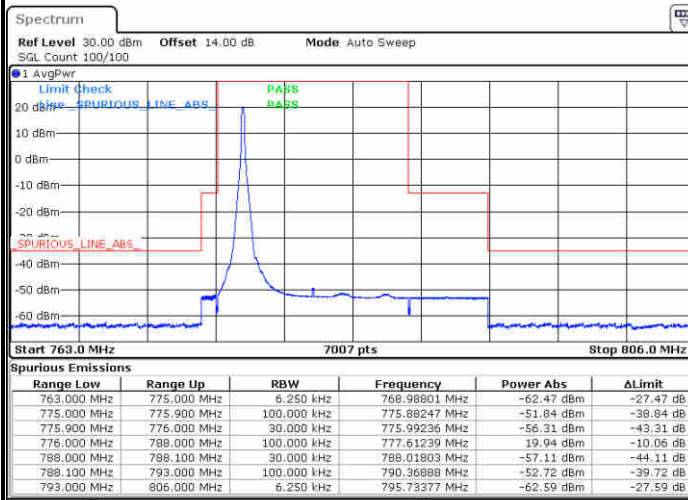




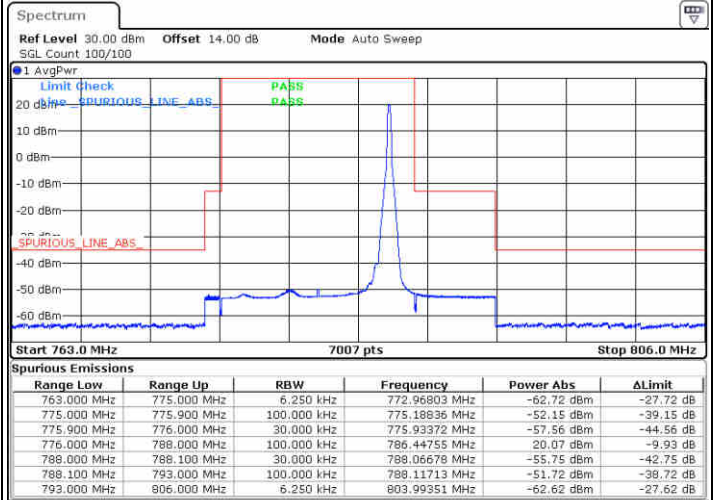
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



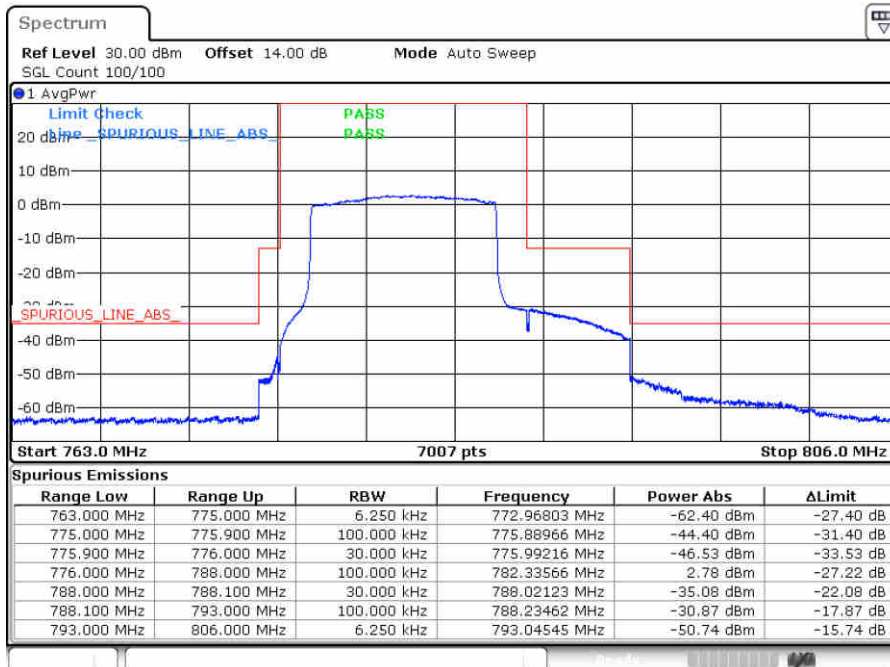
Date: 17.DEC.2019 11:46:15

Highest Band Edge / 1 RB



Date: 17.DEC.2019 11:47:55

Band Edge / Full RB



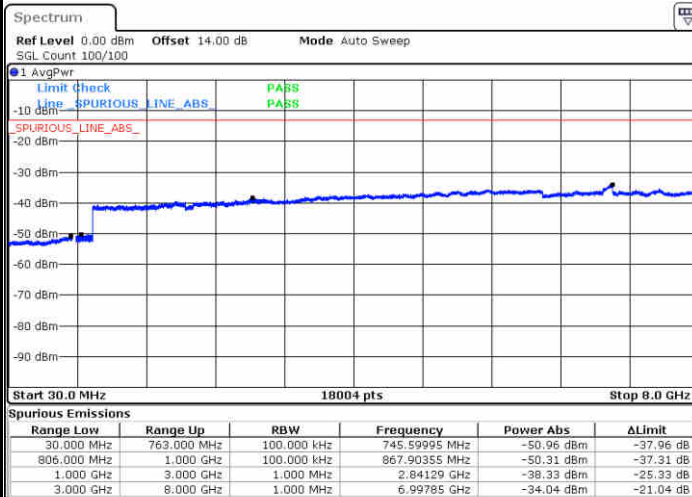
Date: 17.DEC.2019 11:44:35



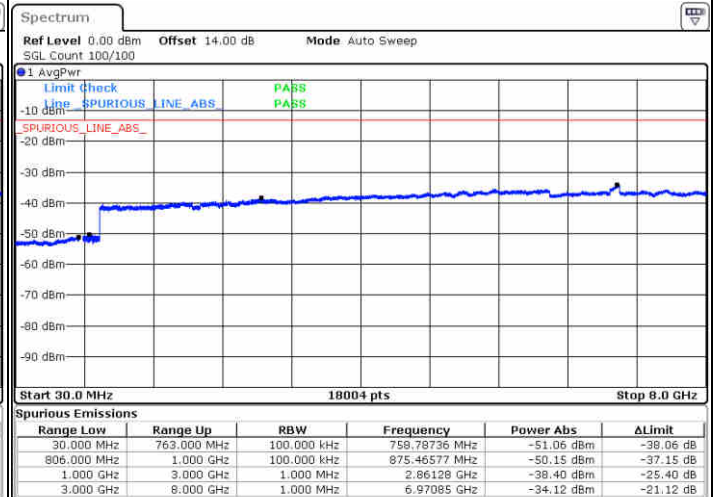
Conducted Spurious Emission

LTE Band 13 / 5MHz

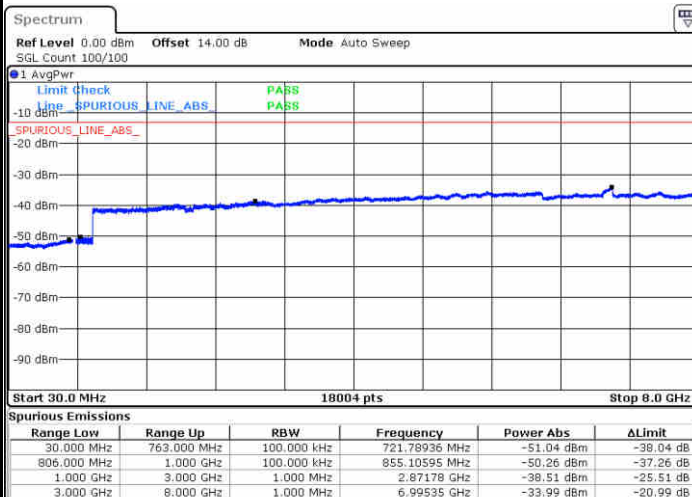
Lowest Channel / QPSK



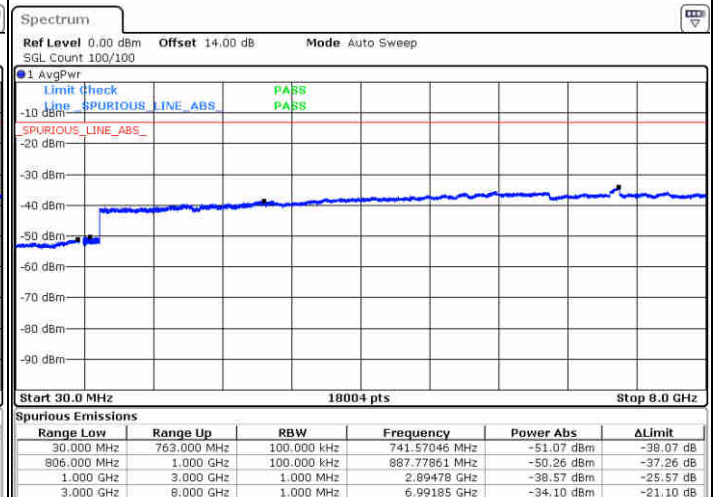
Lowest Channel / 16QAM



Middle Channel / QPSK



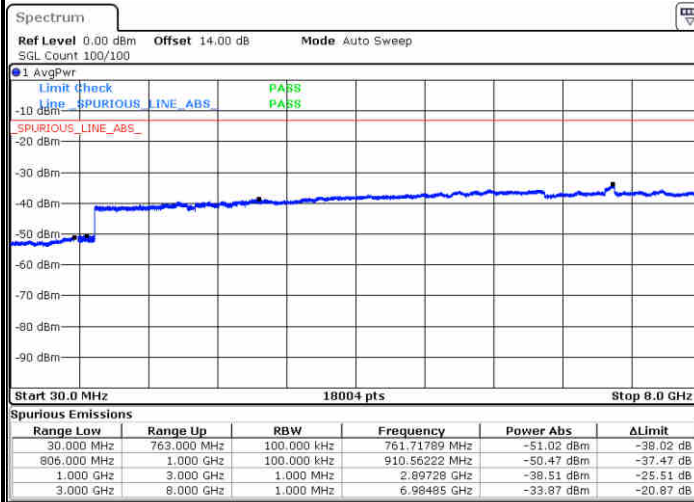
Middle Channel / 16QAM





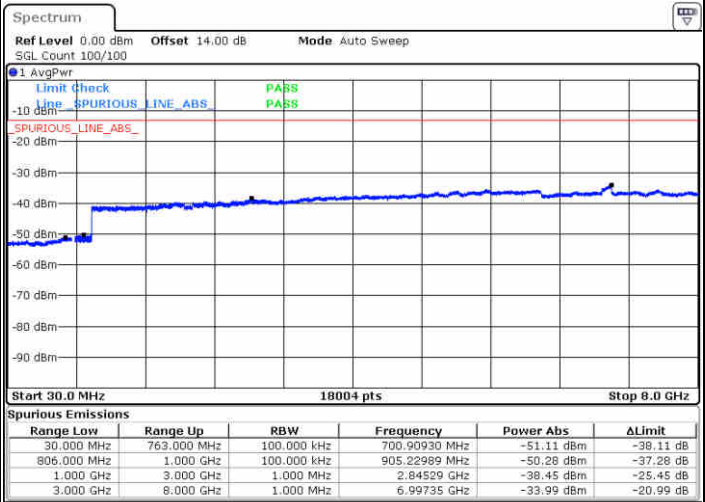
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 17.DEC.2019 11:20:02

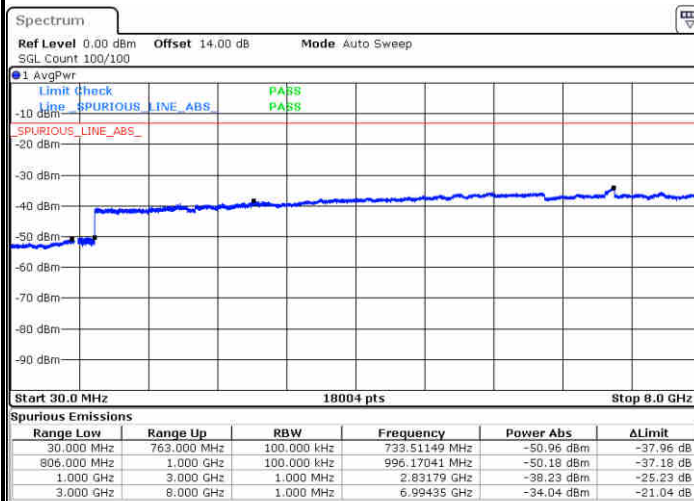
Highest Channel / 16QAM



Date: 17.DEC.2019 11:20:41

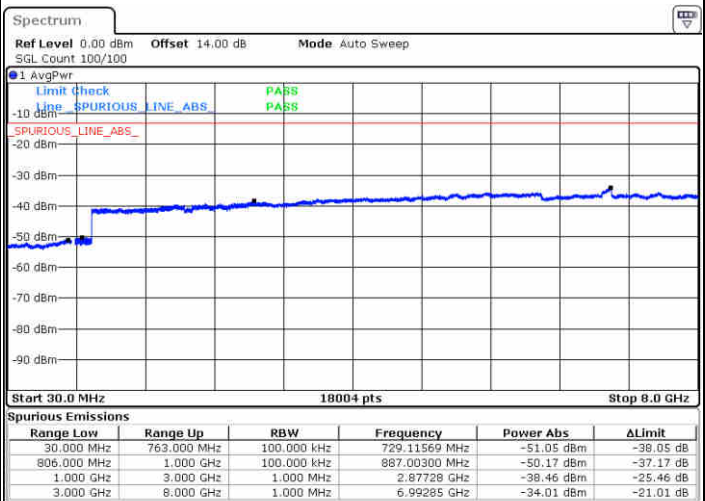
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 17.DEC.2019 11:42:33

Middle Channel / 16QAM

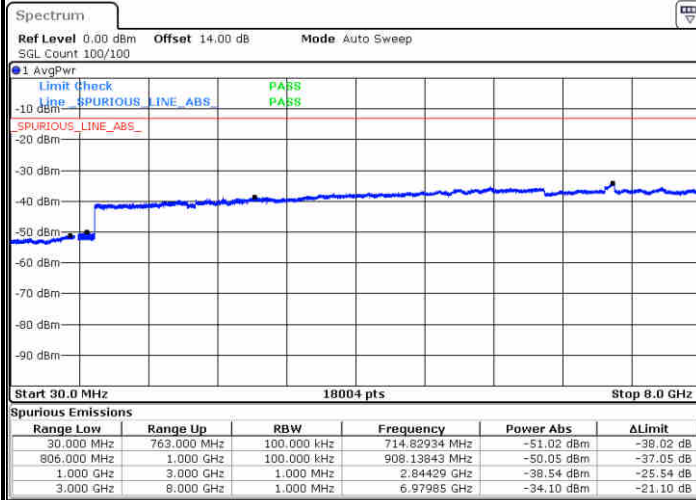


Date: 17.DEC.2019 11:41:53



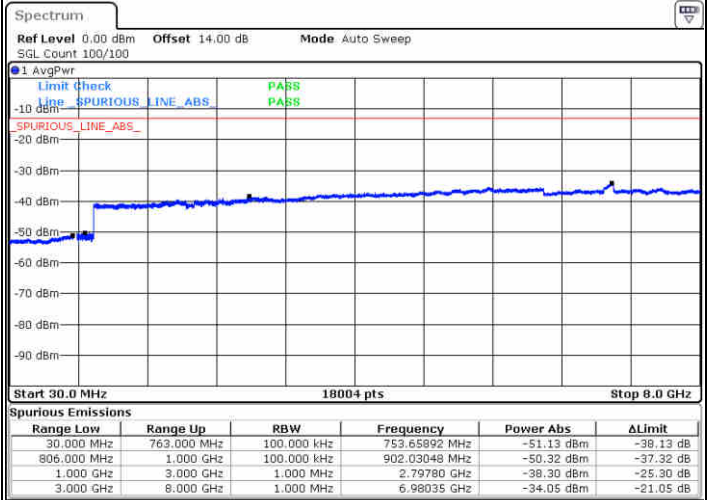
LTE Band 13 / 5MHz

Lowest Channel / 64QAM



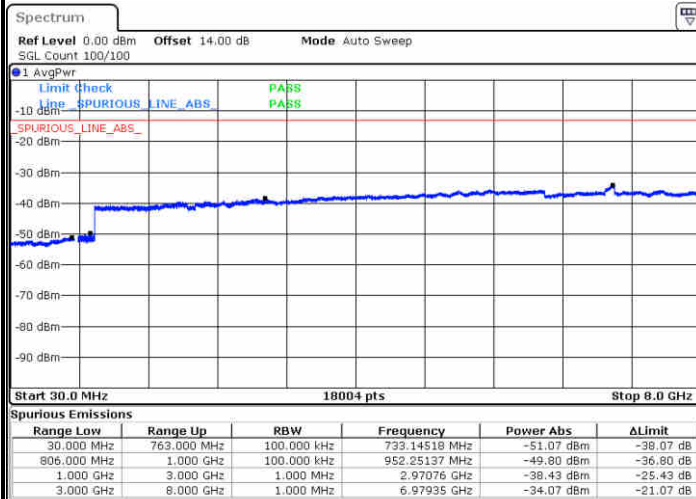
Date: 17.DEC.2019 11:25:04

Middle Channel / 64QAM

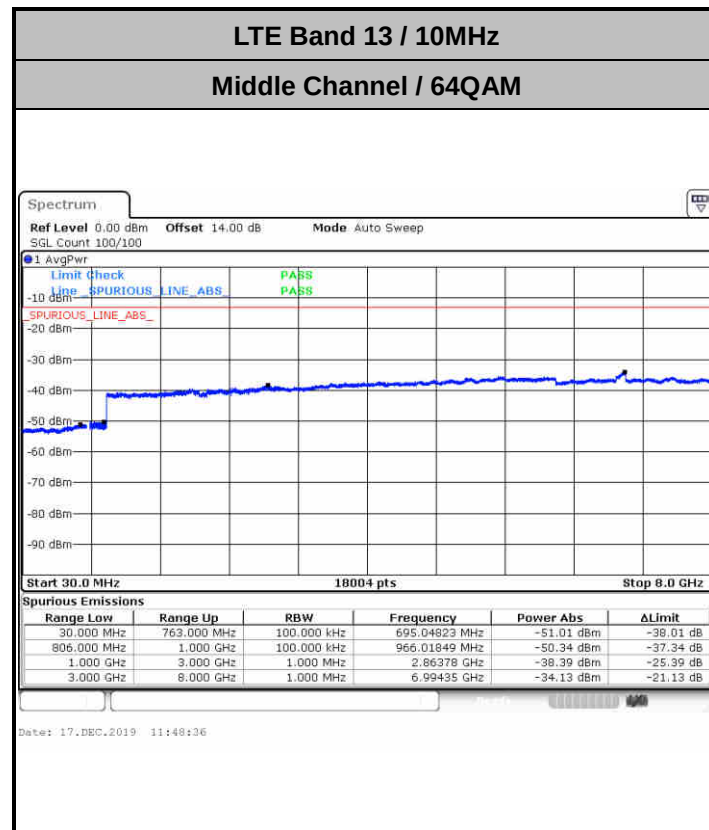


Date: 17.DEC.2019 11:25:44

Highest Channel / 64QAM



Date: 17.DEC.2019 11:30:28



**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	0.0072	PASS
40	Normal Voltage	0.0096	
30	Normal Voltage	0.0096	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0068	
0	Normal Voltage	0.0053	
-10	Normal Voltage	0.0022	
-20	Normal Voltage	0.0020	
-30	Normal Voltage	0.0007	
20	Maximum Voltage	0.0097	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0011	

Note:

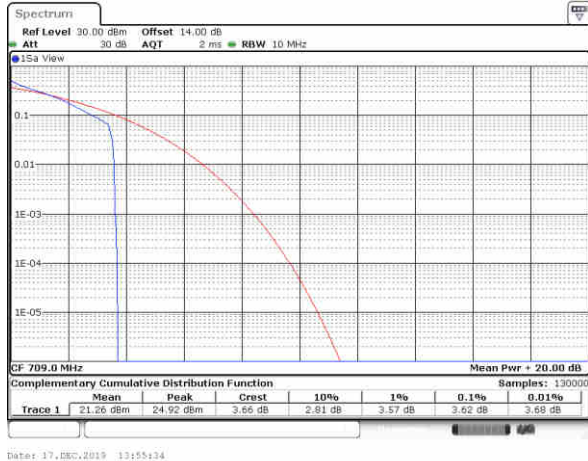
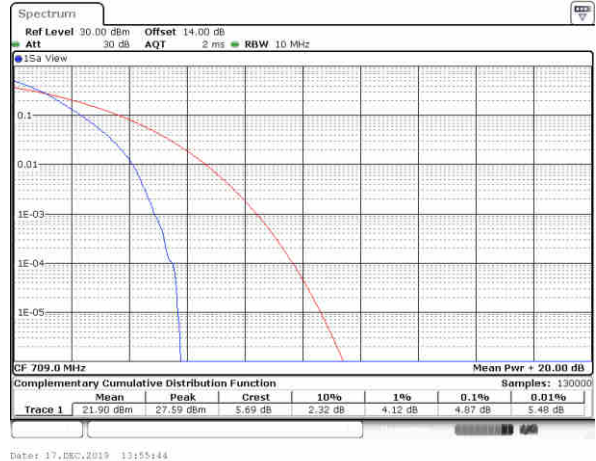
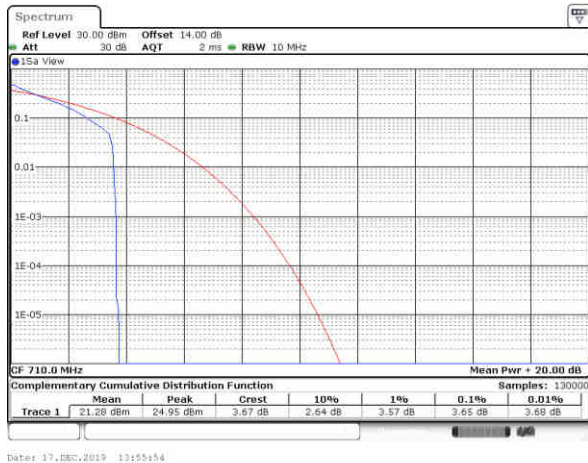
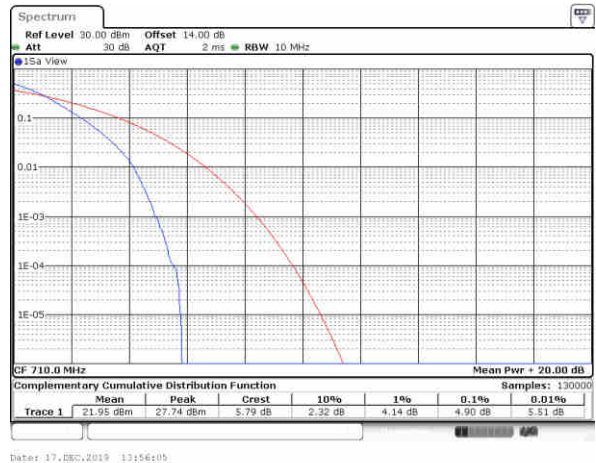
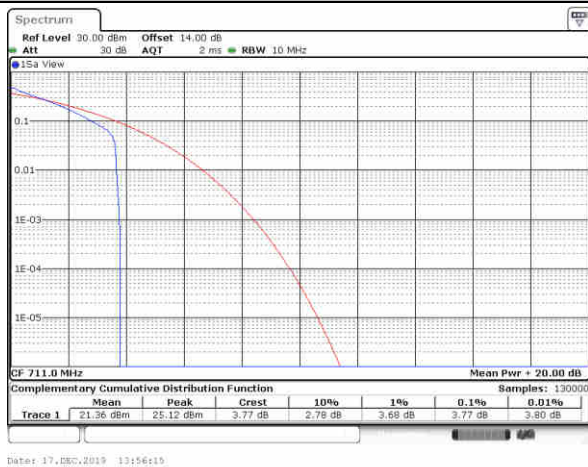
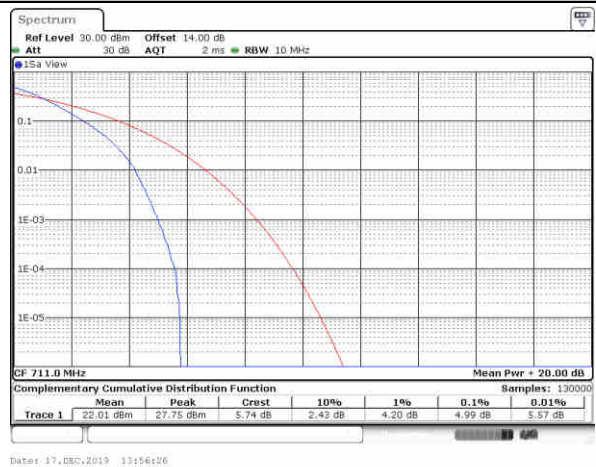
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 17

Peak-to-Average Ratio

Mode	LTE Band 17 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.62	4.87	5.16	5.83	PASS
Middle CH	3.65	4.90	5.19	5.80	
Highest CH	3.77	4.99	5.36	5.86	
Mode	LTE Band 17 / 10MHz				
Mod.	64QAM		-		Limit: 13dB
RB Size	1RB	Full RB	-	-	Result
Lowest CH	5.77	5.83	-	-	PASS
Middle CH	5.54	5.83	-	-	
Highest CH	5.57	5.83	-	-	

LTE Band 17 / 10MHz / QPSK
Lowest Channel / 1RB

Lowest Channel / Full RB

Middle Channel / 1RB

Middle Channel / Full RB

Highest Channel / 1RB

Highest Channel / Full RB




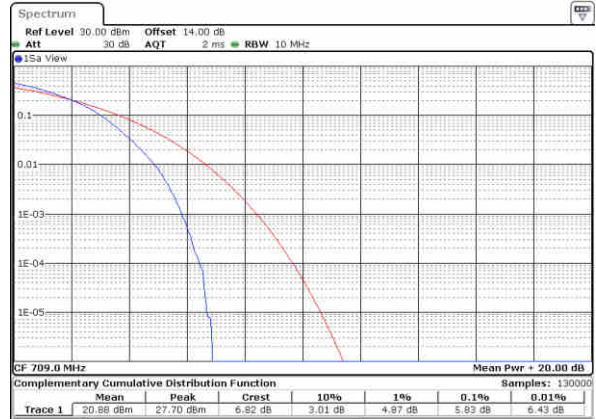
LTE Band 17 / 10MHz / 16QAM

Lowest Channel / 1RB



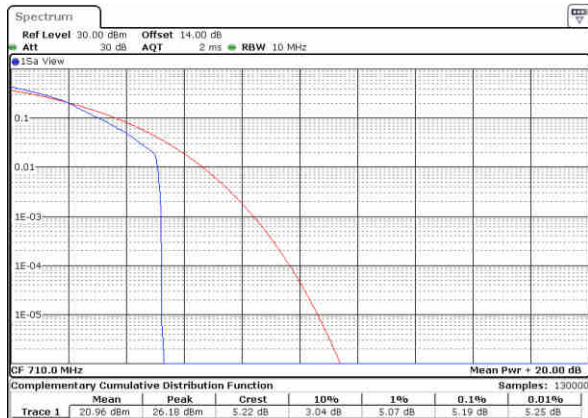
Date: 17, DEC, 2019 13:54:28

Lowest Channel / Full RB



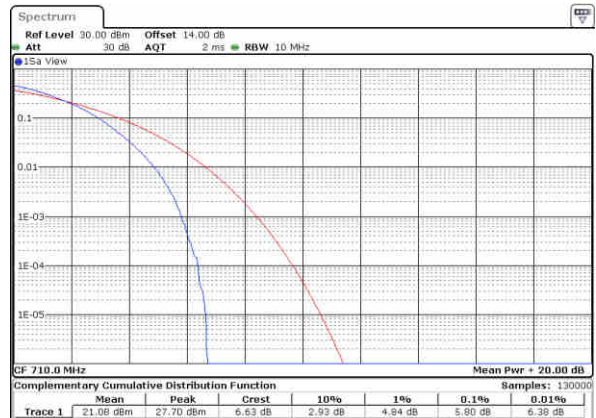
Date: 17, DEC, 2019 13:54:39

Middle Channel / 1RB



Date: 17, DEC, 2019 13:54:50

Middle Channel / Full RB



Date: 17, DEC, 2019 13:55:01

Highest Channel / 1RB

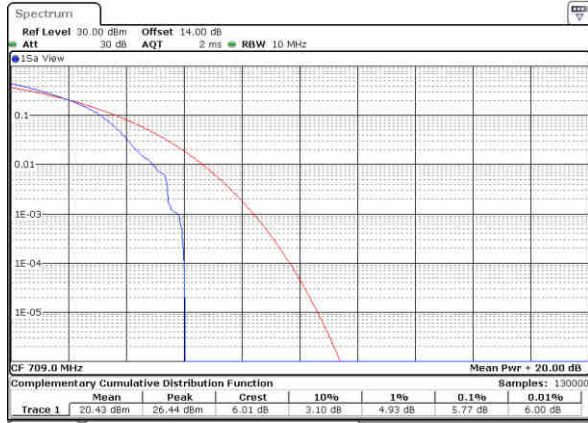


Date: 17, DEC, 2019 13:55:12

Highest Channel / Full RB



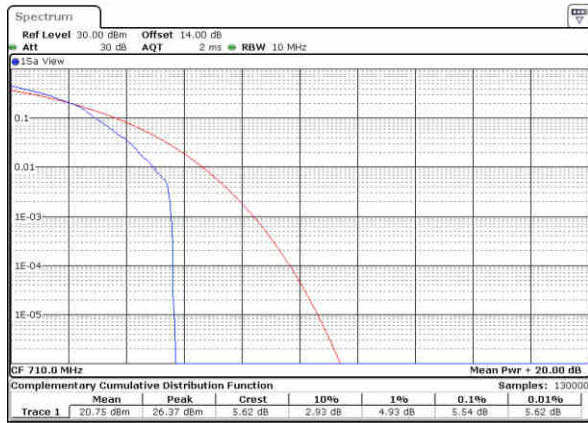
Date: 17, DEC, 2019 13:55:22

LTE Band 17 / 10MHz / 64QAM
Lowest Channel / 1RB


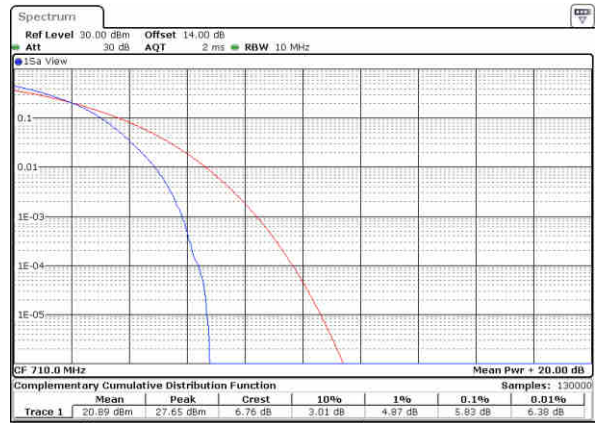
Date: 17, DEC, 2019 13:56:36

Lowest Channel / Full RB

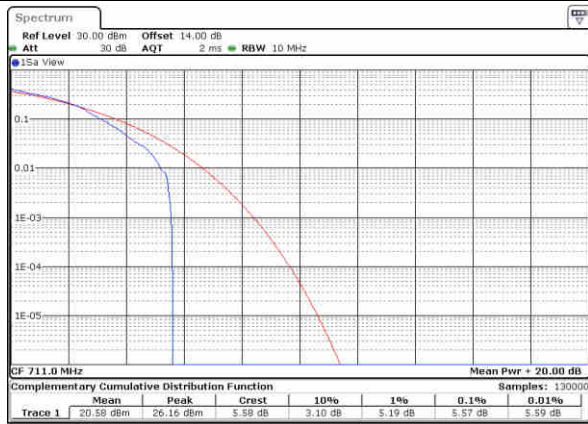

Date: 17, DEC, 2019 13:56:48

Middle Channel / 1RB


Date: 17, DEC, 2019 13:56:58

Middle Channel / Full RB


Date: 17, DEC, 2019 13:57:08

Highest Channel / 1RB


Date: 17, DEC, 2019 13:57:18

Highest Channel / Full RB


Date: 17, DEC, 2019 13:57:28

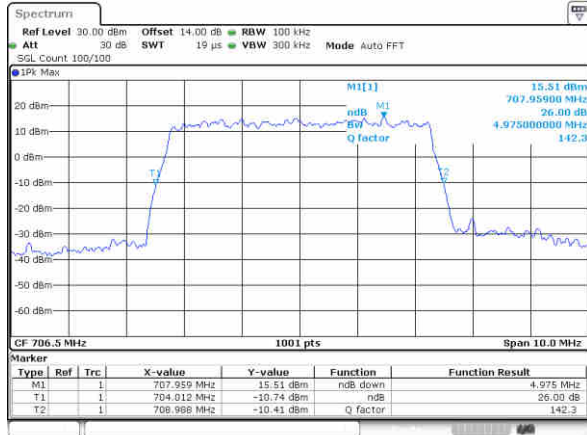
**26dB Bandwidth**

Mode	LTE Band 17 : 26dB BW(MHz)			
BW	5MHz		10MHz	
Mod.	QPSK	16QAM	QPSK	16QAM
Lowest CH	4.98	4.87	9.73	9.93
Middle CH	4.85	4.83	9.73	9.63
Highest CH	4.84	4.83	9.71	9.81
Mode	LTE Band 17 : 26dB BW(MHz)			
BW	5MHz		10MHz	
Mod.	64QAM		64QAM	
Lowest CH	4.87		9.87	
Middle CH	4.88		9.83	
Highest CH	4.83		9.77	

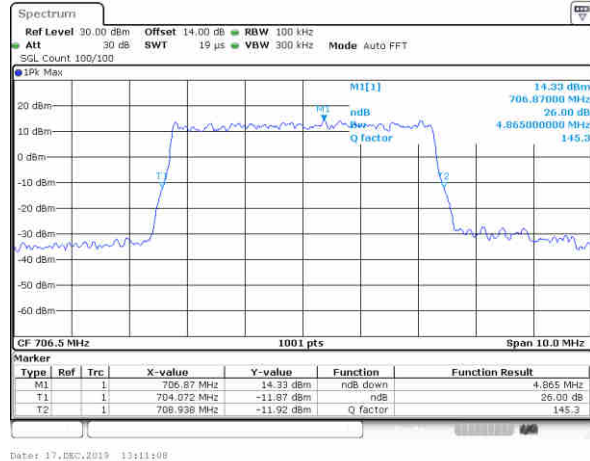


LTE Band 17

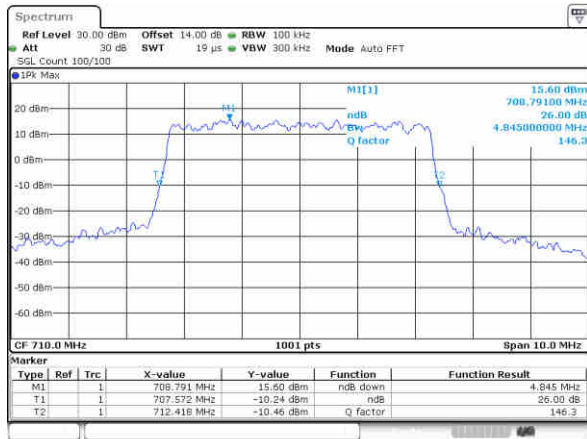
Lowest Channel / 5MHz / QPSK



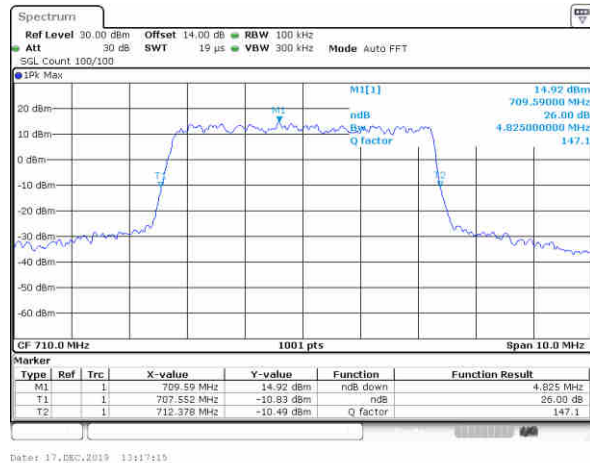
Lowest Channel / 5MHz / 16QAM



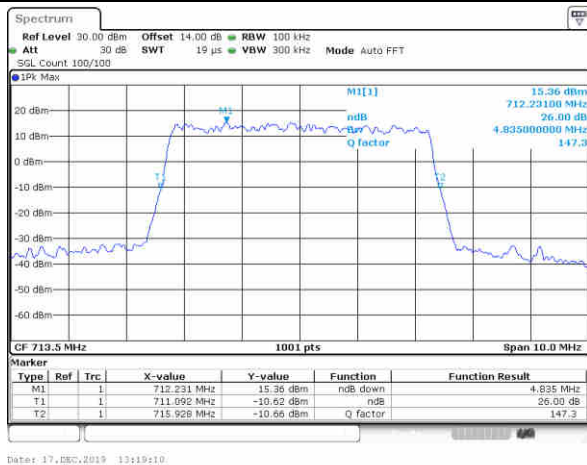
Middle Channel / 5MHz / QPSK



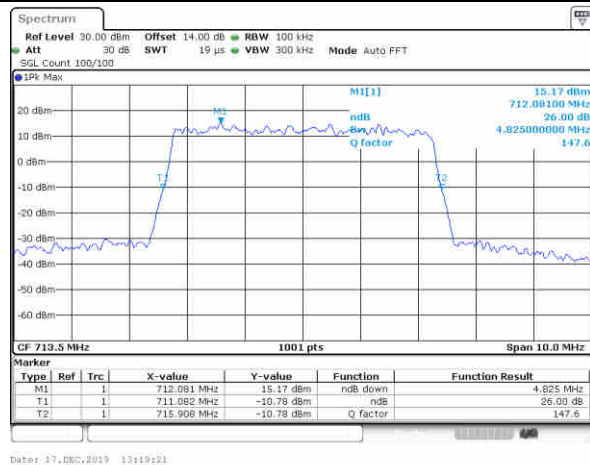
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



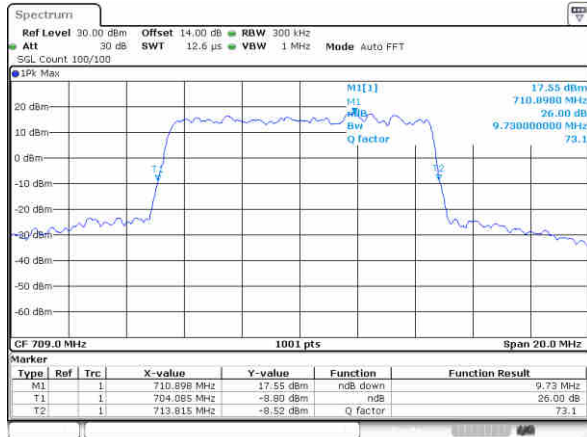
Highest Channel / 5MHz / 16QAM



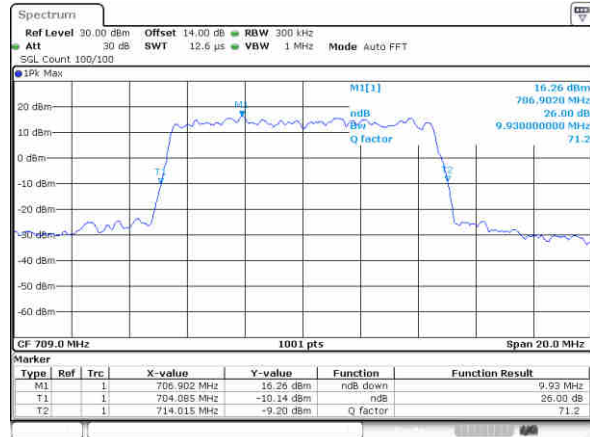


LTE Band 17

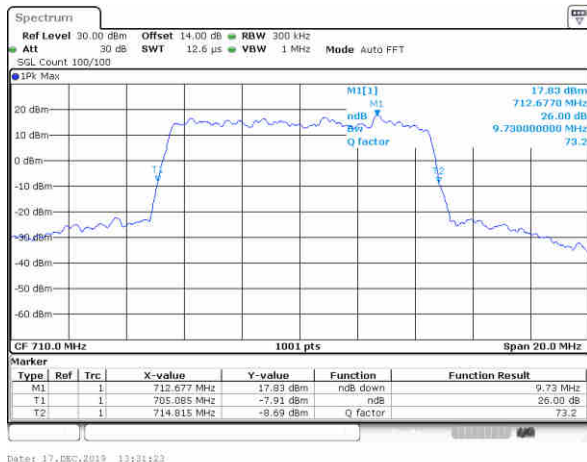
Lowest Channel / 10MHz / QPSK



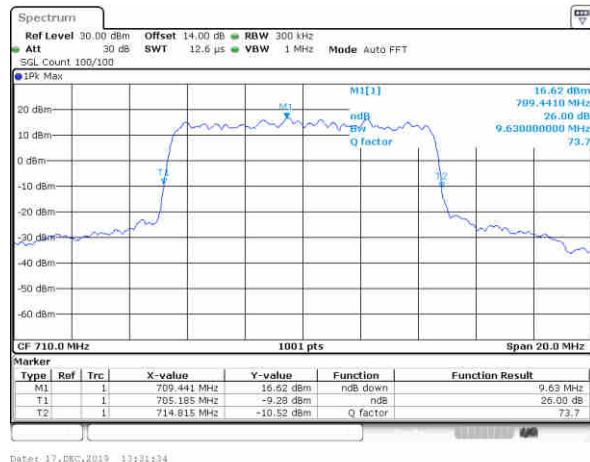
Lowest Channel / 10MHz / 16QAM



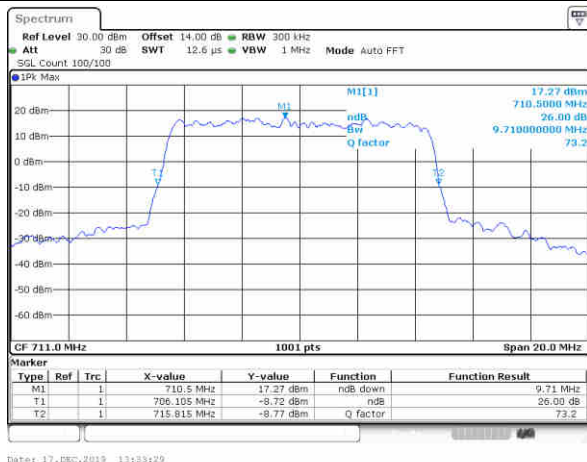
Middle Channel / 10MHz / QPSK



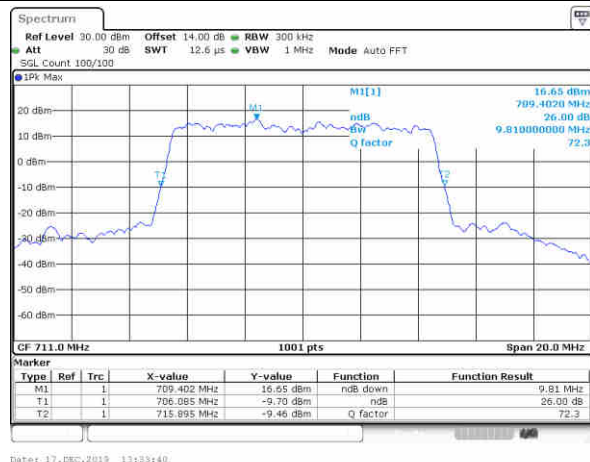
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



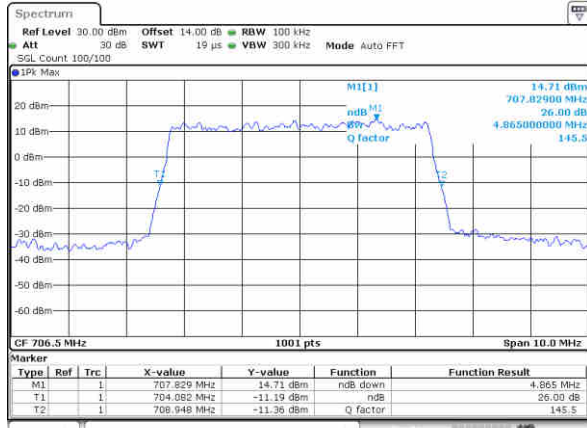
Highest Channel / 10MHz / 16QAM





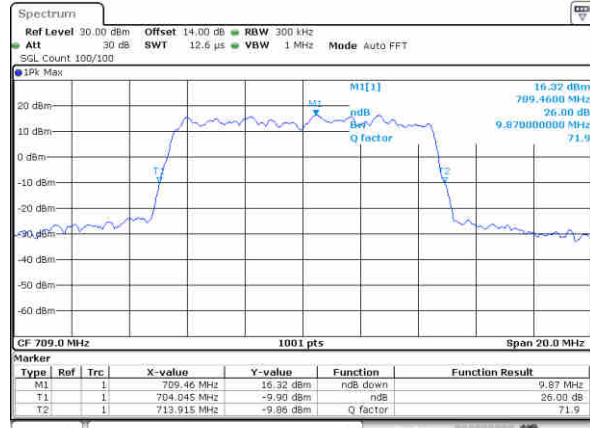
LTE Band 17

Lowest Channel / 5MHz / 64QAM



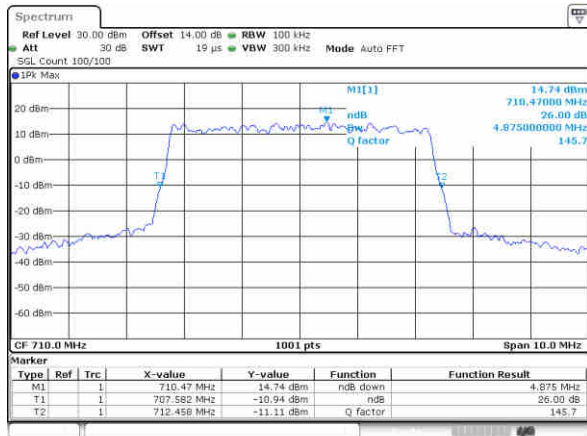
Date: 17, DEC, 2019 13:39:25

Lowest Channel / 10MHz / 64QAM



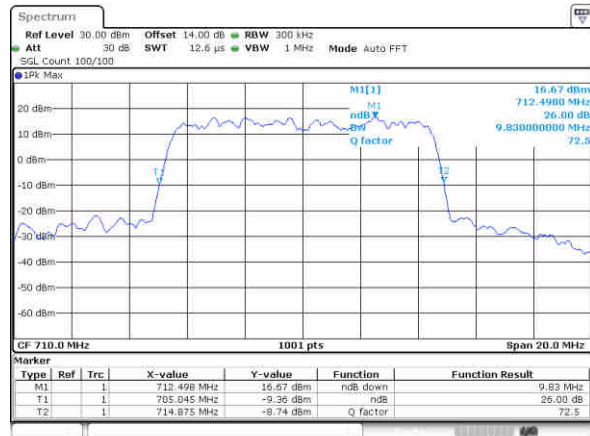
Date: 17, DEC, 2019 13:46:34

Middle Channel / 5MHz / 64QAM



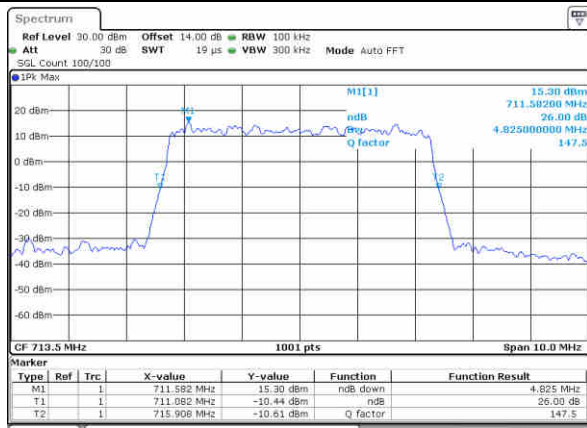
Date: 17, DEC, 2019 13:42:28

Middle Channel / 10MHz / 64QAM



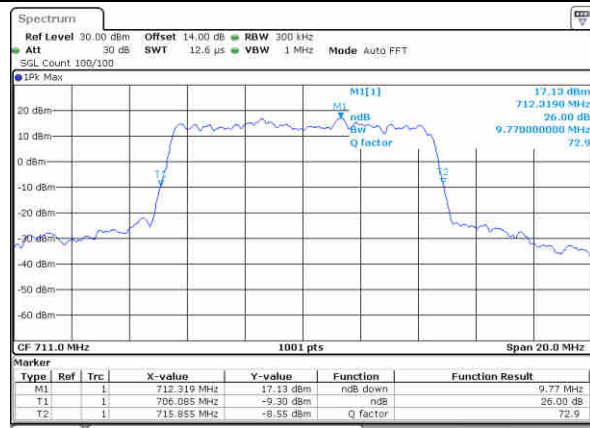
Date: 17, DEC, 2019 13:49:38

Highest Channel / 5MHz / 64QAM



Date: 17, DEC, 2019 13:43:31

Highest Channel / 10MHz / 64QAM



Date: 17, DEC, 2019 13:50:41

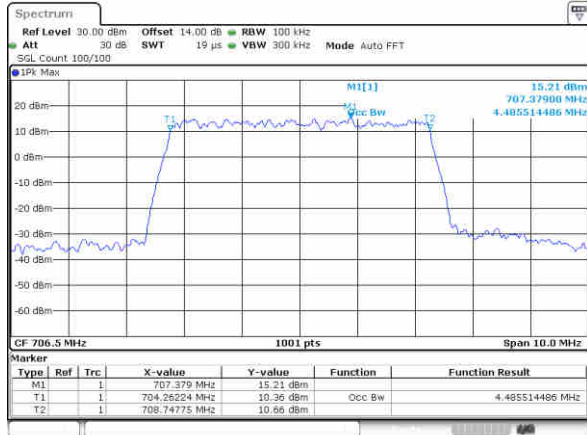
**Occupied Bandwidth**

Mode	LTE Band 17 : 99%OBW(MHz)			
BW	5MHz		10MHz	
Mod.	QPSK	16QAM	QPSK	16QAM
Lowest CH	4.49	4.50	9.03	9.01
Middle CH	4.50	4.49	8.99	9.03
Highest CH	4.49	4.51	8.99	8.99
Mode	LTE Band 17 : 99%OBW(MHz)			
BW	5MHz		10MHz	
Mod.	64QAM		64QAM	
Lowest CH	4.51		8.99	
Middle CH	4.50		8.93	
Highest CH	4.51		8.99	

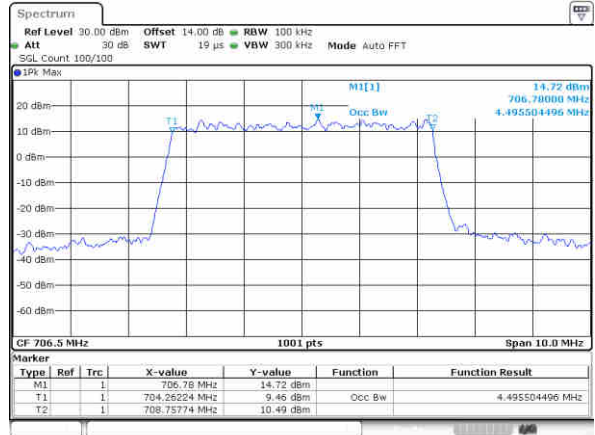


LTE Band 17

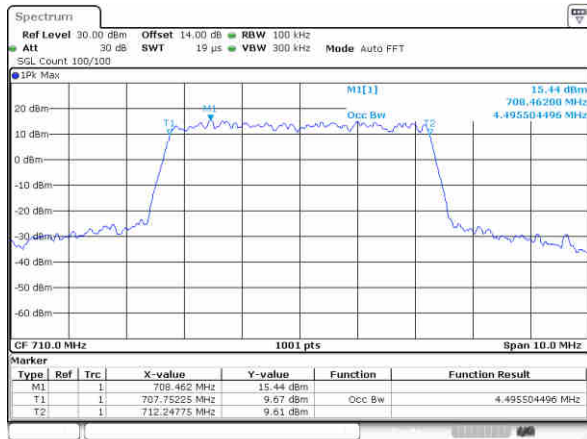
Lowest Channel / 5MHz / QPSK



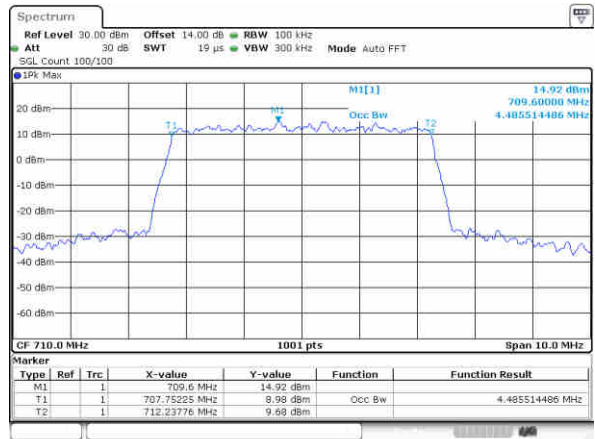
Lowest Channel / 5MHz / 16QAM



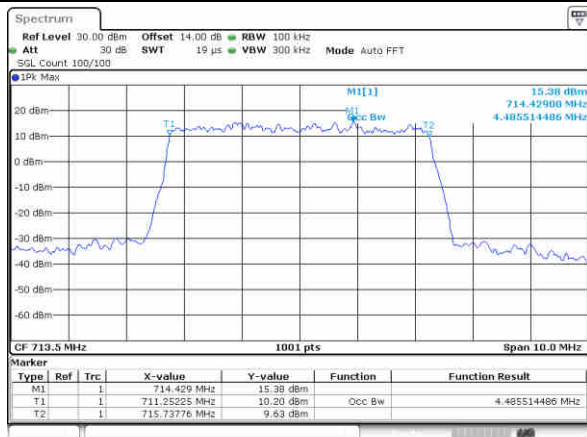
Middle Channel / 5MHz / QPSK



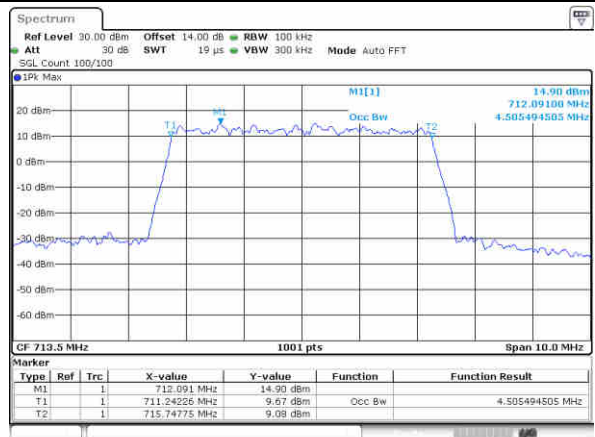
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



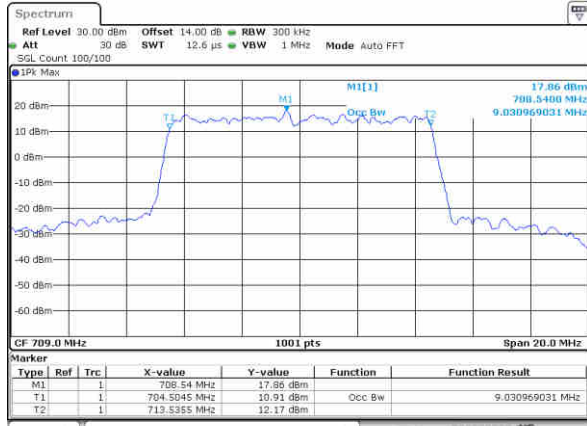
Highest Channel / 5MHz / 16QAM





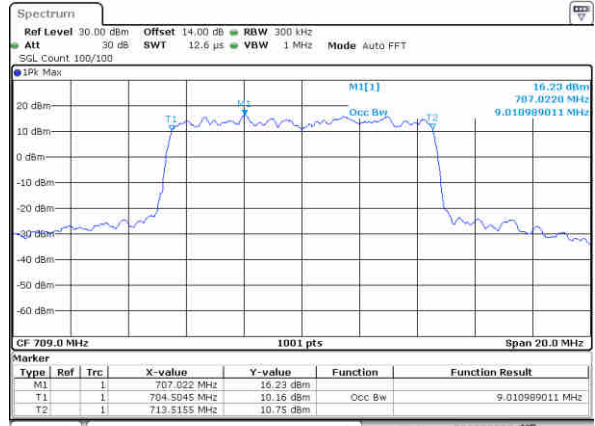
LTE Band 17

Lowest Channel / 10MHz / QPSK



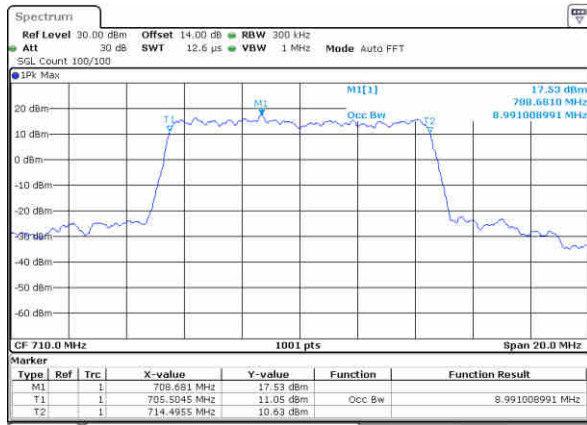
Date: 17, DEC, 2019 13:24:54

Lowest Channel / 10MHz / 16QAM



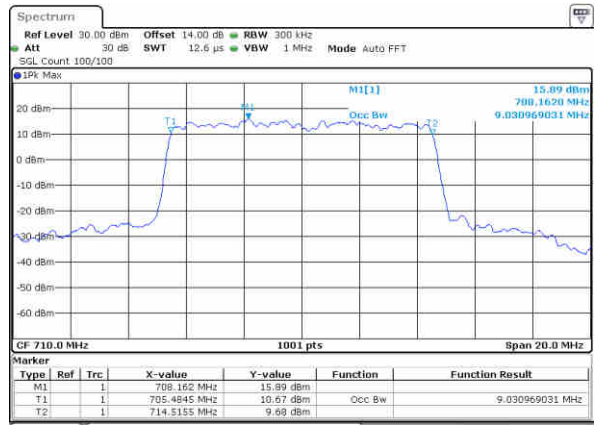
Date: 17, DEC, 2019 13:25:05

Middle Channel / 10MHz / QPSK



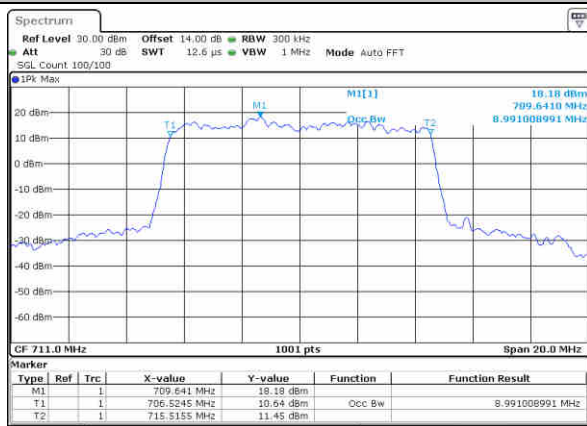
Date: 17, DEC, 2019 13:34:01

Middle Channel / 10MHz / 16QAM



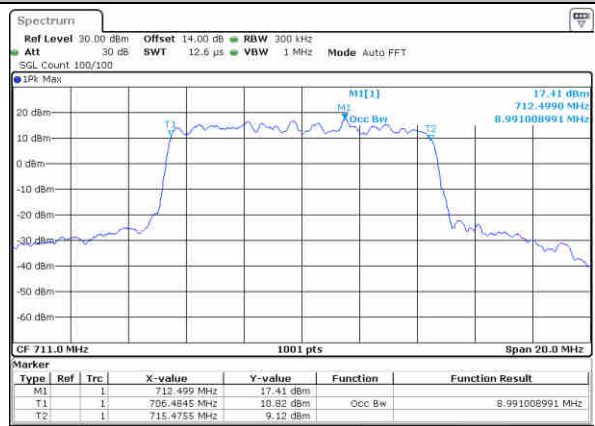
Date: 17, DEC, 2019 13:34:12

Highest Channel / 10MHz / QPSK



Date: 17, DEC, 2019 13:35:07

Highest Channel / 10MHz / 16QAM

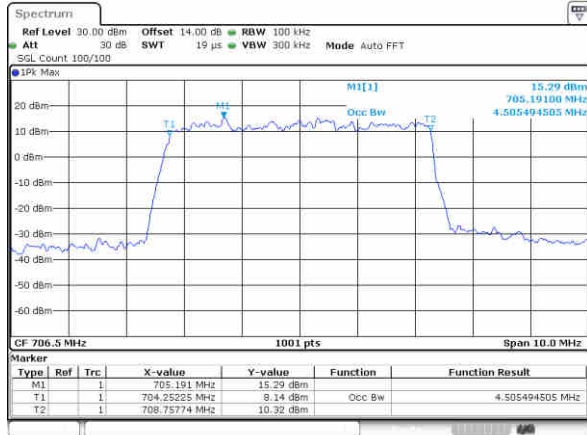


Date: 17, DEC, 2019 13:35:19

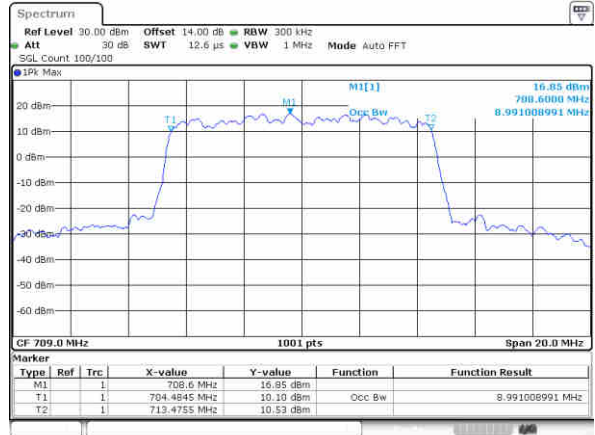


LTE Band 17

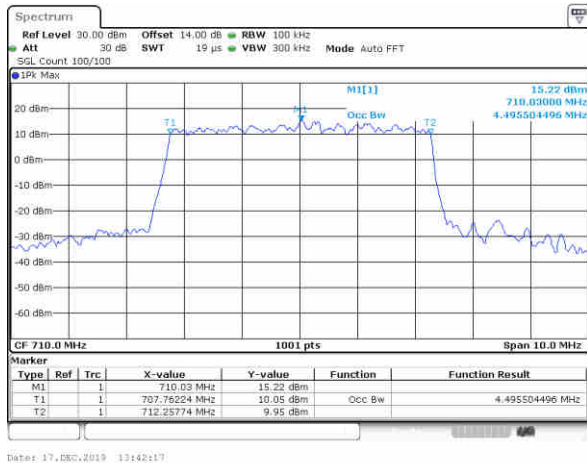
Lowest Channel / 5MHz / 64QAM



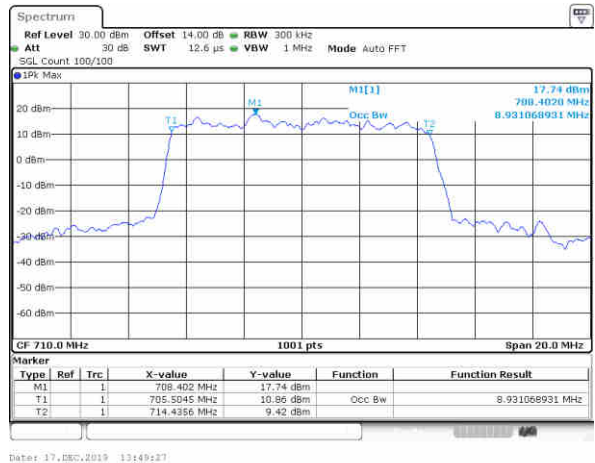
Lowest Channel / 10MHz / 64QAM



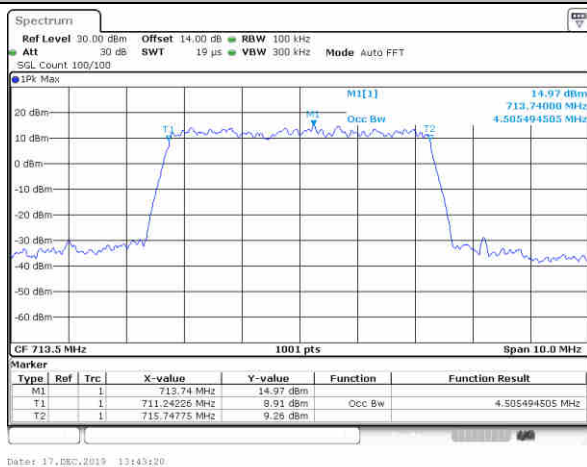
Middle Channel / 5MHz / 64QAM



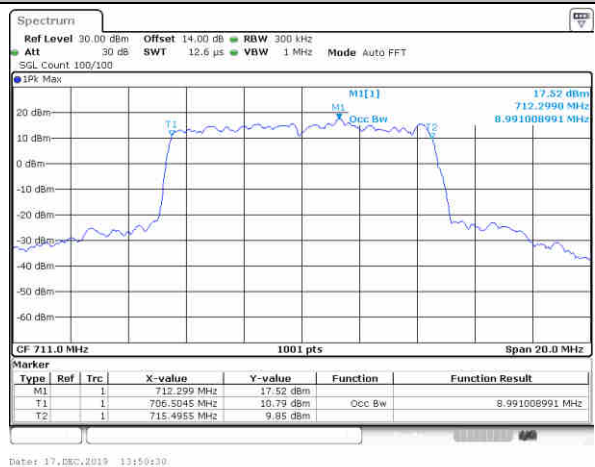
Middle Channel / 10MHz / 64QAM

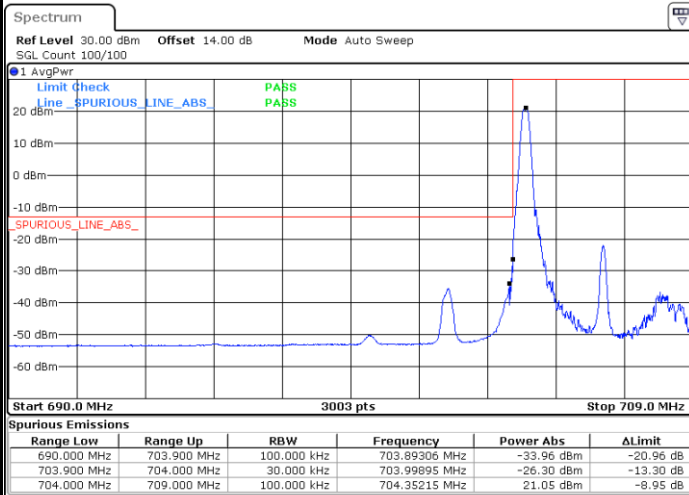
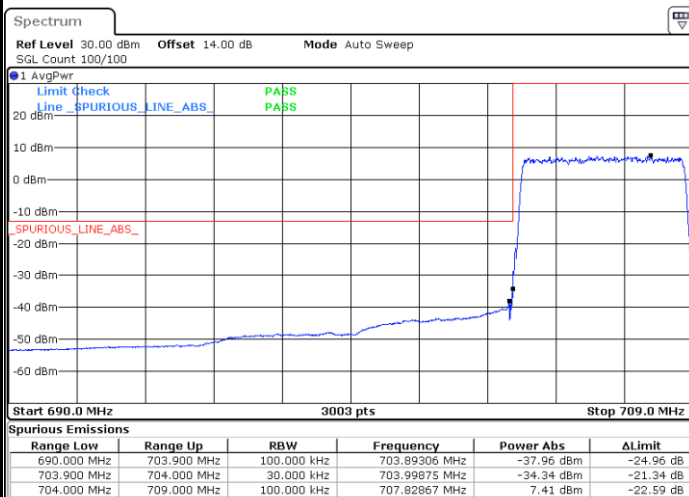
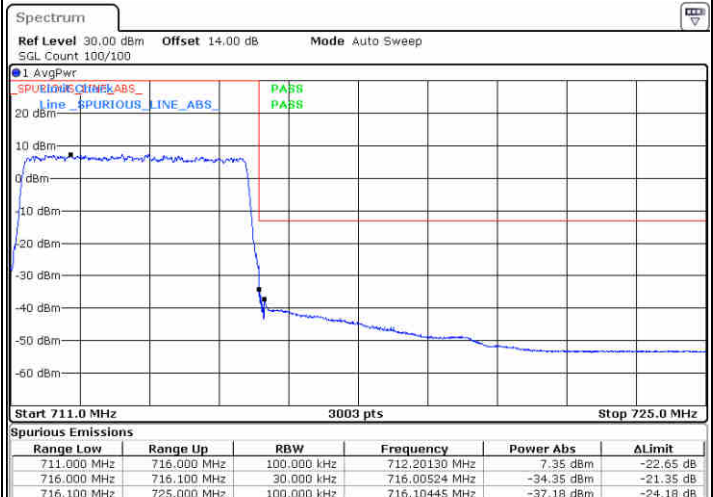


Highest Channel / 5MHz / 64QAM



Highest Channel / 10MHz / 64QAM

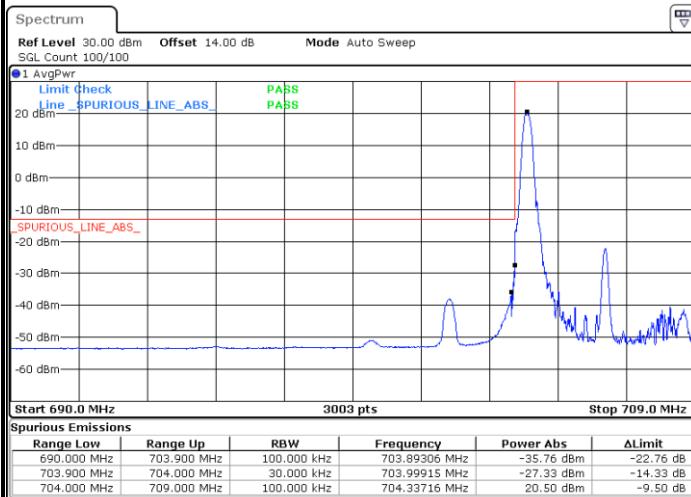


**Conducted Band Edge****LTE Band 17 / 5MHz / QPSK****Lowest Band Edge / 1 RB****Highest Band Edge / 1 RB****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**

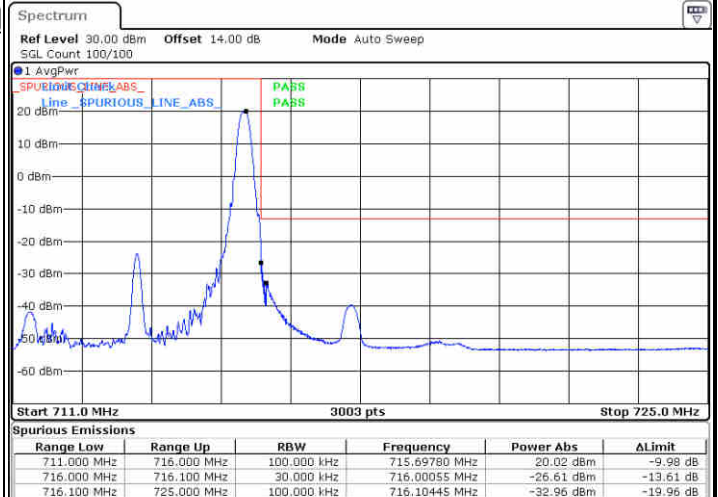


LTE Band 17 / 5MHz / 16QAM

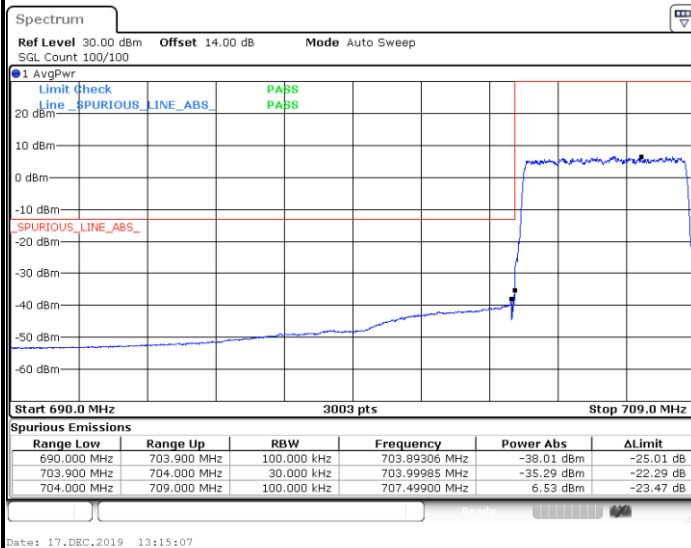
Lowest Band Edge / 1 RB



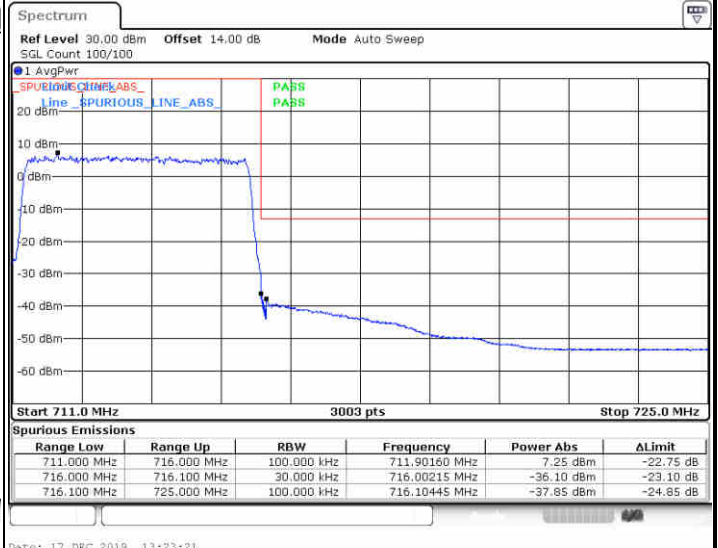
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



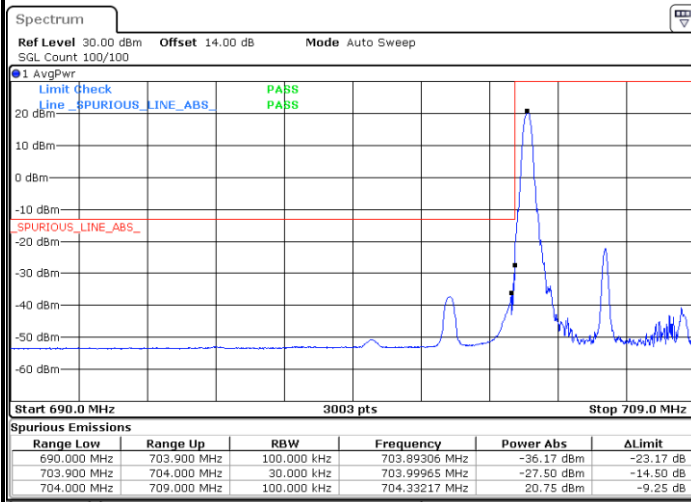
Highest Band Edge / Full RB



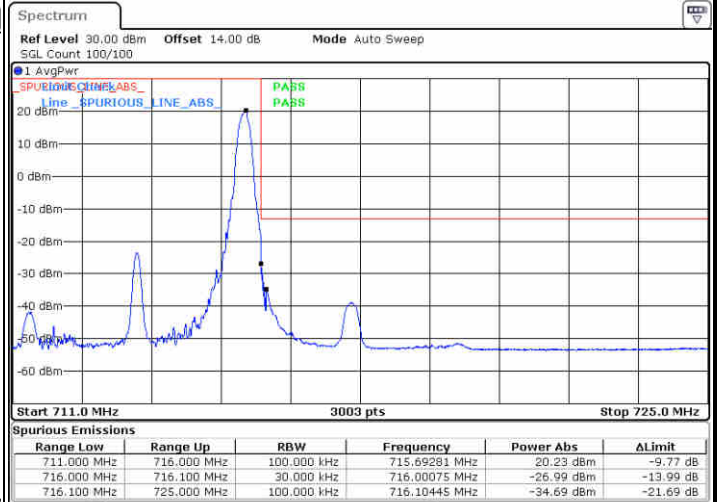


LTE Band 17 / 5MHz / 64QAM

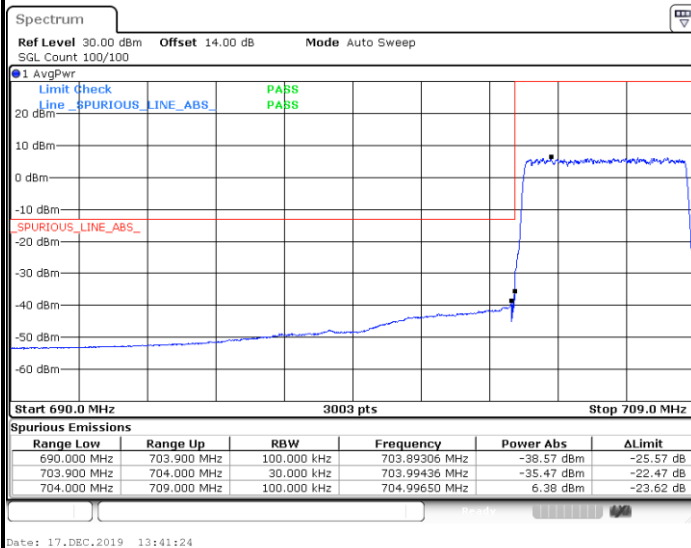
Lowest Band Edge / 1 RB



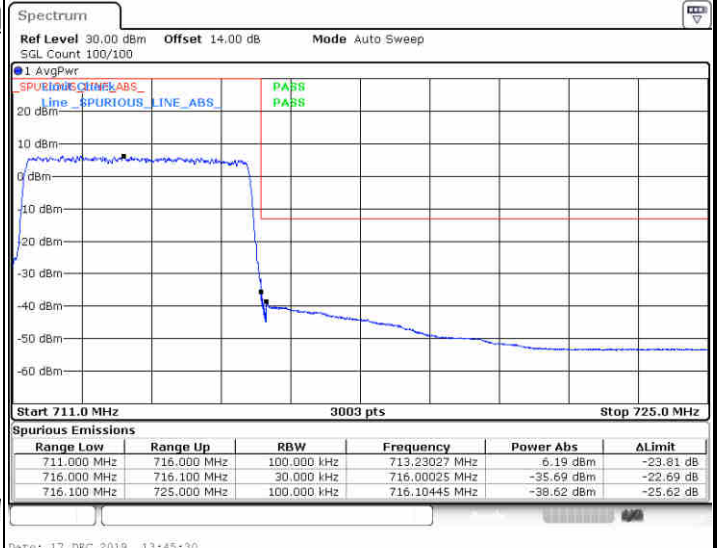
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



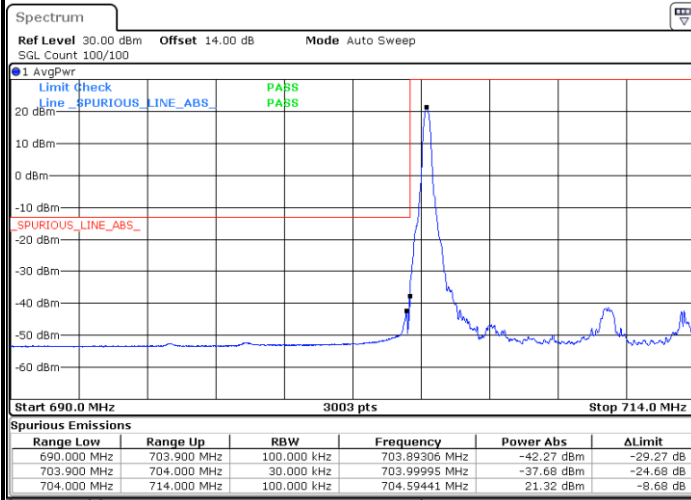
Highest Band Edge / Full RB



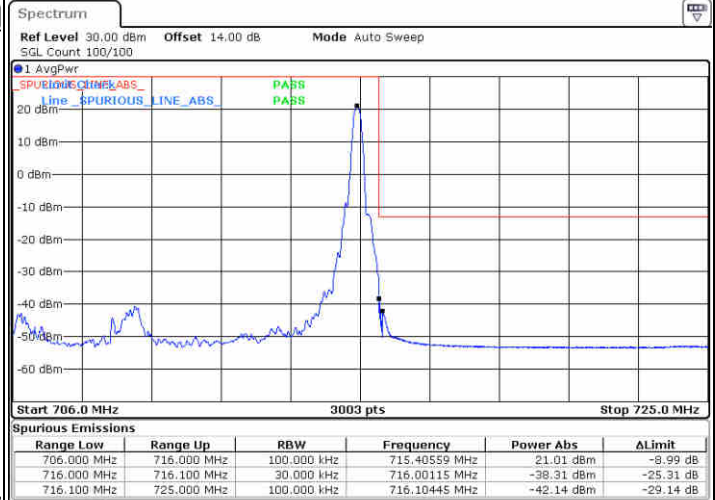


LTE Band 17 / 10MHz / QPSK

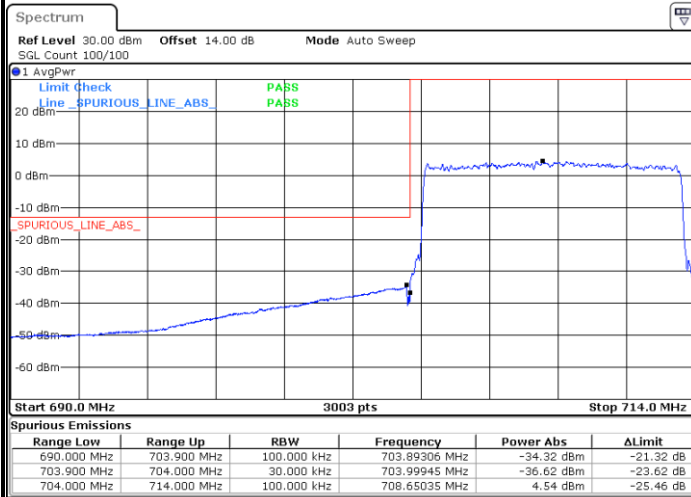
Lowest Band Edge / 1 RB



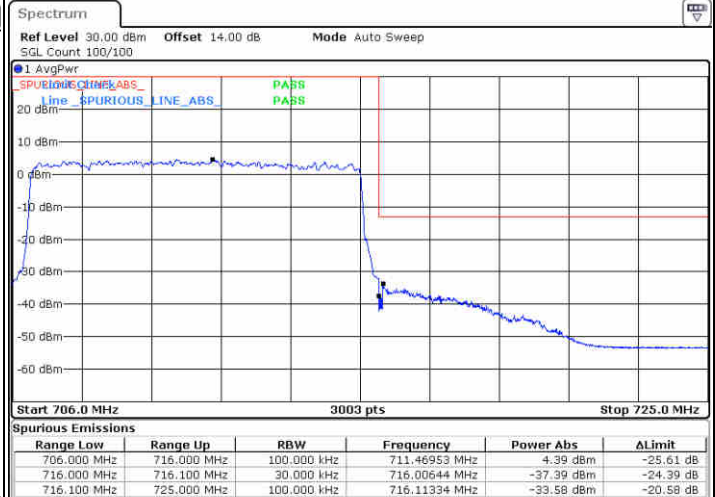
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



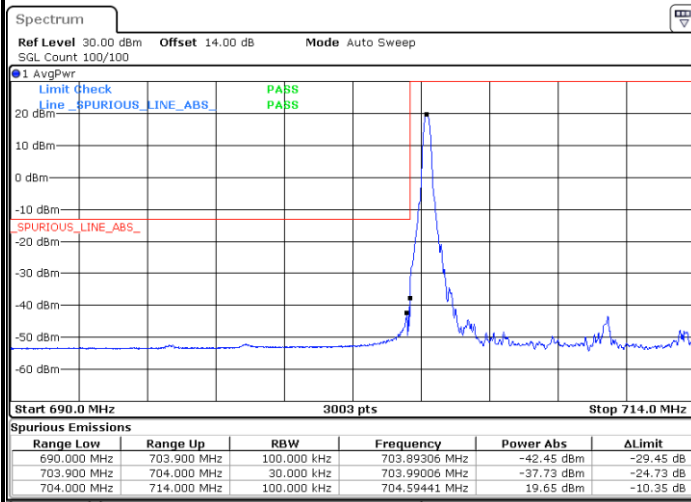
Highest Band Edge / Full RB



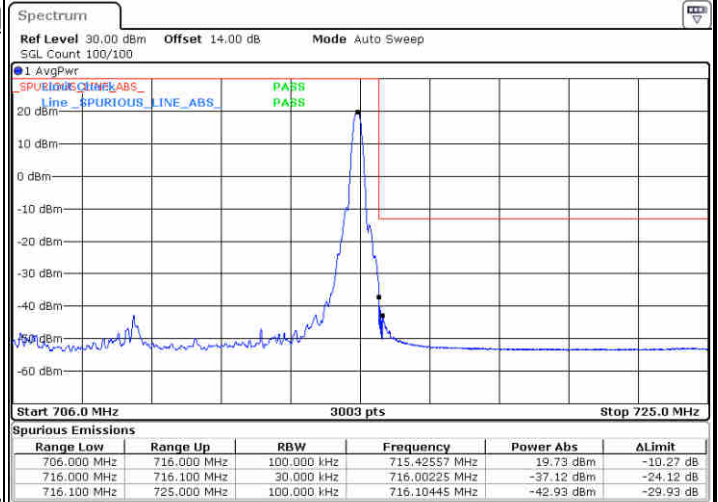


LTE Band 17 / 10MHz / 16QAM

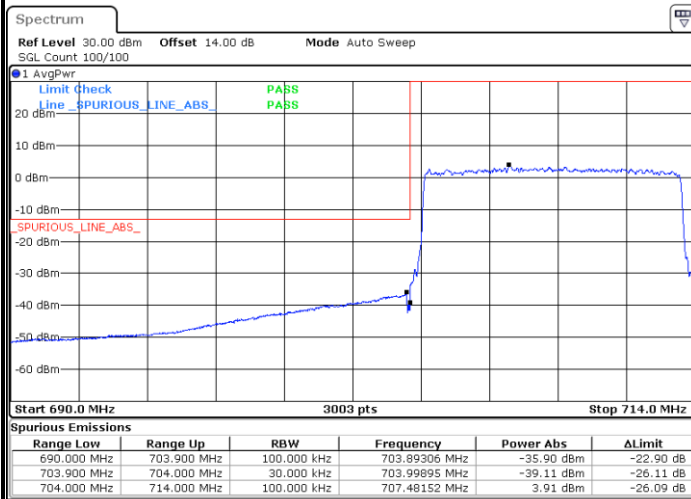
Lowest Band Edge / 1 RB



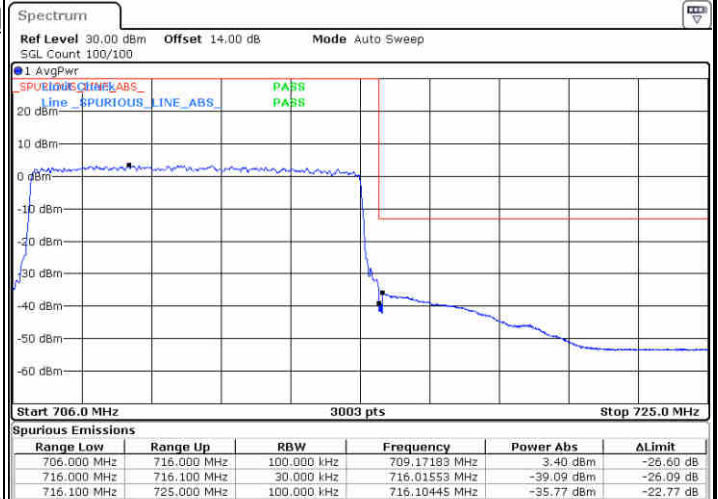
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



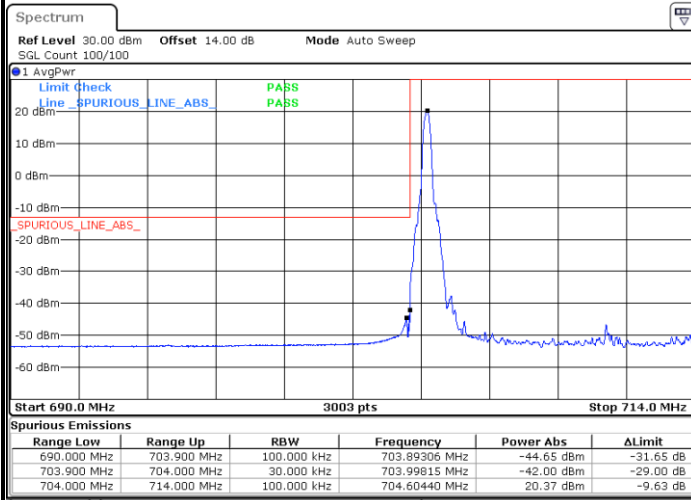
Highest Band Edge / Full RB



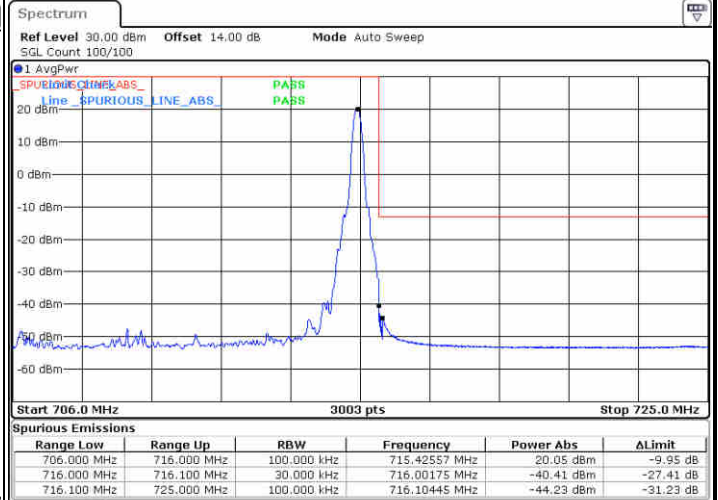


LTE Band 17 / 10MHz / 64QAM

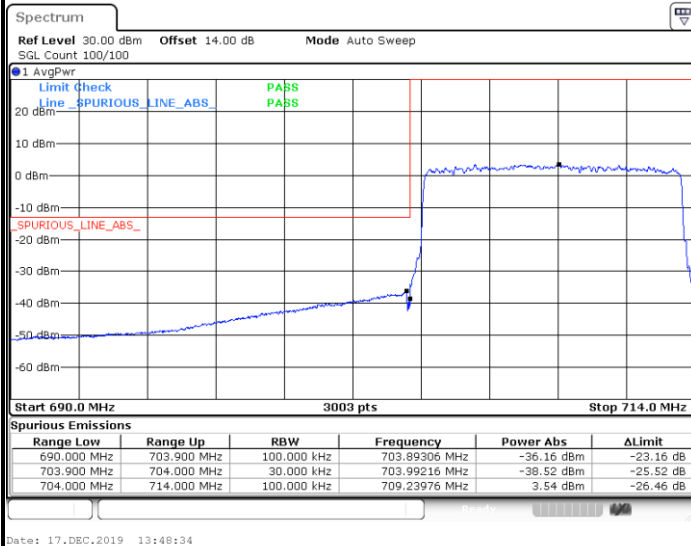
Lowest Band Edge / 1 RB



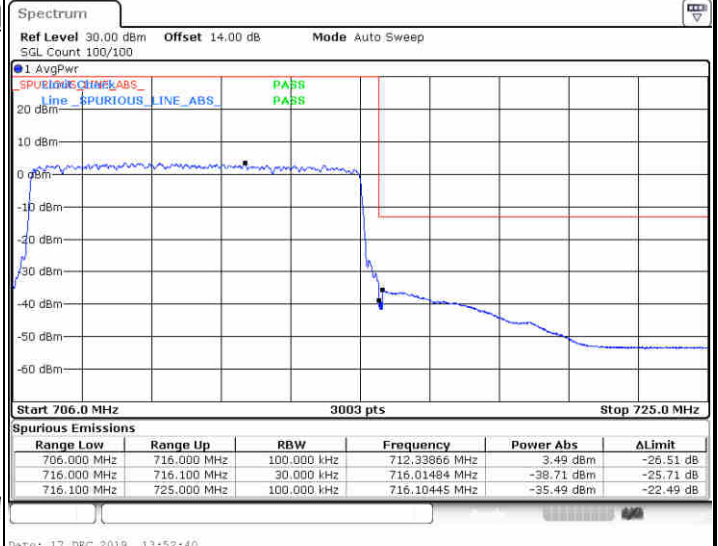
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

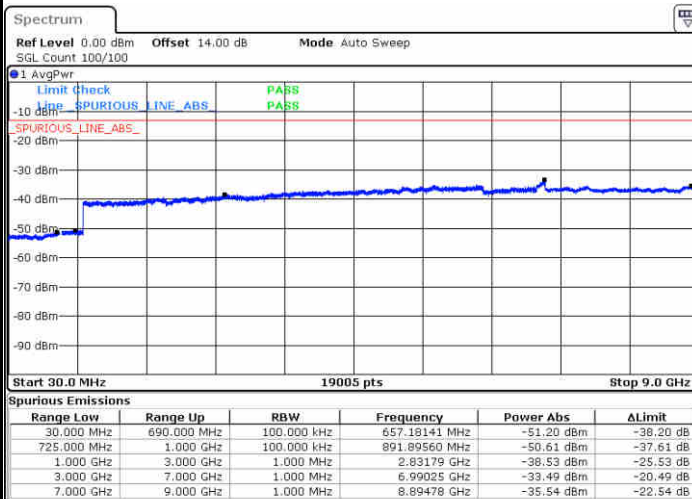




Conducted Spurious Emission

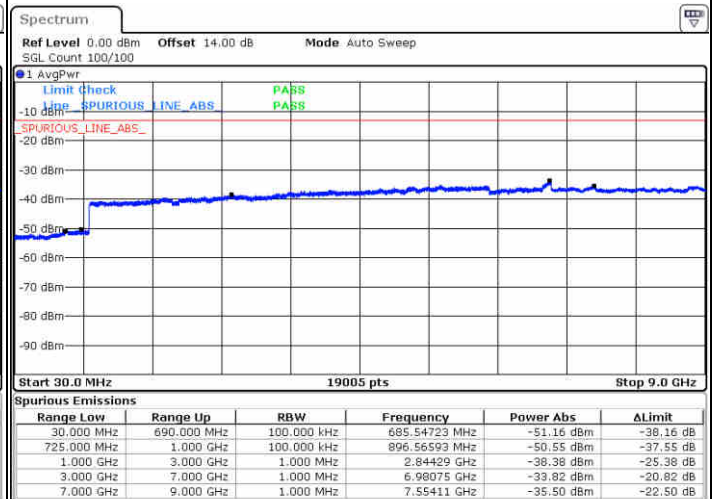
LTE Band 17 / 5MHz

Lowest Channel / QPSK



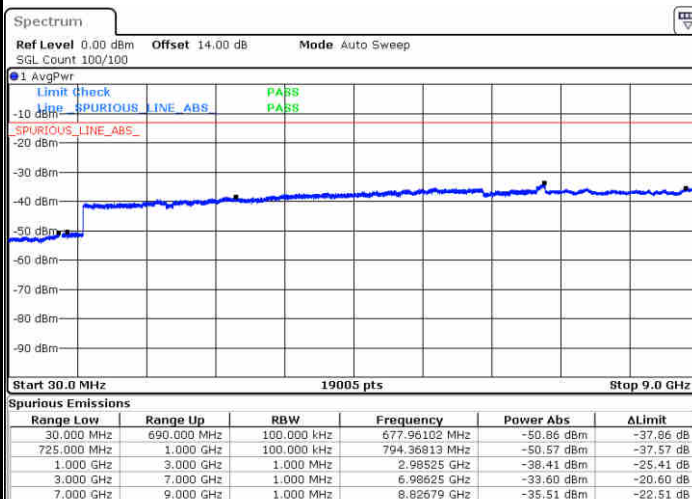
Date: 17.DEC.2019 13:15:45

Lowest Channel / 16QAM



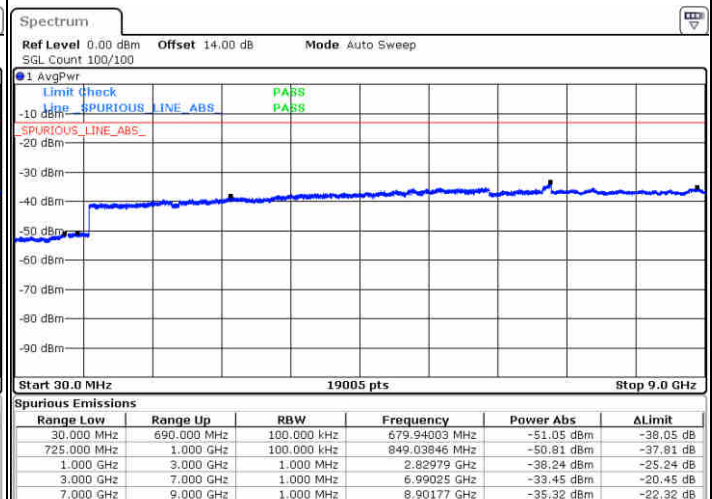
Date: 17.DEC.2019 13:16:30

Middle Channel / QPSK



Date: 17.DEC.2019 13:17:56

Middle Channel / 16QAM

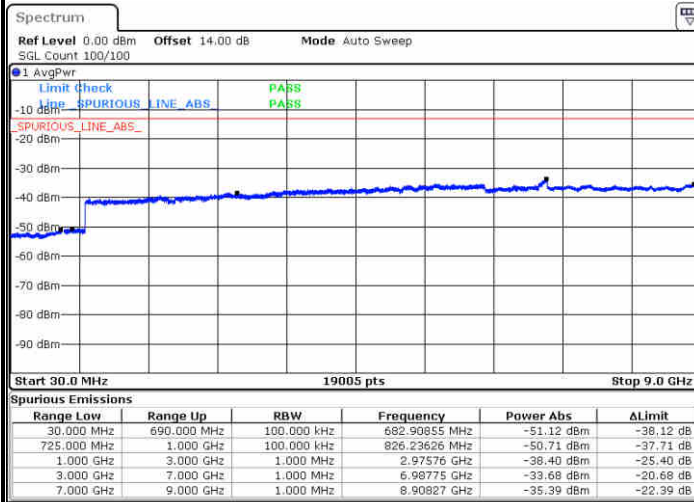


Date: 17.DEC.2019 13:18:37



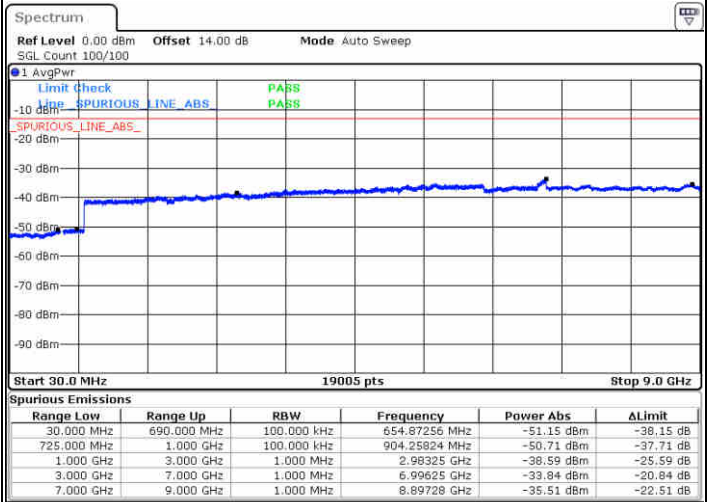
LTE Band 17 / 5MHz

Highest Channel / QPSK



Date: 17.DEC.2019 13:24:02

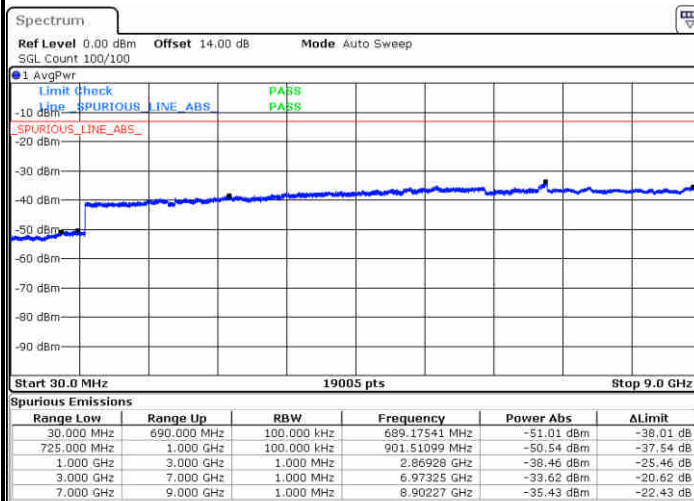
Highest Channel / 16QAM



Date: 17.DEC.2019 13:24:43

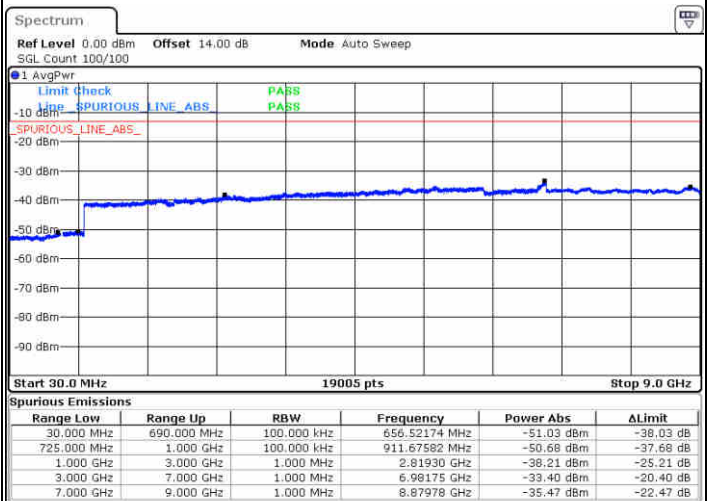
LTE Band 17 / 10MHz

Lowest Channel / QPSK



Date: 17.DEC.2019 13:30:09

Lowest Channel / 16QAM

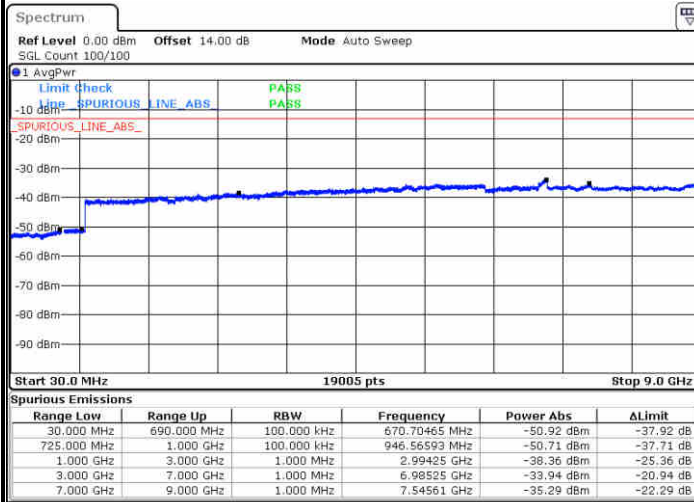


Date: 17.DEC.2019 13:30:50



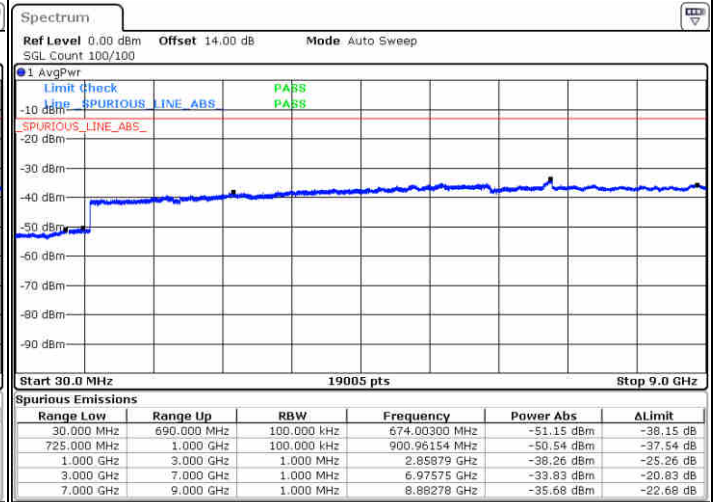
LTE Band 17 / 10MHz

Middle Channel / QPSK



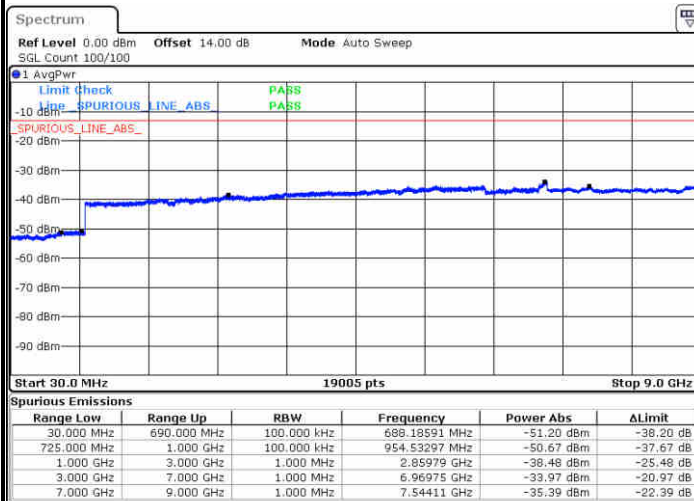
Date: 17.DEC.2019 13:32:15

Middle Channel / 16QAM



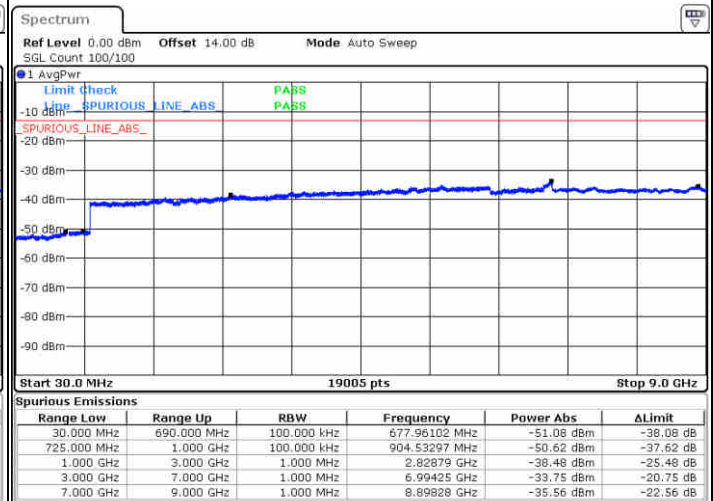
Date: 17.DEC.2019 13:32:56

Highest Channel / QPSK



Date: 17.DEC.2019 13:38:21

Highest Channel / 16QAM

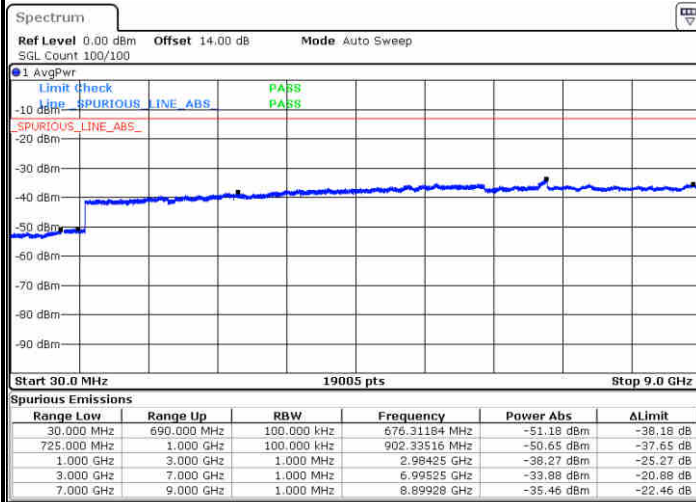


Date: 17.DEC.2019 13:39:03



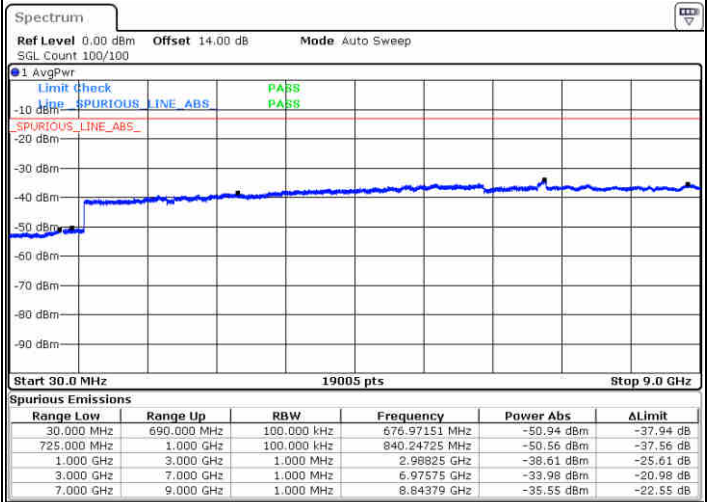
LTE Band 17 / 5MHz

Lowest Channel / 64QAM



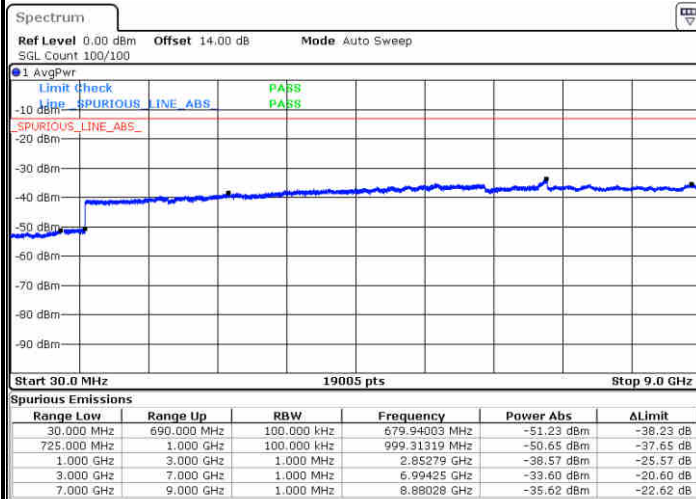
Date: 17.DEC.2019 13:42:05

Middle Channel / 64QAM



Date: 17.DEC.2019 13:43:09

Highest Channel / 64QAM

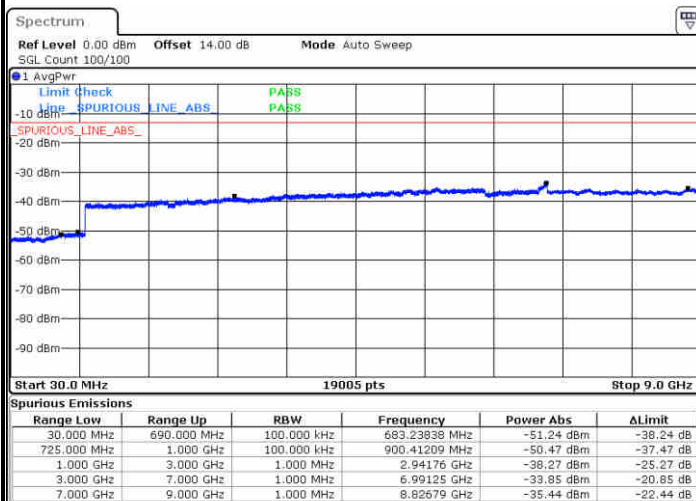


Date: 17.DEC.2019 13:46:12



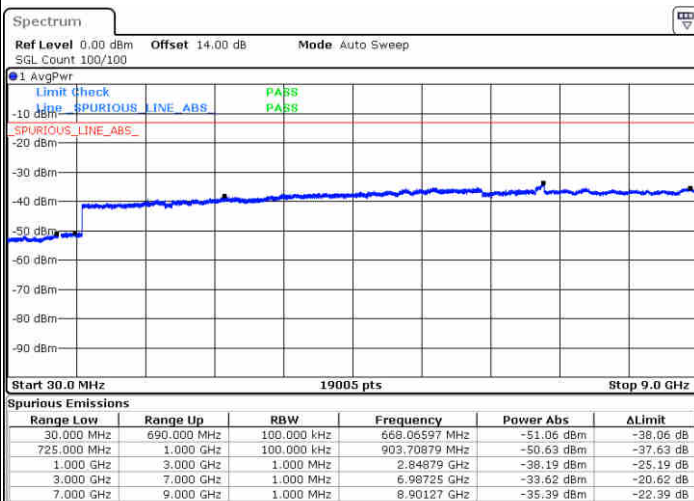
LTE Band 17 / 10MHz

Lowest Channel / 64QAM



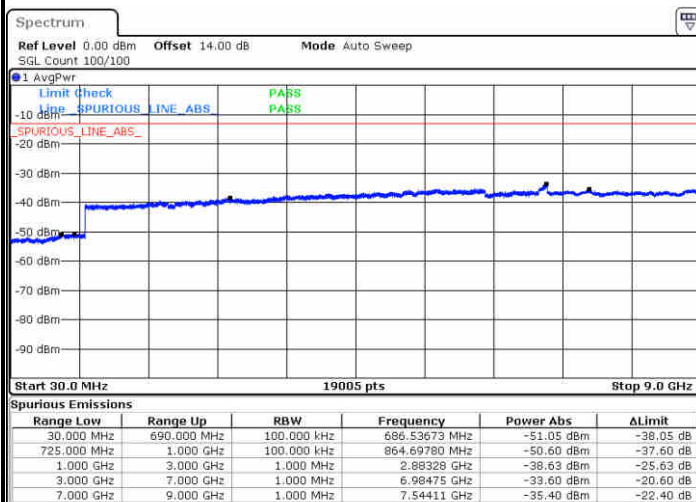
Date: 17.DEC.2019 13:49:15

Middle Channel / 64QAM



Date: 17.DEC.2019 13:50:19

Highest Channel / 64QAM



Date: 17.DEC.2019 13:53:22

**Frequency Stability**

Test Conditions		LTE Band 17 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0104	PASS
40	Normal Voltage	0.0042	
30	Normal Voltage	0.0037	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0061	
0	Normal Voltage	0.0059	
-10	Normal Voltage	0.0038	
-20	Normal Voltage	0.0069	
-30	Normal Voltage	0.0063	
20	Maximum Voltage	0.0047	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0061	

Note:

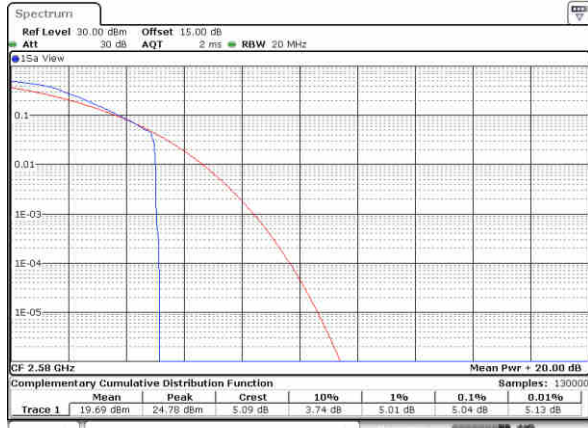
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



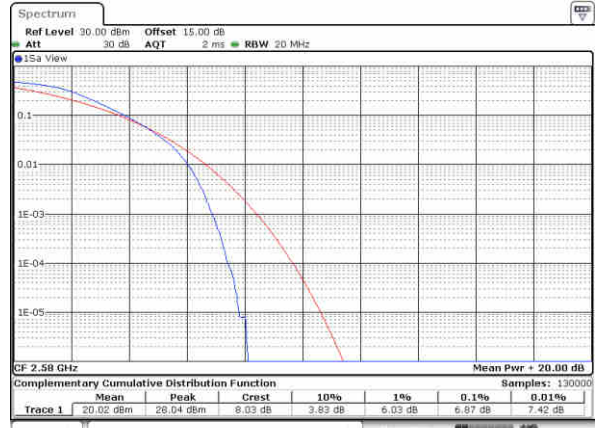
LTE Band 38

Peak-to-Average Ratio

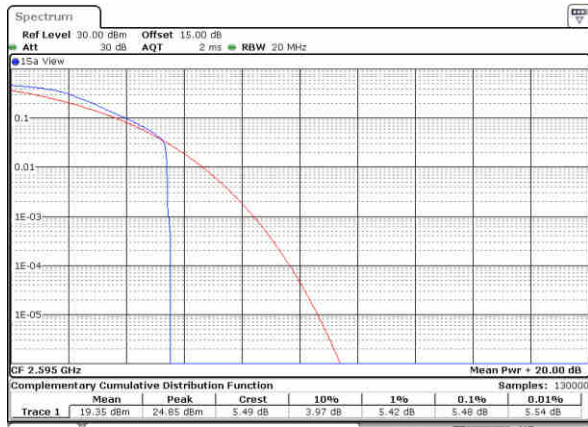
Mode	LTE Band 38 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	5.04	6.87	5.91	6.12	PASS
Middle CH	5.48	5.68	5.88	6.32	
Highest CH	3.68	5.94	6.61	6.67	
Mode	LTE Band 38 / 20MHz				
Mod.	64QAM		-		Limit: 13dB
RB Size	1RB	Full RB	-	-	Result
Lowest CH	5.65	6.23	-	-	PASS
Middle CH	6.09	7.45	-	-	
Highest CH	5.94	6.06	-	-	

LTE Band 38 / 20MHz / QPSK
Lowest Channel / 1RB


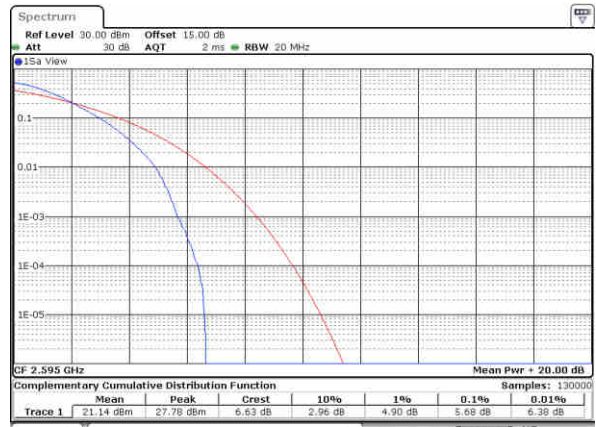
Date: 13, DEC, 2019 14:44:12

Lowest Channel / Full RB


Date: 13, DEC, 2019 14:44:25

Middle Channel / 1RB


Date: 13, DEC, 2019 14:44:36

Middle Channel / Full RB


Date: 13, DEC, 2019 14:44:54

Highest Channel / 1RB


Date: 13, DEC, 2019 14:45:11

Highest Channel / Full RB


Date: 13, DEC, 2019 14:45:22



LTE Band 38 / 20MHz / 16QAM

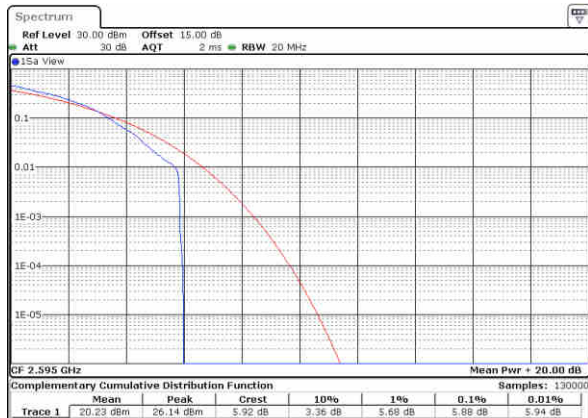
Lowest Channel / 1RB



Lowest Channel / Full RB



Middle Channel / 1RB



Middle Channel / Full RB

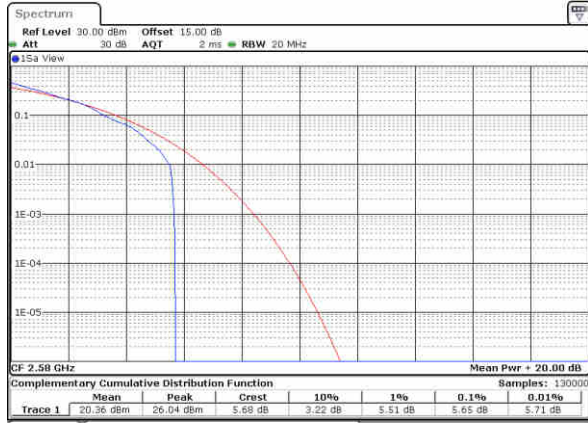


Highest Channel / 1RB



Highest Channel / Full RB

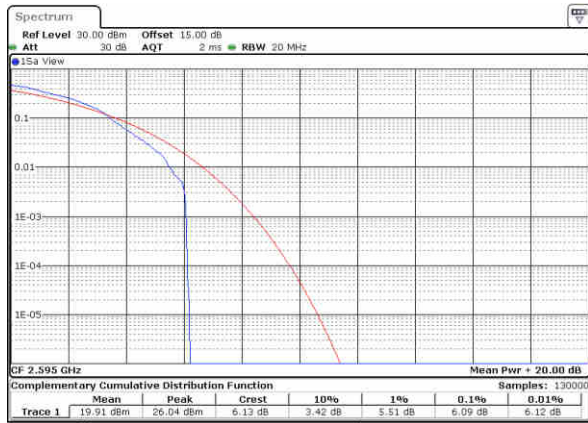


LTE Band 38 / 20MHz / 64QAM
Lowest Channel / 1RB


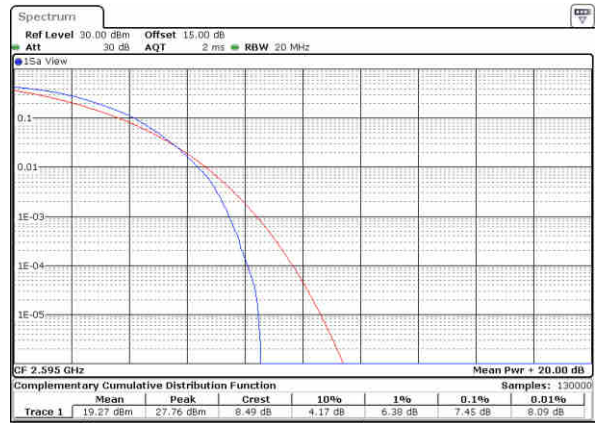
Date: 13, DEC, 2019 14:39:43

Lowest Channel / Full RB

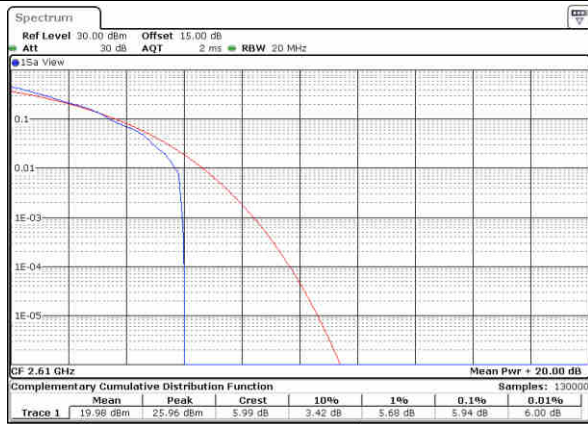

Date: 13, DEC, 2019 14:40:06

Middle Channel / 1RB


Date: 13, DEC, 2019 14:40:27

Middle Channel / Full RB


Date: 13, DEC, 2019 14:40:49

Highest Channel / 1RB


Date: 13, DEC, 2019 14:41:21

Highest Channel / Full RB


Date: 13, DEC, 2019 14:41:48

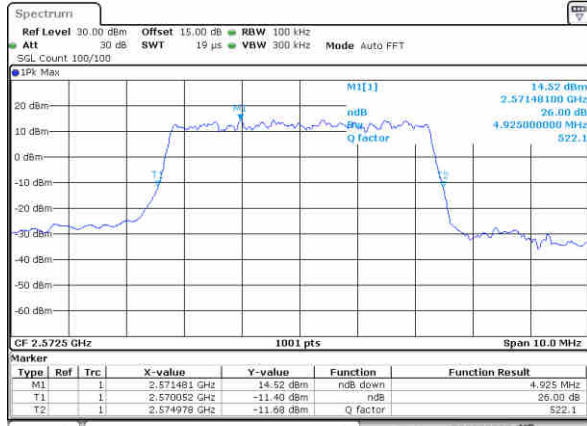
**26dB Bandwidth**

Mode	LTE Band 38 : 26dB BW(MHz)							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	4.93	4.91	9.73	9.61	14.12	14.72	19.14	18.94
Middle CH	4.74	4.88	9.75	9.73	14.36	14.15	18.86	18.66
Highest CH	4.86	4.90	9.63	9.79	14.54	14.36	18.90	18.66
Mode	LTE Band 38 : 26dB BW(MHz)							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM	
Lowest CH	4.88		9.63		14.09		18.82	
Middle CH	4.90		9.81		14.24		18.98	
Highest CH	4.92		9.75		14.09		18.86	



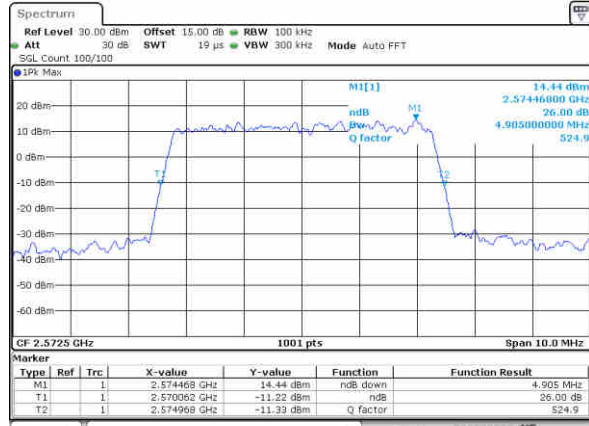
LTE Band 38

Lowest Channel / 5MHz / QPSK



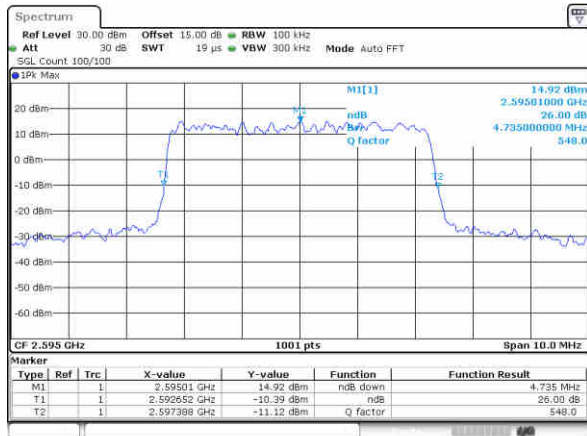
Date: 13, DEC, 2019 14:26:38

Lowest Channel / 5MHz / 16QAM



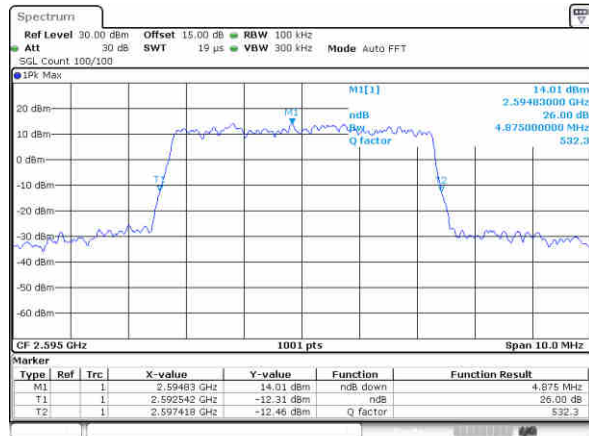
Date: 13, DEC, 2019 14:26:49

Middle Channel / 5MHz / QPSK



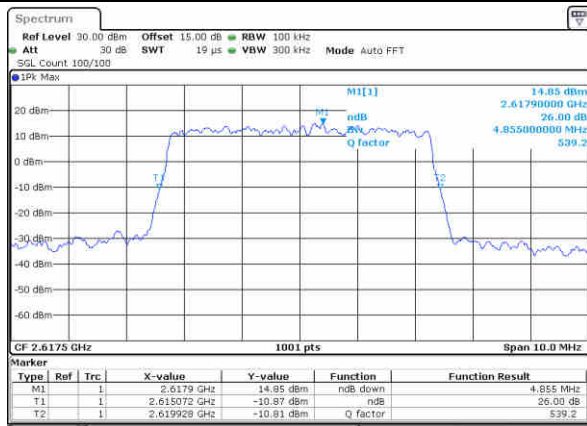
Date: 13, DEC, 2019 14:27:23

Middle Channel / 5MHz / 16QAM



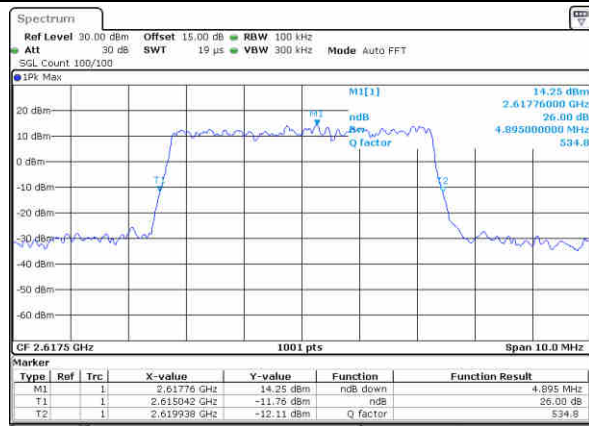
Date: 13, DEC, 2019 14:27:34

Highest Channel / 5MHz / QPSK



Date: 13, DEC, 2019 14:28:07

Highest Channel / 5MHz / 16QAM

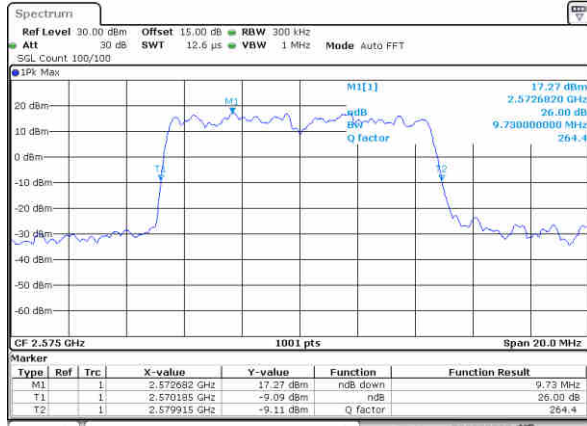


Date: 13, DEC, 2019 14:28:19

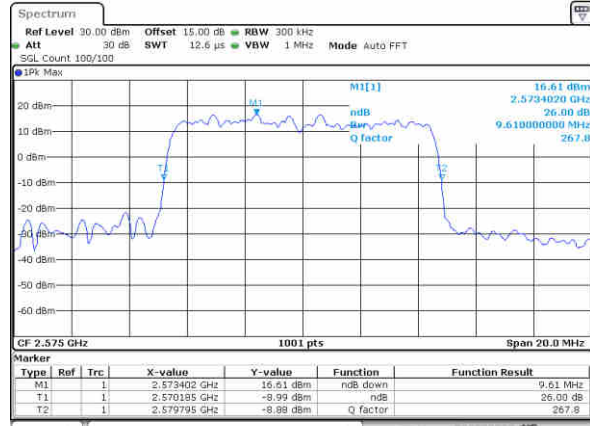


LTE Band 38

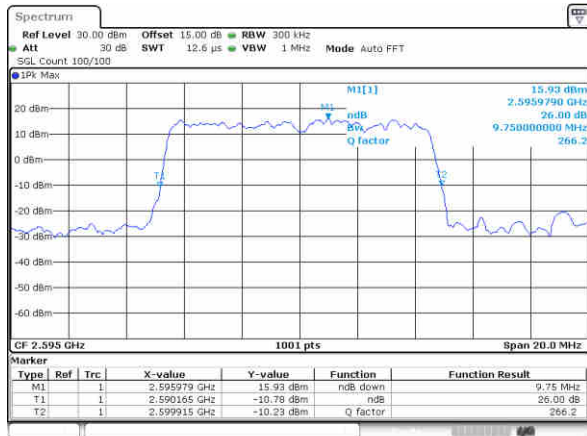
Lowest Channel / 10MHz / QPSK



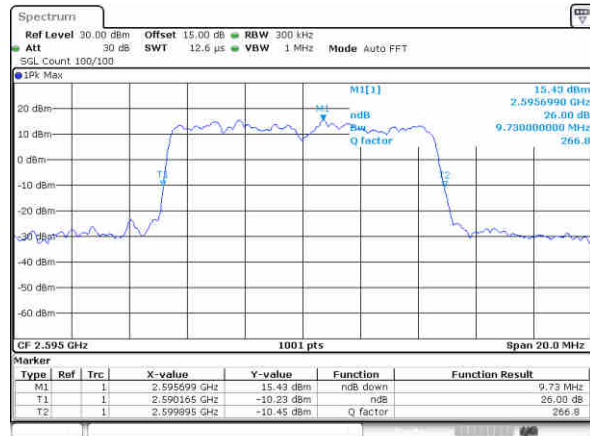
Lowest Channel / 10MHz / 16QAM



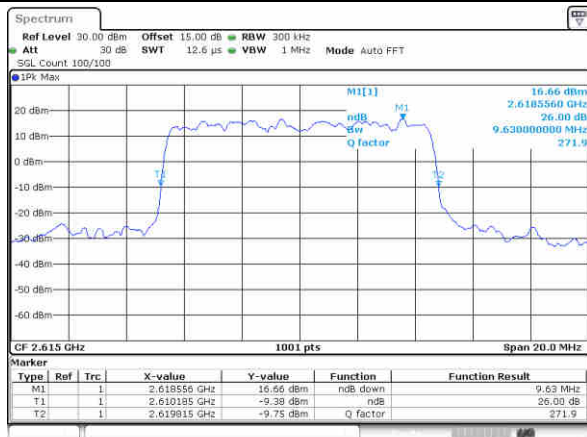
Middle Channel / 10MHz / QPSK



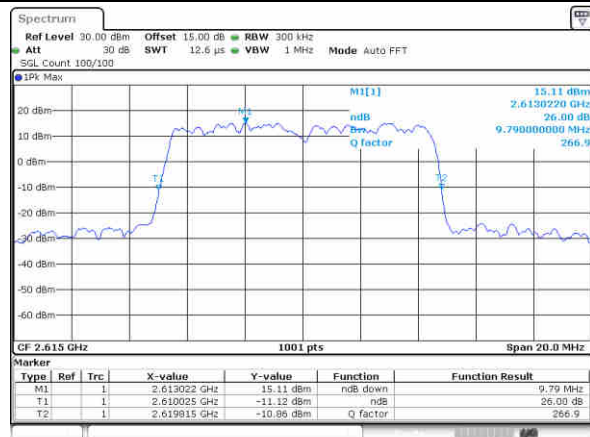
Middle Channel / 10MHz / 16QAM

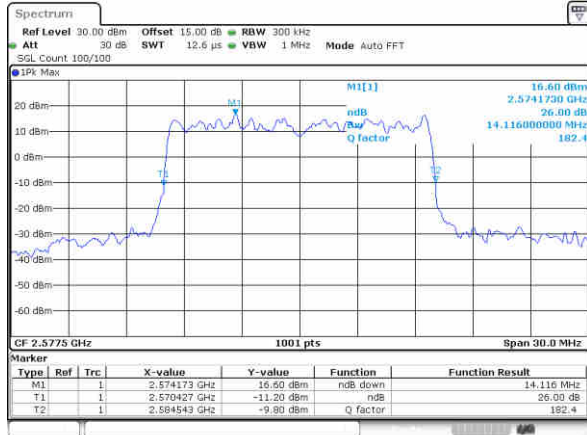


Highest Channel / 10MHz / QPSK

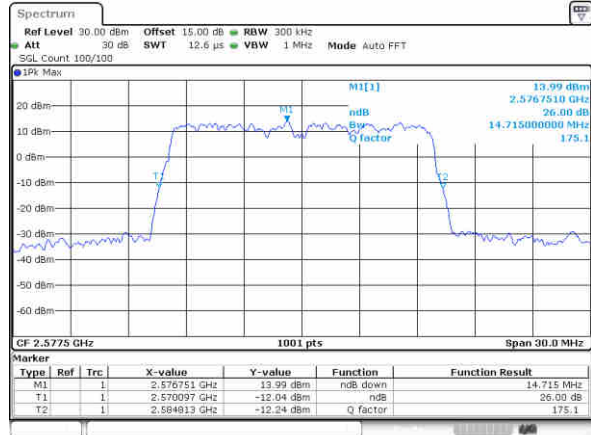


Highest Channel / 10MHz / 16QAM

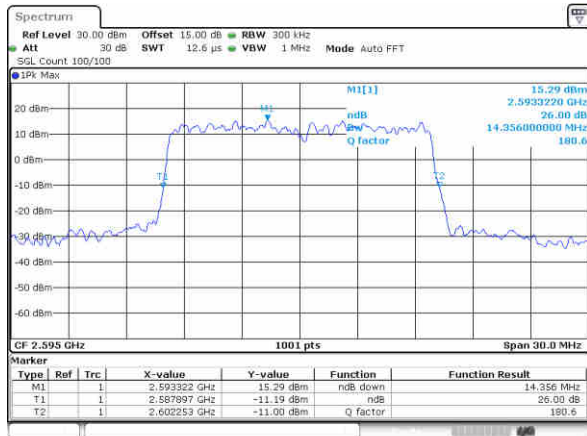


LTE Band 38
Lowest Channel / 15MHz / QPSK


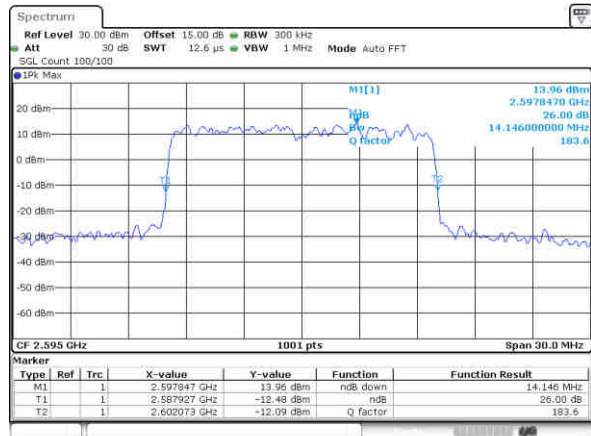
Date: 13, DEC, 2019 14:31:06

Lowest Channel / 15MHz / 16QAM


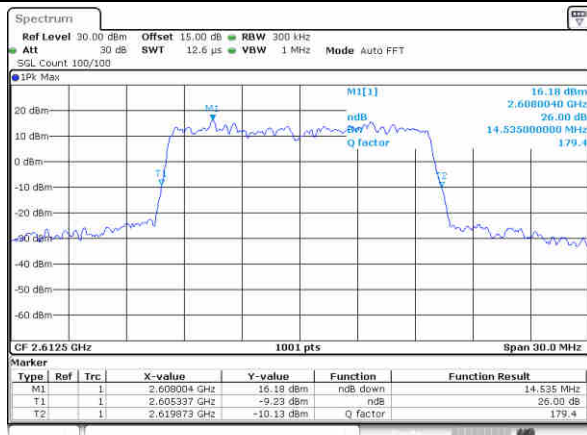
Date: 13, DEC, 2019 14:31:17

Middle Channel / 15MHz / QPSK


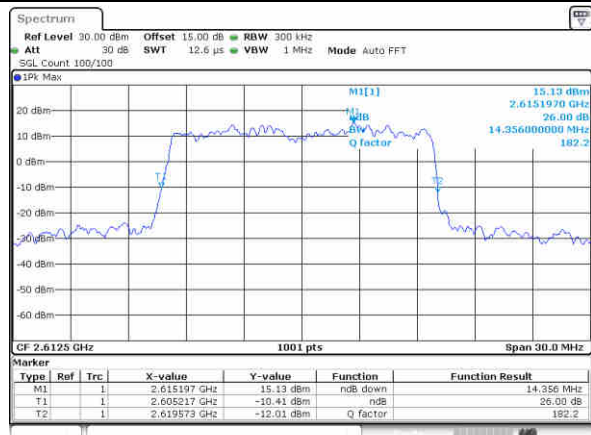
Date: 13, DEC, 2019 14:31:51

Middle Channel / 15MHz / 16QAM


Date: 13, DEC, 2019 14:32:02

Highest Channel / 15MHz / QPSK


Date: 13, DEC, 2019 14:32:36

Highest Channel / 15MHz / 16QAM


Date: 13, DEC, 2019 14:32:47