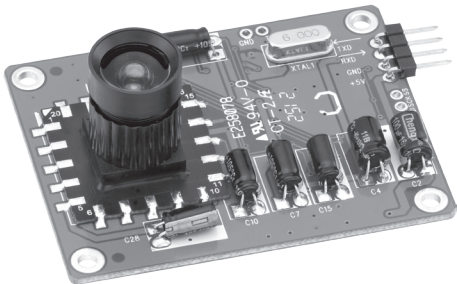




2760248

Camera Board



Thank you for purchasing your Camera Board from **RadioShack**. Please read this user's guide before installing, setting up, and using your new camera board.

Package Contents

- Camera Board
- Jumper Wires
- User's Guide



Features

- A JPEG color camera board tailored for Arduino board (not included) and integrated with an enhanced image processor to generate up to 640x480 resolution
- Support for both SPI and UART interfaces
- Support for composite video output
- Minimum zoom in distance: 30cm

- Works with other shields (not included) to build additional applications, such as:
 - A digital camera with the addition of an SD card shield for storage.
 - A bar code reader with the addition of a touch shield.
 - A wireless network camera with the addition of a WiFi shield.

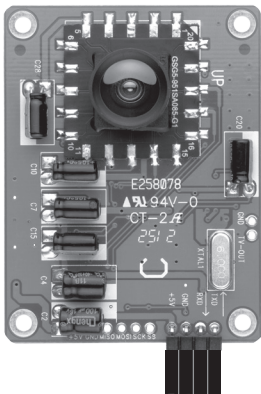
Connect to the Arduino Board



Note: *Each time you connect to the Arduino board, you can use only one of the following methods.*

UART Interface

1. Connect the connector end of the jumper wire into the pin header.



GND
(brown)

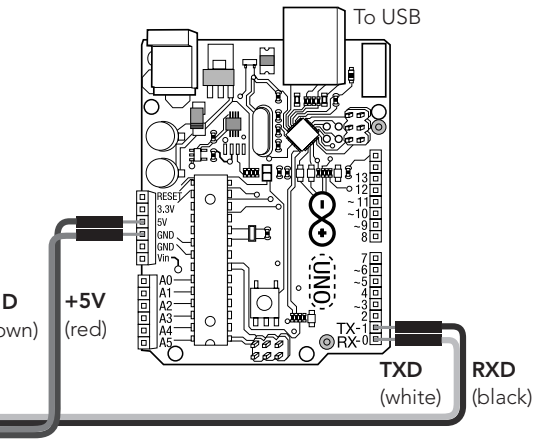
2. Connect the pins:

+5V to +5V

RXD to TX

GND to GND

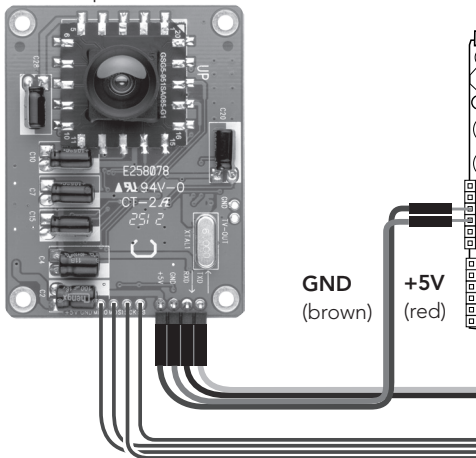
TXD to RX



SPI Interface

SPI provides a faster interface to read or write image buffer and can provide smoother video streaming than UART.

1. Connect the connector end of the jumper wire into the pin header.



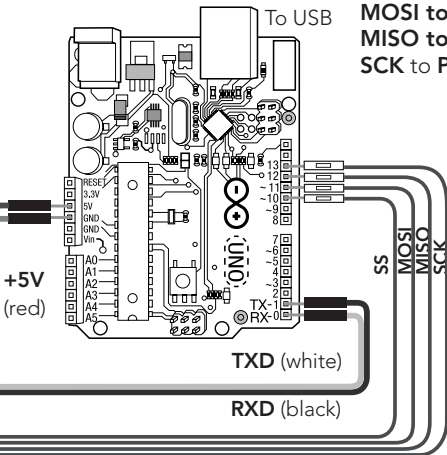
2. Connect the pins:

+5V to +5V
GND to GND

RXD to TX
TXD to RX

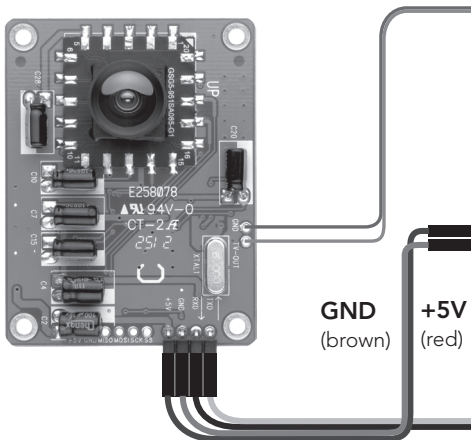
3. Use additional jumper wires (not included) to connect:

SS to Pin 10
MOSI to Pin 11
MISO to Pin 12
SCK to Pin 13

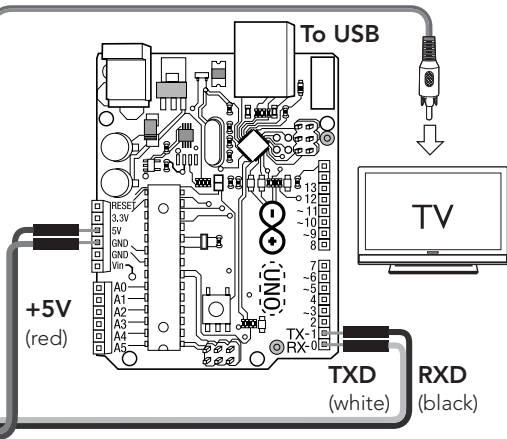


Video Connection

1. Connect the connector end of the jumper wire into the pin header.



2. Connect the pins:
+5V to +5V
GND to GND
RXD to TX
TXD to RX
3. Use a composite video cable (not included) to connect to a TV.



Download the Support Files

1. Go to <http://blog.RadioShack.com/2013/01/radioshack-camera-shield-for-arduino-boards>
2. At the end of the blog post, click **RadioShack Camera Board Support Files**, open the folder, and extract the contents of the folder onto your computer.

Sketch File for UART Interface

Click **camera.ino** and follow the instructions for downloading the sketch file for the VC0706 video processor IC.



Notes:

- *You must use the UART interface to send control commands to the Camera Board.*
- *Your Camera Board is by default set to UART interface at 115200 bps.*
- *Your Camera Board is by default set to read the image buffer through UART.*

Customize the Sketch for UART Interface

In the RadioShack Camera Board Support Files folder, open **VC0706_protocol.pdf** and **2760248_Camera Board Schematic.pdf** for information that will help you customize the sketch.

To use your Camera Board with an SD card shield, go to the RadioShack Camera Board Support Files folder and download the **SdFatBeta20120327.zip** driver package.

Customize the Sketch for SPI Interface

Refer to **Control Mode 0x0F** under section **1.3.2.7.READ_FBUF** in the **VC0706_Protocol.pdf** to customize the sketch.

Connect the Arduino Board to Your Computer

Using a USB cable (not included), connect your Arduino board to your computer so it can communicate and receive power.

Verify and Upload the Sketch

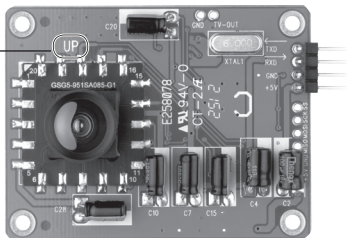
1. Disconnect **TXD** and **RXD** before uploading the sketch.
2. Open the .pde file in the Arduino development program.
3. If you have another shield connected to your Arduino board, merge its sketch with the Camera Board sketch.
4. In the Arduino development window, verify the sketch.
5. If the sketch contains no errors, upload it to your Arduino board.

Your Camera Board will now work with your Arduino board.



Note: Make sure your Camera Board is in an upright position (with label UP on top) when taking pictures.

UP
label



FCC Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Limited Warranty

RadioShack warrants this product against defects in materials and workmanship under normal use by the original purchaser for **ninety (90) days** after the date of purchase from a **RadioShack**-owned store or an authorized **RadioShack** franchisee or dealer. **RADIOSHACK** MAKES NO OTHER EXPRESS WARRANTIES.

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such as fuses or batteries; (d) ordinary wear and tear or cosmetic damage; (e) transportation, shipping or insurance costs; (f) costs of product removal, installation, set-up service, adjustment or reinstallation; and (g) claims by persons other than the original purchaser.

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RadioShack at:

RadioShack Customer Relations

300 RadioShack Circle, Fort Worth, TX 76102

04/08

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