## TO CREATE COLORFUL LIFE

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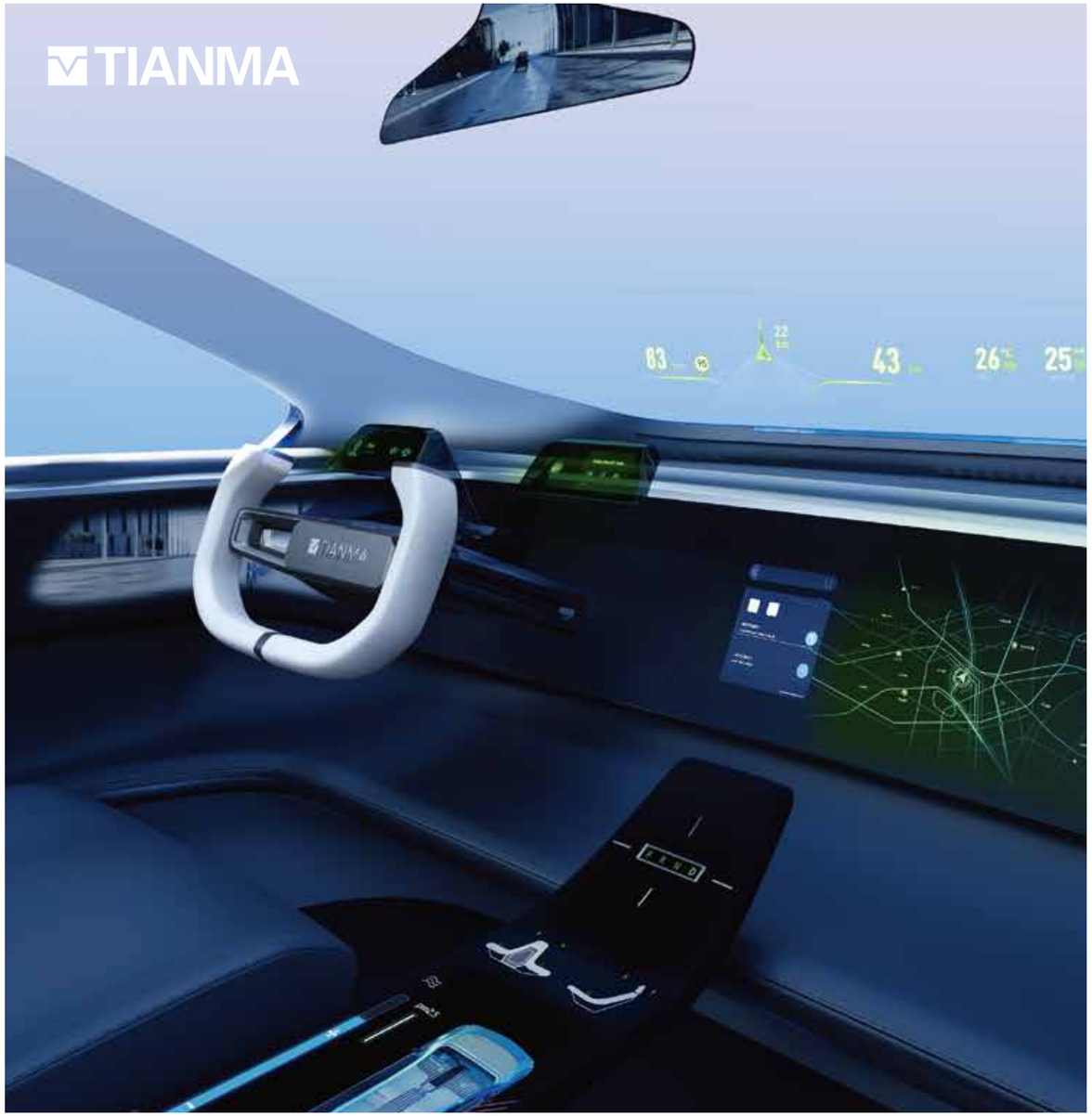



# AUTOMOTIVE DISPLAY

PRODUCT CATALOG

# About us

Tianma Microelectronics Co., Ltd. (Tianma), founded in 1983 and listed on the Shenzhen Stock Exchange (SZ 000050), is a global leader in small and medium-sized display solutions. Updated for 2026, this overview highlights Tianma's leadership in automotive display technology and our strategic vision for next-generation mobility.

**Our Focus: Automotive Leadership**
Tianma is a pioneer in automotive display innovation, serving global automakers for decades. Our portfolio includes:

- **Instrument Clusters & Center Stacks –** High-resolution, automotive-grade TFT-LCD and AM-OLED solutions.
- **Head-Up Displays (HUD) –** Advanced designs for enhanced driver safety and experience.
- **Integrated Smart Cockpit Solutions –** Seamless connectivity and intuitive interfaces for future vehicles.

**Recent Achievements**

- Maintained **No.1 global market share in automotive-grade displays** for five consecutive years.
- Ranked among the **top global suppliers of HUD technology since 2024.**
- Supported over **95% of global automotive brands,** delivering millions of in-vehicle display systems worldwide.

**Technology Leadership**
Innovation drives our success. Tianma has independently developed and mass-produced cutting-edge technologies including:

- TFT-LCD, LTPS, Oxide TFT-LCD, AM-OLED, Flexible and Foldable Displays
- Micro/Mini-LED, Touch Integration, HTD, CFOT, and Intelligent Sensing

These technologies are internationally advanced and domestically leading, earning numerous awards for product innovation and application excellence.

**Global Manufacturing & Service Network**
Tianma operates seven specialized manufacturing centers in Shenzhen, Shanghai, Chengdu, Wuhan, Xiamen, Wuhu, and Japan, supported by a global marketing and technical service network spanning the U.S., Germany, Japan, South Korea, India, and other regions. This infrastructure ensures rapid response and tailored solutions for automotive customers worldwide.

**Looking Ahead**
As we enter 2026, Tianma remains committed to shaping the future of automotive displays. By leveraging global resources and forward-looking innovation, we aim to deliver advanced display solutions that redefine the driving experience and accelerate progress toward our vision of being the world's premier provider of display solutions.

Data source: Omdia

# COMPANY HISTORY

**1983-11**
ESTABLISHED IN SHENZHEN

**1983-2003**
SHENZHEN TN-LCD

**1995-03**
PUBLICLY LISTED

**2006-04**
SHANGHAI G4.5 TFT-LCD

**2008-09**
CHENGDU G4.5 TFT-LCD

**2008-11**
WUHAN G4.5 TFT-LCD

**2009-12**
SHANGHAI
G5 TFT-LCD

**2010-08**
SHANGHAI
G4.5 AM-OLED

**2011-03**
XIAMEN G5.5 LTPS

**2011-07**
JAPAN G2/G3TFT-LCD

**2013-04**
SHANGHAI G5.5 AM-OLED

**2014-12**
XIAMEN G6 LTPS

**2015-03**
WUHAN G6 AM-OLED

**2018-06**
WUHAN G6
AM-OLED PHASE II

**2019-06**
HUBEI YANGTZE RIVER
NEW DISPLAY
INDUSTRY INNOVATION
CENTER FOUNDED

**2020-01**
XIAMEN G6 AM-OLED

**2022-09**
XIAMEN G8.6
a-Si/IGZO LCD
Micro-LED PRODUCTION LINE

**2022-11**
WUHU NEW DISPLAY
MODULE PRODUCTION LINE

# ADVANCED TECHNOLOGIES



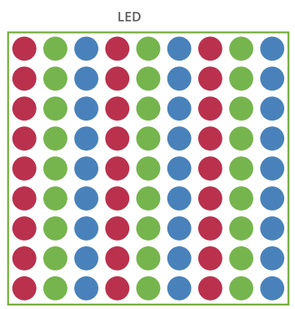
## Flexible Automotive OLED

Flexible automotive OLED curved displays offer versatile applications for next-generation smart cockpits. Built on polyimide flexible substrates with advanced thin-film encapsulation, they enable ultra-thin profiles and narrow borders. This technology enhances design freedom and delivers a more immersive, user-centric driving experience.


- Ultra thin
- Free form
- Bending radius
- Ultra narrow border

## Micro-LED

Micro-LED features miniature LED chips and Active-Matrix TFT, with RGB LED chips functioning as pixels, individually driven to emit light. This enables modules to become more energy efficient, with high transmittance, high contrast, high brightness, narrow border and ultra-thin.





Precision in the scale of micron

- Seamless splicing
- Narrow border
- High transparency

## ARIES

In order to drive in high ambient light conditions and still meet the viewing requirements and expectations for both drivers and passengers, Tianma use ARIES (advanced reflection invisible technology with embedded structure). The ARIES technology helps to achieve ultra-low reflection and improve contrast, providing better overall display performance.


- Super low reflectance < 0.6%
- High ambient contrast ratio (ACR) increase tenfold
- Seamless △E <2

# ADVANCED TECHNOLOGIES



## 3D AR-HUD

By integrating an advanced 3D picture generation unit (PGU) with a 2D Augmented Reality (AR) HUD platform, it delivers realistic 3D visuals with natural depth perception.

**Super-Clear Stereoscopic Imaging**
High PPI and high resolution

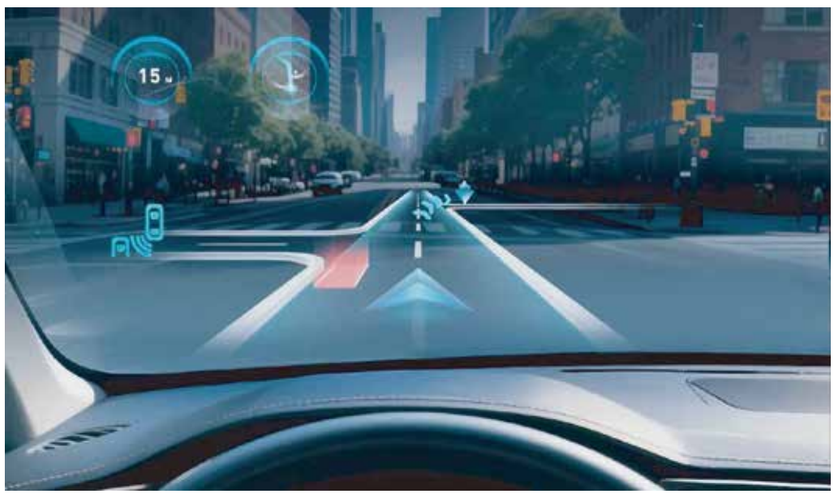
**Extensive 3D depth**
>100m Continuous range

**True AR Experience**
Ultra-precise light field calibration technology & Dynamic rendering algorithm

**Driving Safety Upgraded**
Multi-scenario adaptive optical compensation algorithm

**High System Compatibility**
Compatible with mainstream vehicle models installation

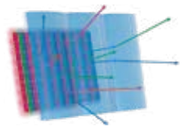
**High-Efficiency Performance**
Low-loss 3D component, maintaining a light transmittance of >99%.




## 3D Cluster Display

This technology enables adjustable 3D depth with seamless 2D/3D switching. Powered by Tianma's proprietary autostereoscopic rendering technique, it delivers a stable, continuous, and comfortable 3D viewing experience without relying on eye tracking.

**500PPI**
Ultra HD 2D mode



Lossless **2D/3D**
Switchable


Glasses-free 3D mode
adjustable depth

Real-time rendering
autostereoscopic
4D light field

Ghost-Free 3D FOV
without eye-tracking

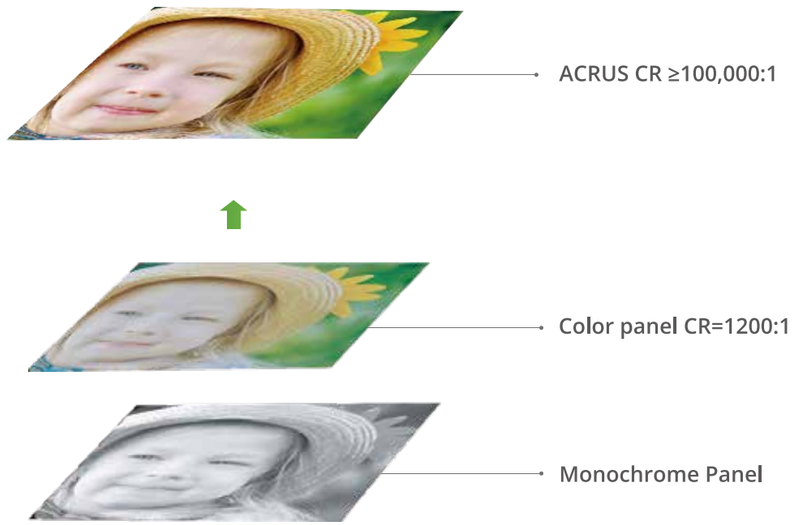
Anti-Reflection
safe driving

# CORE TECHNOLOGIES



## Local Dimming Solutions: ACRUS

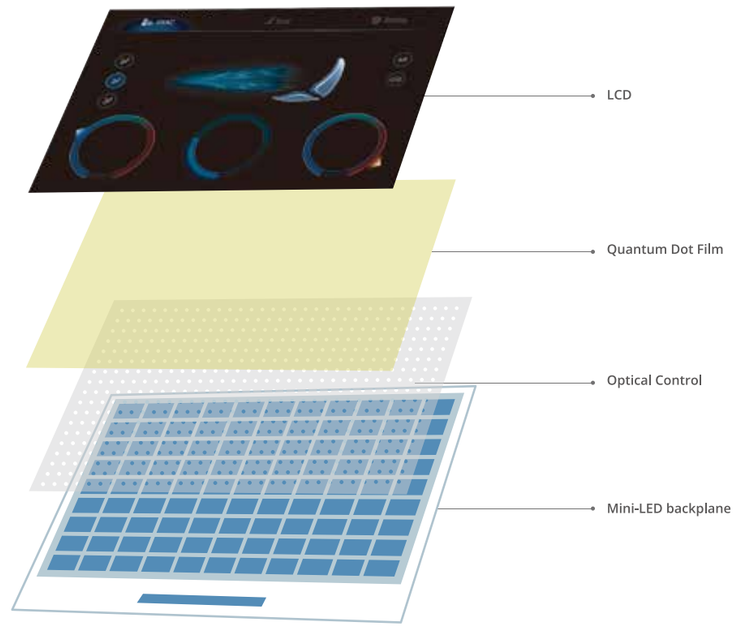
The LCD uses a dual-screen dimming technology, to help achieve a contrast ratio≥100,000:1 and the true black effect.




- High dynamic contrast ≥100,000:1
- True black
- Local dimming

## Local Dimming Solutions: Mini-LED

Mini-LED displays combine a direct-type Mini-LED backlight with a TFT-LCD panel, featuring Full Array Local Dimming (FALD) technology. With thousands of dimming zones, quantum dot film, a precision optical control structure, and optimized algorithms, they deliver wide color gamut, ultra-high peak brightness, minimized halo effect, and superior energy efficiency for exceptional image quality.



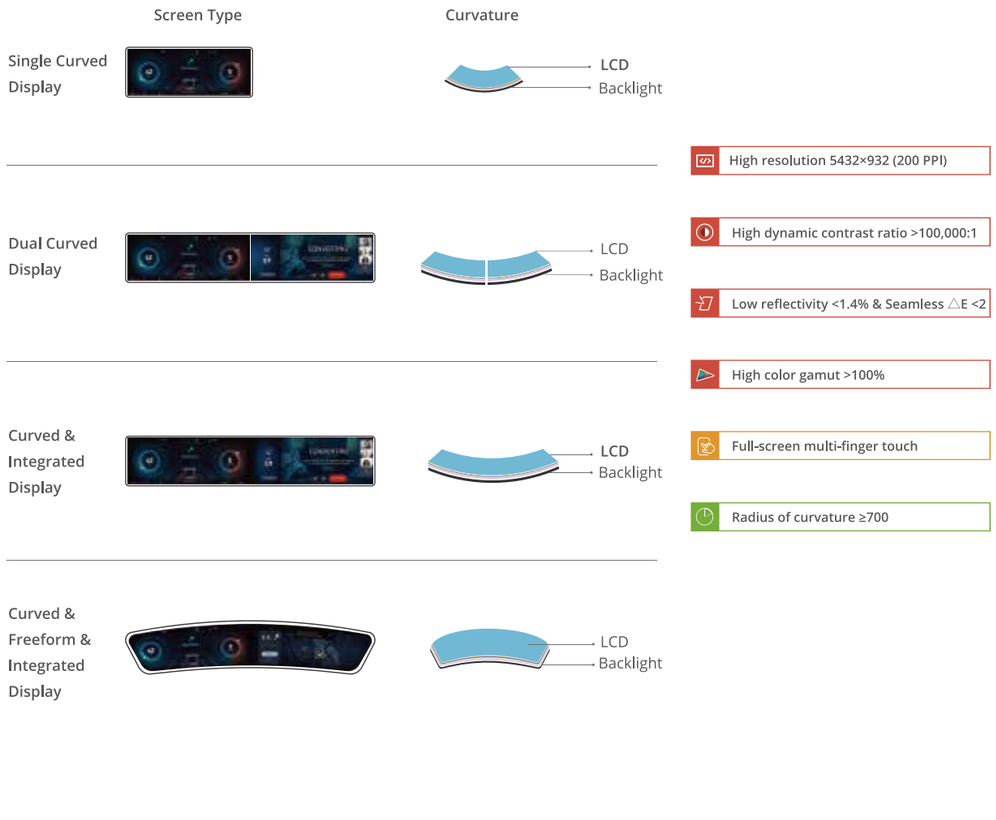

- High contrast ratio >1,000,000:1
- High color gamut >110%
- Single zone brightness 800nits
- Low power consumption: reduced by 55%
- Friendly halo
- Slim design: 0 OD
- Full array local dimming

# CORE TECHNOLOGIES



## Curved Display

Tianma's curved display technology offers flexible curvature options with radii from R700 to R3000. These ranges are optimized for natural viewing angles and support next-generation cockpit integration. Featuring ultra-high contrast (>100,000:1), it delivers stunning visuals while meeting customized design requirements for advanced automotive systems.



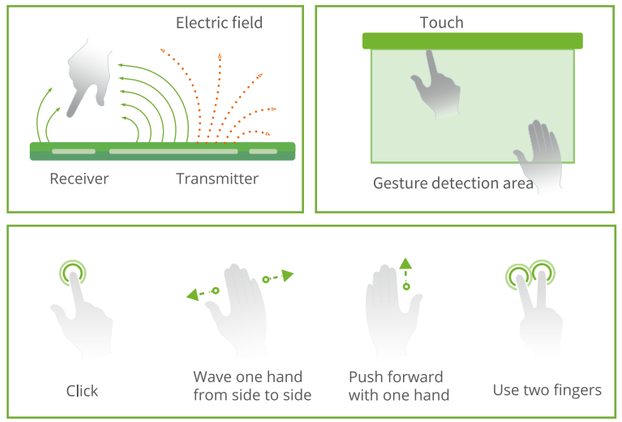

## Touch Solution: TED

TED (Touch Embedded Display technology) is a solution that integrates both touch and display controller functions. The common electrode of the display is designed into a number of unit arrays to realize the technology of driving display and touch simultaneously by Touch and Display Driver Integration (Chip) and only one FPC.

# KEY TECHNOLOGIES

## Touch Solution: Gesture Touch

Tianma's gesture technology enables non-contact operation by detecting variations in electrostatic capacitance as a hand approaches the display. The system uses an electric field formed between transmitting and receiving electrodes on the sensor substrate, ensuring precise and responsive control without physical touch.



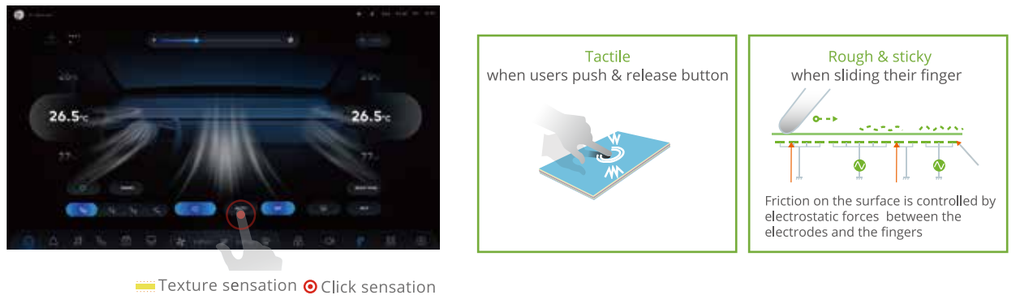

## Knob on Display

Tianma's Knob on Display combines tactile precision with digital versatility for next-generation cockpits. A physical knob is positioned on the touchscreen and paired with an interactive virtual interface, enabling intuitive control and customizable design without compromising display integrity.



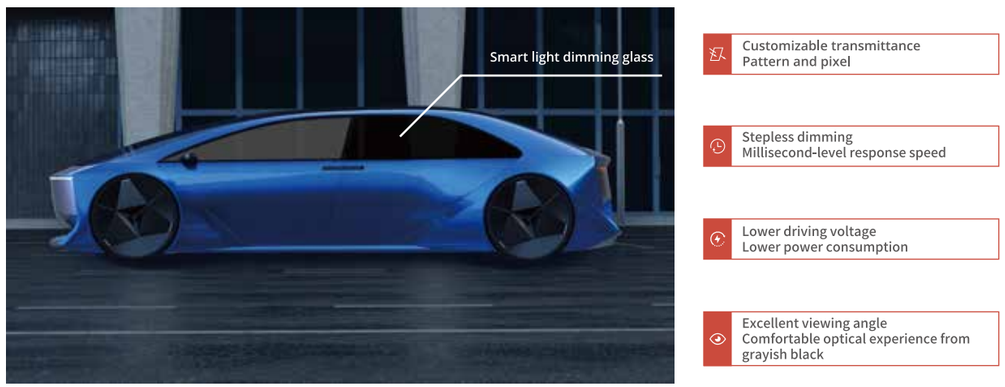

## Touch Solution: Tactile Feedback

Tianma's tactile feedback technology provides haptic cues for eyes-free control. Electrostatic force creates a texture sensation on virtual buttons, while lateral motion delivers a clear click response upon activation. By minimizing visual attention shifts, this system improves operational safety in automotive environments.




## Advanced Light-dimmer Film

Tianma's smart dimming technology uses dichroic dye molecules aligned by liquid crystals to control light absorption. This enables adjustable light transmission, overcoming the limitations of fixed-transparency glass. The film can also integrate touch functionality and is ideal for automotive applications such as windshields, side windows, and roof panels.



# KEY TECHNOLOGIES



## InvisiVue™

The smart interior InvisiVue™ is a minimalist design concept. When the display is off, only the decorative texture integrated with the interior can be observed; when the display is on, a clear display image emerges above the decorative layer.

Traditional large in-vehicle screens with cluttered content can easily distract drivers; with the application of smart interior InvisiVue™, it can avoid distracting attention and enhance user experience.

Equipped with Mini-LED backlight technology, it achieves outstanding visual integration, enabling perfect concealment of the screen and enhancing both visual appeal and user experience. Customization options include wood grain, metal, leather, and other textures.

Non-operating

Operating

Invisible Display Customized Appearance

T 20%-80%

T 20%-80%

T 20%-80%

T 20%-60%

T 20%-80%



T 20%-25%

- Perfect hidden perfmance
- High transmittance
- High resolution
- Customized decorative texture



## LuminoWood

The world's first display combining Tianma's InvisiVue™ technology with omnidirectional privacy protection. Utilizing a high-efficiency, ultra-slim Mini-LED backlight, this innovative display resolves the traditional compromise between visual concealment and privacy functionality.

When inactive, the display elegantly presents only a simulated wood-grain finish.

Upon activation, viewers directly in front of the screen see crisp, dynamic imagery seamlessly emerging through the decorative layer. Off-axis observers, however, perceive only the wood-grain pattern without any visible display content.

This innovative privacy technology provides protection not only horizontally but also vertically, delivering complete omnidirectional privacy across wide viewing angles. Its ultra-slim design further enhances flexibility, creating additional space and enabling innovative cockpit design possibilities.

Traditional privacy technology of PID: Driver 's view

Traditional privacy technology of PID: Passenger 's view

LuminoWood Privacy: Driver 's view

LuminoWood Privacy: Passenger 's view

- The world's first demo combined the invisivue and all-direction privacy technology
- Simulated wood grain invisivue effect
- Excellent seamless effect: ΔE < 0.15
- Excellent all-direction privacy effect

## Privacy

Tianma's switchable privacy display uses advanced optical control and driving algorithms to toggle between two modes. In share mode, the screen provides high brightness and wide viewing angles so all occupants can view shared content such as navigation. In privacy mode, the viewing angle is narrowed so only the passenger sees distracting content like movies, improving driver focus.

Public mode

Privacy mode

- Driving safety
- Sharing/private mode switchable

# COMBINATION TECHNOLOGIES



## High Visual Experience


| | | |
|---|---|---|
| High resolution | | PPI ~ 300 |
| True-black appearance | | ΔE <2 |
| High contrast ratio | | >100,000:1 |
| Large size | | >30 inch |
| High color gamut | | ~ 110% |
| Super narrow border | | ~2.5mm (W/O CTP) ~3.0mm (W CTP) |
| High black uniformity | | >50% (area scan) |
| Fast gray to gray response | | ~18ms |
| Wide frame rate | | 30~120Hz |

# AUTOMOTIVE PRODUCTS



Super Fine TFT · Ultra wide screen · Multi-bonding integrated Display · Narrow Border · One-stop Touch Solution · Curve · Freeform

## Smart Cockpit Display

| Screen Size | 29.6" | 15.7" | 15.6" |
|---|---|---|---|
| Display Mode | SFT | SFT | SFT |
| Aspect Ratio | 32:10 | 16:9 | 16:9 |
| Resolution (pixel) | 6400x1800 | 2880x1620 | 2560x1440 |
| Display Color | 16.7M | 16.7M | 16.7M |
| Interface | eDP | eDP | 2-ports LVDS |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | 4K · Multi-bonding · Narrow Border · One-stop Touch Solution | 4K · Multi-bonding · Narrow Border · One-stop Touch Solution | 8K · Multi-bonding · Narrow Border · One-stop Touch Solution |

| Screen Size | 27.0" | 23.6" | 13.2" | 12.3" |
|---|---|---|---|---|
| Display Mode | SFT | SFT | SFT | SFT |
| Aspect Ratio | 16:3 | 16:3 | 32:9 | 8:3 |
| Resolution (pixel) | 4032x756 | 3840x720 | 2560x720 | 1920×720 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | eDP | 2-ports LVDS | 2-ports LVDS | 2-ports LVDS |
| Operating Temperature | -30°C~+85°C | 30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | 4K · Multi-bonding · Narrow Border · One-stop Touch Solution | 4K · Multi-bonding · Narrow Border · One-stop Touch Solution | Multi-bonding · Narrow Border · One-stop Touch Solution · Curve | Freeform · Multi-bonding · Narrow Border · One-stop Touch Solution · Curve |



Super Fine TFT · Narrow Border · Signal Feedback Anomaly · High Resolution · Ultra-low Reflectivity · Freeform · Cluster

## Cluster Display

Full-LCD Cluster

Semi-LCD Cluster

| Screen Size | 12.3" | 10.25" | 10.25" | 8.8" | 7.0" | 7.0" |
|---|---|---|---|---|---|---|
| Display Mode | SFT | SFT | SFT | SFT | SFT | SFT |
| Aspect Ratio | 8:3 | 8:3 | 8:3 | 8:3 | 15:9 | 15:9 |
| Resolution (pixel) | 1920×720 | 1920x720 | 1280x480 | 1280x480 | 1280x768 | 800×480 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | 2-ports LVDS | 2-ports LVDS | 1-Port LVDS | 1-Port LVDS | 1-Port LVDS | 1-Port LVDS |
| Operating Temperature | -30°C~+85°C | -30°~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | Narrow Border · Signal Feedback Anomaly · Freeform · Ultra-low Reflectivity | Narrow Border · Signal Feedback Anomaly | Signal Feedback Anomaly | Signal Feedback Anomaly | High Resolution · Signal Feedback Anomaly | |

Long Shape Cluster

| Screen Size | 10.2" | 9.2" | 8.88" | 6.0" |
|---|---|---|---|---|
| Display Mode | SFT | SFT | SFT | SFT |
| Aspect Ratio | 11:3 | 15:3 | 12:3 | 11:3 |
| Resolution (pixel) | 1920*532 | 1920*384 | 1920*480 | 1024*274 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | 1-port LVDS | 1-port LVDS | 1-port LVDS | 1-port LVDS |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | Narrow Border · Signal Feedback Anomaly · Narrow Border | Narrow Border · Signal Feedback Anomaly · Narrow Border | Signal Feedback Anomaly · Narrow Border | Signal Feedback Anomaly · Narrow Border |

# AUTOMOTIVE PRODUCTS

## Center Information Display

Super Fine TFT · Dead front · In-Cell Touch · Narrow Border



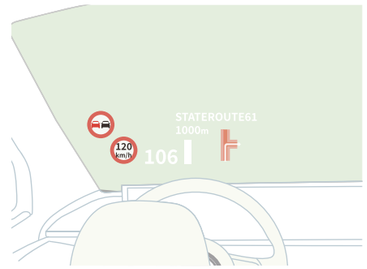

| Screen Size | 17.3" | 17.0" | 15.6" | 15.6" | 15.4" | 14.6" |
|---|---|---|---|---|---|---|
| Display Mode | TFT | TFT | TFT | TFT | TFT | TFT |
| Aspect Ratio | 16:9 | 16:9 | 16:9 | 16:9 | 16:10 | 16:9 |
| Resolution (pixel) | 2880*1620 | 2560x1440 | 2560*1440 | 1920x1080 | 2560x1600 | 2560x1440 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | eDP | eDP | eDP | 2-ports LVDS | eDP | eDP |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | Dead front · In-Cell Touch · Narrow Border | In-Cell Touch · Narrow Border | In-Cell Touch · Narrow Border | In-Cell Touch · Narrow Border | In-Cell Touch · Narrow Border | In-Cell Touch · Narrow Border |

| Screen Size | 14.6" | 12.9" | 12.3" | 10.25" | 10.1" | 13.2" (portrait) |
|---|---|---|---|---|---|---|
| Display Mode | TFT | TFT | TFT | TFT | TFT | TFT |
| Aspect Ratio | 16:9 | 16:9 | 8:3 | 8:3 | 16:9 | 3:4 |
| Resolution (pixel) | 1920x1080 | 1920*1080 | 1920×720 | 1920x720 | 1280x720 | 1440x1920 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | 2-ports LVDS | 2-ports LVDS | 2-ports LVDS | 2-ports LVDS | 1-Port LVDS | 2-ports LVDS |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | Dead front · In-Cell Touch · Narrow Border | Narrow Border | In-Cell Touch · Narrow Border | In-Cell Touch · Narrow Border | In-Cell Touch | Dead front · In-Cell Touch · Narrow Border |



## Head-up Display

Super Fine TFT · Wide Temperature · High Transmittance · Adjustable Reflectivity · FOG · High Brightness · Freeform




| Screen Size | 1.8" | 2.6" | 3.14" | 4.1" | 5.1" |
|---|---|---|---|---|---|
| Display Mode | TFT | TFT | TFT | TFT | TFT |
| Aspect Ratio | 2:1 | 16:9 | 15:9 | 2:1 | 3:1 |
| Resolution (pixel) | 480x240 | 1280x720 | 800x480 | 1280x640 | 1440x480 |
| Display Color | 262K | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | RGB 18bits | 1-Port LVDS | LVDS 24 bits+ SPI | LVDS 24 bits+ SPI | LVDS 24 bits+ SPI |
| Operating Temperature | -40°C~+105°C | -30°C~+85°C | -40°C~+105°C | -40°C~+105°C | -40°C~+105°C |
| Storage Temperature | -40°C~+105°C | -40°C~+95°C | -40°C~+105°C | -40°C~+105°C | -40°C~+105°C |
| Product Features | High Transmittance · High Brightness | High Transmittance · High Brightness | High Transmittance · High Brightness | High Transmittance · High Brightness | High Transmittance · High Brightness |

## Center Rear View Mirror Display

| Screen Size | 9.3" | 9.3" | 9.2" | 8.6" |
|---|---|---|---|---|
| Display Mode | TFT | TFT | TFT | TFT |
| Aspect Ratio | 24:5 | 25:5 | 25:5 | 25:5 |
| Resolution (pixel) | 1920x400 | 1600x320 | 1920x384 | 1280x260 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | 1-Port LVDS | 1-Port LVDS | 1-Port LVDS | 1-Port LVDS |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | Freeform · FOG | Freeform · FOG | High Brightness · Adjustable Reflectivity · Freeform | High Brightness · Freeform |

# AUTOMOTIVE PRODUCTS



Super Fine TFT · Dead front · Narrow Border · One-stop Touch Solution · Low Temperature Heating · In-Cell Touch

## Side Rear View Mirror Display

| Screen Size | 7" | 6.7" |
|---|---|---|
| Display Mode | | |
| Aspect Ratio | 15:9 | 16:9 |
| Resolution (pixel) | 1280x768 | 1280x720 |
| Display Color | 16.7M | 16.7M |
| Interface | 1-Port LVDS | 1-Port LVDS |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C |
| Product Features | | |

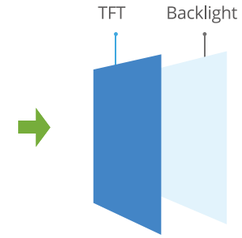
## Rear Seat Entertainment Display

| Screen Size | 20.5" | 17.3" | 15.6" | 15.6" | 12.9" |
|---|---|---|---|---|---|
| Display Mode | | | | | |
| Aspect Ratio | 21:9 | 16:9 | 16:9 | 16:9 | 16:9 |
| Resolution (pixel) | 3840x1648 | 2880x1620 | 2560x1440 | 1920x1080 | 1920x1080 |
| Display Color | 16.7M | 16.7M | 16.7M | 16.7M | 16.7M |
| Interface | eDP | eDP | eDP | 2-ports LVDS | 2-ports LVDS |
| Operating Temperature | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C | -30°C~+85°C |
| Storage Temperature | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C | -40°C~+95°C |
| Product Features | | | | | |



## EBN + TFT

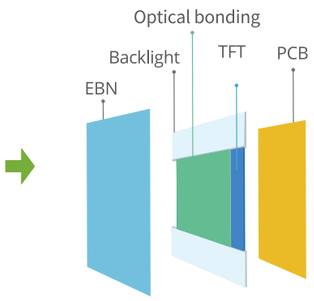
Full TFT Display




### The 3rd Generation Color Gradient EBN + TFT

Tianma can use EBN (Enhanced Black Nematic) + small size TFT technology to produce a display with same performance and content as a traditional TFT display but much more cost effectively, which can achieve multi-color gradient display and be customized per specific requirements. This technology can be used on dashboard.

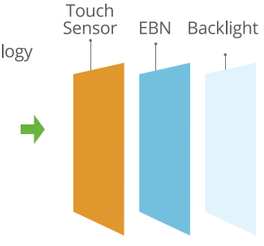
The 3rd Generation Color Gradient EBN + TFT Technology




### The 3rd Generation Color Gradient EBN + Touch Oncell

EBN (Enhanced Black Nematic) + Touch Oncell technology intergrates touch functions and is thinner and more cost effective than the traditional external TP. The product appearance and color can be customized. This technology can be used on the display of air conditioner control panels.

The 3rd Generation Color Gradient EBN + Touch Oncell Technology




| Duty | | 1/1 | |
|---|---|---|---|
| CR (-30°C) | 1000:1 | Transmittance (%) | 20% |
| CR (22°C) | 2000:1 | Operating Temperature | -30°C~+85°C |
| CR (85°C) | 1000:1 | Storage Temperature | -40°C~+95°C |
| Ton+Toff (-30°C) (S) | 1.5 | Vertical (CR>100) | -40°/+60° |
| Ton+Toff (22°C) (ms) | 25 | Horizontal (CR>100) | -60°/+60° |
| Ton+Toff (85°C) (ms) | 10 | | |