TweetM Pre-Release Assembly Info

Your kit should have included the following items:

- 1x YellowJacket – Wireless Arduino Clone
- 1x Solderless Breadboard
- 4x 6-pin stackable headers
- 1x mini pushbutton switch
- 1x 5V FTDI USB programming cable
- 1x 4-AAA battery holder with on/off switch
- Assortment of flexible jumper wires

Not included but required for assembly / operation:

- Soldering Iron (fine tip recommended)
- Solder (.015" dia works great / rosin core)
- Twitter Account
- 4xAAA batteries for standalone operation. 1.2v/cell NiMh rechargeable recommended.

**Assembly –** Please read each step before starting.

1. Solder the four stackable headers onto the YellowJacket board. The female portion of the headers will mount on the top of the YellowJacket. The top has the cpu and reset buttons, and the bottom has the wireless module.

Tips: It is best to place both headers on a side before soldering. If you solder one at a time you may find they won't fit since there is zero clearance between the headers.

After soldering the first pin you may need to re-heat the joint and ensure the header is positioned perpendicular to the board.

Alternate pins when soldering to reduce heat buildup that would occur if you solder each sequential pin.

The exposed solder pads are fairly small so using a fine tipped soldering iron will help.

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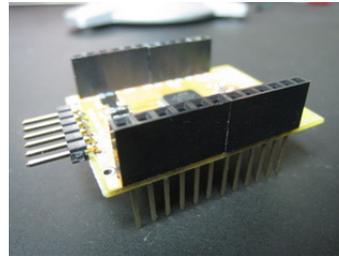
2. Mount the components onto the breadboard. Use the picture for placement. The exact placement isn't critical but the closer it matches will help with debugging.

Tips: If your intended application is space limited you can remove the two power rails on the breadboard since they aren't required in this application. You will need to slice the adhesive backing with a razor blade along the seams.
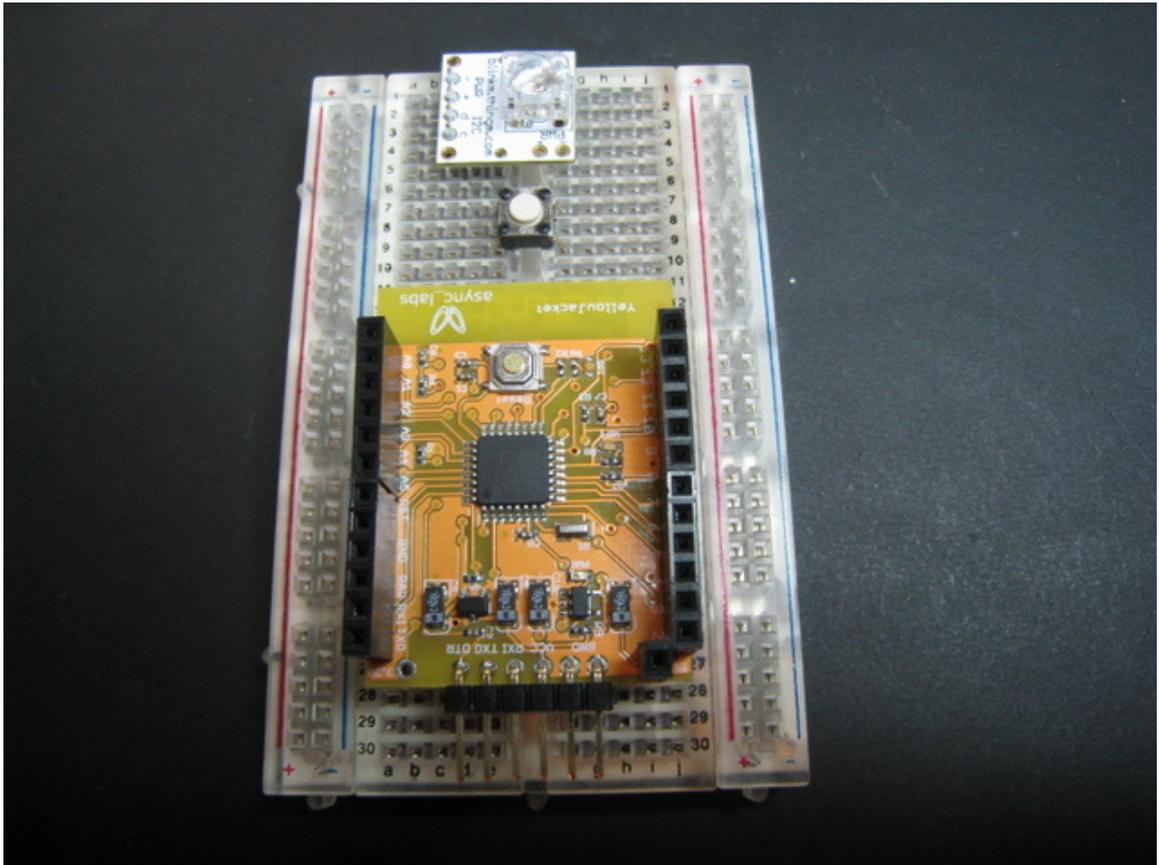
3. Wire it up.

Connections:

Battery:
- red -> raw on YellowJacket
- black -> gnd on Yellowjacket

Tip: During programming and testing power will be provided via the FTDI cable so you won't need the battery pack. (Or the battery pack should be switched off if connected.)

BlinkM: (powered from YellowJacket analog ports)
- - -> A2 on YellowJacket
- + -> A3 on YellowJacket
- D -> A5 on YellowJacket
- C -> A4 on YellowJacket

Mode switch": (pullup resistor provided internally – activated in software.)
- One side connects to – on BlinkM
- The other side is connected to D5 on YellowJacket
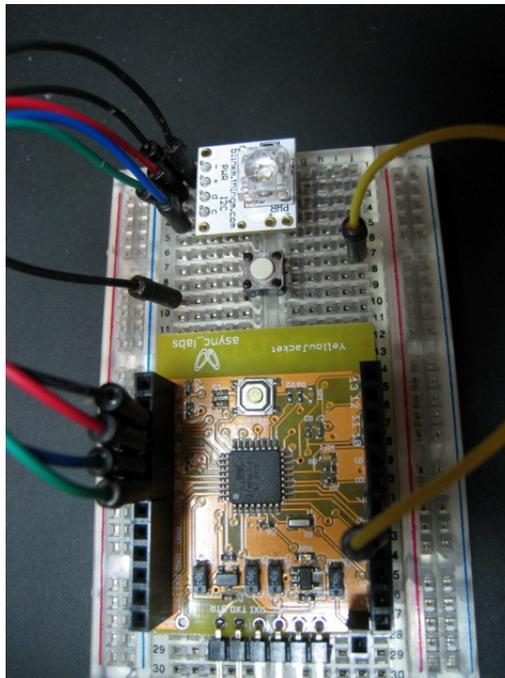
4. Programming with our sample Twitter sketch.

- Install the latest Arduino IDE if you don't already have it.
  http://arduino.cc/en/Main/Software
- Download the Tweetm sketch and YellowJacket libraries from ThingM's Google code repository download area. Choose the TweetM sample archive from the available downloads. http://code.google.com/p/blinkm-projects/downloads/list

> Tip: if you are familiar with SVN you can "checkout" the TweetM project from the repository.
> http://code.google.com/p/blinkm-projects/source/browse/#svn/trunk/blinkm_examples/arduino/TweetM

- Unzip the archive.
- Now you should be able to browse and open the TweetM.pde sketch with the Arduino IDE. (you should see the BlinkM_funcs.h and wifi_config.h as separate tabs once you open the main TweetM sketch.)
- There are some additional Installation instructions located at the top of the TweetM.pde

> Step 1. Copy the "WiShield" library located in the downloaded archive into your computer's (sketchbook)/libraries directory and restart the Arduino IDE
>
> Step 2. This step is already taken care of if you downloaded the library from the above location.
>
> Step 3. Edit the values in this sketch's "wifi_conf.h" to match your network. Take the section that matches your network the closest and change the values to match your network. Make sure only one section active and the unused setting blocks are commented out. You will need to pick an IP that is unused in your network to assign to the YellowJacket. Don't forget to match the gateway and mask to your network. You can find these settings in your wifi router's admin page or network settings on your computer.

- For testing it is useful to change the debug setting to 2 or higher.

> Near line 59 in TweetM.pde

- Currently the TweetM sketch is using Basic Auth and doesn't automatically calculate the Auth digest string. You will need to calculate and change the twauth[] variable to match your calculated Basic Auth string. The easiest way to get this hashed string is by using the curl utility which can be downloaded from here: http://curl.haxx.se/dlwiz/

Sending the following request changed to match your Twitter username:password you can find your hashed Basic Auth digest string in the curl output on the "Authorization: Basic" line.

```
curl -v http://username:password@stream.twitter.com/1/statuses/filter.json?track=colbert
```

- Now we are ready to upload the Sketch to the YellowJacket.
  1. Connect the FTDI cable to the right-angle header.
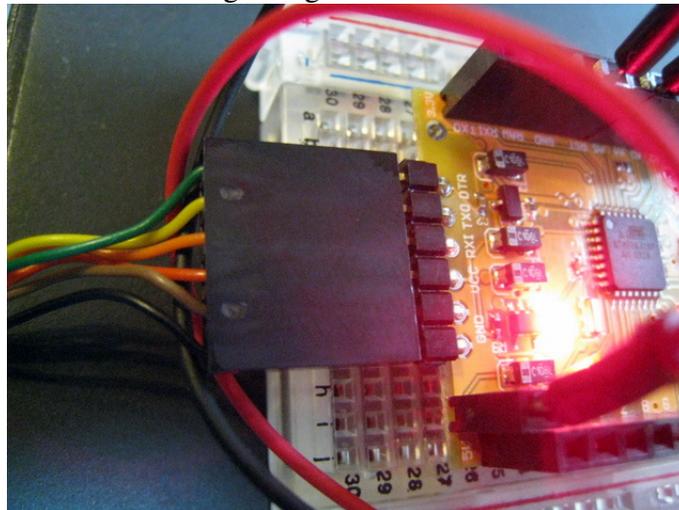
> Green wire of FTDI cable will be on the left lining up with DTR and the Black wire on the right lining up with GND.

  2. Plug the USB end of the FTDI cable into you computer.
  3. Select the newly added port of the FTDI cable under "Tools->Serial port" in the Arduino IDE
  4. Select "Arduino Deumilanove or Nano w/ Atmega328" under Tools->Board" in the Arduino IDE
  5. Verify/Compile the sketch ("Play Button")
  6. Upload to the YellowJacket.

> You may need to hold the reset button on the YellowJacket down until you see the "binary sketch size:" message displayed after pressing the "Upload" button in the IDE.

  7. Use the "Serial Monitor" in the IDE to see the debug messages from the YellowJacket. (57600 baud)

TweetM Assembly Info – ver .11 7/24/10

Troubleshooting:

- If the BlinkM is wired correctly you should see a quick flash sequence upon power-up/reset.

- Green led on the YellowJacket board will turn on when the board successfully connects to your wifi. If you are having trouble getting a connection you may want to change your wifi router to an open "open" configuration with no encryption for testing. (Make sure your wifi_config.h matches any changes.)

- More detailed info on the YellowJacket can be found here: http://asynclabs.com/

- Use curl to verify you can connect using your Twitter username/password. Twitter is in the process of switching to OAuth and at some point in the future the Open Auth method this sample sketch uses may stop working.

Revision History:

Ver .1 Created 7/15/2010
Ver .11 7/24/2010 – Fixed swapped pins in BlinkM wiring description.

Feel free to email questions to willp at Fungizmos.com