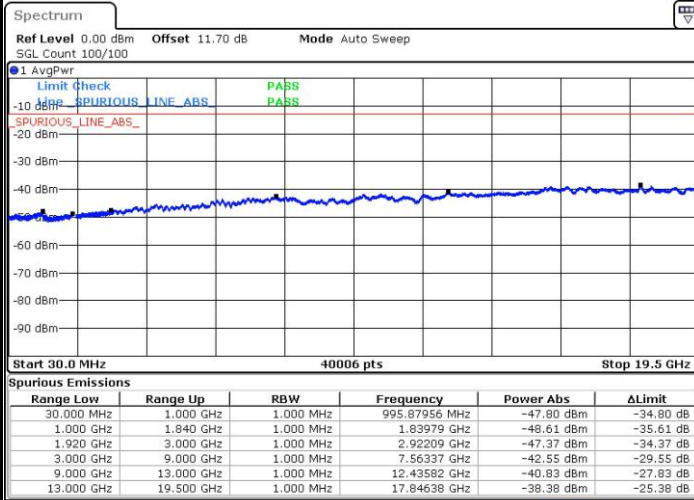




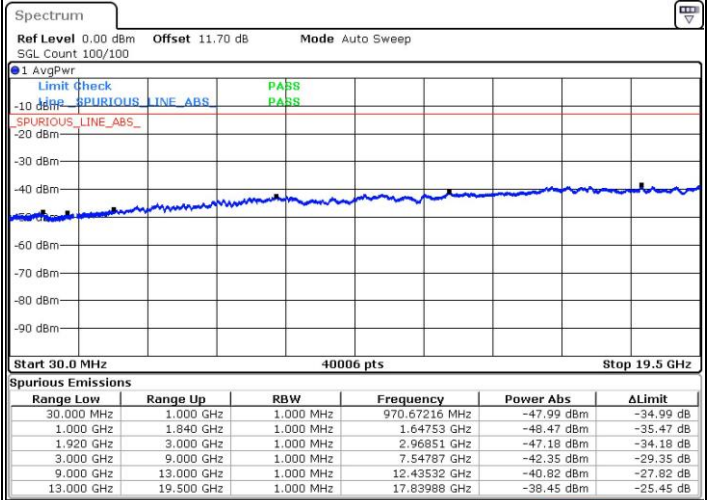
LTE Band 2 / 5MHz

Lowest Channel / 64QAM



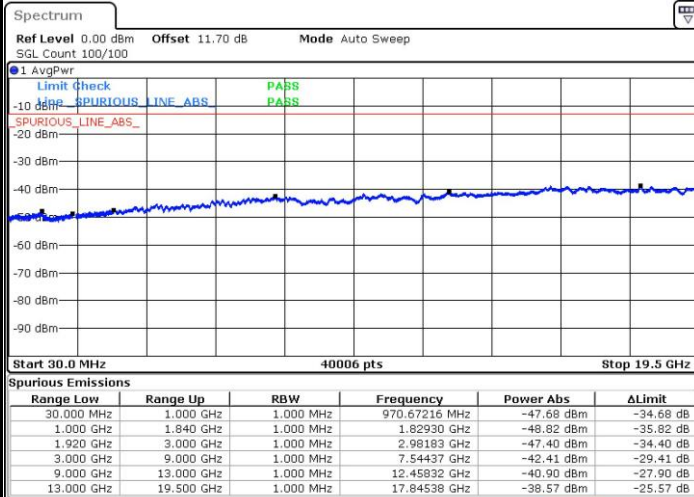
Date: 4.FEB.2019 09:54:58

Middle Channel / 64QAM



Date: 4.FEB.2019 09:56:21

Highest Channel / 64QAM

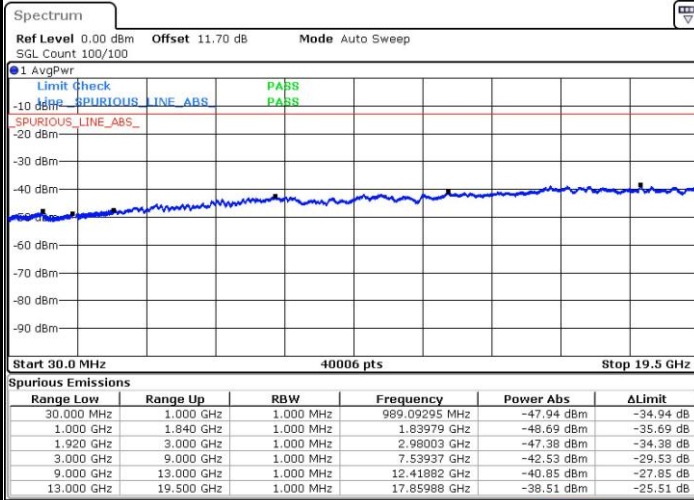


Date: 4.FEB.2019 09:59:44



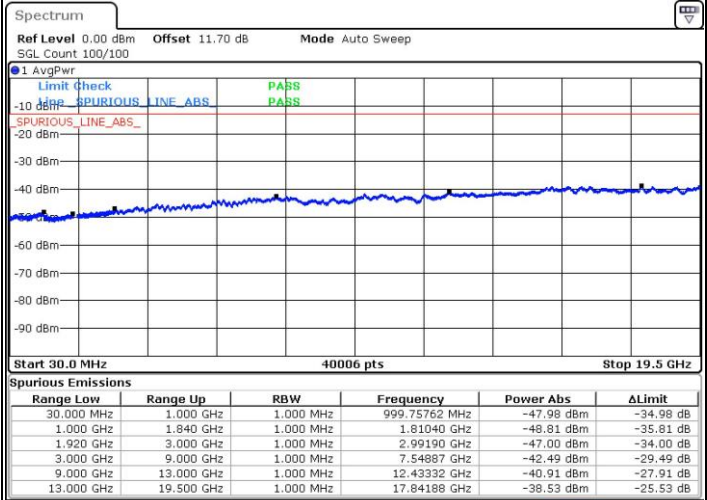
LTE Band 2 / 10MHz

Lowest Channel / 64QAM



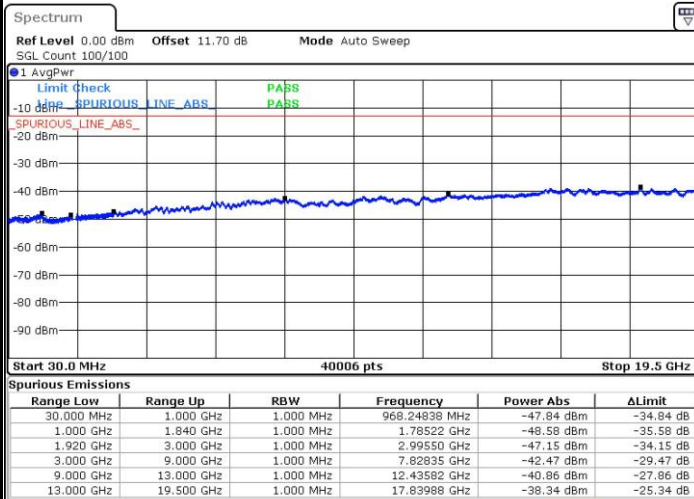
Date: 4.FEB.2019 10:03:08

Middle Channel / 64QAM



Date: 4.FEB.2019 10:04:32

Highest Channel / 64QAM

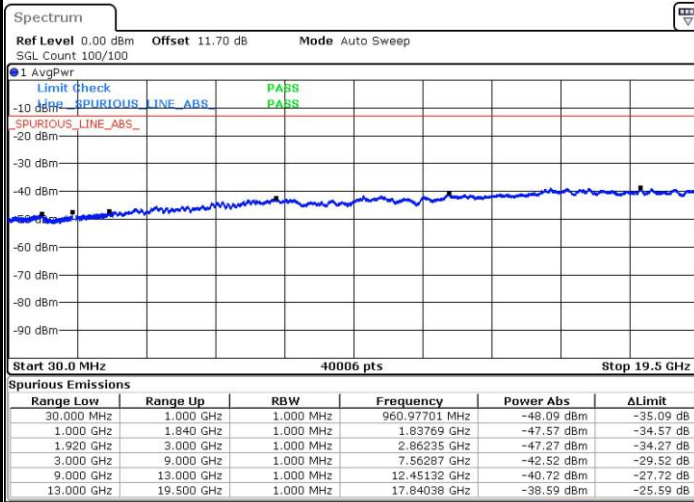


Date: 4.FEB.2019 10:07:55



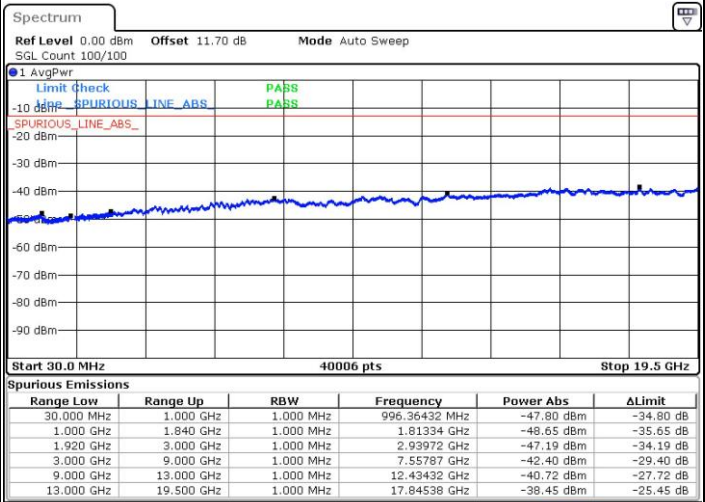
LTE Band 2 / 15MHz

Lowest Channel / 64QAM



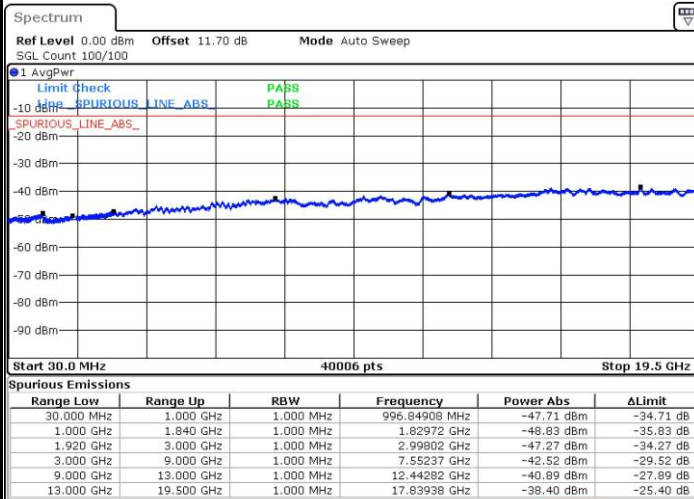
Date: 4.FEB.2019 10:11:19

Middle Channel / 64QAM



Date: 4.FEB.2019 10:12:42

Highest Channel / 64QAM

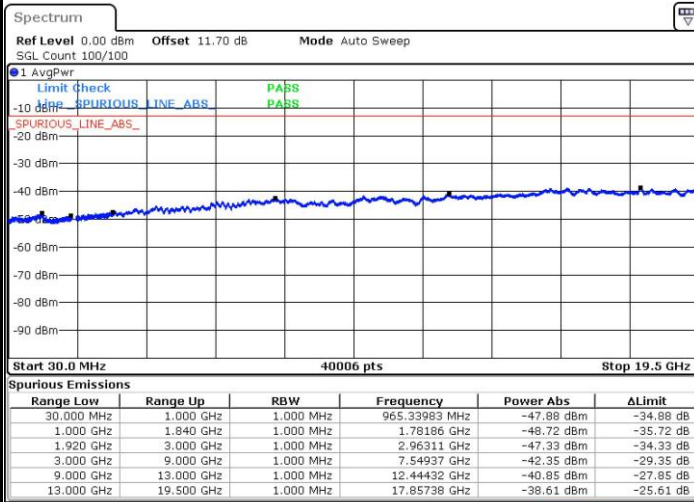


Date: 4.FEB.2019 10:16:06



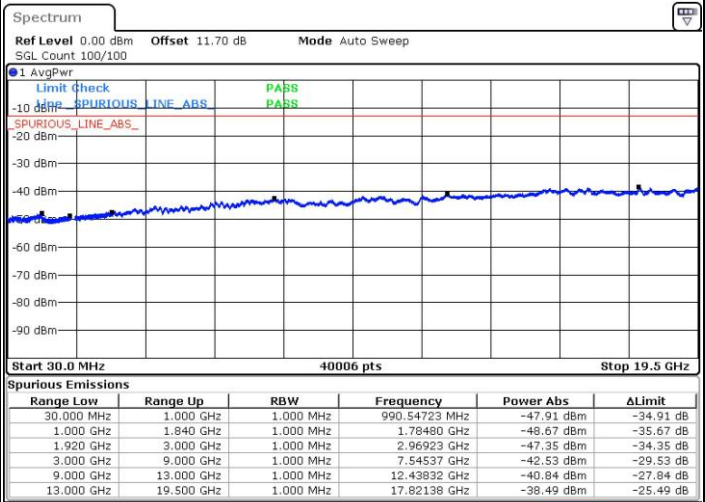
LTE Band 2 / 20MHz

Lowest Channel / 64QAM



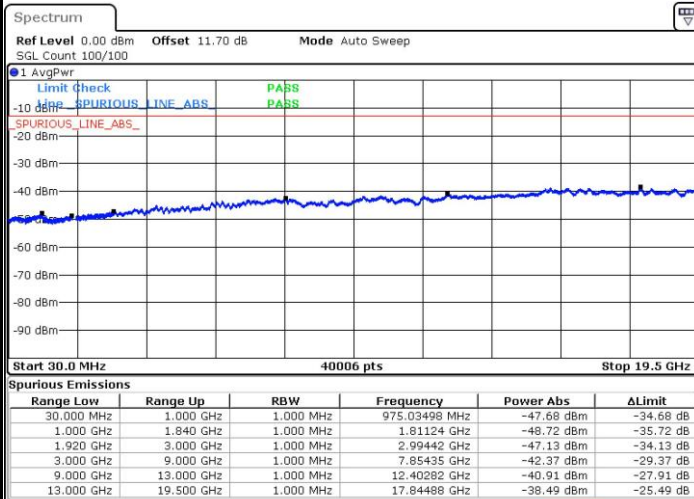
Date: 4.FEB.2019 10:19:29

Middle Channel / 64QAM



Date: 4.FEB.2019 10:20:53

Highest Channel / 64QAM



Date: 4.FEB.2019 10:24:17

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	0.0052	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0065	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0063	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0057	
-20	Normal Voltage	0.0065	
-30	Normal Voltage	0.0005	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0013	

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	3.62	4.61	5.25	5.94	PASS
Middle CH	3.54	4.61	5.16	5.97	
Highest CH	3.39	4.58	4.17	6	
Mode	LTE Band 4 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.93	6.49	-	-	PASS
Middle CH	6.58	6.61	-	-	
Highest CH	5.16	6.52	-	-	

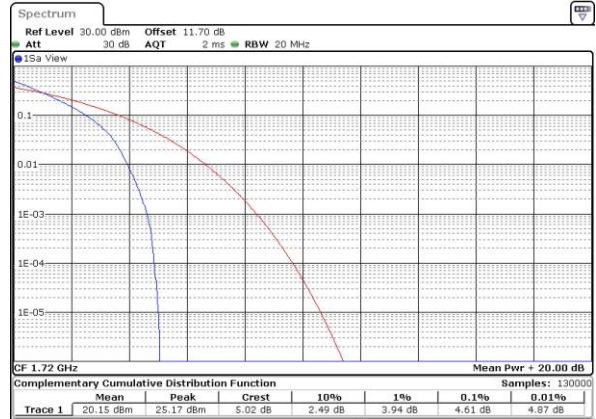


LTE Band 4 / 20MHz / QPSK

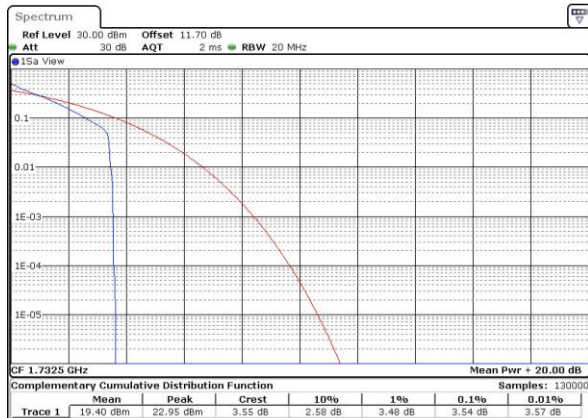
Lowest Channel / 1RB



Lowest Channel / Full RB



Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB

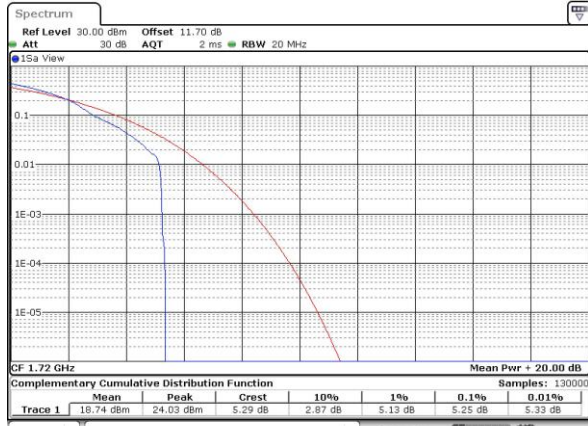


Highest Channel / Full RB



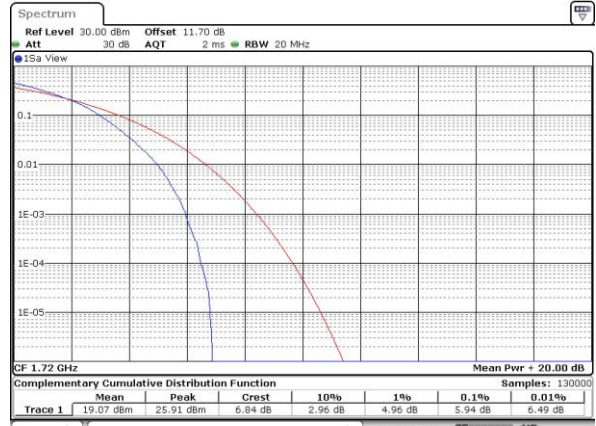
LTE Band 4 / 20MHz / 16QAM

Lowest Channel / 1RB



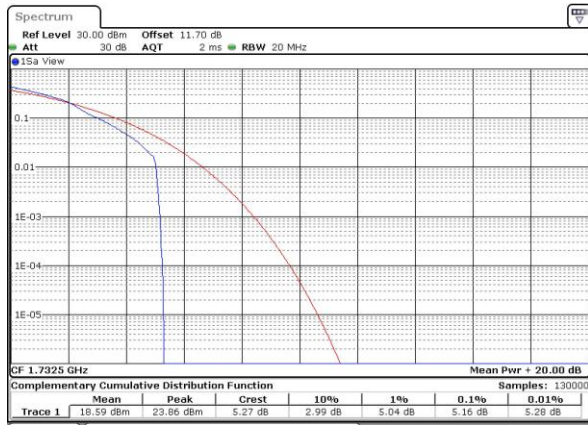
Date: 4 FEB 2019 13:20:44

Lowest Channel / Full RB



Date: 4 FEB 2019 13:22:29

Middle Channel / 1RB



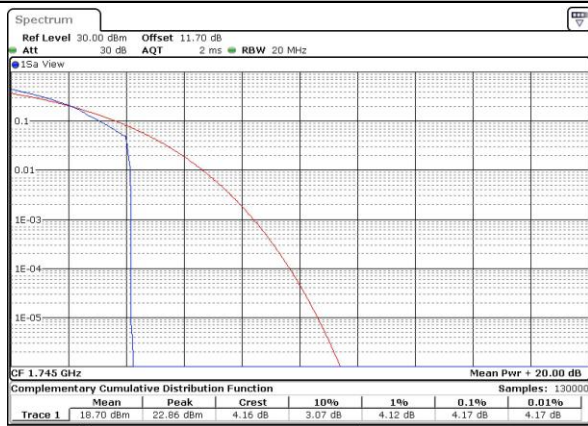
Date: 4 FEB 2019 13:22:39

Middle Channel / Full RB



Date: 4 FEB 2019 13:22:49

Highest Channel / 1RB



Date: 4 FEB 2019 13:22:59

Highest Channel / Full RB

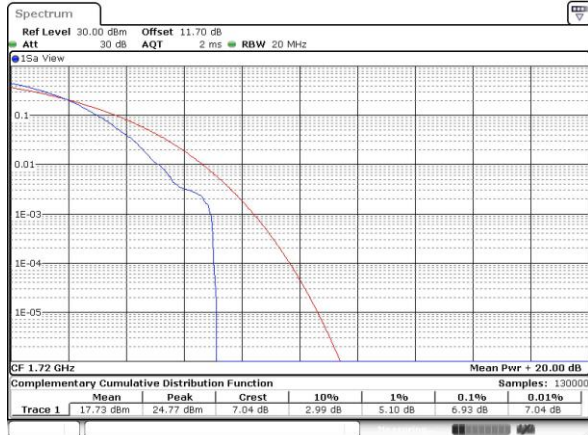


Date: 4 FEB 2019 13:31:19

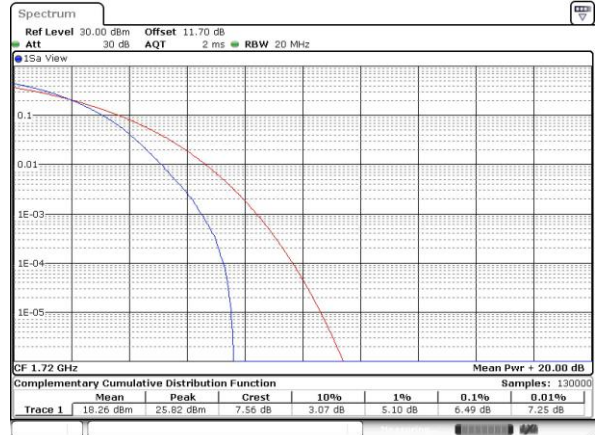


LTE Band 4 / 20MHz / 64QAM

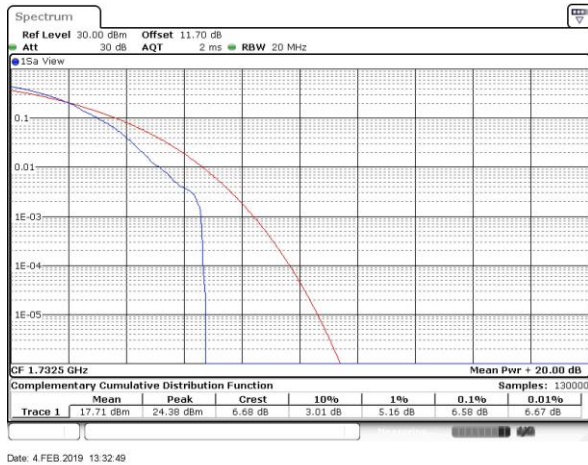
Lowest Channel / 1RB



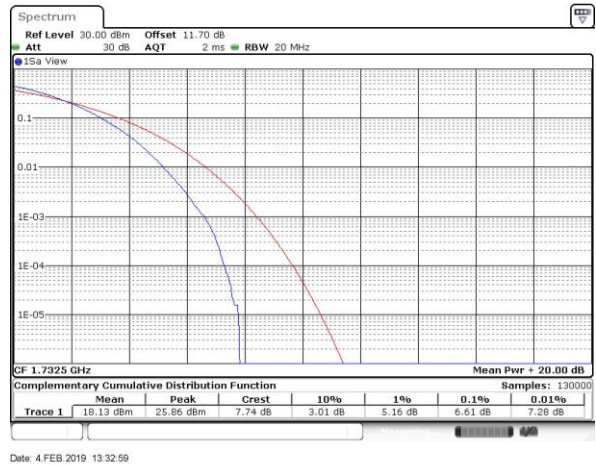
Lowest Channel / Full RB



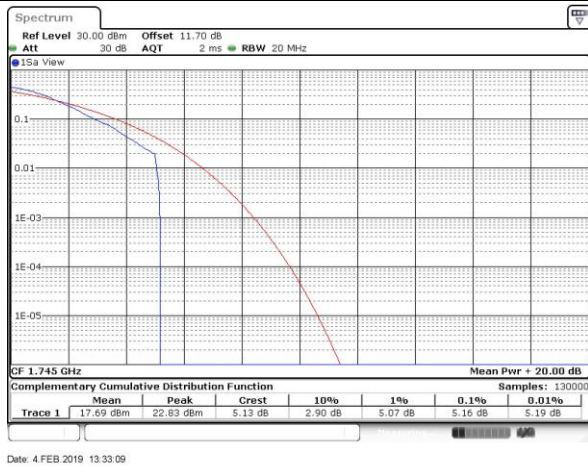
Middle Channel / 1RB



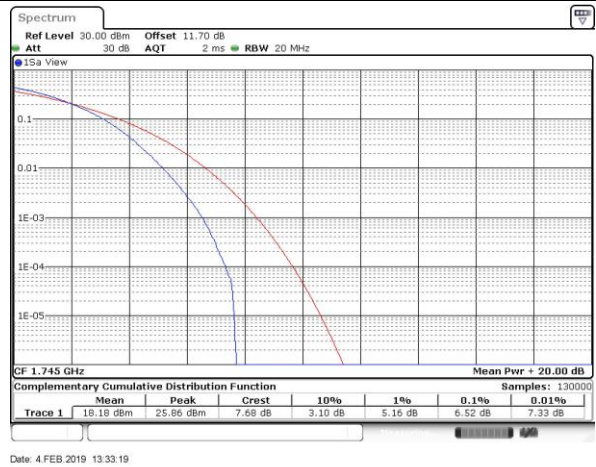
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



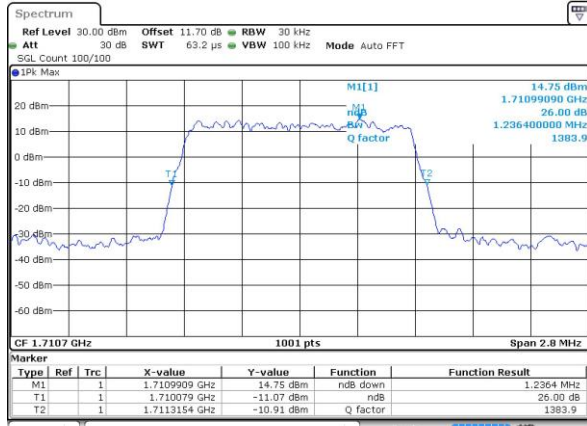
**26dB Bandwidth**

Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.24	1.22	3.04	2.99	4.97	4.90	9.85	9.77	14.42	14.33	20.26	20.06
Middle CH	1.24	1.23	3.08	3.05	4.89	4.87	9.87	9.89	14.51	14.48	20.50	20.30
Highest CH	1.22	1.22	3.05	3.03	4.87	4.92	9.77	9.73	14.51	14.15	20.18	20.14
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.24	-	3.02	-	4.88	-	9.85	-	14.39	-	20.14	-
Middle CH	1.21	-	3.00	-	4.96	-	9.77	-	14.12	-	20.46	-
Highest CH	1.22	-	3.01	-	4.88	-	9.73	-	14.48	-	20.30	-



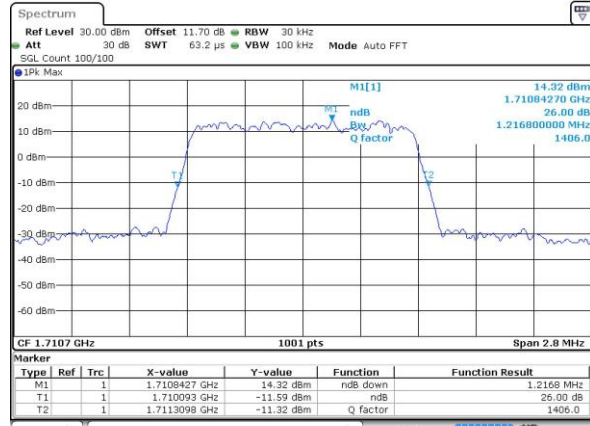
LTE Band 4

Lowest Channel / 1.4MHz / QPSK



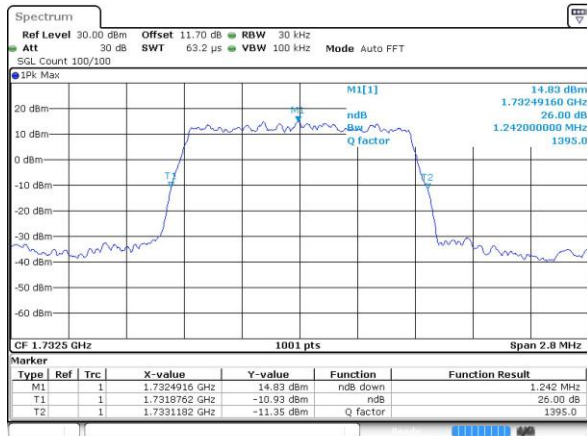
Date: 4 FEB 2019 13:05:33

Lowest Channel / 1.4MHz / 16QAM



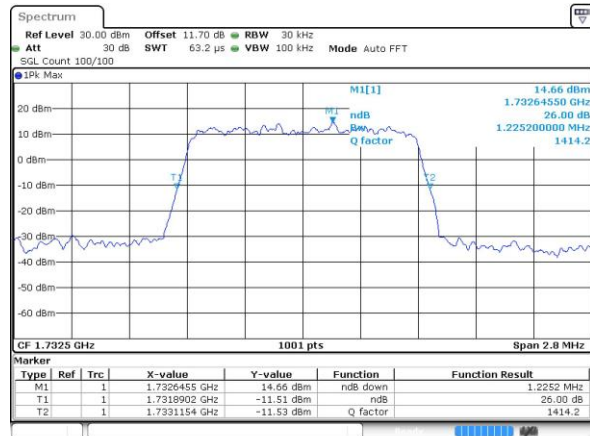
Date: 4 FEB 2019 13:05:44

Middle Channel / 1.4MHz / QPSK



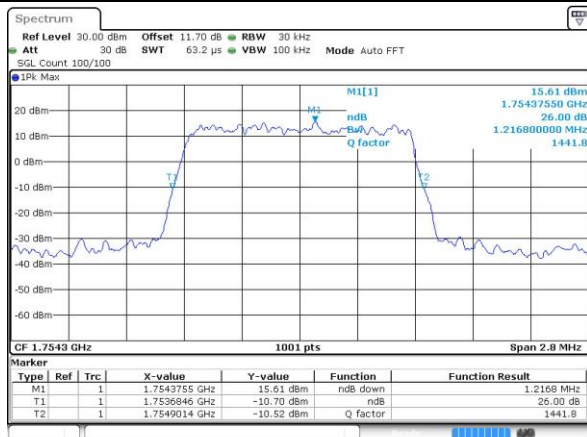
Date: 4 FEB 2019 13:11:54

Middle Channel / 1.4MHz / 16QAM



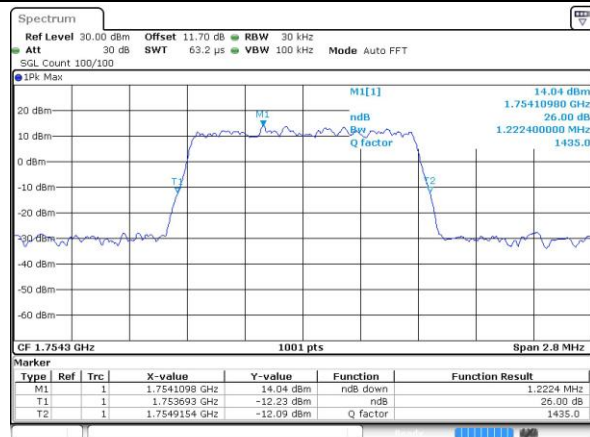
Date: 4 FEB 2019 13:12:05

Highest Channel / 1.4MHz / QPSK



Date: 4 FEB 2019 13:14:00

Highest Channel / 1.4MHz / 16QAM

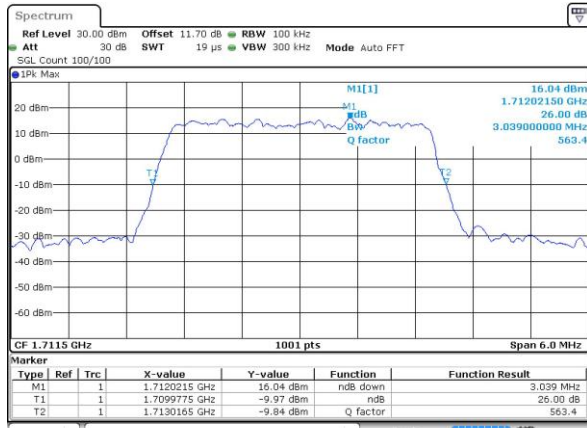


Date: 4 FEB 2019 13:14:12



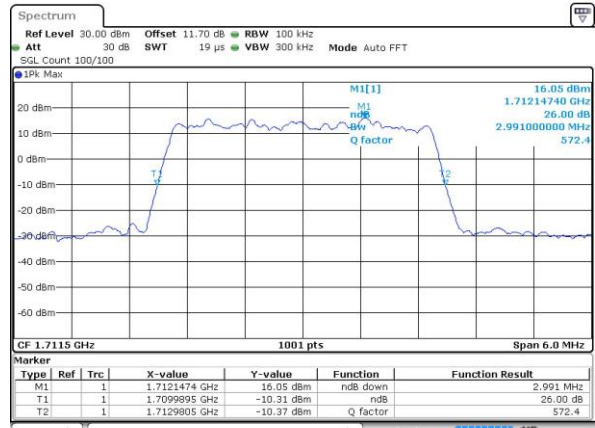
LTE Band 4

Lowest Channel / 3MHz / QPSK



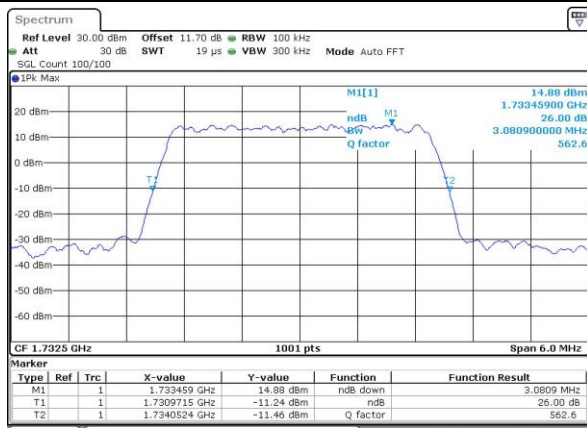
Date: 4 FEB 2019 11:04:51

Lowest Channel / 3MHz / 16QAM



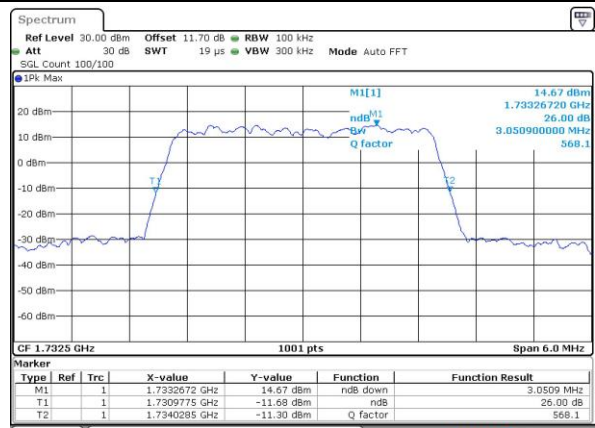
Date: 4 FEB 2019 11:05:03

Middle Channel / 3MHz / QPSK



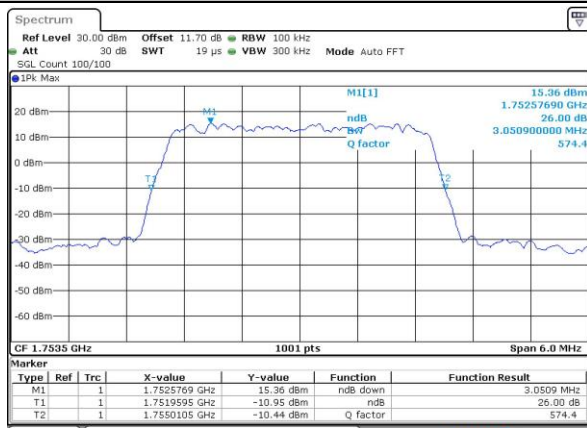
Date: 4 FEB 2019 11:10:58

Middle Channel / 3MHz / 16QAM



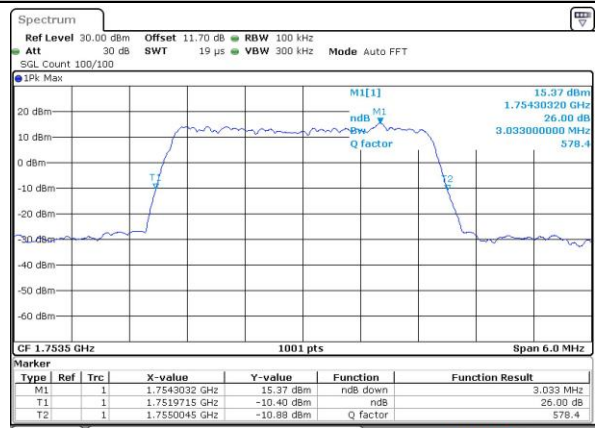
Date: 4 FEB 2019 11:11:10

Highest Channel / 3MHz / QPSK



Date: 4 FEB 2019 11:13:05

Highest Channel / 3MHz / 16QAM

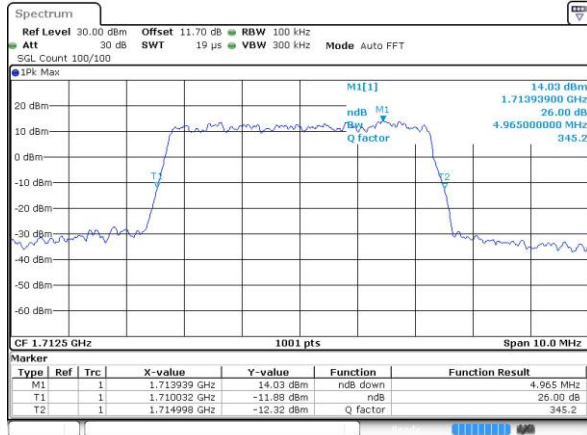


Date: 4 FEB 2019 11:13:16



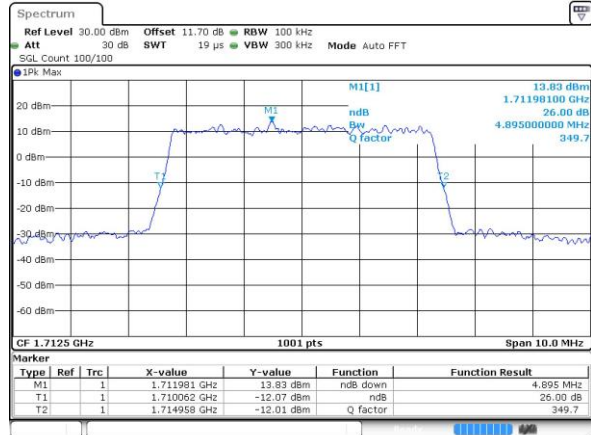
LTE Band 4

Lowest Channel / 5MHz / QPSK



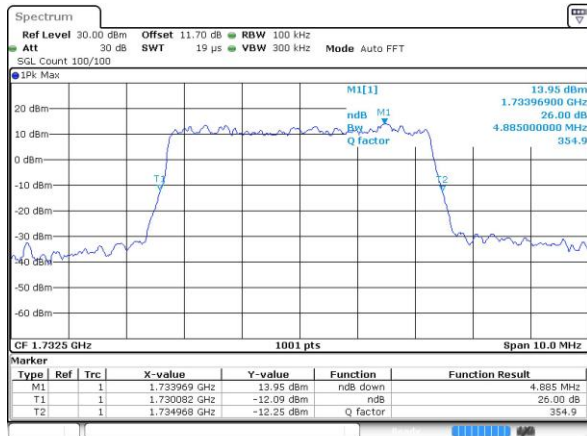
Date: 4.FEB.2019 11:19:12

Lowest Channel / 5MHz / 16QAM



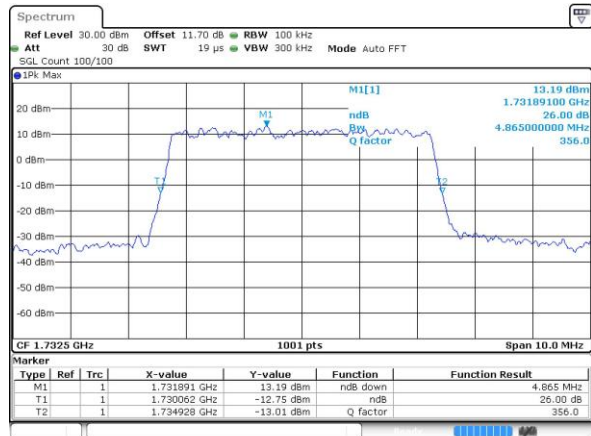
Date: 4.FEB.2019 11:19:24

Middle Channel / 5MHz / QPSK



Date: 4.FEB.2019 11:25:19

Middle Channel / 5MHz / 16QAM



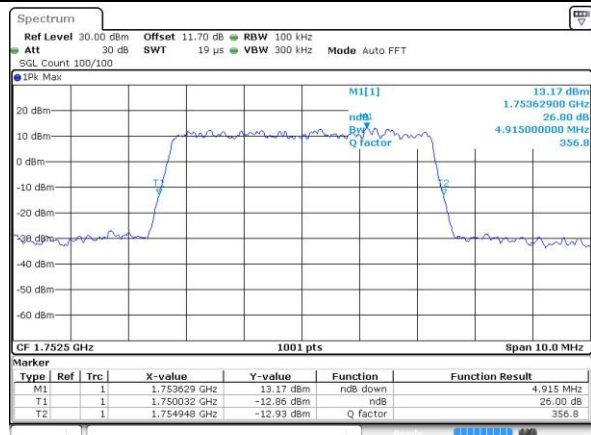
Date: 4.FEB.2019 11:25:31

Highest Channel / 5MHz / QPSK



Date: 4.FEB.2019 11:27:26

Highest Channel / 5MHz / 16QAM

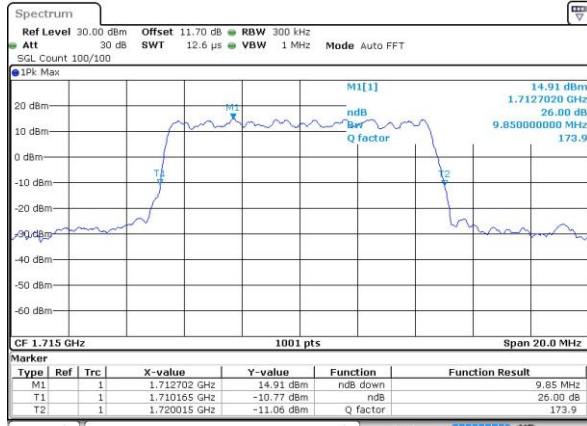


Date: 4.FEB.2019 11:27:38



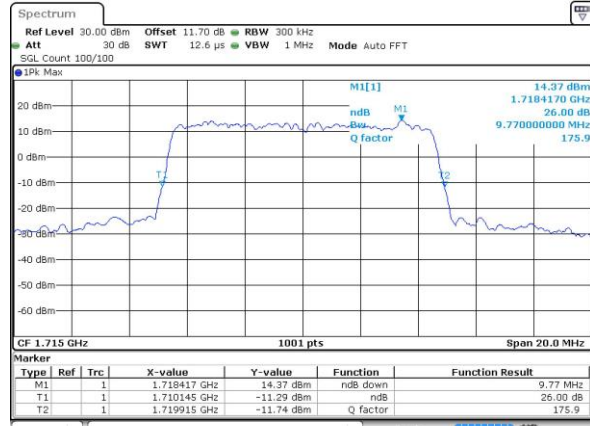
LTE Band 4

Lowest Channel / 10MHz / QPSK



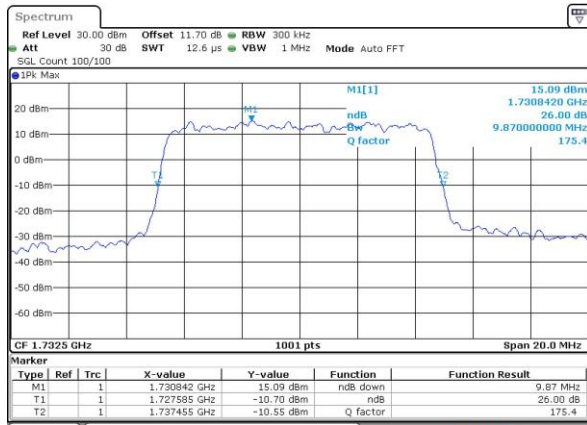
Date: 4 FEB 2019 11:33:34

Lowest Channel / 10MHz / 16QAM



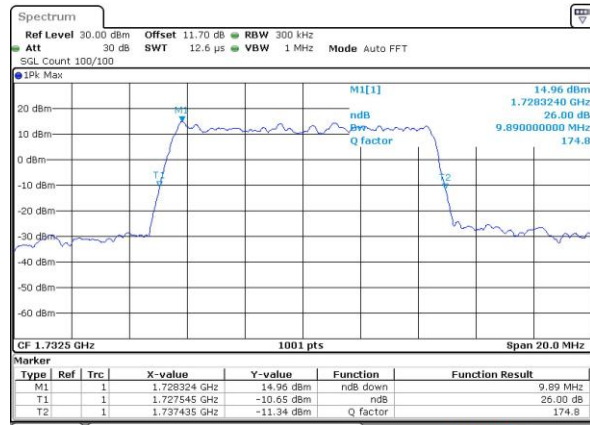
Date: 4 FEB 2019 11:33:45

Middle Channel / 10MHz / QPSK



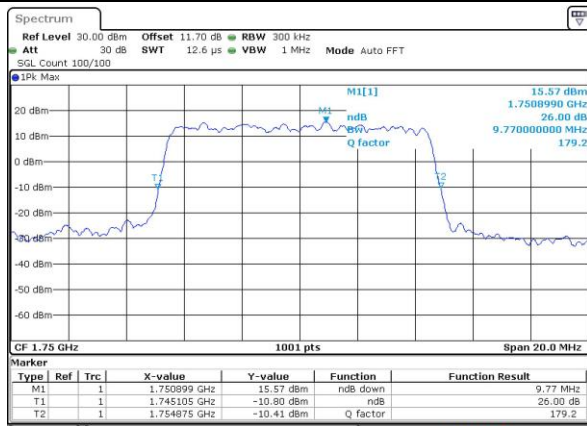
Date: 4 FEB 2019 11:39:41

Middle Channel / 10MHz / 16QAM



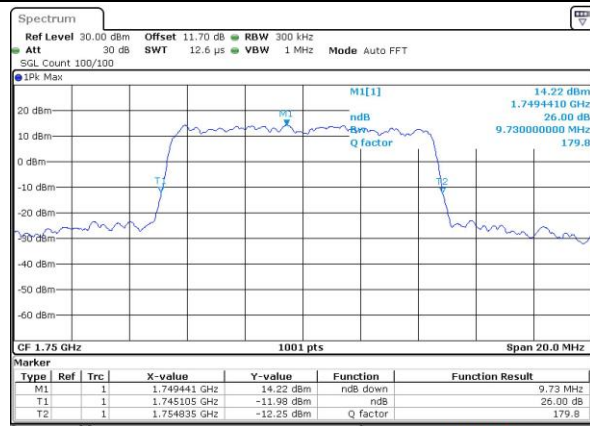
Date: 4 FEB 2019 11:39:52

Highest Channel / 10MHz / QPSK



Date: 4 FEB 2019 11:41:47

Highest Channel / 10MHz / 16QAM

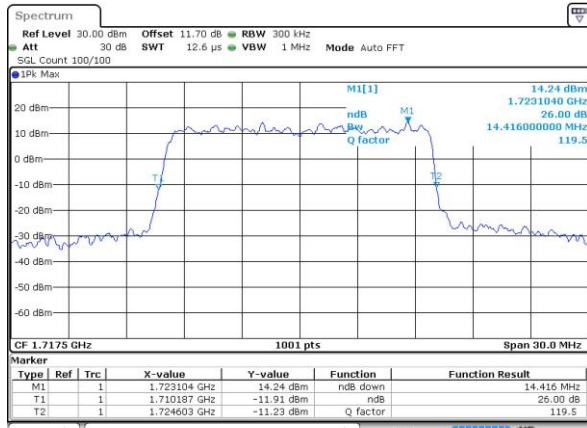


Date: 4 FEB 2019 11:41:59



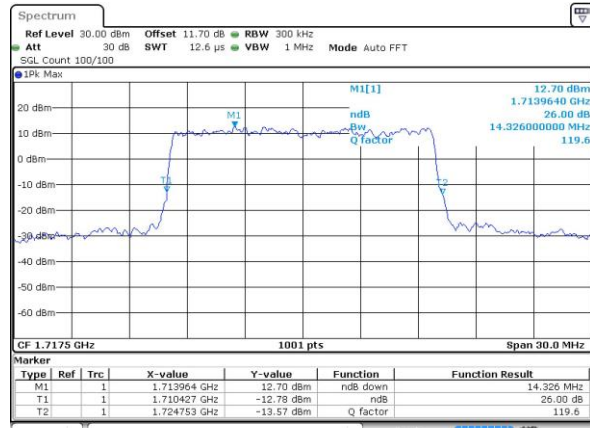
LTE Band 4

Lowest Channel / 15MHz / QPSK



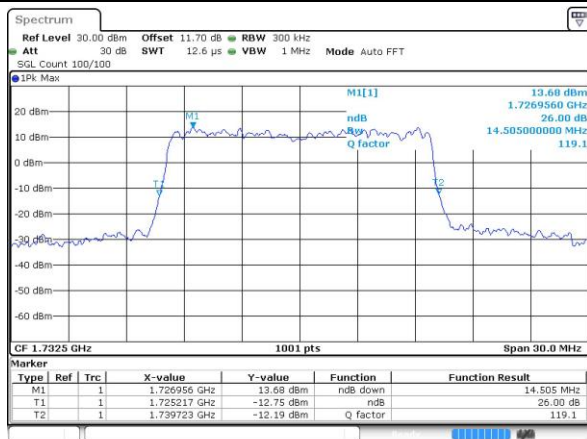
Date: 4 FEB 2019 11:47:54

Lowest Channel / 15MHz / 16QAM



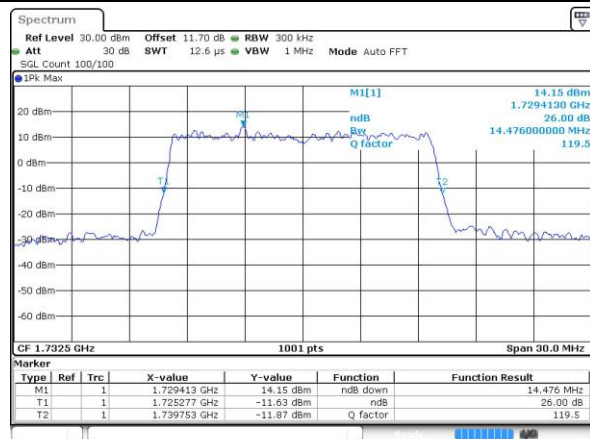
Date: 4 FEB 2019 11:48:06

Middle Channel / 15MHz / QPSK



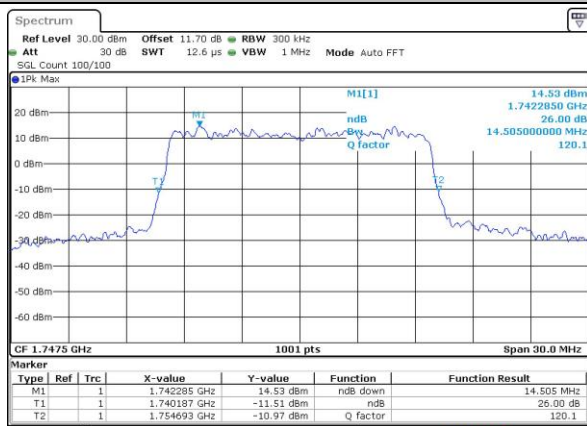
Date: 4 FEB 2019 11:54:02

Middle Channel / 15MHz / 16QAM



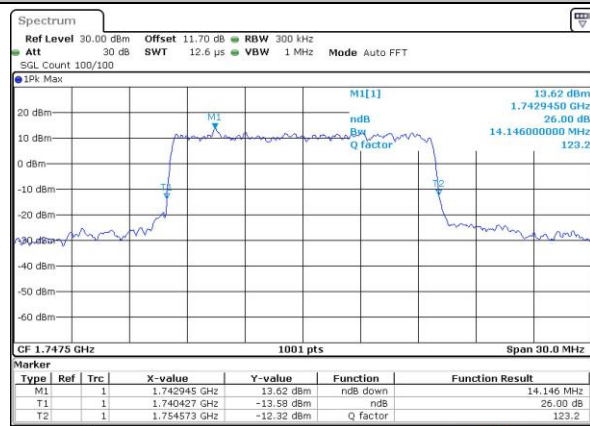
Date: 4 FEB 2019 11:54:13

Highest Channel / 15MHz / QPSK



Date: 4 FEB 2019 11:56:08

Highest Channel / 15MHz / 16QAM

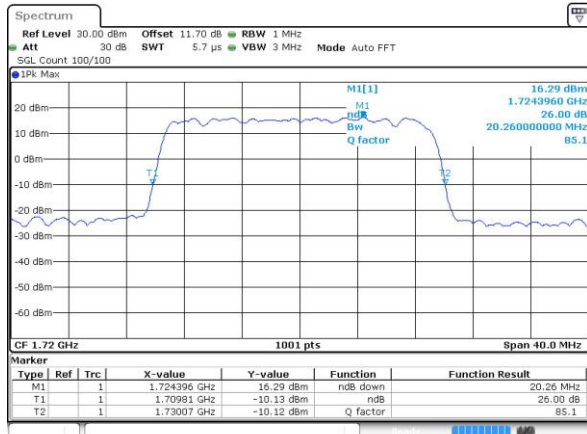


Date: 4 FEB 2019 11:56:20



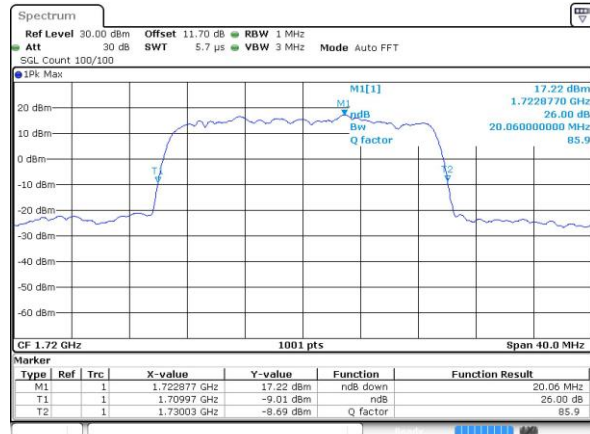
LTE Band 4

Lowest Channel / 20MHz / QPSK



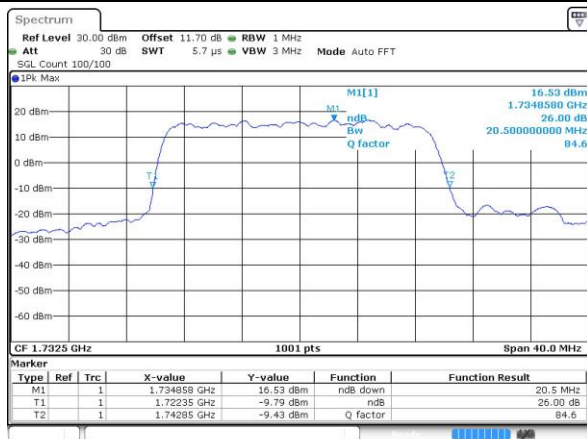
Date: 4 FEB 2019 12:02:15

Lowest Channel / 20MHz / 16QAM



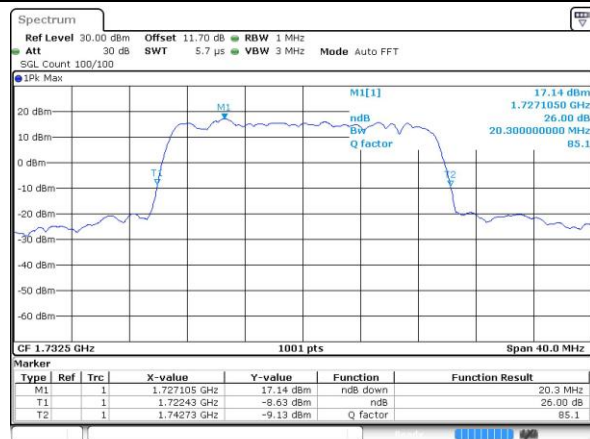
Date: 4 FEB 2019 12:02:26

Middle Channel / 20MHz / QPSK



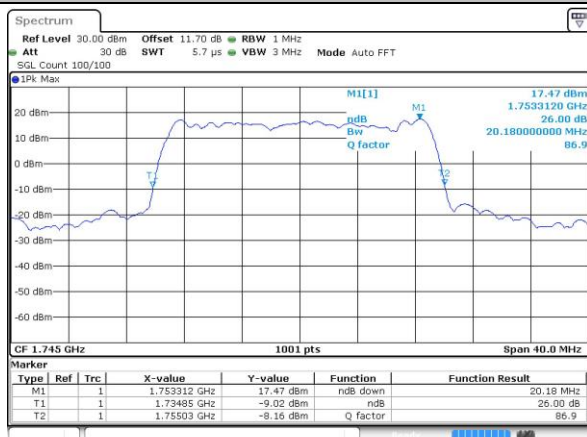
Date: 4 FEB 2019 12:08:22

Middle Channel / 20MHz / 16QAM



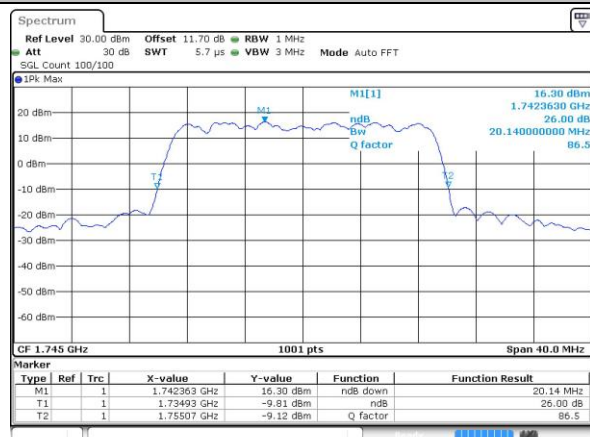
Date: 4 FEB 2019 12:08:34

Highest Channel / 20MHz / QPSK



Date: 4 FEB 2019 12:10:29

Highest Channel / 20MHz / 16QAM

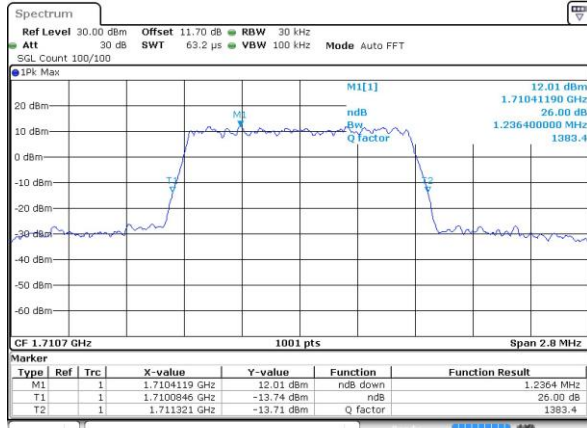


Date: 4 FEB 2019 12:10:40



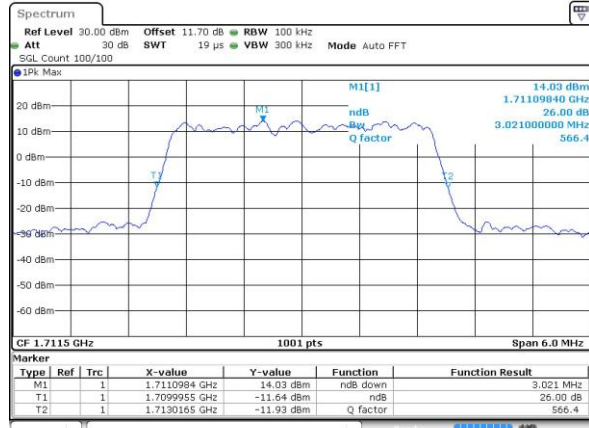
LTE Band 4

Lowest Channel / 1.4MHz / 64QAM



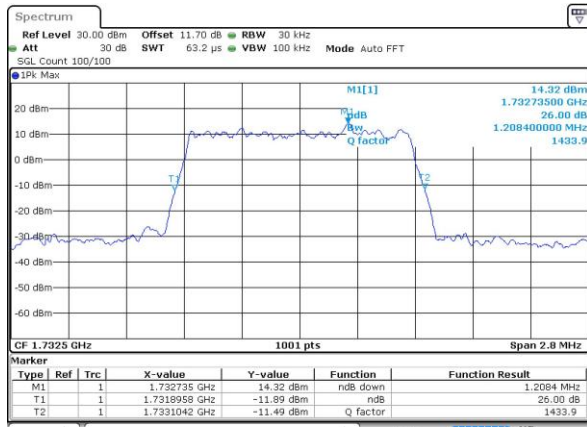
Date: 4 FEB 2019 12:57:58

Lowest Channel / 3MHz / 64QAM



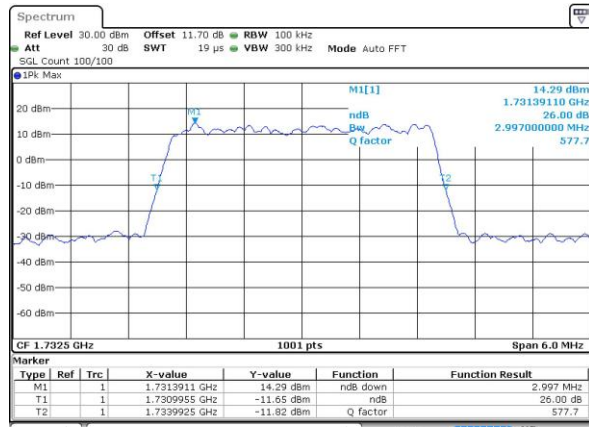
Date: 4 FEB 2019 12:16:25

Middle Channel / 1.4MHz / 64QAM



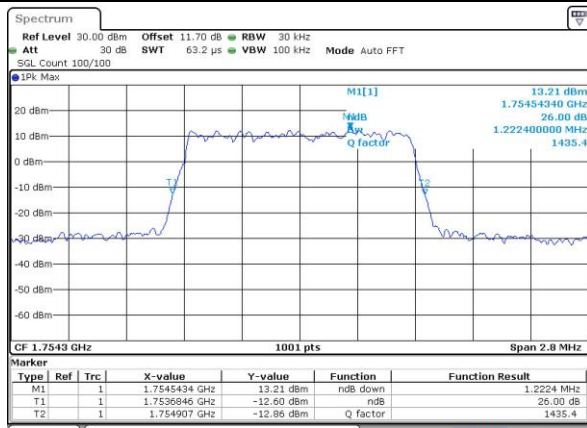
Date: 4 FEB 2019 13:01:08

Middle Channel / 3MHz / 64QAM



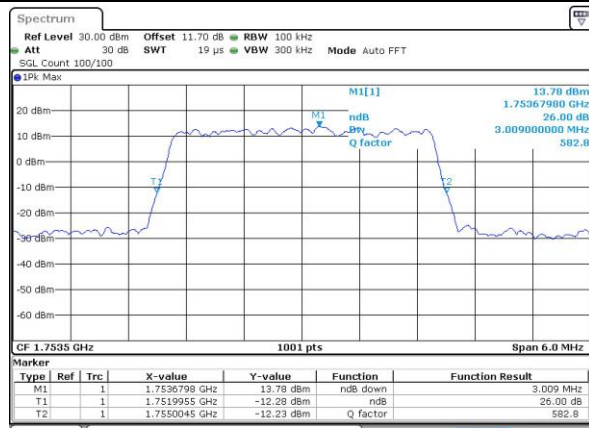
Date: 4 FEB 2019 12:19:28

Highest Channel / 1.4MHz / 64QAM



Date: 4 FEB 2019 13:02:11

Highest Channel / 3MHz / 64QAM

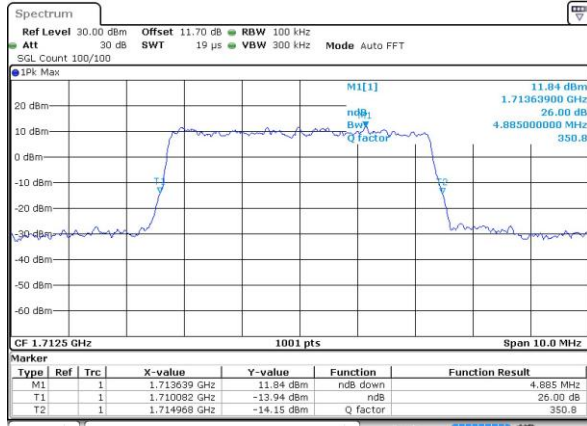


Date: 4 FEB 2019 12:20:31

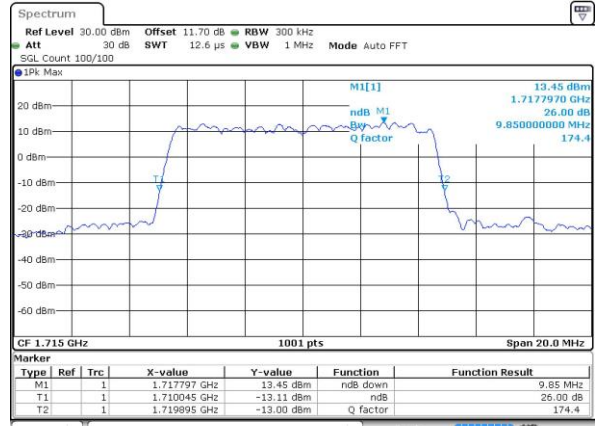


LTE Band 4

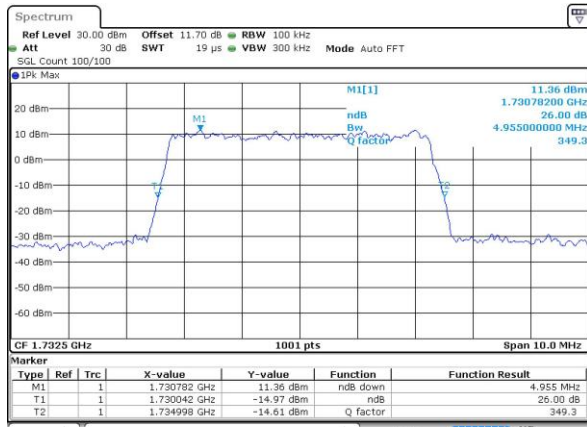
Lowest Channel / 5MHz / 64QAM



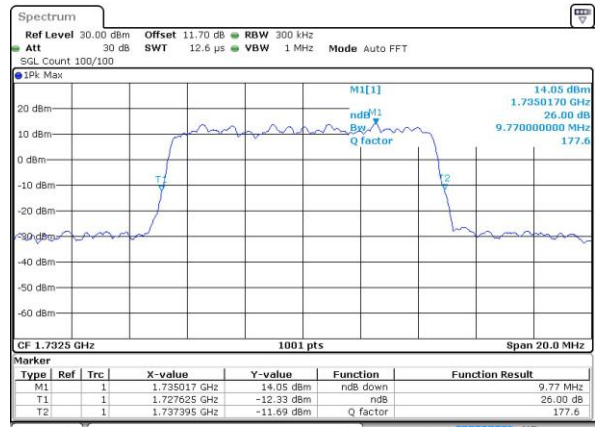
Lowest Channel / 10MHz / 64QAM



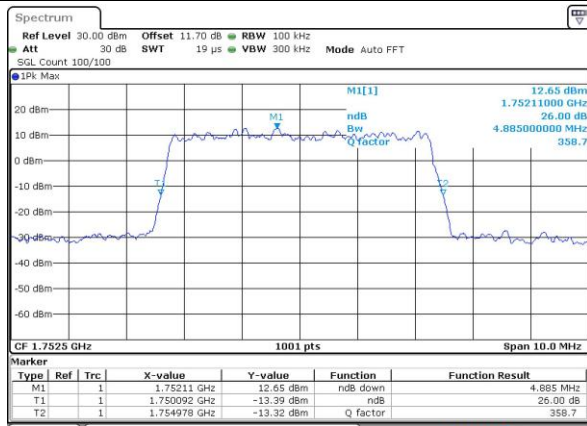
Middle Channel / 5MHz / 64QAM



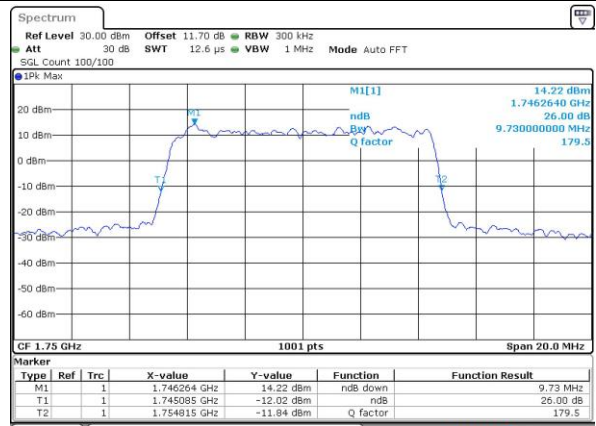
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



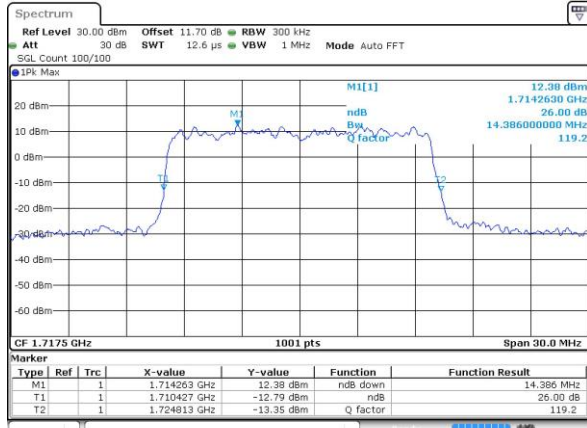
Highest Channel / 10MHz / 64QAM





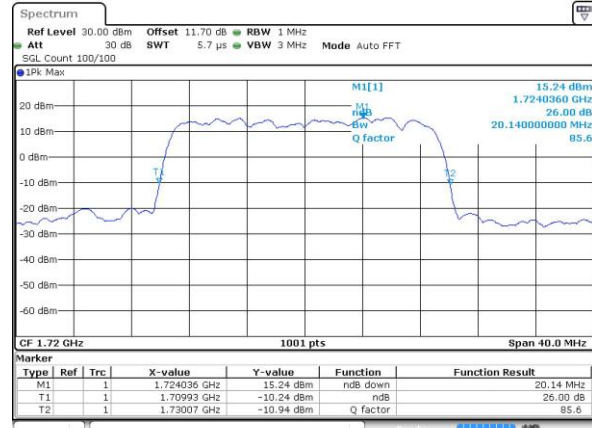
LTE Band 4

Lowest Channel / 15MHz / 64QAM



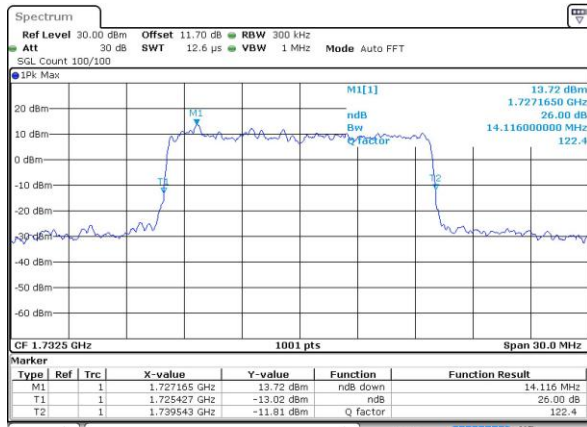
Date: 4 FEB 2019 12:37:56

Lowest Channel / 20MHz / 64QAM



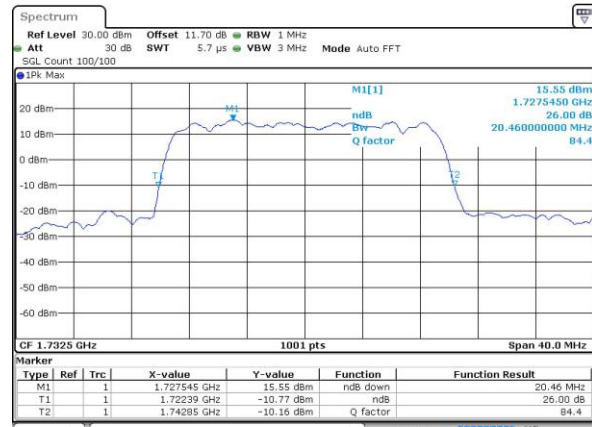
Date: 4 FEB 2019 12:45:07

Middle Channel / 15MHz / 64QAM



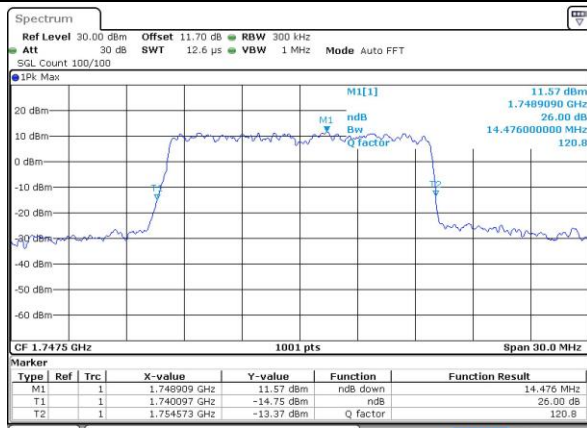
Date: 4 FEB 2019 12:41:00

Middle Channel / 20MHz / 64QAM



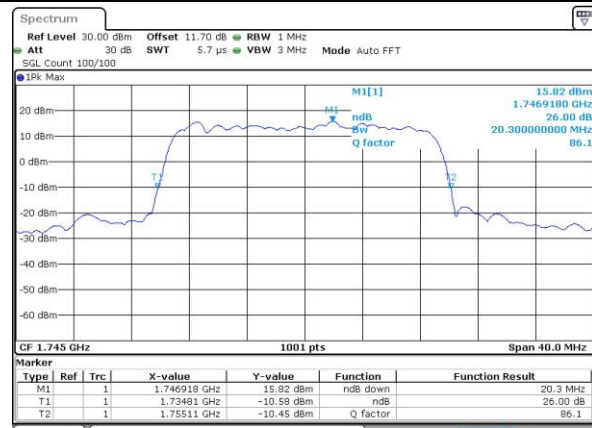
Date: 4 FEB 2019 12:48:11

Highest Channel / 15MHz / 64QAM



Date: 4 FEB 2019 12:42:03

Highest Channel / 20MHz / 64QAM



Date: 4 FEB 2019 12:48:14

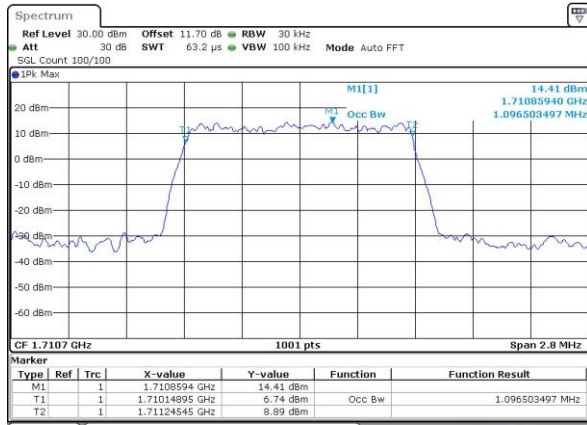
**Occupied Bandwidth**

Mode	LTE Band 4 : 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	1.1	1.1	2.73	2.7	4.5	4.5	9.01	9.01	13.43	13.46	18.34	18.3
Middle CH	1.09	1.09	2.74	2.69	4.47	4.48	8.97	9.03	13.43	13.43	18.38	18.46
Highest CH	1.09	1.09	2.73	2.72	4.5	4.5	9.01	9.05	13.37	13.43	18.3	18.34
Mode	LTE Band 4 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.72	-	4.53	-	9.03	-	13.40	-	18.38	-
Middle CH	1.09	-	2.71	-	4.50	-	9.05	-	13.43	-	18.54	-
Highest CH	1.08	-	2.71	-	4.50	-	9.05	-	13.37	-	18.42	-

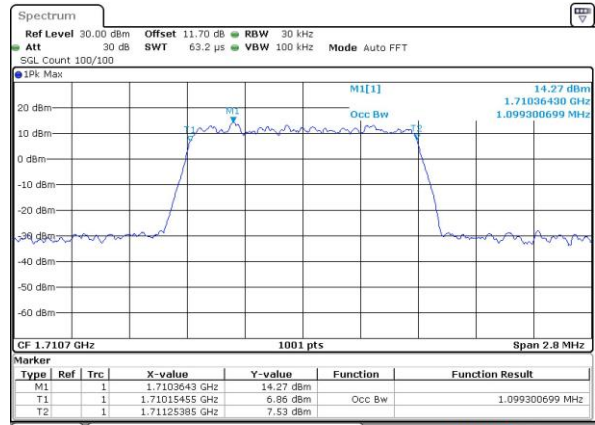


LTE Band 4

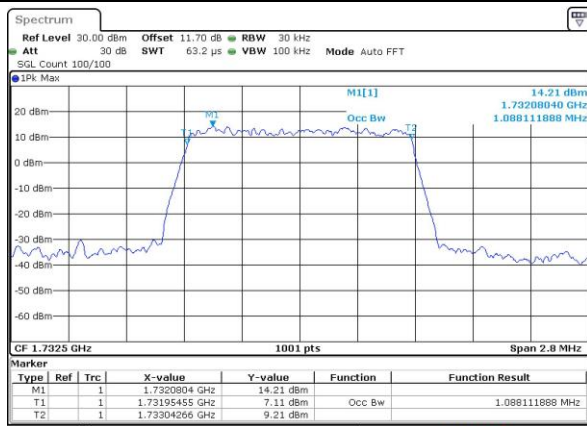
Lowest Channel / 1.4MHz / QPSK



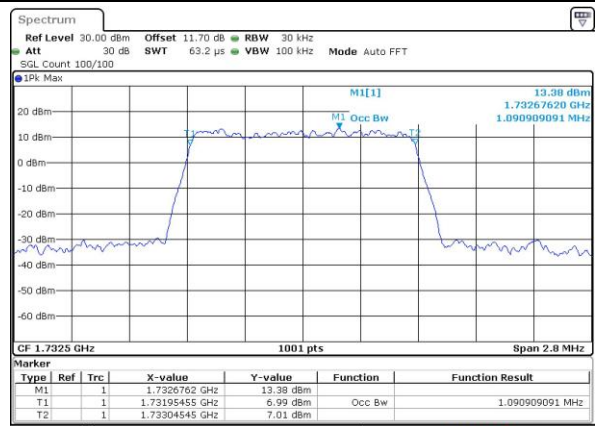
Lowest Channel / 1.4MHz / 16QAM



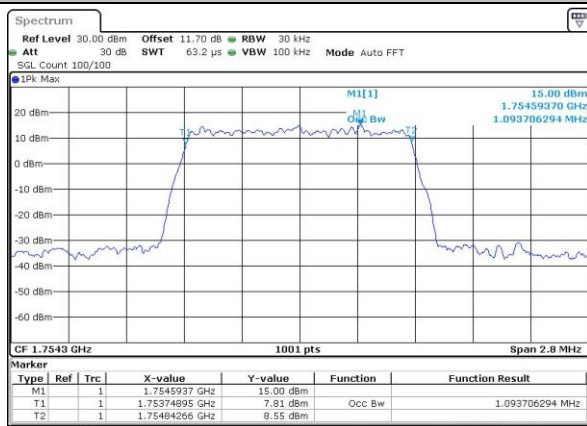
Middle Channel / 1.4MHz / QPSK



Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK



Highest Channel / 1.4MHz / 16QAM

