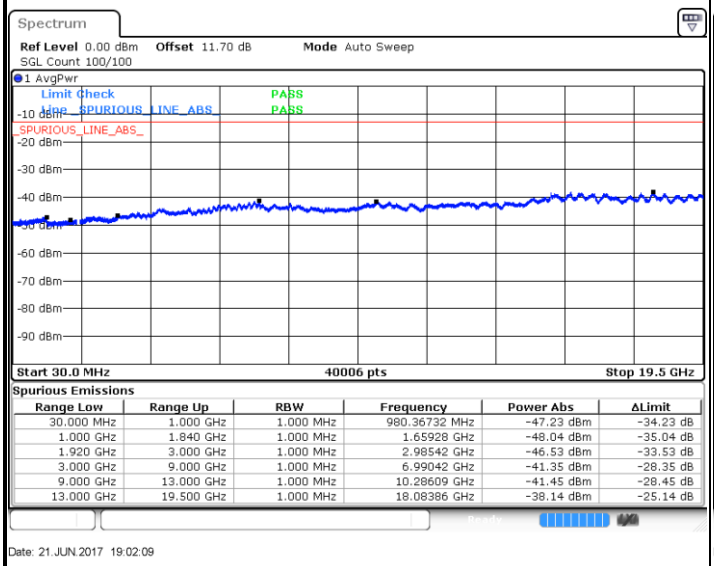
LTE Band 2 / 5MHz

Lowest Channel / 64QAM

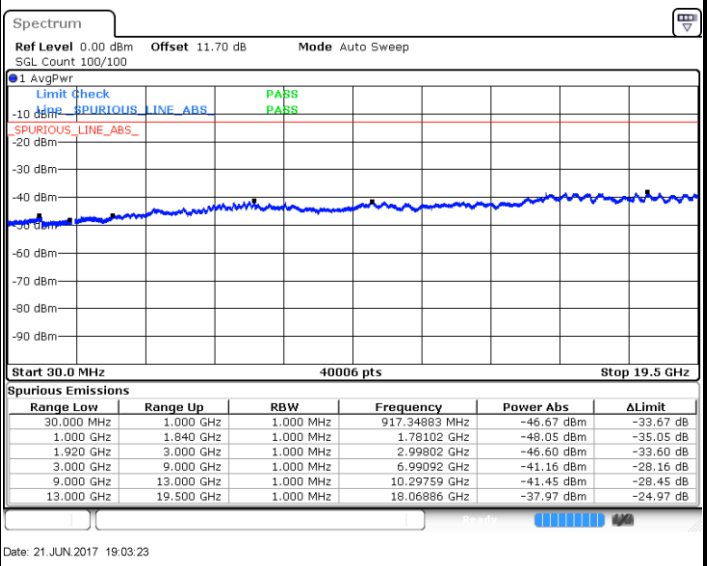


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	980.36732 MHz	-47.23 dBm	-34.23 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.65928 GHz	-48.04 dBm	-35.04 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98542 GHz	-46.53 dBm	-33.53 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99042 GHz	-41.35 dBm	-28.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.28609 GHz	-41.45 dBm	-28.45 dB
13.000 GHz	19.500 GHz	1.000 MHz	18.08386 GHz	-38.14 dBm	-25.14 dB

Date: 21.JUN.2017 19:02:09

Middle Channel / 64QAM

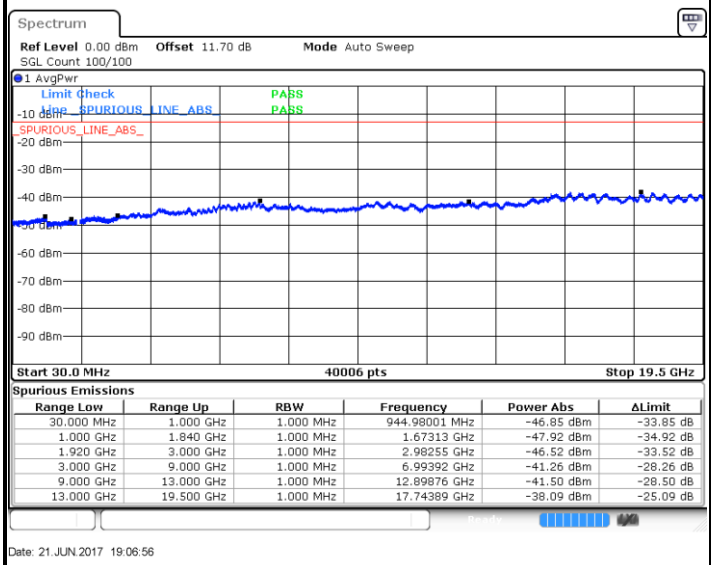


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	917.34883 MHz	-46.67 dBm	-33.67 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78102 GHz	-48.05 dBm	-35.05 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99802 GHz	-46.60 dBm	-33.60 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99092 GHz	-41.16 dBm	-28.16 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.29759 GHz	-41.45 dBm	-28.45 dB
13.000 GHz	19.500 GHz	1.000 MHz	18.06886 GHz	-37.97 dBm	-24.97 dB

Date: 21.JUN.2017 19:03:23

Highest Channel / 64QAM



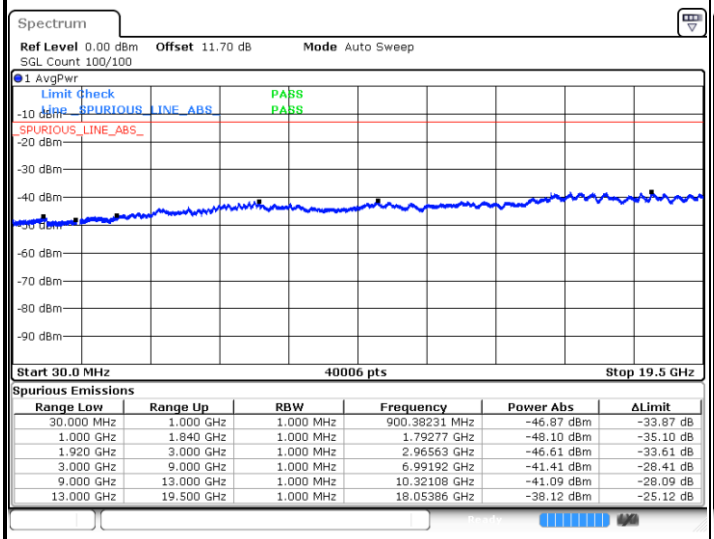
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	944.98001 MHz	-46.85 dBm	-33.85 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.67313 GHz	-47.92 dBm	-34.92 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98255 GHz	-46.52 dBm	-33.52 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99392 GHz	-41.26 dBm	-28.26 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.89876 GHz	-41.50 dBm	-28.50 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.74389 GHz	-38.09 dBm	-25.09 dB

Date: 21.JUN.2017 19:06:56

LTE Band 2 / 10MHz

Lowest Channel / 64QAM

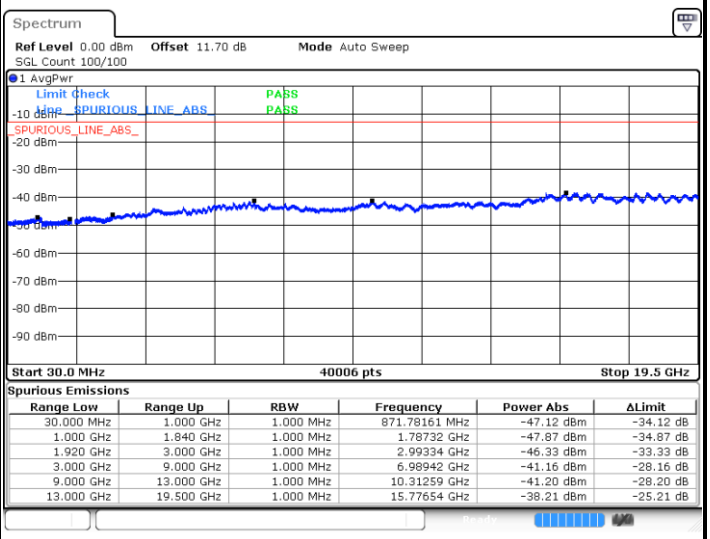


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	900.38231 MHz	-46.87 dBm	-33.87 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.79277 GHz	-48.10 dBm	-35.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96563 GHz	-46.61 dBm	-33.61 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99192 GHz	-41.41 dBm	-28.41 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.32108 GHz	-41.09 dBm	-28.09 dB
13.000 GHz	19.500 GHz	1.000 MHz	18.05386 GHz	-38.12 dBm	-25.12 dB

Date: 21.JUN.2017 19:10:27

Middle Channel / 64QAM

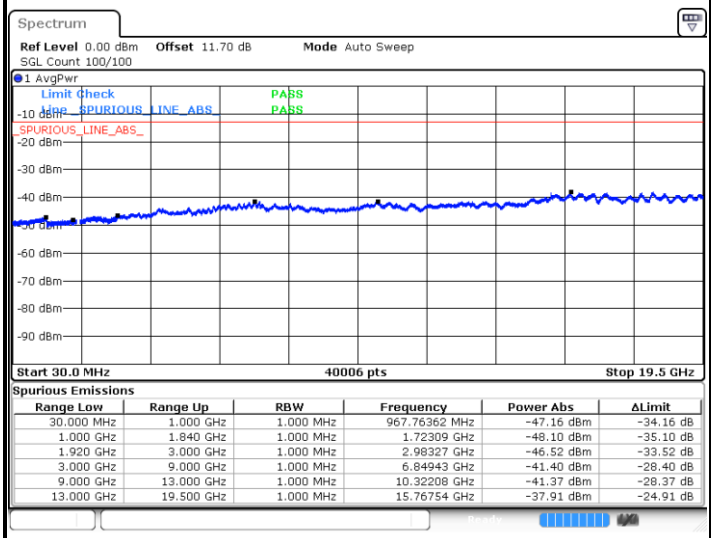


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	871.78161 MHz	-47.12 dBm	-34.12 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78732 GHz	-47.87 dBm	-34.87 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99334 GHz	-46.33 dBm	-33.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98942 GHz	-41.16 dBm	-28.16 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.31259 GHz	-41.20 dBm	-28.20 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.77654 GHz	-38.21 dBm	-25.21 dB

Date: 21.JUN.2017 19:11:41

Highest Channel / 64QAM



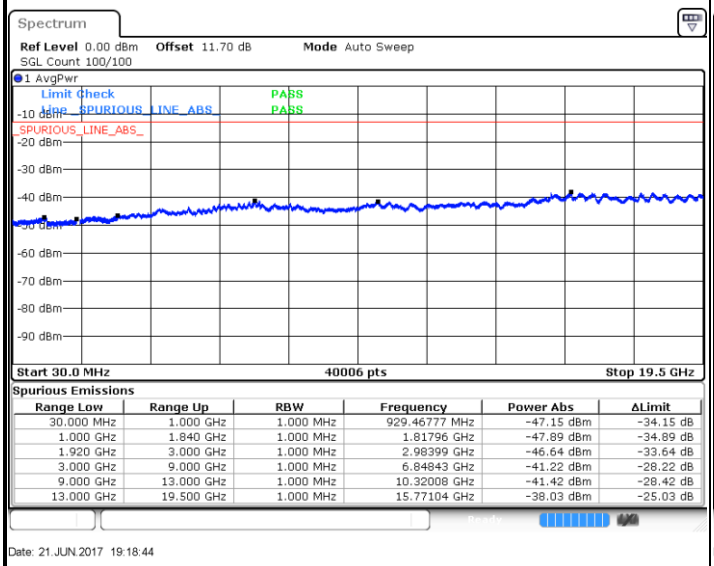
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	967.76362 MHz	-47.16 dBm	-34.16 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.72309 GHz	-48.10 dBm	-35.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98327 GHz	-46.52 dBm	-33.52 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.84943 GHz	-41.40 dBm	-28.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.32208 GHz	-41.37 dBm	-28.37 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.76754 GHz	-37.91 dBm	-24.91 dB

Date: 21.JUN.2017 19:15:13

LTE Band 2 / 15MHz

Lowest Channel / 64QAM

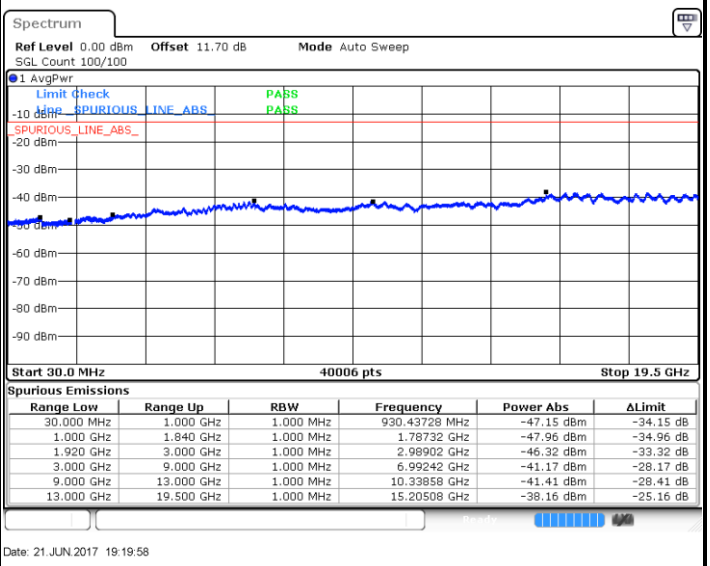


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	929.46777 MHz	-47.15 dBm	-34.15 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81796 GHz	-47.89 dBm	-34.89 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98399 GHz	-46.64 dBm	-33.64 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.84843 GHz	-41.22 dBm	-28.22 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.32008 GHz	-41.42 dBm	-28.42 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.77104 GHz	-38.03 dBm	-25.03 dB

Date: 21.JUN.2017 19:18:44

Middle Channel / 64QAM

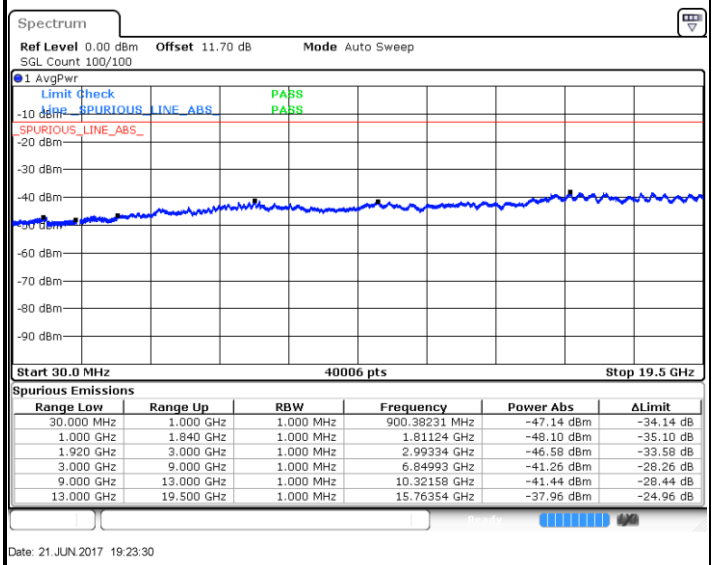


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	930.43728 MHz	-47.15 dBm	-34.15 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78732 GHz	-47.96 dBm	-34.96 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98902 GHz	-46.32 dBm	-33.32 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99242 GHz	-41.17 dBm	-28.17 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.33858 GHz	-41.41 dBm	-28.41 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.20508 GHz	-38.16 dBm	-25.16 dB

Date: 21.JUN.2017 19:19:58

Highest Channel / 64QAM



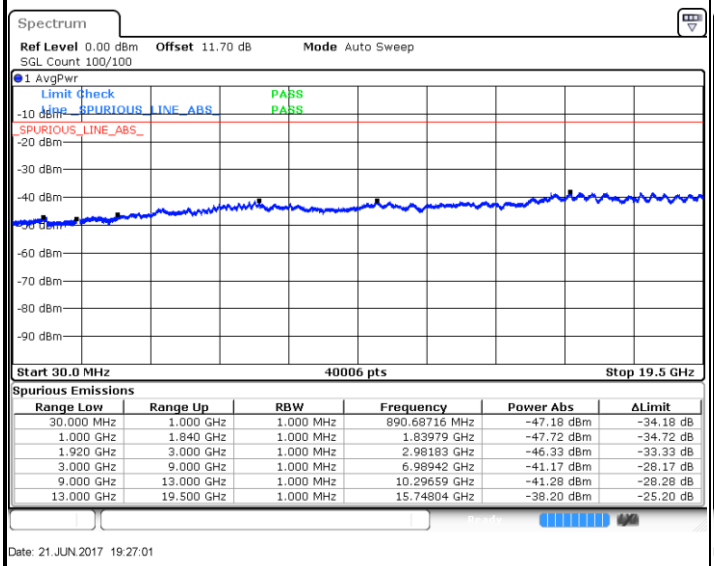
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	900.38231 MHz	-47.14 dBm	-34.14 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81124 GHz	-48.10 dBm	-35.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99334 GHz	-46.58 dBm	-33.58 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.84993 GHz	-41.26 dBm	-28.26 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.32158 GHz	-41.44 dBm	-28.44 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.76354 GHz	-37.96 dBm	-24.96 dB

Date: 21.JUN.2017 19:23:30

LTE Band 2 / 20MHz

Lowest Channel / 64QAM

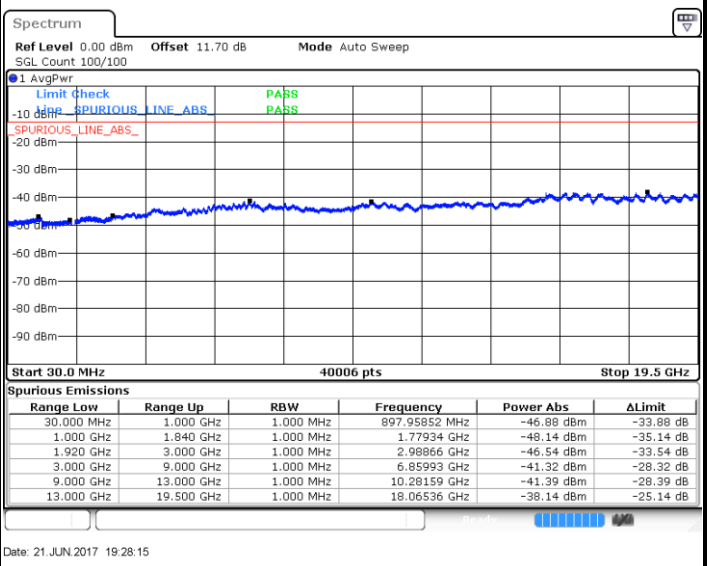


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	890.68716 MHz	-47.18 dBm	-34.18 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-47.72 dBm	-34.72 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98183 GHz	-46.33 dBm	-33.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98942 GHz	-41.17 dBm	-28.17 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.29659 GHz	-41.28 dBm	-28.28 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.74804 GHz	-38.20 dBm	-25.20 dB

Date: 21.JUN.2017 19:27:01

Middle Channel / 64QAM

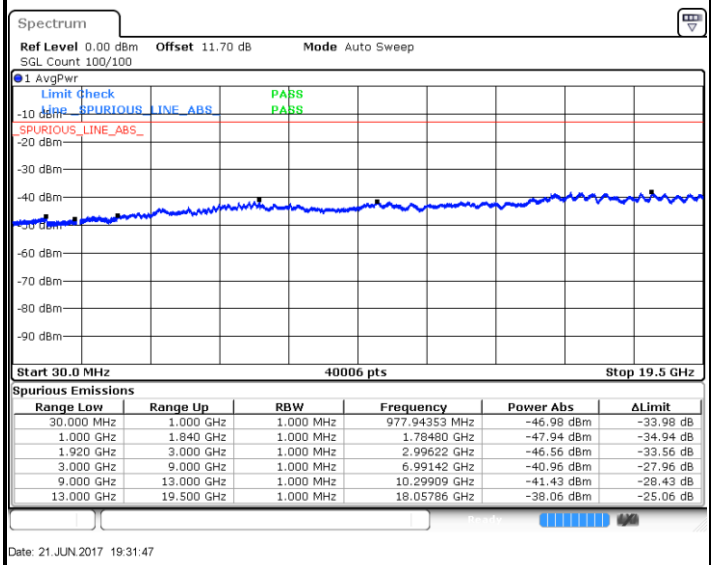


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	897.95852 MHz	-46.88 dBm	-33.88 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.77934 GHz	-48.14 dBm	-35.14 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98866 GHz	-46.54 dBm	-33.54 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.85993 GHz	-41.32 dBm	-28.32 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.28159 GHz	-41.39 dBm	-28.39 dB
13.000 GHz	19.500 GHz	1.000 MHz	18.06536 GHz	-38.14 dBm	-25.14 dB

Date: 21.JUN.2017 19:28:15

Highest Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	977.94353 MHz	-46.98 dBm	-33.98 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78480 GHz	-47.94 dBm	-34.94 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99622 GHz	-46.56 dBm	-33.56 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99142 GHz	-40.96 dBm	-27.96 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.29909 GHz	-41.43 dBm	-28.43 dB
13.000 GHz	19.500 GHz	1.000 MHz	18.05786 GHz	-38.06 dBm	-25.06 dB

Date: 21.JUN.2017 19:31:47

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	0.0042	PASS
40	Normal Voltage	0.0007	
30	Normal Voltage	0.0005	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0014	
-20	Normal Voltage	0.0003	
-30	Normal Voltage	0.0004	
20	Maximum Voltage	0.0034	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0006	

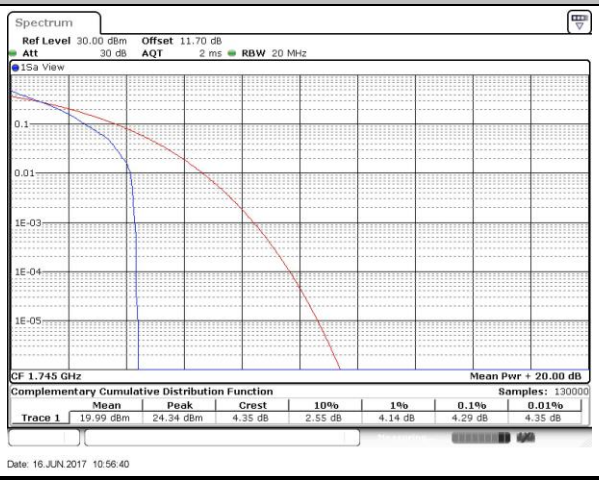
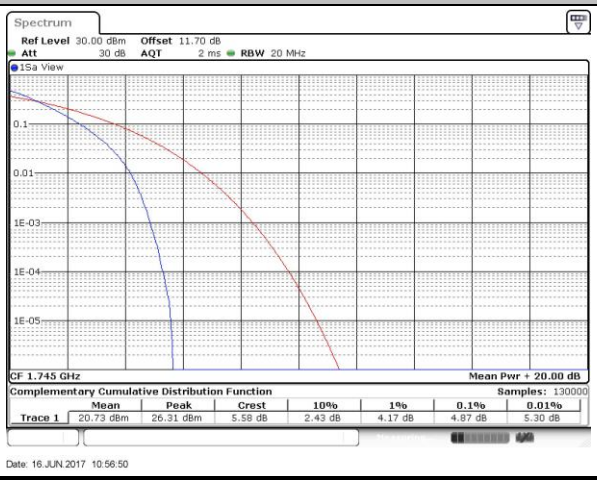
Note:

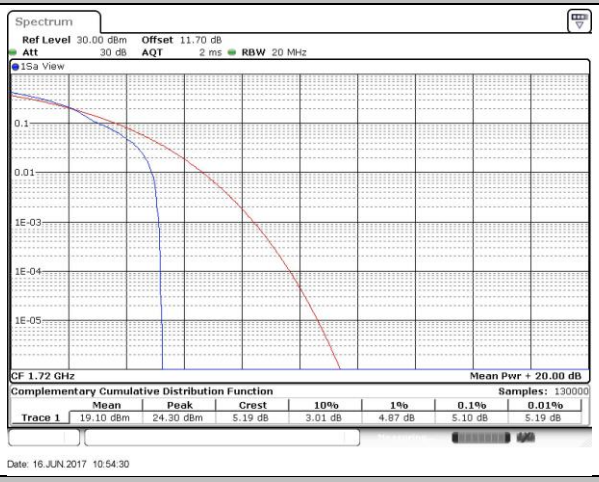
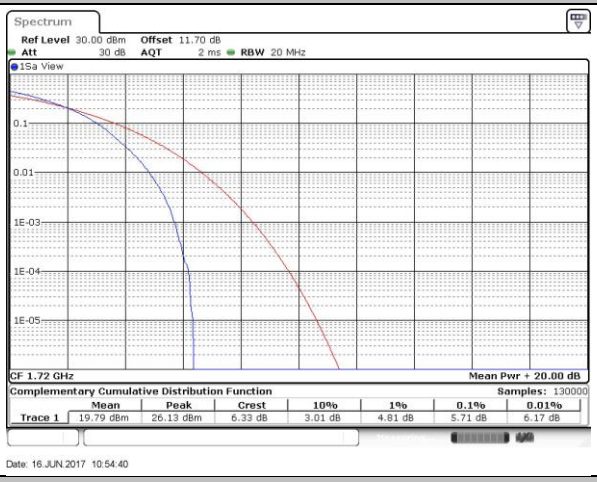
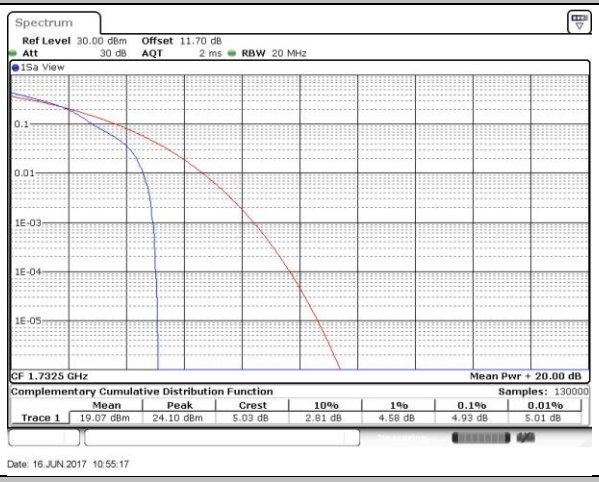
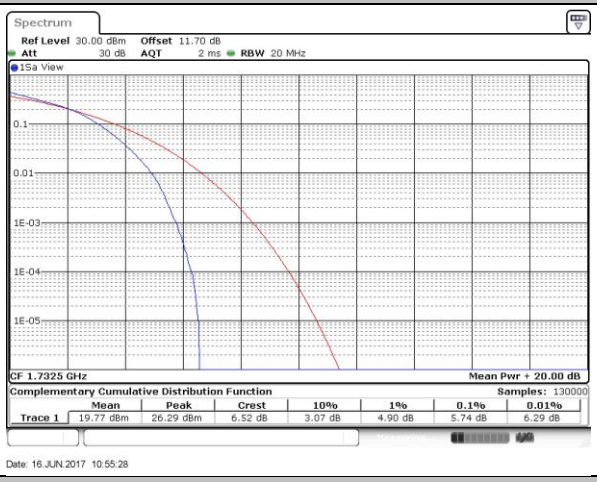
1. Normal Voltage =3.3 V.；Battery End Point (BEP) =3.1 V.；Maximum Voltage =3.6 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

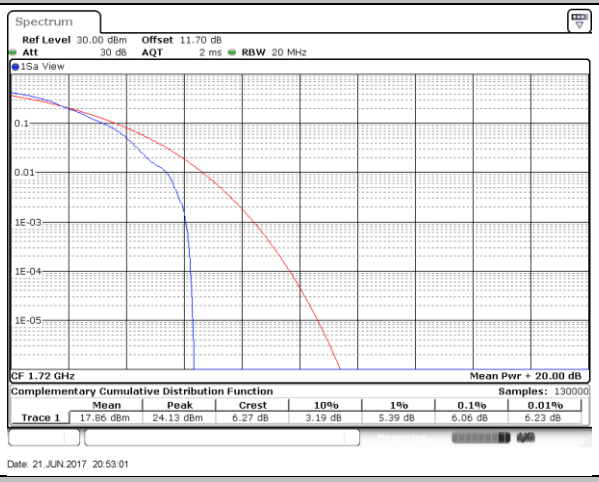
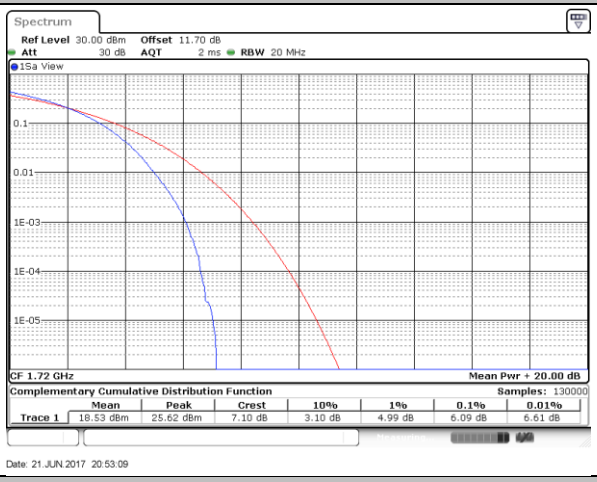
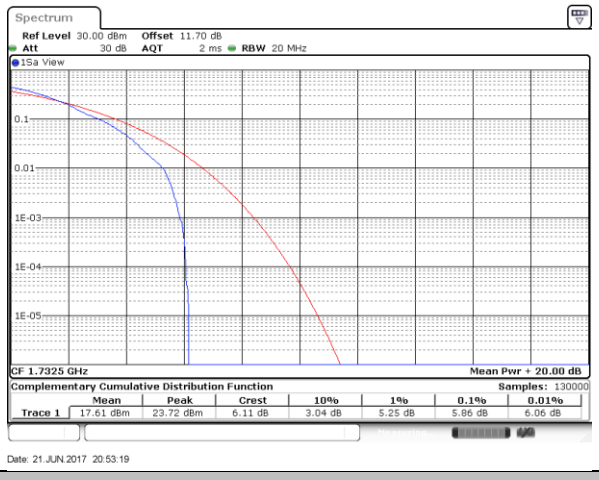
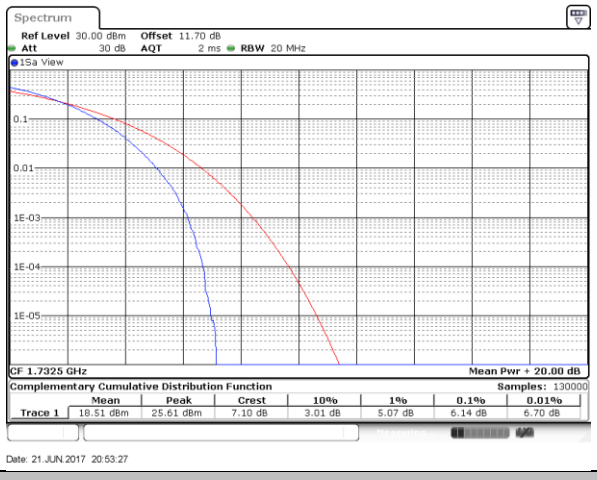
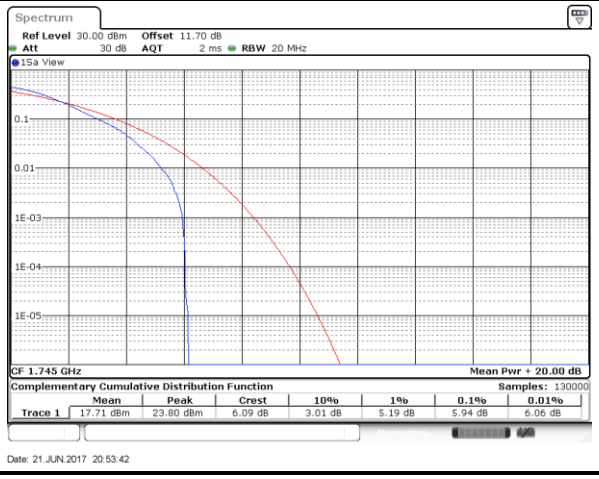
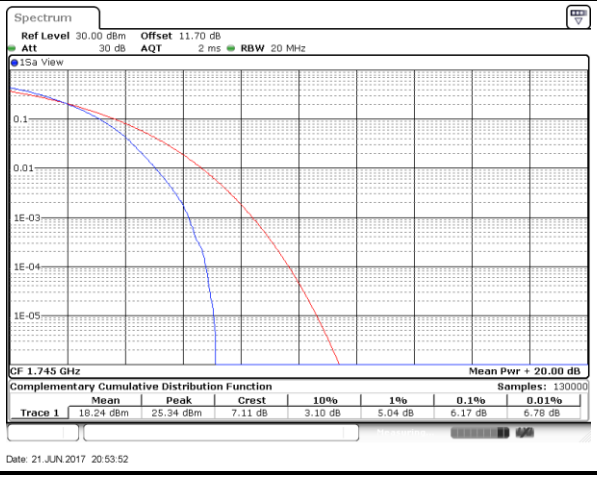
LTE Band 4

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	4.7	4.64	5.1	5.71	PASS
Middle CH	4.06	4.9	4.93	5.74	
Highest CH	4.29	4.87	5.22	5.86	
Mode	LTE Band 4 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.06	6.09			PASS
Middle CH	5.86	6.14			
Highest CH	5.94	6.17			

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**
	

LTE Band 4 / 20MHz / 16QAM	
Lowest Channel / 1RB	**Lowest Channel / Full RB**
	
Middle Channel / 1RB	**Middle Channel / Full RB**
	
Highest Channel / 1RB	**Highest Channel / Full RB**

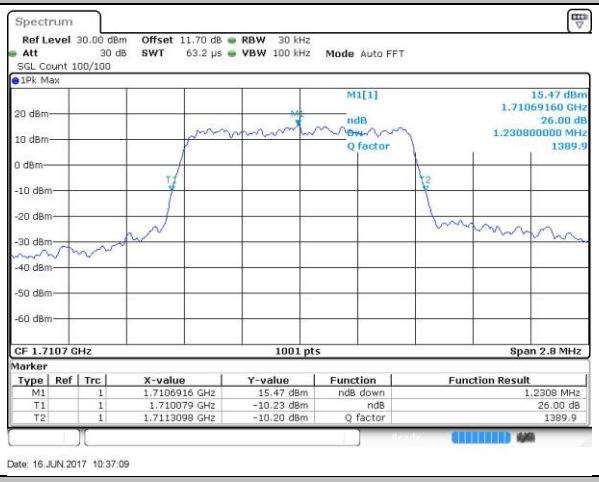
LTE Band 4 / 20MHz / 64QAM	
Lowest Channel / 1RB	**Lowest Channel / Full RB**
	
Middle Channel / 1RB	**Middle Channel / Full RB**
	
Highest Channel / 1RB	**Highest Channel / Full RB**
	

26dB Bandwidth

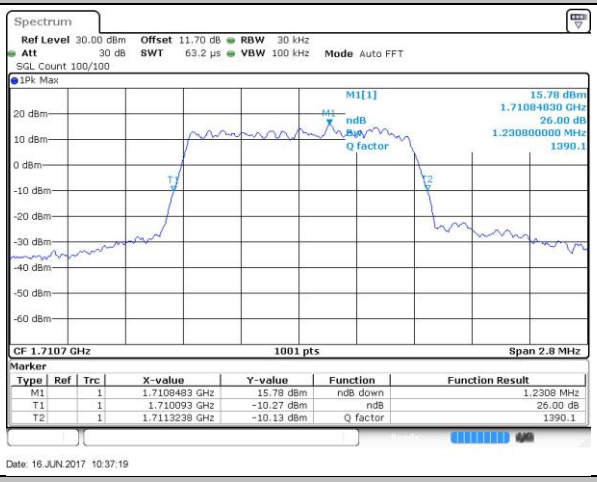
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.23	1.23	3.00	3.02	4.86	4.84	9.65	9.69	14.57	14.69	20.26	20.10
Middle CH	1.23	1.25	3.02	3.05	4.92	4.90	9.81	9.87	14.60	14.36	20.34	20.14
Highest CH	1.23	1.25	3.03	2.99	4.97	4.92	9.73	9.93	14.54	14.30	20.22	20.22
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.21	-	3	-	4.89	-	9.75	-	14.27	-	20.18	-
Middle CH	1.23	-	3.03	-	4.91	-	9.77	-	14.3	-	20.22	-
Highest CH	1.2	-	3.03	-	4.96	-	9.83	-	14.24	-	20.22	-

LTE Band 4

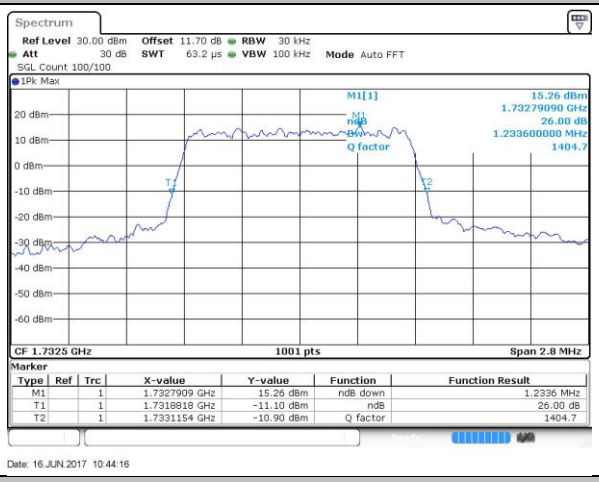
Lowest Channel / 1.4MHz / QPSK



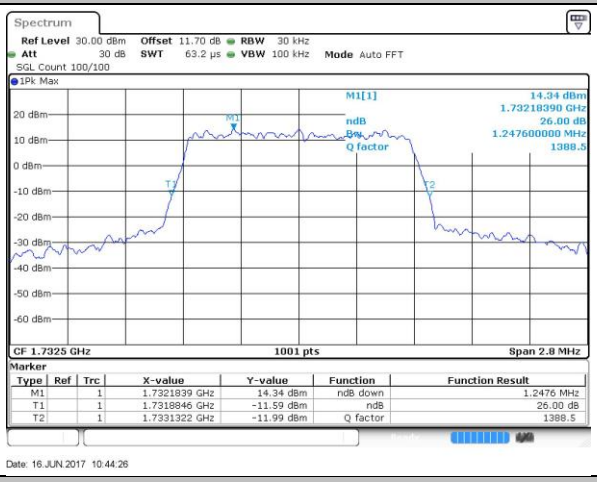
Lowest Channel / 1.4MHz / 16QAM



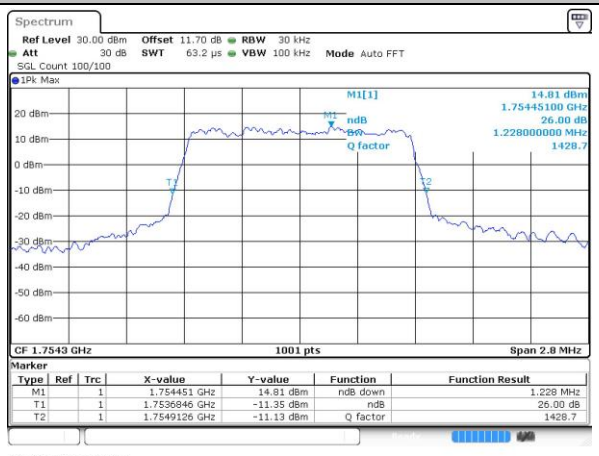
Middle Channel / 1.4MHz / QPSK



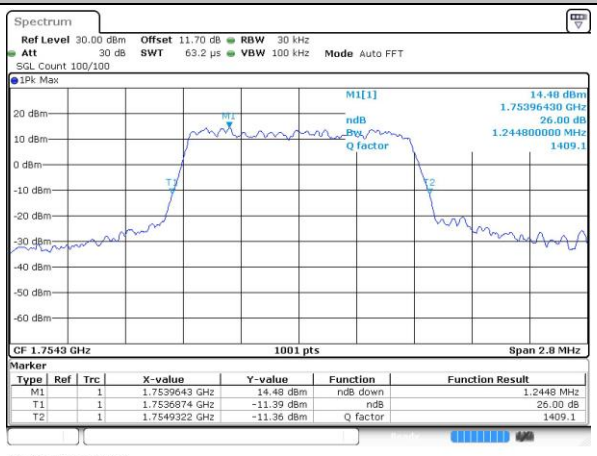
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK

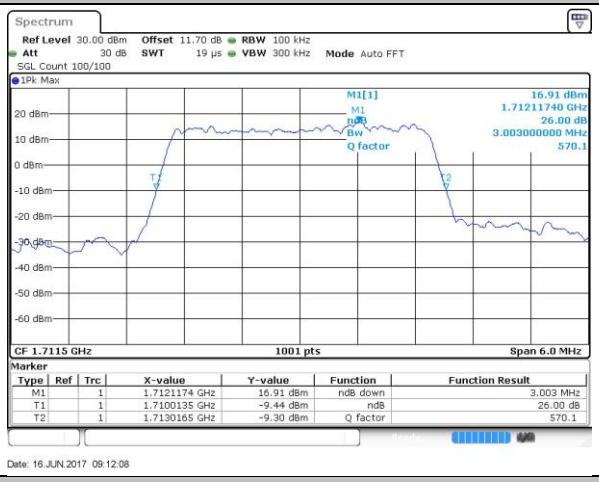


Highest Channel / 1.4MHz / 16QAM

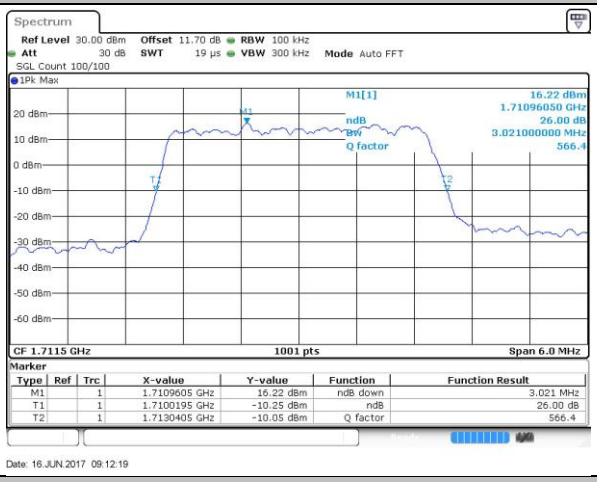


LTE Band 4

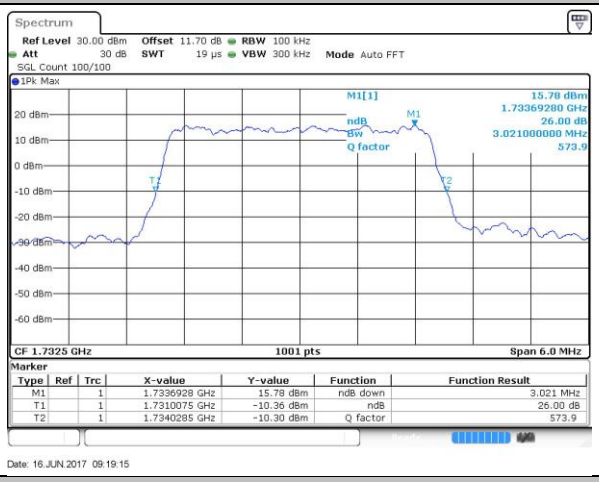
Lowest Channel / 3MHz / QPSK



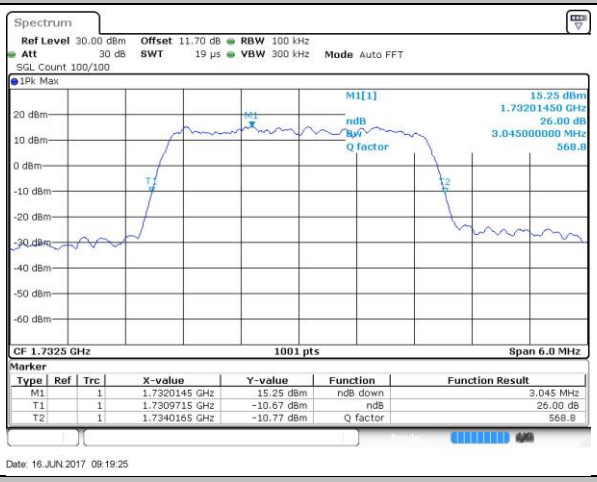
Lowest Channel / 3MHz / 16QAM



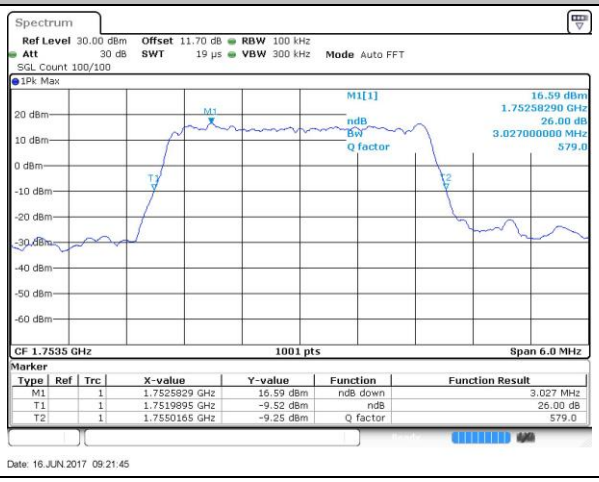
Middle Channel / 3MHz / QPSK



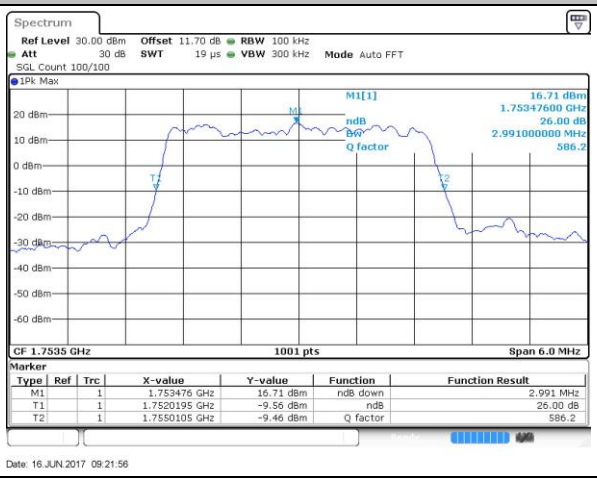
Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK

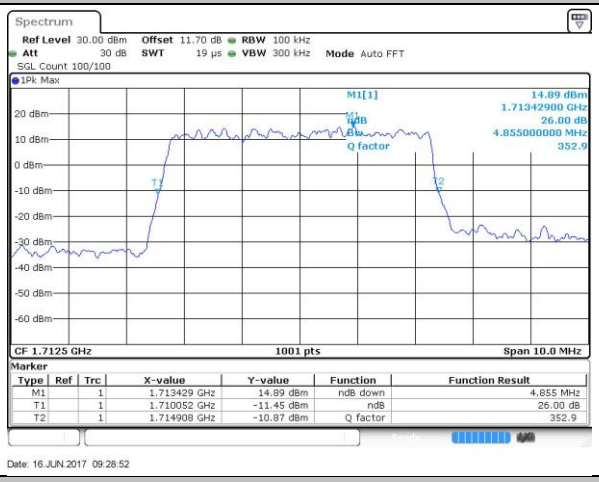


Highest Channel / 3MHz / 16QAM

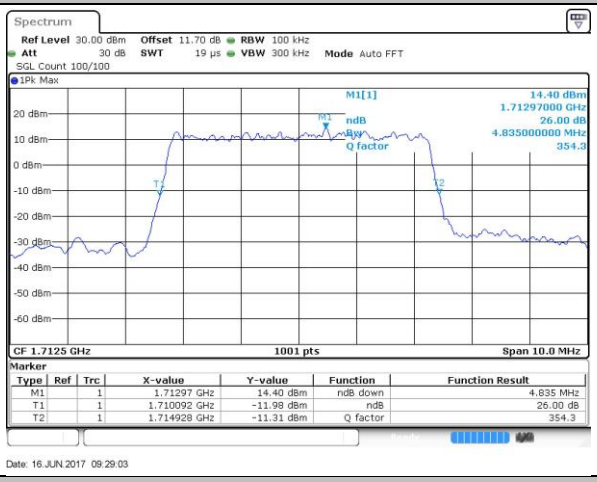


LTE Band 4

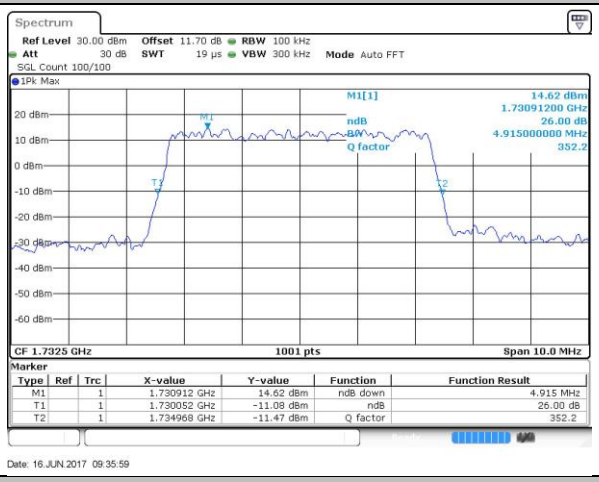
Lowest Channel / 5MHz / QPSK



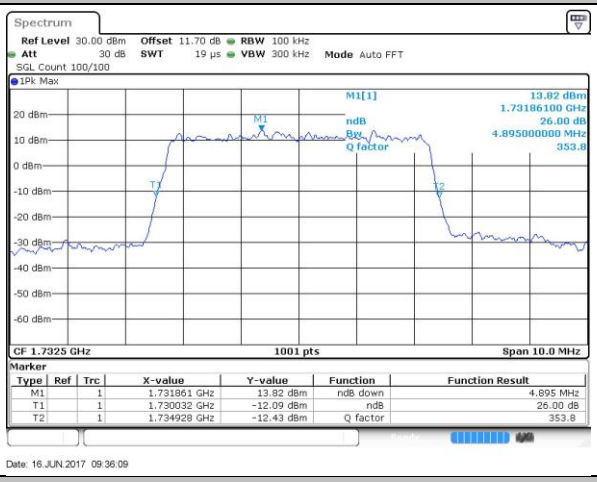
Lowest Channel / 5MHz / 16QAM



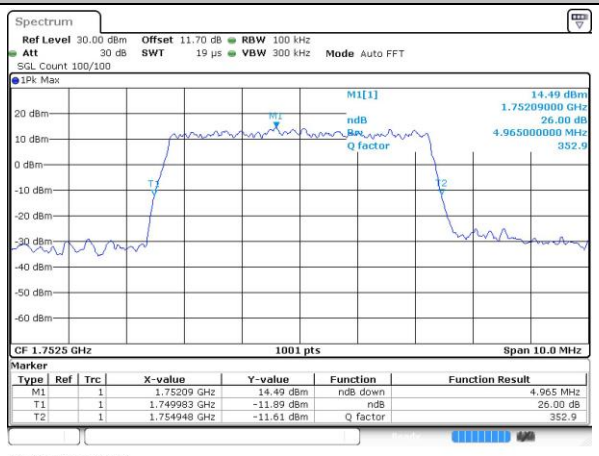
Middle Channel / 5MHz / QPSK



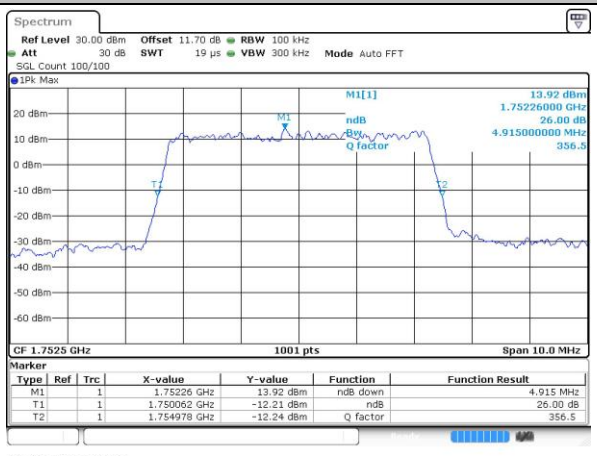
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

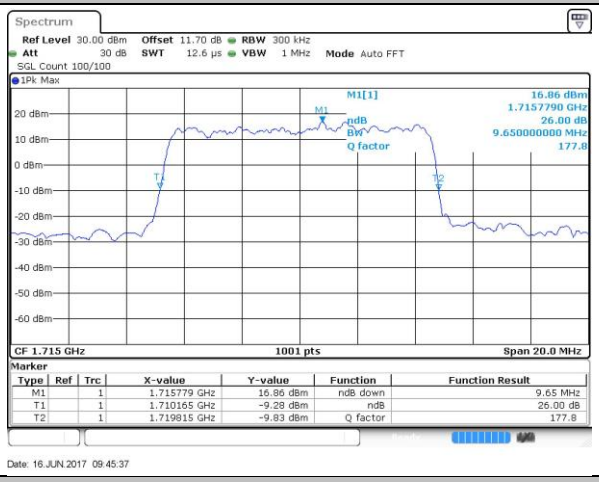


Highest Channel / 5MHz / 16QAM

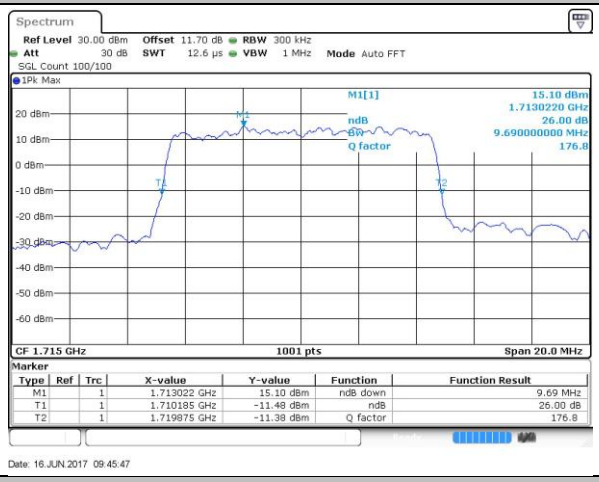


LTE Band 4

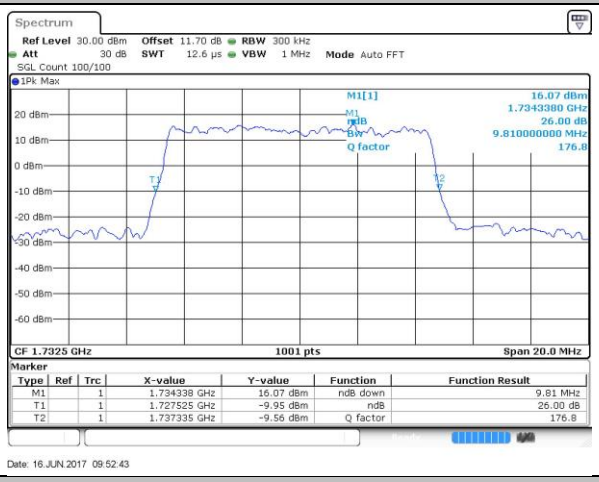
Lowest Channel / 10MHz / QPSK



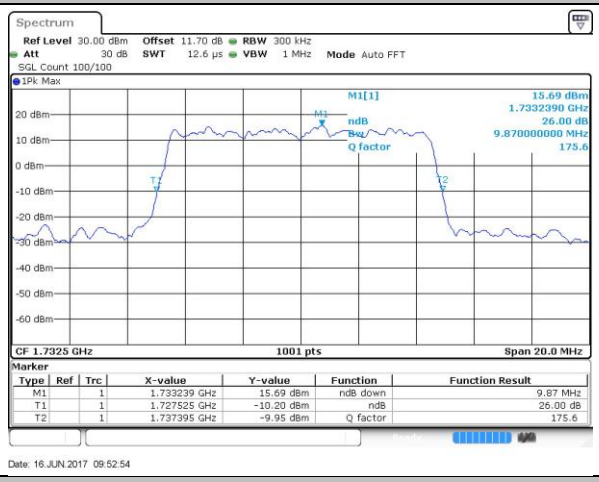
Lowest Channel / 10MHz / 16QAM



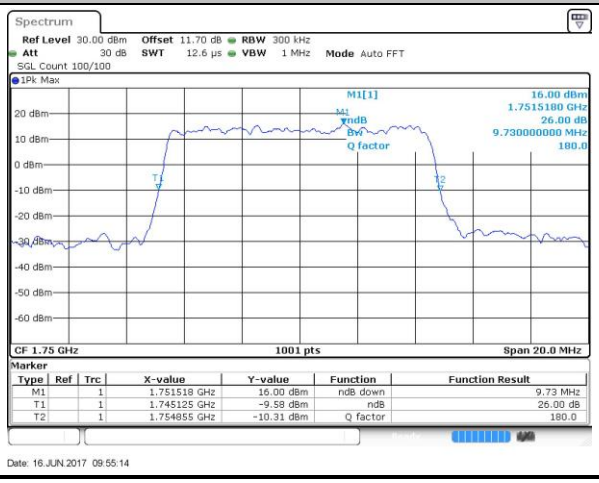
Middle Channel / 10MHz / QPSK



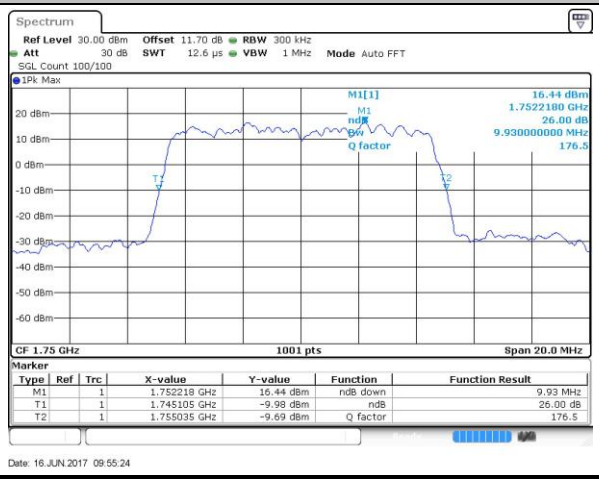
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

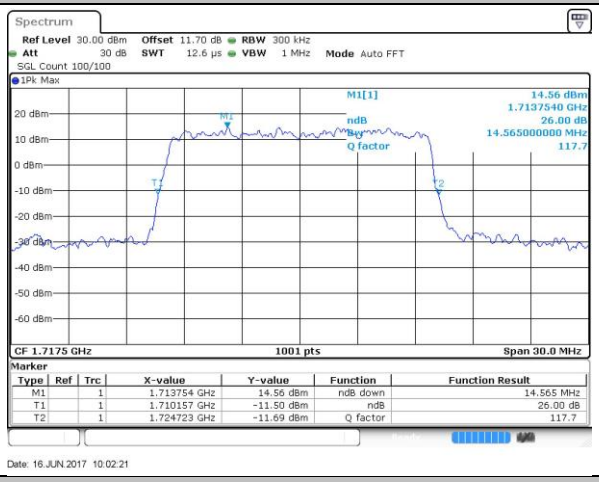


Highest Channel / 10MHz / 16QAM

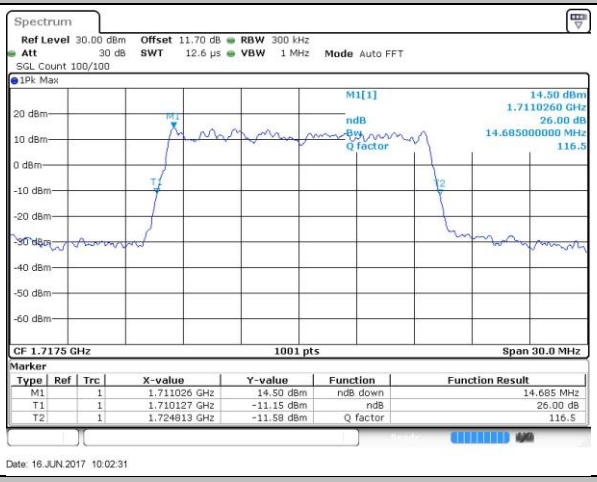


LTE Band 4

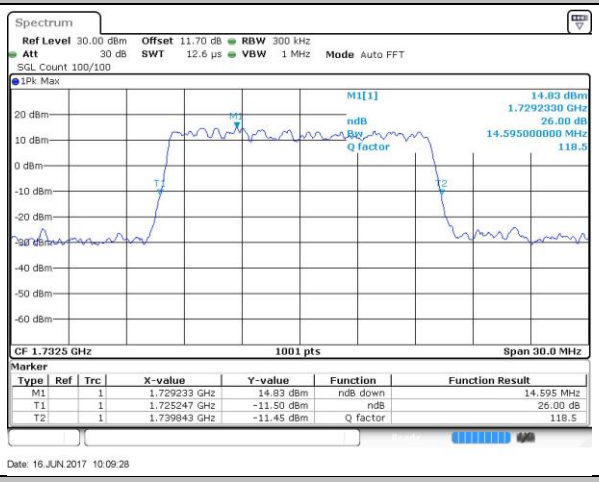
Lowest Channel / 15MHz / QPSK



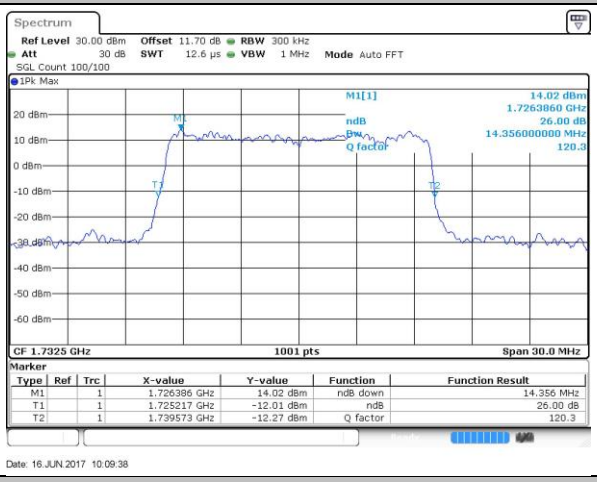
Lowest Channel / 15MHz / 16QAM



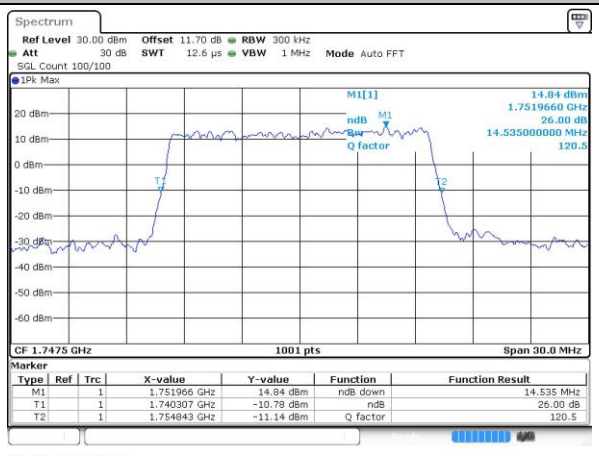
Middle Channel / 15MHz / QPSK



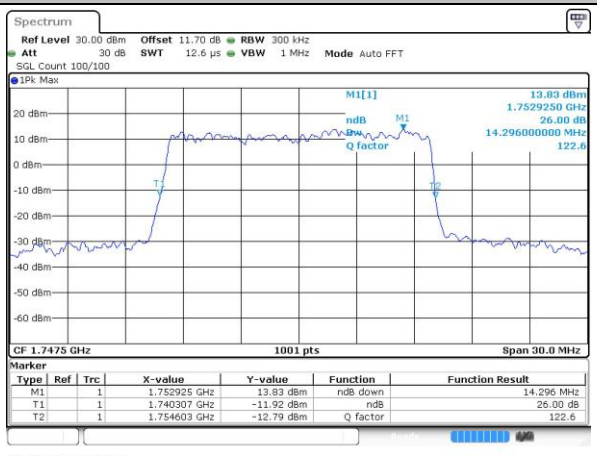
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK

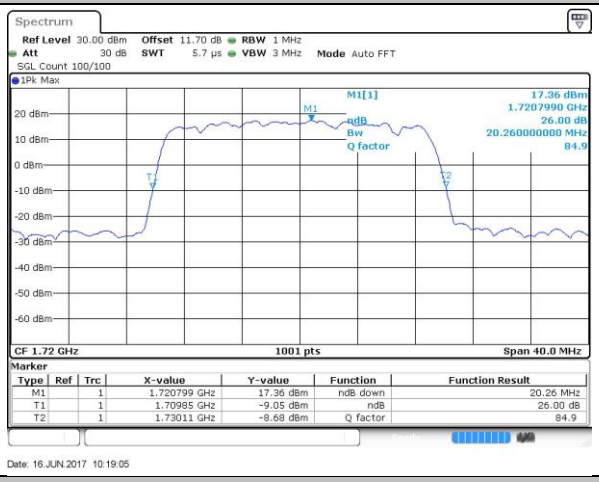


Highest Channel / 15MHz / 16QAM

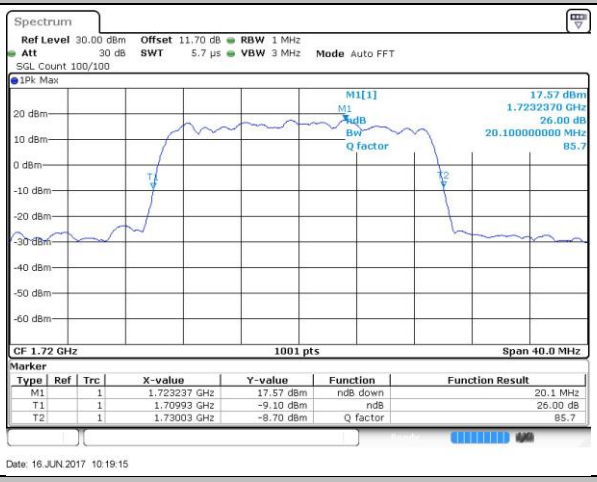


LTE Band 4

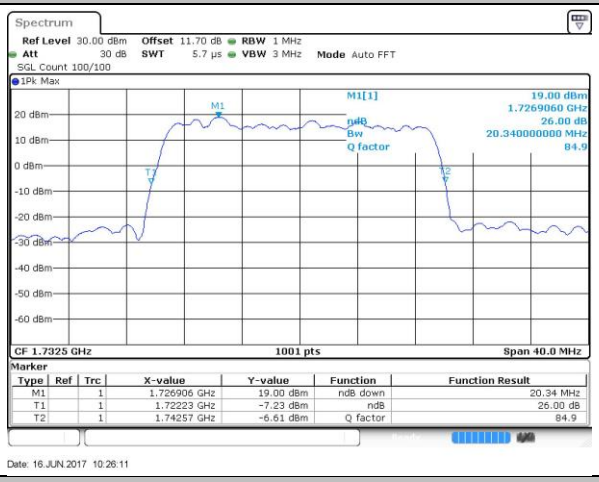
Lowest Channel / 20MHz / QPSK



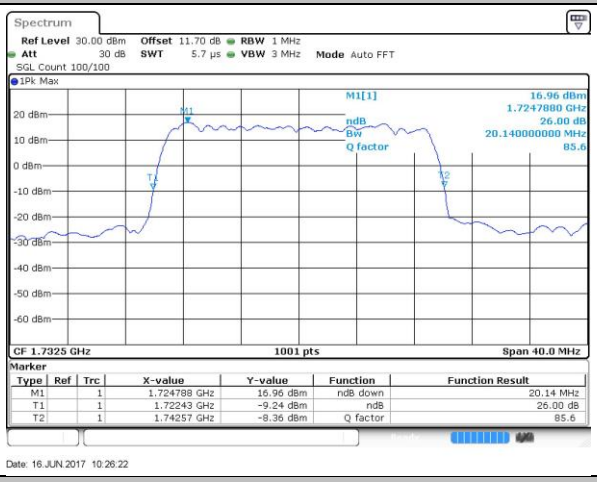
Lowest Channel / 20MHz / 16QAM



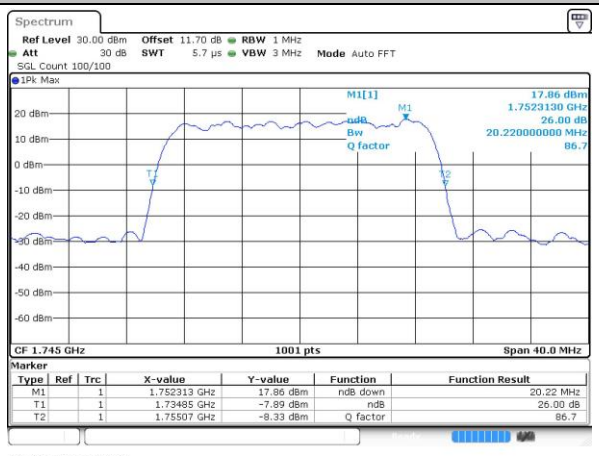
Middle Channel / 20MHz / QPSK



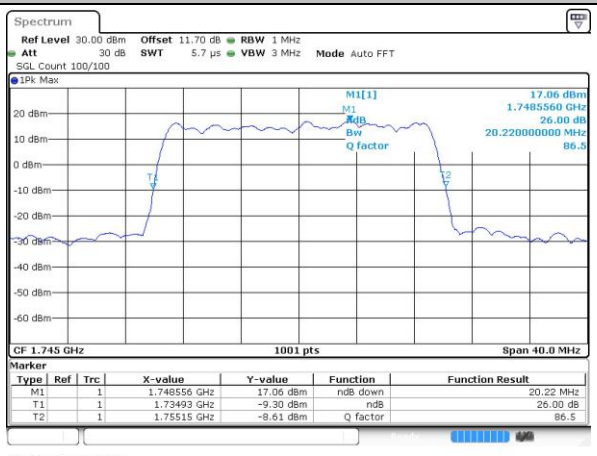
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK

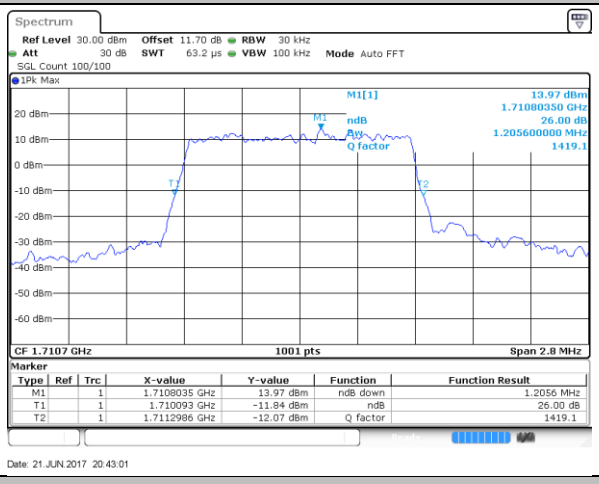


Highest Channel / 20MHz / 16QAM

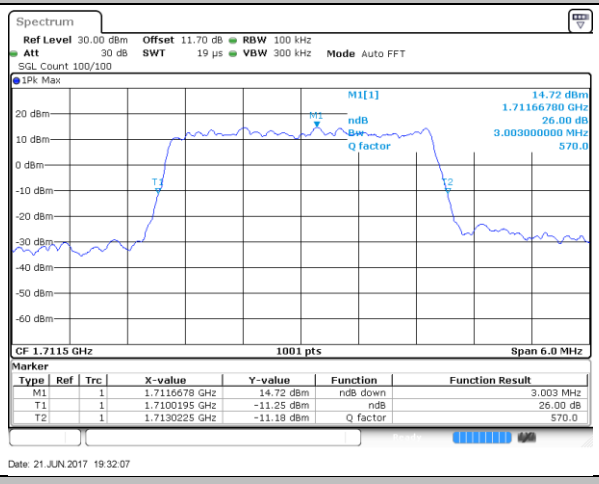


LTE Band 4

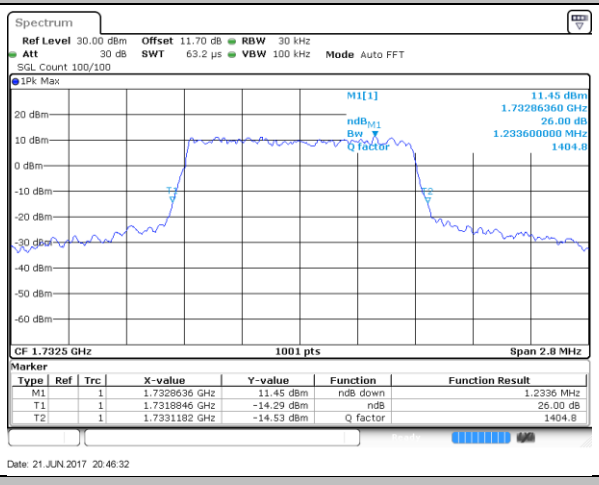
Lowest Channel / 1.4MHz / 64QAM



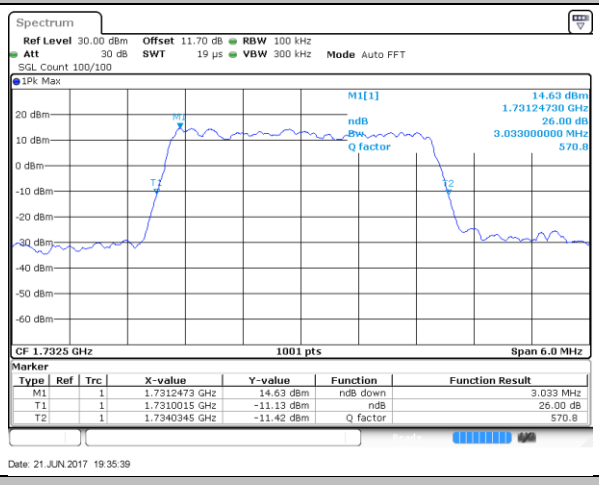
Lowest Channel / 3MHz / 64QAM



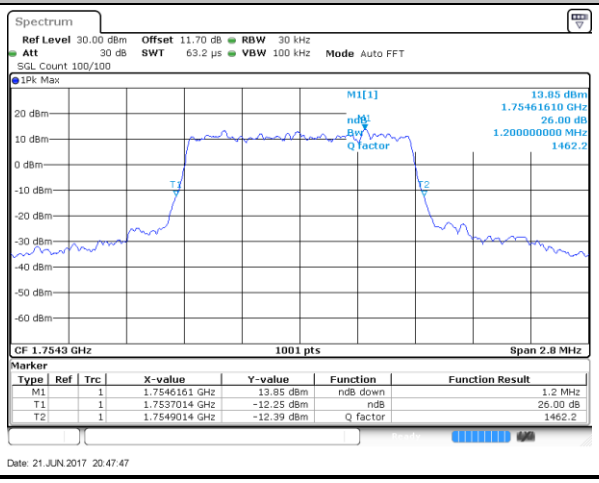
Middle Channel / 1.4MHz / 64QAM



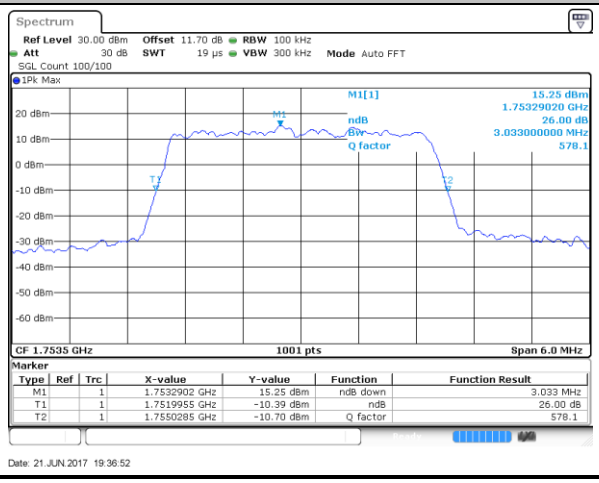
Middle Channel / 3MHz / 64QAM



Highest Channel / 1.4MHz / 64QAM

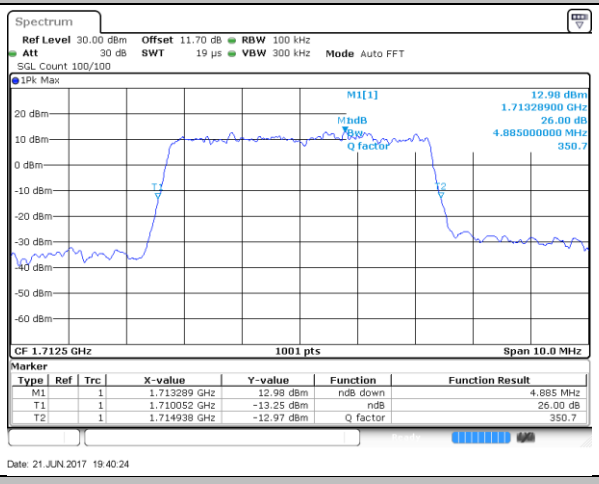


Highest Channel / 3MHz / 64QAM

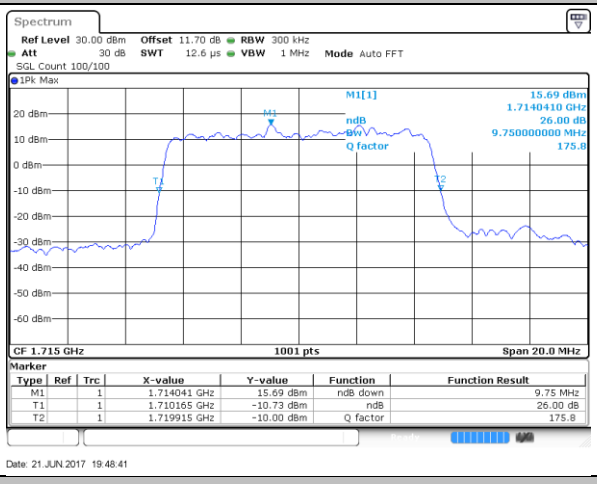


LTE Band 4

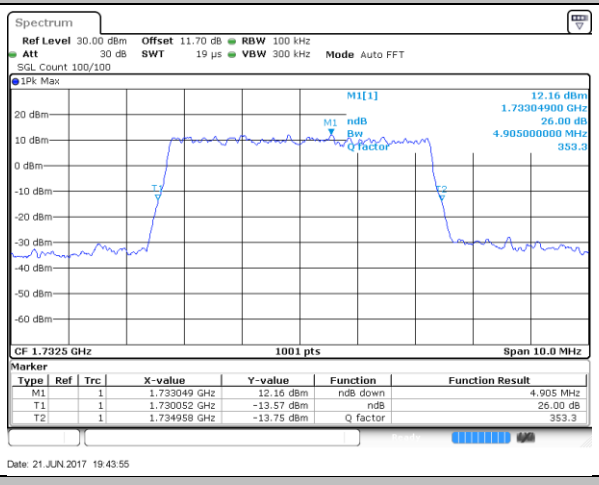
Lowest Channel / 5MHz / 64QAM



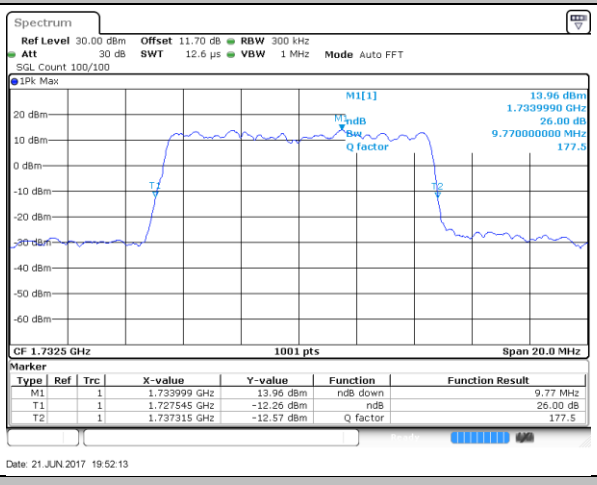
Lowest Channel / 10MHz / 64QAM



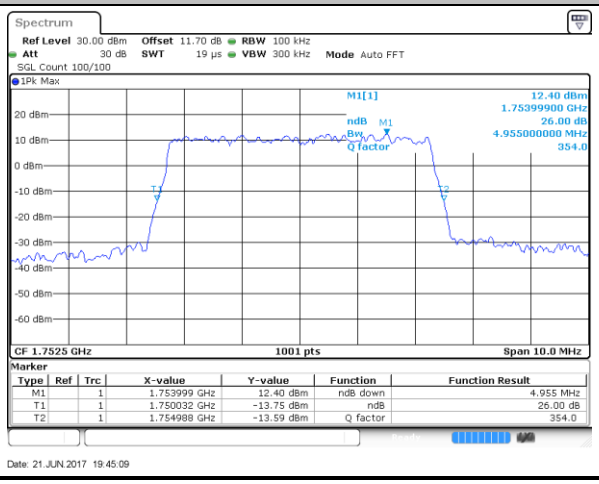
Middle Channel / 5MHz / 64QAM



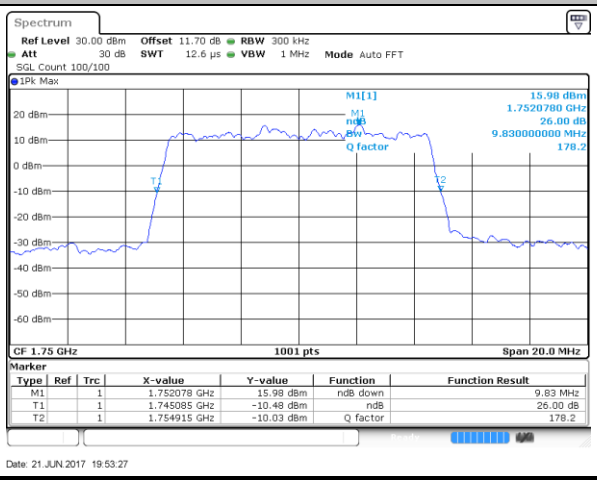
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM

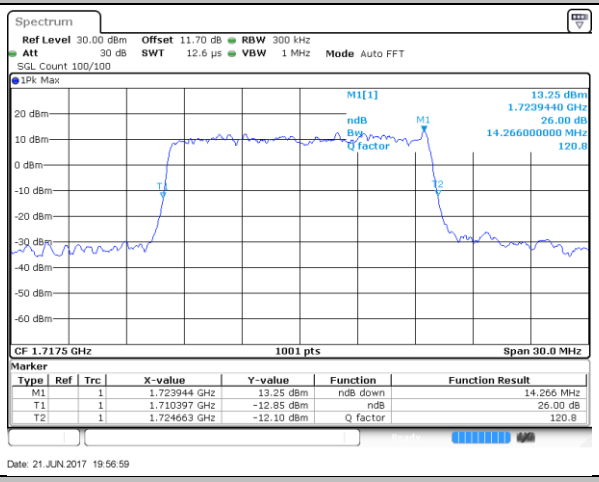


Highest Channel / 10MHz / 64QAM

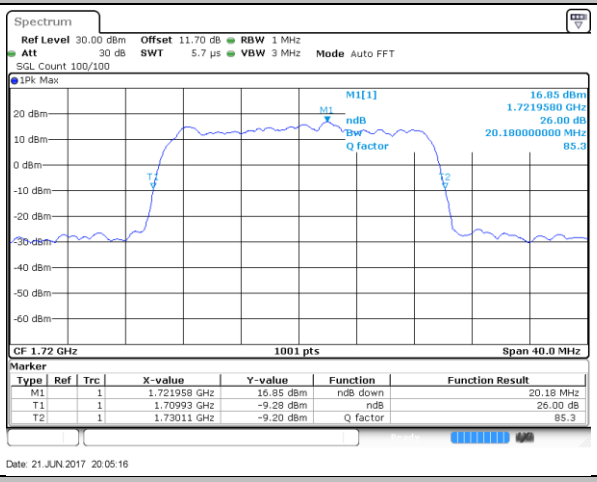


LTE Band 4

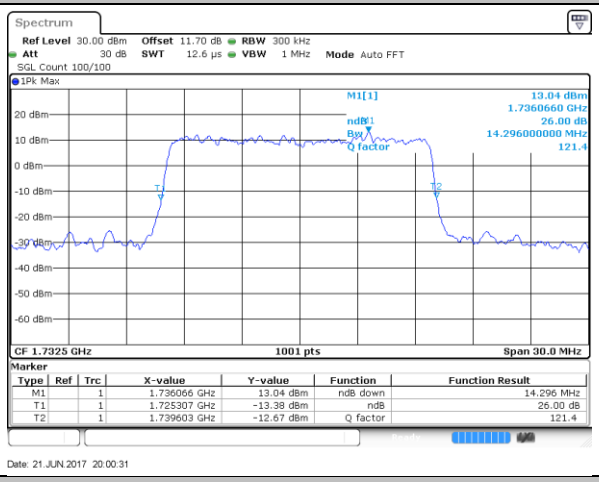
Lowest Channel / 15MHz / 64QAM



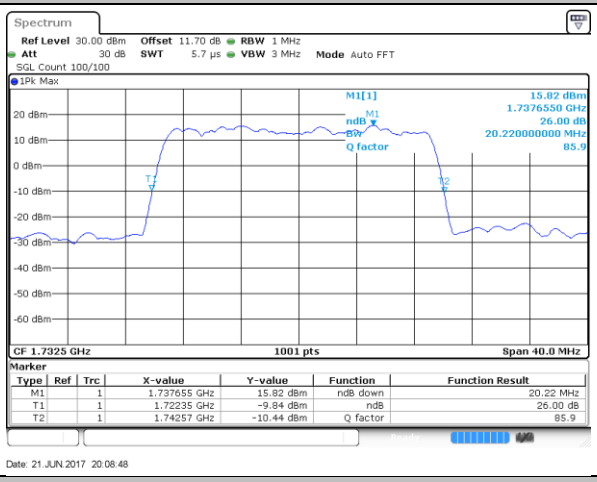
Lowest Channel / 20MHz / 64QAM



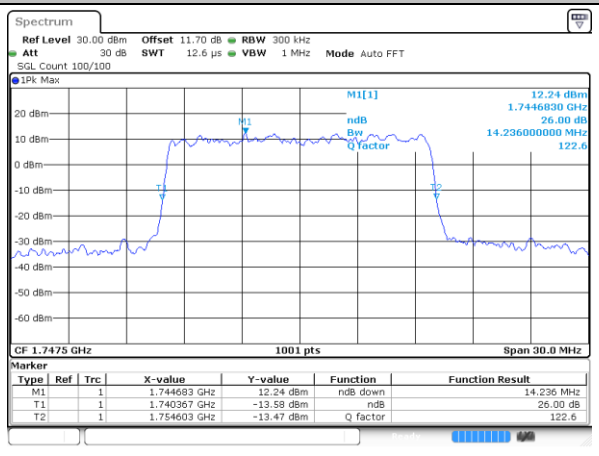
Middle Channel / 15MHz / 64QAM



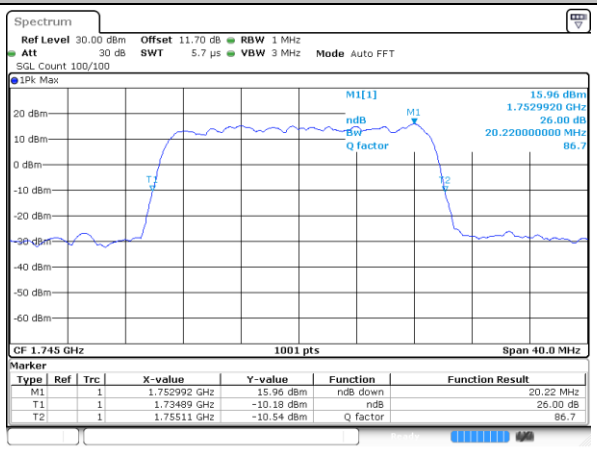
Middle Channel / 20MHz / 64QAM



Highest Channel / 15MHz / 64QAM



Highest Channel / 20MHz / 64QAM

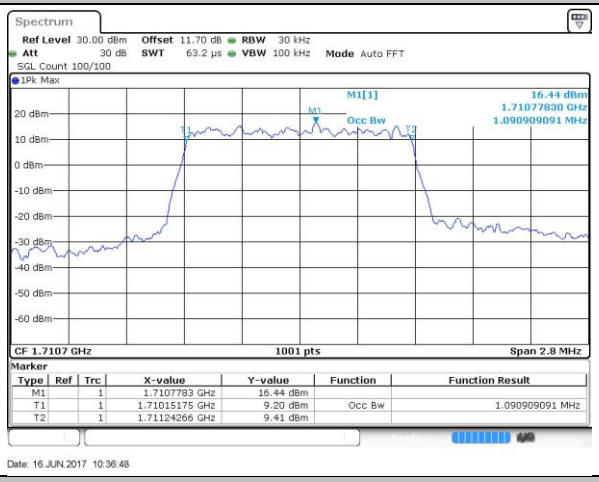


Occupied Bandwidth

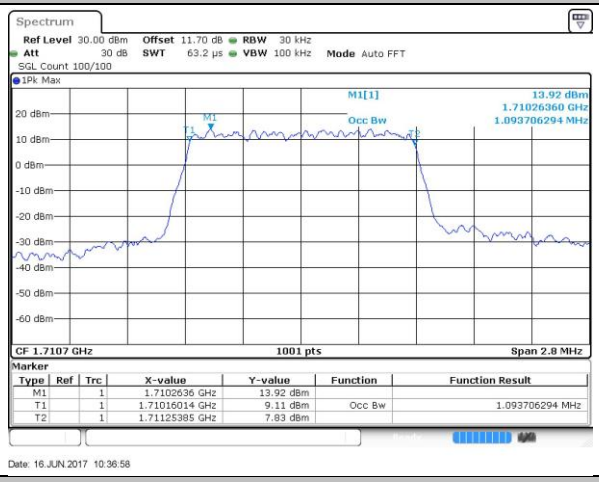
Mode	LTE Band 4 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.09	1.09	2.71	2.71	4.48	4.49	9.01	9.05	13.43	13.46	18.34	18.34
Middle CH	1.09	1.09	2.74	2.73	4.51	4.49	9.03	8.97	13.43	13.46	18.46	18.54
Highest CH	1.09	1.09	2.73	2.72	4.48	4.49	8.95	9.01	13.4	13.4	18.46	18.38
Mode	LTE Band 4 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.72	-	4.48	-	9.01	-	13.43	-	18.3	-
Middle CH	1.09	-	2.73	-	4.51	-	9	-	13.49	-	18.46	-
Highest CH	1.09	-	2.73	-	4.51	-	9.01	-	13.46	-	18.26	-

LTE Band 4

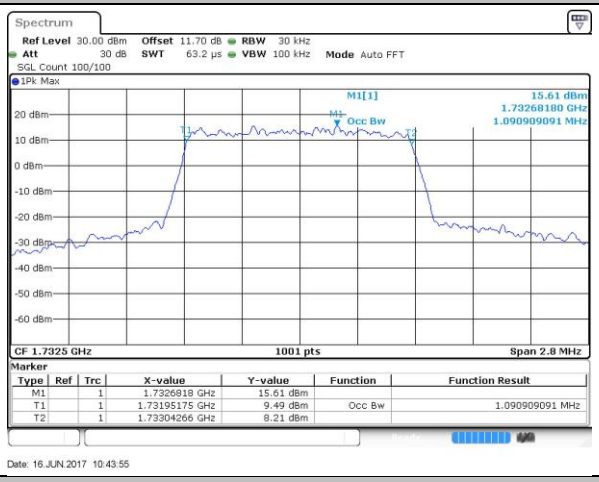
Lowest Channel / 1.4MHz / QPSK



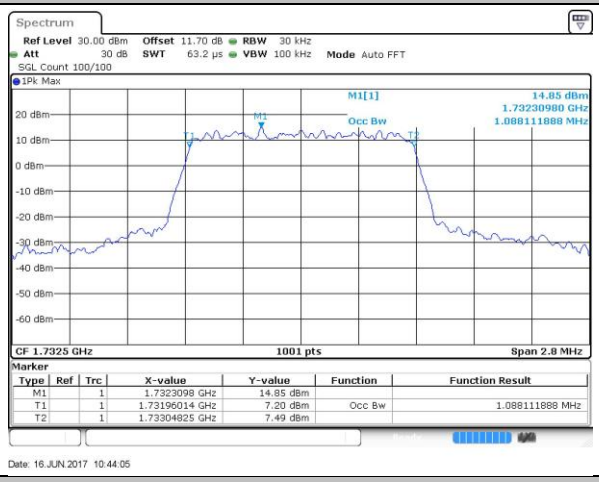
Lowest Channel / 1.4MHz / 16QAM



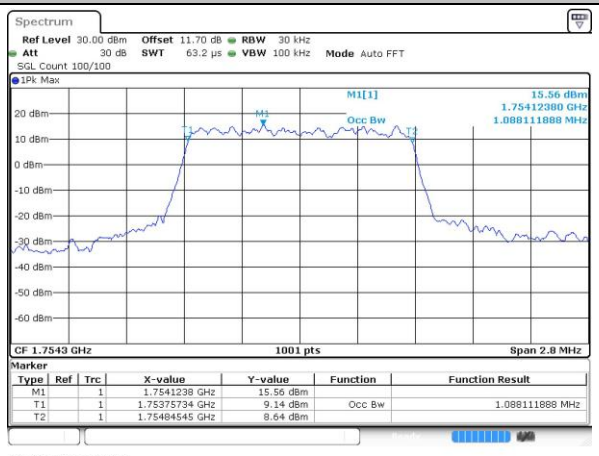
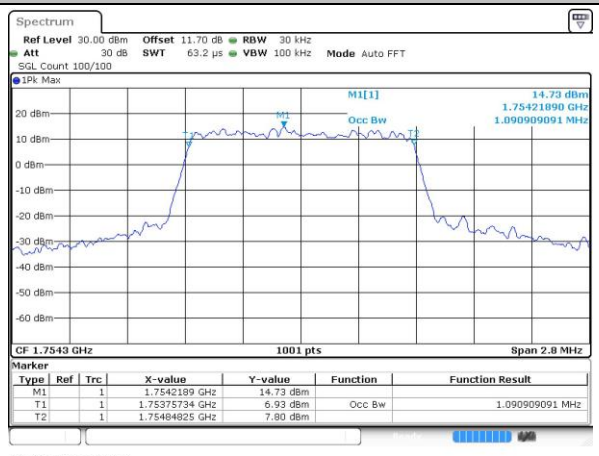
Middle Channel / 1.4MHz / QPSK



Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK



Highest Channel / 1.4MHz / 16QAM