

E Ink Xplained Pro

Summary

Ineltek has developed a low-cost, simple-to-use family of E Ink display add-on boards for the Microchip Xplained Pro prototyping and evaluation platform - currently available with 1.5", 2.6", 2.9" and 5.7" displays. Our Ineltek E Ink Xplained Pro boards make it easy to connect and easy to develop using E Ink's unique enabling technology in a Microchip ARM® or AVR® based development environment. Ineltek's support for your e-paper display development includes software libraries, example projects, 2D and 3D CAD for the displays and the PCB data to quickly prototype your own designs.

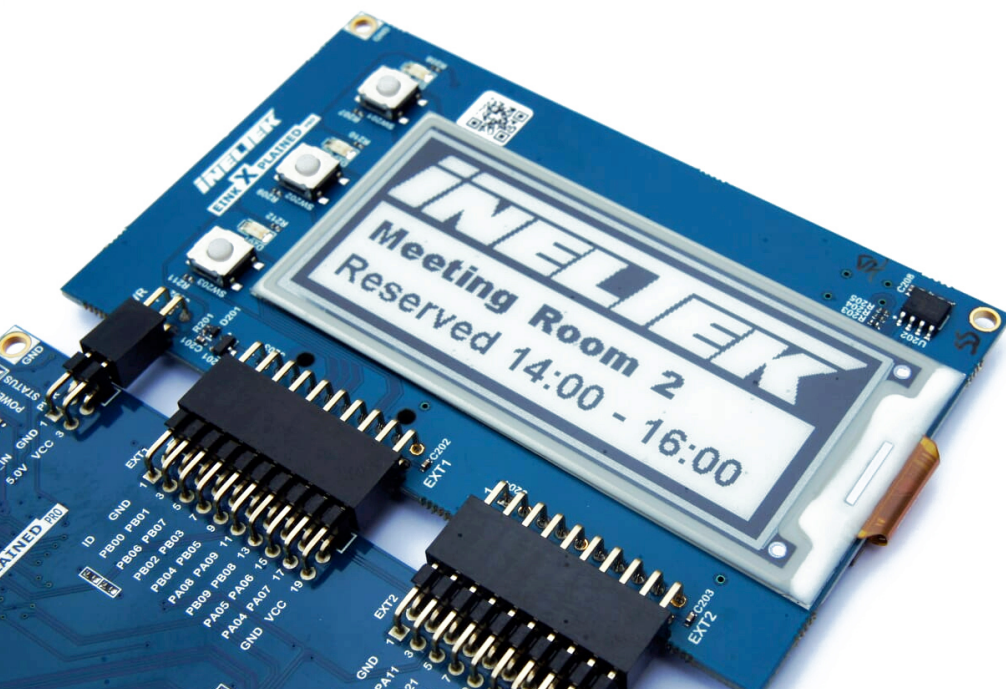


E Ink Displays

E Ink displays are ultra-low power displays that retain their image even when power is removed, making them ideal for low-power applications. Originally developed at MIT in 1997 to create a battery powered electronic book that could last for weeks without charging, it was also developed to allow the user to read off the screen for long periods of time without eye strain. E Ink has since branched out and now develops screens of all shapes and sizes for varying markets from shelf labels to outdoor signage. Originally developed in black and white, displays are now available in greyscale, three colour variants - adding yellow or red into the mix - and with E Ink's new Advanced Colour e-Paper (ACeP™) technology, a full colour gamut can be achieved, including all eight primary colors.

Highlights

- ◆ **Low Power:** E Ink displays only consume power when changing the state of the display. Once power is removed, the display will continue to hold an image. This allows for battery powered applications that can retain critical information, even if the battery drains.
- ◆ **Sunlight Readability:** Easy on the eyes, E Ink displays are reflective displays and only get easier to read outdoors. Great for outdoor signage and power consumption where a backlight isn't required.
- ◆ **Paper-Like Display:** E Ink displays look and feel like paper but are much more dynamic. Useful not only for reading, but for barcode scanning where traditional LCDs often fall short.



Applications

- ◆ eReaders
- ◆ Shelf Labels
- ◆ Logistics
- ◆ Luggage Tags
- ◆ Signage
- ◆ Wearables

Info

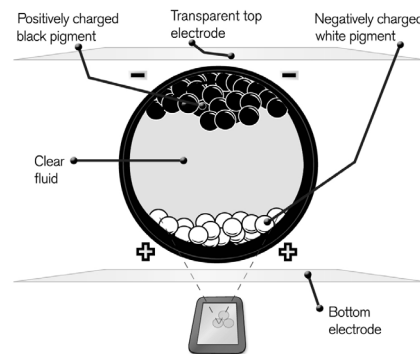
Software available on GitHub:



github.com/Ineltek-UK/

Technology

E Ink displays are made of a layer of tiny micro-capsules filled with a clear, viscous liquid, in which are charged coloured particles. Electrodes sit above and below the capsules to form the pixels on the display. When an electric field is applied across the capsules, the charged particles will align accordingly. Once the field is removed, the particles are held in suspension due to the viscosity of the liquid within the capsule. This allows the display to retain its image after power is removed and also ensures that power is only drawn when the orientation of the particles must be changed. The particles will then either absorb or reflect light to create a glare-free display that only gets easier to read in sunlight.



Getting Started

In order to get started with the E Ink Xplained Pro, a Microchip Xplained MCU board is required. The software can then be downloaded from GitHub. Once extracted, example projects are available for a number of MCUs and can be compiled and programmed to get the demo up and running. Documentation is included with the software library to walk through setting up a new project with the E Ink software library included. For more info contact your local Ineltek office.

Prototype to Production

The E Ink Xplained Pro is designed to get you up and running with a prototype in a matter of minutes. Once you are ready to move on from evaluation, we aim to get you into production as quickly and as easily as possible. Datasheets are available for each of the E Ink displays and reference schematics are available to allow you to simply paste into your own project. 2D and 3D CAD data is also available to aid in both electronic and mechanical design. Should you wish to use a different size display, Ineltek can assist in getting you the display best suited to your application. Reference designs can then easily be adapted for your selected display.



Ordering Info

- ◆ 1.5" Display (Black/White)
EinkXplained015bw
- ◆ 2.6" Display (Black/White/Yellow)
EinkXplained026bwy
- ◆ 2.9" Display (Black/White)
EinkXplained029bw
- ◆ 2.9" Display (Black/White/Red)
EinkXplained029bwr
- ◆ 5.7" Display (Black/White)
EinkXplained057bw

Boards can also be ordered with appropriate Microchip MCU boards