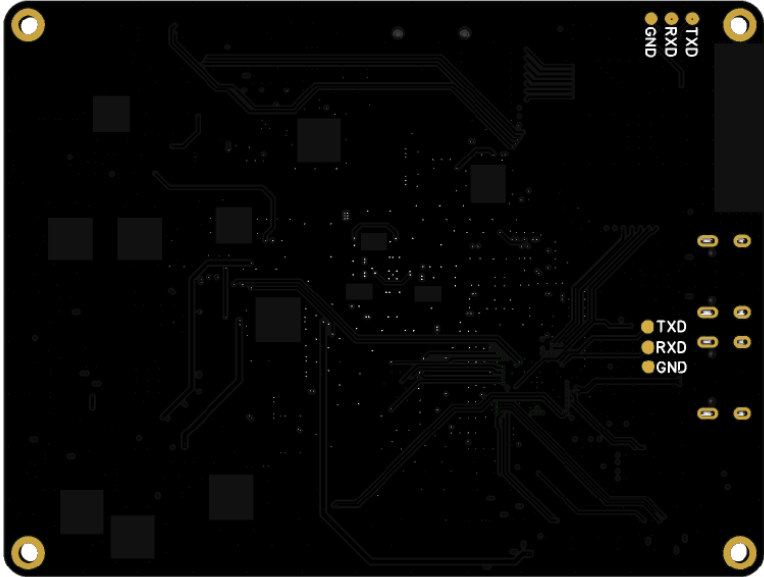
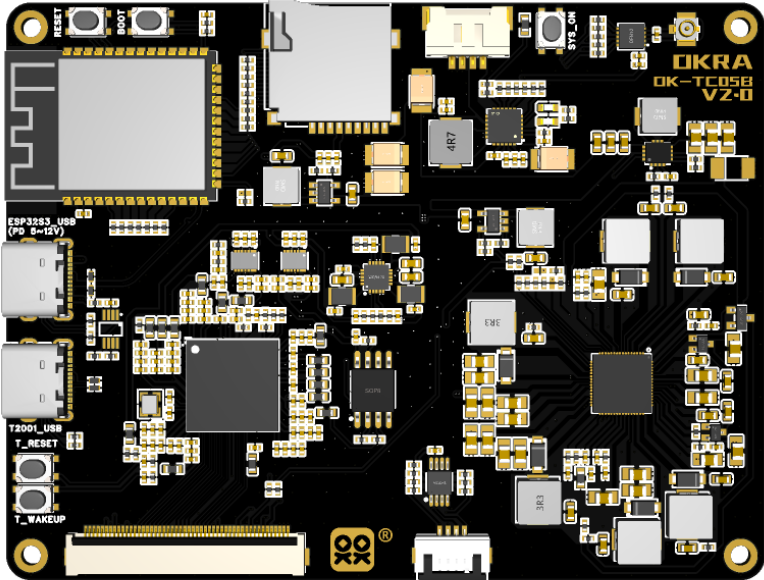


OK-TC05B-T2001 V2.0 Specifications

Foreword

- OK-TC05B-T2001 is an evaluation board designed and developed by [Shanghai OKRA Technologies CO., LTD.] (<https://www.okratechnologies.com>) specifically for 10inch Spectra 6 E-paper display, with an ESP32-S3 large-capacity module on board and can be used as a finished motherboard or T-con board.



Product Features

- Based on E Ink T2001 E-paper display timing control chip
- Equipped with Espressif's ESP32-S3-WROOM-1-N16R8 large-capacity module, it can independently implement image decoding, color enhancement, dithering and other functions, and can also connect to the customer's CMS system and backend through WIFI and BLE5.0.
- Onboard NFC chip, which can expand NFC-related functions and application scenarios.
- ESP32-S3 module can remain in sleep mode (with corresponding firmware), OK-TC05B can be used as an independent T-con board.
- Onboard TI BQ25896 high-performance charging chip, supports 1000~10000mAH single-cell lithium battery charging, charging current can reach 1.5A, and has various functions such as voltage monitoring and battery status monitoring.
- Onboard complete E-paper display power supply module, supporting six source drive voltages, three gate drive voltages, and three VCOM voltages. Fully supports black and white, Kaleido, Gallery, Spectra6 ink screen types, as well as DCVCOM and ACVCOM scenarios.
- Support PD input 5V~12V.
- High-quality six-layer PCB immersion gold process, can easily cope with harsh use environment and ensure high reliability.

ESP32S3-WROOM-1-N16R8

- WIFI+BLE5.0
- Built-in ESP32-S3 series chip, Xtensa dual-core 32-bit LX7 processor, supports single-precision floating-point unit, clock frequency up to 240MHz.
- Built-in 384KB ROM
- Built-in 512KB SRAM
- Built-in 16KB RTC SRAM
- 8MB PSRAM in package
- External 16MB SPI FLASH

[Get the full ESP32S3-WROOM-1-N16R8 datasheet](#)

E Ink T2001 Specifications

Functions	T2001
Support Maximum Panel Resolution	TBD
Package Size	TBD
Memory Size	TBD
Sleep Power	TBD
Gallery/Kaleido Rendering	TBD
mini-LVDS	TBD
TTL Data Bus	TBD
Real-Time image copy	TBD
USB	TBD
SPI	TBD
I2C	TBD
MIPI-DSI	TBD
GPIO	TBD

Supported EPD models

- 10inch Spectra 6 EPD
- Other TTL EPD below 13.3 inches (TBD - E Ink firmware support required)

IO and Buttons

ESP32S3 part:

- Reset and Boot buttons are used to manually reset the ESP32-S3 module or enter firmware download mode.
- QON button: short press for 1 second to exit shipping mode, long press for 10 seconds to enter shipping mode, long press for 20 seconds to hard reset the system (power off for 0.3 seconds and then power on).

T2001 part:

- Reset button, reset T2001 separately. This IO is also controlled by ESP32-S3 module.
- Wakeup button, wake up T2001 separately. This IO is also controlled by ESP32-S3 module.

Power Supply

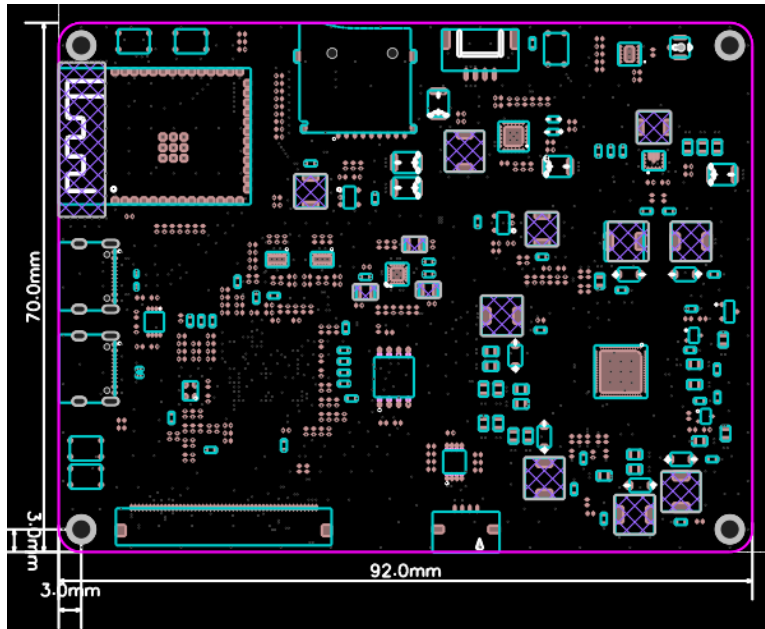
- Power supply of OK-TC05B-T2001:
 - Battery port: Ultra-thin MX1.25x4P.
 - USB-C port (ESP32-S3 module side): PD 5~12V.
- The 5V power supply of the USB-C port on the T2001 side is not connected to the system.

Host computer adaptation

Platform	OS	Contents Provided	Host 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	Onboard ESP32-S3 module

Outline Dimensions

- OK-TC05B-T2001 V2.0 has dimensions of 92x70mm, thickness 1.6mm, fixing holes M2.



Design and quality

- Six-layer board design
- Plug-hole and gold-immersion process
- All-black PCB
- TG155 sheet

Shipping list

- TBD