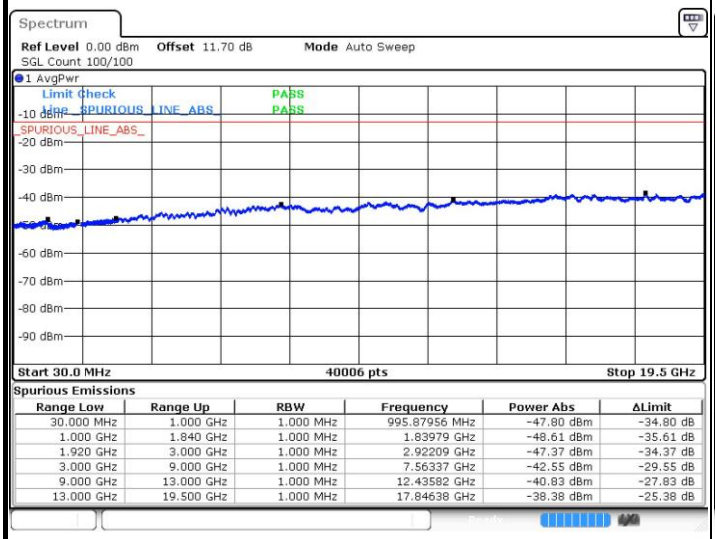
LTE Band 2 / 5MHz

Lowest Channel / 64QAM

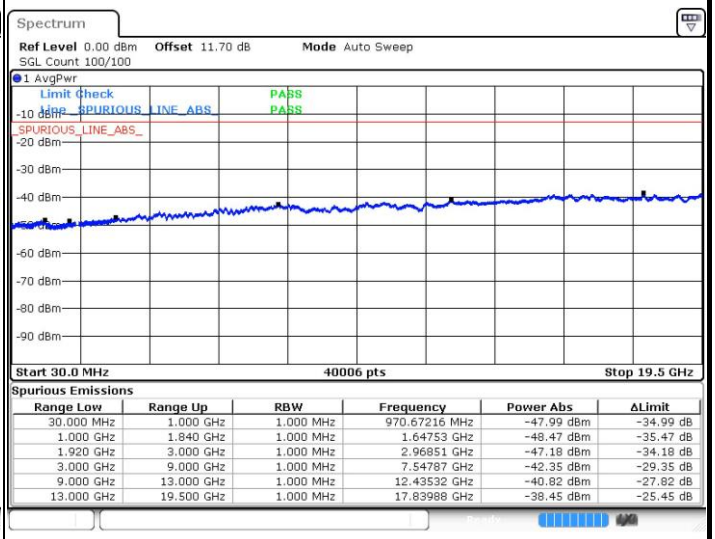


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	995.87956 MHz	-47.80 dBm	-34.80 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-48.61 dBm	-35.61 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.92209 GHz	-47.37 dBm	-34.37 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.56337 GHz	-42.55 dBm	-29.55 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43582 GHz	-40.83 dBm	-27.83 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84638 GHz	-38.38 dBm	-25.38 dB

Date: 4.FEB.2019 09:54:58

Middle Channel / 64QAM

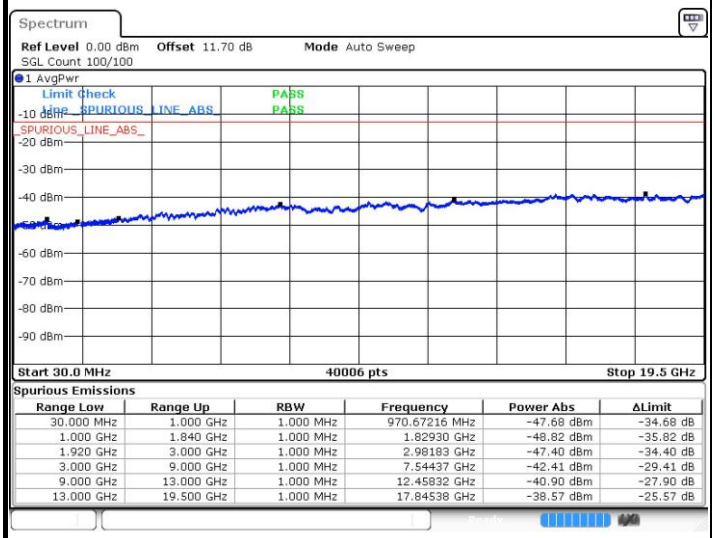


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	970.67216 MHz	-47.99 dBm	-34.99 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.64753 GHz	-48.47 dBm	-35.47 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96851 GHz	-47.18 dBm	-34.18 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54787 GHz	-42.35 dBm	-29.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43532 GHz	-40.82 dBm	-27.82 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.83988 GHz	-38.45 dBm	-25.45 dB

Date: 4.FEB.2019 09:56:21

Highest Channel / 64QAM



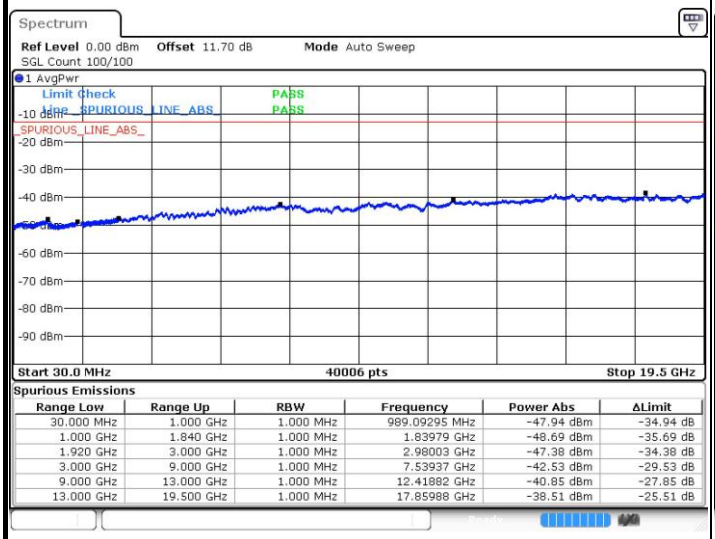
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	970.67216 MHz	-47.68 dBm	-34.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82930 GHz	-48.82 dBm	-35.82 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98183 GHz	-47.40 dBm	-34.40 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54437 GHz	-42.41 dBm	-29.41 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.45832 GHz	-40.90 dBm	-27.90 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84538 GHz	-38.57 dBm	-25.57 dB

Date: 4.FEB.2019 09:59:44

LTE Band 2 / 10MHz

Lowest Channel / 64QAM

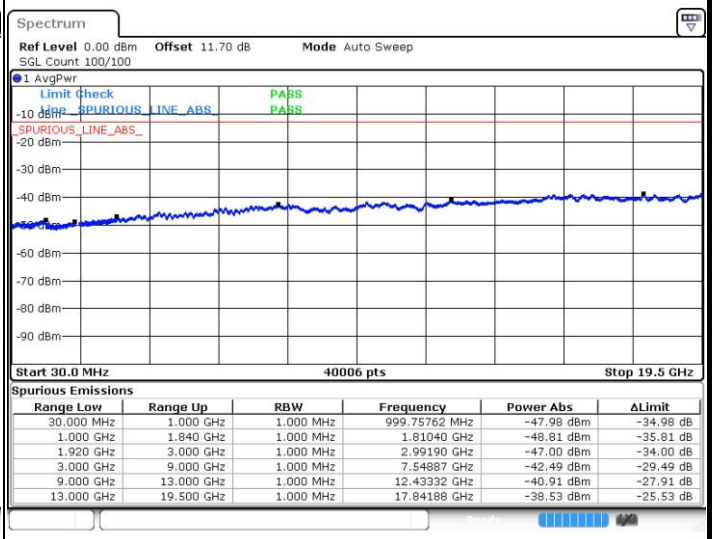


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	989.09295 MHz	-47.94 dBm	-34.94 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-48.69 dBm	-35.69 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98003 GHz	-47.38 dBm	-34.38 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.53937 GHz	-42.53 dBm	-29.53 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41882 GHz	-40.85 dBm	-27.85 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.85988 GHz	-38.51 dBm	-25.51 dB

Date: 4.FEB.2019 10:03:08

Middle Channel / 64QAM

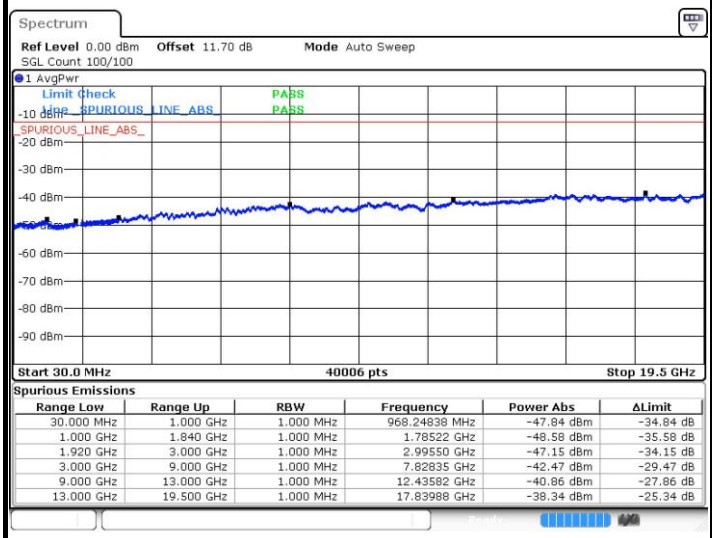


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	999.75762 MHz	-47.98 dBm	-34.98 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81040 GHz	-48.81 dBm	-35.81 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99190 GHz	-47.00 dBm	-34.00 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54887 GHz	-42.49 dBm	-29.49 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43332 GHz	-40.91 dBm	-27.91 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84188 GHz	-38.53 dBm	-25.53 dB

Date: 4.FEB.2019 10:04:32

Highest Channel / 64QAM



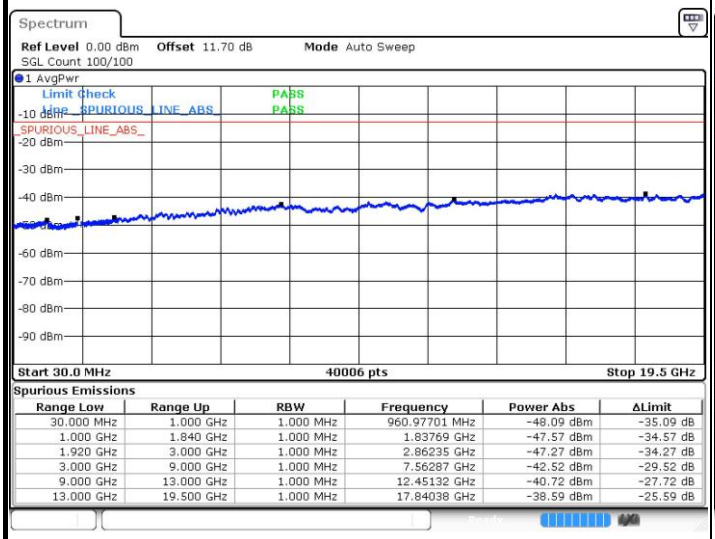
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	968.24838 MHz	-47.84 dBm	-34.84 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78522 GHz	-48.58 dBm	-35.58 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99550 GHz	-47.15 dBm	-34.15 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.82835 GHz	-42.47 dBm	-29.47 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43582 GHz	-40.86 dBm	-27.86 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.83988 GHz	-38.34 dBm	-25.34 dB

Date: 4.FEB.2019 10:07:55

LTE Band 2 / 15MHz

Lowest Channel / 64QAM

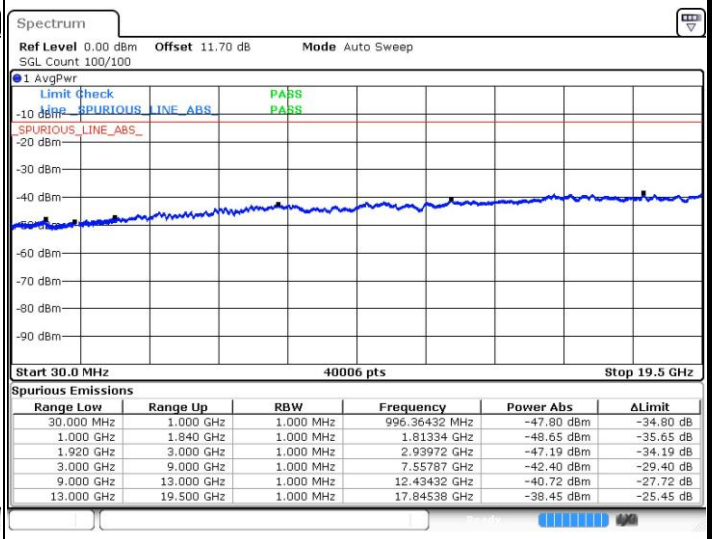


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	960.97701 MHz	-48.09 dBm	-35.09 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83769 GHz	-47.57 dBm	-34.57 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.86235 GHz	-47.27 dBm	-34.27 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.56287 GHz	-42.52 dBm	-29.52 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.45132 GHz	-40.72 dBm	-27.72 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84038 GHz	-38.59 dBm	-25.59 dB

Date: 4.FEB.2019 10:11:19

Middle Channel / 64QAM

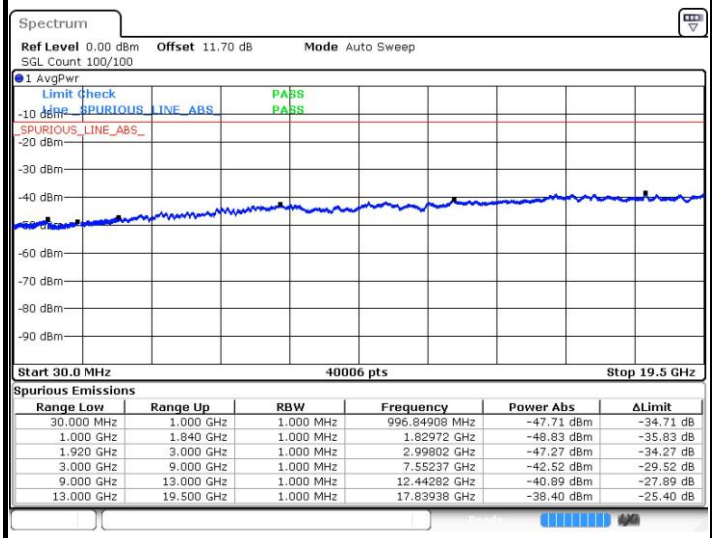


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.36432 MHz	-47.80 dBm	-34.80 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81334 GHz	-48.65 dBm	-35.65 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.93972 GHz	-47.19 dBm	-34.19 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55787 GHz	-42.40 dBm	-29.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43432 GHz	-40.72 dBm	-27.72 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84538 GHz	-38.45 dBm	-25.45 dB

Date: 4.FEB.2019 10:12:42

Highest Channel / 64QAM



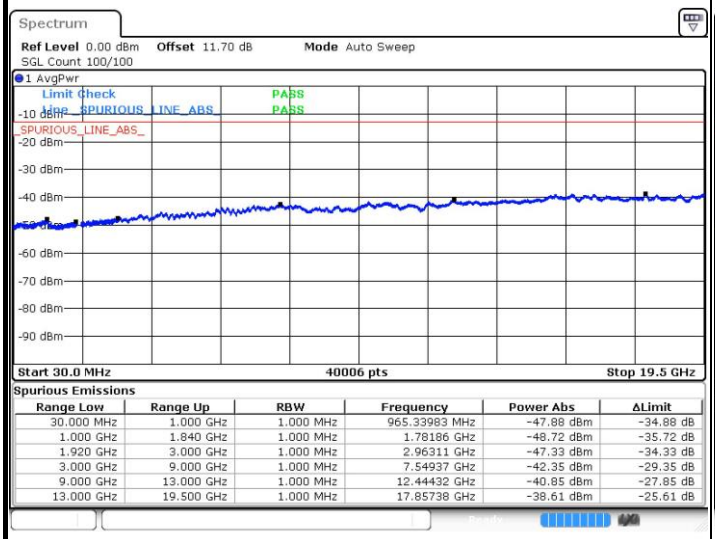
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.84908 MHz	-47.71 dBm	-34.71 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82972 GHz	-48.83 dBm	-35.83 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99802 GHz	-47.27 dBm	-34.27 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.55237 GHz	-42.52 dBm	-29.52 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44282 GHz	-40.89 dBm	-27.89 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.83938 GHz	-38.40 dBm	-25.40 dB

Date: 4.FEB.2019 10:16:06

LTE Band 2 / 20MHz

Lowest Channel / 64QAM

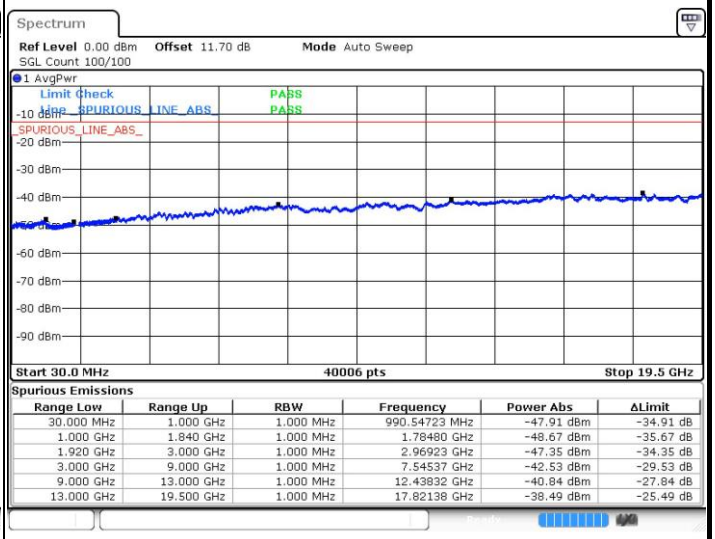


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	965.33983 MHz	-47.88 dBm	-34.88 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78186 GHz	-48.72 dBm	-35.72 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96311 GHz	-47.33 dBm	-34.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54937 GHz	-42.35 dBm	-29.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.44432 GHz	-40.85 dBm	-27.85 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.85738 GHz	-38.61 dBm	-25.61 dB

Date: 4.FEB.2019 10:19:29

Middle Channel / 64QAM

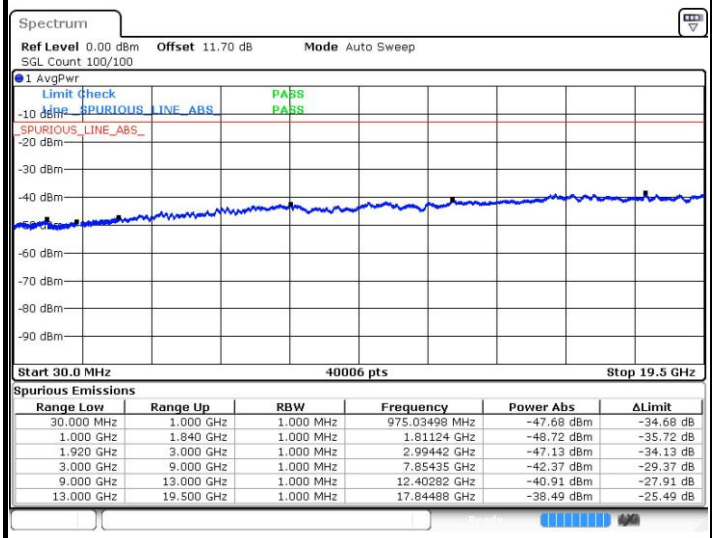


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.54723 MHz	-47.91 dBm	-34.91 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78480 GHz	-48.67 dBm	-35.67 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96923 GHz	-47.35 dBm	-34.35 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.54537 GHz	-42.53 dBm	-29.53 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43832 GHz	-40.84 dBm	-27.84 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.82138 GHz	-38.49 dBm	-25.49 dB

Date: 4.FEB.2019 10:20:53

Highest Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	975.03498 MHz	-47.68 dBm	-34.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81124 GHz	-48.72 dBm	-35.72 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99442 GHz	-47.13 dBm	-34.13 dB
3.000 GHz	9.000 GHz	1.000 MHz	7.85435 GHz	-42.37 dBm	-29.37 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.40282 GHz	-40.91 dBm	-27.91 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.84488 GHz	-38.49 dBm	-25.49 dB

Date: 4.FEB.2019 10:24:17

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	0.0052	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0065	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0063	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0057	
-20	Normal Voltage	0.0065	
-30	Normal Voltage	0.0005	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0013	

Note:

1. Normal Voltage =3.9 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.

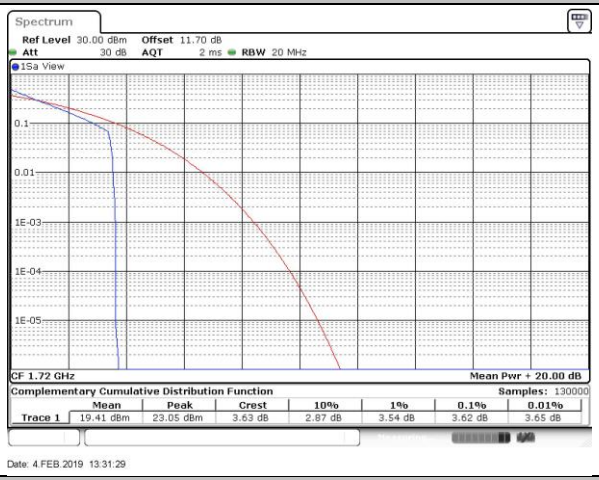
LTE Band 4

Peak-to-Average Ratio

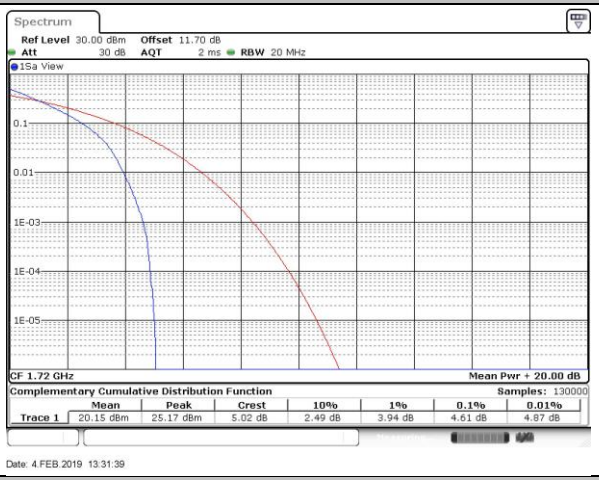
Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.62	4.61	5.25	5.94	PASS
Middle CH	3.54	4.61	5.16	5.97	
Highest CH	3.39	4.58	4.17	6	
Mode	LTE Band 4 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.93	6.49	-	-	PASS
Middle CH	6.58	6.61	-	-	
Highest CH	5.16	6.52	-	-	

LTE Band 4 / 20MHz / QPSK

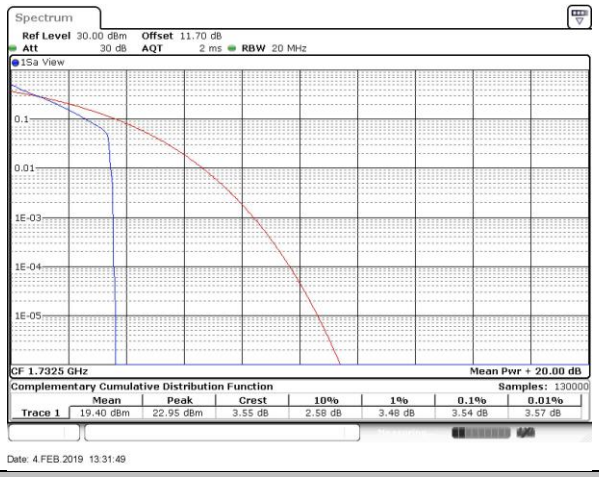
Lowest Channel / 1RB



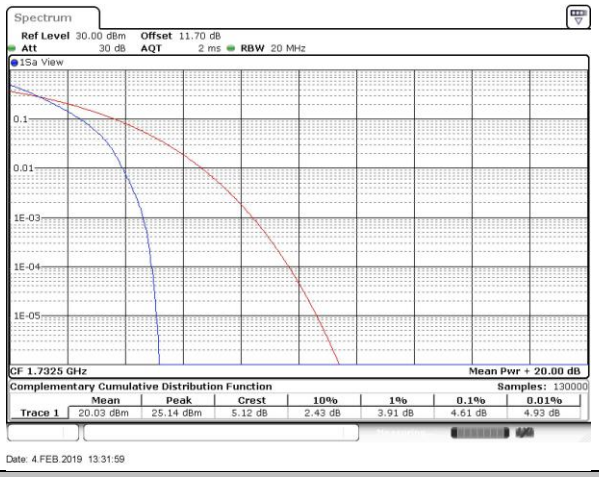
Lowest Channel / Full RB



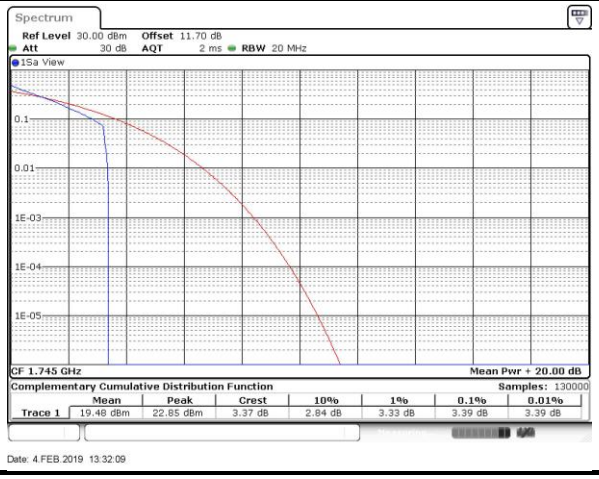
Middle Channel / 1RB



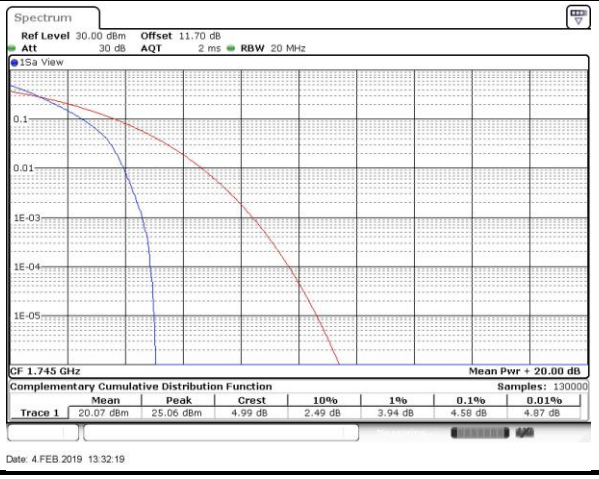
Middle Channel / Full RB



Highest Channel / 1RB

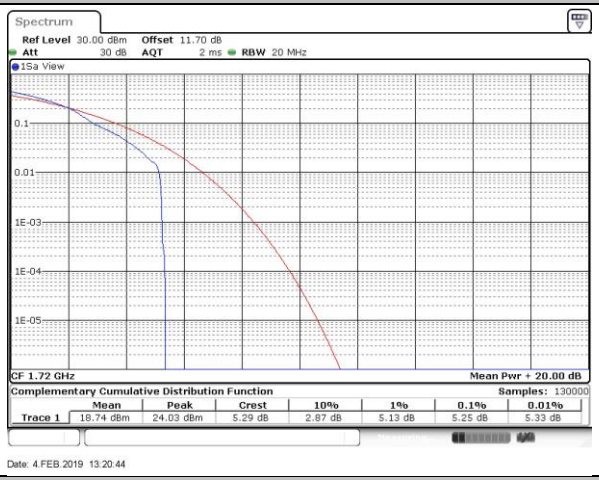


Highest Channel / Full RB

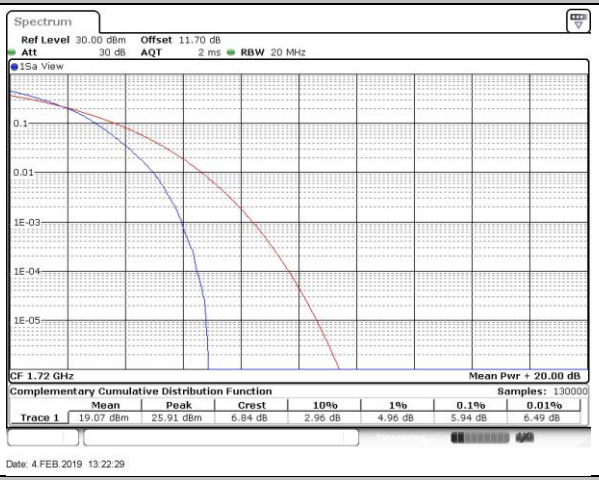


LTE Band 4 / 20MHz / 16QAM

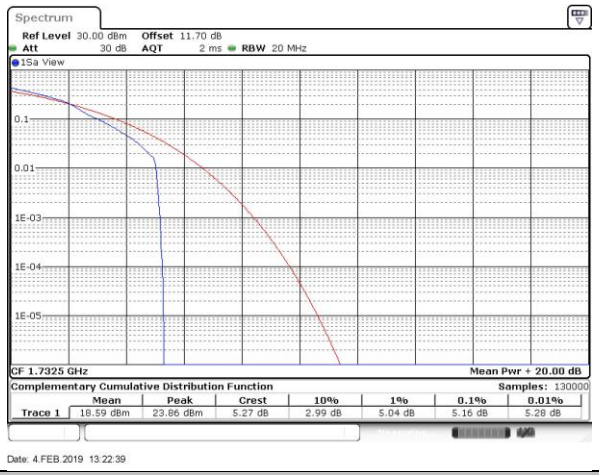
Lowest Channel / 1RB



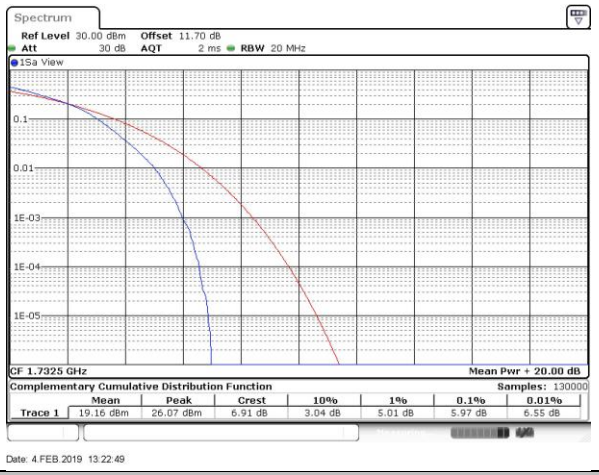
Lowest Channel / Full RB



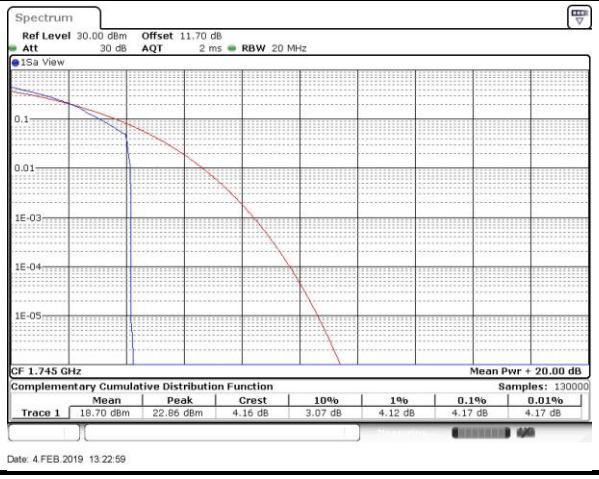
Middle Channel / 1RB



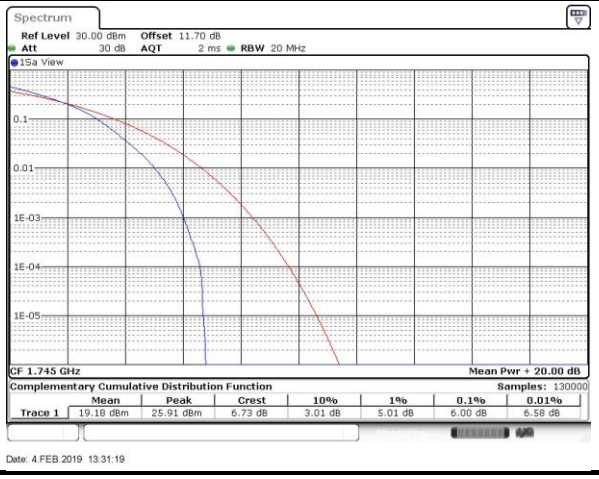
Middle Channel / Full RB



Highest Channel / 1RB

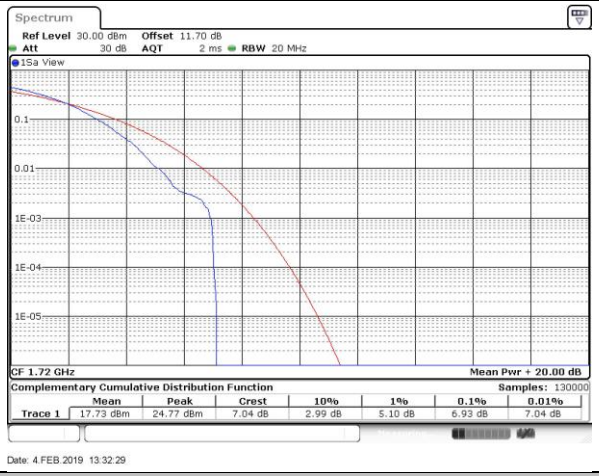


Highest Channel / Full RB

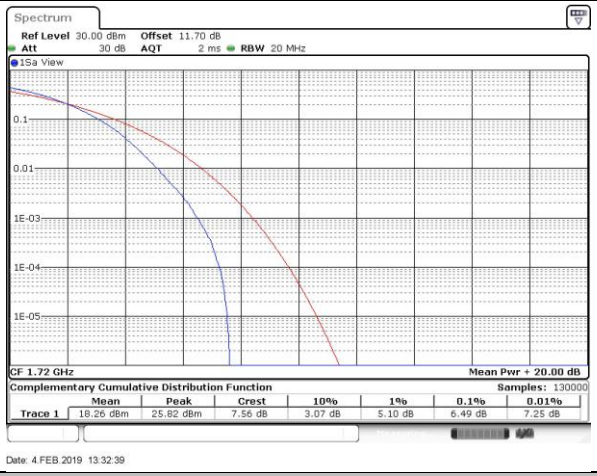


LTE Band 4 / 20MHz / 64QAM

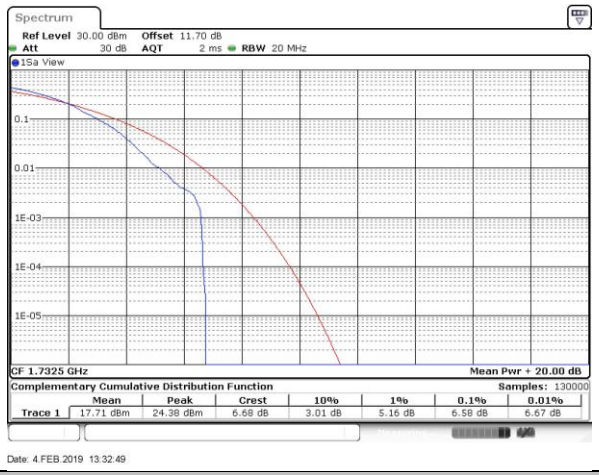
Lowest Channel / 1RB



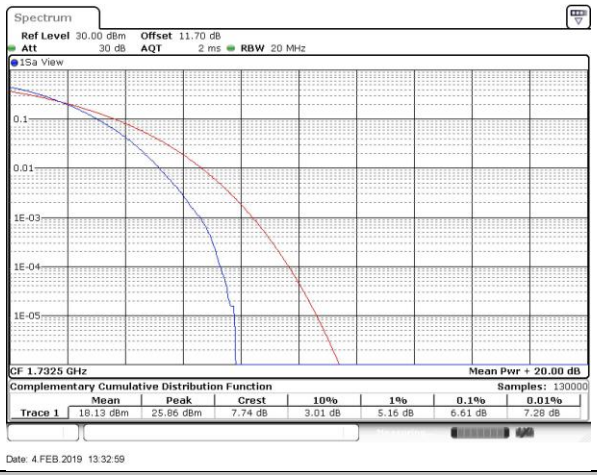
Lowest Channel / Full RB



Middle Channel / 1RB

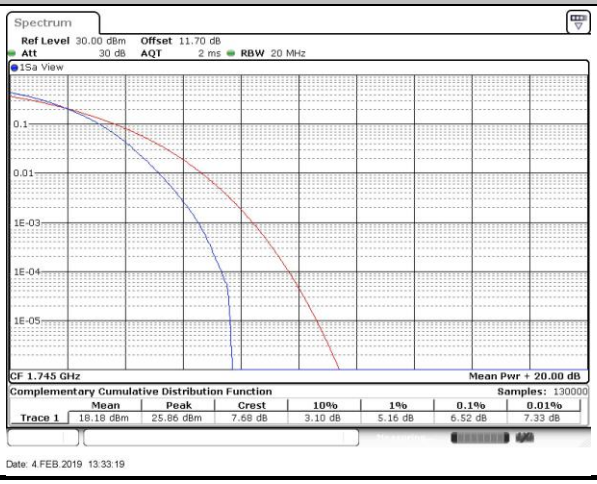


Middle Channel / Full RB



Highest Channel / 1RB

Highest Channel / Full RB

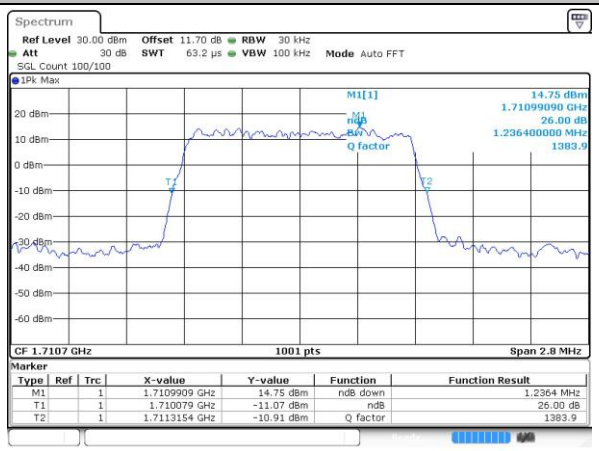


26dB Bandwidth

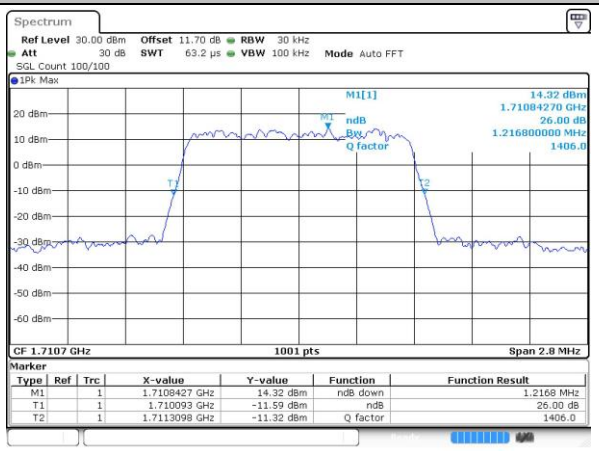
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.24	1.22	3.04	2.99	4.97	4.90	9.85	9.77	14.42	14.33	20.26	20.06
Middle CH	1.24	1.23	3.08	3.05	4.89	4.87	9.87	9.89	14.51	14.48	20.50	20.30
Highest CH	1.22	1.22	3.05	3.03	4.87	4.92	9.77	9.73	14.51	14.15	20.18	20.14
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.24	-	3.02	-	4.88	-	9.85	-	14.39	-	20.14	-
Middle CH	1.21	-	3.00	-	4.96	-	9.77	-	14.12	-	20.46	-
Highest CH	1.22	-	3.01	-	4.88	-	9.73	-	14.48	-	20.30	-

LTE Band 4

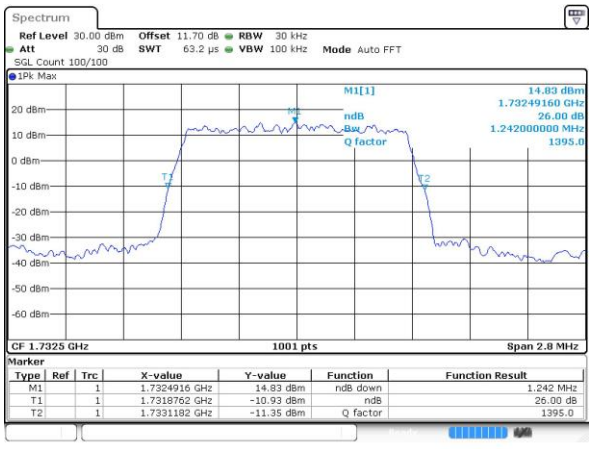
Lowest Channel / 1.4MHz / QPSK



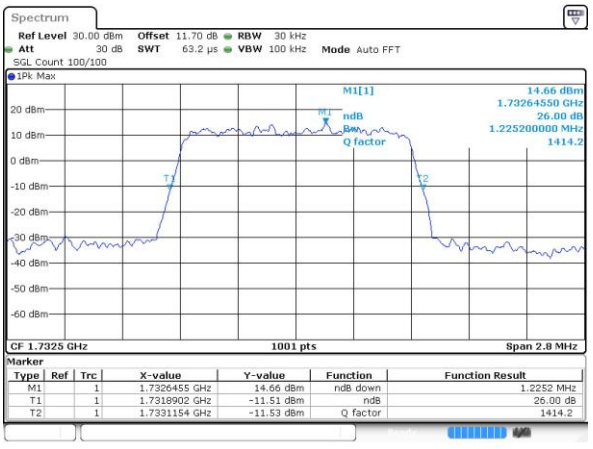
Lowest Channel / 1.4MHz / 16QAM



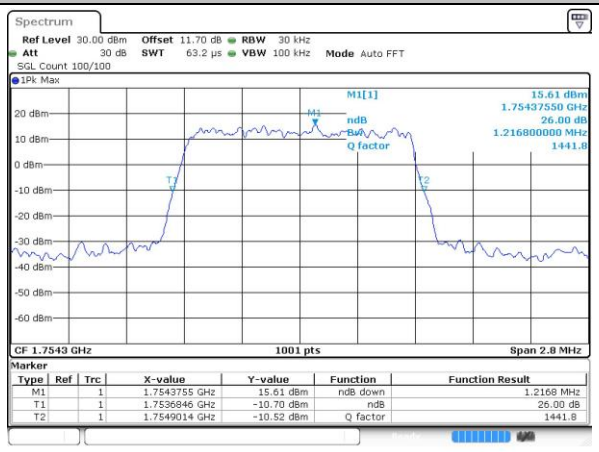
Middle Channel / 1.4MHz / QPSK



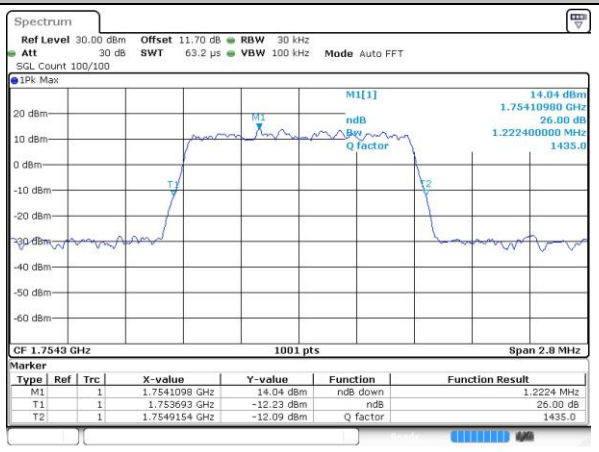
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK

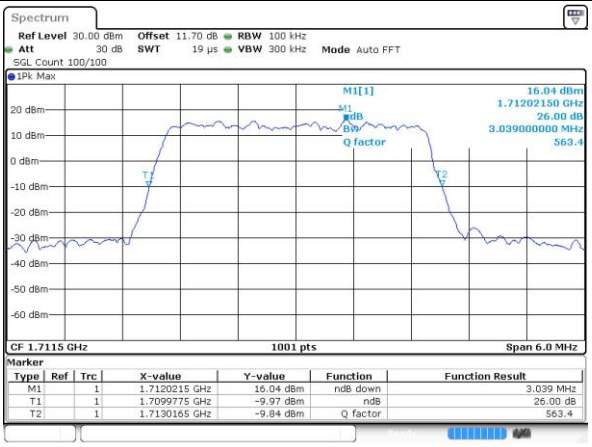


Highest Channel / 1.4MHz / 16QAM

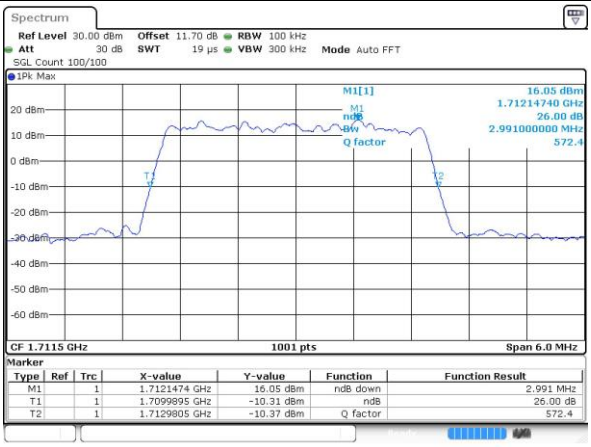


LTE Band 4

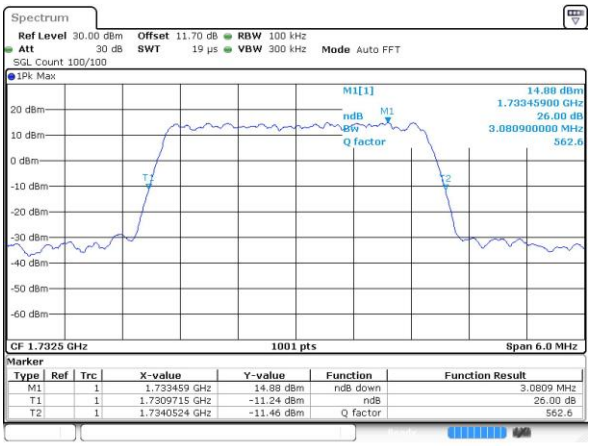
Lowest Channel / 3MHz / QPSK



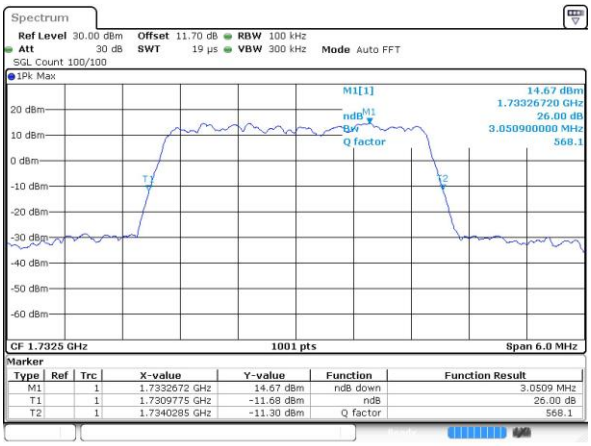
Lowest Channel / 3MHz / 16QAM



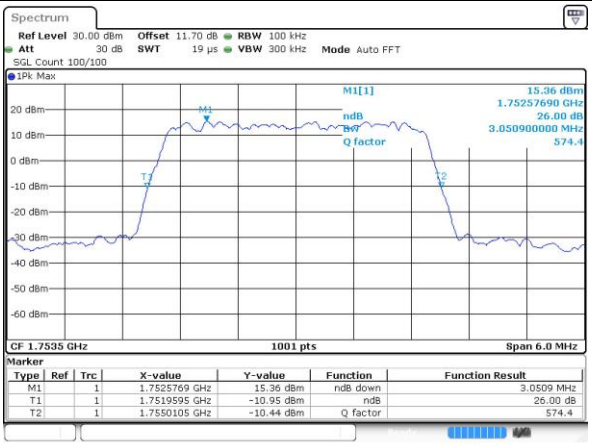
Middle Channel / 3MHz / QPSK



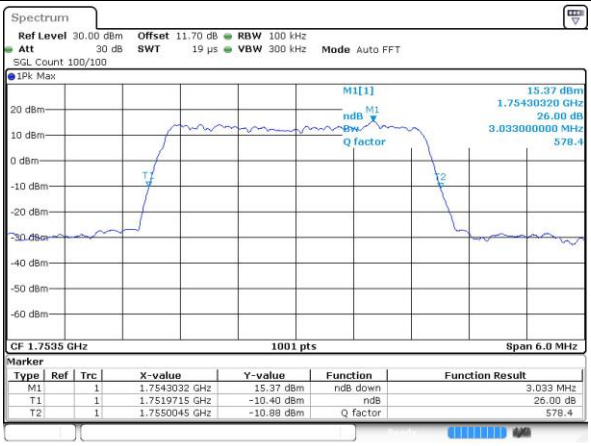
Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK

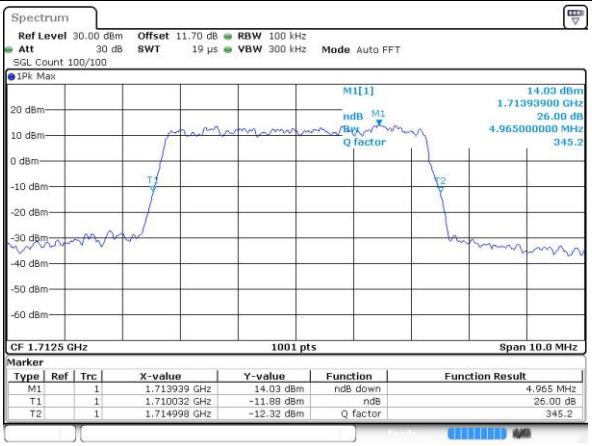


Highest Channel / 3MHz / 16QAM

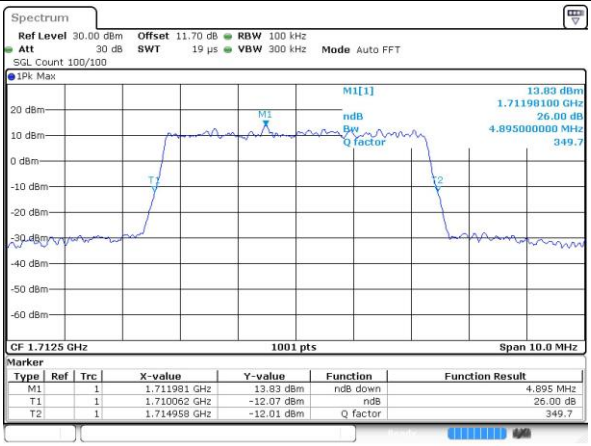


LTE Band 4

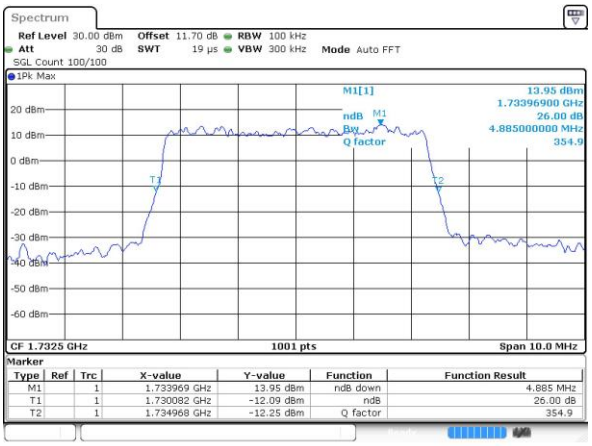
Lowest Channel / 5MHz / QPSK



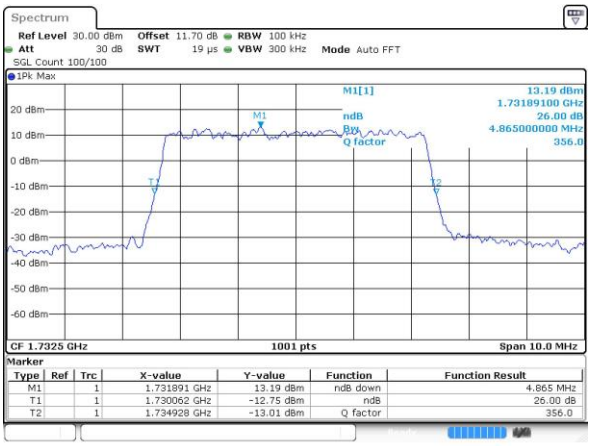
Lowest Channel / 5MHz / 16QAM



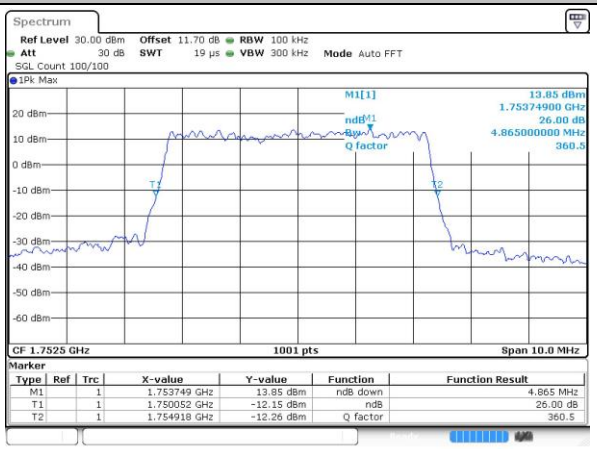
Middle Channel / 5MHz / QPSK



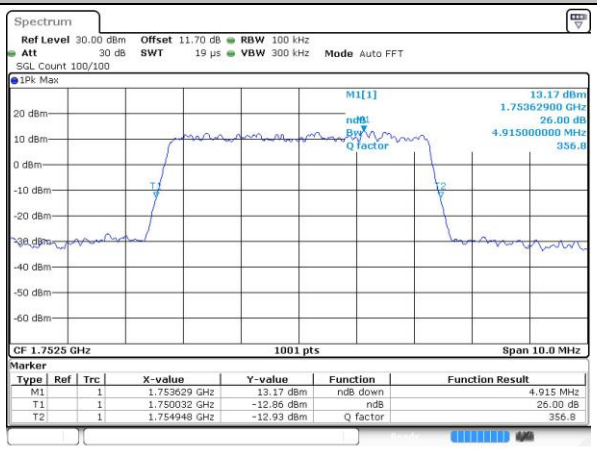
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

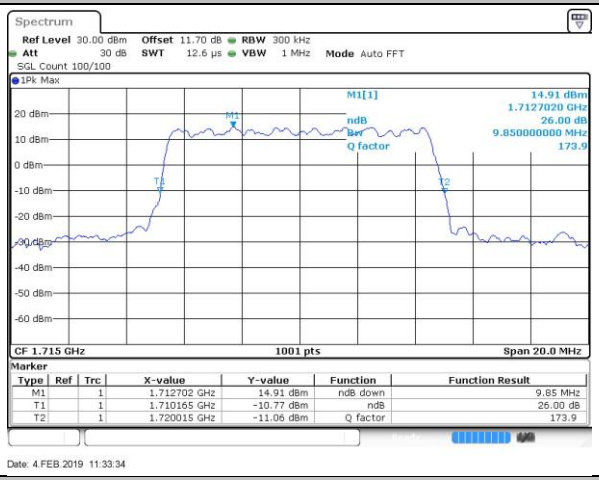


Highest Channel / 5MHz / 16QAM

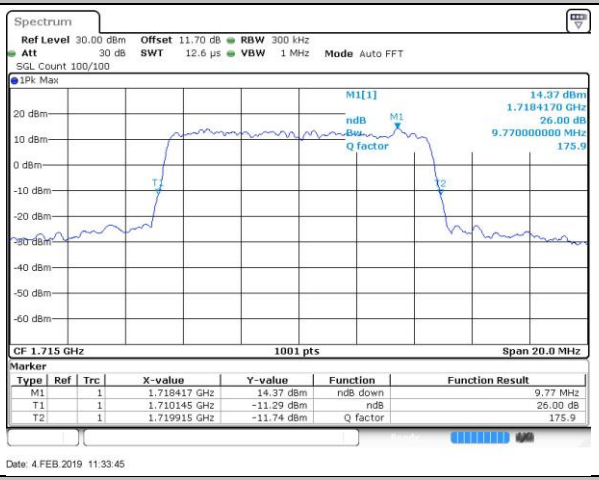


LTE Band 4

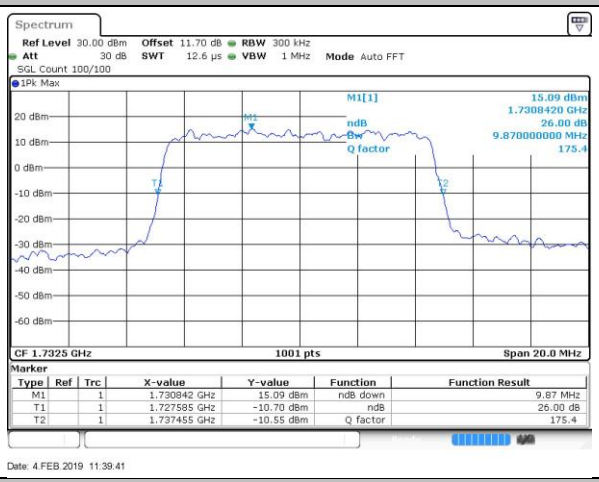
Lowest Channel / 10MHz / QPSK



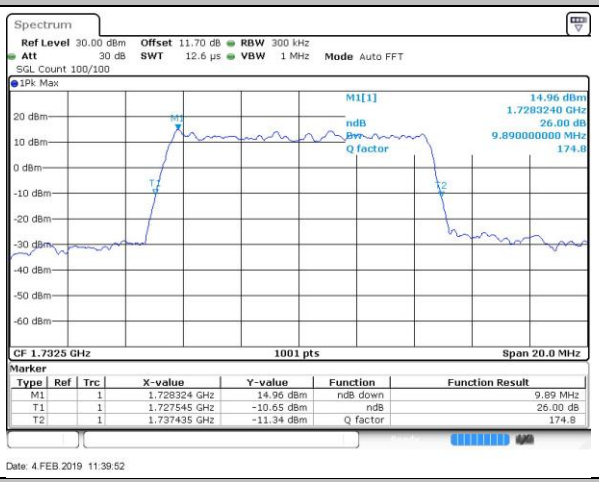
Lowest Channel / 10MHz / 16QAM



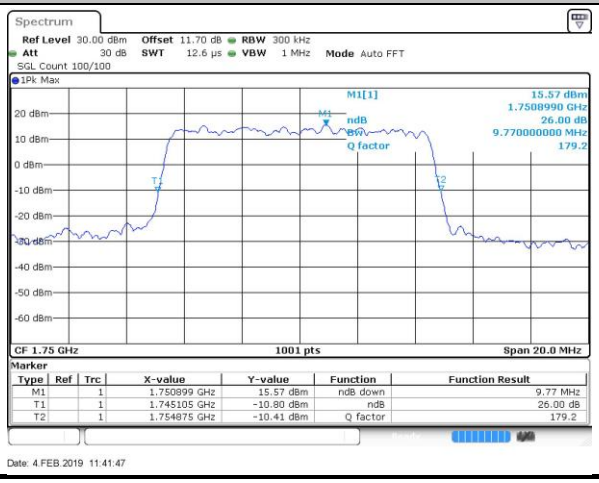
Middle Channel / 10MHz / QPSK



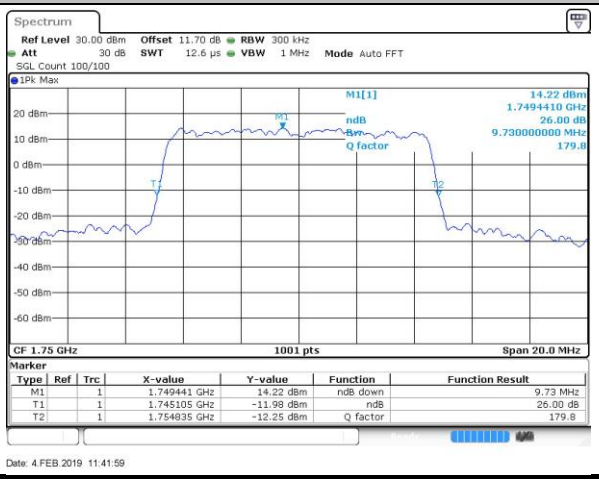
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

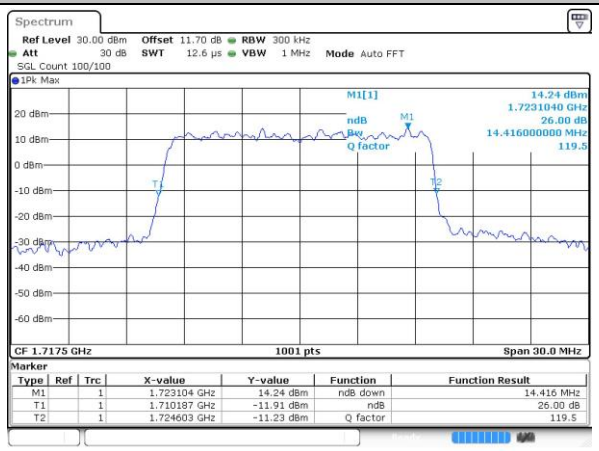


Highest Channel / 10MHz / 16QAM

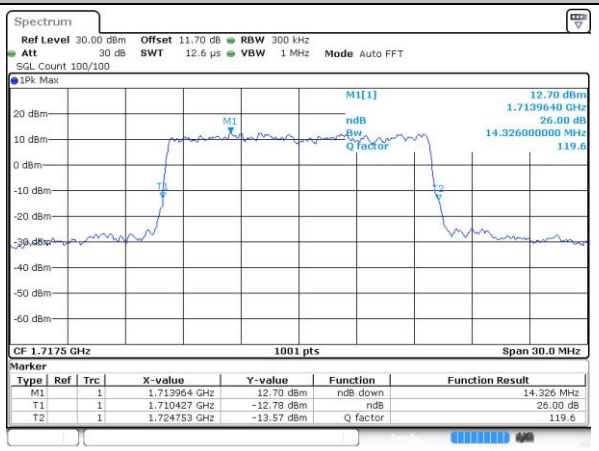


LTE Band 4

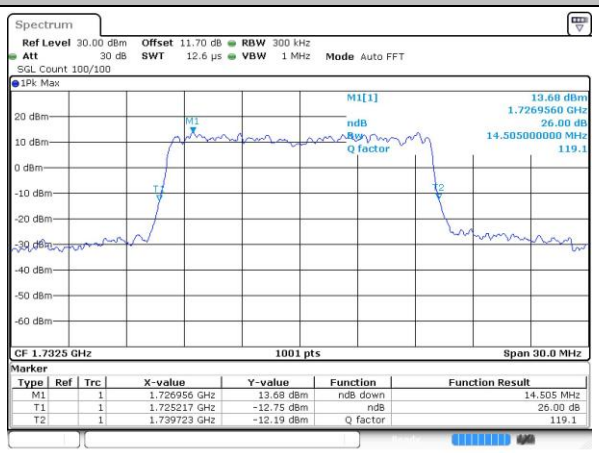
Lowest Channel / 15MHz / QPSK



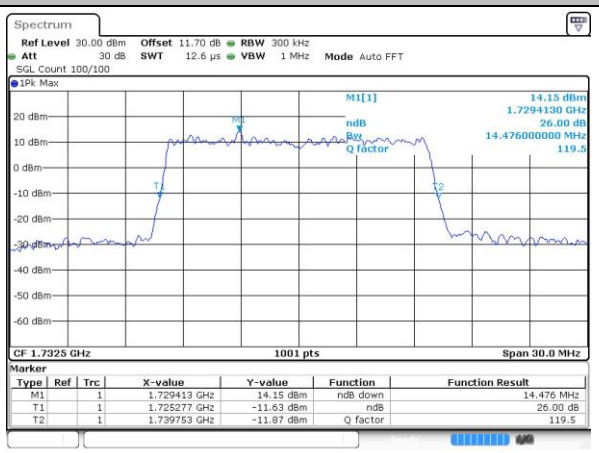
Lowest Channel / 15MHz / 16QAM



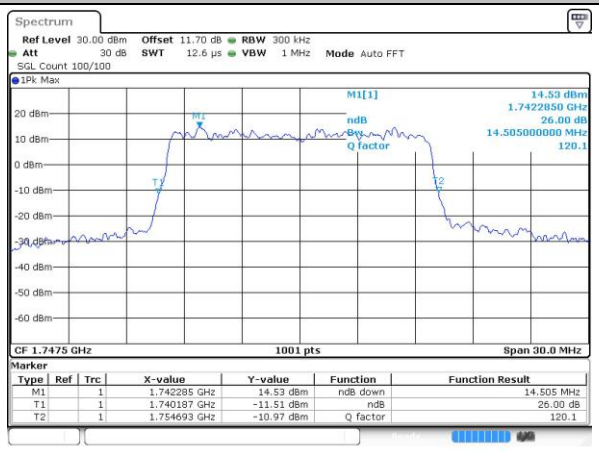
Middle Channel / 15MHz / QPSK



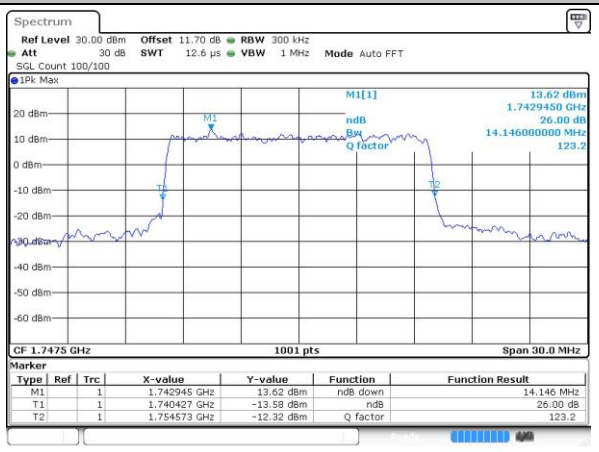
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK

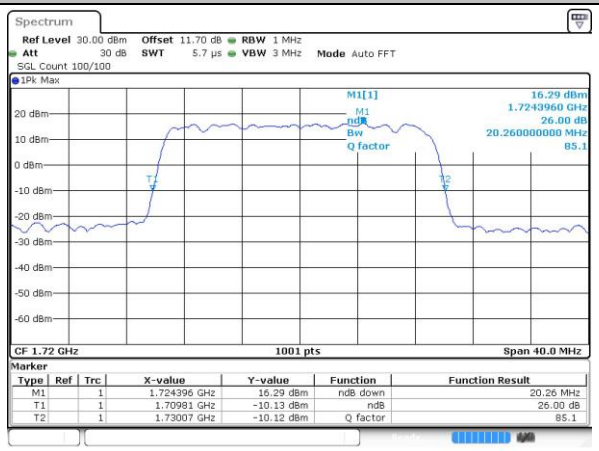


Highest Channel / 15MHz / 16QAM

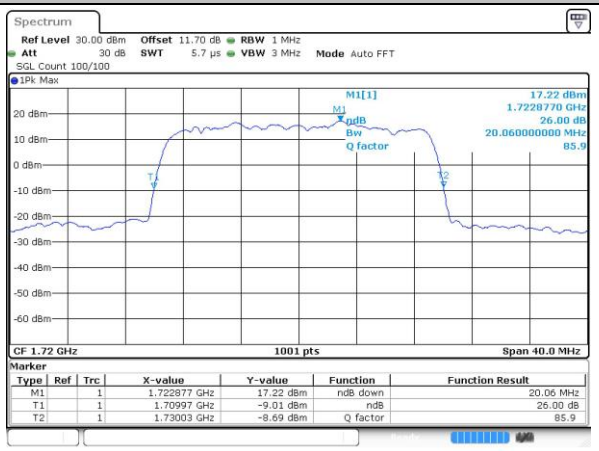


LTE Band 4

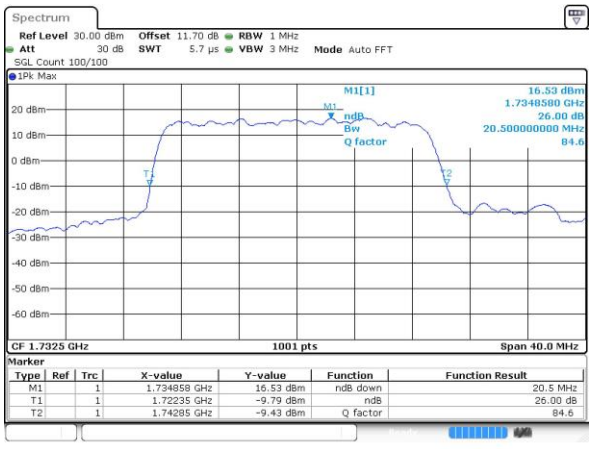
Lowest Channel / 20MHz / QPSK



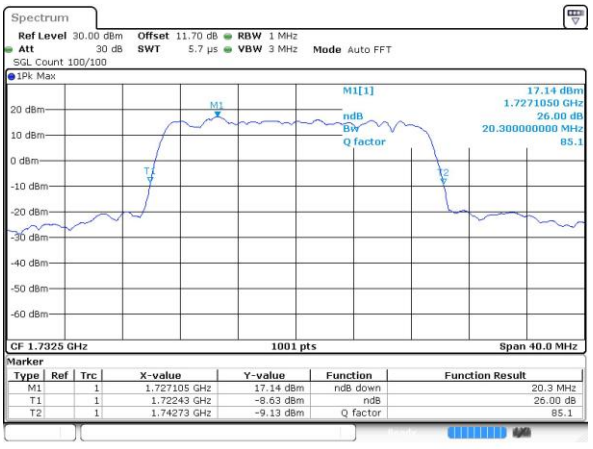
Lowest Channel / 20MHz / 16QAM



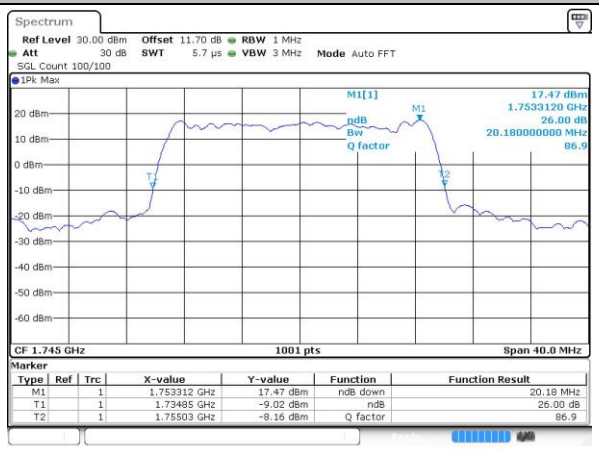
Middle Channel / 20MHz / QPSK



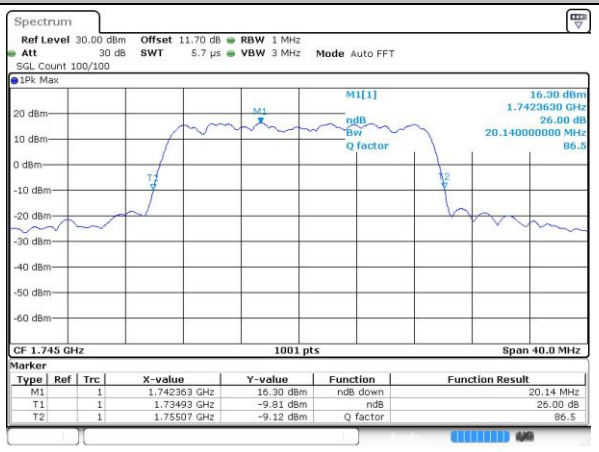
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK

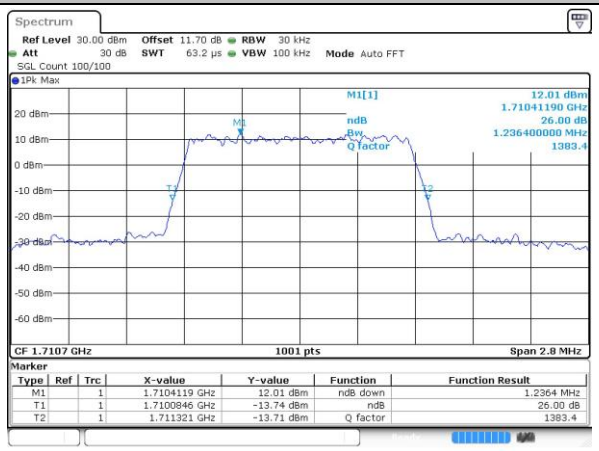


Highest Channel / 20MHz / 16QAM

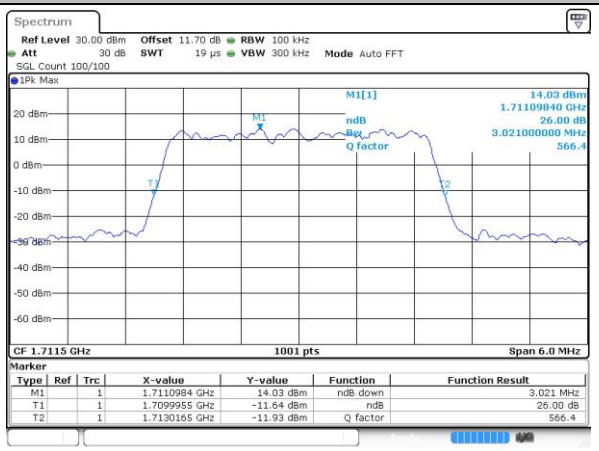


LTE Band 4

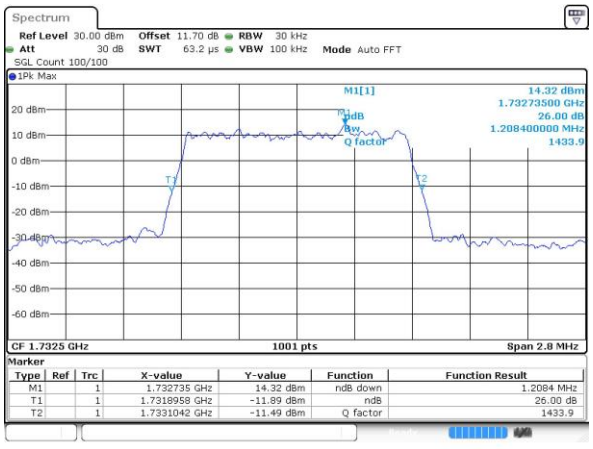
Lowest Channel / 1.4MHz / 64QAM



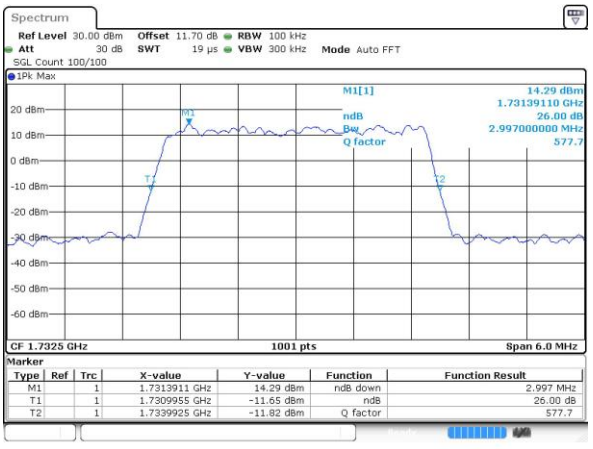
Lowest Channel / 3MHz / 64QAM



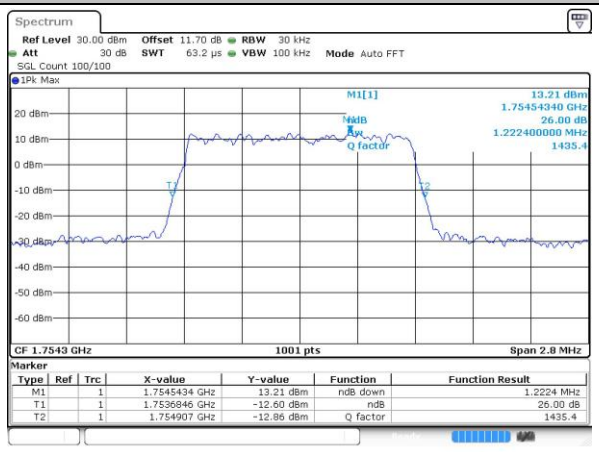
Middle Channel / 1.4MHz / 64QAM



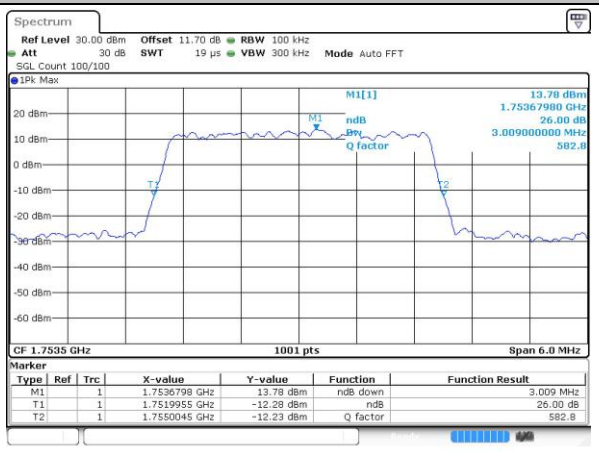
Middle Channel / 3MHz / 64QAM



Highest Channel / 1.4MHz / 64QAM

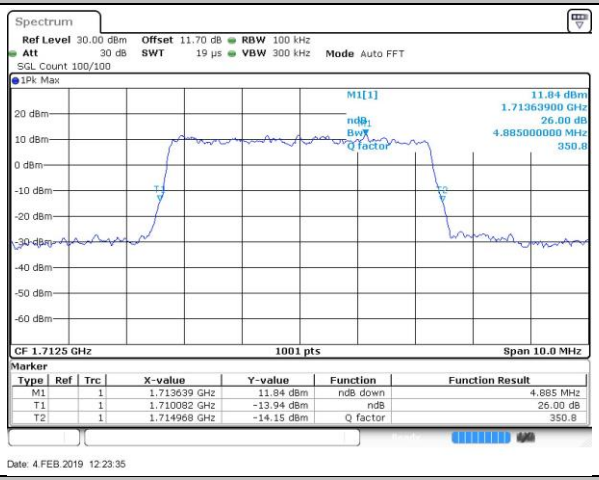


Highest Channel / 3MHz / 64QAM

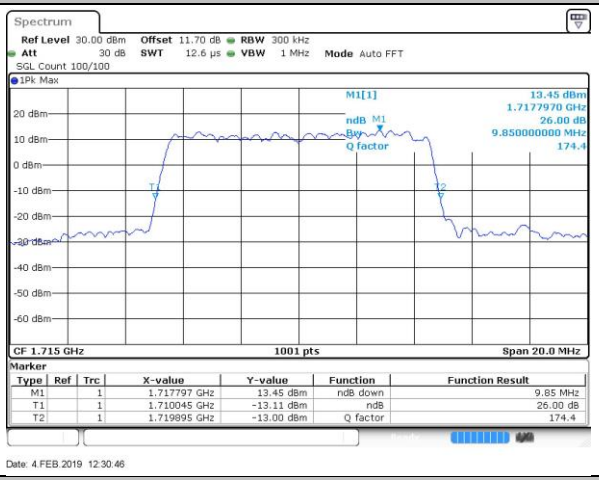


LTE Band 4

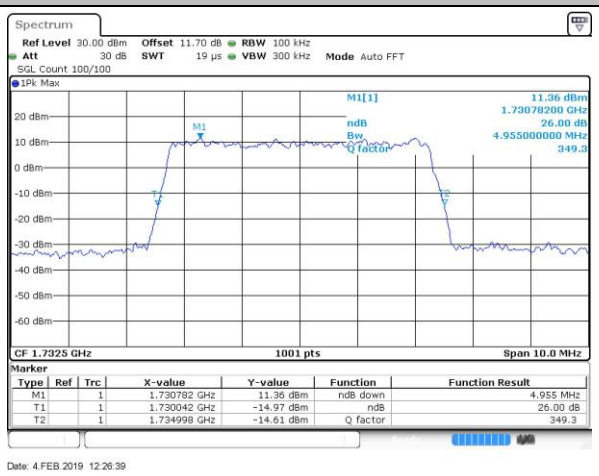
Lowest Channel / 5MHz / 64QAM



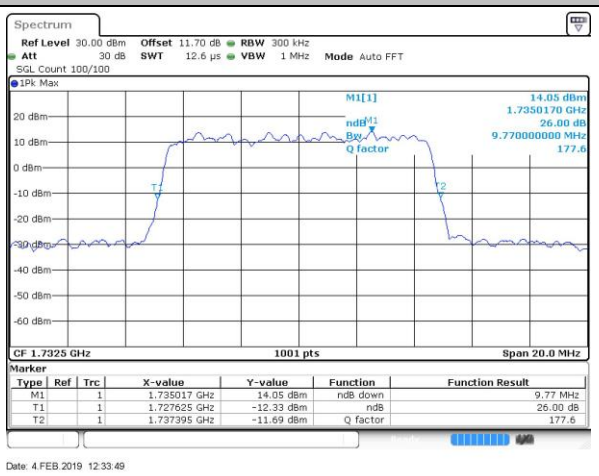
Lowest Channel / 10MHz / 64QAM



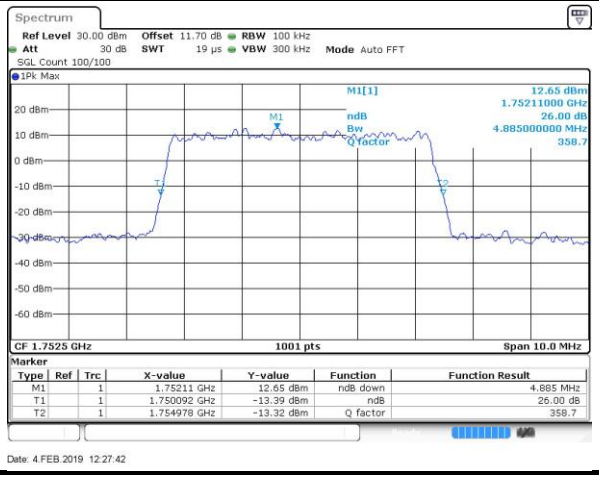
Middle Channel / 5MHz / 64QAM



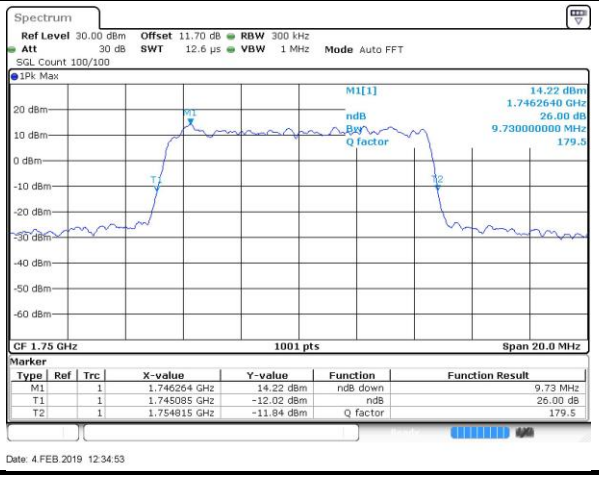
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM

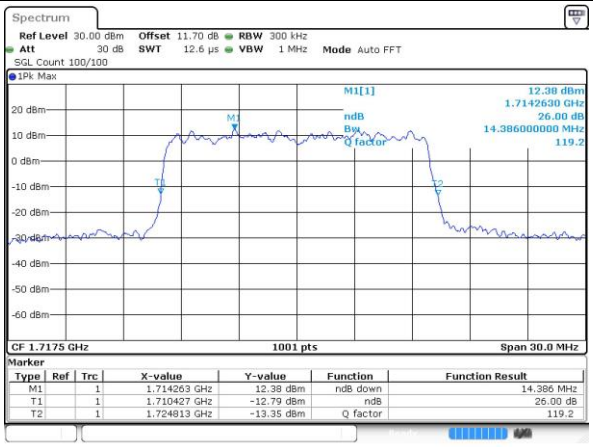


Highest Channel / 10MHz / 64QAM

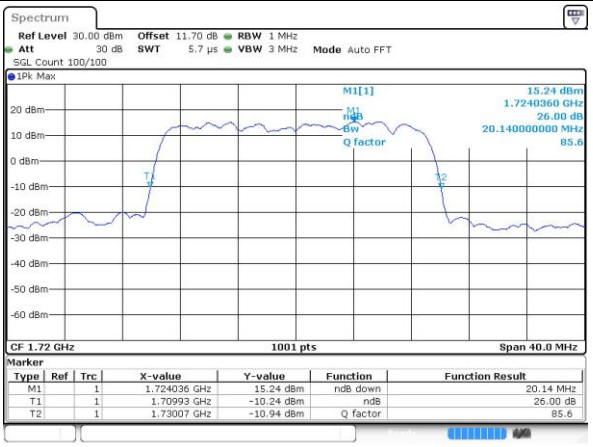


LTE Band 4

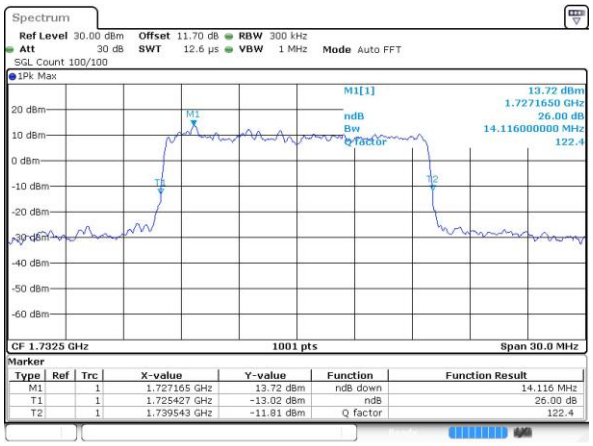
Lowest Channel / 15MHz / 64QAM



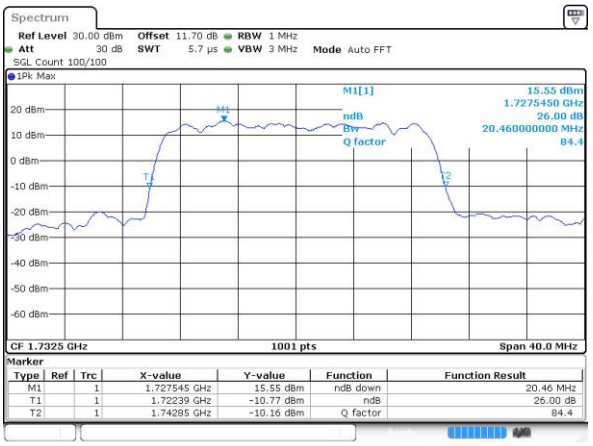
Lowest Channel / 20MHz / 64QAM



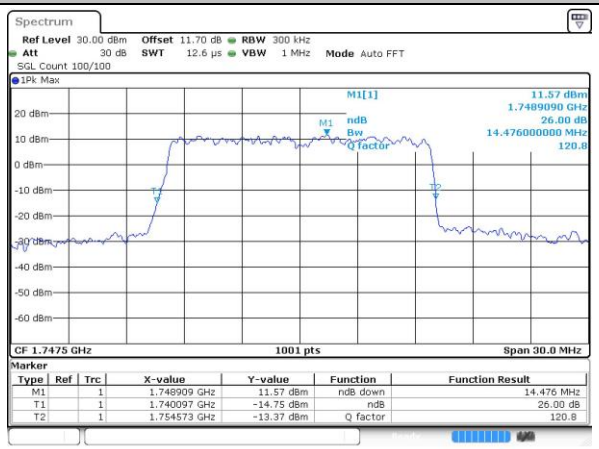
Middle Channel / 15MHz / 64QAM



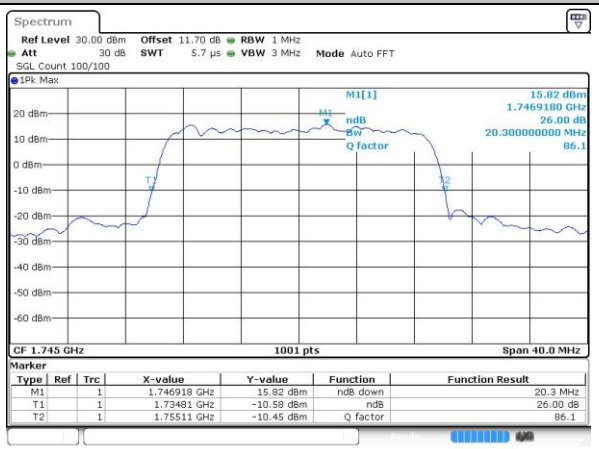
Middle Channel / 20MHz / 64QAM



Highest Channel / 15MHz / 64QAM



Highest Channel / 20MHz / 64QAM

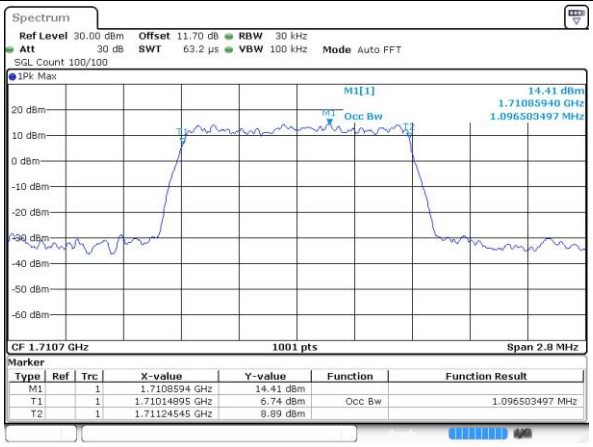


Occupied Bandwidth

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	1.1	1.1	2.73	2.7	4.5	4.5	9.01	9.01	13.43	13.46	18.34	18.3
Middle CH	1.09	1.09	2.74	2.69	4.47	4.48	8.97	9.03	13.43	13.43	18.38	18.46
Highest CH	1.09	1.09	2.73	2.72	4.5	4.5	9.01	9.05	13.37	13.43	18.3	18.34
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	-	4.53	-	9.03	-	13.40	-	18.38	-
Middle CH	1.09	-	2.71	-	4.50	-	9.05	-	13.43	-	18.54	-
Highest CH	1.08	-	2.71	-	4.50	-	9.05	-	13.37	-	18.42	-

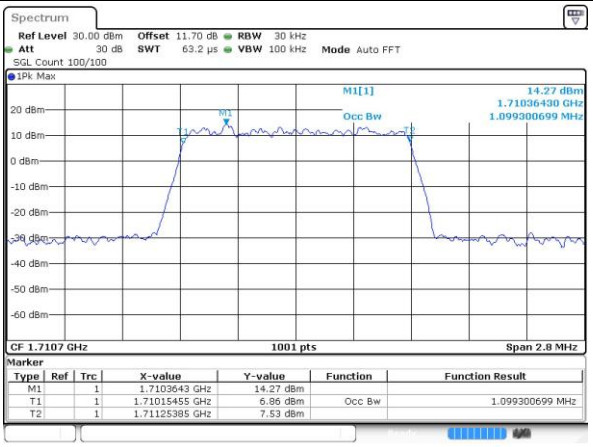
LTE Band 4

Lowest Channel / 1.4MHz / QPSK



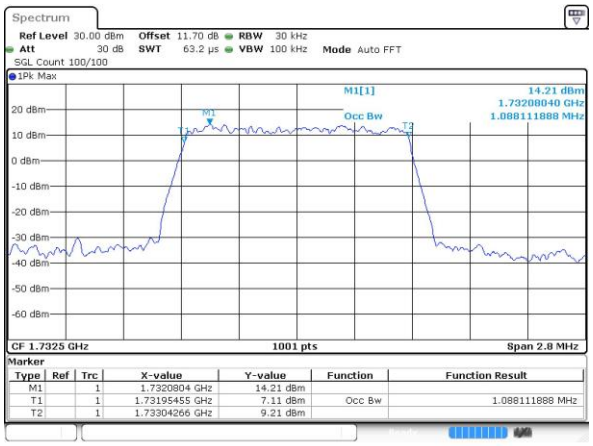
Date: 4.FEB.2019 13:05:10

Lowest Channel / 1.4MHz / 16QAM



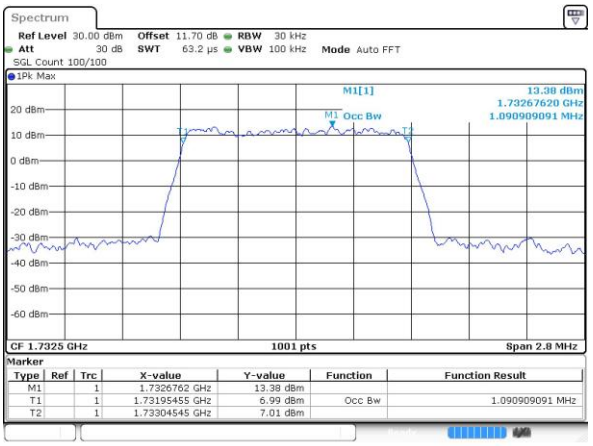
Date: 4.FEB.2019 13:05:22

Middle Channel / 1.4MHz / QPSK



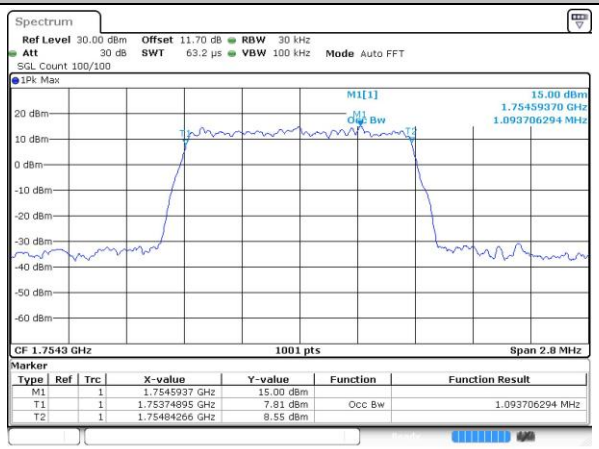
Date: 4.FEB.2019 13:11:31

Middle Channel / 1.4MHz / 16QAM



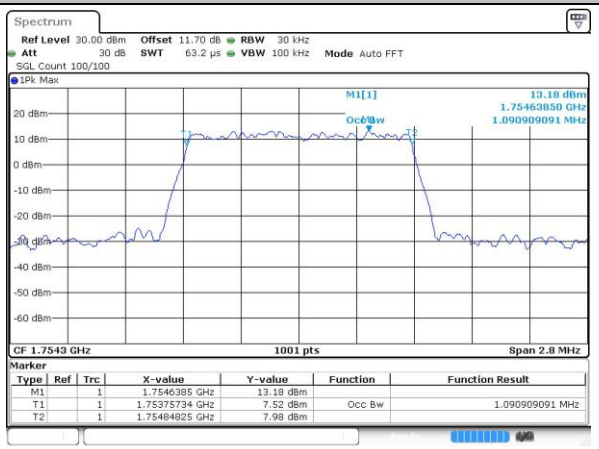
Date: 4.FEB.2019 13:11:42

Highest Channel / 1.4MHz / QPSK



Date: 4.FEB.2019 13:13:37

Highest Channel / 1.4MHz / 16QAM



Date: 4.FEB.2019 13:13:49