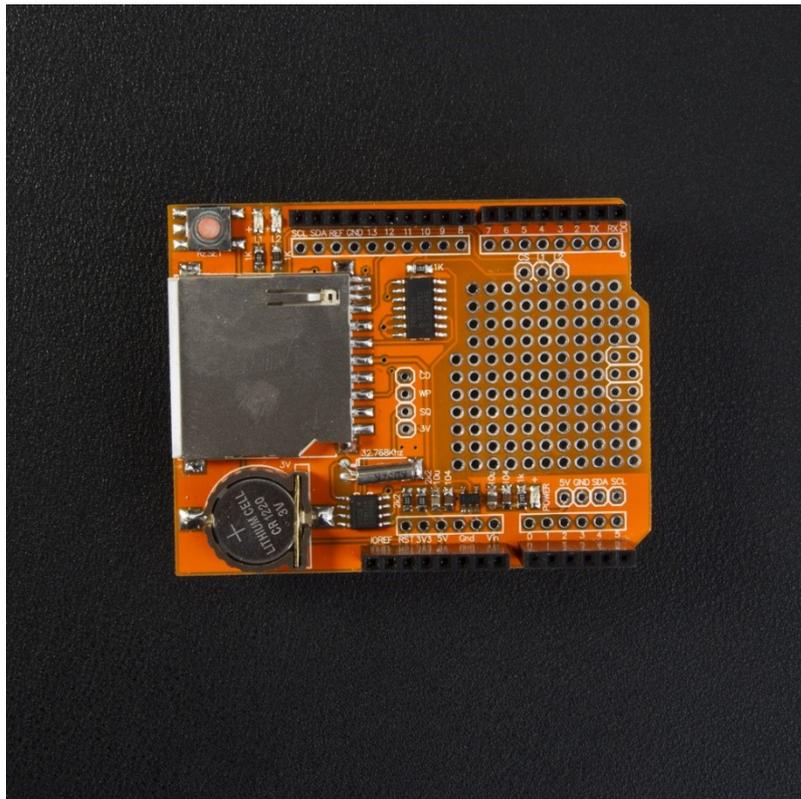


User Manual

For

Arduino Data logg shield (ST1046)



Description:

This Arduino data log shield is a dedicated ,well-designed and not expensive data logging shield. Which is originally designed by Adafruit, we only add some power pins and change the appearance to make it good-looking. And most important is that we have soldered the pins for you, so you needn't do that, Now it can directly plug into Arduino compatible UNO/Mega board.

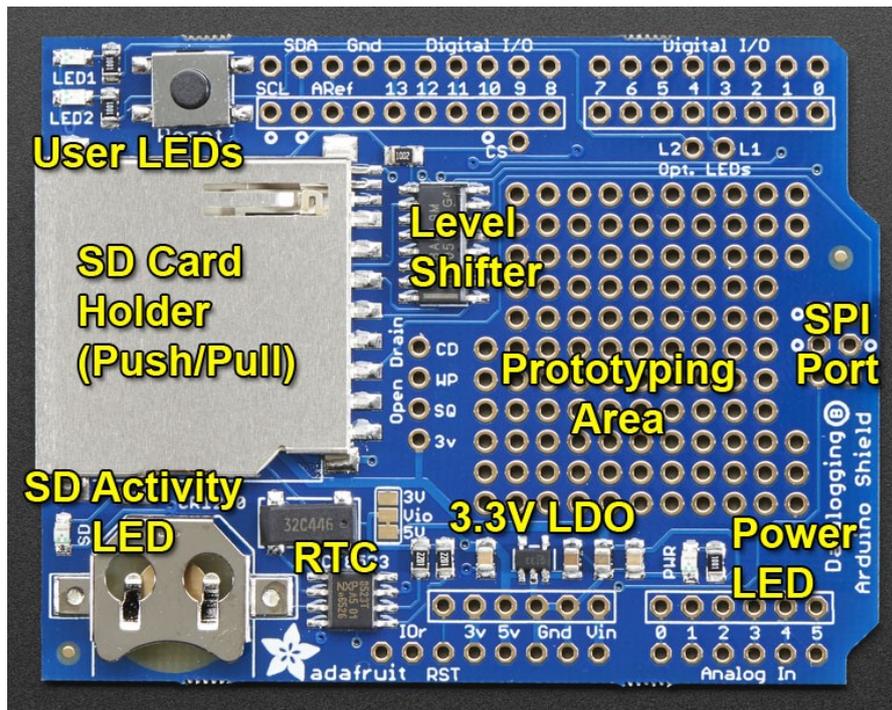
This popular is "R3" compatible so you can use it with just about any Arduino or compatible. You can be up and run with it in less than 15 minutes - saving data to files on any FAT16 or FAT32 formatted SD card, to be read by any plotting, spreadsheet or analysis program. This tutorial will also show you how to use two free software programs to plot your data. The included RTC (Real Time Clock) can be used to timestamp all your data with the current time so that you know precisely what happened when!

Feature:

- SD card interface works with FAT16 or FAT32 formatted cards. Built in 3.3v level shifter circuitry lets you read or write super fast and prevents damage to your SD card
- Real time clock (RTC) keeps the time going even when the Arduino is unplugged. The coin cell battery backup lasts for years
- Included libraries and example code for both SD and RTC mean you can get going quickly
- Prototyping area for soldering connectors, circuitry or sensors.
- Two onfigurable indicator LEDs
- Onboard 3.3v regulator is both a reliable reference voltage and also reliably runs SD cards that require a lot of power to run
- Uses the "R3 layout" I2C and ICSP/SPI ports so it is compatible with a wide variety of Arduinos and Arduino-compatibles

Shield Overview

The data log shield has a few things to make it an excellent way to track data. Here's a rough map of the shield:



SD Card

The big SD card holder can fit any SD/MMC storage up to 32G and as small as 32MB (Anything formatted FAT16 or FAT32) If you have a MicroSD card, there are low cost adapters which will let you fit these in. SD cards are tougher to lose than MicroSD, and there's plenty of space for a full size holder.

Simply Push to insert, or Pull to remove the card from this slot

The SD Activity LED is connected to the clock pin, it will blink when data goes over SPI, which can help you detect when its ok to remove or insert the SD card or power down the Arduino.

The Level Shifter moves all signals from 3.3 or 5V down to 3.3V so you can use this shield with any Arduino safely and not damage cards. Cheaper shields use resistors to level shift, but this doesn't work well at high speed or at all voltage levels!

The SD library, download from here

<https://github.com/adafruit/SD>

Real Time Clock

This is the time-keeping device. It includes the 8-pin chip, the rectangular 32KHz crystal, and a battery holder

The battery holder must contain a battery in order for the RTC to keep track of time when power is removed from the Arduino! Use any CR1220 compatible coin cell.

RTC Library, download from here:

<https://github.com/adafruit/RTClib/archive/master.zip>

Data logger

For using the data log function, you need the following parts to get this shield work.

- Arduino (of course!) an Atmega328 type is best - we always recommend going with an official 'classic' Arduino such as the Uno.
- SD card formatted for FAT and tested using our example sketch
- CdS photocell and a matching 10K pulldown resistor
- Temperature sensor with analog out, such as TMP36
- Battery pack such as a 6-AA 'brick' and a 2.1mm DC jack.
- or you can use a 9V clip for a power supply but a 9V powered logger will last only a couple hours so we suggest 6xAA's
- Some 22 AWG wire, soldering iron, solder, etc.

About how to connect the parts, we can refer the Adafruit's tutorial from here, but remember, this shield have soldered the pins already,

<https://learn.adafruit.com/adafruit-data-logger-shield/overview>