PRODUCT DATASHEET

Inkplate 4TEMPERA

333307

Inkplate 4TEMPERA is a versatile e-paper touchscreen device with Wi-Fi, Bluetooth, and extensive sensors for embedded development.

Full product documentation, files and tutorials: **solde.red/333307**

CORE ATTRIBUTES

SKU **333307**

WEIGHT **230 g**

BARCODE **732388658107**

DESCRIPTION

Inkplate 4TEMPERA is an easy-to-use, all-in-one device that puts the power of **e-paper technology** in the palm of your hand. Behind its 3.8-inch, 600×600-pixel e-paper touchscreen, it packs the following features into one compact, elegant package: **frontlighting**, an abundance of sensors, Wi-Fi and Bluetooth connectivity, a built-in battery, and a low-power operating mode.

In this digital age, screens are the windows through which we interact with much of our world, and **e-paper technology** addresses many of the challenges posed by conventional screens. More specifically, they offer **high contrast**, daylight readability, and unparalleled energy efficiency. And there is one more thing that sets our screens apart: **sustainability**. Every Inkplate 4TEMPERA gives new life to an ED038TH2 E Ink display that we've rescued from a tragic future as e-waste. We'd rather see these screens in your hands than in a landfill.

Inkplate 4TEMPERA is powered by the **ESP32 microcontroller**, to which we've added all of the peripherals we thought you might find useful. Inside the enclosure is a **1200-mAh battery** and power-management circuitry so you can charge it easily and determine its remaining charge accurately. Inkplate 4TEMPERA's real-time clock (RTC) allows for precise time measurements, and its **microSD card slot** allows you to store and display images, among other applications. If you're looking for sensors, you'll find a gyroscope and an accelerometer, as well as temperature, humidity, air quality, and gesture sensors. Inkplate 4TEMPERA also has a built-in, frequency-adjustable buzzer. And of course, it includes various GPIO pins that support peripheral connectivity through a GPIO expander or via the qwiic ecosystem. A **USB-C to USB-C** cable is included in the package, so you can start programming right out of the box.

Designed for high-performance embedded development, the Inkplate 4TEMPERA fully supports Espressif's official **ESP-IDF** framework. This native environment grants developers low-level control over the hardware, enabling precise memory management, optimized display rendering routines, and custom power profiling to take full advantage of the board's ultra-low deep sleep capabilities. Whether building

home prototypes or commercial-grade e-paper applications, ESP-IDF provides the robust foundation needed to unlock the full potential of Inkplate's wireless and processing features.

So, if you're in the market for a nice-looking screen on which you can display whatever you want - wherever, at whatever time of day, and for however long you want - we invite you to check out **Inkplate 4TEMPERA**. We think you'll find it delightful!

Inkplate 4TEMPERA options:

- **Without glass panel:** This version is powered by an ESP32 microcontroller with a 3.8-inch touchscreen e-paper display, integrated lighting, Li-Ion battery, enclosure, and various peripheral components.
- **With glass panel:** This version is powered by an ESP32 microcontroller with a 3.8-inch touchscreen e-paper display, integrated lighting, Li-Ion battery, enclosure, various peripheral components, and is additionally protected by a glass panel.

TECHNICAL DETAILS

- **Display:** 3.8-inch, 600×600 pixel touch-sensitive electronic paper with grayscale support, partial updates, and extremely fast content refresh
- **Processor:** Powered by an ESP32 microcontroller with built-in WiFi and Bluetooth 4.0 (BLE)
- **Power Efficiency:** Low power consumption, only 18 µA in deep sleep mode; includes a battery charger on the board
- **Storage:** microSD card reader for image display
- **Compatibility:** Arduino library ready (100% compatible with Adafruit GFX)
- **Sensors:** APDS-9960 gesture sensor, BME680 environmental and air quality sensor, Buzzer, accelerometer, and gyroscope
- **Included:** 1200mAh li-ion battery and a 3D printed case
- **Dimensions:** 90 × 83 × 24 mm (both versions)

SPECIFICATIONS

DISPLAY SIZE (INCH)	3.8 inch
DISPLAY RESOLUTION W	600
DISPLAY RESOLUTION H	600
DISPLAY COLOR	Grayscale
GRAYSCALE LEVELS	3
FRONTLIGHT	Yes
TOUCH SUPPORT	Capacitive
MCU PART NUMBER	ESP32-WROVER
MCU CLOCK (MHZ)	240 MHz
WIFI	Wifi4
BLUETOOTH	Classic And Ble
QWIIC COMPATIBLE	Yes
SD CARD SLOT	Yes

BATTERY INCLUDED	Yes
BATTERY CAPACITY (MAH)	1200 mAh
BATTERY CONNECTOR	Jst 2Pin
SLEEP CURRENT UA	18
DEV ENVIRONMENTS	Arduino IDE, MicroPython
HAS ENCLOSURE	Yes
RTC ONBOARD	Yes

LINKS

Arduino Library	https://github.com/SolderedElectronics/Inkplate-Arduino-library
Open Source Hardware Files	https://github.com/SolderedElectronics/Soldered-Inkplate-4-TEMPERA-with-glass-panel-hardware-design
MicroPython Module	https://github.com/SolderedElectronics/Inkplate-micropython
Full Documentation	https://docs.soldered.com/inkplate/4tempera/overview
Arduino: Get Started	https://docs.soldered.com/inkplate/4tempera/quick-start-guide/
Hardware Details	https://docs.soldered.com/inkplate/4tempera/hardware/design/
Arduino Library Documentation	https://docs.soldered.com/inkplate/4tempera/basics/initialization/
Arduino: Get Started	https://inkplate.readthedocs.io/en/latest/get-started.html
Full Documentation	https://inkplate.readthedocs.io/en/latest/

GALLERY


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INKPLATE 4 TEMPERA
Documentation:
inkplate.readthedocs.io
Connect to USB port or ESP32 UART pins and send commands at baud 115200 to use peripheral mode.