

# 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 (10.5 ~32V 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
LTE Band	LTE Band 2 QASK	24.0dBm ±2.0
	LTE Band 2 16QAM	23.0dBm ±2.0
	LTE Band 4 QASK	24.0dBm ±2.0
	LTE Band 4 16QAM	23.0dBm ±2.0
	LTE Band 5 QASK	24.0dBm ±2.0
	LTE Band 5 16QAM	23.0dBm ±2.0
	LTE Band 12 QASK	24.0dBm ±2.0
	LTE Band 12 16QAM	23.0dBm ±2.0
	LTE Band 17 QASK	25.0dBm ±2.0
LTE Band 17 16QAM	25.0dBm ±2.0	

WIFI	802.11b	13.5 dBm±1.5
	802.11g	12.0 dBm±1.5
	802.11n(HT20)	12.0 dBm±1.5
Bluetooth	GFSK	2.0 dBm±2.5
	Pi/4QPSK	2.0 dBm±2.5
	8DPSK	2.0 dBm±2.5
BLE	GFSK	-6.2 dBm±1.5

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).