

5 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

9.1 LTE Mode

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

LTE Band and 2							
Full Power				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	22.83	23.12	22.95	24.00
		1	2	22.84	23.46	23.17	24.00
		1	5	22.85	23.44	23.33	24.00
		3	0	21.84	22.15	22.83	24.00
		3	2	21.85	22.21	22.78	24.00
		3	3	21.82	22.11	22.85	24.00
		6	0	21.38	22.16	22.54	23.20
	16QAM	1	0	21.55	22.12	22.18	23.20
		1	2	21.32	21.97	22.37	23.20
		1	5	21.38	22.02	22.01	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	22.24	23.17	23.79	24.00
		1	7	22.18	22.91	23.87	24.00
		1	14	22.08	23.05	22.34	24.00
		8	0	21.71	21.87	21.79	23.20
		8	4	21.87	22.04	21.74	23.20
		8	7	21.82	22.29	21.56	23.20

	16QAM	15	0	21.27	21.85	21.36	23.20
		1	0	21.05	21.64	22.17	23.20
		1	7	21.39	21.78	22.40	23.20
		1	14	21.53	21.83	21.87	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	22.24	23.21	23.05	24.00
		1	13	22.46	23.59	23.32	24.00
		1	24	22.46	23.28	23.13	24.00
		12	0	21.12	22.14	22.36	23.20
		12	6	21.33	22.22	22.34	23.20
		12	13	21.25	22.24	22.52	23.20
		25	0	22.36	22.12	21.78	23.20
	16QAM	1	0	21.35	21.31	22.14	23.20
		1	13	21.29	21.52	22.12	23.20
		1	24	21.05	21.59	22.21	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	22.82	23.02	23.14	24.00
		1	25	23.33	23.28	23.21	24.00
		1	49	23.04	23.17	23.18	24.00
		25	0	22.01	22.06	22.27	23.20
		25	13	22.06	22.16	22.12	23.20
		25	25	22.06	22.13	22.11	23.20
		50	0	21.71	21.85	21.88	23.20
	16QAM	1	0	22.75	22.81	22.68	23.20
		1	25	22.62	22.41	23.02	23.20
		1	49	22.64	22.70	22.34	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	23.42	22.99	22.55	24.00
		1	38	23.28	23.34	22.62	24.00
		1	74	23.12	23.14	22.46	24.00
		36	0	22.27	22.06	21.49	23.20
		36	18	22.24	21.99	21.36	23.20
		36	39	22.13	21.82	21.47	23.20
		75	0	22.06	21.91	21.38	23.20
	16QAM	1	0	22.23	22.26	22.29	23.20
		1	38	22.38	22.37	22.36	23.20
		1	74	22.12	22.29	22.31	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	23.42	23.29	22.77	24.00

		1	50	23.51	23.22	22.61	24.00
		1	99	23.15	23.14	22.83	24.00
		50	0	22.36	22.09	21.91	23.20
		50	25	22.30	22.13	21.69	23.20
		50	50	22.26	22.08	21.77	23.20
		100	0	21.85	21.83	21.68	23.20
	16QAM	1	0	22.44	22.27	22.05	23.20
		1	50	22.66	22.39	22.08	23.20
		1	99	22.22	22.14	21.62	23.20
LTE Band 4							
Full Power				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	23.14	23.09	22.56	24.00
		1	2	23.18	22.84	22.83	24.00
		1	5	22.76	22.52	22.86	24.00
		3	0	22.05	22.06	22.11	24.00
		3	2	22.17	22.24	22.14	24.00
		3	3	22.14	21.99	22.08	24.00
		6	0	21.76	21.84	21.95	23.20
	16QAM	1	0	21.66	21.31	21.35	23.20
		1	2	21.33	21.44	21.66	23.20
		1	5	21.49	21.37	21.59	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	23.55	23.35	22.88	24.00
		1	7	23.67	23.21	23.36	24.00
		1	14	23.59	23.14	22.91	24.00
		8	0	22.08	22.27	22.11	23.20
		8	4	22.22	22.19	22.15	23.20
		8	7	22.11	22.18	22.03	23.20
		15	0	22.60	22.61	22.49	23.20
	16QAM	1	0	21.84	21.87	21.67	23.20
		1	7	21.43	21.22	21.32	23.20
		1	14	21.08	21.20	21.13	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	23.62	23.67	23.57	24.00
		1	13	23.56	23.86	23.96	24.00
		1	24	23.34	23.58	23.95	24.00
		12	0	22.74	22.54	22.53	23.20
		12	6	22.77	22.63	22.54	23.20
		12	13	22.72	22.59	22.73	23.20

		25	0	22.73	22.63	22.63	23.20
	16QAM	1	0	22.89	22.48	22.62	23.20
		1	13	22.67	22.51	22.72	23.20
		1	24	22.93	22.58	22.74	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	23.71	23.78	23.47	24.00
		1	25	23.76	23.72	23.64	24.00
		1	49	23.48	23.45	23.71	24.00
		25	0	22.91	22.78	22.75	23.20
		25	13	22.86	22.94	22.85	23.20
		25	25	22.83	22.59	22.79	23.20
		50	0	22.74	22.66	22.71	23.20
	16QAM	1	0	22.51	22.91	22.79	23.20
		1	25	22.87	22.63	22.41	23.20
		1	49	22.93	22.23	22.49	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	23.72	23.69	23.43	24.00
		1	38	23.79	23.64	23.47	24.00
		1	74	23.55	23.51	23.63	24.00
		36	0	22.67	22.57	22.46	23.20
		36	18	22.52	22.44	22.57	23.20
		36	39	22.62	22.61	22.47	23.20
		75	0	22.61	22.41	22.44	23.20
	16QAM	1	0	22.97	22.81	22.75	23.20
		1	38	23.15	23.06	22.64	23.20
		1	74	22.65	22.52	22.67	23.20
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	23.87	23.56	23.71	24.00
		1	50	23.74	23.83	23.66	24.00
		1	99	23.64	23.46	23.72	24.00
		50	0	22.85	22.66	22.66	23.20
		50	25	22.75	22.47	22.59	23.20
		50	50	22.78	22.61	22.65	23.20
		100	0	22.81	22.64	22.59	23.20
	16QAM	1	0	22.52	22.99	22.85	23.20
		1	50	22.78	22.42	22.77	23.20
		1	99	22.46	22.31	22.73	23.20
LTE Band 5							
Full Power				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB	Offset	Channel/Frequency(MHz)			

		Allocation		20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	22.99	22.85	22.99	24.00
		1	2	22.86	22.89	23.06	24.00
		1	5	22.93	22.96	22.96	24.00
		3	0	23.05	23.10	23.02	24.00
		3	2	23.06	23.07	22.92	24.00
		3	3	23.11	23.13	22.93	24.00
		6	0	22.05	22.06	21.98	23.00
	16QAM	1	0	21.94	21.65	21.93	23.00
		1	2	22.07	22.03	22.02	23.00
		1	5	22.11	21.82	21.51	23.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.01	22.96	23.02	24.00
		1	7	22.94	23.31	22.91	24.00
		1	14	22.86	22.94	22.83	24.00
		8	0	21.97	22.16	22.08	23.00
		8	4	21.87	22.15	22.13	23.00
		8	7	21.87	22.12	21.93	23.00
		15	0	21.92	21.95	21.94	23.00
	16QAM	1	0	21.72	21.76	21.81	23.00
		1	7	21.86	22.07	22.34	23.00
		1	14	21.78	22.12	21.88	23.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	22.92	23.03	23.02	24.00
		1	13	23.04	23.11	22.92	24.00
		1	24	23.08	22.94	22.84	24.00
		12	0	21.96	22.11	22.03	23.00
		12	6	21.84	21.99	22.08	23.00
		12	13	21.81	22.08	21.91	23.00
		25	0	21.84	21.96	21.96	23.00
	16QAM	1	0	21.69	22.12	21.56	23.00
		1	13	22.09	22.17	21.82	23.00
		1	24	21.85	21.95	21.59	23.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	23.01	23.17	22.79	24.00
		1	25	23.15	23.37	23.02	24.00
		1	49	23.32	23.15	22.97	24.00
		25	0	21.96	22.12	21.95	23.00
		25	13	22.02	22.11	21.96	23.00
		25	25	22.05	22.07	22.11	23.00

		50	0	22.29	22.06	21.92	23.00
	16QAM	1	0	22.21	22.16	21.87	23.00
		1	25	22.06	22.12	22.07	23.00
		1	49	22.01	22.01	21.74	23.00
LTE Band 12							
Full Power				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	23.07	23.05	23.17	24.00
		1	2	23.27	23.19	23.18	24.00
		1	5	23.21	23.13	23.01	24.00
		3	0	23.16	22.79	22.99	24.00
		3	2	23.25	23.21	23.05	24.00
		3	3	23.03	23.02	22.97	24.00
		6	0	22.24	22.01	22.09	23.00
	16QAM	1	0	22.09	22.14	22.34	23.00
		1	2	22.47	22.11	22.20	23.00
		1	5	22.14	22.16	22.02	23.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	22.94	23.18	23.33	24.00
		1	7	23.15	23.07	23.54	24.00
		1	14	23.12	22.76	23.00	24.00
		8	0	22.23	22.16	22.43	23.00
		8	4	22.47	22.12	22.27	23.00
		8	7	22.41	22.07	22.29	23.00
		15	0	22.17	22.06	22.06	23.00
	16QAM	1	0	22.01	22.08	22.53	23.00
		1	7	22.33	22.18	22.39	23.00
		1	14	22.03	21.84	21.99	23.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	23.11	23.11	23.07	24.00
		1	13	23.51	23.39	23.27	24.00
		1	24	23.37	23.01	22.93	24.00
		12	0	22.21	22.15	22.10	23.00
		12	6	22.19	22.02	22.24	23.00
		12	13	22.21	22.01	22.05	23.00
		25	0	22.27	22.02	22.11	23.00
	16QAM	1	0	22.18	22.06	21.98	23.00
		1	13	22.46	22.19	22.06	23.00
		1	24	22.05	21.87	21.58	23.00
Bandwidth	Modulation	RB	Offset	Channel/Frequency(MHz)			Tune-up

		Allocation		23060/704	23095/707.5	23130/711	
10MHz	QPSK	1	0	23.07	22.84	22.76	24.00
		1	25	23.32	23.16	23.08	24.00
		1	49	23.03	22.83	22.86	24.00
		25	0	22.09	22.08	22.13	23.00
		25	13	22.31	22.09	22.49	23.00
		25	25	22.13	21.99	22.24	23.00
		50	0	22.04	21.95	22.04	23.00
	16QAM	1	0	21.31	21.76	21.63	23.00
		1	25	21.85	22.09	21.95	23.00
1		49	21.53	21.64	21.66	23.00	
LTE Band 13							
Full Power				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				23205/779.5	23230/782	23255/784.5	
5MHz	QPSK	1	0	23.01	23.22	23.18	24.00
		1	13	23.33	23.45	23.74	24.00
		1	24	23.24	23.15	23.27	24.00
		12	0	22.97	22.15	22.01	23.00
		12	6	22.21	22.13	22.11	23.00
		12	13	22.19	22.22	22.18	23.00
		25	0	22.17	22.09	22.11	23.00
	16QAM	1	0	21.91	22.11	21.54	23.00
		1	13	22.08	22.63	22.26	23.00
1		24	21.84	21.78	21.85	23.00	
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				/	23230/782	/	
10MHz	QPSK	1	0	/	23.01	/	24.00
		1	25	/	23.05	/	24.00
		1	49	/	23.02	/	24.00
		25	0	/	22.16	/	23.00
		25	13	/	22.17	/	23.00
		25	25	/	22.22	/	23.00
		50	0	/	22.19	/	23.00
	16QAM	1	0	/	22.07	/	23.00
		1	25	/	22.08	/	23.00
1		49	/	22.18	/	23.00	