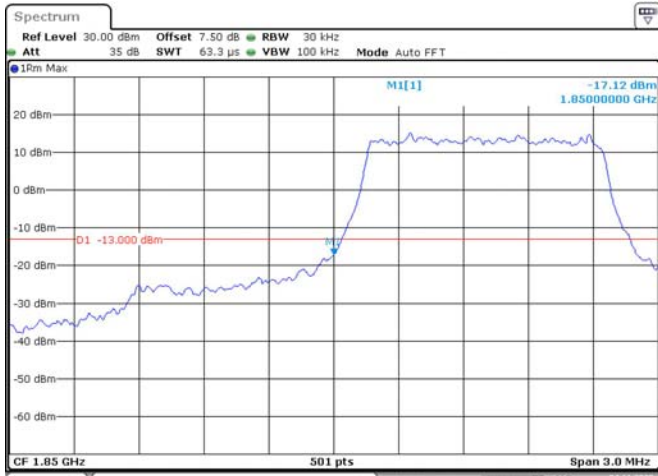


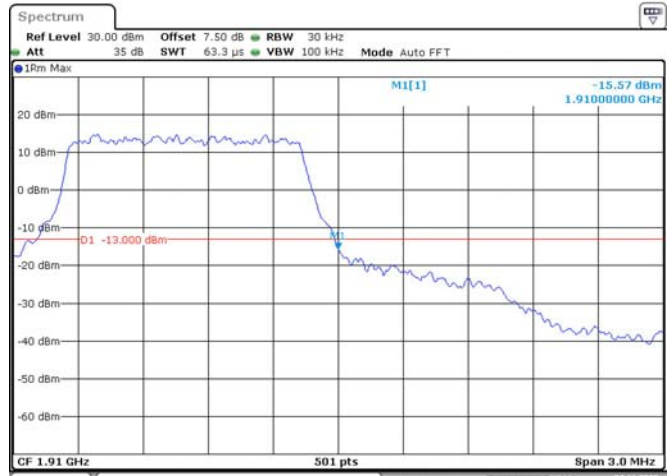
LTE Band 2:

1.4M, QPSK, Left Band Edge



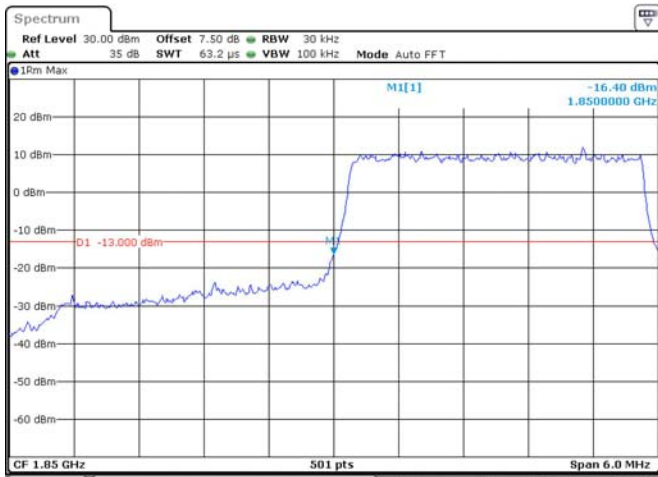
Date: 4.NOV.2020 11:20:14

1.4M, QPSK, Right Band Edge



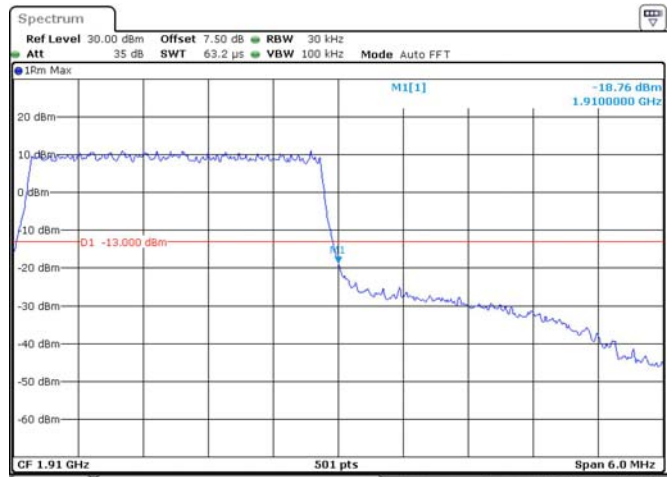
Date: 4.NOV.2020 11:20:59

3M, QPSK, Left Band Edge



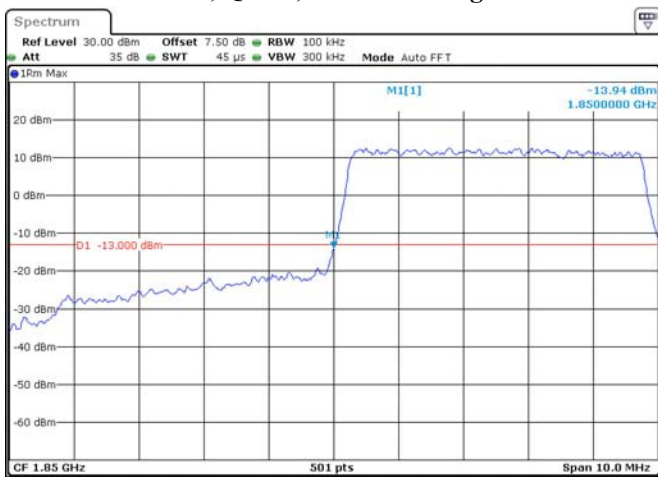
Date: 4.NOV.2020 11:21:37

3M, QPSK, Right Band Edge



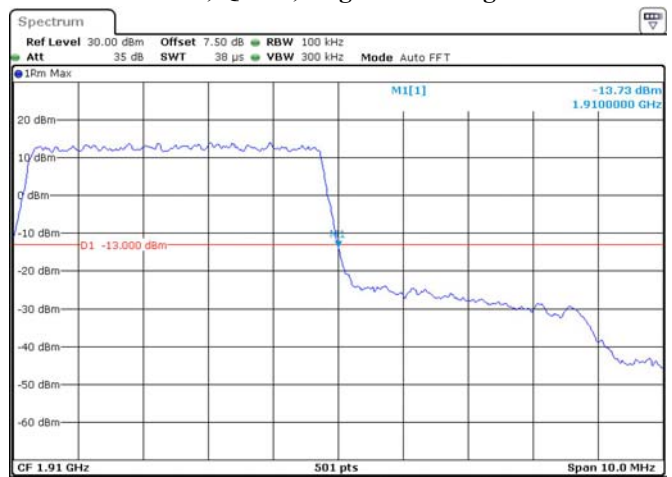
Date: 4.NOV.2020 11:22:10

5M, QPSK, Left Band Edge



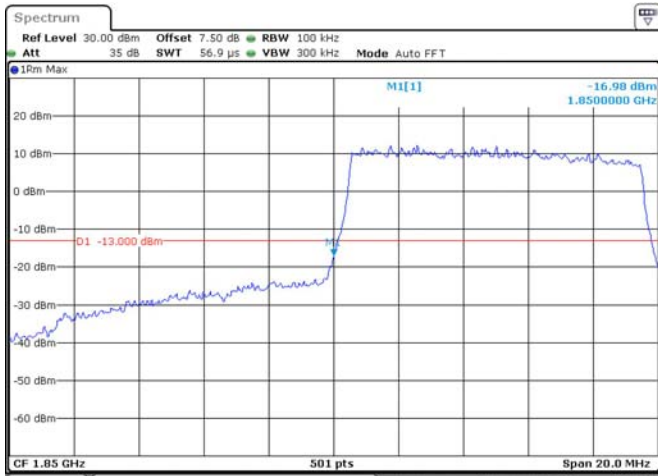
Date: 4.NOV.2020 15:37:45

5M, QPSK, Right Band Edge



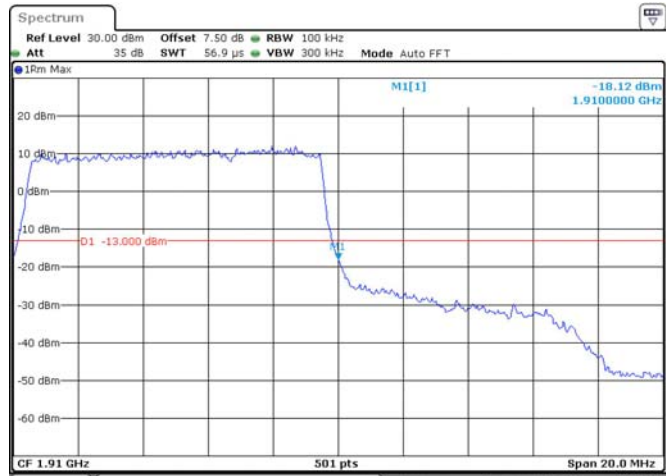
Date: 4.NOV.2020 11:23:47

10M, QPSK, Left Band Edge



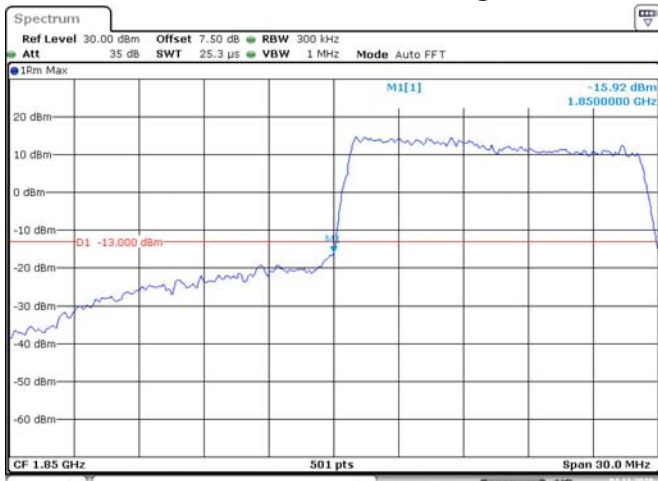
Date: 4.NOV.2020 11:25:17

10M, QPSK, Right Band Edge



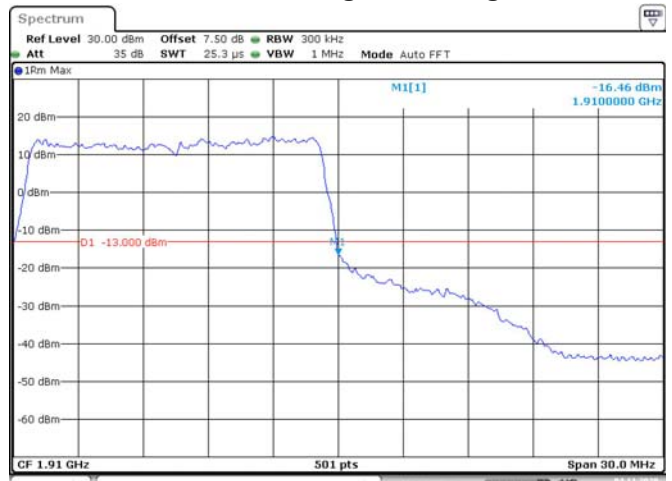
Date: 4.NOV.2020 11:26:08

15M, QPSK, Left Band Edge



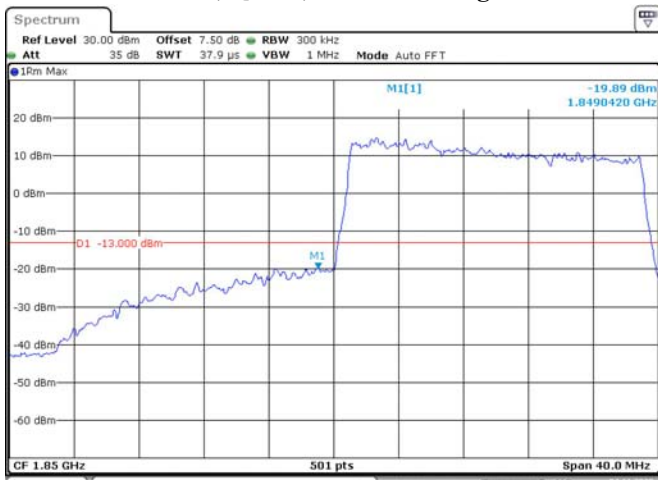
Date: 4.NOV.2020 11:27:14

15M, QPSK, Right Band Edge



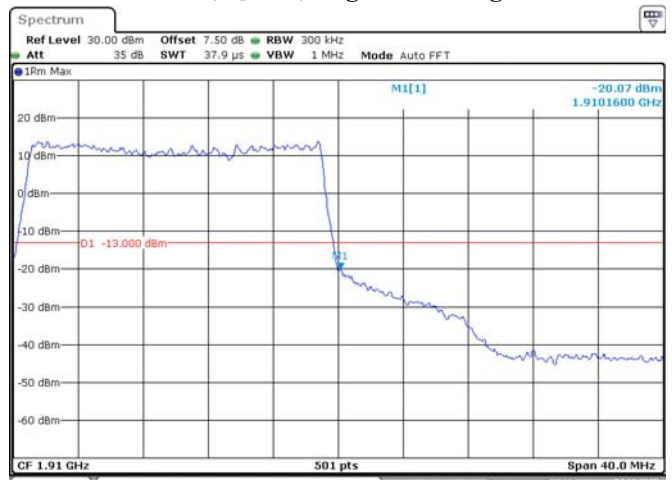
Date: 4.NOV.2020 11:28:24

20M, QPSK, Left Band Edge



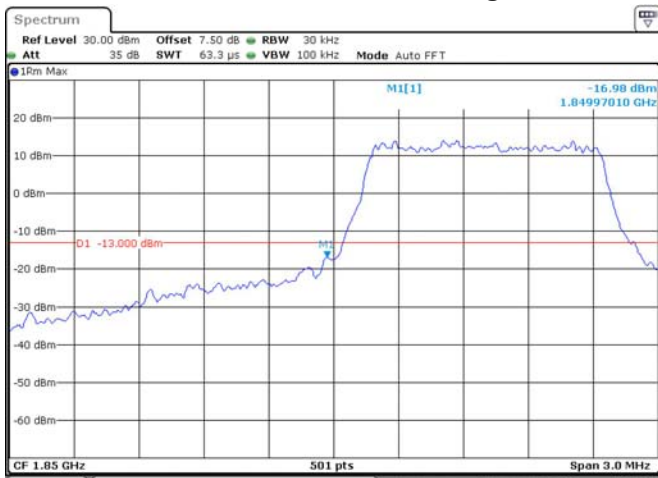
Date: 4.NOV.2020 11:29:28

20M, QPSK, Right Band Edge



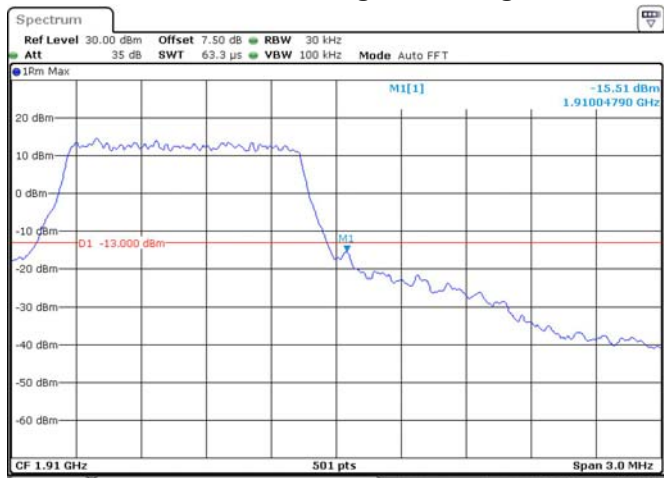
Date: 4.NOV.2020 11:30:44

1.4M, 16QAM, Left Band Edge



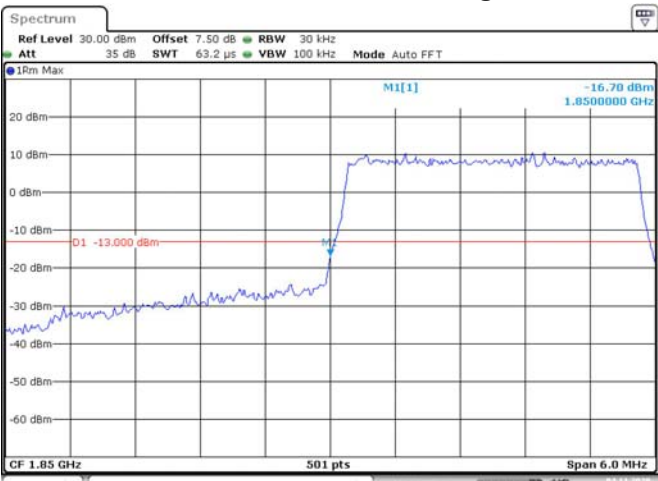
Date: 4.NOV.2020 11:20:36

1.4M, 16QAM, Right Band Edge



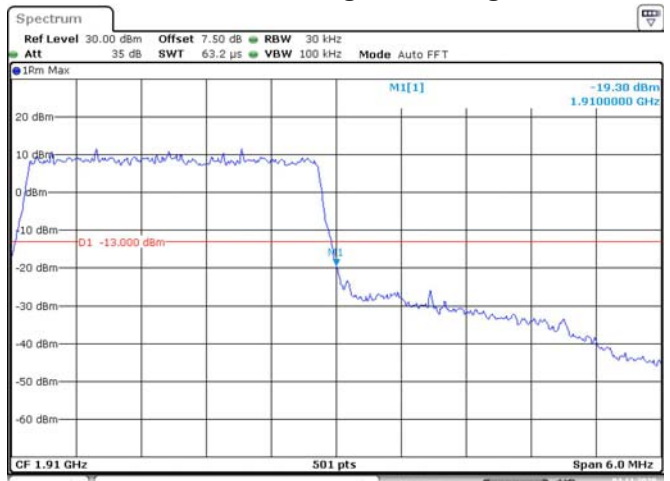
Date: 4.NOV.2020 11:21:15

3M, 16QAM, Left Band Edge



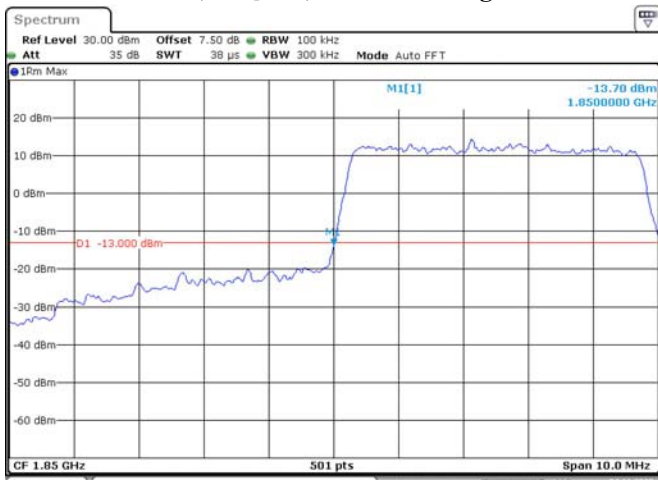
Date: 4.NOV.2020 11:21:53

3M, 16QAM, Right Band Edge



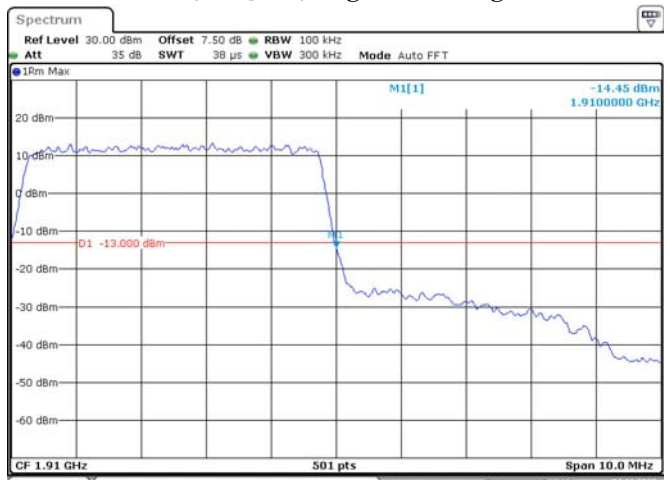
Date: 4.NOV.2020 11:22:32

5M, 16QAM, Left Band Edge



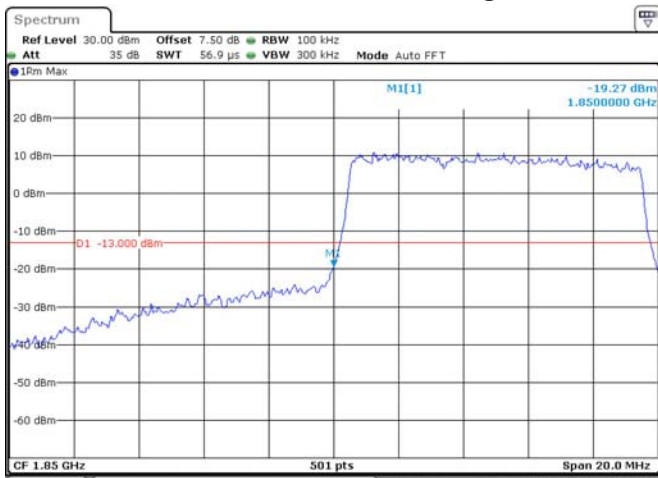
Date: 4.NOV.2020 11:23:23

5M, 16QAM, Right Band Edge



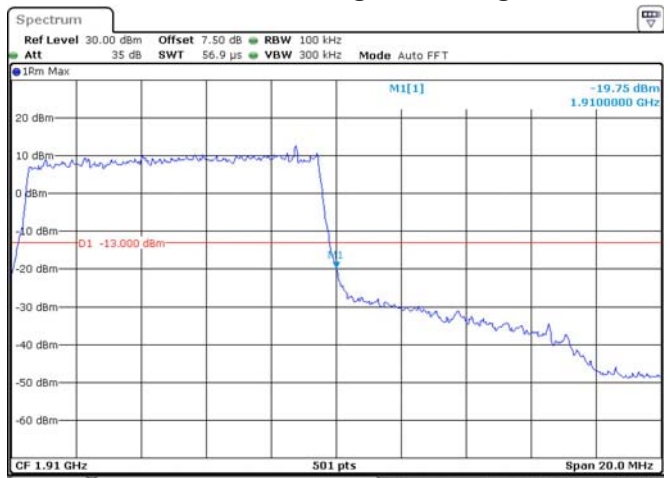
Date: 4.NOV.2020 11:24:15

10M, 16QAM, Left Band Edge



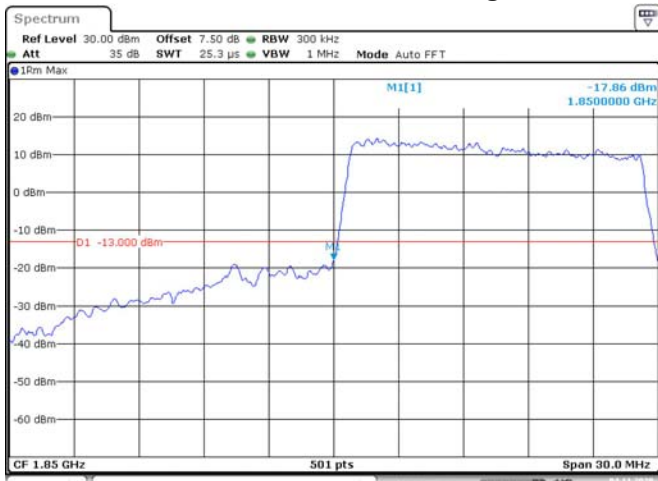
Date: 4.NOV.2020 11:25:41

10M, 16QAM, Right Band Edge



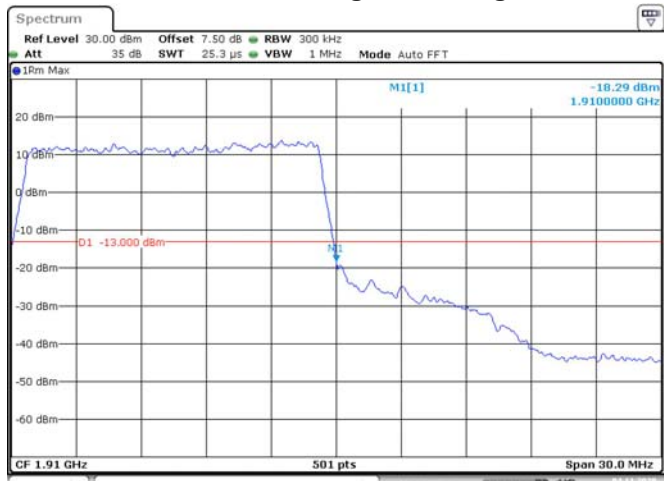
Date: 4.NOV.2020 11:26:37

15M, 16QAM, Left Band Edge



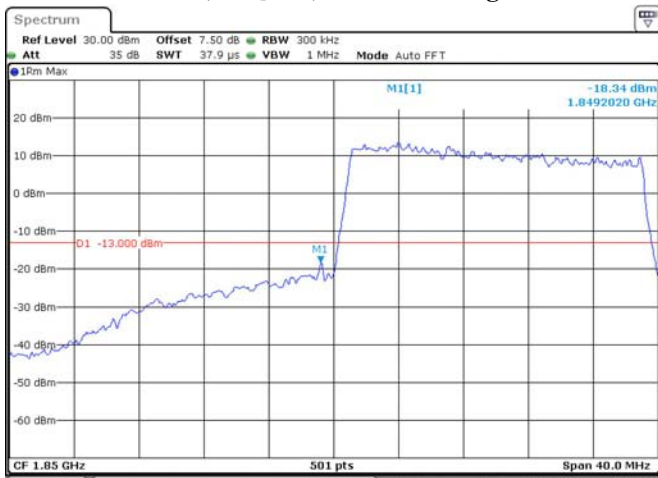
Date: 4.NOV.2020 11:27:44

15M, 16QAM, Right Band Edge



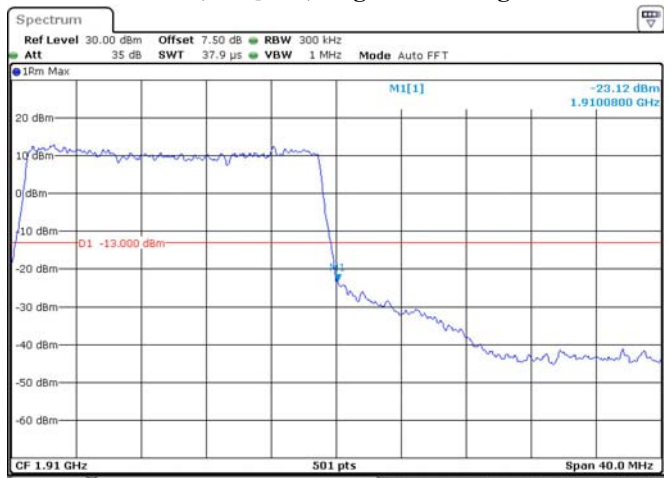
Date: 4.NOV.2020 11:28:51

20M, 16QAM, Left Band Edge



Date: 4.NOV.2020 11:30:01

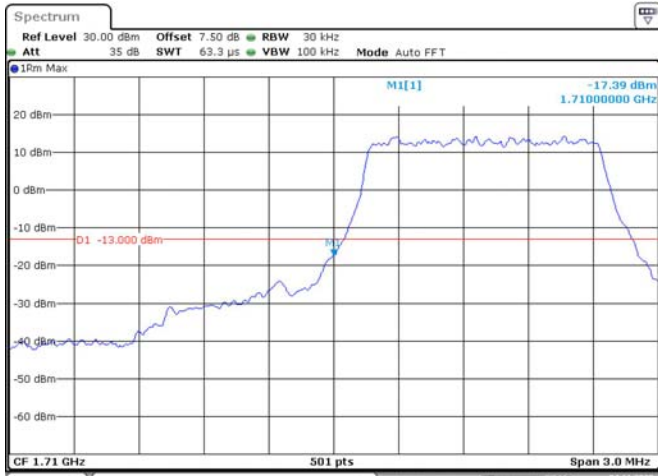
20M, 16QAM, Right Band Edge



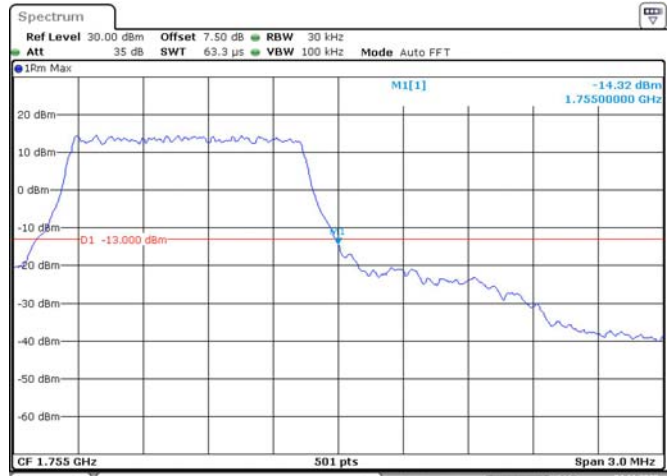
Date: 4.NOV.2020 11:31:23

LTE Band 4:

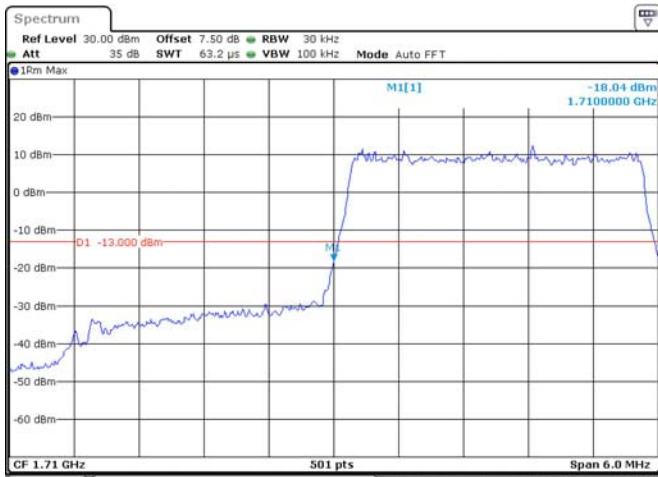
1.4M, QPSK, Left Band Edge



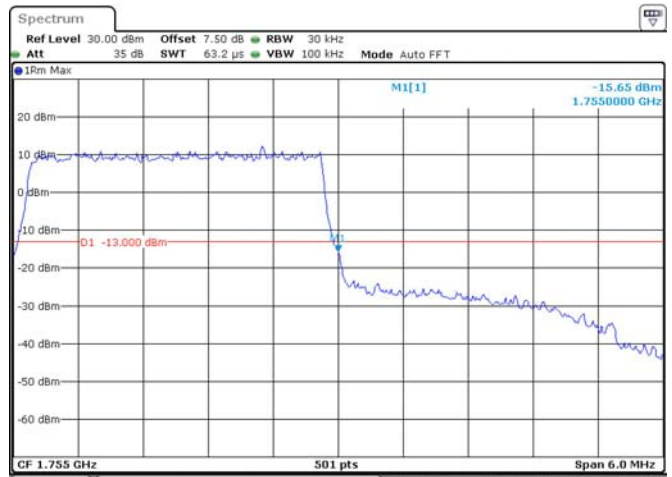
1.4M, QPSK, Right Band Edge



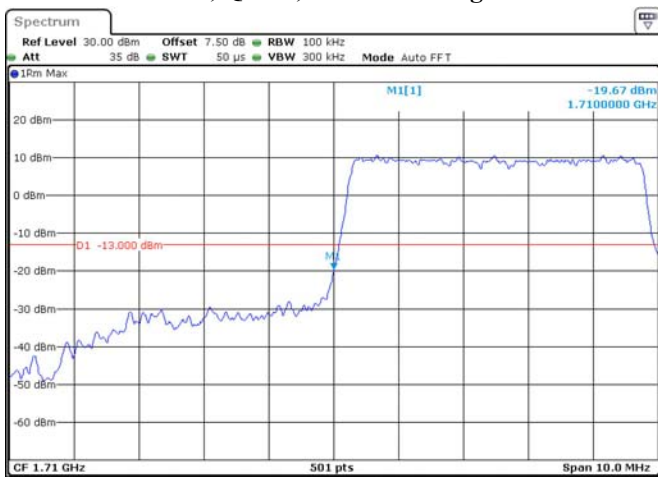
3M, QPSK, Left Band Edge



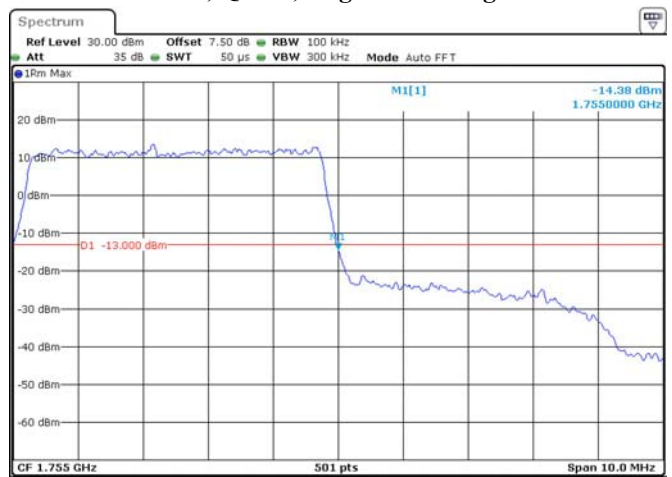
3M, QPSK, Right Band Edge



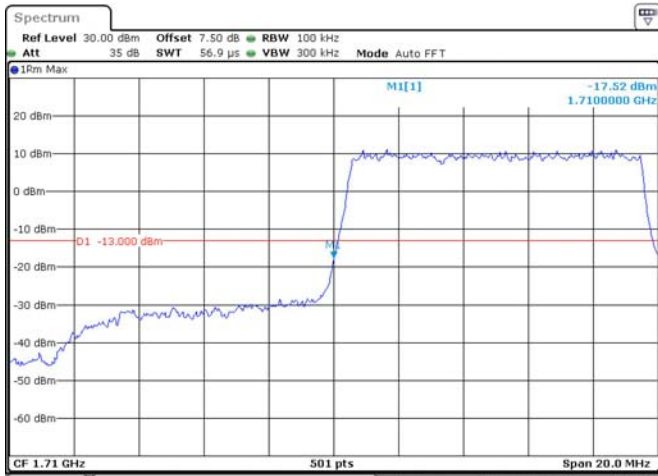
5M, QPSK, Left Band Edge



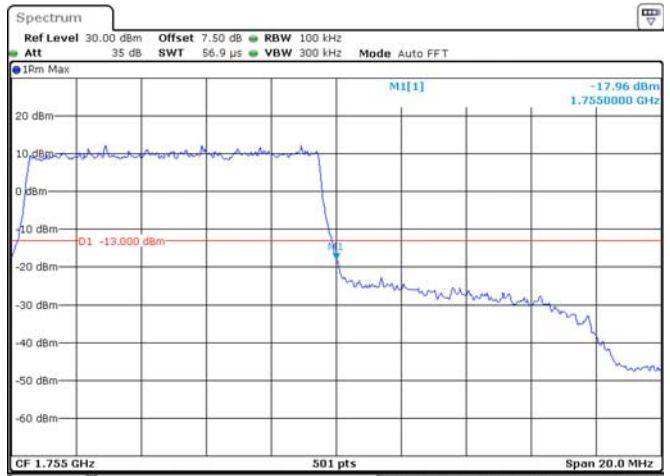
5M, QPSK, Right Band Edge



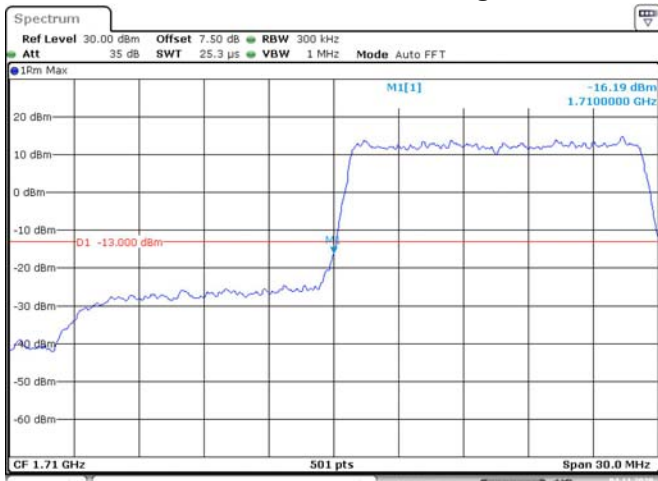
10M, QPSK, Left Band Edge



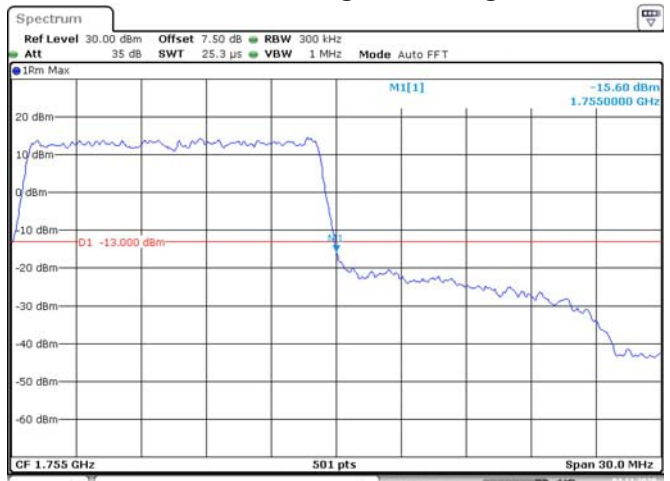
10M, QPSK, Right Band Edge



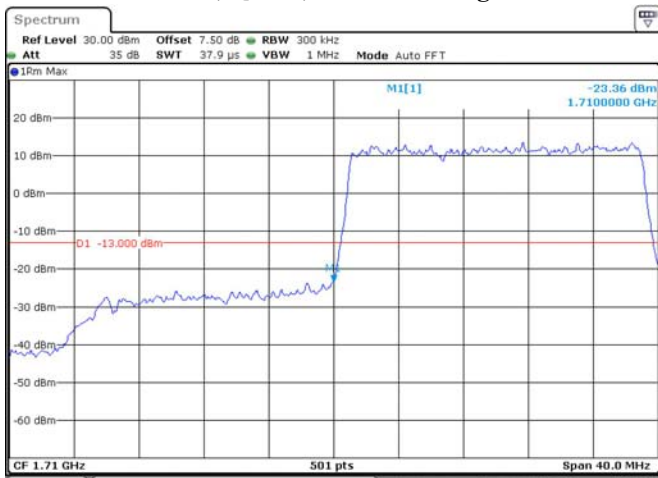
15M, QPSK, Left Band Edge



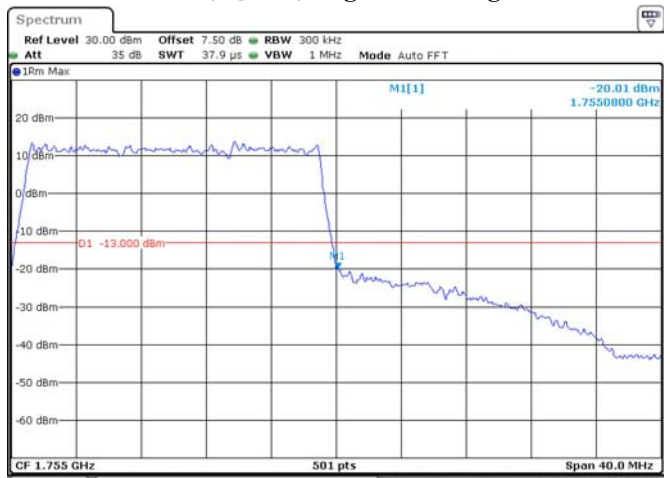
15M, QPSK, Right Band Edge



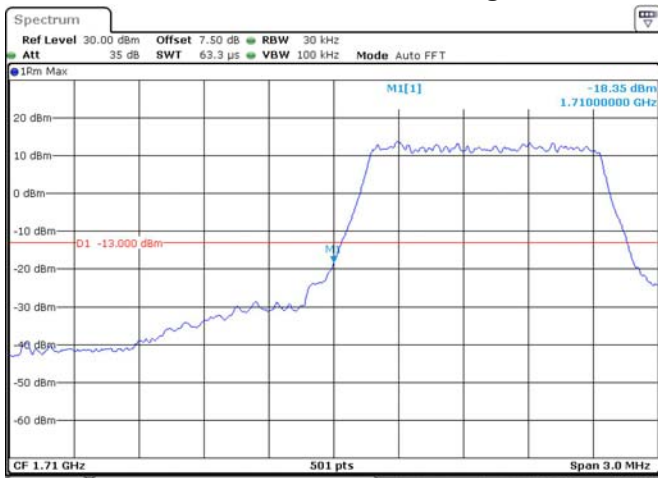
20M, QPSK, Left Band Edge



20M, QPSK, Right Band Edge

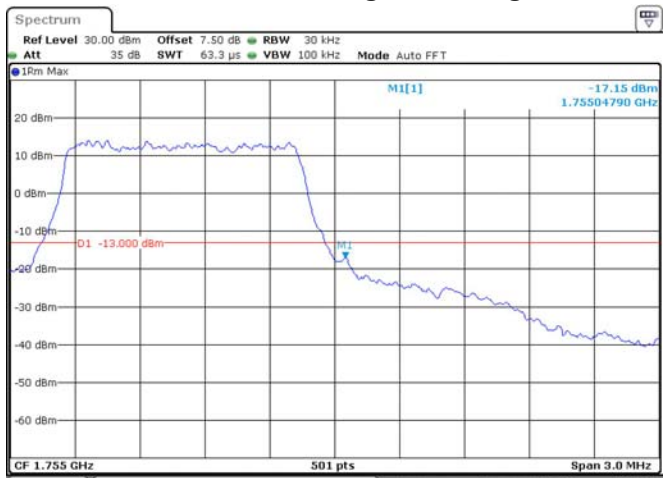


1.4M, 16QAM, Left Band Edge



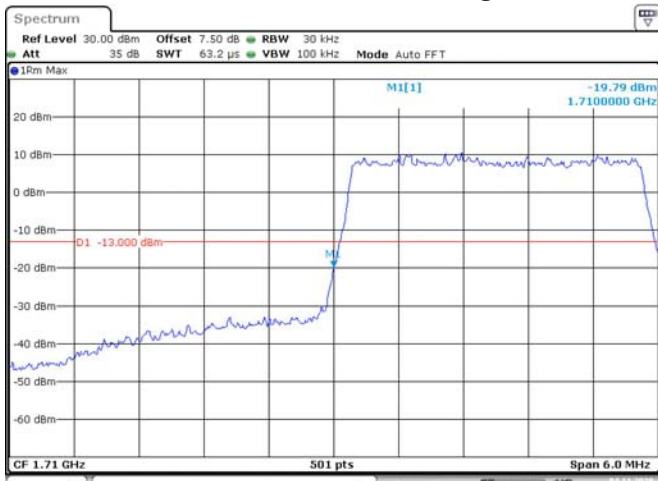
Date: 4.NOV.2020 11:32:10

1.4M, 16QAM, Right Band Edge



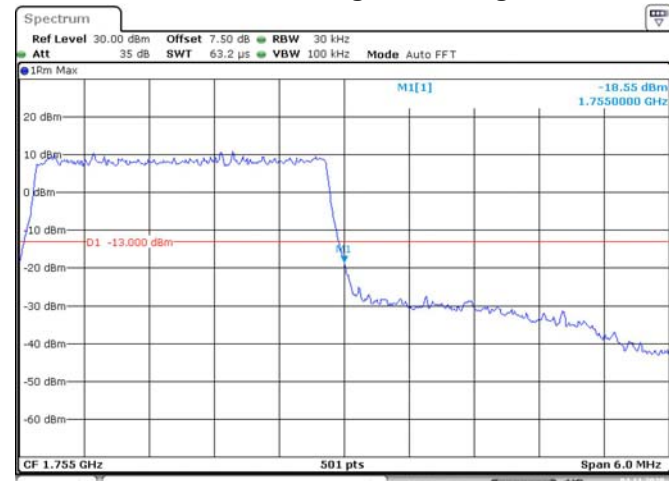
Date: 4.NOV.2020 11:32:49

3M, 16QAM, Left Band Edge



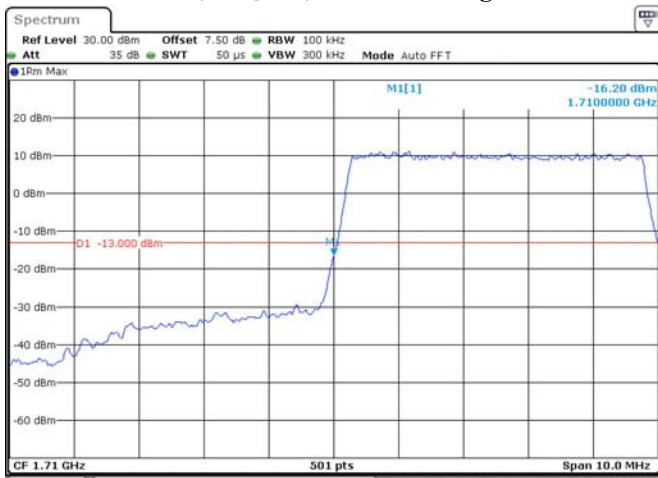
Date: 4.NOV.2020 11:33:27

3M, 16QAM, Right Band Edge



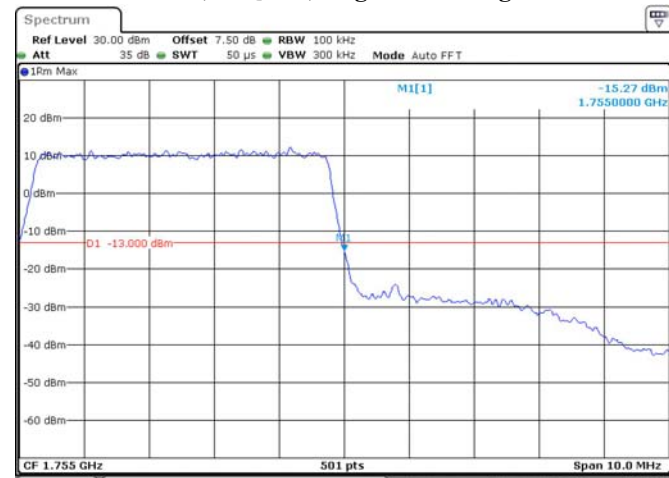
Date: 4.NOV.2020 11:34:02

5M, 16QAM, Left Band Edge



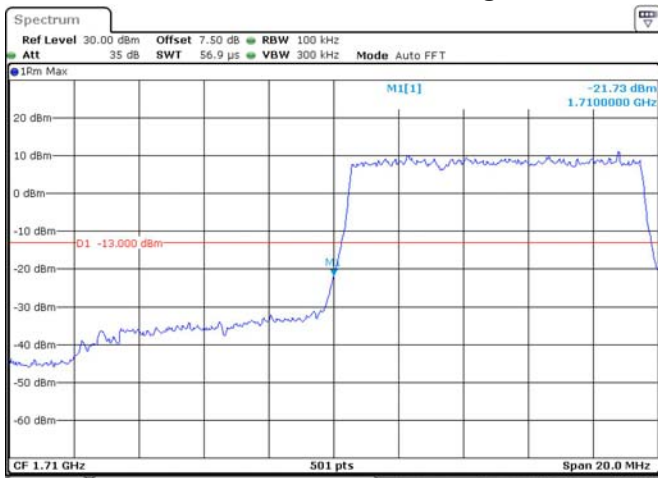
Date: 4.NOV.2020 15:41:14

5M, 16QAM, Right Band Edge



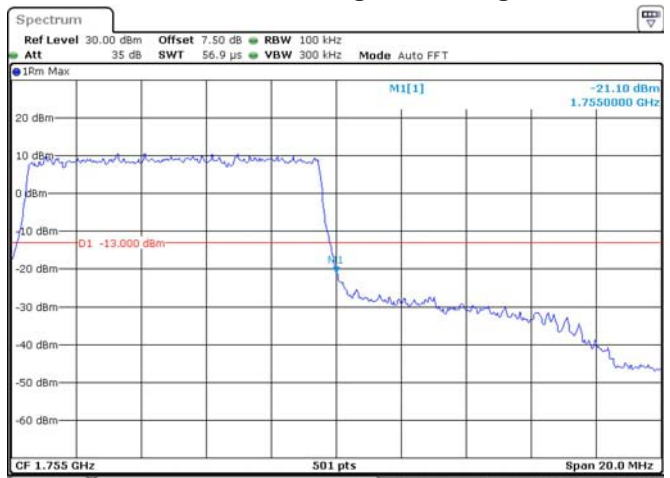
Date: 4.NOV.2020 15:42:25

10M, 16QAM, Left Band Edge



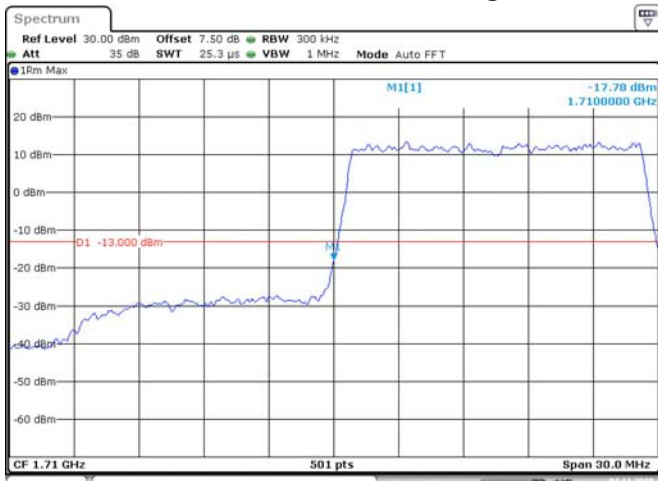
Date: 4.NOV.2020 11:36:32

10M, 16QAM, Right Band Edge



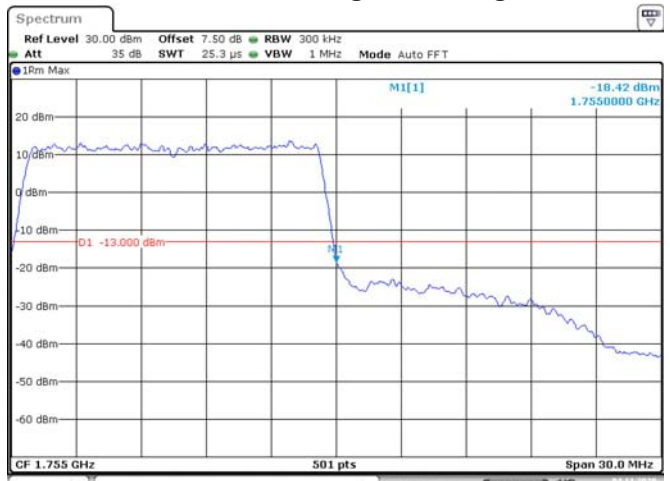
Date: 4.NOV.2020 11:37:28

15M, 16QAM, Left Band Edge



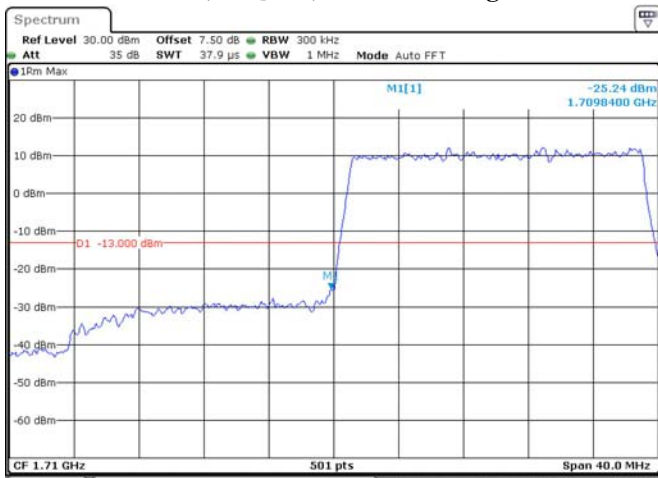
Date: 4.NOV.2020 11:38:38

15M, 16QAM, Right Band Edge



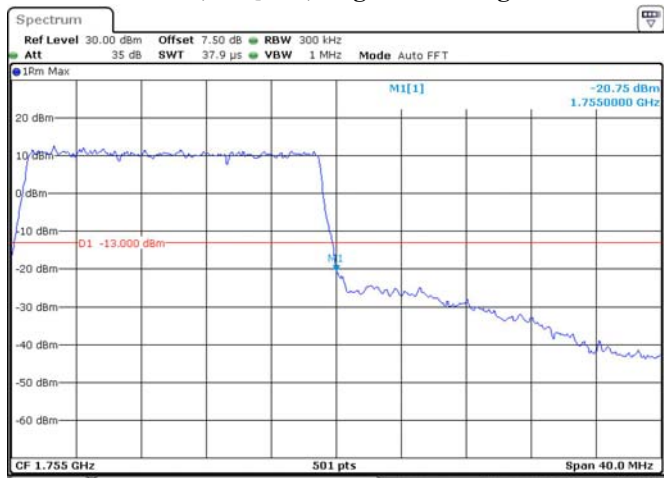
Date: 4.NOV.2020 11:39:40

20M, 16QAM, Left Band Edge



Date: 4.NOV.2020 11:40:44

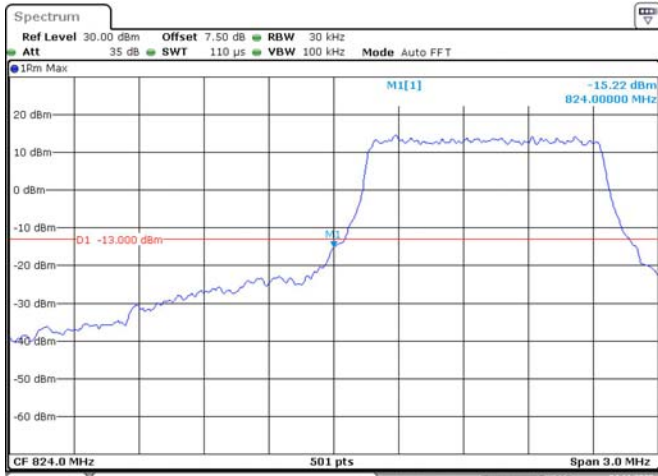
20M, 16QAM, Right Band Edge



Date: 4.NOV.2020 11:41:49

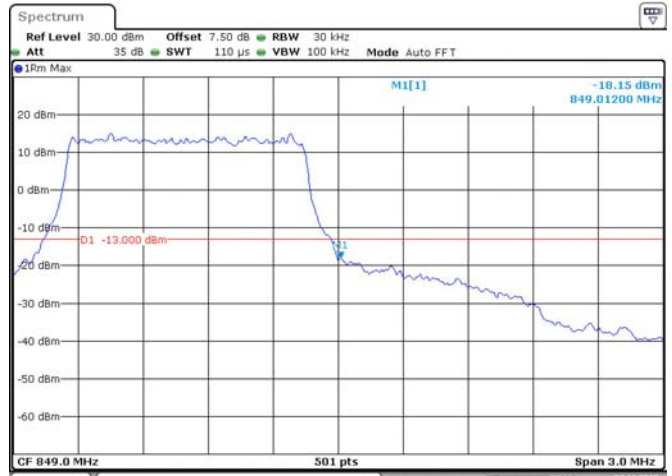
LTE Band 5:

1.4M, QPSK, Left Band Edge



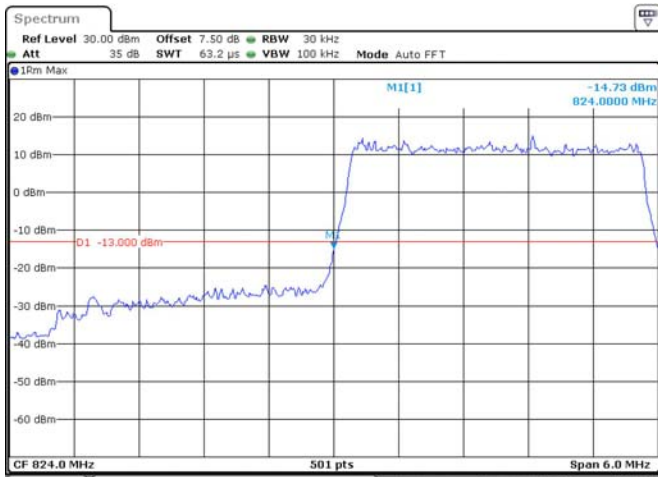
Date: 4.NOV.2020 15:46:27

1.4M, QPSK, Right Band Edge



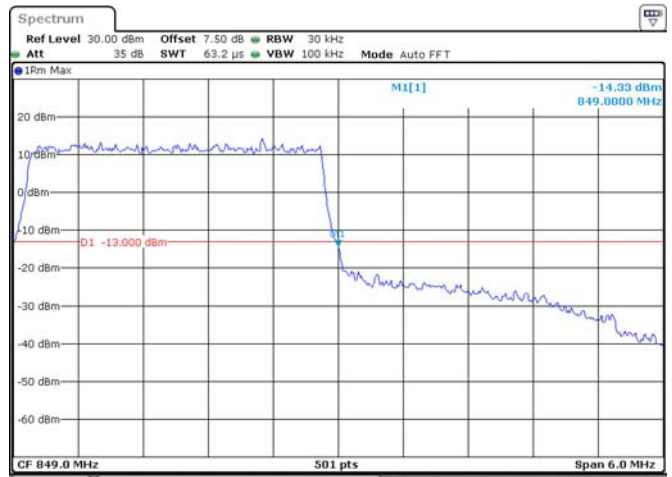
Date: 4.NOV.2020 15:49:17

3M, QPSK, Left Band Edge



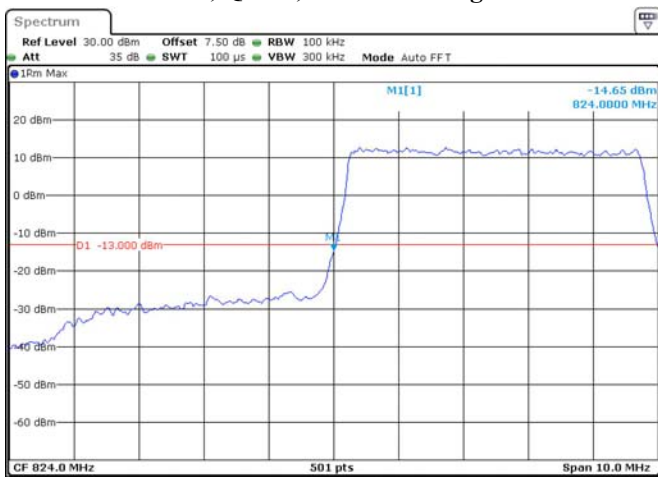
Date: 4.NOV.2020 11:43:24

3M, QPSK, Right Band Edge



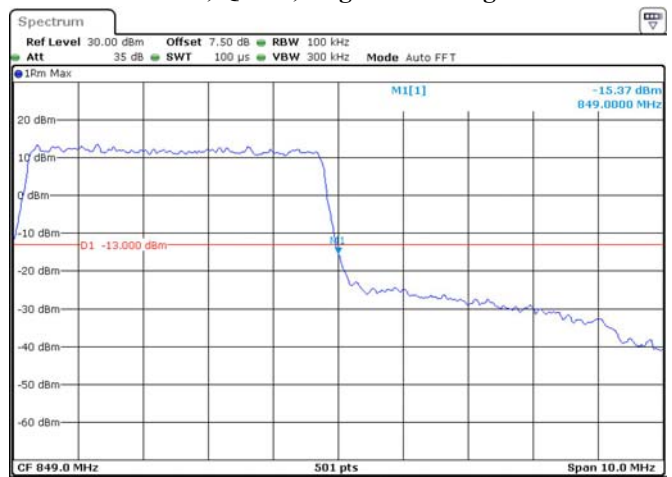
Date: 4.NOV.2020 11:44:00

5M, QPSK, Left Band Edge



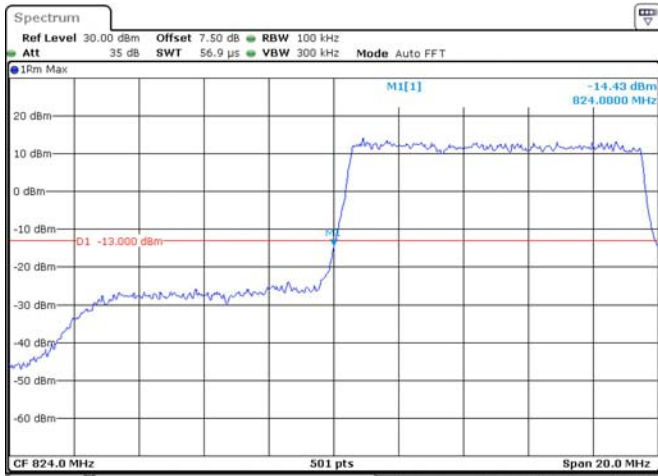
Date: 4.NOV.2020 15:54:22

5M, QPSK, Right Band Edge

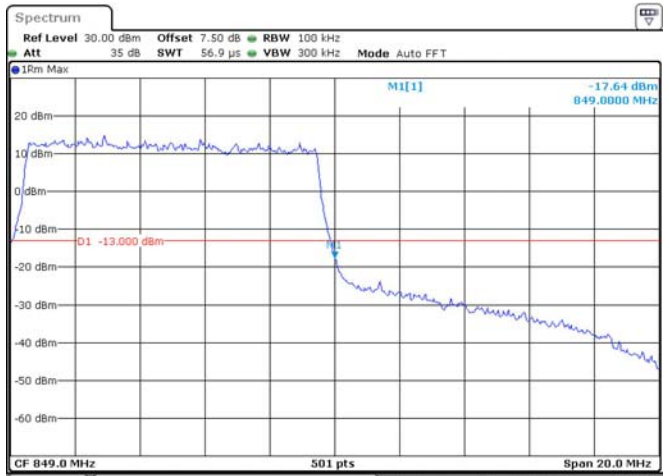


Date: 4.NOV.2020 15:52:33

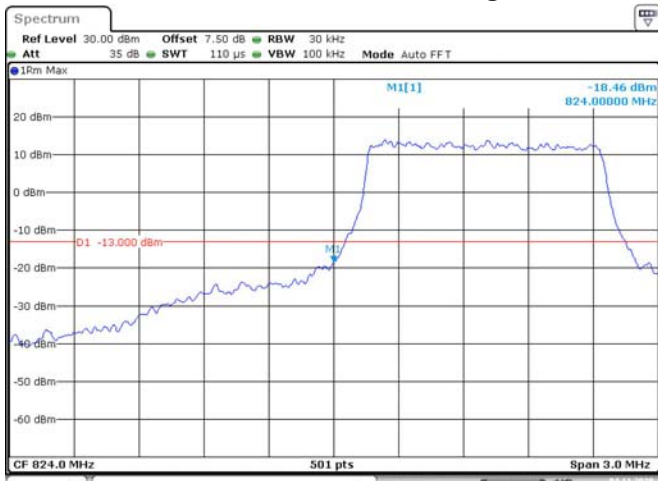
10M, QPSK, Left Band Edge



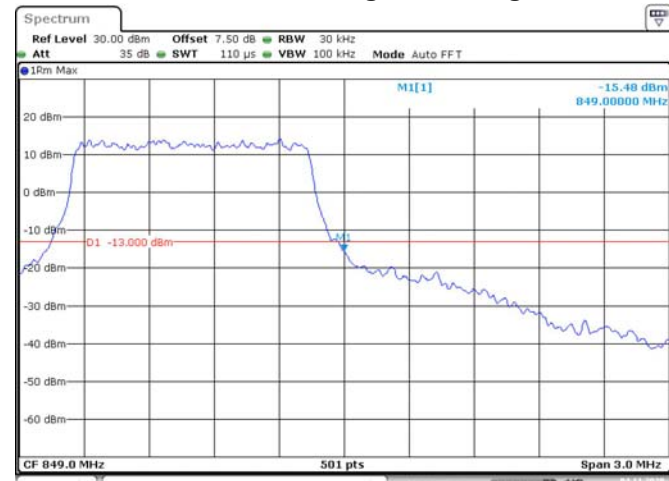
10M, QPSK, Right Band Edge



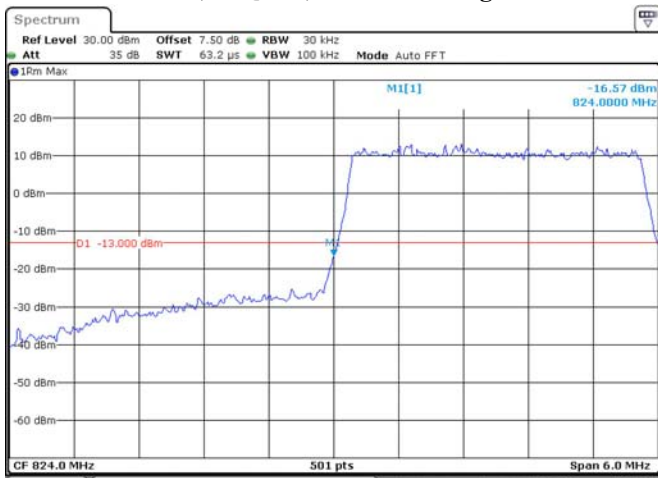
1.4M, 16QAM, Left Band Edge



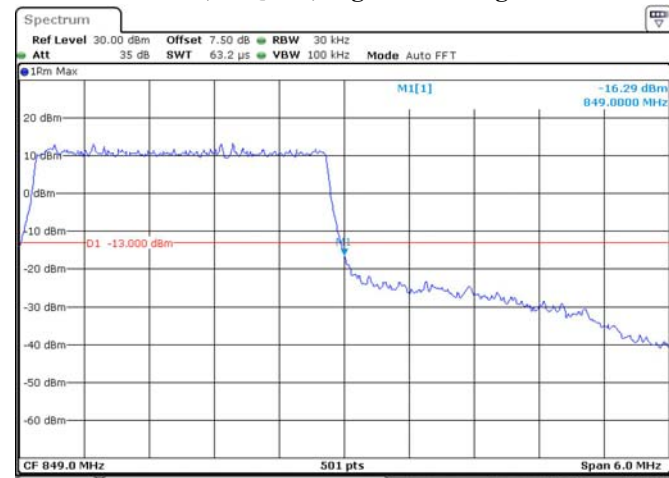
1.4M, 16QAM, Right Band Edge



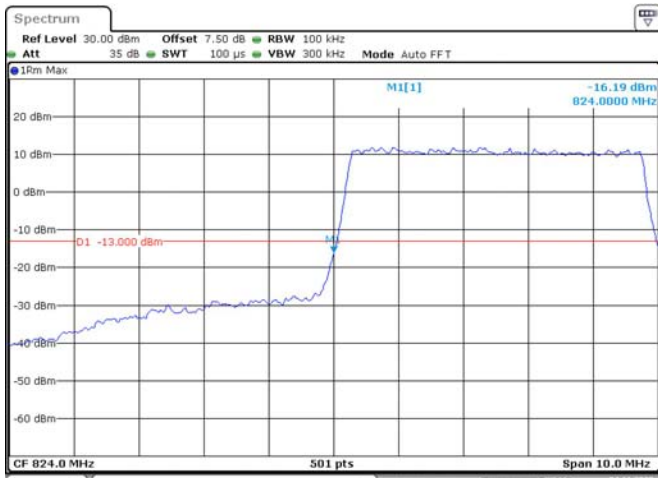
3M, 16QAM, Left Band Edge



3M, 16QAM, Right Band Edge

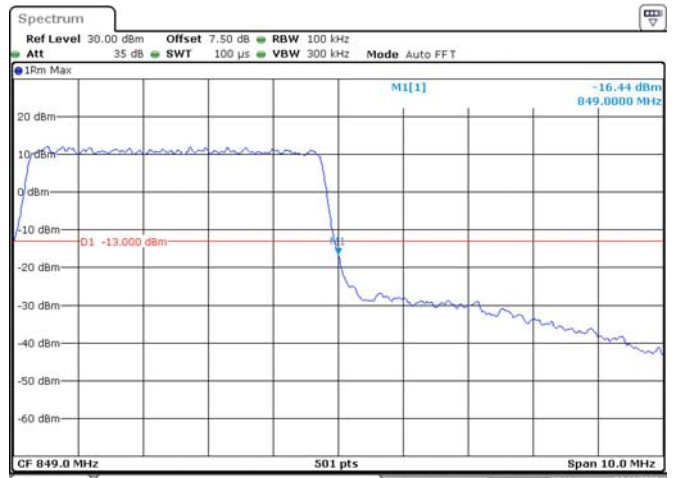


5M, 16QAM, Left Band Edge



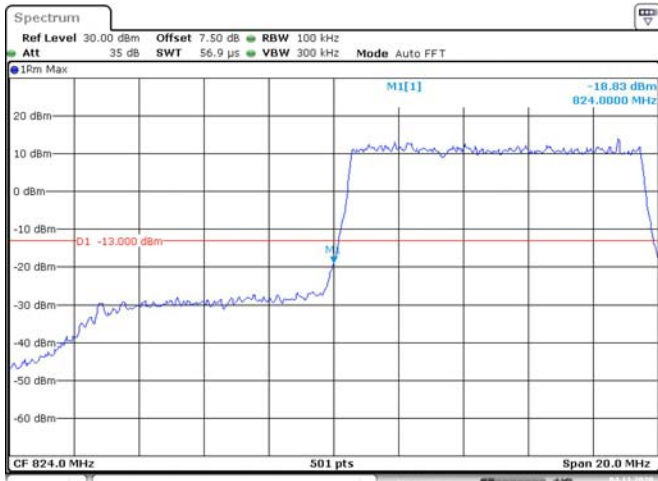
Date: 4.NOV.2020 15:53:58

5M, 16QAM, Right Band Edge



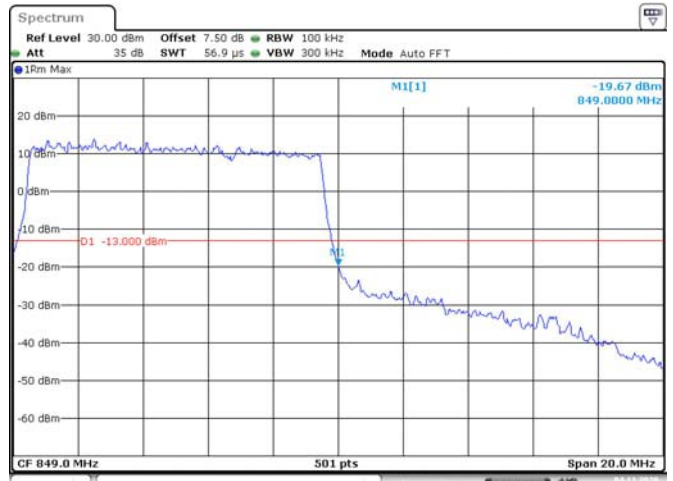
Date: 4.NOV.2020 15:52:59

10M, 16QAM, Left Band Edge



Date: 4.NOV.2020 11:47:00

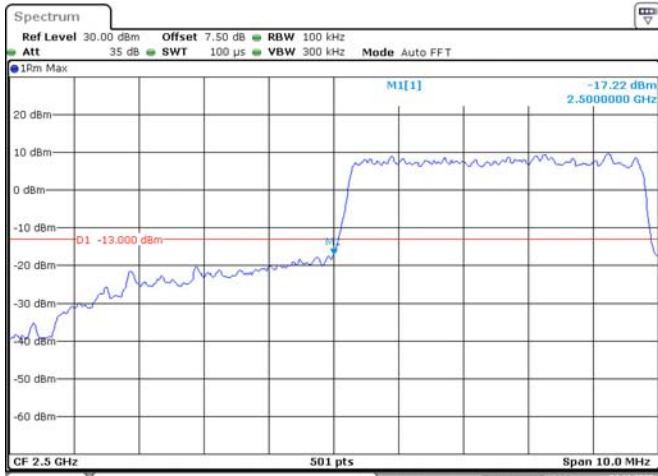
10M, 16QAM, Right Band Edge



Date: 4.NOV.2020 11:48:00

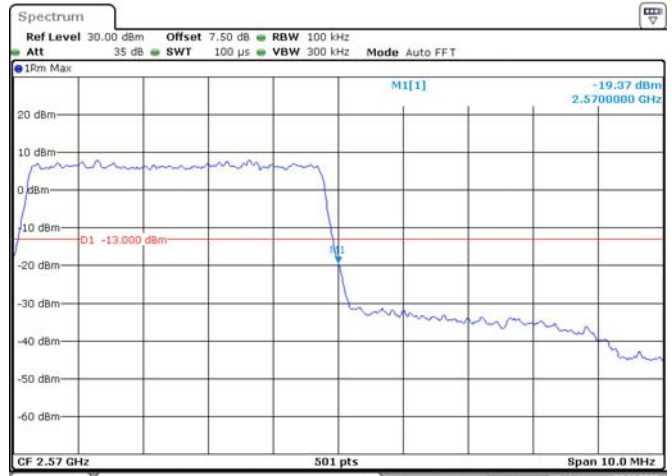
LTE Band 7:

5M, QPSK, Left Band Edge



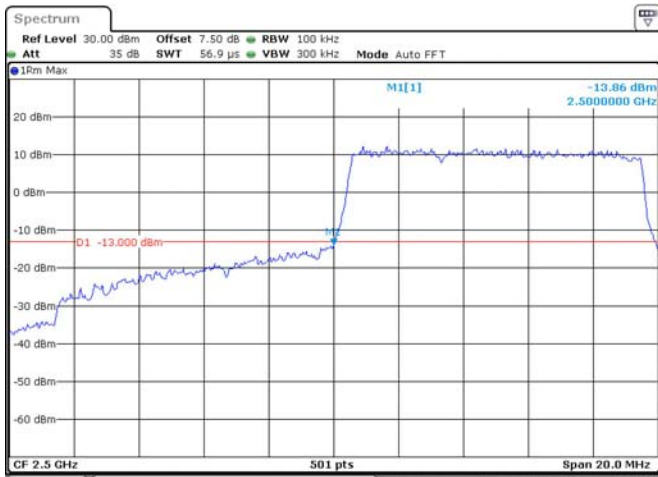
Date: 4.NOV.2020 15:56:54

5M, QPSK, Right Band Edge



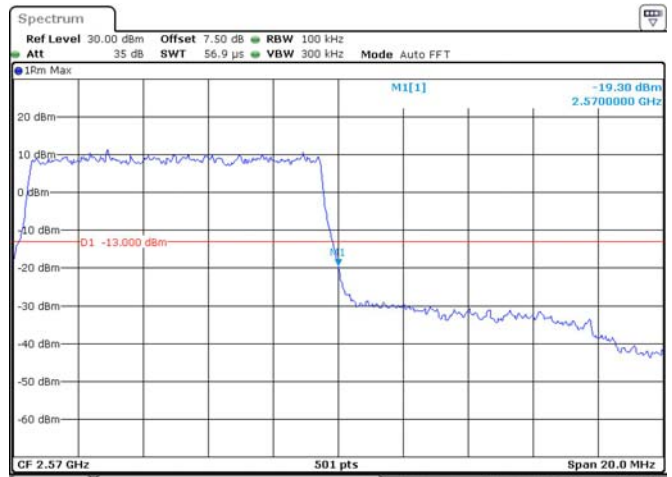
Date: 4.NOV.2020 15:59:30

10M, QPSK, Left Band Edge



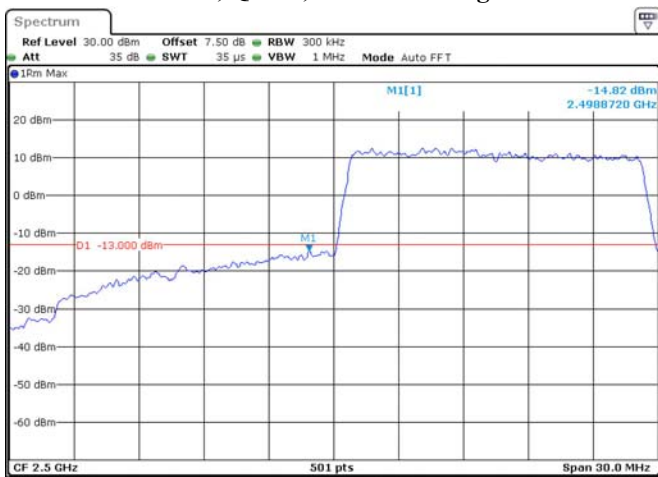
Date: 4.NOV.2020 11:50:19

10M, QPSK, Right Band Edge



Date: 4.NOV.2020 11:51:09

15M, QPSK, Left Band Edge



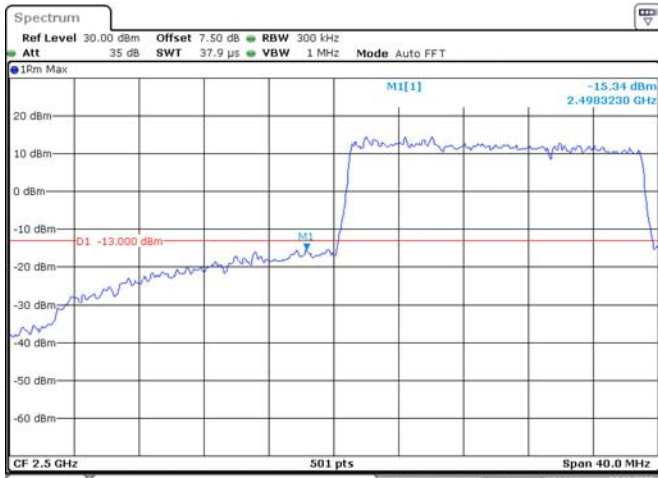
Date: 4.NOV.2020 16:03:44

15M, QPSK, Right Band Edge



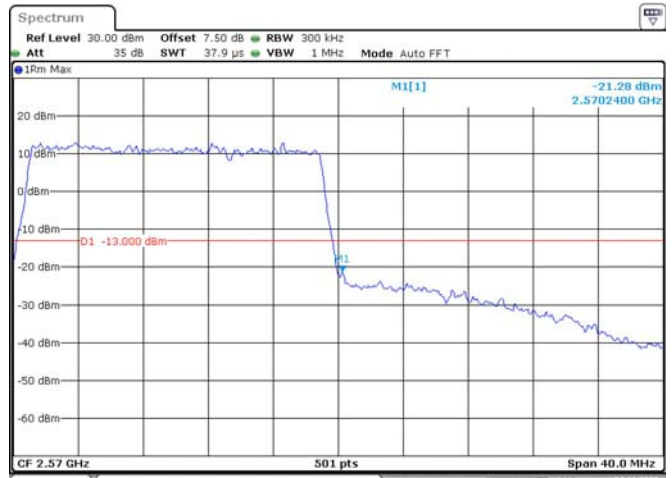
Date: 4.NOV.2020 11:53:28

20M, QPSK, Left Band Edge



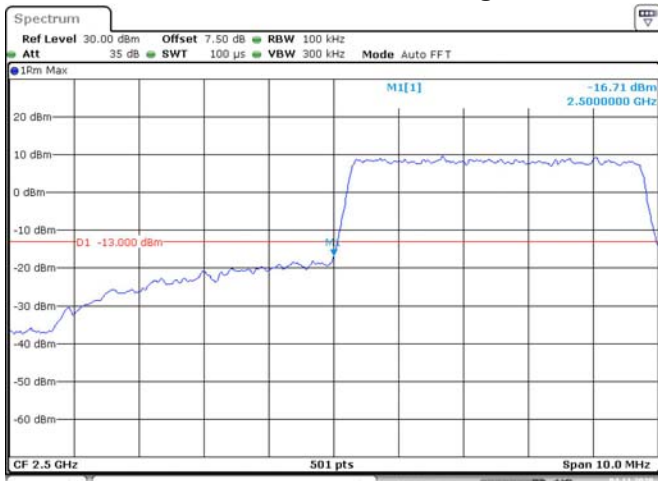
Date: 4.NOV.2020 11:54:34

20M, QPSK, Right Band Edge



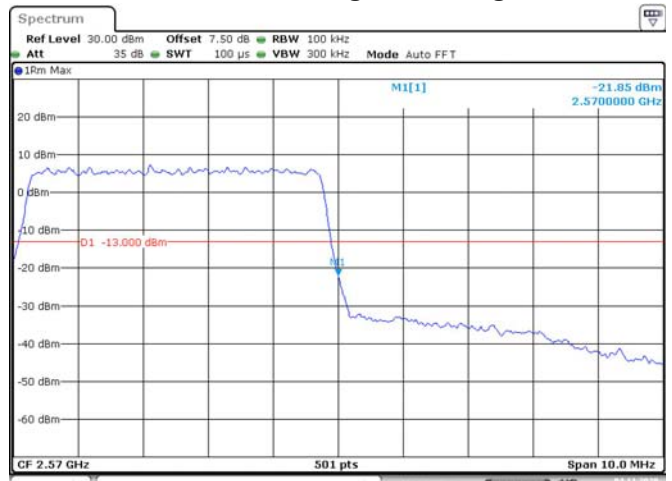
Date: 4.NOV.2020 11:55:50

5M, 16QAM, Left Band Edge



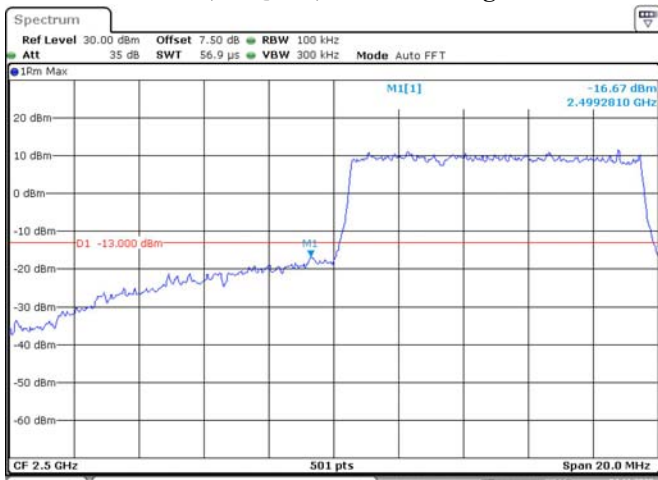
Date: 4.NOV.2020 15:57:23

5M, 16QAM, Right Band Edge



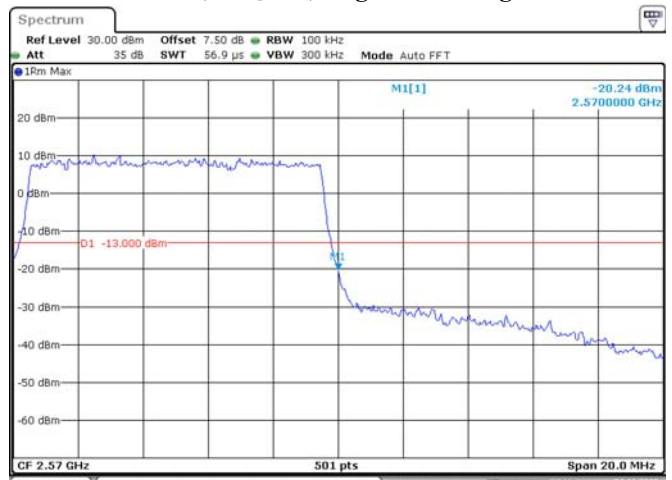
Date: 4.NOV.2020 15:59:06

10M, 16QAM, Left Band Edge



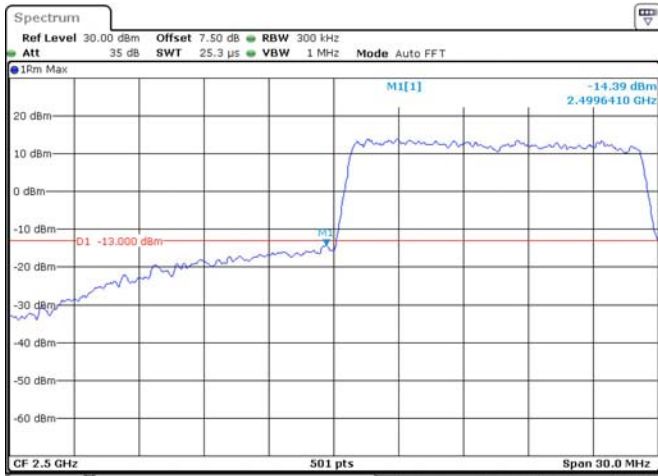
Date: 4.NOV.2020 11:50:42

10M, 16QAM, Right Band Edge



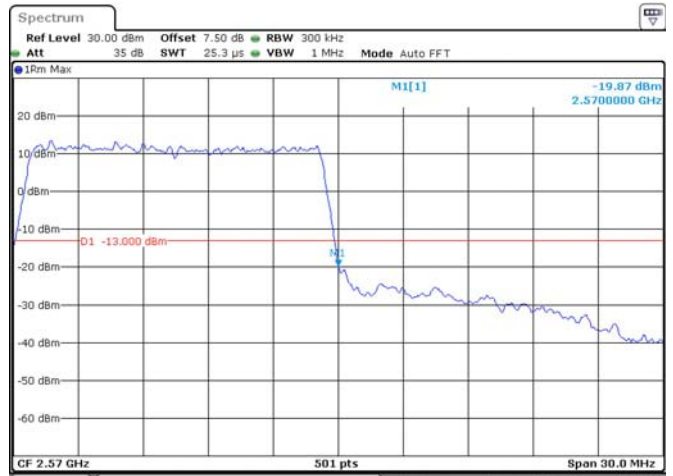
Date: 4.NOV.2020 11:51:35

15M, 16QAM, Left Band Edge



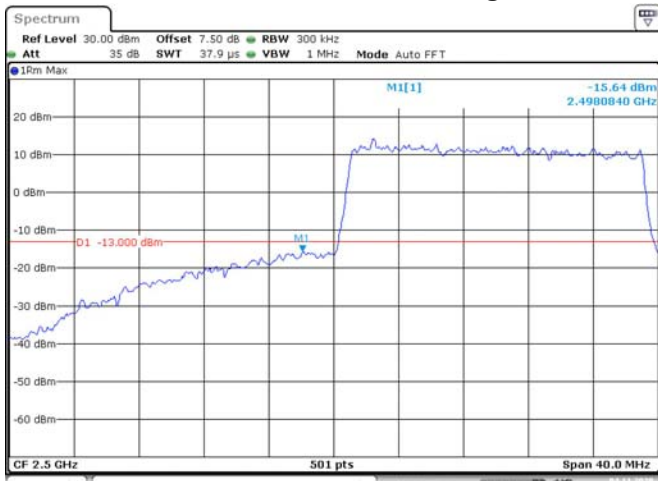
Date: 4.NOV.2020 11:52:48

15M, 16QAM, Right Band Edge



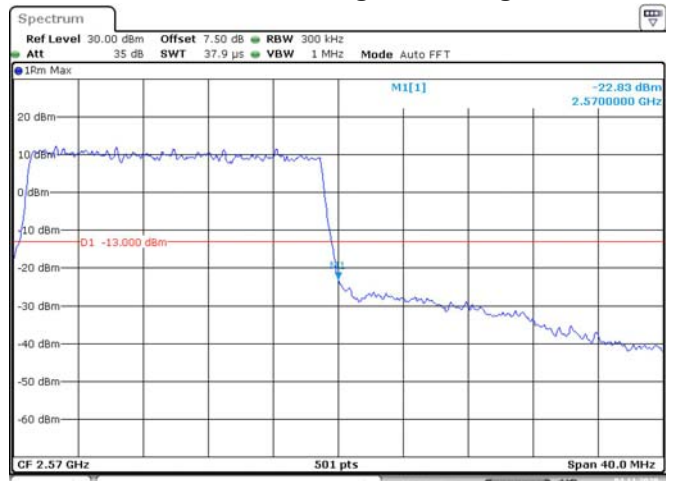
Date: 4.NOV.2020 11:53:57

20M, 16QAM, Left Band Edge



Date: 4.NOV.2020 11:55:10

20M, 16QAM, Right Band Edge



Date: 4.NOV.2020 11:56:23

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

Applicable Standard

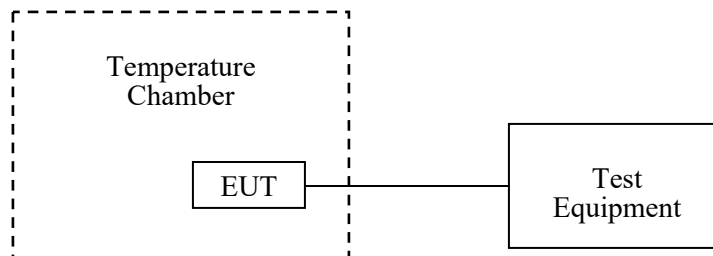
FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235, §27.54

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	2020-09-12	2021-09-12
R&S	Wideband Radio Communication Tester	CMW500	149216	2020-09-12	2021-09-12
ESPEC	Constant temperature and humidity Tester	ESX-4CA	018 463	2020-03-10	2021-03-09
UNI-T	Multimeter	UT39A	M130199938	2020-07-24	2021-07-24
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:	25.6~28.1 °C
Relative Humidity:	30~47%
ATM Pressure:	100.6~101.9kPa
Tester:	Rita Huang
Test Date:	2020-10-21~2020-11-05

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	-9	-0.01076	2.5
-20		-6	-0.00717	
-10		8	0.00956	
0		2	0.00239	
10		7	0.00837	
20		4	0.00478	
30		-1	-0.00120	
40		-5	-0.00598	
50		4	0.00478	
20		3.6	11	
20	4.35	5	0.00598	

8PSK, Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	3.8	2	0.00239	2.5
-20		-8	-0.00956	
-10		-3	-0.00359	
0		7	0.00837	
10		4	0.00478	
20		12	0.01434	
30		-11	-0.01315	
40		-7	-0.00837	
50		6	0.00717	
20		3.6	9	
20	4.35	4	0.00478	

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	-2	-0.00106	Pass
-20		3	0.00160	
-10		1	0.00053	
0		-5	-0.00266	
10		9	0.00479	
20		1	0.00053	
30		-4	-0.00213	
40		6	0.00319	
50		3	0.00160	
20		3.6	-8	
20	4.35	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	-11	-0.00585	Pass
-20		-5	-0.00266	
-10		9	0.00479	
0		4	0.00213	
10		2	0.00106	
20		8	0.00426	
30		-7	-0.00372	
40		-6	-0.00319	
50		7	0.00372	
20		3.6	-2	
20	4.35	-6	-0.00319	

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	-2	-0.00106	Pass
-20		3	0.00160	
-10		5	0.00266	
0		1	0.00053	
10		-2	-0.00106	
20		-8	-0.00426	
30		1	0.00053	
40		9	0.00479	
50		4	0.00213	
25		3.6	-5	
25	4.35	5	0.00266	

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	-6	-0.00717	2.5
-20		-5	-0.00598	
-10		4	0.00478	
0		11	0.01315	
10		-6	-0.00717	
20		-2	-0.00239	
30		7	0.00837	
40		5	0.00598	
50		2	0.00239	
25		3.6	-9	
25	4.35	4	0.00478	

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	-2.90	-0.0015	Pass
-20		9.69	0.0052	
-10		-7.37	-0.0039	
0		-6.47	-0.0034	
10		-8.67	-0.0046	
20		6.64	0.0035	
30		5.72	0.0030	
40		-9.57	-0.0051	
50		-7.43	-0.0040	
20		3.6	7.45	
20	4.35	-7.83	-0.0042	

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	-3.50	-0.0019	Pass
-20		-5.81	-0.0031	
-10		6.94	0.0037	
0		8.32	0.0044	
10		9.85	0.0052	
20		-9.39	-0.0050	
30		-7.70	-0.0041	
40		-5.05	-0.0027	
50		-7.52	-0.0040	
20		3.6	-6.67	
20	4.35	5.52	0.0029	

LTE Band 4

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
3.8	-30	1710.515500	1710	1754.485100	1755
	-20	1710.513100		1754.484800	
	-10	1710.514000		1754.486600	
	0	1710.512800		1754.487800	
	10	1710.513700		1754.485400	
	20	1710.513700		1754.486300	
	30	1710.514000		1754.486000	
	40	1710.515500		1754.484500	
50	1710.513100	1754.487500			
4.35	20	1710.515200		1754.486000	
3.6	20	1710.513700		1754.485100	

16QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
3.8	-30	1710.512500	1710	1754.487200	1755
	-20	1710.511900		1754.485700	
	-10	1710.513400		1754.488100	
	0	1710.513700		1754.486600	
	10	1710.511900		1754.488100	
	20	1710.513700		1754.486300	
	30	1710.514900		1754.486300	
	40	1710.514000		1754.488100	
50	1710.513100	1754.485400			
4.35	20	1710.514600		1754.486900	
3.6	20	1710.514900		1754.487200	

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	3.8	-0.23	-0.0003	2.5
-20		7.81	0.0093	
-10		9.22	0.0110	
0		-6.77	-0.0081	
10		8.27	0.0099	
20		7.16	0.0086	
30		-9.36	-0.0112	
40		8.82	0.0105	
50		8.01	0.0096	
20		3.6	-6.87	
20	4.35	7.33	0.0088	

Middle Channel, $f_c = 836.5$ MHz, Channel Bandwidth:10MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V_{DC}	Hz	ppm	ppm
-30	3.8	-0.44	-0.0005	2.5
-20		-7.86	-0.0094	
-10		-7.18	-0.0086	
0		7.01	0.0084	
10		-8.84	-0.0106	
20		-5.49	-0.0066	
30		-5.96	-0.0071	
40		-6.82	-0.0082	
50		-5.26	-0.0063	
20		3.6	-7.91	
20	4.35	6.77	0.0081	

LTE Band 7

QPSK, Channel Bandwidth:20MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
3.8	-30	2500.513100	2500	2569.486000	2570
	-20	2500.515500		2569.486900	
	-10	2500.513400		2569.487200	
	0	2500.513400		2569.485100	
	10	2500.513700		2569.484800	
	20	2500.513700		2569.486300	
	30	2500.513100		2569.488100	
	40	2500.512800		2569.487800	
50	2500.513100	2569.486600			
3.6	20	2500.514600		2569.485700	
4.35	20	2500.515200		2569.485100	

16QAM, Channel Bandwidth:20MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
3.8	-30	2500.512200	2500	2569.485100	2570
	-20	2500.512500		2569.487200	
	-10	2500.514000		2569.486600	
	0	2500.511900		2569.485700	
	10	2500.512800		2569.484800	
	20	2500.513700		2569.486300	
	30	2500.512800		2569.485100	
	40	2500.514000		2569.488100	
50	2500.513100	2569.485700			
3.6	20	2500.514000		2569.485100	
4.35	20	2500.511900		2569.486000	

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 *******