

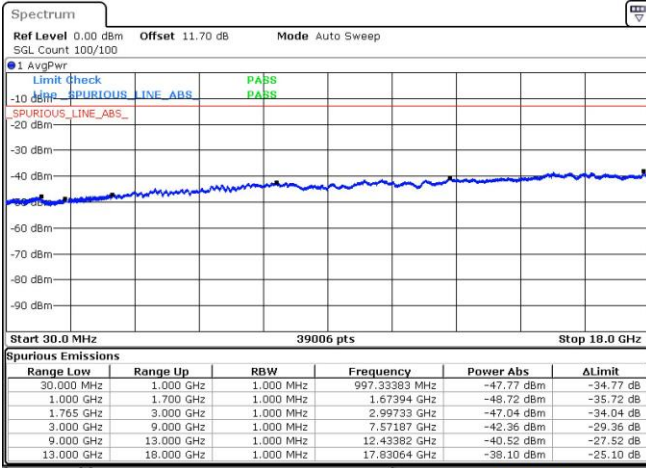


Conducted Spurious Emission

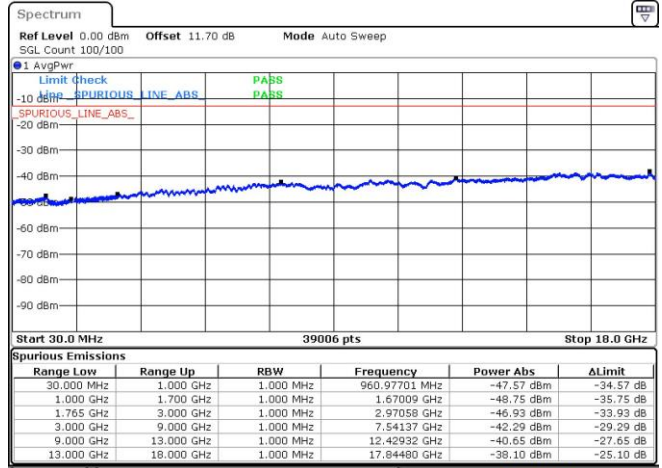
LTE Band 4 / 1.4MHz

Lowest Channel / QPSK

Highest Channel / QPSK

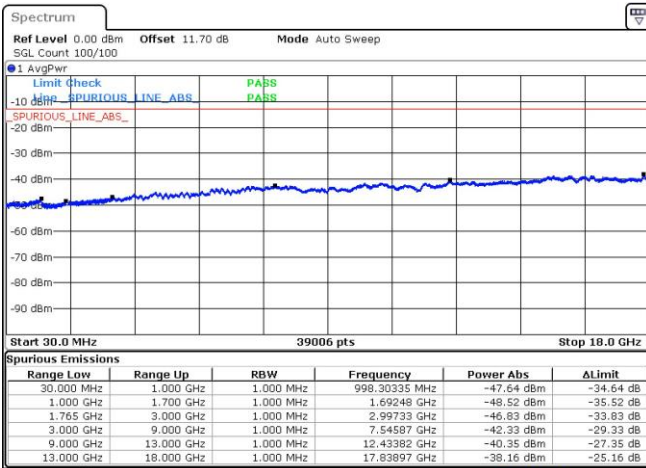


Date: 18 MAY.2019 14:37:02



Date: 18 MAY.2019 14:45:41

Middle Channel / QPSK



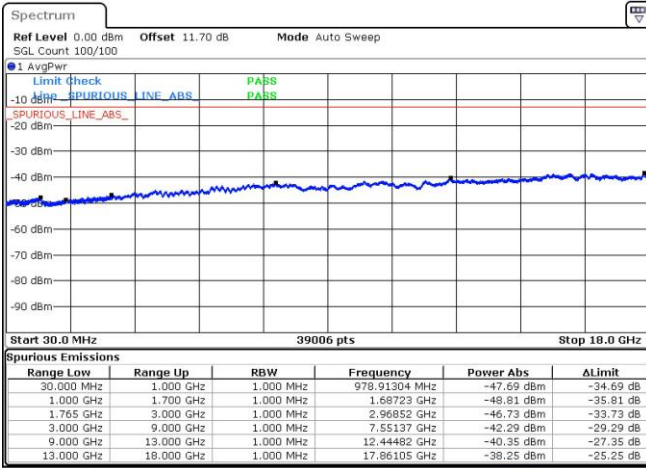
Date: 18 MAY.2019 14:39:12



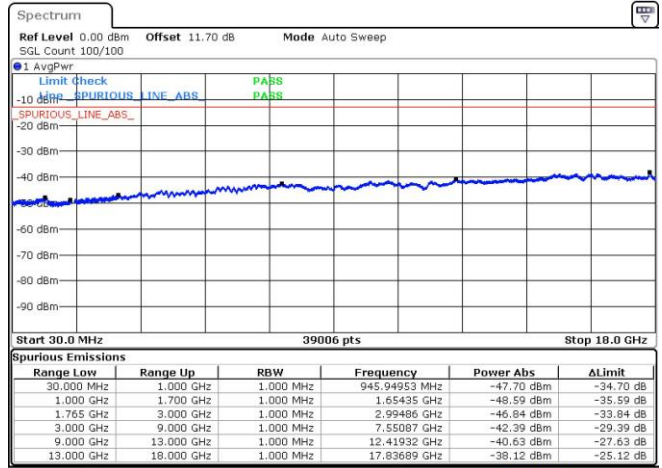
LTE Band 4 / 3MHz

Lowest Channel / QPSK

Highest Channel / QPSK

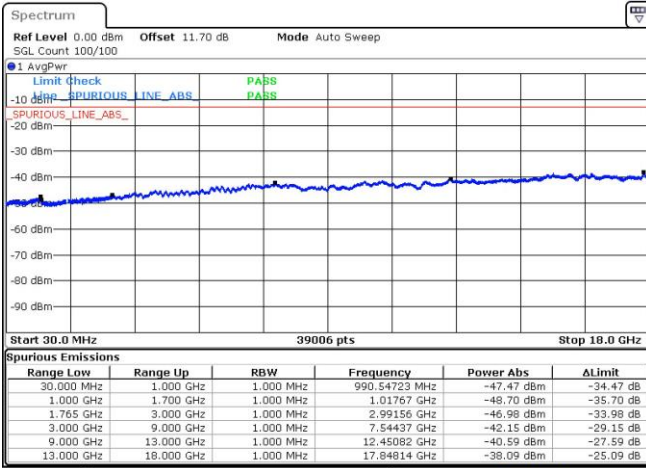


Date: 18 MAY 2019 13:23:04



Date: 18 MAY 2019 13:31:30

Middle Channel / QPSK



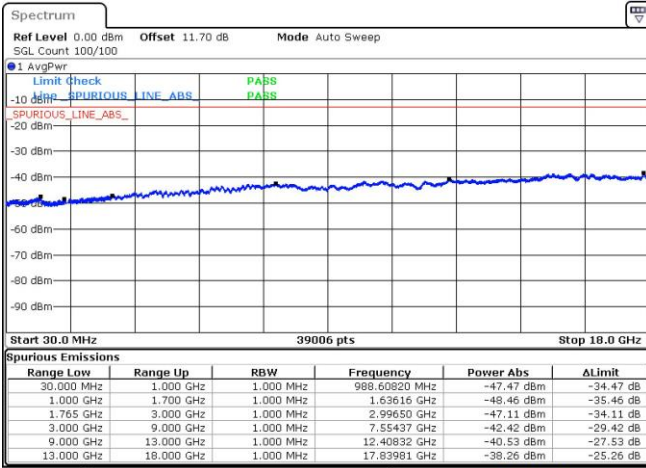
Date: 18 MAY 2019 13:25:14



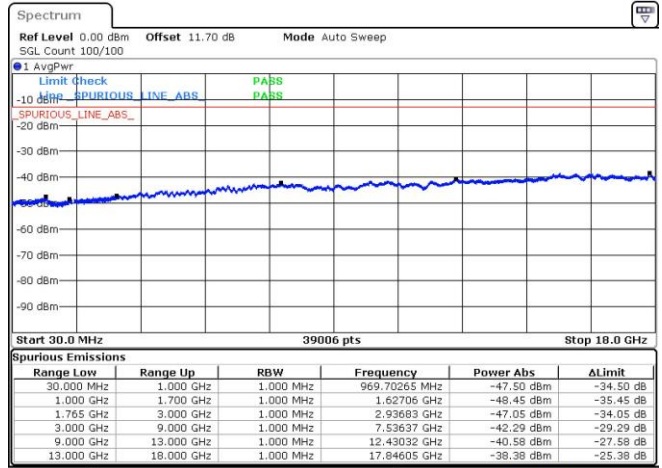
LTE Band 4 / 5MHz

Lowest Channel / QPSK

Highest Channel / QPSK

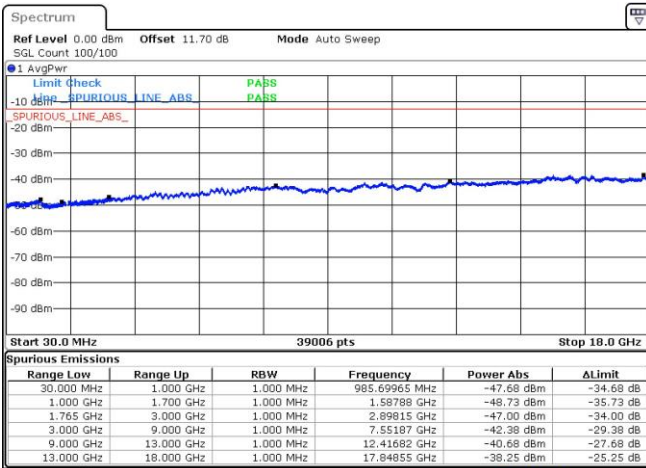


Date: 18 MAY 2019 13:37:49



Date: 18 MAY 2019 13:46:16

Middle Channel / QPSK



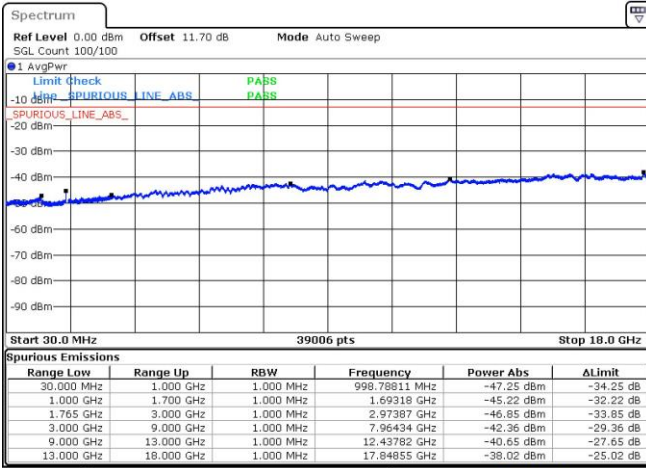
Date: 18 MAY 2019 13:39:59



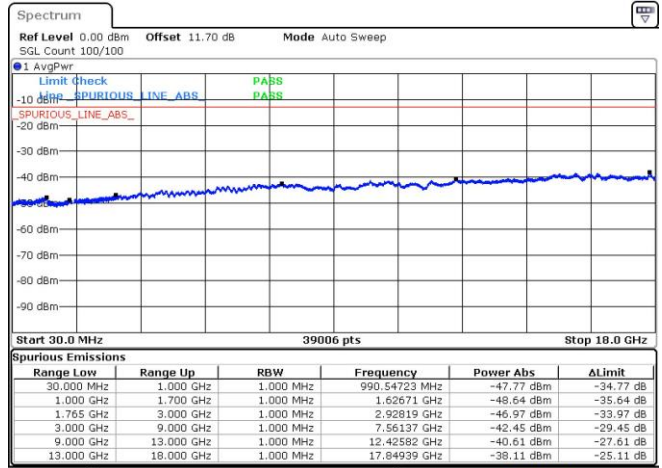
LTE Band 4 / 10MHz

Lowest Channel / QPSK

Highest Channel / QPSK

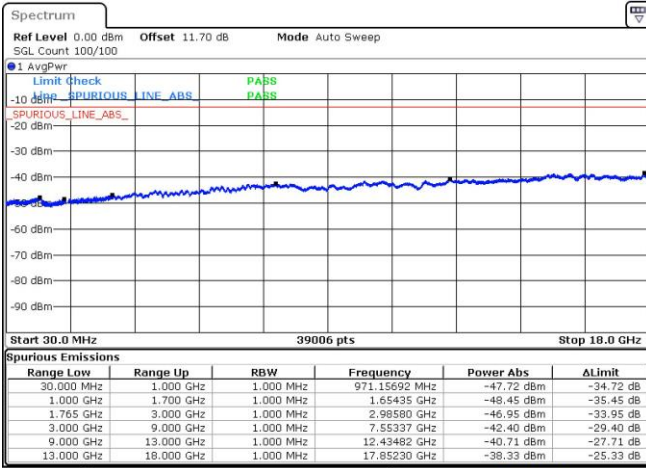


Date: 18 MAY.2019 13:52:35



Date: 18 MAY.2019 14:01:01

Middle Channel / QPSK



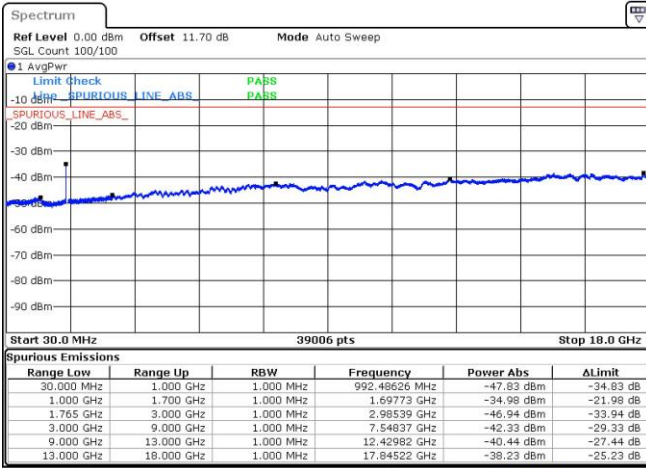
Date: 18 MAY.2019 13:54:45



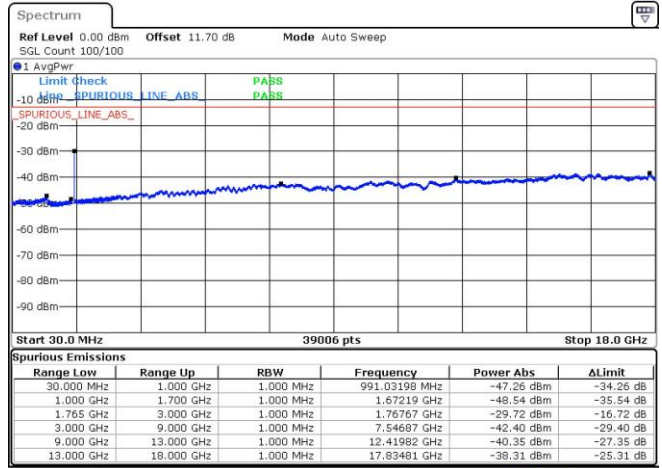
LTE Band 4 / 15MHz

Lowest Channel / QPSK

Highest Channel / QPSK

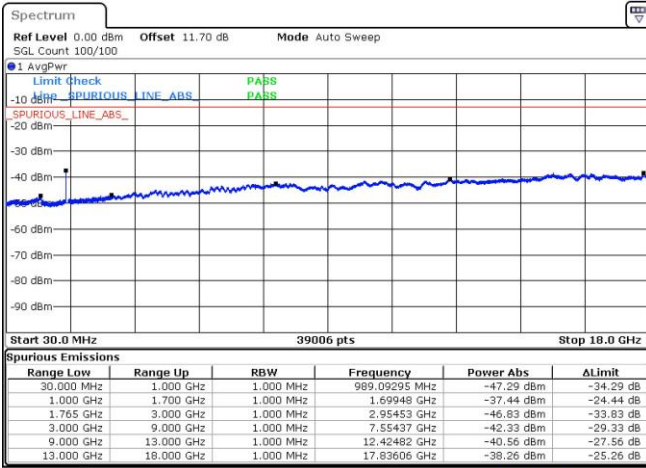


Date: 18.MAY.2019 14:07:20



Date: 18.MAY.2019 14:15:46

Middle Channel / QPSK



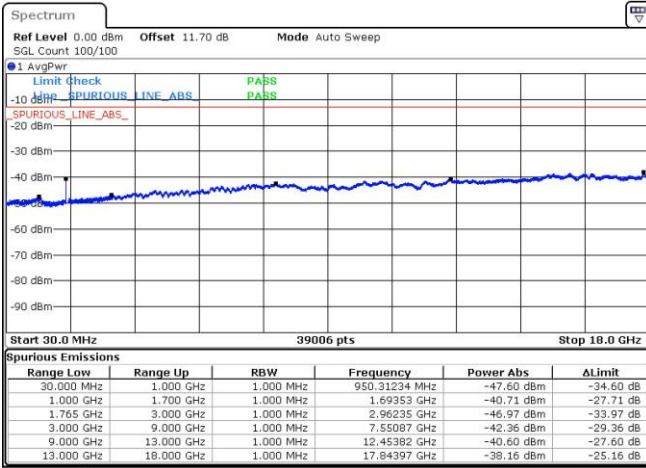
Date: 18.MAY.2019 14:09:29



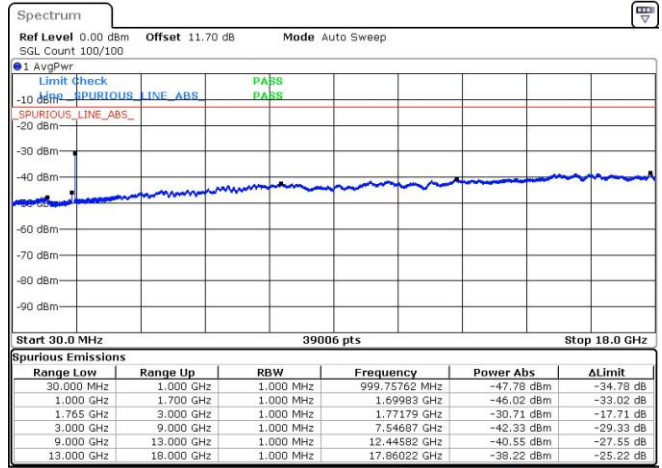
LTE Band 4 / 20MHz

Lowest Channel / QPSK

Highest Channel / QPSK

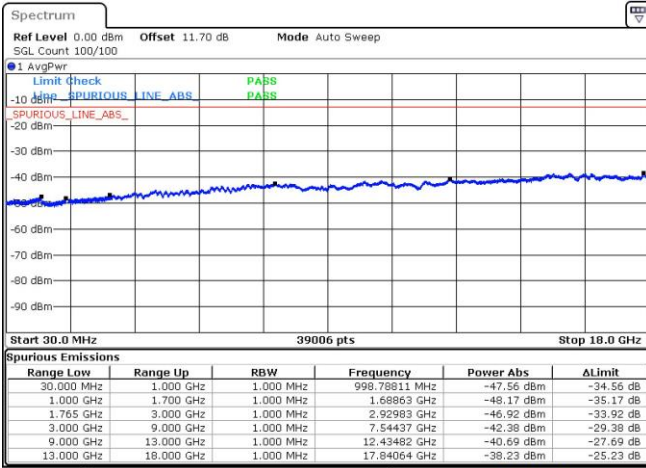


Date: 18.MAY.2019 14:22:04



Date: 18.MAY.2019 14:30:31

Middle Channel / QPSK



Date: 18.MAY.2019 14:24:14



Frequency Stability

Test Conditions		LTE Band 4 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0006	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0018	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0018	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0016	
-20	Normal Voltage	0.0015	
-30	Normal Voltage	0.0017	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0004	
20	Battery End Point	0.0023	

Note:

1. Normal Voltage =14.0 V. ; Battery End Point (BEP) =14.0 V. ; Maximum Voltage =16.0 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 5

Peak-to-Average Ratio

Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.35	5.13	-	-	PASS
Middle CH	4.9	5.28	-	-	
Highest CH	4.72	5.19	-	-	



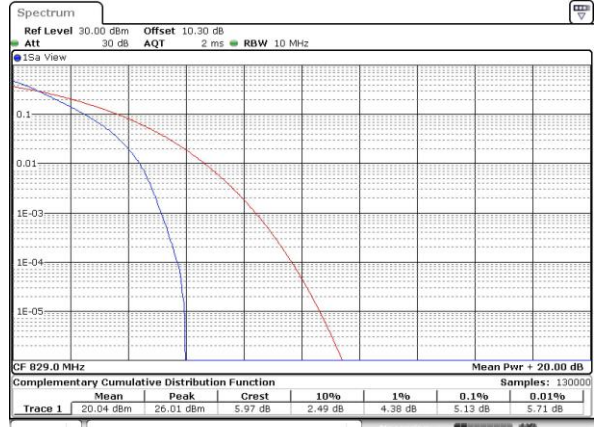
LTE Band 5 / 10MHz / QPSK

Lowest Channel / 1RB



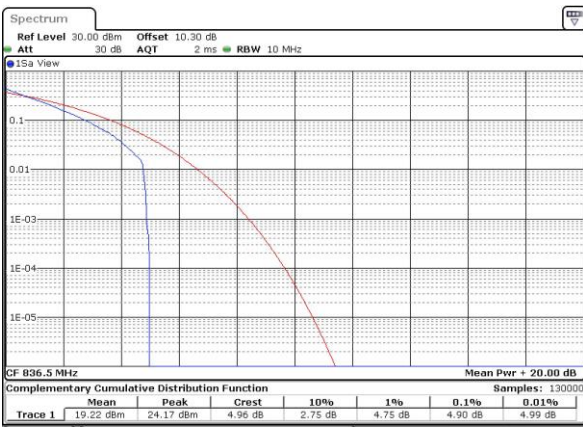
Date: 18.MAY.2019 16:57:01

Lowest Channel / Full RB



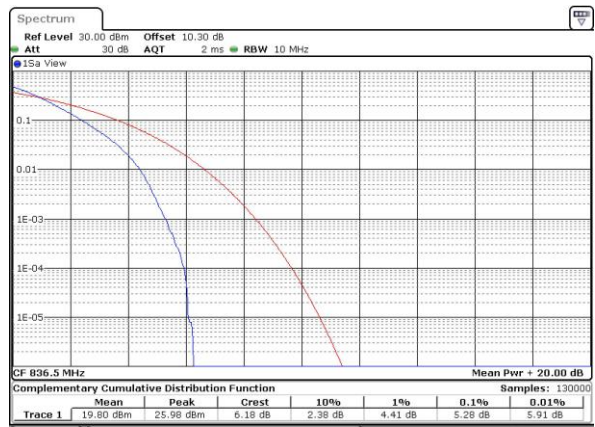
Date: 18.MAY.2019 16:57:14

Middle Channel / 1RB



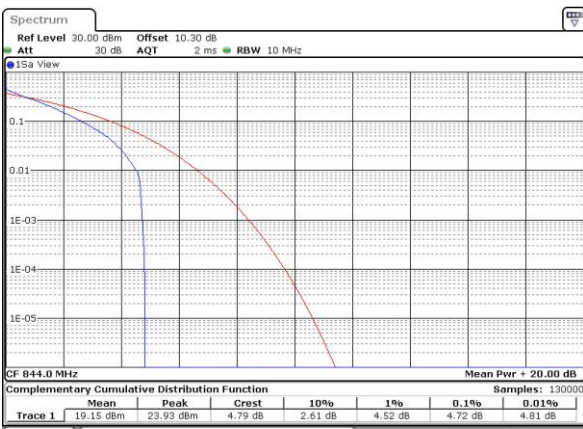
Date: 18.MAY.2019 16:57:25

Middle Channel / Full RB



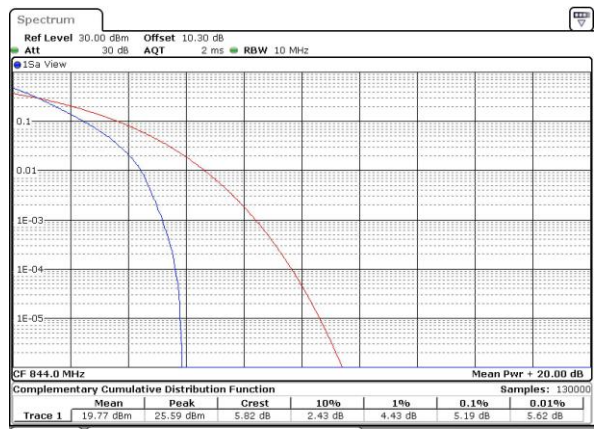
Date: 18.MAY.2019 16:57:38

Highest Channel / 1RB



Date: 18.MAY.2019 16:57:52

Highest Channel / Full RB



Date: 18.MAY.2019 16:58:04



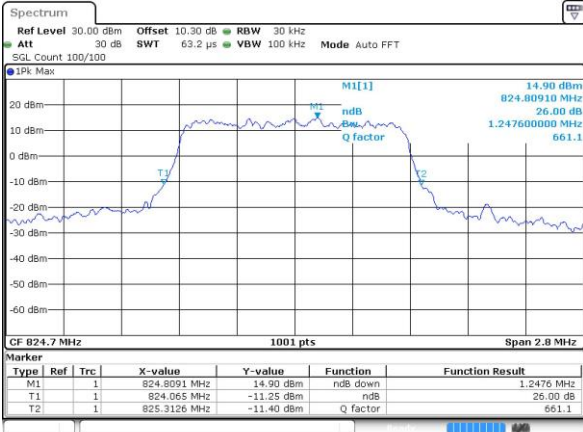
26dB Bandwidth

Mode	LTE Band 5 : 26dB BW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
BW	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.25	-	2.96	-	4.98	-	9.77	-	-	-	-	-
Middle CH	1.26	-	3.00	-	5.00	-	9.65	-	-	-	-	-
Highest CH	1.27	-	2.99	-	4.93	-	9.91	-	-	-	-	-



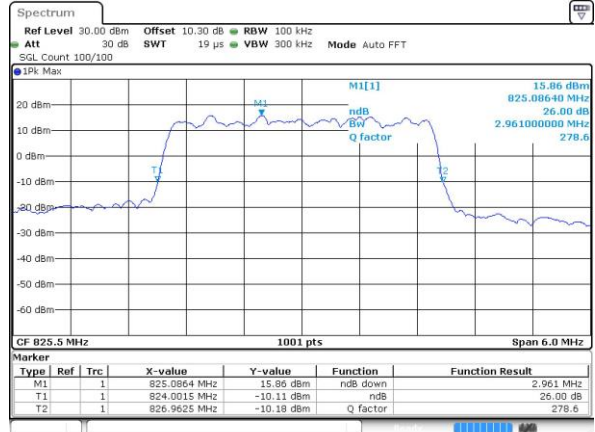
LTE Band 5

Lowest Channel / 1.4MHz / QPSK



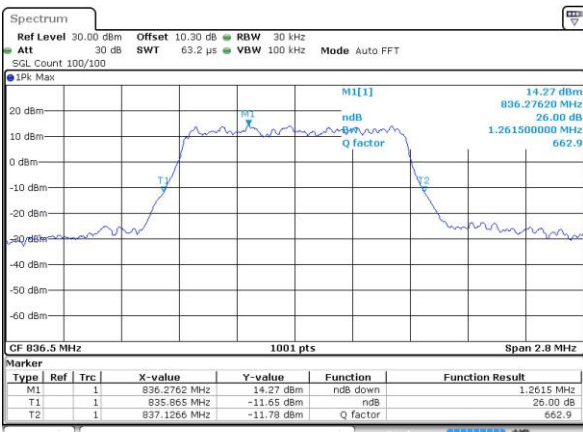
Date: 18.MAY.2019 16:38:22

Lowest Channel / 3MHz / QPSK



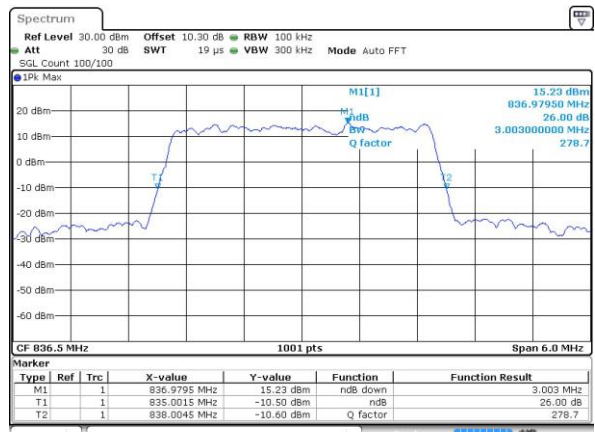
Date: 18.MAY.2019 15:35:59

Middle Channel / 1.4MHz / QPSK



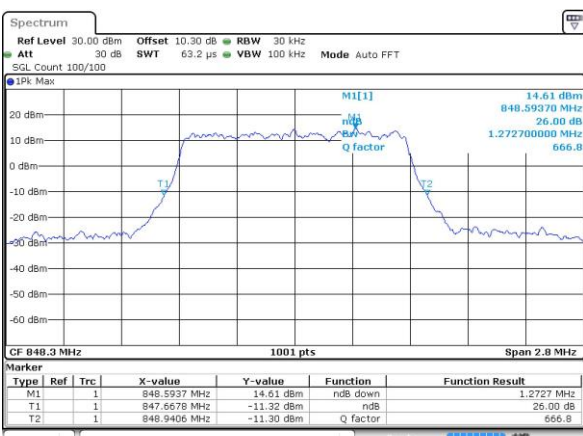
Date: 18.MAY.2019 16:45:05

Middle Channel / 3MHz / QPSK



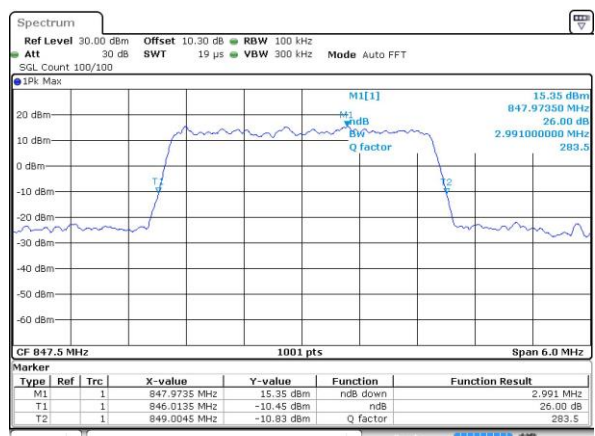
Date: 18.MAY.2019 15:44:54

Highest Channel / 1.4MHz / QPSK



Date: 18.MAY.2019 16:47:15

Highest Channel / 3MHz / QPSK

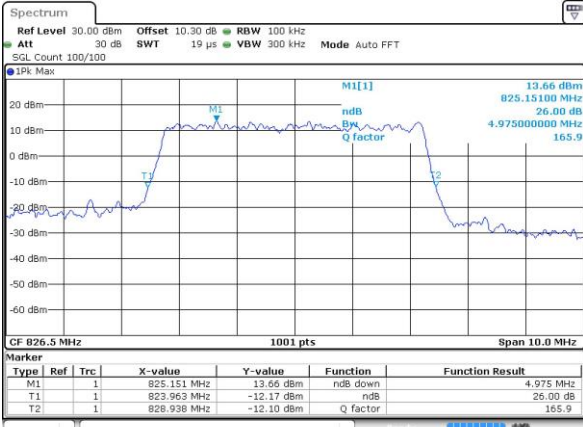


Date: 18.MAY.2019 15:47:04



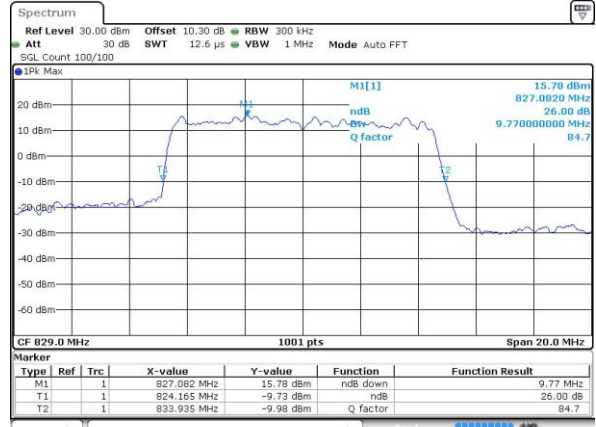
LTE Band 5

Lowest Channel / 5MHz / QPSK



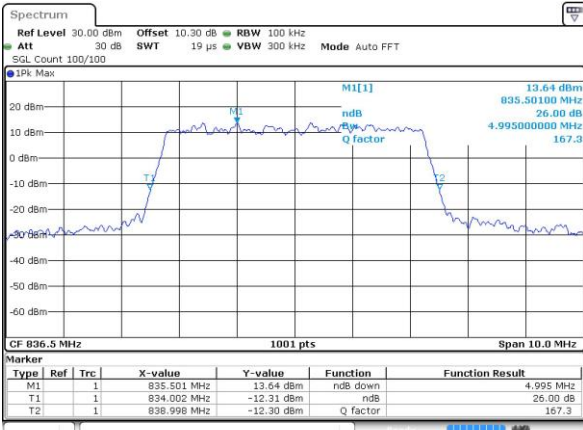
Date: 18.MAY.2019 15:56:03

Lowest Channel / 10MHz / QPSK



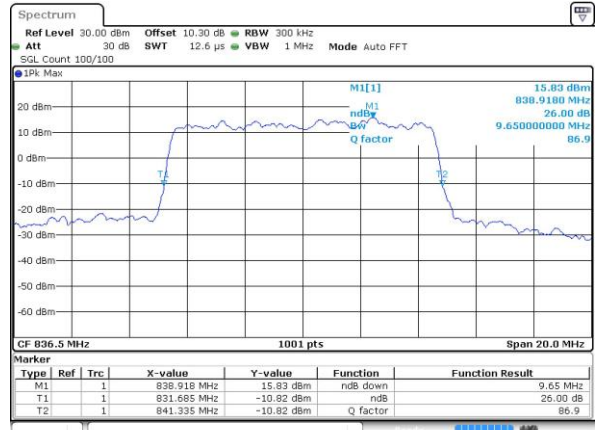
Date: 18.MAY.2019 16:16:06

Middle Channel / 5MHz / QPSK



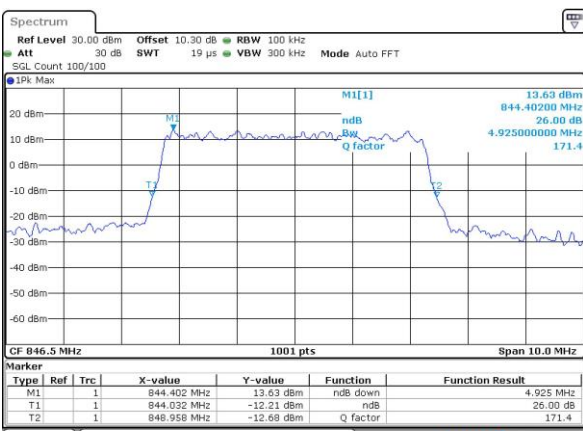
Date: 18.MAY.2019 16:04:58

Middle Channel / 10MHz / QPSK



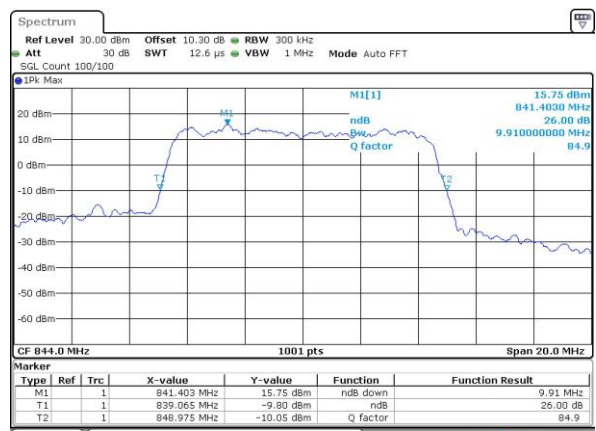
Date: 18.MAY.2019 16:25:01

Highest Channel / 5MHz / QPSK



Date: 18.MAY.2019 16:07:08

Highest Channel / 10MHz / QPSK



Date: 18.MAY.2019 16:27:11



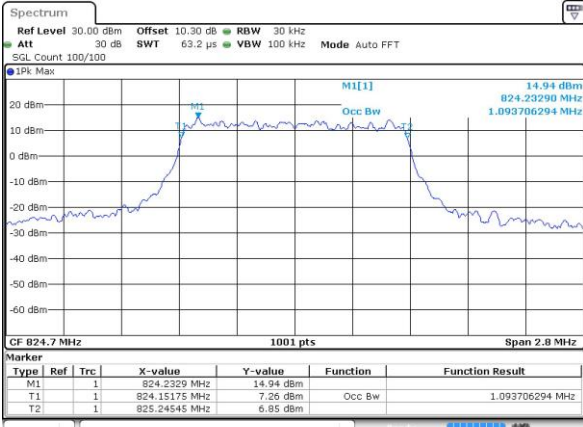
Occupied Bandwidth

Mode	LTE Band 5 : 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	-	2.72	-	4.52	-	9.03	-	-	-	-	-
Middle CH	1.09	-	2.73	-	4.49	-	8.95	-	-	-	-	-
Highest CH	1.09	-	2.72	-	4.5	-	9.01	-	-	-	-	-



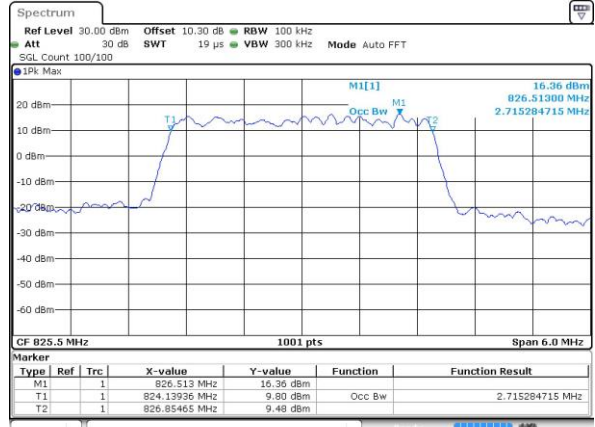
LTE Band 5

Lowest Channel / 1.4MHz / QPSK



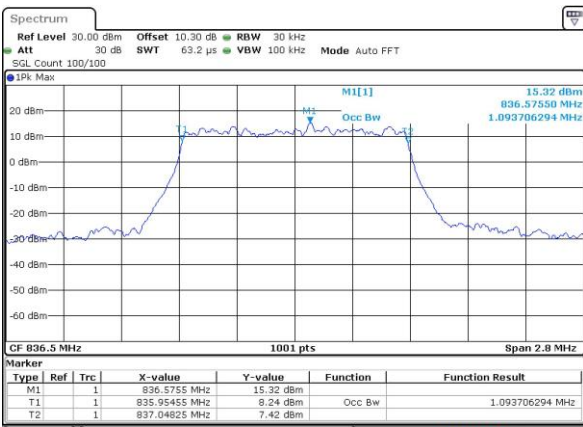
Date: 18 MAY 2019 16:35:45

Lowest Channel / 3MHz / QPSK



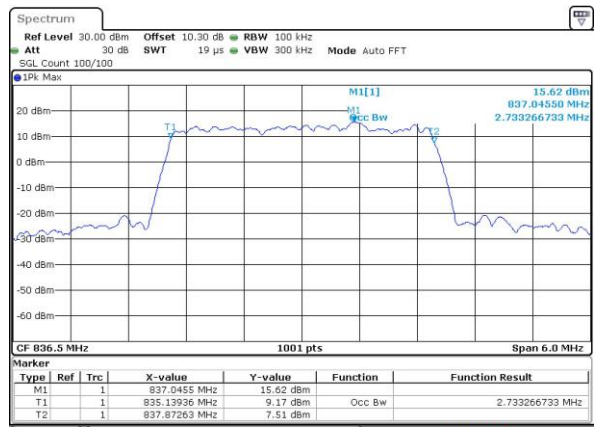
Date: 18 MAY 2019 15:35:35

Middle Channel / 1.4MHz / QPSK



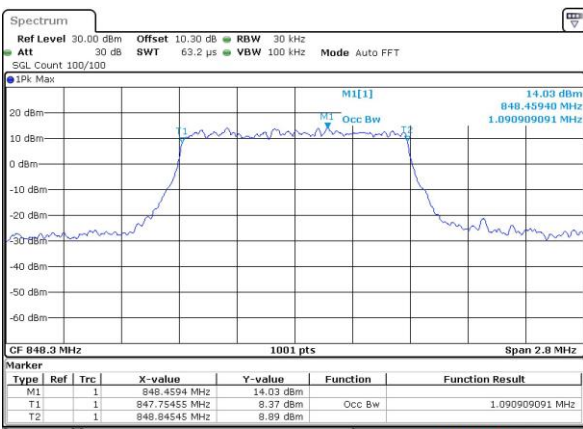
Date: 18 MAY 2019 16:44:42

Middle Channel / 3MHz / QPSK



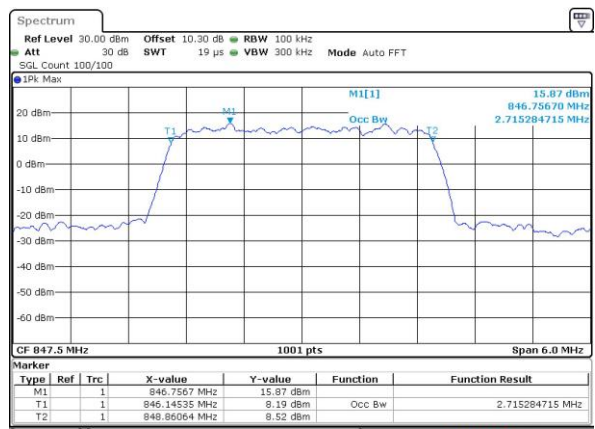
Date: 18 MAY 2019 15:44:31

Highest Channel / 1.4MHz / QPSK



Date: 18 MAY 2019 16:46:50

Highest Channel / 3MHz / QPSK

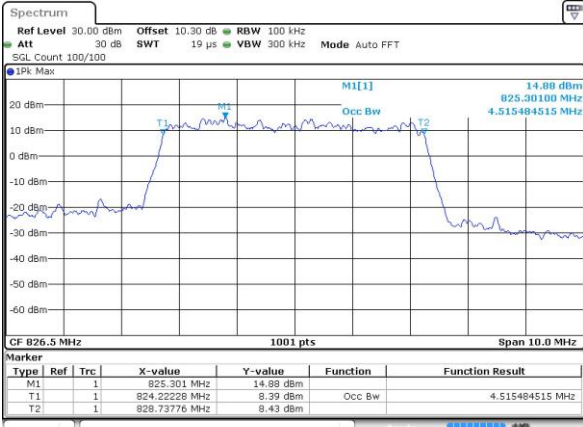


Date: 18 MAY 2019 15:46:40



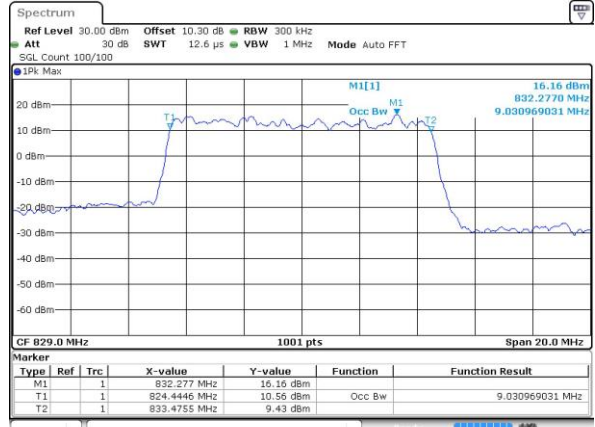
LTE Band 5

Lowest Channel / 5MHz / QPSK



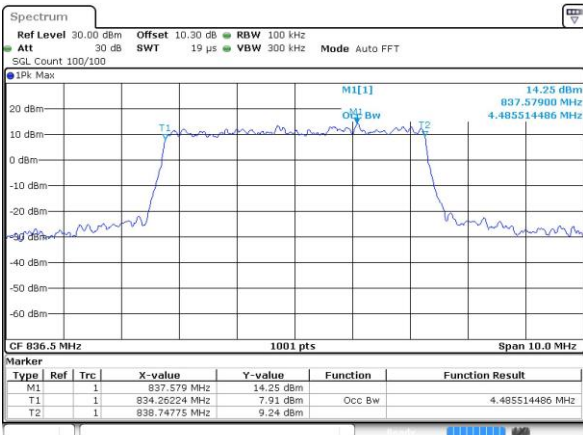
Date: 18 MAY 2019 15:55:38

Lowest Channel / 10MHz / QPSK



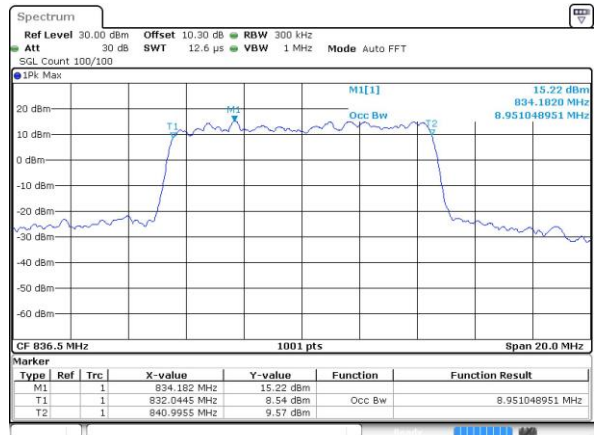
Date: 18 MAY 2019 16:15:42

Middle Channel / 5MHz / QPSK



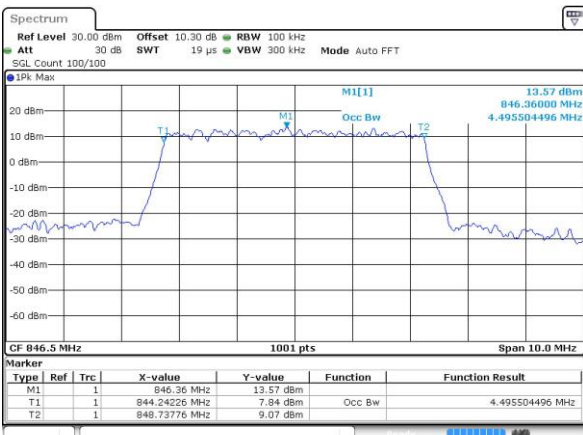
Date: 18 MAY 2019 16:04:35

Middle Channel / 10MHz / QPSK



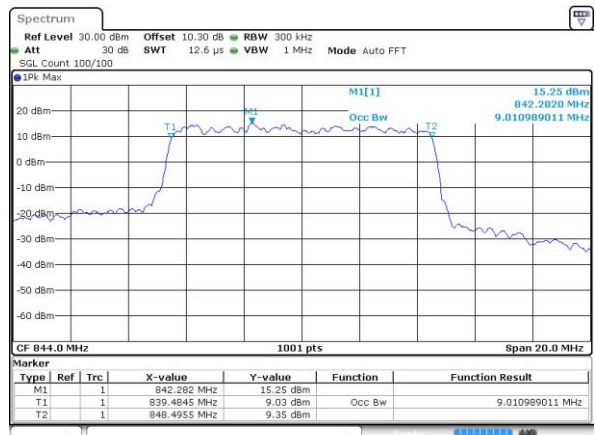
Date: 18 MAY 2019 16:24:38

Highest Channel / 5MHz / QPSK



Date: 18 MAY 2019 16:06:43

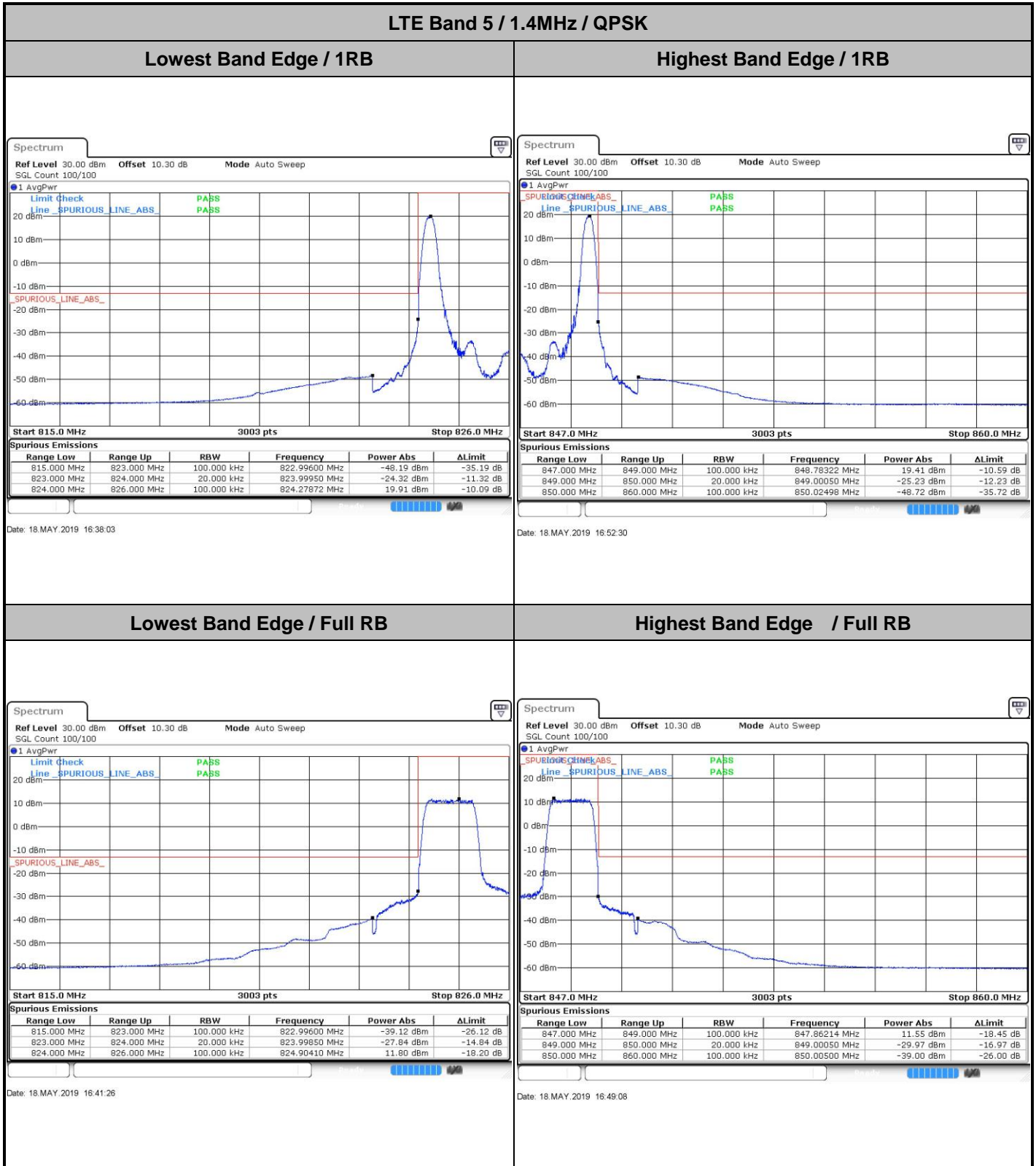
Highest Channel / 10MHz / QPSK



Date: 18 MAY 2019 16:26:47



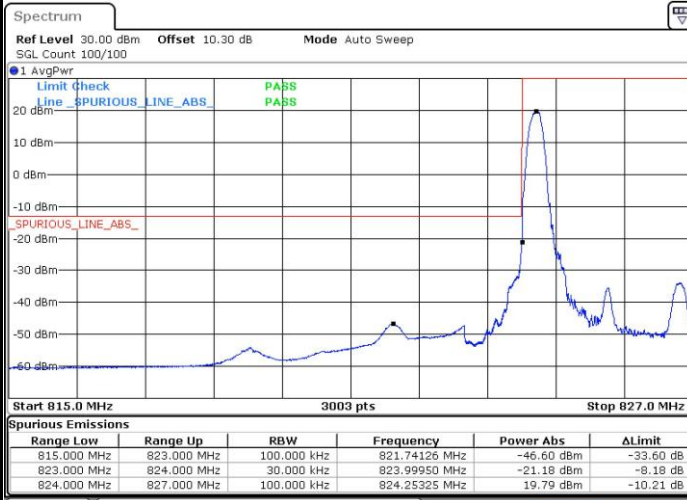
Conducted Band Edge





LTE Band 5 / 3MHz / QPSK

Lowest Band Edge / 1RB



Date: 18.MAY.2019 15:37:52

Highest Band Edge / 1 RB



Date: 18.MAY.2019 15:48:58

Lowest Band Edge / Full RB



Date: 18.MAY.2019 15:41:15

Highest Band Edge / Full RB

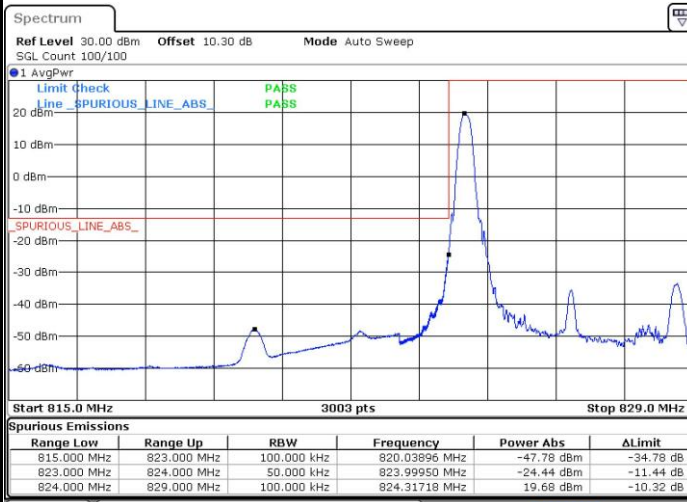


Date: 18.MAY.2019 15:52:20



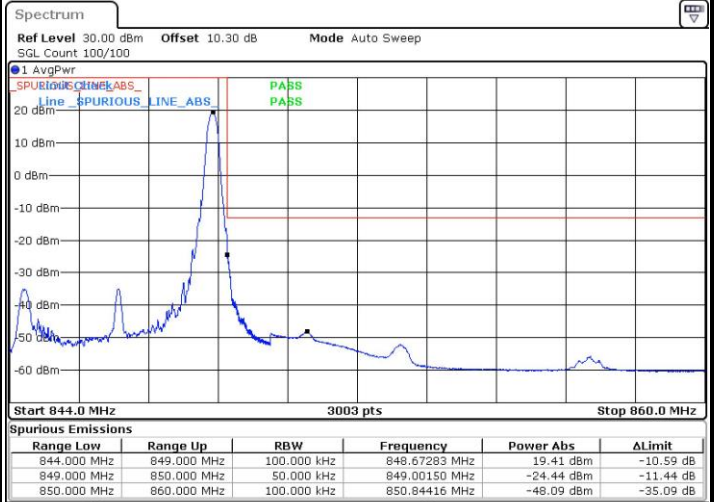
LTE Band 5 / 5MHz / QPSK

Lowest Band Edge / 1 RB



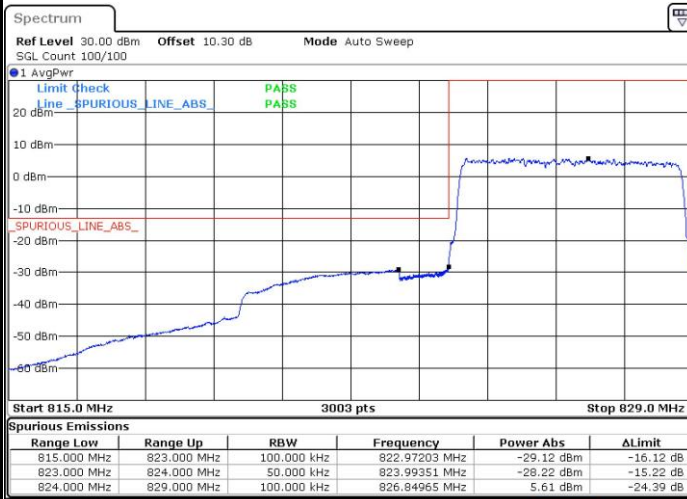
Date: 18.MAY.2019 15:57:56

Highest Band Edge / 1 RB



Date: 18.MAY.2019 16:09:01

Lowest Band Edge / Full RB



Date: 18.MAY.2019 16:01:19

Highest Band Edge / Full RB

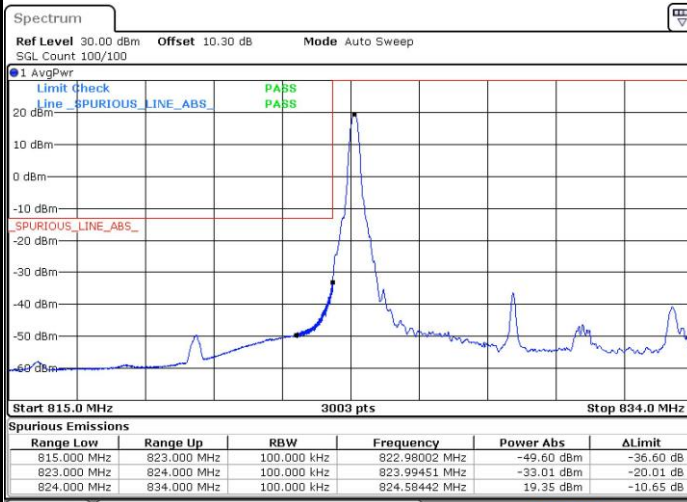


Date: 18.MAY.2019 16:12:24



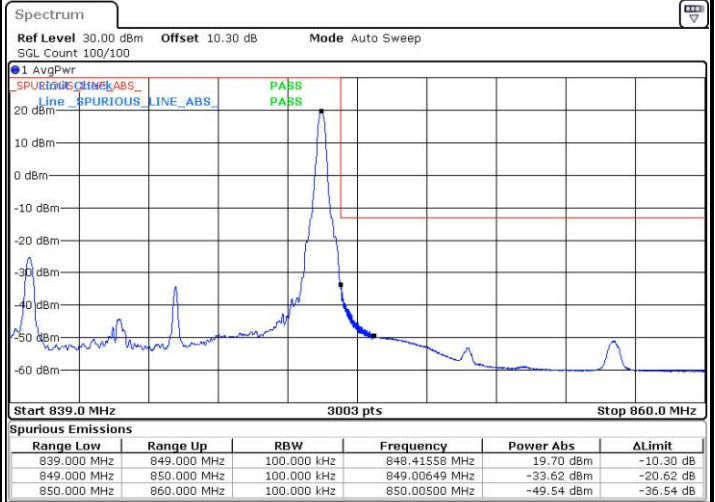
LTE Band 5 / 10MHz / QPSK

Lowest Band Edge / 1 RB



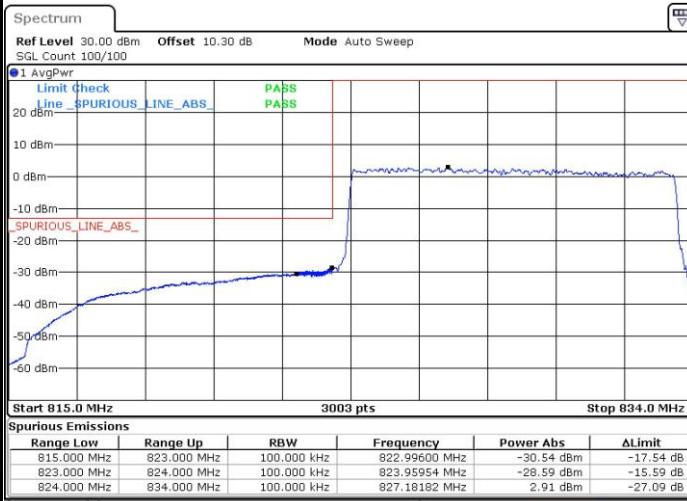
Date: 18.MAY.2019 16:17:59

Highest Band Edge / 1 RB



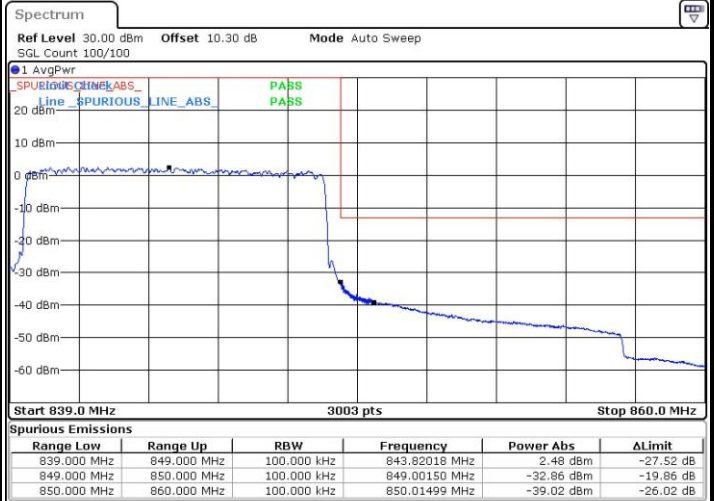
Date: 18.MAY.2019 16:29:05

Lowest Band Edge / Full RB



Date: 18.MAY.2019 16:21:22

Highest Band Edge / Full RB



Date: 18.MAY.2019 16:32:27

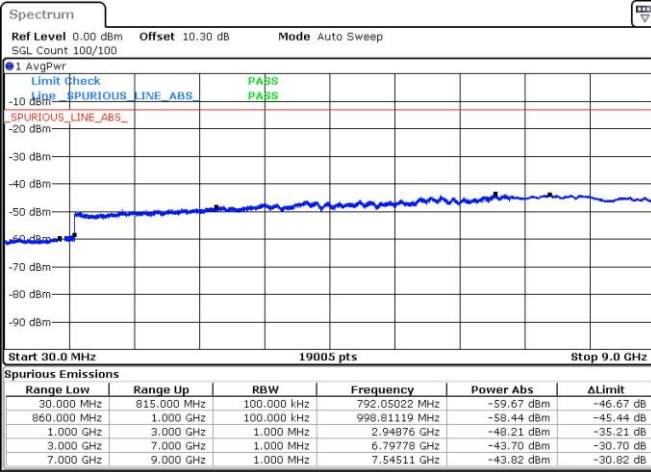


Conducted Spurious Emission

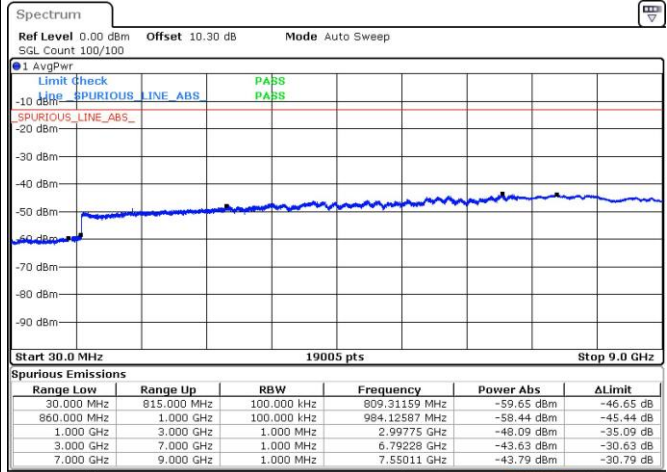
LTE Band 5 / 1.4MHz

Lowest Channel / QPSK

Highest Channel / QPSK

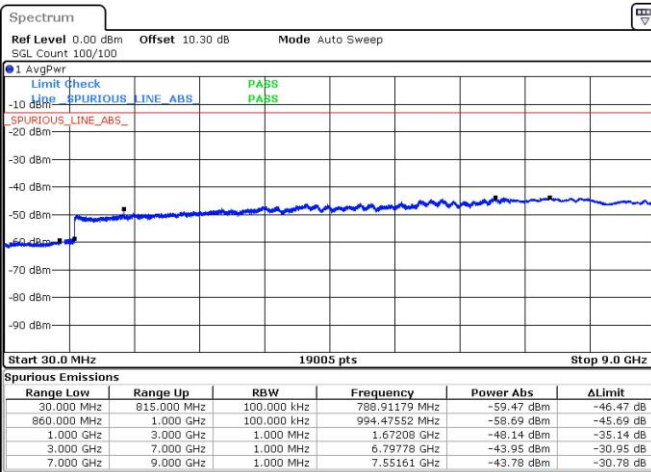


Date: 18 MAY 2019 16:43:48



Date: 18 MAY 2019 16:54:54

Middle Channel / QPSK



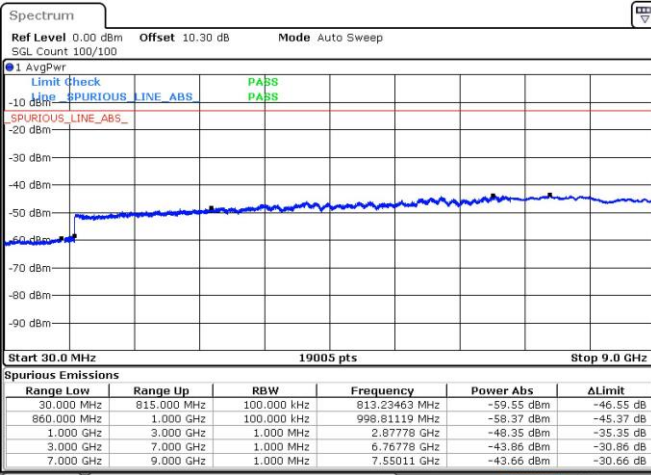
Date: 18 MAY 2019 16:45:58



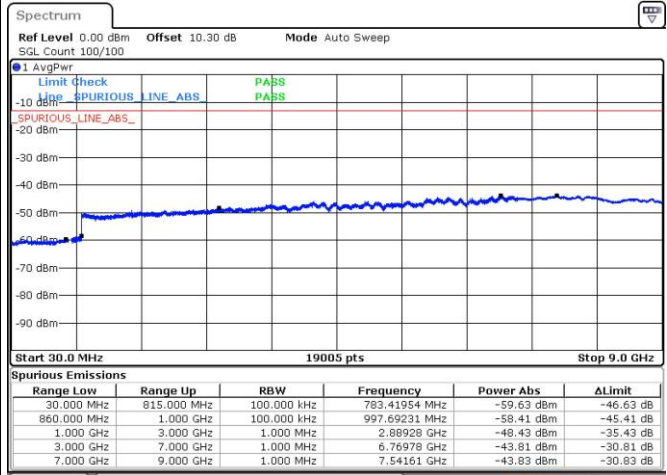
LTE Band 5 / 3MHz

Lowest Channel / QPSK

Highest Channel / QPSK

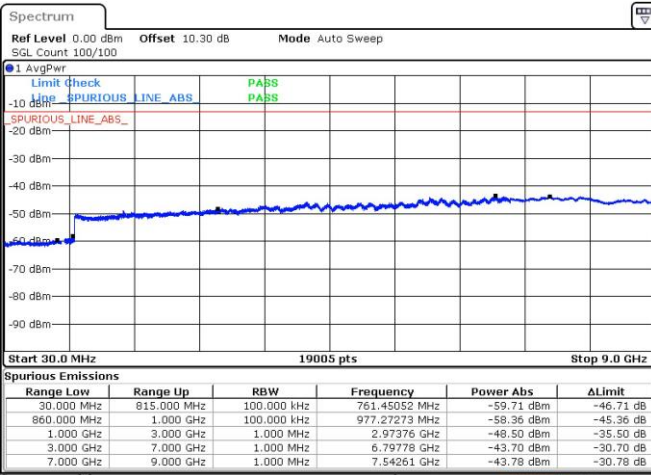


Date: 18 MAY 2019 15:43:38



Date: 18 MAY 2019 15:54:43

Middle Channel / QPSK



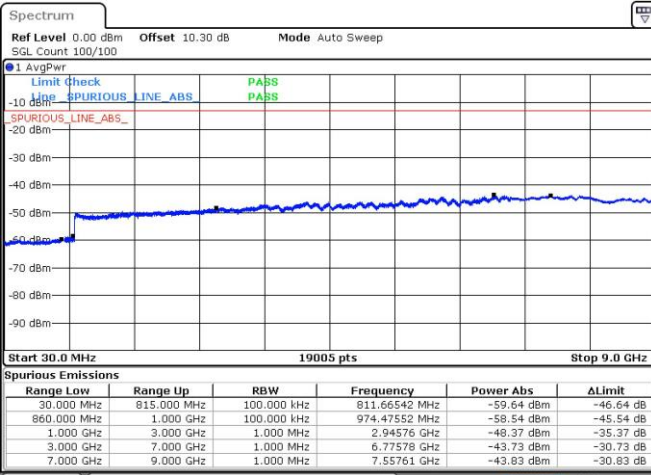
Date: 18 MAY 2019 15:45:47



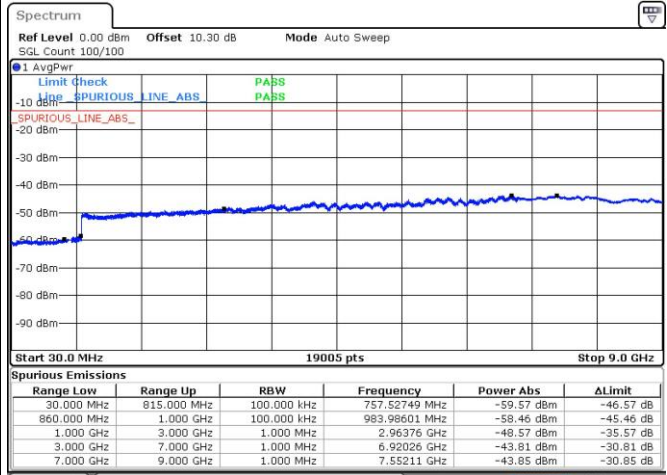
LTE Band 5 / 5MHz

Lowest Channel / QPSK

Highest Channel / QPSK

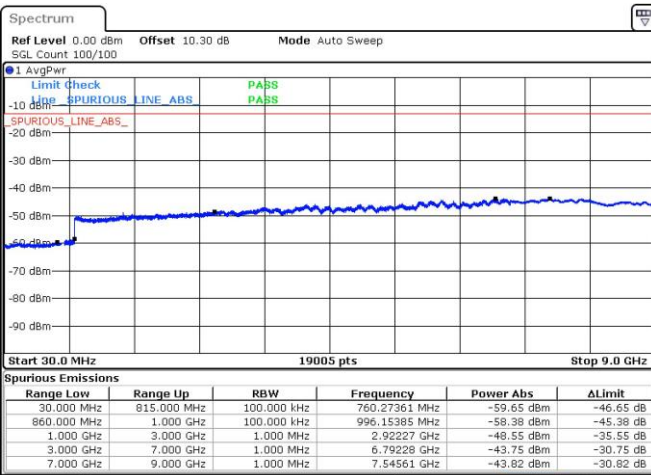


Date: 18 MAY 2019 16:03:41



Date: 18 MAY 2019 16:14:47

Middle Channel / QPSK



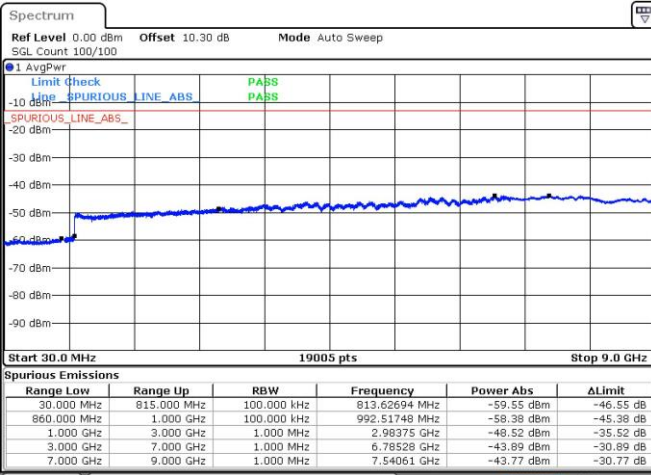
Date: 18 MAY 2019 16:05:51



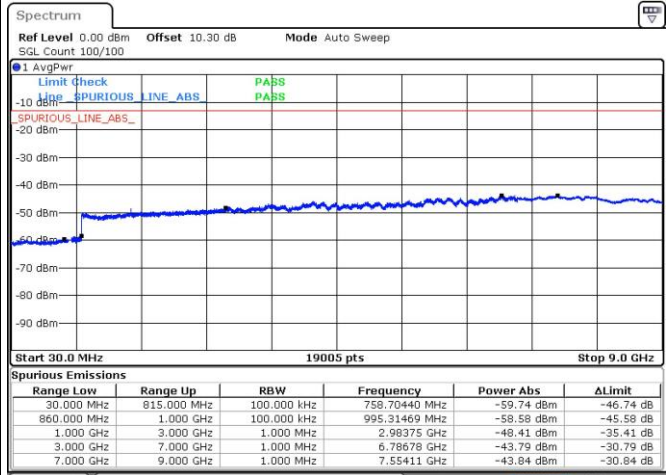
LTE Band 5 / 10MHz

Lowest Channel / QPSK

Highest Channel / QPSK

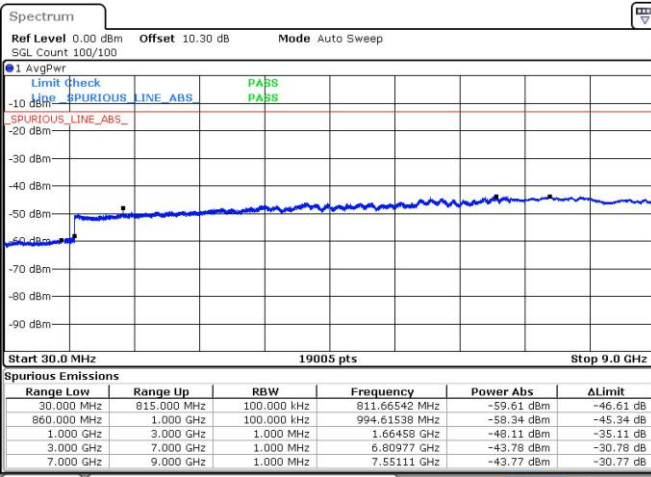


Date: 18 MAY 2019 16:23:45



Date: 18 MAY 2019 16:34:50

Middle Channel / QPSK



Date: 18 MAY 2019 16:25:54



Frequency Stability

Test Conditions		LTE Band 5 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	2.5ppm
		Deviation (ppm)	Result
50	Normal Voltage	0.0007	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0001	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0019	
0	Normal Voltage	0.0022	
-10	Normal Voltage	0.0025	
-20	Normal Voltage	0.0022	
-30	Normal Voltage	0.0037	
20	Maximum Voltage	0.0014	
20	Normal Voltage	0.0008	
20	Battery End Point	0.0006	

Note:

- 1. Normal Voltage =14.0 V. ; Battery End Point (BEP) =14.0 V. ; Maximum Voltage =16.0 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 7

Peak-to-Average Ratio

Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.67	4.93	-	-	PASS
Middle CH	4.41	4.93	-	-	
Highest CH	4.78	4.81	-	-	