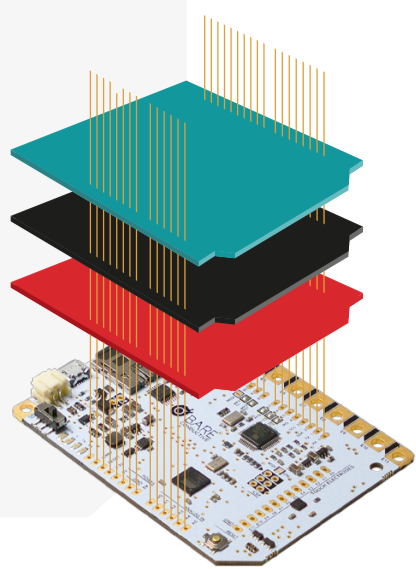


# TOUCH BOARD AND SHIELDS

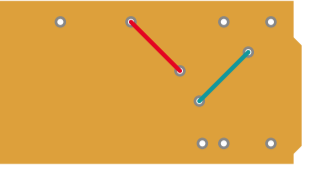


## IS IT COMPATIBLE?



YES

YES — with modifications



### ARDUINO

Shield	FULLY FUNCTIONAL	PARTIALLY FUNCTIONAL with no mods	FUNCTIONAL with MODIFICATIONS to Touch Board	FUNCTIONAL with MODIFICATIONS to Shield	FUNCTIONAL with MODIFICATIONS to Touch Board and to Shield
Proto Shield	Yes	No	No	No	No
Wireless Proto Shield	Yes	No	No	No	No
Motor Shield	No	Yes	No	No	Yes
Ethernet Shield without PoE Rev3	No	No	No	No	Yes

### ADAFRUIT

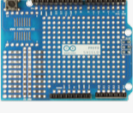
NeoPixel Shield	No	No	Yes	Yes	No
16-Channel 12-bit PWM/ Servo Shield	Yes	No	No	No	No
Bluefruit EZ-Link Shield	Yes	No	No	No	No

### CISECO

10 Amp Relay Shield	Yes	No	No	No	No
---------------------	-----	----	----	----	----

### SPARKFUN

Touch Shield	Yes	No	No	No	No
Ardumoto	No	Yes	No	No	Yes
CC3000 Wifi Shield	No	No	No	No	Yes



#### Arduino Proto Shield

The Arduino Proto Shield makes it easy for you to design custom circuits and extend the capabilities of your Touch Board. As it has no inherent functionality it does not conflict with the Touch Boards core functions.

#### Why this shield is great

You can solder parts like a potentiometer to the prototyping area to create a volume knob for example, or add a small solderless breadboard on top to quickly test circuit ideas without having to solder.

#### Pins and mods

There are no pin maps or modifications necessary for this shield to function, however check out the [Touch Board Pin Functions guide](#) to help you navigate and add in your custom design.

#### Arduino Wireless Proto Shield

The Wireless Proto Shield allows your Touch Board to communicate wirelessly using a wireless module. It is based on the Xbee modules from Digi but can use any module with the same footprint.

#### Why this shield is great

This shield can send and receive touch data from a remote untethered location. We used this shield to make a wireless doorbell but it could also be great for interactive artworks or installations that are hard to reach with cables.

#### Pins and mods

The Xbee wireless module that fits on top of the Wireless Proto Shield only uses D0(RX) and D1(TX) to communicate with the Touch Board. These two pins are already free to use on the Touch Board and this does not require any modifications.

#### Arduino Motor Shield

This shield has two separate motor channels that can each drive or sense a motor. It is based on the L298, a dual full-bridge driver designed to drive inductive loads such as relays, solenoids, DC and stepping motors. It is also Arduino TinkerKit compatible.

#### Why this shield is great

This shield is fairly easy to modify to work with the Touch Board. This is a key shield if you want to change a touch event into a physical movement. If you are just driving the motors without a brake you may not need to do any mods.

#### Pins and mods

Motor B requires you to remove the solder bridge at D8 on the Touch Board, disabling the MP3 function. To use Motor A you need to remap D3 to D10 on the Motor Shield. Removing all the solder bridges on the Touch Board also allows you to connect the Arduino TinkerKit output modules to the shield that use D5 and D6.

#### Ethernet Shield without PoE Rev3

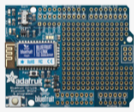
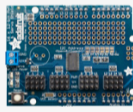
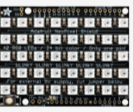
The Arduino Ethernet Shield connects your Touch Board to the internet through an Ethernet cable. Connect it to your network with an RJ45 cable and make things happen across the world using the Internet.

#### Why this shield is great

This shield provides a more reliable connection to the Internet than Wifi. You could use this shield to log touch event data over time to display online or use it to control other objects connected to the web. Soldering is required so make sure you have a good soldering iron and some decent solder.

#### Pins and mods

Due to the shield's high power demand at startup you need to bypass the Touch Board's boost circuit. Keep the switch in the off position on the Touch Board and then connect a regulated 5V power source to the 5V rail on the Ethernet shield. This will then power the Touch Board via the 5V pin from the shield and also power the shield itself.



#### Adafruit NeoPixel Shield

The NeoPixel shield hosts 40 configurable RGB LEDs. The pixels are arranged in a 5x8 matrix and are all individually addressable. Only one pin (D6) is required to control all the LEDs. You can cut a trace and use nearly any other pin if you need some customization.

#### Why this shield is great

We love this shield and often use in demos at trade fairs. We programmed it to translate the proximity of your hand from a painted sensor into a bar graph on the LEDs.

#### Pins and mods

This shield requires a very quick and simple modification using a soldering iron. Simply remove the solder bridge on pin 6 or remap it to another pin, like D13. The latter option saves the MP3 functionality on the Touch Board.

#### Adafruit 16-Channel 12-bit PWM/ Servo Shield

This shield uses only two I2C pins to control 16 free-running PWM outputs. You can even stack multiple shields on top of each other to control more.

#### Why this shield is great

This is a good way to get multiple things moving and responding to touch. It is fully compatible with the Touch Board although you may need to use an external power source for your motors. Definitely a good match for interaction artists and designers.

#### Pins and mods

There are no pin maps or modifications necessary for this shield to function. You will need to use external power for the motors. The Touch Board's capacitive sensor (MPR121) has its I2C address set to 5C, so keep this in mind when altering the shield's default address.

#### Adafruit Bluefruit EZ-Link Shield

This bluetooth shield is a regular 'SPP' serial link client device and can pair with any computer or tablet and appear as a serial/COM port (except iOS). The EZ-Link can automatically detect and change the serial baud rate and the DTR/RTS/DSR flow control pins are automatically synced to the computer serial port.

#### Why this shield is great

The Bluefruit EZ-Link shield is the easiest way to get bluetooth connectivity to your Touch Board. If you have any ideas for interesting interfaces that connect to other bluetooth compatible gadgets without cables, this is your shield.

#### Pins and mods

This shield works without any mods as it takes commands from D0 and D1 pins which are free for use on the Touch Board. There is also a nice prototyping area so check the [Touch Board Pin Function guide](#) if you want to add some extras on top.

#### Ciseco Ethernet Shield 10 Amp Relay Shield

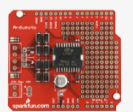
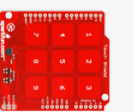
The Ciseco Shield features a relay with a 10 amp 240 VAC/28VDC contact rating. This allows you to control any mains devices from a digital pin on the Touch Board.

#### Why this shield is great

This is the shield we used to create the painted light switch and was included in our Light Switch Inventors Kit on our Kickstarter campaign.

#### Pins and mods

This shield is fully compatible with the Touch Board but does require some soldering to connect D13 to the INPUT of the relay. This allows you to control the relay and anything you connect to it from the Touch Board. Simply solder a jumper wire from D13 to the solder pad labelled INPUT.



#### Sparkfun Touch Shield

The touch shield is a great way to build simple capacitive touch interfaces. In fact it features the same capacitive chip as the Touch Board; the MPR121.

#### Why this shield is great

Use this shield to add a keypad on top of the touch board, to make additional touch points. Now you have a total of 24 sensors.

#### Pins and mods

As the MPR121 is an I2C device you can add multiple touch chips in parallel along the same bus. The MPR121 chip on this shield has its address normally set to 5A which is different to the MPR121 on the Touch Board (5C), so no mods needed.

#### Sparkfun Ardumoto

Similar to Arduino Motor Shield this shield has two motor channels. You can control the speed and direction of your motors and it works with motor A without any mods.

#### Why this shield is great

Get motor channel A driving a motor in minutes with this shield. It is the simplest way to transform a touch event into a physical movement.

#### Pins and mods

To get both motor channels running you will need to remap pin D3 (PWMA) to another PWM pin like pin D10.

#### Sparkfun CC3000 Wifi Shield

This is Sparkfun's version shield containing the Texas Instruments CC3000 Wifi chip. The shield works with some minor trace cutting and remapping as well as a mod on the Touch Board.

#### Why this shield is great

This shield on a Touch Board will definitely spark some ideas! You can get touch data onto the web or control devices half way across the globe. It uses SPI for communication which allows you to push data as fast or as slow as you want.

#### Pins and mods

There are a couple of ways to modify this board. You will need to cut the traces on D13, D12, D11 and D8 on the shield, these are used to access the micro SD card — luckily there's already an SD card on the Touch Board. Remap EN from D7 to D0 and INT from D2 to D1. Make sure you cut the traces for D7 and D2 leading to the shield's associated legs.