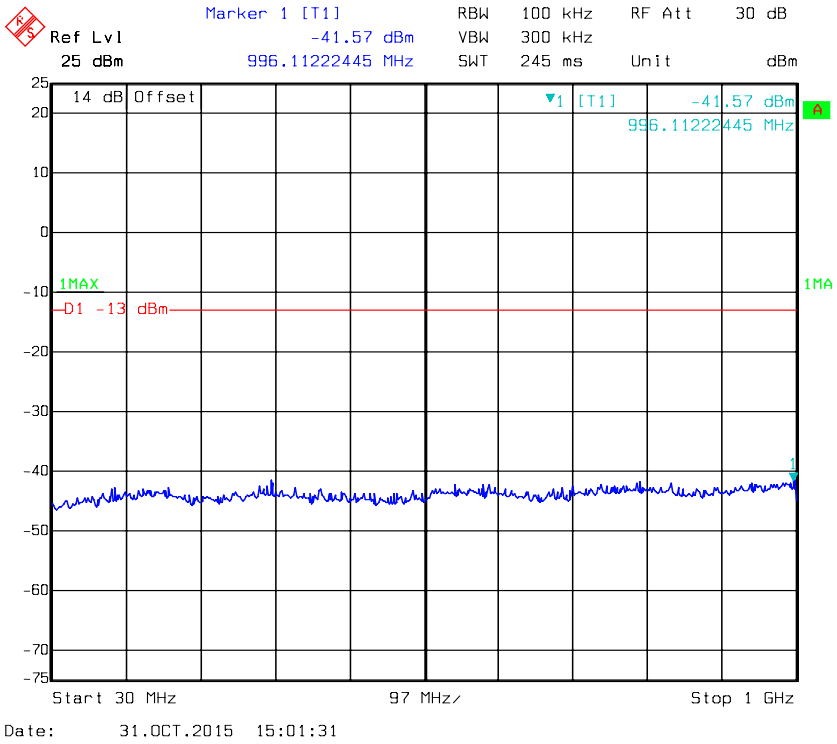
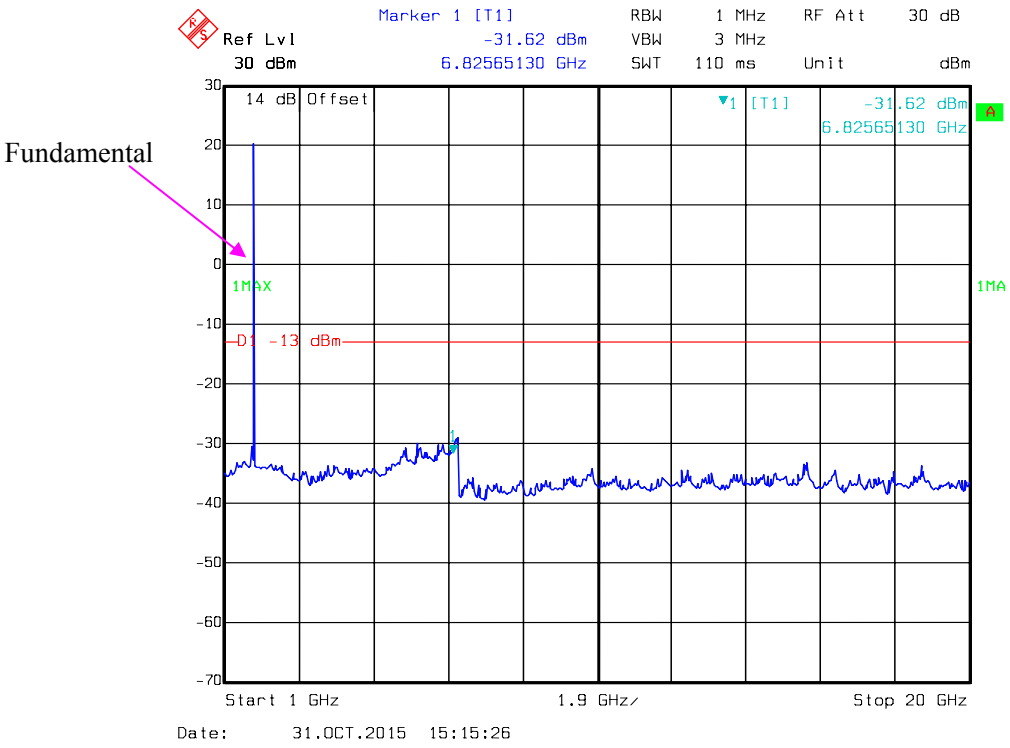
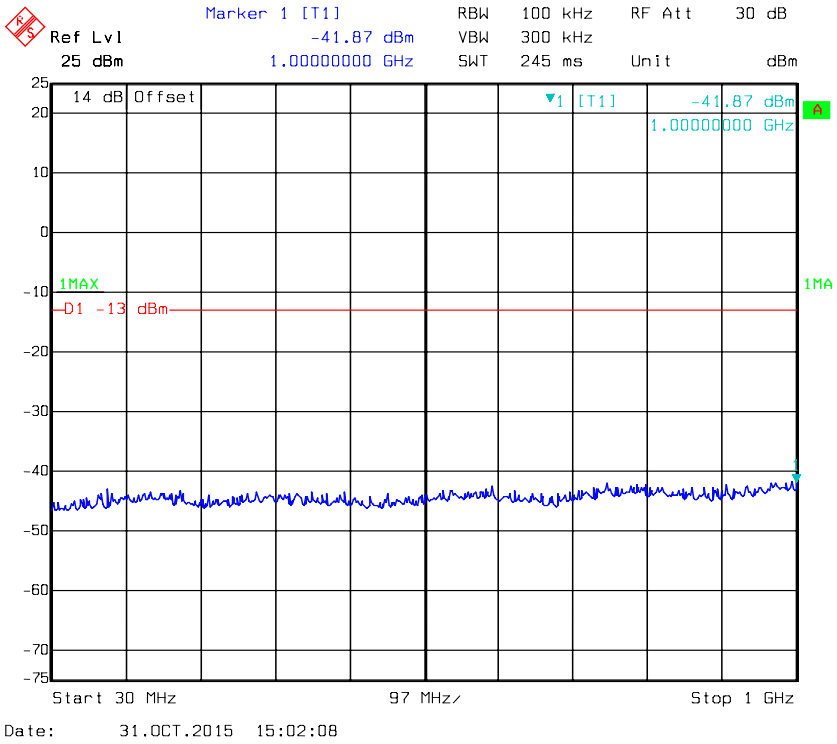
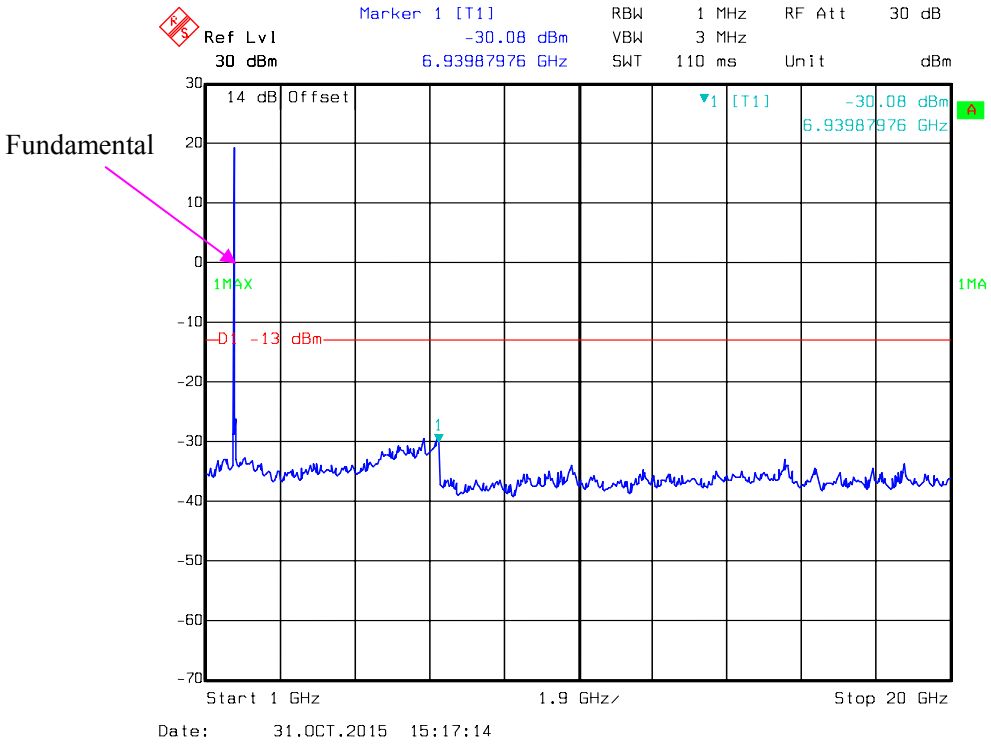
16-QAM, Band 4-5M _ Middle Channel



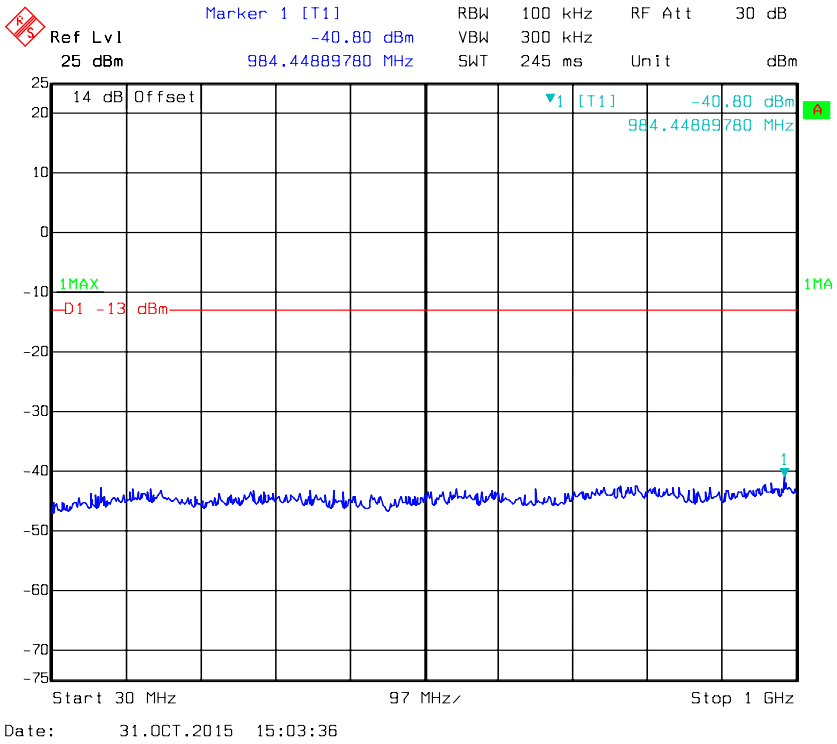


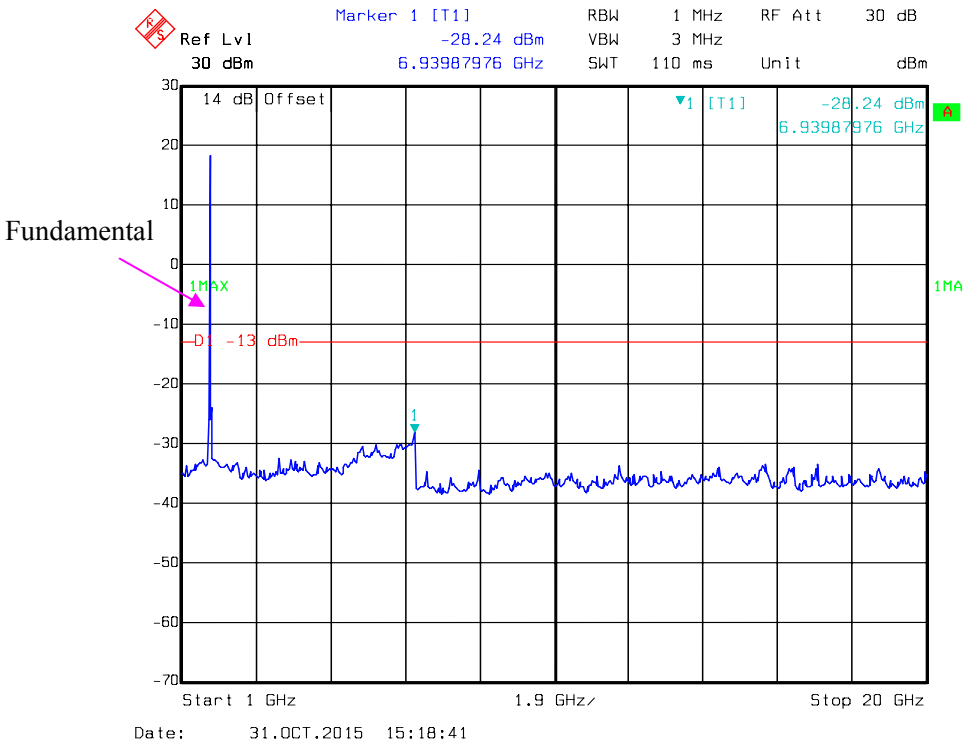
16-QAM, Band 4-10M _ Middle Channel



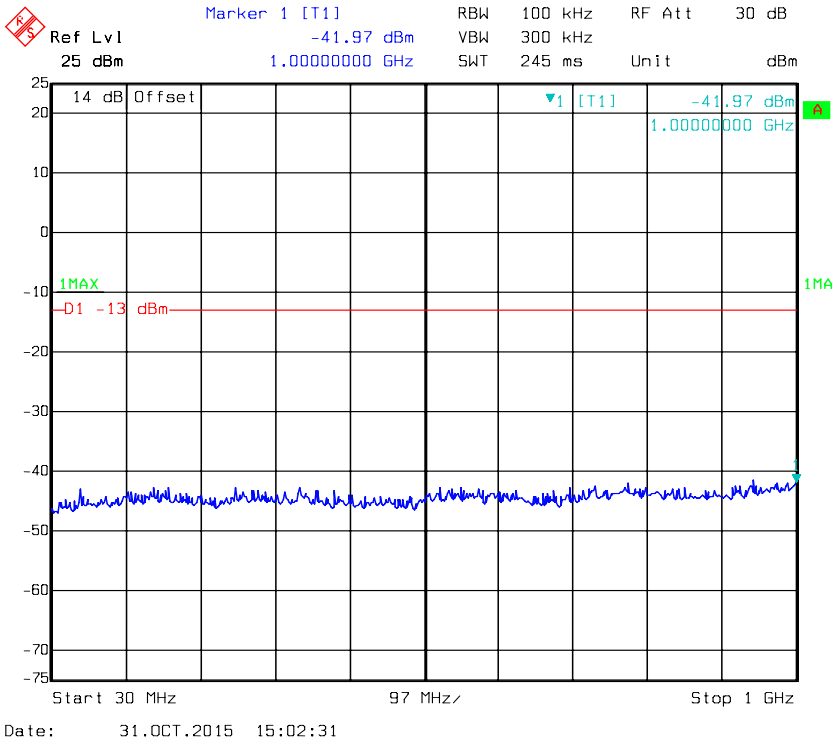


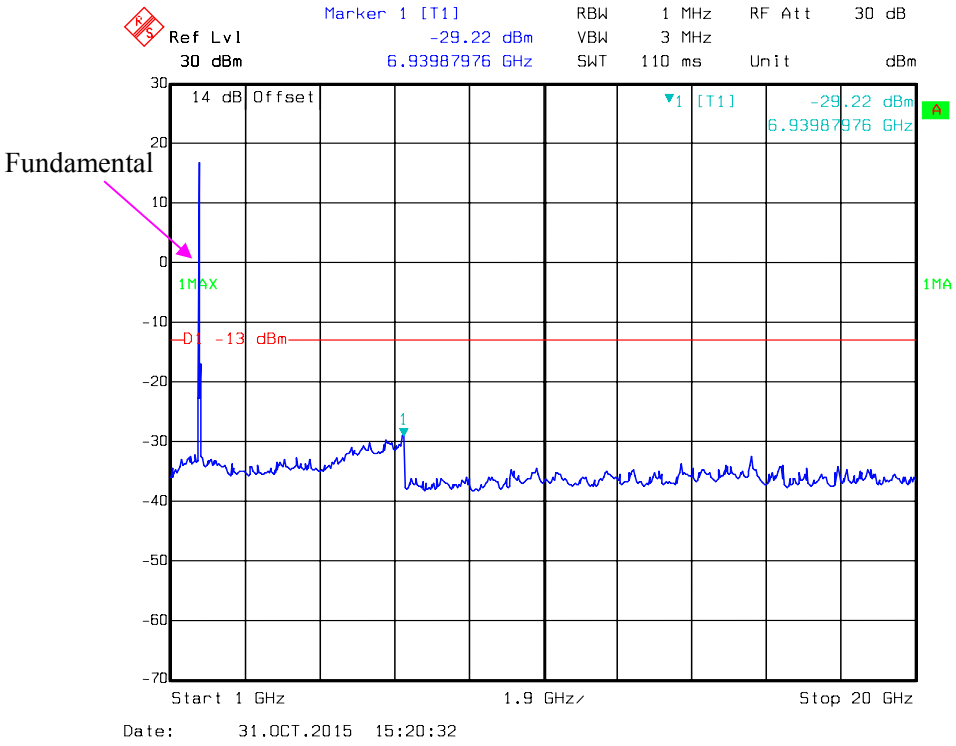
16-QAM, Band 4-15M _ Middle Channel



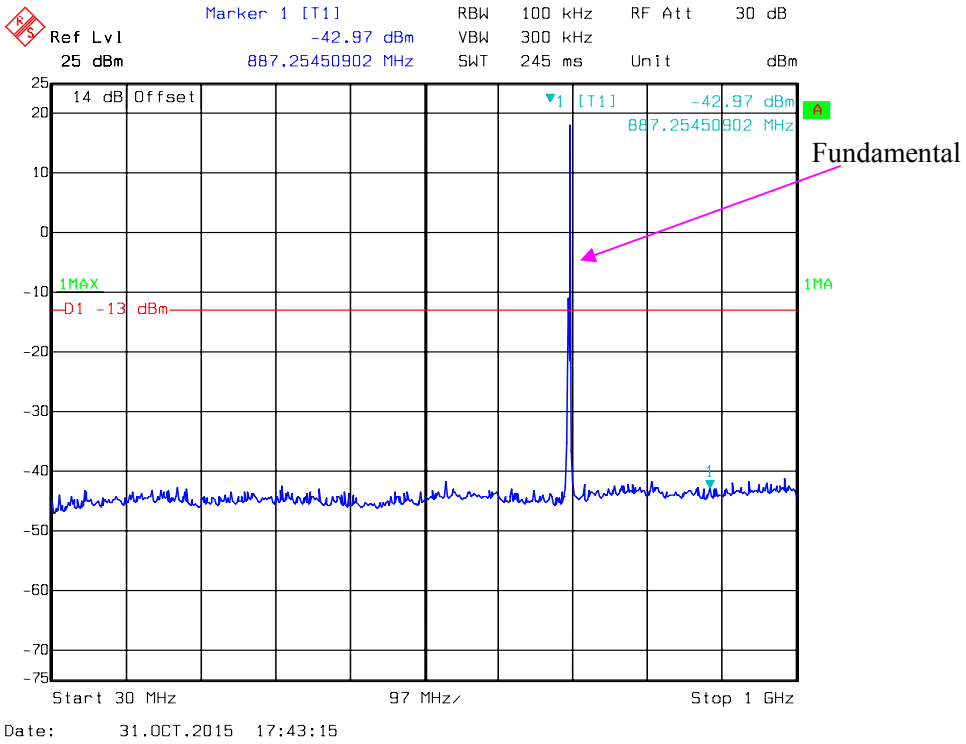


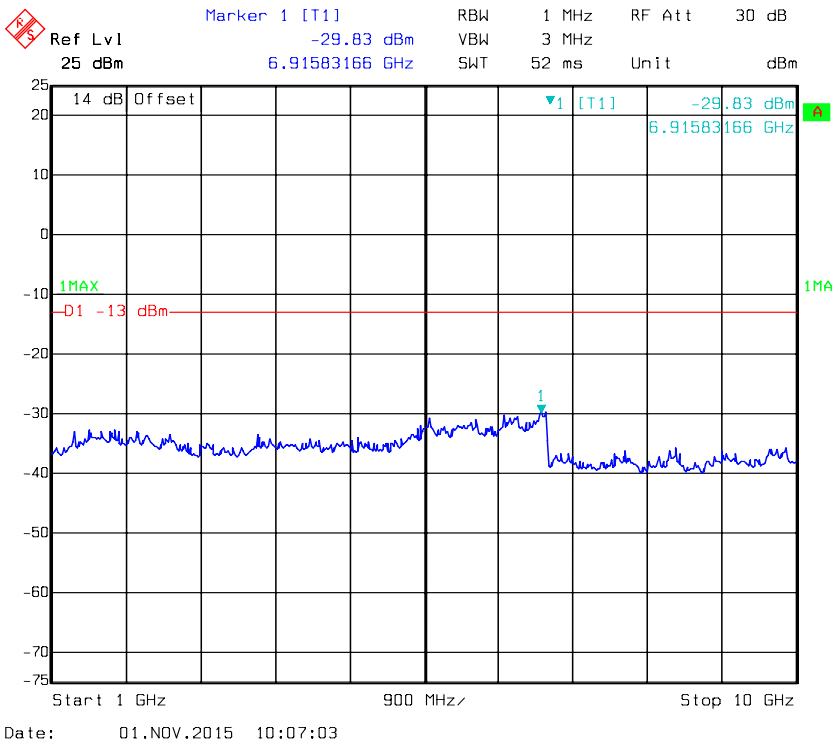
16-QAM, Band 4-20M _ Middle Channel



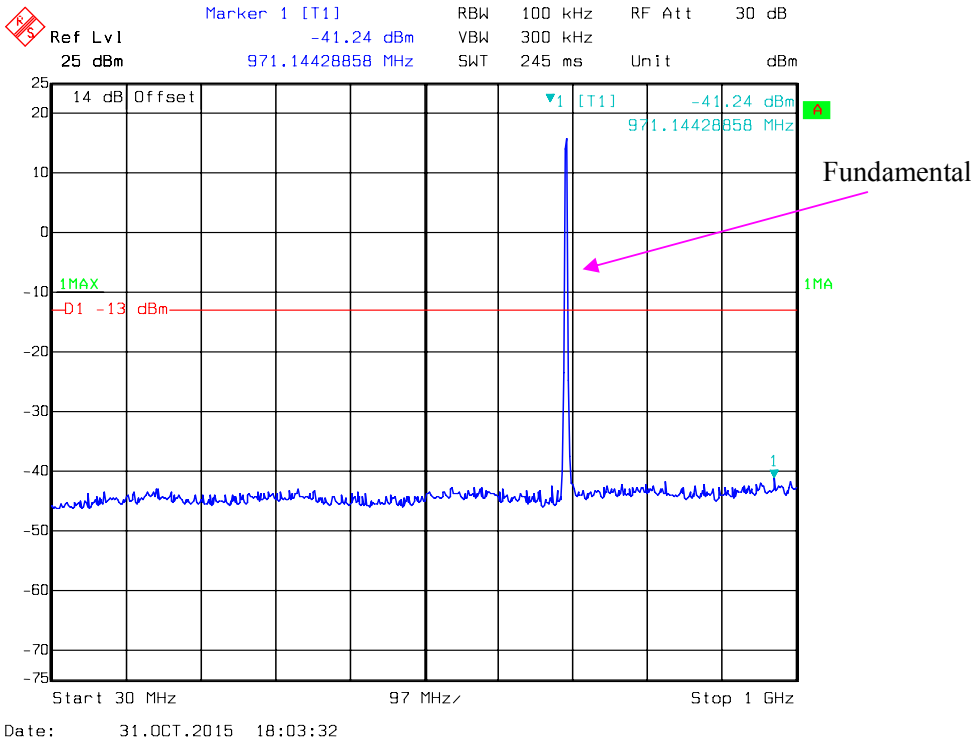


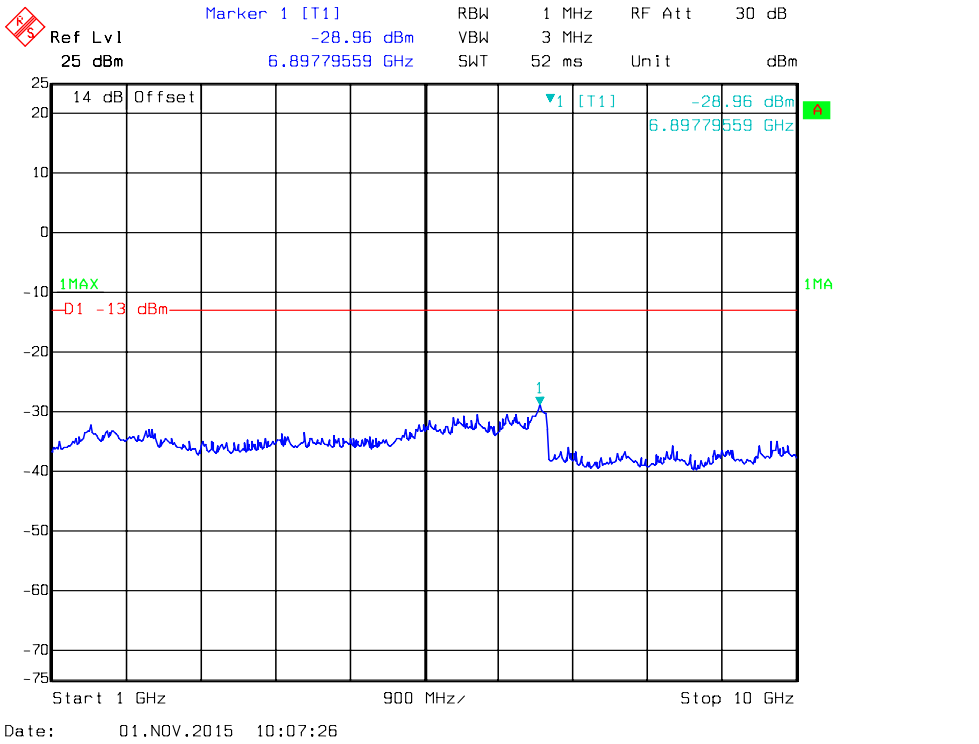
QPSK, Band 12-1.4M _ Middle Channel



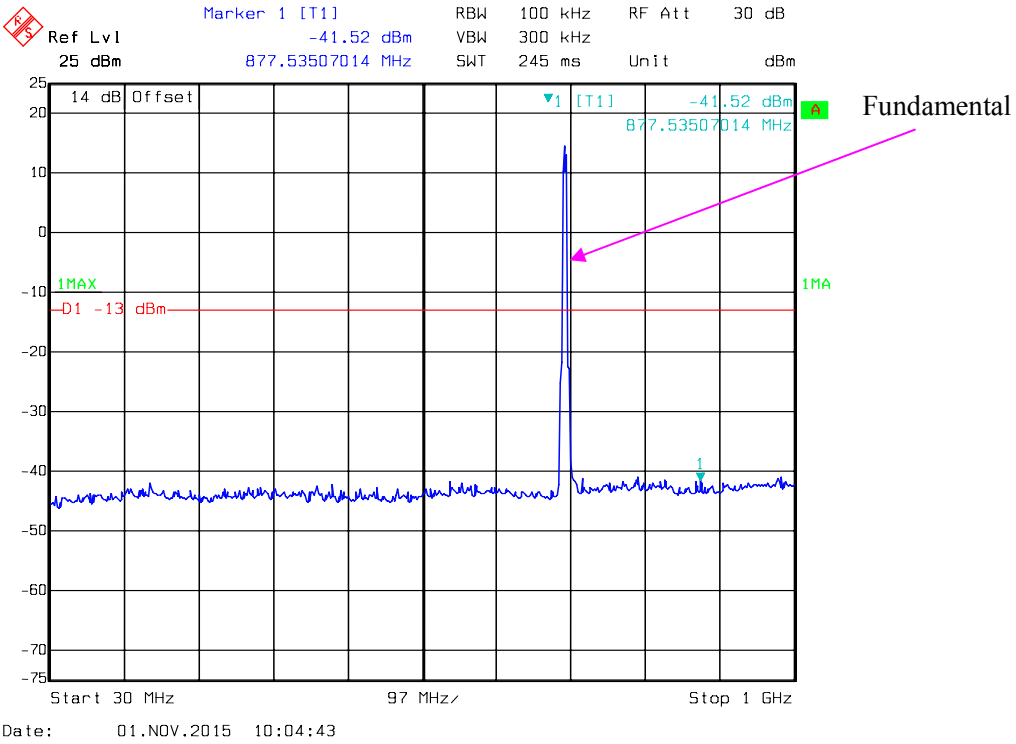


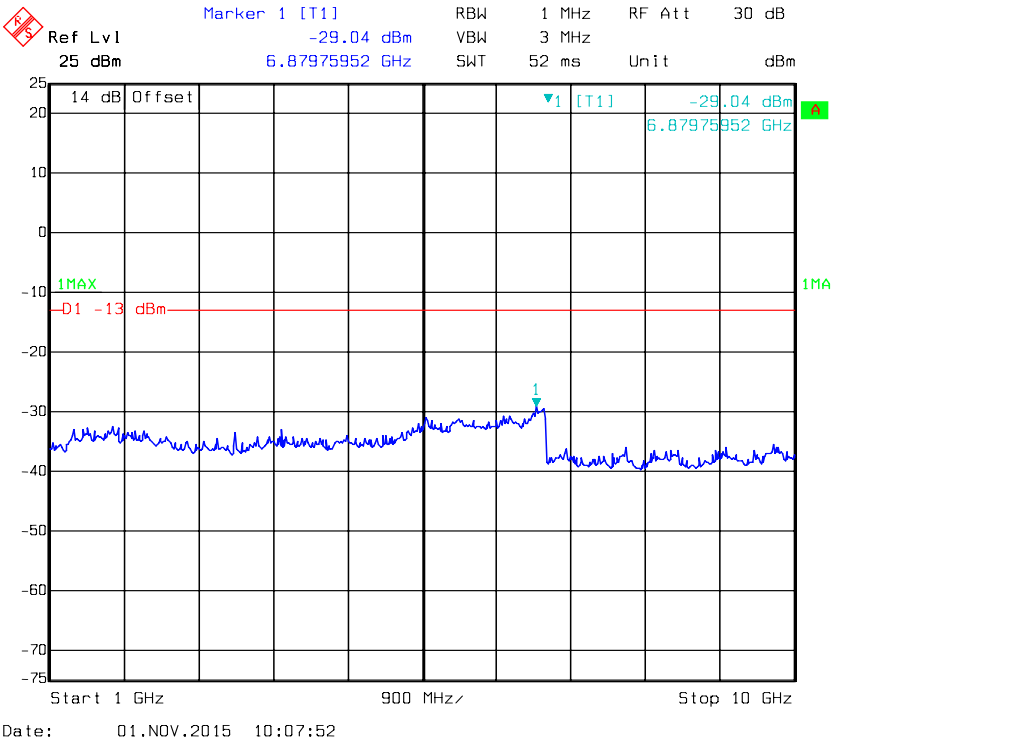
QPSK, Band 12-3M _ Middle Channel



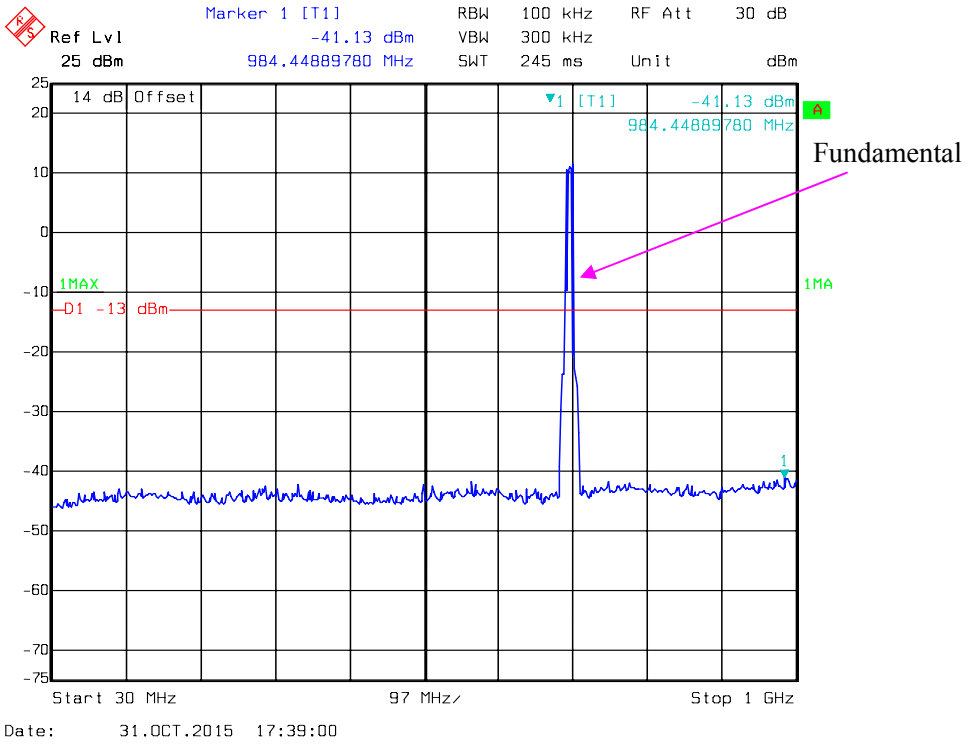


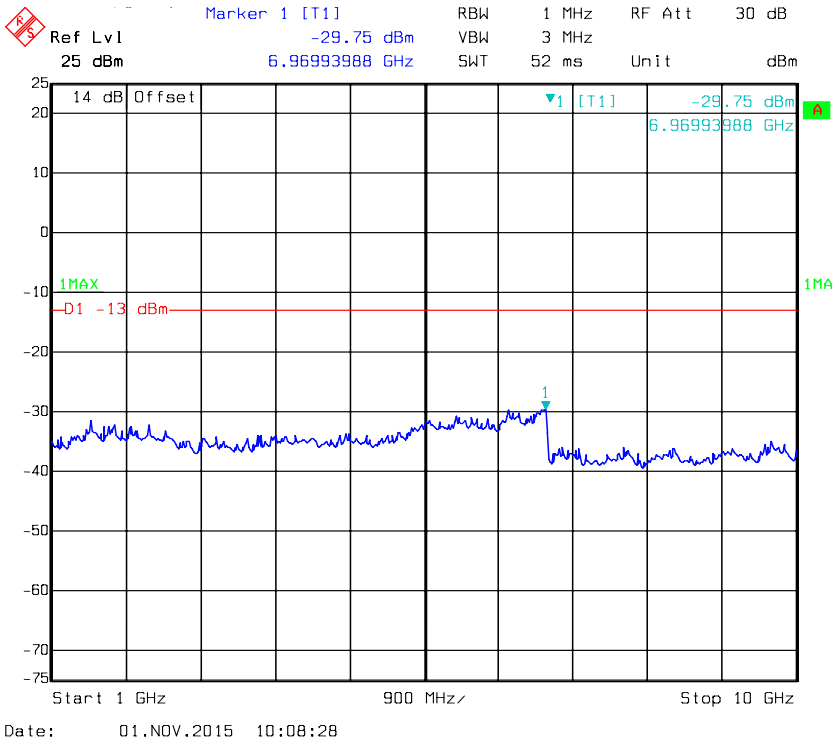
QPSK, Band 12-5M _ Middle Channel



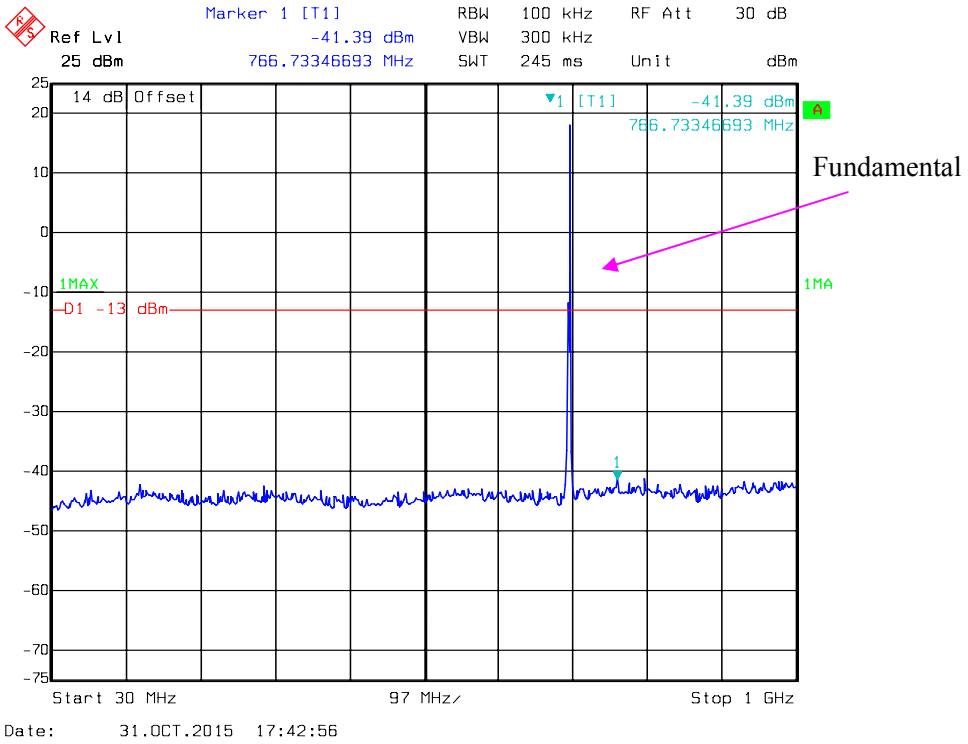


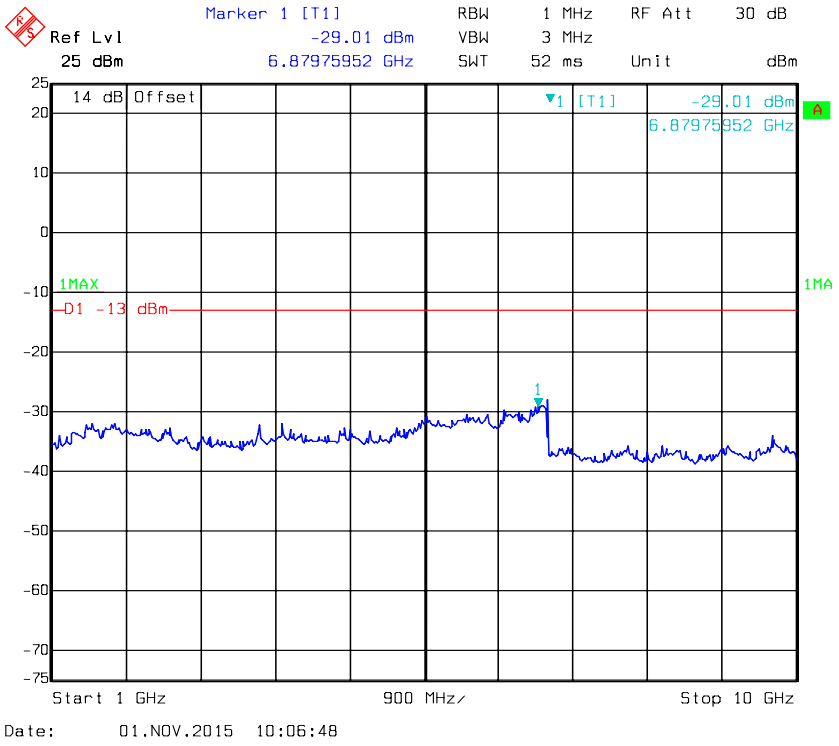
QPSK, Band 12-10M _ Middle Channel



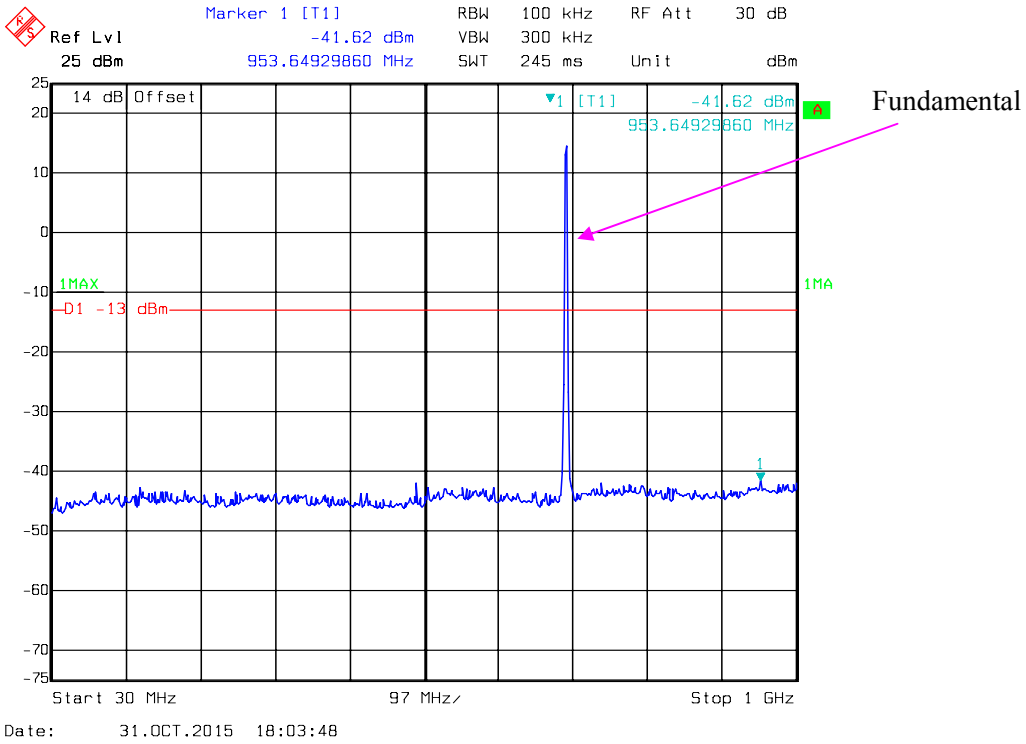


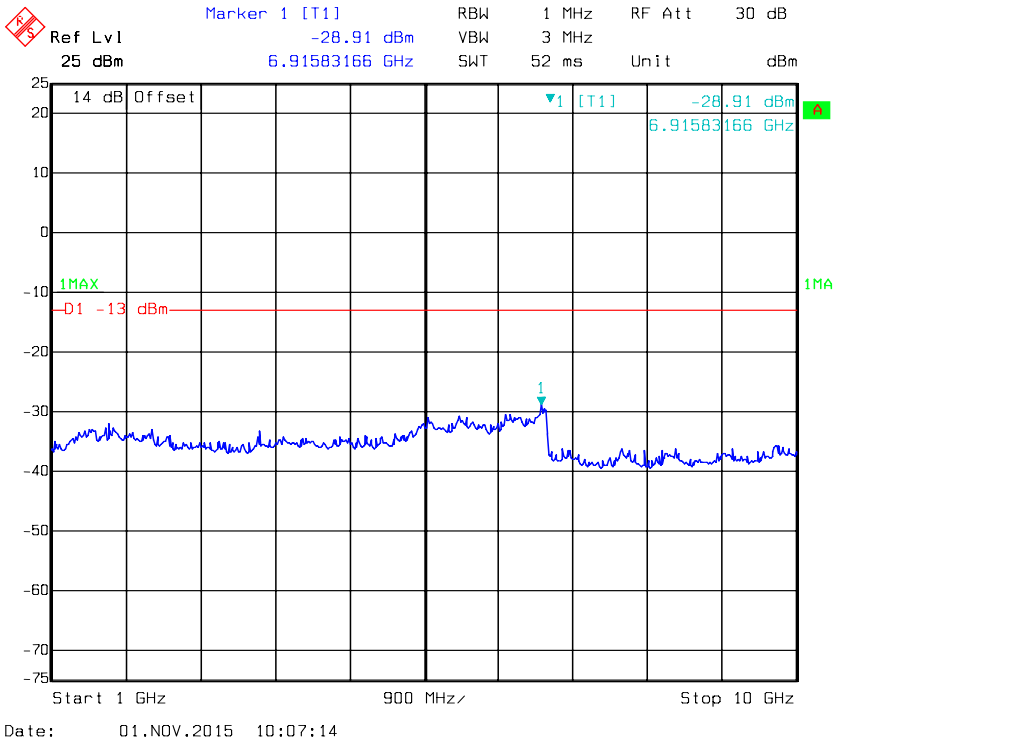
16-QAM, Band 12-1.4M _ Middle Channel



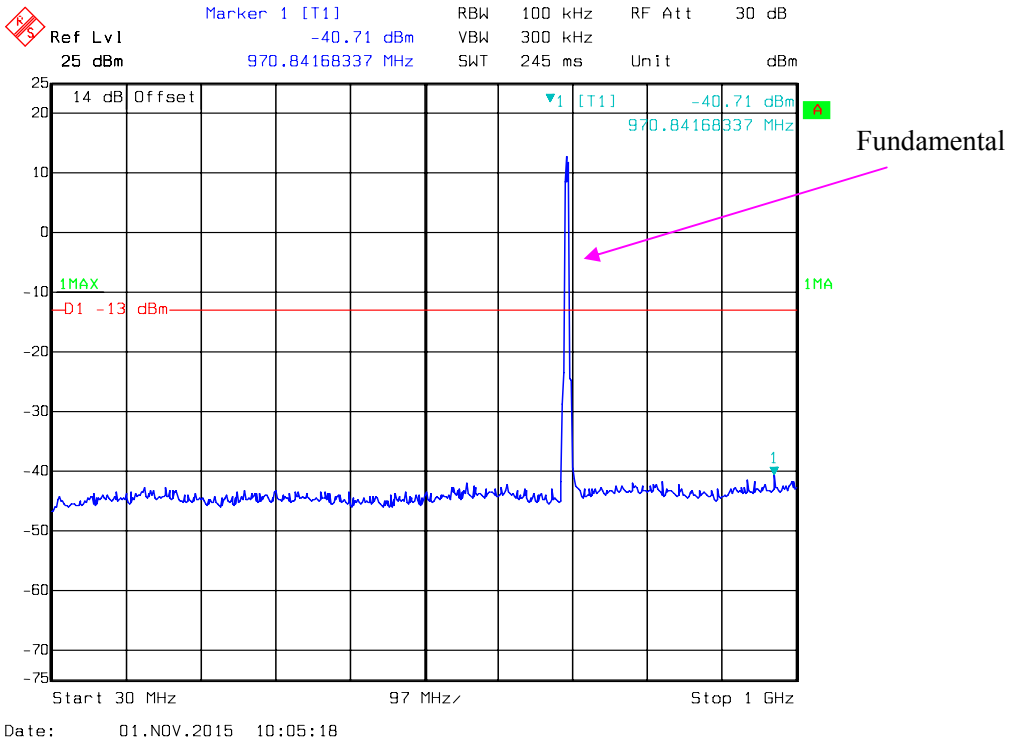


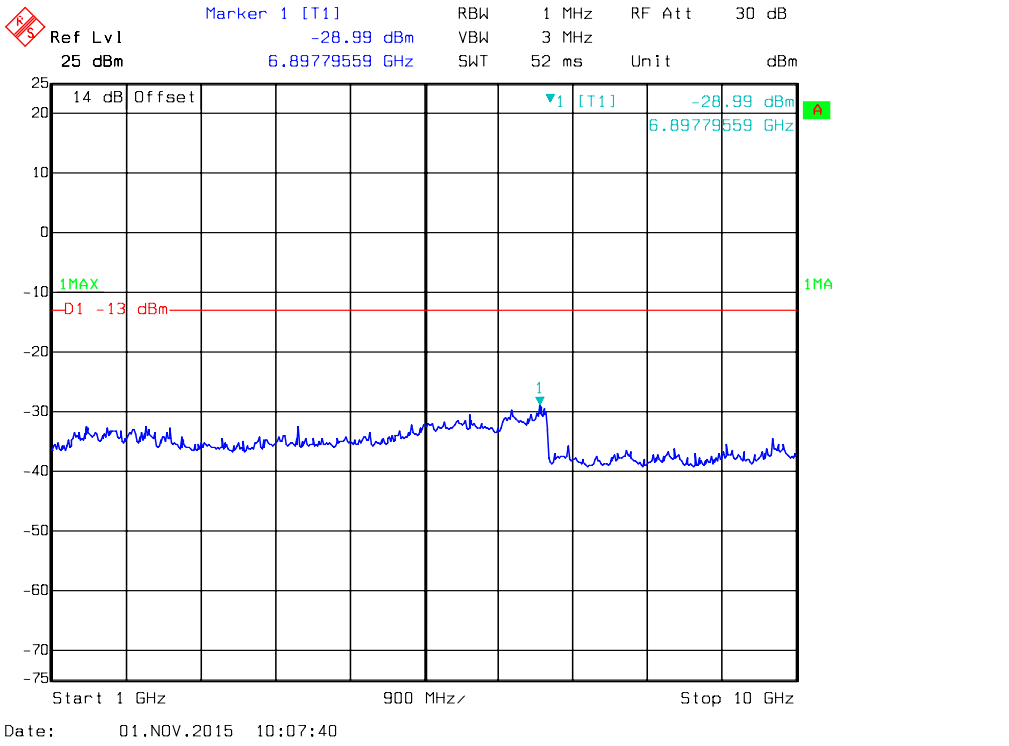
16-QAM, Band 12-3M _ Middle Channel



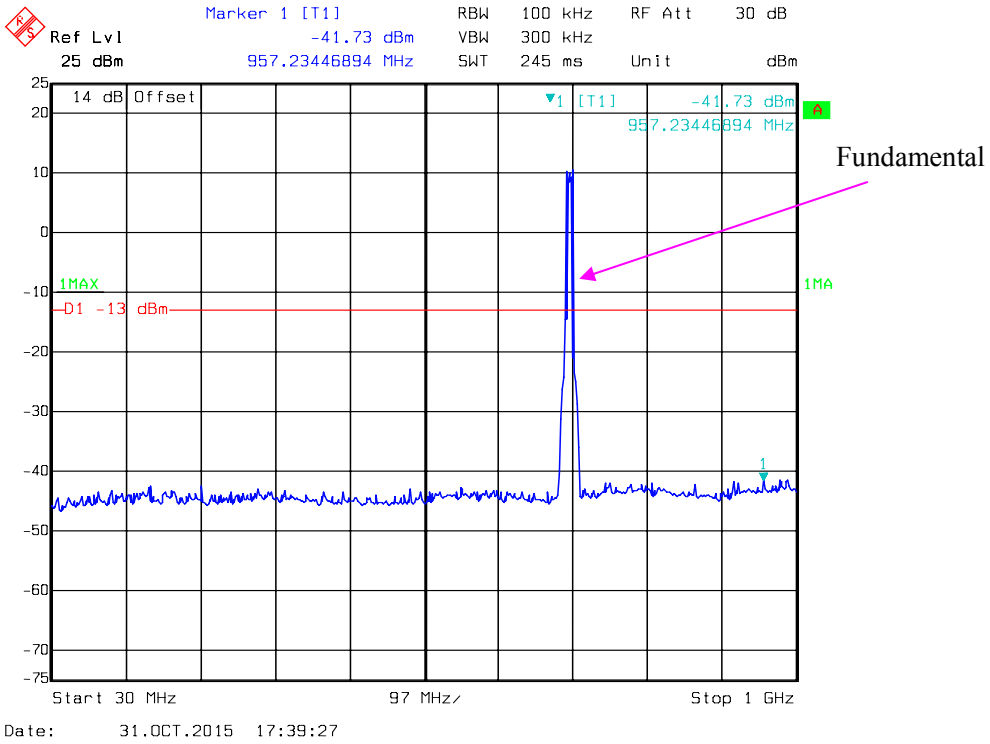


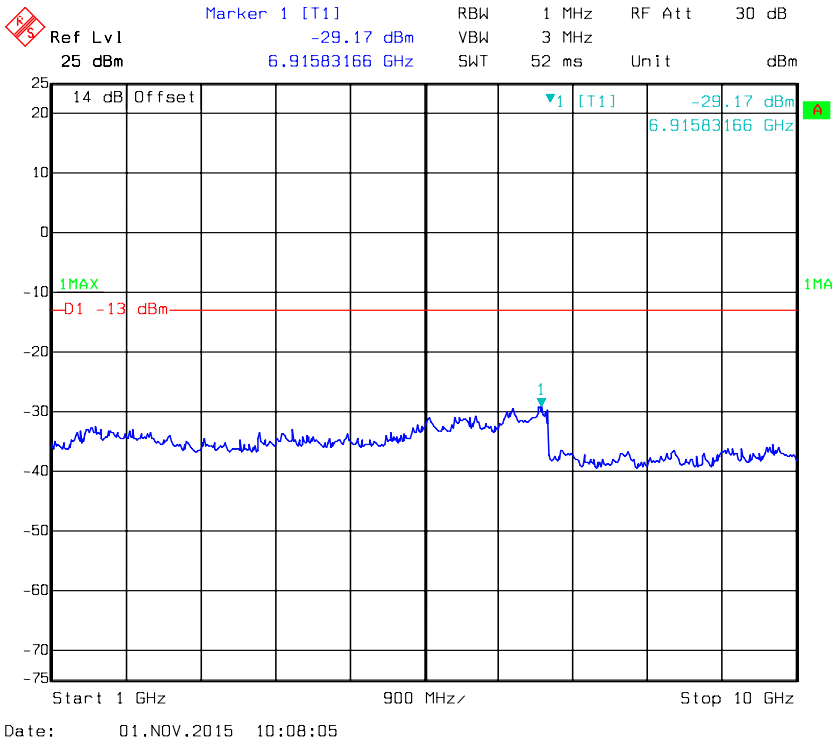
16-QAM, Band 12-5M _ Middle Channel



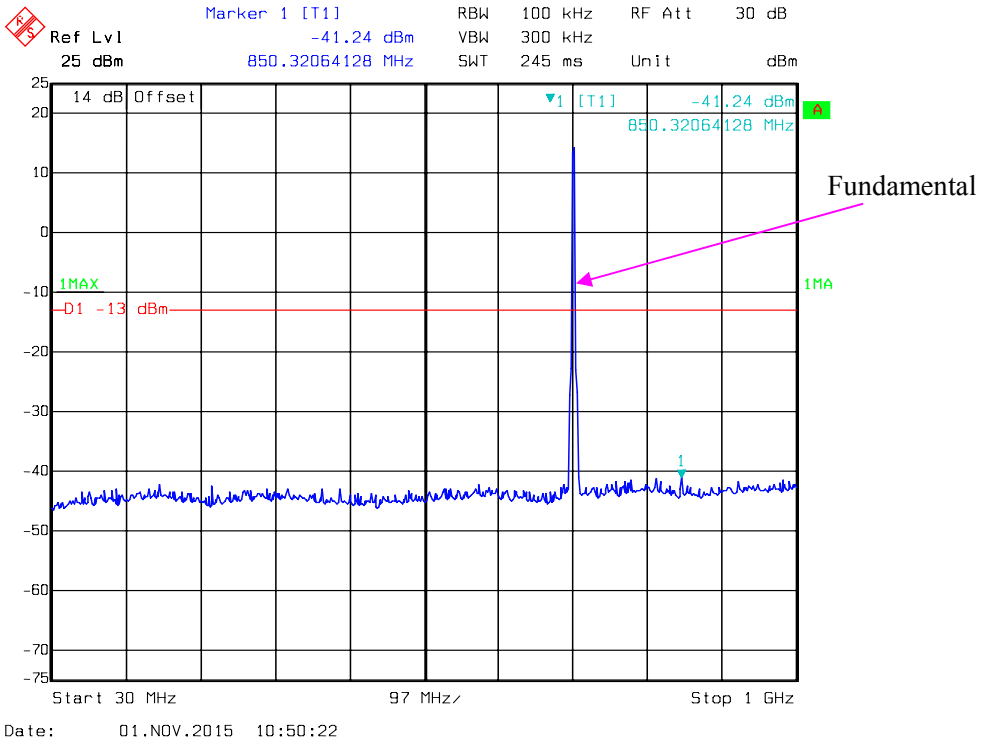


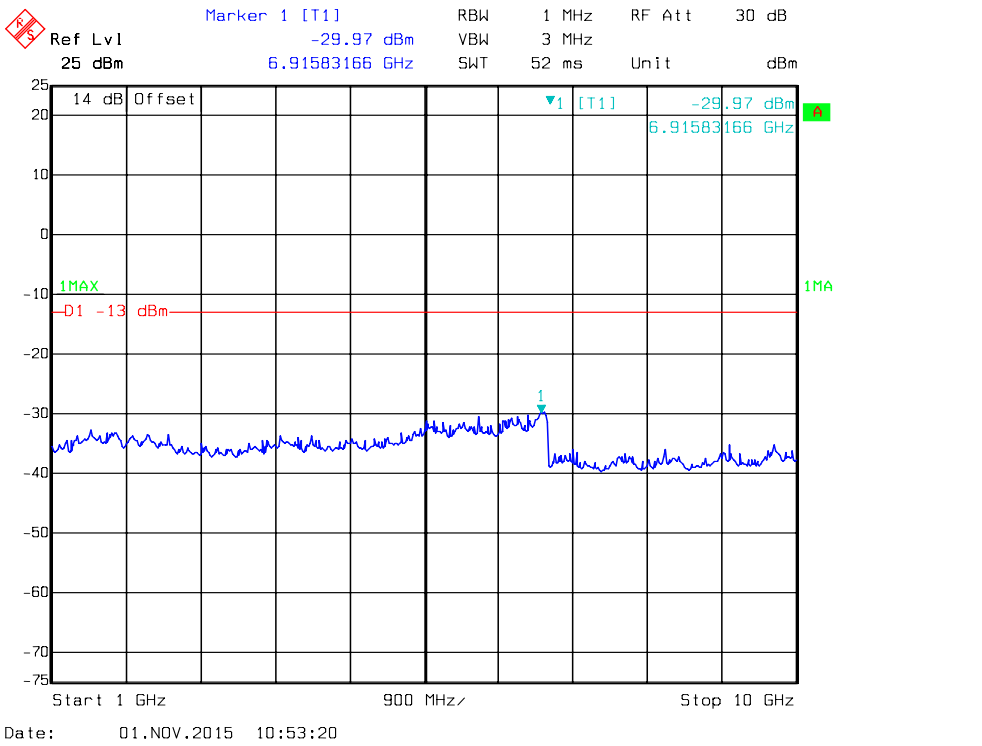
16-QAM, Band 12-10M _ Middle Channel



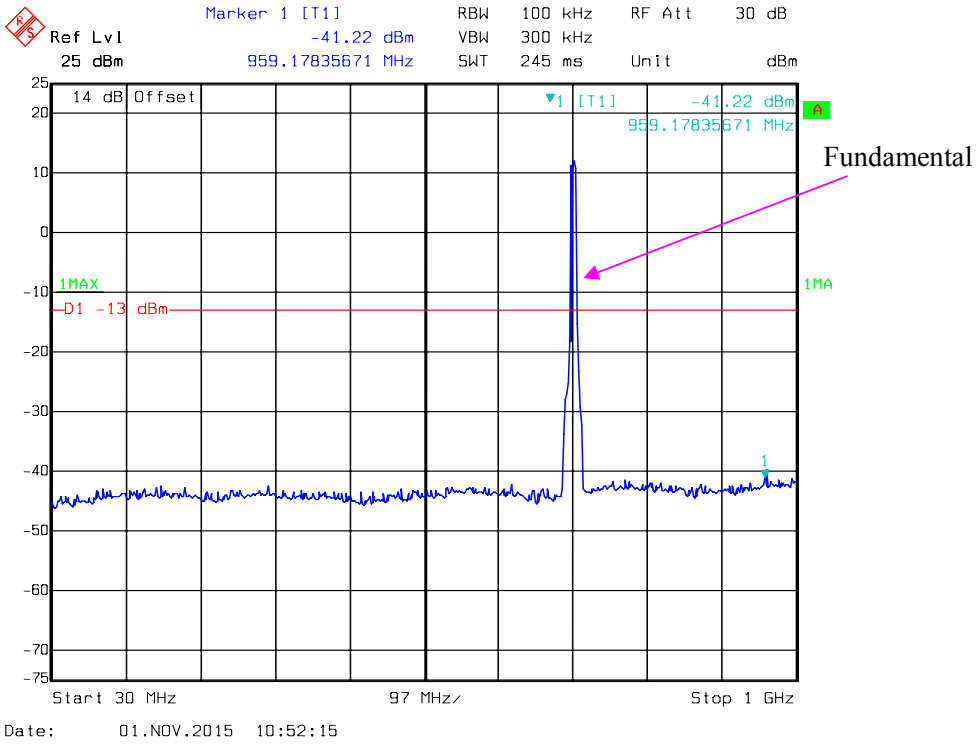


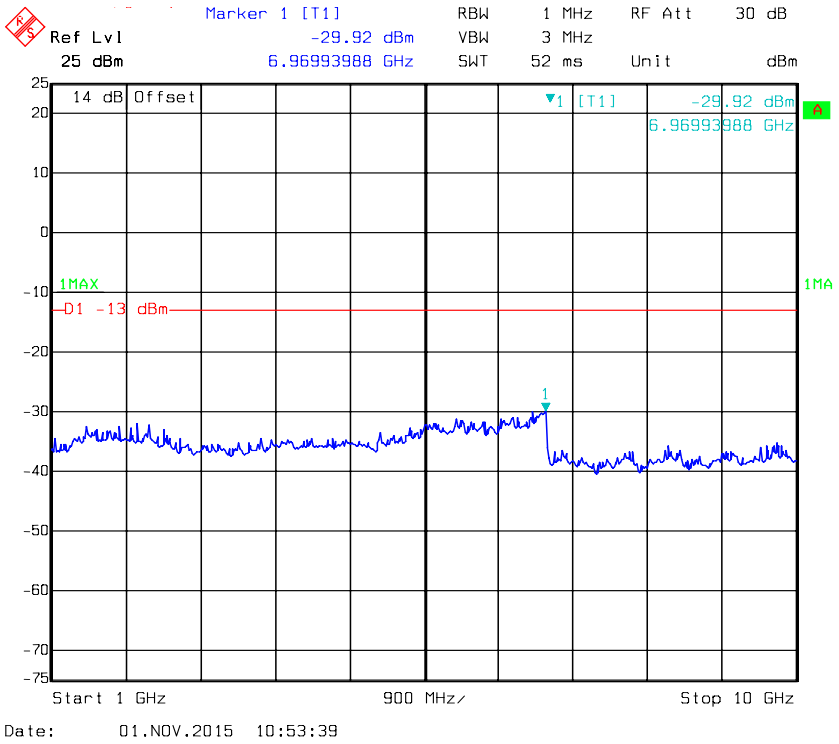
QPSK, Band 17-5M _ Middle Channel



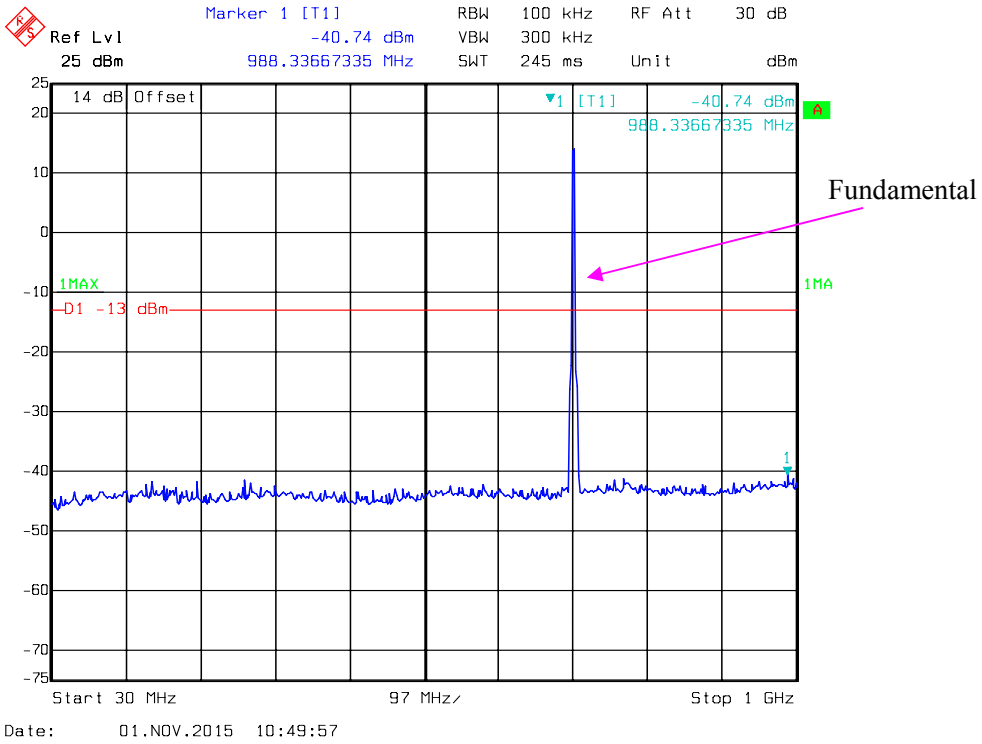


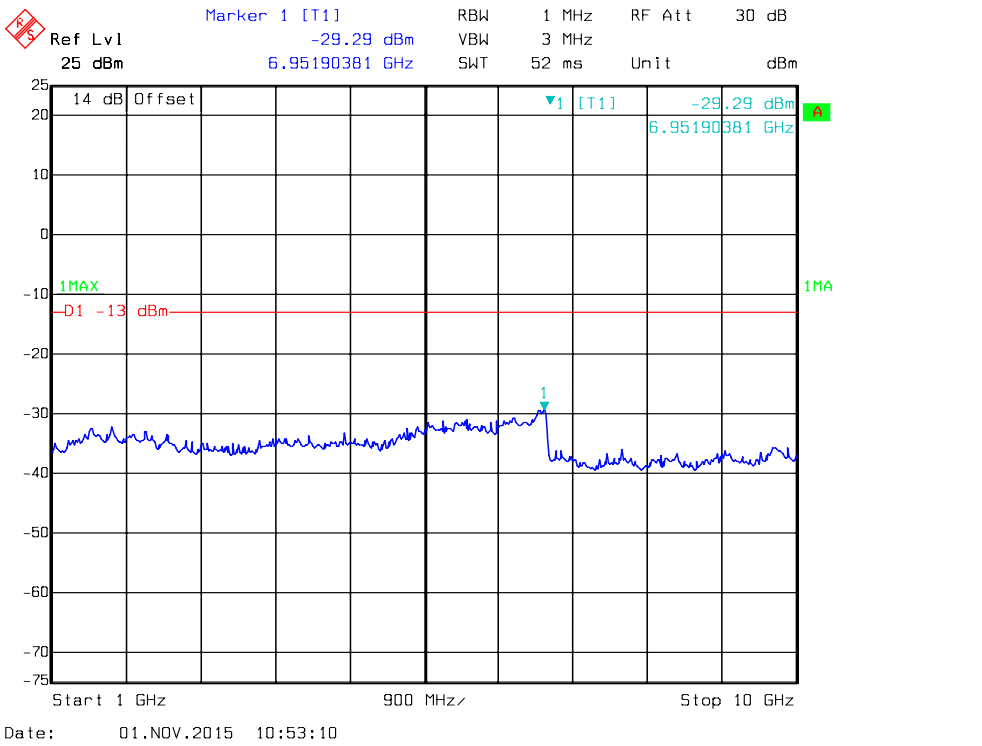
QPSK, Band 17-10M _ Middle Channel



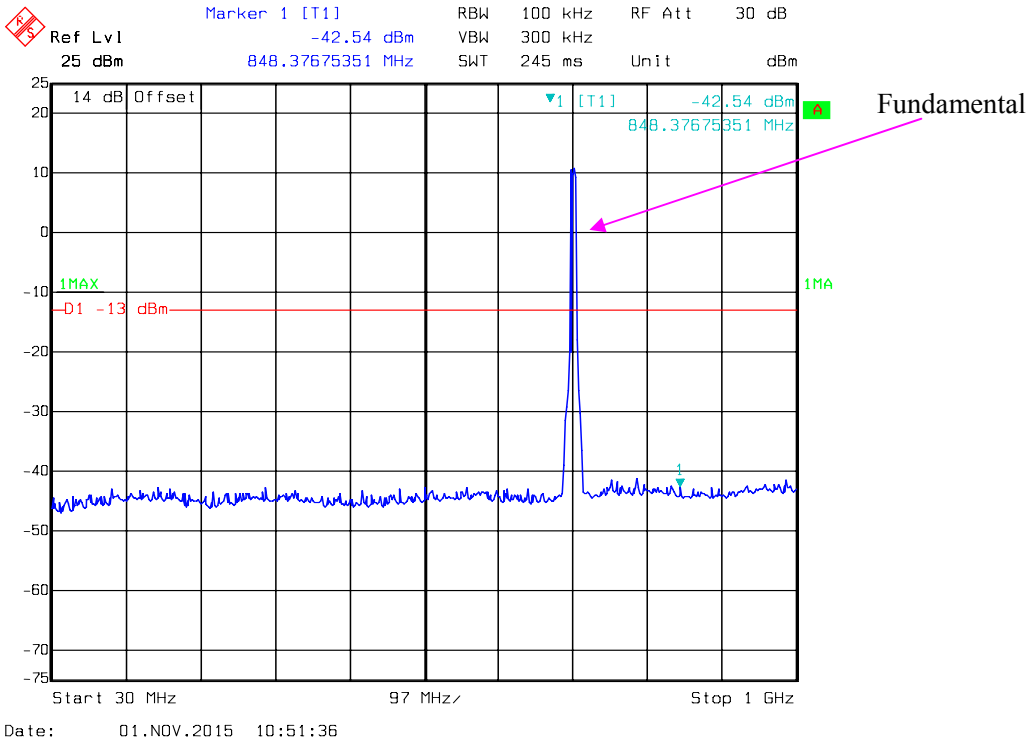


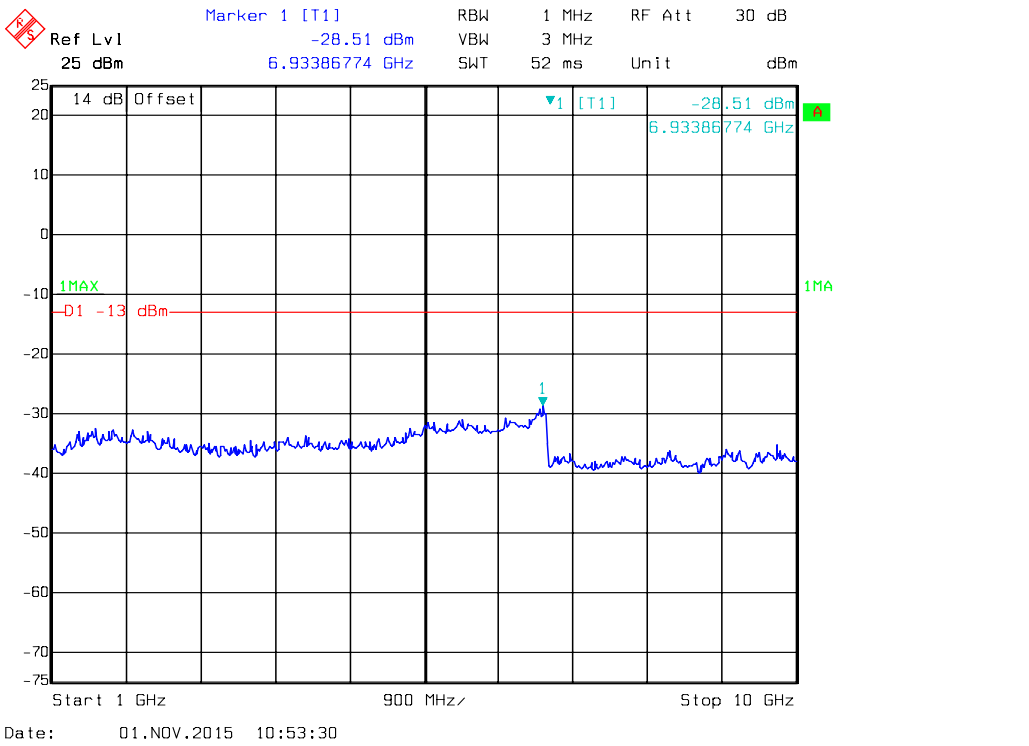
16-QAM, Band 17-5M _ Middle Channel



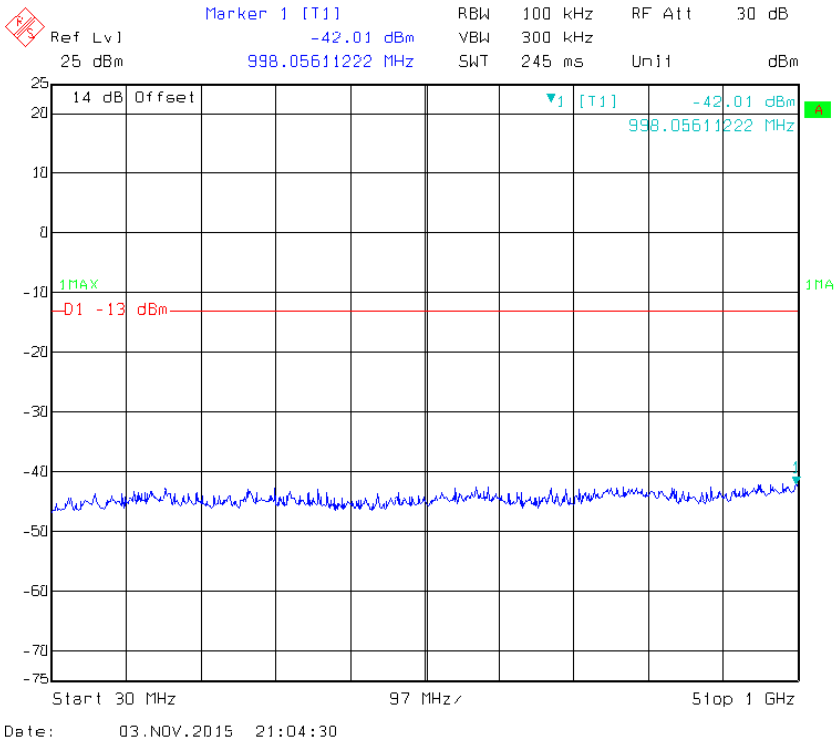


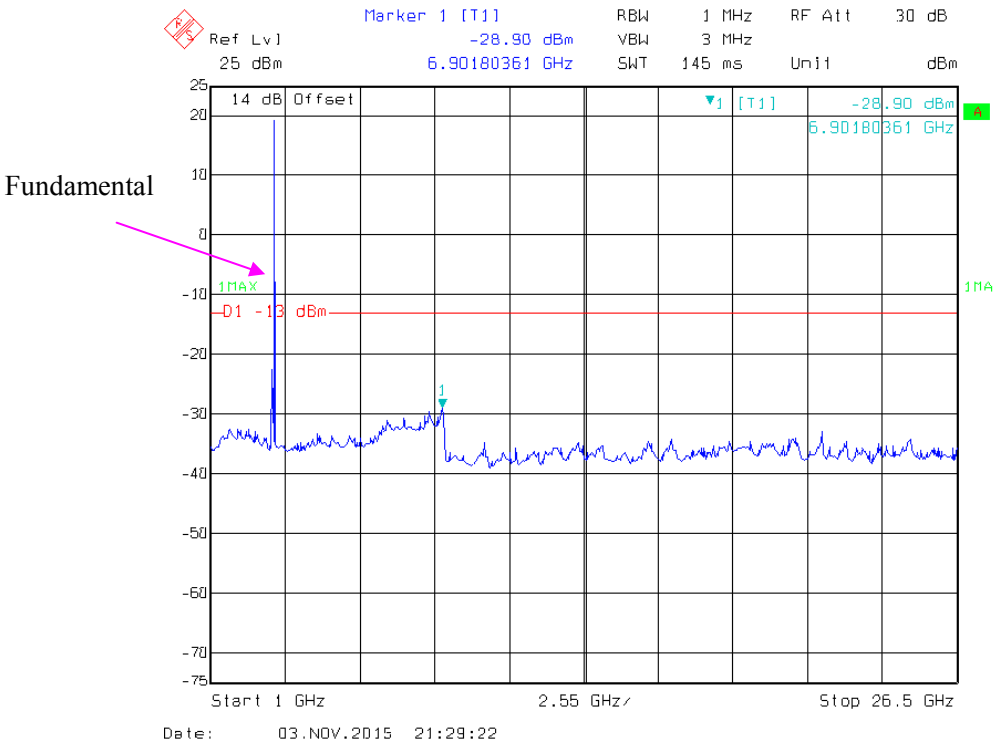
16-QAM, Band 17-10M _ Middle Channel



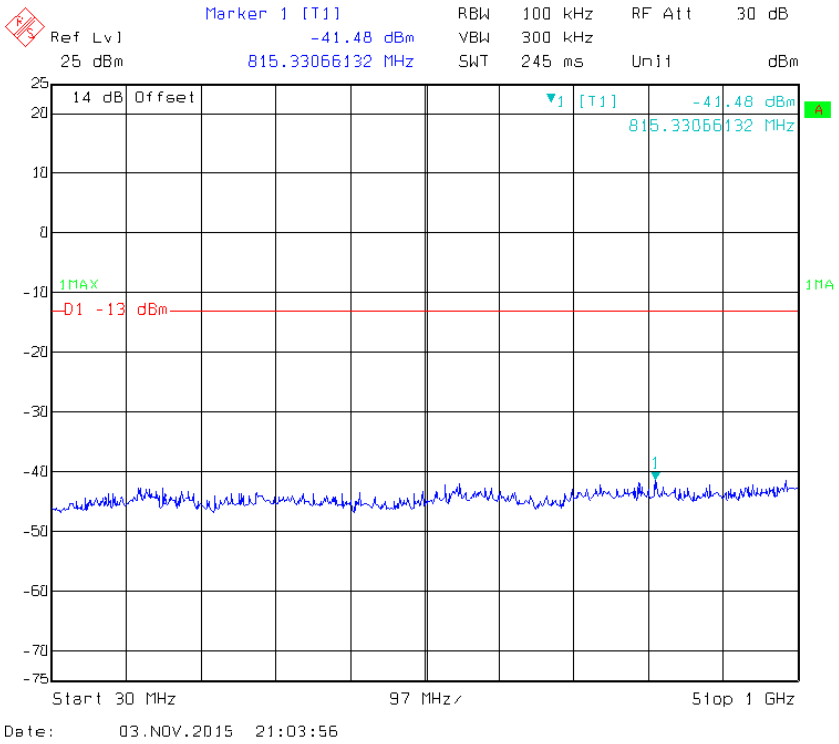


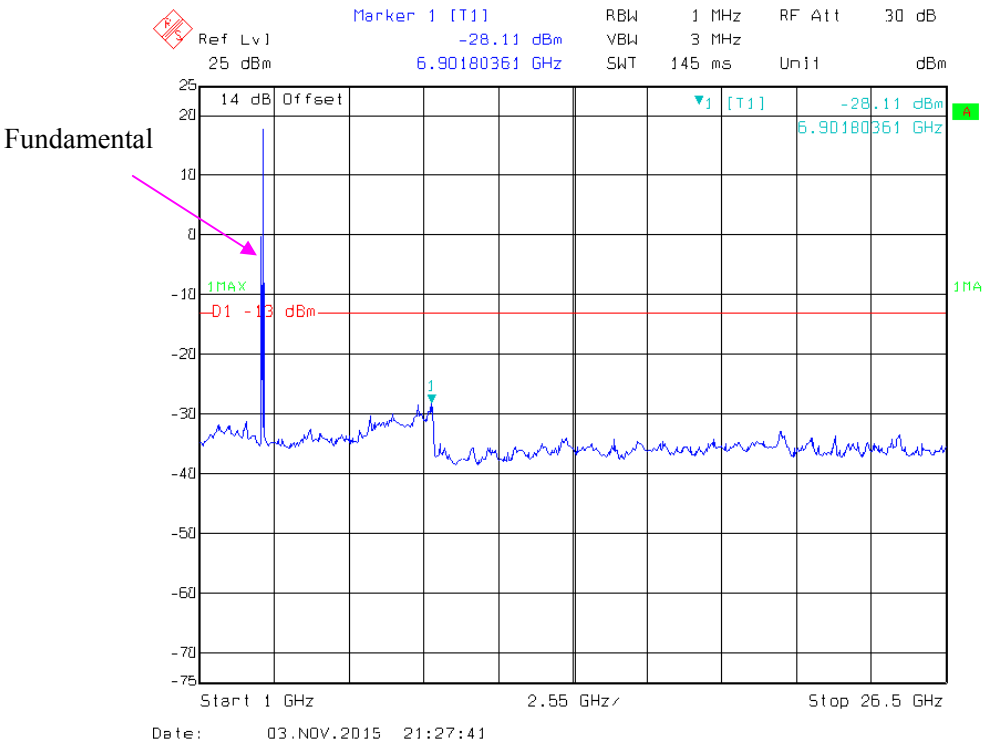
QPSK, Band 41-5M _ Middle Channel



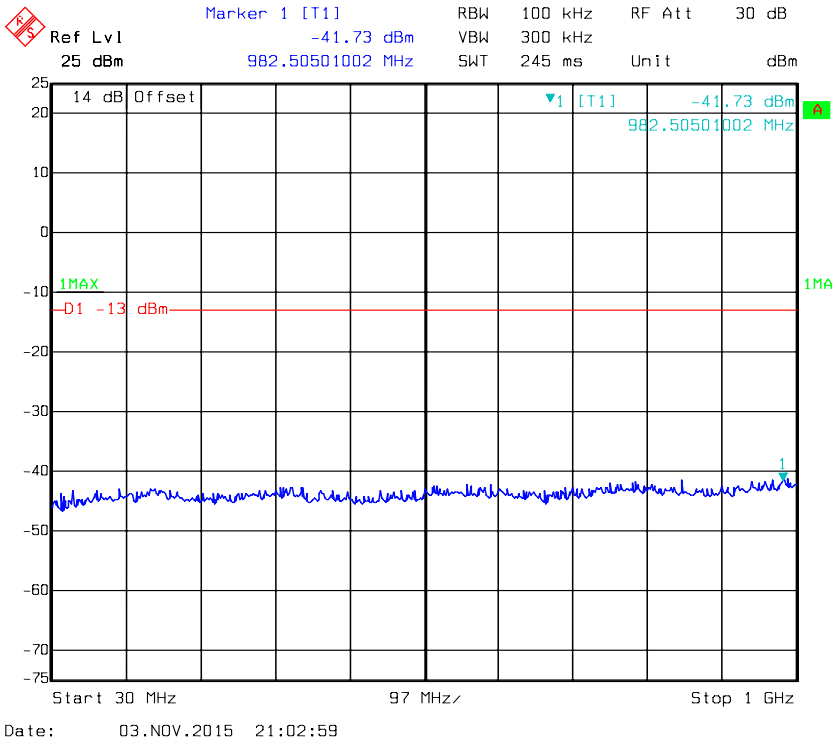


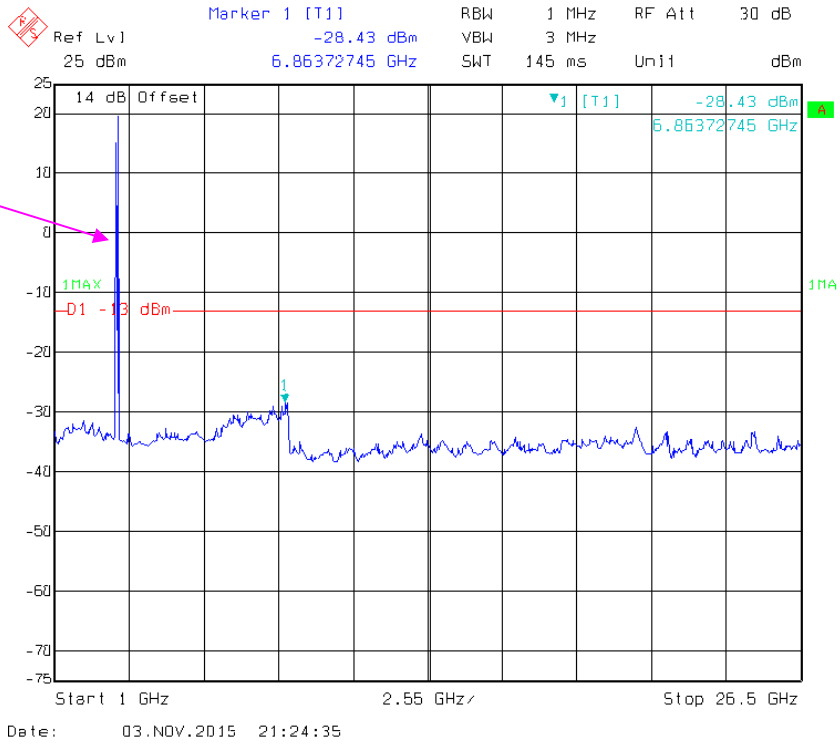
QPSK, Band 41-10M _ Middle Channel





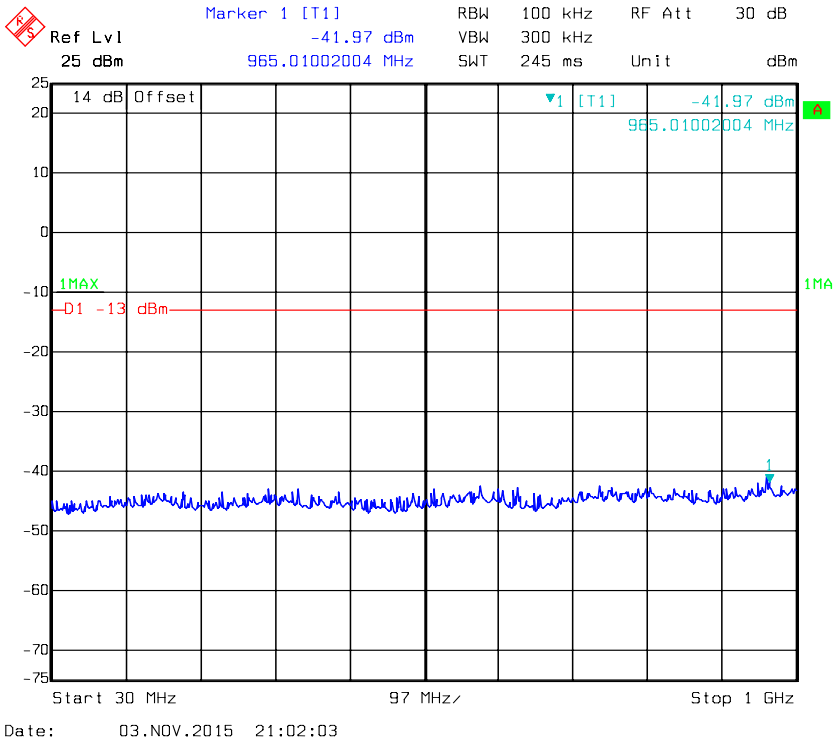
QPSK, Band 41-15M _ Middle Channel

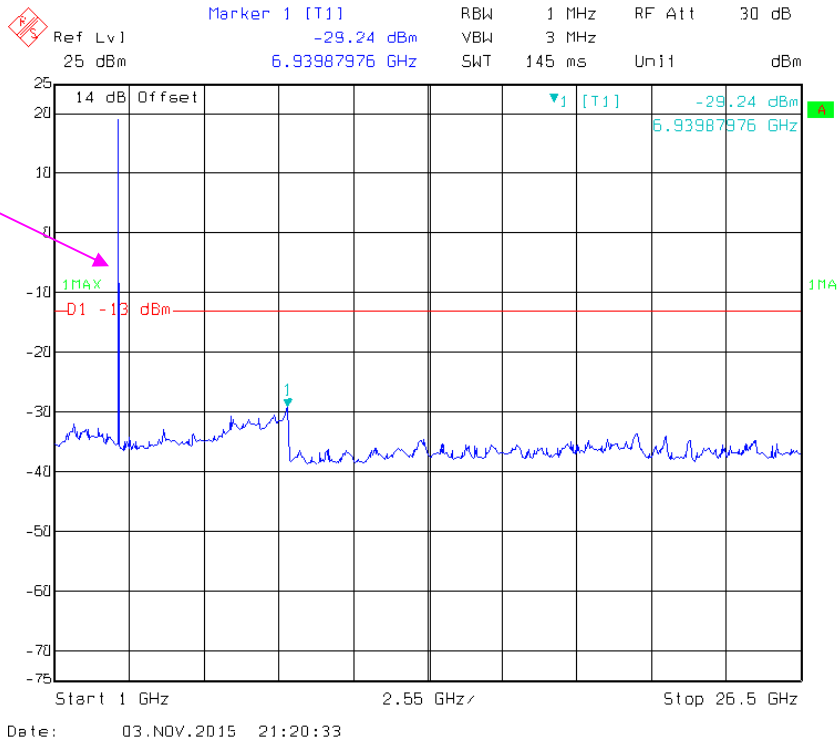




Fundamental

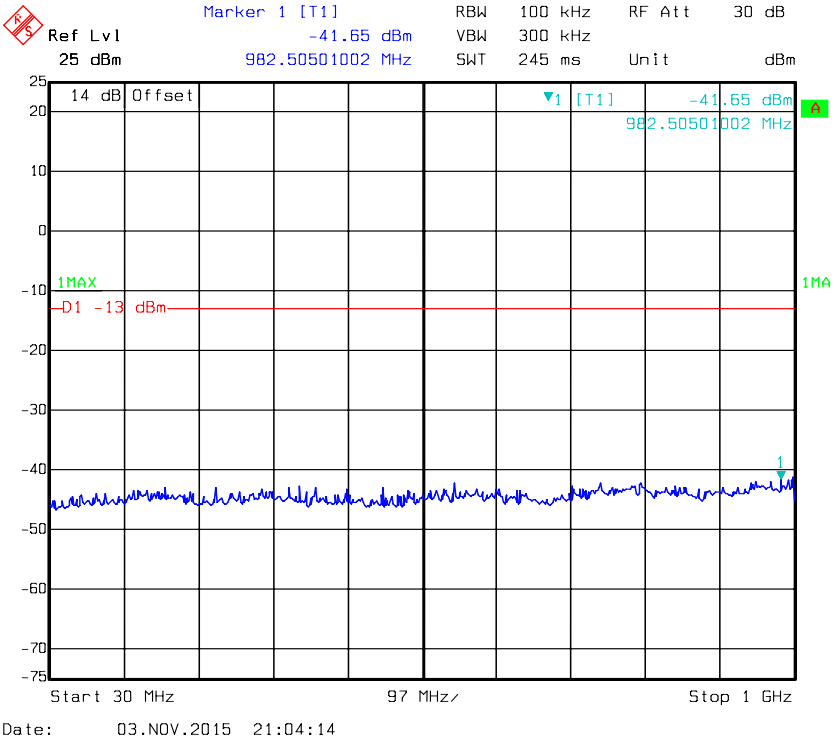
QPSK, Band 41-20M _ Middle Channel

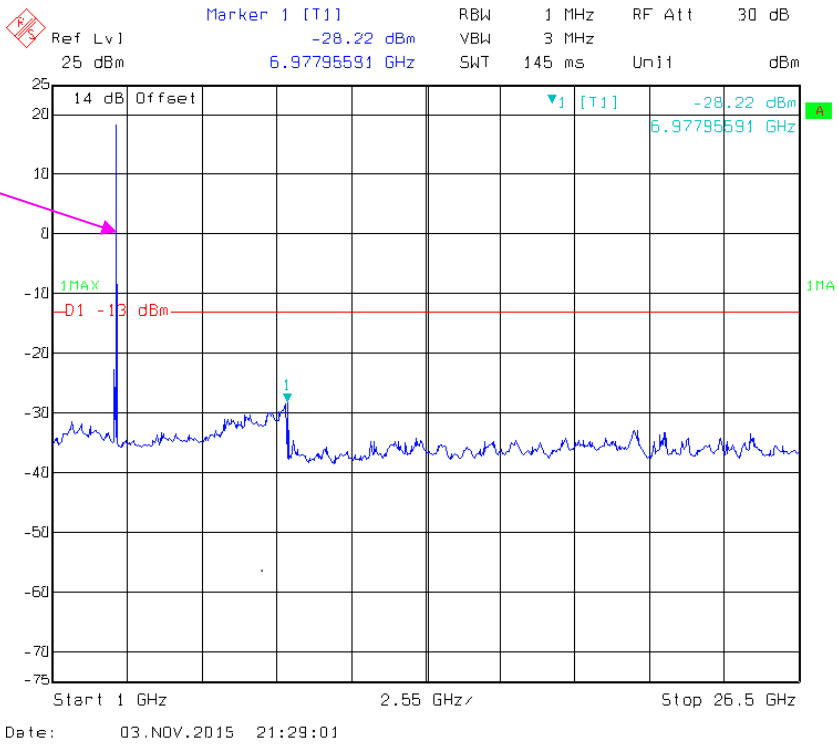




Fundamental

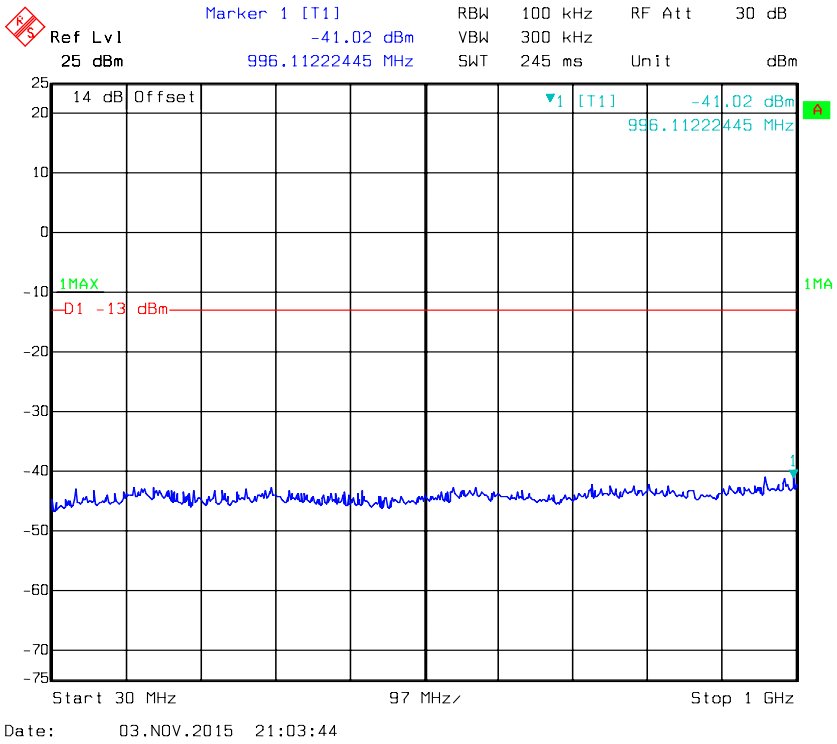
16-QAM, Band 41-5M _ Middle Channel

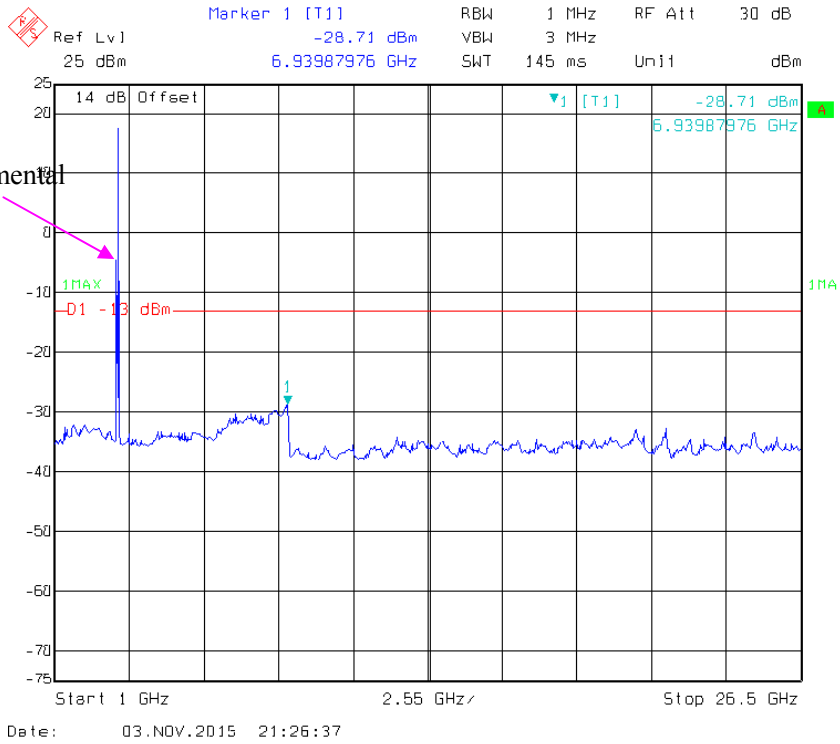




Fundamental

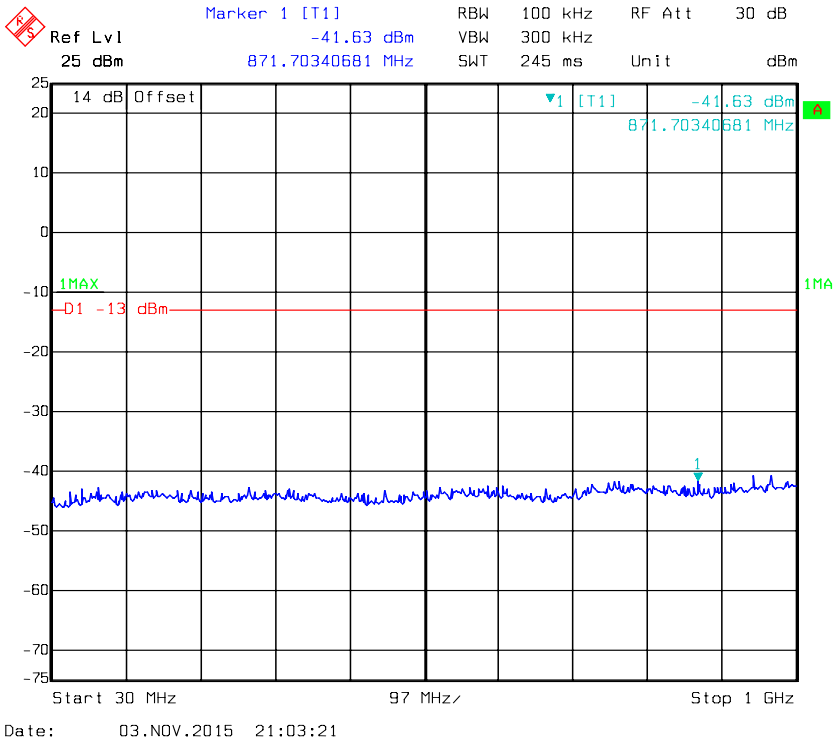
16-QAM, Band 41-10M _ Middle Channel

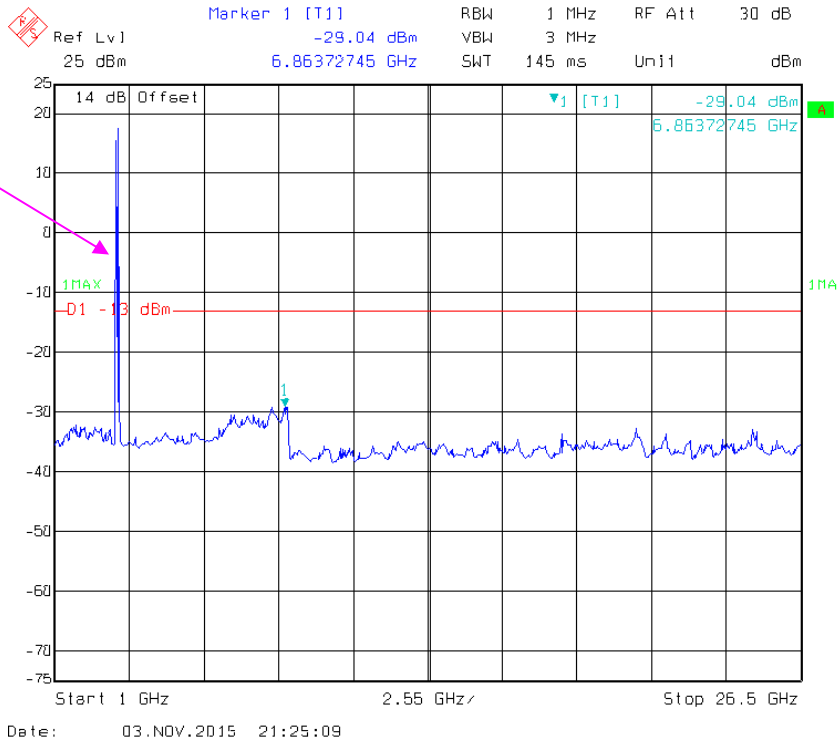




Fundamental

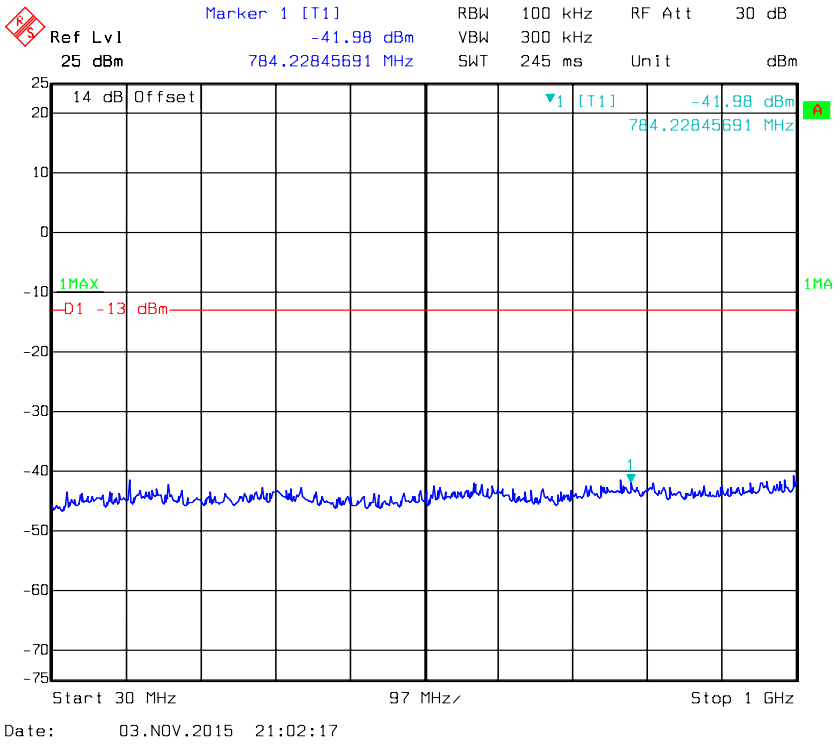
16-QAM, Band 41-15M _ Middle Channel

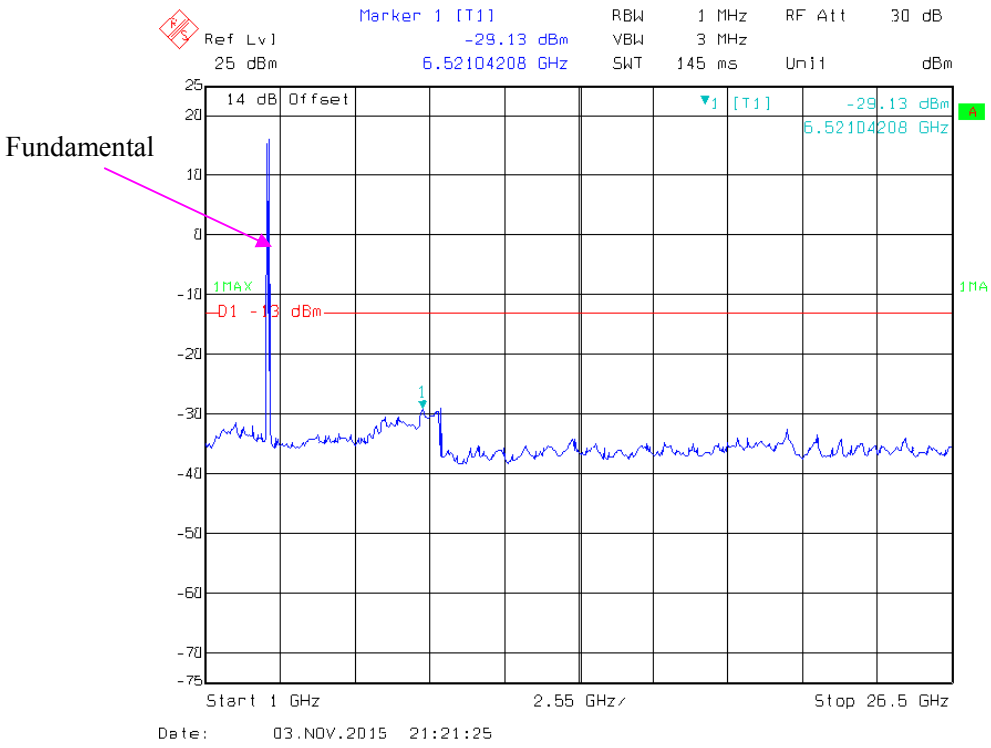




Fundamental

16-QAM, Band 41-20M _ Middle Channel





FCC §2.1053, §22.917 & §24.238 & §27.53- SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917, § 24.238 and § 27.53.

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 (TXpwr in Watts/0.001) – the absolute level

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

Spurious attenuation limit in dB = 55 + 10 Log_{10} (power out in Watts) for band 7

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
ETS LINDGREN	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
Giga	Signal Generator	1026	320408	2015-05-09	2016-05-09
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2015-09-06	2018-09-06
N/A	Coaxial Cable	14m	N/A	2015-05-06	2016-05-06
N/A	Coaxial Cable	8m	N/A	2015-05-06	2016-05-06

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

Test Data

Environmental Conditions

Temperature:	25.5~26.7 °C
Relative Humidity:	48~53 %
ATM Pressure:	99.6~100.3 kPa

The testing was performed by Dean Liu on 2015-10-30 to 2015-11-04.

EUT Operation Mode: Transmitting

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
BC0 RC1 Middle Channel (836.52MHz)								
1673.040	H	46.62	-54.5	10.6	1.5	-45.4	-13.0	32.4
1673.040	V	45.70	-55.7	10.6	1.5	-46.6	-13.0	33.6
2509.560	H	40.22	-57.8	13.1	2.8	-47.5	-13.0	34.5
2509.560	V	38.78	-58.3	13.1	2.8	-48.0	-13.0	35.0
375.000	H	43.57	-54.8	0.0	0.6	-55.4	-13.0	42.4
254.000	V	42.23	-63.5	0.0	0.5	-64.0	-13.0	51.0
BC0 RC3 Middle Channel (836.52MHz)								
1673.040	H	46.84	-54.2	10.6	1.5	-45.1	-13.0	32.1
1673.040	V	45.93	-55.5	10.6	1.5	-46.4	-13.0	33.4
2509.560	H	40.51	-57.5	13.1	2.8	-47.2	-13.0	34.2
2509.560	V	39.04	-58.1	13.1	2.8	-47.8	-13.0	34.8
375.000	H	43.86	-54.5	0.0	0.6	-55.1	-13.0	42.1
254.000	V	42.51	-63.2	0.0	0.5	-63.7	-13.0	50.7
BC0 RTAP Middle Channel (836.52MHz)								
1673.040	H	46.33	-54.7	10.6	1.5	-45.6	-13.0	32.6
1673.040	V	45.49	-55.9	10.6	1.5	-46.8	-13.0	33.8
2509.560	H	40.02	-58	13.1	2.8	-47.7	-13.0	34.7
2509.560	V	38.48	-58.6	13.1	2.8	-48.3	-13.0	35.3
375.000	H	43.30	-55.1	0.0	0.6	-55.7	-13.0	42.7
254.000	V	41.96	-63.8	0.0	0.5	-64.3	-13.0	51.3

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
BC1 RC1 Middle Channel (1880MHz)								
3760.000	H	42.16	-52.1	13.8	2.9	-41.2	-13.0	28.2
3760.000	V	40.11	-53	13.8	2.9	-42.1	-13.0	29.1
5640.000	H	43.56	-48.1	14.0	2.1	-36.2	-13.0	23.2
5640.000	V	41.48	-50.2	14.0	2.1	-38.3	-13.0	25.3
375.000	H	38.23	-60.2	0.0	0.6	-60.8	-13.0	47.8
254.000	V	37.18	-68.5	0.0	0.5	-69.0	-13.0	56.0
BC1 RC3 Middle Channel (1880MHz)								
3760.000	H	42.45	-51.8	13.8	2.9	-40.9	-13.0	27.9
3760.000	V	40.35	-52.7	13.8	2.9	-41.8	-13.0	28.8
5640.000	H	43.76	-47.9	14.0	2.1	-36.0	-13.0	23.0
5640.000	V	41.73	-49.9	14.0	2.1	-38.0	-13.0	25.0
375.000	H	38.52	-59.9	0.0	0.6	-60.5	-13.0	47.5
254.000	V	37.39	-68.3	0.0	0.5	-68.8	-13.0	55.8
BC1 RTAP Middle Channel (1880MHz)								
3760.000	H	41.89	-52.4	13.8	2.9	-41.5	-13.0	28.5
3760.000	V	39.85	-53.2	13.8	2.9	-42.3	-13.0	29.3
5640.000	H	43.34	-48.4	14.0	2.1	-36.5	-13.0	23.5
5640.000	V	41.26	-50.4	14.0	2.1	-38.5	-13.0	25.5
375.000	H	38.03	-60.4	0.0	0.6	-61.0	-13.0	48.0
254.000	V	36.89	-68.8	0.0	0.5	-69.3	-13.0	56.3

Cellular Band (PART 22H)

30 MHz-10 GHz:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:836.6 MHz								
1673.200	H	56.26	-44.8	10.6	1.5	-35.7	-13.0	22.7
1673.200	V	53.43	-47.9	10.6	1.5	-38.8	-13.0	25.8
2509.800	H	42.36	-55.7	13.1	2.8	-45.4	-13.0	32.4
2509.800	V	40.73	-56.4	13.1	2.8	-46.1	-13.0	33.1
375.000	H	45.36	-53	0.0	0.6	-53.6	-13.0	40.6
254.000	V	44.17	-61.5	0.0	0.5	-62.0	-13.0	49.0

WCDMA Band V

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:836.6 MHz								
1673.200	H	44.11	-57	10.6	1.5	-47.9	-13.0	34.9
1673.200	V	42.64	-58.7	10.6	1.5	-49.6	-13.0	36.6
375.000	H	38.39	-60	0.0	0.6	-60.6	-13.0	47.6
254.000	V	37.22	-68.5	0.0	0.5	-69.0	-13.0	56.0

PCS Band (PART 24E)

30 MHz-20 GHz:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:1880 MHz								
3760.000	H	38.39	-55.9	13.8	2.9	-45.0	-13.0	32.0
3760.000	V	36.65	-56.4	13.8	2.9	-45.5	-13.0	32.5
375.000	H	43.57	-54.8	0.0	0.6	-55.4	-13.0	42.4
254.000	V	42.23	-63.5	0.0	0.5	-64.0	-13.0	51.0

WCDMA Band II

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:1880 MHz								
3760.000	H	36.27	-58	13.8	2.9	-47.1	-13.0	34.1
3760.000	V	34.25	-58.8	13.8	2.9	-47.9	-13.0	34.9
375.000	H	38.84	-59.6	0.0	0.6	-60.2	-13.0	47.2
254.000	V	37.51	-68.2	0.0	0.5	-68.7	-13.0	55.7

Note:

1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = SG Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

PART 27

LTE Band 2

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 1880 MHz								
3760.000	H	34.21	-60.1	13.8	2.9	-49.2	-13.0	36.2
3760.000	V	33.74	-59.3	13.8	2.9	-48.4	-13.0	35.4
5640.000	H	34.36	-57.3	14.0	2.1	-45.4	-13.0	32.4
5640.000	V	33.45	-58.2	14.0	2.1	-46.3	-13.0	33.3
375.000	H	35.25	-63.1	0.0	0.6	-63.7	-13.0	50.7
254.000	V	34.26	-71.5	0.0	0.5	-72.0	-13.0	59.0
16- QAM, Frequency: 1880 MHz								
3760.000	H	33.89	-60.4	13.8	2.9	-49.5	-13.0	36.5
3760.000	V	33.55	-59.5	13.8	2.9	-48.6	-13.0	35.6
5640.000	H	34.03	-57.7	14.0	2.1	-45.8	-13.0	32.8
5640.000	V	33.14	-58.5	14.0	2.1	-46.6	-13.0	33.6
375.000	H	35.02	-63.4	0.0	0.6	-64.0	-13.0	51.0
254.000	V	34.28	-71.4	0.0	0.5	-71.9	-13.0	58.9

LTE Band 4

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:1732.5 MHz								
3465.000	H	33.44	-63.5	13.9	1.9	-51.5	-13.0	38.5
3465.000	V	34.47	-61.7	13.9	1.9	-49.7	-13.0	36.7
5197.500	H	32.42	-58.6	14.0	2.3	-46.9	-13.0	33.9
5197.500	V	33.18	-59.4	14.0	2.3	-47.7	-13.0	34.7
375.000	H	35.64	-62.8	0.0	0.6	-63.4	-13.0	50.4
254.000	V	34.28	-71.4	0.0	0.5	-71.9	-13.0	58.9
16- QAM, Frequency: 1732.5 MHz								
3465.000	H	33.17	-63.8	13.9	1.9	-51.8	-13.0	38.8
3465.000	V	34.22	-61.9	13.9	1.9	-49.9	-13.0	36.9
5197.500	H	32.25	-58.8	14.0	2.3	-47.1	-13.0	34.1
5197.500	V	33.09	-59.4	14.0	2.3	-47.7	-13.0	34.7
375.000	H	35.08	-63.3	0.0	0.6	-63.9	-13.0	50.9
254.000	V	34.26	-71.5	0.0	0.5	-72.0	-13.0	59.0

LTE Band 12

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:707.5 MHz								
1415.000	H	43.64	-57.2	9.0	1.3	-49.5	-13.0	36.5
1415.000	V	44.99	-55.6	9.0	1.3	-47.9	-13.0	34.9
2122.500	H	34.31	-61.7	11.2	1.4	-51.9	-13.0	38.9
2122.500	V	36.52	-58.2	11.2	1.4	-48.4	-13.0	35.4
375.000	H	35.69	-62.7	0.0	0.6	-63.3	-13.0	50.3
254.000	V	34.76	-71	0.0	0.5	-71.5	-13.0	58.5
16- QAM, Frequency: 707.5 MHz								
1415.000	H	43.45	-57.4	9.0	1.3	-49.7	-13.0	36.7
1415.000	V	44.97	-55.6	9.0	1.3	-47.9	-13.0	34.9
2122.500	H	34.03	-61.9	11.2	1.4	-52.1	-13.0	39.1
2122.500	V	36.34	-58.3	11.2	1.4	-48.5	-13.0	35.5
375.000	H	34.86	-63.5	0.0	0.6	-64.1	-13.0	51.1
254.000	V	34.28	-71.4	0.0	0.5	-71.9	-13.0	58.9

LTE Band 17

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:710.000 MHz								
1420.000	H	42.21	-58.7	9.1	1.3	-50.9	-13.0	37.9
1420.000	V	40.92	-59.7	9.1	1.3	-51.9	-13.0	38.9
2130.000	H	36.52	-59.4	11.2	1.4	-49.6	-13.0	36.6
2130.000	V	35.07	-59.7	11.2	1.4	-49.9	-13.0	36.9
375.000	H	34.87	-63.5	0.0	0.6	-64.1	-13.0	51.1
254.000	V	34.05	-71.7	0.0	0.5	-72.2	-13.0	59.2
16- QAM, Frequency: 710.000 MHz								
1420.000	H	41.06	-59.8	9.1	1.3	-52.0	-13.0	39.0
1420.000	V	39.14	-61.5	9.1	1.3	-53.7	-13.0	40.7
2130.000	H	35.98	-60	11.2	1.4	-50.2	-13.0	37.2
2130.000	V	34.66	-60.1	11.2	1.4	-50.3	-13.0	37.3
375.000	H	34.69	-63.7	0.0	0.6	-64.3	-13.0	51.3
254.000	V	33.55	-72.2	0.0	0.5	-72.7	-13.0	59.7

LTE Band 41

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:2605.000 MHz								
5210.000	H	34.63	-56.5	14.0	2.3	-44.8	-13.0	31.8
5210.000	V	33.89	-58.7	14.0	2.3	-47.0	-13.0	34.0
7815.000	H	34.75	-52.4	13.3	3.6	-42.7	-13.0	29.7
7815.000	V	33.39	-54.2	13.3	3.6	-44.5	-13.0	31.5
375.000	H	35.39	-63	0.0	0.6	-63.6	-13.0	50.6
254.000	V	34.47	-71.2	0.0	0.5	-71.7	-13.0	58.7
16- QAM, Frequency: 2605.000 MHz								
5210.000	H	34.48	-56.6	14.0	2.3	-44.9	-13.0	31.9
5210.000	V	33.67	-58.9	14.0	2.3	-47.2	-13.0	34.2
7815.000	H	34.35	-52.8	13.3	3.6	-43.1	-13.0	30.1
7815.000	V	33.02	-54.6	13.3	3.6	-44.9	-13.0	31.9
375.000	H	35.22	-63.2	0.0	0.6	-63.8	-13.0	50.8
254.000	V	34.02	-71.7	0.0	0.5	-72.2	-13.0	59.2

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = SG Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

FCC §22.917(a) & §24.238(a) & §27.53(g)§27.53(h) §27.53(m) - BAND EDGES

Applicable Standard

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.

According to §27.53 (g), For operations in the 600 MHz band and the 698-746 MHz band, 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 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

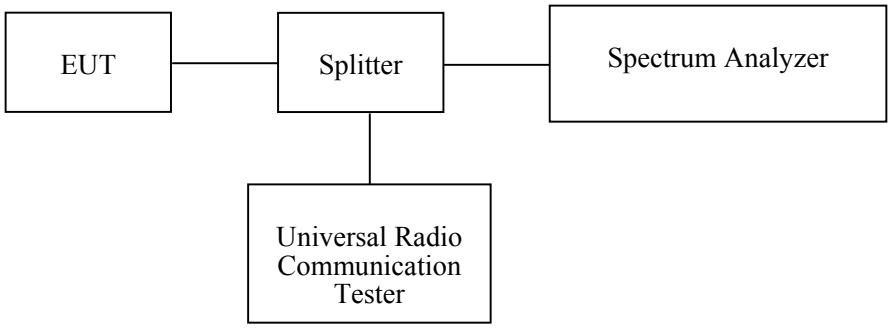
According to §27.53 (h), AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

According to §27.53 (m), (4) 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 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
R&S	Universal Radio Communication Tester	CMU200	109038	2015-05-09	2016-05-09
R&S	Wideband Radio Communication Tester	CMW500	106891	2014-11-23	2015-11-23
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06
E-Microwave	Attenuator(10dB)	EMCA10-5RN	OE01203239	2015-05-08	2016-05-08
Pasternack	RF Coaxial Cable	RF-01	N/A	2015-05-06	2016-05-06
Pasternack	RF Coaxial Cable	RF-02	N/A	2015-05-06	2016-05-06
N/A	Two-way Spliter	ODP-1-6-2S	OE0120142	2015-05-06	2016-05-06

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

Test Data

Environmental Conditions

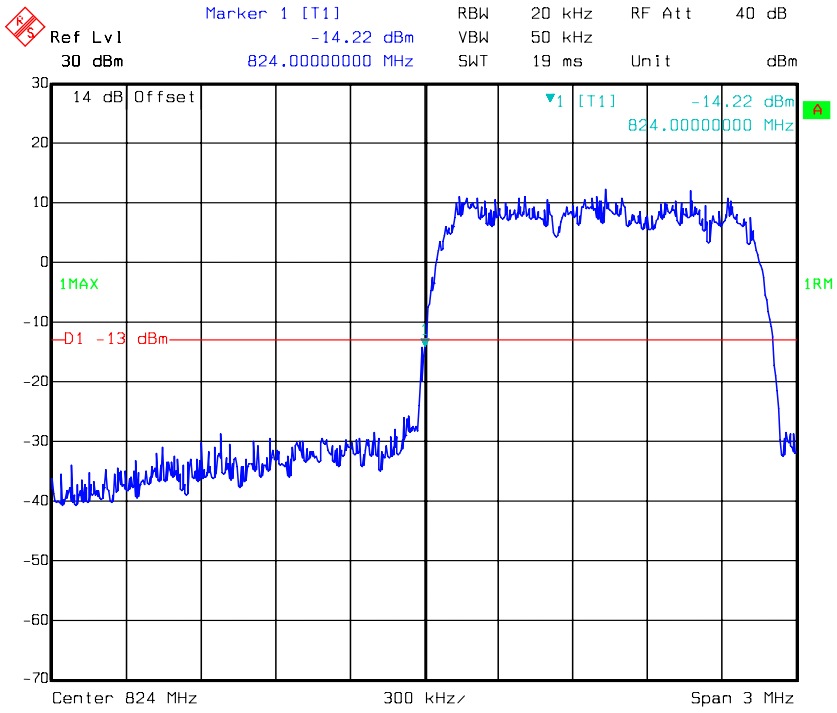
Temperature:	26.3~26.9 °C
Relative Humidity:	50~54 %
ATM Pressure:	100.1~100.4 kPa

The testing was performed by Dean Liu from 2015-10-27 to 2015-11-03.

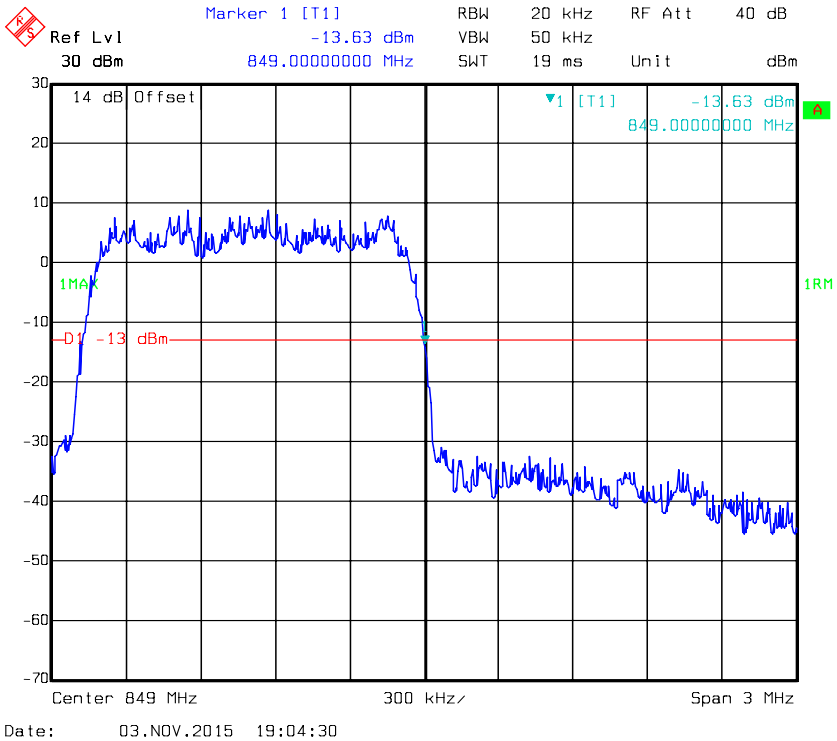
Test Mode: Transmitting

Test Result: Compliance. Please refer to the following plots.

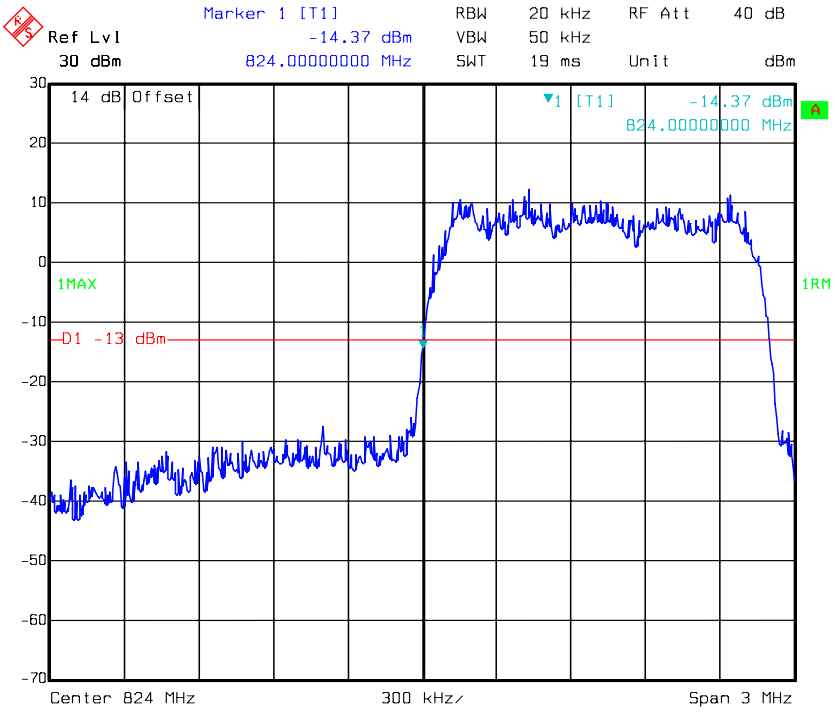
BC0-RC1, Left Band Edge



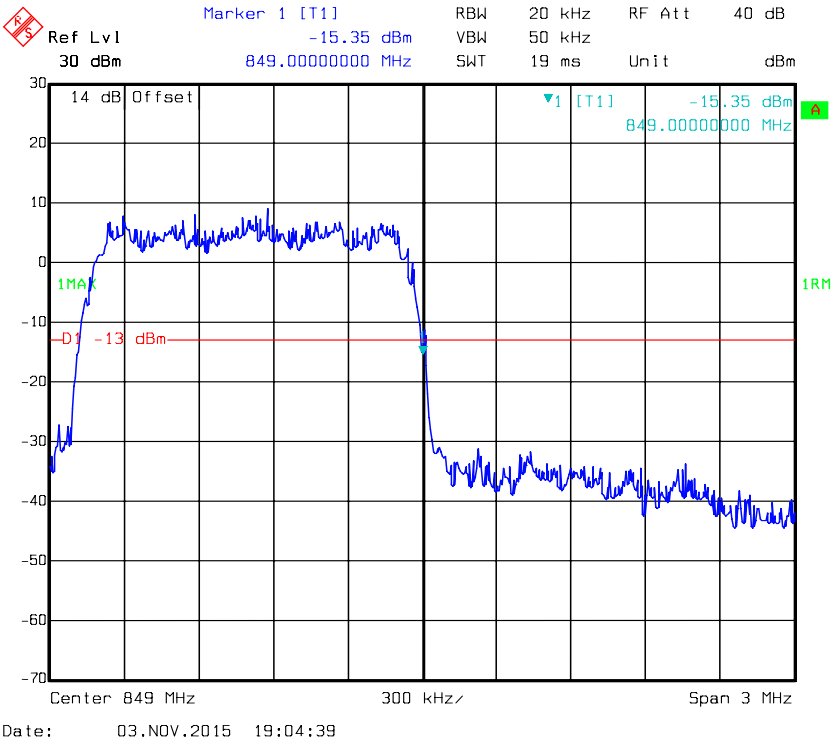
BC0-RC1, Right Band Edge



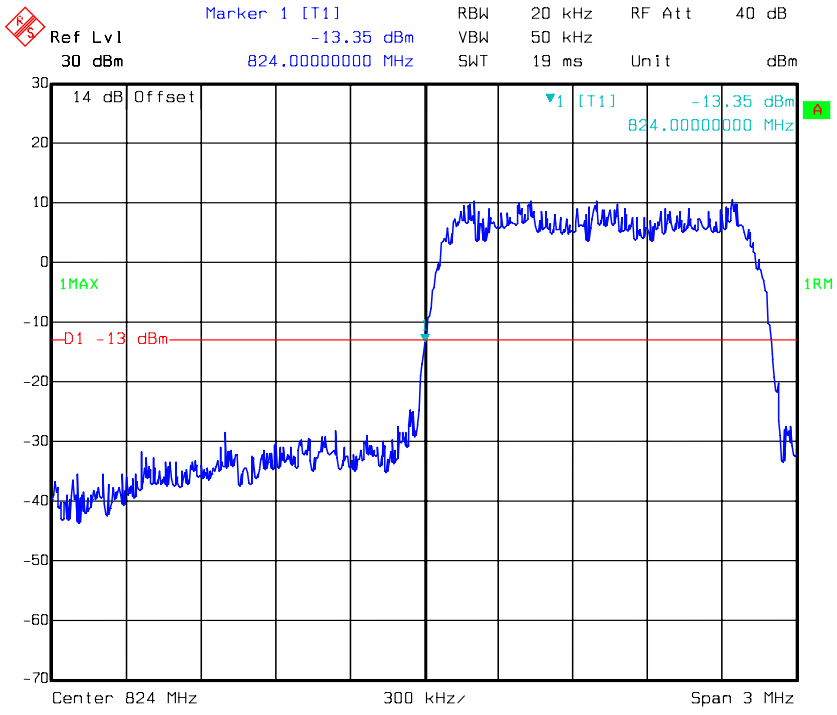
BC0-RC3, Left Band Edge



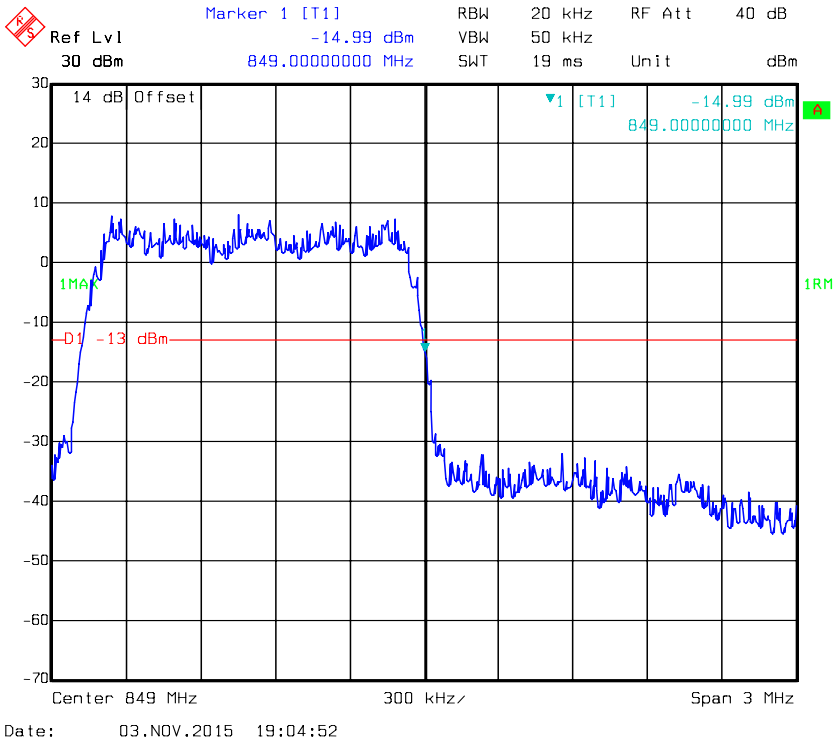
BC0-RC3, Right Band Edge



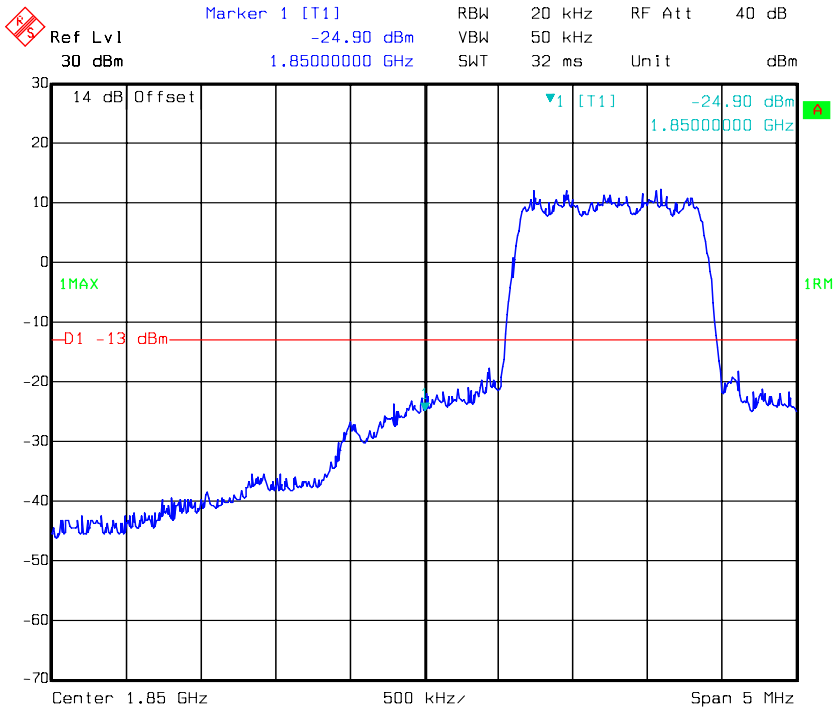
BC0-RTAP, Left Band Edge



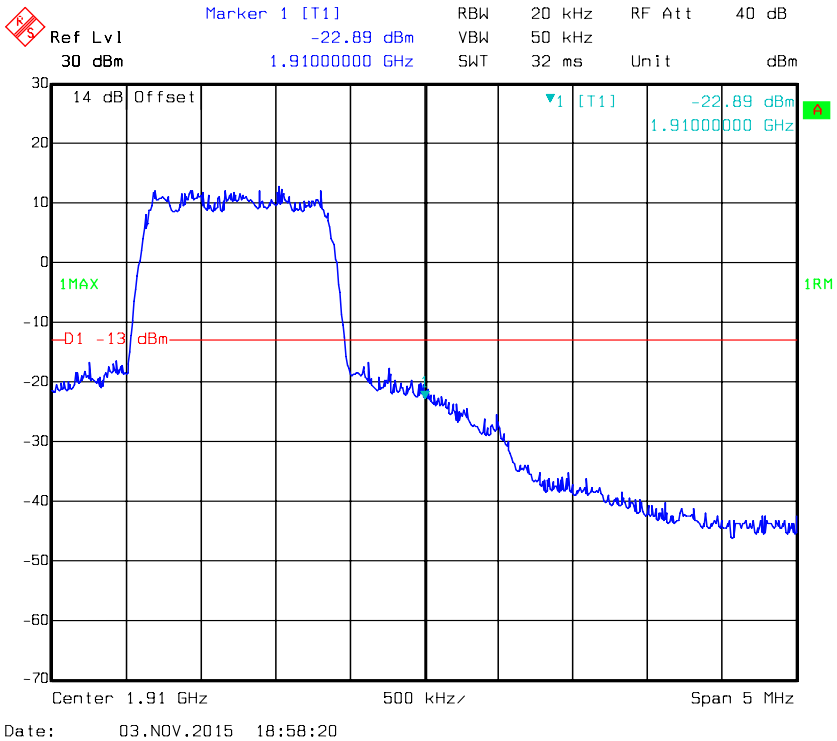
BC0-RTAP, Right Band Edge



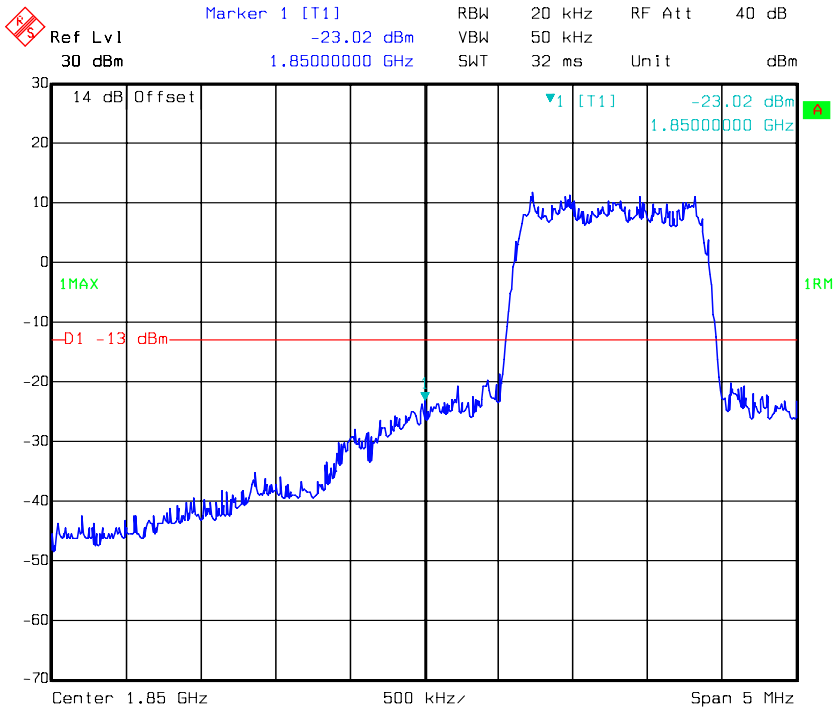
BC1-RC1, Left Band Edge



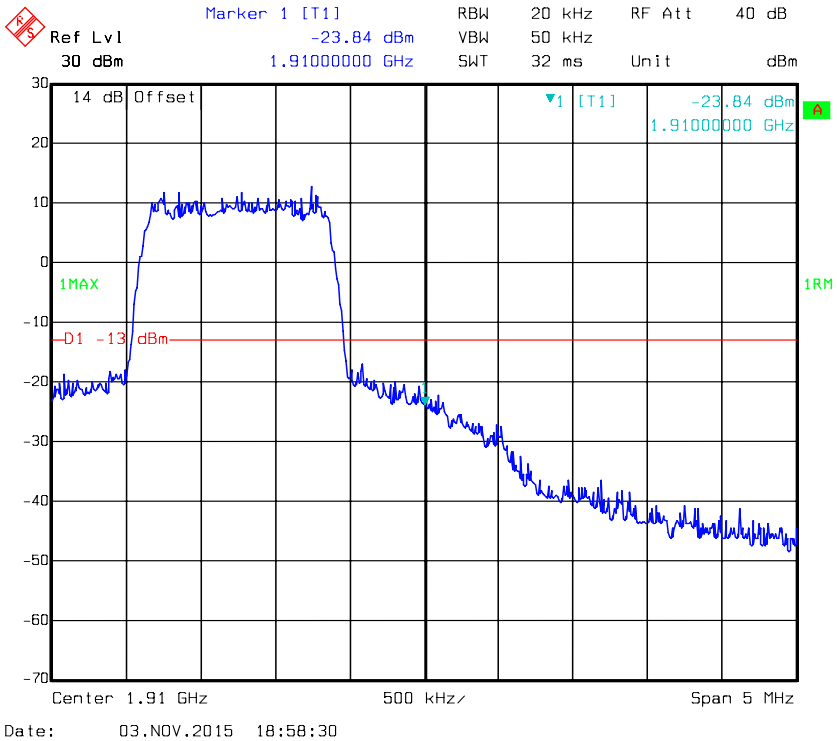
BC1-RC1, Right Band Edge



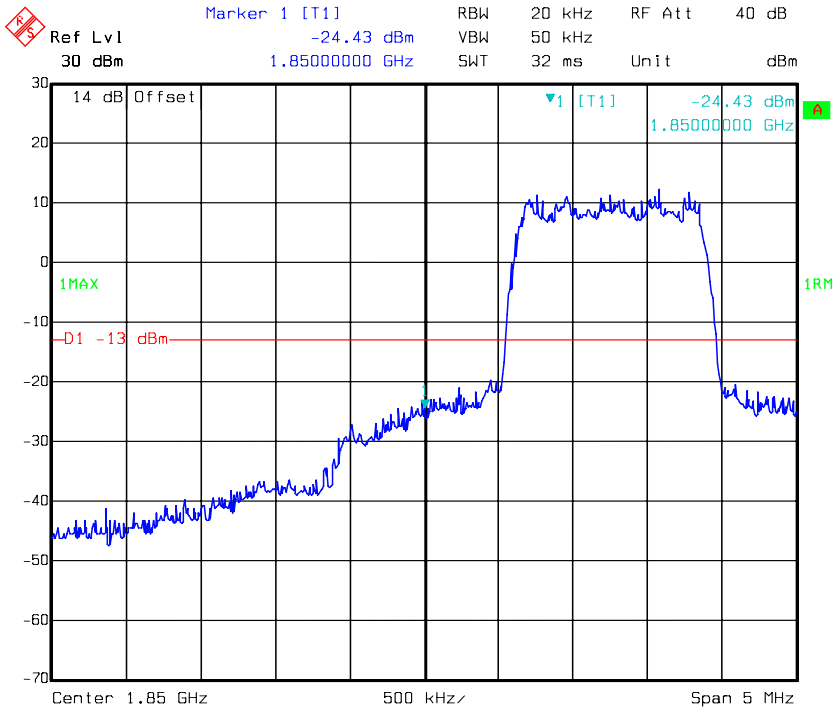
BC1-RC3, Left Band Edge



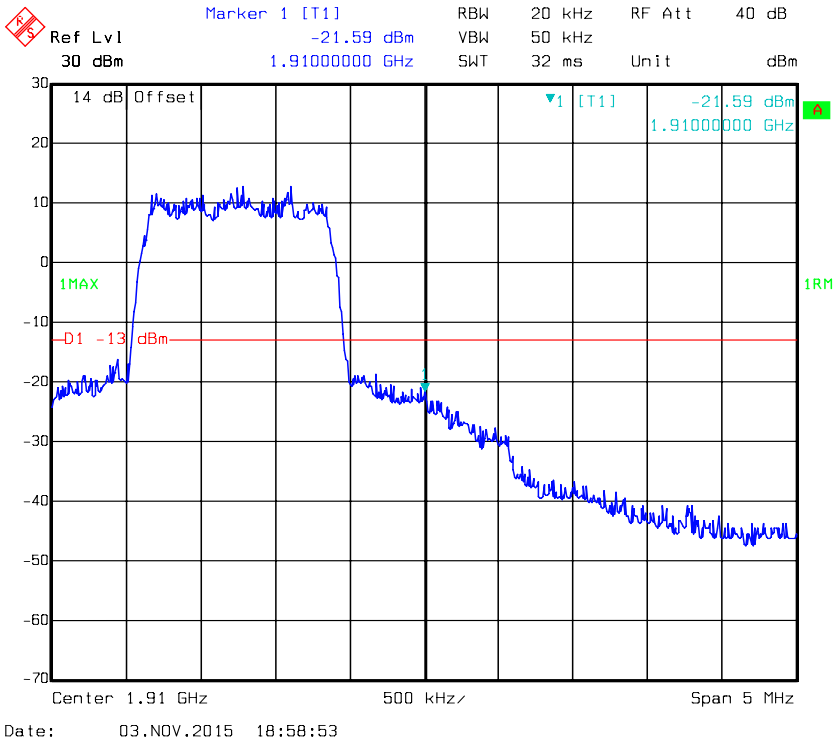
BC1-RC3, Right Band Edge



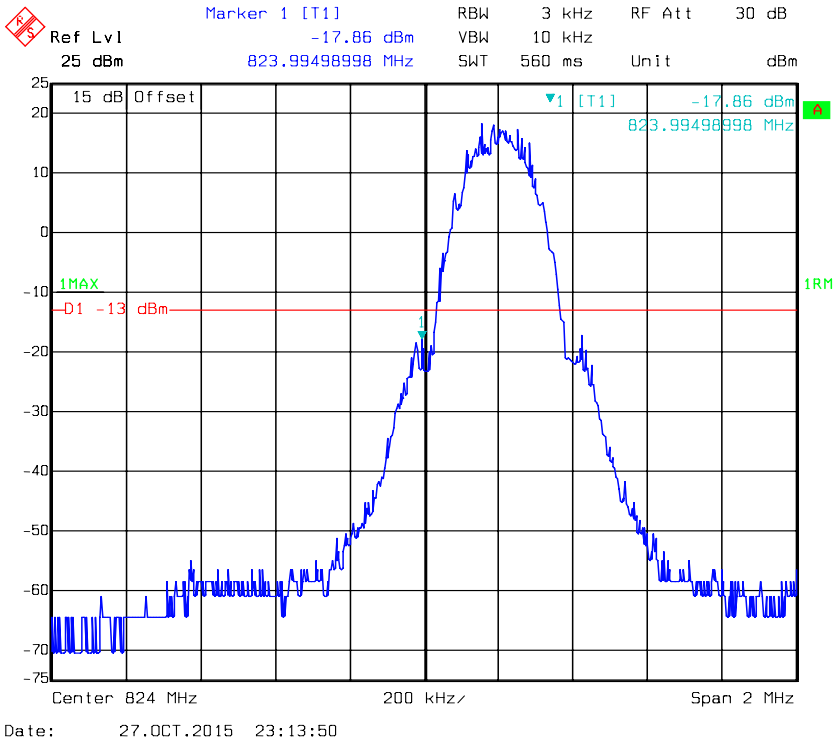
BC1-Rel.A, Left Band Edge



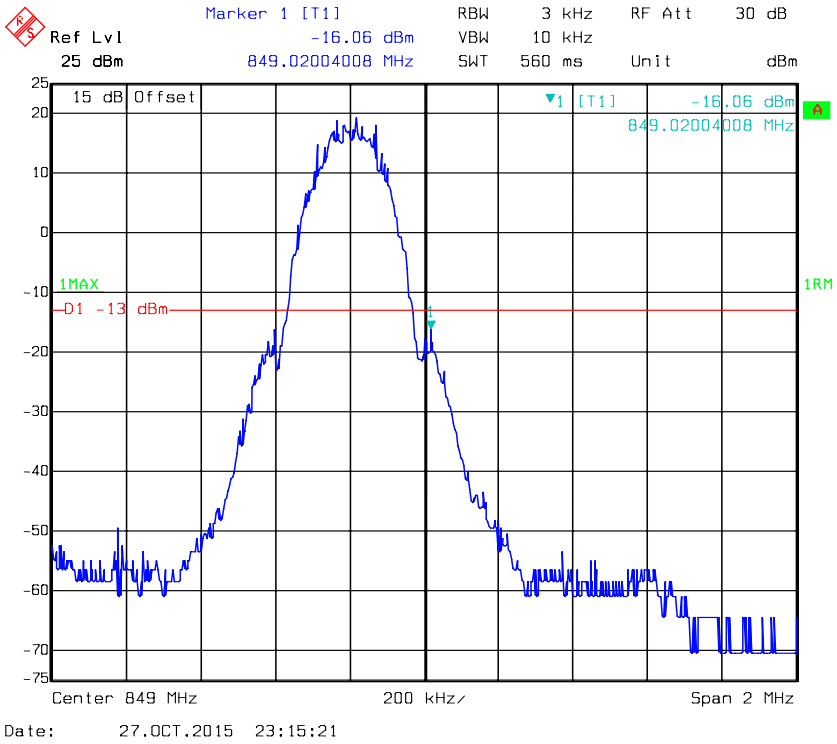
BC1-Rel.A, Right Band Edge



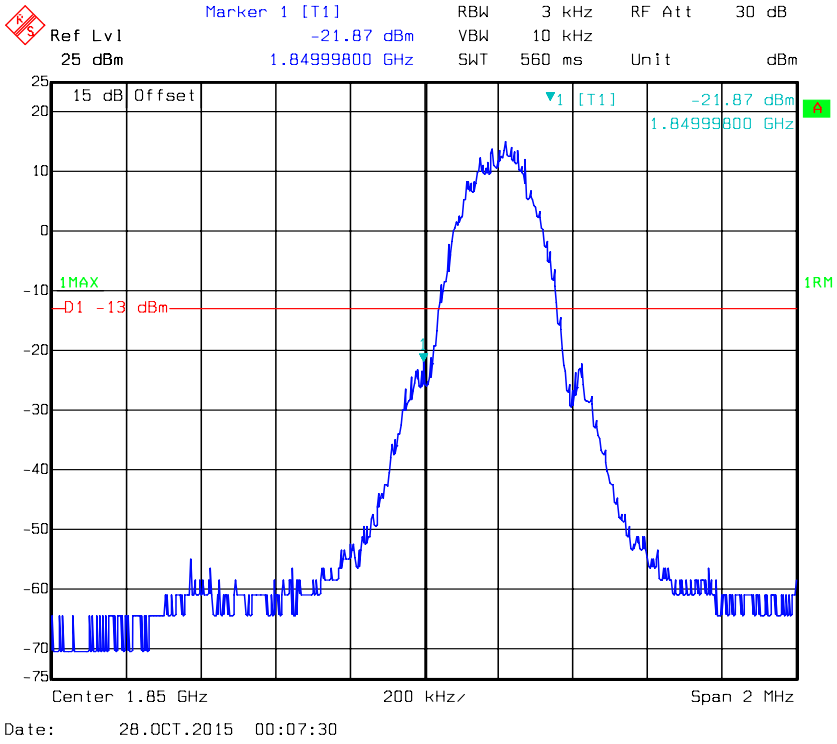
GSM 850, Left Band Edge



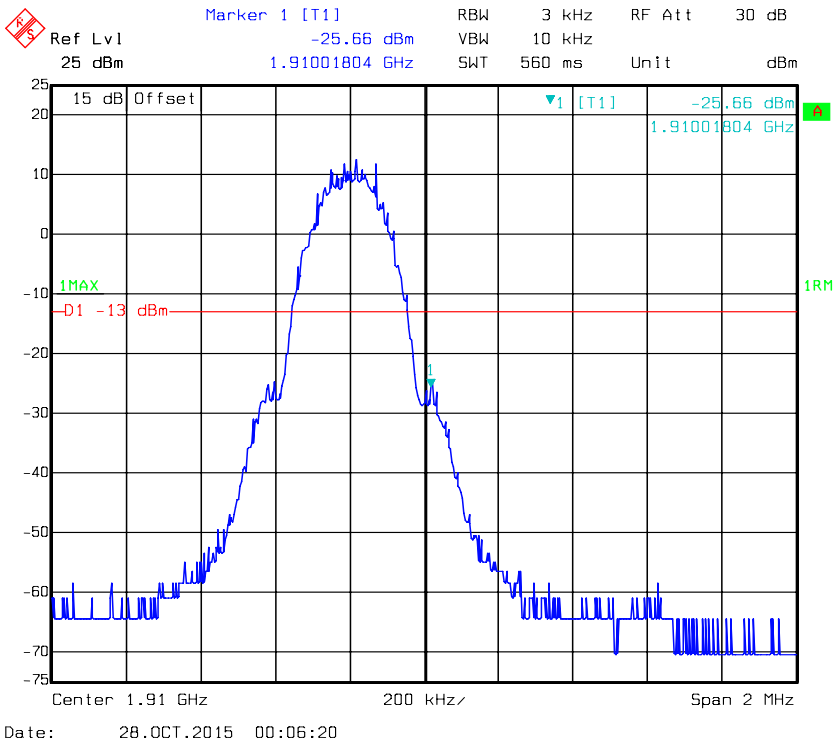
GSM 850, Right Band Edge



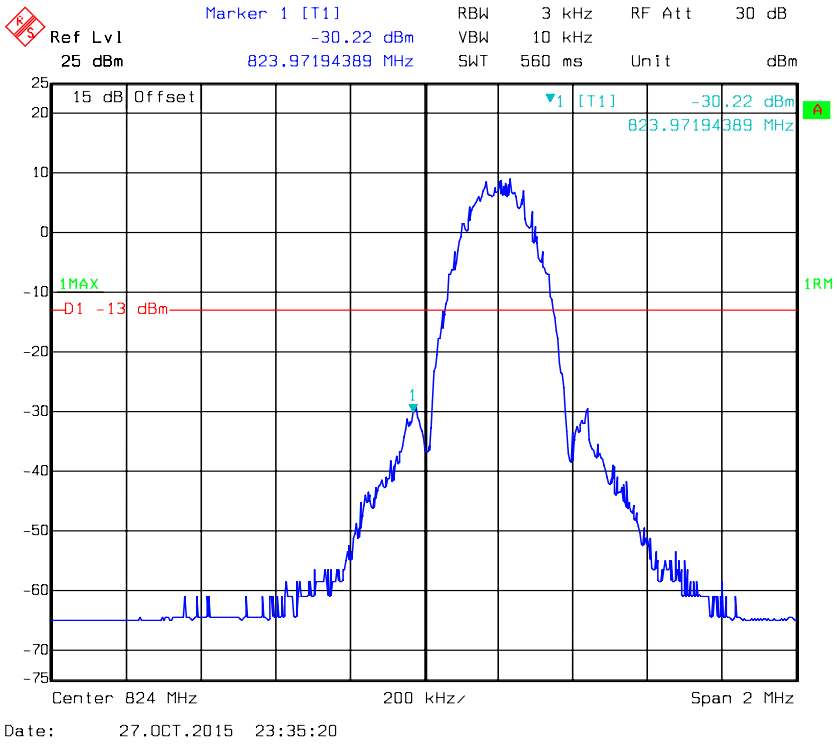
GSM 1900, Left Band Edge



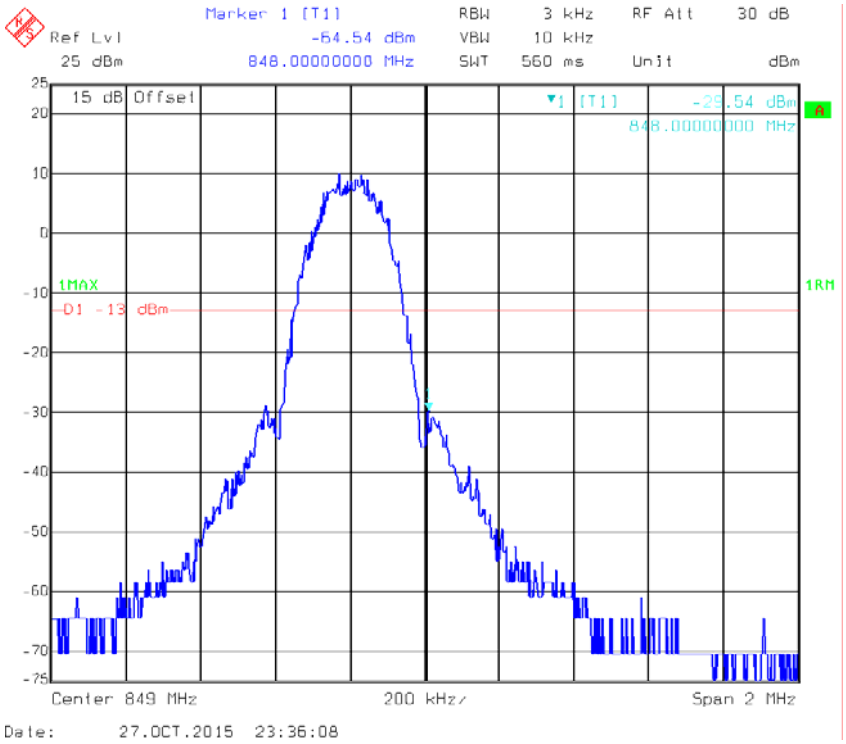
GSM 1900, Right Band Edge



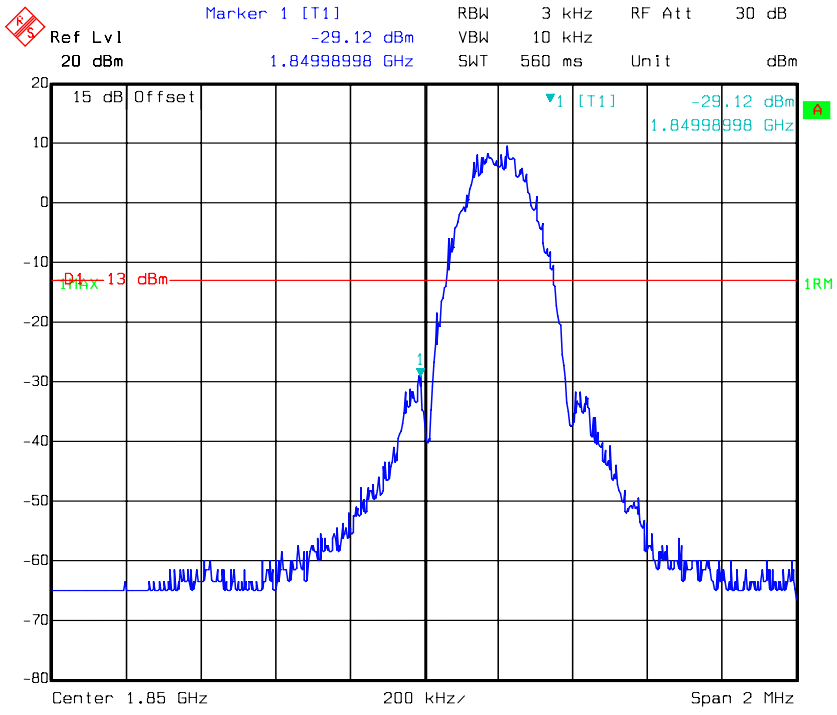
EDGE 850, Left Band Edge



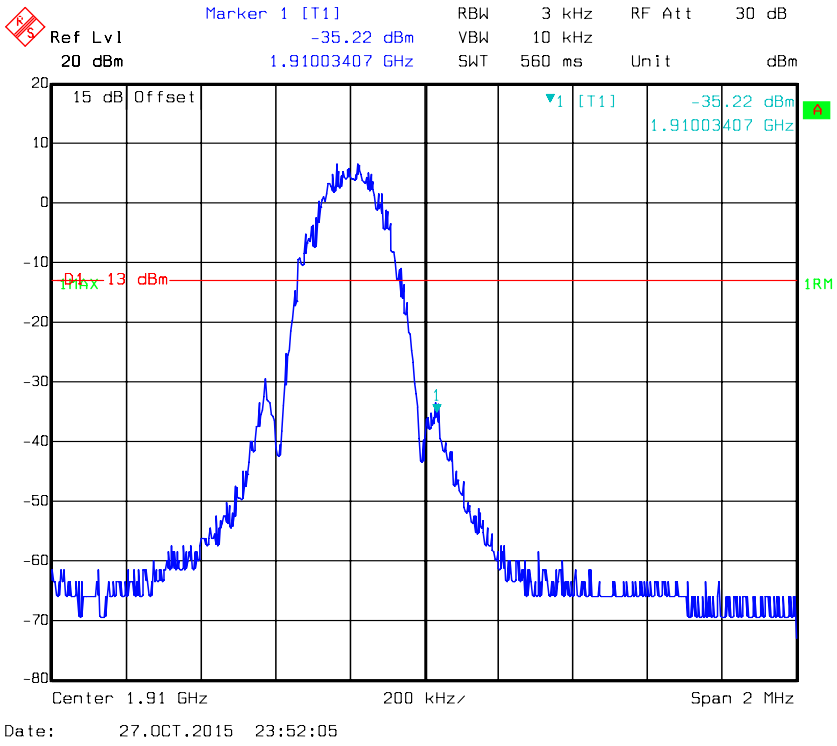
EDGE 850, Right Band Edge



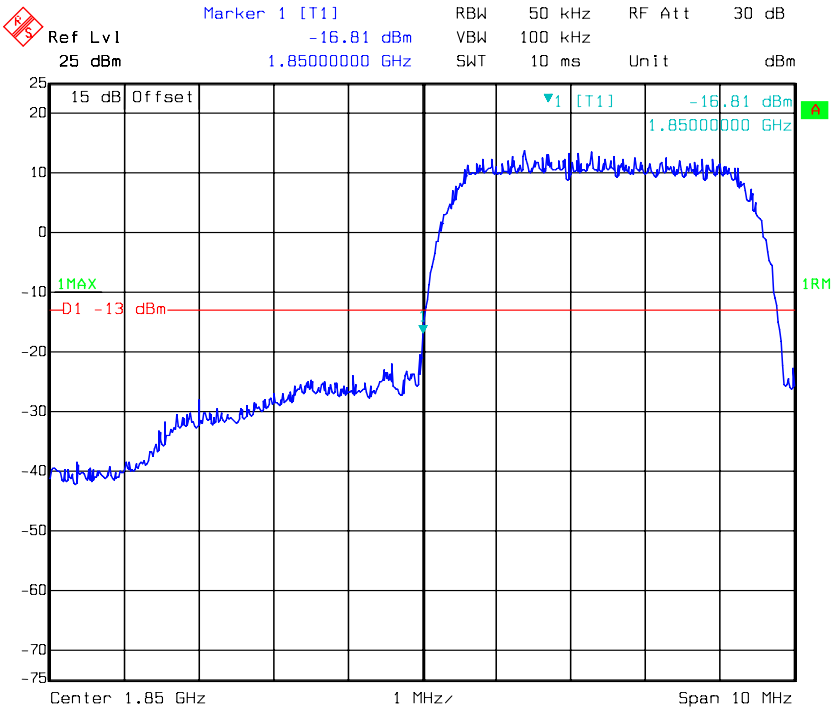
EDGE 1900, Left Band Edge



EDGE 1900, Right Band Edge



REL99 Band II, Left Band Edge



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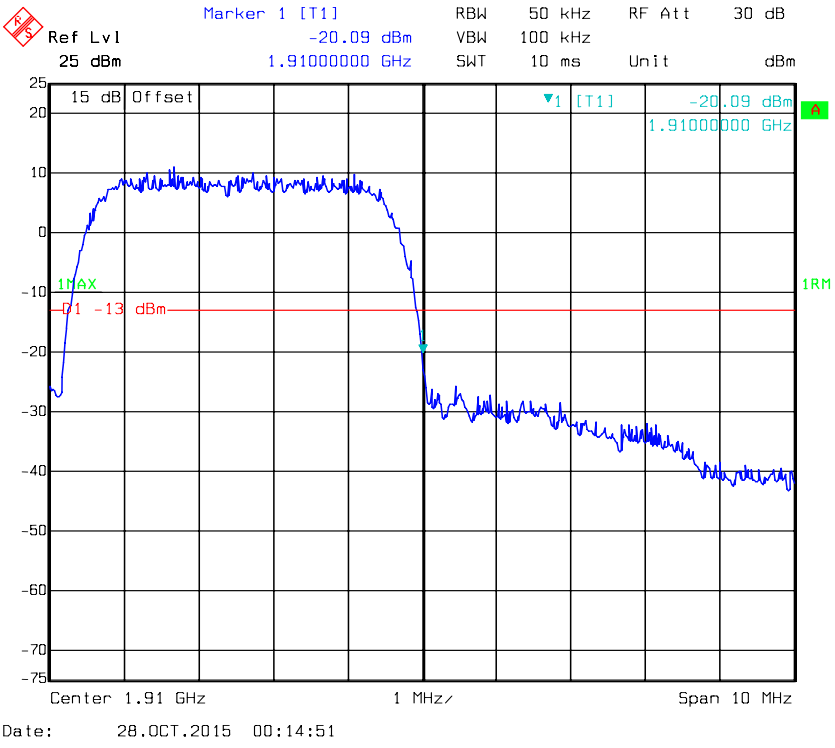
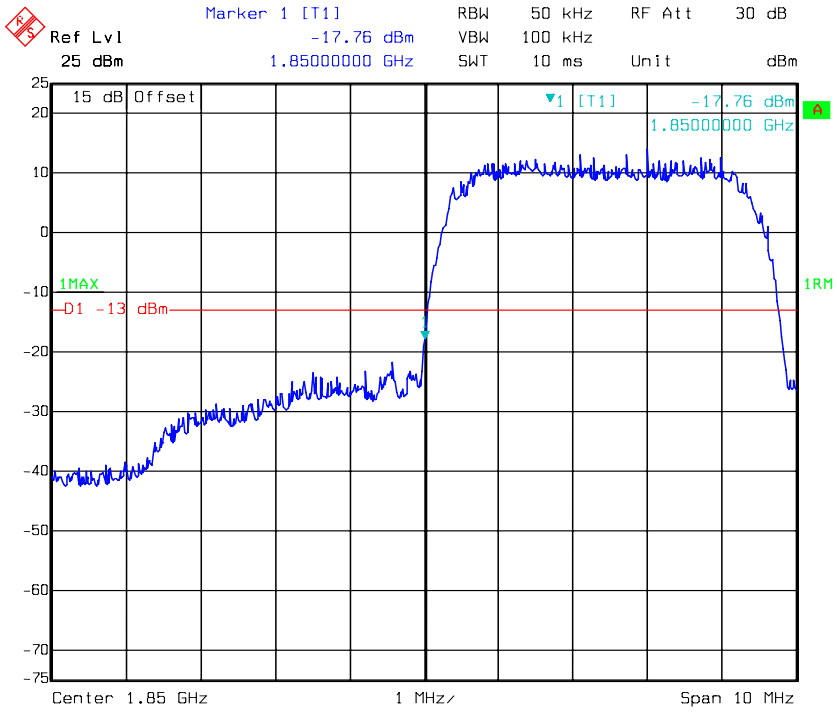
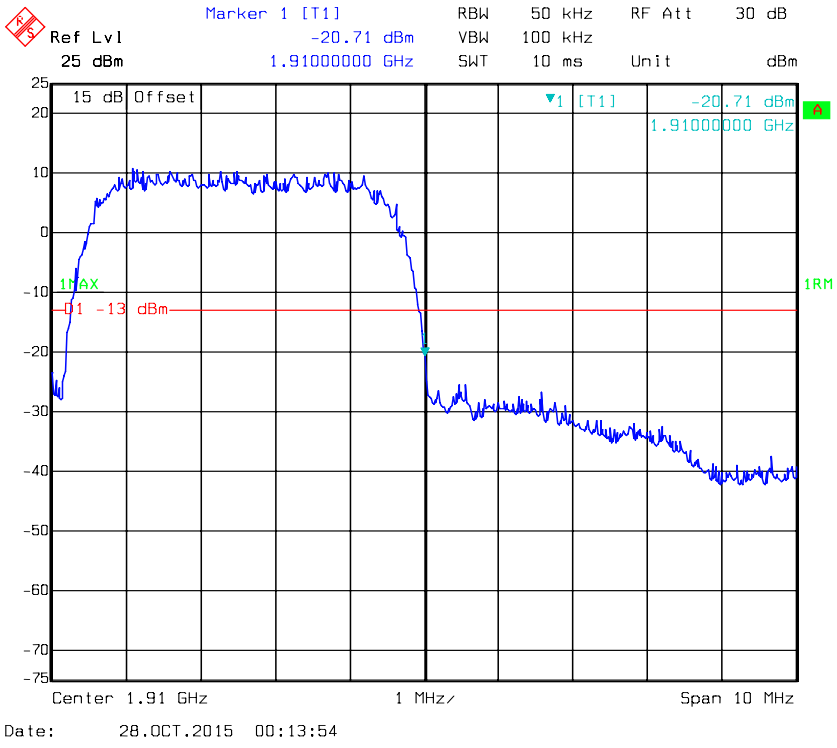


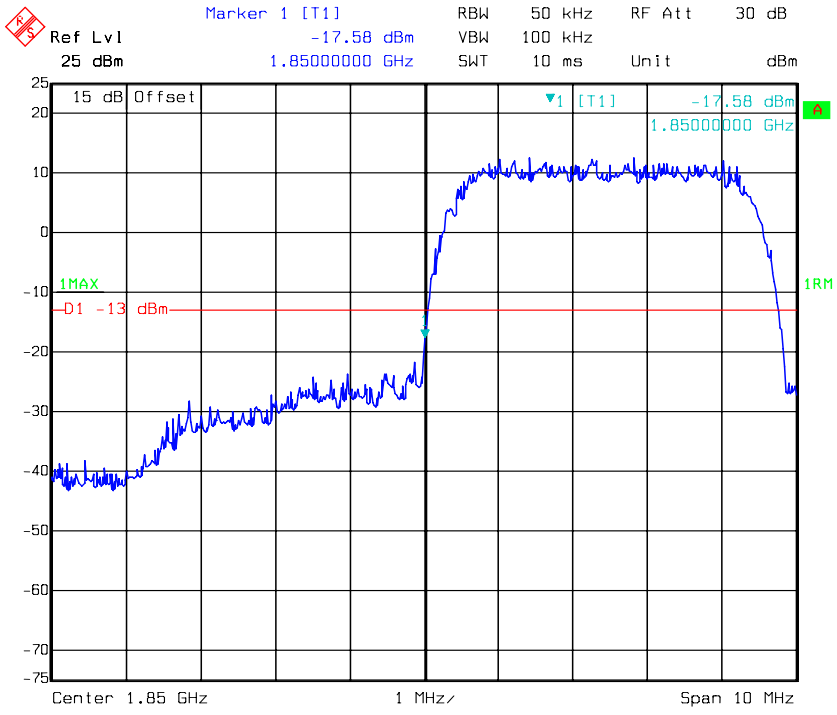
HSDPA Band II, Left Band Edge



HSDPA Band II, Right Band Edge



HSUPA Band II, Left Band Edge



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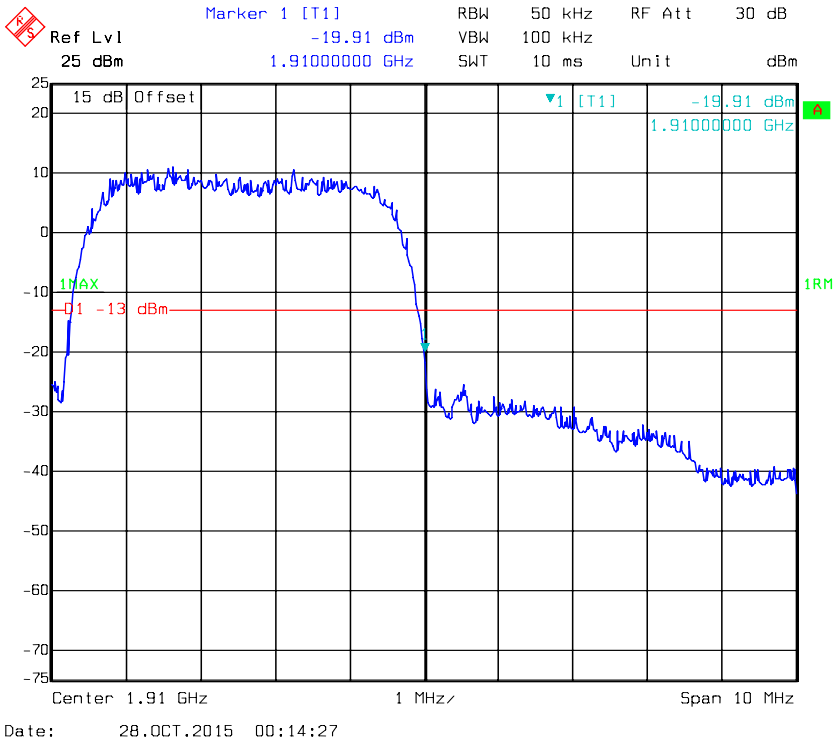
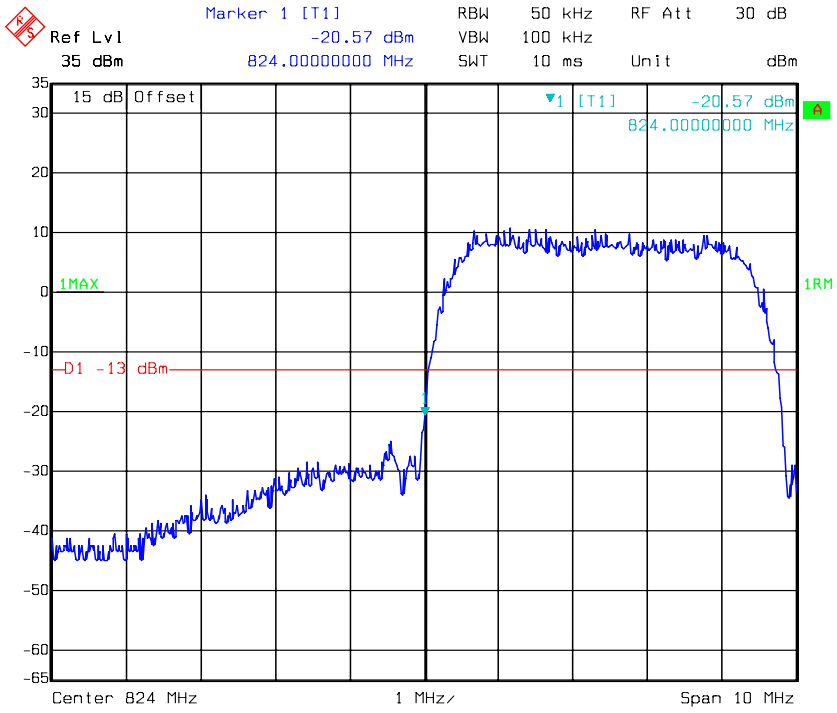
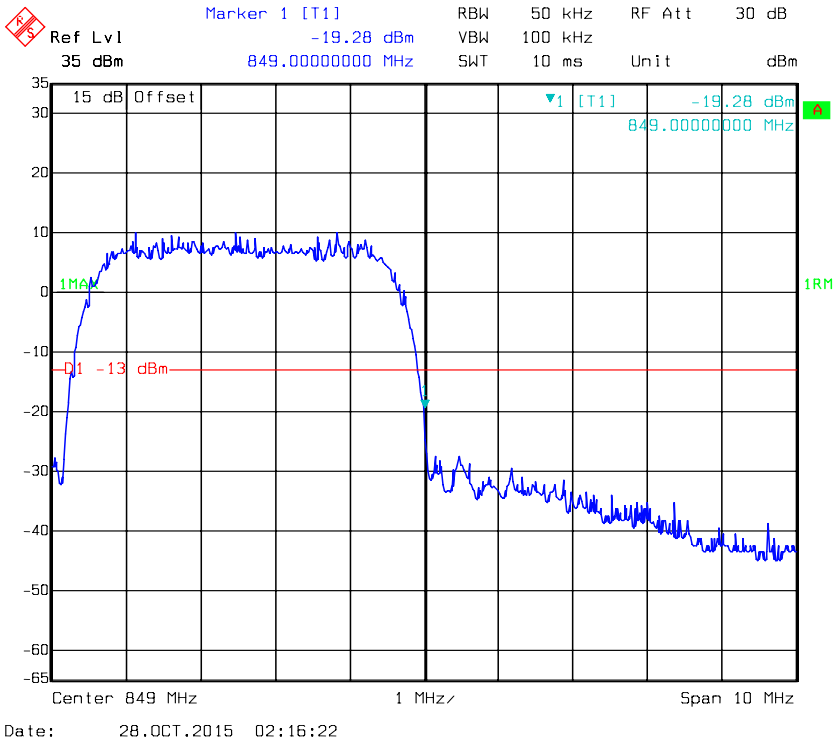


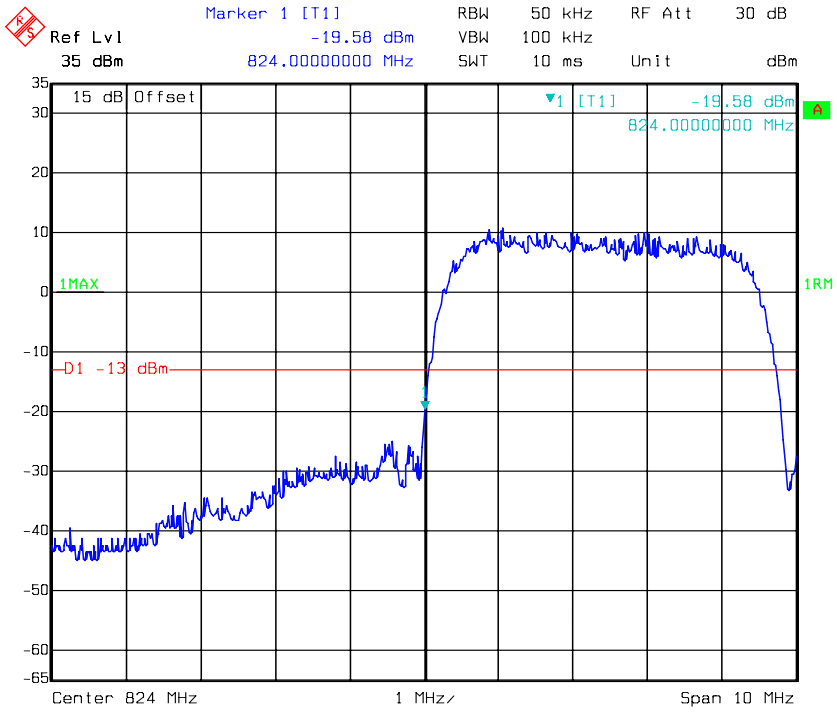
REL99 Band V, Left Band Edge



REL99 Band V Right Band Edge



HSDPA Band V, Left Band Edge



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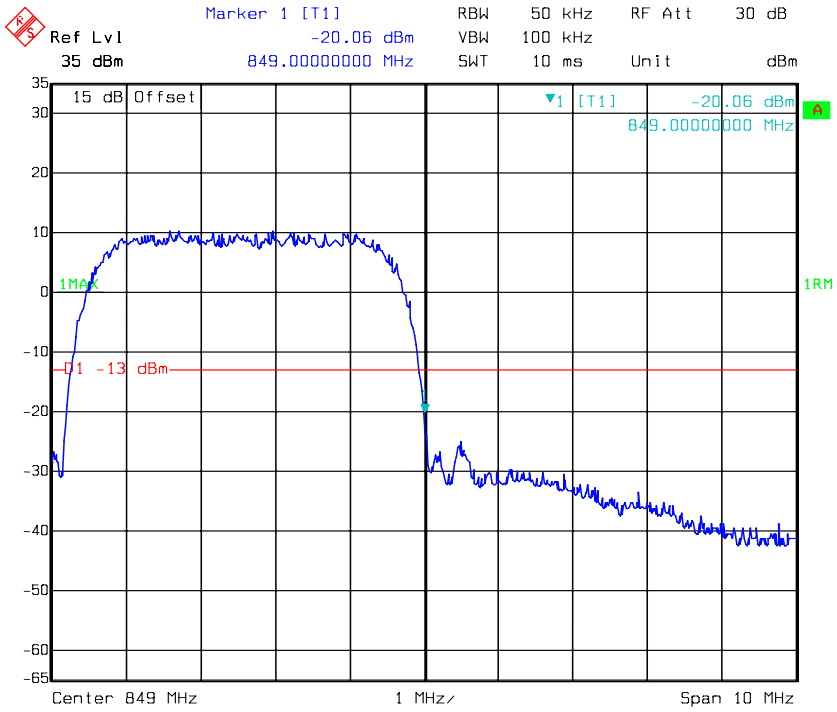
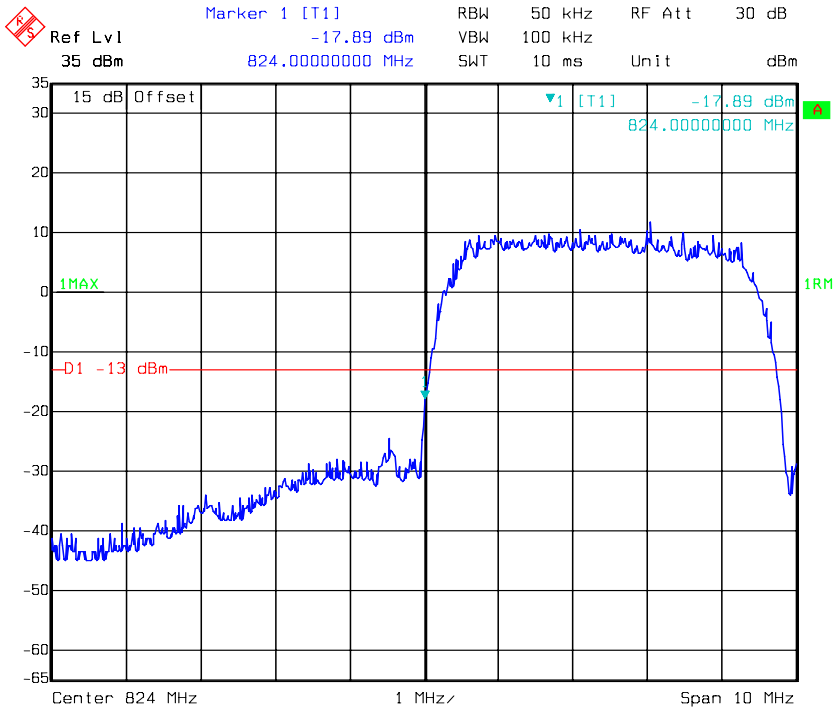
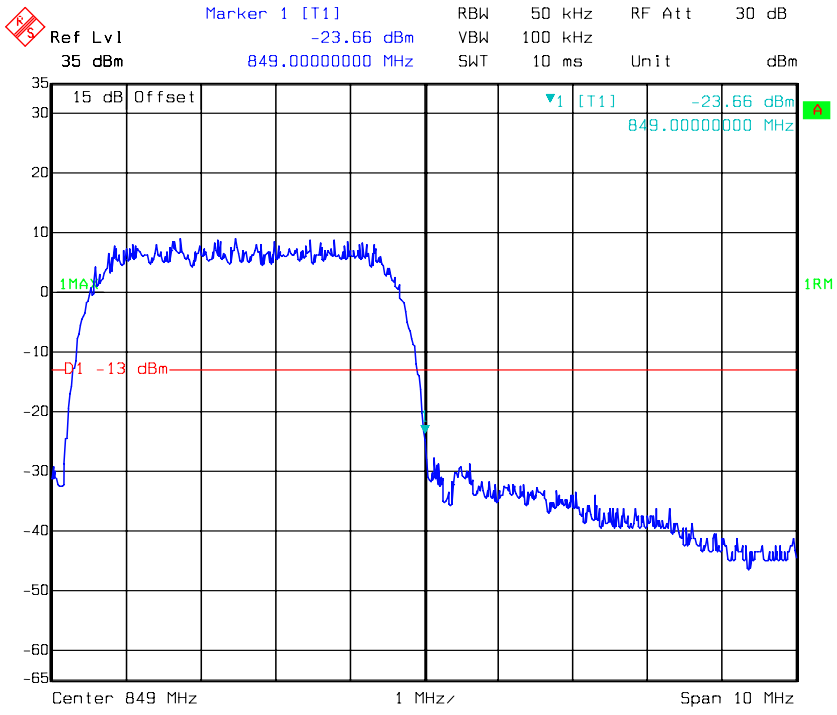


HSUPA Band V, Left Band Edge

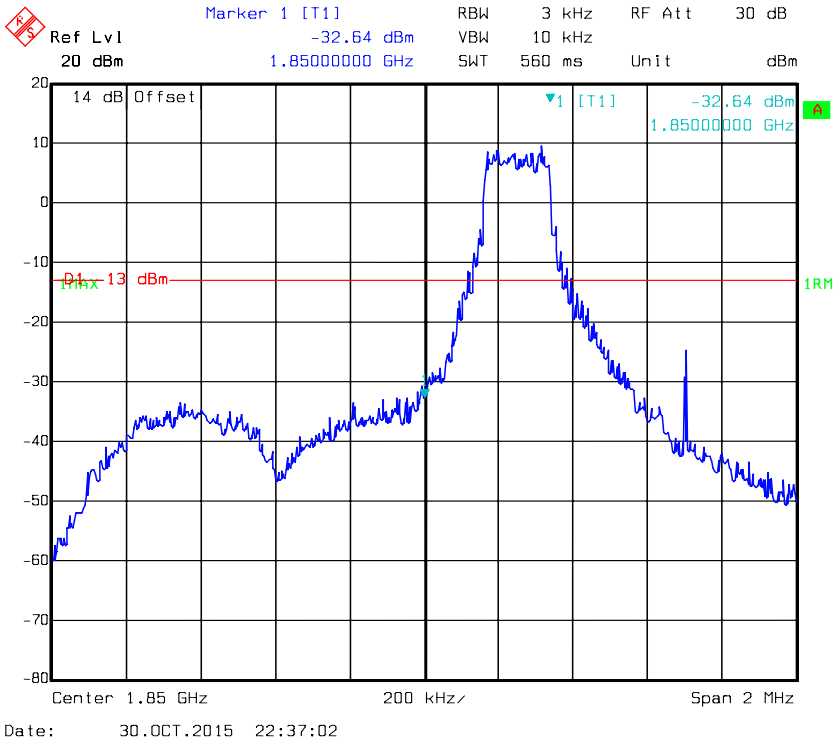


HSUPA Band V, Right Band Edge

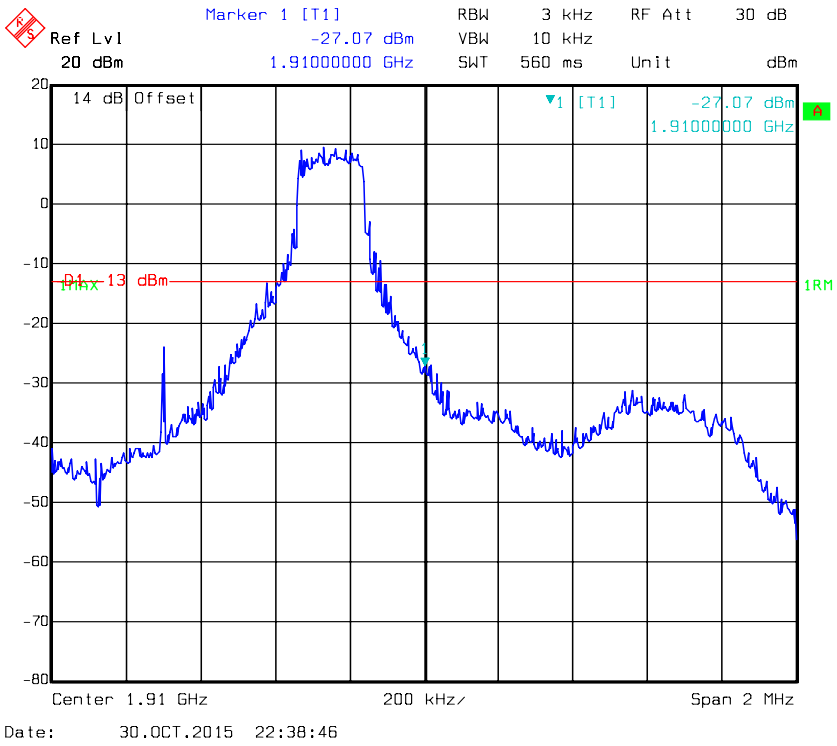


LTE Band 2

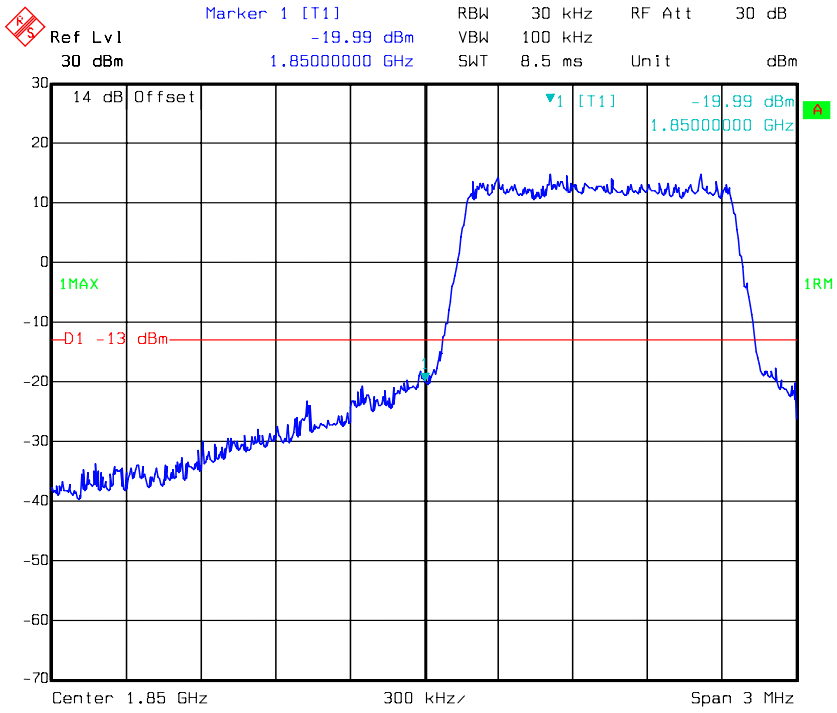
QPSK-1.4M 1RB, Left Band Edge



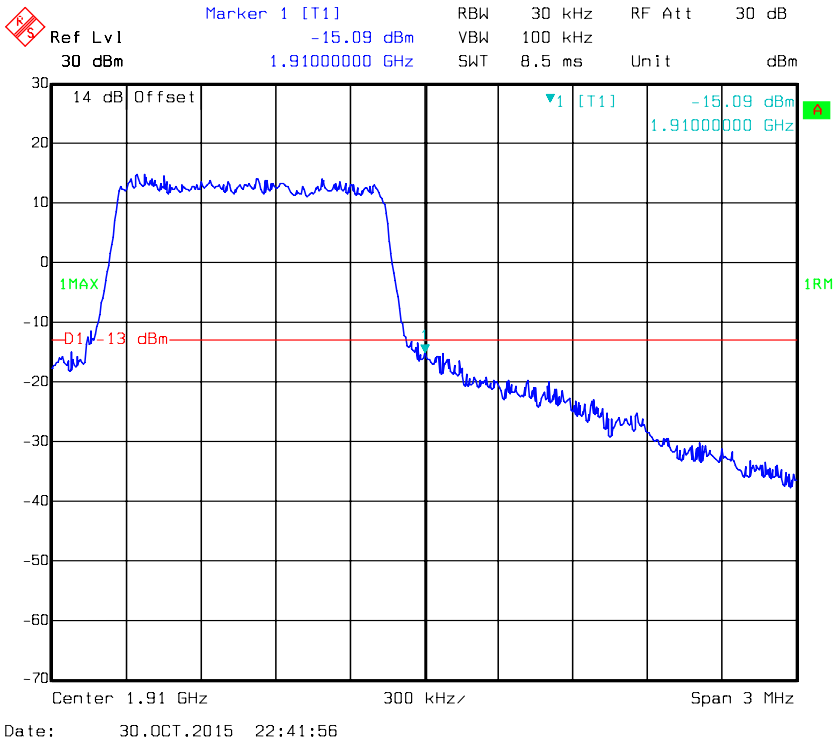
QPSK-1.4M 1RB, Right Band Edge



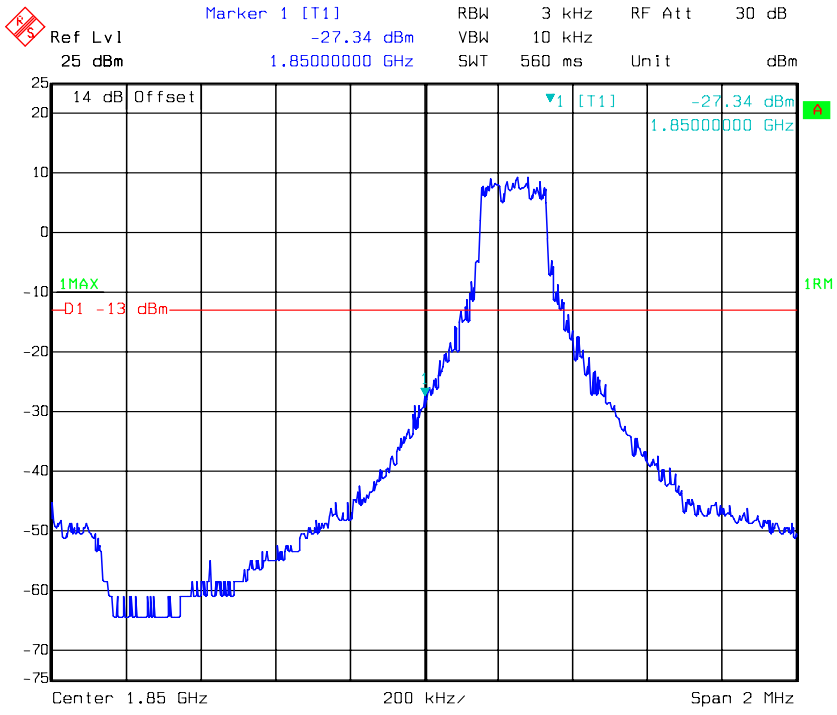
QPSK-1.4M 6RB, Left Band Edge



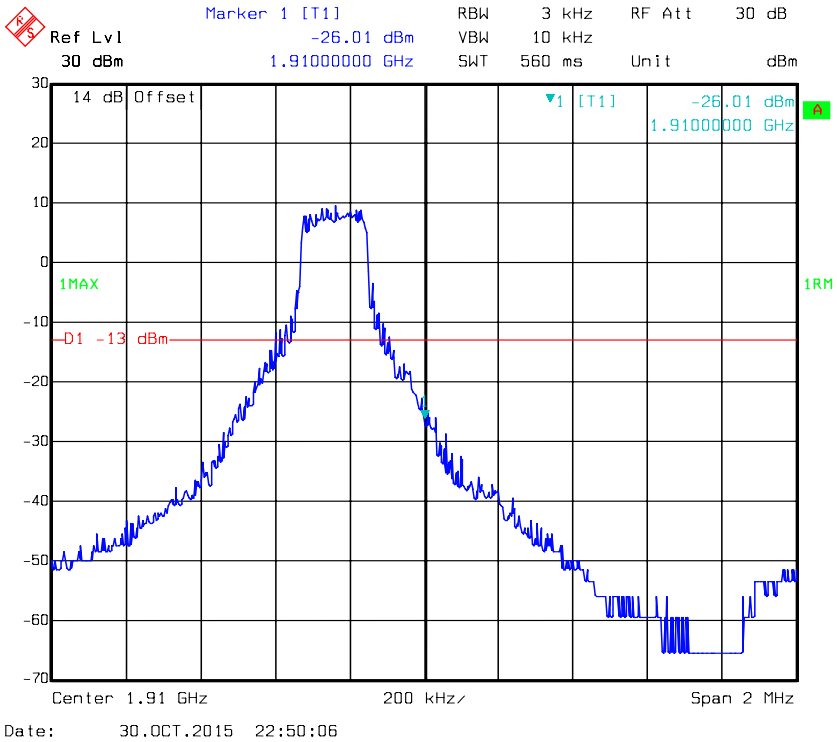
QPSK-1.4M 6RB, Right Band Edge



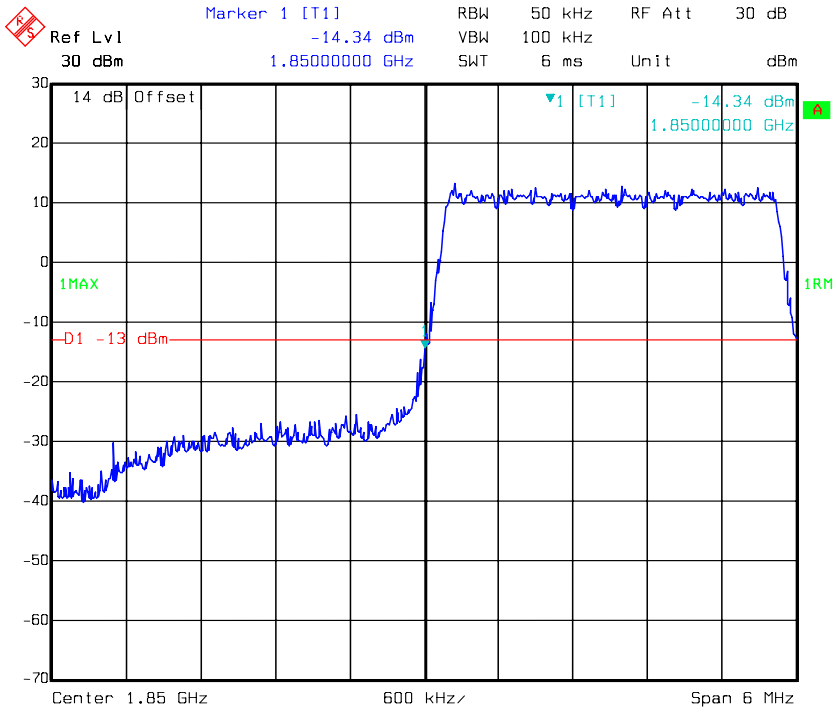
QPSK-3M 1RB, Left Band Edge



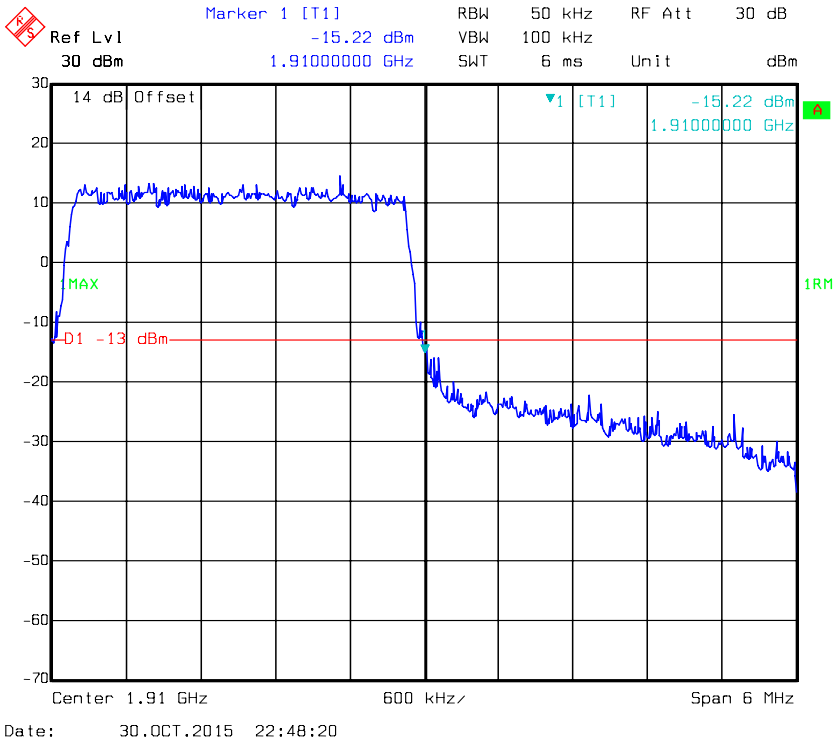
QPSK-3M 1RB, Right Band Edge



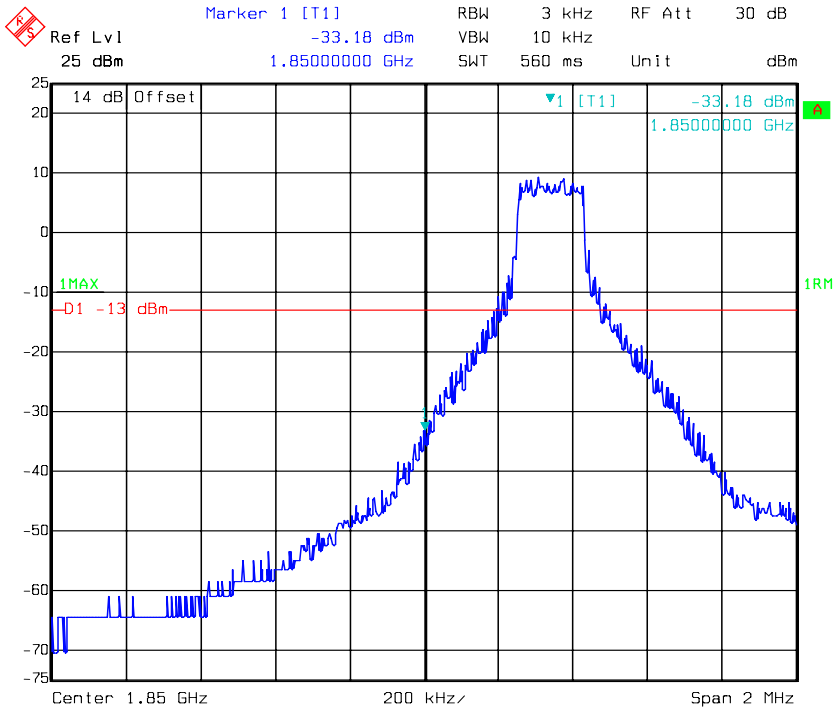
QPSK-3M 15 RB, Left Band Edge



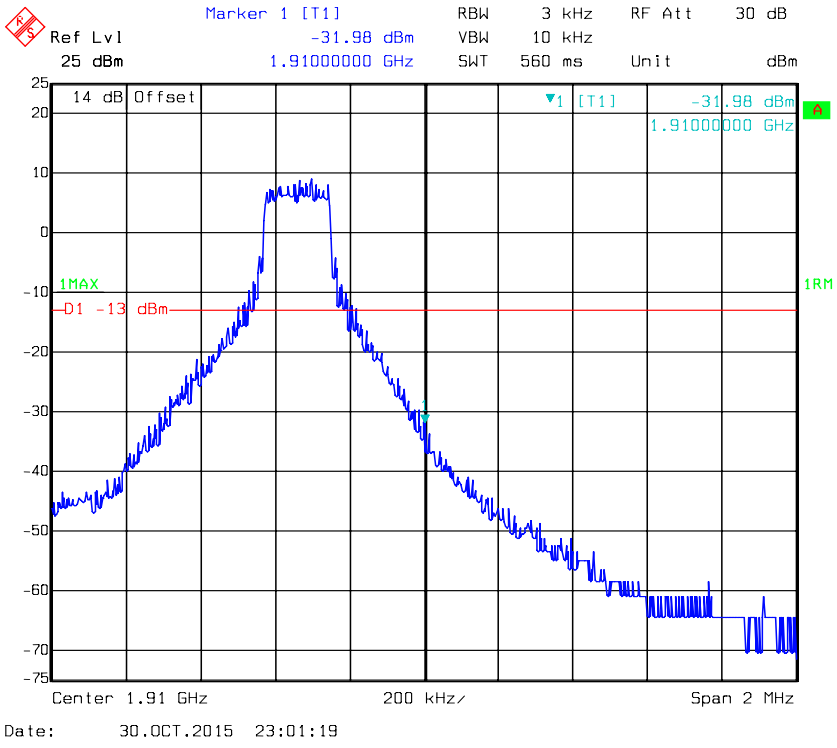
QPSK-3M 15 RB, Right Band Edge



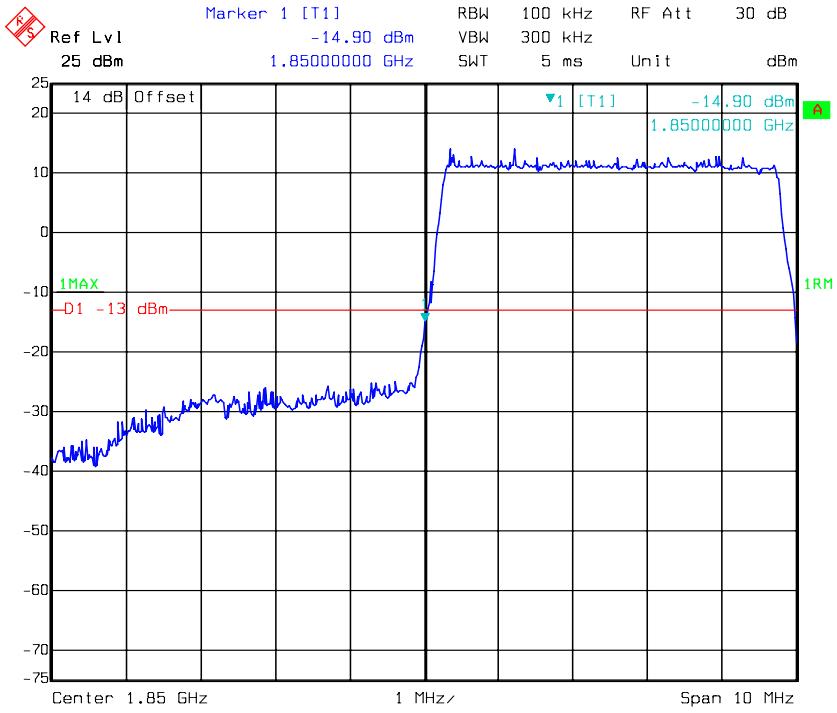
QPSK-5M 1RB, Left Band Edge



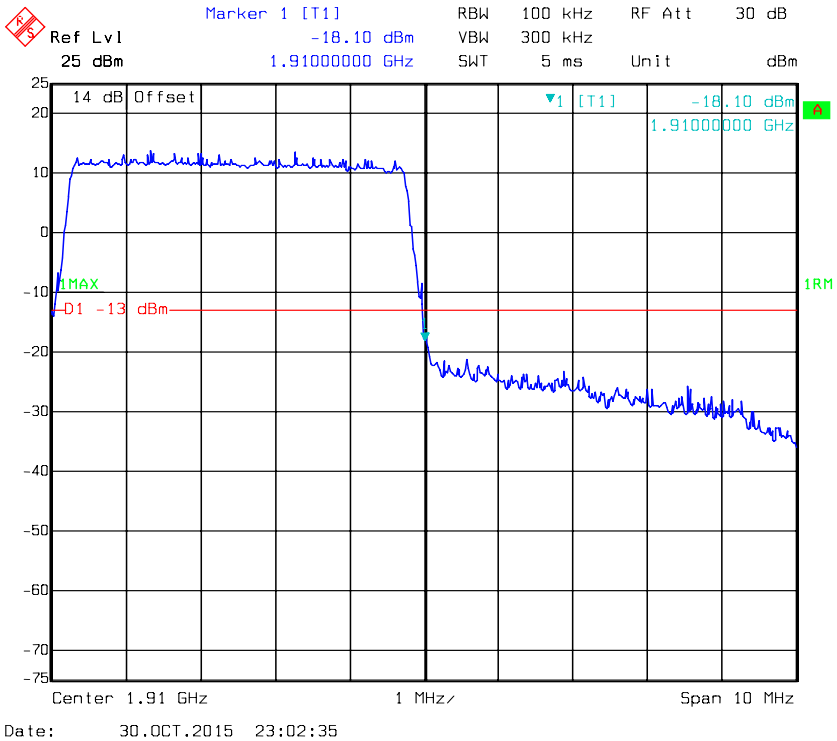
QPSK-5M 1RB, Right Band Edge



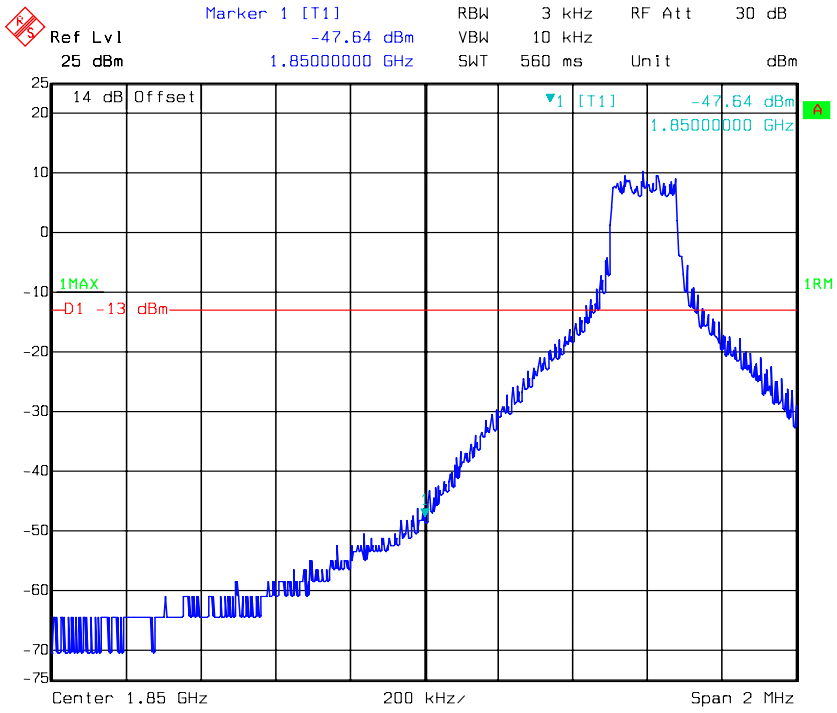
QPSK-5M 25 RB, Left Band Edge



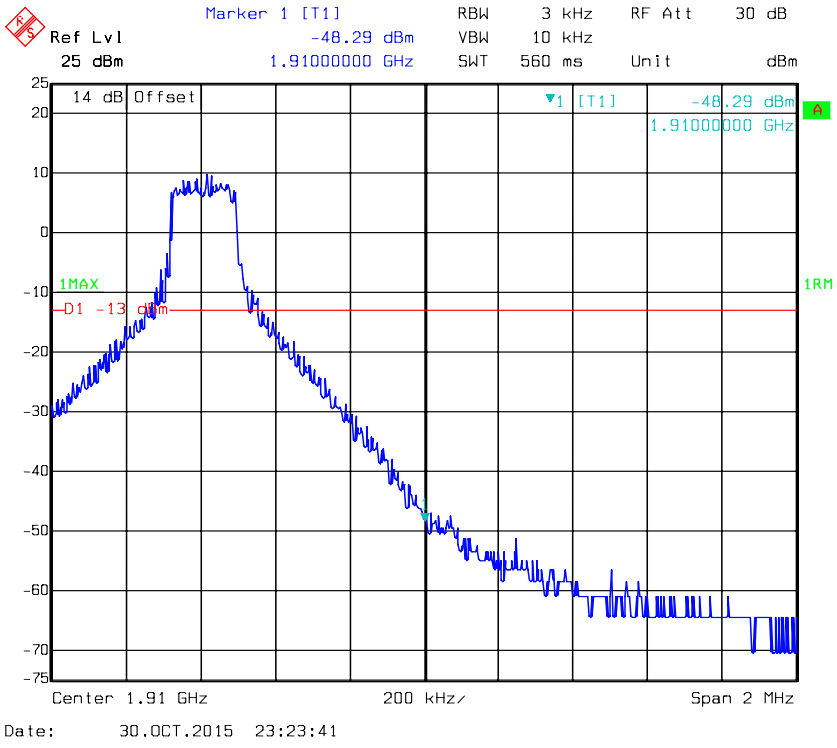
QPSK-5M 25 RB, Right Band Edge



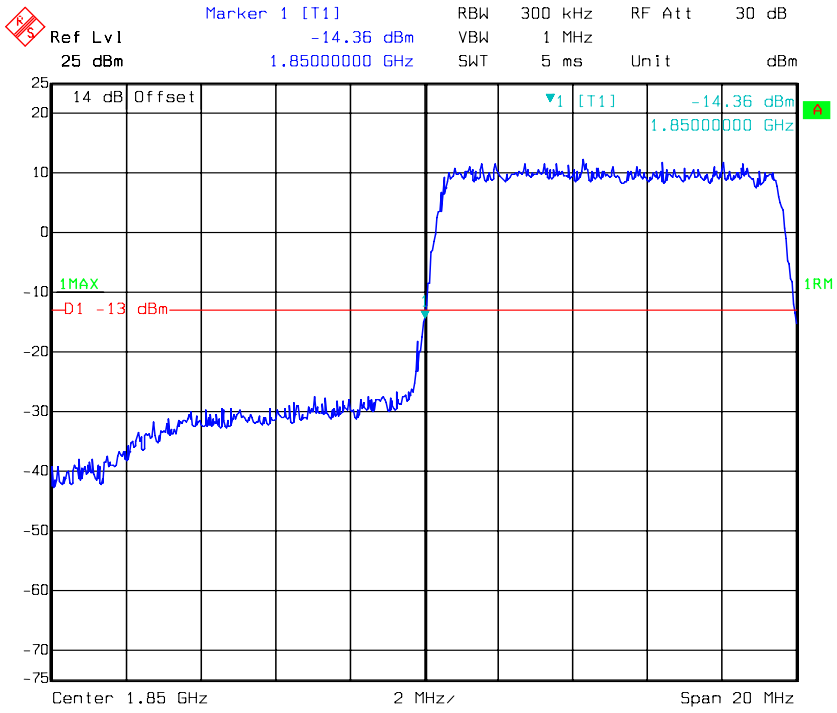
QPSK-10M 1RB, Left Band Edge



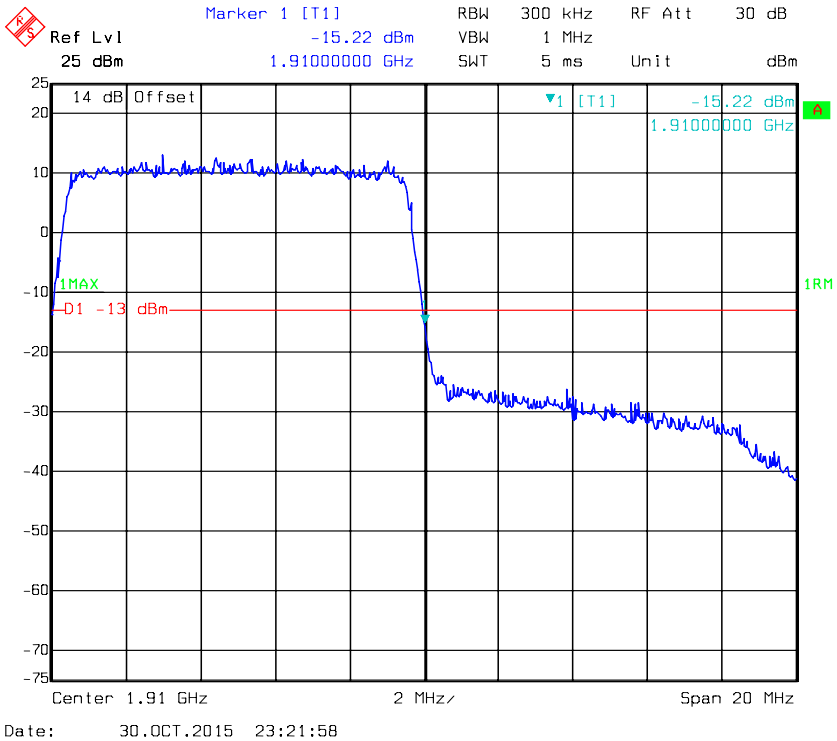
QPSK-10M 1RB, Right Band Edge



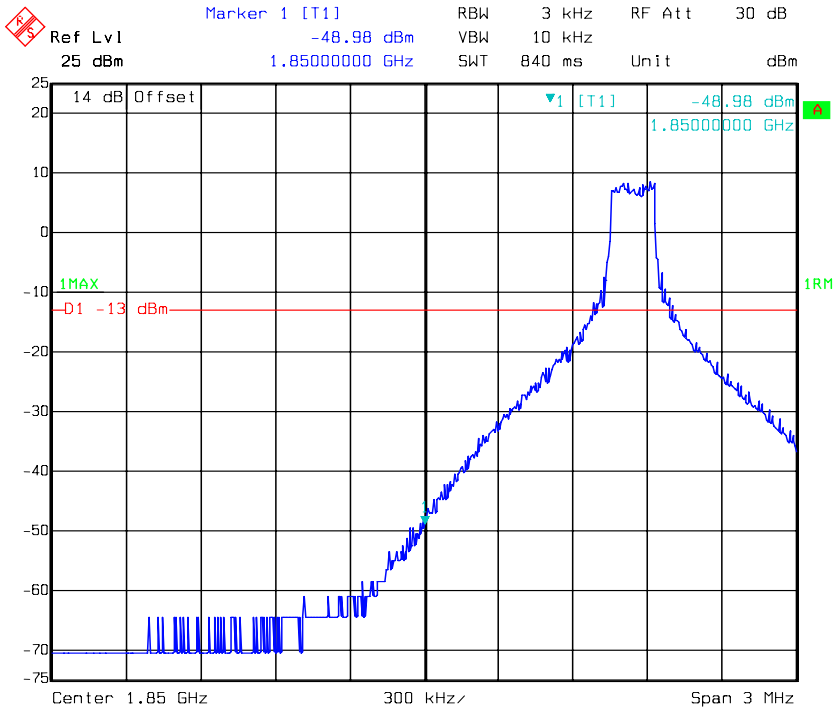
QPSK-10M 50 RB, Left Band Edge



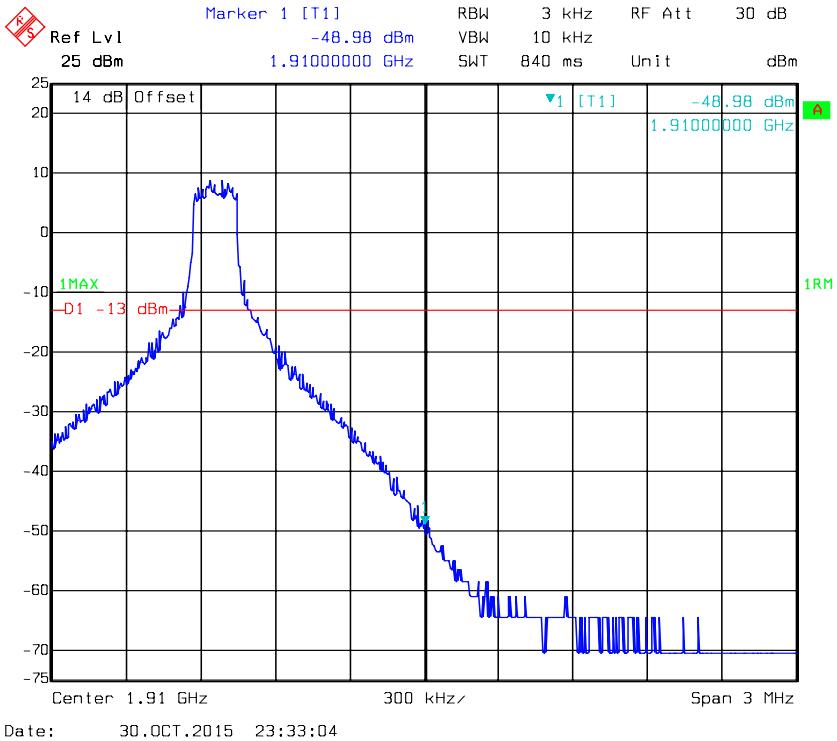
QPSK-10M 50 RB, Right Band Edge



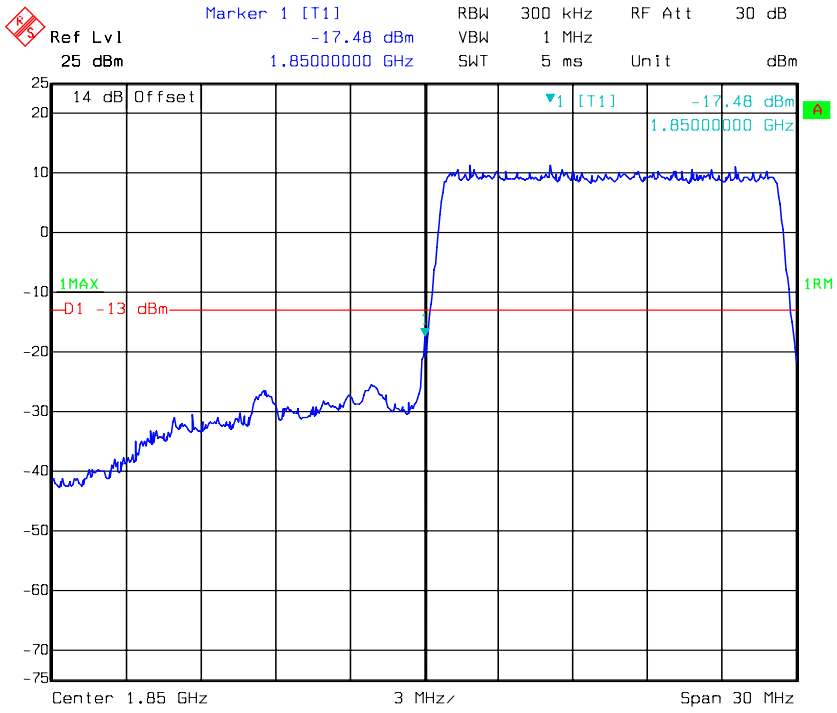
QPSK-15M 1RB, Left Band Edge



QPSK-15M 1RB, Right Band Edge



QPSK-15M 75 RB, Left Band Edge



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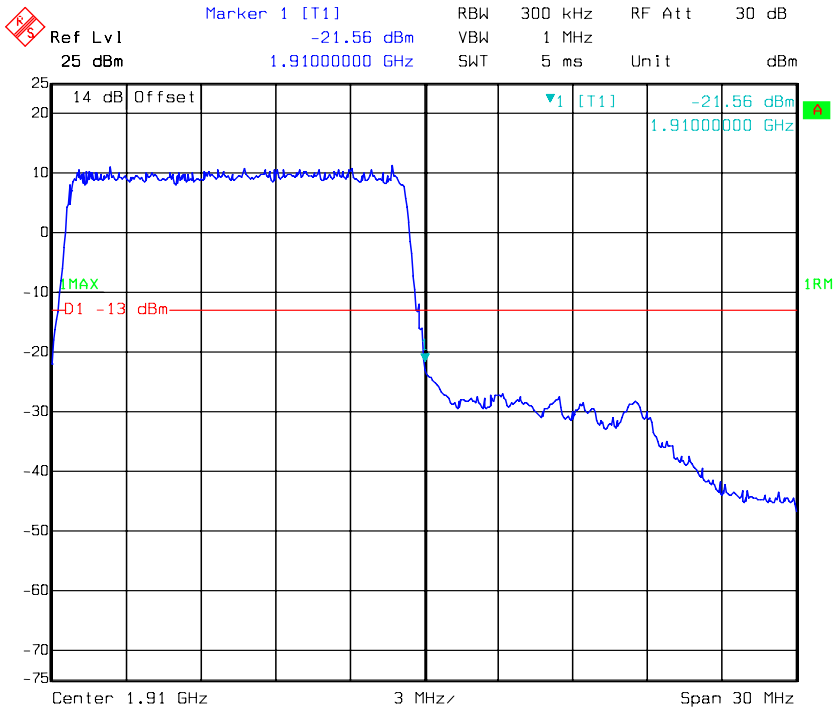
QPSK-15M 75 RB, Right Band Edge



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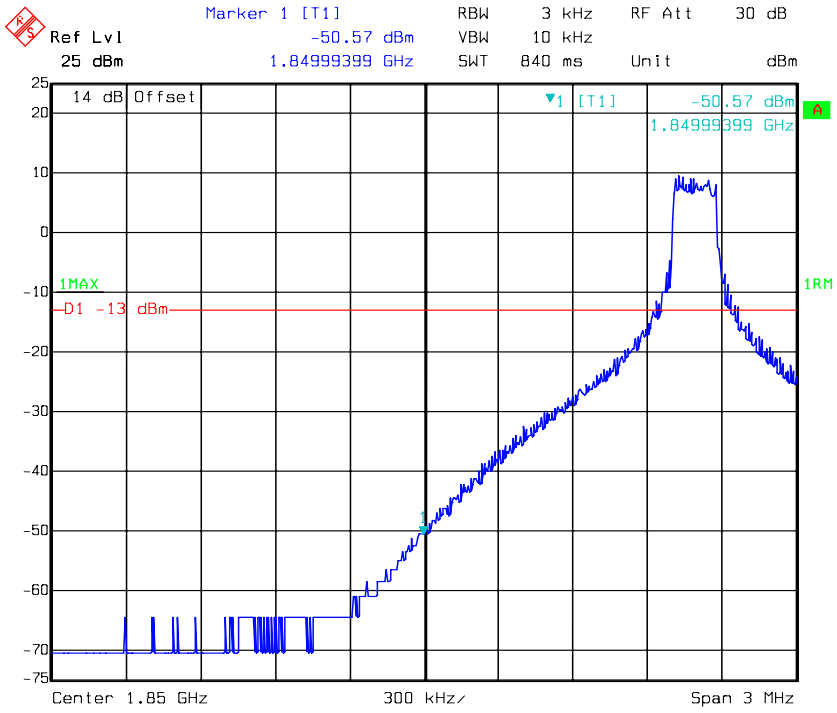
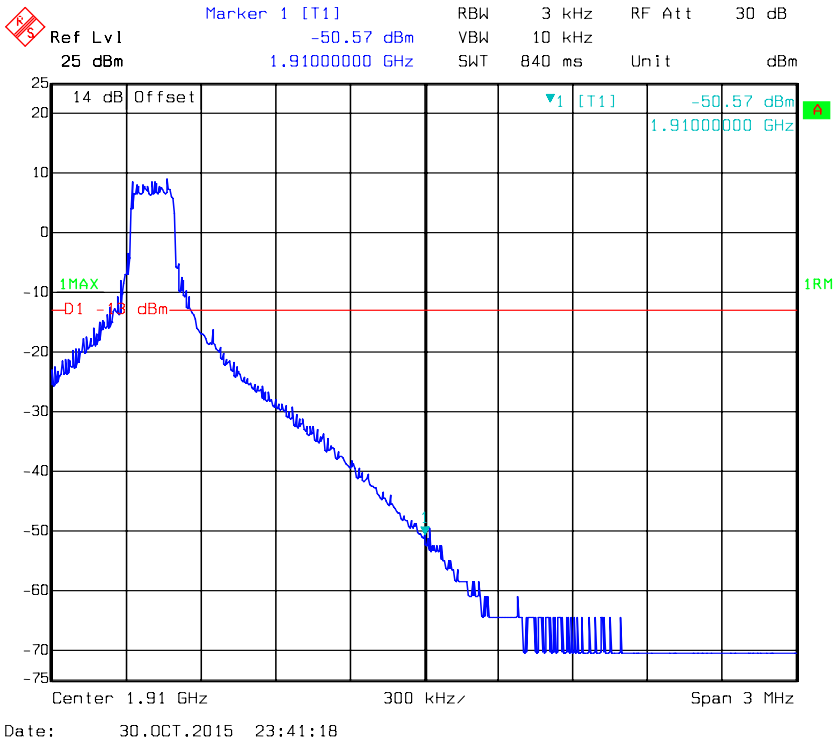
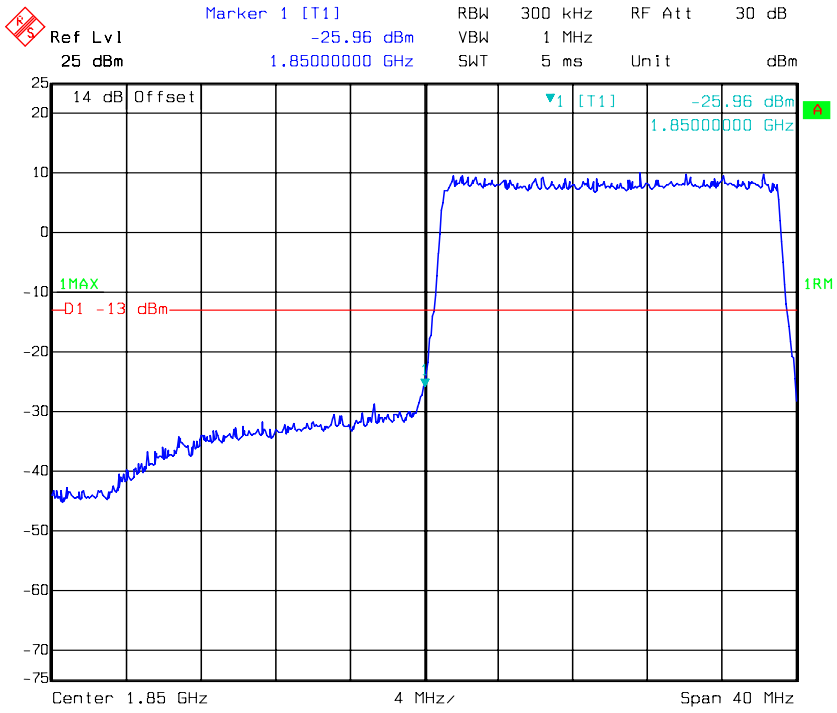
QPSK-20M 1RB, Left Band Edge



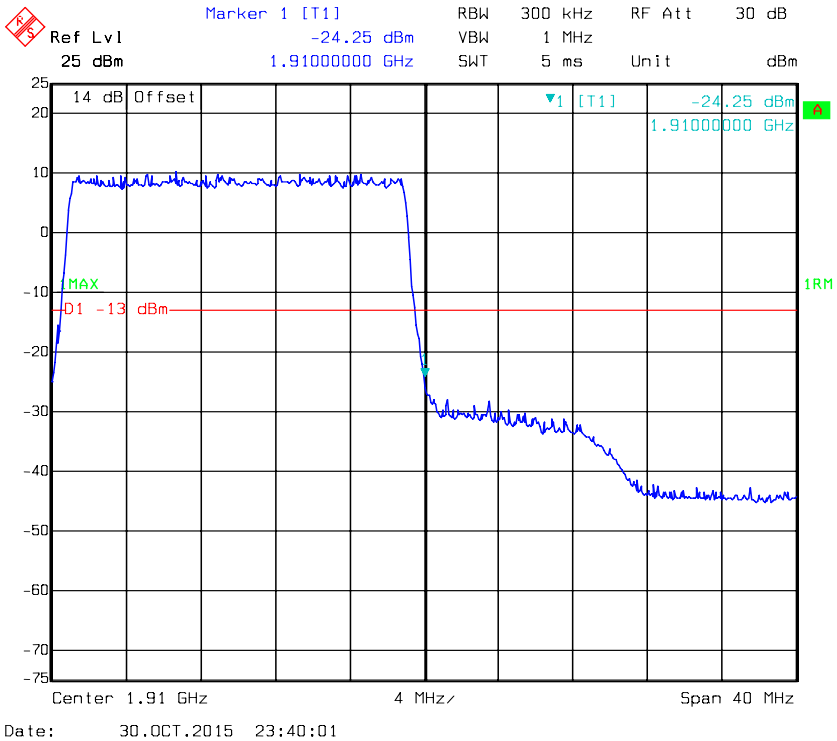
QPSK-20M 1RB, Right Band Edge



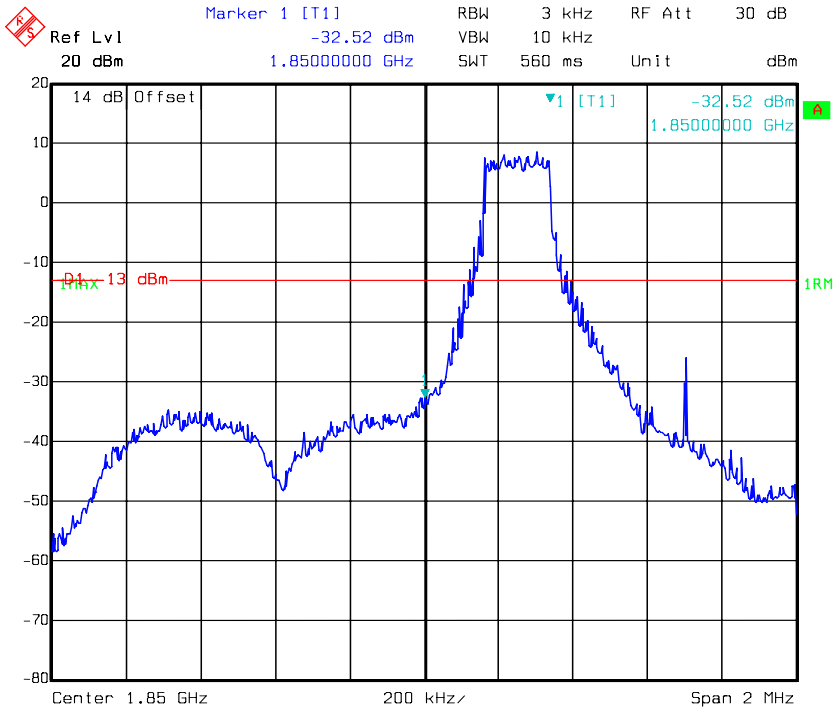
QPSK-20M 100 RB, Left Band Edge



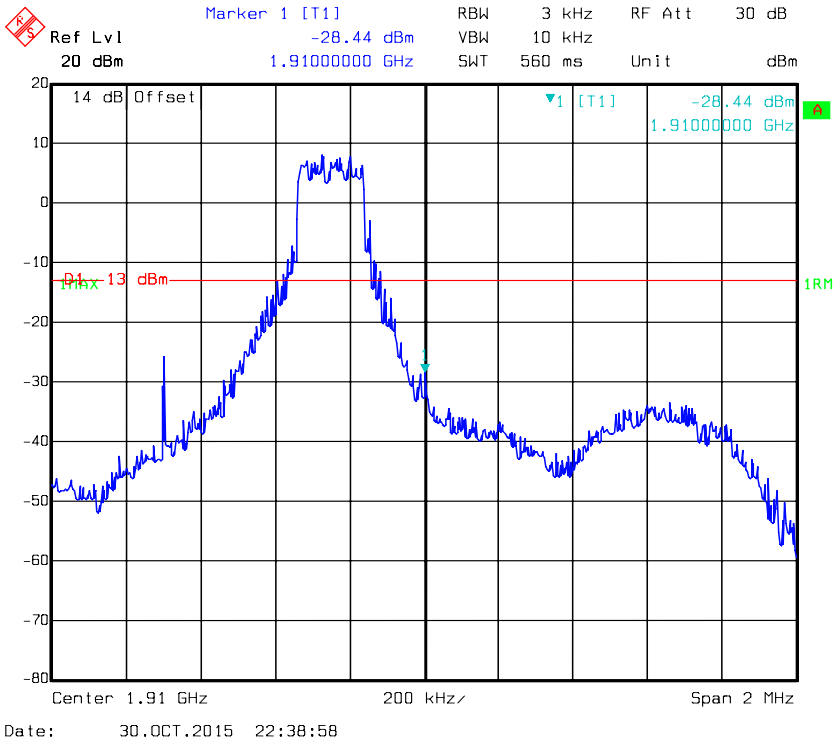
QPSK-20M 100 RB, Right Band Edge



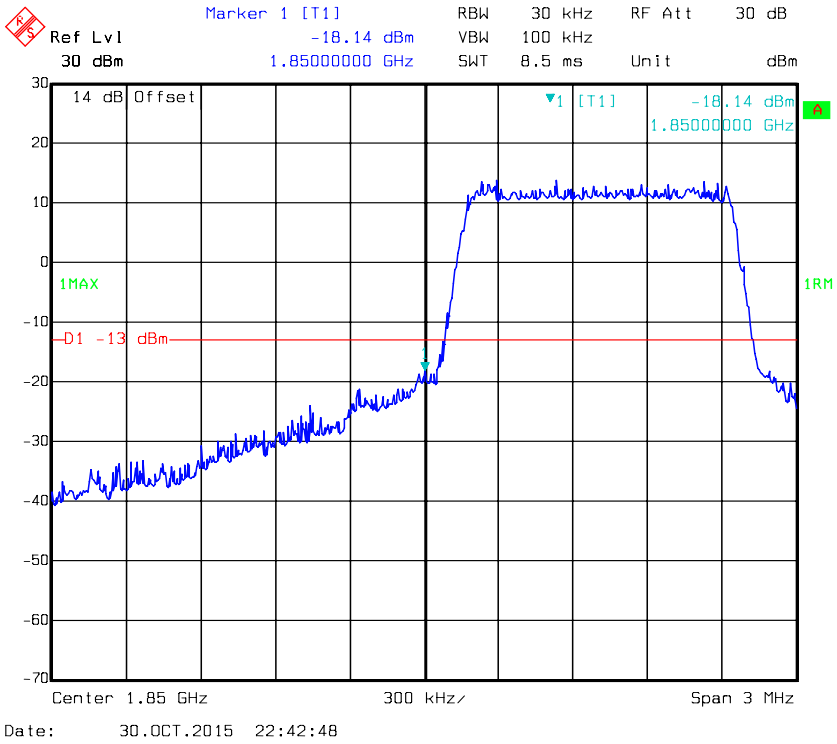
16QAM-1.4M 1RB, Left Band Edge



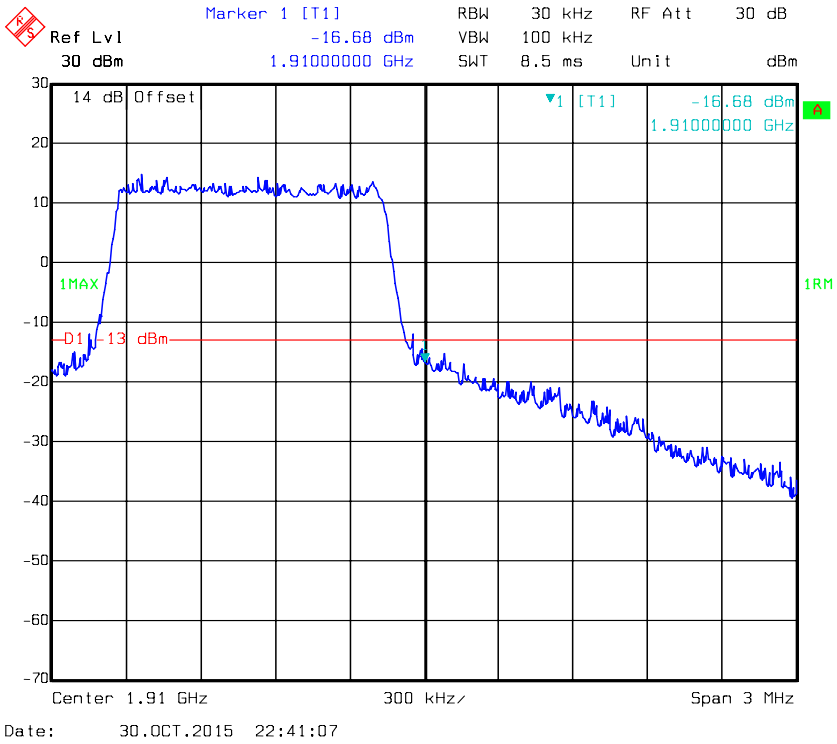
16QAM-1.4M 1RB, Right Band Edge



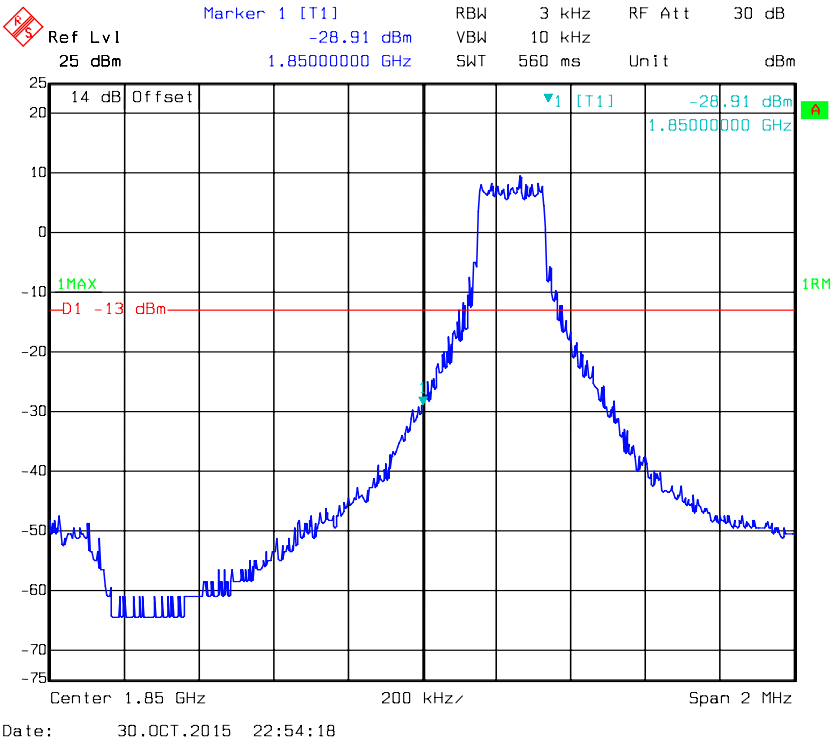
16QAM-1.4M 6RB, Left Band Edge



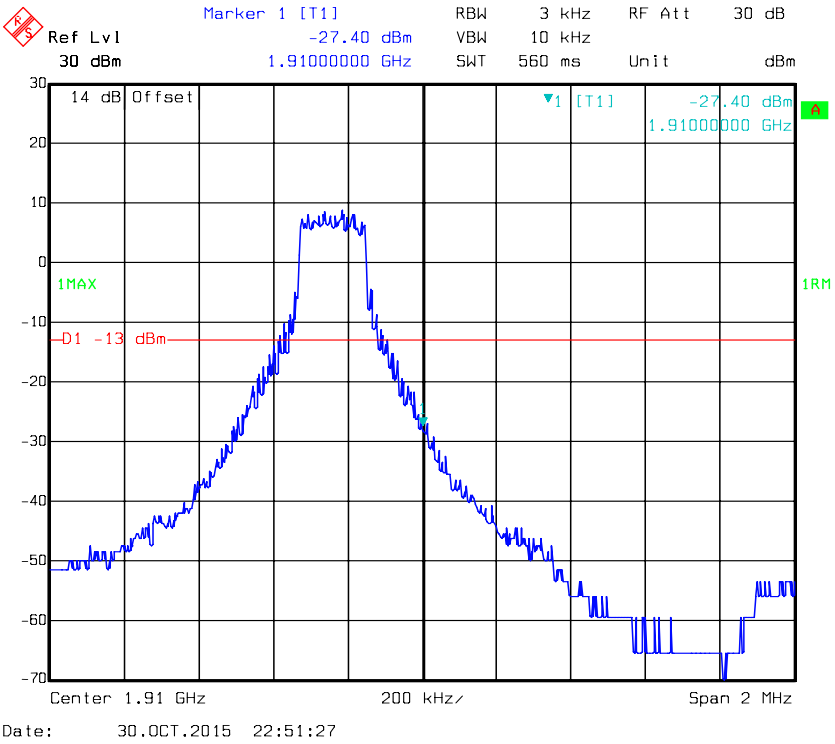
16QAM-1.4M 6RB, Right Band Edge



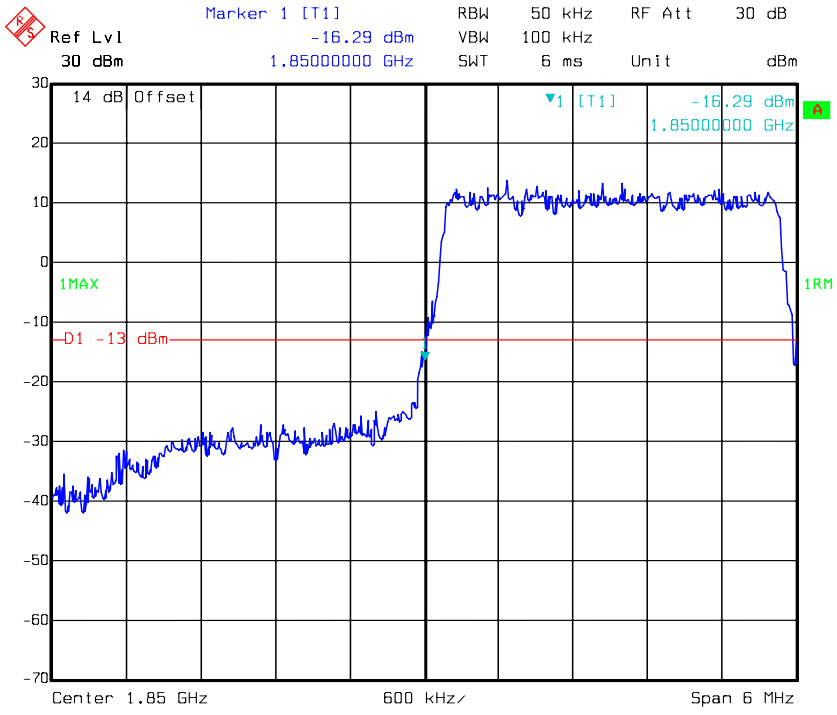
16QAM-3M 1RB, Left Band Edge



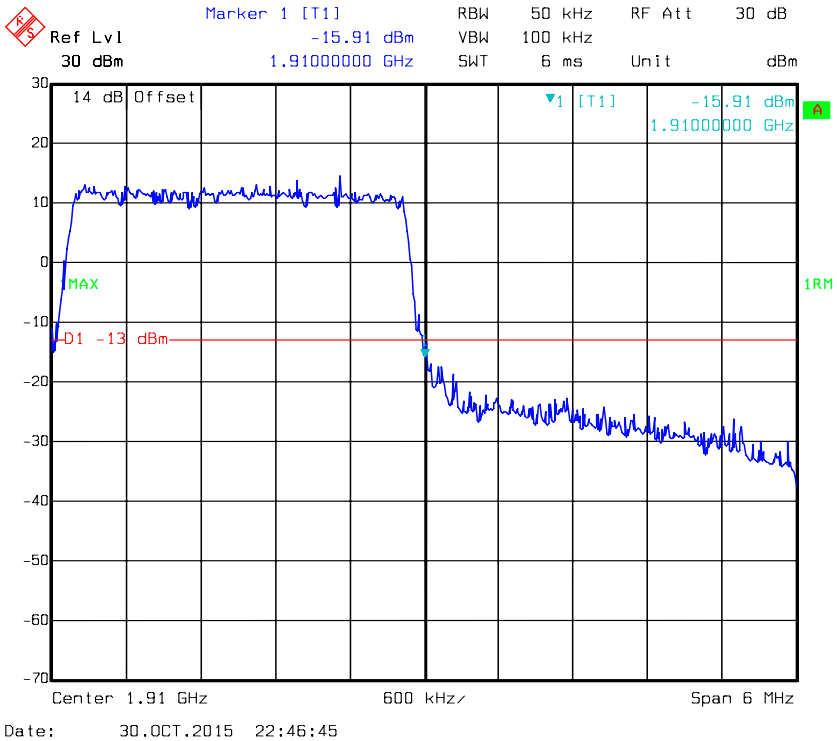
16QAM-3M 1RB, Right Band Edge



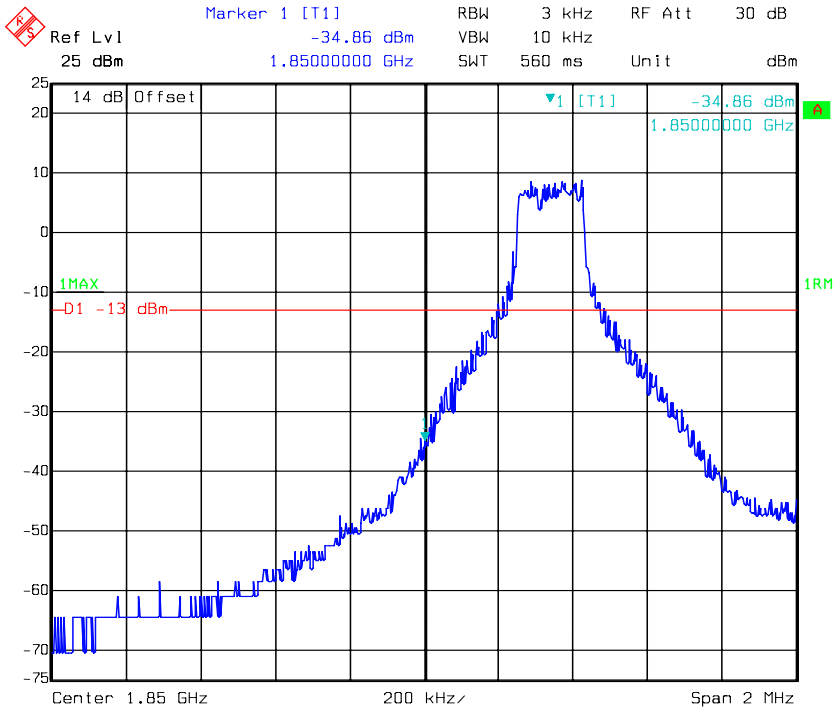
16QAM-3M 15 RB, Left Band Edge



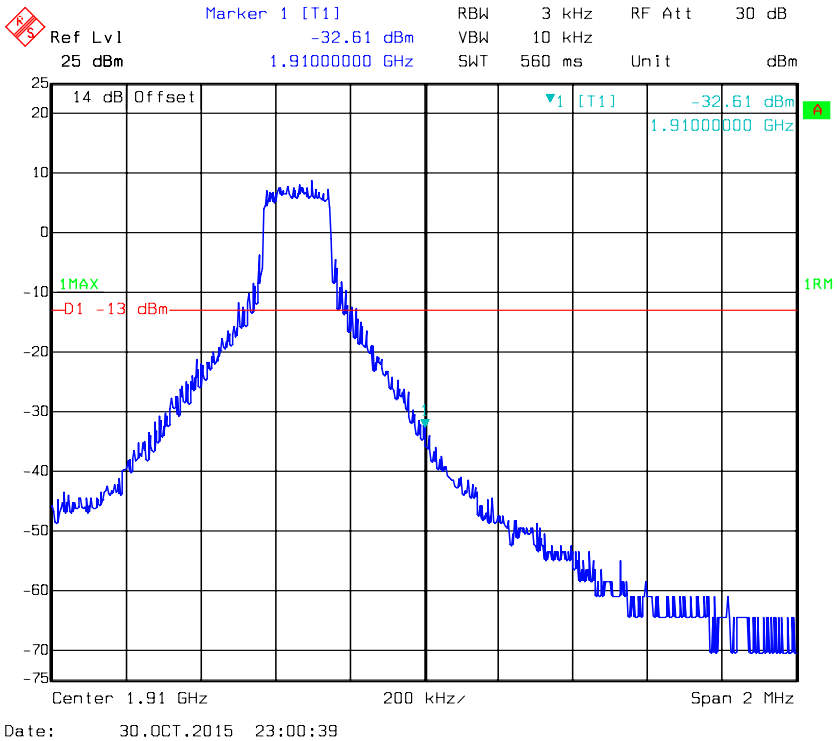
16QAM-3M 15 RB, Right Band Edge



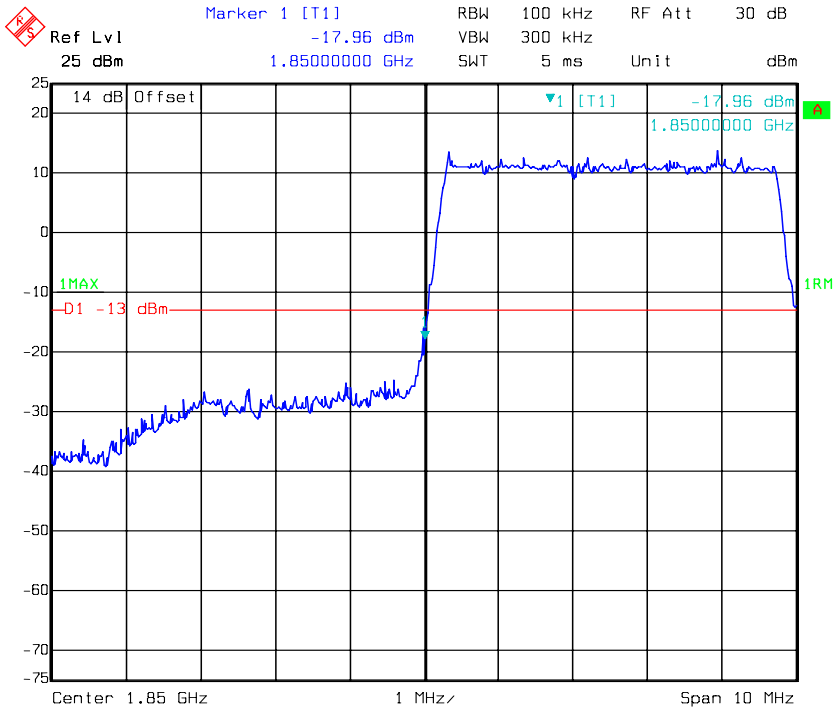
16QAM-5M 1RB, Left Band Edge



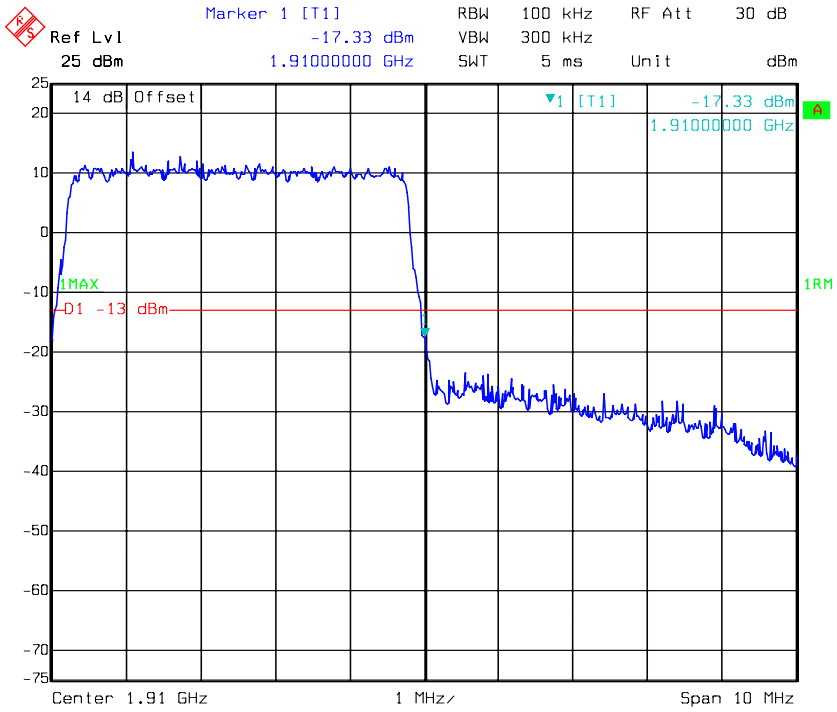
16QAM-5M 1RB, Right Band Edge



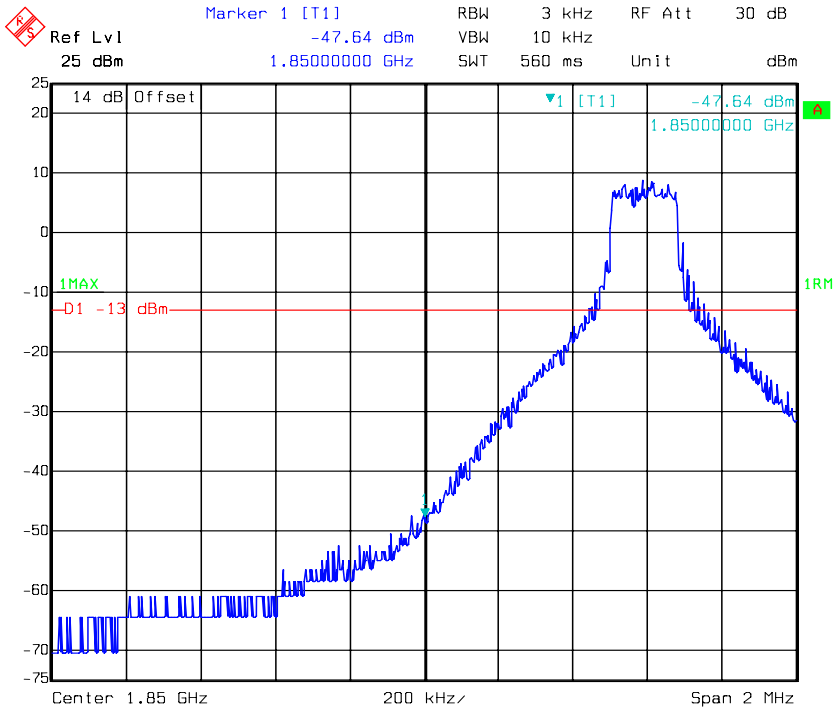
16QAM-5M 25 RB, Left Band Edge



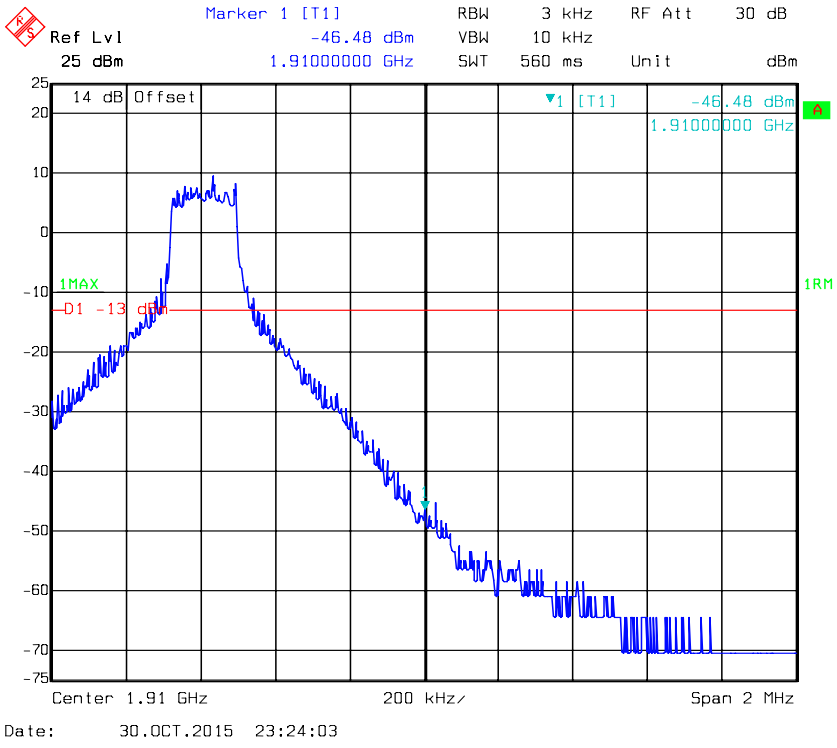
16QAM-5M 25 RB, Right Band Edge



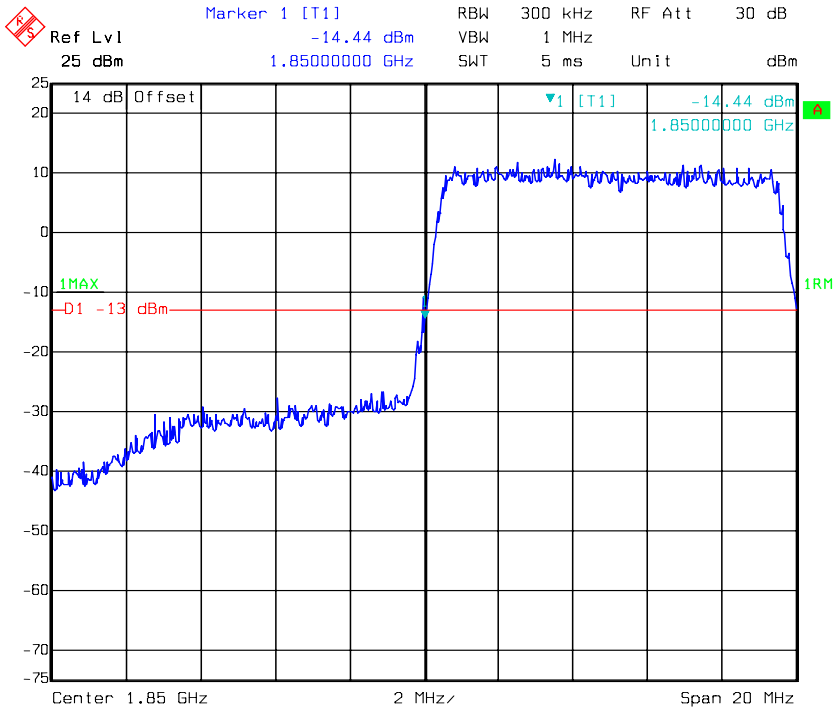
16QAM-10M 1RB, Left Band Edge



16QAM-10M 1RB, Right Band Edge



16QAM-10M 50 RB, Left Band Edge



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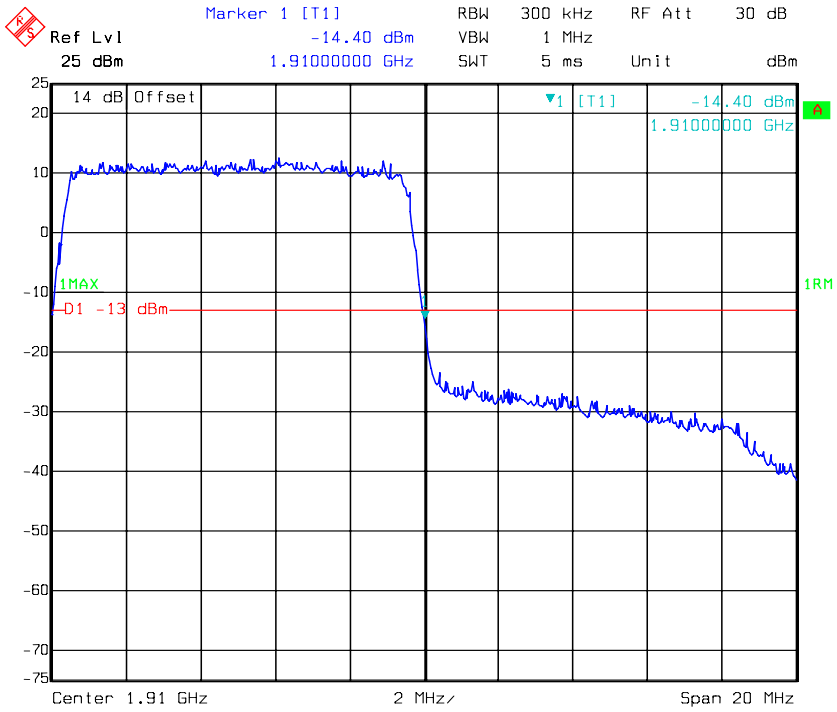
16QAM-10M 50 RB, Right Band Edge



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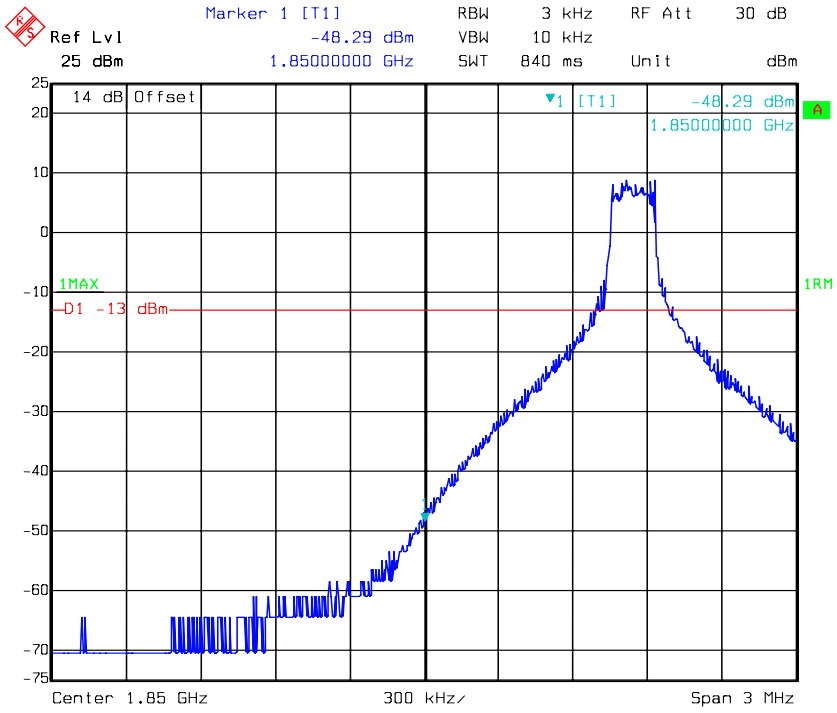
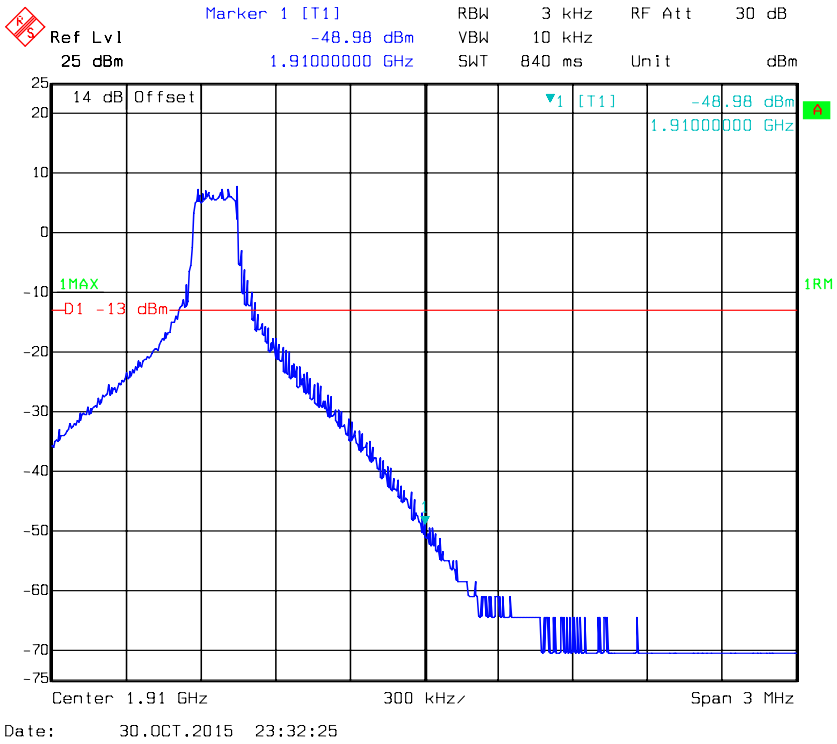
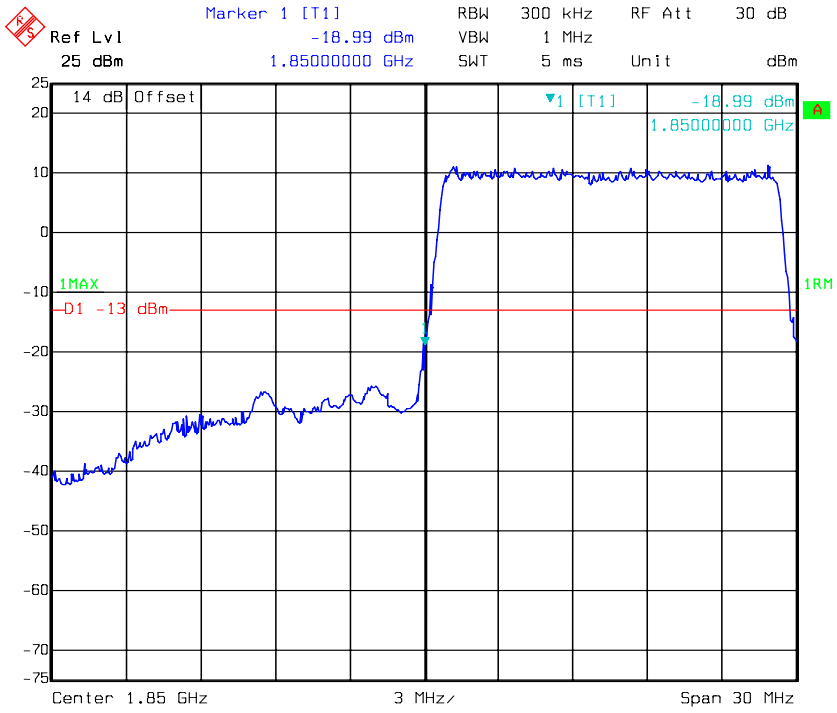
16QAM-15M 1RB, Left Band Edge



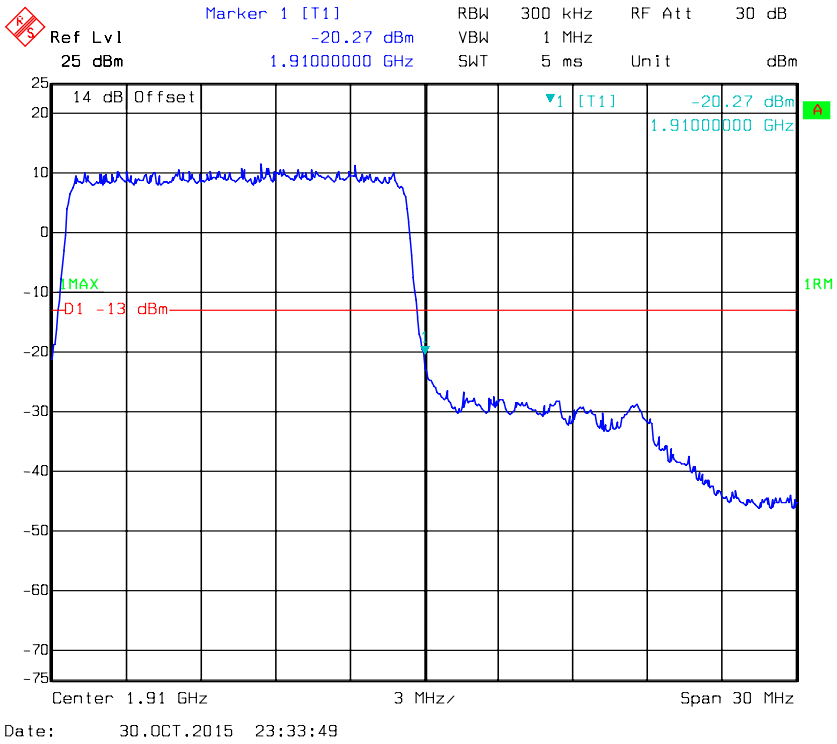
16QAM-15M 1RB, Right Band Edge



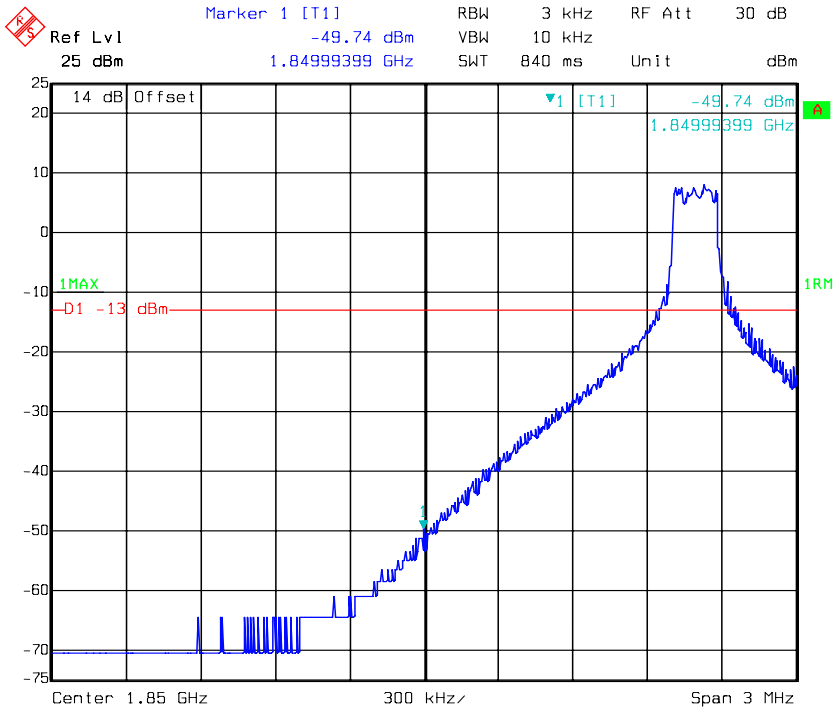
16QAM-15M 75 RB, Left Band Edge



16QAM-15M 75 RB, Right Band Edge



QPSK-20M 1RB, Left Band Edge



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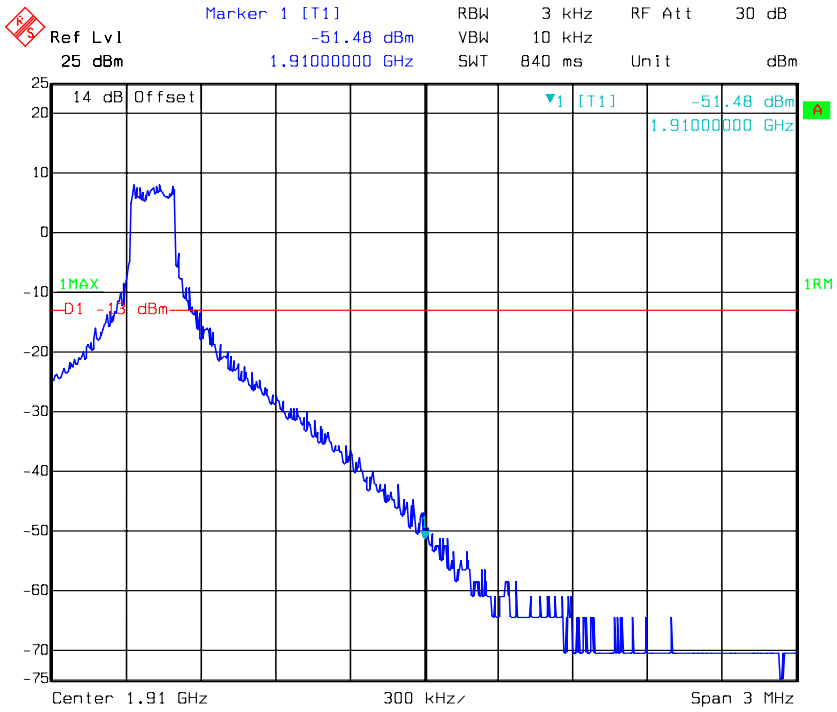
16QAM-20M 1RB, Right Band Edge



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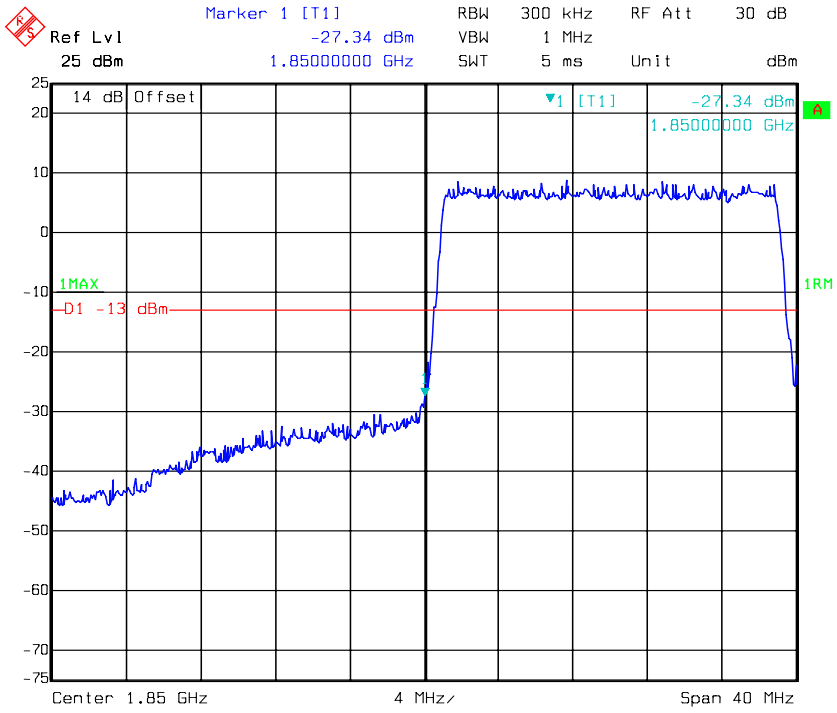
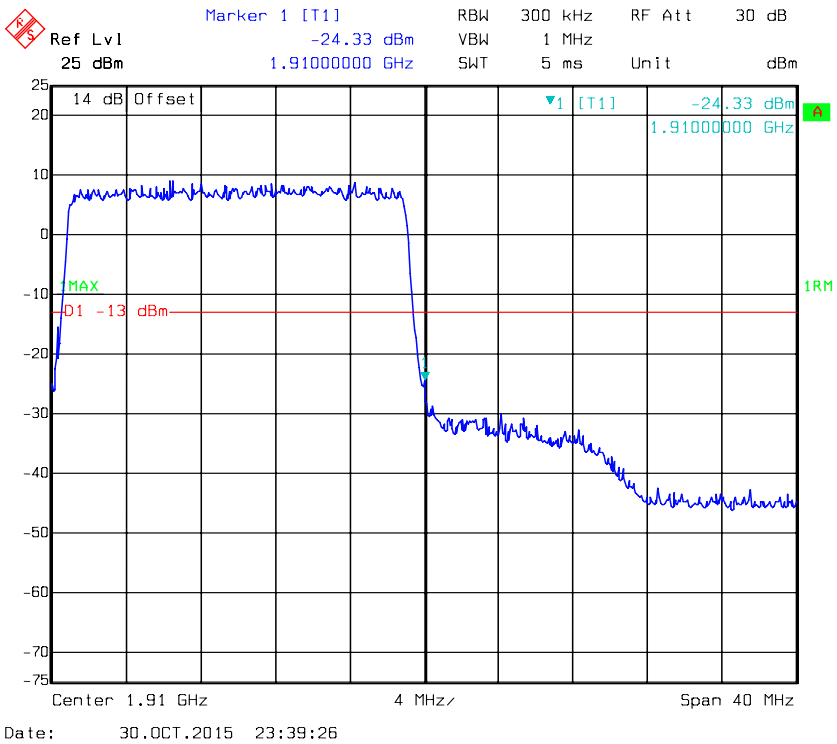
16QAM-20M 100 RB, Left Band Edge

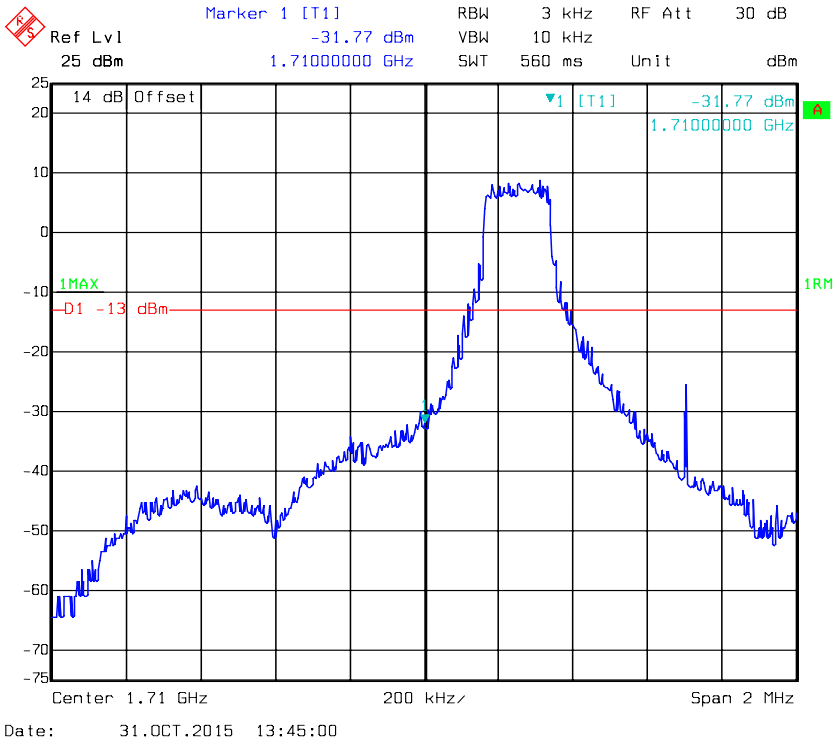


16QAM-20M 100 RB, Right Band Edge



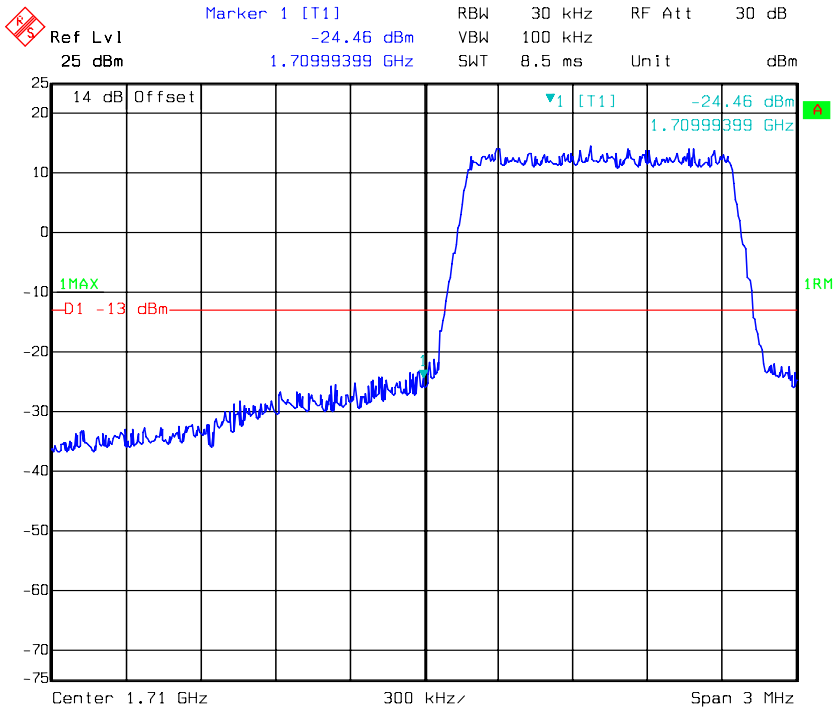
LTE Band 4

QPSK-1.4M 1RB, Left Band Edge

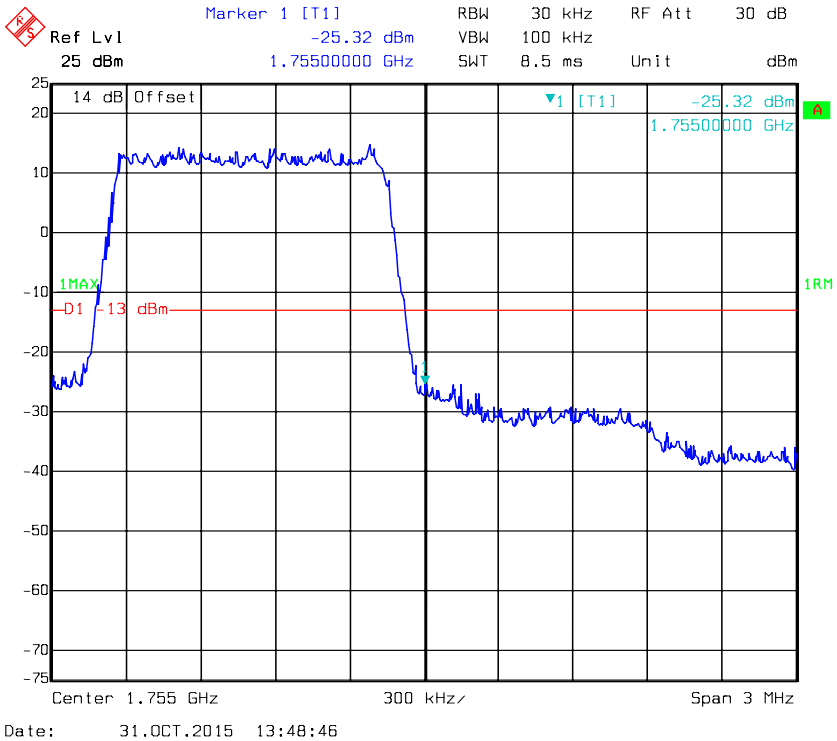


QPSK-1.4M 1RB, Right Band Edge

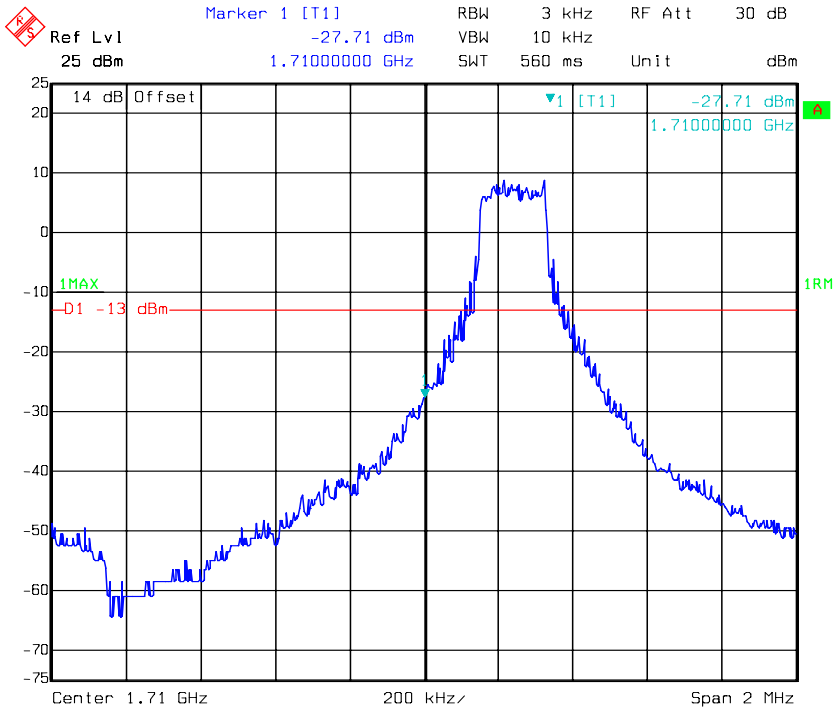
QPSK-1.4M 6RB, Left Band Edge



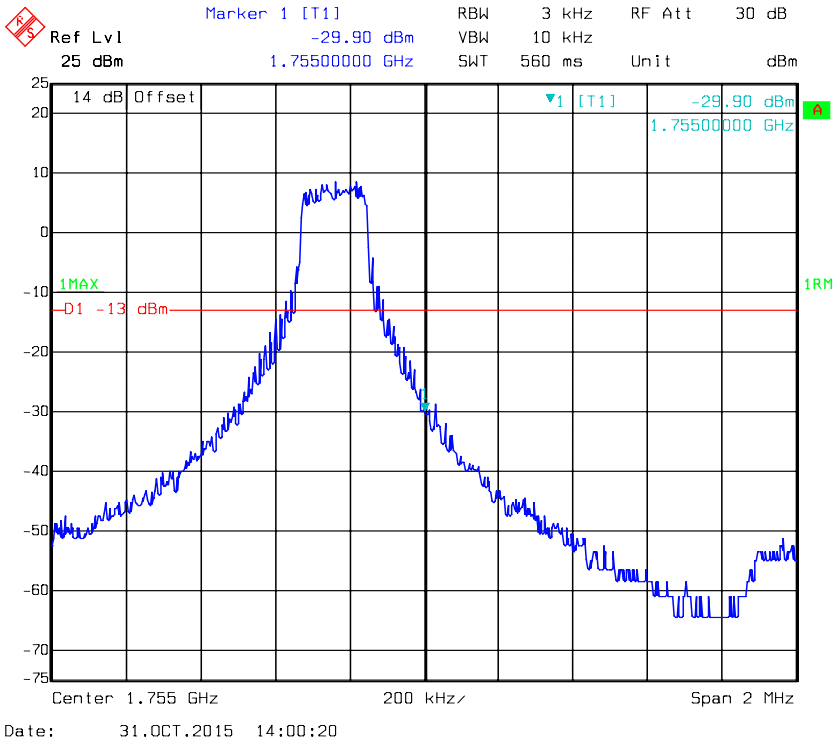
QPSK-1.4M 6RB, Right Band Edge



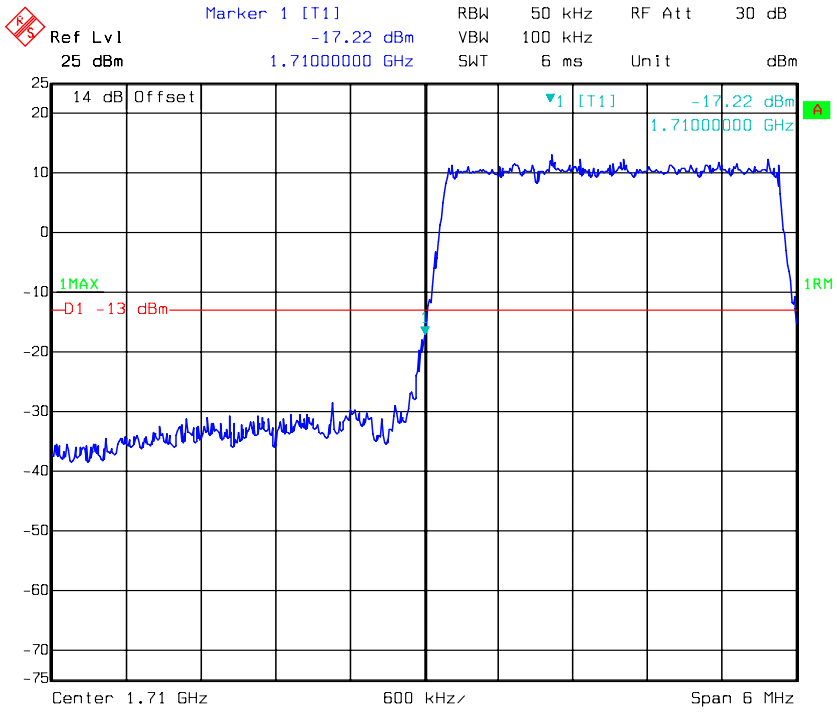
QPSK-3M 1RB, Left Band Edge



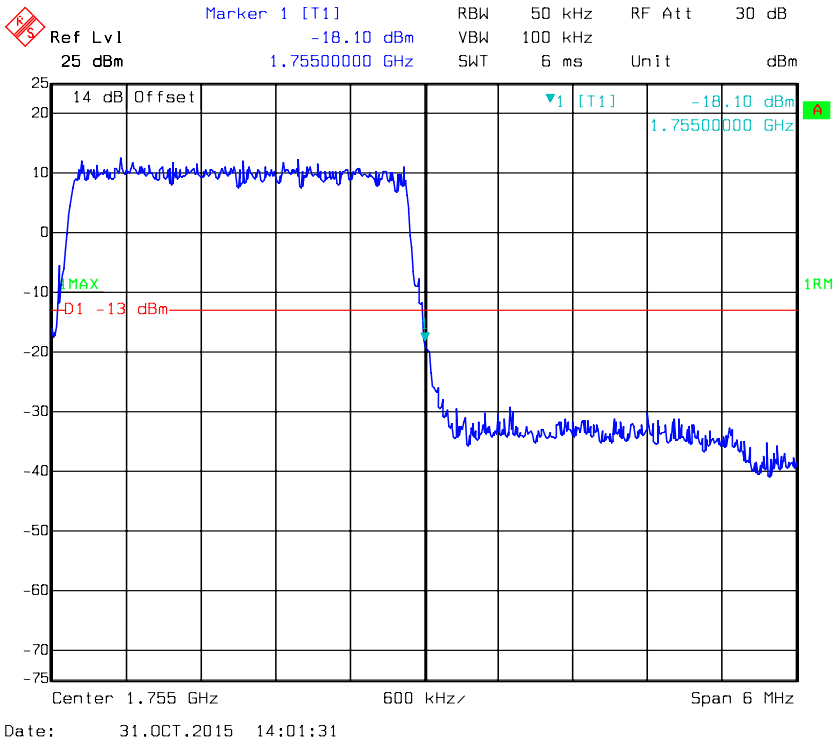
QPSK-3M 1RB, Right Band Edge



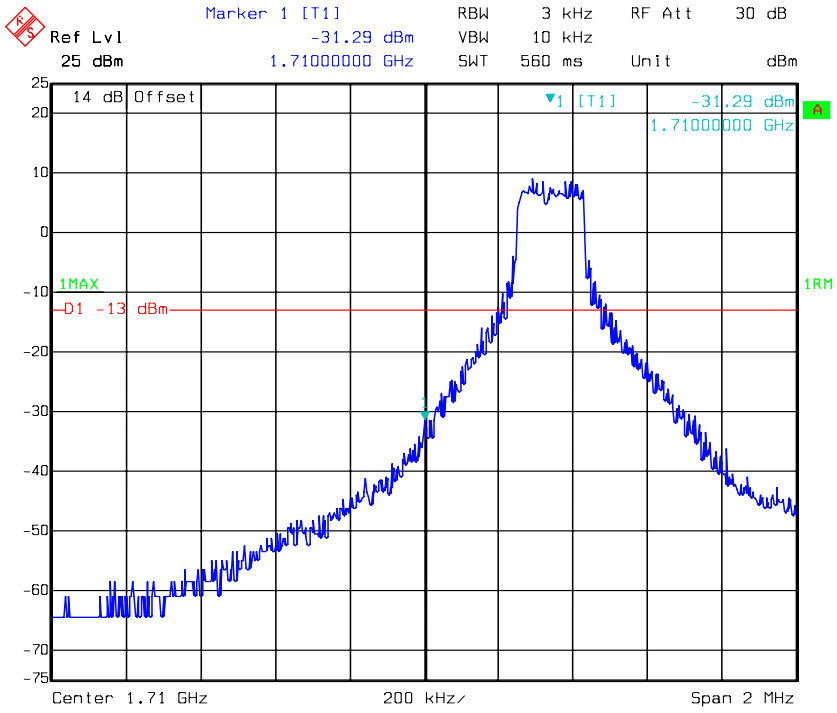
QPSK-3M 15 RB, Left Band Edge



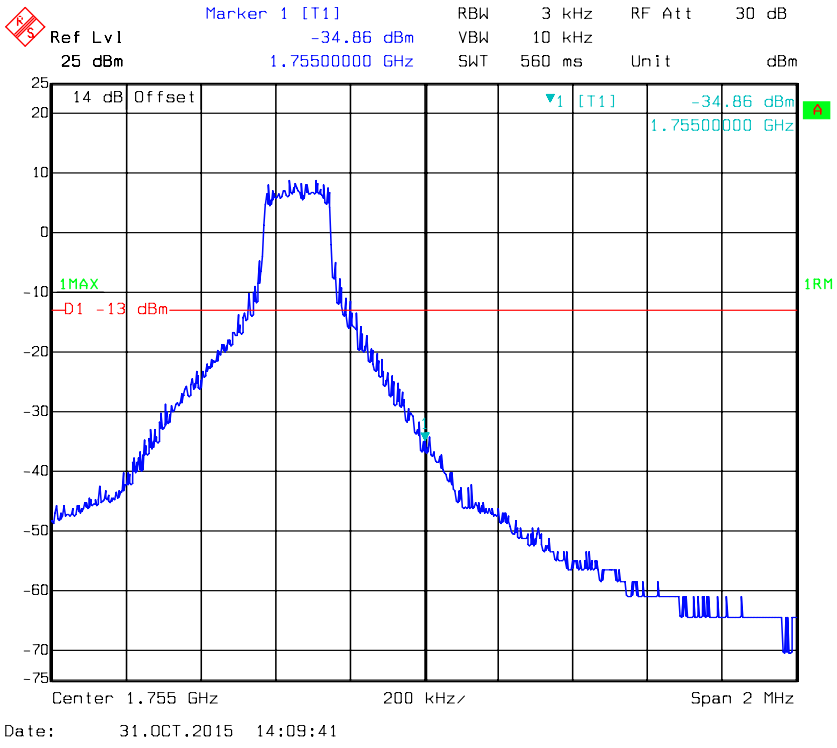
QPSK-3M 15 RB, Right Band Edge



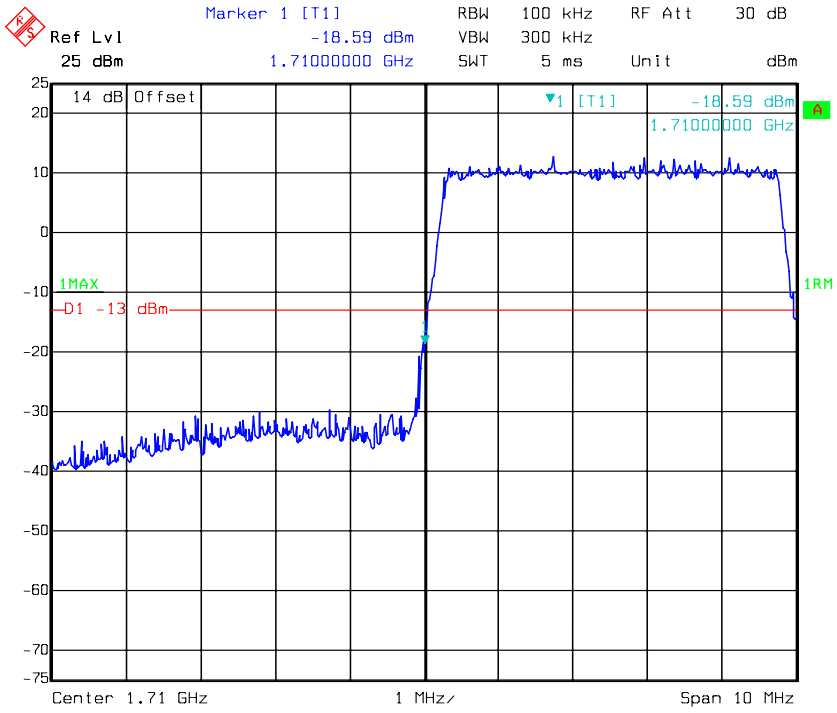
QPSK-5M 1RB, Left Band Edge



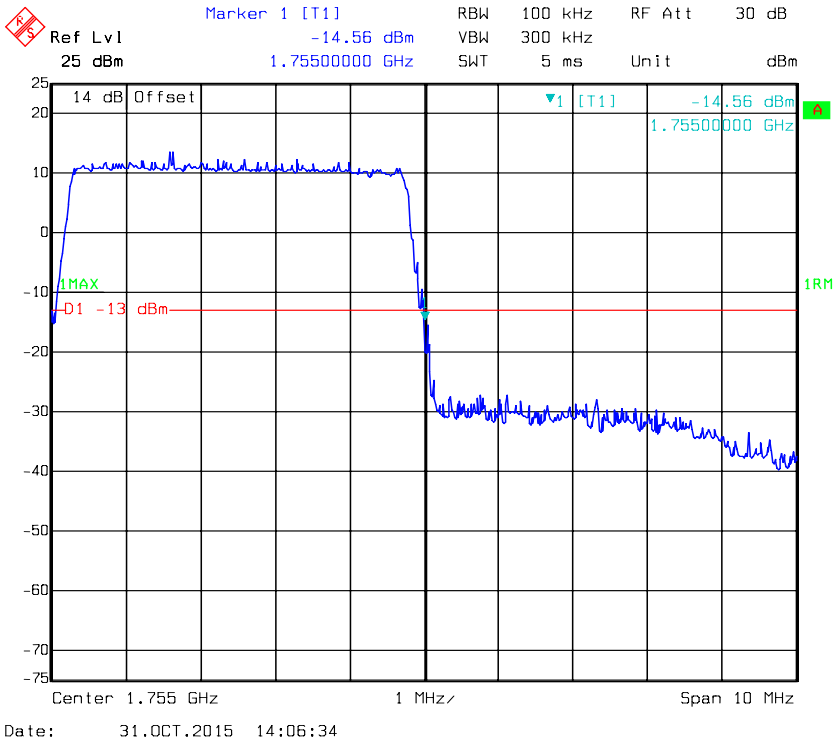
QPSK-5M 1RB, Right Band Edge



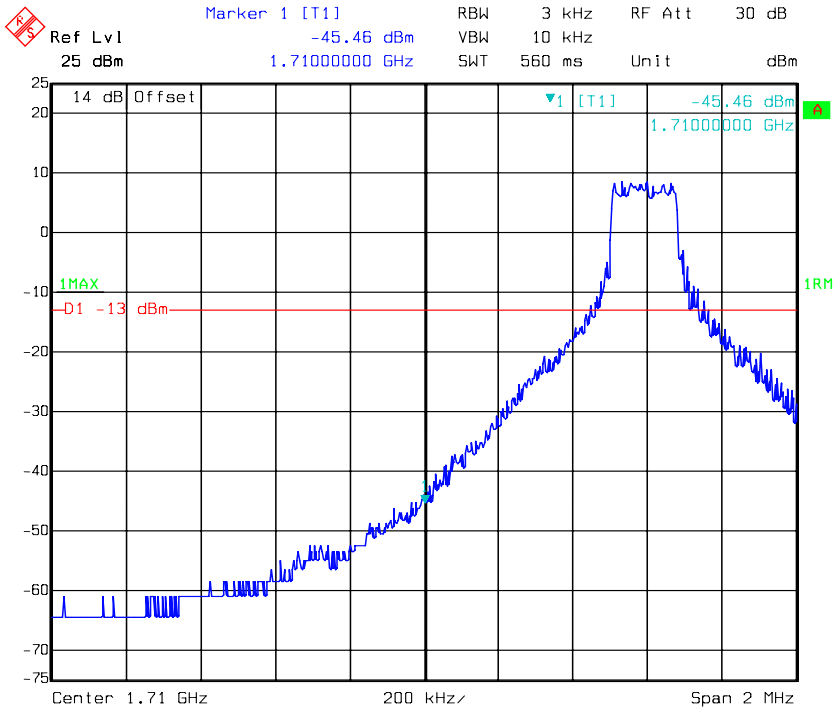
QPSK-5M 25 RB, Left Band Edge



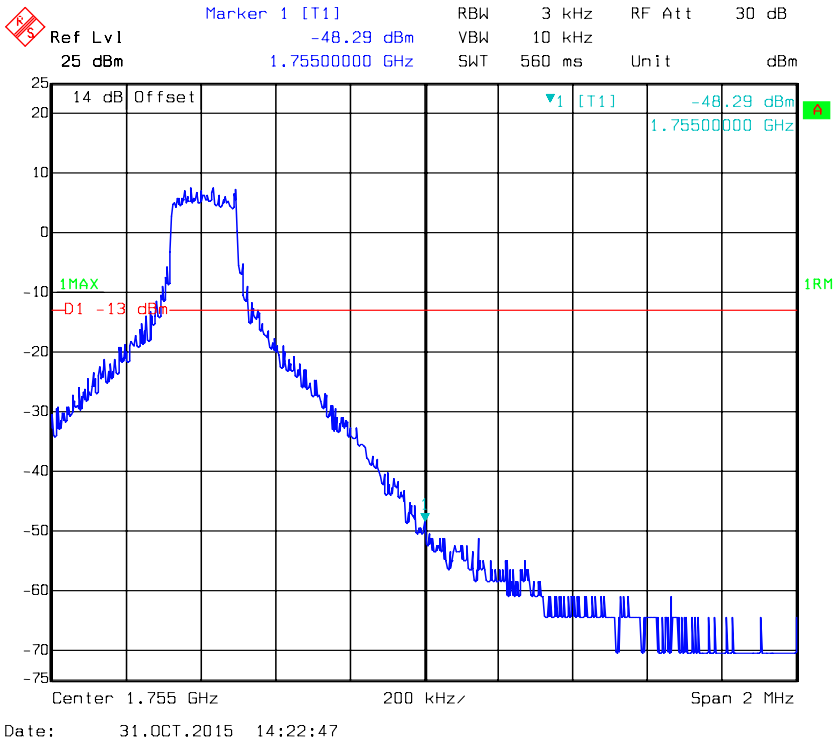
QPSK-5M 25 RB, Right Band Edge



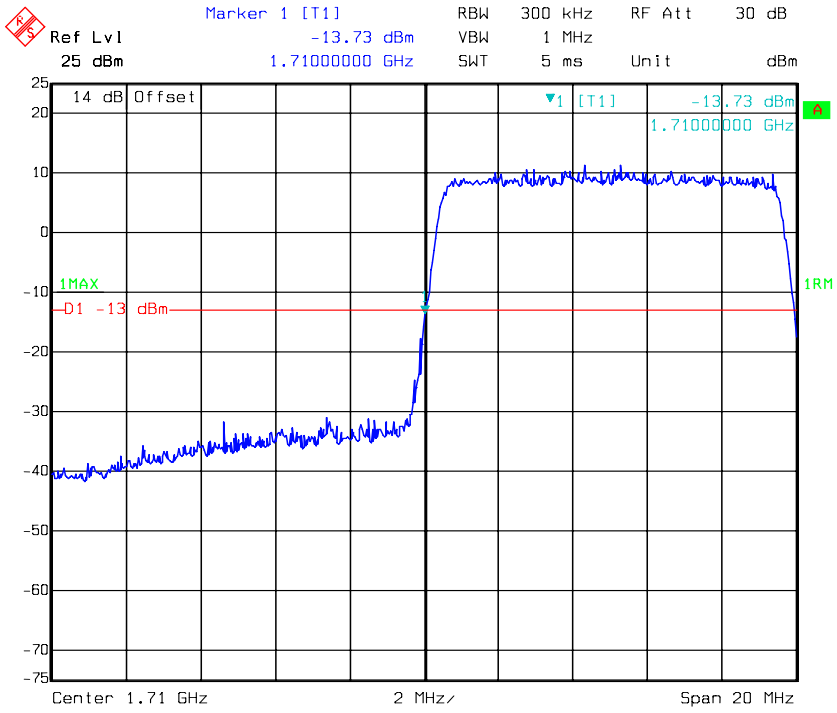
QPSK-10M 1RB, Left Band Edge



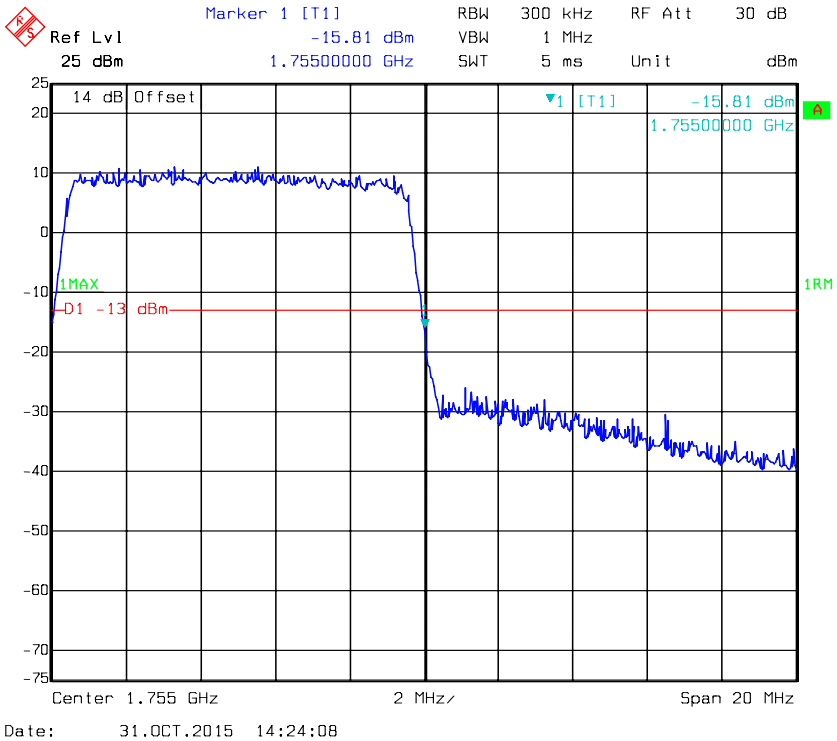
QPSK-10M 1RB, Right Band Edge



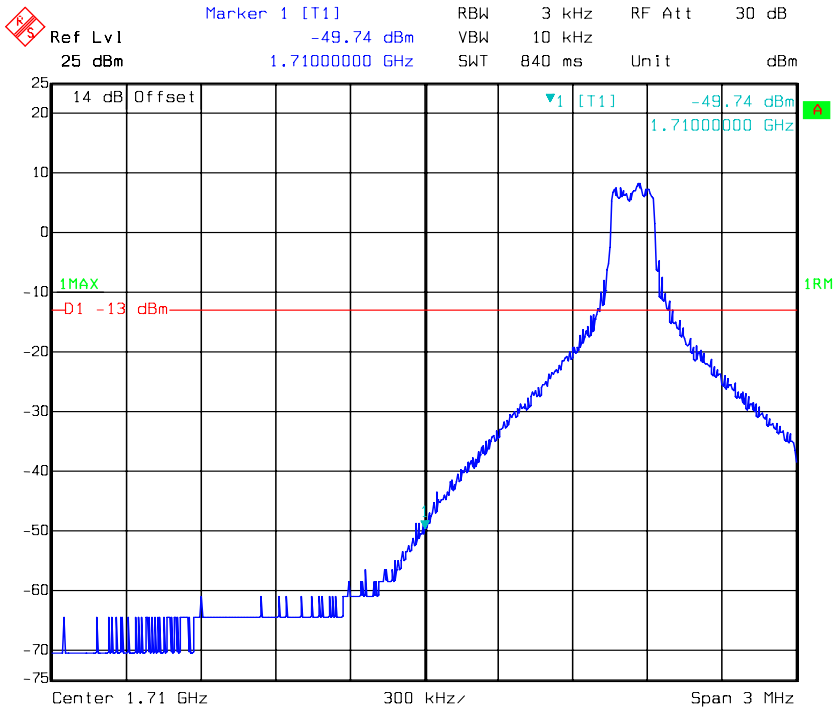
QPSK-10M 50 RB, Left Band Edge



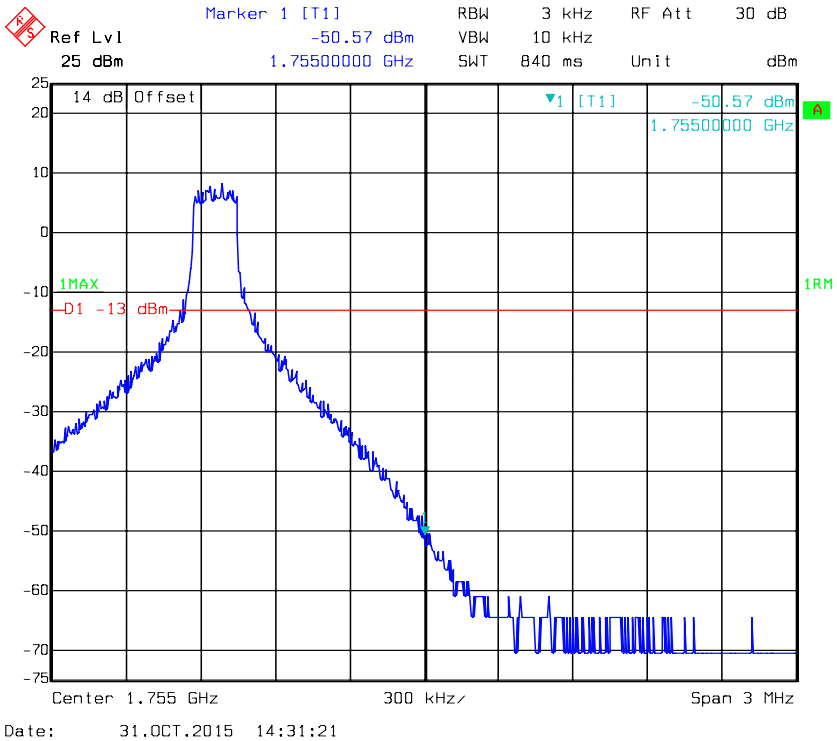
QPSK-10M 50 RB, Right Band Edge



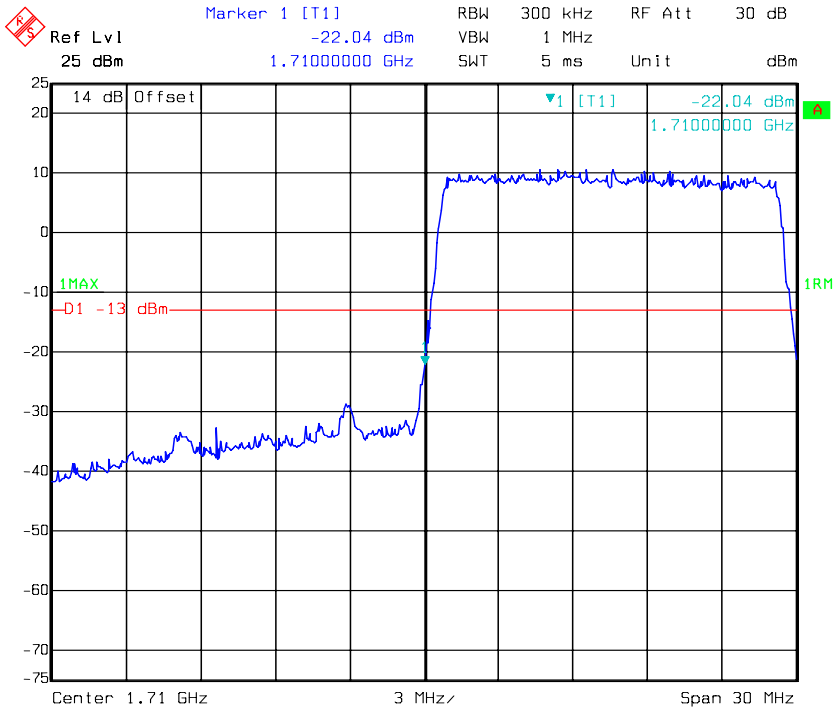
QPSK-15M 1RB, Left Band Edge



QPSK-15M 1RB, Right Band Edge



QPSK-15M 75 RB, Left Band Edge



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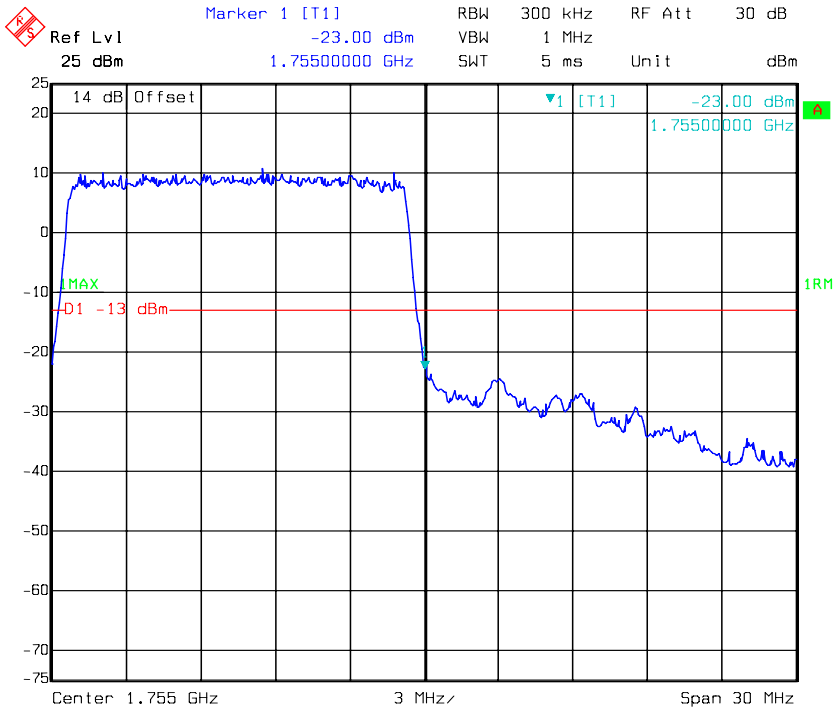
QPSK-15M 75 RB, Right Band Edge



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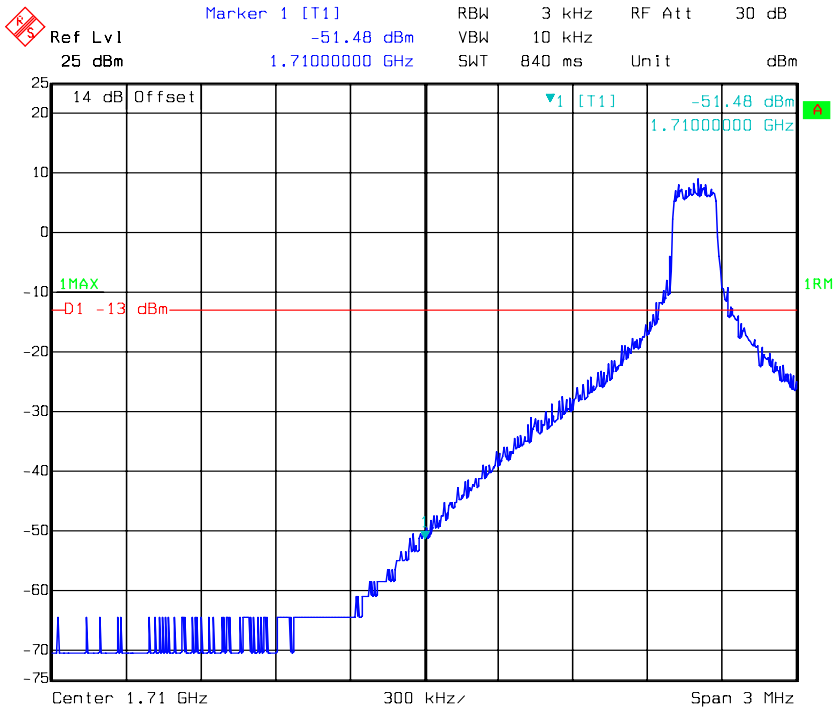
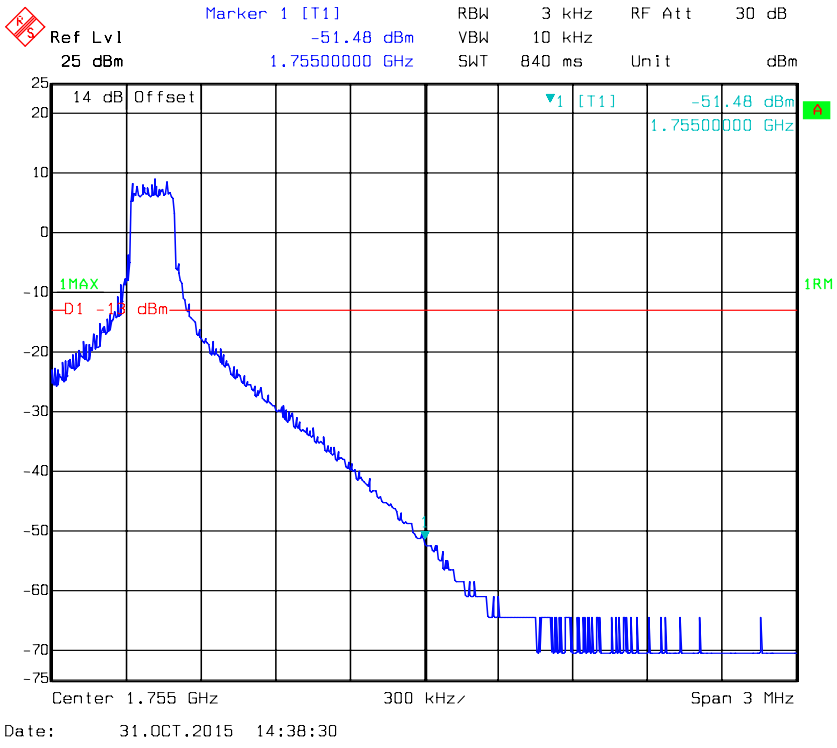
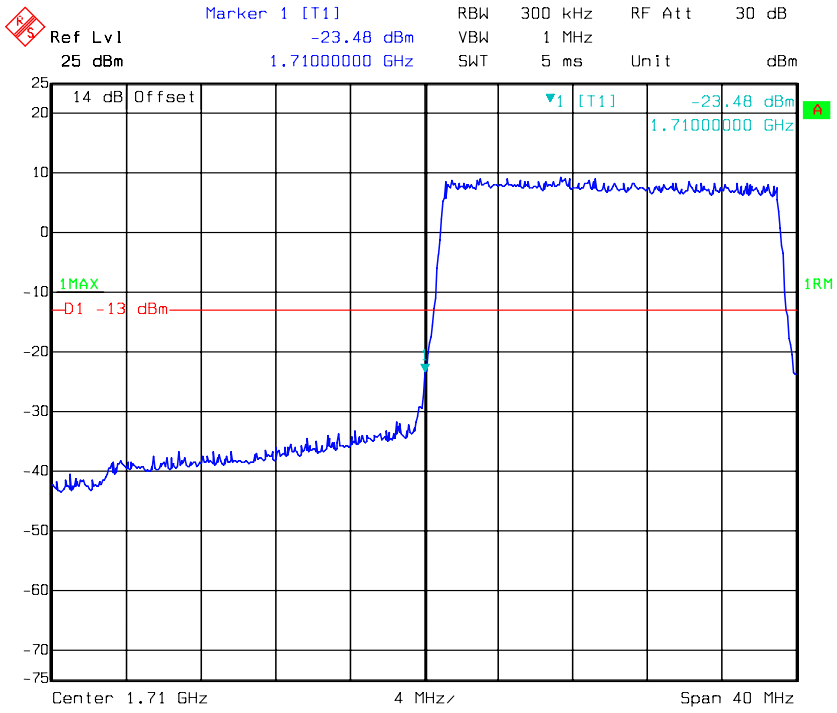
QPSK-20M 1RB, Left Band Edge



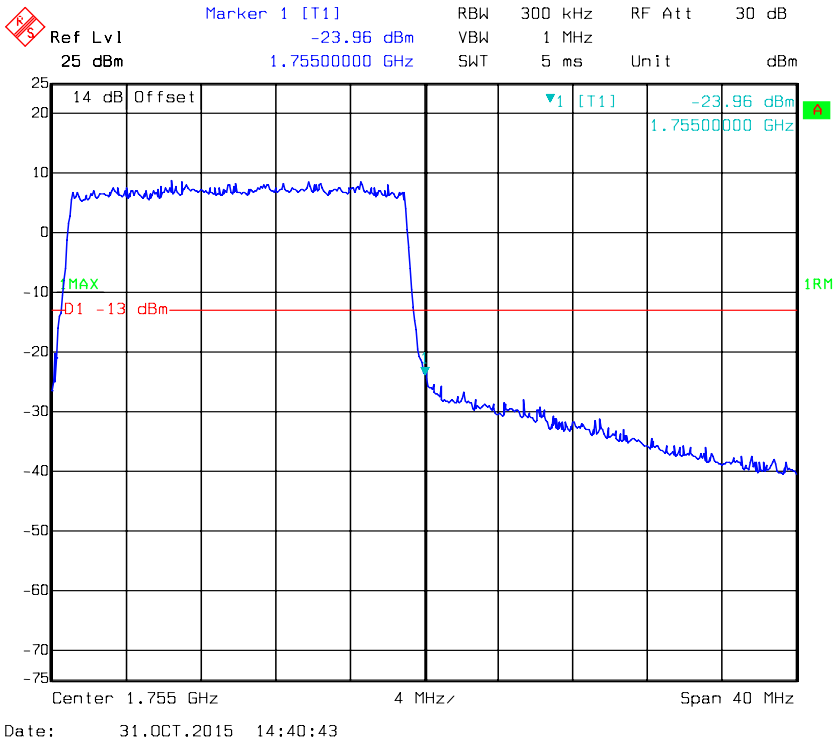
QPSK-20M 1RB, Right Band Edge



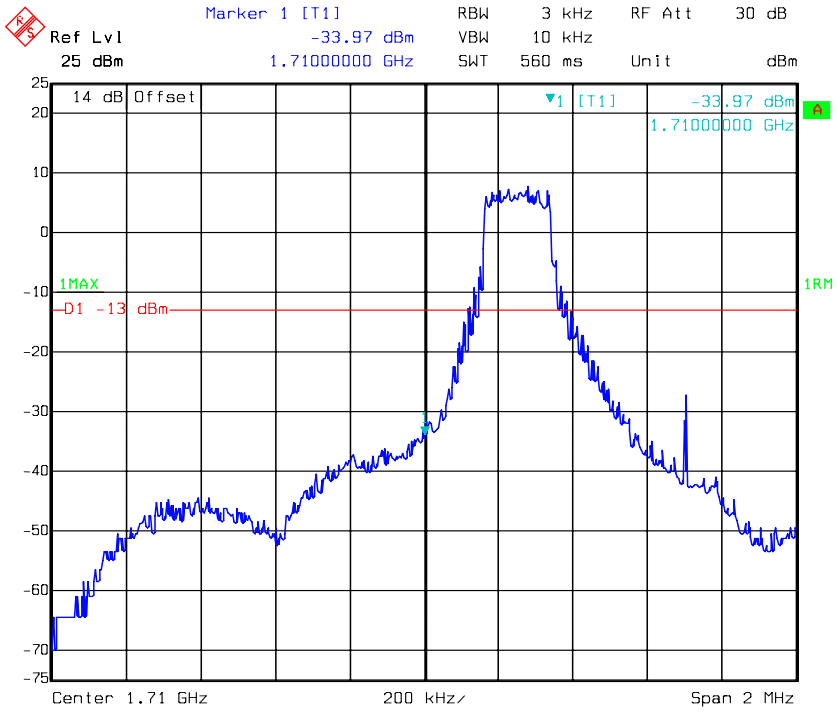
QPSK-20M 100 RB, Left Band Edge



QPSK-20M 100 RB, Right Band Edge



16QAM-1.4M 1RB, Left Band Edge



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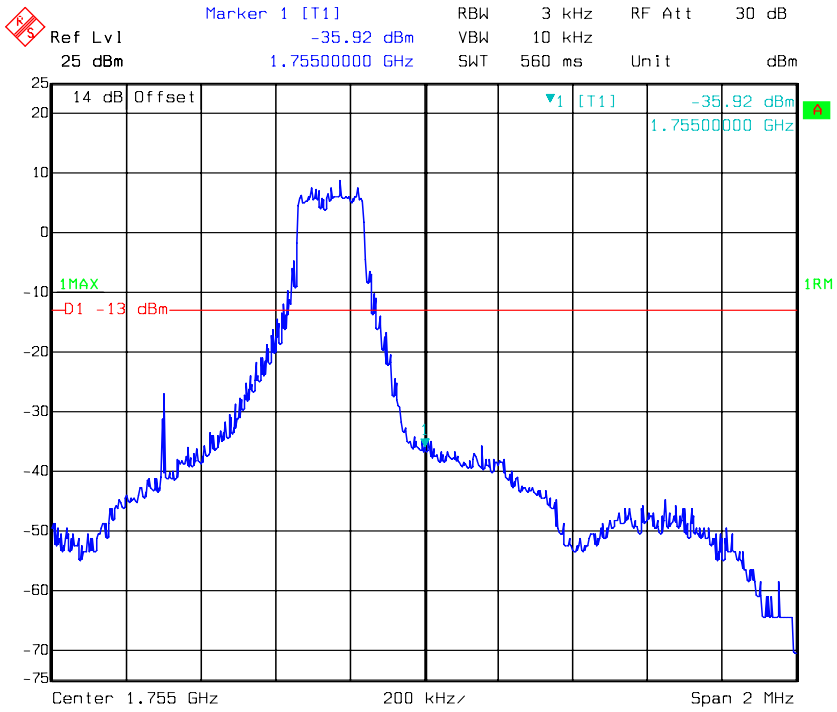
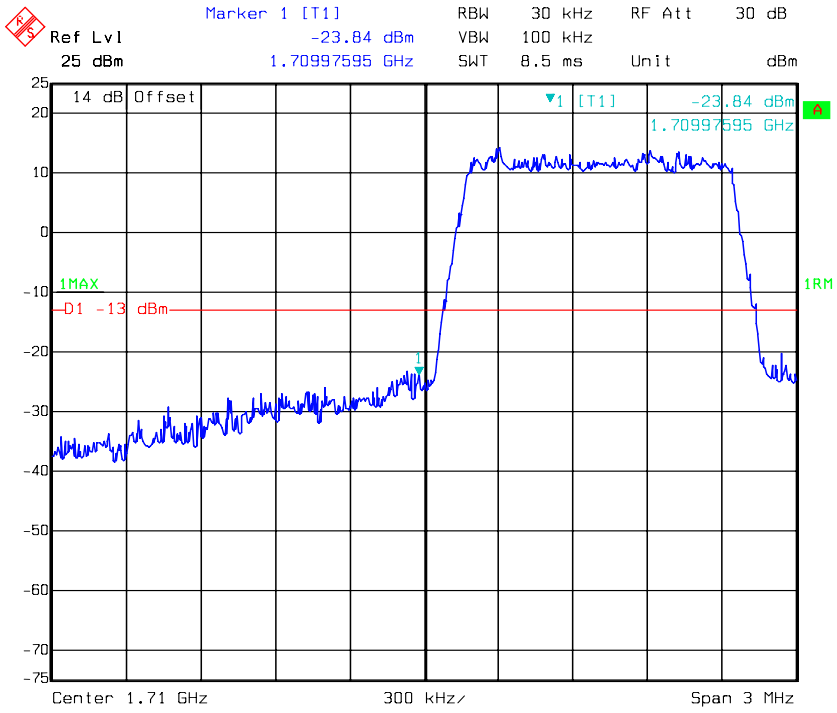
16QAM-1.4M 1RB, Right Band Edge



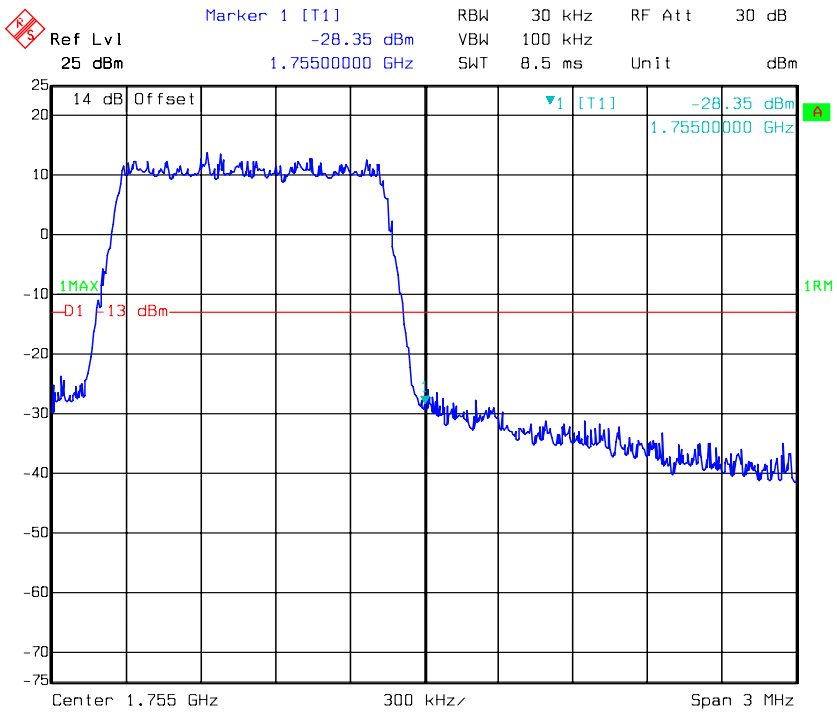
Date: 31.OCT.2015 13:46:50

16QAM-1.4M 6RB, Left Band Edge



Date: 31.OCT.2015 13:50:31

16QAM-1.4M 6RB, Right Band Edge



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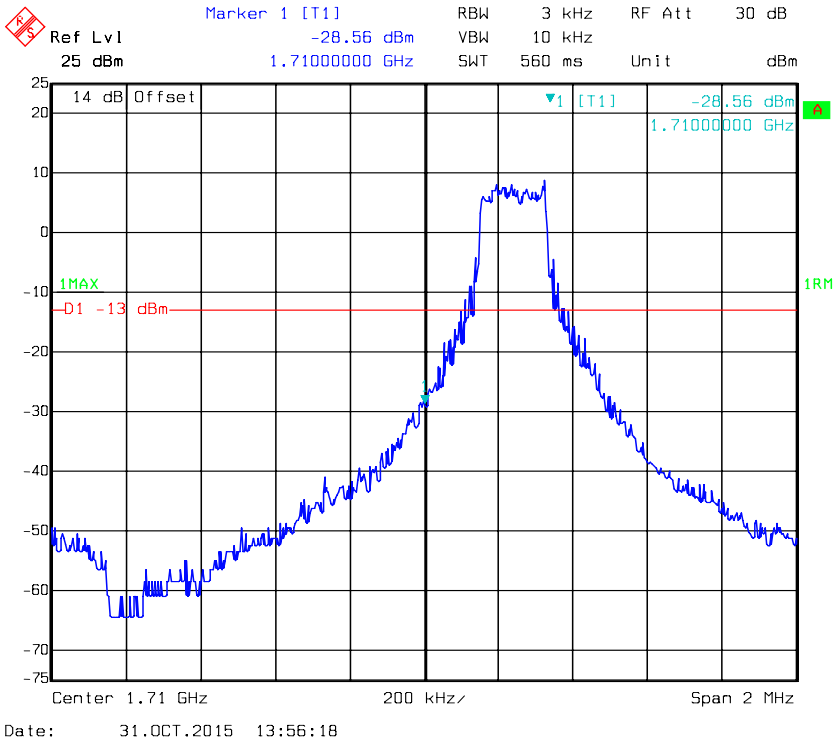
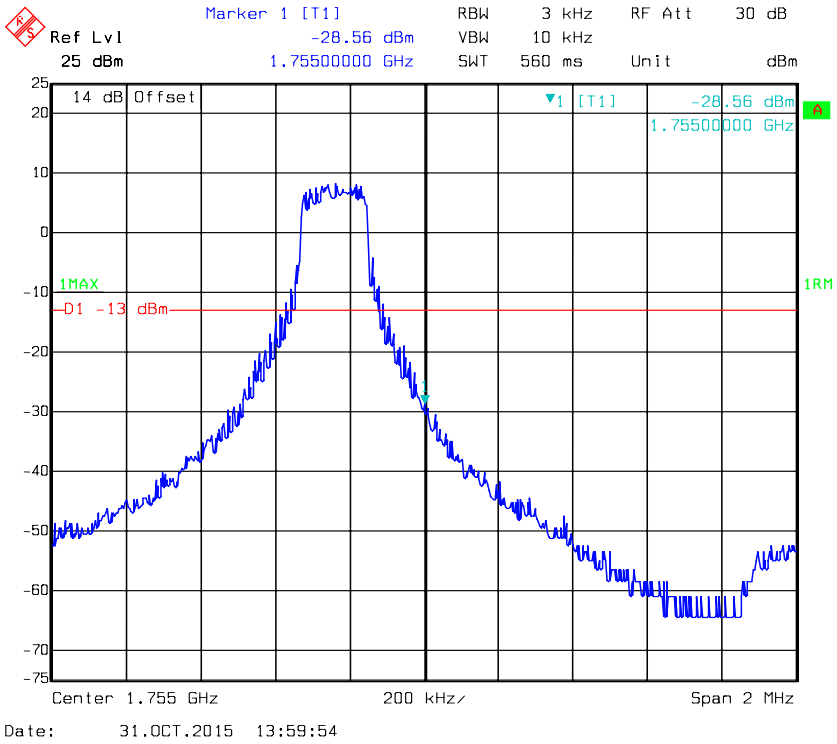
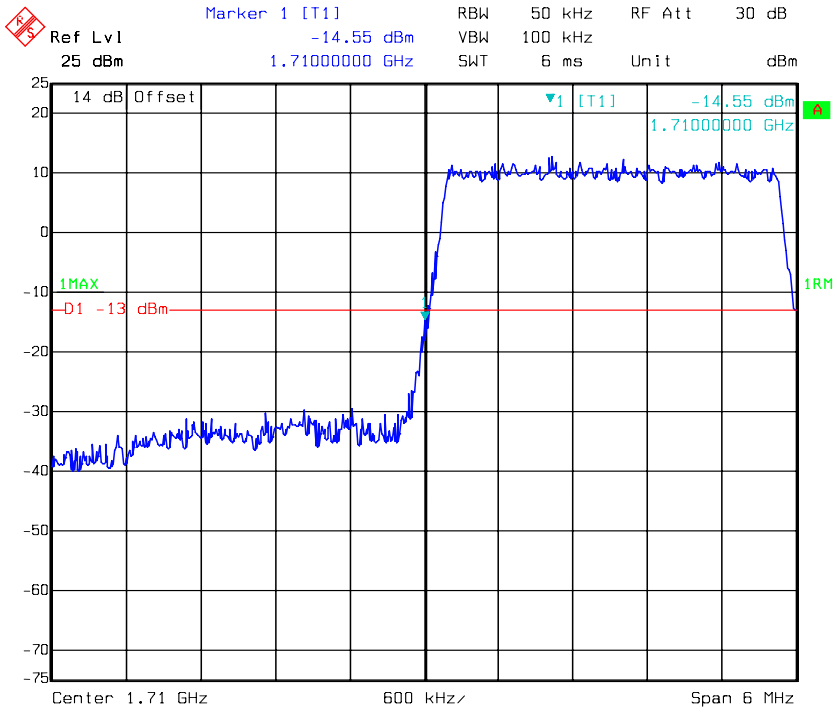
16QAM-3M 1RB, Left Band Edge



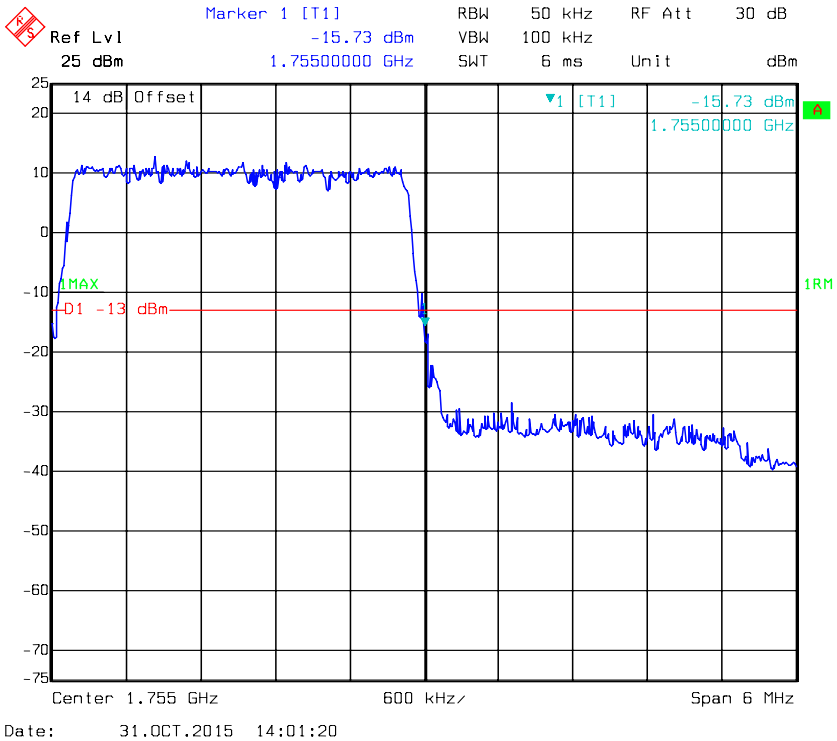
16QAM-3M 1RB, Right Band Edge



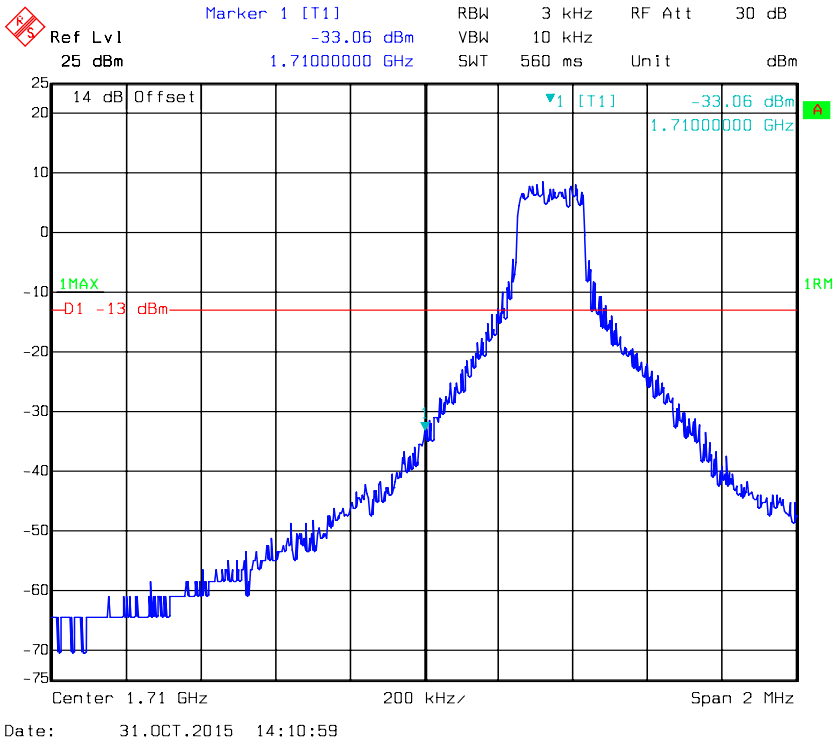
16QAM-3M 15 RB, Left Band Edge



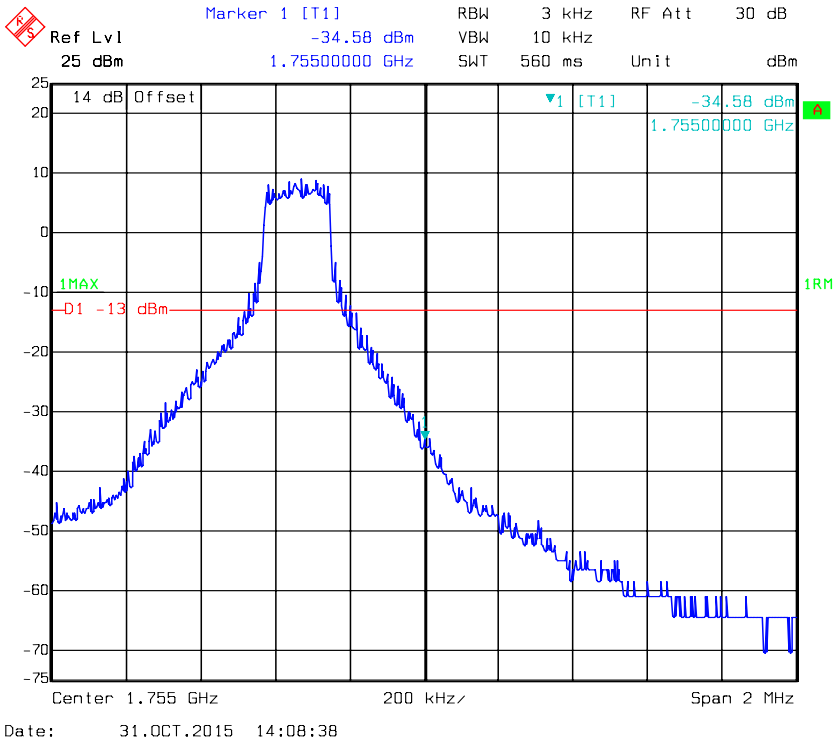
16QAM-3M 15 RB, Right Band Edge



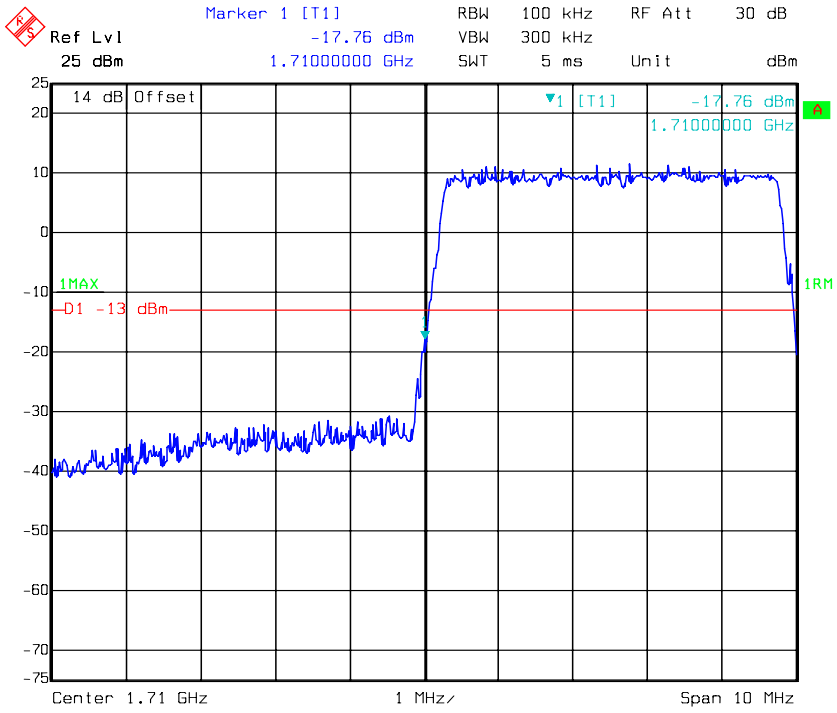
16QAM-5M 1RB, Left Band Edge



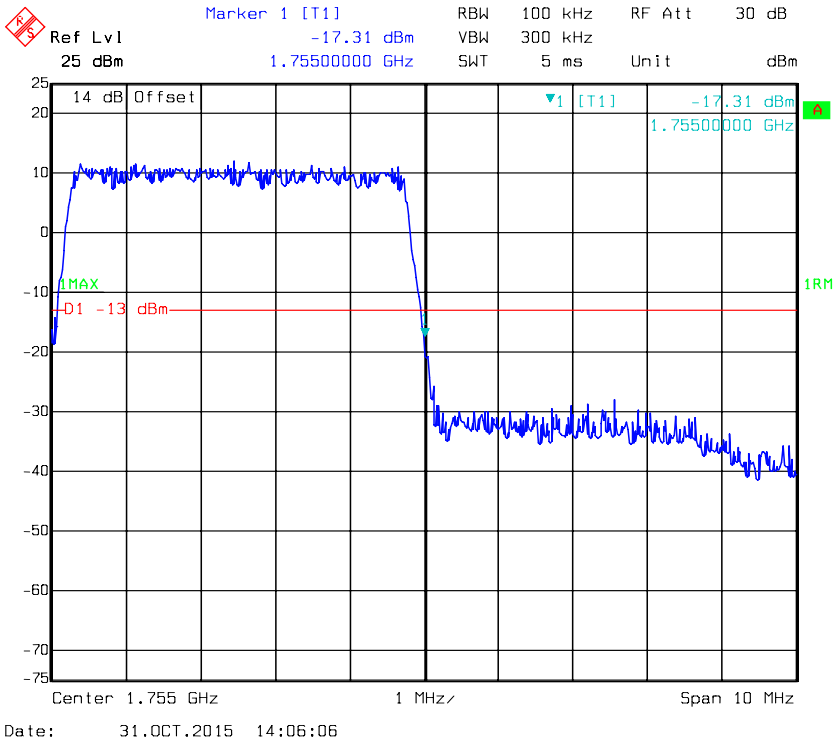
16QAM-5M 1RB, Right Band Edge



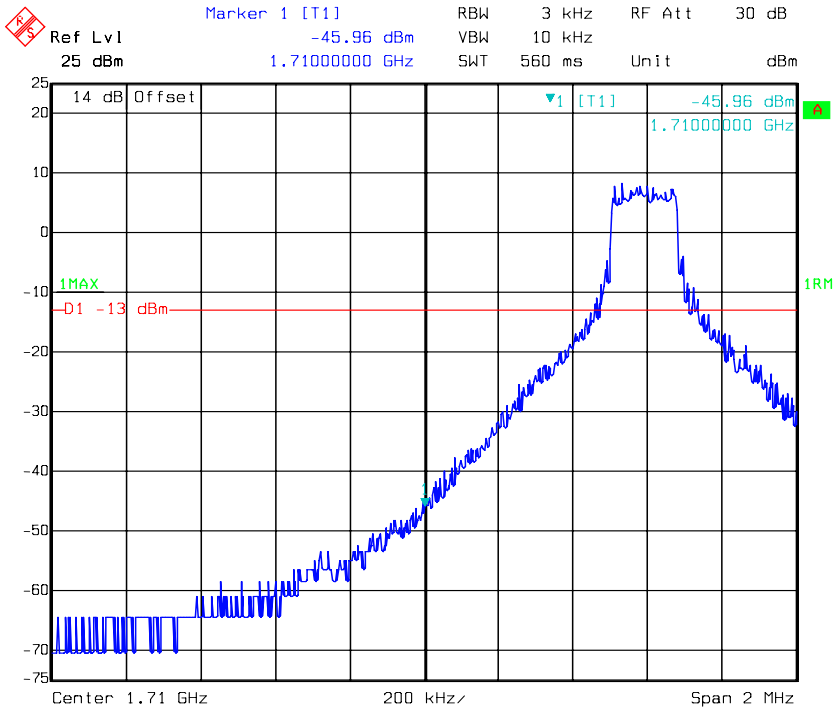
16QAM-5M 25 RB, Left Band Edge



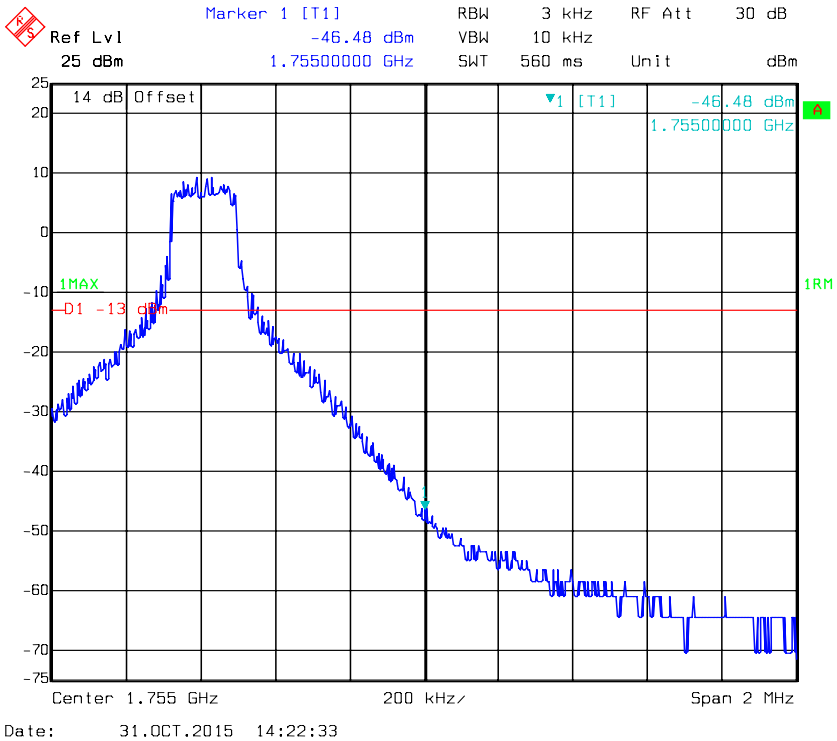
16QAM-5M 25 RB, Right Band Edge



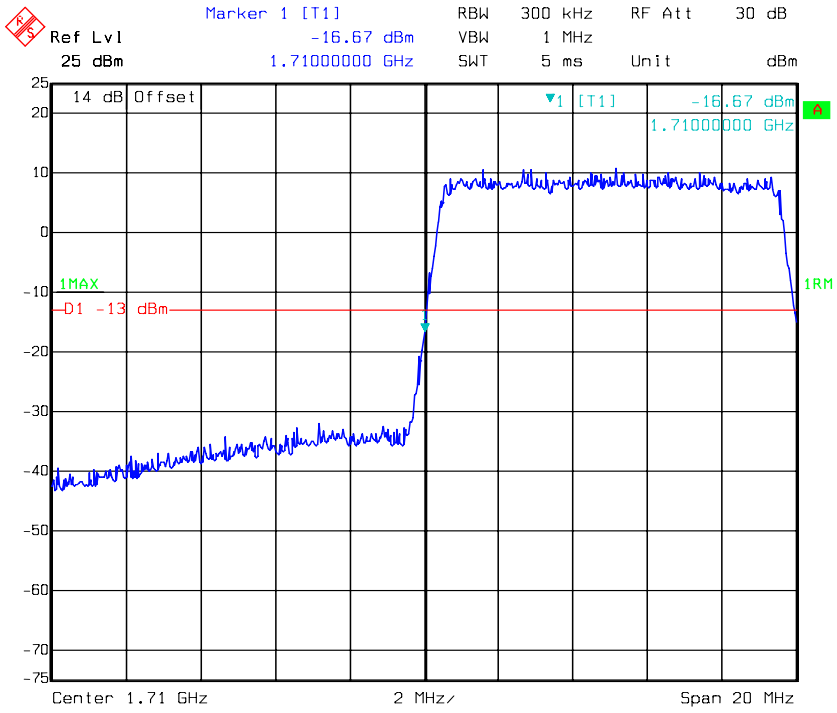
16QAM-10M 1RB, Left Band Edge



16QAM-10M 1RB, Right Band Edge



16QAM-10M 50 RB, Left Band Edge



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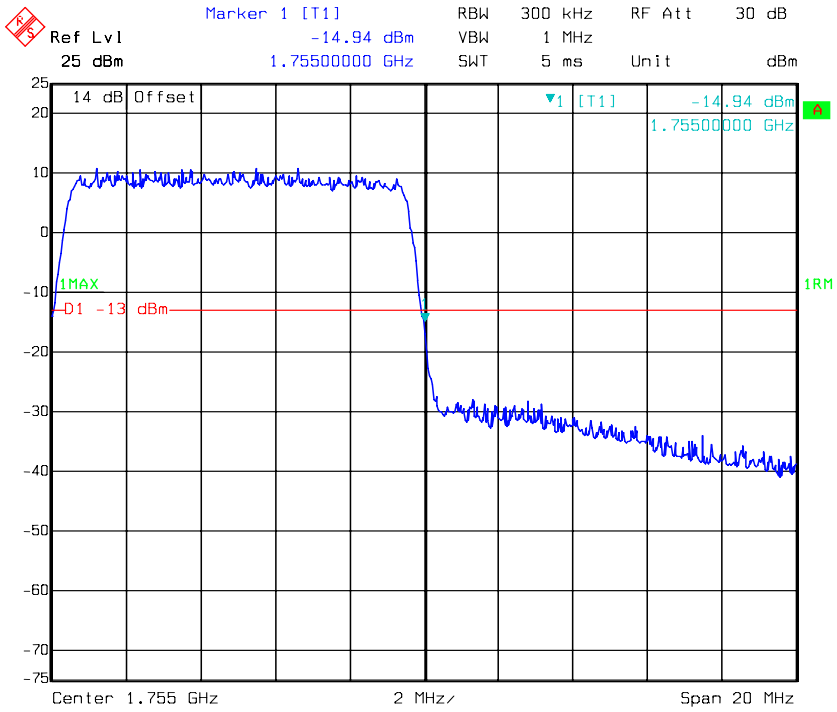
16QAM-10M 50 RB, Right Band Edge



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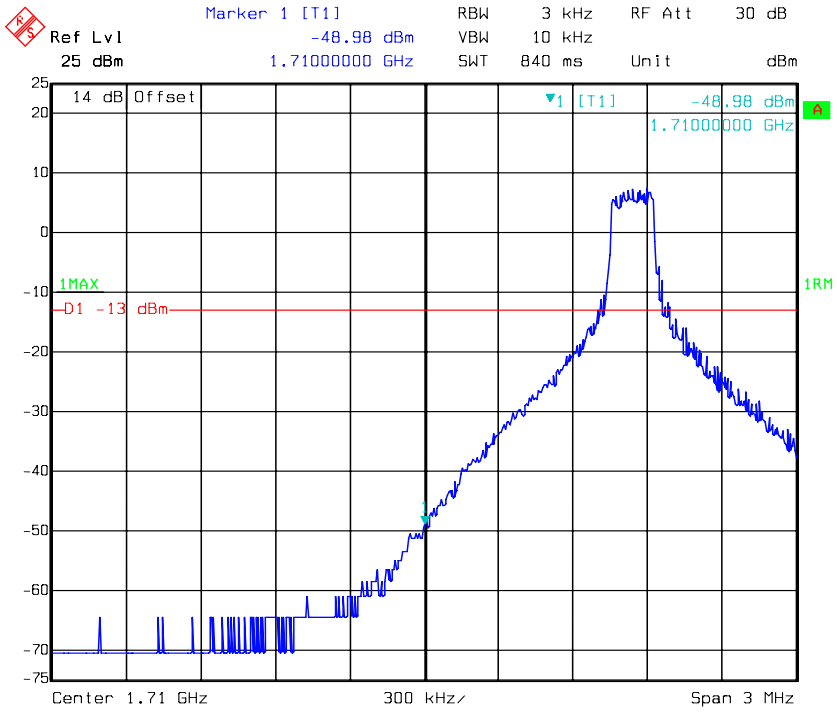
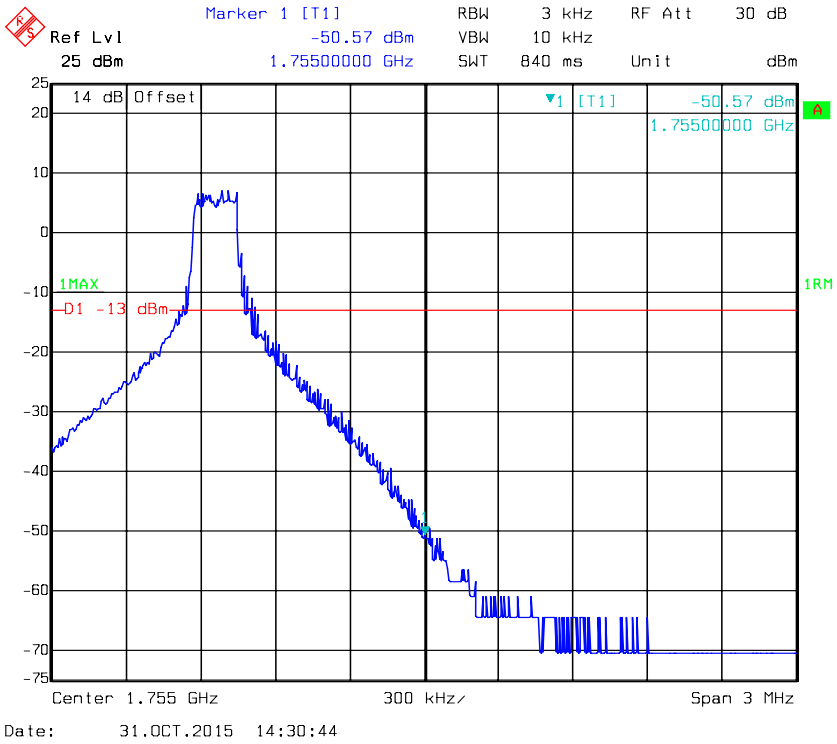
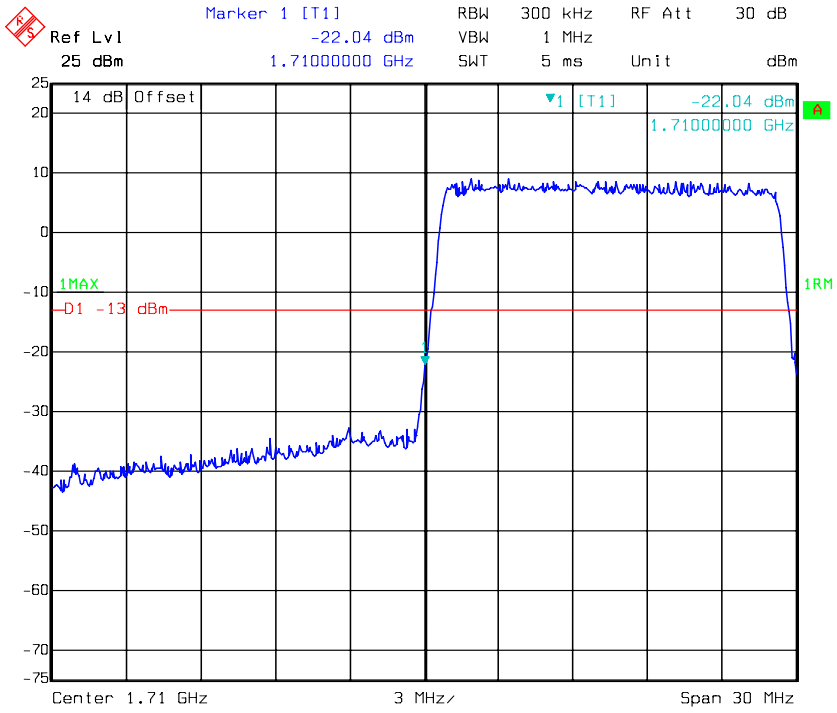
16QAM-15M 1RB, Left Band Edge



16QAM-15M 1RB, Right Band Edge



16QAM-15M 75 RB, Left Band Edge



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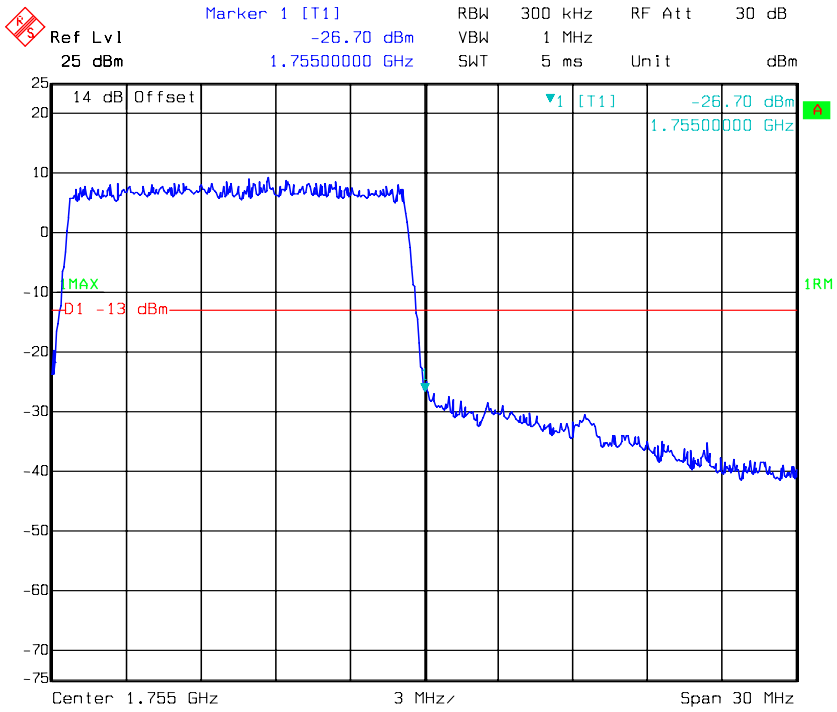
16QAM-15M 75 RB, Right Band Edge



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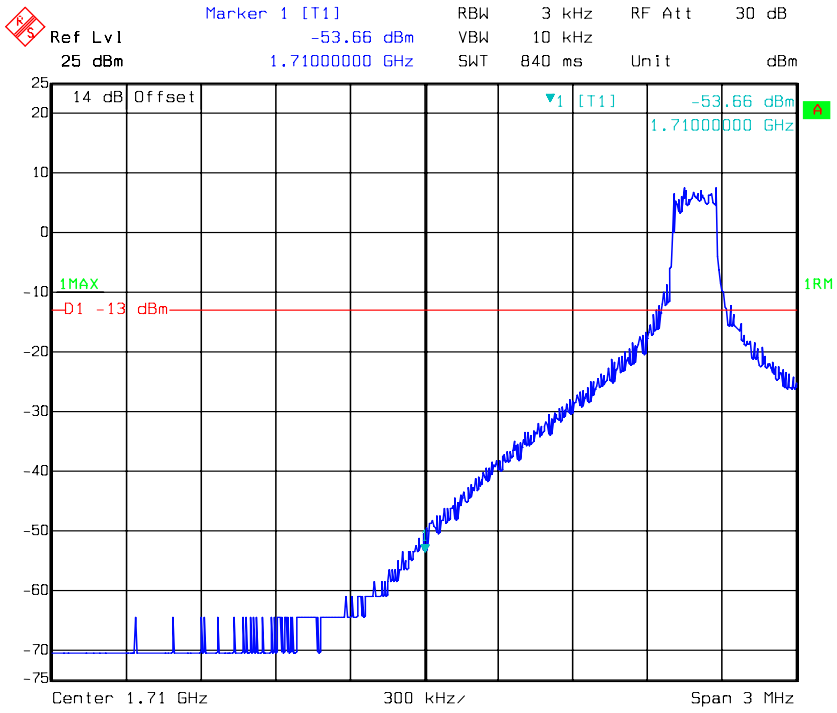
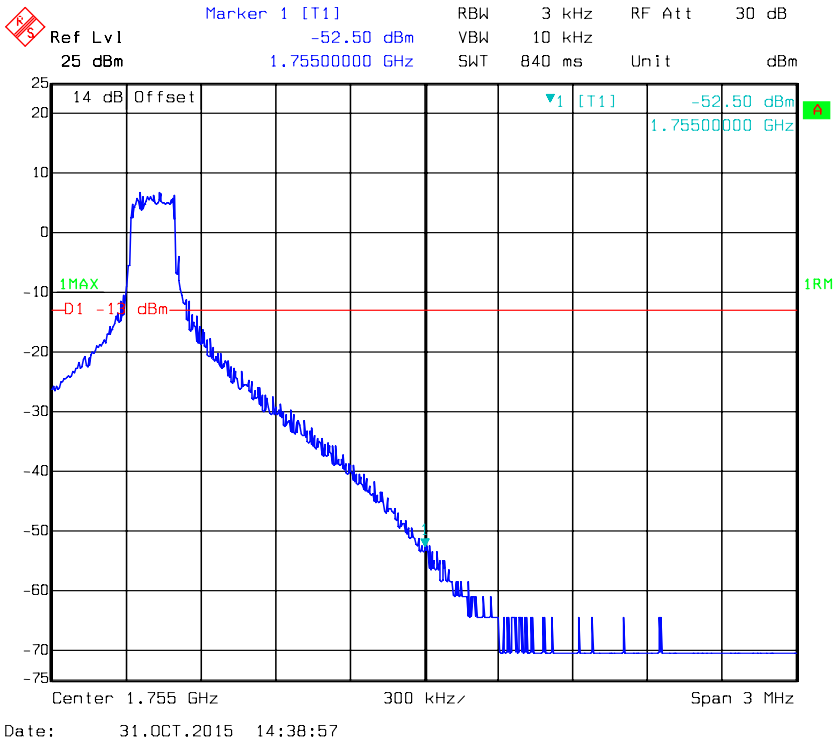
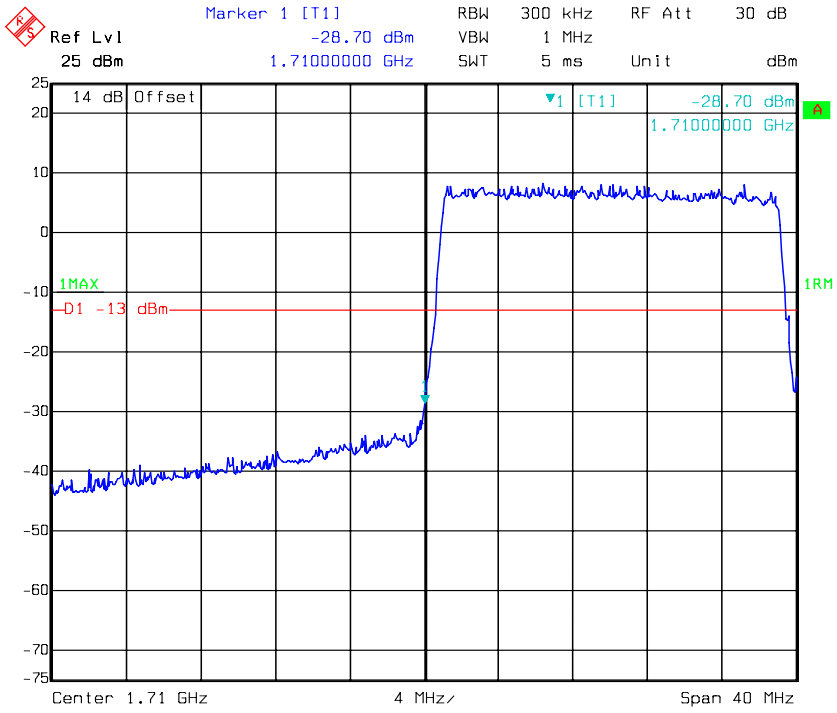
QPSK-20M 1RB, Left Band Edge



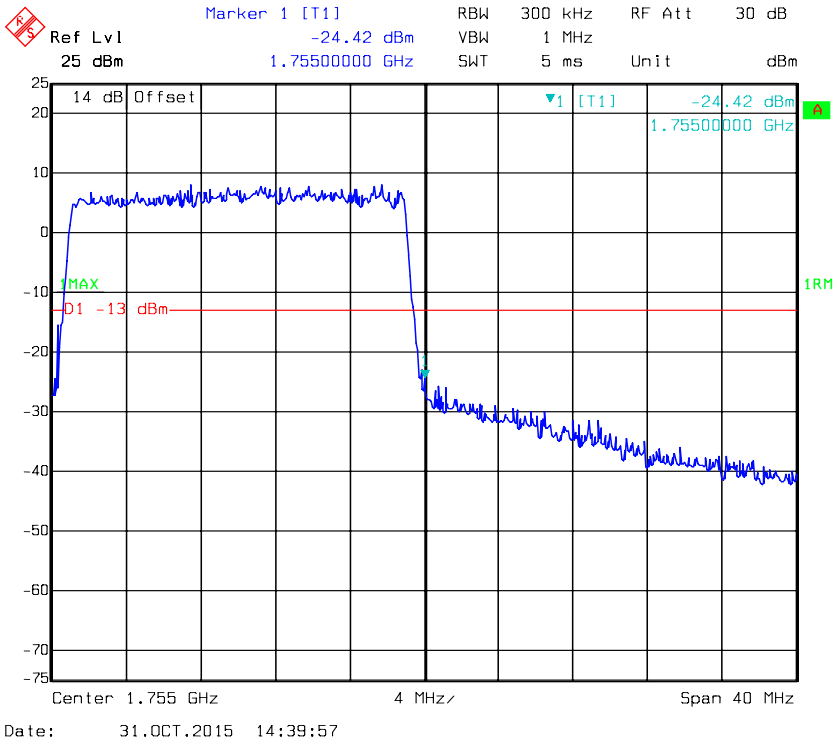
16QAM-20M 1RB, Right Band Edge



16QAM-20M 100 RB, Left Band Edge

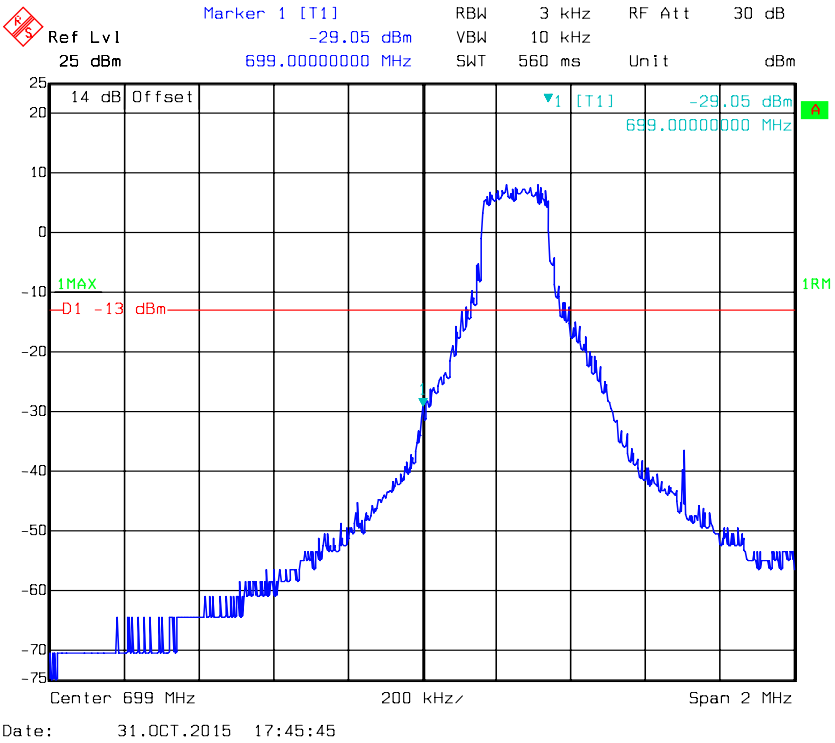


16QAM-20M 100 RB, Right Band Edge

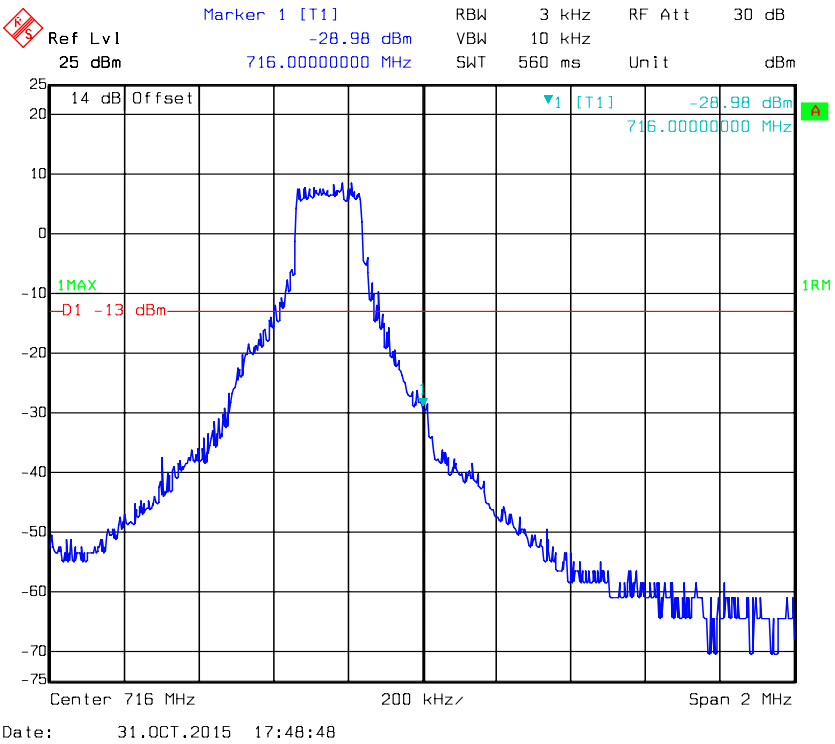


LTE Band 12

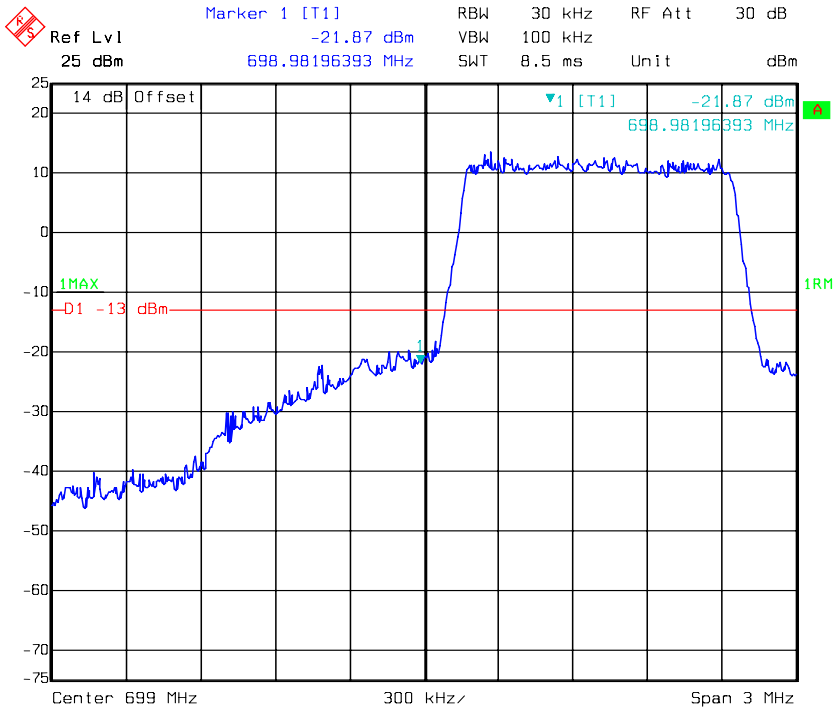
QPSK-1.4M 1RB, Left Band Edge



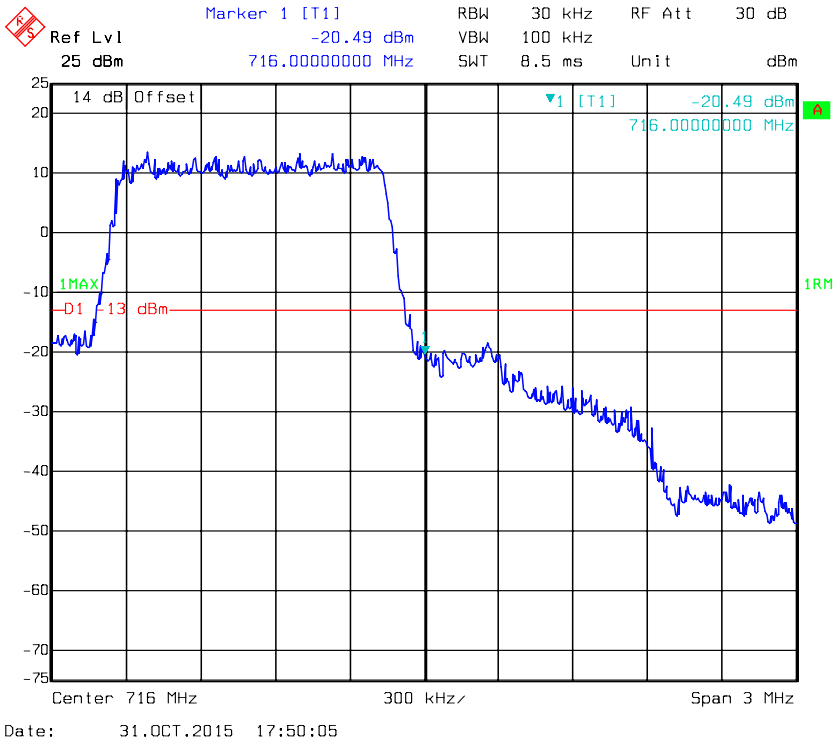
QPSK-1.4M 1RB, Right Band Edge



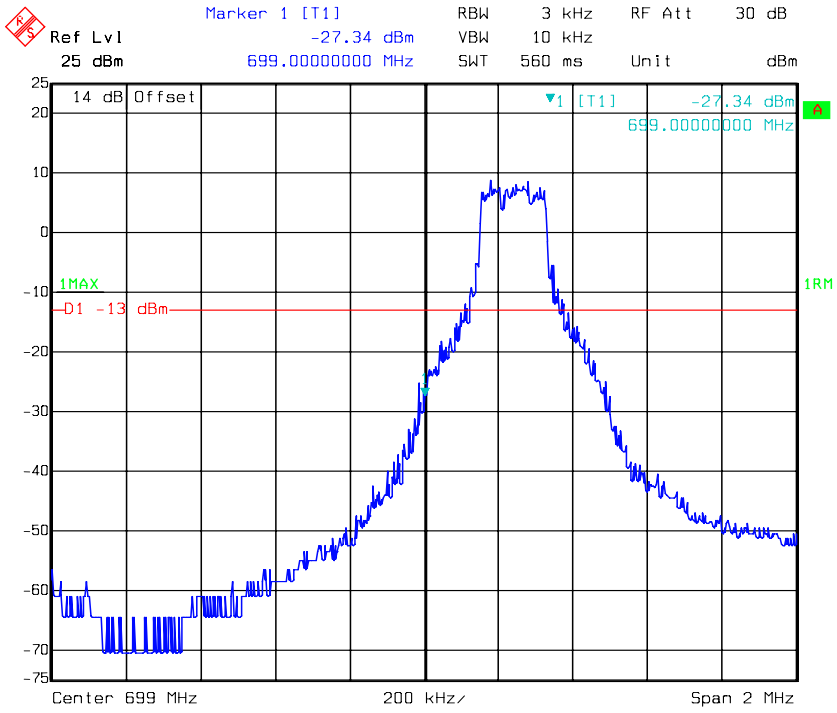
QPSK-1.4M 6RB, Left Band Edge



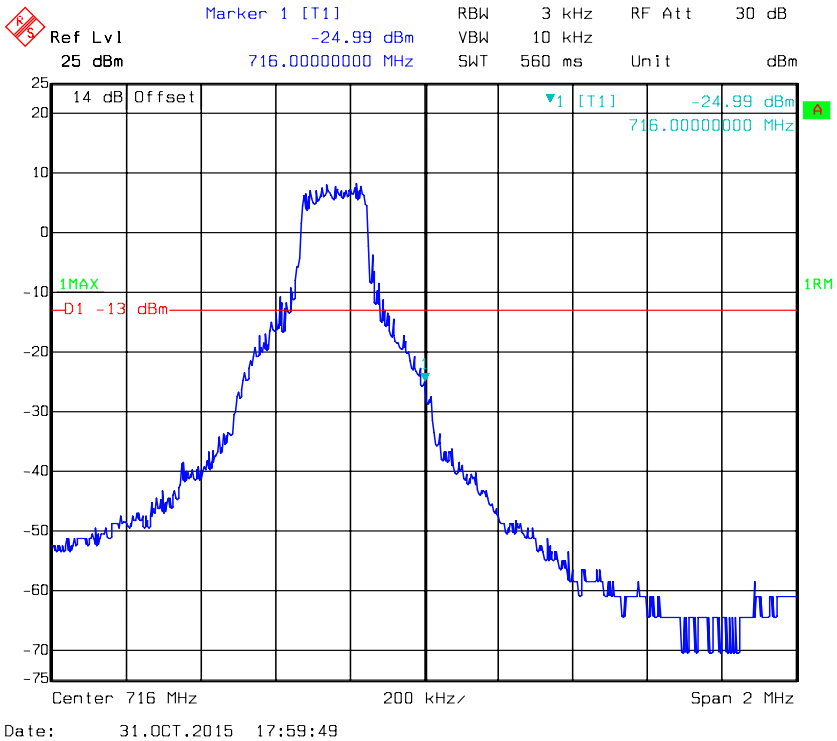
QPSK-1.4M 6RB, Right Band Edge



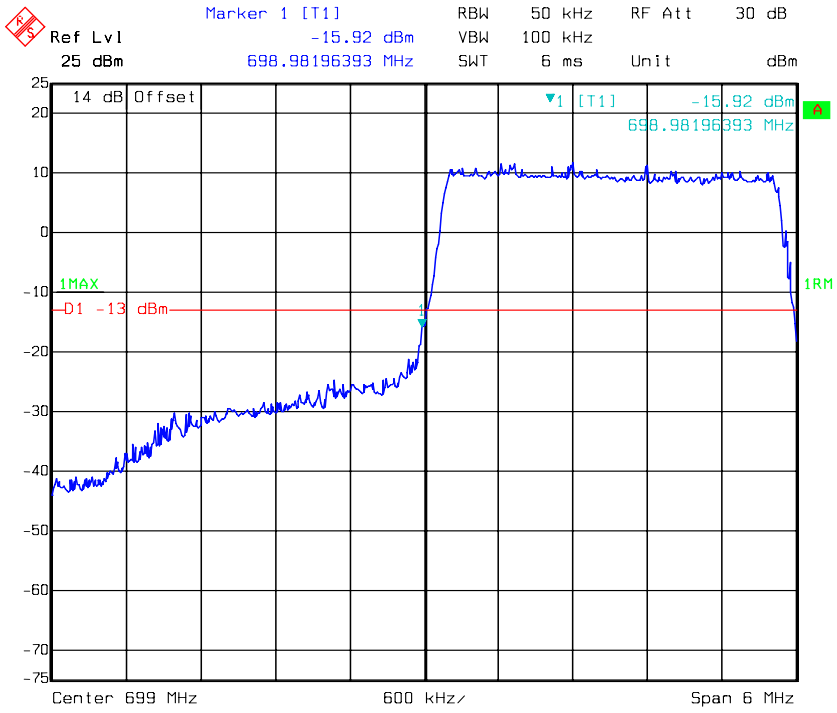
QPSK-3M 1RB, Left Band Edge



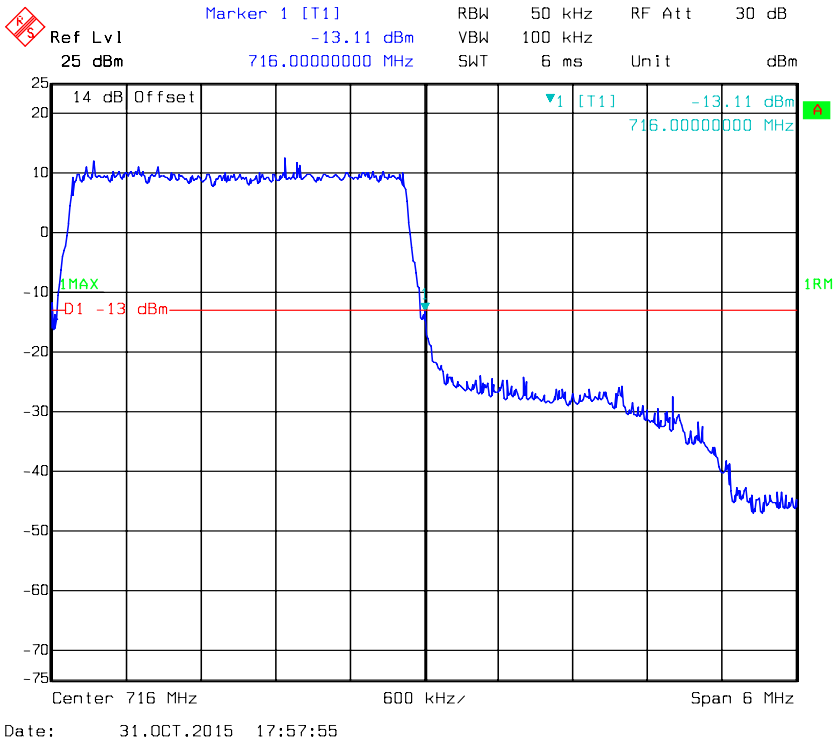
QPSK-3M 1RB, Right Band Edge



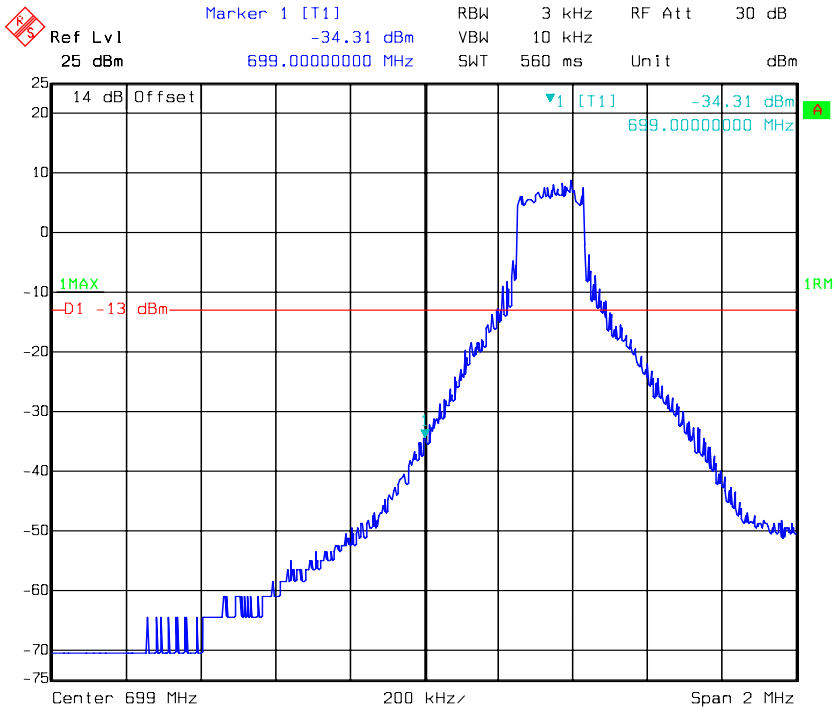
QPSK-3M 15 RB, Left Band Edge



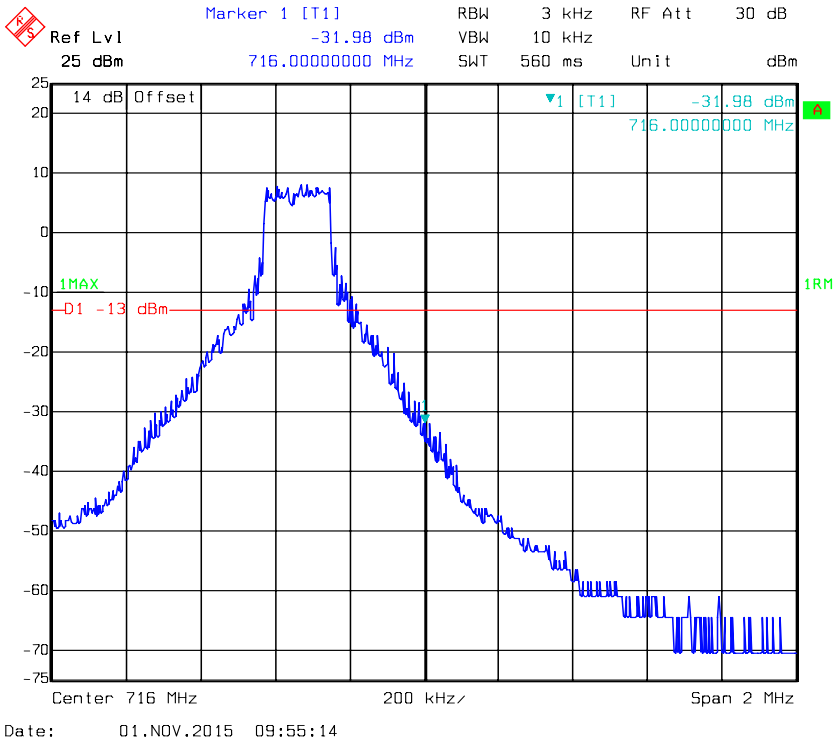
QPSK-3M 15 RB, Right Band Edge



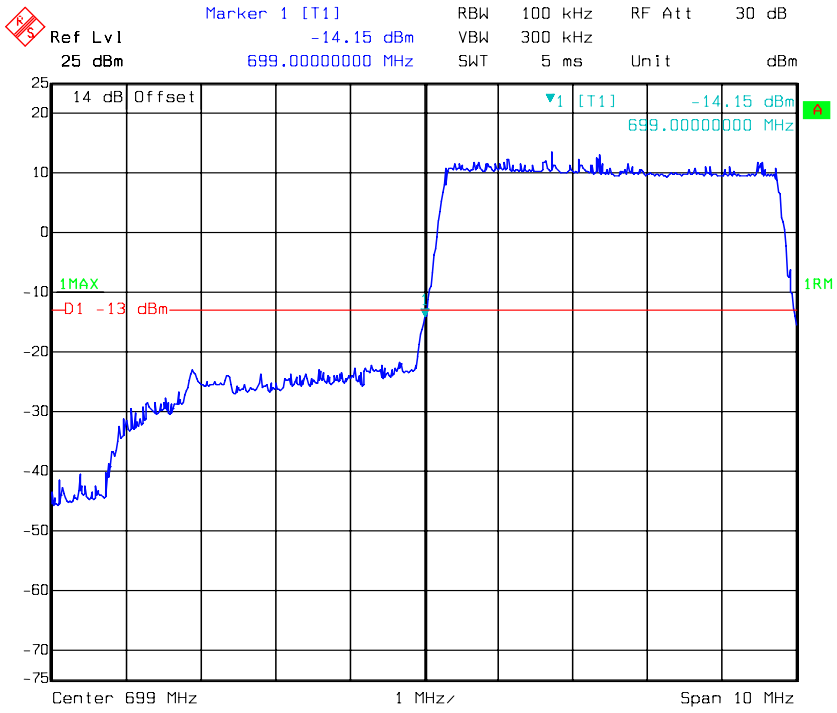
QPSK-5M 1RB, Left Band Edge



QPSK-5M 1RB, Right Band Edge

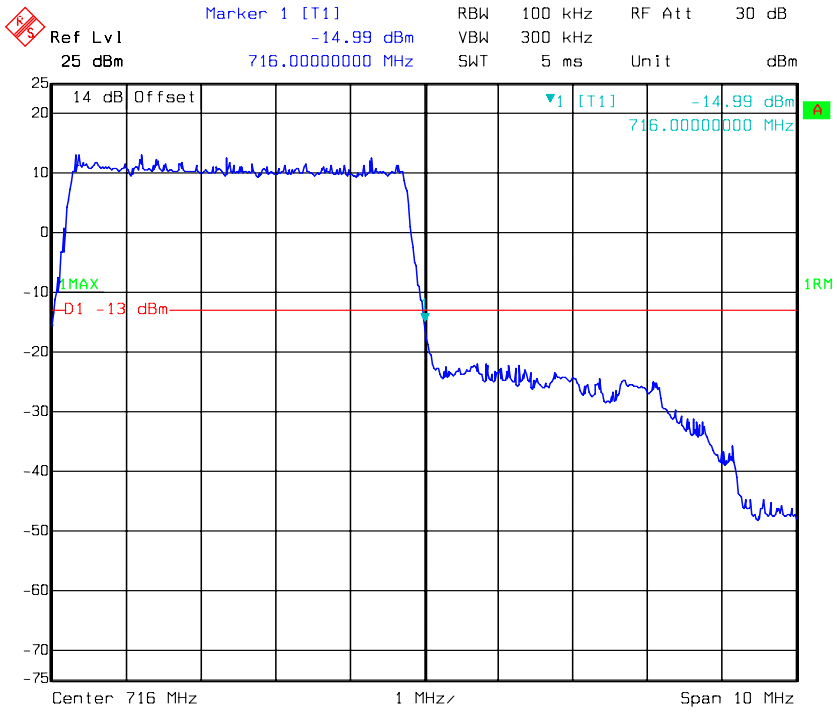


QPSK-5M 25 RB, Left Band Edge



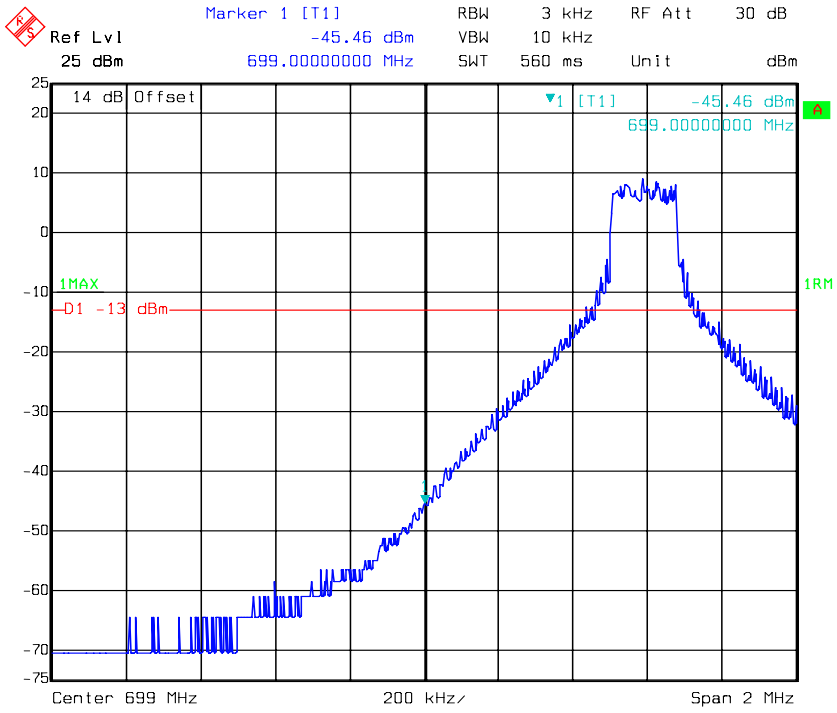
Date: 01.NOV.2015 10:02:17

QPSK-5M 25 RB, Right Band Edge

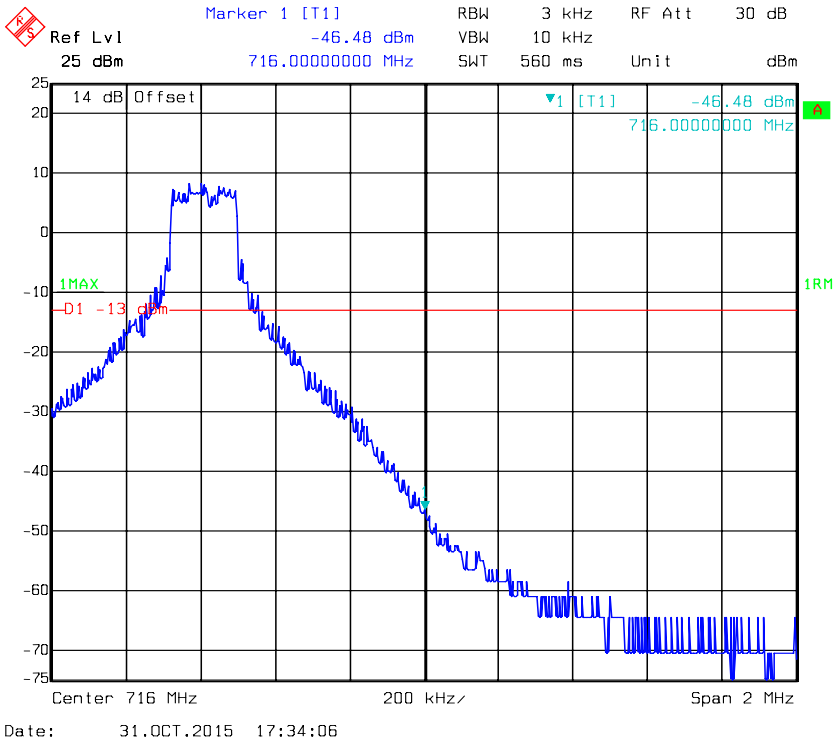


Date: 01.NOV.2015 09:57:04

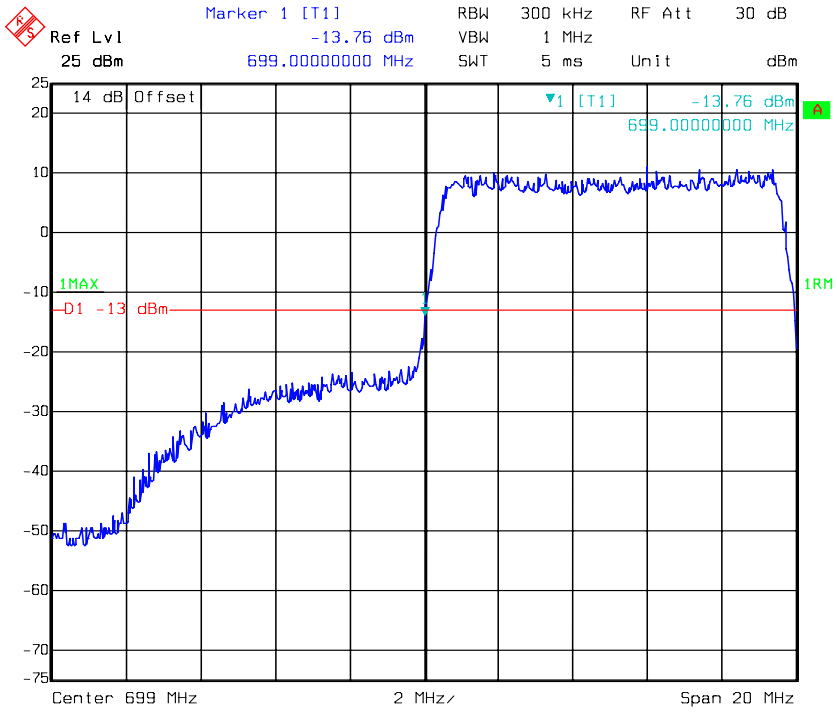
QPSK-10M 1RB, Left Band Edge



QPSK-10M 1RB, Right Band Edge

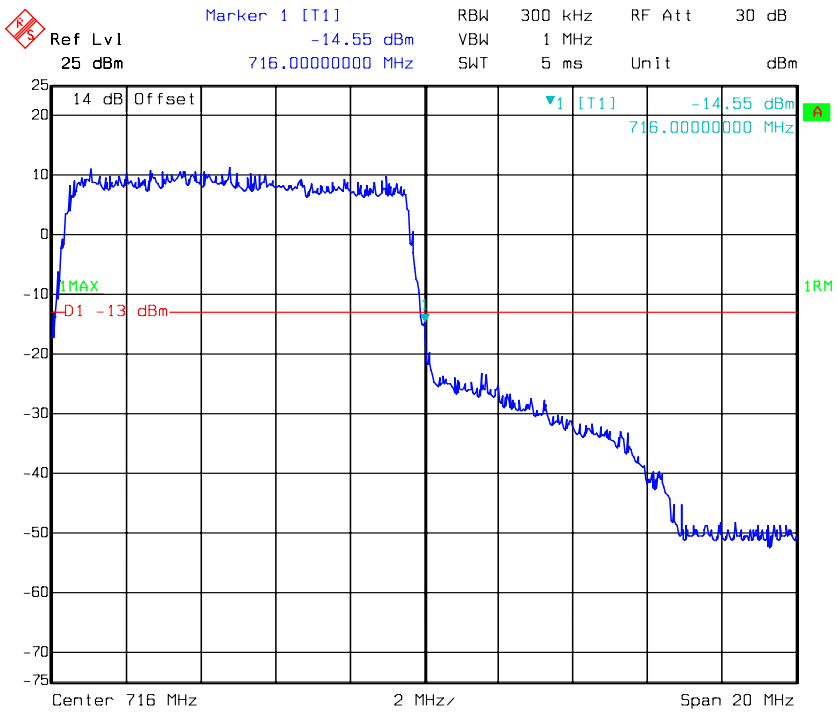


QPSK-10M 50 RB, Left Band Edge



Date: 31.OCT.2015 17:37:04

QPSK-10M 50 RB, Right Band Edge



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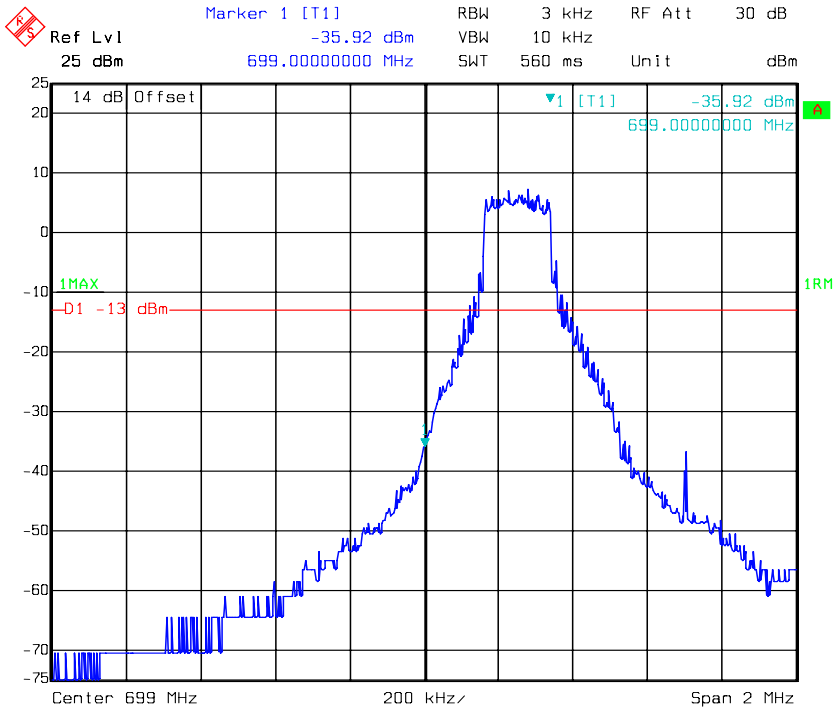
16QAM-1.4M 1RB, Left Band Edge



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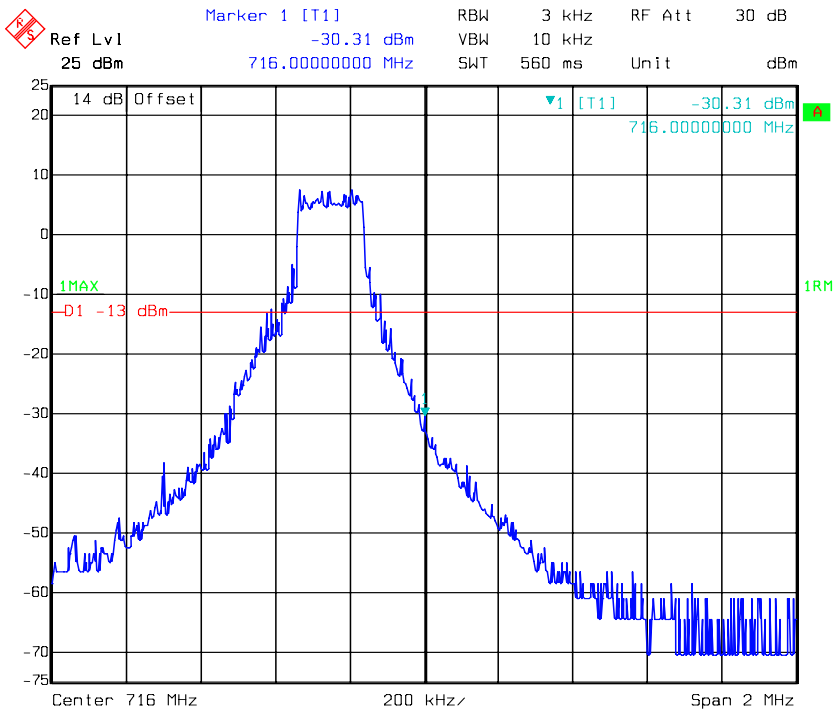
16QAM-1.4M 1RB, Right Band Edge



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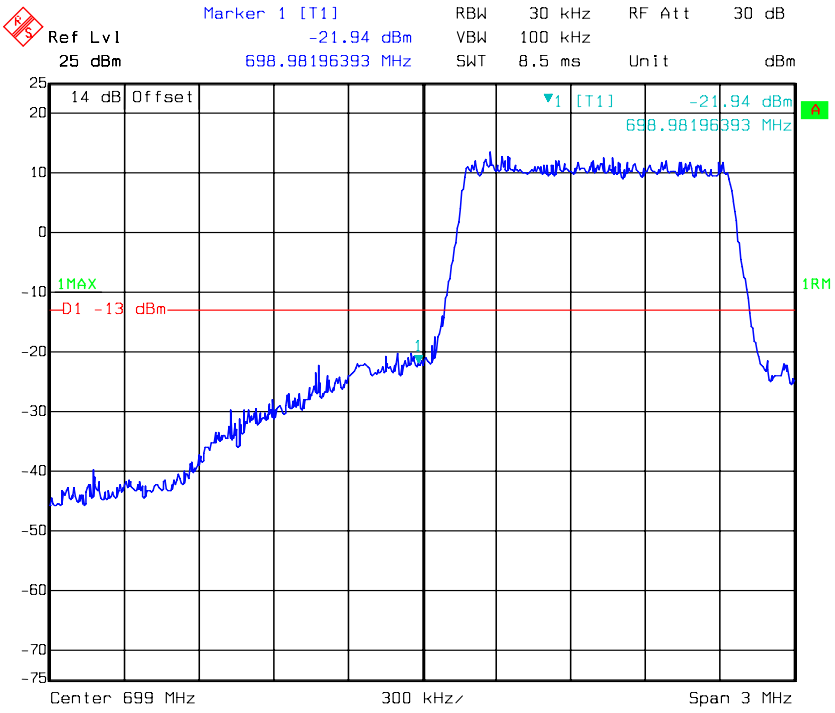
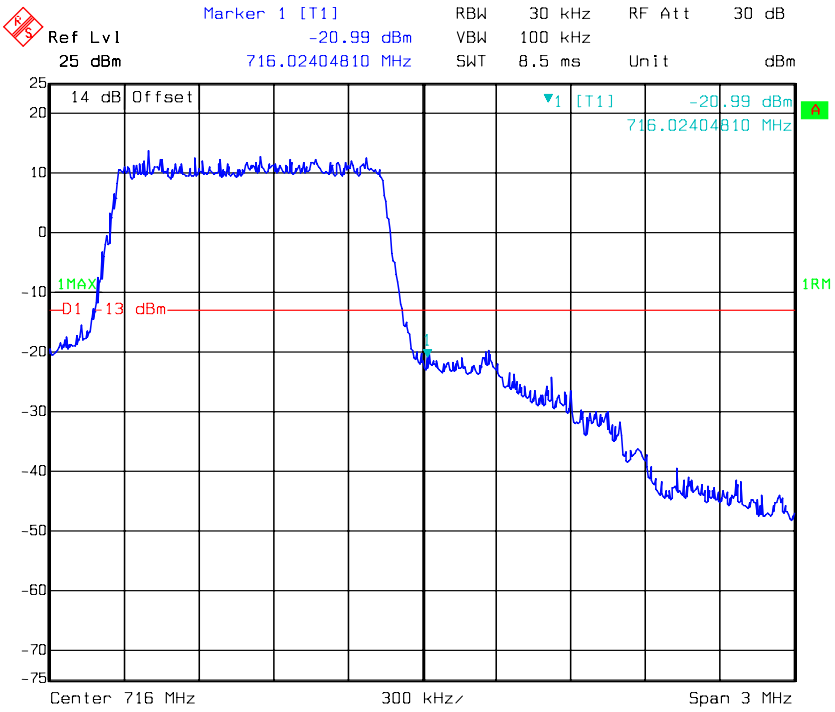
16QAM-1.4M 6RB, Left Band Edge



Date: 31.OCT.2015 17:51:55

16QAM-1.4M 6RB, Right Band Edge



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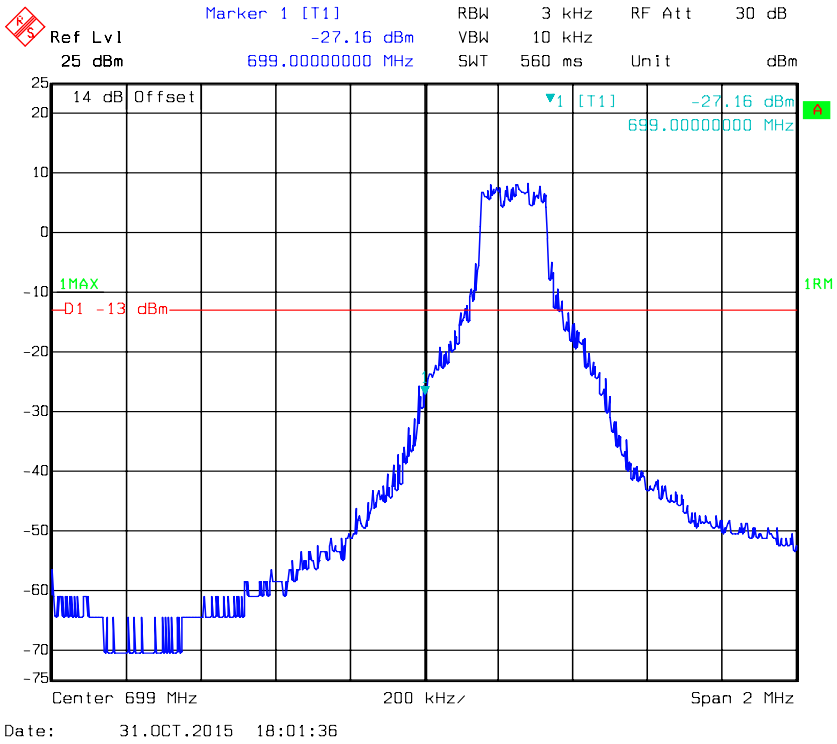
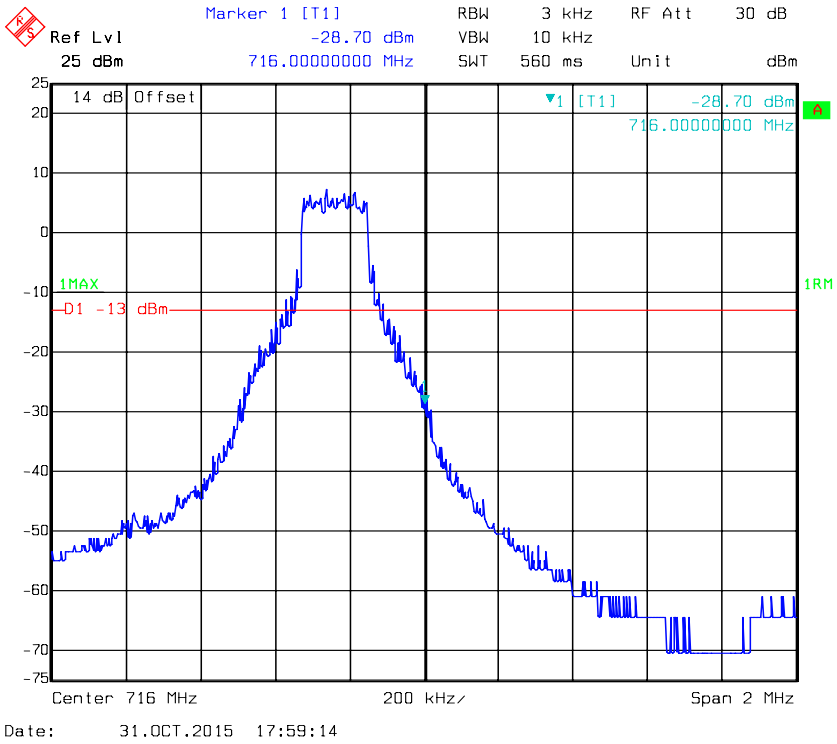
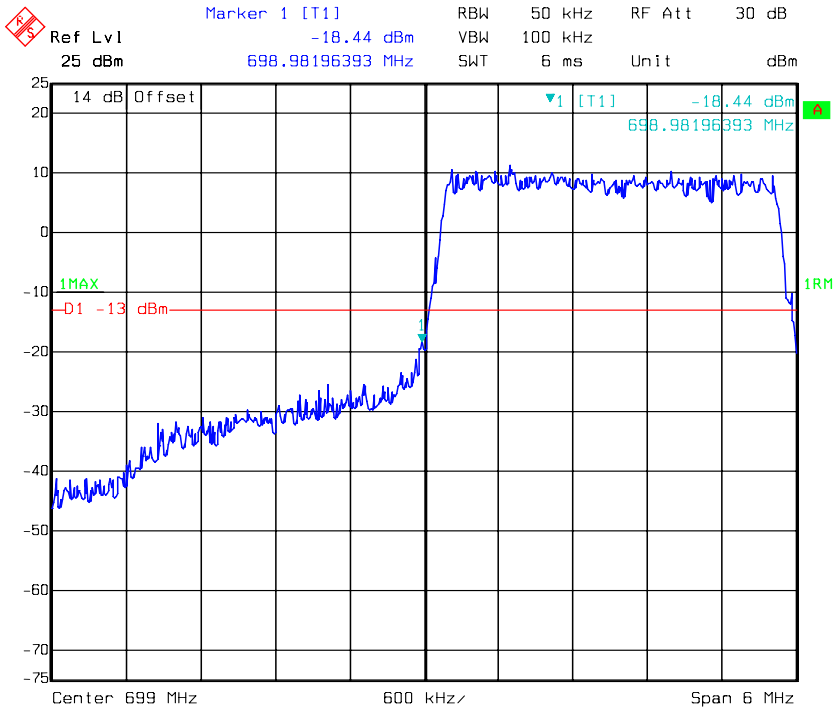
16QAM-3M 1RB, Left Band Edge



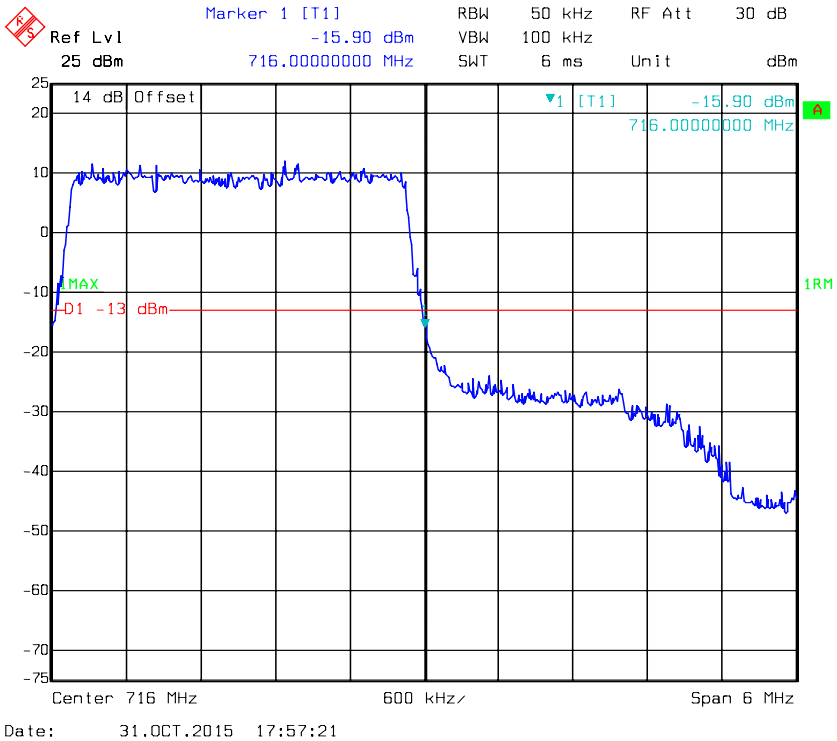
16QAM-3M 1RB, Right Band Edge



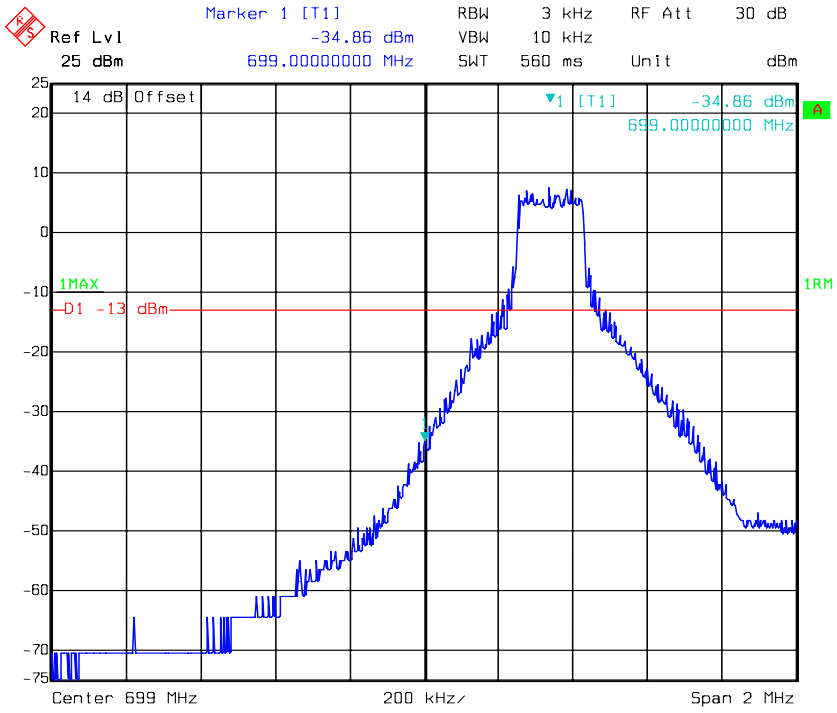
16QAM-3M 15 RB, Left Band Edge



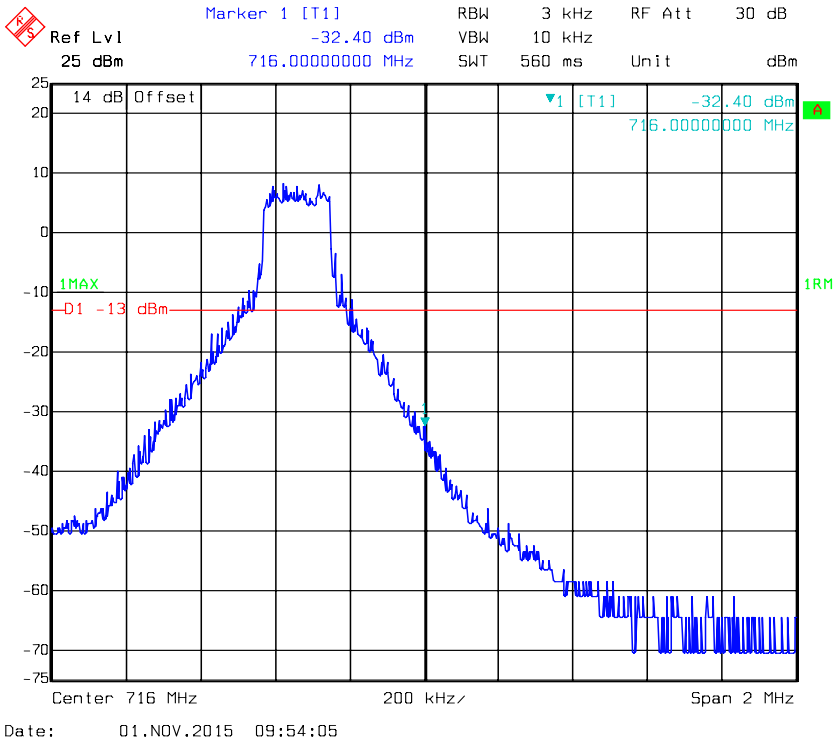
16QAM-3M 15 RB, Right Band Edge



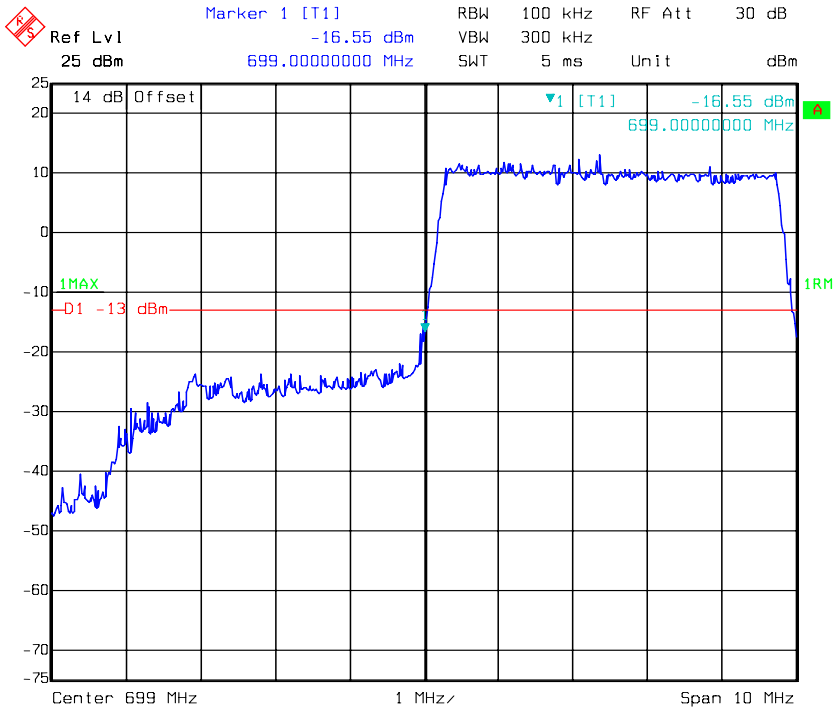
16QAM-5M 1RB, Left Band Edge



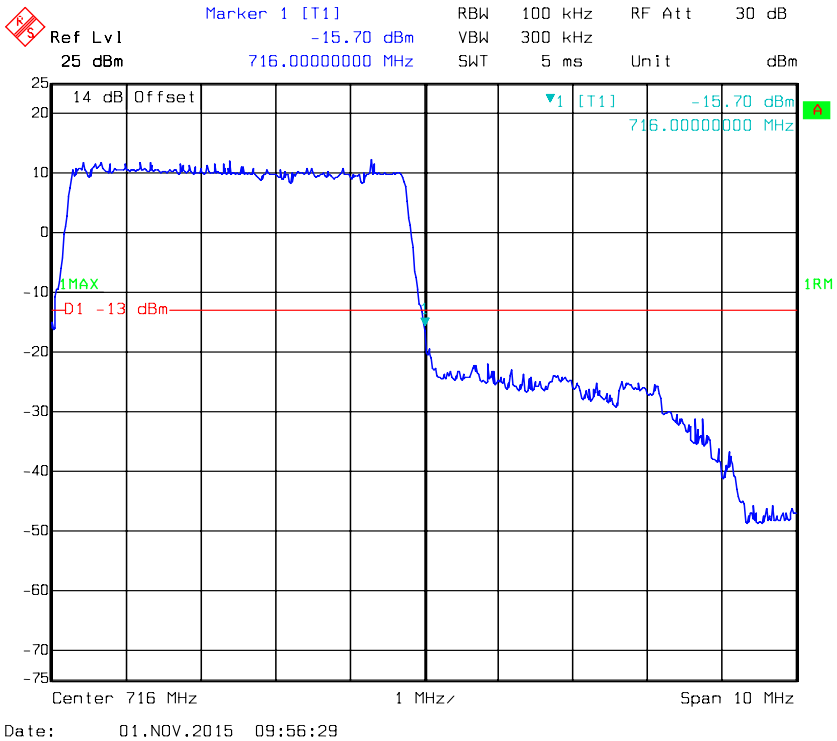
16QAM-5M 1RB, Right Band Edge



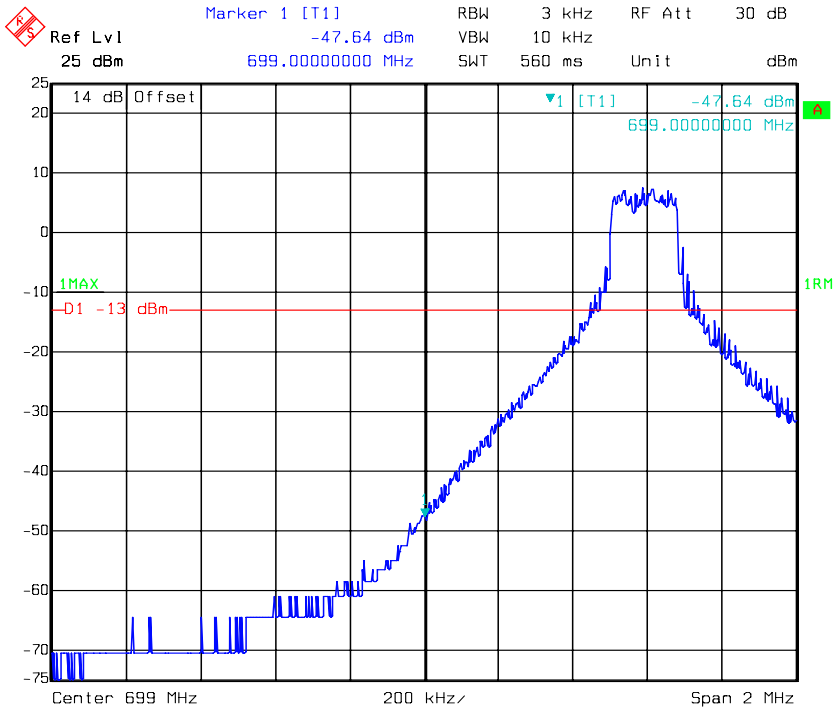
16QAM-5M 25 RB, Left Band Edge



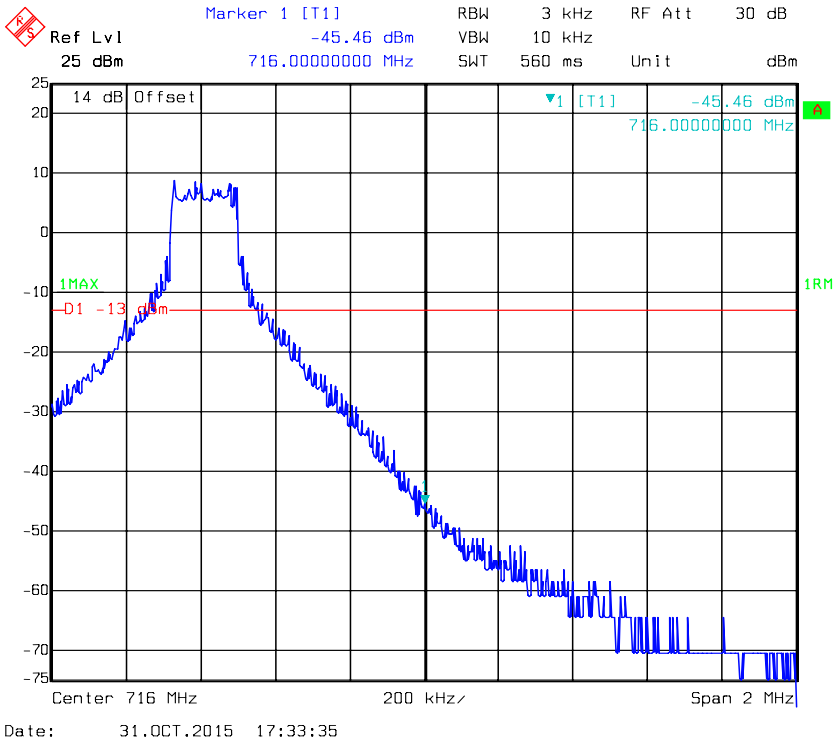
16QAM-5M 25 RB, Right Band Edge



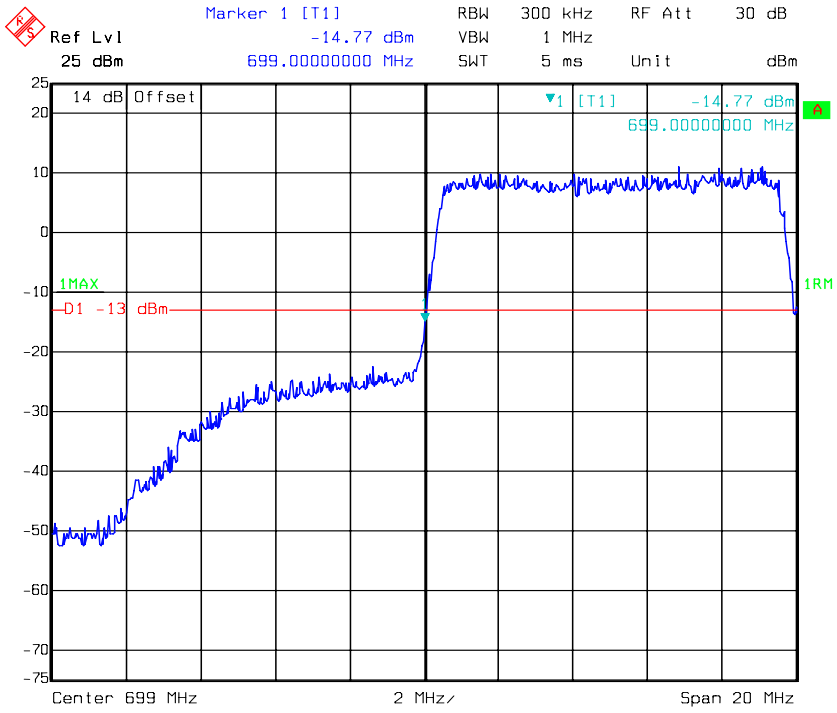
16QAM-10M 1RB, Left Band Edge



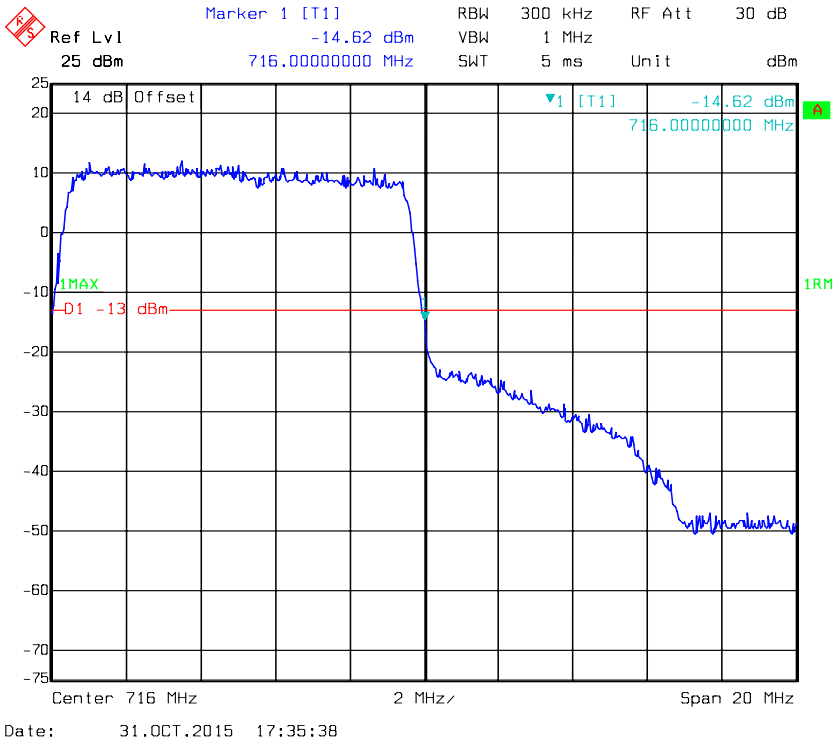
16QAM-10M 1RB, Right Band Edge



16QAM-10M 50 RB, Left Band Edge

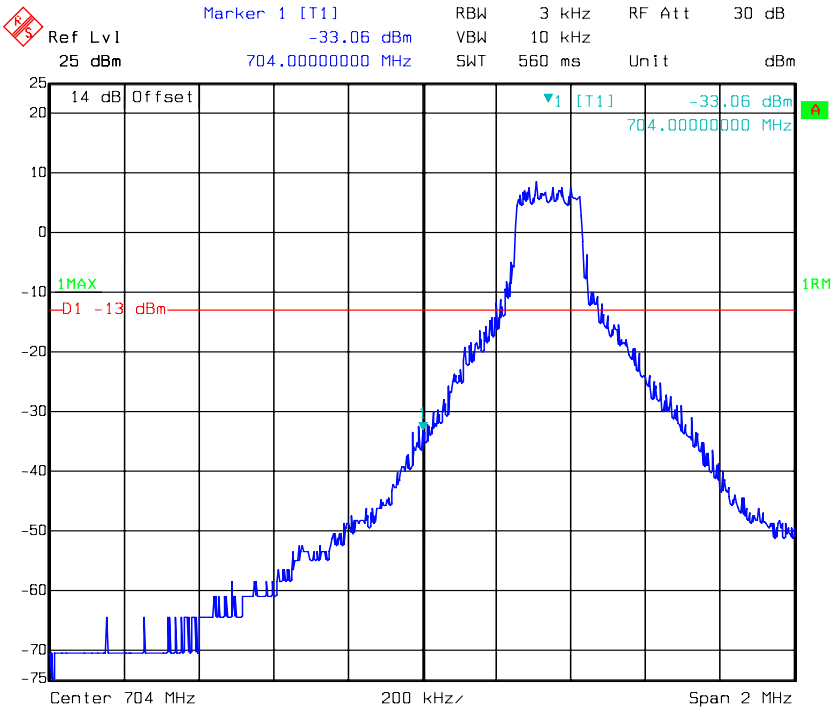


16QAM-10M 50 RB, Right Band Edge

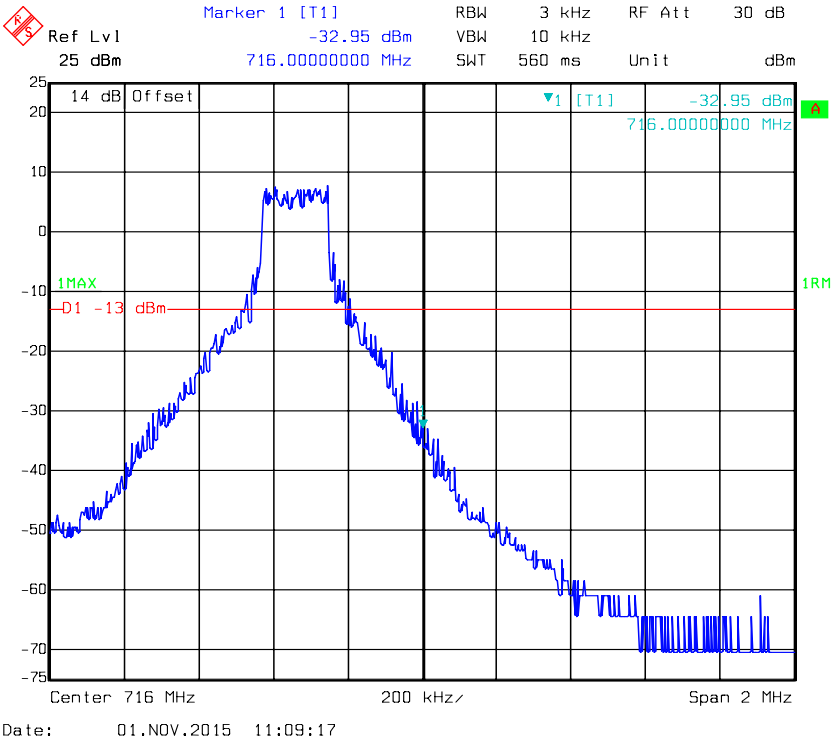


LTE Band 17

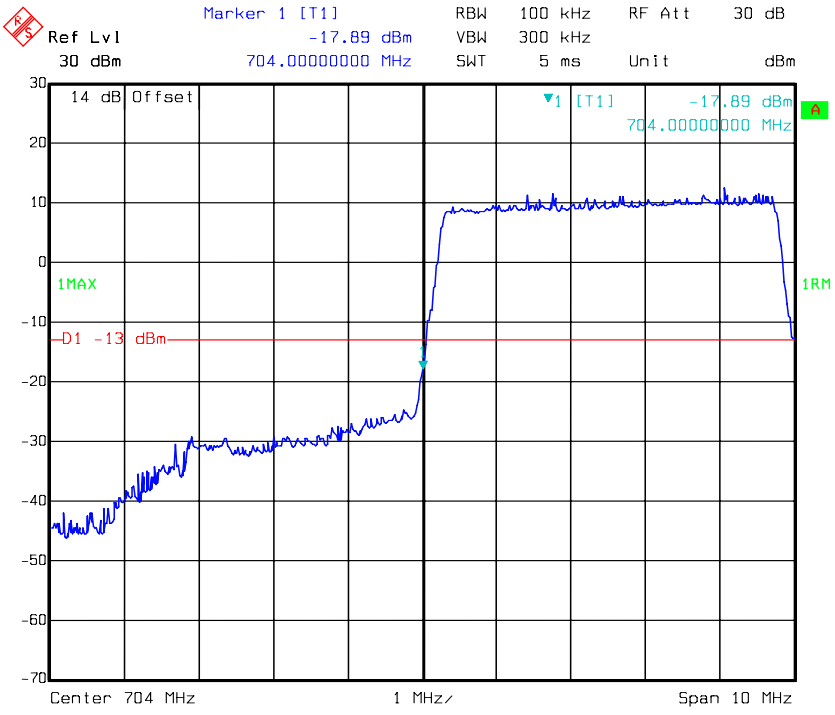
QPSK-5M 1RB, Left Band Edge



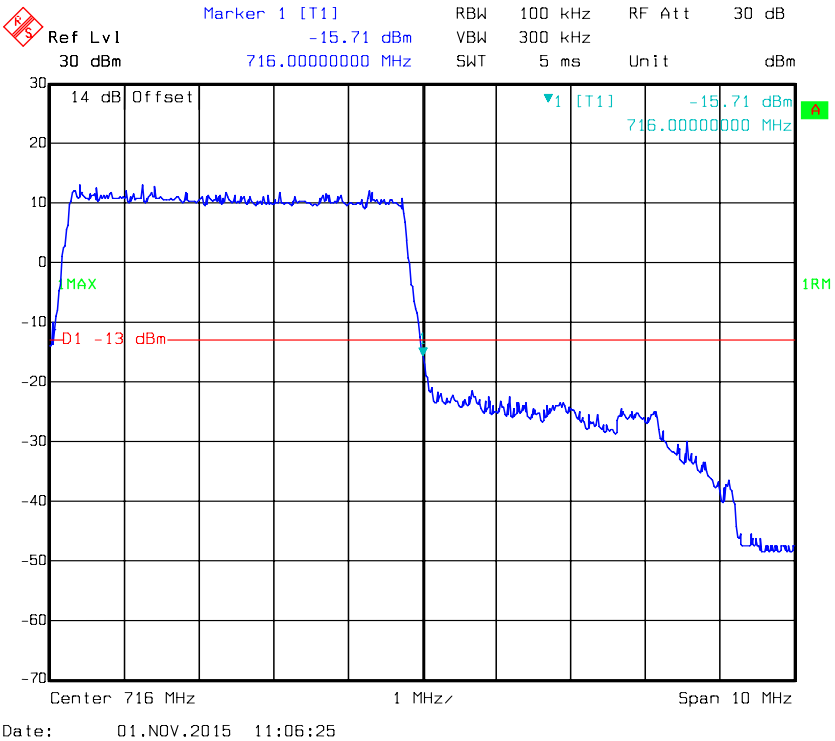
QPSK-5M 1RB, Right Band Edge



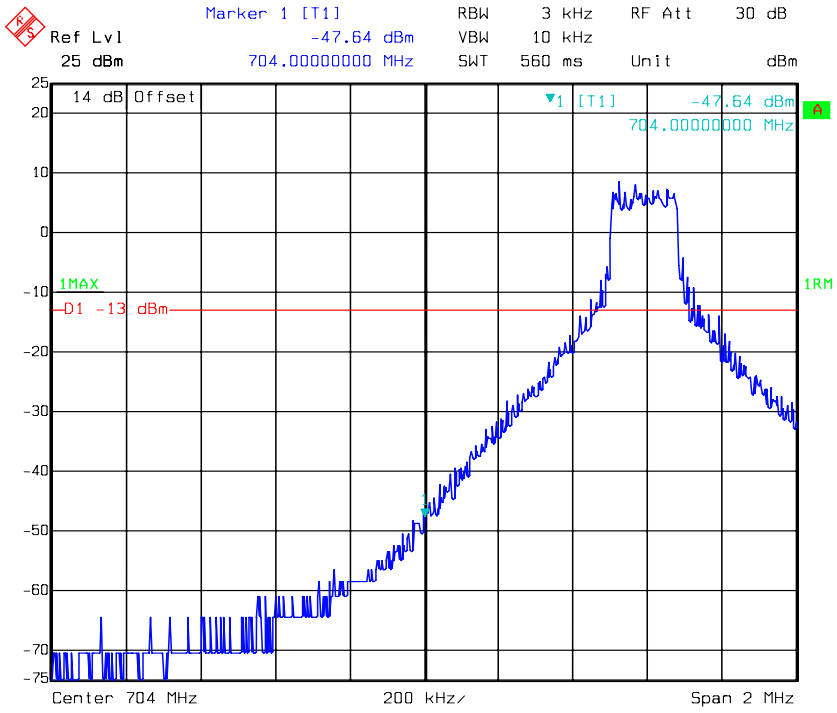
QPSK-5M 25 RB, Left Band Edge



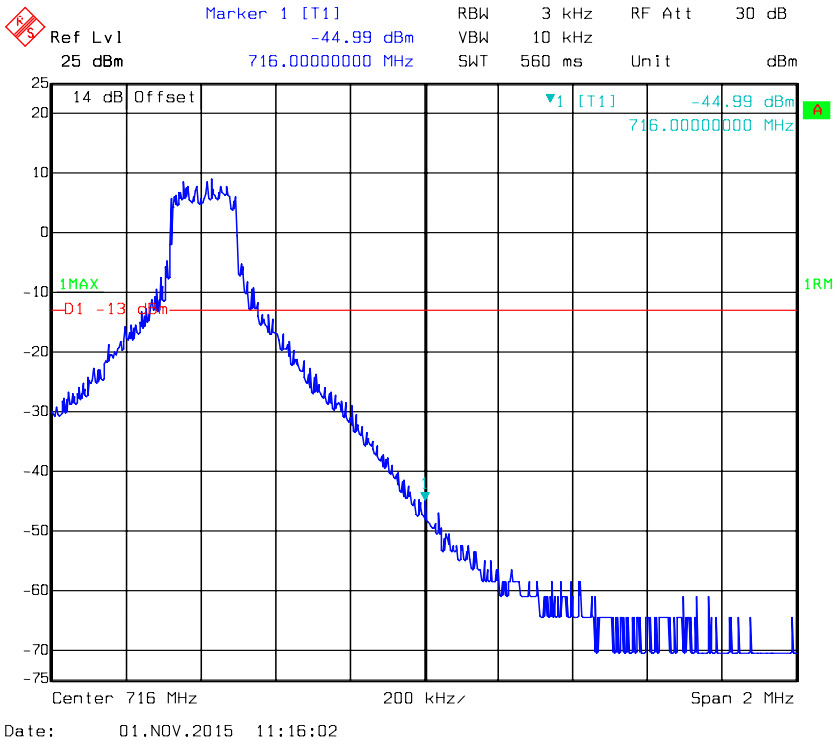
QPSK-5M 25 RB, Right Band Edge



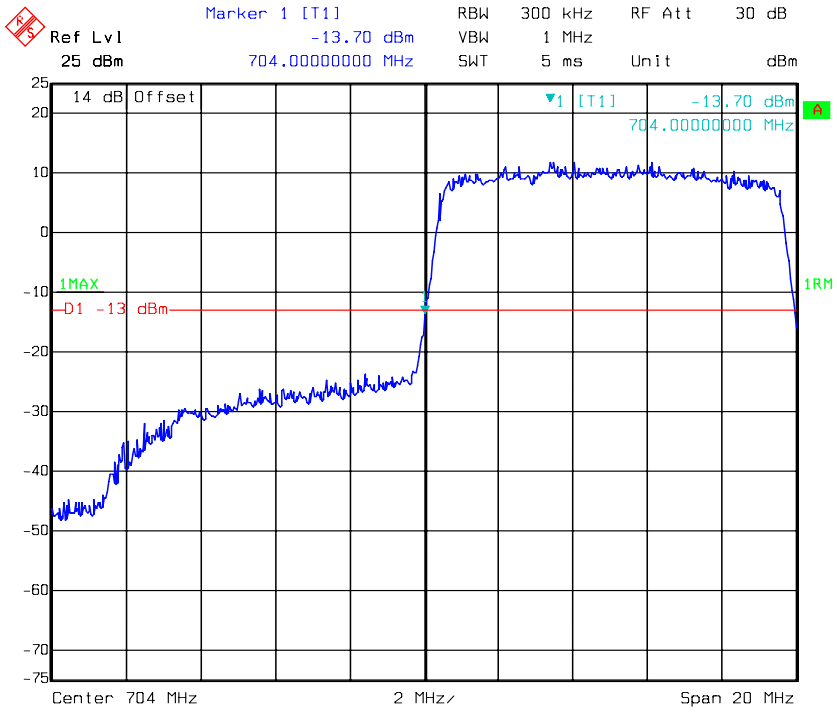
QPSK-10M 1RB, Left Band Edge



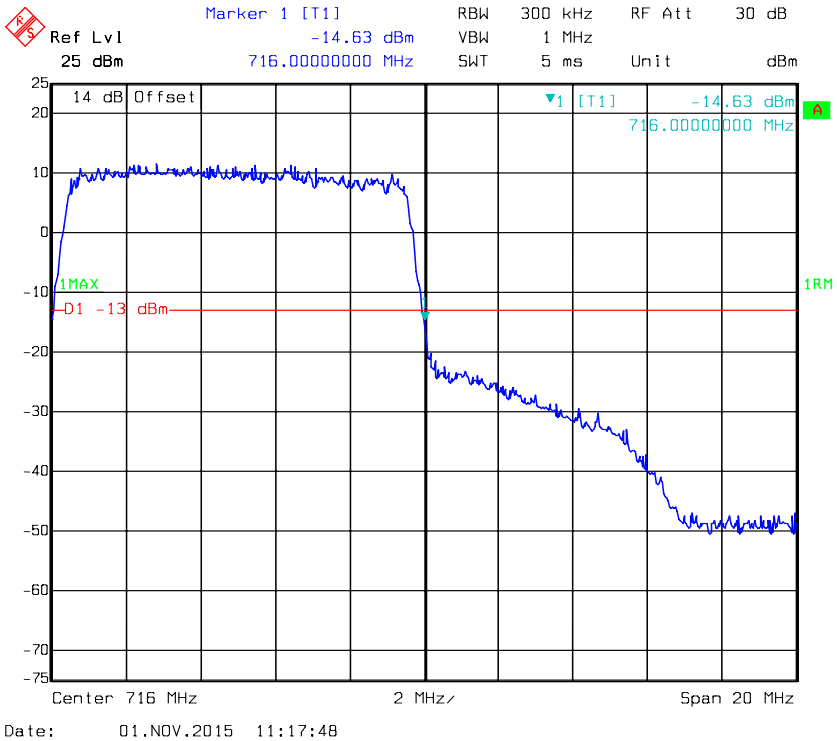
QPSK-10M 1RB, Right Band Edge



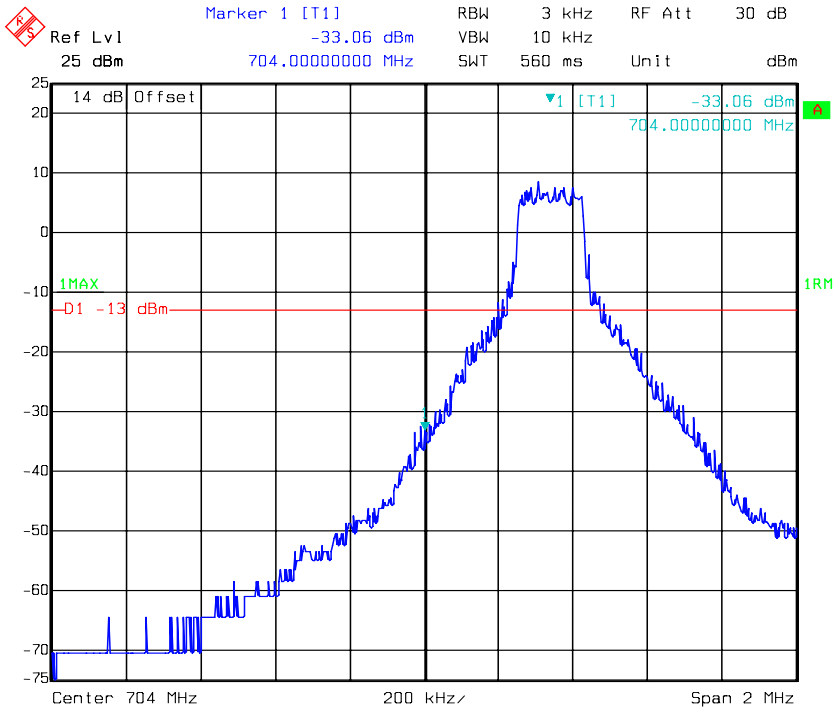
QPSK-10M 50 RB, Left Band Edge



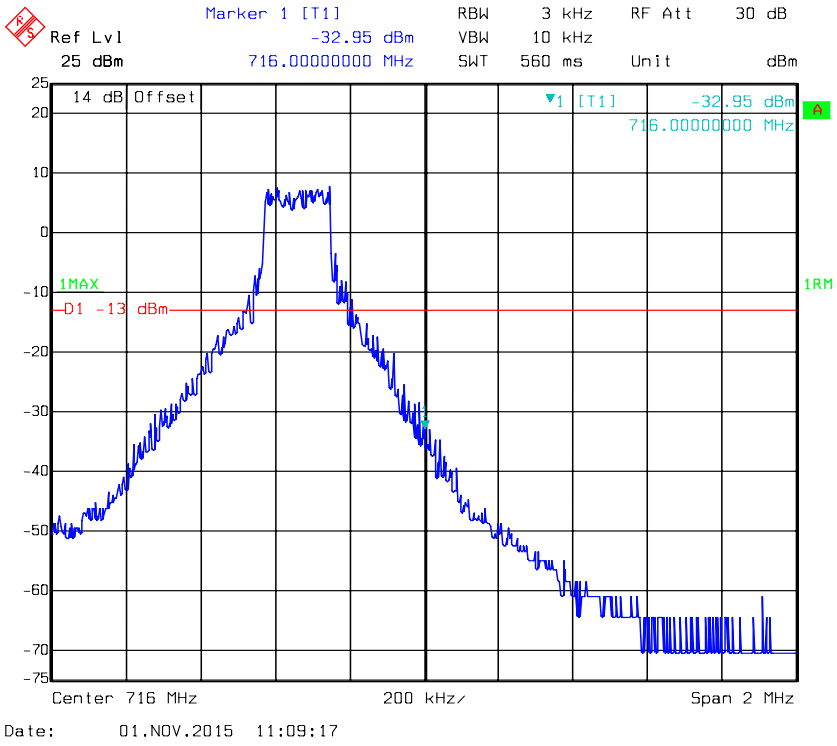
QPSK-10M 50 RB, Right Band Edge



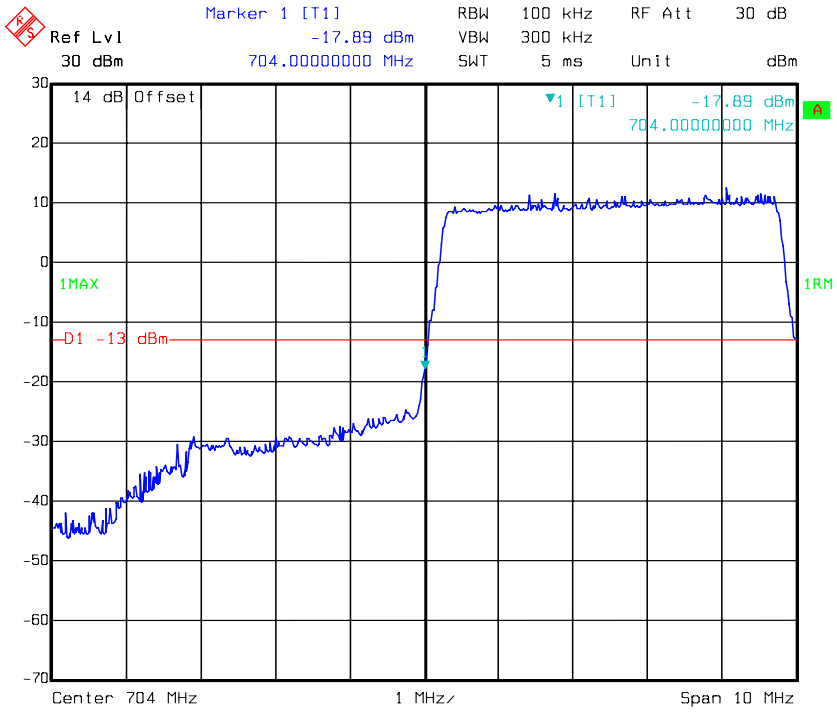
16QAM-5M 1RB, Left Band Edge



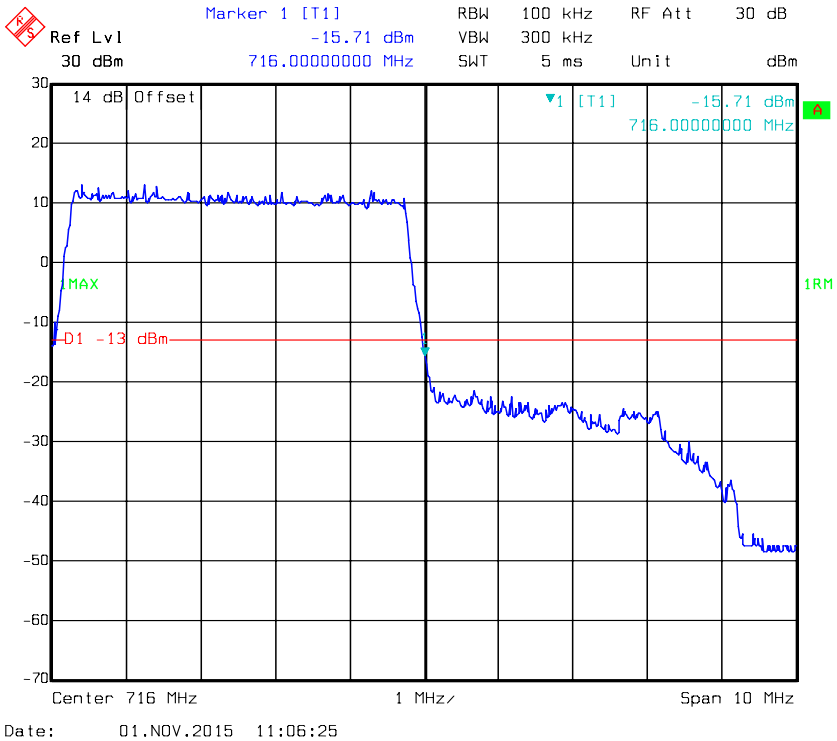
16QAM-5M 1RB, Right Band Edge



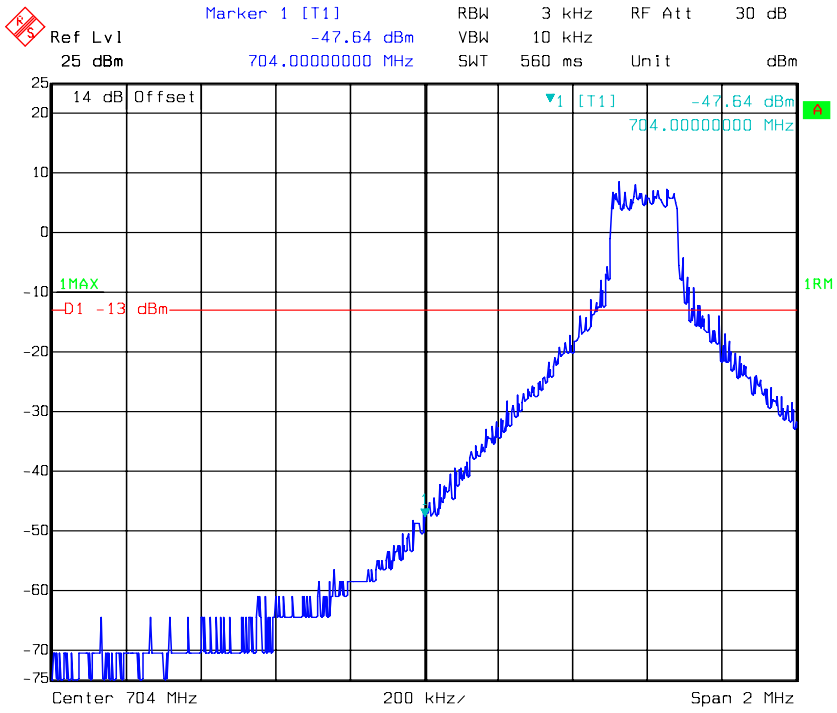
16QAM-5M 25 RB, Left Band Edge



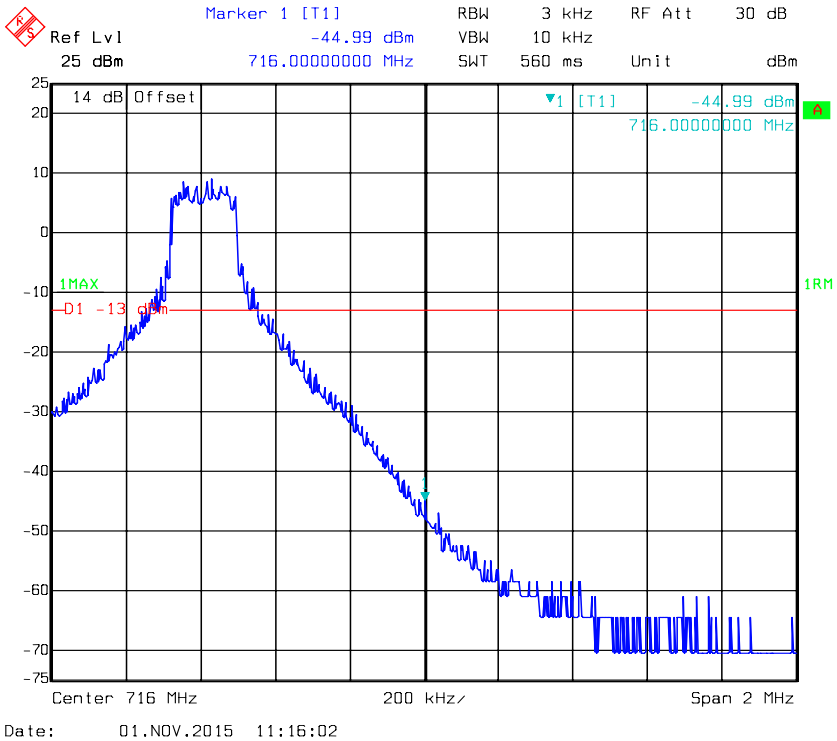
16QAM-5M 25 RB, Right Band Edge



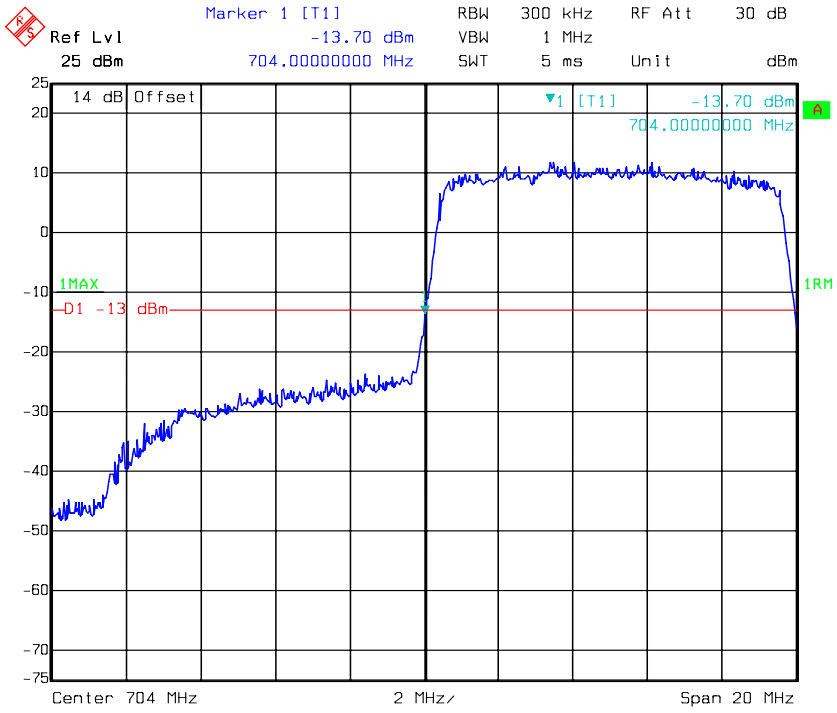
16QAM-10M 1RB, Left Band Edge



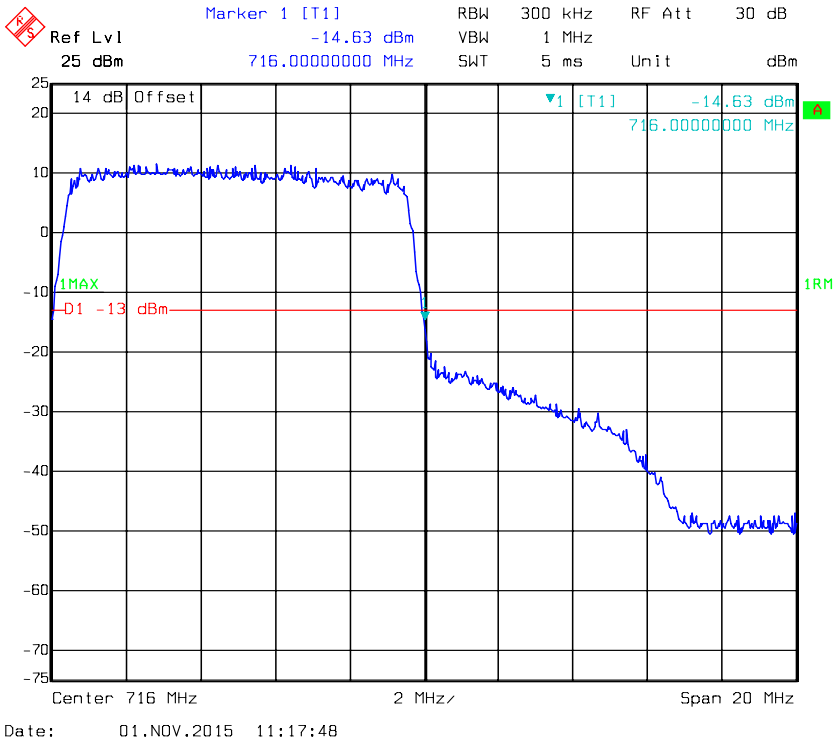
16QAM-10M 1RB, Right Band Edge



16QAM-10M 50 RB, Left Band Edge

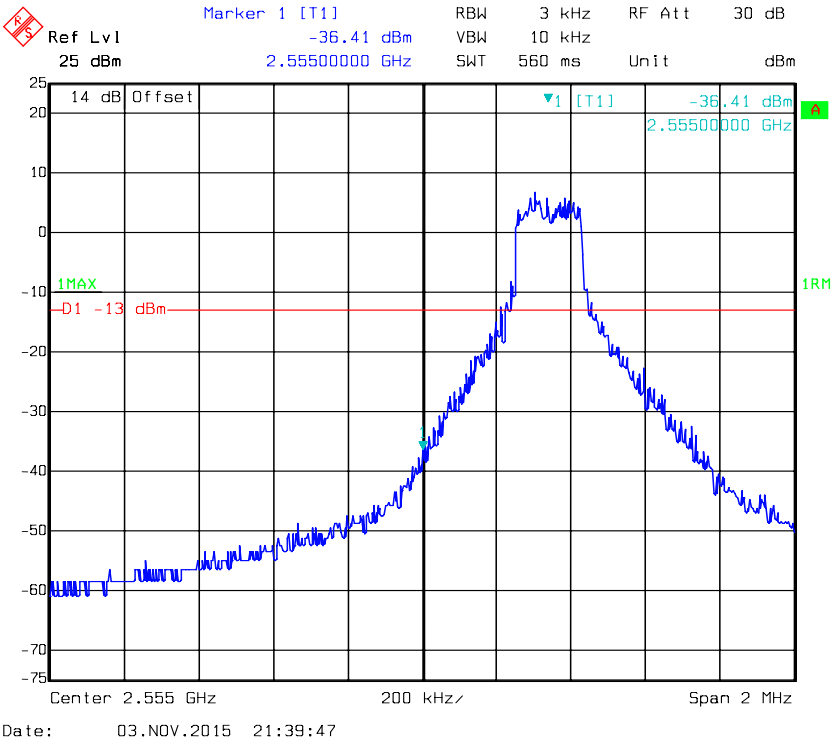


16QAM-10M 50 RB, Right Band Edge

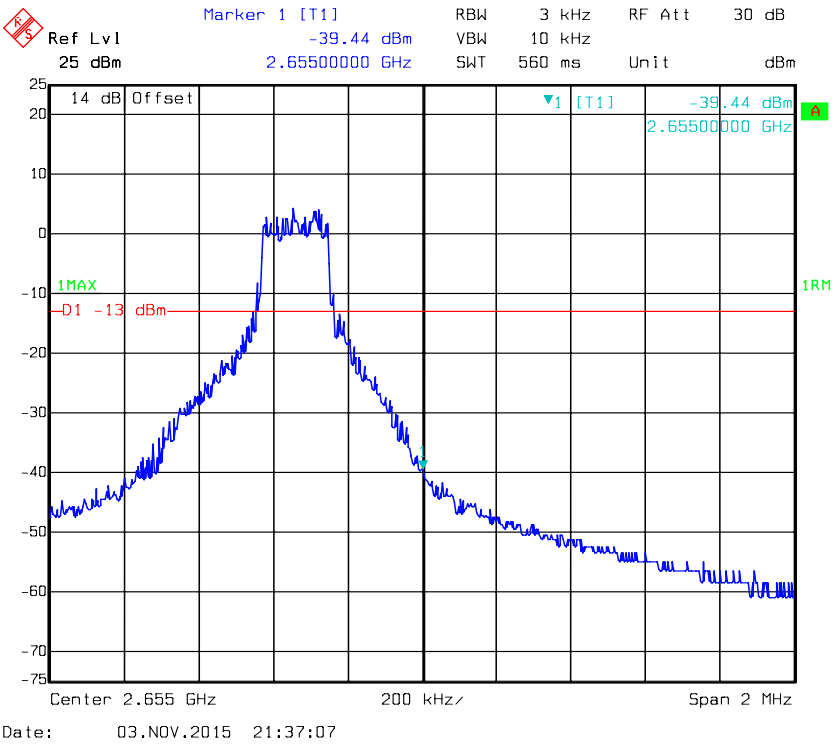


LTE Band 41

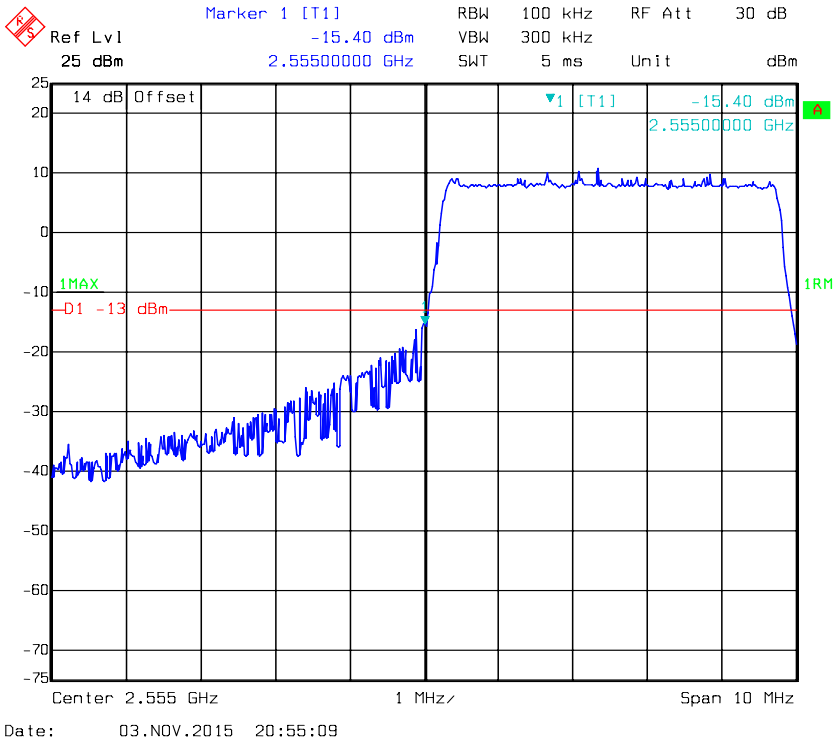
QPSK-5M 1RB, Left Band Edge



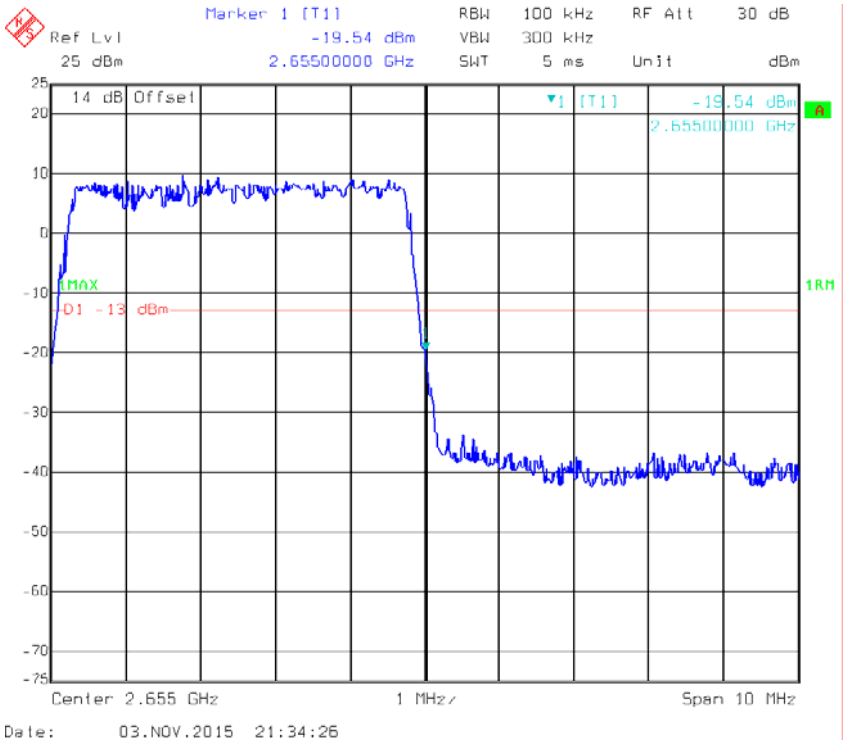
QPSK-5M 1RB, Right Band Edge



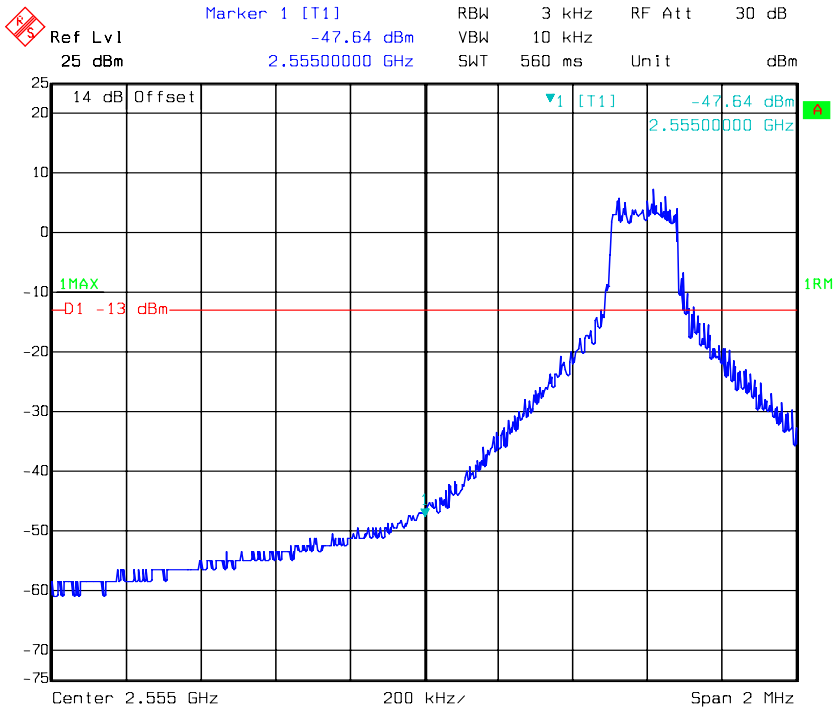
QPSK-5M 25 RB, Left Band Edge



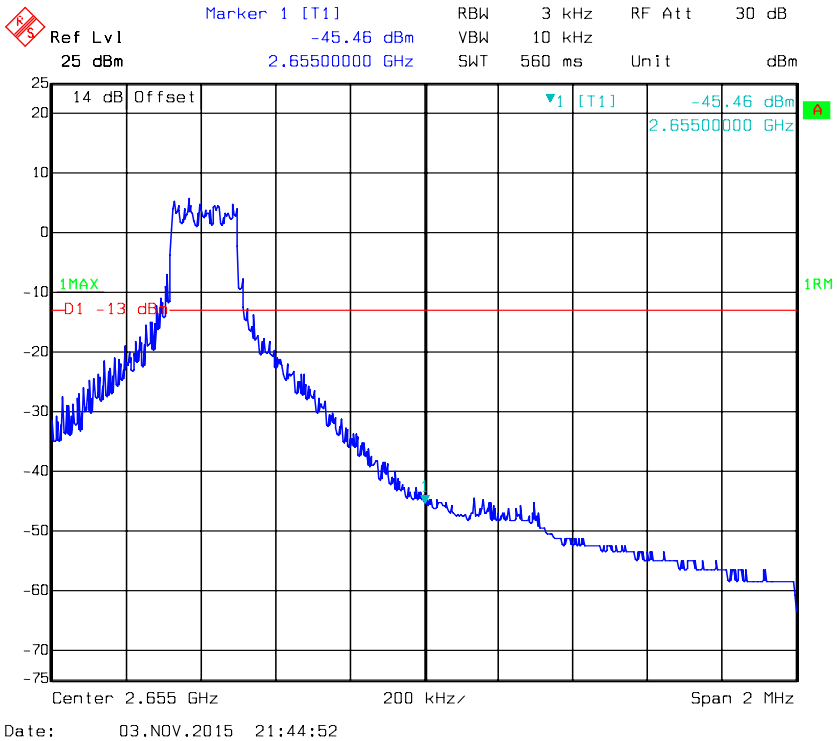
QPSK-5M 25 RB, Right Band Edge



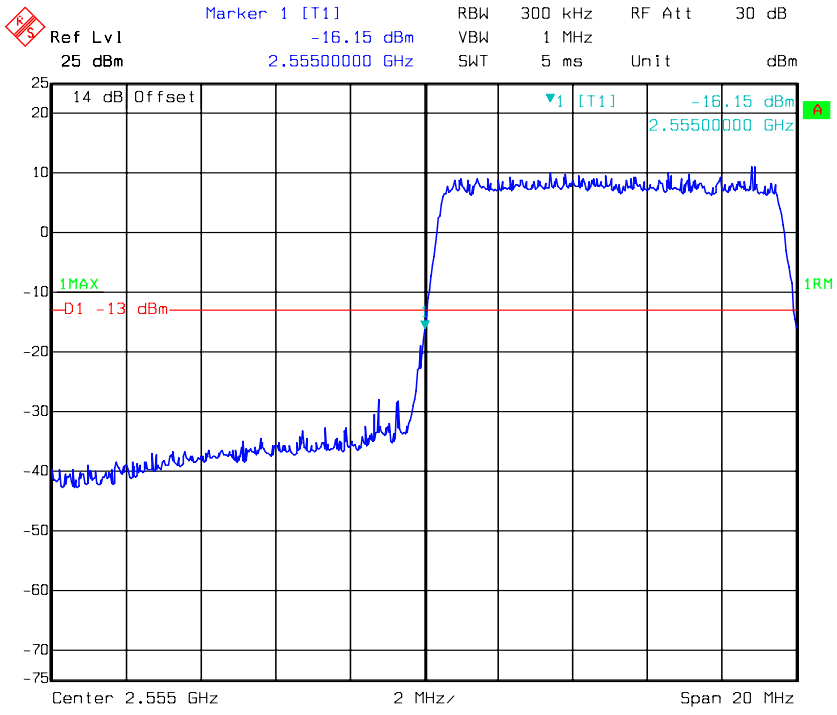
QPSK-10M 1RB, Left Band Edge



QPSK-10M 1RB, Right Band Edge



QPSK-10M 50 RB, Left Band Edge



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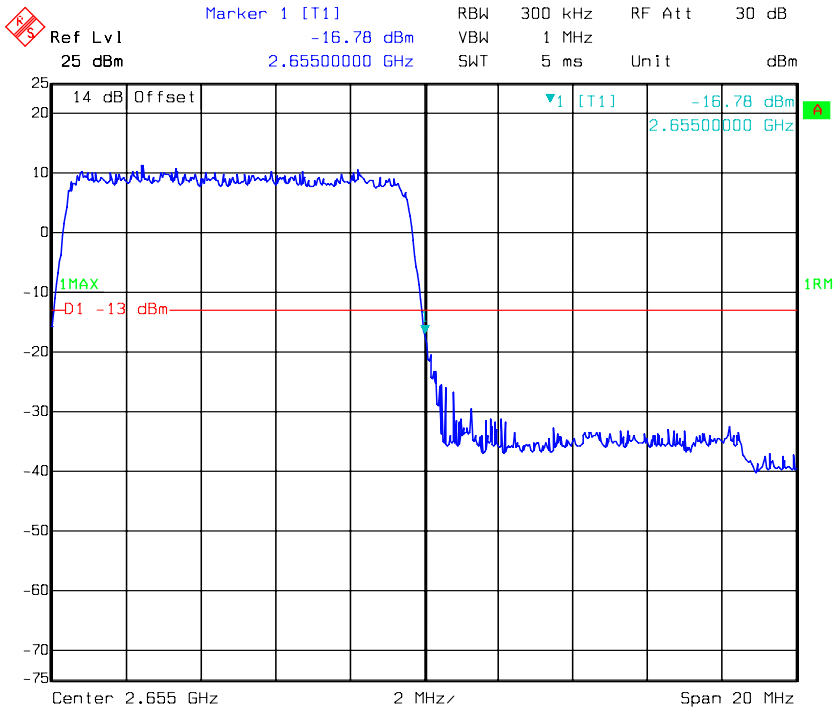
QPSK-10M 50 RB, Right Band Edge



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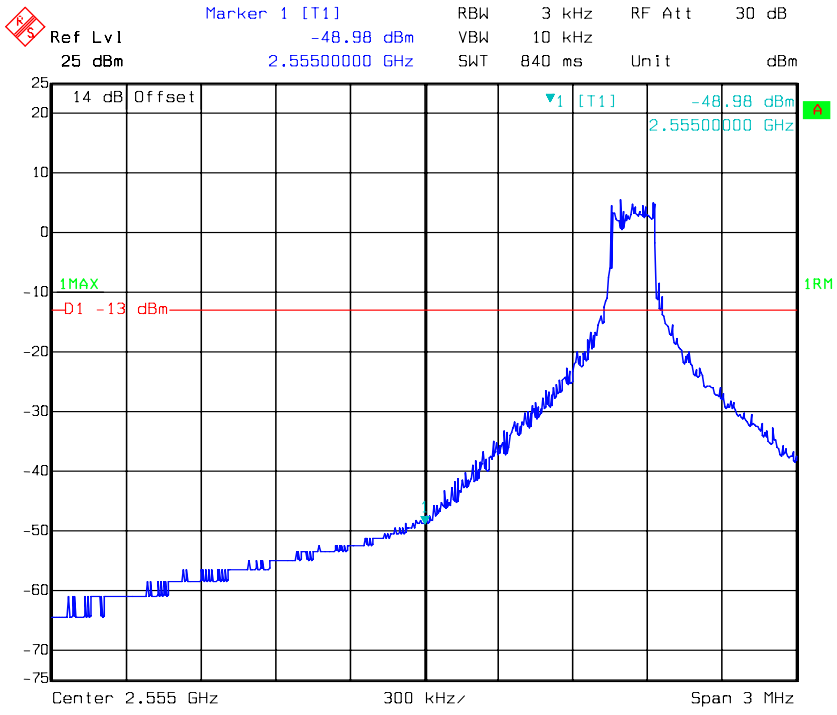
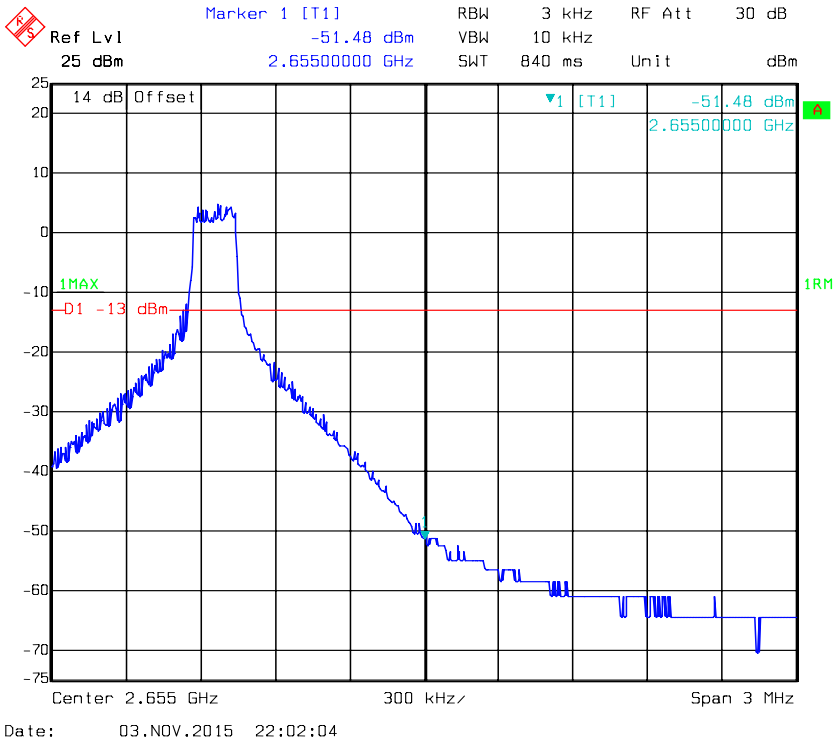
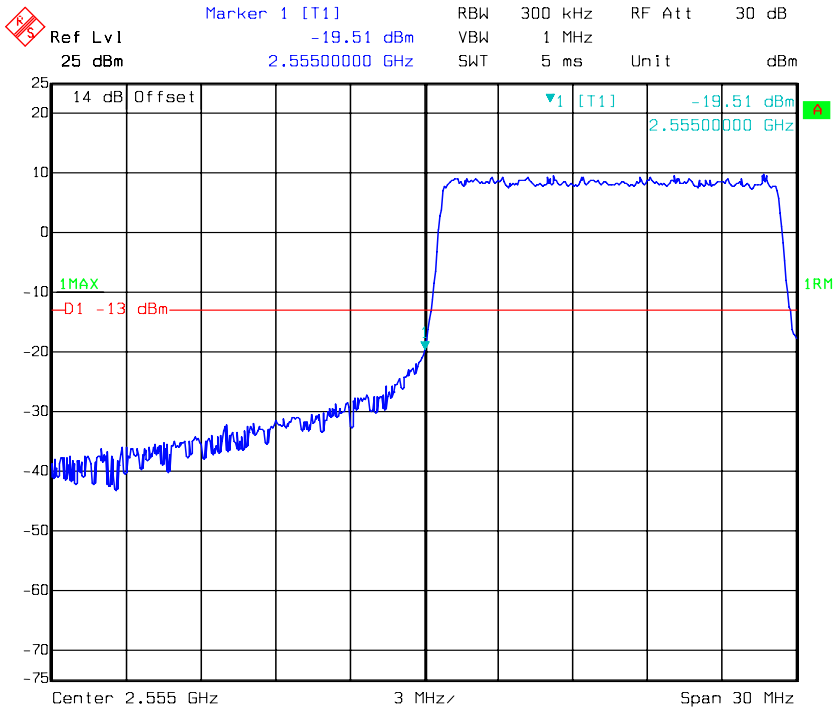
QPSK-15M 1RB, Left Band Edge



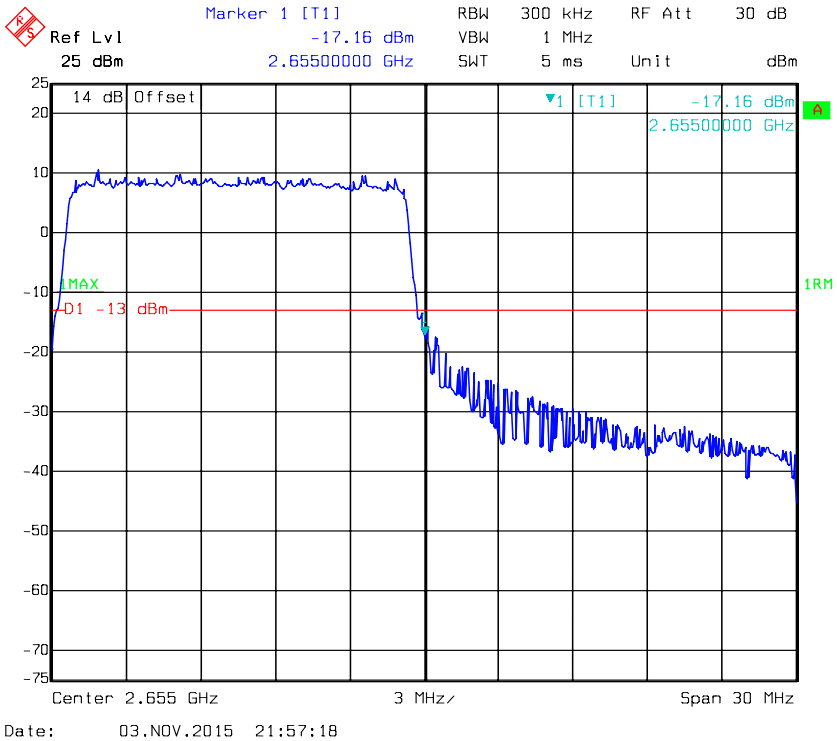
QPSK-15M 1RB, Right Band Edge



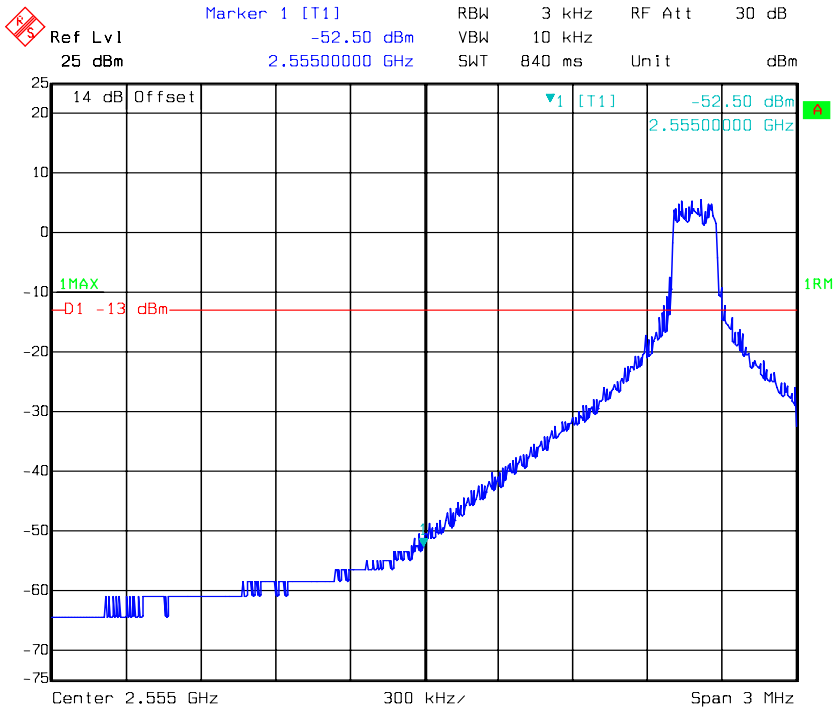
QPSK-15M 75 RB, Left Band Edge



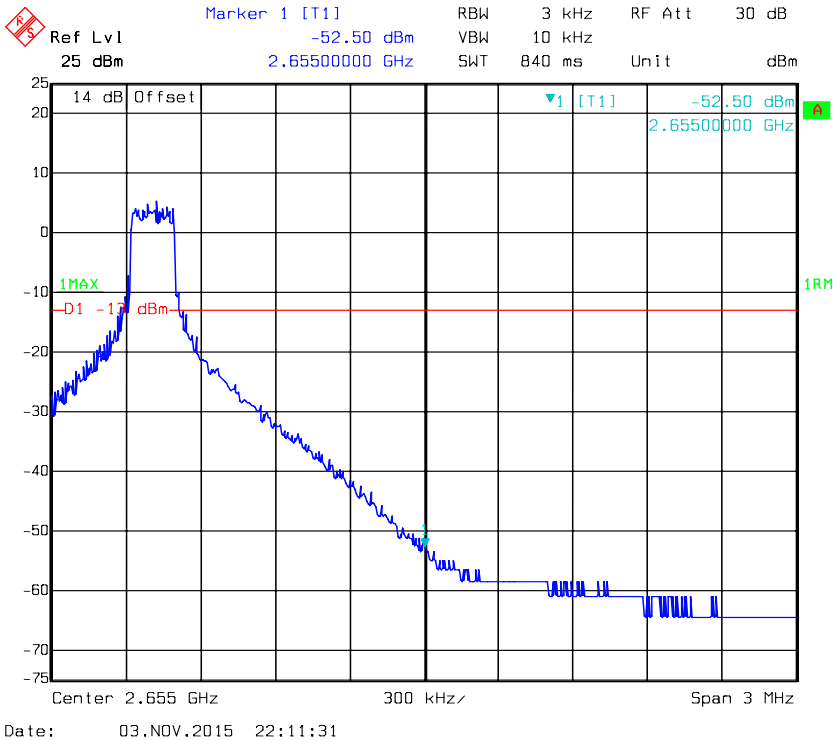
QPSK-15M 75 RB, Right Band Edge



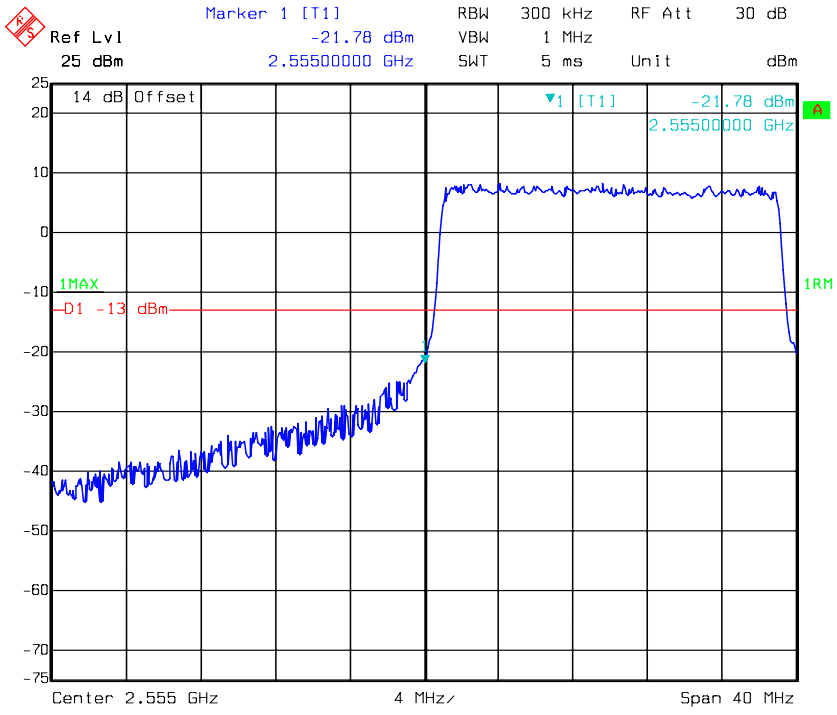
QPSK-20M 1RB, Left Band Edge



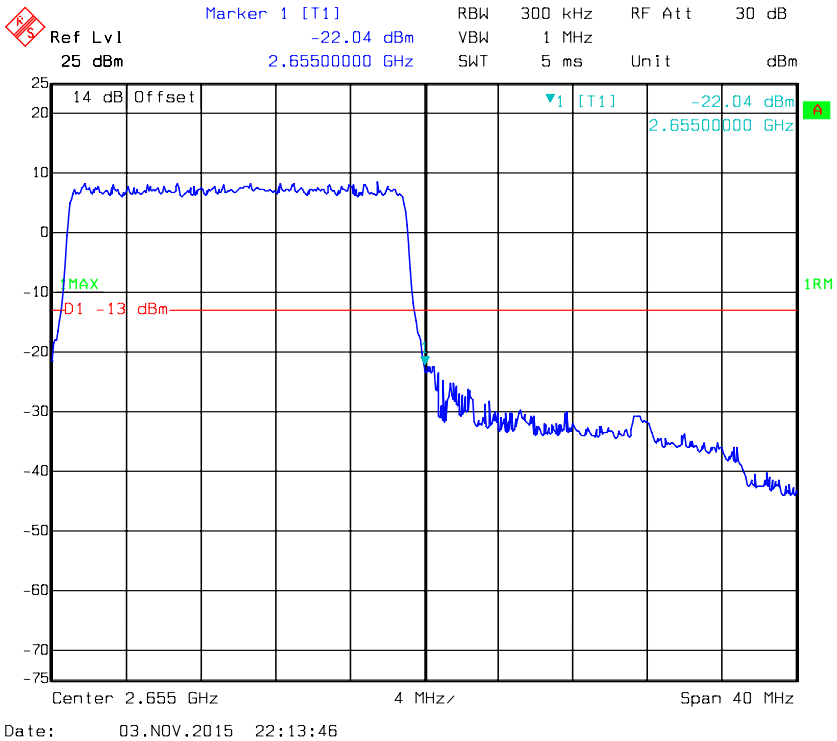
QPSK-20M 1RB, Right Band Edge



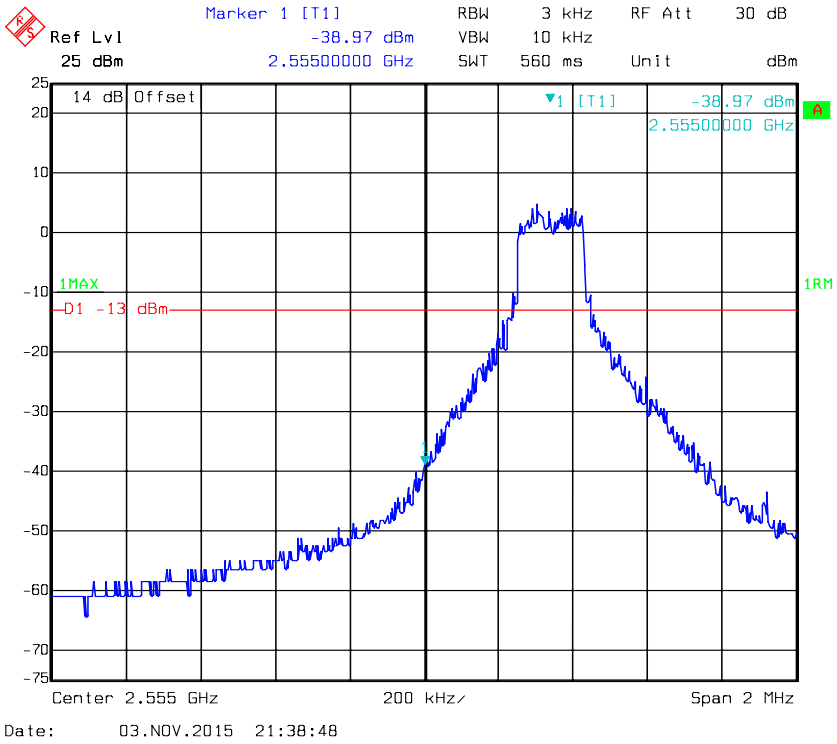
QPSK-20M 100 RB, Left Band Edge



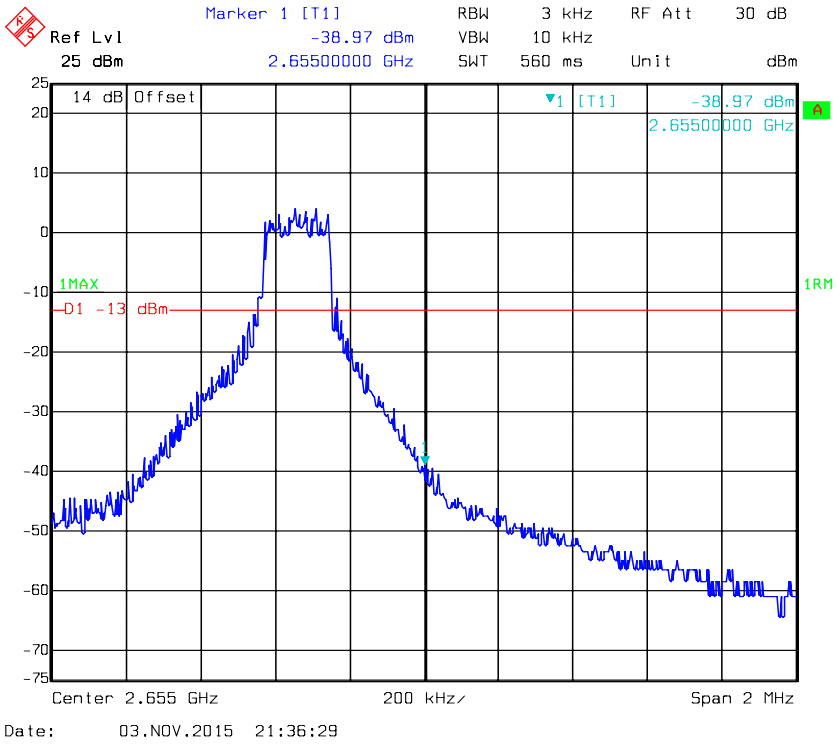
QPSK-20M 100 RB, Right Band Edge



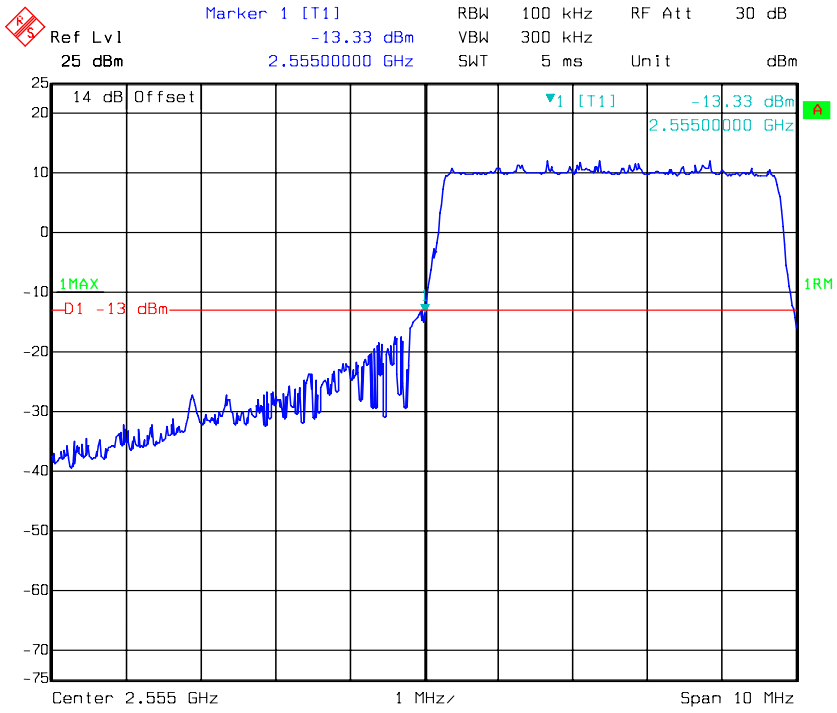
16QAM-5M 1RB, Left Band Edge



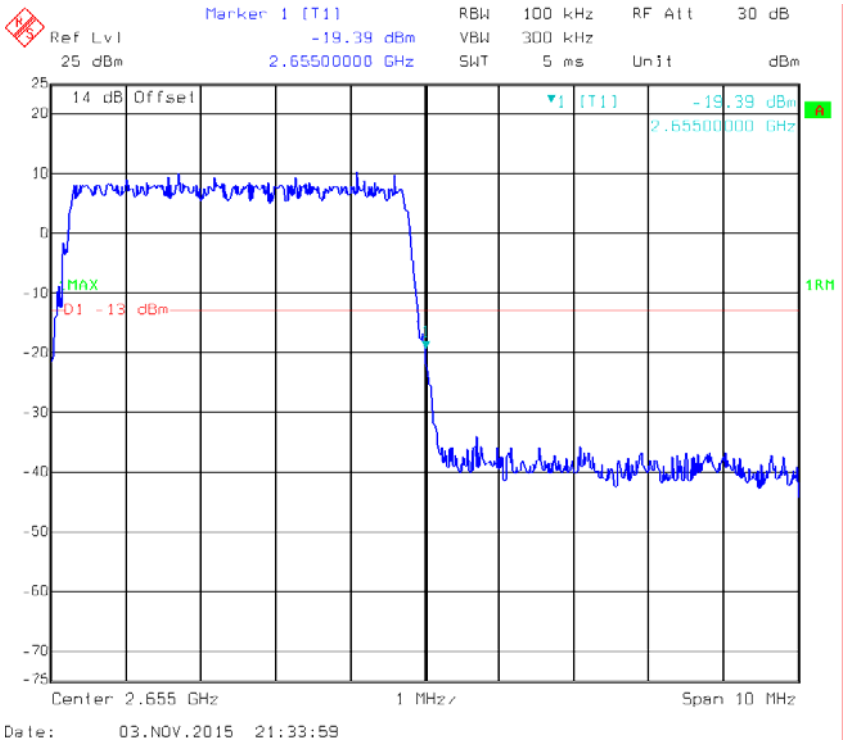
16QAM-5M 1RB, Right Band Edge



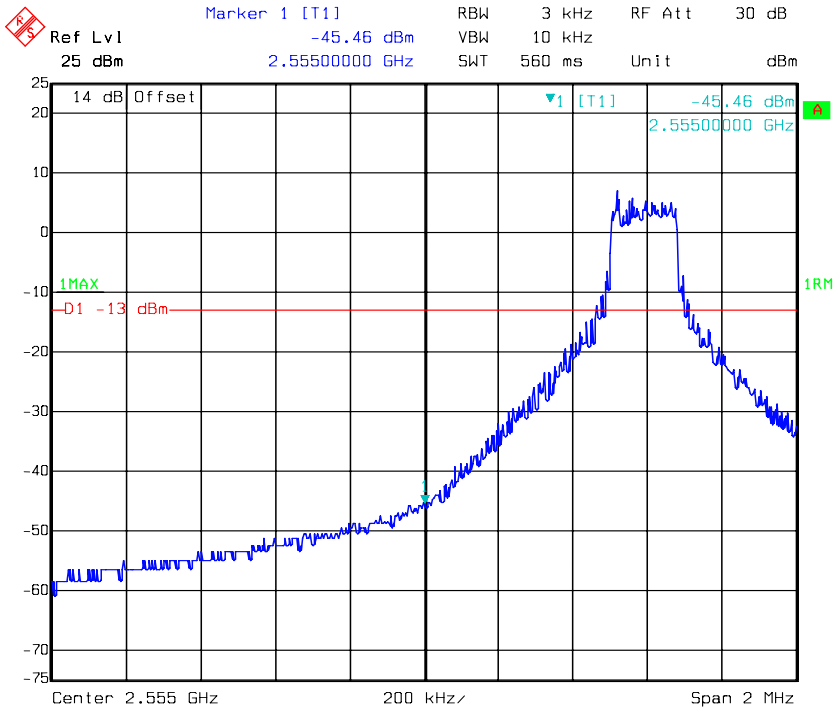
16QAM-5M 25 RB, Left Band Edge



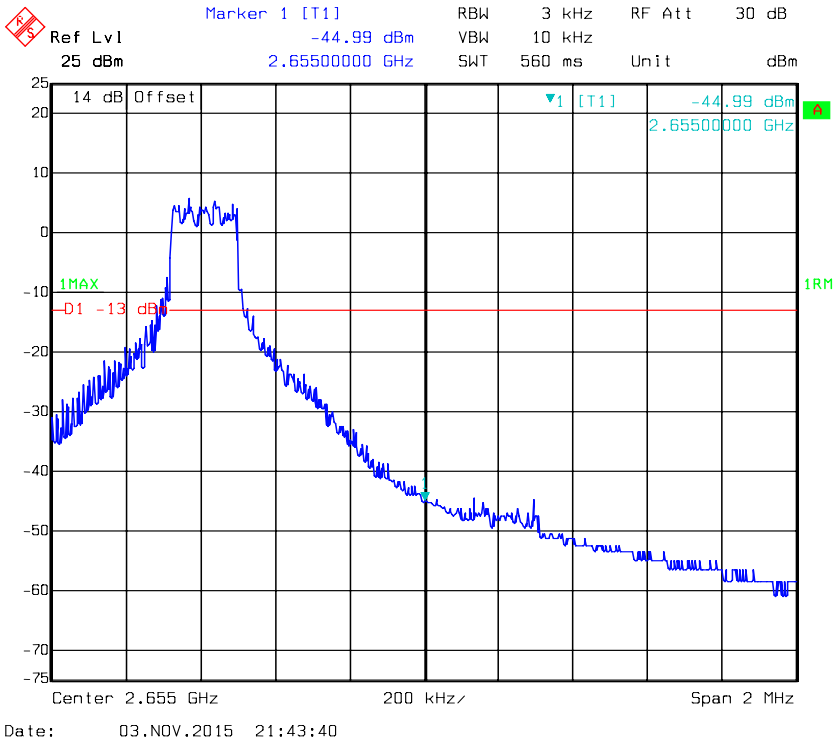
16QAM-5M 25 RB, Right Band Edge



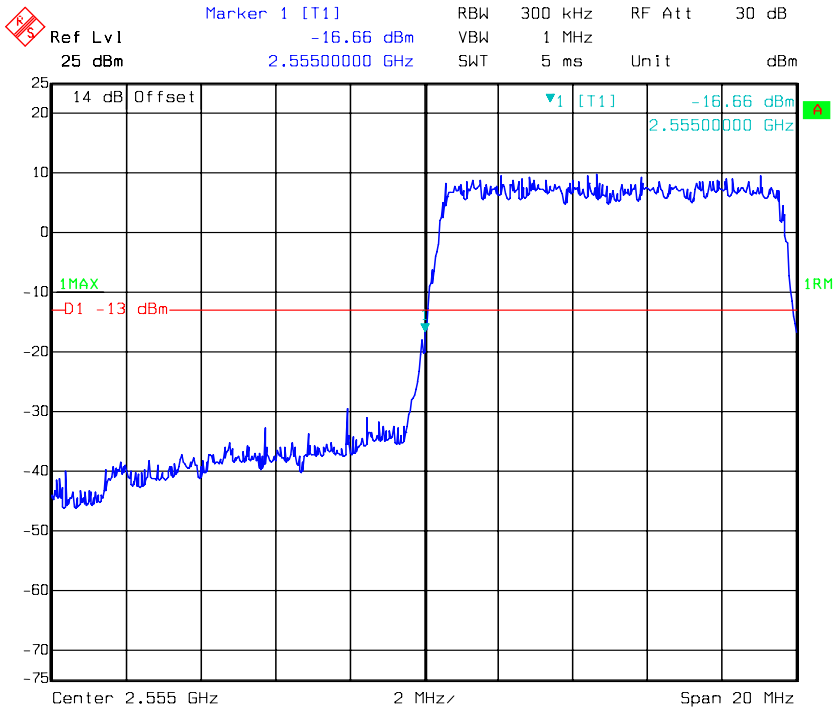
16QAM-10M 1RB, Left Band Edge



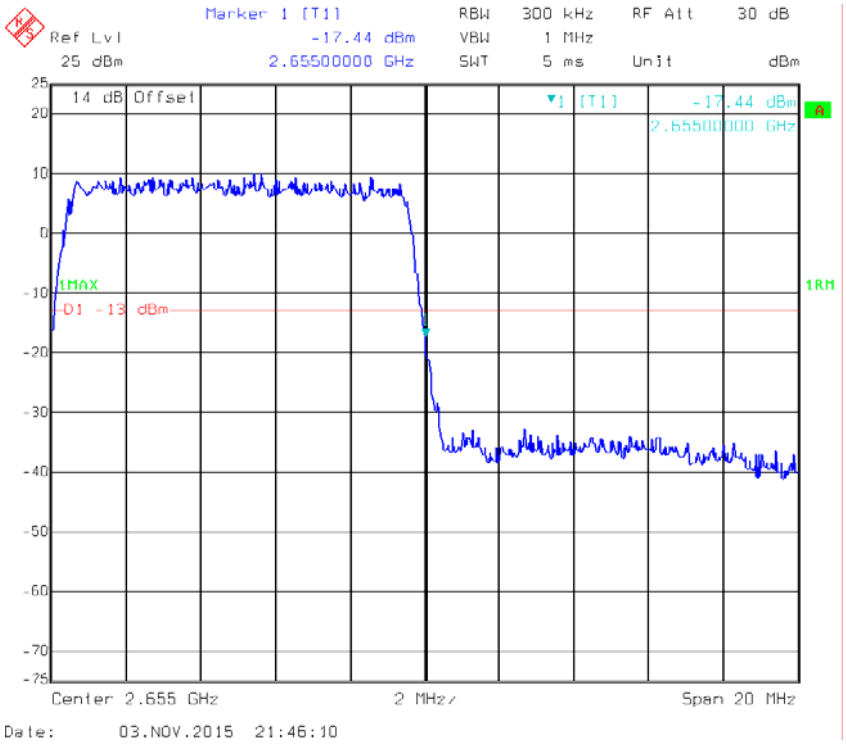
16QAM-10M 1RB, Right Band Edge



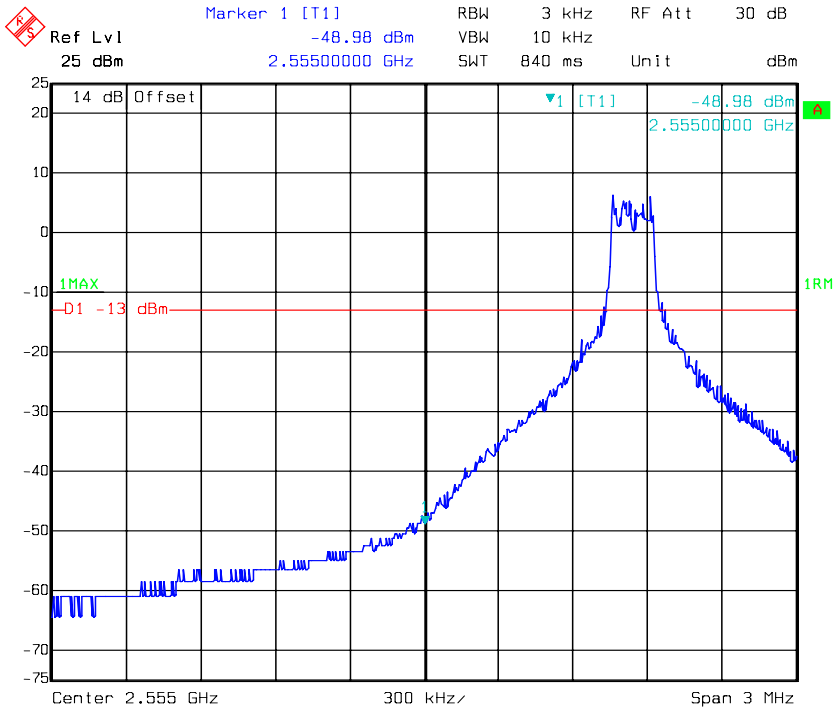
16QAM-10M 50 RB, Left Band Edge



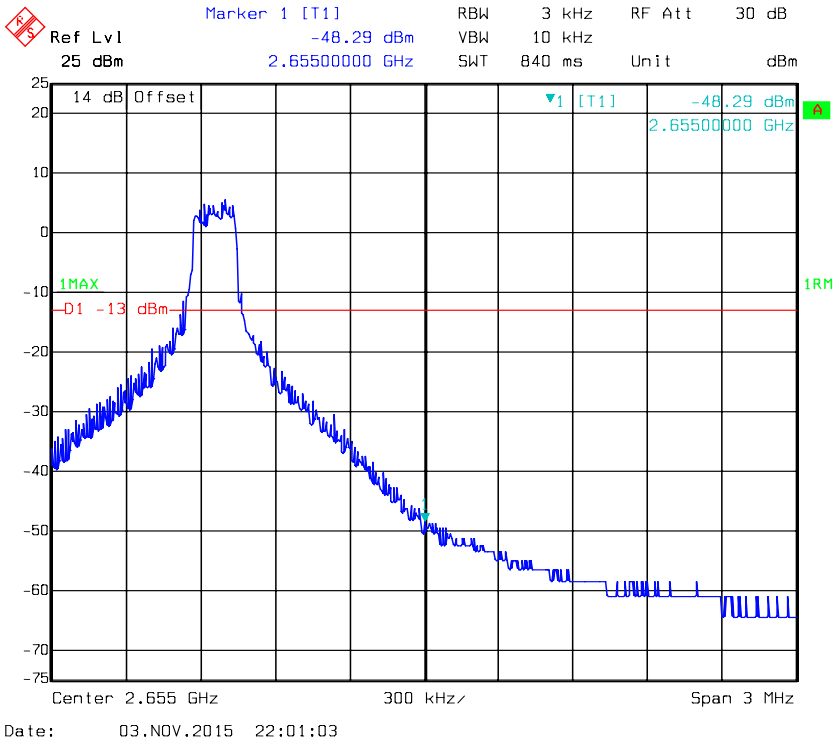
16QAM-10M 50 RB, Right Band Edge



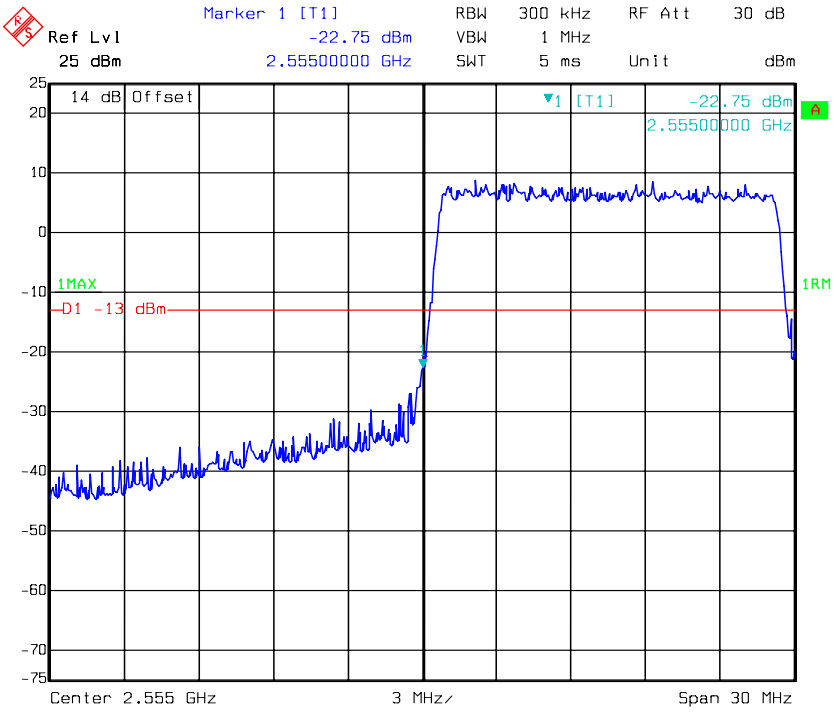
16QAM-15M 1RB, Left Band Edge



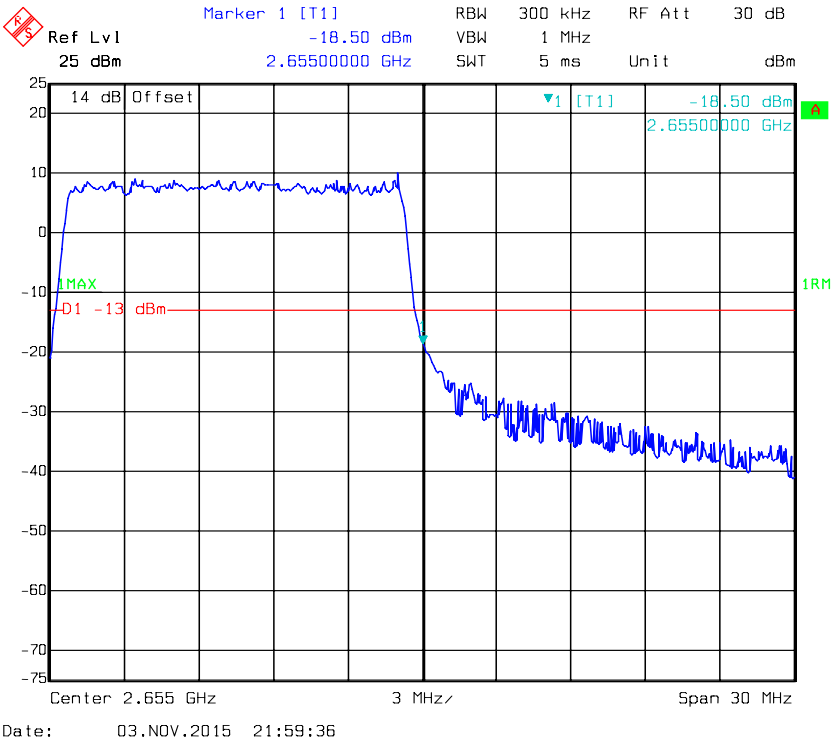
16QAM-15M 1RB, Right Band Edge



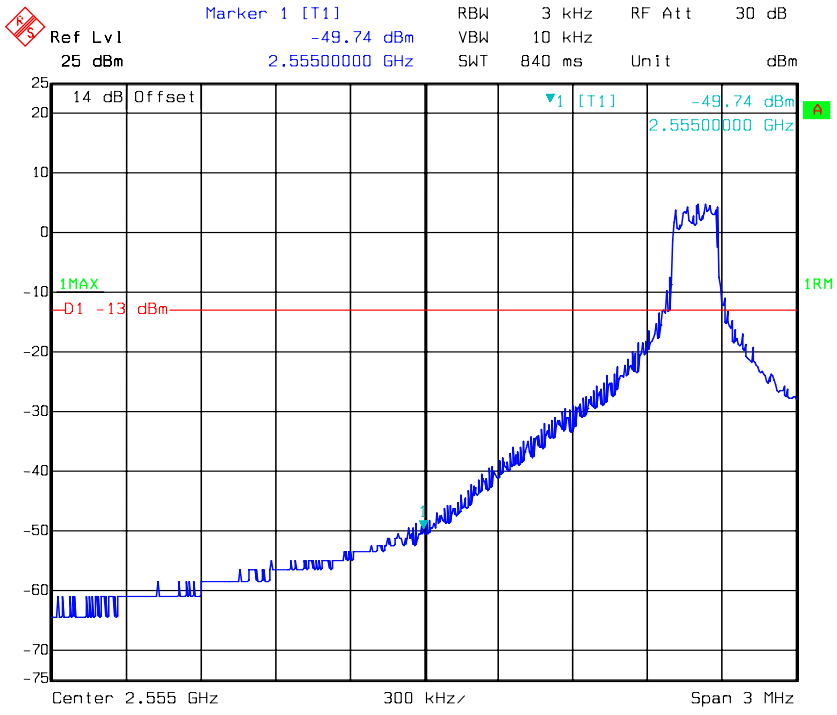
16QAM-15M 75 RB, Left Band Edge



16QAM-15M 75 RB, Right Band Edge

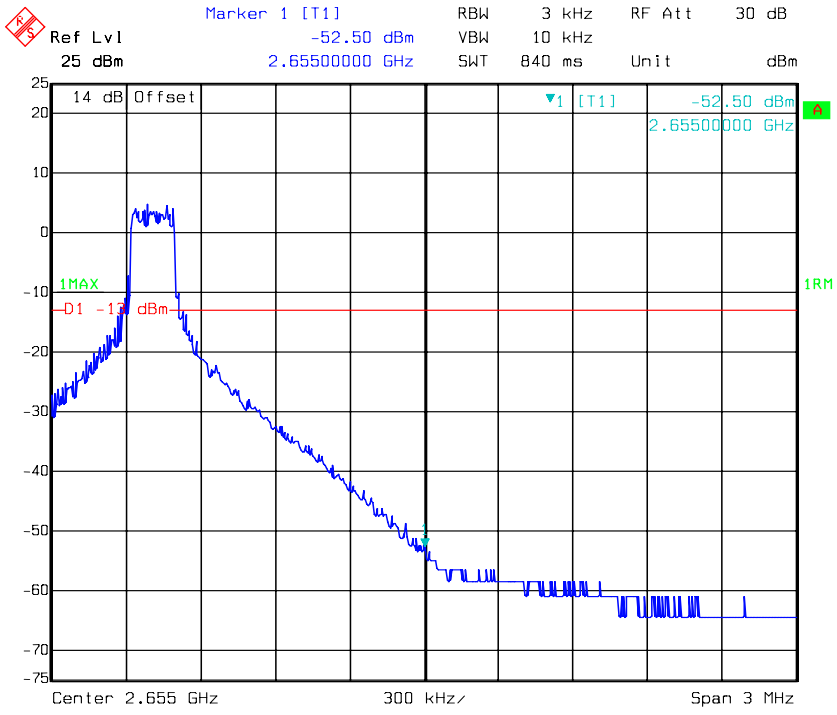


QPSK-20M 1RB, Left Band Edge



Date: 03.NOV.2015 22:06:43

16QAM-20M 1RB, Right Band Edge



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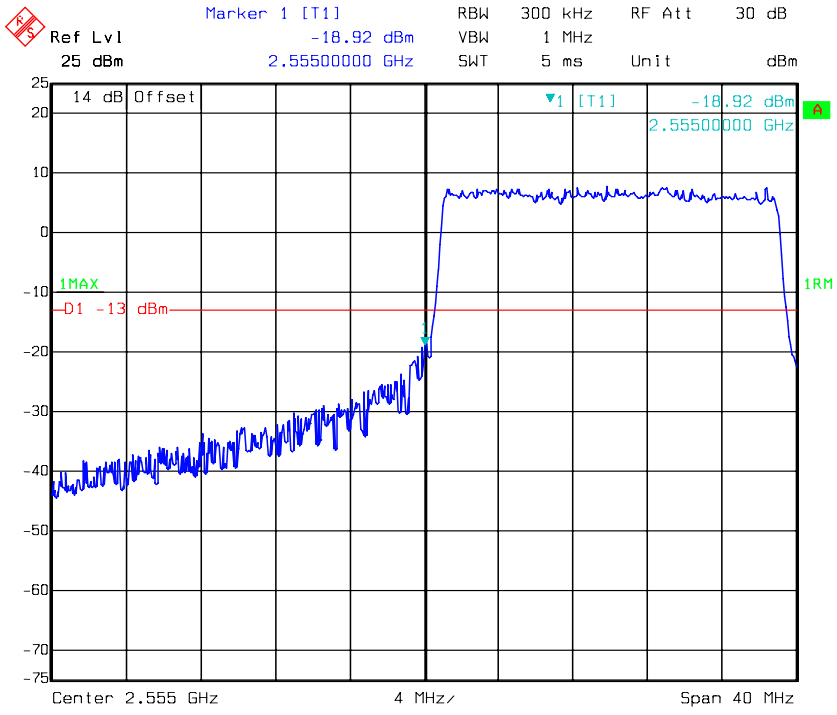
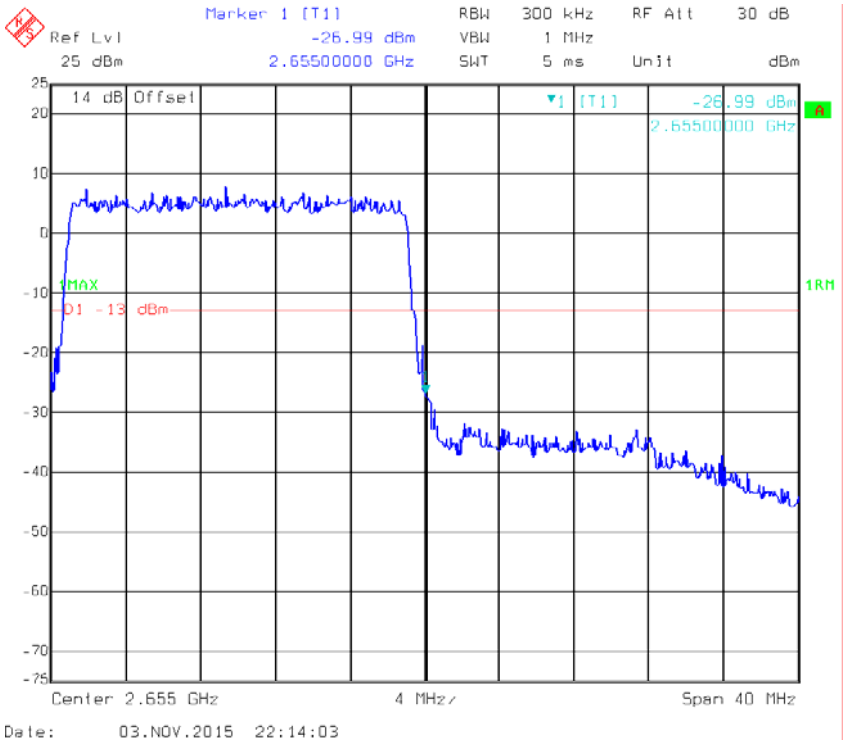


16QAM-20M 100 RB, Right Band Edge



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

Applicable Standard

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

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

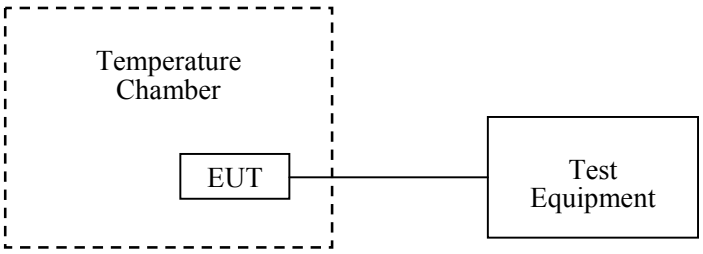
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-3	2015-08-01	2016-08-01
R&S	Universal Radio Communication Tester	CMU200	109 038	2015-05-09	2016-05-09
R&S	Wideband Radio Communication Tester	CMW500	106891	2014-11-23	2015-11-23
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
UNI-T	Multimeter	UT39A	M130199938	2015-04-10	2016-04-10
N/A	Two-way Spliter	ODP-1-6-2S	OE0120142	2015-05-06	2016-05-06

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

Test Data

Environmental Conditions

Temperature:	26.3~26.9 °C
Relative Humidity:	50~54 %
ATM Pressure:	100.1~100.4 kPa

The testing was performed by Dean Liu from 2015-10-27 to 2015-11-03.

BC0 Band (Part 22H)

BC0 RC1,Middle Channel, fc = 836.52MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-16	-0.019	2.5
-20	3.8	-14	-0.017	2.5
-10	3.8	-9	-0.011	2.5
0	3.8	-4	-0.005	2.5
10	3.8	-5	-0.006	2.5
20	3.8	-5	-0.006	2.5
30	3.8	-3	-0.004	2.5
40	3.8	-6	-0.007	2.5
50	3.8	-5	-0.006	2.5
25	3.5	-7	-0.008	2.5
25	4.3	-6	-0.007	2.5

BC0 Rel.A,Middle Channel, fc = 836.52MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-18	-0.022	2.5
-20	3.8	-13	-0.016	2.5
-10	3.8	-8	-0.010	2.5
0	3.8	-8	-0.010	2.5
10	3.8	-7	-0.008	2.5
20	3.8	-7	-0.008	2.5
30	3.8	-7	-0.008	2.5
40	3.8	-8	-0.010	2.5
50	3.8	-7	-0.008	2.5
25	3.5	-9	-0.011	2.5
25	4.3	-7	-0.008	2.5

Cellular Band

GMSK, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-34	-0.041	2.5
-20	3.8	-33	-0.039	2.5
-10	3.8	-28	-0.033	2.5
0	3.8	-32	-0.038	2.5
10	3.8	-24	-0.029	2.5
20	3.8	-31	-0.037	2.5
30	3.8	-32	-0.038	2.5
40	3.8	-21	-0.025	2.5
50	3.8	-25	-0.030	2.5
25	3.5	-31	-0.037	2.5
25	4.3	-25	-0.030	2.5

EDGE, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-30	-0.036	2.5
-20	3.8	-30	-0.036	2.5
-10	3.8	-29	-0.035	2.5
0	3.8	-31	-0.037	2.5
10	3.8	-24	-0.029	2.5
20	3.8	-29	-0.035	2.5
30	3.8	-30	-0.036	2.5
40	3.8	-23	-0.027	2.5
50	3.8	-26	-0.031	2.5
25	3.5	-30	-0.036	2.5
25	4.3	-25	-0.030	2.5

WCDMA Band V: Re199

Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-29	-0.035	2.5
-20	3.8	-28	-0.033	2.5
-10	3.8	-22	-0.026	2.5
0	3.8	-24	-0.029	2.5
10	3.8	-16	-0.019	2.5
20	3.8	-22	-0.026	2.5
30	3.8	-25	-0.030	2.5
40	3.8	-24	-0.029	2.5
50	3.8	-28	-0.033	2.5
25	3.5	-21	-0.025	2.5
25	4.3	-18	-0.022	2.5

WCDMA Band V: HSDPA

Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-29	-0.035	2.5
-20	3.8	-25	-0.030	2.5
-10	3.8	-20	-0.024	2.5
0	3.8	-21	-0.025	2.5
10	3.8	-23	-0.027	2.5
20	3.8	-21	-0.025	2.5
30	3.8	-26	-0.031	2.5
40	3.8	-22	-0.026	2.5
50	3.8	-26	-0.031	2.5
25	3.5	-28	-0.033	2.5
25	4.3	-14	-0.017	2.5

WCDMA Band V: HSUPA

Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-22	-0.026	2.5
-20	3.8	-24	-0.029	2.5
-10	3.8	-21	-0.025	2.5
0	3.8	-21	-0.025	2.5
10	3.8	-17	-0.020	2.5
20	3.8	-19	-0.023	2.5
30	3.8	-30	-0.036	2.5
40	3.8	-14	-0.017	2.5
50	3.8	-19	-0.023	2.5
25	3.5	-21	-0.025	2.5
25	4.3	-16	-0.019	2.5

BC1 Band (Part 24E)

BC1 RC1,Middle Channel, fc = 1880MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-13	-0.007	Compliance
-20	3.8	-15	-0.008	Compliance
-10	3.8	-11	-0.006	Compliance
0	3.8	-8	-0.004	Compliance
10	3.8	-8	-0.004	Compliance
20	3.8	-4	-0.002	Compliance
30	3.8	-10	-0.005	Compliance
40	3.8	-7	-0.004	Compliance
50	3.8	-5	-0.003	Compliance
25	3.5	-8	-0.004	Compliance
25	4.3	-7	-0.004	Compliance

BC1 Rel.A,Middle Channel, fc = 1880MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.8	-13	-0.007	Compliance
-20	3.8	-11	-0.006	Compliance
-10	3.8	-10	-0.005	Compliance
0	3.8	-9	-0.005	Compliance
10	3.8	-8	-0.004	Compliance
20	3.8	-7	-0.004	Compliance
30	3.8	-6	-0.003	Compliance
40	3.8	-9	-0.005	Compliance
50	3.8	-8	-0.004	Compliance
25	3.5	-9	-0.005	Compliance
25	4.3	-7	-0.004	Compliance

PCS Band:

GMSK, Middle Channel, f_c = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.8	-35	-0.019	Compliance
-20	3.8	-32	-0.017	Compliance
-10	3.8	-27	-0.014	Compliance
0	3.8	-28	-0.015	Compliance
10	3.8	-22	-0.012	Compliance
20	3.8	-25	-0.013	Compliance
30	3.8	-22	-0.012	Compliance
40	3.8	-19	-0.010	Compliance
50	3.8	-23	-0.012	Compliance
25	3.5	-26	-0.014	Compliance
25	4.3	-20	-0.011	Compliance

EDGE, Middle Channel, f_c = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.8	-33	-0.018	Compliance
-20	3.8	-31	-0.016	Compliance
-10	3.8	-26	-0.014	Compliance
0	3.8	-27	-0.014	Compliance
10	3.8	-22	-0.012	Compliance
20	3.8	-25	-0.013	Compliance
30	3.8	-24	-0.013	Compliance
40	3.8	-19	-0.010	Compliance
50	3.8	-22	-0.012	Compliance
25	3.5	-26	-0.014	Compliance
25	4.3	-22	-0.012	Compliance

WCDMA Band II: Re199

Middle Channel, f_c = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.8	-23	-0.012	Compliance
-20	3.8	-24	-0.013	Compliance
-10	3.8	-20	-0.011	Compliance
0	3.8	-23	-0.012	Compliance
10	3.8	-16	-0.009	Compliance
20	3.8	-20	-0.011	Compliance
30	3.8	-21	-0.011	Compliance
40	3.8	-16	-0.009	Compliance
50	3.8	-20	-0.011	Compliance
25	3.5	-21	-0.011	Compliance
25	4.3	-19	-0.010	Compliance

WCDMA Band II: HSDPA

Middle Channel, f_c = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.8	-25	-0.013	Compliance
-20	3.8	-23	-0.012	Compliance
-10	3.8	-20	-0.011	Compliance
0	3.8	-20	-0.011	Compliance
10	3.8	-15	-0.008	Compliance
20	3.8	-19	-0.010	Compliance
30	3.8	-18	-0.010	Compliance
40	3.8	-11	-0.006	Compliance
50	3.8	-17	-0.009	Compliance
25	3.5	-22	-0.012	Compliance
25	4.3	-17	-0.009	Compliance

WCDMA Band II: HSUPA

Middle Channel, f_c = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.8	-25	-0.013	Compliance
-20	3.8	-25	-0.013	Compliance
-10	3.8	-22	-0.012	Compliance
0	3.8	-23	-0.012	Compliance
10	3.8	-16	-0.009	Compliance
20	3.8	-20	-0.011	Compliance
30	3.8	-27	-0.014	Compliance
40	3.8	-25	-0.013	Compliance
50	3.8	-28	-0.015	Compliance
25	3.5	-23	-0.012	Compliance
25	4.3	-19	-0.010	Compliance

PART 27:

LTE Band 2:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 1880 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-5.02	-0.0027	Compliance
-20	3.8	-5.42	-0.0029	Compliance
-10	3.8	-4.39	-0.0023	Compliance
0	3.8	-4.13	-0.0022	Compliance
10	3.8	-4.62	-0.0025	Compliance
20	3.8	-4.29	-0.0023	Compliance
30	3.8	-4.92	-0.0026	Compliance
40	3.8	-4.57	-0.0024	Compliance
50	3.8	-4.76	-0.0025	Compliance
25	3.5	-4.98	-0.0026	Compliance
25	4.3	-4.53	-0.0024	Compliance

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 1880 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-6.43	-0.0034	Compliance
-20	3.8	-5.55	-0.0030	Compliance
-10	3.8	-5.97	-0.0032	Compliance
0	3.8	-6.11	-0.0033	Compliance
10	3.8	-6.25	-0.0033	Compliance
20	3.8	-5.9	-0.0031	Compliance
30	3.8	-6.28	-0.0033	Compliance
40	3.8	-6.36	-0.0034	Compliance
50	3.8	-6.62	-0.0035	Compliance
25	3.5	-6.42	-0.0034	Compliance
25	4.3	-5.36	-0.0029	Compliance

LTE Band 4:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 1732.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-6.32	-0.0036	Compliance
-20	3.8	-5.44	-0.0031	Compliance
-10	3.8	-5.64	-0.0033	Compliance
0	3.8	-6.03	-0.0035	Compliance
10	3.8	-5.65	-0.0033	Compliance
20	3.8	-5.67	-0.0033	Compliance
30	3.8	-5.59	-0.0032	Compliance
40	3.8	-5.61	-0.0032	Compliance
50	3.8	-5.47	-0.0032	Compliance
25	3.5	-6	-0.0035	Compliance
25	4.3	-5.93	-0.0034	Compliance

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 1732.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-5.48	-0.0032	Compliance
-20	3.8	-5.41	-0.0031	Compliance
-10	3.8	-5.34	-0.0031	Compliance
0	3.8	-5.51	-0.0032	Compliance
10	3.8	-6.19	-0.0036	Compliance
20	3.8	-5.51	-0.0032	Compliance
30	3.8	-5.66	-0.0033	Compliance
40	3.8	-6.2	-0.0036	Compliance
50	3.8	-6.49	-0.0037	Compliance
25	3.5	-6.53	-0.0038	Compliance
25	4.3	-6.31	-0.0036	Compliance

LTE Band 12:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 707.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-6.61	-0.0093	Compliance
-20	3.8	-6.07	-0.0086	Compliance
-10	3.8	-6.04	-0.0085	Compliance
0	3.8	-6.99	-0.0099	Compliance
10	3.8	-6.63	-0.0094	Compliance
20	3.8	-6.76	-0.0096	Compliance
30	3.8	-6.11	-0.0086	Compliance
40	3.8	-6.67	-0.0094	Compliance
50	3.8	-6.67	-0.0094	Compliance
25	3.5	-6.87	-0.0097	Compliance
25	4.3	-6.62	-0.0094	Compliance

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 707.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-6.67	-0.0094	Compliance
-20	3.8	-6.55	-0.0093	Compliance
-10	3.8	-6.01	-0.0085	Compliance
0	3.8	-6.6	-0.0093	Compliance
10	3.8	-6.09	-0.0086	Compliance
20	3.8	-6.28	-0.0089	Compliance
30	3.8	-6.34	-0.0090	Compliance
40	3.8	-7.01	-0.0099	Compliance
50	3.8	-6.57	-0.0093	Compliance
25	3.5	-6.25	-0.0088	Compliance
25	4.3	-6.1	-0.0086	Compliance

LTE Band 17:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 710 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-7.26	-0.0102	Compliance
-20	3.8	-6.82	-0.0096	Compliance
-10	3.8	-6.1	-0.0086	Compliance
0	3.8	-6.53	-0.0092	Compliance
10	3.8	-6.23	-0.0088	Compliance
20	3.8	-6.64	-0.0094	Compliance
30	3.8	-7.05	-0.0099	Compliance
40	3.8	-7.01	-0.0099	Compliance
50	3.8	-7.13	-0.0100	Compliance
25	3.5	-6.57	-0.0093	Compliance
25	4.3	-6.85	-0.0096	Compliance

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 710 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-6.59	-0.0093	Compliance
-20	3.8	-6.37	-0.0090	Compliance
-10	3.8	-6.74	-0.0095	Compliance
0	3.8	-6.67	-0.0094	Compliance
10	3.8	-7.04	-0.0099	Compliance
20	3.8	-7.03	-0.0099	Compliance
30	3.8	-6.97	-0.0098	Compliance
40	3.8	-7.2	-0.0101	Compliance
50	3.8	-7.08	-0.0100	Compliance
25	3.5	-6.6	-0.0093	Compliance
25	4.3	-6.82	-0.0096	Compliance

LTE Band 41:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 2605 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-5.79	-0.0022	Compliance
-20	3.8	-6.15	-0.0024	Compliance
-10	3.8	-6.28	-0.0024	Compliance
0	3.8	-6.3	-0.0024	Compliance
10	3.8	-5.68	-0.0022	Compliance
20	3.8	-5.79	-0.0022	Compliance
30	3.8	-5.87	-0.0023	Compliance
40	3.8	-5.8	-0.0022	Compliance
50	3.8	-6.46	-0.0025	Compliance
25	3.5	-5.47	-0.0021	Compliance
25	4.3	-6.14	-0.0024	Compliance

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 2605 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-6	-0.0023	Compliance
-20	3.8	-5.72	-0.0022	Compliance
-10	3.8	-5.66	-0.0022	Compliance
0	3.8	-5.46	-0.0021	Compliance
10	3.8	-5.98	-0.0023	Compliance
20	3.8	-5.89	-0.0023	Compliance
30	3.8	-6.35	-0.0024	Compliance
40	3.8	-6.28	-0.0024	Compliance
50	3.8	-6.41	-0.0025	Compliance
25	3.5	-5.67	-0.0022	Compliance
25	4.3	-6.46	-0.0025	Compliance

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

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