



## MOBILE ROBOTICS

### KOALA 2.5

#### Main Features:

- Compact size
- Easy to Use
- High modularity
- Powerful Embedded Computing Power
- Swappable battery pack, docking ready
- Multiple sensor arrays
- High quality and high accuracy DC motors and gearbox
- Indoor or outdoor use
- Various fixation points for extensions
- Experiments on a full size platform
- Easy transportability (to other laboratories, conferences, etc.)

#### Possible Applications:

- Telemanipulation
- Mapping, Path planning and navigation study
- Object research and recognition
- Surveillance
- Object transport
- Tour Guide
- Advanced Electronics demonstration
- Artificial intelligence study

#### Koala Specifications:

- PicoITX mainboard running Linux on Dual Core Intel Atom N2800 1.86GHz with Hyper Threading
- RAM 4 GB, 40 GB of SSD
- Motion: 2 DC brushed motors with incremental encoders
- Max Speed: 0.6 m/s directly, and 0.38 m/s using factory default PID speed controller  
Min: 0.005 m/s using factory default speed controller
- 9x Ultrasonic sensors for navigation
- 3-axis accelerometer, 3-axis gyroscope and 3 axis magnetometer
- Navigation: Onboard GPS
- Power Swappable battery pack Lipo 5Ah / 11.1V, Autonomy 2 to 4 hours
- 1x VGA connector, 1x microphone in, 1x line out, 1x I2C (3.3V)
- 2x USB 2.0 ports (500mA), 1x serial port, 1x Ethernet 10/100/1000
- 4x Power output – 24V / 3A total (open drain)
- 4x Input / Output (0 – 3.3V). Can be configured to manage a servo motor (PWM)
- 2x Analog Input (0 - 3.3V)
- Available voltage : 3.3V – 1.85A, 5V – 1.85A, 12V – 3A direct from the battery
- Ready for docking, 15 V in and I2C communication

- Length : 32 cm, Width : 32cm, Height : 14.5 cm
- Clearance 30 mm
- Turn Radius 0 cm
- Maximum Slope Transversal: 43 degrees
- Weight Approx 4500 g
- Payload Approx 3500 g
- Operating temperature 0°C to 50°C
- Development Environment for Autonomous Application GNU C/C++ compiler
- Swiss made



### Extensions available



#### PAN TILT Stereo camera

Stereoscopic camera for distance sensing and object recognition. Can be delivered with a Pan-Tilt system for an almost unlimited angle of view.

features:

- Pixel synchronous Dual camera streams
- WVGA 752(H) x 480(V) (360690 pixels) sensors output 736(H)x480(V) images in 8-bit greyscale format.



#### Battery pack

Already included in the autonomous Koala package, the intelligent battery pack on Koala has several very interesting features:

- Can be easily plugged in and out of the Koala
- Can be recharged externally or while inside the robot (delivered with an additional external charger)
- Lithium Polymer battery with a capacity of 5000 mAh