seeed studio

INDUSTRIAL PRODUCT DATASHEET

reTerminal E1002 Full-color ePaper Display

The reTerminal E1002 Full-color ePaper Display combines an 800×480 E Ink® Spectra™6 screen with ESP32-S3, a 2000mAh battery, and no-code SenseCraft Seeedash deployment for low-power HMI and dashboard applications.

SKU	UPDATED	PRICE
100017057	2026-09-20 07:34:22	$109.00(Excl. VAT)



Overview



The reTerminal E1002 is a fully assembled HMI with an integrated 800×480 E Ink® Spectra™6 full-color ePaper display, powered by Espressif ESP32-S3 and a built-in 2000mAh battery that delivers up to 3 months of operation in deep sleep mode (6-hour refresh interval). It enables no-code UI design and deployment via SenseCraft Seeedash and supports TRMNL Dashboards, Home Assistant (ESPHome), Arduino, PlatformIO, and ESP32-IDF for applications ranging from desktop personal assistants and home automation dashboards to smart office, retail, and education prototypes.

Key Features

Note:

- Due to the characteristics of full-color ePaper, **a full-screen refresh takes approximately 25–30 seconds** and may involve **visible color flashing** before the final image stabilizes.
- SenseCraft HMI has been renamed to **SenseCraft Seeedash**. Existing content remains available. Seeedash is currently in beta, with usage limits on AI and UI generation.
- The reTerminal E Series comes with SenseCraft Seeedash firmware by default. Using TRMNL Dashboard firmware requires a separate **TRMNL BYOD license**.
- If you need a larger ePaper panel for a digital photo frame, a **13.3" full-color version** is also available.

1. **Beautiful, Ready-to-Use E Ink® Spectra™6 Color ePaper Display**

The reTerminal E1002 comes fully assembled as an HMI (Human Machine Interface) in a sleek, durable enclosure, featuring an integrated 800×480 E Ink® Spectra™6 full-color ePaper display. Powered by Espressif's ESP32-S3, it delivers vivid visuals and crisp text straight out of the box—no extra setup required.

2. **Ultra-Low Power with 3-Month Battery Life**

Equipped with a built-in 2000mAh battery and engineered for maximum power efficiency, the reTerminal E1002 runs for up to 3 months on a single charge in deep sleep mode (6-hour refresh interval). Place it anywhere—on your desk, mounted on a wall, or in any space—without worrying about frequent recharging.

3. **No-Code UI Design & Deployment with SenseCraft Seeedash**

Design and deploy personalized dashboards effortlessly with **SenseCraft Seeedash**, our new AI-powered no-code platform. Create your UI through simple drag-and-drop elements, choose from our rich templates, or let AI help you. Connect real-time data from onboard sensors or web APIs, then deploy your finished dashboard to reTerminal E1001/E1002 display with just a few clicks. From design to data configuration to deployment, everything happens seamlessly on one single platform.

4. **Works with Popular Software Platforms**

Enjoy seamless compatibility with multiple software ecosystems. Create no-code TRMNL Dashboards with 300+ plugins for everyday and work data, connect instantly to Home Assistant via ESPHome firmware, or developing your customized applications using Arduino, PlatformIO or ESP32-IDF environment. You can also access all supported firmware and tools for the reTerminal E Series from **one centralized Firmware Hub**.

5. **Flexible Hardware & Software Customization**

Leveraging Seeed Studio's extensive OEM/ODM expertise, the reTerminal E10E1001/E1002 can be customized to fit your exact needs. Whether you require specific sensors, modified I/O configurations, or tailored UI designs, it's built to adapt —ideal for industrial, educational, or personal use.

ESPHome Ready-Made Project: Zero-Code Setup!

Seeed Studio is proud to have joined the ESPHome Ready-Made Project. No YAML or coding required—flash your firmware directly via web browser for instant integration.

Featured Devices:

- **XIAO Smart IR Mate:** Your ultimate Home Assistant infrared hub.
- **XIAO W5500 Ethernet Adapter V1.2:** Reliable PoE Bluetooth Proxy for Seamless Connectivity.

Experience seamless setup now at the **ESPHome Ready-Made Projects website**!

Explore landing page to discover more plug-and-play, Home Assistant–compatible devices designed for faster deployment and simplified integration.

Product Gallery

















Specification

Product Name	reTerminal E1001	reTerminal E1002
Processor	ESP32-S3 with 8MB PSRAM	
Storage	32MB Flash, support Micro SD card	
Display	7.5" Monochrome	7.3" Full Color
Resolution	800x480 Pixels	
Micro SD Card	Maximum support 32GB SD card, FAT32 format	
Wireless Connectivity	2.4GHz 802.11 b/g/n Wi-Fi, Bluetooth 5.0	
Sensor	Temperature, humidity sensors	
Microphone	Reserved for voice interaction application	
Buzzer	Buzzer for sound alert	
Battery	2000mAh	
Power Input	USB-C 5V/1A	
Software	Default firmware support SenseCraft Seeedash(SenseCraft Seeedash)	
	Support ESPHome firmware for Home Assistant	
	Support Arduino/PlatformIO/ESP-IDF development platform	
Working Temperature	0-40°C	
Dimensions	176mm*120mm*53mm(With Stand)/17mm(Without Stand)	

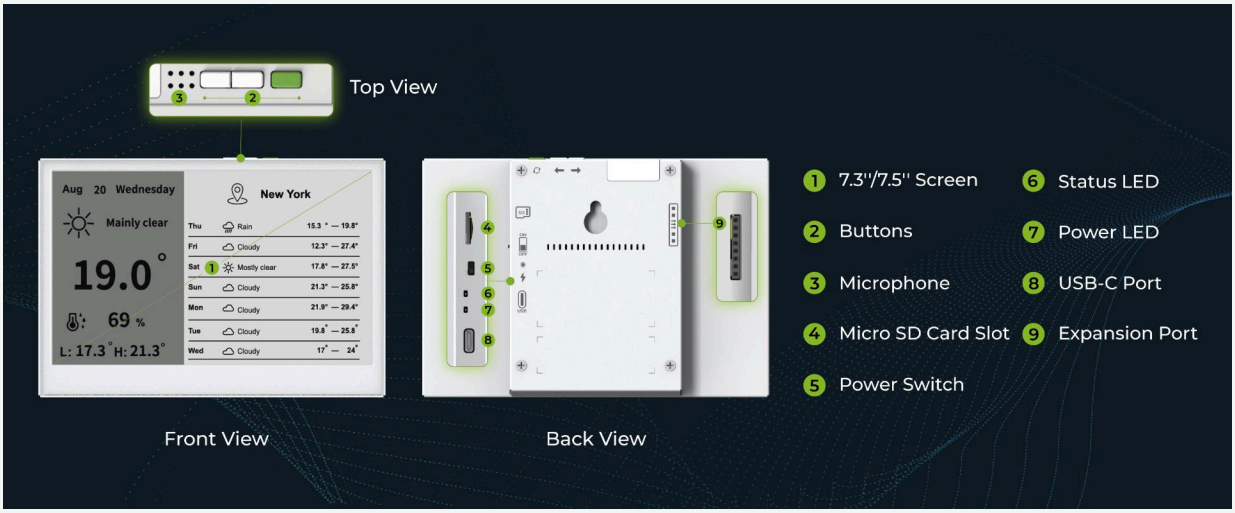
ePaper Displays in Comparison	reTerminal E1001	reTerminal E1002	XIAO 7.5'' ePaper Panel

TRMNL7.5''(OG)DIYKit

Display	Size	7.5''	7.3''	7.5''	7.5''
	Color	Monochrome	Full-color	Monochrome	Monochrome
	Resolution	800×480	800×480	800×480	800×480
	Partial Refresh	✅	❌	✅	✅
	Refresh Rate	2-5s	12-15s	2-5s	2-5s
MCU		ESP32-S3	ESP32-S3	ESP32-C3	ESP32-S3
Enclosure		Metal	Metal	3D Printed PLA	❌
SD Card Support		✅	✅	❌	❌
Battery	Capacity	2000mAh	2000mAh	2000mAh	2000mAh
	Monitoring	✅	✅	❌	✅
Expansion Interfaces		UART & I2C	UART & I2C	❌	❌

Compatible Software	SenseCraft Seeedash Home Assistant/ESPHome TRMNL Arduino EEZ Studio	SenseCraft Seeedash Home Assistant/ESPHome TRMNL Arduino Sqaureline Vision EEZ Studio	Home Assistant/ESPHome TRMNL Arduino	TRMNL SenseCraft Seeedash Home Assistant Arduino
Certifications	FCC/CE/MIC Radio/ROHS	FCC/CE/MIC Radio/ROHS	✗	✗
MSRP	$69-$76.99	$99-$109.99	$65.55-$72.19	$42.66-$46.54

Hardware Overview



Applications

- **Desktop Personal Assistants:** Show colorful pictures or photos, track calendars, notifications, weather, or news as a stylish, energy-efficient alternative to tablets.
- **Home Automation Dashboards:** Display real-time smart home data like temperature, humidity, and air quality via Home Assistant.
- **Smart Office Displays:** Show meeting room availability, office schedules, or directional guidance in low-power, always-on ePaper displays.
- **Retail & Public Information Displays:** Low-power ePaper signs for menus, schedules, or occupancy indicators with long battery life.
- **Education & Rapid Prototyping:** An ideal platform for developers and students to learn IoT, embedded systems, and no-code UI design, while quickly prototyping and testing sensors, modules, or custom dashboards.

Part List

reTerminal E1002 ePaper Display	X1
USB Type-C cable	X1
Display stand with screw	X1
Screw driver	X1

Compliance & Logistics



HSCODE	8543709990
USHSCODE	8524119000
UPC	
EUHSCODE	8471707000
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- https://www.seeedstudio.com/reTerminal-E1002-p-6533.html
- reTerminal E Series ePaper Display
- reTerminal MIC Radio Certificate
- reTerminal E1002 FCC Certificate
- reTerminal E1002 CE Certificate
- reTerminal E1002 ROHS Certificate

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