

1. Overview

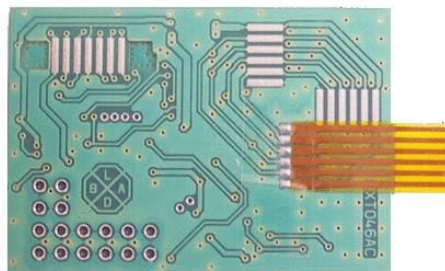
Turbo Motion is a unique accelerometer equipped mobile phone accessory for movement detection. Working with any SIM Toolkit enabled mobile phone (all mobile phones produced since 1999) it is ideal to use with abandoned or recycled mobile phones as a car alarm that requires no in-car installation.



Top view

2. Features

- **Dual Axis Accelerometer +/- 2g**
- **13 digital I/O, 4 of them usable as ADC inputs**
- **SIM Toolkit based, compatible with any SIM Toolkit enabled GSM mobile phone or module**
- **Comes with preinstalled Auto Alarm application for vehicle movement detection**
- **Loadable applications**
- **Upgradable freely available firmware**
- **Open and well documented application development**
- **Open source and free development tool chain**



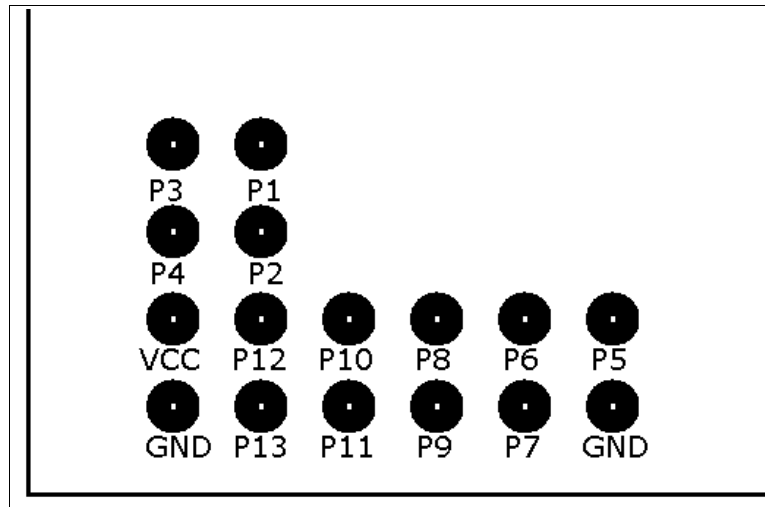
Bottom side

3. Software

Turbo Motion is software (both application and firmware) compatible with family of **Turbo SIM Toolkit Adapters** produced by **BLADOX**. The preinstalled **Auto Alarm** application is easy to use vehicle movement detection alarm that requires no in-car installation. Applications can be loaded and removed via data cable with AT commands for SMS handling.

The firmware (kernel) can be upgraded by bootloader procedure with the help of **Turbo Programmer**.

4. Electrical Characteristics



Pinout

Pin Description

Turbo Lite Pin	ATmega128 Pin	Function
P1	PF2	ANALOG I / DIGITAL I/O
P2	PF5	ANALOG I / DIGITAL I/O
P3	PF3	ANALOG I / DIGITAL I/O
P4	PF6	ANALOG I / DIGITAL I/O
P5	PG1	DIGITAL I/O
P6	PC2	DIGITAL I/O
P7	PC1	DIGITAL I/O
P8	PC6	DIGITAL I/O
P9	PC4	DIGITAL I/O
P10	PA7	DIGITAL I/O
P11	PC7	DIGITAL I/O
P12	PA4	DIGITAL I/O
P13	PA6	DIGITAL I/O

Note

VCC pin voltage depends on mobile equipment used, typically 3V +/-10%. Maximum power supply current from VCC is 10mA. Application should avoid to exceed this value. Use optocouplers with high Current Transfer Ratio (CTR) for isolation. See www.bladox.com for schematics.

Size

The PCB size is 44x30x3 mm.