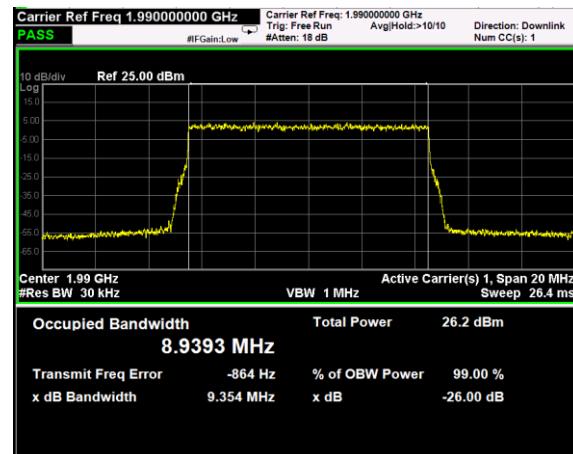
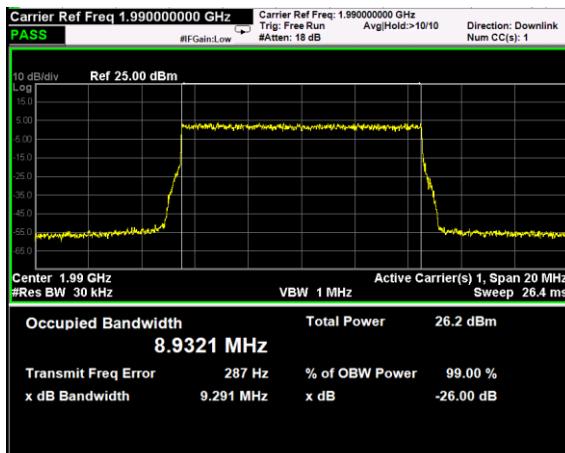


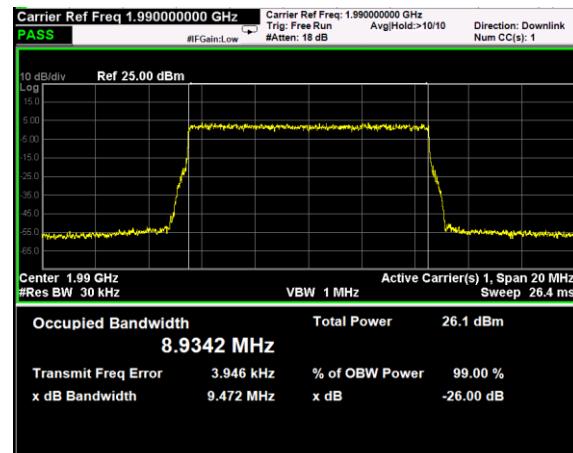
Channel: TOP, Modulation: QPSK,  
BW=10MHz



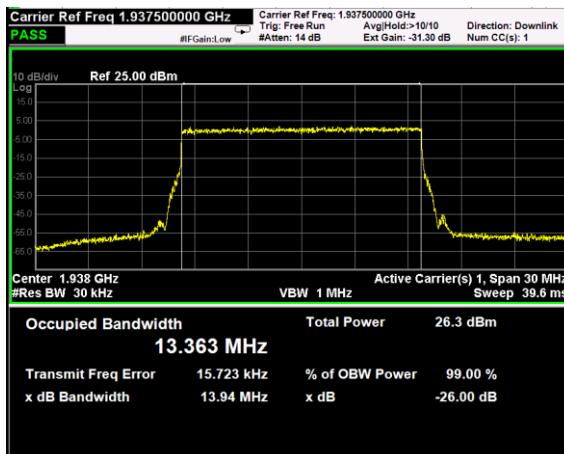
Channel: TOP, Modulation: 16QAM,  
BW=10MHz



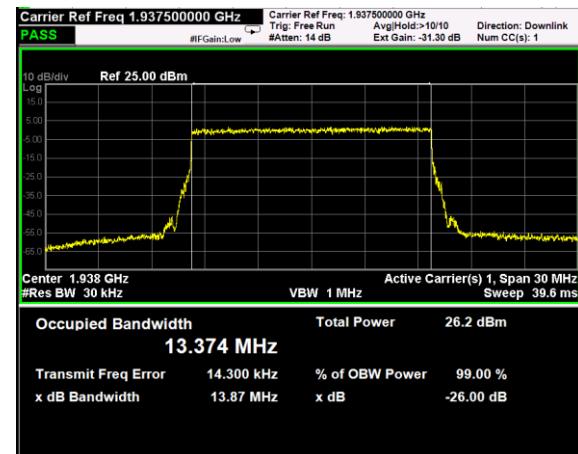
Channel: TOP, Modulation: 64QAM,  
BW=10MHz



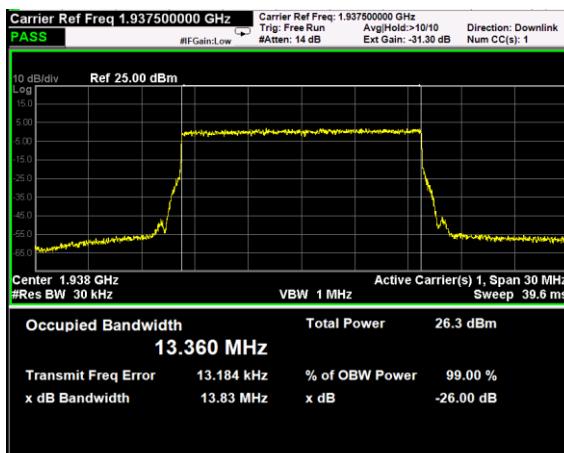
Channel: TOP, Modulation: 256QAM,  
BW=10MHz



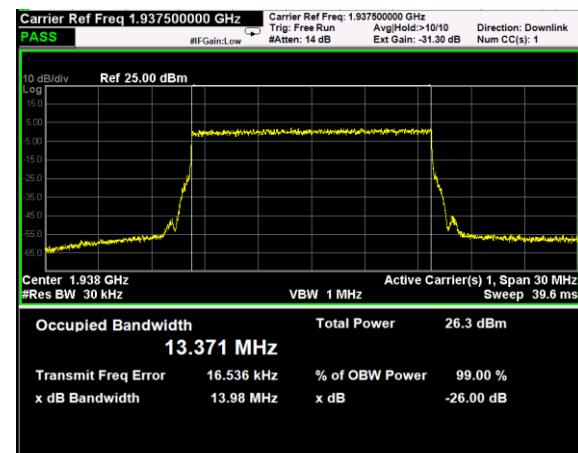
Channel: BOTTOM, Modulation: QPSK,  
BW=15MHz



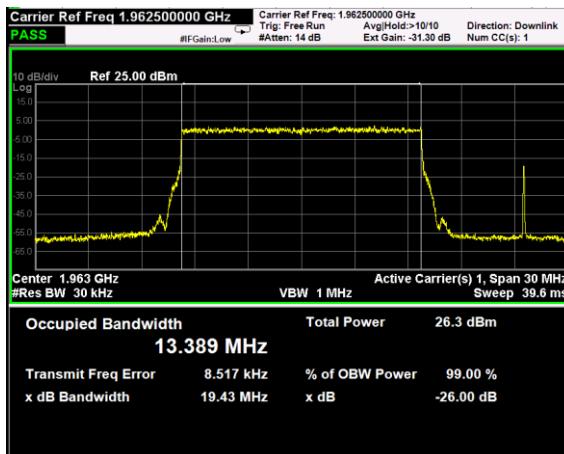
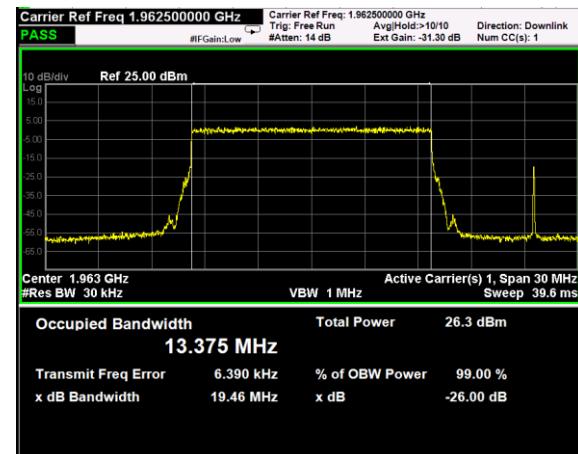
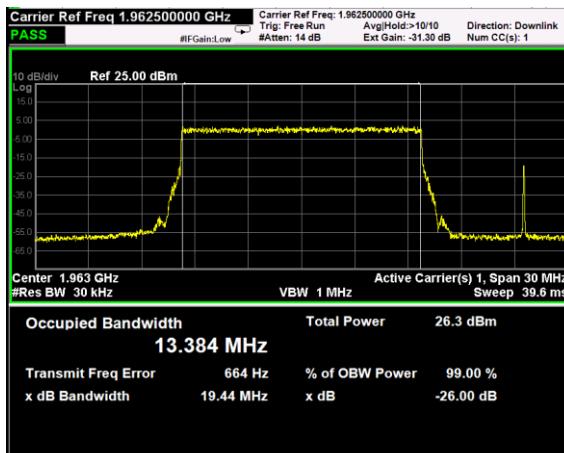
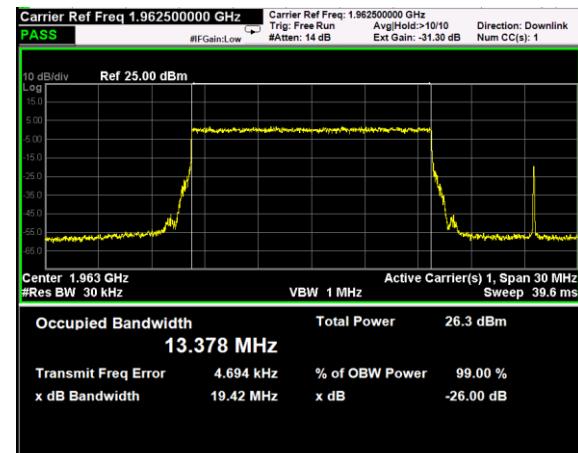
Channel: BOTTOM, Modulation: 16QAM,  
BW=15MHz

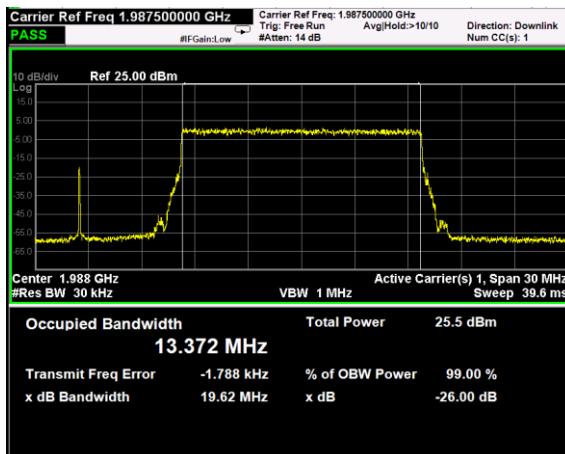


Channel: BOTTOM, Modulation: 64QAM,  
BW=15MHz

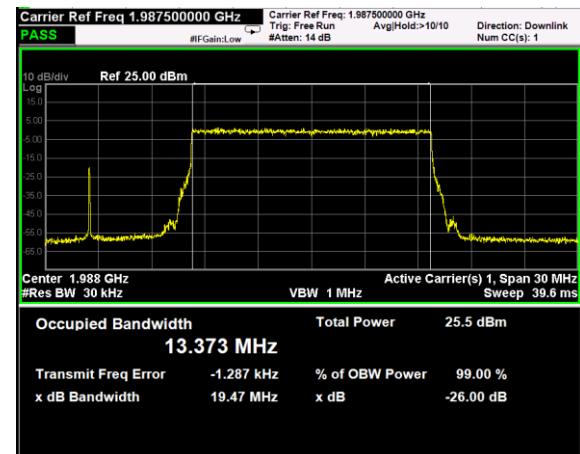


Channel: BOTTOM, Modulation: 256QAM,  
BW=15MHz

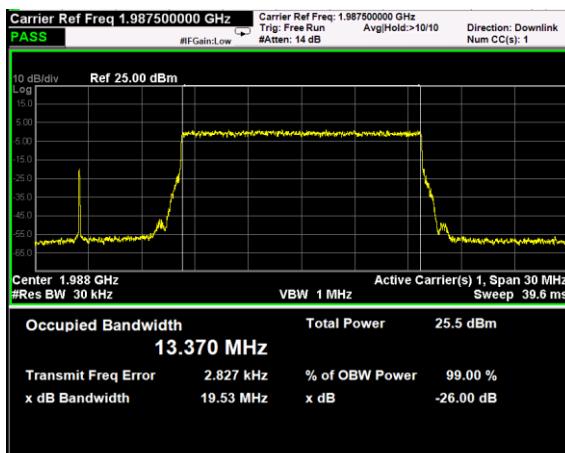
Channel: MIDDLE, Modulation: QPSK,  
BW=15MHzChannel: MIDDLE, Modulation: 16QAM,  
BW=15MHzChannel: MIDDLE, Modulation: 64QAM,  
BW=15MHzChannel: MIDDLE, Modulation: 256QAM,  
BW=15MHz



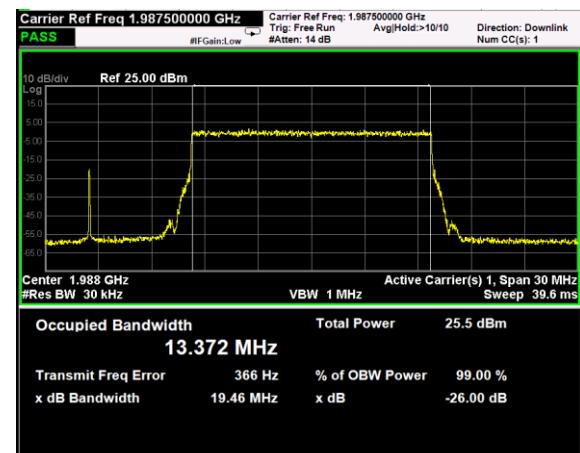
Channel: TOP, Modulation: QPSK,  
BW=15MHz



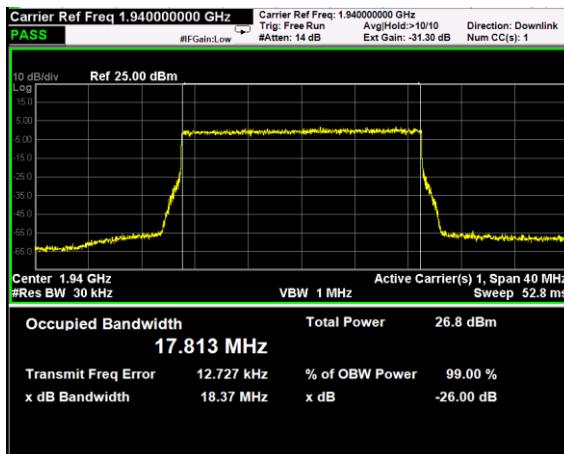
Channel: TOP, Modulation: 16QAM,  
BW=15MHz



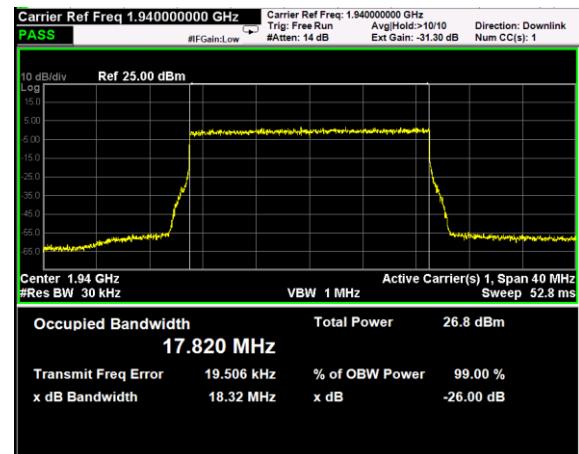
Channel: TOP, Modulation: 64QAM,  
BW=15MHz



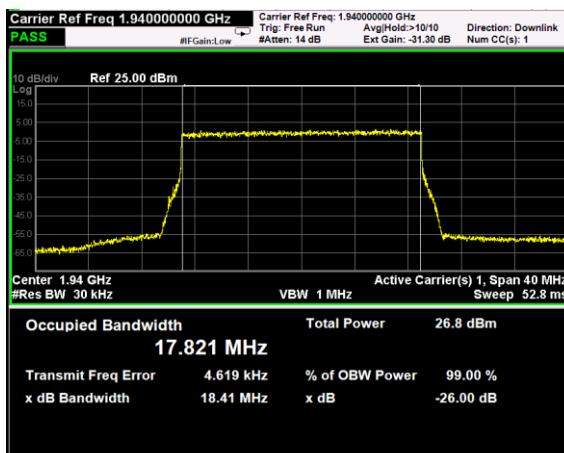
Channel: TOP, Modulation: 256QAM,  
BW=15MHz



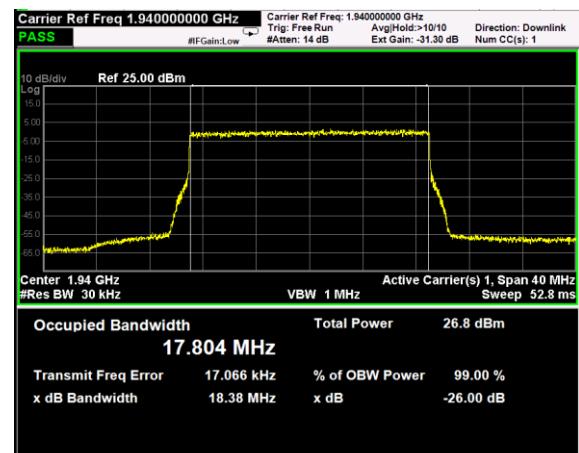
Channel: BOTTOM, Modulation: QPSK,  
BW=20MHz



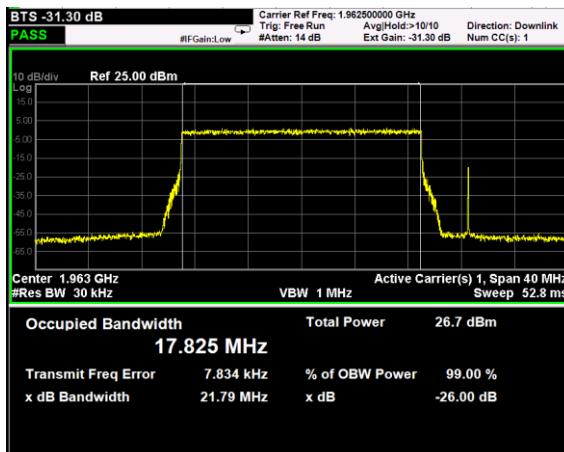
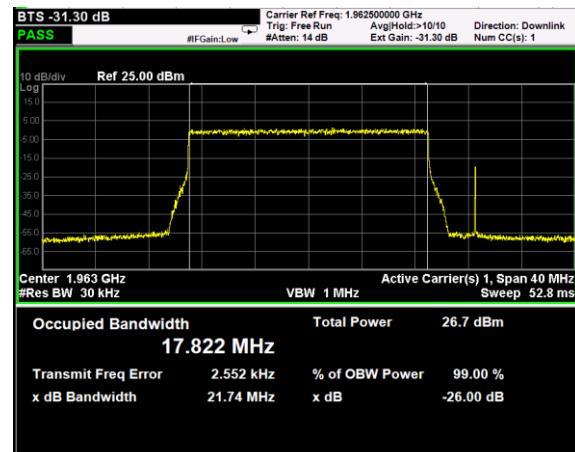
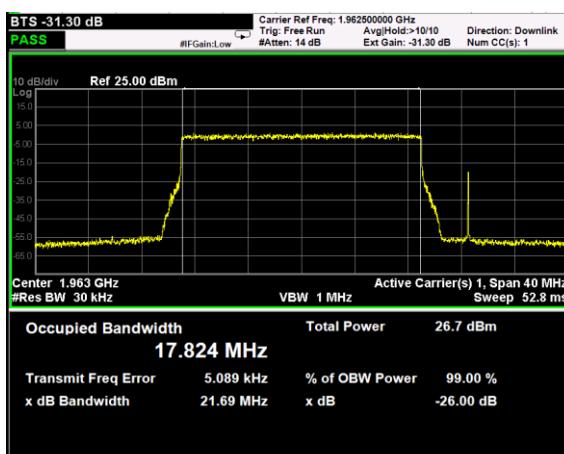
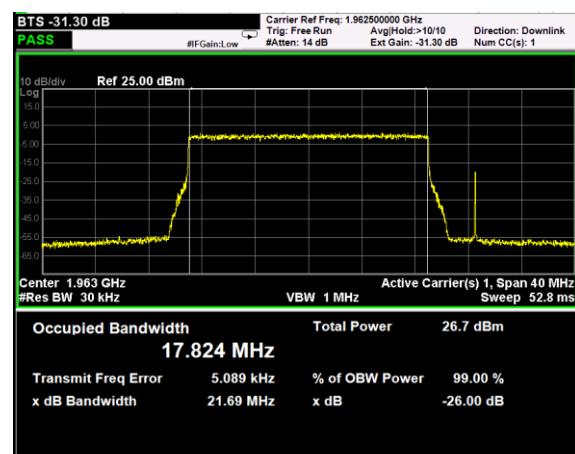
Channel: BOTTOM, Modulation: 16QAM,  
BW=20MHz

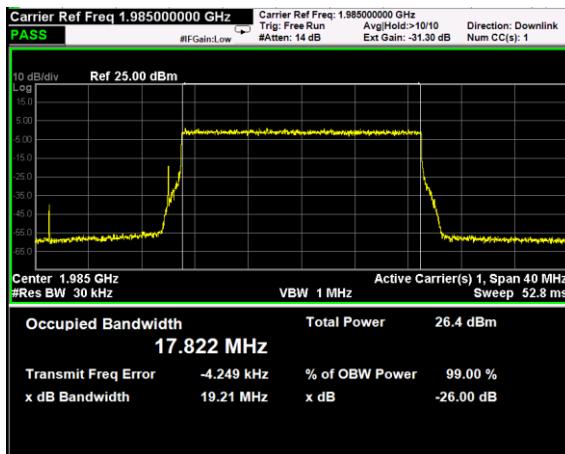


Channel: BOTTOM, Modulation: 64QAM,  
BW=20MHz

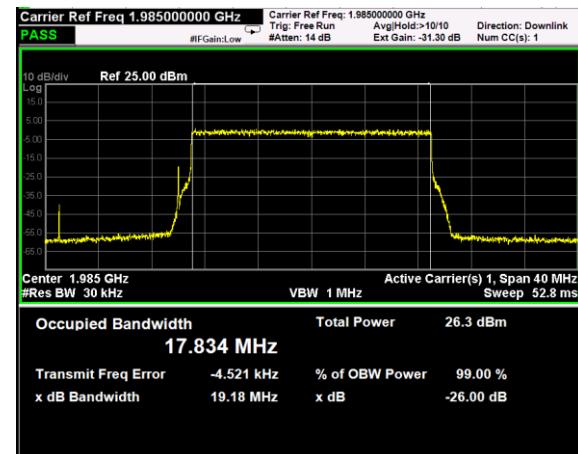


Channel: BOTTOM, Modulation: 256QAM,  
BW=20MHz

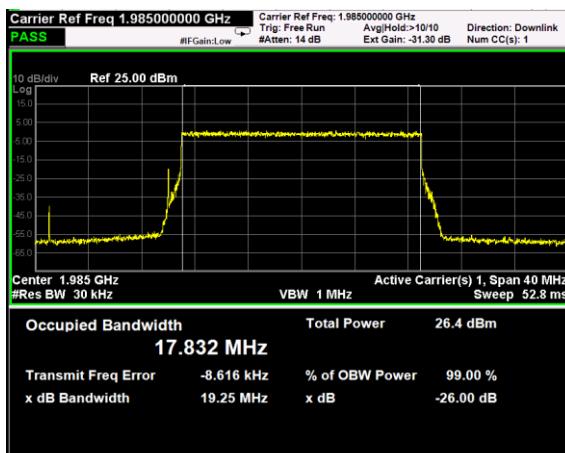
Channel: MIDDLE, Modulation: QPSK,  
BW=20MHzChannel: MIDDLE, Modulation: 16QAM,  
BW=20MHzChannel: MIDDLE, Modulation: 64QAM,  
BW=20MHzChannel: MIDDLE, Modulation: 256QAM,  
BW=20MHz



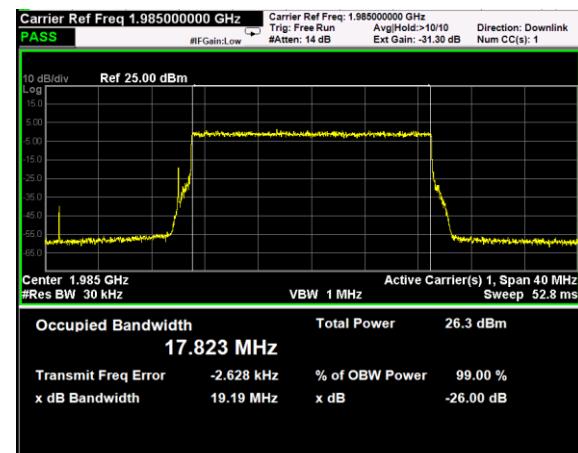
Channel: TOP, Modulation: QPSK,  
BW=20MHz



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



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



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



## Clause 24.232(a) Peak output power at RF antenna connector

(a) (1) Base stations with an emission bandwidth of 1 MHz or less are limited to 1640 watts equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.

(a) (2) Base stations with an emission bandwidth greater than 1 MHz are limited to 1640 watts/MHz equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.

(d) 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 (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. 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.

Test date: [04/03/2019 to 05/10/2019](#)

Test results: [Pass](#)

Special notes

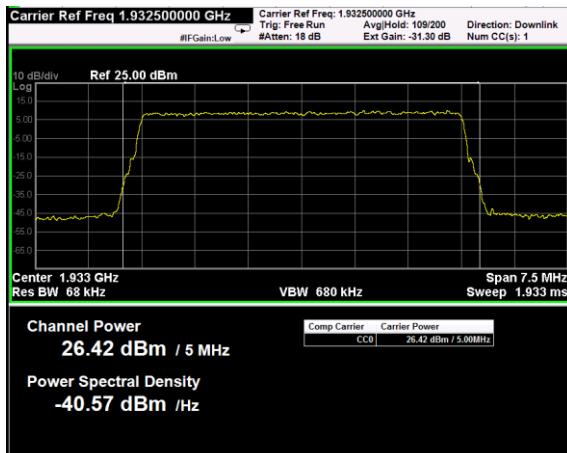


## Clause 24.232(a) Peak output power at RF antenna connector

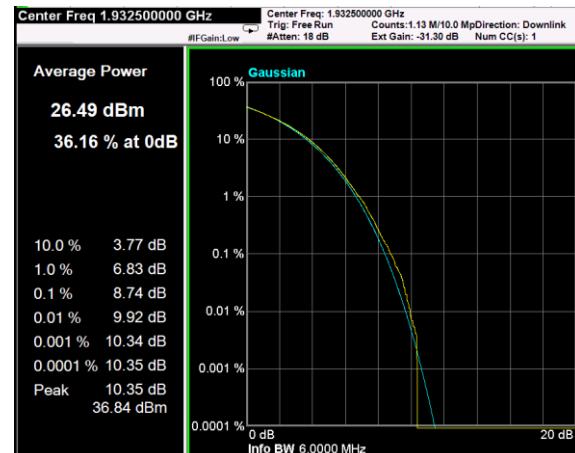
## Test data

## RF PORT 1

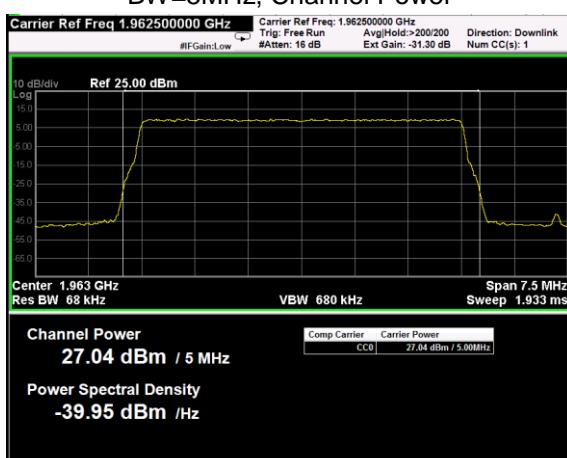
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 5MHz (QPSK)	1932.5	26.42	0.439	10.35
Down-link	LTE 5MHz (QPSK)	1962.5	27.04	0.506	10.43
Down-link	LTE 5MHz (QPSK)	1992.5	26.49	0.446	10.55
Down-link	LTE 5MHz (16QAM)	1932.5	26.62	0.459	10.38
Down-link	LTE 5MHz (16QAM)	1962.5	27.06	0.508	10.43
Down-link	LTE 5MHz (16QAM)	1992.5	26.25	0.422	10.48
Down-link	LTE 5MHz (64QAM)	1932.5	26.67	0.465	10.56
Down-link	LTE 5MHz (64QAM)	1962.5	27.09	0.512	10.33
Down-link	LTE 5MHz (64QAM)	1992.5	26.63	0.460	10.49
Down-link	LTE 5MHz (256QAM)	1932.5	26.67	0.465	10.37
Down-link	LTE 5MHz (256QAM)	1962.5	26.98	0.499	10.41
Down-link	LTE 5MHz (256QAM)	1992.5	26.58	0.455	10.48



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



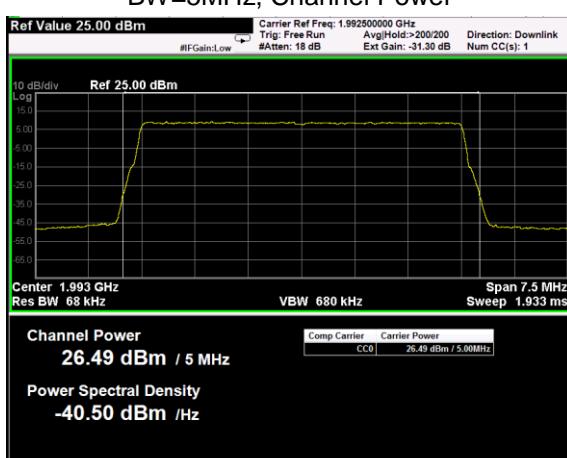
Channel: BOTTOM, Modulation: QPSK,  
BW=5MHz, CCDF



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



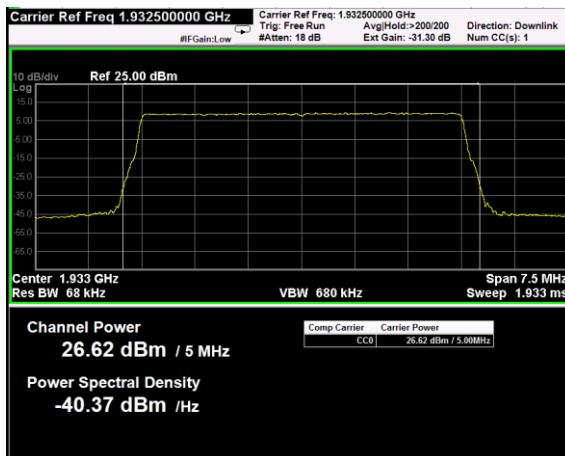
Channel: MIDDLE, Modulation: QPSK,  
BW=5MHz, CCDF



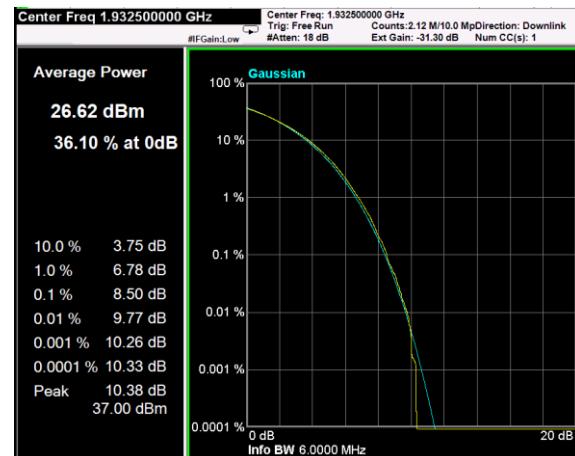
Channel: TOP, Modulation: QPSK,  
BW=5MHz, Channel Power



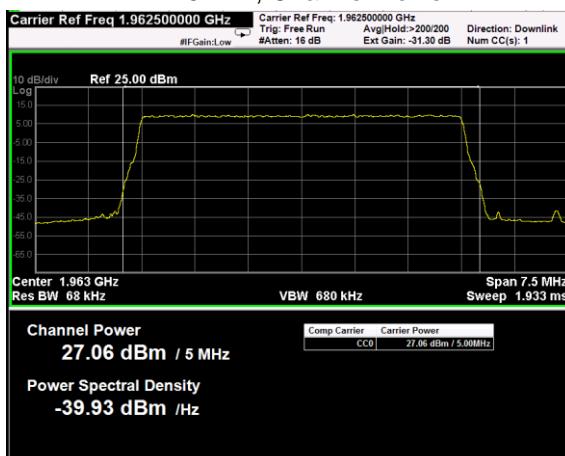
Channel: TOP, Modulation: QPSK,  
BW=5MHz, CCDF



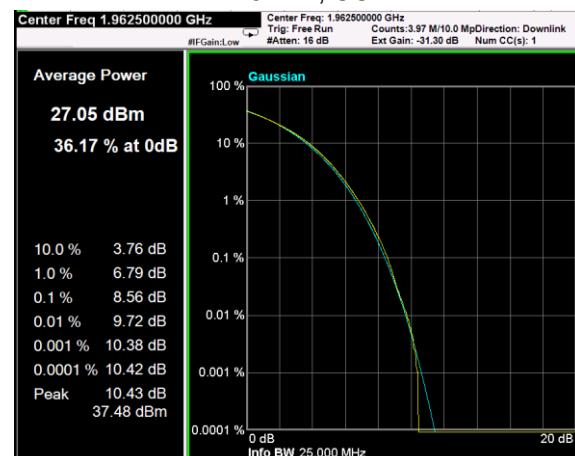
Channel: BOTTOM, Modulation: 16QAM,  
BW=5MHz, Channel Power



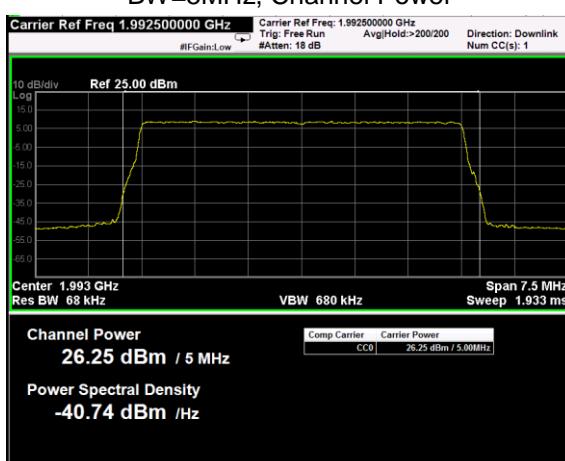
Channel: BOTTOM, Modulation: 16QAM,  
BW=5MHz, CCDF



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



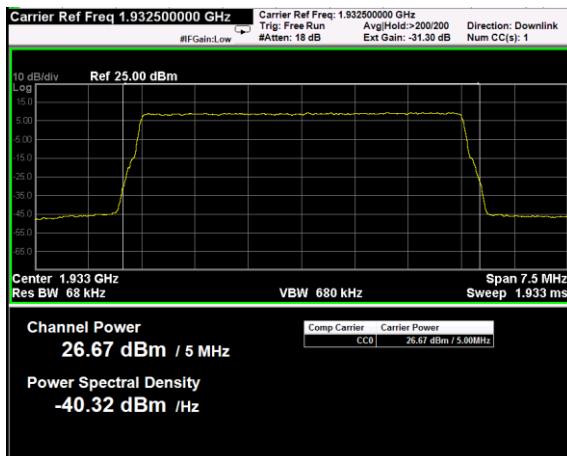
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BW=5MHz, CCDF



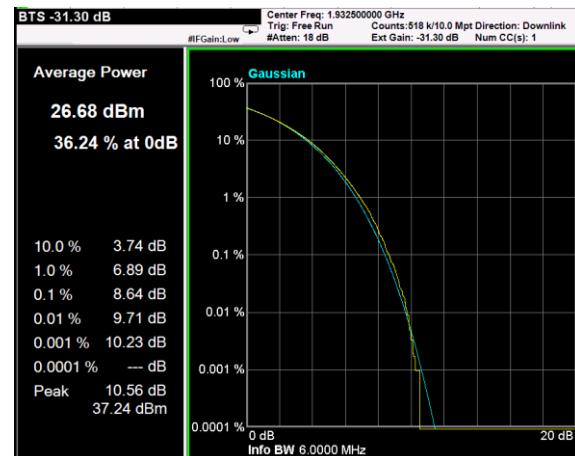
Channel: TOP, Modulation: 16QAM,  
BW=5MHz, Channel Power



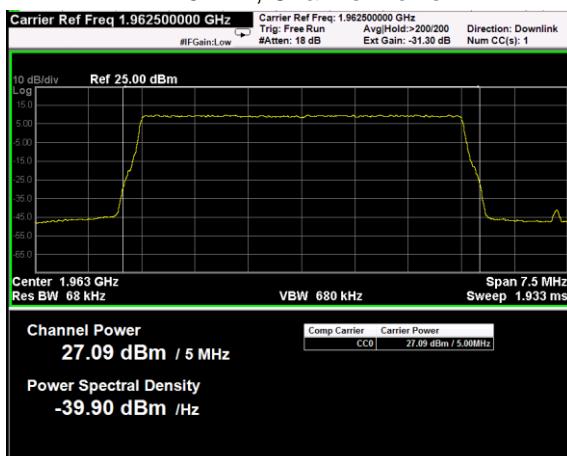
Channel: TOP, Modulation: 16QAM,  
BW=5MHz, CCDF



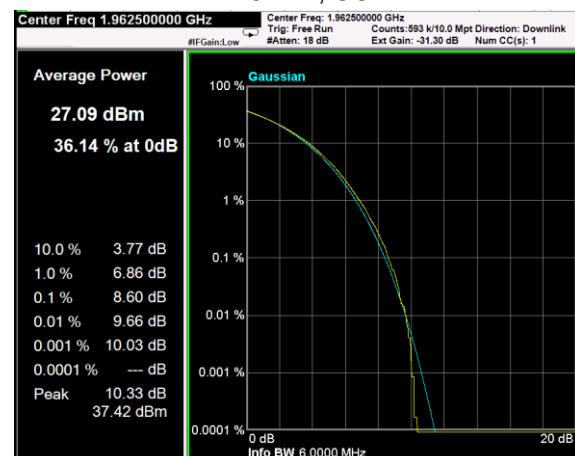
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Channel Power



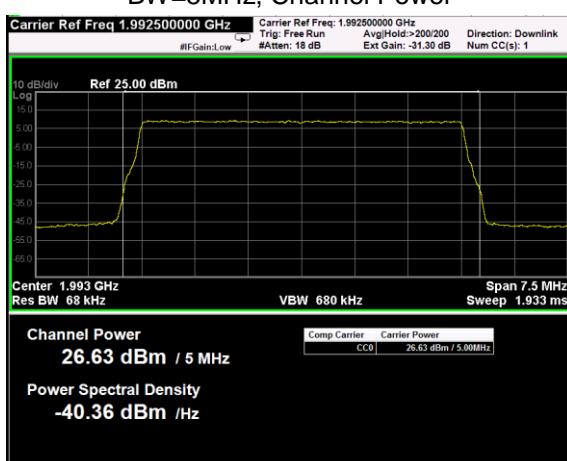
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, CCDF



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



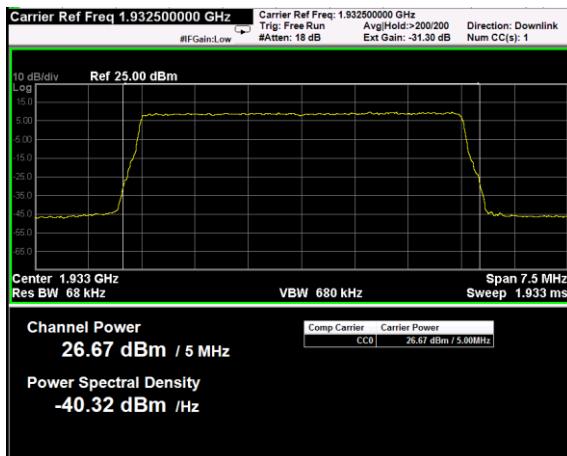
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, CCDF



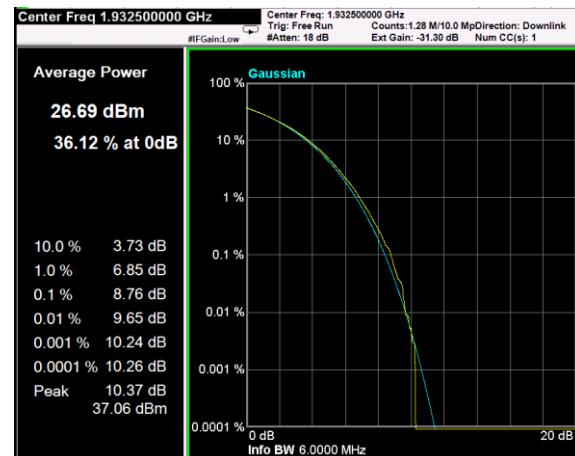
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Channel Power



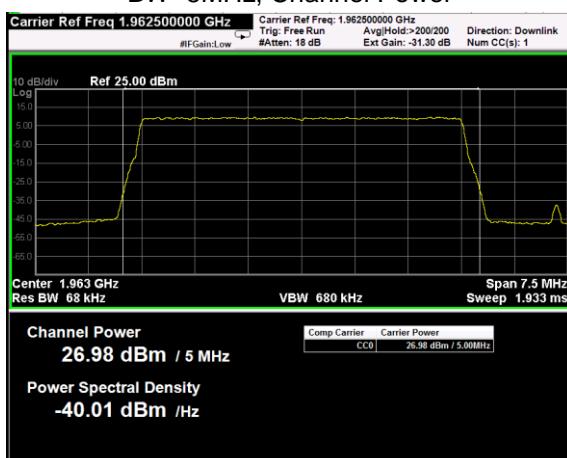
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, CCDF



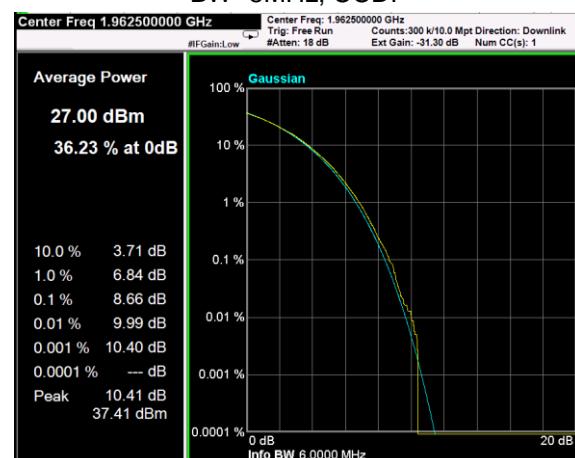
Channel: BOTTOM, Modulation: 256QAM,  
BW=5MHz, Channel Power



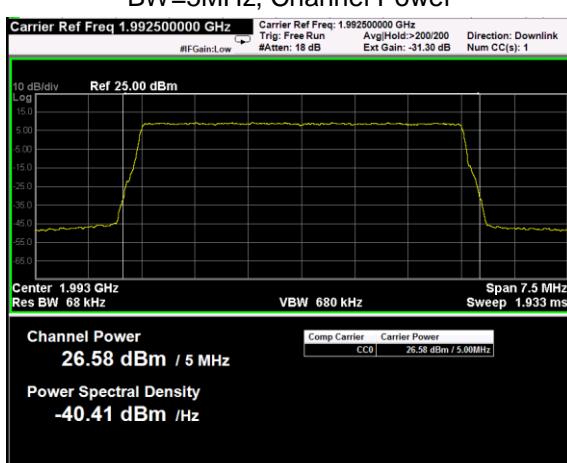
Channel: BOTTOM, Modulation: 256QAM,  
BW=5MHz, CCDF



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



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



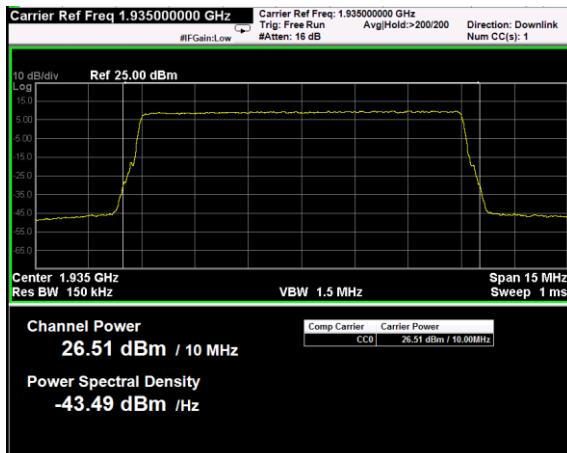
Channel: TOP, Modulation: 256QAM,  
BW=5MHz, Channel Power



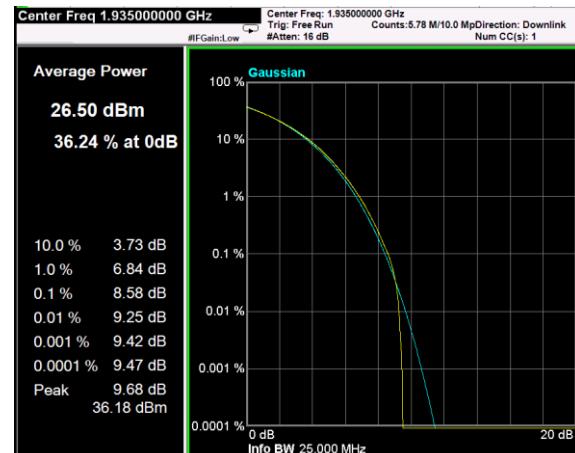
Channel: TOP, Modulation: 256QAM,  
BW=5MHz, CCDF



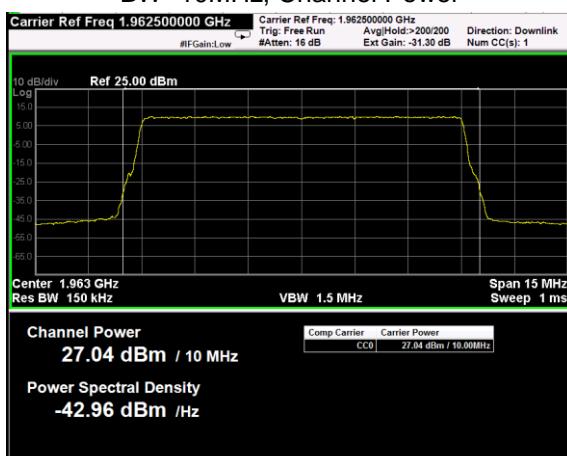
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 10MHz (QPSK)	1935	26.51	0.448	9.68
Down-link	LTE 10MHz (QPSK)	1962.5	27.04	0.506	9.24
Down-link	LTE 10MHz (QPSK)	1990	26.58	0.455	9.27
Down-link	LTE 10MHz (16QAM)	1935	26.87	0.486	9.61
Down-link	LTE 10MHz (16QAM)	1962.5	27.01	0.502	9.23
Down-link	LTE 10MHz (16QAM)	1990	26.63	0.460	9.29
Down-link	LTE 10MHz (64QAM)	1935	26.44	0.441	9.46
Down-link	LTE 10MHz (64QAM)	1962.5	26.99	0.500	9.25
Down-link	LTE 10MHz (64QAM)	1990	26.62	0.459	9.29
Down-link	LTE 10MHz (256QAM)	1935	26.56	0.453	9.5
Down-link	LTE 10MHz (256QAM)	1962.5	26.8	0.479	9.25
Down-link	LTE 10MHz (256QAM)	1990	26.66	0.463	9.27



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



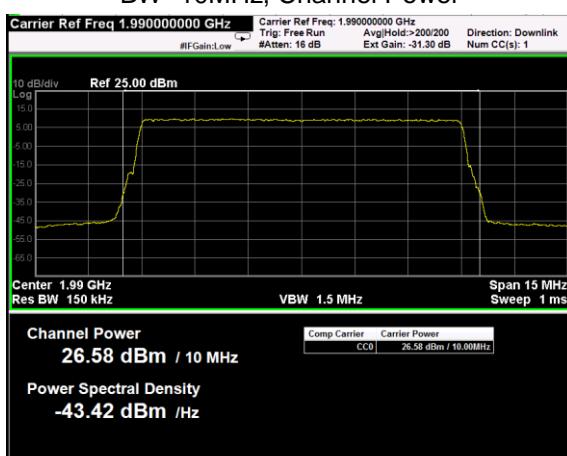
Channel: BOTTOM, Modulation: QPSK,  
BW=10MHz, CCDF



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



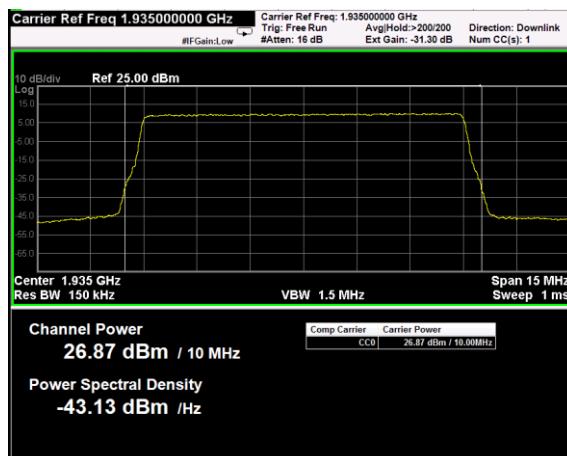
Channel: MIDDLE, Modulation: QPSK,  
BW=10MHz, CCDF



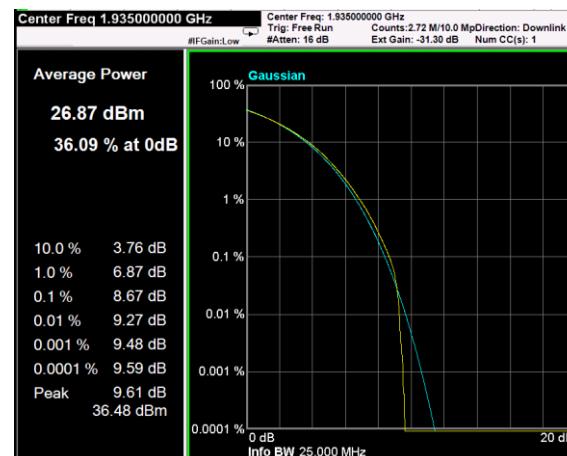
Channel: TOP, Modulation: QPSK,  
BW=10MHz, Channel Power



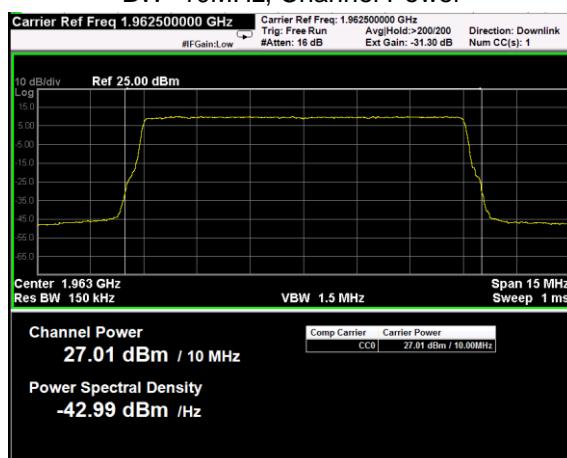
Channel: TOP, Modulation: QPSK,  
BW=10MHz, CCDF



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



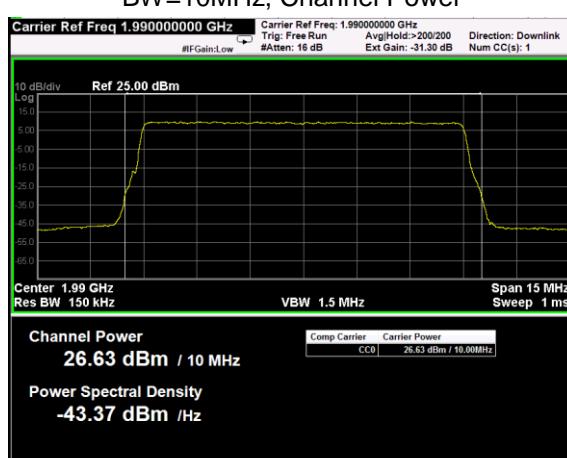
Channel: BOTTOM, Modulation: 16QAM, BW=10MHz, CCDF



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



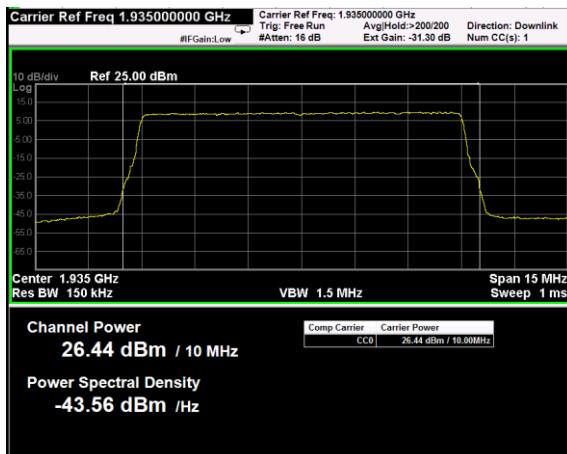
Channel: MIDDLE, Modulation: 16QAM, BW=10MHz, CCDF



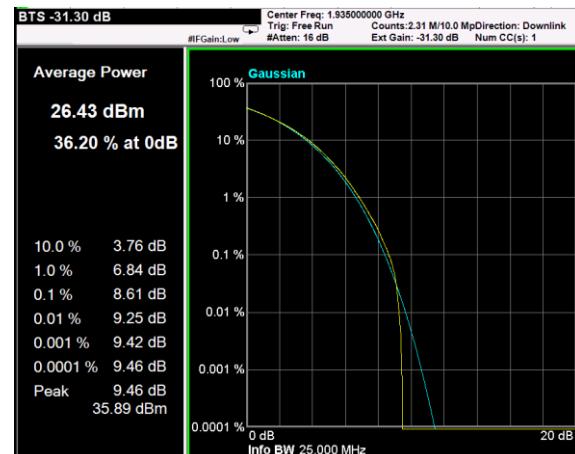
Channel: TOP, Modulation: 16QAM, BW=10MHz, Channel Power



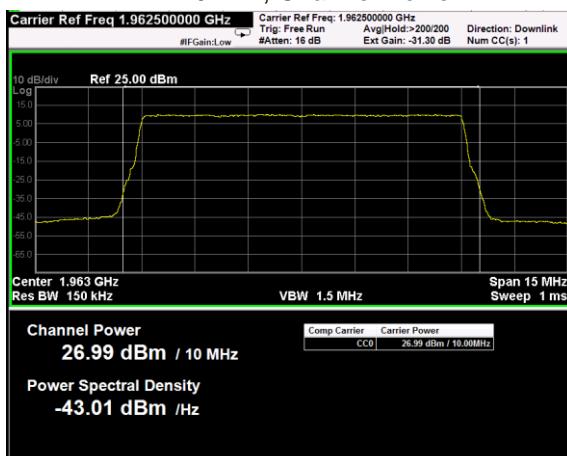
Channel: TOP, Modulation: 16QAM, BW=10MHz, CCDF



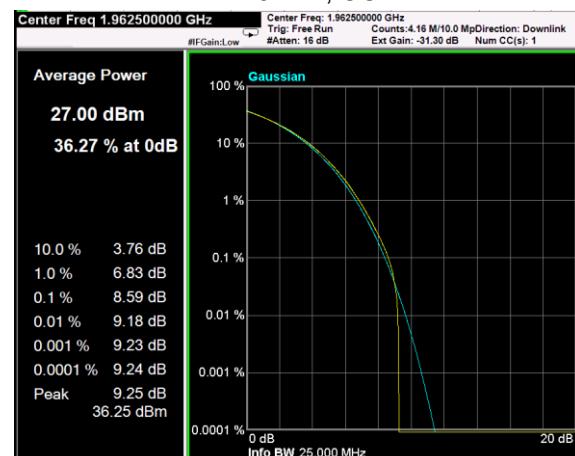
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz, Channel Power



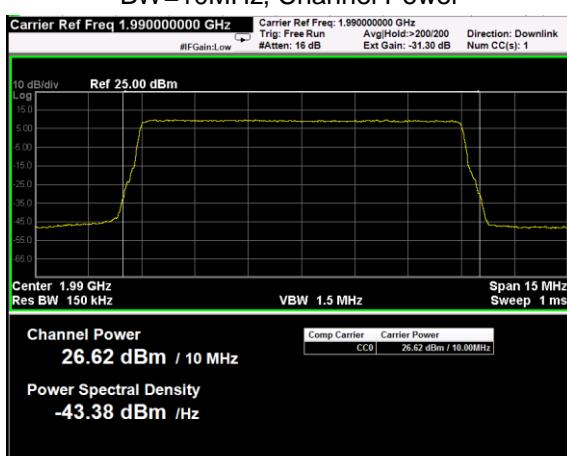
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz, CCDF



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



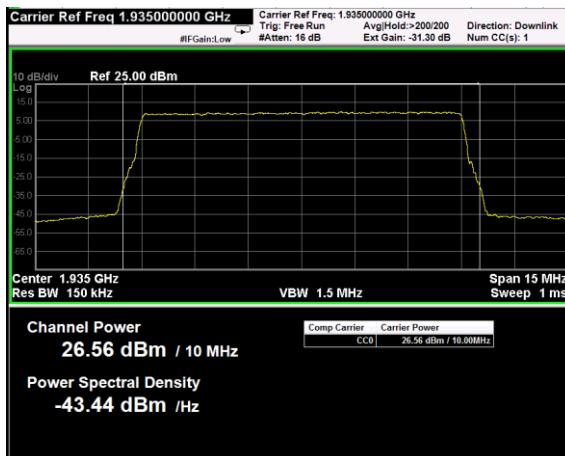
Channel: MIDDLE, Modulation: 64QAM, BW=10MHz, CCDF



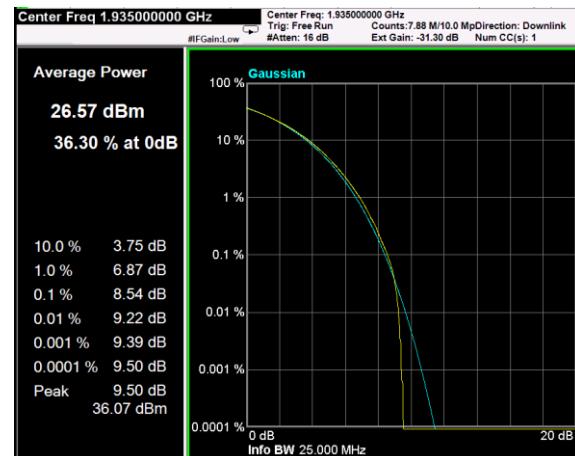
Channel: TOP, Modulation: 64QAM, BW=10MHz, Channel Power



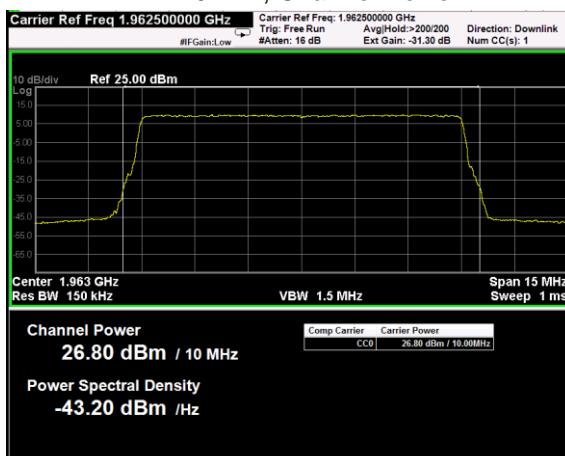
Channel: TOP, Modulation: 64QAM, BW=10MHz, CCDF



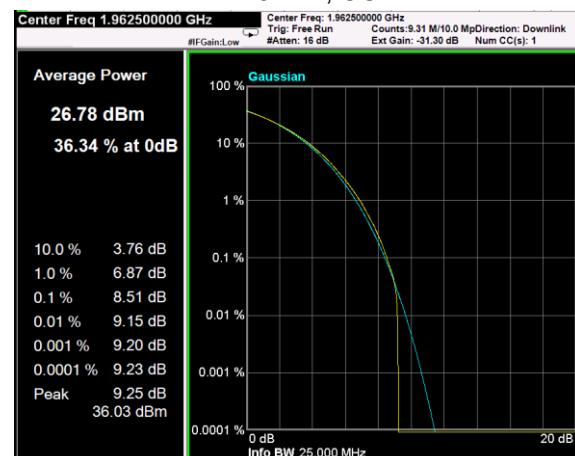
Channel: BOTTOM, Modulation: 256QAM,  
BW=10MHz, Channel Power



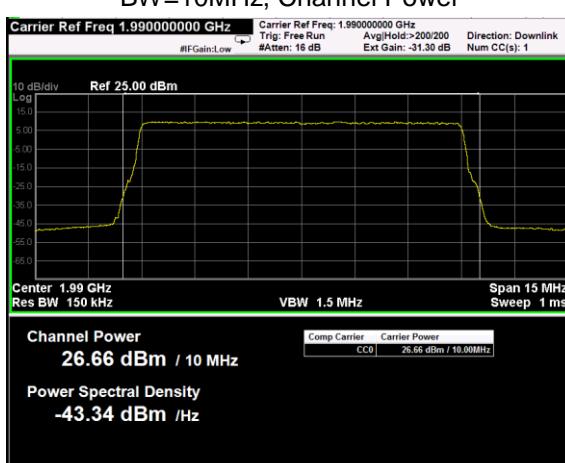
Channel: BOTTOM, Modulation: 256QAM,  
BW=10MHz, CCDF



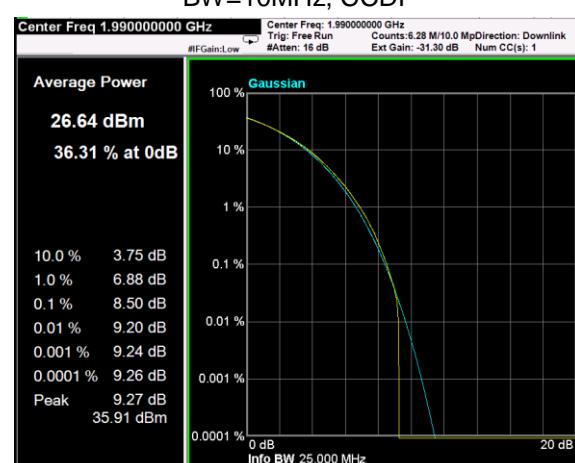
Channel: MIDDLE, Modulation: 256QAM,  
BW=10MHz, Channel Power



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



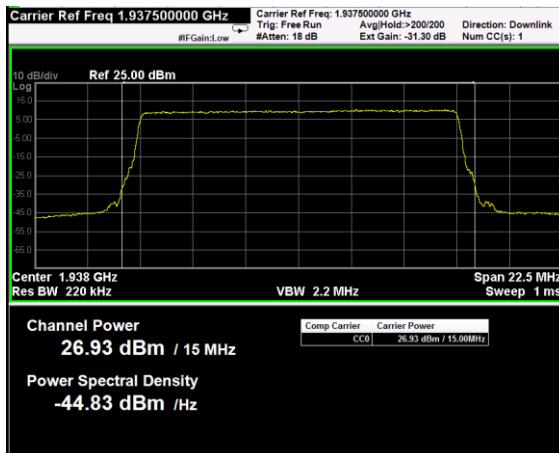
Channel: TOP, Modulation: 256QAM,  
BW=10MHz, Channel Power



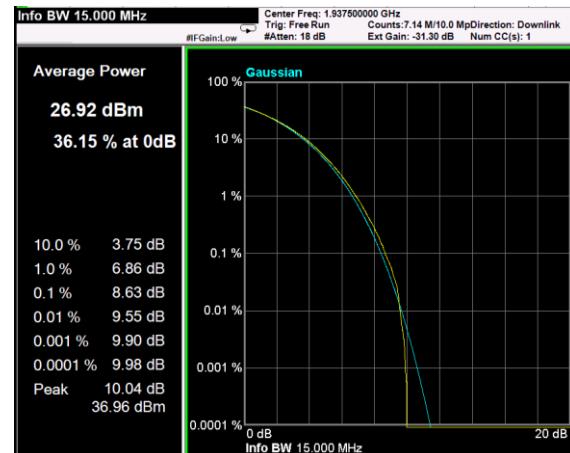
Channel: TOP, Modulation: 256QAM,  
BW=10MHz, CCDF



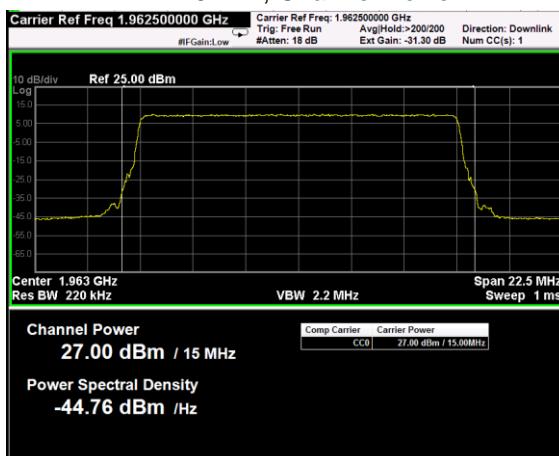
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 15MHz (QPSK)	1937.5	26.93	0.493	10.04
Down-link	LTE 15MHz (QPSK)	1962.5	27	0.501	9.75
Down-link	LTE 15MHz (QPSK)	1987.5	26.65	0.462	9.72
Down-link	LTE 15MHz (16QAM)	1937.5	26.91	0.491	10.09
Down-link	LTE 15MHz (16QAM)	1962.5	27.04	0.506	9.72
Down-link	LTE 15MHz (16QAM)	1987.5	26.71	0.469	9.72
Down-link	LTE 15MHz (64QAM)	1937.5	26.93	0.493	10.2
Down-link	LTE 15MHz (64QAM)	1962.5	27.03	0.505	9.73
Down-link	LTE 15MHz (64QAM)	1987.5	26.39	0.436	9.71
Down-link	LTE 15MHz (256QAM)	1937.5	26.95	0.495	10.22
Down-link	LTE 15MHz (256QAM)	1962.5	27.02	0.504	9.76
Down-link	LTE 15MHz (256QAM)	1987.5	26.66	0.463	9.72



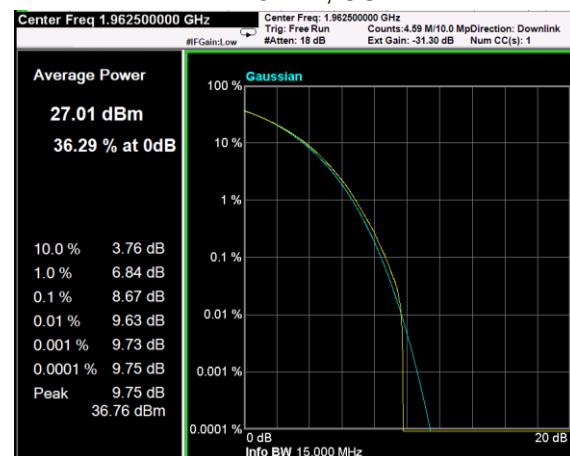
Channel: BOTTOM, Modulation: QPSK,  
BW=15MHz, Channel Power



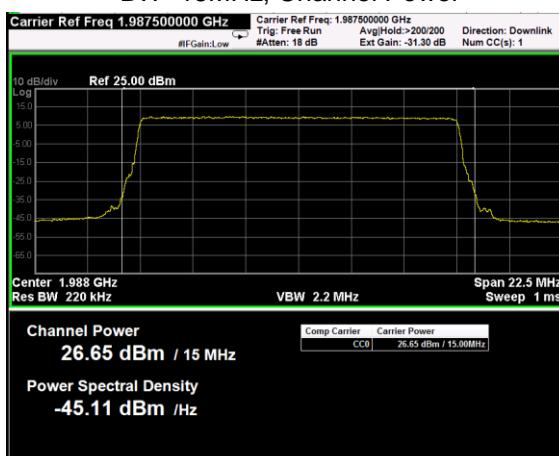
Channel: BOTTOM, Modulation: QPSK,  
BW=15MHz, CCDF



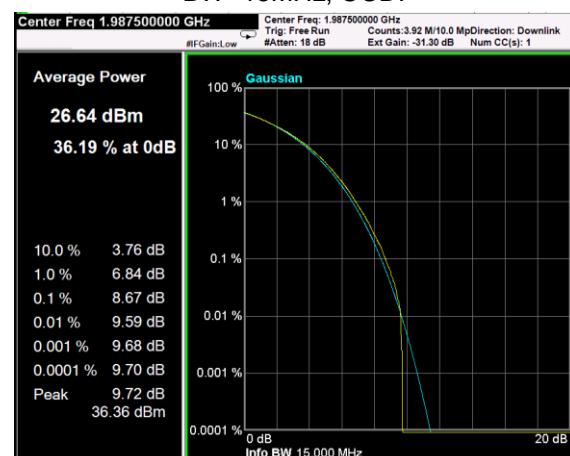
Channel: MIDDLE, Modulation: QPSK,  
BW=15MHz, Channel Power



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



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



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