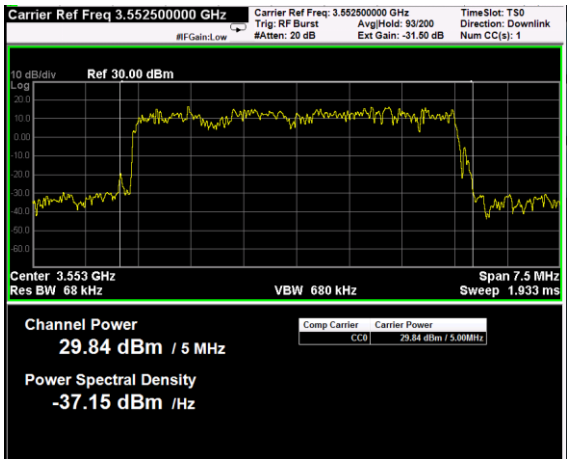
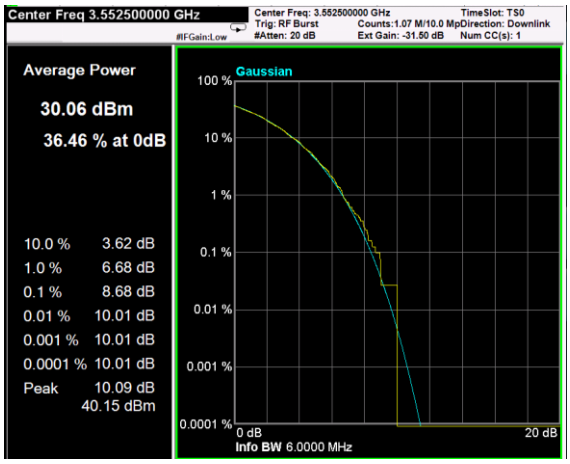
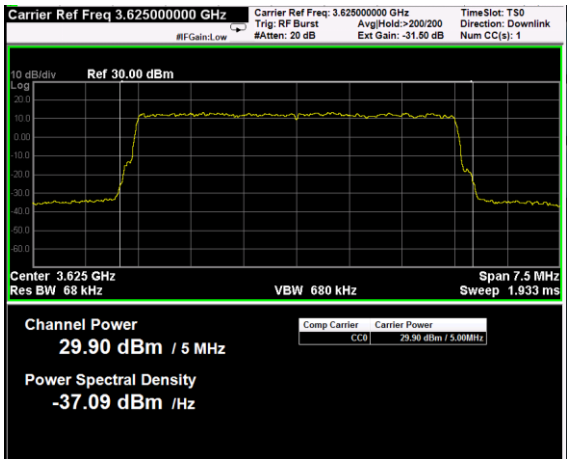


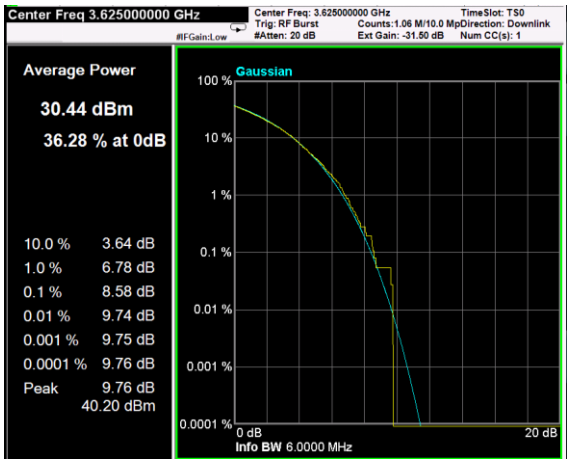
Channel: BOTTOM, Modulation: 16QAM, BW=5MHz, Channel Power



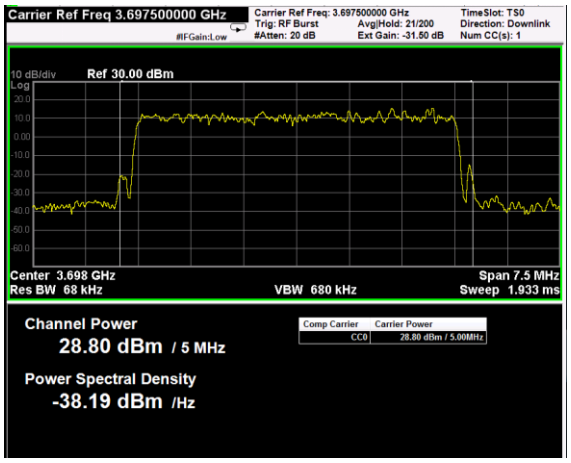
Channel: BOTTOM, Modulation: 16QAM, BW=5MHz, CCDF



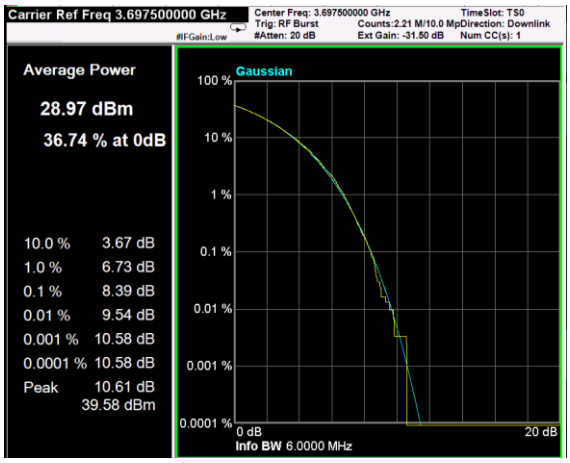
Channel: MIDDLE, Modulation: 16QAM, BW=5MHz, Channel Power



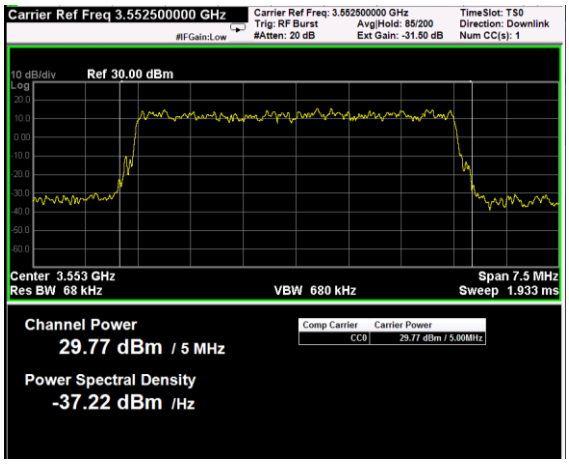
Channel: MIDDLE, Modulation: 16QAM, BW=5MHz, CCDF



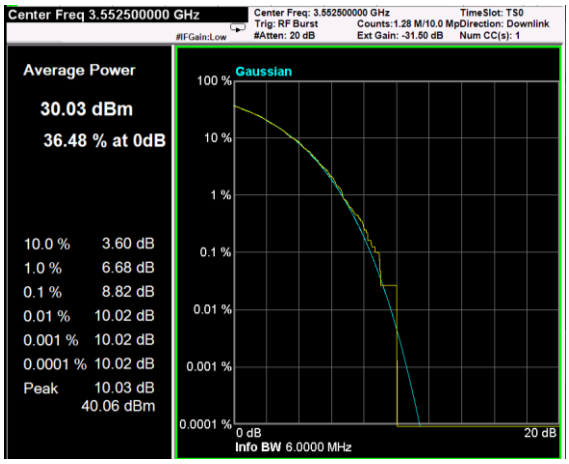
Channel: TOP, Modulation: 16QAM, BW=5MHz, Channel Power



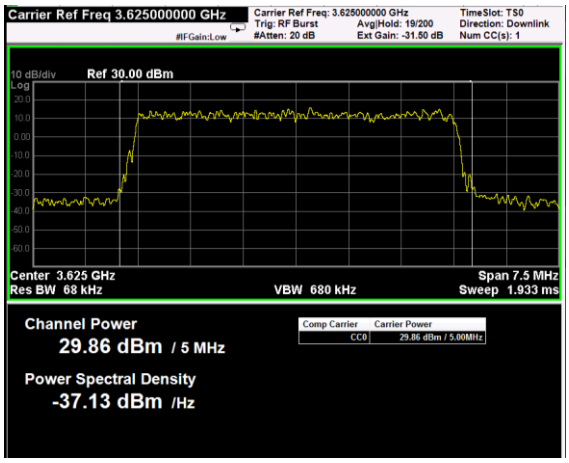
Channel: TOP, Modulation: 16QAM, BW=5MHz, CCDF



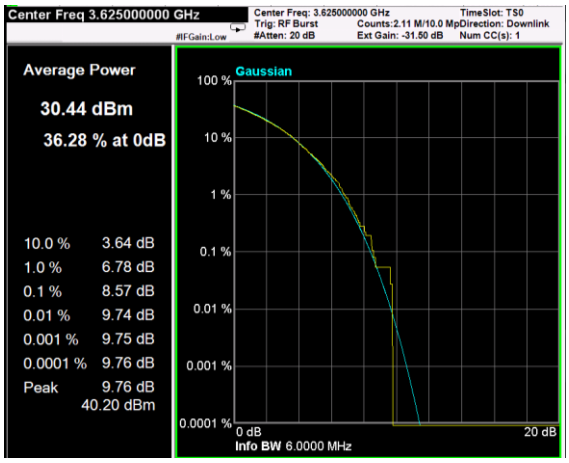
Channel: BOTTOM, Modulation: 64QAM, BW=5MHz, Channel Power



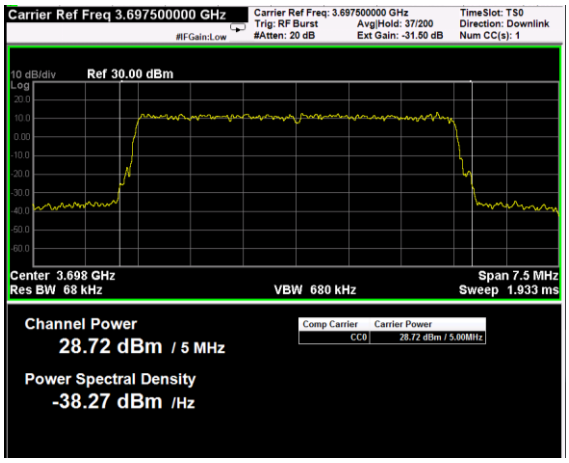
Channel: BOTTOM, Modulation: 64QAM, BW=5MHz, CCDF



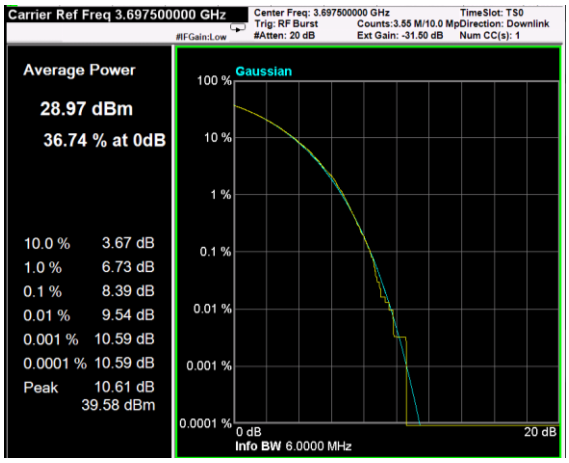
Channel: MIDDLE, Modulation: 64QAM, BW=5MHz, Channel Power



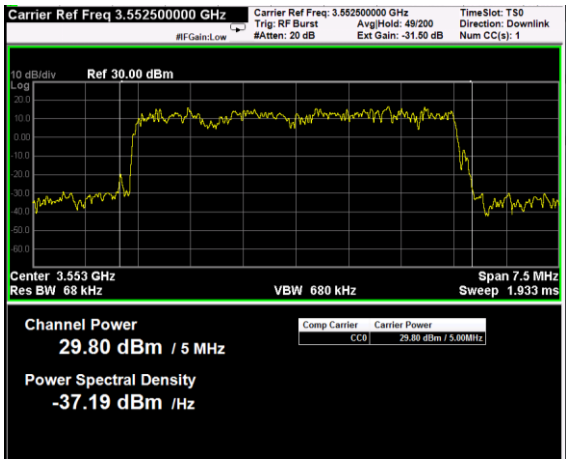
Channel: MIDDLE, Modulation: 64QAM, BW=5MHz, CCDF



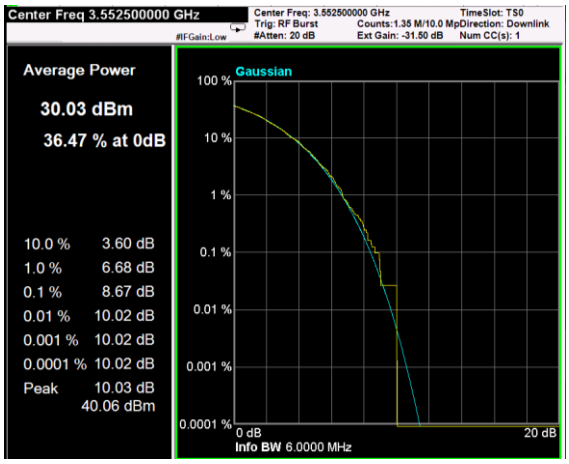
Channel: TOP, Modulation: 64QAM, BW=5MHz, Channel Power



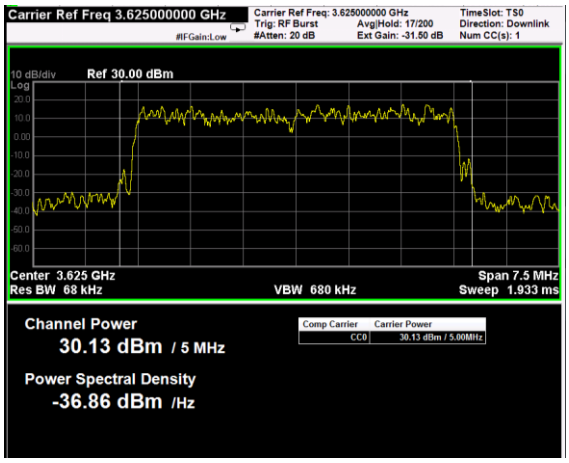
Channel: TOP, Modulation: 64QAM, BW=5MHz, CCDF



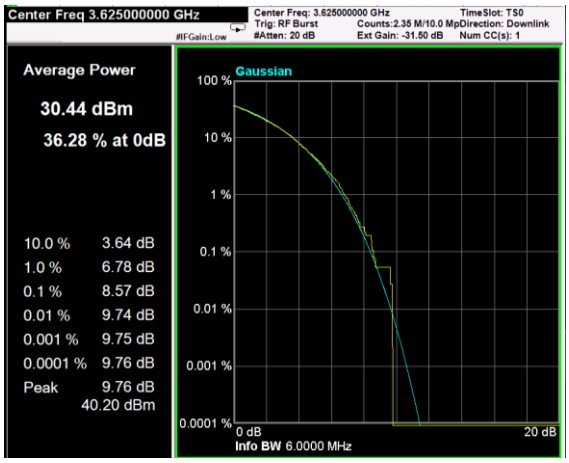
Channel: BOTTOM, Modulation: 256QAM, BW=5MHz, Channel Power



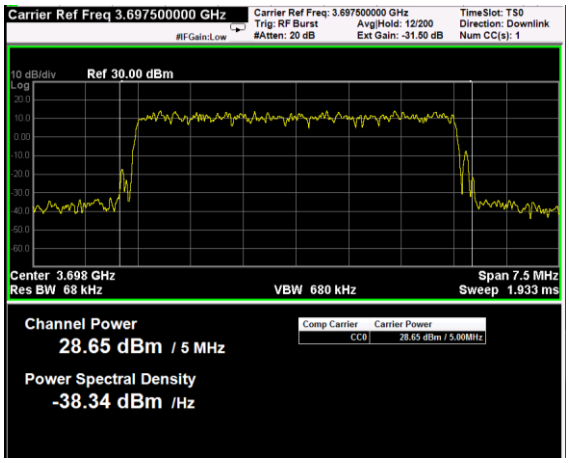
Channel: BOTTOM, Modulation: 256QAM, BW=5MHz, CCDF



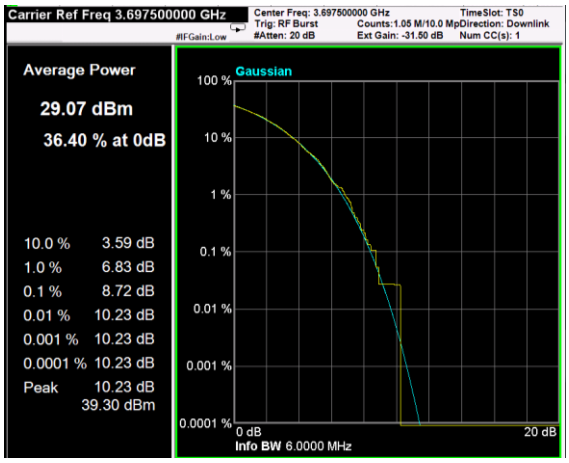
Channel: MIDDLE, Modulation: 256QAM, BW=5MHz, Channel Power



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



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



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

RF PORT 1

Test data							
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PSD (dBm/Hz)	PSD (dBm/MHz)	PAR (dB)
Down-link	LTE 10MHz (QPSK)	3555	29.23	0.838	-40.77	19.23	9.41
Down-link	LTE 10MHz (QPSK)	3625	29.92	0.980	-40.08	19.92	9.15
Down-link	LTE 10MHz (QPSK)	3695	29.33	0.857	-40.67	19.33	9.55
Down-link	LTE 10MHz (16QAM)	3555	29.39	0.869	-40.61	19.39	9.46
Down-link	LTE 10MHz (16QAM)	3625	29.94	0.986	-40.06	19.94	9.13
Down-link	LTE 10MHz (16QAM)	3695	29.92	0.982	-40.08	19.92	9.08
Down-link	LTE 10MHz (64QAM)	3555	29.39	0.869	-40.61	19.39	9.41
Down-link	LTE 10MHz (64QAM)	3625	29.88	0.973	-40.12	19.88	9.43
Down-link	LTE 10MHz (64QAM)	3695	29.91	0.979	-40.09	19.91	9.51
Down-link	LTE 10MHz (256QAM)	3555	29.78	0.951	-40.22	19.78	9.09
Down-link	LTE 10MHz (256QAM)	3625	29.84	0.963	-40.16	19.84	9.43
Down-link	LTE 10MHz (256QAM)	3695	29.49	0.889	-40.51	19.49	9.57

RF PORT 2

Test data							
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PSD (dBm/Hz)	PSD (dBm/MHz)	PAR (dB)
Down-link	LTE 10MHz (QPSK)	3555	29.89	0.975	-40.11	19.89	9.82
Down-link	LTE 10MHz (QPSK)	3625	29.85	0.966	-40.15	19.85	9.36
Down-link	LTE 10MHz (QPSK)	3695	29.35	0.861	-40.65	19.35	9.37
Down-link	LTE 10MHz (16QAM)	3555	29.79	0.953	-40.21	19.79	9.82
Down-link	LTE 10MHz (16QAM)	3625	29.99	0.998	-40.01	19.99	9.82
Down-link	LTE 10MHz (16QAM)	3695	29.54	0.899	-40.46	19.54	9.37
Down-link	LTE 10MHz (64QAM)	3555	29.74	0.942	-40.26	19.74	9.82
Down-link	LTE 10MHz (64QAM)	3625	29.83	0.961	-40.17	19.83	9.82
Down-link	LTE 10MHz (64QAM)	3695	29.44	0.879	-40.56	19.44	9.37
Down-link	LTE 10MHz (256QAM)	3555	29.87	0.971	-40.13	19.87	9.82
Down-link	LTE 10MHz (256QAM)	3625	29.96	0.991	-40.04	19.96	9.36
Down-link	LTE 10MHz (256QAM)	3695	29.36	0.863	-40.64	19.36	9.37

Special notes

Maximum EIRP ≤ 30dBm/10MHz
Maximum PSD eirp ≤ 20dBm/1MHz

PSD eirp (in 1 MHz) = PSD_{max} + 10Log(N $_{Ant}$) – N + G_{max} = 20 + 3 – N + G_{max} ≤ 20
G_{max} ≤ (20-20-3+N) = N - 3

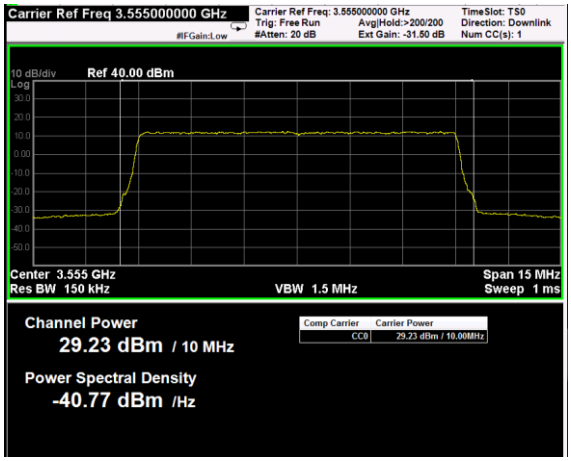
Where:

- PSD_{max} is the maximum PSD value measured on the antenna connector of the equipment and it depends on the LTE bandwidth signal
- 10Log(N $_{Ant}$), with N $_{Ant}$ = 2 due to MIMO application, in according to “662911 D01 Multiple Transmitter Output v02r01”
- N is system path loss (in dB) due to cable insertion, splitter, etc.…
- G_{max} is the maximum antenna gain (in dBi)

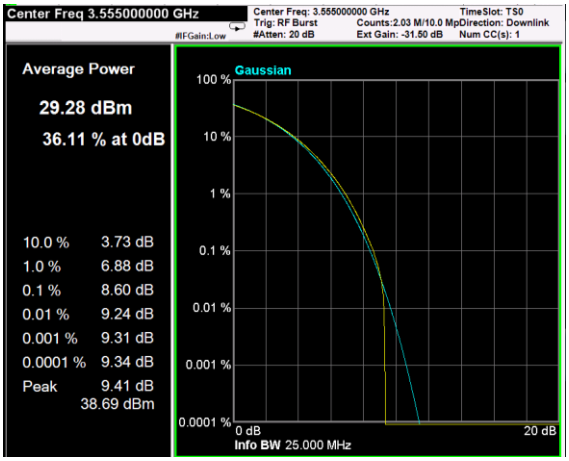
Therefore:

- for N < 3 dB → Maximum antenna gain Gmax = 0 dBi and Output power setting = (27 + N) dBm (in this case the output power shall be reduced by the amount in dB of the insertion loss less than 3 dB)
- for N ≥ 3 dB → Maximum antenna gain Gmax = N–3 and Output power setting = 30 dBm

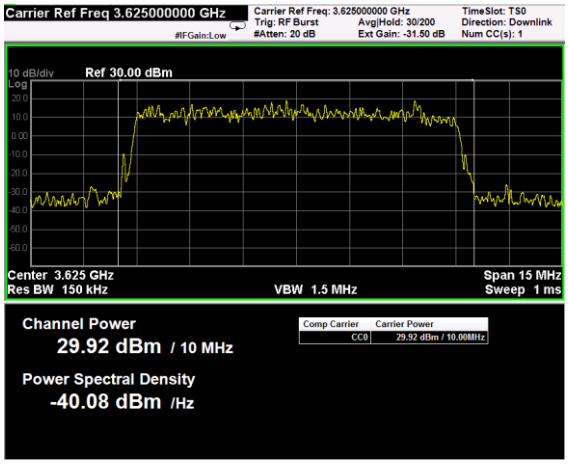
RF PORT 1 plots



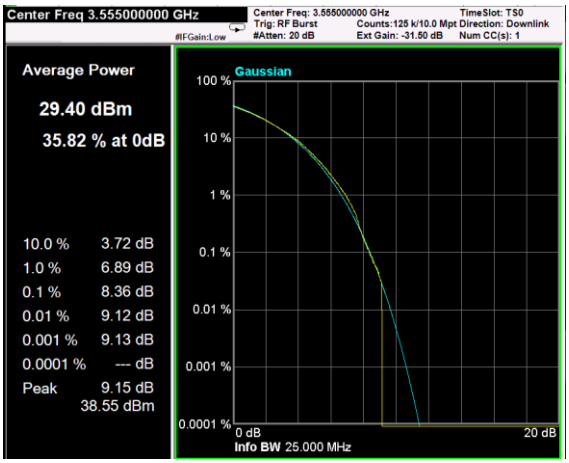
Channel: BOTTOM, Modulation: QPSK, BW=10MHz, Channel Power



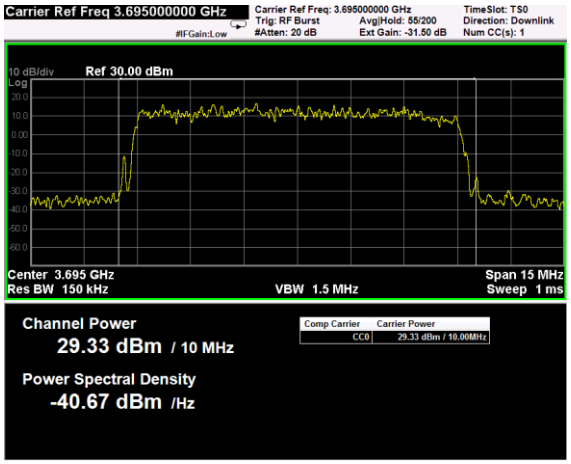
Channel: BOTTOM, Modulation: QPSK, BW=10MHz, CCDF



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

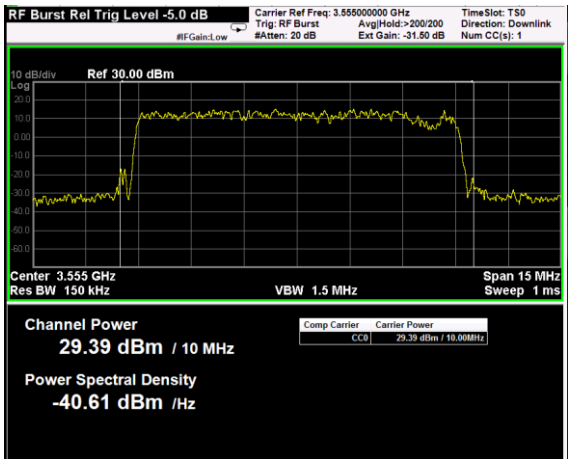


Channel: MIDDLE, Modulation: QPSK, BW=10MHz, CCDF

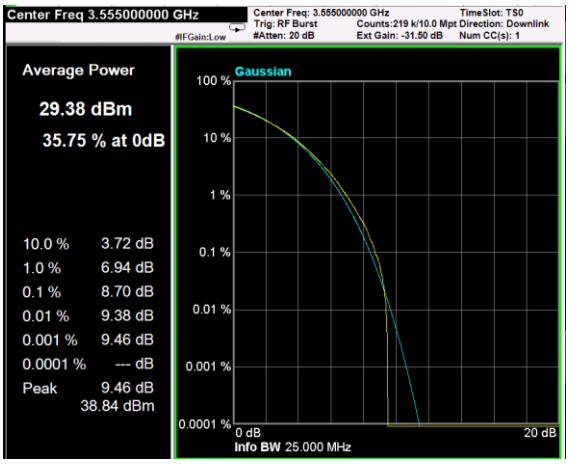


Channel: TOP, Modulation: QPSK, BW=10MHz, Channel Power

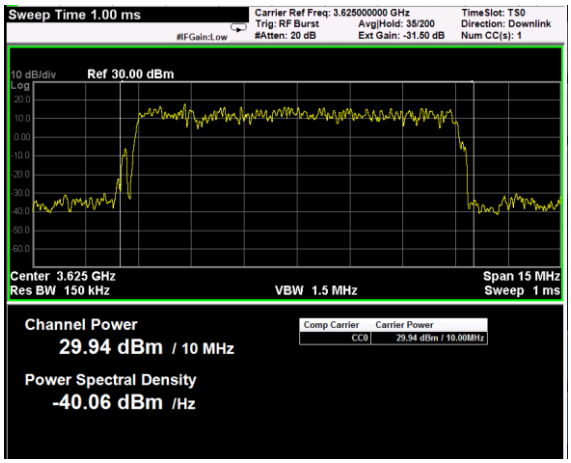
Channel: TOP, Modulation: QPSK, BW=10MHz, CCDF



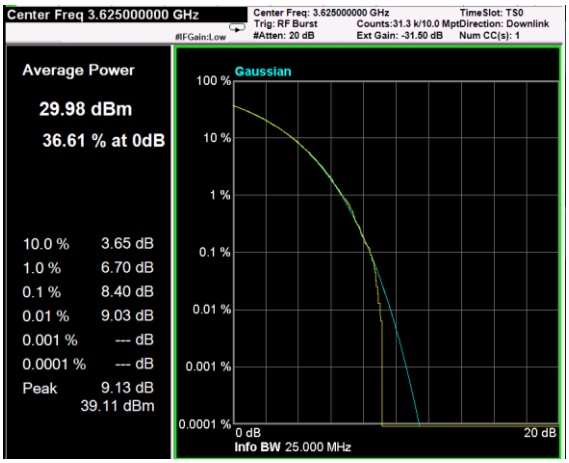
Channel: BOTTOM, Modulation: 16QAM, BW=10MHz, Channel Power



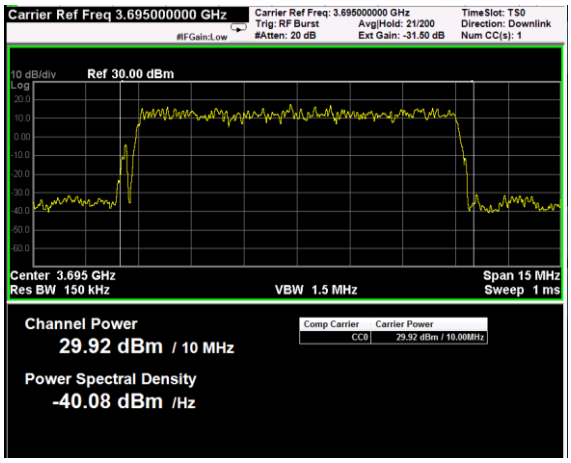
Channel: BOTTOM, Modulation: 16QAM, BW=10MHz, CCDF



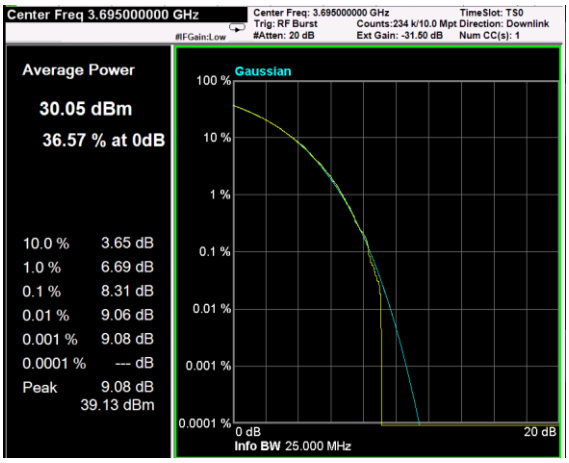
Channel: MIDDLE, Modulation: 16QAM, BW=10MHz, Channel Power



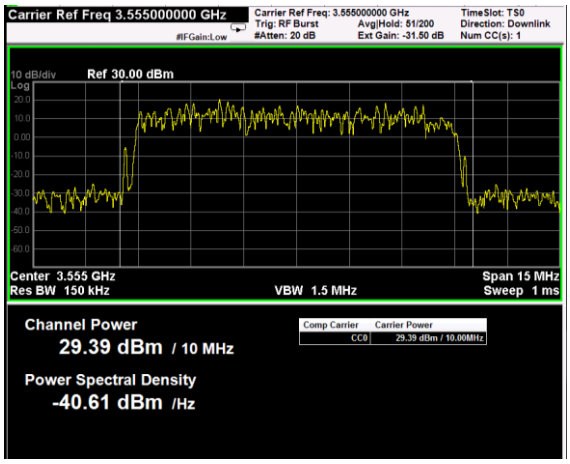
Channel: MIDDLE, Modulation: 16QAM, BW=10MHz, CCDF



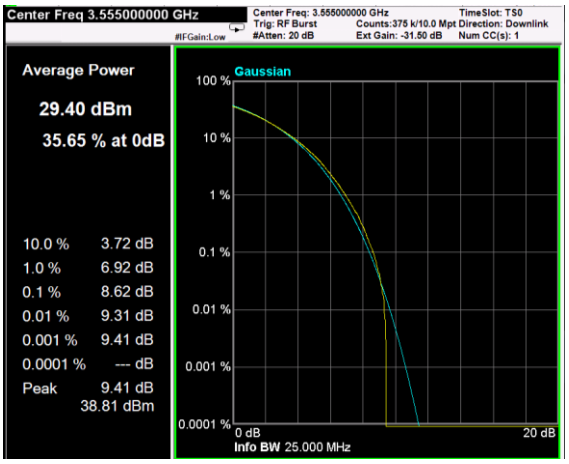
Channel: TOP, Modulation: 16QAM, BW=10MHz, Channel Power



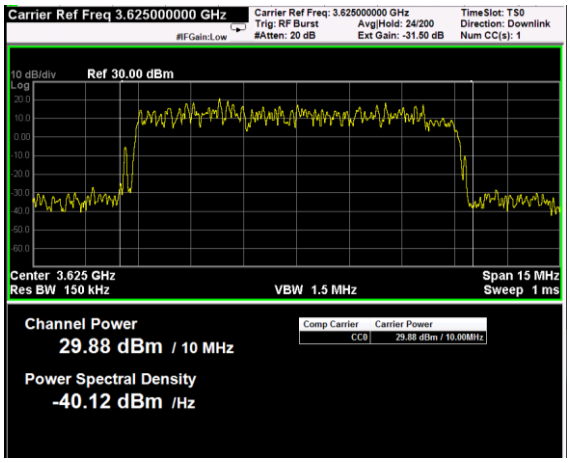
Channel: TOP, Modulation: 16QAM, BW=10MHz, CCDF



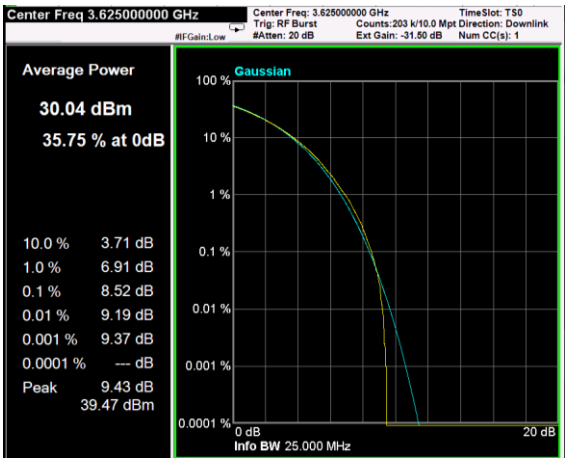
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz, Channel Power



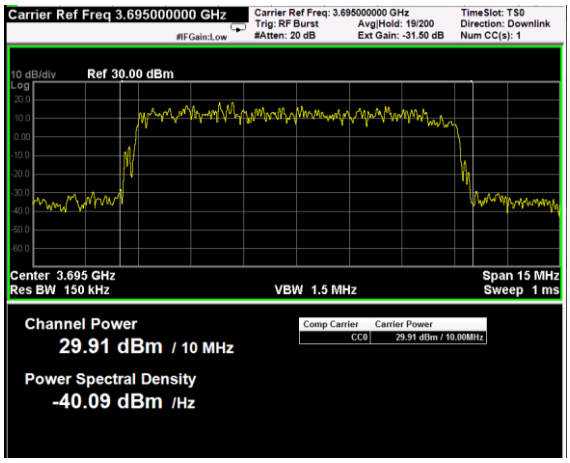
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz, CCDF



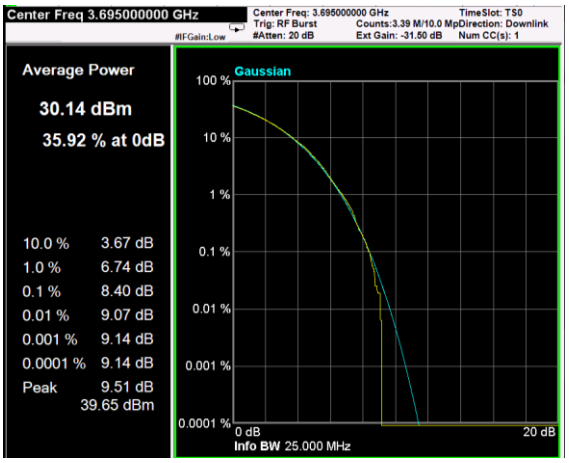
Channel: MIDDLE, Modulation: 64QAM, BW=10MHz, Channel Power



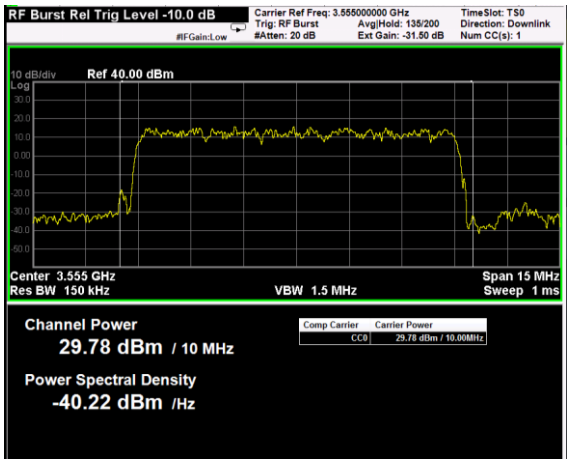
Channel: MIDDLE, Modulation: 64QAM, BW=10MHz, CCDF



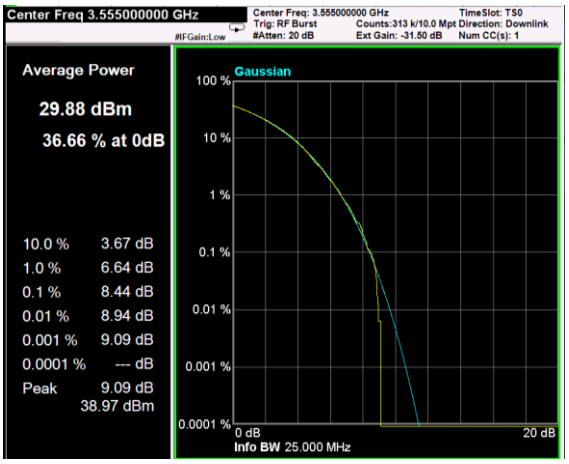
Channel: TOP, Modulation: 64QAM, BW=10MHz, Channel Power



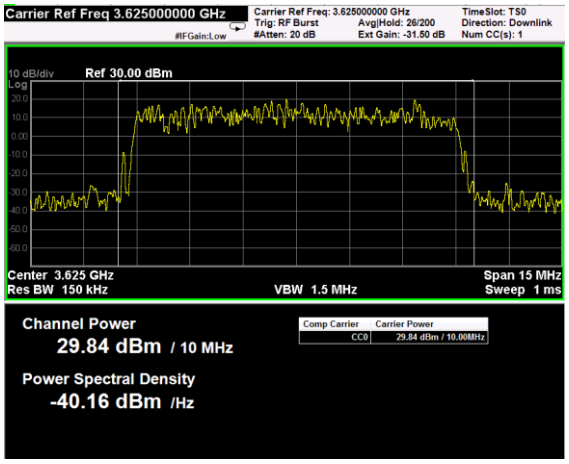
Channel: TOP, Modulation: 64QAM, BW=10MHz, CCDF



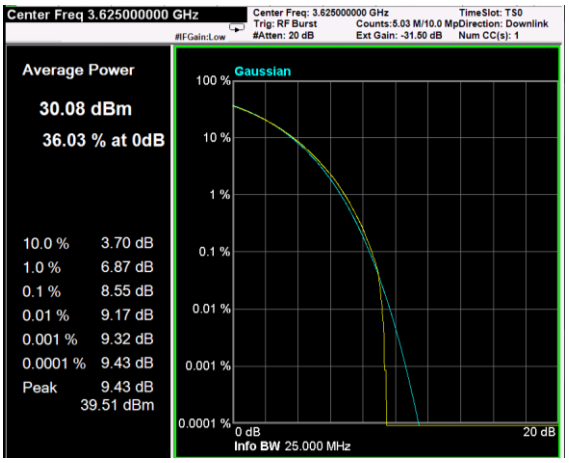
Channel: BOTTOM, Modulation: 256QAM, BW=10MHz, Channel Power



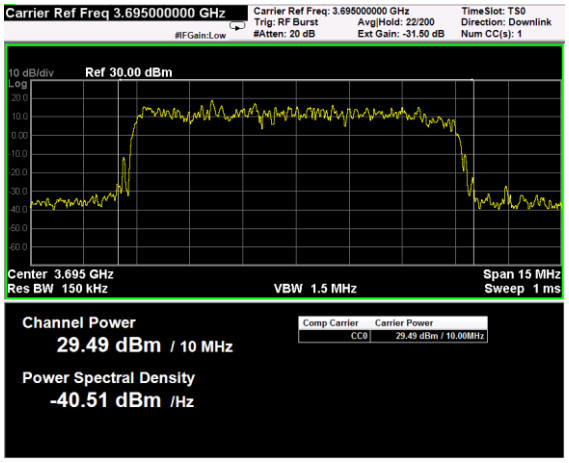
Channel: BOTTOM, Modulation: 256QAM, BW=10MHz, CCDF



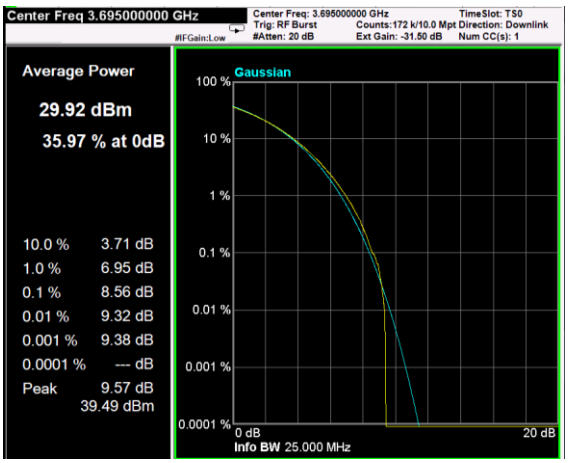
Channel: MIDDLE, Modulation: 256QAM, BW=10MHz, Channel Power



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

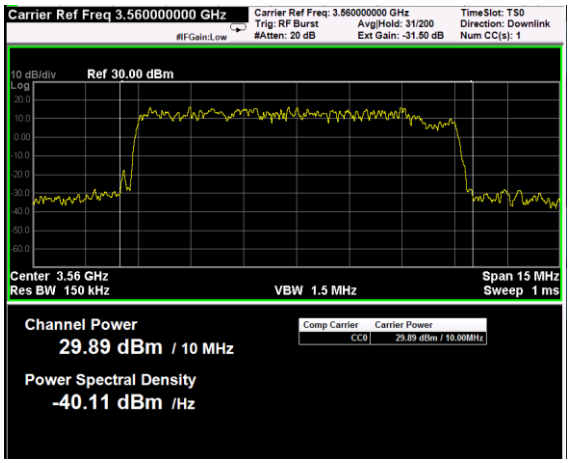


Channel: TOP, Modulation: 256QAM, BW=10MHz, Channel Power

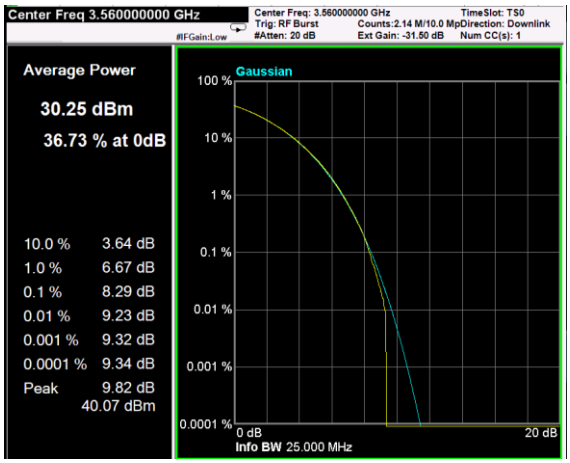


Channel: TOP, Modulation: 256QAM, BW=10MHz, CCDF

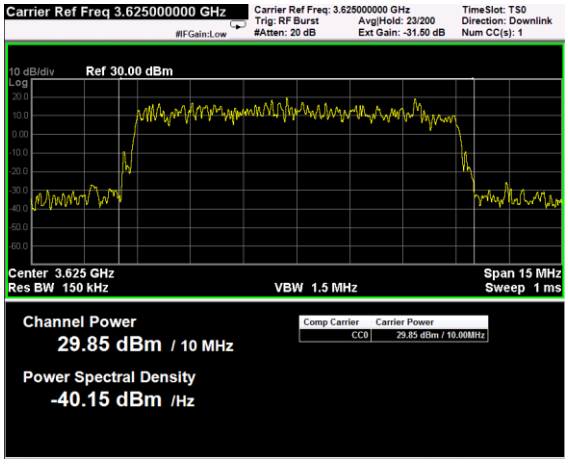
RF PORT 2 plots



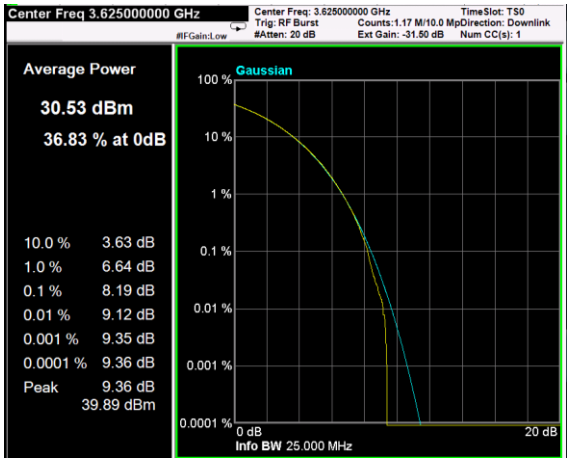
Channel: BOTTOM, Modulation: QPSK, BW=10MHz, Channel Power



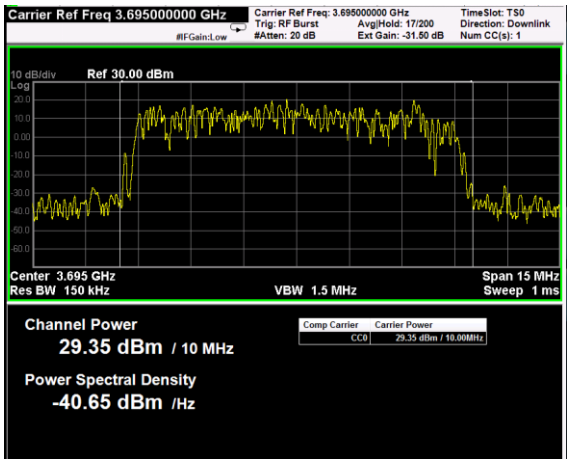
Channel: BOTTOM, Modulation: QPSK, BW=10MHz, CCDF



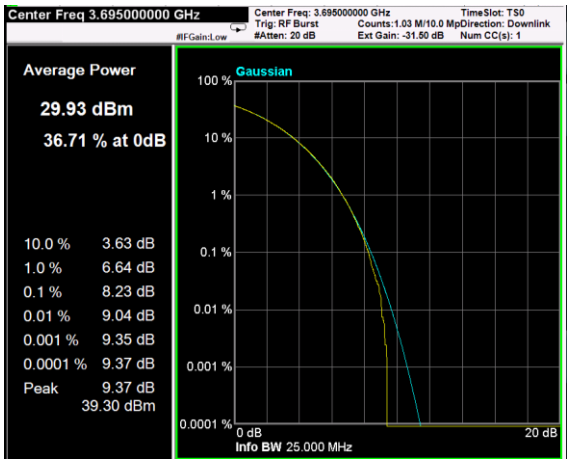
Channel: MIDDLE, Modulation: QPSK, BW=10MHz, Channel Power



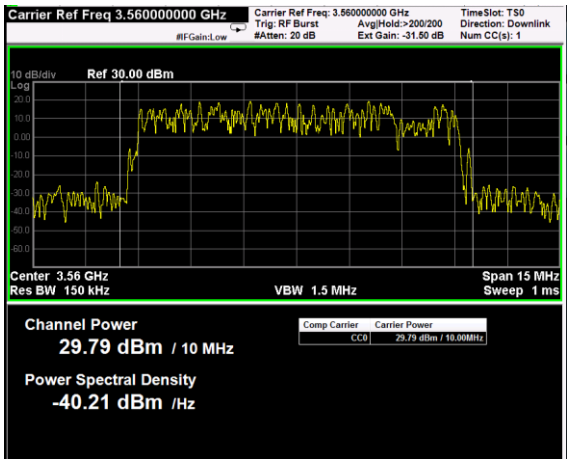
Channel: MIDDLE, Modulation: QPSK, BW=10MHz, CCDF



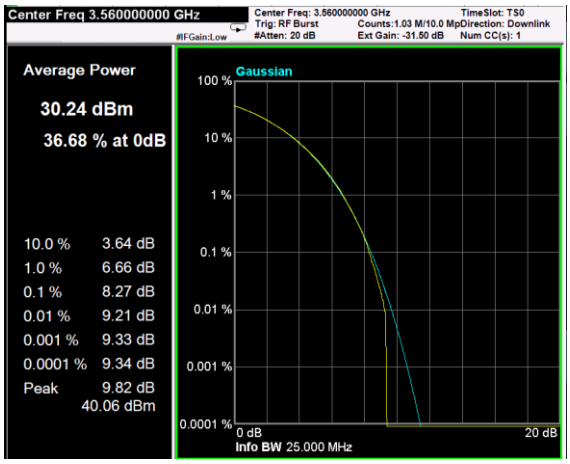
Channel: TOP, Modulation: QPSK, BW=10MHz, Channel Power



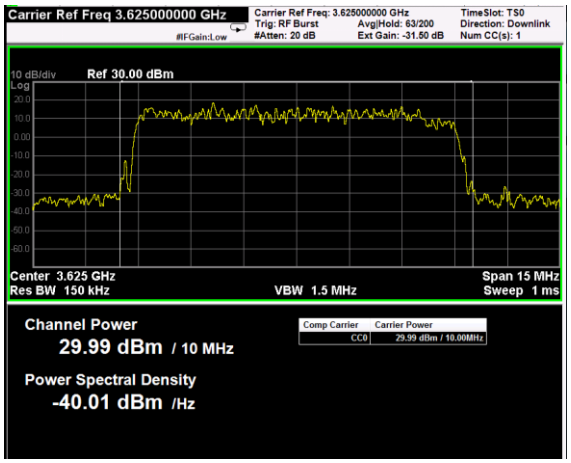
Channel: TOP, Modulation: QPSK, BW=10MHz, CCDF



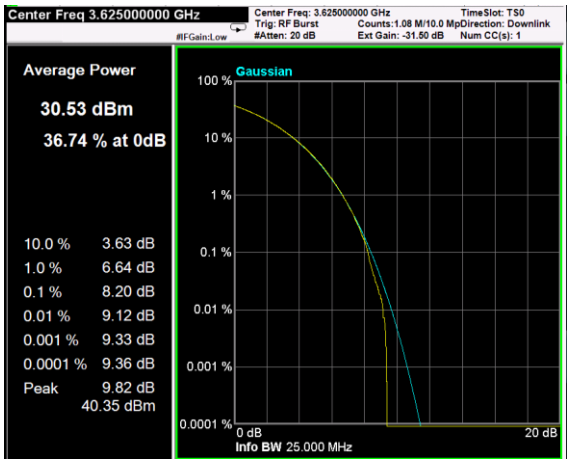
Channel: BOTTOM, Modulation: 16QAM, BW=10MHz, Channel Power



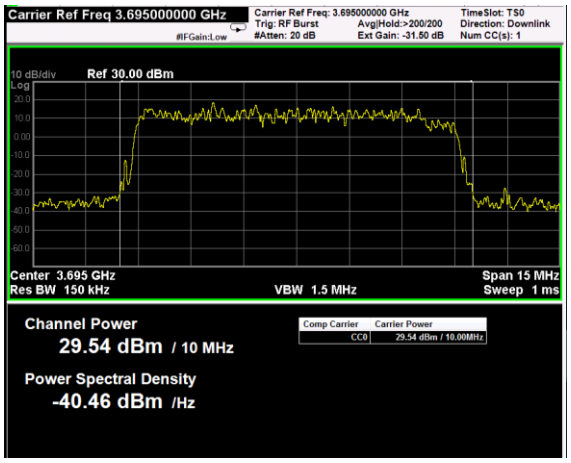
Channel: BOTTOM, Modulation: 16QAM, BW=10MHz, CCDF



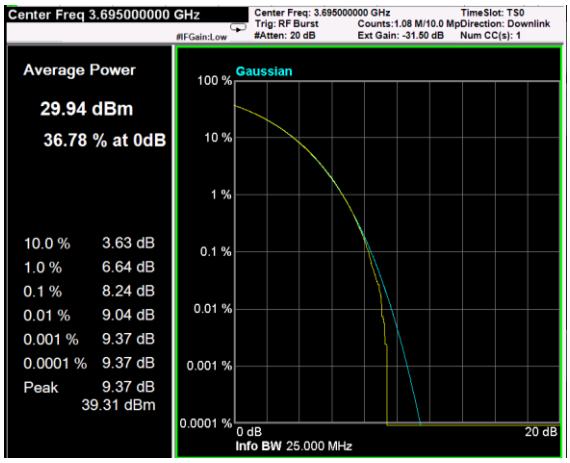
Channel: MIDDLE, Modulation: 16QAM, BW=10MHz, Channel Power



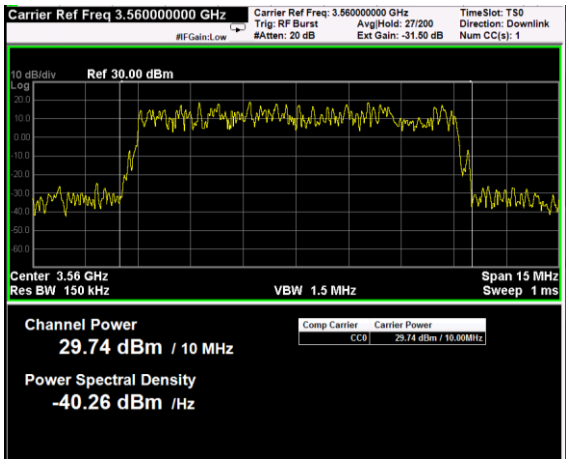
Channel: MIDDLE, Modulation: 16QAM, BW=10MHz, CCDF



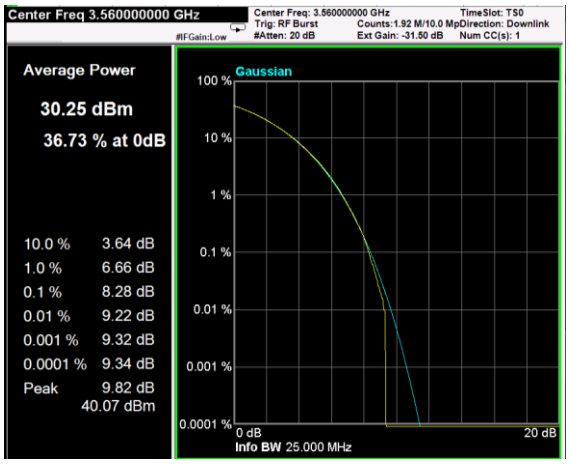
Channel: TOP, Modulation: 16QAM, BW=10MHz, Channel Power



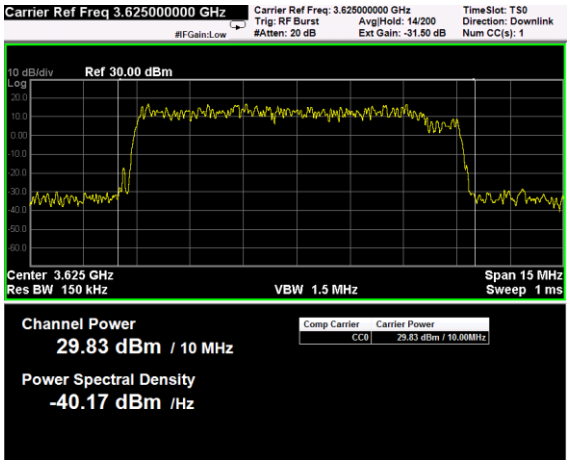
Channel: TOP, Modulation: 16QAM, BW=10MHz, CCDF



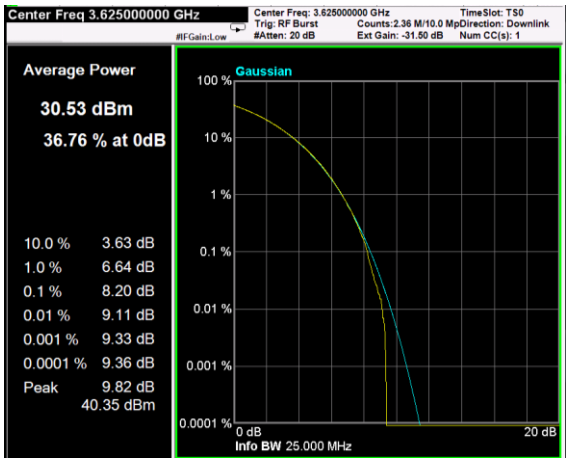
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz, Channel Power



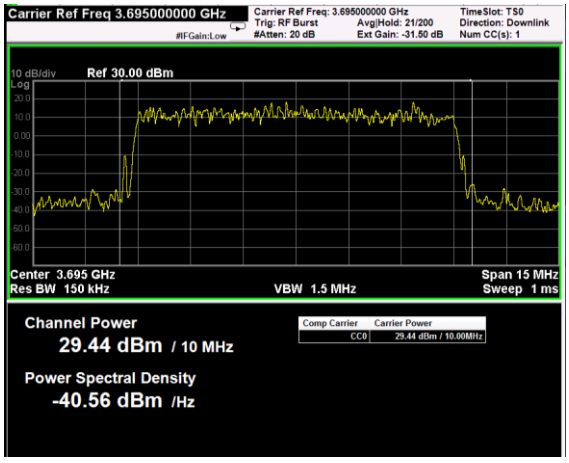
Channel: BOTTOM, Modulation: 64QAM, BW=10MHz, CCDF



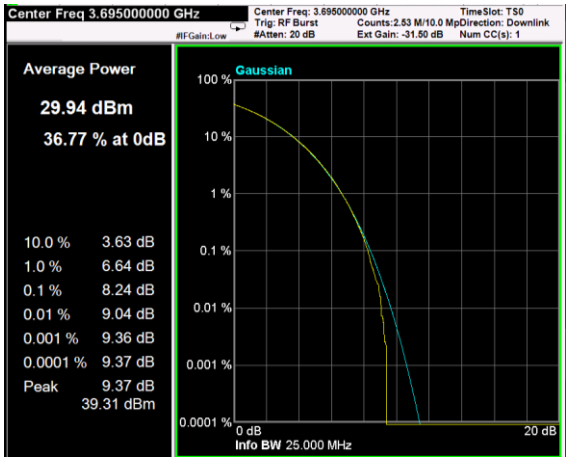
Channel: MIDDLE, Modulation: 64QAM, BW=10MHz, Channel Power



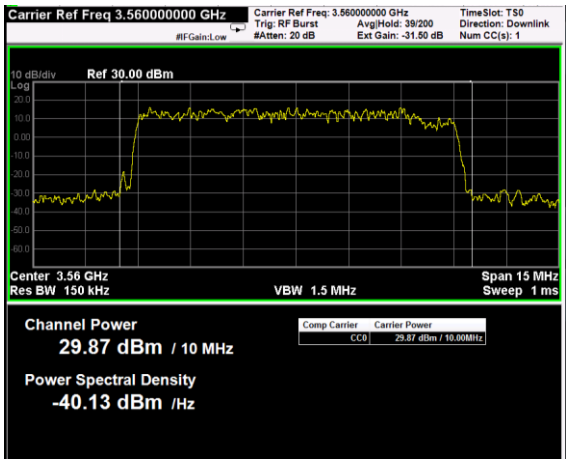
Channel: MIDDLE, Modulation: 64QAM, BW=10MHz, CCDF



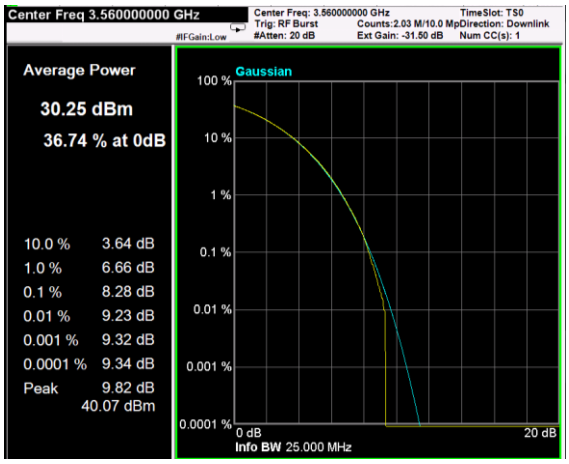
Channel: TOP, Modulation: 64QAM, BW=10MHz, Channel Power



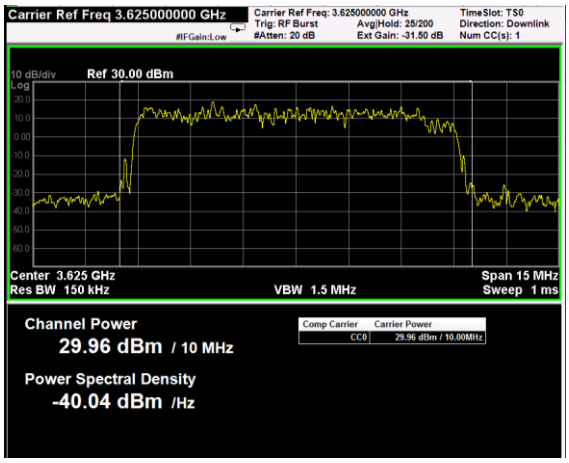
Channel: TOP, Modulation: 64QAM, BW=10MHz, CCDF



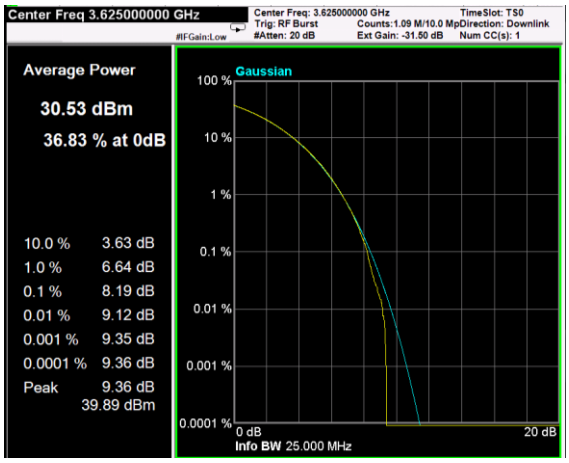
Channel: BOTTOM, Modulation: 256QAM, BW=10MHz, Channel Power



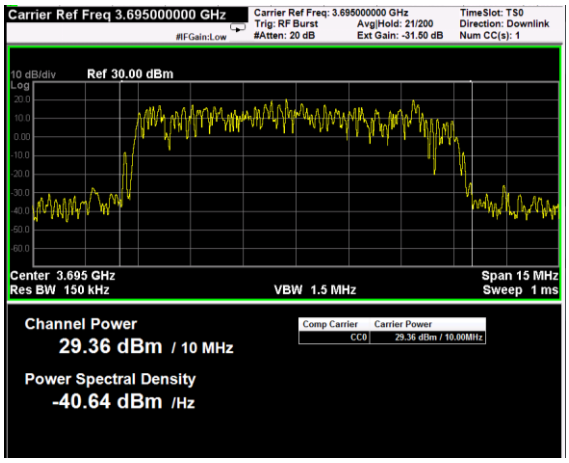
Channel: BOTTOM, Modulation: 256QAM, BW=10MHz, CCDF



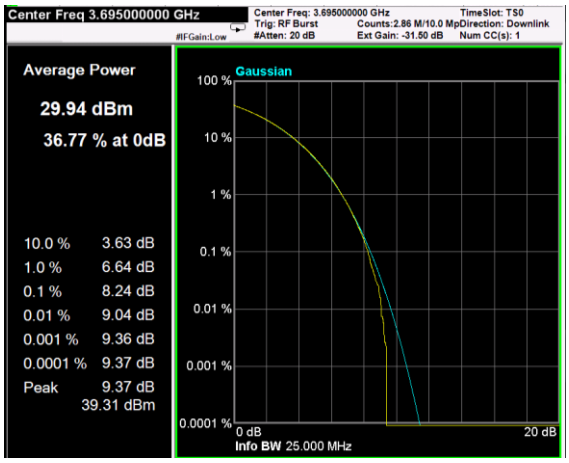
Channel: MIDDLE, Modulation: 256QAM, BW=10MHz, Channel Power



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



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



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

RF PORT 1

	Test data						
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PSD (dBm/Hz)	PSD (dBm/MHz)	PAR (dB)
Down-link	LTE 15MHz (QPSK)	3557.5	29.38	0.867	-42.38	17.62	9.88
Down-link	LTE 15MHz (QPSK)	3625	29.68	0.929	-42.08	17.92	9.83
Down-link	LTE 15MHz (QPSK)	3692.5	29.73	0.940	-42.04	17.96	9.6
Down-link	LTE 15MHz (16QAM)	3557.5	29.53	0.897	-42.23	17.77	9.55
Down-link	LTE 15MHz (16QAM)	3625	29.59	0.910	-42.17	17.83	9.45
Down-link	LTE 15MHz (16QAM)	3692.5	29.64	0.920	-42.12	17.88	9.64
Down-link	LTE 15MHz (64QAM)	3557.5	29.69	0.931	-42.07	17.93	9.56
Down-link	LTE 15MHz (64QAM)	3625	29.6	0.912	-42.17	17.83	9.6
Down-link	LTE 15MHz (64QAM)	3692.5	29.93	0.984	-41.83	18.17	9.83
Down-link	LTE 15MHz (256QAM)	3557.5	29.14	0.820	-42.63	17.37	9.91
Down-link	LTE 15MHz (256QAM)	3625	29.48	0.887	-42.28	17.72	9.63
Down-link	LTE 15MHz (256QAM)	3692.5	29.57	0.906	-42.20	17.8	9.8

RF PORT 2

Test data

Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PSD (dBm/Hz)	PSD (dBm/MHz)	PAR (dB)
Down-link	LTE 15MHz (QPSK)	3557.5	29.43	0.877	-42.33	17.67	10.29
Down-link	LTE 15MHz (QPSK)	3625	30.09	1.021	-41.67	18.33	9.85
Down-link	LTE 15MHz (QPSK)	3692.5	28.97	0.789	-42.79	17.21	9.77
Down-link	LTE 15MHz (16QAM)	3557.5	29.48	0.887	-42.28	17.72	12.75
Down-link	LTE 15MHz (16QAM)	3625	30.1	1.023	-41.67	18.33	9.85
Down-link	LTE 15MHz (16QAM)	3692.5	28.98	0.791	-42.78	17.22	9.78
Down-link	LTE 15MHz (64QAM)	3557.5	29.47	0.885	-42.29	17.71	10.29
Down-link	LTE 15MHz (64QAM)	3625	30.14	1.033	-41.62	18.38	9.85
Down-link	LTE 15MHz (64QAM)	3692.5	29.08	0.809	-42.68	17.32	9.78
Down-link	LTE 15MHz (256QAM)	3557.5	29.47	0.885	-42.29	17.71	10.29
Down-link	LTE 15MHz (256QAM)	3625	30.22	1.052	-41.54	18.46	9.85
Down-link	LTE 15MHz (256QAM)	3692.5	29.01	0.796	-42.75	17.25	9.77

Special notes

Maximum EIRP ≤ 30dBm/10MHz
Maximum PSD eirp ≤ 20dBm/1MHz

PSD eirp (in 1 MHz) = PSD_{max} + 10Log(N $_{Ant}$) – N + G_{max} = 18,50 + 3 – N + G_{max} ≤ 20
G_{max} ≤ (20-18,50-3+N) = N – 1,50

Where:

- PSD_{max} is the maximum PSD value measured on the antenna connector of the equipment and it depends on the LTE bandwidth signal
- 10Log(N $_{Ant}$), with N $_{Ant}$ = 2 due to MIMO application, in according to “662911 D01 Multiple Transmitter Output v02r01”
- N is system path loss (in dB) due to cable insertion, splitter, etc.…
- G_{max} is the maximum antenna gain (in dBi)

Therefore:

- for N < 1,50 dB → Maximum antenna gain Gmax = 0 dBi and Output power setting = (28,5 + N) dBm (in this case the output power shall be reduced by the amount in dB of the insertion loss less than 1,50 dB)
- for N ≥ 1,50 dB → Maximum antenna gain Gmax = N–1,50 and Output power setting = 30 dBm