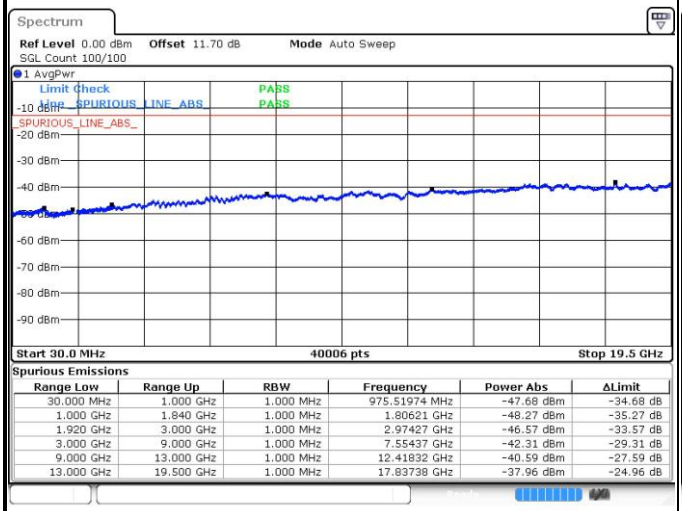
LTE Band 2 / 5MHz

Lowest Channel / QPSK

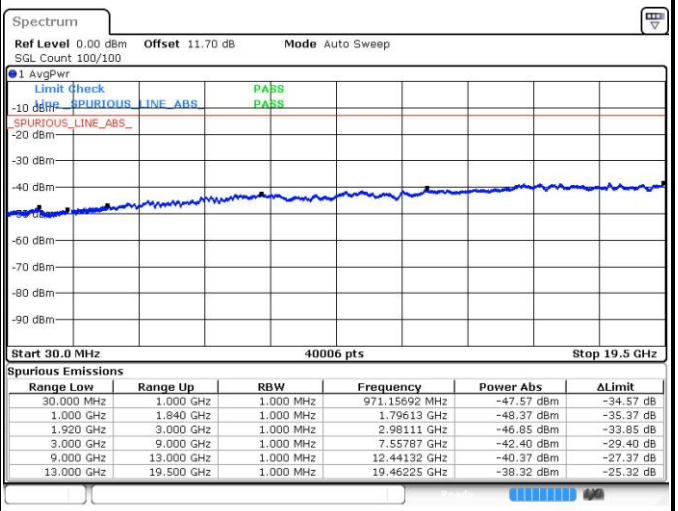


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	975.51974 MHz	-47.68 dBm	-34.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80621 GHz	-48.27 dBm	-35.27 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97427 GHz	-46.57 dBm	-33.57 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55437 GHz	-42.31 dBm	-29.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41832 GHz	-40.59 dBm	-27.59 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.83738 GHz	-37.96 dBm	-24.96 dB

Date: 18.MAY.2019 11:34:38

Highest Channel / QPSK

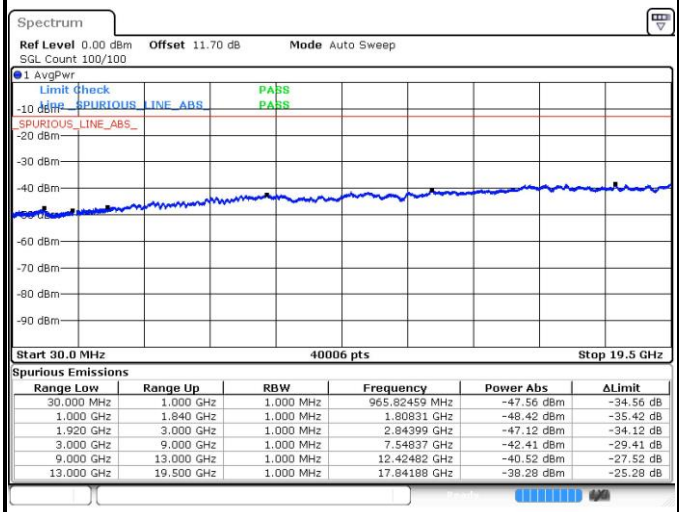


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	971.15692 MHz	-47.57 dBm	-34.57 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.79613 GHz	-48.37 dBm	-35.37 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98111 GHz	-46.85 dBm	-33.85 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55787 GHz	-42.40 dBm	-29.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44132 GHz	-40.37 dBm	-27.37 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.46225 GHz	-38.32 dBm	-25.32 dB

Date: 18.MAY.2019 11:43:03

Middle Channel / QPSK



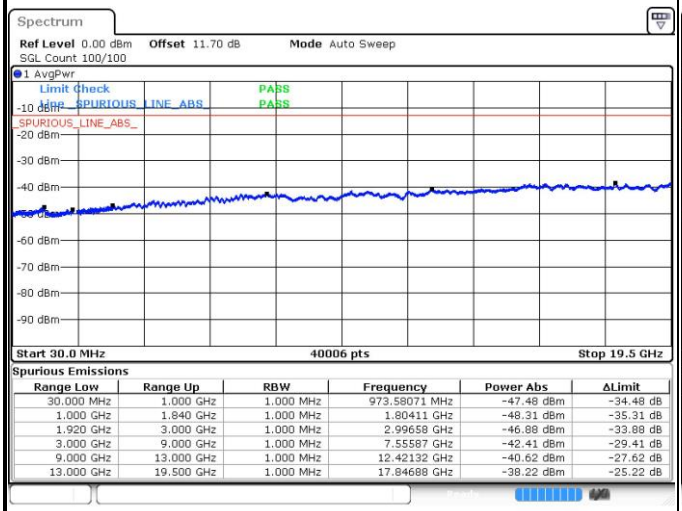
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	965.82459 MHz	-47.56 dBm	-34.56 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80831 GHz	-48.42 dBm	-35.42 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.84399 GHz	-47.12 dBm	-34.12 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54837 GHz	-42.41 dBm	-29.41 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.42482 GHz	-40.52 dBm	-27.52 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84188 GHz	-38.28 dBm	-25.28 dB

Date: 18.MAY.2019 11:36:47

LTE Band 2 / 10MHz

Lowest Channel / QPSK

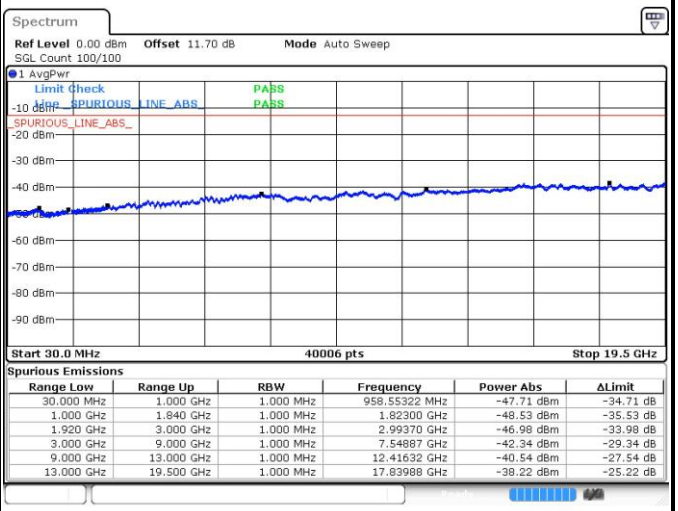


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	973.58071 MHz	-47.48 dBm	-34.48 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80411 GHz	-48.31 dBm	-35.31 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99658 GHz	-46.88 dBm	-33.88 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55587 GHz	-42.41 dBm	-29.41 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.42132 GHz	-40.62 dBm	-27.62 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84688 GHz	-38.22 dBm	-25.22 dB

Date: 18.MAY.2019 11:49:21

Highest Channel / QPSK

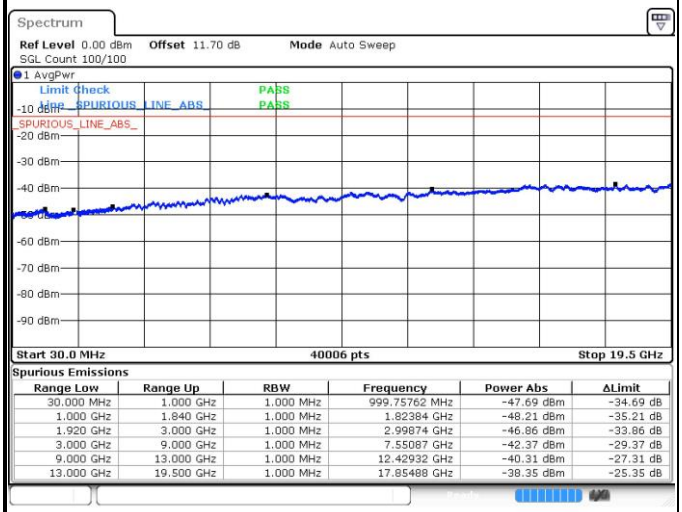


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	958.55322 MHz	-47.71 dBm	-34.71 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82300 GHz	-48.53 dBm	-35.53 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99370 GHz	-46.98 dBm	-33.98 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54887 GHz	-42.34 dBm	-29.34 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41632 GHz	-40.54 dBm	-27.54 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.83988 GHz	-38.22 dBm	-25.22 dB

Date: 18.MAY.2019 11:57:47

Middle Channel / QPSK



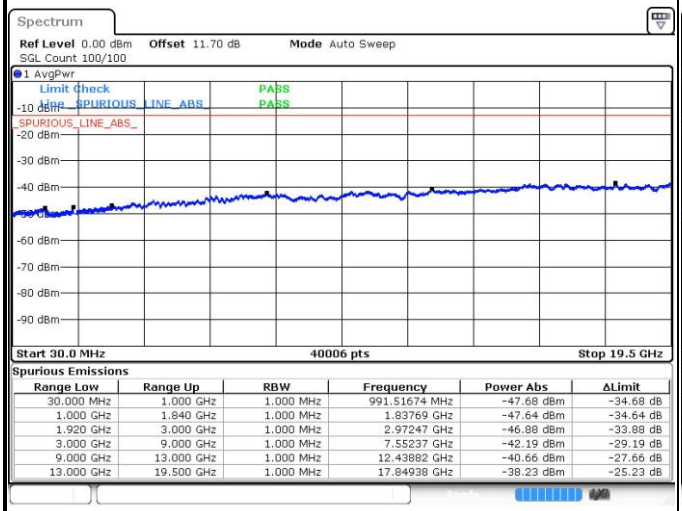
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	999.75762 MHz	-47.69 dBm	-34.69 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82384 GHz	-48.21 dBm	-35.21 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99874 GHz	-46.86 dBm	-33.86 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55087 GHz	-42.37 dBm	-29.37 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.42932 GHz	-40.31 dBm	-27.31 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.85488 GHz	-38.35 dBm	-25.35 dB

Date: 18.MAY.2019 11:51:31

LTE Band 2 / 15MHz

Lowest Channel / QPSK

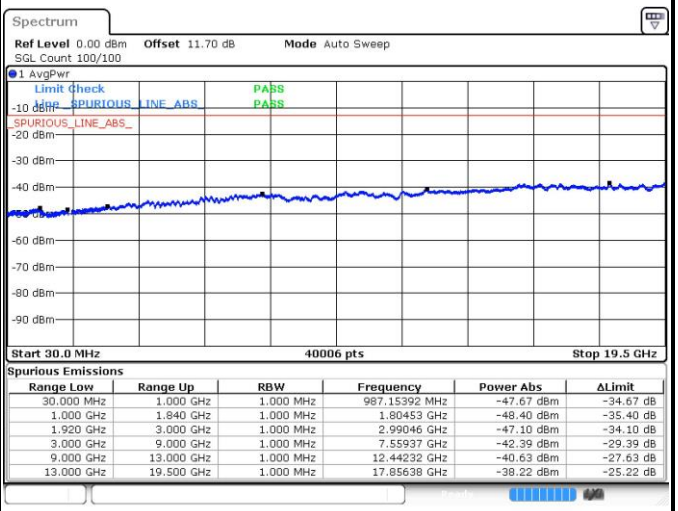


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.51674 MHz	-47.68 dBm	-34.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83769 GHz	-47.64 dBm	-34.64 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97247 GHz	-46.88 dBm	-33.88 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55237 GHz	-42.19 dBm	-29.19 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43882 GHz	-40.66 dBm	-27.66 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84938 GHz	-38.23 dBm	-25.23 dB

Date: 18.MAY.2019 12:04:06

Highest Channel / QPSK

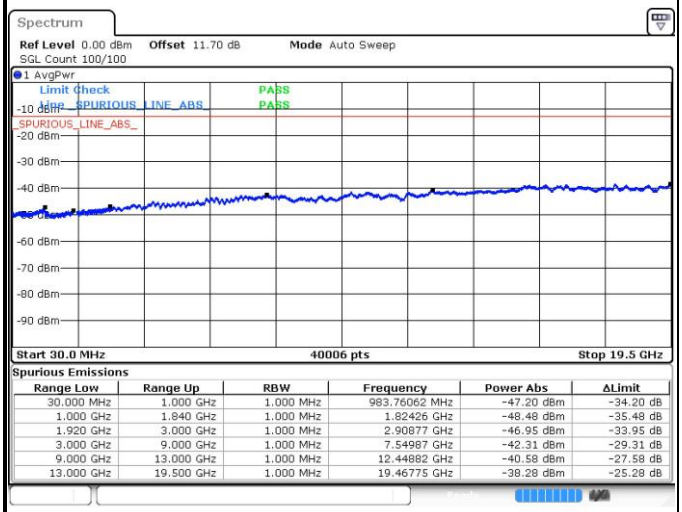


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	987.15392 MHz	-47.67 dBm	-34.67 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80453 GHz	-48.40 dBm	-35.40 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99046 GHz	-47.10 dBm	-34.10 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55937 GHz	-42.39 dBm	-29.39 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44232 GHz	-40.63 dBm	-27.63 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.85638 GHz	-38.22 dBm	-25.22 dB

Date: 18.MAY.2019 12:12:31

Middle Channel / QPSK



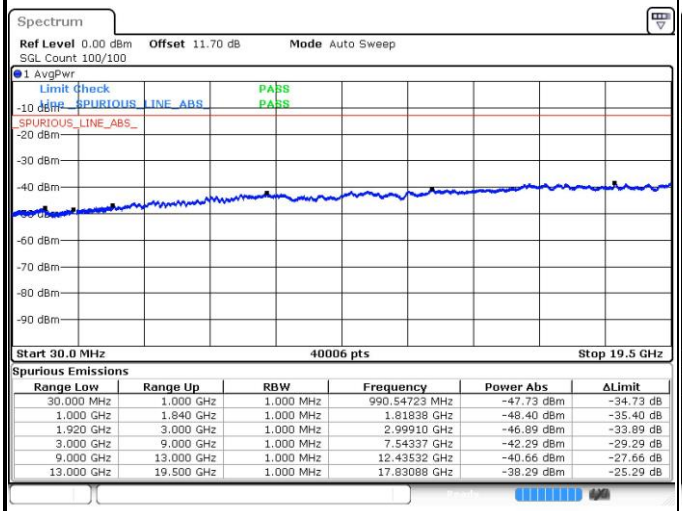
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	983.76062 MHz	-47.20 dBm	-34.20 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82426 GHz	-48.48 dBm	-35.48 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.90877 GHz	-46.95 dBm	-33.95 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54987 GHz	-42.31 dBm	-29.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44882 GHz	-40.58 dBm	-27.58 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.46775 GHz	-38.28 dBm	-25.28 dB

Date: 18.MAY.2019 12:06:16

LTE Band 2 / 20MHz

Lowest Channel / QPSK

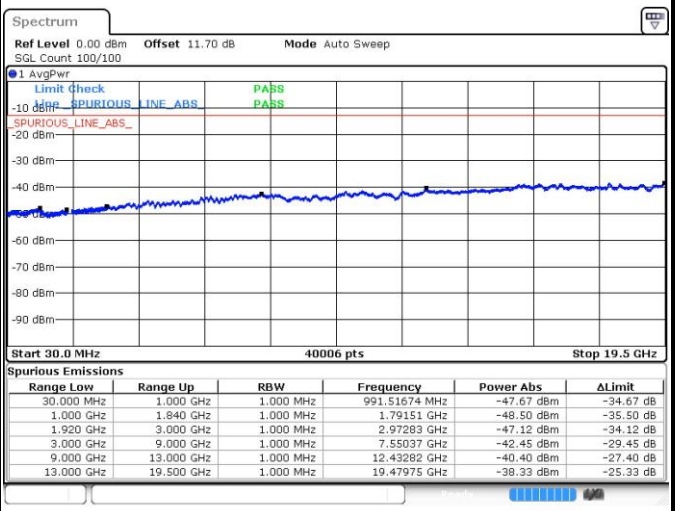


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.54723 MHz	-47.73 dBm	-34.73 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81838 GHz	-48.40 dBm	-35.40 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99910 GHz	-46.89 dBm	-33.89 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54337 GHz	-42.29 dBm	-29.29 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43532 GHz	-40.66 dBm	-27.66 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.83088 GHz	-38.29 dBm	-25.29 dB

Date: 18.MAY.2019 12:18:50

Highest Channel / QPSK

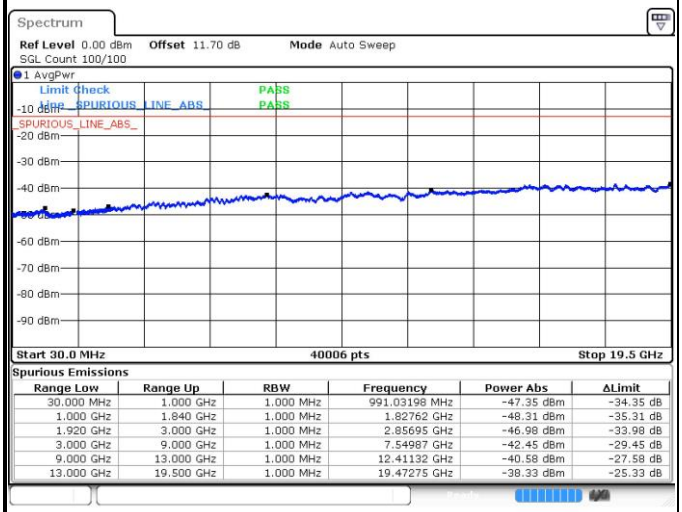


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.51674 MHz	-47.67 dBm	-34.67 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.79151 GHz	-48.50 dBm	-35.50 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97283 GHz	-47.12 dBm	-34.12 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55037 GHz	-42.45 dBm	-29.45 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43282 GHz	-40.40 dBm	-27.40 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.47975 GHz	-38.33 dBm	-25.33 dB

Date: 18.MAY.2019 13:11:36

Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.03198 MHz	-47.35 dBm	-34.35 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82762 GHz	-48.31 dBm	-35.31 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.85695 GHz	-46.98 dBm	-33.98 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54987 GHz	-42.45 dBm	-29.45 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41132 GHz	-40.58 dBm	-27.58 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.47275 GHz	-38.33 dBm	-25.33 dB

Date: 18.MAY.2019 13:05:19

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	0.0009	PASS
40	Normal Voltage	0.0013	
30	Normal Voltage	0.0004	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0019	
0	Normal Voltage	0.0007	
-10	Normal Voltage	0.0021	
-20	Normal Voltage	0.0006	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0009	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0012	

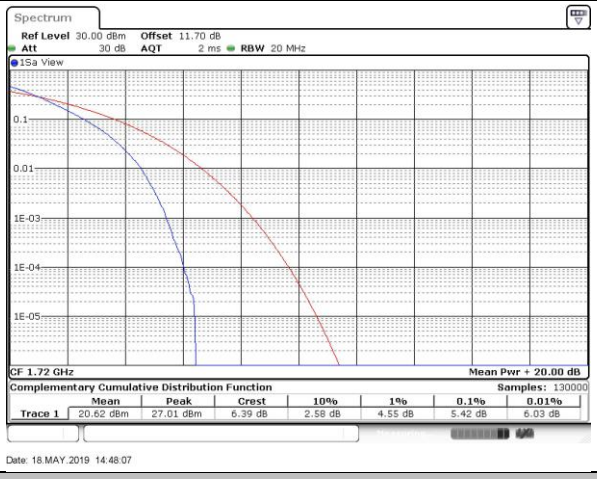
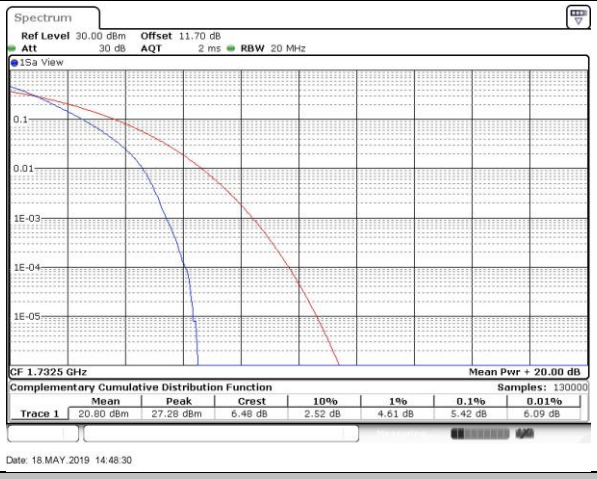
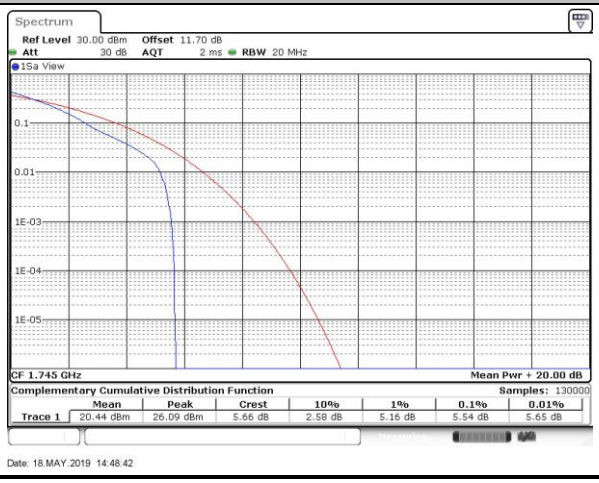
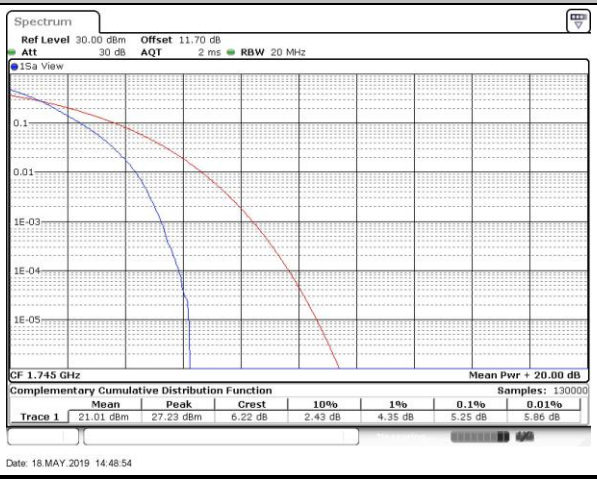
Note:

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 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	5.36	5.42	-	-	PASS
Middle CH	5.45	5.42	-	-	
Highest CH	5.54	5.25	-	-	

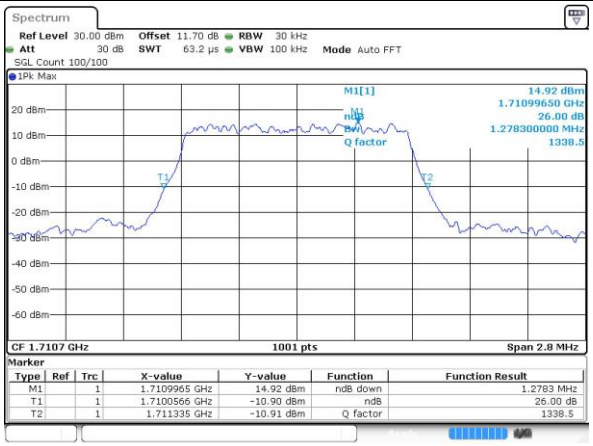
LTE Band 4 / 20MHz / QPSK	
Lowest Channel / 1RB	**Lowest Channel / Full RB**
	
Middle Channel / 1RB	**Middle Channel / Full RB**
	
Highest Channel / 1RB	**Highest Channel / Full RB**
	

26dB Bandwidth

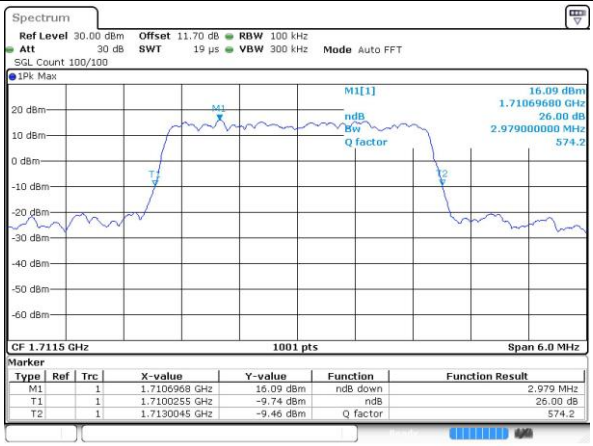
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.28	-	2.98	-	4.93	-	9.65	-	14.30	-	18.82	-
Middle CH	1.28	-	2.94	-	5.03	-	9.69	-	14.30	-	18.78	-
Highest CH	1.28	-	3.01	-	4.84	-	9.71	-	14.42	-	18.86	-

LTE Band 4

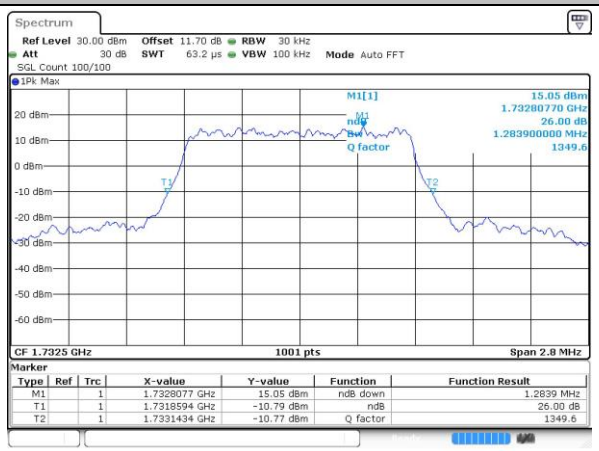
Lowest Channel / 1.4MHz / QPSK



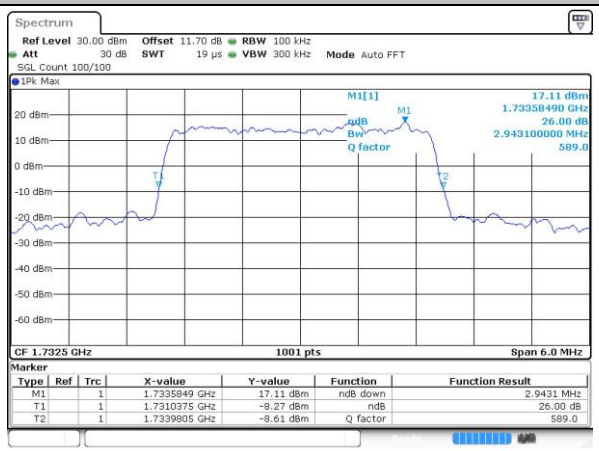
Lowest Channel / 3MHz / QPSK



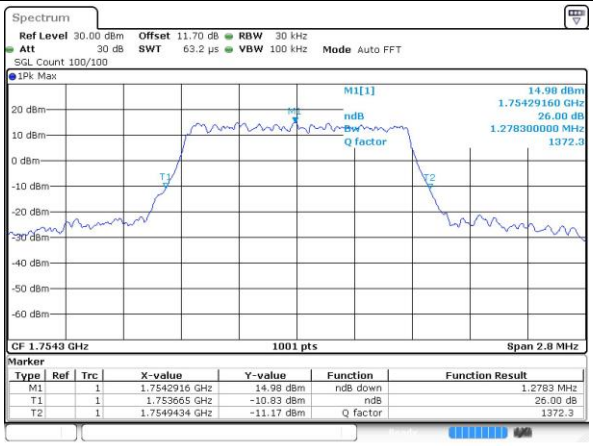
Middle Channel / 1.4MHz / QPSK



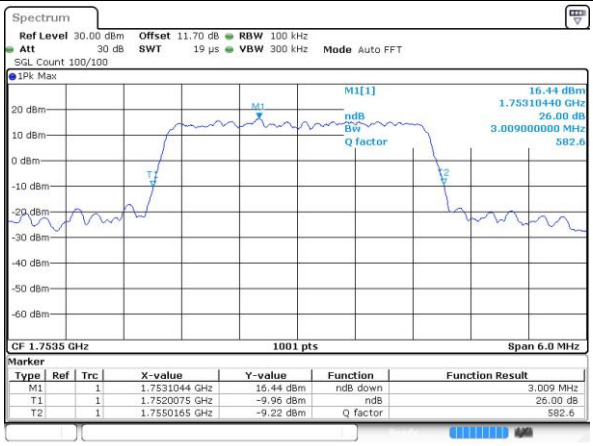
Middle Channel / 3MHz / QPSK



Highest Channel / 1.4MHz / QPSK

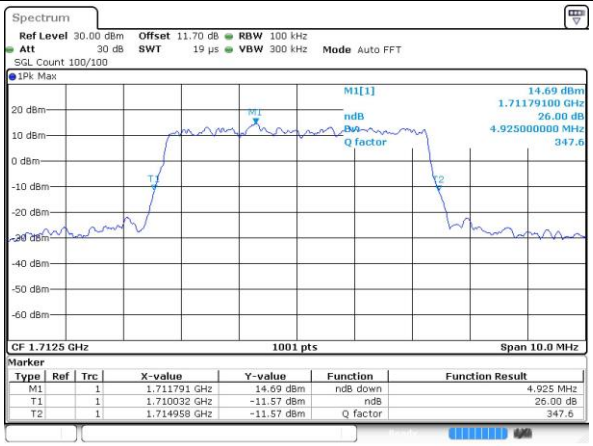


Highest Channel /3MHz / QPSK

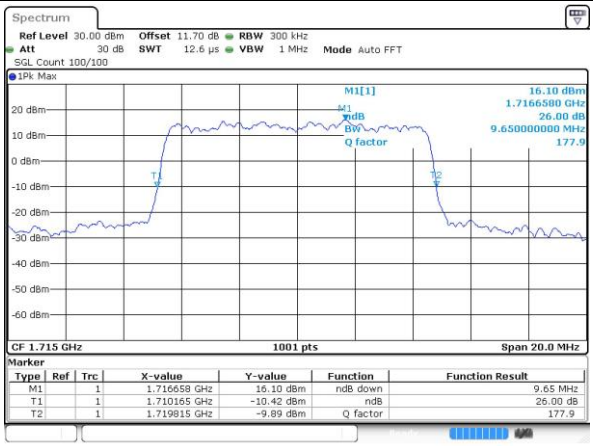


LTE Band 4

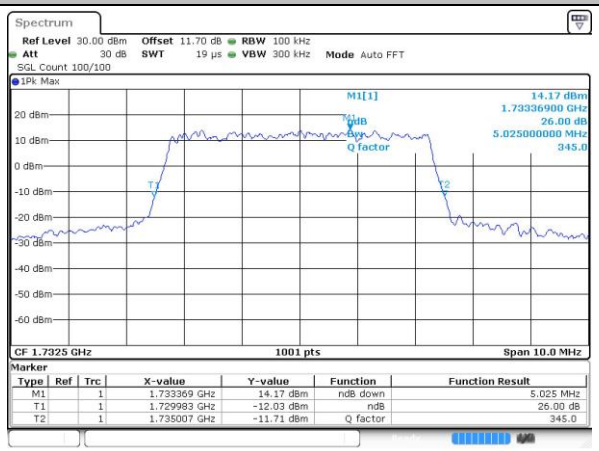
Lowest Channel / 5MHz / QPSK



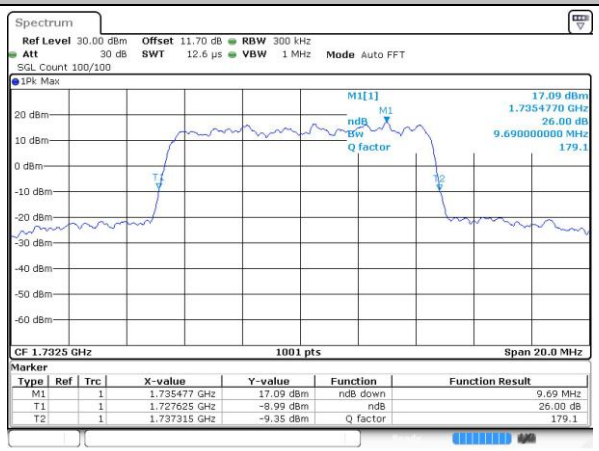
Lowest Channel / 10MHz / QPSK



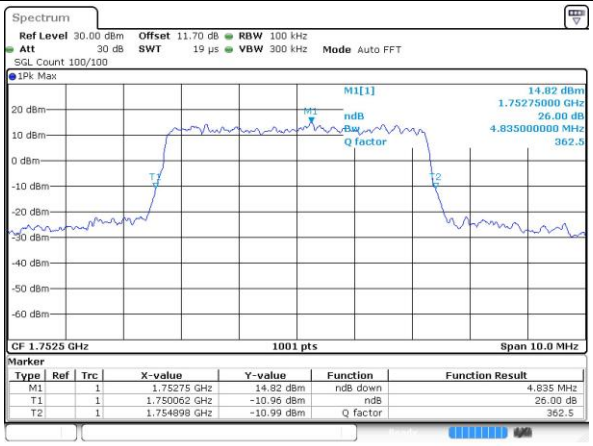
Middle Channel / 5MHz / QPSK



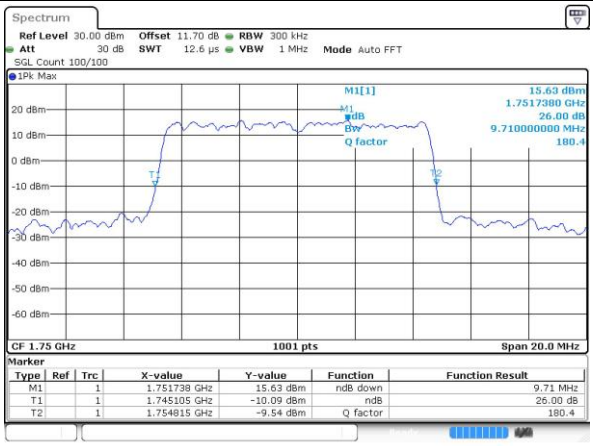
Middle Channel / 10MHz / QPSK



Highest Channel / 5MHz / QPSK

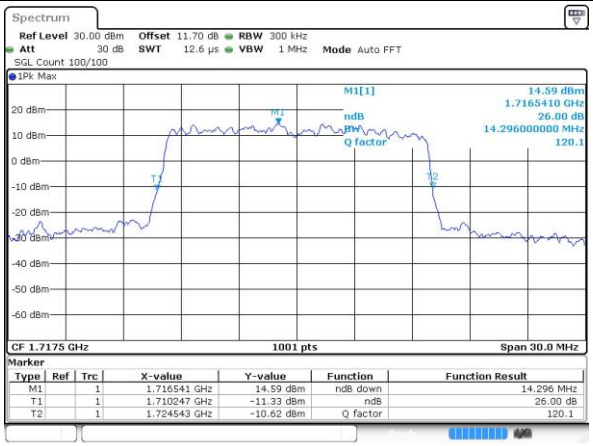


Highest Channel / 10MHz / QPSK

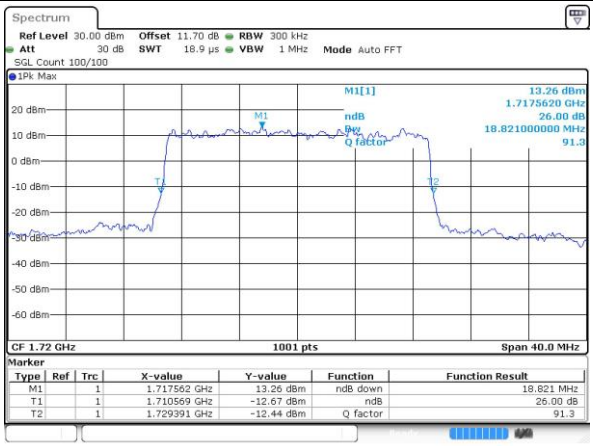


LTE Band 4

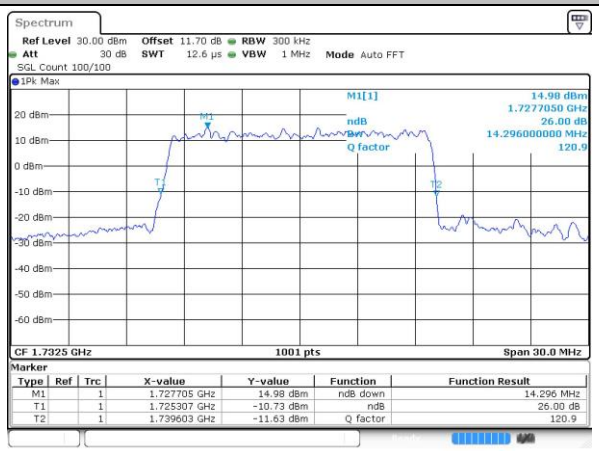
Lowest Channel / 15MHz / QPSK



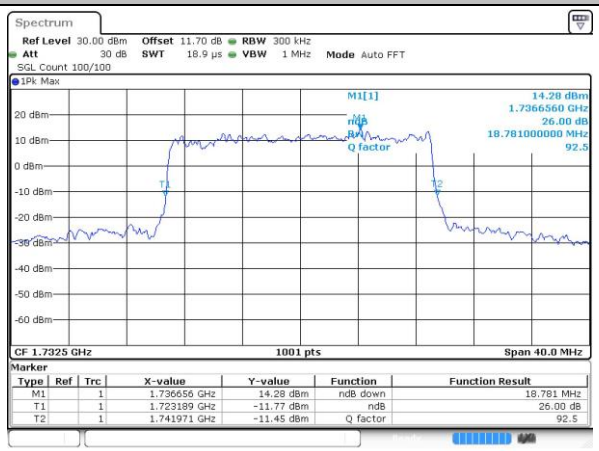
Lowest Channel / 20MHz / QPSK



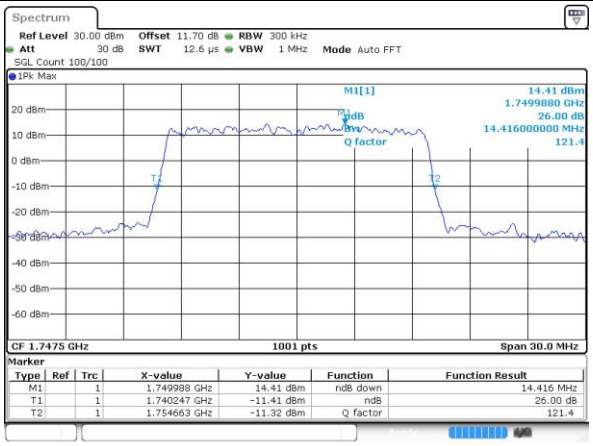
Middle Channel / 15MHz / QPSK



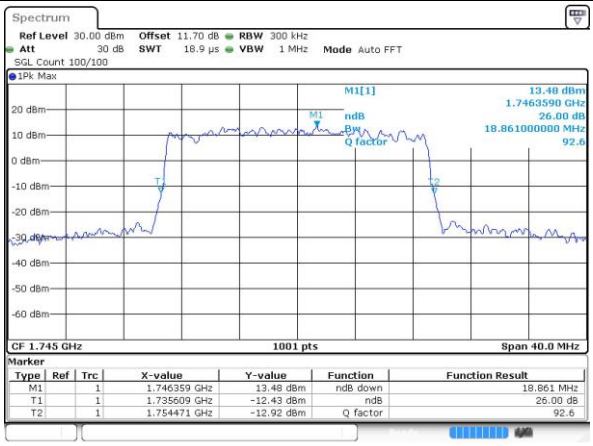
Middle Channel / 20MHz / QPSK



Highest Channel / 15MHz / QPSK



Highest Channel / 20MHz / QPSK

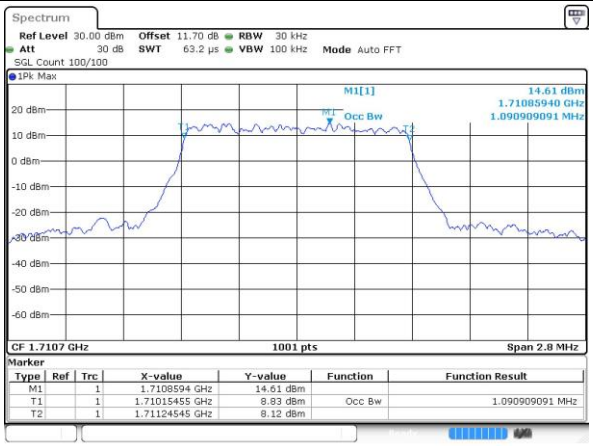


Occupied Bandwidth

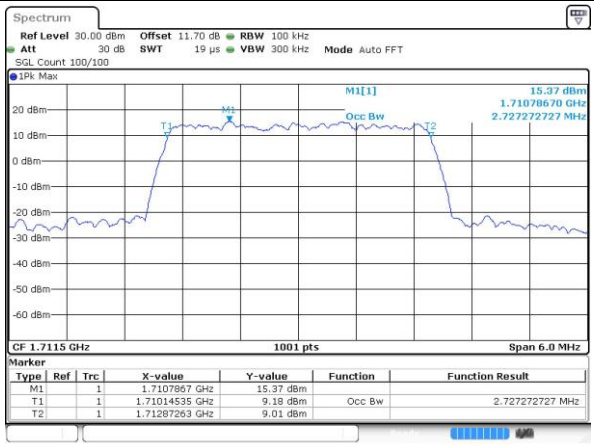
Mode	LTE Band 4 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.09	-	2.73	-	4.48	-	9.07	-	13.4	-	17.86	-
Middle CH	1.09	-	2.73	-	4.5	-	9.05	-	13.46	-	17.86	-
Highest CH	1.11	-	2.72	-	4.49	-	8.97	-	13.43	-	17.86	-

LTE Band 4

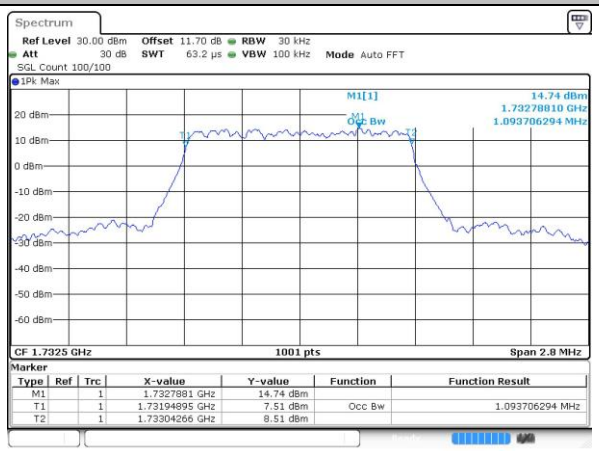
Lowest Channel / 1.4MHz / QPSK



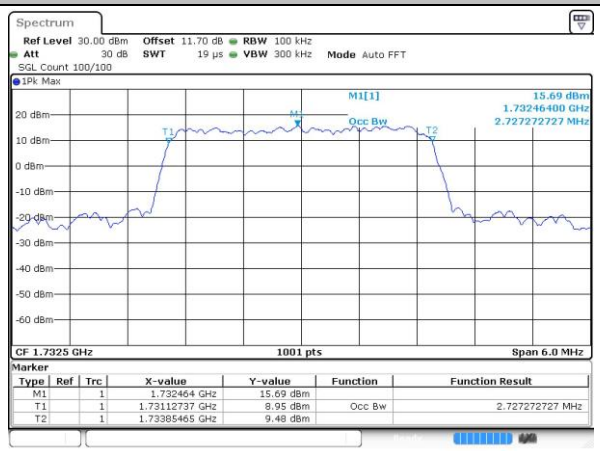
Lowest Channel / 3MHz / QPSK



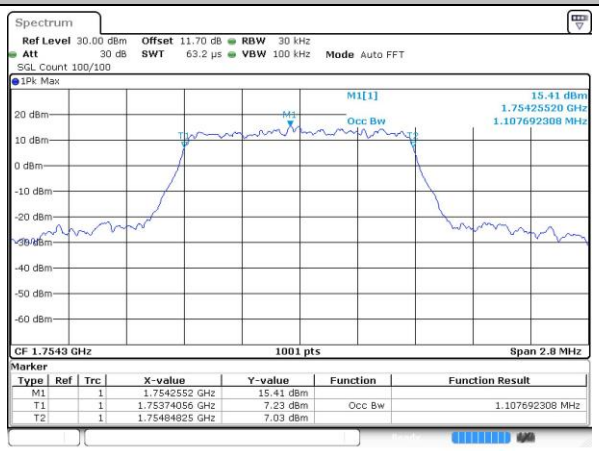
Middle Channel / 1.4MHz / QPSK



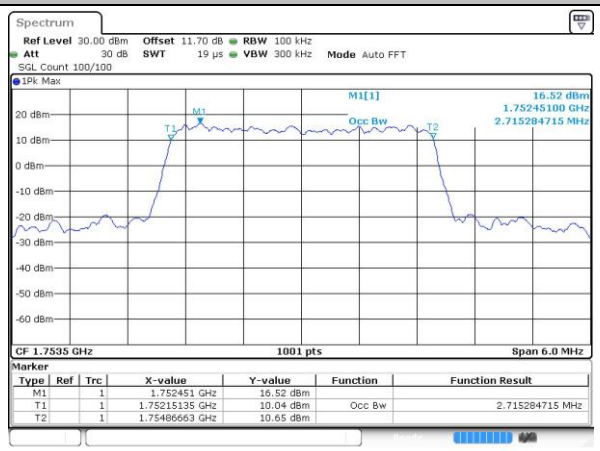
Middle Channel / 3MHz / QPSK



Highest Channel / 1.4MHz / QPSK

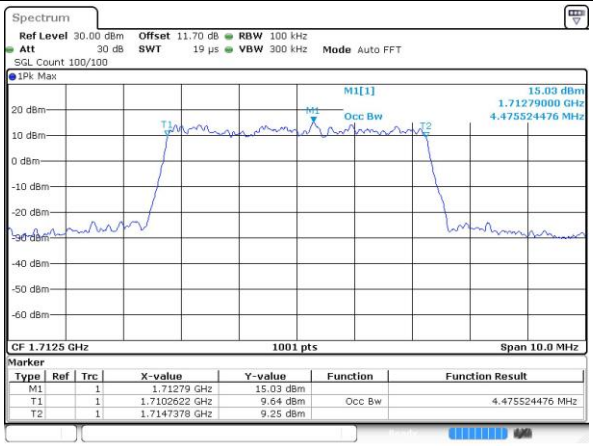


Highest Channel / 3MHz / QPSK

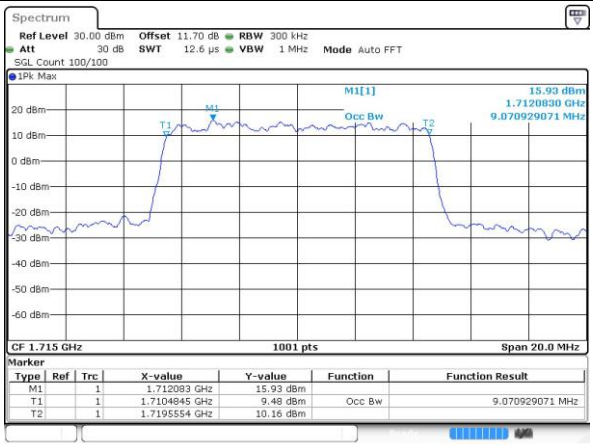


LTE Band 4

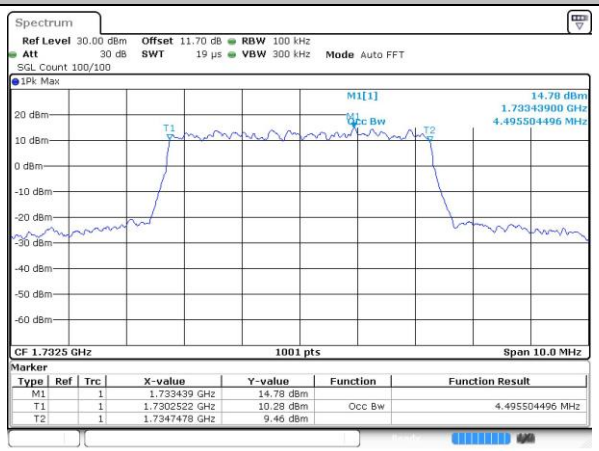
Lowest Channel / 5MHz / QPSK



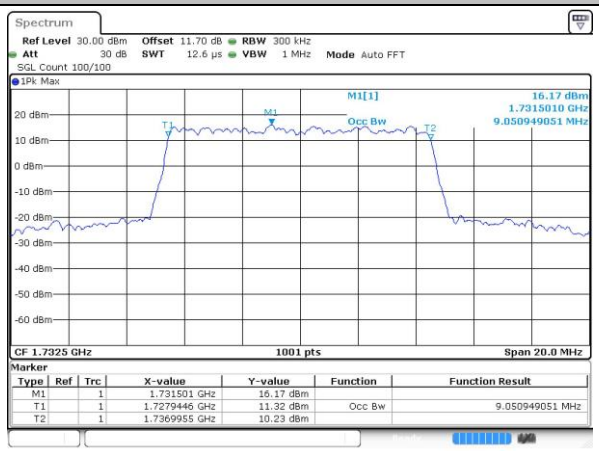
Lowest Channel / 10MHz / QPSK



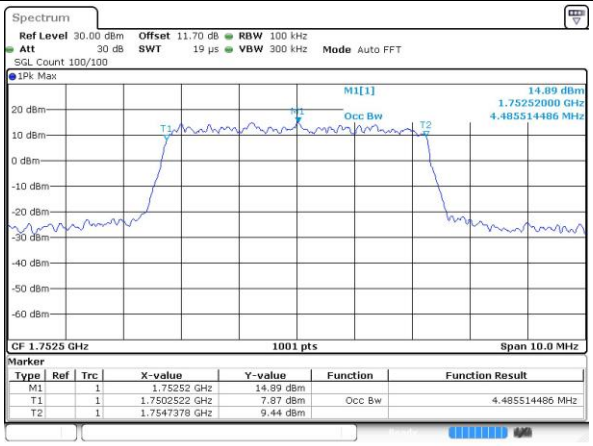
Middle Channel / 5MHz / QPSK



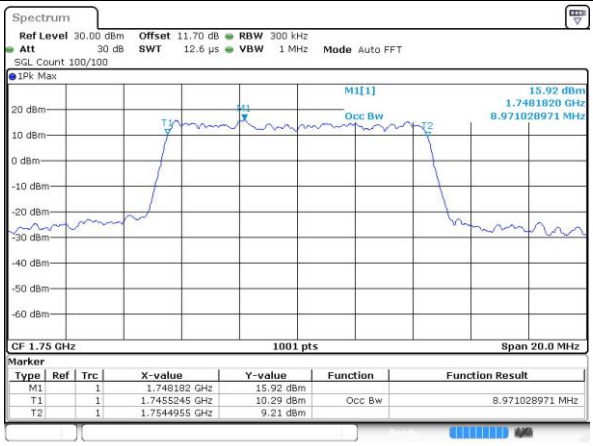
Middle Channel / 10MHz / QPSK



Highest Channel / 5MHz / QPSK

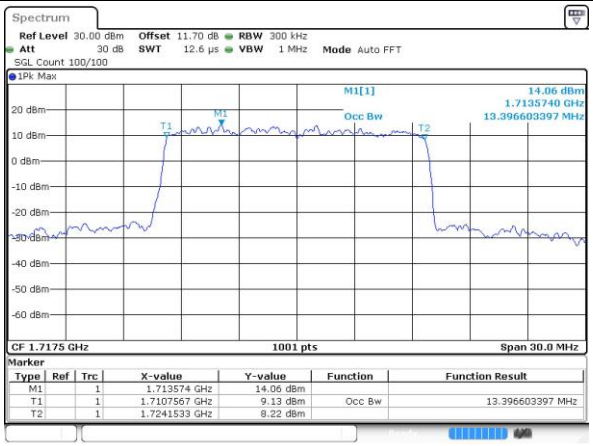


Highest Channel / 10MHz / QPSK

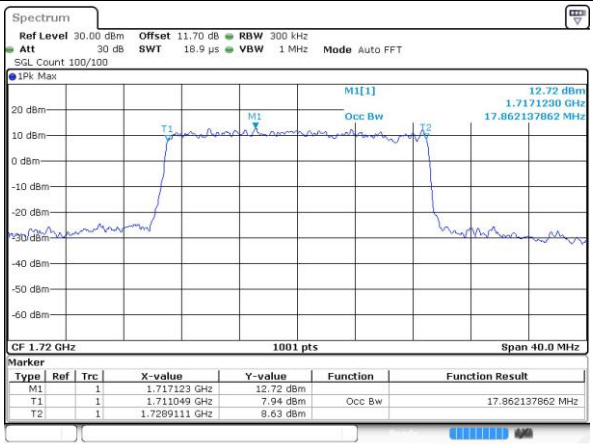


LTE Band 4

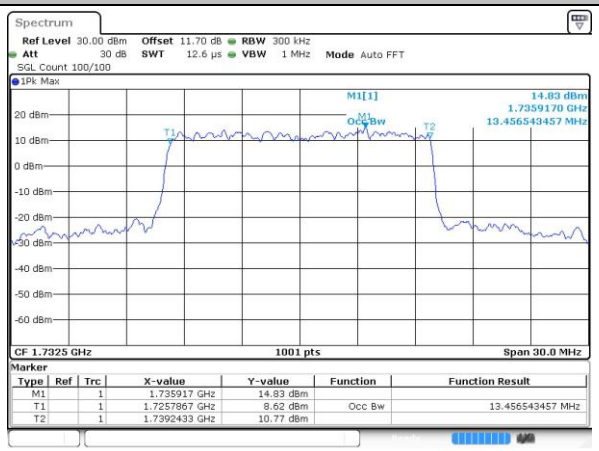
Lowest Channel / 15MHz / QPSK



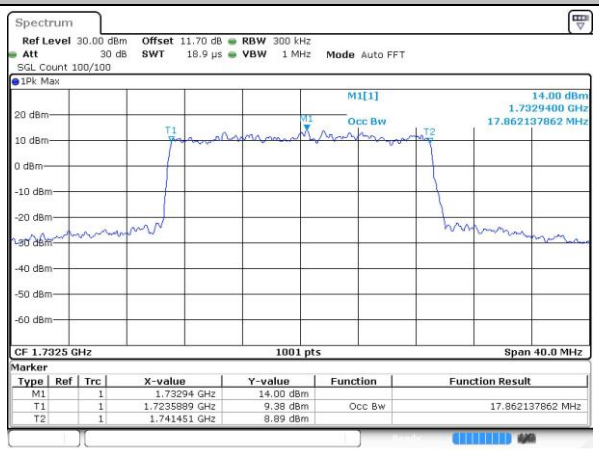
Lowest Channel / 20MHz / QPSK



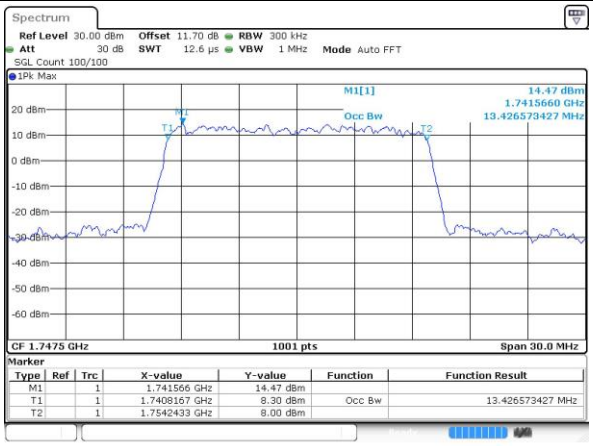
Middle Channel / 15MHz / QPSK



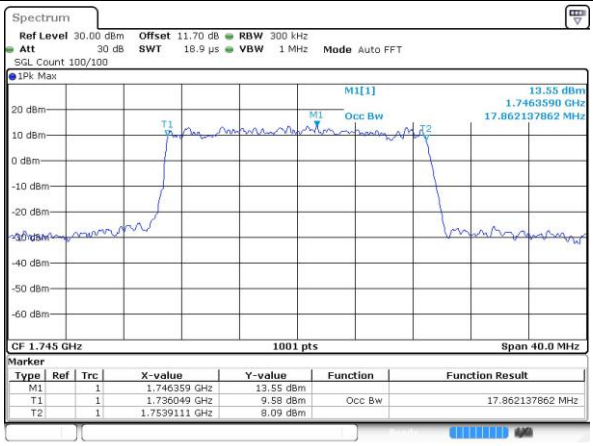
Middle Channel / 20MHz / QPSK



Highest Channel / 15MHz / QPSK



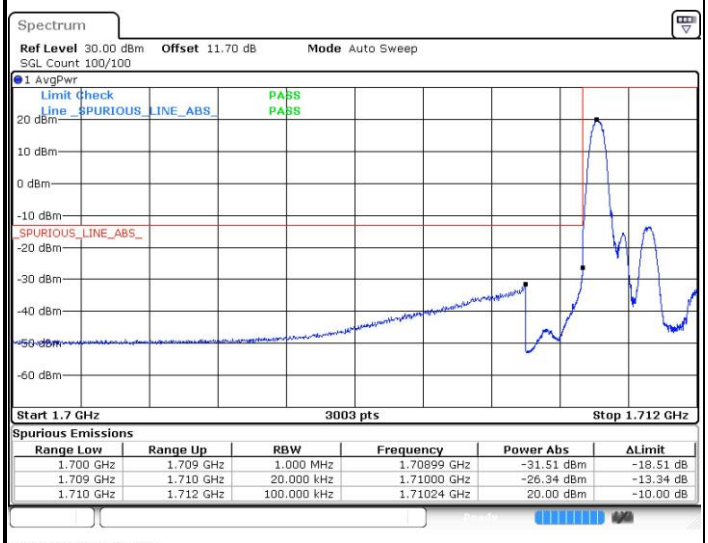
Highest Channel / 20MHz / QPSK



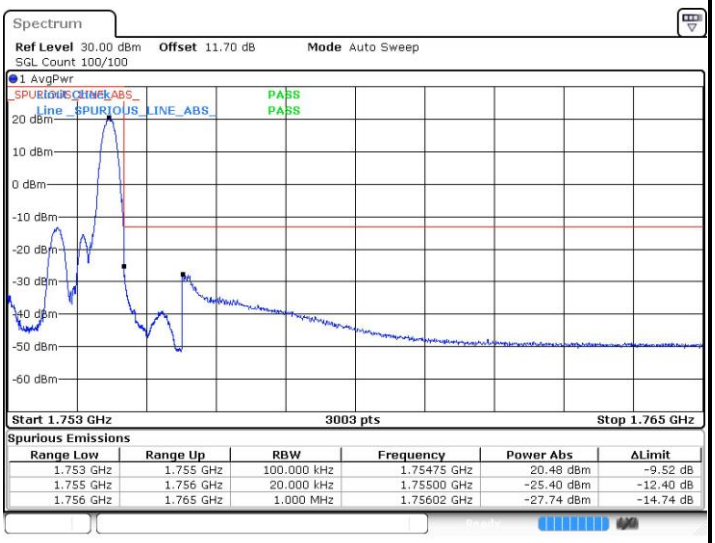
Conducted Band Edge

LTE Band 4 / 1.4MHz / QPSK

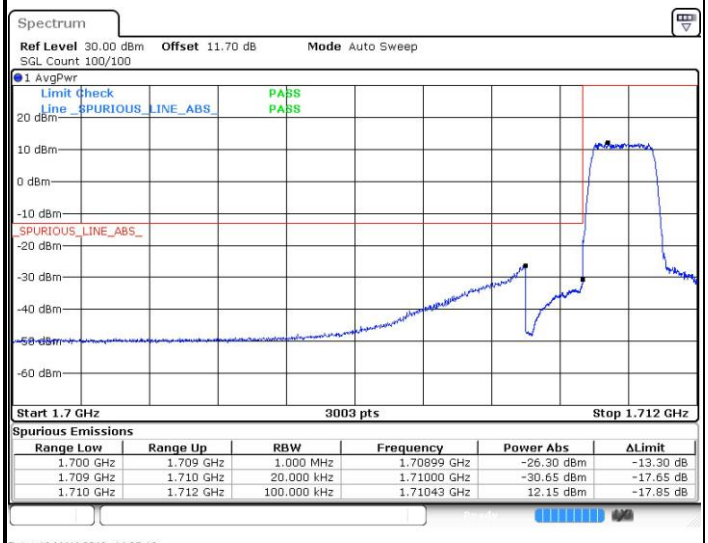
Lowest Band Edge / 1RB



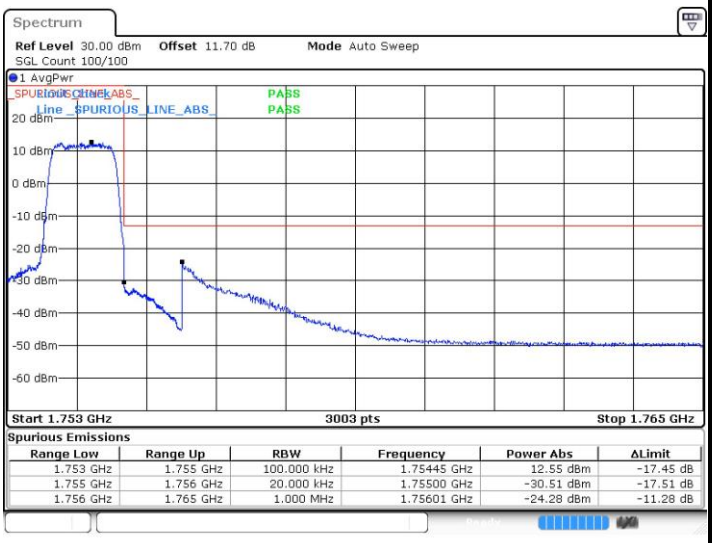
Highest Band Edge / 1RB



Lowest Band Edge / Full RB

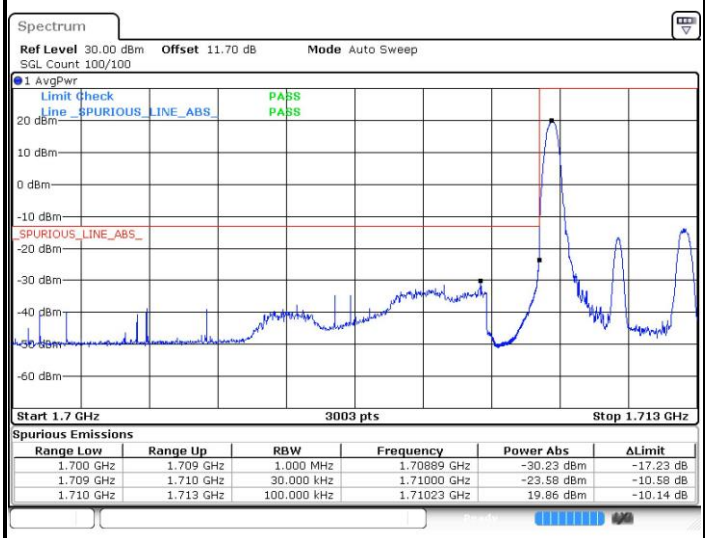


Highest Band Edge / Full RB



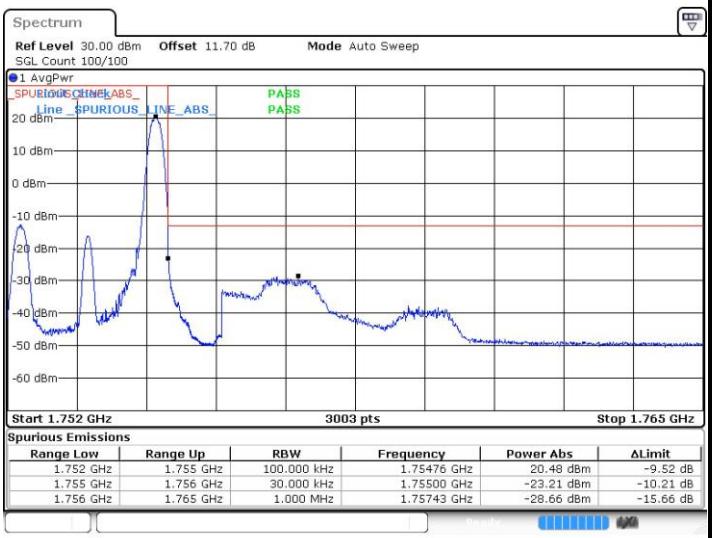
LTE Band 4 / 3MHz / QPSK

Lowest Band Edge / 1RB



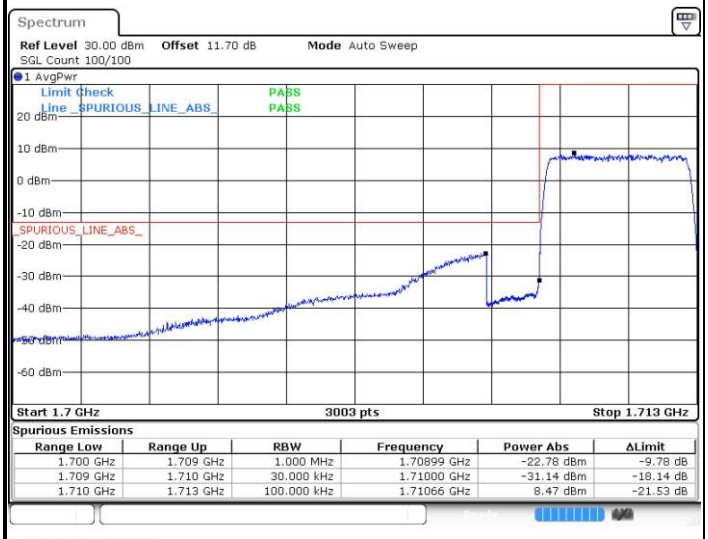
Date: 18.MAY.2019 13:19:19

Highest Band Edge / 1 RB



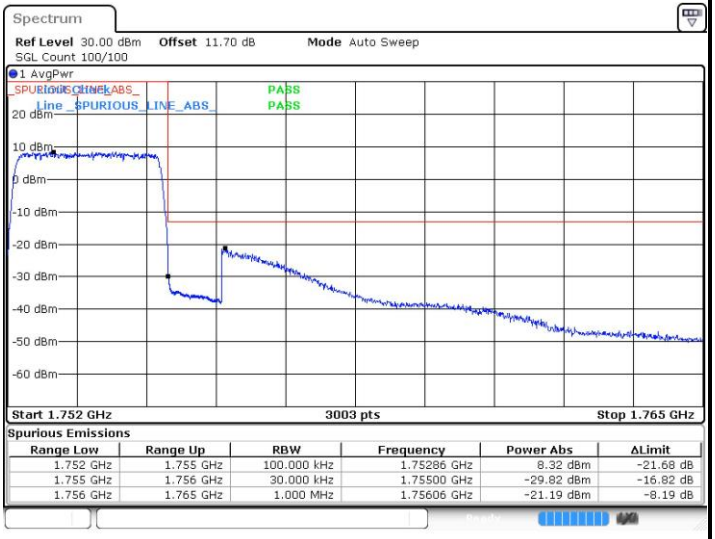
Date: 18.MAY.2019 13:27:45

Lowest Band Edge / Full RB



Date: 18.MAY.2019 13:21:21

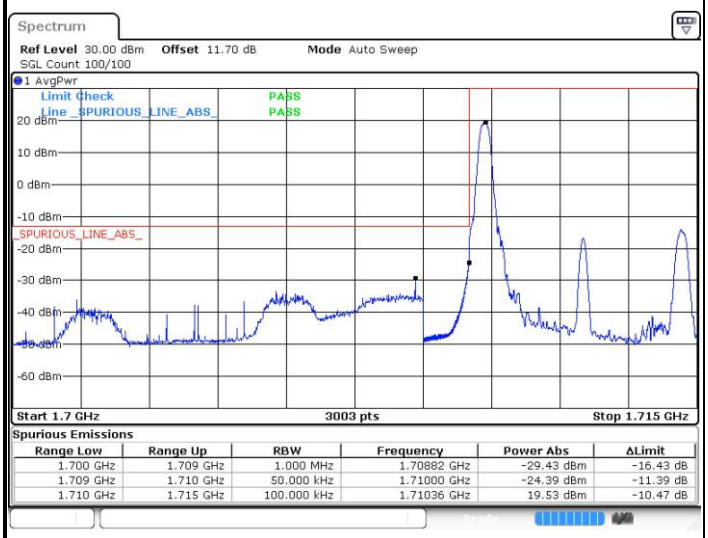
Highest Band Edge / Full RB



Date: 18.MAY.2019 13:29:47

LTE Band 4 / 5MHz / QPSK

Lowest Band Edge / 1 RB

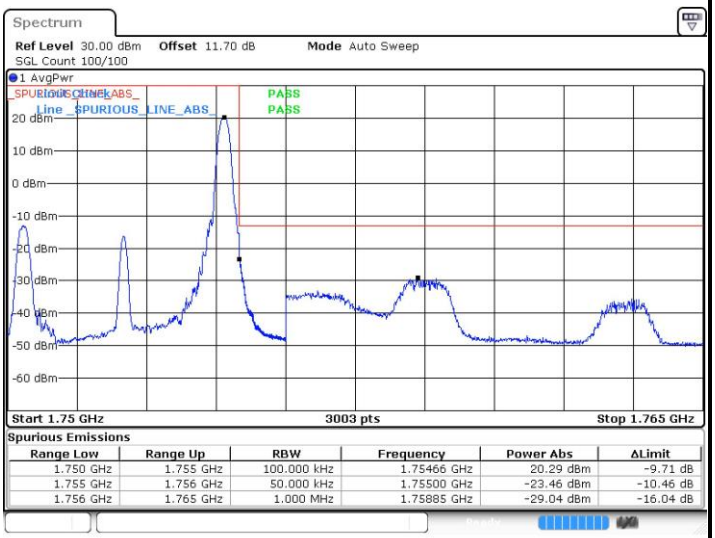


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70882 GHz	-29.43 dBm	-16.43 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-24.39 dBm	-11.39 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71036 GHz	19.53 dBm	-10.47 dB

Date: 18.MAY.2019 13:34:03

Highest Band Edge / 1 RB

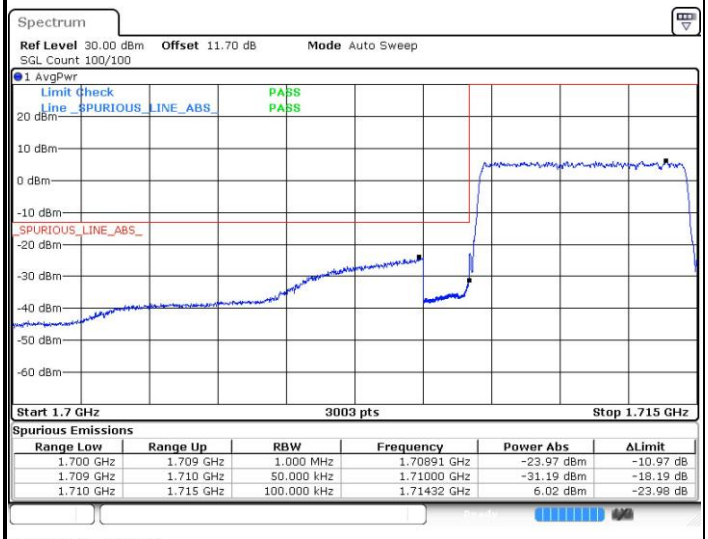


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75466 GHz	20.29 dBm	-9.71 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-23.46 dBm	-10.46 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75885 GHz	-29.04 dBm	-16.04 dB

Date: 18.MAY.2019 13:42:30

Lowest Band Edge / Full RB

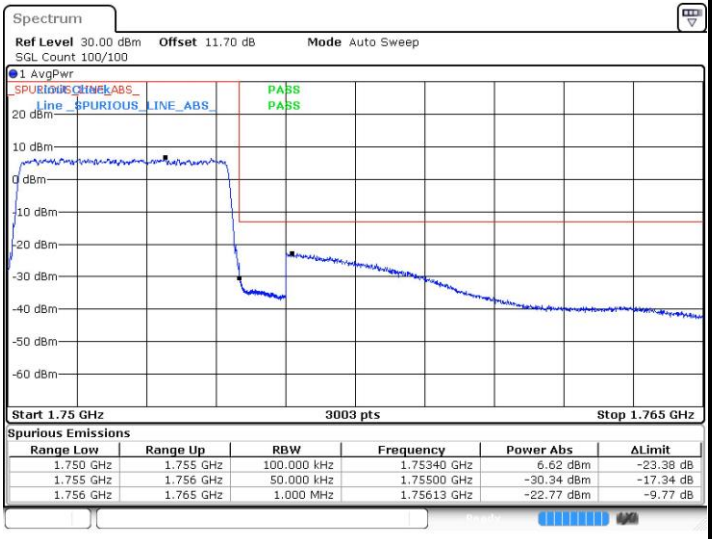


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70891 GHz	-23.97 dBm	-10.97 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-31.19 dBm	-18.19 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71432 GHz	6.02 dBm	-23.98 dB

Date: 18.MAY.2019 13:36:06

Highest Band Edge / Full RB



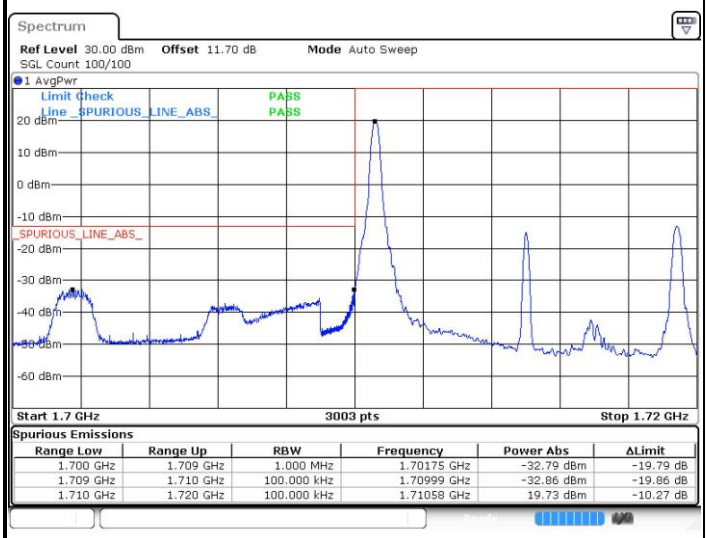
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75340 GHz	6.62 dBm	-23.38 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-30.34 dBm	-17.34 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75613 GHz	-22.77 dBm	-9.77 dB

Date: 18.MAY.2019 13:44:33

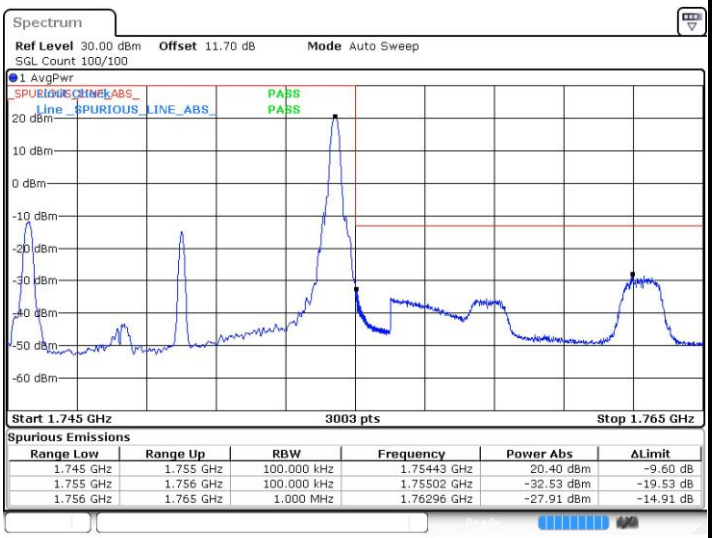
LTE Band 4 / 10MHz / QPSK

Lowest Band Edge / 1 RB



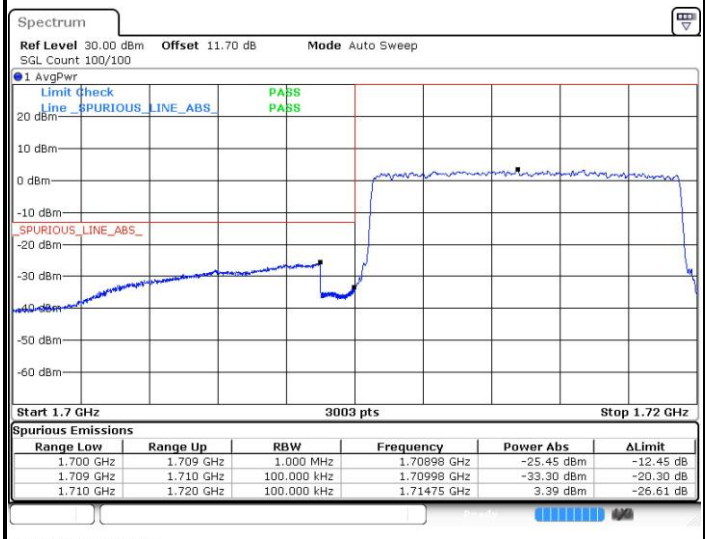
Date: 18.MAY.2019 13:48:49

Highest Band Edge / 1 RB



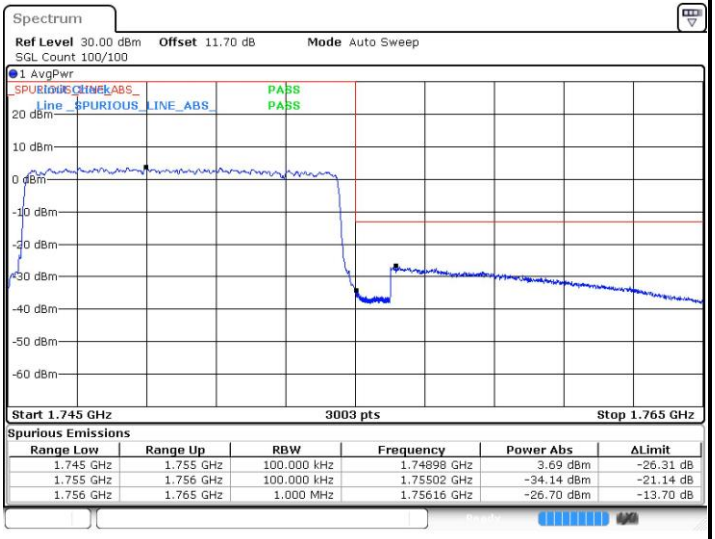
Date: 18.MAY.2019 13:57:15

Lowest Band Edge / Full RB

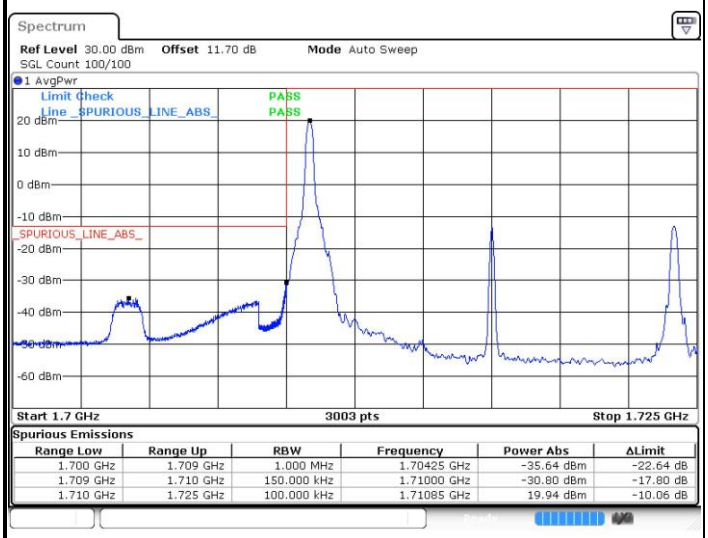
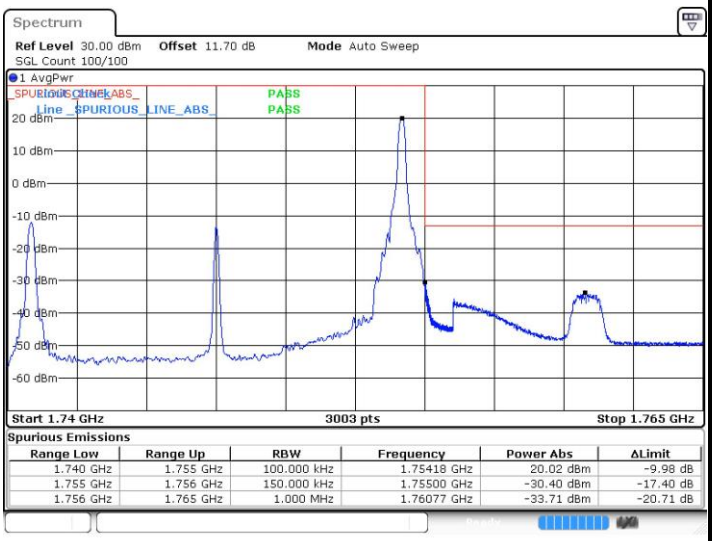
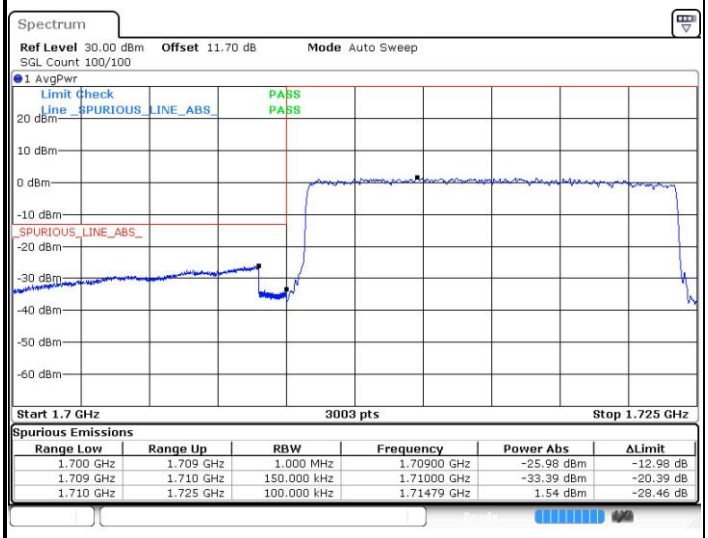
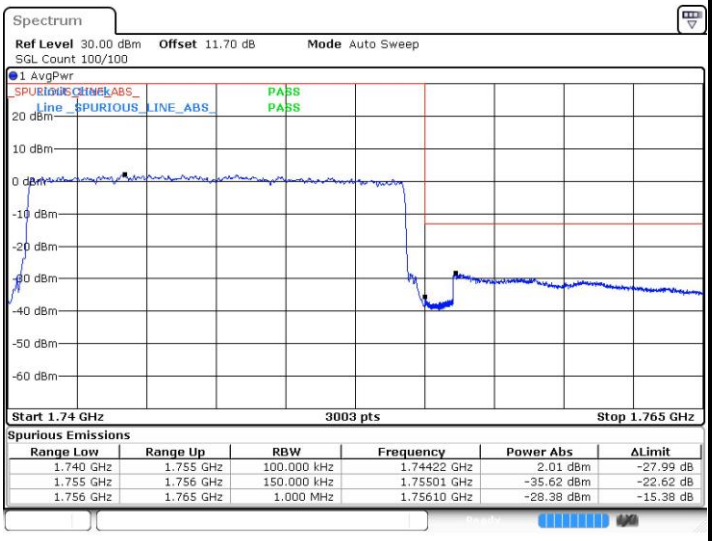


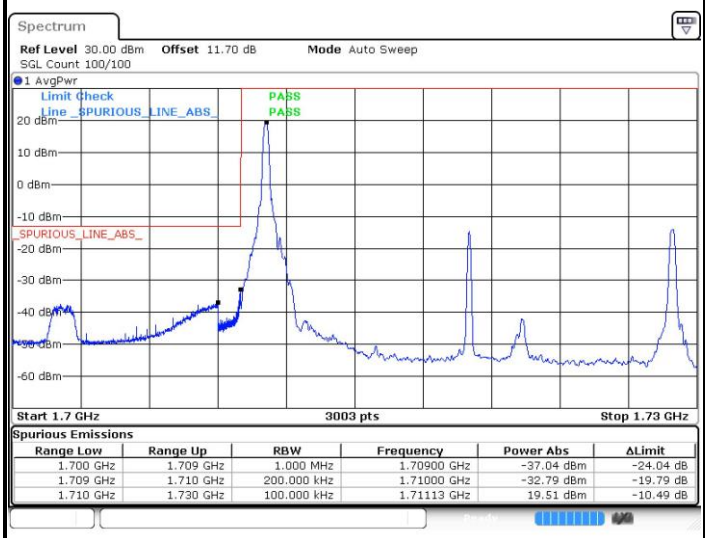
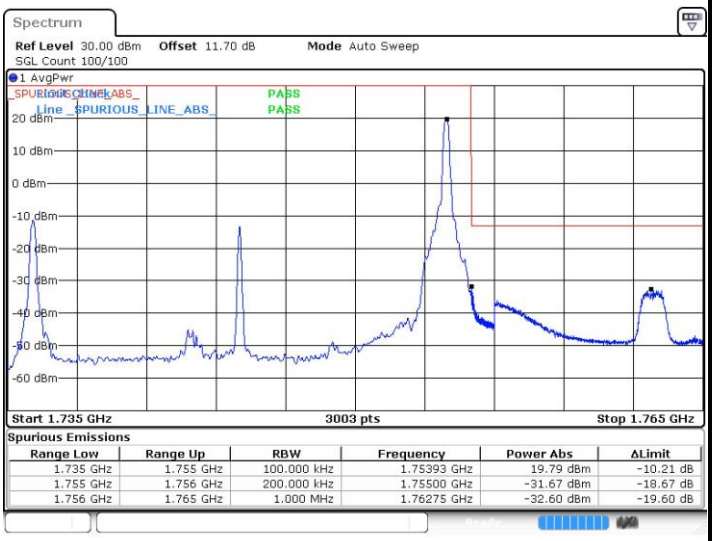
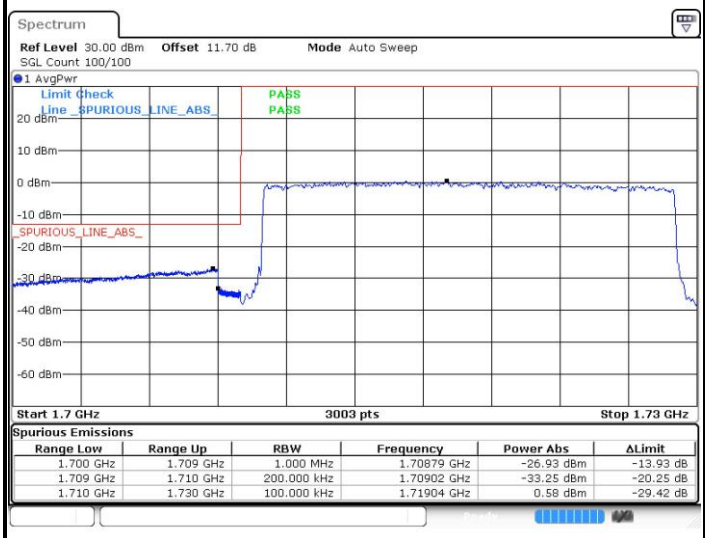
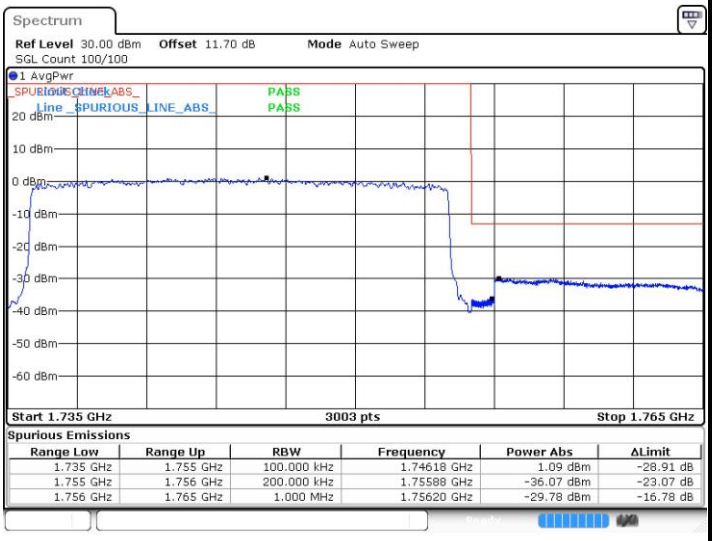
Date: 18.MAY.2019 13:50:52

Highest Band Edge / Full RB



Date: 18.MAY.2019 13:59:18

LTE Band 4 / 15MHz / QPSK	
Lowest Band Edge / 1 RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

LTE Band 4 / 20MHz / QPSK	
Lowest Band Edge / 1 RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**