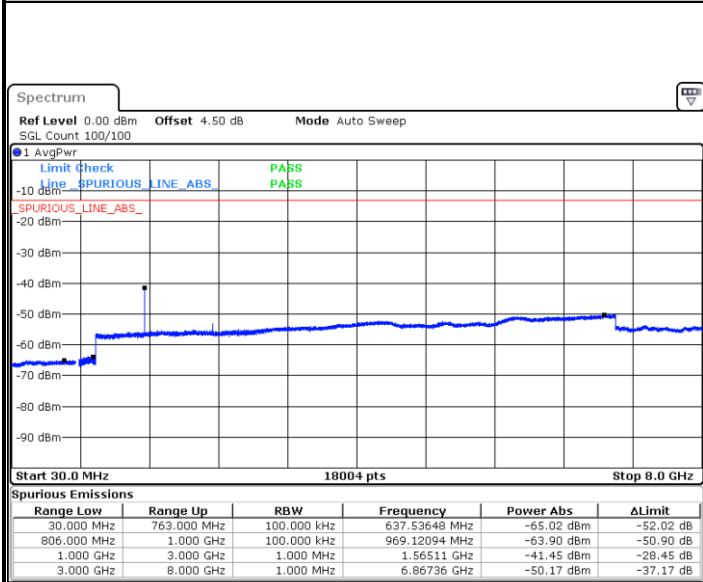
# Conducted Spurious Emission





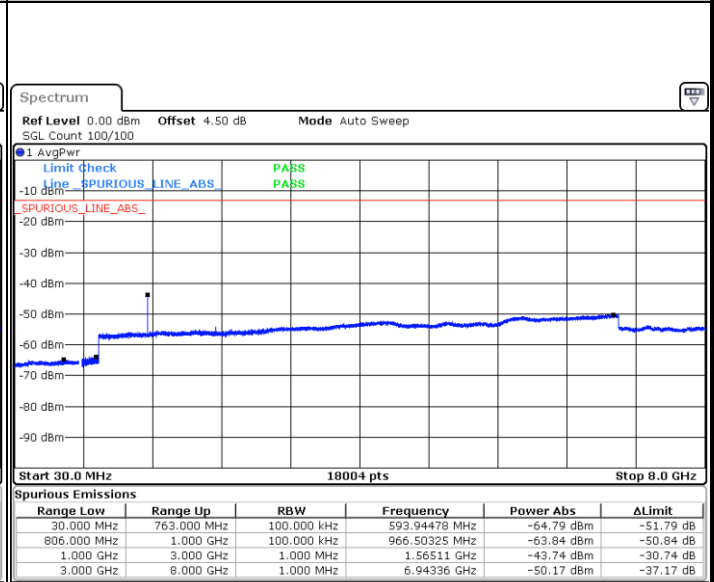
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 24.OCT.2019 15:45:44

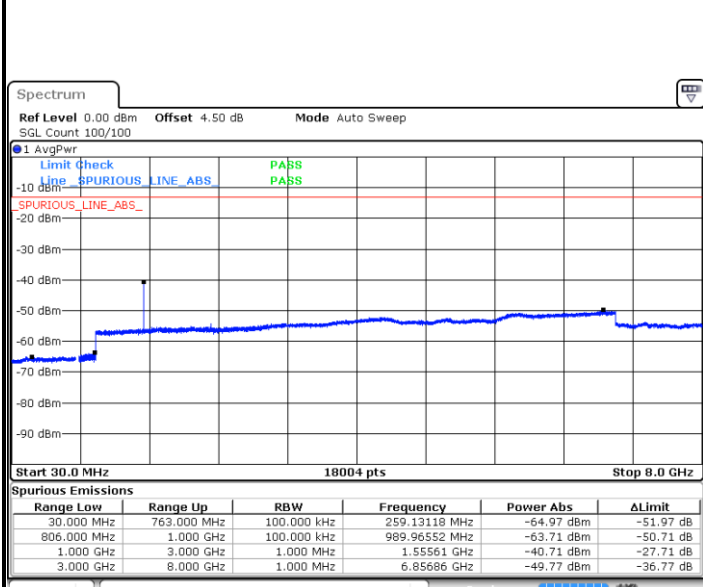
Highest Channel / 16QAM



Date: 24.OCT.2019 15:44:50

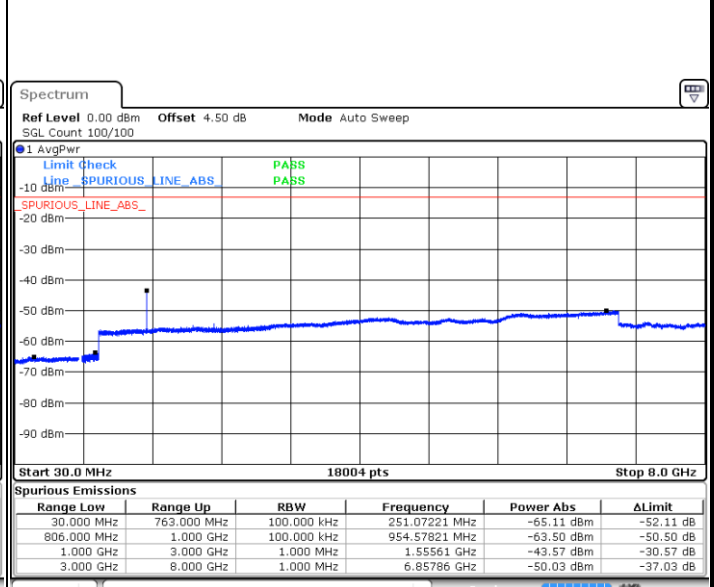
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 24.OCT.2019 15:46:37

Middle Channel / 16QAM



Date: 24.OCT.2019 15:47:30



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	0.0010	PASS
40	Normal Voltage	0.0001	
30	Normal Voltage	0.0055	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0049	
0	Normal Voltage	0.0065	
-10	Normal Voltage	0.0009	
-20	Normal Voltage	0.0056	
-30	Normal Voltage	0.0064	
20	Maximum Voltage	0.0003	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0046	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



## LTE Band 66

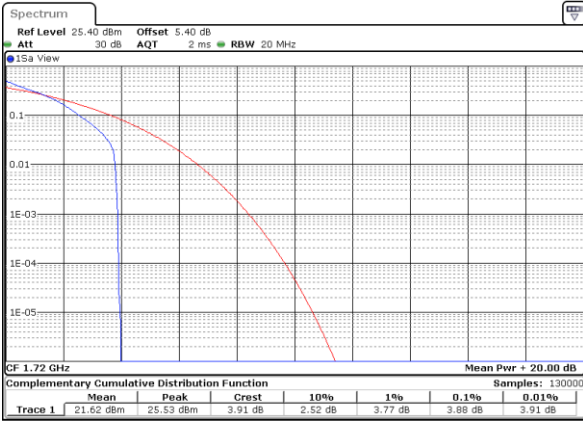
### Peak-to-Average Ratio

Mode	LTE Band 66 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.88	4.55	4.99	5.48	PASS
Middle CH	3.94	4.67	4.87	5.74	
Highest CH	3.86	4.52	4.90	5.54	



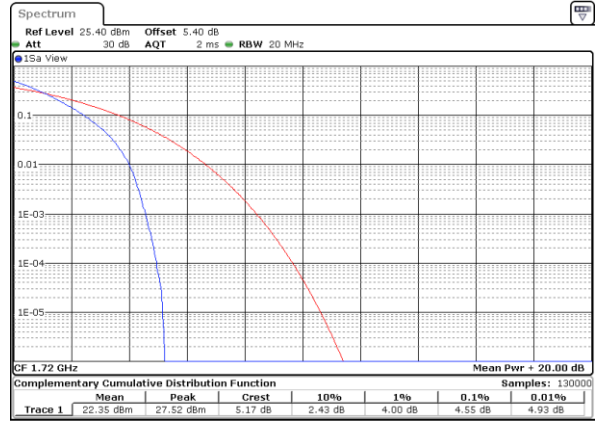
LTE Band 66 / 20MHz / QPSK

Lowest Channel / 1RB



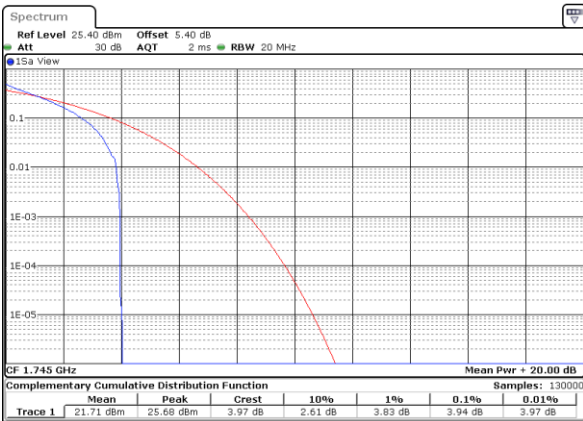
Date: 12.NOV.2019 15:03:23

Lowest Channel / Full RB



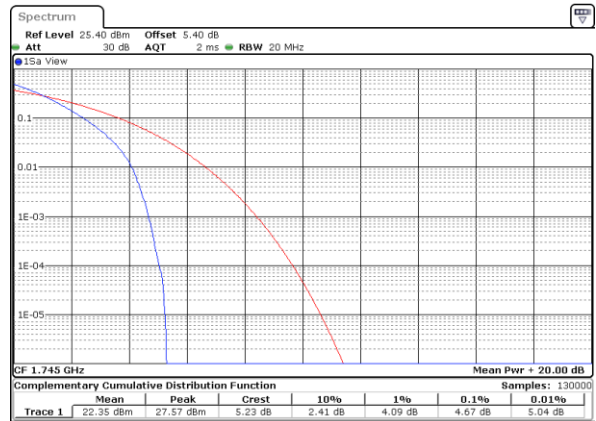
Date: 12.NOV.2019 15:01:08

Middle Channel / 1RB



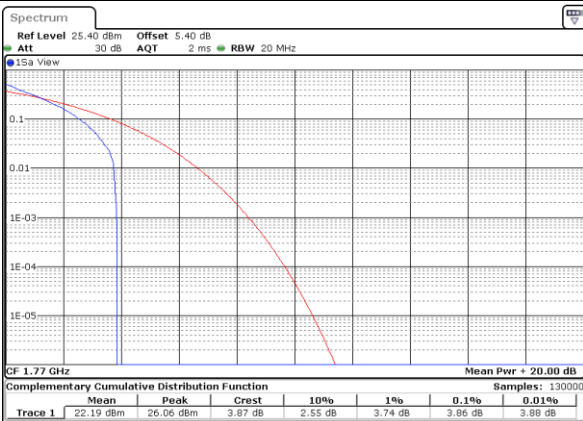
Date: 12.NOV.2019 15:04:51

Middle Channel / Full RB



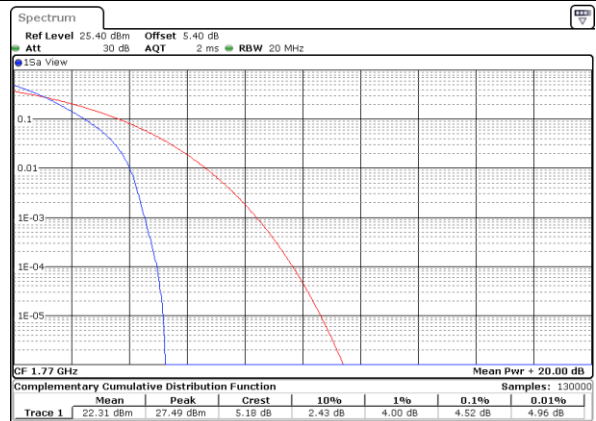
Date: 12.NOV.2019 15:08:07

Highest Channel / 1RB



Date: 12.NOV.2019 15:11:44

Highest Channel / Full RB

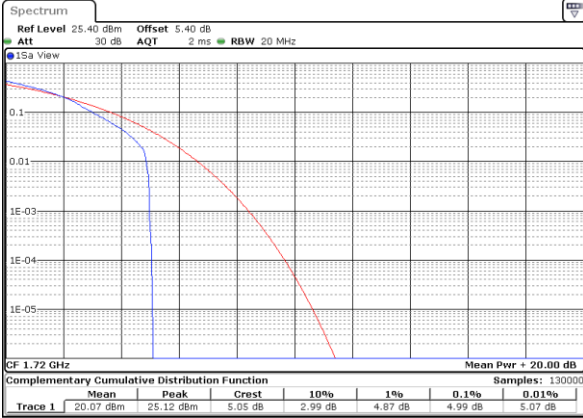


Date: 12.NOV.2019 15:09:16



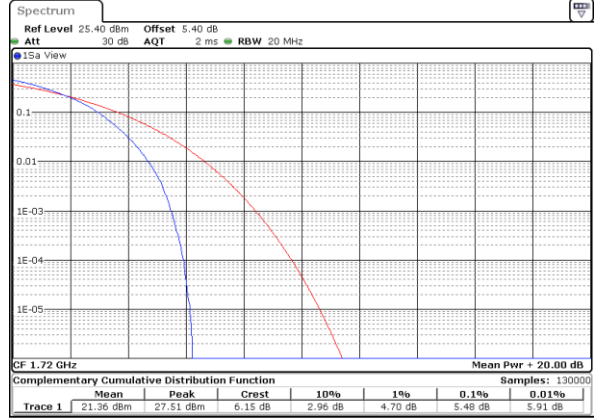
LTE Band 66 / 20MHz / 16QAM

Lowest Channel / 1RB



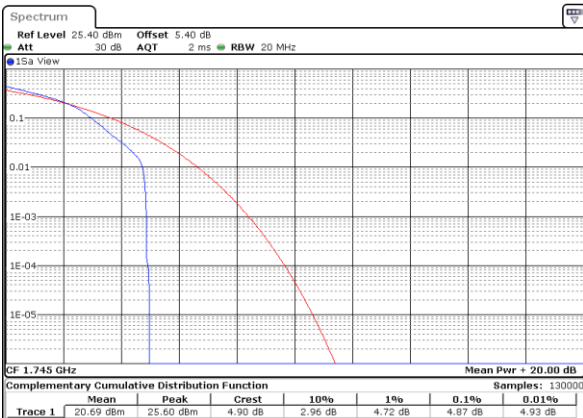
Date: 12.NOV.2019 15:02:19

Lowest Channel / Full RB



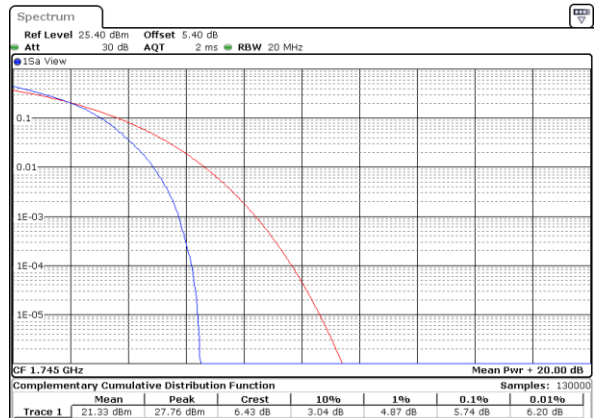
Date: 12.NOV.2019 15:01:21

Middle Channel / 1RB



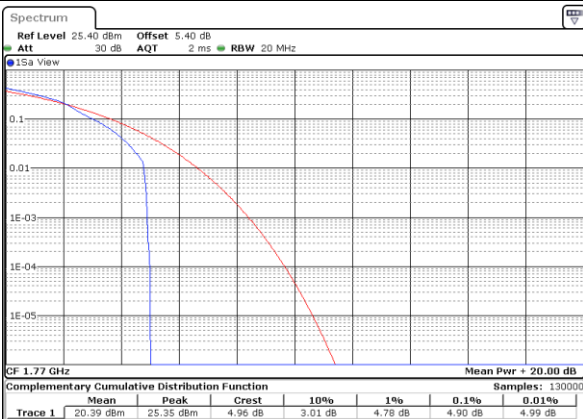
Date: 12.NOV.2019 15:05:49

Middle Channel / Full RB



Date: 12.NOV.2019 15:07:31

Highest Channel / 1RB



Date: 12.NOV.2019 15:13:37

Highest Channel / Full RB



Date: 12.NOV.2019 15:09:59



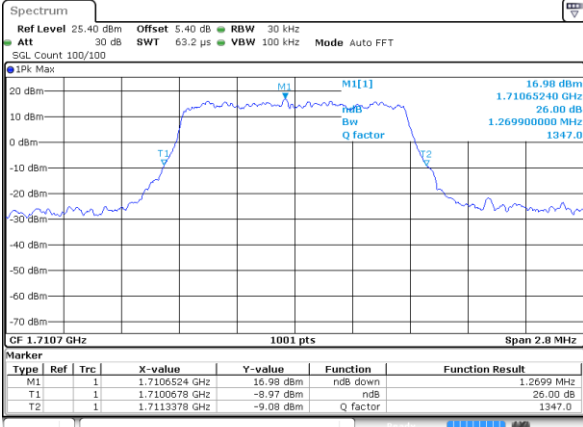
**26dB Bandwidth**

Mode	LTE Band 66 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.270	1.301	3.003	3.039	4.985	4.995	9.85	9.87	14.505	14.266	20.18	20.30
Middle CH	1.315	1.292	2.985	3.033	4.925	4.985	9.71	9.81	14.266	14.266	20.14	20.30
Highest CH	1.267	1.320	3.027	3.009	4.805	4.905	9.91	9.79	14.236	14.356	20.34	20.14



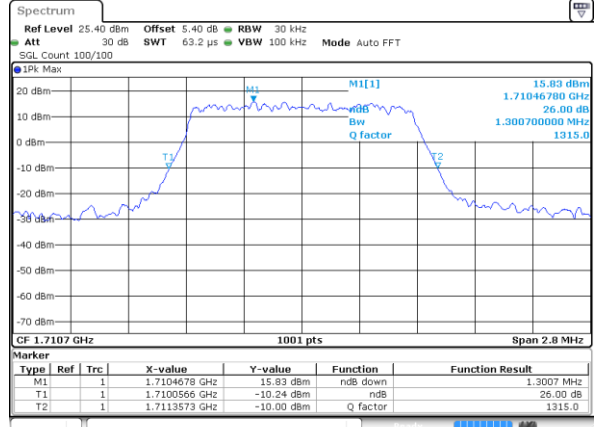
LTE Band 66

Lowest Channel / 1.4MHz / QPSK



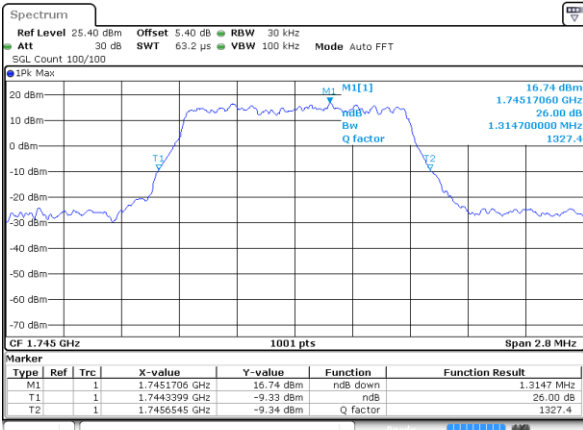
Date: 12 NOV 2019 11:29:35

Lowest Channel / 1.4MHz / 16QAM



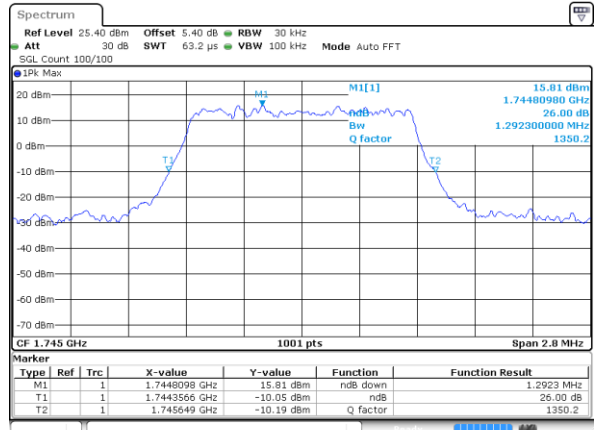
Date: 12 NOV 2019 11:31:00

Middle Channel / 1.4MHz / QPSK



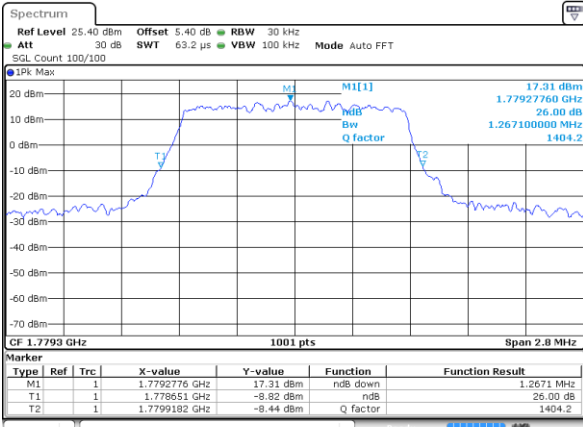
Date: 12 NOV 2019 11:39:02

Middle Channel / 1.4MHz / 16QAM



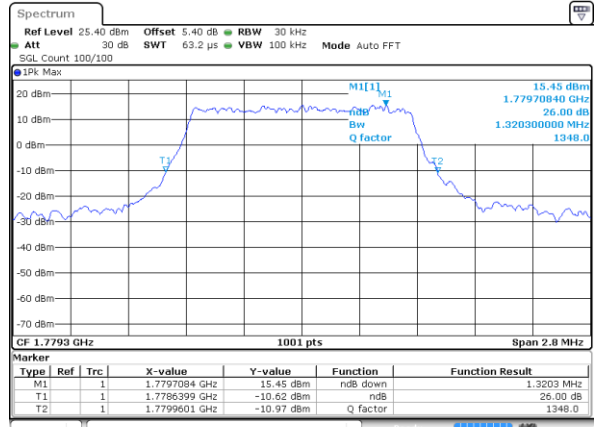
Date: 12 NOV 2019 11:38:39

Highest Channel / 1.4MHz / QPSK



Date: 12 NOV 2019 11:40:58

Highest Channel / 1.4MHz / 16QAM



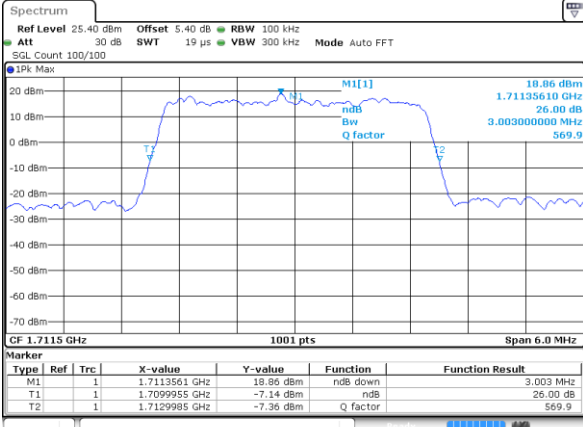
Date: 12 NOV 2019 11:41:32





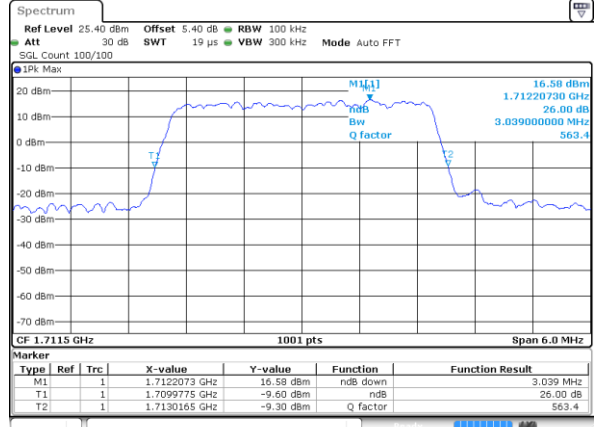
LTE Band 66

Lowest Channel / 3MHz / QPSK



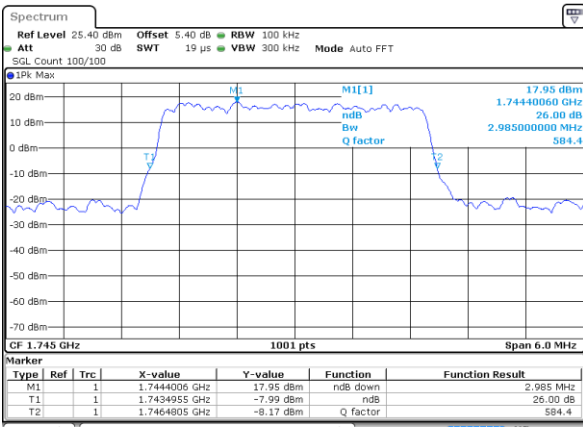
Date: 12 NOV 2019 12:01:30

Lowest Channel / 3MHz / 16QAM



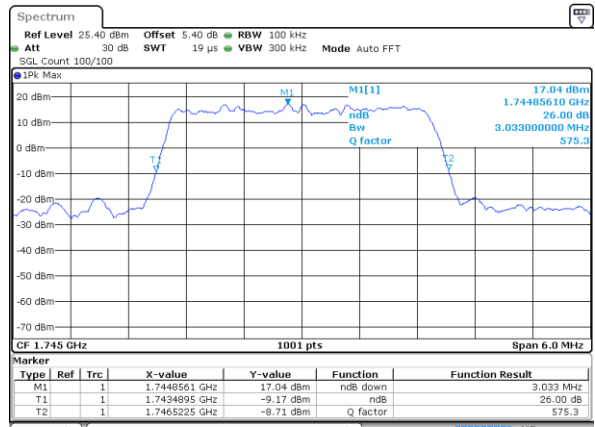
Date: 12 NOV 2019 12:00:35

Middle Channel / 3MHz / QPSK



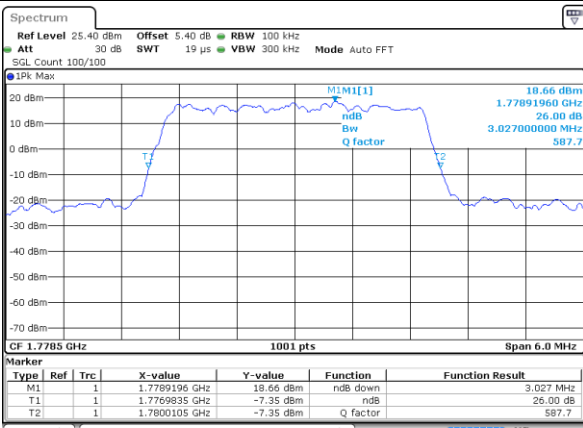
Date: 12 NOV 2019 12:07:24

Middle Channel / 3MHz / 16QAM



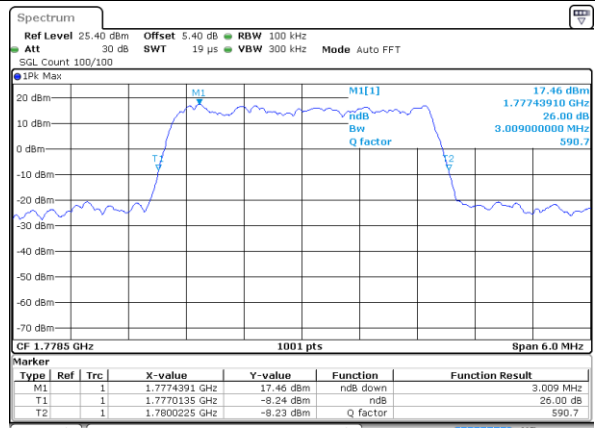
Date: 12 NOV 2019 12:07:49

Highest Channel / 3MHz / QPSK



Date: 12 NOV 2019 12:08:51

Highest Channel / 3MHz / 16QAM

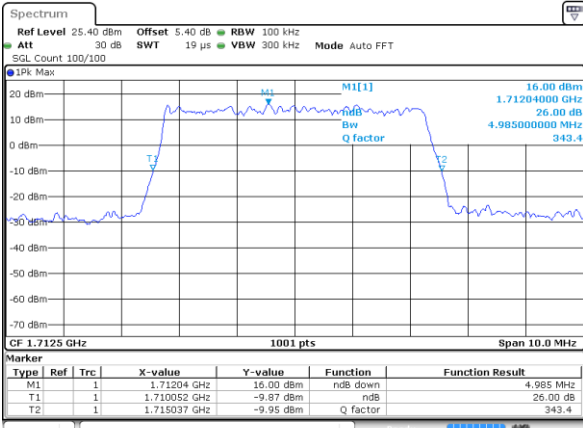


Date: 12 NOV 2019 12:08:29



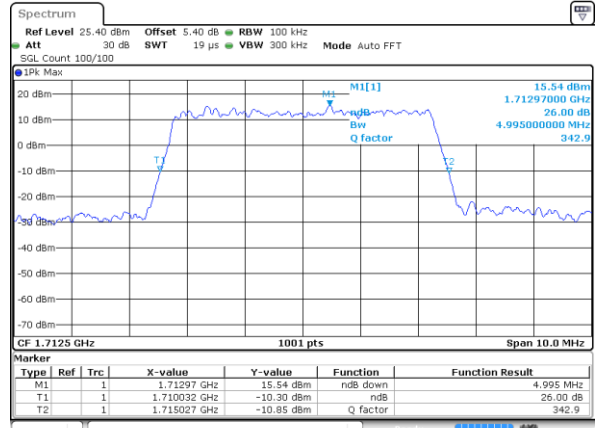
LTE Band 66

Lowest Channel / 5MHz / QPSK



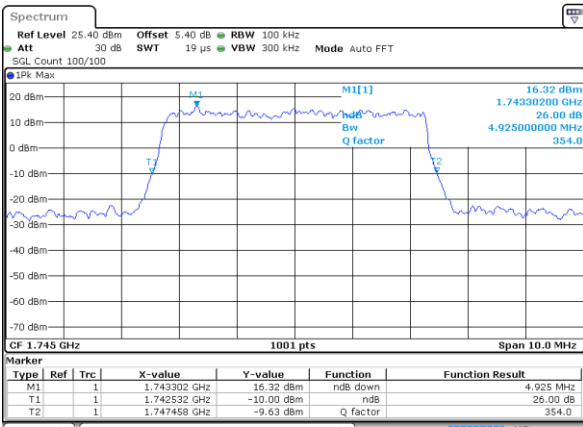
Date: 12 NOV 2019 13:47:29

Lowest Channel / 5MHz / 16QAM



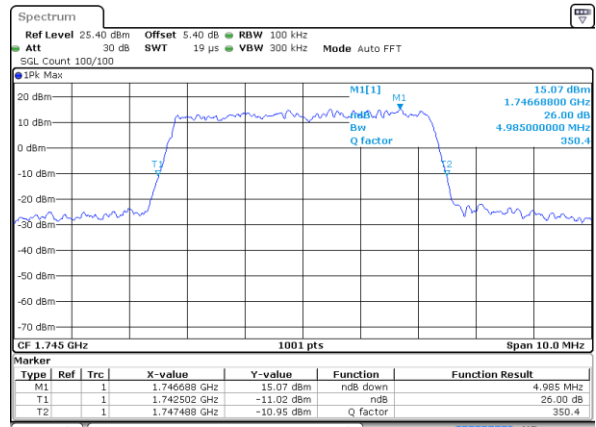
Date: 12 NOV 2019 13:48:20

Middle Channel / 5MHz / QPSK



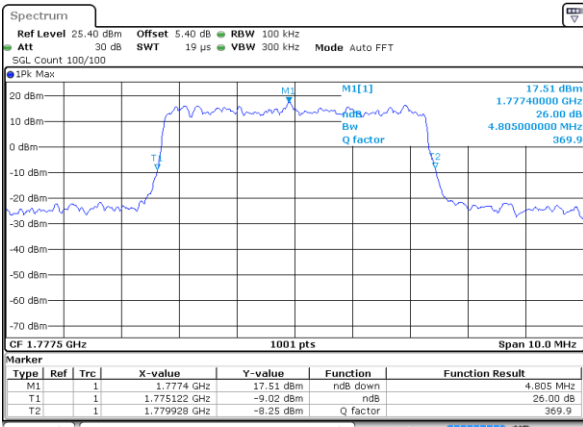
Date: 12 NOV 2019 13:53:53

Middle Channel / 5MHz / 16QAM



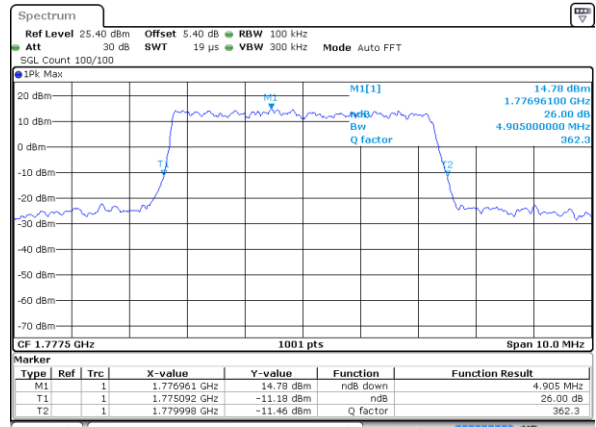
Date: 12 NOV 2019 13:53:23

Highest Channel / 5MHz / QPSK



Date: 12 NOV 2019 14:03:54

Highest Channel / 5MHz / 16QAM

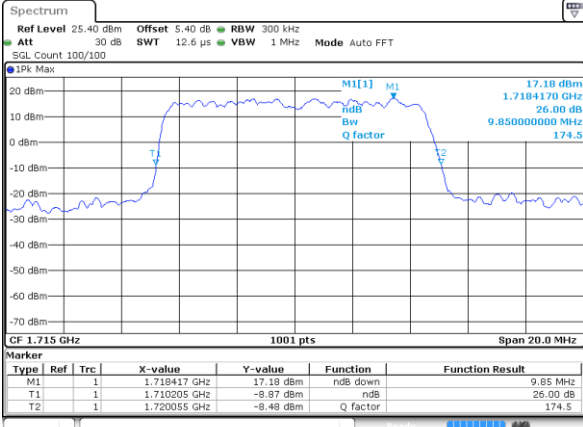


Date: 12 NOV 2019 14:04:46



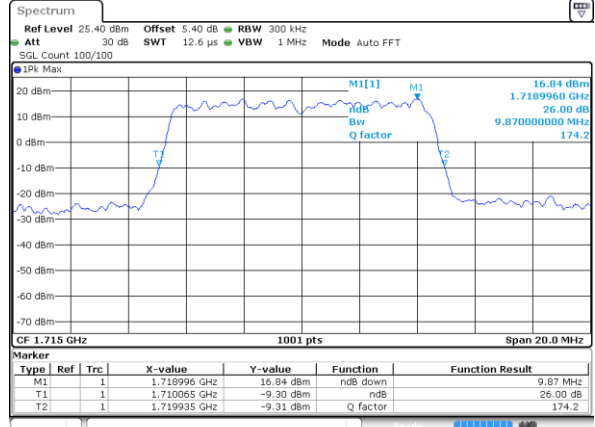
LTE Band 66

Lowest Channel / 10MHz / QPSK



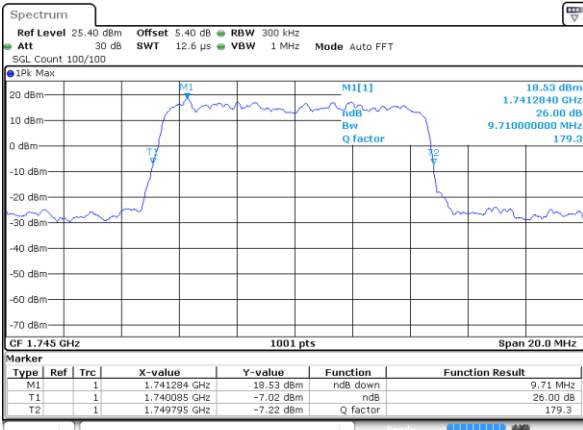
Date: 12 NOV 2019 14:08:52

Lowest Channel / 10MHz / 16QAM



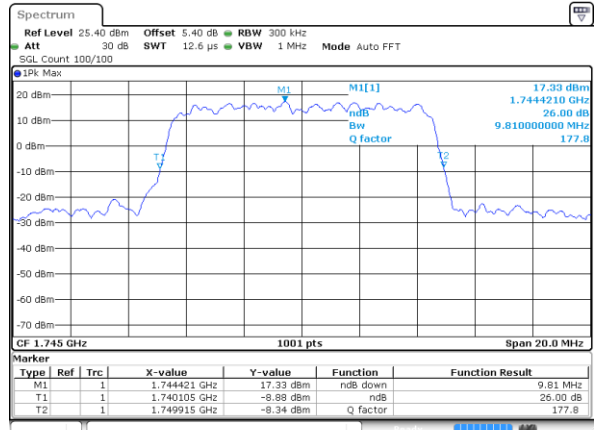
Date: 12 NOV 2019 14:09:35

Middle Channel / 10MHz / QPSK



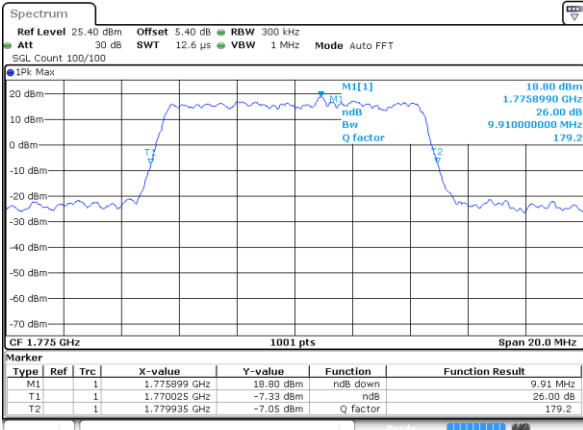
Date: 12 NOV 2019 14:21:36

Middle Channel / 10MHz / 16QAM



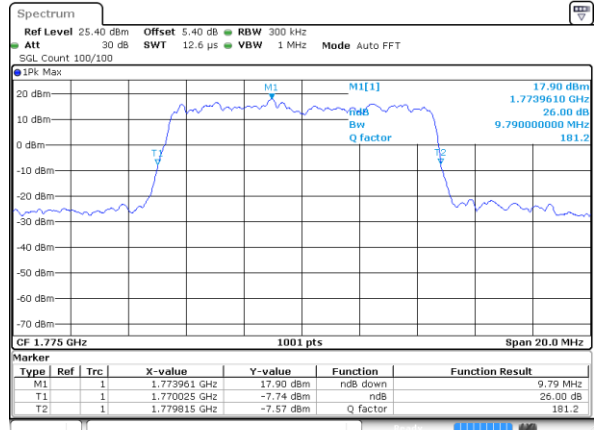
Date: 12 NOV 2019 14:20:59

Highest Channel / 10MHz / QPSK



Date: 12 NOV 2019 14:23:40

Highest Channel / 10MHz / 16QAM

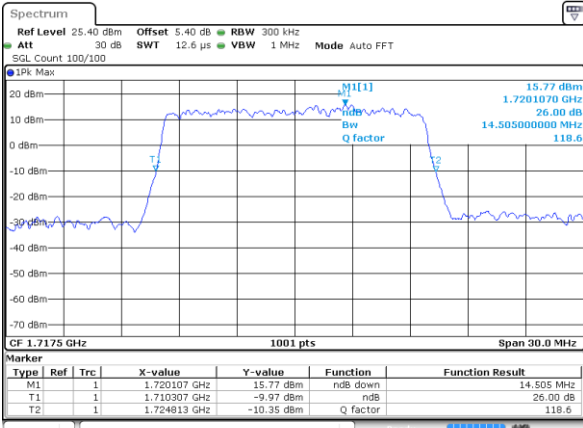


Date: 12 NOV 2019 14:24:37



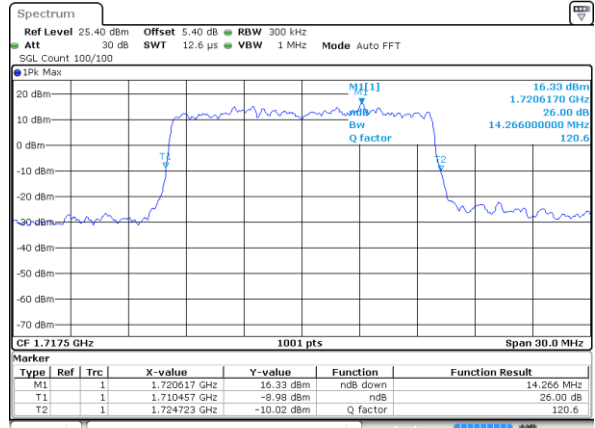
LTE Band 66

Lowest Channel / 15MHz / QPSK



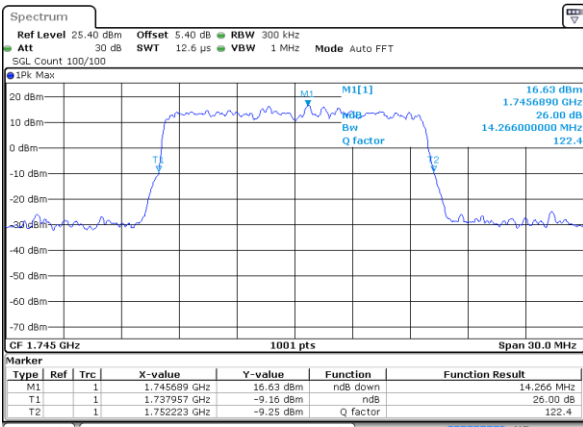
Date: 12 NOV 2019 14:48:00

Lowest Channel / 15MHz / 16QAM



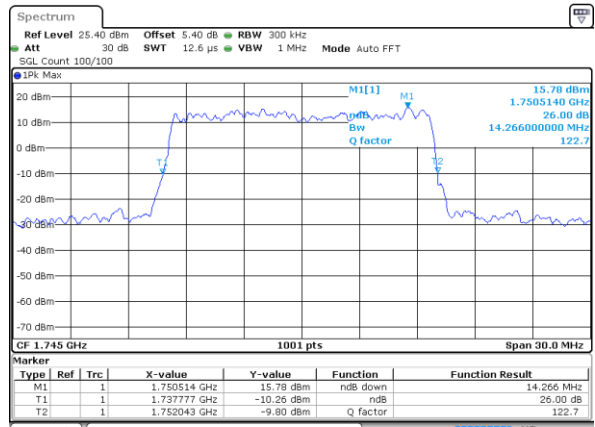
Date: 12 NOV 2019 14:48:40

Middle Channel / 15MHz / QPSK



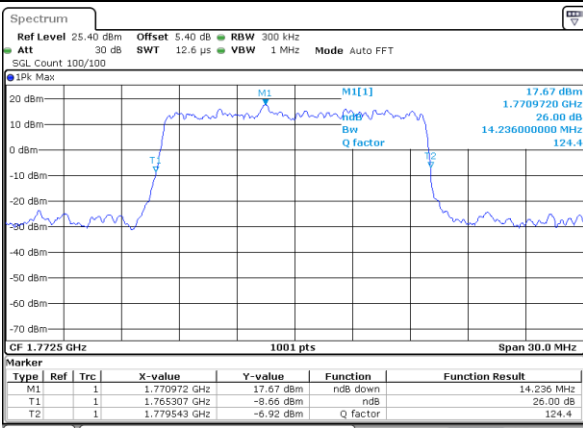
Date: 12 NOV 2019 14:53:56

Middle Channel / 15MHz / 16QAM



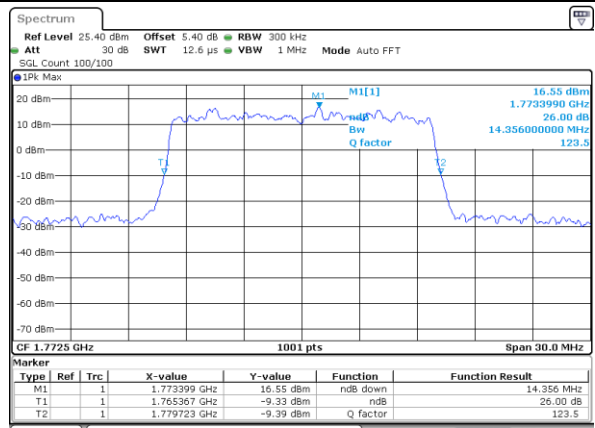
Date: 12 NOV 2019 14:53:32

Highest Channel / 15MHz / QPSK



Date: 12 NOV 2019 14:54:35

Highest Channel / 15MHz / 16QAM

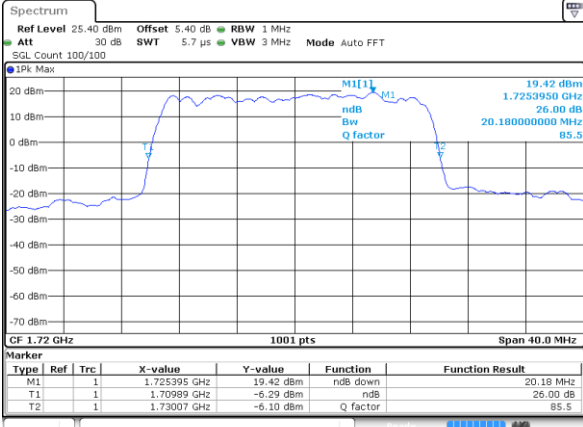


Date: 12 NOV 2019 14:55:21



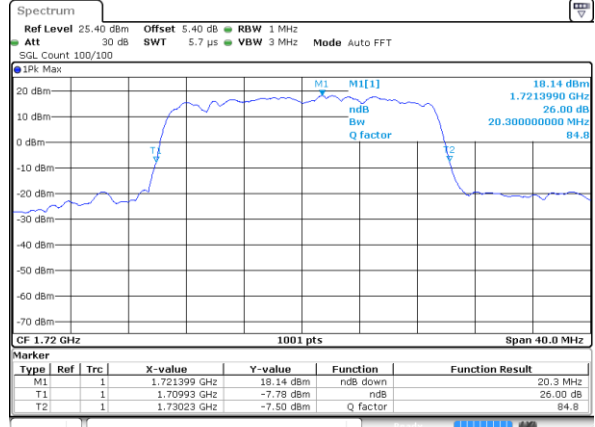
LTE Band 66

Lowest Channel / 20MHz / QPSK



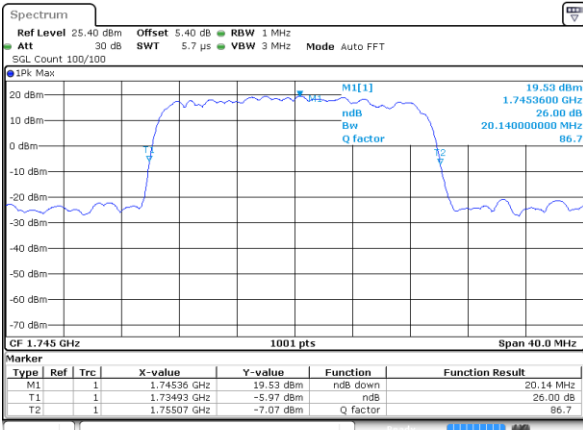
Date: 12 NOV 2019 15:00:49

Lowest Channel / 20MHz / 16QAM



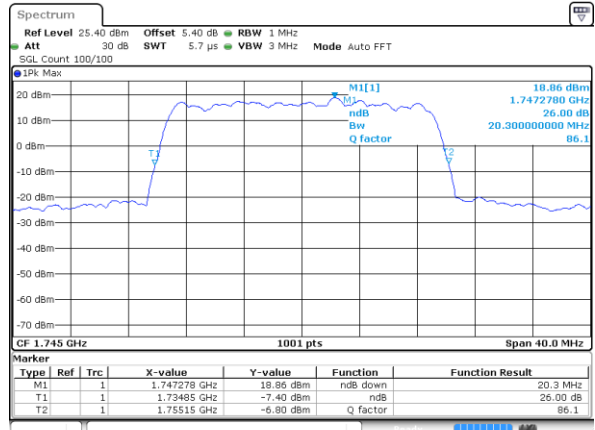
Date: 12 NOV 2019 15:01:37

Middle Channel / 20MHz / QPSK



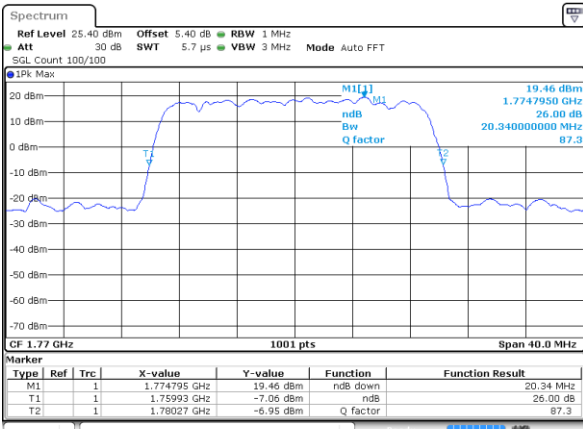
Date: 12 NOV 2019 15:08:22

Middle Channel / 20MHz / 16QAM



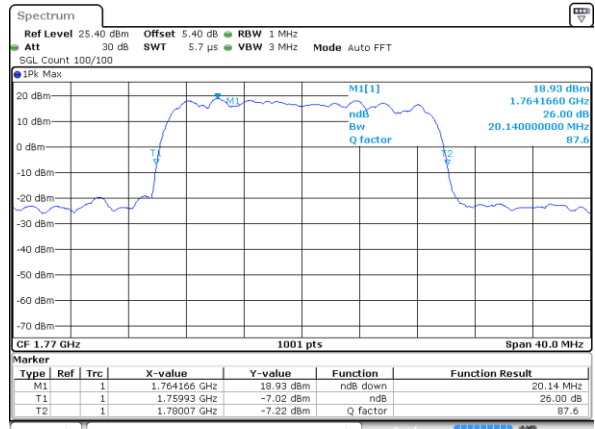
Date: 12 NOV 2019 15:07:49

Highest Channel / 20MHz / QPSK



Date: 12 NOV 2019 15:09:32

Highest Channel / 20MHz / 16QAM



Date: 12 NOV 2019 15:10:14



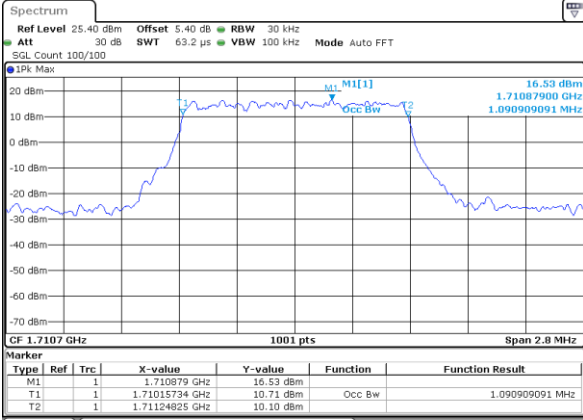
### Occupied Bandwidth

Mode	LTE Band 66 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.09	1.09	2.73	2.71	4.51	4.51	9.01	8.97	13.40	13.49	18.18	18.34
Middle CH	1.09	1.10	2.73	2.71	4.47	4.49	8.99	8.99	13.40	13.37	18.42	18.22
Highest CH	1.08	1.09	2.74	2.70	4.47	4.50	9.01	8.99	13.40	13.43	18.30	18.34



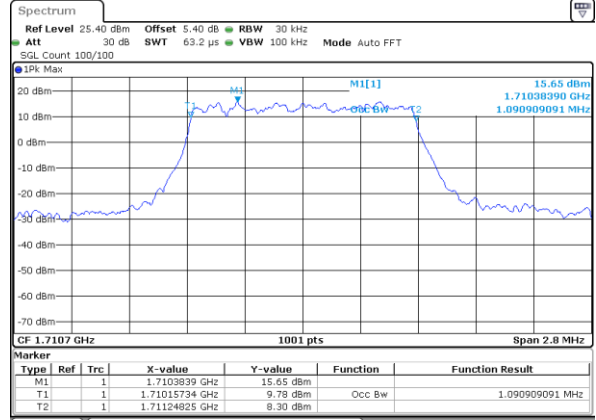
LTE Band 66

Lowest Channel / 1.4MHz / QPSK



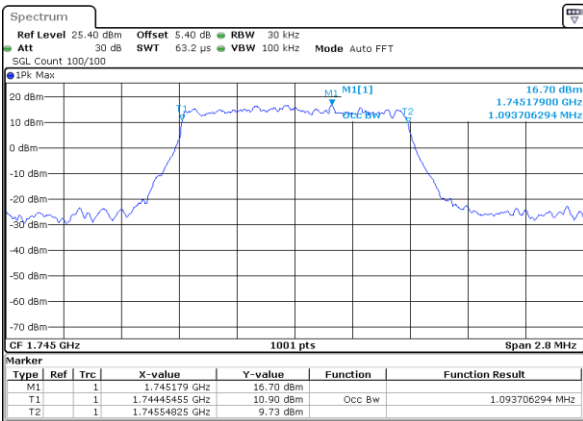
Date: 12 NOV 2019 11:29:28

Lowest Channel / 1.4MHz / 16QAM



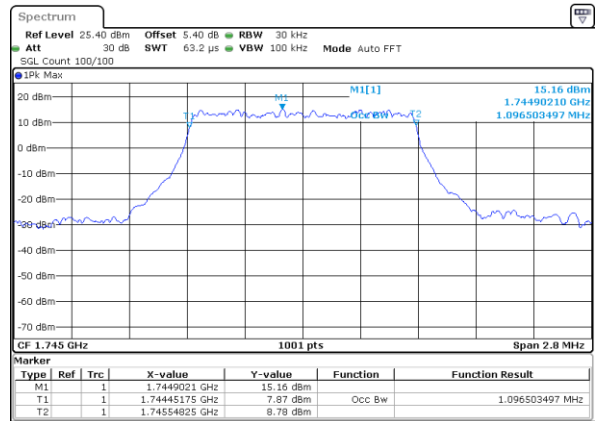
Date: 12 NOV 2019 11:30:52

Middle Channel / 1.4MHz / QPSK



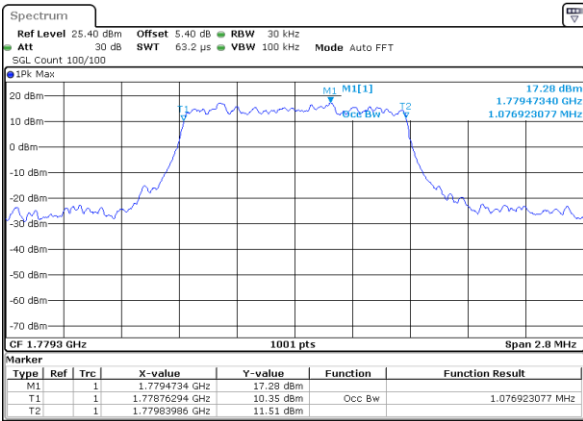
Date: 12 NOV 2019 11:38:54

Middle Channel / 1.4MHz / 16QAM



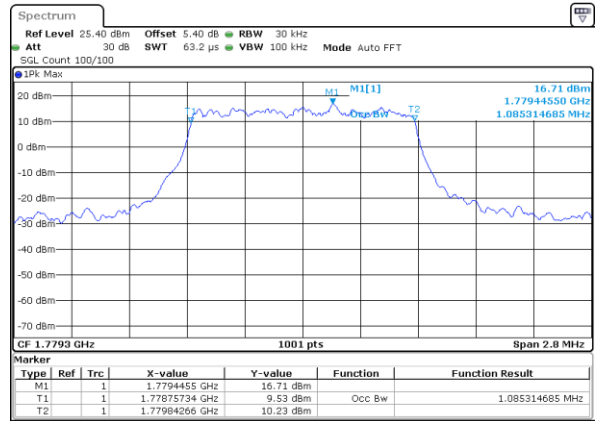
Date: 12 NOV 2019 11:38:32

Highest Channel / 1.4MHz / QPSK



Date: 12 NOV 2019 11:40:50

Highest Channel / 1.4MHz / 16QAM

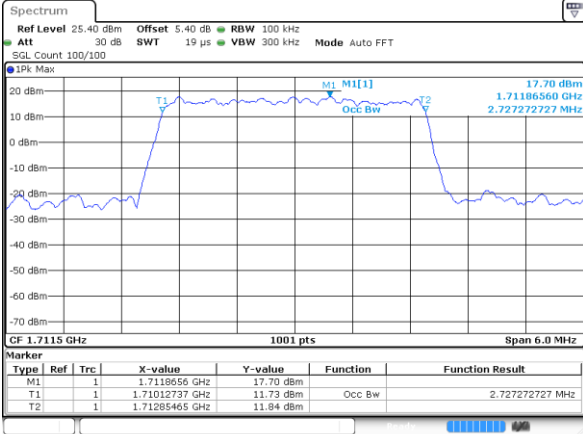


Date: 12 NOV 2019 11:41:20



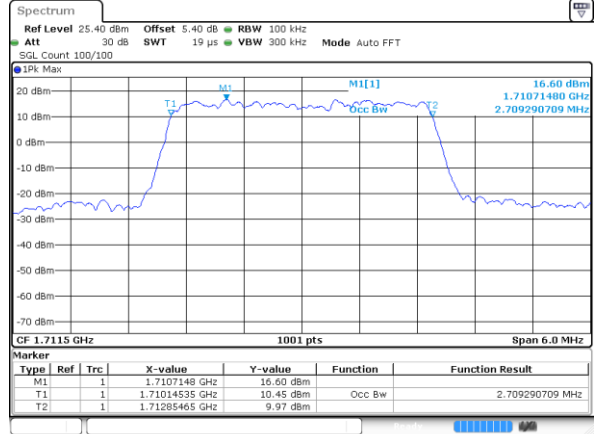
LTE Band 66

Lowest Channel / 3MHz / QPSK



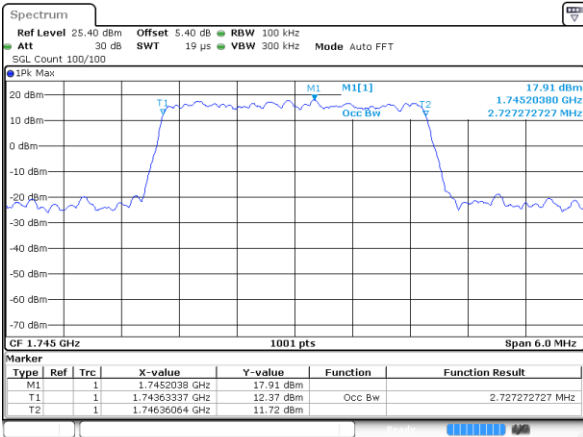
Date: 12 NOV 2019 12:01:23

Lowest Channel / 3MHz / 16QAM



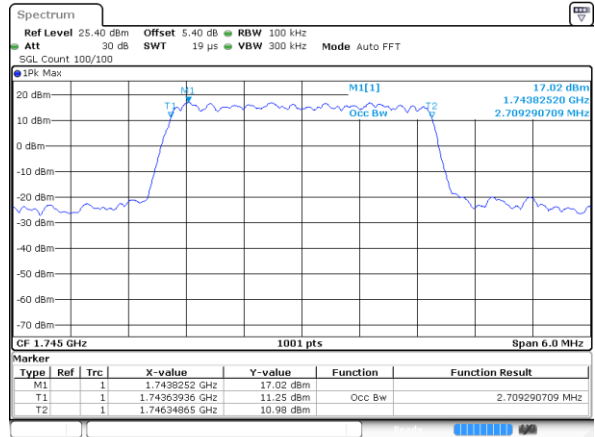
Date: 12 NOV 2019 12:00:22

Middle Channel / 3MHz / QPSK



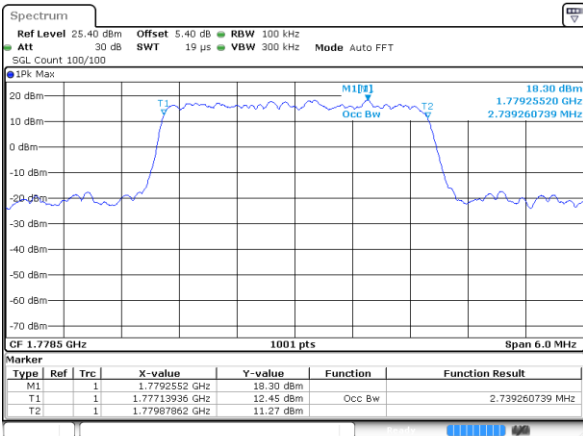
Date: 12 NOV 2019 12:07:17

Middle Channel / 3MHz / 16QAM



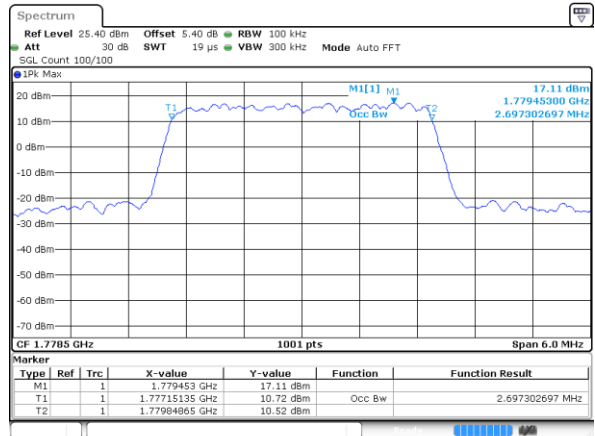
Date: 12 NOV 2019 12:07:41

Highest Channel / 3MHz / QPSK



Date: 12 NOV 2019 12:08:43

Highest Channel / 3MHz / 16QAM



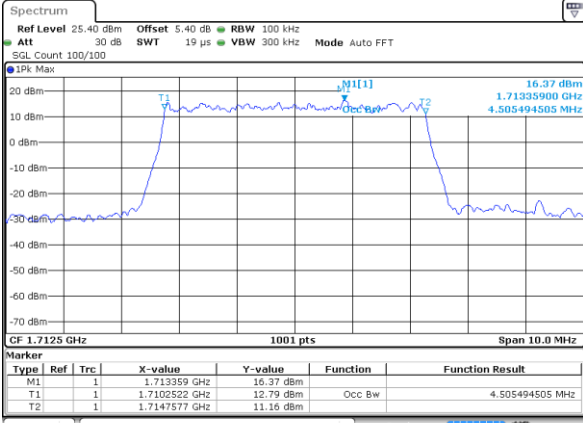
Date: 12 NOV 2019 12:08:21





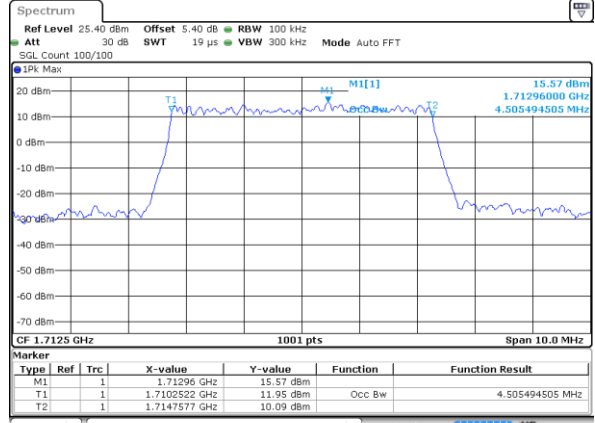
LTE Band 66

Lowest Channel / 5MHz / QPSK



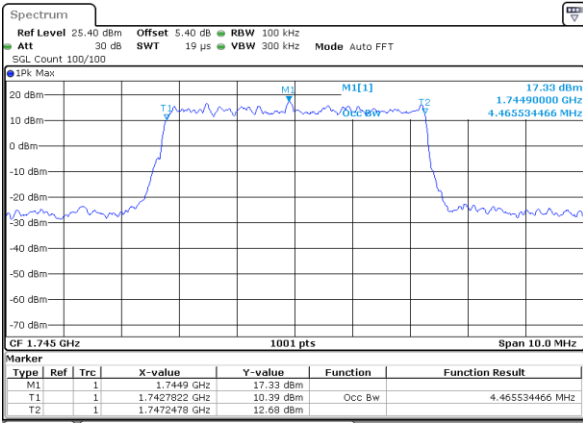
Date: 12 NOV 2019 13:47:20

Lowest Channel / 5MHz / 16QAM



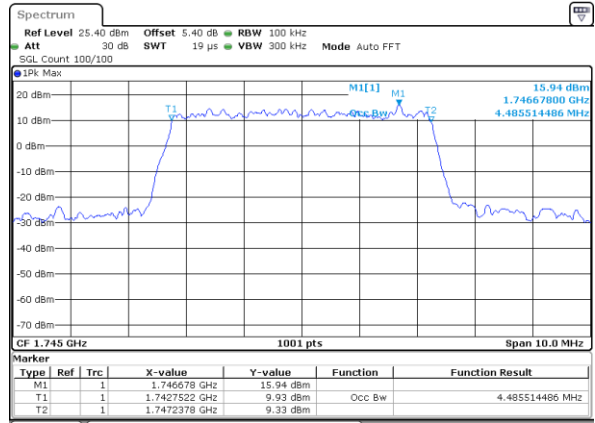
Date: 12 NOV 2019 13:48:11

Middle Channel / 5MHz / QPSK



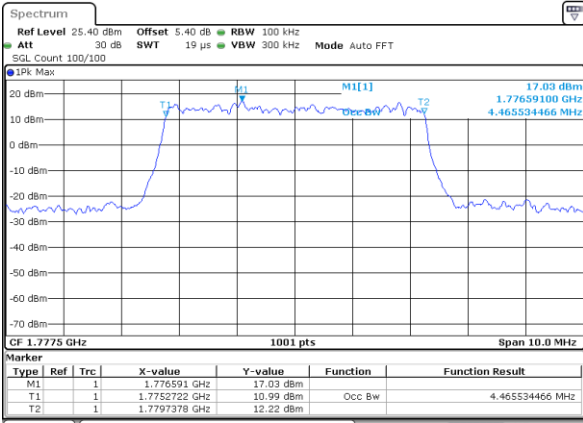
Date: 12 NOV 2019 13:53:42

Middle Channel / 5MHz / 16QAM



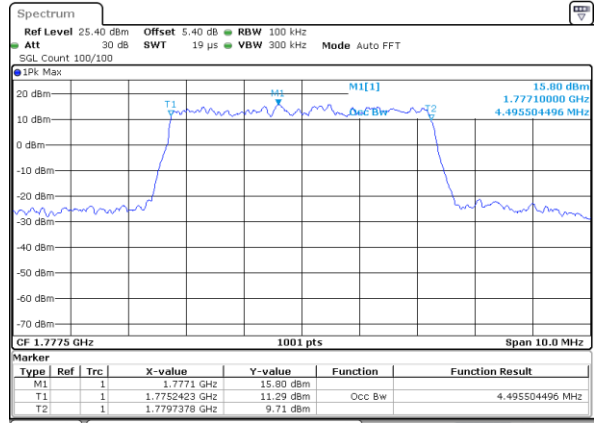
Date: 12 NOV 2019 13:53:13

Highest Channel / 5MHz / QPSK



Date: 12 NOV 2019 14:03:45

Highest Channel / 5MHz / 16QAM

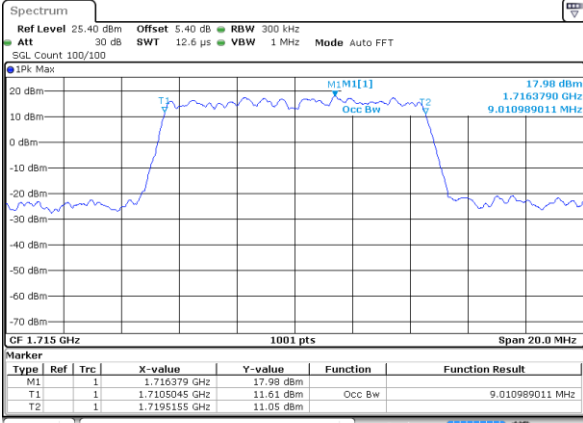


Date: 12 NOV 2019 14:04:36



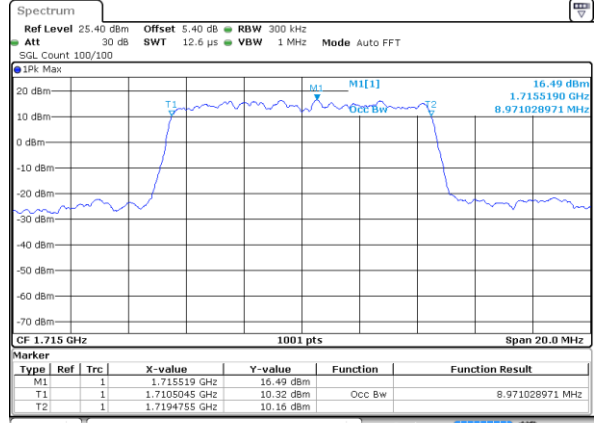
LTE Band 66

Lowest Channel / 10MHz / QPSK



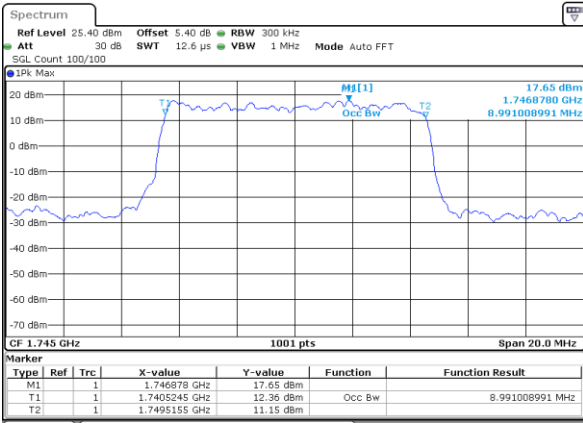
Date: 12 NOV 2019 14:08:43

Lowest Channel / 10MHz / 16QAM



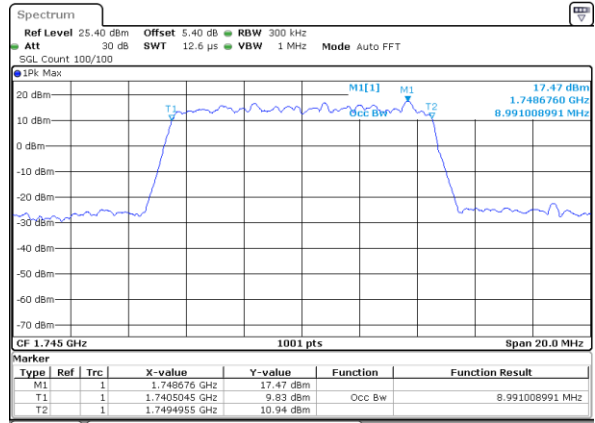
Date: 12 NOV 2019 14:09:27

Middle Channel / 10MHz / QPSK



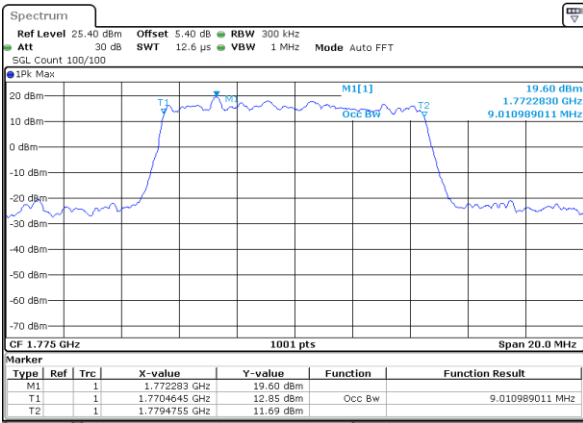
Date: 12 NOV 2019 14:21:28

Middle Channel / 10MHz / 16QAM



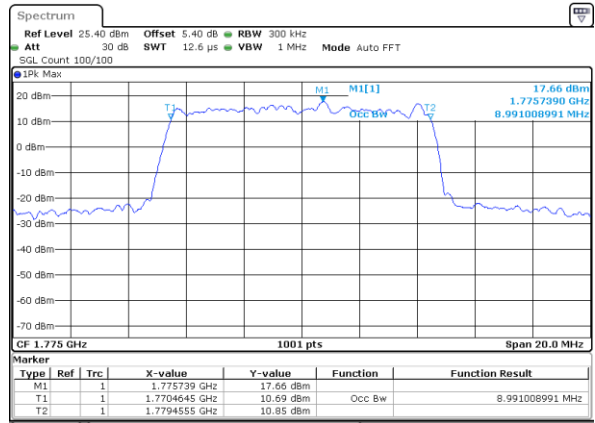
Date: 12 NOV 2019 14:24:48

Highest Channel / 10MHz / QPSK



Date: 12 NOV 2019 14:23:32

Highest Channel / 10MHz / 16QAM



Date: 12 NOV 2019 14:24:29