



5.0 Inch High Brightness IPS TFT LCD Module with EVE2 Engine & Capacitive Touch SPI Display

Our Product Introduction

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Basic Information

- Place of Origin: China
- Brand Name: chenghao optoelectronic
- Certification: RoHS & CE & FCC
- Model Number: CH500WV05PA
- Minimum Order Quantity: 100 pcs
- Price: Negotiable
- Packaging Details: Standard export packaging
- Delivery Time: 7-15 work days
- Payment Terms: T/T
- Supply Ability: 300,000 pieces/month



Product Specification

- Module No: CH500WV05PA
- Display Mode: Transmissive / Normally Black
- Screen Size: 5.0 Inch
- Resolution: 800x480
- Viewing Direction: 80/80/80/80 (Full Viewing Angle)
- Screen Brightness: 900 Cd/m2 (typ.)
- Module Interface: SPI (D-SPI / Q-SPI Modes)
- FPC Pin Numbers: 20-pin (2.54mm IDC Box Header / 1.0mm FFC)
- Module Size: 120.7(W)x75.8(H) Mm
- Active Area Size: 108.0(W)x64.8(H) Mm
- Touch Type: Capacitive Touch (CTP)
- Anti-Glare: Yes (AG Coating)



More Images



Product Description

The CH500WV05PA is a 5.0-inch IPS TFT LCD module featuring 800x480 resolution, 900cd/m2 high brightness, and full 80/80/80/80 viewing angles for excellent sunlight readability. Equipped with an integrated EVE2 (Embedded Video Engine) graphics controller, this display supports SPI interface (D-SPI/Q-SPI modes) and capacitive touch panel, enabling rich GUI development without an external GPU. The module incorporates an anti-glare surface treatment for reduced reflections in bright environments. With a compact outline of 120.7x75.8mm, active area of 108.0x64.8mm, and an onboard LED driver, it offers dual connection options: a 2.54mm pitch 20-pin IDC box header and a 1.0mm pitch 20-pin FFC connector, providing flexible integration for industrial HMI, instrumentation, smart home control panels, medical devices, and automotive display applications.

Product Features

1. 900cd/m2 High Brightness for Direct Sunlight Readability

With a typical luminance of 900cd/m2, this display remains clearly visible under direct sunlight, making it ideal for outdoor kiosks, agricultural equipment panels, and marine instrumentation where ambient light is uncontrollable.

2. Built-in EVE2 Graphics Engine — Smart Display Without External GPU

The integrated EVE2 controller handles rendering, touch decoding, and audio output entirely on-module via SPI commands. This offloads the host MCU and accelerates GUI development, perfect for resource-constrained embedded systems.

3. Full 80/80/80/80 IPS Viewing Angle

The IPS panel delivers consistent color and contrast from any viewing direction, enabling multi-operator readability in industrial control rooms, medical monitoring stations, and shared-use terminals.

4. Anti-Glare Surface Coating for Challenging Environments

An AG coating minimizes specular reflection from overhead lighting or outdoor glare, ensuring that luminance isn't lost to surface reflections — a critical feature for automotive dashboard displays and sun-exposed outdoor panels.

5. Capacitive Touch Panel with Dual Interface Flexibility

The projective capacitive touch panel supports multi-touch gestures, while the dual-connector design (2.54mm IDC header + 1.0mm FFC) provides wiring flexibility for different enclosure designs in embedded applications.

Product Drawing

Touch Integration: Capacitive touch, resistive touch, or no-touch configurations based on your product requirements.

Anti-Glare Coating: AG surface treatment to reduce ambient reflections for outdoor and high-glare environments.

Cover Glass Customization: Tailored glass thickness, shape, color, and silk-screen printing to match your brand and industrial design.

Contact our engineering team with your specifications for a tailored solution.

Application Cases

Industrial HMI Panels: The SPI interface with built-in EVE2 graphics engine enables rich touchscreen control interfaces for PLC-driven machinery, process control stations, and factory-floor operator terminals without requiring a high-end host processor.

Smart Home Control Panels: Compact 5.0-inch size, capacitive multi-touch, and 900cd/m2 brightness make it suitable for wall-mounted home automation hubs, climate controllers, and security system interfaces visible even in brightly lit rooms.

Marine & Outdoor Instrumentation: High brightness combined with anti-glare coating ensures readability under direct sunlight, ideal for boat dashboard displays, GPS navigation instruments, and outdoor metering equipment.

Medical Monitoring Devices: IPS full viewing angles and high contrast ratio allow multi-angle readability in clinical settings, suitable for patient monitors, infusion pump displays, and portable diagnostic terminals.

FAQ

Q1: What SPI modes does this display support?

This module supports both D-SPI (single data lane) and Q-SPI (quad data lane) modes, configurable via the EVE2 controller for higher bandwidth in graphics-intensive applications.

Q2: Can the brightness be adjusted?

Yes, the onboard LED driver (operated via the EVE2 PWM control) allows software-adjustable backlight brightness from 0 to 900cd/m2.

Q3: Is a separate GPU or display controller required?

No. The integrated EVE2 graphics engine handles all rendering, touch decoding, and audio output onboard, communicating with the host MCU via simple SPI commands.

Q4: What touch gestures are supported?

The projective capacitive touch panel supports single-touch, multi-touch gestures (up to 5 points), swipe, and pinch-to-zoom, configurable through the EVE2 touch engine.

Q5: Can the FPC and connector be customized?

Yes. Chenghao offers custom FPC outline, pin count, and connector type (IDC, FFC, ZIF) to fit your specific enclosure and interface requirements.





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