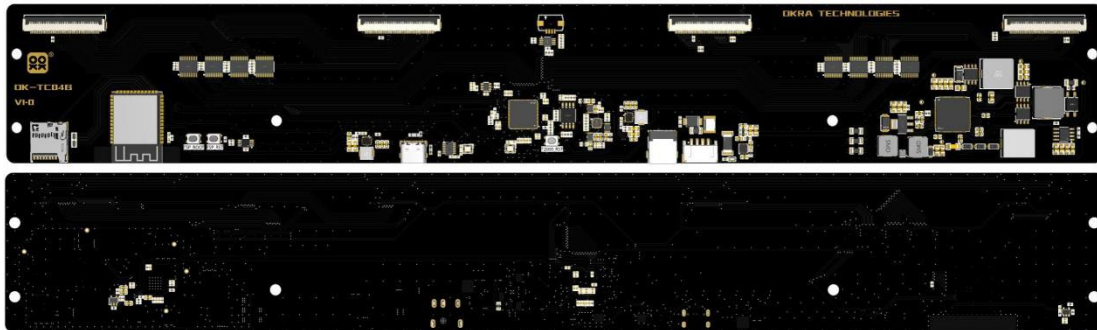


OK-TC04B V1.1 Specs

Foreword

- OK-TC04B V1.1 is an evaluation board specifically designed and developed by [Shanghai OKRA Technologies CO., LTD (<https://www.okratechnologies.com>) for 31.2inch E-paper display (ED312TTx). It can also be used as a finished motherboard or T-con board.



Product Features

- Based on E Ink T2000 ink screen timing control chip.
- Onboard PMIC chip for E-paper displays, providing Source, Gate, and VCOM voltages to the screen.
- Onboard OCP and OVP protection circuits protect the power supply system and driver board from surge damage.
- Onboard multiple host computer interfaces including USB, SPI, and MIPI, adaptable to various application scenarios.
- High-quality four-layer PCB with immersion gold plating, capable of withstanding harsh environments and ensuring high reliability.
- Features in version V1.1:

- Onboard temperature sensor, eliminating the need for an external sensor board.
- Onboard ESP32S3-WROOM-1-N16R8 high-capacity module, usable as a motherboard..
- Onboard USB hub chip, allowing host computers to simultaneously connect to the T2000 and ESP32S3's native USB port and debug serial port via USB interface.
- Onboard TF card slot for storing data or pictures on ESP32S3.

E Ink T2000 Specifications

Functions	T2000
Support Maximum Panel Resolution	3200x2400@120Hz, 3840x2160@120Hz
Package Size	10x10mm QFN104
Memory Size	256/512 Mb with SiP
Sleep Power	2.2mW
Gallery/Kaleido Rendering	yes
mini-LVDS	12 pairs
TTL Data Bus	8/16/24
Real-Time image copy	yes
USB	USB 3.0 / 2.0
SPI	Standard SPI / Dual / Quad SPI. 1 host & 1 device
I2C	up to 1Mbps. 1 host & 1 device
MIPI-DSI	4 lanes. up to 1Gbps/lanes, RGB format supported.
GPIO	Used for Power Control and Status reading.

Supported EPD model

- 31.2inch: BW

IO and buttons

- OK-TC04B V1.1 board features the T2000's Reset button, and the ESP32S3's Reset and Boot buttons, facilitating debugging and firmware flashing.

Power supply

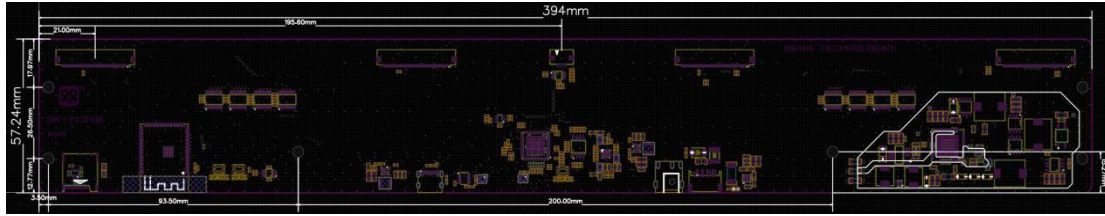
- OK-TC04B V1.1 is powered by a 12V DC interface (5.5x2.1 specification), with a peak current of <math><2A@12V</math> during screen refresh.
- The 5V power supply from the USB-C port is not connected to the system.

Host computer adaptation

Platform	OS	Contents Provided	Supported Interface	Remark
X86	Windows 10 +	Demo AP executable.	USB	for demo only
X86/ARM	Linux	Source Code & Libraries	USB	
SOC	RTOS	Source Code & Libraries	SPI	Slide Show Firmware

Outline dimensions

OK-TC04B V1.1 outline dimensions is 394x57.24mm, with a plate thickness of 1.6mm, and M3 mounting holes.



Design and Quality

- Onboard OCP and OVP circuits to fully protect the electrical safety of core components and the E-paper display
- Four-layer board design
- Hole plugging and immersion gold plating
- All-black PCB
- TG155 board material

Shipping List

- OK-TC04B driver board
- 12V 2A power supply
- FFC cable x4