

# 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 (7.6V 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
WCDMA Band II	RMC 12.2kbps	22.5dBm ±1.0
	HSDPA	21.5dBm ±1.0
	HSUPA	20.0dBm ±1.0
WCDMA Band VI	RMC 12.2kbps	22.5dBm ±1.0
	HSDPA	21.5dBm ±1.0
	HSUPA	20.5dBm ±1.0
WCDMA Band V	RMC 12.2kbps	22.5dBm ±1.0
	HSDPA	21.5dBm ±1.0
	HSUPA	21.0dBm ±1.0
LTE Band	LTE Band 2 QASK	22.0dBm ±1.0
	LTE Band 2 16QAM	21.0dBm ±1.0
	LTE Band 4 QASK	24.0dBm ±1.0
	LTE Band 4 16QAM	23.5dBm ±1.0
	LTE Band 5 QASK	19.0dBm ±1.0
	LTE Band 5 16QAM	18.5dBm ±1.0
	LTE Band 7 QASK	26.5dBm ±1.0
	LTE Band 7 16QAM	26.5dBm ±1.0
	LTE Band 12 QASK	20.5dBm ±1.0
	LTE Band 12 16QAM	20.0dBm ±1.0
	LTE Band 13 QASK	20.5dBm ±1.0
	LTE Band 13 16QAM	20.0dBm ±1.0
	LTE Band 14 QASK	21.0dBm ±1.0
	LTE Band 14 16QAM	20.5dBm ±1.0
	LTE Band 17 QASK	20.5dBm ±1.0
	LTE Band 17 16QAM	20.0dBm ±1.0
	LTE Band 25 QASK	24.0dBm ±1.0
	LTE Band 25 16QAM	23.0dBm ±1.0
	LTE Band 26-1 QASK	19.0dBm ±1.0
	LTE Band 26-1 16QAM	18.0dBm ±1.0
	LTE Band 26-2 QASK	19.0dBm ±1.0
	LTE Band 26-2 16QAM	18.5dBm ±1.0
	LTE Band 41 QASK	26.5dBm ±1.0
	LTE Band 41 16QAM	26.0dBm ±1.0
	LTE Band 66 QASK	24.5dBm ±1.0
	LTE Band 66 16QAM	23.5dBm ±1.0
	LTE Band 71 QASK	23.0dBm ±1.0
	LTE Band 71 16QAM	23.0dBm ±1.0
WIFI2.4	802.11b	15.5 dBm±1.0

	802.11g	14.5 dBm±1.0
	802.11n(HT20)	14.0 dBm±1.0
	802.11n(HT40)	14.0 dBm±1.0
Bluetooth	GFSK	8.5 dBm±1.0
	Pi/4QPSK	8.5 dBm±1.0
	8DPSK	9.0 dBm±1.0
BLE	GFSK(1M)	0.0 dBm±1.0

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).