

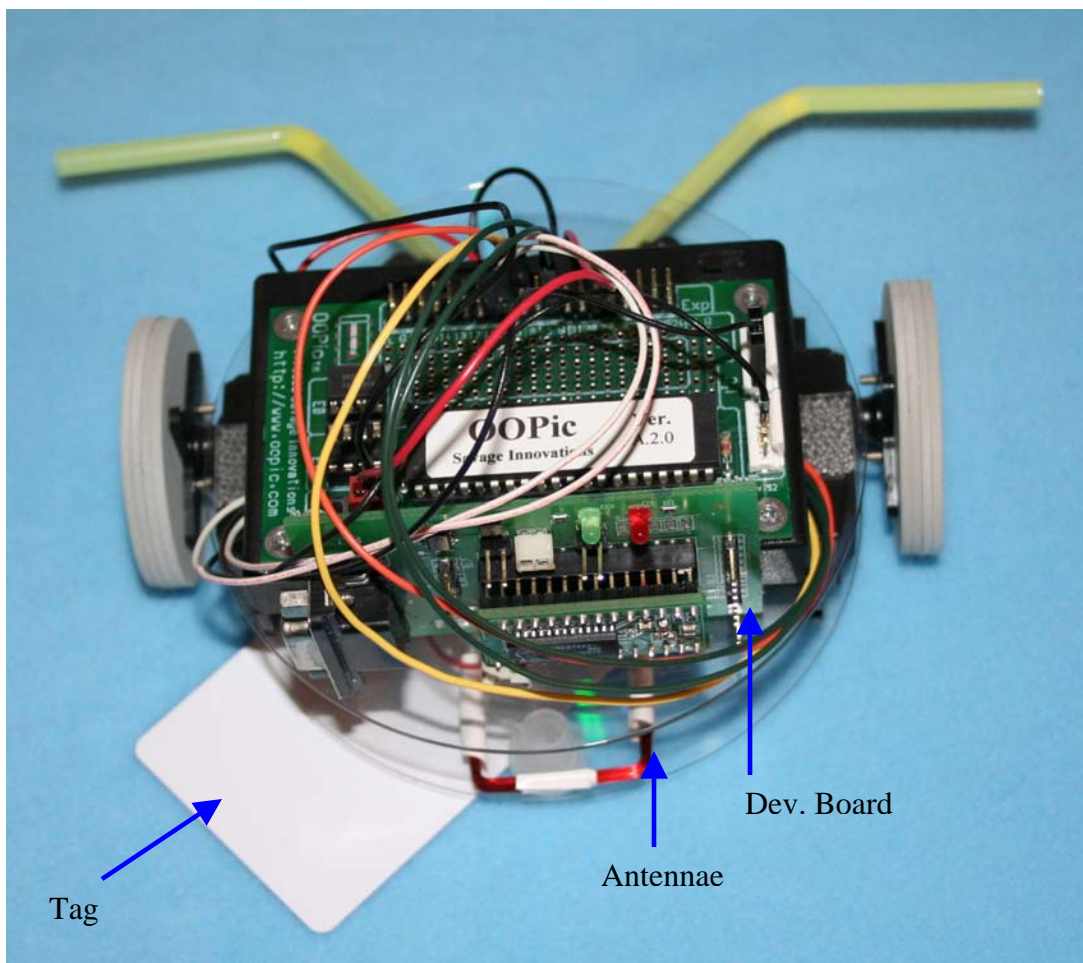
Adding RFID to a NewCDbot

By Abe Howell

Introduction:

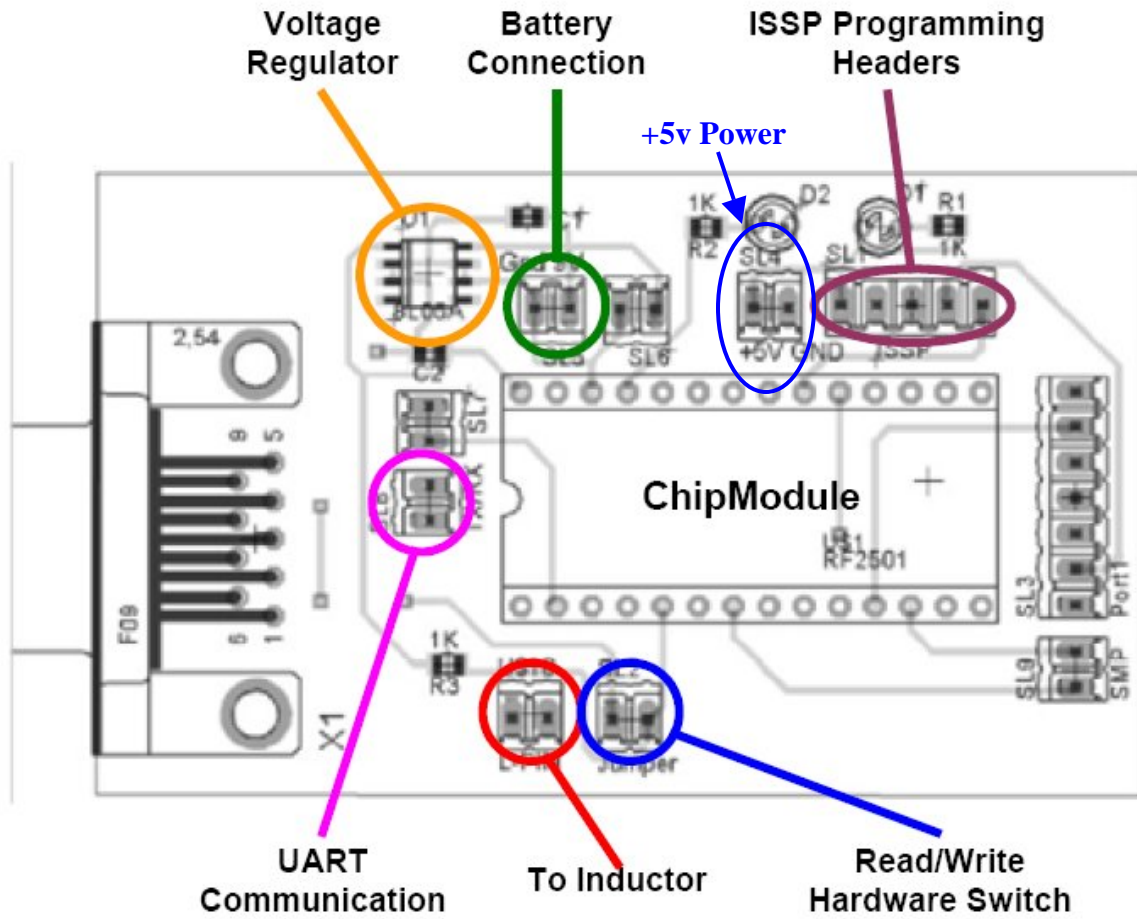
This tutorial assumes that you have a fully functioning NewCDbot robot with either an OOPic I or OOPic II controller. You also need to purchase a development kit from SonMicro (www.sonmicro.com) part#SM3005-B5.

The first step is to figure out how to mount the RFID dev. Board to your robot. I decided to mount it to the back of the robot's battery pack. You also need to mount the antennae. I mounted mine on top of the bottom CD as shown below.



Figure#1. Mount Development Board and Antennae to NewCDbot.

Next, we need to power the dev. board, connect to the OOPic's serial port and connect the antennae to the dev. board.



Figure#2. Schematic of RFID Development Board.

To power the dev. board we need to fabricate a cable and connect SL4 on the dev. board to +5volts and ground on the OOPic (could use pin# 21&23 or 22&24). To fabricate a cable I suggest using the following parts and material to create this cable and the two others that will be needed. You should use 22-24 gauge wire.

- Female crimp connectors (Jameco part#100756).
- Male crimp connectors (Jameco part#145357).
- Crimp Tool (Jameco part#99442).

21	+5v	—	+ 5 Volts regulated
23	GND	—	GND
22	+5v	—	+ 5 Volts regulated
24	GND	—	GND

Figure#3. OOPic Power Pins.

To connect the dev. board serial port to the OOPic serial port we need to fabricate a cable to connect the SL8 pins on the dev. board to pin#23(RX) and pin#24(TX) on the OOPic. More specifically, the SL8 TX pin on the dev. board must connect to pin#23(RX) on the OOPic and SL8 RX pin must go to pin#24(TX) on the OOPic.

Finally, we need to connect the antennae to the dev. board. To do this simply fabricate a cable and plug it into the antennae and then connect the other end to the U\$18 pins on the dev. board. We needed to fabricate a cable because the antennae cable is not long enough. Be very careful when handling the antennae, as they are very fragile and susceptible to damage.

In a future tutorial I will explain how to program the OOPic to read and write data to in range tags. Please send comments/questions to abe@abotics.com