RoboCar
Nvis 3302P

Nvis 3302P RoboCar is an electro-mechanical platform with the capability of sensing the environment, processing the data, and acting according to the preprogrammed sequence. It is a miniature prototype car powered by batteries whose motion is controlled by PIC16F877A microcontroller. Various Sensors can be interfaced like IR (Infrared) Sensor, Ultrasonic Sensor, Analog Sensor, and many more. It is a multitasking Robocar that can perform actions such as line follower, obstacle detection with wireless operation with DC motor drive. Robocar displays all action on LCD.

Nvis 3302P RoboCar is a Robot designed for Robotics students. It will help them to get comfortable with the world of Robotics and Embedded Systems.

Features

- **16 x 2 character LCD interface**
- **Ultrasonic Sensor interface**
- **Infrared(IR) Transmitter interface**
- **IR Receiver interface**
- **DC Motor interface & control**
- **Buzzer interface**
- **Switch interface**
- **Expansion connectors**
- **Onboard battery charger**
- **PC based programming**
- **RF module interface(Optional)**
- **Analog Sensor interface (Optional)**

Technical Specifications

MCU	:	PIC16F877A
Crystal Frequency	:	20MHz
DC Power Supplies	:	+8.4V & +5V
Charger Supply	:	9V

Motor

- Rated Voltage	:	+8.4V DC
- Rated Speed	:	100 rpm
- Rated Torque	:	2Kgcm
- Rated Current	:	600mAH
		Lithium Polymer battery
- Interconnection for modules	:	CBK female connectors

General

- Dimensions (mm)	:	W 220 x D 170 x H 105
- Weight	:	1.5kg (approx.)

Sensors

• IR Transmitter-Receiver	:	IR LED Pair

• Ultrasonic Sensor (LV-MaxSonar)

- Reading rate	:	20Hz
- Operating voltage	:	2.5-5.5V
- Measuring distance	:	254 inches (645cm)
- Current consumption	:	2mA current

Analog Sensor (optional)

- Operating voltage	:	4.5V to 5.5V
- Current consumption	:	30mA (Typical)
- Output	:	Analog Voltage
- Max. Range	:	80cm
- Min. Range	:	10cm

RF Module (optional)

- Working voltage	:	3.3V
- Frequency of operation	:	2.4GHz
- Typical operating range	:	30 ft.
- UART baud rate	:	9600bps

Compact PIC USB Programmer
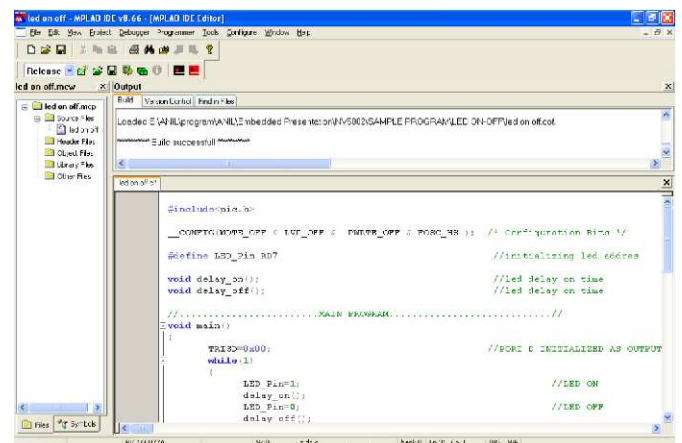

Scope of Learning

- Learn to interface various Sensors like:
    1. IR Sensor
    2. Ultrasonic Sensor
    3. Analog Sensor (optional)
- Learn to interface LCD with PIC16F877A microcontroller
- Learn to interface DC motor with PIC16F877A microcontroller
- Gaining indepth knowledge about Robotics and PIC microcontroller that will be useful in further studies
- Learn the concept of RF communication (optional)

Included Accessories

- Battery (8.4 V)   1 no.
- CBK female connector   3 nos.
- Software CD   1 no.
- Battery Charge adapter (9 V)   1no.
- Ultrasonic Sensor   1no.

Optional Accessories

- RF module (Nvis MC15S09)
- Analog Sensor
- Compact PIC IC programmer (Nvis 5002P)

Program Window

Subject to Change