

Shen Zhen Yixun Electronic Technology Co., Ltd.

Tune-up (dBm) procedure

This is to formally certify that:

The tune up procedures of Mobile Phone (FCC ID:2AQ8SCHAPERONT200)

The tune up procedures of is not open to end user. The end user is not allowed to perform final tune. All the power and frequency set up were finished at the manufacturer stage.

Tune up procedure shall be over the power range or at specific operating power levels.

Procedure:

1. Set the phone to operational voltage and on one certain channel in a special service mode by means of company proprietary software.
2. The actual power is measured at several power levels.
3. The gain factors of each individual phone are adjusted via the Board-test SW using automatic adjustment arithmetic until the Tune-up Range (dBm) value is met.

It must provide an operational voltage (DC 3.7V by battery) to turn on the device and on one certain channel in service mode by means of company proprietary software. spectrum analyzer(Agilent, N9020A) and Power meter

(DARE, RPR3006W)measures the 2.4G device specific RF characteristics.

Base station simulator (R&S CMW500) measures the 2G/3G/4G device specific RF characteristics. The maximum power of each individual channels are adjusted until the target value met.

Band GSM850	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	128	189	251
Frequency (MHz)		824.2	836.4	848.8
GSM (GMSK)	33.00	32.38	32.62	32.47
GPRS(GMSK,1 Tx slot)	33.00	32.40	32.64	32.46
GPRS(GMSK,2 Tx slot)	31.00	30.48	30.57	30.41
GPRS(GMSK,3 Tx slot)	29.00	28.50	28.60	28.44
GPRS(GMSK,4 Tx slot)	26.50	26.30	26.37	26.22
EGPRS(8PSK,1 Tx slot)	27.50	26.98	27.16	27.18
EGPRS(8PSK,2 Tx slot)	27.00	26.19	26.55	25.92
EGPRS(8PSK,3 Tx slot)	24.00	22.91	23.88	23.04
EGPRS(8PSK,4 Tx slot)	22.50	21.02	22.13	21.39
Band GSM1900	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	512	661	810
Frequency (MHz)		1850.2	1880.0	1909.8
GSM (GMSK)	30.00	29.51	29.52	29.44
GPRS(GMSK,1 Tx slot)	29.50	29.46	29.47	29.40
GPRS(GMSK,2 Tx slot)	28.00	27.51	27.25	27.20
GPRS(GMSK,3 Tx slot)	26.00	25.89	25.63	25.34

GPRS(GMSK,4 Tx slot)	24.00	23.88	23.56	23.31
EGPRS(8PSK,1 Tx slot)	27.50	26.67	27.38	26.16
EGPRS(8PSK,2 Tx slot)	26.50	26.02	25.71	25.07
EGPRS(8PSK,3 Tx slot)	25.00	24.48	24.95	23.94
EGPRS(8PSK,4 Tx slot)	22.00	21.07	21.71	20.84

Band	WCDMA Band 2			
Tx Channel	Tune-up	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC 12.2Kbps	22.50	22.35	22.39	22.41
HSDPA Subtest-1	22.50	22.45	22.22	22.26
HSDPA Subtest-2	22.50	22.02	22.04	21.93
HSDPA Subtest-3	22.00	21.74	21.66	21.73
HSDPA Subtest-4	22.00	21.31	21.35	21.62
HSUPA Subtest-1	22.50	22.30	22.11	22.04
HSUPA Subtest-2	22.50	22.38	22.20	22.26
HSUPA Subtest-3	22.50	22.07	21.94	21.83
HSUPA Subtest-4	22.50	22.32	21.95	22.07
HSUPA Subtest-5	22.50	22.07	22.12	22.10
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC12.2K	23.00	22.51	22.25	22.13
HSDPA Sub 1	23.00	22.83	22.22	21.97
HSDPA Sub 2	22.50	22.30	21.92	21.68
HSDPA Sub 3	22.00	21.78	21.82	21.59
HSDPA Sub 4	22.00	21.73	21.54	21.29
HSUPA Sub 1	23.00	22.54	21.98	21.86
HSUPA Sub 2	23.00	22.71	22.18	21.93
HSUPA Sub 3	22.00	21.97	21.98	21.68
HSUPA Sub 4	23.00	22.68	22.08	22.00
HSUPA Sub 5	22.50	22.16	22.07	21.84

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	23.50	22.94	23.15	23.20
			1	2	23.50	23.06	23.11	23.21
			1	5	23.50	22.95	23.06	23.18
			3	0	23.50	23.00	23.01	23.04
			3	1	23.50	23.06	23.05	23.05
			3	2	23.50	23.01	22.95	23.05
			6	0	22.50	21.87	21.98	22.09
		16QAM	1	0	23.00	22.96	22.10	22.27
			1	2	23.00	22.88	22.15	22.44
			1	5	23.00	22.97	22.05	22.31
			3	0	22.50	22.12	22.04	22.46
			3	1	22.50	22.09	22.05	22.47
			3	2	22.50	22.12	21.97	22.42
			6	0	21.50	20.97	21.10	21.28
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	23.50	22.99	23.15	23.02
			1	7	23.50	22.95	23.14	22.98
			1	14	23.50	22.93	23.05	23.01
			8	0	22.50	21.91	21.91	22.06
			8	4	22.50	21.95	21.90	21.95
			8	7	22.50	21.89	21.89	22.01
			15	0	22.00	21.90	21.96	21.99
		16QAM	1	0	23.50	23.06	22.12	22.68
			1	7	23.50	22.94	22.07	22.67
			1	14	23.50	23.06	22.10	22.69
			8	0	21.50	20.93	21.11	21.24
			8	4	21.50	20.93	21.09	21.26
			8	7	21.50	20.92	21.16	21.27
			15	0	21.50	21.07	21.05	21.16
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	23.50	22.91	22.97	22.84
			1	12	23.50	22.83	23.00	22.84
			1	24	23.50	22.88	22.92	22.83
			12	0	22.00	21.91	21.95	21.87
			12	6	22.00	21.90	22.00	21.87
			12	11	22.00	21.87	21.88	21.96
			25	0	22.00	21.89	22.00	21.88
		16QAM	1	0	22.50	21.94	22.08	21.95

			1	12	22.50	21.88	22.05	21.97
			1	24	22.50	21.95	22.10	21.98
			12	0	21.50	21.01	20.94	20.99
			12	6	21.50	20.94	20.91	20.95
			12	11	21.50	20.98	20.92	21.01
			25	0	21.50	20.93	21.18	20.94
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band 2	10MHz	QPSK	1	0	23.50	22.93	22.93	23.17
			1	24	23.50	22.97	22.99	23.18
			1	49	23.50	22.89	22.97	23.18
			25	0	22.50	21.96	21.98	21.94
			25	12	22.50	21.96	21.89	21.94
			25	24	22.50	21.92	22.00	22.02
		16QAM	50	0	22.50	21.84	22.07	22.07
			1	0	23.50	22.99	22.04	22.32
			1	24	23.50	23.03	22.07	22.38
			1	49	23.50	23.05	22.05	22.37
			25	0	21.50	20.91	20.97	21.14
			25	12	21.50	21.01	21.00	21.12
			25	24	21.50	20.92	21.03	21.05
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band 2	15MHz	QPSK	1	0	23.50	22.92	22.94	22.86
			1	37	23.50	22.87	23.04	22.83
			1	74	23.50	22.90	22.95	22.81
			36	0	22.50	21.95	22.02	21.96
			36	18	22.50	21.94	22.01	21.96
			36	37	22.50	21.91	21.98	22.05
		16QAM	75	0	22.50	21.89	21.89	22.09
			1	0	23.50	23.11	22.68	22.85
			1	37	23.50	23.03	22.65	22.83
			1	74	23.50	23.04	22.64	22.82
			36	0	21.50	21.16	21.07	20.95
			36	18	21.50	21.02	21.15	20.96
			36	37	21.50	20.98	21.12	21.00
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	23.50	23.24	22.97	22.95
			1	49	23.50	23.10	22.95	22.83
			1	99	23.50	23.14	22.95	22.96
			50	0	22.50	22.02	21.96	22.11
			50	24	22.50	21.85	21.95	21.99
			50	49	22.50	21.88	21.95	22.13

			100	0	22.50	21.93	22.13	22.10
		16QAM	1	0	22.50	22.31	21.59	22.22
			1	49	22.50	22.28	21.65	22.20
			1	99	22.50	22.32	21.66	22.25
			50	0	21.50	21.26	21.19	21.10
			50	24	21.50	21.08	21.20	21.09
			50	49	21.50	21.03	21.19	21.13

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band 4	1.4MHz	QPSK	1	0	23.50	21.94	23.25	23.19
			1	2	23.50	23.00	23.31	23.13
			1	5	23.50	23.00	23.26	23.05
			3	0	23.50	23.15	23.12	23.13
			3	1	23.50	22.58	23.08	23.15
			3	2	23.50	22.84	23.17	23.11
		16QAM	6	0	22.50	22.19	22.15	22.00
			1	0	23.00	22.59	22.48	22.66
			1	2	23.00	22.29	22.32	22.70
			1	5	23.00	22.80	22.36	22.78
			3	0	23.00	22.22	22.52	22.04
			3	1	23.00	22.10	22.56	22.04
			3	2	23.00	22.17	22.52	22.01
			6	0	21.50	20.93	21.26	21.00
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	23.50	23.04	23.01	23.26
			1	7	23.50	22.99	23.02	23.22
			1	14	23.50	23.00	23.08	23.27
			8	0	22.50	21.97	22.03	21.94
			8	4	22.50	22.08	22.09	21.91
			8	7	22.50	22.11	22.07	22.03
		16QAM	15	0	22.50	22.05	22.05	22.01
			1	0	23.50	23.22	22.79	21.67
			1	7	23.50	23.16	22.77	21.66
			1	14	23.50	23.17	22.82	21.65
			8	0	21.50	21.06	21.40	21.20
			8	4	21.50	21.11	21.37	21.26
			8	7	21.50	21.02	21.35	21.18
			15	0	21.50	21.28	21.16	21.06
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band	5MHz	QPSK	1	0	23.50	22.98	23.19	22.88
			1	12	23.50	23.01	23.16	22.82

4			1	24	23.50	22.99	23.16	22.95		
			12	0	22.50	22.05	22.05	21.95		
			12	6	22.50	22.03	22.07	21.96		
			12	11	22.50	22.15	22.01	22.01		
			25	0	22.50	22.11	22.09	22.06		
		16QAM	1	0	22.50	22.22	21.71	22.17		
			1	12	22.50	22.22	21.74	22.16		
			1	24	22.50	22.17	21.80	22.16		
			12	0	21.50	21.09	20.97	21.12		
			12	6	21.50	21.07	21.06	21.12		
			12	11	21.50	21.09	21.02	21.12		
			25	0	21.50	21.25	21.25	21.10		
		Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
					RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	23.50	23.02	23.00	22.85		
			1	24	23.50	22.94	23.44	23.05		
			1	49	23.50	23.08	23.33	23.06		
			25	0	22.50	22.06	21.99	22.02		
			25	12	22.50	22.08	22.17	22.01		
			25	24	22.50	22.17	22.08	21.99		
			50	0	22.50	22.05	22.13	21.99		
		16QAM	1	0	23.50	22.43	23.25	21.98		
			1	24	23.50	22.42	23.31	22.01		
			1	49	23.50	22.40	23.31	21.99		
			25	0	21.50	21.16	21.07	21.18		
			25	12	21.50	21.19	21.05	21.19		
			25	24	21.50	21.22	21.12	21.18		
			25	49	21.50	21.22	21.12	21.18		
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)				
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5		
LTE Band 4	15MHz	QPSK	1	0	23.50	23.05	23.08	22.85		
			1	37	23.50	23.04	23.10	22.87		
			1	74	23.50	23.15	23.01	22.89		
			36	0	22.50	21.99	22.01	22.01		
			36	18	22.50	22.10	22.15	22.02		
			36	37	22.50	22.15	22.08	21.98		
			75	0	22.50	22.03	22.14	22.00		
		16QAM	1	0	23.50	23.28	22.90	23.02		
			1	37	23.50	23.24	22.87	22.97		
			1	74	23.50	23.27	22.78	22.96		
			36	0	21.50	21.10	21.32	21.05		
			36	18	21.50	21.14	21.25	21.08		
			36	37	21.50	21.18	21.28	21.06		
			36	74	21.50	21.18	21.28	21.06		
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)				
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745		

LTE Band 4	20MHz	QPSK	1	0	23.50	23.20	23.13	23.29
			1	49	23.50	23.03	23.13	22.92
			1	99	23.50	23.17	23.11	22.98
			50	0	22.50	22.11	22.17	22.10
			50	24	22.50	22.00	22.08	22.02
			50	49	22.50	22.08	22.16	22.09
			100	0	22.50	22.09	22.00	22.11
		16QAM	1	0	22.50	22.03	22.19	22.38
			1	49	22.50	21.96	22.16	22.31
			1	99	22.50	22.06	22.17	22.24
			50	0	21.50	21.12	21.24	21.07
			50	24	21.50	21.17	21.21	21.07
			50	49	21.50	21.13	21.22	21.08

BR+EDR	Output Power (dBm)				
	Data Rates	Tune-up	Channel		
			OCH	39CH	78CH
	1M	10.000	9.558	8.140	8.740
2M	10.000	8.424	9.172	8.995	
3M	10.000	8.430	9.281	9.173	

Nick Zhou

Nick Zhou / Manager

Date/City: 2021-12-07 / Shenzhen
Phone: +86 13620210469
Fax: +86 13620210469
E-mail: 13620210469@163.com