Order Code - 49552
GOLBO-SWARM Robotics Research Platform

- Microcontroller : Atmel ATmega328
- Flash (Kbytes) : 32 Kbytes
- Operating Frequency : 20 MHz
- CPU : 8-bit
- I/O Pins : 20
- Ext Interrupts : 24
- SPI : 1
- TWI (I2C) : 1
- UART : 1
- ADC channels : 5
- ADC Resolution (bits) : 10
- ADC Speed (ksps) : 15
- Analog Comparators : 1
- SRAM (Kbytes) : 1
- Self Program Memory
- I/O Supply Class : 1.8 to 5.5
- Operating Voltage (Vcc) : 1.8 to 5.5
- Programming : ISP programmable with On-chip code transfer program.

USB interface for downloading hex codes

The machine is small, fast moving, low powered indoor moving platform. 3 wheels drive mobile robot utilizing omni wheels. It is capable of moving in any direction by changing the velocity and direction of each wheel without changing its orientation. It include microcontroller, IO expansion board, DC motor with encoder, IR and ultrasonic sensors and pre-drilled screw holes.

Sensors:

Line Finder – 1 Units – Array of 5

- Power supply : 5 V DC
- Indicator LED
- Output: Analog/ digital
- Sensing Distance: Adjustable
- 3mm screw hole for mounting

Ultrasonic range finder - 3 Units

- Supply Voltage – 5 VDC
- Supply Current – 30 mA typ; 35 mA max
- Range – 2 cm to 4 m
- Input Trigger – positive TTL pulse, 2 uS min, 5 µs typ.
- Burst Frequency – 40 kHz for 200 µs
- Burst Indicator LED shows sensor activity
- Delay before next measurement – 200 µs

Analog IR distance sensor- 1 Units

- Operating voltage: 4.5 V to 5.5 V
- Average current consumption: 30 mA (typical)
- Distance measuring range: 10 cm to 80 cm (4" to 32")
- Output type: analog voltage
- Response time: 38 ± 10 ms

Wheel:

- Type: 90º Omni wheel
- Material: Nylon or Aluminium Alloy
- Load Capacity : 15kg
- Material : Rubber or Nylon
- Coupled Mode: Brass Tube or bearings

Communication:

- **Zigbee : 60mW with Wire Antenna : 2 Units**
- 3.3V @ 215mA
- 250kbps Max data rate
- 60mW output (+18dBm)
- 1 mile (1500m) range
- Fully FCC certified
- 6, 10-bit ADC input pins
- 8, digital IO pins
- 128-bit encryption
- Local or over-air configuration
- AT or API command set
- USB interface adapter
- **USB 2.0 Wired Communication**
- **RS232 wired Communication**

Compass:-

- Resolution: 400µG Minimum
- Offset (°) from North 2° Typical

Indications

- 16X2 Alphanumeric Display
- Indicator LEDs
- Piezo Electric Buzzer

Development Application:

- Sample codes: Supporting Microsoft ® Robotics Studio, Microsoft ® Visual Studio,MATLAB ®.

Others:

- Rechargeable Battery: Li-Po 11.1V , 5AH
- Battery Charger
- Switching Interface
- Rework docking station
- Documentation and tutorials
- Necessary set of tool kit
- All required cables and connectors

Note: Specifications are subject to change.

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