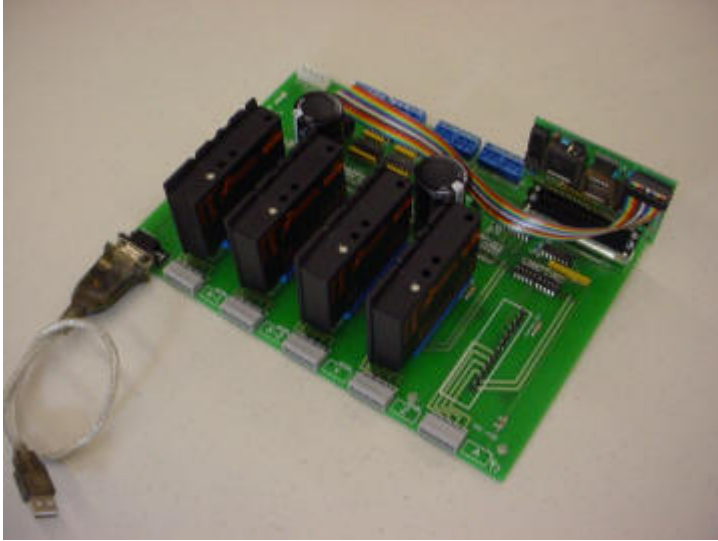


# Installing the PRT 4g Control Board as an Upgrade for Existing PRT Standard Tools



The ShopBot Control System Upgrade for PRT Tools (PRT Version 4g) is a drop-in replacement Control Board for existing ShopBot PRT CNC Tools. It will bring faster cutting and faster positioning to your tool at the same time providing 2.5 times greater resolution and improved smoothness.

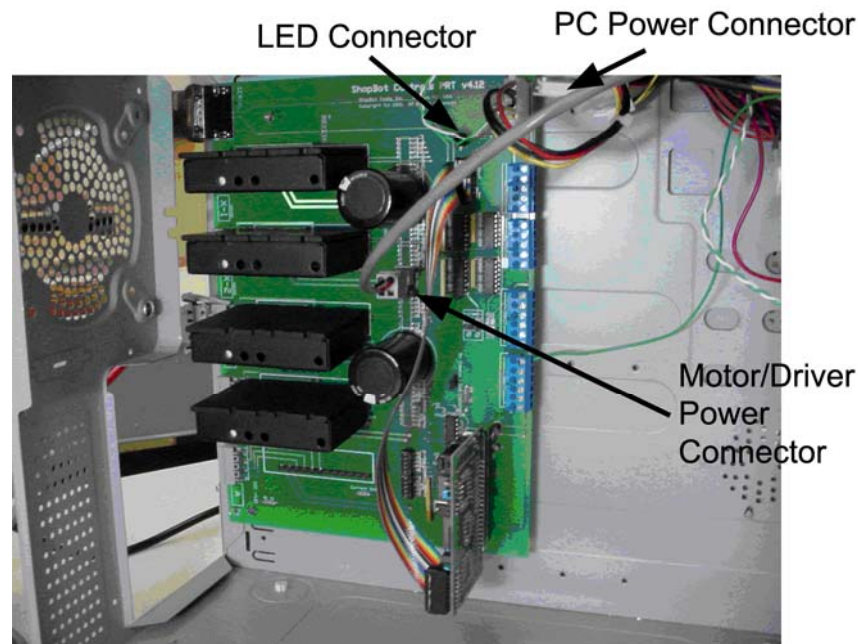
**To receive your rebate, return your current PRT Control Board to ShopBot Tools in the packaging for the PRT 4g Upgrade. Fill out and include the form at the back of these instructions so we know who you are and how you'd like to receive the rebate.**

**ShopBot Tools, Inc**  
3333B Industrial Dr  
Durham, NC 27704  
919-680-4800 or 888-680-4466  
[www.shopbottools.com](http://www.shopbottools.com)

*ShopBot has always worked to make enhancements and improvements that we make to our products available as upgrades or retrofits for existing tools. We have used the high speed Control Card from our PRTalpha tools as the basis for an improved Control Board for PRT Tools. In addition to higher speeds, this upgrade provide higher resolution stepping which takes advantage of the highly regarded Gecko drive stepper drivers to offer some significant performance enhancements for PRTstandard CNC tools.*

## ***Remove Your Old Board***

1. Make sure the power cord is unplugged.
2. Disconnect the motor cables and serial cable.
3. Take the side off the box.
4. Pull the gray Wago connector in the center of the board to disconnect the motor/driver power connector.
5. Disconnect the PC power connector at the upper back corner of the board.
6. Disconnect the two blue connector blocks. One is your Inputs, the other your Outputs. You will plug these back into the new board.
7. Disconnect the small LED cable that attaches to the 3 pin header plug. Note that the green is positive on this connector.
8. Remove the board by taking out the 4 screws that attach it to the PC case. Save the screws to use when you put the new board in.



## ***STOP and verify that your 48v power supply wires are set up correctly.***

The black wire should be connected to the negative terminal and the red wire goes to the positive terminal. The two-pin, plastic Wago connector will only work one way on the board. If your wires are reversed, you will need to correct them in the Wago connector.

## ***Put the New PRT 4g Board into the PC Case***

1. Basically, reverse what you just did.
2. Screw the board in using the 4 screws.
3. Plug the Blue Input block and the Output block into the appropriate locations. There will be additional blocks on the new board for the additional I/O, but your old blocks will plug to the lower number pins in both cases.
4. Connect the small LED cable to the 3 pin header. The green wire goes to the positive side.
5. Then connect the computer power connector at the upper back corner of the board.
6. Re-connect the motor power cable to the Wago connector in the center of the board.
7. You'll be using the included USB cable to connect the Control Box to your PC.  
DO NOT CONNECT THE USB CABLE TO YOUR COMPUTER YET. INSTALL THE USB SOFTWARE FIRST. See Below.

## ***Adjust the Power Supply for a Little More Spunk***

Before you close the PC case, set your Power Supply to an optimum voltage. You will need a voltmeter and you will have to turn the box on to make the adjustment. If you aren't comfortable doing this, find a technical person to help out.

1. Set your voltmeter to a scale for reading up to 65 volts DC.
2. Before you turn the power on, insert the voltmeter leads into the Wago connector so that you will be able to measure the motor-driver voltage from the Power supply.
3. Turn the power on and check the reading. It will probably be about 44v.
4. Locate the motor-driver Power Supply at the front of the PC case. See picture above. On the top of the Power Supply is a very small adjustment dial that can be turned with a small screwdriver. This dial is very delicate and does not like to be twisted.
5. Watch the voltage as you very gently rotate the dial to the right (clockwise). The voltage should go up as you rotate. With great care, ease the voltage up to about 48v. [A Power Supply of up to 75v DC can be used with this Control Board and the Geckodrives. However, the existing supply becomes unstable if set over ~50v.]
6. Close the box, put everything back in position, and reattach the motor cables. When you turn the box on, the motors should all lock into position as they power on. Each Geckodrive has a red LED that indicates normal function if it is glowing red.

## ***Install the USB Driver***

You will be communicating with your new Control Board using a USB connection from your PC (a special Hi-Speed serial card is also an option). DO NOT PLUG IN THE USB UNTIL YOU HAVE INSTALLED THE SOFTWARE FOR IT.

1. Put the USB Software Installation CD included with the PRT 4g control board in the CD drive. Follow the setup instructions to install the software for the USB.
2. After the software installation is done, plug in the USB cable.
3. Find out what com port you have connected on in the device manager. Go to Start > Control Panel > [Performance & Maintenance] > System > Hardware > Device

Manager. Look under ComPorts for ATEN USB to Serial Bridge (COM ??) and copy down the COM number in the parentheses. You'll need to enter this in the next step.

### *Load the PRTalpha Software on Your ShopBot Computer*

1. Before you install, go to the "C:\Program Files\ShopBot\ShopBot 3" folder and delete your SHOPBOT.INI file (the ".INI" may not be visible depending on your Windows settings).
2. Download and install the latest version of the ShopBot Control Software from the website, or use the version on the included CD. You will now use the PRTalpha version.
3. When asked what type of tool you have, select the correct PRT4g size from the setting table.
4. If the tool does not connect, a yellow window will appear. Select "Try to connect on another com port" and give the number you copied from the Device Manager window above.
5. The correct unit values for a PRT with 3.6 motors and 25-tooth pinions are listed below. They should be installed automatically.

1833.465 unit value for X and Y  
2291.831 unit value for Z axis

### *AWAY YOU GO ...*

Before you forget, pack up your current PRT Control Board (the one you just removed) in the packaging for the PRT 4g Upgrade. Fill out and include the form on the next page so we know who you are and how you'd like to receive the rebate. Send to

**ShopBot Tools, Inc**  
3333B Industrial Dr  
Durham, NC 27704

ATTN: PRT 4G Upgrade Return

## PRT 4g Upgrade Rebate Request Form

1. Include the RMA that came with your new board **or** fill out this form and include it in with the old Control Board. Print or stick one of your business return address labels on it. You can cut out the address below to use as shipping label.

Your Name	
Company Name	
Street	
City, State Zip	
Country if other than USA	
Phone	
Email	

2. Circle how do you want to receive the rebate.

\$250.00 credit to my credit card

Send a check for \$250.00 to the address above. Check will be made out to company name unless you request otherwise

3. Please write the RMA# on the address label.

-----Cut here and paste label on package-----Write RMA# on label-----

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