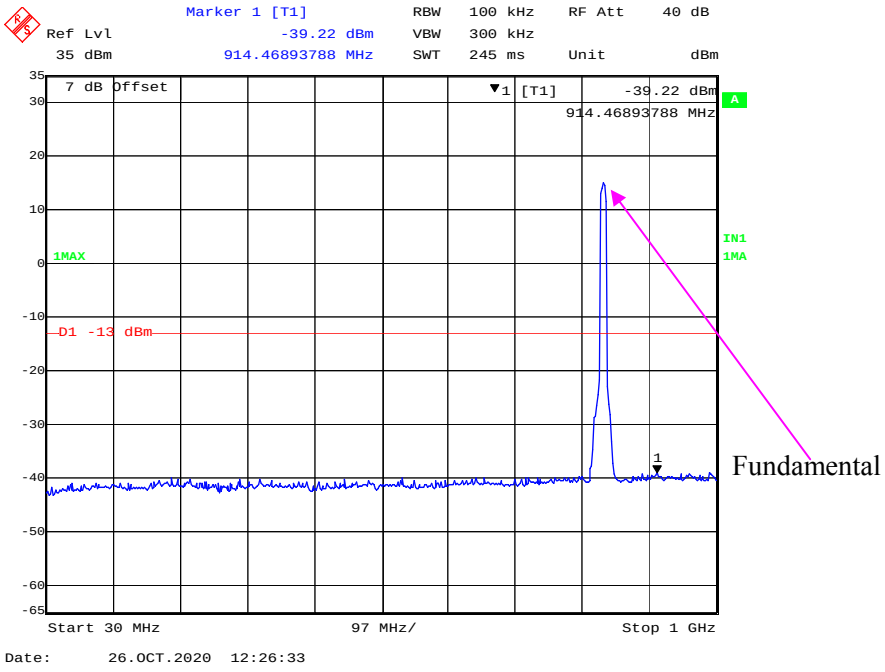
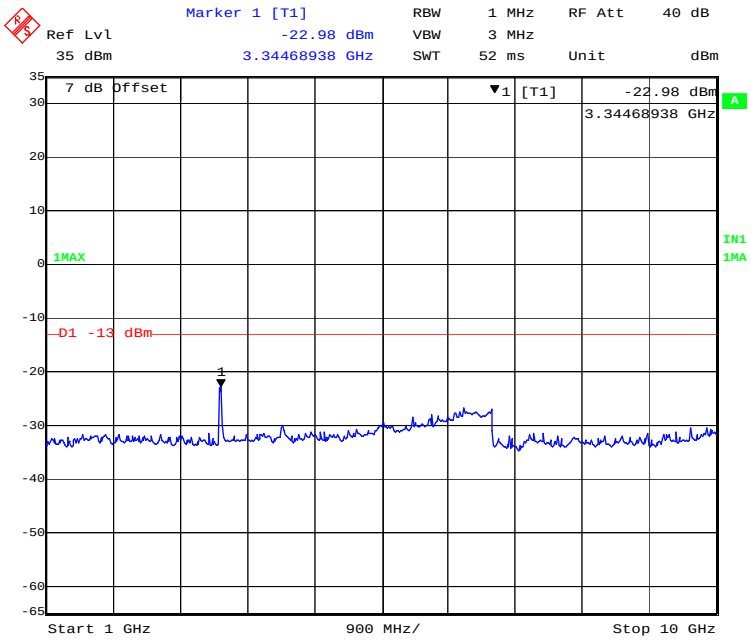
30 MHz - 1 GHz (QPSK, 10.0 MHz, Middle Channel)



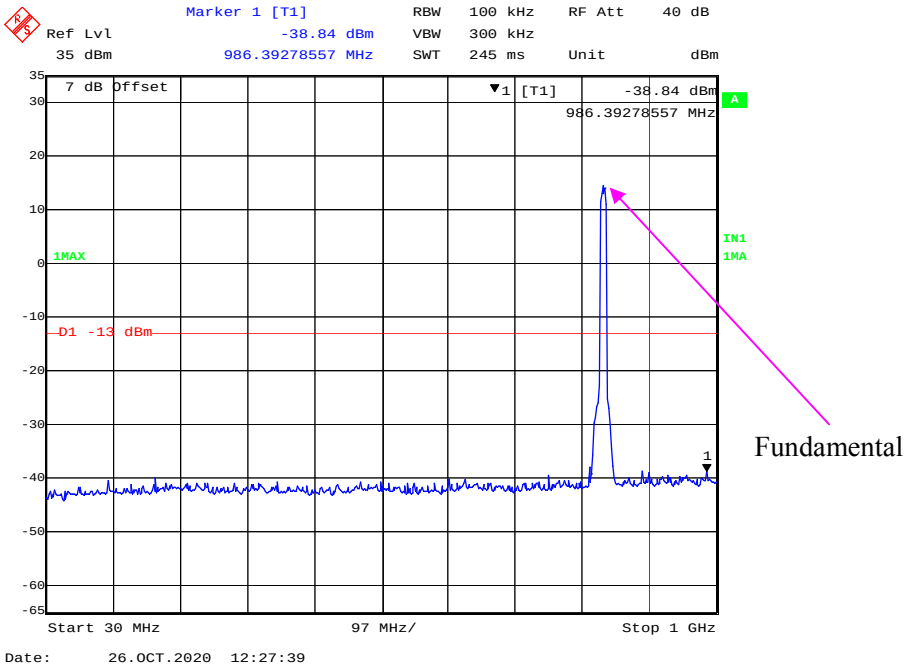
Date: 26.OCT.2020 12:26:33

1 GHz – 10 GHz (QPSK, 10.0 MHz, Middle Channel)



Date: 26.OCT.2020 14:11:11

30 MHz - 1 GHz (16QAM, 10.0 MHz, Middle Channel)

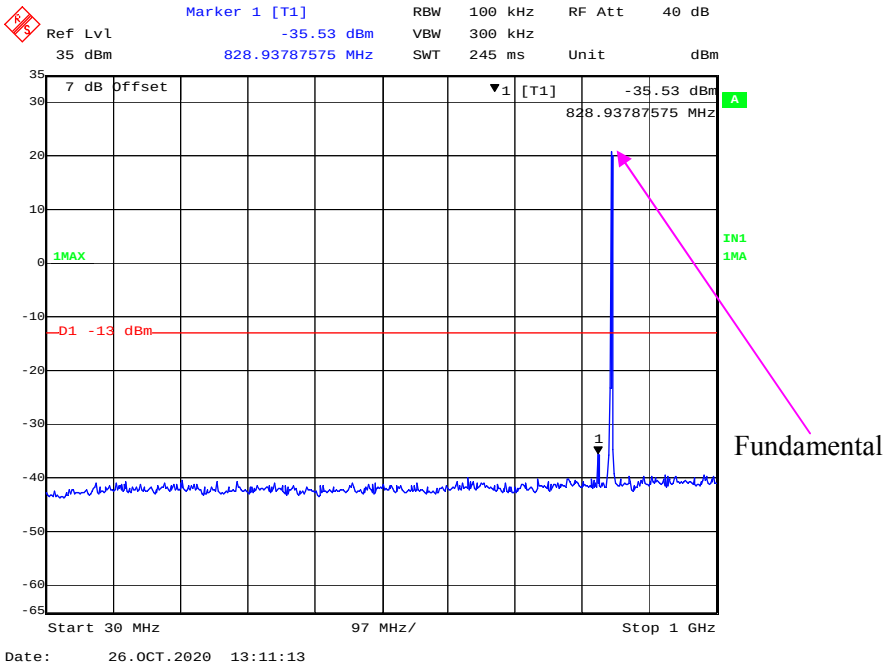


Date: 26.OCT.2020 12:27:39

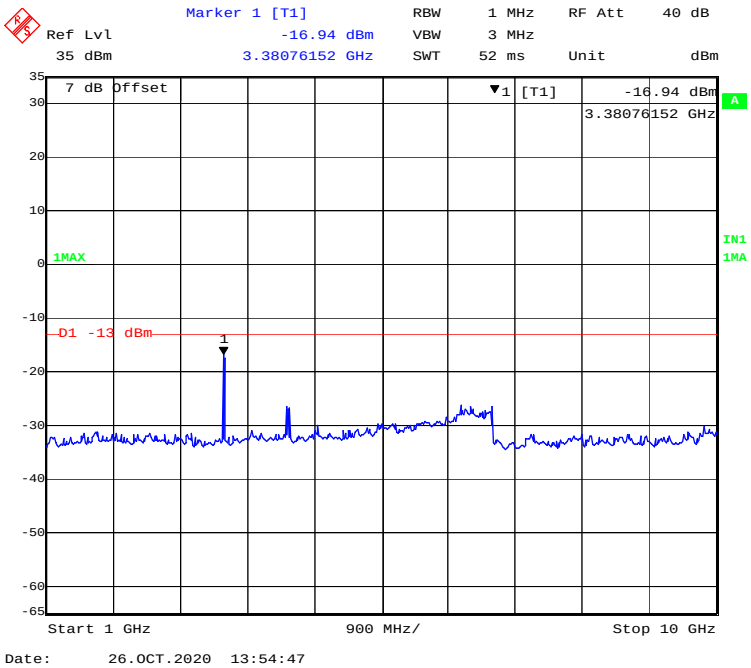
1 GHz – 10 GHz (16QAM, 10.0 MHz, Middle Channel)

Date: 26.OCT.2020 14:10:35

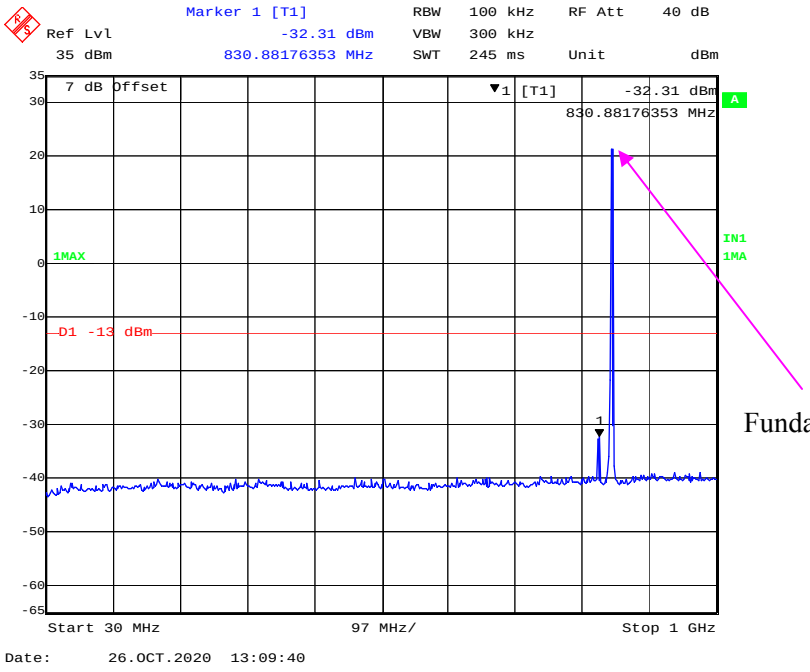
30 MHz - 1 GHz (QPSK, 1.4 MHz, High Channel)



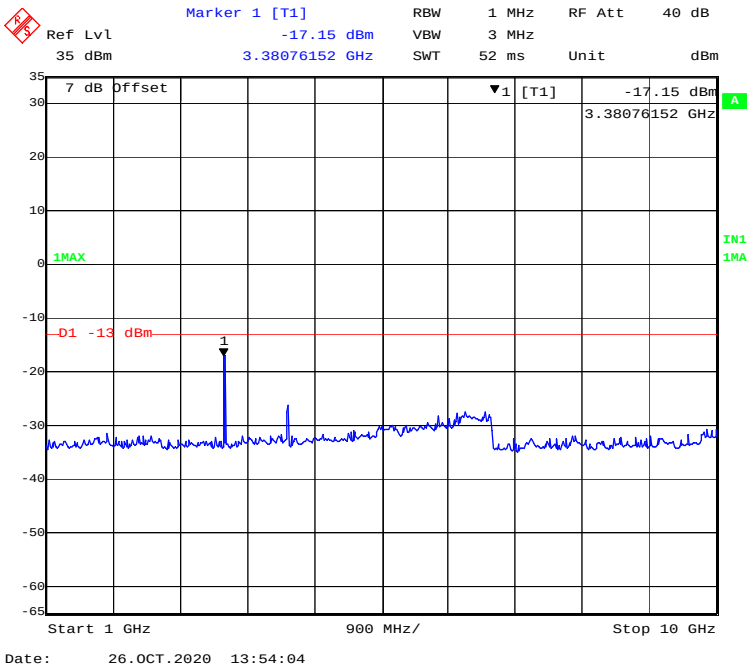
1 GHz – 10 GHz (QPSK, 1.4 MHz, High Channel)



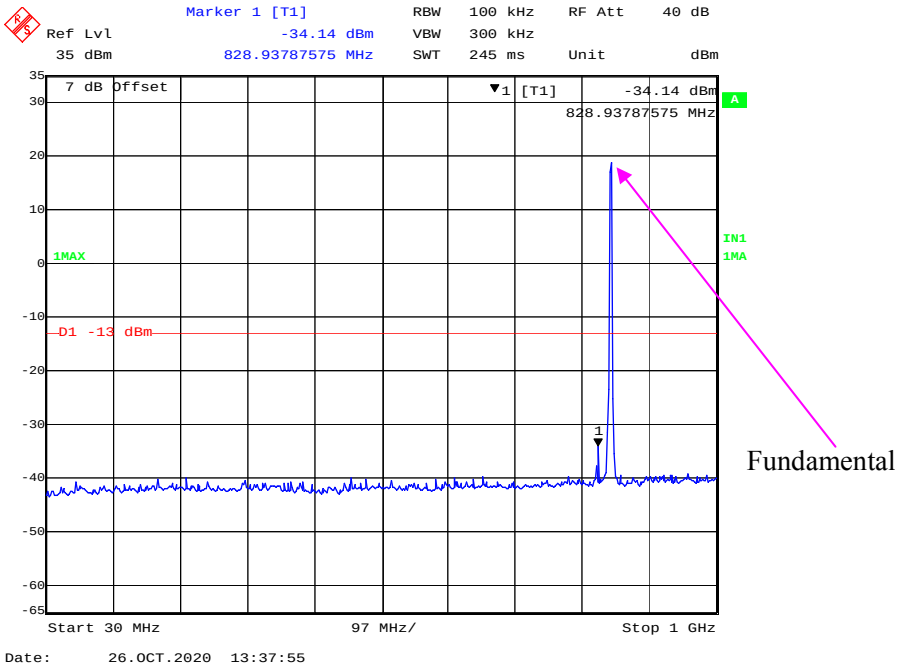
30 MHz - 1 GHz (16QAM, 1.4 MHz, High Channel)



1 GHz – 10 GHz (16QAM, 1.4 MHz, High Channel)

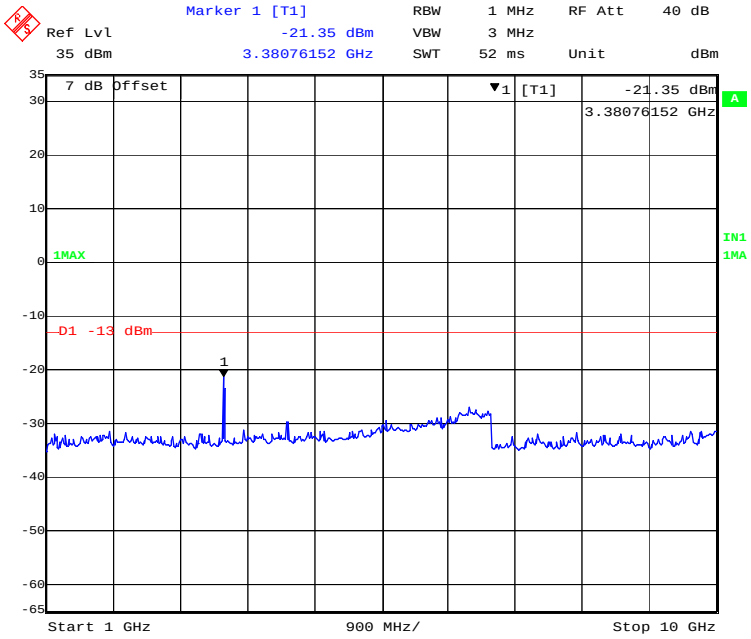


30 MHz - 1 GHz (QPSK, 3.0 MHz, High Channel)



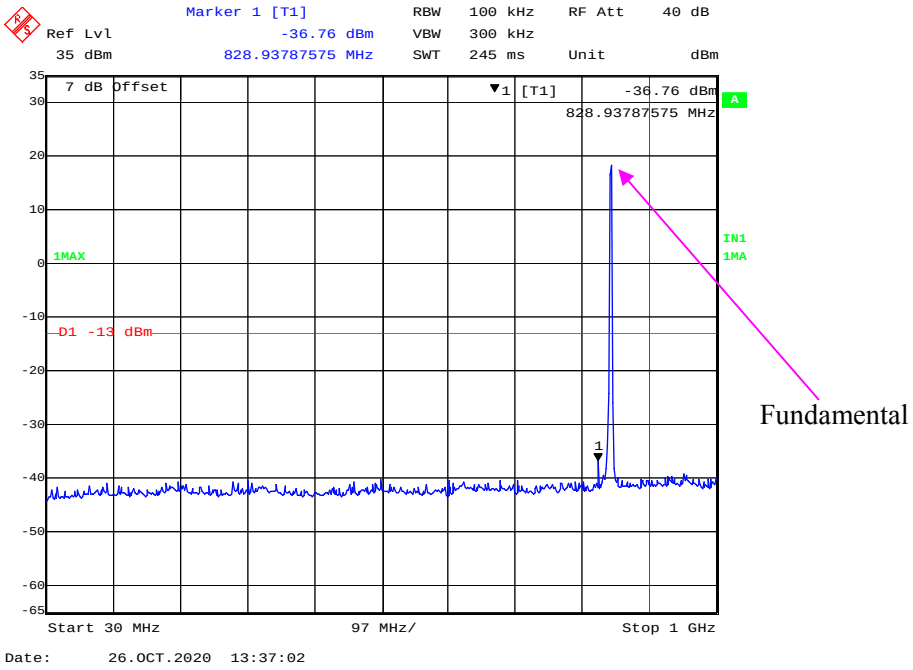
Date: 26.OCT.2020 13:37:55

1 GHz – 10 GHz (QPSK, 3.0 MHz, High Channel)



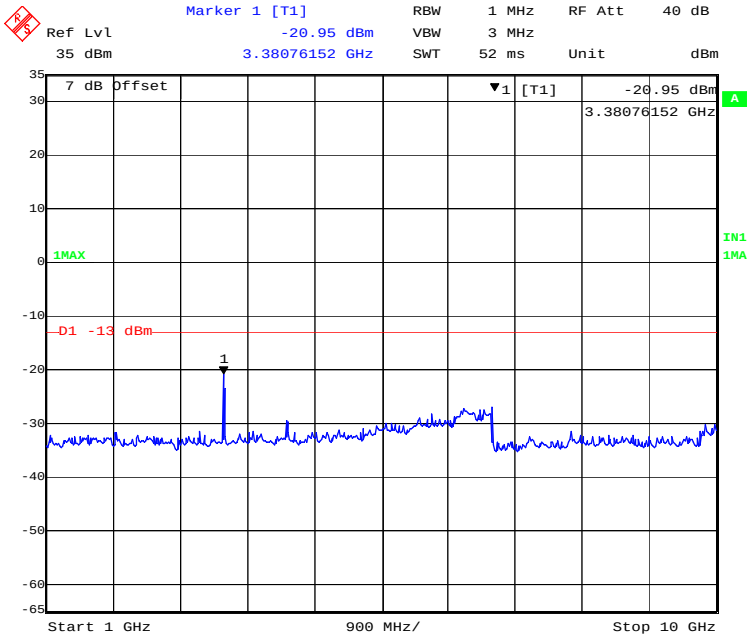
Date: 26.OCT.2020 13:51:27

30 MHz - 1 GHz (16QAM, 3.0 MHz, High Channel)



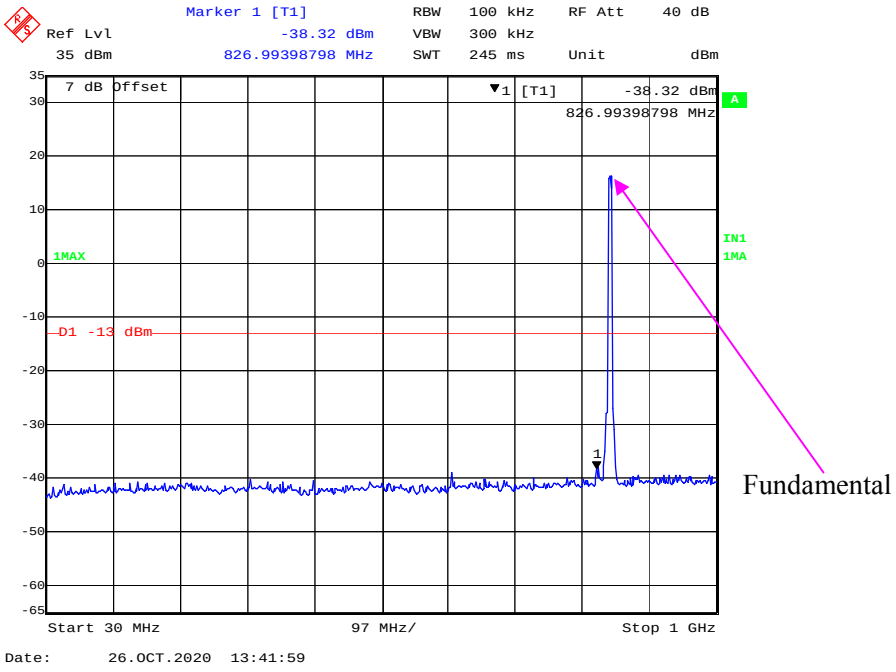
Date: 26.OCT.2020 13:37:02

1 GHz – 10 GHz (16QAM, 3.0 MHz, High Channel)



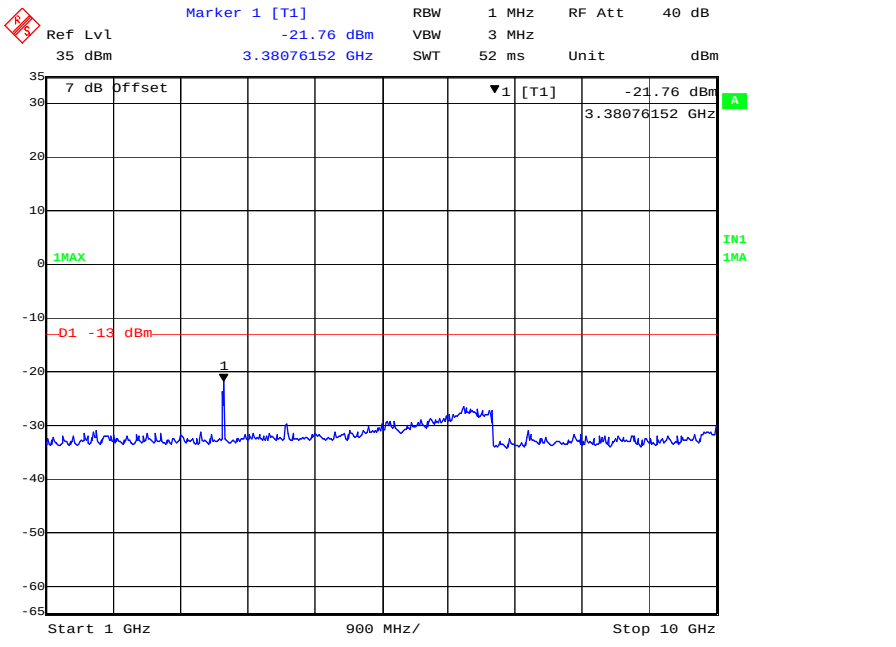
Date: 26.OCT.2020 13:50:47

30 MHz - 1 GHz (QPSK, 5.0 MHz, High Channel)



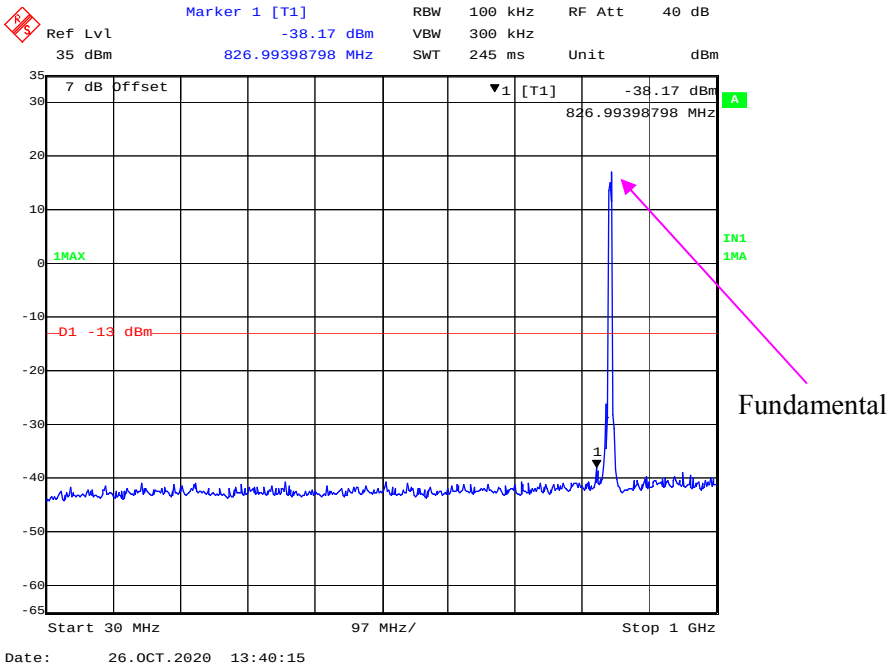
Date: 26.OCT.2020 13:41:59

1 GHz – 10 GHz (QPSK, 5.0MHz, High Channel)

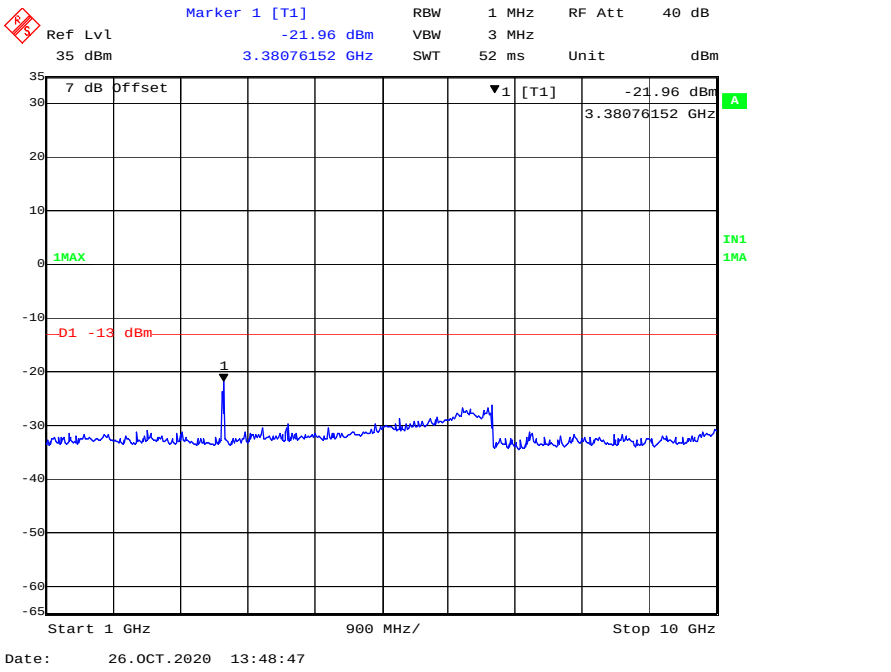


Date: 26.OCT.2020 13:49:36

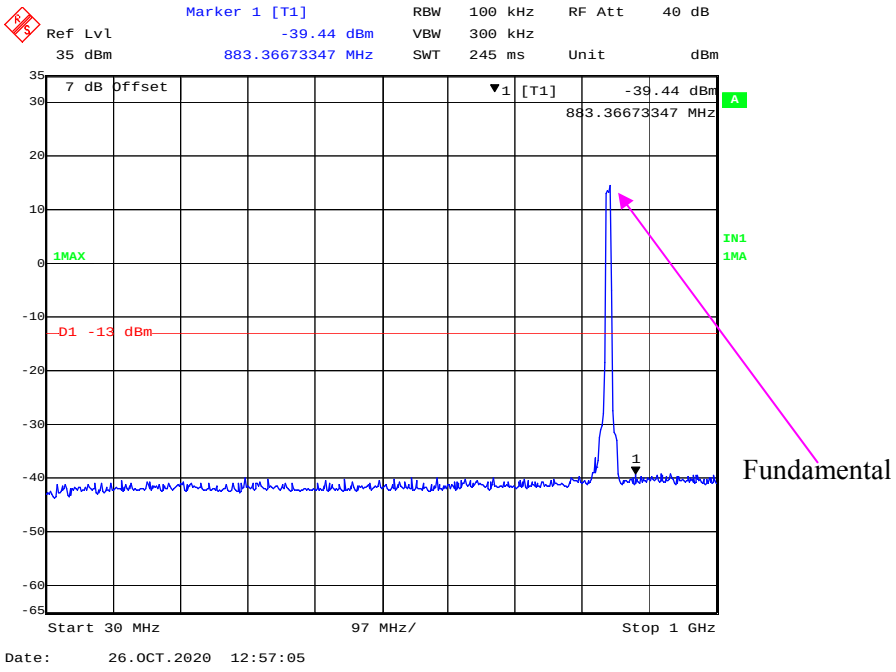
30 MHz - 1 GHz (16QAM, 5.0 MHz, High Channel)



1 GHz – 10 GHz (16QAM, 5.0MHz, High Channel)

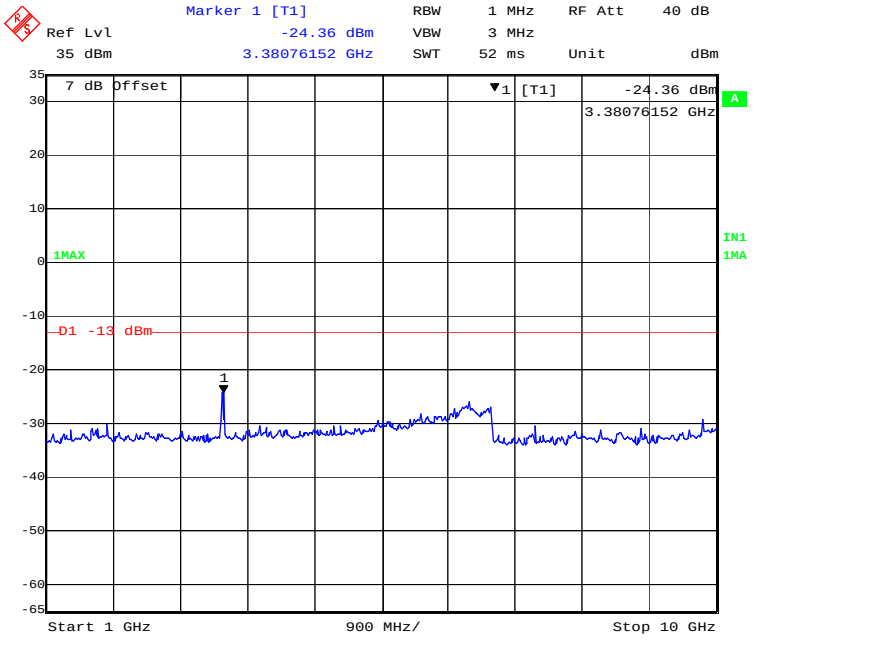


30 MHz - 1 GHz (QPSK, 10.0 MHz, High Channel)



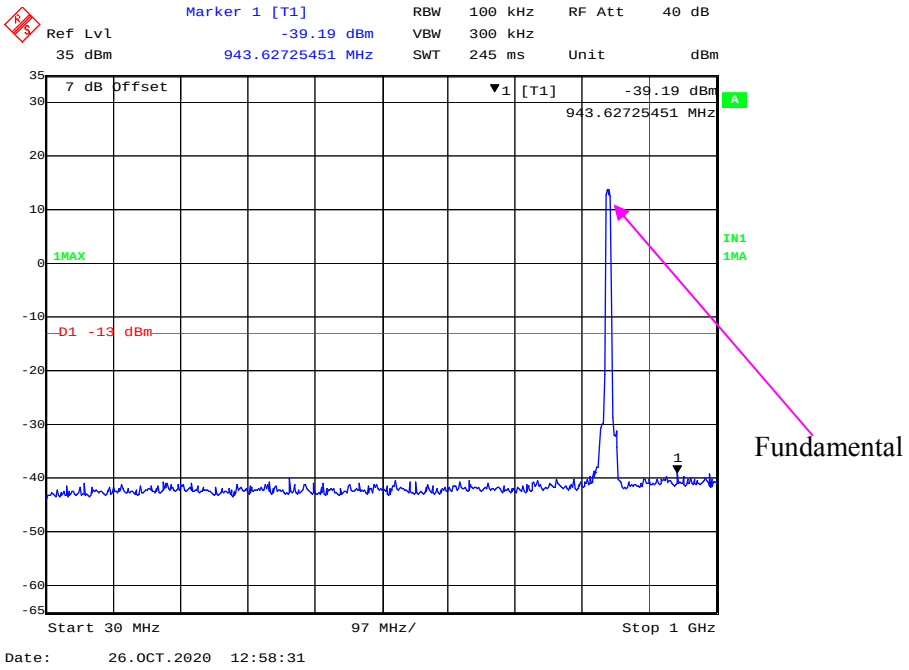
Date: 26.OCT.2020 12:57:05

1 GHz – 10 GHz (QPSK, 10.0 MHz, High Channel)

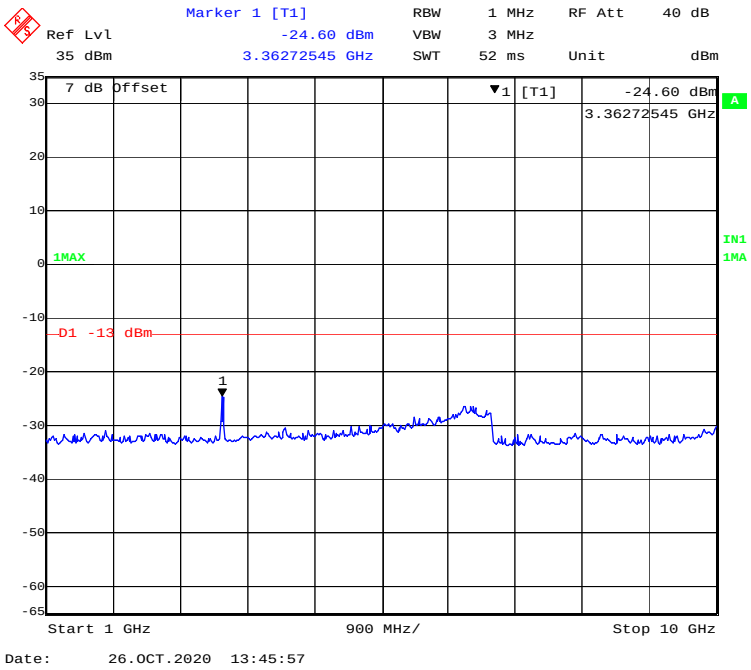


Date: 26.OCT.2020 13:46:52

30 MHz - 1 GHz (16QAM, 10.0 MHz, High Channel)

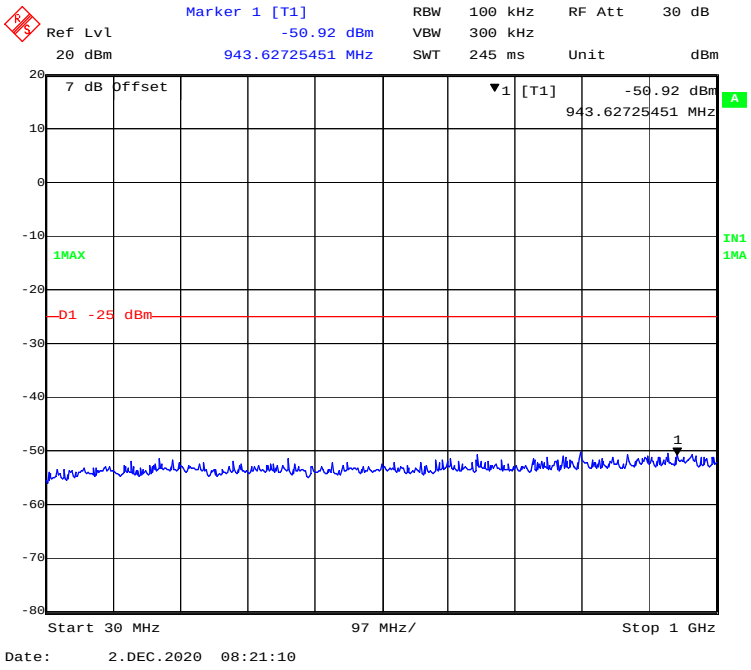


1 GHz – 10 GHz (16QAM, 10.0 MHz, High Channel)

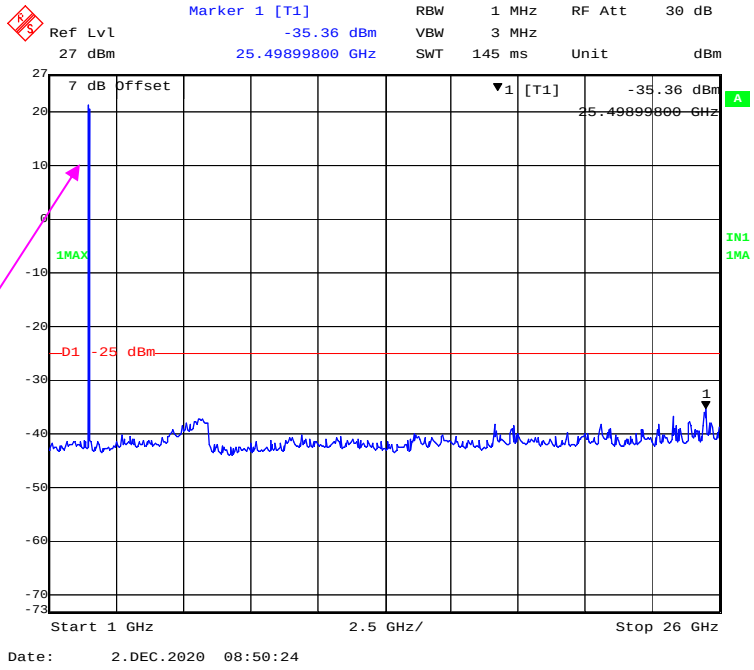


LTE Band 7

30 MHz – 1 GHz (QPSK, 5.0 MHz, Low Channel)

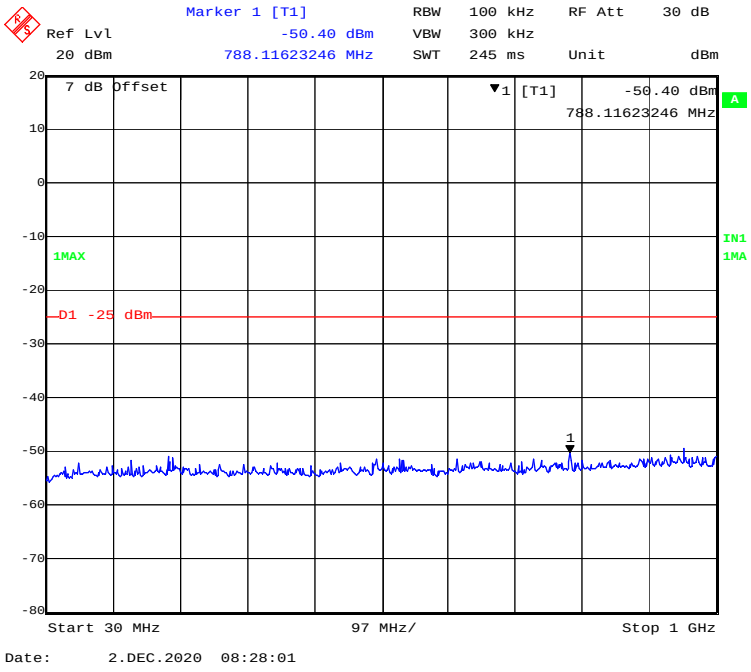


1 GHz – 26 GHz (QPSK, 5.0 MHz, Low Channel)

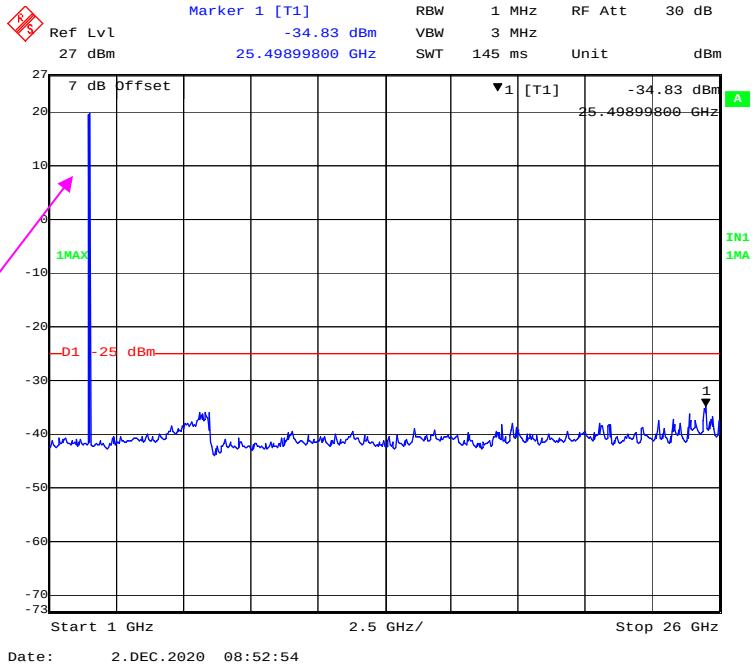


Fundamental

30 MHz – 1 GHz (QPSK, 10.0 MHz, Low Channel)

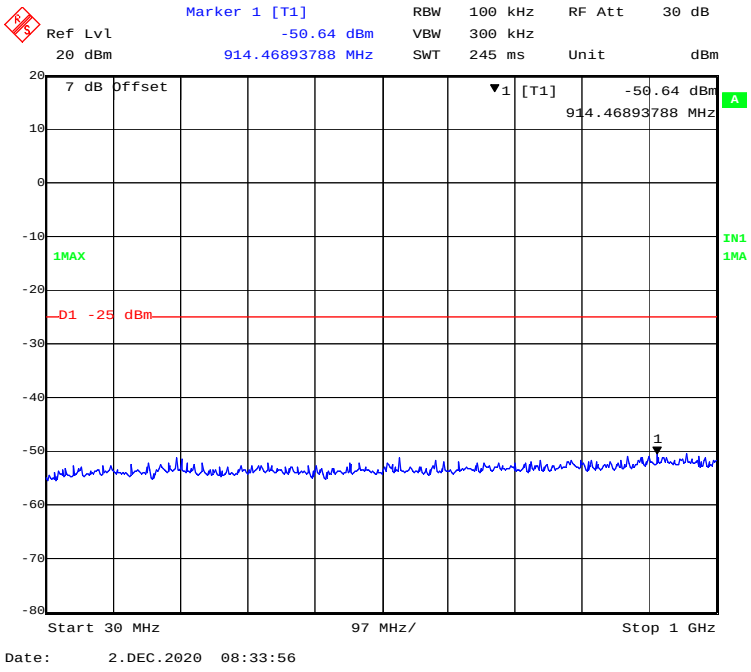


1 GHz – 26 GHz (QPSK, 10.0 MHz, Low Channel)

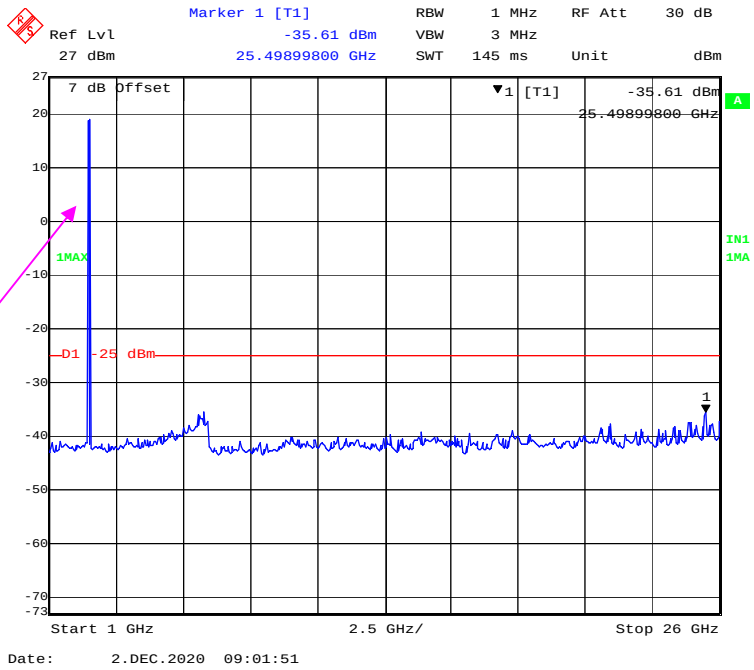


Fundamental

30 MHz – 1 GHz (QPSK, 15.0 MHz, Low Channel)

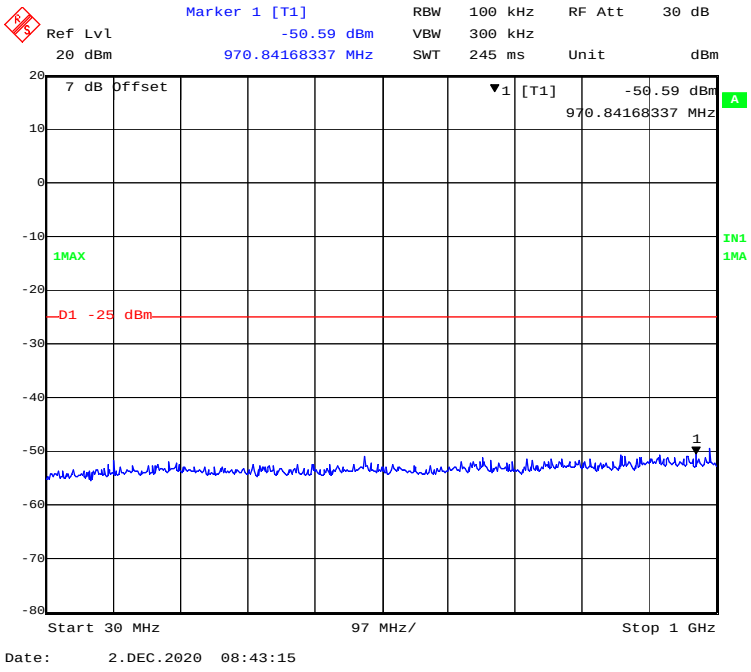


1 GHz – 26 GHz (QPSK, 15.0MHz, Low Channel)

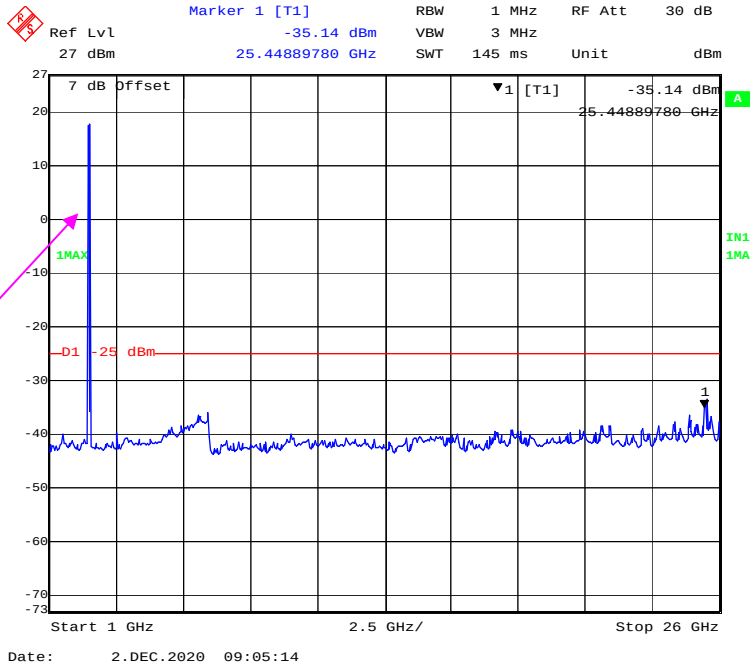


Fundamental

30 MHz – 1 GHz (QPSK, 20.0 MHz, Low Channel)

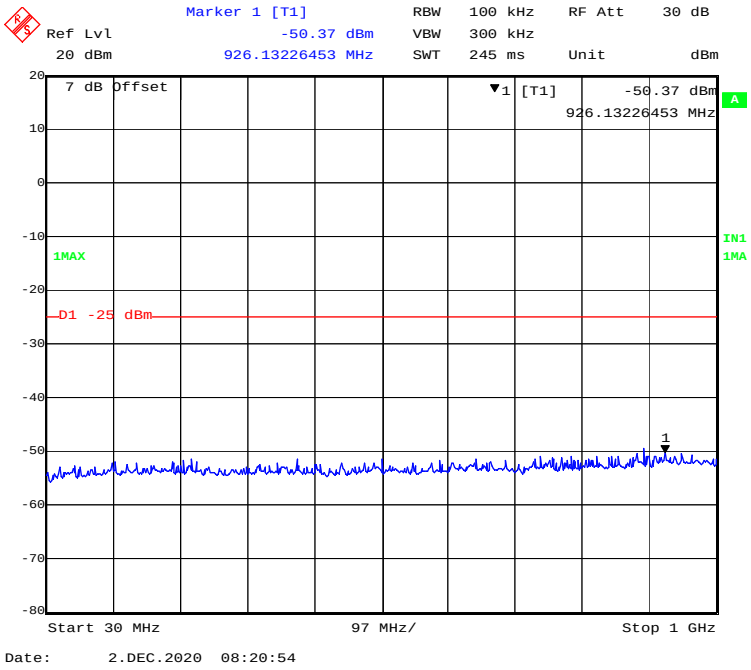


1 GHz – 26 GHz (QPSK, 20.0 MHz, Low Channel)

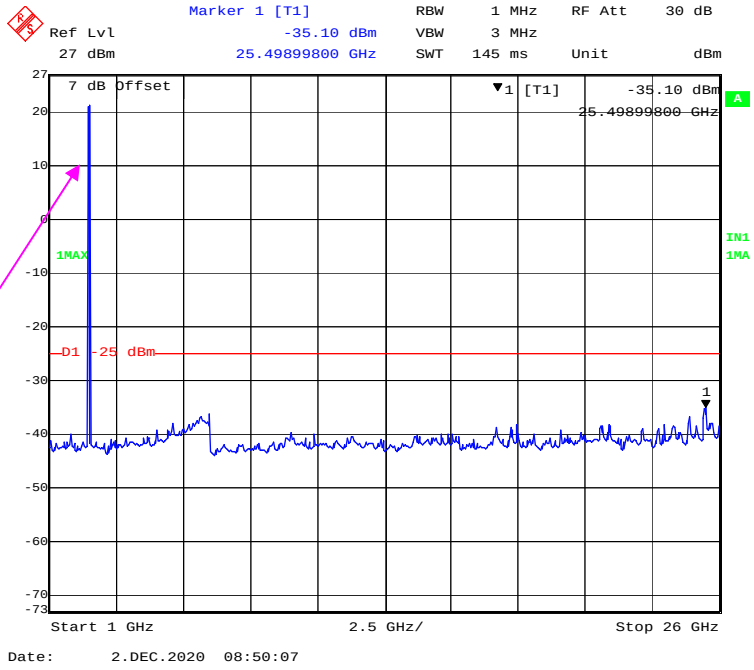


Fundamental

30 MHz – 1 GHz (16QAM, 5.0 MHz, Low Channel)

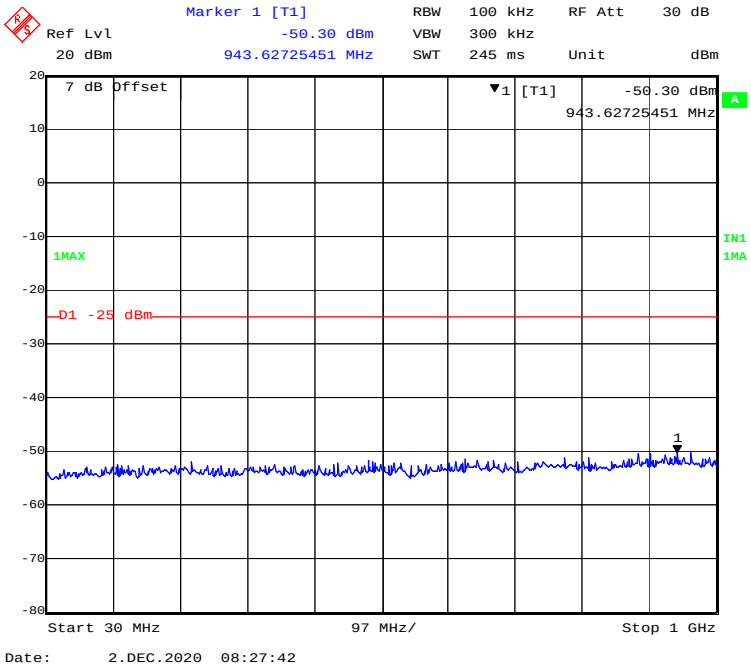


1 GHz – 26 GHz (16QAM, 5.0 MHz, Low Channel)

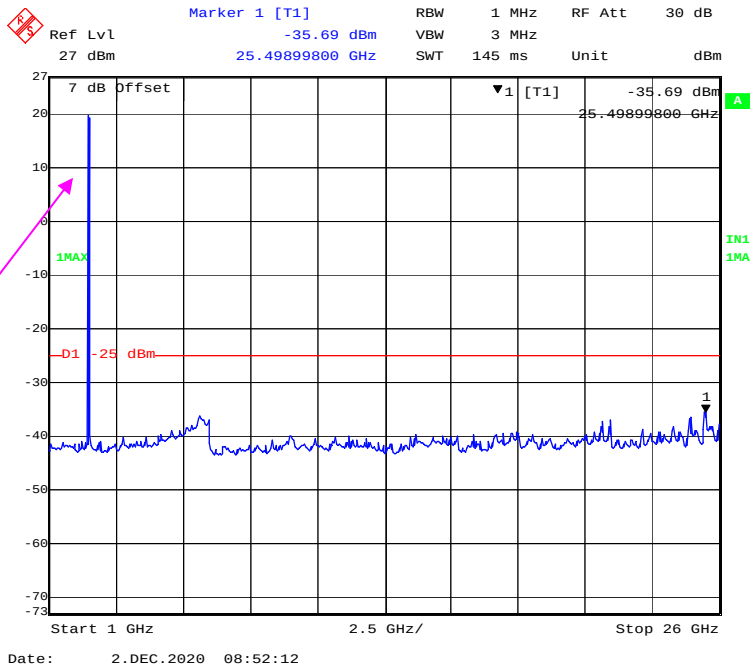


Fundamental

30 MHz – 1 GHz (16QAM, 10.0 MHz, Low Channel)

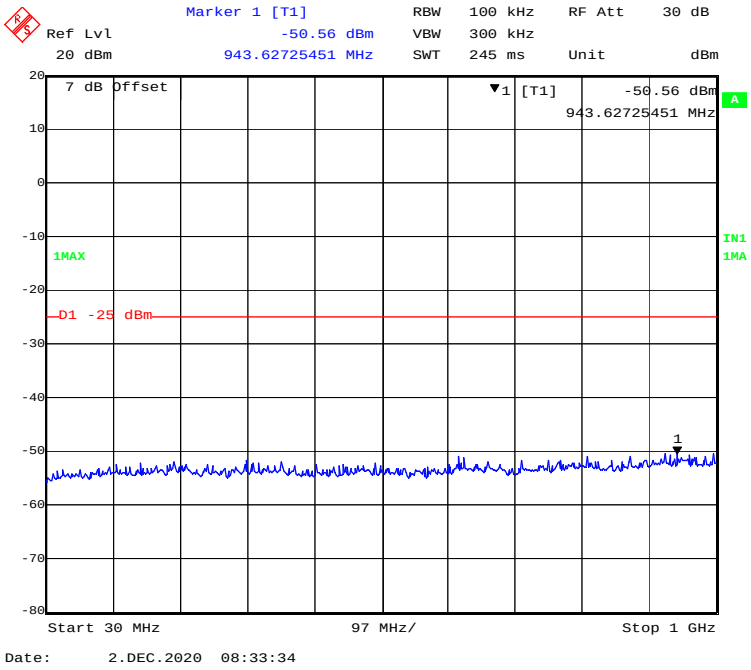


1 GHz – 26 GHz (16QAM, 10.0 MHz, Low Channel)

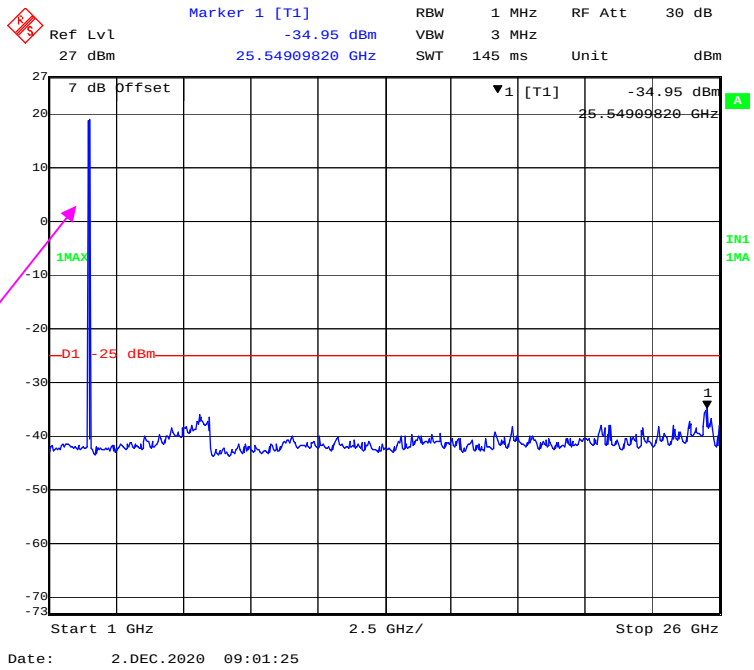


Fundamental

30 MHz – 1 GHz (16QAM, 15.0 MHz, Low Channel)

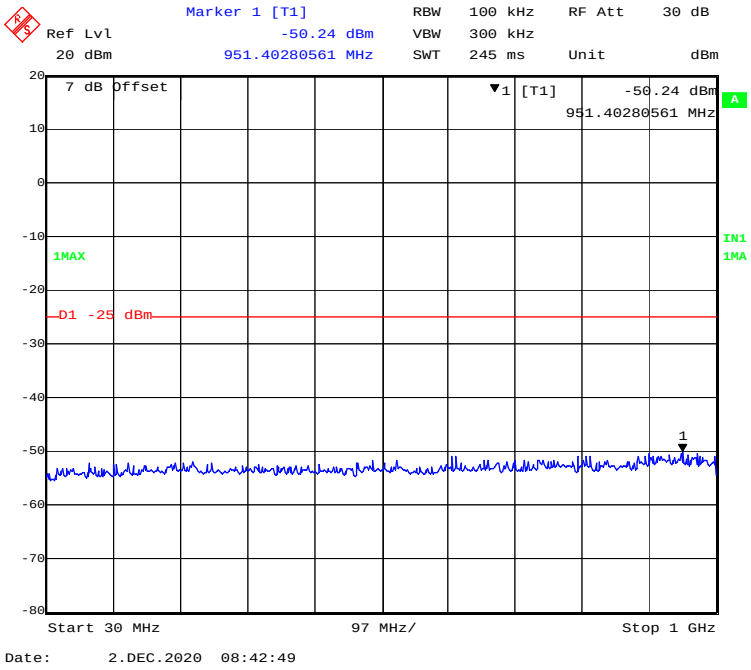


1 GHz – 26 GHz (16QAM, 15.0MHz, Low Channel)

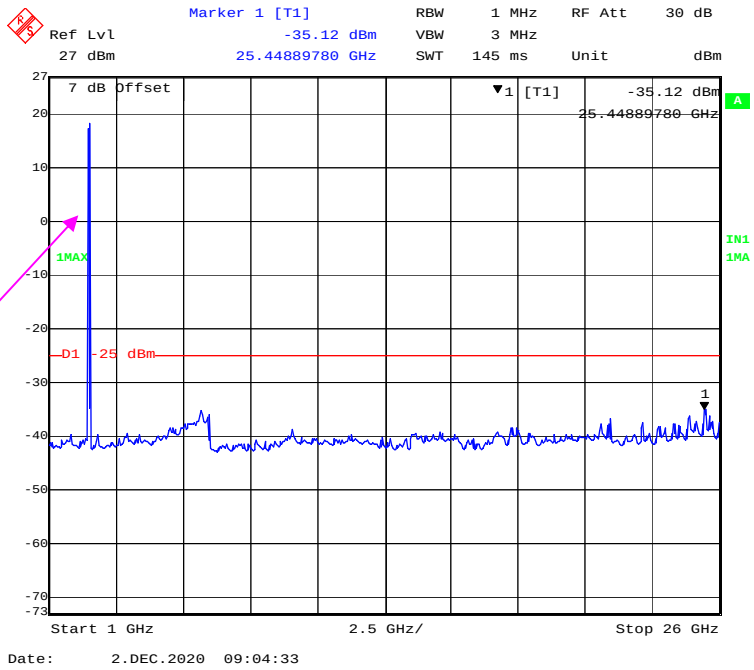


Fundamental

30 MHz – 1 GHz (16QAM, 20.0 MHz, Low Channel)

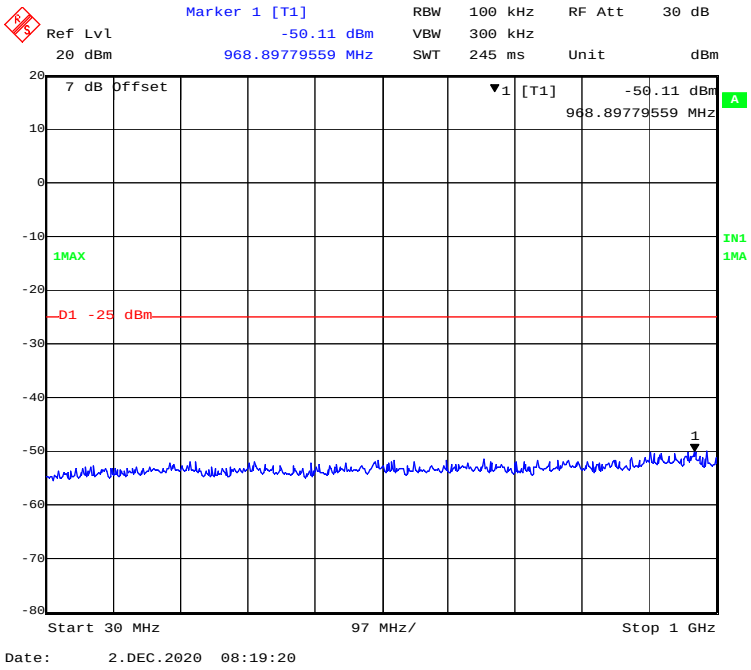


1 GHz – 26 GHz (16QAM, 20.0 MHz, Low Channel)

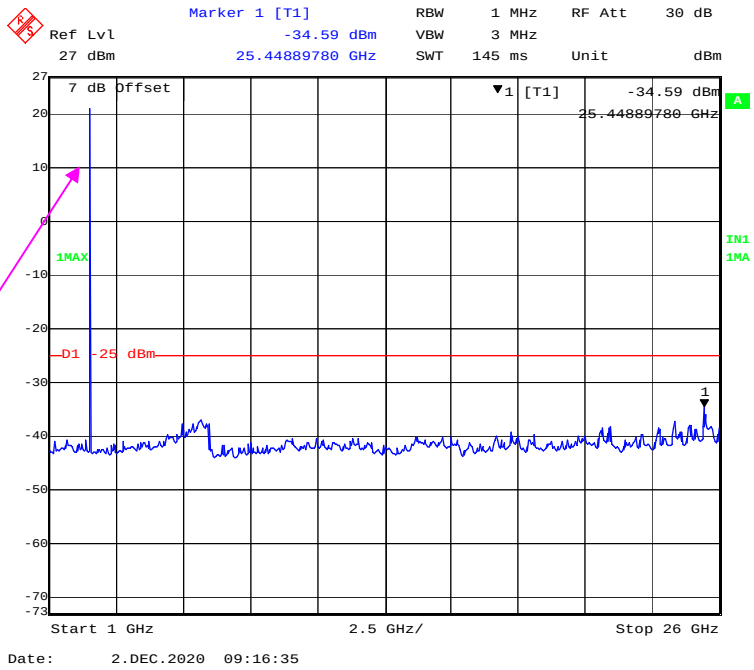


Fundamental

30 MHz – 1 GHz (QPSK, 5.0 MHz, Middle Channel)

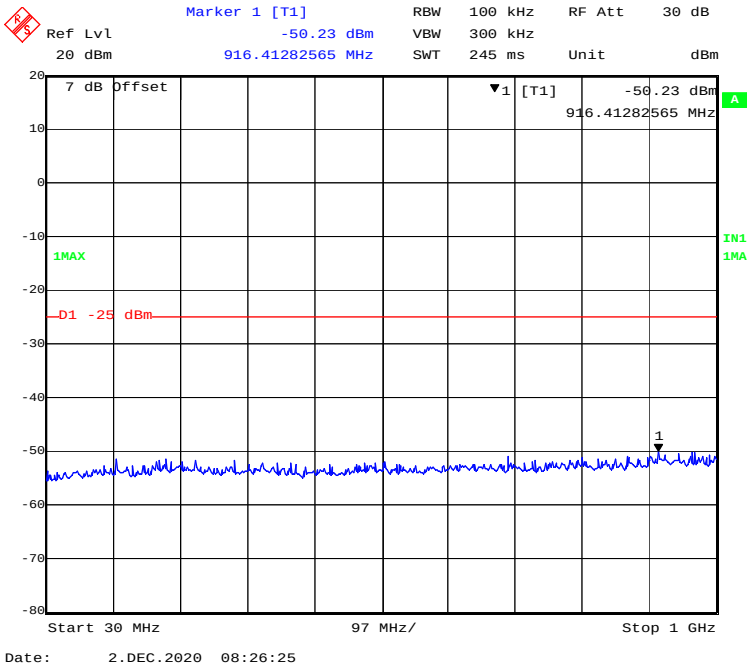


1 GHz – 26 GHz (QPSK, 5.0 MHz, Middle Channel)

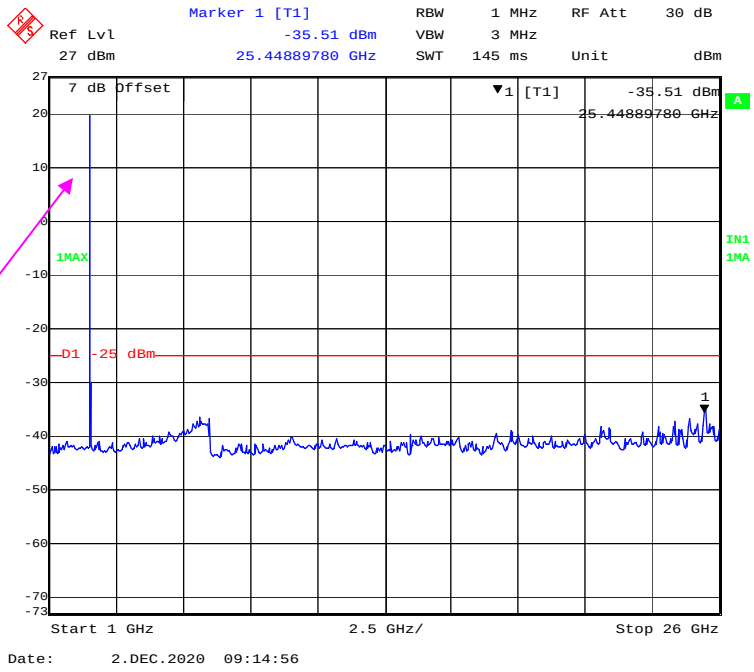


Fundamental

30 MHz – 1 GHz (QPSK, 10.0 MHz, Middle Channel)

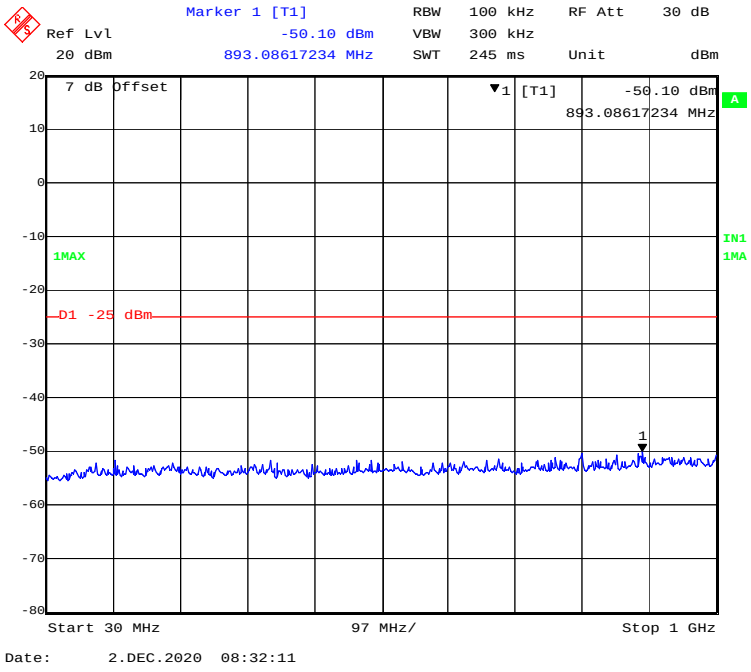


1 GHz – 26 GHz (QPSK, 10.0 MHz, Middle Channel)

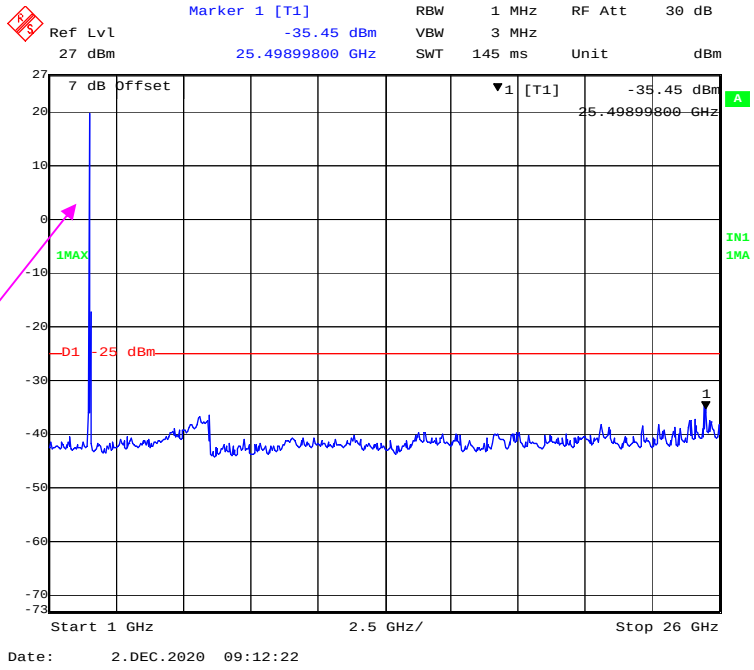


Fundamental

30 MHz – 1 GHz (QPSK, 15.0 MHz, Middle Channel)

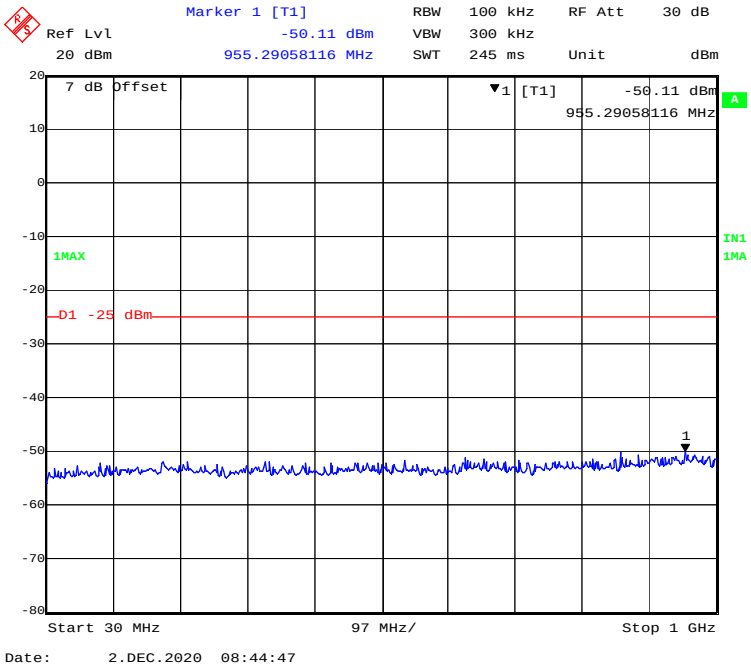


1 GHz – 26 GHz (QPSK, 15.0MHz, Middle Channel)

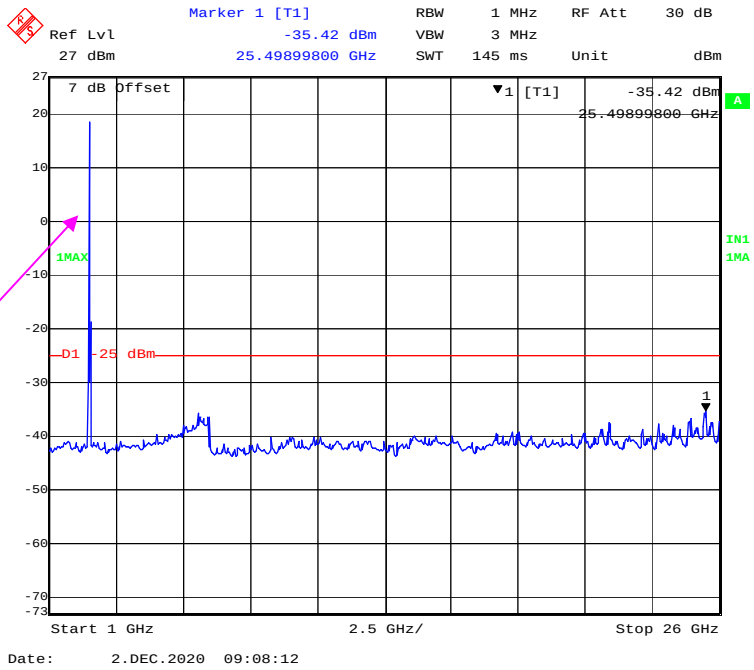


Fundamental

30 MHz – 1 GHz (QPSK, 20.0 MHz, Middle Channel)

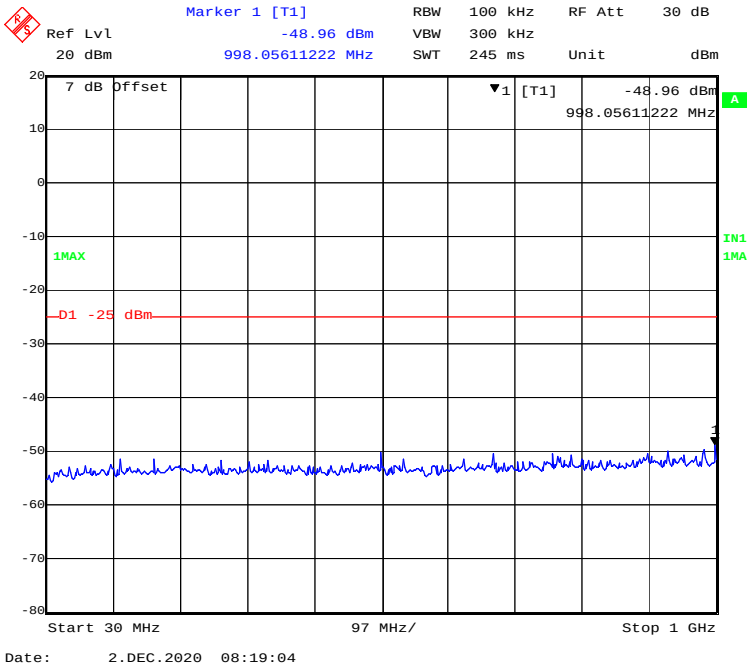


1 GHz – 26 GHz (QPSK, 20.0 MHz, Middle Channel)

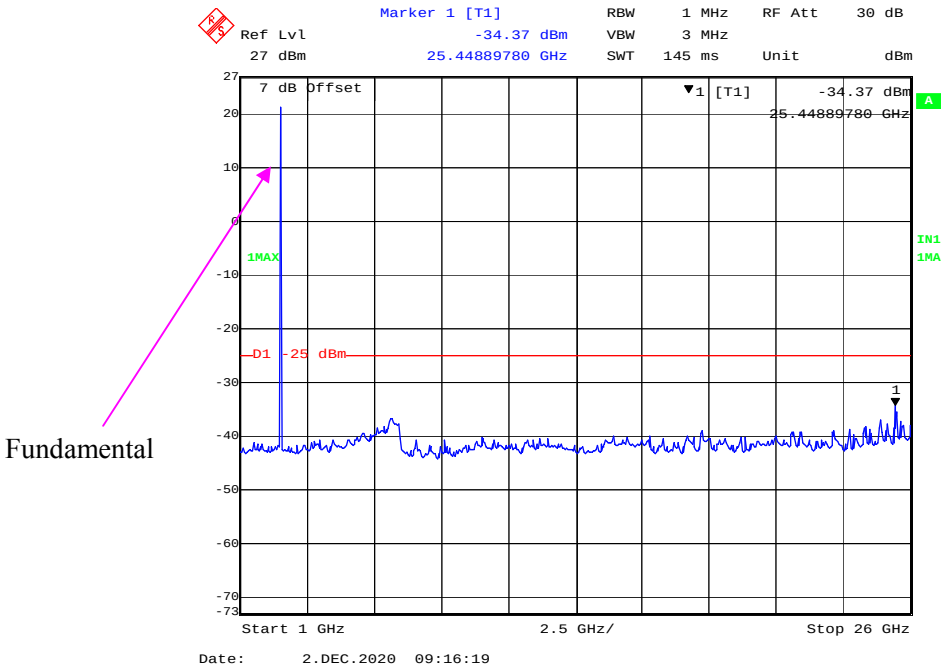


Fundamental

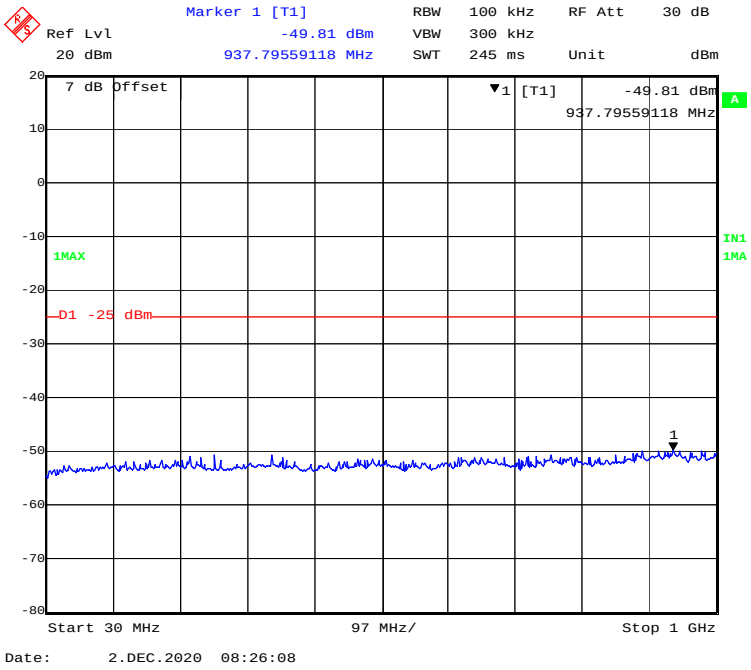
30 MHz – 1 GHz (16QAM, 5.0 MHz, Middle Channel)



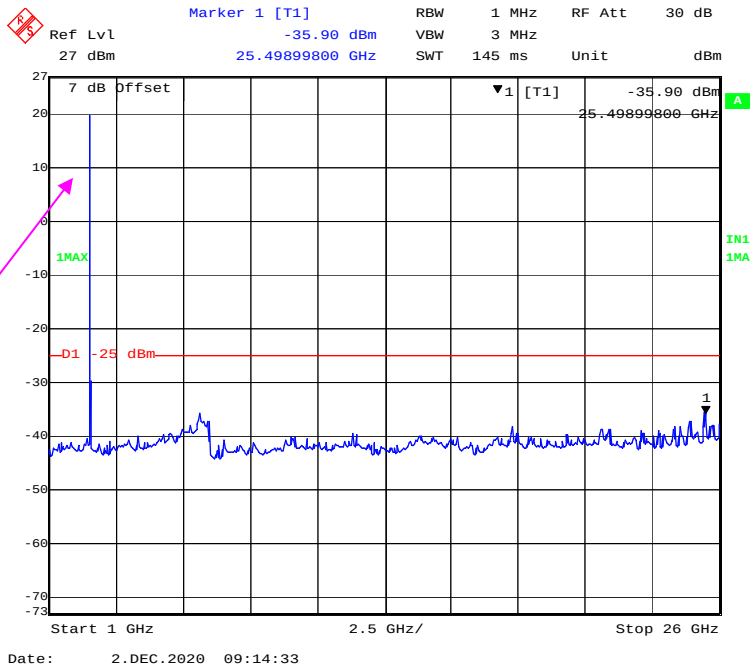
1 GHz – 26 GHz (16QAM, 5.0 MHz, Middle Channel)



30 MHz – 1 GHz (16QAM, 10.0 MHz, Middle Channel)

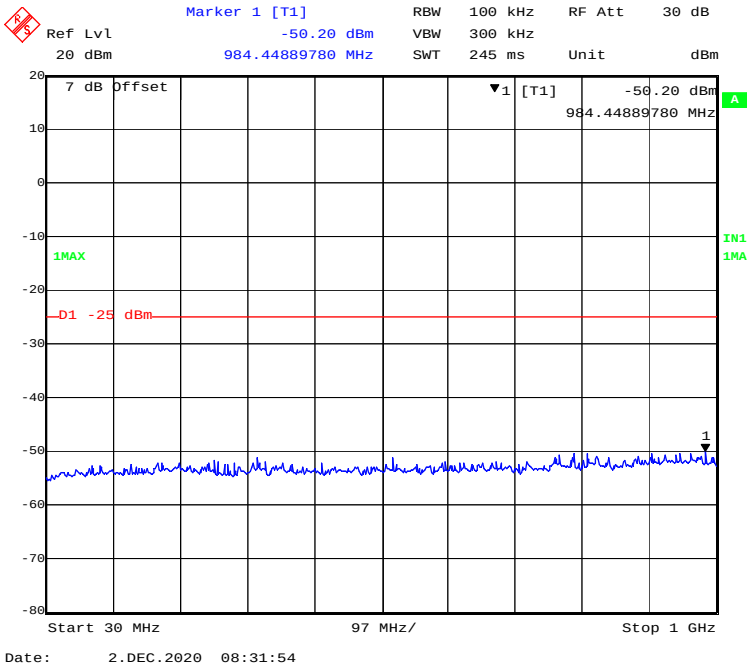


1 GHz – 26 GHz (16QAM, 10.0 MHz, Middle Channel)

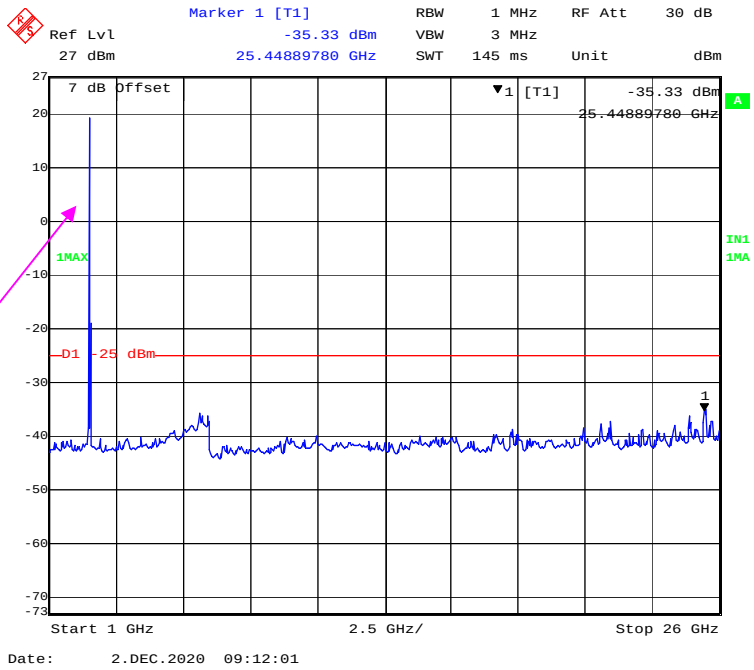


Fundamental

30 MHz – 1 GHz (16QAM, 15.0 MHz, Middle Channel)

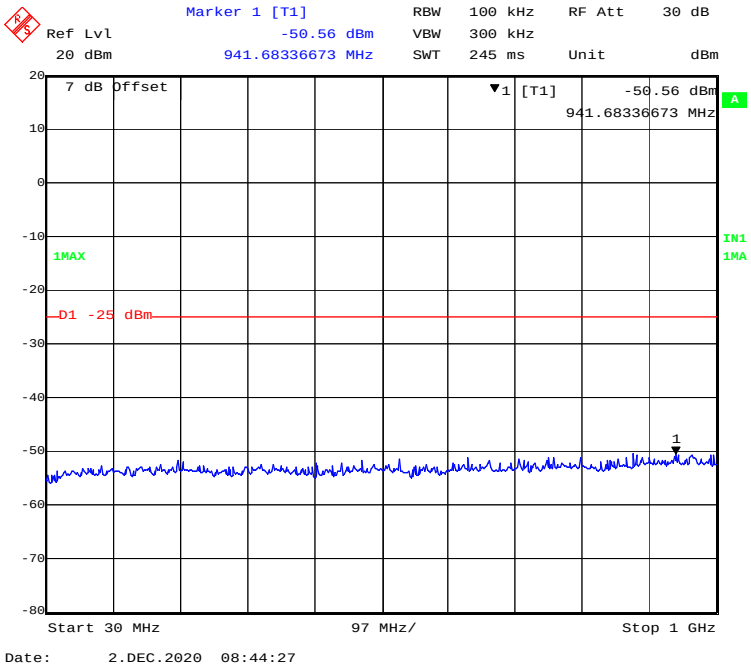


1 GHz – 26 GHz (16QAM, 15.0MHz, Middle Channel)

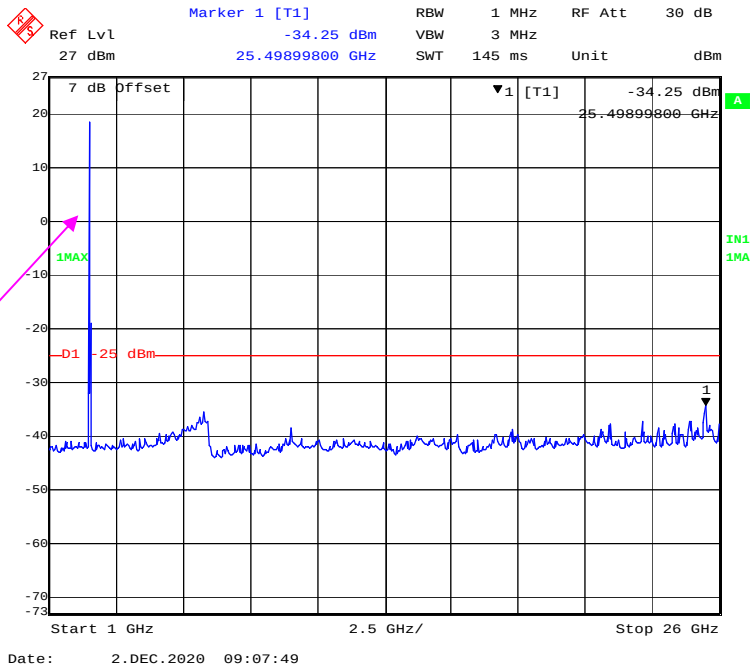


Fundamental

30 MHz – 1 GHz (16QAM, 20.0 MHz, Middle Channel)

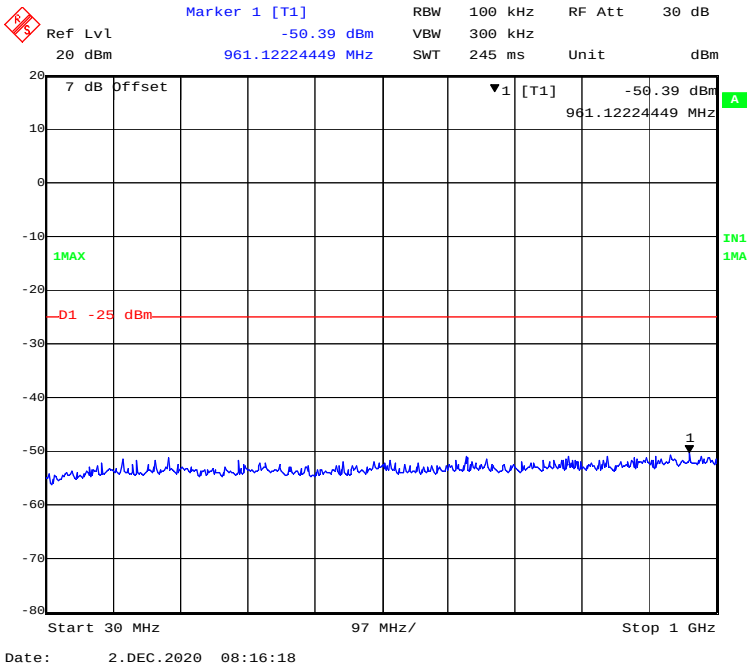


1 GHz – 26 GHz (16QAM, 20.0 MHz, Middle Channel)

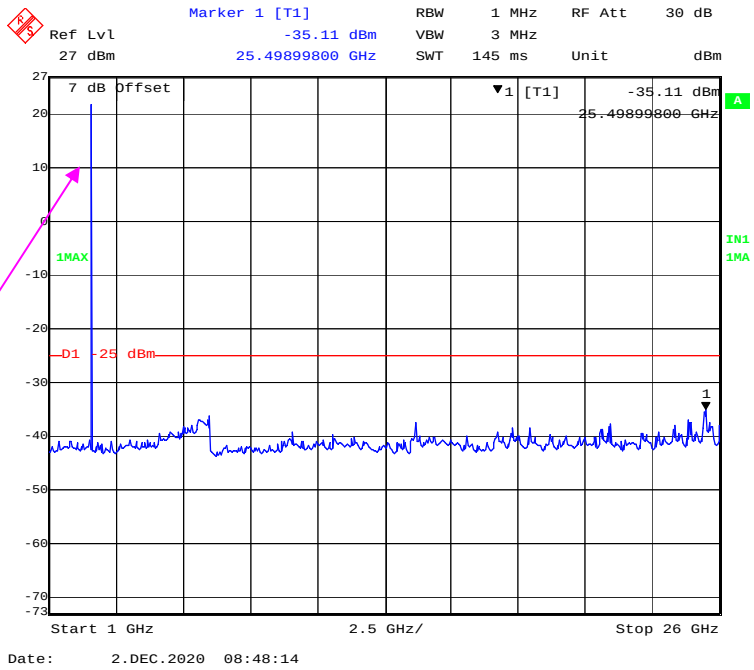


Fundamental

30 MHz – 1 GHz (QPSK, 5.0 MHz, High Channel)

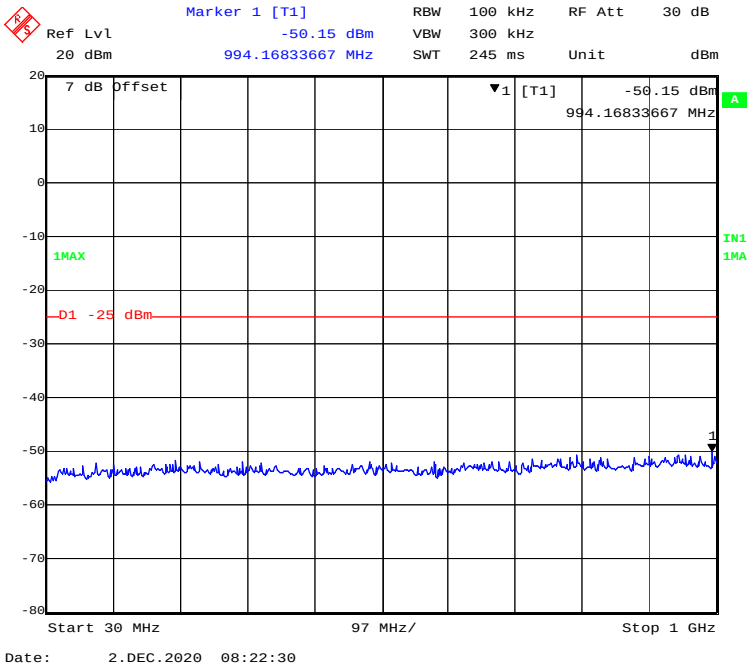


1 GHz – 26 GHz (QPSK, 5.0 MHz, High Channel)

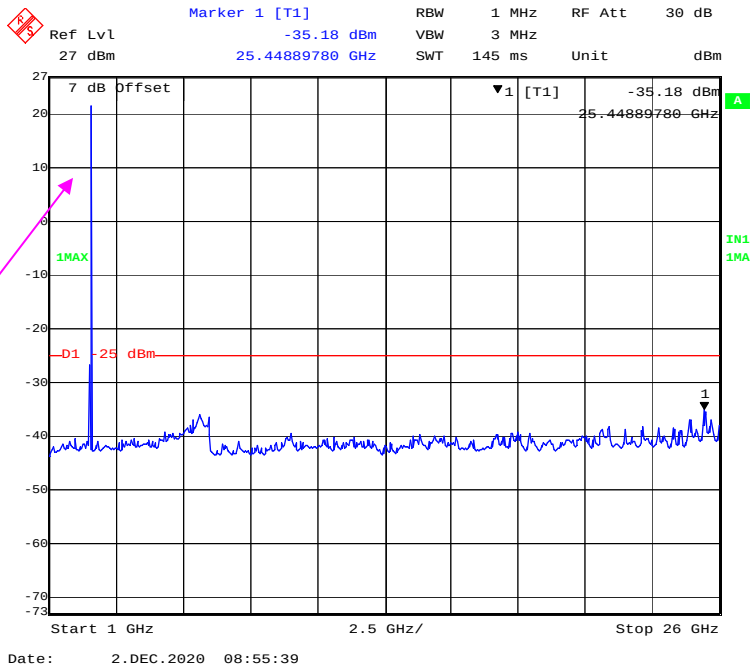


Fundamental

30 MHz – 1 GHz (QPSK, 10.0 MHz, High Channel)

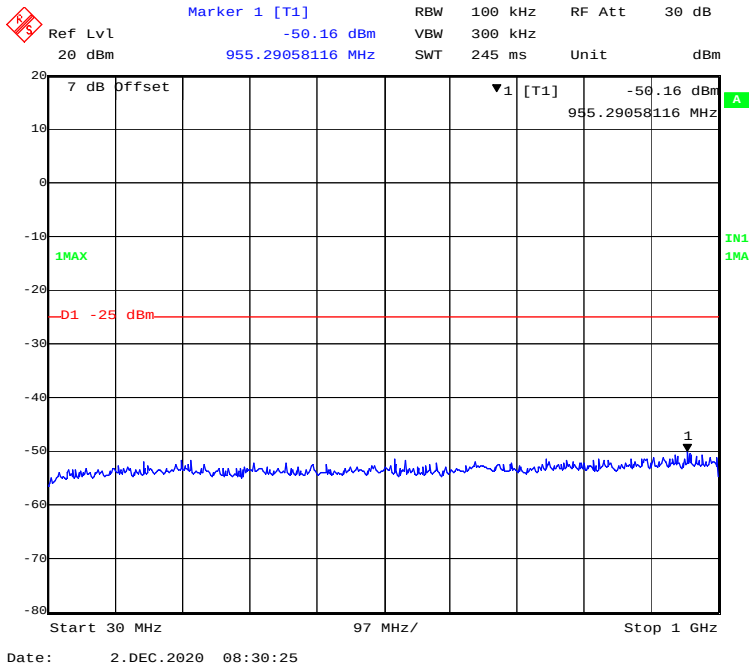


1 GHz – 26 GHz (QPSK, 10.0 MHz, High Channel)

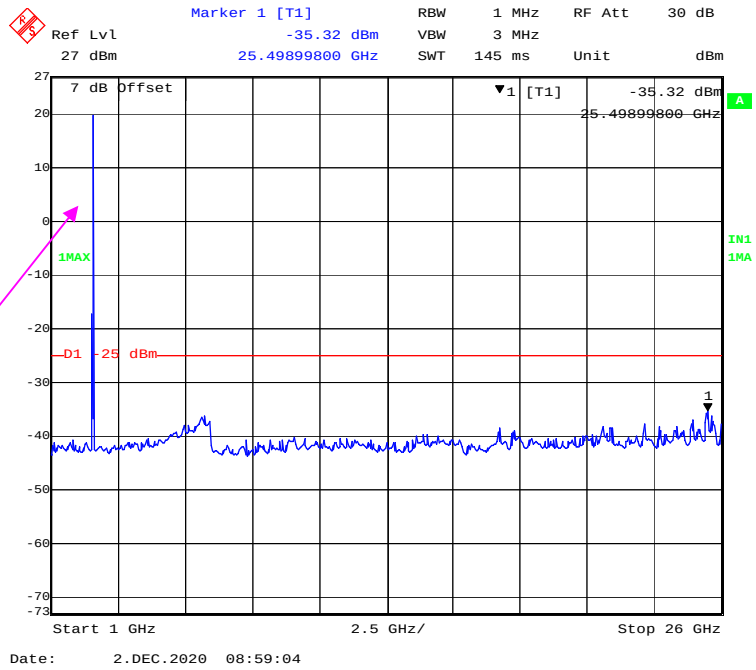


Fundamental

30 MHz – 1 GHz (QPSK, 15.0 MHz, High Channel)

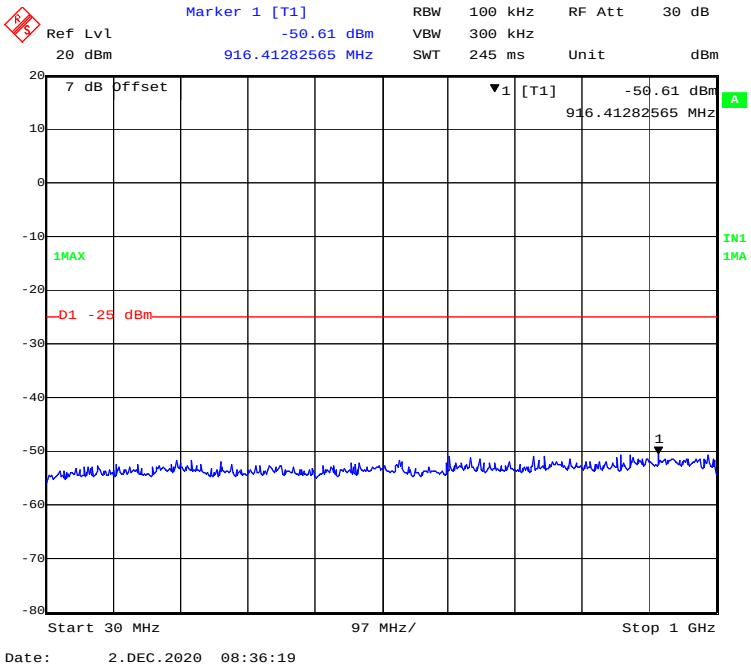


1 GHz – 26 GHz (QPSK, 15.0MHz, High Channel)

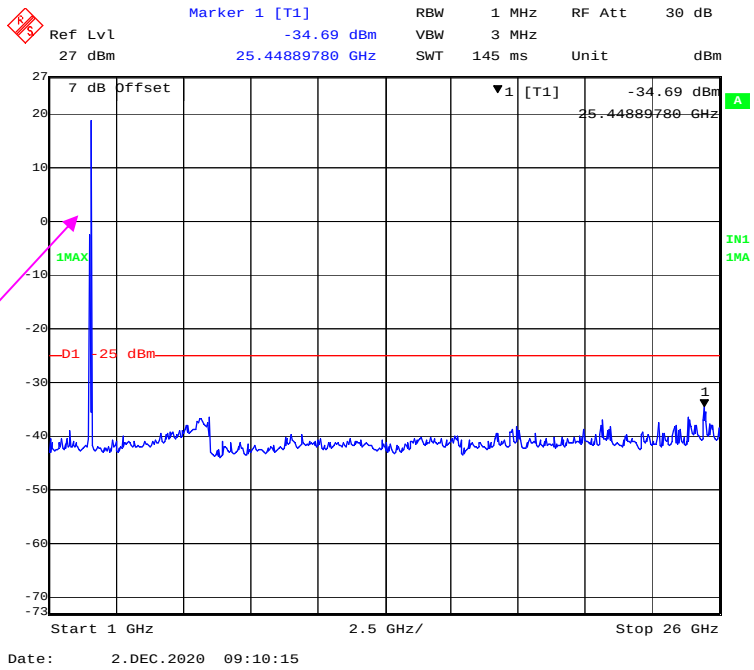


Fundamental

30 MHz – 1 GHz (QPSK, 20.0 MHz, High Channel)

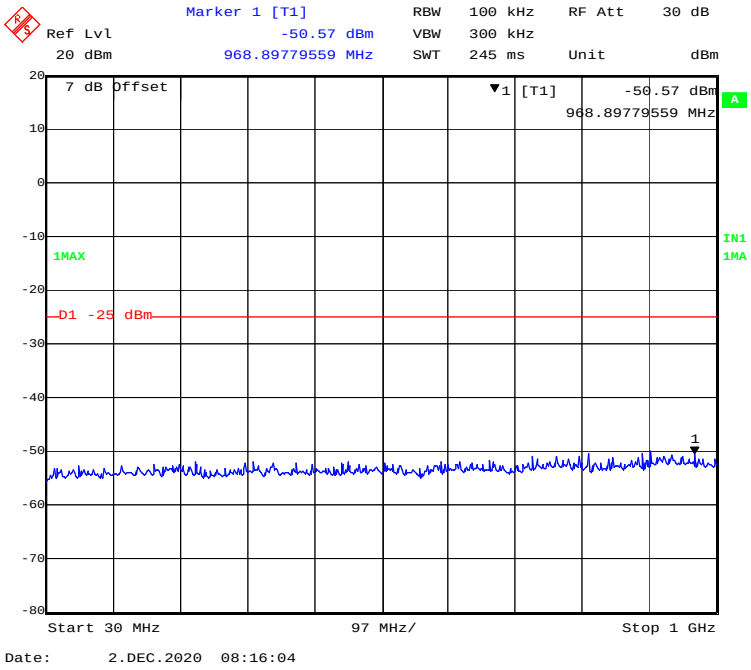


1 GHz – 26 GHz (QPSK, 20.0 MHz, High Channel)

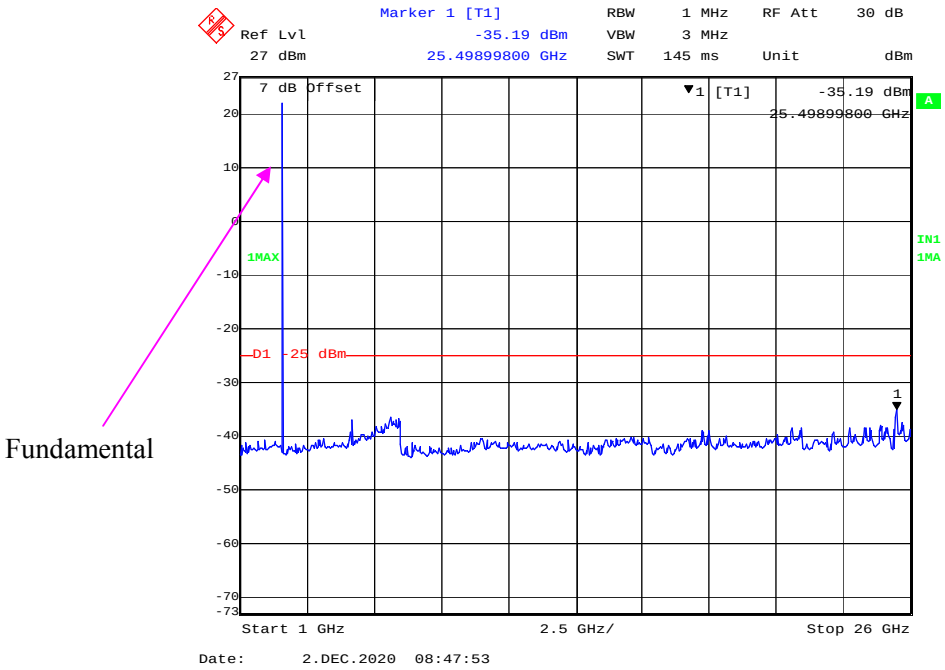


Fundamental

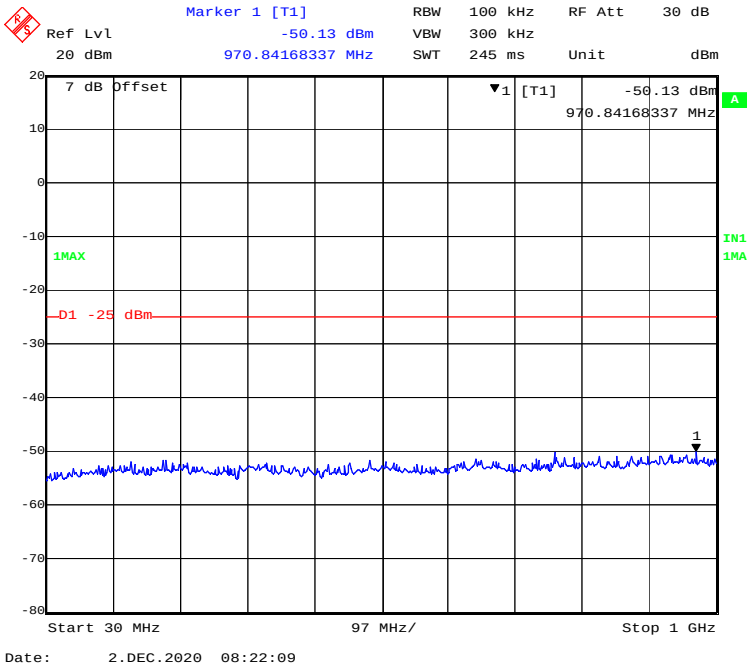
30 MHz – 1 GHz (16QAM, 5.0 MHz, High Channel)



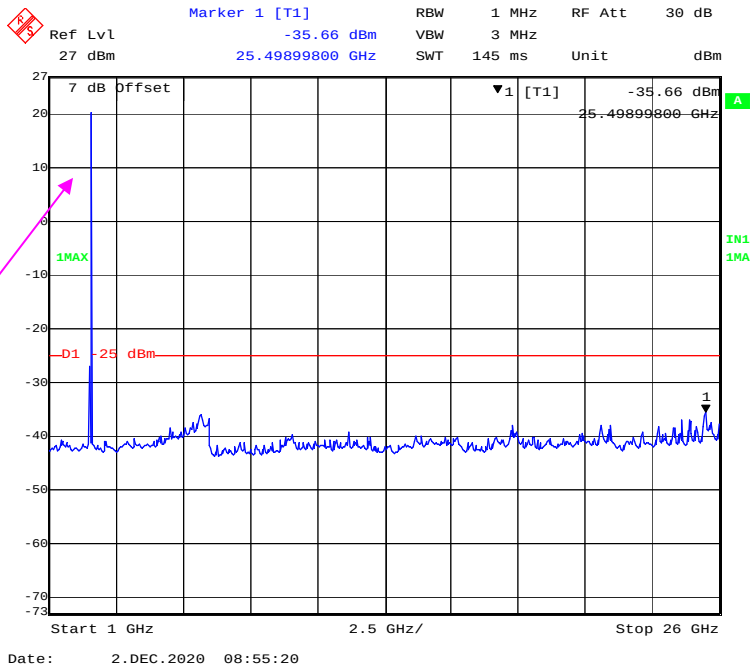
1 GHz – 26 GHz (16QAM, 5.0 MHz, High Channel)



30 MHz – 1 GHz (16QAM, 10.0 MHz, High Channel)

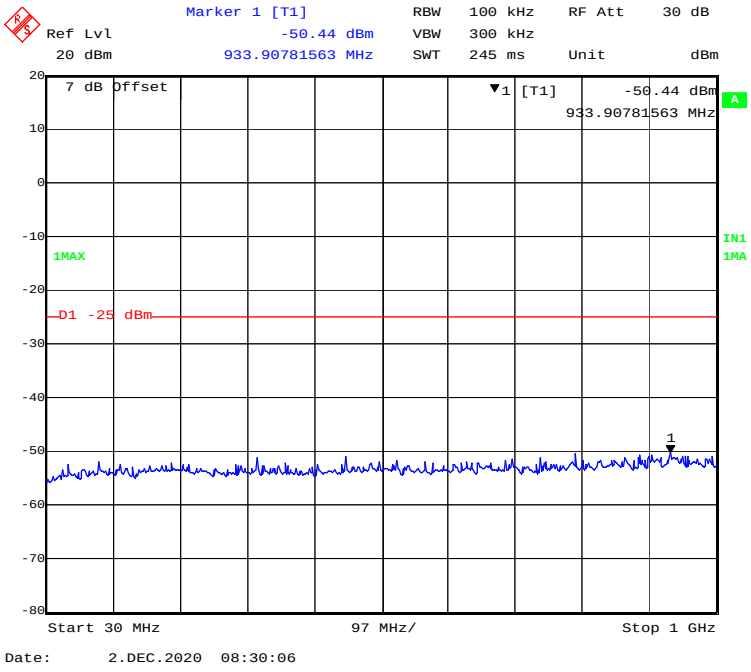


1 GHz – 26 GHz (16QAM, 10.0 MHz, High Channel)

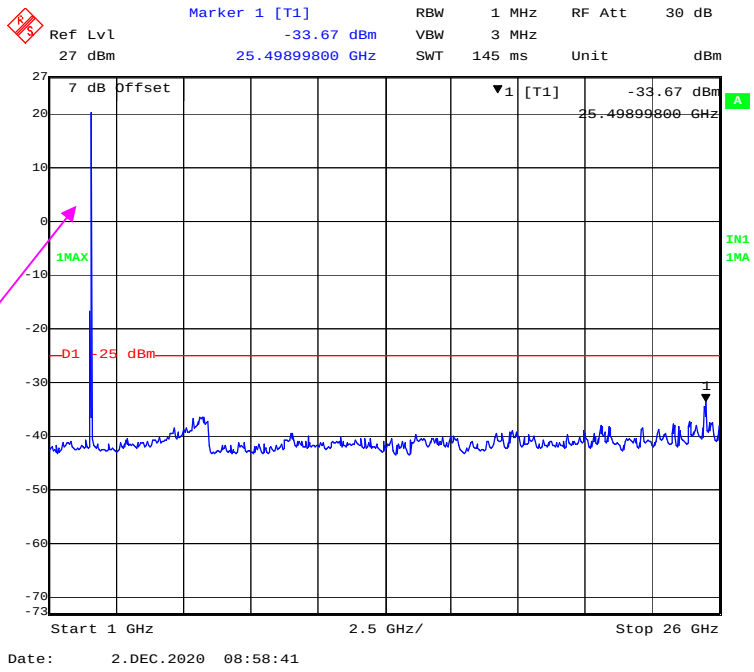


Fundamental

30 MHz – 1 GHz (16QAM, 15.0 MHz, High Channel)

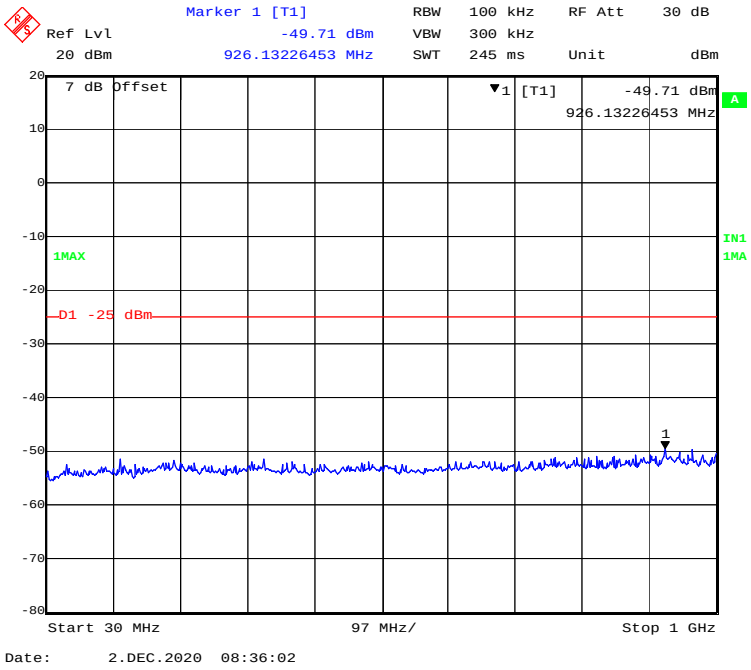


1 GHz – 26 GHz (16QAM, 15.0MHz, High Channel)

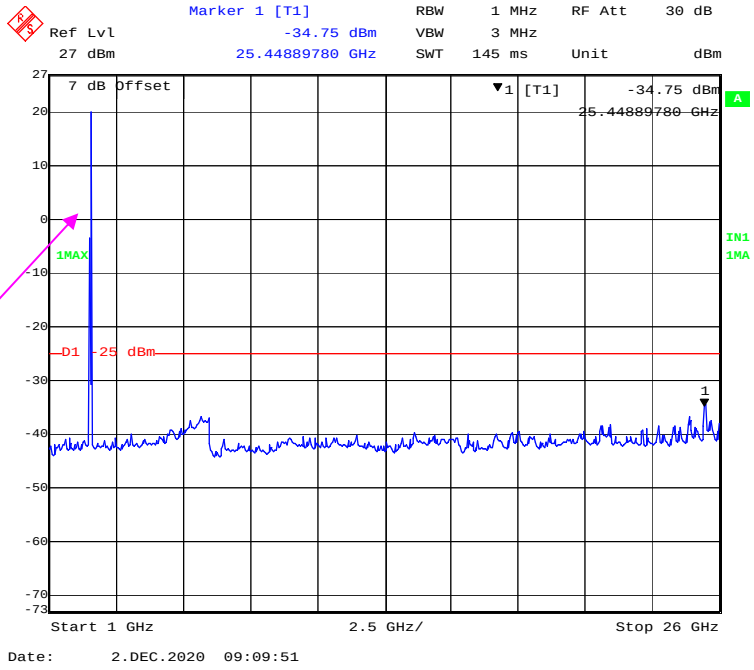


Fundamental

30 MHz – 1 GHz (16QAM, 20.0 MHz, High Channel)



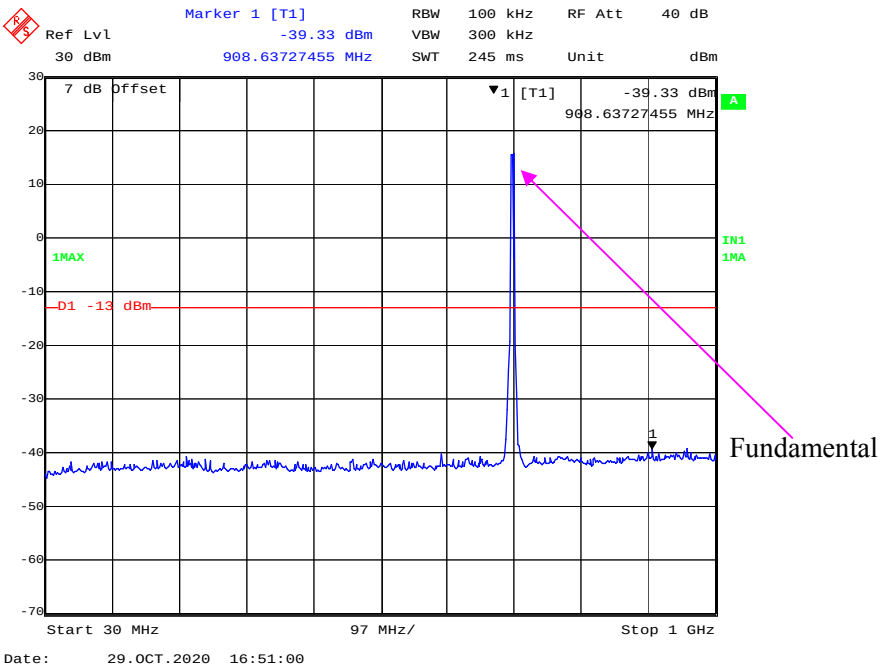
1 GHz – 26 GHz (16QAM, 20.0 MHz, High Channel)



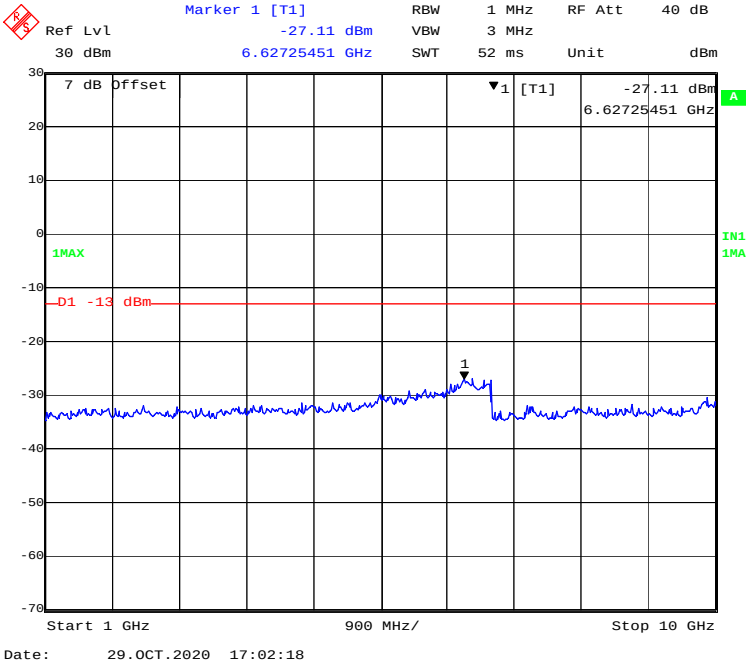
Fundamental

LTE Band 17:

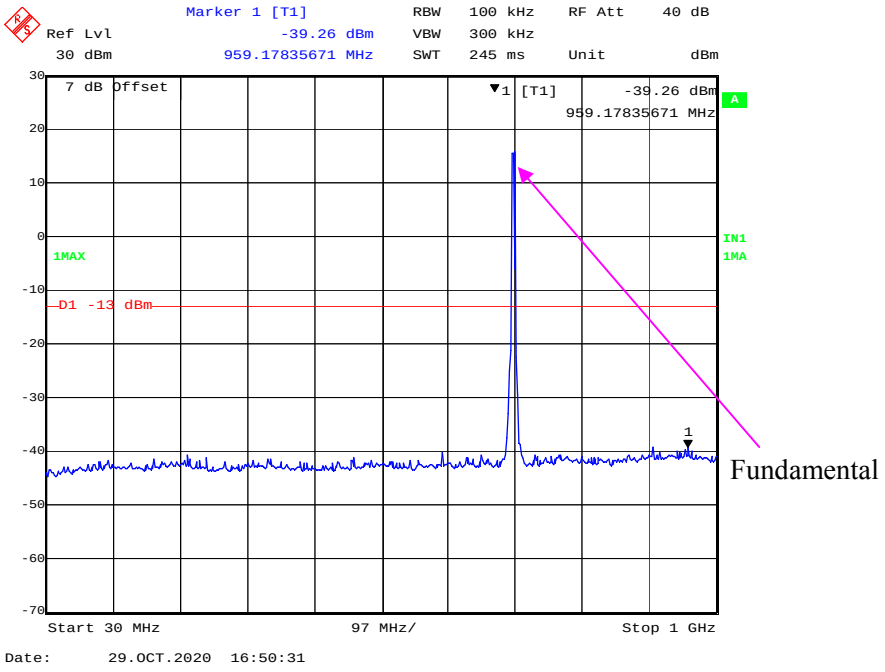
30 MHz - 1 GHz (5 MHz, QPSK, Low Channel)



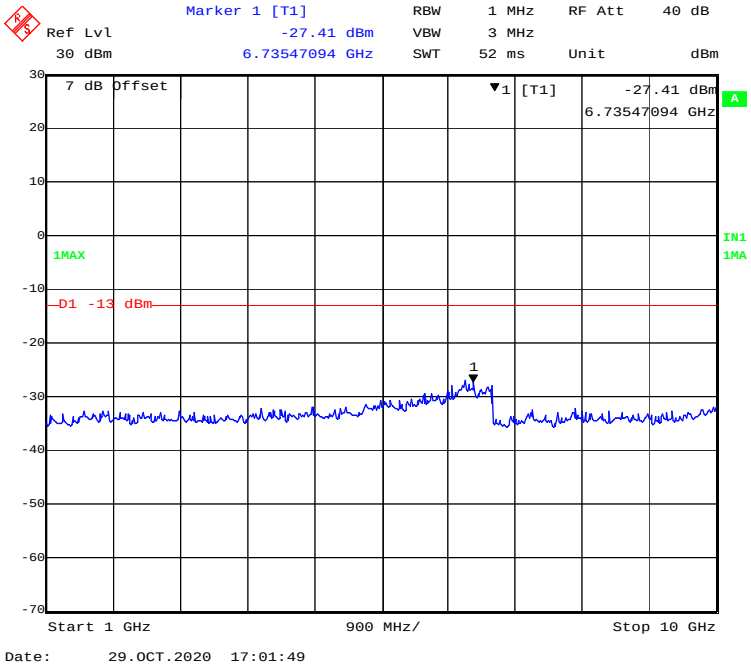
1 GHz – 10 GHz (5 MHz, QPSK, Low Channel)



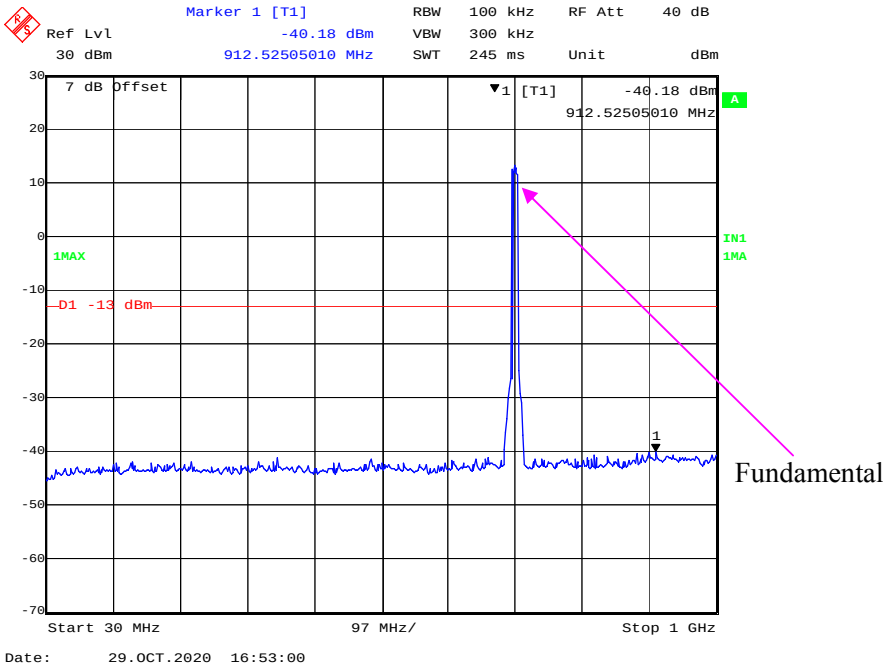
30 MHz - 1 GHz (5 MHz, 16-QAM, Low Channel)



1 GHz – 10 GHz (5 MHz, 16-QAM, Low Channel)

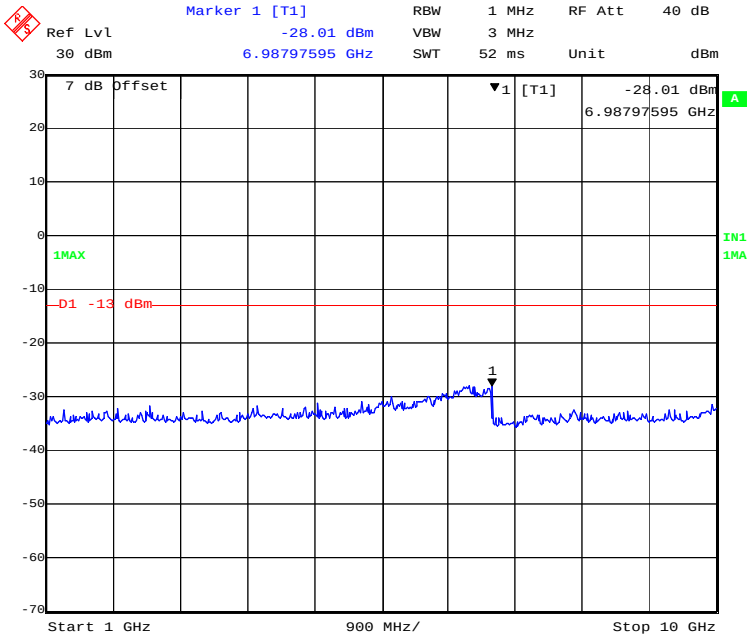


30 MHz - 1 GHz (10 MHz, QPSK, Low Channel)



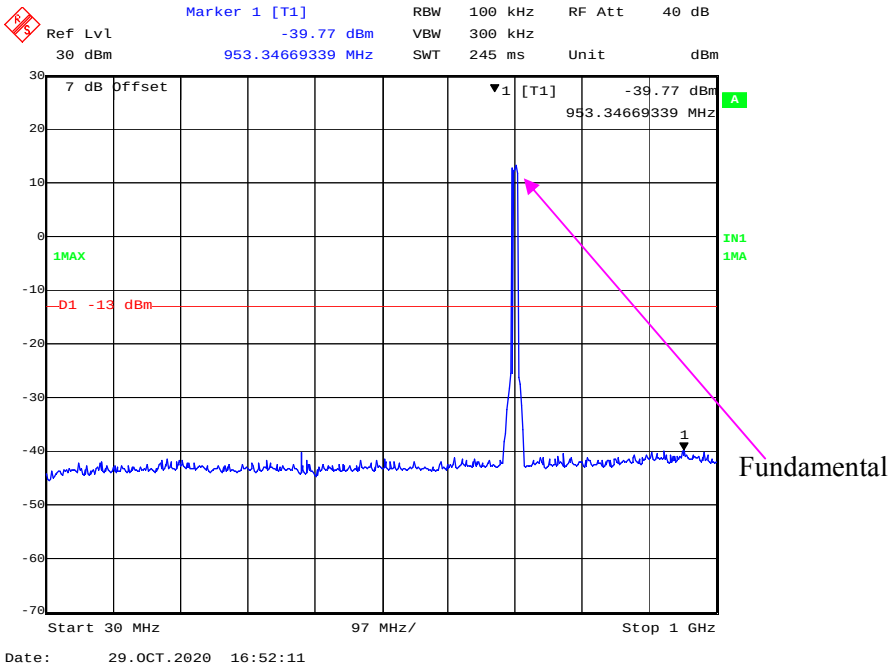
Date: 29.OCT.2020 16:53:00

1 GHz – 10 GHz (10 MHz, QPSK, Low Channel)

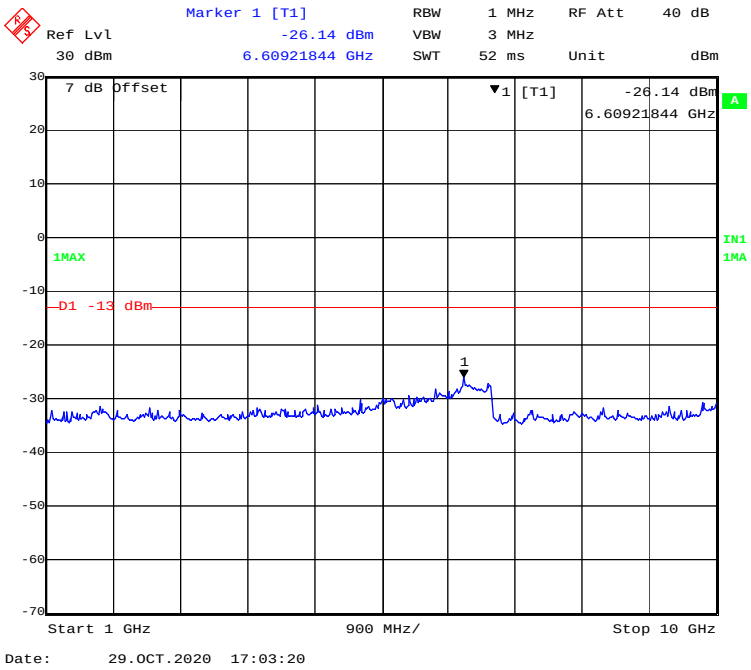


Date: 29.OCT.2020 17:02:56

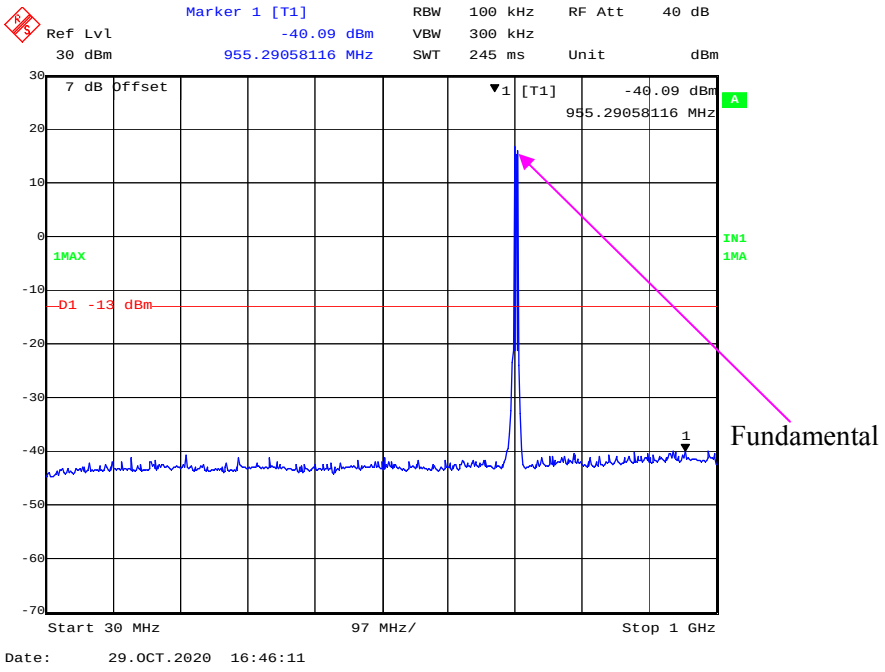
30 MHz - 1 GHz (10 MHz, 16-QAM, Low Channel)



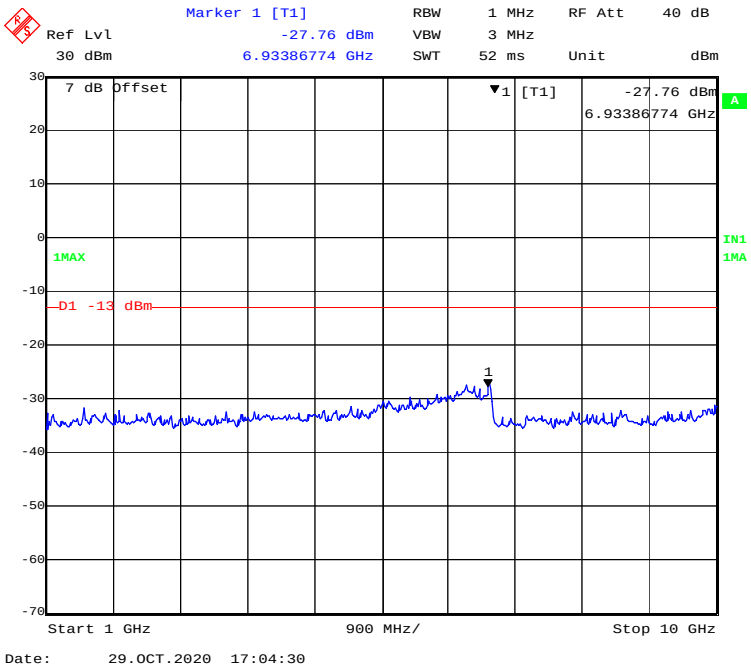
1 GHz – 10 GHz (10 MHz, 16-QAM, Low Channel)



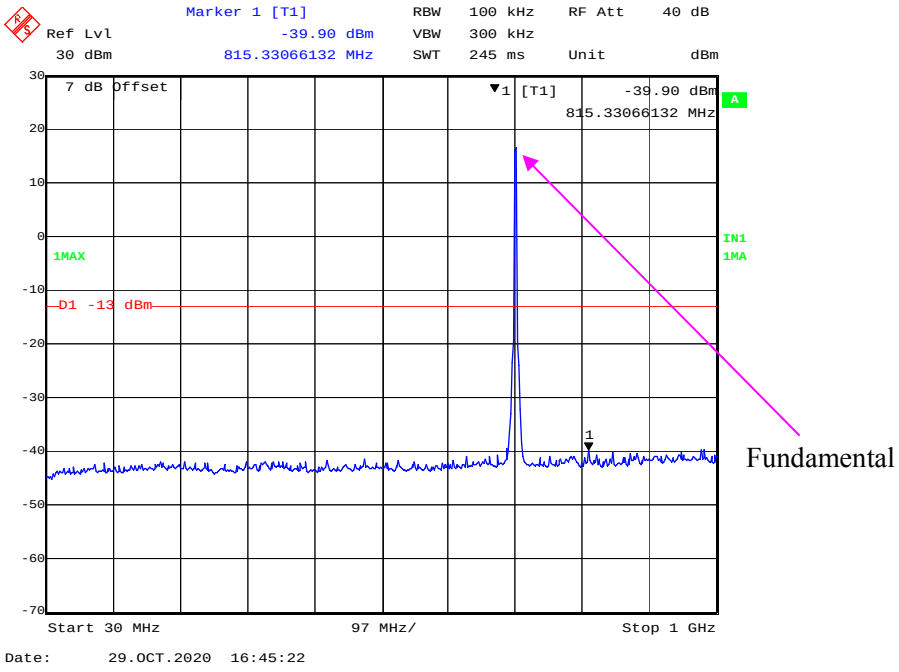
30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)



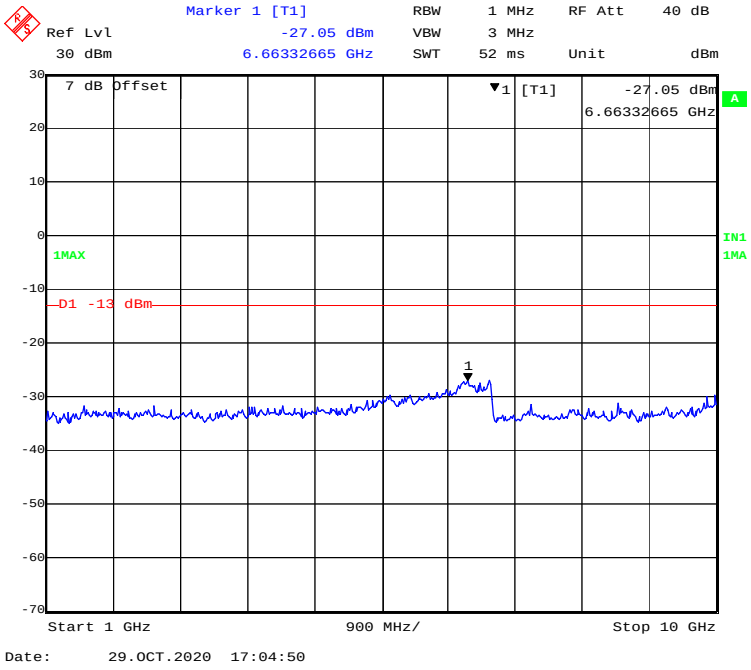
1 GHz – 10 GHz (5 MHz, QPSK, Middle Channel)



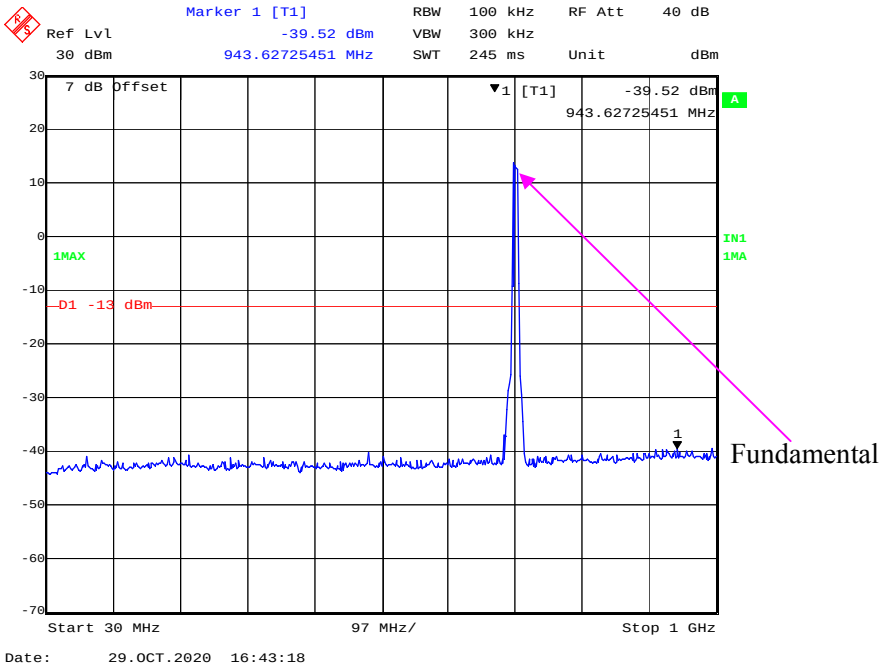
30 MHz - 1 GHz (5 MHz, 16-QAM, Middle Channel)



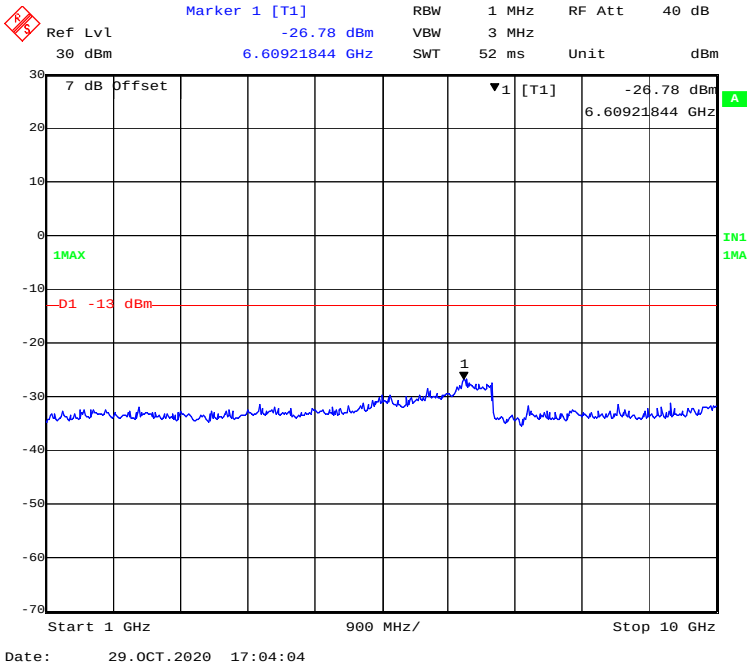
1 GHz – 10 GHz (5 MHz, 16-QAM, Middle Channel)



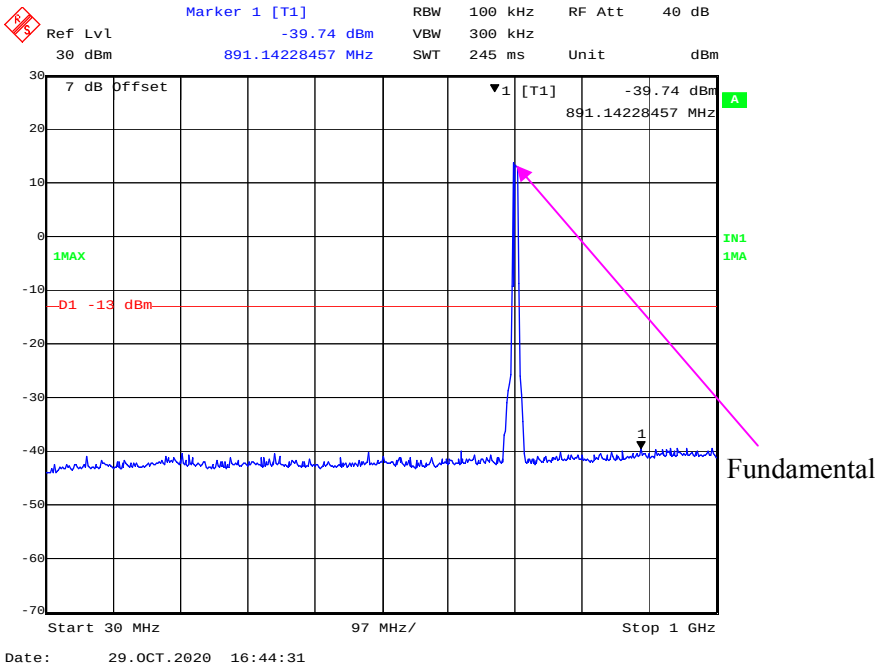
30 MHz - 1 GHz (10 MHz, QPSK, Middle Channel)



1 GHz – 10 GHz (10 MHz, QPSK, Middle Channel)

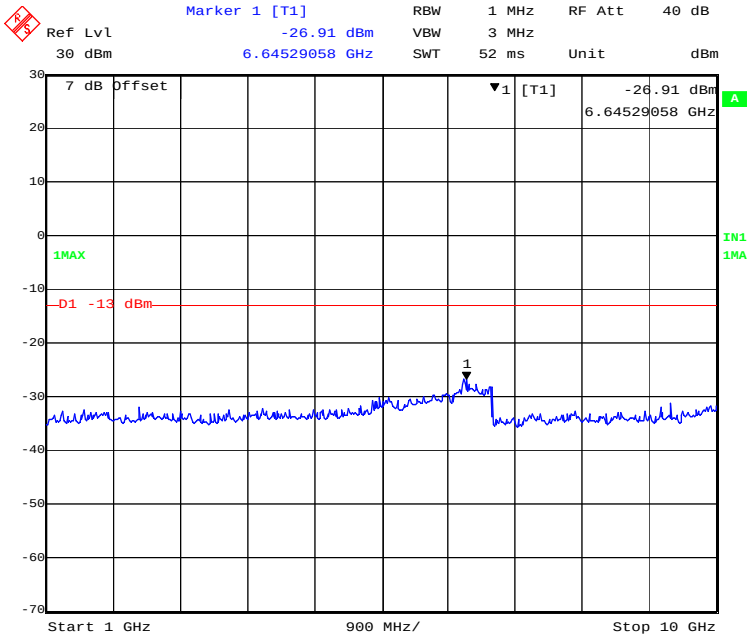


30 MHz - 1 GHz (10 MHz, 16-QAM, Middle Channel)



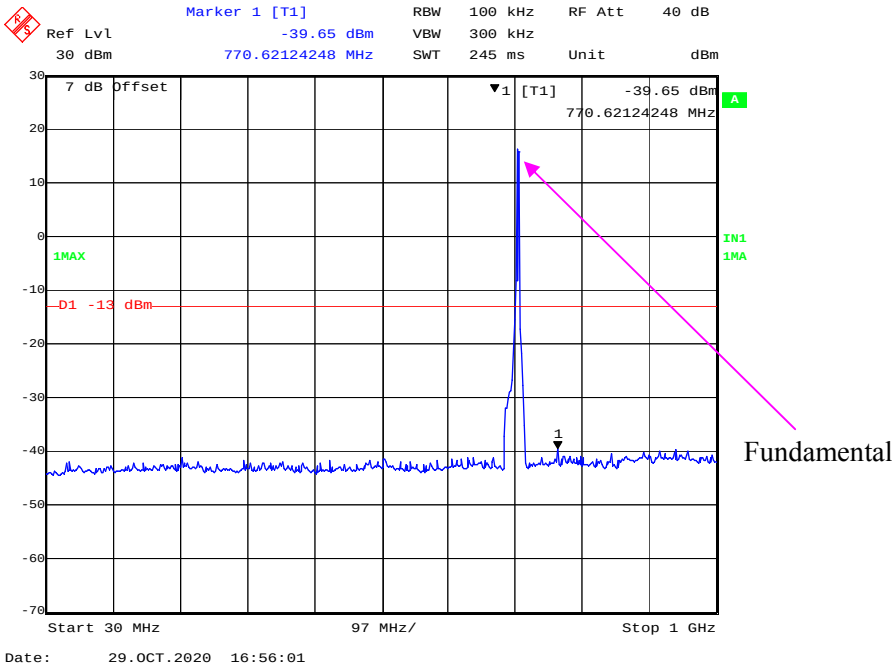
Date: 29.OCT.2020 16:44:31

1 GHz – 10 GHz (10 MHz, 16-QAM, Middle Channel)



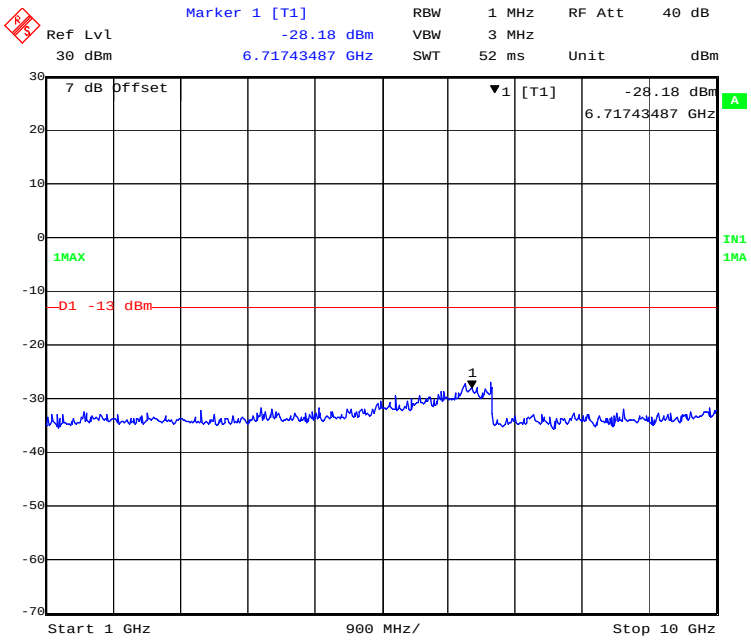
Date: 29.OCT.2020 17:03:46

30 MHz - 1 GHz (5 MHz, QPSK, High Channel)



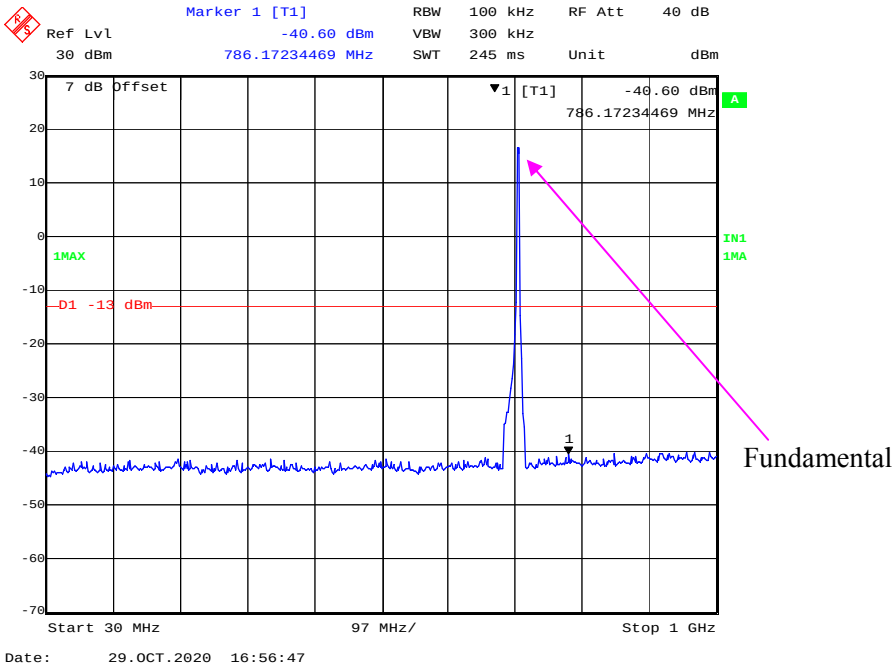
Date: 29.OCT.2020 16:56:01

1 GHz – 10 GHz (5 MHz, QPSK, High Channel)



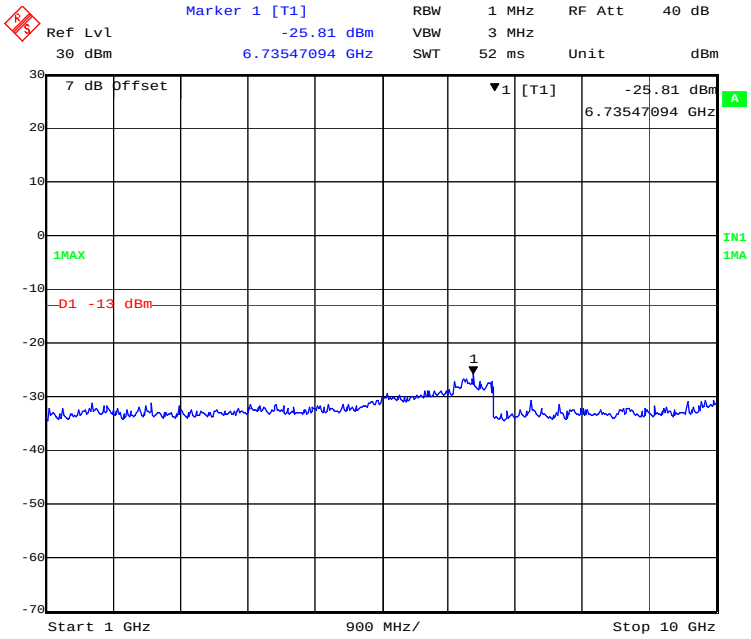
Date: 29.OCT.2020 16:59:39

30 MHz - 1 GHz (5 MHz, 16-QAM, High Channel)



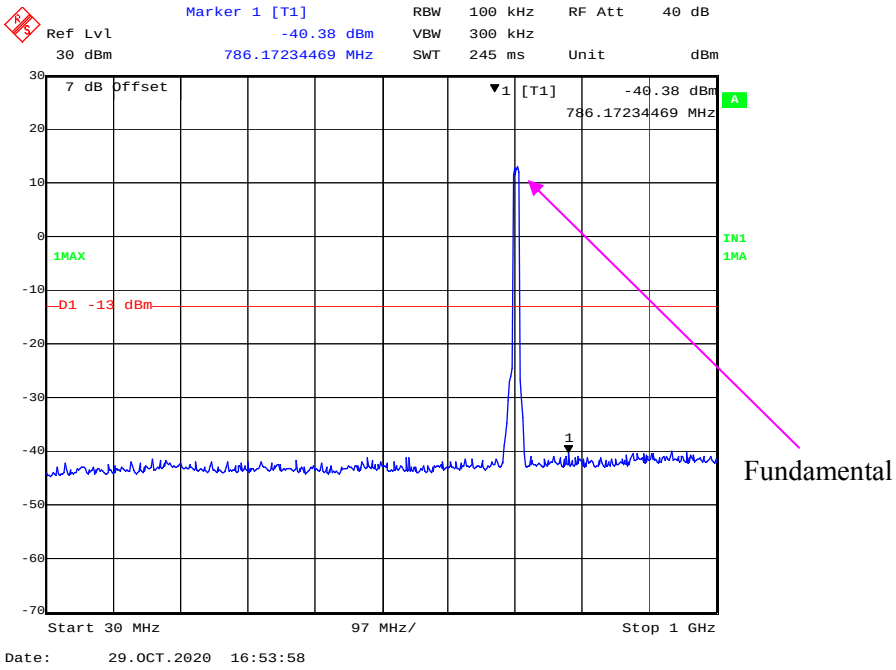
Date: 29.OCT.2020 16:56:47

1 GHz – 10 GHz (5 MHz, 16-QAM, High Channel)



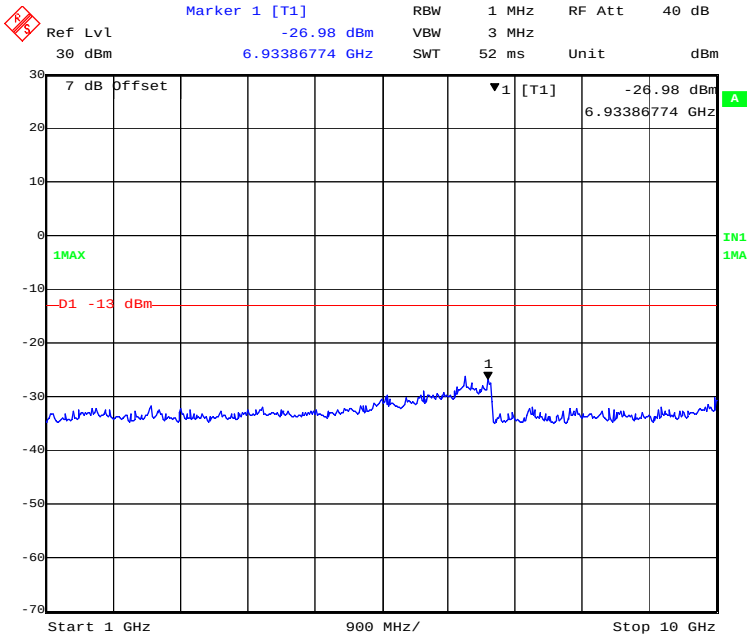
Date: 29.OCT.2020 16:59:11

30 MHz - 1 GHz (10 MHz, QPSK, High Channel)



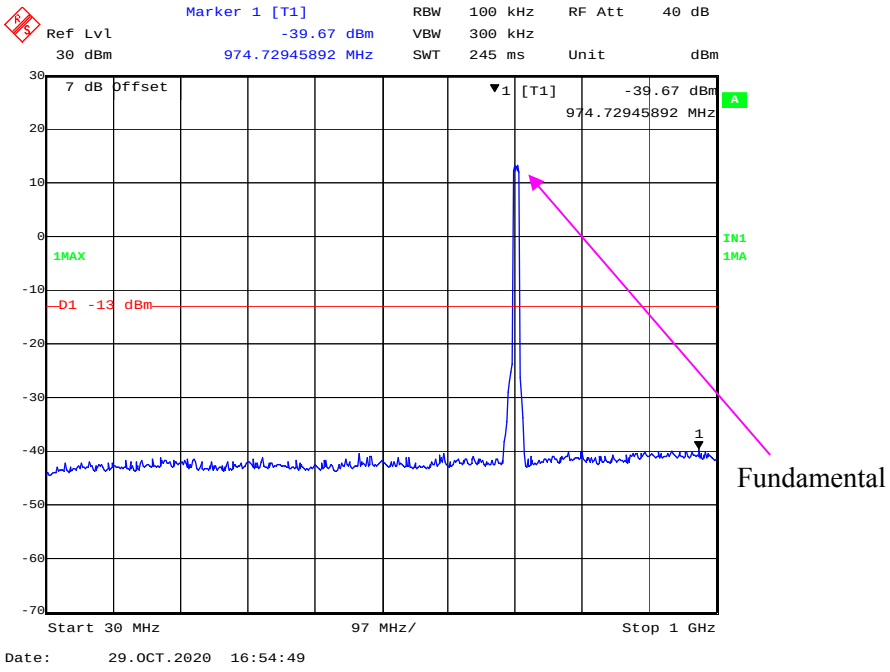
Date: 29.OCT.2020 16:53:58

1 GHz – 10 GHz (10 MHz, QPSK, High Channel)



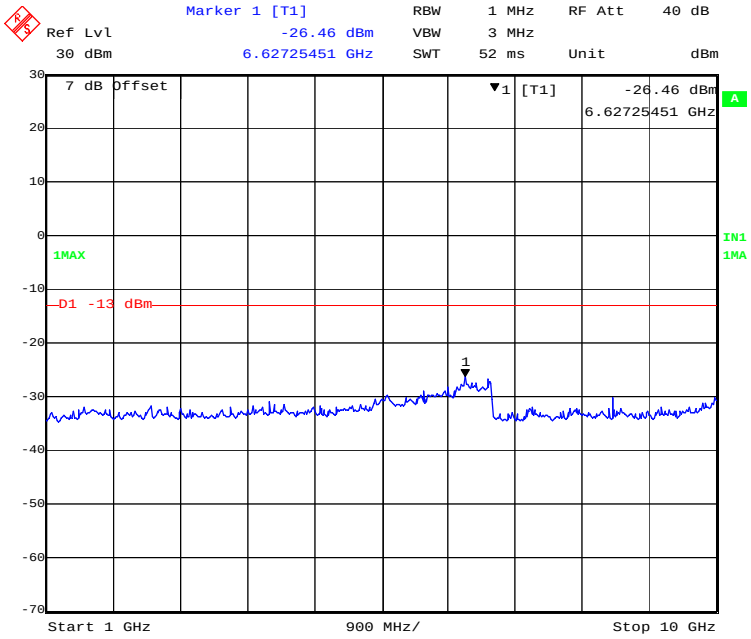
Date: 29.OCT.2020 17:01:02

30 MHz - 1 GHz (10 MHz, 16-QAM, High Channel)



Date: 29.OCT.2020 16:54:49

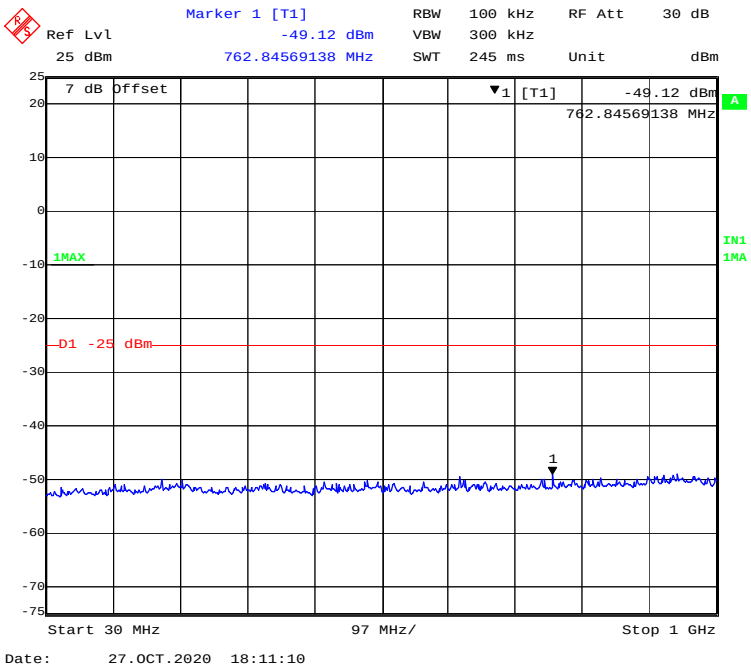
1 GHz – 10 GHz (10 MHz, 16-QAM, High Channel)



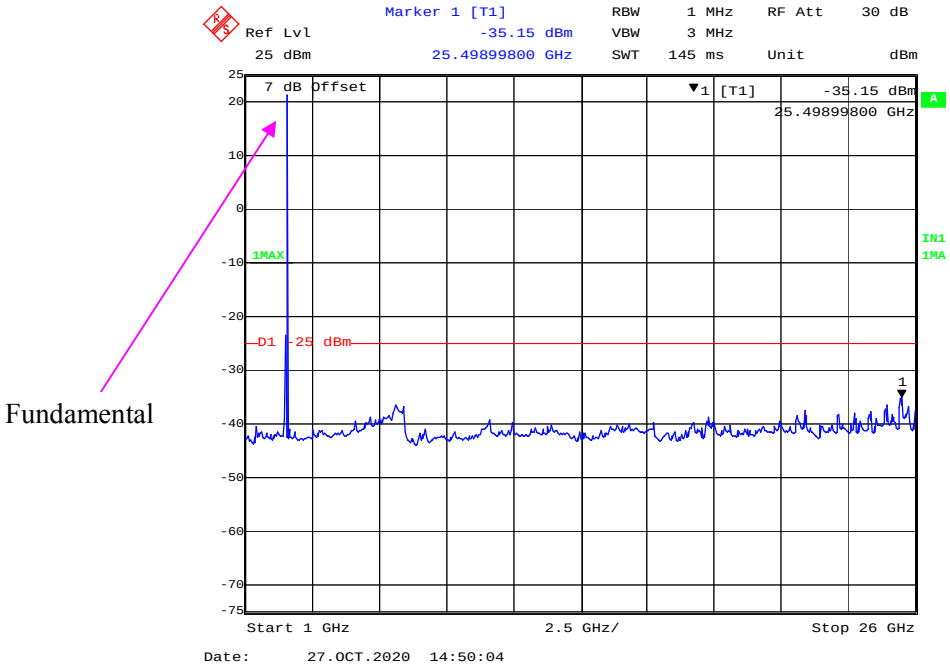
Date: 29.OCT.2020 17:01:18

LTE Band 41:

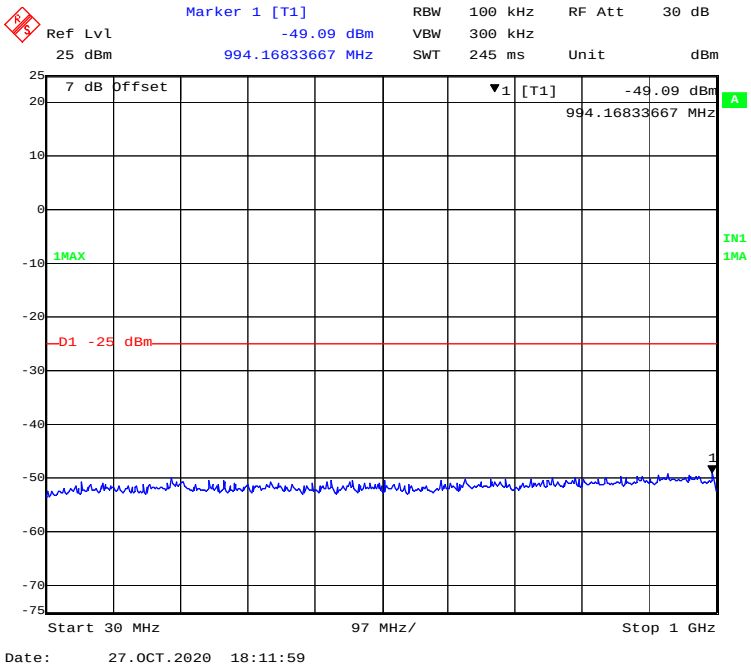
30 MHz - 1 GHz (5 MHz, QPSK, Low Channel)



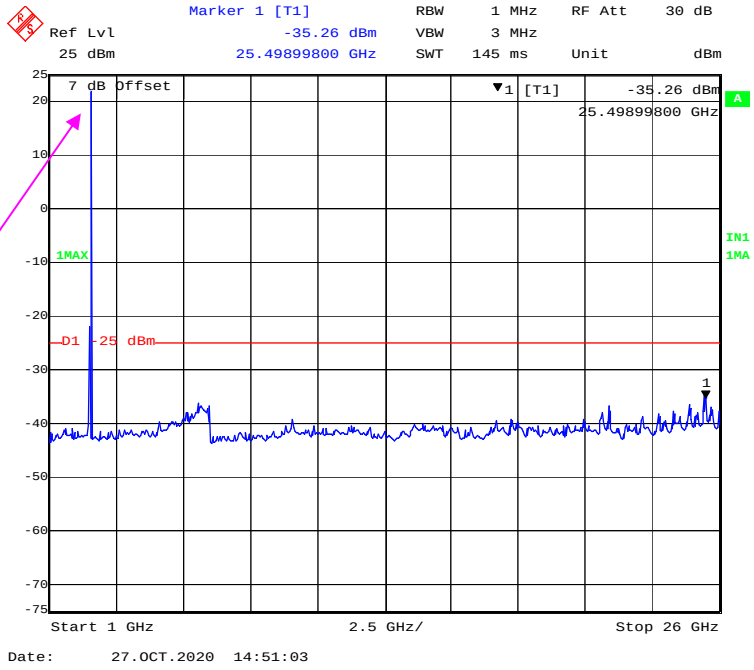
1 GHz – 26.5 GHz (5 MHz, QPSK, Low Channel)



30 MHz - 1 GHz (5 MHz, 16-QAM, Low Channel)

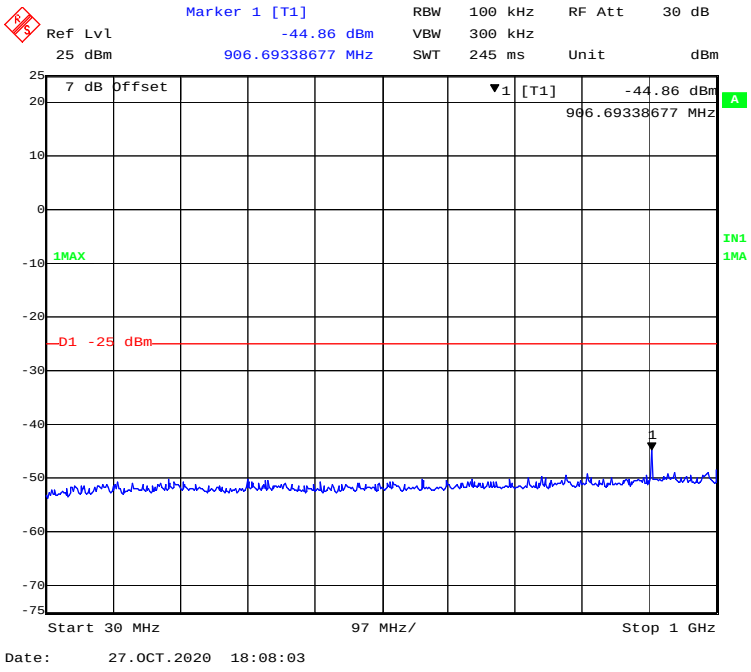


1 GHz –26.5 GHz (5 MHz, 16-QAM, Low Channel)

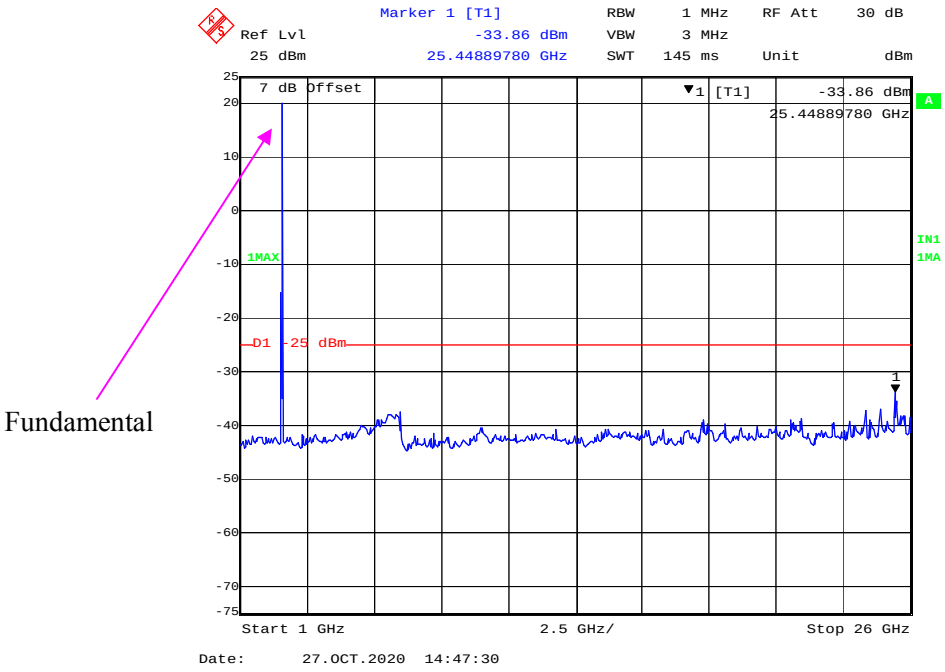


Fundamental

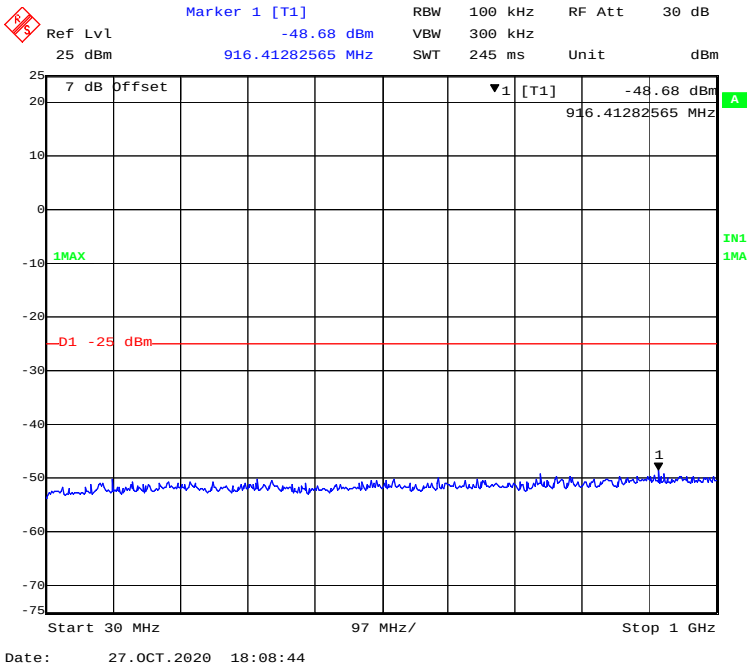
30 MHz - 1 GHz (10 MHz, QPSK, Low Channel)



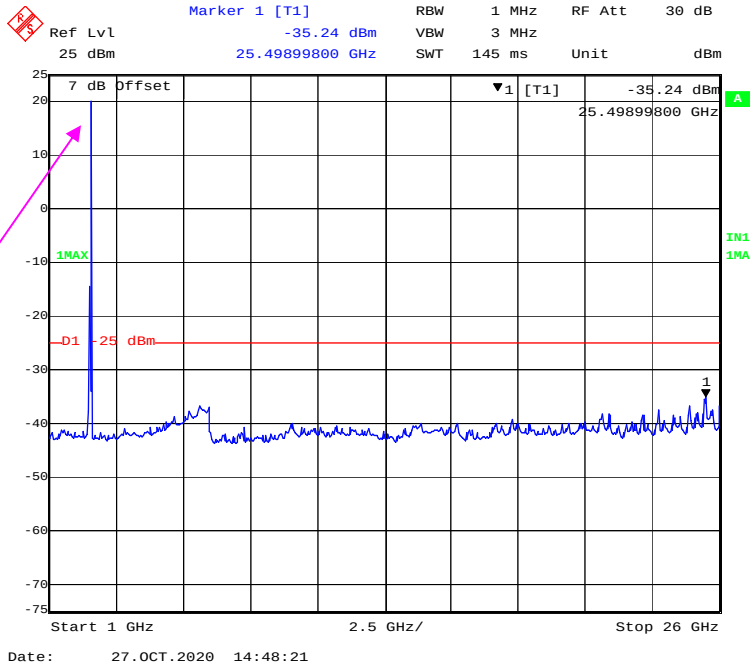
1 GHz –26.5 GHz (10 MHz, QPSK, Low Channel)



30 MHz - 1 GHz (10 MHz, 16-QAM, Low Channel)

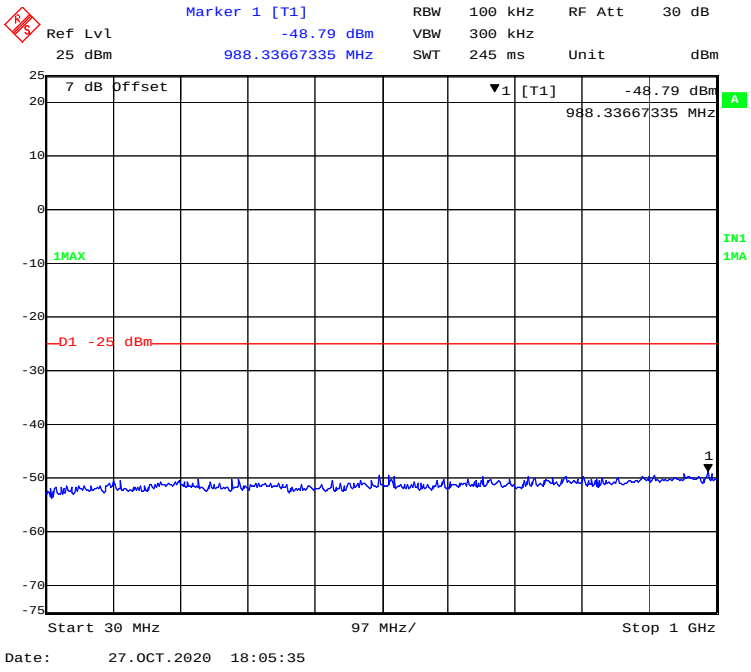


1 GHz –26.5 GHz (10 MHz, 16-QAM, Low Channel)

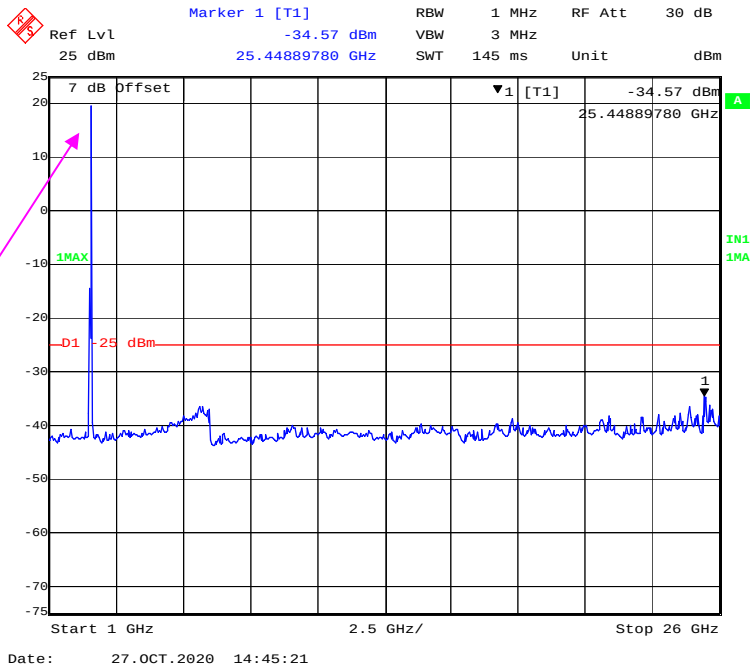


Fundamental

30 MHz - 1 GHz (15 MHz, QPSK, Low Channel)

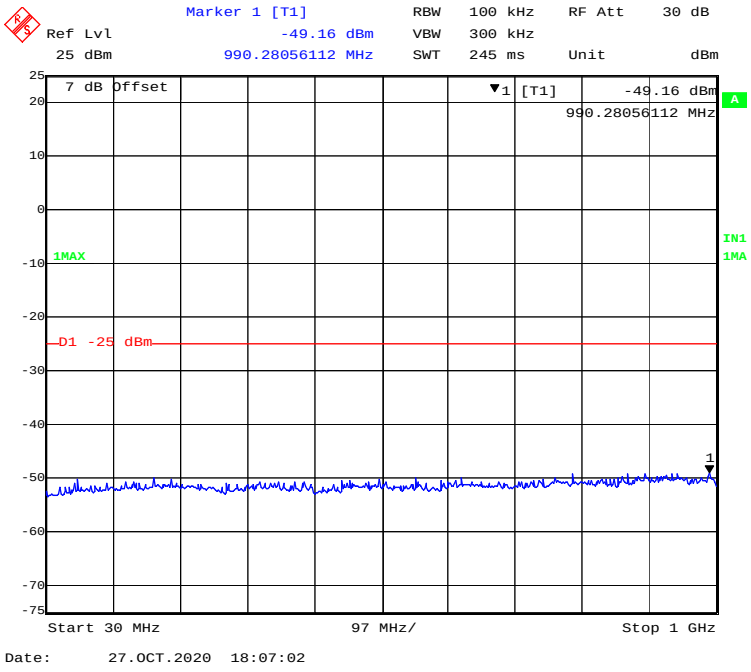


1 GHz –26.5 GHz (15 MHz, QPSK, Low Channel)

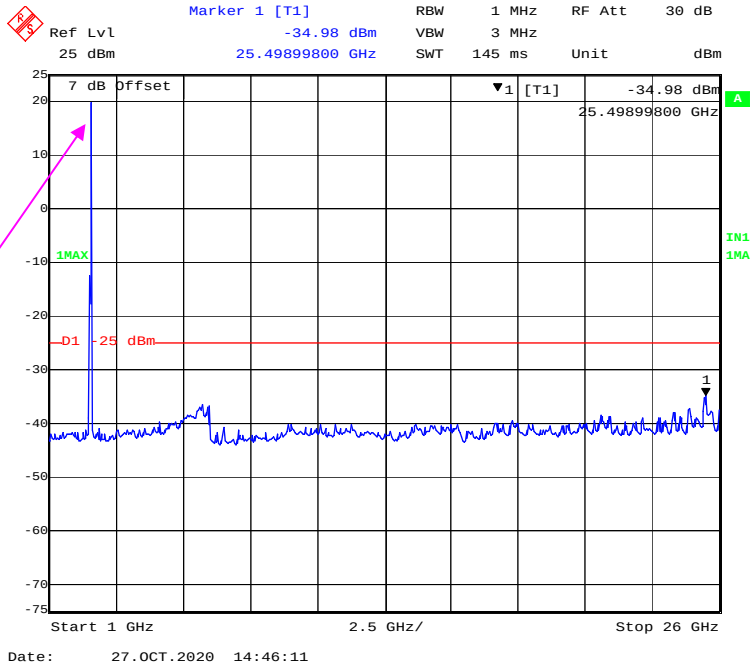


Fundamental

30 MHz - 1 GHz (15 MHz, 16-QAM, Low Channel)

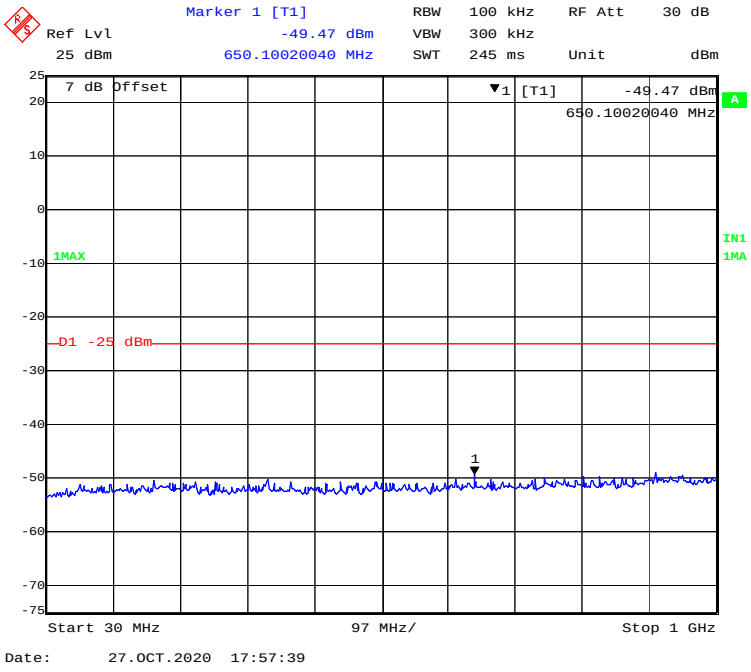


1 GHz –26.5 GHz (15 MHz, 16-QAM, Low Channel)

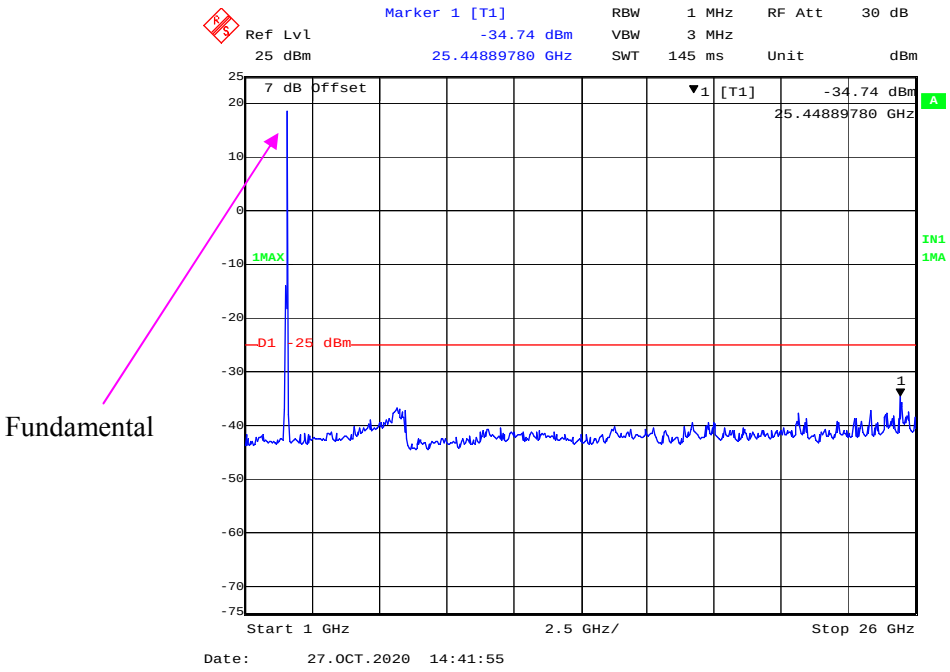


Fundamental

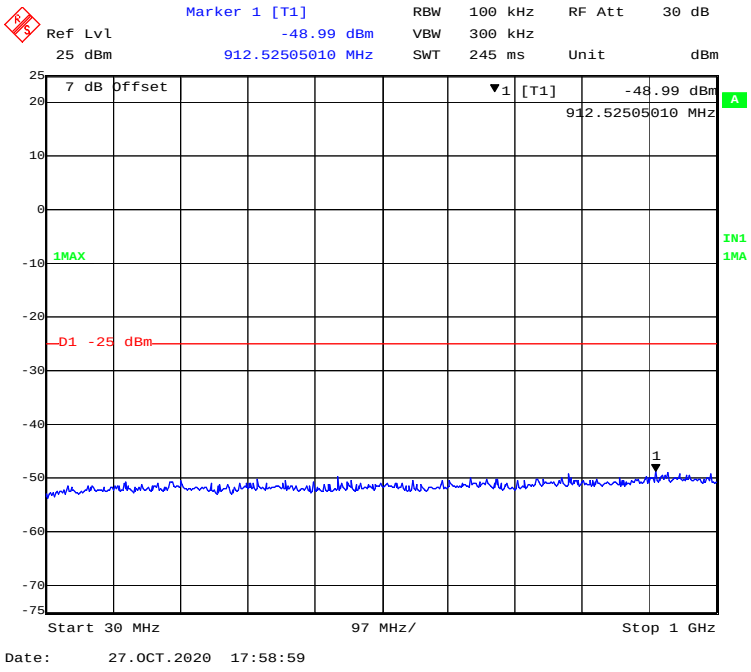
30 MHz - 1 GHz (20 MHz, QPSK, Low Channel)



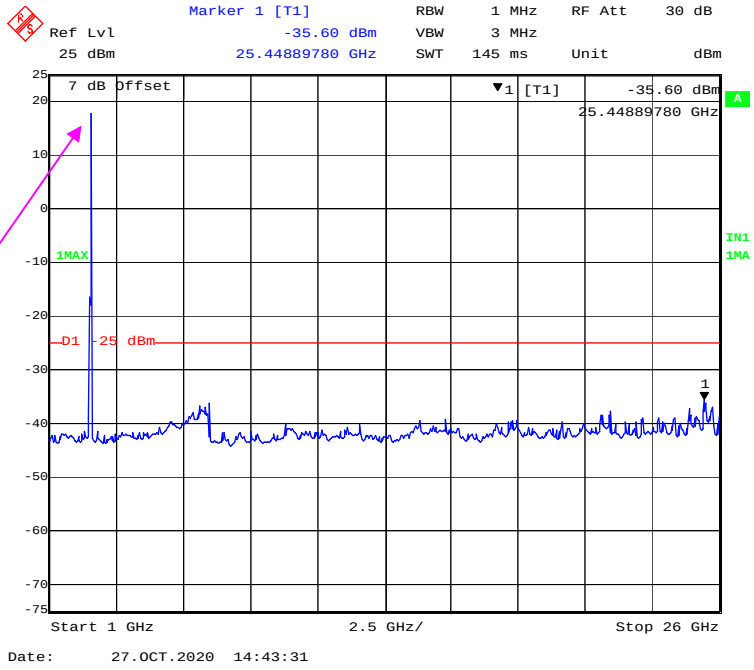
1 GHz –26.5 GHz (20 MHz, QPSK, Low Channel)



30 MHz - 1 GHz (20 MHz, 16-QAM, Low Channel)

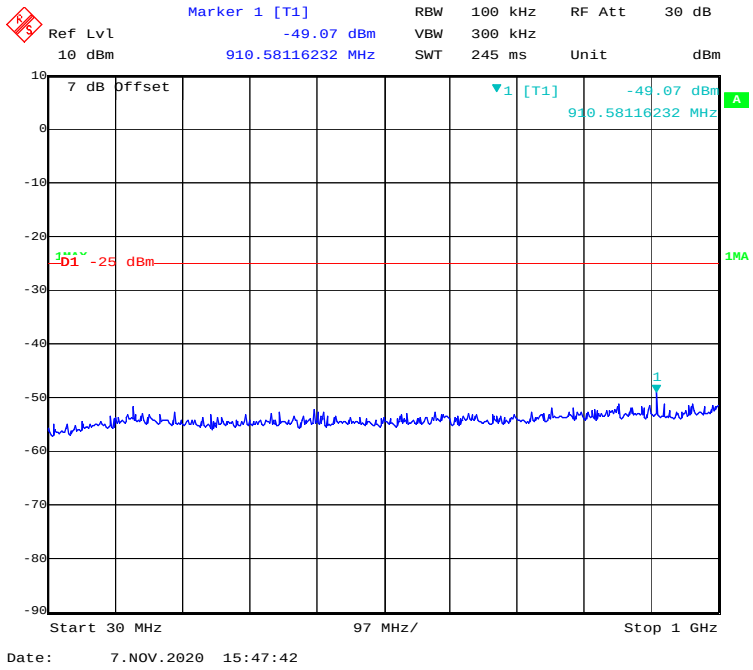


1 GHz –26.5 GHz (20 MHz, 16-QAM, Low Channel)

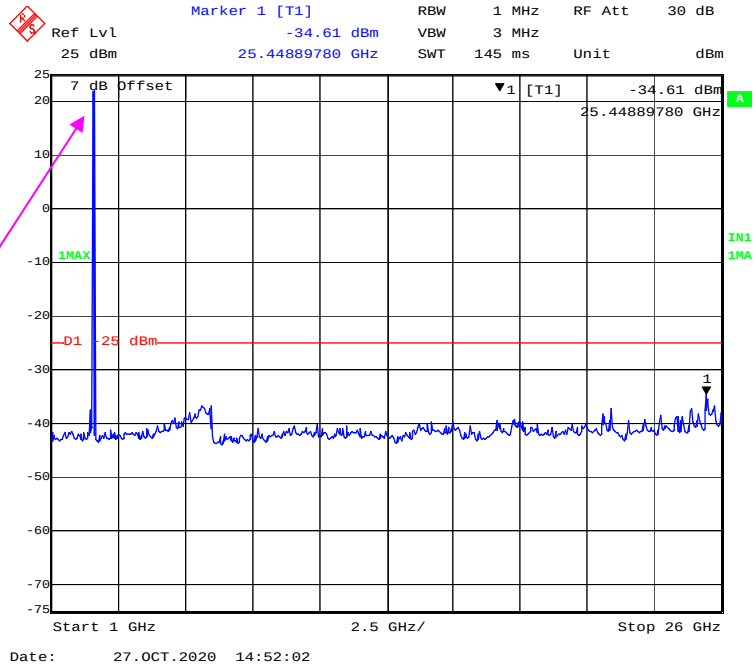


Fundamental

30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)

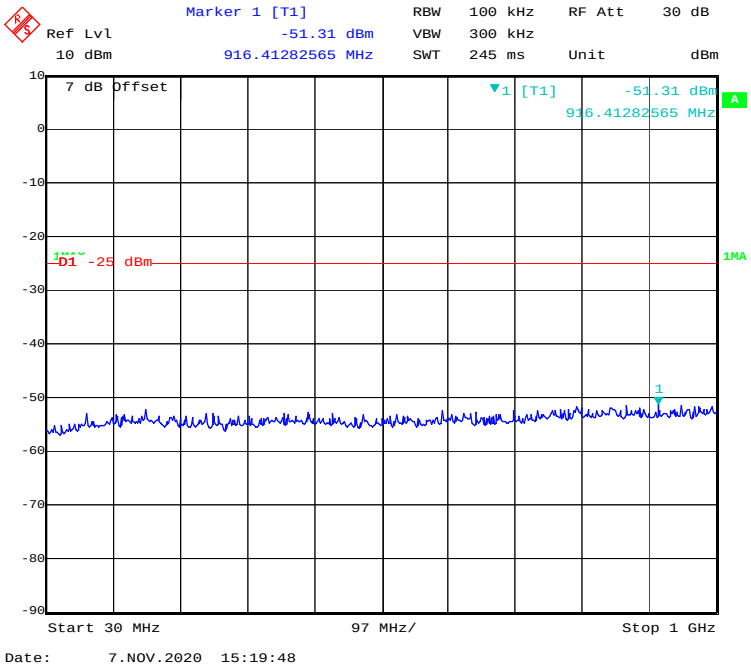


1 GHz –26.5 GHz (5 MHz, QPSK, Middle Channel)

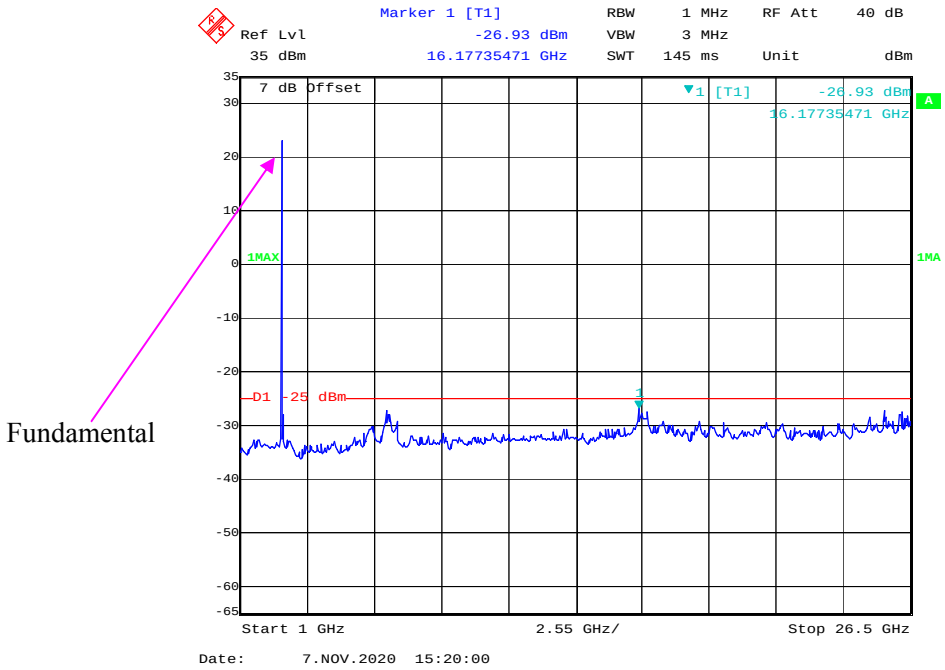


Fundamental

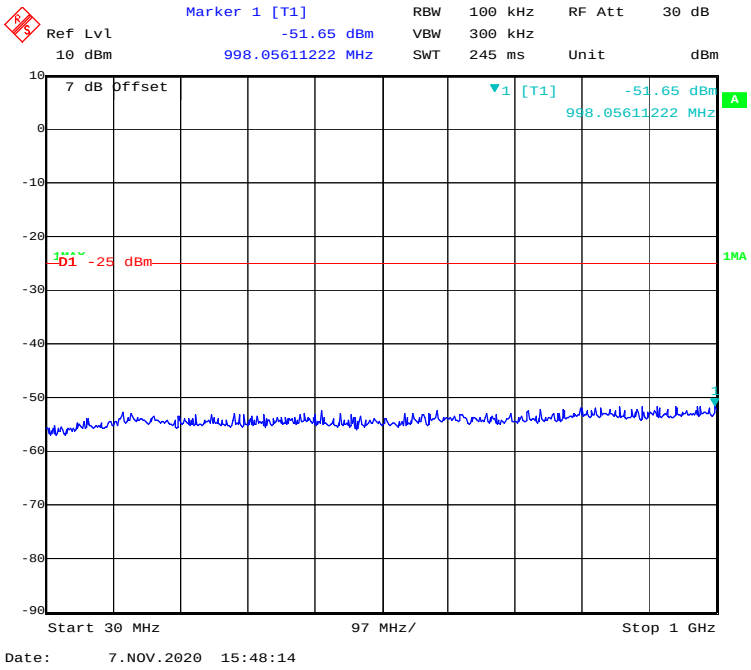
30 MHz - 1 GHz (5 MHz, 16-QAM, Middle Channel)



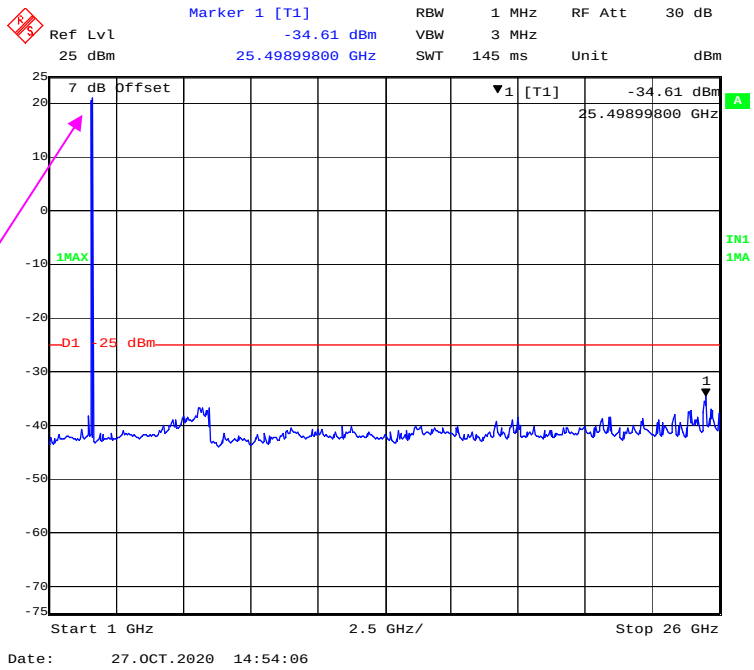
1 GHz –26.5 GHz (5 MHz, 16-QAM, Middle Channel)



30 MHz - 1 GHz (10 MHz, QPSK, Middle Channel)

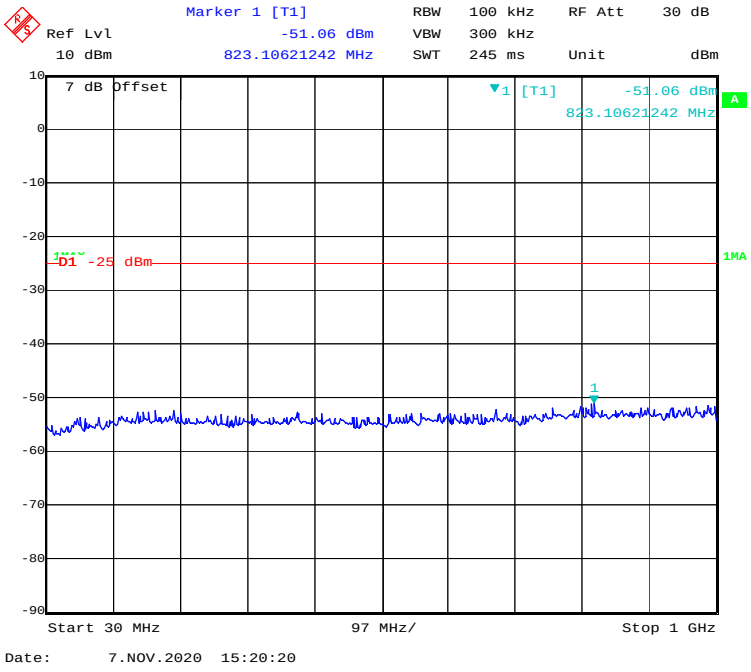


1 GHz –26.5 GHz (10 MHz, QPSK, Middle Channel)

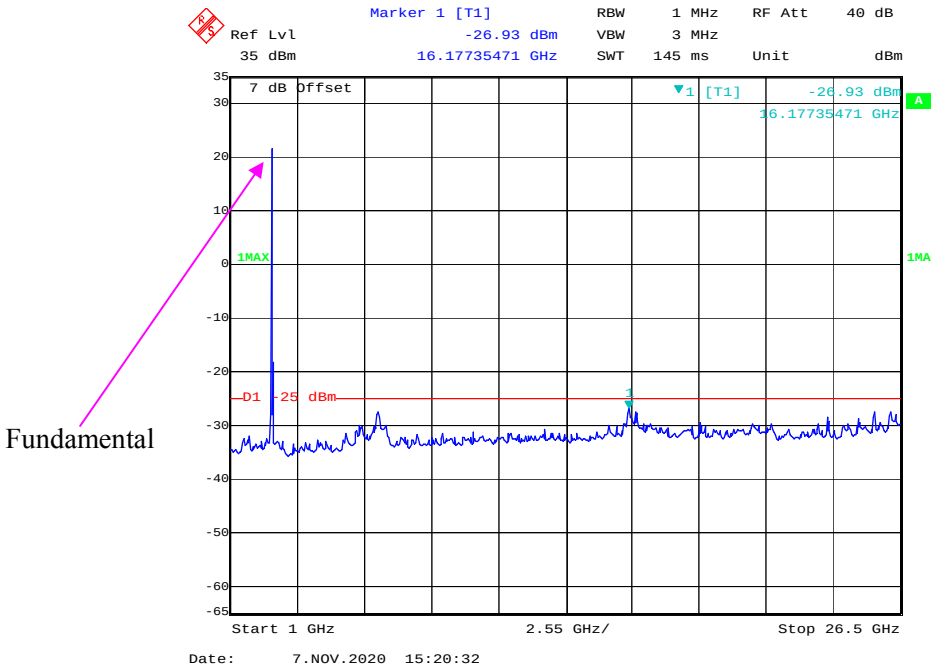


Fundamental

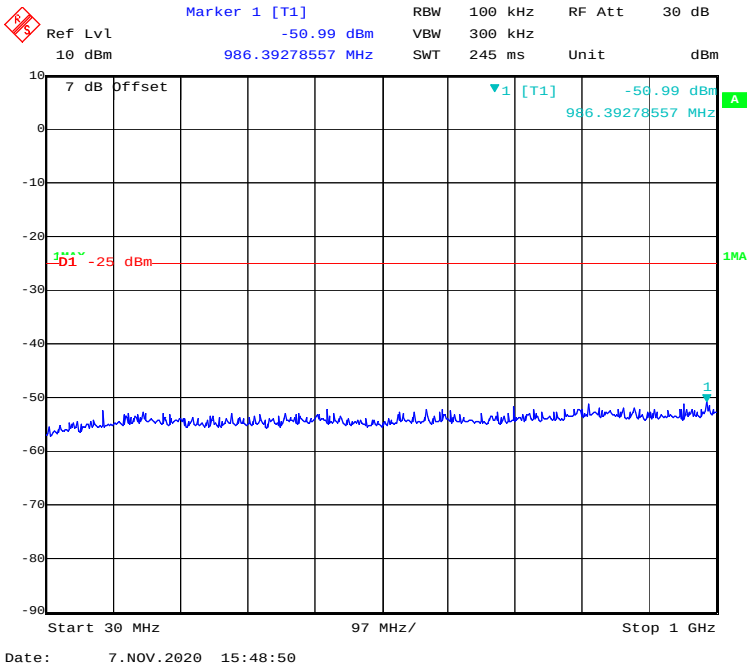
30 MHz - 1 GHz (10 MHz, 16-QAM, Middle Channel)



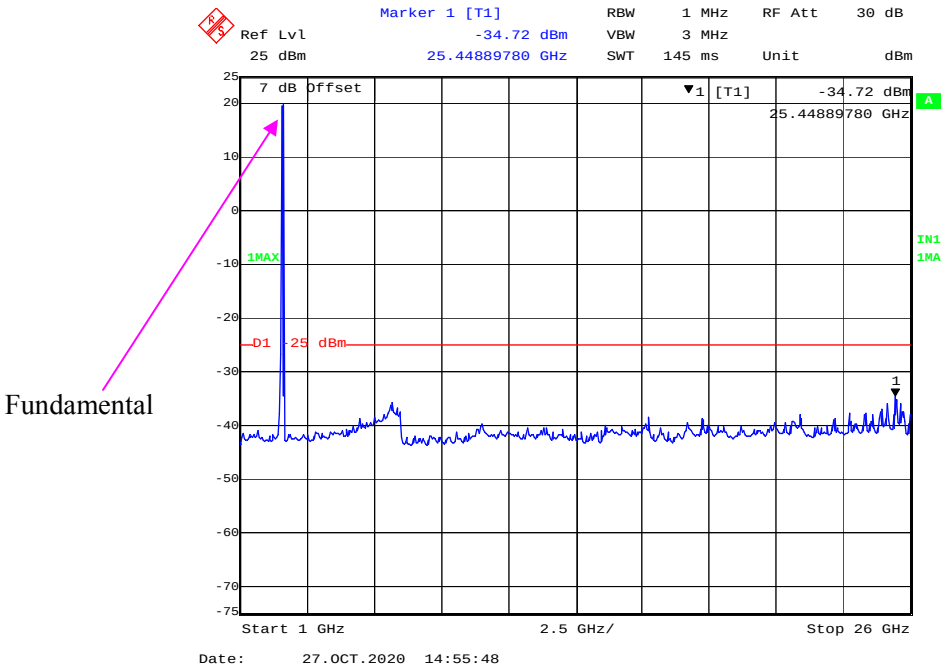
1 GHz –26.5 GHz (10 MHz, 16-QAM, Middle Channel)



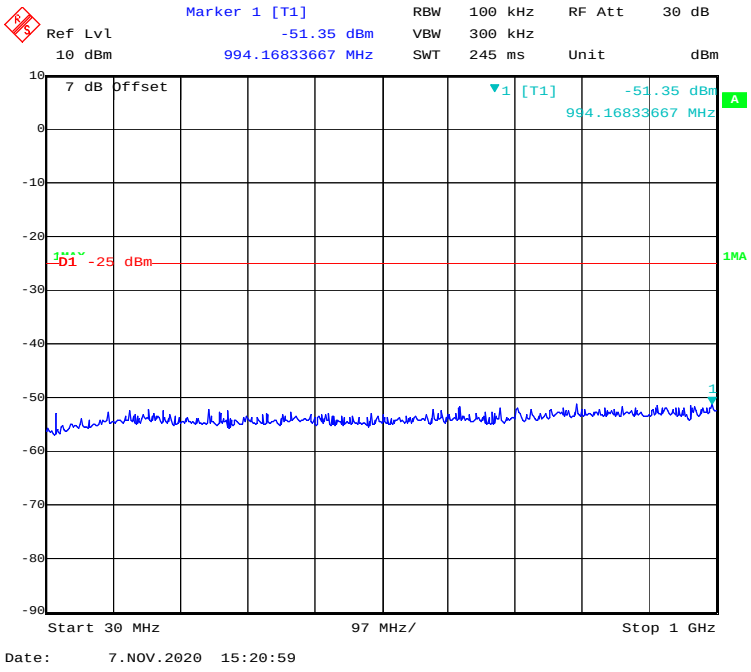
30 MHz - 1 GHz (15 MHz, QPSK, Middle Channel)



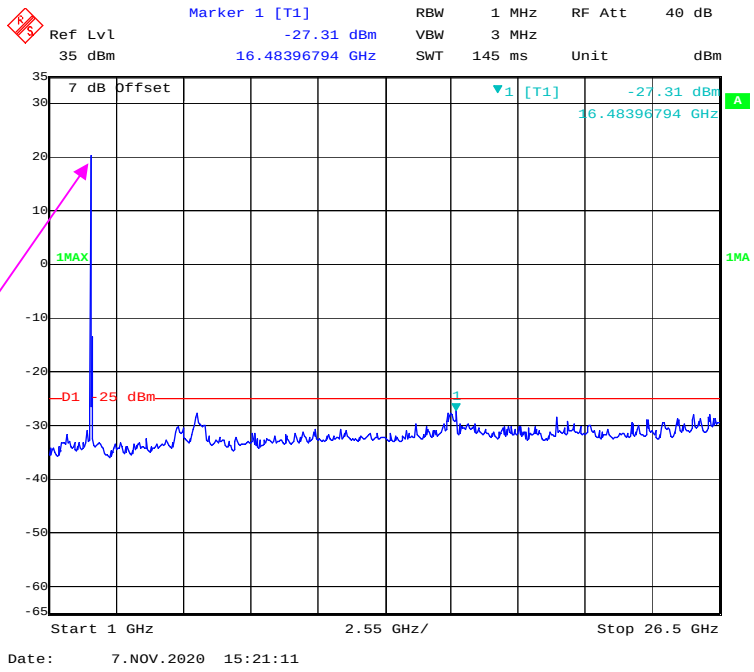
1 GHz –26.5 GHz (15 MHz, QPSK, Middle Channel)



30 MHz - 1 GHz (15 MHz, 16-QAM, Middle Channel)

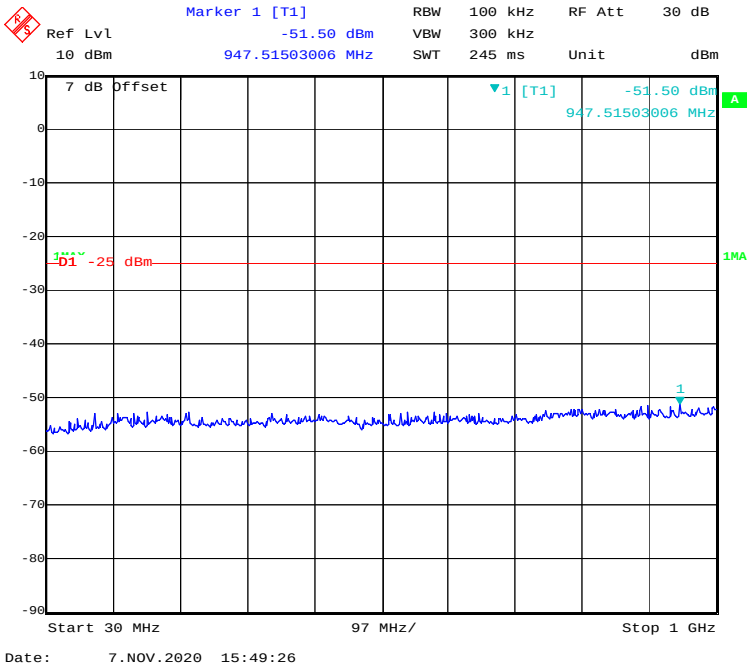


1 GHz –26.5 GHz (15 MHz, 16-QAM, Middle Channel)

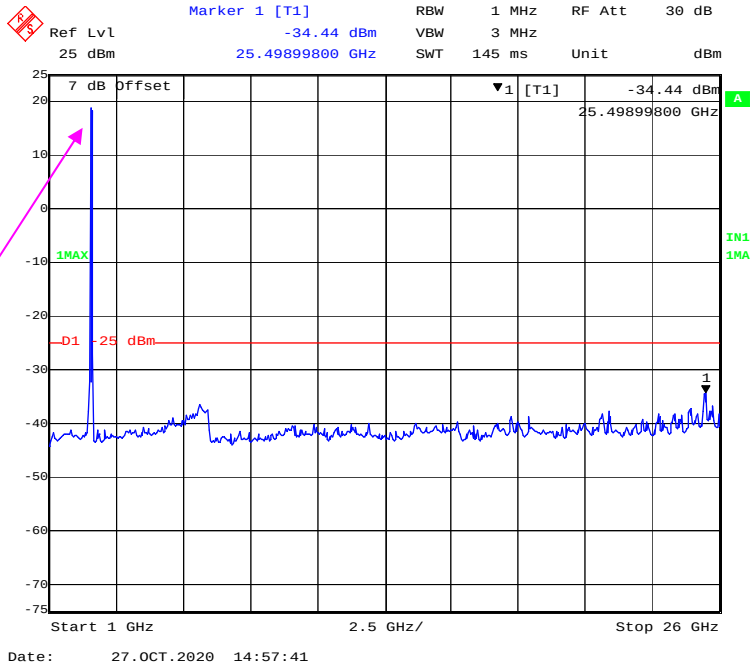


Fundamental

30 MHz - 1 GHz (20 MHz, QPSK, Middle Channel)

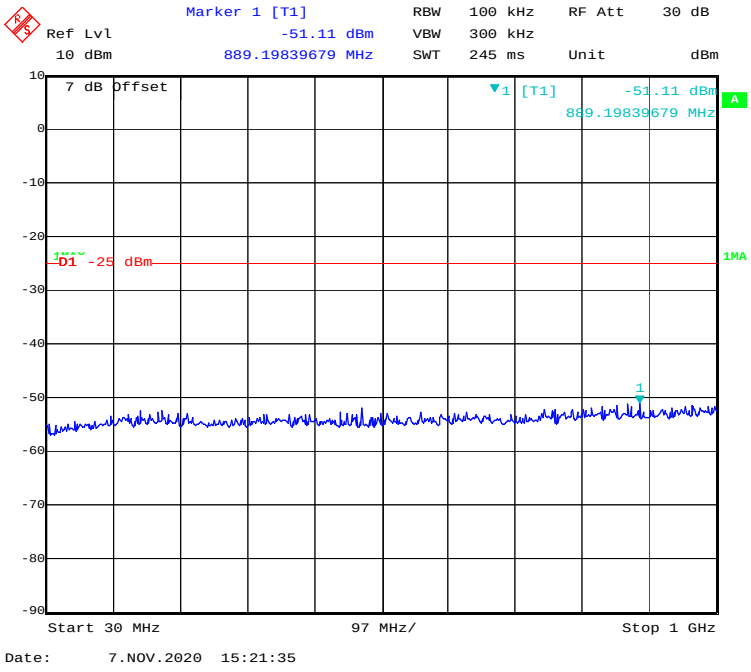


1 GHz –26.5 GHz (20 MHz, QPSK, Middle Channel)

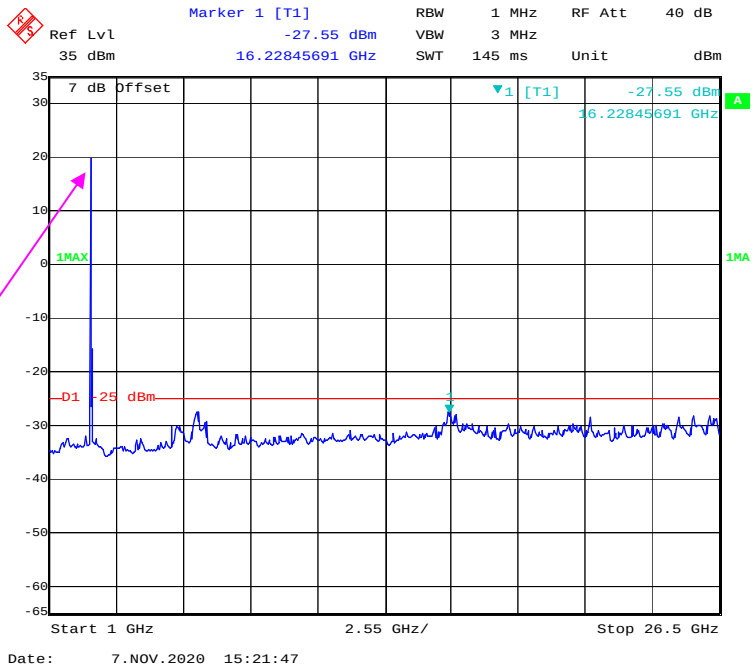


Fundamental

30 MHz - 1 GHz (20 MHz, 16-QAM, Middle Channel)

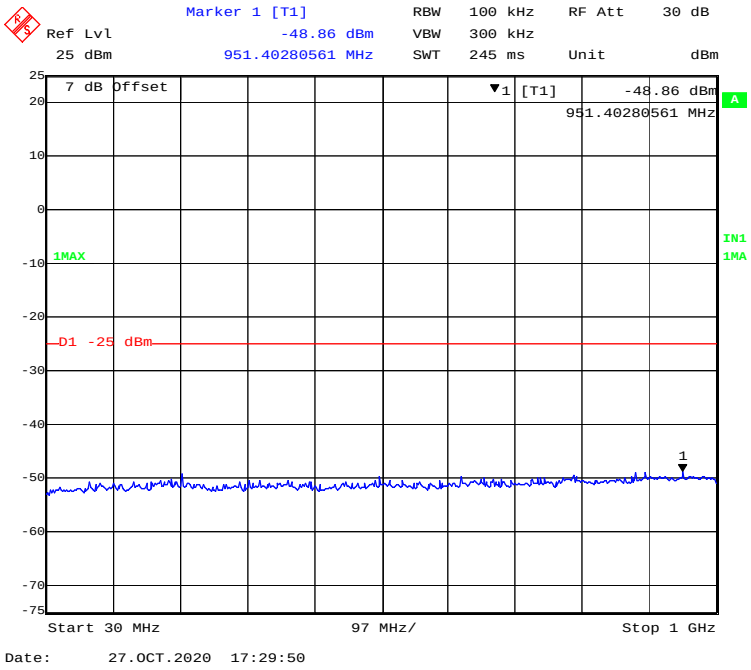


1 GHz –26.5 GHz (20 MHz, 16-QAM, Middle Channel)

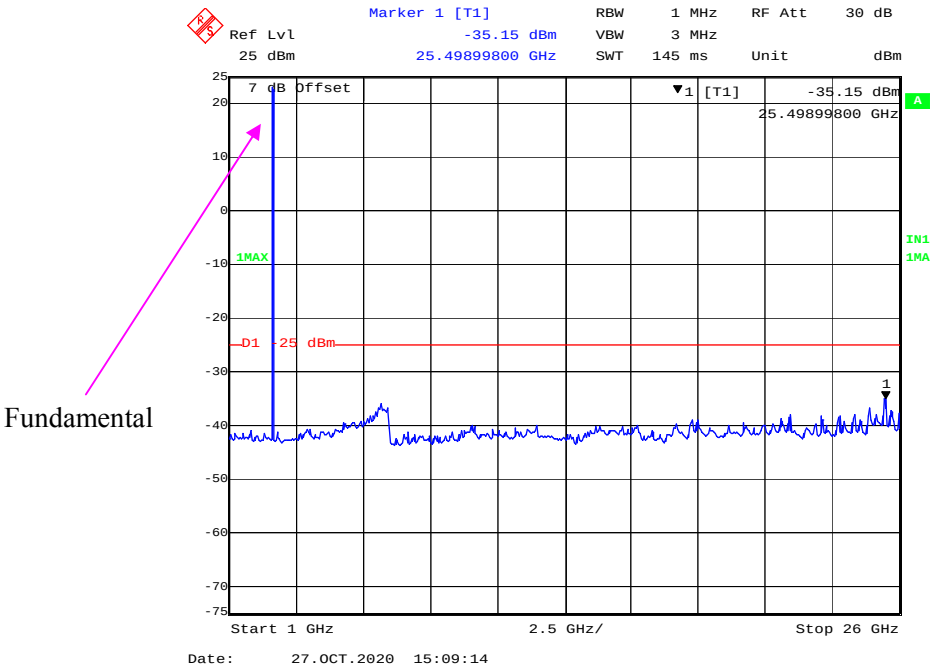


Fundamental

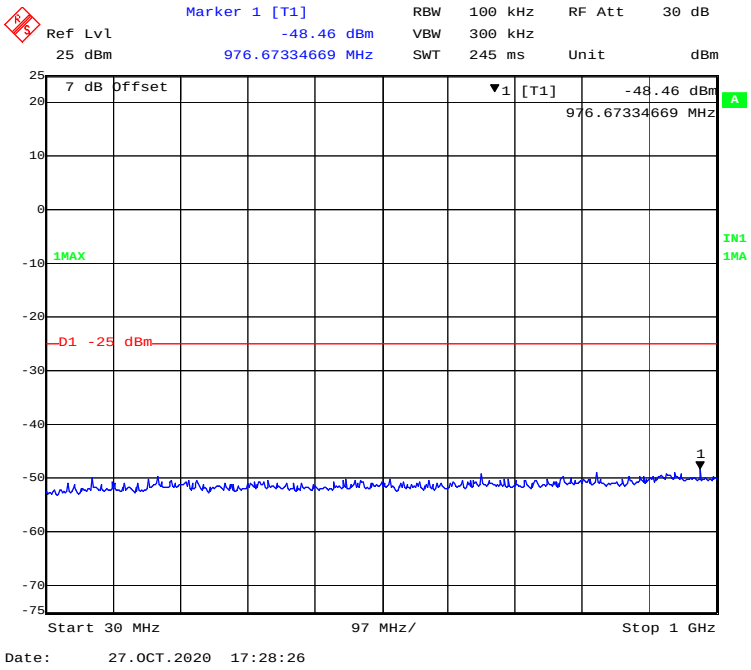
30 MHz - 1 GHz (5 MHz, QPSK, High Channel)



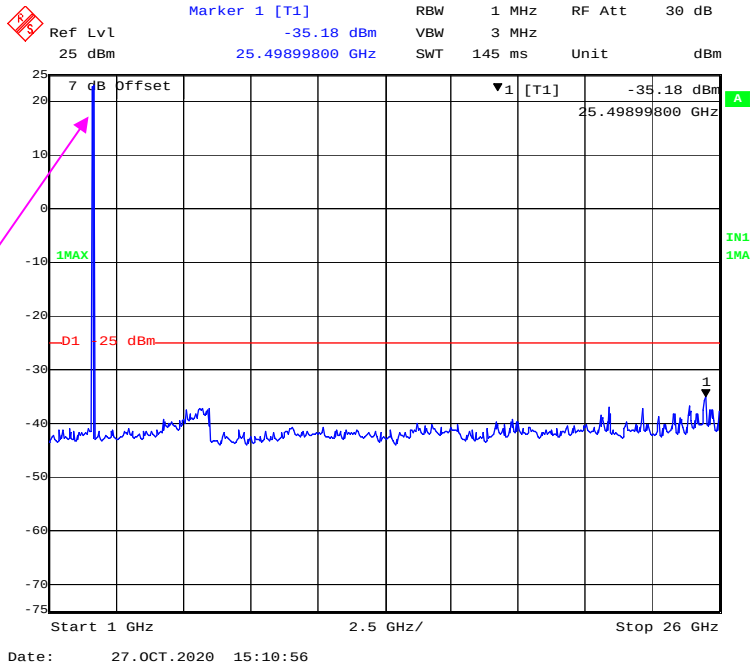
1 GHz –26.5 GHz (5 MHz, QPSK, High Channel)



30 MHz - 1 GHz (5 MHz, 16-QAM, High Channel)

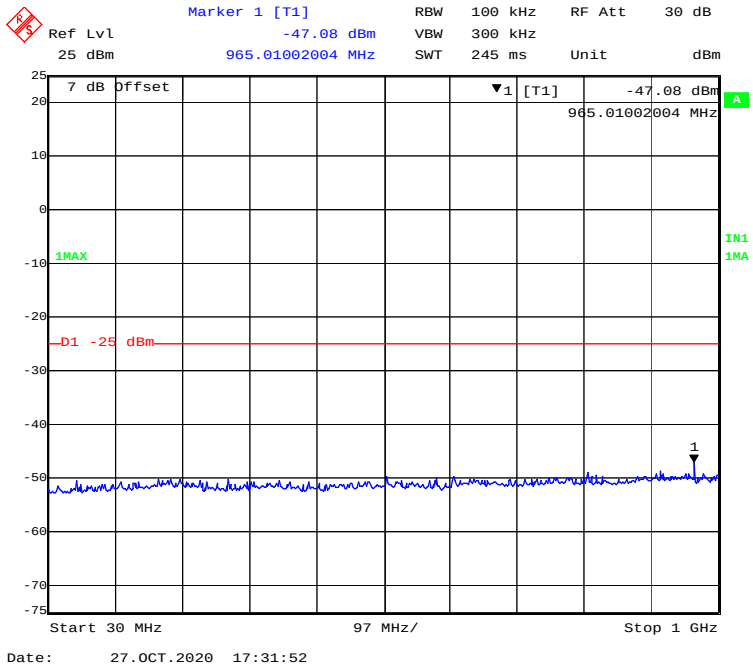


1 GHz –26.5 GHz (5 MHz, 16-QAM, High Channel)

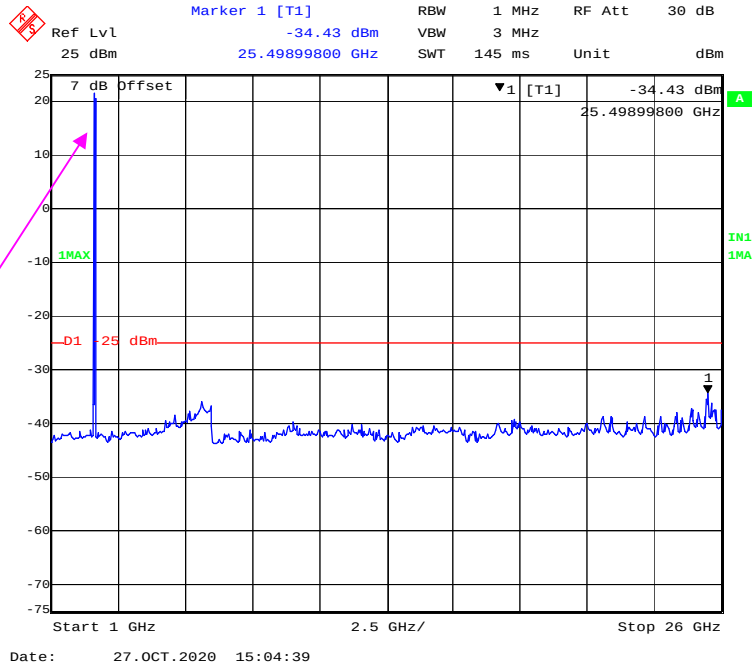


Fundamental

30 MHz - 1 GHz (10 MHz, QPSK, High Channel)

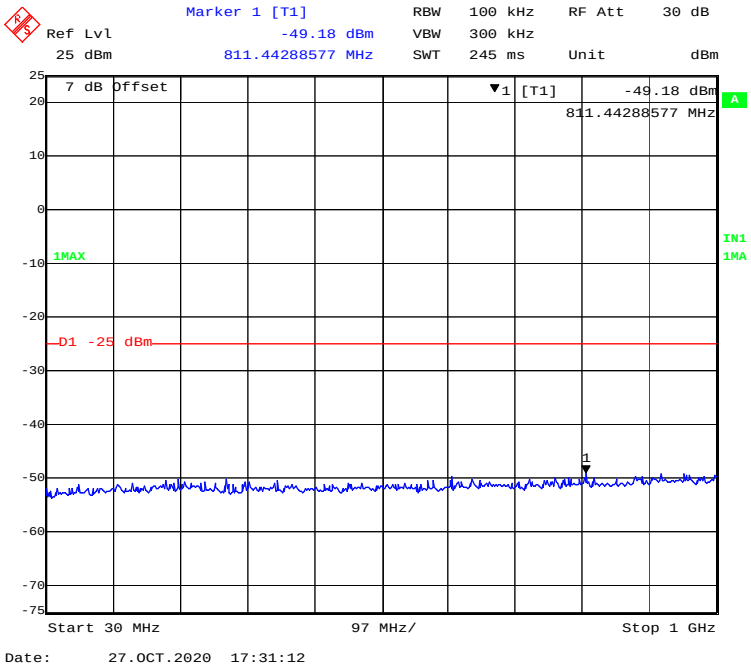


1 GHz –26.5 GHz (10 MHz, QPSK, High Channel)

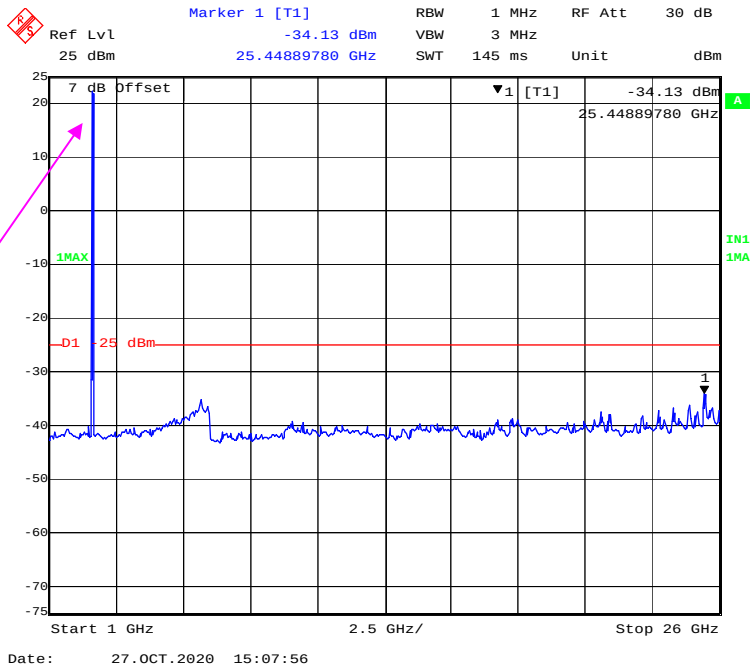


Fundamental

30 MHz - 1 GHz (10 MHz, 16-QAM, High Channel)

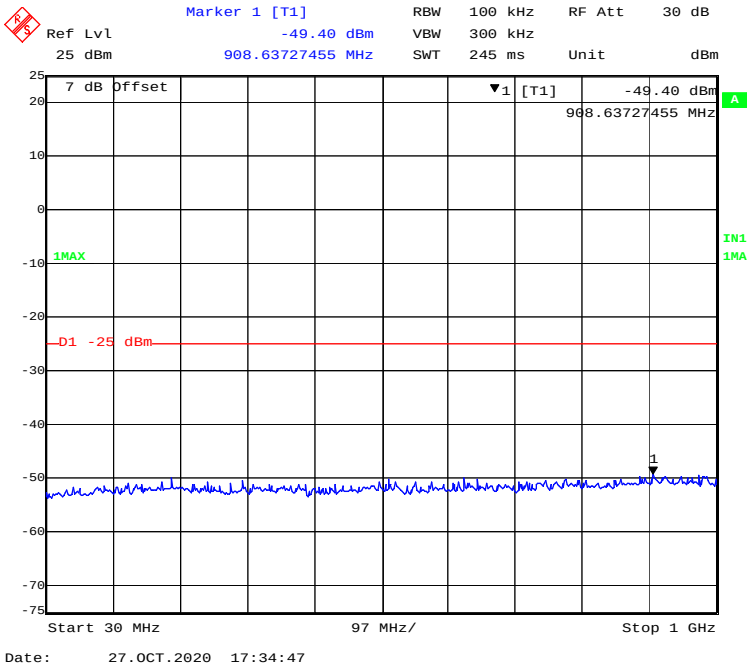


1 GHz –26.5 GHz (10 MHz, 16-QAM, High Channel)

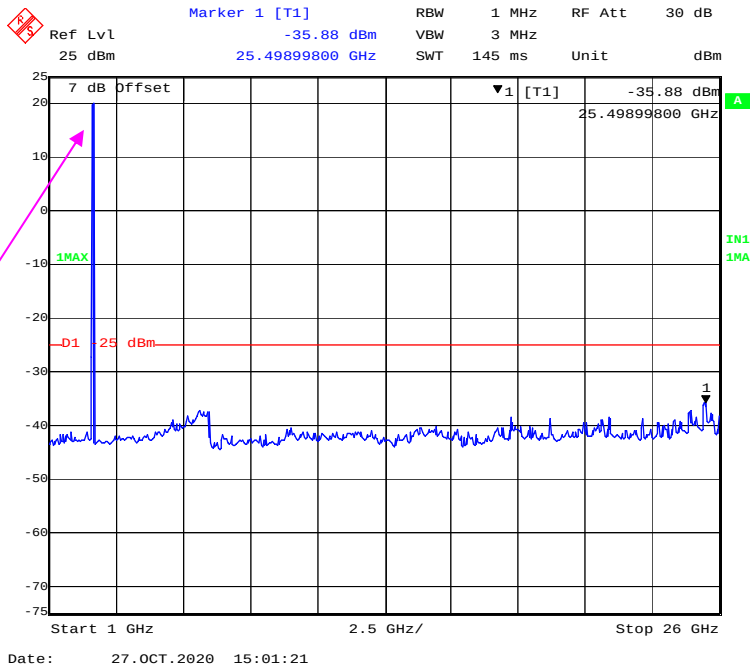


Fundamental

30 MHz - 1 GHz (15 MHz, QPSK, High Channel)

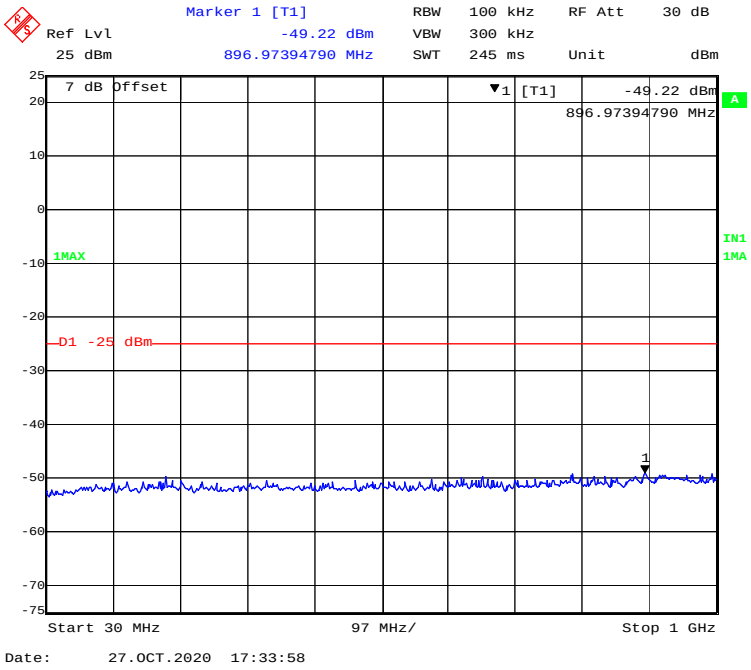


1 GHz –26.5 GHz (15 MHz, QPSK, Middle Channel)

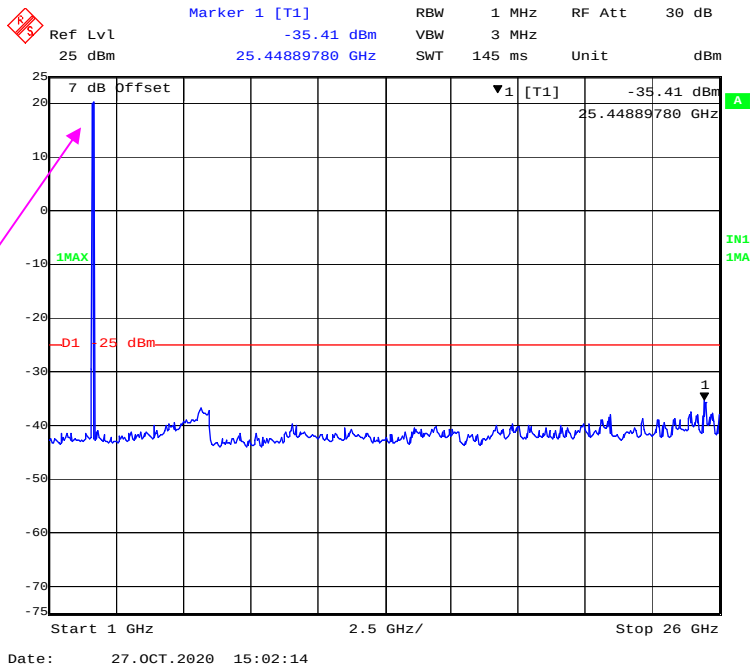


Fundamental

30 MHz - 1 GHz (15 MHz, 16-QAM, High Channel)

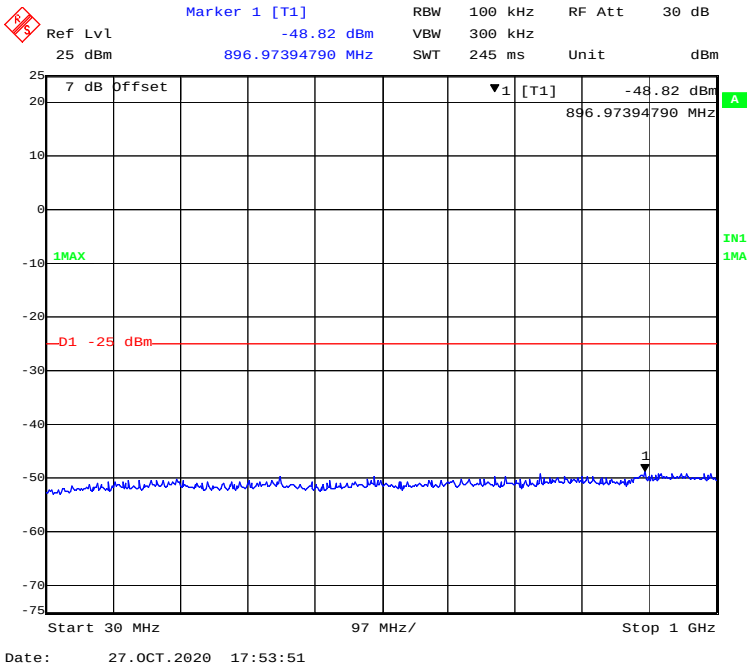


1 GHz –26.5 GHz (15 MHz, 16-QAM, High Channel)

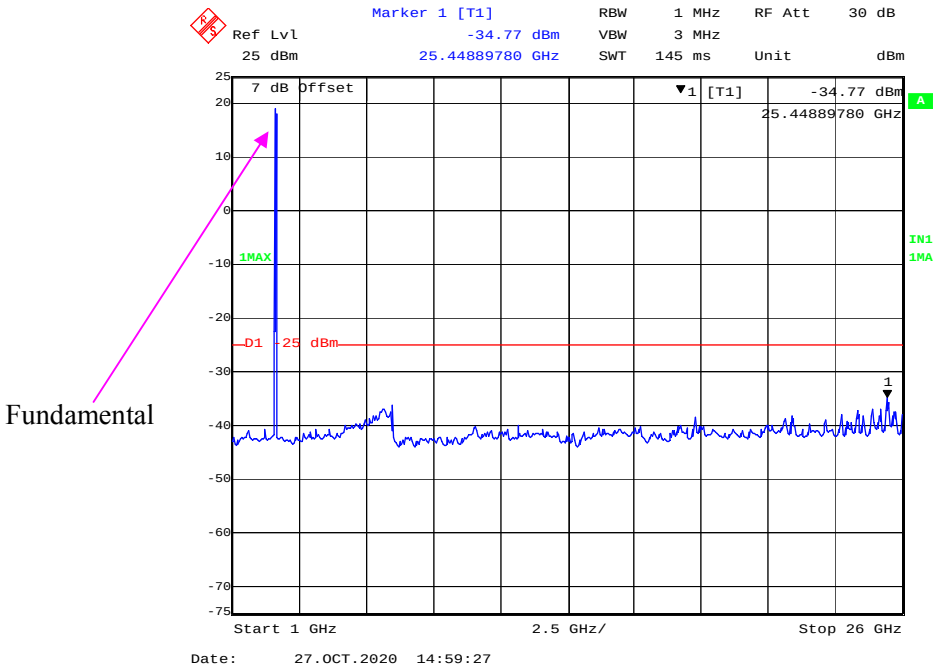


Fundamental

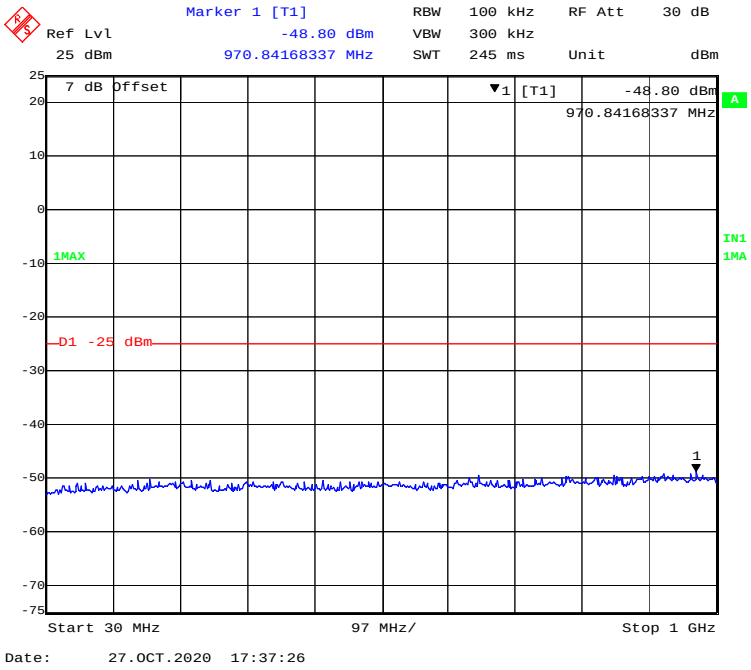
30 MHz - 1 GHz (20 MHz, QPSK, High Channel)



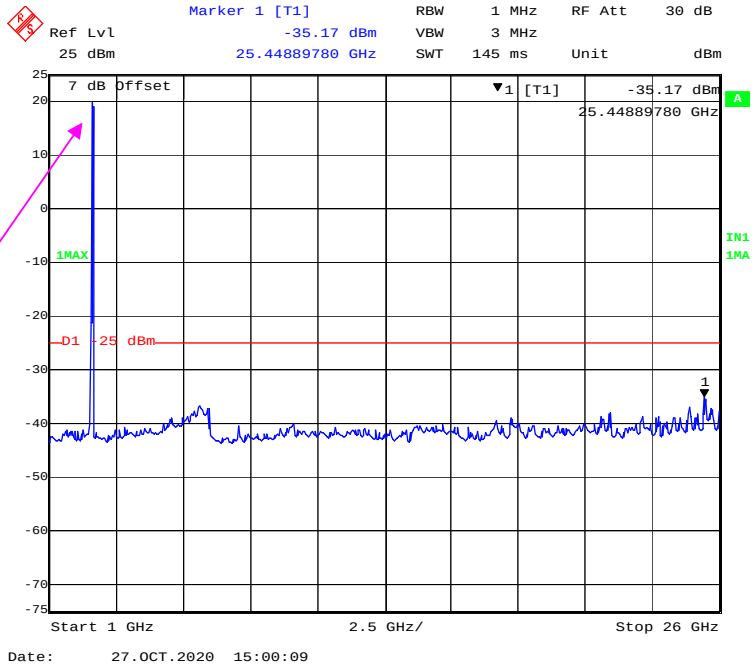
1 GHz –26.5 GHz (20 MHz, QPSK, High Channel)



30 MHz - 1 GHz (20 MHz, 16-QAM, High Channel)



1 GHz –26.5 GHz (20 MHz, 16-QAM, High Channel)



Fundamental

FCC § 2.1053; § 22.917 (a); § 24.238 (a); §27.53 (h) (m) - SPURIOUS RADIATED EMISSIONS

Applicable Standards

FCC § 2.1053, §22.917(a) ,§ 24.238(a) and § 27.53 (h) (m)

22.917 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

24.238 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

27.53(h) (m), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TX pwr in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log_{10} (power out in Watts)

Test Data

Environmental Conditions

Temperature:	24.7~24.9 ℃
Relative Humidity:	50~52 %
ATM Pressure:	101.9~102.3 kPa

The testing was performed by Jack Jiao from 2020-11-15 to 2020-12-02.

Test mode: Transmitting

30 MHz ~ 10 GHz:

GPRS 850 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
GPRS Mode, Low channel										
296.99	55.84	195	210	H	-51.03	0.46	-2.16	-53.65	-13	40.65
296.99	55.88	56	158	V	-50.99	0.46	-2.16	-53.61	-13	40.61
1648.40	49.99	78	125	H	-63.36	0.84	8.44	-55.76	-13	42.76
1648.40	49.93	96	139	V	-63.42	0.84	8.44	-55.82	-13	42.82
GPRS Mode, Middle channel										
296.99	55.28	115	100	H	-51.59	0.46	-2.16	-54.21	-13	41.21
296.99	55.01	240	150	V	-51.86	0.46	-2.16	-54.48	-13	41.48
1673.20	49.87	248	150	H	-53.52	0.84	8.48	-45.88	-13	32.88
1673.20	49.79	187	150	V	-53.6	0.84	8.48	-45.96	-13	32.96
GPRS Mode, High channel										
296.99	55.24	193	213	H	-51.63	0.46	-2.16	-54.25	-13	41.25
296.99	55.24	56	156	V	-51.63	0.46	-2.16	-54.25	-13	41.25
1697.60	49.99	79	125	H	-63.02	0.84	8.52	-55.34	-13	42.34
1697.60	49.64	110	102	V	-63.37	0.84	8.52	-55.69	-13	42.69

WCDMA Band V

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
WCDMA Mode, Low channel										
335.30	55.49	156	150	H	-52.59	0.48	-1.87	-54.94	-13	41.94
335.30	55.14	195	150	V	-52.94	0.48	-1.87	-55.29	-13	42.29
1652.80	36.86	170	100	H	-76.46	0.84	8.44	-68.86	-13	55.86
1652.80	36.04	279	100	V	-77.28	0.84	8.44	-69.68	-13	56.68
WCDMA Mode, Middle channel										
335.30	55.90	219	150	H	-52.18	0.48	-1.87	-54.53	-13	41.53
335.30	55.30	193	150	V	-52.78	0.48	-1.87	-55.13	-13	42.13
1673.20	36.18	255	100	H	-67.21	0.84	8.48	-59.57	-13	46.57
1673.20	36.71	330	100	V	-66.68	0.84	8.48	-59.04	-13	46.04
WCDMA Mode, High channel										
335.30	55.02	94	150	H	-53.06	0.48	-1.87	-55.41	-13	42.41
335.30	55.48	9	150	V	-52.60	0.48	-1.87	-54.95	-13	41.95
1693.20	36.04	178	100	H	-76.99	0.84	8.51	-69.32	-13	56.32
1693.20	36.13	25	100	V	-76.90	0.84	8.51	-69.23	-13	56.23

30 MHz ~ 20 GHz:

PCS 1900 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
GPRS Mode, Low channel										
296.99	55.65	55	145	H	-51.22	0.46	-2.16	-53.84	-13	40.84
296.99	55.29	302	156	V	-51.58	0.46	-2.16	-54.20	-13	41.20
3700.40	43.05	225	189	H	-63.92	0.95	9.78	-55.09	-13	42.09
3700.40	42.75	110	200	V	-64.22	0.95	9.78	-55.39	-13	42.39
GPRS Mode, Middle channel										
296.99	55.86	318	100	H	-51.01	0.46	-2.16	-53.63	-13	40.63
296.99	55.60	192	100	V	-51.27	0.46	-2.16	-53.89	-13	40.89
3760.00	43.23	87	200	H	-63.55	0.95	9.74	-54.76	-13	41.76
3760.00	42.98	162	200	V	-64.12	0.95	9.74	-55.33	-13	42.33
GPRS Mode, High channel										
296.99	55.27	55	145	H	-51.60	0.46	-2.16	-54.22	-13	41.22
296.99	55.35	302	156	V	-51.52	0.46	-2.16	-54.14	-13	41.14
3819.60	42.56	225	189	H	-64.03	0.96	9.71	-55.28	-13	42.28
3819.60	41.97	110	200	V	-64.62	0.96	9.71	-55.87	-13	42.87

WCDMA Band II

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
WCDMA Mode, Low channel										
557.43	53.43	70	150	H	-51.20	0.58	-1.20	-52.98	-13	39.98
557.43	53.02	194	150	V	-51.61	0.58	-1.20	-53.39	-13	40.39
3704.80	37.64	315	200	H	-69.32	0.95	9.78	-60.49	-13	47.49
3704.80	37.97	338	100	V	-68.99	0.95	9.78	-60.16	-13	47.16
WCDMA Mode, Middle channel										
557.43	53.10	167	150	H	-51.53	0.58	-1.20	-53.31	-13	40.31
557.43	53.45	279	150	V	-51.18	0.58	-1.20	-52.96	-13	39.96
3760.00	37.68	180	200	H	-69.10	0.95	9.74	-60.31	-13	47.31
3760.00	37.64	75	100	V	-69.14	0.95	9.74	-60.35	-13	47.35
WCDMA Mode, High channel										
557.43	53.99	260	150	H	-50.64	0.58	-1.20	-52.42	-13	39.42
557.43	53.50	112	150	V	-51.13	0.58	-1.20	-52.91	-13	39.91
3815.20	37.64	272	200	H	-68.96	0.96	9.71	-60.21	-13	47.21
3815.20	37.45	113	100	V	-69.15	0.96	9.71	-60.40	-13	47.40

Note:
1) Absolute Level (dBm) = Submitted Level (dBm) - Cable loss (dB) + Antenna Gain (dBd/dBi)
2) Margin (dB) = Limit (dBm) - Absolute Level (dBm)

30 MHz ~ 10 GHz:

LTE Band 2:

Test mode: Transmitting (Pre-scan with all the bandwidth, and worst case as below)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Low Channel										
296.99	54.74	219	150	H	-52.13	0.46	-2.16	-54.75	-13	41.75
296.99	55.01	93	150	V	-51.86	0.46	-2.16	-54.48	-13	41.48
3701.40	41.42	9	200	H	-65.54	0.95	9.78	-56.71	-13	43.71
3701.40	40.24	120	200	V	-66.72	0.95	9.78	-57.89	-13	44.89
16-QAM 1.4MHz Bandwidth Low Channel										
296.99	54.41	210	200	H	-52.46	0.46	-2.16	-55.08	-13	42.08
296.99	55.67	87	150	V	-51.20	0.46	-2.16	-53.82	-13	40.82
3701.40	41.46	22	150	H	-65.50	0.95	9.78	-56.67	-13	43.67
3701.40	40.63	60	200	V	-66.33	0.95	9.78	-57.5	-13	44.50

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
296.99	54.94	230	150	H	-51.93	0.46	-2.16	-54.55	-13	41.55
296.99	55.47	110	150	V	-51.40	0.46	-2.16	-54.02	-13	41.02
3760.00	33.05	263	200	H	-64.93	0.95	9.74	-56.14	-13	43.14
3760.00	31.41	218	200	V	-66.57	0.95	9.74	-57.78	-13	44.78
16-QAM 1.4MHz Bandwidth Middle Channel										
296.99	54.09	156	200	H	-52.78	0.46	-2.16	-55.40	-13	42.40
296.99	55.11	91	150	V	-51.76	0.46	-2.16	-54.38	-13	41.38
3760.00	32.93	107	150	H	-65.05	0.95	9.74	-56.26	-13	43.26
3760.00	31.30	62	200	V	-66.68	0.95	9.74	-57.89	-13	44.89

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth High Channel										
296.99	54.42	190	200	H	-52.45	0.46	-2.16	-55.07	-13	42.07
296.99	55.87	91	150	V	-51.00	0.46	-2.16	-53.62	-13	40.62
3818.60	40.92	272	150	H	-65.68	0.96	9.71	-56.93	-13	43.93
3818.60	40.39	69	200	V	-66.21	0.96	9.71	-57.46	-13	44.46
16-QAM 1.4MHz Bandwidth High Channel										
296.99	54.29	230	150	H	-52.58	0.46	-2.16	-55.20	-13	42.20
296.99	55.40	91	150	V	-51.47	0.46	-2.16	-54.09	-13	41.09
3818.60	41.59	222	200	H	-65.01	0.96	9.71	-56.26	-13	43.26
3818.60	40.84	10	200	V	-65.76	0.96	9.71	-57.01	-13	44.01

30 MHz ~ 20 GHz:

LTE Band 4:

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Low Channel										
296.99	54.97	150	200	H	-51.90	0.46	-2.16	-54.52	-13	41.52
296.99	55.83	89	150	V	-51.04	0.46	-2.16	-53.66	-13	40.66
3421.40	42.75	355	150	H	-65.19	0.93	9.82	-56.3	-13	43.30
3421.40	41.66	232	200	V	-66.28	0.93	9.82	-57.39	-13	44.39
16-QAM 1.4MHz Bandwidth Low Channel										
296.99	54.05	143	200	H	-52.82	0.46	-2.16	-55.44	-13	42.44
296.99	55.61	91	200	V	-51.26	0.46	-2.16	-53.88	-13	40.88
3421.40	42.91	168	150	H	-65.03	0.93	9.82	-56.14	-13	43.14
3421.40	41.47	330	150	V	-66.47	0.93	9.82	-57.58	-13	44.58

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
296.99	54.61	89	150	H	-52.26	0.46	-2.16	-54.88	-13	41.88
296.99	55.96	140	150	V	-50.91	0.46	-2.16	-53.53	-13	40.53
3465.00	35.80	30	200	H	-63.01	0.93	9.87	-54.07	-13	41.07
3465.00	36.73	287	200	V	-62.08	0.93	9.87	-53.14	-13	40.14
16-QAM 1.4MHz Bandwidth Middle Channel										
296.99	54.82	119	200	H	-52.05	0.46	-2.16	-54.67	-13	41.67
296.99	55.7	98	150	V	-51.17	0.46	-2.16	-53.79	-13	40.79
3465.00	35.48	183	150	H	-63.33	0.93	9.87	-54.39	-13	41.39
3465.00	35.95	237	200	V	-62.86	0.93	9.87	-53.92	-13	40.92

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth High Channel										
296.99	54.98	206	150	H	-51.89	0.46	-2.16	-54.51	-13	41.51
296.99	55.22	120	150	V	-51.65	0.46	-2.16	-54.27	-13	41.27
3508.60	44.45	72	200	H	-63.12	0.93	9.90	-54.15	-13	41.15
3508.60	44.64	297	200	V	-62.93	0.93	9.90	-53.96	-13	40.96
16-QAM 1.4MHz Bandwidth High Channel										
296.99	54.94	219	200	H	-51.93	0.46	-2.16	-54.55	-13	41.55
296.99	55.15	163	150	V	-51.72	0.46	-2.16	-54.34	-13	41.34
3508.60	44.54	296	150	H	-63.03	0.93	9.90	-54.06	-13	41.06
3508.60	44.64	188	200	V	-62.93	0.93	9.90	-53.96	-13	40.96

LTE Band 5:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Low Channel										
296.99	54.05	156	200	H	-52.82	0.46	-2.16	-55.44	-13	42.44
296.99	55.88	173	150	V	-50.99	0.46	-2.16	-53.61	-13	40.61
1649.40	48.80	6	150	H	-64.54	0.84	8.44	-56.94	-13	43.94
1649.40	47.98	351	200	V	-65.36	0.84	8.44	-57.76	-13	44.76
16-QAM 1.4MHz Bandwidth Low Channel										
296.99	54.15	96	150	H	-52.72	0.46	-2.16	-55.34	-13	42.34
296.99	55.81	150	150	V	-51.06	0.46	-2.16	-53.68	-13	40.68
1649.40	49.64	216	200	H	-63.70	0.84	8.44	-56.10	-13	43.10
1649.40	47.95	324	200	V	-65.39	0.84	8.44	-57.79	-13	44.79

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
296.99	54.16	232	100	H	-52.71	0.46	-2.16	-55.33	-13	42.33
296.99	55.53	91	200	V	-51.34	0.46	-2.16	-53.96	-13	40.96
1673.00	39.34	138	150	H	-66.19	0.84	8.48	-58.55	-13	45.55
1673.00	38.73	186	100	V	-66.80	0.84	8.48	-59.16	-13	46.16
16-QAM 1.4MHz Bandwidth Middle Channel										
296.99	54.40	197	150	H	-52.47	0.46	-2.16	-55.09	-13	42.09
296.99	55.61	113	150	V	-51.26	0.46	-2.16	-53.88	-13	40.88
1673.00	39.83	7	200	H	-65.70	0.84	8.48	-58.06	-13	45.06
1673.00	38.68	228	200	V	-66.85	0.84	8.48	-59.21	-13	46.21

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth High Channel										
296.99	54.15	211	100	H	-52.72	0.46	-2.16	-55.34	-13	42.34
296.99	55.42	101	200	V	-51.45	0.46	-2.16	-54.07	-13	41.07
1696.60	45.18	241	150	H	-67.83	0.84	8.51	-60.16	-13	47.16
1696.60	45.97	150	100	V	-67.04	0.84	8.51	-59.37	-13	46.37
16-QAM 1.4MHz Bandwidth High Channel										
296.99	54.62	136	150	H	-52.25	0.46	-2.16	-54.87	-13	41.87
296.99	55.84	114	150	V	-51.03	0.46	-2.16	-53.65	-13	40.65
1696.60	45.85	164	200	H	-67.16	0.84	8.51	-59.49	-13	46.49
1696.60	46.85	28	200	V	-66.16	0.84	8.51	-58.49	-13	45.49

30 MHz ~ 26 GHz:
LTE Band 7:

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Low Channel										
559.98	54.66	79	200	H	-49.84	0.58	-1.17	-48.09	-13	35.09
559.98	55.8	106	200	V	-48.7	0.58	-1.17	-46.95	-13	33.95
5005.00	44.92	254	100	H	-61.07	1.08	10.30	-51.85	-13	38.85
5005.00	43.29	348	150	V	-62.7	1.08	10.30	-53.48	-13	40.48
16-QAM 5MHz Bandwidth Low Channel										
559.98	54.48	73	100	H	-50.02	0.58	-1.17	-48.27	-13	35.27
559.98	55.68	106	150	V	-48.82	0.58	-1.17	-47.07	-13	34.07
5005.00	44.4	134	150	H	-61.59	1.08	10.30	-52.37	-13	39.37
5005.00	45.29	158	200	V	-60.7	1.08	10.30	-51.48	-13	38.48

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
559.98	54.08	291	200	H	-50.42	0.58	-1.17	-48.67	-13	35.67
559.98	55.1	168	200	V	-49.4	0.58	-1.17	-47.65	-13	34.65
5070.00	44.33	76	100	H	-61.3	1.09	10.30	-52.09	-13	39.09
5070.00	45.28	213	150	V	-60.35	1.09	10.30	-51.14	-13	38.14
16-QAM 5MHz Bandwidth Middle Channel										
559.98	54.45	284	100	H	-50.05	0.58	-1.17	-48.3	-13	35.3
559.98	55.38	257	150	V	-49.12	0.58	-1.17	-47.37	-13	34.37
5070.00	43.94	155	150	H	-61.69	1.09	10.30	-52.48	-13	39.48
5070.00	45.29	53	200	V	-60.34	1.09	10.30	-51.13	-13	38.13

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth High Channel										
559.98	54.12	12	200	H	-50.38	0.58	-1.17	-48.63	-13	35.63
559.98	55.93	45	200	V	-48.57	0.58	-1.17	-46.82	-13	33.82
5135.00	43.25	11	100	H	-62.02	1.1	10.30	-52.82	-13	39.82
5135.00	44.09	170	150	V	-61.18	1.1	10.30	-51.98	-13	38.98
16-QAM 5MHz Bandwidth High Channel										
559.98	54.16	76	100	H	-50.34	0.58	-1.17	-48.59	-13	35.59
559.98	55.68	299	150	V	-48.82	0.58	-1.17	-47.07	-13	34.07
5135.00	43.77	144	150	H	-61.5	1.1	10.30	-52.3	-13	39.3
5135.00	44.26	191	200	V	-61.01	1.1	10.30	-51.81	-13	38.81

30 MHz ~ 10 GHz:
LTE Band 17:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Low Channel										
296.99	54.62	224	100	H	-52.25	0.46	-2.16	-49.63	-13	36.63
296.99	55.37	63	200	V	-51.50	0.46	-2.16	-48.88	-13	35.88
1413.00	55.02	158	150	H	-59.95	0.83	8.06	-52.72	-13	39.72
1413.00	56.63	244	100	V	-58.34	0.83	8.06	-51.11	-13	38.11
16-QAM 5MHz Bandwidth Low Channel										
296.99	54.69	67	150	H	-52.18	0.46	-2.16	-49.56	-13	36.56
296.99	55.09	234	150	V	-51.78	0.46	-2.16	-49.16	-13	36.16
1413.00	55.25	267	200	H	-59.72	0.83	8.06	-52.49	-13	39.49
1413.00	55.98	88	200	V	-58.99	0.83	8.06	-51.76	-13	38.76

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
296.99	54.51	349	100	H	-52.36	0.46	-2.16	-49.74	-13	36.74
296.99	55.59	271	200	V	-51.28	0.46	-2.16	-48.66	-13	35.66
1420.00	54.75	82	150	H	-60.17	0.83	8.07	-52.93	-13	39.93
1420.00	56.64	224	100	V	-58.28	0.83	8.07	-51.04	-13	38.04
16-QAM 5MHz Bandwidth Middle Channel										
296.99	54.26	167	150	H	-52.61	0.46	-2.16	-49.99	-13	36.99
296.99	55.90	331	150	V	-50.97	0.46	-2.16	-48.35	-13	35.35
1420.00	55.63	254	200	H	-59.29	0.83	8.07	-52.05	-13	39.05
1420.00	56.35	353	200	V	-58.57	0.83	8.07	-51.33	-13	38.33

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth High Channel										
296.99	54.00	56	100	H	-52.87	0.46	-2.16	-50.25	-13	37.25
296.99	55.58	203	200	V	-51.29	0.46	-2.16	-48.67	-13	35.67
1427.00	55.26	253	150	H	-59.62	0.83	8.08	-52.37	-13	39.37
1427.00	56.27	303	100	V	-58.61	0.83	8.08	-51.36	-13	38.36
16-QAM 5MHz Bandwidth High Channel										
296.99	54.96	187	150	H	-51.91	0.46	-2.16	-49.29	-13	36.29
296.99	55.52	59	150	V	-51.35	0.46	-2.16	-48.73	-13	35.73
1427.00	55.39	91	200	H	-59.49	0.83	8.08	-52.24	-13	39.24
1427.00	55.89	293	200	V	-58.99	0.83	8.08	-51.74	-13	38.74

30 MHz ~ 26.5 GHz:
LTE Band 41:

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Low Channel										
296.99	54.90	337	200	H	-51.97	0.46	-2.16	-49.35	-13	36.35
296.99	55.24	185	200	V	-51.63	0.46	-2.16	-49.01	-13	36.01
5115.00	44.32	139	100	H	-61.06	1.09	10.30	-51.85	-13	38.85
5115.00	42.69	59	150	V	-62.69	1.09	10.30	-53.48	-13	40.48
16-QAM 5MHz Bandwidth Low Channel										
296.99	54.39	195	100	H	-52.48	0.46	-2.16	-49.86	-13	36.86
296.99	55.52	204	150	V	-51.35	0.46	-2.16	-48.73	-13	35.73
5115.00	43.84	143	150	H	-61.54	1.09	10.30	-52.33	-13	39.33
5115.00	44.91	21	200	V	-60.47	1.09	10.30	-51.26	-13	38.26

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
296.99	54.30	195	200	H	-52.57	0.46	-2.16	-49.95	-13	36.95
296.99	55.19	25	200	V	-51.68	0.46	-2.16	-49.06	-13	36.06
5180.00	43.58	122	100	H	-61.44	1.10	10.30	-52.24	-13	39.24
5180.00	44.52	95	150	V	-60.50	1.10	10.30	-51.30	-13	38.30
16-QAM 5MHz Bandwidth Middle Channel										
296.99	54.67	145	100	H	-52.20	0.46	-2.16	-49.58	-13	36.58
296.99	55.89	16	150	V	-50.98	0.46	-2.16	-48.36	-13	35.36
5180.00	43.49	242	150	H	-61.53	1.10	10.30	-52.33	-13	39.33
5180.00	44.24	59	200	V	-60.78	1.10	10.30	-51.58	-13	38.58

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth High Channel										
296.99	54.95	234	200	H	-51.92	0.46	-2.16	-49.3	-13	36.30
296.99	55.40	193	200	V	-51.47	0.46	-2.16	-48.85	-13	35.85
5305.00	42.69	318	100	H	-61.63	1.12	10.30	-52.45	-13	39.45
5305.00	43.42	222	150	V	-60.90	1.12	10.30	-51.72	-13	38.72
16-QAM 5MHz Bandwidth High Channel										
296.99	54.94	209	100	H	-51.93	0.46	-2.16	-49.31	-13	36.31
296.99	55.94	156	150	V	-50.93	0.46	-2.16	-48.31	-13	35.31
5305.00	42.62	4	150	H	-61.70	1.12	10.30	-52.52	-13	39.52
5305.00	43.55	120	200	V	-60.77	1.12	10.30	-51.59	-13	38.59

Note:
1) Absolute Level (dBm) = Submitted Level (dBm) - Cable loss (dB) + Antenna Gain (dBd/dBi)
2) Margin (dB) = Limit (dBm) - Absolute Level (dBm)

FCC § 22.917 (a); § 24.238 (a); §27.53 (m) - BAND EDGES

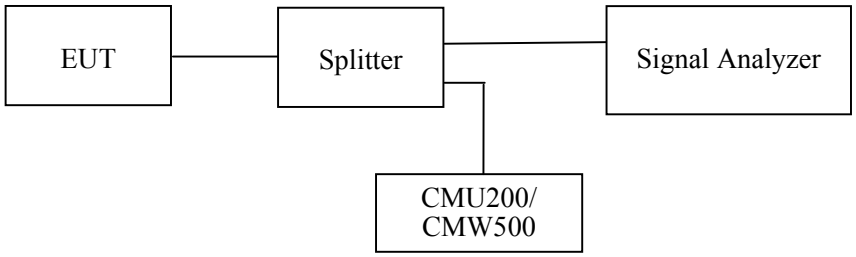
Applicable Standards

According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.
FCC §2.1051.The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.



Test Data

Environmental Conditions

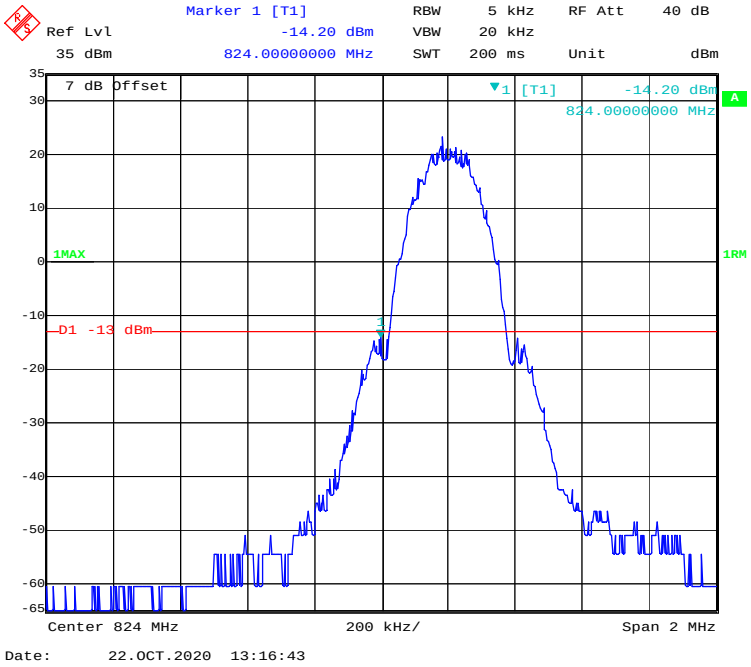
Temperature:	24.5~25.3 ℃
Relative Humidity:	50~52 %
ATM Pressure:	100.4~101.7 kPa

The testing was performed by Jack Jiao from 2020-10-17 to 2020-12-02.

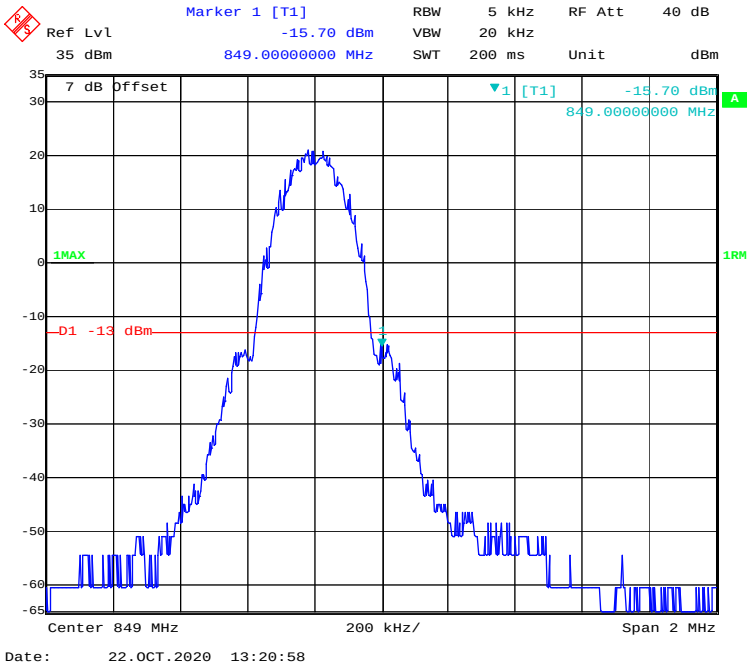
EUT operation mode: Transmitting
Test Result: Compliant.

GSM 850 Band:

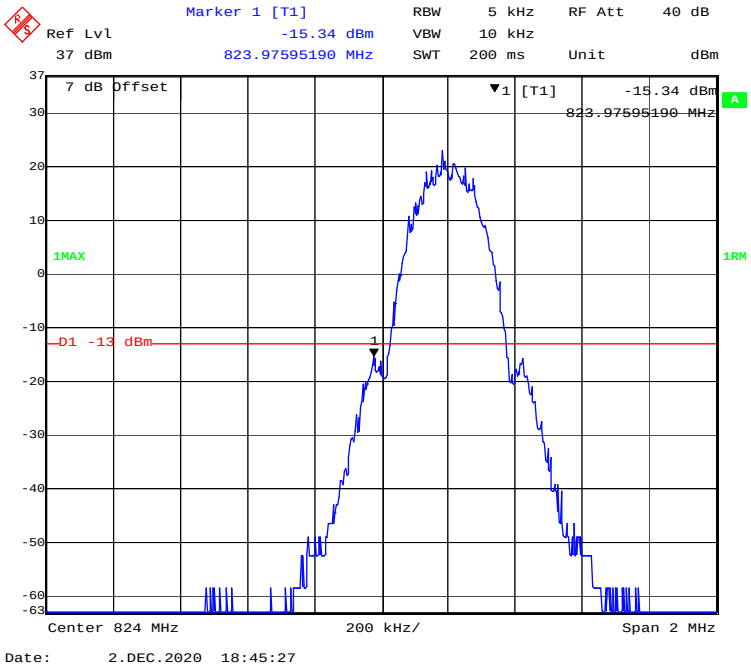
GSM Mode, Left Band Edge



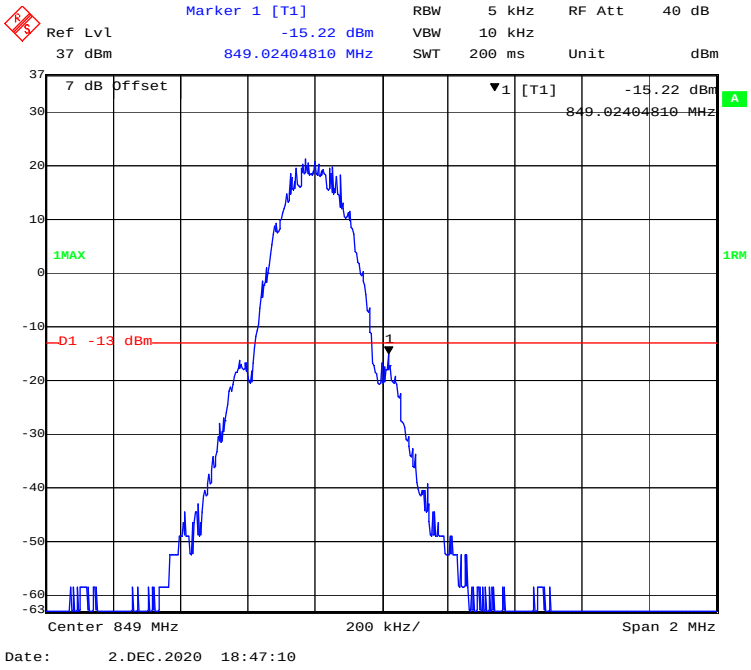
GSM Mode, Right Band Edge



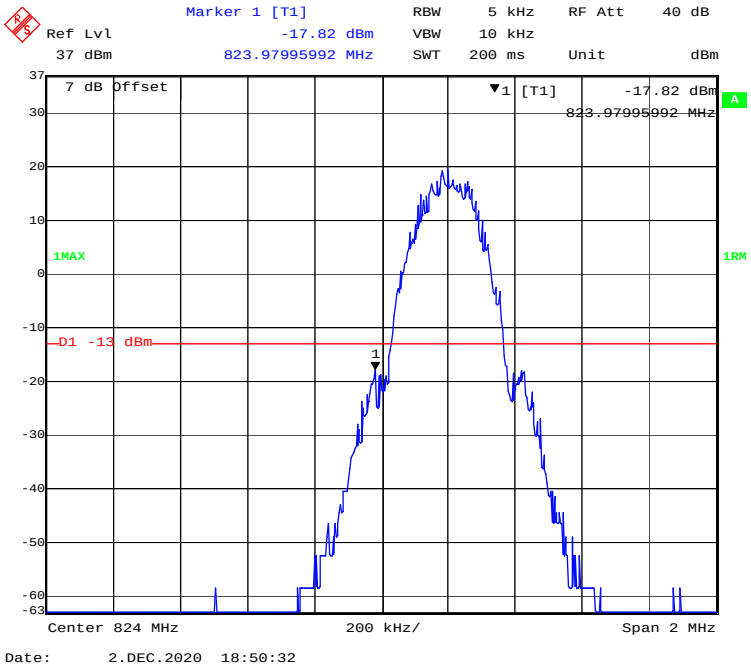
GPRS Mode, Left Band Edge



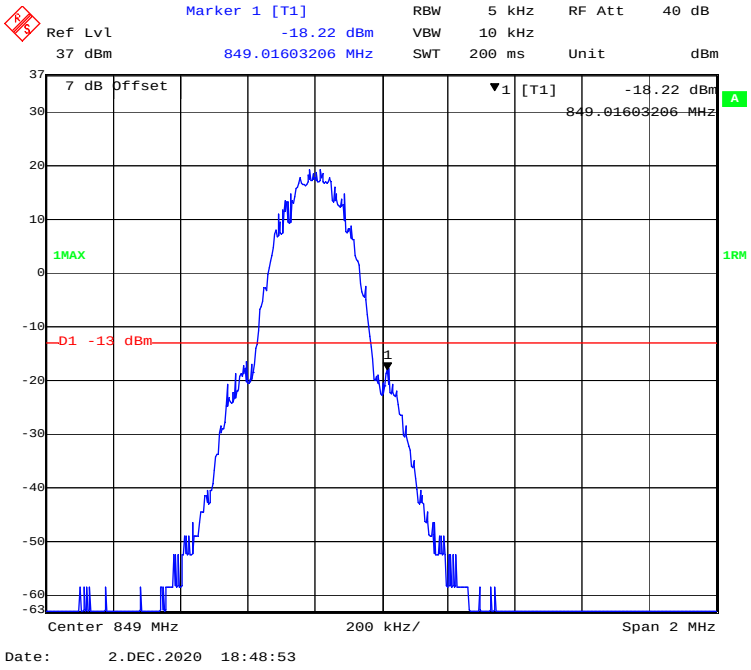
GPRS Mode, Right Band Edge



EGPRS Mode, Left Band Edge

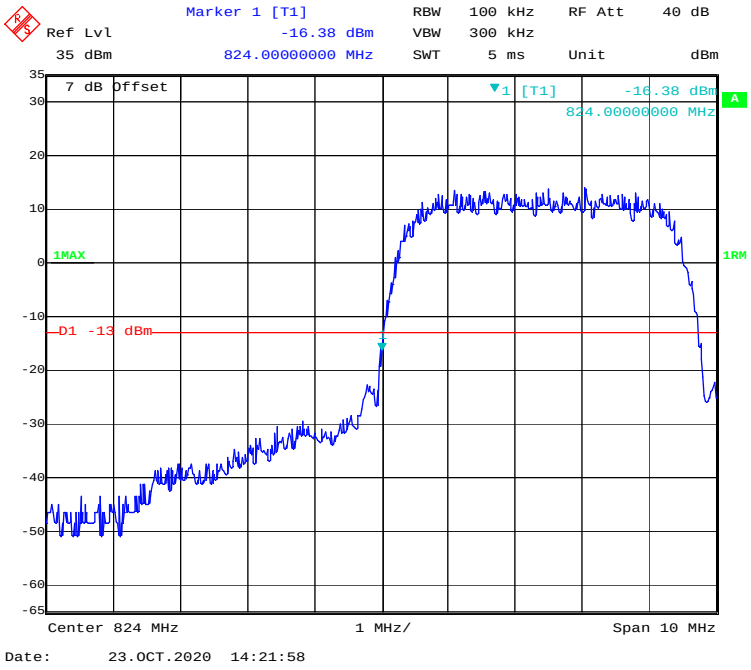


EGPRS Mode, Right Band Edge

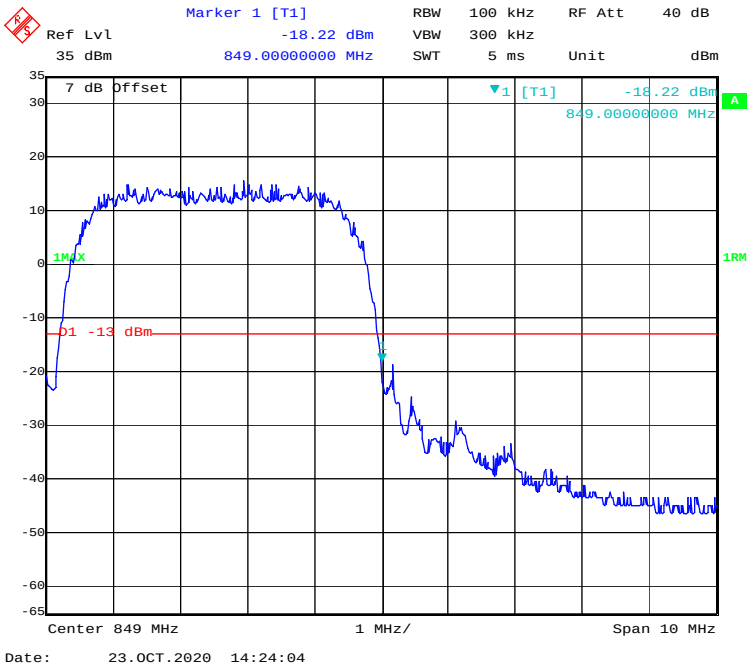


WCDMA Band V

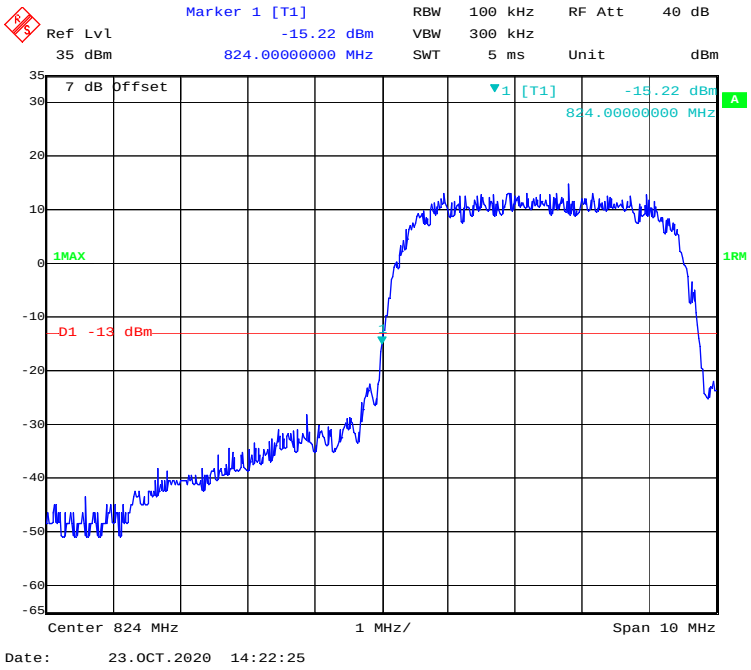
WCDMA (Rel 99) Mode, Left Band Edge



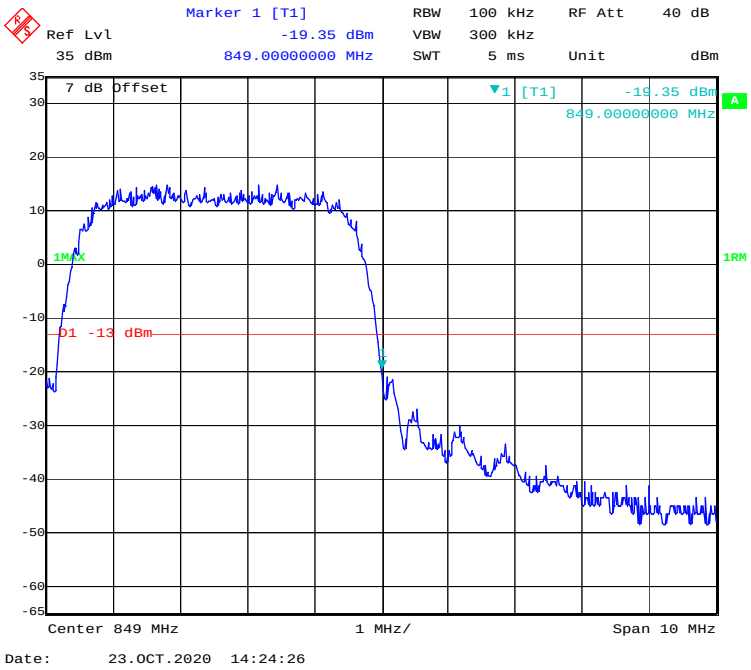
WCDMA (Rel 99) Mode, Right Band Edge



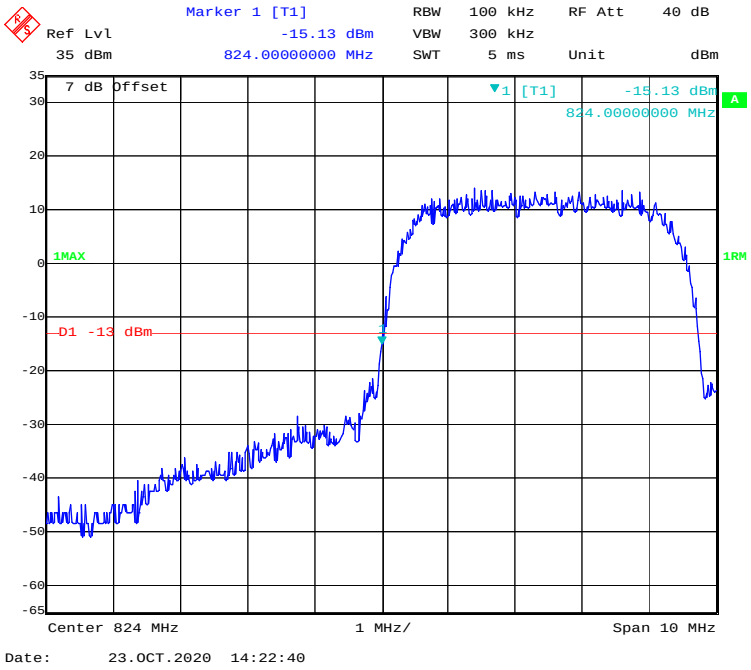
WCDMA (HSDPA) Mode, Left Band Edge



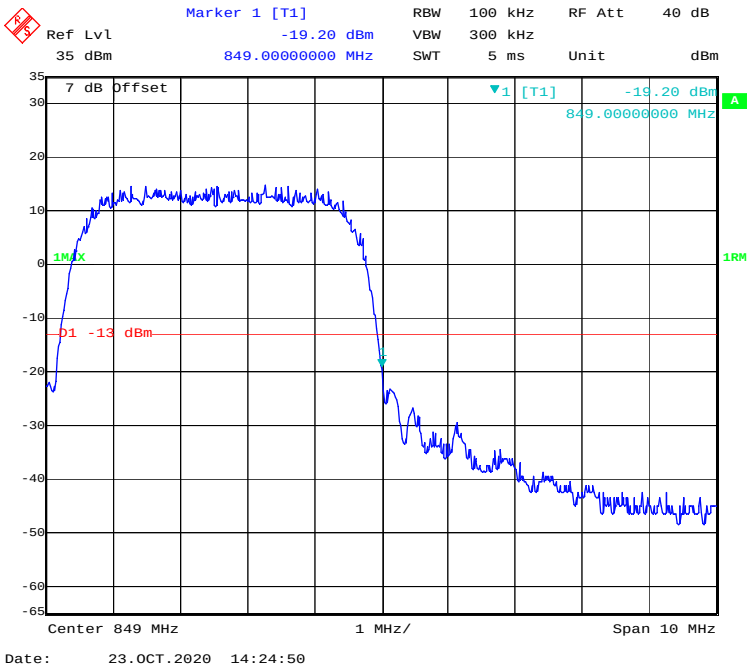
WCDMA (HSDPA) Mode, Right Band Edge



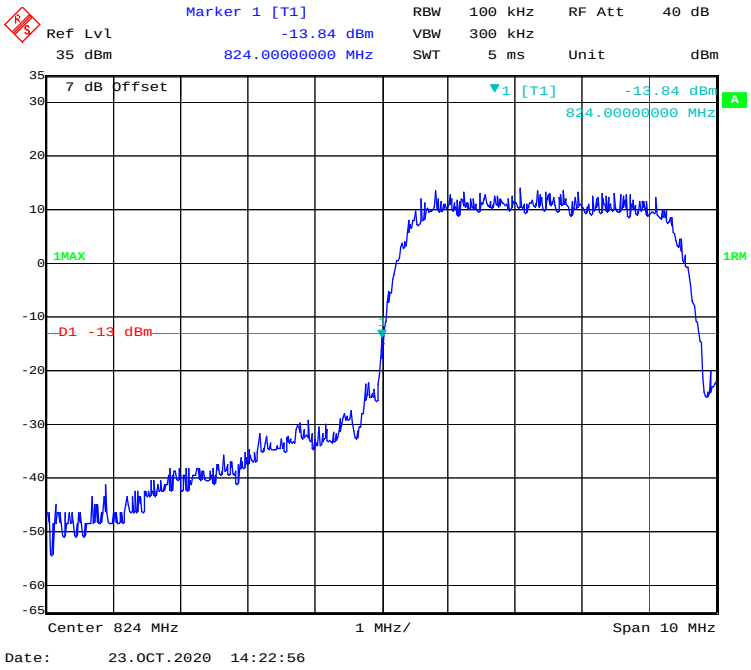
WCDMA (HSUPA) Mode, Left Band Edge



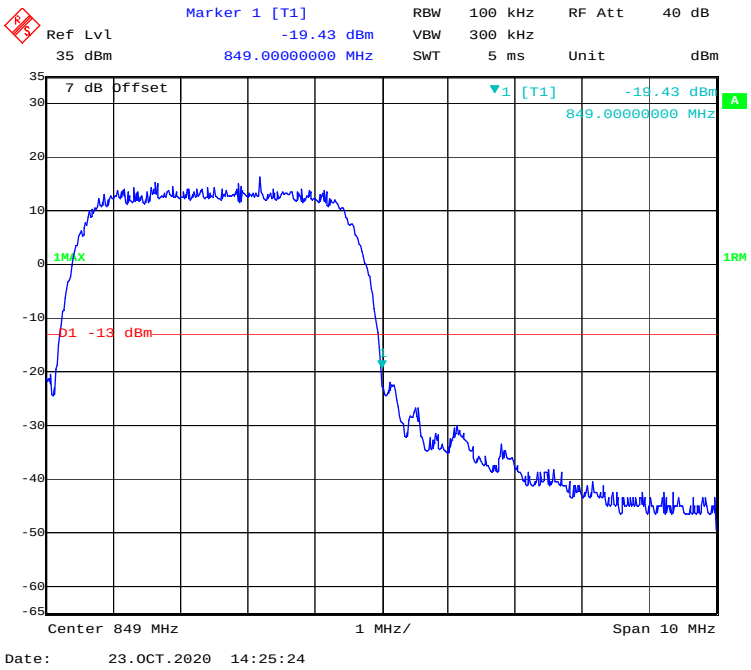
WCDMA (HSUPA) Mode, Right Band Edge



WCDMA (HSPA+) Mode, Left Band Edge

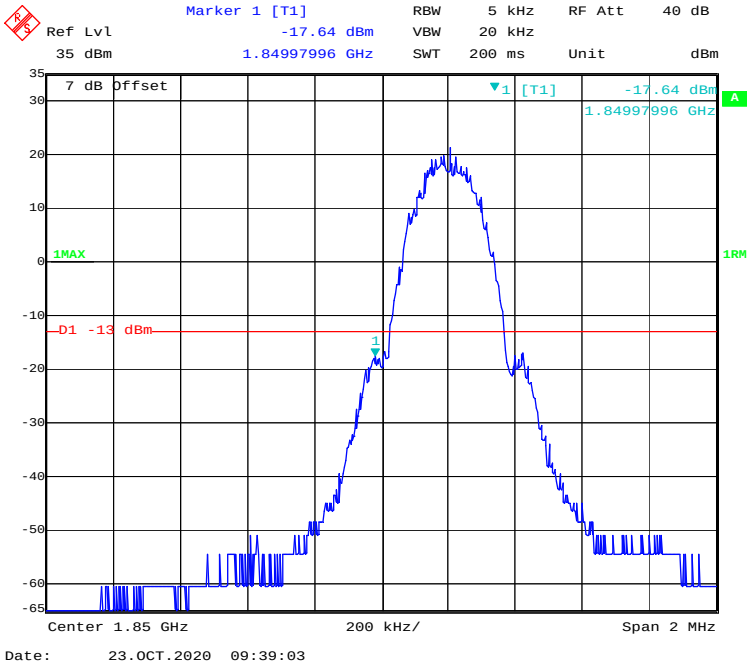


WCDMA (HSPA+) Mode, Right Band Edge

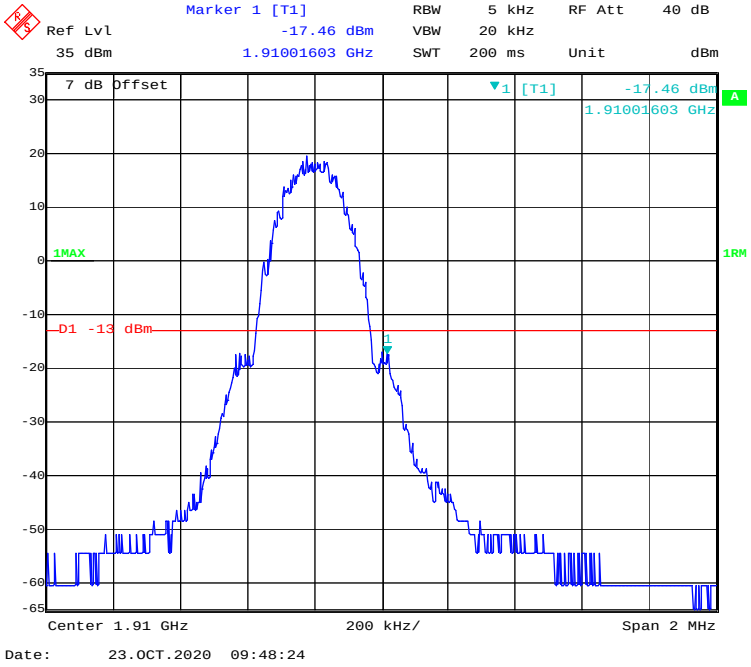


PCS 1900 Band:

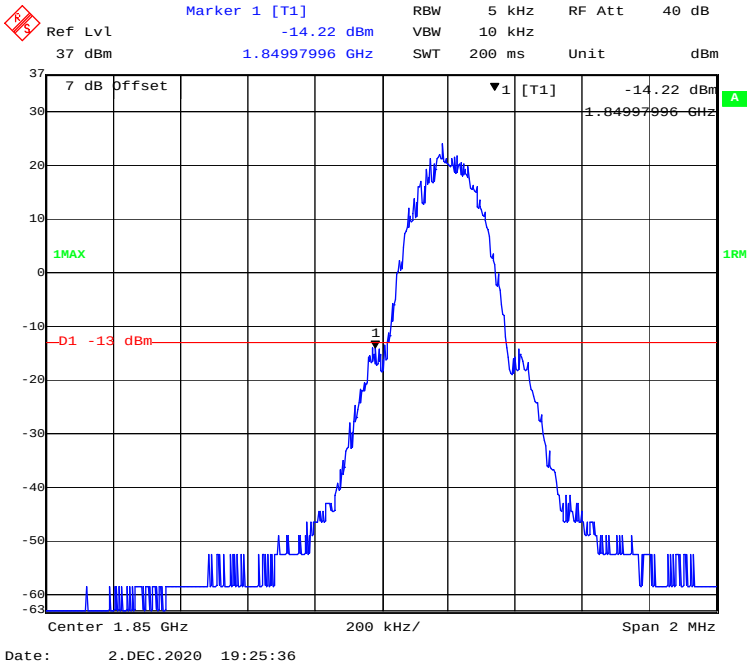
GSM Mode, Left Band Edge



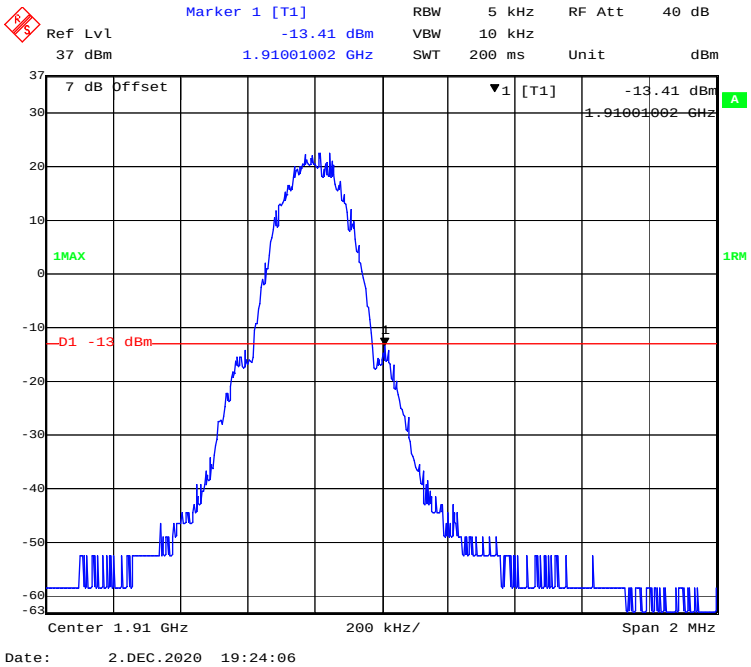
GSM Mode, Right Band Edge



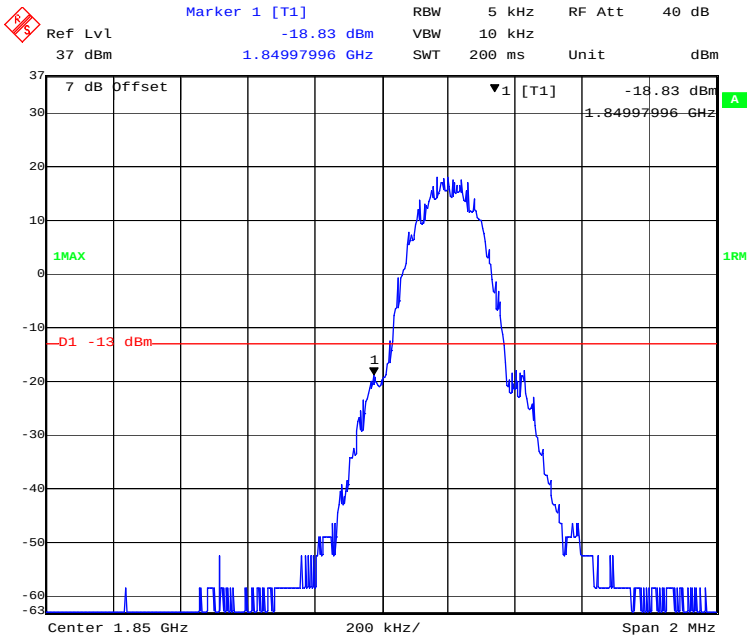
GPRS Mode, Left Band Edge



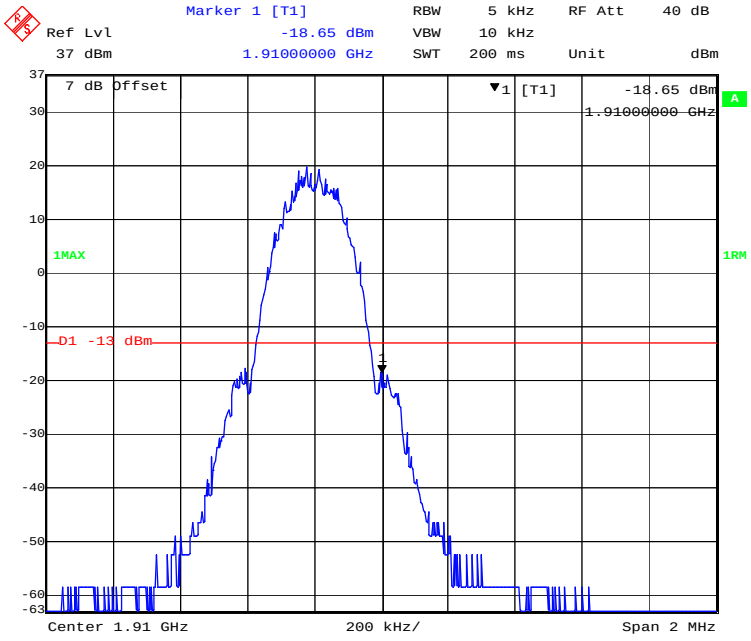
GPRS Mode, Right Band Edge



EGPRS Mode, Left Band Edge

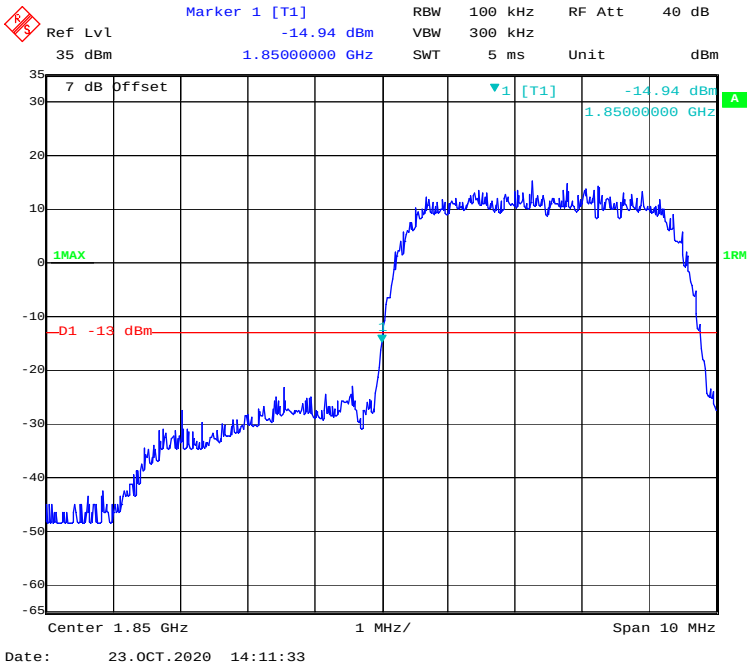


EGPRS Mode, Right Band Edge

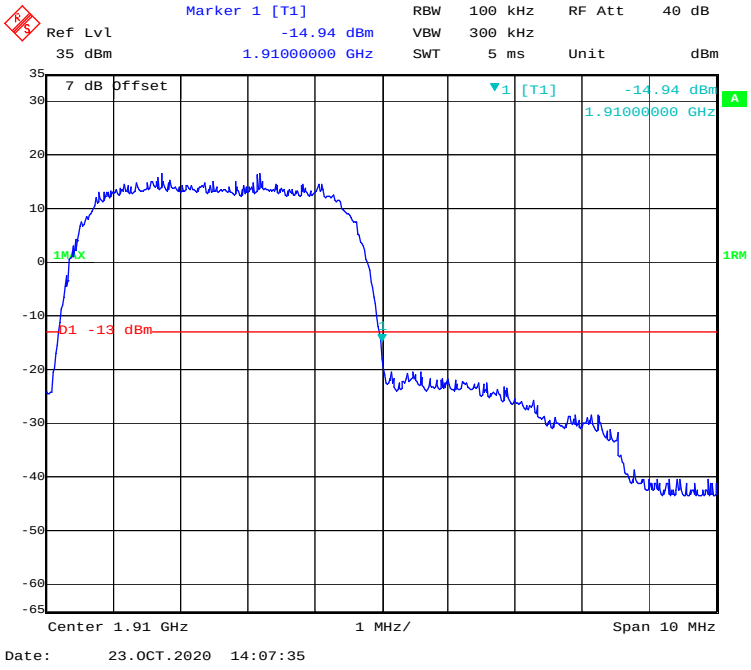


WCDMA Band II

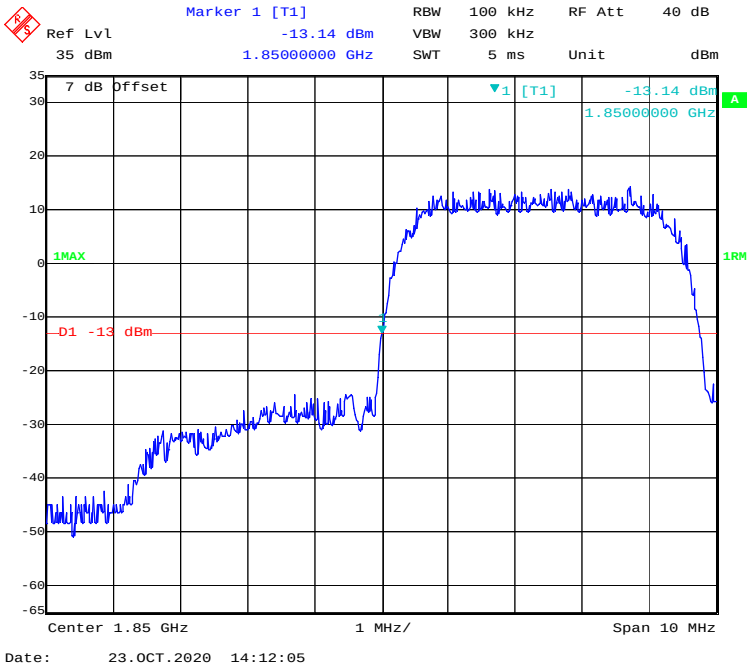
WCDMA (Rel 99) Mode, Left Band Edge



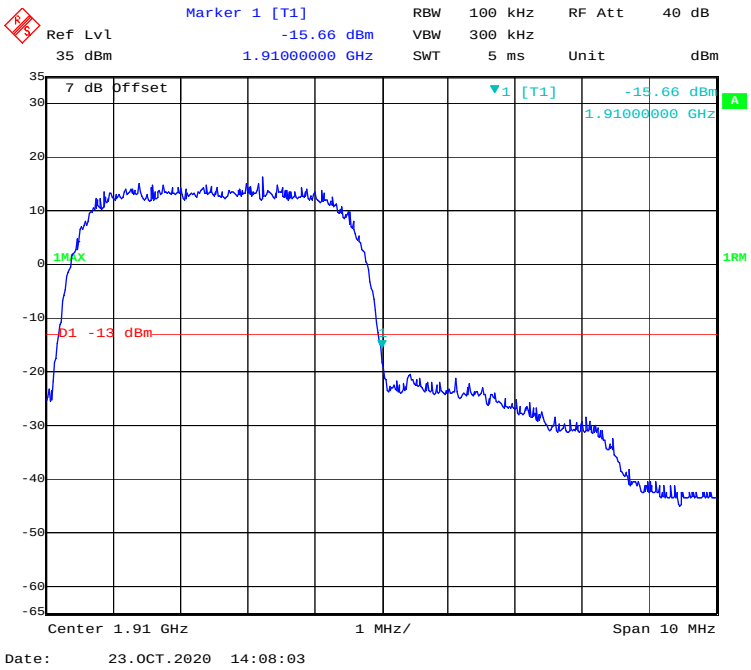
WCDMA (Rel 99) Mode, Right Band Edge



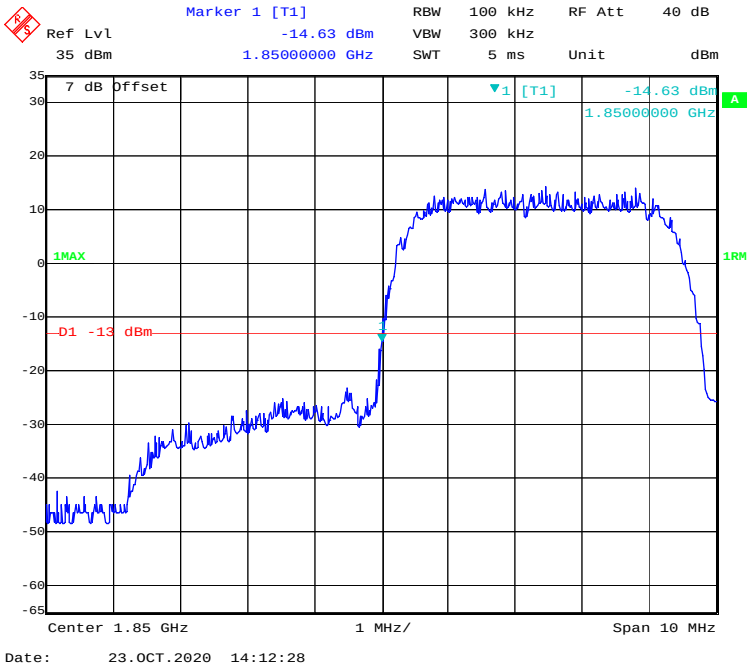
WCDMA (HSDPA) Mode, Left Band Edge



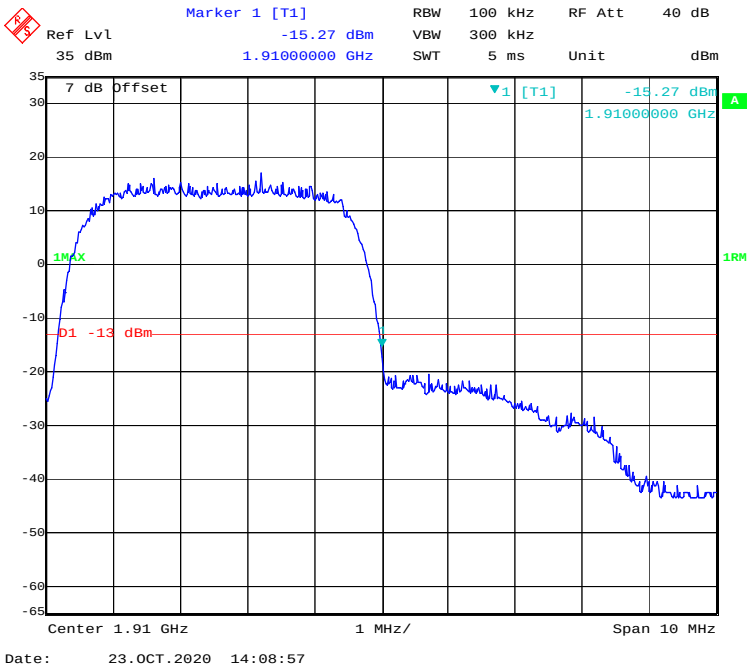
WCDMA (HSDPA) Mode, Right Band Edge



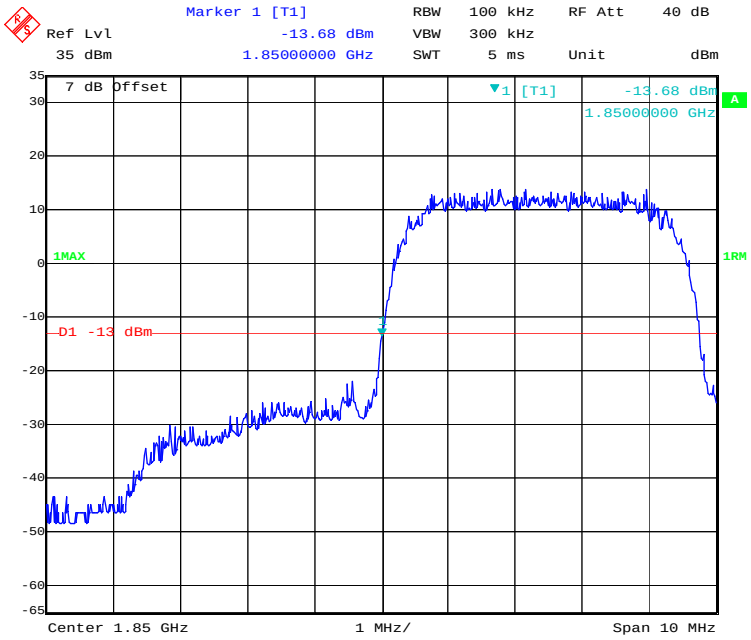
WCDMA (HSUPA) Mode, Left Band Edge



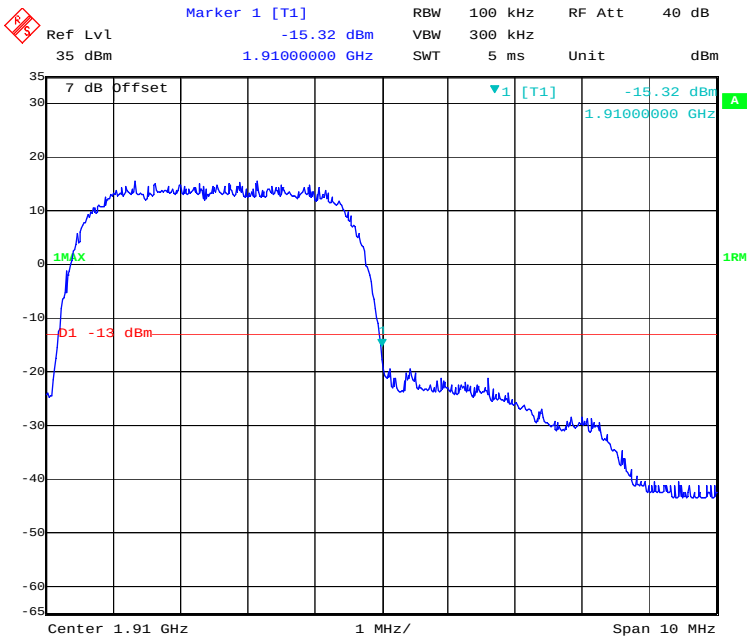
WCDMA (HSUPA) Mode, Right Band Edge



WCDMA (HSPA+) Mode, Left Band Edge

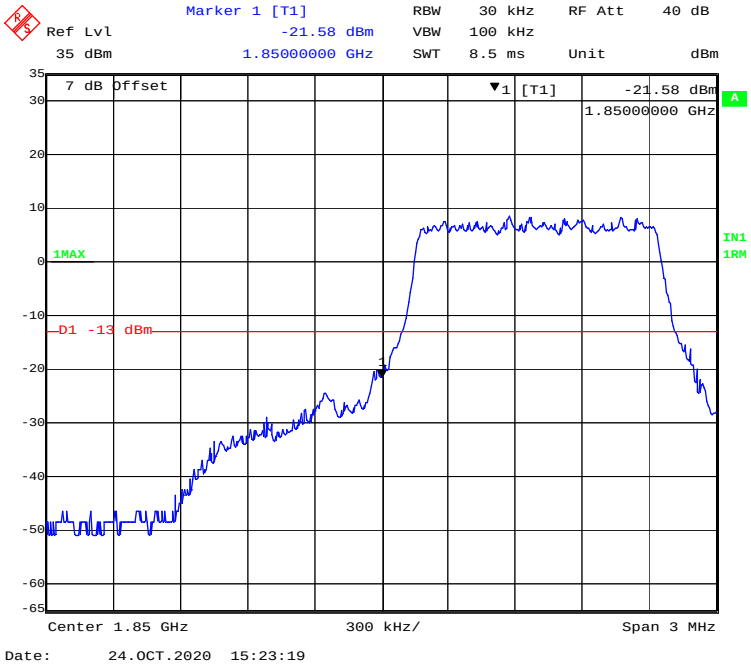


WCDMA (HSPA+) Mode, Right Band Edge

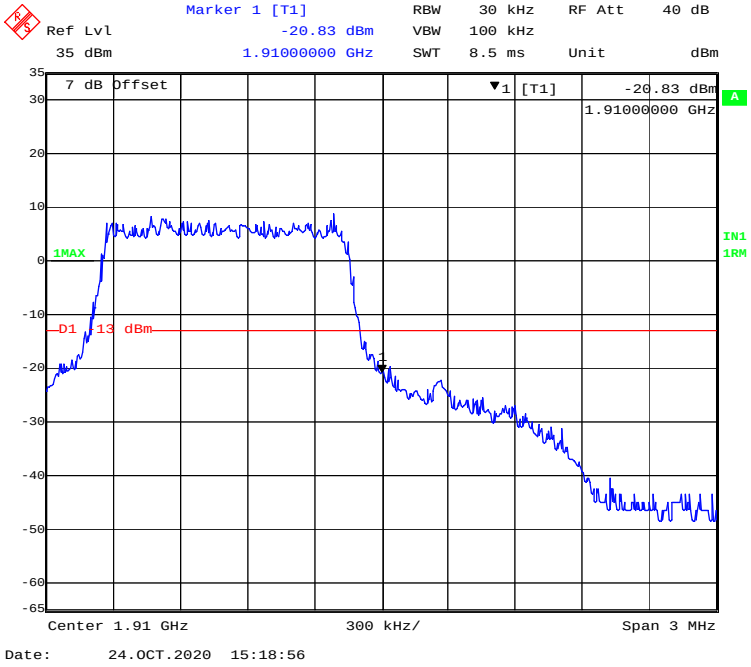


LTE Band 2:

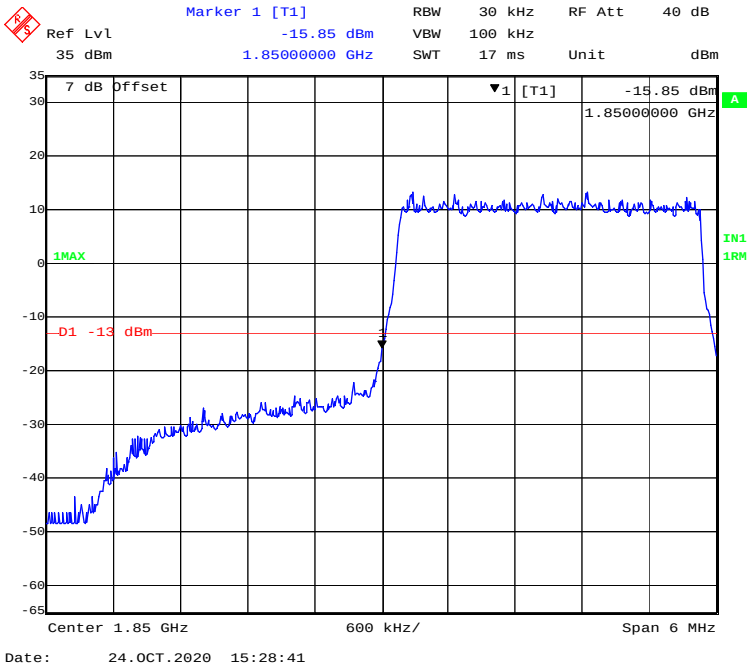
QPSK (1.4 MHz, FULL RB) - Left Band Edge



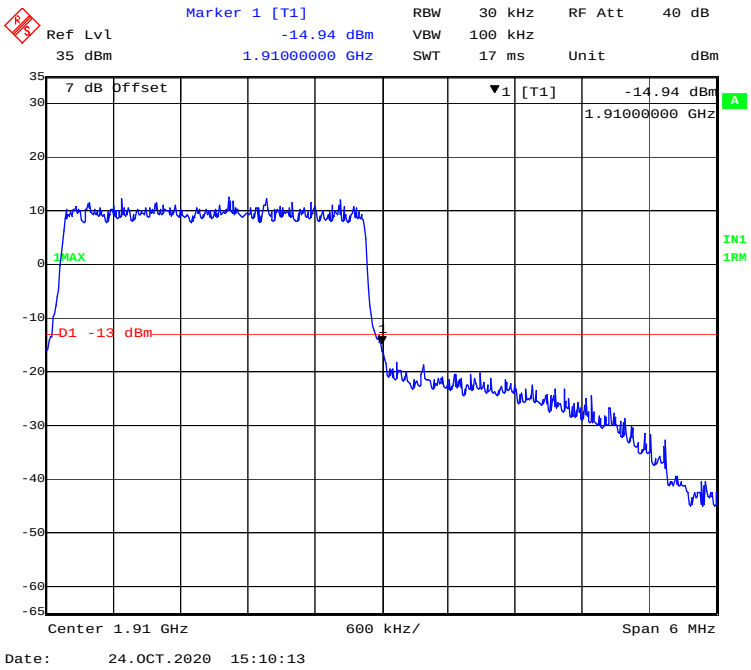
QPSK (1.4 MHz, FULL RB) - Right Band Edge



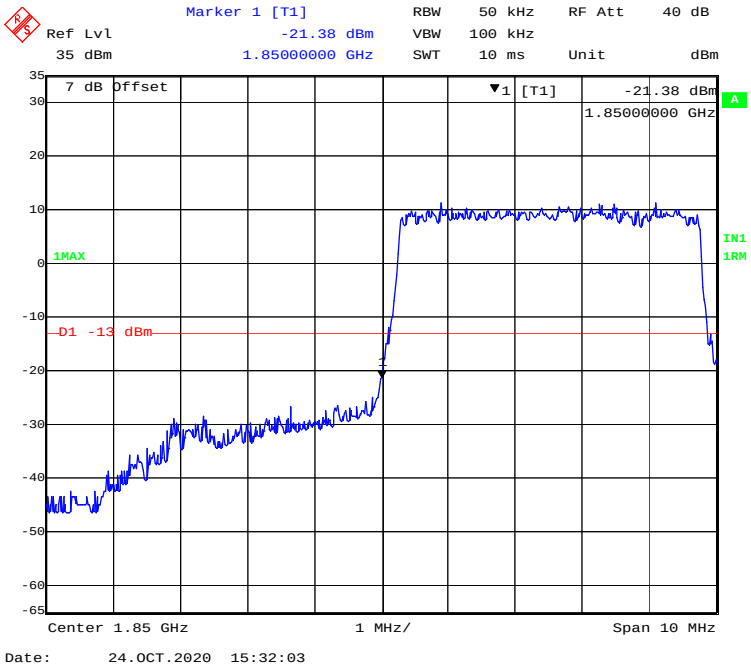
QPSK (3 MHz, FULL RB) - Left Band Edge



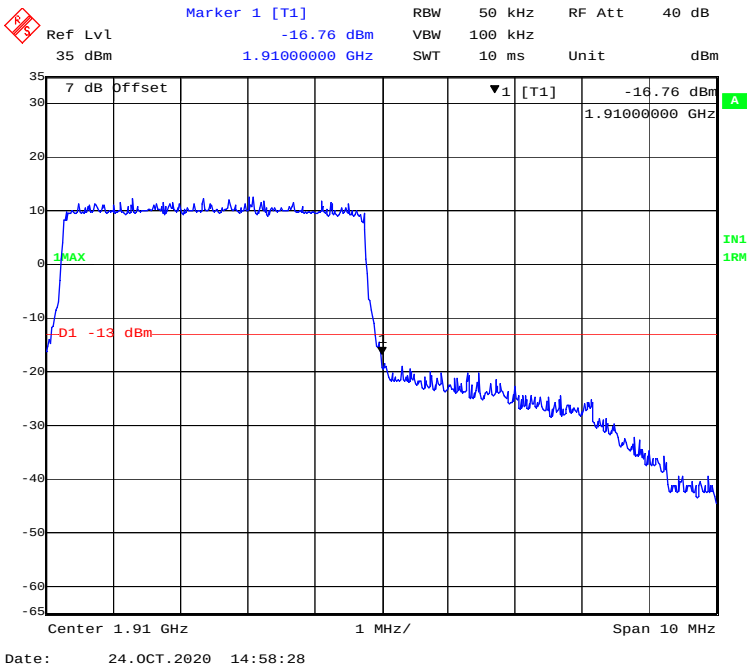
QPSK (3 MHz, FULL RB) - Right Band Edge



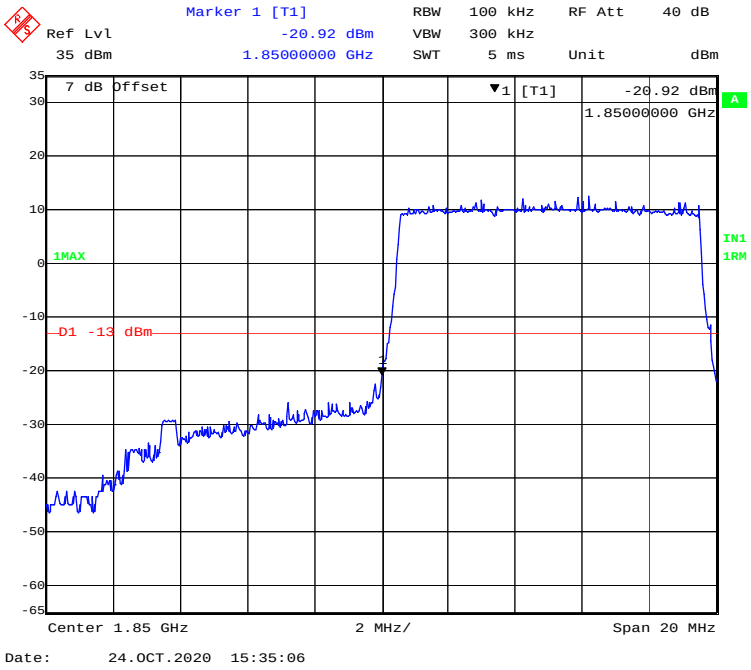
QPSK (5 MHz, FULL RB) - Left Band Edge



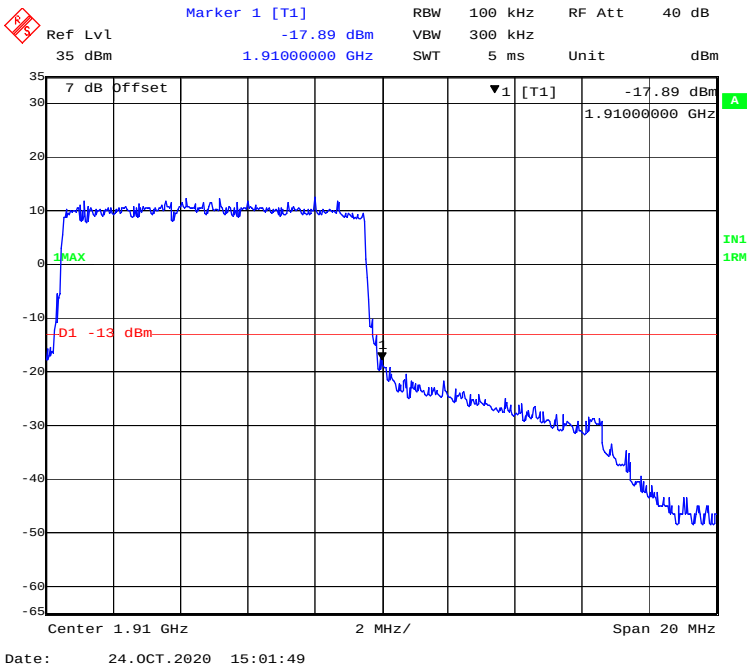
QPSK (5 MHz, FULL RB) - Right Band Edge



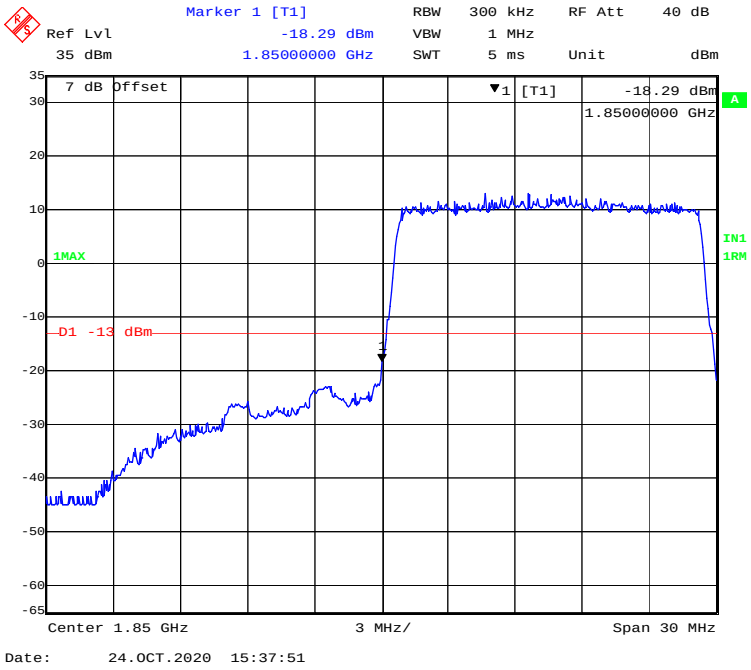
QPSK (10 MHz, FULL RB) - Left Band Edge



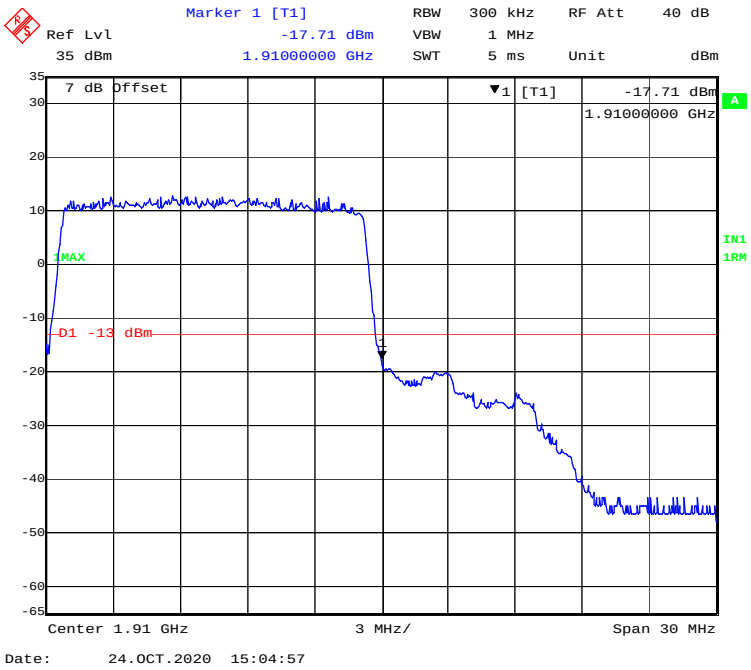
QPSK (10 MHz, FULL RB) - Right Band Edge



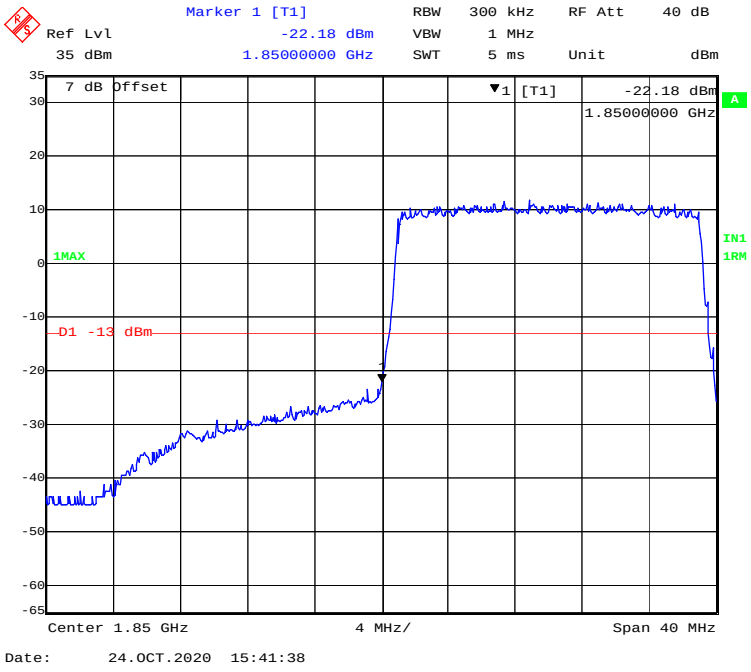
QPSK (15 MHz, FULL RB) - Left Band Edge



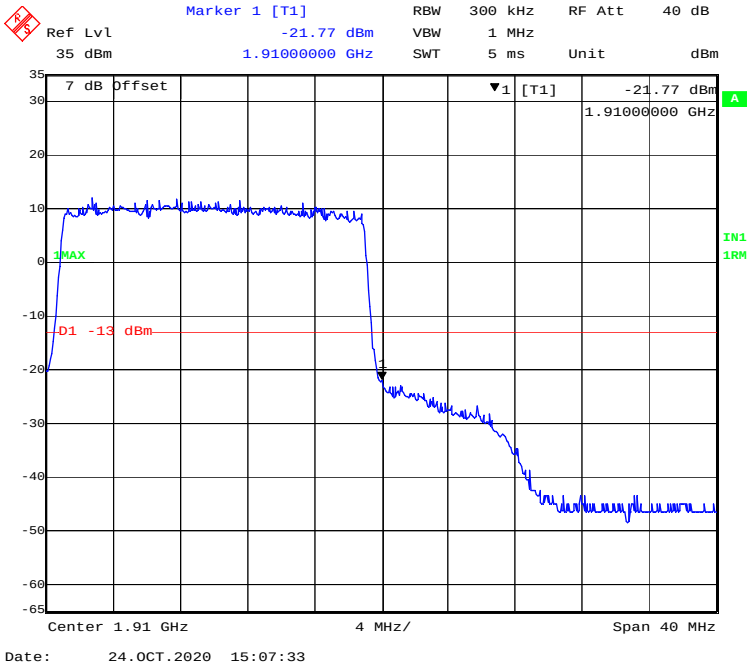
QPSK (15 MHz, FULL RB) - Right Band Edge



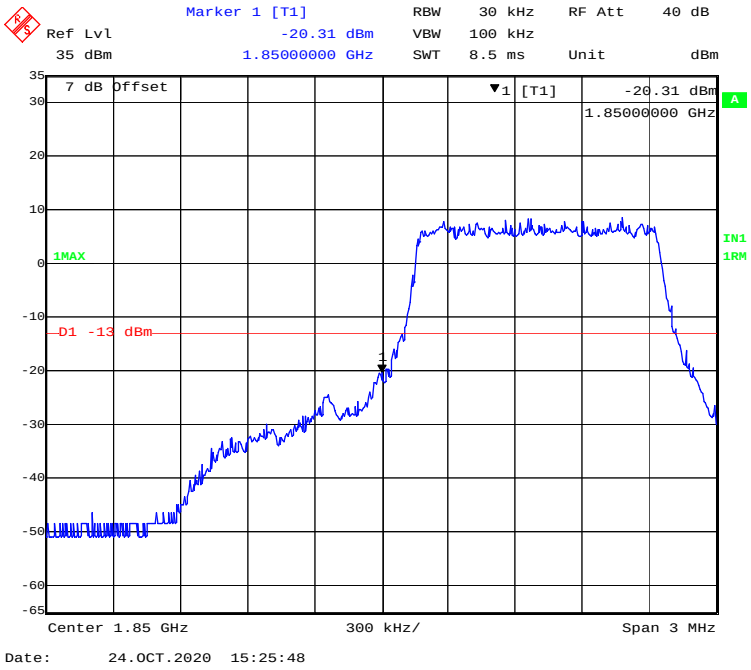
QPSK (20 MHz, FULL RB) - Left Band Edge



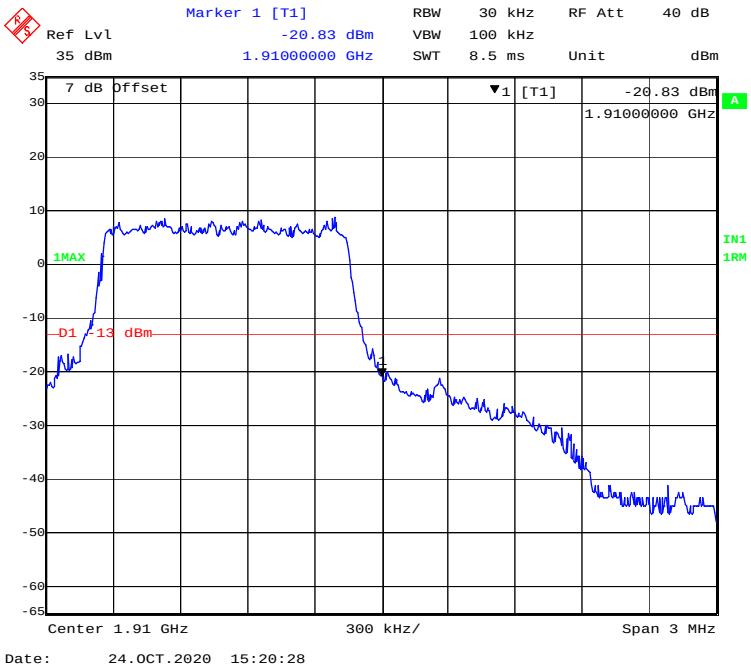
QPSK (20 MHz, FULL RB) - Right Band Edge



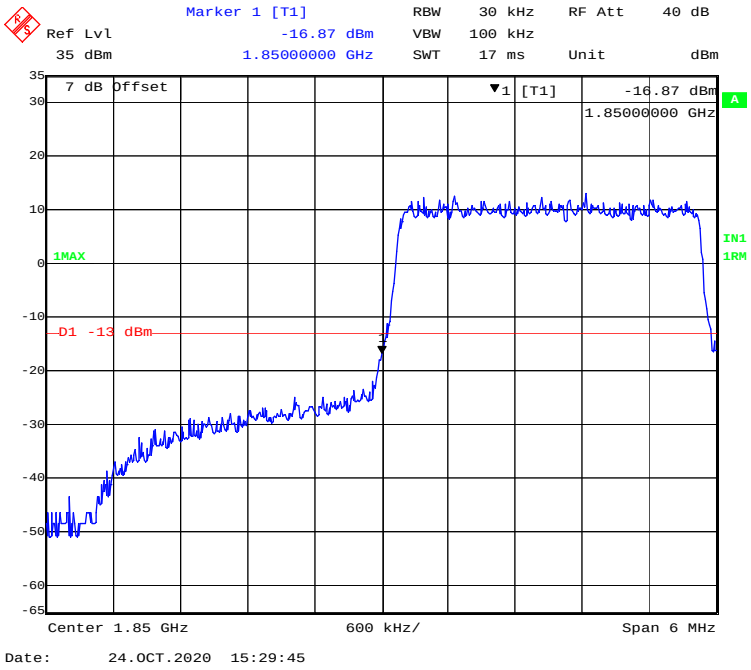
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



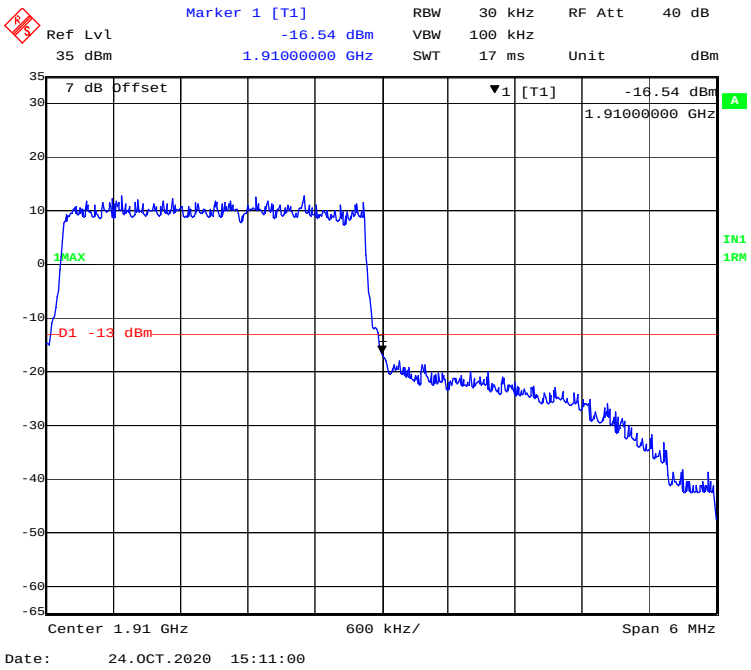
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



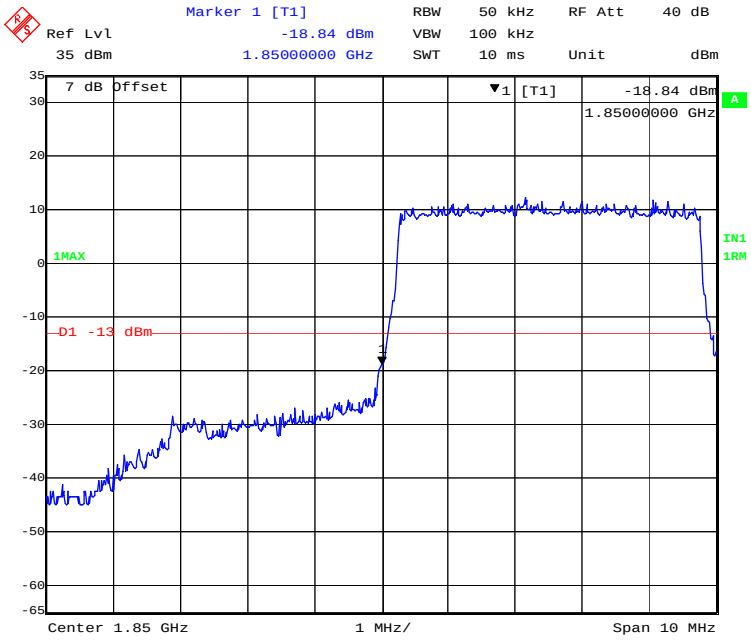
16-QAM (3 MHz, FULL RB) - Left Band Edge



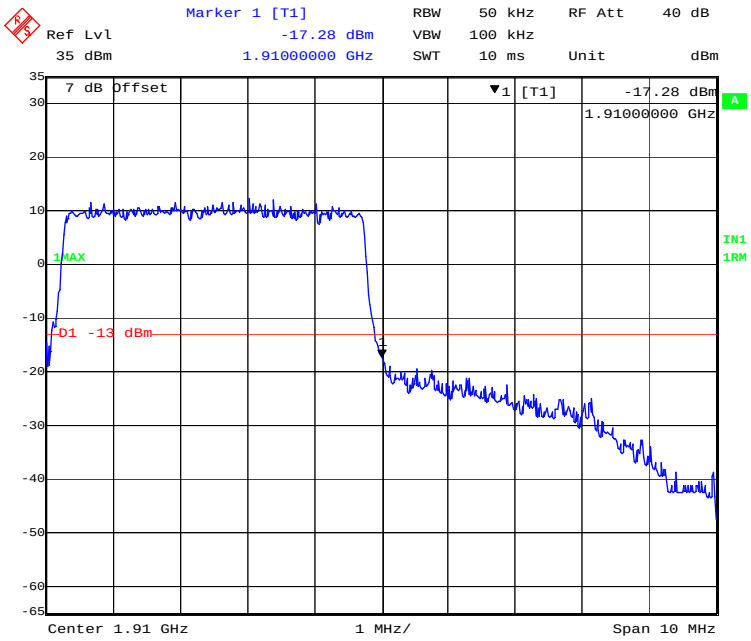
16-QAM (3 MHz, FULL RB) - Right Band Edge



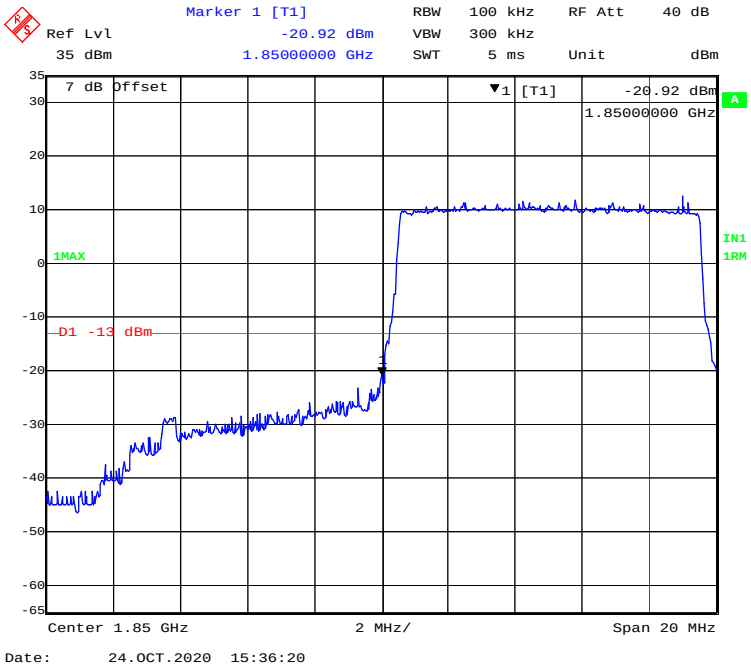
16-QAM (5 MHz, FULL RB) - Left Band Edge



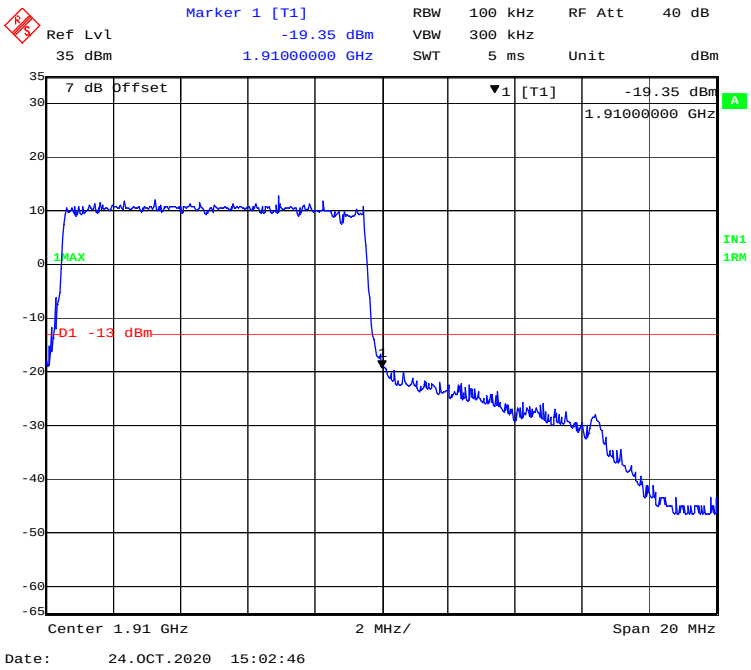
16-QAM (5 MHz, FULL RB) - Right Band Edge



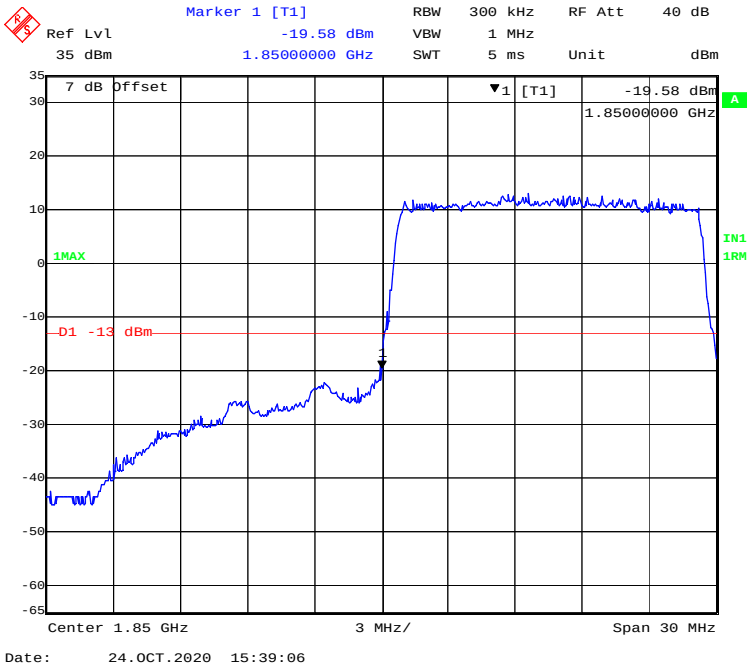
16-QAM (10 MHz, FULL RB) - Left Band Edge



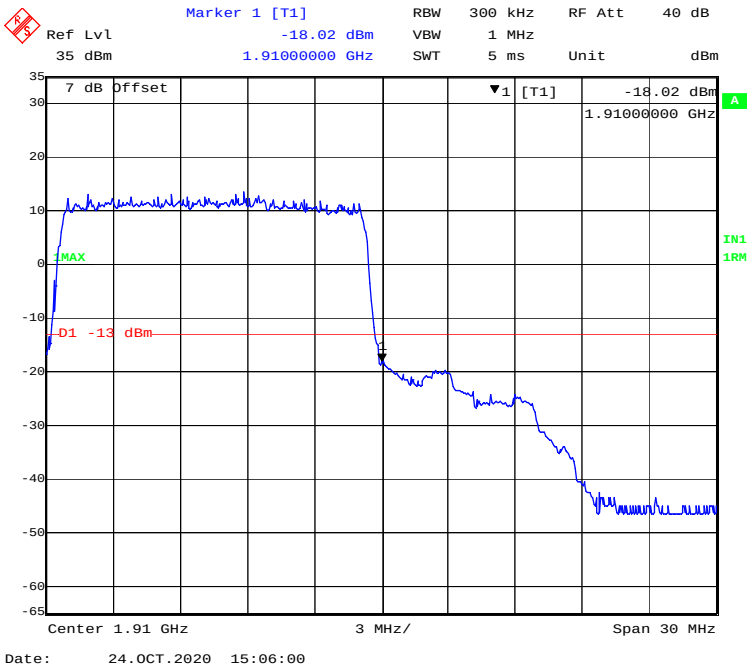
16-QAM (10 MHz, FULL RB) - Right Band Edge



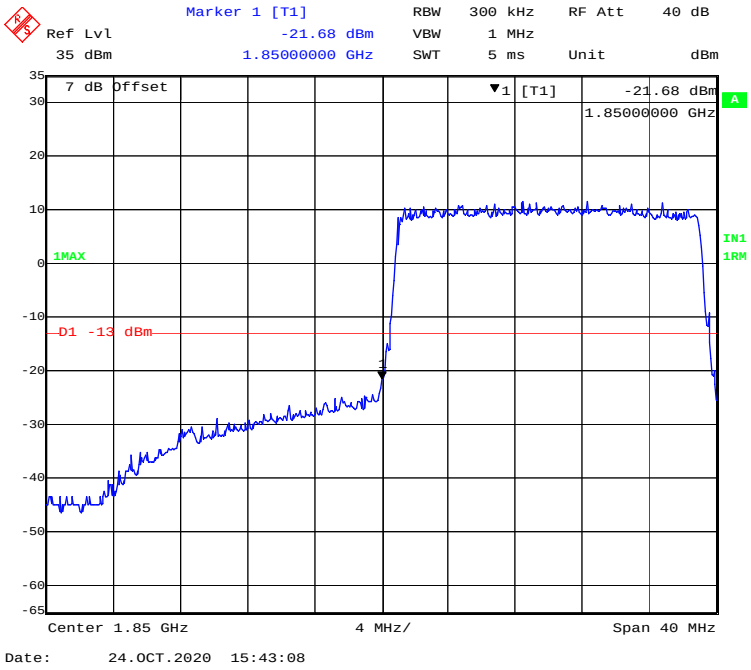
16-QAM (15 MHz, FULL RB) - Left Band Edge



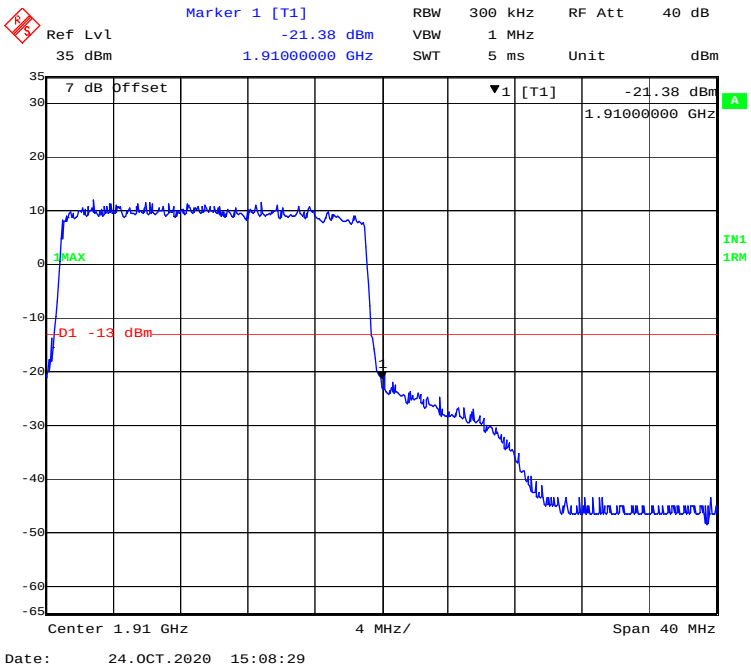
16-QAM (15 MHz, FULL RB) - Right Band Edge



16-QAM (20 MHz, FULL RB) - Left Band Edge

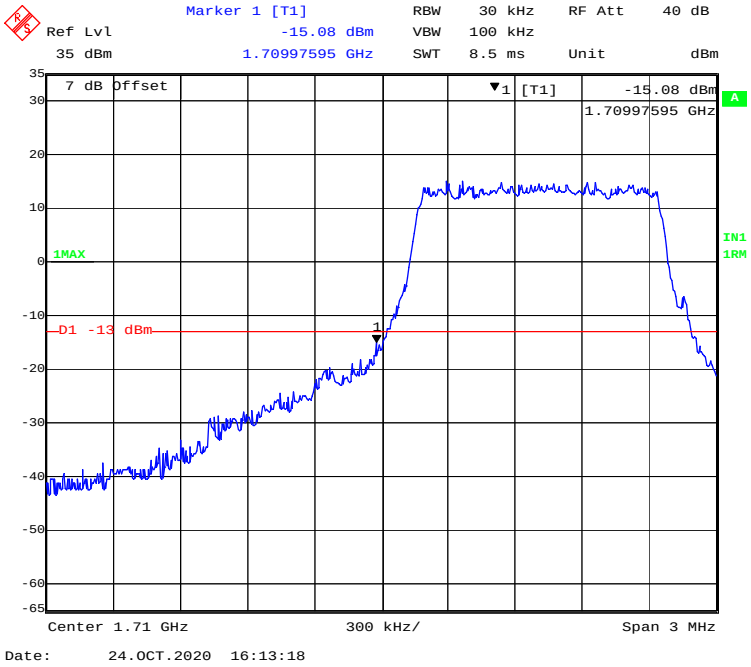


16-QAM (20 MHz, FULL RB) - Right Band Edge

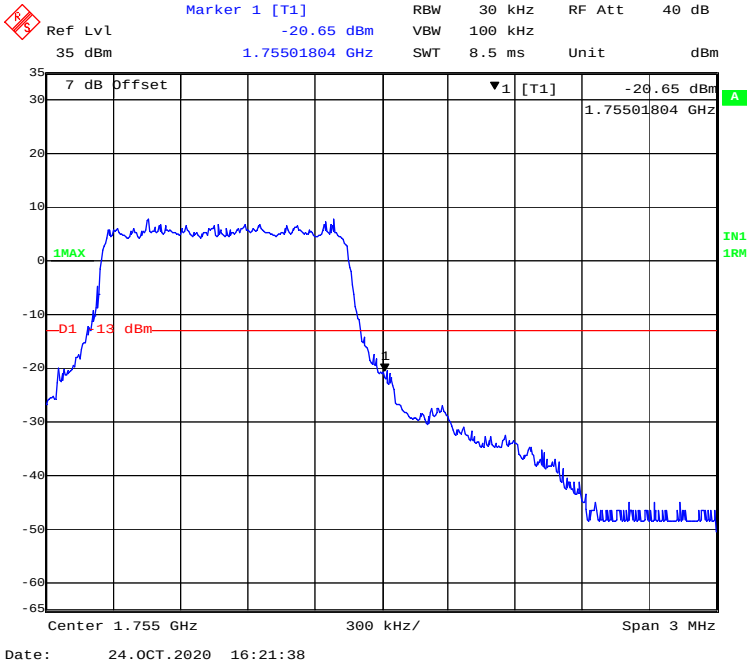


LTE Band 4:

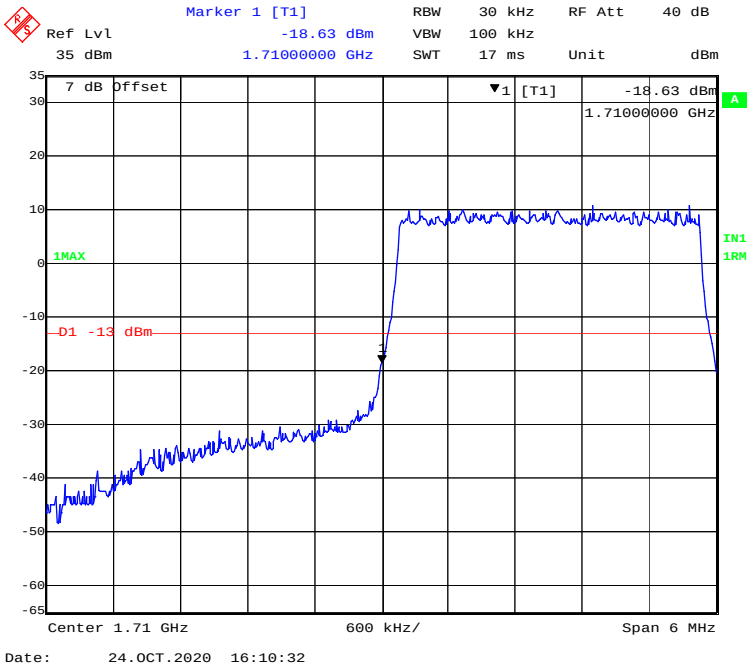
QPSK (1.4 MHz, FULL RB) - Left Band Edge



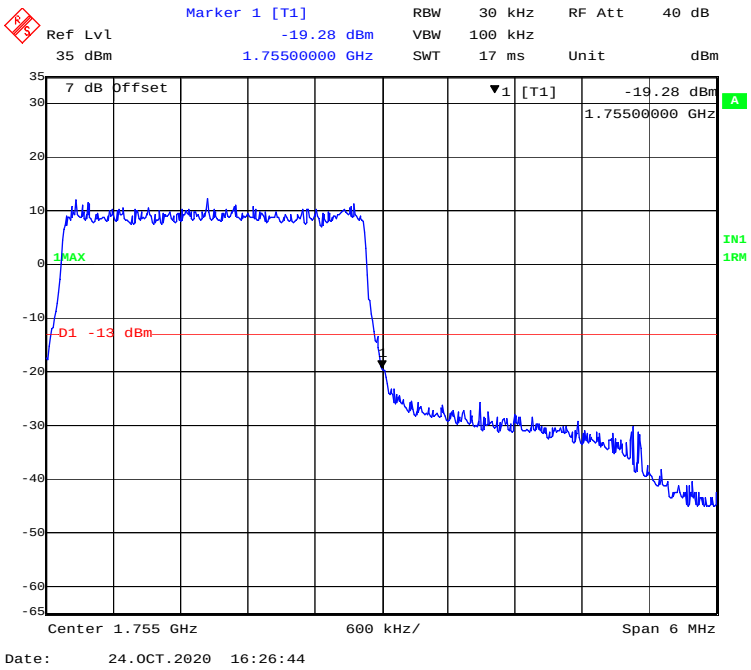
QPSK (1.4 MHz, FULL RB) - Right Band Edge



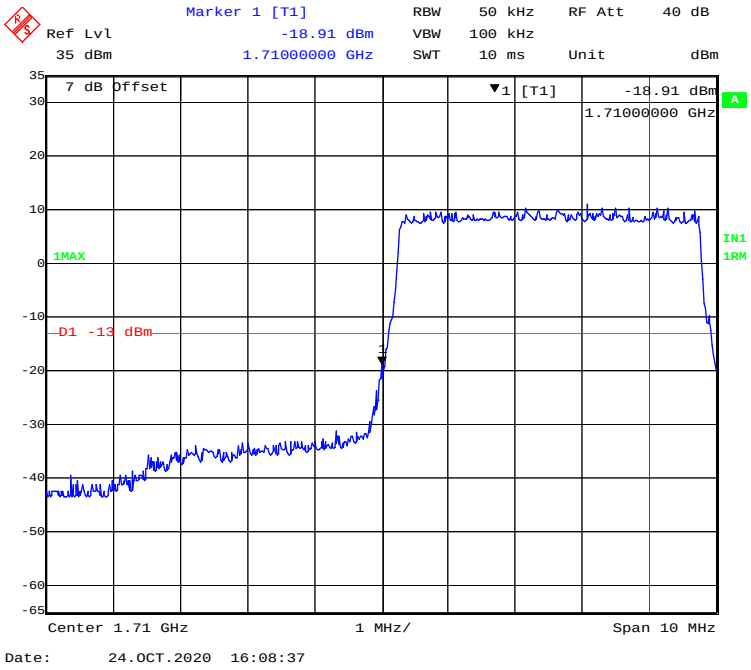
QPSK (3 MHz, FULL RB) - Left Band Edge



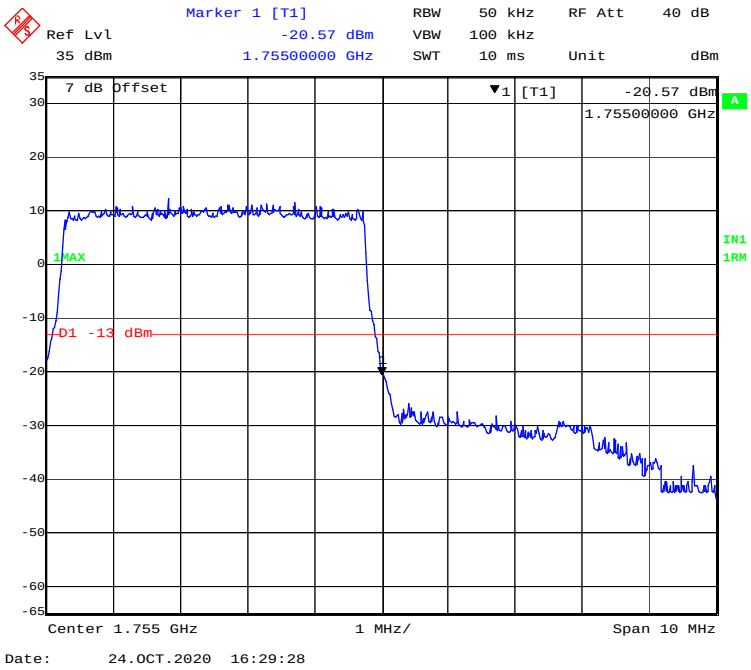
QPSK (3 MHz, FULL RB) - Right Band Edge



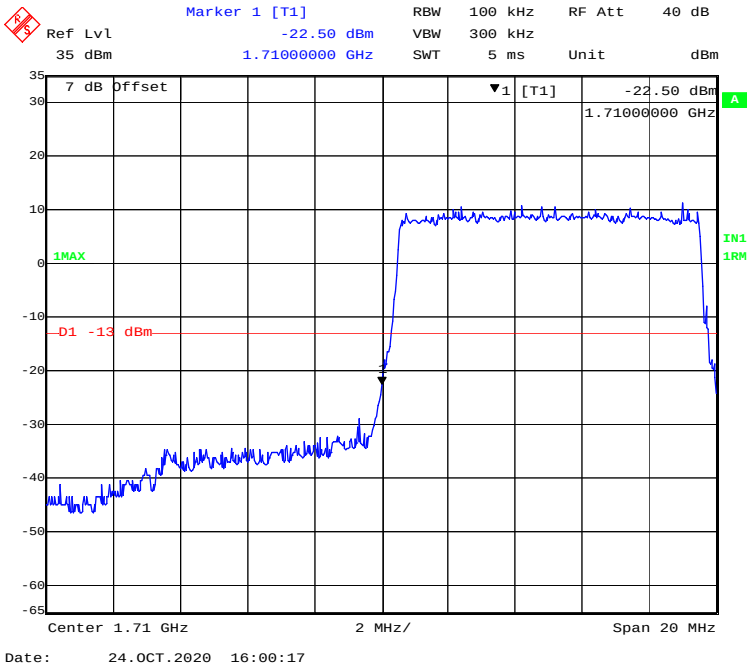
QPSK (5 MHz, FULL RB) - Left Band Edge



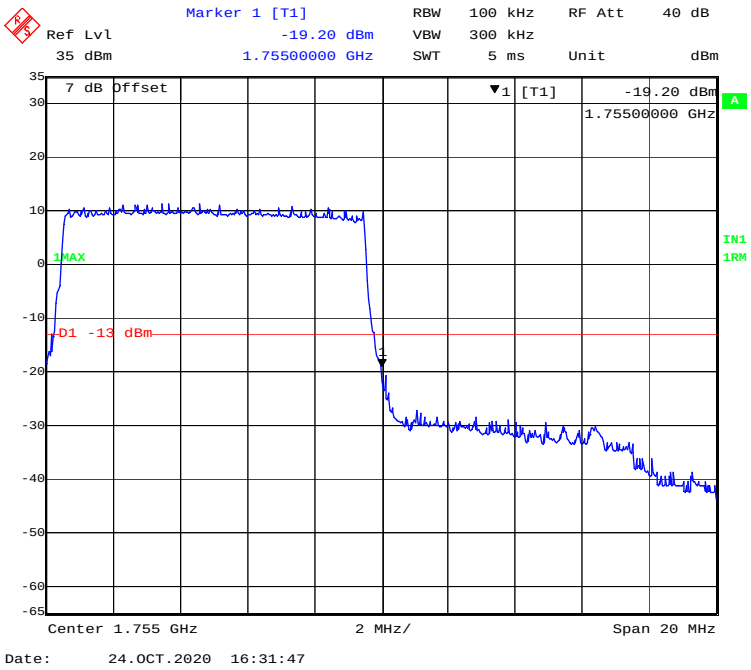
QPSK (5 MHz, FULL RB) - Right Band Edge



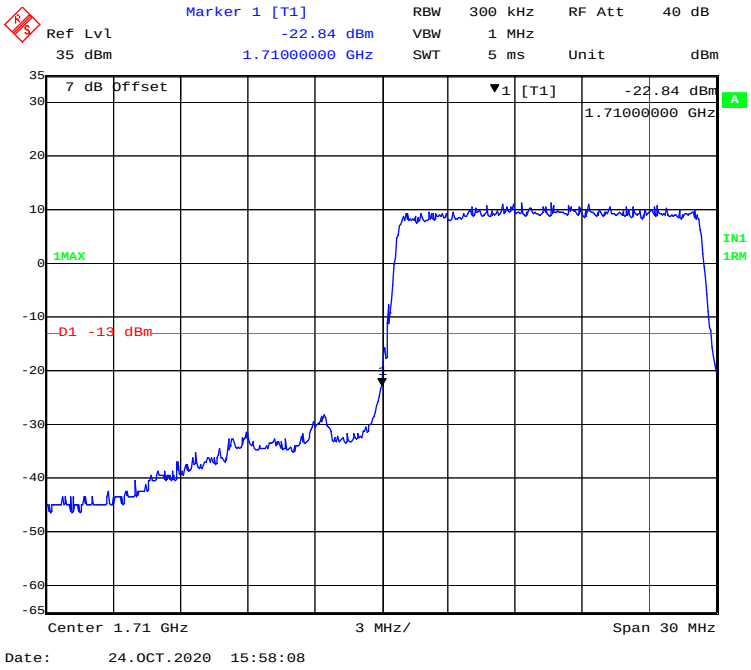
QPSK (10 MHz, FULL RB) - Left Band Edge



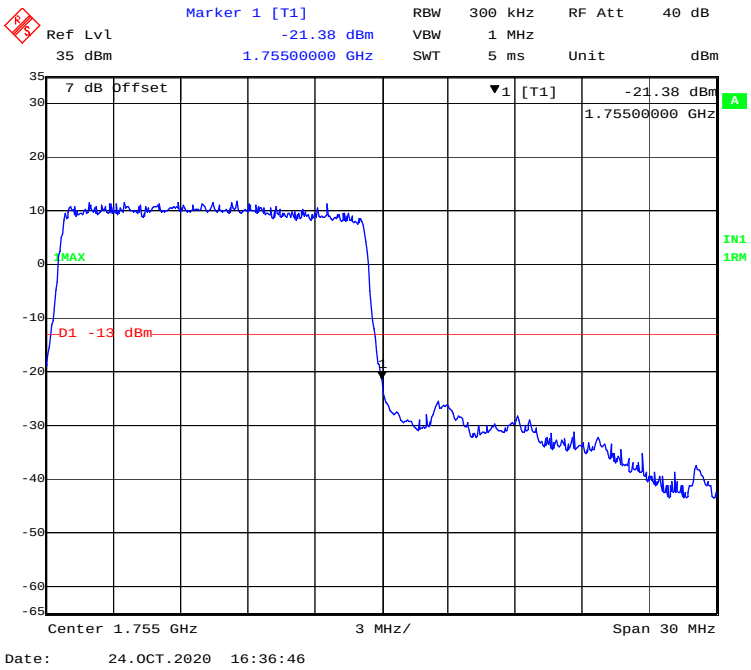
QPSK (10 MHz, FULL RB) - Right Band Edge



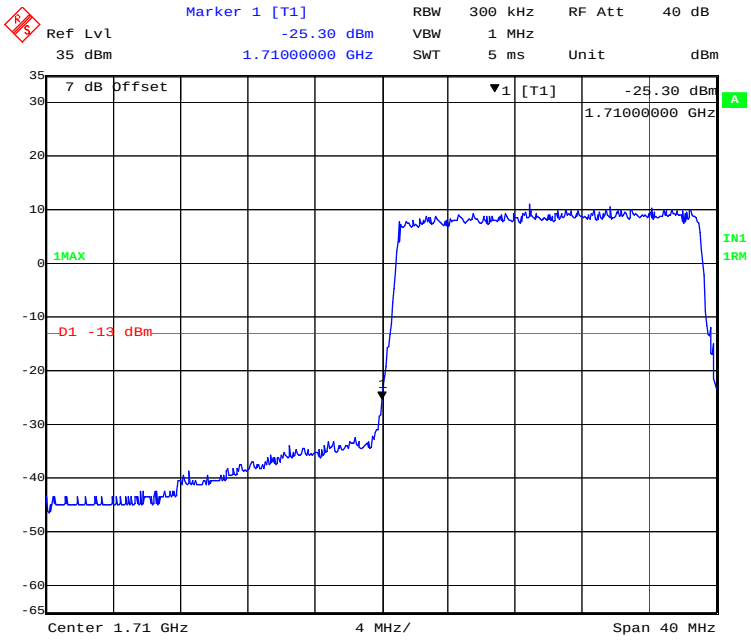
QPSK (15 MHz, FULL RB) - Left Band Edge



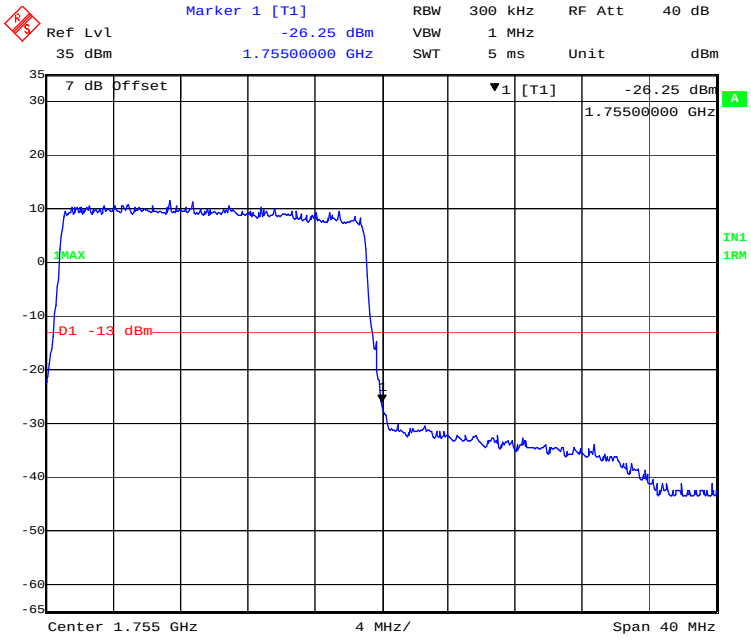
QPSK (15 MHz, FULL RB) - Right Band Edge



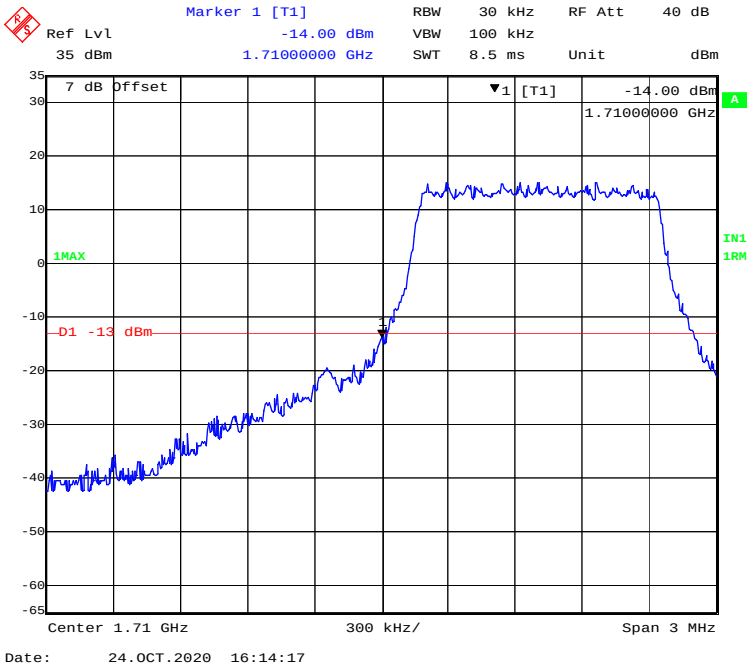
QPSK (20 MHz, FULL RB) - Left Band Edge



QPSK (20 MHz, FULL RB) - Right Band Edge

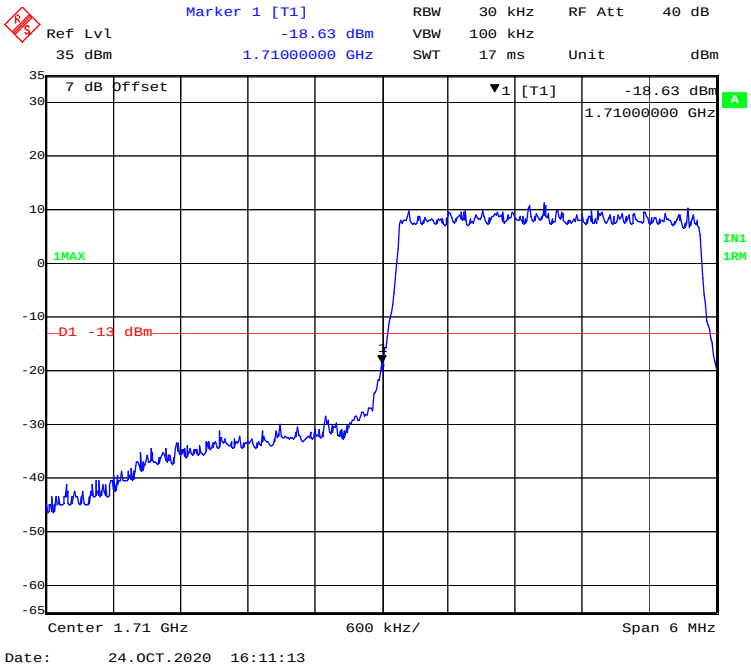


16-QAM (1.4 MHz, FULL RB) - Left Band Edge

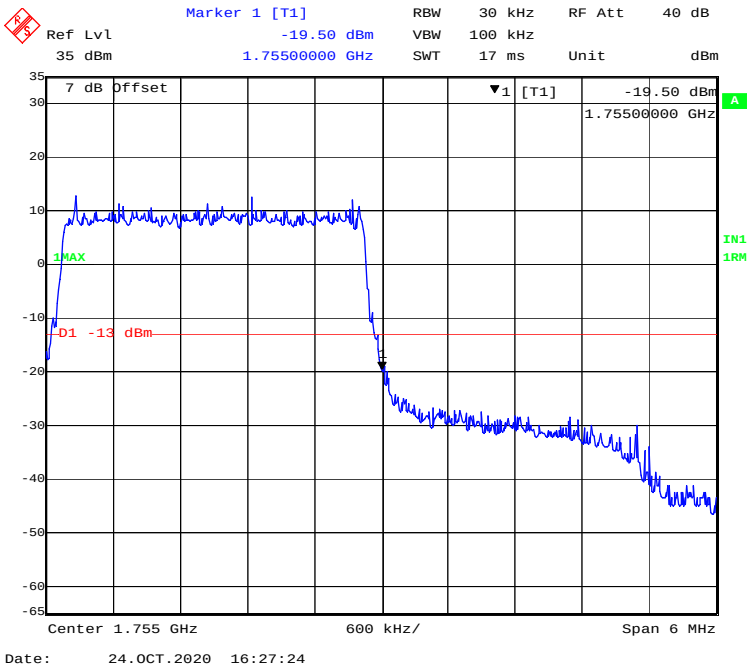


16-QAM (1.4 MHz, FULL RB) - Right Band Edge

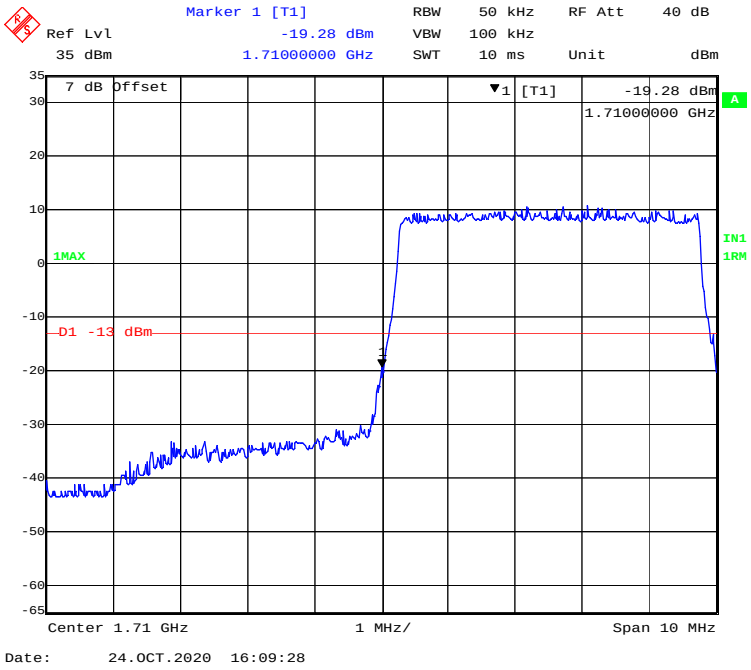
16-QAM (3 MHz, FULL RB) - Left Band Edge



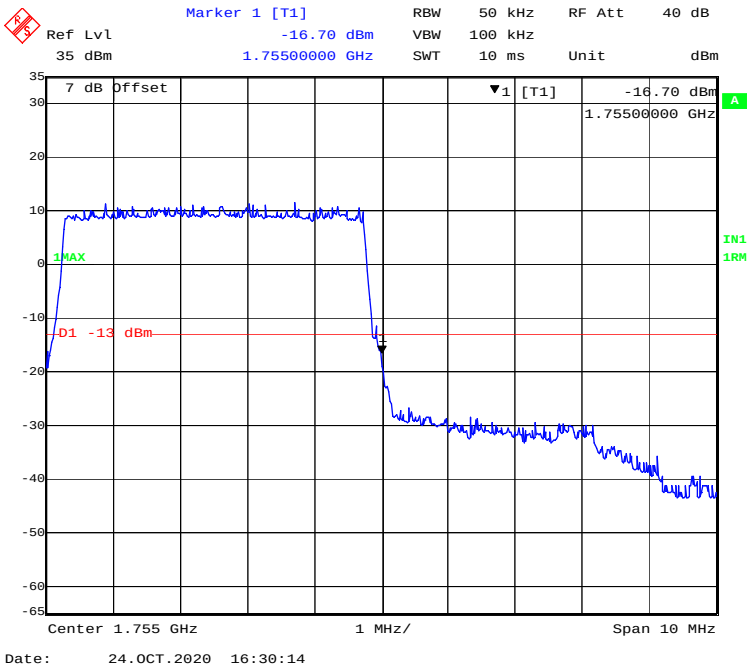
16-QAM (3 MHz, FULL RB) - Right Band Edge



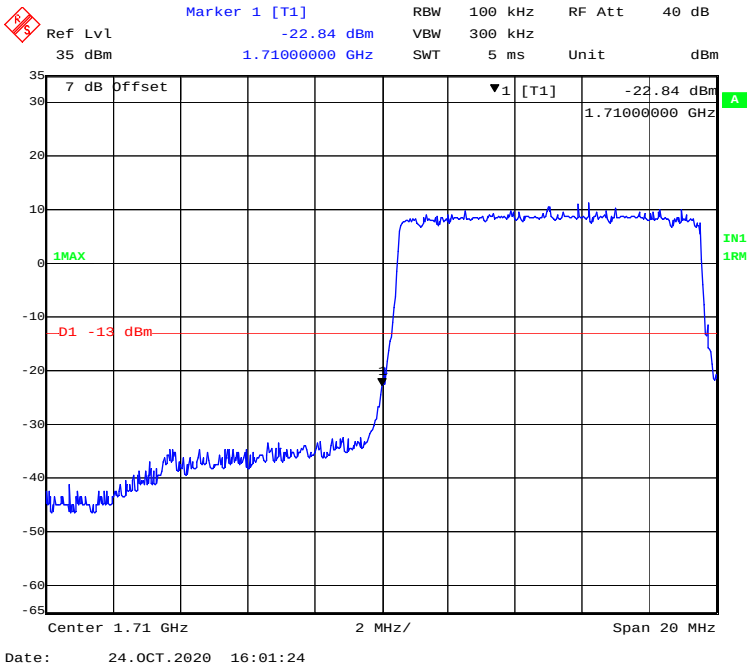
16-QAM (5 MHz, FULL RB) - Left Band Edge



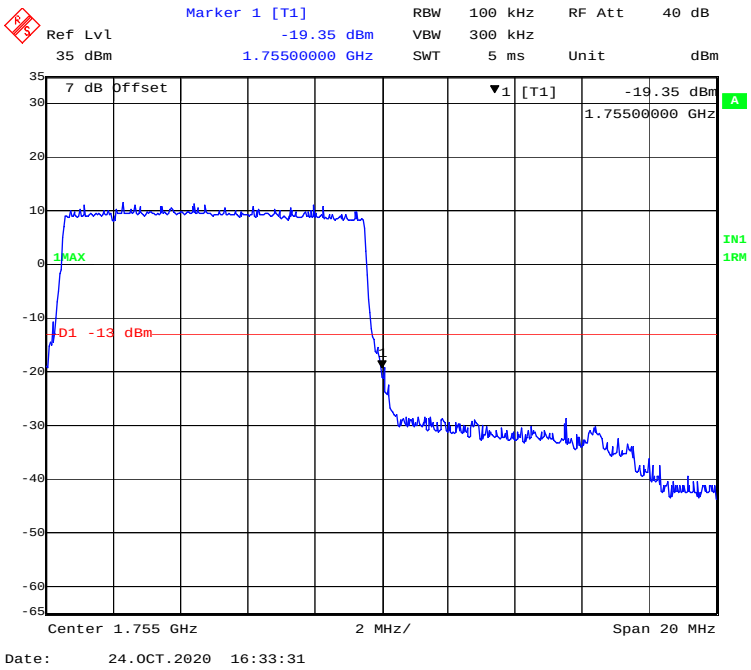
16-QAM (5 MHz, FULL RB) - Right Band Edge



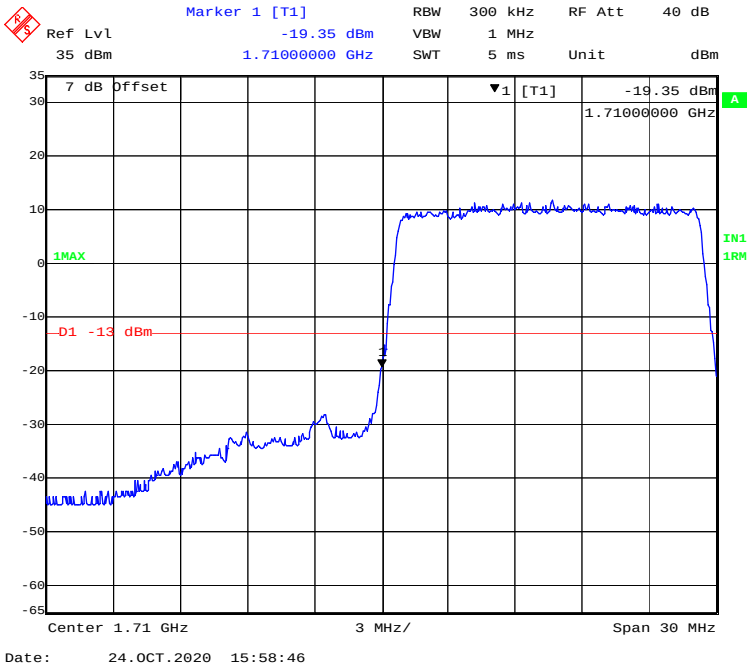
16-QAM (10 MHz, FULL RB) - Left Band Edge



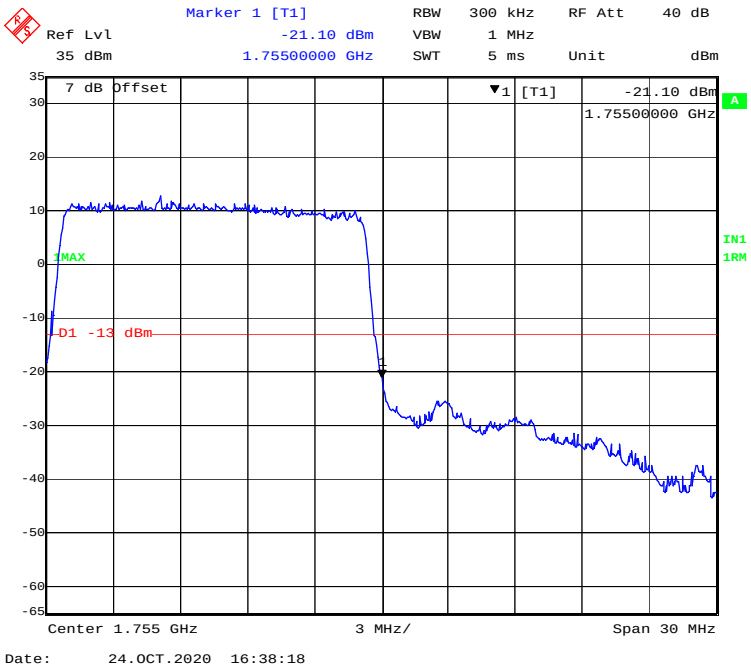
16-QAM (10 MHz, FULL RB) - Right Band Edge



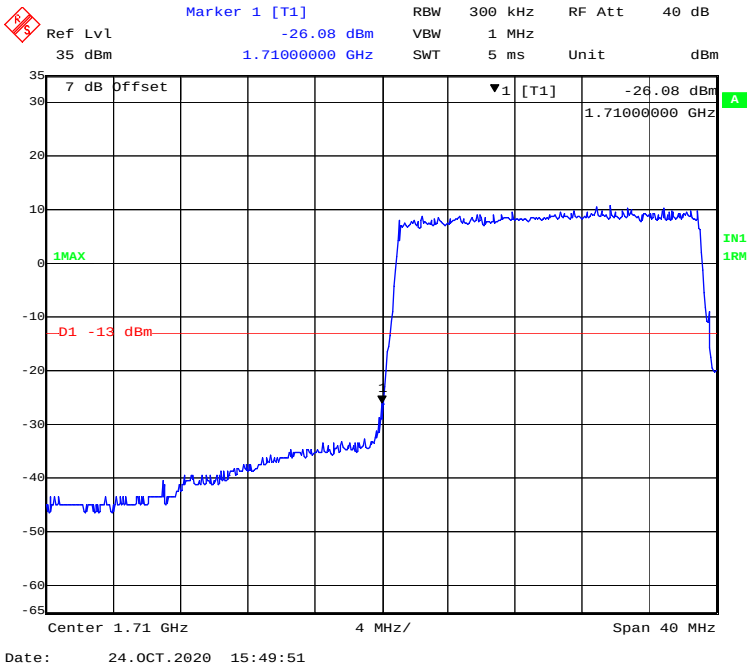
16-QAM (15 MHz, FULL RB) - Left Band Edge



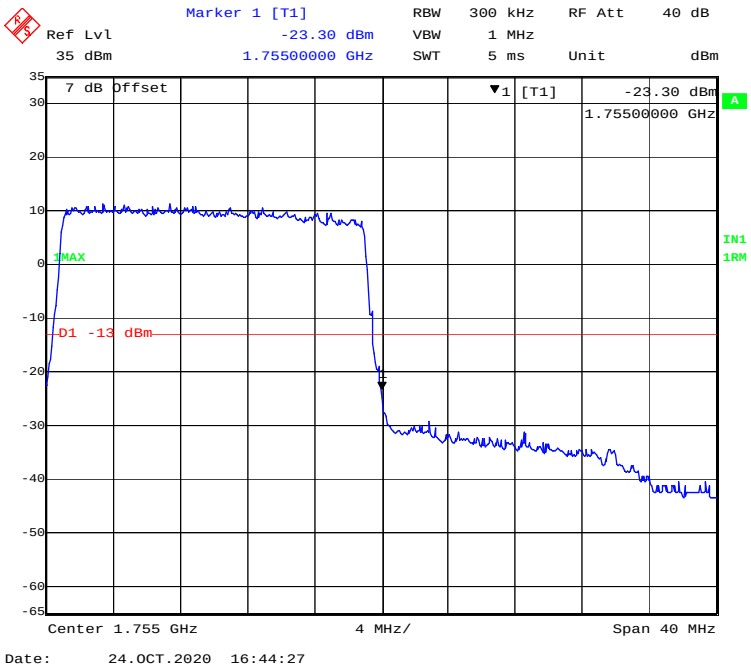
16-QAM (15 MHz, FULL RB) - Right Band Edge



16-QAM (20 MHz, FULL RB) - Left Band Edge

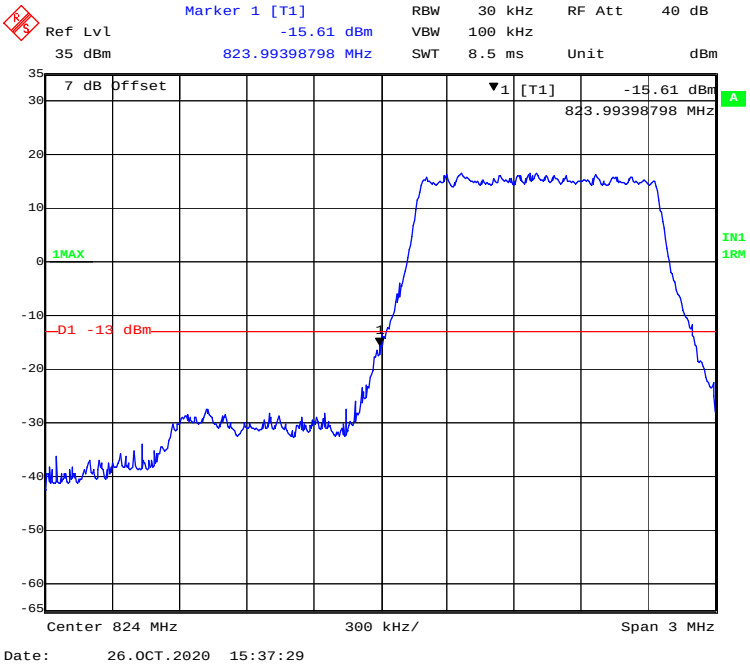


16-QAM (20 MHz, FULL RB) - Right Band Edge

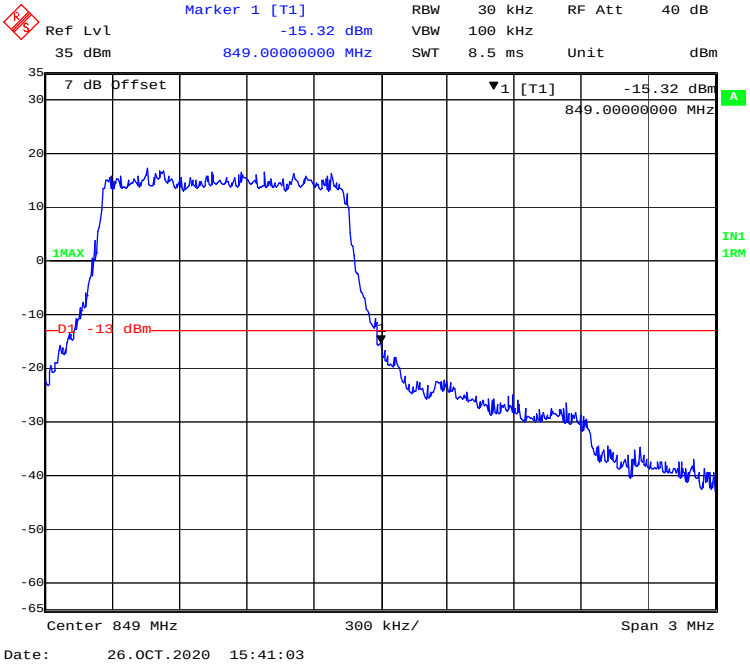


LTE Band 5:

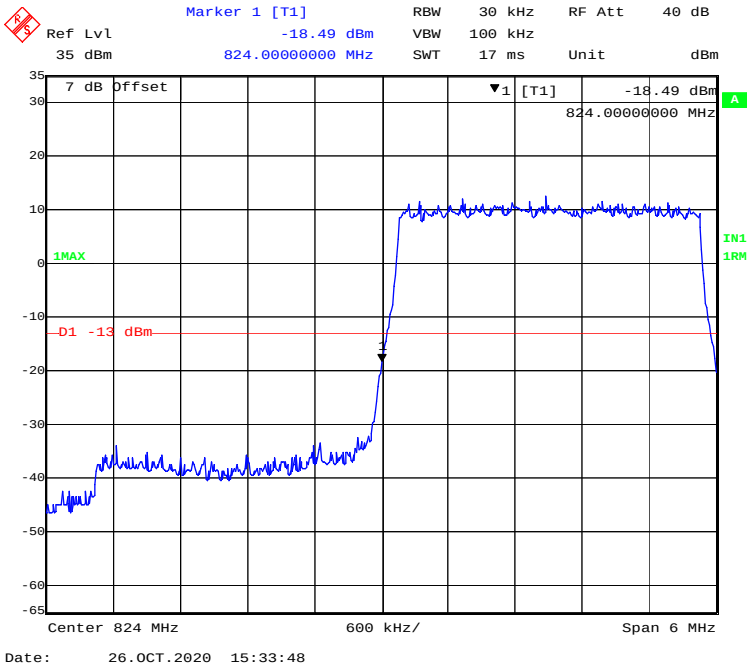
QPSK (1.4 MHz, FULL RB) - Left Band Edge



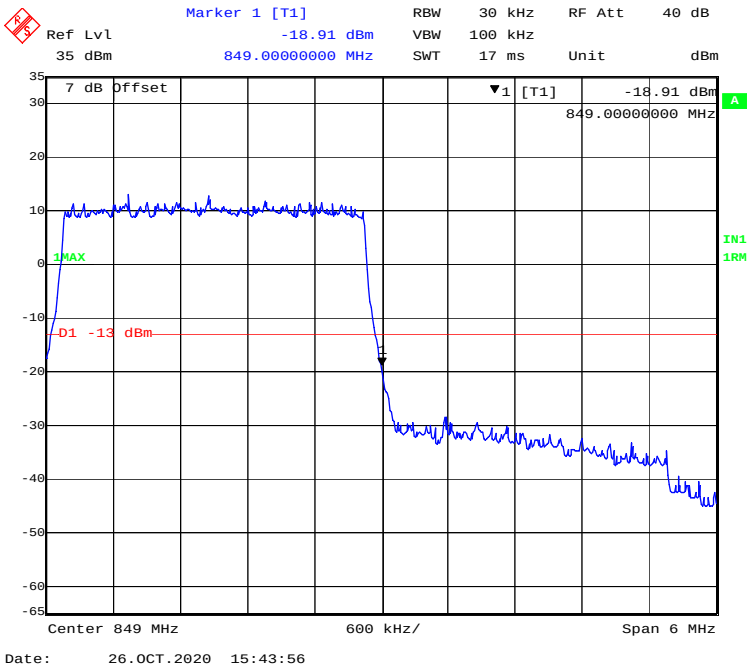
QPSK (1.4 MHz, FULL RB) - Right Band Edge



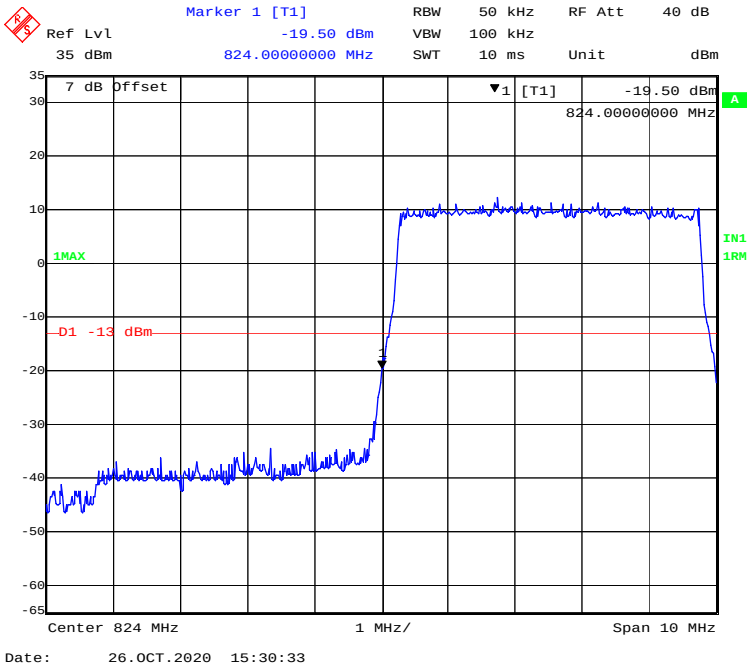
QPSK (3.0 MHz, FULL RB) - Left Band Edge



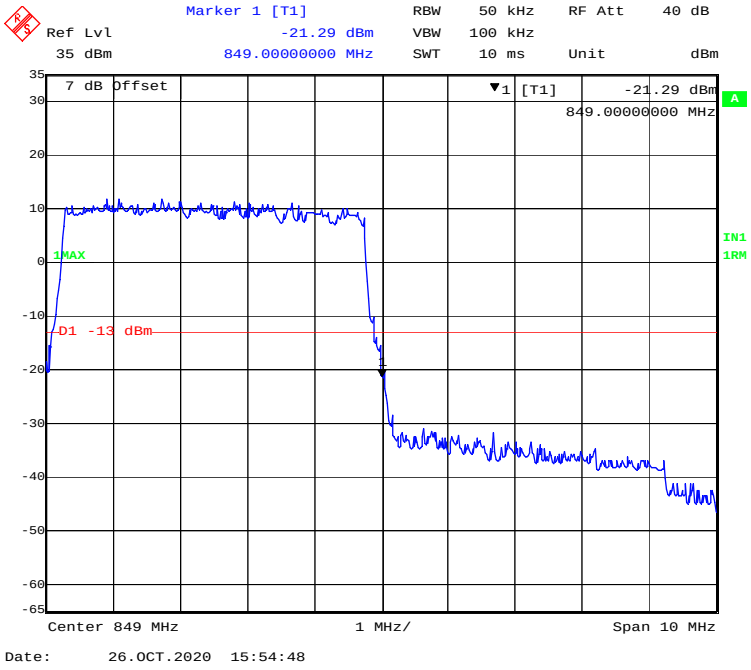
QPSK (3.0 MHz, FULL RB) - Right Band Edge



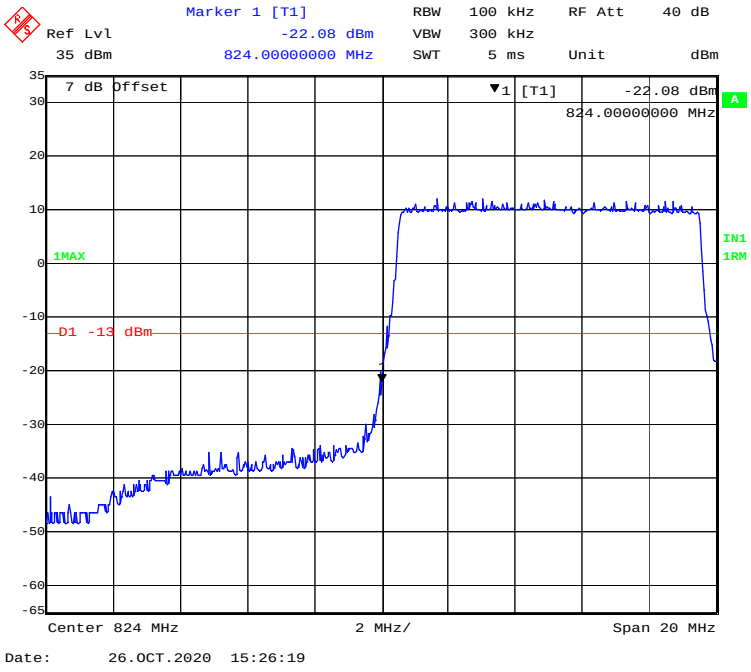
QPSK (5.0 MHz, FULL RB) - Left Band Edge



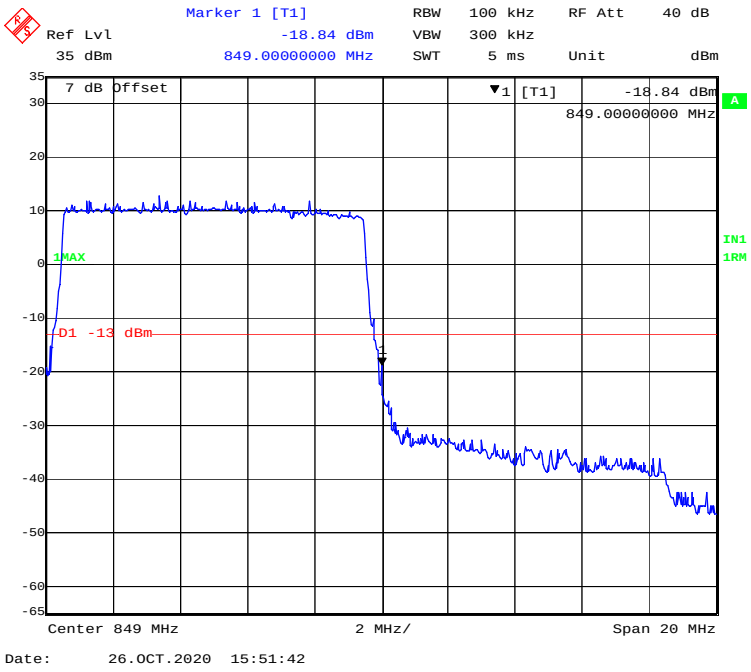
QPSK (5.0 MHz, FULL RB) - Right Band Edge



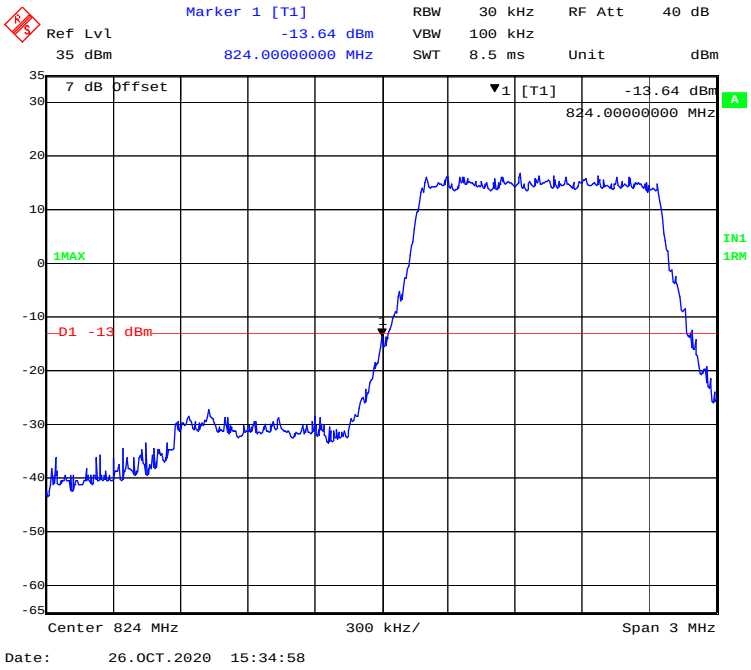
QPSK (10.0 MHz, FULL RB) - Left Band Edge



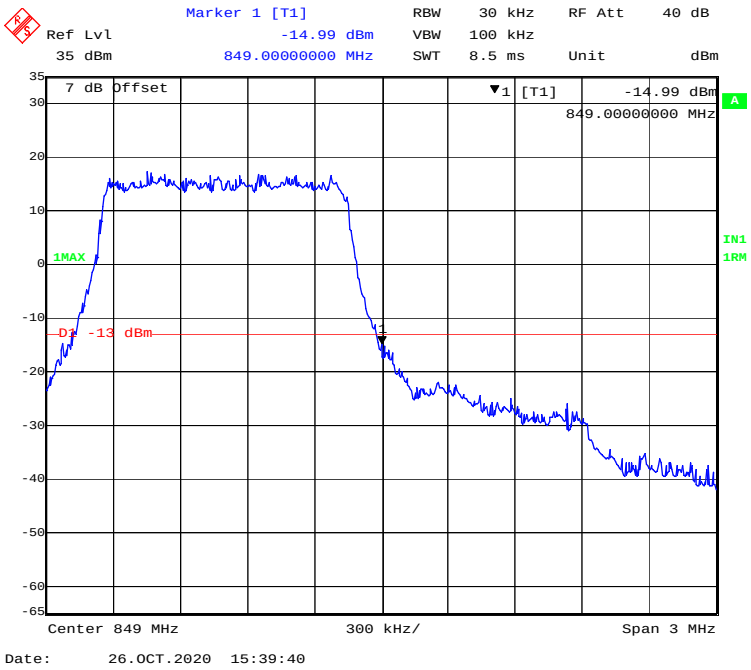
QPSK (10.0 MHz, FULL RB) - Right Band Edge



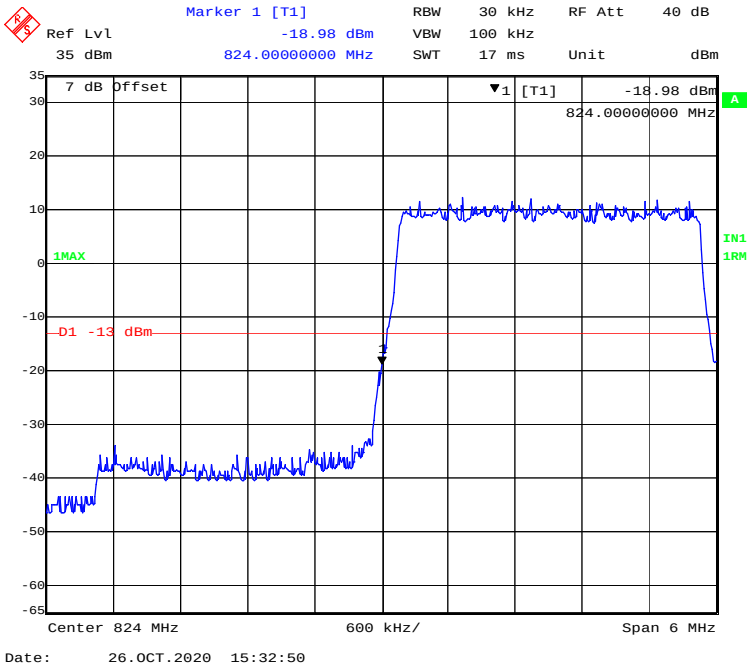
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



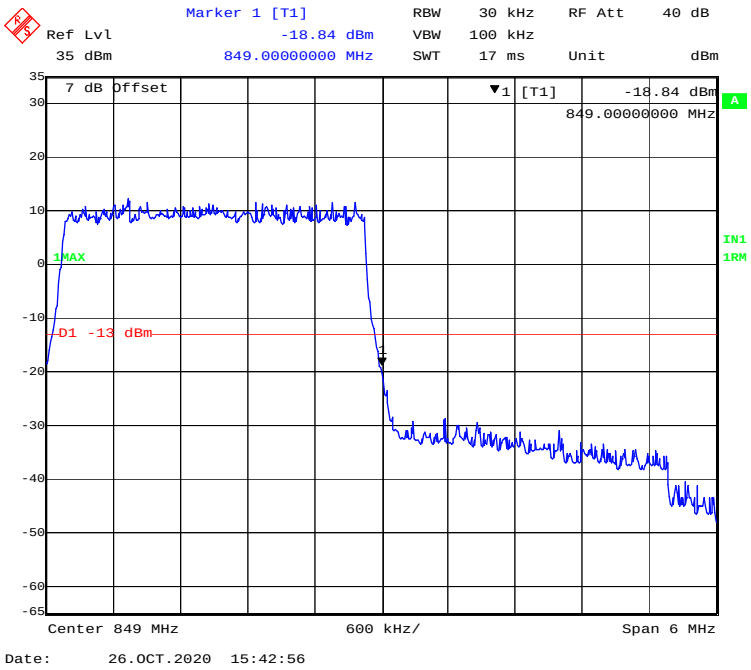
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



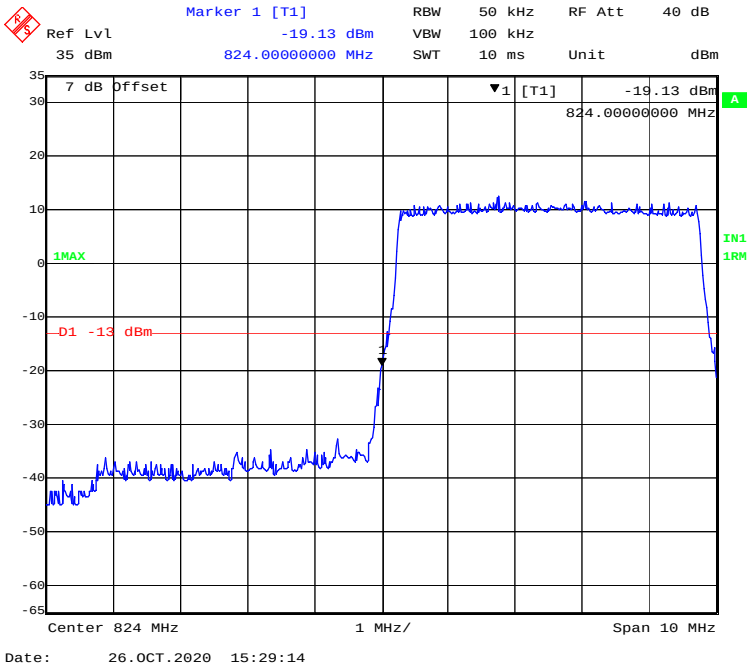
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



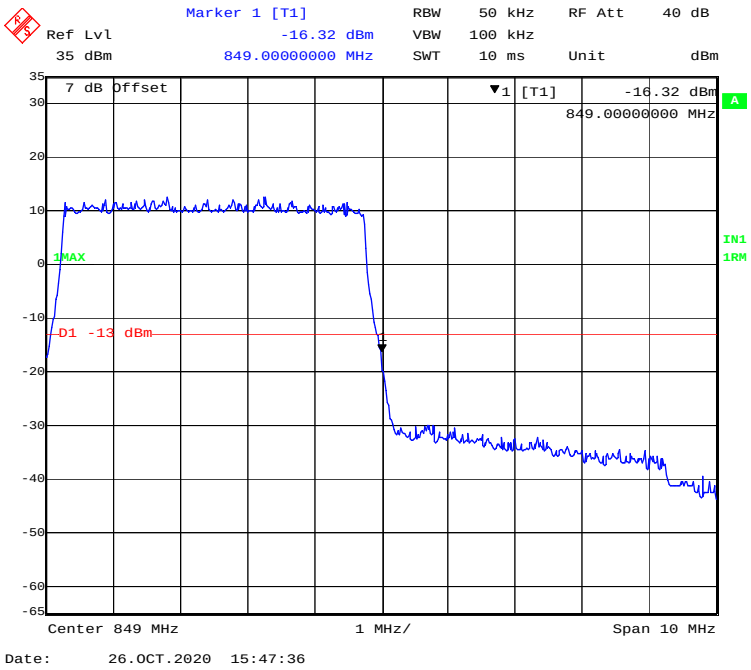
16-QAM (3.0 MHz, FULL RB) - Right Band Edge



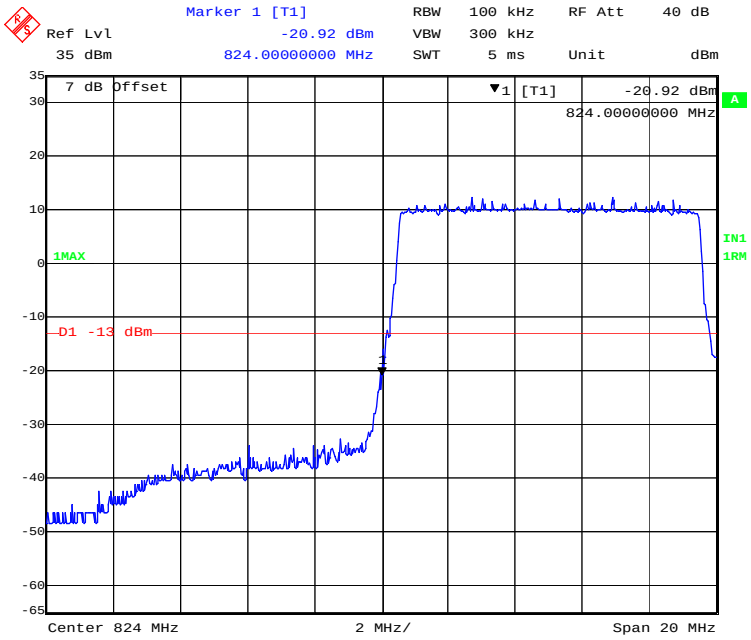
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



16-QAM (5.0 MHz, FULL RB) - Right Band Edge



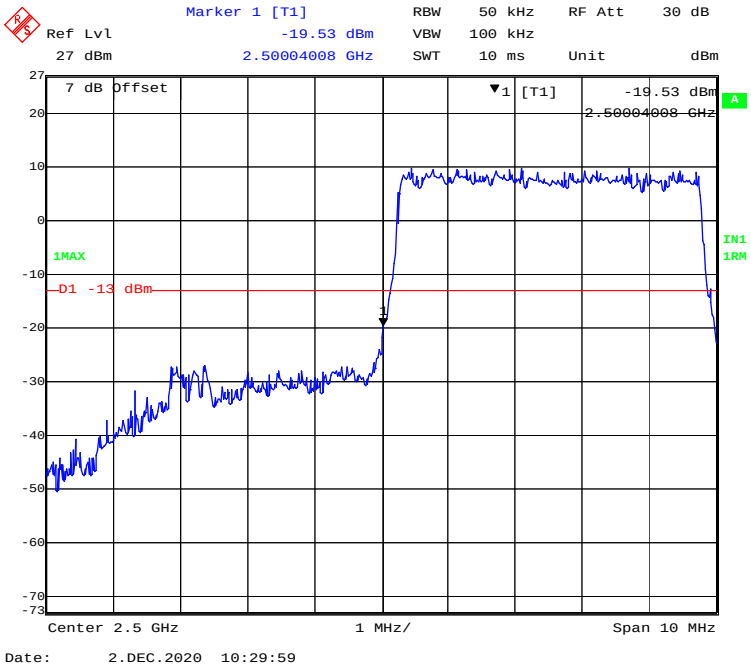
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



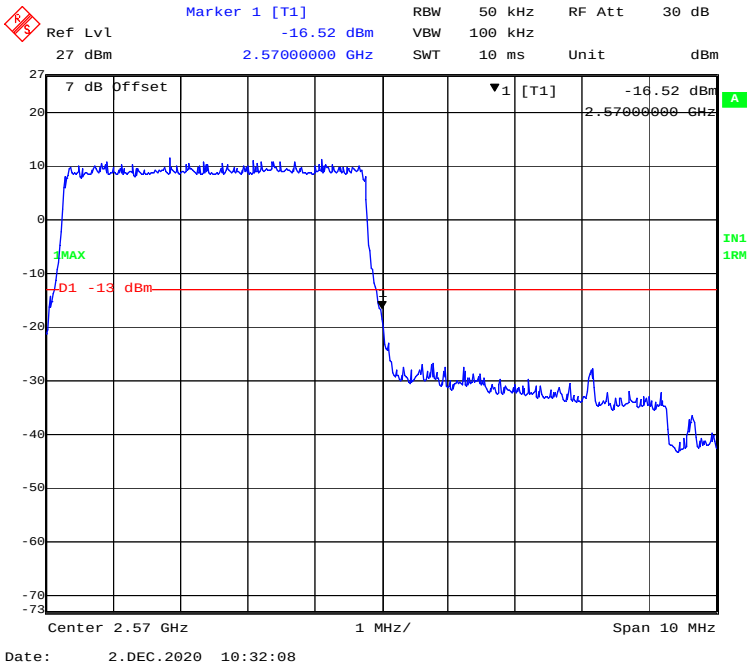
16-QAM (10.0 MHz, FULL RB) - Right Band Edge

LTE Band 7:

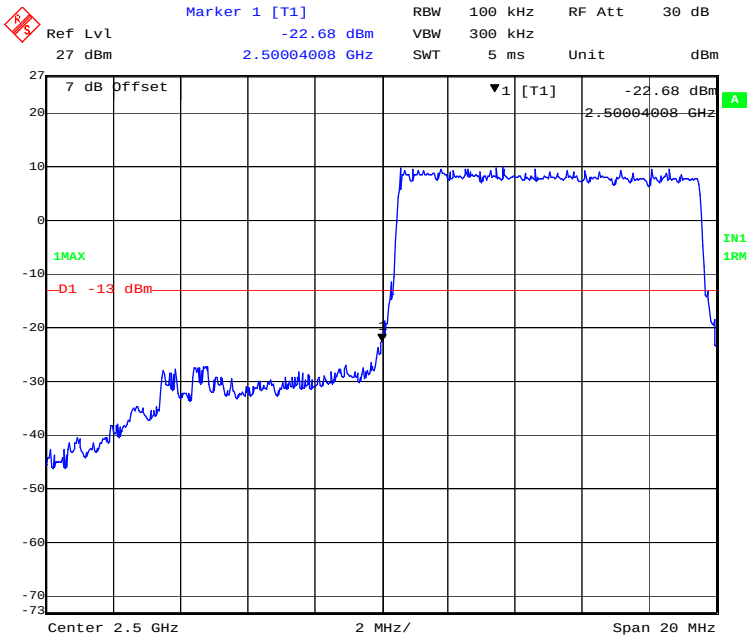
QPSK (5.0 MHz, FULL RB) - Left Band Edge



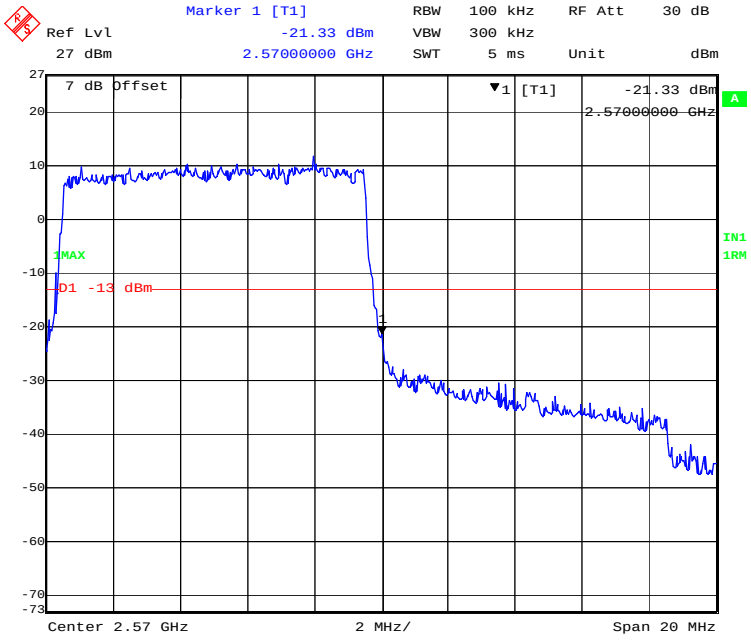
QPSK (5.0 MHz, FULL RB) - Right Band Edge



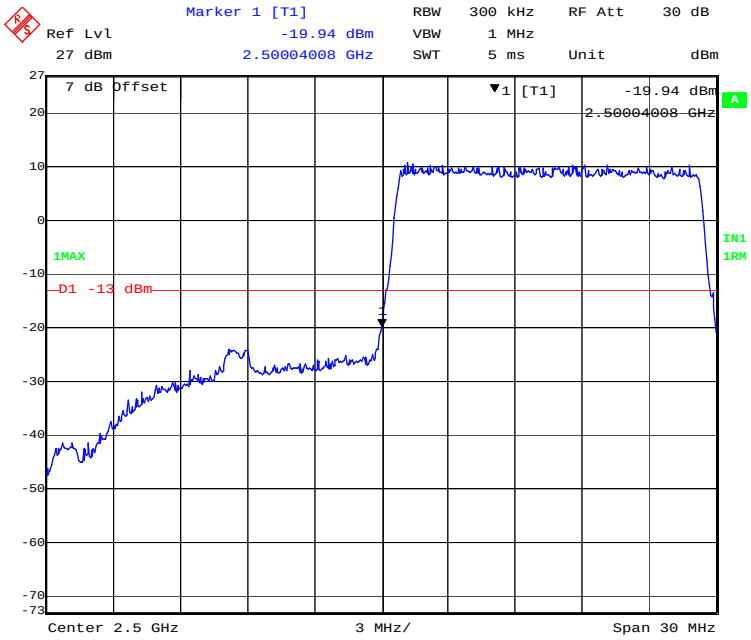
QPSK (10.0 MHz, FULL RB) - Left Band Edge



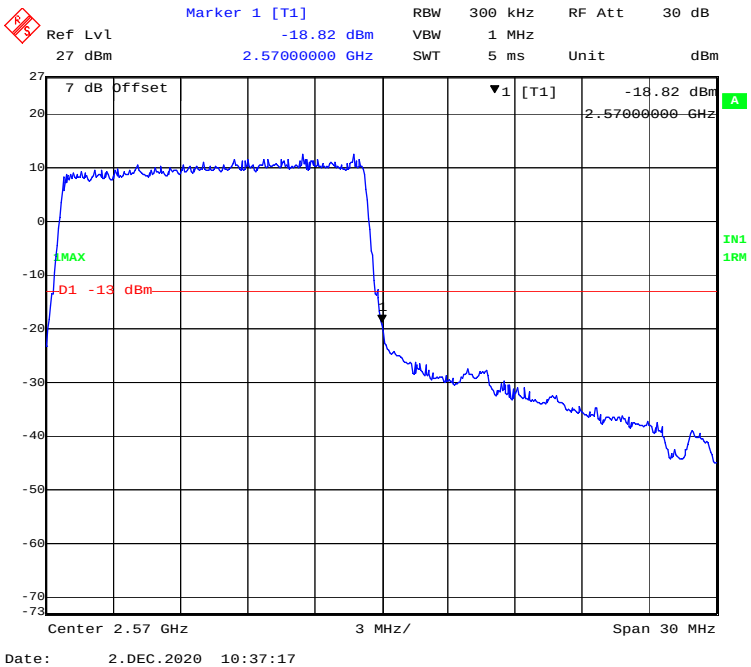
QPSK (10.0 MHz, FULL RB) - Right Band Edge



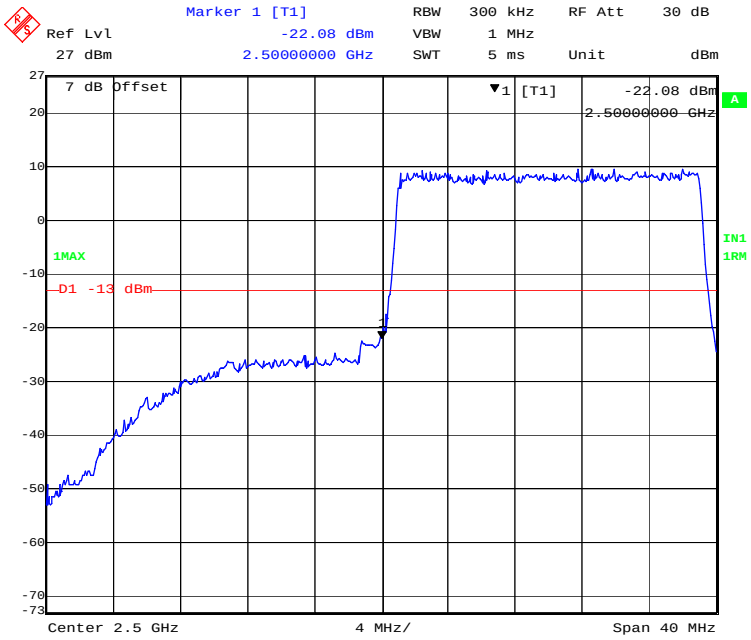
QPSK (15.0 MHz, FULL RB) - Left Band Edge



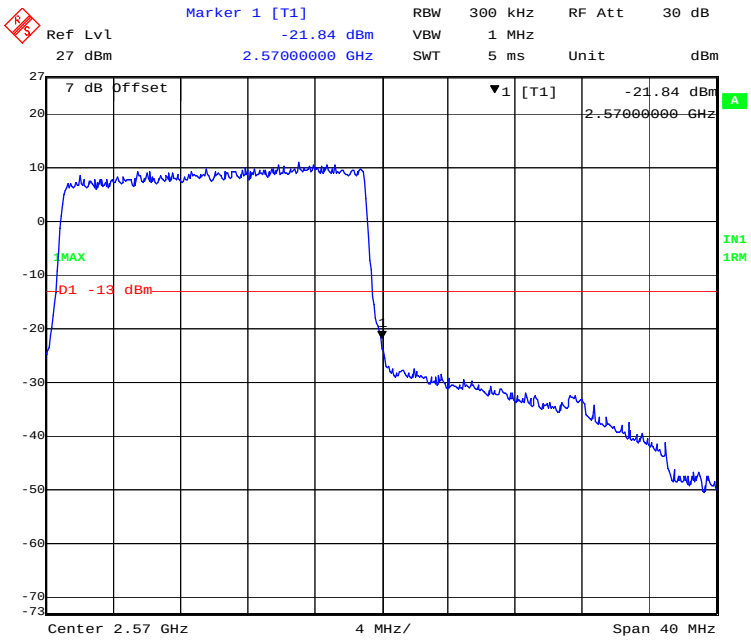
QPSK (15.0 MHz, FULL RB) - Right Band Edge



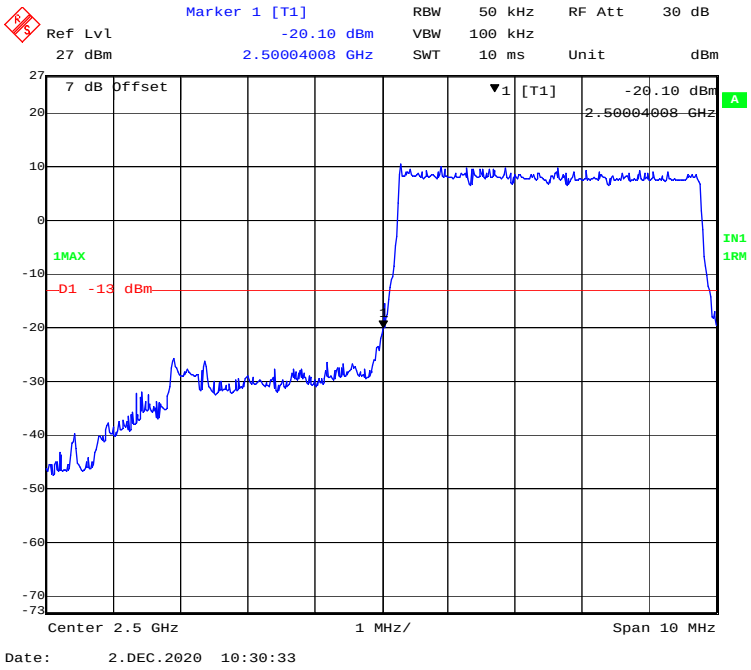
QPSK (20.0 MHz, FULL RB) - Left Band Edge



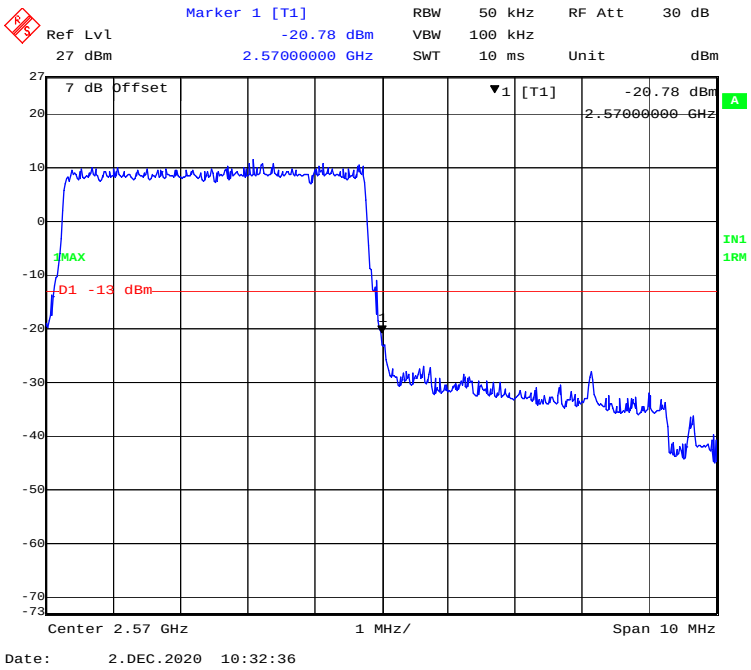
QPSK (20.0 MHz, FULL RB) - Right Band Edge



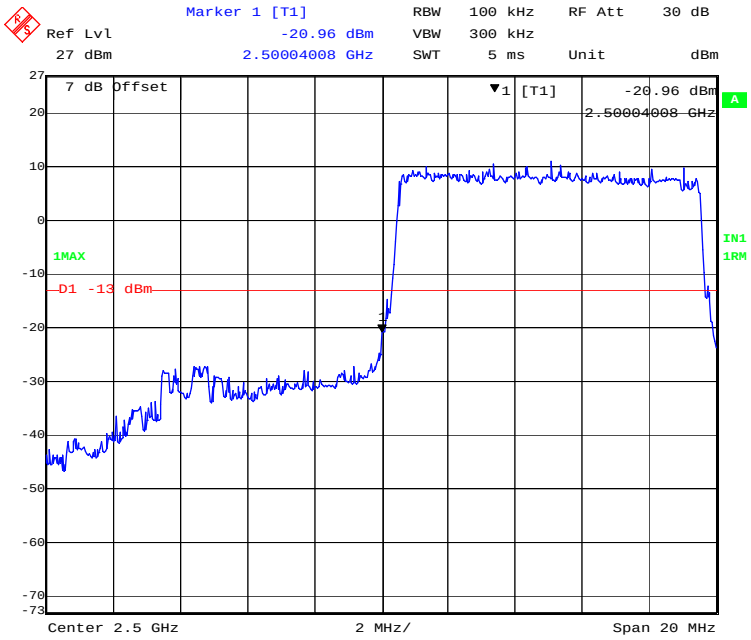
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



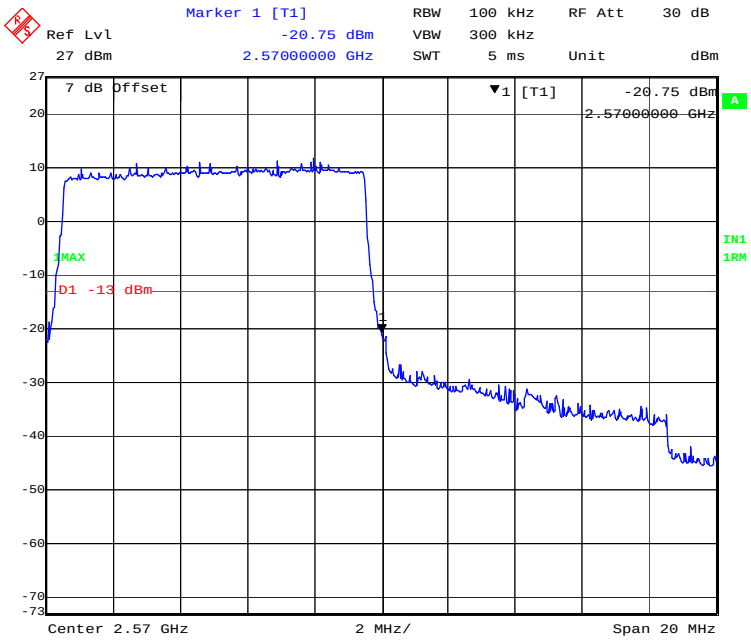
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



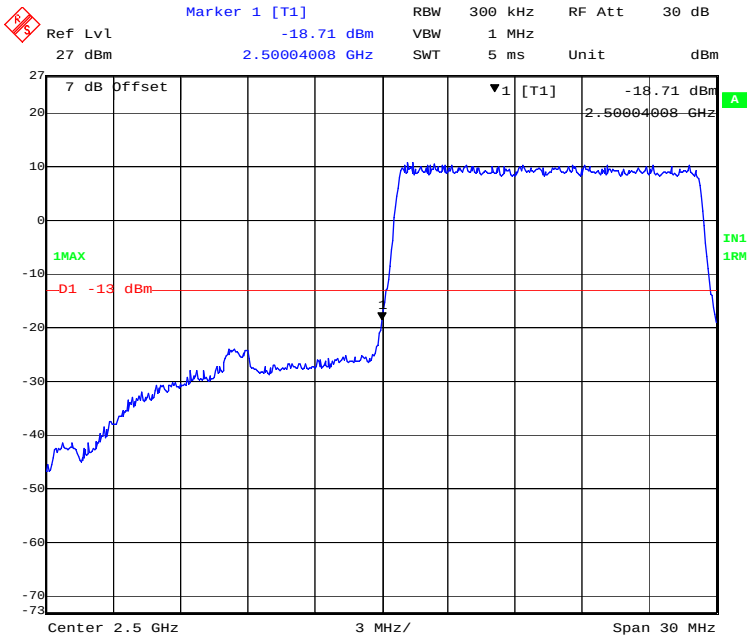
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



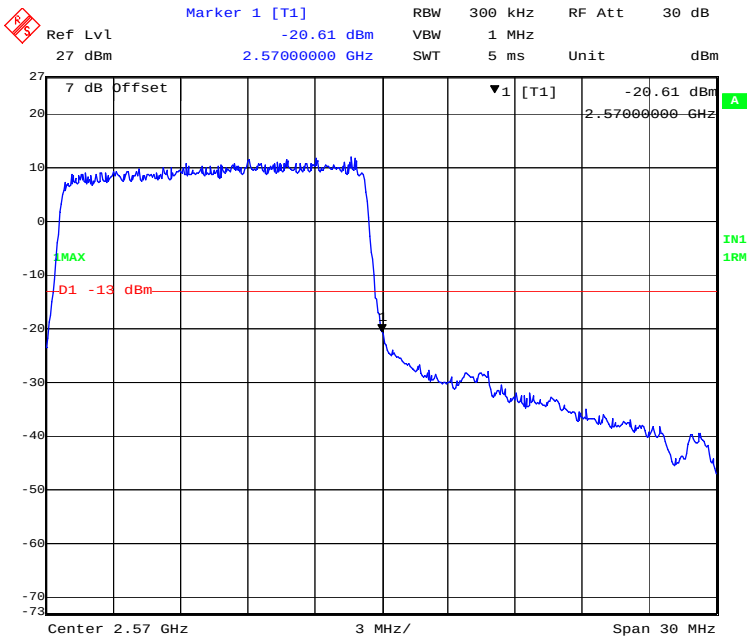
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



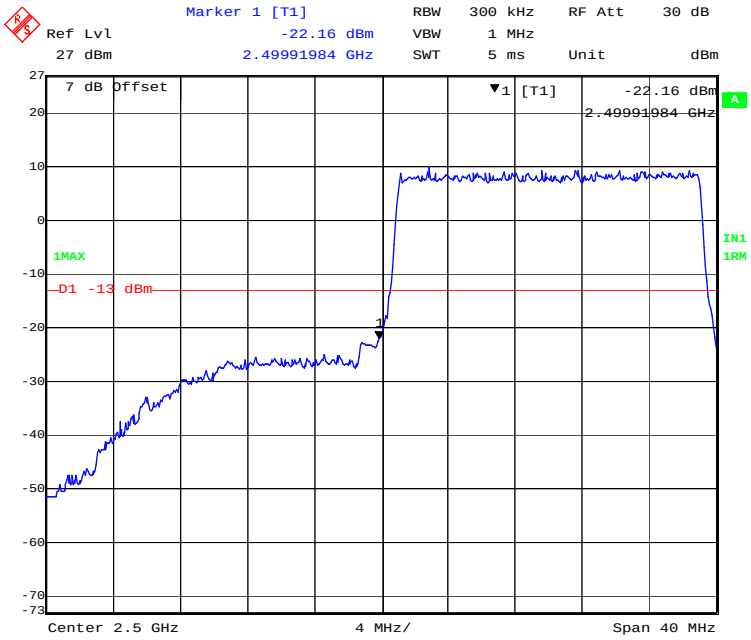
16-QAM (15.0 MHz, FULL RB) - Left Band Edge



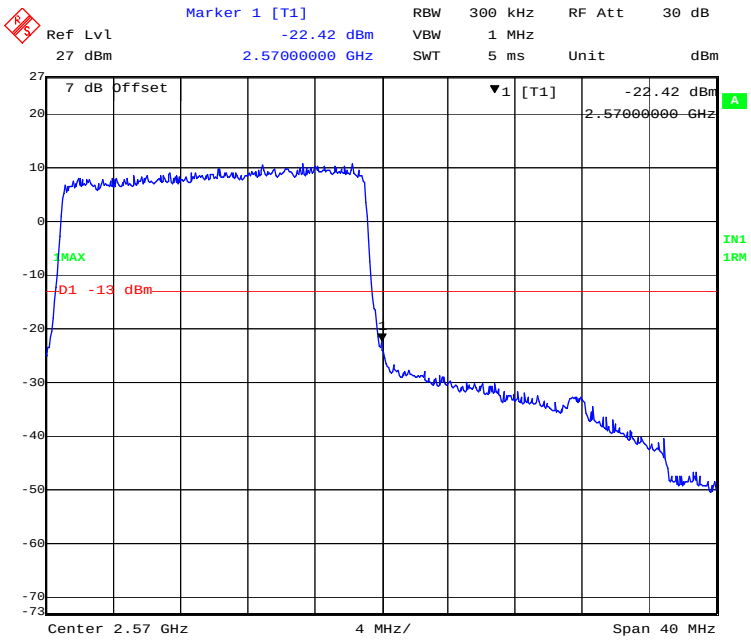
16-QAM (15.0 MHz, FULL RB) - Right Band Edge



16-QAM (20.0 MHz, FULL RB) - Left Band Edge

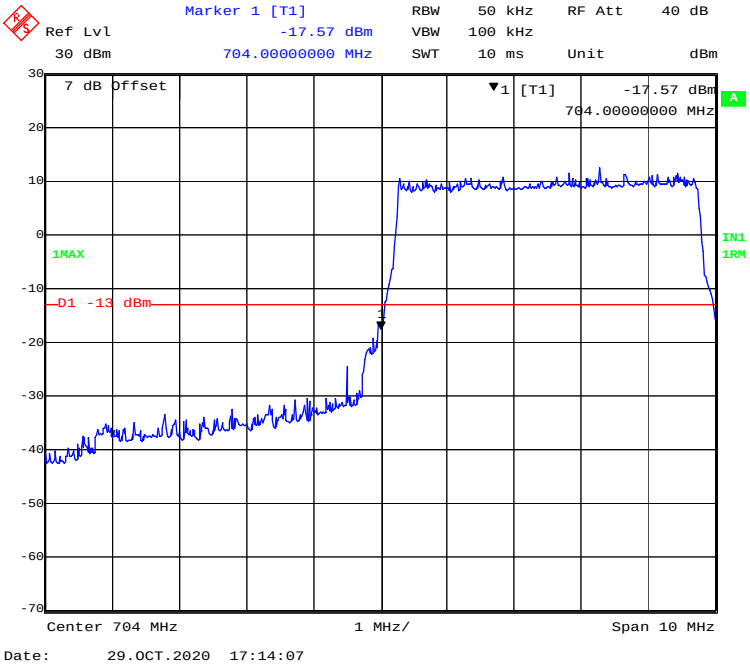


16-QAM (20.0 MHz, FULL RB) - Right Band Edge

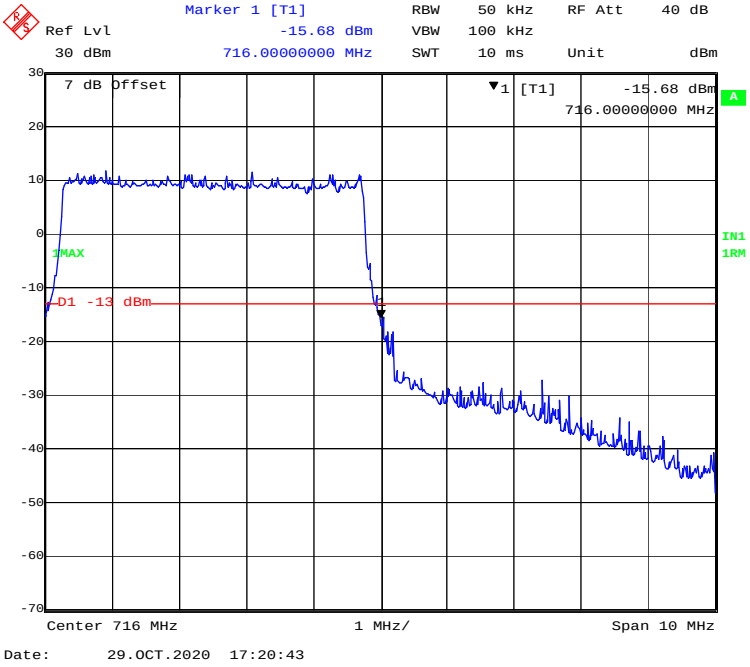


LTE Band 17:

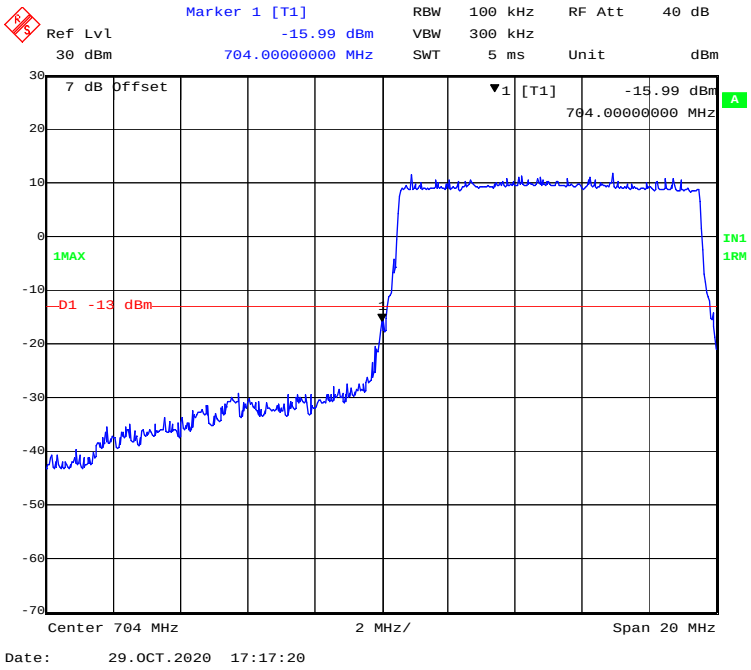
QPSK (5 MHz, FULL RB) - Left Band Edge



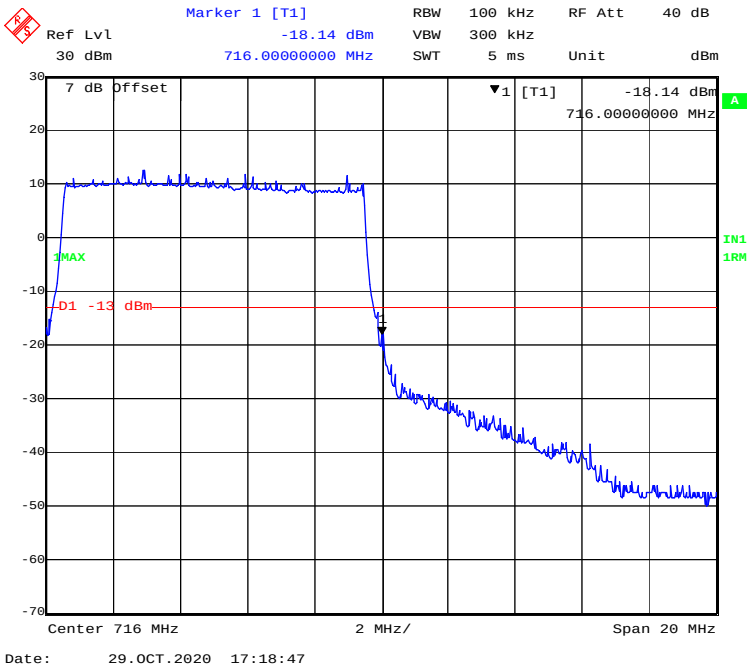
QPSK (5 MHz, FULL RB) - Right Band Edge



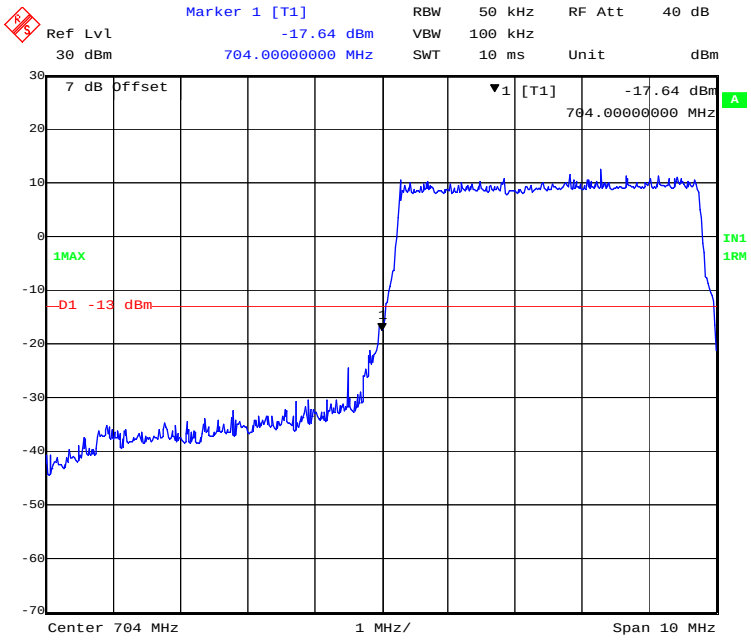
QPSK (10 MHz, FULL RB) - Left Band Edge



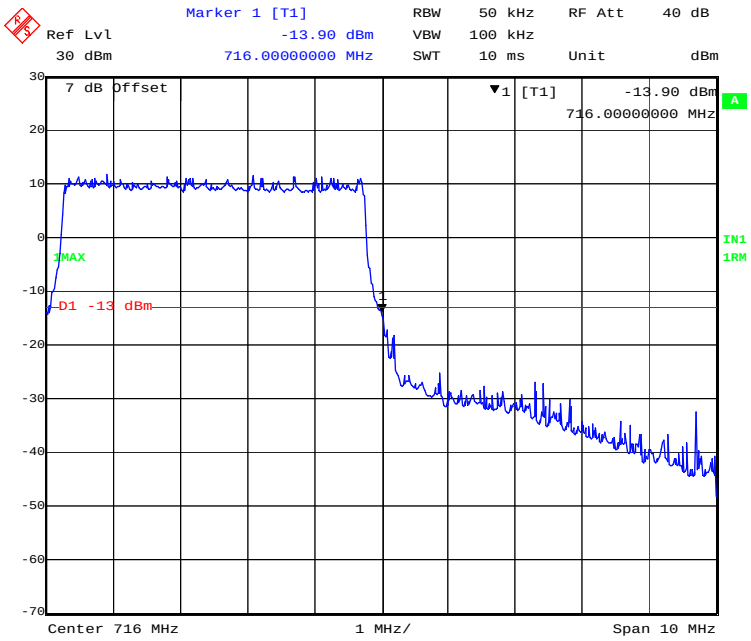
QPSK (10 MHz, FULL RB) - Right Band Edge



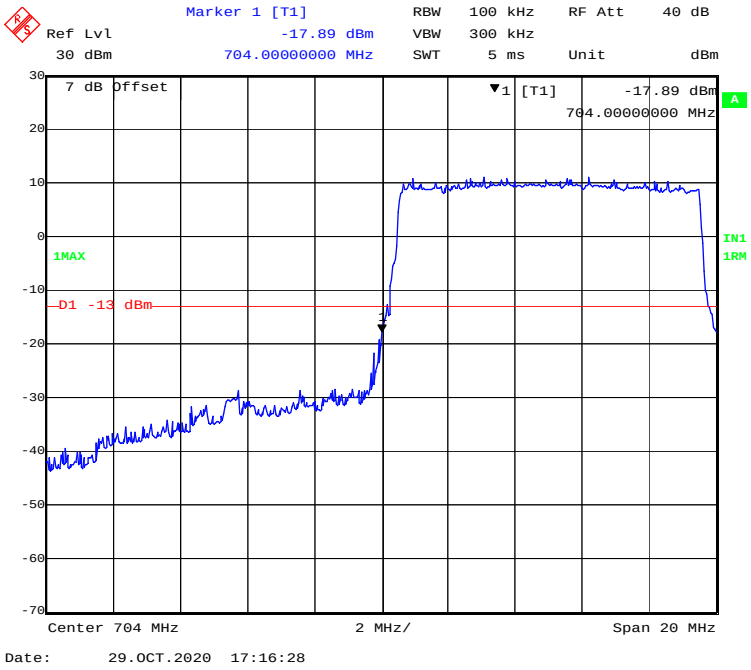
16-QAM (5 MHz, FULL RB) - Left Band Edge



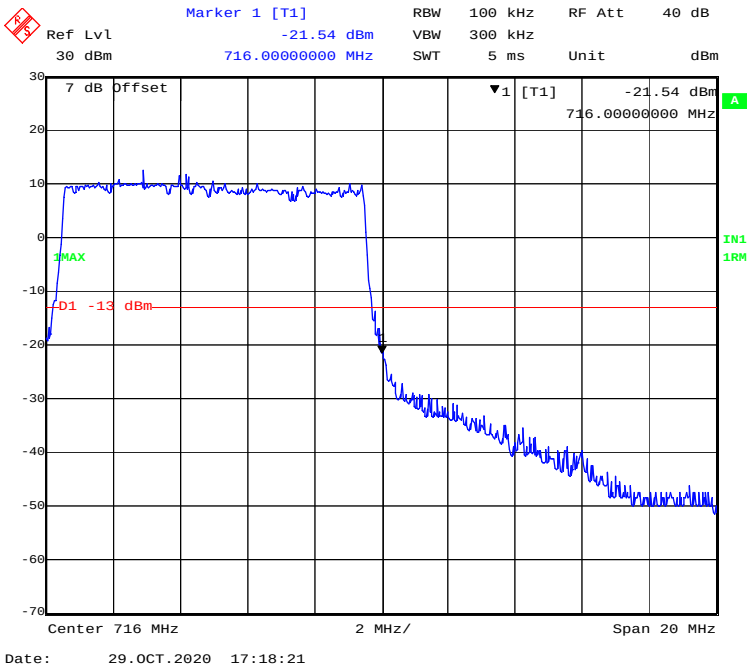
16-QAM (5 MHz, FULL RB) - Right Band Edge



16-QAM (10 MHz, FULL RB) - Left Band Edge

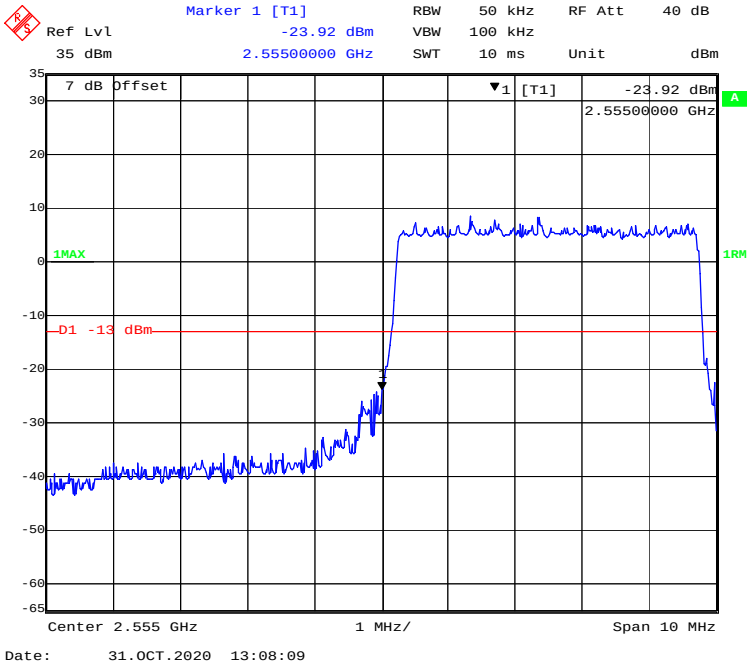


16-QAM (10 MHz, FULL RB) - Right Band Edge

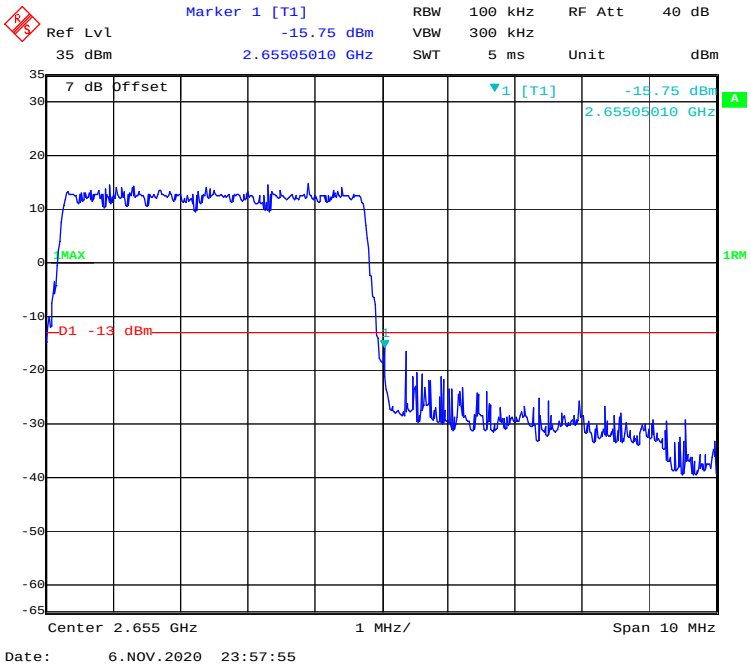


LTE Band 41:

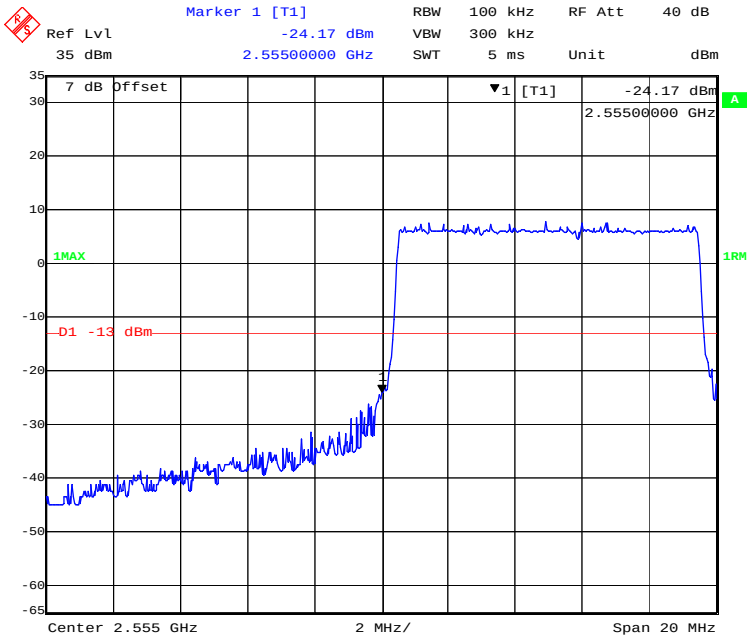
QPSK (5 MHz, FULL RB) - Left Band Edge



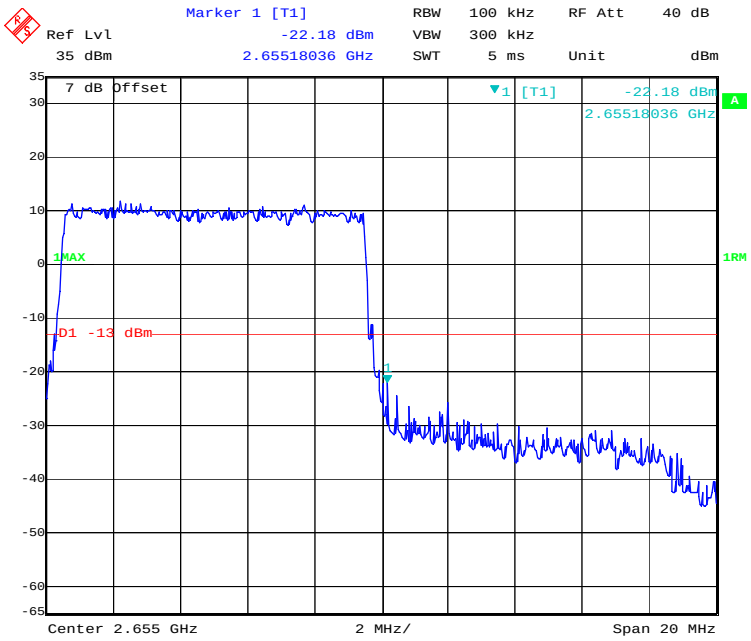
QPSK (5 MHz, FULL RB) - Right Band Edge



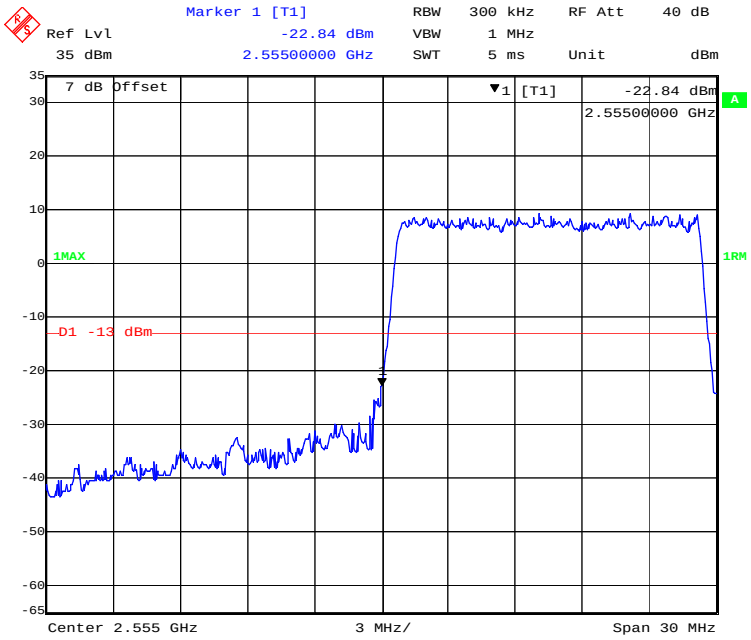
QPSK (10 MHz, FULL RB) - Left Band Edge



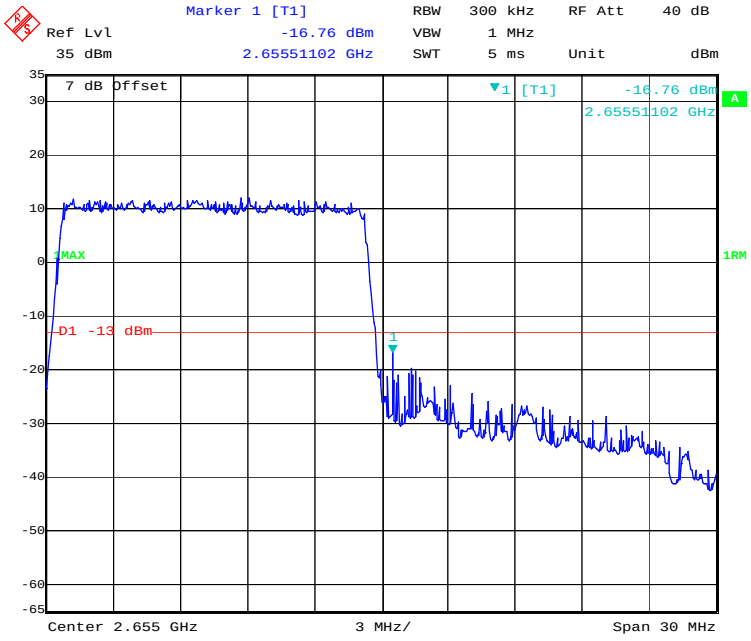
QPSK (10 MHz, FULL RB) - Right Band Edge



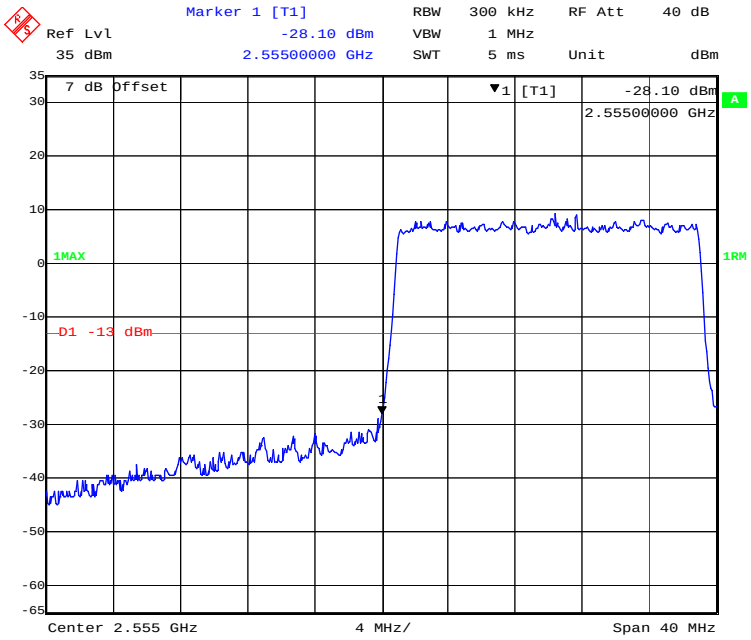
QPSK (15 MHz, FULL RB) - Left Band Edge



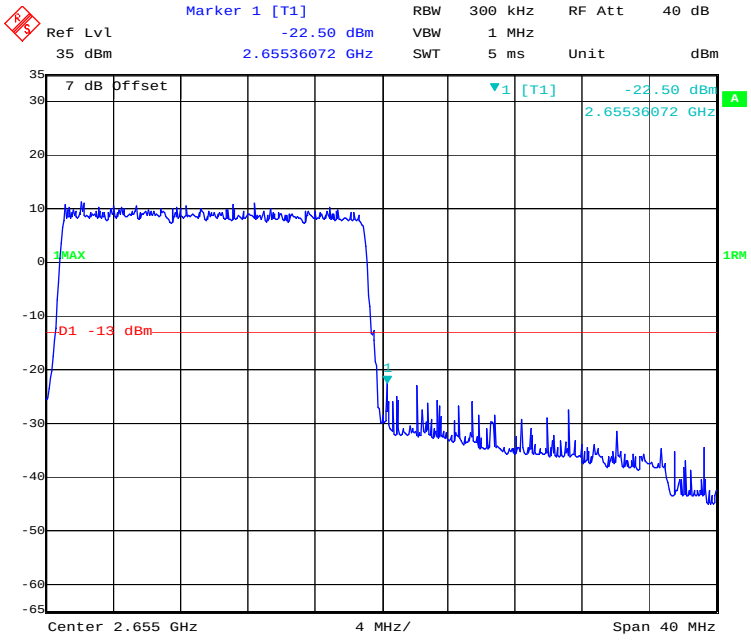
QPSK (15 MHz, FULL RB) - Right Band Edge



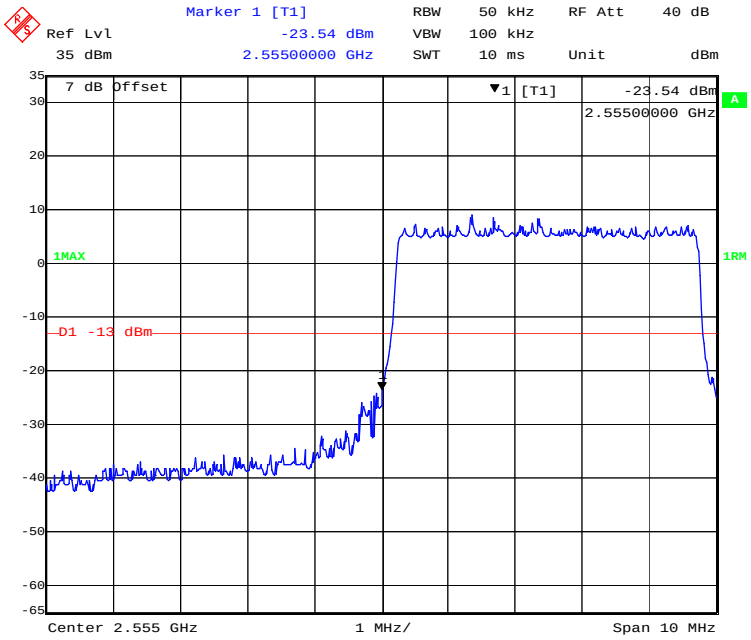
QPSK (20 MHz, FULL RB) - Left Band Edge



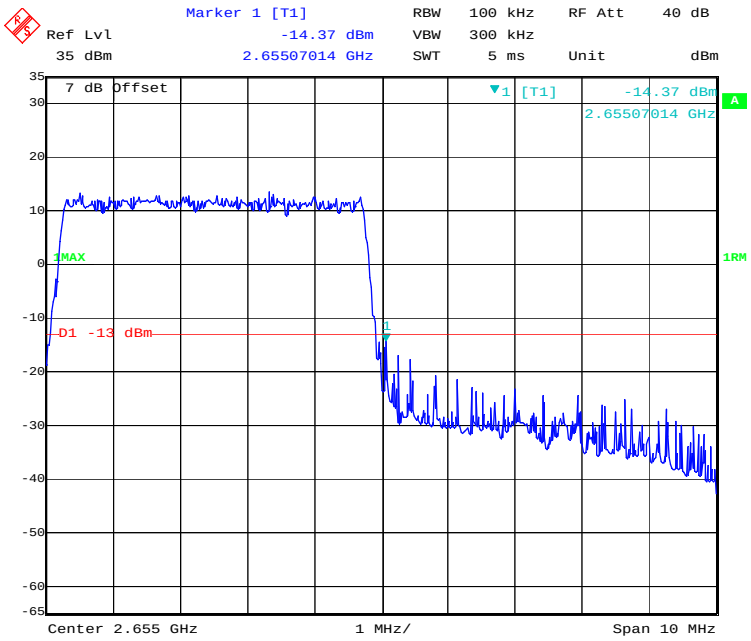
QPSK (20 MHz, FULL RB) - Right Band Edge



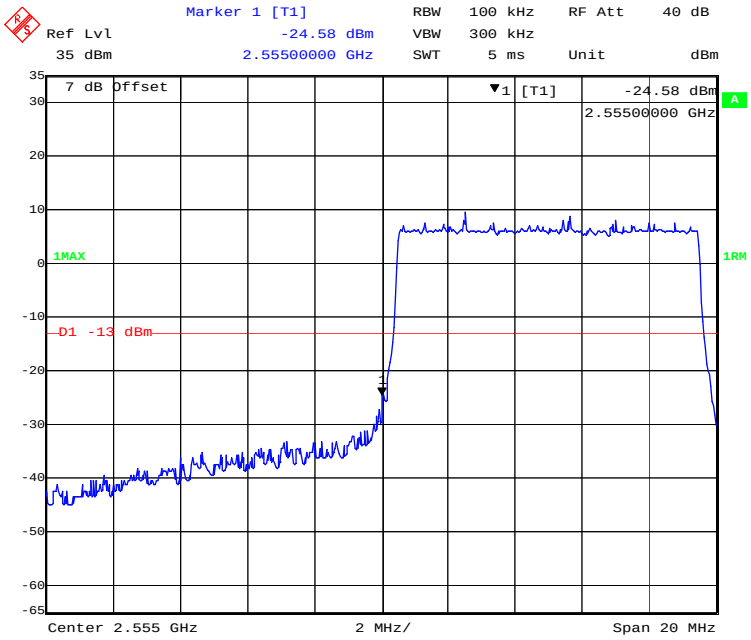
16-QAM (5 MHz, FULL RB) - Left Band Edge



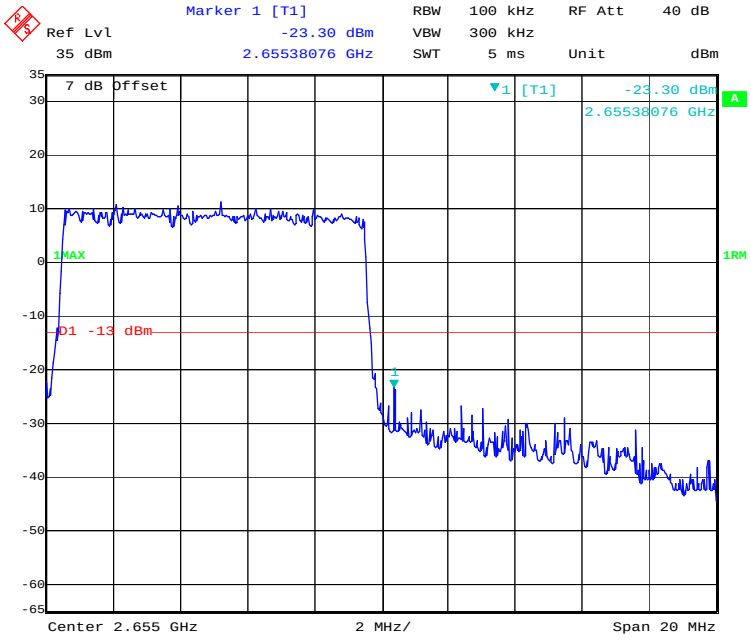
16-QAM (5 MHz, FULL RB) - Right Band Edge



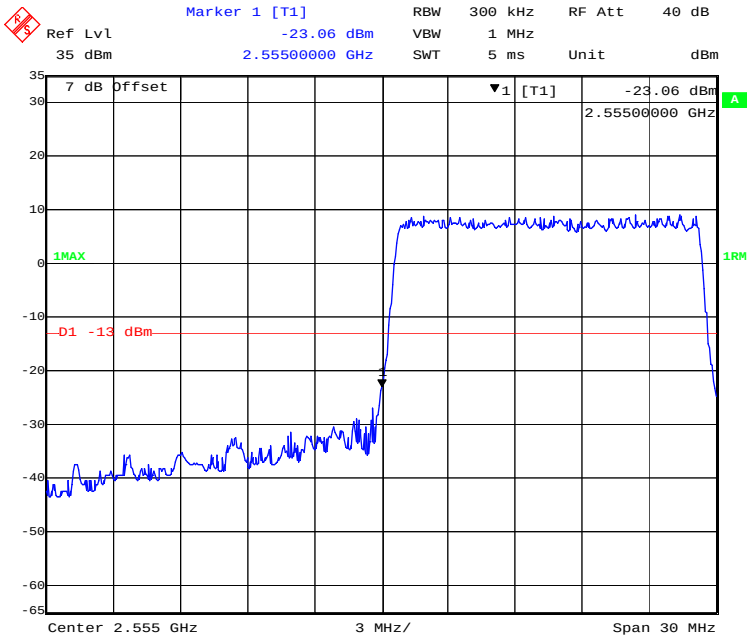
16-QAM (10 MHz, FULL RB) - Left Band Edge



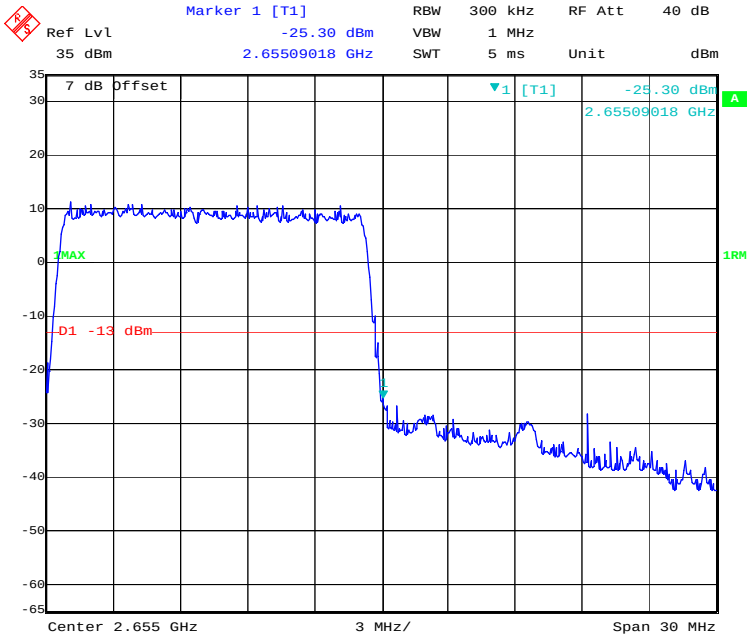
16-QAM (10 MHz, FULL RB) - Right Band Edge



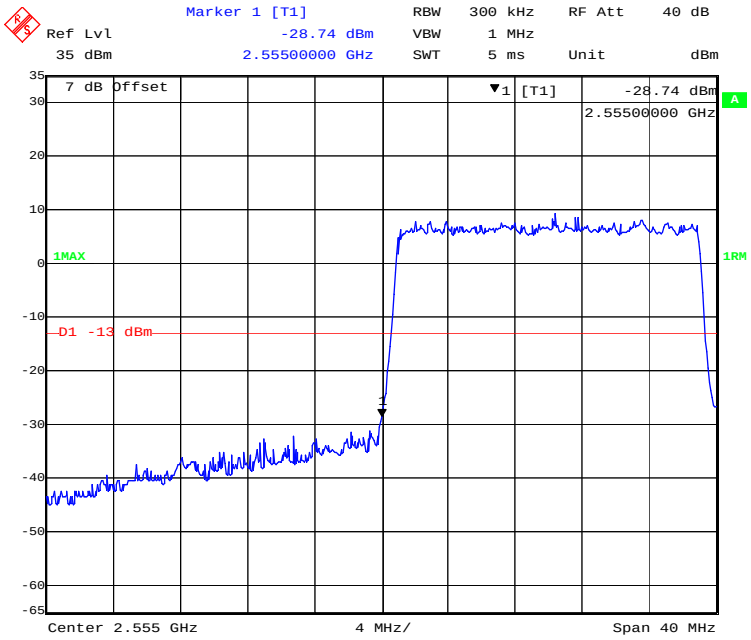
16-QAM (15 MHz, FULL RB) - Left Band Edge



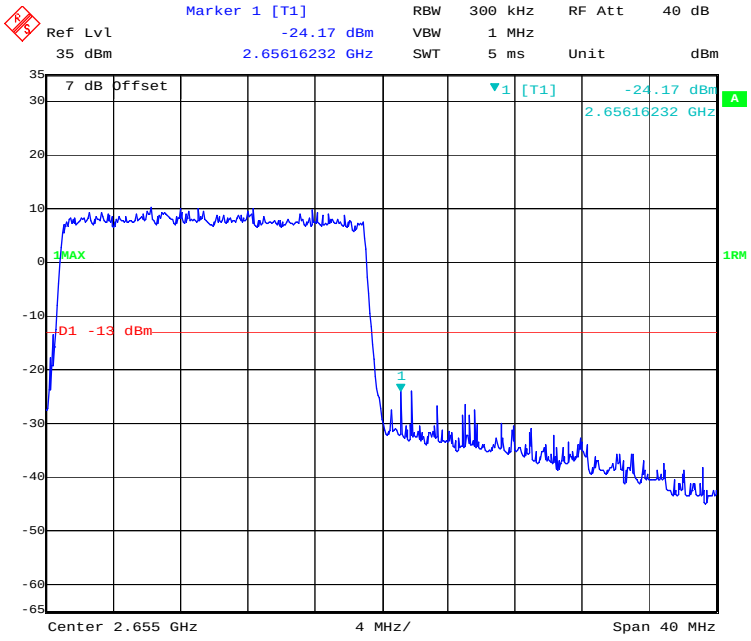
16-QAM (15 MHz, FULL RB) - Right Band Edge



16-QAM (20 MHz, FULL RB) - Left Band Edge



16-QAM (20 MHz, FULL RB) - Right Band Edge



FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY

Applicable Standards

FCC § 2.1055, §22.355, §24.235 and §27.54.

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

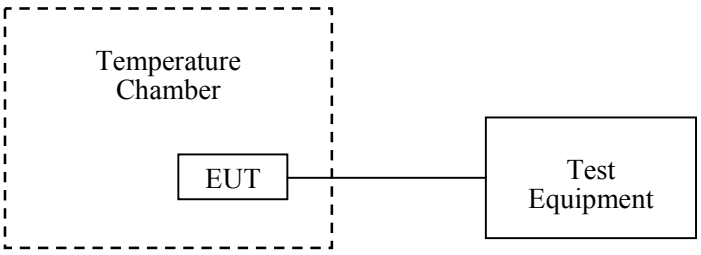
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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 DC 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: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Data

Environmental Conditions

Temperature:	24.9~25.3 ℃
Relative Humidity:	50~52 %
ATM Pressure:	101.3~102.3 kPa

The testing was performed by Jack Jiao from 2020-11-15 to 2020-12-10.

EUT operation mode: Transmitting

Test Result: Compliant.

GSM 850 Band:

GSM Mode, Middle Channel, f_o =836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	8	0.009563	2.5
-20		18	0.021516	2.5
-10		9	0.010758	2.5
0		10	0.011953	2.5
10		12	0.014344	2.5
20		10	0.011953	2.5
30		6	0.007172	2.5
40		14	0.016734	2.5
50		12	0.014344	2.5
20	V min.= 3.5	11	0.013148	2.5
20	V max.= 4.35	12	0.014344	2.5

GPRS Mode, Middle Channel, f_o =836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	7	0.008367	2.5
-20		11	0.013148	2.5
-10		13	0.015539	2.5
0		19	0.022711	2.5
10		15	0.017930	2.5
20		14	0.016734	2.5
30		15	0.017930	2.5
40		14	0.016734	2.5
50		18	0.021516	2.5
20	V min.= 3.5	15	0.017930	2.5
20	V max.= 4.35	11	0.013148	2.5

EGPRS Mode, Middle Channel, f_o=836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	14	0.016734	2.5
-20		12	0.014344	2.5
-10		14	0.016734	2.5
0		14	0.016734	2.5
10		17	0.020320	2.5
20		13	0.015539	2.5
30		18	0.021516	2.5
40		19	0.022711	2.5
50		17	0.020320	2.5
20	V min.= 3.5	19	0.022711	2.5
20	V max.= 4.35	17	0.020320	2.5

WCDMA Band V:

WCDMA Mode, Middle Channel, f_o = 836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	20	0.023906	2.5
-20		6	0.017930	2.5
-10		14	0.016734	2.5
0		15	0.017930	2.5
10		14	0.016734	2.5
20		14	0.016734	2.5
30		11	0.013148	2.5
40		11	0.013148	2.5
50		12	0.014344	2.5
20	V min.= 3.5	16	0.019125	2.5
20	V max.= 4.35	12	0.014344	2.5

PCS 1900 Band

GSM Mode, Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	15	0.007979	pass
-20		14	0.007447	pass
-10		17	0.009043	pass
0		9	0.004787	pass
10		15	0.007979	pass
20		15	0.007979	pass
30		12	0.006383	pass
40		14	0.007447	pass
50		9	0.004787	pass
20	V min.= 3.5	10	0.005319	pass
20	V max.= 4.35	15	0.007979	pass

GPRS Mode, Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	17	0.009043	pass
-20		12	0.006383	pass
-10		19	0.010106	pass
0		7	0.003723	pass
10		15	0.007979	pass
20		17	0.009043	pass
30		10	0.005319	pass
40		10	0.005319	pass
50		14	0.007447	pass
20	V min.= 3.5	15	0.007979	pass
20	V max.= 4.35	9	0.004787	pass

EGPRS Mode, Middle Channel, f_0 =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	16	0.008511	pass
-20		20	0.010638	pass
-10		6	0.003191	pass
0		20	0.010638	pass
10		13	0.006915	pass
20		9	0.004787	pass
30		15	0.007979	pass
40		16	0.008511	pass
50		10	0.005319	pass
20	V min.= 3.5	10	0.005319	pass
20	V max.= 4.35	11	0.005851	pass

WCDMA Band II:

WCDMA Mode, Middle Channel, f_o = 1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	12	0.006383	pass
-20		13	0.006915	pass
-10		13	0.006915	pass
0		20	0.010638	pass
10		14	0.007447	pass
20		9	0.004787	pass
30		9	0.004787	pass
40		7	0.003723	pass
50		15	0.007979	pass
20	V min.= 3.5	16	0.008511	pass
20	V max.= 4.35	10	0.005319	pass

LTE Band 2:

Middle Channel, f_o=1880.0 MHz (QPSK) /Channel Bandwidth:20MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	17	0.0090	pass
-20		16	0.0085	pass
-10		10	0.0053	pass
0		18	0.0096	pass
10		19	0.0101	pass
20		17	0.0090	pass
30		17	0.0090	pass
40		17	0.0090	pass
50		14	0.0074	pass
20	V min.= 3.5	11	0.0059	pass
20	V max.= 4.35	17	0.0090	pass

Middle Channel, f_o=1880.0 MHz (16-QAM) /Channel Bandwidth:20MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	11	0.0059	2.5
-20		16	0.0085	2.5
-10		17	0.0090	2.5
0		13	0.0069	2.5
10		19	0.0101	2.5
20		9	0.0048	2.5
30		21	0.0112	2.5
40		15	0.0080	2.5
50		11	0.0059	2.5
20	V min.= 3.5	19	0.0101	2.5
20	V max.= 4.35	16	0.0085	2.5

LTE Band 4:

Low Channel & High Channel (QPSK) /Channel Bandwidth:20MHz					
Temperature	Power Supplied	F_L	F_H	F_L Limit	F_H Limit
(℃)	(V_{DC})	(MHz)	(MHz)	(MHz)	(MHz)
-30	3.8	1710.0423	1754.9456	1710	1755
-20		1710.0483	1754.9484	1710	1755
-10		1710.0410	1754.9442	1710	1755
0		1710.0451	1754.9463	1710	1755
10		1710.0425	1754.9401	1710	1755
20		1710.0416	1754.9440	1710	1755
30		1710.0411	1754.9460	1710	1755
40		1710.0461	1754.9471	1710	1755
50		1710.0456	1754.9430	1710	1755
20	V min.= 3.5	1710.0499	1754.9473	1710	1755
20	V max.= 4.35	1710.0441	1754.9433	1710	1755

Low Channel & High Channel (16-QAM) /Channel Bandwidth:20MHz					
Temperature	Power Supplied	F_L	F_H	F_L Limit	F_H Limit
(℃)	(V_{DC})	(MHz)	(MHz)	(MHz)	(MHz)
-30	3.8	1710.0403	1754.9429	1710	1755
-20		1710.0461	1754.9497	1710	1755
-10		1710.0434	1754.9425	1710	1755
0		1710.0491	1754.9470	1710	1755
10		1710.0475	1754.9413	1710	1755
20		1710.0460	1754.9419	1710	1755
30		1710.0435	1754.9406	1710	1755
40		1710.0417	1754.9481	1710	1755
50		1710.0408	1754.9427	1710	1755
20	V min.= 3.5	1710.0457	1754.9420	1710	1755
20	V max.= 4.35	1710.0410	1754.9440	1710	1755

LTE Band 5:

Middle Channel, f_o = 836.5 MHz (QPSK) /Channel Bandwidth:10MHz				
Temperature	**Power Supplied**	**Frequency Error**	**Frequency Error**	**Limit**
(℃)	**(V_{DC})**	**(Hz)**	**(ppm)**	**(ppm)**
-30	3.8	16	0.0191	2.5
-20		14	0.0167	2.5
-10		16	0.0191	2.5
0		9	0.0108	2.5
10		18	0.0215	2.5
20		12	0.0143	2.5
30		10	0.0120	2.5
40		19	0.0227	2.5
50		13	0.0155	2.5
20	V min.= 3.5	12	0.0143	2.5
20	V max.= 4.35	8	0.0096	2.5

Middle Channel, f_o = 836.5 MHz (16-QAM) /Channel Bandwidth:10MHz				
Temperature	**Power Supplied**	**Frequency Error**	**Frequency Error**	**Limit**
(℃)	**(V_{DC})**	**(Hz)**	**(ppm)**	**(ppm)**
-30	3.8	13	0.0155	2.5
-20		11	0.0132	2.5
-10		13	0.0155	2.5
0		20	0.0239	2.5
10		8	0.0096	2.5
20		12	0.0143	2.5
30		19	0.0227	2.5
40		19	0.0227	2.5
50		11	0.0132	2.5
20	V min.= 3.5	20	0.0239	2.5
20	V max.= 4.35	19	0.0227	2.5

LTE Band 7:

Low Channel & High Channel (QPSK) /Channel Bandwidth:20MHz					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	3.8	2500.0552	2569.9560	2500	2570
-20		2500.0555	2569.9517	2500	2570
-10		2500.0524	2569.9566	2500	2570
0		2500.0542	2569.9539	2500	2570
10		2500.0544	2569.9560	2500	2570
20		2500.0527	2569.9511	2500	2570
30		2500.0569	2569.9542	2500	2570
40		2500.0563	2569.9538	2500	2570
50		2500.0543	2569.9519	2500	2570
20	V min.= 3.5	2500.0513	2569.9525	2500	2570
20	V max.= 4.35	2500.0588	2569.9507	2500	2570

Low Channel & High Channel (16-QAM) /Channel Bandwidth:20MHz					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	3.8	2500.0531	2569.9564	2500	2570
-20		2500.0502	2569.9541	2500	2570
-10		2500.0506	2569.9549	2500	2570
0		2500.0565	2569.9592	2500	2570
10		2500.0507	2569.9587	2500	2570
20		2500.0521	2569.9544	2500	2570
30		2500.0574	2569.9588	2500	2570
40		2500.0547	2569.9572	2500	2570
50		2500.0546	2569.9596	2500	2570
20	V min.= 3.5	2500.0518	2569.9512	2500	2570
20	V max.= 4.35	2500.0556	2569.9507	2500	2570

LTE Band 17:

Low Channel & High Channel (QPSK) /Channel Bandwidth:10MHz					
Temperature	Power Supplied	F_L	F_H	F_L Limit	F_H Limit
(℃)	(V_{DC})	(MHz)	(MHz)	(MHz)	(MHz)
-30	3.8	704.3281	715.1495	704	716
-20		704.3273	715.1416	704	716
-10		704.3281	715.1408	704	716
0		704.3292	715.1408	704	716
10		704.3277	715.1492	704	716
20		704.3268	715.1460	704	716
30		704.3239	715.1455	704	716
40		704.3217	715.1469	704	716
50		704.3275	715.1404	704	716
20	V min.= 3.5	704.3252	715.1438	704	716
20	V max.= 4.35	704.3286	715.1462	704	716

Low Channel & High Channel (16-QAM) /Channel Bandwidth:10MHz					
Temperature	Power Supplied	F_L	F_H	F_L Limit	F_H Limit
(℃)	(V_{DC})	(MHz)	(MHz)	(MHz)	(MHz)
-30	3.8	704.3302	715.1475	704	716
-20		704.3236	715.1420	704	716
-10		704.3281	715.1456	704	716
0		704.3302	715.1423	704	716
10		704.3298	715.1462	704	716
20		704.3250	715.1466	704	716
30		704.3304	715.1437	704	716
40		704.3284	715.1498	704	716
50		704.3273	715.1409	704	716
20	V min.= 3.5	704.3225	715.1406	704	716
20	V max.= 4.35	704.3218	715.1417	704	716

LTE Band 41:

Low Channel & High Channel (QPSK) /Channel Bandwidth:20MHz					
Temperature	Power Supplied	F_L	F_H	F_L Limit	F_H Limit
(℃)	(V_{DC})	(MHz)	(MHz)	(MHz)	(MHz)
-30	3.8	2555.0579	2654.9586	2555	2655
-20		2555.0592	2654.9546	2555	2655
-10		2555.0570	2654.9567	2555	2655
0		2555.0587	2654.9555	2555	2655
10		2555.052	2654.9501	2555	2655
20		2555.0575	2654.9583	2555	2655
30		2555.0578	2654.9531	2555	2655
40		2555.0600	2654.9597	2555	2655
50		2555.0571	2654.9552	2555	2655
20	V min.= 3.5	2555.0512	2654.9565	2555	2655
20	V max.= 4.35	2555.0536	2654.9501	2555	2655

Low Channel & High Channel (16-QAM) /Channel Bandwidth:20MHz					
Temperature	Power Supplied	F_L	F_H	F_L Limit	F_H Limit
(℃)	(V_{DC})	(MHz)	(MHz)	(MHz)	(MHz)
-30	3.8	2555.0581	2654.9512	2555	2655
-20		2555.0598	2654.9600	2555	2655
-10		2555.0557	2654.9504	2555	2655
0		2555.0569	2654.9513	2555	2655
10		2555.0564	2654.9507	2555	2655
20		2555.0513	2654.9515	2555	2655
30		2555.0572	2654.9598	2555	2655
40		2555.0580	2654.9514	2555	2655
50		2555.0506	2654.9551	2555	2655
20	V min.= 3.5	2555.0516	2654.9521	2555	2655
20	V max.= 4.35	2555.0539	2654.9513	2555	2655

Declarations

1: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

2: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

3: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

4: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

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