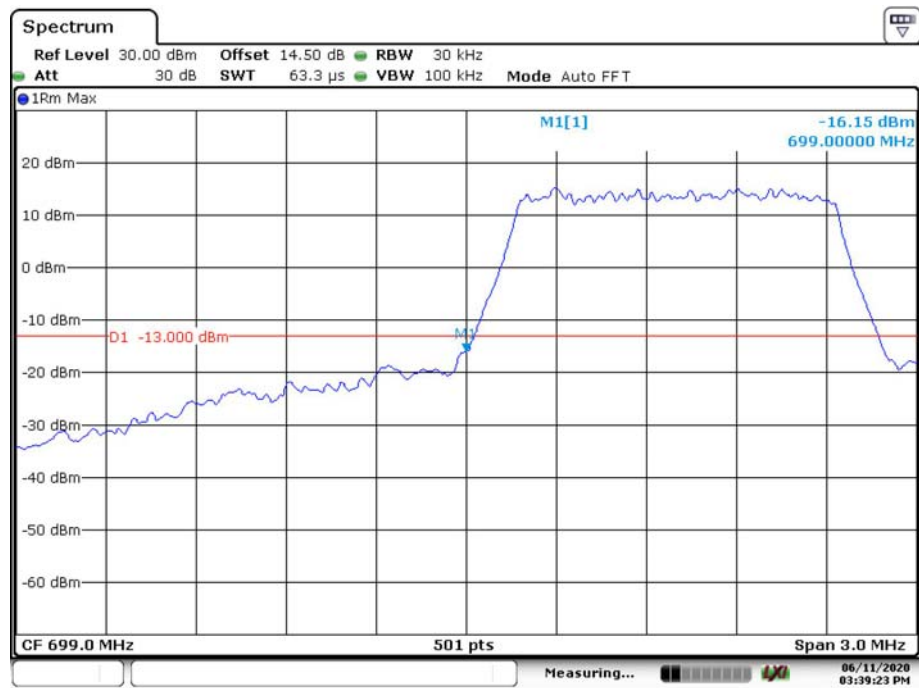
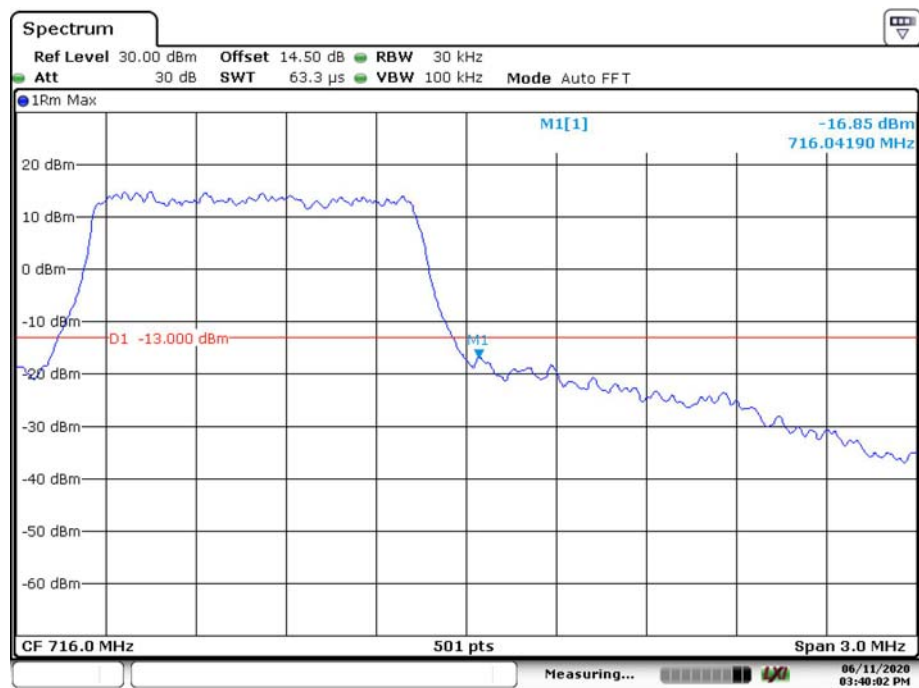


1.4M 16QAM Left Band Edge



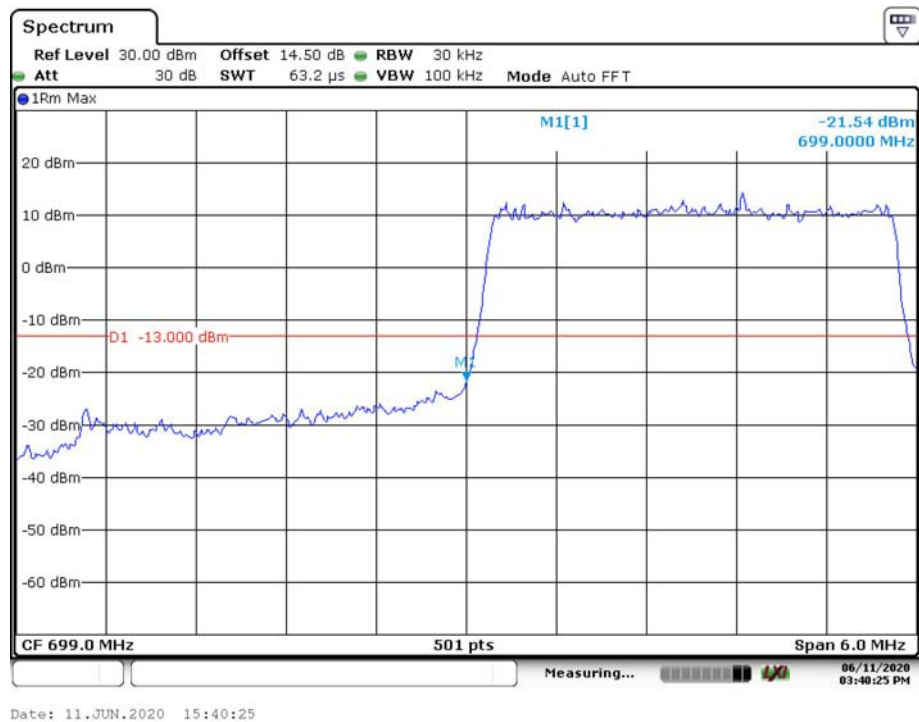
Date: 11.JUN.2020 15:39:23

1.4M 16QAM Right Band Edge

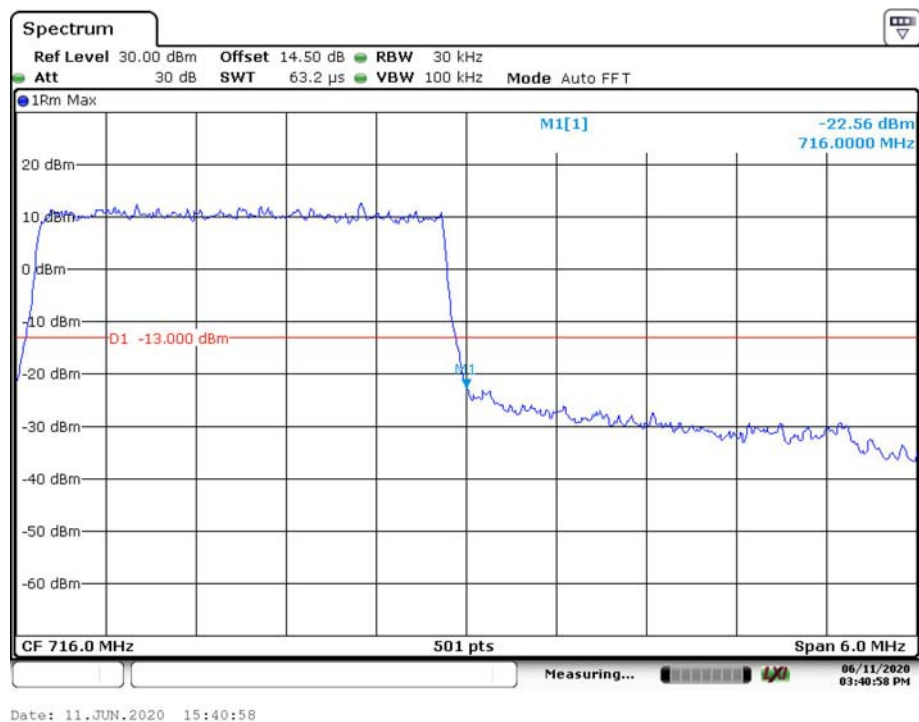


Date: 11.JUN.2020 15:40:02

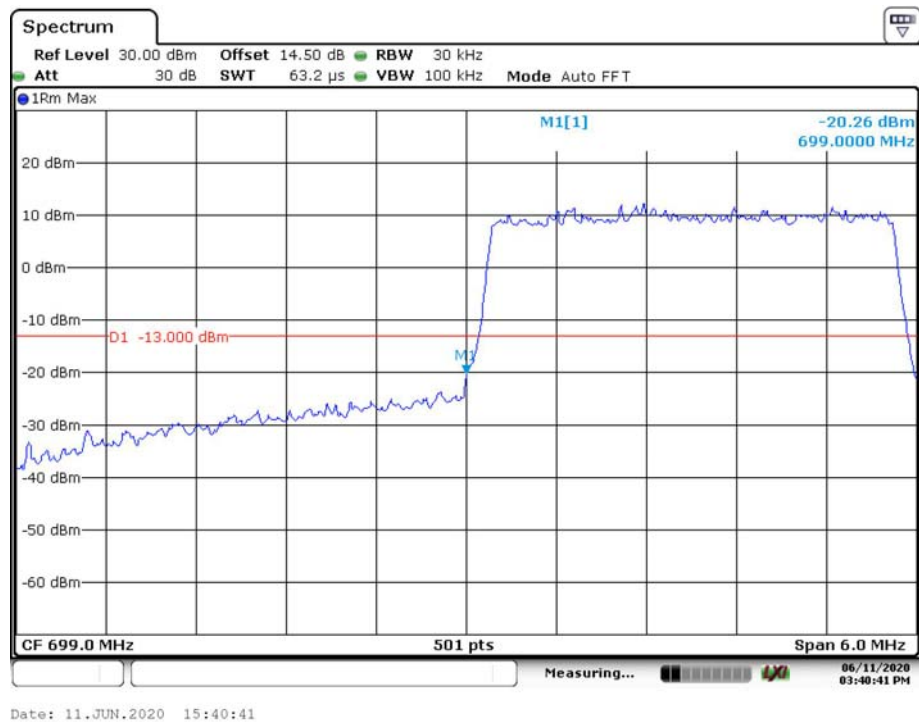
3M QPSK Left Band Edge



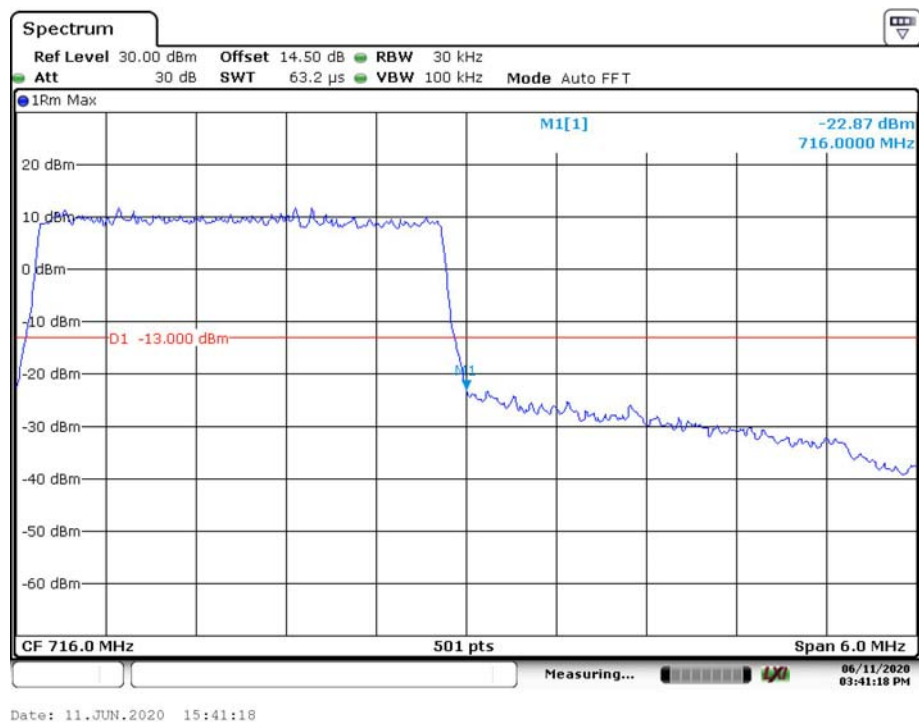
3M QPSK Right Band Edge



3M 16QAM Left Band Edge



3M 16QAM Right Band Edge

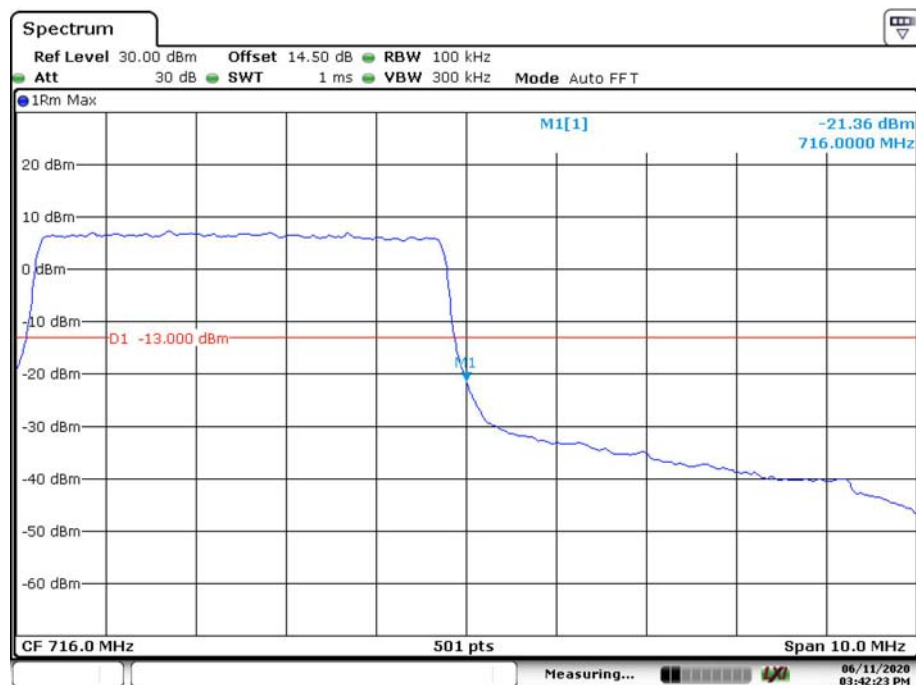


5M QPSK Left Band Edge



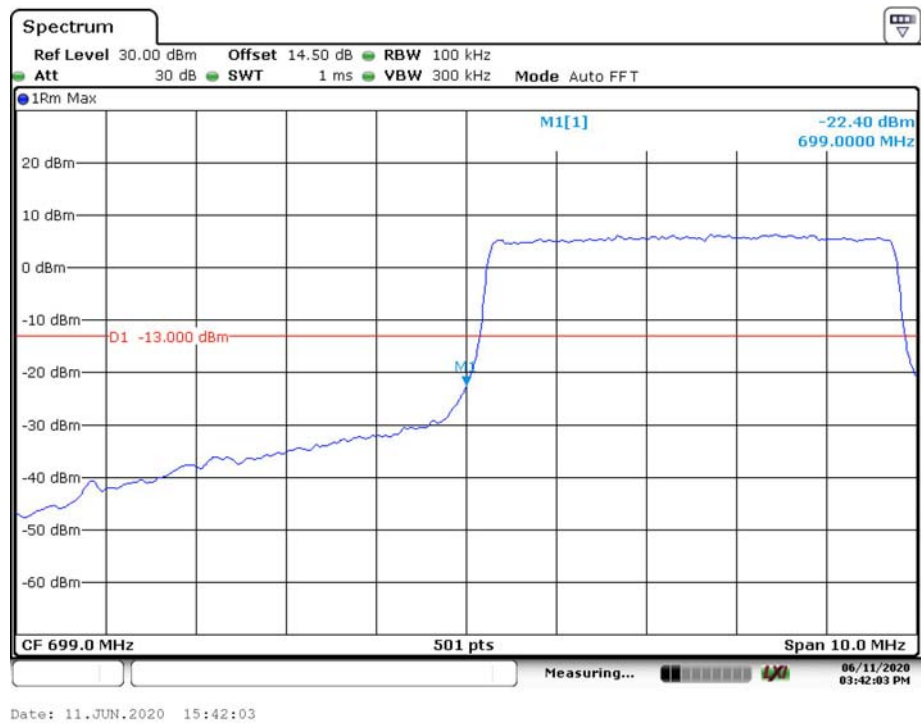
Date: 11.JUN.2020 15:41:42

5M QPSK Right Band Edge



Date: 11.JUN.2020 15:42:23

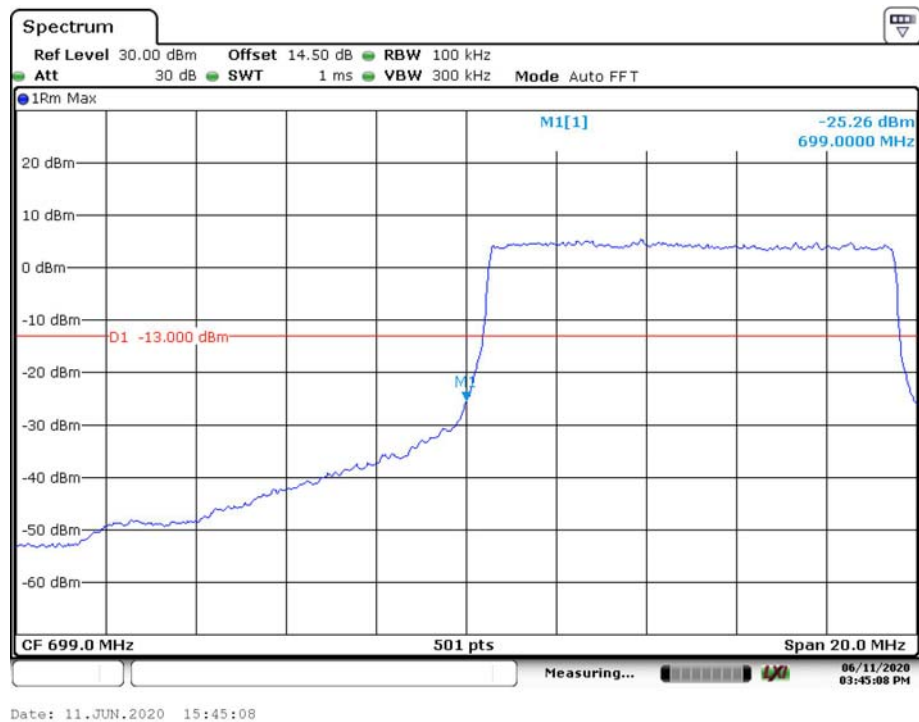
5M 16QAM Left Band Edge



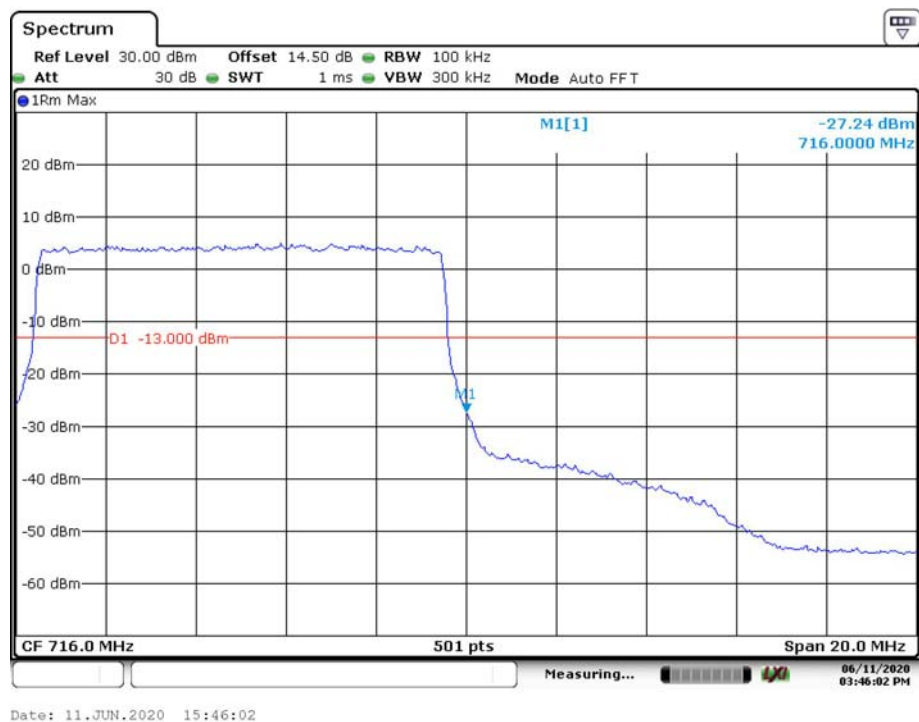
5M 16QAM Right Band Edge



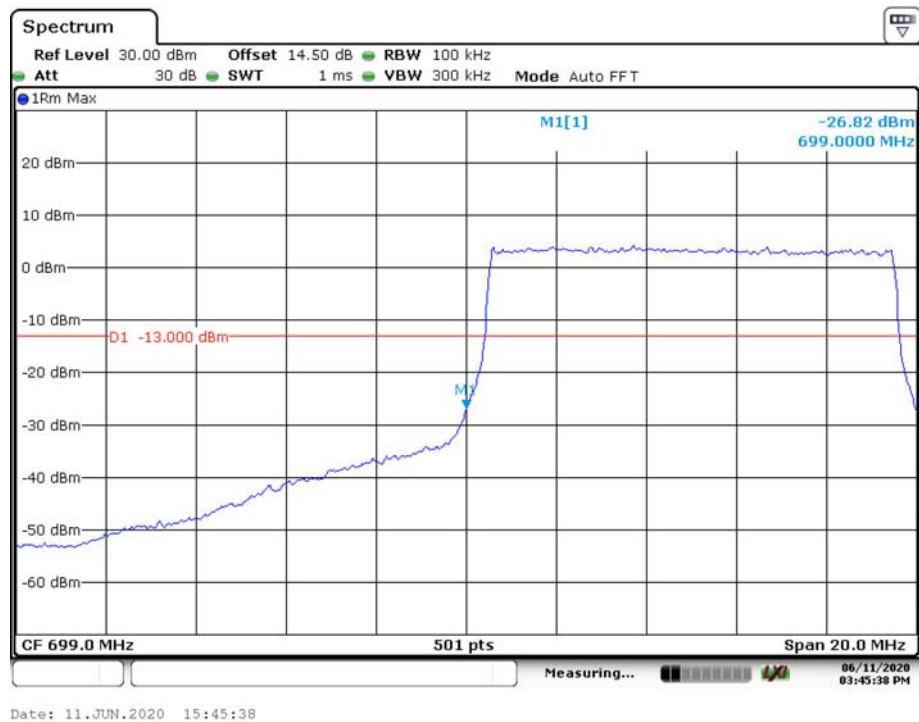
10M QPSK Left Band Edge



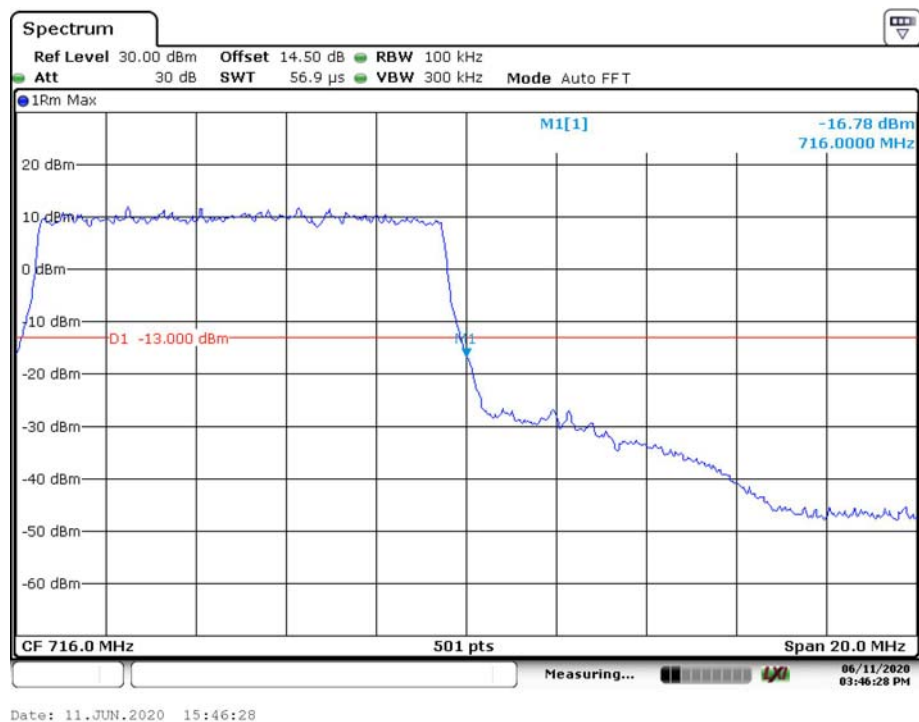
10M QPSK Right Band Edge



10M 16QAM Left Band Edge



10M 16QAM Right Band Edge



LTE Band 17

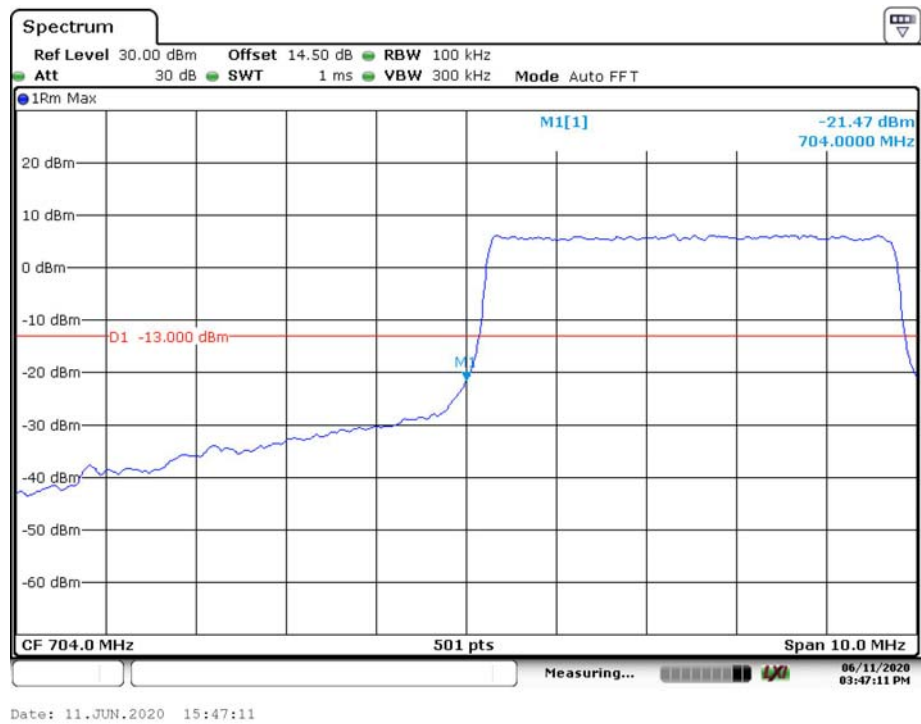
5M QPSK Left Band Edge



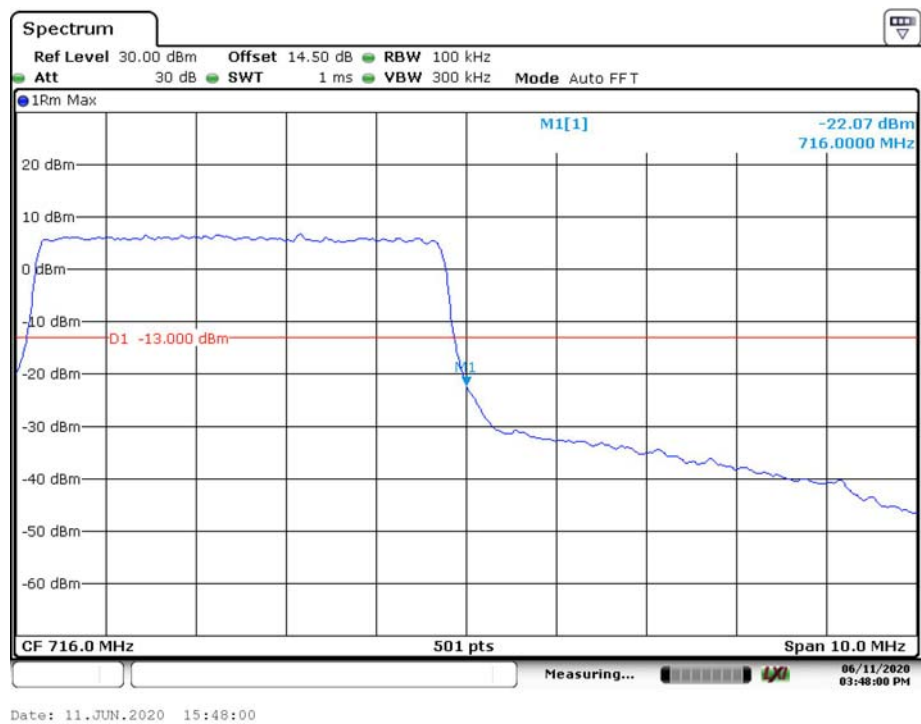
5M QPSK Right Band Edge



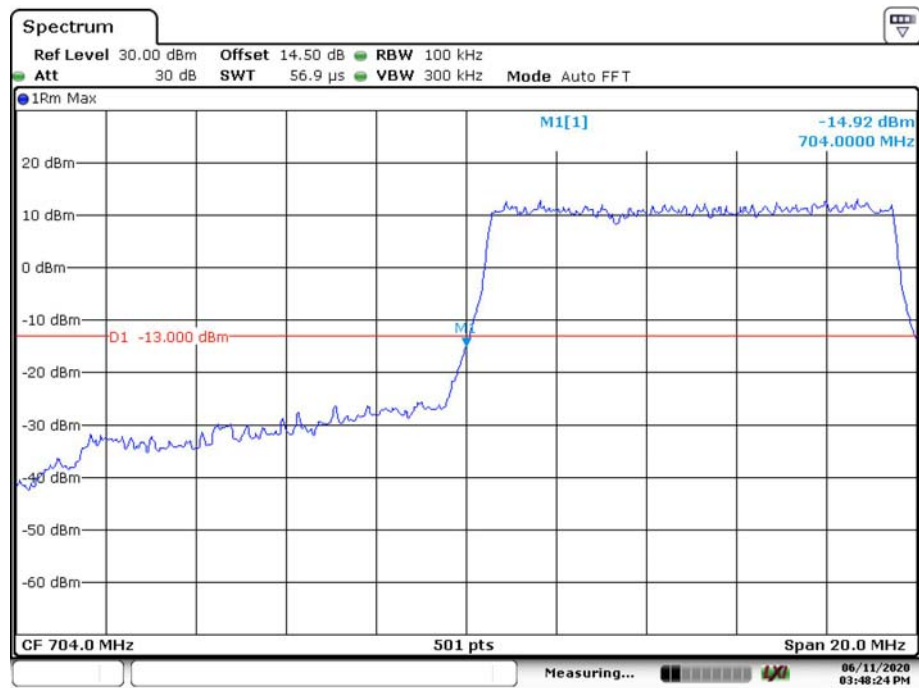
5M 16QAM Left Band Edge



5M 16QAM Right Band Edge

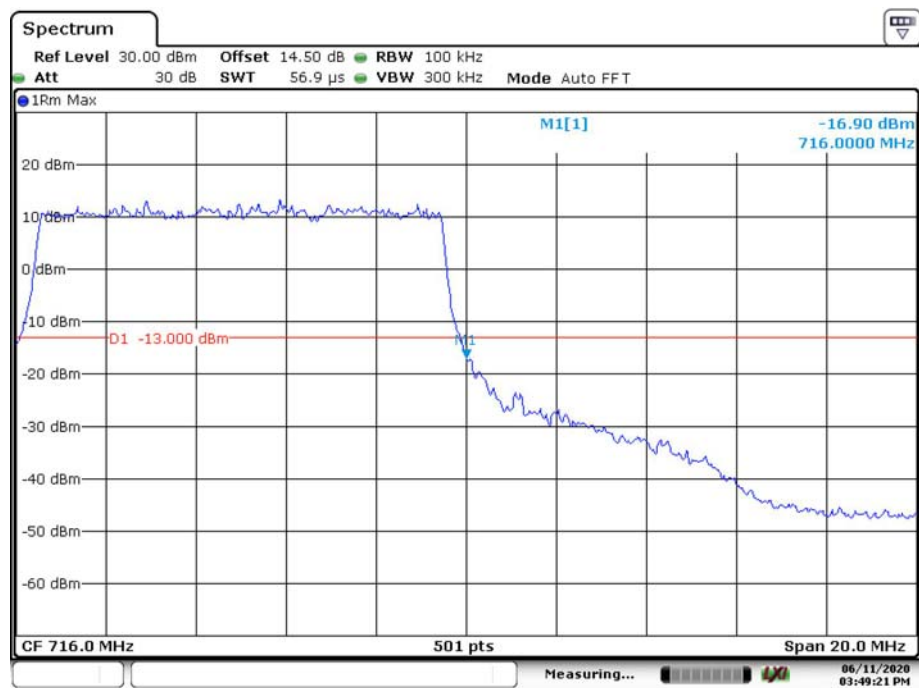


10M QPSK Left Band Edge



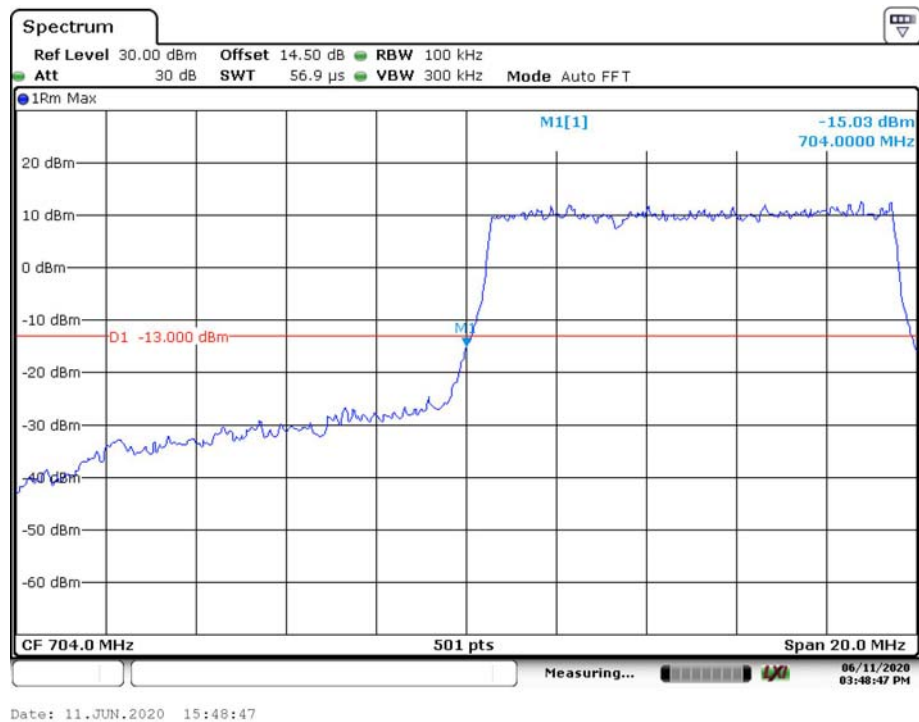
Date: 11.JUN.2020 15:48:24

10M QPSK Right Band Edge

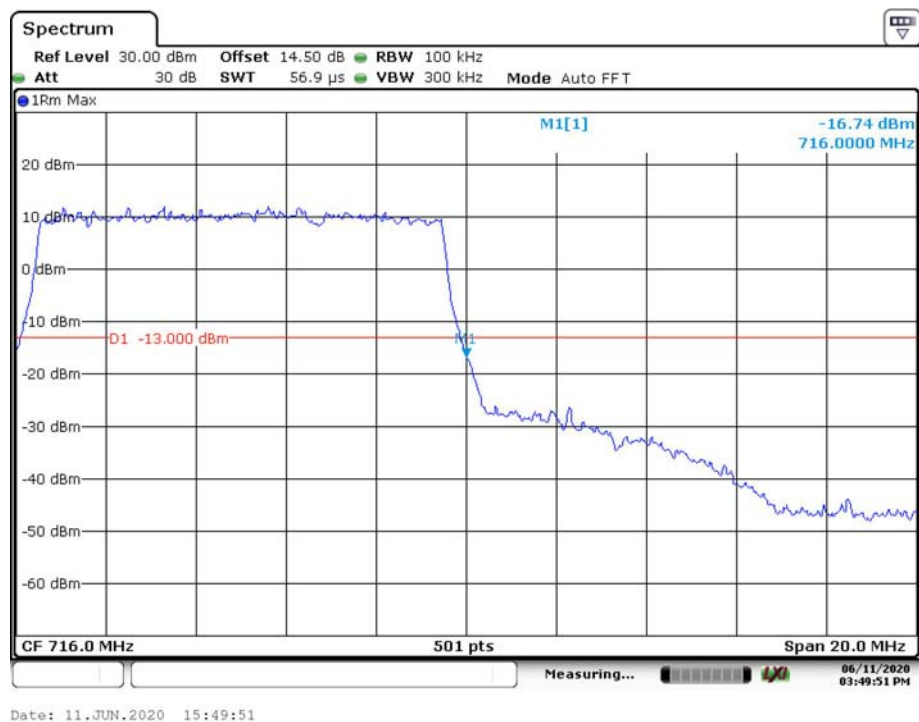


Date: 11.JUN.2020 15:49:21

10M 16QAM Left Band Edge



10M 16QAM Right Band Edge



LTE Band 38

5M QPSK Left Band Edge



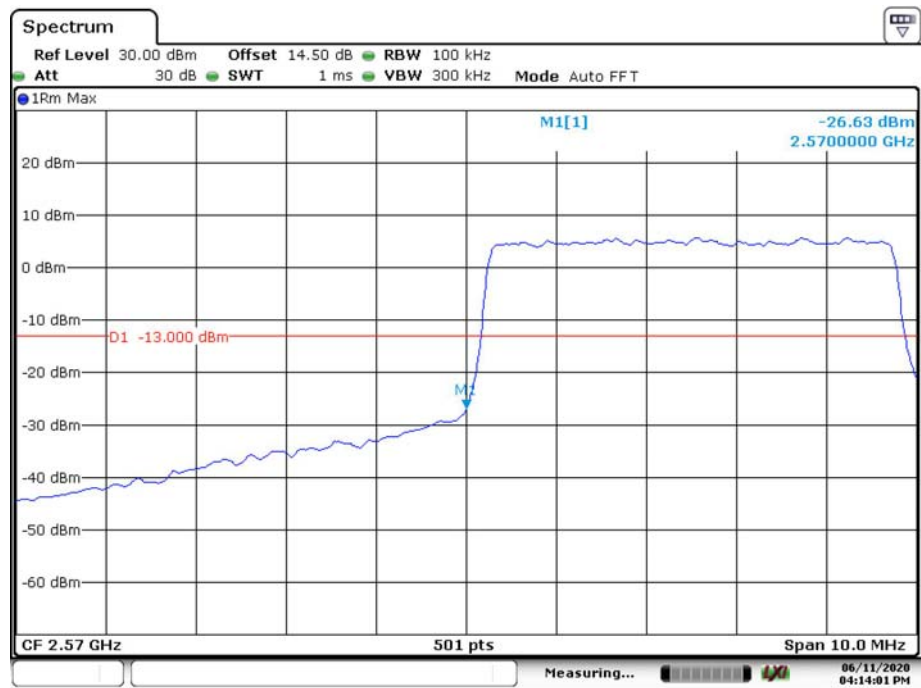
Date: 11.JUN.2020 16:13:40

5M QPSK Right Band Edge



Date: 11.JUN.2020 16:14:24

5M 16QAM Left Band Edge



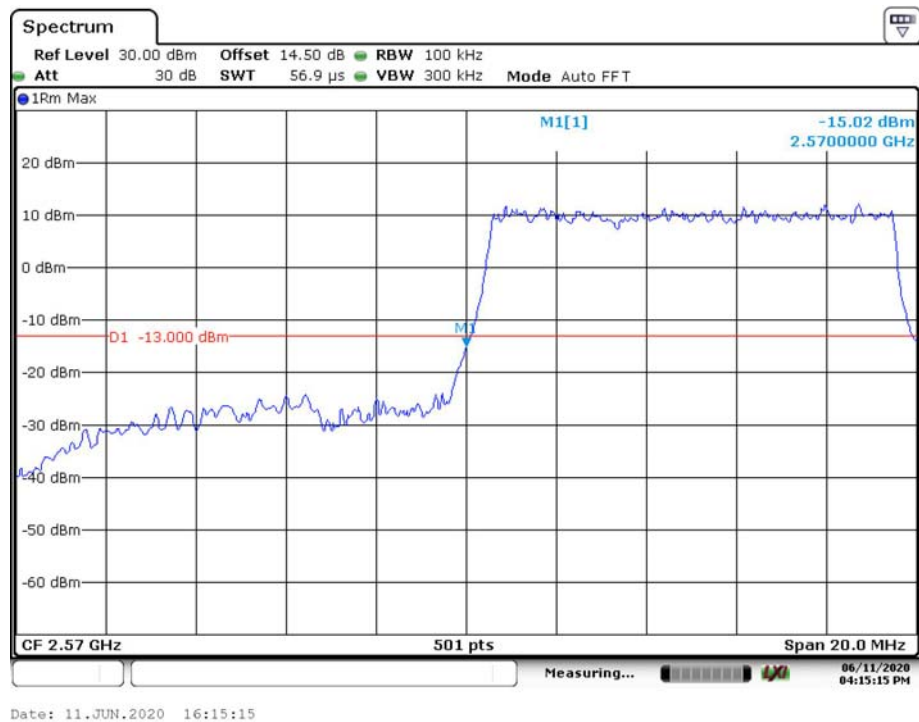
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5M 16QAM Right Band Edge

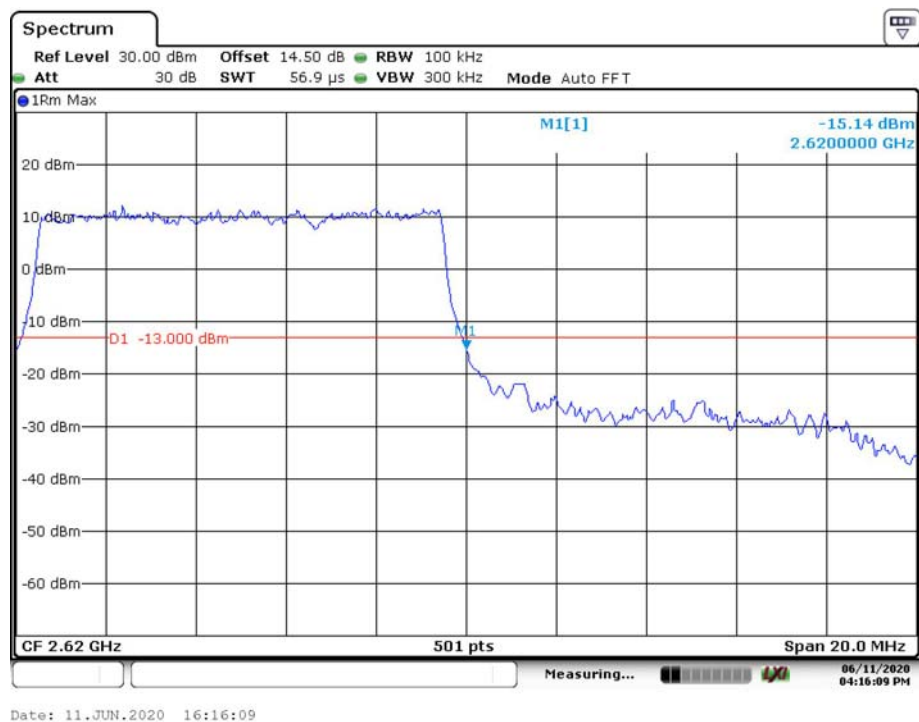


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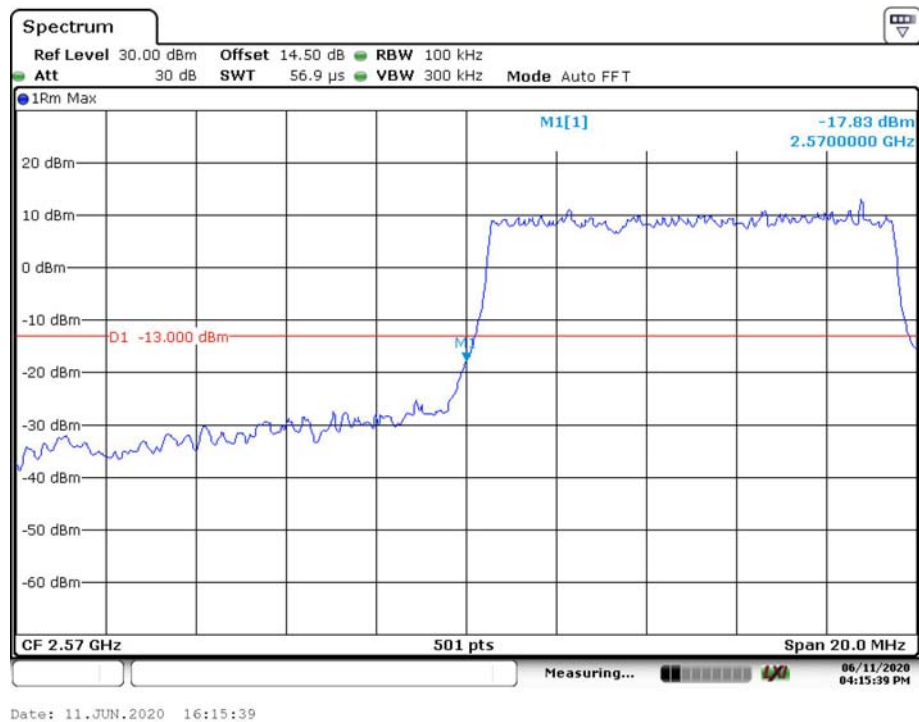
10M QPSK Left Band Edge



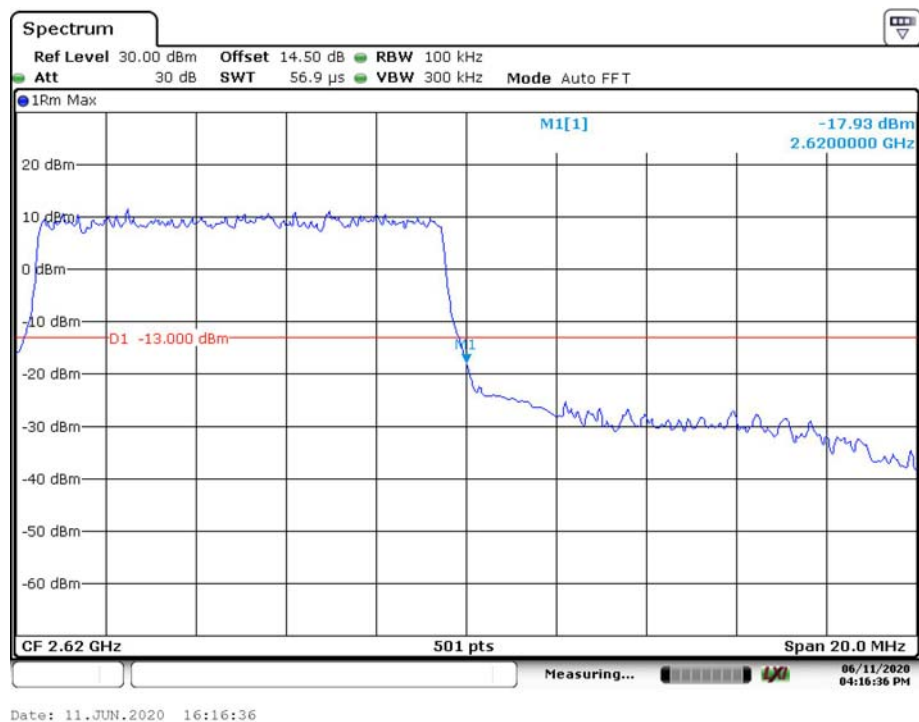
10M QPSK Right Band Edge



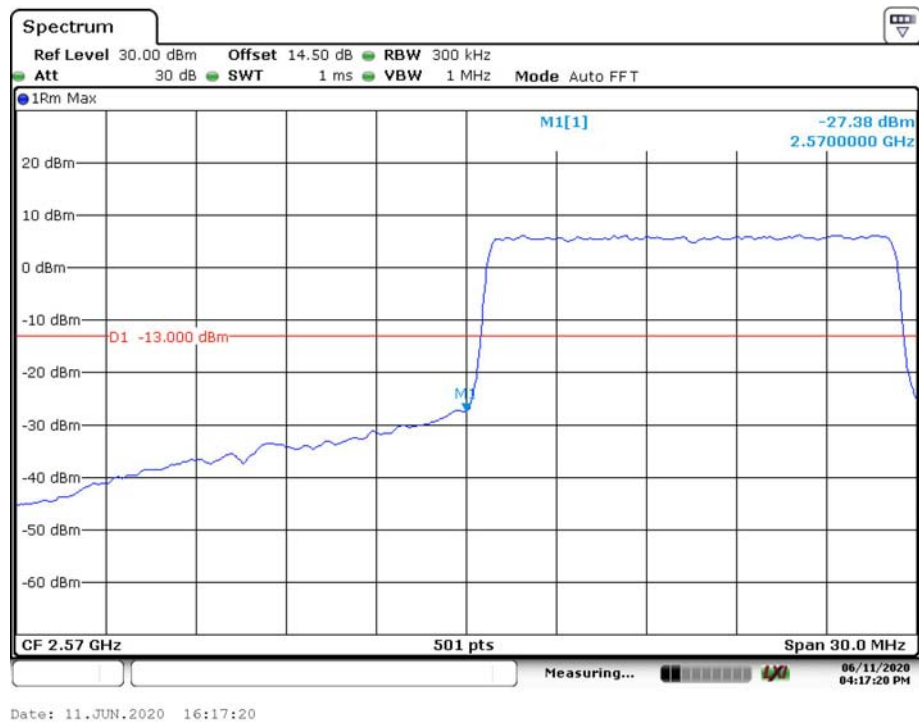
10M 16QAM Left Band Edge



10M 16QAM Right Band Edge



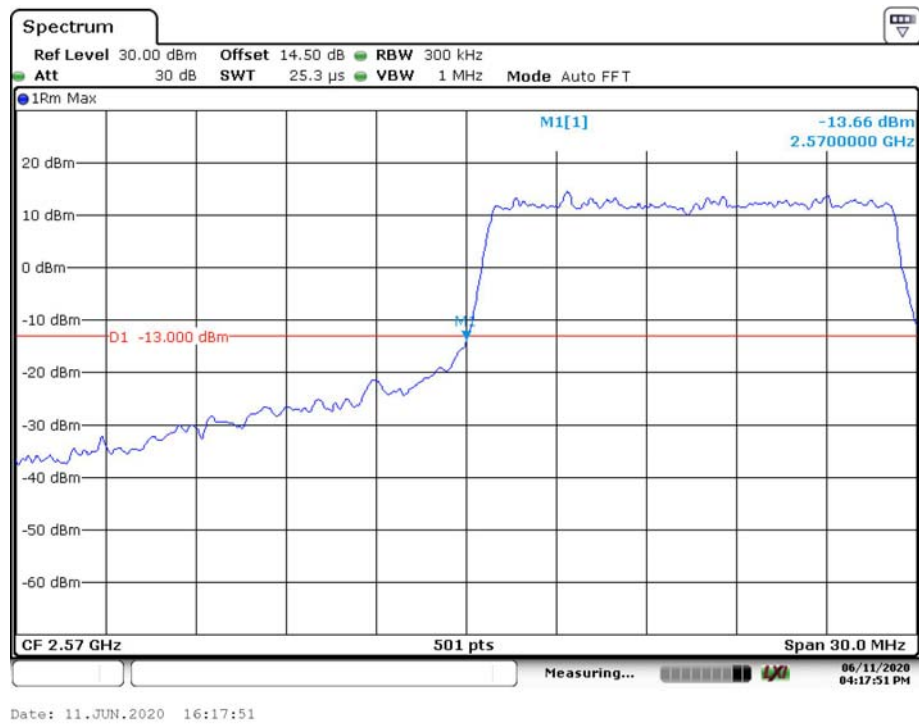
15M QPSK Left Band Edge



15M QPSK Right Band Edge



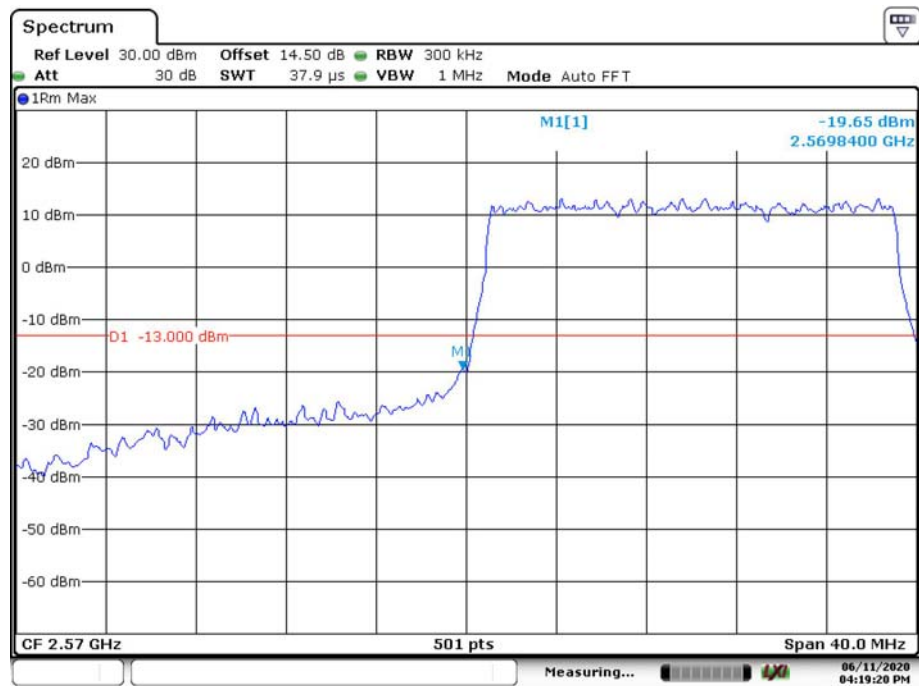
15M 16QAM Left Band Edge



15M 16QAM Right Band Edge

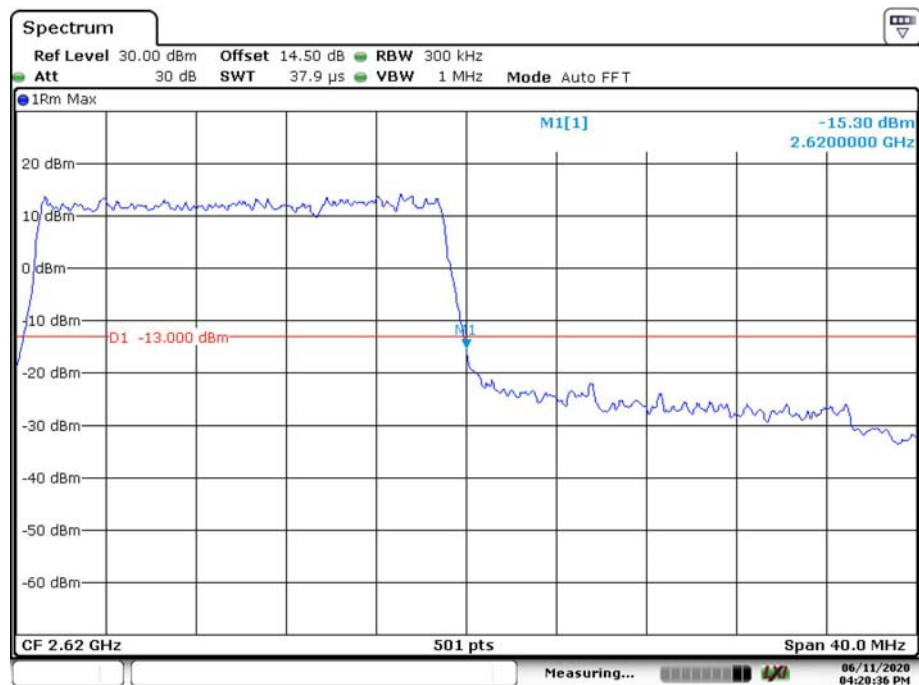


20M QPSK Left Band Edge



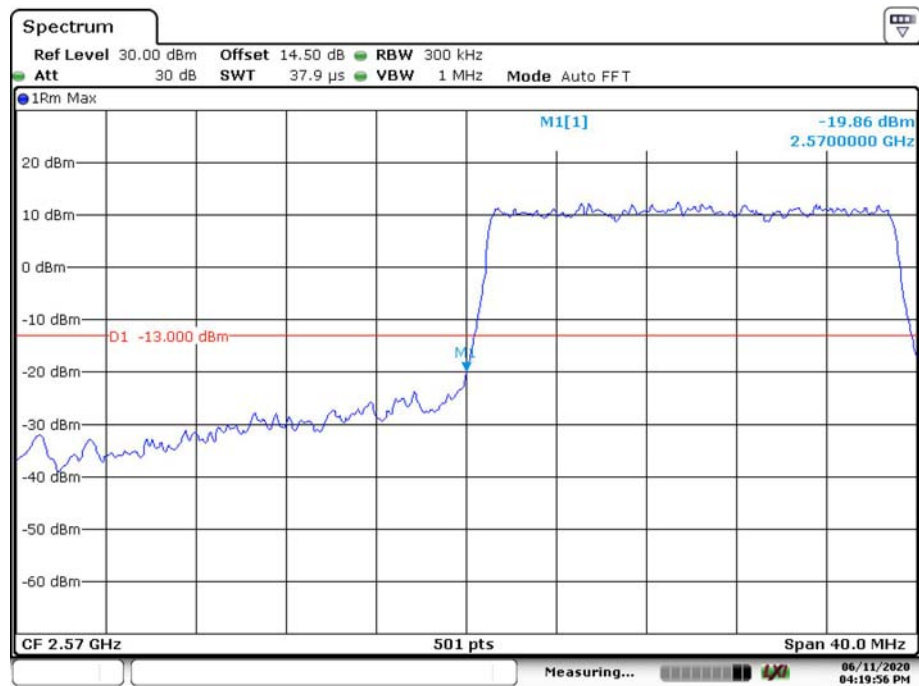
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20M QPSK Right Band Edge



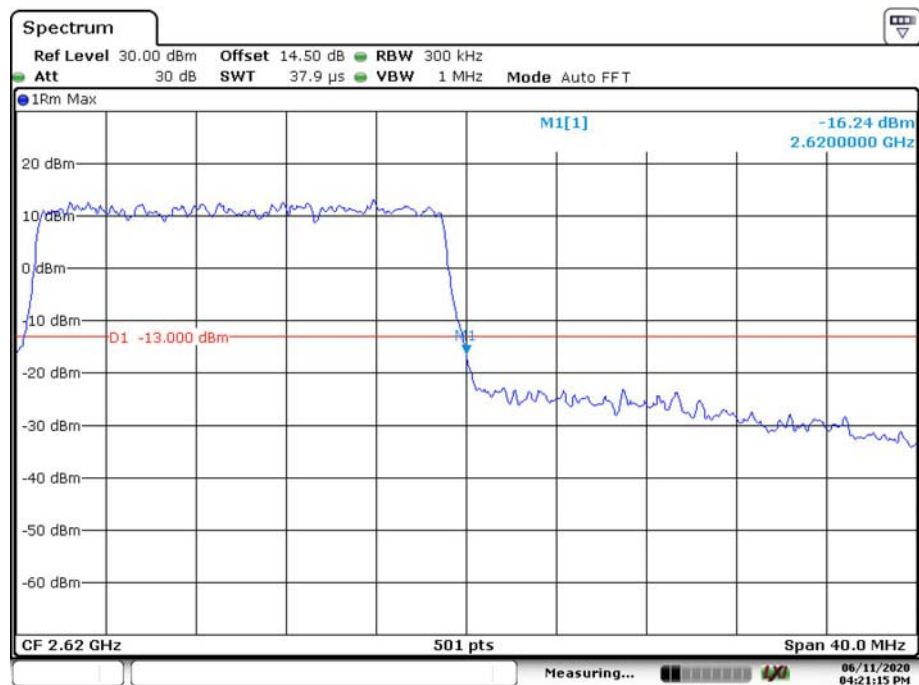
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20M 16QAM Left Band Edge



Date: 11.JUN.2020 16:19:56

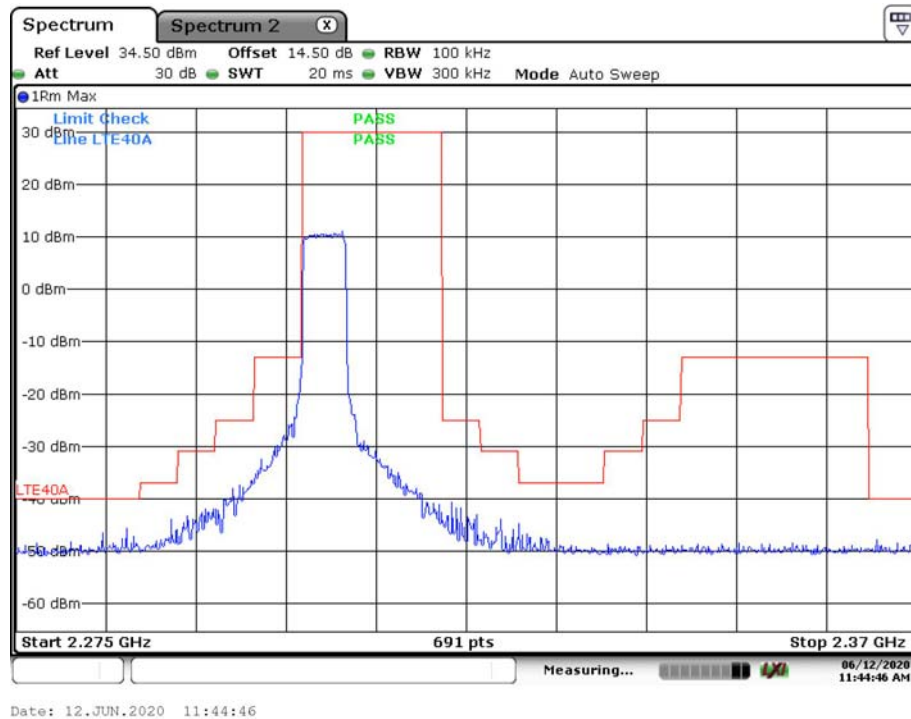
20M 16QAM Right Band Edge



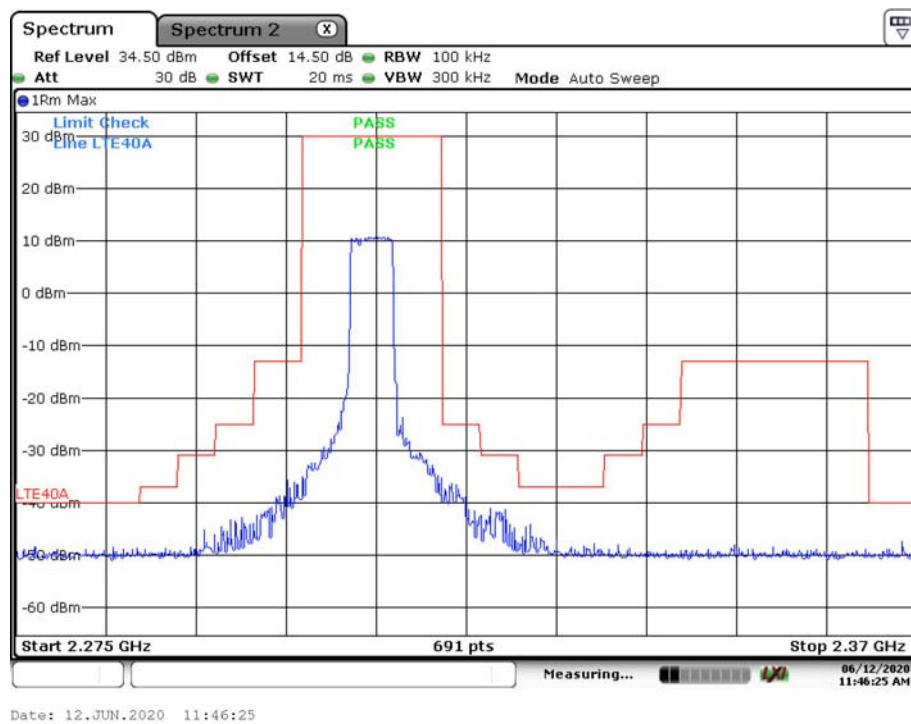
Date: 11.JUN.2020 16:21:15

LTE Band 40, Lower:

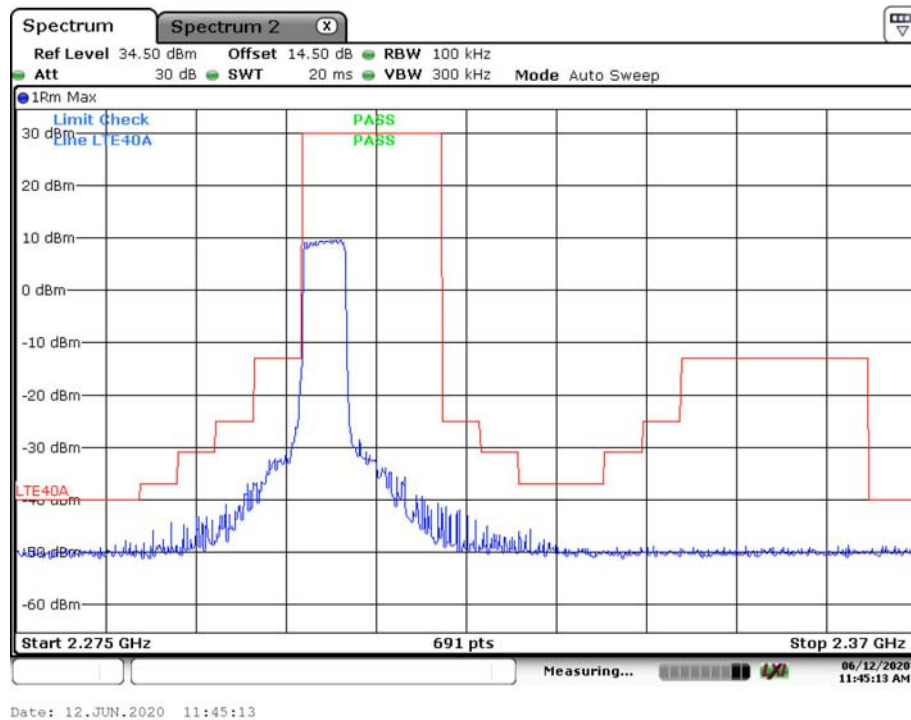
QPSK_5MHz_25 RB_ Left



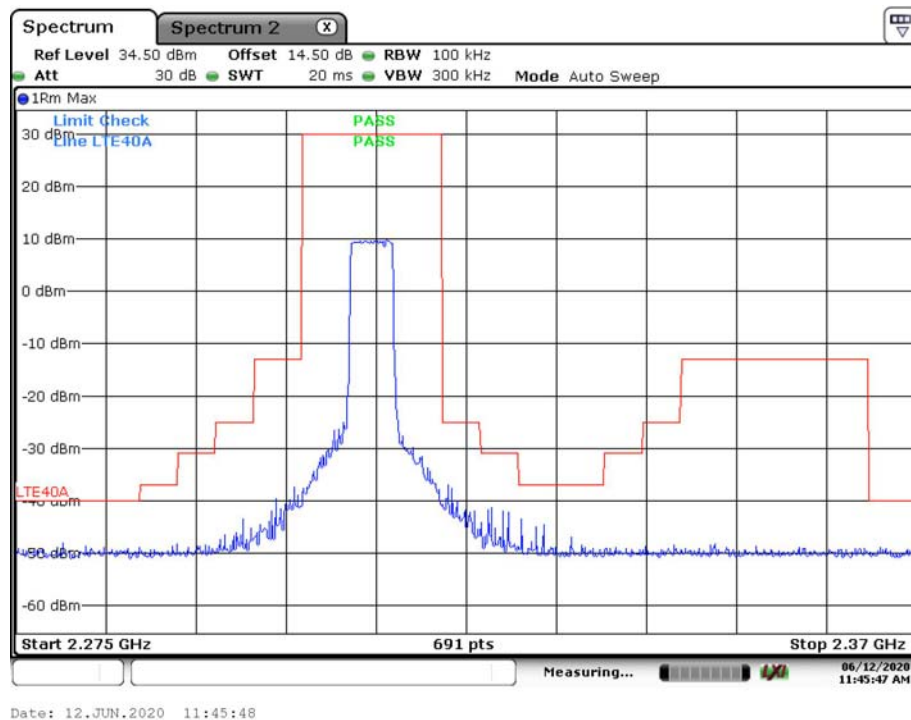
QPSK_5MHz_25 RB_ Right



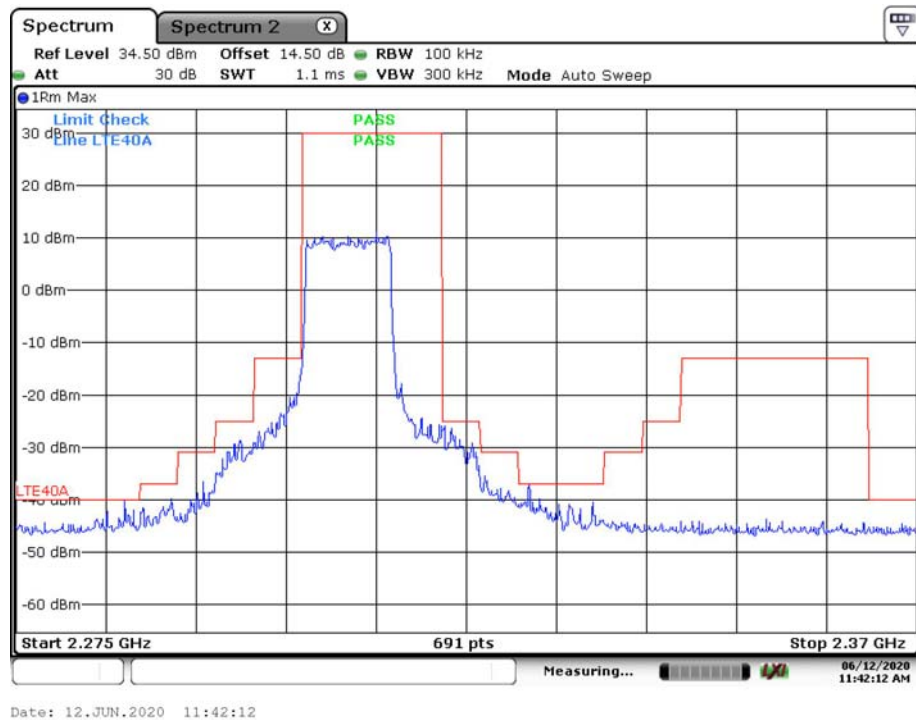
16QAM_5MHz_25 RB_ Left



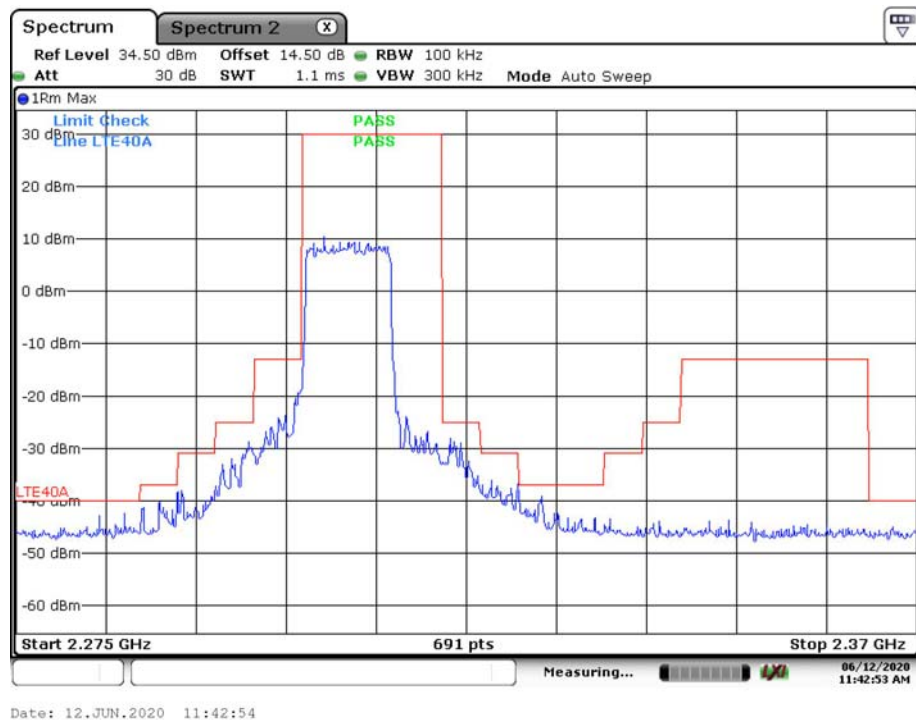
16QAM_5MHz_25 RB_ Right



QPSK_10MHz_50 RB

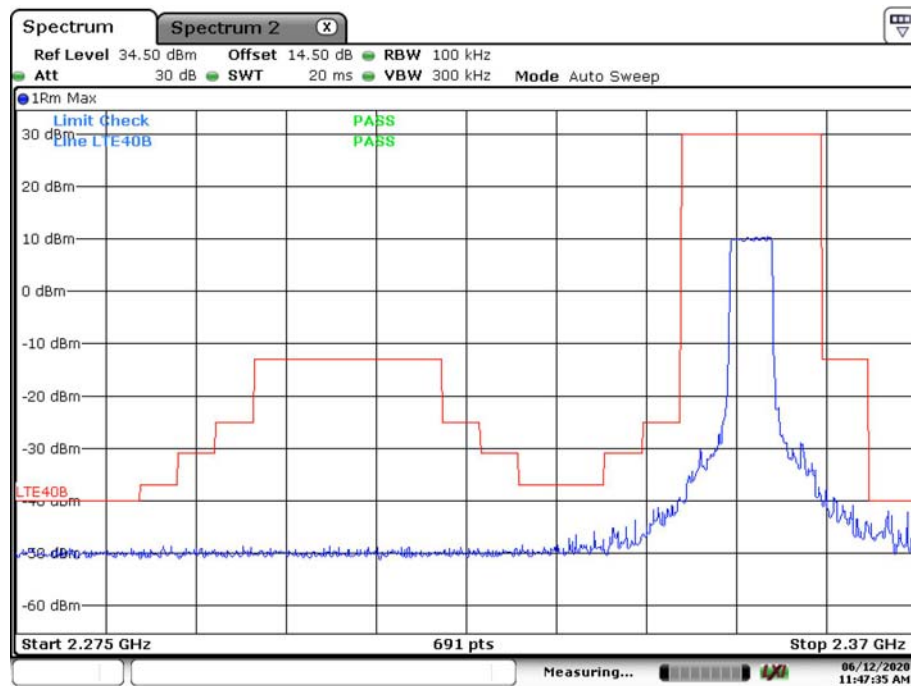


16QAM_10MHz_50 RB

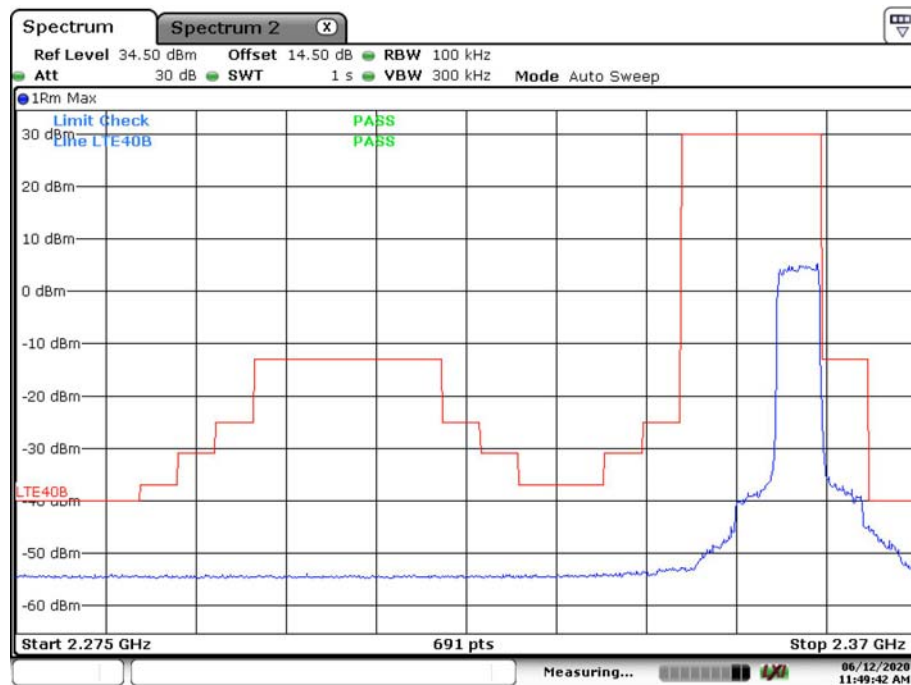


LTE Band 40-Upper

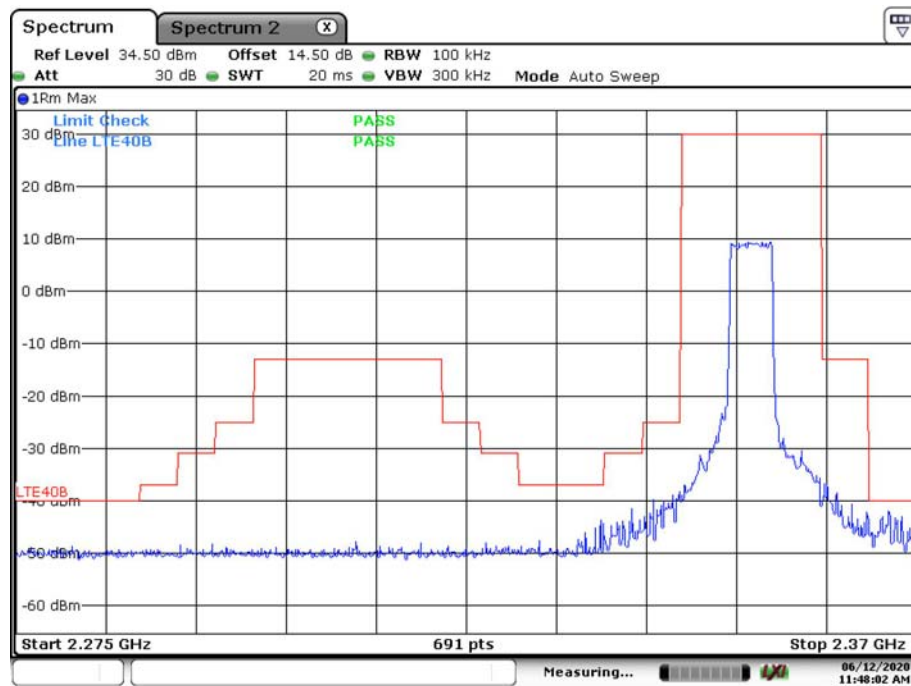
QPSK_5MHz_25 RB_Left



QPSK_5MHz_25 RB_Right

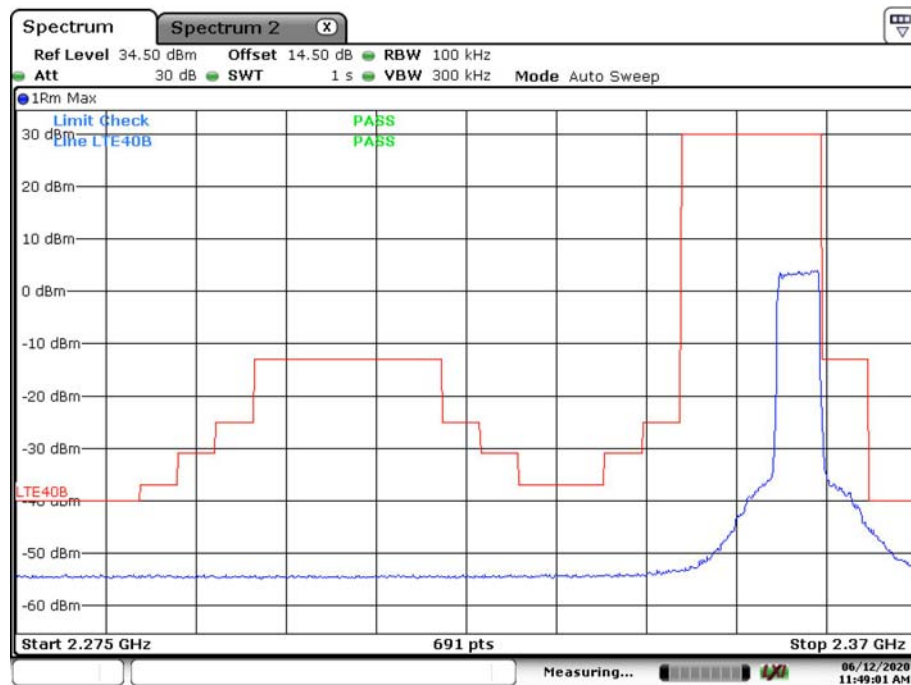


16QAM_5MHz_25 RB_ Right



Date: 12.JUN.2020 11:48:03

16QAM_5MHz_25 RB_ Left



Date: 12.JUN.2020 11:49:02

QPSK_10MHz_ 50 RB



16QAM_5MHz_ 25 RB_ Left



FCC §2.1055, §22.355 & §24.235 & §27.54 - FREQUENCY STABILITY

Applicable Standard

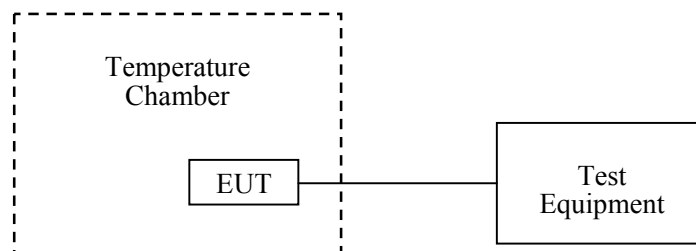
FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235, §27.54

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set from 85% to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-01-09
Unknown	Coaxial Cable	C-SJ00-0010	C0010/04	Each time	N/A
E-Microwave	Blocking Control	EMDCB-00036	0E01201048	Each time	N/A
E-Microwave	Coaxial Attenuators	EMCA10-5RN-6	OE01203239	Each time	N/A
R&S	Universal Radio Communication Tester	CMU200	106 891	2019-09-12	2020-09-12
R&S	Wideband Radio Communication Tester	CMW500	149216	2019-09-12	2020-09-12
ESPEC	Constant temperature and humidity Tester	ESX-4CA	018 463	2020-03-10	2021-03-09
UNI-T	Multimeter	UT39A	M130199938	2019-07-24	2020-07-24
Pro instrument	DC Power Supply	pps3300	3300012	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	26.1~27.4 °C
Relative Humidity:	66 ~73%
ATM Pressure:	99.8~100.9kPa
Tester:	Rita Huang
Test Date:	2020-06-04~2020-06-12

Test Result: Compliance.

Cellular Band

GMSK, Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.8	-6	-0.00717	2.5
-20		-6	-0.00717	
-10		-5	-0.00598	
0		-7	-0.00837	
10		-6	-0.00717	
20		-8	-0.00956	
30		-7	-0.00837	
40		-11	-0.01315	
50		-8	-0.00956	
20	3.6	-7	-0.00837	
20	4.3	-7	-0.00837	

8PSK, Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.8	-6	-0.00717	2.5
-20		-4	-0.00478	
-10		-7	-0.00837	
0		-7	-0.00837	
10		-6	-0.00717	
20		-8	-0.00956	
30		-7	-0.00837	
40		-9	-0.01076	
50		-8	-0.00956	
20	3.6	-8	-0.00956	
20	4.3	-6	-0.00717	

PCS Band

GMSK, Middle Channel, $f_c = 1880.0$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Results
°C	V _{DC}	Hz	ppm	
-30	3.8	-7	-0.00372	Pass
-20		-4	-0.00213	
-10		-1	-0.00053	
0		-3	-0.00160	
10		-6	-0.00319	
20		-5	-0.00266	
30		-6	-0.00319	
40		-4	-0.00213	
50		-3	-0.00160	
20	3.6	-4	-0.00213	
20	4.3	-4	-0.00213	

8PSK, Middle Channel, $f_c = 1880.0$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Results
°C	V _{DC}	Hz	ppm	
-30	3.8	-5	-0.00266	Pass
-20		-5	-0.00266	
-10		-3	-0.00160	
0		-4	-0.00213	
10		-5	-0.00266	
20		-6	-0.00319	
30		-6	-0.00319	
40		-5	-0.00266	
50		-4	-0.00213	
20	3.6	-2	-0.00106	
20	4.3	-4	-0.00213	

WCDMA Band II: R99

Middle Channel, $f_c = 1880.0$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	3.8	4	0.00213	Pass
-20		6	0.00319	
-10		8	0.00426	
0		7	0.00372	
10		6	0.00319	
20		9	0.00479	
30		9	0.00479	
40		10	0.00532	
50		8	0.00426	
20	3.6	8	0.00426	
20	4.3	9	0.00479	

WCDMA Band IV: R99

QPSK, Channel Bandwidth: 10MHz					
Power Supplied	Temperature	F _L	Limit	F _H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
3.8	-30	1710.6974	1710	1754.747	1755
	-20	1710.6962		1754.759	
	-10	1710.6986		1754.753	
	0	1710.6186		1754.738	
	10	1710.6001		1754.741	
	20	1710.7980		1754.726	
	30	1710.7998		1754.729	
	40	1710.7004		1754.738	
	50	1710.4007		1754.729	
3.6	20	1710.5016		1754.711	
4.3	20	1710.6016		1754.726	

WCDMA Band V: R99

Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.8	8	0.00956	2.5
-20		6	0.00717	
-10		7	0.00837	
0		5	0.00598	
10		7	0.00837	
20		8	0.00956	
30		7	0.00837	
40		6	0.00717	
50		7	0.00837	
20	3.6	5	0.00598	
20	4.3	8	0.00956	

LTE Band 2:

QPSK, Channel Bandwidth:10MHz Middle Channel, $f_c = 1880$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	3.8	-8.83	-0.0047	Pass
-20		-9.97	-0.0053	
-10		-6.13	-0.0033	
0		6.17	0.0033	
10		7.92	0.0042	
20		6.46	0.0034	
30		-6.52	-0.0035	
40		7.18	0.0038	
50		-9.69	-0.0052	
20	3.6	-8.17	-0.0043	
20	4.3	-7.05	-0.0038	

16QAM, Channel Bandwidth:10MHz Middle Channel, $f_c = 1880$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	3.8	-7.24	-0.0039	Pass
-20		-6.68	-0.0036	
-10		9.77	0.0052	
0		-7.62	-0.0041	
10		-9.91	-0.0053	
20		-9.82	-0.0052	
30		-6.68	-0.0036	
40		-8.85	-0.0047	
50		5.67	0.003	
20	3.6	6.05	0.0032	
20	4.3	7.52	0.004	

LTE Band 4

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	1710.510400	1710	1754.481800	1755
	-20	1710.510100		1754.482100	
	-10	1710.509800		1754.480900	
	0	1710.509800		1754.481900	
	10	1710.509800		1754.482500	
	20	1710.513700		1754.486300	
	30	1710.509500		1754.483900	
	40	1710.516100		1754.484200	
	50	1710.517000		1754.483900	
3.6	20	1710.515500	1710	1754.483600	1755
4.3	20	1710.513100		1754.483600	

16QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	1710.514900	1710	1754.485100	1755
	-20	1710.515500		1754.486000	
	-10	1710.514700		1754.487200	
	0	1710.516200		1754.487200	
	10	1710.516200		1754.487800	
	20	1710.513700		1754.486300	
	30	1710.516700		1754.487800	
	40	1710.516400		1754.488700	
	50	1710.516100		1754.489100	
3.6	20	1710.516900	1710	1754.488100	1755
4.3	20	1710.518100		1754.486900	

LTE Band 5:

Middle Channel, $f_c = 836.5$ MHz, Channel Bandwidth:10MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.6	-6.34	-0.0076	2.5
-20		-6.97	-0.0083	
-10		-5.50	-0.0066	
0		6.06	0.0072	
10		9.80	0.0117	
20		5.03	0.006	
30		-6.62	-0.0079	
40		-8.73	-0.0104	
50		-7.05	-0.0084	
20	3.4	8.99	0.0107	
20	4.2	-7.17	-0.0086	

Middle Channel, $f_c = 836.5$ MHz, Channel Bandwidth:10MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.6	-5.05	-0.006	2.5
-20		8.10	0.0097	
-10		-8.59	-0.0103	
0		9.33	0.0112	
10		-6.94	-0.0083	
20		7.54	0.009	
30		6.43	0.0077	
40		-6.17	-0.0074	
50		-6.44	-0.0077	
20	3.4	6.34	0.0076	
20	4.2	-6.89	-0.0082	

LTE Band 7

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	2500.571900	2500	2569.456400	2570
	-20	2500.572800		2569.457000	
	-10	2500.572000		2569.455800	
	0	2500.571500		2569.456800	
	10	2500.571500		2569.458000	
	20	2500.571600		2569.457300	
	30	2500.569800		2569.459700	
	40	2500.569800		2569.458800	
	50	2500.571000		2569.458400	
3.6	20	2500.570500	2500	2569.459900	2570
4.3	20	2500.571700		2569.461100	

16QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	2500.573700	2500	2569.483000	2570
	-20	2500.573700		2569.482400	
	-10	2500.574900		2569.481200	
	0	2500.573400		2569.480700	
	10	2500.572800		2569.480100	
	20	2500.571600		2569.486300	
	30	2500.573700		2569.487800	
	40	2500.573100		2569.487500	
	50	2500.571900		2569.487100	
3.6	20	2500.570400	2500	2569.486100	2570
4.3	20	2500.571000		2569.487300	

LTE Band 12

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	699.517600	699	715.482700	716
	-20	699.518500		715.483300	
	-10	699.518500		715.484100	
	0	699.517500		715.483600	
	10	699.516900		715.483000	
	20	699.513700		715.486300	
	30	699.512800		715.488400	
	40	699.511900		715.489000	
	50	699.513100		715.489000	
3.6	20	699.513100		715.488000	
4.3	20	699.512500		715.489200	

16QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	699.517300	699	715.483900	716
	-20	699.516700		715.483600	
	-10	699.515500		715.484800	
	0	699.514500		715.483300	
	10	699.515700		715.481500	
	20	699.513700		715.486300	
	30	699.517600		715.489900	
	40	699.517300		715.490200	
	50	699.518500		715.491000	
3.6	20	699.517500		715.492500	
4.3	20	699.519300		715.494300	

LTE Band 17

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	704.511900	704	715.481800	716
	-20	704.511300		715.481200	
	-10	704.512500		715.481600	
	0	704.513500		715.483100	
	10	704.514100		715.484900	
	20	704.513700		715.486300	
	30	704.512200		715.485100	
	40	704.511900		715.484800	
	50	704.513100		715.485200	
3.6	20	704.512600	704	715.484700	716
4.3	20	704.513200		715.484100	

16QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.8	-30	704.515500	704	715.490500	716
	-20	704.514600		715.490500	
	-10	704.515800		715.490900	
	0	704.516800		715.489900	
	10	704.518600		715.488700	
	20	704.513700		715.486300	
	30	704.510400		715.484200	
	40	704.510700		715.485100	
	50	704.510300		715.485500	
3.6	20	704.509800	704	715.486000	716
4.3	20	704.509200		715.484200	

LTE Band 38

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.6	-30	2570.511000	2570	2619.487200	2620
	-20	2570.511000		2619.486300	
	-10	2570.510600		2619.487500	
	0	2570.512100		2619.486000	
	10	2570.510900		2619.487800	
	20	2570.513700		2619.486300	
	30	2570.511600		2619.484500	
	40	2570.512200		2619.483600	
	50	2570.511400		2619.484000	
3.4	20	2570.510900	2570	2619.482500	2620
4.2	20	2570.512700		2619.484300	

16QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	℃	MHz	MHz	MHz	MHz
3.6	-30	2570.509200	2570	2619.455800	2620
	-20	2570.508900		2619.456100	
	-10	2570.510100		2619.457300	
	0	2570.510100		2619.457300	
	10	2570.510700		2619.456100	
	20	2570.513700		2619.457300	
	30	2570.510700		2619.461500	
	40	2570.509800		2619.460900	
	50	2570.509400		2619.459700	
3.4	20	2570.508900	2570	2619.460200	2620
4.2	20	2570.507700		2619.458400	

LTE Band 40:**Lower:**

QPSK, Channel Bandwidth:10MHz					
Temperature	Voltage	Test Result (MHz)		Limit (MHz)	
°C	V_{DC}	F_L	F_H	F_L	F_H
-30	3.6	2305.511600	2314.482100	2305	2315
-20		2305.512200	2314.483000	2305	2315
-10		2305.513000	2314.483400	2305	2315
0		2305.513000	2314.482900	2305	2315
10		2305.511800	2314.481700	2305	2315
20		2305.513700	2314.486300	2305	2315
30		2305.509800	2314.484200	2305	2315
40		2305.508900	2314.484200	2305	2315
50		2305.508100	2314.485400	2305	2315
20	3.4	2305.509100	2314.484400	2305	2315
20	4.2	2305.507900	2314.483200	2305	2315

16QAM, Channel Bandwidth:10MHz					
Temperature	Voltage	Test Result (MHz)		Limit (MHz)	
°C	V_{DC}	F_L	F_H	F_L	F_H
-30	3.6	2305.545400	2314.484800	2305	2315
-20		2305.545700	2314.485100	2305	2315
-10		2305.546100	2314.486300	2305	2315
0		2305.545600	2314.487800	2305	2315
10		2305.546200	2314.486600	2305	2315
20		2305.542700	2314.486300	2305	2315
30		2305.540000	2314.485700	2305	2315
40		2305.539400	2314.486300	2305	2315
50		2305.540600	2314.487500	2305	2315
20	3.4	2305.540100	2314.487500	2305	2315
20	4.2	2305.539500	2314.485700	2305	2315

Upper:

QPSK, Channel Bandwidth:10MHz					
Temperature	Voltage	Test Result (MHz)		Limit (MHz)	
°C	V_{DC}	F_L	F_H	F_L	F_H
-30	3.6	2350.509800	2359.481800	2350	2360
-20		2350.508900	2359.482700	2350	2360
-10		2350.509700	2359.481500	2350	2360
0		2350.511200	2359.482500	2350	2360
10		2350.511200	2359.481300	2350	2360
20		2350.513700	2359.486300	2350	2360
30		2350.510400	2359.485400	2350	2360
40		2350.511000	2359.486000	2350	2360
50		2350.510600	2359.485200	2350	2360
20	3.4	2350.511600	2359.485700	2350	2360
20	4.2	2350.513400	2359.485100	2350	2360

16QAM, Channel Bandwidth:10MHz					
Temperature	Voltage	Test Result (MHz)		Limit (MHz)	
°C	V_{DC}	F_L	F_H	F_L	F_H
-30	3.6	2350.545100	2359.458800	2350	2360
-20		2350.544200	2359.458800	2350	2360
-10		2350.543000	2359.459600	2350	2360
0		2350.543000	2359.460600	2350	2360
10		2350.544200	2359.461800	2350	2360
20		2350.542700	2359.457300	2350	2360
30		2350.545700	2359.456100	2350	2360
40		2350.544800	2359.456100	2350	2360
50		2350.544000	2359.456100	2350	2360
20	3.4	2350.544500	2359.456600	2350	2360
20	4.2	2350.543900	2359.457200	2350	2360

Note: The fundamental emissions stay within the authorized bands of operation based on the frequency deviation measured is small, the extreme voltage was declared by applicant.

******* END OF REPORT *******