Gripper Assembly for Fire Bird V

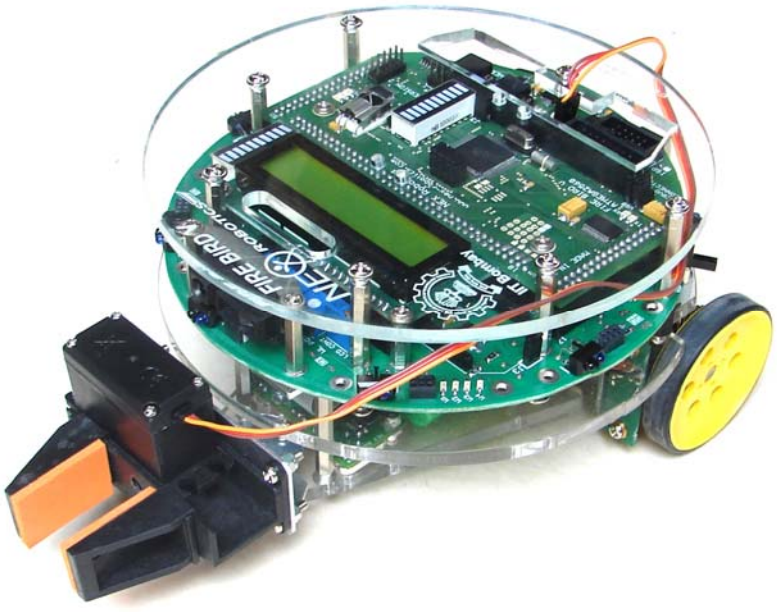

Figure 1: Gripper mounted on the Fire Bird V ATMEGA2560 Robot

Gripper assembly is used for picking up small objects or holding other robot's back side to form chain of robots.. Gripping action is actuated using servo motor. Power and the control signal for this servo motor are taken from the S1 servo motor port.

Specifications

- Operating Voltage : 5V
- Grip & Un-grip : 0 to 180 degrees

Servo motor basic operation

Please refer to chapter 5 "Timer / Counter Operations on the robot" in the Fire Bird V ATMEGA2560 Software Manual.

Note: Use Fire Bird V ATMEGA2560 Hardware and Software Manual along with this application note.

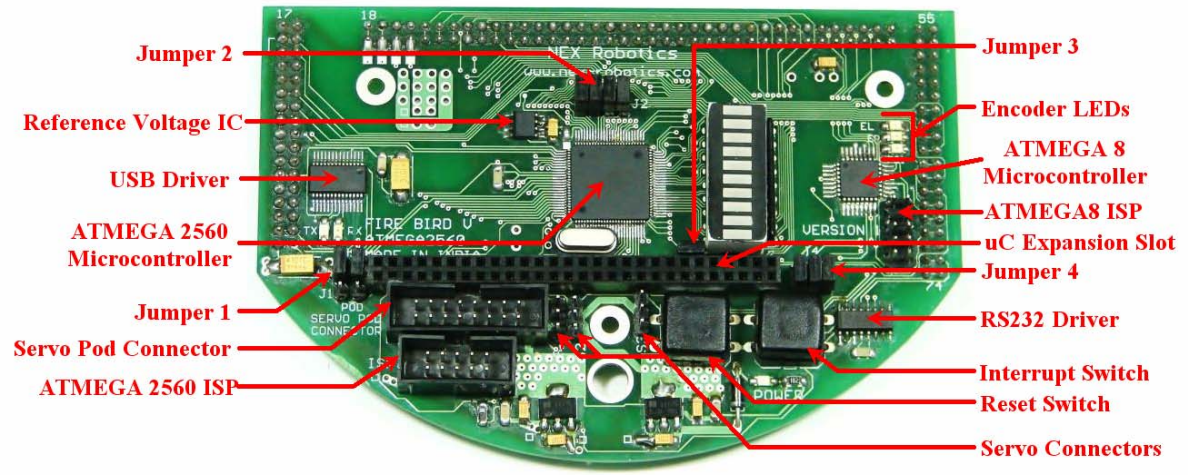

Figure 2: Location of the servo motor connector on Fire Bird V ATMEGA2560 board

Servo Connection:

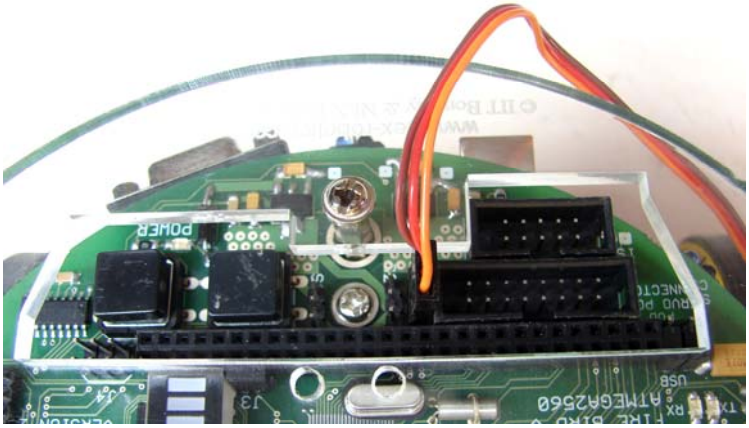

Figure 3: Connecting Gripper Servo motor to the servo connector "S1" on the microcontroller board

Application Example: "Robot_gripper_control_spl_case"
In this Application example the gripper's servo motor is connected to the "S1" servo connector. Servo motor connection is shown in figure 2 and 3. This application example is located in the "Accessories\Robot_gripper_control_spl_case" folder in the documentation CD.

Upon powering up the robot will un-grip the gripper and move forward for 2.5Sec, pick the object by gripping the object. Move back for 0.5sec, turn left by approx 180 degrees, move forward for 2.5Sec, leave the object by un-gripping the object and move to the start position to pick the next object. This operation is continued, till the robot is powered off.

Warning:

- Power to the servo motor is provided by 5V low drop voltage regulator which is located on the microcontroller board. It can provide only 500mA current. In order to prevent overload on the gripper grip the object with just the necessary force. Do not over grip the object.
- Do not keep servo motor in tight grip position for more than 30 seconds.

Notice

The contents of this manual are subject to change without notice. All efforts have been made to ensure the accuracy of contents in this manual. However, should any errors be detected, NEX Robotics welcomes your corrections. You can send us your queries / suggestions at
info@nex-robotics.com

⚠ **Product's electronics is static sensitive. Use the product in static free environment.**
⚠ **Read the user manuals completely before start using this product**

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Almost all the part of this product are recyclable. Please send this product to the recycling plant after its operational life. By recycling we can contribute to cleaner and healthier environment for the future generations.