8. Radiated Spurious Emission

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232 and §27.50

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17
KDB 971168 v02r01 RF power output using broadband peak and average power meter method.
KDB 971168 D01 Power Meas License Digital Systems v02r01, “Measurement Guidance for Certification of Licensed Digital Transmitters”

MODES TESTED

- ☐ LTE Band 2
- LTE Band 4
- ☐ LTE Band7

RESULTS

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/ RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1850.7	-1.95	3.76	28.24	22.53	179.061	Horizontal	Pass
		1880	-1.08	3.91	28.22	23.23	210.378	Horizontal	Pass
		1909.3	-1.40	3.93	28.2	22.87	193.642	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1850.7	-1.92	3.76	28.24	22.56	180.302	Horizontal	Pass
		1880	-1.13	3.91	28.22	23.18	207.970	Horizontal	Pass
		1909.3	-1.73	3.93	28.2	22.54	179.473	Horizontal	Pass
3.0MHz Band QPSK	15/0	1851.5	-2.01	3.77	28.23	22.45	175.792	Horizontal	Pass
		1880	-1.31	3.91	28.24	23.02	200.447	Horizontal	Pass
		1908.5	-1.16	3.94	28.25	23.15	206.538	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1851.5	-2.04	3.77	28.23	22.42	174.582	Horizontal	Pass
		1880	-1.66	3.91	28.24	22.67	184.927	Horizontal	Pass
		1908.5	-2.10	3.94	28.25	22.21	166.341	Horizontal	Pass
5.0MHz Band QPSK	25/0	1852.5	-1.68	3.77	28.31	22.86	193.197	Horizontal	Pass
		1880	-1.80	3.91	28.22	22.51	178.238	Horizontal	Pass
		1907.5	-1.31	3.94	28.2	22.95	197.242	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1852.5	-1.78	3.77	28.31	22.76	188.799	Horizontal	Pass
		1880	-0.95	3.91	28.22	23.36	216.770	Horizontal	Pass
		1907.5	-1.16	3.94	28.2	23.1	204.174	Horizontal	Pass
10.0MHz Band QPSK	50/0	1855	-2.01	3.79	28.33	22.53	179.061	Horizontal	Pass
		1880	-1.36	3.95	28.22	22.91	195.434	Horizontal	Pass
		1905	-1.34	3.97	28.19	22.88	194.089	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1855	-2.01	3.79	28.33	22.53	179.061	Horizontal	Pass
		1880	-0.97	3.95	28.22	23.3	213.796	Horizontal	Pass
		1905	-1.81	3.97	28.19	22.41	174.181	Horizontal	Pass
15.0MHz Band QPSK	75/0	1857.5	-2.24	3.79	28.34	22.31	170.216	Horizontal	Pass
		1880	-0.96	3.95	28.22	23.31	214.289	Horizontal	Pass
		1902.5	-1.30	3.97	28.18	22.91	195.434	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1857.5	-1.89	3.79	28.34	22.66	184.502	Horizontal	Pass
		1880	-1.18	3.95	28.22	23.09	203.704	Horizontal	Pass
		1902.5	-1.98	3.97	28.18	22.23	167.109	Horizontal	Pass

20.0MHz Band QPSK	100/0	1860	-2.17	3.81	28.35	22.37	172.584	Horizontal	Pass
		1880	-1.44	3.96	28.22	22.82	191.426	Horizontal	Pass
		1900	-1.23	4	28.16	22.93	196.336	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1860	-1.79	3.81	28.35	22.75	188.365	Horizontal	Pass
		1880	-1.38	3.96	28.22	22.88	194.089	Horizontal	Pass
		1900	-1.34	4	28.16	22.82	191.426	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Radiated Power (EIRP) for Band 2									
Mode	RB/ RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1850.7	-2.15	3.76	28.24	22.33	171.002	Vertical	Pass
		1880	-2.40	3.91	28.22	21.91	155.239	Vertical	Pass
		1909.3	-2.21	3.93	28.2	22.06	160.694	Vertical	Pass
1.4MHz Band 16 QAM	6/0	1850.7	-2.25	3.76	28.24	22.23	167.109	Vertical	Pass
		1880	-2.98	3.91	28.22	21.33	135.831	Vertical	Pass
		1909.3	-2.97	3.93	28.2	21.3	134.896	Vertical	Pass
3.0MHz Band QPSK	15/0	1851.5	-2.06	3.77	28.23	22.4	173.780	Vertical	Pass
		1880	-2.15	3.91	28.24	22.18	165.196	Vertical	Pass
		1908.5	-2.64	3.94	28.25	21.67	146.893	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1851.5	-2.84	3.77	28.23	21.62	145.211	Vertical	Pass
		1880	-2.53	3.91	28.24	21.8	151.356	Vertical	Pass
		1908.5	-2.47	3.94	28.25	21.84	152.757	Vertical	Pass
5.0MHz Band QPSK	25/0	1852.5	-2.13	3.77	28.31	22.41	174.181	Vertical	Pass
		1880	-2.17	3.91	28.22	22.14	163.682	Vertical	Pass
		1907.5	-2.43	3.94	28.2	21.83	152.405	Vertical	Pass
5.0MHz Band 16 QAM	25/0	1852.5	-2.00	3.77	28.31	22.54	179.473	Vertical	Pass
		1880	-2.40	3.91	28.22	21.91	155.239	Vertical	Pass
		1907.5	-2.76	3.94	28.2	21.5	141.254	Vertical	Pass
10.0MHz Band QPSK	50/0	1855	-2.83	3.79	28.33	21.71	148.252	Vertical	Pass
		1880	-2.16	3.95	28.22	22.11	162.555	Vertical	Pass
		1905	-2.47	3.97	28.19	21.75	149.624	Vertical	Pass
10.0MHz Band 16 QAM	50/0	1855	-2.31	3.79	28.33	22.23	167.109	Vertical	Pass
		1880	-2.70	3.95	28.22	21.57	143.549	Vertical	Pass
		1905	-2.44	3.97	28.19	21.78	150.661	Vertical	Pass
15.0MHz Band QPSK	75/0	1857.5	-2.02	3.79	28.34	22.53	179.061	Vertical	Pass
		1880	-2.08	3.95	28.22	22.19	165.577	Vertical	Pass
		1902.5	-2.13	3.97	28.18	22.08	161.436	Vertical	Pass
15.0MHz Band 16 QAM	75/0	1857.5	-2.31	3.79	28.34	22.24	167.494	Vertical	Pass
		1880	-2.86	3.95	28.22	21.41	138.357	Vertical	Pass
		1902.5	-2.15	3.97	28.18	22.06	160.694	Vertical	Pass
20.0MHz Band	100/ 0	1860	-2.61	3.81	28.35	21.93	155.955	Vertical	Pass
		1880	-2.41	3.96	28.22	21.85	153.109	Vertical	Pass

QPSK		1900	-2.30	4	28.16	21.86	153.462	Vertical	Pass
20.0MHz Band 16 QAM	100/0	1860	-2.23	3.81	28.35	22.31	170.216	Vertical	Pass
		1880	-2.11	3.96	28.22	22.15	164.059	Vertical	Pass
		1900	-2.81	4	28.16	21.35	136.458	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1710.7	-1.20	3.12	27.58	23.26	211.836	Horizontal	Pass
		1732.5	-1.25	3.27	27.61	23.09	203.704	Horizontal	Pass
		1754.3	-0.54	3.29	27.63	23.8	239.883	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1710.7	-0.75	3.12	27.58	23.71	234.963	Horizontal	Pass
		1732.5	-1.23	3.27	27.61	23.11	204.644	Horizontal	Pass
		1754.3	-0.99	3.29	27.63	23.35	216.272	Horizontal	Pass
3.0MHz Band QPSK	15/0	1711.5	-0.93	3.13	27.61	23.55	226.464	Horizontal	Pass
		1732.5	-1.05	3.27	27.61	23.29	213.304	Horizontal	Pass
		1753.5	-1.07	3.3	27.62	23.25	211.349	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1711.5	-0.40	3.13	27.61	24.08	255.859	Horizontal	Pass
		1732.5	-0.38	3.27	27.61	23.96	248.886	Horizontal	Pass
		1753.5	-0.55	3.3	27.62	23.77	238.232	Horizontal	Pass
5.0MHz Band QPSK	25/0	1712.5	-0.88	3.13	27.63	23.62	230.144	Horizontal	Pass
		1732.5	-0.73	3.27	27.61	23.61	229.615	Horizontal	Pass
		1752.5	-1.26	3.3	27.6	23.04	201.372	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1712.5	-0.58	3.13	27.63	23.92	246.604	Horizontal	Pass
		1732.5	-0.40	3.27	27.61	23.94	247.742	Horizontal	Pass
		1752.5	-1.35	3.3	27.6	22.95	197.242	Horizontal	Pass
10.0MHz Band QPSK	50/0	1715	-1.04	3.15	27.64	23.45	221.309	Horizontal	Pass
		1732.5	-0.74	3.31	27.61	23.56	226.986	Horizontal	Pass
		1750	-1.12	3.33	27.59	23.14	206.063	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1715	-1.15	3.15	27.64	23.34	215.774	Horizontal	Pass
		1732.5	-1.33	3.31	27.61	22.97	198.153	Horizontal	Pass
		1750	-1.03	3.33	27.59	23.23	210.378	Horizontal	Pass
15.0MHz Band QPSK	75/0	1717.5	-1.31	3.15	27.65	23.19	208.449	Horizontal	Pass
		1732.5	-0.49	3.31	27.61	23.81	240.436	Horizontal	Pass
		1747.5	-1.23	3.33	27.57	23.01	199.986	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1717.5	-0.38	3.15	27.65	24.12	258.226	Horizontal	Pass
		1732.5	-0.79	3.31	27.61	23.51	224.388	Horizontal	Pass
		1747.5	-0.90	3.33	27.57	23.34	215.774	Horizontal	Pass

20.0MHz Band QPSK	100/0	1720	-0.59	3.17	27.66	23.9	245.471	Horizontal	Pass
		1732.5	-0.95	3.32	27.61	23.34	215.774	Horizontal	Pass
		1745	-1.00	3.36	27.56	23.2	208.930	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1720	-1.21	3.17	27.66	23.28	212.814	Horizontal	Pass
		1732.5	-1.03	3.32	27.61	23.26	211.836	Horizontal	Pass
		1745	-0.43	3.36	27.56	23.77	238.232	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1710.7	-1.04	3.12	27.58	23.42	219.786	Vertical	Pass
		1732.5	-0.31	3.27	27.61	24.03	252.930	Vertical	Pass
		1754.3	-0.66	3.29	27.63	23.68	233.346	Vertical	Pass
1.4MHz Band 16 QAM	6/0	1710.7	-0.73	3.12	27.58	23.73	236.048	Vertical	Pass
		1732.5	-0.75	3.27	27.61	23.59	228.560	Vertical	Pass
		1754.3	-0.75	3.29	27.63	23.59	228.560	Vertical	Pass
3.0MHz Band QPSK	15/0	1711.5	-0.62	3.13	27.61	23.86	243.220	Vertical	Pass
		1732.5	-0.39	3.27	27.61	23.95	248.313	Vertical	Pass
		1753.5	-0.33	3.3	27.62	23.99	250.611	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1711.5	-1.01	3.13	27.61	23.47	222.331	Vertical	Pass
		1732.5	-0.61	3.27	27.61	23.73	236.048	Vertical	Pass
		1753.5	-0.82	3.3	27.62	23.5	223.872	Vertical	Pass
5.0MHz Band QPSK	25/0	1712.5	-0.85	3.13	27.63	23.65	231.739	Vertical	Pass
		1732.5	-0.86	3.27	27.61	23.48	222.844	Vertical	Pass
		1752.5	-0.74	3.3	27.6	23.56	226.986	Vertical	Pass
5.0MHz Band 16 QAM	25/0	1712.5	-0.36	3.13	27.63	24.14	259.418	Vertical	Pass
		1732.5	-0.51	3.27	27.61	23.83	241.546	Vertical	Pass
		1752.5	-0.58	3.3	27.6	23.72	235.505	Vertical	Pass
10.0MHz Band QPSK	50/0	1715	-0.35	3.15	27.64	24.14	259.418	Vertical	Pass
		1732.5	-0.74	3.31	27.61	23.56	226.986	Vertical	Pass
		1750	-0.94	3.33	27.59	23.32	214.783	Vertical	Pass
10.0MHz Band 16 QAM	50/0	1715	-0.37	3.15	27.64	24.12	258.226	Vertical	Pass
		1732.5	-0.39	3.31	27.61	23.91	246.037	Vertical	Pass
		1750	-1.01	3.33	27.59	23.25	211.349	Vertical	Pass
15.0MHz Band QPSK	75/0	1717.5	-0.20	3.15	27.65	24.3	269.153	Vertical	Pass
		1732.5	-0.29	3.31	27.61	24.01	251.768	Vertical	Pass
		1747.5	-1.01	3.33	27.57	23.23	210.378	Vertical	Pass
15.0MHz Band 16 QAM	75/0	1717.5	-0.53	3.15	27.65	23.97	249.459	Vertical	Pass
		1732.5	-0.86	3.31	27.61	23.44	220.800	Vertical	Pass
		1747.5	-0.24	3.33	27.57	24	251.189	Vertical	Pass
20.0MHz Band	100/0	1720	-0.84	3.17	27.66	23.65	231.739	Vertical	Pass
		1732.5	-1.08	3.32	27.61	23.21	209.411	Vertical	Pass

QPSK		1745	-0.55	3.36	27.56	23.65	231.739	Vertical	Pass
20.0MHz Band 16 QAM	100/0	1720	-0.50	3.17	27.66	23.99	250.611	Vertical	Pass
		1732.5	-0.41	3.32	27.61	23.88	244.343	Vertical	Pass
		1745	-0.66	3.36	27.56	23.54	225.944	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/ RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	25/0	2502.5	0.76	4.54	27.75	23.97	249.459	Horizontal	Pass
		2535	0.48	4.69	27.72	23.51	224.388	Horizontal	Pass
		2567.5	0.69	4.71	27.71	23.69	233.884	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	2502.5	-0.08	4.54	27.75	23.13	205.589	Horizontal	Pass
		2535	0.79	4.69	27.72	23.82	240.991	Horizontal	Pass
		2567.5	-0.08	4.71	27.71	22.92	195.884	Horizontal	Pass
10.0MHz Band QPSK	50/0	2505	0.67	4.55	27.76	23.88	244.343	Horizontal	Pass
		2535	0.48	4.69	27.72	23.51	224.388	Horizontal	Pass
		2565	0.05	4.72	27.7	23.03	200.909	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2505	0.24	4.55	27.76	23.45	221.309	Horizontal	Pass
		2535	0.06	4.69	27.72	23.09	203.704	Horizontal	Pass
		2565	0.17	4.72	27.7	23.15	206.538	Horizontal	Pass
15.0MHz Band QPSK	75/0	2507.5	0.34	4.55	27.77	23.56	226.986	Horizontal	Pass
		2535	0.65	4.69	27.72	23.68	233.346	Horizontal	Pass
		2562.5	0.27	4.72	27.69	23.24	210.863	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2507.5	0.53	4.55	27.77	23.75	237.137	Horizontal	Pass
		2535	0.76	4.69	27.72	23.79	239.332	Horizontal	Pass
		2562.5	0.62	4.72	27.69	23.59	228.560	Horizontal	Pass
20.0MHz Band QPSK	100/ 0	2510	-0.10	4.57	27.78	23.11	204.644	Horizontal	Pass
		2535	0.53	4.73	27.72	23.52	224.905	Horizontal	Pass
		2560	0.23	4.75	27.68	23.16	207.014	Horizontal	Pass
20.0MHz Band 16 QAM	100/ 0	2510	0.23	4.57	27.78	23.44	220.800	Horizontal	Pass
		2535	0.79	4.73	27.72	23.78	238.781	Horizontal	Pass
		2560	0.07	4.75	27.68	23	199.526	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Radiated Power (EIRP) for Band 7									
Mode	RB/ RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	25/0	2502.5	0.24	4.54	27.75	23.45	221.309	Vertical	Pass
		2535	0.38	4.69	27.72	23.41	219.280	Vertical	Pass
		2567.5	0.03	4.71	27.71	23.03	200.909	Vertical	Pass
5.0MHz Band 16 QAM	25/0	2502.5	0.24	4.54	27.75	23.45	221.309	Vertical	Pass
		2535	-0.16	4.69	27.72	22.87	193.642	Vertical	Pass
		2567.5	0.43	4.71	27.71	23.43	220.293	Vertical	Pass
10.0MHz Band QPSK	50/0	2505	-0.23	4.55	27.76	22.98	198.609	Vertical	Pass
		2535	0.07	4.69	27.72	23.1	204.174	Vertical	Pass
		2565	0.08	4.72	27.7	23.06	202.302	Vertical	Pass
10.0MHz Band 16 QAM	50/0	2505	0.16	4.55	27.76	23.37	217.270	Vertical	Pass
		2535	-0.37	4.69	27.72	22.66	184.502	Vertical	Pass
		2565	0.45	4.72	27.7	23.43	220.293	Vertical	Pass
15.0MHz Band QPSK	75/0	2507.5	0.21	4.55	27.77	23.43	220.293	Vertical	Pass
		2535	-0.36	4.69	27.72	22.67	184.927	Vertical	Pass
		2562.5	0.32	4.72	27.69	23.29	213.304	Vertical	Pass
15.0MHz Band 16 QAM	75/0	2507.5	0.46	4.55	27.77	23.68	233.346	Vertical	Pass
		2535	-0.15	4.69	27.72	22.88	194.089	Vertical	Pass
		2562.5	0.19	4.72	27.69	23.16	207.014	Vertical	Pass
20.0MHz Band QPSK	100/ 0	2510	-0.03	4.57	27.78	23.18	207.970	Vertical	Pass
		2535	-0.03	4.73	27.72	22.96	197.697	Vertical	Pass
		2560	0.46	4.75	27.68	23.39	218.273	Vertical	Pass
20.0MHz Band 16 QAM	100/ 0	2510	0.34	4.57	27.78	23.55	226.464	Vertical	Pass
		2535	0.45	4.73	27.72	23.44	220.800	Vertical	Pass
		2560	-0.33	4.75	27.68	22.6	181.970	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

9. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one 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. 100 kHz or 1 percent of emission bandwidth, as specified). 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.

For PCS equipment - 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 frequency block a resolution bandwidth of at least one 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 or 1 percent of emission bandwidth, as specified). 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.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:
a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB; and
b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (p) at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

- ☐ LTE Band 2
- LTE Band 4
- ☐ LTE Band7

RESULTS

PASS

9.1 LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (1.4.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-53.26	4.04	33.51	-23.79	-13	-10.79	Horizontal
3701.4	-51.11	4.04	33.51	-21.64	-13	-8.64	Vertical
5552.1	-54.48	5.24	35.84	-23.88	-13	-10.88	Vertical
5552.1	-56.64	5.24	35.84	-26.04	-13	-13.04	Horizontal
Test Results for Mid Channel 1732.5MHz							
3760	-52.28	4.04	33.56	-22.76	-13	-9.76	Horizontal
3760	-53.65	4.04	33.56	-24.13	-13	-11.13	Vertical
5640	-54.47	5.24	35.91	-23.80	-13	-10.80	Vertical
5640	-53.62	5.24	35.91	-22.95	-13	-9.95	Horizontal
Test Results for High Channel 1754.3MHz							
3818.6	-55.59	4.04	34	-25.63	-13	-12.63	Horizontal
3818.6	-56.62	4.04	34	-26.66	-13	-13.66	Vertical
5727.9	-54.41	5.24	36.04	-23.61	-13	-10.61	Vertical
5727.9	-53.95	5.24	36.04	-23.15	-13	-10.15	Horizontal

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3720	-55.98	4.07	33.54	-26.51	-13	-13.51	Horizontal
3720	-54.47	4.07	33.54	-25.00	-13	-12.00	Vertical
5580	-56.96	5.28	35.86	-26.38	-13	-13.38	Vertical
5580	-58.51	5.28	35.86	-27.93	-13	-14.93	Horizontal
Test Results for Mid Channel 1732.5MHz							
3760	-53.21	4.04	33.56	-23.69	-13	-10.69	Horizontal
3760	-54.84	4.04	33.56	-25.32	-13	-12.32	Vertical
5640	-56.95	5.24	35.91	-26.28	-13	-13.28	Vertical
5640	-56.11	5.24	35.91	-25.44	-13	-12.44	Horizontal
Test Results for High Channel 1754.3MHz							
3800	-56.32	4.04	34	-26.36	-13	-13.36	Horizontal
3800	-54.10	4.04	34	-24.14	-13	-11.14	Vertical
5700	-54.29	5.24	36.04	-23.49	-13	-10.49	Vertical
5700	-54.17	5.24	36.04	-23.37	-13	-10.37	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)
. We test both H direction and V direction, recorded worst case direction.

9.2 LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (1.4.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-52.95	4.02	29.8	-27.17	-13	-14.17	Horizontal
3421.4	-54.16	4.02	29.8	-28.38	-13	-15.38	Vertical
5132.1	-53.95	5.24	35.84	-23.35	-13	-10.35	Vertical
5132.1	-55.16	5.24	35.84	-24.56	-13	-11.56	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-54.78	4.03	30	-28.81	-13	-15.81	Horizontal
3465	-52.21	4.03	30	-26.24	-13	-13.24	Vertical
5197.5	-56.85	5.25	35.86	-26.24	-13	-13.24	Vertical
5197.5	-57.84	5.25	35.86	-27.23	-13	-14.23	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-59.15	4.05	30.01	-33.19	-13	-20.19	Horizontal
3508.6	-54.21	4.05	30.01	-28.25	-13	-15.25	Vertical
5262.9	-53.62	5.26	35.86	-23.02	-13	-10.02	Vertical
5262.9	-60.85	5.26	35.86	-30.25	-13	-17.25	Horizontal

QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3440	-55.12	4.02	29.8	-29.34	-13	-16.34	Horizontal
3440	-53.69	4.02	29.8	-27.91	-13	-14.91	Vertical
5160	-54.64	5.24	35.84	-24.04	-13	-11.04	Vertical
5160	-57.41	5.24	35.84	-26.81	-13	-13.81	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-51.12	4.03	30	-25.15	-13	-12.15	Horizontal
3465	-53.97	4.03	30	-28.00	-13	-15.00	Vertical
5197.5	-56.63	5.25	35.86	-26.02	-13	-13.02	Vertical
5197.5	-54.13	5.25	35.86	-23.52	-13	-10.52	Horizontal
Test Results for High Channel 1754.3MHz							
2490	-56.22	2.91	27.68	-31.45	-13	-18.45	Horizontal
3490	-56.69	2.91	27.68	-31.92	-13	-18.92	Vertical

5235	-53.32	5.26	35.86	-22.72	-13	-9.72	Vertical
5235	-57.41	5.26	35.86	-26.81	-13	-13.81	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. We test both H direction and V direction, recorded worst case direction.

9.4 LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5005	-56.98	5.23	35.81	-26.40	-13	-13.40	Horizontal
5005	-53.64	5.23	35.81	-23.06	-13	-10.06	Vertical
7507.5	-54.74	5.67	36.85	-23.56	-13	-10.56	Vertical
7507.5	-56.98	5.67	36.85	-25.80	-13	-12.80	Horizontal
Test Results for Mid Channel 1732.5MHz							
5070	-57.64	5.23	35.82	-27.05	-13	-14.05	Horizontal
5070	-61.12	5.23	35.82	-30.53	-13	-17.53	Vertical
7605	-54.41	5.67	36.85	-23.23	-13	-10.23	Vertical
7605	-57.85	5.67	36.85	-26.67	-13	-13.67	Horizontal
Test Results for High Channel 1754.3MHz							
5135	-57.41	5.24	35.83	-26.82	-13	-13.82	Horizontal
5135	-58.96	5.24	35.83	-28.37	-13	-15.37	Vertical
7702.5	-56.63	5.68	36.87	-25.44	-13	-12.44	Vertical
7702.5	-54.41	5.68	36.87	-23.22	-13	-10.22	Horizontal

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5020	-56.69	5.23	35.82	-26.10	-13	-13.10	Horizontal
5020	-56.68	5.23	35.82	-26.09	-13	-13.09	Vertical
7530	-54.74	5.67	36.86	-23.55	-13	-10.55	Vertical
7530	-57.97	5.67	36.86	-26.78	-13	-13.78	Horizontal
Test Results for Mid Channel 1732.5MHz							
5070	-56.96	5.23	35.82	-26.37	-13	-13.37	Horizontal
5070	-54.81	5.23	35.82	-24.22	-13	-11.22	Vertical
7605	-55.21	5.67	36.85	-24.03	-13	-11.03	Vertical
7605	-55.23	5.67	36.85	-24.05	-13	-11.05	Horizontal

Test Results for High Channel 1754.3MHz							
5120	-56.63	5.24	35.83	-26.04	-13	-13.04	Horizontal
5120	-54.74	5.24	35.83	-24.15	-13	-11.15	Vertical
7680	-53.68	5.7	36.88	-22.50	-13	-9.50	Vertical
7680	-56.69	5.7	36.88	-25.51	-13	-12.51	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. We test both H direction and V direction, recorded worst case direction.

10. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage,DC 3.6V, Normal, DC 3.8V and High voltage, DC 4.4V.

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to -30ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

- LTE Band 2

LTE Band 4

- LTE Band7

RESULTS

See the following pages.

10.1 LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH *18900* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.6	1880	-14.2	-0.007553	2.5
3.8	1880	-27.7	-0.014734	2.5
4.4	1880	-16.4	-0.008723	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH *18900* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	-25	-0.013298	2.5
Extreme (50C)	1880	-16.5	-0.008777	2.5
Extreme (40C)	1880	-11.7	-0.006223	2.5
Extreme (30C)	1880	-25.3	-0.013457	2.5
Extreme (10C)	1880	-21.9	-0.011649	2.5
Extreme (0C)	1880	-24.4	-0.012979	2.5
Extreme (-10C)	1880	-20	-0.010638	2.5
Extreme (-20C)	1880	-18.2	-0.009681	2.5
Extreme (-30C)	1880	-13.6	-0.007234	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH *18900* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.6	1880	-12	-0.006383	2.5
3.8	1880	-11	-0.005851	2.5
4.4	1880	-5.6	-0.002979	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH *18900* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	-23.6	-0.012553	2.5
Extreme (50C)	1880	-24.1	-0.012819	2.5
Extreme (40C)	1880	11	0.005851	2.5
Extreme (30C)	1880	21	0.011170	2.5
Extreme (10C)	1880	16.5	0.008777	2.5
Extreme (0C)	1880	-17.4	-0.009255	2.5
Extreme (-10C)	1880	-14.2	-0.007553	2.5
Extreme (-20C)	1880	-13.9	-0.007394	2.5
Extreme (-30C)	1880	-11.8	-0.006277	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.2 LTE BAND 4

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.6	1732.5	26.2	0.015123	2.5
3.8	1732.5	-12.2	-0.007042	2.5
4.4	1732.5	21	0.012121	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	6.9	0.003983	2.5
Extreme (50C)	1732.5	11.4	0.006580	2.5
Extreme (40C)	1732.5	15.2	0.008773	2.5
Extreme (30C)	1732.5	16.7	0.009639	2.5
Extreme (10C)	1732.5	17.8	0.010274	2.5
Extreme (0C)	1732.5	20.3	0.011717	2.5
Extreme (-10C)	1732.5	-11.4	-0.006580	2.5
Extreme (-20C)	1732.5	-19.8	-0.011429	2.5
Extreme (-30C)	1732.5	24.5	0.014141	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.6	1732.5	19.8	0.011429	2.5
3.8	1732.5	22.3	0.012872	2.5
4.4	1732.5	21.4	0.012352	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	14.8	0.008543	2.5
Extreme (50C)	1732.5	-5.8	-0.003348	2.5
Extreme (40C)	1732.5	-7.4	-0.004271	2.5
Extreme (30C)	1732.5	-14.6	-0.008427	2.5
Extreme (10C)	1732.5	-13.6	-0.007850	2.5
Extreme (0C)	1732.5	-15.8	-0.009120	2.5
Extreme (-10C)	1732.5	-22.5	-0.012987	2.5
Extreme (-20C)	1732.5	25.8	0.014892	2.5
Extreme (-30C)	1732.5	26.3	0.015180	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.4 LTE BAND 7

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH *21100* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.6	2535	-16.1	-0.006351	2.5
3.8	2535	14.6	0.005759	2.5
4.4	2535	10	0.003945	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH *21100* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	10.6	0.004181	2.5
Extreme (50C)	2535	-11.6	-0.004576	2.5
Extreme (40C)	2535	12.3	0.004852	2.5
Extreme (30C)	2535	14.5	0.005720	2.5
Extreme (10C)	2535	8.5	0.003353	2.5
Extreme (0C)	2535	-6.3	-0.002485	2.5
Extreme (-10C)	2535	-3.9	-0.001538	2.5
Extreme (-20C)	2535	-7.4	-0.002919	2.5
Extreme (-30C)	2535	-5.8	-0.002288	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH *21100* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.6	2535	-12.4	-0.004892	2.5
3.8	2535	12.1	0.004773	2.5
4.4	2535	10.5	0.004142	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH *21100* RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	-16.5	-0.006509	2.5
Extreme (50C)	2535	9.8	0.003866	2.5
Extreme (40C)	2535	10.4	0.004103	2.5
Extreme (30C)	2535	14.2	0.005602	2.5
Extreme (10C)	2535	-15.2	-0.005996	2.5
Extreme (0C)	2535	-12.2	-0.004813	2.5
Extreme (-10C)	2535	-9.5	-0.003748	2.5
Extreme (-20C)	2535	8.6	0.003393	2.5
Extreme (-30C)	2535	8.8	0.003471	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

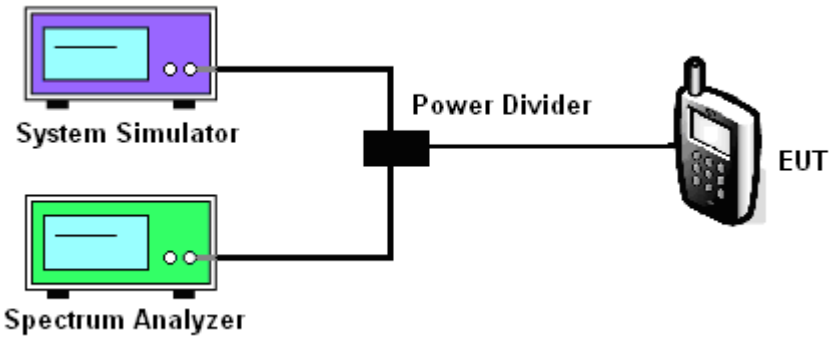
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. For GSM/EGPRS operating modes:
   a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
   b. Set EUT in maximum power output, and triggered the burst signal.
   c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
4. For UMTS operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

11.4 Test Setup



MODES TESTED

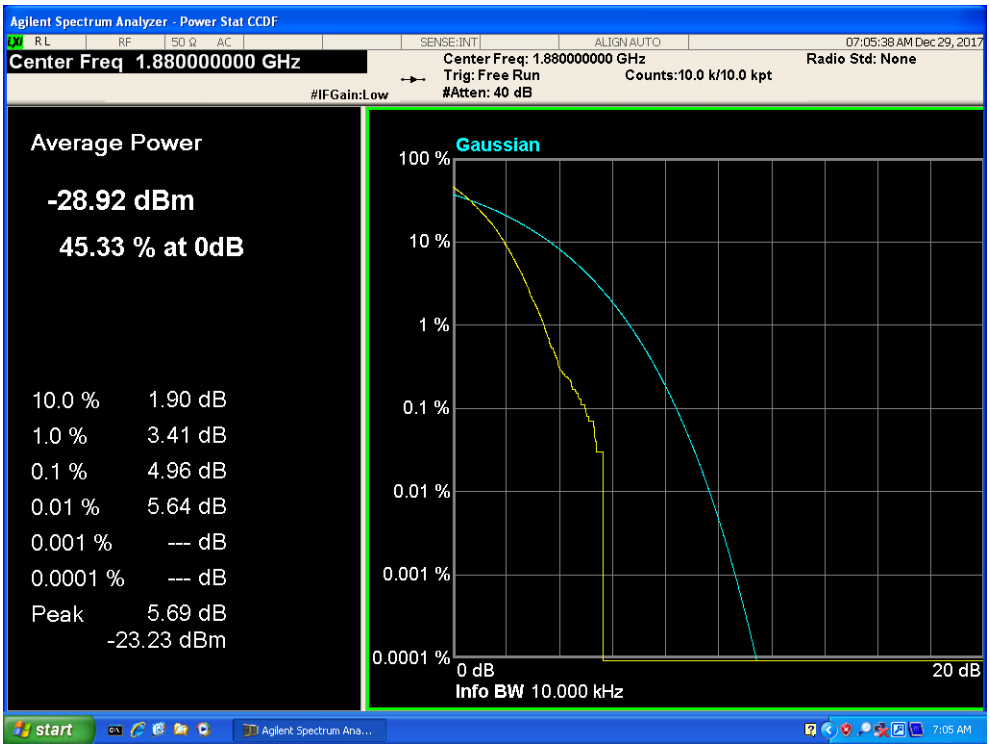
- □ LTE Band2
- LTE Band 4
- □ LTE Band7
- □

BAND	CHANNEL	Frequency [MHz]	BANDWIDTH	NO. RB	RB POS.	MODULATION	PAR [dB]
2	18900	1880.0	1.4	1	Low	QPSK	4.96
2	18900	1880.0	1.4	1	Low	16-QAM	4.29
2	18900	1880.0	3.0	1	Low	QPSK	1.70
2	18900	1880.0	3.0	1	Low	16-QAM	1.68
2	18900	1880.0	5.0	1	Low	QPSK	2.74
2	18900	1880.0	5.0	1	Low	16-QAM	2.83
2	18900	1880.0	10.0	1	Low	QPSK	3.27
2	18900	1880.0	10.0	1	Low	16-QAM	2.96
2	18900	1880.0	15.0	1	Low	QPSK	3.42
2	18900	1880.0	15.0	1	Low	16-QAM	3.73
2	18900	1880.0	20.0	1	Low	QPSK	4.46
2	18900	1880.0	20.0	1	Low	16-QAM	5.14
4	20175	1732.5	1.4	1	Low	QPSK	4.29
4	20175	1732.5	1.4	1	Low	16-QAM	3.68
4	20175	1732.5	3.0	1	Low	QPSK	1.50
4	20175	1732.5	3.0	1	Low	16-QAM	1.62
4	20175	1732.5	5.0	1	Low	QPSK	2.51
4	20175	1732.5	5.0	1	Low	16-QAM	3.18
4	20175	1732.5	10.0	1	Low	QPSK	2.83
4	20175	1732.5	10.0	1	Low	16-QAM	3.36
4	20175	1732.5	15.0	1	Low	QPSK	3.12

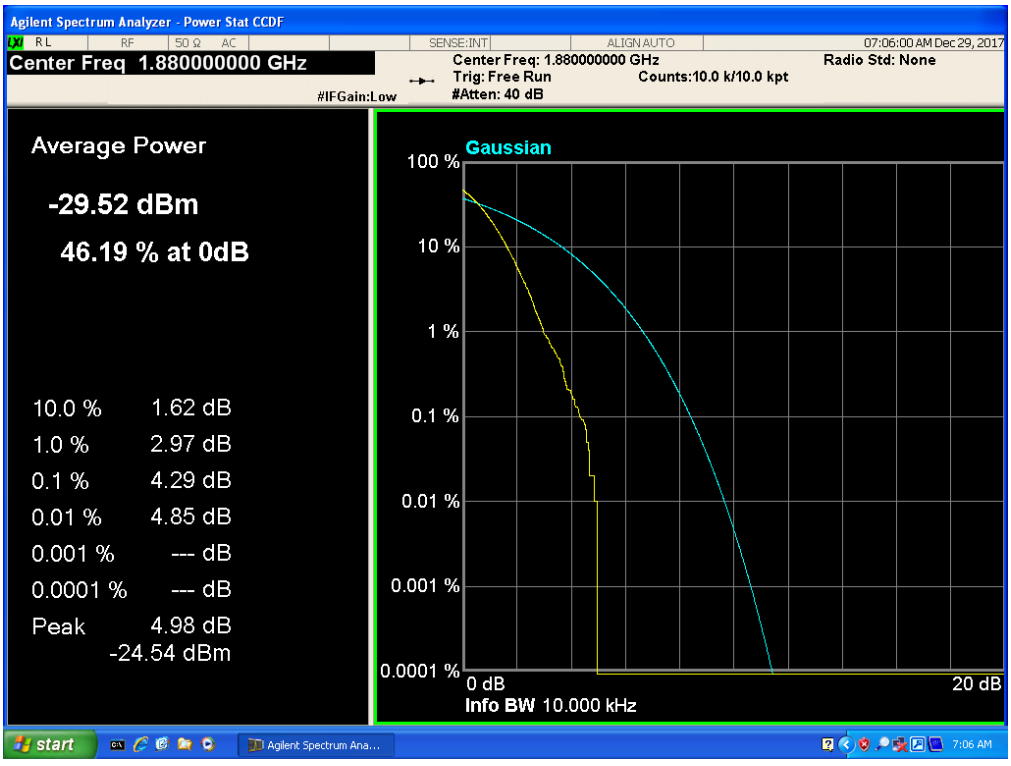
4	20175	1732.5	15.0	1	Low	16-QAM	3.77
4	20175	1732.5	20.0	1	Low	QPSK	3.42
4	20175	1732.5	20.0	1	Low	16-QAM	4.08
7	21100	2535.0	5.0	1	Low	QPSK	3.76
7	21100	2535.0	5.0	1	Low	16-QAM	3.44
7	21100	2535.0	10.0	1	Low	QPSK	3.94
7	21100	2535.0	10.0	1	Low	16-QAM	3.78
7	21100	2535.0	15.0	1	Low	QPSK	4.71
7	21100	2535.0	15.0	1	Low	16-QAM	5.00
7	21100	2535.0	20.0	1	Low	QPSK	4.76
7	21100	2535.0	20.0	1	Low	16-QAM	4.68

11.5 LTE BAND 2

Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,QPSK

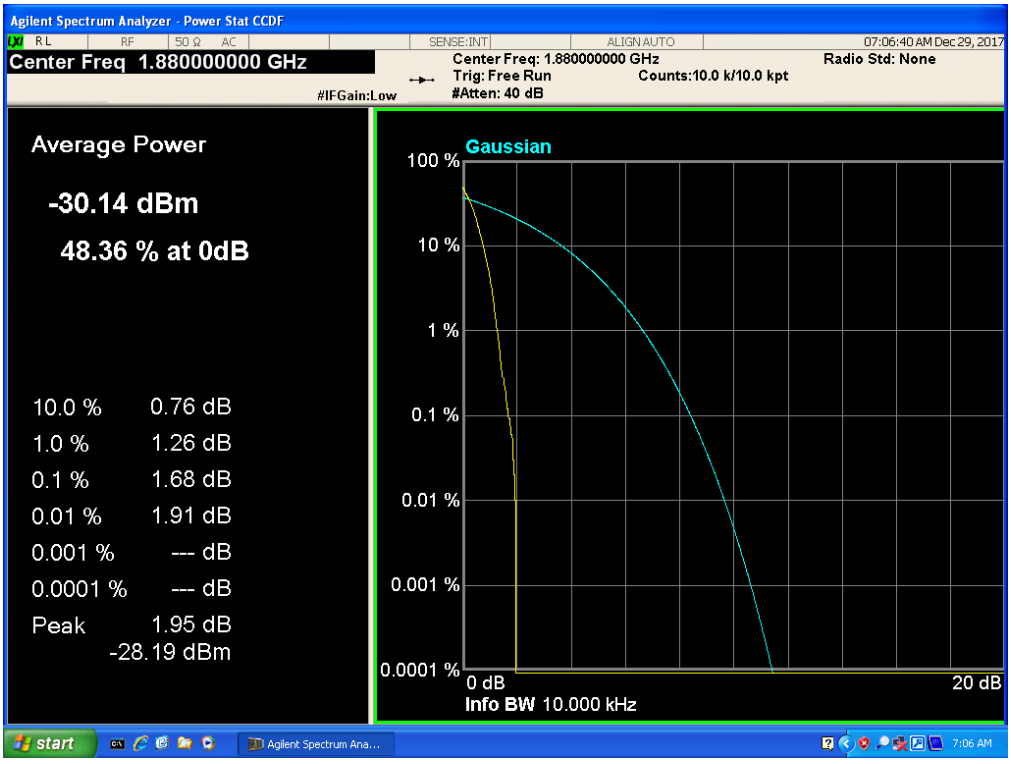


Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,16-QAM

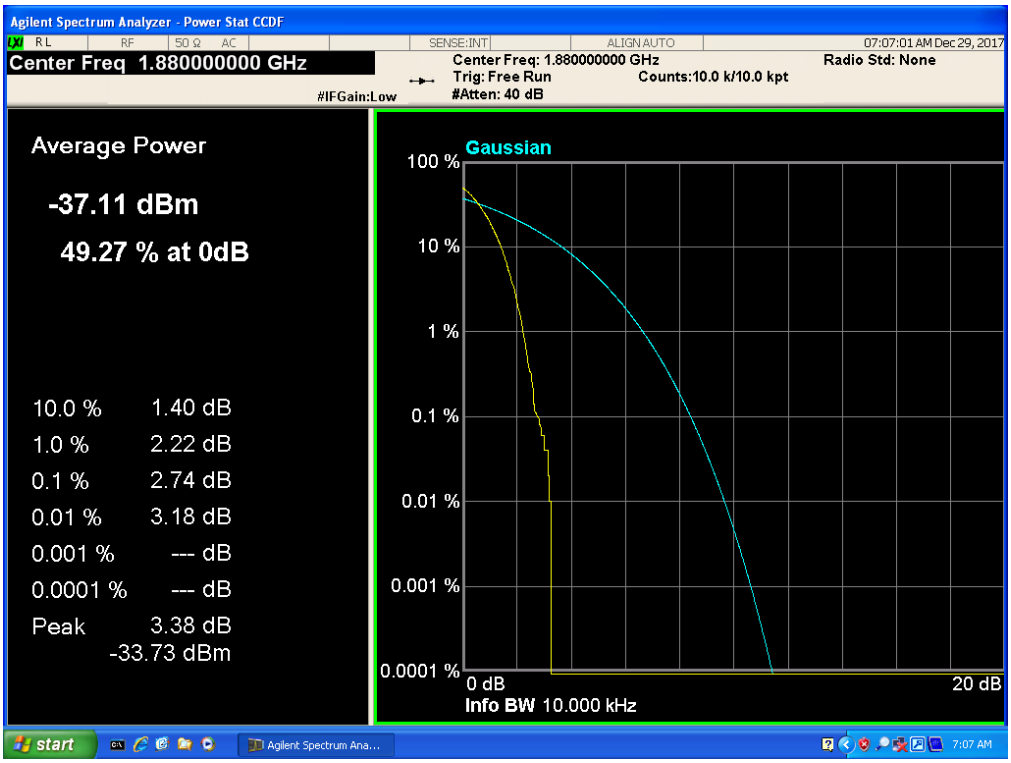


Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,QPSK

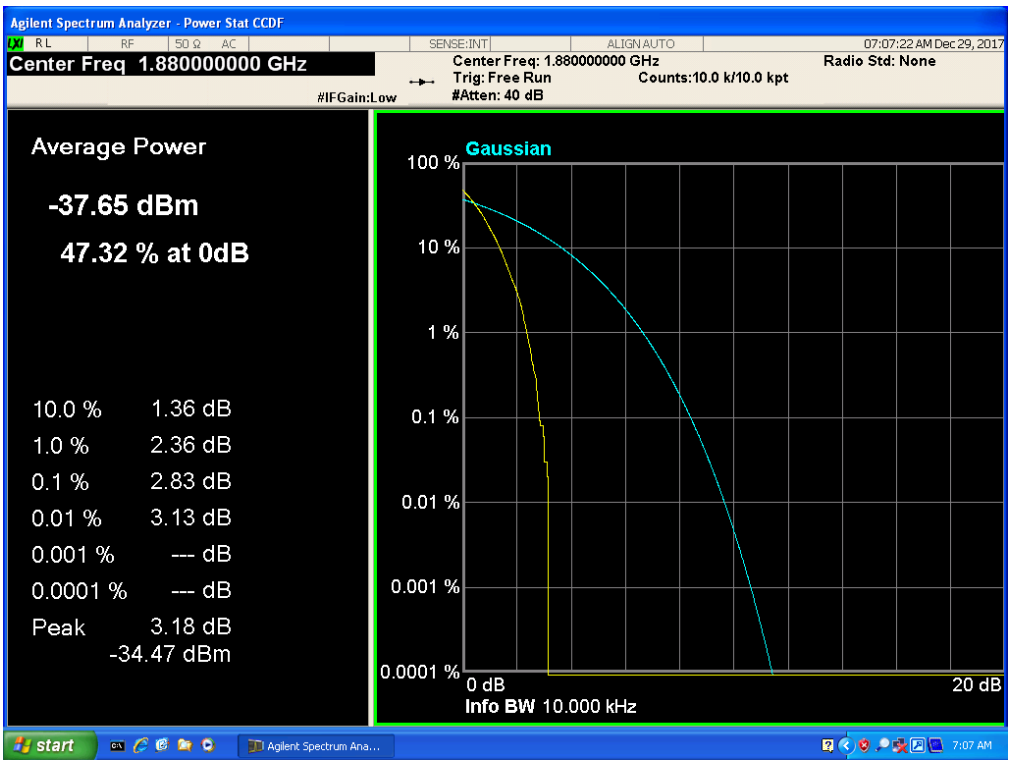
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,16-QAM



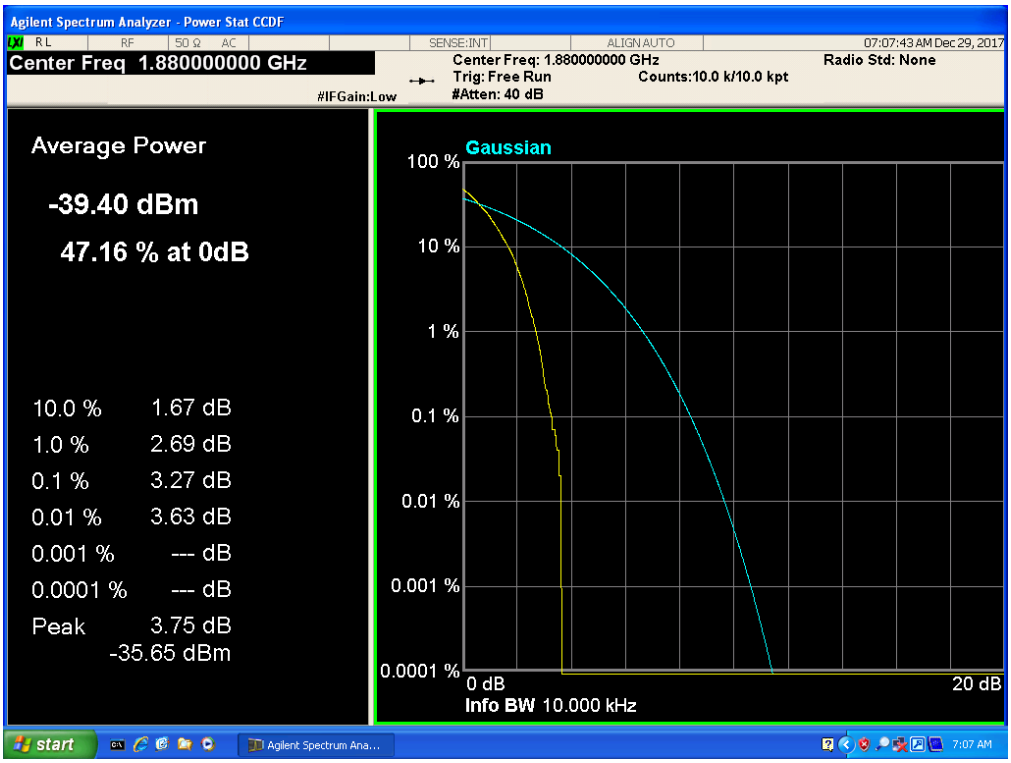
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



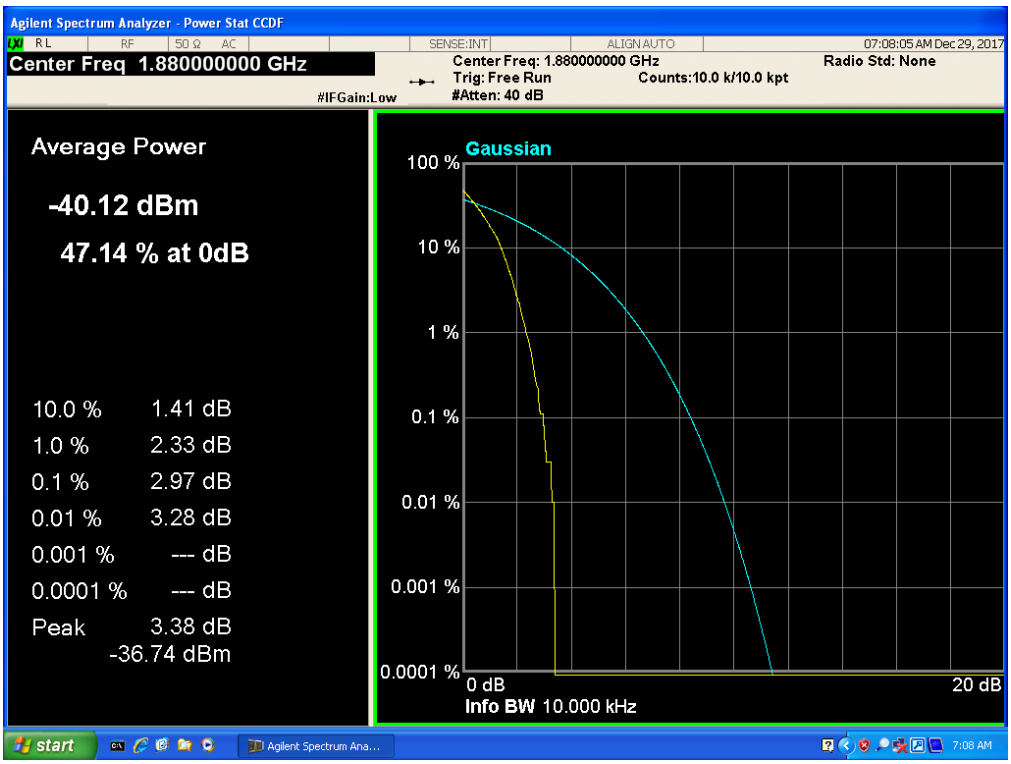
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,16-QAM



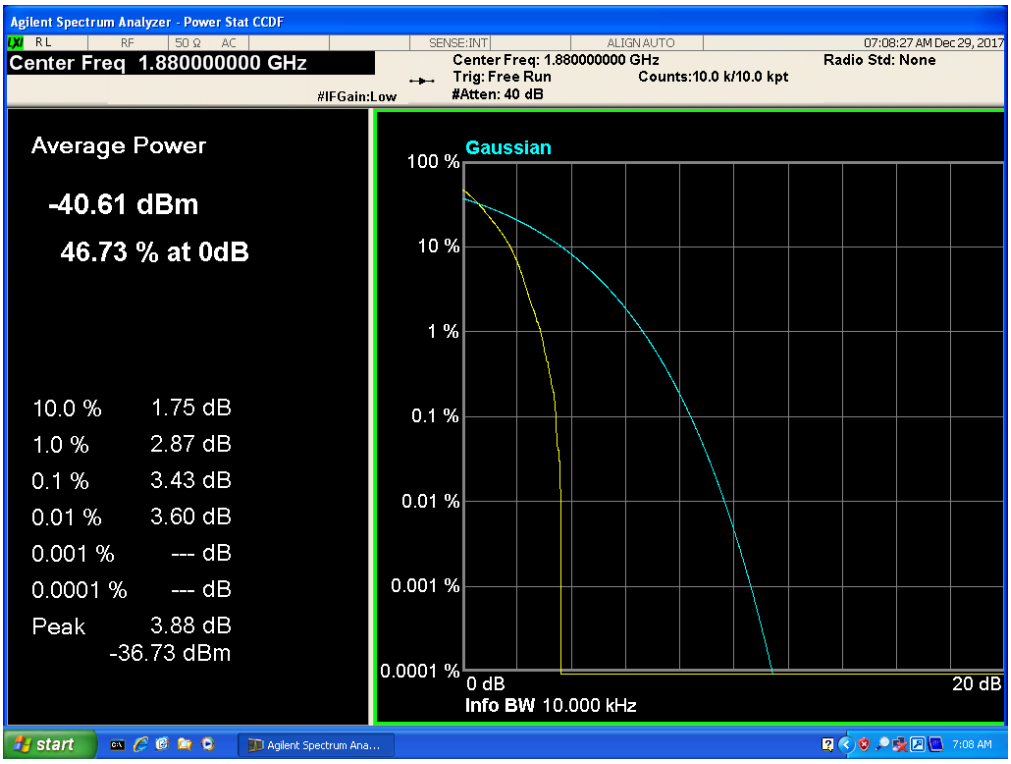
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



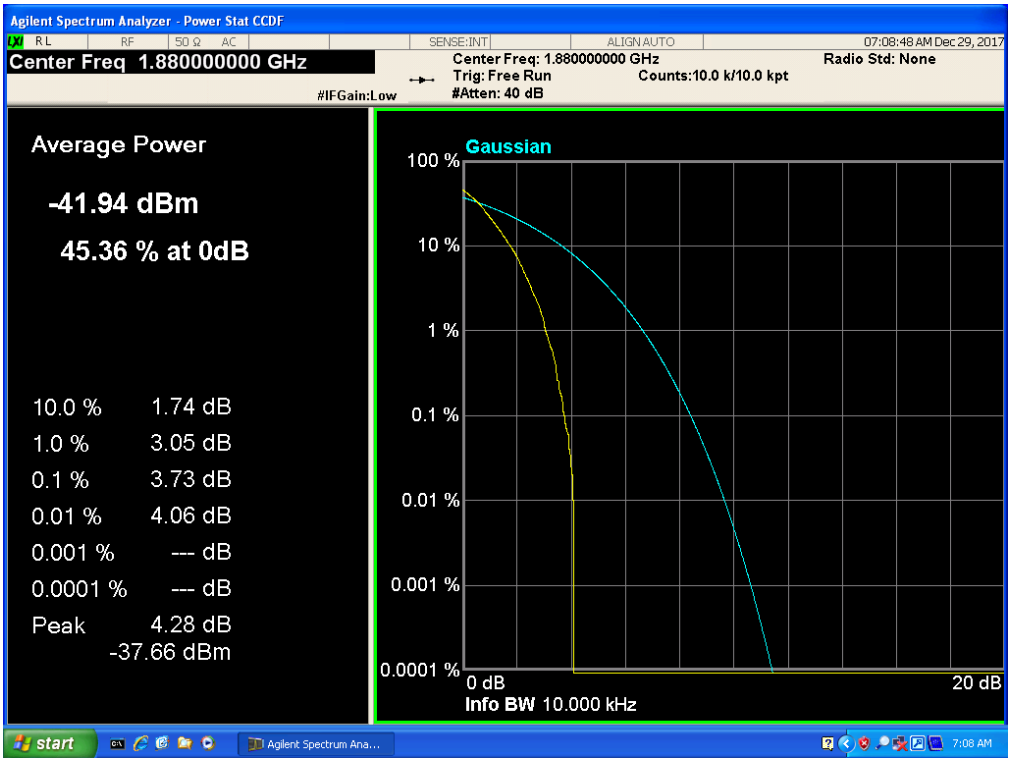
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,16-QAM



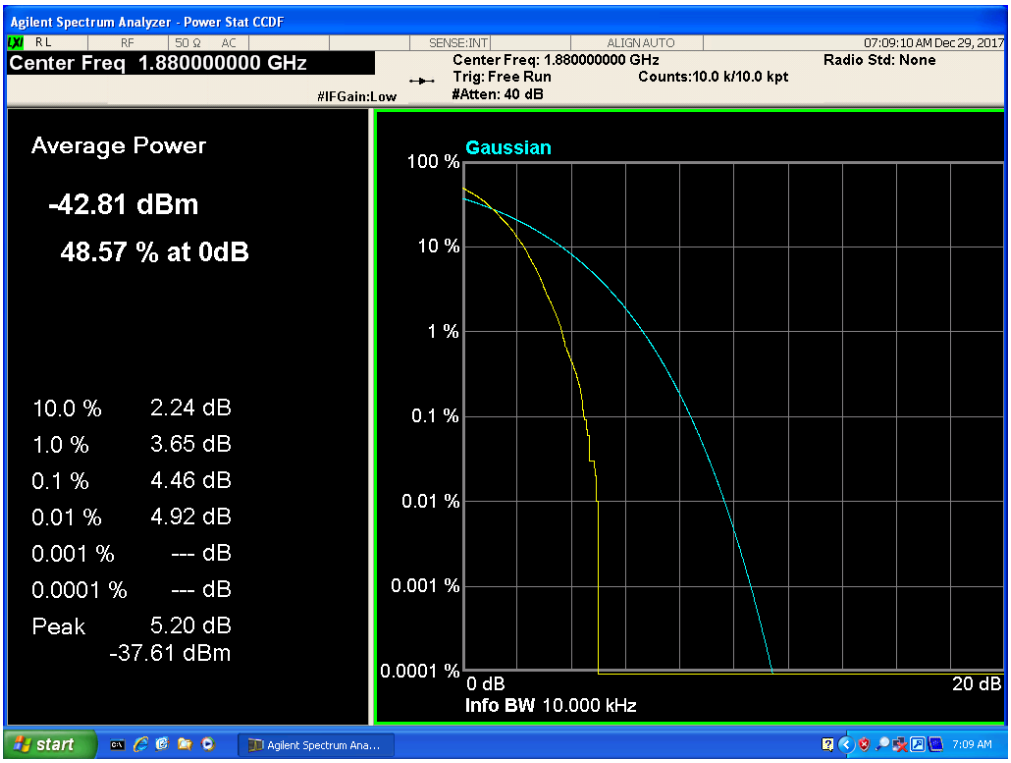
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,QPSK



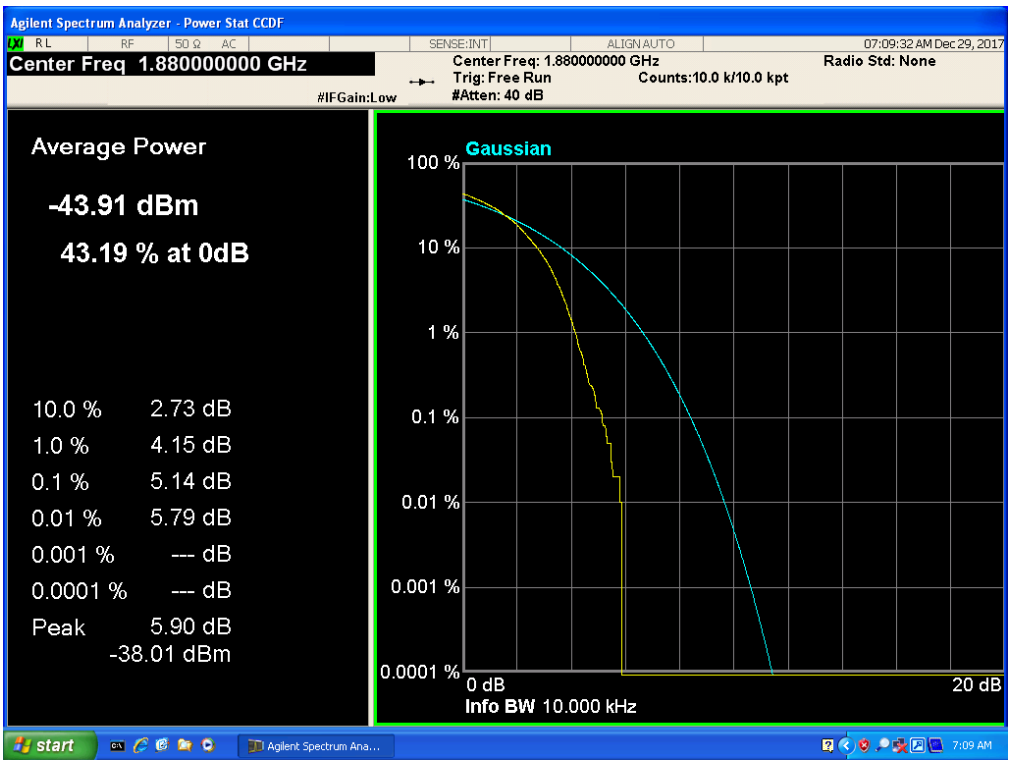
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,16-QAM



Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK

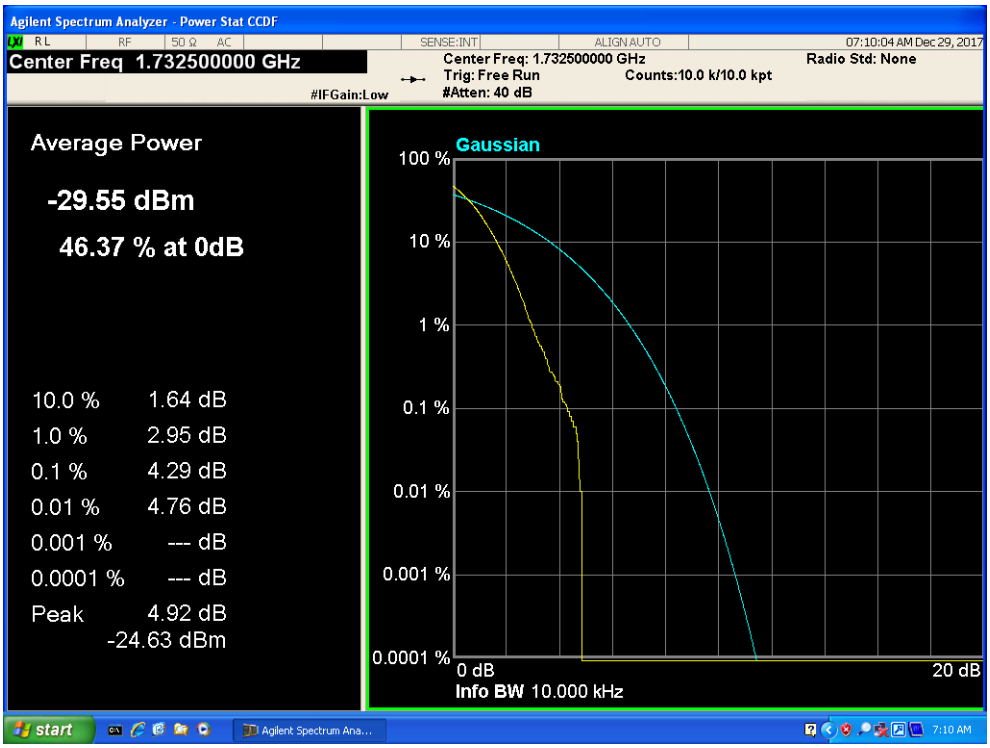


Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,16-QAM

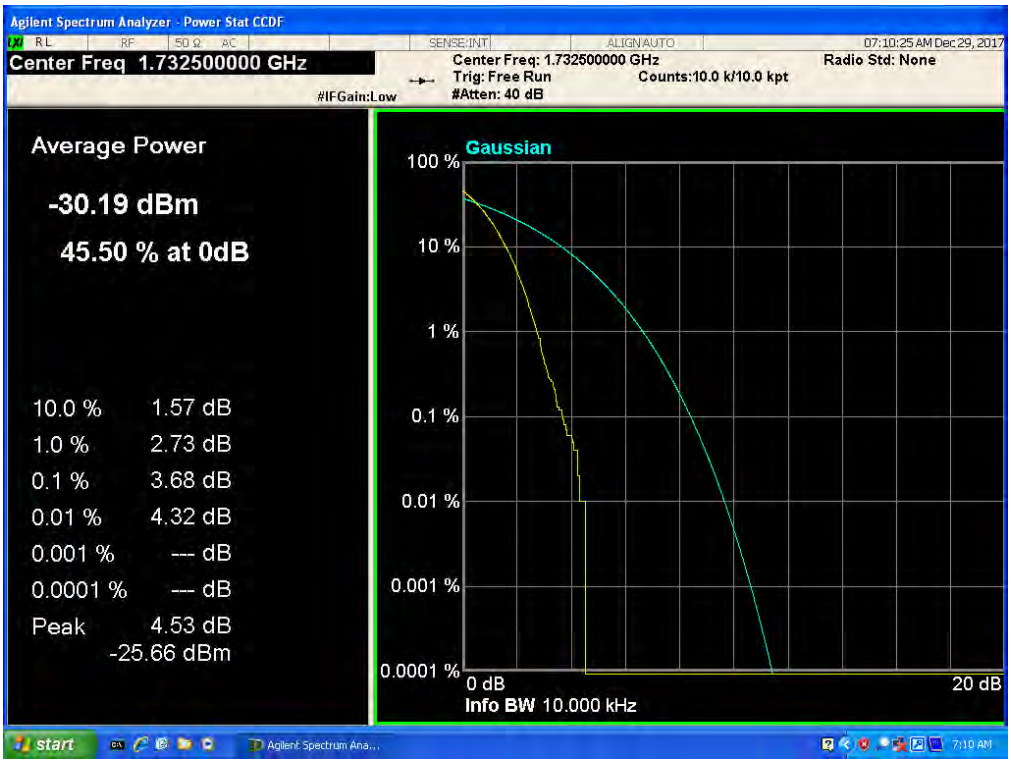


11.6 LTE BAND 4

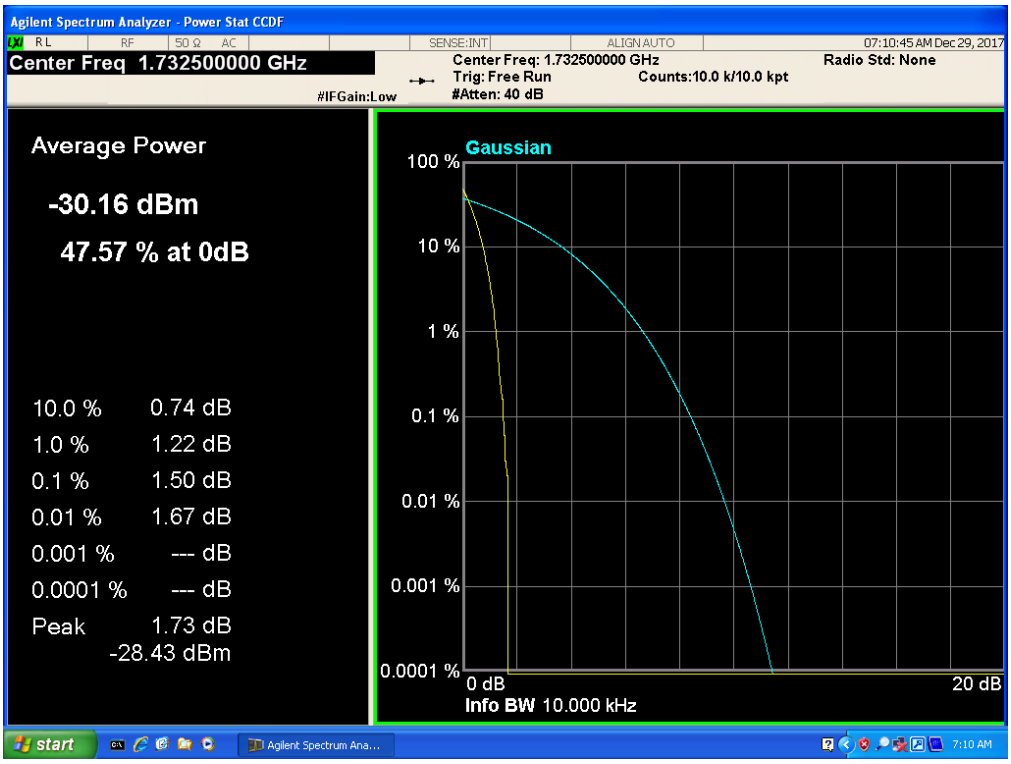
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK



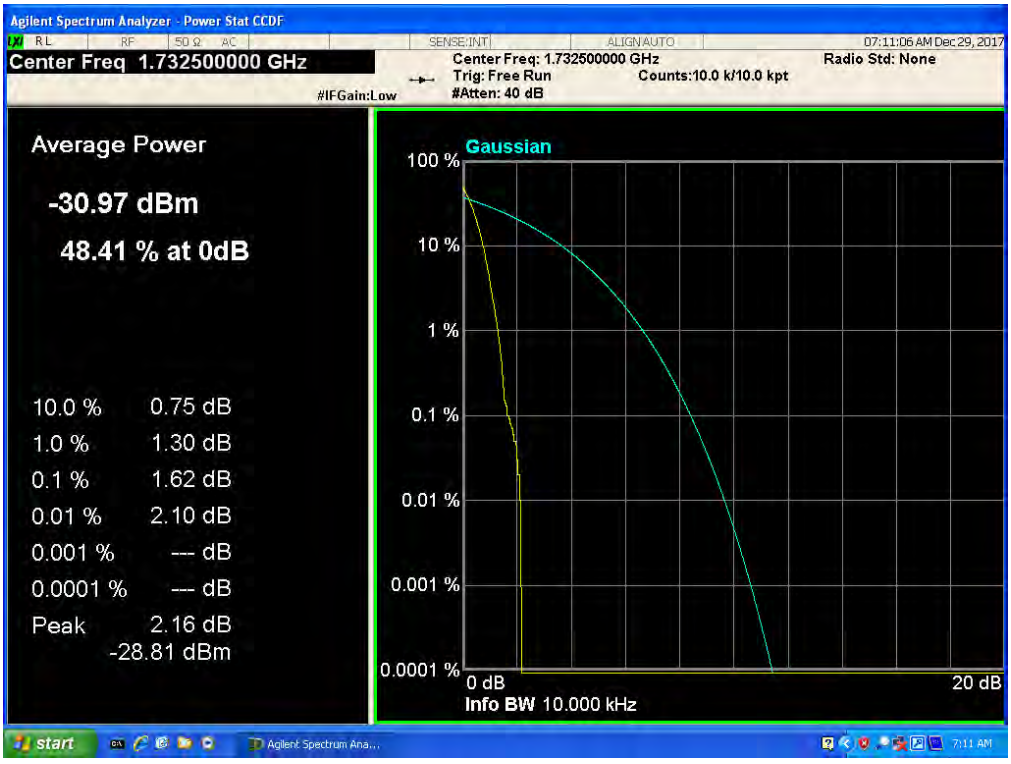
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,16-QAM



Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



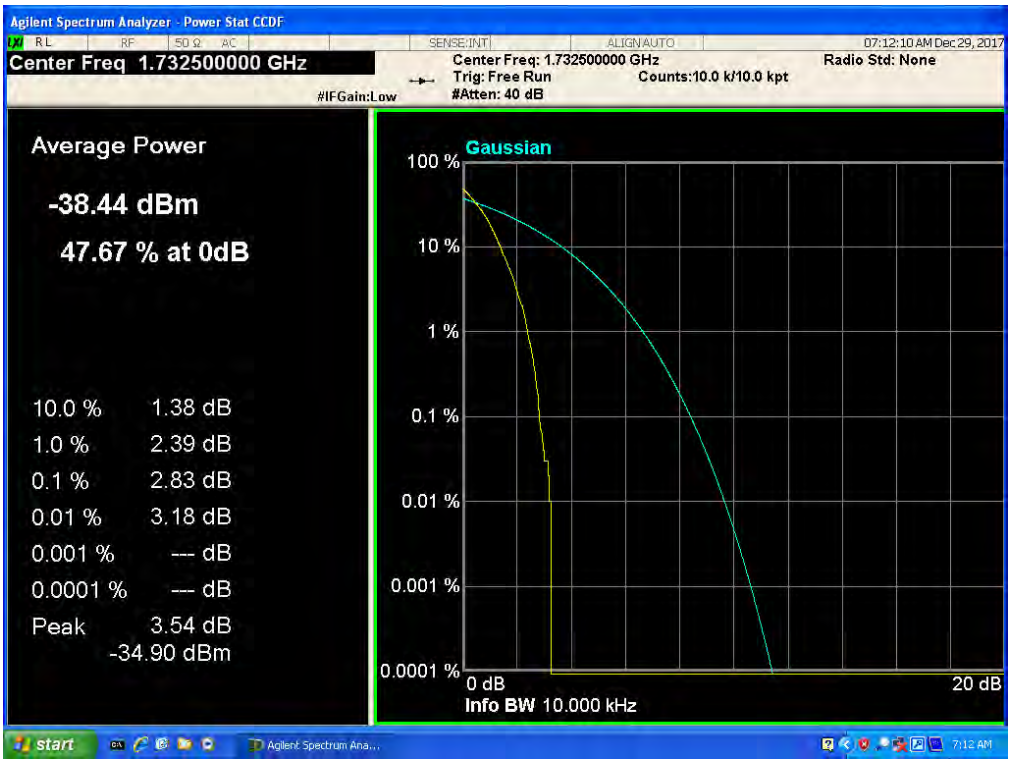
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,16-QAM



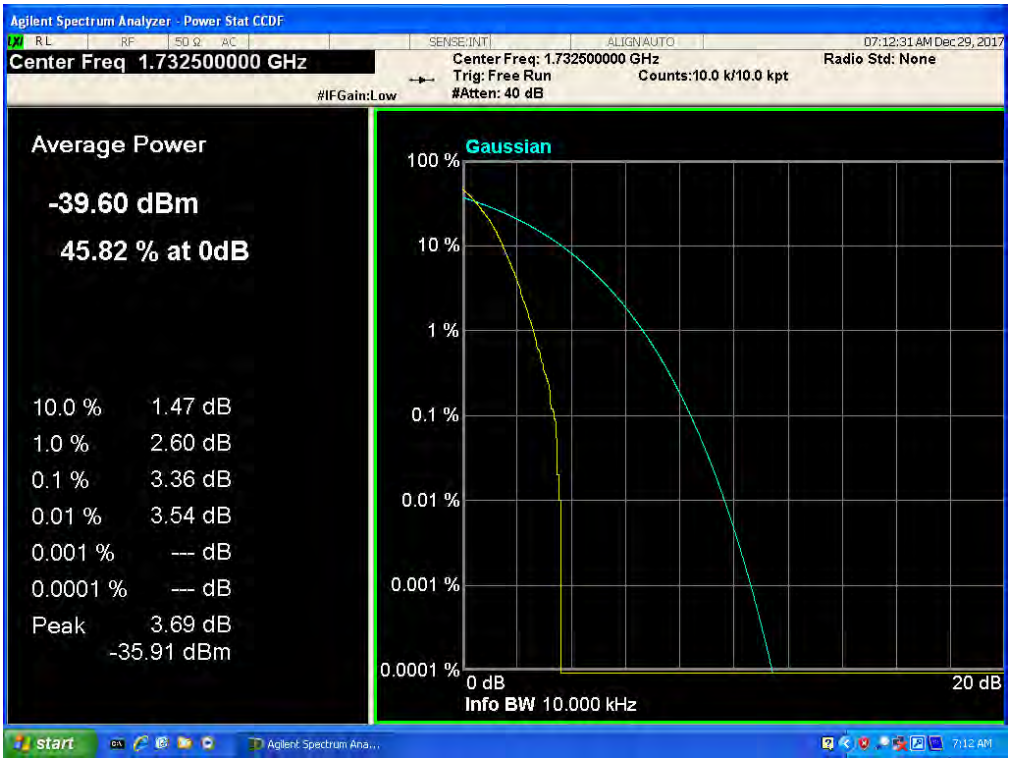
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK

Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,16-QAM

Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK

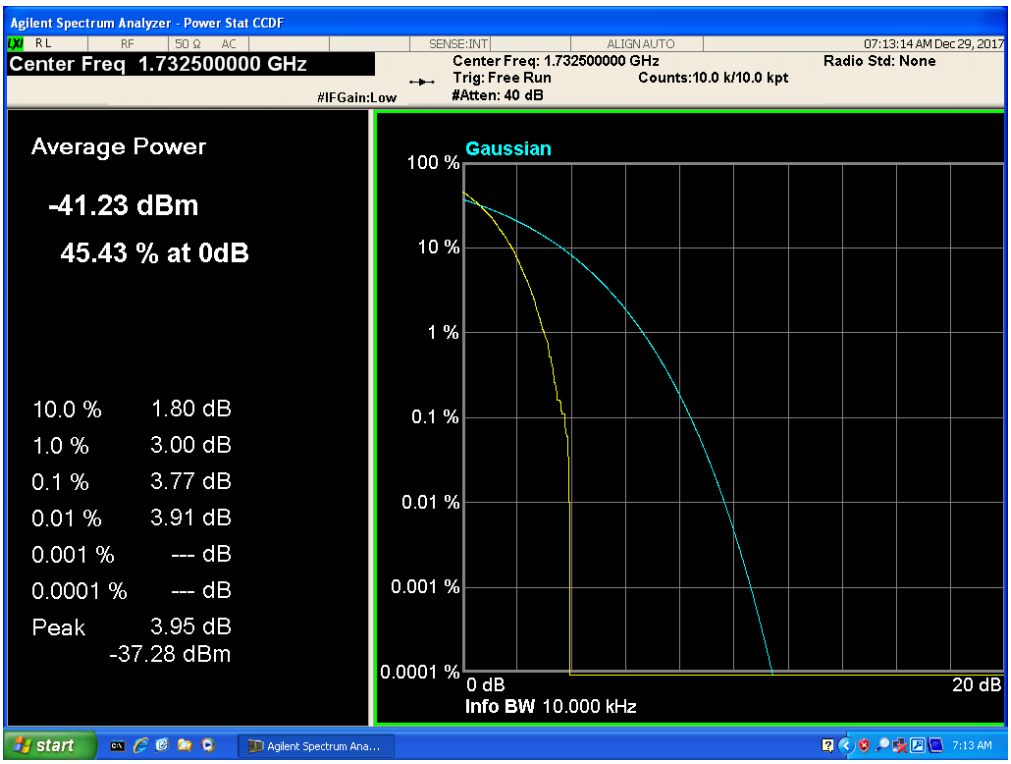


Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,16-QAM

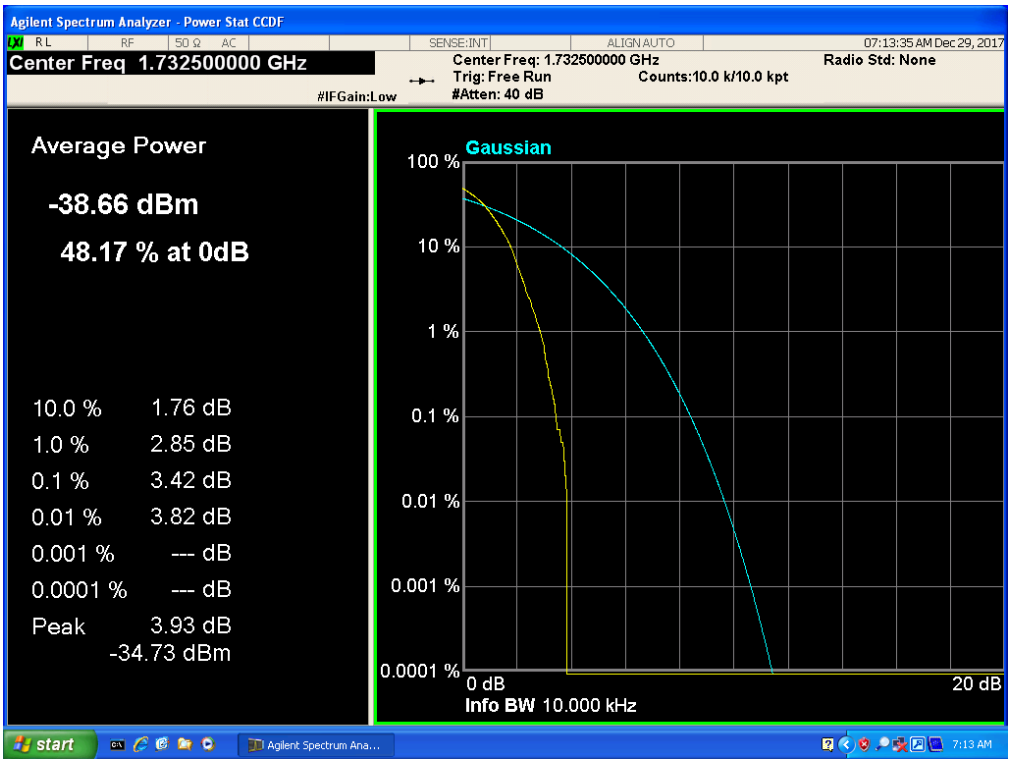


Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK

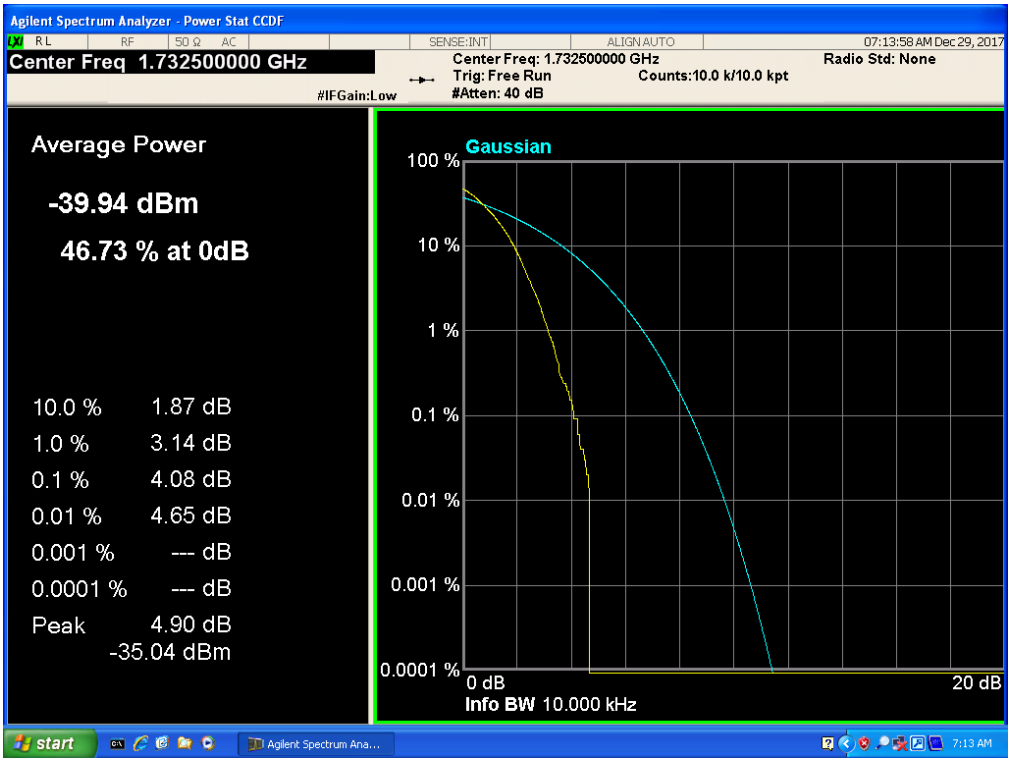
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,16-QAM



Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,QPSK

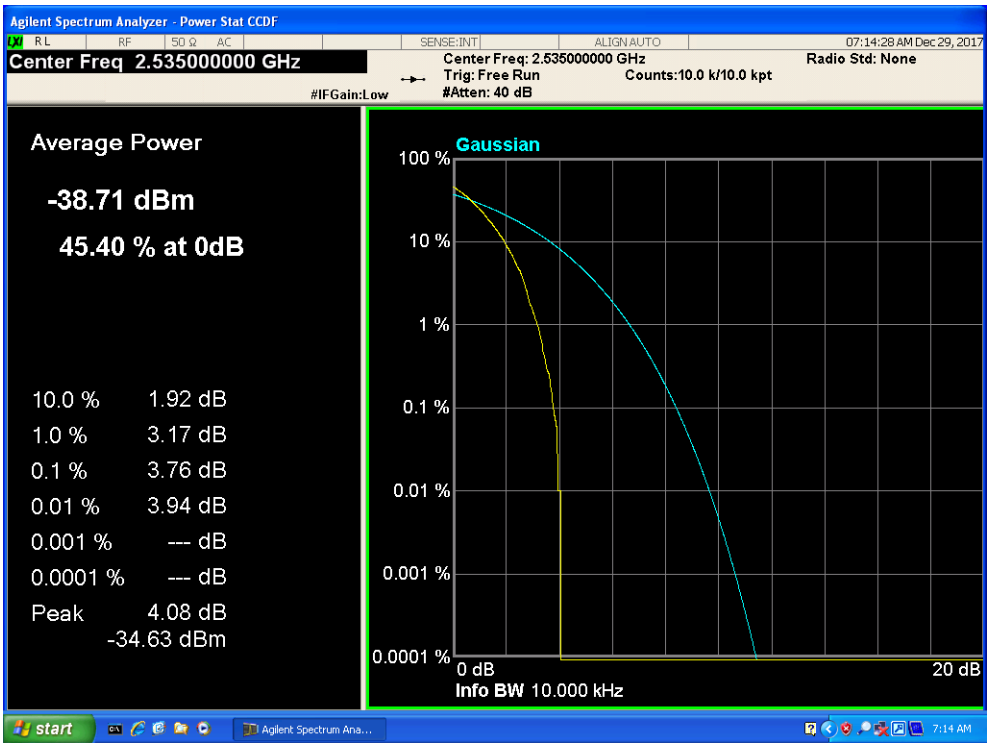


Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,16-QAM

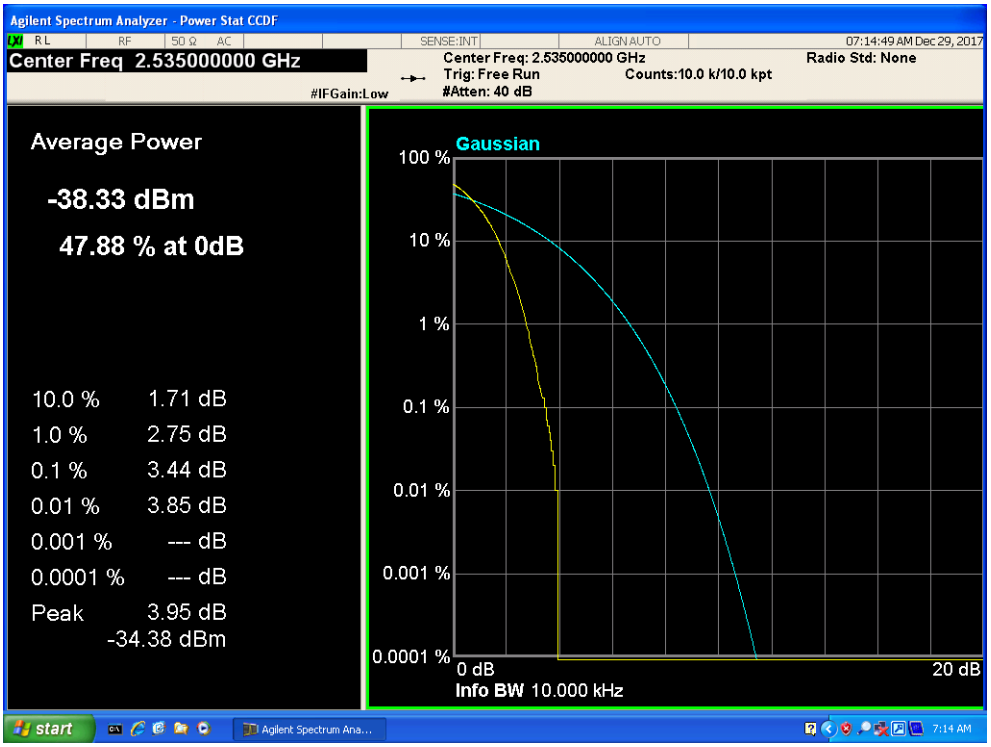


11.8 LTE BAND 7

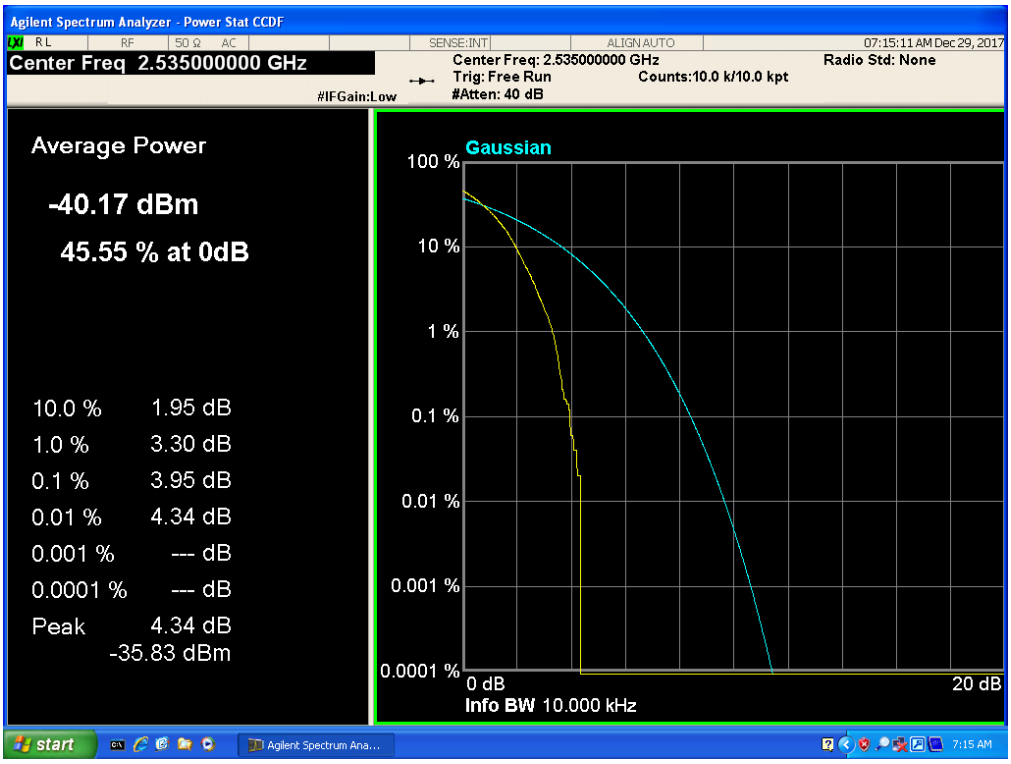
Band 7,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



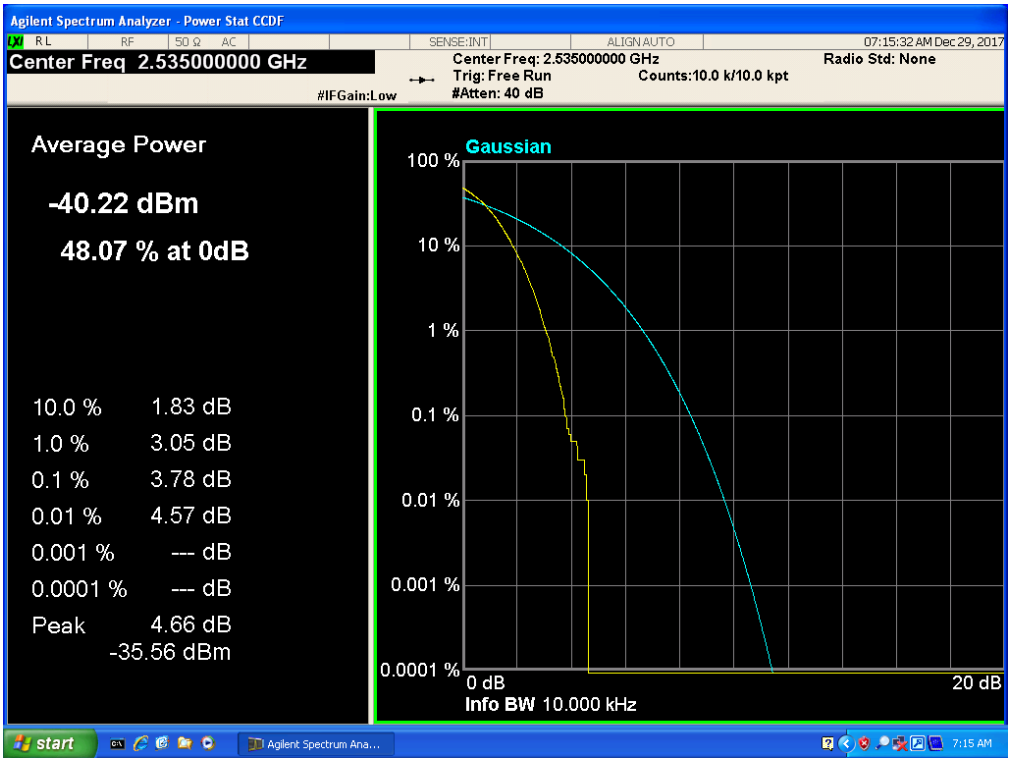
Band 7,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 1,RB POS. Low,16-QAM



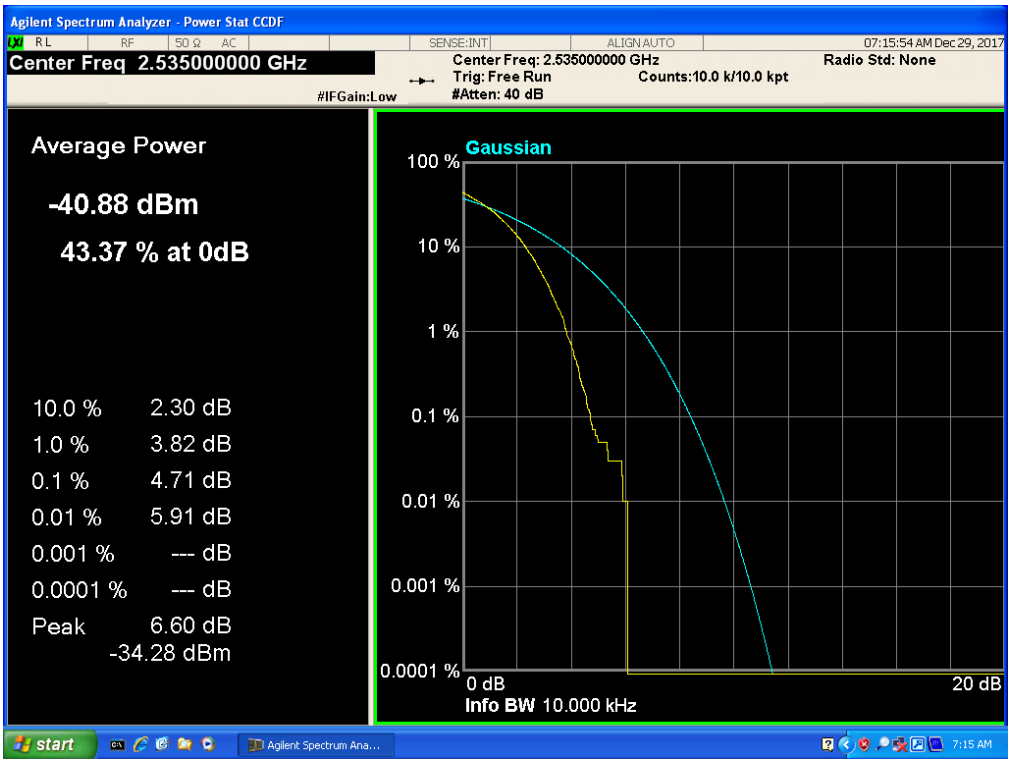
Band 7,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



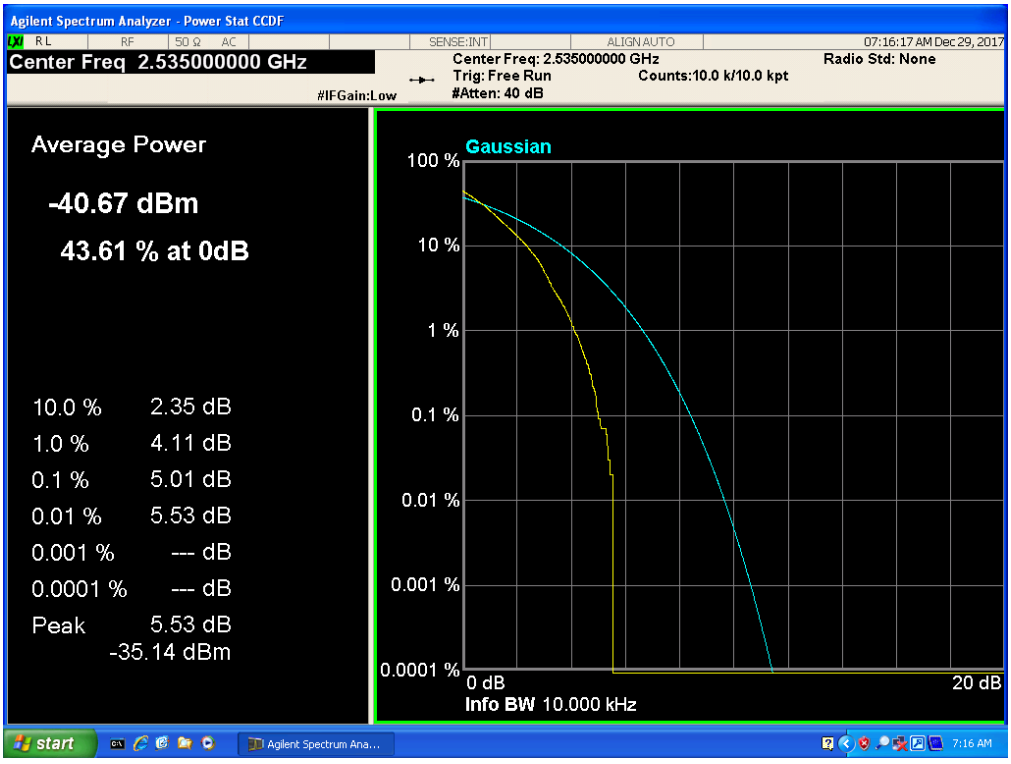
Band 7,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 1,RB POS. Low,16-QAM



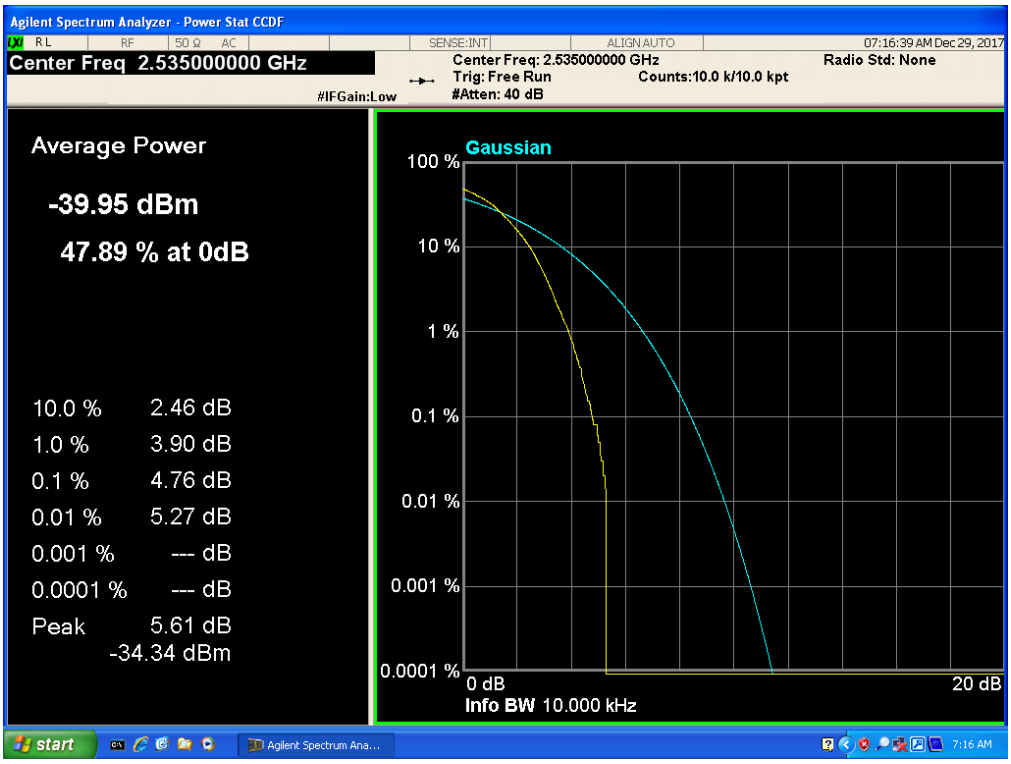
Band 7,UL Channel 21100,UL Frequency 2535.0,BW 15.0,NO. RB 1,RB POS. Low,QPSK



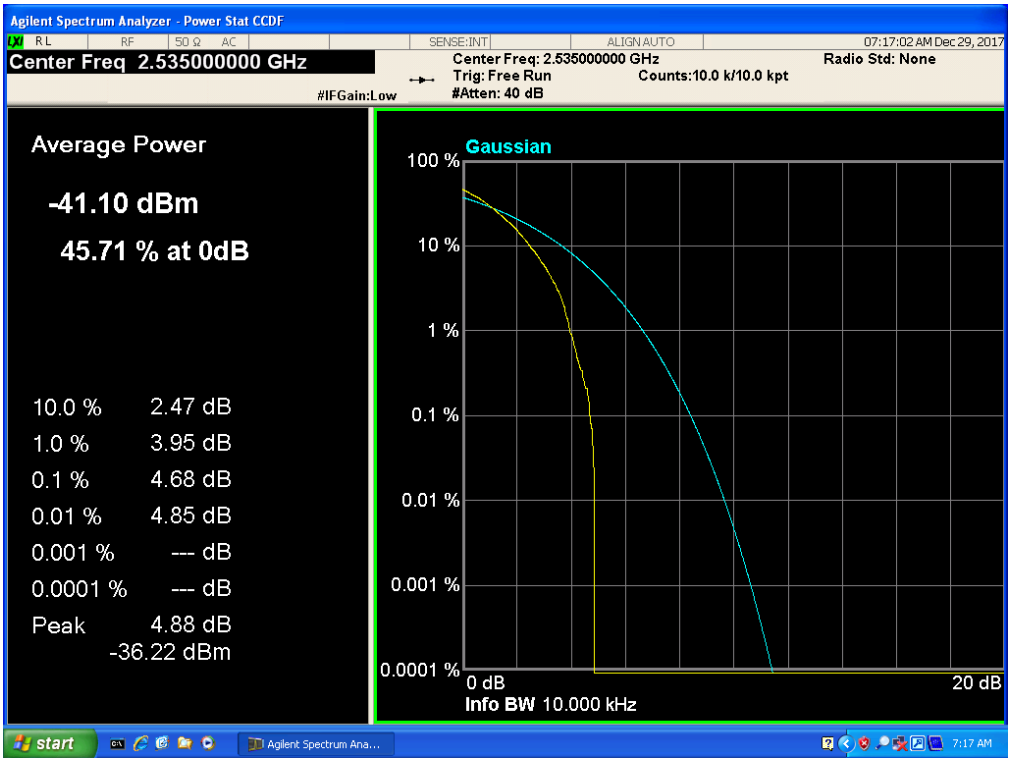
Band 7,UL Channel 21100,UL Frequency 2535.0,BW 15.0,NO. RB 1,RB POS. Low,16-QAM



Band 7,UL Channel 21100,UL Frequency 2535.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



Band 7,UL Channel 21100,UL Frequency 2535.0,BW 20.0,NO. RB 1,RB POS. Low,16-QAM



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