GoGo Board

Science & Robotics
for the Inventive Mind

Let's Invent
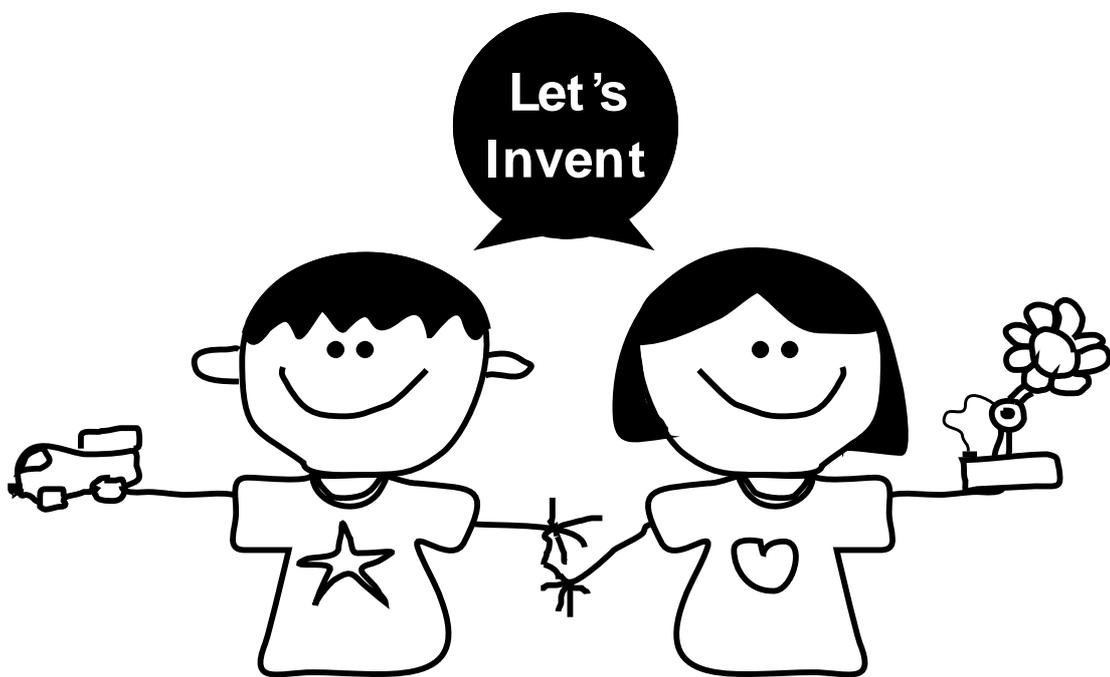
Getting Started Guide

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Getting Started

Power Indicator LED
Run Button
ON/OFF Switch
Power Jack

4 Motor Ports
Extension Port
Beeper
RUN Status LED
Remote Receiver
Battery Pack (6xAA)

8 Sensor Ports
USB Connector
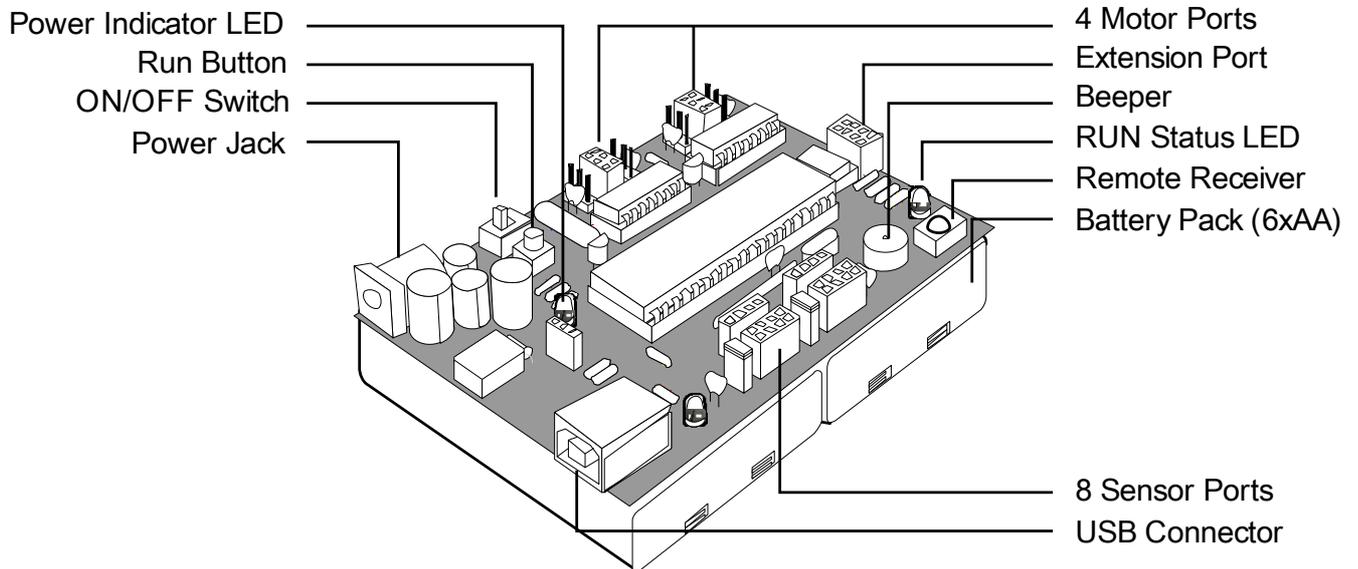
Checklist

To use the gogoboard, you should have the following things ready.

- A GoGo Board together with a USB cable.

- Batteries or power adapter if using motors. Although the gogoboard can be powered via the USB cable, it is not recommended for use with motors, as the USB port provides only limited power.

- Some sensors and/or motors.

- Construction materials such as cardboard paper, wood, ice-cream sticks, string, etc.

- A computer running any recent version of Windows (Windows 2000 and older have not been tested).

Connecting to the GoGo Board for the first time

1. Before plugging the gogoboard to the computer, it is best to install the GoGo Monitor beforehand. The GoGo Monitor is available on the gogoboard's website (download page).

2. Connect the USB cable to the GoGo Board and then to the computer. Power on the GoGo Board. You should hear it beep twice.

3. When the board is first connected to a computer, Windows will ask for a driver. The gogobard requires a single .inf files for this process. You can download the file "gogo_cdc_NTXPVista.inf" from the gogoboard's website. Alternatively, since this file is automatically installed with the GoGo Monitor, you can let Windows search for a driver automatically as well. Note that it may take some time before Windows locates the file.

4. Check Windows Device Manager to see the COM port number of the newly connected gogoboard. (as shown in the image below)

5. Launch the GoGo Monitor. Enter the correct serial port number then press "Connect". This should open the main page of the GoGo Monitor software. You are now ready to go!
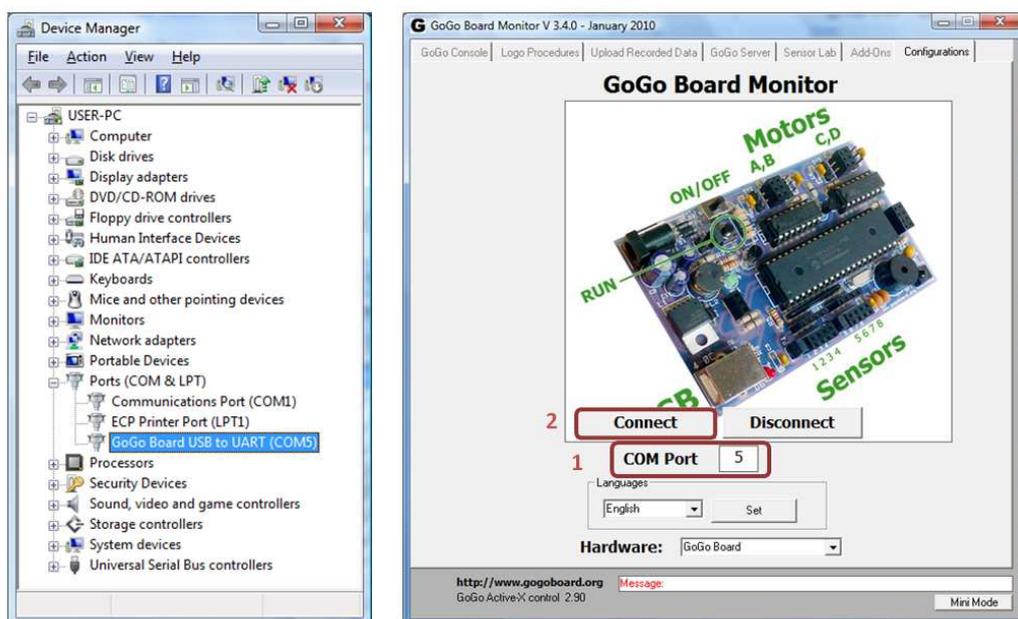
Using the GoGo Monitor

1. **BEEP** : Pressing the beep button on GoGo Console tab will make the GoGo Board beep. This is useful for testing if the gogo is properly connected.

2. **Sensors** : You can observe sensor values by pressing the **Burst ON** button.

3. **Motors** : Test the motors by selecting motors: A, B, C, or D and press ON under **Motor Controls** option.

4. **Logo Procedures**: This is where you write your programs to control the GoGoBoard.
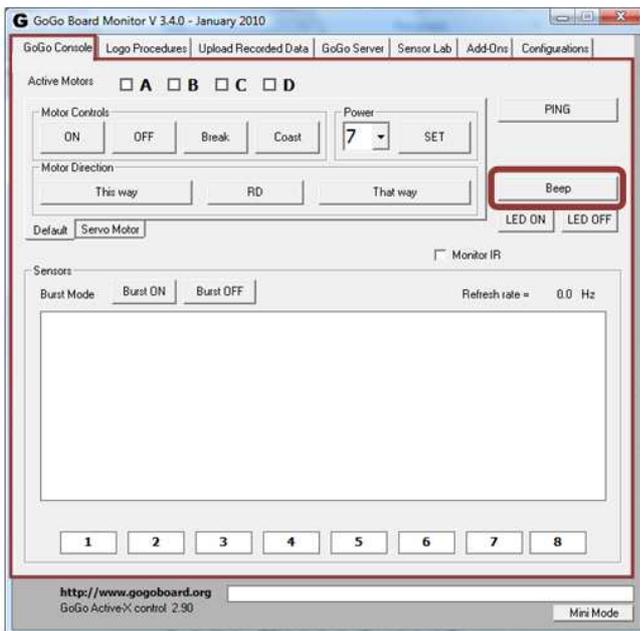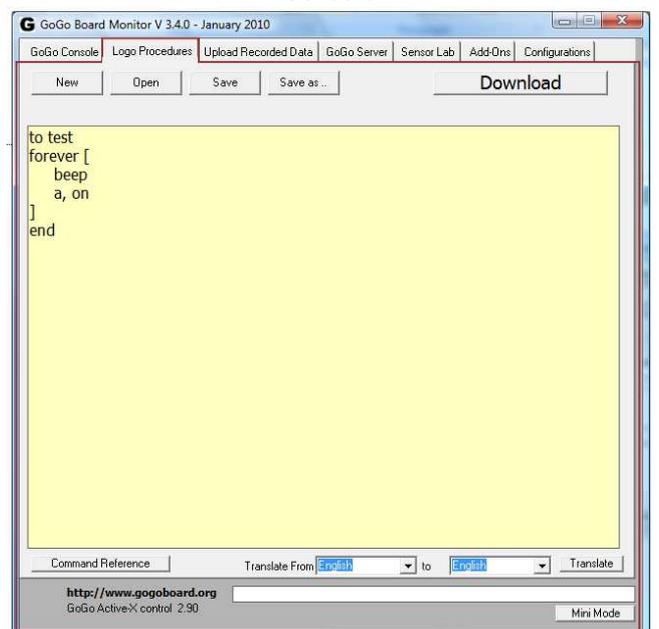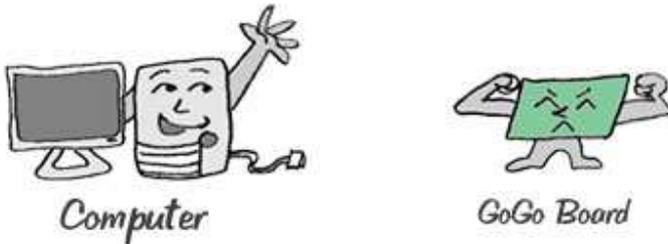

1. Beep
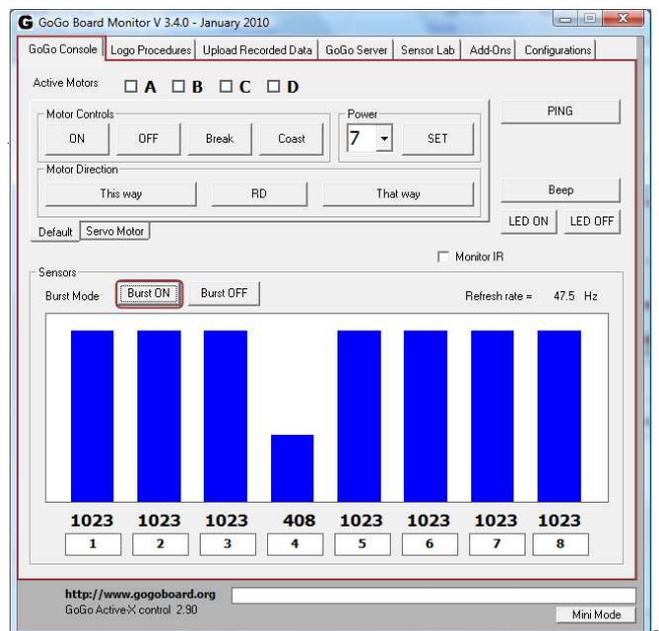
2. Sensors
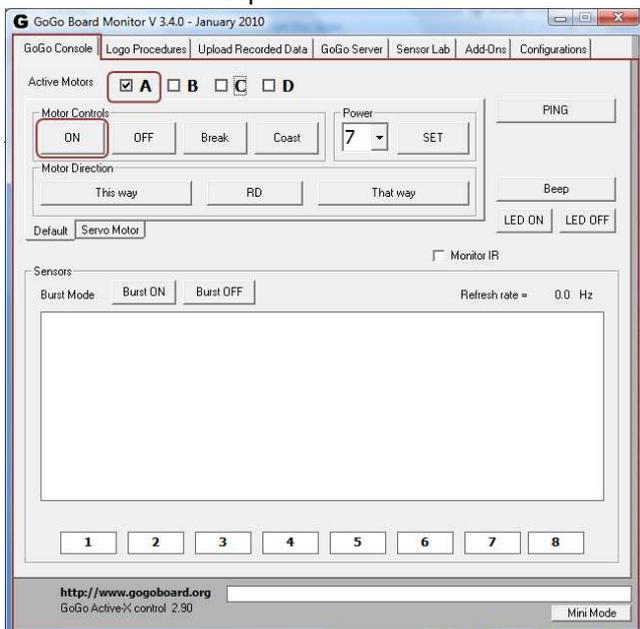
3. Motors

4. Logo Procedures

Different ways of using the GoGo Board

Now that the GoGo board is working, you can start using it in many programming environments. The GoGo board can function in two modes: tethered and autonomous.

Autonomous Mode

Computer   GoGo Board

The GoGo Monitor allows users to download and store procedures on the board. The GoGo Board can execute these procedures even while disconnected from the computer. This allows users to create autonomous robots, environmental sensing devices, and other smart objects.

Tethered Mode

Computer   GoGo Board
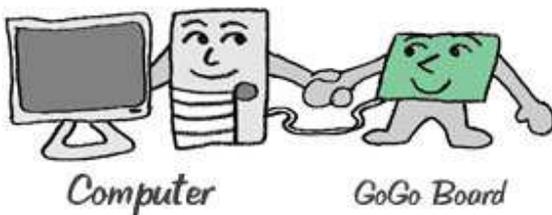
In this mode the board is always connected to the computer. It allows any programming language that can access a serial port to interact directly with the sensor values and to actuate various devices. You can create games, interactive art work, and many other applications in this mode. Right now you can access the GoGo Board from the following programming environments:

- NetLogo – a multi–agent programmable modeling environment
- Scratch – A graphical programming language for everyone
- Microworlds – A multimedia enhanced version of the Logo programming language

How to use the infrared remote control

The GoGo Board can receive commands from any Sony infrared remote control through IR receiver on the board. The received value is the code from each button. For example, pressing number 1 on the remote will give a code of 128, number 2 will be 129, and so on. These code numbers are defined by the SONY remote standard. Select the "Monitor IR" check box on the gogo monitor software to see what code is being received.

The power button on the remote is a special button. It functions exactly the same way as the run button. Press it once to run Logo procedures. Press again to stop.

Below is a list of Logo Commands that can be used with the remote control

newir?   "TRUE" when there is a signal from the Remote Control to the GoGo Board

ir   This command will return the IR code received

The following example procedure will beep when Button 1 (code = 128) on the remote is pressed and blink the user LED when Button 2 (code = 129) is pressed.

```
to testIR
  forever [
    if newir? [
      make "command ir
      if :command = 128 [beep]
      if :command = 129 [ledon wait 10 ledoff]
    ]
  ]
end
```

Troubleshooting guide

USB power issues. Using motors while powered only by the USB port is not recommended. USB ports provide only 500mA max, which is usually not sufficient to properly drive motors. It can also interfere with the USB connection causing the board resets. It is best to use batteries or a power adapter while using motors.

GoGo Monitor losing control of the gogoboard. This typically happens when the gogoboard is reset either intentionally (by power cycling the board) or unintentionally due to power issues. Because a board reset will also reset the USB circuitary, you must follow the sequence below to proceed properly.

1.   Press the "disconnect" button on the GoGo Monitor
2.   Power on the gogoboard
3.   Press "Connect" to regain control.
4.   If step 3 fails, restart GoGo Monitor and connect