

CRYSTAL DISPLAY SYSTEMS LTD

Small Format Display Capability



TFT Modules



OLED Solutions

Bar Type TFT Displays



UART TFT Displays

OS Smart Displays



Printed E-Paper Displays

Monochrome Modules



Custom Designs



CONTENTS

- Colour TFT Displays
- Bar Type TFT Displays
- Sunlight Readable Outdoor TFT Displays
- AMOLED Displays
- PMOLED Displays
- UART TFT Displays
- Android OS Smart Displays
- Linux OS Smart Displays
- Monochrome LCD Displays
- Printed E-Paper Displays
- Custom Designs – Monochrome LCD Displays
- Contact Us

~ Colour TFT Displays



Our industrial display lineup offers a comprehensive range of TN and IPS TFT screens from 0.95" (120RGBx240 pixels) to 49.0" (3840RGBx2160), catering to various industry standards in size, format, and functionality. With versatile models in bar, round, and square formats, we cover a wide array of design needs for specialized applications.

Key Features Include:

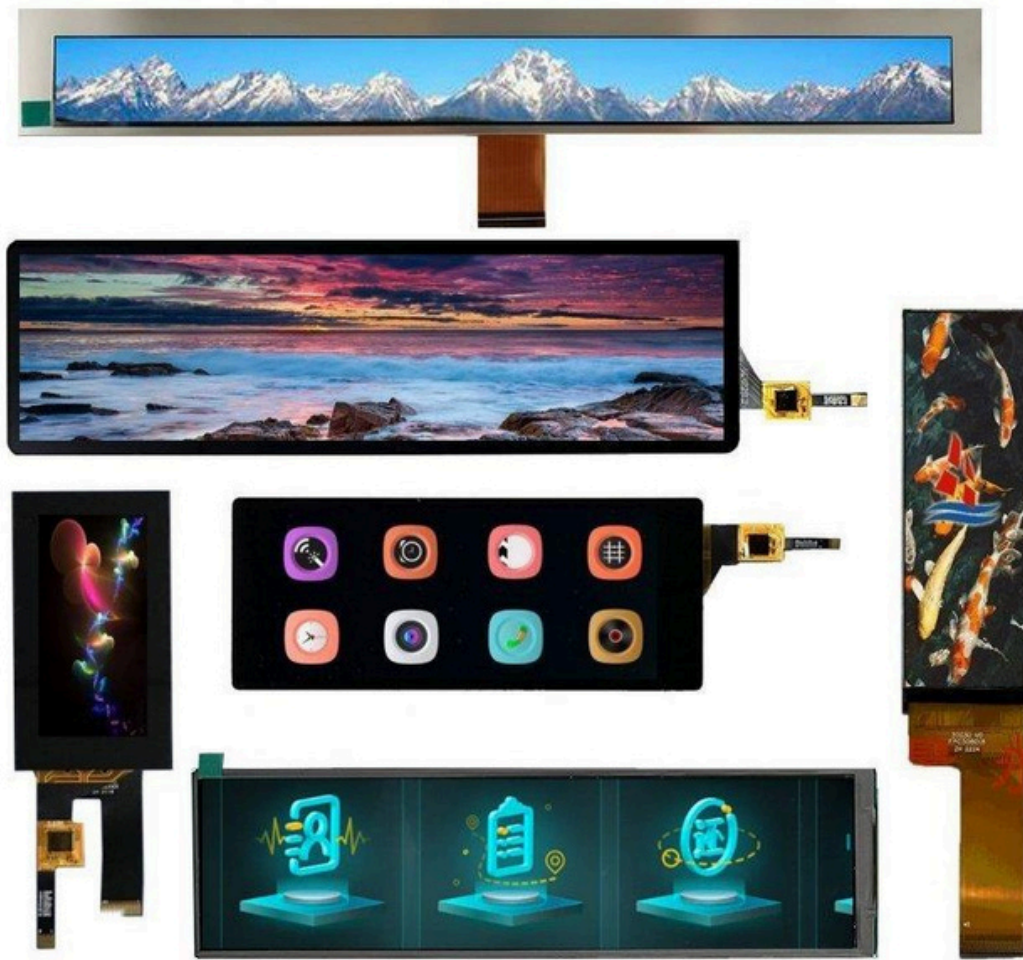
- **High-Brightness Options:** Designed for readability even in direct sunlight.
- **Ultra-Wide Temperature Range:** Reliable performance in extreme conditions (-30°C to +85°C).
- **Broad Viewing Angles:** Consistent display quality from any angle (85° across all directions).

Most sizes support both capacitive (PCAP) and 4-Wire resistive touch options, alongside multiple display interface choices—MCU, SPI, MIPI, RGB, LVDS, HDMI, UART and USB-C—allowing seamless integration into diverse systems. This extensive range meets the stringent requirements of industrial, medical, retail, automotive, and aerospace applications where durability, clarity, and adaptability are essential.



[Learn More](#)

~Bar Type TFT Displays



We offer a comprehensive selection of "Bar Type," "Letterbox," or "Stretch" TFT LCD display from a 2:1 aspect ratio 0.96-inch, 120(RGB) x 240 resolution panel to a 3.5:1 aspect ratio 28.0" 1920(RGB) x 360 resolution panel with many more sizes and formats between these opposite ends of the spectrum.

These extremely versatile high-resolution displays are engineered to meet high specifications for industrial, automotive, and aerospace applications, delivering excellent optical performances for brightness, wide viewing angles and high contrast ratios. The displays can also be used in both landscape and portrait orientation without the loss of image quality.



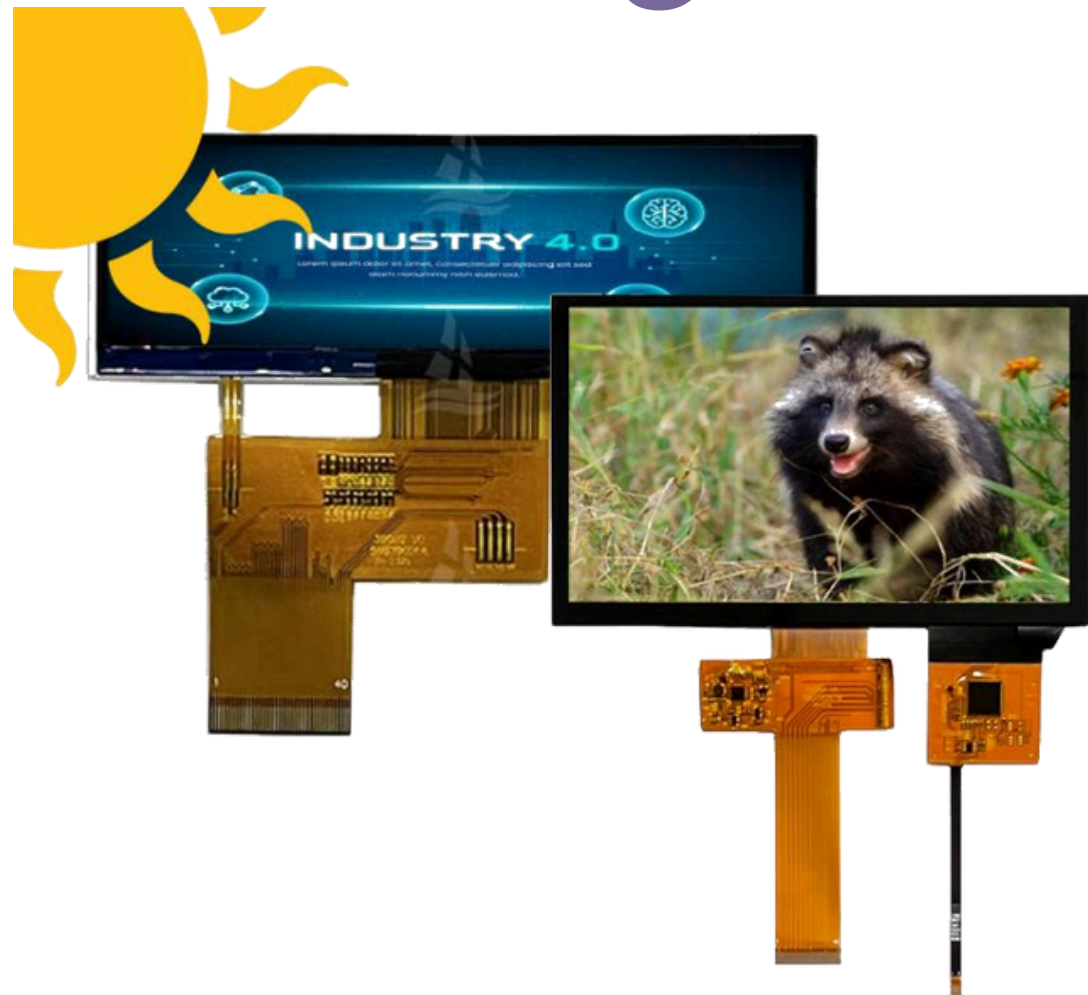
Key features include:

- **High brightness:** Up to 2000cd/m²
- **High contrast:** 1200:1
- **Wide Viewing Angles:** 85°/85°/85°/85°
- **Wide OpTemp:** -30°C~+85°C
- **Touch options:** Optically bonded PCAP
- **Interface options:** MIPI, SPI, RGB, LVDS & HDMI



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~Sunlight Readable Outdoor TFT Displays



Within our extensive TFT range we have many high brightness, full sunlight viewing options covering the standard sizes and formats plus displays from our bar (stretch) range.

Our transmissive TFT displays feature a high brightness LED backlight, typically between 800~2000cd/m², our transfective models generally have a low brightness LED backlight for night viewing only, but utilise ambient light during the day, making them ideal for low power applications.

High Brightness PCAP touch options are also available with many having the touch optically bonded to the TFT panel eliminating the void between the display and touch thus reducing the number of reflective surfaces within the assembly.

This creates a superior optical performance ensuring the display can be fully readable in all lighting conditions.

Many of our high brightness options also feature a wide operating temperature of -35°C~+85°C making them suitable for applications requiring operation at both ends of the temperature spectrum.



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~AMOLED Displays



Our AMOLED display range stands at the forefront of high-performance display technology, offering unmatched optical specifications. Available in sizes from 0.95" (120RGBx240) to 27.0" (4K), these displays are engineered for applications that demand superior quality and responsiveness.

Key features include:

- **High-Resolution Options:** Compact 2K and 4K resolutions for exceptional clarity, even in smaller footprints.
- **Outstanding Contrast Ratios:** Up to 100,000:1, delivering deep blacks and vivid colours.
- **Ultra-Fast Response Time:** At 0.2ms, ideal for dynamic visuals and smooth motion.
- **Slim, Lightweight Design:** With profiles under 1.0mm, they are incredibly compact.

Many sizes support the latest "OnCell" capacitive touch technology, making these displays some of the slimmest touch-enabled options available, with a profile of only 1.5mm. This AMOLED lineup is ideal for applications where premium visual performance and sleek design are paramount.



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~PMOLED Displays



PMOLED technology outperforms traditional LCDs in small graphic displays. Many applications are shifting from monochrome LCD and TFT LCD to PMOLEDs for their superior visibility, fast response times, and low power consumption. PMOLEDs come in various sizes, offer full RGB colour, monochrome and area colour options, plus character displays compatible with standard LCD modules.

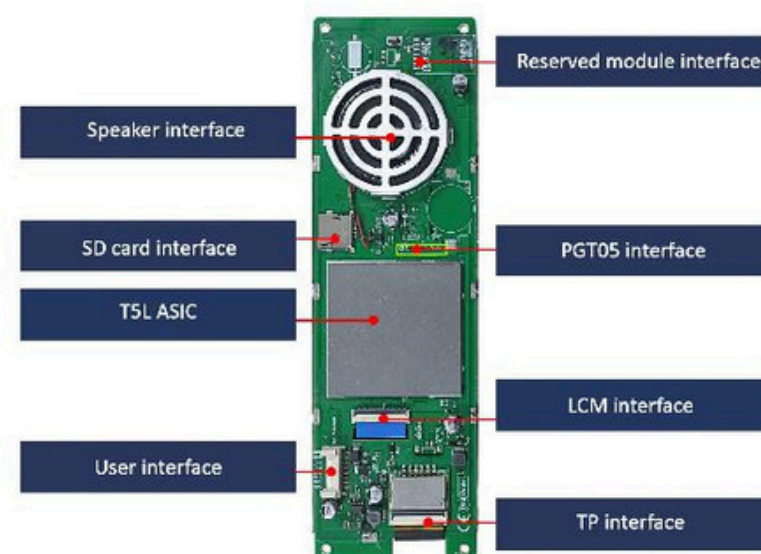
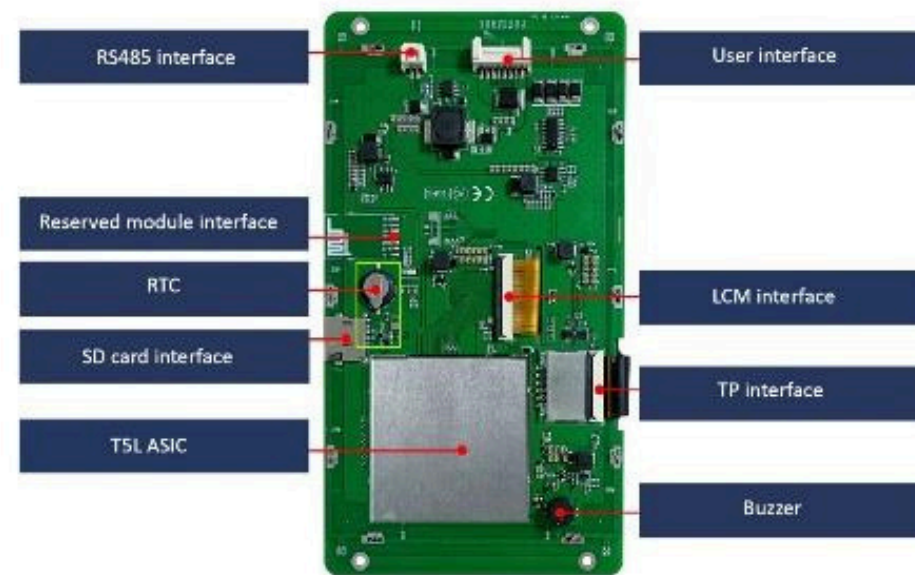
Key features include

- **Extremely wide viewing angle:** of 175° on all axis
- **High contrast ratio:** >10,000:1
- **Fast response times:** Up to 10 times faster than LCD
- **Long life:** 60khrs typically (yellow up 200khrs)
- **Low power consumption:** <LCD LED backlights ~ ideal for battery applications
- **Wide Operating temperature:** -40°C ~ +85°C
- **Lightweight & compact:** typically, 1.1mm ~ 2.5mm thick and weighing only 2.0g.
- **Emissive technology:** no backlight required



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~UART TFT Displays



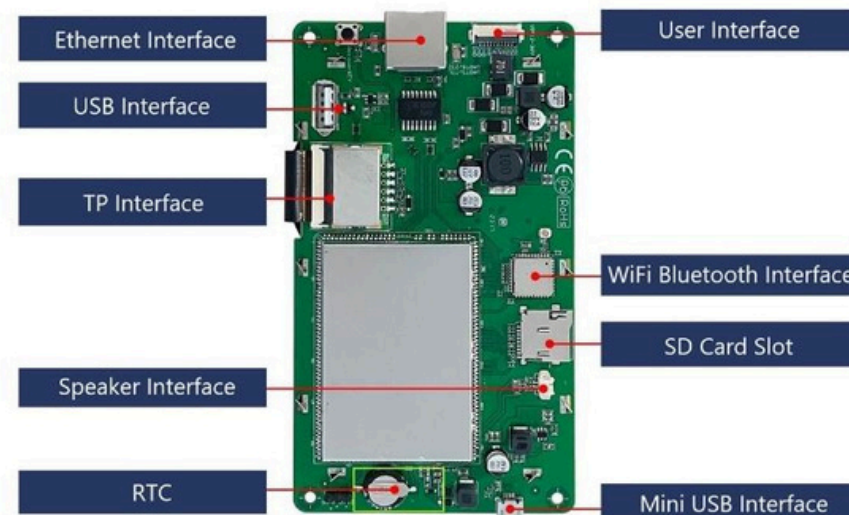
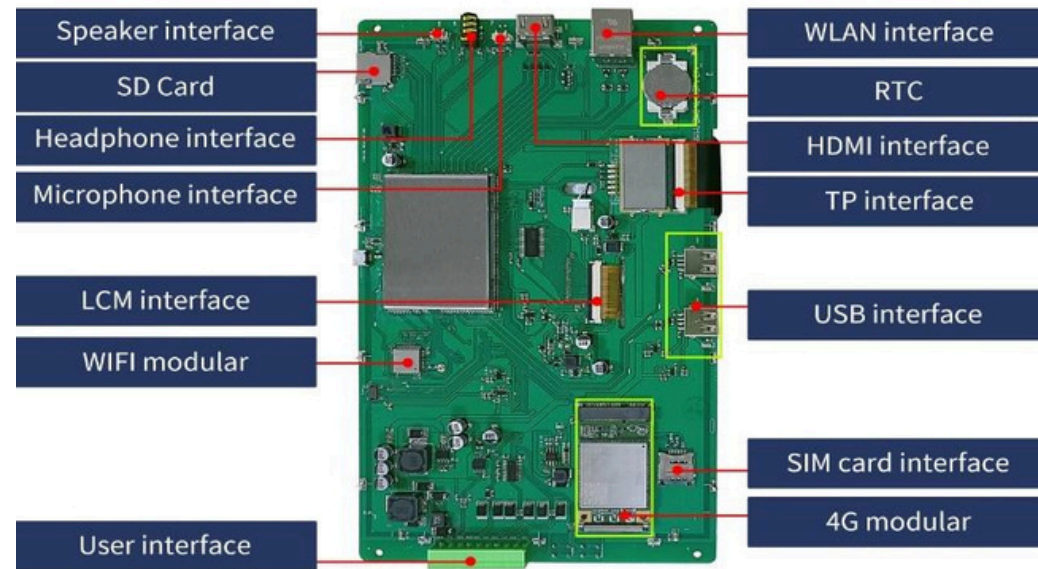
Designing a product with a colour TFT display and touch functionality is simplified with CDS's UART Display lineup, allowing rapid user interface (UI) development through an intuitive software tool. These displays utilize the **UART interface (TX & RX)** for seamless communication with microcontrollers and microprocessors, eliminating the need for complex display or touch drivers.

Key features include:

- **Diverse Display Sizes and Formats:** Options range from a compact 1.3" 240(RGB)x240 circular display to a full 21.5" 1920(RGB)x1080 2K HD model, with all the popular sizes, bar, and square formats available.
- **Powerful Dual-Core Processor:** Based on the reliable 8051 architecture, each display is equipped with a minimum 16MB of FLASH memory and supports RS232 and TTL (RS485 some models) interfaces, providing robust performance for advanced UIs.
- **IPS Technology and Touch Options:** Most displays offer IPS wide-viewing angles and come with either PCAP or 4-Wire Resistive touch, catering to various user needs.

The standard displays have an operating temperature range of -20°C to +70°C, however we can also support severe environments applications with displays that can operate from -40°C to +85°C. This versatile display range is ideal for applications requiring efficient, high-quality touch displays with quick UI development capabilities.

~Android OS Smart Displays



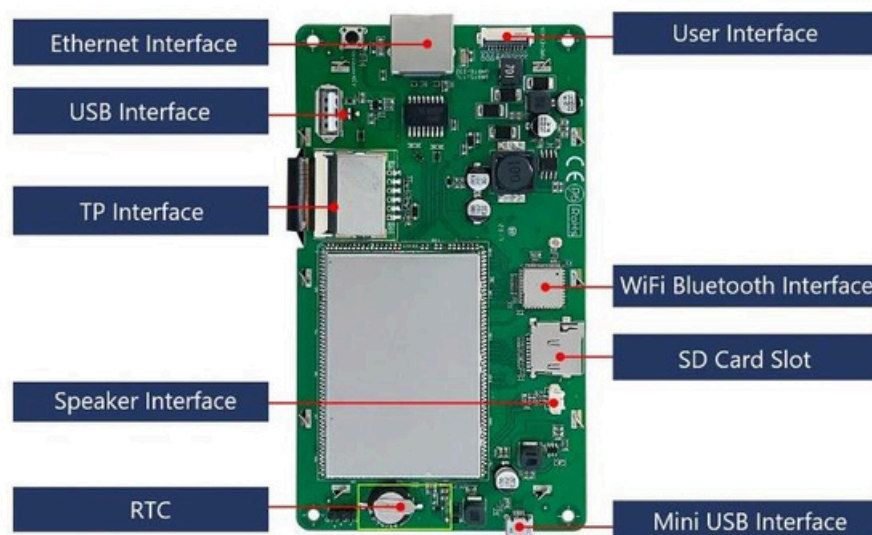
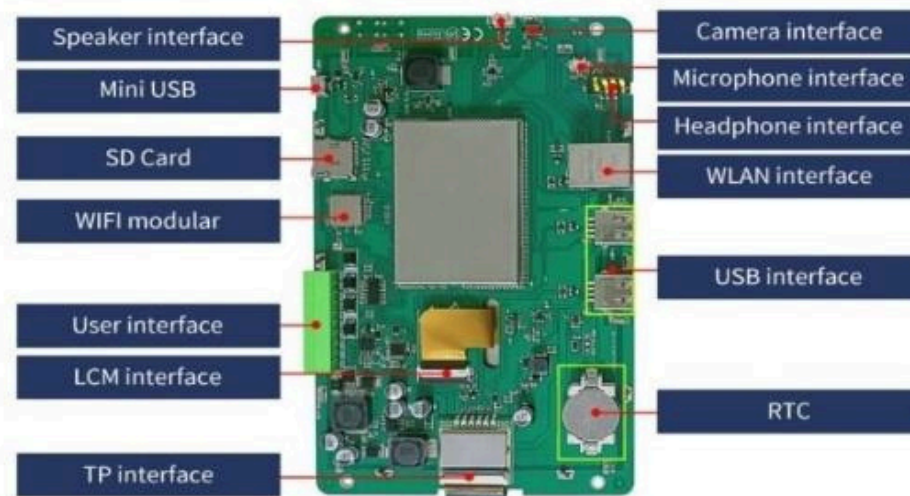
Our Android based industrial Intelligent display modules provide a wealth of standard integrated features and functionality. These features coupled with the ability to configure and customize with standard 'off-the-shelf' Android apps or user developed APK files enable peripheral hardware to be simply and easily integrated into your design.

Key features include:

- Sizes from 5" 800(RGB)x480 to 15.6" 1920(RGB)x1080
- PCAP touch as standard
- Rockchip RK3566 Quad-Core ARM processor
- 8GB FLASH (EMMC) + 2GB RAM (DDR4)
- Android 11 OS

The displays also include a 64GB SD card slot for App updates, ethernet, WI-FI, Bluetooth and 4G (option) connectivity plus USB, HDMI, RS232, RS485 and TTL interfaces are available for communication to a host of peripheral devices As Android is an open-source operating system developers can easily change code to build a customized user Interface specific to their own application.

~Linux OS Smart Displays



Our highly versatile Linux based industrial Intelligent display modules provide a wealth of standard integrated features and functionality. These features coupled with the ability to configure and customize with standard 'off-the-shelf' Linux apps or unique user developed apps enable peripheral hardware to be simply and easily integrated into your system.

Key features include:

- Sizes from 5" 800(RGB)x480 to 15.0" 1024(RGB)x768 PCAP touch as standard
- Dual-Core & Quad-Core Processors
- Linux Debian 10, 3.10, 4.19 & 5.4 OS options
- 8GB FLASH (EMMC) + 2GB RAM (DDR4)
- Inshell options

As Linux is an open-source operating system developers can easily change code to build a customized user Interface. Linux offers a high level of security against viruses & malware as programme changes can only be made by the system administrator resulting in an extremely safe and stable system.



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~Monochrome LCD Displays



Our product line-up boasts a wide array of alphanumeric and graphic STN & FSTN LCD modules, incorporating cutting-edge COB/SMT and COG technologies.

Industry standard character modules ranging from 2x8 to 4x40 displays, covering all the popular formats including large character and extended operating temperature versions. Reflective non-backlit or LED backlit transmissive positive or transmissive negative. In the graphic series, we offer resolutions

from 98 x 64 to 320 x 240

QVGA, with integrated on-board controller ICs for easy interfacing plus additional features like touch screens, positive/negative polarizer options, and various LED backlight colours.

Key features include:

- STN Grey, STN Yellow, STN Blue & FSTN LCD panel options
- White & Yellow/Green LED backlight colours
- -20°C~+70°C wide operating temp versions



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~Printed E-Paper Displays



Our flexible printed E-Paper displays are designed to convey quick & simple visual feedback. The technology is aimed at fixed segment and icon display applications where the purpose is to provide an intuitive visual impact. The current business model supports full custom designed solutions to a customer's own design brief.

Key features include

- **Ultra-low power consumption:** $1.73\mu\text{W}$ per cm^2
- **Low-voltage drive:** 1.5~3V
- **Flexible:** PET-Plastic flexible substrate
- **Semi-bistable :** Image retention time, 1m~15mins (customizable)
- **Screen update speed:** 250milliseconds for a 4mm^2 display segment
- **Multiple colours:** Grey, red, green, magenta & yellow



The advantages of Printed E-Paper displays is not just power consumption, but rather a combination of various positive properties that our displays bring to the table. Firstly, we do not use glass, the layer thickness is very low at $300\ \mu\text{m}$, our displays are flexible. The power consumption (static power consumption) of $1.67\text{mW}/\text{cm}^2$ is naturally low, ideal for battery-operated applications.



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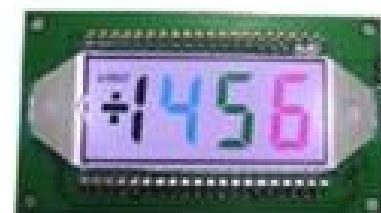
~Custom Designs - Monochrome LCD Displays



We offer custom LCD solutions to meet your specific needs. If a standard LCD won't fit your case or display requirements, we provide semi-custom or fully custom options. We can modify standard parts or create a unique display to match your design. Even a simple sketch can be the starting point, and our engineers will work with you to ensure your needs are met. We can also provide custom LED backlights. To ensure cost effective production there is a minimum order quantity (MOQ) based on size and complexity, this can be as little as 1000 pieces

Key Features include

- TN/STN Panel or Modules
- Reflective/Transflective/Transmissive polarisers
- 3, 6, 9 & 12 o'clock viewing direction options
- FS-LCD Panels (Field Sequential LCD Panels)
- Multi-Colour or single colour LED backlights to suit
- Wide operating temperature options (-40~80°C)
- Pin or Elastomer connections
- Static or Multiplexed driving
- 5V or 3V input voltages



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Need any additional information?

Our team is always available to help you with pricing details, technical support, or any additional information you may need. Please don't hesitate to reach out.



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