

Fitting the card

A 24 x 56 mm reference strip for the Raspberry Pi 4 and Raspberry Pi 5.

The GPIO Card slides onto the Raspberry Pi 40-pin header and stays there while you work, so the pinout sits beside your hands instead of on a browser tab behind you. It is a reference only: it carries no power, makes no electrical connection, and nothing on it needs setting up.

Before you start

The card fits any standard 40-pin header, and is cut short so it clears the connectors that sit just past pin 40 on both the Pi 4 and the Pi 5.

It will not seat on the Pi 400 or Pi 500.

Their header lies flat inside the keyboard case, so there is no room above it. A right-angle header adapter gives you somewhere to fit the card.

THE CARD

Size	24.0 x 56.0 mm
Thickness	1.6 mm FR-4
Holes	40 plated, 1.50 mm
Grid	2.54 mm
Finish	ENIG gold, white mask
Fits	Raspberry Pi 4 and Pi 5
Weight	4 g

Fitting it

1 Switch the Pi off

Not strictly required - the card is passive - but you are about to put your fingers across every pin on the header, so power it down first.

2 Find pin 1

Pin 1 is at the end of the header furthest from the Ethernet and USB sockets - the micro-SD and USB-C end of the board. Pin 40 is the end nearest the Ethernet socket. Most Raspberry Pis also mark pin 1 with a square solder pad, where every other pad is round.

3 Line up pin 1 on the card with pin 1 on the header

The card is printed with pin numbers down both outside edges. Hold it so the number 1 sits over the header's pin 1. Turned end for end, every label lands next to the wrong pin - the numbers will not match the header, which is how you catch it.

4 Lower it straight down

All 40 holes engage at once. Keep the card level and press gently; it should slide down without force. If one corner catches, lift it and start again rather than rocking it on.

5 Push it most of the way down, not all the way

Leave a few millimetres of pin showing above the card so jumper wires still have something to grip. The card does not need to touch the Pi.

Before you wire anything to these pins

Raspberry Pi GPIO is 3.3 V logic and is NOT 5 V tolerant.

A 5 V sensor output wired straight to a GPIO pin can damage the SoC.

Pins 2 and 4 are 5 V supply rails - the Pi gives you 5 V, it will not accept it back on a GPIO.

Pins 27 and 28 are reserved for HAT identification; using them as ordinary GPIO breaks auto-detect.

Reading the card

One side tells you where a pin is. The other tells you what it does.

The front - where is it?

Physical pin numbers 1 to 40 run down the outside edges, and the BCM GPIO number sits beside each hole. Both numbering systems are on the same face precisely because mixing them up is the most common way a working circuit does nothing.

Physical pin 12 is not GPIO 12

Physical pin 12 carries GPIO 18. GPIO 12 is on physical pin 32.

Libraries ask for one or the other: BCM mode wants the GPIO number, BOARD mode wants the pin number.

The back - what is it?

The same 40 rows, named by bus instead of by number: SDA and SCL for I2C, TXD and RXD for UART, MOSI, MISO, SCLK, CE0 and CE1 for SPI0, and the four hardware PWM pins. A blank row is an ordinary GPIO with nothing special attached to it - free for you to use.

Colour

Seven colours, the same on both faces, so a pin can be found by what it does rather than by counting along the header.

COLOUR KEY

- | | |
|-----------------|---------------------------------------|
| ● 5V power | ● UART TXD / RXD |
| ● 3.3V power | ● SPI0 MOSI / MISO / SCLK / CE0 / CE1 |
| ● Ground | ● Hardware PWM |
| ● I2C SDA / SCL | |

Quick answers

- | | |
|------------------------------------|--|
| Where is 5 V? | Pins 2 and 4. Supply only. |
| Where is 3.3 V? | Pins 1 and 17. |
| How many grounds? | Eight: 6, 9, 14, 20, 25, 30, 34 and 39. |
| Which pins are I2C? | Pin 3 is SDA, pin 5 is SCL. |
| Which pins are UART? | Pin 8 is TXD, pin 10 is RXD. |
| Which pins are SPI0? | 19 MOSI, 21 MISO, 23 SCLK, 24 CE0, 26 CE1. |
| Which pins do hardware PWM? | 12, 32, 33 and 35. |
| Can I leave it on? | Yes. It is narrow enough to stay on while a HAT is fitted. |

Taking it off and looking after it

Lift it straight up with a finger at each end. Do not lever it off from one end - that bends the header pins. The gold plating needs no cleaning; if it picks up flux or dust, a dry cloth is enough. Stored flat it will outlast the Pi it came with.