

This guide is for the Adafruit EYESPI Breakout board.

Adafruit's most recent display breakouts have come with a new feature: an 18-pin "EYE SPI" standard FPC connector with flip-top connector. This is intended to be a sort-of "STEMMA QT for displays" - a way to quickly connect and extend display wiring that uses a lot of SPI pins. In this case, we need a lot of SPI pins, and we want to be able to use long distances, so the answer is an 18-pin 0.5mm pitch FPC connector.

Power Pins

- Vin - This is the power pin. To power the board (and thus your display), connect to the same power as the logic level of your microcontroller, e.g. for a 3V micro like a Feather, use 3V, and for a 5V micro like an Arduino, use 5V.
- Gnd - This is common ground for power and logic.

I2C Logic Pins

- SCL - This is the I2C serial clock pin. Connect to the desired I2C clock pin on your microcontroller.
- SDA - This is the I2C serial data pin. Connect to the desired I2C data pin on your microcontroller.

SPI Pins

- SCK - This is the SPI clock input pin.
- MOSI - This is the SPI MOSI (Microcontroller Out / Serial In) pin. It is used to send data from the microcontroller to the SD card and/or display.
- MISO - This is the SPI MISO (Microcontroller In / Serial Out) pin. It's used for the SD card. It isn't used for the display because it's write-only. It is 3.3V logic out (but can be read by 5V logic).
- DC - This is the display SPI data/command selector pin.
- RST - This is the display reset pin. Connecting to ground resets the display! It's best to have this pin controlled by the library so the display is reset cleanly, but you can also connect it to the Microcontroller's Reset pin, which works for most cases. Often, there is an automatic-reset chip on the display which will reset it on power-up, making this connection unnecessary in that case.
- TCS - This is the TFT or eInk SPI chip select pin.

GPIO Pins

- GP1 and GP2 - These are the GPIO pins.

Chip Select Pins

- TSCS - This is the Touch Screen Chip Select pin.
- MEMCS - This is the Memory Chip Select. This pin is required for communicating with the onboard RAM chip.
- SDCS - This is the SD card chip select pin. This pin is required for communicating with the onboard SD card holder. You can leave this disconnected if you aren't going to access SD cards.

Backlight Pin

- Lite - This is the PWM input for the backlight control. It is by default pulled high (backlight on), however, you can PWM at any frequency or pull down to turn the backlight off.

Other Pins

- BUSY - This is the busy-detect pin used by eInk displays. It is optional, and if not connected, the code will wait an approximate number of seconds.
- INT - This is the capacitive touch interrupt pin. When a touch is detected, this pin goes low. This is only necessary when using a capacitive touch display.

You can connect an EYESPI compatible display to the EYESPI breakout board using an EYESPI cable. An EYESPI cable is an 18 pin flexible PCB (FPC). The FPC can only be connected properly in one orientation, so be sure to follow the steps below to ensure that your display and breakout are plugged in properly.