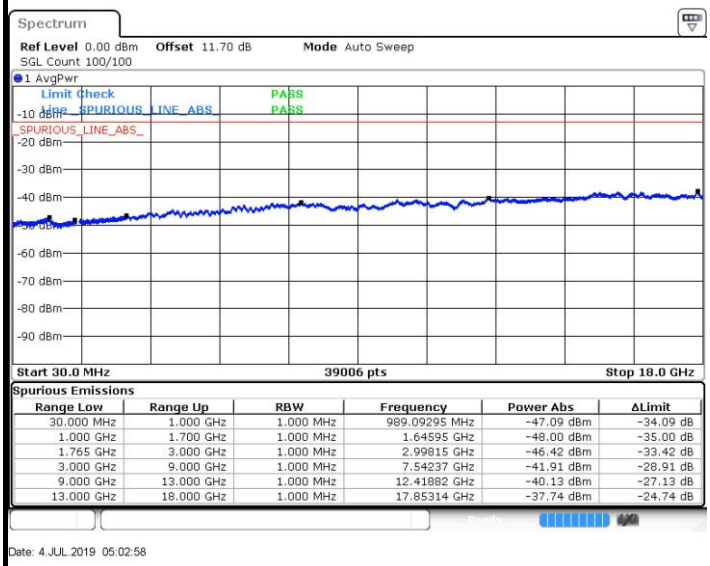
LTE Band 4 / 5MHz

Lowest Channel / 64QAM

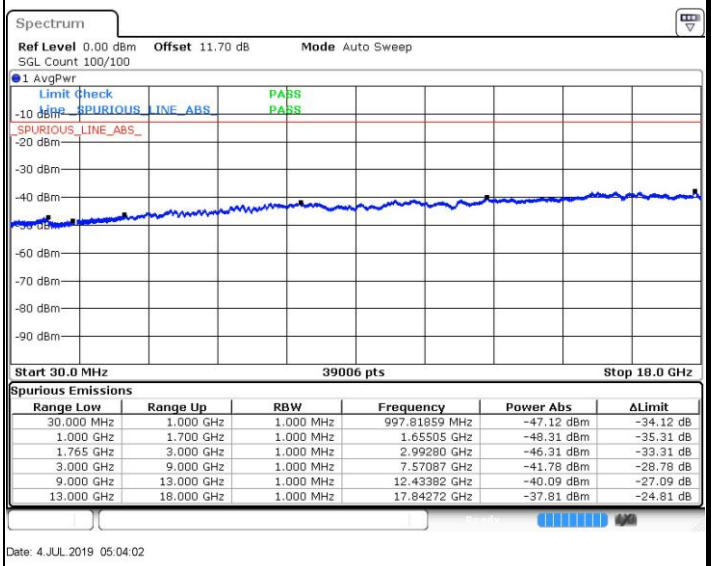


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	989.09295 MHz	-47.09 dBm	-34.09 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.64595 GHz	-48.00 dBm	-35.00 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.99815 GHz	-46.42 dBm	-33.42 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54237 GHz	-41.91 dBm	-28.91 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41882 GHz	-40.13 dBm	-27.13 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.85314 GHz	-37.74 dBm	-24.74 dB

Date: 4.JUL.2019 05:02:58

Middle Channel / 64QAM

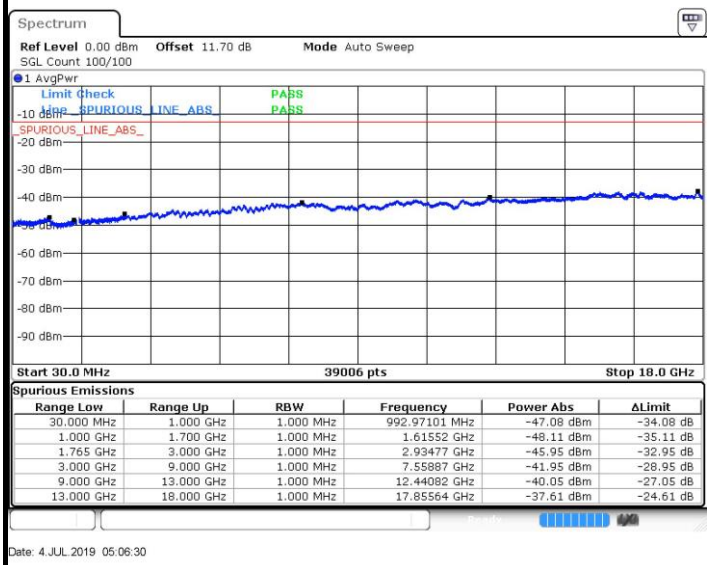


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	997.81859 MHz	-47.12 dBm	-34.12 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.65505 GHz	-48.31 dBm	-35.31 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.99280 GHz	-46.31 dBm	-33.31 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.57087 GHz	-41.78 dBm	-28.78 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43382 GHz	-40.09 dBm	-27.09 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.84272 GHz	-37.81 dBm	-24.81 dB

Date: 4.JUL.2019 05:04:02

Highest Channel / 64QAM



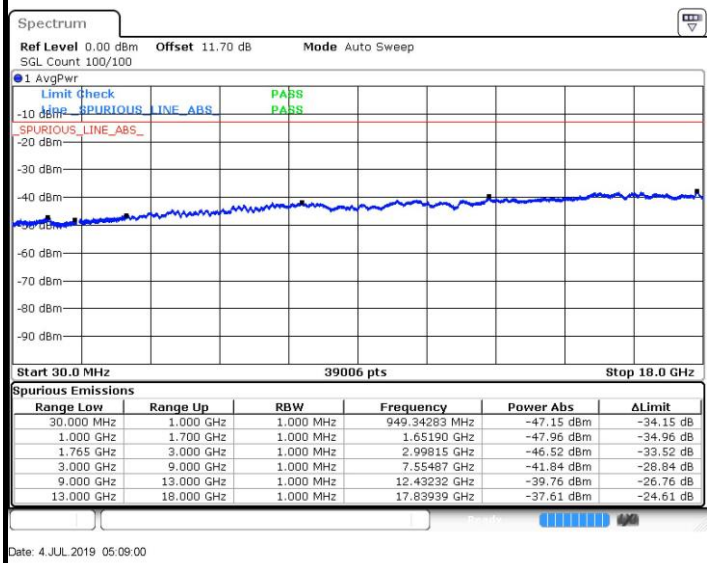
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.97101 MHz	-47.08 dBm	-34.08 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.61552 GHz	-48.11 dBm	-35.11 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.93477 GHz	-45.95 dBm	-32.95 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55887 GHz	-41.95 dBm	-28.95 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44082 GHz	-40.05 dBm	-27.05 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.85564 GHz	-37.61 dBm	-24.61 dB

Date: 4.JUL.2019 05:06:30

LTE Band 4 / 10MHz

Lowest Channel / 64QAM

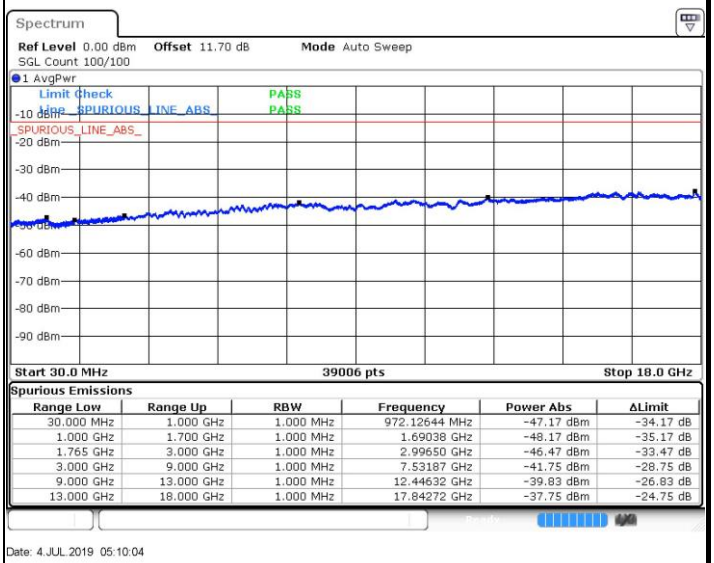


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	949.34283 MHz	-47.15 dBm	-34.15 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.65190 GHz	-47.96 dBm	-34.96 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.99815 GHz	-46.52 dBm	-33.52 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55487 GHz	-41.84 dBm	-28.84 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43232 GHz	-39.76 dBm	-26.76 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.83939 GHz	-37.61 dBm	-24.61 dB

Date: 4.JUL.2019 05:09:00

Middle Channel / 64QAM

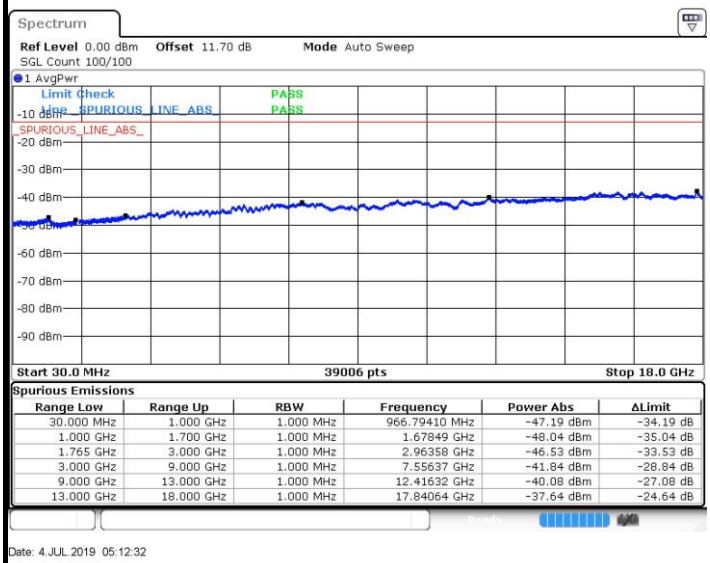


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	972.12644 MHz	-47.17 dBm	-34.17 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69038 GHz	-48.17 dBm	-35.17 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.99650 GHz	-46.47 dBm	-33.47 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.53187 GHz	-41.75 dBm	-28.75 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44632 GHz	-39.83 dBm	-26.83 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.84272 GHz	-37.75 dBm	-24.75 dB

Date: 4.JUL.2019 05:10:04

Highest Channel / 64QAM



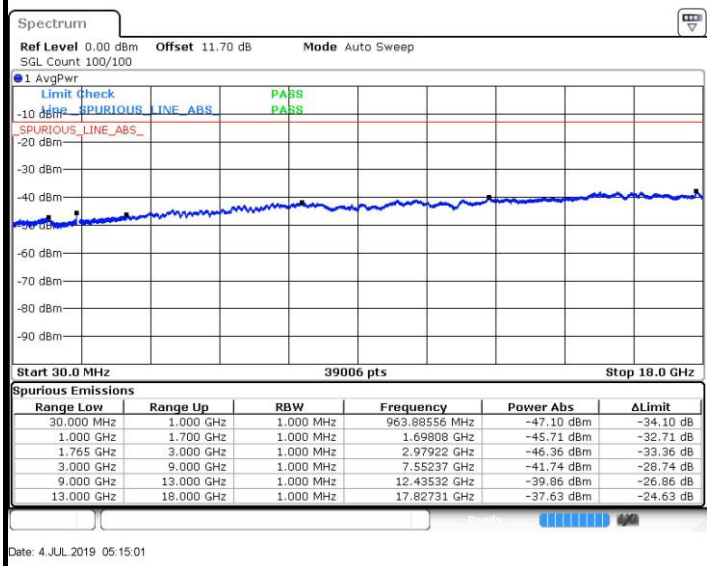
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	966.79410 MHz	-47.19 dBm	-34.19 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.67849 GHz	-48.04 dBm	-35.04 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.96358 GHz	-46.53 dBm	-33.53 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55637 GHz	-41.84 dBm	-28.84 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41632 GHz	-40.08 dBm	-27.08 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.84064 GHz	-37.64 dBm	-24.64 dB

Date: 4.JUL.2019 05:12:32

LTE Band 4 / 15MHz

Lowest Channel / 64QAM

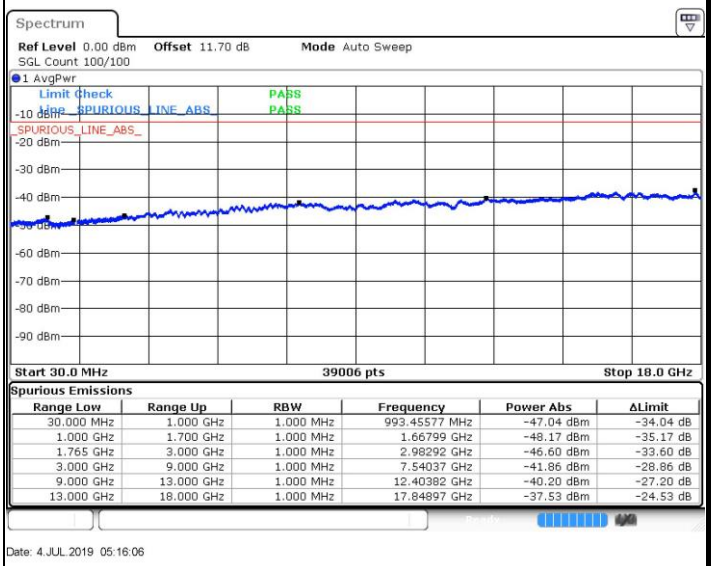


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	963.88556 MHz	-47.10 dBm	-34.10 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69808 GHz	-45.71 dBm	-32.71 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.97922 GHz	-46.36 dBm	-33.36 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55237 GHz	-41.74 dBm	-28.74 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43532 GHz	-39.86 dBm	-26.86 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.82731 GHz	-37.63 dBm	-24.63 dB

Date: 4.JUL.2019 05:15:01

Middle Channel / 64QAM

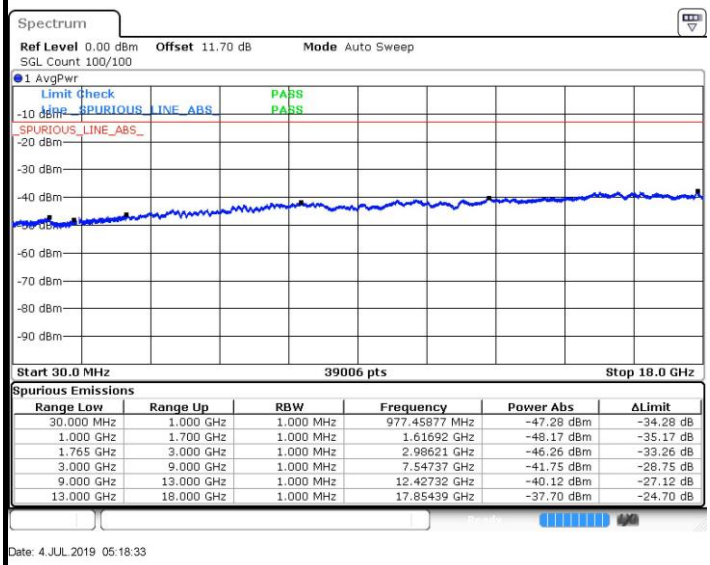


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	993.45577 MHz	-47.04 dBm	-34.04 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.66799 GHz	-48.17 dBm	-35.17 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.98292 GHz	-46.60 dBm	-33.60 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54037 GHz	-41.86 dBm	-28.86 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.40382 GHz	-40.20 dBm	-27.20 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.84897 GHz	-37.53 dBm	-24.53 dB

Date: 4.JUL.2019 05:16:06

Highest Channel / 64QAM



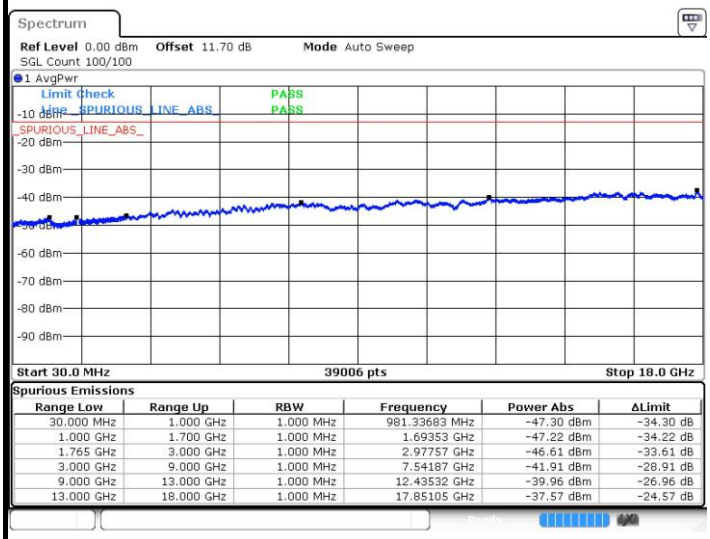
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	977.45877 MHz	-47.28 dBm	-34.28 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.61692 GHz	-48.17 dBm	-35.17 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.98621 GHz	-46.26 dBm	-33.26 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54737 GHz	-41.75 dBm	-28.75 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.42732 GHz	-40.12 dBm	-27.12 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.85439 GHz	-37.70 dBm	-24.70 dB

Date: 4.JUL.2019 05:18:33

LTE Band 4 / 20MHz

Lowest Channel / 64QAM

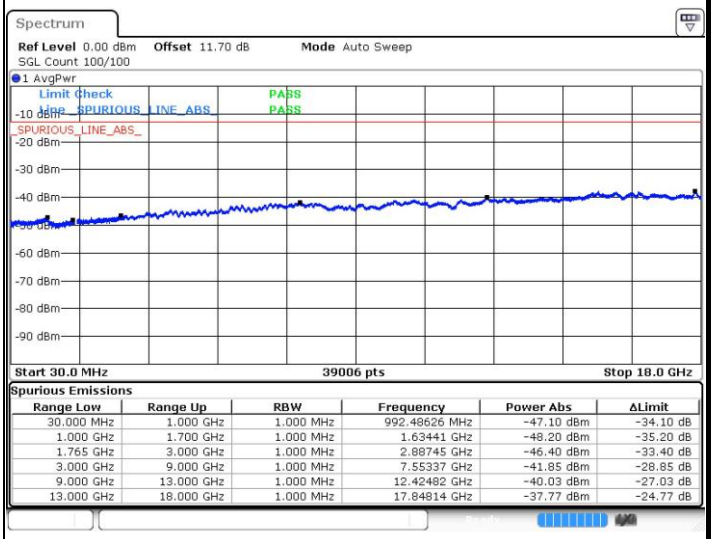


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	981.33683 MHz	-47.30 dBm	-34.30 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69353 GHz	-47.22 dBm	-34.22 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.97757 GHz	-46.61 dBm	-33.61 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54187 GHz	-41.91 dBm	-28.91 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43532 GHz	-39.96 dBm	-26.96 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.85105 GHz	-37.57 dBm	-24.57 dB

Date: 4.JUL.2019 05:21:02

Middle Channel / 64QAM

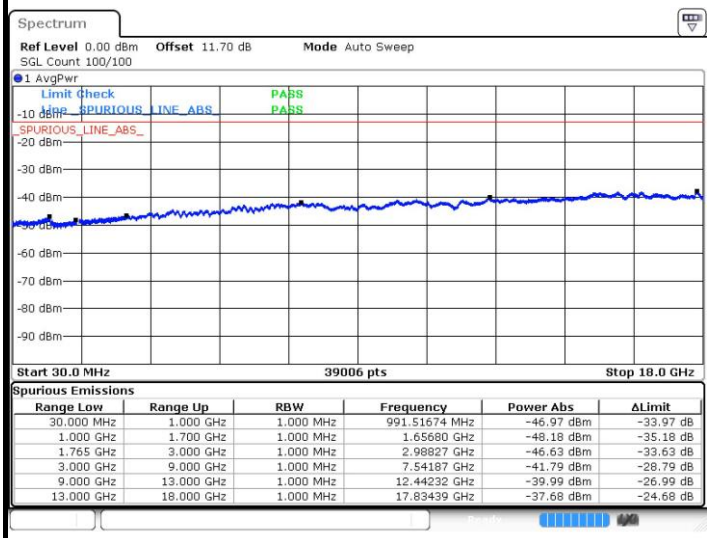


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.48626 MHz	-47.10 dBm	-34.10 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.63441 GHz	-48.20 dBm	-35.20 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.88745 GHz	-46.40 dBm	-33.40 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55337 GHz	-41.85 dBm	-28.85 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.42482 GHz	-40.03 dBm	-27.03 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.84814 GHz	-37.77 dBm	-24.77 dB

Date: 4.JUL.2019 05:22:07

Highest Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.51674 MHz	-46.97 dBm	-33.97 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.65680 GHz	-48.18 dBm	-35.18 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.98827 GHz	-46.63 dBm	-33.63 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54187 GHz	-41.79 dBm	-28.79 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44232 GHz	-39.99 dBm	-26.99 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.83439 GHz	-37.68 dBm	-24.68 dB

Date: 4.JUL.2019 05:24:35

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	0.0007	PASS
40	Normal Voltage	0.0071	
30	Normal Voltage	0.0056	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0066	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0002	
-30	Normal Voltage	0.0005	
20	Maximum Voltage	0.0070	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0059	

Note:

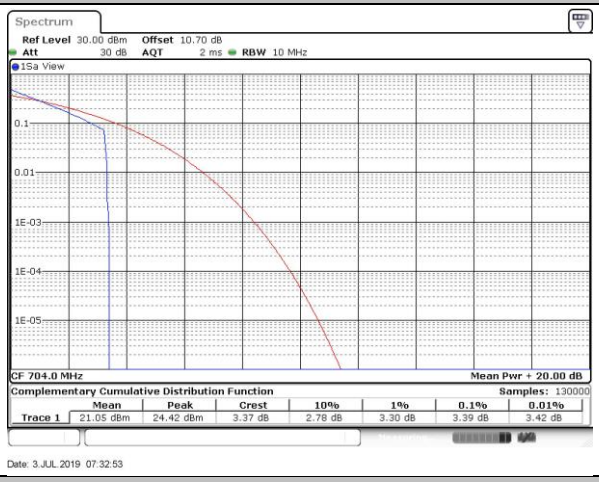
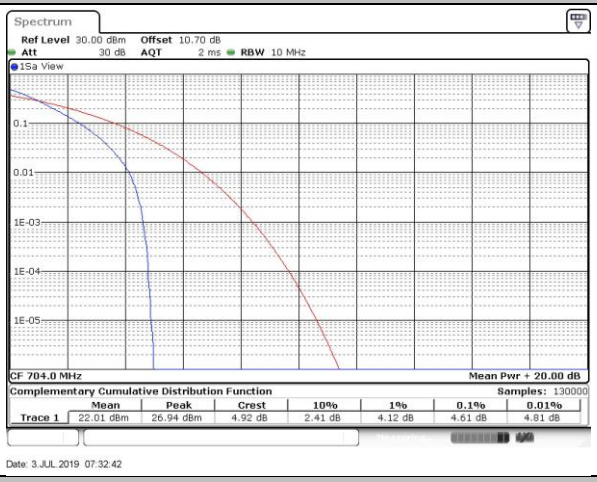
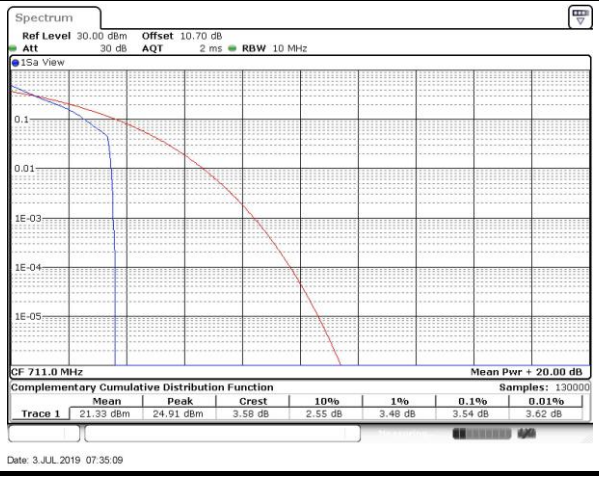
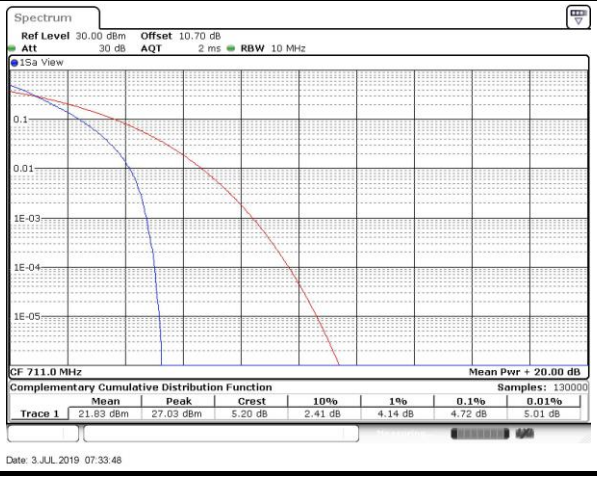
1. Normal Voltage =3.85 V.；Battery End Point (BEP) =3.65 V.；Maximum Voltage =4.25 V.

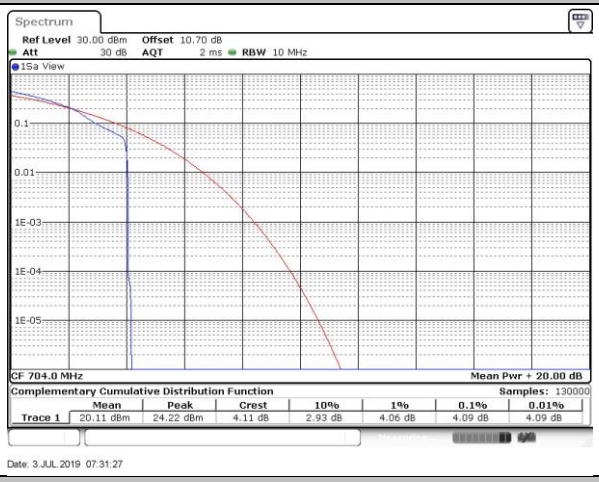
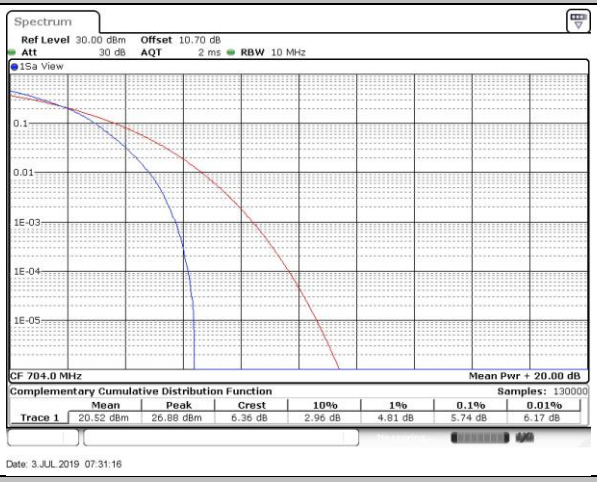
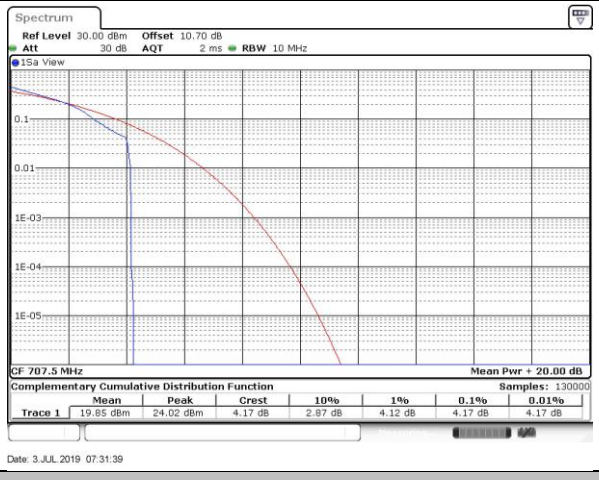
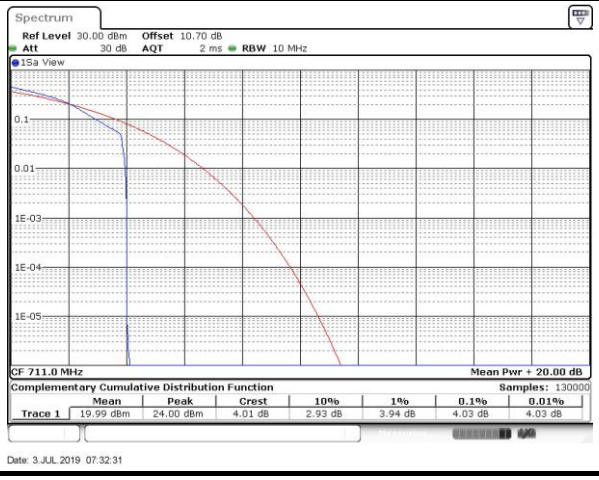
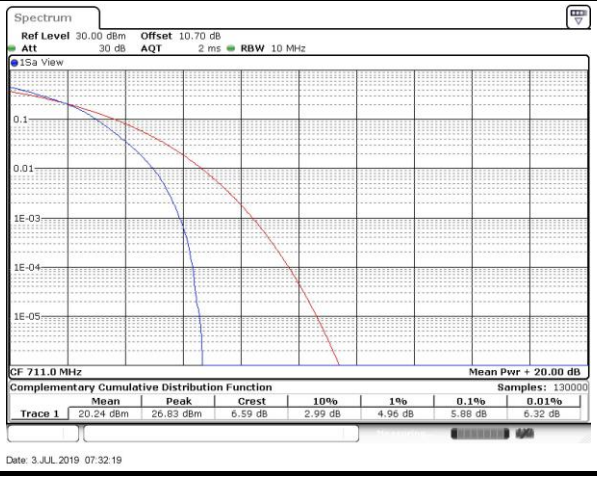
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

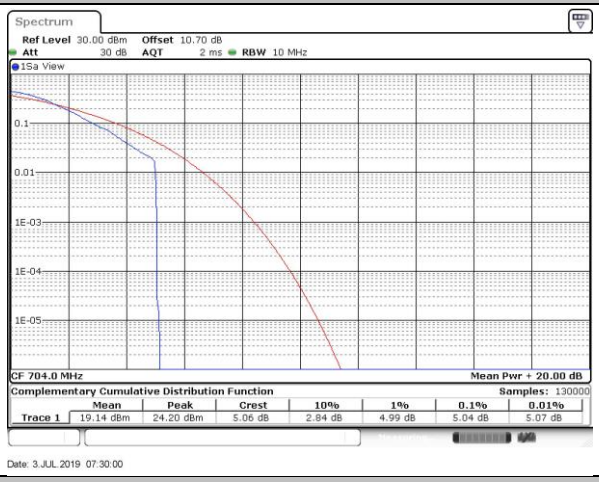
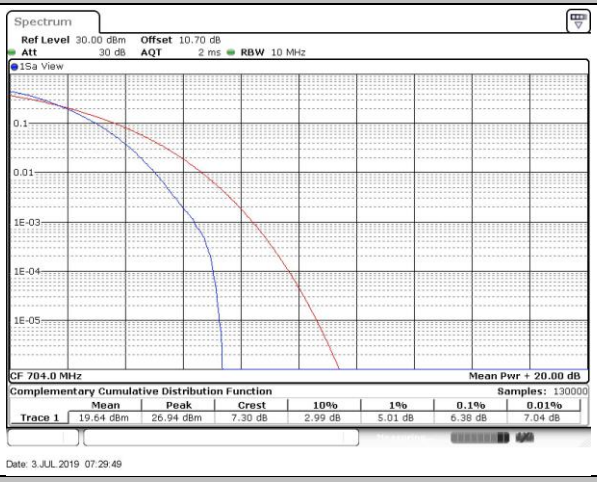
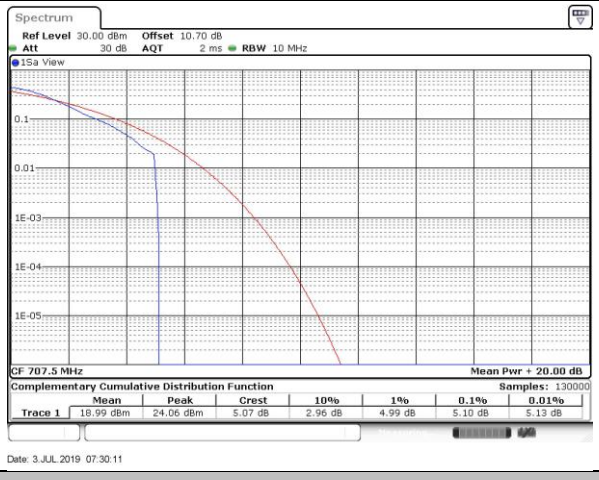
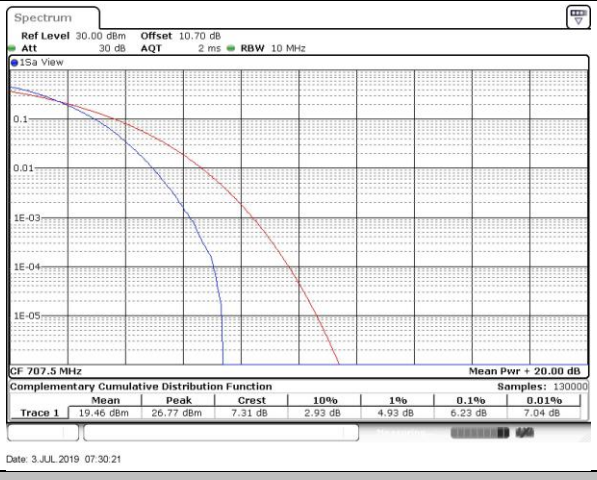
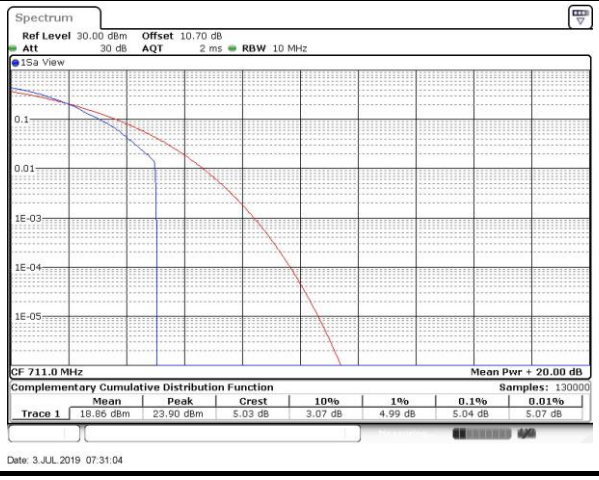
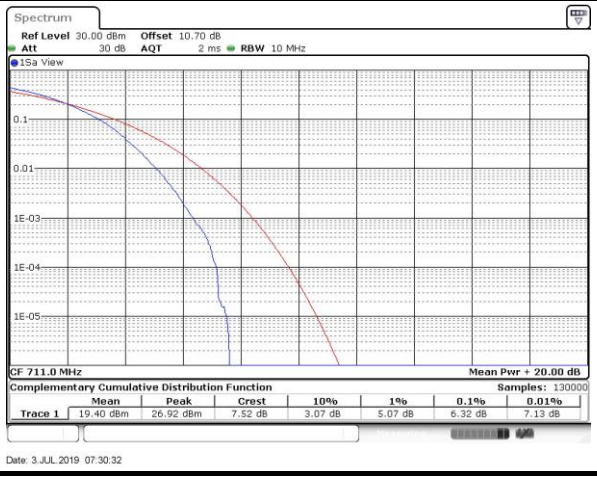
LTE Band 12

Peak-to-Average Ratio

Mode	LTE Band 12 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.39	4.61	4.09	5.74	PASS
Middle CH	3.51	4.81	4.17	5.82	
Highest CH	3.54	4.72	4.03	5.88	
Mode	LTE Band 12 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.04	6.38	-	-	PASS
Middle CH	5.10	6.23	-	-	
Highest CH	5.04	6.32	-	-	

LTE Band 12 / 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 12 / 10MHz / 16QAM	
Lowest Channel / 1RB	**Lowest Channel / Full RB**
	
Middle Channel / 1RB	**Middle Channel / Full RB**
	
Highest Channel / 1RB	**Highest Channel / Full RB**
	

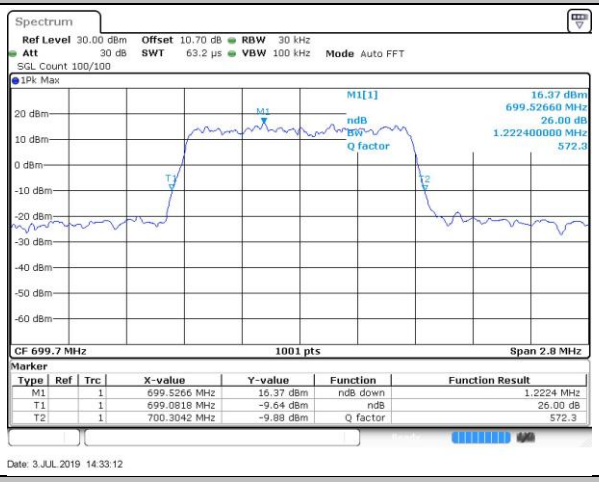
LTE Band 12 / 10MHz / 64QAM	
Lowest Channel / 1RB	**Lowest Channel / Full RB**
	
Middle Channel / 1RB	**Middle Channel / Full RB**
	
Highest Channel / 1RB	**Highest Channel / Full RB**
	

26dB Bandwidth

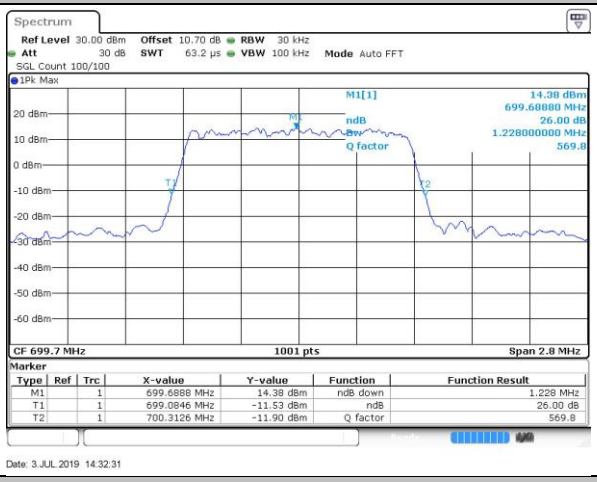
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.22	1.23	3.02	2.97	4.77	4.88	9.67	9.75	-	-	-	-
Middle CH	1.24	1.23	3.06	3.01	4.82	4.90	9.71	9.81	-	-	-	-
Highest CH	1.23	1.22	3.02	3.05	4.87	4.90	9.81	9.77	-	-	-	-
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.23	-	3.02	-	4.92	-	9.81	-	-	-	-	-
Middle CH	1.22	-	3.01	-	4.94	-	10.03	-	-	-	-	-
Highest CH	1.22	-	2.97	-	4.86	-	9.81	-	-	-	-	-

LTE Band 12

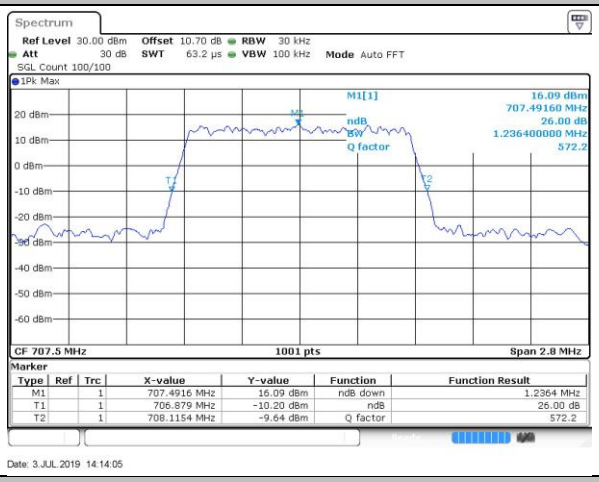
Lowest Channel / 1.4MHz / QPSK



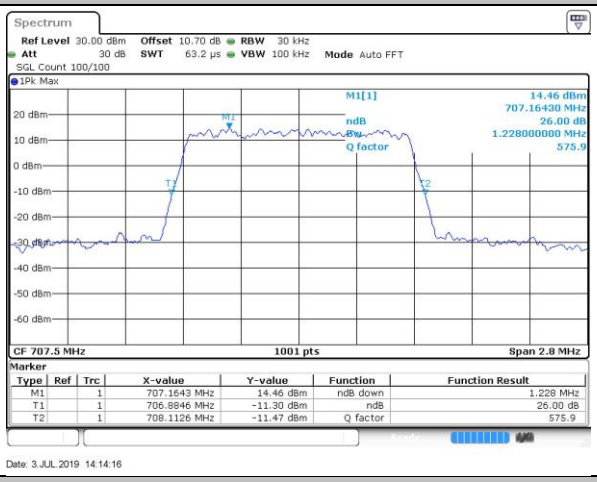
Lowest Channel / 1.4MHz / 16QAM



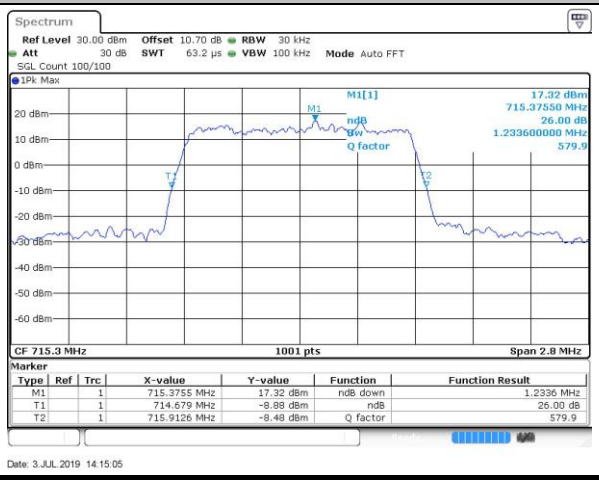
Middle Channel / 1.4MHz / QPSK



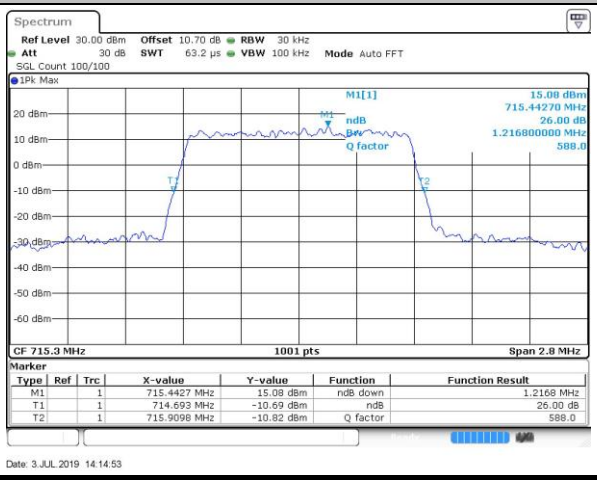
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK

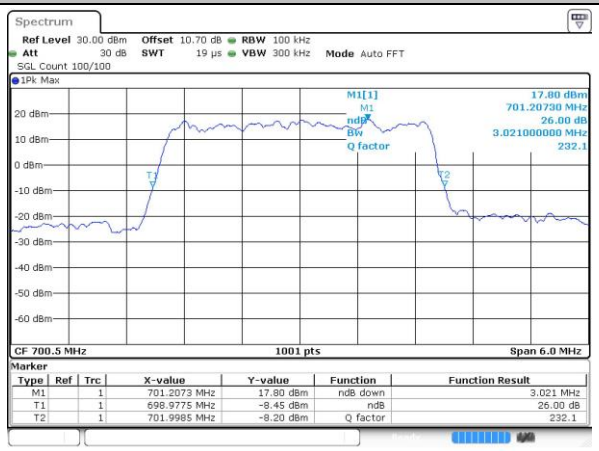


Highest Channel / 1.4MHz / 16QAM

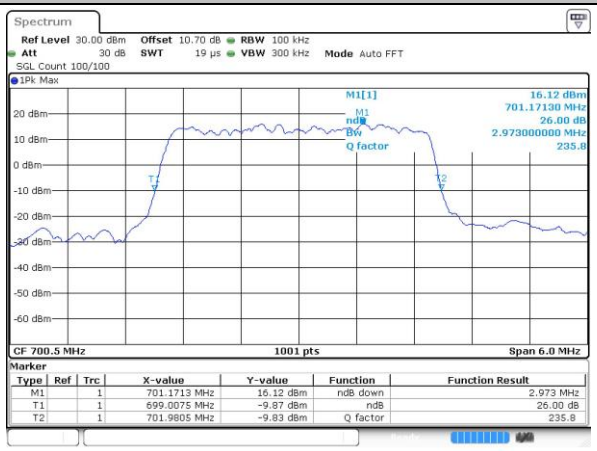


LTE Band 12

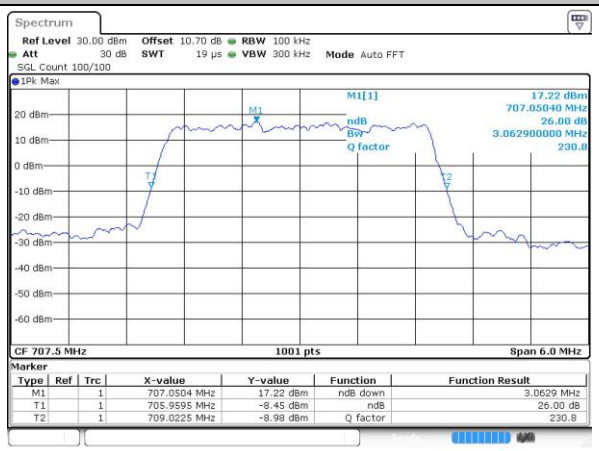
Lowest Channel / 3MHz / QPSK



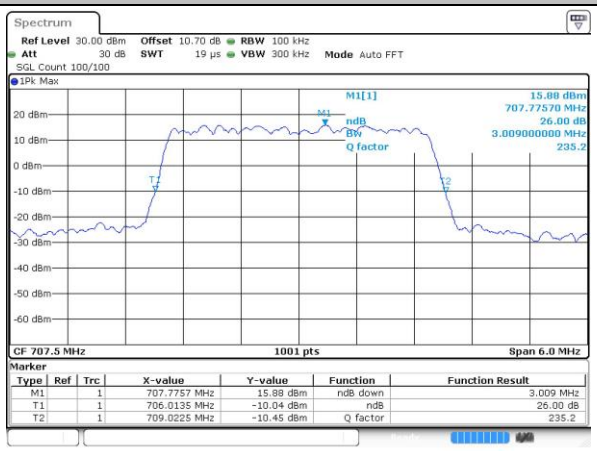
Lowest Channel / 3MHz / 16QAM



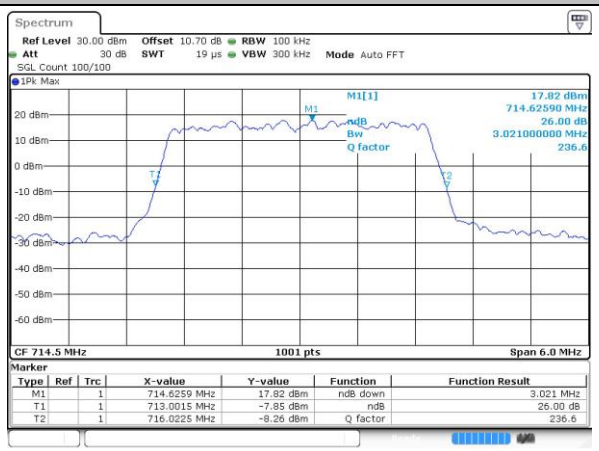
Middle Channel / 3MHz / QPSK



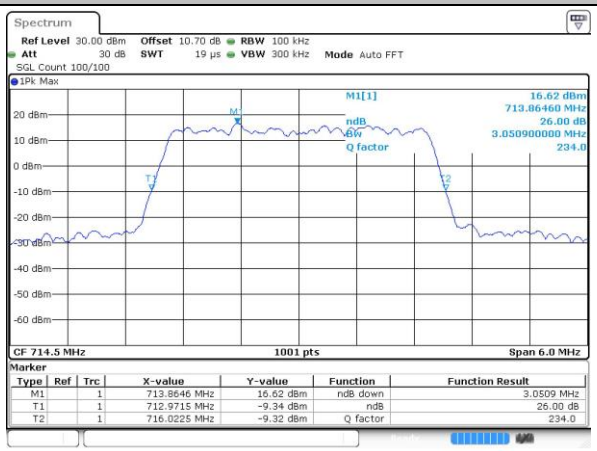
Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK

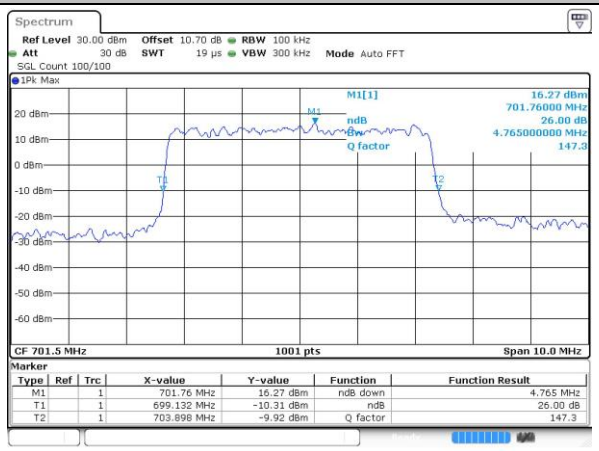


Highest Channel / 3MHz / 16QAM

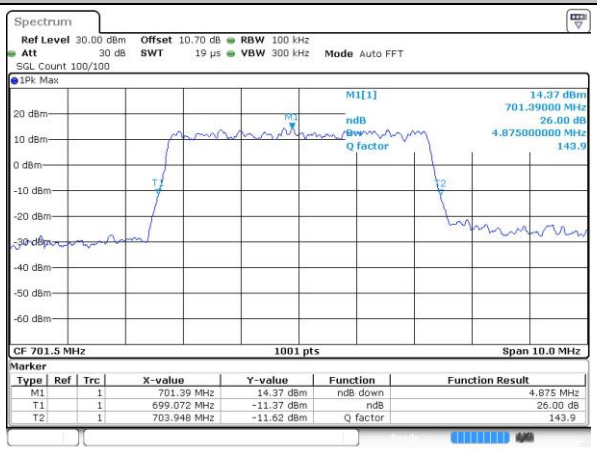


LTE Band 12

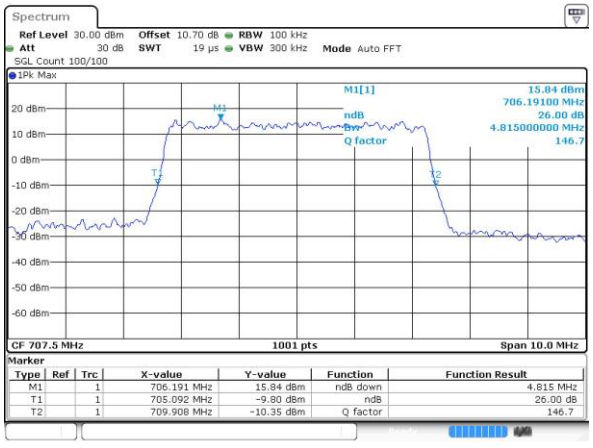
Lowest Channel / 5MHz / QPSK



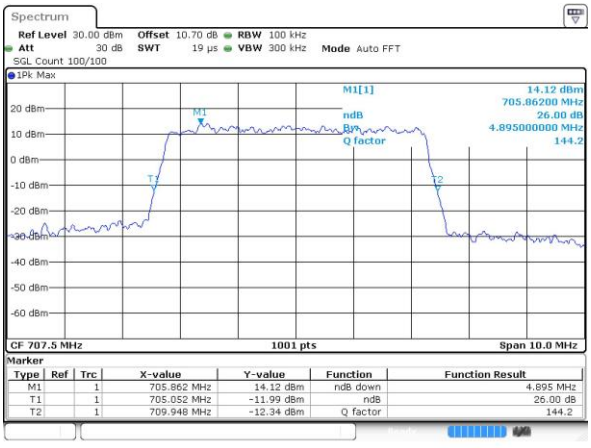
Lowest Channel / 5MHz / 16QAM



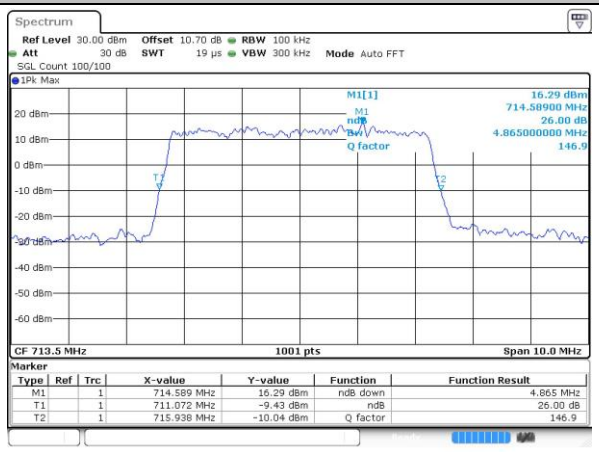
Middle Channel / 5MHz / QPSK



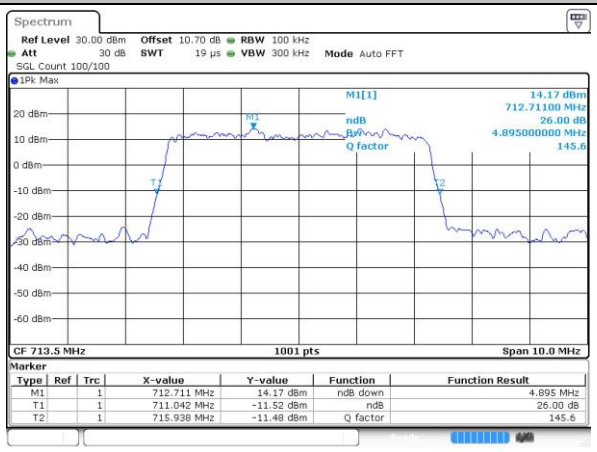
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

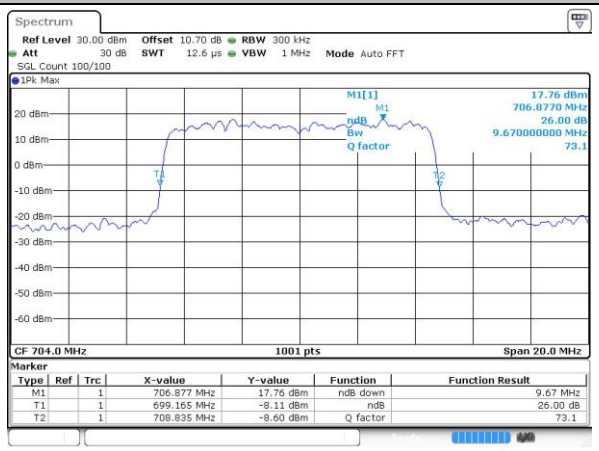


Highest Channel / 5MHz / 16QAM

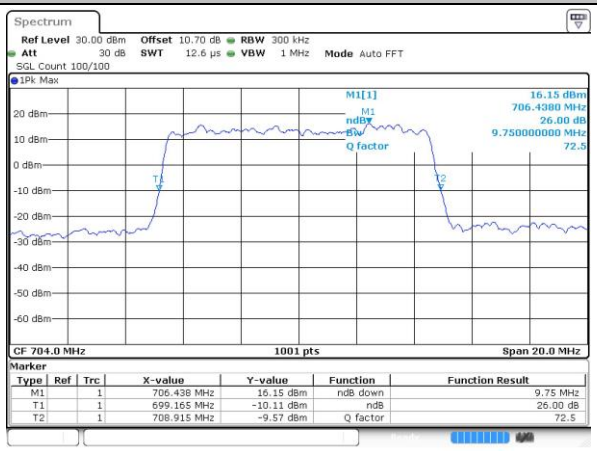


LTE Band 12

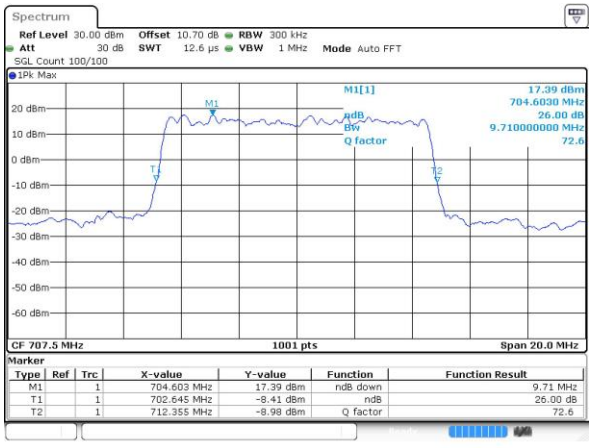
Lowest Channel / 10MHz / QPSK



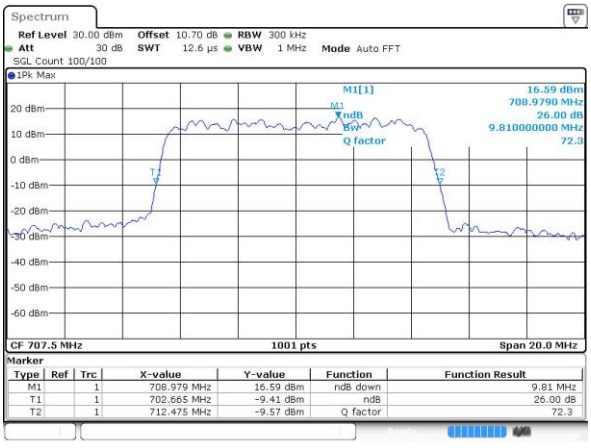
Lowest Channel / 10MHz / 16QAM



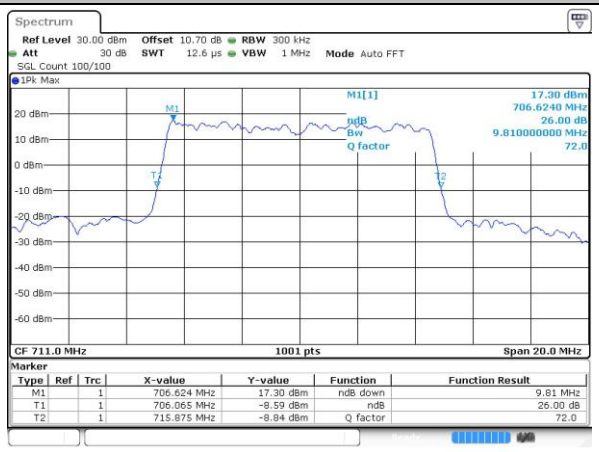
Middle Channel / 10MHz / QPSK



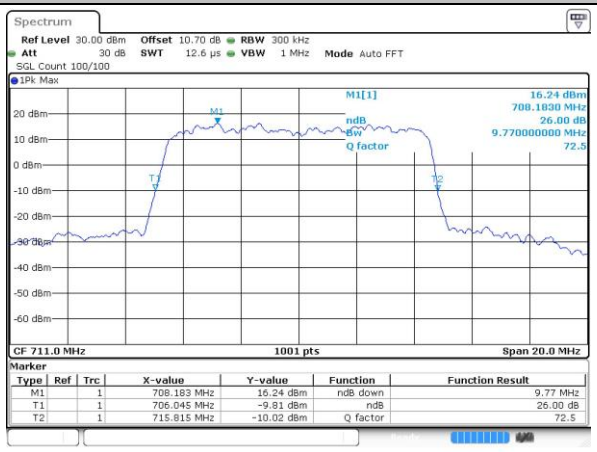
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

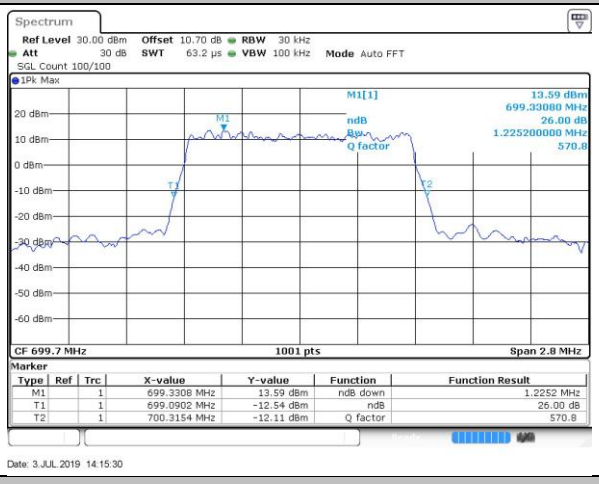


Highest Channel / 10MHz / 16QAM

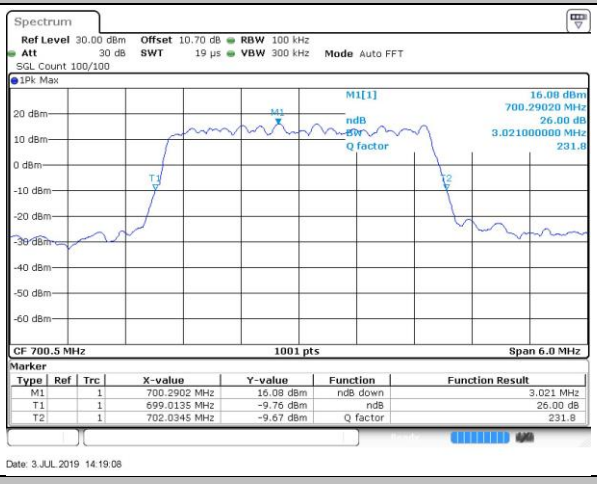


LTE Band 12

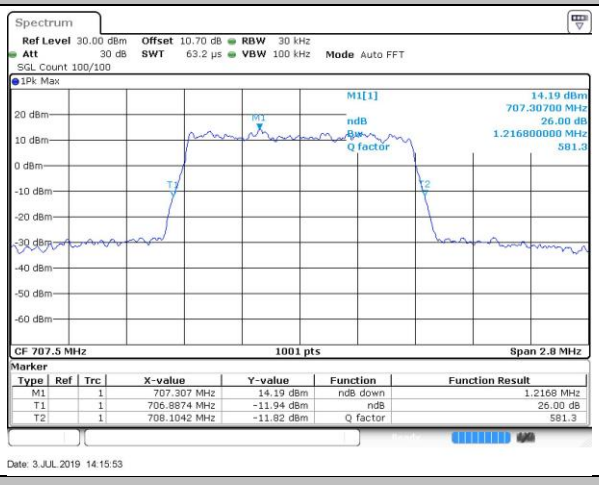
Lowest Channel / 1.4MHz / 64QAM



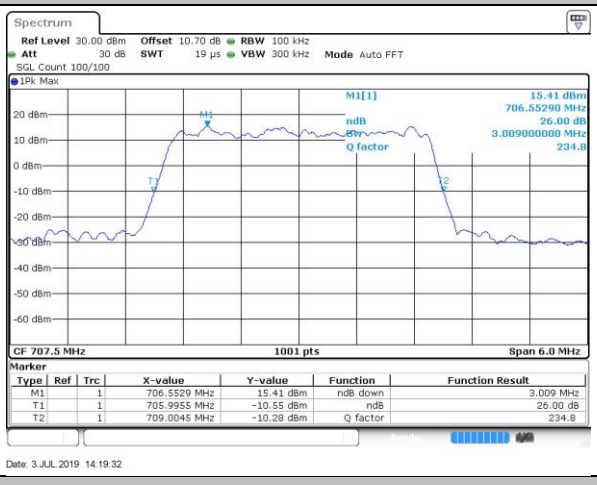
Lowest Channel / 3MHz / 64QAM



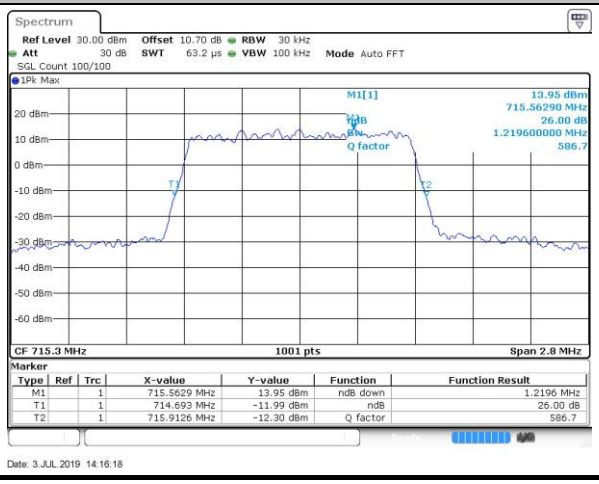
Middle Channel / 1.4MHz / 64QAM



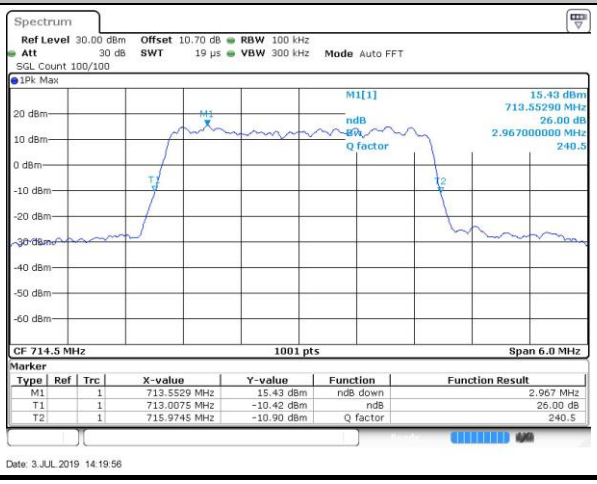
Middle Channel / 3MHz / 64QAM



Highest Channel / 1.4MHz / 64QAM

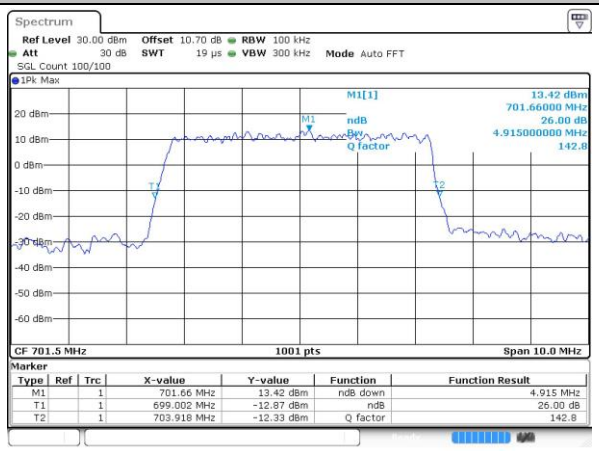


Highest Channel / 3MHz / 64QAM

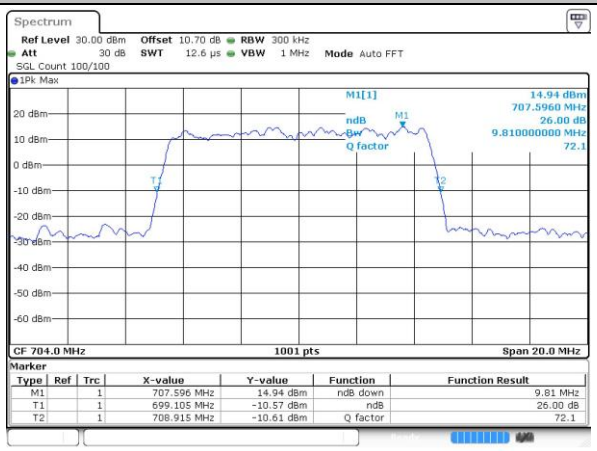


LTE Band 12

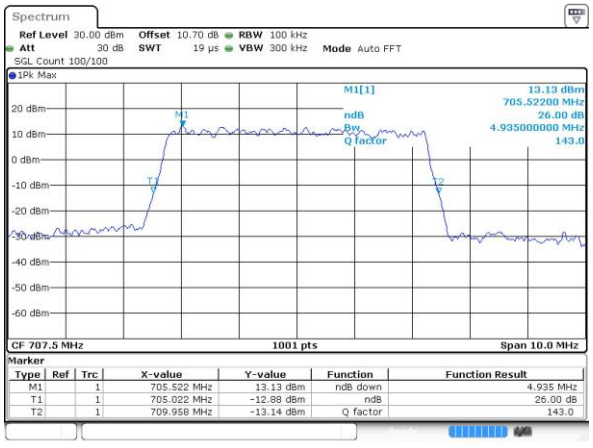
Lowest Channel / 5MHz / 64QAM



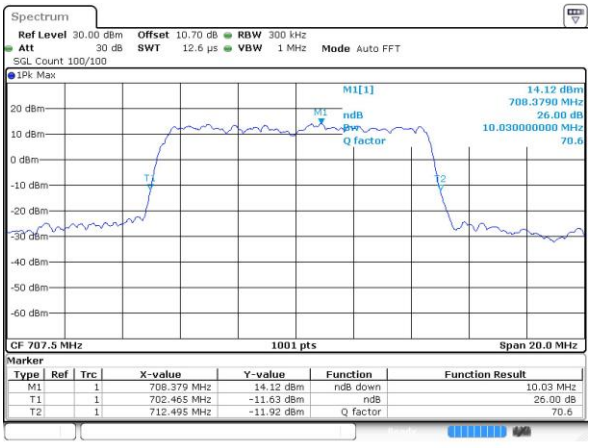
Lowest Channel / 10MHz / 64QAM



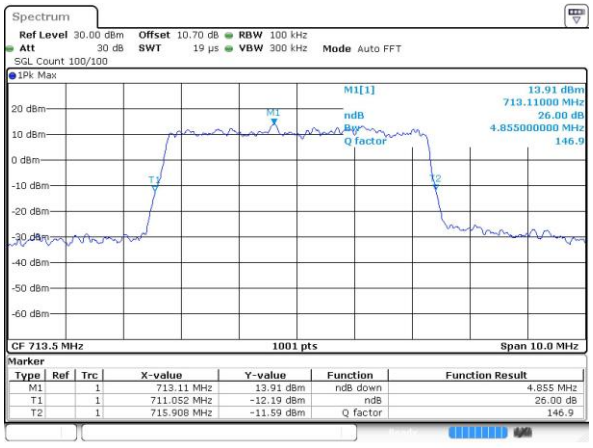
Middle Channel / 5MHz / 64QAM



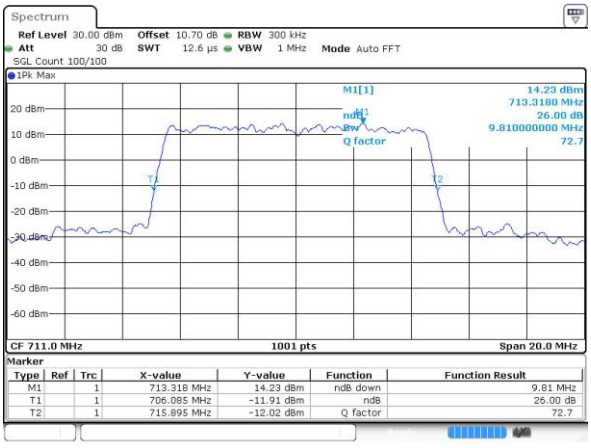
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



Highest Channel / 10MHz / 64QAM

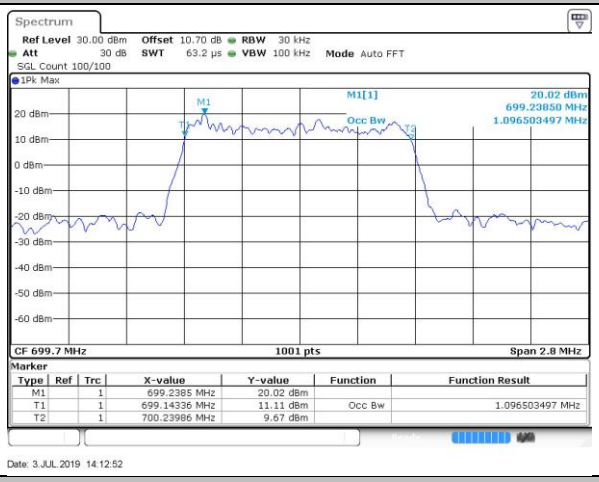


Occupied Bandwidth

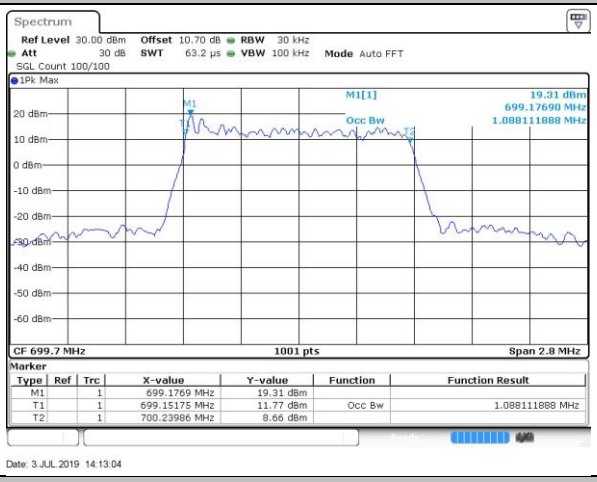
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.10	1.09	2.71	2.72	4.49	4.47	8.99	8.97	-	-	-	-
Middle CH	1.09	1.08	2.71	2.72	4.50	4.50	9.03	8.99	-	-	-	-
Highest CH	1.09	1.09	2.72	2.72	4.47	4.51	8.97	9.07	-	-	-	-
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.72	-	4.51	-	9.01	-	-	-	-	-
Middle CH	1.10	-	2.72	-	4.49	-	9.01	-	-	-	-	-
Highest CH	1.08	-	2.71	-	4.50	-	9.01	-	-	-	-	-

LTE Band 12

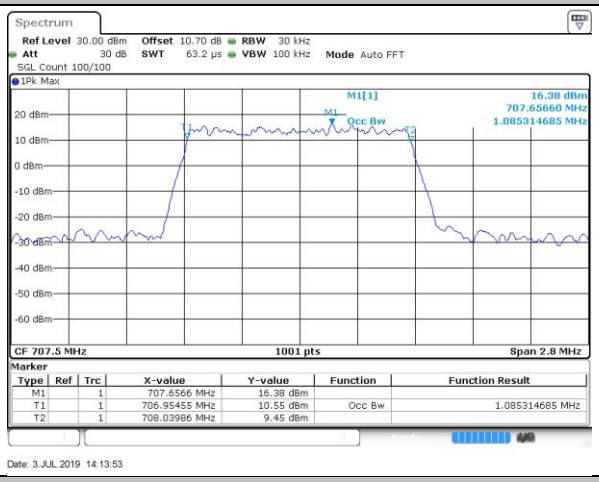
Lowest Channel / 1.4MHz / QPSK



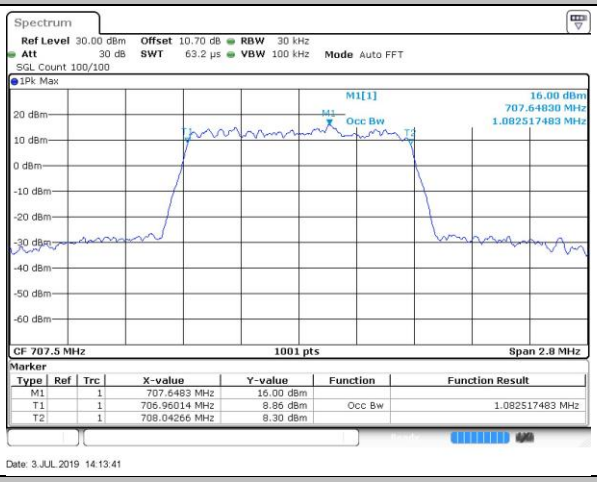
Lowest Channel / 1.4MHz / 16QAM



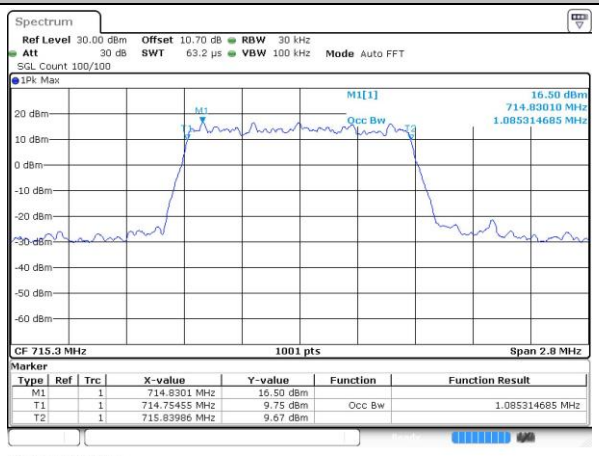
Middle Channel / 1.4MHz / QPSK



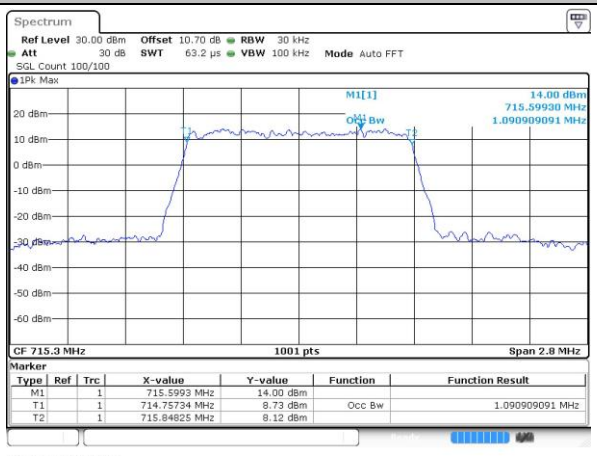
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK

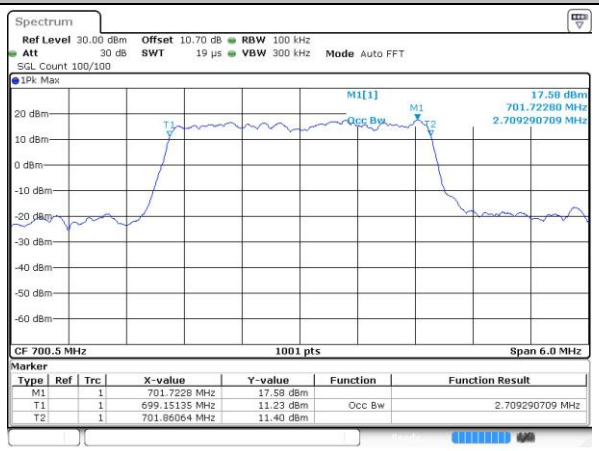


Highest Channel / 1.4MHz / 16QAM

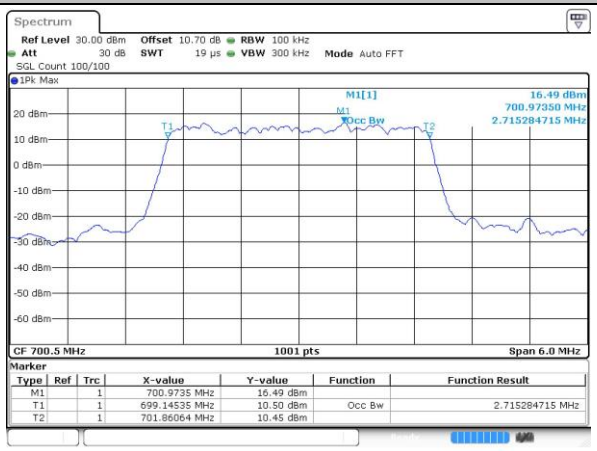


LTE Band 12

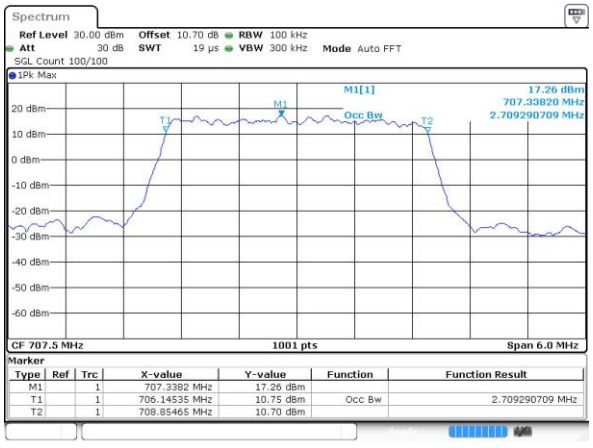
Lowest Channel / 3MHz / QPSK



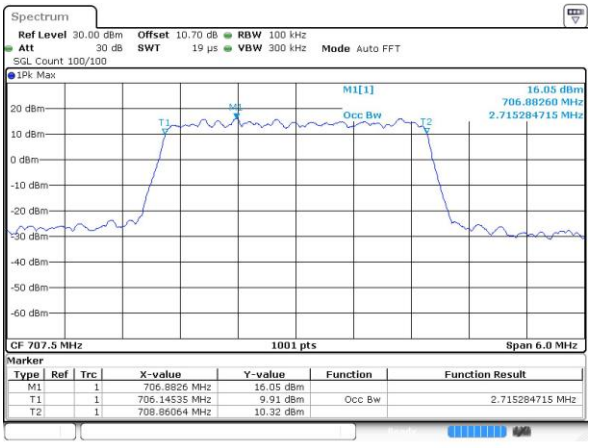
Lowest Channel / 3MHz / 16QAM



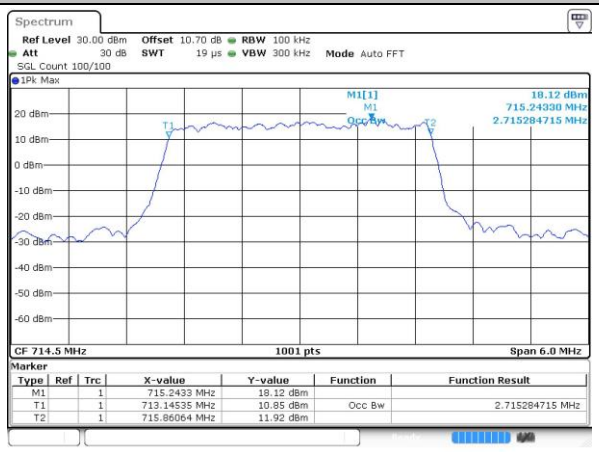
Middle Channel / 3MHz / QPSK



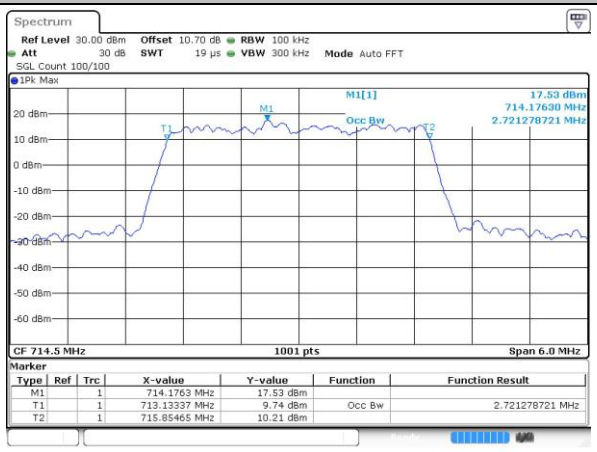
Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK

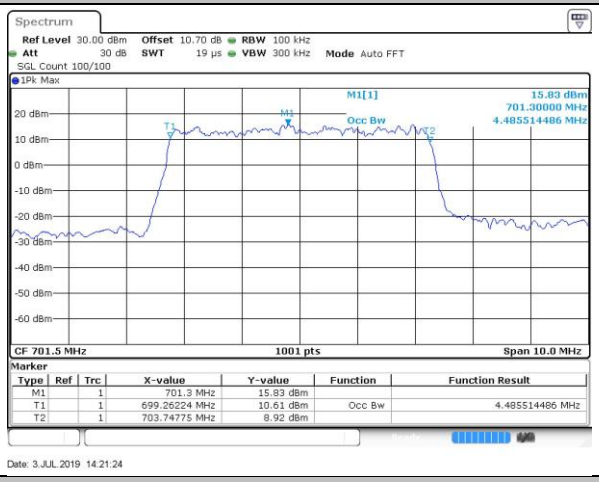


Highest Channel / 3MHz / 16QAM

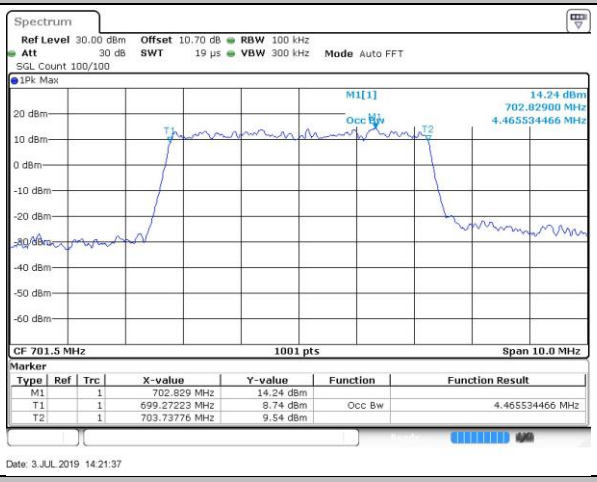


LTE Band 12

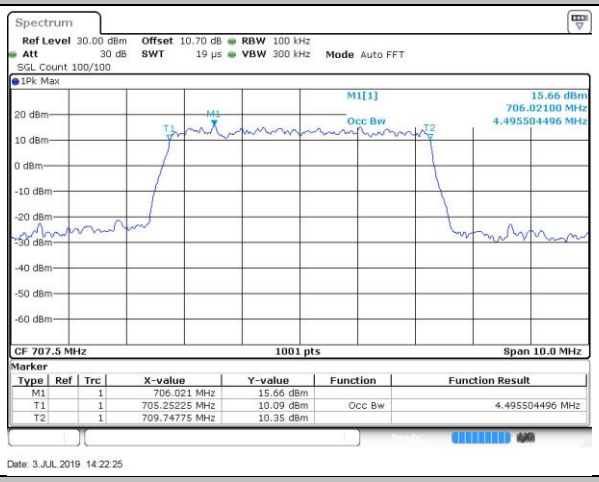
Lowest Channel / 5MHz / QPSK



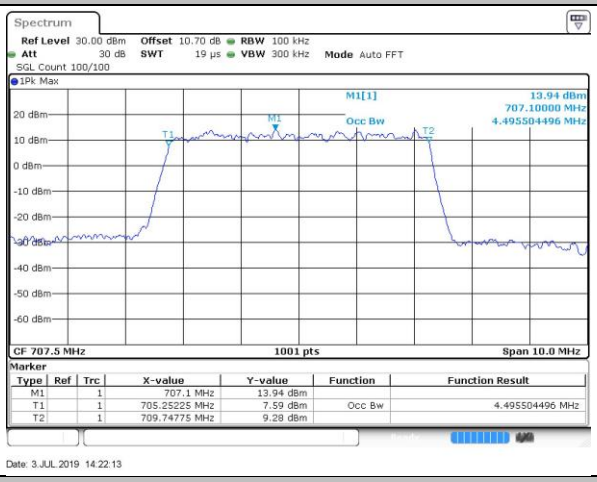
Lowest Channel / 5MHz / 16QAM



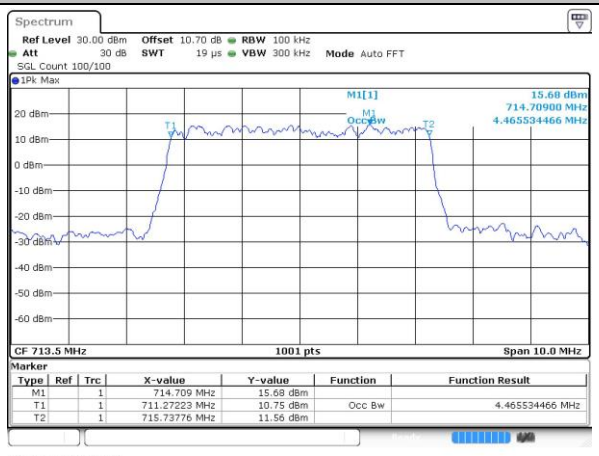
Middle Channel / 5MHz / QPSK



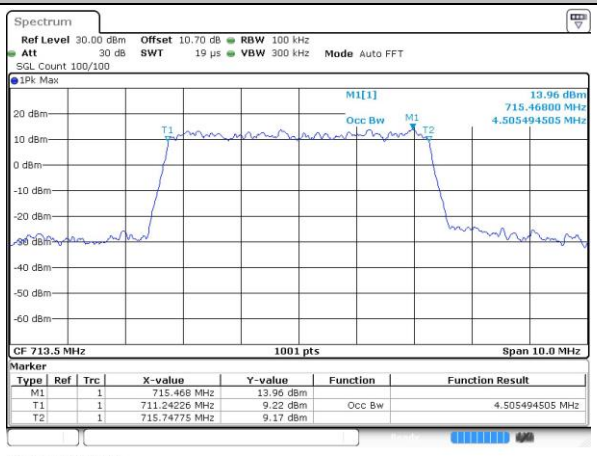
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

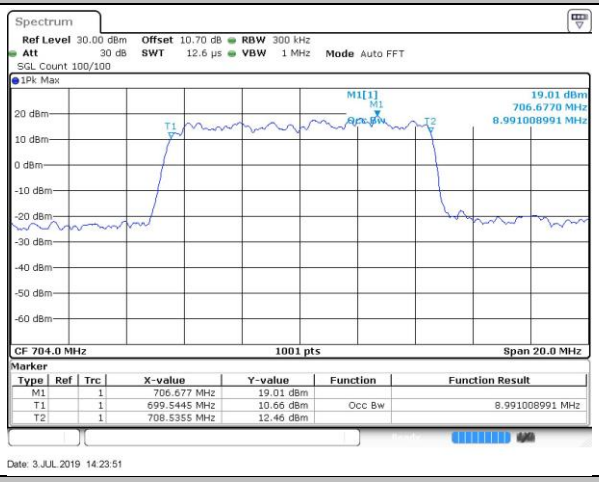


Highest Channel / 5MHz / 16QAM

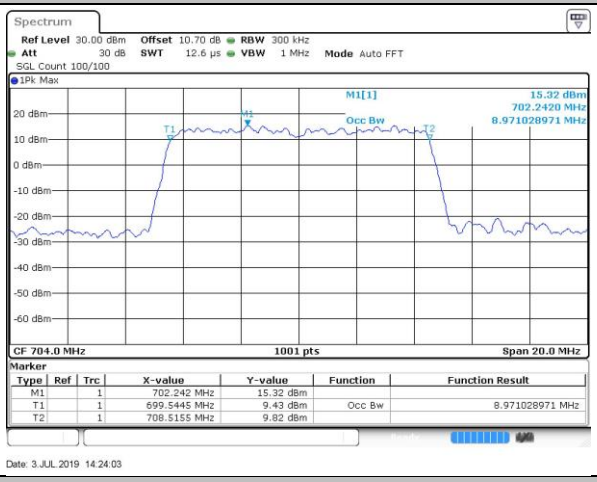


LTE Band 12

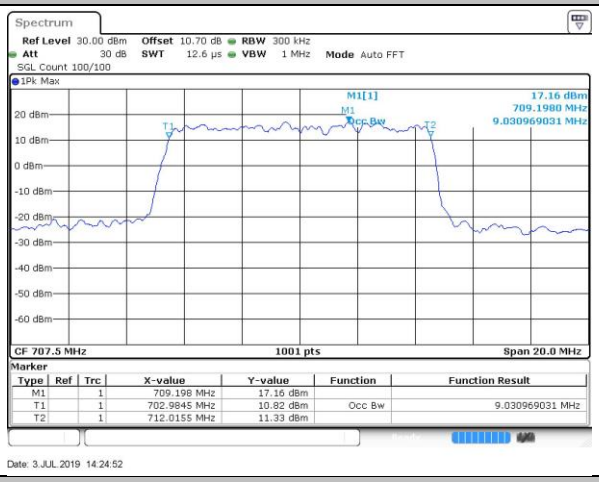
Lowest Channel / 10MHz / QPSK



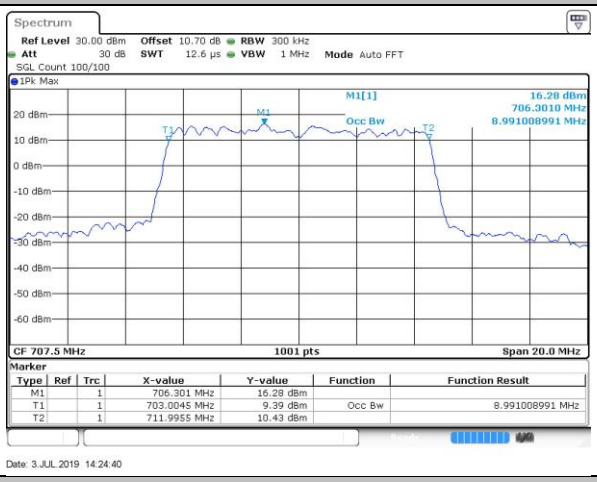
Lowest Channel / 10MHz / 16QAM



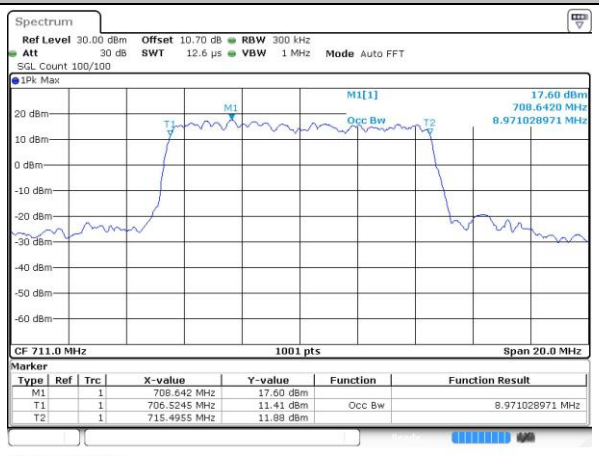
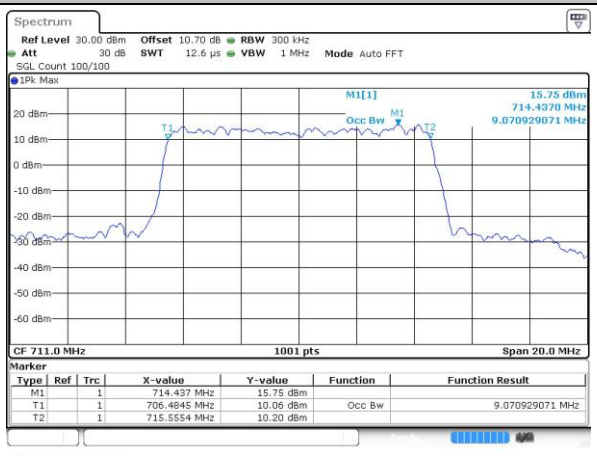
Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



Highest Channel / 10MHz / 16QAM