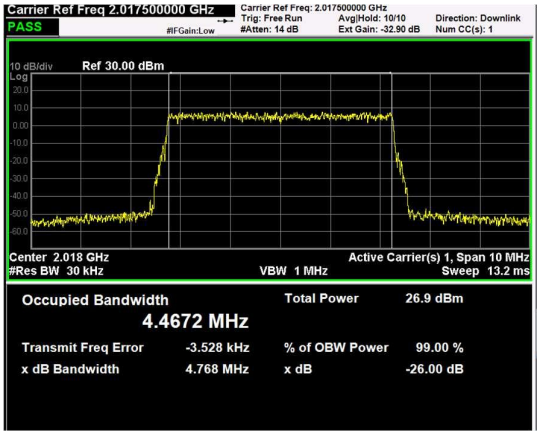
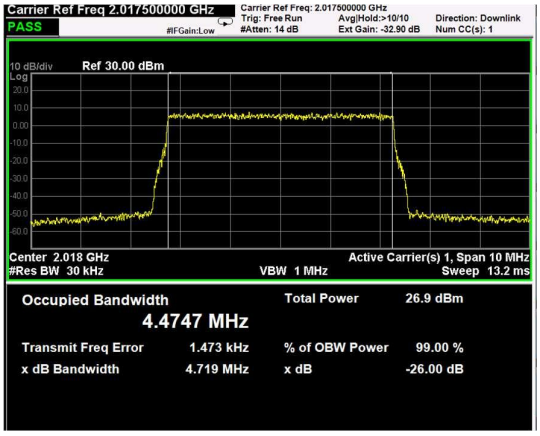
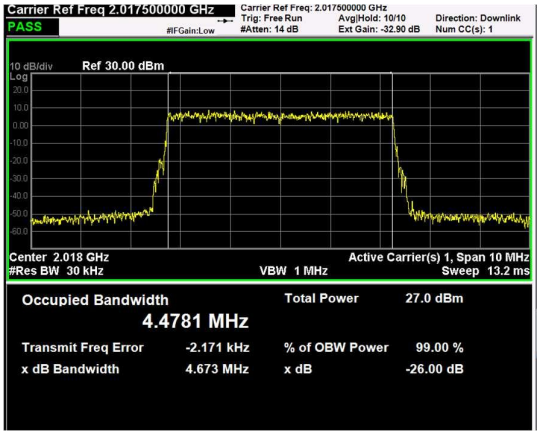


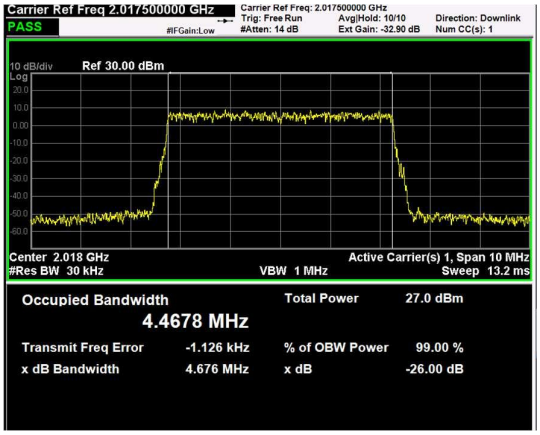
Channel: TOP, Modulation: QPSK, BW=5MHz



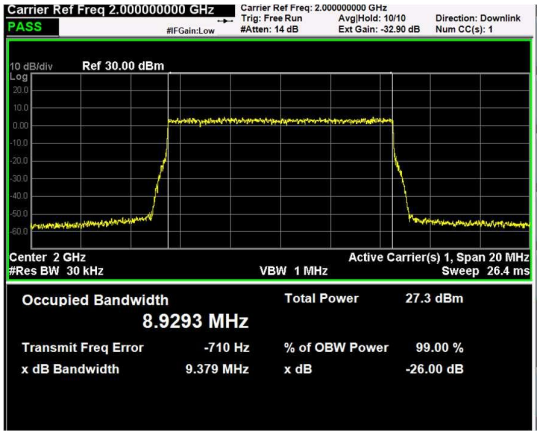
Channel: TOP, Modulation: 16QAM, BW=5MHz



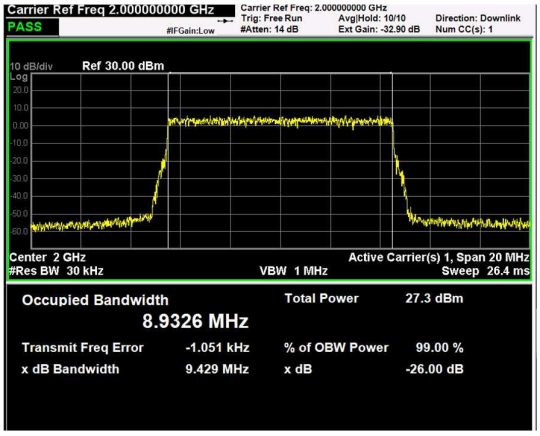
Channel: TOP, Modulation: 64QAM, BW=5MHz



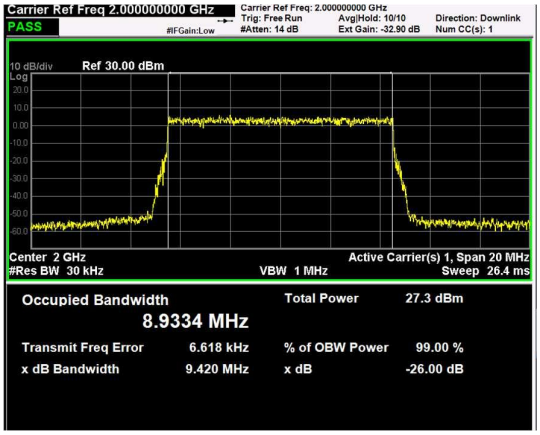
Channel: TOP, Modulation: 256QAM, BW=5MHz



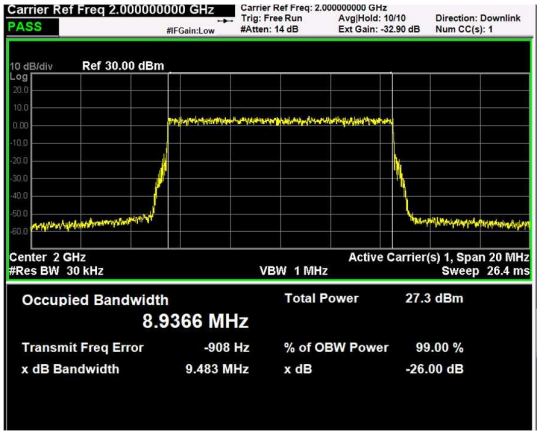
Channel: BOTTOM, Modulation: QPSK, BW=10MHz



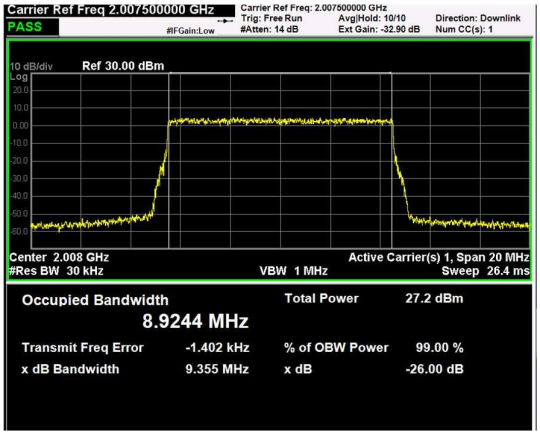
Channel: BOTTOM, Modulation: 16QAM, BW=10MHz



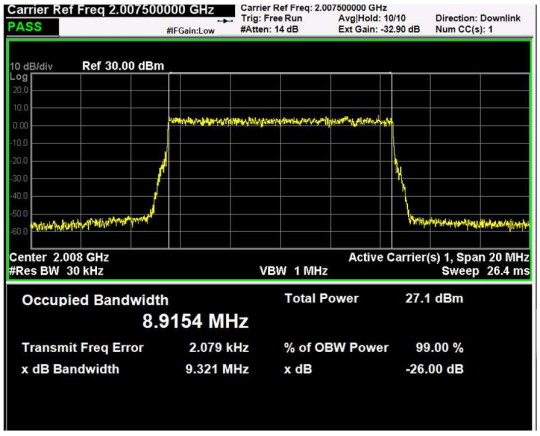
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz



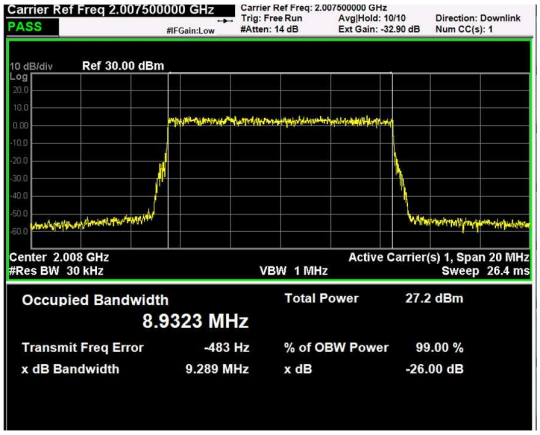
Channel: BOTTOM, Modulation: 256QAM, BW=10MHz



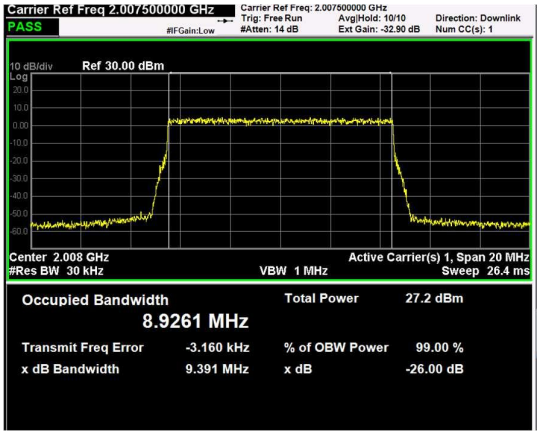
Channel: MIDDLE, Modulation: QPSK, BW=10MHz



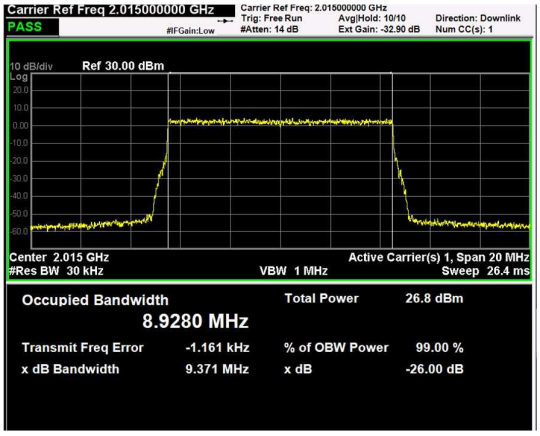
Channel: MIDDLE, Modulation: 16QAM, BW=10MHz



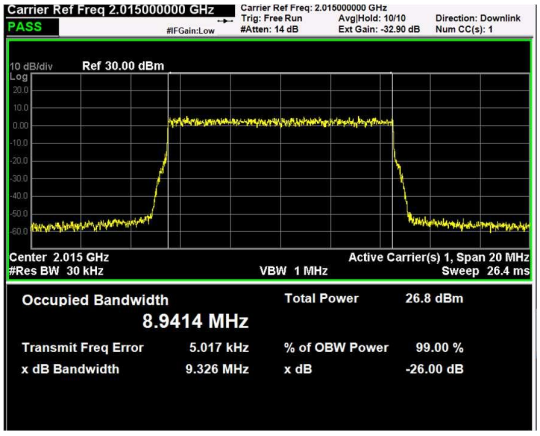
Channel: MIDDLE, Modulation: 64QAM, BW=10MHz



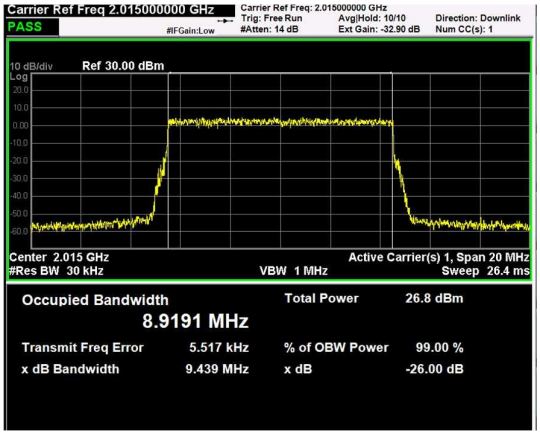
Channel: MIDDLE, Modulation: 256QAM, BW=10MHz



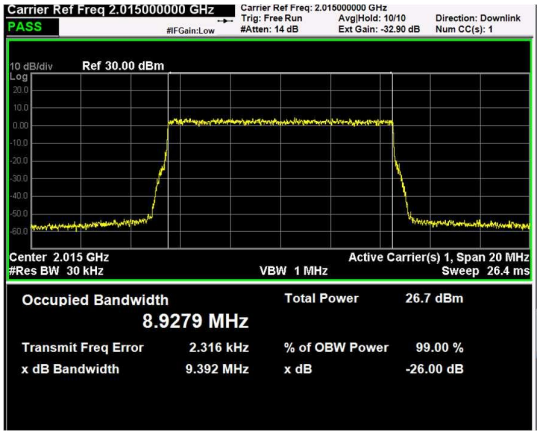
Channel: TOP, Modulation: QPSK, BW=10MHz



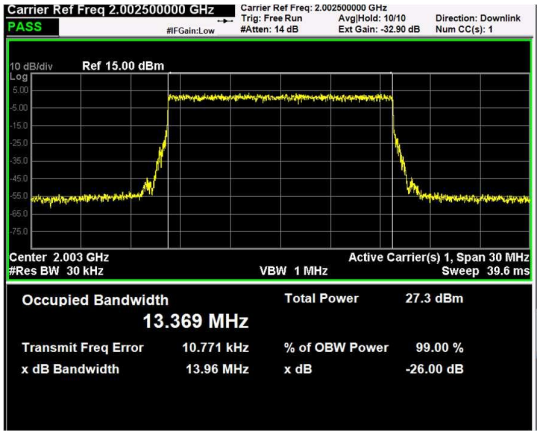
Channel: TOP, Modulation: 16QAM, BW=10MHz



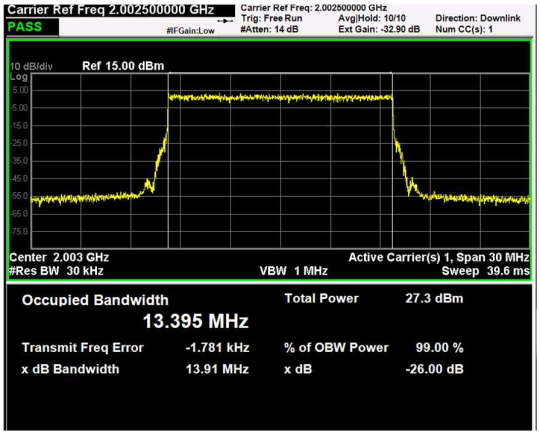
Channel: TOP, Modulation: 64QAM, BW=10MHz



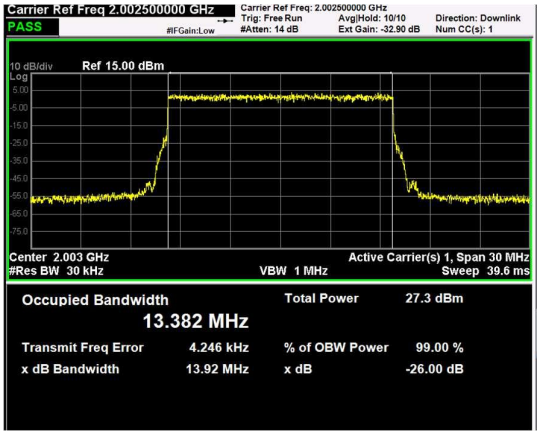
Channel: TOP, Modulation: 256QAM, BW=10MHz



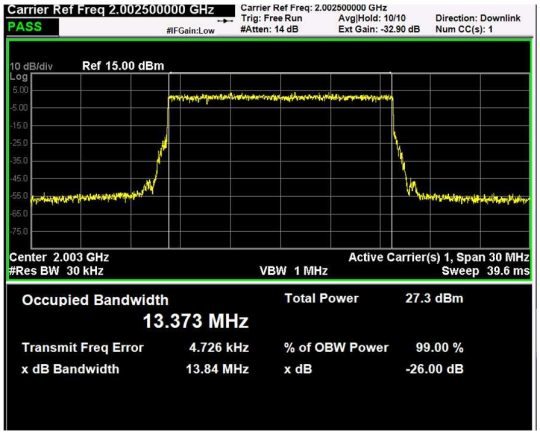
Channel: BOTTOM, Modulation: QPSK, BW=15MHz



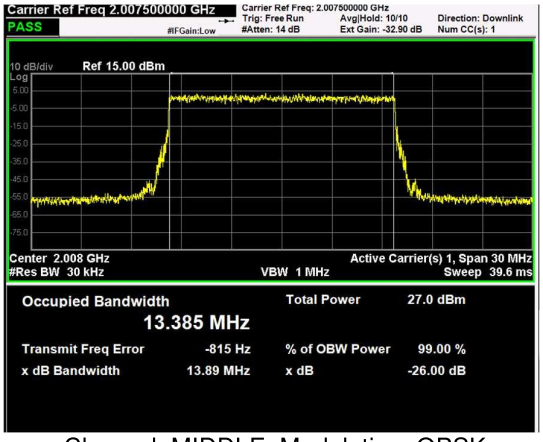
Channel: BOTTOM, Modulation: 16QAM, BW=15MHz



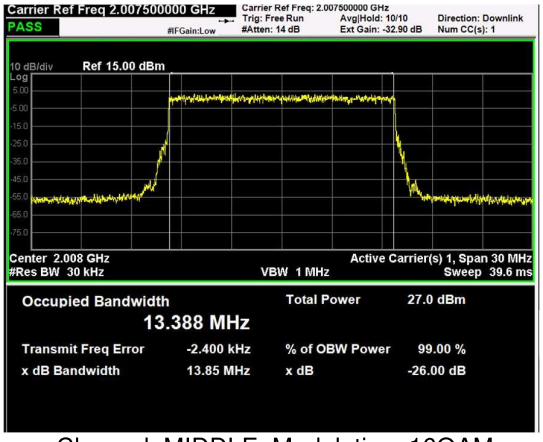
Channel: BOTTOM, Modulation: 64QAM, BW=15MHz



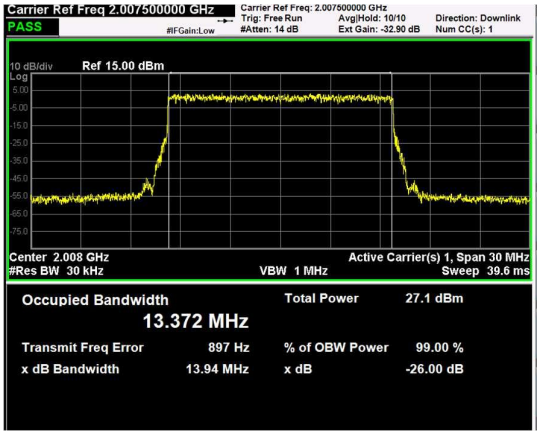
Channel: BOTTOM, Modulation: 256QAM, BW=15MHz



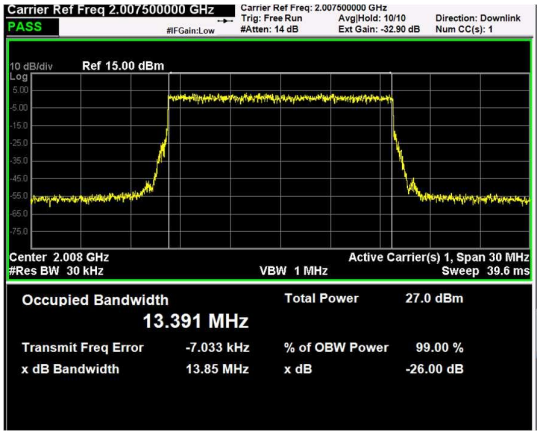
Channel: MIDDLE, Modulation: QPSK, BW=15MHz



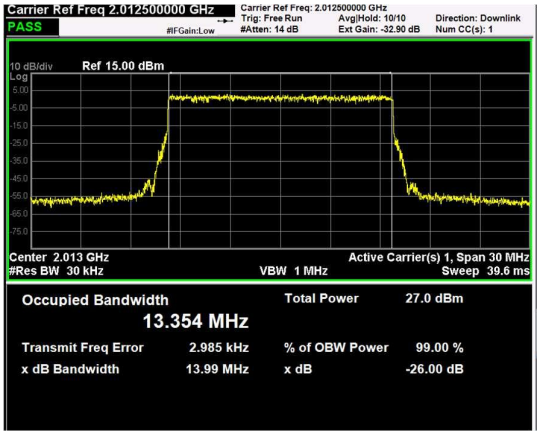
Channel: MIDDLE, Modulation: 16QAM, BW=15MHz



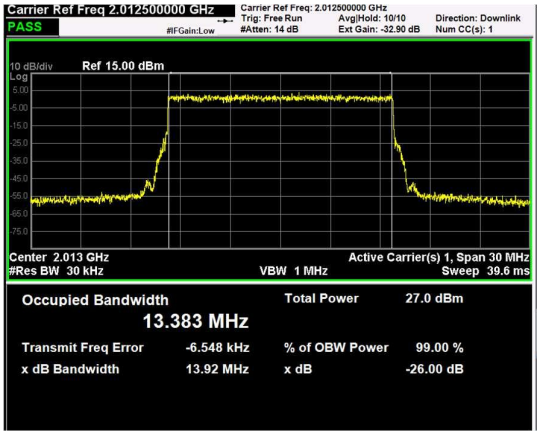
Channel: MIDDLE, Modulation: 64QAM, BW=15MHz



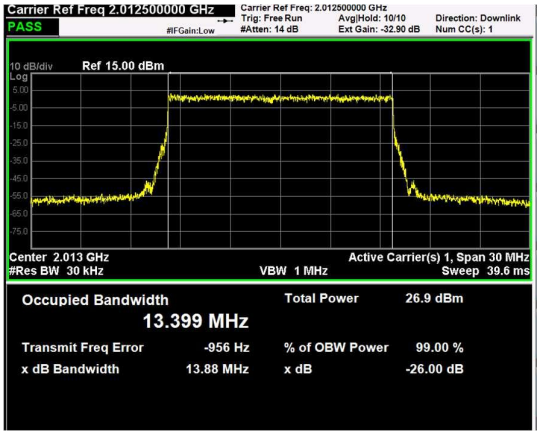
Channel: MIDDLE, Modulation: 256QAM, BW=15MHz



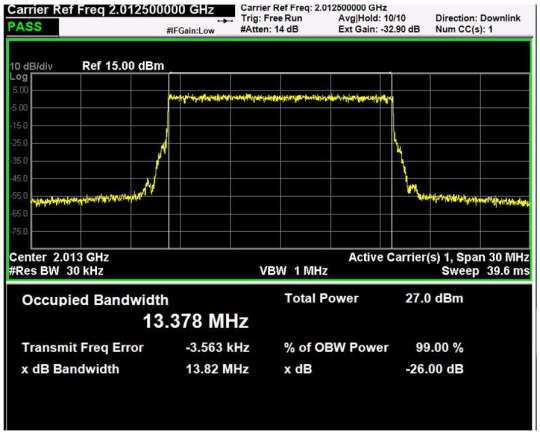
Channel: TOP, Modulation: QPSK, BW=15MHz



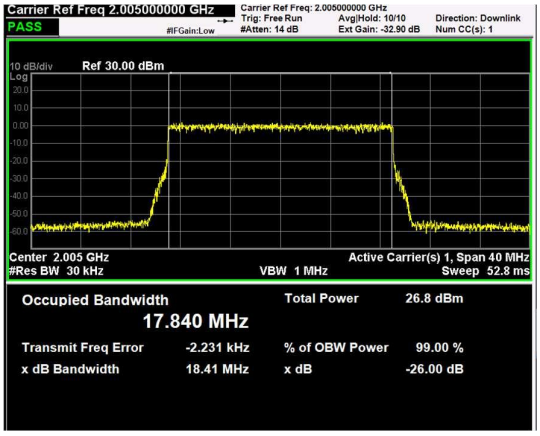
Channel: TOP, Modulation: 16QAM, BW=15MHz



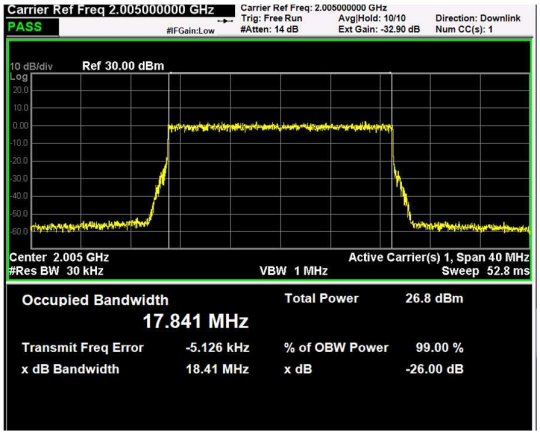
Channel: TOP, Modulation: 64QAM, BW=15MHz



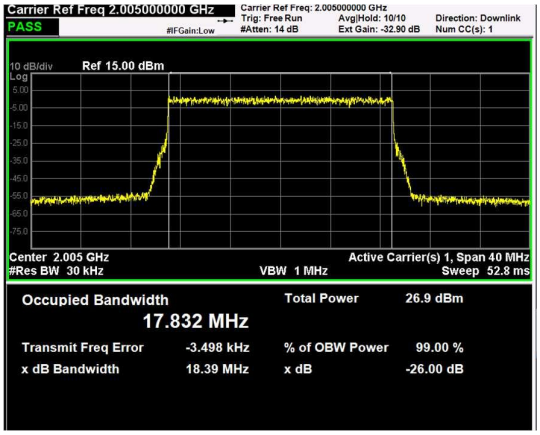
Channel: TOP, Modulation: 256QAM, BW=15MHz



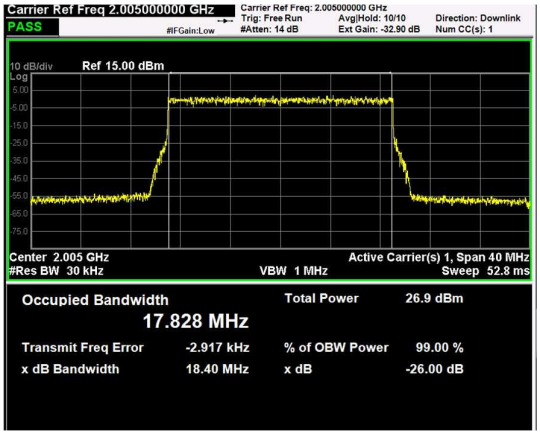
Channel: BOTTOM, Modulation: QPSK, BW=20MHz



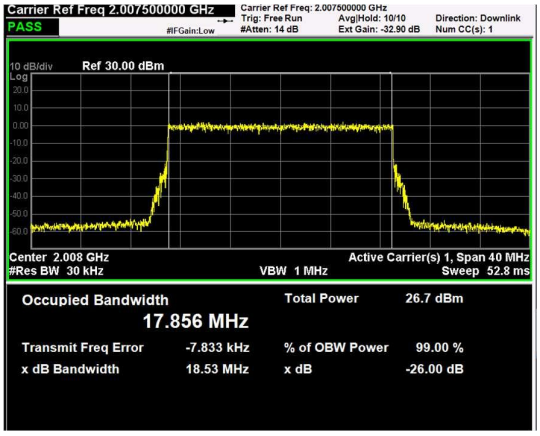
Channel: BOTTOM, Modulation: 16QAM, BW=20MHz



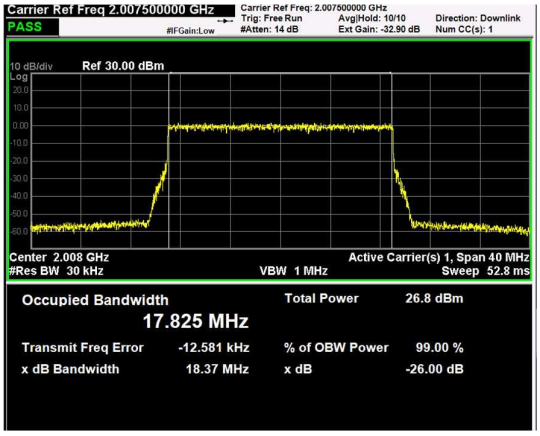
Channel: BOTTOM, Modulation: 64QAM, BW=20MHz



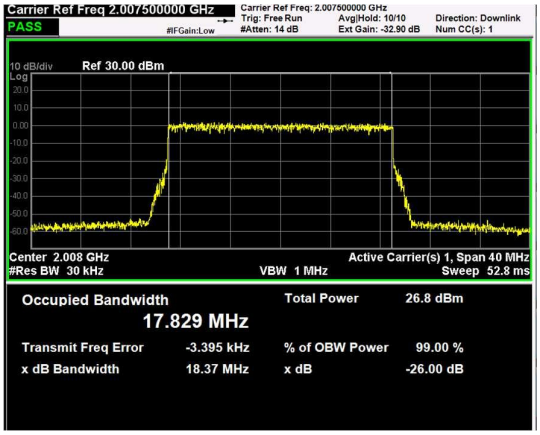
Channel: BOTTOM, Modulation: 256QAM, BW=20MHz



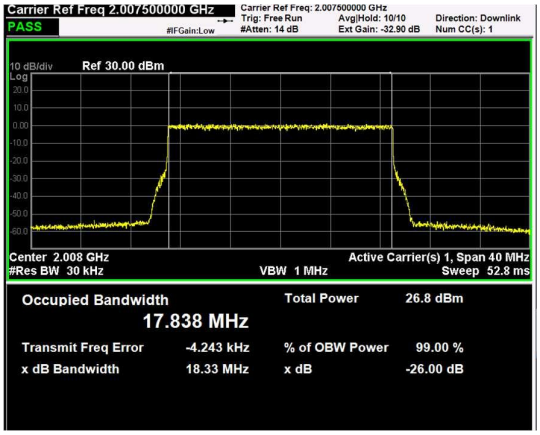
Channel: MIDDLE, Modulation: QPSK, BW=20MHz



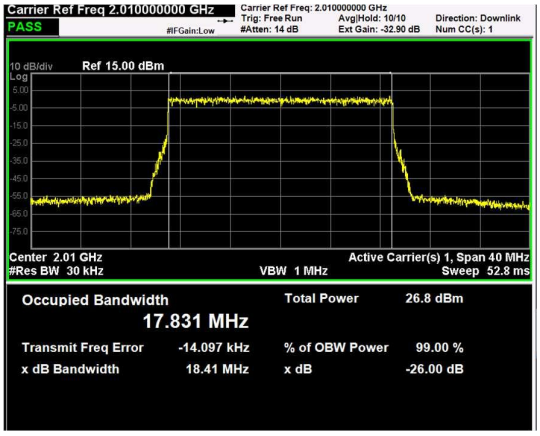
Channel: MIDDLE, Modulation: 16QAM, BW=20MHz



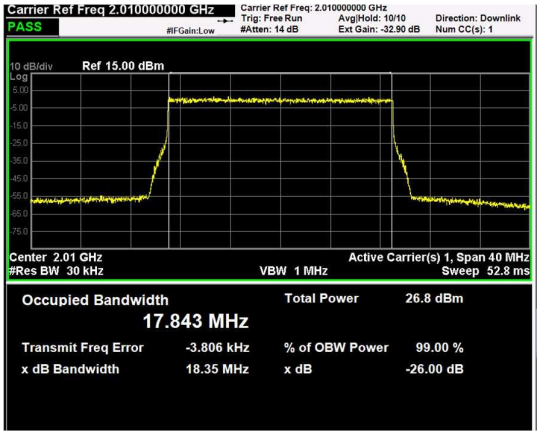
Channel: MIDDLE, Modulation: 64QAM, BW=20MHz



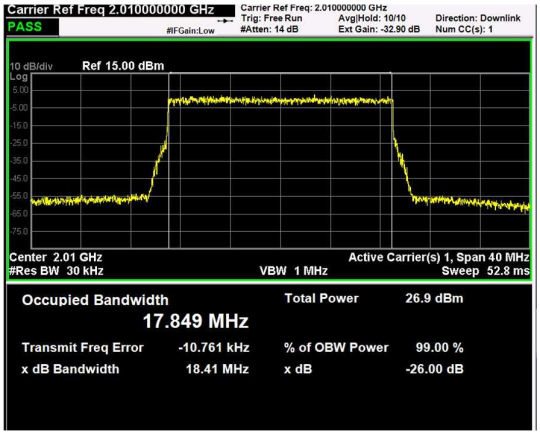
Channel: MIDDLE, Modulation: 256QAM, BW=20MHz



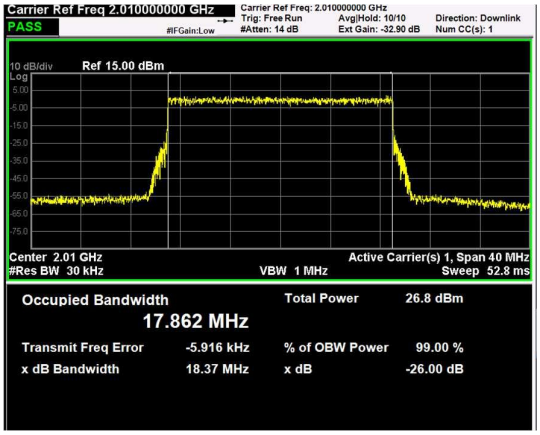
Channel: TOP, Modulation: QPSK, BW=20MHz



Channel: TOP, Modulation: 16QAM, BW=20MHz



Channel: TOP, Modulation: 64QAM, BW=20MHz



Channel: TOP, Modulation: 256QAM, BW=20MHz

Clause 27.50(d) Peak output power at RF antenna connector

§ 27.50(d) The following power and antenna height requirements apply to stations transmitting 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 MHz bands:

(1) The power of each fixed or base station transmitting in the 1995-2000 MHz, 2110-2155 MHz, 2155-2180 MHz or 2180-2200 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to:

(i) An equivalent isotropically radiated power (EIRP) of 3280 watts when transmitting with an emission bandwidth of 1 MHz or less;

(ii) An EIRP of 3280 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

(2) The power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described in paragraph (d)(1) of this section is limited to:

(i) An equivalent isotropically radiated power (EIRP) of 1640 watts when transmitting with an emission bandwidth of 1 MHz or less;

(ii) An EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

(5) Equipment employed must be authorized in accordance with the provisions of §24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

(7) Fixed, mobile, and portable (hand-held) stations operating in the 2000-2020 MHz band are limited to 2 watts EIRP, except that the total power of any portion of an emission that falls within the 2000-2005 MHz band may not exceed 5 milliwatts. A licensee of AWS-4 authority may enter into private operator-to-operator agreements with all 1995-2000 MHz licensees to operate in 2000-2005 MHz at power levels above 5 milliwatts EIRP; except the total power of the AWS-4 mobile emissions may not exceed 2 watts EIRP

Test date: 10/21/2019 to 12/13/2019

Test results: Pass

Special notes

Based on discussion in docket no. DA 13-2409 (para. 25 and 47) for operations in 2000-2020MHz in downlink, only 27.50 (d)(1) and 27.50 (d)(2) apply.

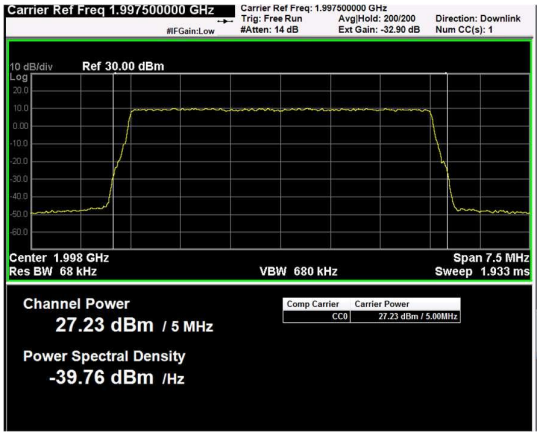
Clause 27.50(d) Peak output power at RF antenna connector

Test data

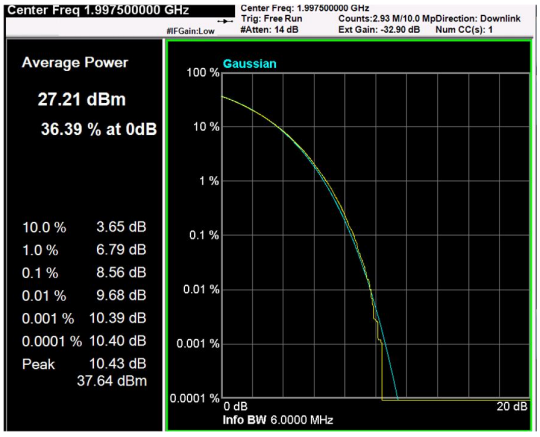
RF PORT 1

Test data

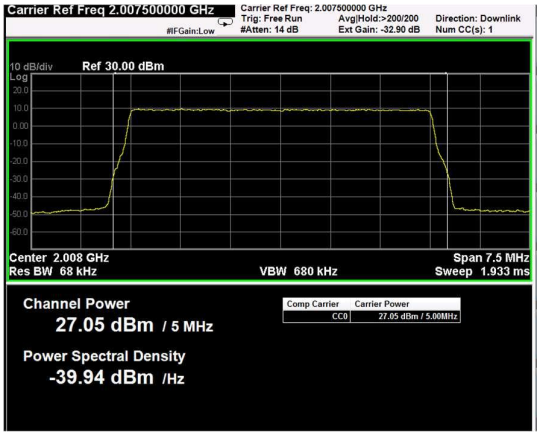
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 5MHz (QPSK)	1997.5	27.2	0.528	10.4
Down-link	LTE 5MHz (QPSK)	2007.5	27.1	0.507	10.4
Down-link	LTE 5MHz (QPSK)	2017.5	26.9	0.491	10.4
Down-link	LTE 5MHz (16QAM)	1997.5	27.2	0.522	10.3
Down-link	LTE 5MHz (16QAM)	2007.5	27.1	0.509	10.4
Down-link	LTE 5MHz (16QAM)	2017.5	26.9	0.494	10.4
Down-link	LTE 5MHz (64QAM)	1997.5	27.1	0.518	10.5
Down-link	LTE 5MHz (64QAM)	2007.5	27.0	0.506	10.4
Down-link	LTE 5MHz (64QAM)	2017.5	27.0	0.495	10.5
Down-link	LTE 5MHz (256QAM)	1997.5	27.1	0.518	10.4
Down-link	LTE 5MHz (256QAM)	2007.5	27.0	0.506	10.4
Down-link	LTE 5MHz (256QAM)	2017.5	26.9	0.494	10.3



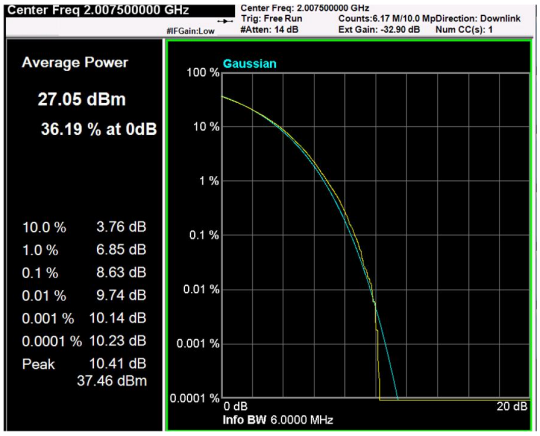
Channel: BOTTOM, Modulation: QPSK, BW=5MHz, Channel Power



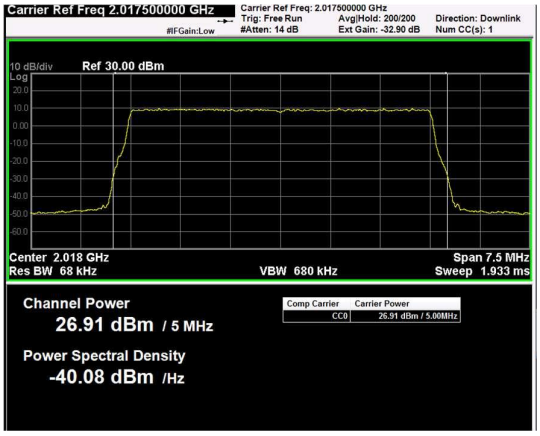
Channel: BOTTOM, Modulation: QPSK, BW=5MHz, CCDF



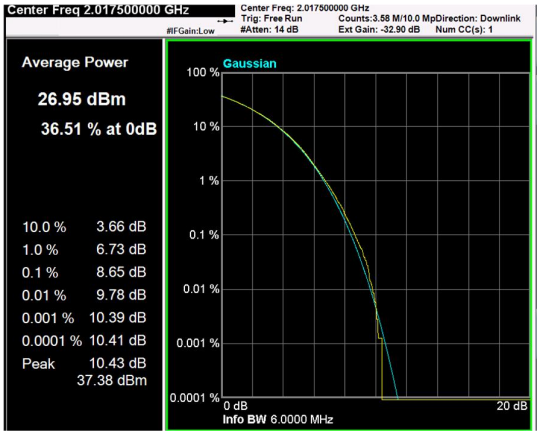
Channel: MIDDLE, Modulation: QPSK, BW=5MHz, Channel Power



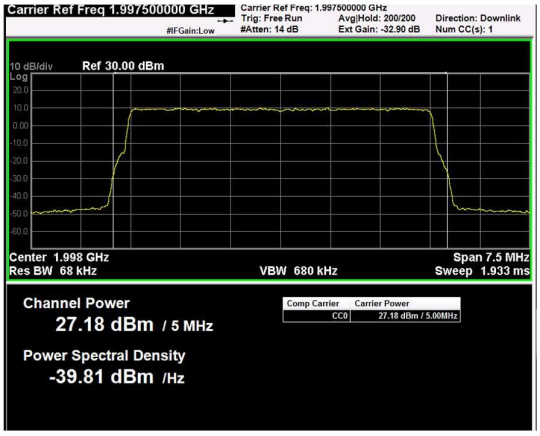
Channel: MIDDLE, Modulation: QPSK, BW=5MHz, CCDF



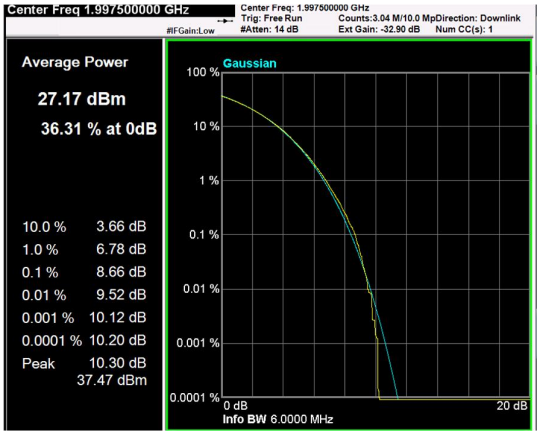
Channel: TOP, Modulation: QPSK, BW=5MHz, Channel Power



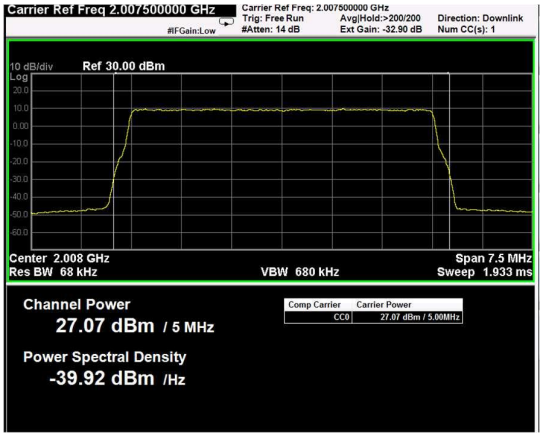
Channel: TOP, Modulation: QPSK, BW=5MHz, CCDF



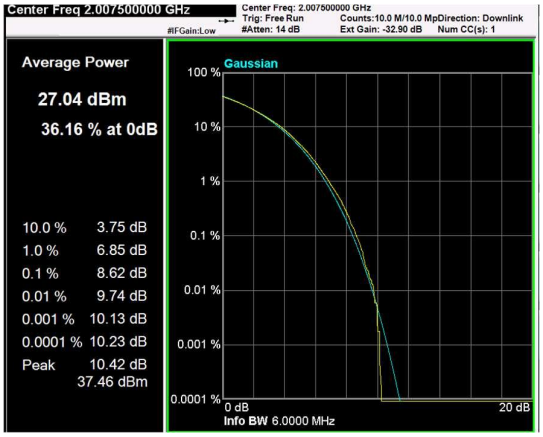
Channel: BOTTOM, Modulation: 16QAM, BW=5MHz, Channel Power



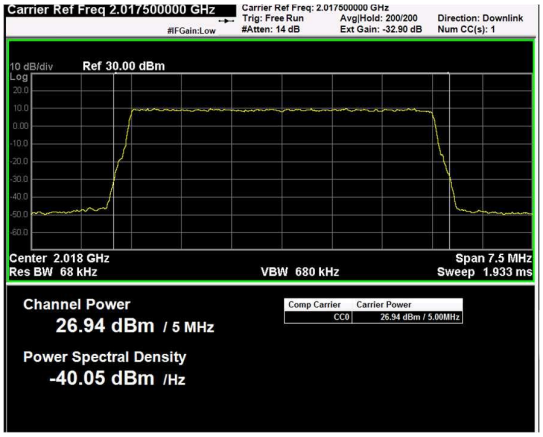
Channel: BOTTOM, Modulation: 16QAM, BW=5MHz, CCDF



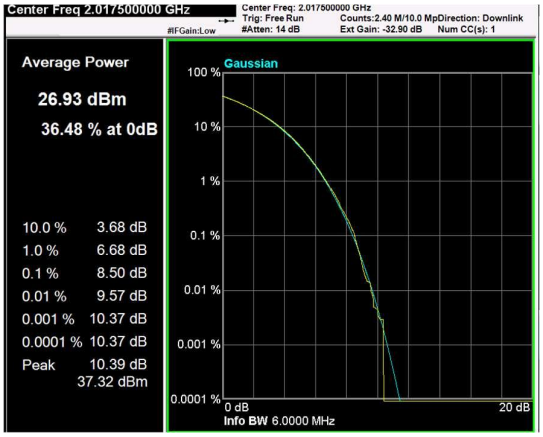
Channel: MIDDLE, Modulation: 16QAM, BW=5MHz, Channel Power



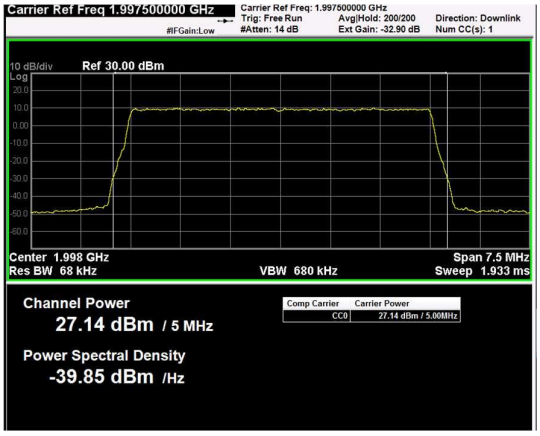
Channel: MIDDLE, Modulation: 16QAM, BW=5MHz, CCDF



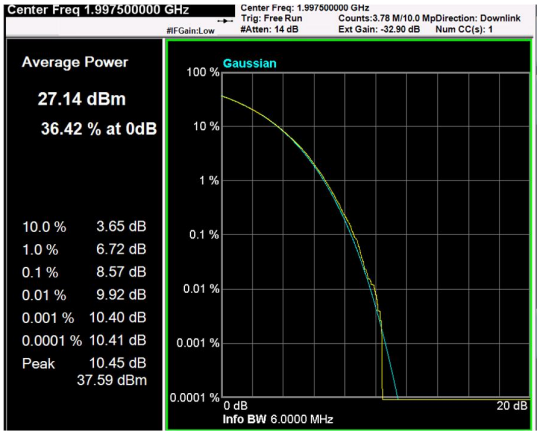
Channel: TOP, Modulation: 16QAM, BW=5MHz, Channel Power



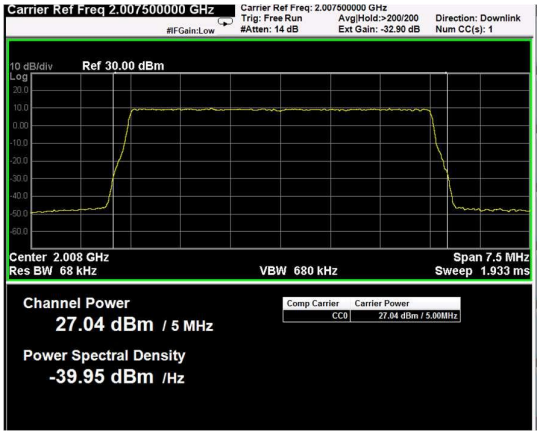
Channel: TOP, Modulation: 16QAM, BW=5MHz, CCDF



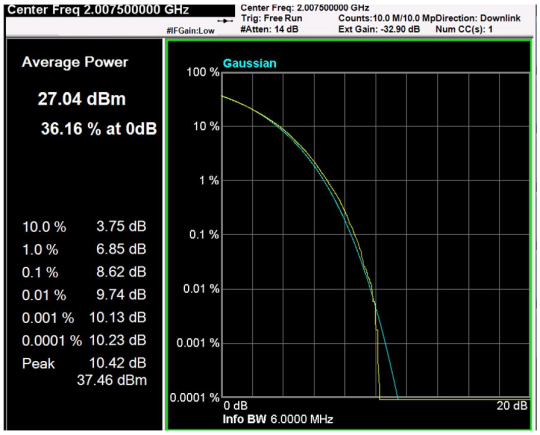
Channel: BOTTOM, Modulation: 64QAM, BW=5MHz, Channel Power



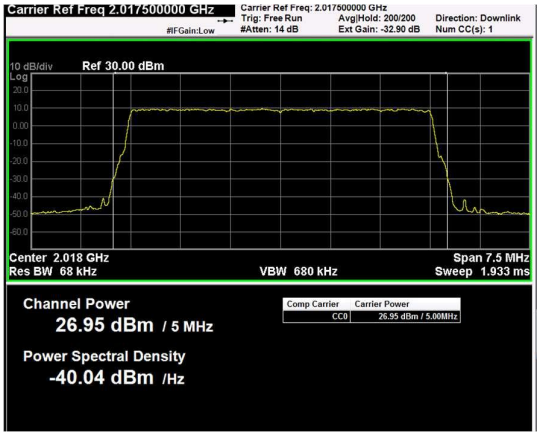
Channel: BOTTOM, Modulation: 64QAM, BW=5MHz, CCDF



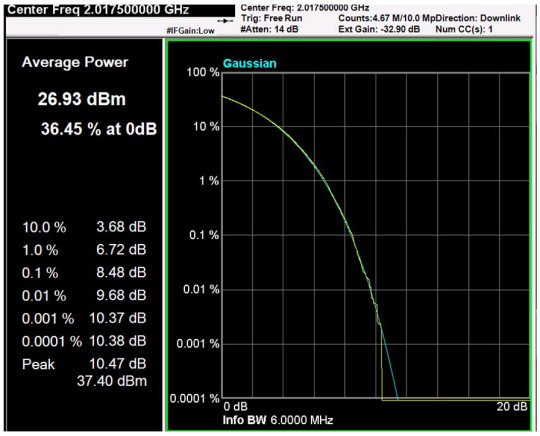
Channel: MIDDLE, Modulation: 64QAM, BW=5MHz, Channel Power



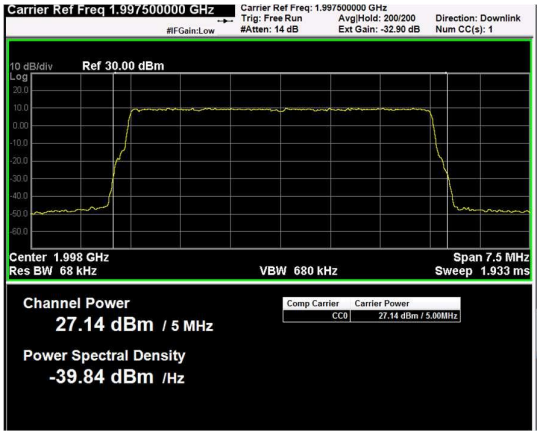
Channel: MIDDLE, Modulation: 64QAM, BW=5MHz, CCDF



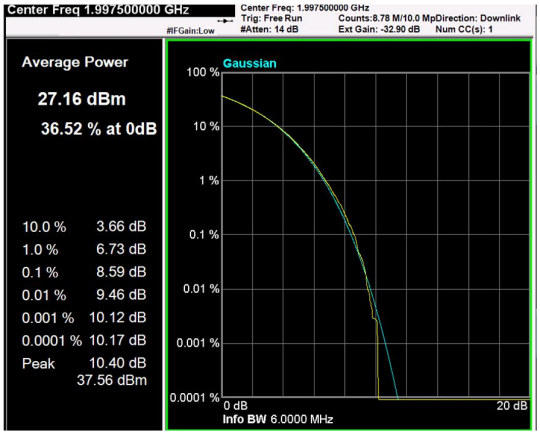
Channel: TOP, Modulation: 64QAM, BW=5MHz, Channel Power



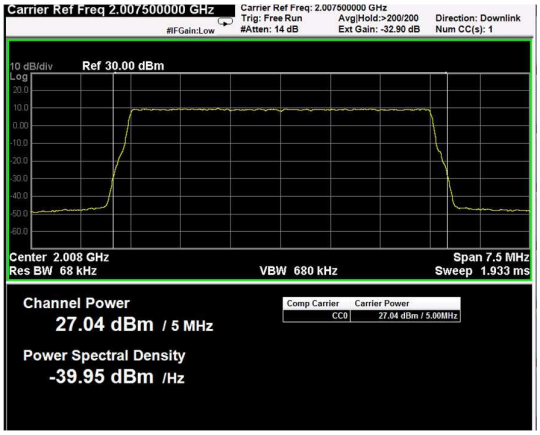
Channel: TOP, Modulation: 64QAM, BW=5MHz, CCDF



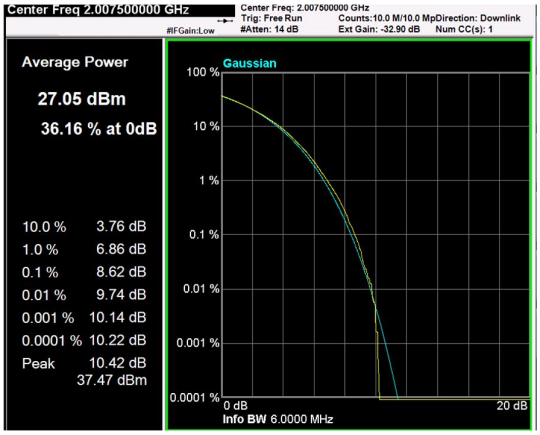
Channel: BOTTOM, Modulation: 256QAM, BW=5MHz, Channel Power



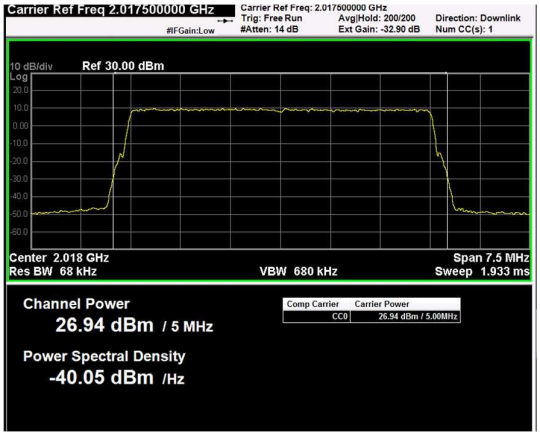
Channel: BOTTOM, Modulation: 256QAM, BW=5MHz, CCDF



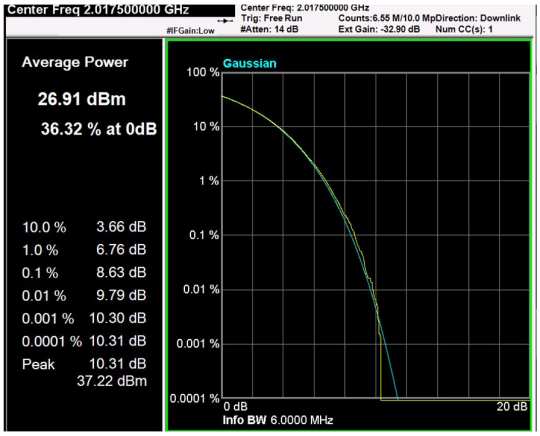
Channel: MIDDLE, Modulation: 256QAM, BW=5MHz, Channel Power



Channel: MIDDLE, Modulation: 256QAM, BW=5MHz, CCDF



Channel: TOP, Modulation: 256QAM, BW=5MHz, Channel Power



Channel: TOP, Modulation: 256QAM, BW=5MHz, CCDF

Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 10MHz (QPSK)	2000	27.0	0.498	9.1
Down-link	LTE 10MHz (QPSK)	2007.5	27.2	0.527	9.1
Down-link	LTE 10MHz (QPSK)	2015	26.9	0.492	9.2
Down-link	LTE 10MHz (16QAM)	2000	27.0	0.500	9.1
Down-link	LTE 10MHz (16QAM)	2007.5	27.0	0.506	9.3
Down-link	LTE 10MHz (16QAM)	2015	26.9	0.492	9.2
Down-link	LTE 10MHz (64QAM)	2000	27.0	0.499	9.1
Down-link	LTE 10MHz (64QAM)	2007.5	27.1	0.507	9.3
Down-link	LTE 10MHz (64QAM)	2015	26.9	0.493	9.2
Down-link	LTE 10MHz (256QAM)	2000	27.0	0.501	9.1
Down-link	LTE 10MHz (256QAM)	2007.5	27.1	0.509	9.3
Down-link	LTE 10MHz (256QAM)	2015	26.9	0.493	9.2