HIgh Brightness Lcd Module Display 1280x800 1000cd/m2 Luminance Suitable For Wide Temperature

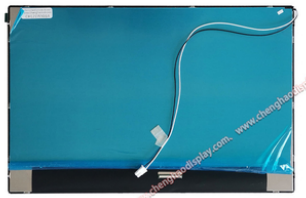
Our Product Introduction

Basic Information

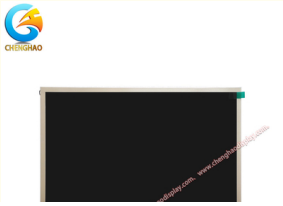
- Brand Name: Chenghao Optoelectronic
- Certification: CE, ISO9001, Rose, SGS
- Model Number: CH121WX01A
- Minimum Order Quantity: 100 Pcs
- Packaging Details: All The Products Are Packed In Right Way To Keep It Safe. For Small Sizes Of Products We Use Tray + Carton, For Bigger Sizes We Use Foam Slot + Carton. We Also Design Packages According To Customers' Requirements
- Delivery Time: 3~7 Days
- Payment Terms: T/T,AliPay,PayPal
- Supply Ability: 50000000 Pcs/month

Product Specification

- FPC Pin Number: 40 Pins
- Viewing Direction: 85/85/85/85
- Active Area Size: 261.12 * 163.2 Mm
- Storage Temperature: -30 ~ +80 °C
- Interface: LVDS
- Display Mode: IPS/Transmissive/Normally Black
- Resolution: 1280x800 Dots
- Screen Brightness: 1000 Cd/m2 Luminance
- Highlight: **Wide Temperature Lcd Module Display**, **1000cd/m2 Lcd Module Display**, **1280x800 Lcd Module Display**



More Images



Product Description

Product Description:

CH121WX01A is a 12.1-inch high-brightness IPS LCD display module launched by Chenghao Optoelectronics. It is designed for strong light environments, with a resolution of 1280×800 pixels and a brightness of up to 1000 cd/m², meeting the sunlight readability requirements of outdoor equipment and industrial scenes. As an integrated industrial and trade enterprise certified by ISO dual systems, Chenghao Optoelectronics relies on its independent research and development capabilities and full-process quality control to provide high-performance display solutions for the high-end markets in Europe and the United States.

The module adopts IPS hard screen technology, a transmissive normally black display mode, and a LVDS high-speed interface to ensure accurate and stable picture colors (16.7M colors) and efficient and reliable data transmission. Its wide temperature design (-20℃ to +70℃) and compact structure (thickness is only 7.5mm) are suitable for harsh environments and space-constrained equipment. The module has a built-in amorphous silicon TFT panel, driver IC and customized backlight system, taking into account low power consumption and long life characteristics.

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		*Core advantages:* Outdoor visibility: 1000 cd/m² ultra-high brightness, no fear of direct sunlight, suitable for scenarios such as smart transportation and outdoor terminals; Flexible expansion: support FPC cable customization, interface protocol adjustment and touch panel integration, quickly match customer hardware architecture; Fast delivery: accept sample applications (MOQ 100 pieces) to shorten product development cycle

CH121WX01A is widely used in industrial HMI, medical monitors, vehicle-mounted central control, IoT gateways and smart security equipment, improving the end-user experience with high resolution and anti-interference capabilities. Chenghao Optoelectronics provides a full chain of services from design support to mass production, ensuring that each module meets international quality standards and helps customers seize the high-end display market.

Features:

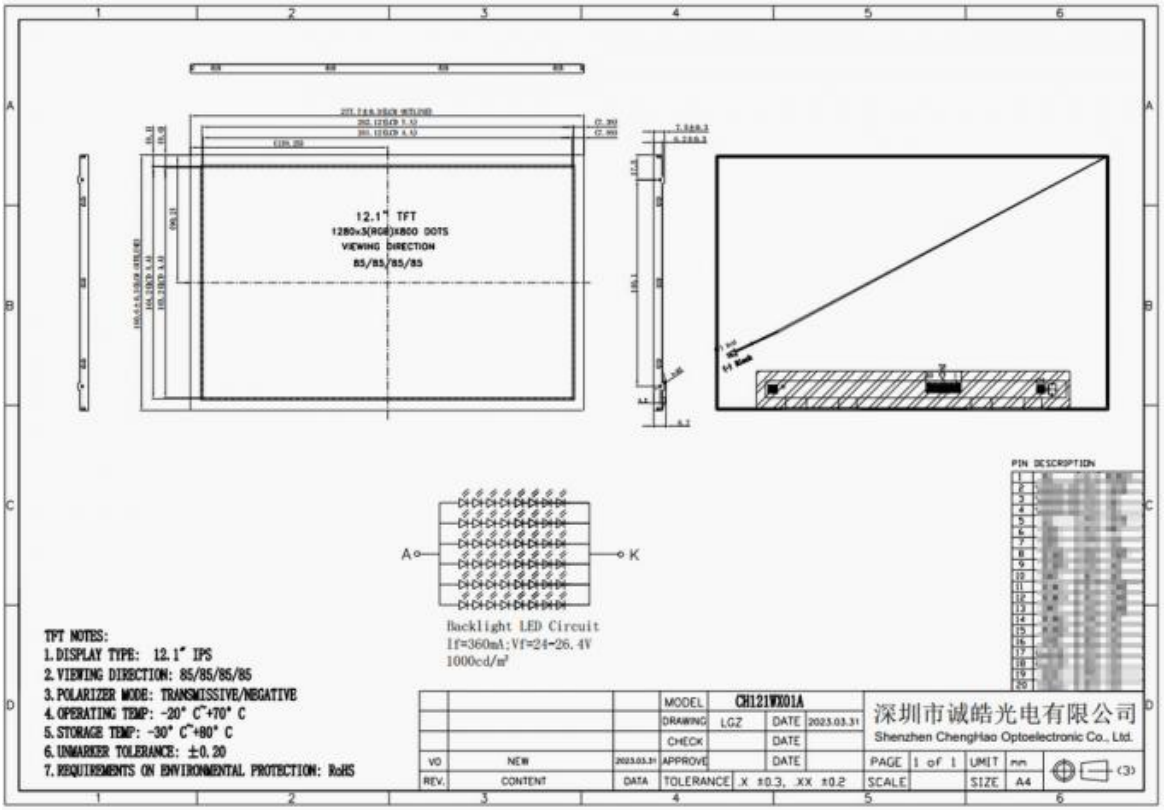
(1) 85° full viewing angle display
Based on IPS (in-plane switching) technology, liquid crystal molecules are arranged horizontally, and a wider viewing angle coverage can be achieved when voltage is applied. All four directions (up/down/left/right) support 85° viewing angles. Even if multiple people watch from multiple angles (such as collaborative operation of industrial control consoles or tilted viewing angles of vehicle-mounted central control), the color saturation and contrast of the picture remain consistent, avoiding the grayscale inversion problem of traditional TN panels, and is suitable for scenarios that require multi-angle information sharing.

(2) Extreme environment adaptability
The module supports storage temperatures of -30℃ to +80℃ and operating temperatures of -20℃ to +70℃ through a special packaging process and a combination of temperature-resistant materials (such as wide-temperature liquid crystal materials and anti-aging rubber frames). It can still operate stably in extremely cold environments (such as cold chain logistics terminals) or high-temperature workshops (such as metallurgical equipment HMI), avoiding display lag or backlight attenuation caused by temperature fluctuations.

(3) Amorphous silicon TFT drive
The amorphous silicon (a-Si) thin film transistor technology is used, which has lower manufacturing costs and large-area production advantages compared to low-temperature polycrystalline silicon (LTPS). Each pixel is driven by an independent TFT, with a response time as low as 15ms. With the LVDS interface, a 60Hz refresh rate is achieved at a resolution of 1280×800, and dynamic images are free of ghosting, which is suitable for high-speed data scenarios such as medical image display or industrial real-time monitoring.

(4) Transmissive normally black mode
When the power is off, the default arrangement of the liquid crystal molecules prevents the backlight from penetrating, and the screen is pure black (Normally Black). The contrast ratio is as high as 800:1, which significantly improves the dark field detail performance. The transmissive backlight design uses a high-uniformity light guide plate with a brightness fluctuation of less than 10%, ensuring that there is no local overexposure or color deviation under strong outdoor light, and taking into account low power consumption (typical power consumption 2.5W) and high image quality requirements.

(5) High-precision size adaptation
The overall size of the module is 277.7×180.6×7.5mm, the effective display area is 261.12×163.2mm, and the screen-to-body ratio is 94.3%. Through precise structural design (such as ultra-thin bezels and embedded mounting holes), it can be seamlessly integrated into space-constrained equipment (such as portable testing instruments or drone ground stations). CAD drawings are also provided to shorten the customer's mechanical structure adaptation cycle.



Technical Parameters:

Module Outline Size	277.7 * 180.6 * 7.5 mm
Backlight Type	48 pcs White LED
Screen Brightness	1000 cd/m2 Luminance
Color	16M
Operating Temperature	-20 ~ +70 ℃
FPC Pin Number	40 Pins
Storage Temperature	-30 ~ +80 ℃
Display Mode	IPS/Transmissive/Normally Black
Interface	LVDS
Resolution	1280x800 Dots

Applications:

With its high brightness, wide temperature adaptability and industrial-grade stability, CH121WX01A can meet the display needs of professional equipment in multiple fields, especially for the following emerging and high-end scenarios:

(1) Renewable energy monitoring system
The module's ultra-high brightness of 1000 cd/m² and IPS full-viewing angle characteristics are suitable for outdoor monitoring terminals of photovoltaic power stations or wind farms. It can still clearly display real-time data such as power generation efficiency and grid load under direct sunlight. With the LVDS interface's anti-electromagnetic interference capability, it ensures signal stability in complex electromagnetic environments.
(2) Smart agricultural IoT terminal
The wide temperature design (-20℃ to +70℃) supports the module to operate stably in humid or temperature-difference environments such as greenhouses and outdoor weather stations. It can be flexibly integrated into agricultural machinery touch panels through customized FPC cables to provide real-time feedback on soil moisture, crop growth data and equipment status.
(3) Aerospace ground control equipment
The 7.5mm ultra-thin body and high screen-to-body ratio design are suitable for the compact space of airborne maintenance terminals or ground command desks. The amorphous silicon TFT driver ensures continuous refresh of flight parameters at low power consumption, meeting the dual requirements of lightweight and reliability of avionics equipment for display modules.
(4) Deep-sea exploration instruments
The module achieves -30℃ storage tolerance through a special packaging process and can be used for the in-cabin display unit of deep-sea exploration equipment. The backlight system has been pressure tested (IP67 protection level customization option) to maintain brightness uniformity under high-pressure environments and accurately present sonar imaging and depth data.
(5) Smart retail interactive terminals

The transmissive normally black mode maintains high contrast under high ambient light in shopping malls, supports multi-touch customization (optional projected capacitive or infrared solutions), and is suitable for self-service checkout machines, virtual fitting mirrors and other equipment to improve user interaction experience and equipment all-weather operation efficiency.
(6) Special vehicle control system
For special vehicles such as mining trucks and fire rescue vehicles, the module has an anti-seismic design (passed 5G vibration test) and dust and oil-proof surface treatment to ensure accurate touch response under bumpy road conditions, real-time display of vehicle operating conditions and navigation information, and reduce the driver's operating load.

Chenghao Optoelectronics provides in-depth adaptation services for the above scenarios, from optical adjustment, interface definition to structural reinforcement, to ensure the performance advantages of CH121WX01A in the subdivided field and help customers create differentiated terminal products.

Support and Services:

CH121WX01A is a high-quality LCD display module developed and produced by Chenghao Optoelectronic, providing customers with comprehensive support and services. As an enterprise integrating R&D, production and sales, Chenghao Optoelectronic is committed to providing customers with professional display solutions. For CH121WX01A, we provide a variety of support and services to ensure its best performance in different application scenarios.

First of all, CH121WX01A supports sample testing services, and customers can verify whether the product performance meets the project requirements through sample testing. In addition, we provide flexible customization services, and customers can adjust the module according to specific project requirements, such as modifying the FPC shape and structure, adjusting the backlight brightness, defining the LCD interface, and designing a custom touch panel. This highly flexible customization capability ensures that the product can perfectly adapt to the customer's application environment.

In terms of technical support, our professional team is able to provide customers with a full range of technical guidance and after-sales services. No matter what problems customers encounter during use, our team can respond in time and provide solutions. In addition, CH121WX01A strictly follows ISO9001 quality management system and ISO14001 environmental management system standards to ensure high quality and reliability of products in all aspects of design, production and after-sales.

CH121WX01A has a wide range of applications, including industrial control, smart home, medical equipment, artificial intelligence, IoT devices, and automotive applications. Whether it is a standardized product or a customized solution, Chenghao Optoelectronic is committed to providing customers with efficient and reliable support and services to help customers achieve their project goals.

FAQ:

Q: What is the model number of the TFT LCD Display product?
A: The model number of the TFT LCD Display product is CH121WX01A.
Q: What certifications does the TFT LCD Display product have?
A: The TFT LCD Display product is certified with CE, RoHS
Q: What is the minimum order quantity for the TFT LCD Display product?
A: The minimum order quantity for the TFT LCD Display product is 100 Pcs.
Q: What are the packaging details for the TFT LCD Display product?
A: All the products are packed in the right way to keep them safe. For small sizes of products, we use Tray + Carton, for bigger sizes, we use Foam Slot + Carton. We also design packages according to customers' requirements.
Q: What is the delivery time for the TFT LCD Display product?
A: The delivery time for the TFT LCD Display product is 3~7 days.
Q: What are the payment terms accepted for the TFT LCD Display product?
A: The accepted payment terms for the TFT LCD Display product are T/T, AliPay, and PayPal.
Q: What is the supply ability for the TFT LCD Display product?
A: The supply ability for the TFT LCD Display product is 50000000 Pcs/month.

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