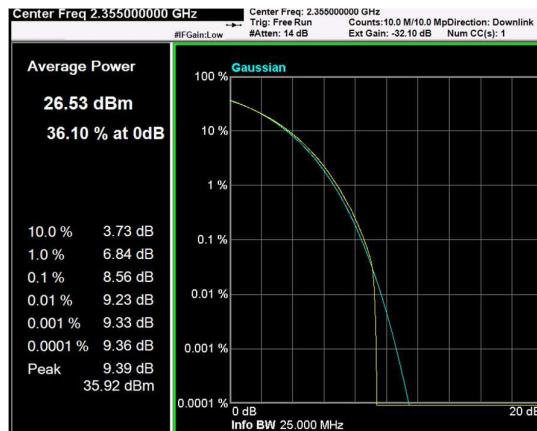
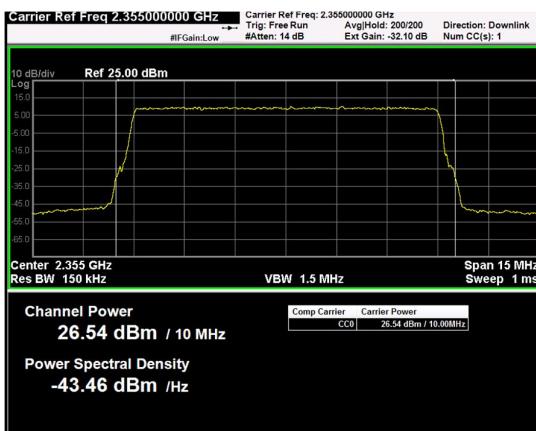


Channel: MIDDLE, Modulation: QPSK,  
BW=10MHz, Channel Power



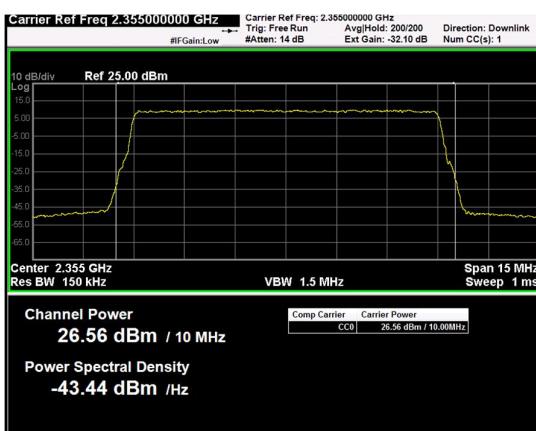
Channel: MIDDLE, Modulation: QPSK,  
BW=10MHz, CCDF



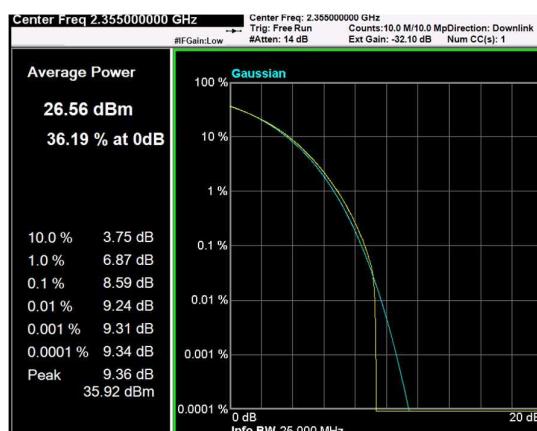
Channel: MIDDLE, Modulation: 16QAM,  
BW=10MHz, Channel Power



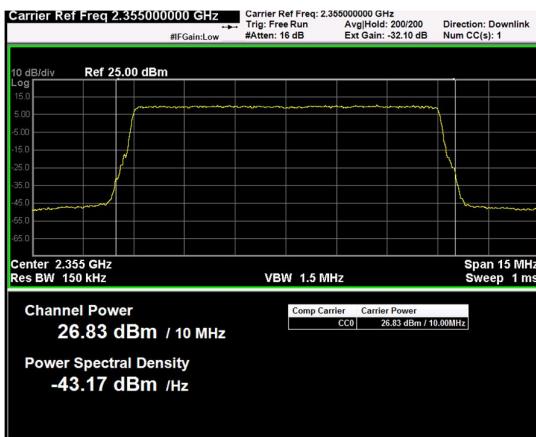
Channel: MIDDLE, Modulation: 16QAM,  
BW=10MHz, CCDF



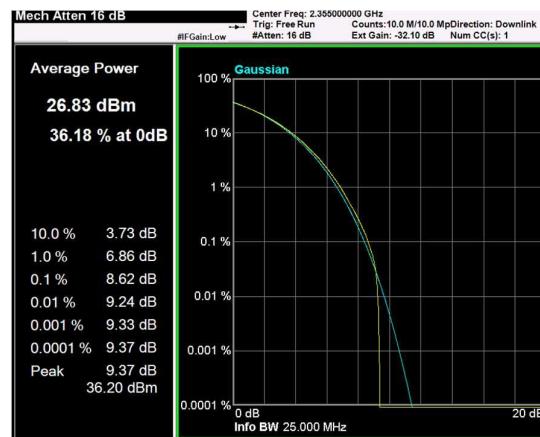
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Channel Power



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



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

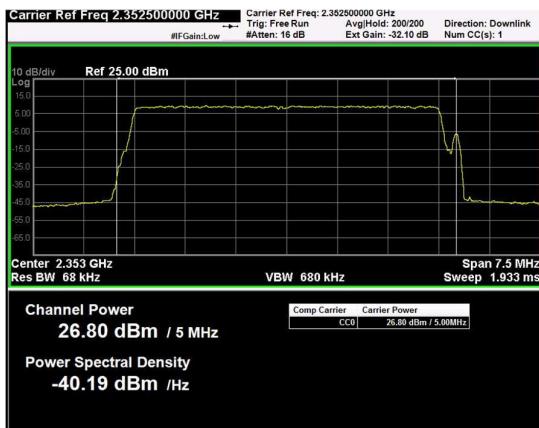


Channel: MIDDLE, Modulation: 256QAM,  
BW=10MHz, CCDF

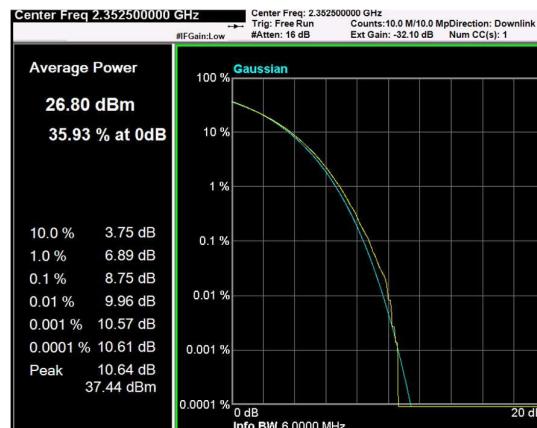


## RF PORT 2

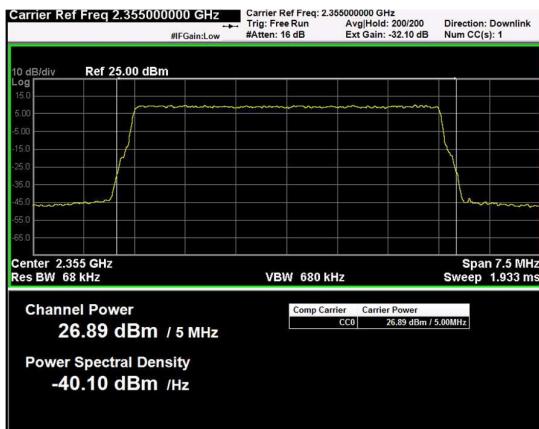
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 5MHz (QPSK)	2352.5	26.8	0.479	10.6
Down-link	LTE 5MHz (QPSK)	2355	26.9	0.489	10.5
Down-link	LTE 5MHz (QPSK)	2357.5	26.9	0.486	10.5
Down-link	LTE 5MHz (16QAM)	2352.5	26.8	0.479	10.6
Down-link	LTE 5MHz (16QAM)	2355	27.0	0.497	10.5
Down-link	LTE 5MHz (16QAM)	2357.5	26.9	0.488	10.5
Down-link	LTE 5MHz (64QAM)	2352.5	26.9	0.490	10.5
Down-link	LTE 5MHz (64QAM)	2355	27.0	0.499	10.5
Down-link	LTE 5MHz (64QAM)	2357.5	26.9	0.489	10.5
Down-link	LTE 5MHz (256QAM)	2352.5	26.8	0.478	10.6
Down-link	LTE 5MHz (256QAM)	2355	27.0	0.498	10.5
Down-link	LTE 5MHz (256QAM)	2357.5	26.9	0.489	10.5



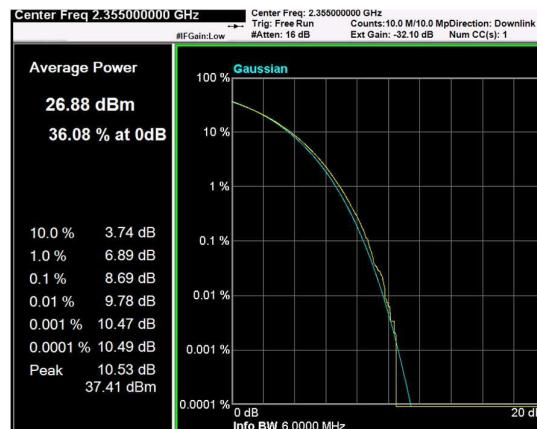
Channel: BOTTOM, Modulation: QPSK,  
BW=5MHz, Channel Power



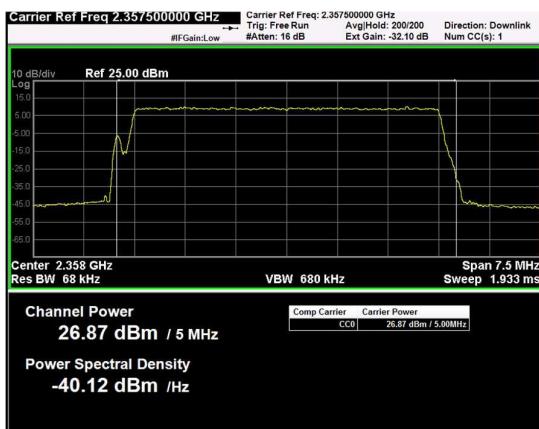
Channel: BOTTOM, Modulation: QPSK,  
BW=5MHz, CCDF



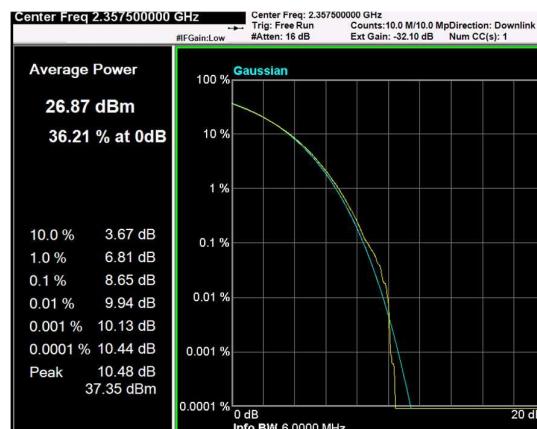
Channel: MIDDLE, Modulation: QPSK,  
BW=5MHz, Channel Power



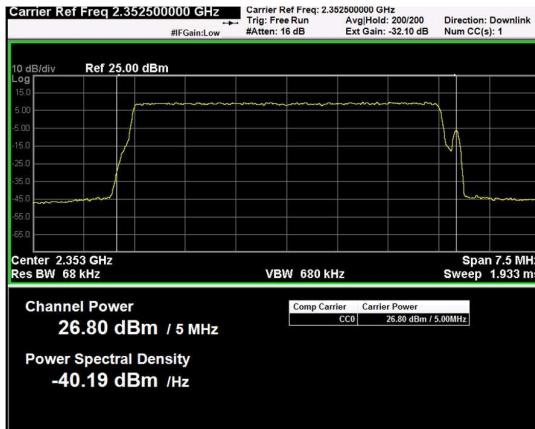
Channel: MIDDLE, Modulation: QPSK,  
BW=5MHz, CCDF

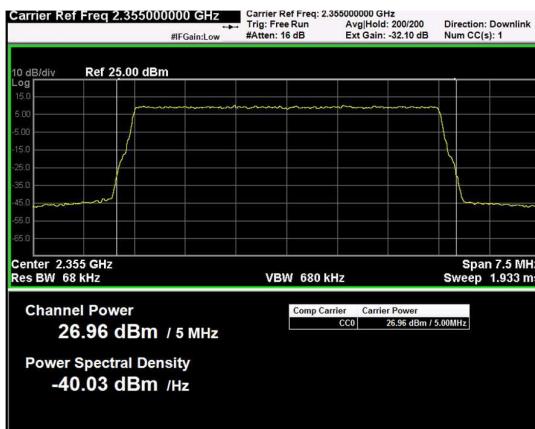
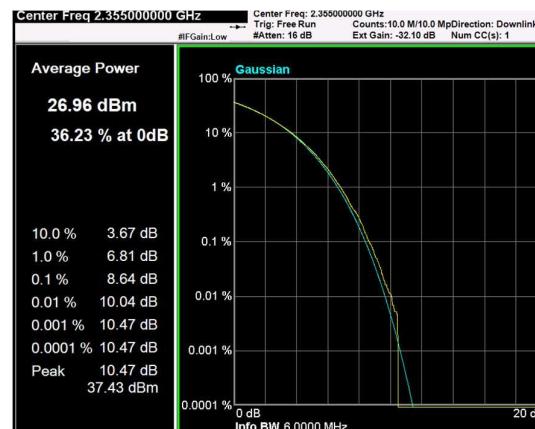
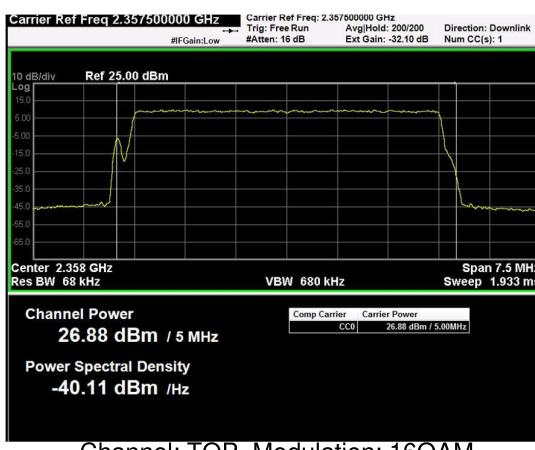


Channel: TOP, Modulation: QPSK,  
BW=5MHz, Channel Power

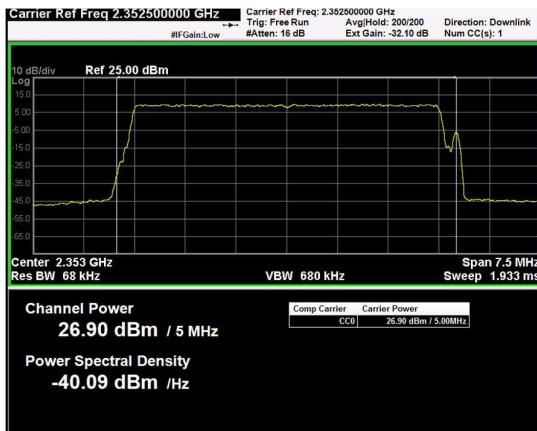


Channel: TOP, Modulation: QPSK,  
BW=5MHz, CCDF

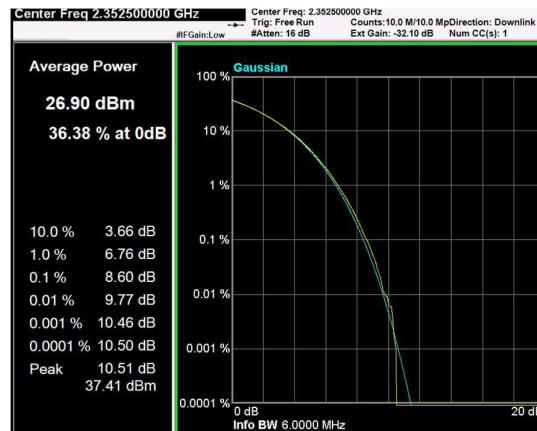

 Channel: BOTTOM, Modulation: 16QAM,  
 BW=5MHz, Channel Power

 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

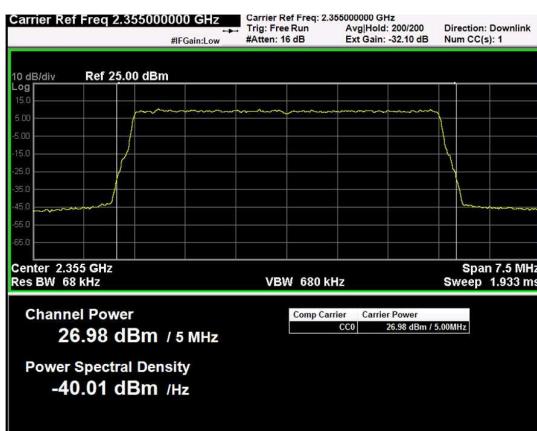
 Channel: TOP, Modulation: 16QAM,  
 BW=5MHz, CCDF



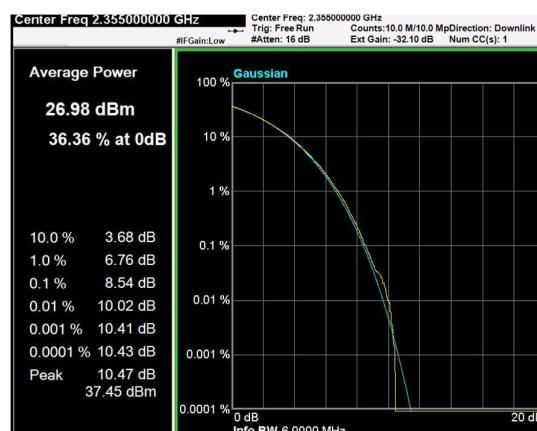
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Channel Power



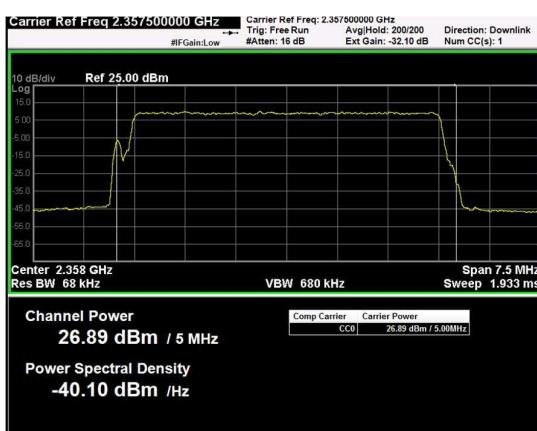
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, CCDF



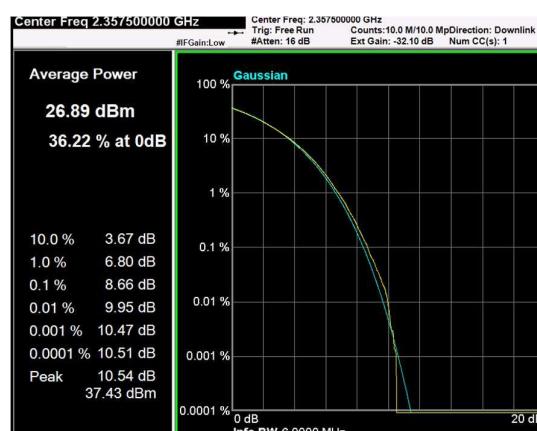
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Channel Power



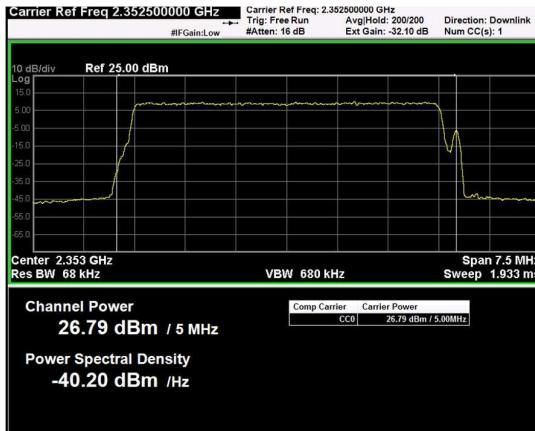
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, CCDF



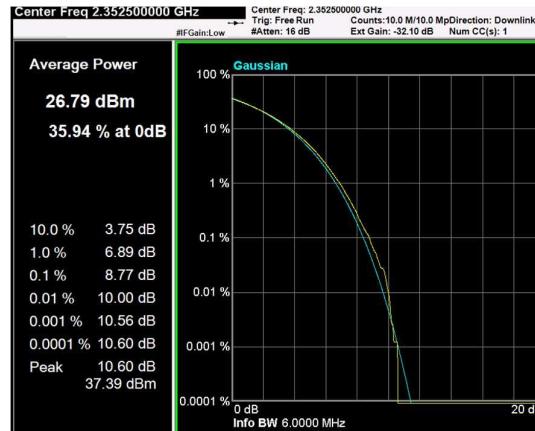
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Channel Power



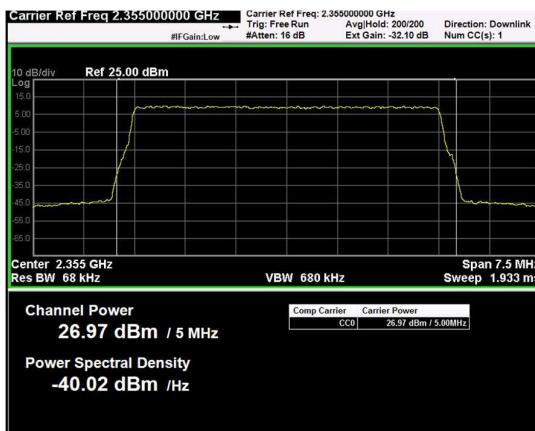
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, CCDF



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



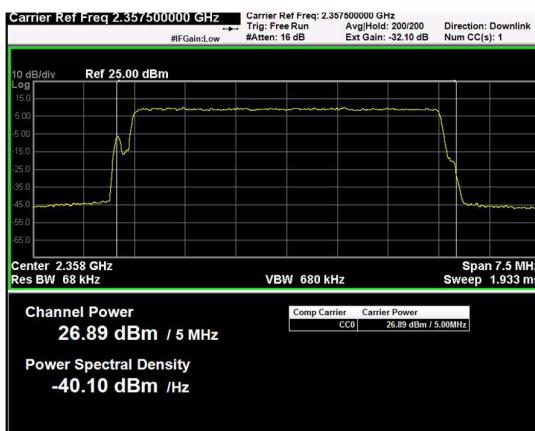
Channel: BOTTOM, Modulation: 256QAM,  
BW=5MHz, CCDF



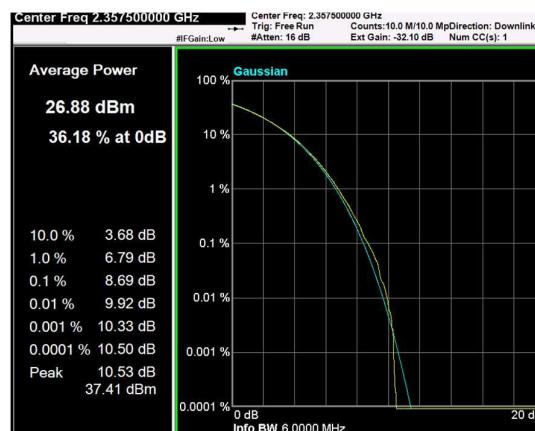
Channel: MIDDLE, Modulation: 256QAM,  
BW=5MHz, Channel Power



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



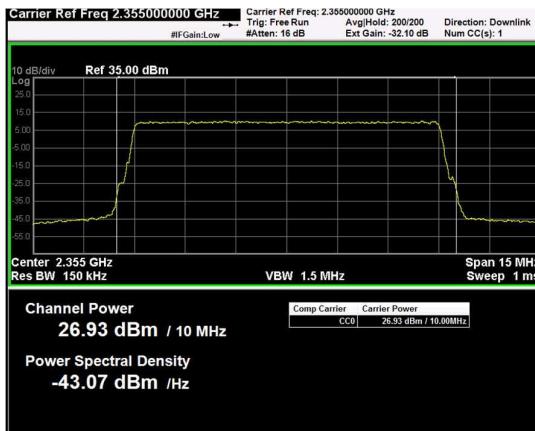
Channel: TOP, Modulation: 256QAM,  
BW=5MHz, Channel Power



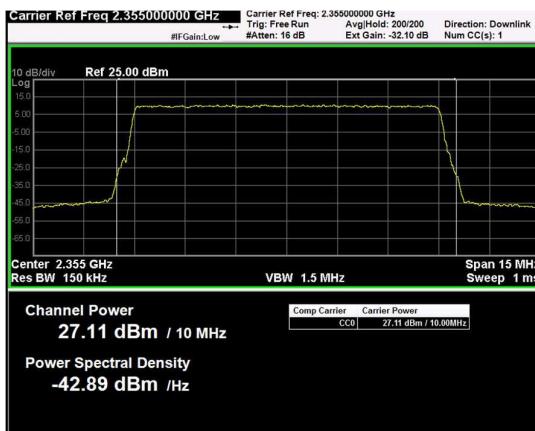
Channel: TOP, Modulation: 256QAM,  
BW=5MHz, CCDF



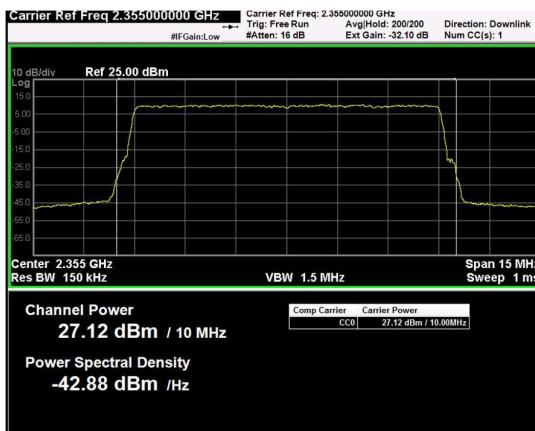
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 10MHz (QPSK)	2355	26.9	0.493	9.4
Down-link	LTE 10MHz (16QAM)	2355	27.1	0.514	9.2
Down-link	LTE 10MHz (64QAM)	2355	27.1	0.516	9.2
Down-link	LTE 10MHz (256QAM)	2355	27.1	0.513	9.3



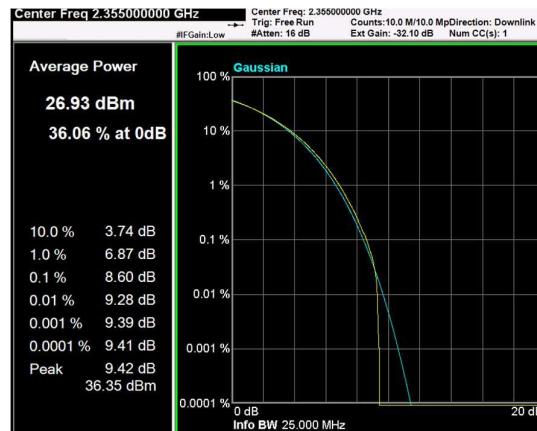
Channel: MIDDLE, Modulation: QPSK,  
BW=10MHz, Channel Power



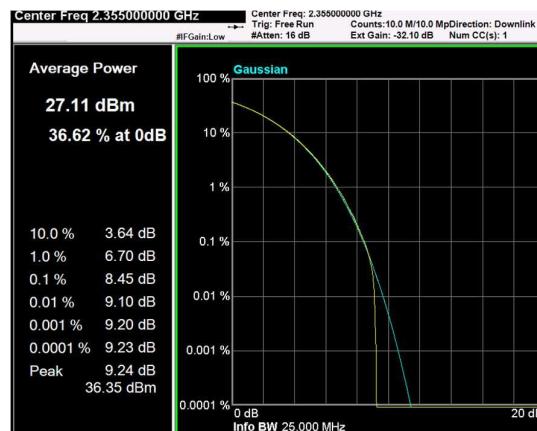
Channel: MIDDLE, Modulation: 16QAM,  
BW=10MHz, Channel Power



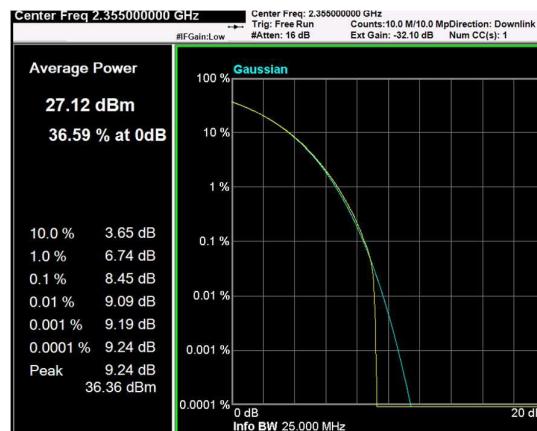
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Channel Power



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



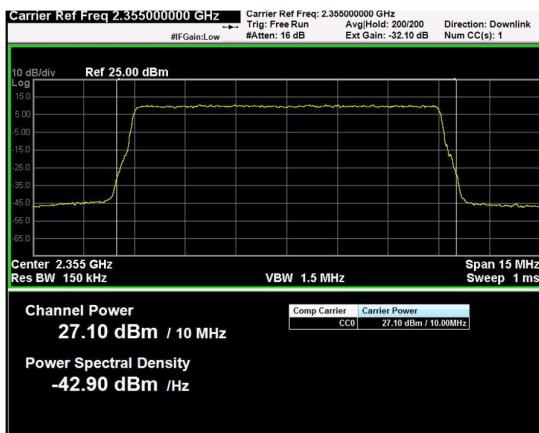
Channel: MIDDLE, Modulation: 16QAM,  
BW=10MHz, CCDF



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



Specification: FCC 27

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

**Clause 27.53(a) Spurious emissions at RF antenna connector**

(a) For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

(1) For base and fixed stations' operations in the 2305-2320 MHz band and the 2345-2360 MHz band:

- (i) By a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, and not less than  $75 + 10 \log (P)$  dB on all frequencies between 2320 and 2345 MHz;
- (ii) By a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2300 and 2305 MHz,  $70 + 10 \log (P)$  dB on all frequencies between 2287.5 and 2300 MHz,  $72 + 10 \log (P)$  dB on all frequencies between 2285 and 2287.5 MHz, and  $75 + 10 \log (P)$  dB below 2285 MHz;
- (iii) By a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2360 and 2362.5 MHz,  $55 + 10 \log (P)$  dB on all frequencies between 2362.5 and 2365 MHz,  $70 + 10 \log (P)$  dB on all frequencies between 2365 and 2367.5 MHz,  $72 + 10 \log (P)$  dB on all frequencies between 2367.5 and 2370 MHz, and  $75 + 10 \log (P)$  dB above 2370 MHz.

(5) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(7) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power;

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

Test results: Pass

**Special notes**

1) Limit of spurious emission at RF connector has been calculated following the indication in the "662911 D01 Multiple Transmitter Output v02r01" Clause 3) a) iii) with  $N_{Ant} = 2$ .

$$10\text{Log}(N_{Ant}) = 10\text{Log}(2) = 3 \text{ dB}$$

Limit= -45dBm - 3dBm=-48dBm



## Clause 27.53 (a) Spurious emissions at RF antenna connector, continued

## Test data

**See Plots below**

## Spurious emissions measurement results:

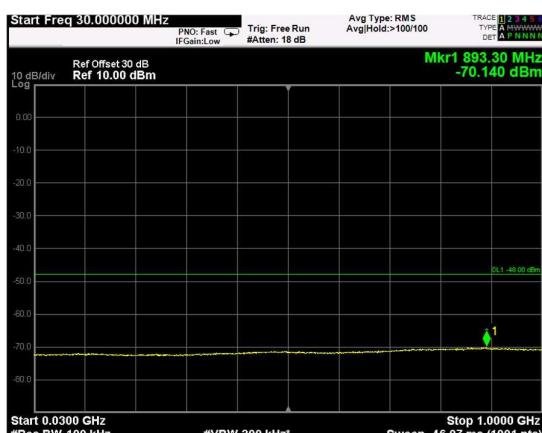
Frequency (MHz)	Spurious emission (dBm)	Limit (dBm)	Margin (dB)
<u>Low channel</u>			
First channel	Negligible	-45	
<u>Mid channel</u>			
2355 MHz	Negligible	-45	
<u>High channel</u>			
Last channel	Negligible	-45	

**Test data: spurious emissions at antenna terminal**
**RF PORT 1**


Channel: BOTTOM, Modulation: QPSK,  
BW=5MHz, Range: Lower



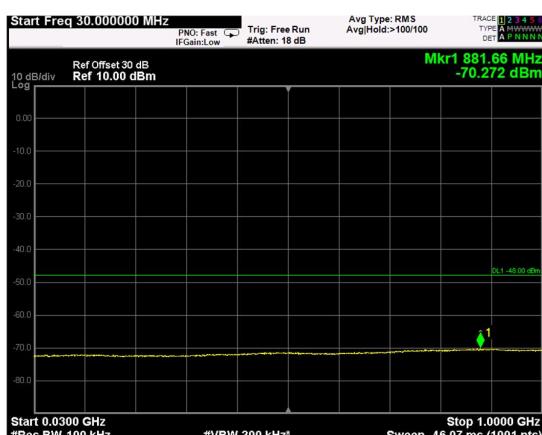
Channel: BOTTOM, Modulation: QPSK,  
BW=5MHz, Range: Upper



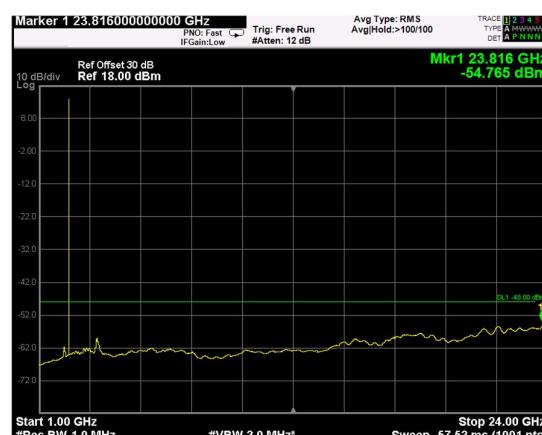
Channel: MIDDLE, Modulation: QPSK,  
BW=5MHz, Range: Lower



Channel: MIDDLE, Modulation: QPSK,  
BW=5MHz, Range: Upper



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



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



Specification: FCC 27



Channel: BOTTOM, Modulation: 16QAM,  
BW=5MHz, Range: Lower



Channel: BOTTOM, Modulation: 16QAM,  
BW=5MHz, Range: Upper



Channel: MIDDLE, Modulation: 16QAM,  
BW=5MHz, Range: Lower



Channel: MIDDLE, Modulation: 16QAM,  
BW=5MHz, Range: Upper



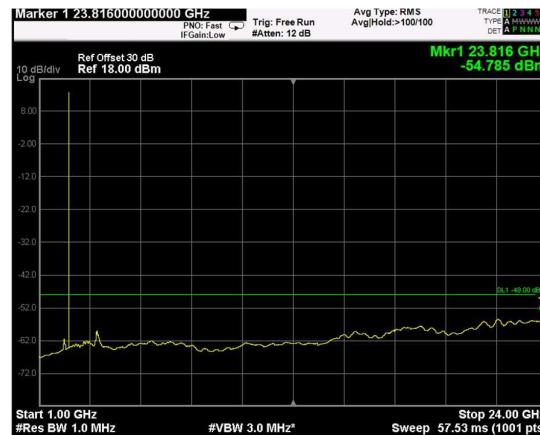
Channel: TOP, Modulation: 16QAM,  
BW=5MHz, Range: Lower



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



Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Range: Lower



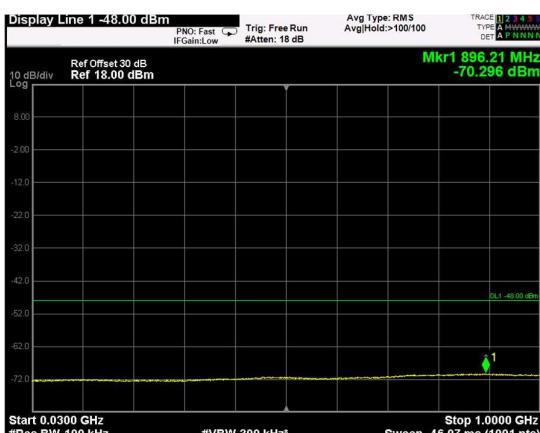
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Range: Upper



Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: Lower



Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: Upper



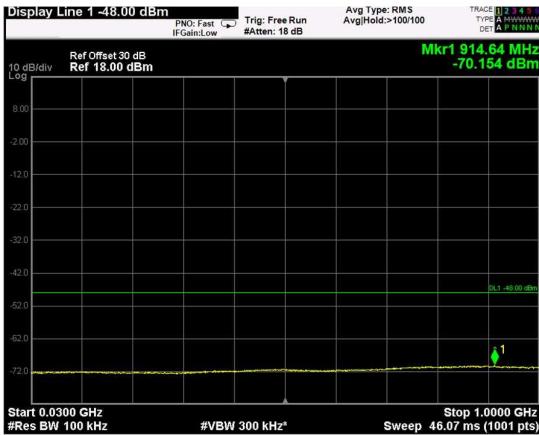
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Range: Lower



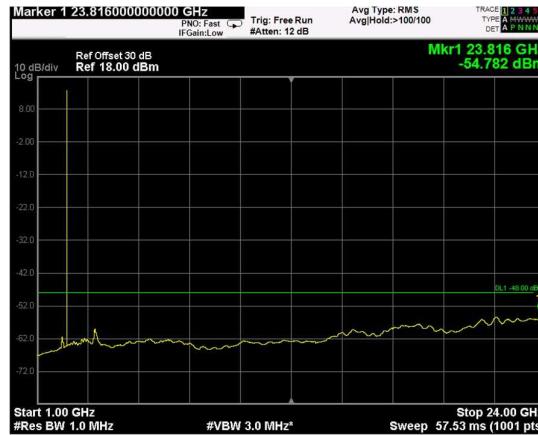
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Range: Upper



Specification: FCC 27



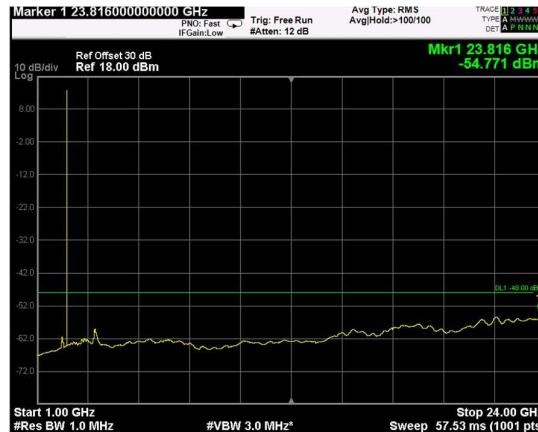
Channel: BOTTOM, Modulation: 256QAM,  
BW=5MHz, Range: Lower



Channel: BOTTOM, Modulation: 256QAM,  
BW=5MHz, Range: Upper



Channel: MIDDLE, Modulation: 256QAM,  
BW=5MHz, Range: Lower



Channel: MIDDLE, Modulation: 256QAM,  
BW=5MHz, Range: Upper



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



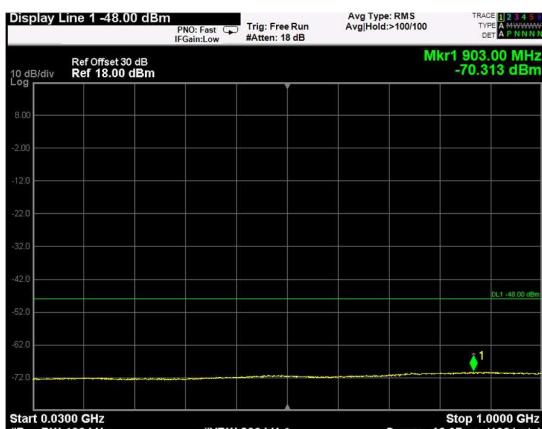
Channel: TOP, Modulation: 256QAM,  
BW=5MHz, Range: Upper



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



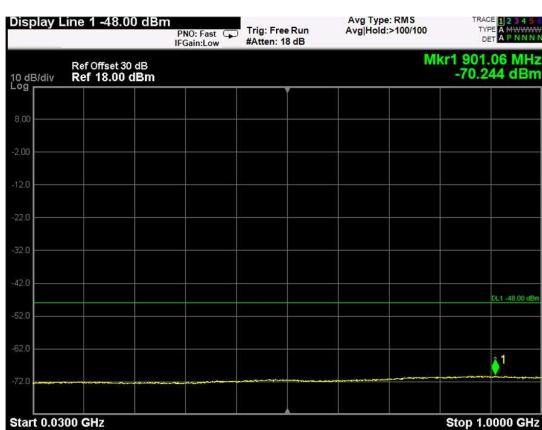
Channel: MIDDLE, Modulation: QPSK,  
BW=10MHz, Range: Upper



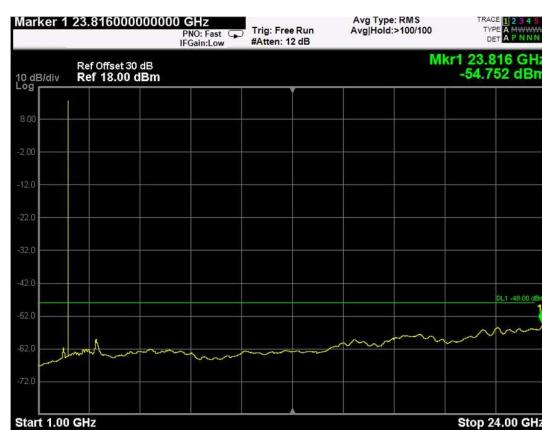
Channel: MIDDLE, Modulation: 16QAM,  
BW=10MHz, Range: Lower



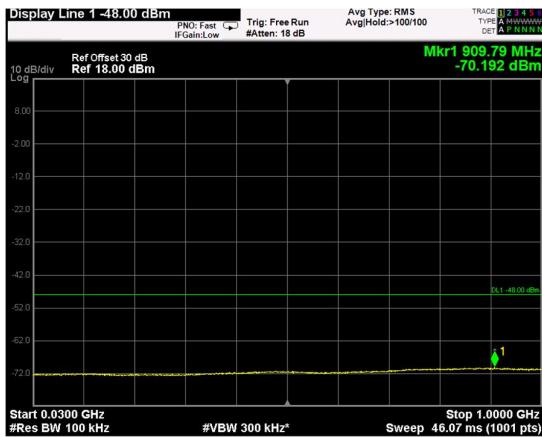
Channel: MIDDLE, Modulation: 16QAM,  
BW=10MHz, Range: Upper



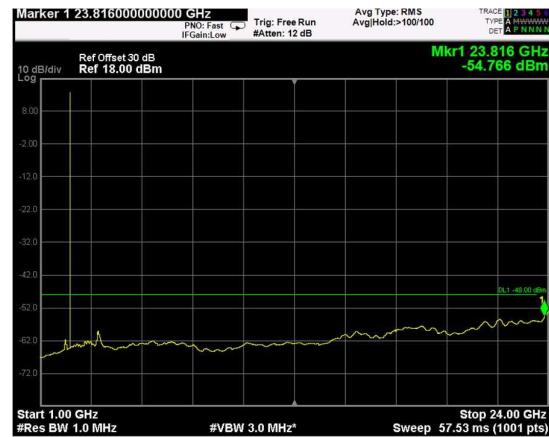
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Range: Lower



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



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



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