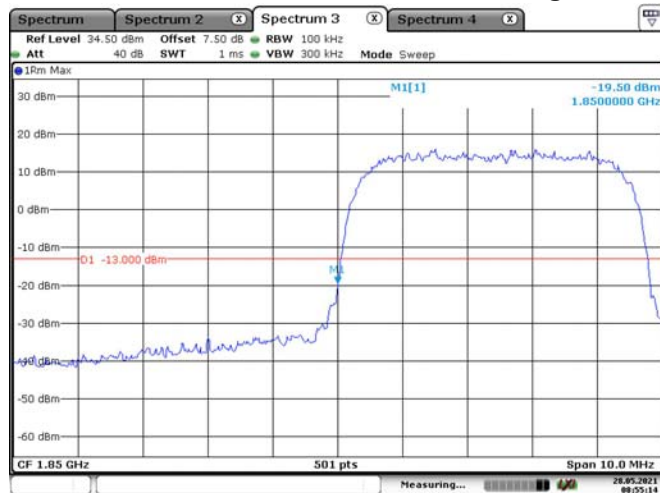


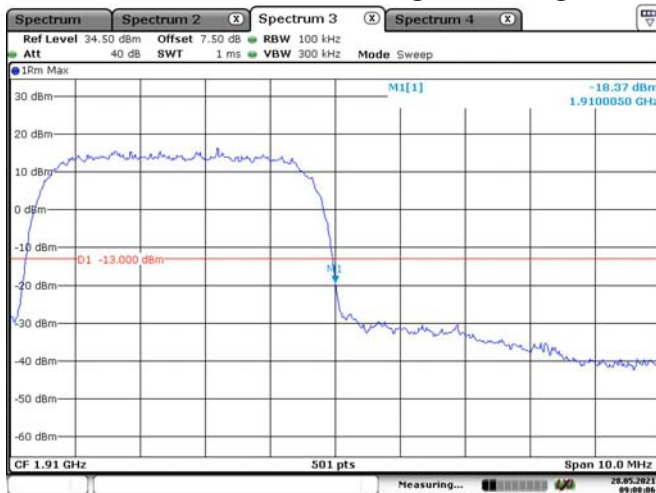
WCDMA

WCDMA Band II, RMC, Left Band Edge



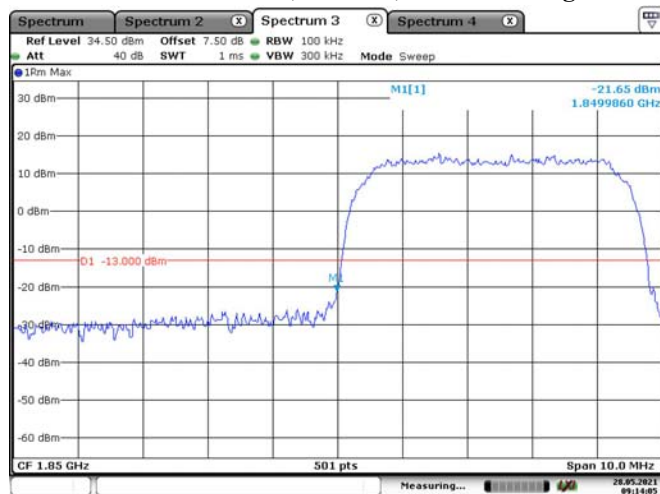
Date: 28.MAY.2021 09:05:14

WCDMA Band II, RMC, Right Band Edge



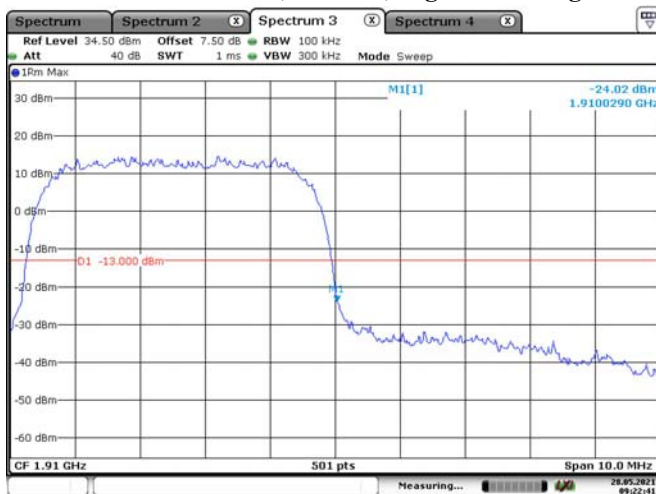
Date: 28.MAY.2021 09:08:06

WCDMA Band II, HSDPA, Left Band Edge



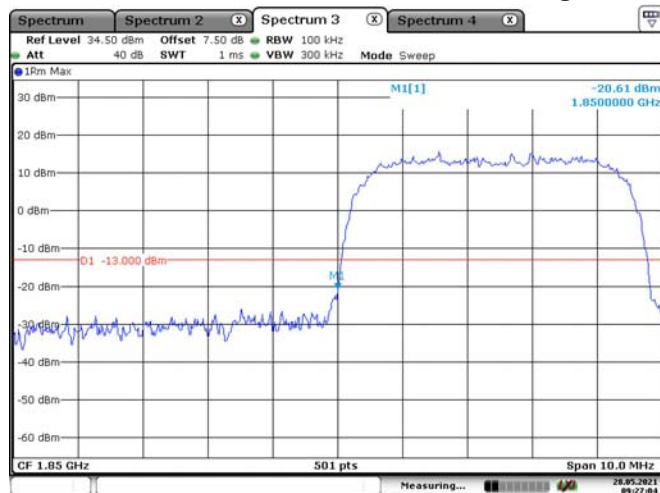
Date: 28.MAY.2021 09:14:05

WCDMA Band II, HSDPA, Right Band Edge



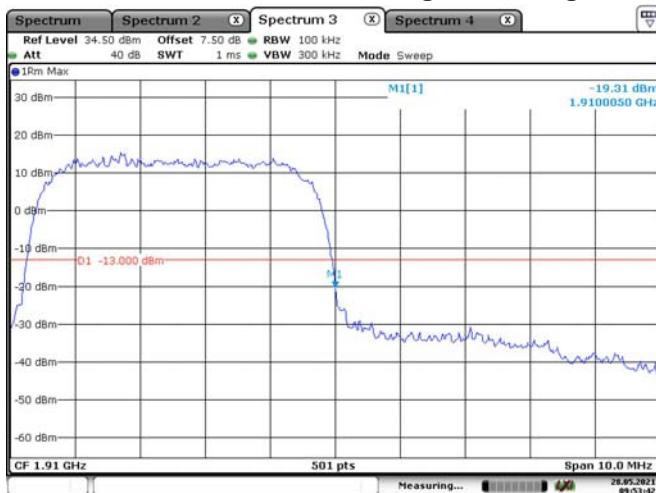
Date: 28.MAY.2021 09:22:41

WCDMA Band II, HSUPA, Left Band Edge



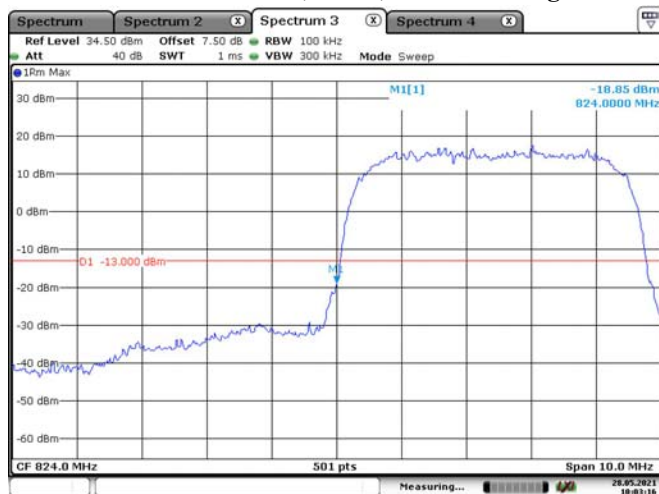
Date: 28.MAY.2021 09:27:04

WCDMA Band II, HSUPA, Right Band Edge



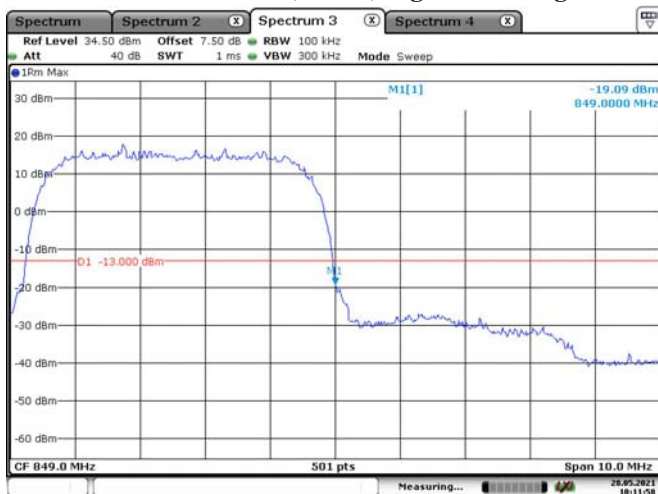
Date: 28.MAY.2021 09:53:42

WCDMA Band V, RMC, Left Band Edge



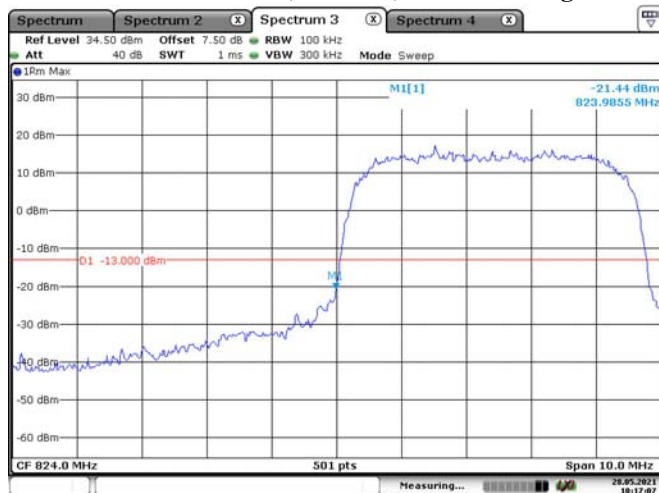
Date: 28.MAY.2021 10:03:17

WCDMA Band V, RMC, Right Band Edge



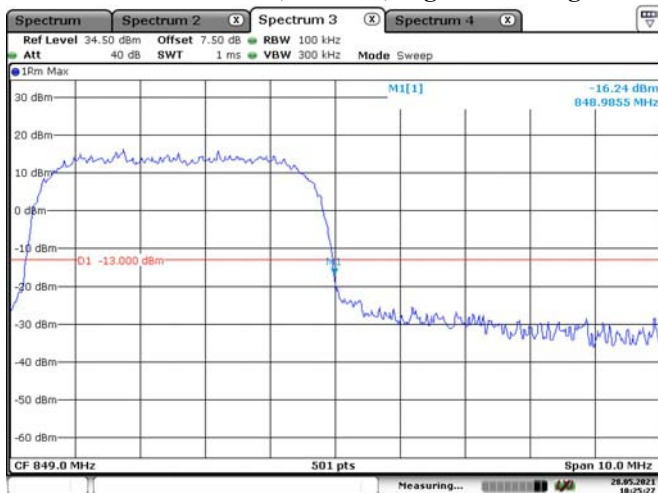
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WCDMA Band V, HSDPA, Left Band Edge



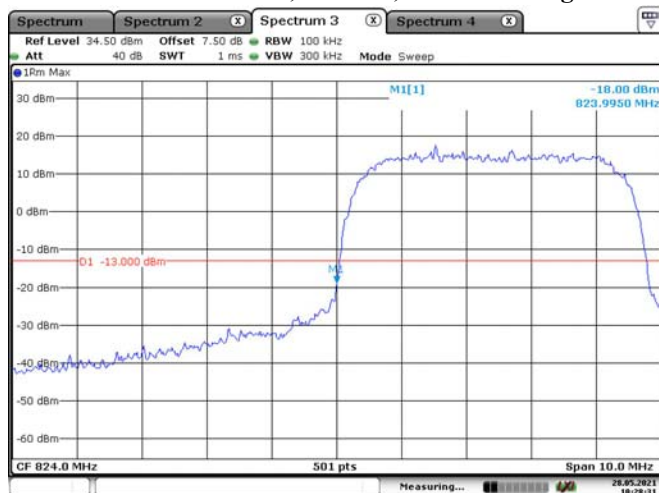
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WCDMA Band V, HSDPA, Right Band Edge



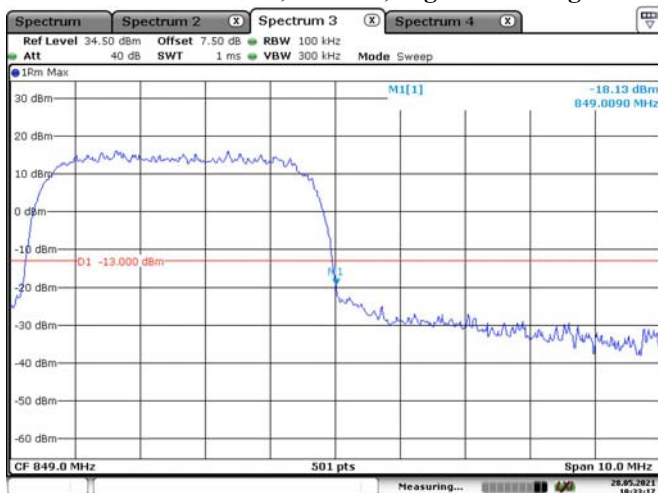
Date: 28.MAY.2021 10:25:27

WCDMA Band V, HSUPA, Left Band Edge



Date: 28.MAY.2021 10:28:32

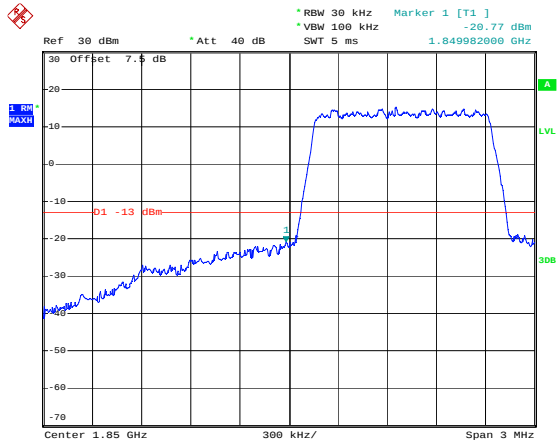
WCDMA Band V, HSUPA, Right Band Edge



Date: 28.MAY.2021 10:33:17

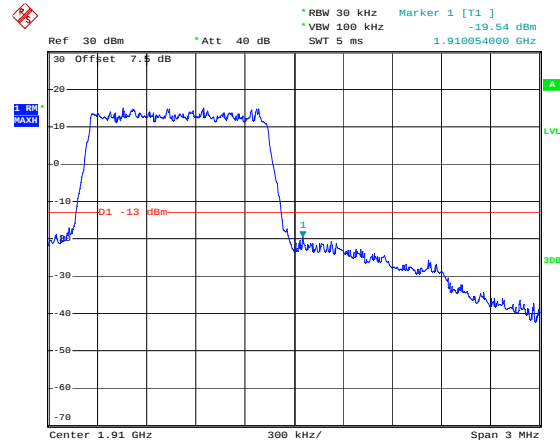
LTE Band 2

1.4M, QPSK, Left Band Edge



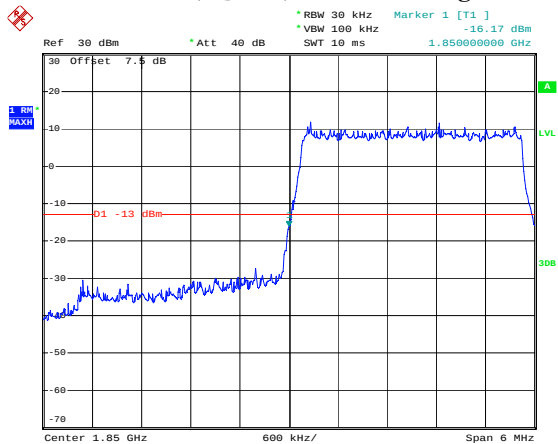
Date: 27.MAY.2021 15:07:09

1.4M, QPSK, Right Band Edge



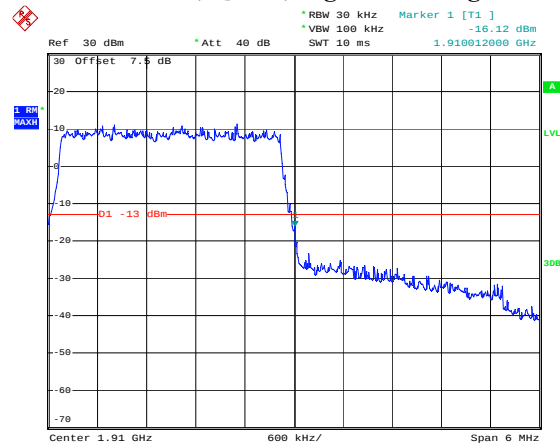
Date: 27.MAY.2021 15:07:52

3M, QPSK, Left Band Edge



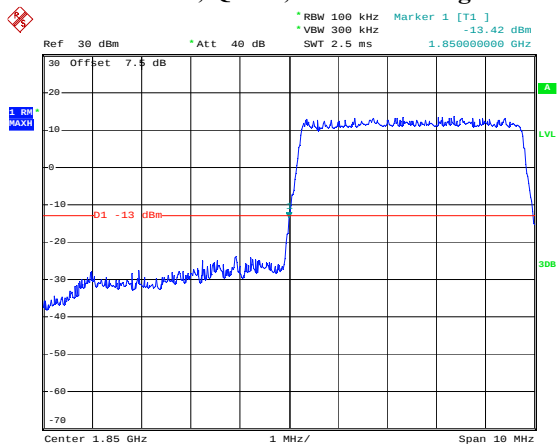
Date: 27.MAY.2021 15:08:30

3M, QPSK, Right Band Edge



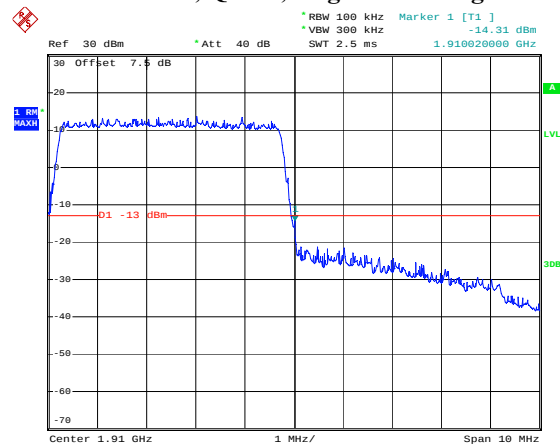
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5M, QPSK, Left Band Edge



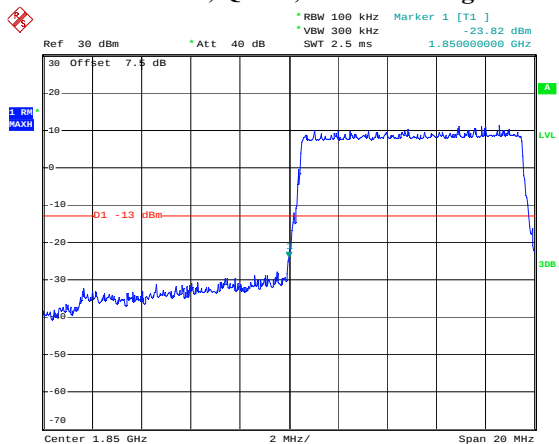
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5M, QPSK, Right Band Edge



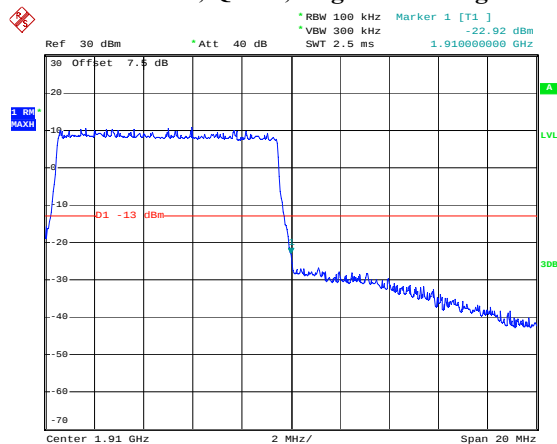
Date: 27.MAY.2021 15:10:22

10M, QPSK, Left Band Edge



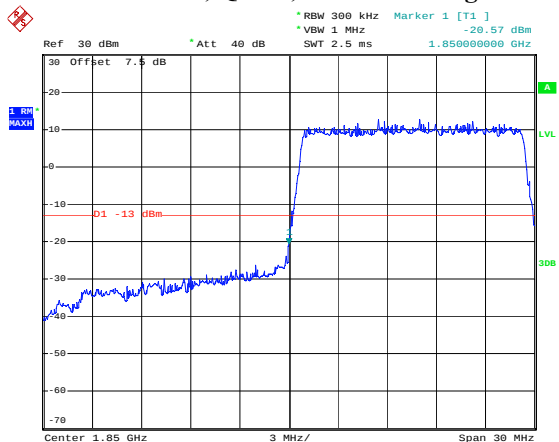
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10M, QPSK, Right Band Edge



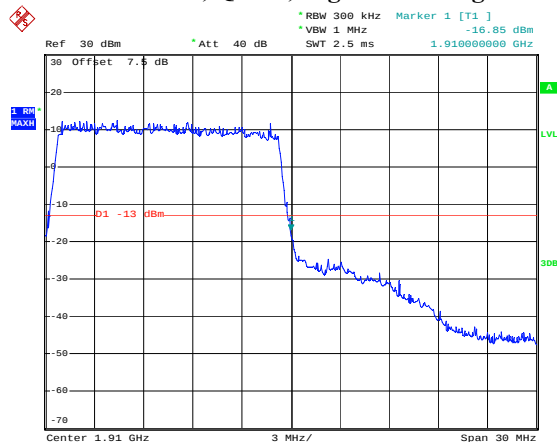
Date: 27.MAY.2021 15:11:33

15M, QPSK, Left Band Edge



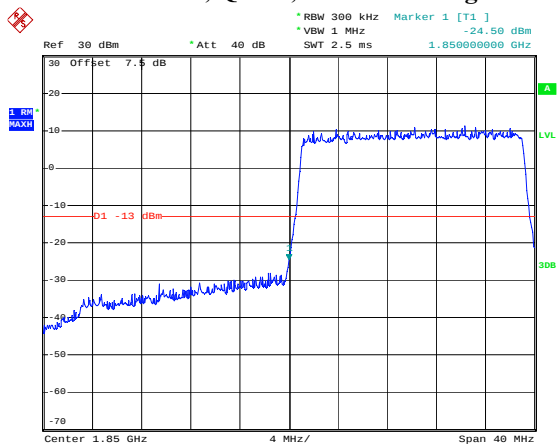
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15M, QPSK, Right Band Edge



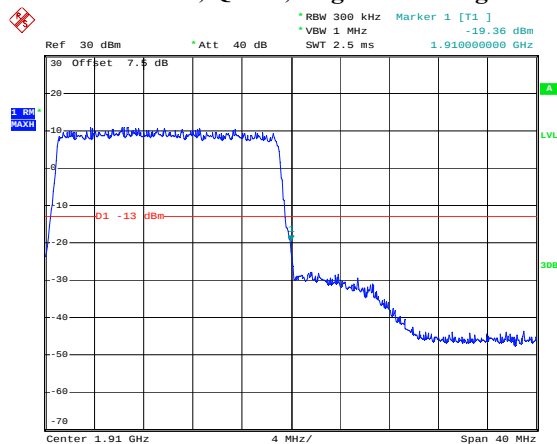
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20M, QPSK, Left Band Edge



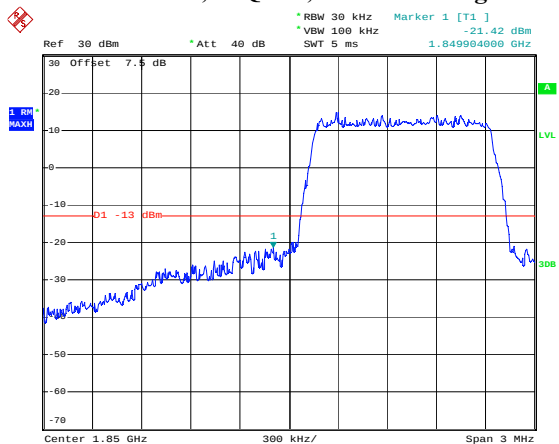
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20M, QPSK, Right Band Edge



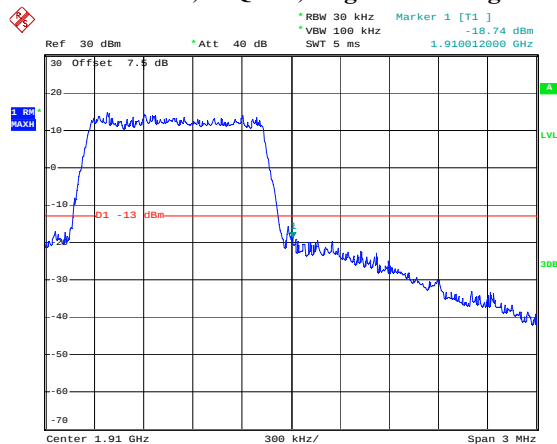
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1.4M, 16QAM, Left Band Edge



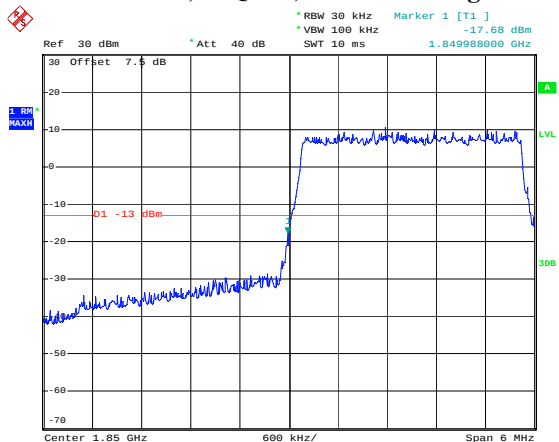
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1.4M, 16QAM, Right Band Edge



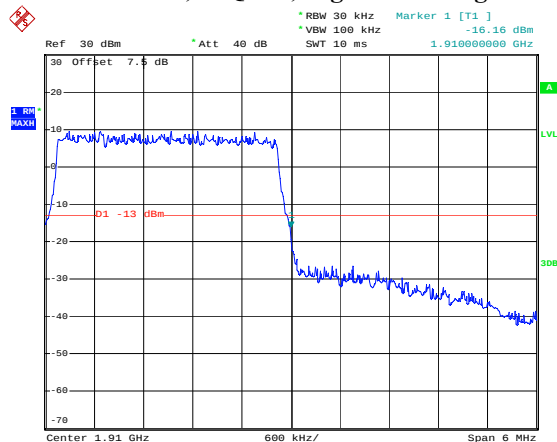
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3M, 16QAM, Left Band Edge



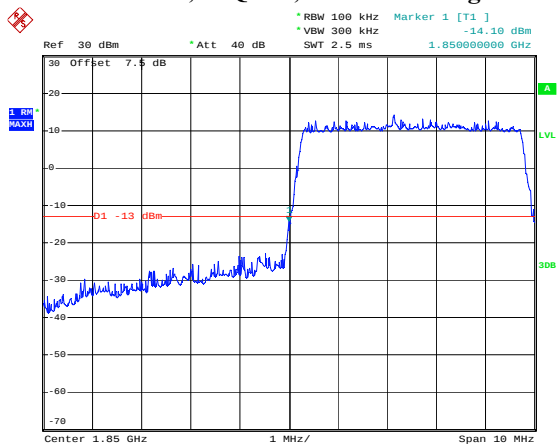
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3M, 16QAM, Right Band Edge



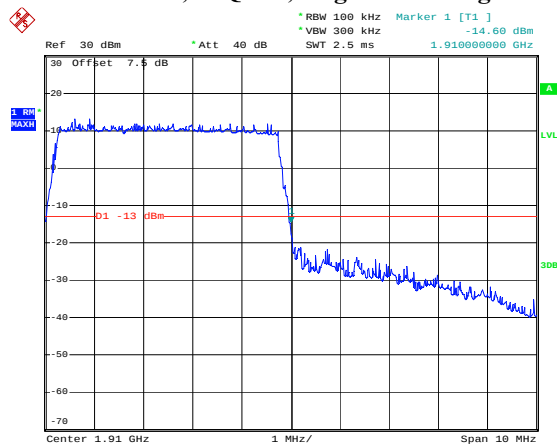
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5M, 16QAM, Left Band Edge



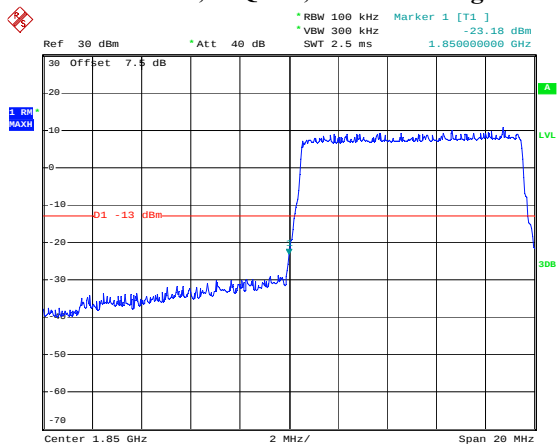
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5M, 16QAM, Right Band Edge



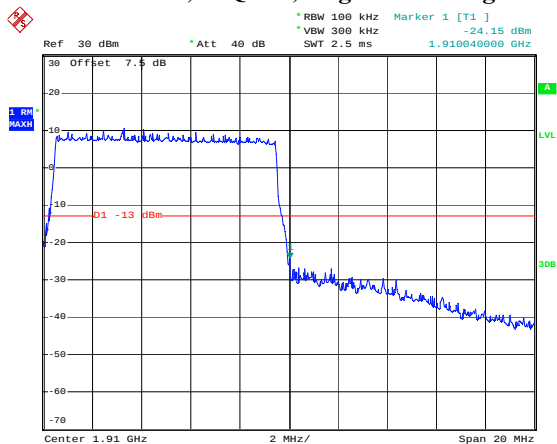
Date: 27.MAY.2021 15:10:38

10M, 16QAM, Left Band Edge



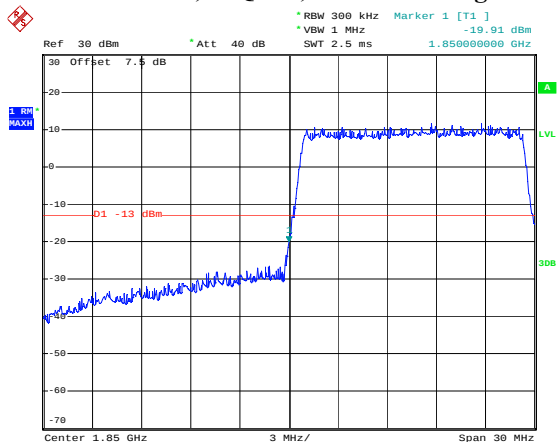
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10M, 16QAM, Right Band Edge



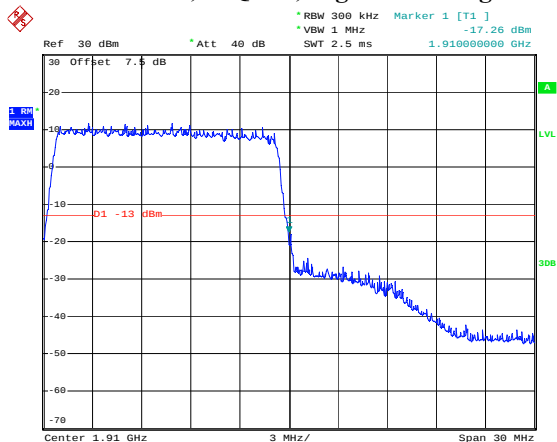
Date: 27.MAY.2021 15:11:50

15M, 16QAM, Left Band Edge



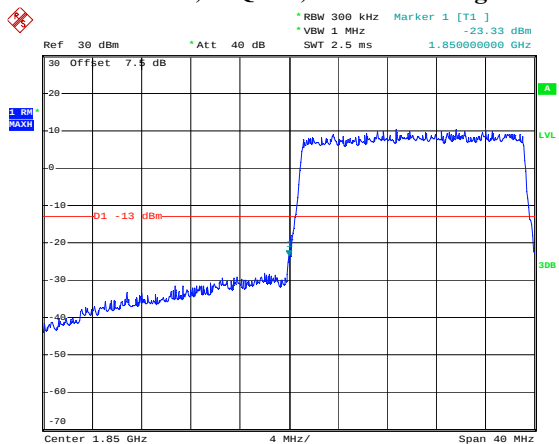
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15M, 16QAM, Right Band Edge



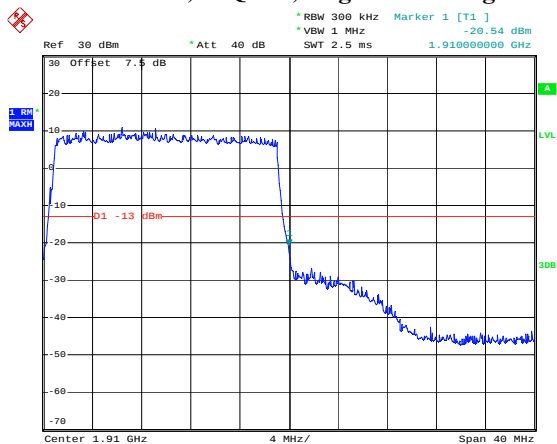
Date: 27.MAY.2021 15:13:10

20M, 16QAM, Left Band Edge



Date: 27.MAY.2021 15:13:56

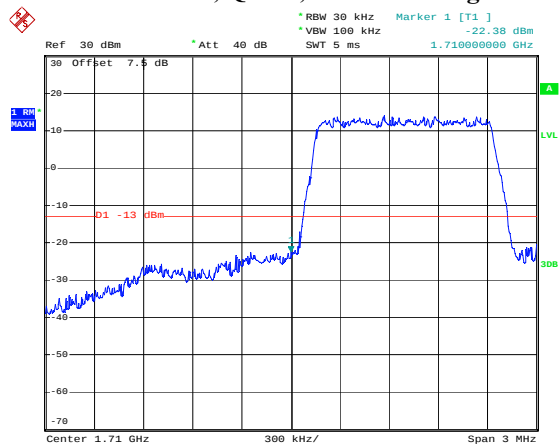
20M, 16QAM, Right Band Edge



Date: 27.MAY.2021 15:14:42

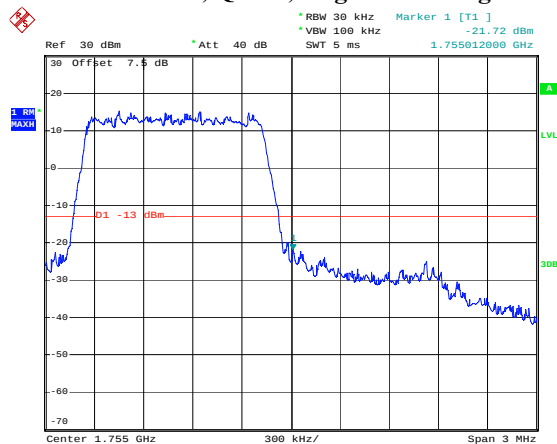
LTE Band 4

1.4M, QPSK, Left Band Edge



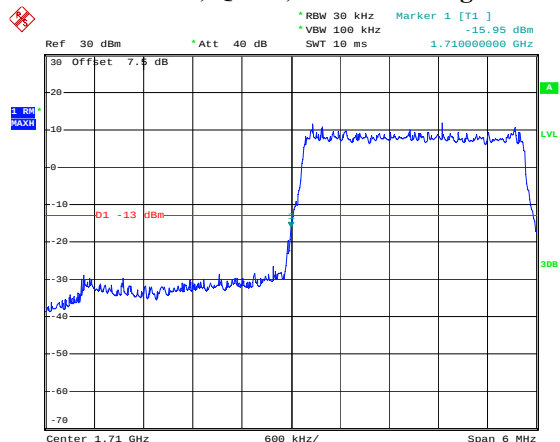
Date: 27.MAY.2021 15:15:03

1.4M, QPSK, Right Band Edge



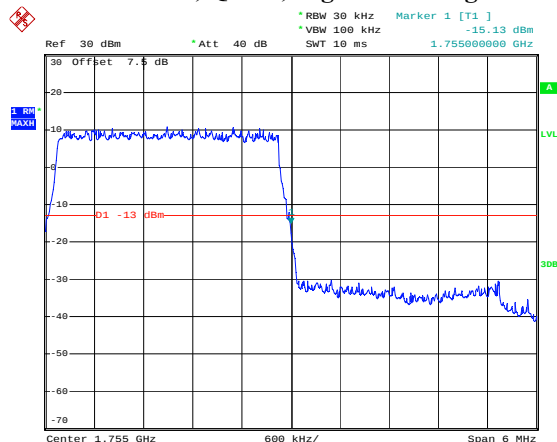
Date: 27.MAY.2021 15:15:45

3M, QPSK, Left Band Edge



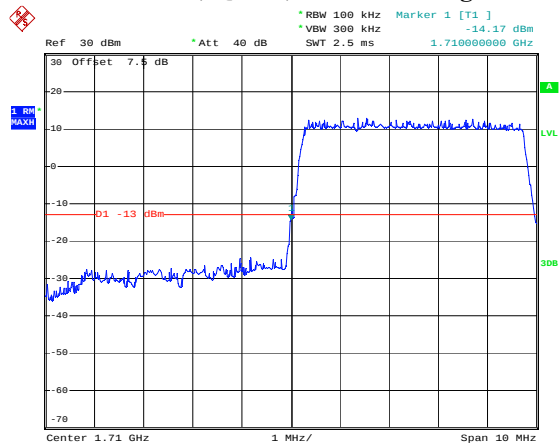
Date: 27.MAY.2021 15:16:26

3M, QPSK, Right Band Edge



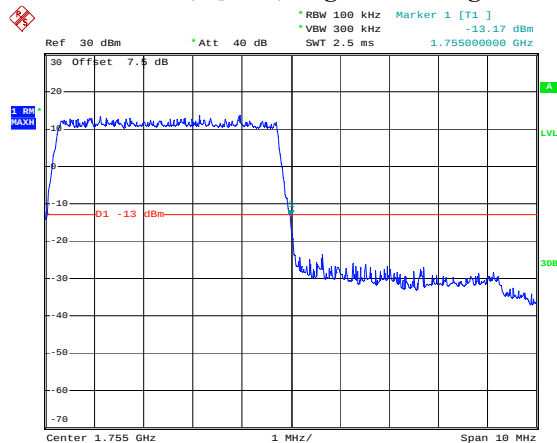
Date: 27.MAY.2021 15:17:01

5M, QPSK, Left Band Edge



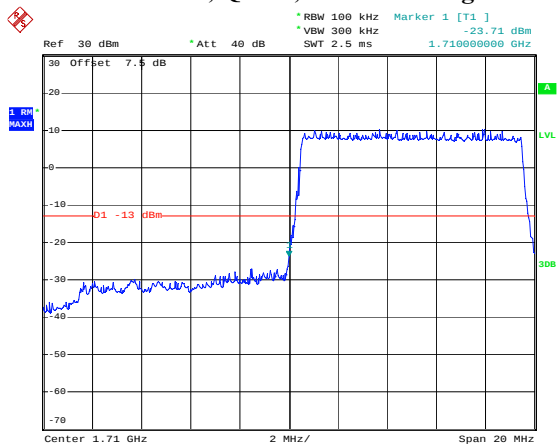
Date: 27.MAY.2021 15:17:36

5M, QPSK, Right Band Edge



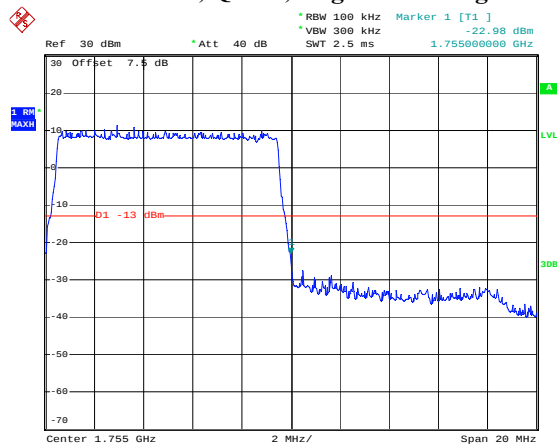
Date: 27.MAY.2021 15:18:14

10M, QPSK, Left Band Edge



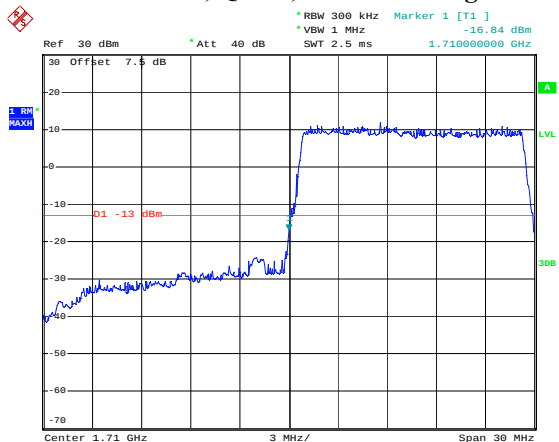
Date: 27.MAY.2021 15:18:53

10M, QPSK, Right Band Edge



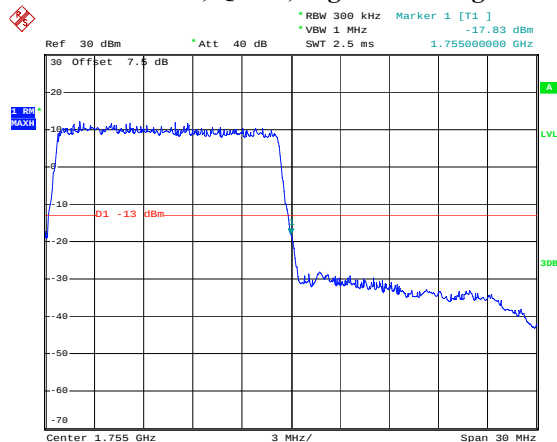
Date: 27.MAY.2021 15:19:31

15M, QPSK, Left Band Edge



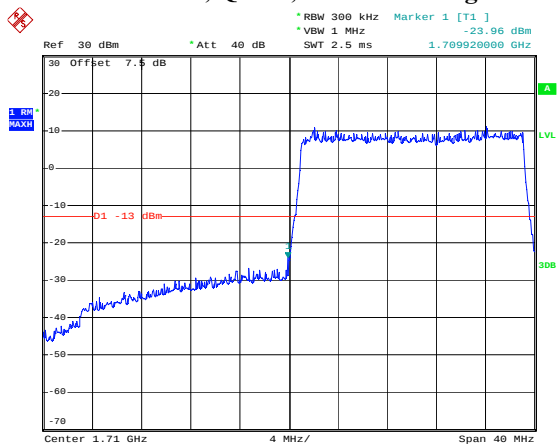
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15M, QPSK, Right Band Edge



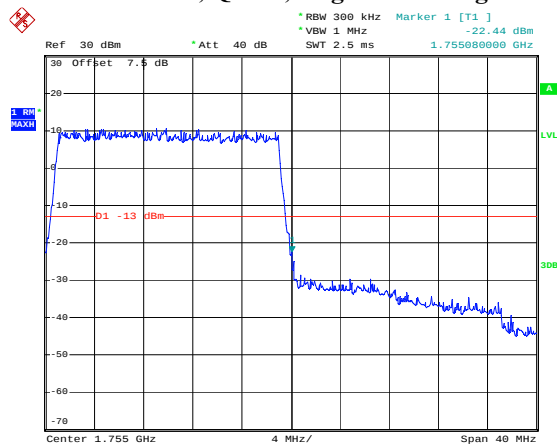
Date: 27.MAY.2021 15:20:50

20M, QPSK, Left Band Edge



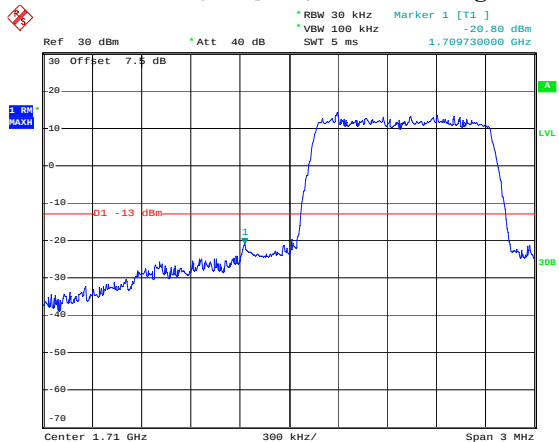
Date: 27.MAY.2021 15:21:31

20M, QPSK, Right Band Edge



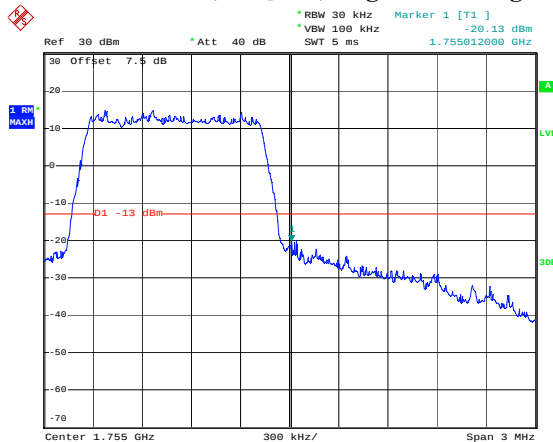
Date: 27.MAY.2021 15:22:13

1.4M, 16QAM, Left Band Edge



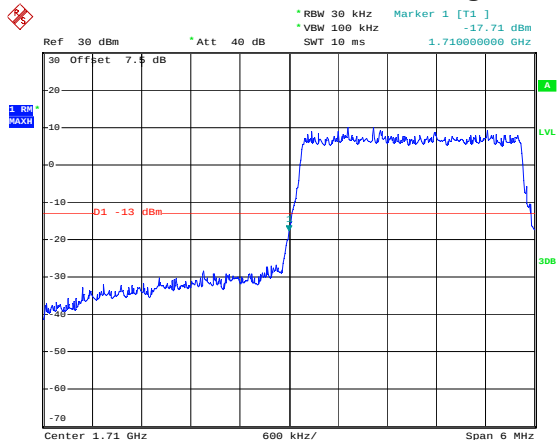
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1.4M, 16QAM, Right Band Edge



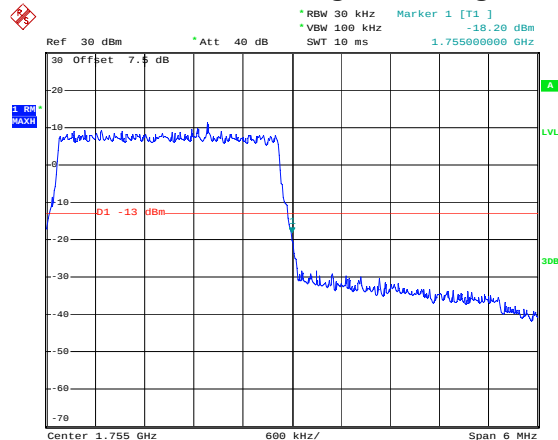
Date: 27.MAY.2021 15:16:03

3M, 16QAM, Left Band Edge



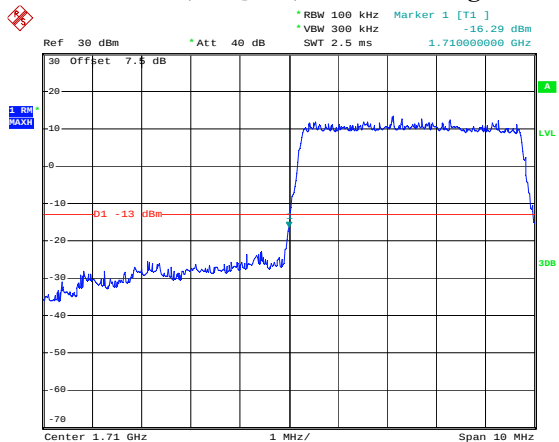
Date: 27.MAY.2021 15:16:42

3M, 16QAM, Right Band Edge



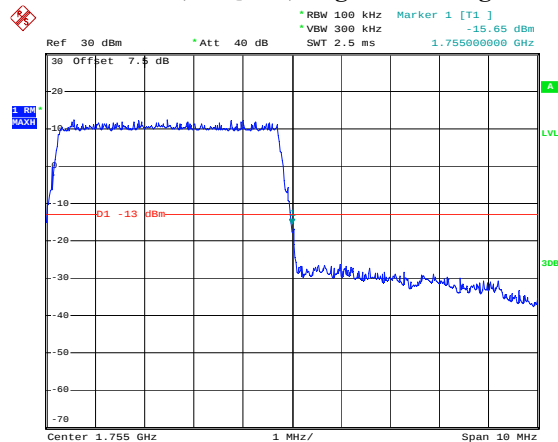
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5M, 16QAM, Left Band Edge



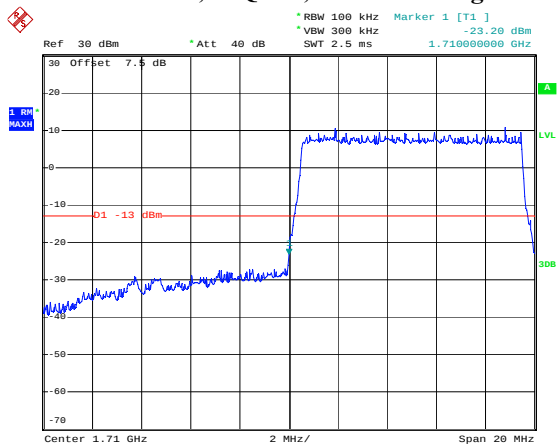
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5M, 16QAM, Right Band Edge



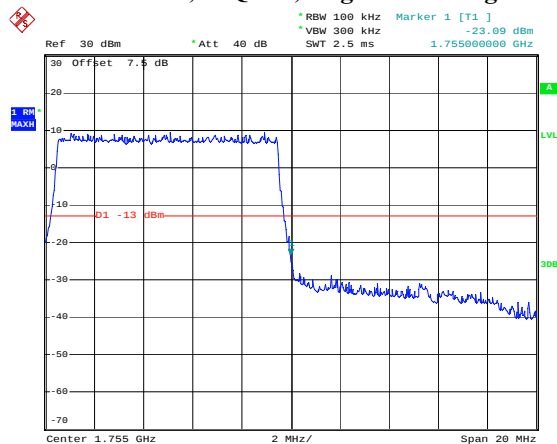
Date: 27.MAY.2021 15:18:33

10M, 16QAM, Left Band Edge



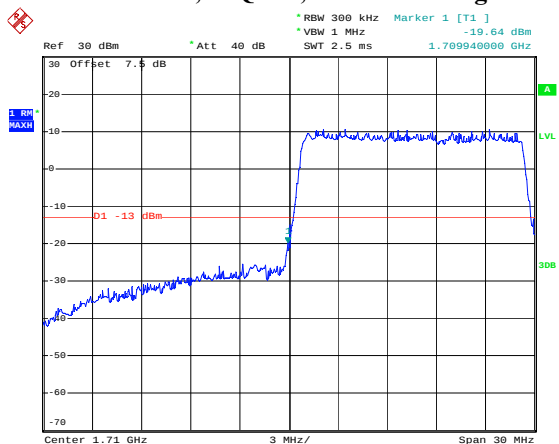
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10M, 16QAM, Right Band Edge



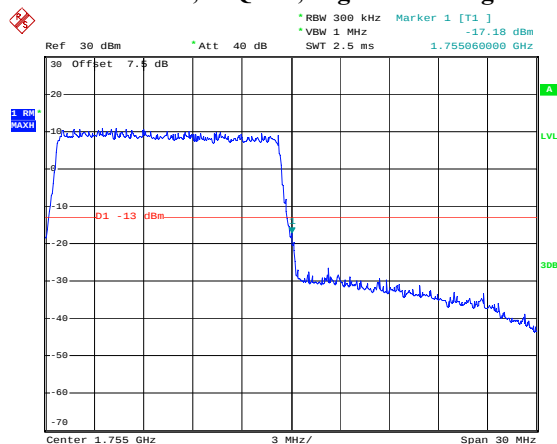
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15M, 16QAM, Left Band Edge



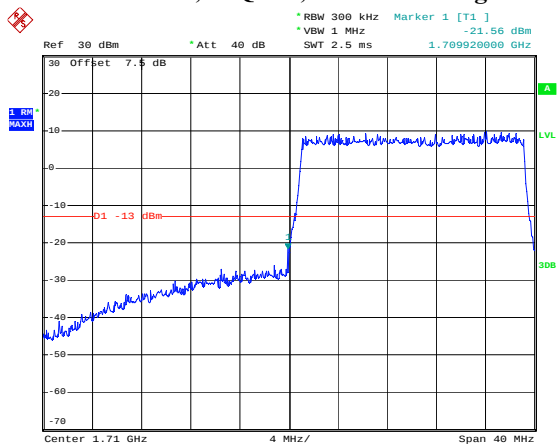
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15M, 16QAM, Right Band Edge



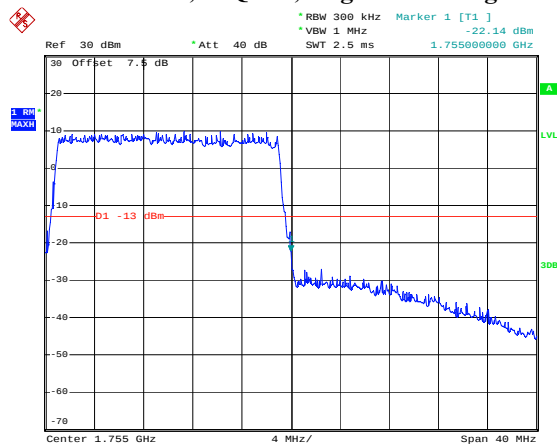
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20M, 16QAM, Left Band Edge



Date: 27.MAY.2021 15:21:53

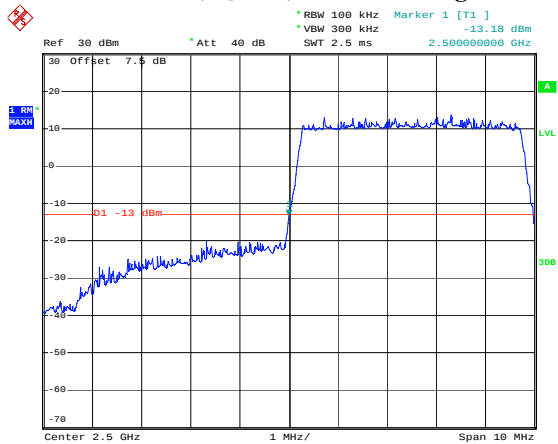
20M, 16QAM, Right Band Edge



Date: 27.MAY.2021 15:22:35

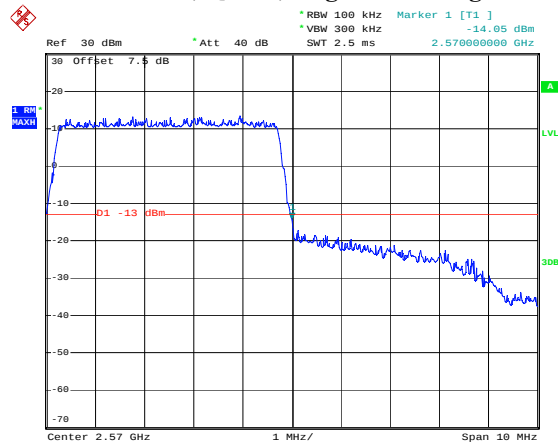
LTE Band 7

5M, QPSK, Left Band Edge



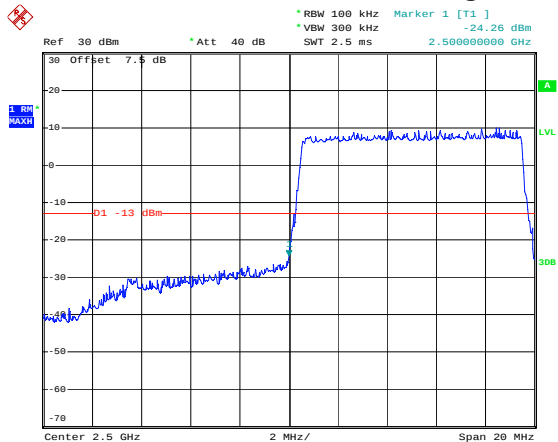
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5M, QPSK, Right Band Edge



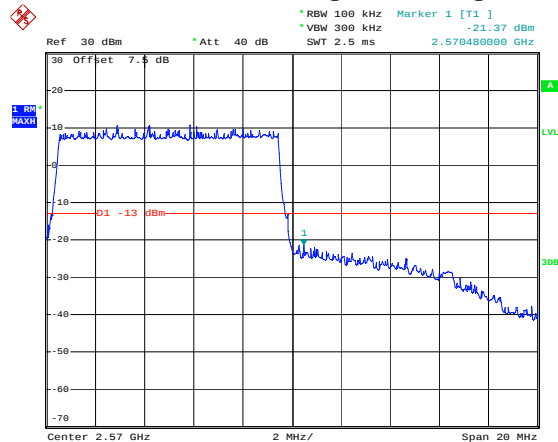
Date: 27.MAY.2021 15:23:38

10M, QPSK, Left Band Edge



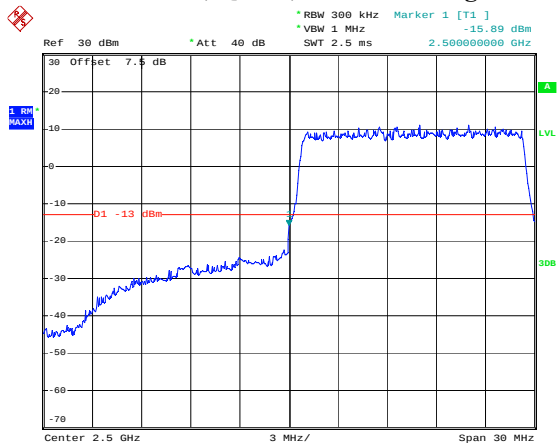
Date: 27.MAY.2021 15:24:21

10M, QPSK, Right Band Edge



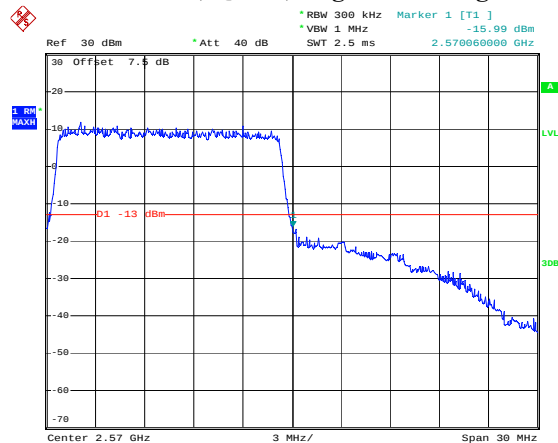
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15M, QPSK, Left Band Edge



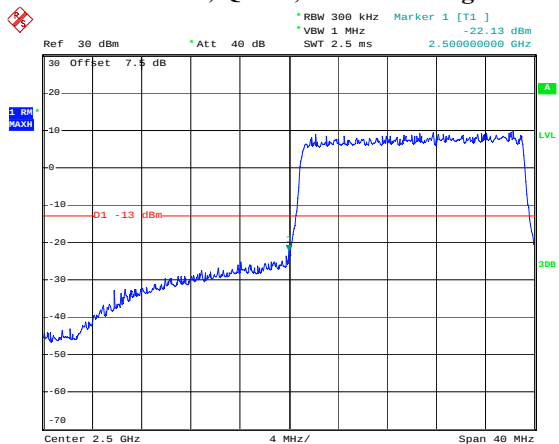
Date: 27.MAY.2021 15:25:36

15M, QPSK, Right Band Edge



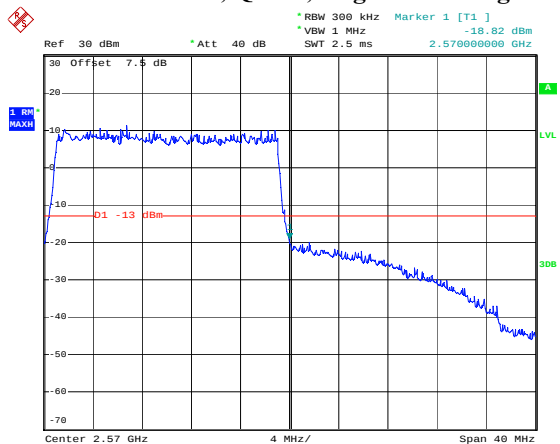
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20M, QPSK, Left Band Edge



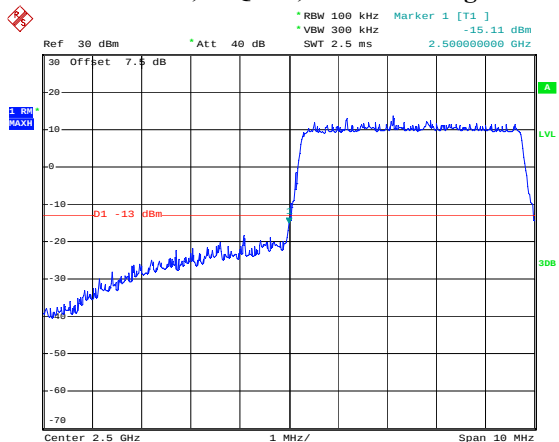
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20M, QPSK, Right Band Edge



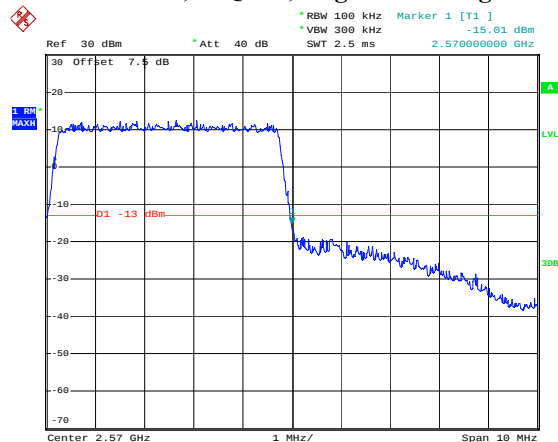
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5M, 16QAM, Left Band Edge



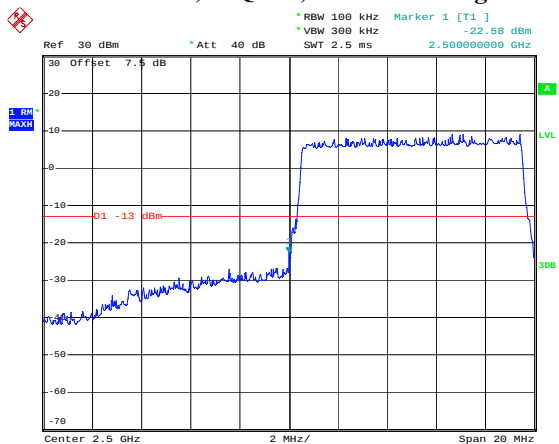
Date: 27.MAY.2021 15:23:19

5M, 16QAM, Right Band Edge



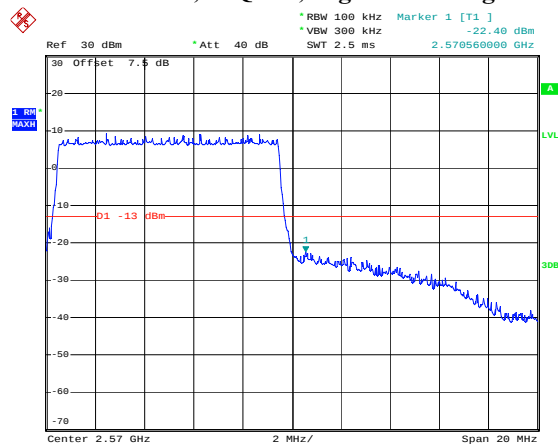
Date: 27.MAY.2021 15:24:00

10M, 16QAM, Left Band Edge



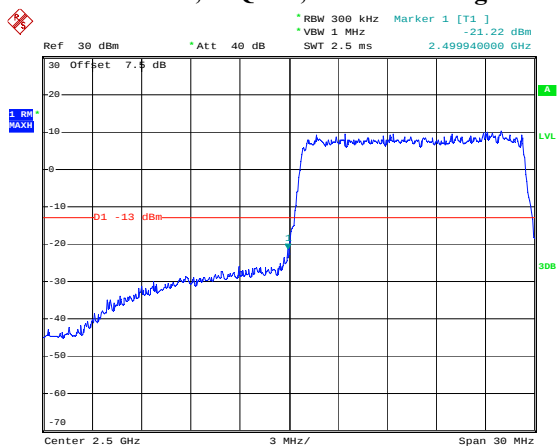
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10M, 16QAM, Right Band Edge



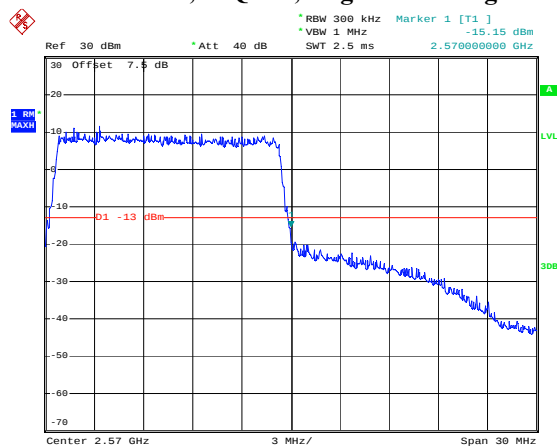
Date: 27.MAY.2021 15:25:13

15M, 16QAM, Left Band Edge



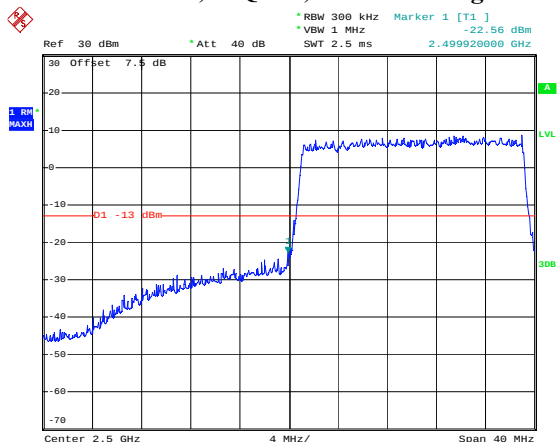
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15M, 16QAM, Right Band Edge



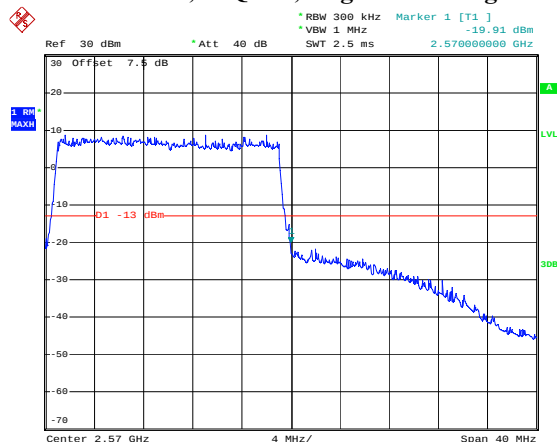
Date: 27.MAY.2021 15:26:34

20M, 16QAM, Left Band Edge



Date: 27.MAY.2021 15:27:18

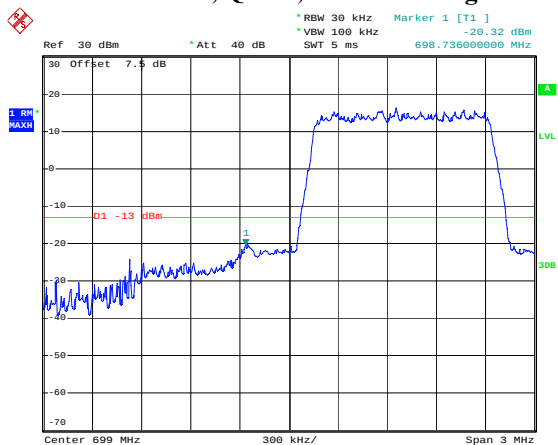
20M, 16QAM, Right Band Edge



Date: 27.MAY.2021 15:28:00

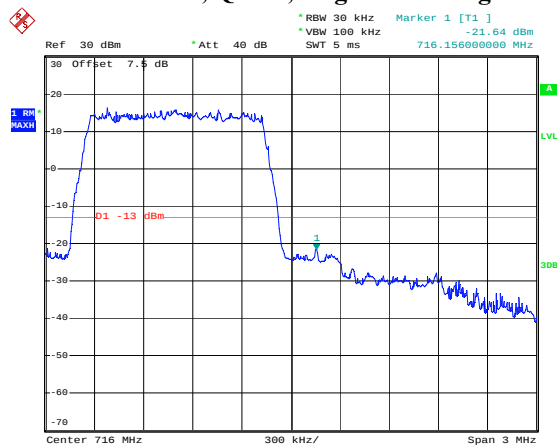
LTE Band 12

1.4M, QPSK, Left Band Edge



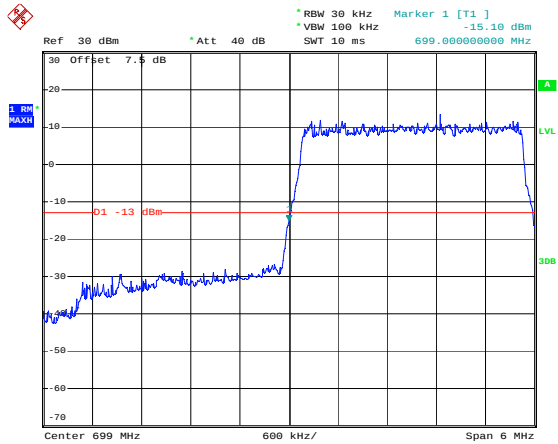
Date: 27.MAY.2021 15:28:28

1.4M, QPSK, Right Band Edge



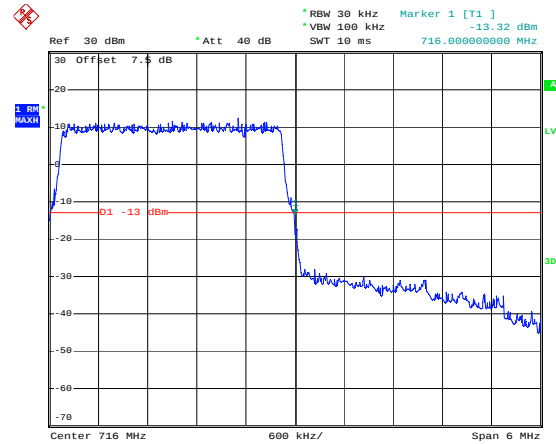
Date: 27.MAY.2021 15:29:04

3M, QPSK, Left Band Edge



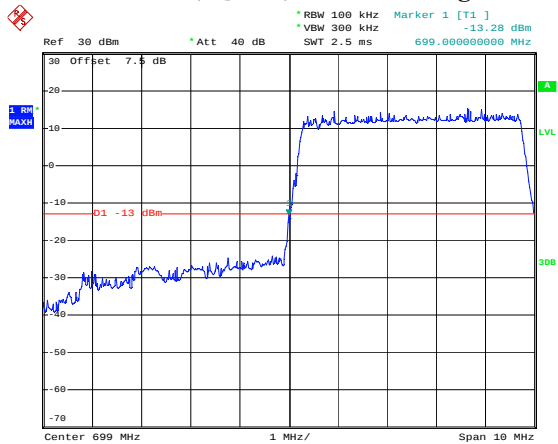
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3M, QPSK, Right Band Edge



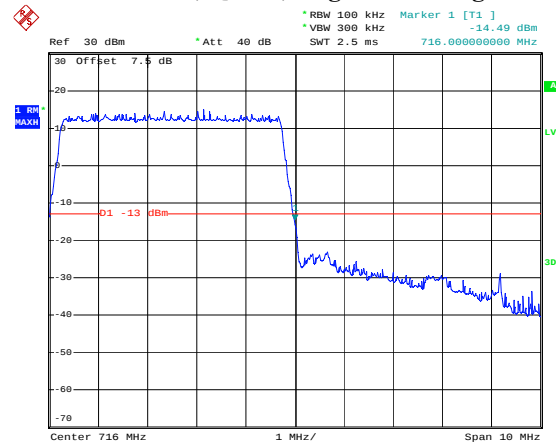
Date: 27.MAY.2021 15:30:18

5M, QPSK, Left Band Edge



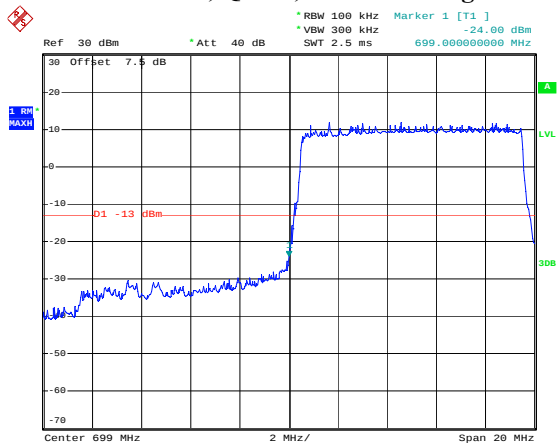
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5M, QPSK, Right Band Edge



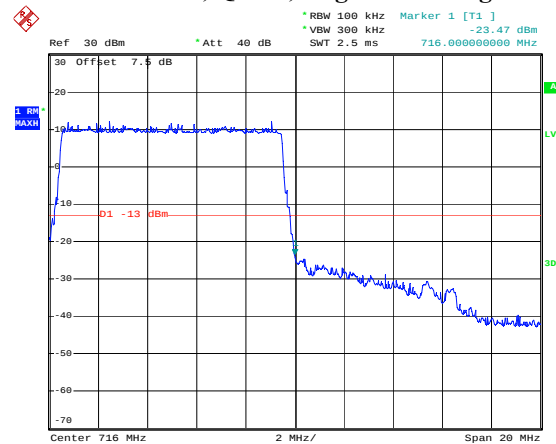
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10M, QPSK, Left Band Edge



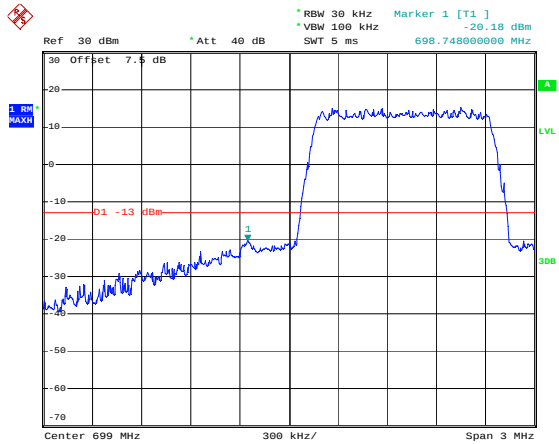
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10M, QPSK, Right Band Edge



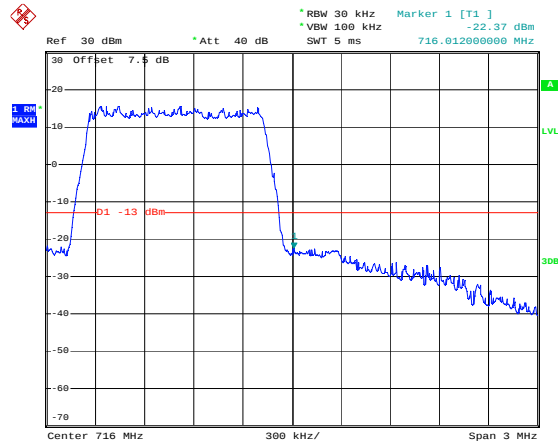
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1.4M, 16QAM, Left Band Edge



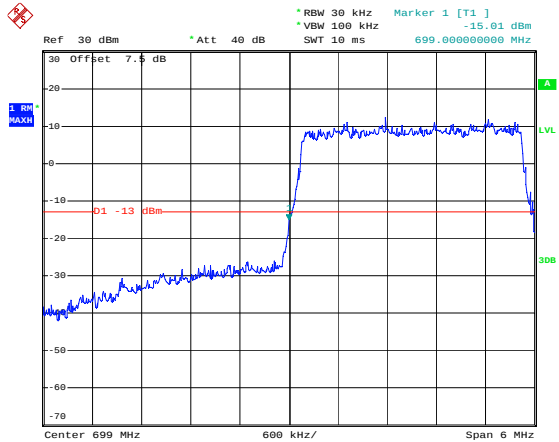
Date: 27.MAY.2021 15:28:47

1.4M, 16QAM, Right Band Edge



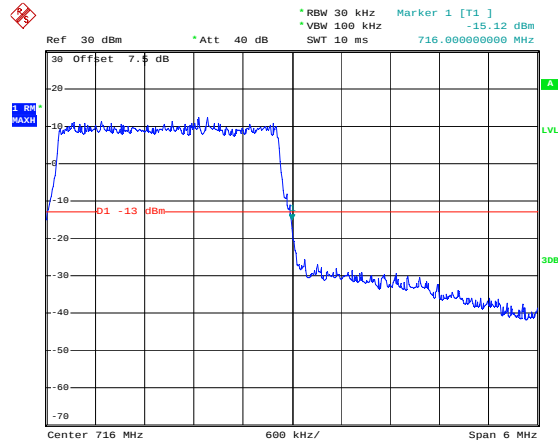
Date: 27.MAY.2021 15:29:20

3M, 16QAM, Left Band Edge



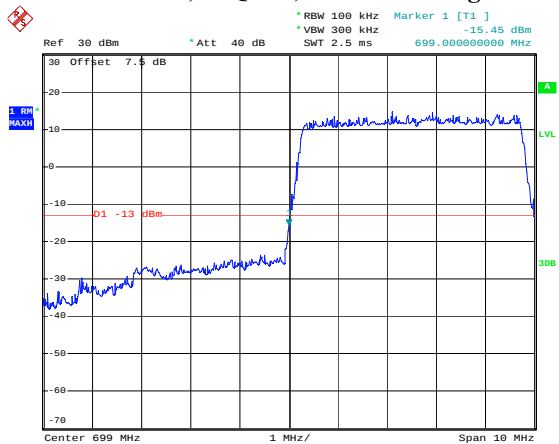
Date: 27.MAY.2021 15:30:01

3M, 16QAM, Right Band Edge



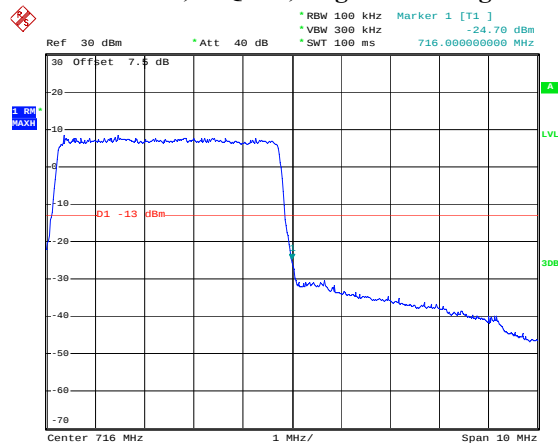
Date: 27.MAY.2021 15:30:36

5M, 16QAM, Left Band Edge



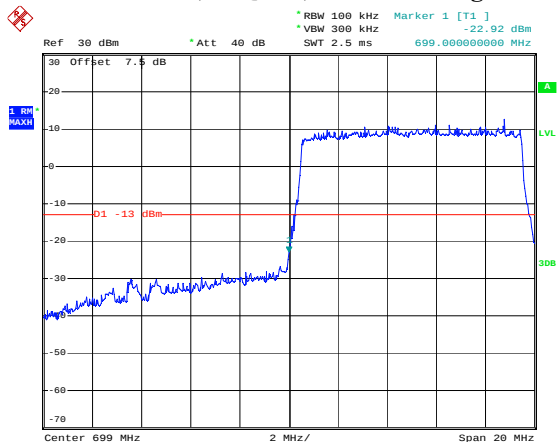
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5M, 16QAM, Right Band Edge



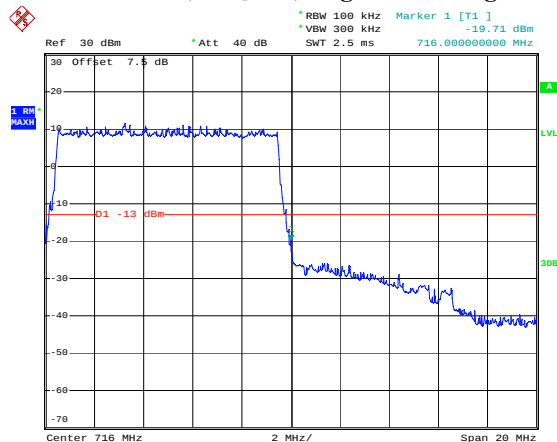
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10M, 16QAM, Left Band Edge



Date: 27.MAY.2021 15:32:28

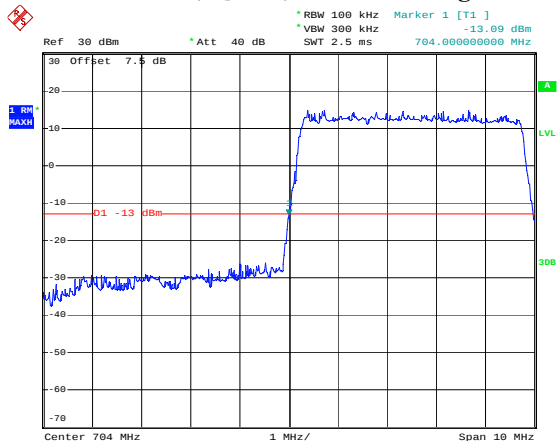
10M, 16QAM, Right Band Edge



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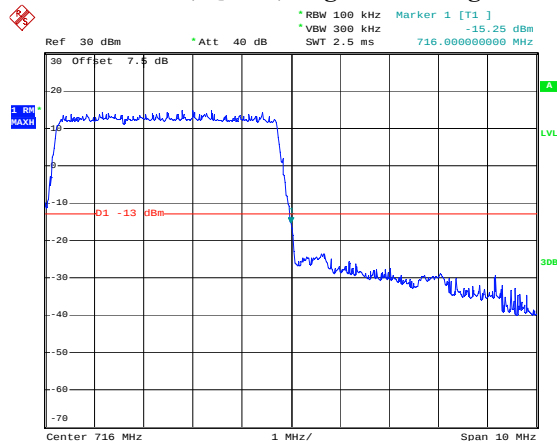
LTE Band 17

5M, QPSK, Left Band Edge



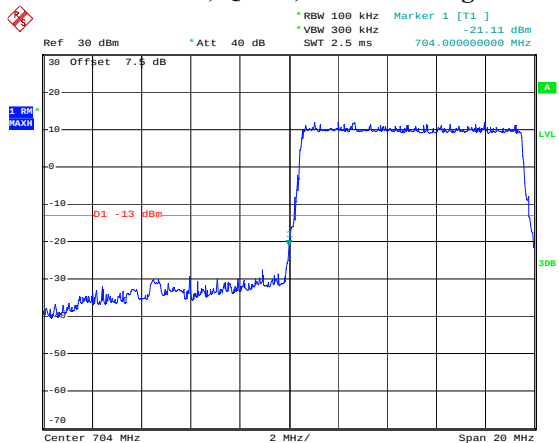
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5M, QPSK, Right Band Edge



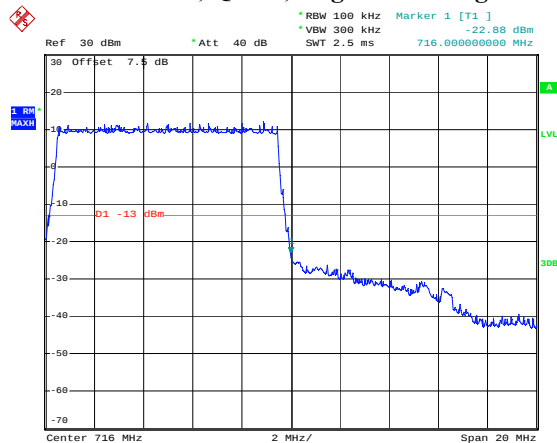
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10M, QPSK, Left Band Edge



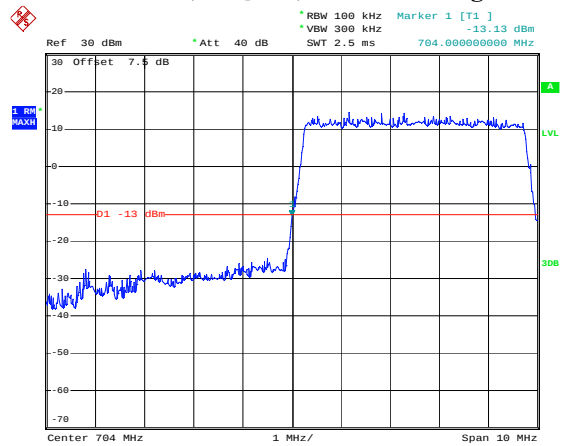
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10M, QPSK, Right Band Edge



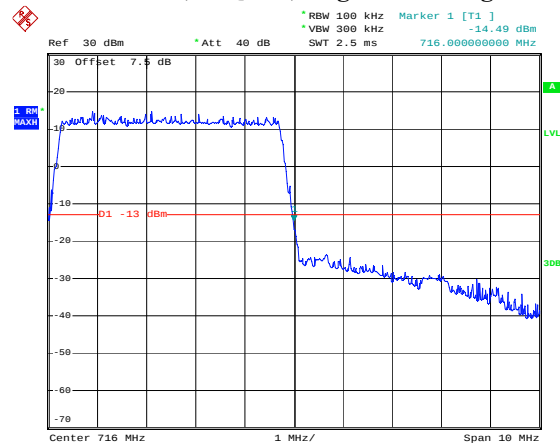
Date: 27.MAY.2021 15:35:14

5M, 16QAM, Left Band Edge



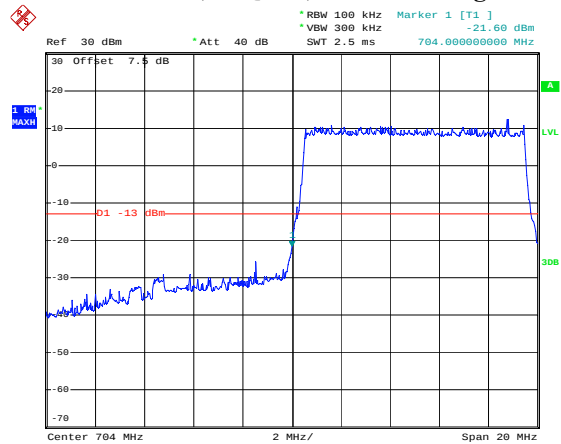
Date: 27.MAY.2021 15:33:47

5M, 16QAM, Right Band Edge



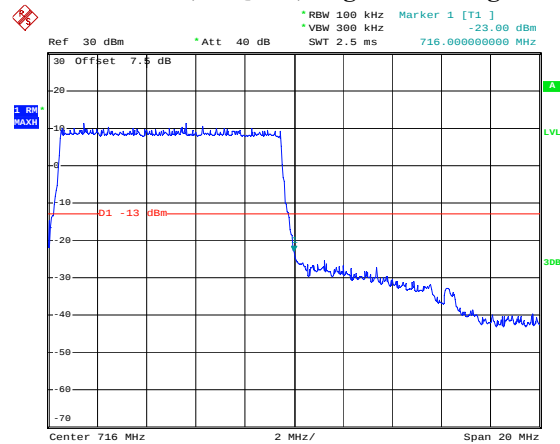
Date: 27.MAY.2021 15:34:19

10M, 16QAM, Left Band Edge



Date: 27.MAY.2021 15:34:57

10M, 16QAM, Right Band Edge



Date: 27.MAY.2021 15:35:31

8 - FREQUENCY STABILITY

Applicable Standard

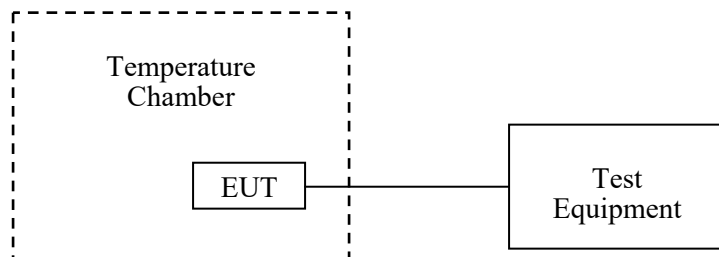
FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235, §27.54

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 Data

Test Mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots.

GSM

GMSK, Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	NV	-6	-0.00717	2.5
-20		2	0.00239	
-10		-9	-0.01076	
0		-3	-0.00359	
10		8	0.00956	
20		11	0.01315	
30		5	0.00598	
40		-9	-0.01076	
50		8	0.00956	
20	LV	-12	-0.01434	2.5
20	HV	-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	NV	14	0.01673	2.5
-20		-8	-0.00956	
-10		14	0.01673	
0		7	0.00837	
10		12	0.01434	
20		-14	-0.01673	
30		-12	-0.01434	
40		6	0.00717	
50		9	0.01076	
20	LV	-11	-0.01315	
20	HV	2	0.00239	

GMSK, Middle Channel, $f_c = 1880$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	NV	-15	-0.00798	Pass
-20		-11	-0.00585	
-10		10	0.00532	
0		12	0.00638	
10		-7	-0.00372	
20		18	0.00957	
30		9	0.00479	
40		8	0.00426	
50		-6	-0.00319	
20	LV	18	0.00957	
20	HV	14	0.00745	

8PSK, Middle Channel, $f_c = 1880$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	NV	15	0.00798	Pass
-20		-8	-0.00426	
-10		12	0.00638	
0		16	0.00851	
10		17	0.00904	
20		26	0.01383	
30		22	0.01170	
40		16	0.00851	
50		-2	-0.00106	
20	LV	12	0.00638	
20	HV	16	0.00851	

WCDMA

Middle Channel, $f_c = 1880.0$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V _{DC}	Hz	ppm	
-30	NV	-12	-0.00638	Pass
-20		-17	-0.00904	
-10		-15	-0.00798	
0		-16	-0.00851	
10		-21	-0.01117	
20		-26	-0.01383	
30		-22	-0.01170	
40		-19	-0.01011	
50		-12	-0.00638	
20	LV	-15	-0.00798	
20	HV	12	0.00638	

Middle Channel, $f_c = 836.6$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Limit
°C	V _{DC}	Hz	ppm	ppm
-30	NV	-12	-0.00693	2.5
-20		-13	-0.00750	
-10		-14	-0.00808	
0		-11	-0.00635	
10		-15	-0.00866	
20		-16	-0.00923	
30		-12	-0.00693	
40		-13	-0.00750	
50		-17	-0.00981	
20	LV	-15	-0.00866	
20	HV	-13	-0.00750	

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	NV	-10.89	-0.0058	Pass
-20		-7.22	-0.0038	
-10		-5.48	-0.0029	
0		-6.45	-0.0034	
10		6.94	0.0037	
20		-8.77	-0.0047	
30		-7.94	-0.0042	
40		5.90	0.0031	
50		8.51	0.0045	
20	LV	-5.57	-0.003	
20	HV	7.03	0.0037	

16QAM, Channel Bandwidth:10MHz Middle Channel, $f_c = 1880$ MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
°C	V_{DC}	Hz	ppm	
-30	NV	-47.28	-0.0251	Pass
-20		-6.73	-0.0036	
-10		7.07	0.0038	
0		-8.43	-0.0045	
10		-7.06	-0.0038	
20		-7.90	-0.0042	
30		-8.40	-0.0045	
40		-7.45	-0.004	
50		7.31	0.0039	
20	LV	8.10	0.0043	
20	HV	6.60	0.0035	

LTE Band 4

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	1710.528300	1710	1754.478900	1755
	-20	1710.524700		1754.472800	
	-10	1710.528100		1754.478700	
	0	1710.521700		1754.477300	
	10	1710.528700		1754.475800	
	20	1710.528900		1754.471100	
	30	1710.528200		1754.474700	
	40	1710.524500		1754.476600	
	50	1710.528700		1754.475700	
LV	20	1710.522300		1754.477600	
HV	20	1710.525800		1754.481300	

16-QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	1710.525500	1710	1754.516200	1755
	-20	1710.528600		1754.517700	
	-10	1710.527800		1754.518300	
	0	1710.527200		1754.517200	
	10	1710.520600		1754.511900	
	20	1710.528900		1754.511000	
	30	1710.527300		1754.512800	
	40	1710.527200		1754.517600	
	50	1710.527900		1754.519600	
LV	20	1710.523400		1754.514300	
HV	20	1710.524600		1754.517600	

LTE Band 7

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	2500.528200	2500	2569.511400	2570
	-20	2500.528900		2569.512700	
	-10	2500.525700		2569.516300	
	0	2500.522600		2569.517300	
	10	2500.527600		2569.517800	
	20	2500.528900		2569.511000	
	30	2500.528700		2569.516500	
	40	2500.522600		2569.517300	
	50	2500.527300		2569.512800	
LV	20	2500.524600		2569.517600	
HV	20	2500.526700		2569.513400	

16-QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	2500.529600	2500	2569.474600	2570
	-20	2500.527800		2569.478200	
	-10	2500.527700		2569.478900	
	0	2500.524200		2569.475300	
	10	2500.525500		2569.475000	
	20	2500.528900		2569.471100	
	30	2500.525400		2569.474600	
	40	2500.527600		2569.473400	
	50	2500.525600		2569.479600	
LV	20	2500.526200		2569.474800	
HV	20	2500.522800		2569.478900	

LTE Band 12

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	699.527600	699	715.478900	716
	-20	699.528800		715.475400	
	-10	699.521000		715.476300	
	0	699.522800		715.472400	
	10	699.526400		715.472800	
	20	699.528900		715.471100	
	30	699.522600		715.474600	
	40	699.524300		715.472800	
	50	699.527500		715.477600	
LV	20	699.522600		715.479600	
HV	20	699.527800		715.477400	

16-QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	699.527600	699	715.478800	716
	-20	699.525300		715.479400	
	-10	699.524500		715.472800	
	0	699.529500		715.477600	
	10	699.524300		715.474900	
	20	699.528900		715.471100	
	30	699.527600		715.477600	
	40	699.525100		715.474200	
	50	699.520800		715.472600	
LV	20	699.521600		715.474500	
HV	20	699.527500		715.472800	

LTE Band 17

QPSK, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	704.526800	704	715.512800	716
	-20	704.527500		715.513600	
	-10	704.520600		715.519500	
	0	704.521300		715.511700	
	10	704.527600		715.514700	
	20	704.528900		715.511000	
	30	704.511400		715.515900	
	40	704.524300		715.514300	
	50	704.527200		715.517600	
LV	20	704.524100	704	715.515200	716
HV	20	704.519500		715.517600	

16-QAM, Channel Bandwidth:10MHz					
Power Supplied	Temperature	F_L	Limit	F_H	Limit
Vdc	°C	MHz	MHz	MHz	MHz
NV	-30	704.518500	704	715.473200	716
	-20	704.517300		715.477600	
	-10	704.519200		715.472400	
	0	704.517100		715.477600	
	10	704.529500		715.478000	
	20	704.528900		715.471100	
	30	704.520600		715.478400	
	40	704.517500		715.475200	
	50	704.514300		715.476200	
LV	20	704.517900	704	715.477300	716
HV	20	704.518600		715.479400	

Note:

The fundamental emissions stay within the authorized bands of operation based on the frequency deviation measured is small.

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