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Inkplate 2 With e-paper & Enclosure

333167

The Inkplate 2 is a versatile Arduino-compatible board with a 2.13" e-paper display, ideal for low-power IoT projects.

Full product documentation, files and tutorials: **solde.red/333167**

CORE ATTRIBUTES

SKU	333167
WEIGHT	97 g
BARCODE	732388678006

DESCRIPTION

The **Inkplate 2** is an Arduino-compatible board featuring a 2.13" three-color **e-paper display**. It is a plug-and-play device, programmable via USB port, and controlled by an **ESP32 microcontroller**. It easily connects to the internet via **WiFi** and has onboard Bluetooth as well. Since it uses only 8uA in low-power mode, it can last for months on a single Li-ion battery charge. It's simple enough for beginners with our documentation and getting started guides. Inkplate 2 has it all, packed on a small form factor board.

If you're like us, when you first saw an e-book reader, you thought "If only I could use a screen like this in my project". Thanks to the exceptional **sharpness and contrast**, the ability to display in sunlight, and truly unprecedented efficiency in terms of energy (it consumes energy only when changing the content on the screen), electronic paper is the ideal choice for many applications. Inkplate 2, continuing the tradition of the now well-known Inkplate series, offers a variation of e-paper accessible to hobbyists.

Inkplate 2 offers native support for both **ESPHome** and **ESP-IDF**, providing flexibility for any development workflow. For smart home enthusiasts, ESPHome enables seamless integration into the Home Assistant ecosystem using simple YAML configuration files to deploy dashboards and sensor readouts. For advanced engineering, native ESP-IDF framework support grants complete low-level control over the onboard Espressif processors. This enables developers to implement custom power management routines, maximize battery efficiency during deep sleep, and optimize wireless performance for production-ready IoT applications. A **USB-C to USB-C** cable is included in the package, so you can start using it right out of the box.

Inkplate 2 options:

- **With e-paper:** A basic version, featuring the e-Paper display itself, along with everything you need to get started! Ideal for desktop projects always powered via USB-C.
- **With e-paper display & enclosure:** This version offers a sturdy and sleek enclosure for your device, precisely 3D printed. It's perfect for those who want an extra layer of protection without any added features.

- **With e-paper display, enclosure, and battery:** Upgrade to this version if you're looking for both protection and mobility. This option includes a 3D-printed enclosure as well as an integrated battery, ensuring your device stays powered even on the go.

TECHNICAL DETAILS

- **Screen size:** 2.13"
- **Screen resolution:** 212×104px
- **Screen colors:** red, black, white
- **Pixel density:** 111dpi
- **Screen refresh time:** 15s
- **Microcontroller:** ESP32
- **Flash memory:** 4MB
- **RAM:** 8MB
- **Current (low-power mode):** 8uA
- Screen flickering occurs while changing the screen
- Optional 3D-printed enclosure
- Optional 3D-printed enclosure and 600mAh battery
- **Dimensions for version with EPD:** 65.3 × 35 × 9.8 mm / 2.6 × 1.4 × 0.4 inch
- **Dimensions for version with enclosure:** 79.3 × 44 × 15.7 mm / 3.1 × 1.7 × 0.6 inch
- **Dimensions for version with enclosure and battery:** 79.3 × 44 × 15.7 mm / 3.1 × 1.7 × 0.6 inch

SPECIFICATIONS

DISPLAY SIZE (INCH)	2.13 inch
DISPLAY RESOLUTION W	212
DISPLAY RESOLUTION H	104
DISPLAY COLOR	Black White Red
FRONTLIGHT	No
FULL REFRESH (S)	21 s
TOUCH SUPPORT	None
MCU PART NUMBER	ESP32-WROVER-IE-N4R8
MCU CLOCK (MHZ)	240 MHz
WIFI	Wifi4
BLUETOOTH	Classic And Ble
QWIIC COMPATIBLE	Yes
SD CARD SLOT	No
BATTERY INCLUDED	No
BATTERY CONNECTOR	Solder Pads
DEV ENVIRONMENTS	Arduino IDE, MicroPython

HAS ENCLOSURE	Yes
RTC ONBOARD	No

LINKS

Arduino Library	https://github.com/SolderedElectronics/Inkplate-Arduino-library
Open Source Hardware Files	https://github.com/SolderedElectronics/Soldered-Inkplate-2-hardware-design
MicroPython Module	https://github.com/SolderedElectronics/Inkplate-micropython
Arduino: Get Started	https://docs.soldered.com/inkplate/2/quick-start-guide/
Hardware Details	https://docs.soldered.com/inkplate/2/hardware/design/
Arduino Library Documentation	https://docs.soldered.com/inkplate/2/basics/initialization/
Full Documentation	https://docs.soldered.com/inkplate/2/overview
Arduino: Get Started	https://inkplate.readthedocs.io/en/latest/get-started.html

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