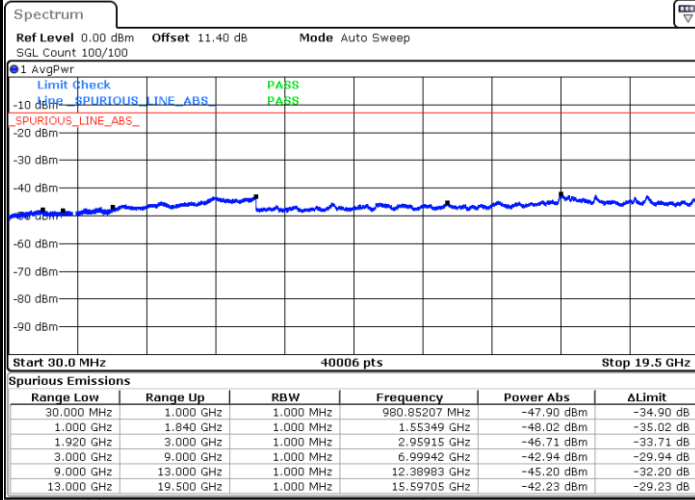




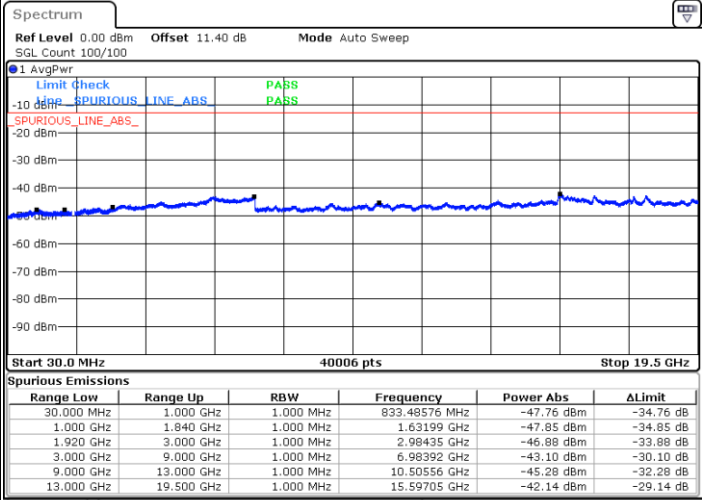
LTE Band 2 / 5MHz

Highest Channel / QPSK



Date: 13.JAN.2020 10:16:37

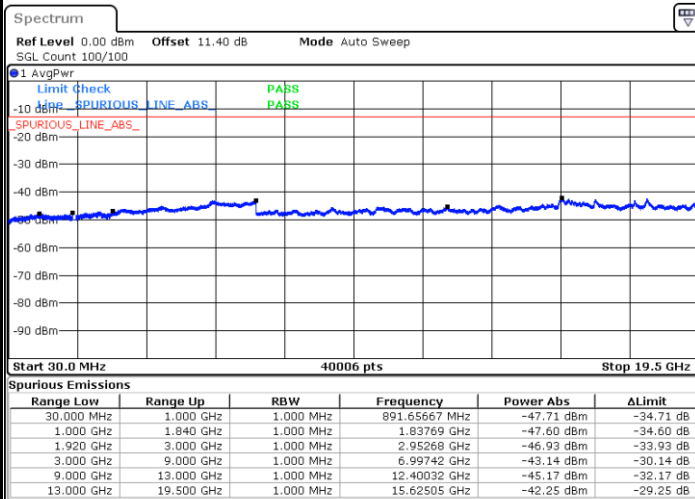
Highest Channel / 16QAM



Date: 13.JAN.2020 10:17:27

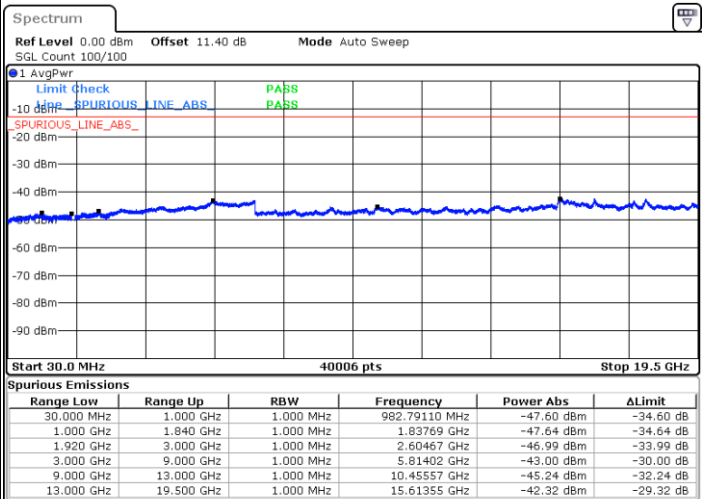
LTE Band 2 / 10MHz

Lowest Channel / QPSK



Date: 13.JAN.2020 10:18:18

Lowest Channel / 16QAM



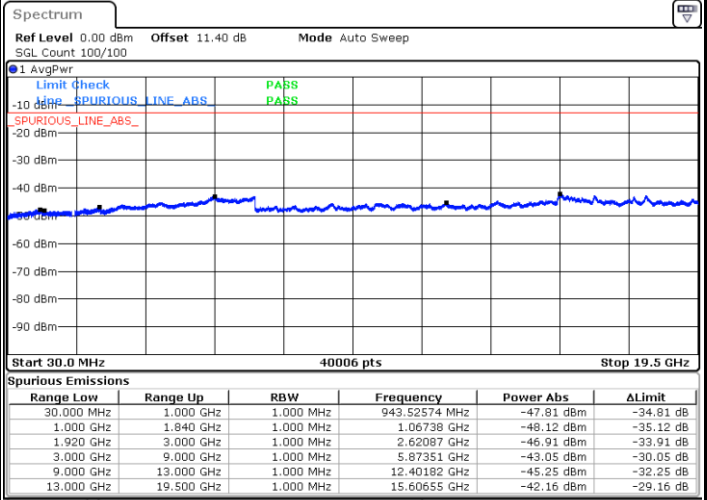
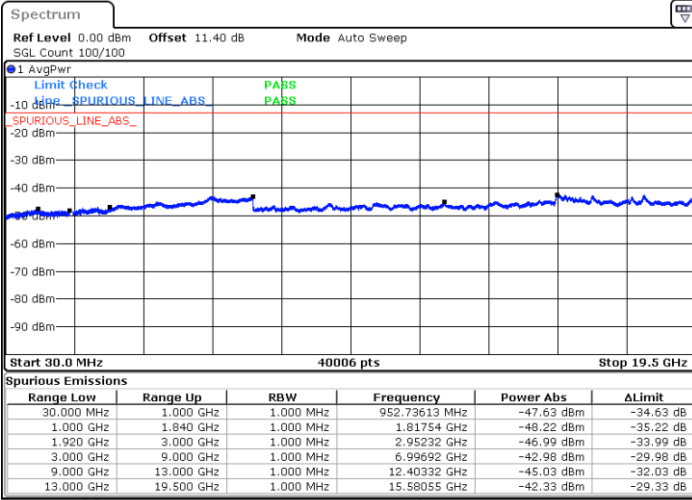
Date: 13.JAN.2020 10:19:08



LTE Band 2 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM

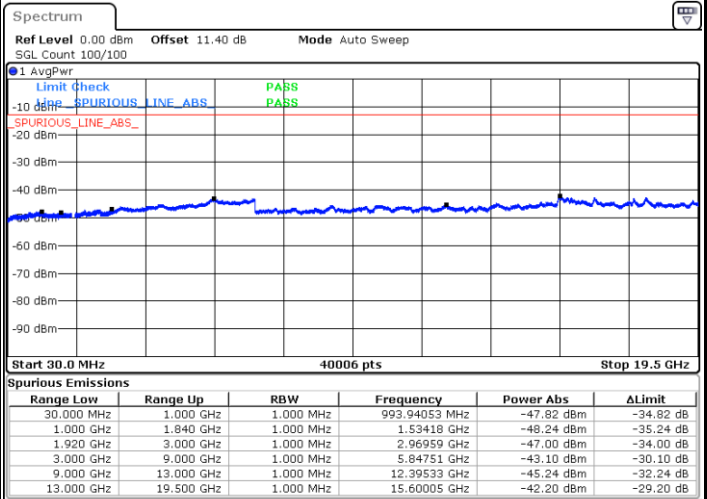
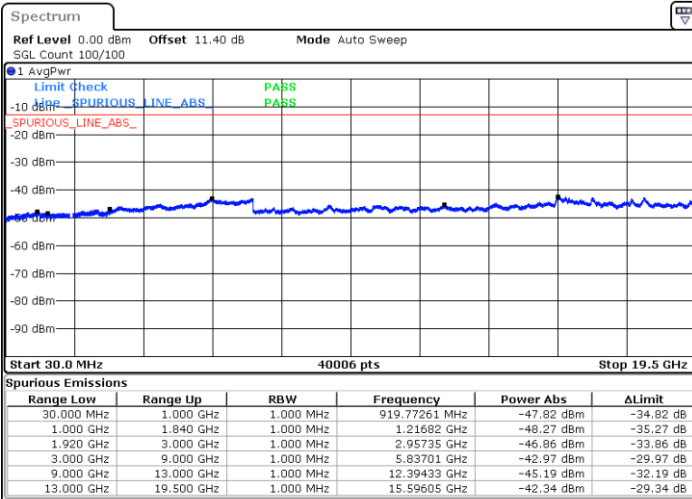


Date: 13.JAN.2020 10:19:57

Date: 13.JAN.2020 10:20:47

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 13.JAN.2020 10:21:37

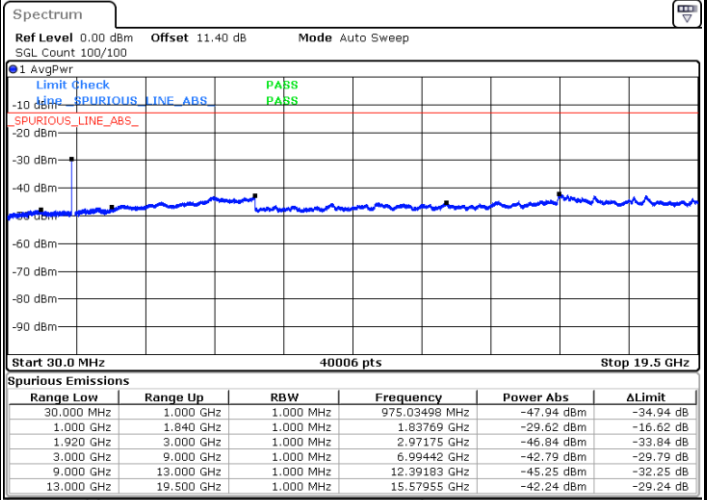
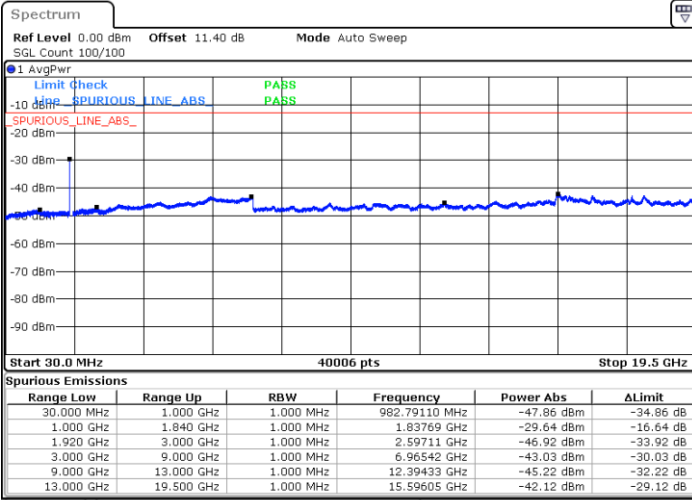
Date: 13.JAN.2020 10:22:27



LTE Band 2 / 15MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

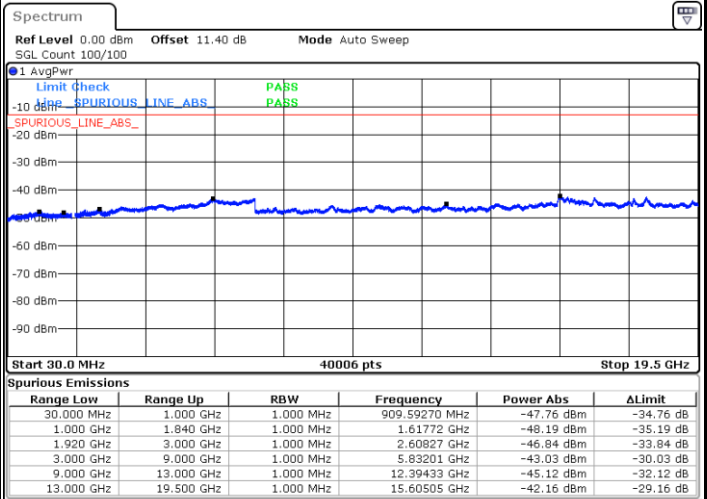
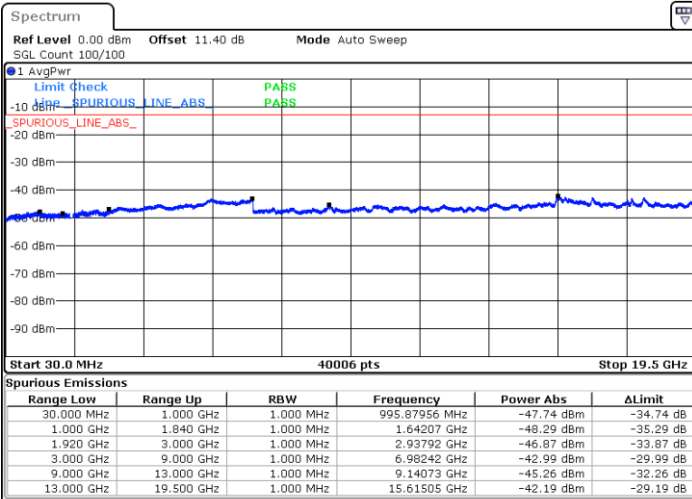


Date: 13.JAN.2020 10:23:18

Date: 13.JAN.2020 10:24:08

Middle Channel / QPSK

Middle Channel / 16QAM



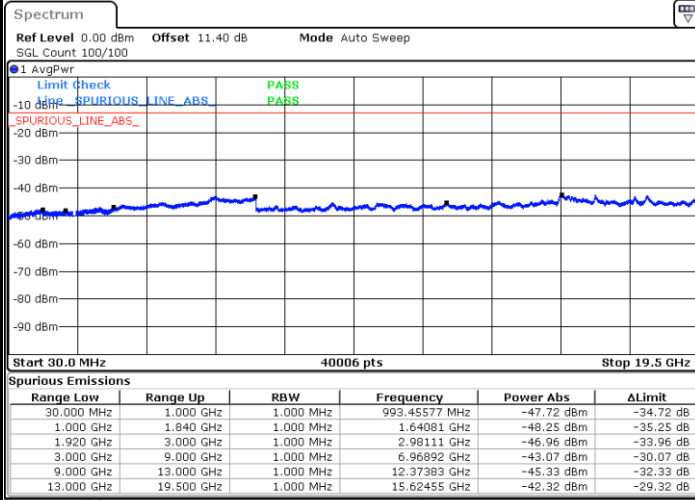
Date: 13.JAN.2020 10:24:58

Date: 13.JAN.2020 10:25:47



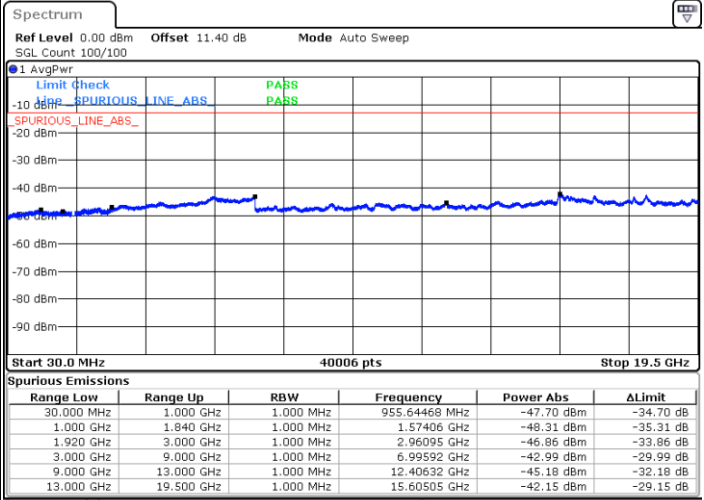
LTE Band 2 / 15MHz

Highest Channel / QPSK



Date: 13.JAN.2020 10:26:37

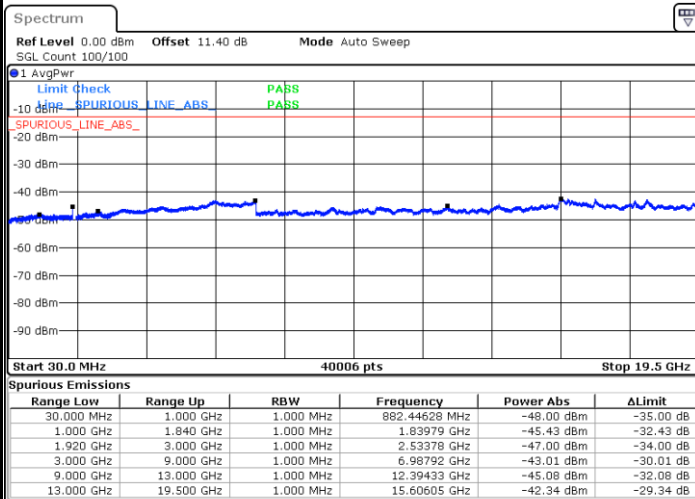
Highest Channel / 16QAM



Date: 13.JAN.2020 10:27:27

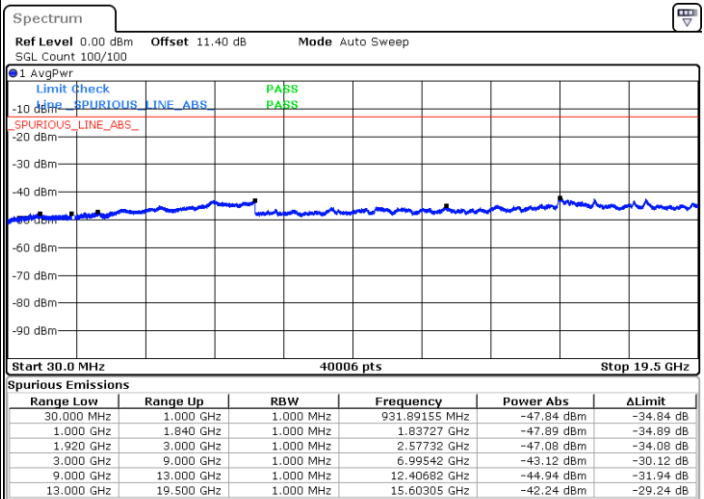
LTE Band 2 / 20MHz

Lowest Channel / QPSK



Date: 13.JAN.2020 10:28:18

Lowest Channel / 16QAM



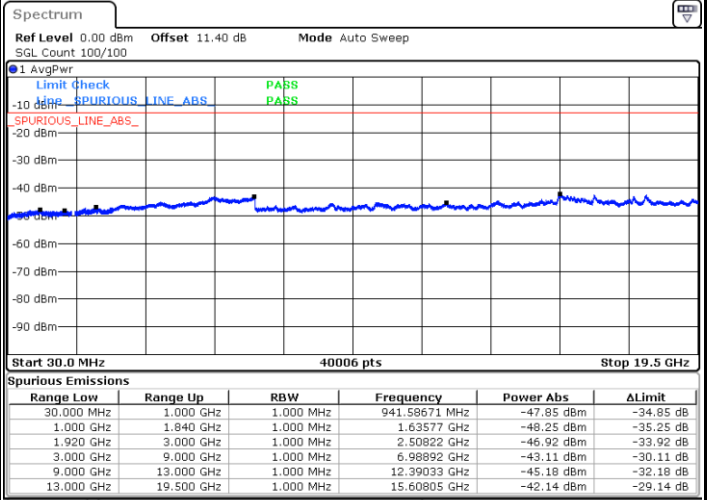
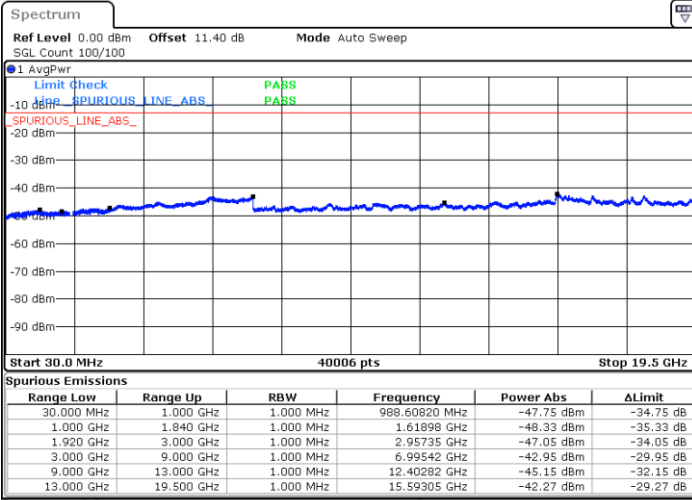
Date: 13.JAN.2020 10:29:08



LTE Band 2 / 20MHz

Middle Channel / QPSK

Middle Channel / 16QAM

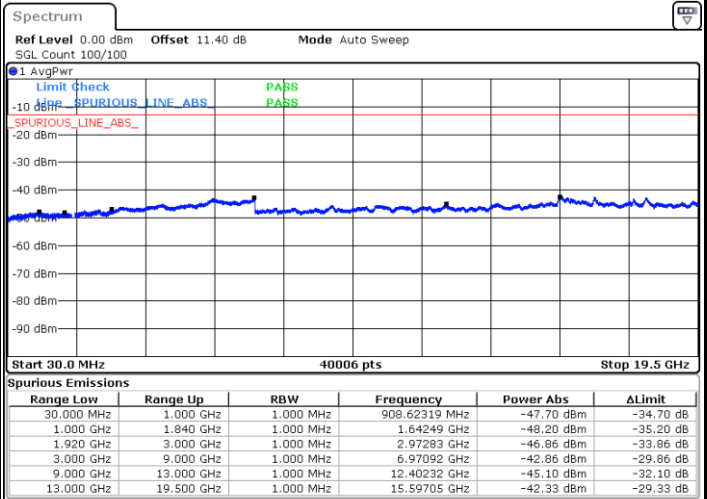
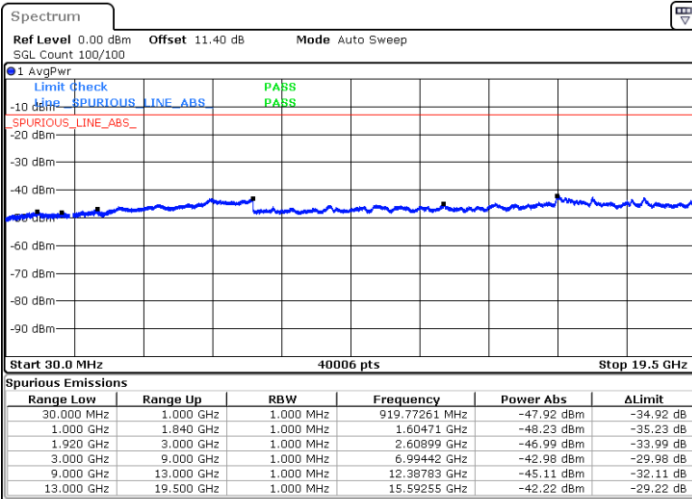


Date: 13.JAN.2020 10:29:58

Date: 13.JAN.2020 10:30:47

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 13.JAN.2020 10:31:37

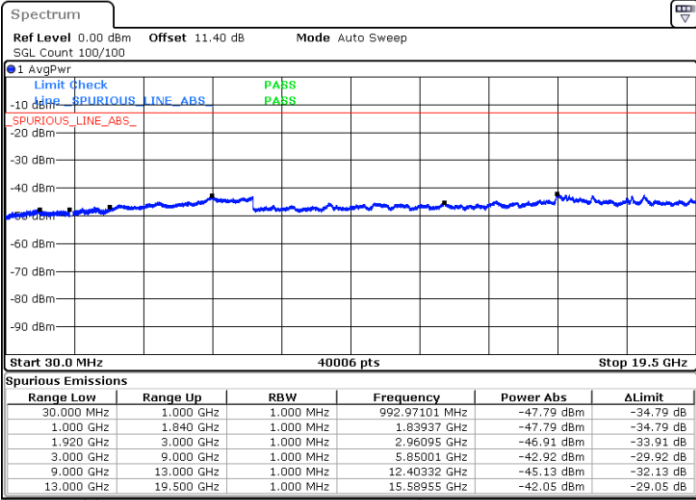
Date: 13.JAN.2020 10:32:27



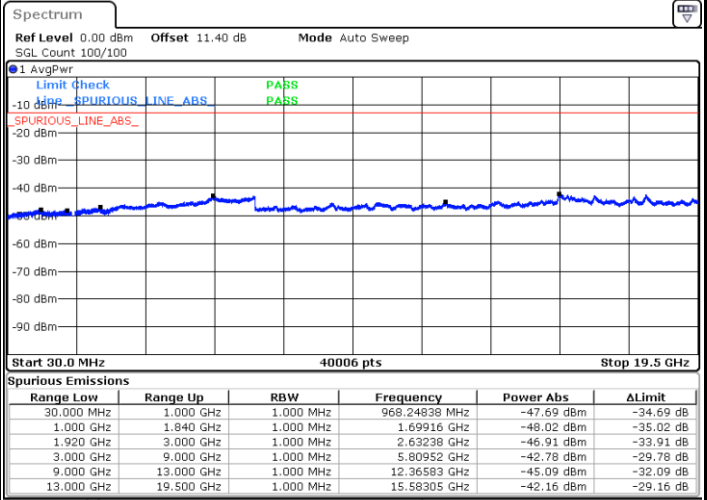
LTE Band 2 / 1.4MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

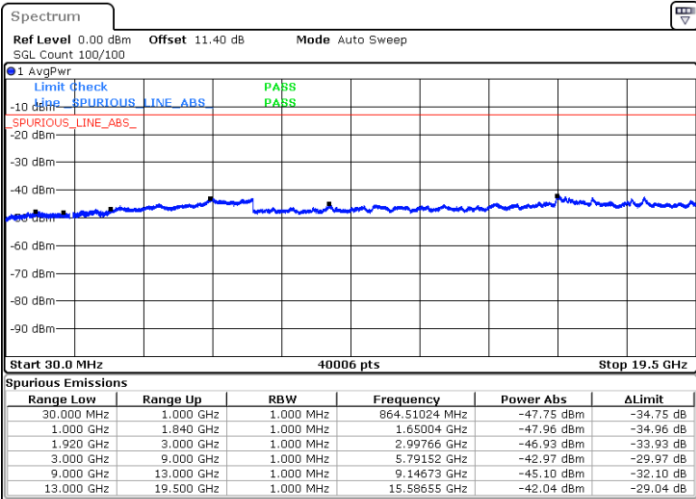


Date: 11.JAN.2020 16:34:10



Date: 11.JAN.2020 16:35:00

Highest Channel / 64QAM



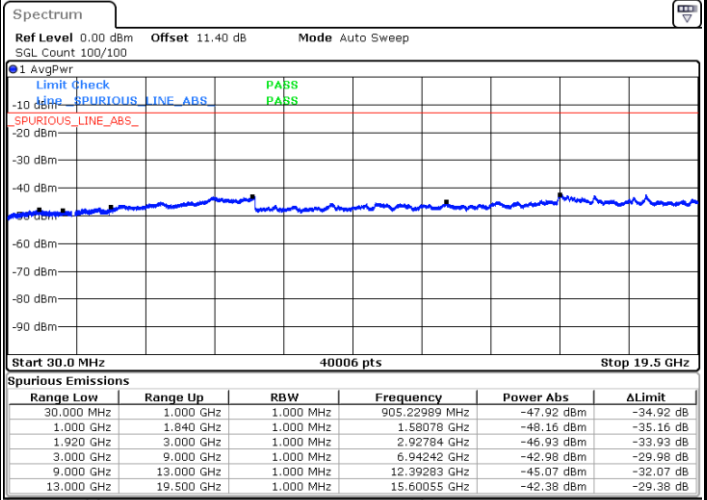
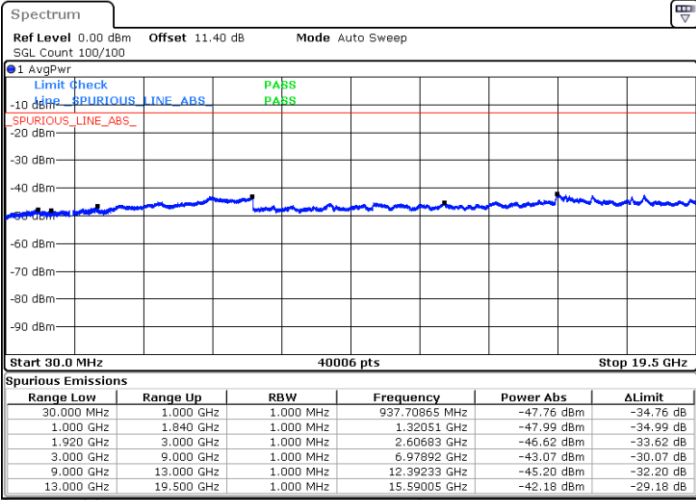
Date: 11.JAN.2020 16:38:09



LTE Band 2 / 3MHz

Lowest Channel / 64QAM

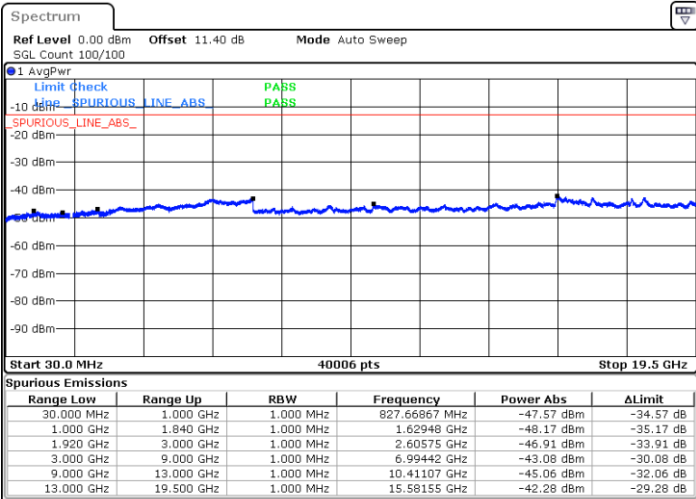
Middle Channel / 64QAM



Date: 13.JAN.2020 10:42:07

Date: 13.JAN.2020 10:42:57

Highest Channel / 64QAM



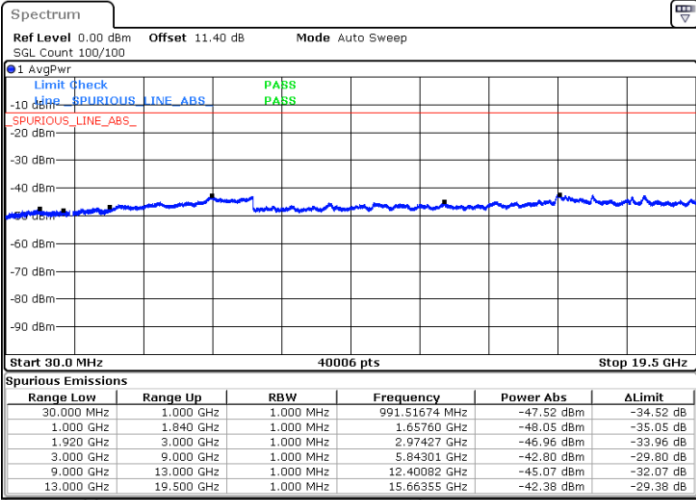
Date: 13.JAN.2020 10:46:06



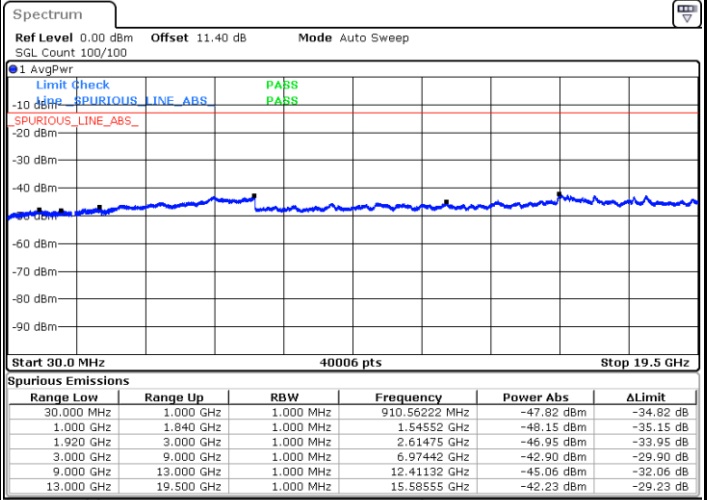
LTE Band 2 / 5MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

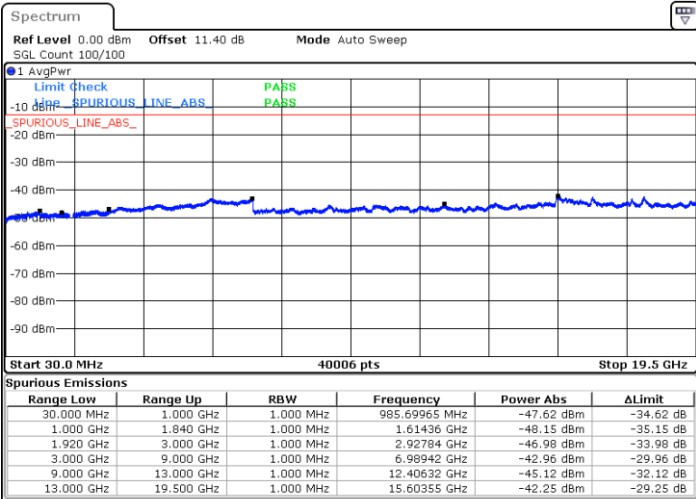


Date: 13.JAN.2020 10:49:17



Date: 13.JAN.2020 10:50:06

Highest Channel / 64QAM



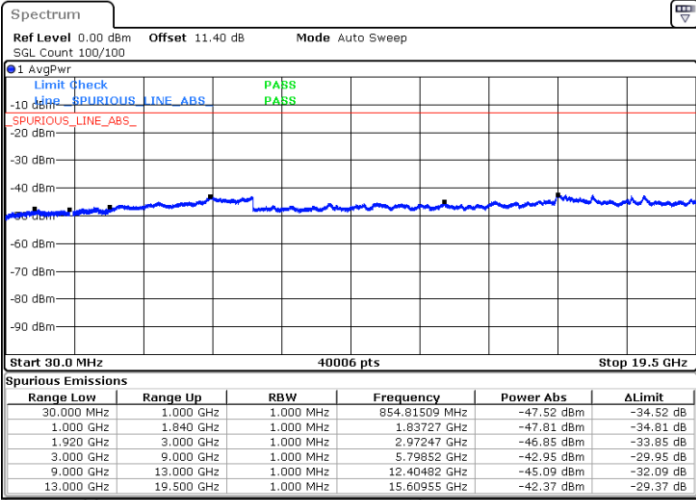
Date: 13.JAN.2020 10:53:16



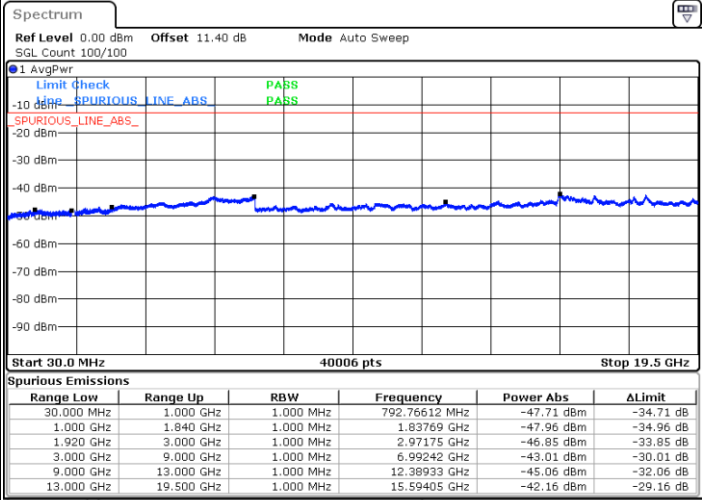
LTE Band 2 / 10MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

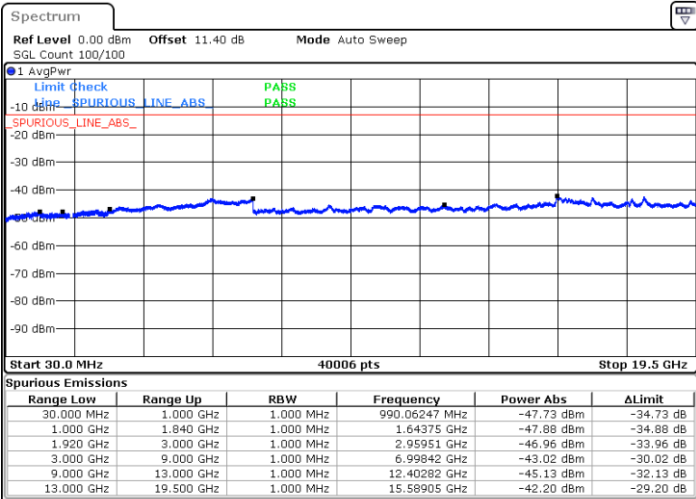


Date: 13.JAN.2020 10:56:26



Date: 13.JAN.2020 10:57:16

Highest Channel / 64QAM



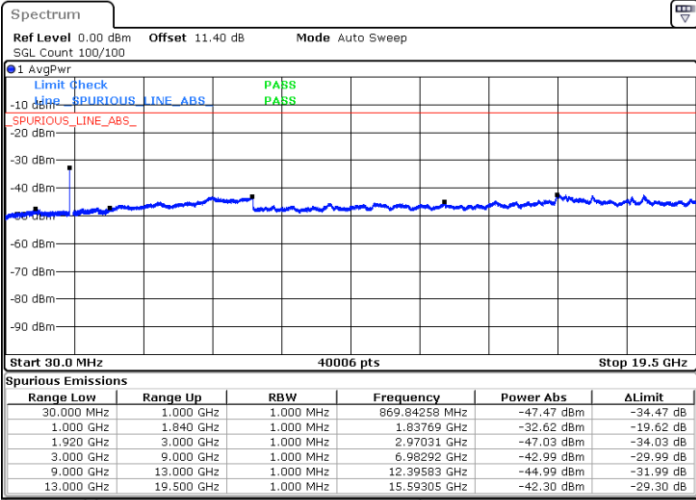
Date: 13.JAN.2020 11:00:25



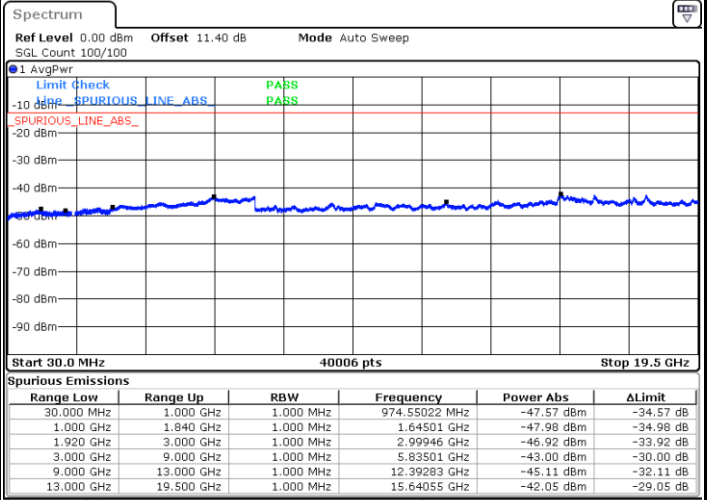
LTE Band 2 / 15MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

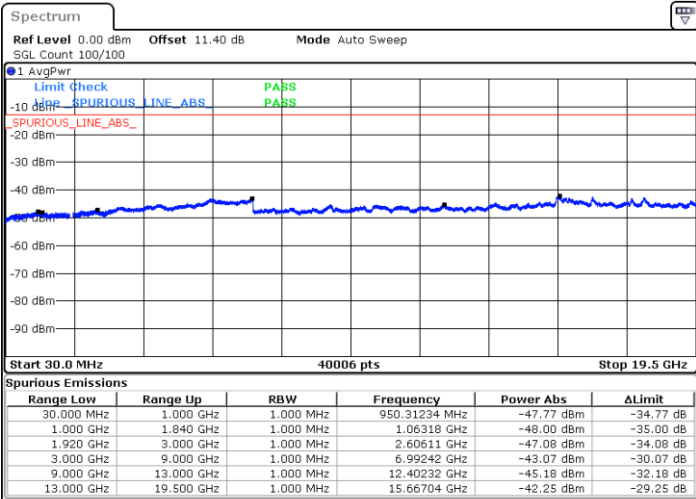


Date: 13.JAN.2020 11:03:35



Date: 13.JAN.2020 11:04:25

Highest Channel / 64QAM



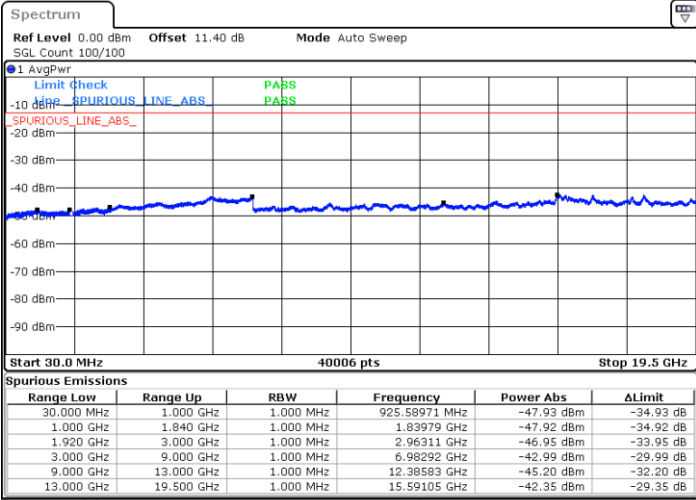
Date: 13.JAN.2020 11:07:34



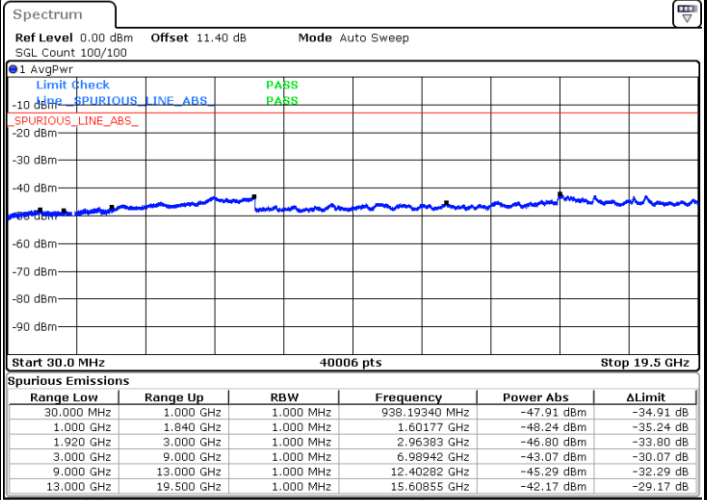
LTE Band 2 / 20MHz

Lowest Channel / 64QAM

Middle Channel / 64QAM

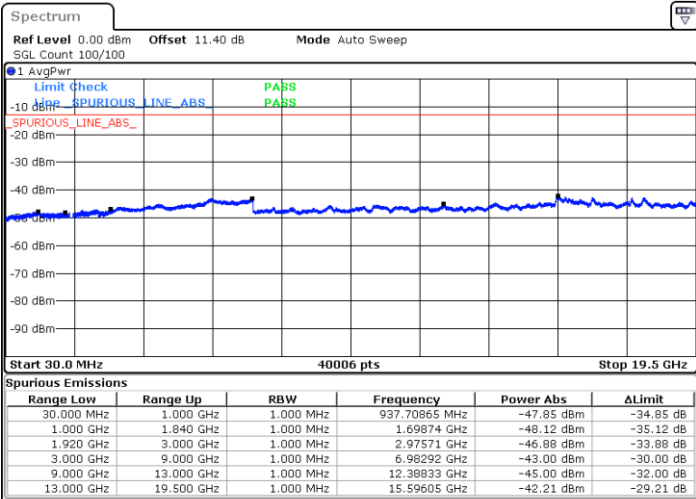


Date: 13.JAN.2020 11:10:44



Date: 13.JAN.2020 11:11:34

Highest Channel / 64QAM



Date: 13.JAN.2020 11:14:43



**Frequency Stability**

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0068	PASS
40	Normal Voltage	0.0063	
30	Normal Voltage	0.0054	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0052	
0	Normal Voltage	0.0058	
-10	Normal Voltage	0.0076	
-20	Normal Voltage	0.0063	
-30	Normal Voltage	0.0085	
20	Maximum Voltage	0.0003	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0007	

**Note:**

1. Normal Voltage =3.9 V. : Battery End Point (BEP) =3.4 V. : Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



# LTE Band 4

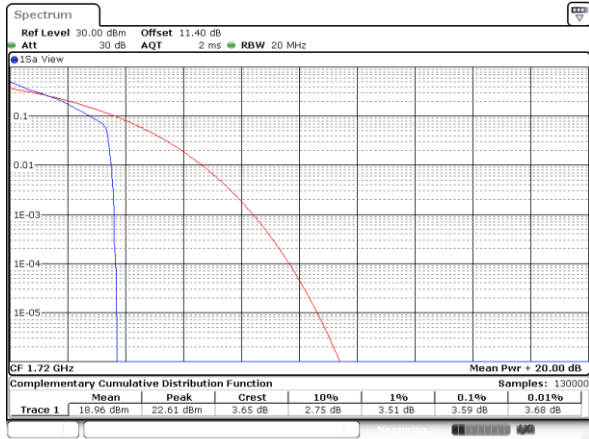
## Peak-to-Average Ratio

Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.59	4.78	5.19	5.80	PASS
Middle CH	3.68	4.99	5.13	5.80	
Highest CH	3.74	5.07	4.75	5.94	
Mode	LTE Band 4 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.17	6.32	-	-	PASS
Middle CH	6.84	6.38	-	-	
Highest CH	6.12	6.43	-	-	



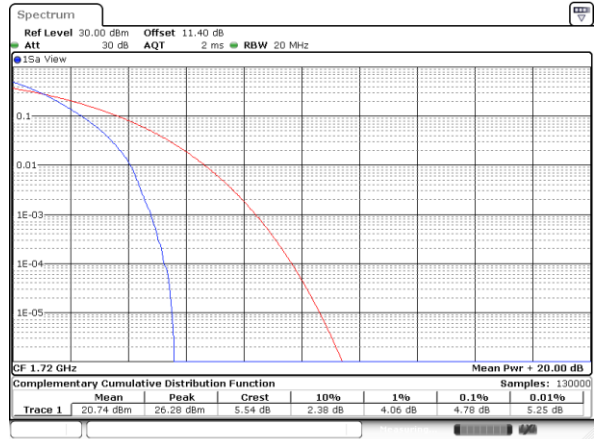
LTE Band 4 / 20MHz / QPSK

Lowest Channel / 1RB



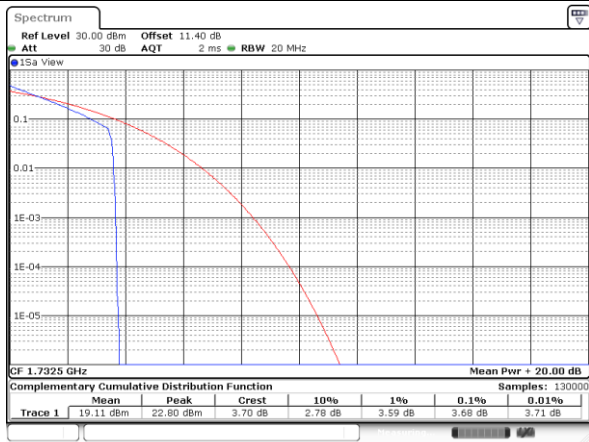
Date: 13\_JAN\_2020 14:21:23

Lowest Channel / Full RB



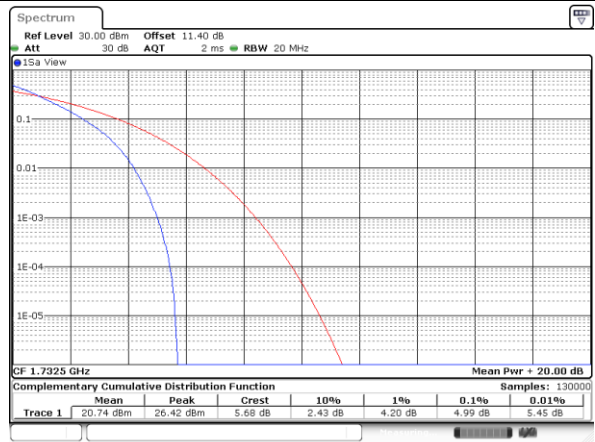
Date: 13\_JAN\_2020 14:21:37

Middle Channel / 1RB



Date: 13\_JAN\_2020 14:21:51

Middle Channel / Full RB



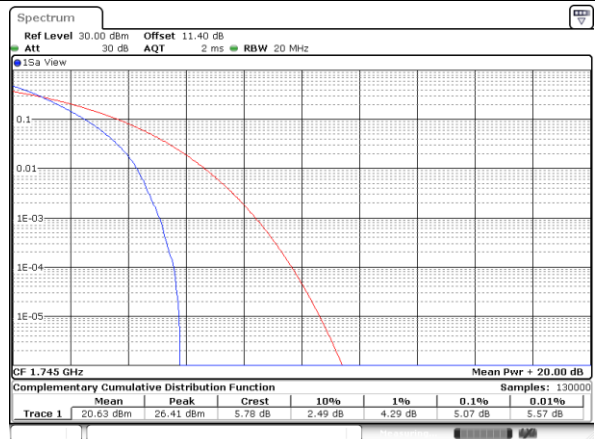
Date: 13\_JAN\_2020 14:22:06

Highest Channel / 1RB



Date: 13\_JAN\_2020 14:22:22

Highest Channel / Full RB

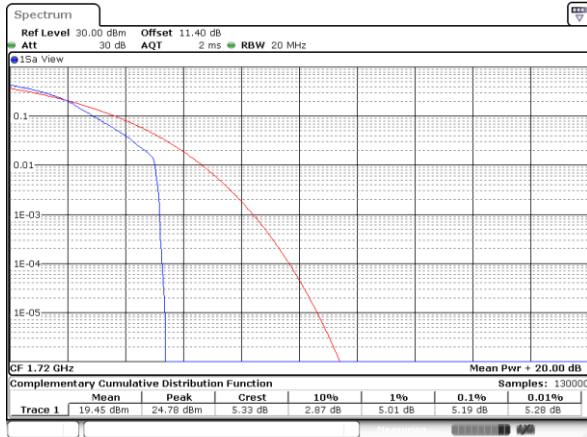


Date: 13\_JAN\_2020 14:22:40



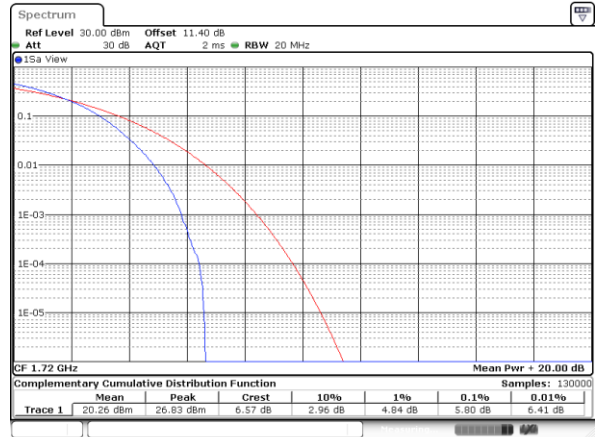
LTE Band 4 / 20MHz / 16QAM

Lowest Channel / 1RB



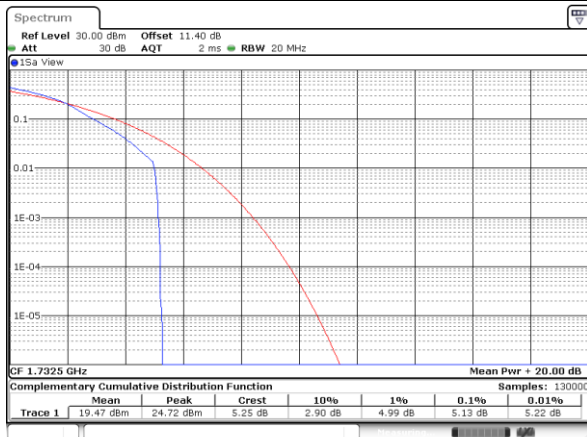
Date: 13\_JAN\_2020 14:20:00

Lowest Channel / Full RB



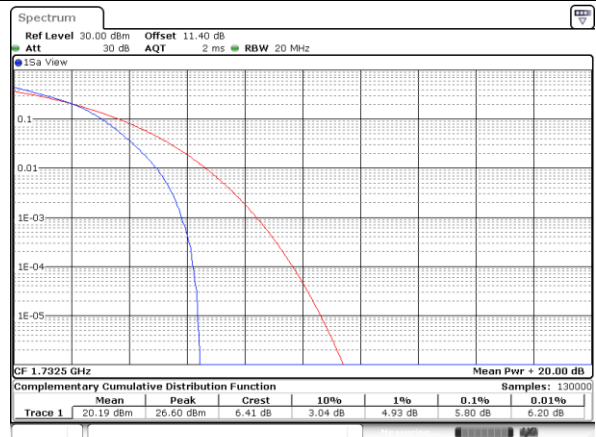
Date: 13\_JAN\_2020 14:20:14

Middle Channel / 1RB



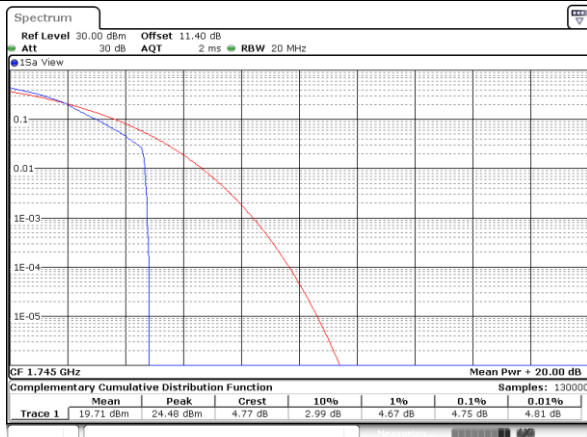
Date: 13\_JAN\_2020 14:20:27

Middle Channel / Full RB



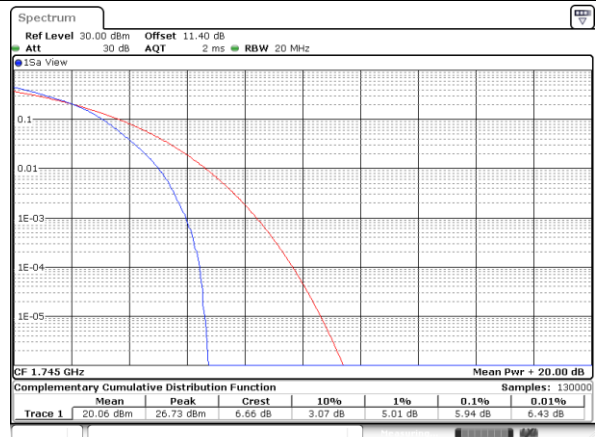
Date: 13\_JAN\_2020 14:20:40

Highest Channel / 1RB



Date: 13\_JAN\_2020 14:20:54

Highest Channel / Full RB

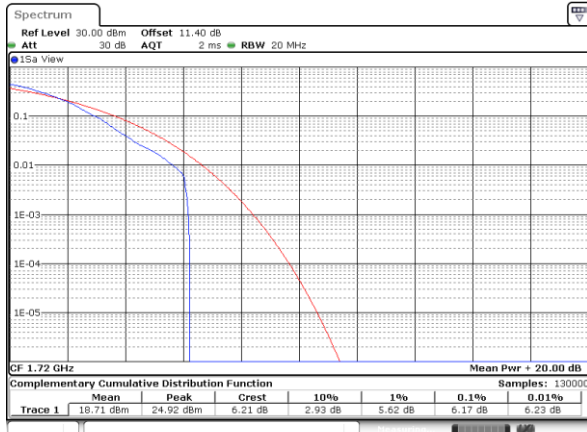


Date: 13\_JAN\_2020 14:21:08



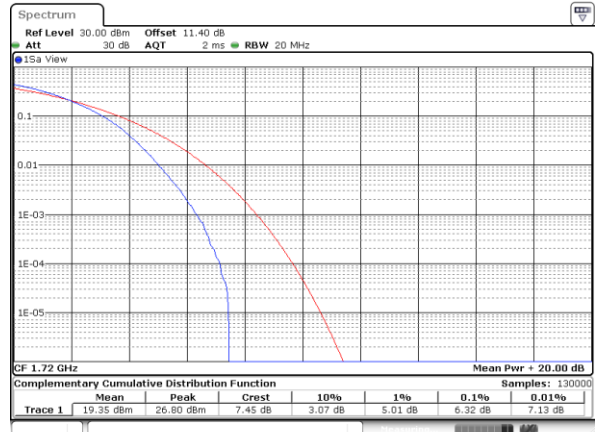
LTE Band 4 / 20MHz / 64QAM

Lowest Channel / 1RB



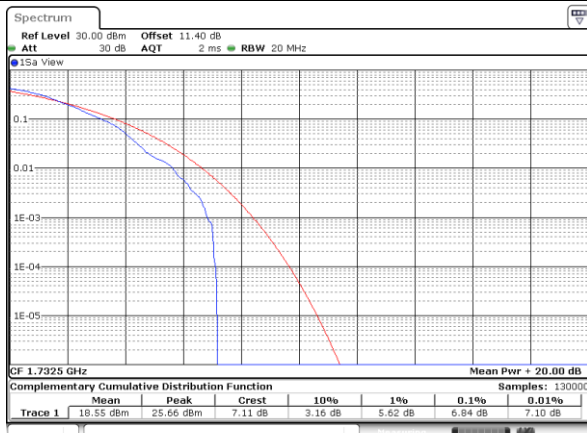
Date: 13\_JAN\_2020 14:22:54

Lowest Channel / Full RB



Date: 13\_JAN\_2020 14:25:01

Middle Channel / 1RB



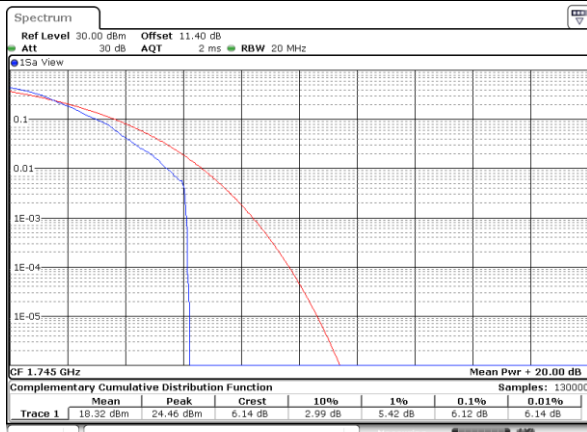
Date: 13\_JAN\_2020 14:25:18

Middle Channel / Full RB



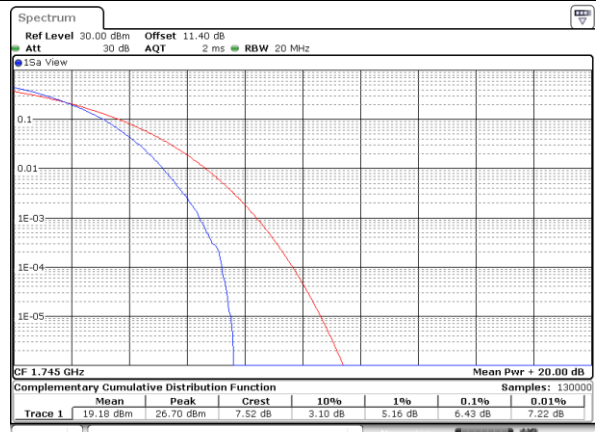
Date: 13\_JAN\_2020 14:27:40

Highest Channel / 1RB



Date: 13\_JAN\_2020 14:28:44

Highest Channel / Full RB



Date: 13\_JAN\_2020 14:28:23



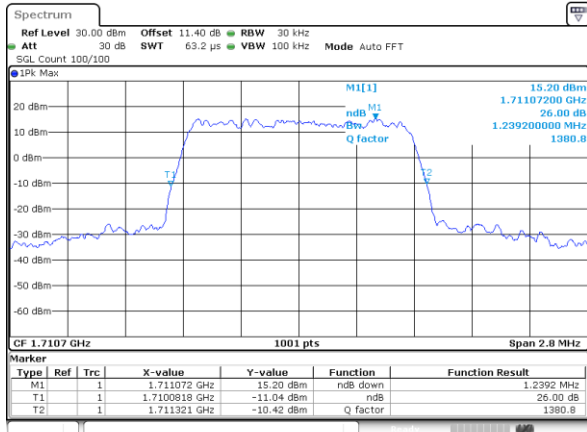
**26dB Bandwidth**

Mode BW	LTE Band 4 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.24	1.22	3.03	3.07	4.90	4.84	9.83	9.65	14.66	14.36	19.06	19.18
Middle CH	1.21	1.22	3.06	3.04	4.98	4.83	9.69	9.77	14.33	14.54	18.94	18.98
Highest CH	1.23	1.22	3.03	3.06	4.92	4.90	9.63	9.75	14.45	14.42	19.54	18.94
Mode BW	LTE Band 4 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.23	-	3.03	-	4.91	-	9.81	-	14.45	-	18.90	-
Middle CH	1.23	-	3.01	-	4.85	-	9.89	-	14.33	-	18.86	-
Highest CH	1.22	-	3.05	-	4.96	-	9.79	-	14.27	-	19.18	-



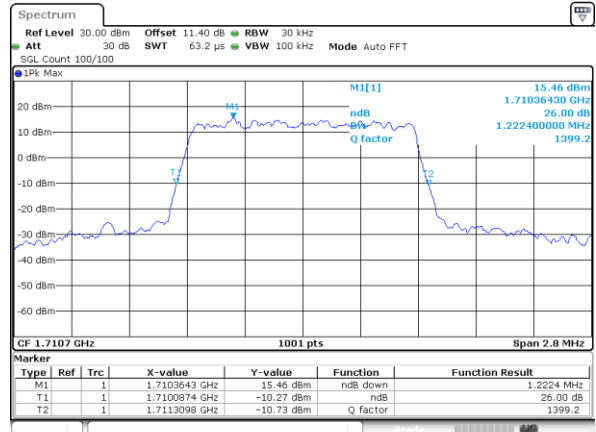
LTE Band 4

Lowest Channel / 1.4MHz / QPSK



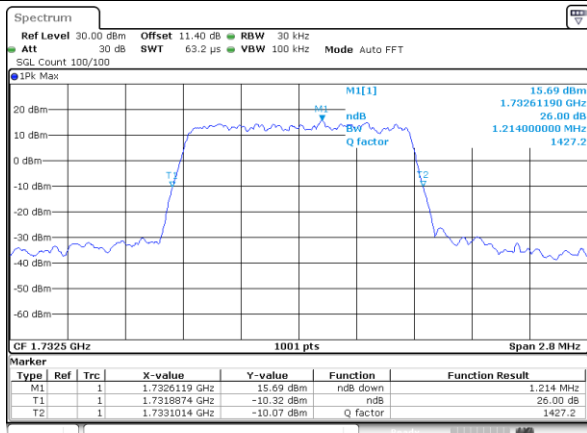
Date: 13\_JAN\_2020 13:55:39

Lowest Channel / 1.4MHz / 16QAM



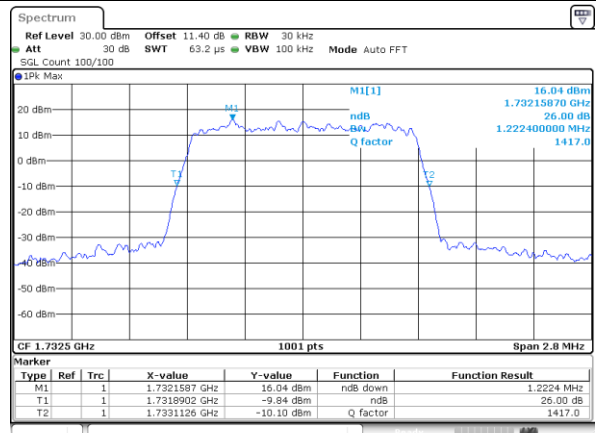
Date: 13\_JAN\_2020 13:55:53

Middle Channel / 1.4MHz / QPSK



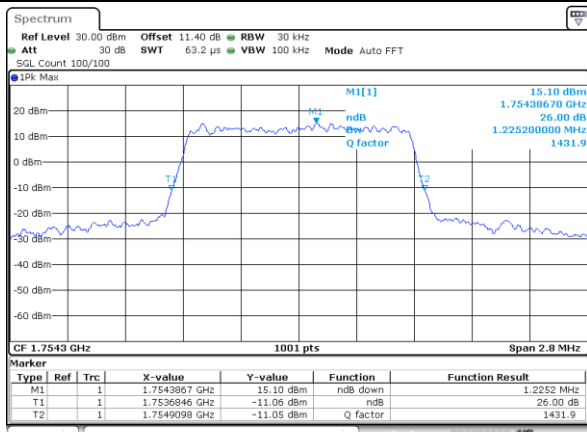
Date: 13\_JAN\_2020 13:56:33

Middle Channel / 1.4MHz / 16QAM



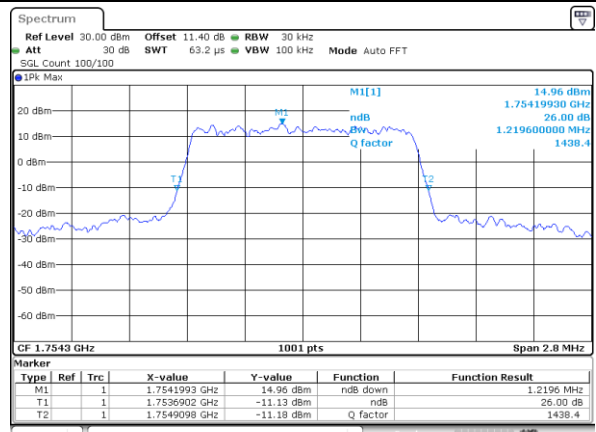
Date: 13\_JAN\_2020 13:56:46

Highest Channel / 1.4MHz / QPSK



Date: 13\_JAN\_2020 13:57:27

Highest Channel / 1.4MHz / 16QAM

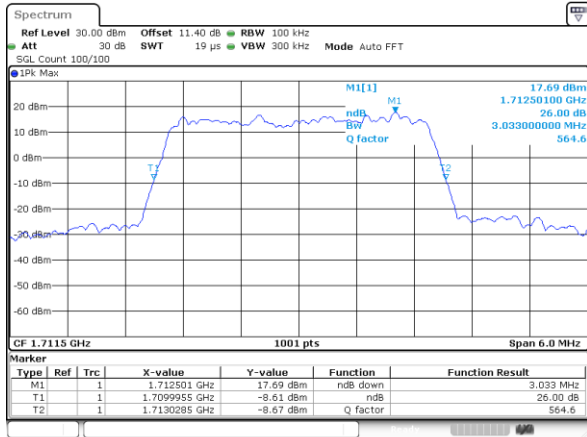


Date: 13\_JAN\_2020 13:57:41



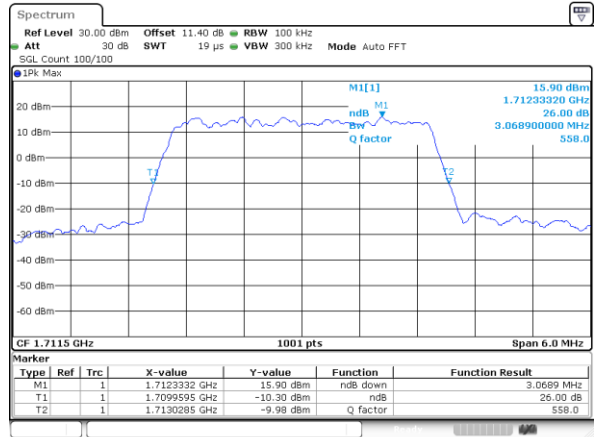
LTE Band 4

Lowest Channel / 3MHz / QPSK



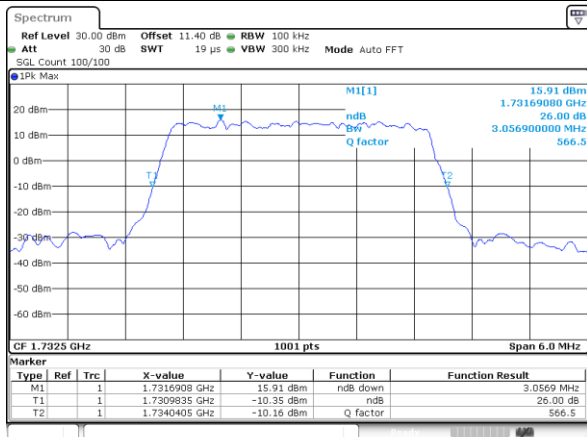
Date: 13\_JAN\_2020 13:59:45

Lowest Channel / 3MHz / 16QAM



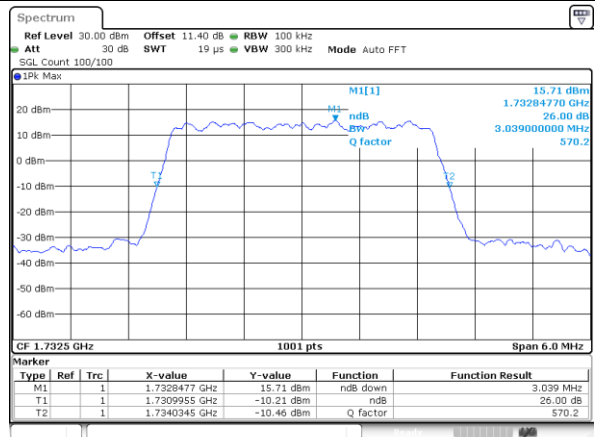
Date: 13\_JAN\_2020 13:59:58

Middle Channel / 3MHz / QPSK



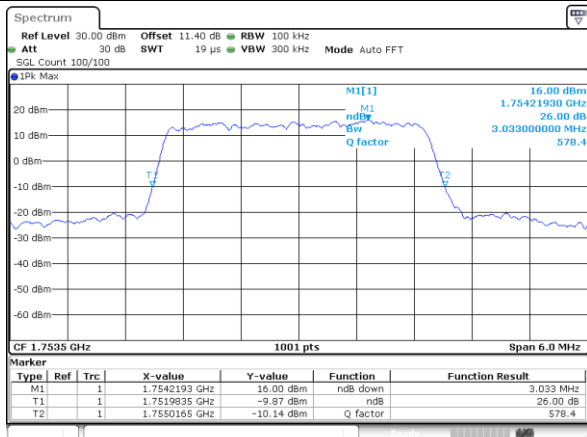
Date: 13\_JAN\_2020 14:00:39

Middle Channel / 3MHz / 16QAM



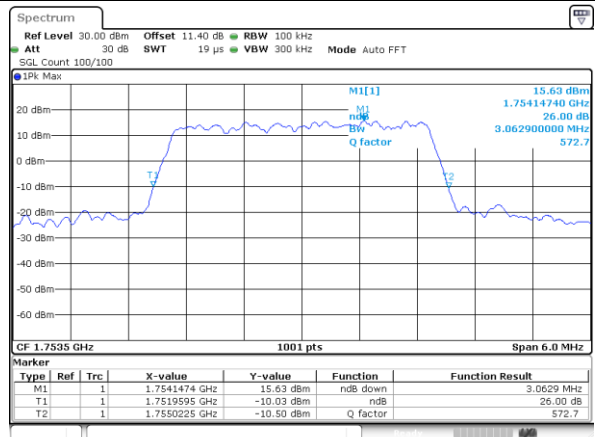
Date: 13\_JAN\_2020 14:00:52

Highest Channel / 3MHz / QPSK



Date: 13\_JAN\_2020 14:01:33

Highest Channel / 3MHz / 16QAM

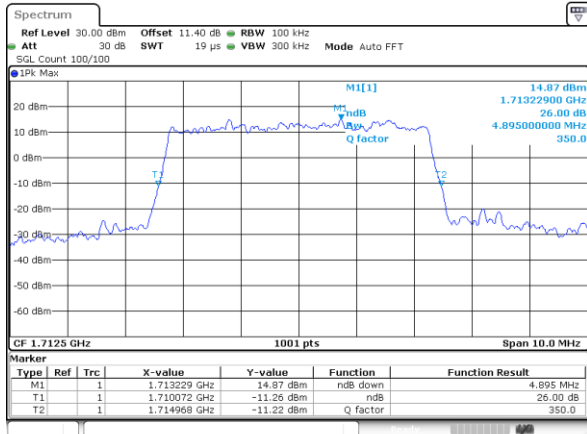


Date: 13\_JAN\_2020 14:01:47



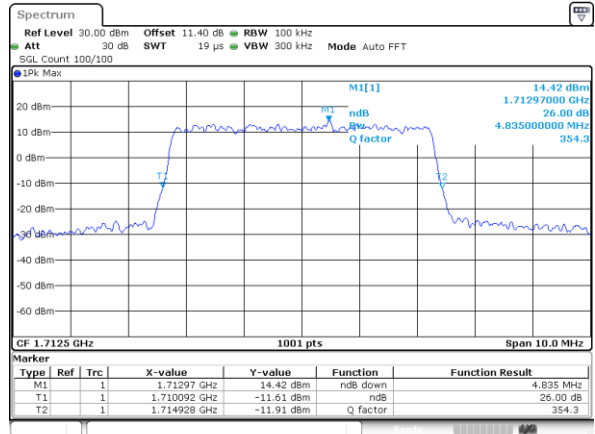
LTE Band 4

Lowest Channel / 5MHz / QPSK



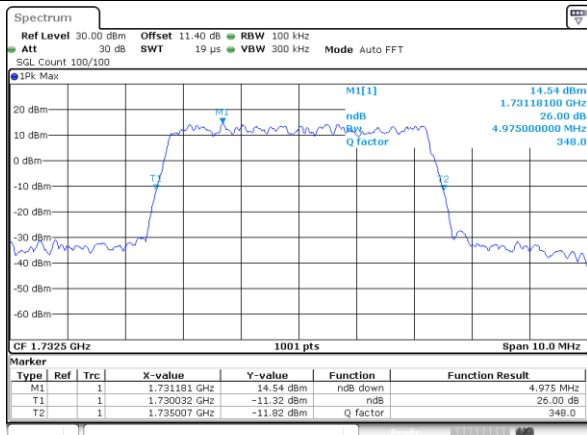
Date: 13\_JAN\_2020 14:05:12

Lowest Channel / 5MHz / 16QAM



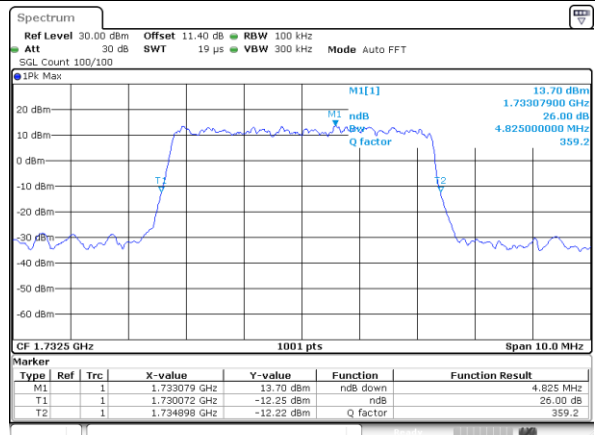
Date: 13\_JAN\_2020 14:05:26

Middle Channel / 5MHz / QPSK



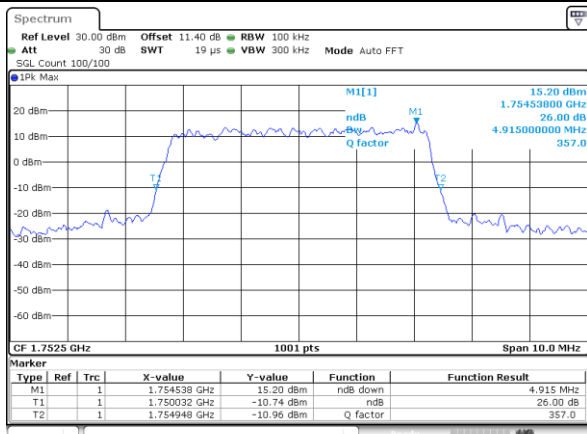
Date: 13\_JAN\_2020 14:06:06

Middle Channel / 5MHz / 16QAM



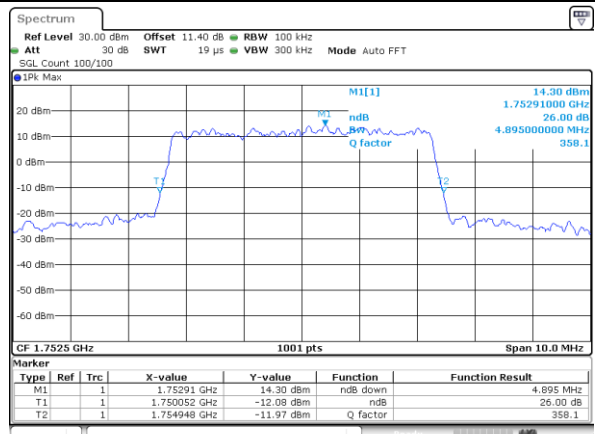
Date: 13\_JAN\_2020 14:06:19

Highest Channel / 5MHz / QPSK



Date: 13\_JAN\_2020 14:07:00

Highest Channel / 5MHz / 16QAM

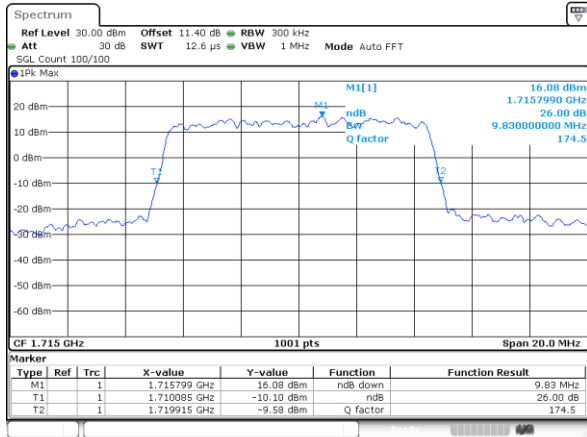


Date: 13\_JAN\_2020 14:07:14



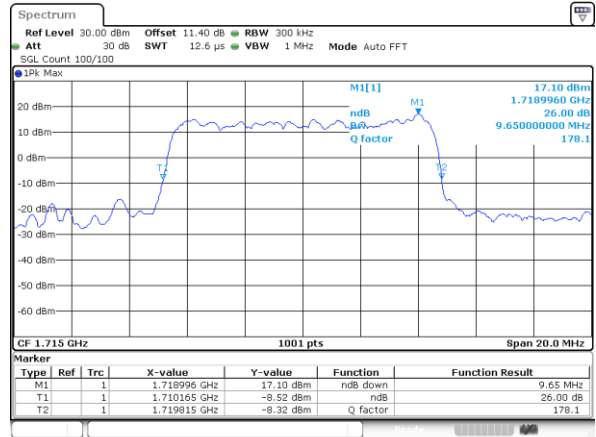
LTE Band 4

Lowest Channel / 10MHz / QPSK



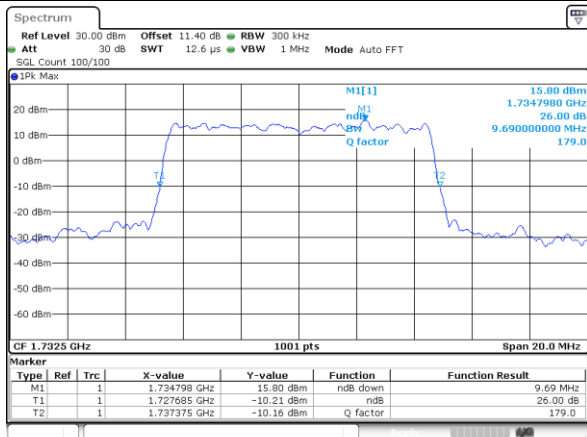
Date: 13\_JAN\_2020 14:07:56

Lowest Channel / 10MHz / 16QAM



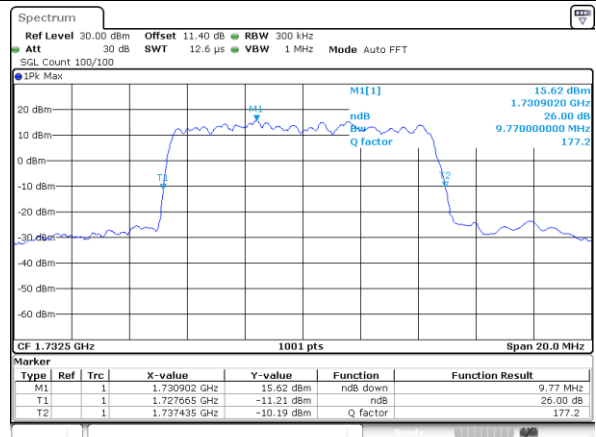
Date: 13\_JAN\_2020 14:08:10

Middle Channel / 10MHz / QPSK



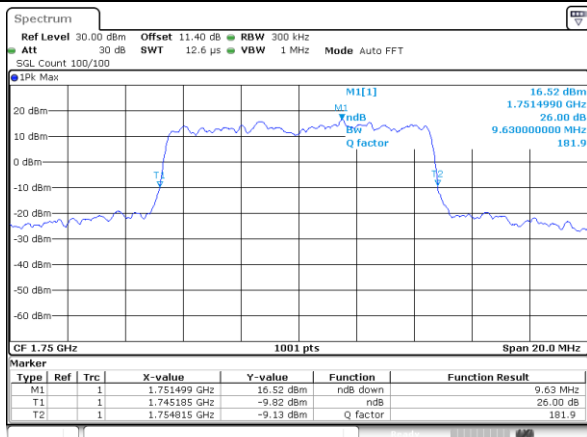
Date: 13\_JAN\_2020 14:08:50

Middle Channel / 10MHz / 16QAM



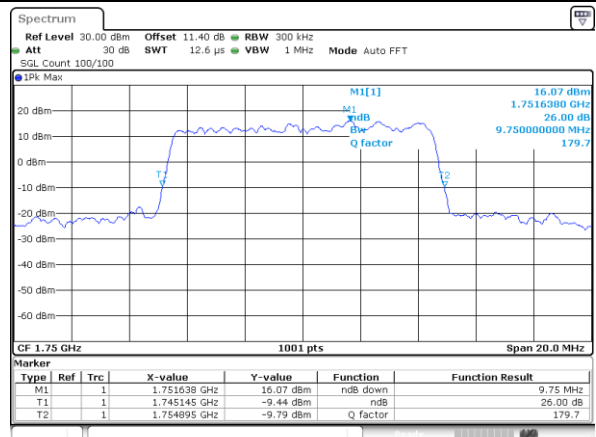
Date: 13\_JAN\_2020 14:09:03

Highest Channel / 10MHz / QPSK



Date: 13\_JAN\_2020 14:09:45

Highest Channel / 10MHz / 16QAM

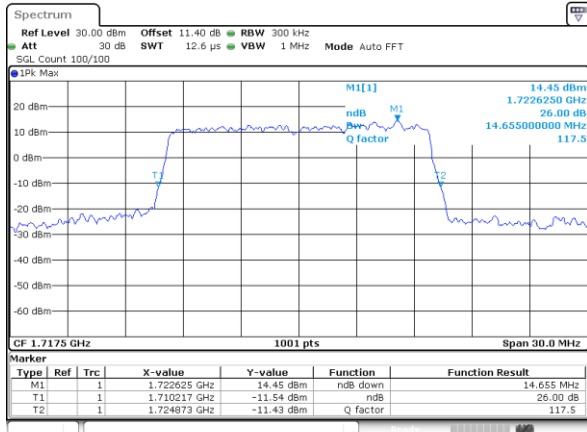


Date: 13\_JAN\_2020 14:09:58

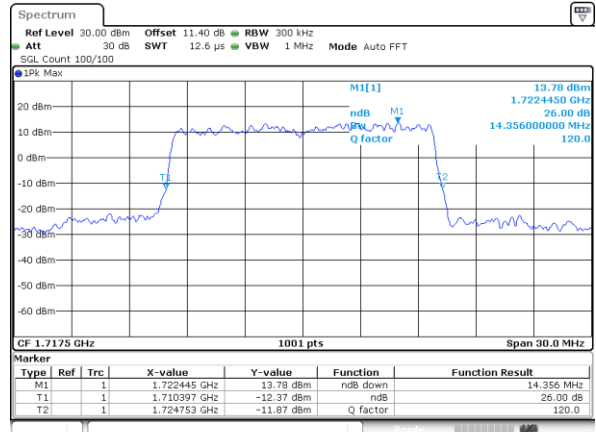


LTE Band 4

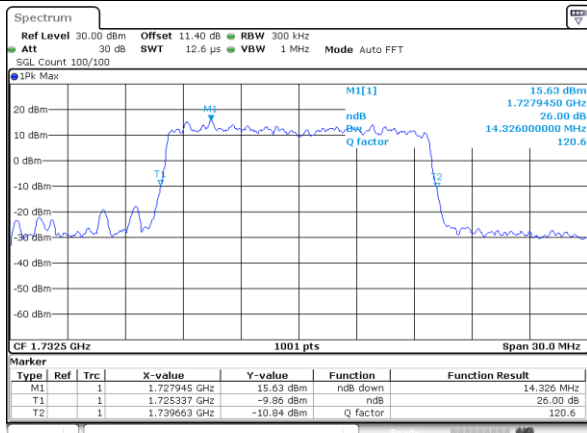
Lowest Channel / 15MHz / QPSK



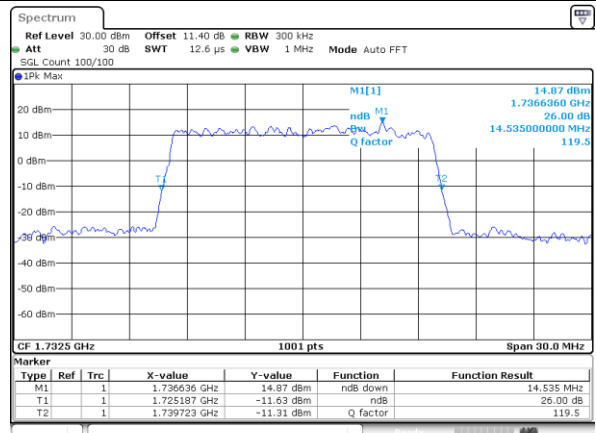
Lowest Channel / 15MHz / 16QAM



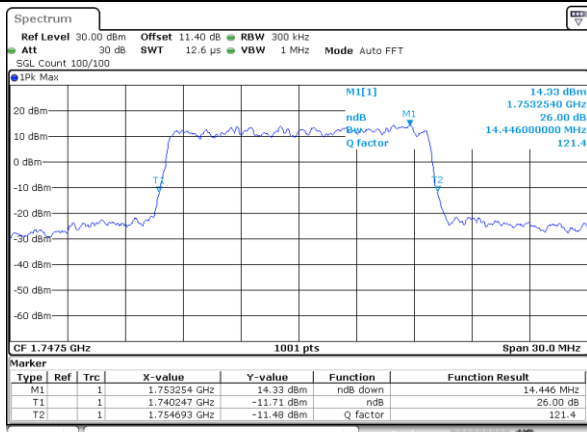
Middle Channel / 15MHz / QPSK



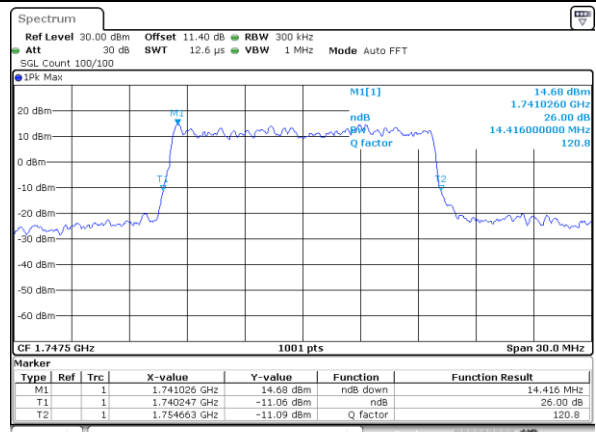
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK



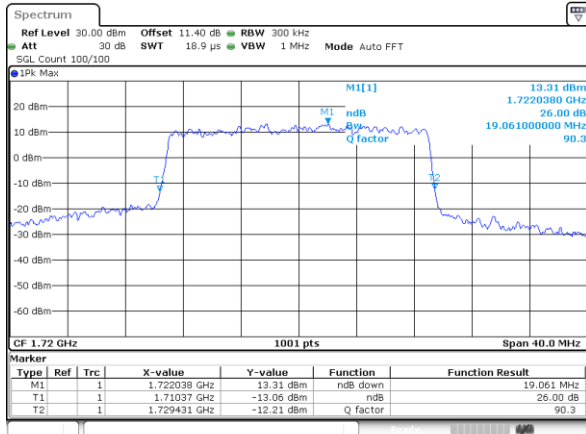
Highest Channel / 15MHz / 16QAM





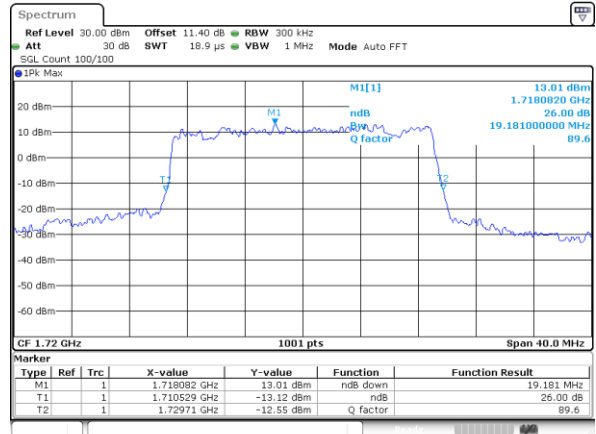
LTE Band 4

Lowest Channel / 20MHz / QPSK



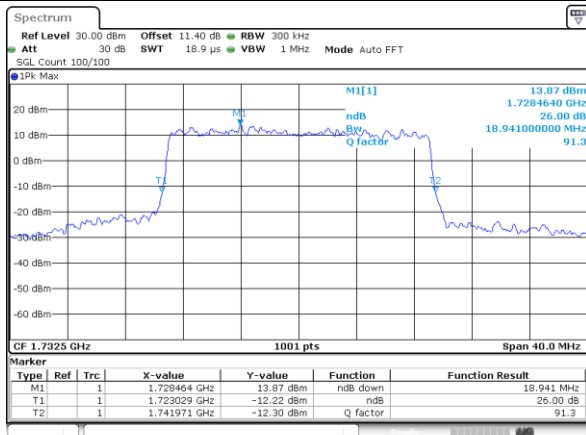
Date: 13\_JAN\_2020 14:16:08

Lowest Channel / 20MHz / 16QAM



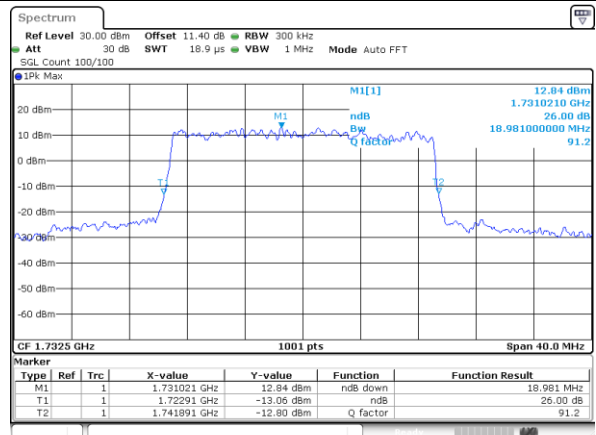
Date: 13\_JAN\_2020 14:16:22

Middle Channel / 20MHz / QPSK



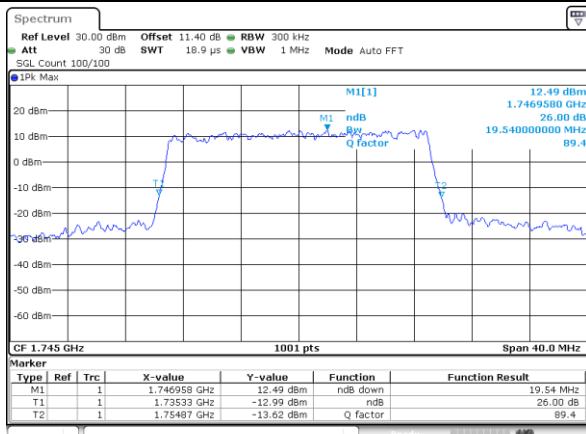
Date: 13\_JAN\_2020 14:17:02

Middle Channel / 20MHz / 16QAM



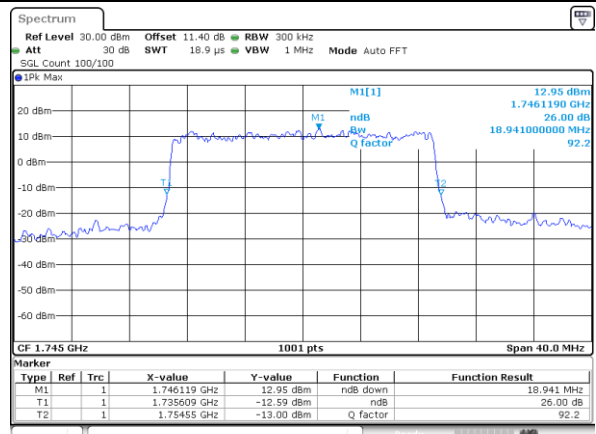
Date: 13\_JAN\_2020 14:17:15

Highest Channel / 20MHz / QPSK



Date: 13\_JAN\_2020 14:17:56

Highest Channel / 20MHz / 16QAM

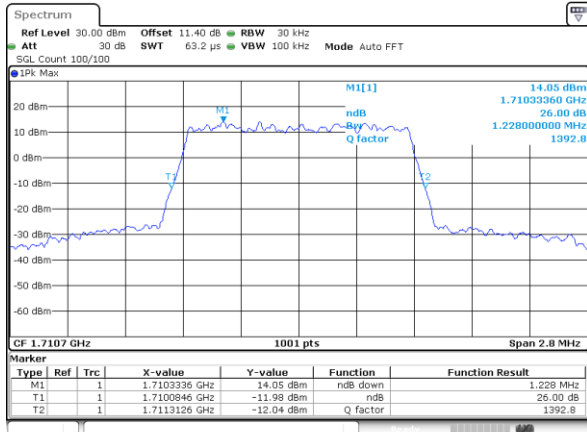


Date: 13\_JAN\_2020 14:18:10



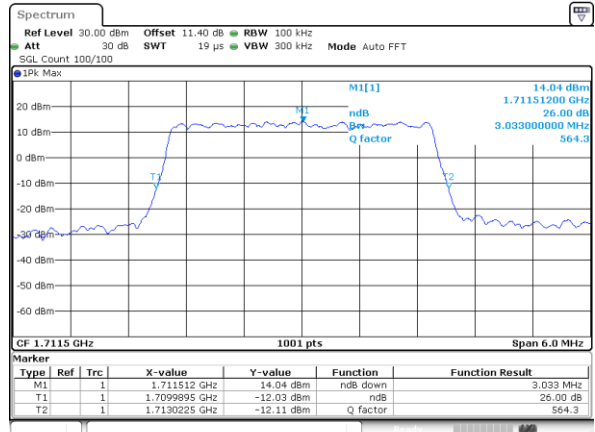
LTE Band 4

Lowest Channel / 1.4MHz / 64QAM



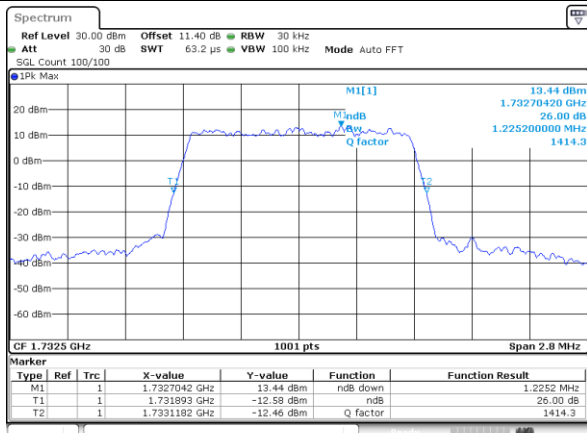
Date: 13\_JAN\_2020 13:58:08

Lowest Channel / 3MHz / 64QAM



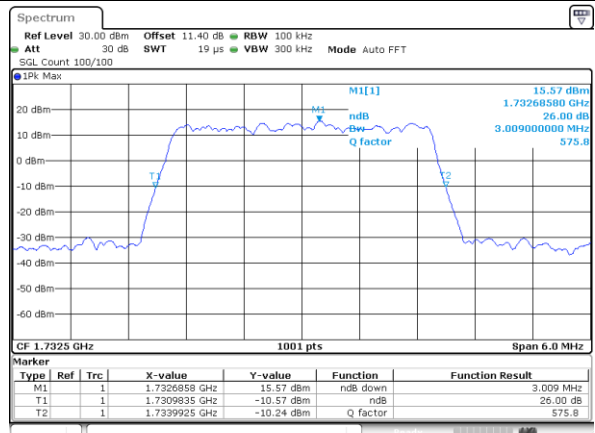
Date: 13\_JAN\_2020 14:02:15

Middle Channel / 1.4MHz / 64QAM



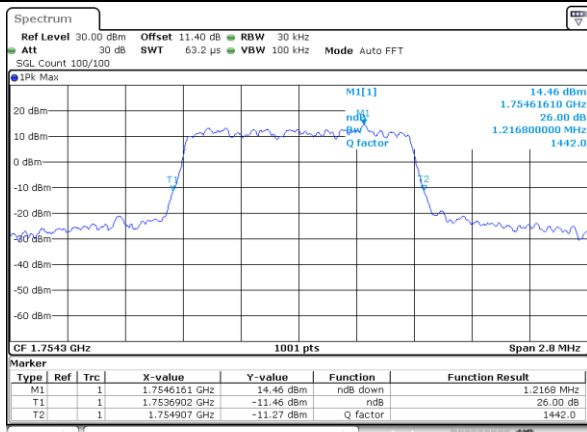
Date: 13\_JAN\_2020 13:58:35

Middle Channel / 3MHz / 64QAM



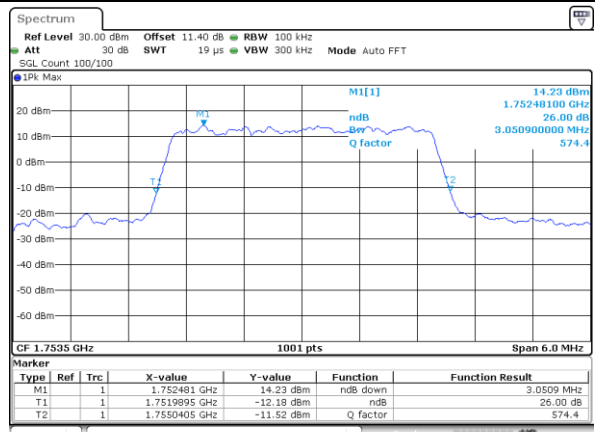
Date: 13\_JAN\_2020 14:02:41

Highest Channel / 1.4MHz / 64QAM



Date: 13\_JAN\_2020 13:59:02

Highest Channel / 3MHz / 64QAM

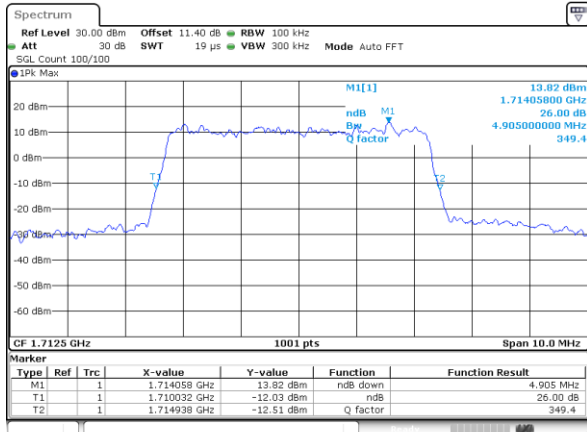


Date: 13\_JAN\_2020 14:03:08



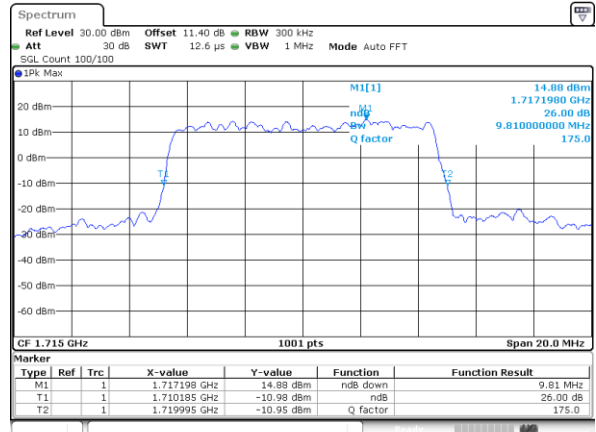
LTE Band 4

Lowest Channel / 5MHz / 64QAM



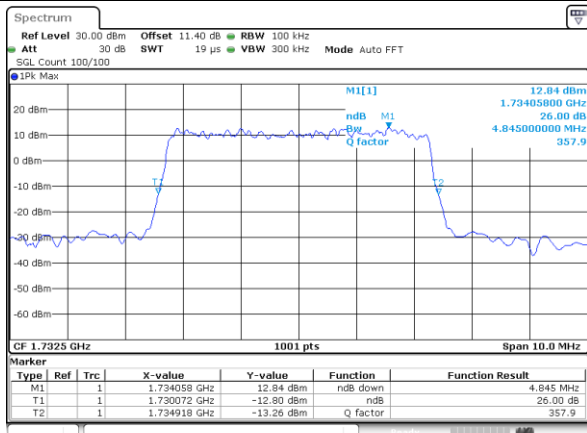
Date: 13\_JAN.2020 14:03:37

Lowest Channel / 10MHz / 64QAM



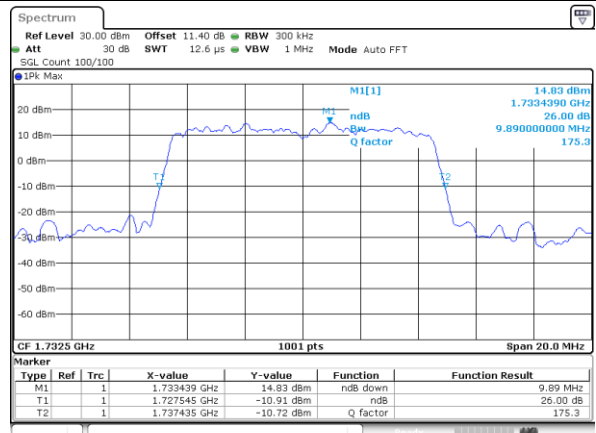
Date: 13\_JAN.2020 14:10:26

Middle Channel / 5MHz / 64QAM



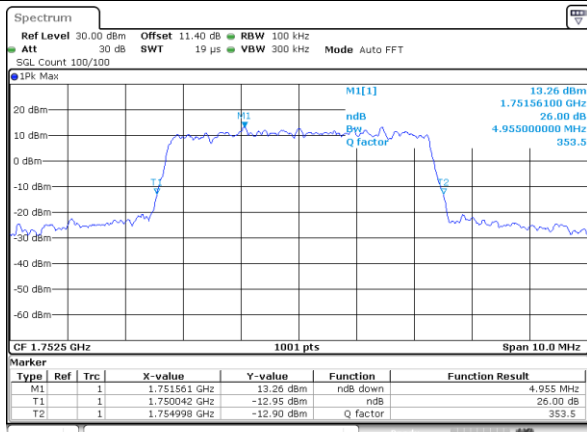
Date: 13\_JAN.2020 14:04:03

Middle Channel / 10MHz / 64QAM



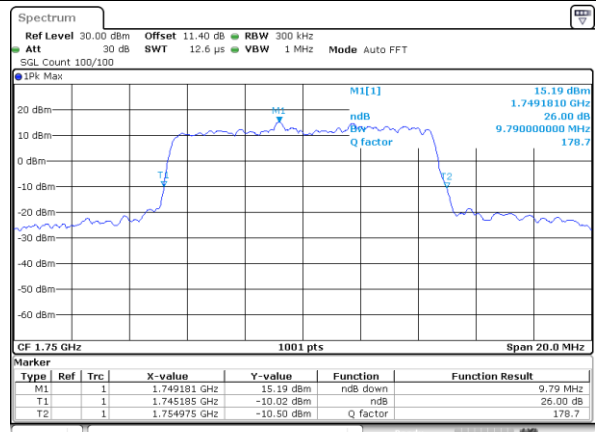
Date: 13\_JAN.2020 14:10:53

Highest Channel / 5MHz / 64QAM



Date: 13\_JAN.2020 14:04:30

Highest Channel / 10MHz / 64QAM

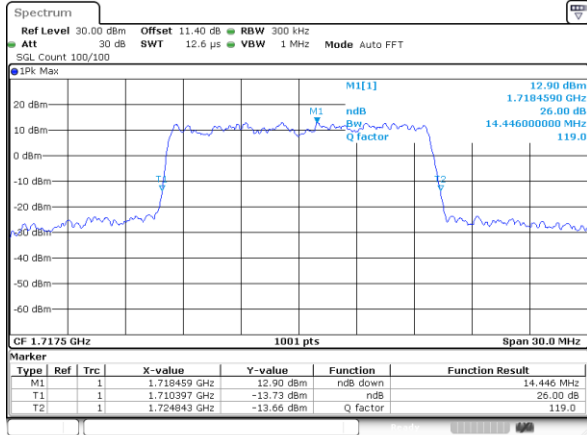


Date: 13\_JAN.2020 14:11:20



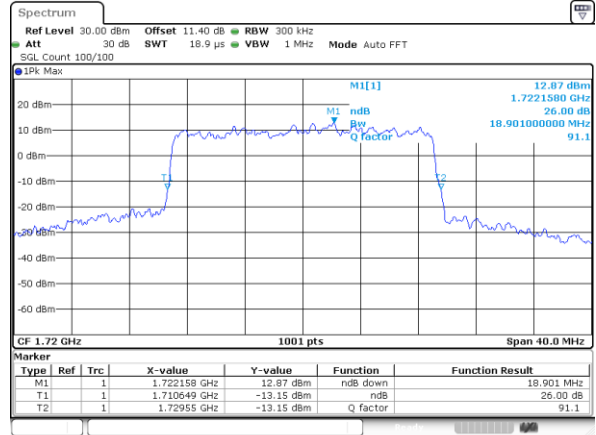
LTE Band 4

Lowest Channel / 15MHz / 64QAM



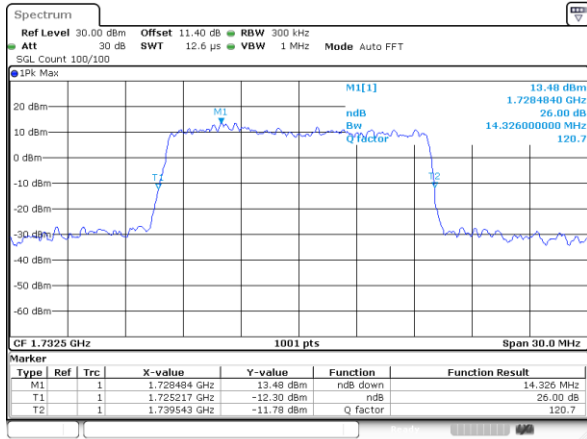
Date: 13\_JAN\_2020 14:14:32

Lowest Channel / 20MHz / 64QAM



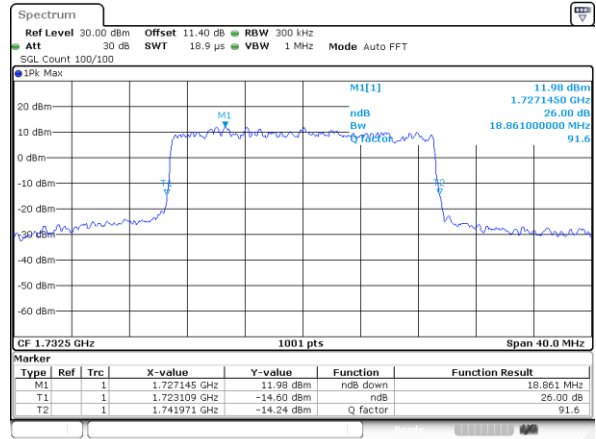
Date: 13\_JAN\_2020 14:18:38

Middle Channel / 15MHz / 64QAM



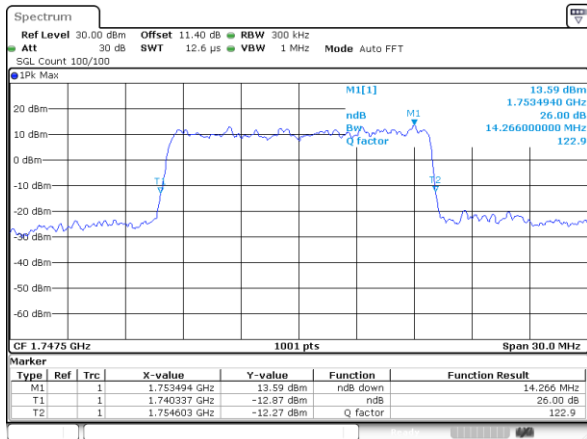
Date: 13\_JAN\_2020 14:14:59

Middle Channel / 20MHz / 64QAM



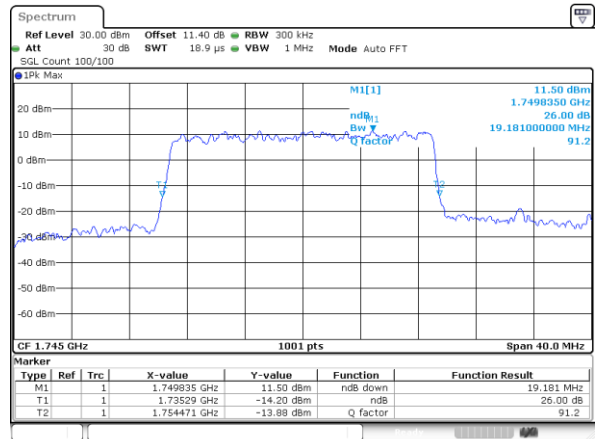
Date: 13\_JAN\_2020 14:19:04

Highest Channel / 15MHz / 64QAM



Date: 13\_JAN\_2020 14:15:26

Highest Channel / 20MHz / 64QAM



Date: 13\_JAN\_2020 14:19:31



**Occupied Bandwidth**

Mode BW	LTE Band 4 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.09	1.09	2.72	2.72	4.50	4.49	9.03	9.03	13.46	13.46	17.86	17.74
Middle CH	1.09	1.09	2.72	2.72	4.48	4.50	9.03	8.99	13.46	13.43	17.90	17.78
Highest CH	1.08	1.09	2.72	2.73	4.48	4.49	8.99	9.03	13.40	13.43	17.90	18.02
Mode BW	LTE Band 4 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.73	-	4.49	-	8.99	-	13.46	-	17.94	-
Middle CH	1.09	-	2.72	-	4.50	-	8.99	-	13.46	-	17.86	-
Highest CH	1.09	-	2.73	-	4.50	-	9.01	-	13.46	-	17.86	-