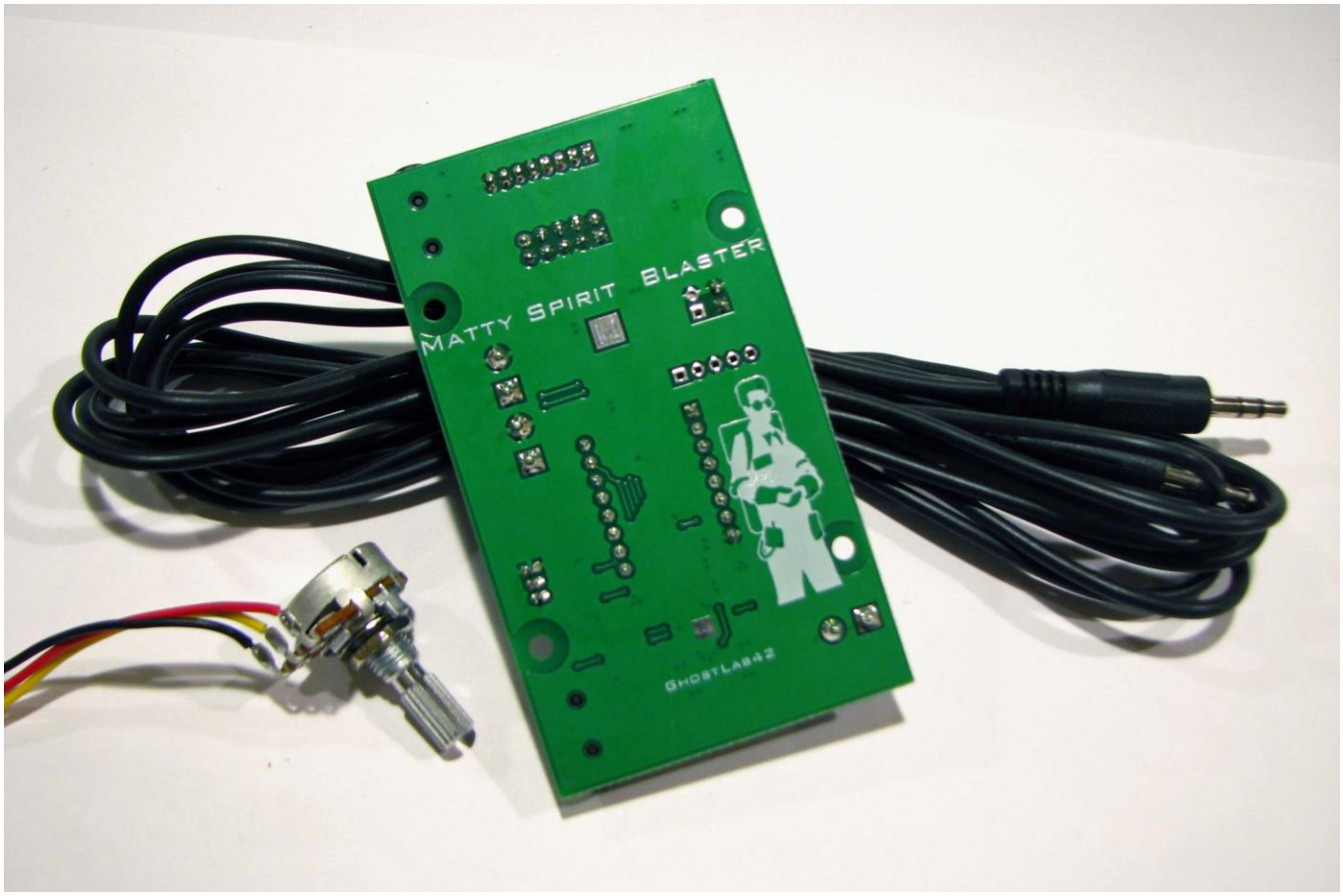
MattyBlaster

The MattyBlaster is a great accessory for your Matty Neutrino Wand that enables you to have a much louder sound and also has the ability to turn on/off your pack light electronics from your Matty Wand. No modifications to the Matty Wand are needed and the only connection to the Matty Wand is with the supplied 10 ft audio cable.



The board can turn on and off the battery voltage to be supplied to a pack lights kit (not included). If you are using the GBFans' Powercell and Cyclotron Light kit, a separate ribbon cable connector is supplied so that power and additional features can be coordinated with the sound and the Matty Wand actions: Unique power up and down sequencing, speeding up while firing in high power mode and also a special sequence will be displayed when the streams are crossed (another Matty Wand is need for that!)

The board will supply the same sounds that the Matty wand produces and a couple of new sounds. The new sounds include an overheating beep prior to the overloading and automatic shutdown of the stream, the sound of a venting mechanism after the wand overloads, a pack shutdown sound (when the Matty Wands is turned off) and an optional background Hum to let you know the pack is on and working.

The board can also detect if the Matty wand is just in sleep mode (it keeps the pack lights going during that time), is shut down (and the lights and sound will shut down) or not connected (just keeps the light going).

Other parts needed:

Battery

The MattyBlaster works with a 9V to 14V battery, but the 10W audio amplifier works best with a 12V battery that can supply a lot of current! The same battery can also be used to power the pack lights kit, so check to make sure the lights kit can handle the same voltage as the battery provides.

If you use the GBFans' Powercell and Cyclotron light kit, the one battery can also be used to power a vent relay and e-cig smoke setup to enable producing smoke during the venting sound sequence.

This does not replace or aid the batteries in the Matty Wand – it still needs its own batteries!

Two possible battery connection to screw terminal adapters are included. Hopefully they will fit your battery. Be sure to check the polarity with a voltmeter since each battery can be different.

A Power switch

Depending on the battery, how it is going to be wired for recharging and where you want a switch to disconnect the main battery, you may want to add a separate power switch to the wiring of this system.

A Speaker

An 8 ohm speaker is recommended, though the board can drive a 4 ohm speaker, but at a lower power. Sound output level is dependent on many things, so it is not always a lower or high volume based on the impedance of the speaker.

A full range speaker is also recommended. The board can play a wide range of sounds and can also be used to play your music.

Connection Wire

For connecting the battery to the board, the switched battery to a separate pack lights board and also to connect the speaker to the board wire will be need.

18AWG to 22AWG stranded wire is recommended. Solid core wire will also work, but it is stiffer and does not allow you to bend it as often as stranded wire allows.

The same kind of wire can be used for the speaker and the battery, though color coding the wires may make it easier to verify that it is wired up correctly.

Pack Lights Board Ribbon Cable

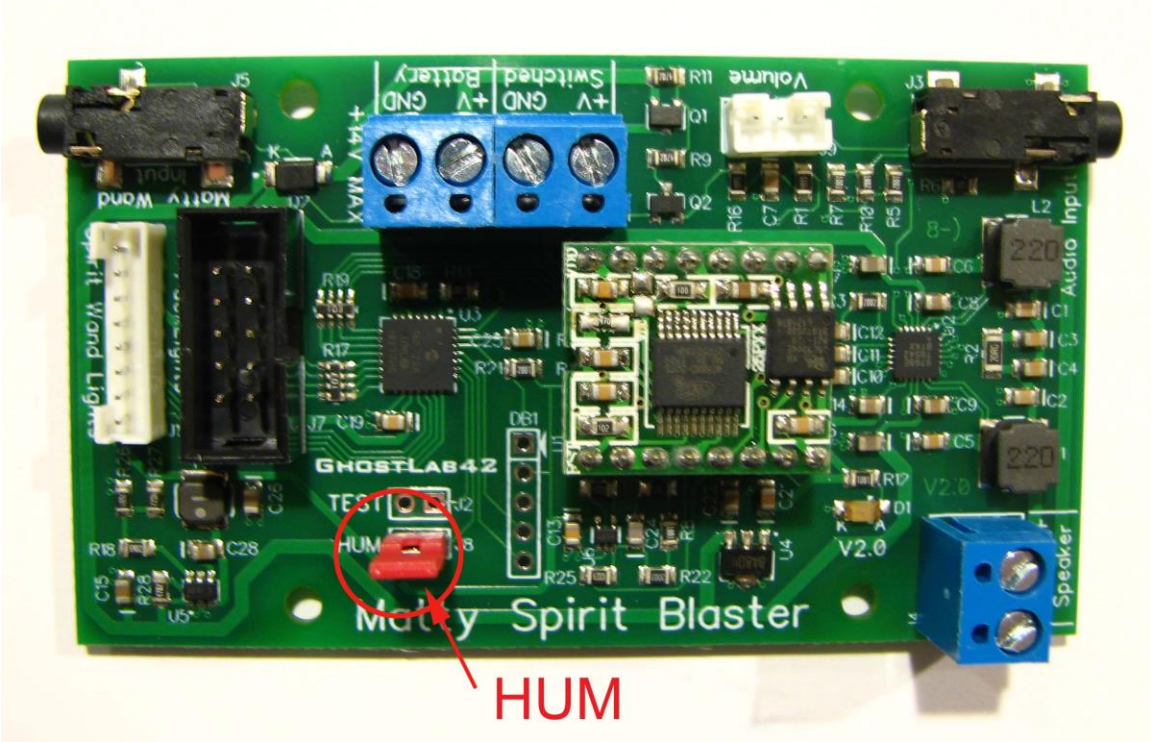
If you are using the GBFans' Powercell and Cyclotron light kit, the supplied 10 conductor ribbon cable is needed to connect the Matty Blaster to the GBFans board. The Matty Blaster basically pretends to be a GBFans soundboard. This same ribbon cable can also connect to a GhostLab42 Spirit Pack Lights board. The ribbon cable provides control signals and power to either of those connected powercell boards.

Configurations:

V2.0 and V3.0 board:

There is a single jumper labeled “HUM” on the board. This can be changed anytime, but it may take some action (like firing or powering up or down) to take effect.

HUM (V2.0 board) or SEL2 (V3.0 board)
Jumper OFF: The pack will be quiet when the jumper is not shorting the two pins together
Jumper ON: The pack will make a continuous hum sound while powered up. The sound is not heard during firing sequences.



V4.2 board

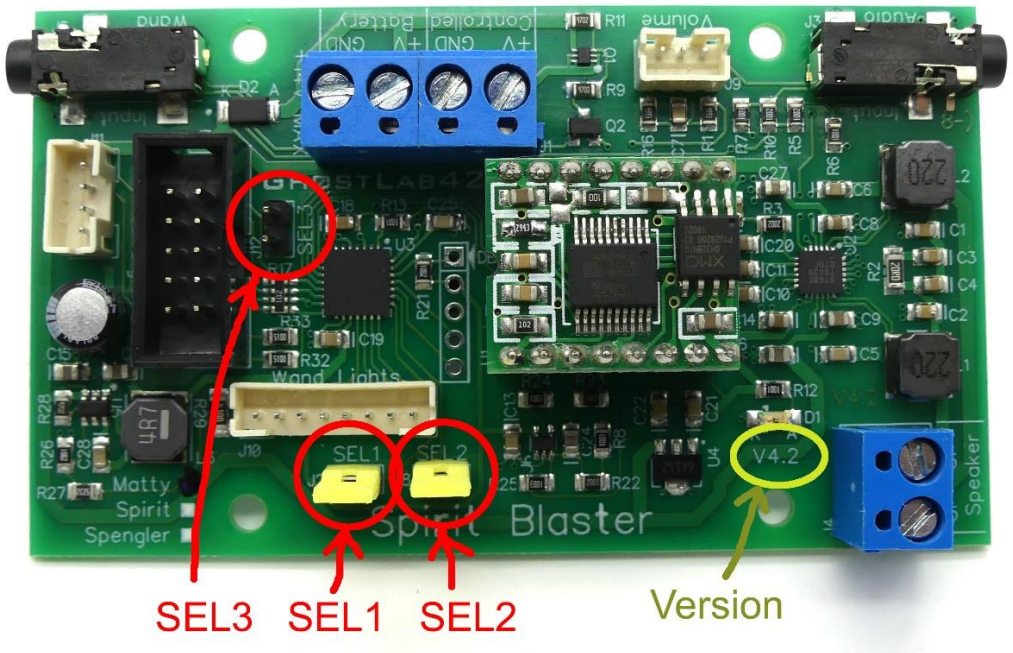
There are three SEL jumper locations and two provided jumpers. The image below shows the board set up for TEST mode since it has jumpers on SEL1 and SEL2.

SEL3 is mainly used to select HUM or not when the pack is idle.

SEL2 replaces the normal Matty wand sound with the full Afterlife startup sound. The wand will still make the usual Matty startup sound, but the pack will take its time and play the Afterlife sound. Do not start changing switches on the Matty wand while this sound is playing or the sound board could get lost since it cannot see what the Matty wand is doing while it is playing the startup sound.

SEL1 replaces the normal Matty wand sound with a shorter version of the full Afterlife startup sound. The wand will still make the usual Matty startup sound, but the pack will play the Afterlife sound. Do not start changing switches on the Matty wand while this sound is playing or the sound board could get lost since it cannot see what the Matty wand is doing while it is playing the startup sound. Since this shorter version is only a bit longer than the Matty's startup sound, the time you have to wait before you should change the wand switches is much less than when playing the full Afterlife startup sound.

Jumper Selections	**SEL3**	**SEL2**	**SEL1**
No HUM when pack is idle, Matty startup	off	off	off
No HUM when pack is idle, Afterlife short startup	off	off	ON
No HUM when pack is idle, Afterlife full startup	off	ON	off
TEST mode	off	ON	ON
HUM when pack is idle, Matty startup	ON	off	off
HUM when pack is idle, Afterlife short startup	ON	off	ON
HUM when pack is idle, Afterlife full startup	ON	ON	off
TEST mode (same as test mode with 2 jumpers)	ON	ON	ON

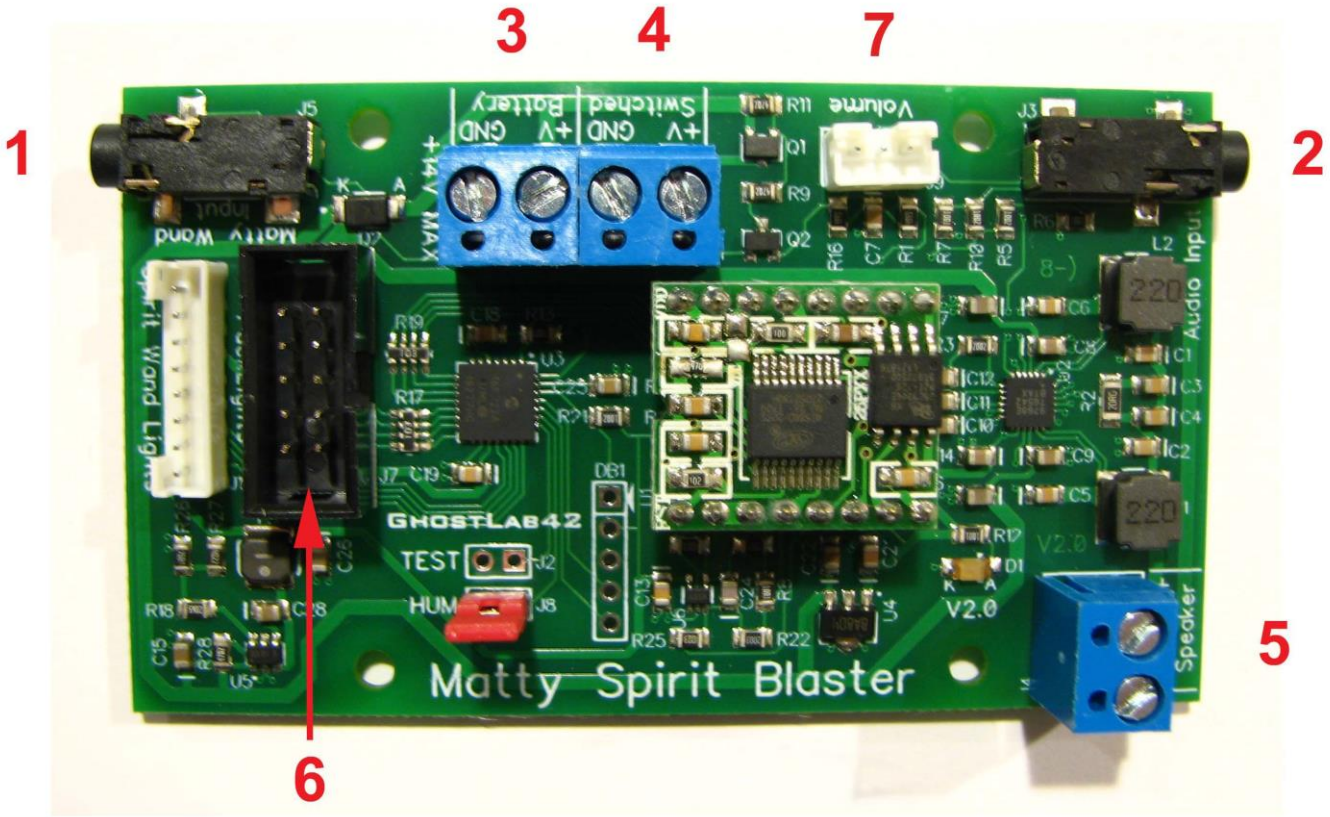


Precautions:

1) Power connections - make sure the battery polarity is correct. There is protection on this board for a reverse battery, but other electronics may not have that protection.
2) Make sure the voltage does not exceed the maximum of 14V DC. A battery charger can deliver significantly higher voltage than what the battery is rated for, so do not connect the battery charger to the electronics or the battery while it is still connected to the electronics.
3) Do not wire things (or unwire) with the battery power applied. Dangling power wires that may touch something on the board can easily damage electronics.
4) Do not set the board on metal (or any highly conductive surface) when battery power is applied. Make sure the board is either on a non-conductive surface or is well mounted to a metal surface and no loose metal parts (screws, nuts, etc.) are able to short things on the boards before power is applied.
5) Minimize static zaps (ESD). Zapping the boards directly by touching them after walking around can damage electronics. Best to ground yourself on some grounded surface (or large metal object) before touching electronics.

Connections:

There are seven sets of connections available on the MattyBlaster Board:



1. Matty Wand – connect one end of the 10ft audio cable in here, the other end of the cable goes into the jack on the handle of the Matty Wand.
2. Audio input – plug in a 3.5mm stereo audio cable from an MP3 player into this connector. The incoming audio will be mixed with the pack sound audio.
3. The main 9V to 12V DC battery is connected to these two screw terminals marked as “Battery”.
   The positive lead (“+”, Positive, Pos, usually RED) from the battery is connected to the “Battery“ ”+V”s crew terminal.
   The negative lead (“-“, Negative, Ground, GND, Common, usually Black) is connected to the “Battery”“GND” screw terminal.
4. For a separate Pack Lights board (not needed when using the GBFans board), a switched battery voltage is available in the screw terminals marked with “Switched” that can be wired to the pack light’s electronics board’s battery input .
   The “Switched” “+V” is wired to the light’s positive Battery connector.
   The “Switched” “GND” is wired to the light’s negative Battery connector.
5. Speaker connections. Two wires go to the speaker. It does not matter which wire goes to which speaker terminal. THe wires should NOT be connected to a ground or common wire from the batteries.
6. Pack Lights ribbon cable connector. Only needed if this board will be controlling the GBFans Lights, GhostLab42 Pack Lights or GhostLab42 Spirit Pack Lights kits.
7. Volume control pot connection. Keyed connector for panel mount volume control potentiometer.

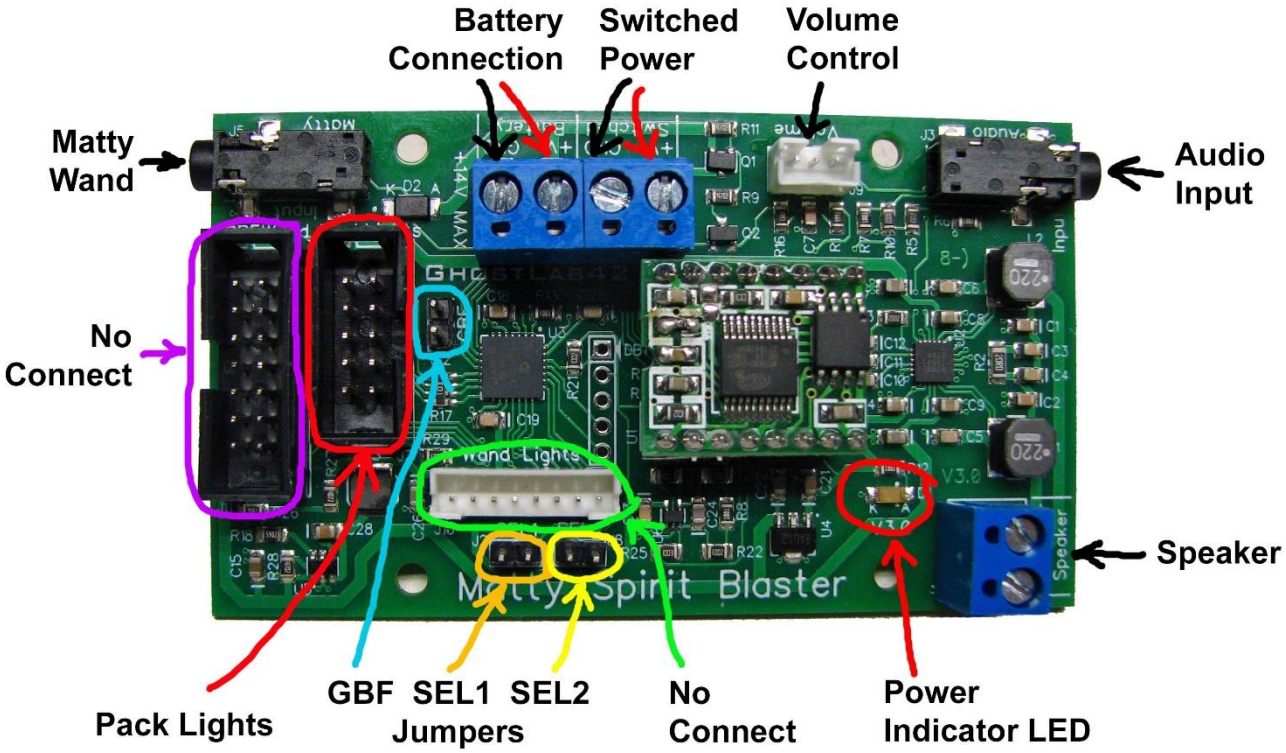
Version 3.0 of the Matty Blaster board has some additional connectors, but they are not used with the Matty Blaster specific version of the board.

Jumpers:

GBF – Not used

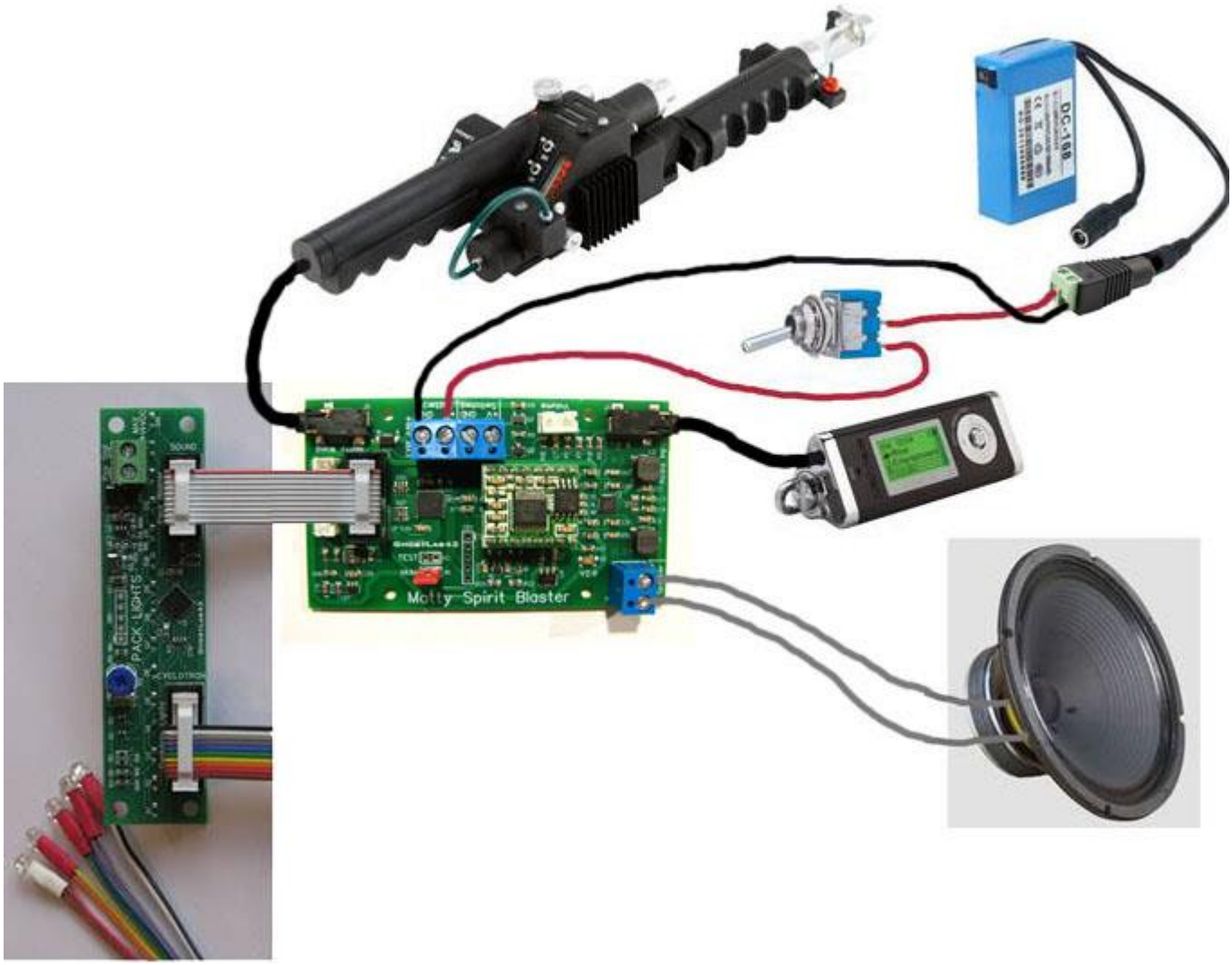
SEL1 – same as TEST, used to put the board in a test mode when power is first applied

SEL2 – HUM selection (ON => Hum, OFF => no Hum)

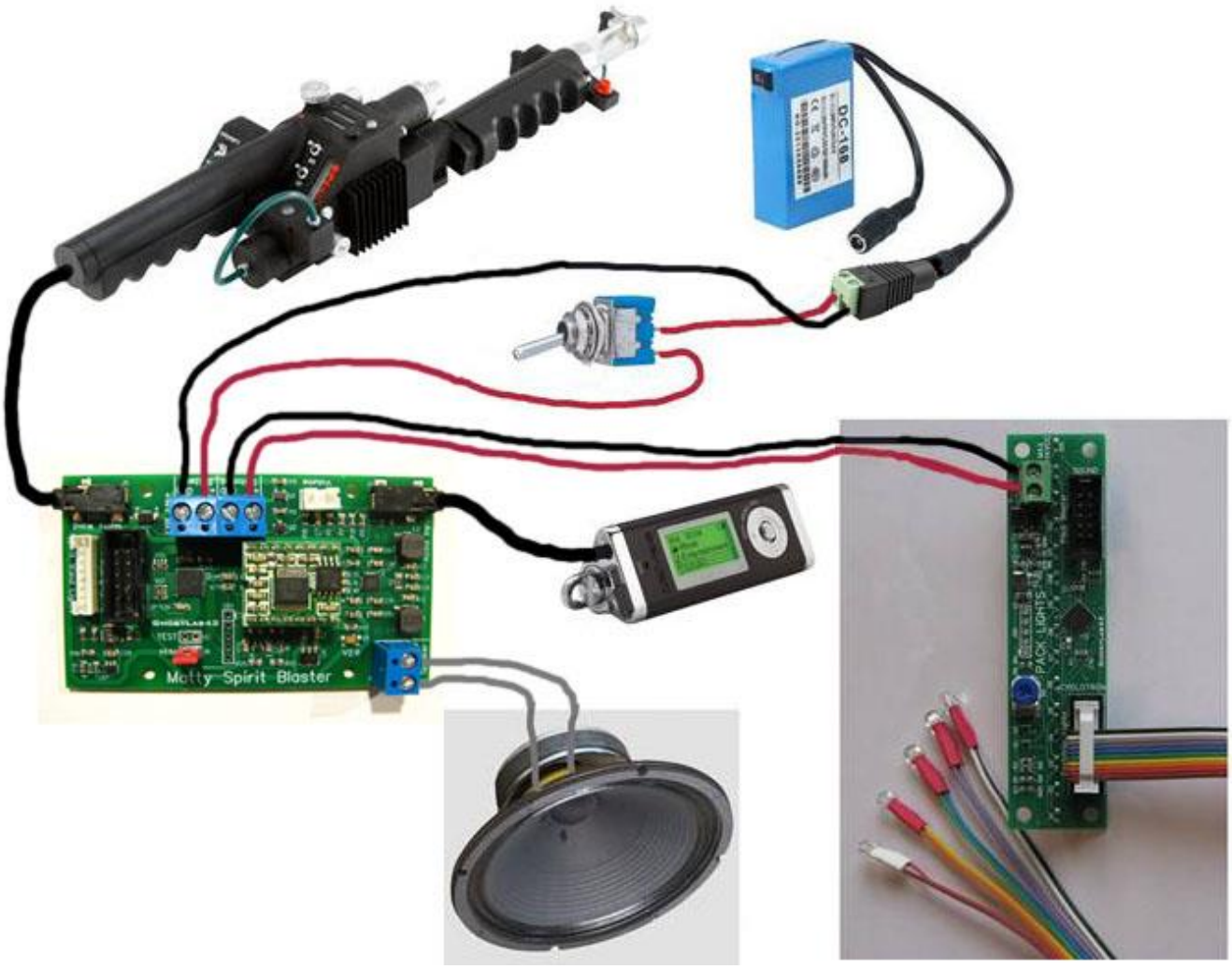


Wiring:

Here is a wiring diagram with the GBFans Pack Lights board:



Here is a wiring diagram with a generic Pack Lights board (controlled via the Switched Battery power connection):



Here is picture with the volume potentiometer, the Matty wand cable and the ribbon cable attached:

