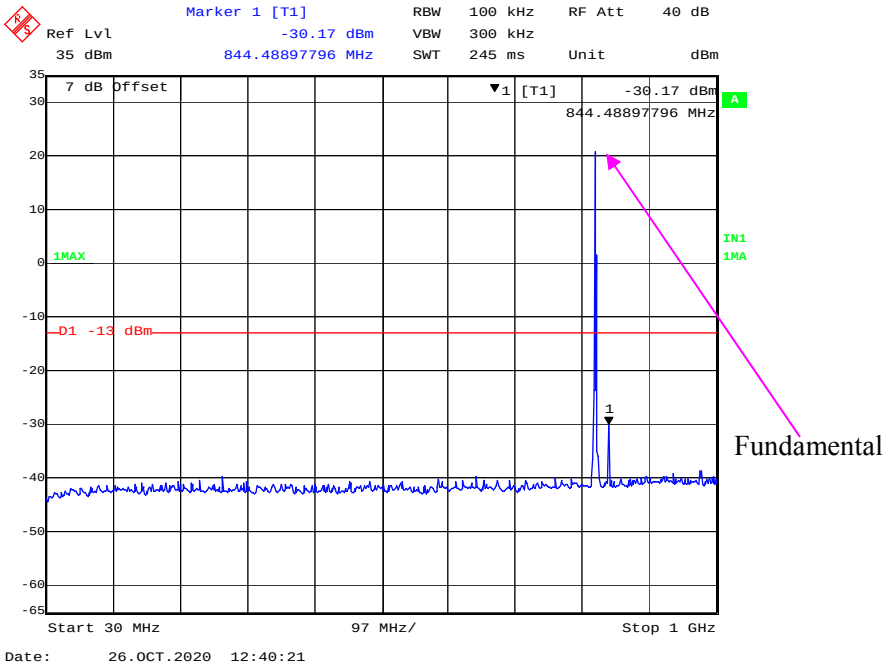
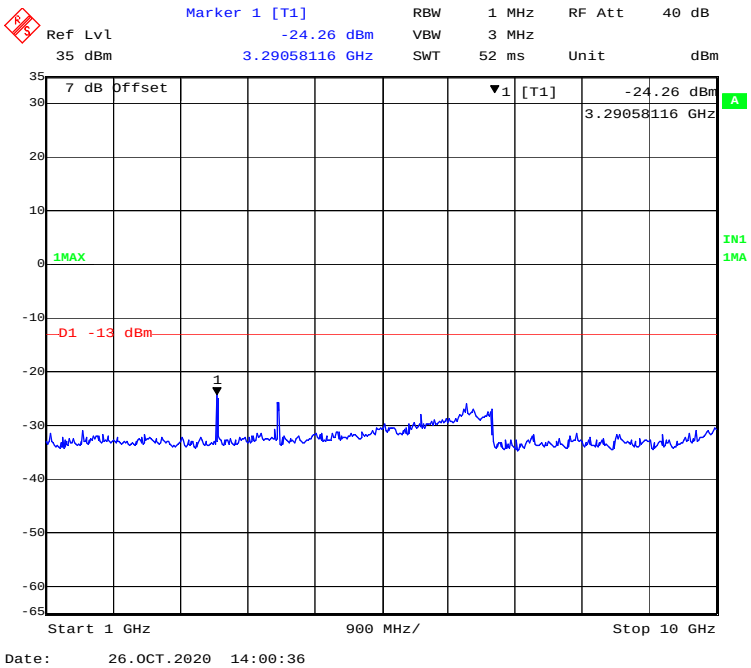
LTE Band 5:

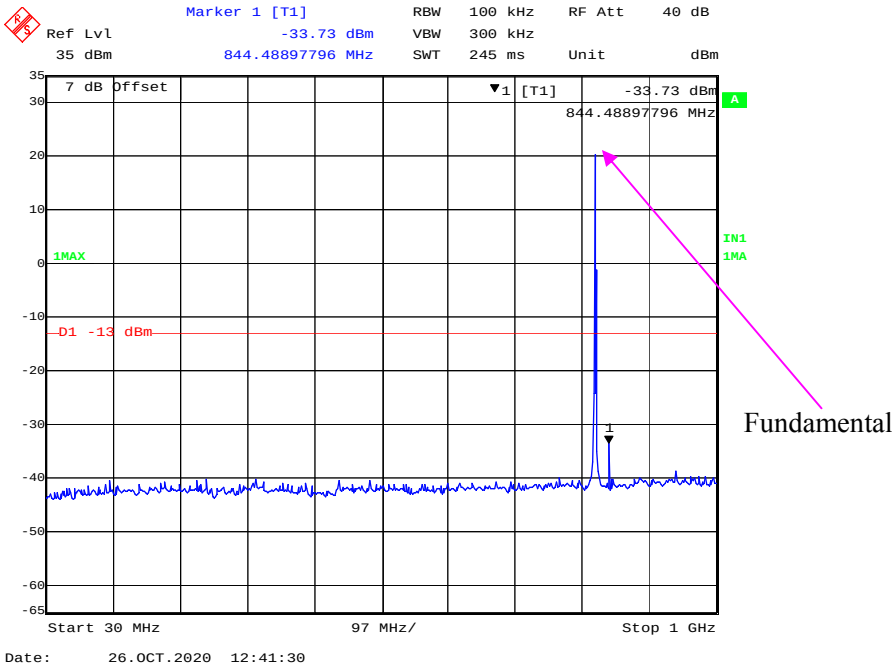
30 MHz - 1 GHz (QPSK, 1.4 MHz, Low Channel)



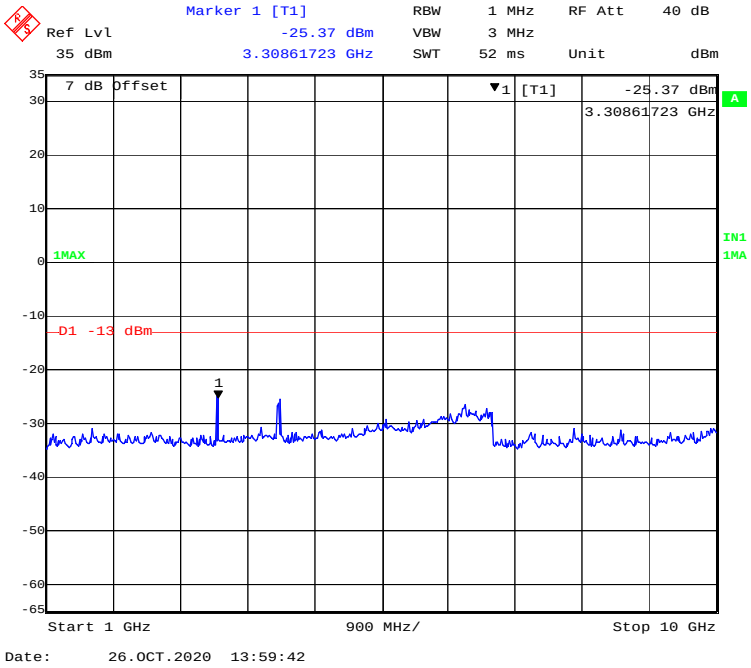
1 GHz – 10 GHz (QPSK, 1.4 MHz, Low Channel)



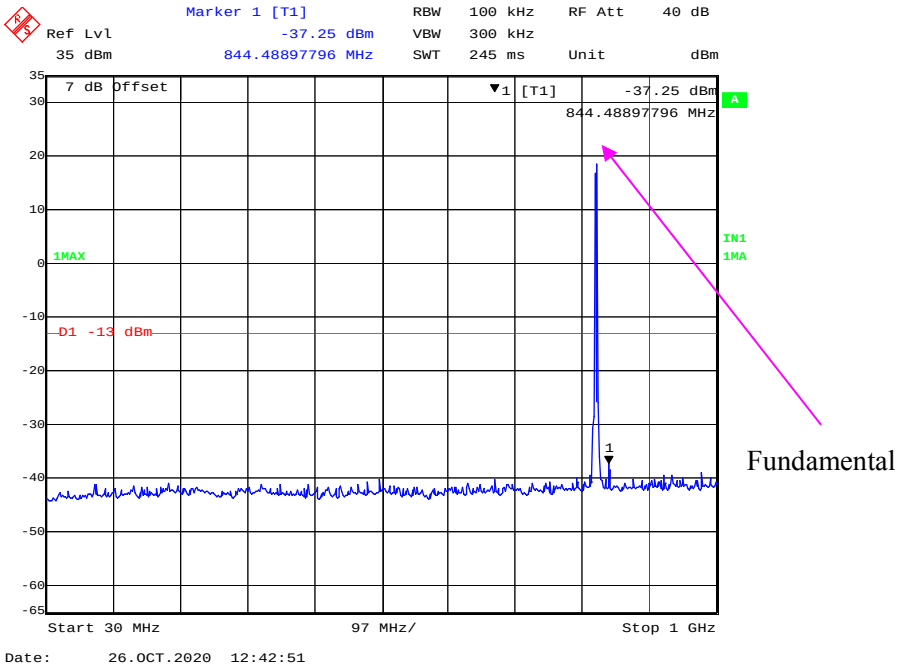
30 MHz - 1 GHz (16QAM, 1.4 MHz, Low Channel)



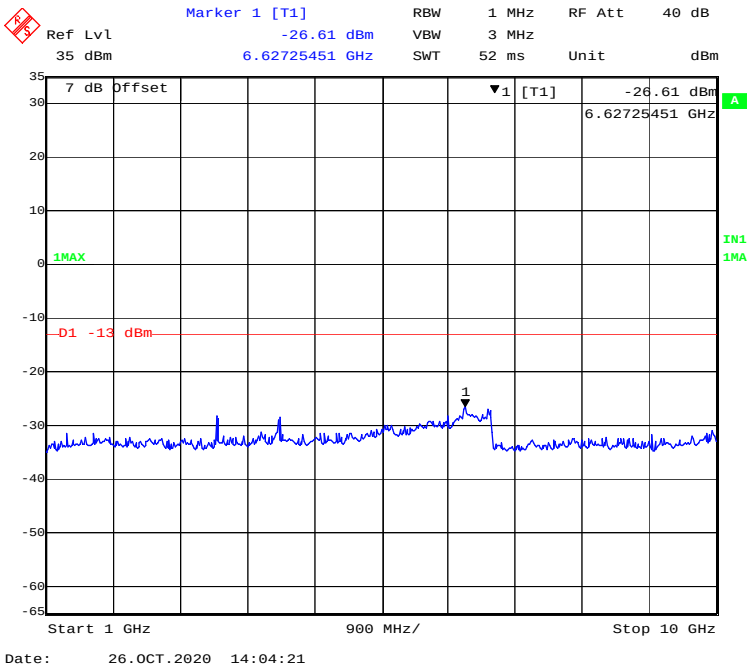
1 GHz – 10 GHz (16QAM, 1.4 MHz, Low Channel)



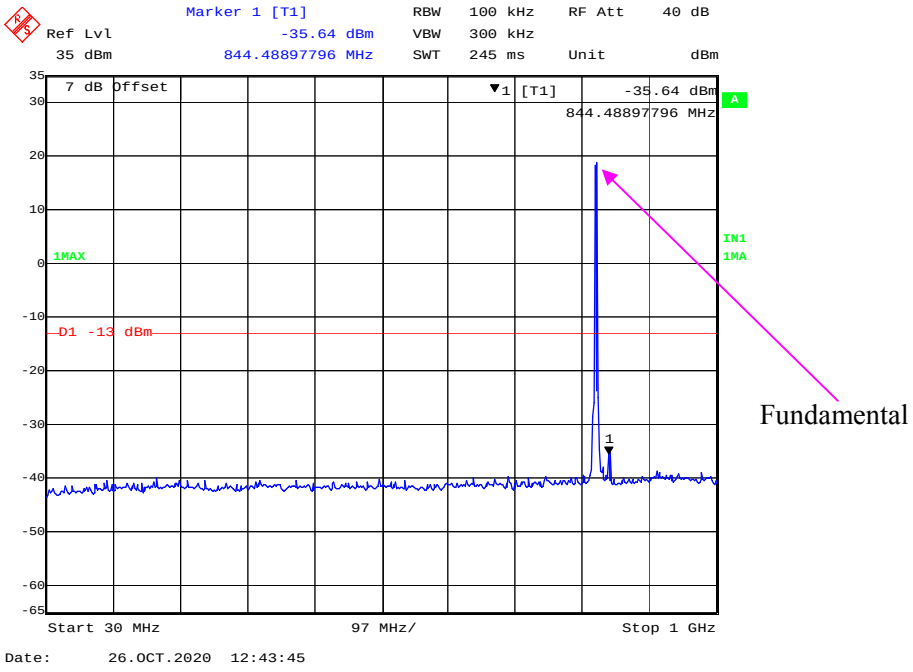
30 MHz - 1 GHz (QPSK, 3.0 MHz, Low Channel)



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

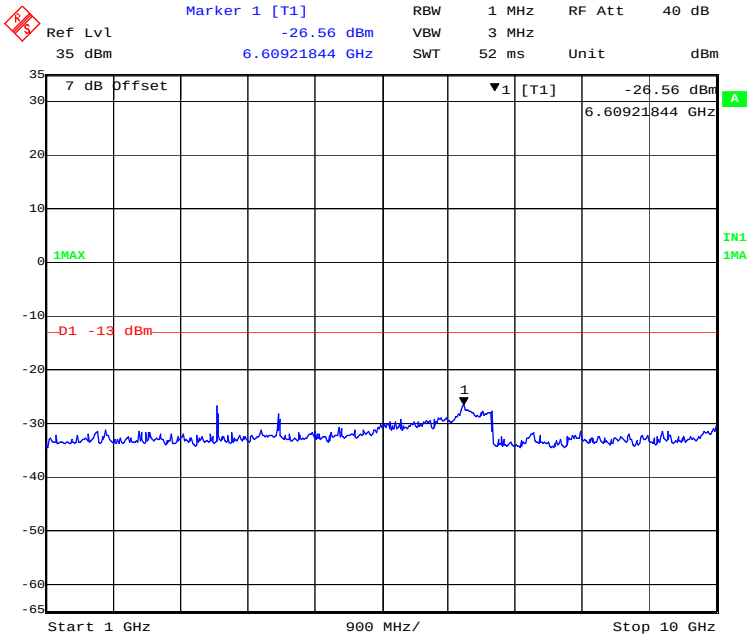


30 MHz - 1 GHz (16QAM, 3.0 MHz, Low Channel)



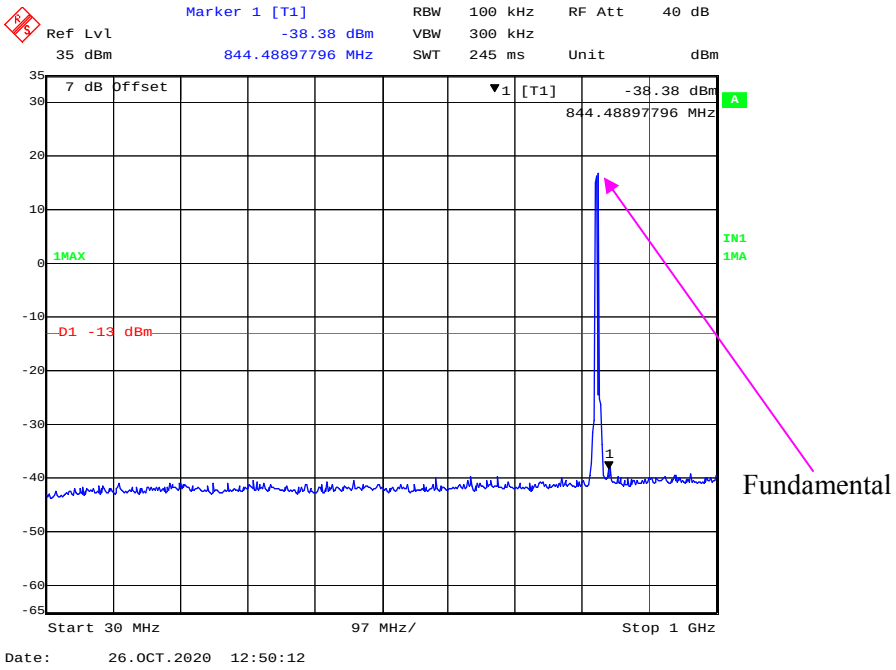
Date: 26.OCT.2020 12:43:45

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



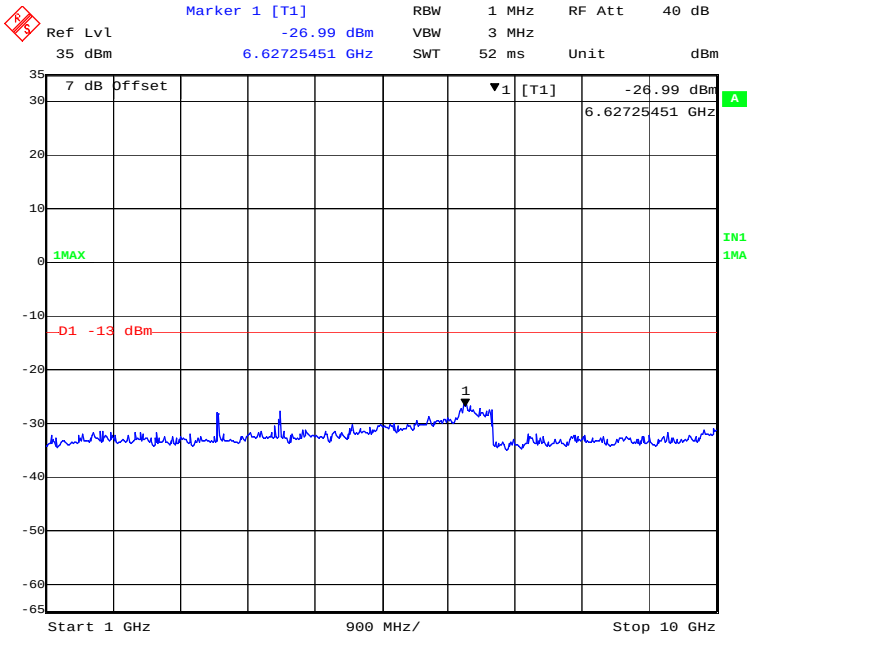
Date: 26.OCT.2020 14:03:33

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



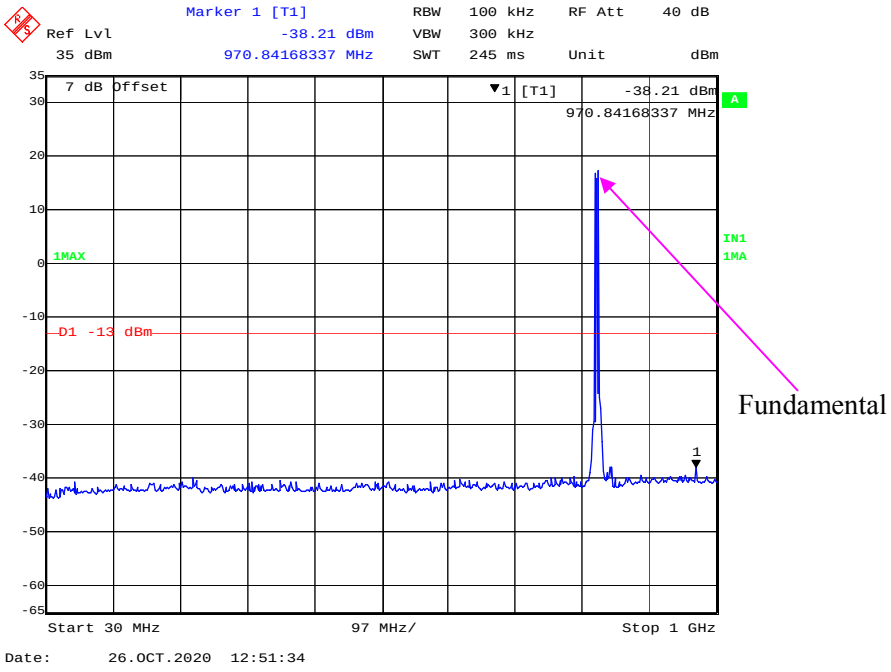
Date: 26.OCT.2020 12:50:12

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

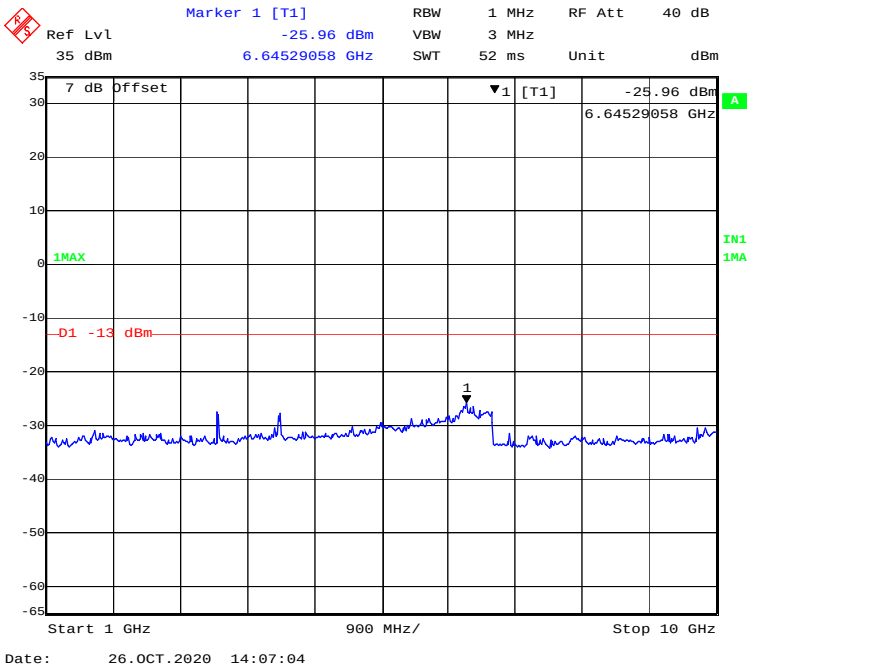


Date: 26.OCT.2020 14:06:45

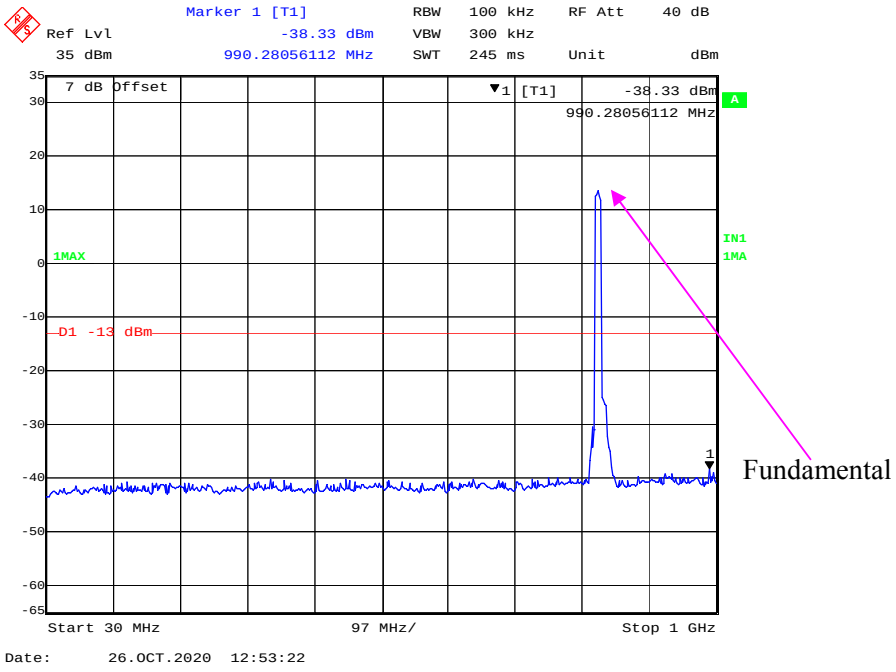
30 MHz - 1 GHz (16QAM, 5.0 MHz, Low Channel)



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



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



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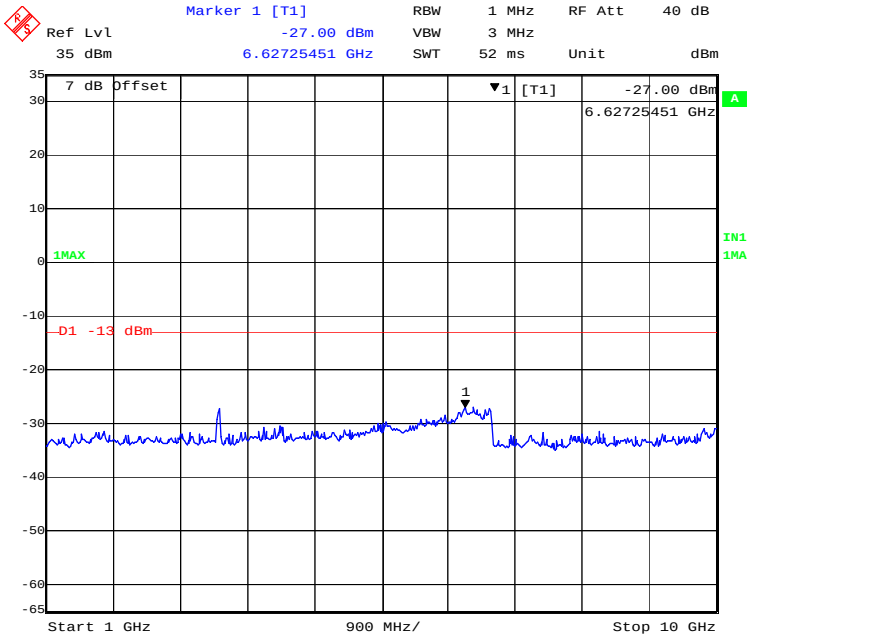
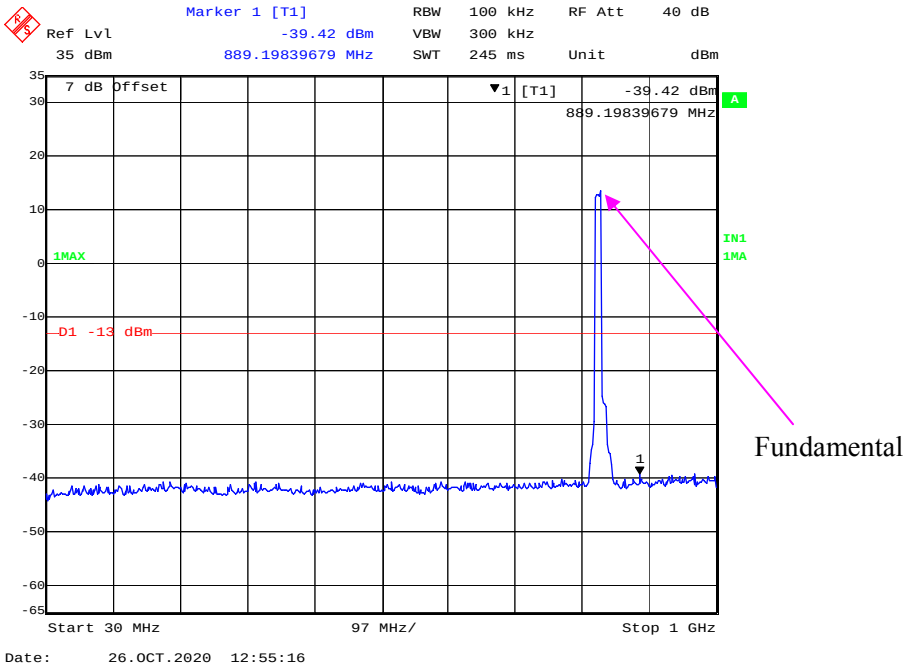
1 GHz – 10 GHz (QPSK, 10.0 MHz, Low Channel)



Date: 26.OCT.2020 14:09:05

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

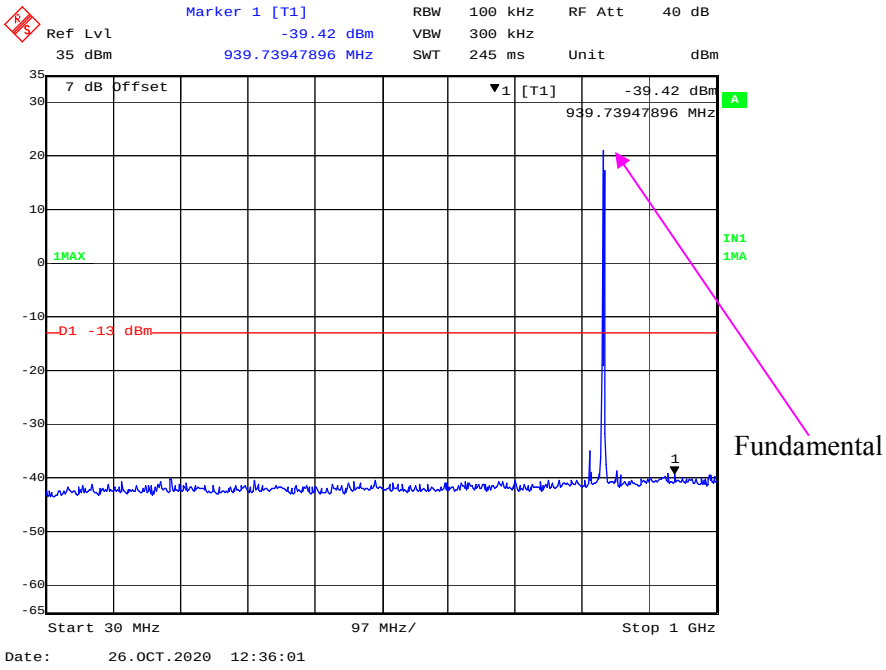


Date: 26.OCT.2020 12:55:16

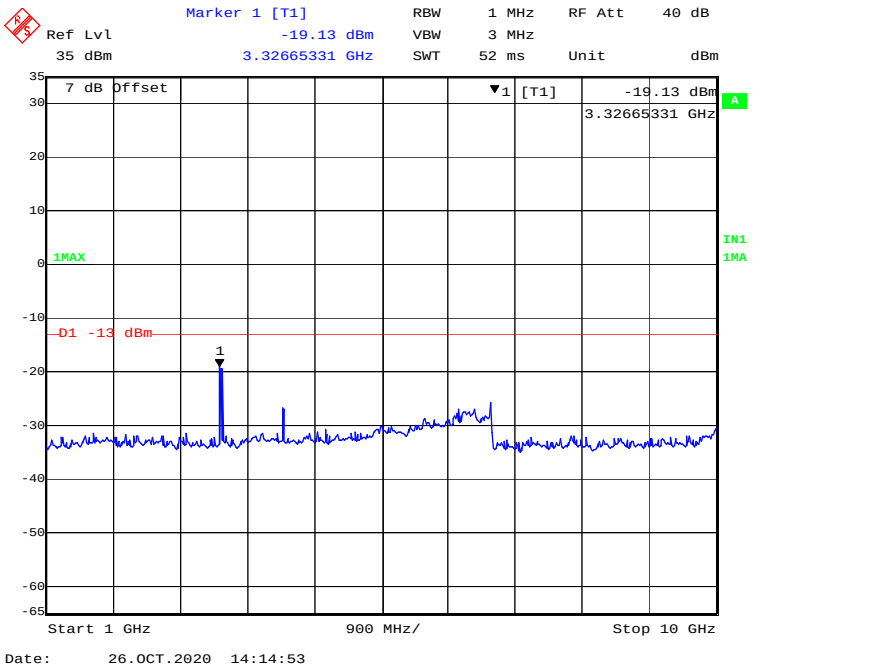
1 GHz – 10 GHz (16QAM, 10.0 MHz, Low Channel)

Date: 26.OCT.2020 14:08:16

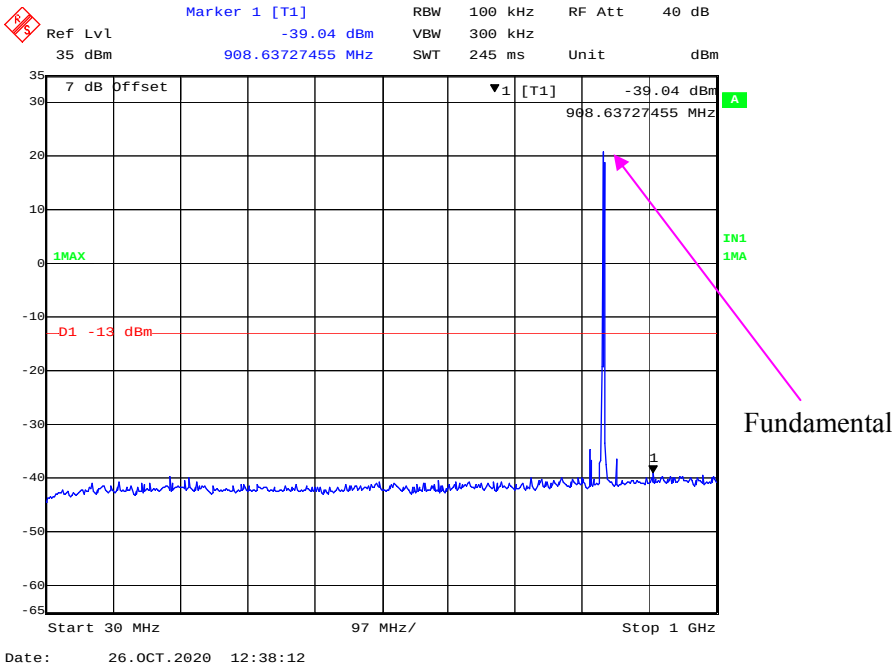
30 MHz - 1 GHz (QPSK, 1.4 MHz, Middle Channel)



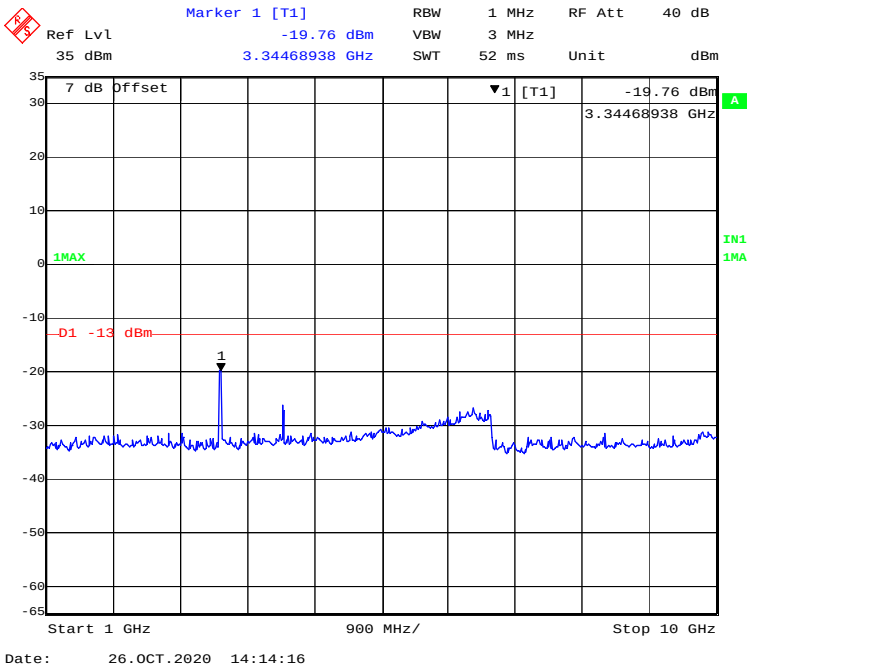
1 GHz – 10 GHz (QPSK, 1.4 MHz, Middle Channel)



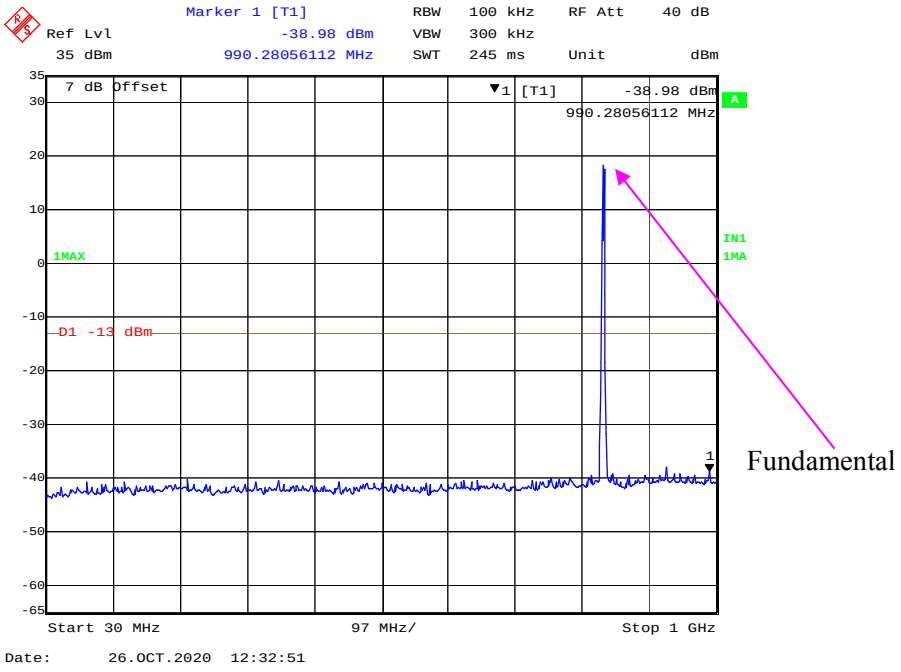
30 MHz - 1 GHz (16QAM, 1.4 MHz, Middle Channel)



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



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



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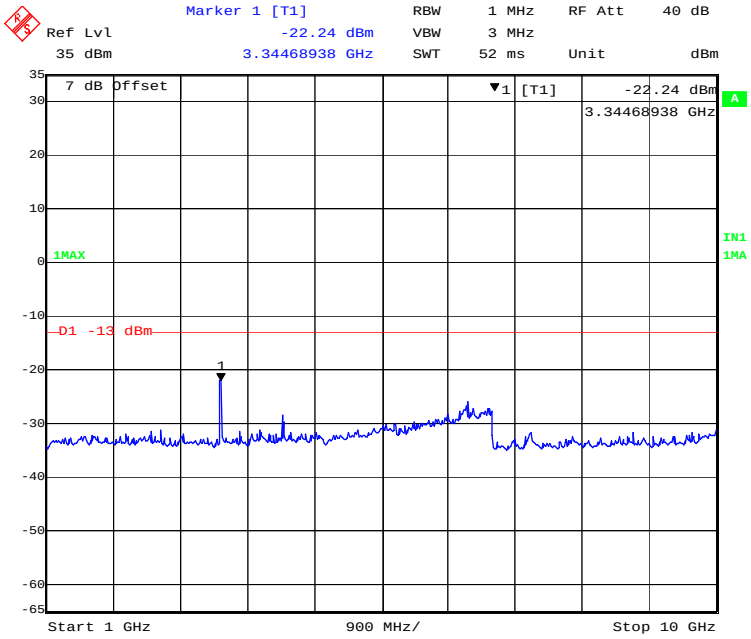
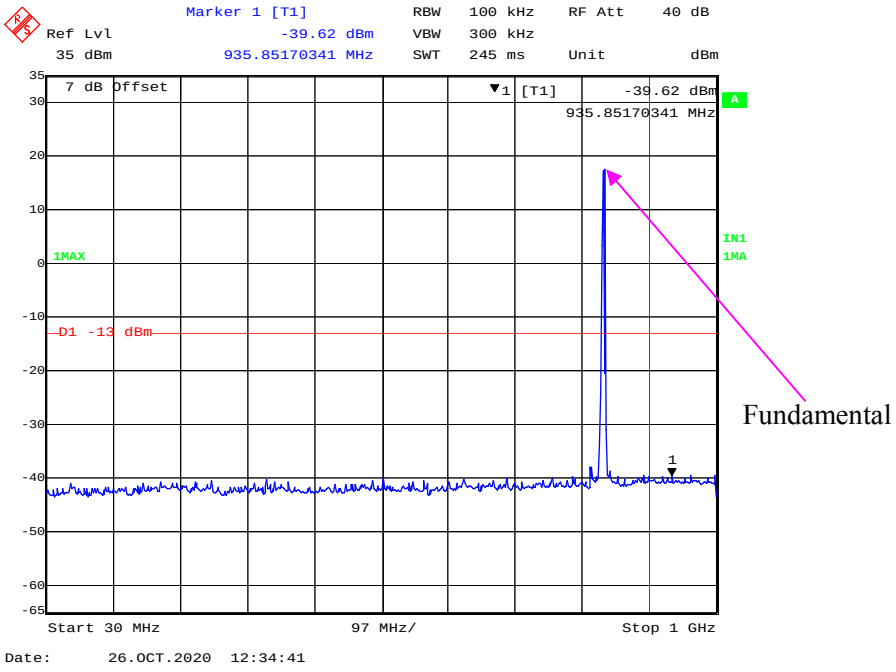
1 GHz – 10 GHz (QPSK, 3.0 MHz, Middle Channel)

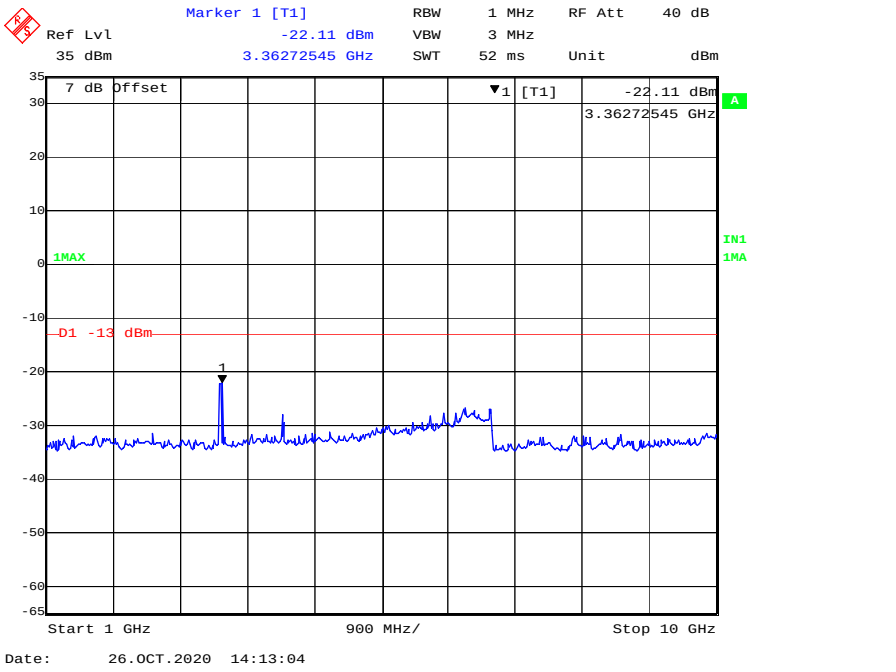


Date: 26.OCT.2020 14:13:40

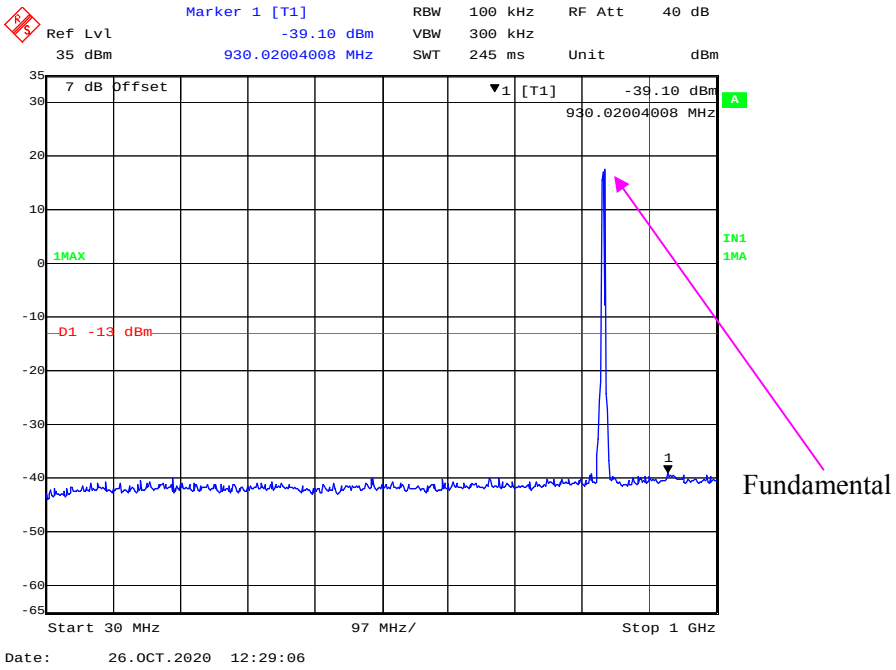
30 MHz - 1 GHz (16QAM, 3.0 MHz, Middle Channel)



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



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



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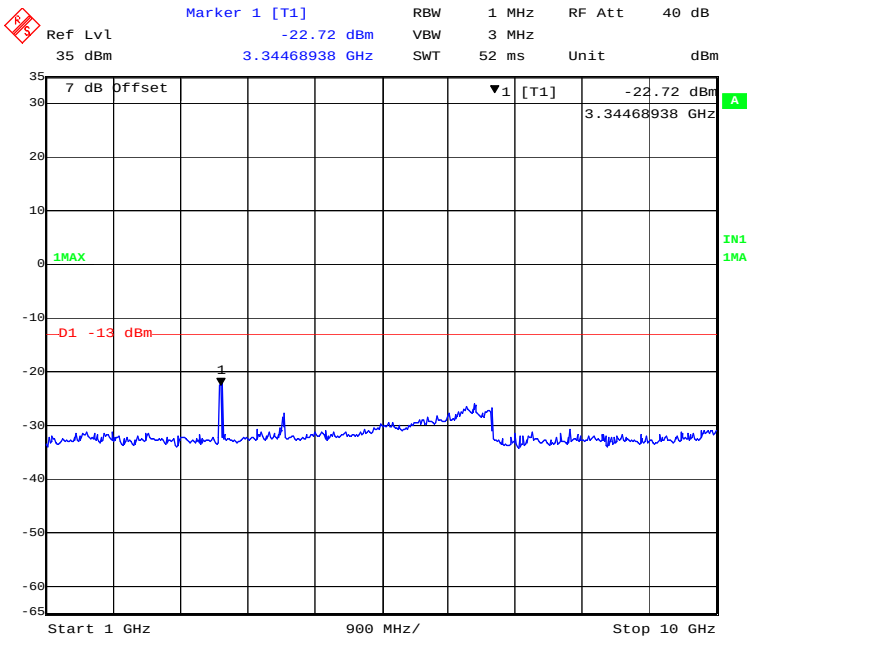
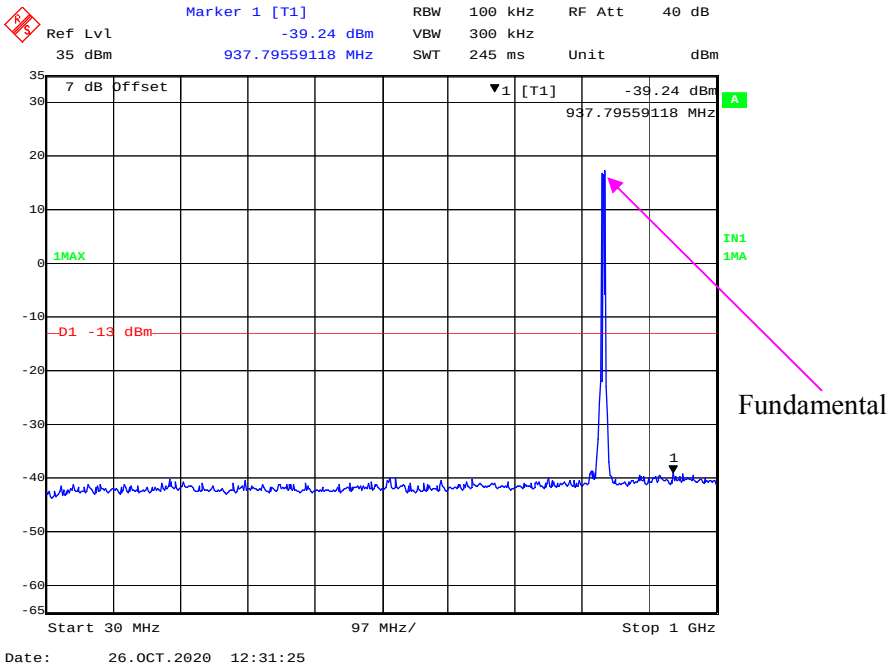
1 GHz – 10 GHz (QPSK, 5.0MHz, Middle Channel)

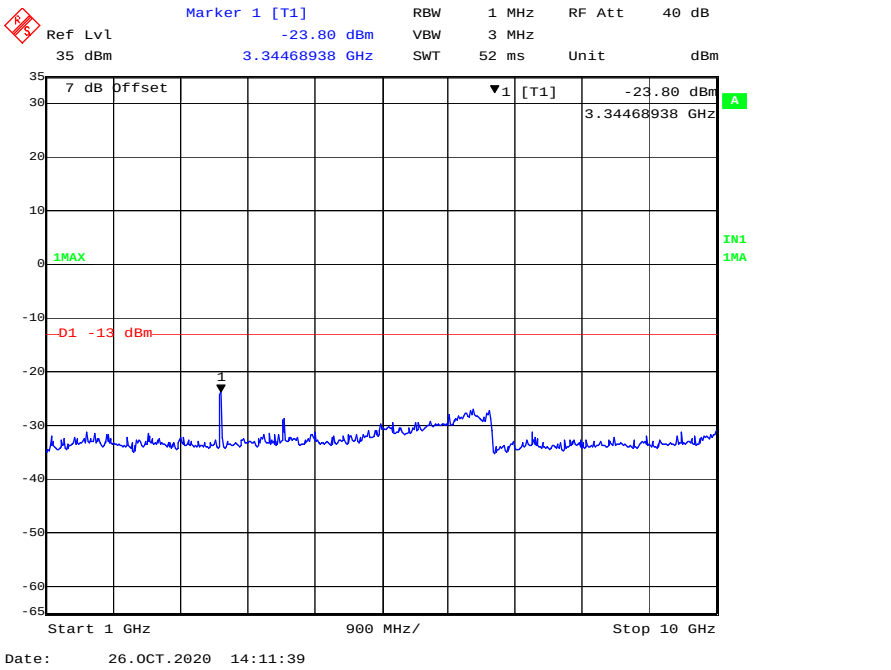


Date: 26.OCT.2020 14:12:21

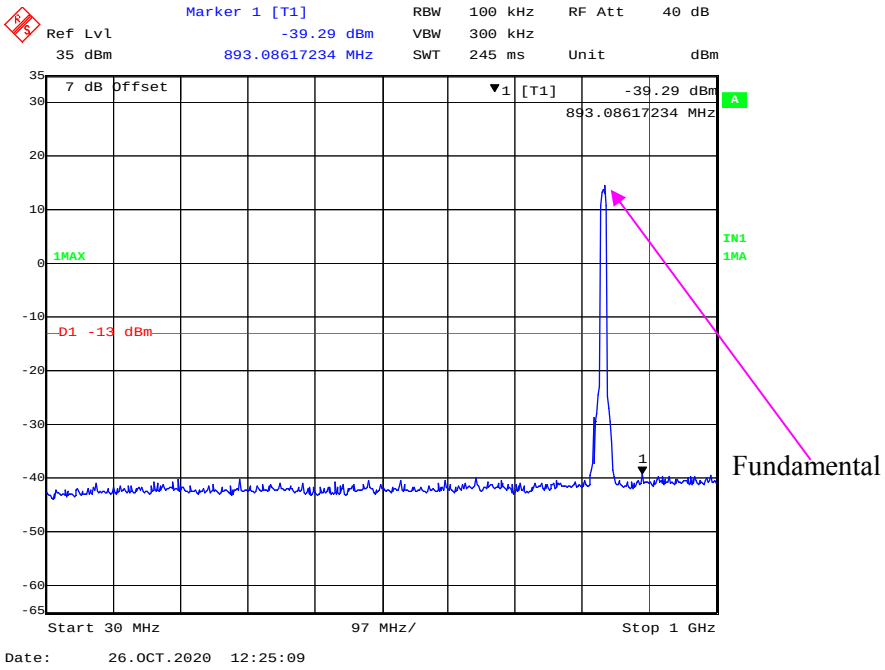
30 MHz - 1 GHz (16QAM, 5.0 MHz, Middle Channel)



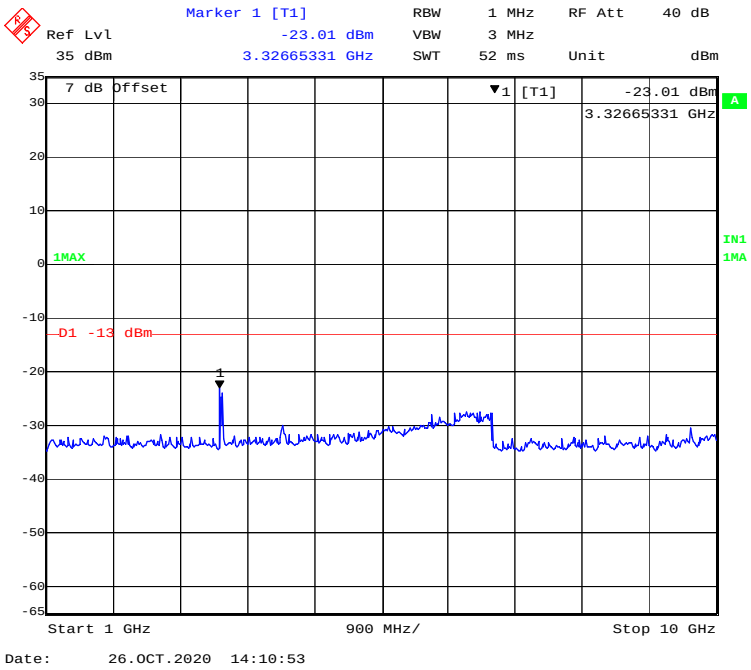
1 GHz – 10 GHz (16QAM, 5.0MHz, Middle Channel)



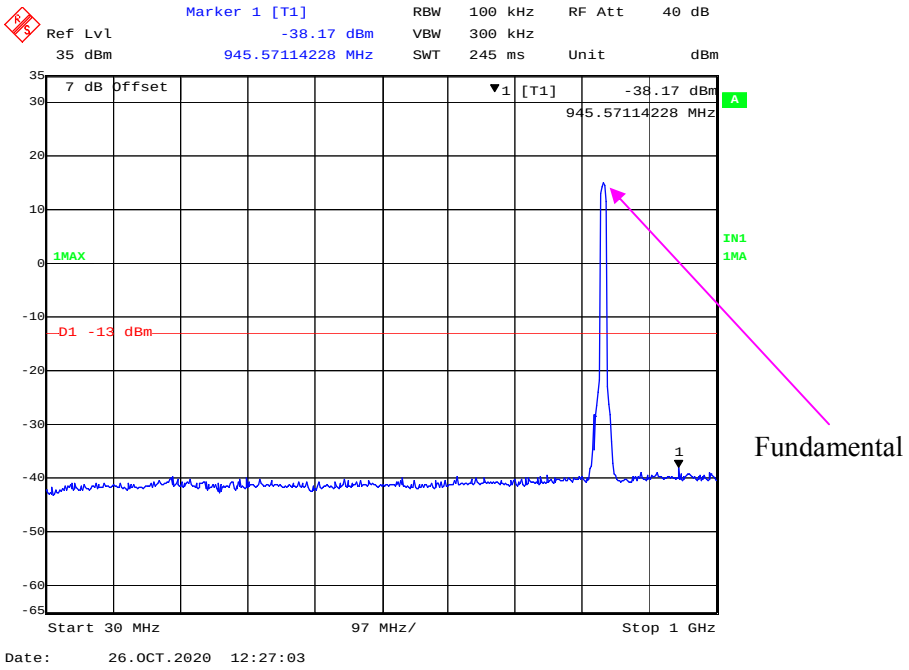
30 MHz - 1 GHz (QPSK, 10.0 MHz, Middle Channel)



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



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

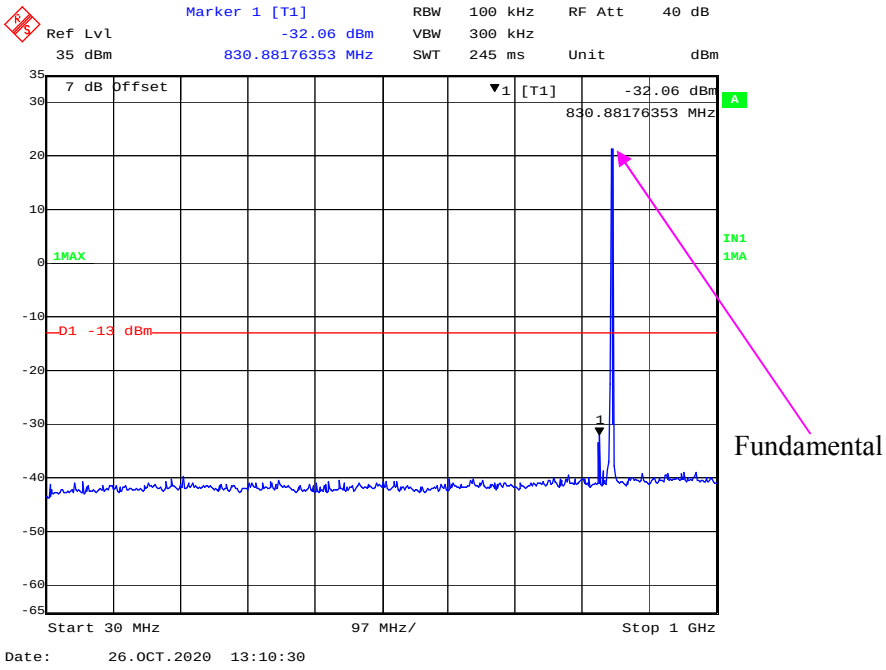


Date: 26.OCT.2020 12:27:03

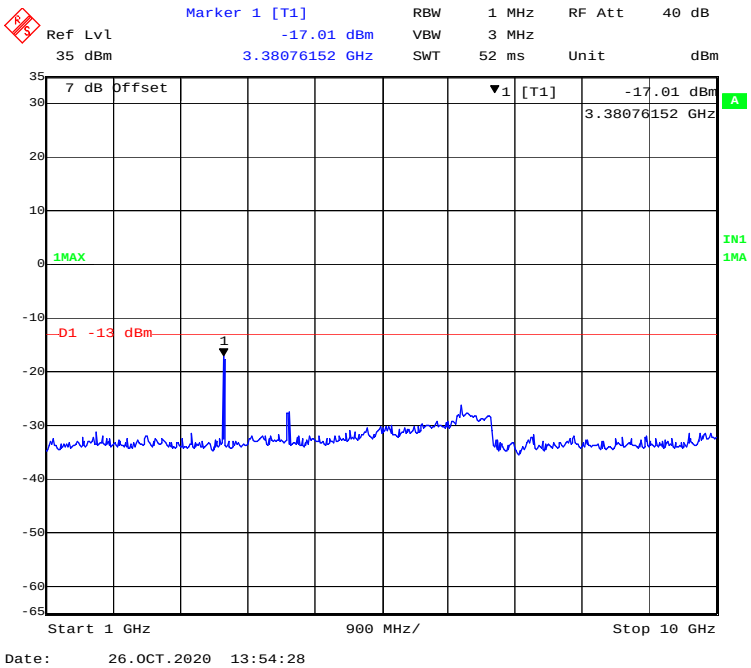
1 GHz – 10 GHz (16QAM, 10.0 MHz, Middle Channel)

Date: 26.OCT.2020 14:10:17

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

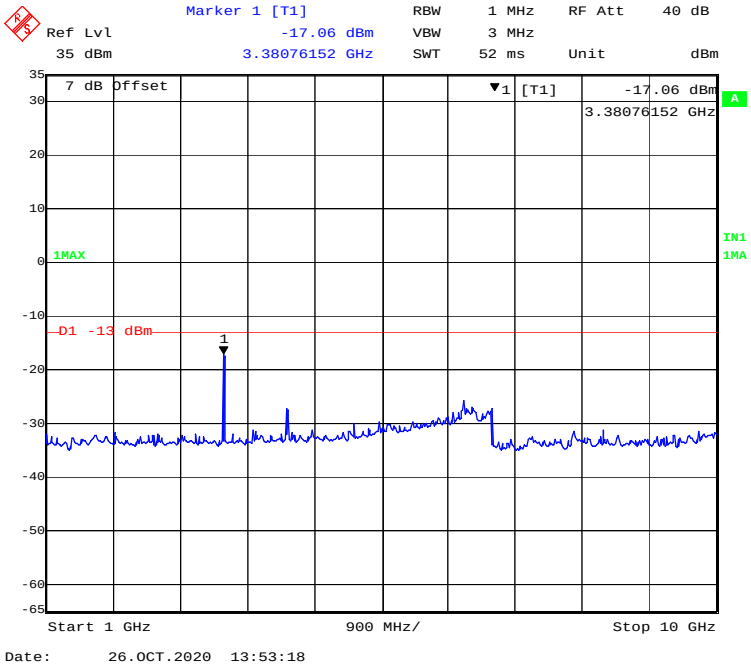


1 GHz – 10 GHz (QPSK, 1.4 MHz, High Channel)

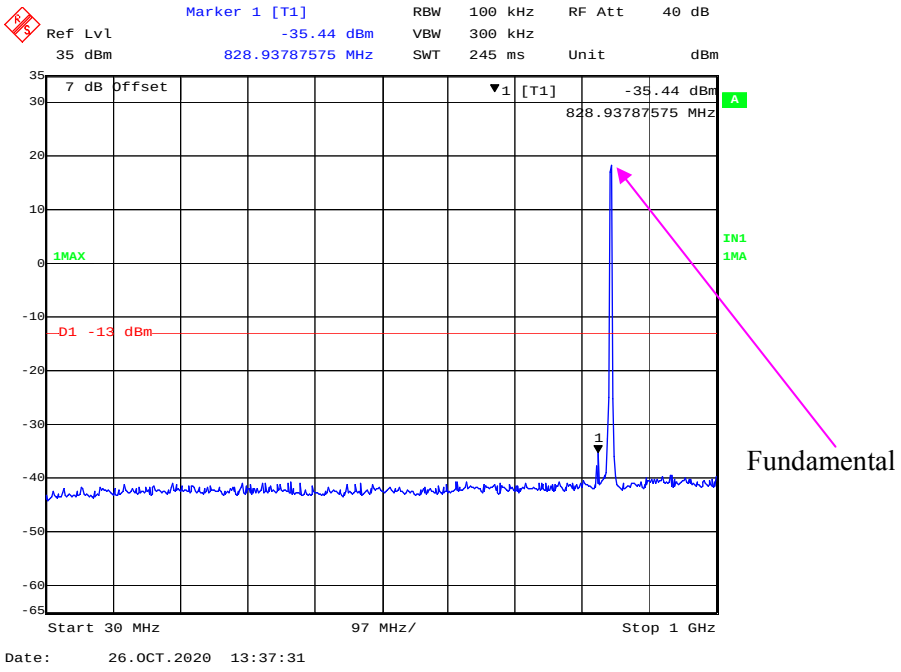


30 MHz - 1 GHz (16QAM, 1.4 MHz, High Channel)

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

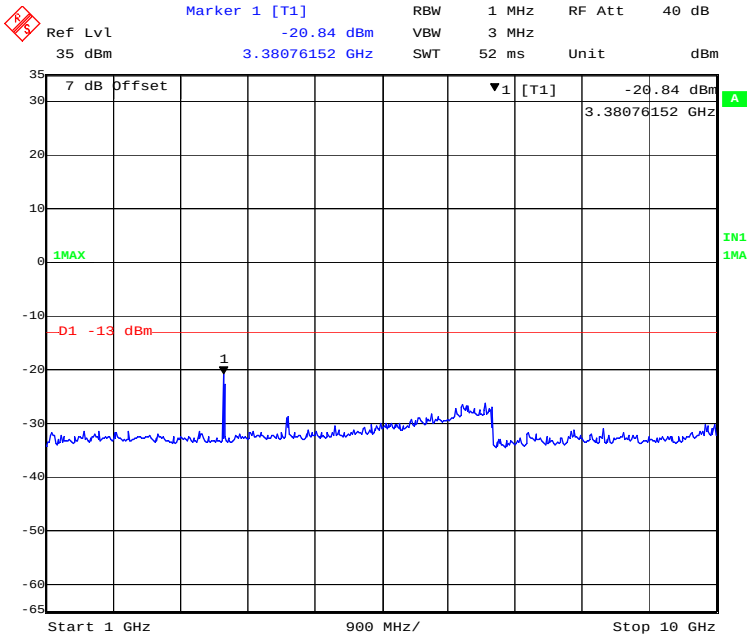


30 MHz - 1 GHz (QPSK, 3.0 MHz, High Channel)



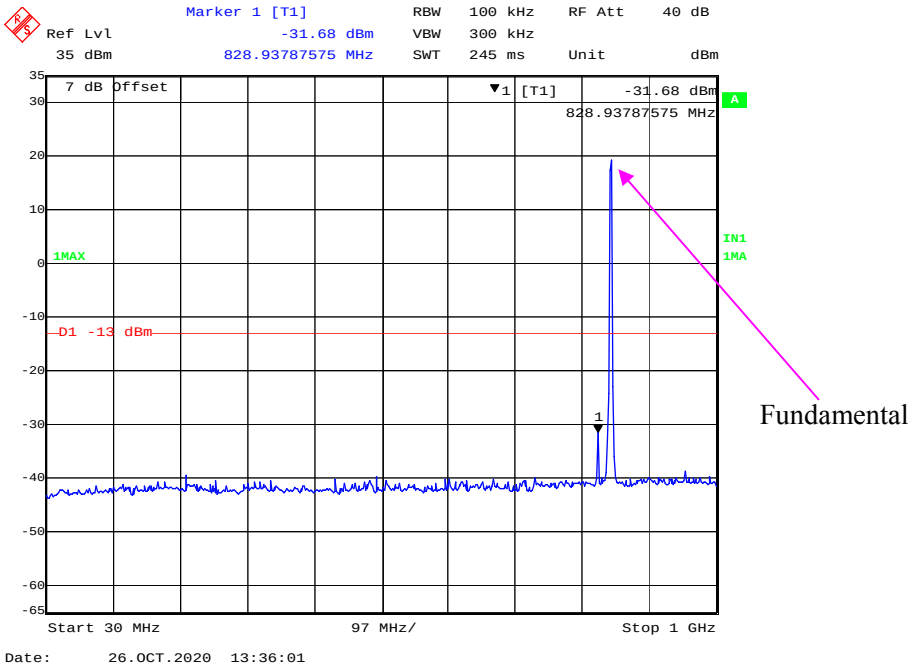
Date: 26.OCT.2020 13:37:31

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

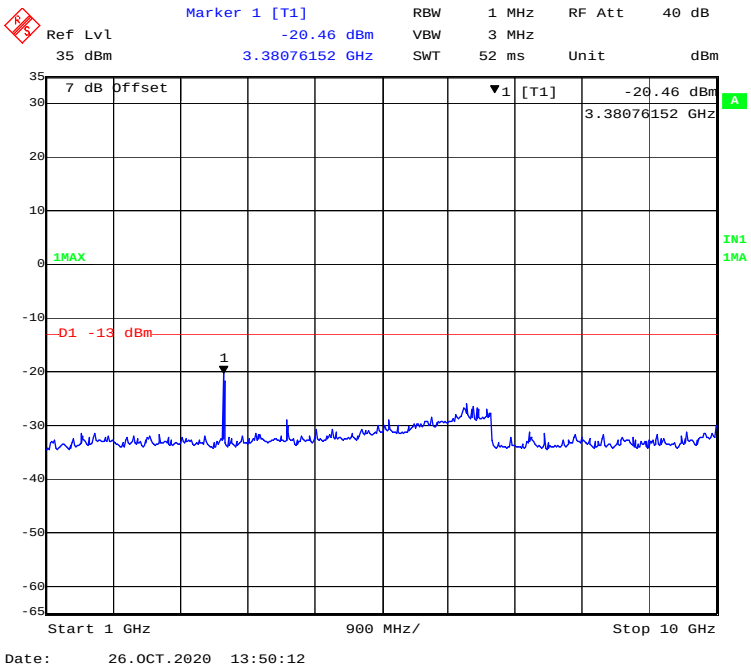


Date: 26.OCT.2020 13:51:05

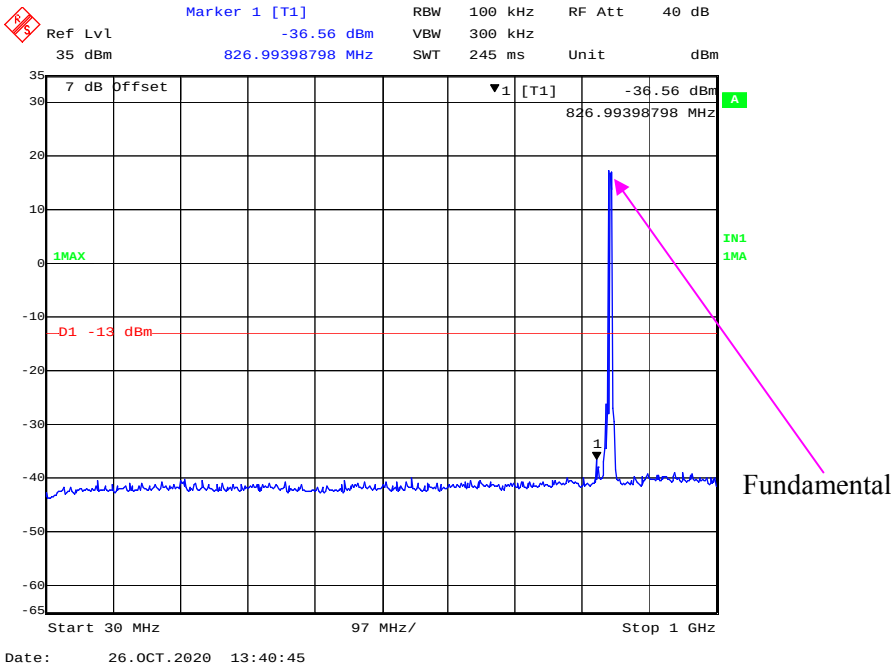
30 MHz - 1 GHz (16QAM, 3.0 MHz, High Channel)



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

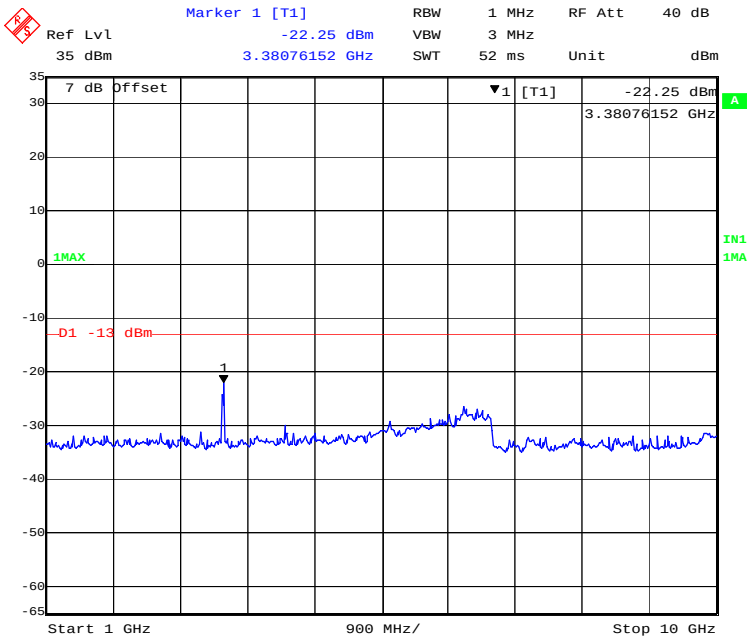


30 MHz - 1 GHz (QPSK, 5.0 MHz, High Channel)



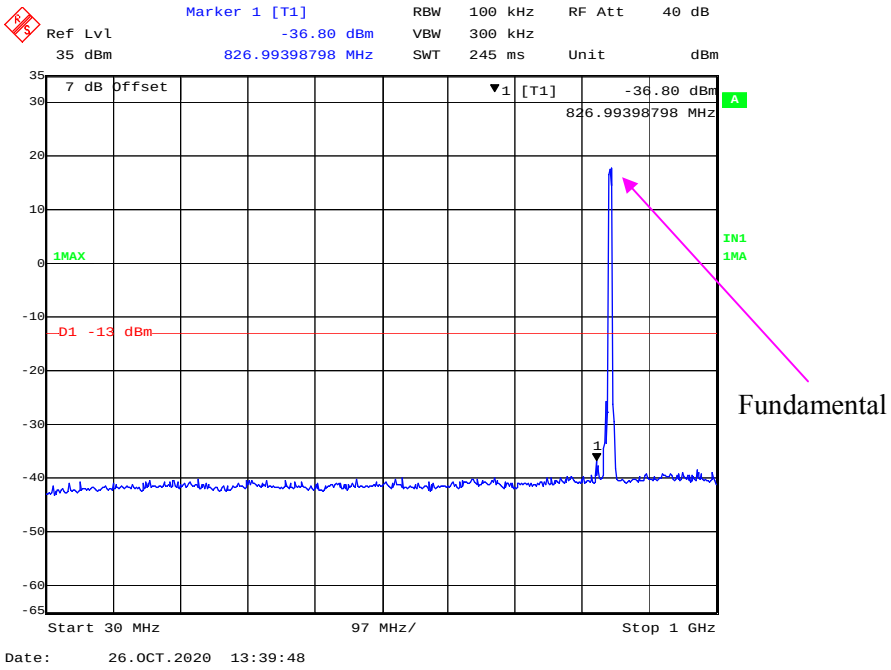
Date: 26.OCT.2020 13:40:45

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

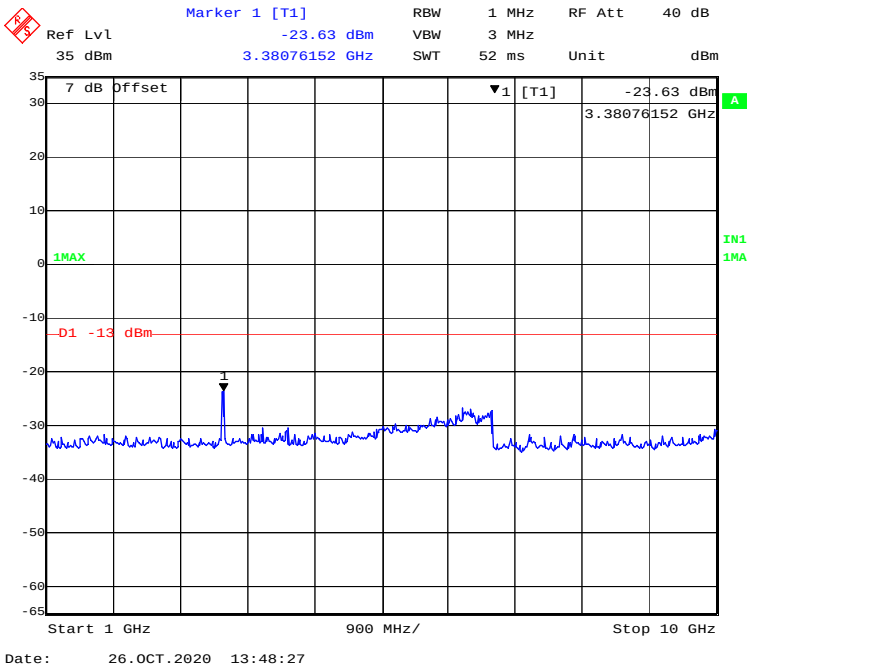


Date: 26.OCT.2020 13:49:12

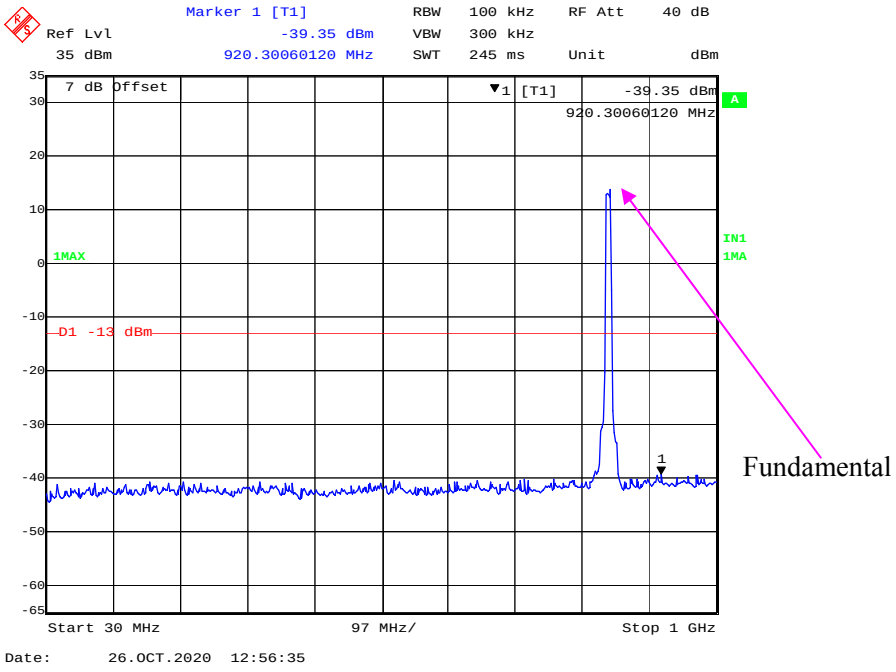
30 MHz - 1 GHz (16QAM, 5.0 MHz, High Channel)



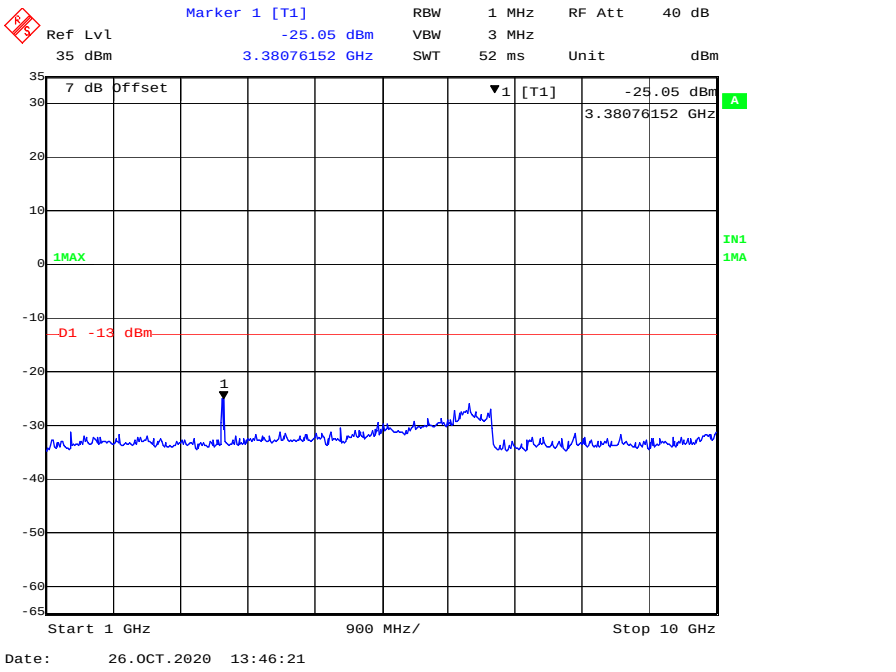
1 GHz – 10 GHz (16QAM, 5.0MHz, High Channel)



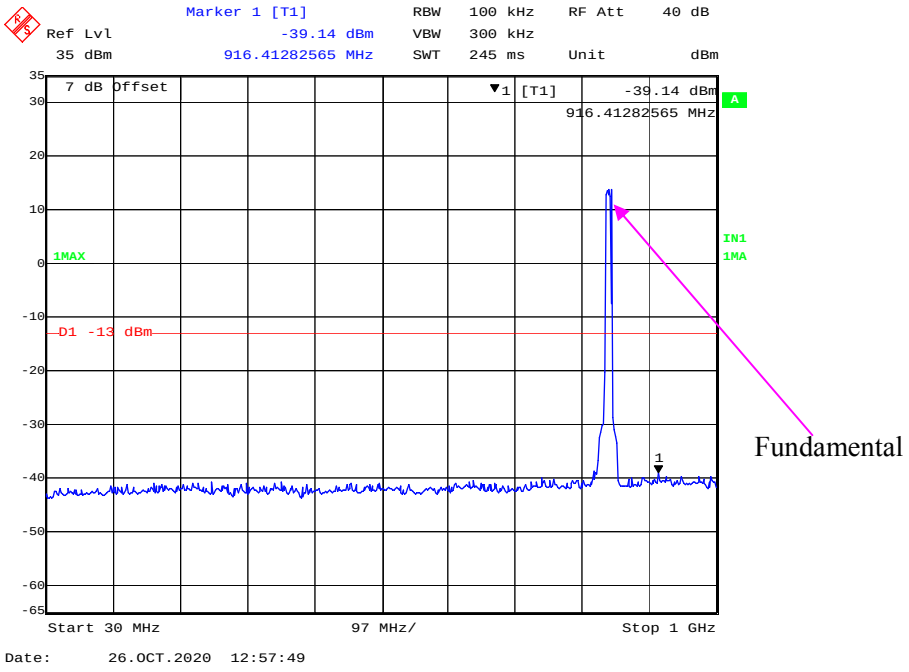
30 MHz - 1 GHz (QPSK, 10.0 MHz, High Channel)



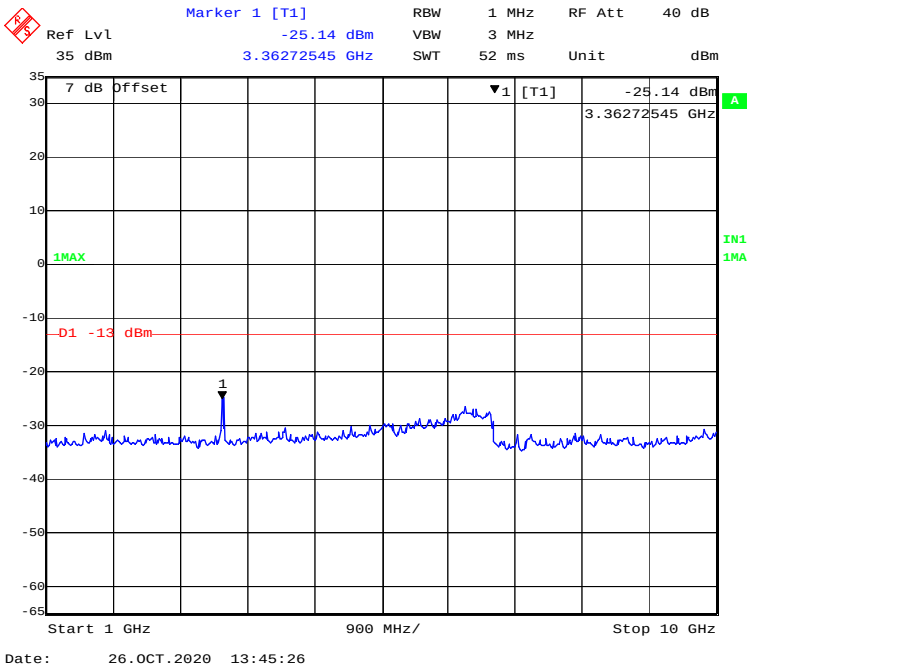
1 GHz – 10 GHz (QPSK, 10.0 MHz, High Channel)



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

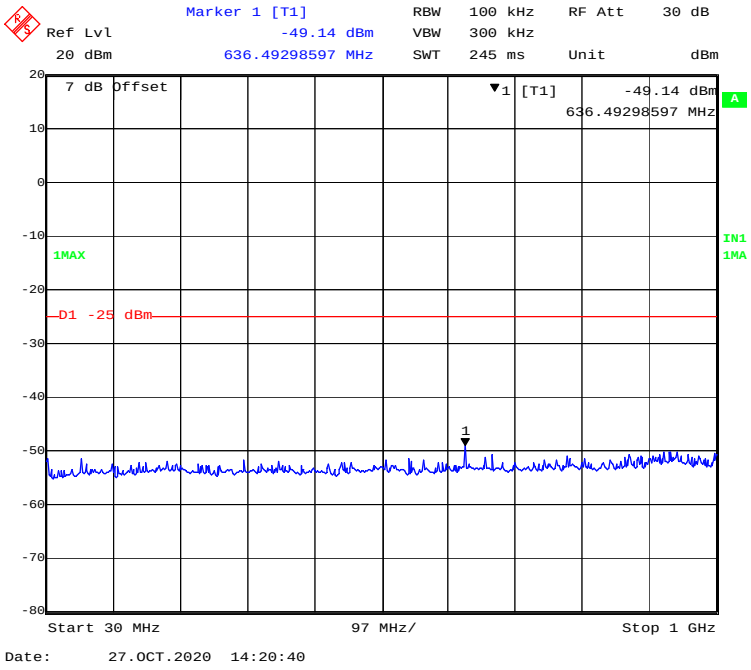


1 GHz – 10 GHz (16QAM, 10.0 MHz, High Channel)

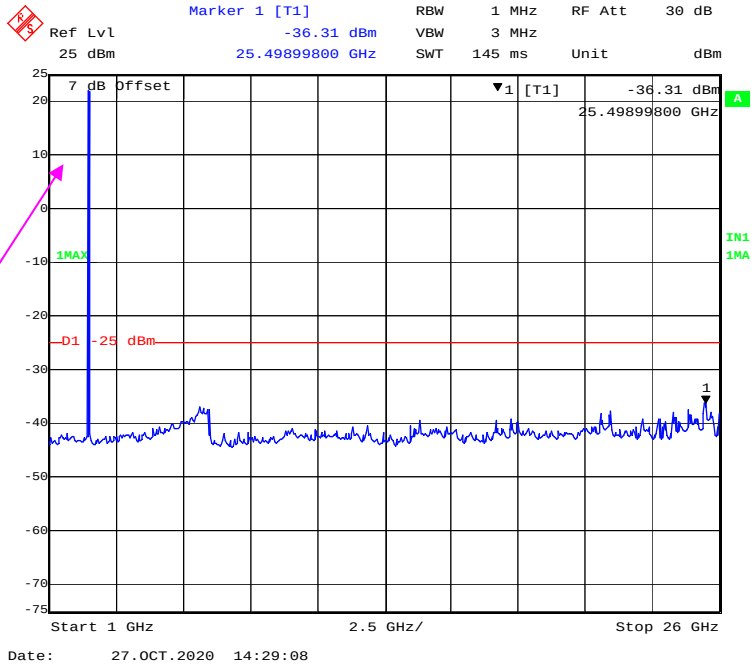


LTE Band 7:

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

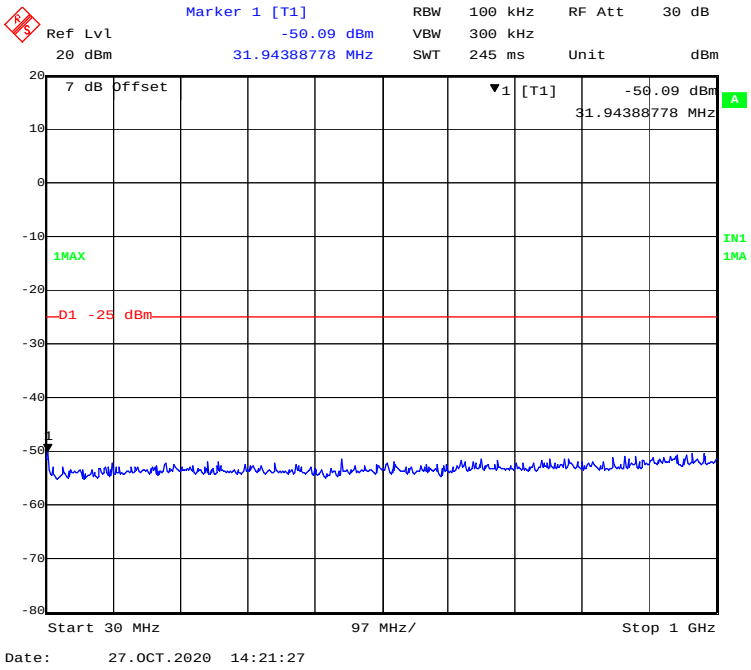


1 GHz – 26 GHz (5 MHz, QPSK, Low Channel)

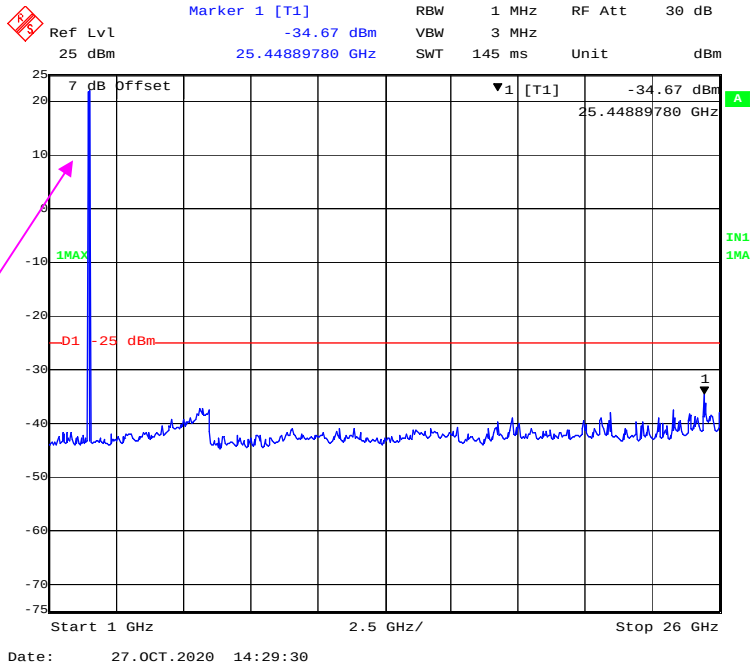


Fundamental

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

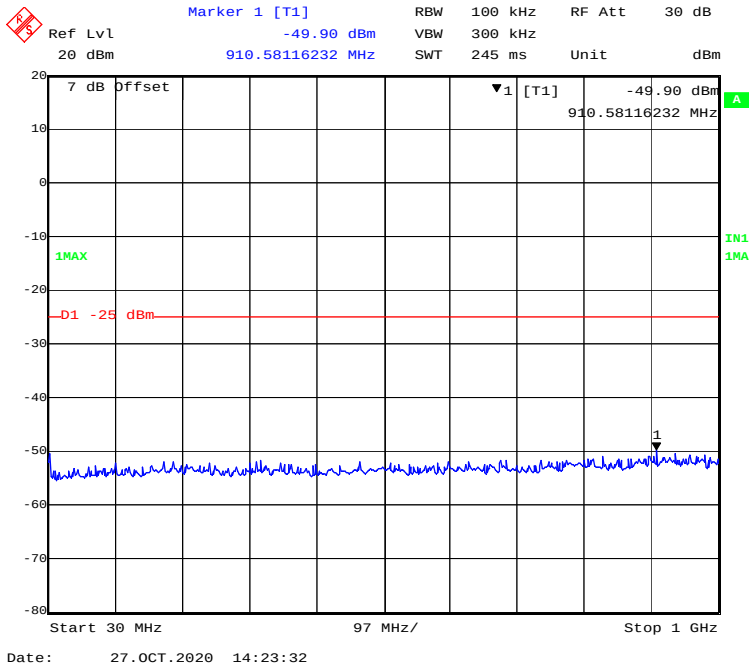


1 GHz – 26 GHz (5 MHz, 16-QAM, Low Channel)

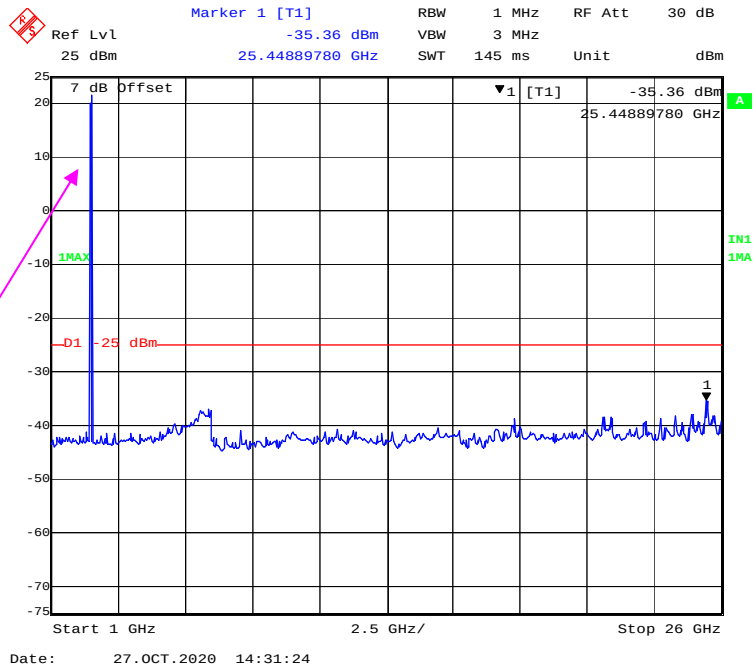


Fundamental

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

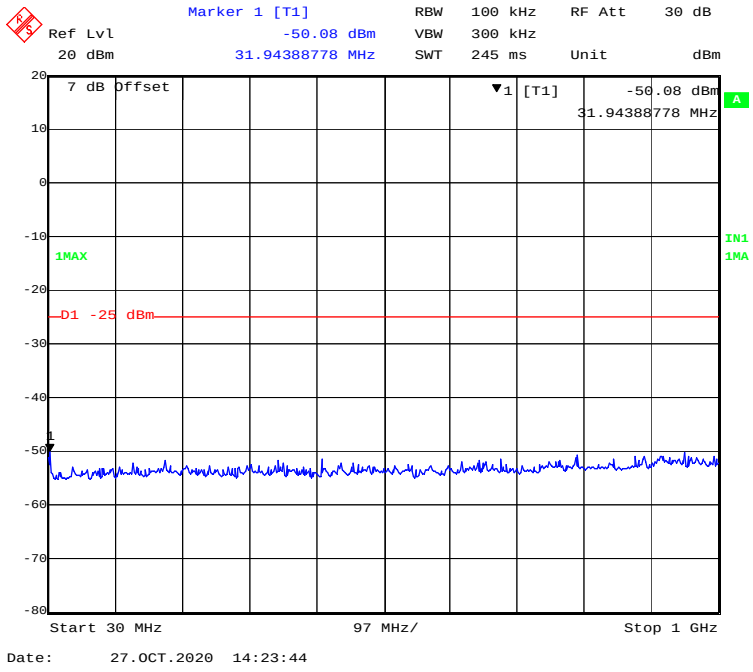


1 GHz – 26 GHz (10MHz, QPSK, Low Channel)

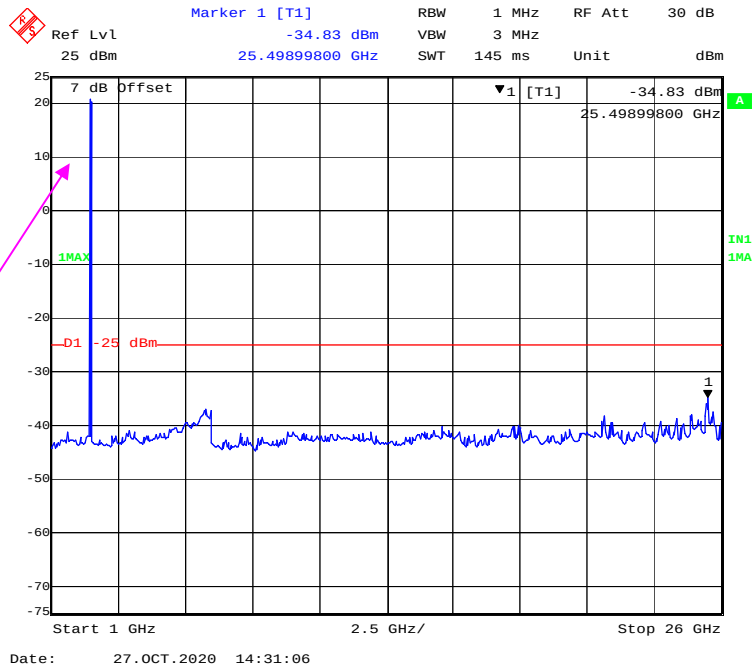


Fundamental

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

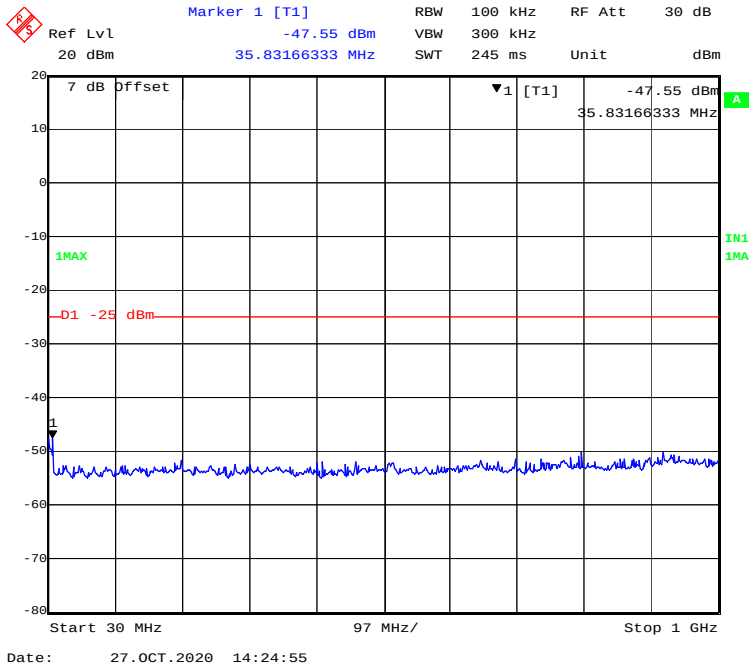


1 GHz – 26 GHz (10 MHz, 16-QAM, Low Channel)

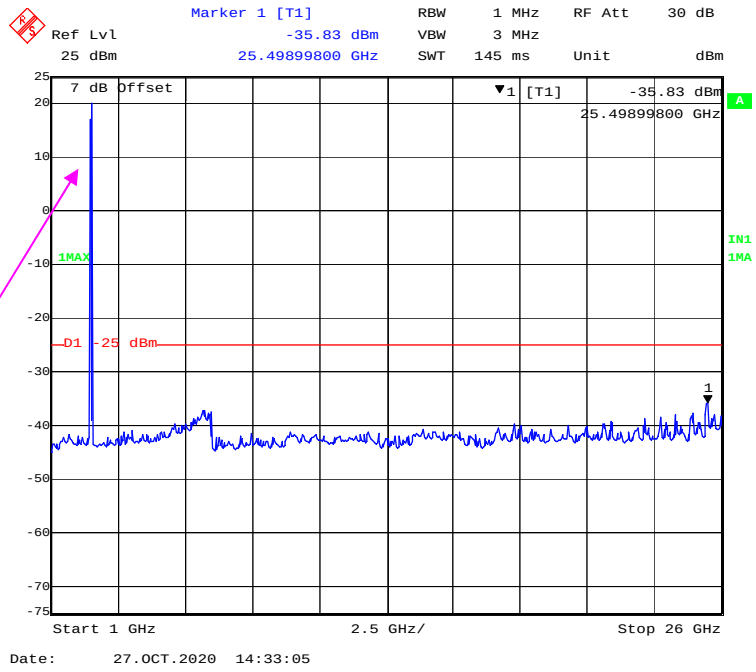


Fundamental

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

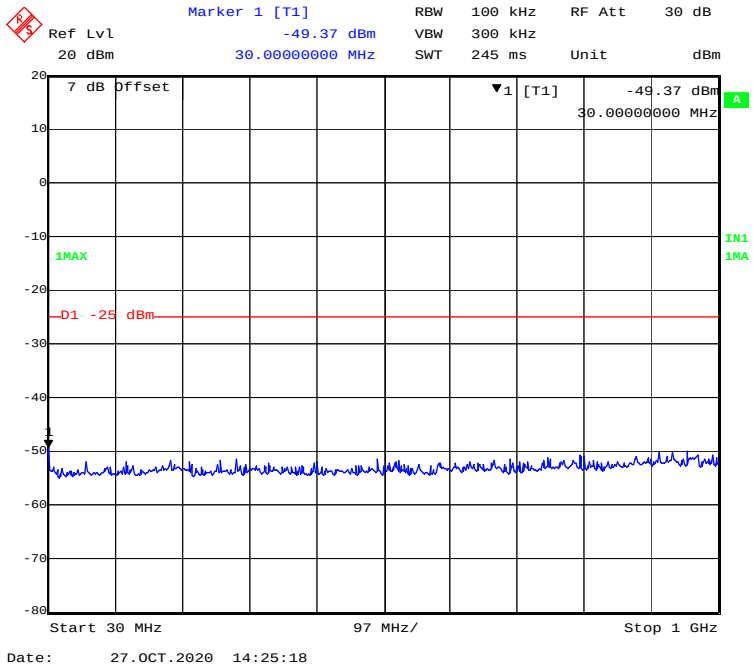


1 GHz – 26 GHz (15MHz, QPSK, Low Channel)

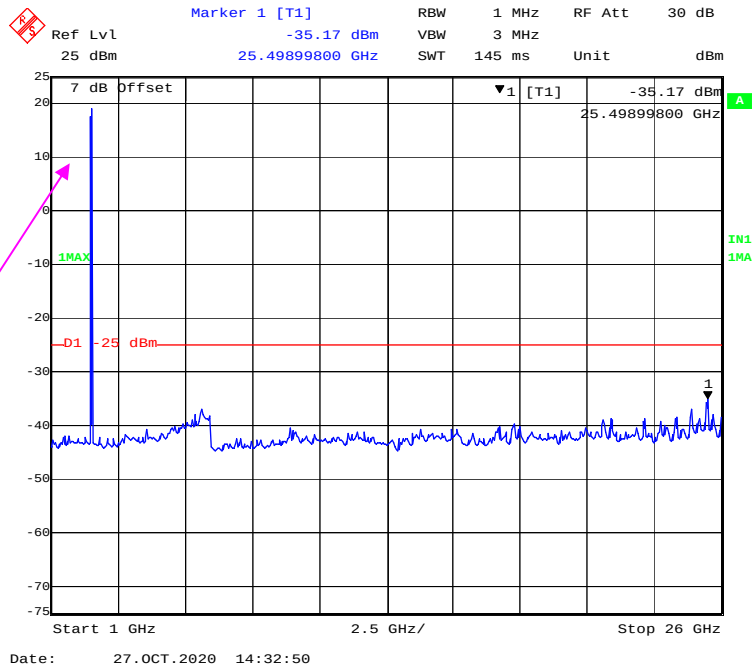


Fundamental

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

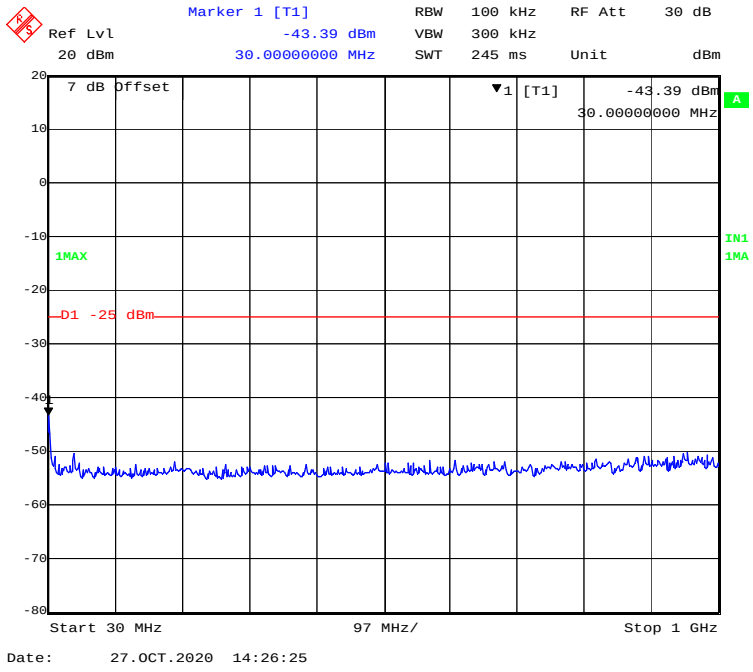


1 GHz – 26 GHz (15 MHz, 16-QAM, Low Channel)

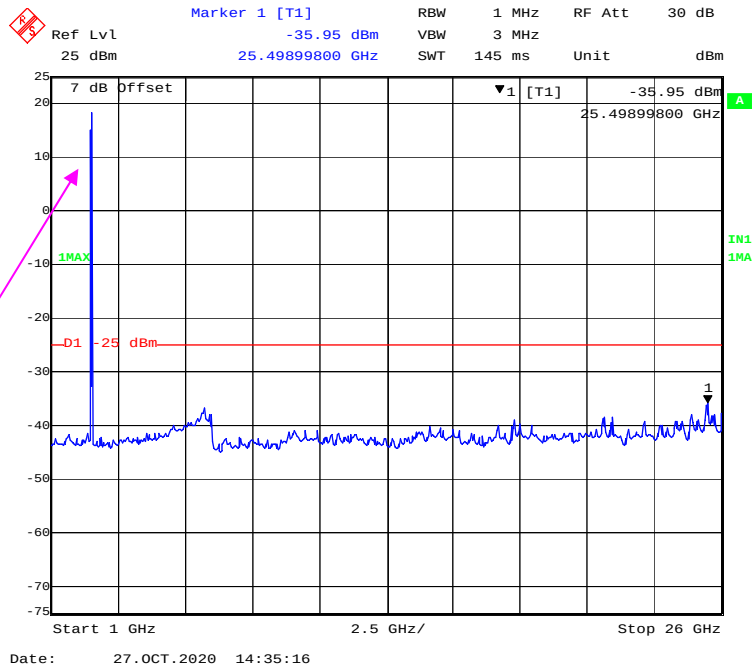


Fundamental

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

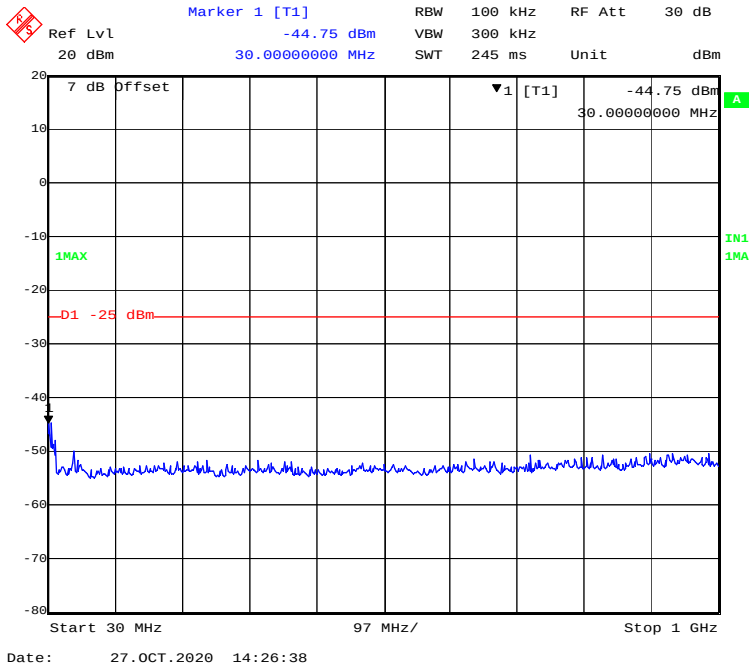


1 GHz – 26 GHz (20MHz, QPSK, Low Channel)

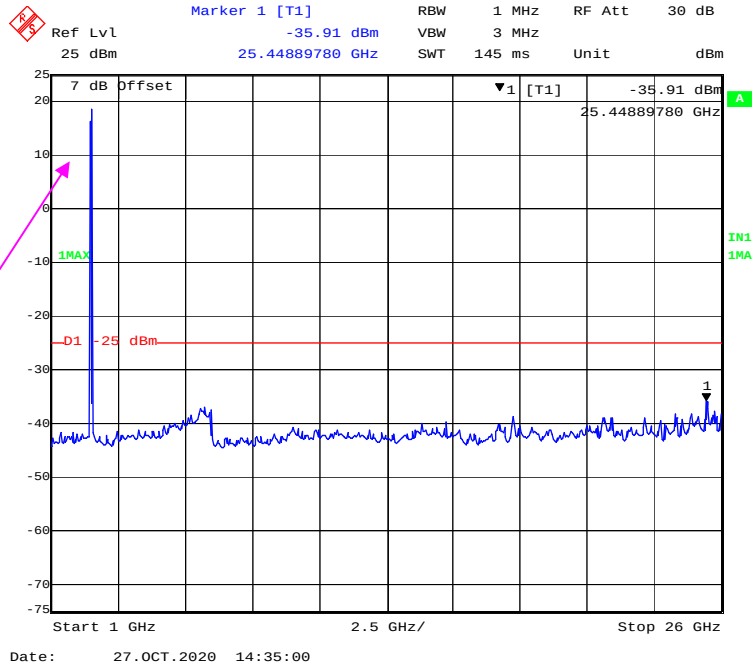


Fundamental

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

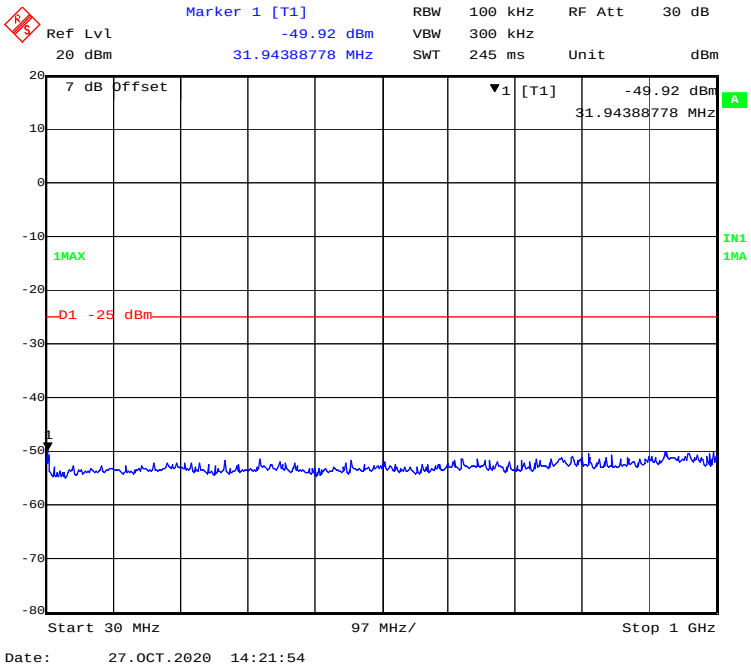


1 GHz – 26 GHz (20 MHz, 16-QAM, Low Channel)

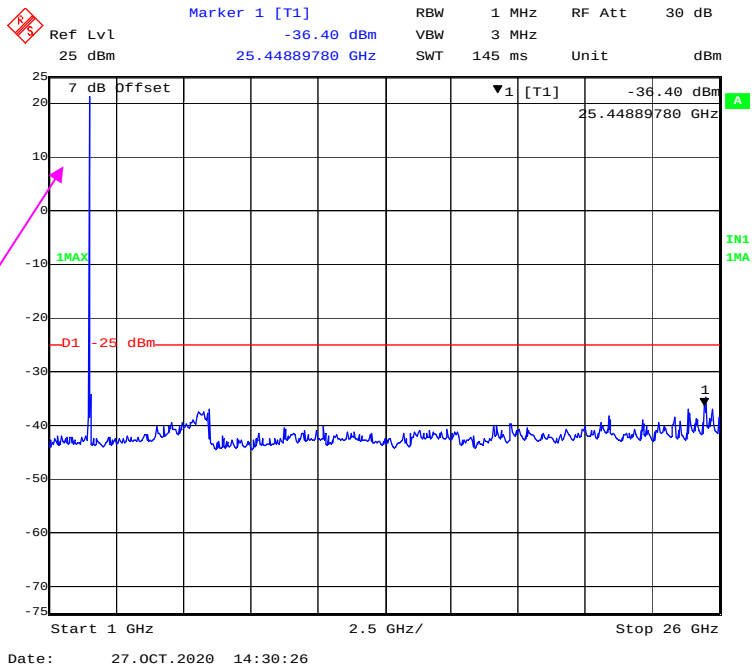


Fundamental

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

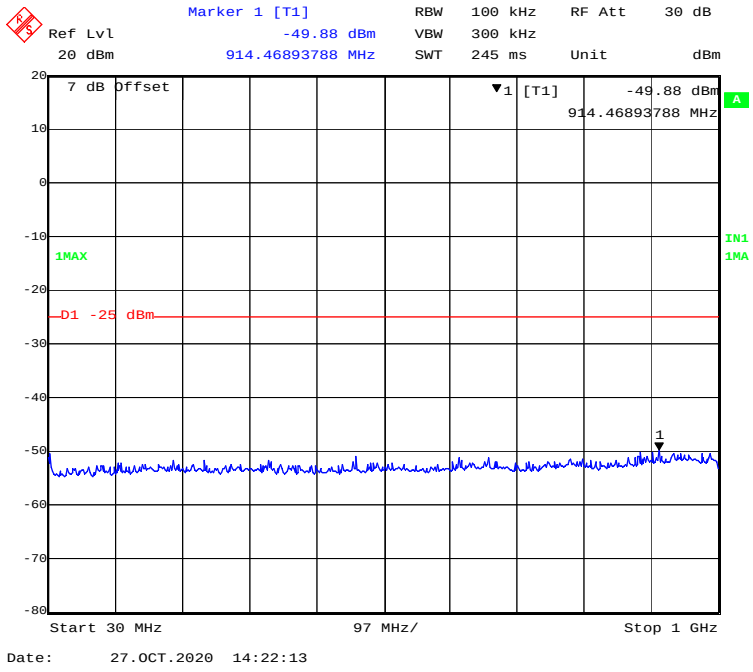


1 GHz – 26 GHz (5 MHz, QPSK, Middle Channel)

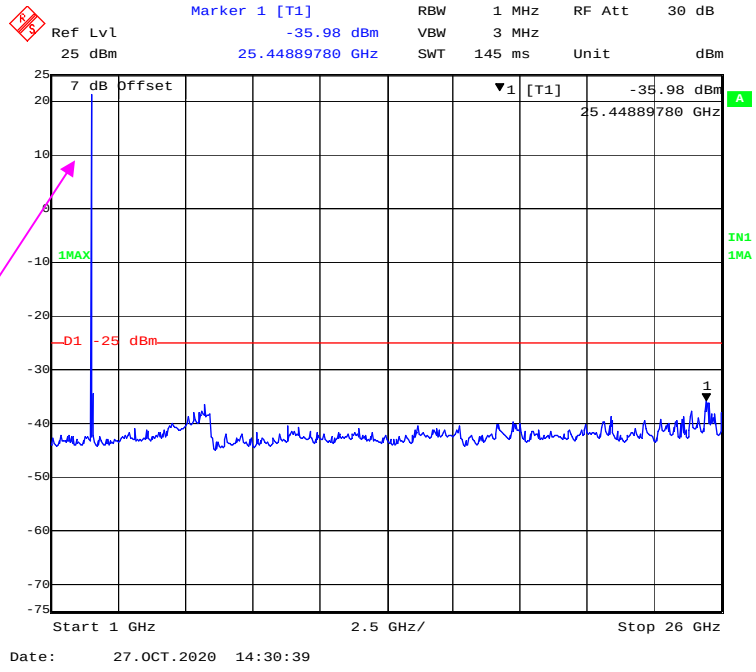


Fundamental

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

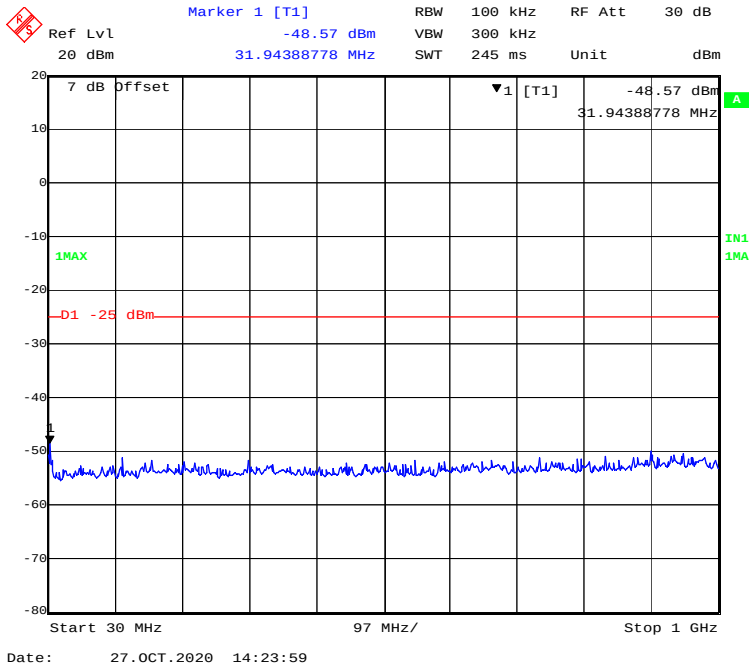


1 GHz – 26 GHz (5 MHz, 16-QAM, Middle Channel)

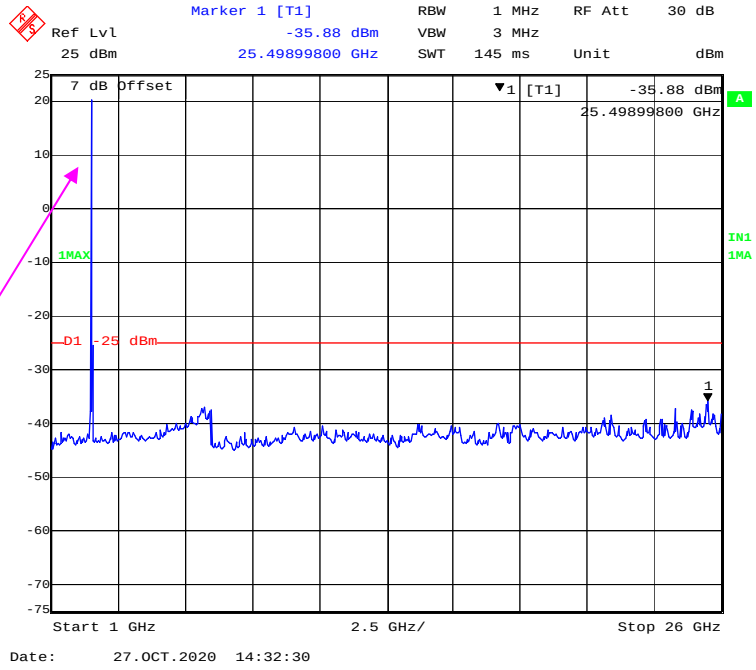


Fundamental

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

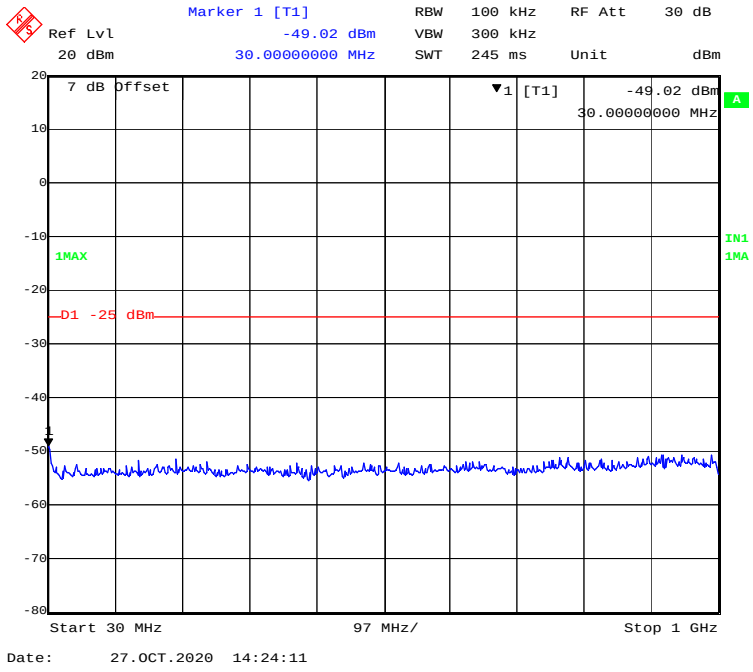


1 GHz – 26 GHz (10MHz, QPSK, Middle Channel)

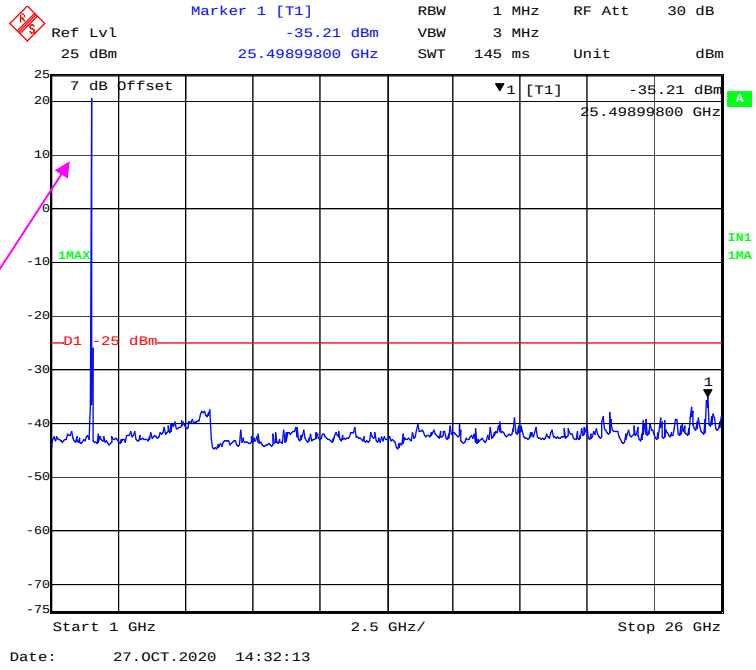


Fundamental

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

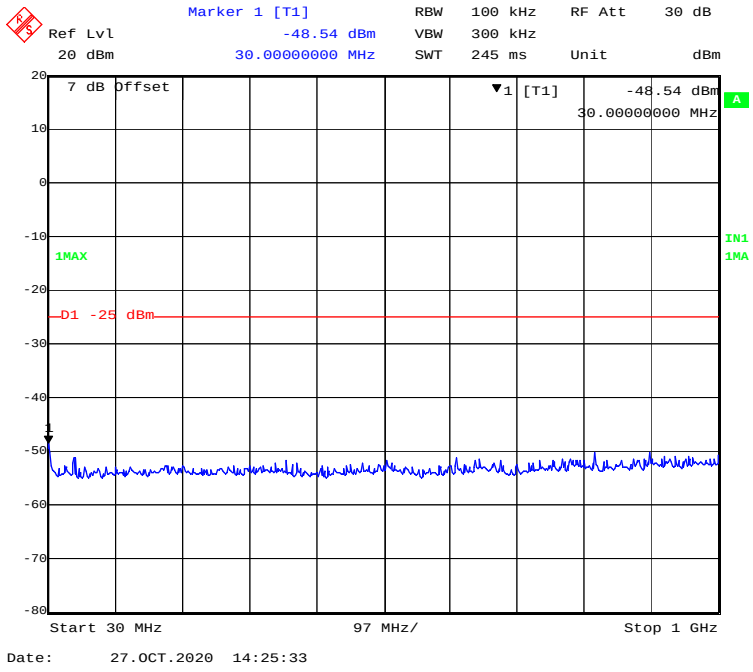


1 GHz – 26 GHz (10 MHz, 16-QAM, Middle Channel)

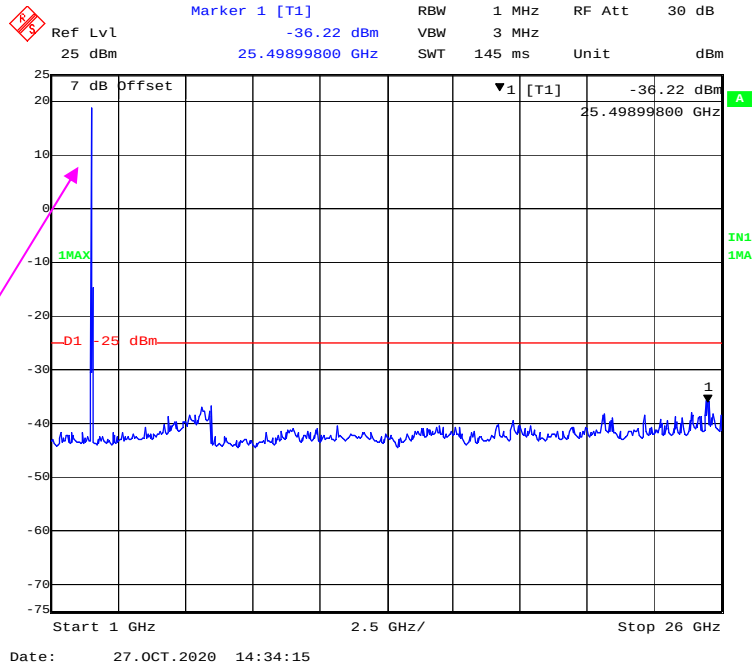


Fundamental

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

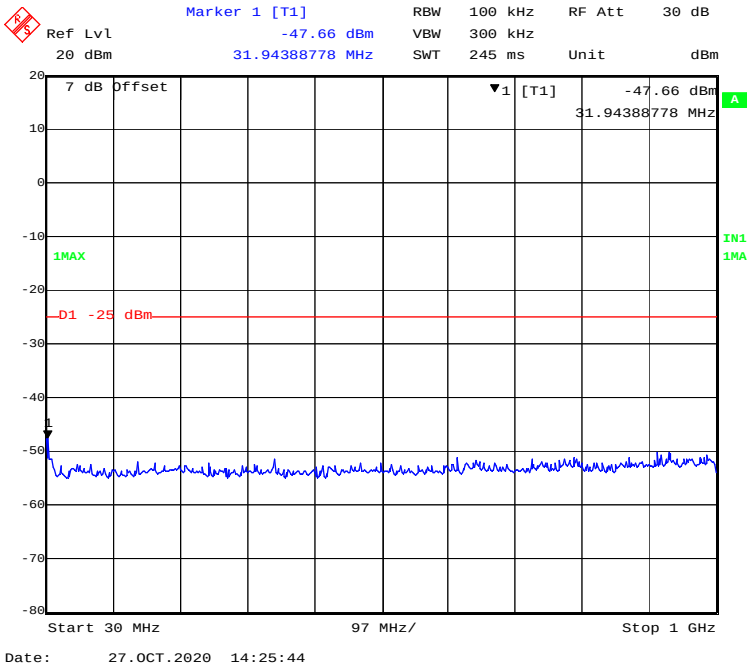


1 GHz – 26 GHz (15MHz, QPSK, Middle Channel)

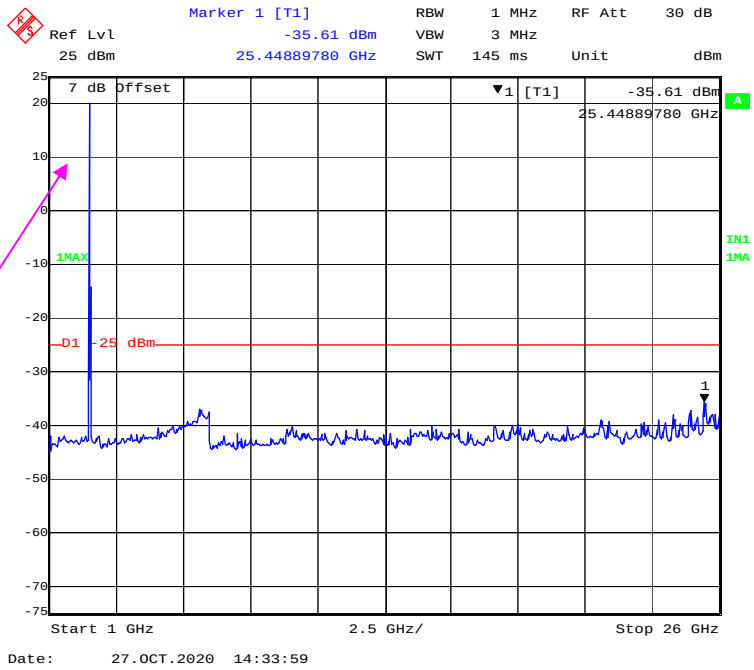


Fundamental

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

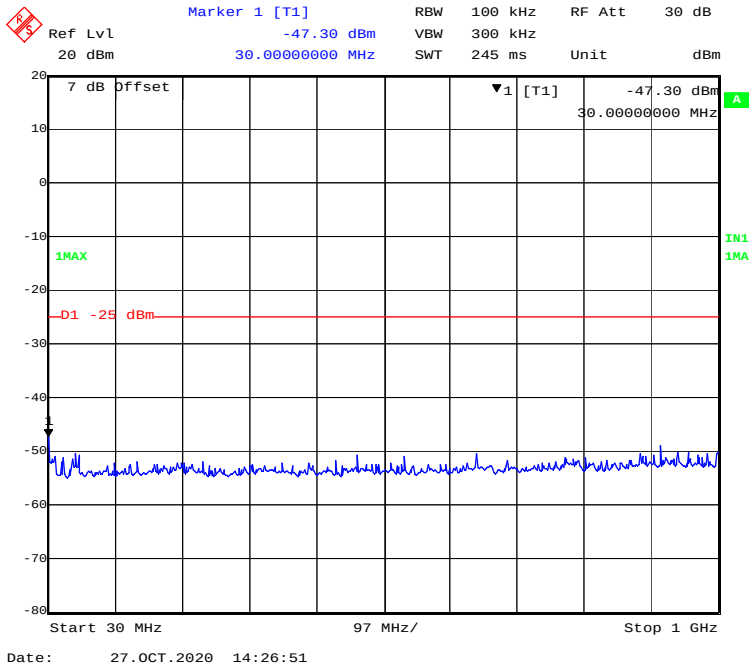


1 GHz – 26 GHz (15 MHz, 16-QAM, Middle Channel)

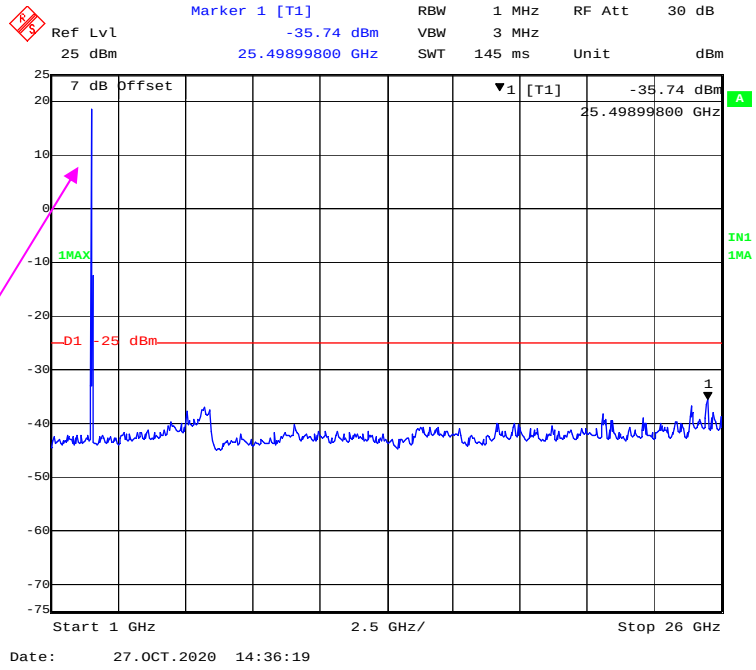


Fundamental

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

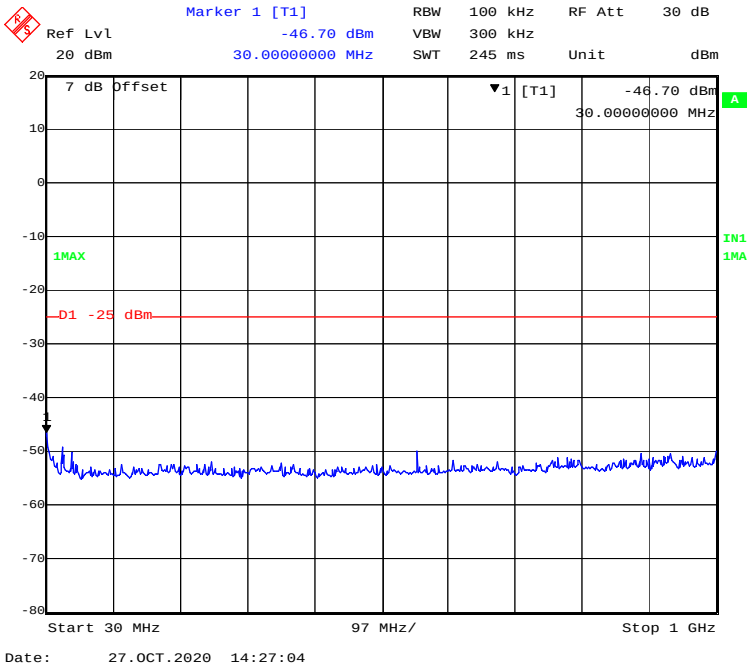


1 GHz – 26 GHz (20MHz, QPSK, Middle Channel)

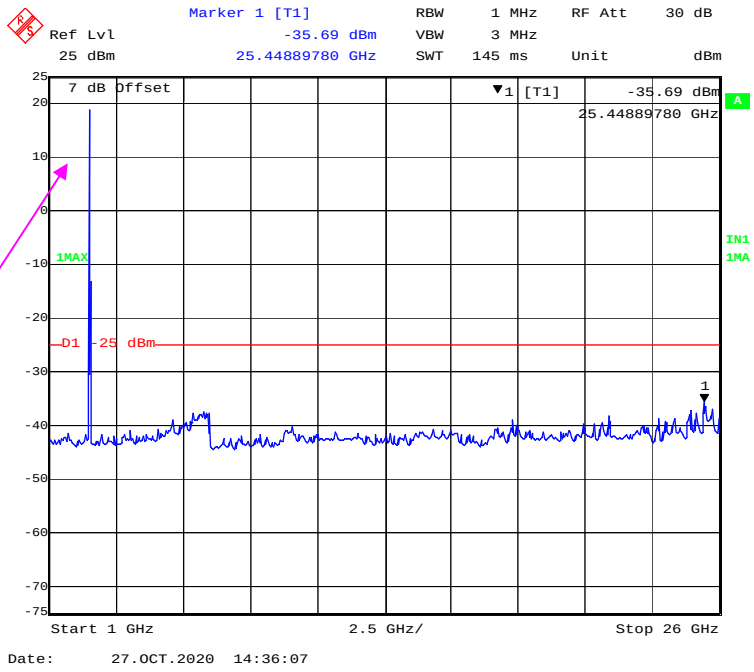


Fundamental

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

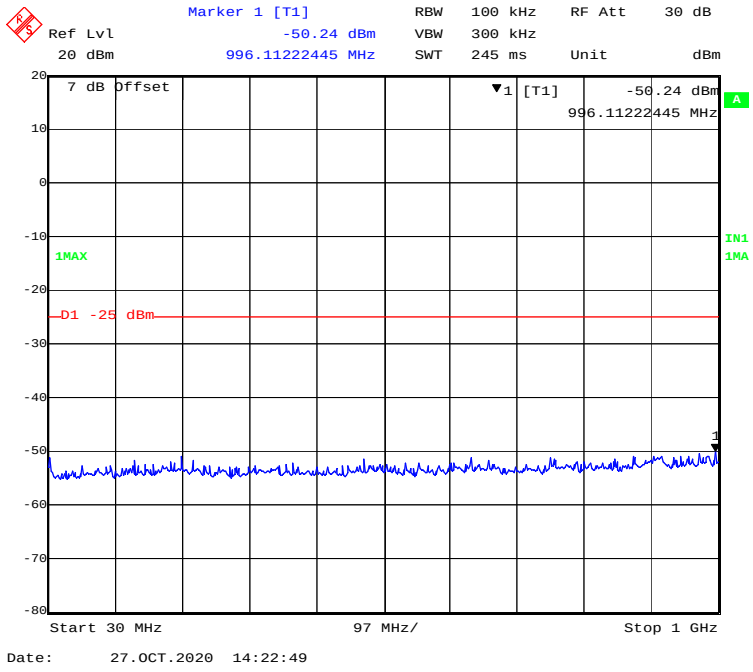


1 GHz – 26 GHz (20 MHz, 16-QAM, Middle Channel)

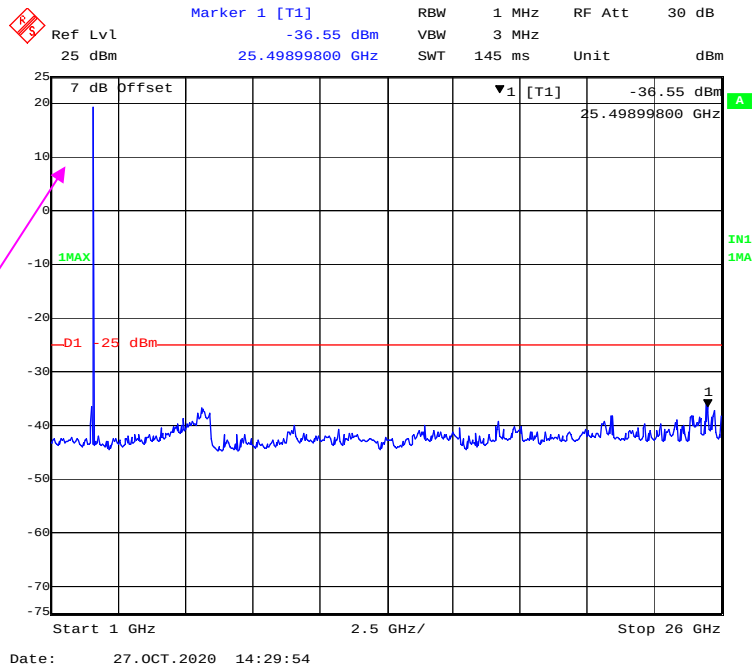


Fundamental

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

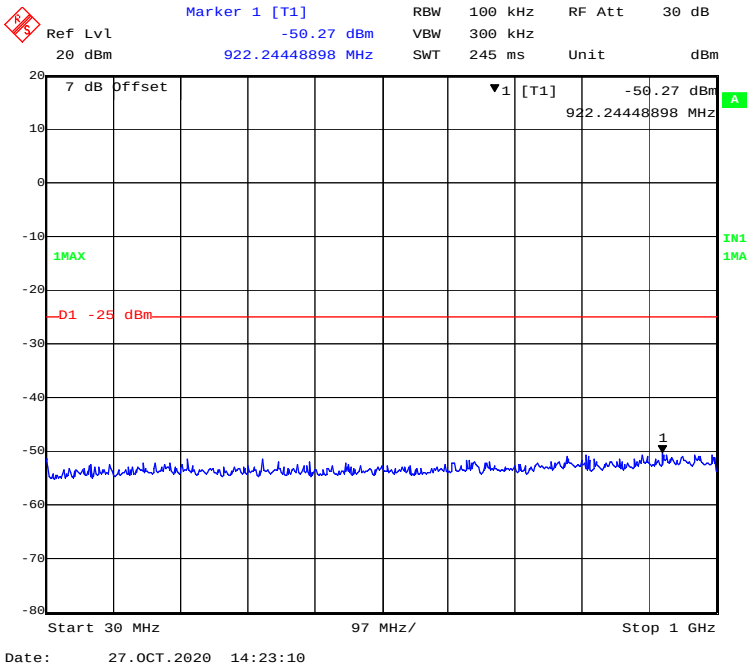


1 GHz – 26 GHz (5 MHz, QPSK, High Channel)

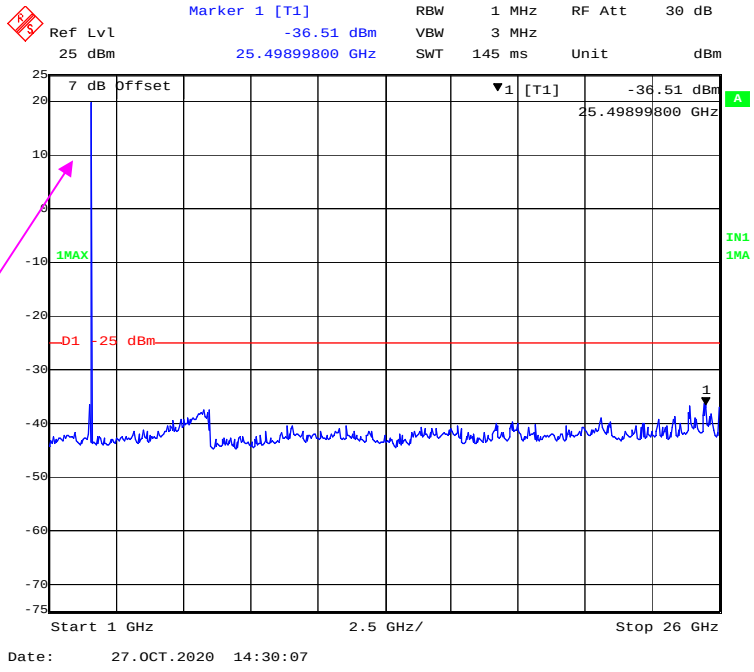


Fundamental

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

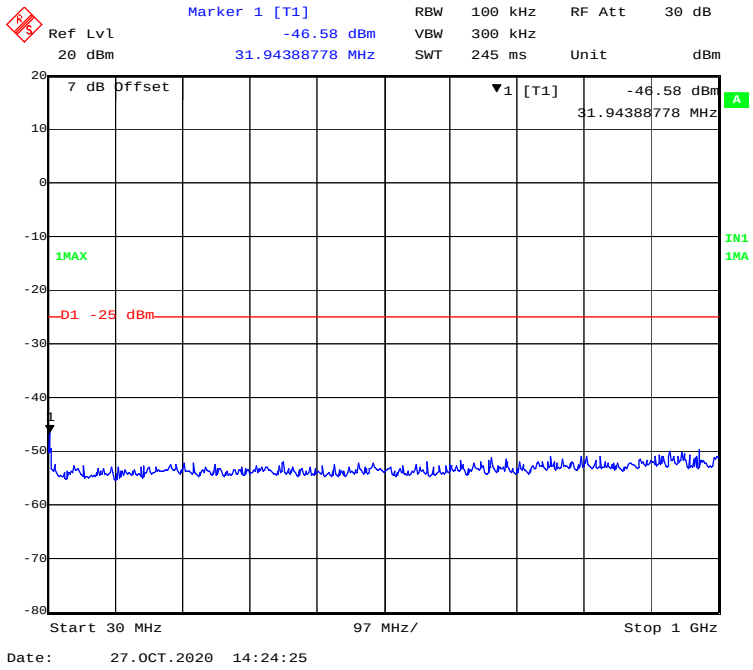


1 GHz – 26 GHz (5 MHz, 16-QAM, High Channel)

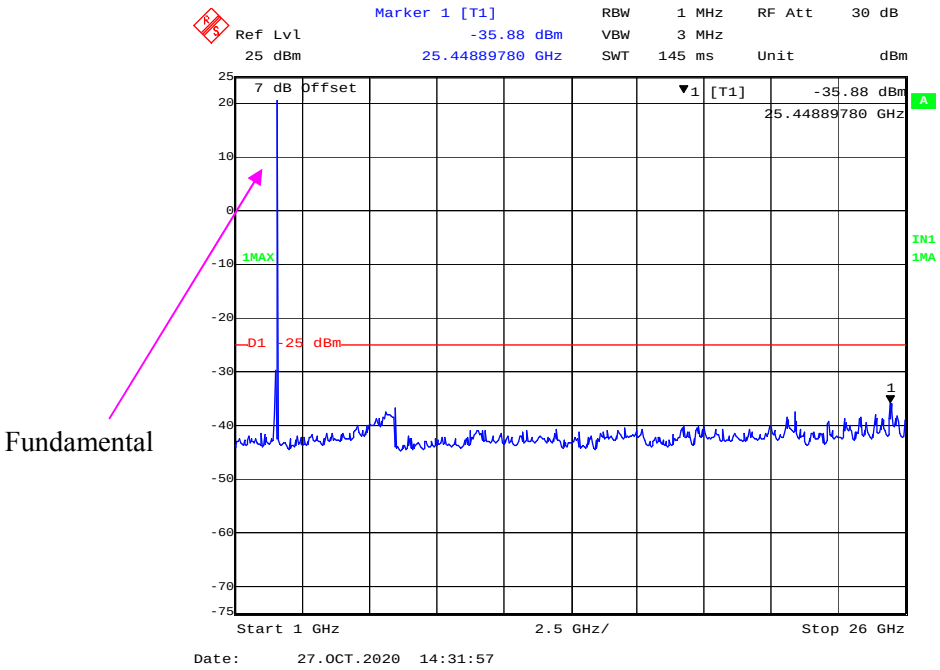


Fundamental

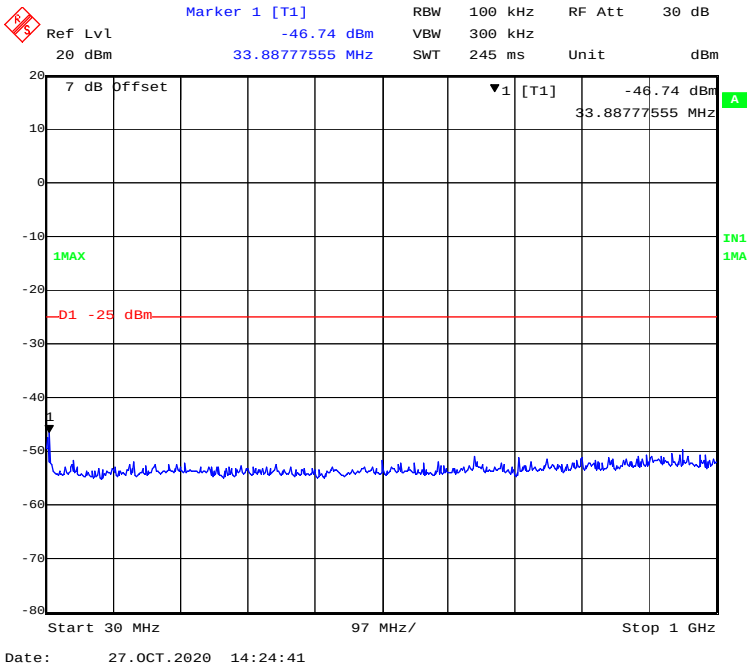
30 MHz - 1 GHz (10 MHz, QPSK, High Channel)



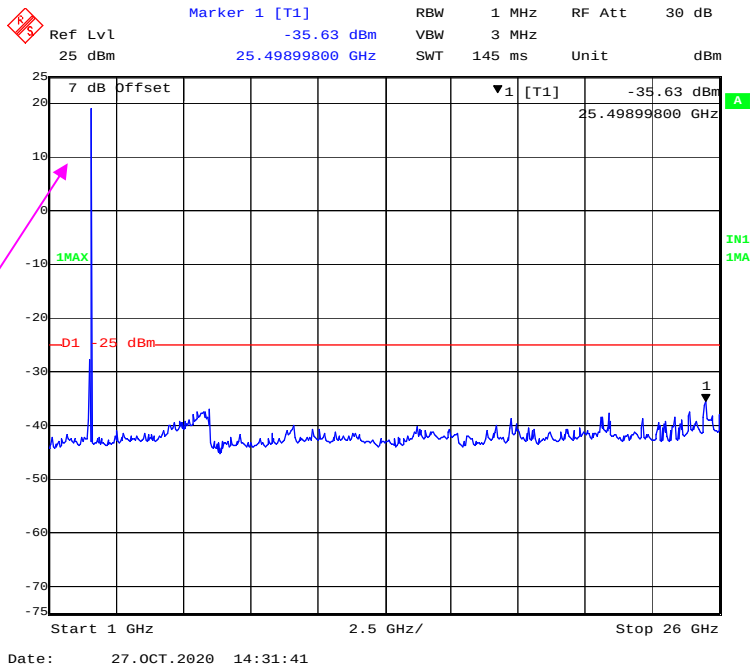
1 GHz – 26 GHz (10MHz, QPSK, High Channel)



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

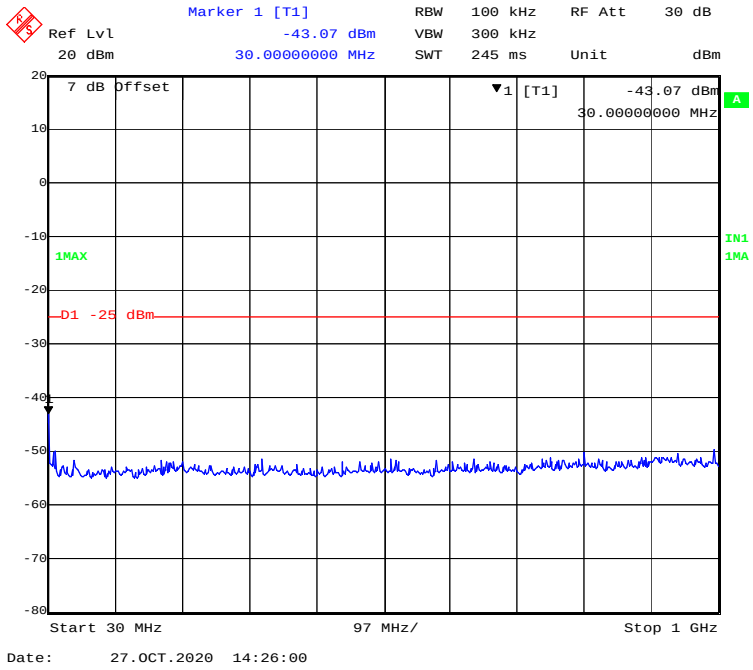


1 GHz – 26 GHz (10 MHz, 16-QAM, High Channel)

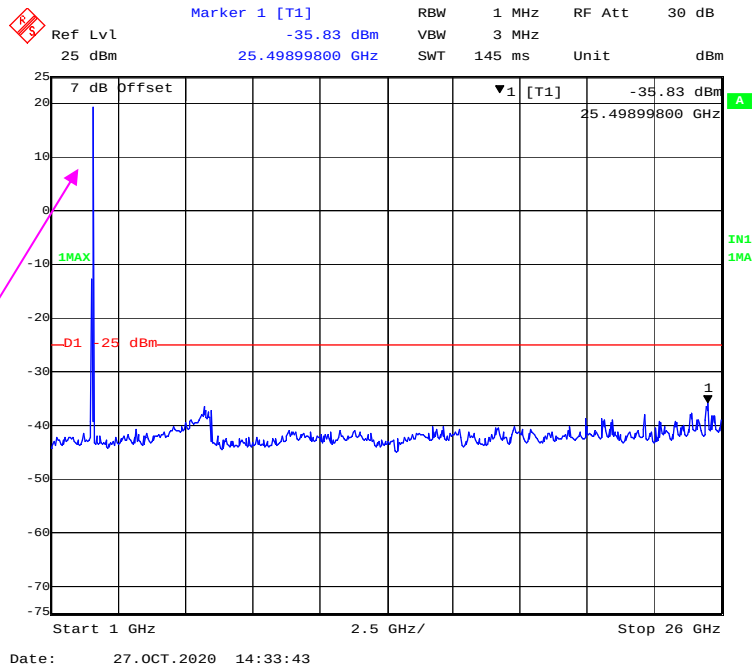


Fundamental

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

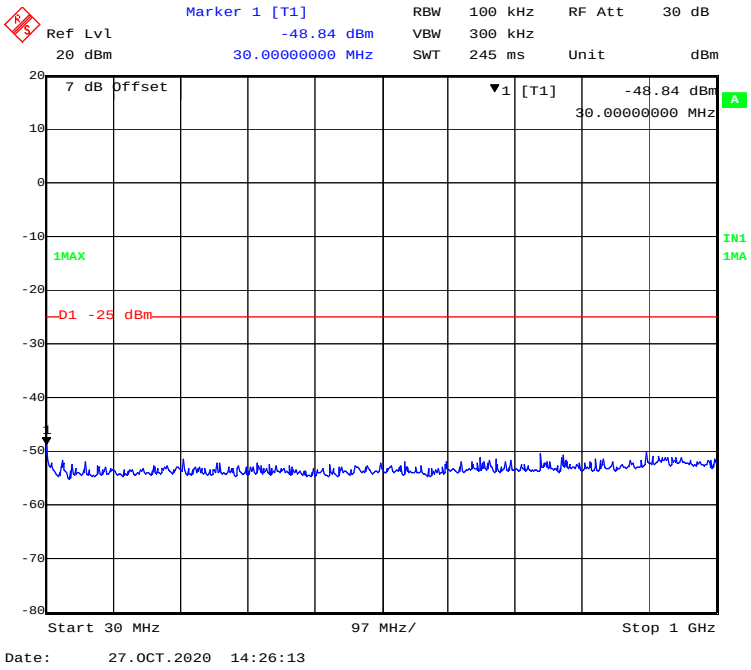


1 GHz – 26 GHz (15MHz, QPSK, High Channel)

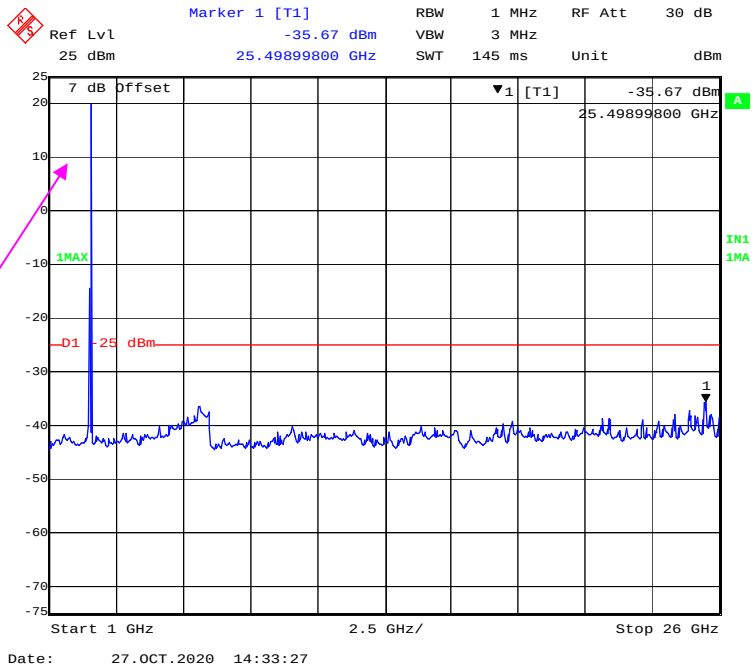


Fundamental

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

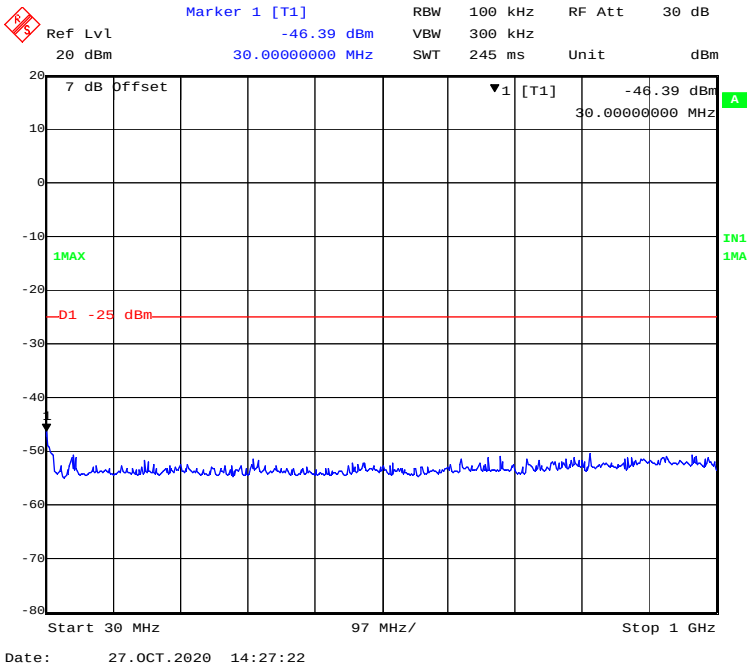


1 GHz – 26 GHz (15 MHz, 16-QAM, High Channel)

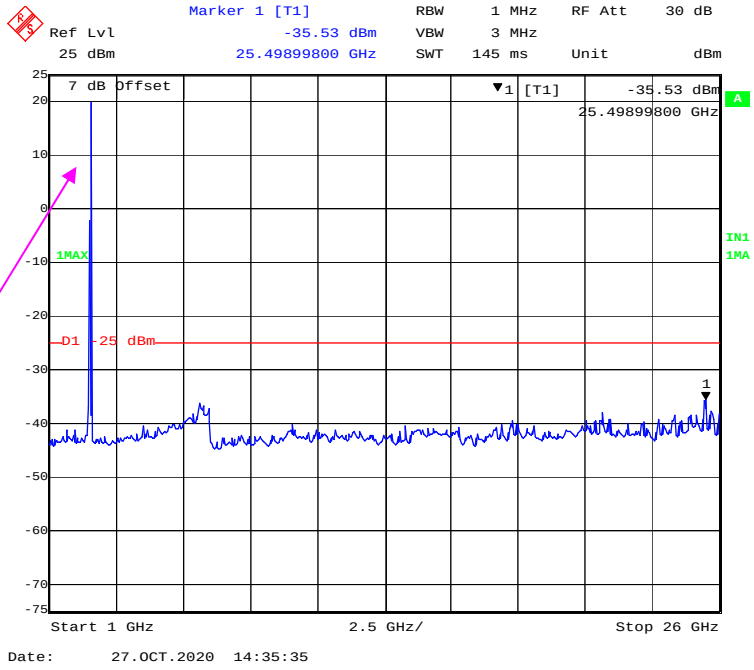


Fundamental

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

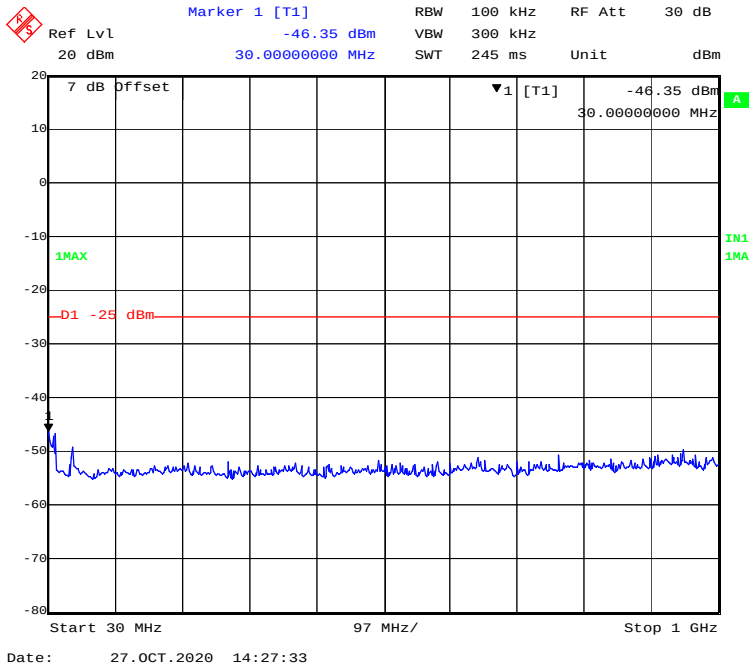


1 GHz – 26 GHz (20MHz, QPSK, High Channel)

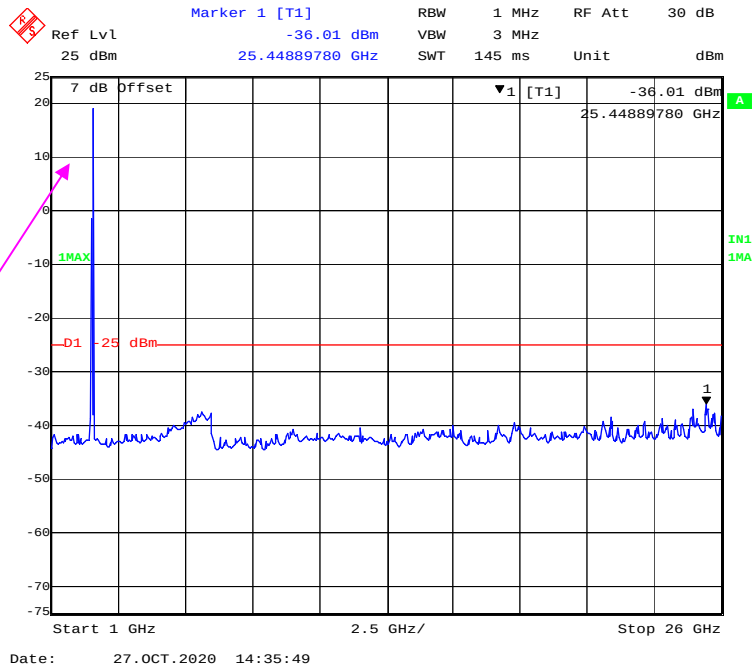


Fundamental

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



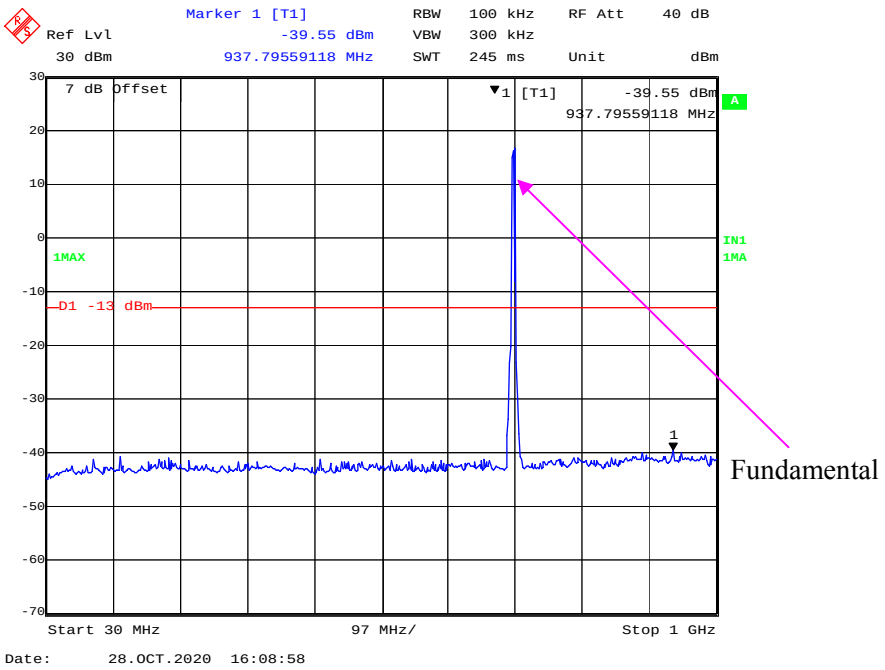
1 GHz – 26 GHz (20 MHz, 16-QAM, High Channel)



Fundamental

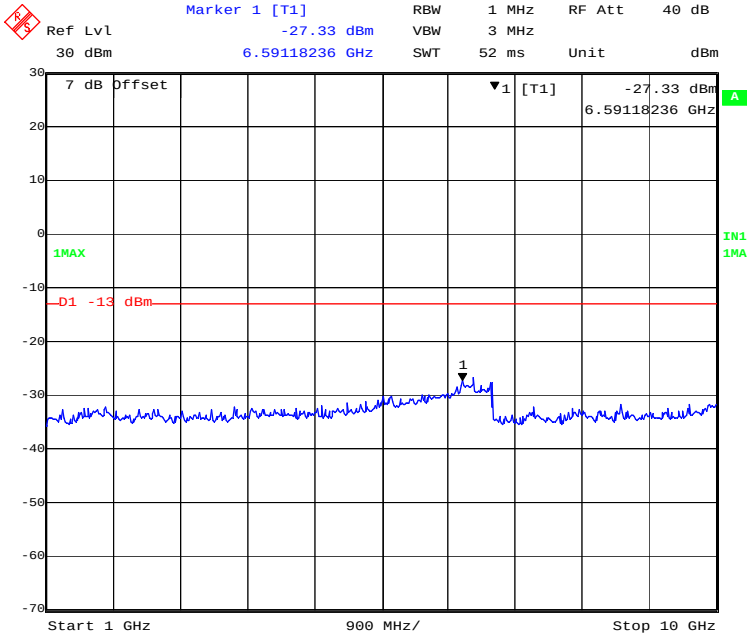
LTE Band 17:

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



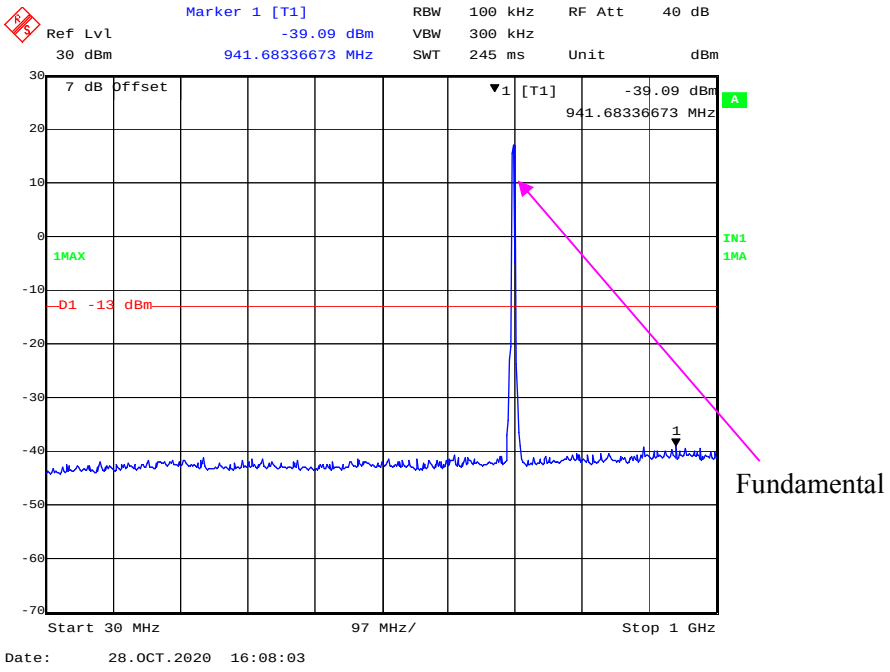
Date: 28.OCT.2020 16:08:58

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



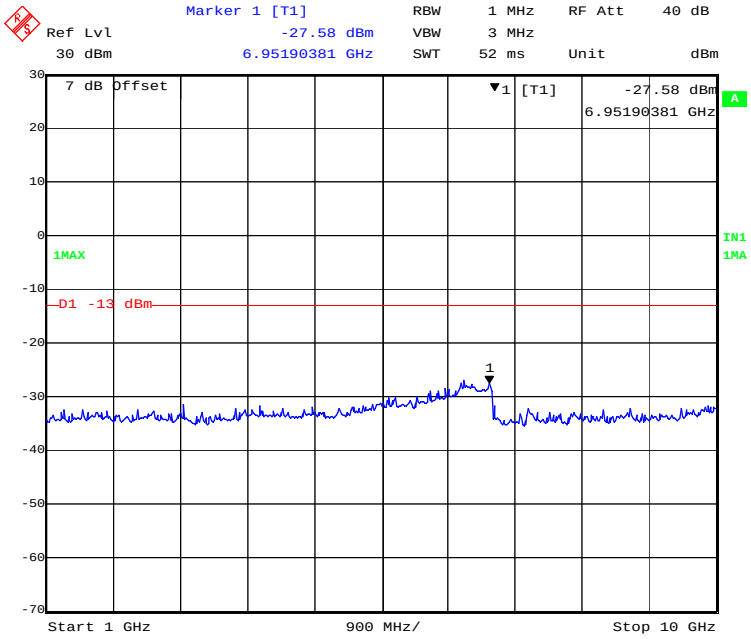
Date: 28.OCT.2020 16:20:56

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



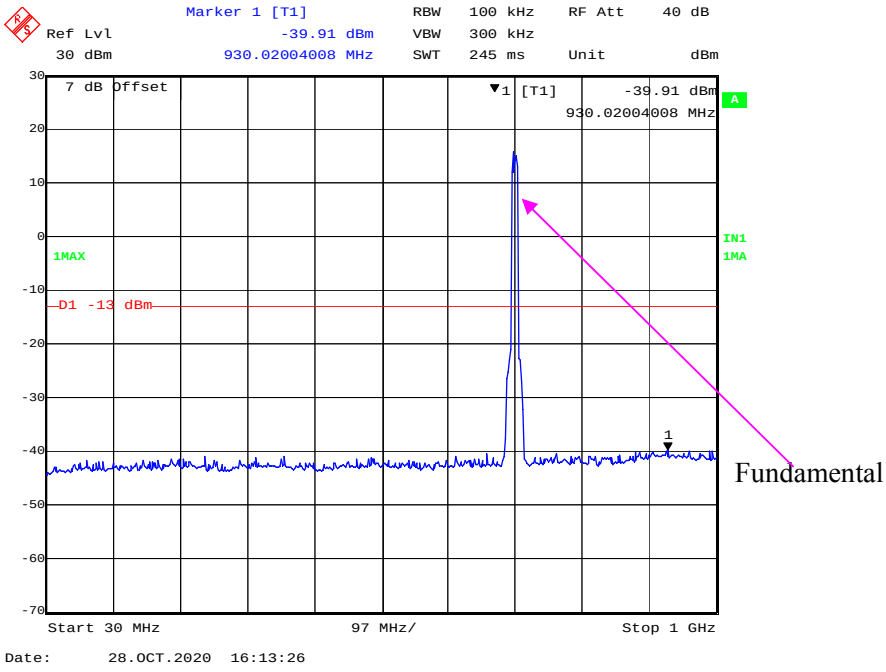
Date: 28.OCT.2020 16:08:03

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



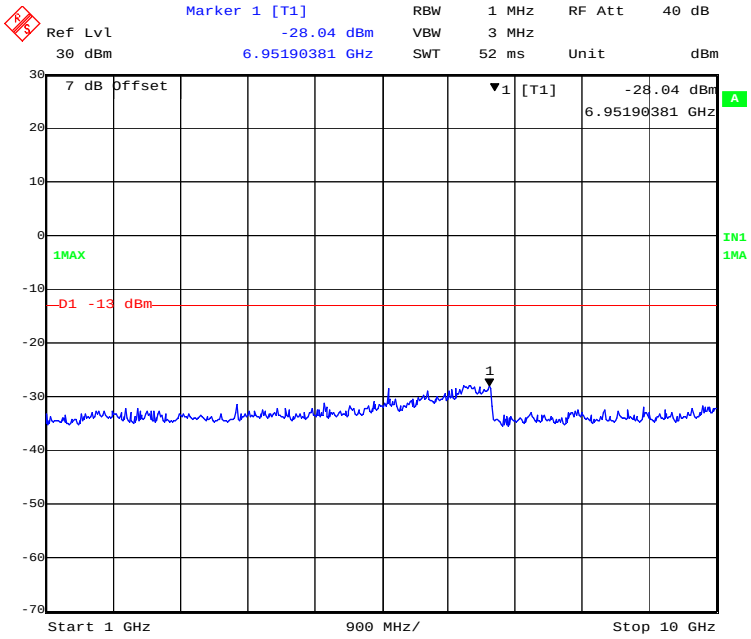
Date: 28.OCT.2020 16:20:33

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



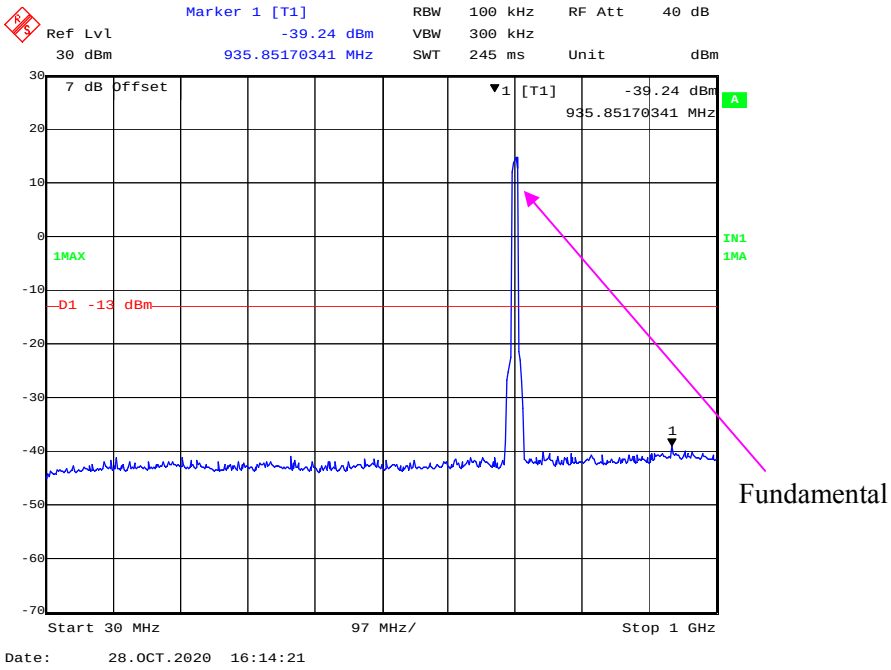
Date: 28.OCT.2020 16:13:26

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

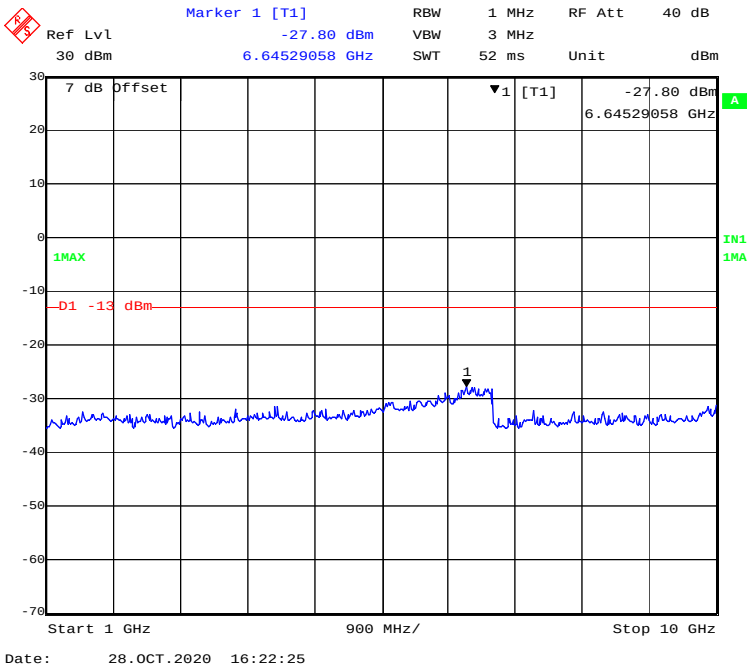


Date: 28.OCT.2020 16:22:43

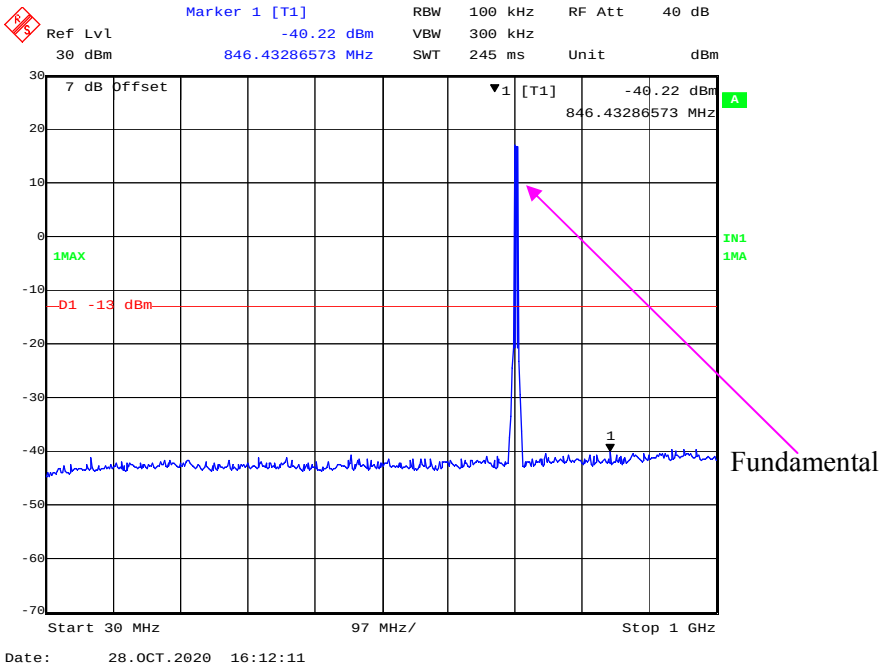
30 MHz - 1 GHz (10 MHz, 16-QAM, Low Channel)



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

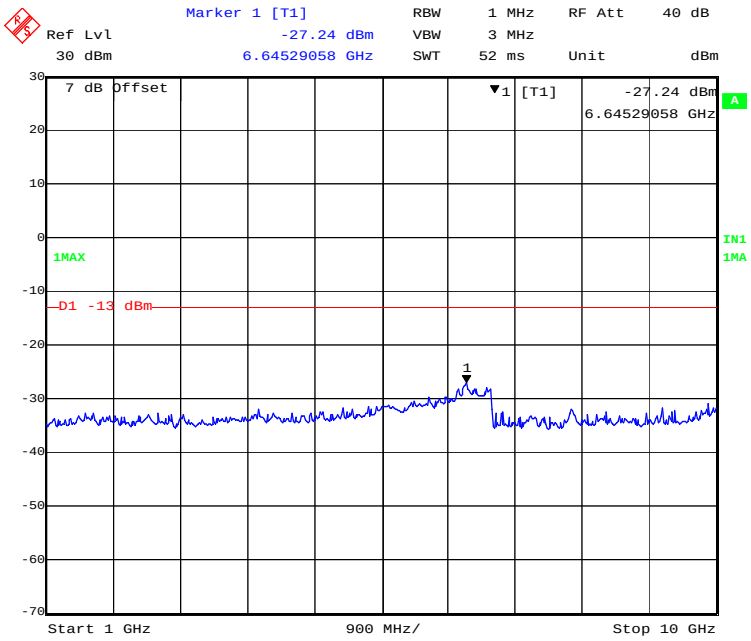


30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)



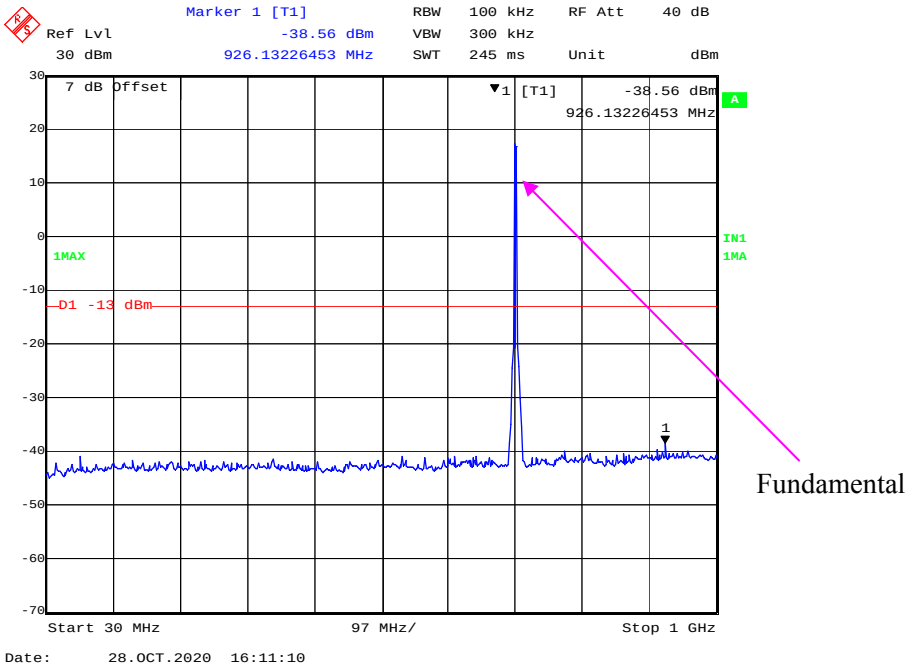
Date: 28.OCT.2020 16:12:11

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



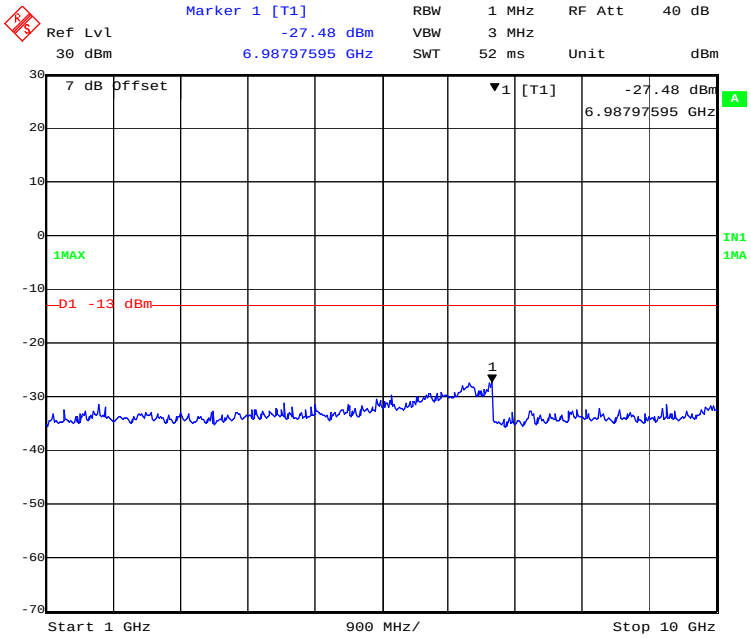
Date: 28.OCT.2020 16:21:28

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



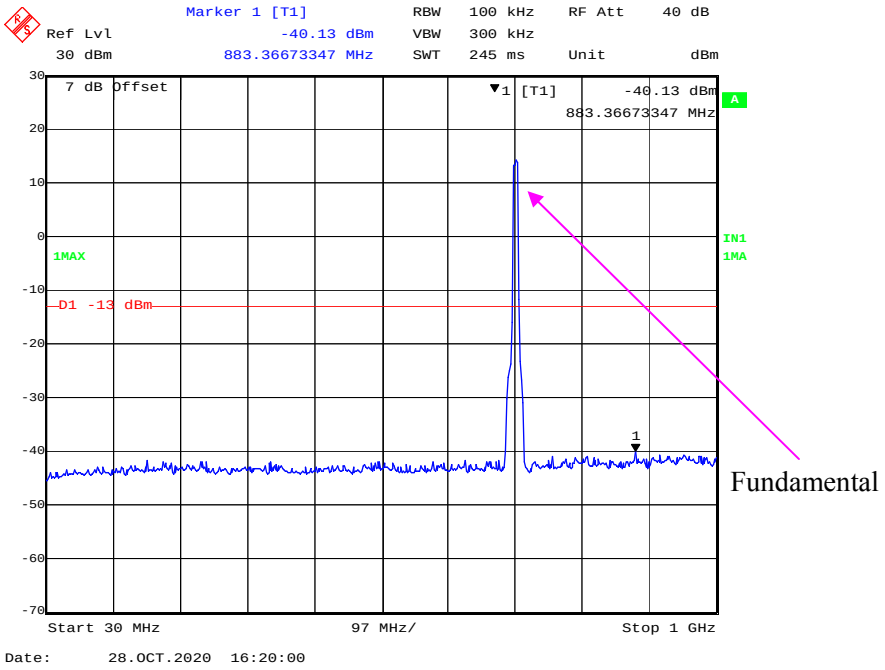
Date: 28.OCT.2020 16:11:10

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



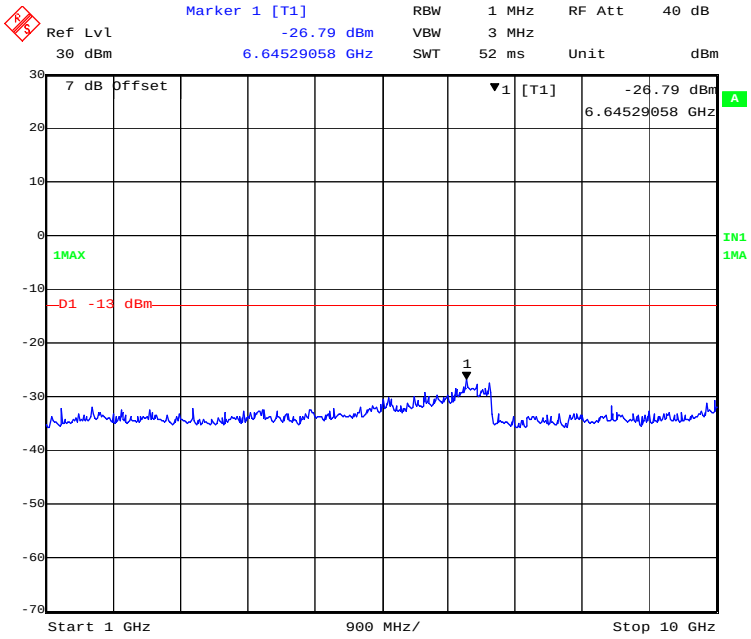
Date: 28.OCT.2020 16:21:11

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



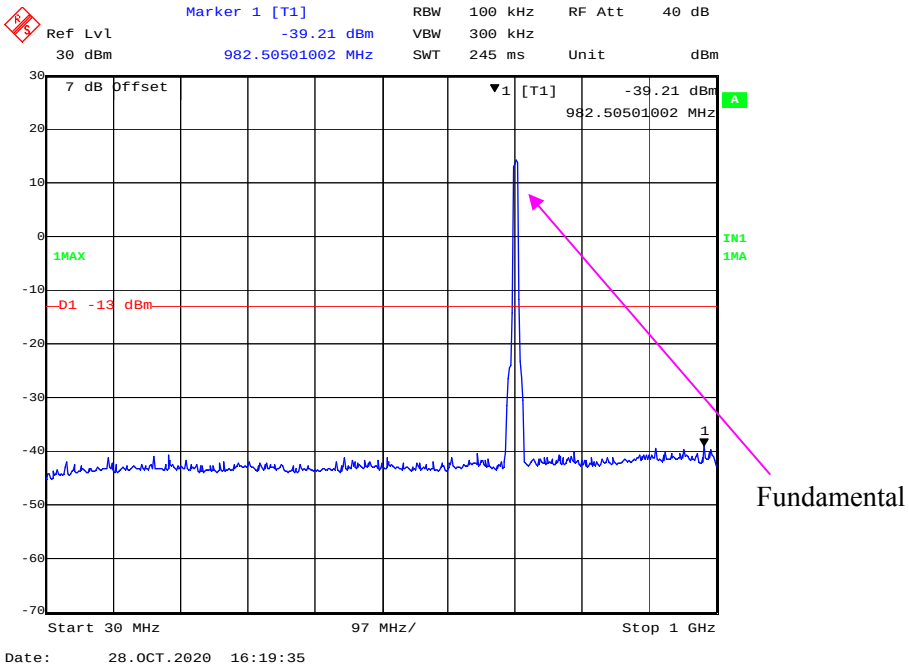
Date: 28.OCT.2020 16:20:00

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

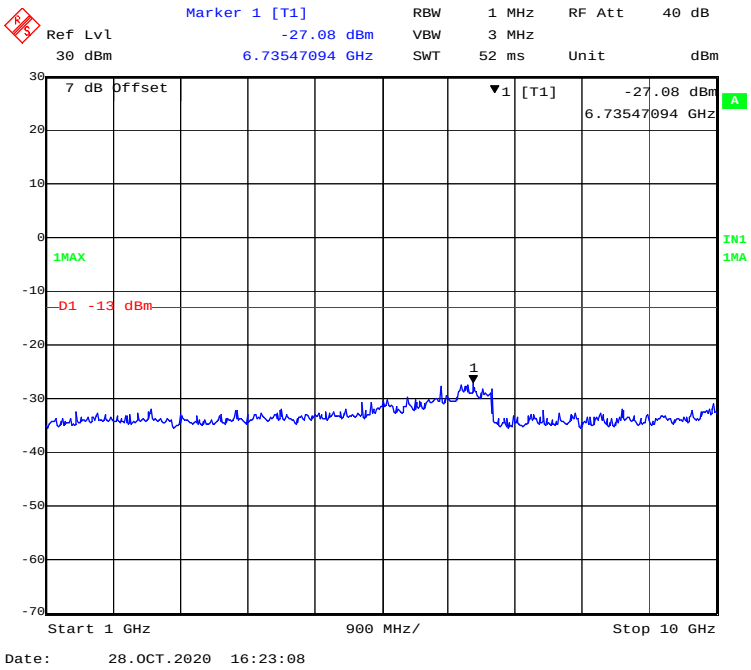


Date: 28.OCT.2020 16:22:55

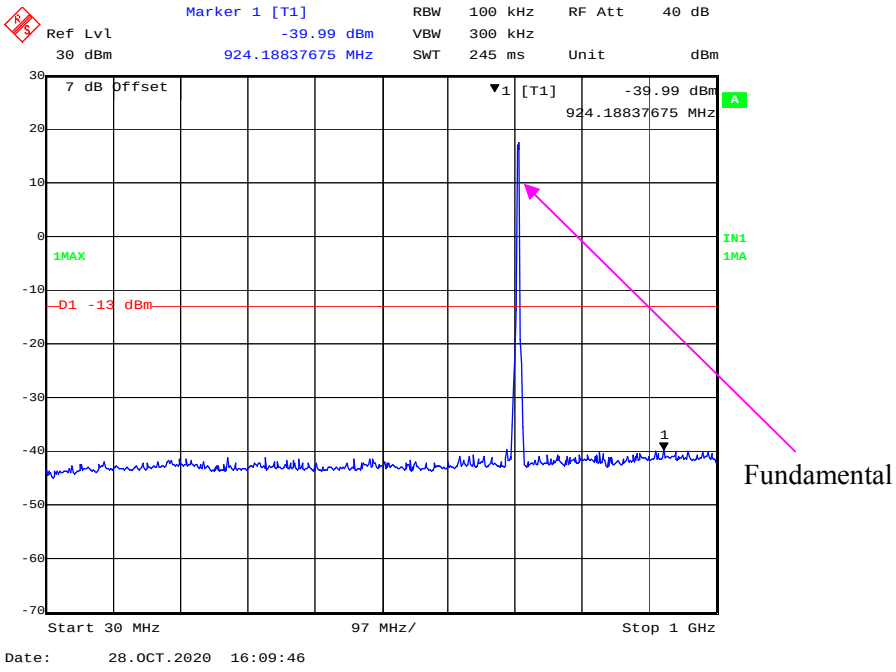
30 MHz - 1 GHz (10 MHz, 16-QAM, Middle Channel)



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

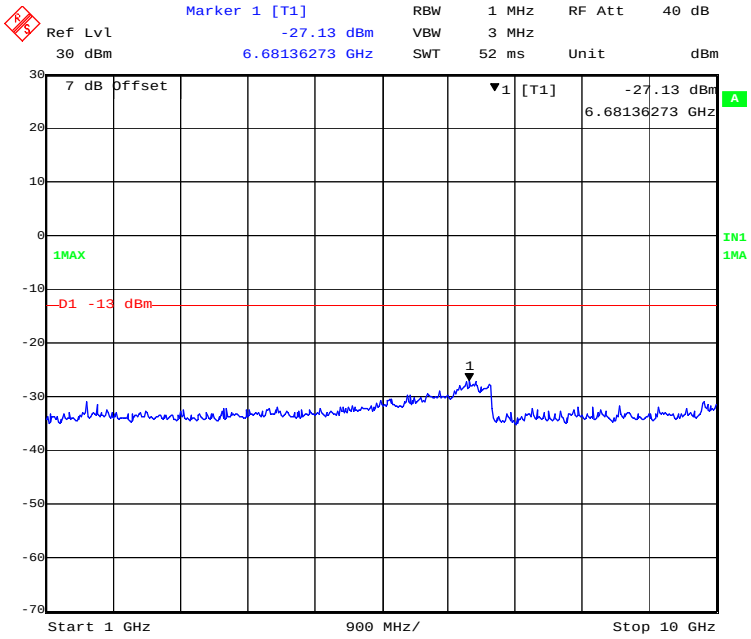


30 MHz - 1 GHz (5 MHz, QPSK, High Channel)



Date: 28.OCT.2020 16:09:46

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



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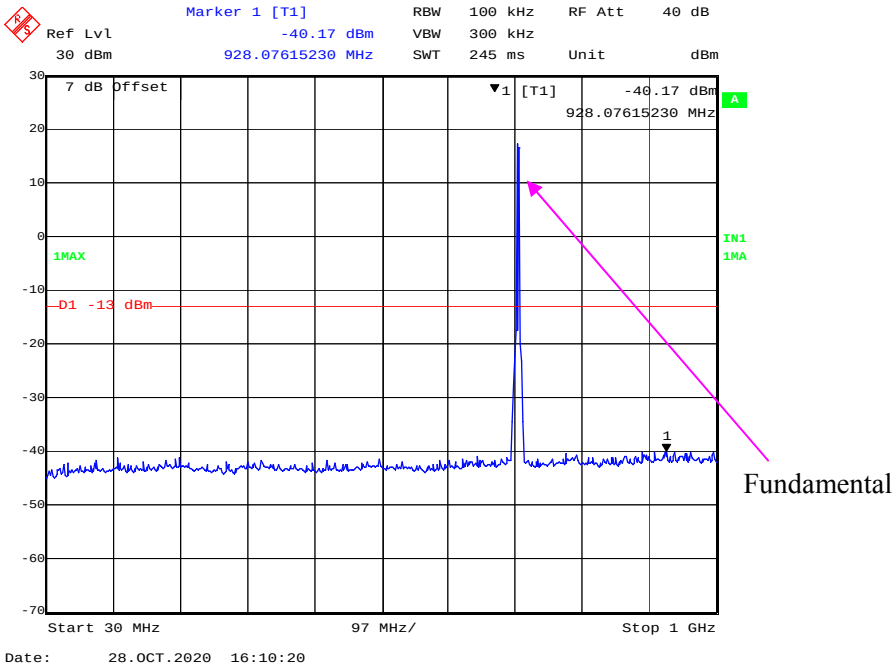
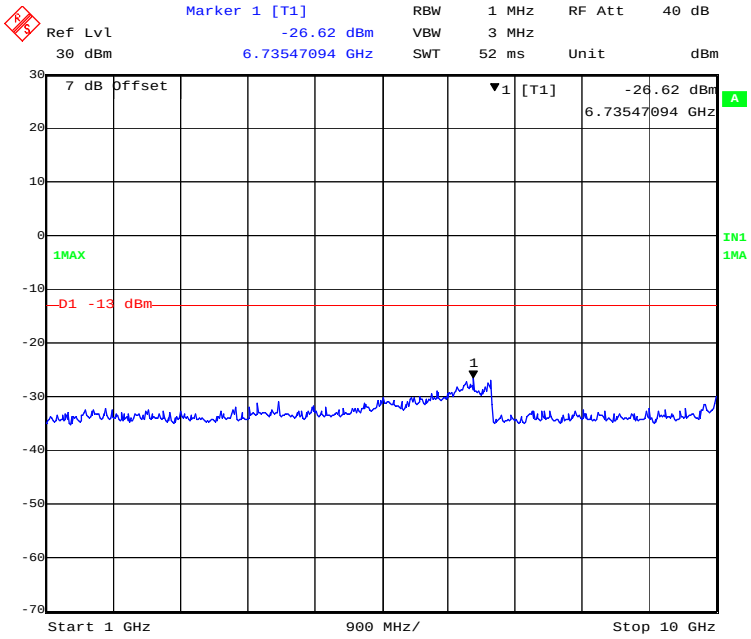
30 MHz - 1 GHz (5 MHz, 16-QAM, High Channel)



Date: 28.OCT.2020 16:10:20

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



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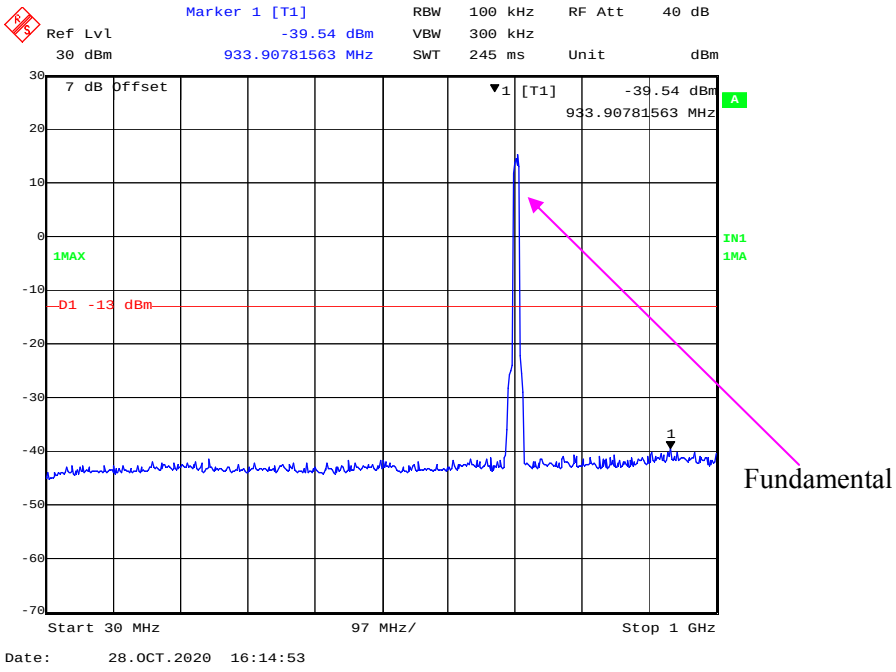
30 MHz - 1 GHz (10 MHz, QPSK, High Channel)



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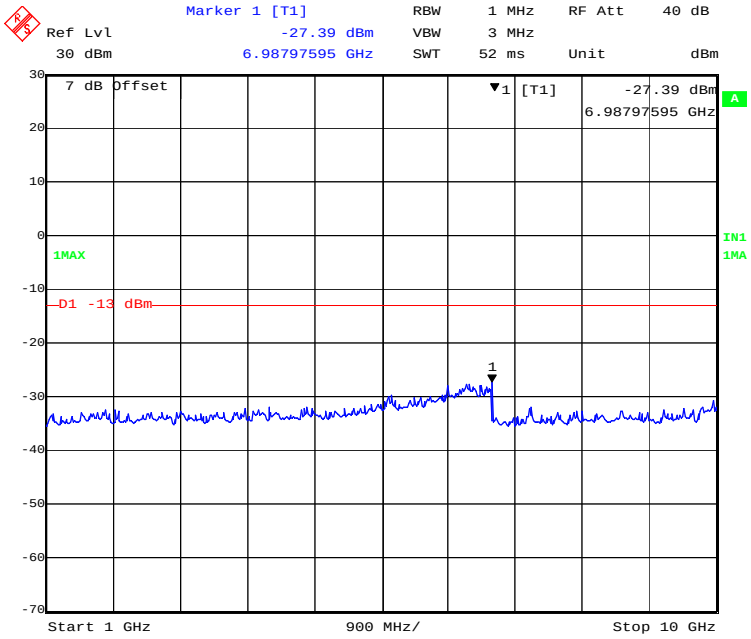
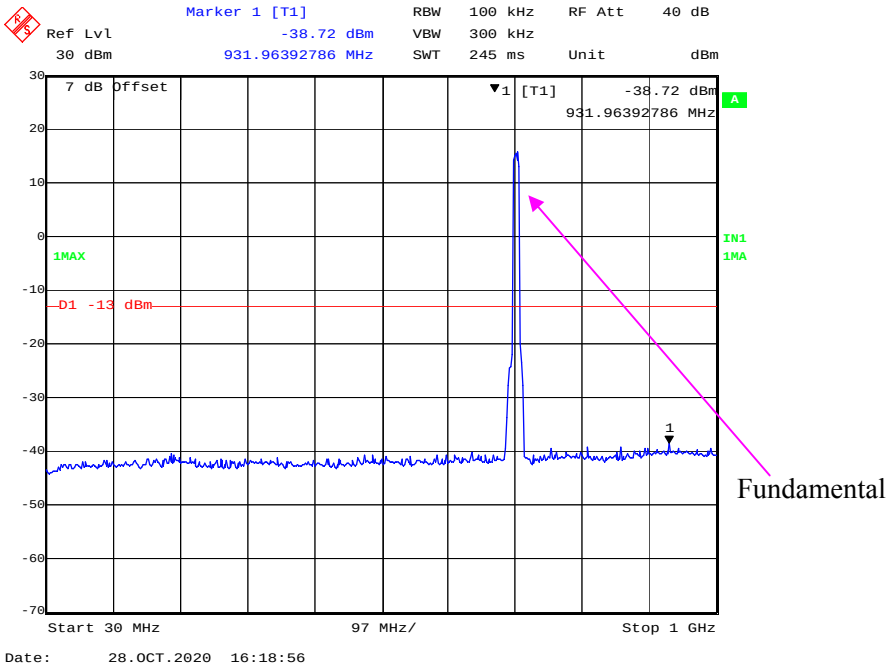
1 GHz – 10 GHz (10 MHz, QPSK, High Channel)



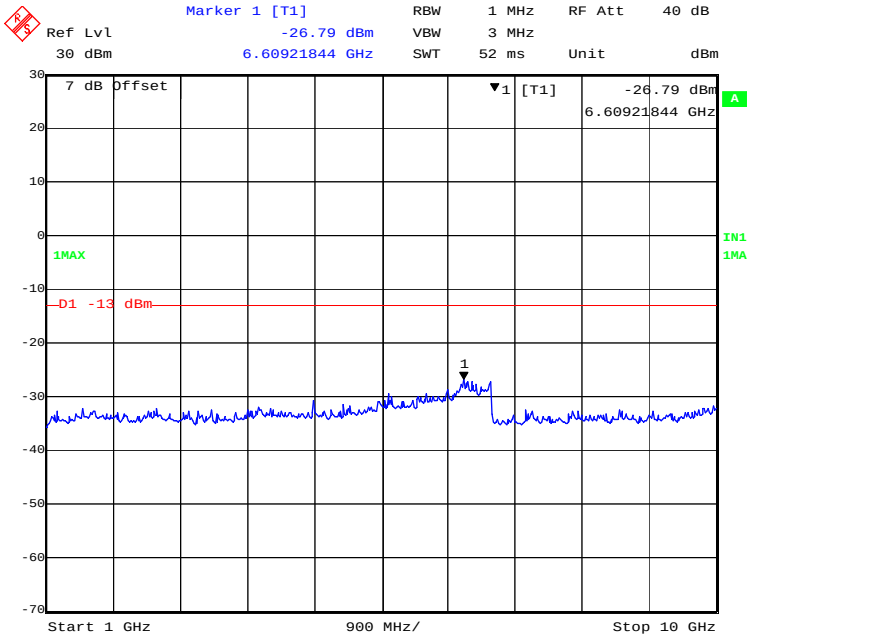
Date: 28.OCT.2020 16:23:25

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



Date: 28.OCT.2020 16:18:56

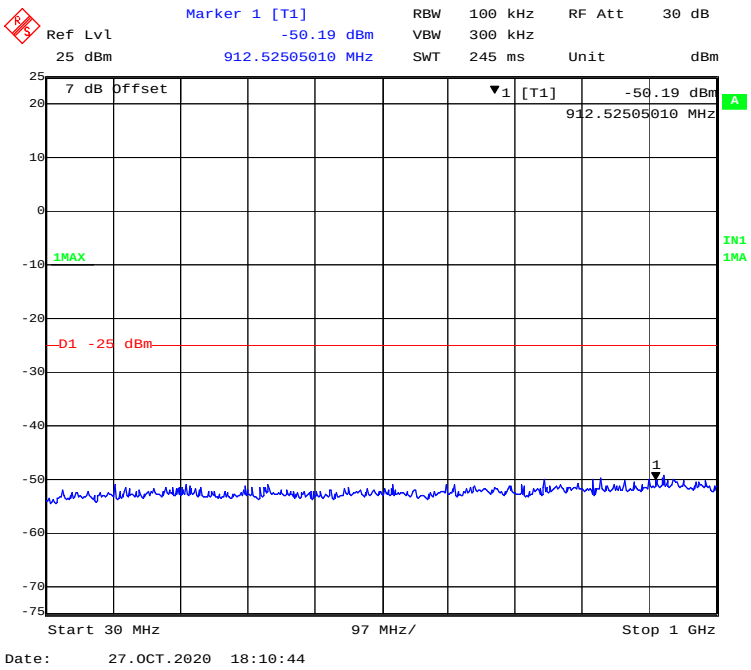
1 GHz – 10 GHz (10 MHz, 16-QAM, High Channel)



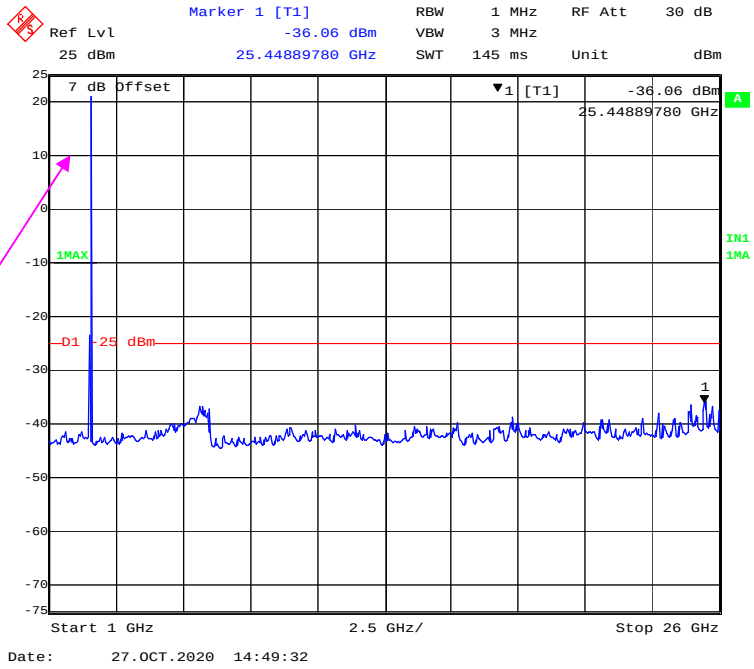
Date: 28.OCT.2020 16:23:39

LTE Band 41:

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

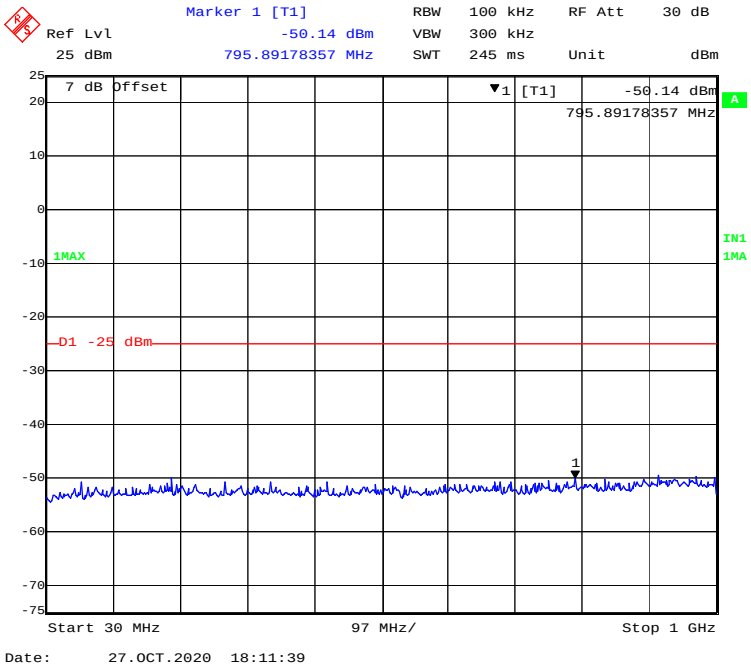


1 GHz – 26 GHz (5 MHz, QPSK, Low Channel)

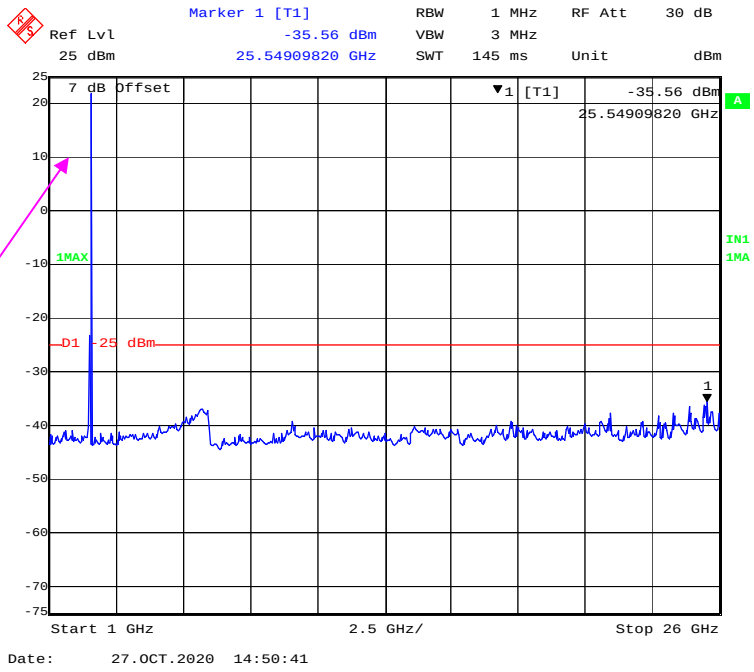


Fundamental

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

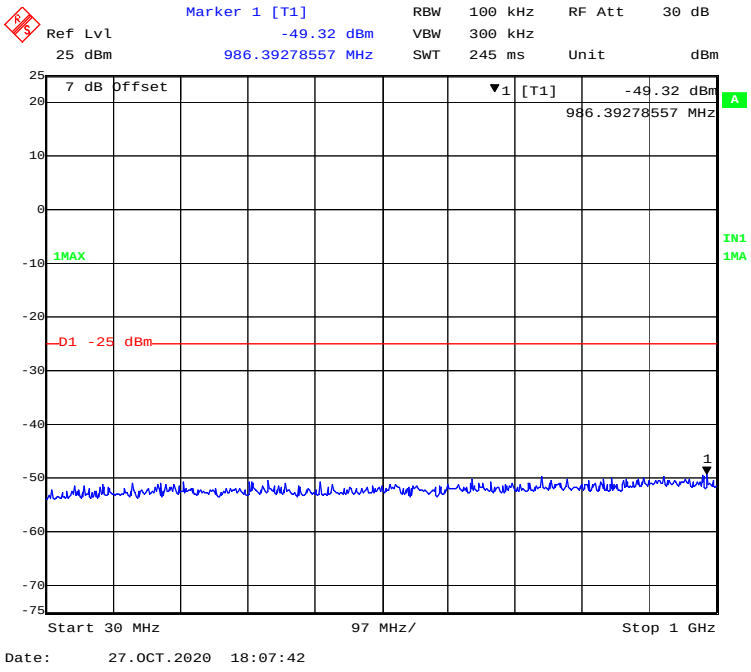


1 GHz –26 GHz (5 MHz, 16-QAM, Low Channel)

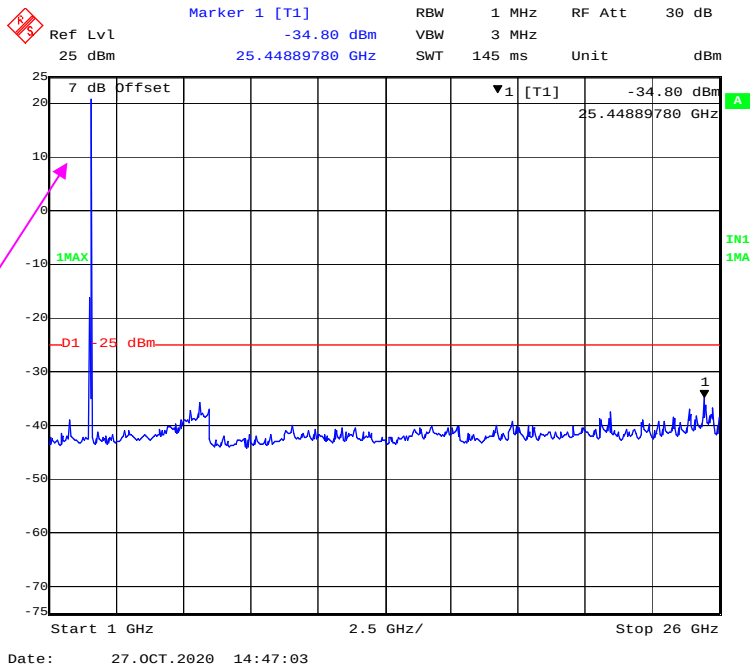


Fundamental

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

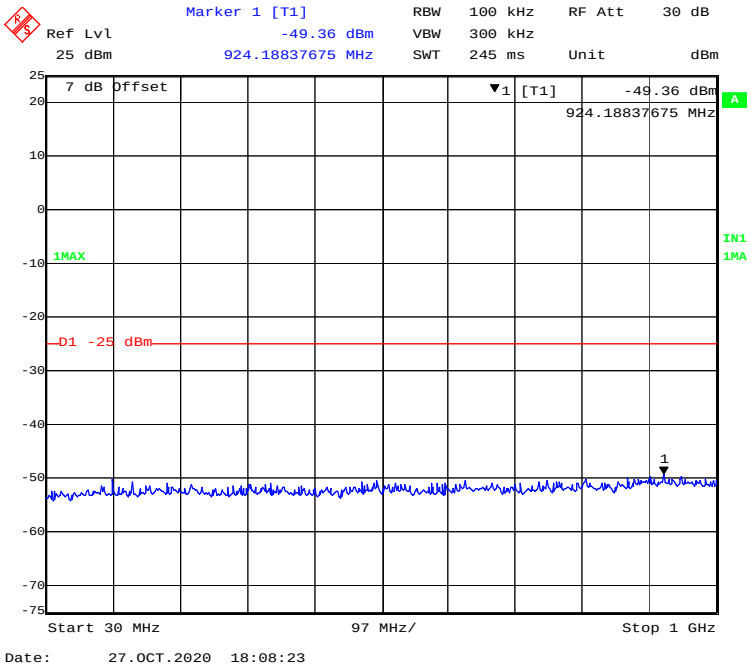


1 GHz –26 GHz (10 MHz, QPSK, Low Channel)

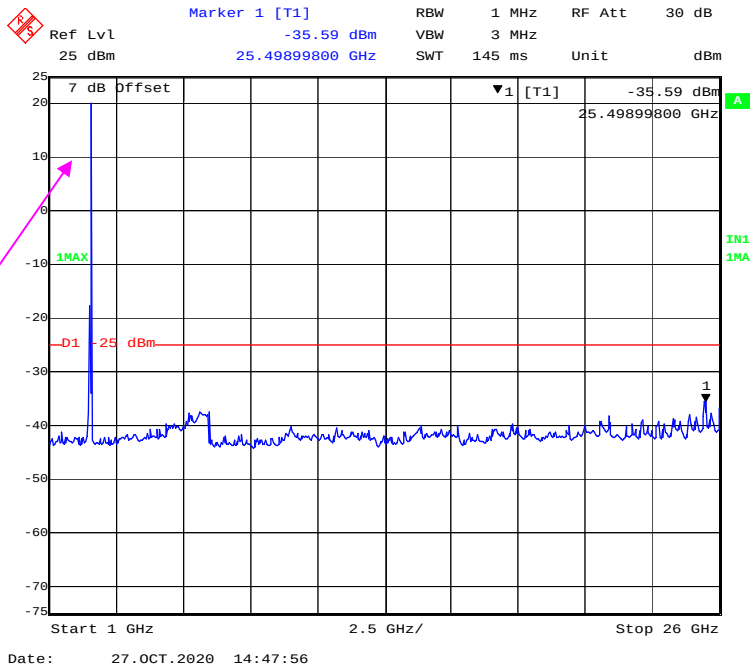


Fundamental

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

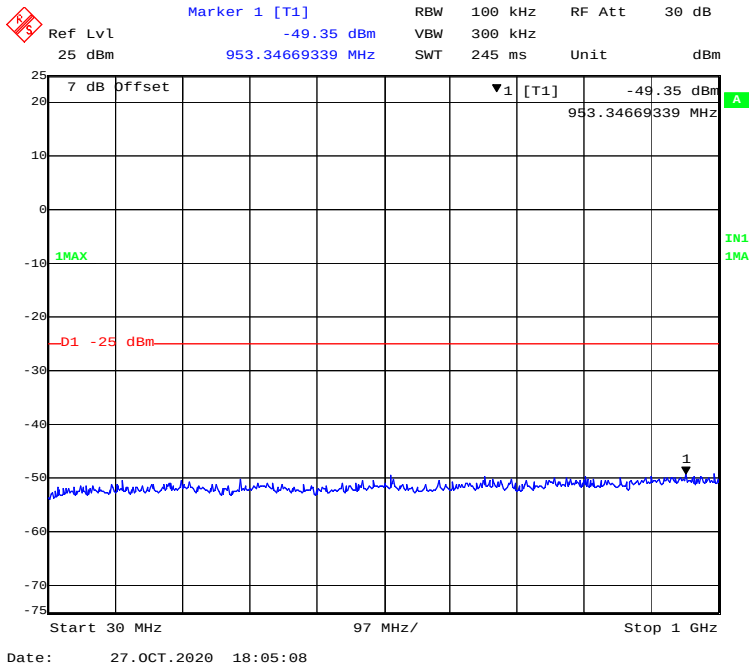


1 GHz –26 GHz (10 MHz, 16-QAM, Low Channel)

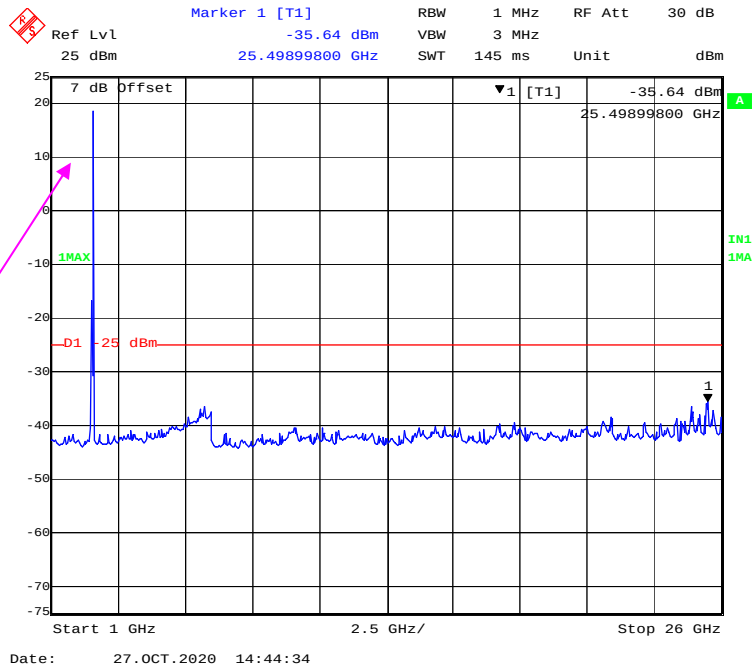


Fundamental

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

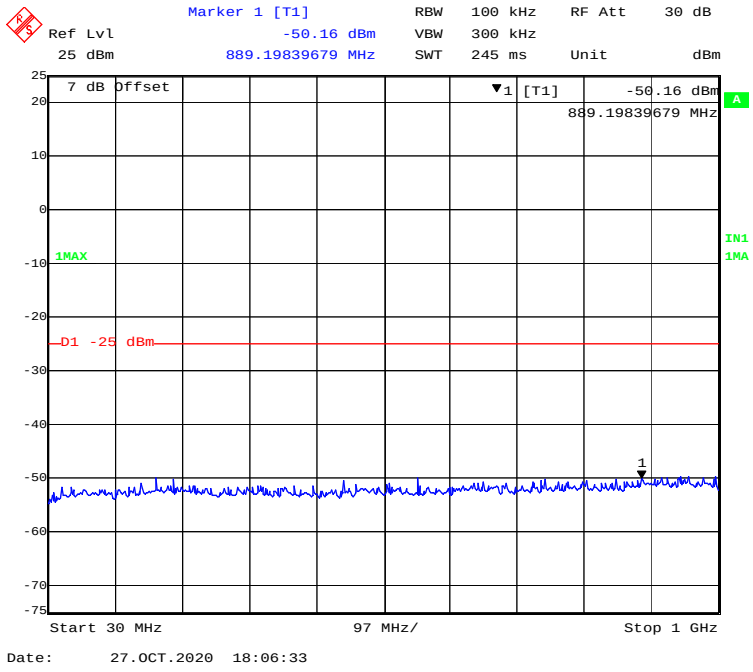


1 GHz –26 GHz (15 MHz, QPSK, Low Channel)

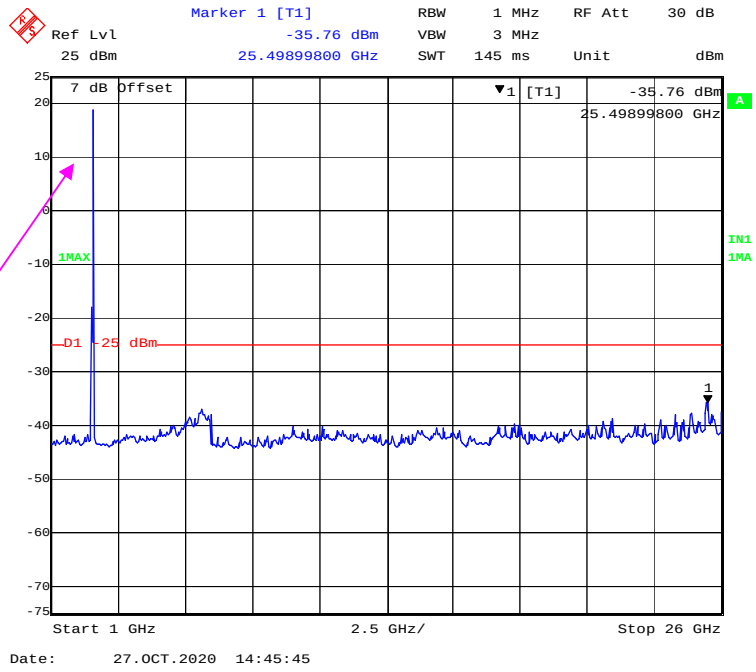


Fundamental

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

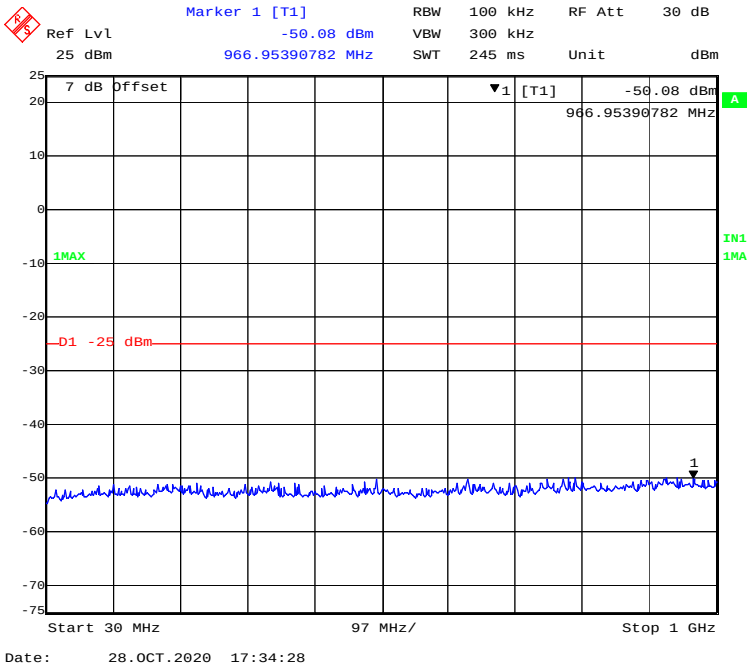


1 GHz –26 GHz (15 MHz, 16-QAM, Low Channel)

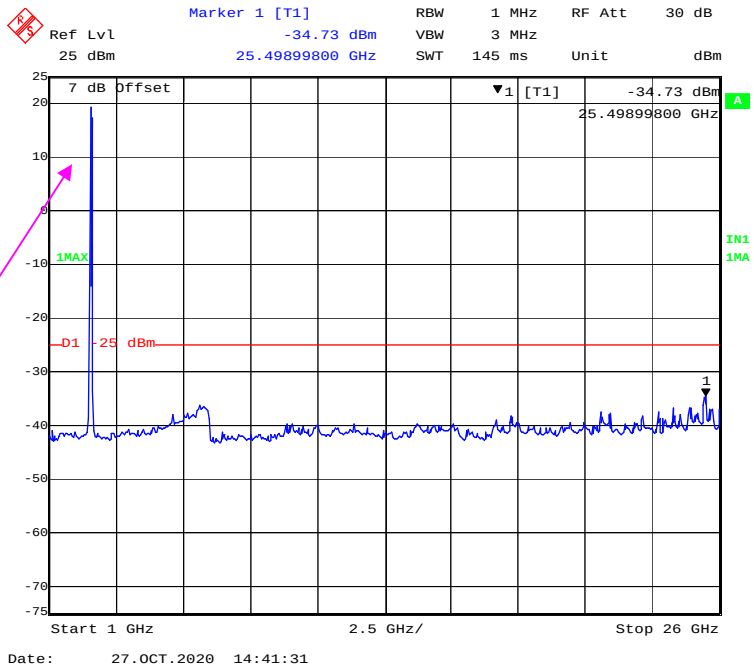


Fundamental

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

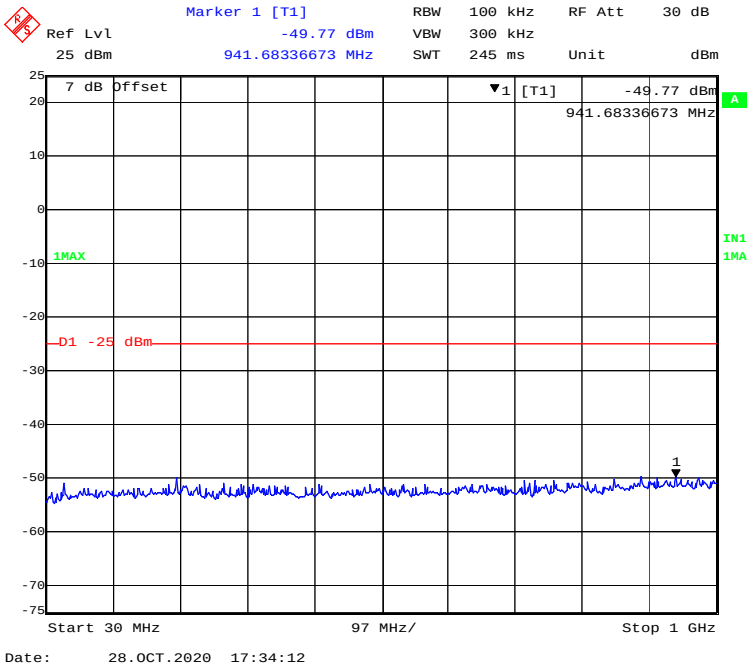


1 GHz –26 GHz (20 MHz, QPSK, Low Channel)

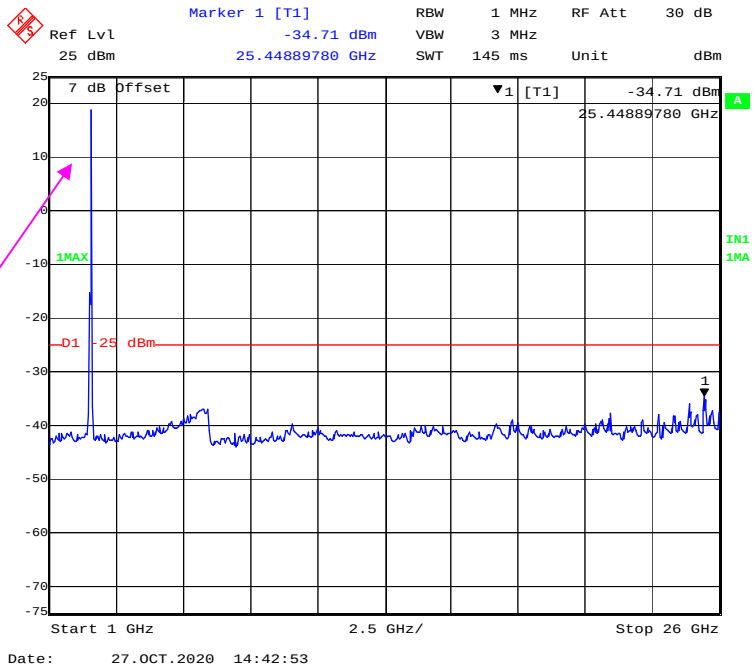


Fundamental

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

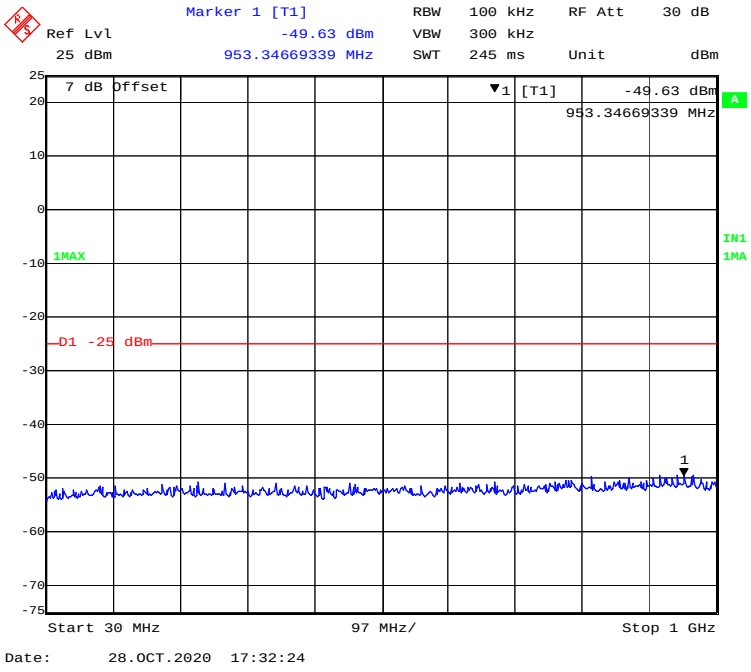


1 GHz –26 GHz (20 MHz, 16-QAM, Low Channel)

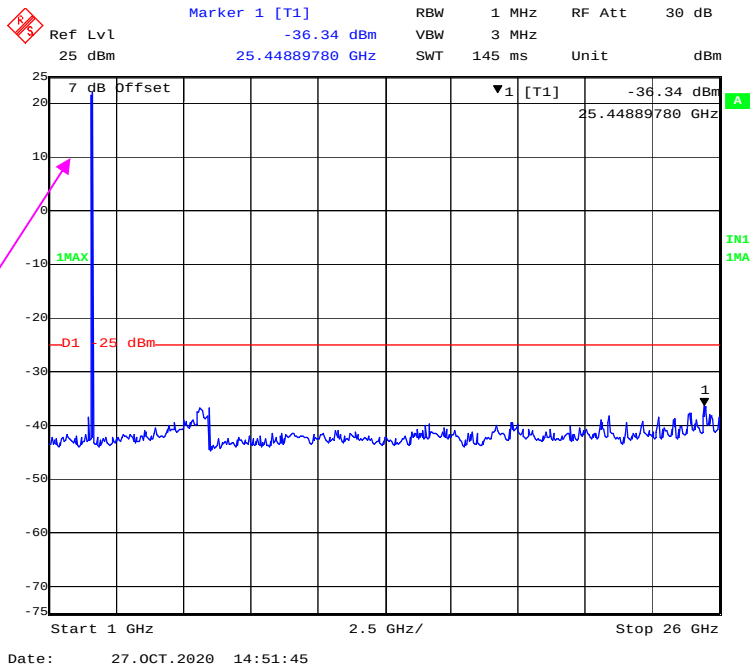


Fundamental

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

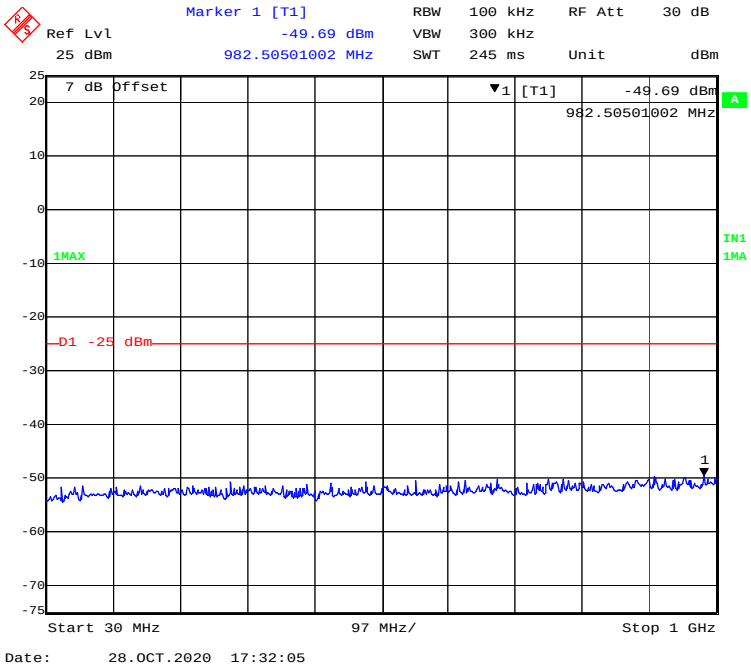


1 GHz –26 GHz (5 MHz, QPSK, Middle Channel)

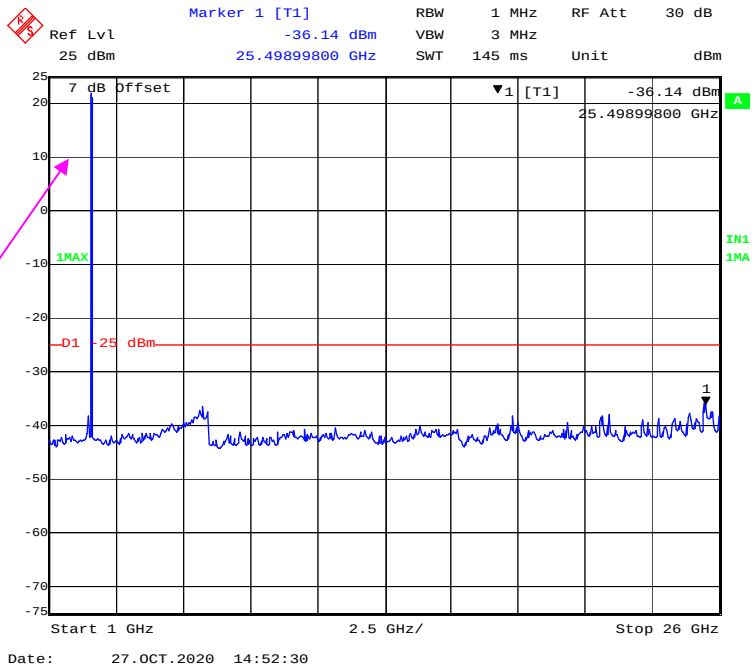


Fundamental

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

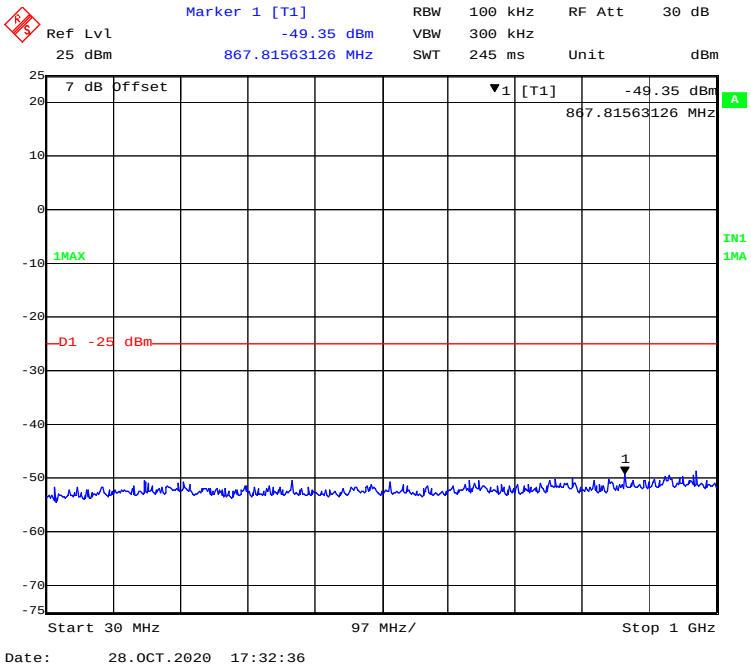


1 GHz –26 GHz (5 MHz, 16-QAM, Middle Channel)

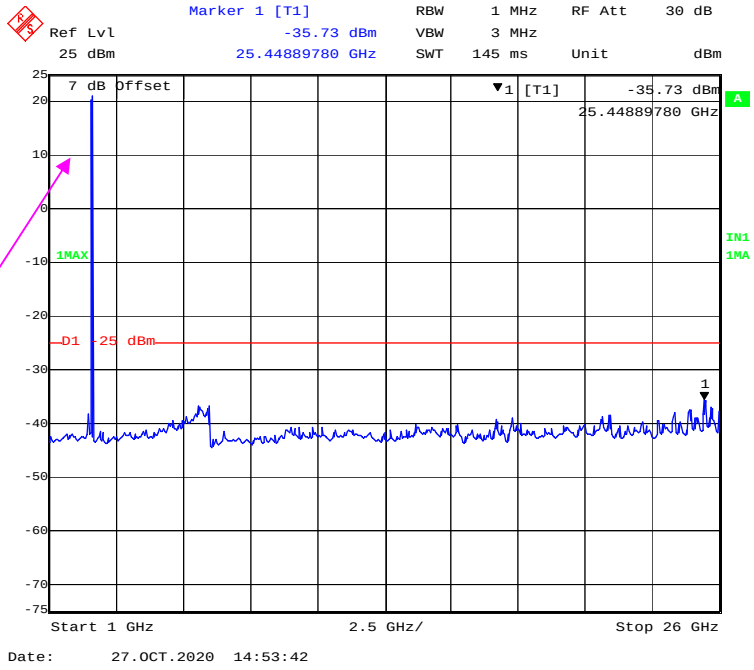


Fundamental

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

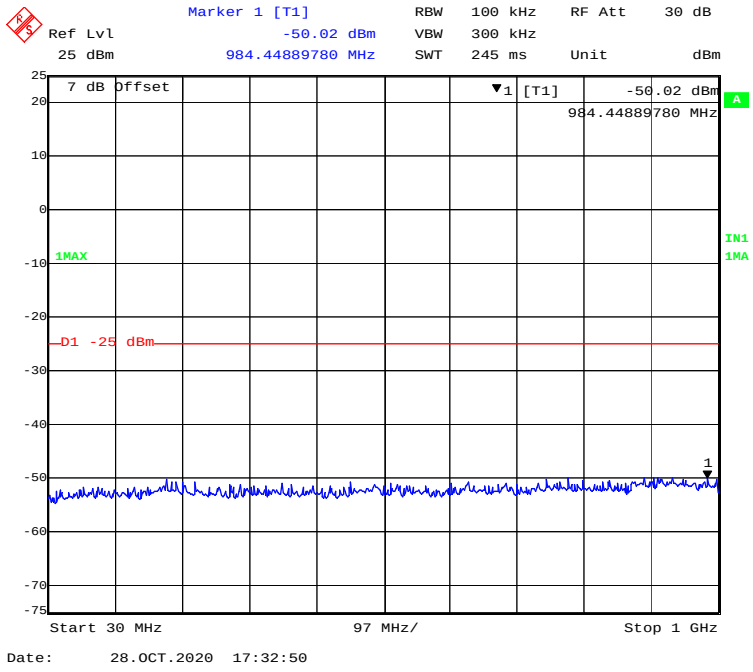


1 GHz –26 GHz (10 MHz, QPSK, Middle Channel)

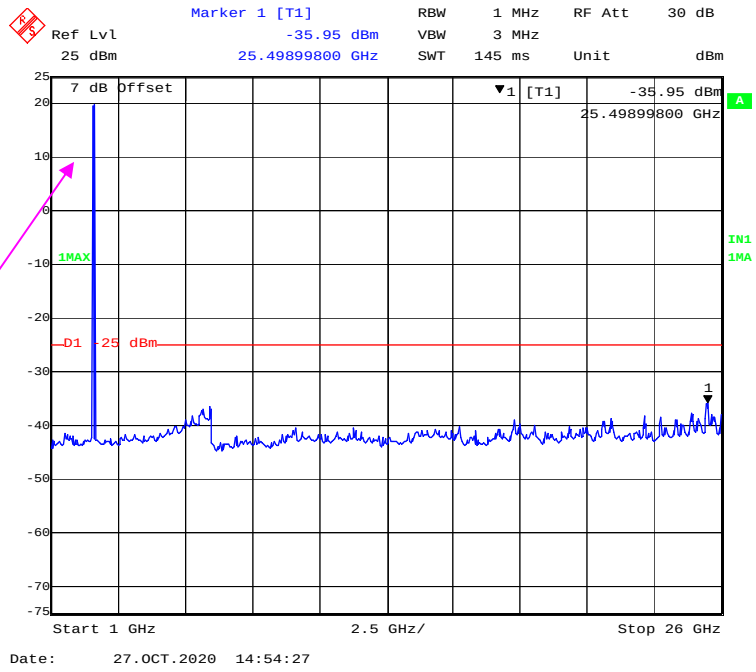


Fundamental

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

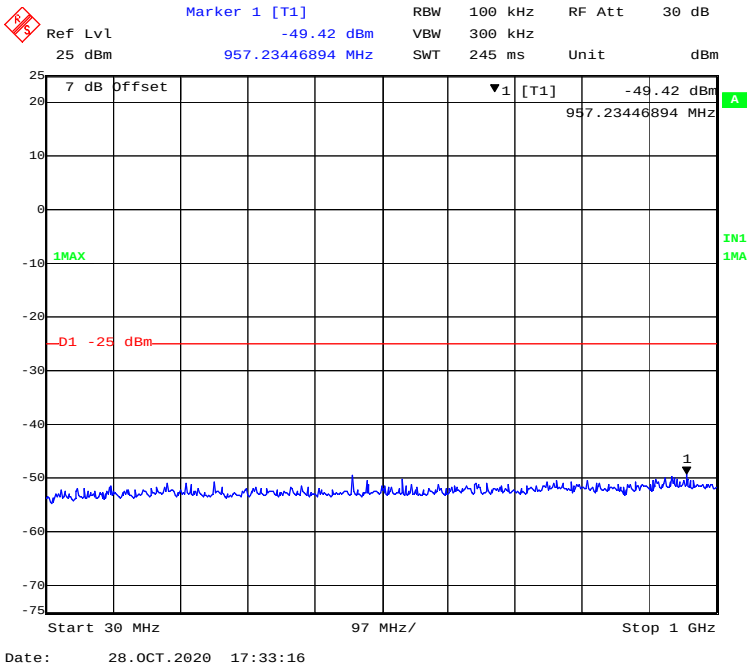


1 GHz –26 GHz (10 MHz, 16-QAM, Middle Channel)

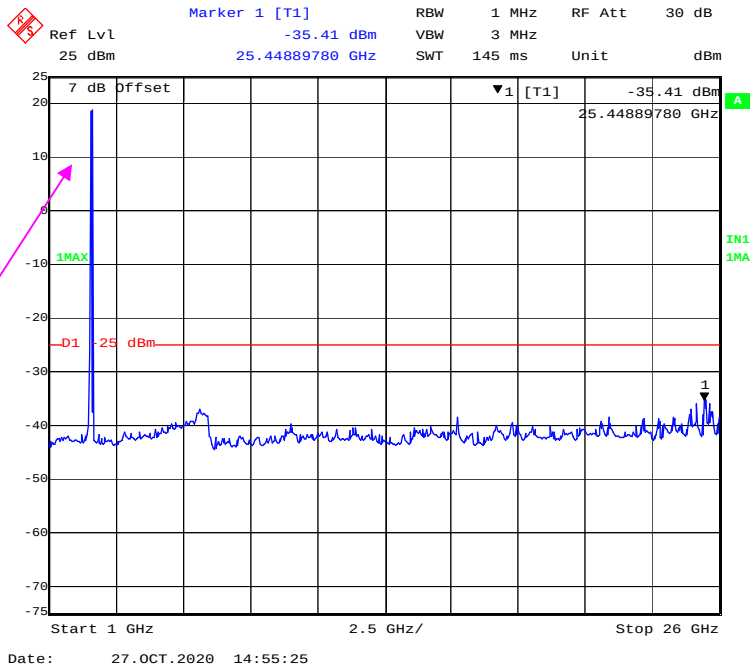


Fundamental

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

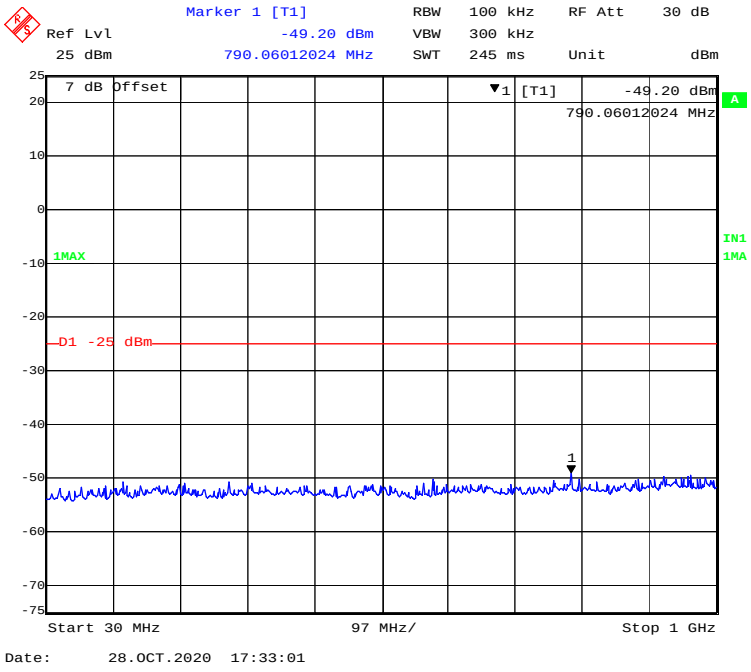


1 GHz –26 GHz (15 MHz, QPSK, Middle Channel)

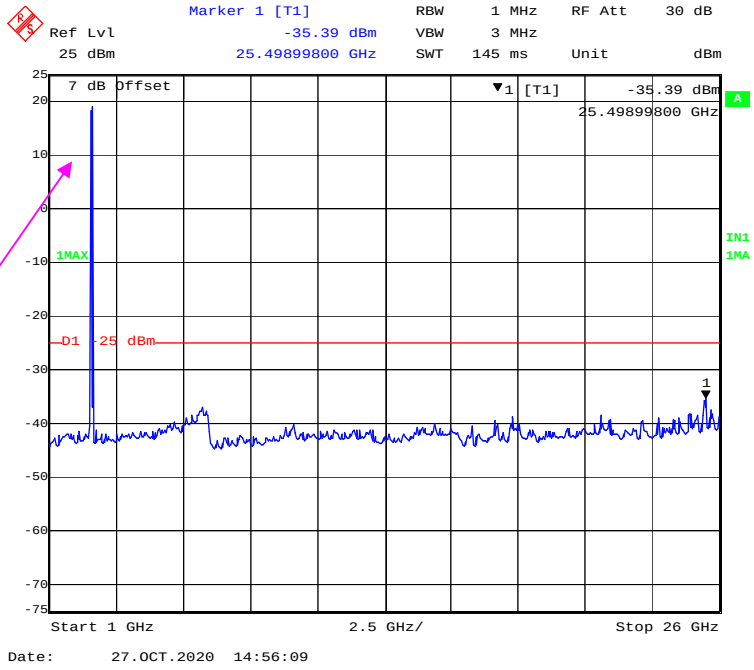


Fundamental

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

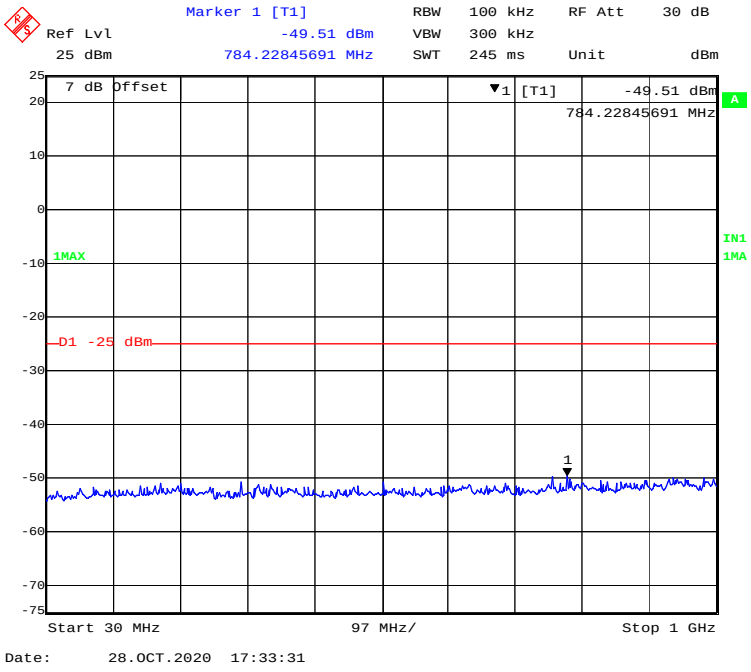


1 GHz –26 GHz (15 MHz, 16-QAM, Middle Channel)

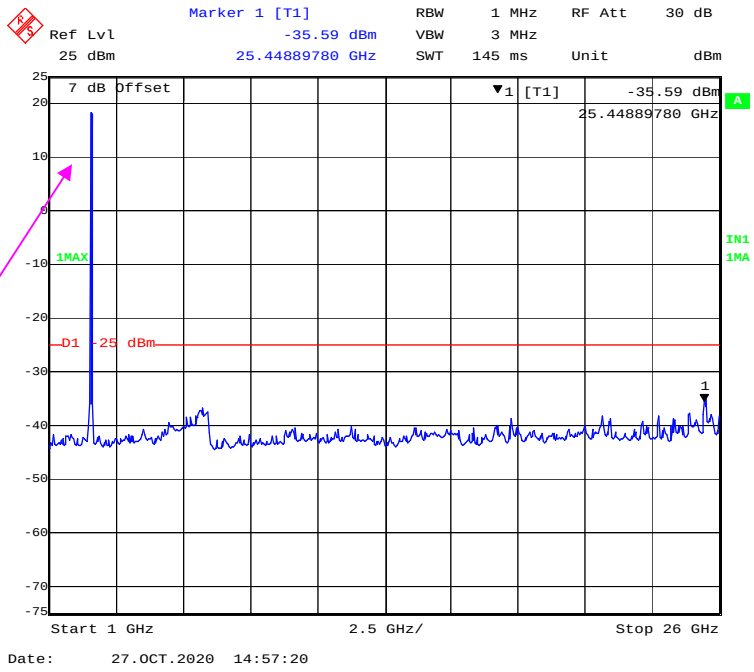


Fundamental

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

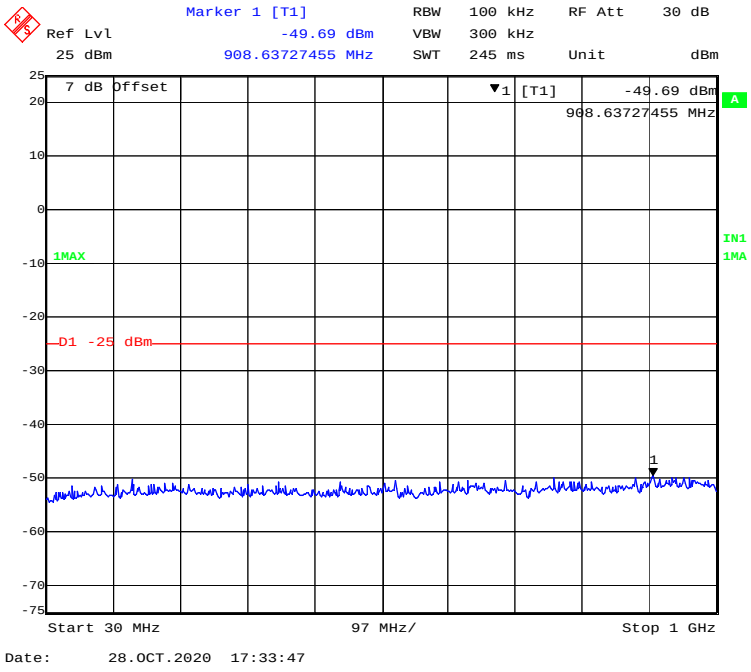


1 GHz –26 GHz (20 MHz, QPSK, Middle Channel)

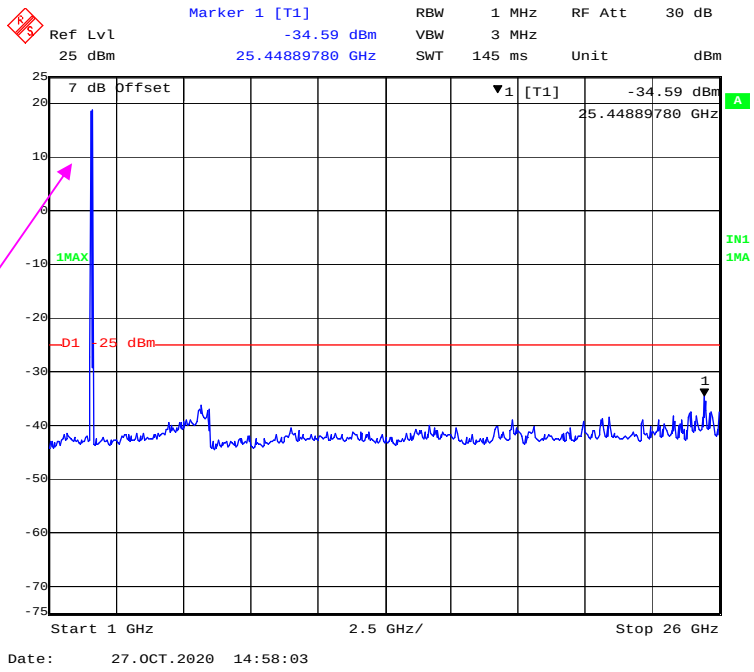


Fundamental

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

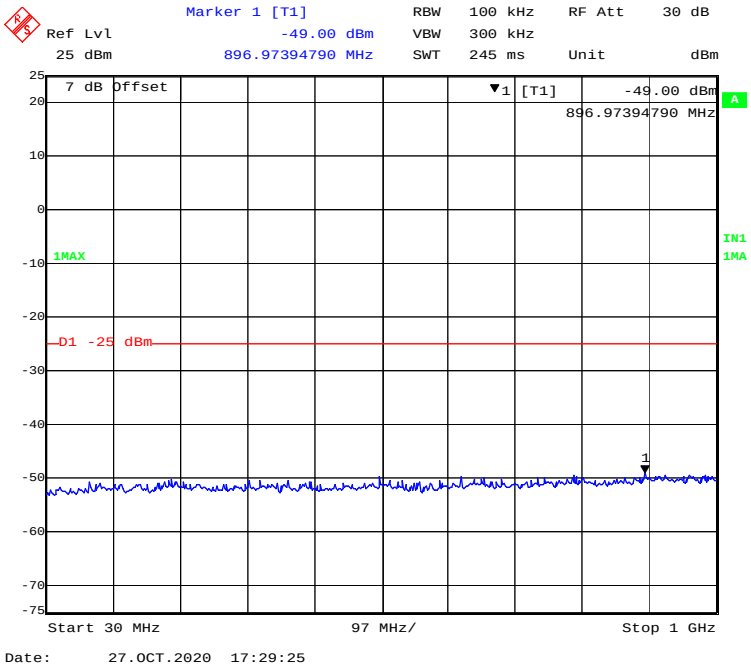


1 GHz –26 GHz (20 MHz, 16-QAM, Middle Channel)

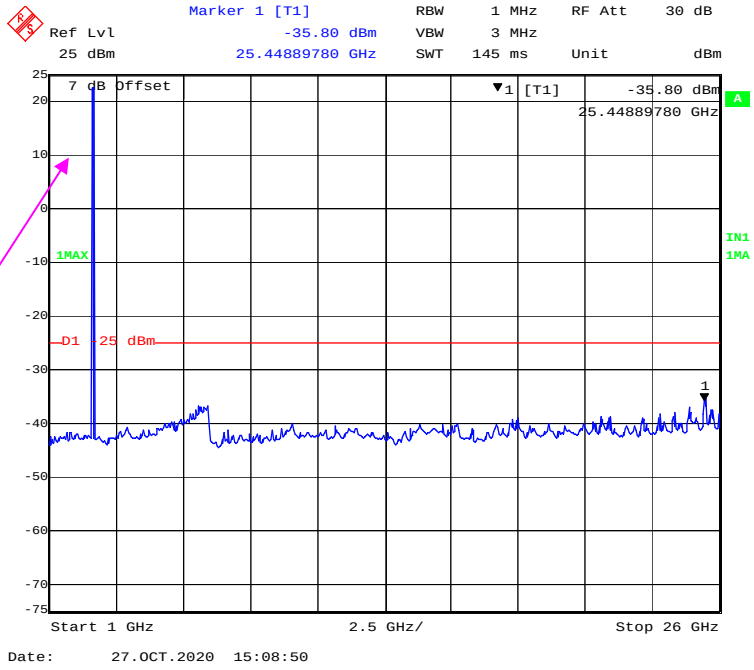


Fundamental

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

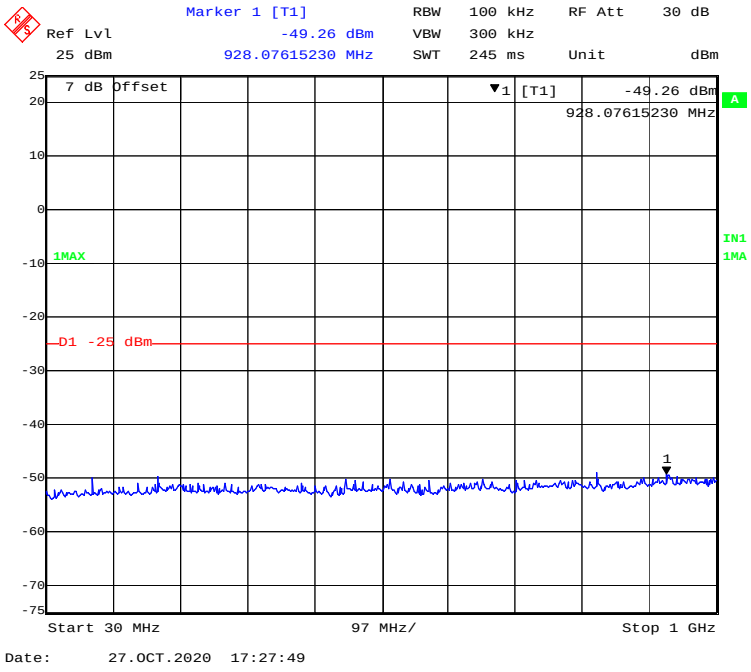


1 GHz –26 GHz (5 MHz, QPSK, High Channel)

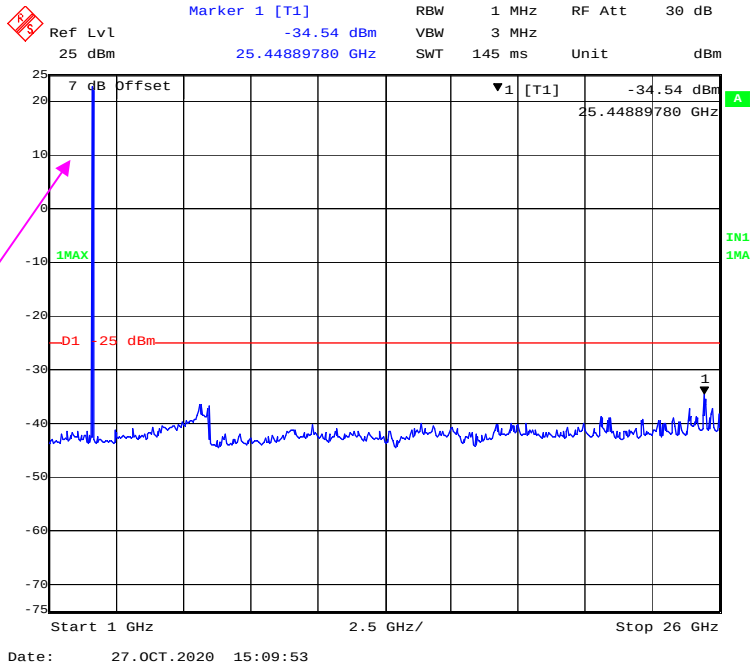


Fundamental

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

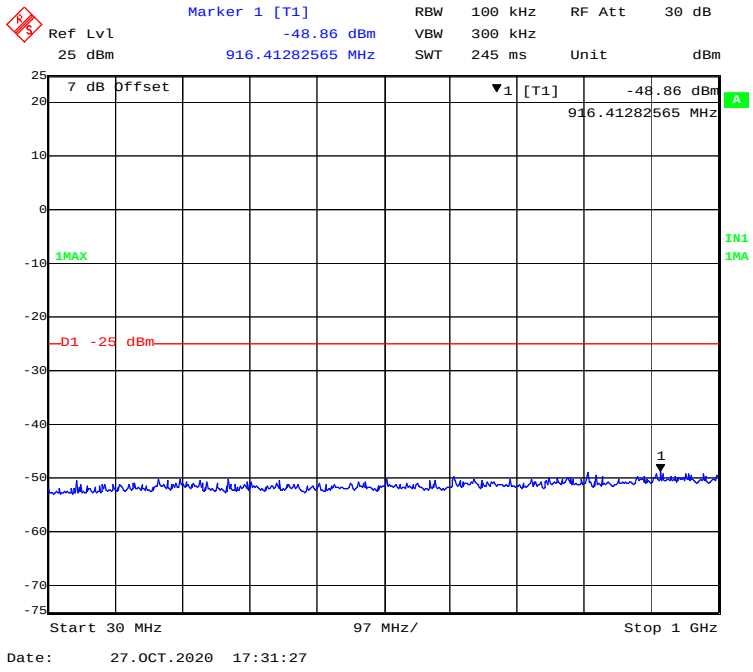


1 GHz –26 GHz (5 MHz, 16-QAM, High Channel)

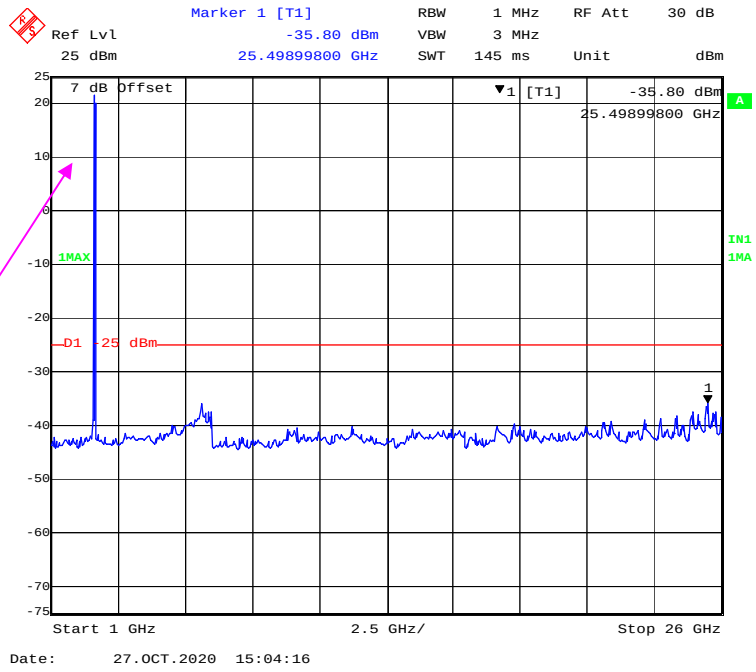


Fundamental

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

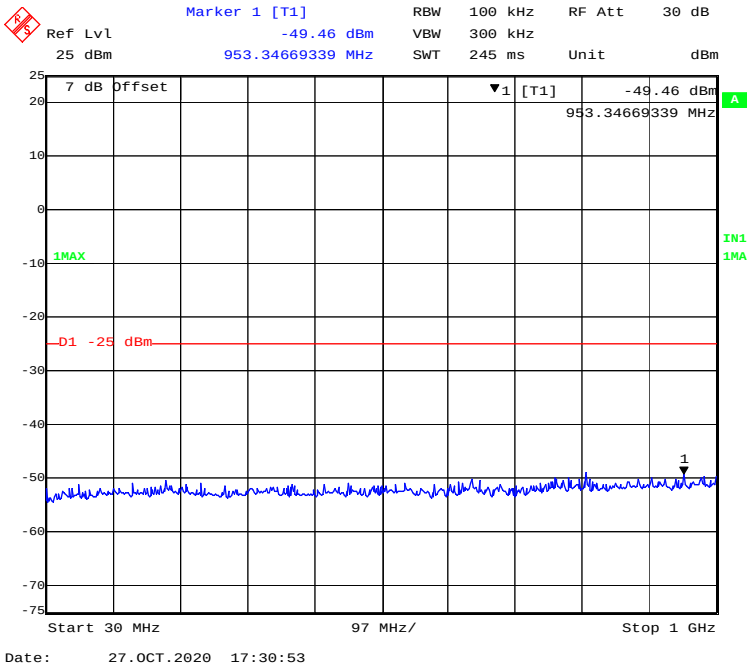


1 GHz –26 GHz (10 MHz, QPSK, High Channel)

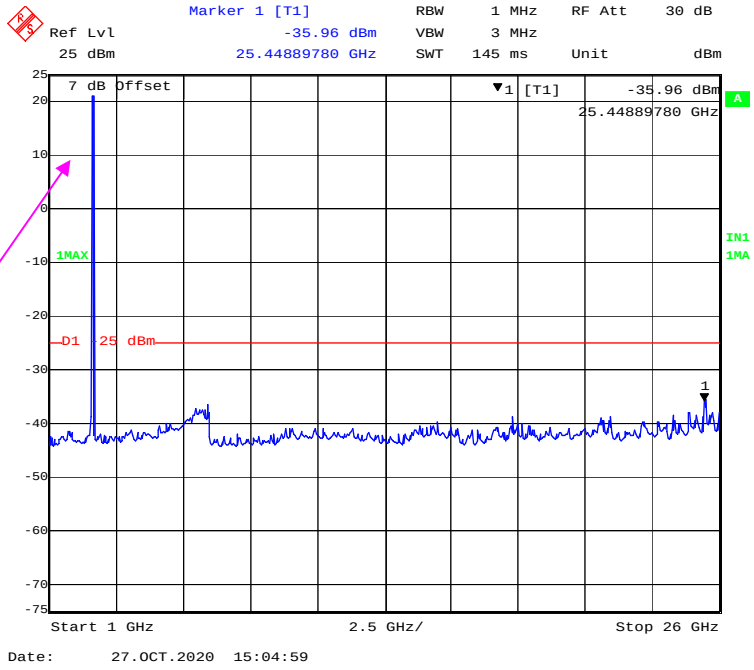


Fundamental

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

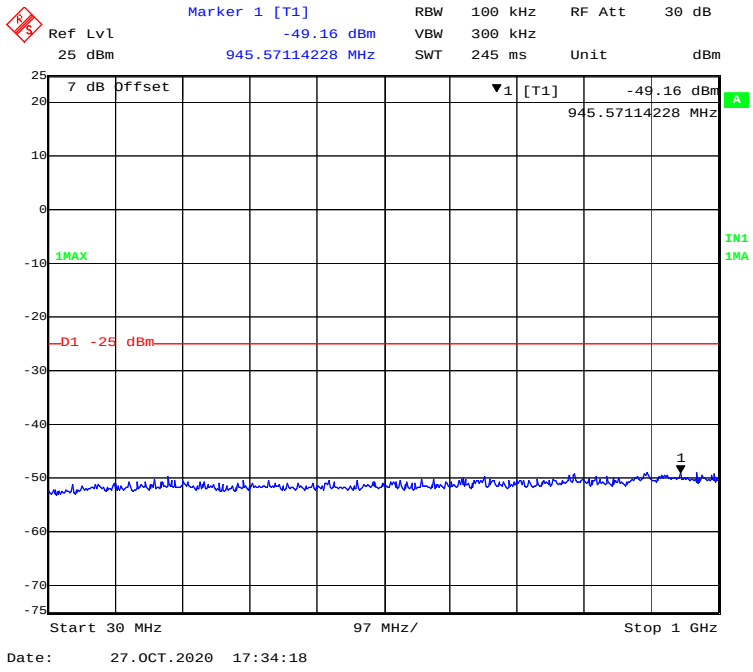


1 GHz –26 GHz (10 MHz, 16-QAM, High Channel)

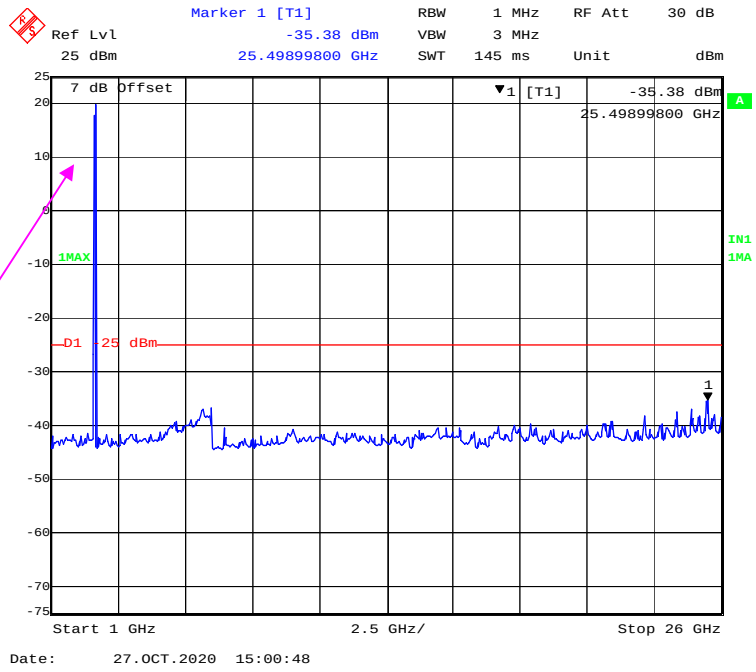


Fundamental

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

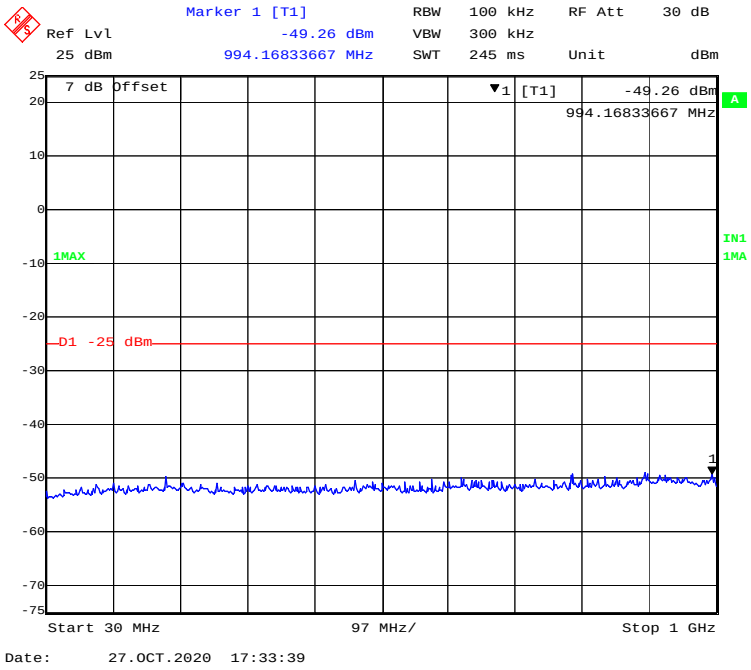


1 GHz –26 GHz (15 MHz, QPSK, Middle Channel)

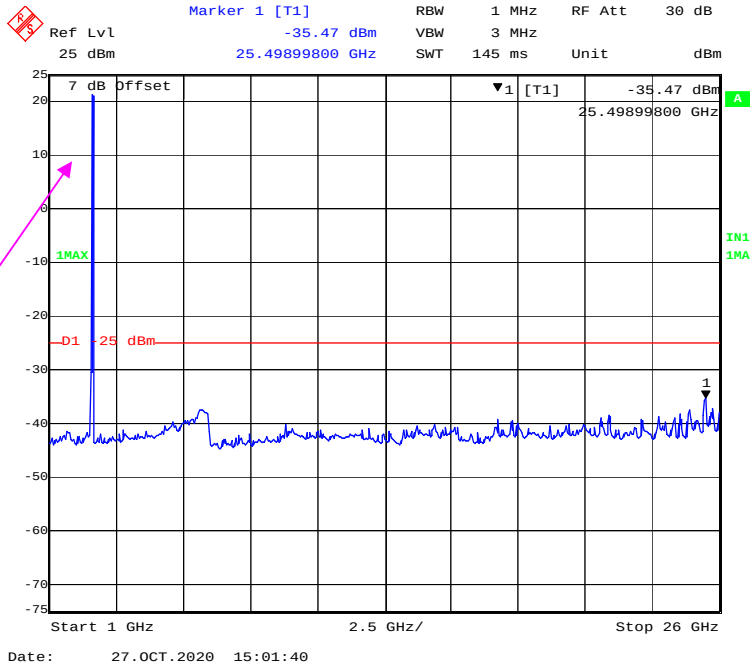


Fundamental

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

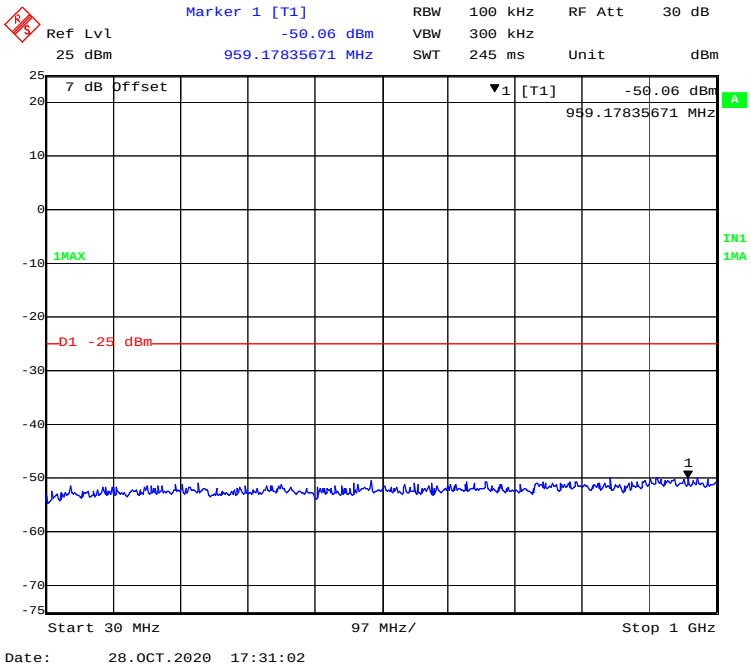


1 GHz –26 GHz (15 MHz, 16-QAM, High Channel)

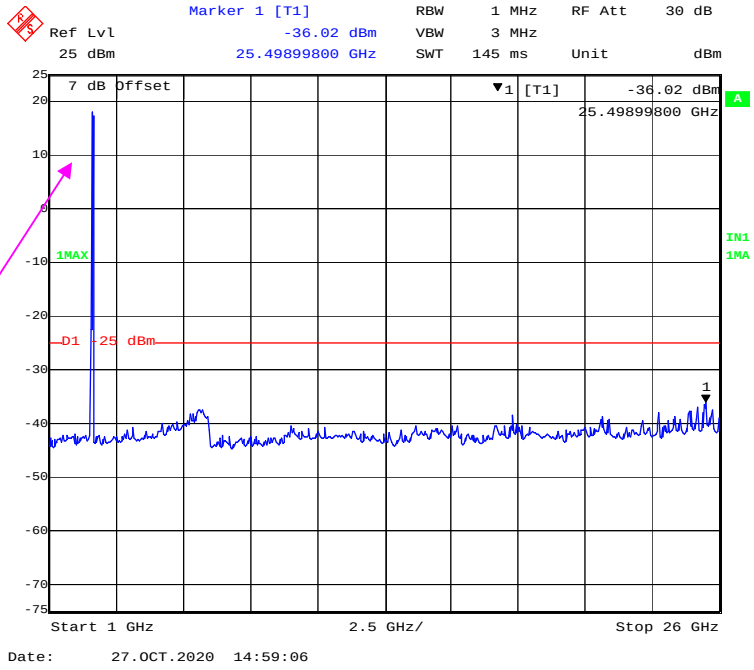


Fundamental

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

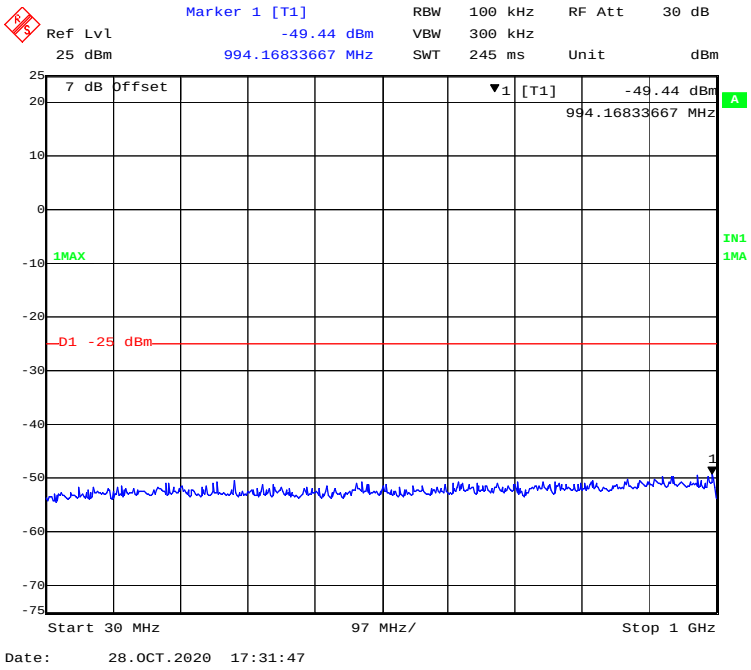


1 GHz –26 GHz (20 MHz, QPSK, High Channel)

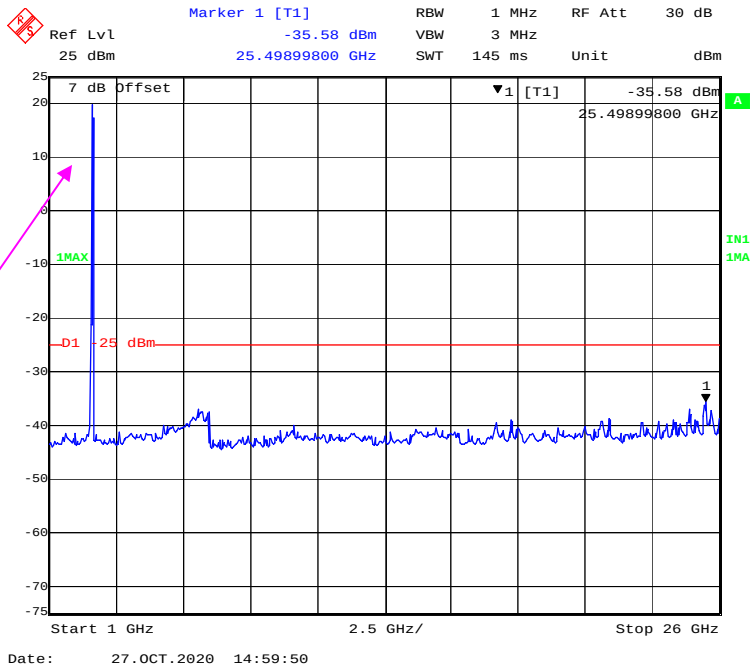


Fundamental

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



1 GHz –26 GHz (20 MHz, 16-QAM, High Channel)



Fundamental

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

Applicable Standards

FCC § 2.1053, §22.917(a) ,§ 24.238(a) and § 27.53(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(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:	23.4 ℃
Relative Humidity:	49 %
ATM Pressure:	101.5 kPa

The testing was performed by CK Huang on 2020-10-28.

Test mode: Transmitting

30 MHz ~ 10 GHz:

GSM 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)			
GSM Mode, Low channel										
260.01	52.46	195	150	H	-56.51	0.44	-2.23	-59.18	-13	46.18
260.01	53.01	56	150	V	-55.96	0.44	-2.23	-58.63	-13	45.63
1648.40	49.89	78	200	H	-63.46	0.84	8.44	-55.86	-13	42.86
1648.40	50.42	96	200	V	-62.93	0.84	8.44	-55.33	-13	42.33
GSM Mode, Middle channel										
260.01	51.02	9	150	H	-57.95	0.44	-2.23	-60.62	-13	47.62
260.01	52.49	213	150	V	-56.48	0.44	-2.23	-59.15	-13	46.15
1673.20	55.46	114	150	H	-47.93	0.84	8.48	-40.29	-13	27.29
1673.20	55.06	16	150	V	-48.33	0.84	8.48	-40.69	-13	27.69
GSM Mode, High channel										
260.01	51.49	195	210	H	-57.48	0.44	-2.23	-60.15	-13	47.15
260.01	52.08	56	158	V	-56.89	0.44	-2.23	-59.56	-13	46.56
1697.60	49.37	78	125	H	-63.64	0.84	8.52	-55.96	-13	42.96
1697.60	50.15	96	139	V	-62.86	0.84	8.52	-55.18	-13	42.18

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										
33.39	53.01	337	150	H	-20.38	0.16	-25.82	-46.36	-13	33.36
33.39	52.88	93	150	V	-20.51	0.16	-25.82	-46.49	-13	33.49
1652.80	36.46	280	100	H	-71.76	0.84	8.44	-64.16	-13	51.16
1652.80	36.94	133	100	V	-73.42	0.84	8.44	-65.82	-13	52.82
WCDMA Mode, Middle channel										
33.39	53.91	20	150	H	-19.48	0.16	-25.82	-45.46	-13	32.46
33.39	52.69	213	150	V	-20.7	0.16	-25.82	-46.68	-13	33.68
1673.20	36.61	103	100	H	-72.76	0.84	8.48	-65.12	-13	52.12
1673.20	36.16	32	100	V	-73.10	0.84	8.48	-65.46	-13	52.46
WCDMA Mode, High channel										
33.39	52.19	104	150	H	-21.2	0.16	-25.82	-47.18	-13	34.18
33.39	50.69	179	150	V	-22.7	0.16	-25.82	-48.68	-13	35.68
1693.20	36.07	277	100	H	-73.86	0.84	8.51	-66.19	-13	53.19
1693.20	36.85	232	100	V	-73.50	0.84	8.51	-65.83	-13	52.83

CDMA850 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)			
CDMA850 Mode, Low channel										
260.01	52.19	114	150	H	-50.39	0.44	-2.23	-53.06	-13	40.06
260.01	51.93	165	150	V	-50.65	0.44	-2.23	-53.32	-13	40.32
1649.40	48.58	58	200	H	-64.76	0.84	8.44	-57.16	-13	44.16
1649.40	49.58	178	100	V	-63.76	0.84	8.44	-56.16	-13	43.16
CDMA850 Mode, Middle channel										
260.01	52.55	52	150	H	-50.03	0.44	-2.23	-52.7	-13	39.70
260.01	51.96	35	150	V	-50.62	0.44	-2.23	-53.29	-13	40.29
1673.04	50.07	129	200	H	-63.1	0.84	8.48	-55.46	-13	42.46
1673.04	48.79	285	100	V	-64.38	0.84	8.48	-56.74	-13	43.74
CDMA850 Mode, High channel										
260.01	51.47	236	150	H	-51.11	0.44	-2.23	-53.78	-13	40.78
260.01	52.36	223	150	V	-50.22	0.44	-2.23	-52.89	-13	39.89
1696.62	49.38	293	200	H	-63.63	0.84	8.51	-55.96	-13	42.96
1696.62	49.28	9	100	V	-63.73	0.84	8.51	-56.06	-13	43.06

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)			
1xRTT Mode, Low channel										
260.01	53.13	63	150	H	-49.45	0.44	-2.23	-52.12	-13	39.12
260.01	52.96	41	150	V	-49.62	0.44	-2.23	-52.29	-13	39.29
1649.40	47.46	98	200	H	-64.76	0.84	8.44	-57.16	-13	44.16
1649.40	50.33	275	100	V	-63.76	0.84	8.44	-56.16	-13	43.16
1xRTT Mode, Middle channel										
260.01	53.02	90	150	H	-49.56	0.44	-2.23	-52.23	-13	39.23
260.01	52.46	50	150	V	-50.12	0.44	-2.23	-52.79	-13	39.79
1673.04	49.46	35	200	H	-63.1	0.84	8.48	-55.46	-13	42.46
1673.04	48.22	247	100	V	-64.38	0.84	8.48	-56.74	-13	43.74
1xRTT Mode, High channel										
260.01	49.96	194	150	H	-52.62	0.44	-2.23	-55.29	-13	42.29
260.01	52.02	349	150	V	-50.56	0.44	-2.23	-53.23	-13	40.23
1696.62	50.02	158	200	H	-63.63	0.84	8.51	-55.96	-13	42.96
1696.62	49.46	64	100	V	-63.73	0.84	8.51	-56.06	-13	43.06

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)			
GSM Mode, Low channel										
261.01	52.01	55	145	H	-56.88	0.44	-2.23	-59.55	-13	46.55
261.01	51.88	302	156	V	-57.01	0.44	-2.23	-59.68	-13	46.68
3700.40	42.65	225	189	H	-64.32	0.95	9.78	-55.49	-13	42.49
3700.40	42.35	110	200	V	-64.62	0.95	9.78	-55.79	-13	42.79
GSM Mode, Middle channel										
261.01	51.02	122	100	H	-57.87	0.44	-2.23	-60.54	-13	47.54
261.01	50.49	123	100	V	-58.4	0.44	-2.23	-61.07	-13	48.07
3760.00	55.49	265	200	H	-51.29	0.95	9.74	-42.5	-13	29.5
3760.00	55.3	206	200	V	-51.8	0.95	9.74	-43.01	-13	30.01
GSM Mode, High channel										
261.01	51.09	55	145	H	-57.8	0.44	-2.23	-60.47	-13	47.47
261.01	52.12	302	156	V	-56.77	0.44	-2.23	-59.44	-13	46.44
3819.60	42.15	225	189	H	-64.44	0.96	9.71	-55.69	-13	42.69
3819.60	42.44	110	200	V	-64.15	0.96	9.71	-55.4	-13	42.4

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										
559.98	51.45	323	150	H	-53.05	0.58	-1.17	-54.8	-13	41.8
559.98	52.96	126	150	V	-51.54	0.58	-1.17	-53.29	-13	40.29
3704.80	37.64	3	200	H	-70.22	0.95	9.78	-61.39	-13	48.39
3704.80	37.45	221	100	V	-69.02	0.95	9.78	-60.19	-13	47.19
WCDMA Mode, Middle channel										
559.98	49.06	169	150	H	-55.44	0.58	-1.17	-57.19	-13	44.19
559.98	50.19	30	150	V	-54.31	0.58	-1.17	-56.06	-13	43.06
3760.00	37.16	345	200	H	-69.1	0.95	9.74	-60.31	-13	47.31
3760.00	37.04	276	100	V	-68.92	0.95	9.74	-60.13	-13	47.13
WCDMA Mode, High channel										
557.43	51.42	107	150	H	-53.08	0.58	-1.17	-54.83	-13	41.83
557.43	50.96	186	150	V	-53.54	0.58	-1.17	-55.29	-13	42.29
3815.20	37.33	306	200	H	-69.24	0.96	9.71	-60.49	-13	47.49
3815.20	37.69	127	100	V	-68.24	0.96	9.71	-59.49	-13	46.49

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 ~ 20 GHz:

LTE Band 2:

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										
559.98	51.46	219	150	H	-53.04	0.58	-1.17	-54.79	-13	41.79
559.98	50.99	91	150	V	-53.51	0.58	-1.17	-55.26	-13	42.26
3701.40	41.86	337	200.0	H	-65.10	0.95	9.78	-56.27	-13	43.27
3701.40	40.64	281	200.0	V	-66.32	0.95	9.78	-57.49	-13	44.49
16-QAM 1.4MHz Bandwidth Low Channel										
559.98	50.66	219	150	H	-53.84	0.58	-1.17	-55.59	-13	42.59
559.98	51.67	91	150	V	-52.83	0.58	-1.17	-54.58	-13	41.58
3701.40	42.10	249	200.0	H	-64.86	0.95	9.78	-56.03	-13	43.03
3701.40	40.62	339	200.0	V	-66.34	0.95	9.78	-57.51	-13	44.51

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										
559.98	49.97	219	150	H	-54.53	0.58	-1.17	-56.28	-13	43.28
559.98	50.19	91	150	V	-54.31	0.58	-1.17	-56.06	-13	43.06
3760.00	32.73	235	200.0	H	-65.25	0.95	9.74	-56.46	-13	43.46
3760.00	32.16	258	200.0	V	-65.82	0.95	9.74	-57.03	-13	44.03
16-QAM 1.4MHz Bandwidth Middle Channel										
559.98	51.56	219	150	H	-52.94	0.58	-1.17	-54.69	-13	41.69
559.98	50.36	91	150	V	-54.14	0.58	-1.17	-55.89	-13	42.89
3760.00	32.65	110	200.0	H	-65.33	0.95	9.74	-56.54	-13	43.54
3760.00	31.46	335	200.0	V	-66.52	0.95	9.74	-57.73	-13	44.73

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										
559.98	52.08	219	150	H	-52.42	0.58	-1.17	-54.17	-13	41.17
559.98	51.49	91	150	V	-53.01	0.58	-1.17	-54.76	-13	41.76
3818.60	41.53	132	200.0	H	-65.07	0.96	9.71	-56.32	-13	43.32
3818.60	39.95	50	200.0	V	-66.65	0.96	9.71	-57.9	-13	44.90
16-QAM 1.4MHz Bandwidth High Channel										
559.98	52.05	219	150	H	-52.45	0.58	-1.17	-54.20	-13	41.20
559.98	51.36	91	150	V	-53.14	0.58	-1.17	-54.89	-13	41.89
3818.60	40.92	113	200.0	H	-65.68	0.96	9.71	-56.93	-13	43.93
3818.60	40.63	298	200.0	V	-65.97	0.96	9.71	-57.22	-13	44.22

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										
559.98	51.69	219	150	H	-52.81	0.58	-1.17	-54.56	-13	41.56
559.98	52.36	91	150	V	-52.14	0.58	-1.17	-53.89	-13	40.89
3421.40	42.63	170	200.0	H	-65.31	0.93	9.82	-56.42	-13	43.42
3421.40	41.32	68	200.0	V	-66.62	0.93	9.82	-57.73	-13	44.73
16-QAM 1.4MHz Bandwidth Low Channel										
559.98	50.46	219	200	H	-54.04	0.58	-1.17	-55.79	-13	42.79
559.98	51.63	91	200	V	-52.87	0.58	-1.17	-54.62	-13	41.62
3421.40	42.24	93	150.0	H	-65.70	0.93	9.82	-56.81	-13	43.81
3421.40	41.82	159	150.0	V	-66.12	0.93	9.82	-57.23	-13	44.23

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										
559.98	51.69	219	150	H	-52.81	0.58	-1.17	-54.56	-13	41.56
559.98	52.08	91	150	V	-52.42	0.58	-1.17	-54.17	-13	41.17
3465.00	35.12	248	200.0	H	-63.69	0.93	9.87	-54.75	-13	41.75
3465.00	36.43	104	200.0	V	-62.38	0.93	9.87	-53.44	-13	40.44
16-QAM 1.4MHz Bandwidth Middle Channel										
559.98	51.22	219	200	H	-53.28	0.58	-1.17	-55.03	-13	42.03
559.98	50.89	91	200	V	-53.61	0.58	-1.17	-55.36	-13	42.36
3465.00	35.57	305	150.0	H	-63.24	0.93	9.87	-54.3	-13	41.30
3465.00	36.59	200	150.0	V	-62.22	0.93	9.87	-53.28	-13	40.28

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										
559.98	51.25	219	150	H	-53.25	0.58	-1.17	-55.00	-13	42.00
559.98	52.49	91	150	V	-52.01	0.58	-1.17	-53.76	-13	40.76
3508.60	44.45	88	200.0	H	-63.12	0.93	9.90	-54.15	-13	41.15
3508.60	44.64	359	200.0	V	-62.93	0.93	9.90	-53.96	-13	40.96
16-QAM 1.4MHz Bandwidth High Channel										
559.98	51.26	219	200	H	-53.24	0.58	-1.17	-54.99	-13	41.99
559.98	50.99	91	200	V	-53.51	0.58	-1.17	-55.26	-13	42.26
3508.60	44.54	283	150.0	H	-63.03	0.93	9.90	-54.06	-13	41.06
3508.60	44.64	353	150.0	V	-62.93	0.93	9.90	-53.96	-13	40.96

30 MHz ~ 10 GHz:
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										
559.98	52.06	219	150	H	-52.44	0.58	-1.17	-54.19	-13	41.19
559.98	51.69	91	150	V	-52.81	0.58	-1.17	-54.56	-13	41.56
1649.40	49.46	40	200.0	H	-63.88	0.84	8.44	-56.28	-13	43.28
1649.40	48.22	333	200.0	V	-65.12	0.84	8.44	-57.52	-13	44.52
16-QAM 1.4MHz Bandwidth Low Channel										
559.98	51.22	219	150	H	-53.28	0.58	-1.17	-55.03	-13	42.03
559.98	51.07	91	150	V	-53.43	0.58	-1.17	-55.18	-13	42.18
1649.40	48.96	282	200.0	H	-64.38	0.84	8.44	-56.78	-13	43.78
1649.40	48.47	200	200.0	V	-64.87	0.84	8.44	-57.27	-13	44.27

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										
559.98	51.66	219	150	H	-52.84	0.58	-1.17	-54.59	-13	41.59
559.98	52.09	91	150	V	-52.41	0.58	-1.17	-54.16	-13	41.16
1673.00	45.18	191	200.0	H	-67.83	0.84	8.51	-60.16	-13	47.16
1673.00	45.97	117	200.0	V	-67.04	0.84	8.51	-59.37	-13	46.37
16-QAM 1.4MHz Bandwidth Middle Channel										
559.98	51.36	219	150	H	-53.14	0.58	-1.17	-54.89	-13	41.89
559.98	52.66	91	150	V	-51.84	0.58	-1.17	-53.59	-13	40.59
1673.00	45.85	100	200.0	H	-67.16	0.84	8.51	-59.49	-13	46.49
1673.00	46.85	65	200.0	V	-66.16	0.84	8.51	-58.49	-13	45.49

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										
559.98	51.69	219	150	H	-52.81	0.58	-1.17	-54.56	-13	41.56
559.98	52.49	91	150	V	-52.01	0.58	-1.17	-53.76	-13	40.76
1696.60	39.38	213	200.0	H	-66.15	0.84	8.48	-58.51	-13	45.51
1696.60	38.00	139	200.0	V	-67.53	0.84	8.48	-59.89	-13	46.89
16-QAM 1.4MHz Bandwidth High Channel										
559.98	52.16	219	150	H	-52.34	0.58	-1.17	-54.09	-13	41.09
559.98	51.96	91	150	V	-52.54	0.58	-1.17	-54.29	-13	41.29
1696.60	39.34	225	200.0	H	-66.19	0.84	8.48	-58.55	-13	45.55
1696.60	38.43	353	200.0	V	-67.10	0.84	8.48	-59.46	-13	46.46

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	51.69	261	200	H	-52.81	0.58	-1.17	-51.06	-25	26.06
559.98	52.43	124	200	V	-52.07	0.58	-1.17	-50.32	-25	25.32
5005.00	44.92	333	100	H	-61.07	1.08	10.30	-51.85	-25	26.85
5005.00	43.29	248	150	V	-62.7	1.08	10.30	-53.48	-25	28.48
16-QAM 5MHz Bandwidth Low Channel										
559.98	52.44	74	100	H	-52.06	0.58	-1.17	-50.31	-25	25.31
559.98	51.27	209	150	V	-53.23	0.58	-1.17	-51.48	-25	26.48
5005.00	43.88	194	150	H	-62.11	1.08	10.30	-52.89	-25	27.89
5005.00	44.83	146	200	V	-61.16	1.08	10.30	-51.94	-25	26.94

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	51.36	209	200	H	-53.14	0.58	-1.17	-51.39	-25	26.39
559.98	52.66	137	200	V	-51.84	0.58	-1.17	-50.09	-25	25.09
5070.00	44.1	238	100	H	-61.53	1.09	10.30	-52.32	-25	27.32
5070.00	44.63	324	150	V	-61	1.09	10.30	-51.79	-25	26.79
16-QAM 5MHz Bandwidth Middle Channel										
559.98	52.66	246	100	H	-51.84	0.58	-1.17	-50.09	-25	25.09
559.98	51.79	247	150	V	-52.71	0.58	-1.17	-50.96	-25	25.96
5070.00	44.12	71	150	H	-61.51	1.09	10.30	-52.3	-25	27.3
5070.00	45.02	227	200	V	-60.61	1.09	10.30	-51.4	-25	26.4

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 5MHz Bandwidth High Channel										
559.98	51.69	333	200	H	-52.81	0.58	-1.17	-51.06	-25	26.06
559.98	52.02	163	200	V	-52.48	0.58	-1.17	-50.73	-25	25.73
5135.00	43.62	257	100	H	-61.65	1.1	10.30	-52.45	-25	27.45
5135.00	44.2	64	150	V	-61.07	1.1	10.30	-51.87	-25	26.87
16-QAM 5MHz Bandwidth High Channel										
559.98	51.96	196	100	H	-52.54	0.58	-1.17	-50.79	-25	25.79
559.98	52.49	212	150	V	-52.01	0.58	-1.17	-50.26	-25	25.26
5135.00	43.41	134	150	H	-61.86	1.1	10.30	-52.66	-25	27.66
5135.00	44.61	30	200	V	-60.66	1.1	10.30	-51.46	-25	26.46

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										
559.98	51.69	300	100	H	-52.81	0.58	-1.17	-51.06	-13	38.06
559.98	52.19	293	200	V	-52.31	0.58	-1.17	-50.56	-13	37.56
1413.00	54.99	313	150	H	-59.98	0.83	8.06	-52.75	-13	39.75
1413.00	55.83	287	100	V	-59.14	0.83	8.06	-51.91	-13	38.91
16-QAM 5MHz Bandwidth Low Channel										
559.98	52.09	319	150	H	-52.41	0.58	-1.17	-50.66	-13	37.66
559.98	51.06	152	150	V	-53.44	0.58	-1.17	-51.69	-13	38.69
1413.00	55.08	200	200	H	-59.89	0.83	8.06	-52.66	-13	39.66
1413.00	56.06	245	200	V	-58.91	0.83	8.06	-51.68	-13	38.68

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	51.29	206	100	H	-53.21	0.58	-1.17	-51.46	-13	38.46
559.98	52.09	20	200	V	-52.41	0.58	-1.17	-50.66	-13	37.66
1420.00	55.26	107	150	H	-59.66	0.83	8.07	-52.42	-13	39.42
1420.00	55.93	169	100	V	-58.99	0.83	8.07	-51.75	-13	38.75
16-QAM 5MHz Bandwidth Middle Channel										
559.98	52.06	244	150	H	-52.44	0.58	-1.17	-50.69	-13	37.69
559.98	51.62	108	150	V	-52.88	0.58	-1.17	-51.13	-13	38.13
1420.00	55.49	300	200	H	-59.43	0.83	8.07	-52.19	-13	39.19
1420.00	56.06	136	200	V	-58.86	0.83	8.07	-51.62	-13	38.62

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	51.36	142	100	H	-53.14	0.58	-1.17	-51.39	-13	38.39
559.98	52.09	296	200	V	-52.41	0.58	-1.17	-50.66	-13	37.66
1427.00	55.19	360	150	H	-59.69	0.83	8.08	-52.44	-13	39.44
1427.00	56.27	140	100	V	-58.61	0.83	8.08	-51.36	-13	38.36
16-QAM 5MHz Bandwidth High Channel										
559.98	51.42	171	150	H	-53.08	0.58	-1.17	-51.33	-13	38.33
559.98	52.09	133	150	V	-52.41	0.58	-1.17	-50.66	-13	37.66
1427.00	55.16	99	200	H	-59.72	0.83	8.08	-52.47	-13	39.47
1427.00	55.94	342	200	V	-58.94	0.83	8.08	-51.69	-13	38.69

30 MHz ~ 26 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										
559.98	51.66	40	200	H	-52.84	0.58	-1.17	-51.09	-25	26.09
559.98	52.09	115	200	V	-52.41	0.58	-1.17	-50.66	-25	25.66
5115.00	44.32	61	100	H	-61.06	1.09	10.30	-51.85	-25	26.85
5115.00	42.69	77	150	V	-62.69	1.09	10.30	-53.48	-25	28.48
16-QAM 5MHz Bandwidth Low Channel										
559.98	51.46	111	100	H	-53.04	0.58	-1.17	-51.29	-25	26.29
559.98	52.07	358	150	V	-52.43	0.58	-1.17	-50.68	-25	25.68
5115.00	44.04	50	150	H	-61.34	1.09	10.30	-52.13	-25	27.13
5115.00	44.74	337	200	V	-60.64	1.09	10.30	-51.43	-25	26.43

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	51.36	327	200	H	-53.14	0.58	-1.17	-51.39	-25	26.39
559.98	52.44	206	200	V	-52.06	0.58	-1.17	-50.31	-25	25.31
5180.00	42.91	53	100	H	-62.11	1.1	10.30	-52.91	-25	27.91
5180.00	44.15	338	150	V	-60.87	1.1	10.30	-51.67	-25	26.67
16-QAM 5MHz Bandwidth Middle Channel										
559.98	52.09	324	100	H	-52.41	0.58	-1.17	-50.66	-25	25.66
559.98	51.46	236	150	V	-53.04	0.58	-1.17	-51.29	-25	26.29
5180.00	43.01	338	150	H	-62.01	1.1	10.30	-52.81	-25	27.81
5180.00	44.24	298	200	V	-60.78	1.1	10.30	-51.58	-25	26.58

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										
559.98	51.39	309	200	H	-53.11	0.58	-1.17	-51.36	-25	26.36
559.98	52.49	189	200	V	-52.01	0.58	-1.17	-50.26	-25	25.26
5305.00	43.12	173	100	H	-61.2	1.12	10.30	-52.02	-25	27.02
5305.00	43.74	274	150	V	-60.58	1.12	10.30	-51.4	-25	26.4
16-QAM 5MHz Bandwidth High Channel										
559.98	52.44	355	100	H	-52.06	0.58	-1.17	-50.31	-25	25.31
559.98	51.09	304	150	V	-53.41	0.58	-1.17	-51.66	-25	26.66
5305.00	42.26	348	150	H	-62.06	1.12	10.30	-52.88	-25	27.88
5305.00	43.89	230	200	V	-60.43	1.12	10.30	-51.25	-25	26.25

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) (g)(h)- BAND EDGES

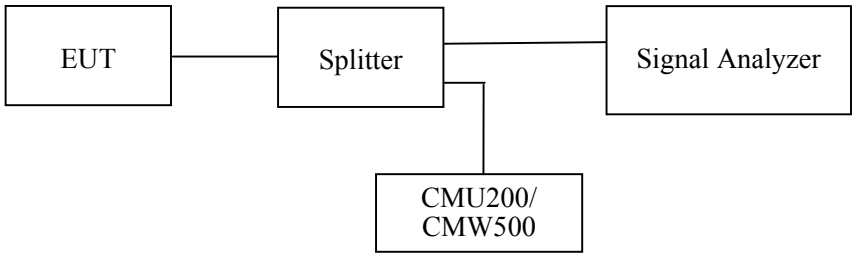
Applicable Standards

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

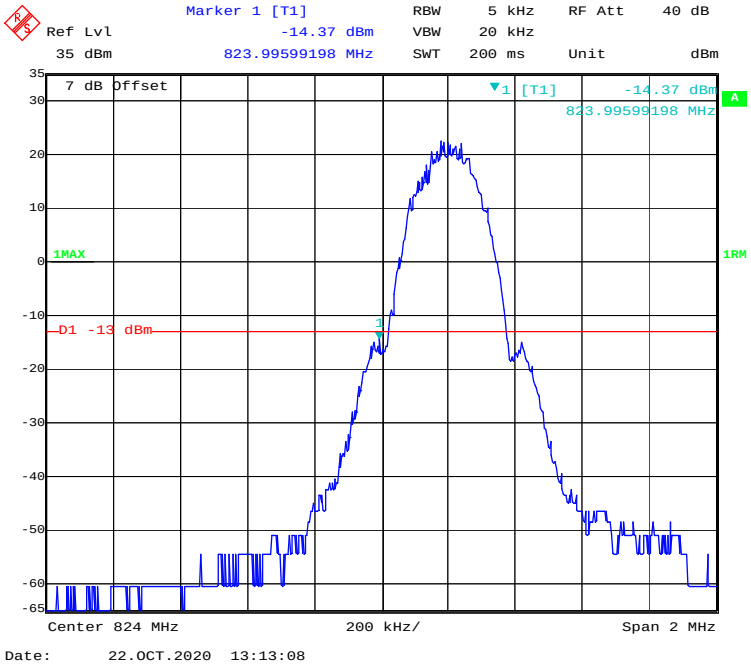
Temperature:	23.1~24.4 ℃
Relative Humidity:	49~52 %
ATM Pressure:	101.2~101.7 kPa

The testing was performed by CK Huang from 2020-10-17 to 2020-11-03.

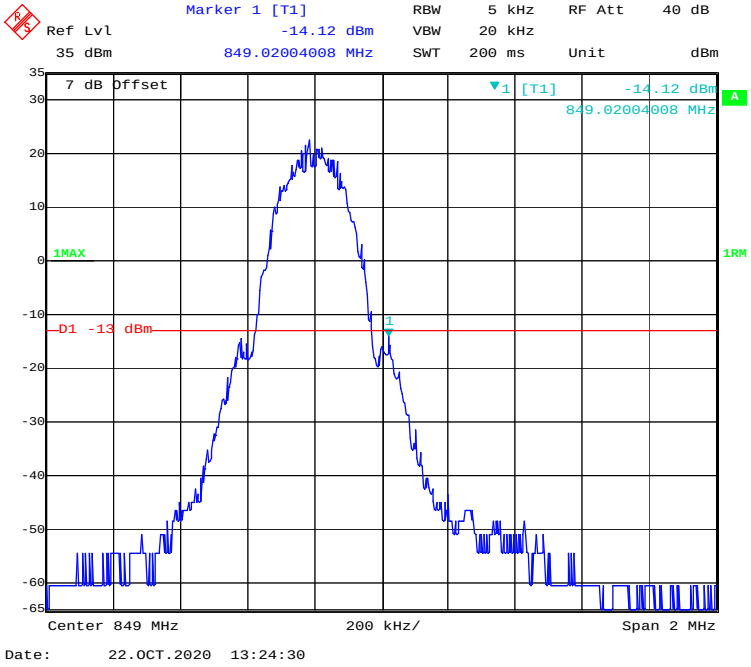
EUT operation mode: Transmitting
Test Result: Compliant.

GSM 850 Band:

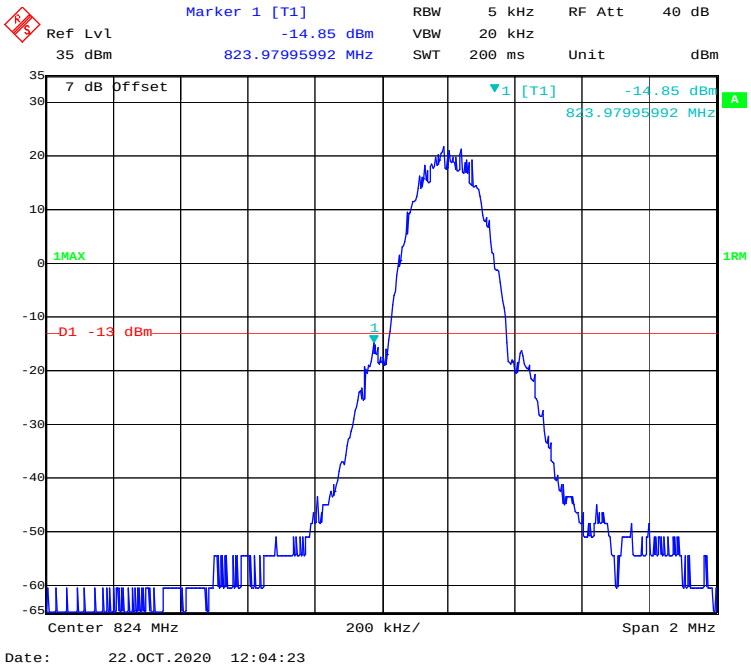
GSM Mode, Left Band Edge



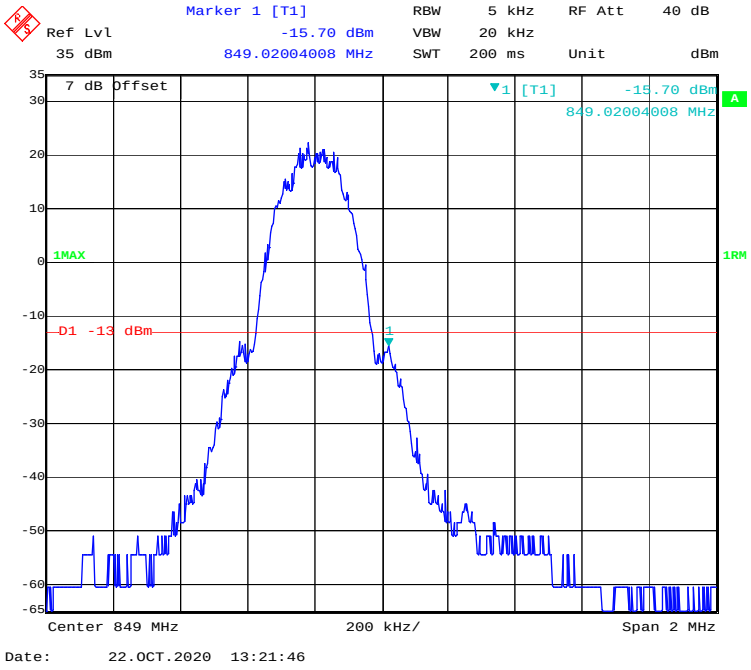
GSM Mode, Right Band Edge



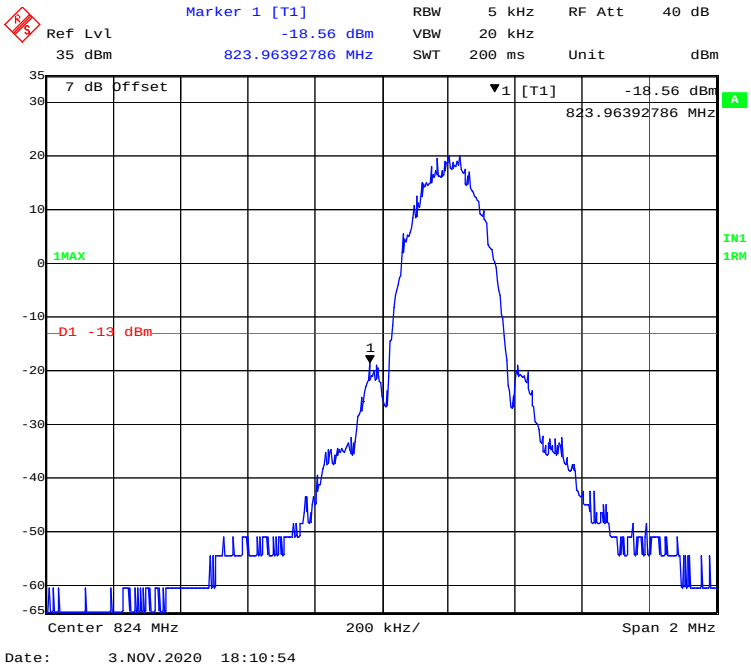
GPRS Mode, Left Band Edge



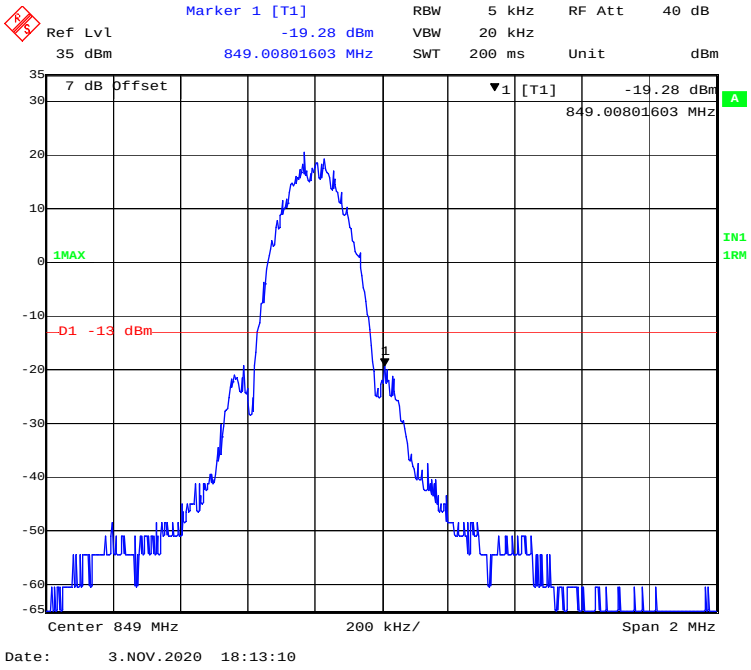
GPRS Mode, Right Band Edge



EGPRS Mode, Left Band Edge

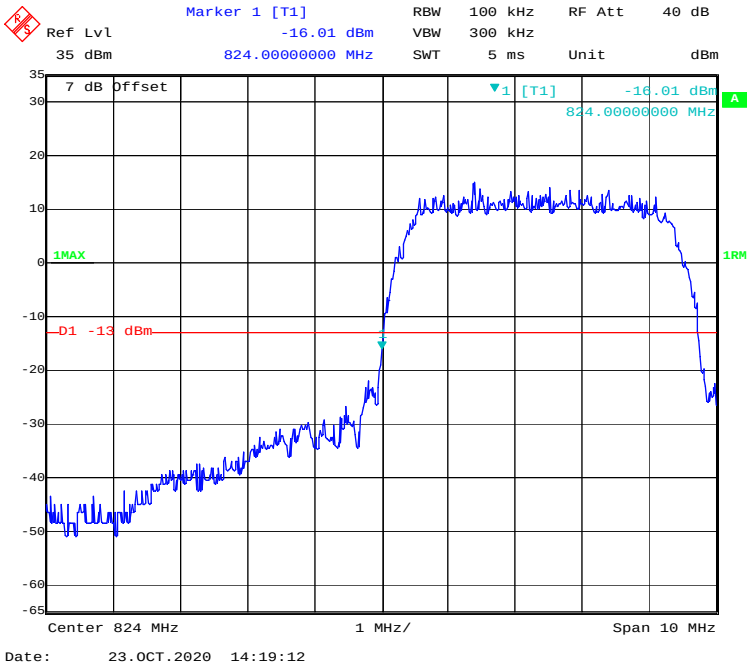


EGPRS Mode, Right Band Edge

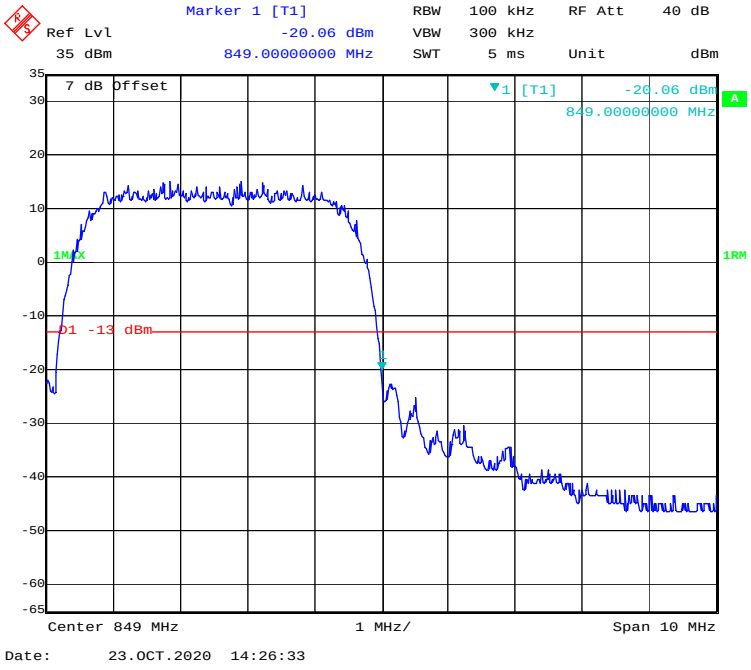


WCDMA Band V

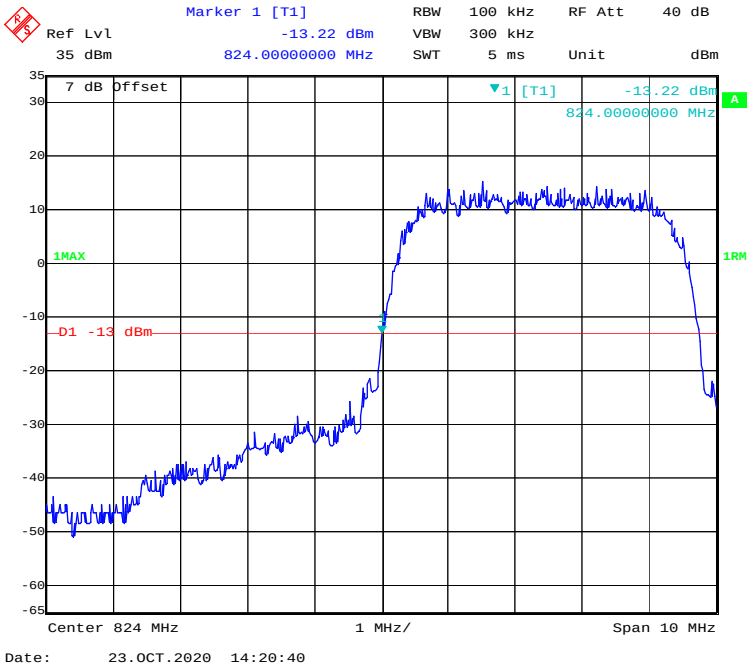
WCDMA (Rel 99) Mode, Left Band Edge



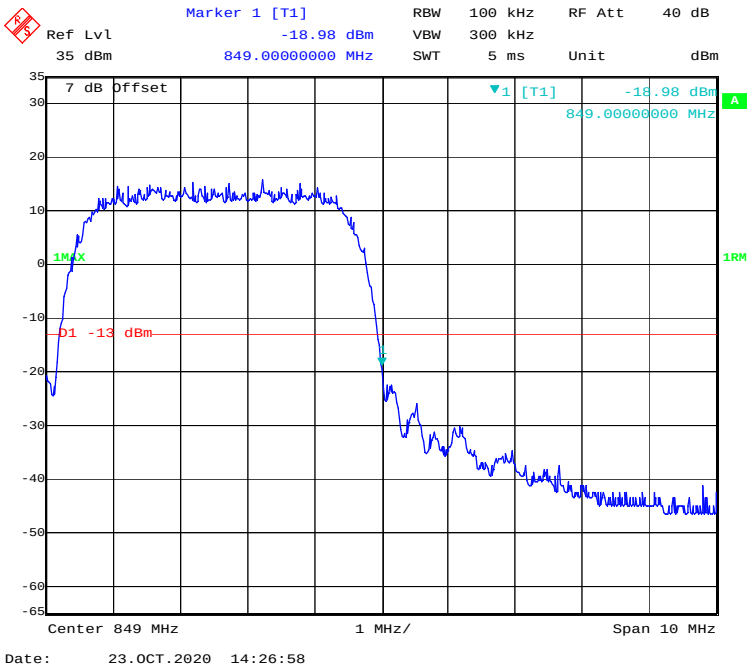
WCDMA (Rel 99) Mode, Right Band Edge



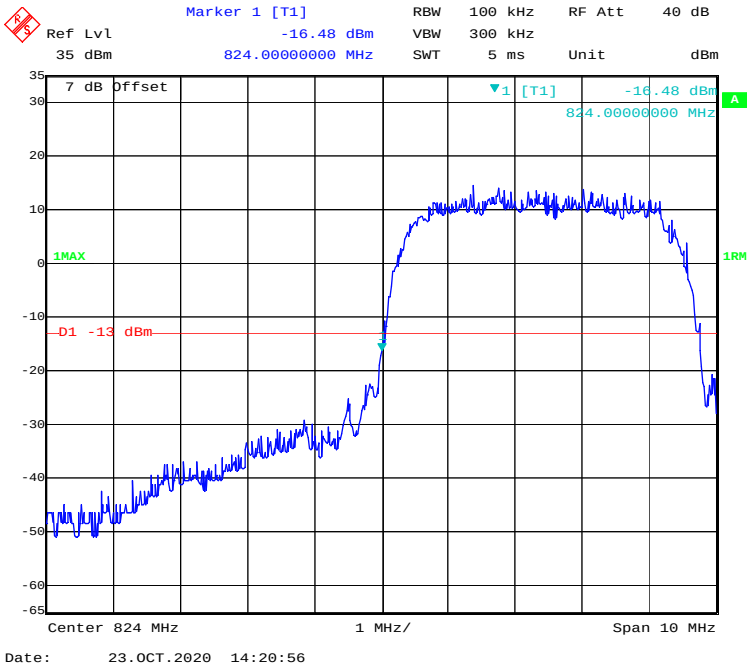
WCDMA (HSDPA) Mode, Left Band Edge



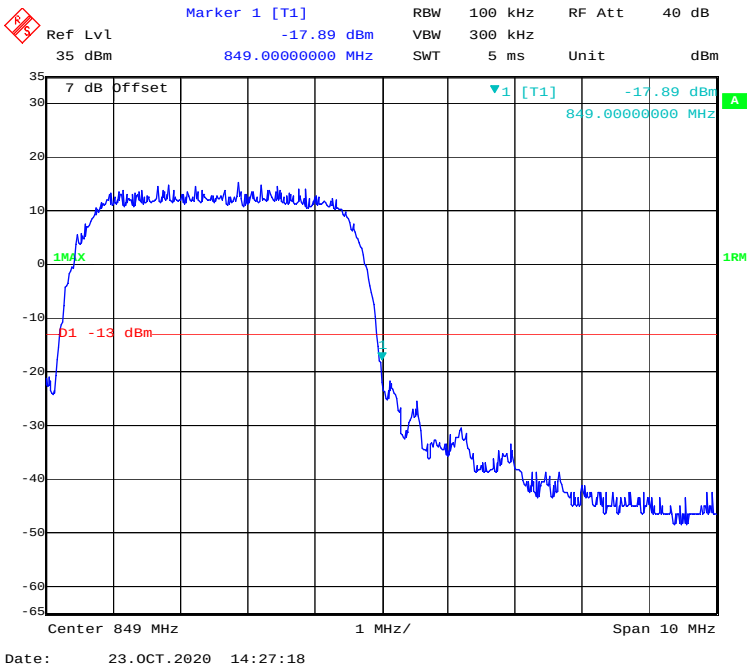
WCDMA (HSDPA) Mode, Right Band Edge



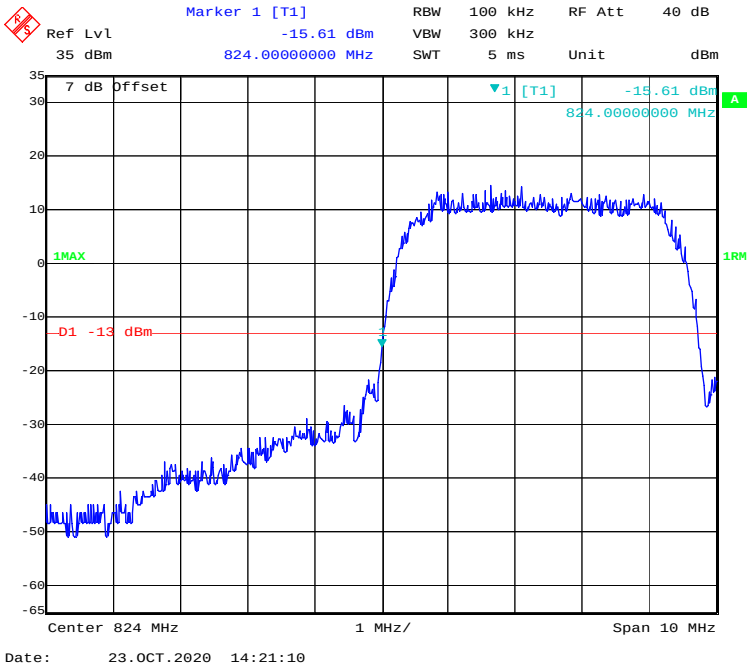
WCDMA (HSUPA) Mode, Left Band Edge



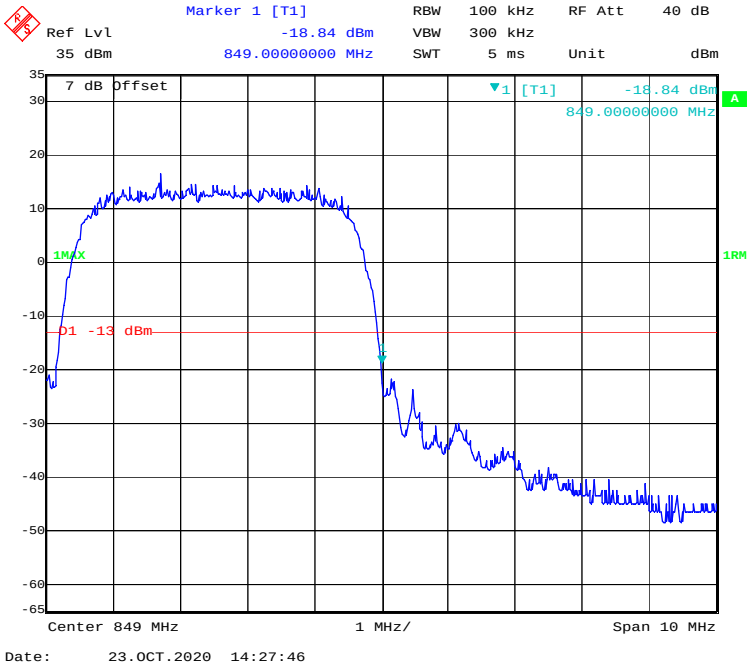
WCDMA (HSUPA) Mode, Right Band Edge



WCDMA (HSPA+) Mode, Left Band Edge

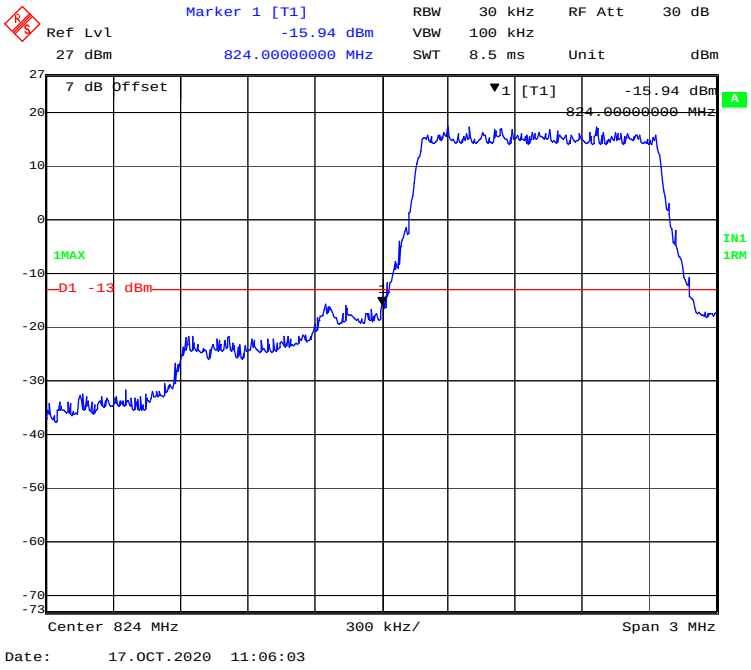


WCDMA (HSPA+) Mode, Right Band Edge

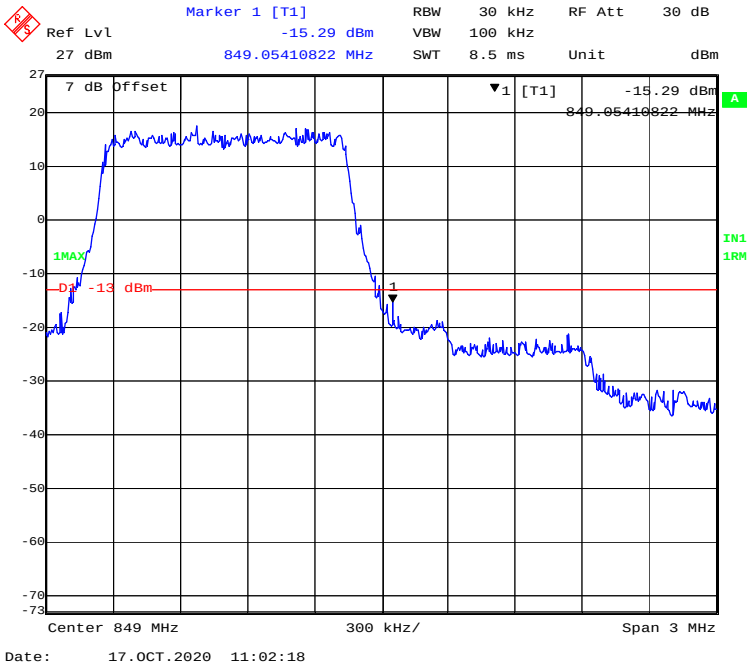


CDMA850 Band:

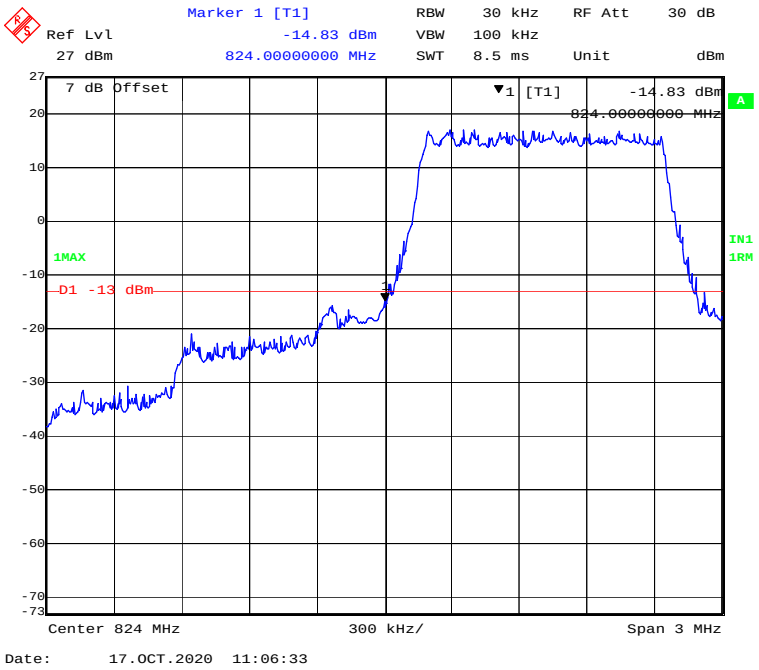
EVDO CDMA850 Mode, Left Band Edge



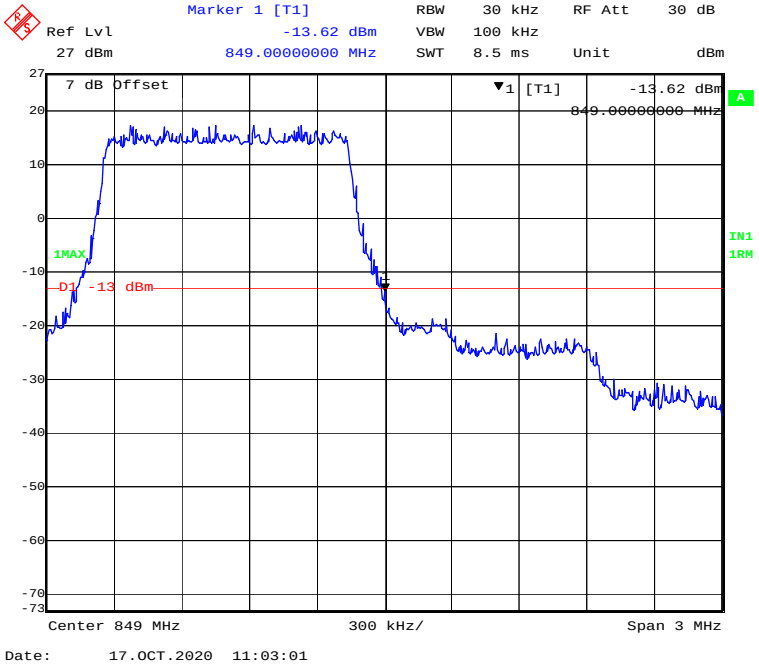
EVDO CDMA850 Mode, Right Band Edge



1xRTT Mode, Left Band Edge

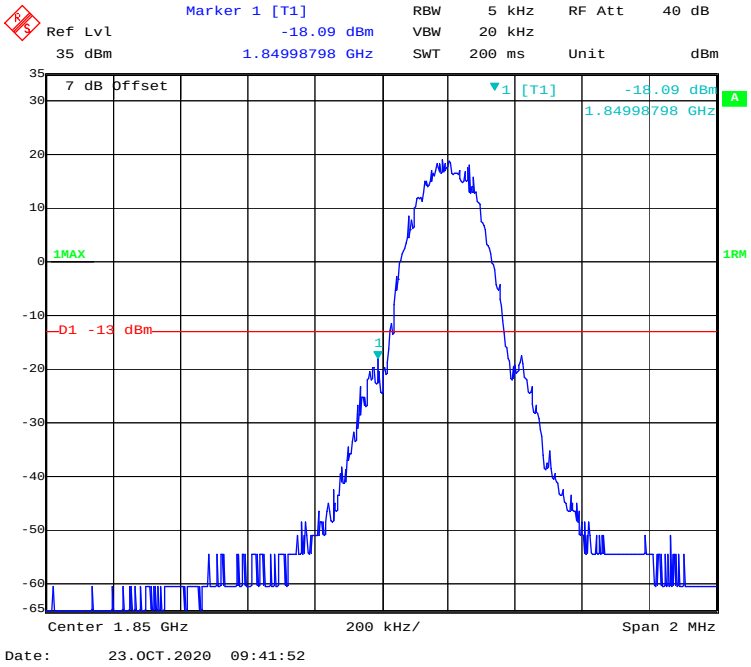


1xRTT Mode, Right Band Edge

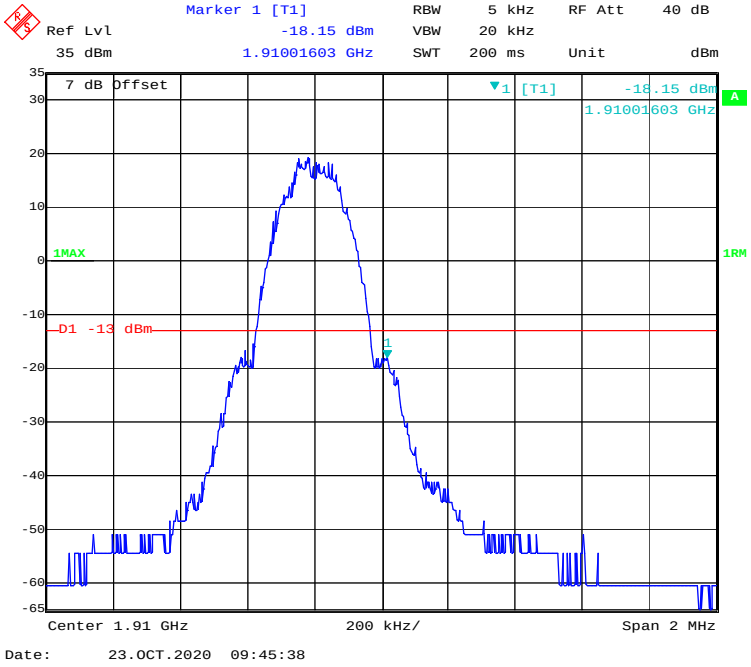


PCS 1900 Band:

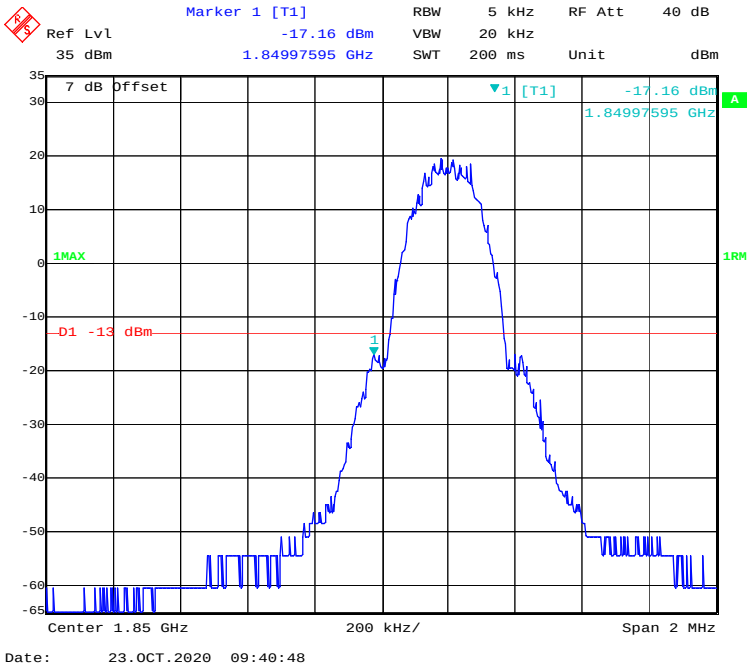
GSM Mode, Left Band Edge



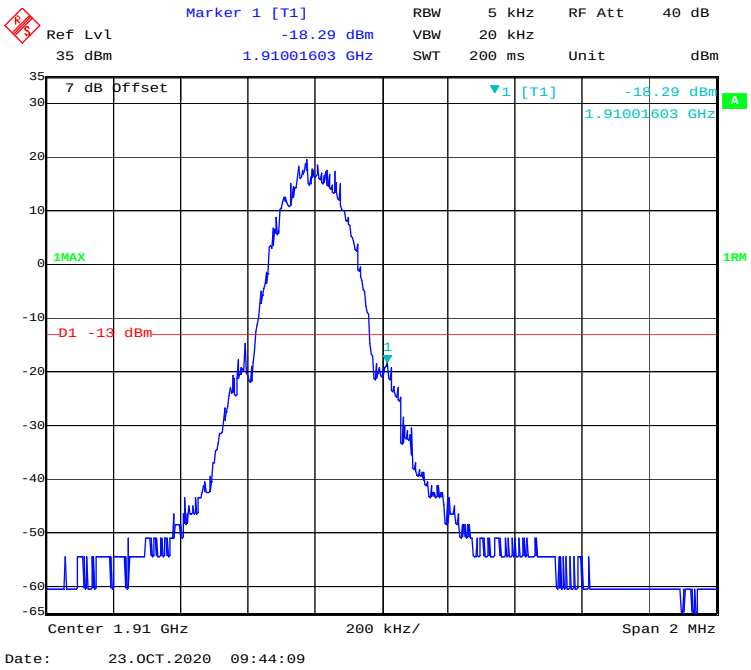
GSM Mode, Right Band Edge



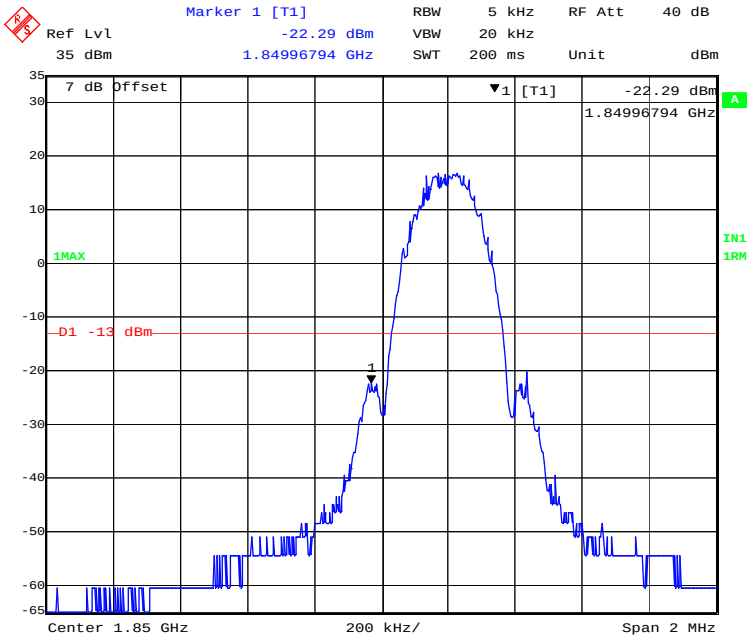
GPRS Mode, Left Band Edge



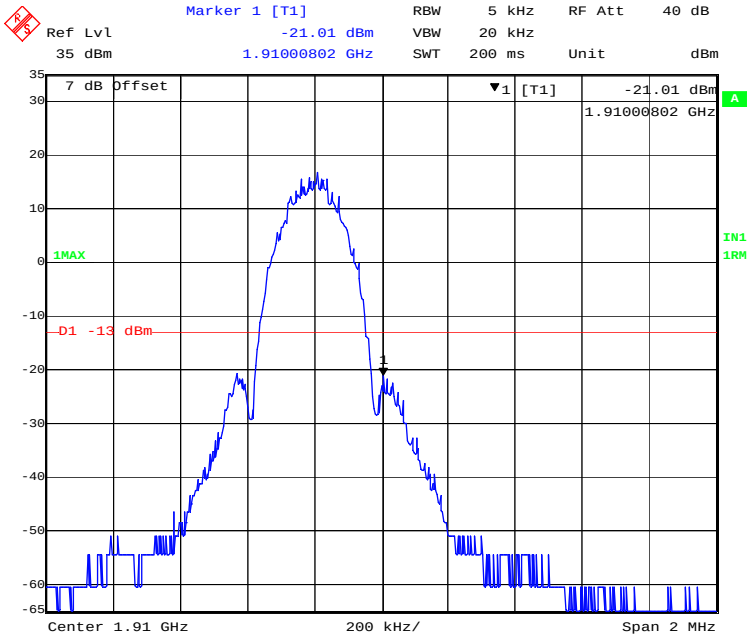
GPRS Mode, Right Band Edge



EGPRS Mode, Left Band Edge

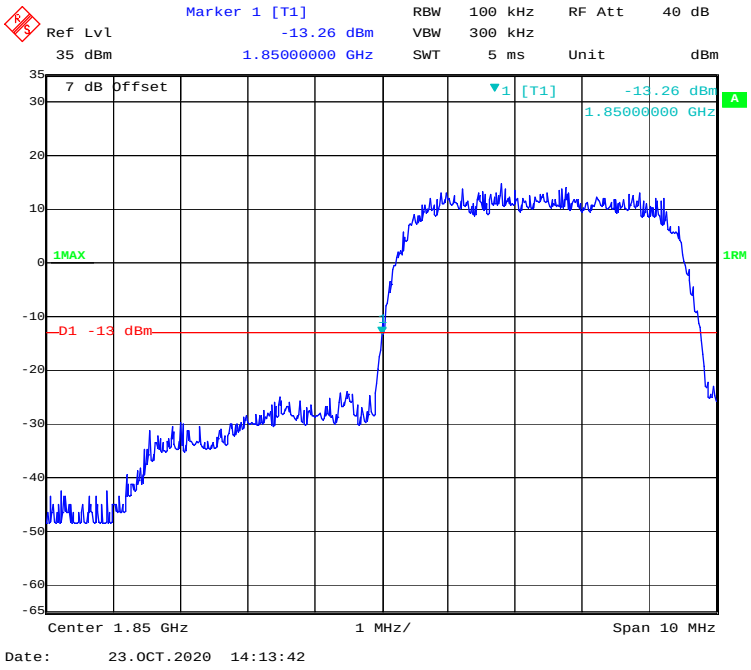


EGPRS Mode, Right Band Edge

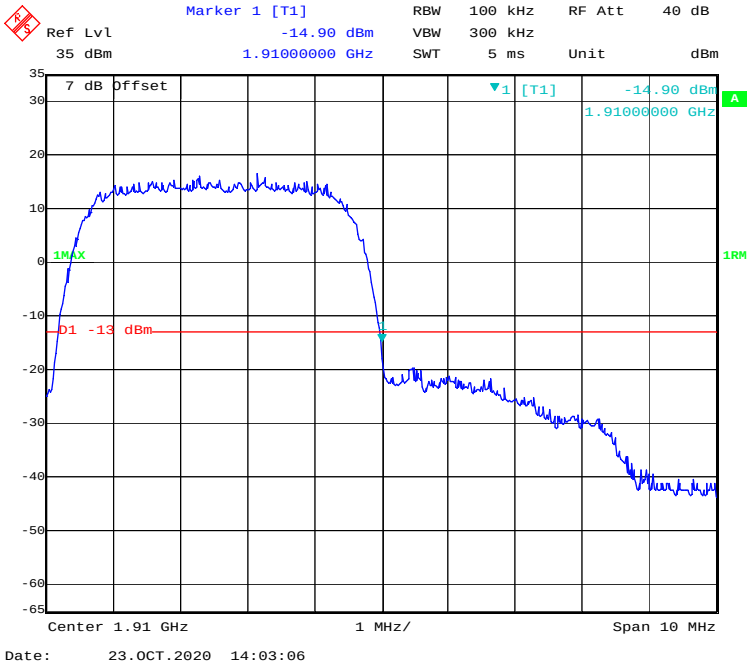


WCDMA Band II

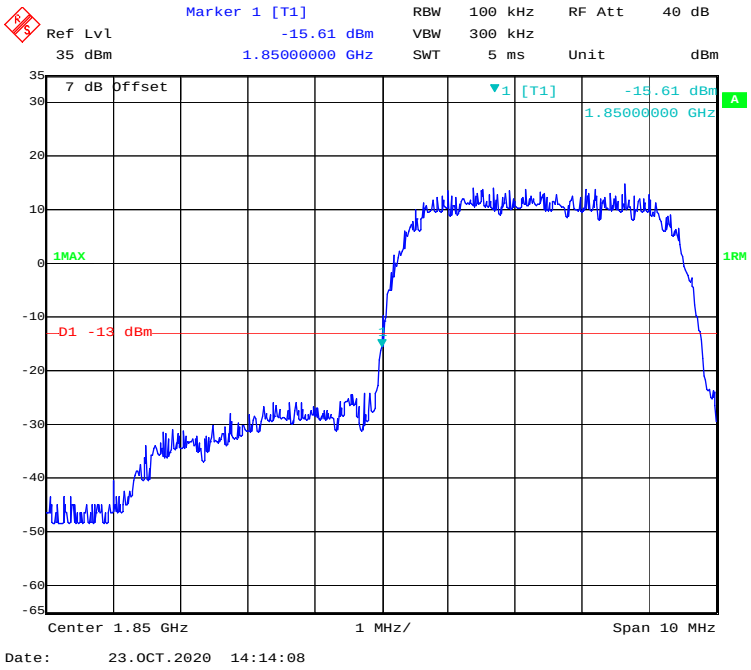
WCDMA (Rel 99) Mode, Left Band Edge



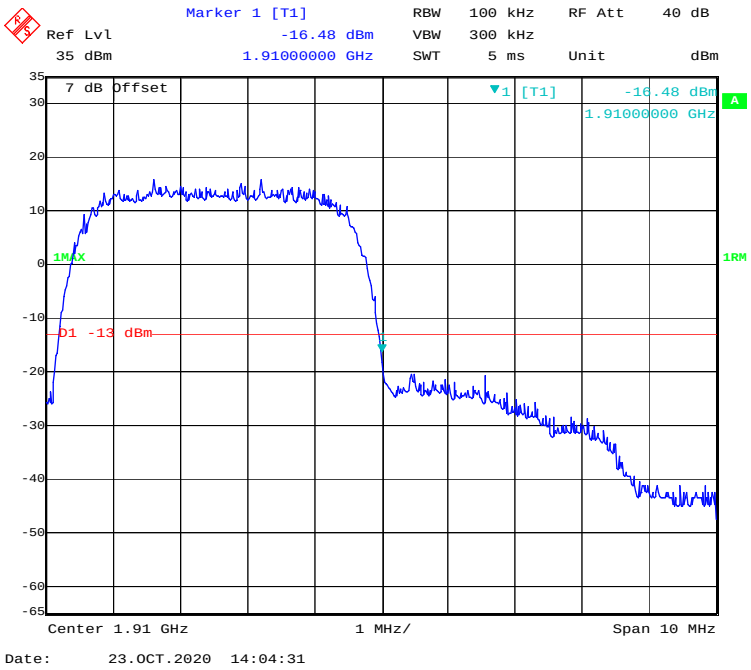
WCDMA (Rel 99) Mode, Right Band Edge



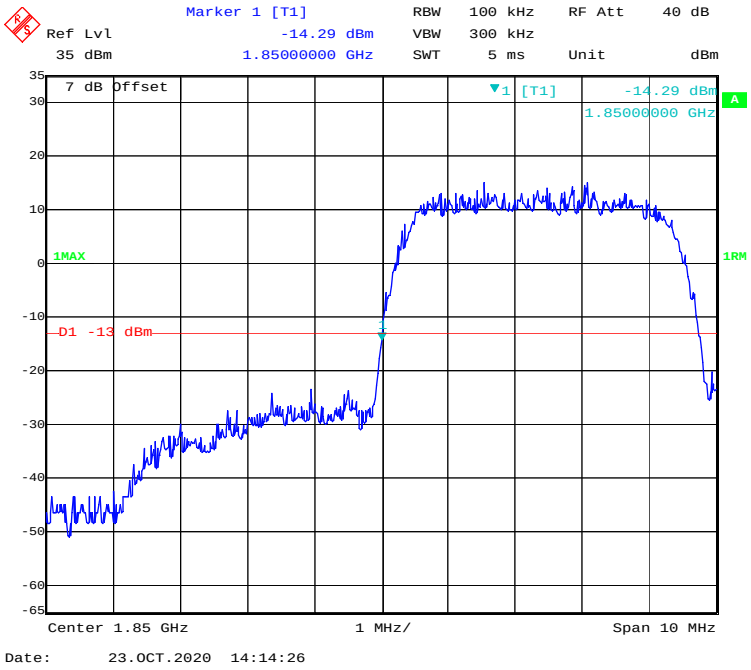
WCDMA (HSDPA) Mode, Left Band Edge



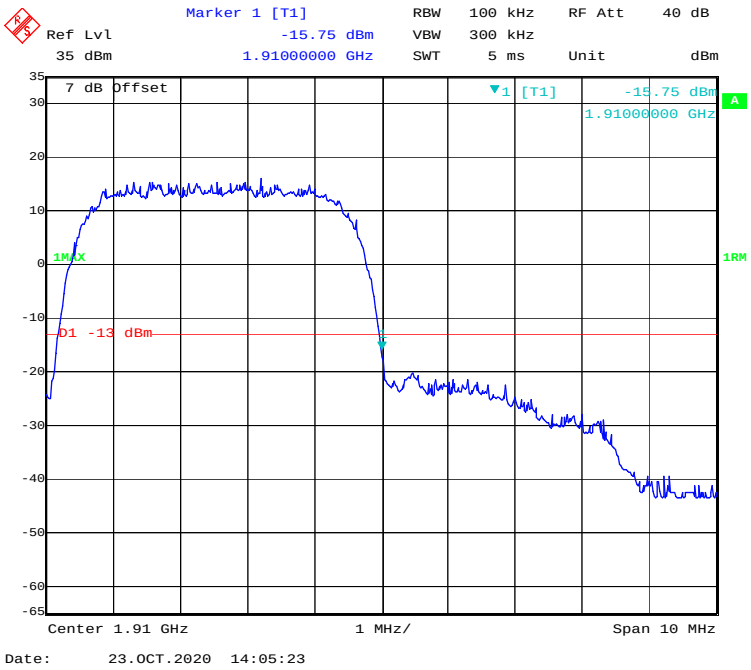
WCDMA (HSDPA) Mode, Right Band Edge



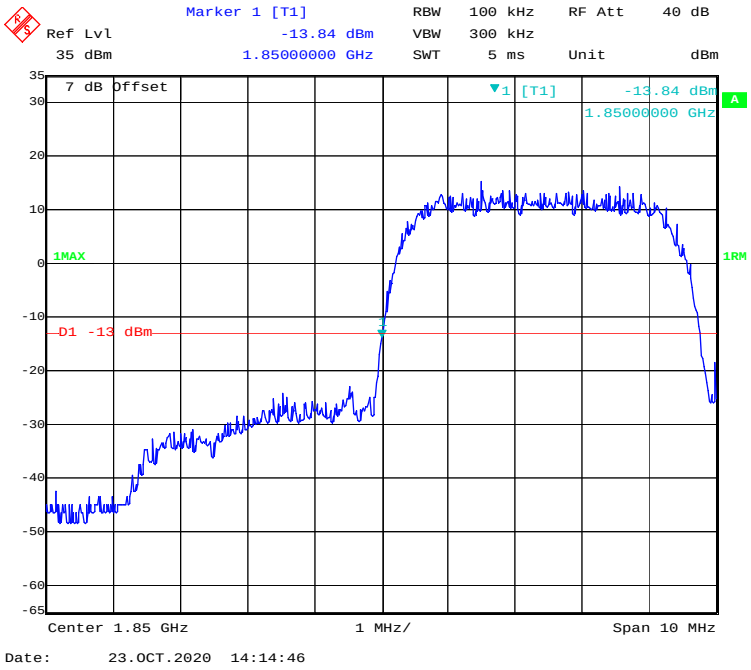
WCDMA (HSUPA) Mode, Left Band Edge



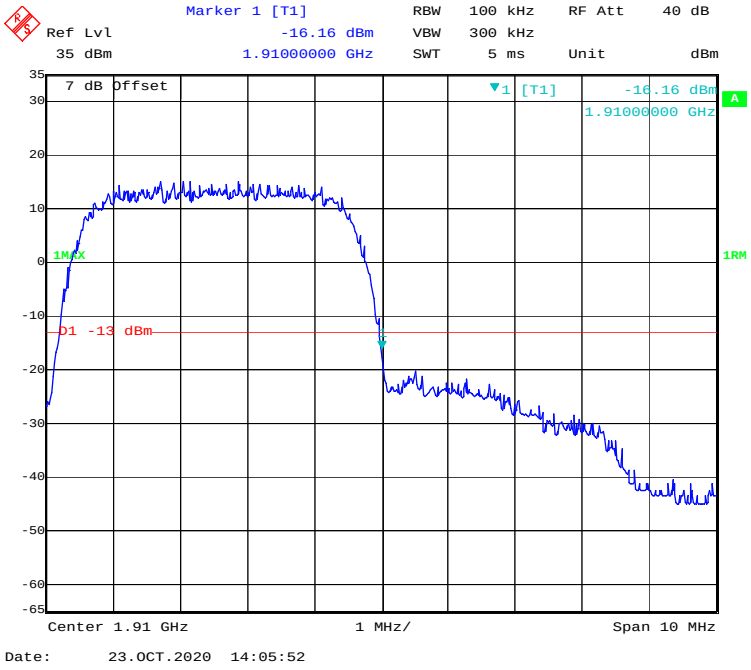
WCDMA (HSUPA) Mode, Right Band Edge



WCDMA (HSPA+) Mode, Left Band Edge

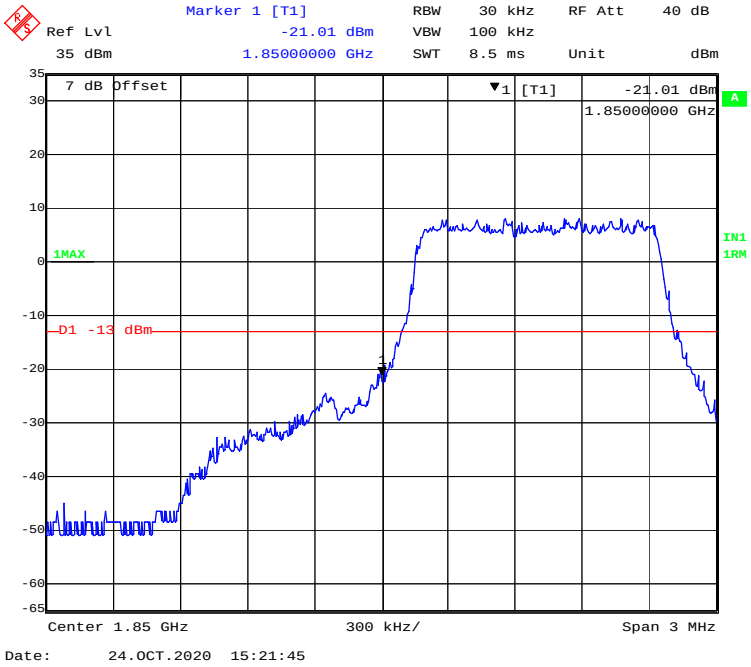


WCDMA (HSPA+) Mode, Right Band Edge

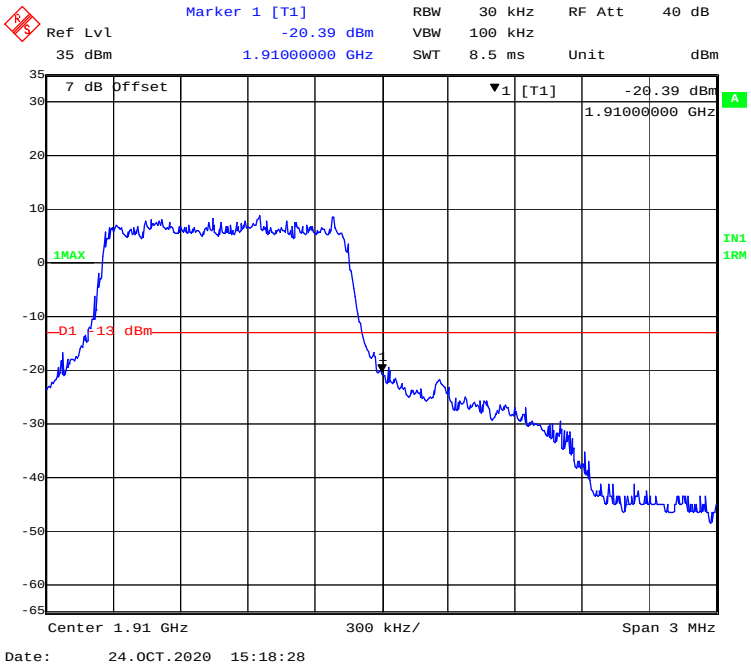


LTE Band 2:

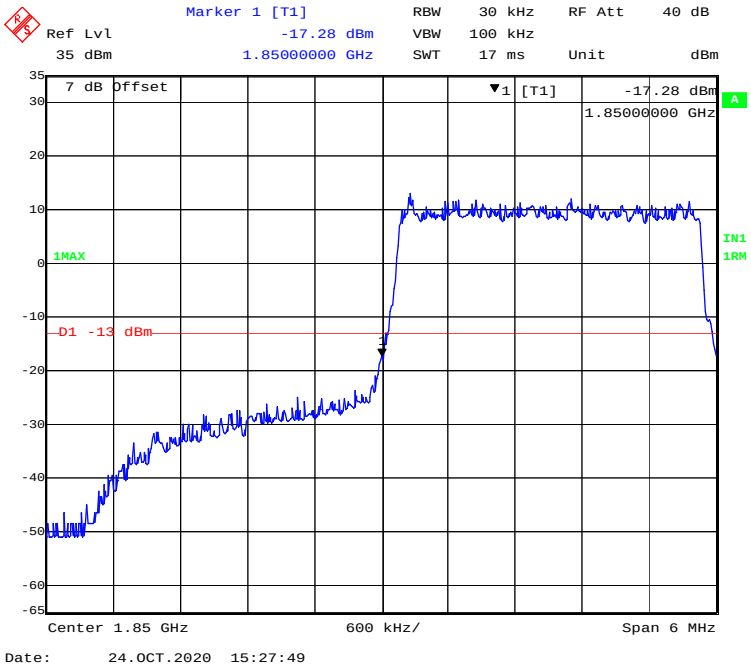
QPSK (1.4 MHz, FULL RB) - Left Band Edge



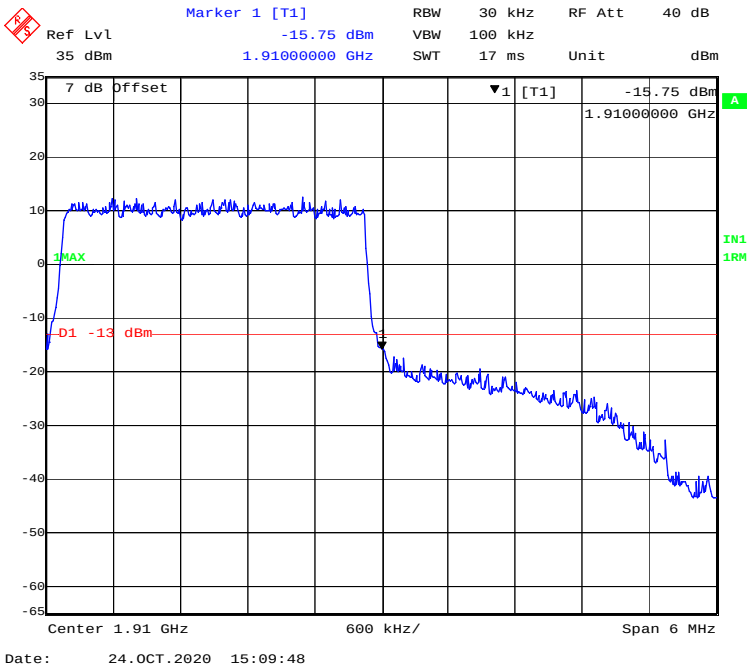
QPSK (1.4 MHz, FULL RB) - Right Band Edge



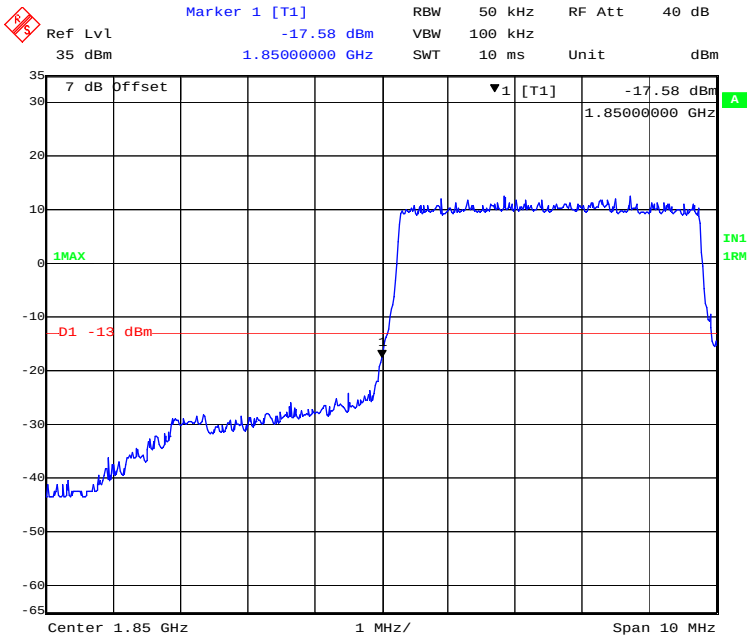
QPSK (3 MHz, FULL RB) - Left Band Edge



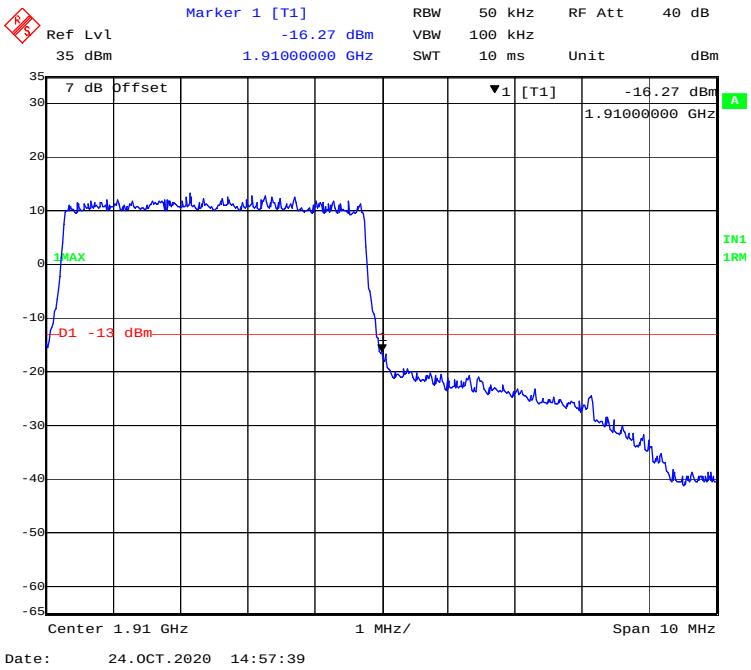
QPSK (3 MHz, FULL RB) - Right Band Edge



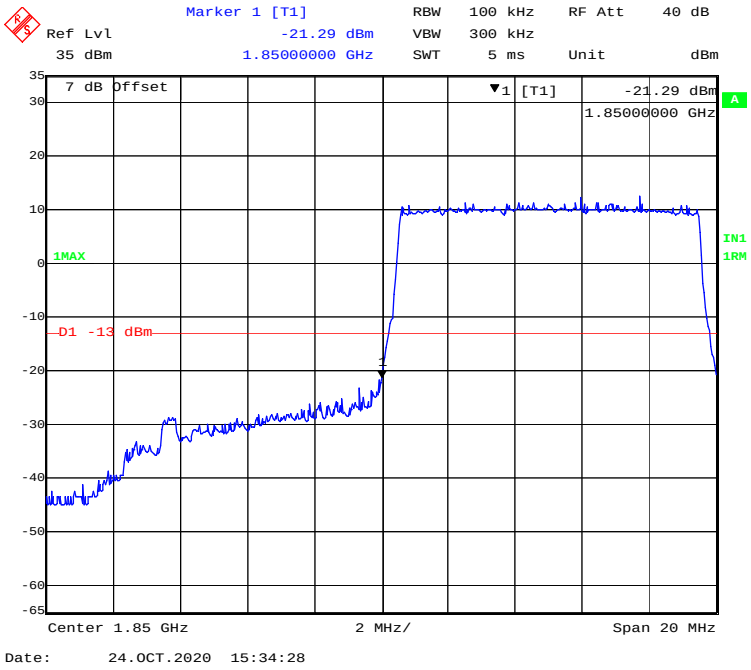
QPSK (5 MHz, FULL RB) - Left Band Edge



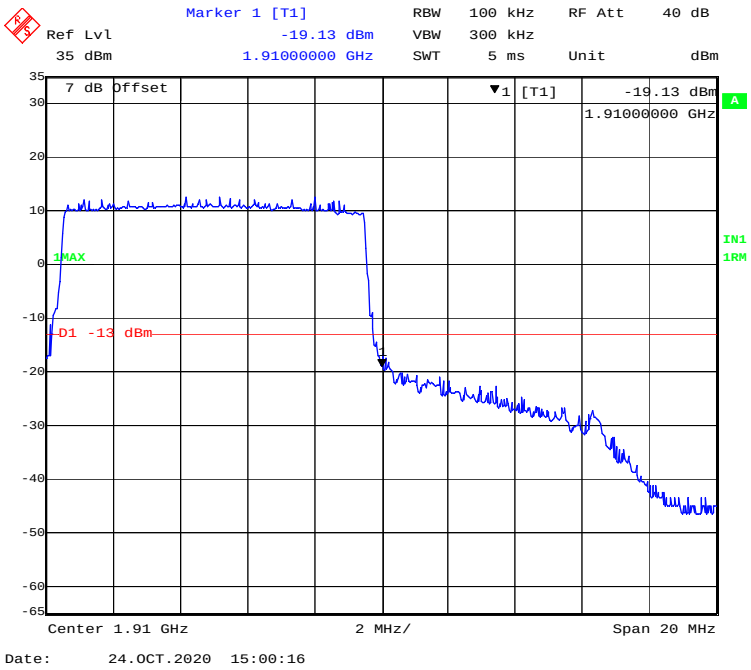
QPSK (5 MHz, FULL RB) - Right Band Edge



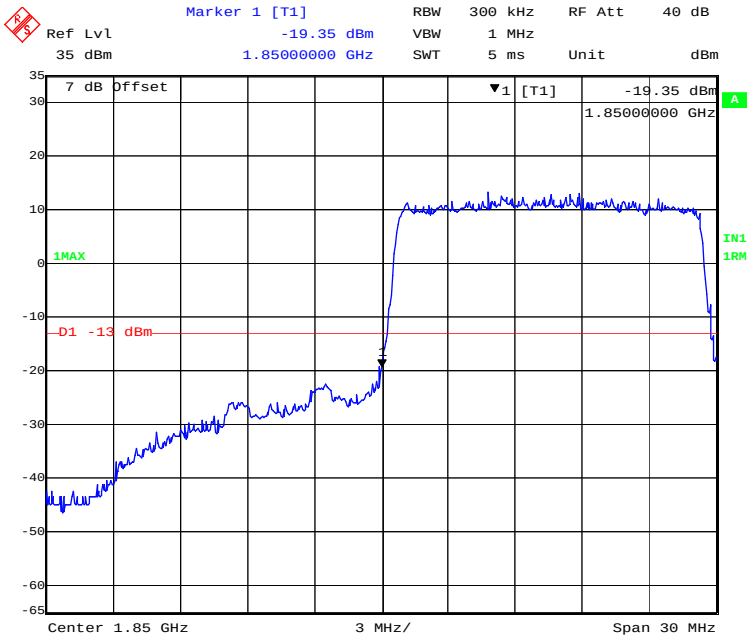
QPSK (10 MHz, FULL RB) - Left Band Edge



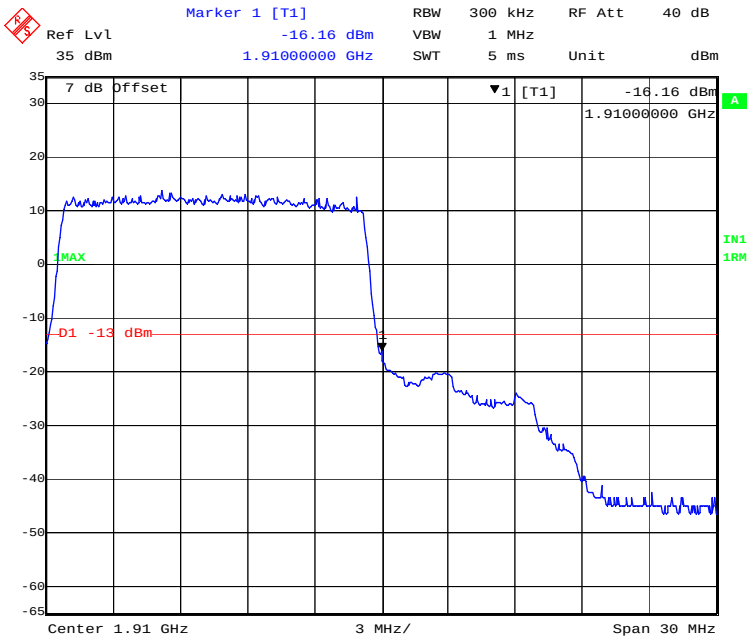
QPSK (10 MHz, FULL RB) - Right Band Edge



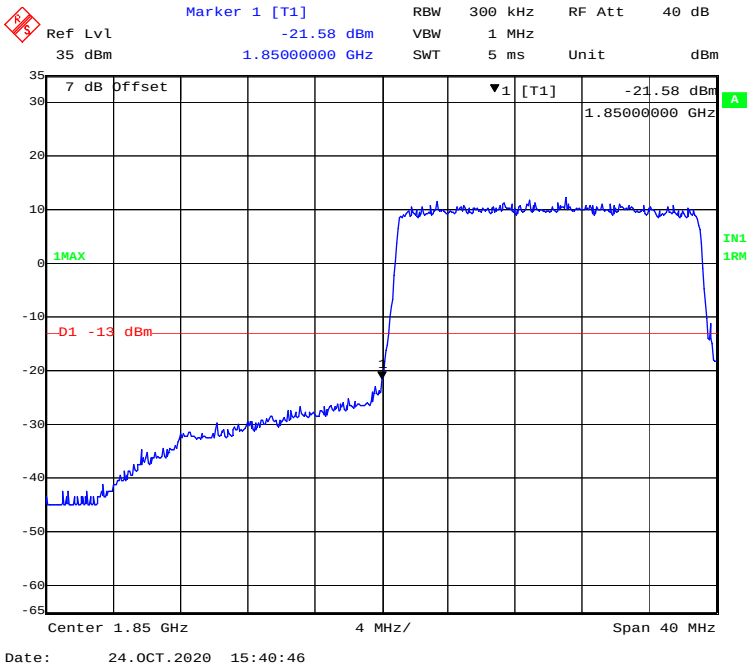
QPSK (15 MHz, FULL RB) - Left Band Edge



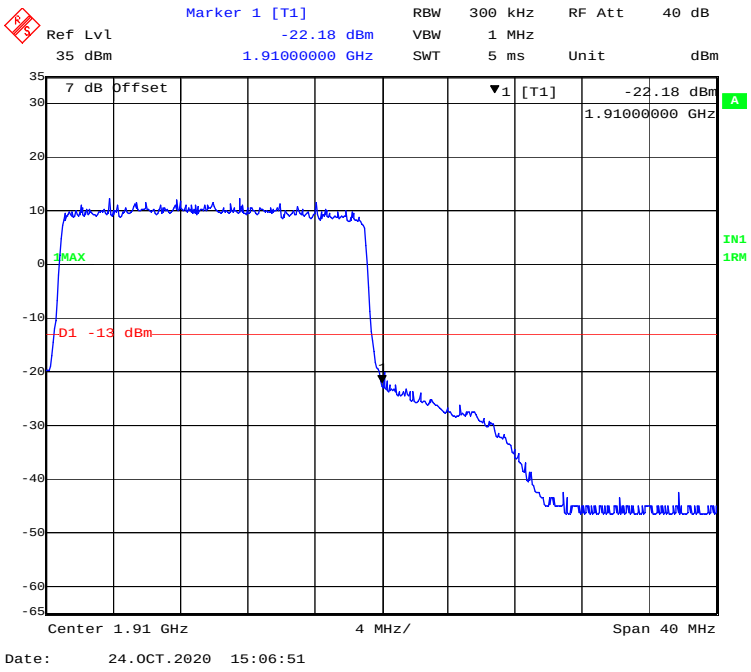
QPSK (15 MHz, FULL RB) - Right Band Edge



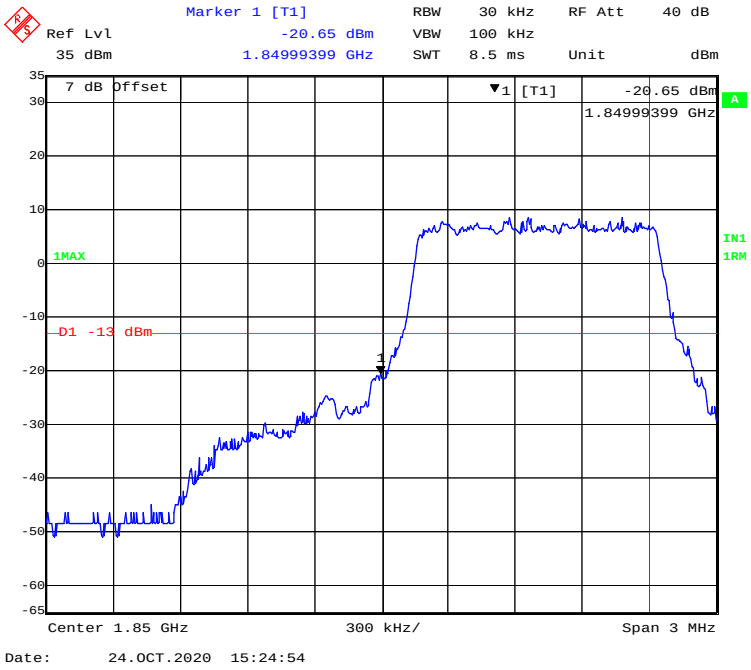
QPSK (20 MHz, FULL RB) - Left Band Edge



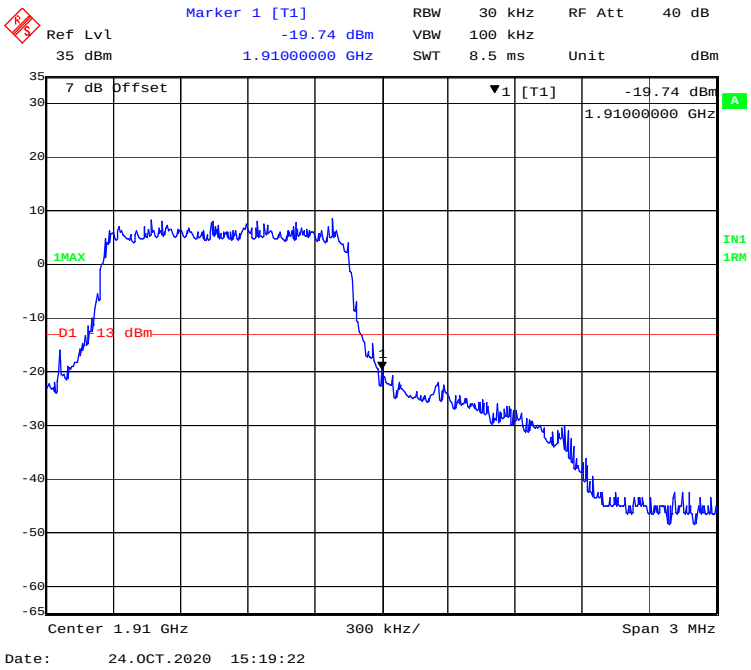
QPSK (20 MHz, FULL RB) - Right Band Edge



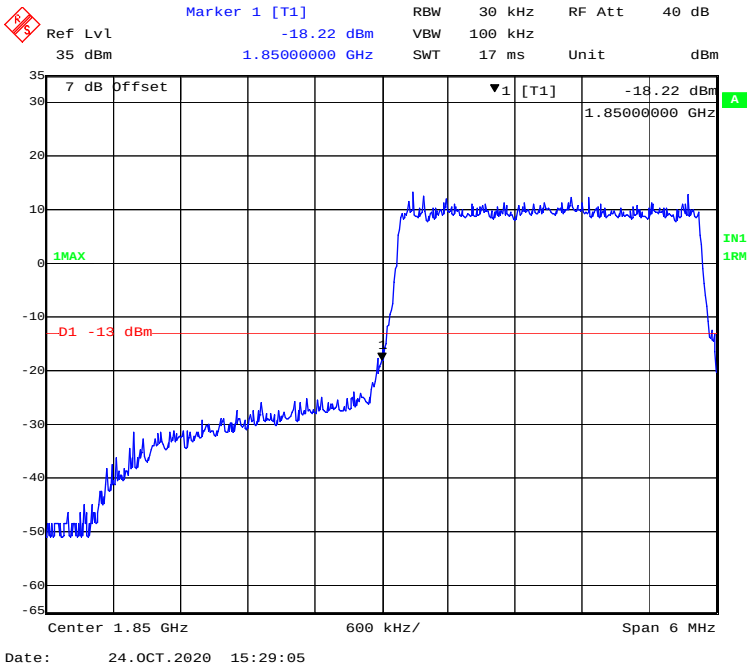
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



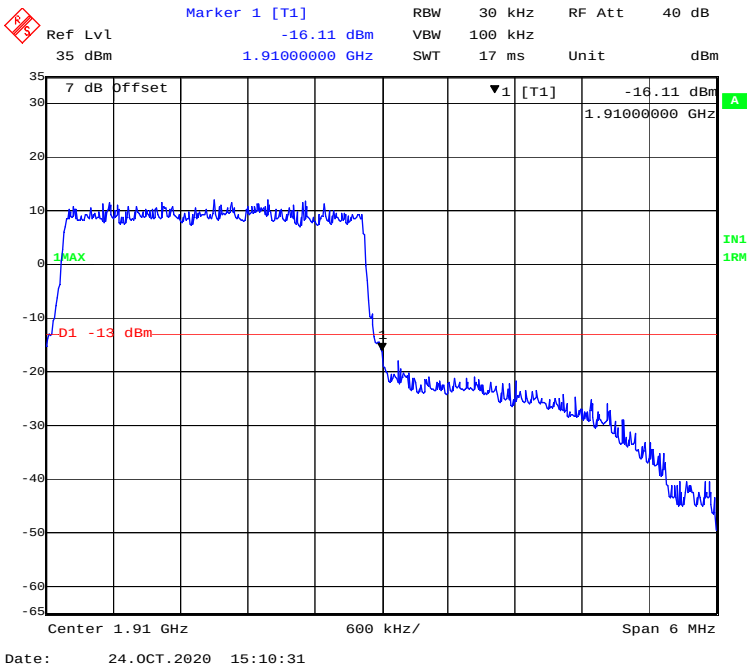
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



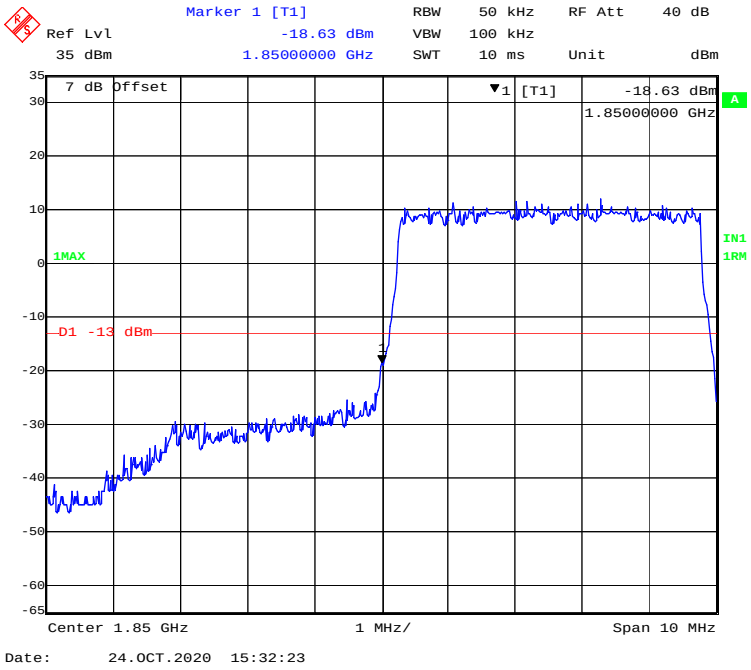
16-QAM (3 MHz, FULL RB) - Left Band Edge



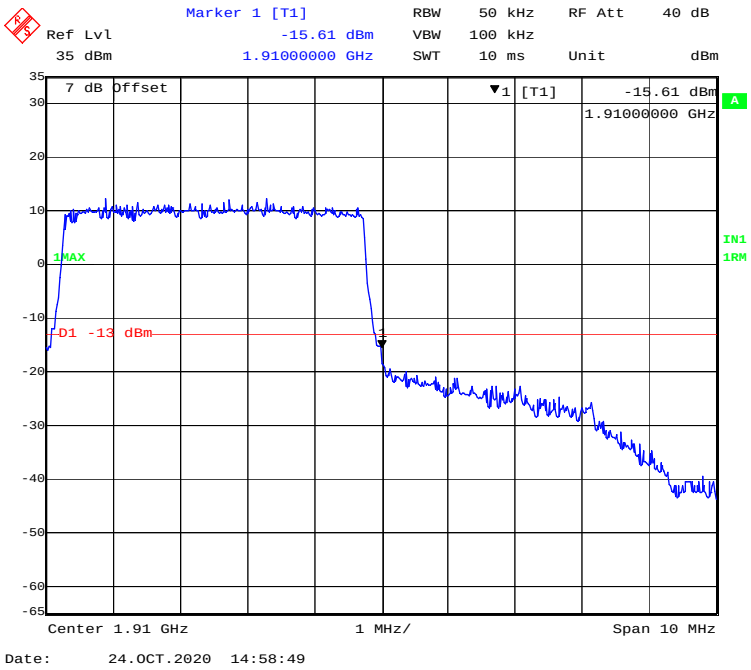
16-QAM (3 MHz, FULL RB) - Right Band Edge



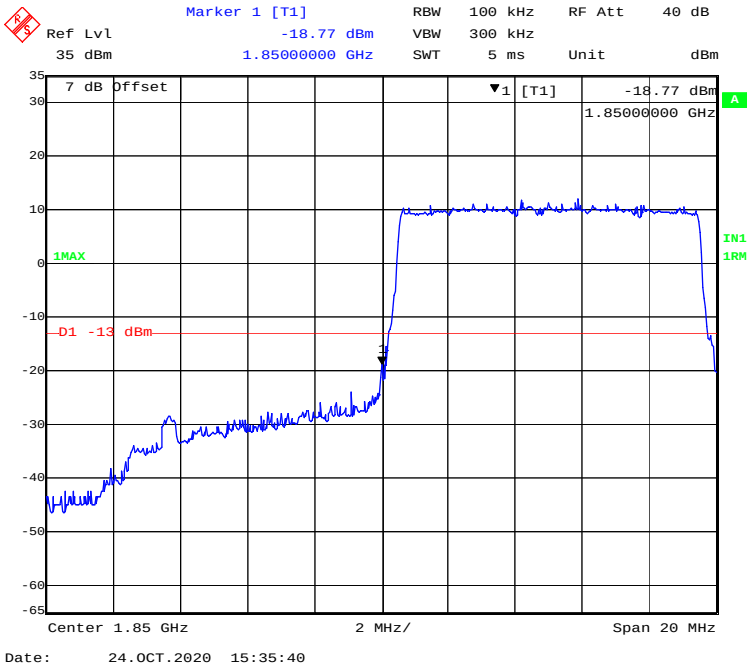
16-QAM (5 MHz, FULL RB) - Left Band Edge



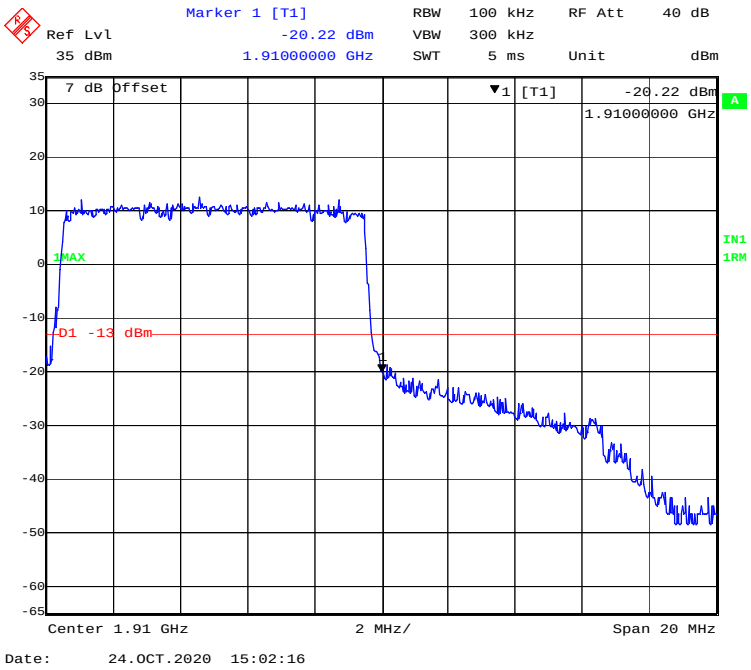
16-QAM (5 MHz, FULL RB) - Right Band Edge



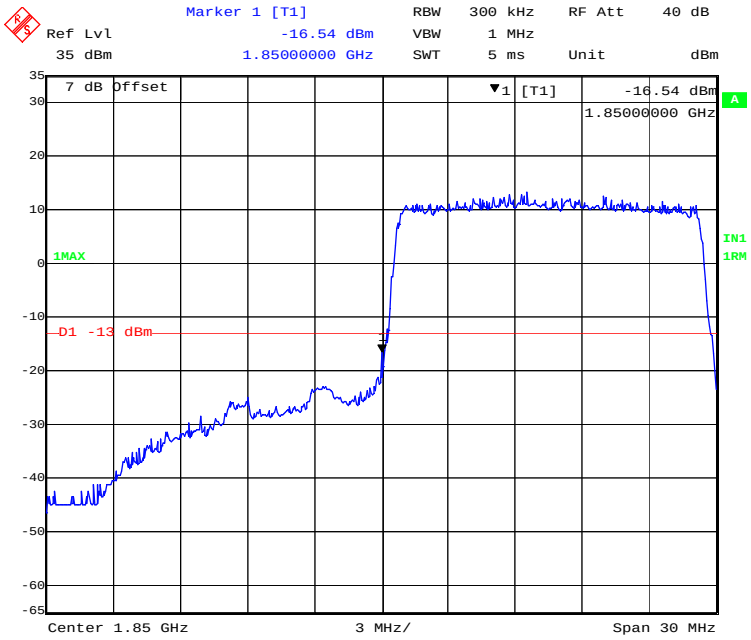
16-QAM (10 MHz, FULL RB) - Left Band Edge



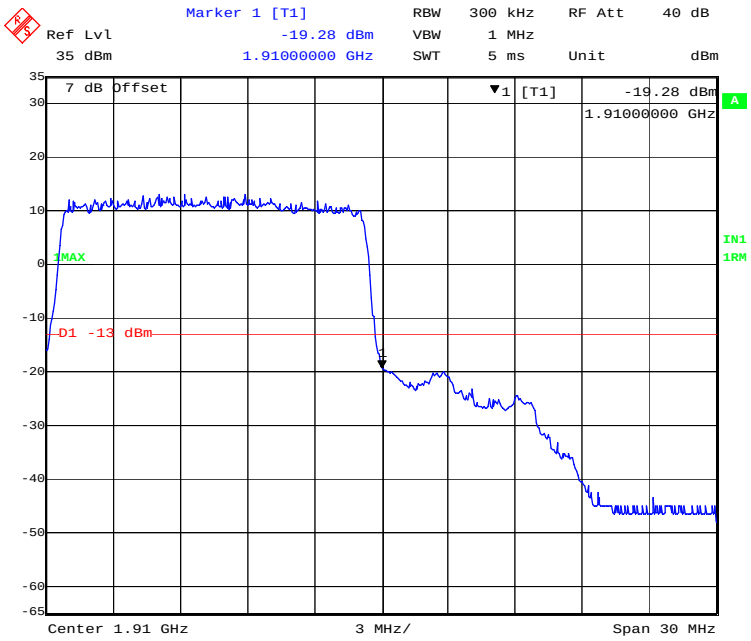
16-QAM (10 MHz, FULL RB) - Right Band Edge



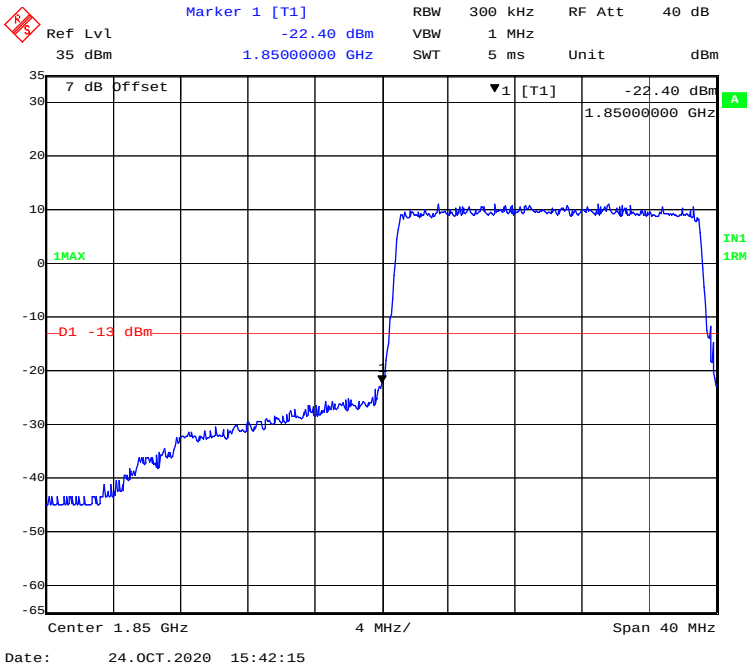
16-QAM (15 MHz, FULL RB) - Left Band Edge



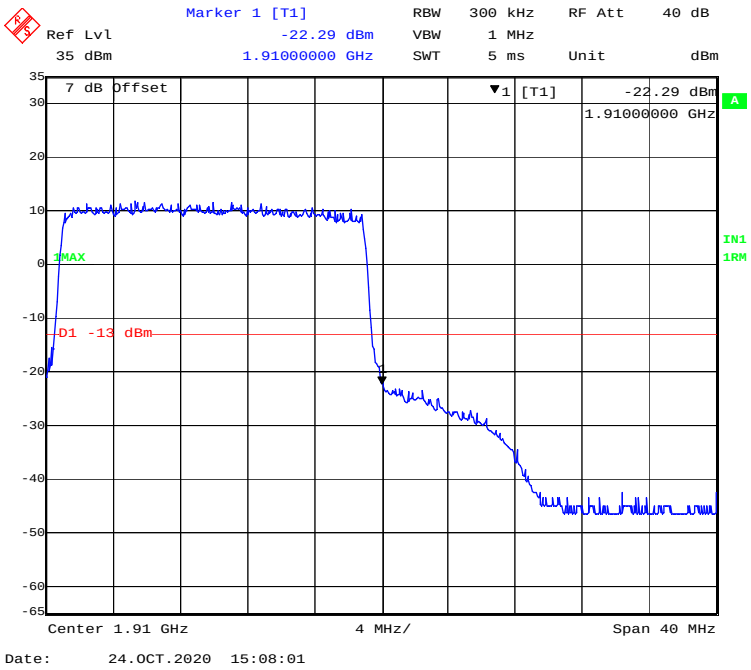
16-QAM (15 MHz, FULL RB) - Right Band Edge



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

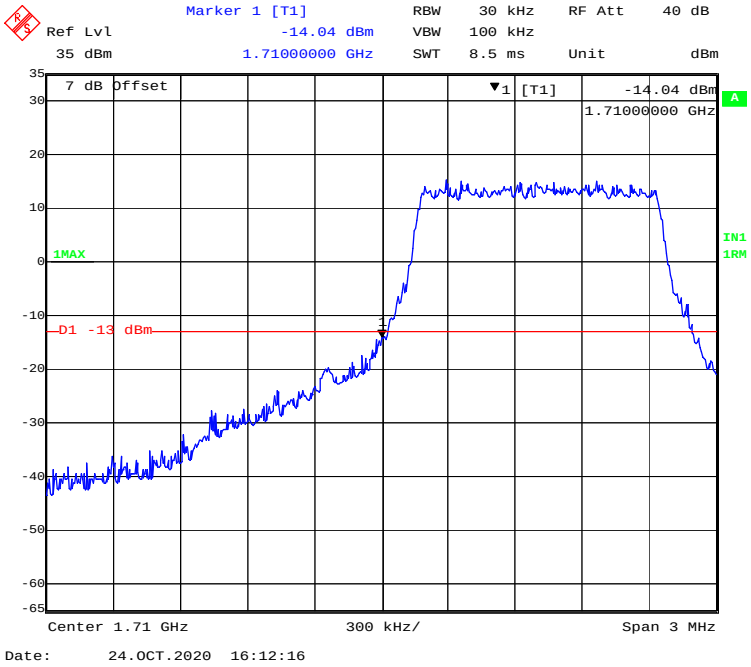


16-QAM (20 MHz, FULL RB) - Right Band Edge

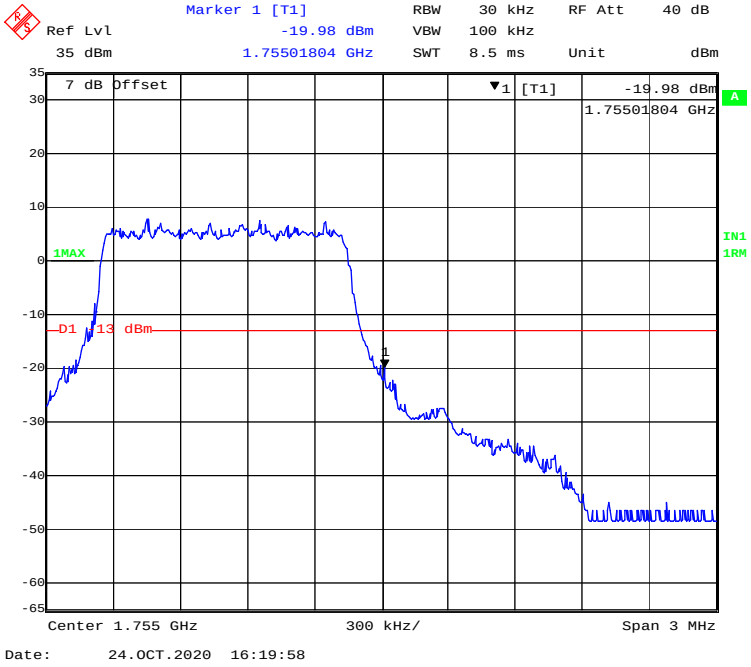


LTE Band 4:

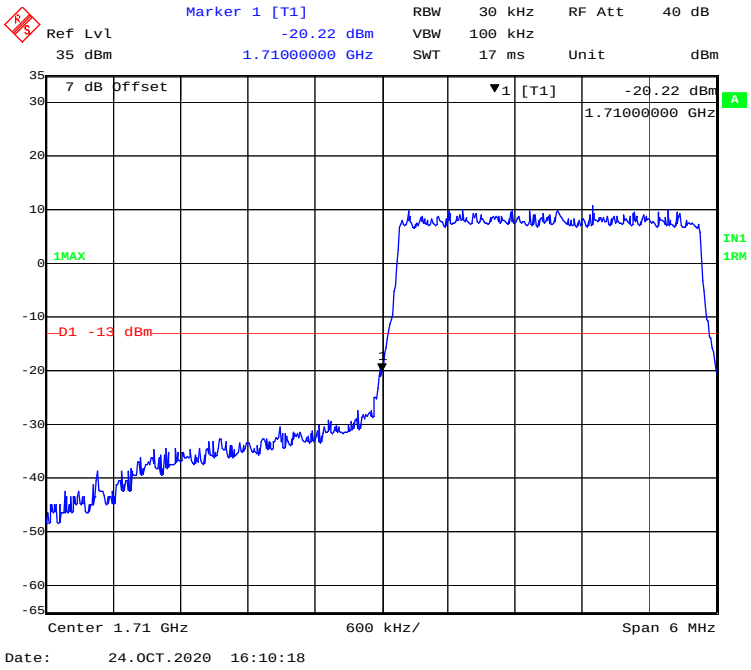
QPSK (1.4 MHz, FULL RB) - Left Band Edge



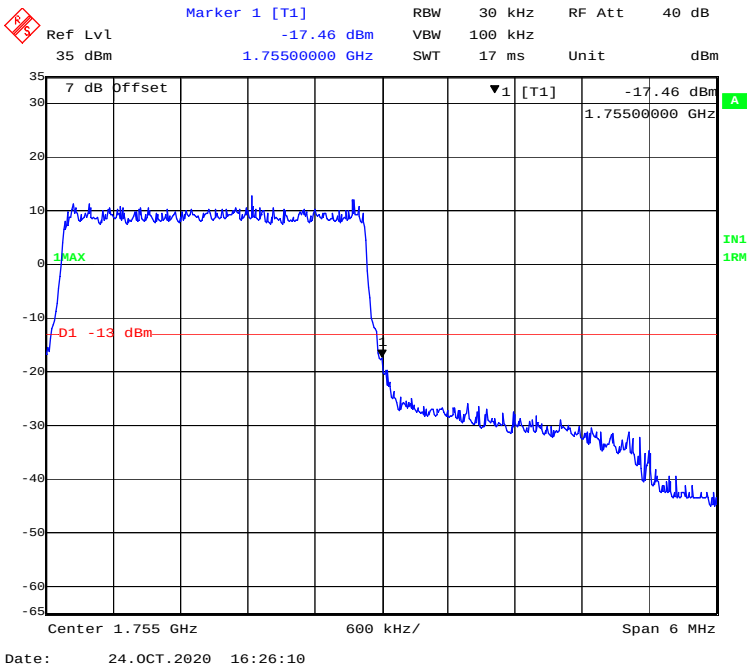
QPSK (1.4 MHz, FULL RB) - Right Band Edge



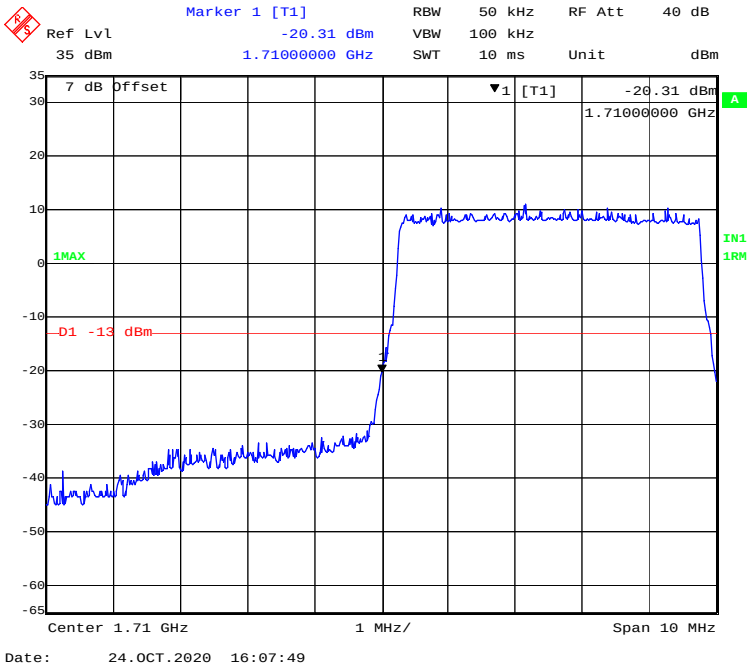
QPSK (3 MHz, FULL RB) - Left Band Edge



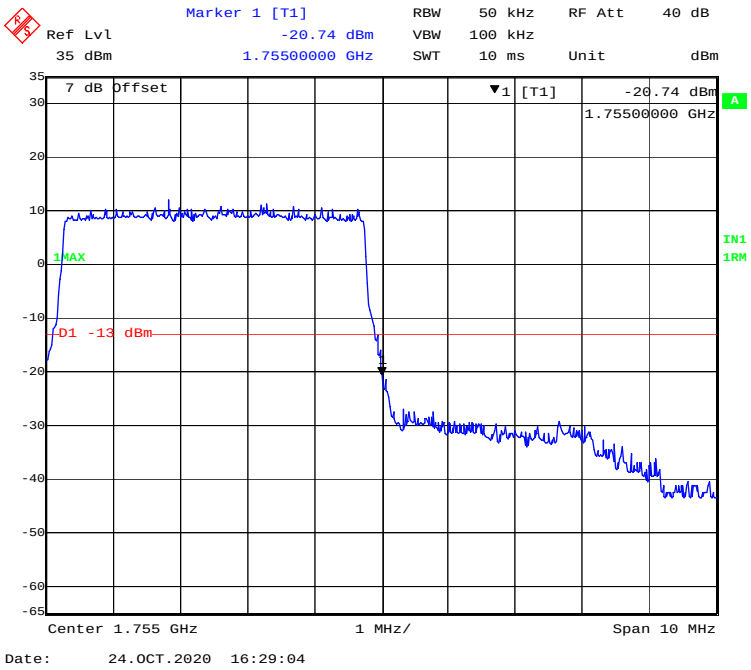
QPSK (3 MHz, FULL RB) - Right Band Edge



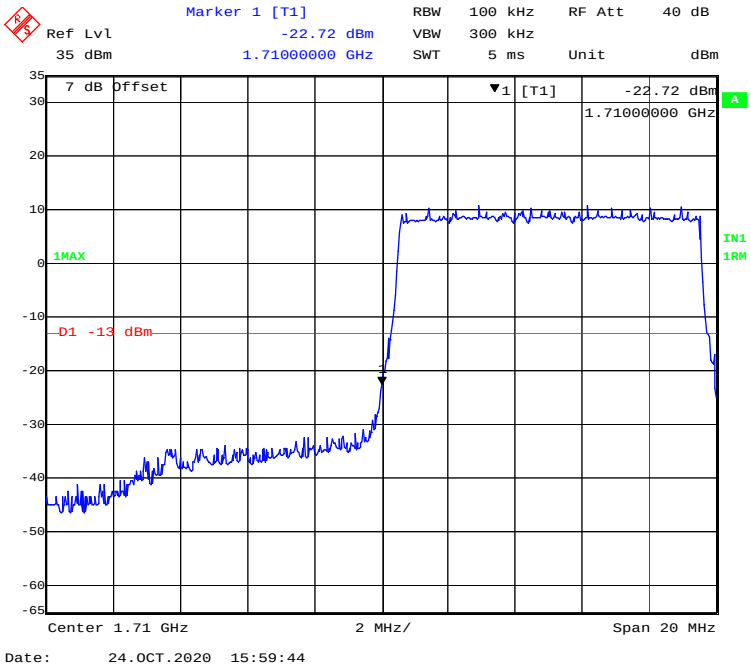
QPSK (5 MHz, FULL RB) - Left Band Edge



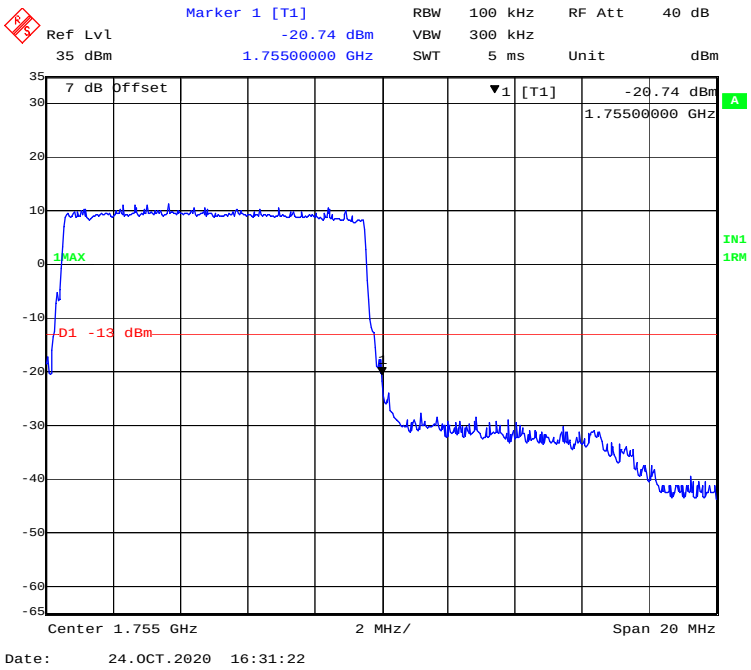
QPSK (5 MHz, FULL RB) - Right Band Edge



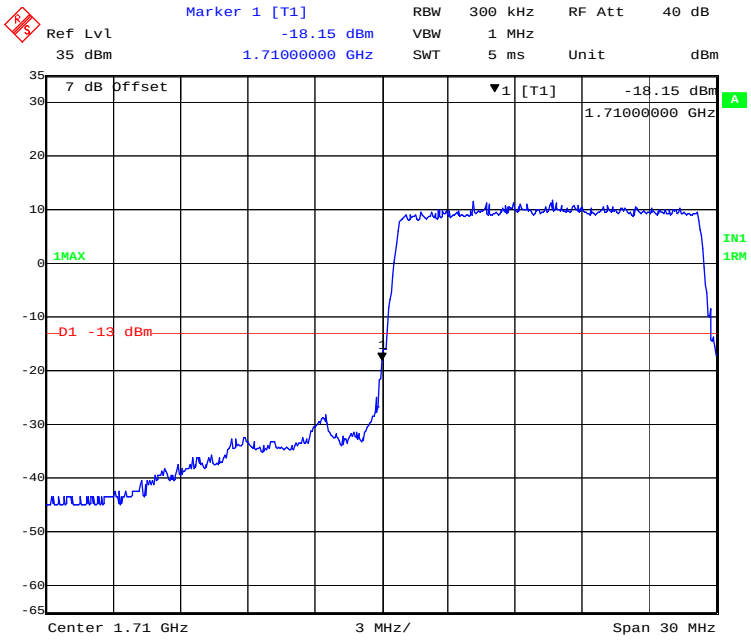
QPSK (10 MHz, FULL RB) - Left Band Edge



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

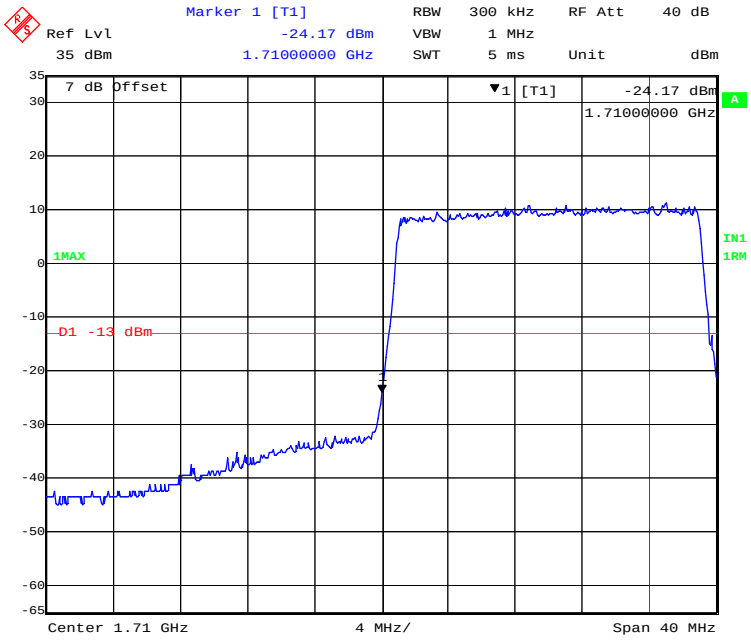


QPSK (15 MHz, FULL RB) - Left Band Edge

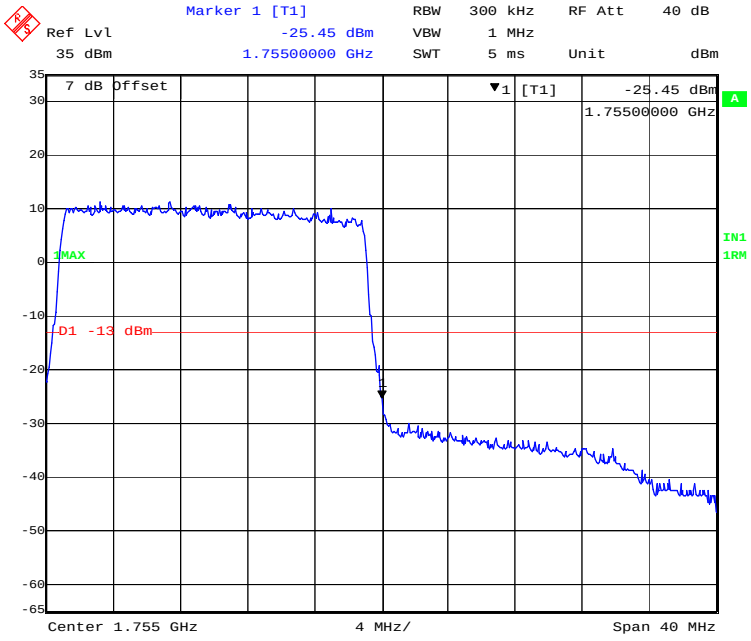


QPSK (15 MHz, FULL RB) - Right Band Edge

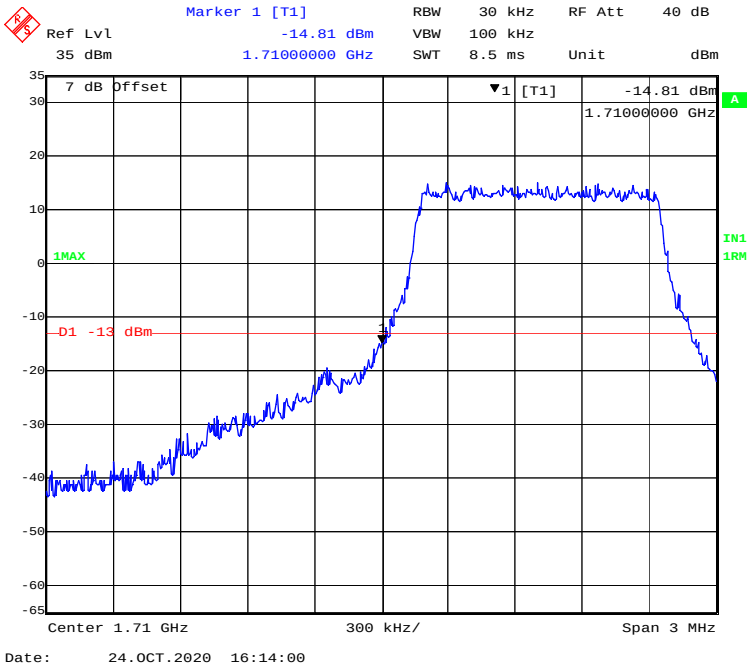
QPSK (20 MHz, FULL RB) - Left Band Edge



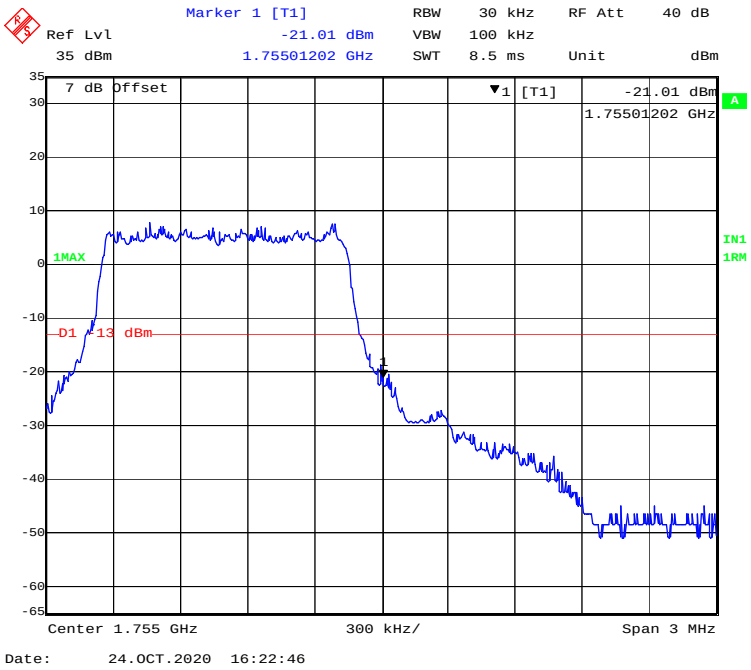
QPSK (20 MHz, FULL RB) - Right Band Edge



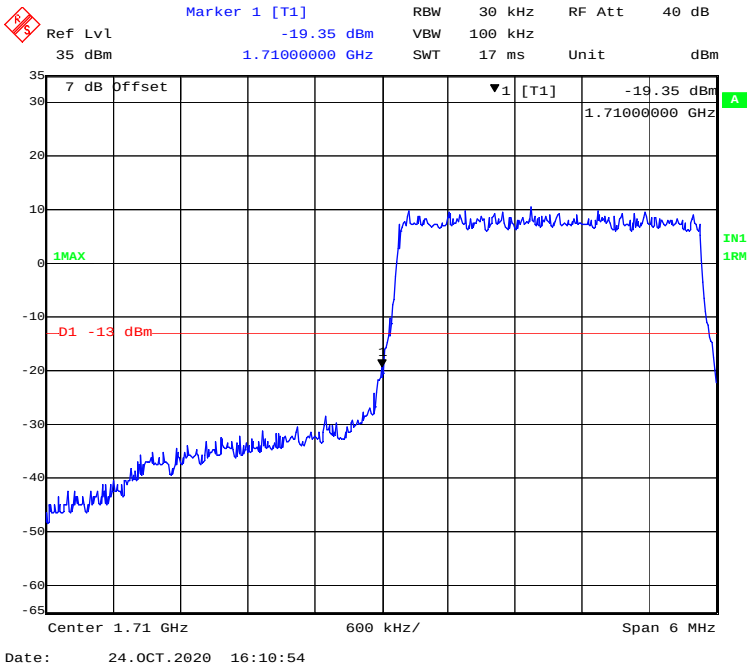
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



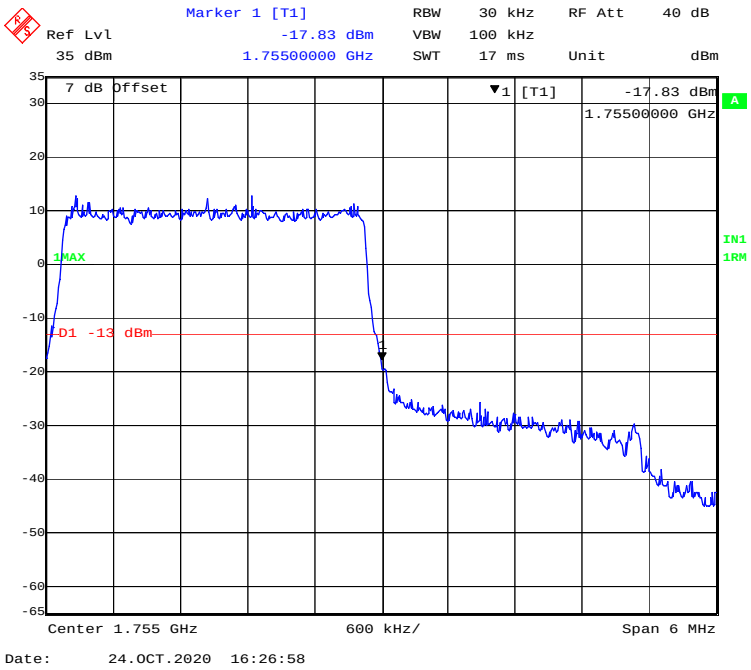
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



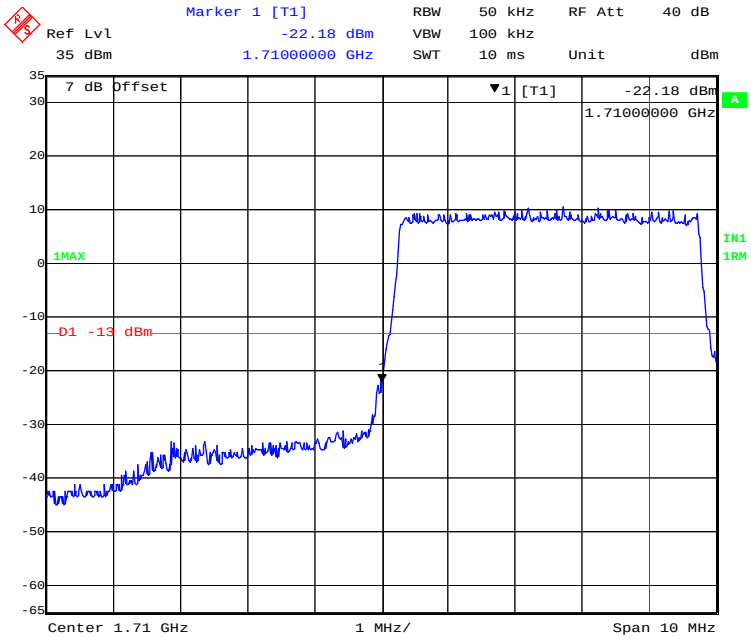
16-QAM (3 MHz, FULL RB) - Left Band Edge



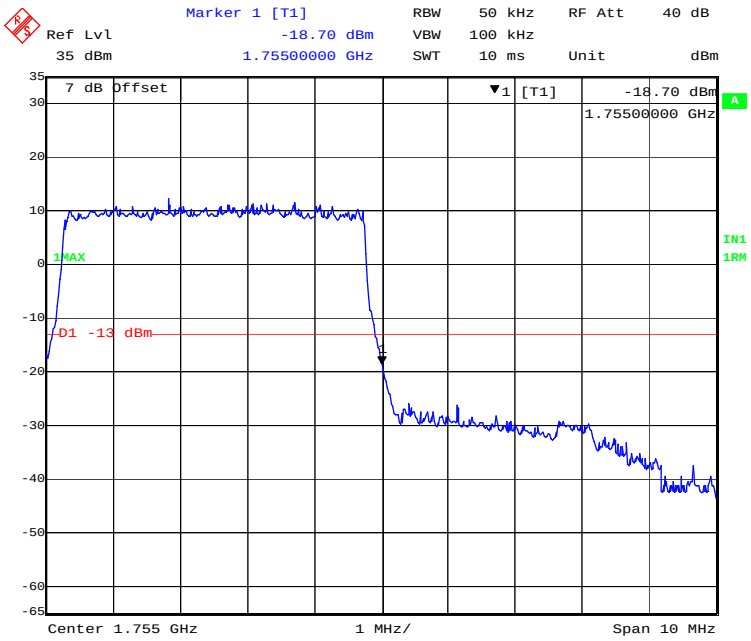
16-QAM (3 MHz, FULL RB) - Right Band Edge



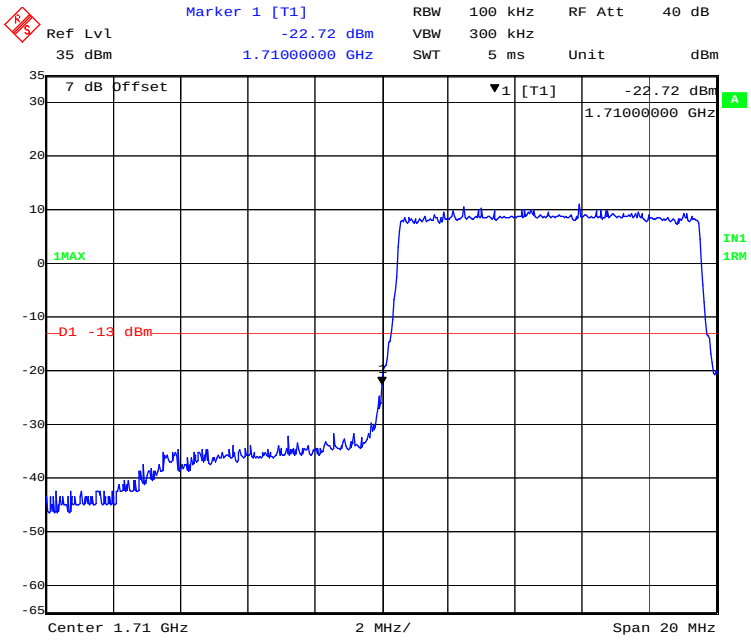
16-QAM (5 MHz, FULL RB) - Left Band Edge



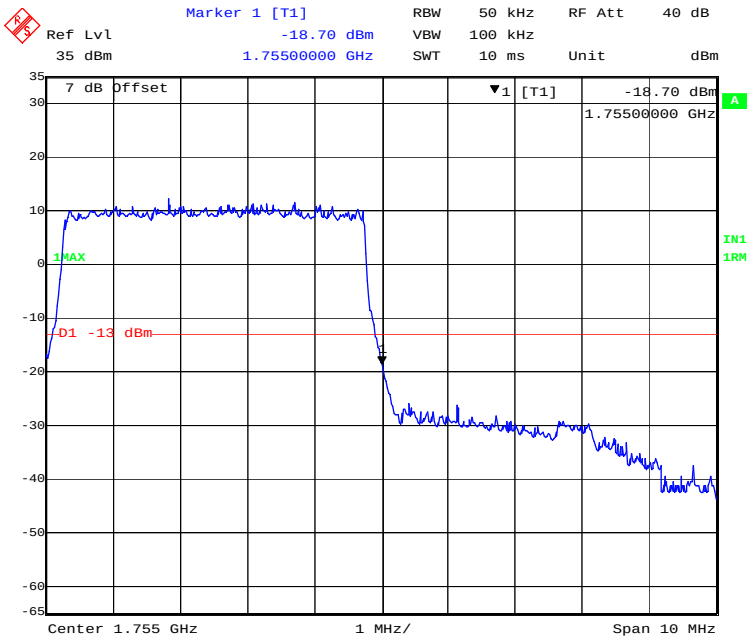
16-QAM (5 MHz, FULL RB) - Right Band Edge



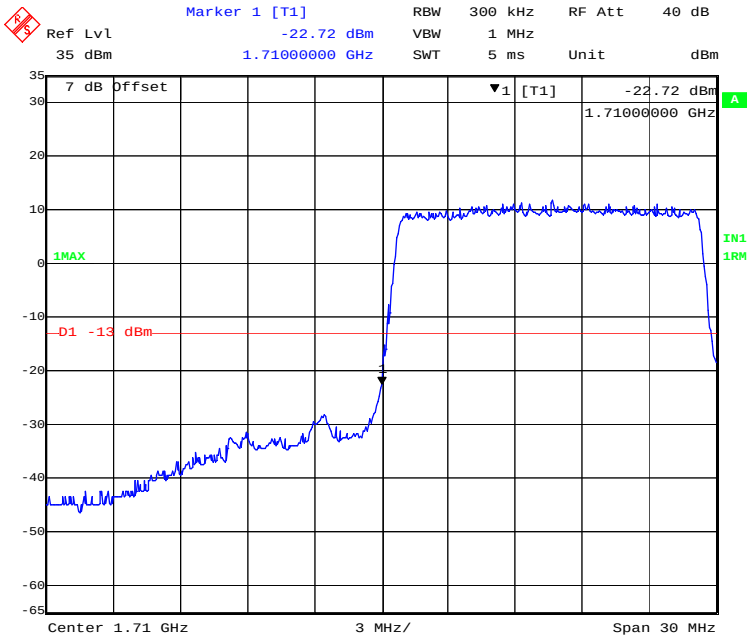
16-QAM (10 MHz, FULL RB) - Left Band Edge



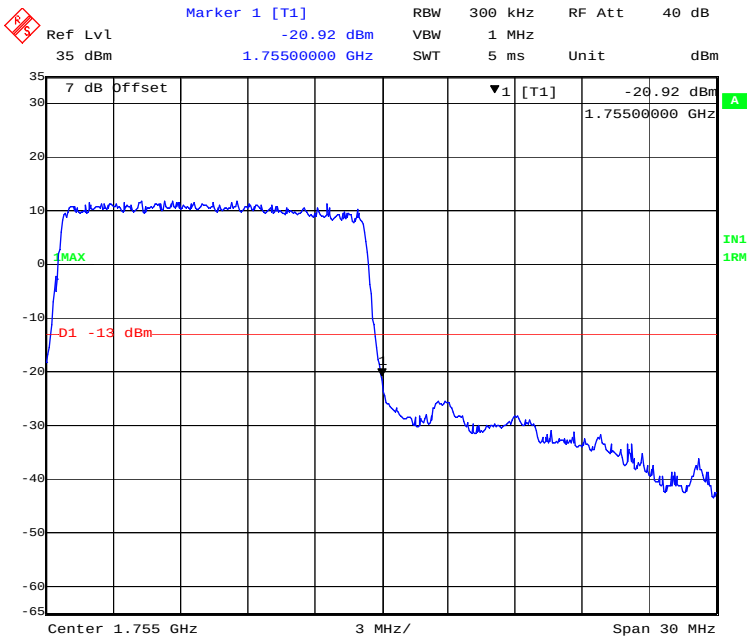
16-QAM (10 MHz, FULL RB) - Right Band Edge



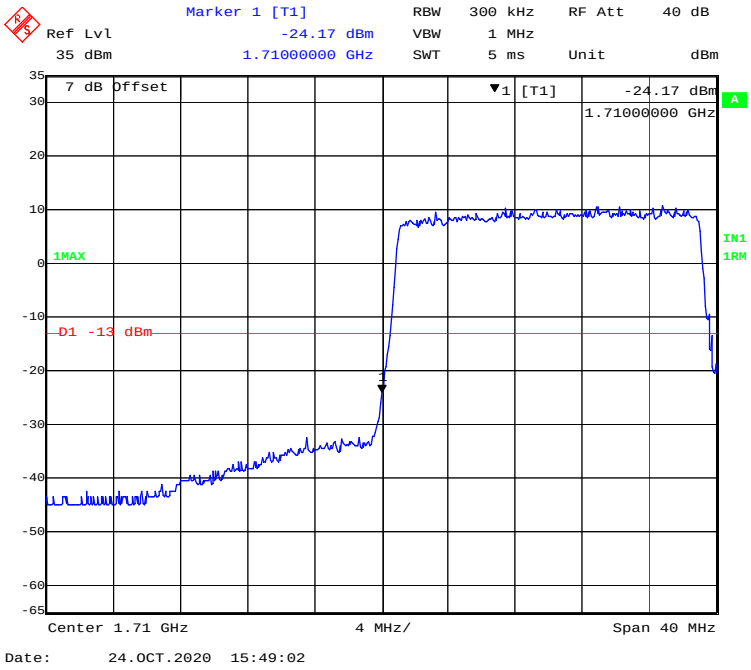
16-QAM (15 MHz, FULL RB) - Left Band Edge



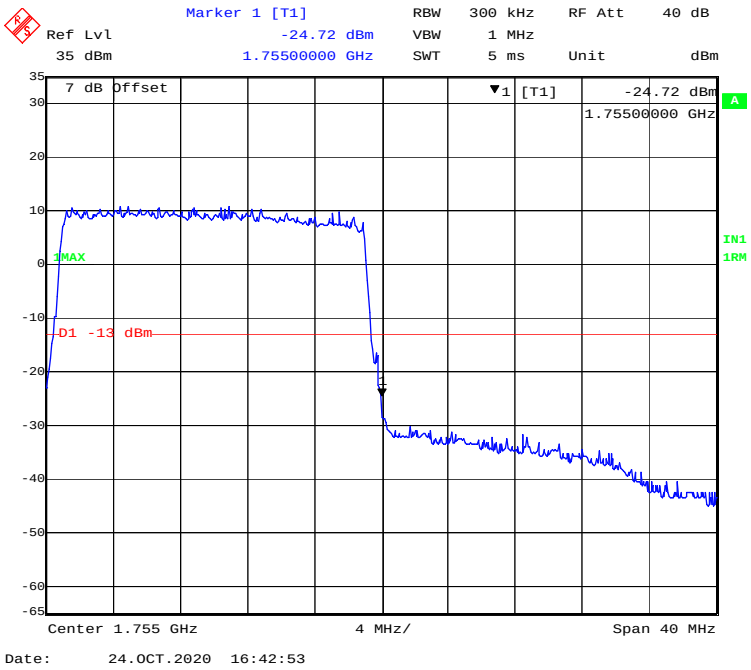
16-QAM (15 MHz, FULL RB) - Right Band Edge



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

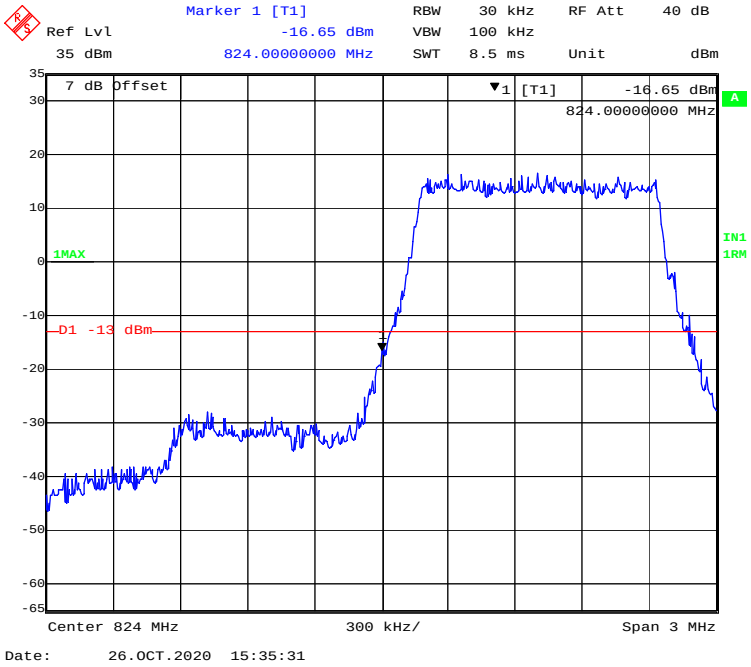


16-QAM (20 MHz, FULL RB) - Right Band Edge

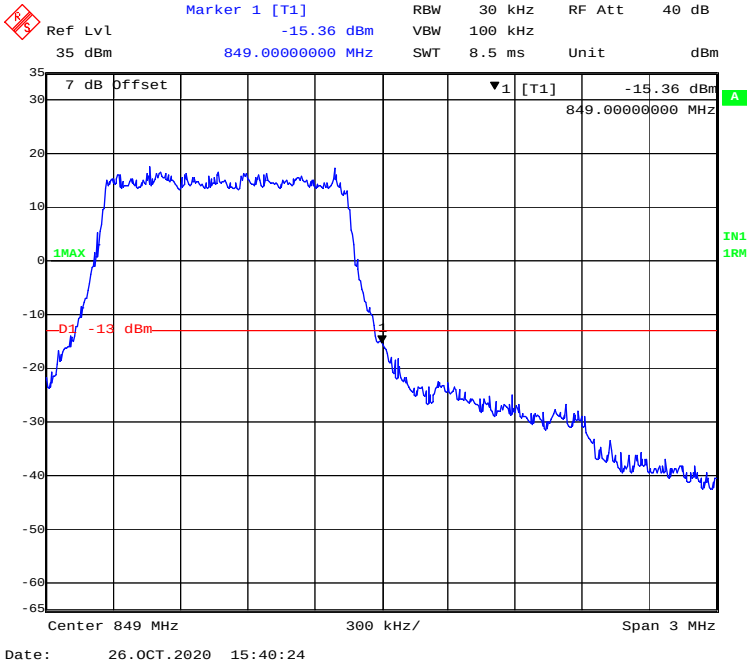


LTE Band 5:

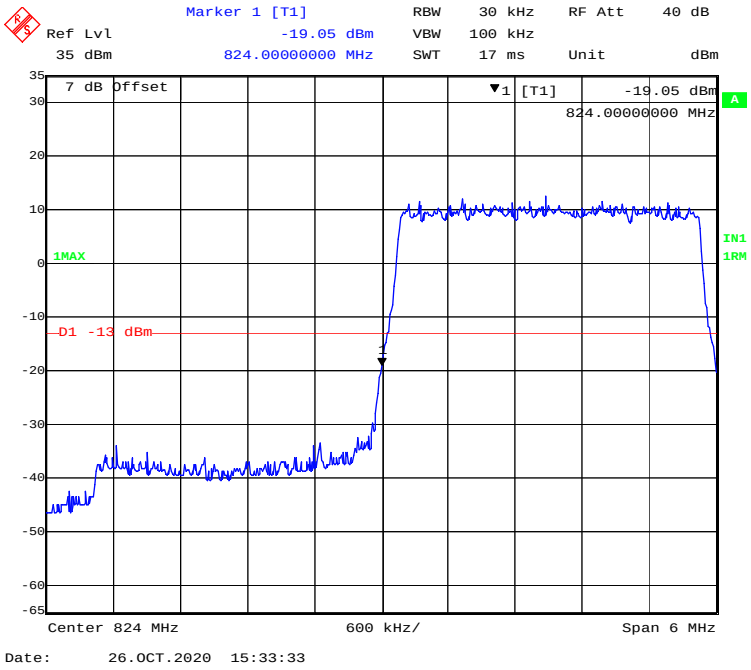
QPSK (1.4 MHz, FULL RB) - Left Band Edge



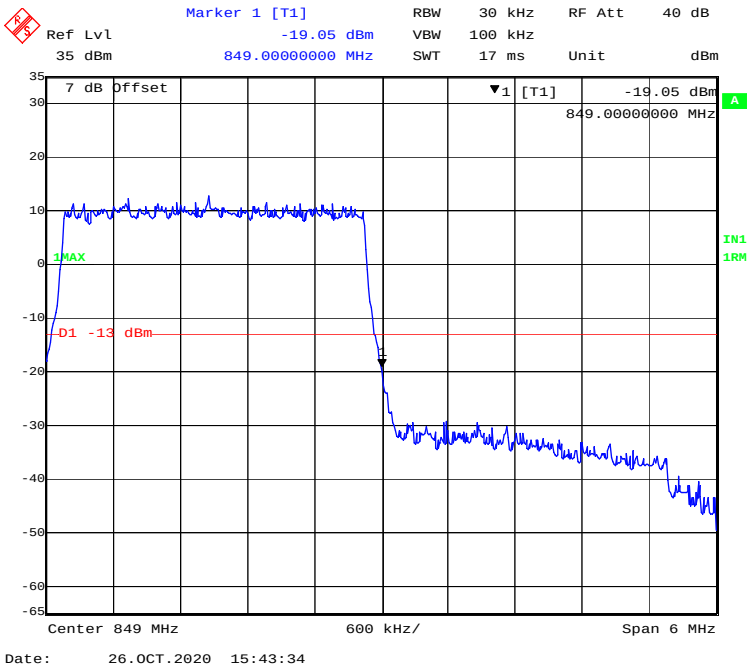
QPSK (1.4 MHz, FULL RB) - Right Band Edge



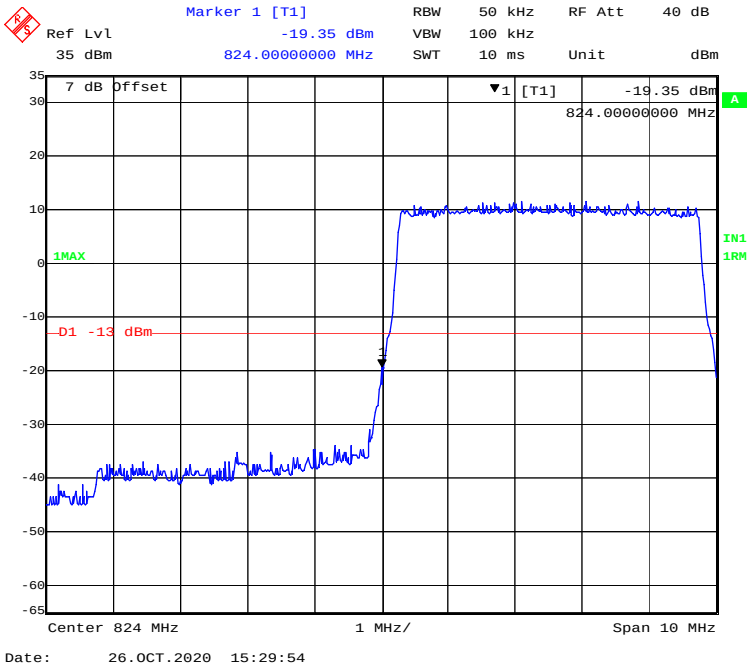
QPSK (3.0 MHz, FULL RB) - Left Band Edge



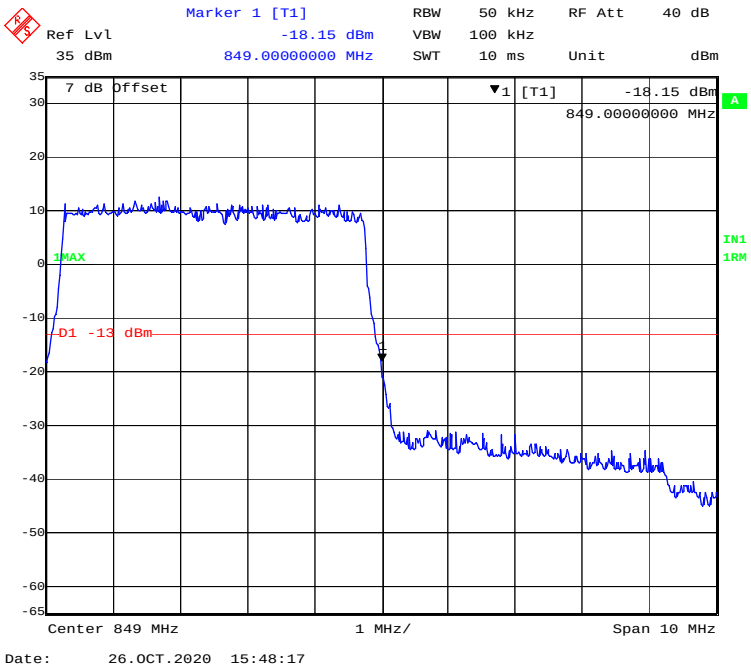
QPSK (3.0 MHz, FULL RB) - Right Band Edge



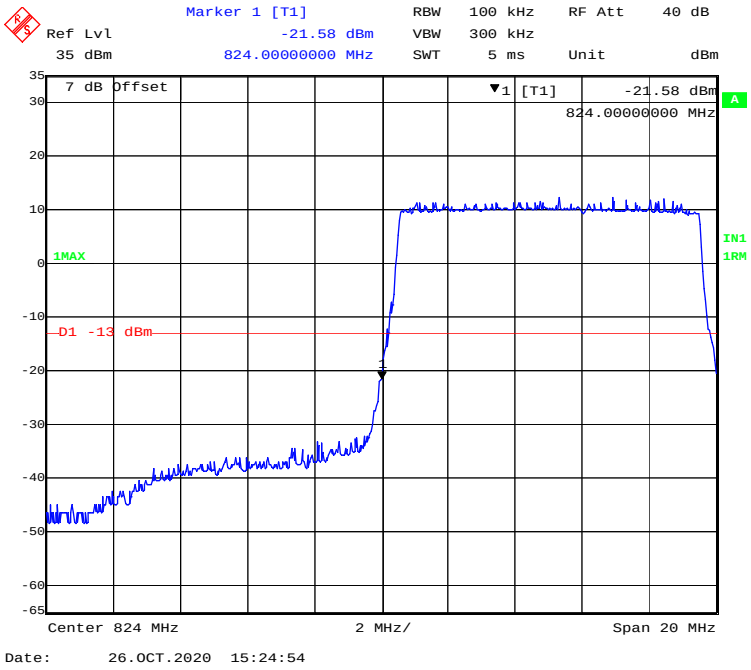
QPSK (5.0 MHz, FULL RB) - Left Band Edge



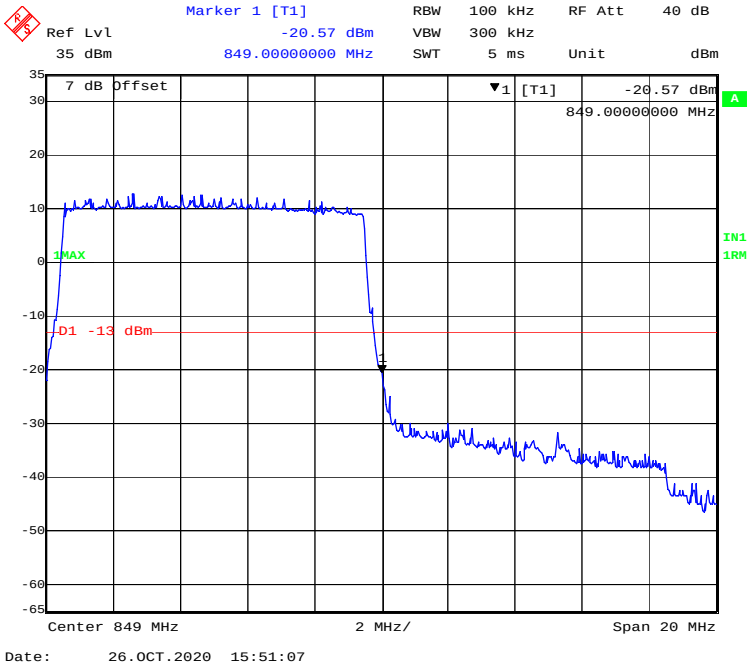
QPSK (5.0 MHz, FULL RB) - Right Band Edge



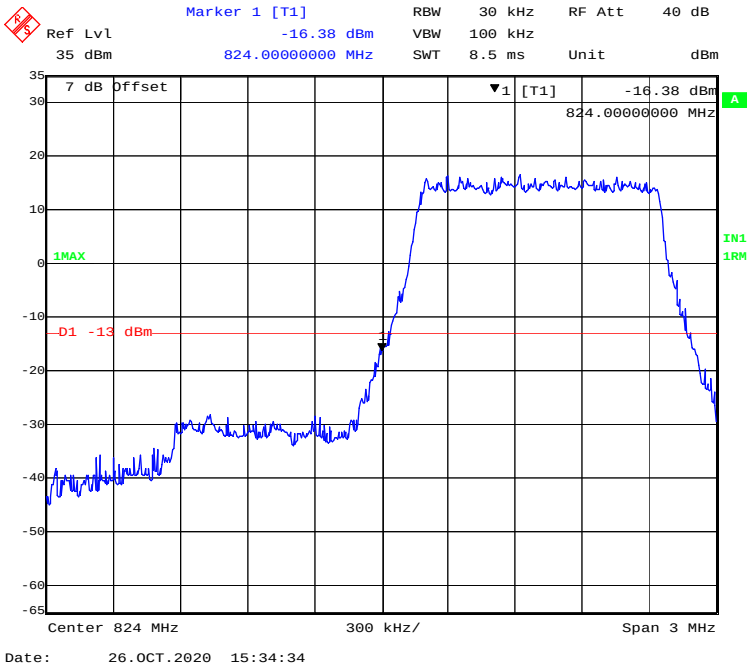
QPSK (10.0 MHz, FULL RB) - Left Band Edge



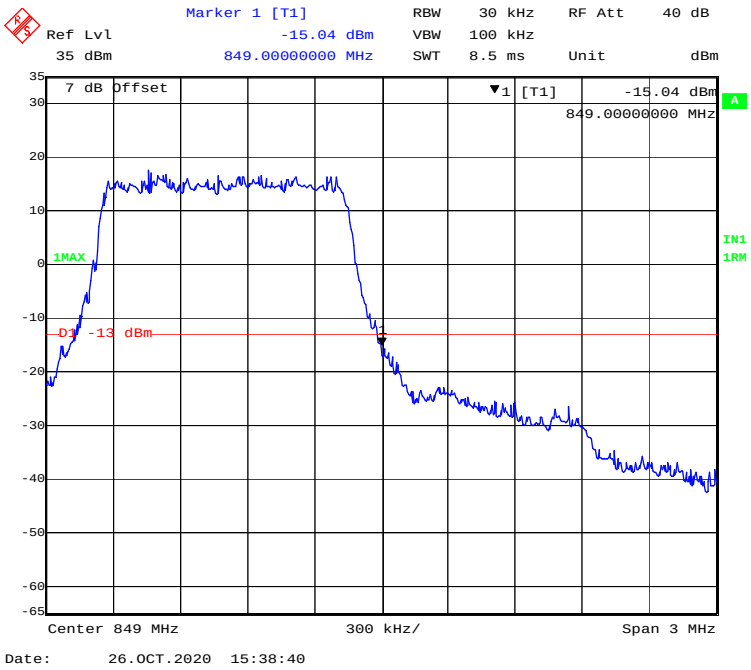
QPSK (10.0 MHz, FULL RB) - Right Band Edge



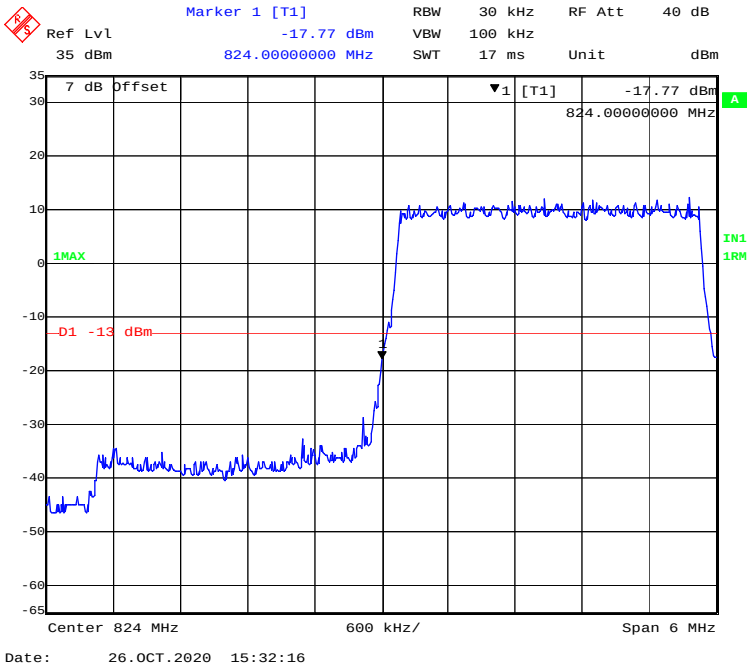
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



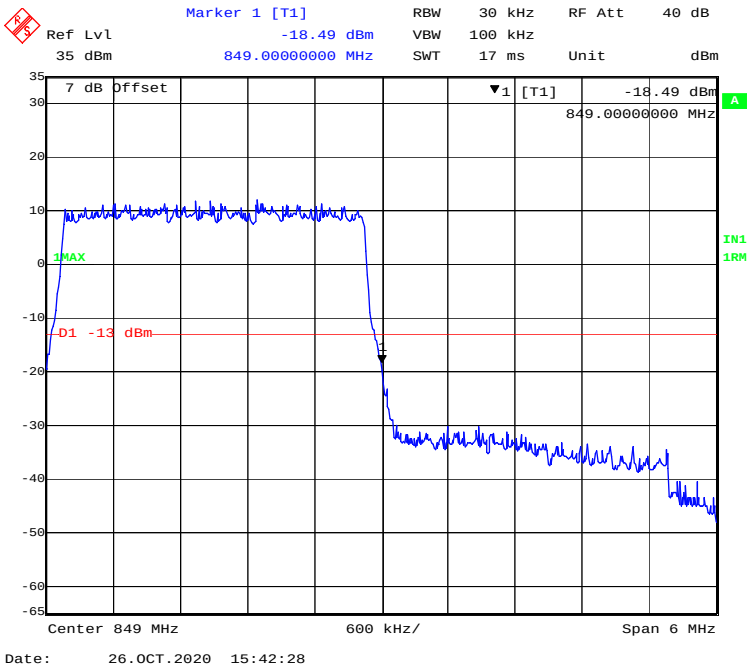
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



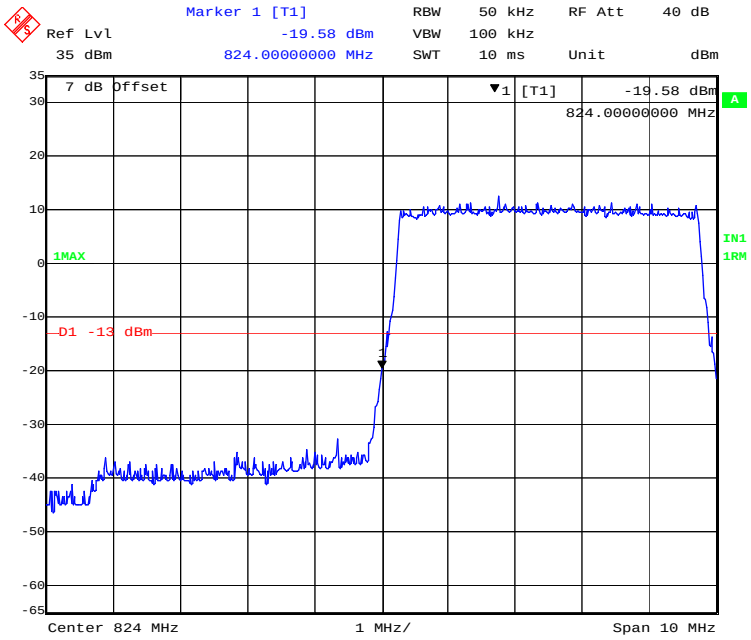
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



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

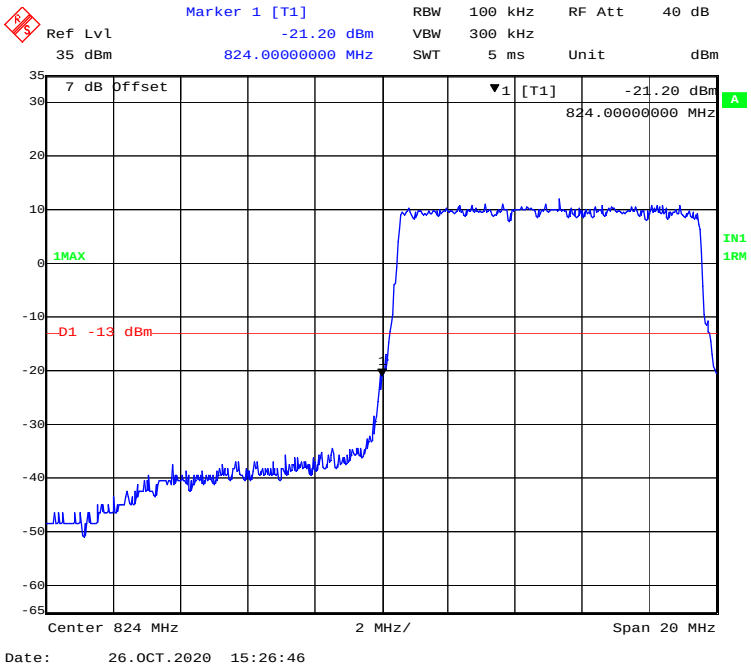


16-QAM (5.0 MHz, FULL RB) - Left Band Edge

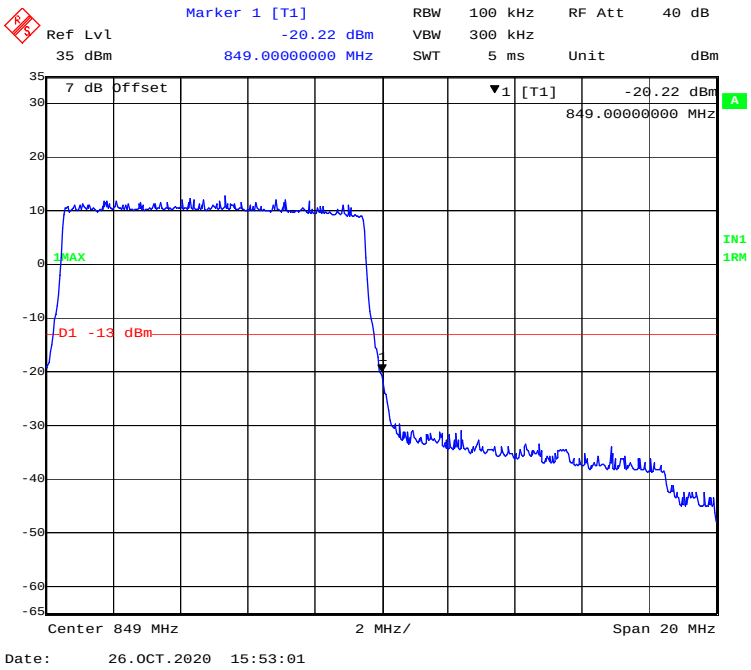


16-QAM (5.0 MHz, FULL RB) - Right Band Edge

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

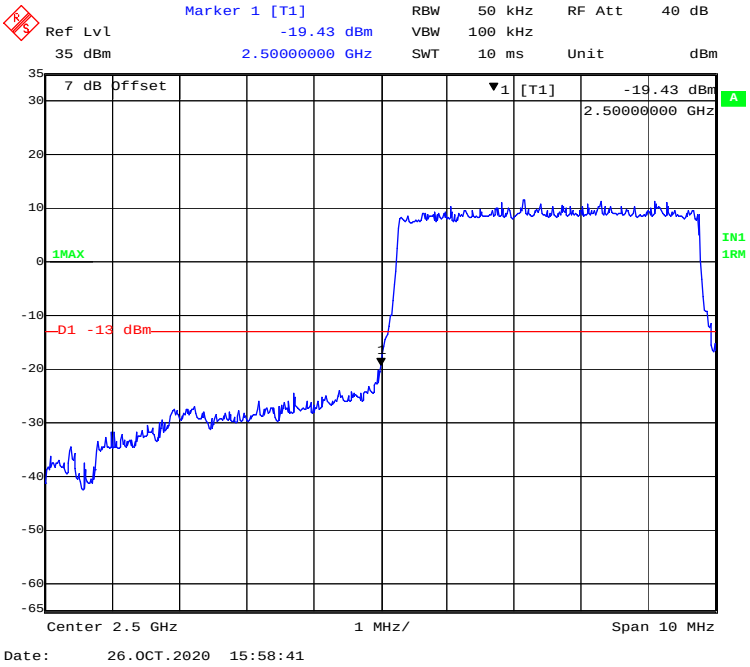


16-QAM (10.0 MHz, FULL RB) - Right Band Edge

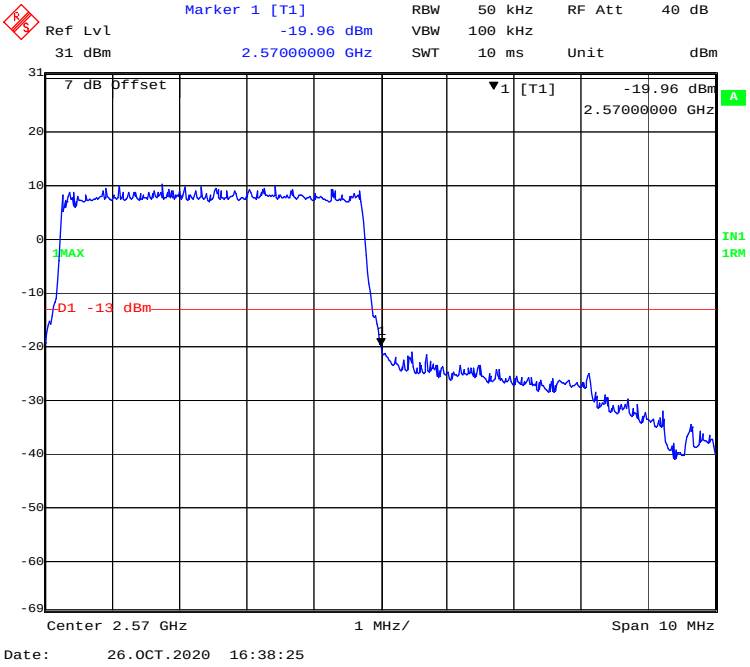


LTE Band 7:

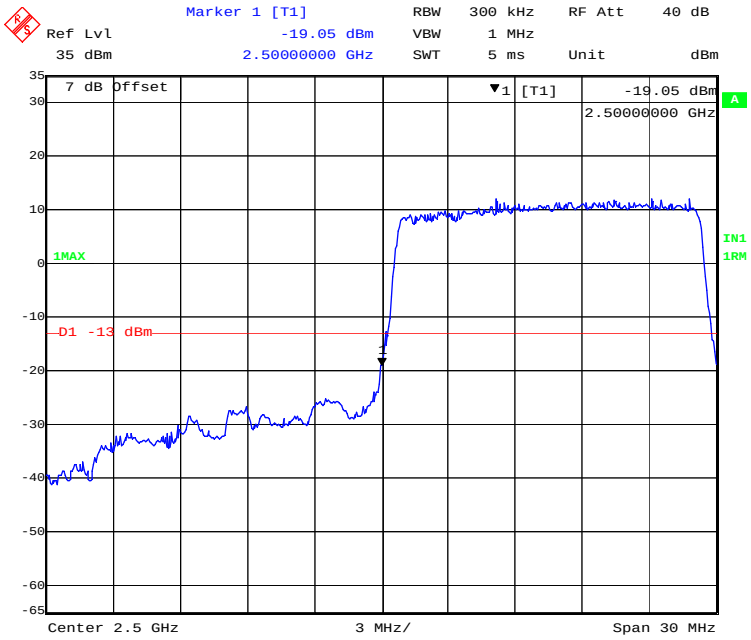
QPSK (5 MHz, FULL RB) - Left Band Edge



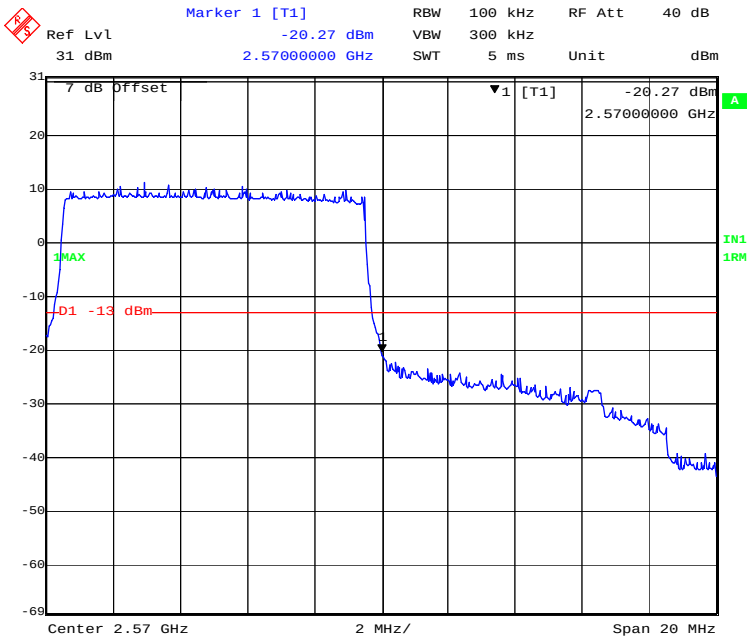
QPSK (5 MHz, FULL RB) - Right Band Edge



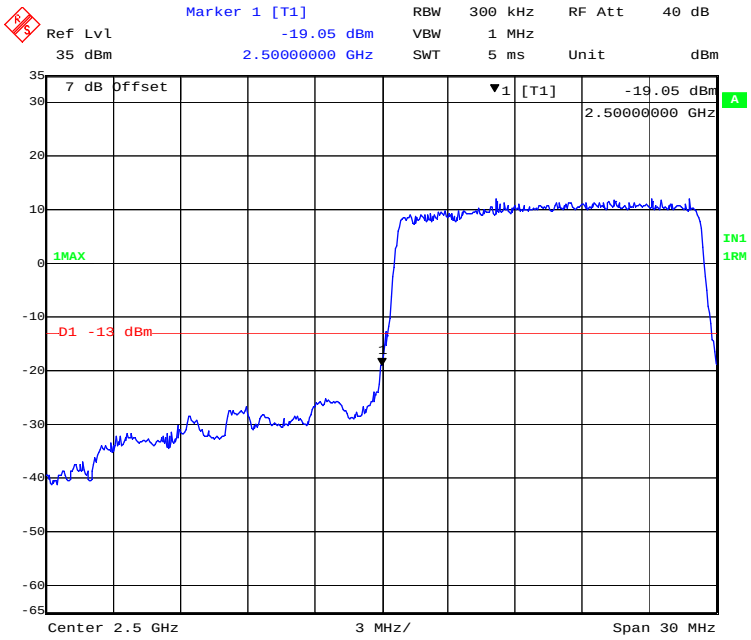
QPSK (10 MHz, FULL RB) - Left Band Edge



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

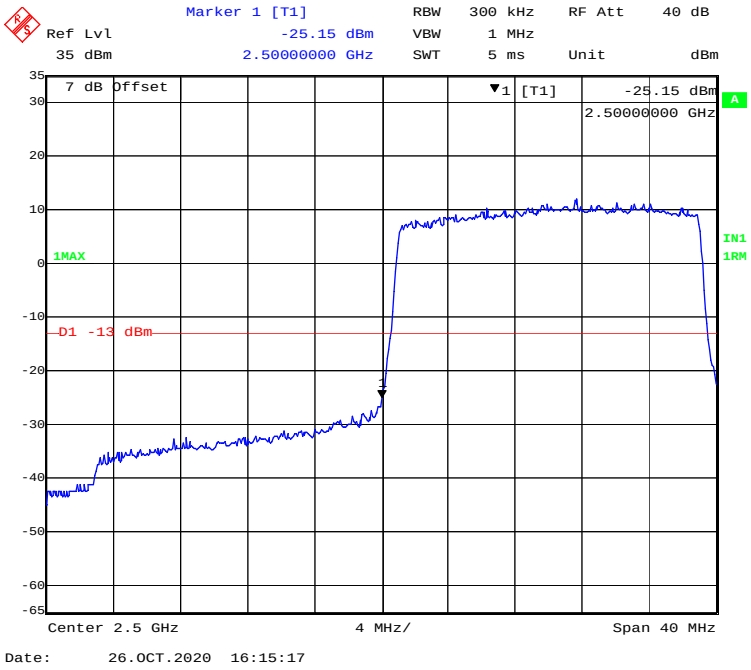


QPSK (15 MHz, FULL RB) - Left Band Edge

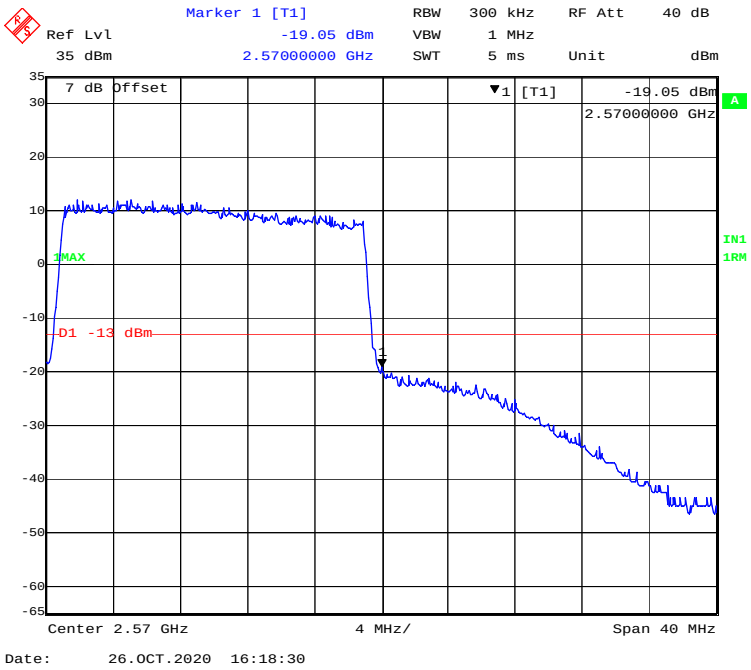


QPSK (15 MHz, FULL RB) - Right Band Edge

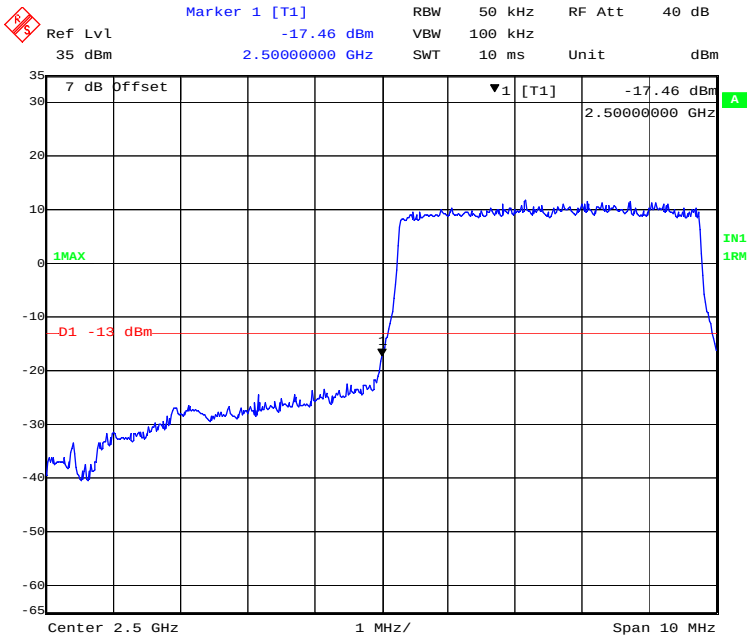
QPSK (20 MHz, FULL RB) - Left Band Edge



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

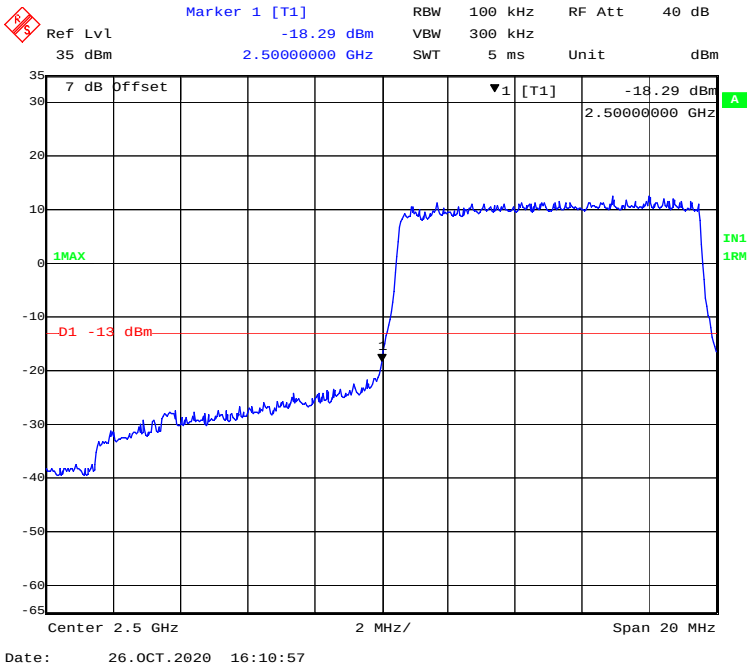


16-QAM (5 MHz, FULL RB) - Left Band Edge

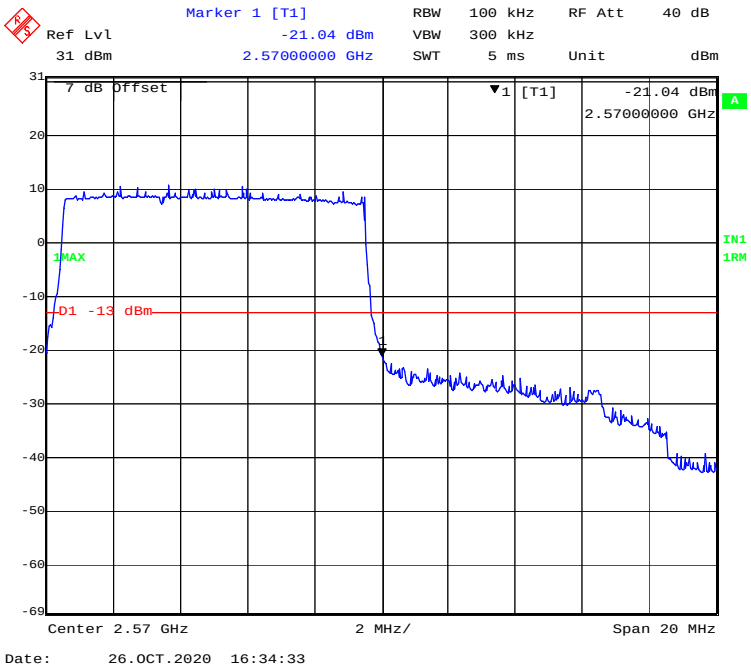


16-QAM (5 MHz, FULL RB) - Right Band Edge

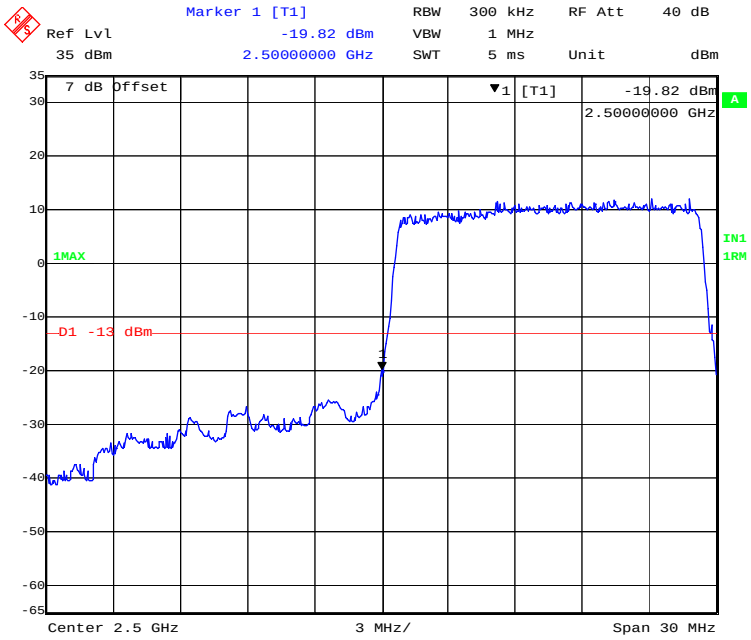
16-QAM (10 MHz, FULL RB) - Left Band Edge



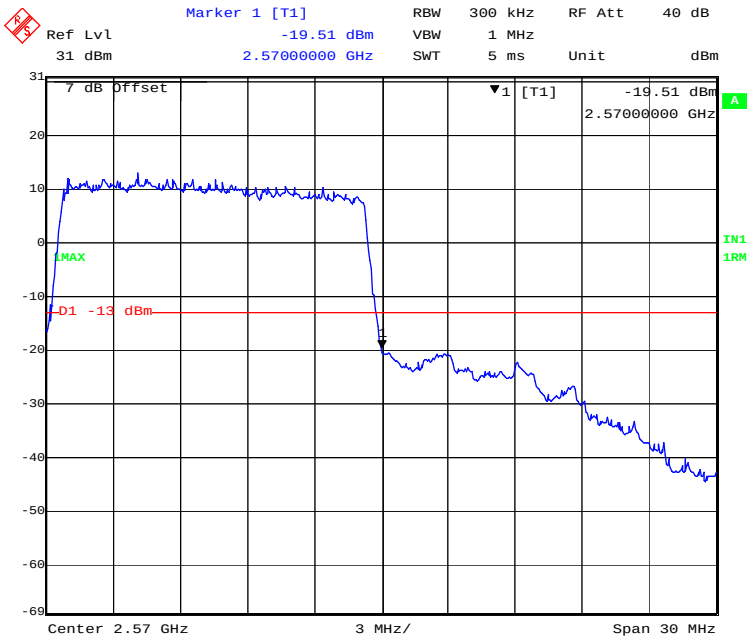
16-QAM (10 MHz, FULL RB) - Right Band Edge



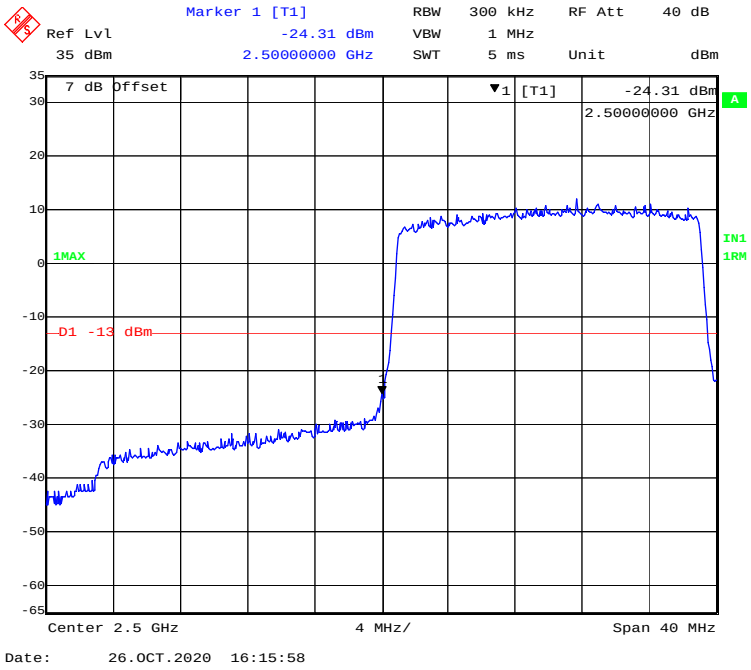
16-QAM (15 MHz, FULL RB) - Left Band Edge



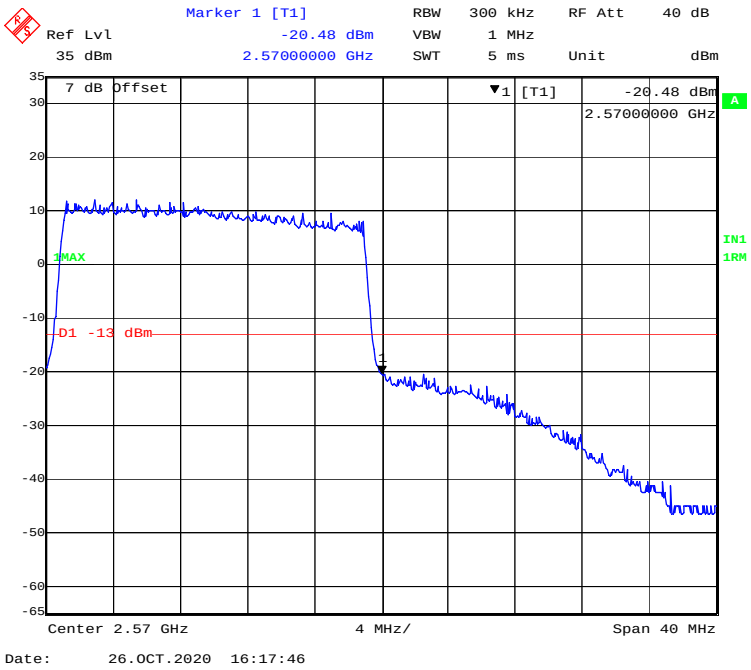
16-QAM (15 MHz, FULL RB) - Right Band Edge



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

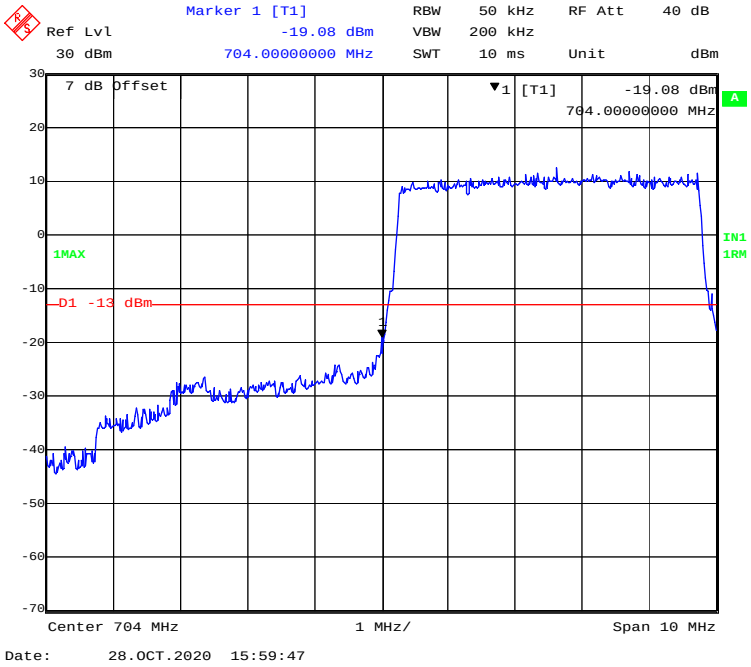


16-QAM (20 MHz, FULL RB) - Right Band Edge

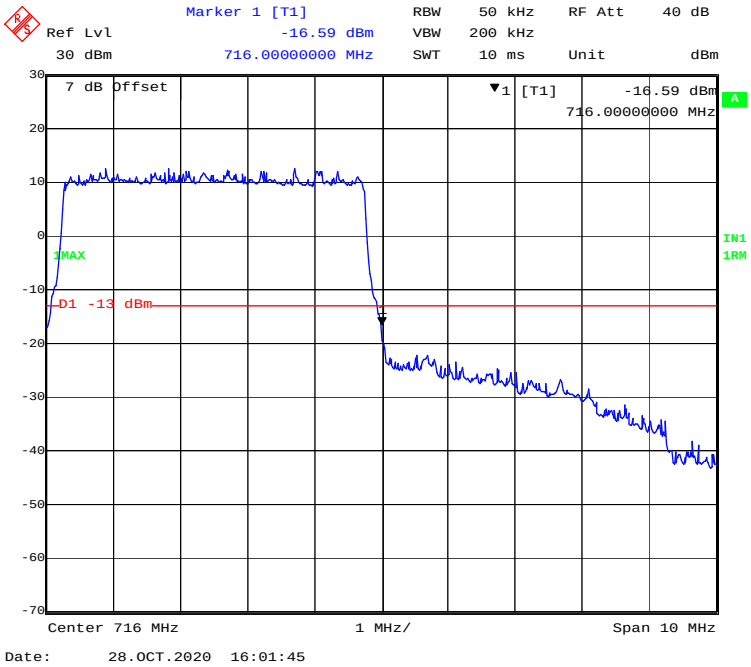


LTE Band 17:

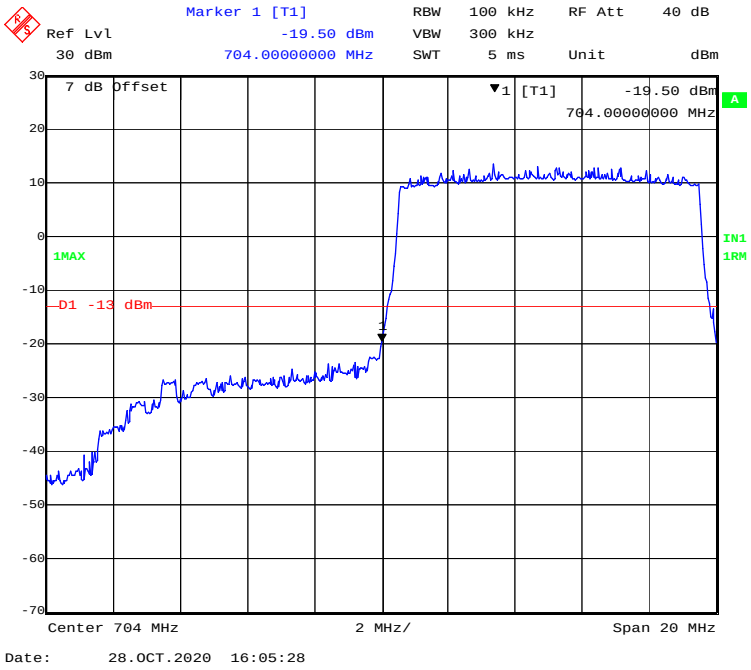
QPSK (5 MHz, FULL RB) - Left Band Edge



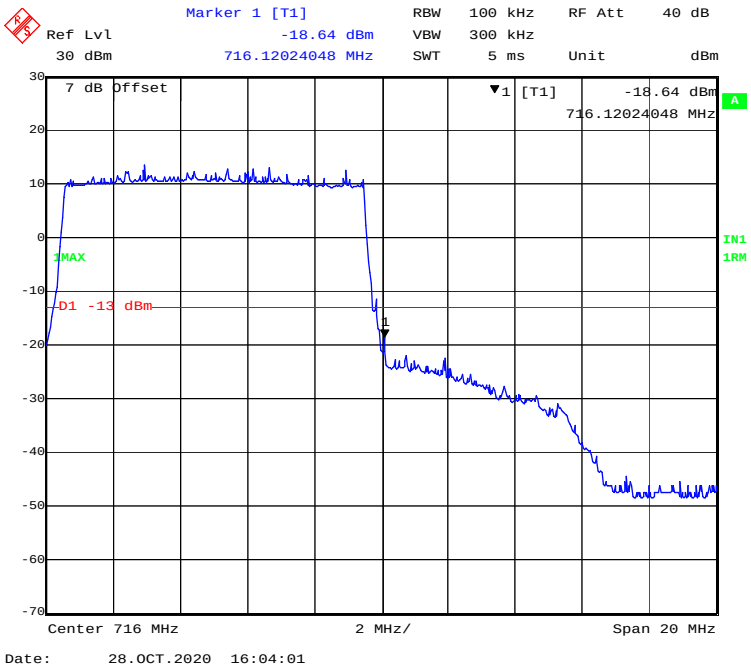
QPSK (5 MHz, FULL RB) - Right Band Edge



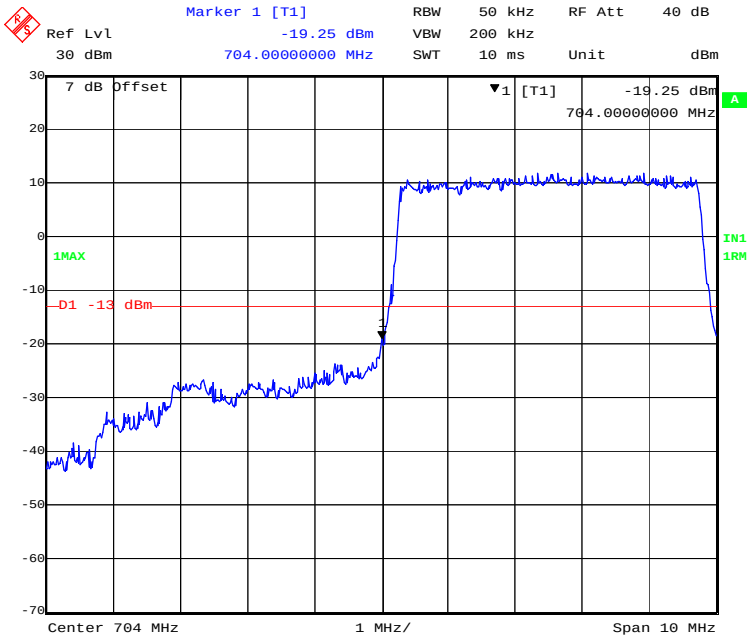
QPSK (10 MHz, FULL RB) - Left Band Edge



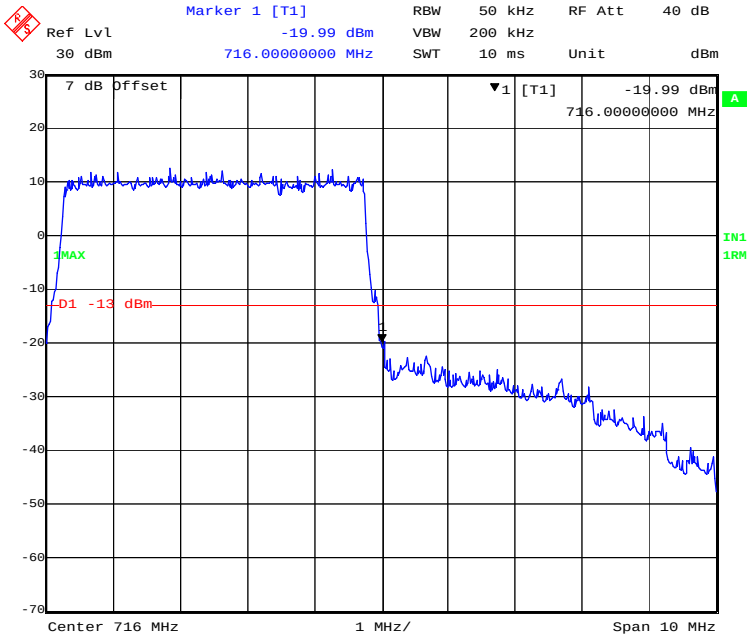
QPSK (10 MHz, FULL RB) - Right Band Edge



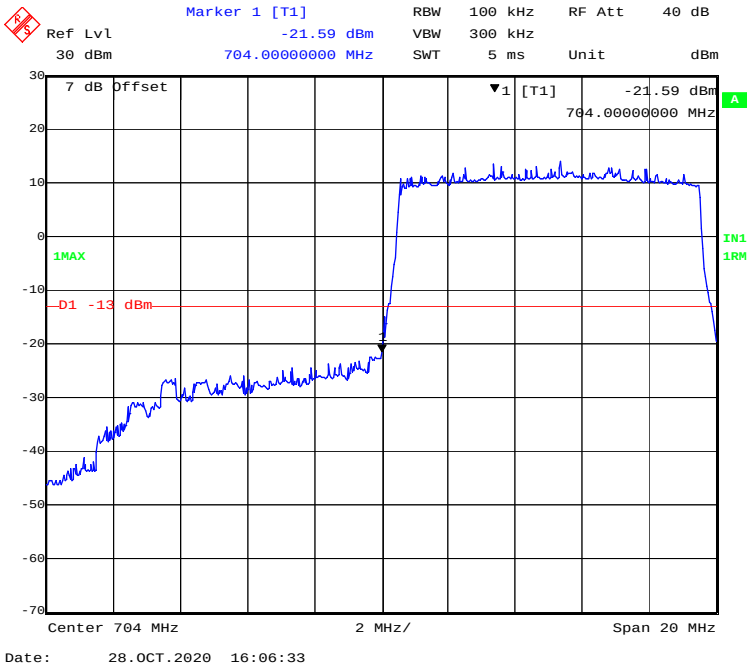
16-QAM (5 MHz, FULL RB) - Left Band Edge



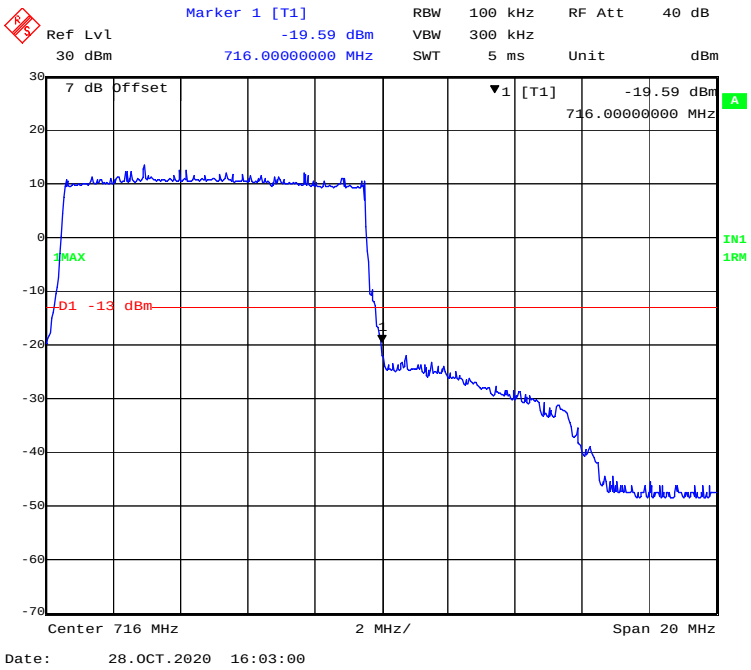
16-QAM (5 MHz, FULL RB) - Right Band Edge



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

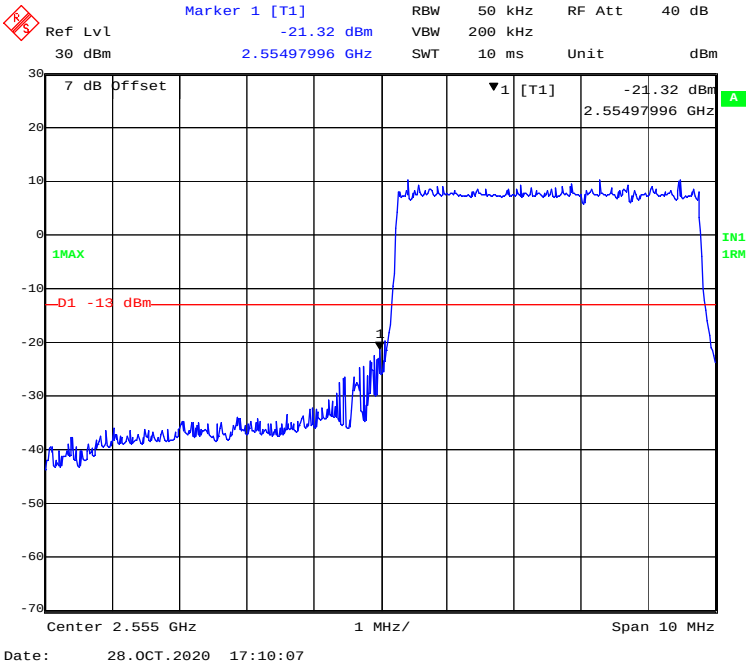


16-QAM (10 MHz, FULL RB) - Right Band Edge

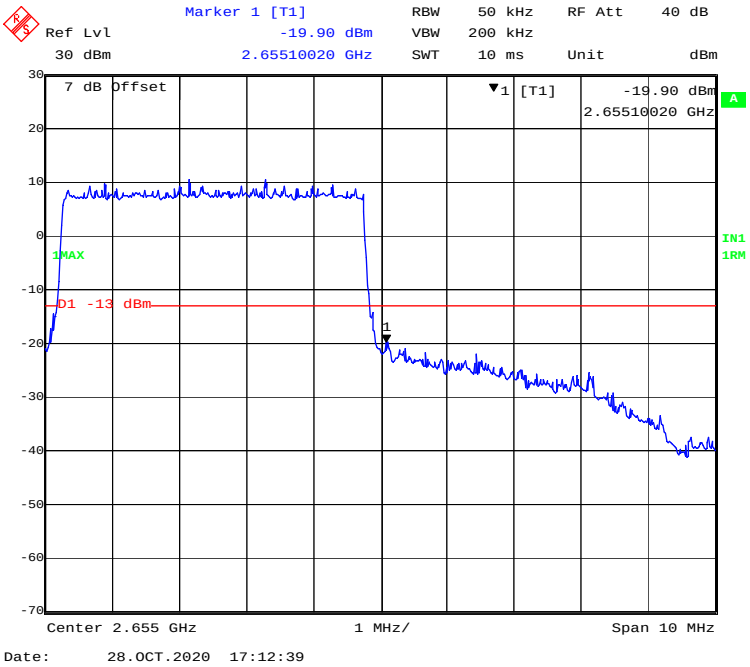


LTE Band 41:

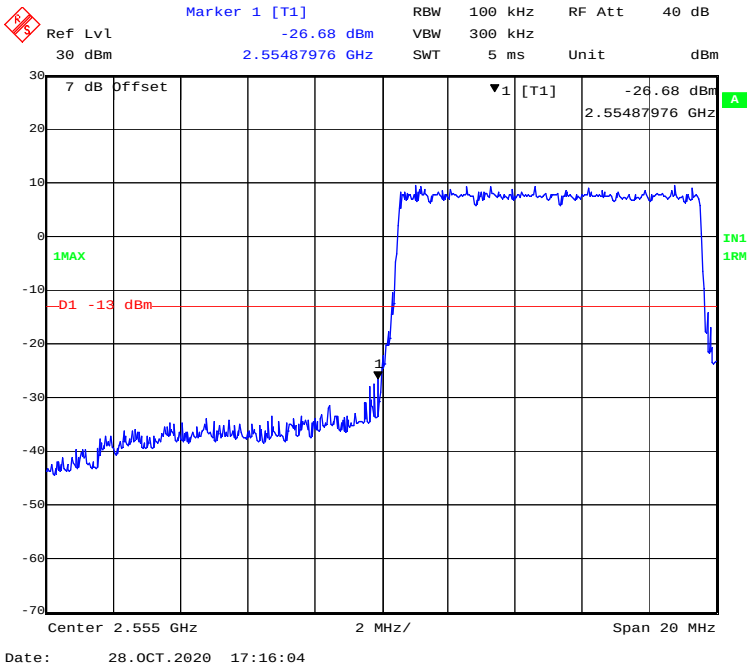
QPSK (5 MHz, FULL RB) - Left Band Edge



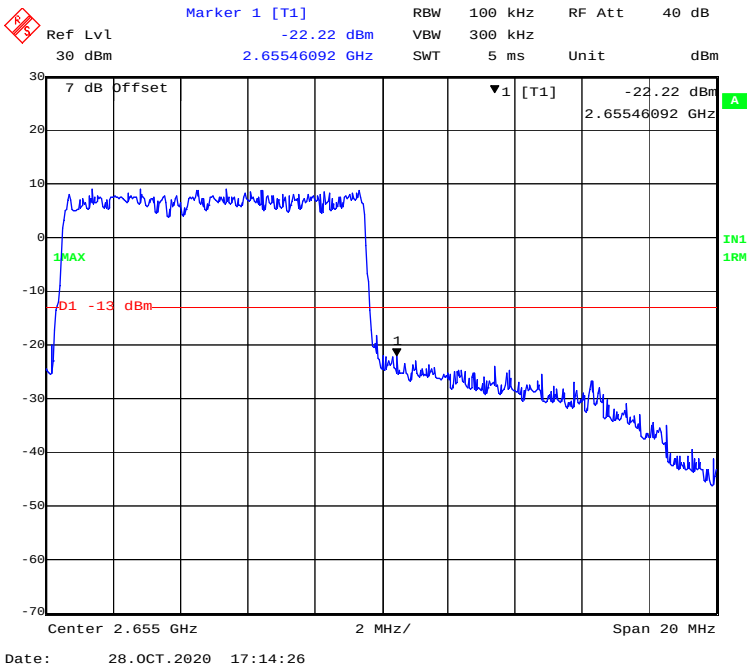
QPSK (5 MHz, FULL RB) - Right Band Edge



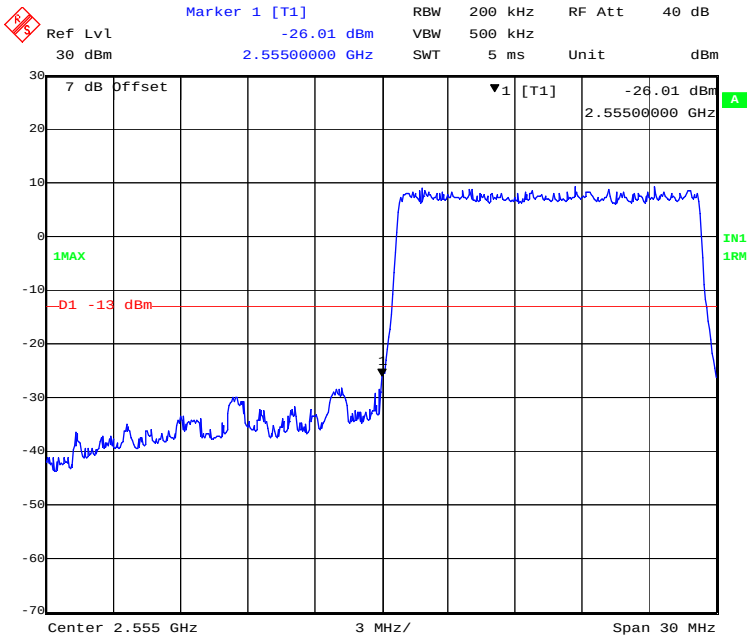
QPSK (10 MHz, FULL RB) - Left Band Edge



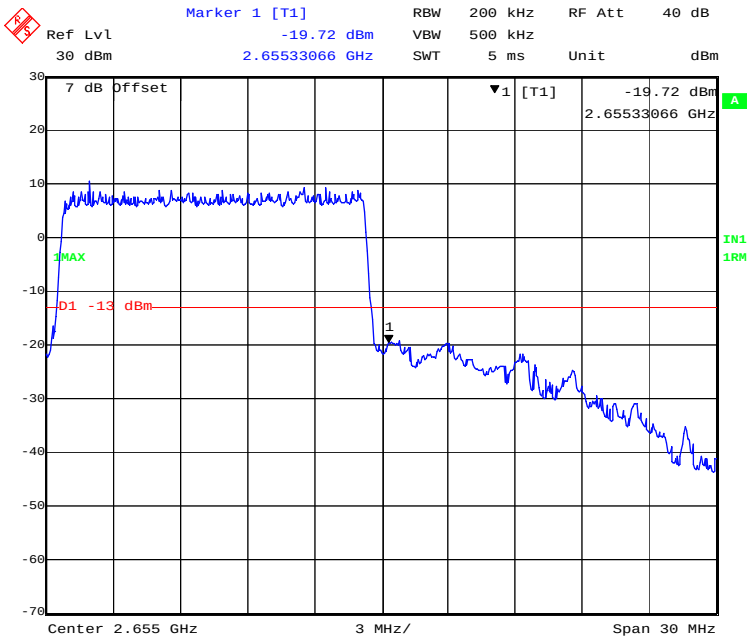
QPSK (10 MHz, FULL RB) - Right Band Edge



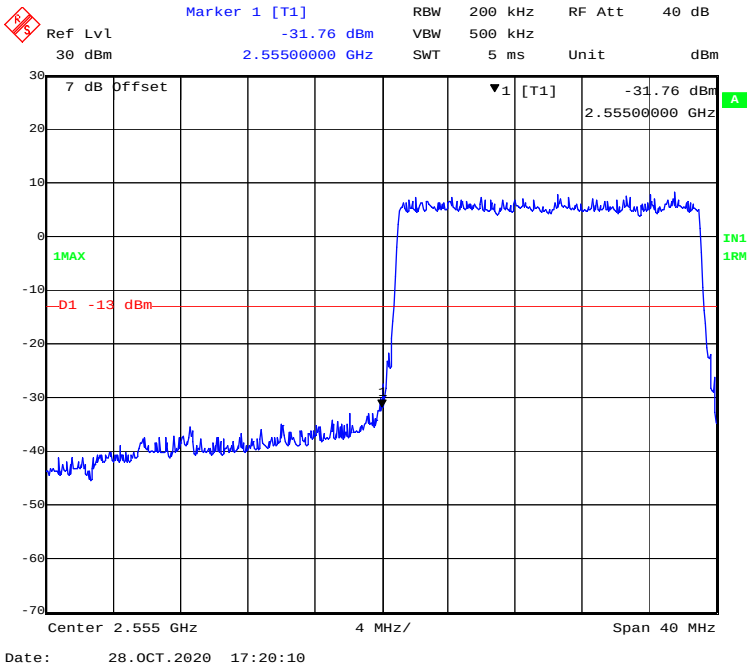
QPSK (15 MHz, FULL RB) - Left Band Edge



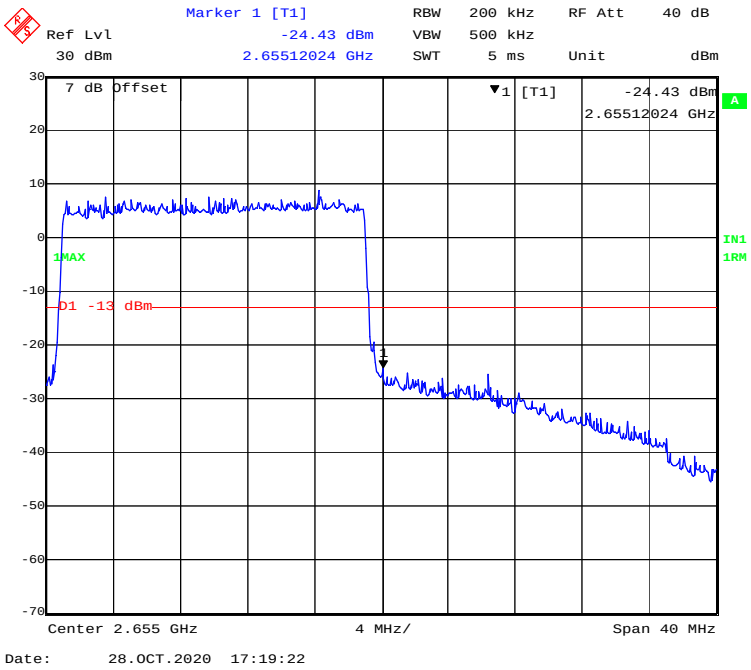
QPSK (15 MHz, FULL RB) - Right Band Edge



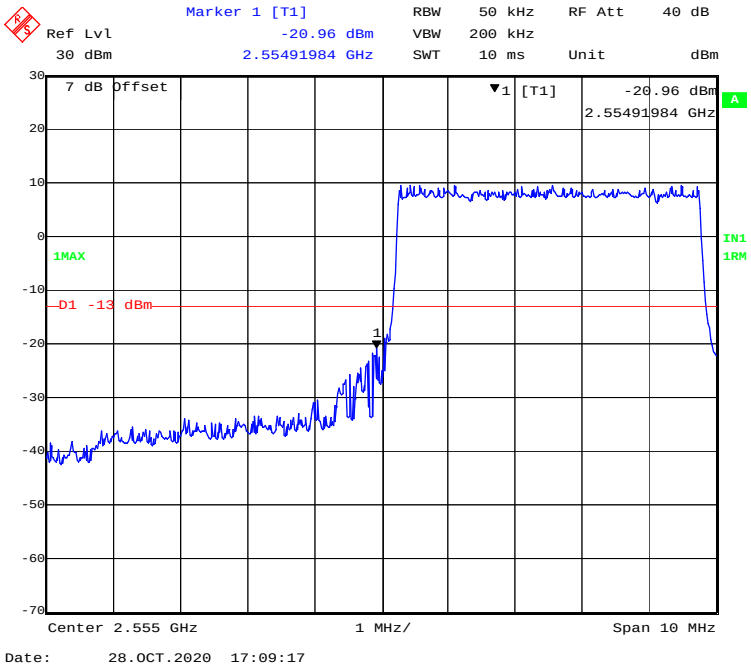
QPSK (20 MHz, FULL RB) - Left Band Edge



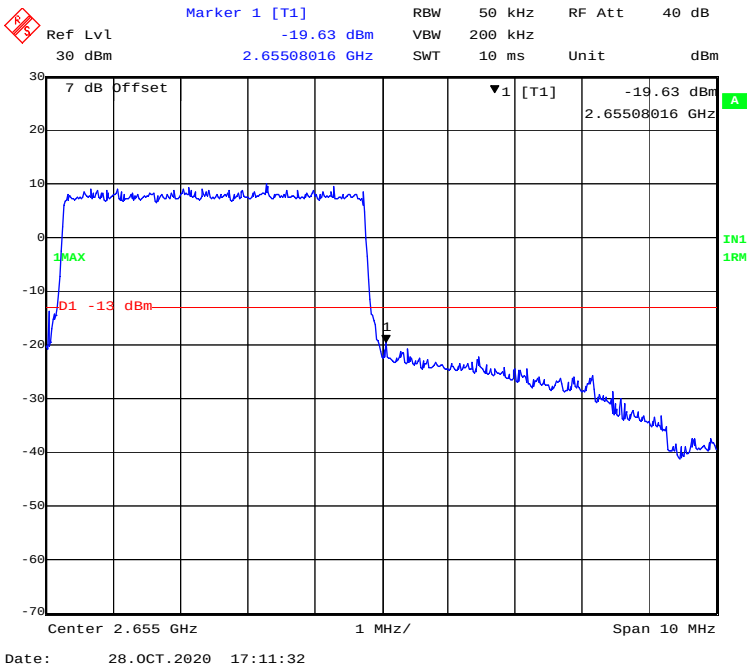
QPSK (20 MHz, FULL RB) - Right Band Edge



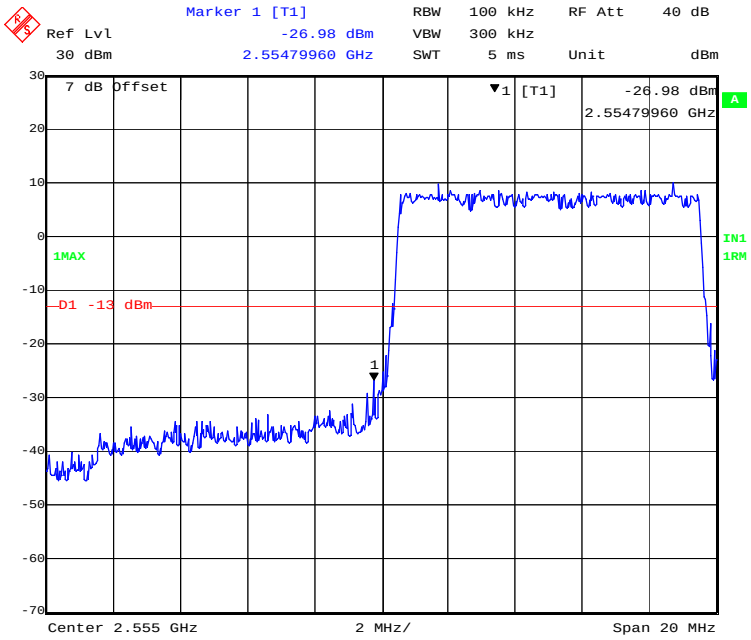
16-QAM (5 MHz, FULL RB) - Left Band Edge



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

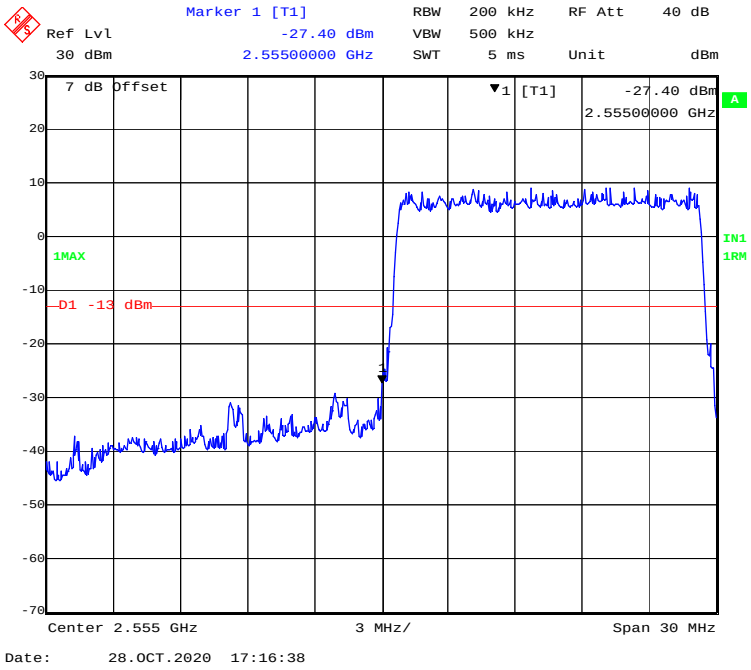


16-QAM (10 MHz, FULL RB) - Left Band Edge

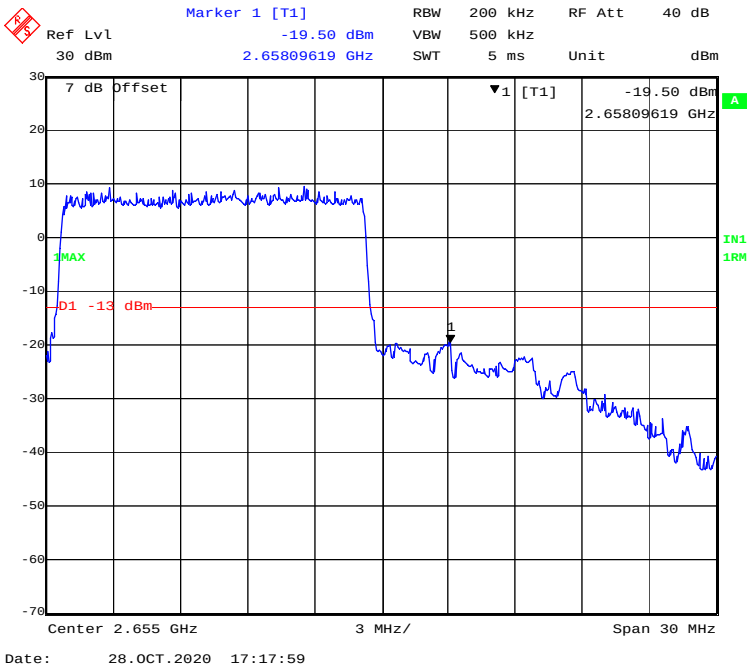


16-QAM (10 MHz, FULL RB) - Right Band Edge

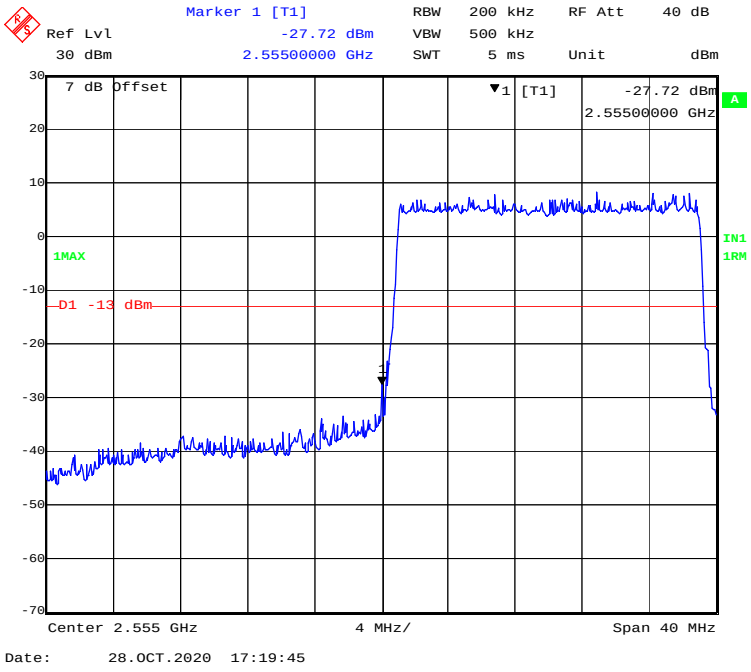
16-QAM (15 MHz, FULL RB) - Left Band Edge



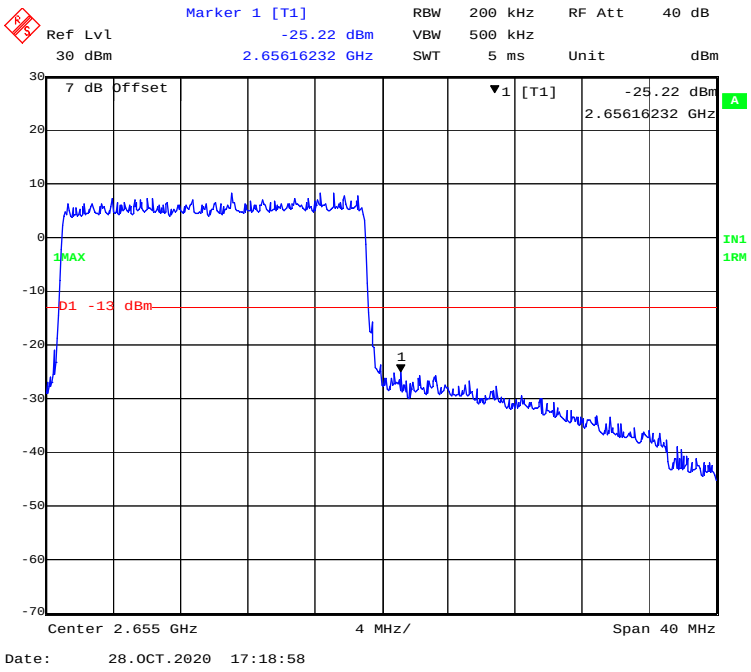
16-QAM (15 MHz, FULL RB) - Right Band Edge



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

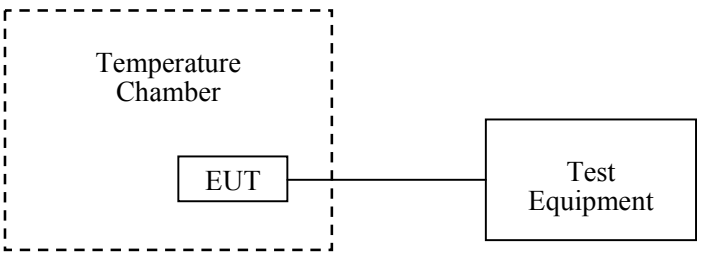
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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:	23.3 ℃
Relative Humidity:	54 %
ATM Pressure:	102.0 kPa

The testing was performed by CK Huang on 2020-11-03.

EUT operation mode: Transmitting

Test Result: Compliant.

DC 3.85V from battery:

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	3.85	13	0.015539	2.5
-20		11	0.013148	2.5
-10		18	0.021516	2.5
0		17	0.020320	2.5
10		13	0.015539	2.5
20		21	0.025102	2.5
30		11	0.013148	2.5
40		16	0.019125	2.5
50		15	0.017930	2.5
20	V min.= 3.5	13	0.015539	2.5
20	V max.= 4.2	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	3.85	4	0.004781	2.5
-20		9	0.010758	2.5
-10		6	0.007172	2.5
0		7	0.008367	2.5
10		8	0.009563	2.5
20		5	0.005977	2.5
30		1	0.001195	2.5
40		5	0.005977	2.5
50		7	0.008367	2.5
20	V min.= 3.5	10	0.011953	2.5
20	V max.= 4.2	5	0.005977	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	3.85	16	0.019125	2.5
-20		17	0.009563	2.5
-10		9	0.014344	2.5
0		8	0.009563	2.5
10		12	0.014344	2.5
20		18	0.021516	2.5
30		12	0.014344	2.5
40		19	0.022711	2.5
50		11	0.013148	2.5
20	V min.= 3.5	9	0.010758	2.5
20	V max.= 4.2	14	0.016734	2.5

CDMA850 Band:

EVDO Mode, Middle Channel, f_o =836.52 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.85	14	0.016736	2.5
-20		16	0.019127	2.5
-10		16	0.019127	2.5
0		12	0.014345	2.5
10		18	0.021518	2.5
20		17	0.020322	2.5
30		15	0.017931	2.5
40		18	0.021518	2.5
50		12	0.014345	2.5
20	V min.= 3.5	15	0.017931	2.5
20	V max.= 4.2	17	0.020322	2.5

1xRTT Mode, Middle Channel, f_o =836.52 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	15	0.017931	2.5
-20		16	0.019127	2.5
-10		17	0.020322	2.5
0		13	0.015541	2.5
10		17	0.020322	2.5
20		16	0.019127	2.5
30		15	0.017931	2.5
40		17	0.020322	2.5
50		13	0.015541	2.5
20	V min.= 3.5	12	0.014345	2.5
20	V max.= 4.2	14	0.016736	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	3.85	17	0.009043	pass
-20		11	0.005851	pass
-10		20	0.010638	pass
0		10	0.005319	pass
10		15	0.007979	pass
20		16	0.008511	pass
30		14	0.007447	pass
40		13	0.006915	pass
50		16	0.008511	pass
20	V min.= 3.5	17	0.009043	pass
20	V max.= 4.2	11	0.005851	pass

EGPRS Mode, Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.85	15	0.007979	pass
-20		10	0.005319	pass
-10		12	0.006383	pass
0		18	0.009574	pass
10		13	0.006915	pass
20		12	0.006383	pass
30		11	0.005851	pass
40		15	0.007979	pass
50		13	0.006915	pass
20	V min.= 3.5	14	0.007447	pass
20	V max.= 4.2	19	0.010106	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	3.85	11	0.005851	pass
-20		6	0.003191	pass
-10		13	0.006915	pass
0		21	0.011170	pass
10		18	0.009574	pass
20		7	0.003723	pass
30		15	0.007979	pass
40		9	0.004787	pass
50		21	0.011170	pass
20	V min.= 3.5	18	0.009574	pass
20	V max.= 4.2	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	3.85	12	0.0064	pass
-20		17	0.0090	pass
-10		14	0.0074	pass
0		20	0.0106	pass
10		17	0.0090	pass
20		12	0.0064	pass
30		9	0.0048	pass
40		15	0.0080	pass
50		20	0.0106	pass
20	V min.= 3.5	12	0.0064	pass
20	V max.= 4.2	11	0.0059	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	3.85	20	0.0106	2.5
-20		15	0.0080	2.5
-10		20	0.0106	2.5
0		20	0.0106	2.5
10		16	0.0085	2.5
20		13	0.0069	2.5
30		11	0.0059	2.5
40		11	0.0059	2.5
50		12	0.0064	2.5
20	V min.= 3.5	19	0.0101	2.5
20	V max.= 4.2	14	0.0074	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	3.85	1710.0488	1754.9481	1710	1755
-20		1710.0466	1754.9453	1710	1755
-10		1710.0401	1754.9478	1710	1755
0		1710.0438	1754.9445	1710	1755
10		1710.0422	1754.9483	1710	1755
20		1710.0441	1754.9405	1710	1755
30		1710.0498	1754.9491	1710	1755
40		1710.0452	1754.9464	1710	1755
50		1710.0432	1754.9468	1710	1755
20	V min.= 3.5	1710.0405	1754.9466	1710	1755
20	V max.= 4.2	1710.0413	1754.9456	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	3.85	1710.0411	1754.9454	1710	1755
-20		1710.0461	1754.9422	1710	1755
-10		1710.0467	1754.9470	1710	1755
0		1710.0491	1754.9436	1710	1755
10		1710.0461	1754.9406	1710	1755
20		1710.0443	1754.9457	1710	1755
30		1710.0422	1754.9401	1710	1755
40		1710.0492	1754.9473	1710	1755
50		1710.0411	1754.9435	1710	1755
20	V min.= 3.5	1710.0408	1754.9410	1710	1755
20	V max.= 4.2	1710.0441	1754.9478	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	3.85	15	0.0179	2.5
-20		15	0.0179	2.5
-10		19	0.0227	2.5
0		12	0.0143	2.5
10		17	0.0203	2.5
20		20	0.0239	2.5
30		14	0.0167	2.5
40		12	0.0143	2.5
50		12	0.0143	2.5
20	V min.= 3.5	11	0.0132	2.5
20	V max.= 4.2	11	0.0132	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	3.85	10	0.0120	2.5
-20		19	0.0227	2.5
-10		11	0.0132	2.5
0		17	0.0203	2.5
10		13	0.0155	2.5
20		8	0.0096	2.5
30		19	0.0227	2.5
40		10	0.0120	2.5
50		12	0.0143	2.5
20	V min.= 3.5	13	0.0155	2.5
20	V max.= 4.2	14	0.0167	2.5

LTE Band 7:

Low Channel & High Channel (QPSK):20MHz					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	3.85	2500.0593	2569.9560	2500	2570
-20		2500.0581	2569.9551	2500	2570
-10		2500.0563	2569.9511	2500	2570
0		2500.0515	2569.9582	2500	2570
10		2500.0581	2569.9582	2500	2570
20		2500.0526	2569.9505	2500	2570
30		2500.0576	2569.9535	2500	2570
40		2500.054	2569.9532	2500	2570
50		2500.052	2569.9518	2500	2570
20	V min.= 3.5	2500.0585	2569.9587	2500	2570
20	V max.= 4.2	2500.0586	2569.9595	2500	2570

Low Channel & High Channel (16-QAM):20MHz					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	3.85	2500.0508	2569.9564	2500	2570
-20		2500.0514	2569.9516	2500	2570
-10		2500.0573	2569.9512	2500	2570
0		2500.0597	2569.9599	2500	2570
10		2500.0509	2569.9579	2500	2570
20		2500.0517	2569.9573	2500	2570
30		2500.0537	2569.9538	2500	2570
40		2500.0572	2569.9512	2500	2570
50		2500.0565	2569.9511	2500	2570
20	V min.= 3.5	2500.0540	2569.9599	2500	2570
20	V max.= 4.2	2500.0520	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	3.85	704.0550	715.9572	704	716
-20		704.0555	715.9551	704	716
-10		704.0543	715.9569	704	716
0		704.0560	715.9570	704	716
10		704.0505	715.9521	704	716
20		704.0589	715.9562	704	716
30		704.0513	715.9576	704	716
40		704.0583	715.9539	704	716
50		704.0584	715.9528	704	716
20	V min.= 3.5	704.0519	715.9534	704	716
20	V max.= 4.2	704.0598	715.9595	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	3.85	704.0504	715.9584	704	716
-20		704.0583	715.9584	704	716
-10		704.0538	715.9577	704	716
0		704.0532	715.9511	704	716
10		704.0582	715.9509	704	716
20		704.0537	715.9573	704	716
30		704.0596	715.9538	704	716
40		704.0562	715.9505	704	716
50		704.0534	715.9550	704	716
20	V min.= 3.5	704.0531	715.9578	704	716
20	V max.= 4.2	704.0550	715.9518	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	3.85	2555.0568	2654.9587	2555	2655
-20		2555.0567	2654.9567	2555	2655
-10		2555.056	2654.9574	2555	2655
0		2555.0547	2654.9527	2555	2655
10		2555.0518	2654.9503	2555	2655
20		2555.0502	2654.957	2555	2655
30		2555.0568	2654.9538	2555	2655
40		2555.0501	2654.9532	2555	2655
50		2555.0585	2654.9591	2555	2655
20	V min.= 3.5	2555.0517	2654.9539	2555	2655
20	V max.= 4.2	2555.0537	2654.958	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	3.85	2555.0532	2654.9557	2555	2655
-20		2555.0544	2654.9505	2555	2655
-10		2555.0505	2654.9569	2555	2655
0		2555.0552	2654.9581	2555	2655
10		2555.0545	2654.9566	2555	2655
20		2555.0581	2654.9575	2555	2655
30		2555.054	2654.9559	2555	2655
40		2555.0537	2654.9532	2555	2655
50		2555.0542	2654.9576	2555	2655
20	V min.= 3.5	2555.0595	2654.9514	2555	2655
20	V max.= 4.2	2555.0519	2654.9515	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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******* END OF REPORT *******