



NB-IOT Power

Band 2 (1900MHz Band) Part 24E										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				1860.1	1890	1919.9	24	0		
Frequency (MHz)				1850.1	1880	1909.9				
3.75	BPSK	1	0	22.18	22.15	22.18				
3.75	BPSK	1	47	22.14	22.15	22.13				
3.75	QPSK	1	0	22.19	22.17	22.18				
3.75	QPSK	1	47	22.16	22.19	22.17				
15	BPSK	1	0	22.19	22.34	22.21				
15	BPSK	1	11	22.22	22.26	22.25				
15	QPSK	1	0	22.20	22.26	22.23				
15	QPSK	1	11	22.25	22.27	22.20				
15	QPSK	12	0	20.10	20.18	20.16			22	2

Band 4										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				19951	20175	20399	24	0		
Frequency (MHz)				1710.1	1732.5	1754.9				
3.75	BPSK	1	0	22.49	22.41	22.48				
3.75	BPSK	1	47	22.44	22.47	22.47				
3.75	QPSK	1	0	22.48	22.41	22.48				
3.75	QPSK	1	47	22.44	22.46	22.46				
15	BPSK	1	0	22.64	22.70	22.66				
15	BPSK	1	11	22.66	22.64	22.67				
15	QPSK	1	0	22.65	22.66	22.61				
15	QPSK	1	11	22.64	22.62	22.62				
15	QPSK	12	0	20.74	20.78	20.76			22	2

Band 5 (Cellular Band) Part 22H(only on channel required)										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				20401	20525	20649	24	0		
Frequency (MHz)				824.1	836.5	848.9				
3.75	BPSK	1	0	22.05	22.06	22.05				
3.75	BPSK	1	47	22.03	22.02	22.02				
3.75	QPSK	1	0	22.03	22.06	22.03				
3.75	QPSK	1	47	22.05	22.04	22.07				
15	BPSK	1	0	22.94	23.05	23.02				
15	BPSK	1	11	22.99	23.01	22.96				
15	QPSK	1	0	22.99	23.00	22.96				
15	QPSK	1	11	22.99	23.00	22.98				
15	QPSK	12	0	21.03	21.04	21.01			22	2



Band 12 (700MHz Low Band) Part 27F(only on channel required)										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				23011	23095	23179				
Frequency (MHz)				699.1	707.5	715.9				
3.75	BPSK	1	0	22.91	22.93	22.99	24	0		
3.75	BPSK	1	47	22.96	22.94	22.91				
3.75	QPSK	1	0	22.98	22.96	22.92				
3.75	QPSK	1	47	22.94	22.98	22.94				
15	BPSK	1	0	23.04	23.09	23.03				
15	BPSK	1	11	23.03	23.03	23.02				
15	QPSK	1	0	23.02	23.06	23.04				
15	QPSK	1	11	23.06	23.05	23.03				
15	QPSK	12	0	20.34	20.36	20.31			22	2

Band 13(700MHz Band) Part 27F										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				23181	23230	23279				
Frequency (MHz)				777.1	782	786.9				
3.75	BPSK	1	0	22.75	22.71	22.75	24	0		
3.75	BPSK	1	47	22.72	22.71	22.75				
3.75	QPSK	1	0	22.78	22.74	22.73				
3.75	QPSK	1	47	22.72	22.72	22.77				
15	BPSK	1	0	23.12	23.19	23.06				
15	BPSK	1	11	23.07	23.08	23.07				
15	QPSK	1	0	23.06	23.07	23.14				
15	QPSK	1	11	23.06	23.12	23.12				
15	QPSK	12	0	21.13	21.15	21.11			22	2

Band 17 (700MHz Band) Part 27H(only on channel required)										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				23731	23790	23849				
Frequency (MHz)				704.1	710	715.9				
3.75	BPSK	1	0	22.42	22.47	22.50	24	0		
3.75	BPSK	1	47	22.43	22.47	22.48				
3.75	QPSK	1	0	22.49	22.46	22.44				
3.75	QPSK	1	47	22.47	22.50	22.42				
15	BPSK	1	0	22.55	22.67	22.57				
15	BPSK	1	11	22.60	22.59	22.54				
15	QPSK	1	0	22.53	22.56	22.58				
15	QPSK	1	11	22.58	22.53	22.60				
15	QPSK	12	0	20.21	20.38	20.25			22	2



Band 25 (1900MHz Band) Part 24E										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				26041	26365	26689				
Frequency (MHz)				1850.1	1882.5	1914.9				
3.75	BPSK	1	0	22.32	22.29	22.26	24	0		
3.75	BPSK	1	47	22.33	22.31	22.33				
3.75	QPSK	1	0	22.26	22.33	22.26				
3.75	QPSK	1	47	22.28	22.31	22.29				
15	BPSK	1	0	22.37	22.45	22.44				
15	BPSK	1	11	22.38	22.41	22.37				
15	QPSK	1	0	22.40	22.40	22.42				
15	QPSK	1	11	22.39	22.42	22.37				
15	QPSK	12	0	20.26	20.35	20.31			22	2

Band 66										
Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel				131973	132322	132671				
Frequency (MHz)				1710.1	1745	1779.9				
3.75	BPSK	1	0	22.61	22.67	22.65	24	0		
3.75	BPSK	1	47	22.68	22.63	22.62				
3.75	QPSK	1	0	22.65	22.65	22.62				
3.75	QPSK	1	47	22.65	22.60	22.65				
15	BPSK	1	0	22.82	22.89	22.88				
15	BPSK	1	11	22.82	22.82	22.82				
15	QPSK	1	0	22.81	22.80	22.82				
15	QPSK	1	11	22.88	22.87	22.85				
15	QPSK	12	0	20.79	20.97	20.85			22	2



Band 12											
BW (MHz)	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				L	M	H	23050	23095	23130	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				L	M	H	762	771			
10	QPSK	1	0	0	0	7	22.01	22.08	21.97	24.00	0
10	QPSK	1	5	0	0	7	21.95	22.07	21.96		
10	QPSK	3	0	0	0	7	22.83	22.84	22.86		
10	QPSK	3	3	0	0	7	22.76	22.87	22.79		
10	QPSK	6	0	0	0	7	21.10	21.21	21.08		
10	16QAM	1	0	0	0	7	22.60	22.71	22.69	23.00	1
10	16QAM	1	5	0	0	7	22.70	22.84	22.76		
10	16QAM	3	0	0	0	7	22.16	22.24	22.16		
10	16QAM	3	3	0	0	7	22.27	22.41	22.29		
10	16QAM	5	0	0	0	7	21.12	21.20	21.08		
Channel				L	M	H	23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				L	M	H	701.5	707.5	713.5		
5	QPSK	1	0	0	0	3	21.91	22.00	21.86	23.00	0
5	QPSK	1	5	0	0	3	21.86	21.96	21.85		
5	QPSK	3	0	0	0	3	21.11	21.17	21.08		
5	QPSK	3	3	0	0	3	21.14	21.23	21.12		
5	QPSK	6	0	0	0	3	21.13	21.23	21.11		
5	16QAM	1	0	0	0	3	22.52	22.58	22.52	24.00	0
5	16QAM	1	5	0	0	3	22.58	22.76	22.68		
5	16QAM	3	0	0	0	3	21.12	21.22	21.12		
5	16QAM	3	3	0	0	3	21.13	21.21	21.10		
5	16QAM	5	0	0	0	3	20.13	20.19	20.07		
Channel				L	M	H	23025	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				L	M	H	700.5	707.5	714.5		
3	QPSK	1	0	0	0	1	21.88	21.99	21.87	24.00	0
3	QPSK	1	5	0	0	1	21.85	21.96	21.82		
3	QPSK	3	0	0	0	1	21.13	21.22	21.06		
3	QPSK	3	3	0	0	1	21.13	21.16	21.10		
3	QPSK	6	0	0	0	1	20.12	20.21	20.09		
3	16QAM	1	0	0	0	1	21.13	21.18	21.06	23.00	1
3	16QAM	1	5	0	0	1	21.15	21.20	21.10		
3	16QAM	3	0	0	0	1	20.13	20.17	20.08		
3	16QAM	3	3	0	0	1	20.15	20.19	20.10		
3	16QAM	5	0	0	0	1	20.10	20.16	20.08		
Channel				L	M	H	23010	23095	23113	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				L	M	H	699.7	707.5	715.3		
1.4	QPSK	1	0	0	0	0	21.89	21.96	21.87	24.00	0
1.4	QPSK	1	5	0	0	0	21.84	21.95	21.85		
1.4	QPSK	3	0	0	0	0	21.14	21.19	21.06		
1.4	QPSK	3	3	0	0	0	21.16	21.17	21.07		
1.4	QPSK	6	0	0	0	0	20.14	20.17	20.12		
1.4	16QAM	1	0	0	0	0	21.10	21.19	21.12	23.00	1
1.4	16QAM	1	5	0	0	0	21.14	21.19	21.10		
1.4	16QAM	3	0	0	0	0	20.15	20.23	20.07		
1.4	16QAM	3	3	0	0	0	20.13	20.21	20.12		
1.4	16QAM	5	0	0	0	0	20.16	20.22	20.06		

Band 13											
BW (MHz)	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				L	M	H	23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				L	M	H	762	762			
10	QPSK	1	0	0	0	7	22.68			24.00	0
10	QPSK	1	5	0	0	7	22.45				
10	QPSK	3	0	0	0	7	23.65				
10	QPSK	3	3	0	0	7	23.62				
10	QPSK	6	0	0	0	7	21.72				
10	16QAM	1	0	0	0	7	22.61			23.00	1
10	16QAM	1	5	0	0	7	21.68				
10	16QAM	3	0	0	0	7	22.63				
10	16QAM	3	3	0	0	7	22.59				
10	16QAM	5	0	0	0	7	21.68				
Channel				L	M	H	23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				L	M	H	779.5	782	784.5		
5	QPSK	1	0	0	0	3	22.55	22.55	22.54	24.00	0
5	QPSK	1	5	0	0	3	22.34	22.38	22.35		
5	QPSK	3	0	0	0	3	21.66	21.69	21.66		
5	QPSK	3	3	0	0	3	21.68	21.70	21.64		
5	QPSK	6	0	0	0	3	21.68	21.66	21.67		
5	16QAM	1	0	0	0	3	22.52	22.47	22.51	24.00	0
5	16QAM	1	5	0	0	3	21.60	21.58	21.59		
5	16QAM	3	0	0	0	3	21.70	21.69	21.63		
5	16QAM	3	3	0	0	3	21.69	21.69	21.66		
5	16QAM	5	0	0	0	3	20.69	20.67	20.67		