Instructions for Ordering the Shield Board

By: Bob Glicksman; 14 April 2012

Introduction.

The Open Source Controller contains a "Shield Board" that is a custom designed printed circuit board, specific to this device. As a custom designed part, the Shield Board must be ordered from a printed circuit board manufacturer. Normally, it is not possible to order a few, small printed circuit boards to be custom manufactured. Printed circuit board manufacturers generally will only accept minimum orders that comprise a large number of square inches of board before they will manufacture the order. Sparkfun Electronics set up a subsidiary to solve this problem called BatchPCB.com (http://batchpcb.com/index.php/Products).

BatchPCB.com does not actually manufacture PC boards. What they do is to accumulate a large batch of small orders, consolidate a number of small boards onto larger boards by merging the computer aided manufacturing (CAM) files ("Gerber" and drill files) submitted by customers using customized software that they developed, and then accumulate enough larger boards to fulfill a minimum order quantity by one of a number of PC fabrication shops with which they have established business relationships.

Therefore, when you order a printed circuit board from BatchPCB.com, you should expect it to take 3 weeks or more for the order to be fulfilled.

The volume of business at BatchPCB.com varies. It normally takes 2 or 3 days for enough orders to come in to fill up a batch, but it can take longer, particularly during holiday periods. After a batch is filled, BatchPCB.com sends the merged CAM files off to a fabrication house that may take 2 weeks or more to fulfill the order. BatchPCB.com then receives the boards back, separates the small boards from the merged larger boards that were fabricated by the outside vendor, assembles each small order and mails it out to each customer. They also add a substantial uplift charge for this service ($10 per board, in addition to the base cost of fabrication, plus $10 for order processing and handling, and additional shipping costs that vary with location and type of shipping).

When you order a Shield Board from BatchPCB.com, you will receive the batch identification number of the batch that your order has been placed in. The BatchPCB.com site gives you the status of each batch so that you can track the progress of them filling the batch and know when your order's batch has been sent out for fabrication. When BatchPCB.com receives the batch back from the fabricator (usually in about 2 weeks) and has prepared and shipped your order, they will e-mail you a notice to this effect.

BatchPBC.com Ordering Process.

The process of ordering a Shield Board from BatchPCB.com is somewhat complex and will be reviewed here.

The first step is that you must register on the site. There is no alternative to registering; there is no guest registration. Registration requires that you supply your first and last name, a login name and a password for the site, and your full address. There is no workaround for this -- BatchPCB.com has to be able to send you back your order.

To register in the site, go to: http://batchpcb.com/index.php/Home, click "Join Now" in the green area at the top of the page to the left of the text fields for user name and password (see figure 1, below). You will be taken to a registration page where you will need to enter this information. You only need to register once. Thereafter, you can log into the site with your user name and password.
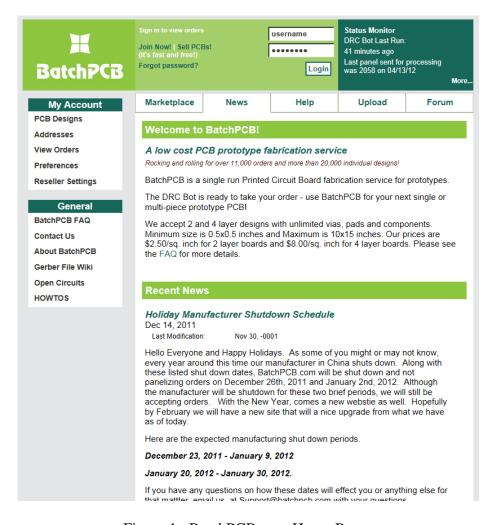

Figure 1. BatchPCB.com Home Page.

After registering, log out and then log in at the home page:

http://batchpcb.com/index.php/Home.

To do this, click in the field where it says "username" and type in the user name that you registered with. Click in the field below the user name that displays "........" and enter your password there. Click the button labeled "Login" to log into the site. See figure 1 for details.

Once you are logged in, do not log out from the site. Go to the url line at the top of your web browser and enter the following full url:

http://www.batchpcb.com/product_info.php?products_id=75513&check=a69606452bf49d346372d5d822638f62

When you click enter on your browser, you should see the Shield Board product page, as shown in figure 2 below.
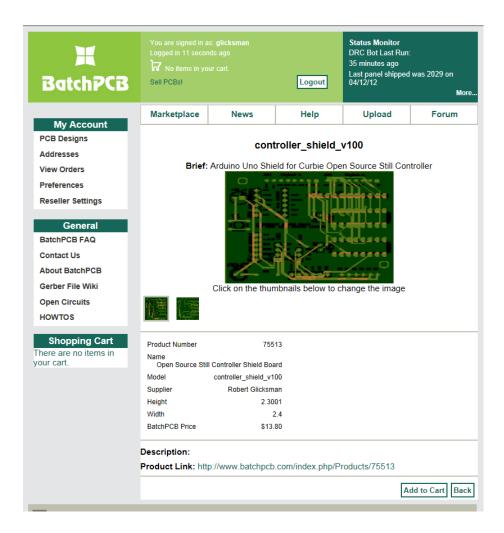

Figure 2. BatchPCB.com Shield Board Product Page.

Click on the "Add to Cart" button at the bottom of the page, as shown in figure 2. You will then be taken to the order page, as shown in figure 3:
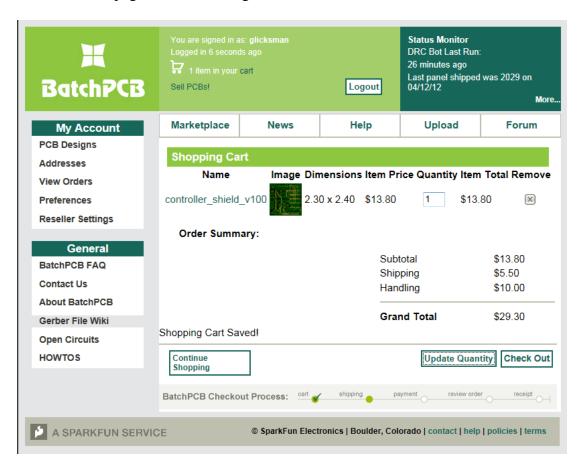

Figure 3. BatchPCB Order Page.

Unless you want to shop further, click the "Check Out" button on the bottom of the page. If you want more than one Shield Board, change the quantity on this page and click the "Update Quantity" button on the bottom of the page, then the "Check Out" button.

Once you check out, you will be taken to the check out page where you can select the desired shipping option and the shipping address, as well as review your order and see the order total price, including shipping and handling. Note that each Shield Board costs $13.80, which is the $3.80 price for the board fabrication plus the $10 per board processing price. You will also see a per-order $10 charge for order processing and handling and the shipping charge (which varies with the shipping option and your shipping location). After verifying the correct check out information, click "Continue" and you will select the payment option (various credit cards or PayPal) and you will complete the ordering process.

Log out from the site when you are through ordering.

Options to BatchPCB.com.

As of this writing, BatchPCB.com is the only way to order a Shield Board. The site is expensive but is the only known way to order a single board this small. Since order processing and shipping charges are per order, it is more economical to order several boards at one time. You might want to tell people that you are ordering a Shield Board and see if any others will go in on one order with you.

The Open Source Controller is an open source project. As such, the Eagle computer-aided design (CAD) files for the Shield Board are included in the release package. They are contained in a folder called "Shield Board Eagle Files" that is inside the "Hardware" folder within the release package zip archive. You are free to modify the Shield Board in any way, subject to the Creative Commons license that applies to this project, and you can certainly use the Eagle CAD package to generate a set of CAM files in order to have a different printed circuit board fabrication house of your choosing manufacture boards from you. The specifics of the files that are needed for printed circuit board fabrication may vary with the fabrication house, as well as the fabrication design rules, so it is best to use Eagle's CAM feature and these CAD files to generate the necessary files for another printed circuit board manufacturing house. The Shield Board is small and only uses two layers, so it is supported by the free version of Eagle that hobbyists use. You can obtain eagle from the CADSoft web site: http://www.cadsoftusa.com/.