Star Tune up procedure

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

1. It must provide an operational voltage (3.5 ~ 4.2V DC) to turn on the device and on one

   certain channel in service mode by means of company proprietary software.

2. Base station simulator (CMW500) measures the Mobile phone device specific RF characteristics.

3. The maximum gains of each individual device are adjusted until the target value met.

Tune-up Power		
Mode	Frequency Bands	Tune-up Power
GSM	GSM 850	33.0 dBm±1.0
GPRS	GPRS 850 1Txslot	33.0 dBm±1.0
	GPRS 850 2Txslot	32.0 dBm±1.0
	GPRS 850 3Txslot	30.0 dBm±1.0
	GPRS 850 4Txslot	29.0 dBm±1.0
GSM	GSM 1900	29.0 dBm±1.0
GPRS	GPRS 1900 1Txslot	29.0 dBm±1.0
	GPRS 1900 2Txslot	28.0 dBm±1.0
	GPRS 1900 3Txslot	26.0 dBm±1.0
	GPRS 1900 4Txslot	25.0 dBm±1.0
WCDMA Band II	RMC 12.2kbps	22.0dBm ±1.0
	HSDPA	22.0dBm ±1.0
	HSUPA	22.0dBm ±1.0
WCDMA Band V	RMC 12.2kbps	23.0dBm ±1.0
	HSDPA	22.0dBm ±1.0
	HSUPA	22.0dBm ±1.0
WCDMA Band IV	RMC 12.2Kbps	23.0dBm ±1.0
	HSDPA	22.0dBm ±1.0
	HSUPA	22.0dBm ±1.0
WIFI	802.11b	15.0 dBm±2.0
	802.11g	13.0 dBm±2.0
	802.11n(HT20)	13.0 dBm±2.0
	802.11n(HT40)	13.0 dBm±2.0
Bluetooth	GFSK	6.0 dBm±2.0
	Pi/4QPSK	6.0 dBm±2.0
	8DPSK	6.0 dBm±2.0
	BLE	2.0 dBm±1.0

Tune-up Power			
Mode	Frequency Bands		Tune-up Power
Band 2	1.4 MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	3 MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	5 MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	10MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	15MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	20MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
Band 4	1.4 MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	3 MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	5 MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	10MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	15MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB
	20MHz	QPSK	23.0dBm±2dB
		16QAM	22.0dBm±2dB

Then these appropriate gain settings are stored in each device individually.

The user has no possibility to change these settings later on, and during manufacturing each device will be individual calibrated. The measurement is done in fully calibrated setup, which is based on a CMW500 base station simulator. Furthermore, the highest power level is verified afterwards in a call measurement on three channels (low, middle and high).