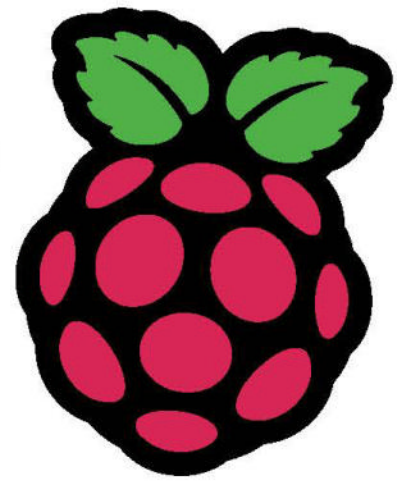




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The *MagPi*



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MASTER THE **LINUX COMMAND LINE INTERFACE**

EXT3-1 Kit and 3.70" E-ink display

SPECS

DISPLAY:

3.7", 240×416 resolution, 130 dpi

DRIVER:

Drive displays between 1.54" and 12", 8MB flash memory, open-source

INTERFACE:

Capacitive touch with customisable UI

► Pervasive Displays ► pervasivedisplays.com ► £29 / \$37

An updated e-ink display and driver board for Raspberry Pi Pico that saves on space. **Rob Zwetsloot** takes a look

When we last looked at the display and extension board that makes up Pervasive Displays' line of Pico development kits, we quite liked the customisability of the display and its code (magpi.cc/121). However, we were concerned with the amount of space it took up. As a development kit for making product with a Pico, it's not too much of an issue as you're likely going to have everything be a little more compact in a final product. Hobbyists not as much, though.

The newer EXT3-1 expansion board, along with the 3.70" touchscreen display, have shrunk down in the right areas, making them far more appealing to hobbyists. The display itself is

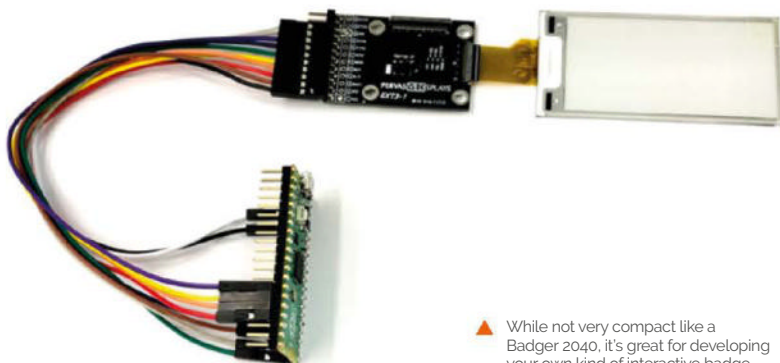
very cool and almost wafer-thin, while still having great contrast, and even capacitive touch capabilities. It's limited to black and white but that's not too unusual still for e-ink displays.

Hooking it all up is quite simple – if you've ever added a Raspberry Pi Camera Module to a Raspberry Pi, the ribbon and connector will be familiar to you. These cannot be directly plugged into Pico, so once you've installed the screen to the extension board, you'll need to connect to Pico using GPIO pins and wires. You can prototype easily on a breadboard, but eventually you'll need to break out the soldering iron.

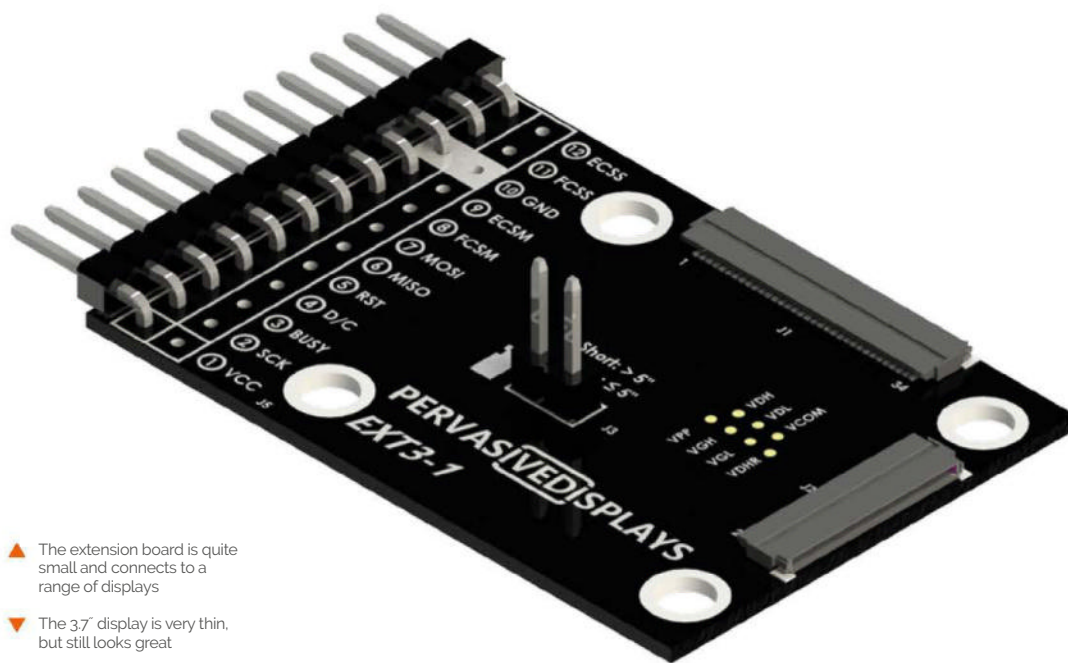
Code differently

While many Pico kits and products use MicroPython or variations on it like CircuitPython, here Pico uses Arduino code, which is much closer to C++. While this may be different to some, the way the display is programmed is easy to understand thanks to the example code provided – and the very readable way most of the PDLs library is set out. The documentation is pretty good too, especially if you plan to use the whole system for development. Wireless capabilities are not currently included in the Pico build, though, so you'll need it to interact with something else if you want to do something networked.

The whole thing runs very smoothly once all set up and coded, with the sort of response time



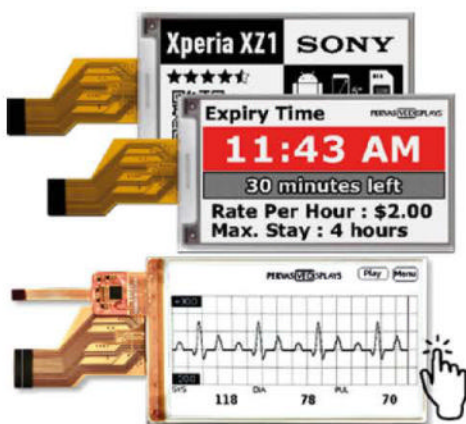
▲ While not very compact like a Badger 2040, it's great for developing your own kind of interactive badge



▲ The extension board is quite small and connects to a range of displays

▼ The 3.7" display is very thin, but still looks great

“ The whole thing runs very smoothly once all set up and coded, with the sort of response time you might expect from an e-ink display ”



you might expect from an e-ink display – so not as quick to refresh as an LCD or LED display, but good enough for the kind of functions you’d want with e-ink. One thing we will add: we mentioned it’s quite a thin display and, while the contrast is good, putting it right in front of a strong light source may see some of that light come through. In such cases, you can always reverse the black and white pixels on the display. However, that still isn’t a perfect solution.

We do like the Pervasive Displays kits, and the expanding range of display sizes is making them more and more attractive for both commercial and hobby projects. We need to find a way to permanently use this screen now. 📺

Verdict

A great display that has some quite powerful code backing it, even if it is more unique code than other Pico products.

8/10