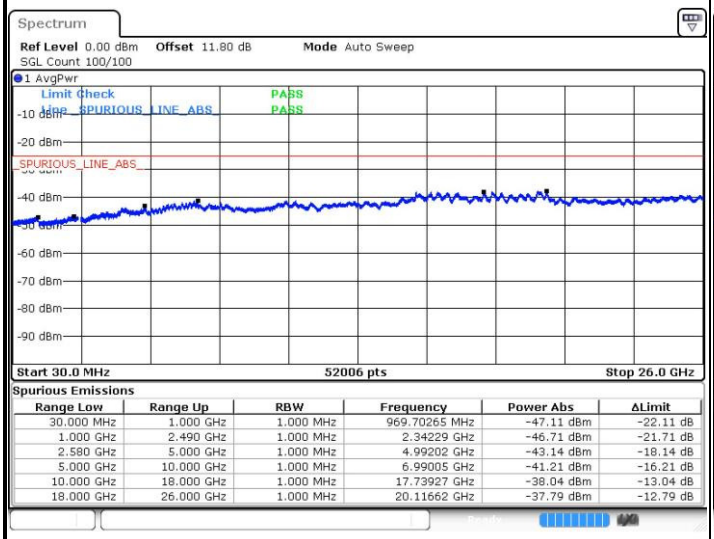
LTE Band 7 / 20MHz

Middle Channel / QPSK

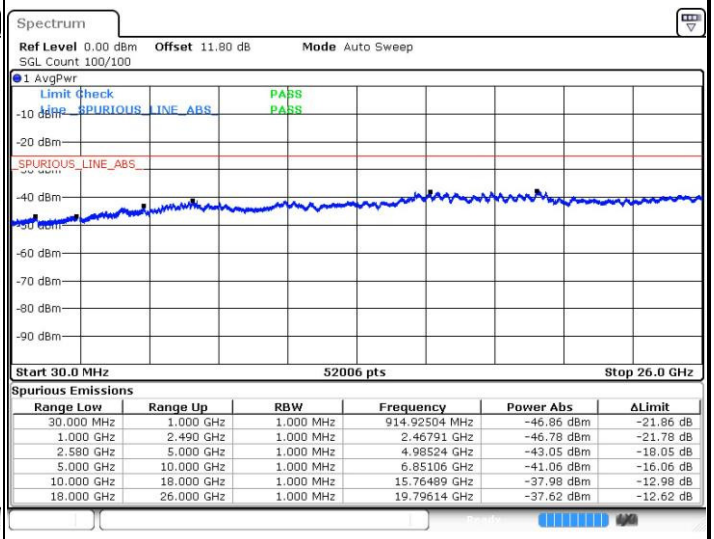


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	969.70265 MHz	-47.11 dBm	-22.11 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.34229 GHz	-46.71 dBm	-21.71 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99202 GHz	-43.14 dBm	-18.14 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.99005 GHz	-41.21 dBm	-16.21 dB
10.000 GHz	18.000 GHz	1.000 MHz	17.73927 GHz	-38.04 dBm	-13.04 dB
18.000 GHz	26.000 GHz	1.000 MHz	20.11662 GHz	-37.79 dBm	-12.79 dB

Date: 6.APR.2017 11:12:59

Middle Channel / 16QAM

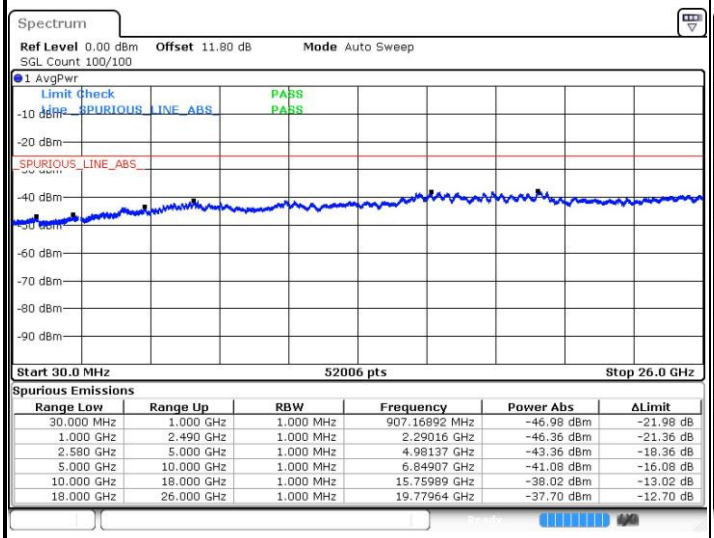


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	914.92504 MHz	-46.86 dBm	-21.86 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.46791 GHz	-46.78 dBm	-21.78 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98524 GHz	-43.05 dBm	-18.05 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.85106 GHz	-41.06 dBm	-16.06 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.76489 GHz	-37.98 dBm	-12.98 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.79614 GHz	-37.62 dBm	-12.62 dB

Date: 6.APR.2017 11:13:52

Highest Channel / QPSK

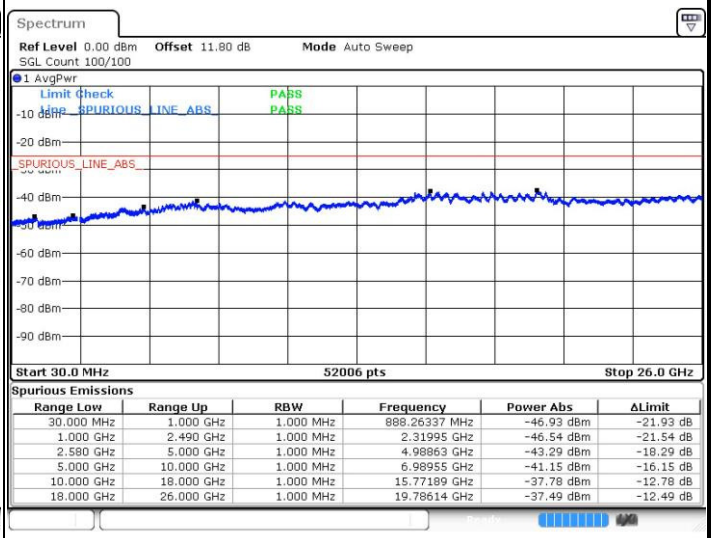


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	907.16892 MHz	-46.98 dBm	-21.98 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.29016 GHz	-46.36 dBm	-21.36 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98137 GHz	-43.36 dBm	-18.36 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.84907 GHz	-41.08 dBm	-16.08 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75989 GHz	-38.02 dBm	-13.02 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.77964 GHz	-37.70 dBm	-12.70 dB

Date: 6.APR.2017 11:20:07

Highest Channel / 16QAM



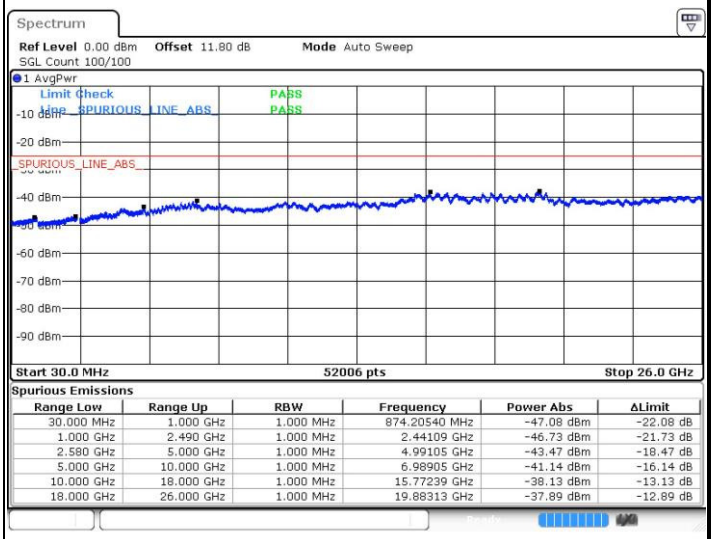
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	888.26337 MHz	-46.93 dBm	-21.93 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.31995 GHz	-46.54 dBm	-21.54 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98863 GHz	-43.29 dBm	-18.29 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98955 GHz	-41.15 dBm	-16.15 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.77189 GHz	-37.78 dBm	-12.78 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.78614 GHz	-37.49 dBm	-12.49 dB

Date: 6.APR.2017 11:21:00

LTE Band 7 / 5MHz

Lowest Channel / 64QAM

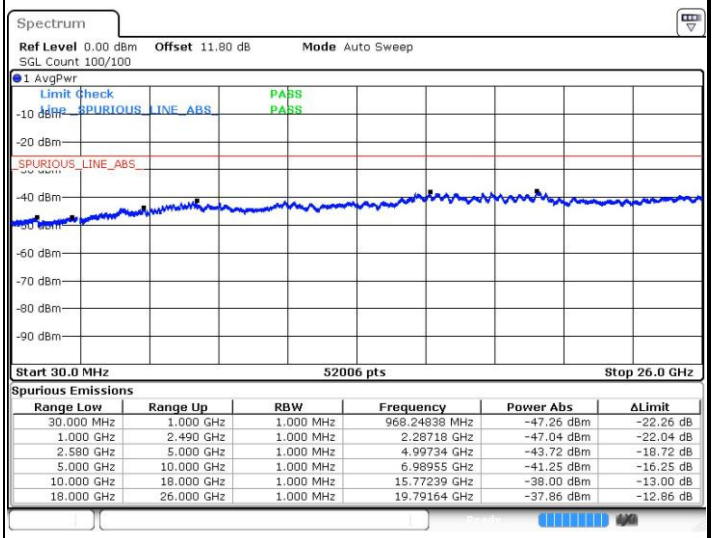


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	874.20540 MHz	-47.08 dBm	-22.08 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.44109 GHz	-46.73 dBm	-21.73 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99105 GHz	-43.47 dBm	-18.47 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98905 GHz	-41.14 dBm	-16.14 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.77239 GHz	-38.13 dBm	-13.13 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.88313 GHz	-37.89 dBm	-12.89 dB

Date: 27.APR.2017 21:51:06

Middle Channel / 64QAM



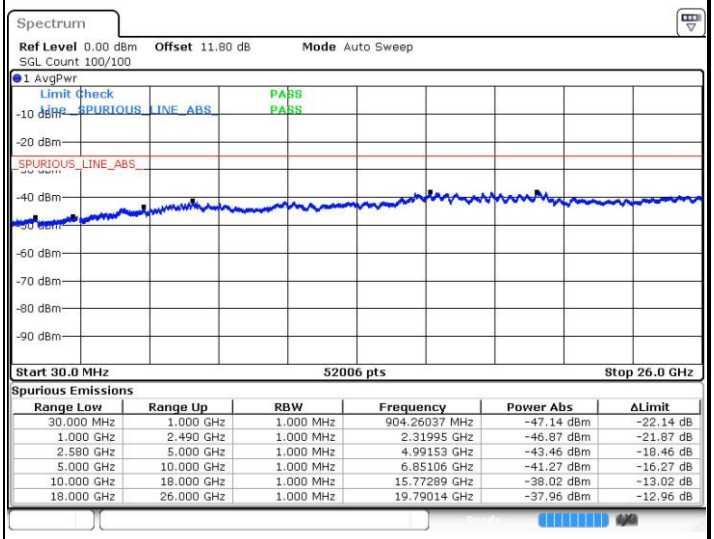
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	968.24838 MHz	-47.26 dBm	-22.26 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.28718 GHz	-47.04 dBm	-22.04 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99734 GHz	-43.72 dBm	-18.72 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98955 GHz	-41.25 dBm	-16.25 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.77239 GHz	-38.00 dBm	-13.00 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.79164 GHz	-37.86 dBm	-12.86 dB

Date: 27.APR.2017 21:52:20

LTE Band 7 / 5MHz

Highest Channel / 64QAM



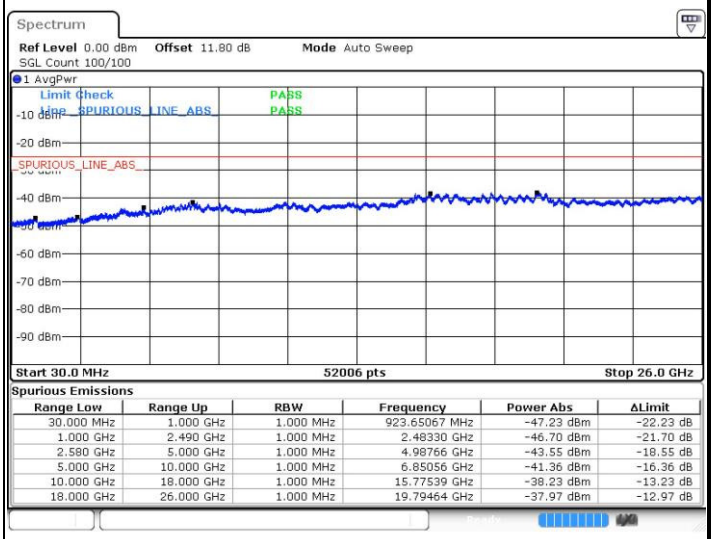
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	904.26037 MHz	-47.14 dBm	-22.14 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.31995 GHz	-46.87 dBm	-21.87 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99153 GHz	-43.46 dBm	-18.46 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.85106 GHz	-41.27 dBm	-16.27 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.77289 GHz	-38.02 dBm	-13.02 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.79014 GHz	-37.96 dBm	-12.96 dB

Date: 27.APR.2017 21:55:54

LTE Band 7 / 10MHz

Lowest Channel / 64QAM

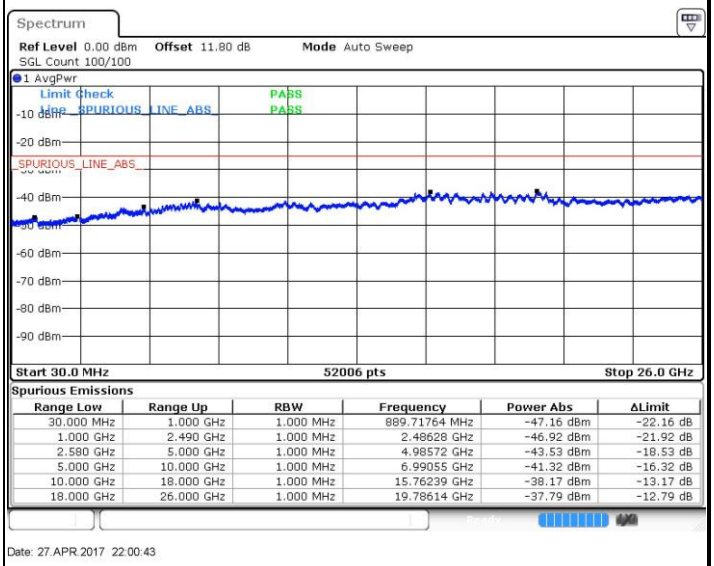


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	923.65067 MHz	-47.23 dBm	-22.23 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48330 GHz	-46.70 dBm	-21.70 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98766 GHz	-43.55 dBm	-18.55 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.85056 GHz	-41.36 dBm	-16.36 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.77539 GHz	-38.23 dBm	-13.23 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.79464 GHz	-37.97 dBm	-12.97 dB

Date: 27.APR.2017 21:59:29

LTE Band 7 / 10MHz	
	Middle Channel / 64QAM

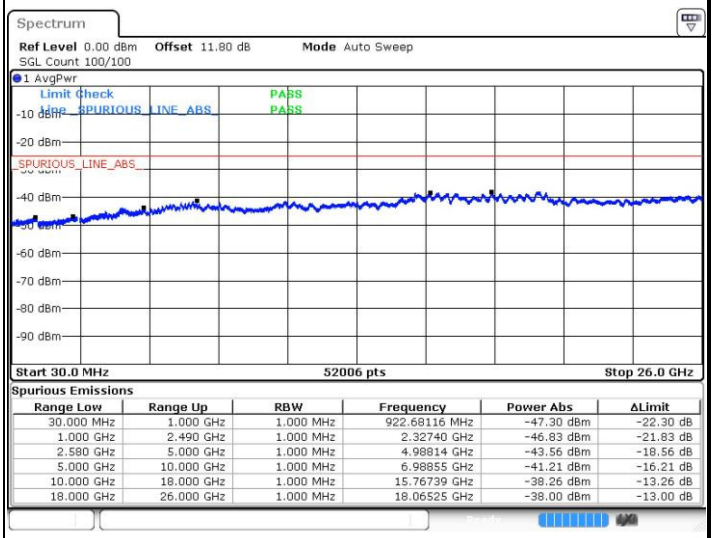


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	889.71764 MHz	-47.16 dBm	-22.16 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48628 GHz	-46.92 dBm	-21.92 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98572 GHz	-43.53 dBm	-18.53 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.99055 GHz	-41.32 dBm	-16.32 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.76239 GHz	-38.17 dBm	-13.17 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.78614 GHz	-37.79 dBm	-12.79 dB

Date: 27.APR.2017 22:00:43

	Highest Channel / 64QAM



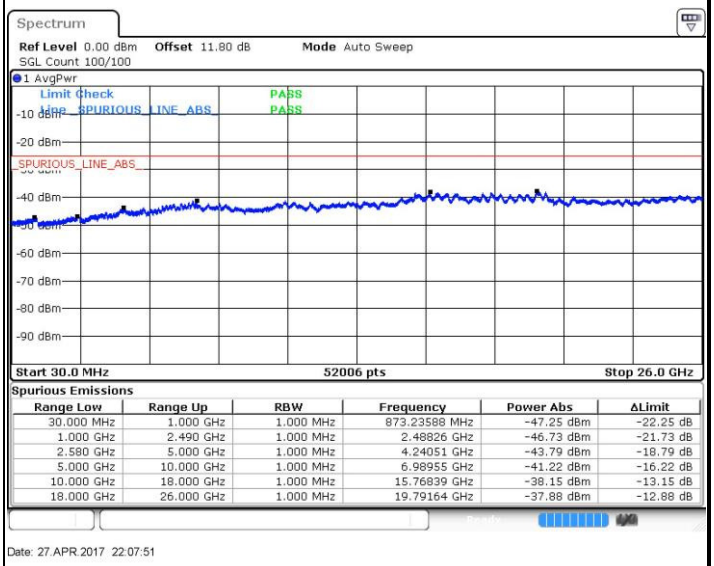
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	922.68116 MHz	-47.30 dBm	-22.30 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.32740 GHz	-46.83 dBm	-21.83 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98814 GHz	-43.56 dBm	-18.56 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98855 GHz	-41.21 dBm	-16.21 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.76739 GHz	-38.26 dBm	-13.26 dB
18.000 GHz	26.000 GHz	1.000 MHz	18.06525 GHz	-38.00 dBm	-13.00 dB

Date: 27.APR.2017 22:04:18

LTE Band 7 / 15MHz

Lowest Channel / 64QAM

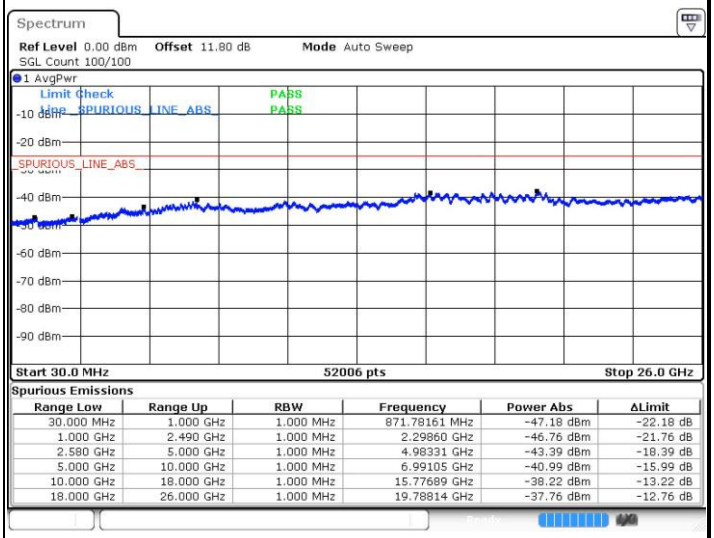


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	873.23588 MHz	-47.25 dBm	-22.25 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48826 GHz	-46.73 dBm	-21.73 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.24051 GHz	-43.79 dBm	-18.79 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98955 GHz	-41.22 dBm	-16.22 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.76839 GHz	-38.15 dBm	-13.15 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.79164 GHz	-37.88 dBm	-12.88 dB

Date: 27.APR.2017 22:07:51

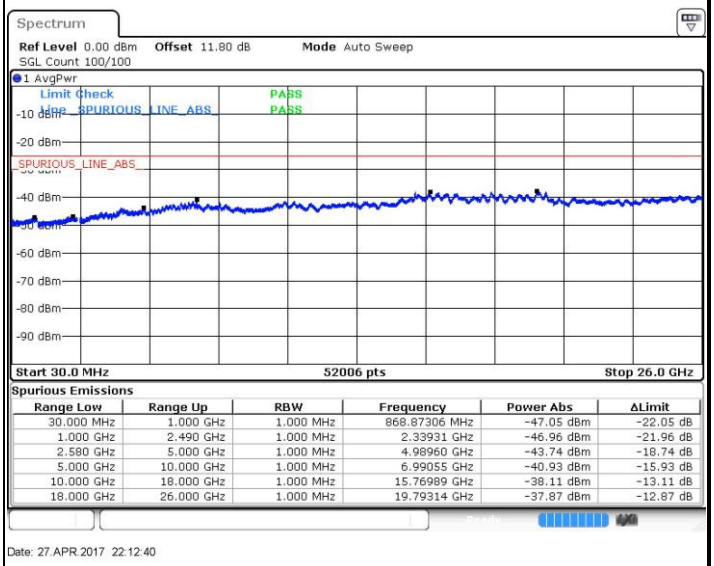
Middle Channel / 64QAM

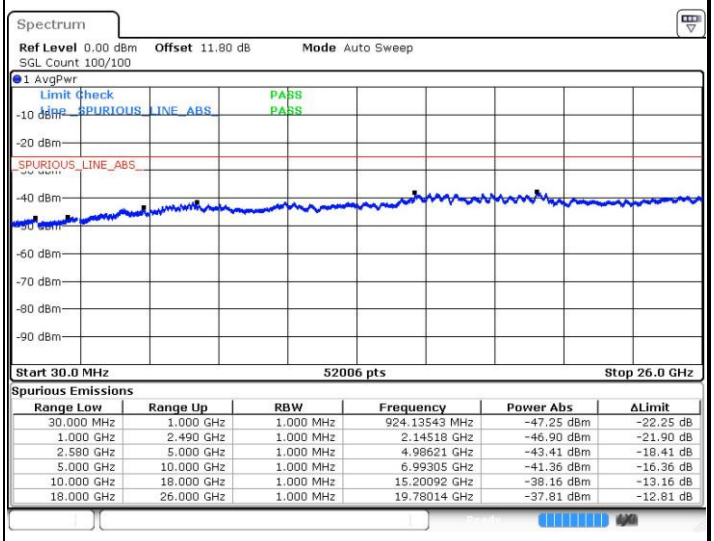


Spurious Emissions

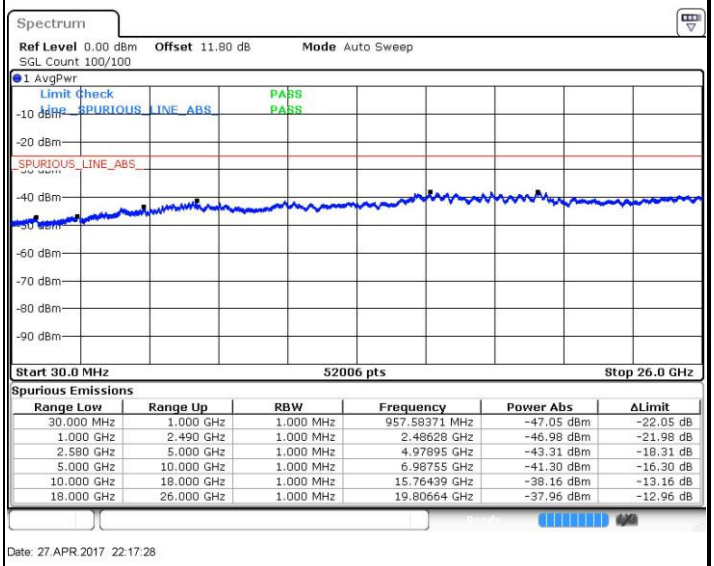
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	871.78161 MHz	-47.18 dBm	-22.18 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.29860 GHz	-46.76 dBm	-21.76 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98331 GHz	-43.39 dBm	-18.39 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.99105 GHz	-40.99 dBm	-15.99 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.77689 GHz	-38.22 dBm	-13.22 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.78814 GHz	-37.76 dBm	-12.76 dB

Date: 27.APR.2017 22:09:06

LTE Band7 / 15MHz	
	Highest Channel / 64QAM
	 Spurious Emissions Range Low / Range Up / RBW / Frequency / Power Abs / ΔLimit 30.000 MHz / 1.000 GHz / 1.000 MHz / 868.87306 MHz / -47.05 dBm / -22.05 dB 1.000 GHz / 2.490 GHz / 1.000 MHz / 2.33931 GHz / -46.96 dBm / -21.96 dB 2.580 GHz / 5.000 GHz / 1.000 MHz / 4.98960 GHz / -43.74 dBm / -18.74 dB 5.000 GHz / 10.000 GHz / 1.000 MHz / 6.99055 GHz / -40.93 dBm / -15.93 dB 10.000 GHz / 18.000 GHz / 1.000 MHz / 15.76989 GHz / -38.11 dBm / -13.11 dB 18.000 GHz / 26.000 GHz / 1.000 MHz / 19.79314 GHz / -37.87 dBm / -12.87 dB Date: 27.APR.2017 22:12:40

LTE Band 7 / 20MHz	
	Lowest Channel / 64QAM
	 Spurious Emissions Range Low / Range Up / RBW / Frequency / Power Abs / ΔLimit 30.000 MHz / 1.000 GHz / 1.000 MHz / 924.13543 MHz / -47.25 dBm / -22.25 dB 1.000 GHz / 2.490 GHz / 1.000 MHz / 2.14518 GHz / -46.90 dBm / -21.90 dB 2.580 GHz / 5.000 GHz / 1.000 MHz / 4.98621 GHz / -43.41 dBm / -18.41 dB 5.000 GHz / 10.000 GHz / 1.000 MHz / 6.99305 GHz / -41.36 dBm / -16.36 dB 10.000 GHz / 18.000 GHz / 1.000 MHz / 15.20092 GHz / -38.16 dBm / -13.16 dB 18.000 GHz / 26.000 GHz / 1.000 MHz / 19.78014 GHz / -37.81 dBm / -12.81 dB Date: 27.APR.2017 22:16:14

LTE Band 7 / 20MHz	
	Middle Channel / 64QAM

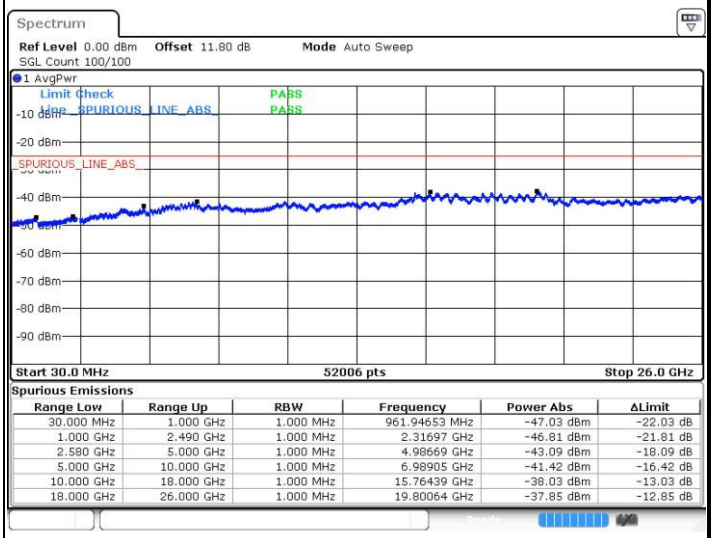


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	957.58371 MHz	-47.05 dBm	-22.05 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48628 GHz	-46.98 dBm	-21.98 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.97895 GHz	-43.31 dBm	-18.31 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98755 GHz	-41.30 dBm	-16.30 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.76439 GHz	-38.16 dBm	-13.16 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.80664 GHz	-37.96 dBm	-12.96 dB

Date: 27.APR.2017 22:17:28

	Highest Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	961.94653 MHz	-47.03 dBm	-22.03 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.31697 GHz	-46.81 dBm	-21.81 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98669 GHz	-43.09 dBm	-18.09 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.98905 GHz	-41.42 dBm	-16.42 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.76439 GHz	-38.03 dBm	-13.03 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.80064 GHz	-37.85 dBm	-12.85 dB

Date: 27.APR.2017 22:21:02

Frequency Stability

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0006	PASS
40	Normal Voltage	0.0003	
30	Normal Voltage	0.0122	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0123	
-10	Normal Voltage	0.0003	
-20	Normal Voltage	0.0119	
-30	Normal Voltage	0.0000	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

Note:

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.4 V.；Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

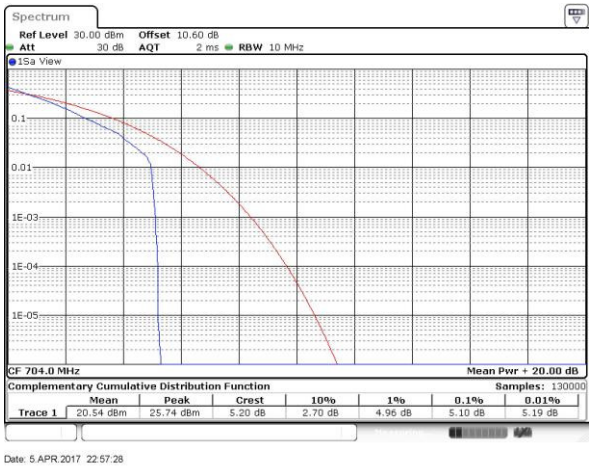
LTE Band 12

Peak-to-Average Ratio

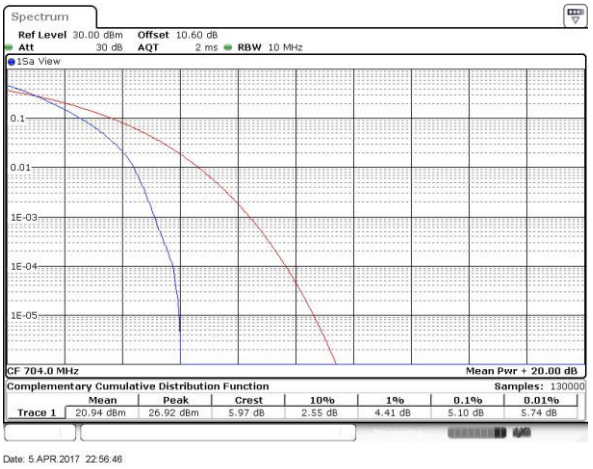
Mode	LTE Band 12 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	5.1	5.1	5.51	5.97	PASS
Middle CH	5.25	4.9	6.17	5.83	
Highest CH	4.29	5.22	5.25	6	
Mod.	-		64QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	5.83	6	PASS
Middle CH	-	-	5.97	5.97	
Highest CH	-	-	5.28	6.03	

LTE Band 12 / 10MHz / QPSK

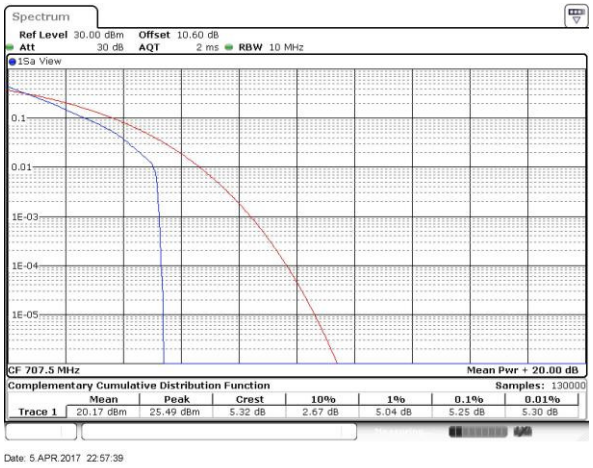
Lowest Channel / 1RB



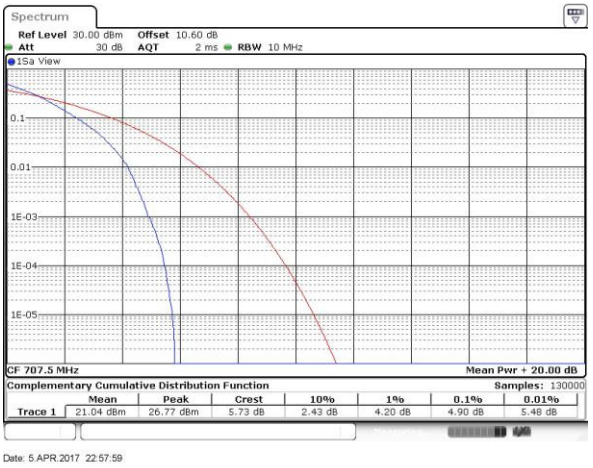
Lowest Channel / Full RB



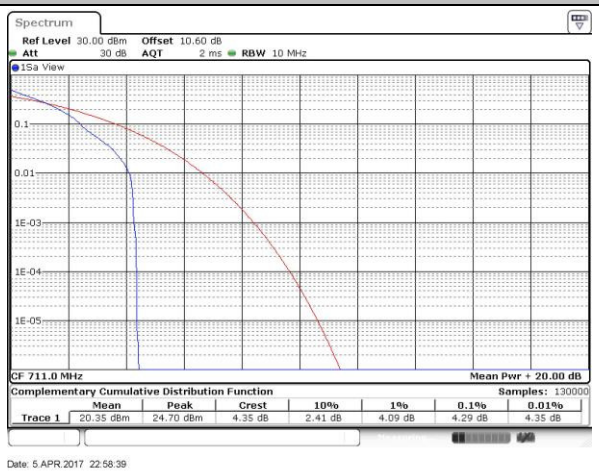
Middle Channel / 1RB



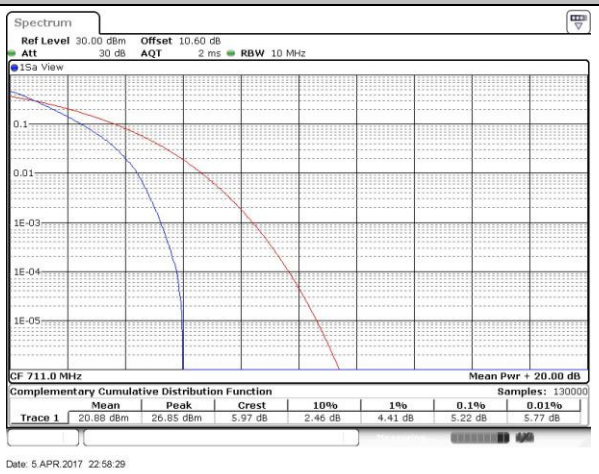
Middle Channel / Full RB



Highest Channel / 1RB

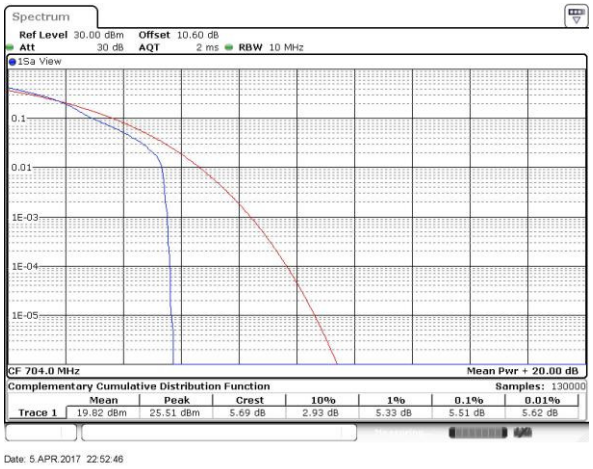


Highest Channel / Full RB

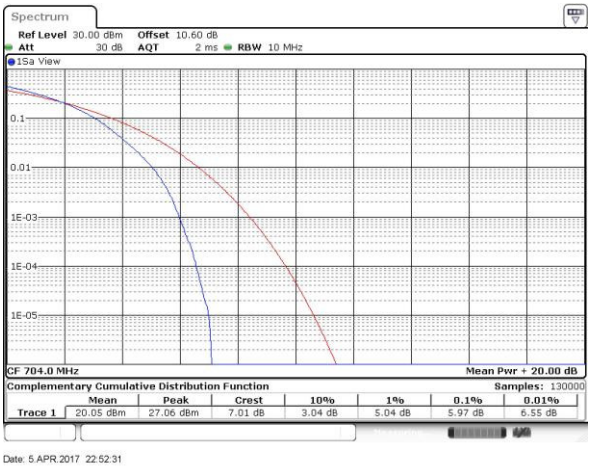


LTE Band 12 / 10MHz / 16QAM

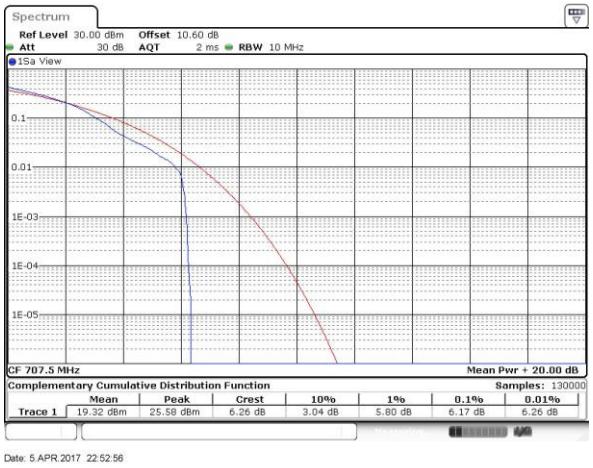
Lowest Channel / 1RB



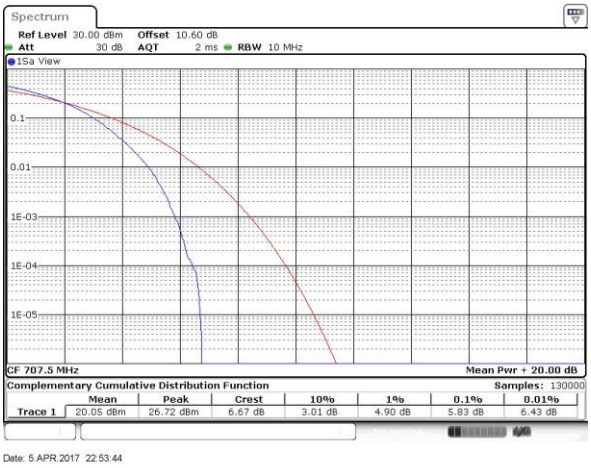
Lowest Channel / Full RB



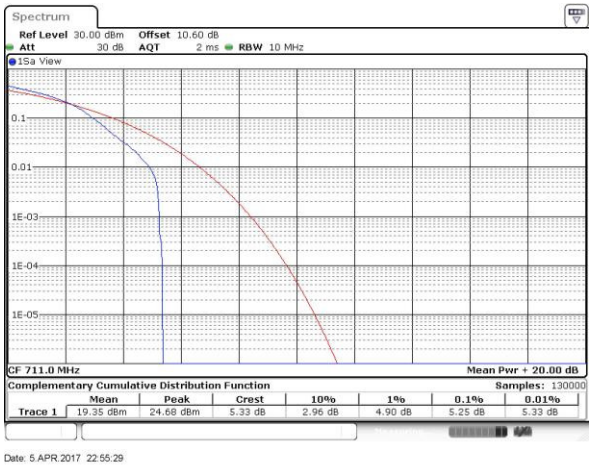
Middle Channel / 1RB



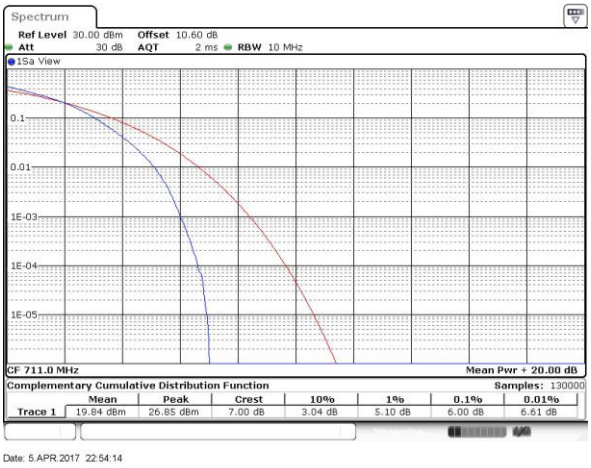
Middle Channel / Full RB



Highest Channel / 1RB

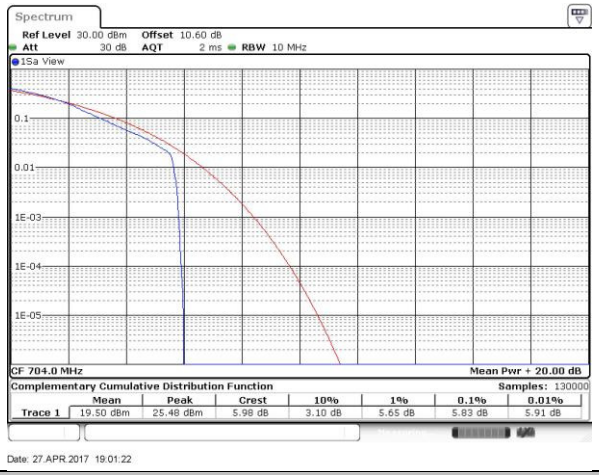


Highest Channel / Full RB

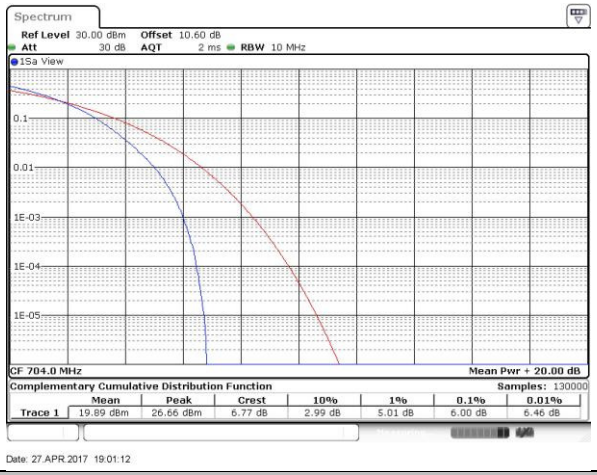


LTE Band 12 / 10MHz / 64QAM

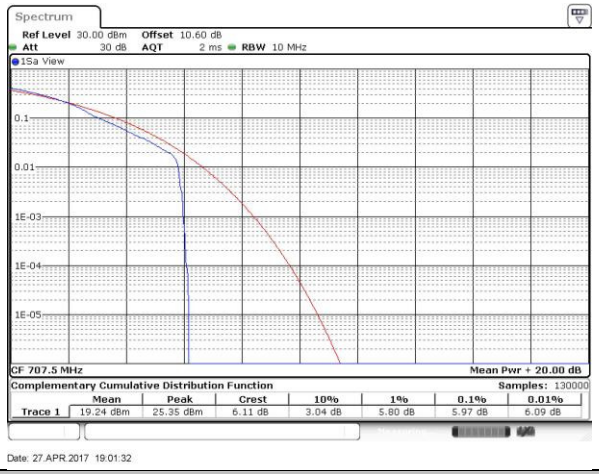
Lowest Channel / 1RB



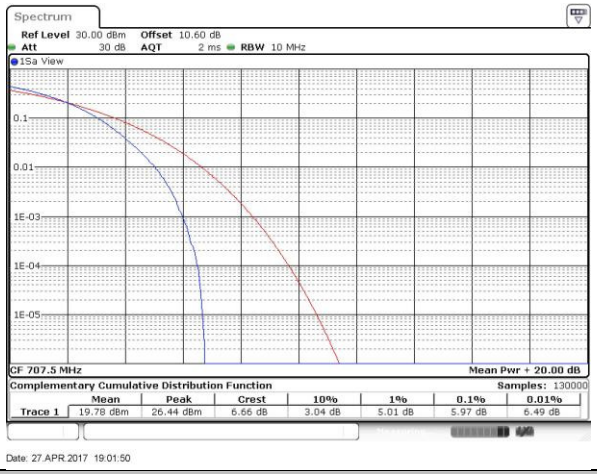
Lowest Channel / Full RB



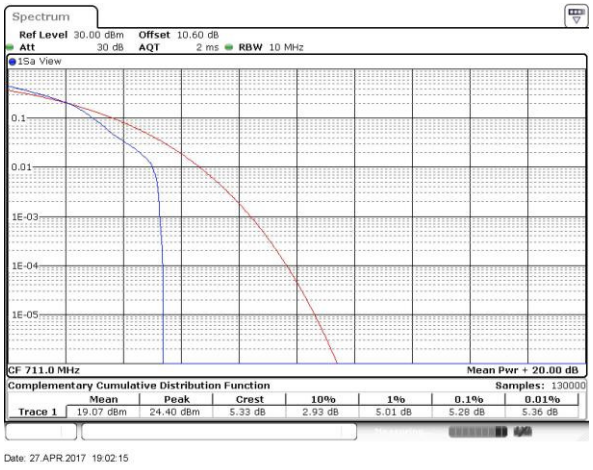
Middle Channel / 1RB



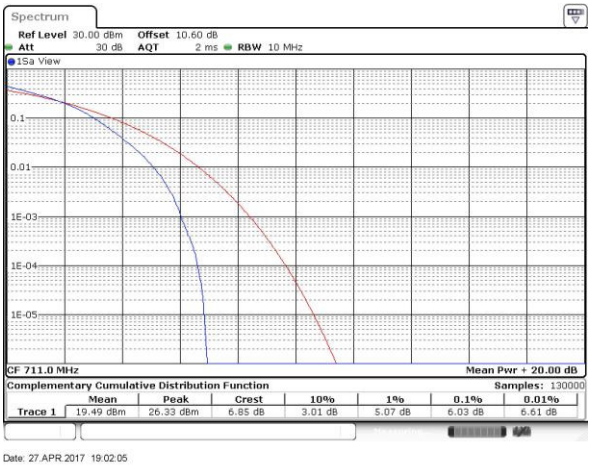
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB

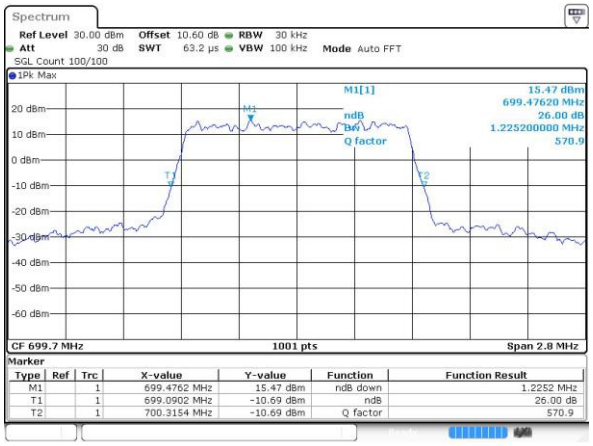


26dB Bandwidth

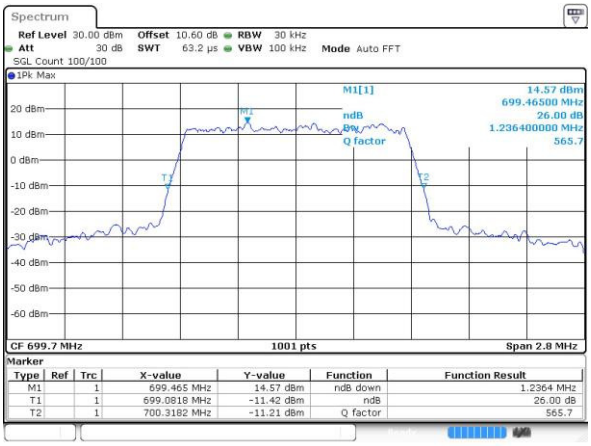
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.23	1.24	2.99	3.02	4.96	4.89	9.79	9.79	-	-	-	-
Middle CH	1.23	1.23	3.03	3.02	4.87	4.92	9.87	9.71	-	-	-	-
Highest CH	1.24	1.23	3.00	3.03	4.97	4.88	9.81	9.77	-	-	-	-
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM
Lowest CH	-	1.24	-	3.01	-	4.87	-	9.71	-	-	-	-
Middle CH	-	1.21	-	3.02	-	4.80	-	9.73	-	-	-	-
Highest CH	-	1.22	-	3.00	-	4.90	-	9.65	-	-	-	-

LTE Band 12

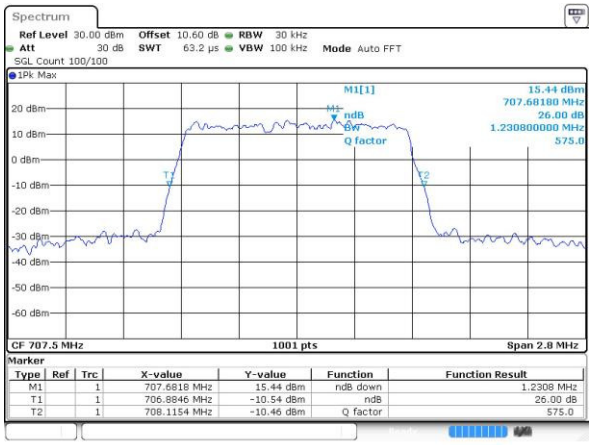
Lowest Channel / 1.4MHz / QPSK



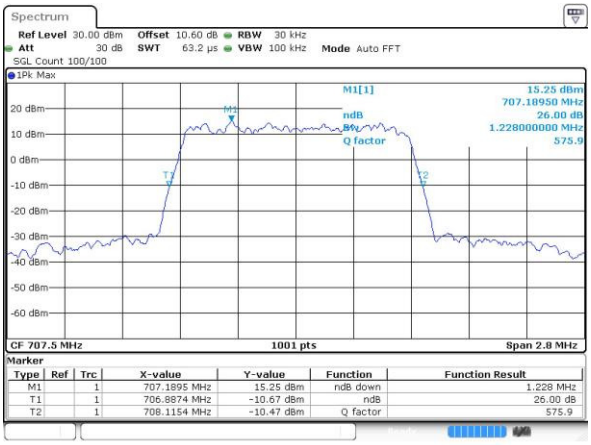
Lowest Channel / 1.4MHz / 16QAM



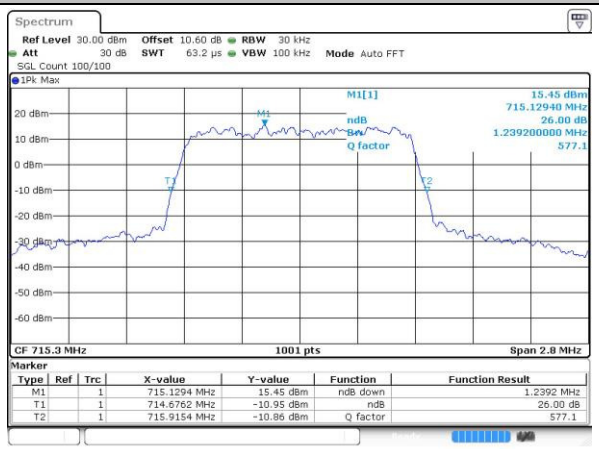
Middle Channel / 1.4MHz / QPSK



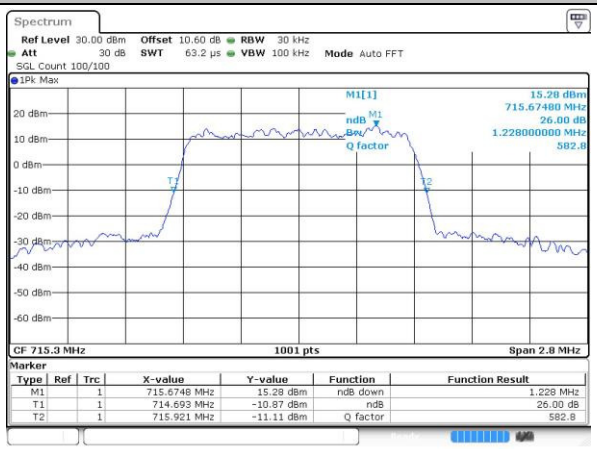
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK

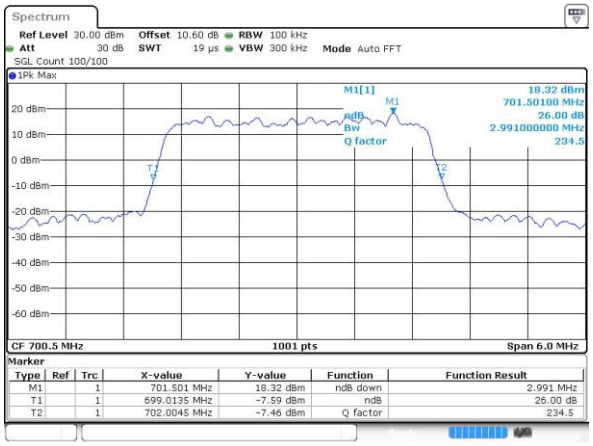


Highest Channel / 1.4MHz / 16QAM

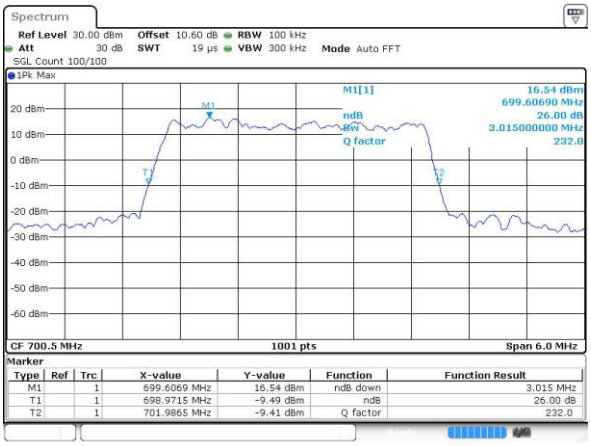


LTE Band 12

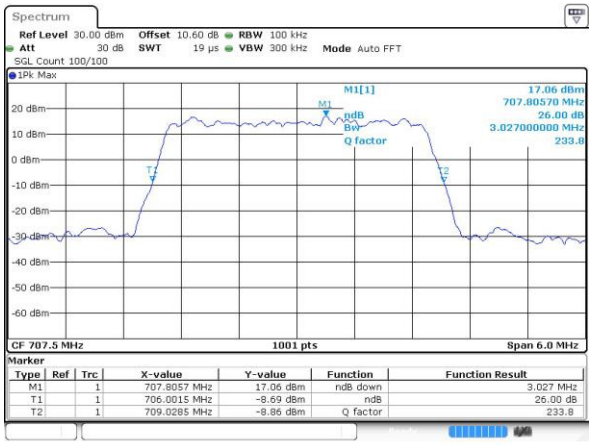
Lowest Channel / 3MHz / QPSK



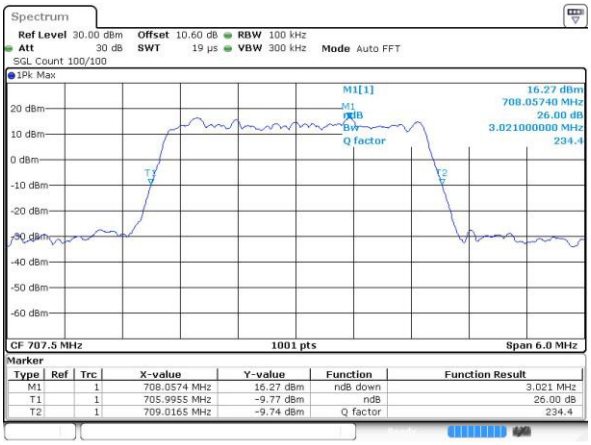
Lowest Channel / 3MHz / 16QAM



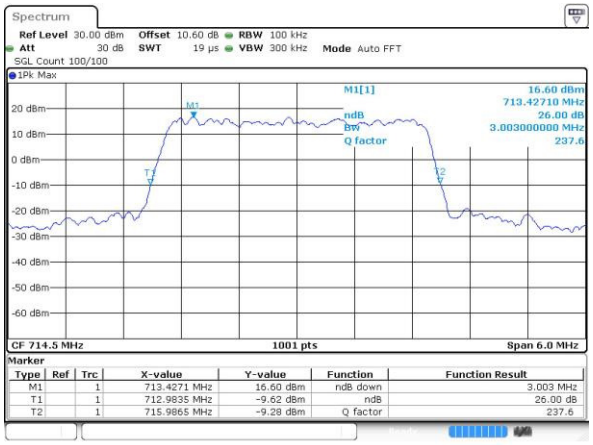
Middle Channel / 3MHz / QPSK



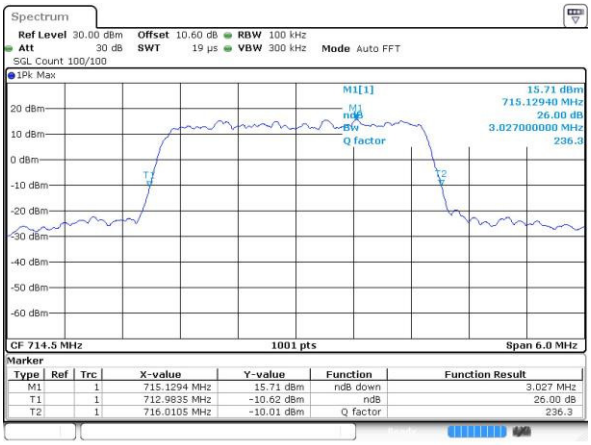
Middle Channel /3MHz / 16QAM



Highest Channel /3MHz / QPSK

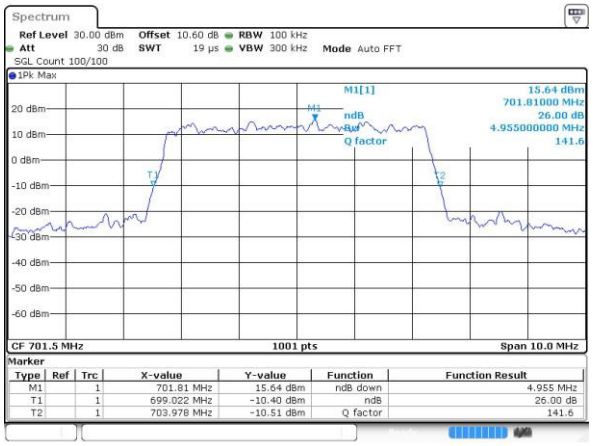


Highest Channel /3MHz / 16QAM

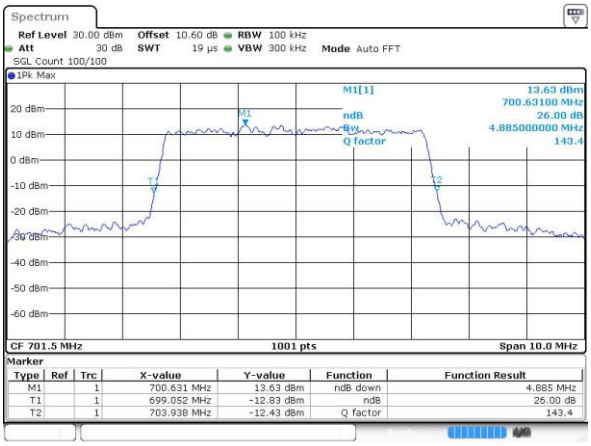


LTE Band 12

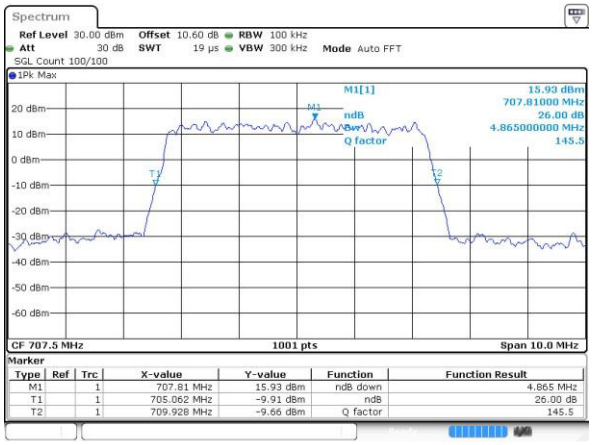
Lowest Channel / 5MHz / QPSK



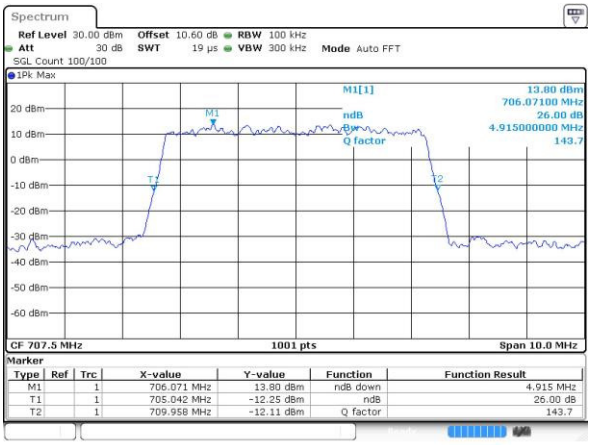
Lowest Channel / 5MHz / 16QAM



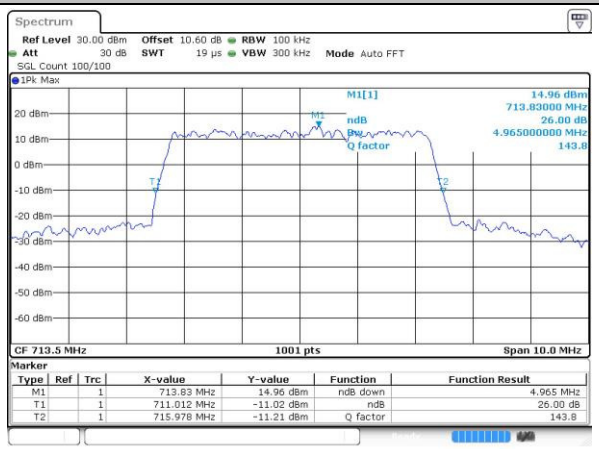
Middle Channel / 5MHz / QPSK



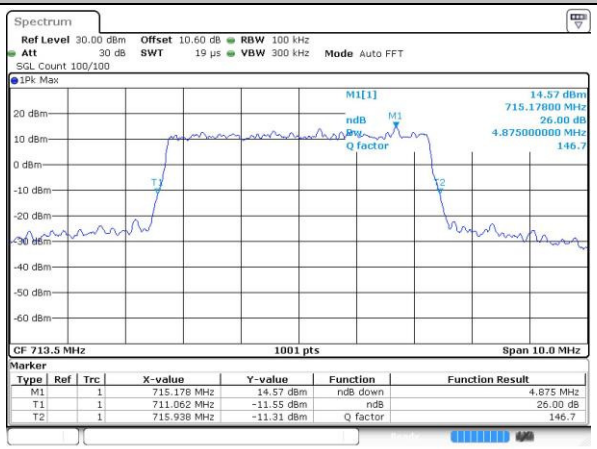
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

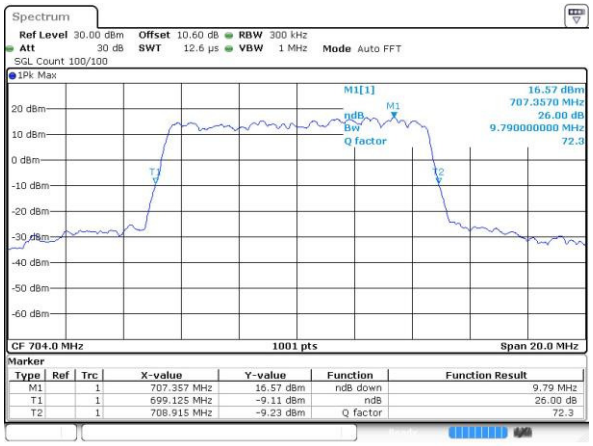


Highest Channel / 5MHz / 16QAM

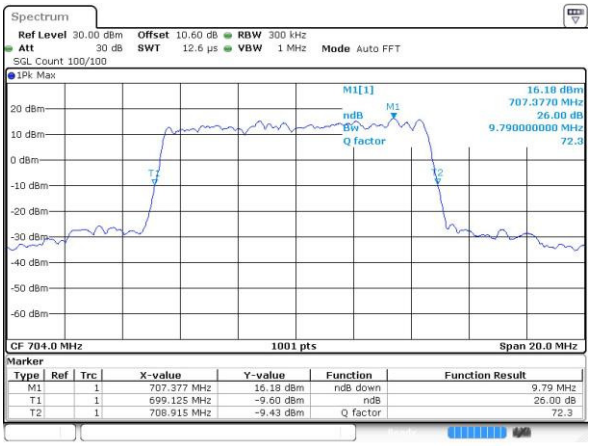


LTE Band 12

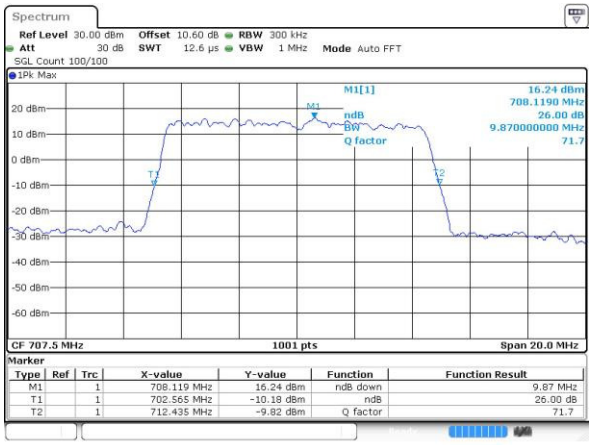
Lowest Channel / 10MHz / QPSK



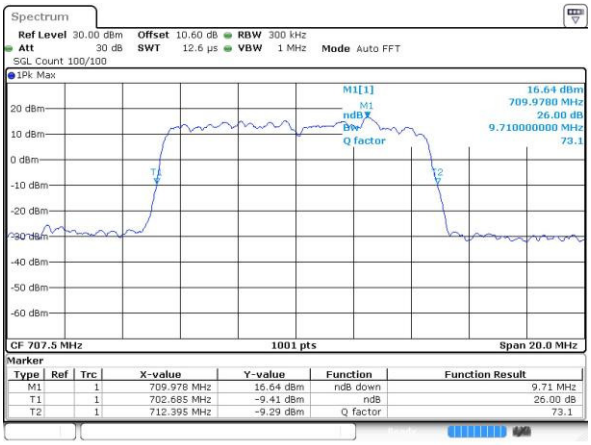
Lowest Channel / 10MHz / 16QAM



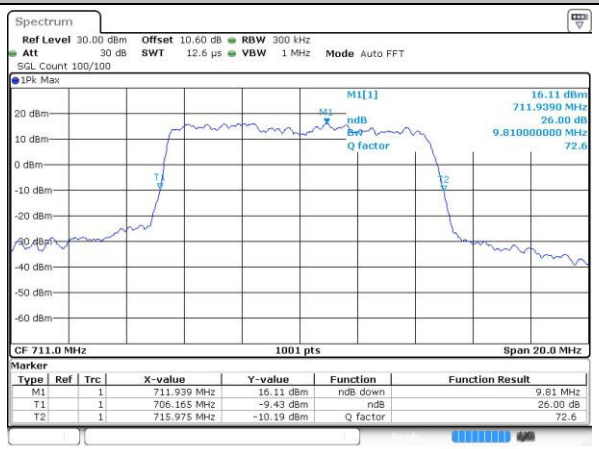
Middle Channel / 10MHz / QPSK



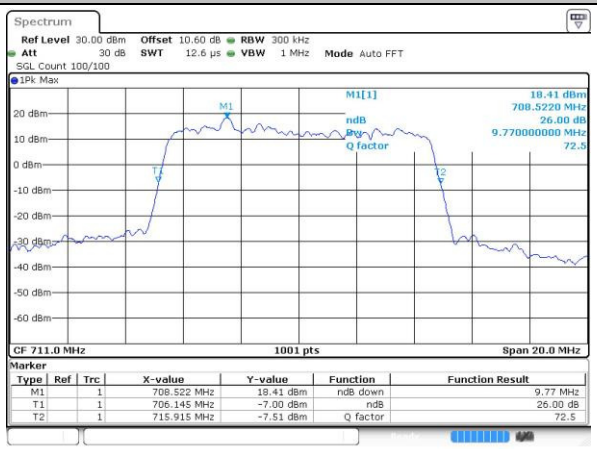
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

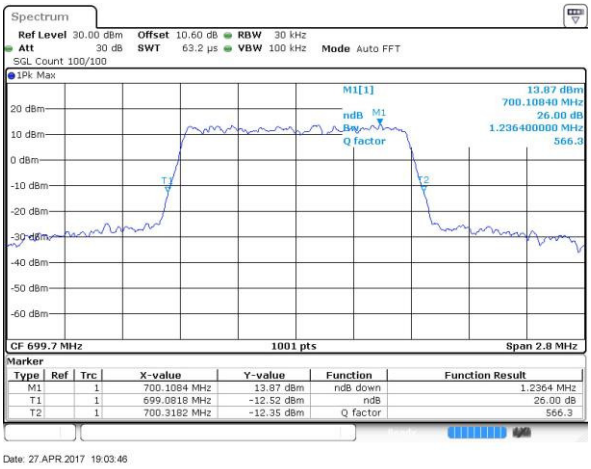


Highest Channel / 10MHz / 16QAM

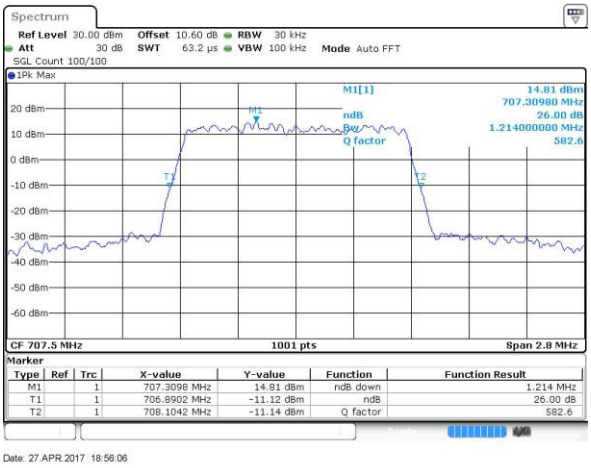


LTE Band 12

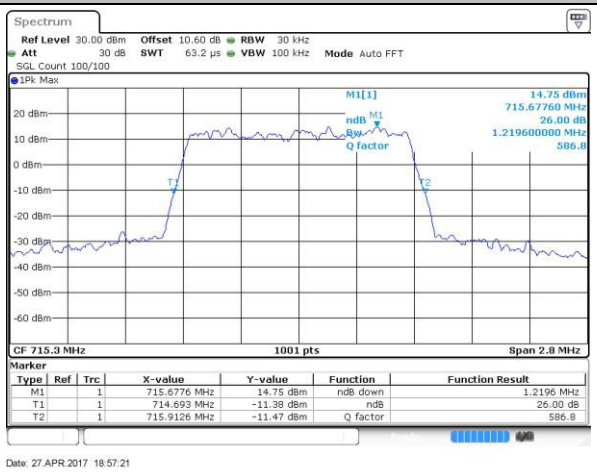
Lowest Channel / 1.4MHz / 64QAM

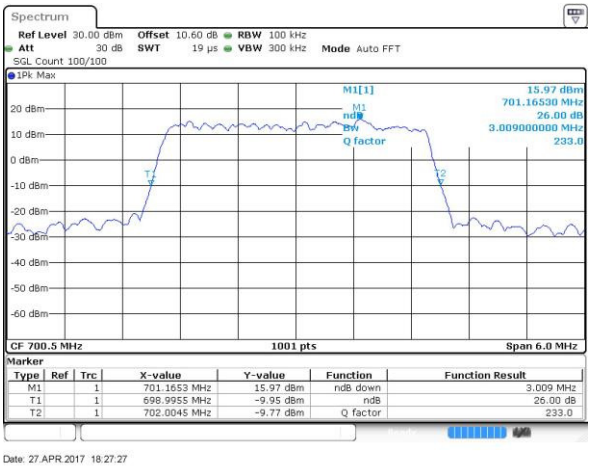
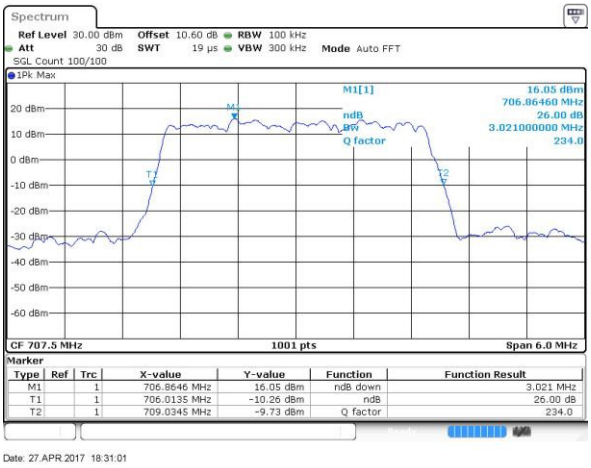
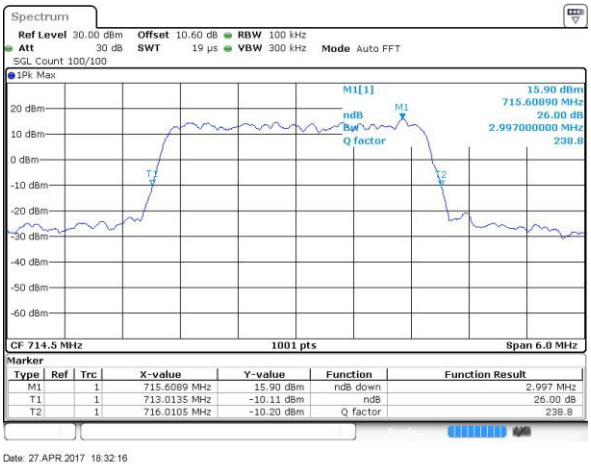


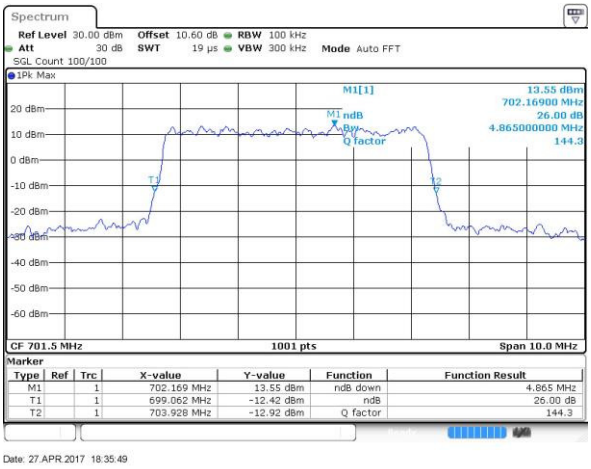
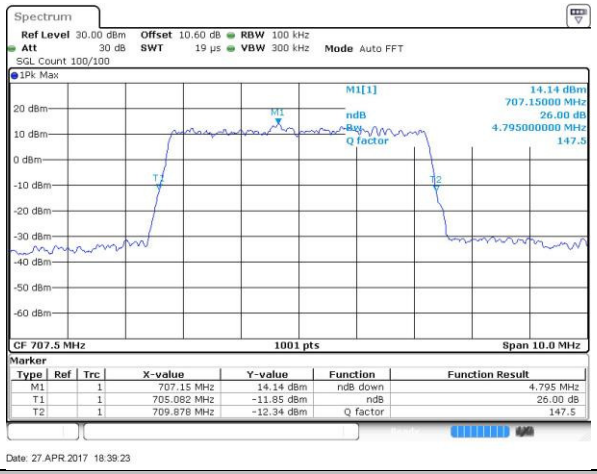
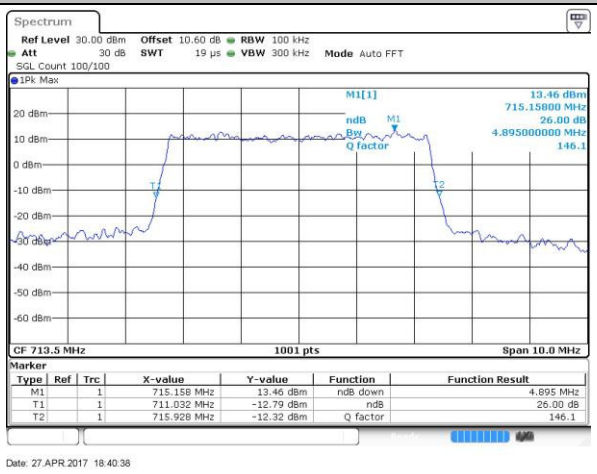
Middle Channel / 1.4MHz / 64QAM

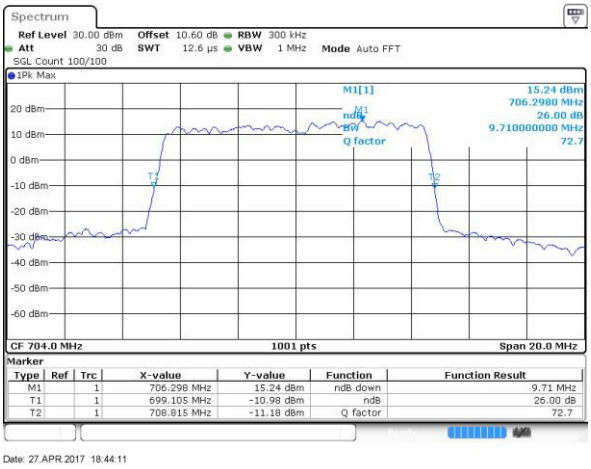
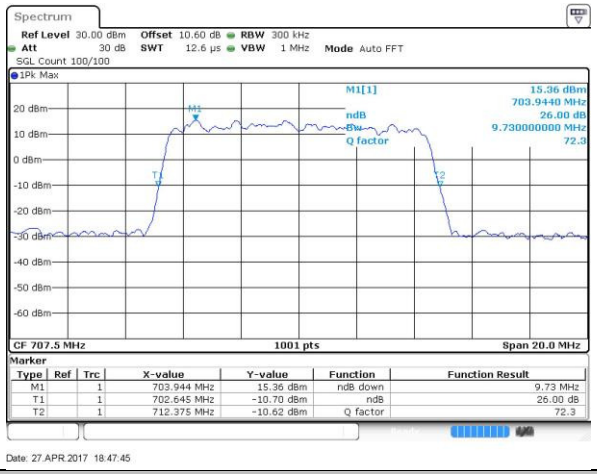
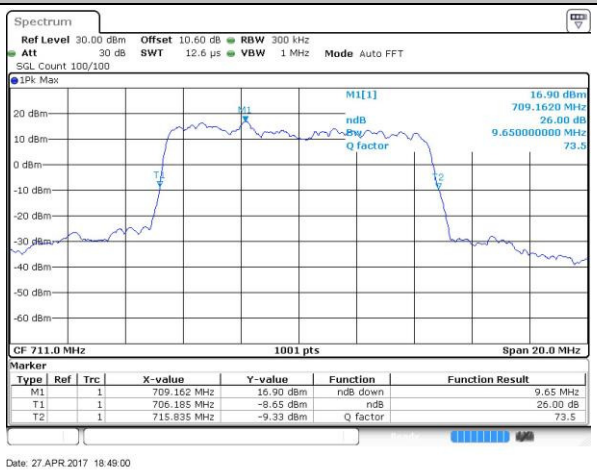


Highest Channel / 1.4MHz / 64QAM



LTE Band 12	
	Lowest Channel / 3MHz / 64QAM
	
	Middle Channel /3MHz / 64QAM
	
	Highest Channel /3MHz / 64QAM
	

LTE Band 12	
	Lowest Channel / 5MHz / 64QAM
	
	Middle Channel / 5MHz / 64QAM
	
	Highest Channel / 5MHz / 64QAM
	

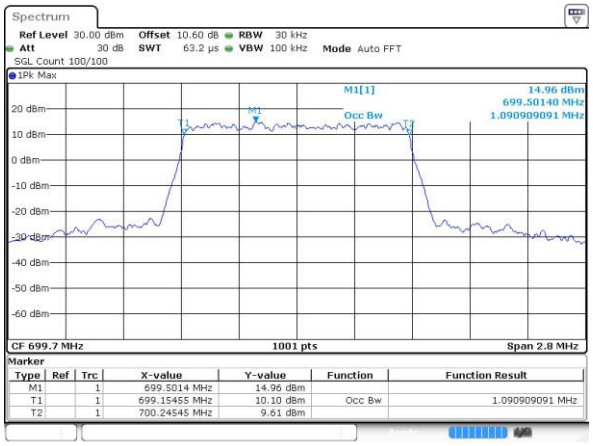
LTE Band 12	
	Lowest Channel / 10MHz / 64QAM
	
	Middle Channel / 10MHz / 64QAM
	
	Highest Channel / 10MHz / 64QAM
	

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	1.09	1.09	2.72	2.71	4.49	4.49	9.09	8.99	-	-	-	-
Middle CH	1.08	1.09	2.72	2.71	4.48	4.47	8.99	8.97	-	-	-	-
Highest CH	1.09	1.09	2.72	2.73	4.49	4.48	9.03	9.03	-	-	-	-
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM
Lowest CH	-	1.09	-	2.7	-	4.49	-	9.01	-	-	-	-
Middle CH	-	1.09	-	2.73	-	4.48	-	9.01	-	-	-	-
Highest CH	-	1.09	-	2.71	-	4.48	-	9.07	-	-	-	-

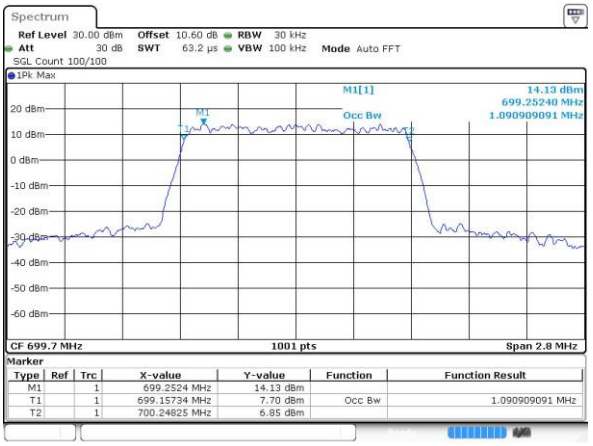
LTE Band 12

Lowest Channel / 1.4MHz / QPSK



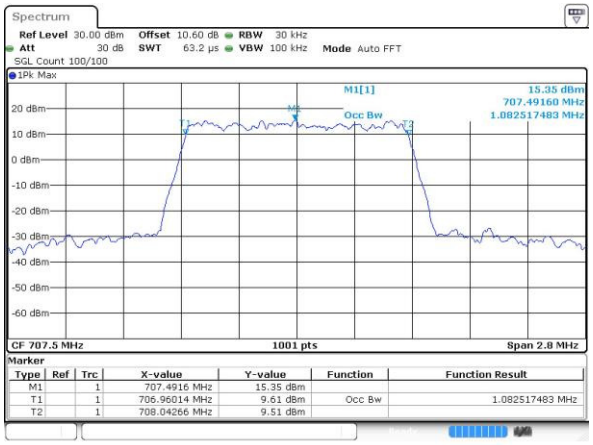
Date: 5.APR.2017 22:35:17

Lowest Channel / 1.4MHz / 16QAM



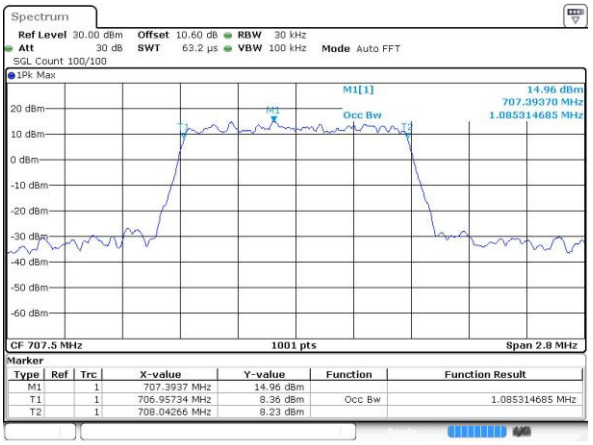
Date: 5.APR.2017 22:35:28

Middle Channel / 1.4MHz / QPSK



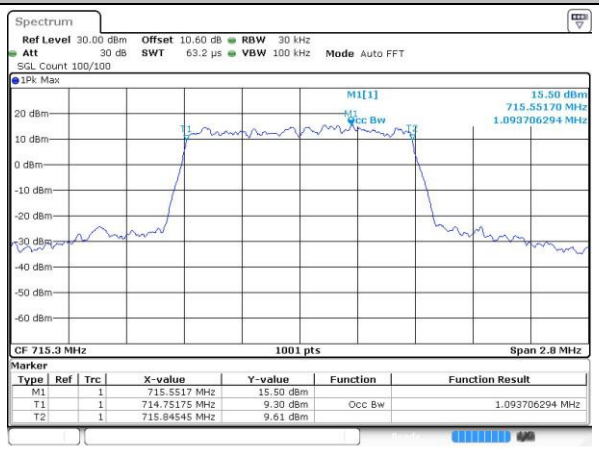
Date: 5.APR.2017 22:42:34

Middle Channel / 1.4MHz / 16QAM



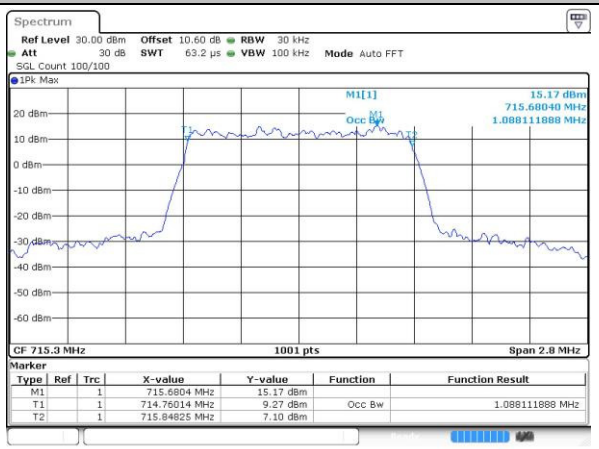
Date: 5.APR.2017 22:42:24

Highest Channel / 1.4MHz / QPSK



Date: 5.APR.2017 22:44:54

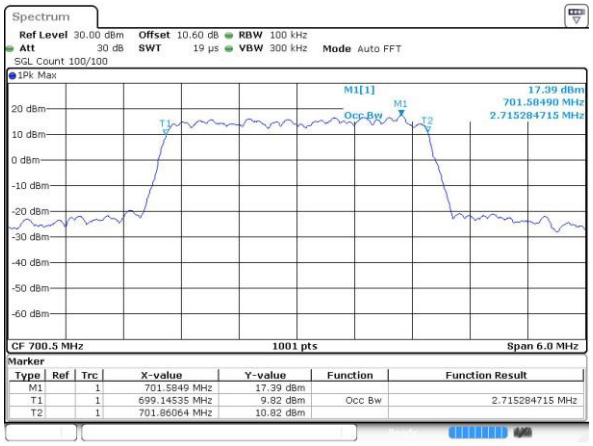
Highest Channel / 1.4MHz / 16QAM



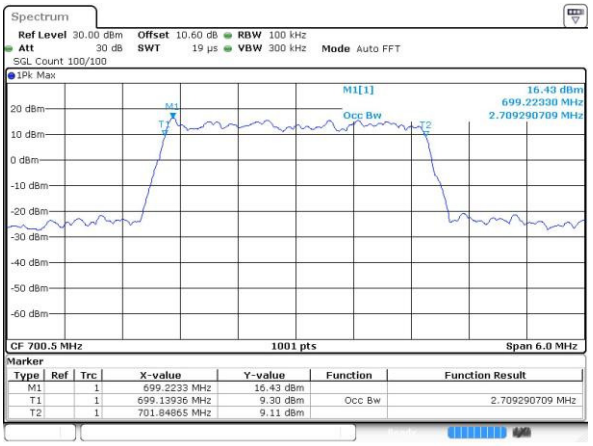
Date: 5.APR.2017 22:45:04

LTE Band 12

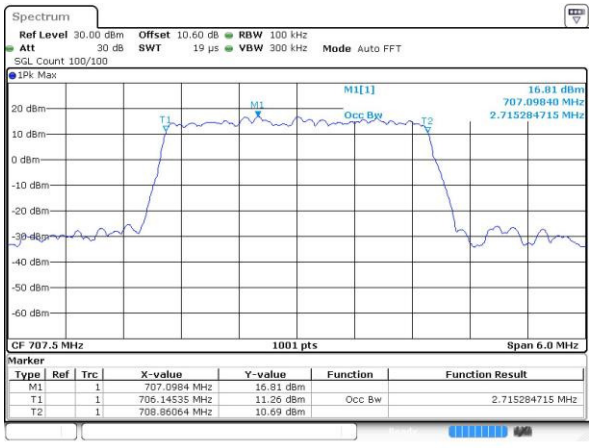
Lowest Channel / 3MHz / QPSK



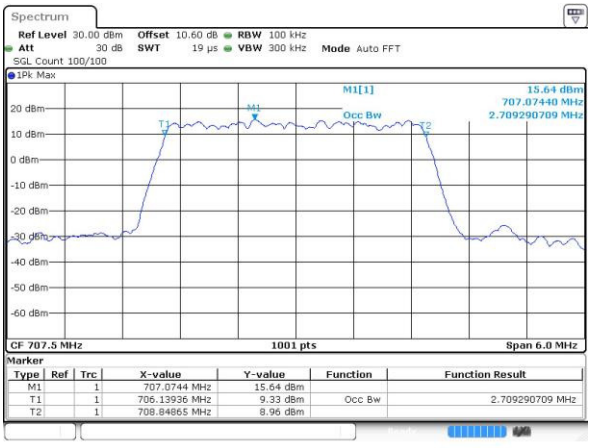
Lowest Channel / 3MHz / 16QAM



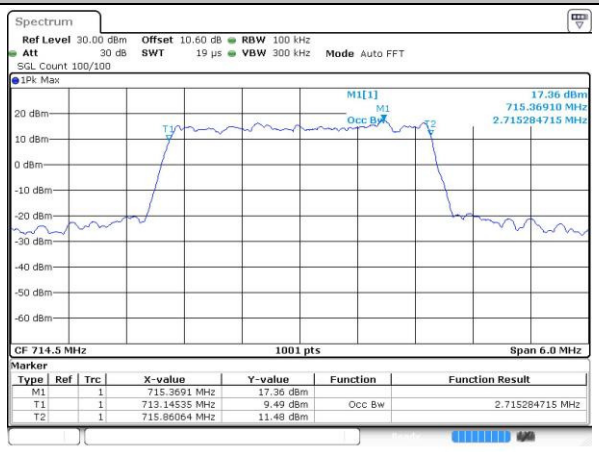
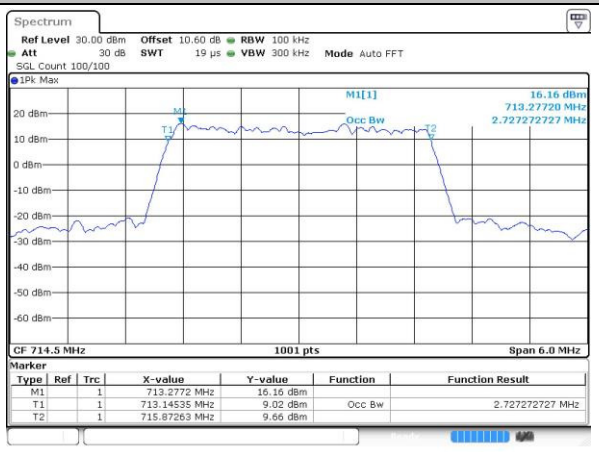
Middle Channel / 3MHz / QPSK



Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK



Highest Channel / 3MHz / 16QAM