

protoBox

Arduino and battery powered multipurpose,customizable box with joystick control,bluetooth,leds and high power switching driver(ZVS).

Vitor

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Description

Details

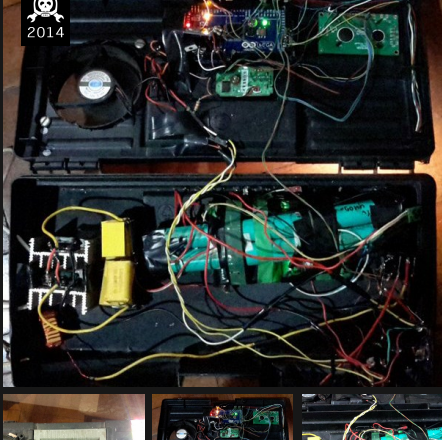
Files

Components

Logs

Instructions

Discussion



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TEAM (1)

Vitor

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boxOS, Codes and tips

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ARDUINO LEDS POWER SUPPLY BATTERY

THEHACKADAYPRIZE FLYBACK TOOLBOX

INDUCTION HEATER ZVS

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DESCRIPTION

It first started with a box to hold and cool my Mazzilli flyback driver(aka ZVS), but grew and became smarter with the Arduino. The idea is to have a portable box in which you can put anything you want and also power anything - including your smartphone and things that need a high current oscillator.It is also meant to allow interaction using bluetooth and infrared.

The simple BT "protocol" I made is also flexible and allows easy control of an endless number of devices.

DETAILS

This section can be used to explain everything about your project.

The batteries that keep the box alive are two sets of 11.1 lipo taken from old notebooks(4400mAh each) in parallel, they can supply power for a long time .The protoBox supplies 12V, 3.3V and 5V(USB or connector).By the way, most of the connectors are old computer connectors.

The "ZVS" driver used is a modified version I made that allows greater voltages (I've already ran under 80V).For greater current applications, like the heater I showed in the pictures, use the IRFP260 mosfet and cool the capacitors.

The joystick with buttons used to navigate through the menu is from a Wii Nunchuck(to Arduino SDA and SCL pins), and the lcd display is a standard 16x2.

The switch turns the arduino, leds, 5V usb charger on. The ZVS is controlled by two relays,one to handle smaller currents and other to handle the high current of an external source.

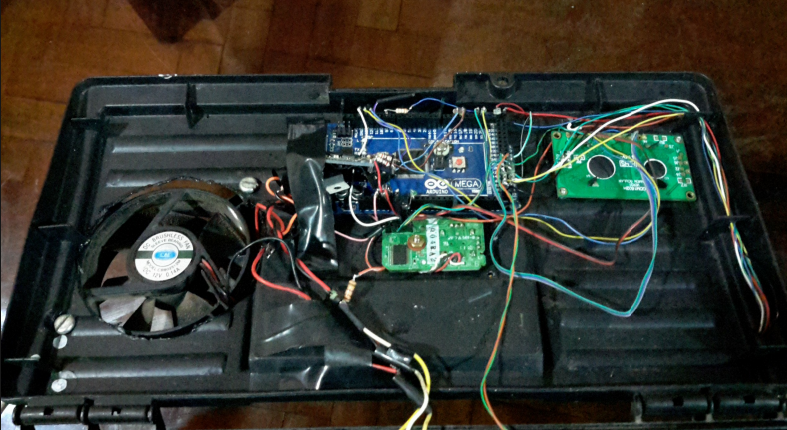
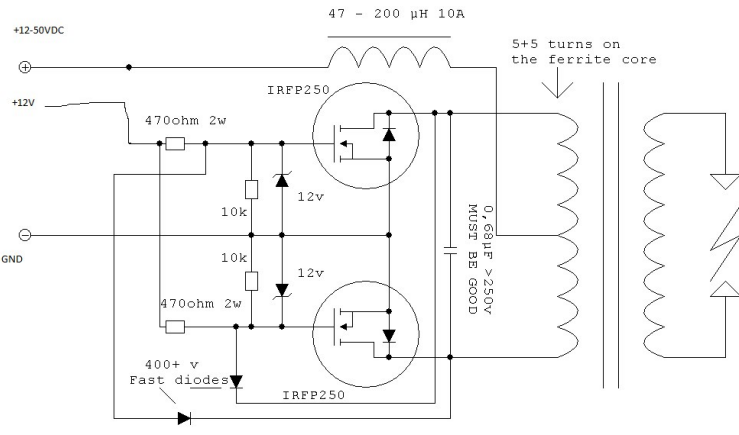
The led strips are controlled using two shift registers(to Arduino SPI pins) and diodes with cathodes to their inverted outputs, so you don't need any transistor to level shift the 5v to 12v(they'll always be 0v to turn on or unconnected to turn off)!

Speaking of leds, I've also included an IR receiver and an IR led (must be to Arduino pin 9)to allow the protoBox to talk to my TV or DVD, you know, just for the case I can't find the remote.

The bluetooth module is connected to Arduino serial TX and RX 2.

More Arduino pin info can be found on the boxOS code on git.

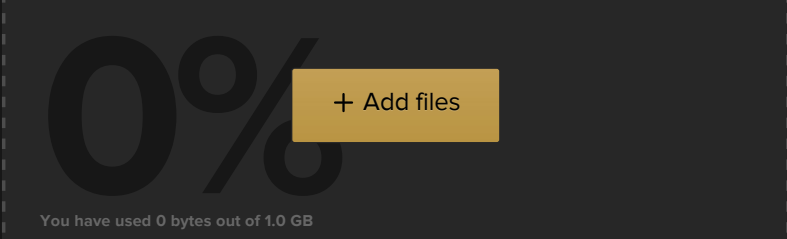
Flyback Driver



Edit details

FILES

Add and manage files for this project.



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COMPONENTS

You can list the components you used in your project here.

- 2 x 74HC595 or CD4094
Shift registers for the leds
- 1 x 12V Rechargeable Battery
- 4 x RGB LEDs or RGB LED strips
- 1 x LCD display
I used 16x2, must be Arduino compatible
- 1 x Arduino Board
Mega 2560 is a good choice

Edit components

View all 13 components

PROJECT LOGS

Project logs can be used to keep your followers up to date about your project.

Improvements!

Vitor • 08/21/2014 at 04:30 • 0 comments

I've just replaced the 3 switches by two relays(controlled in the lcd menu) and kept just the main switch.The bluetooth and IR are now both working fine.

Add a project log

View project log

BUILD INSTRUCTIONS

Build instructions can be used to create step by step how-to guide for your project.

Add instructions

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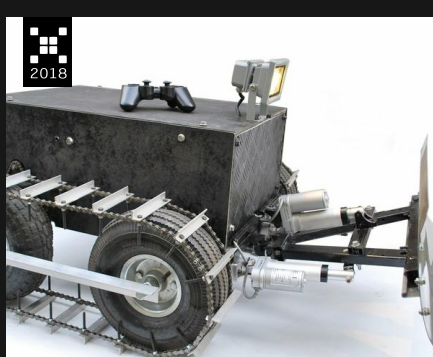


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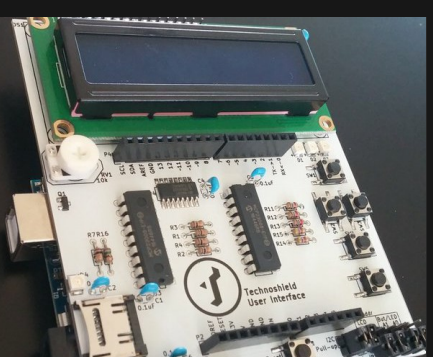
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