

Special Report – Displays at Touch Taiwan 2025

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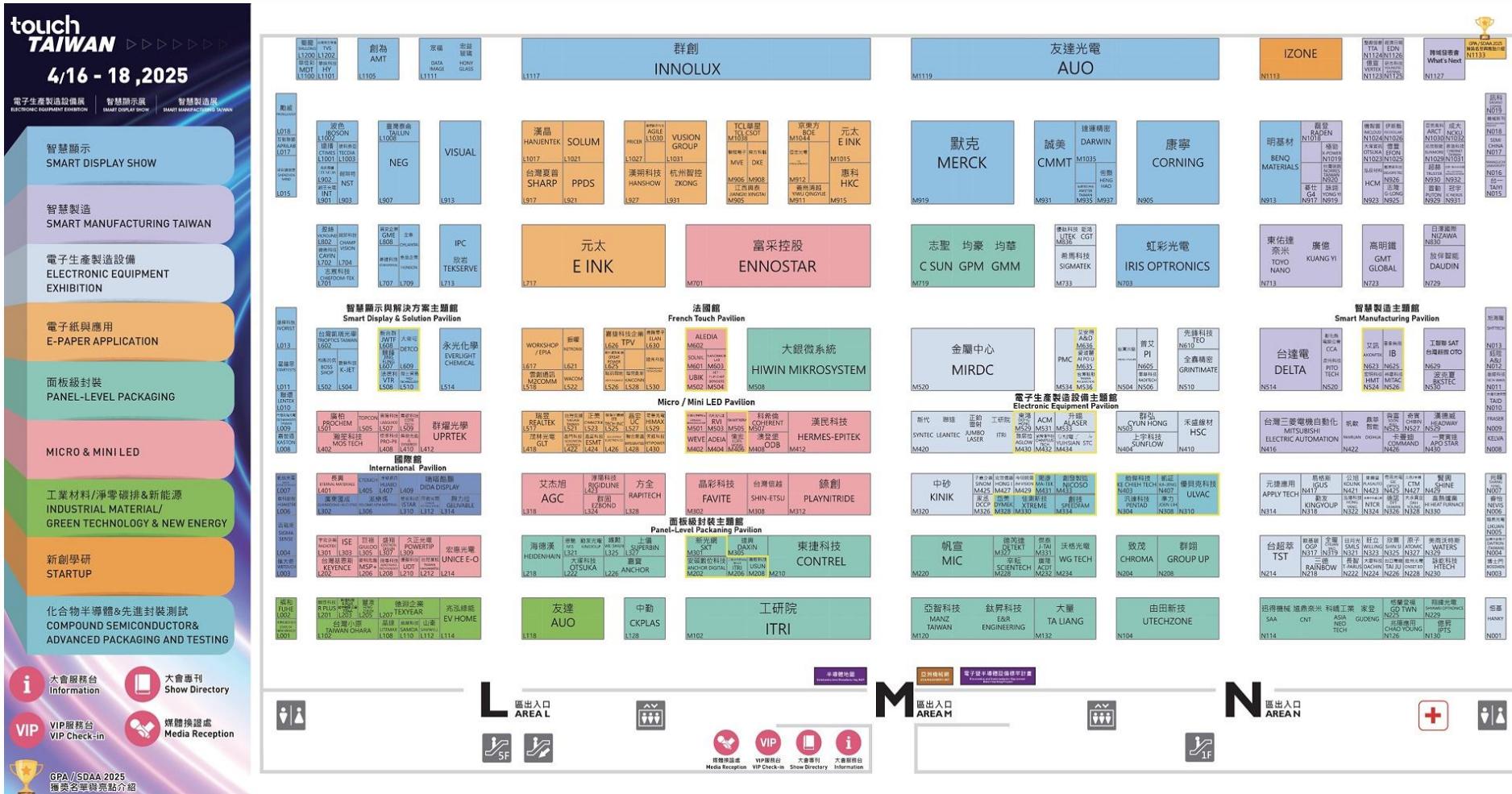


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About Touch Taiwan 2025

Touch Taiwan 2025: Exhibitors



Source: Touch Taiwan

About Touch Taiwan 2025

- Touch Taiwan 2025 was held from April 16 to April 18, 2025. This year's exhibition was no longer limited to just flat-panel display (FPD) topics despite display makers such as AUO, Innolux, and E Ink occupying a larger space. The major exhibitions included the latest FPDs for many applications, electronic paper displays (EPDs) and their ecosystem, equipment for panel-level packaging (PLP), and Micro LED manufacturing equipment and materials.
- **EPD:** E Ink demonstrated its EPD technologies, including Kaleido (4,096 colors via a color filter), Gallery, Marquee (millions of colors via CMYW pigments), Spectra (colors via color pigments), and Prism. The Kaleido technology has been applied in many color e-readers released since 2024. E Ink and its supply chain partners demonstrated innovative applications and image improvements. The first foldable e-reader (8-inch) debuted at the booth. Iris Optronics featured its cholesteric LCD technology, and the performance was much better than in 2024.
- **Micro LED:** Ennstar demonstrated specific LED lighting applications (such as inspection, communication, biometric sensing, etc.) instead of only making displays. This indicates that Ennstar will develop more valuable and profitable applications by means of its LED light expertise. The first LEDoS chip through the color conversion method (CCM) was shown. Aleida and Rayleigh also presented their Micro LED solutions.
- **Equipment:** Because PLP is emerging in Taiwan, makers at the event proposed the related equipment solutions and materials. Since AUO and Innolux skipped AMOLED competition for smarter investment, they have different future strategies. Innolux shared that PLP was one of the approaches for its future.
- **Vertical applications:** The focus at Touch Taiwan was on EPD applications in electronic shelf labels (ESL), retail signage, and digital posters; Micro LED for interactive wall displays; transparent Micro LED for in-flight entertainment; and Mini LED backlighting for outdoor scenarios such as marine applications. Furthermore, the event focused on integrating artificial intelligence (AI) for enhanced human-machine interaction (HMI) through object, pose, and voice recognition in kiosks and video walls, as well as utilizing AI-driven image segmentation platforms in medical systems to support preoperative planning and postoperative consultation.

1.0 Taiwanese panel makers and exhibitions

AUO: World's largest 65-inch field sequential color signage



World's first largest field sequential color (FSC) display removes the color filter for higher transmittance, thereby reducing power consumption and achieving 99% DCI-P3 color gamut with RGB local dimming.

- Size: 65-inch
- Technology: a-Si
- Resolution: 7680x1080
- Refresh rate: 360Hz
- LCD type: VA model
- Backlight type: Direct-lit backlight with RGB LED local dimming, 2,000 dimming zones
- Color gamut: DCI-P3 95%-99% (Pure Color)
- FSC Algorithm: Four-field algorithm

Source: Omdia analyst photo, Touch Taiwan 2025

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AUO: 127-inch Micro LED TV with 8 pieces of 41.6-inch Micro LED displays



- Size: 127-inch
- Resolution: 3840x2160
- Pixel Pitch: 0.732mm
- Refresh rate: 120Hz
- Glass substrate: LTPS
- Color gamut: DCI-P3 100%
- Simplified tiling: 42-inch single-modulex8 pieces for a 127-inch TV
- Advanced Reflectionless Technology (A.R.T.)

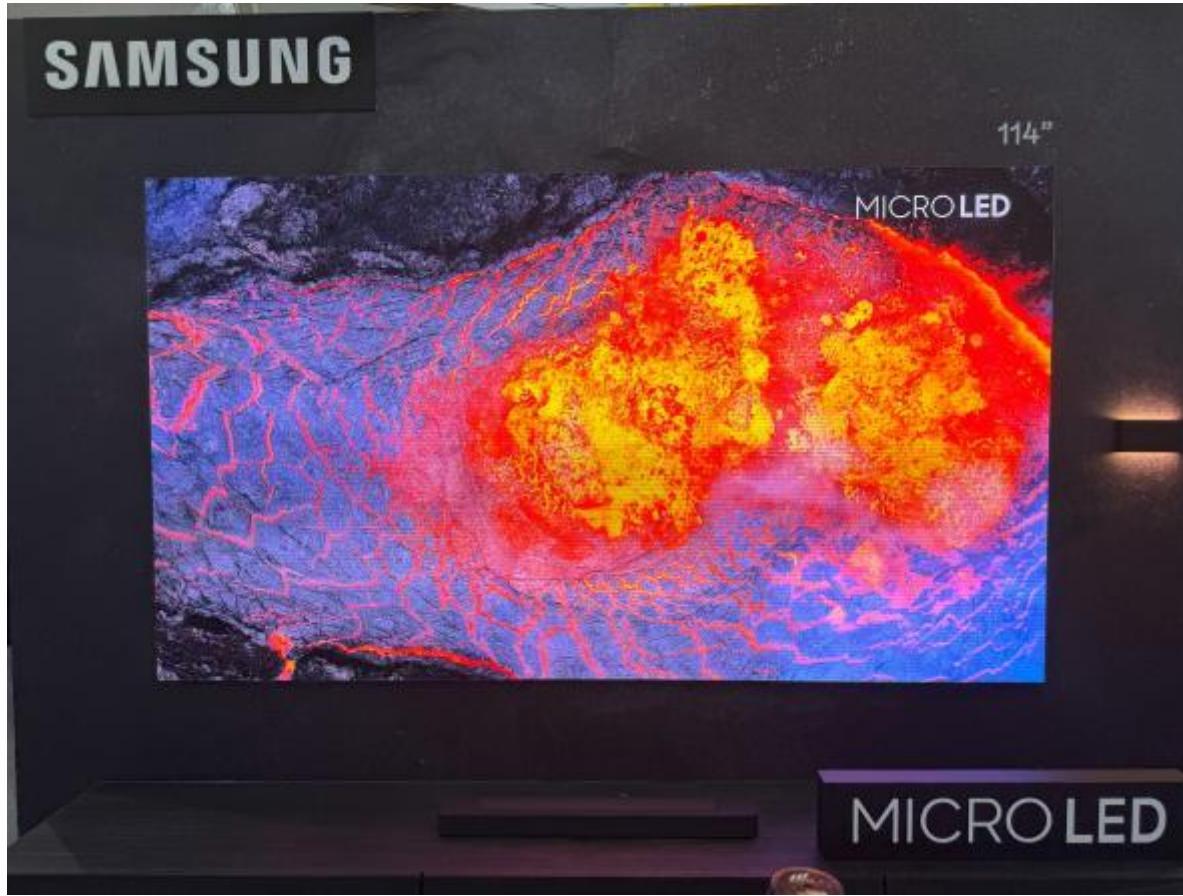
Source: Omdia analyst photos, Touch Taiwan 2025



- World's largest 42-inch single Micro LED module
- AUO's AM (active matrix) Micro LED, which undergoes IC processing, mass transfer, and systems integration at its Gen 4.5 fab.
- Consistent color gamut and less color difference with a three-sided non-border design.
- 2 pieces of 42-inch can be a 64-inch FHD TV display.

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AUO: 114-inch Micro LED TV with 81 pieces of 21.7-inch Micro LED displays



Source: Omdia analyst photo, Touch Taiwan 2025

- Size: 114-inch with 81 pieces of 12.7-inch Micro LED displays
- Resolution: 4968x2808
- Glass substrate: LTPS
- Chip size 440µm
- Real 10 bits IC with DCI-P3 100%

Innolux: World's largest 204-inch Micro LED TV with 256 pieces of 12.3-inch Micro LED displays



Source: Omdia analyst photos, Touch Taiwan 2025

12.7-inch Micro LED display



World's first largest 204-inch Micro LED 8K display

- Size: 204-inch with 256 pieces of 12.3-inch (480x180 resolution) Micro LED displays
- Resolution: 8K
- Color gamut: Above DCI-P3 95%

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Innolux: World's first 130-inch Micro LED tiling display



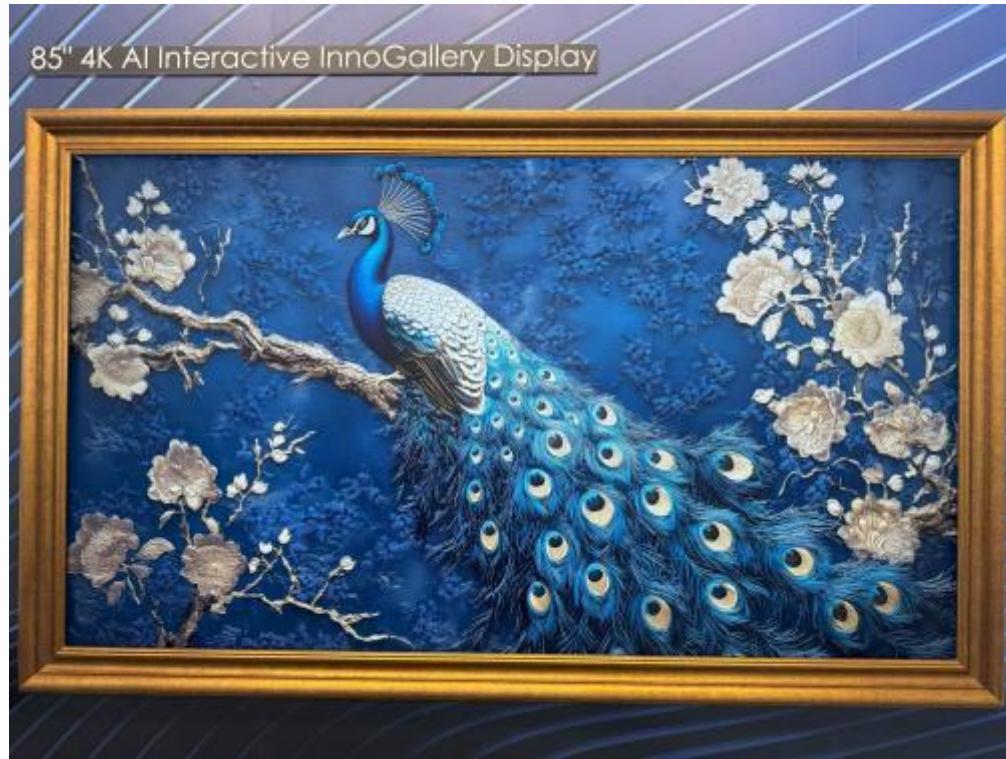
- Size: 130-inch with 12 pieces of 31.2-inch display modules
- Total is 240 pieces of 7.8-inch Micro LED displays
- Glass substrate: LTPS



Source: Omdia analyst photos, Touch Taiwan 2025

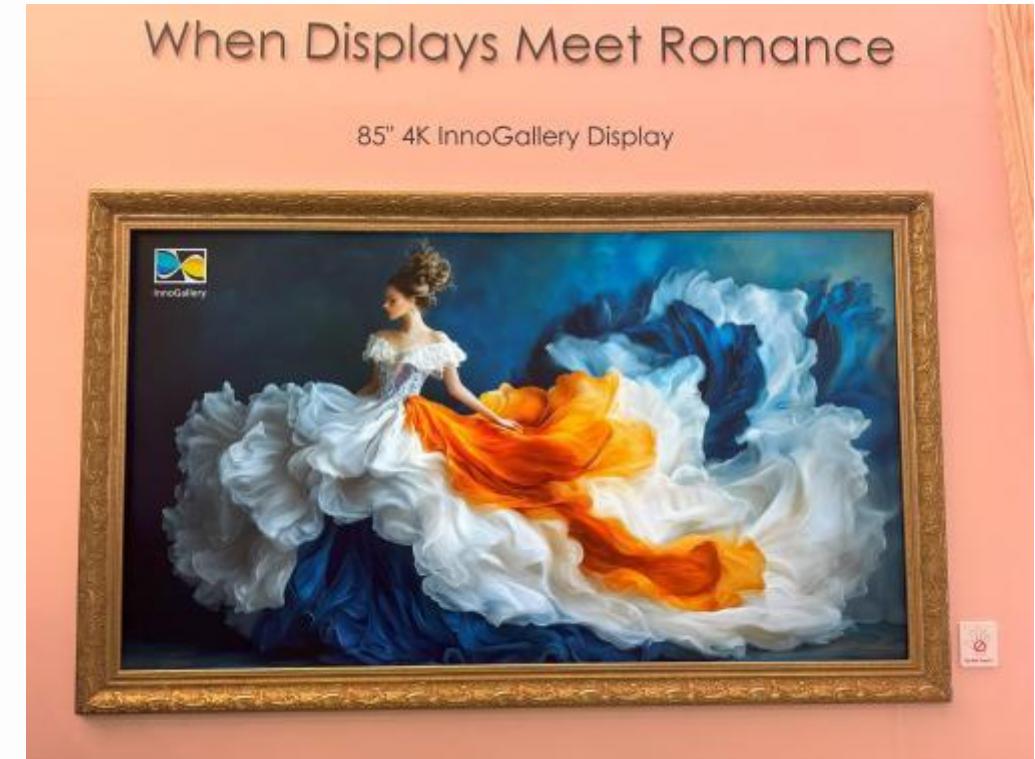
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Innolux: 85-inch 4K AI Interactive InnoGallery Display



- Innolux adopted anti-reflective (AF) film with more than 75% haze to achieve a gallery display.
- Size: 85-inch
- Resolution: 3840x2160
- AR film: More than 75% haze

Source: Omdia analyst photos, Touch Taiwan 2025



- AI chips can be included by system-on-chip (SoC) suppliers such as Samsung, Meditech, or Realtek.

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E Ink: World's largest 75-inch e-paper display



World's first 75-inch E Ink Spectra (6) with 6 pieces of 25-inch E Ink films

Resolution: 5120x2880 (79 PPI)

Glass substrate: Oxide

Source: Omdia analyst photos, Touch Taiwan 2025



E Ink Marquee

- Size: 75-inch
- Resolution: 5120x2880
- E Ink's first 75-inch film
- Glass substrate: Oxide

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Corning: World's first 41.6-inch transparent Micro LED display



- Size: 41.6-inch
- Technology: LTPS
- Resolution: 960x1080
- Brightness: 1000 cd/m²
- Transmittance: 60%
- The largest transparent Micro LED tile of its kind; this panel is enabled by a 0.7mm Corning Lotus NXT Glass TFT backplane substrate.

Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux: LTPS notebook display with light and high color gamut design

Feather Display with LTPS technology



- Size: 13.3-inch
- Weight: 137g max
- Resolution: 1920x1200
- Contrast ratio: 1200:1
- Color gamut: sRGB 100%
- Frame rate: 60Hz



- Size: 14.0-inch
- Weight: 125g max
- Thickness: 1.6t
- Resolution: 2560x1600
- Contrast ratio: 1200:1
- Color gamut: DCI-P3 100%
- Frame rate: 120Hz

Source: Omdia analyst photos, Touch Taiwan 2025

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AD 100% with LTPS technology

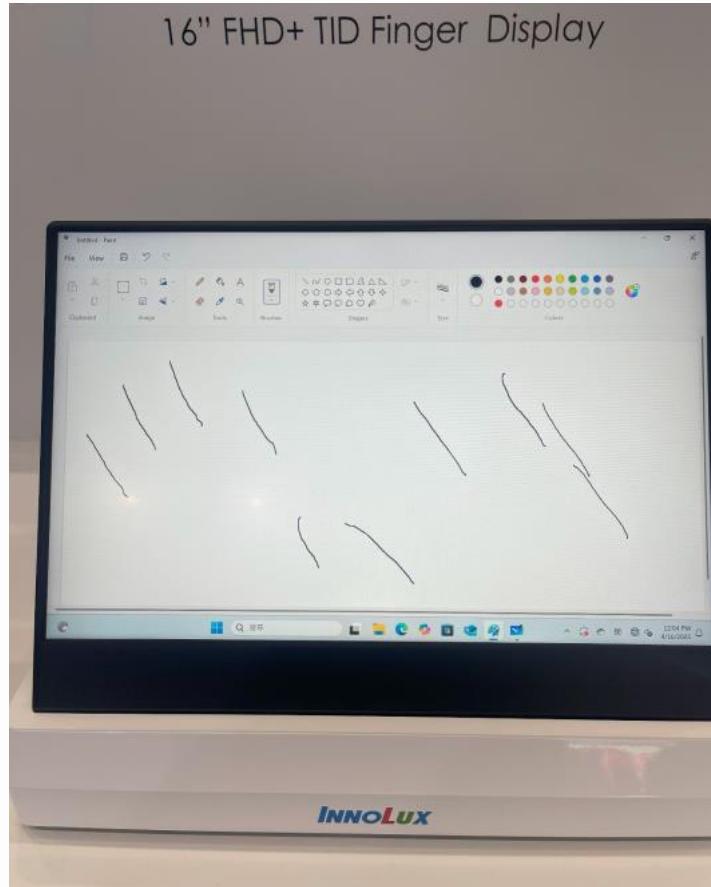


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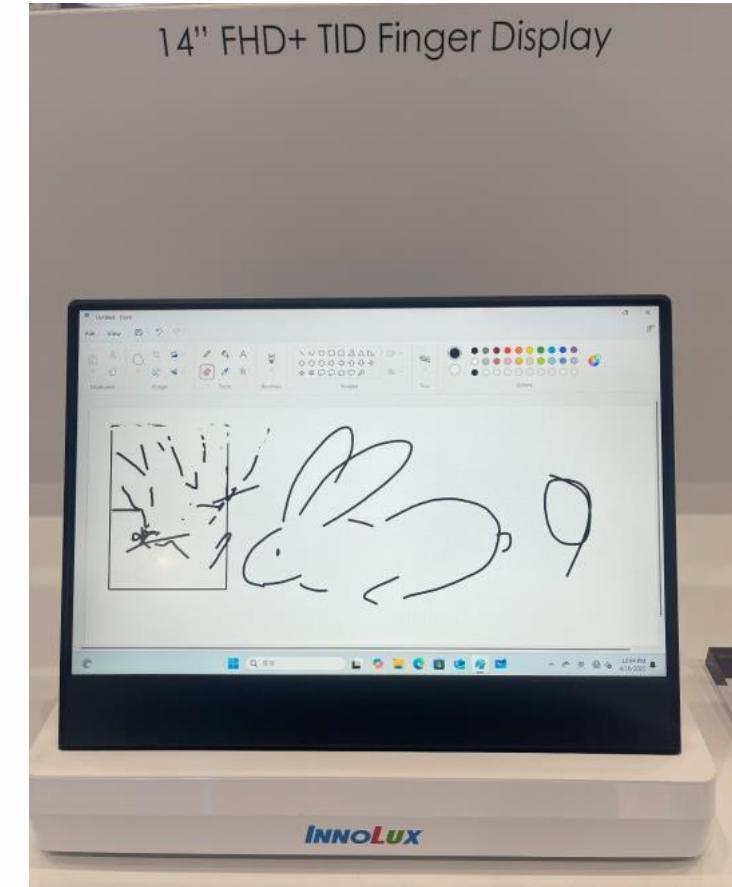
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- Adobe 100% + DCI P3 100%
BT2020 86.4%
New LED: B+G chip LED
- Size: 14.0-inch
 - Resolution: 2560x1600
 - Brightness: 400
 - Contrast ratio: 2000:1
 - Frame rate: 120Hz

Innolux: In-cell Touch (TDI) solution with a 10-finger display



- Size: 16.0-inch
- eDP 1.2
- Technology: a-Si AAS
- Resolution: 1920x1200
- Brightness: 300 nits
- Contrast ratio: 1500:1
- Color gamut: NTSC 45%
- Frame rate: 60Hz



- Size: 14.0-inch
- eDP 1.4
- Technology: a-Si AAS
- Resolution: 1920x1200
- Brightness: 300 nits
- Contrast ratio: 1500:1
- Color gamut: NTSC 45%
- Frame rate: 60Hz

Source: Omdia analyst photo, Touch Taiwan 2025

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Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux: Super-high-brightness Mini LED direct backlight for monitor

Impressive high brightness and thermal dissipation; high color saturation DCI-P3; supports a wide range of operation temperatures



Source: Omdia analyst photos, Touch Taiwan 2025



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AUO: High-vivid-color and low-power TDDI solution for notebook displays

**16-inch: High-vivid-color notebook display
Adobe and DCI-P3 dual 100%**



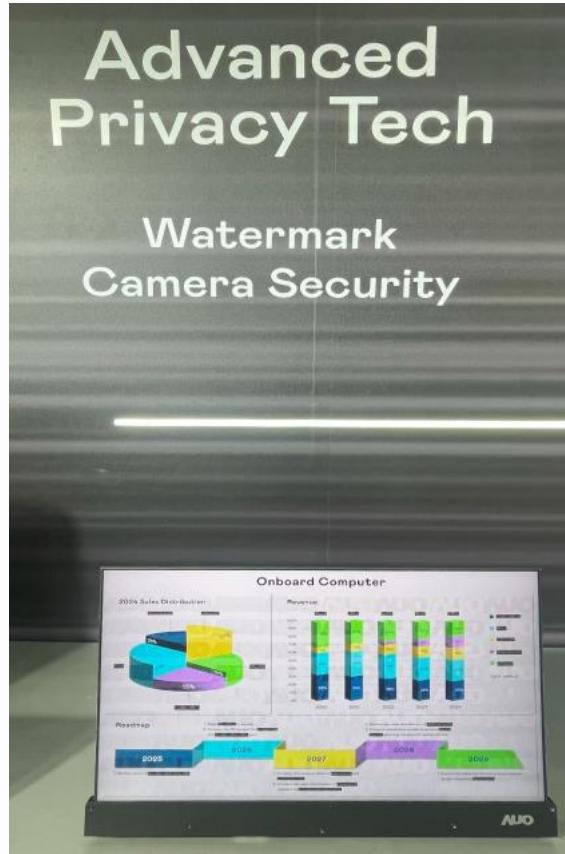
**16-inch: iTP TDDI one-chip power-saving notebook display
LTPS technology, lowest power consumption of touch solution**



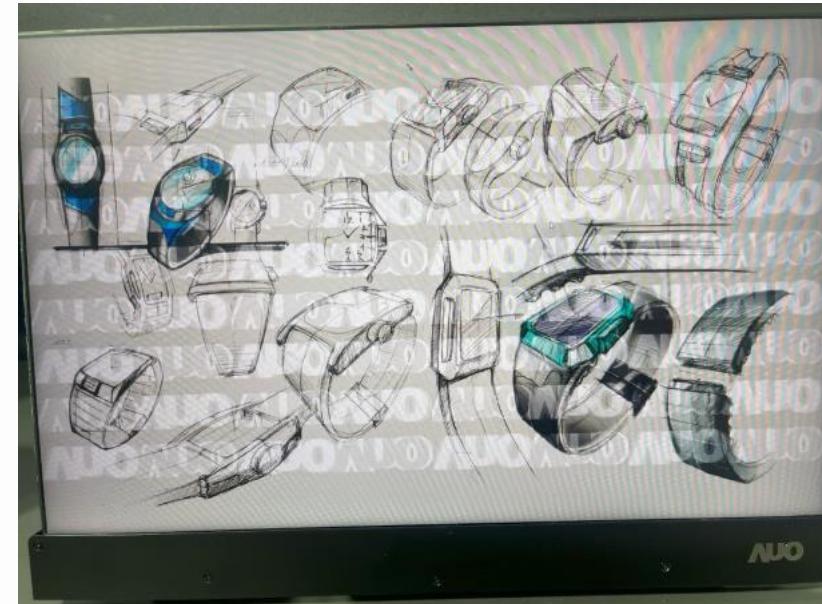
Source: Omdia analyst photos, Touch Taiwan 2025

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AUO: Advanced privacy display with watermark and camera security



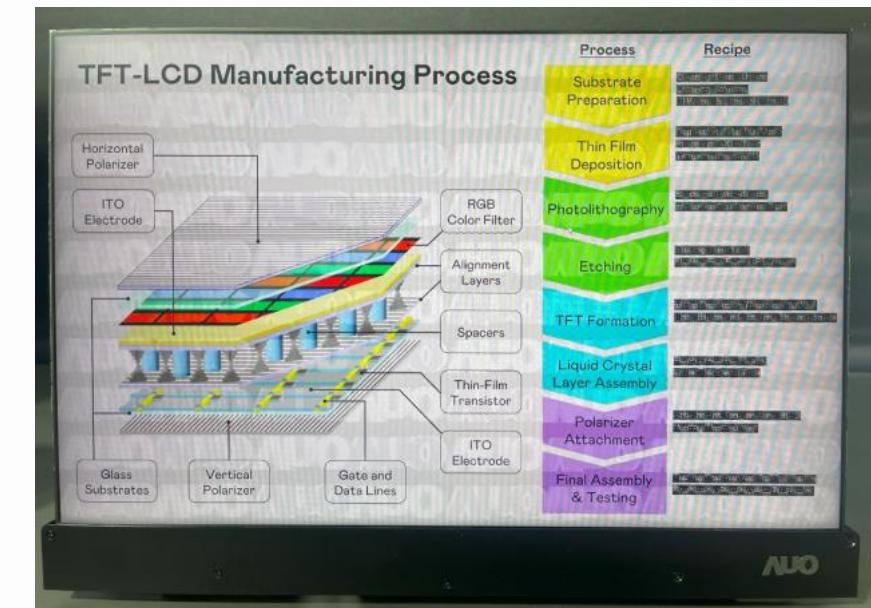
- Size: 16.0-inch
- Resolution: 1920x1200
- Frame rate: 165Hz
- Brightness: 400 cd/m²



Watermark mode

Clear photography

Encryption



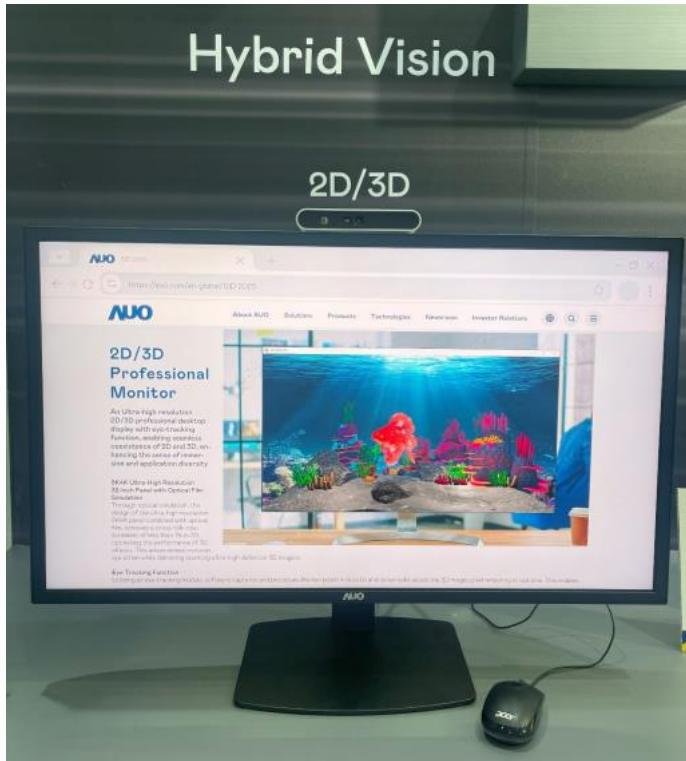
Source: Omdia analyst photos, Touch Taiwan 2025

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AUO: Professional monitor display

2D/3D professional monitor

8K ultra-high resolution; AI eye-tracking system; 2D/3D coexistence



- Size: 32.0-inch
- Technology: AHVA
- Resolution: 7680x4320
- Frame rate: 60Hz
- 3D concept: Auto-stereoscopic with 1D fixed lens
- 3D technology: Dual view with eye-tracking system

High-vivid-color professional monitor

4K resolution with 120Hz; 3000:1 contrast; DCI-P3 100%



- Size: 27.0-inch
- Technology: AHVA
- Resolution: 3840x2160
- Frame rate: 120Hz
- Brightness: 400 cd/m²
- Contrast ratio: 3000:1
- Color gamut: DCI-P3 100%
- Design: Four-sided bezel-less

Source: Omdia analyst photo, Touch Taiwan 2025

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Source: Omdia analyst photo, Touch Taiwan 2025

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AUO: HFR gaming monitor display with the highest PPI and NVIDIA solution

World's highest PPI HFR gaming monitor



- Size: 27-inch
- Technology: AHVA
- Resolution: 5120x2880, 281 PPI
- Frame rate: 160Hz
- Response time: 1ms with OD
- Brightness: 350 cd/m²
- Contrast ratio: 1500:1
- Color gamut: DCI-P3 95%

Source: Omdia analyst photo, Touch Taiwan 2025

World's first motion clarity gaming monitor with NVIDIA's new G-SYNC pulsar technology



- Size: 27-inch
- Technology: AHVA
- Resolution: 2560x1440
- Frame rate: 360Hz
- Response time: 1ms with OD
- Brightness: 400 cd/m²
- Color gamut: DCI-P3 90%

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AUO: World's highest recycle rate professional monitor



Source: Omdia analyst photo, Touch Taiwan 2025

50% recycle rate

- Size: 27.0-inch
- Technology: AHVA
- Resolution: 2560x1440
- Frame rate: 120Hz
- Brightness: 350 cd/m²
- Contrast ratio: 3000:1
- Color gamut: DCI-P3 98%
- Design: Four-sided bezel-less

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Mantix exhibited mainstream IT displays

- Mantix focuses on tablet-sized related IT displays. It showed mass-produced tablet displays as well as a 15.6-inch IT display with touch solution at Touch Taiwan 2025.

Mantix's tablet displays with embedded touch solution

Tablet 8.68-inch



Tablet 10.95-inch



Tablet 12.6-inch



IT display of Mantix

- Size: 15.6-inch
- Resolution: 1920x1080
- Touch: Add-on



Source: Omdia analyst photos, Touch Taiwan 2025

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Source: Omdia analyst photo, Touch Taiwan 2025

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2.0 Automotive displays and applications

Key automotive display innovations at Touch Taiwan 2025 (1/2)

- At Touch Taiwan 2025, AUO/BHTC and Innolux/CarUX showcased their strong capabilities as Tier 1 integrators, emphasizing advanced cockpit solutions that go beyond display hardware. Demonstrated features included integrated cameras, voice control, advanced driver assistance system (ADAS) information alerts, and gesture control, highlighting their system-level innovation. As both companies primarily target the US and European markets, they are focusing on future-oriented technologies such as pillar-to-pillar displays, dual-view and privacy-view functions, invisible and transparent displays, panoramic HUDs, and light field HUDs, reflecting their vision for next-generation smart mobility experiences.
- **AUO/BHTC**
 - **Micro LED Smart Cockpit 2025:** AUO unveiled its “Infinite Future, Infinite Possibilities” Smart Cockpit 2025 concept, featuring **Micro LED** transparent displays, a deformable console, and a foldable steering wheel. Collaborating with partners like BHTC, Saint-Gobain Sekurit, and Corning, AUO emphasized immersive, sustainable in-car experiences with eco-friendly materials and energy-efficient designs, showcasing its leadership in smart mobility.
 - **The 46.7-inch Pillar-to-Pillar Integrated FIDM** showcased AUO’s strong technological capability in producing ultra-wide displays on Gen 6 LTPS LCD lines using mask stitching. This advanced LCD integrates multiple functions, including in-cell sensors for adaptive brightness, an under-display camera (UDC) for facial recognition and interaction, and a one-chip system-on-chip (SoC) that combines cockpit domain control and display rendering. With a 7K1K resolution, 100,000:1 contrast ratio, and support for ambient light sensor (ALS) and thermal sensor integration, the system delivers a seamless, high-performance human-machine interface across the full width of the dashboard.
 - **Hybrid Head-Up Display (HHUD)** combines near-field projection and AR display functionality within a compact module. It integrates dual TFT LCDs, offering both transparent depth effects and blackprint appearance for streamlined cockpit integration. Designed with pillar-to-pillar (P2P) coverage and high luminance performance, the display supports visibility in various lighting conditions. This hybrid architecture is intended to support enhanced information delivery while maintaining spatial efficiency, aligning with evolving head-up display requirements in automotive design.
- **INX/CarUX**
 - **The CarUX Integrated Cockpit OLED System** features a 49-inch eLEAP OLED display developed in collaboration between CarUX and JDI. It integrates three displays under one seamless cover lens: a 12.3-inch instrument cluster, a 14-inch dual-view center information display, and a 14-inch dual-view front passenger display with privacy view functionality. From the driver’s view, the displays are the instrument cluster and center display. From the passenger view, the displays show the entertainment-focused contents enabled by dual-view technology.

Key automotive display innovations at Touch Taiwan 2025 (2/2)

- **INX/CarUX (continued)**

- **Smart Display+ (10.25-inch)** is a display module with integrated computing capability designed to operate independently of the central head unit. It incorporates an MCU and graphic card within the display, allowing for local processing and image generation of information such as RPM and speed. The system supports landscape and portrait orientation switching, touch interaction across extended instrument cluster and infotainment functions, and pop-up alerts with sound notifications. By processing data locally, the display can help reduce the workload on the head unit and support information redundancy within the cockpit system.
- **InvisiView** is a pillar-to-pillar display solution that integrates carbon-pattern printed cover glass, supplied by Corning, to blend the display into the vehicle's interior. The design aims to minimize visual disruption when the screen is off while maintaining icon visibility in active areas. The use of interior-matching textures helps reduce the perceived coldness of a black screen and contributes to aesthetic continuity. The display system includes a 35-inch and 20-inch LTPS panel, with resolutions of 7280x1112 and 3760x1088, respectively. Surface treatments include anti-glare (AG), anti-reflection (AR), anti-fingerprint (AF), and chemical strengthening, and multiple pattern options are available to support different styling preferences in automotive applications.
- **Windshield Reflective Solution (PHUD and AR HUD)** includes two display types designed for augmented reality (AR) and immersive in-vehicle information delivery. The 9.6-inch Micro LED Light Field AR Projective Display uses Micro LED-based light field technology to produce multi-depth 3D images with brightness exceeding 10,000 nits and a resolution of 1920x1080. It supports a viewing depth from 2 to 15 meters and is intended for use in AR HUD applications. The system integrates local image processing and interface algorithms for alignment with the external driving environment. The 48-inch Full-width Windshield Projective Display, based on LTPS LCD with FALD backlight, offers a brightness of ~14,000 nits and ~2,800 nits for virtual images, with a resolution of 3840x374. It incorporates distortion correction and is designed to minimize ghosting and optical aberrations. Both displays are intended to enhance visibility, reduce driver distraction, and support new cockpit design flexibility without increasing system volume.

- **I-Zone**

- A reflective motorcycle instrument module featuring KSF color conversion technology was jointly presented by National Taiwan University of Science and Technology, Ming Chi University of Technology, and Azumo. This project integrates a reflective LCD with KSF-enhanced white LED backlighting to improve color performance, outdoor visibility, and power efficiency.

2.1 AUO/BHTC

AUO/BHTC: Smart Cockpit 2025



Source: AUO and Omdia

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14.3" Morphing Center Control	30" XR Interactive Window	47.5" Horizon Image Glass
<ul style="list-style-type: none"> • Stretchable Micro LED • Resolution: 1280x640 pixel • Pixel Density: 100 PPI • Brightness: >1,000 cd/m² • Stretchable Ability: Multi-stretchable area • Interactivity: Dynamically activated / Information center / Function Control 	<ul style="list-style-type: none"> • Work together with Corning and Vitro • Resolution: 960x540 pixel • Active Area: 678.14x408.70mm • Transmittance: 25% • Touch: TIP film 0.375mm • Brightness: 500 cd/m² • Color gamut: >110% NTSC • Transparency Adjustment: PDLC (50% / 9%) • Pixel Pitch: 0.69mm 	<ul style="list-style-type: none"> • Resolution: 4x1920xRGBx1080 pixel • Pixel Density: 163 PPI • Transmittance: >55% • Border: 0.3 / 0.3 / 0.3mm • Tiling Pitch: 0.9mm • Brightness: 1000 cd/m² • Color gamut: >100% NTSC • LED Size: <30μm
55" Virtual Sky Canopy	14.6" Foldable Cruise Pilot	Interactive Matrix Display
<ul style="list-style-type: none"> • Co-developed with Saint-Gobain Sekurit • Resolution: 1680x1080 pixel • Active Area: 1186.7x817.4mm • Transmittance: 15% • Brightness: 500 cd/m² • Color gamut: >110% NTSC • Transparency Adjustment: PDLC (30% / 2%) • Pixel Pitch: 0.69mm 	<ul style="list-style-type: none"> • Resolution: QHD 2560xRGBx1440 pixel • Pixel Density: 202 PPI • Pixel Configuration: Color conversion • Brightness: >1,000 cd/m² • Reflection: <1% (SCI), <0.8% (SCE) • LED Size: <30 μm • Viewing Angle: 89° / 89° / 89° / 89° 	<ul style="list-style-type: none"> • Developed by Ennstar • Red / Green / Blue / White Lumen: 2.1 / 4.5 / 0.49 / 7.1 lm / ea • Resolution: 1140x120 pixel • Module Size: 60x60mm (38 pcs) • Brightness: 5,000 cd/m² • Pitch: 1mm • Gray Level: 16 bits • Contrast Ratio: 10,000:1

AUO/BHTC : 46.7-inch LTPS LCD pillar-to-pillar integrated FIDM



Source: Omdia analyst photo, Touch Taiwan 2025

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46.7" pillar-to-pillar integrated FIDM

A one-chip curved display features in-cell sensors for auto-adjusting brightness, invisible UDC for an enhanced experience, and an audio system for voice control and identification.

- One-Chip P2P Curved Display
- In-cell Sensor
- Under-Display Camera

Specifications (AHVA)

- Resolution: 7K1K
- Active Area: 1180.8x110.7mm
- Curve Radius: R2000
- Contrast Ratio: 100000:1
- Dimming Zones: 1100
- LCM IR T% for UDC: 38.5%
- ALS Range: Up to 100000 lux
- Thermal Sensor Range: -20°C to 60°C

AUO/BHTC: Hybrid head-up display



Source: Omdia analyst photos, Touch Taiwan 2025

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Hybrid head-up display (HHUD)

Stay Focused. Drive Safe.

Merging Near-Field and AR Vision for an Immersive Drive.

- High Luminance
- P2P Large Size
- Display Quality Driving Safety



Features

- **Hybrid Approach in a Single Module.**

Maximizes application value in a single compact module.

- **Seamless Blackprint and Transparent Depth Effect.**

Enhances aesthetics and functionality.

- **High Luminance for Day and Night.**

Ensures clear visibility for safer driving.

- **12.3" Dual TFT LCD Displays.**

Delivers richer, immersive driving experiences.

- **Optimized Thermal Concept.**

Maintains display quality and supports driving safety.

AUO/BHTC: 13-inch 3D AR HUD



Source: Omdia analyst photo, Touch Taiwan 2025

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13" 3D AR Head-Up Micro LED display

3D AR HUD features light field 3D technology and ultra high brightness Micro LED for windshield reflective solution. With noticeable and continuous image depth perception, high AR interactivity can provide safety and focus while driving.

- Ultra-high Brightness
- Light Field 3D with Eye Tracking
- Continuous Image Depth Perception

Specifications

- Resolution:** 1920x900
- Pixel Per Degree:** > 60
- Field of View:** 15.6°x6.2°
- Brightness:** > 12500 cd/m²
- Road Covered Range:** 20 m

AUO/BHTC: Smart Cockpit Solution



Source: Omdia analyst photos, Touch Taiwan 2025



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AUO/BHTC: HaptiFold Micro LED display



Source: Omdia analyst photos, Touch Taiwan 2025

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HaptiFold Micro LED display

Seamless Design. Ultimate Flexibility. Perfect Function.

Crafted for Automotive Interiors.

- Narrow Folding Edges
- Active Haptics
- Micro LED Technology

Features

- Seamless integration for an elevated driving experience with AUO's 14.6" flexible Micro LED touch display.
- Active haptics and force sensing for intuitive control.
- 3D-shaped plastic cover lens for avant-garde design with narrow folding edges.
- Slim, freestanding design for space efficiency and comfort.

AUO: Dual-sided transparent Micro LED display



17.3" Dual-sided transparent Micro LED display

Elegance Unveiled: Merging Transparency with Bidirectional Displays

The double-sided transparent display merges visual information with the real environment.

- Independent Information
- Bidirectional Visibility
- High Brightness

Specifications

- Resolution:** 1280x720x2-side
- LED type:** RGB / Flip Chip
- Transmittance:** ≥ 35%
- Brightness:** ≥ 500 cd/m²
- Viewing Angle:** ≥ 170°
- Color gamut:** ≥ 110% NTSC
- Contrast Ratio:** 100000:1

Source: Omdia analyst photo, Touch Taiwan 2025

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2.2 Innolux/CarUX

Innolux/CarUX: Integrated Cockpit OLED System



Source: Omdia analyst photos, Touch Taiwan 2025



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Integrated Cockpit OLED System

- Environment Positive
- Lithography with Maskless Deposition
- Extremely Long Life, Low Power, and High Luminance
- Any Shape Patterning

Specification:

- Size: 49"
- Technology Cluster: eLEAP OLED
- Technology CID: eLEAP OLED with 2 Vision Display
- Technology PID: eLEAP OLED with Privacy
- Touch Technology: On Cell
- Resolution Cluster: 2880 RGBx1080
- Resolution CID: 2880 RGBx1770
- Resolution PID: 2880 RGBx1440
- PPI Cluster: 242
- PPI CID: 171
- PPI PID: 171
- Brightness (nits): 800 (only Define Cluster)
- Static Contrast: $\geq 1,000,000:1$ (only Define Cluster)
- Applications: Automotive

Innolux/CarUX: Smart Display+ (Display with Computing Capability)



Source: Omdia analyst photos, Touch Taiwan 2025

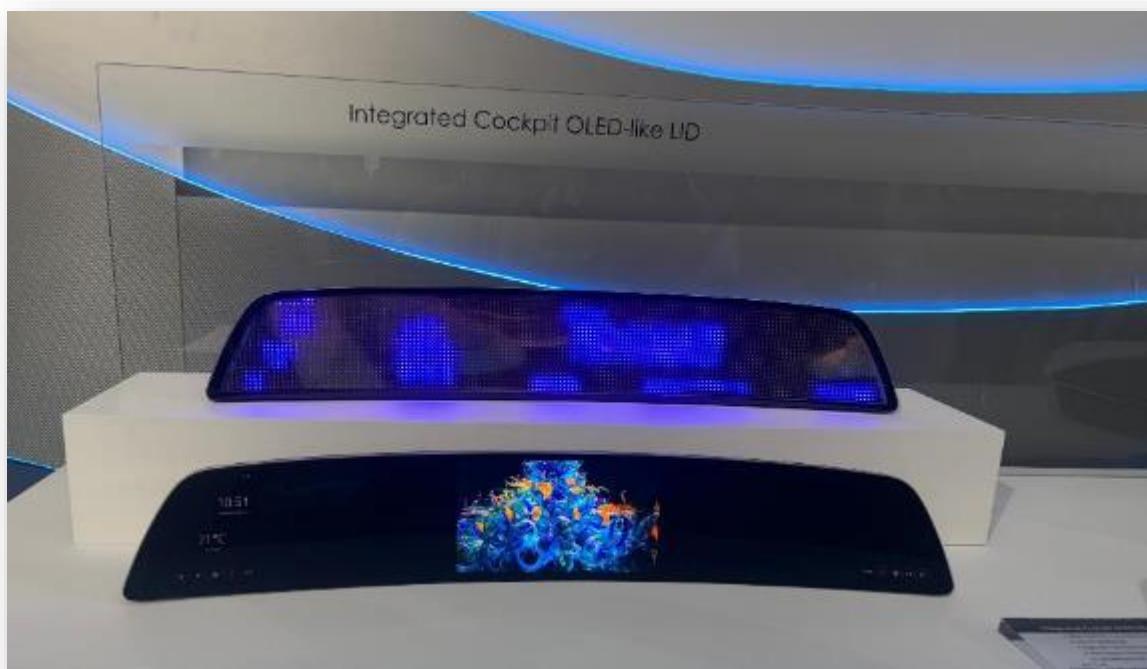
Smart Display+

10.25" Display with Computing Capability

- **Size:** 10.25"
- **Technology:** Smart Display
- **Special Features:**
 - Integrated display module with internal generated instrument cluster and IVI from head unit.
 - HMI switches to landscape/portrait orientation if panel module is rotated.
 - Touch functionality in extended cluster and infotainment
 - Full function of ICM with pop-up and sound alerts.

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Innolux/CarUX: Integrated Cockpit OLED-like LID



Source: Omdia analyst photo, Touch Taiwan 2025

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Integrated Cockpit OLED-like LID

- GEN 3 ONE PCE Active Matrix FALD
- a-Si TFT Driving LED
- High Color Saturation and Resolution
- Slim Design (OD 6mm → < 2mm)
- Cost Efficiency CSP LED
- **Size:** 34"
- **Technology:** a-Si LCD + AM FALD BLU
- **LD zones:** > 3K zones
- **Shape:** Free-form
- **Curvature (mm):** R1800
- **Resolution:** 8960 RGBx1320
- **PPI:** 271
- **Brightness (nits):** 850
- **Contrast Ratio:** > 1,000,000:1
- **Color gamut:** > 115%
- **OD (mm):** < 2
- **Applications:** Automotive

Innolux/CarUX: InvisiView



Source: Omdia analyst photo, Touch Taiwan 2025

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- **InvisiView**
Display and Ambient Lighting under Transparent Leather
- **Size:** 12.3"
- **Technology:** Transparent Leather HMI Display
- **Special Features:**
 - The Indicator Under Interior Trim Parts
 - Integrated Screen, Leather Decoration, and Mood Lighting
 - Normal Display and Touch Control Can Still Be Achieved Through the Leather UI
 - Hidden HMI
 - Integrated decoration and mood lighting

Innolux/CarUX: Kinematics Solution



Source: Omdia analyst photo, Touch Taiwan 2025

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- **Kinematics Solution**
12.6" Multi-axis Rotatable Display
- Natural Language Processing Interaction
- AI-Based Face Tracking
- Voice Recognition and Tracking

Size: 12.6"

Technology: Kinematics Display

Motion type:

- Rotate (Portrait / Landscape)
- Tilt (Up / Down)
- Lateral Tilt (Left / Right)

Innolux/CarUX: Integrated Cockpit OLED System LID



Source: Omdia analyst photo, Touch Taiwan 2025

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Integrated Cockpit OLED System-LID

- Ultra-high Contrast
- High Color Saturation and Resolution
- Slim Design Compared to LCD
- Co-op with JDI
- **Size:** 31.9"
- **Technology:** eLEAP OLED
- **Backplane:** HMO (high mobility oxide)
- **Shape:** Free-form
- **Resolution:** 6460 RGBx880
- **PPI:** 205
- **Aperture Ratio:** 63%
- **Brightness (nits):** > 1,000
- **Contrast Ratio:** > 1,000,000 : 1
- **Applications:** Automotive

Innolux/CarUX: InvisiView



Source: Omdia analyst photo, Touch Taiwan 2025

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InvisiView

Pillar-to-Pillar LID under a Carbon Fiber Pattern

- Carbon Pattern Printed Cover Glass
- Blending into Vehicle Interior Design
- Multiple Patterns Available
- Size: 35" + 20"
- Technology: LTPS AAS
- Resolution: 7280 RGBx1112 / 3760 RGBx1088
- Cover Glass Technology: Carbon Pattern Printing
- Surface Treatment: AG / AR / AF and Chemical Strengthening
- Applications: Automotive

Innolux/CarUX: Smart Privacy



Source: Omdia analyst photo, Touch Taiwan 2025

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Smart Privacy

12.3" Free Zone Privacy View

- Free Zone Privacy Solution
- 30°–60° Privacy Ratio Under 1%
- Support Changing Light Direction at Different Locations

Size: 12.3"

Model Name: DD123SA-01A

Technology: TFT LCD (a-Si AAS)

Resolution: 1920 RGBx720

PPI: 167

Privacy Ratio: 45° < 0.5%

Contrast Ratio: 1500:1

Applications: Automotive

Innolux/CarUX: Windshield Reflective Solution



Source: Omdia analyst photo, Touch Taiwan 2025

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Windshield Reflective Solution

9.6" Micro LED Light Field AR Projective Display | 48" Full-width Windshield Projective Display

Left (9.6" Micro LED Light Field AR Projective Display)

- Immersive Driving Experience
- Micro LED-based AR HUD
- Light Field AR Technology
- **Size:** 9.6"
- **AR Technology:** Light Field
- **Display Technology:** Micro LED
- **Brightness (nits):** ~10,000
- **Resolution:** 1920x1080
- **Pixels Per Inch (PPI):** 229
- **3D Depth (m):** 2 ~ 15
- **Applications:** Automotive ARHUD

Right (48" Full-width Windshield Projective Display)

- Warpage Correction (Distortion Free)
- High Luminance
- Ghosting Image Free
- No Significant Aberration
- Smaller Volume (Compared with HUD)
- **Size:** 48" (1100x114)
- **Technology:** LTPS LCD + FALD BLU
- **Brightness (nits):** ~14,000
- **Virtual Image Brightness (nits):** ~2,800
- **Resolution:** 3840x374
- **Applications:** Automotive Projective HUD

Innolux Micro LED displays



Source: Omdia analyst photos, Touch Taiwan 2025



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Main Features	Free-Tiling Mirror MicroLED
Display Size / Resolution	33.4" / 1104 (xRGB)*1248
Tiling Unit / Cabinet Unit	12.7" 552(xRGB)*312
TFT backplane	LTPS TFT glass / Zero Border
Color Solution	Blue uLED + Color Conversion
PPI / Pitch	50ppi / P 0.5mm
NTSC	115%
Surface Reflectivity (%)	92%
Transparency (%)	-
Luminance	1000 nits

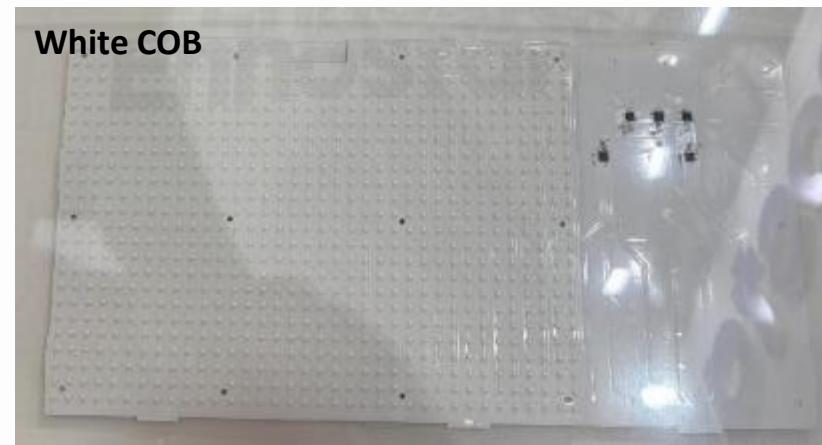
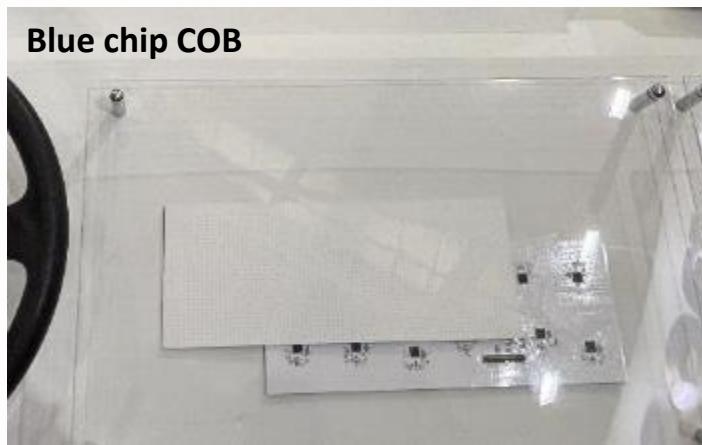
Main Features	Borderless Transparent MicroLED
Display Size / Resolution	22.3" 480(xRGB)*1080
TFT backplane	22.3" 480(xRGB)*1080
Color Solution	LTPS TFT glass / Zero Border
PPI / Pitch	RGB MicroLED
NTSC	55ppi / P 0.46mm
Surface Reflectivity (%)	115%
Transparency (%)	-
Luminance	60%
	1000 nits

Main Features	High ppi Mirror Display
Display Size / Resolution	9.6" / 1920 (xRGB)*1080
TFT backplane	LTPS TFT glass
Color Solution	RGB MicroLED
PPI / Pitch	229ppi / P 0.11mm
NTSC/Transparency	115%
Luminance / Reflectance	>3500 nits/86%

Source: Innolux

2.3 Others

Ennstar: Full-array local dimming (FALD) backlight LCDs



Source: Omdia analyst photos, Touch Taiwan 2025

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I-Zone: National Taiwan University of Science and Technology reflective motorcycle instrument module with KSF color conversion technology



Source: Omdia analyst photo, Touch Taiwan 2025

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Source: Omdia analyst photos, Touch Taiwan 2025



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Privacy-view solutions

Cheng Mei Materials Technology: Film + dual cells



Source: Omdia analyst photo, Touch Taiwan 2025

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Darwin: Dual backlights



Source: Omdia analyst photo, Touch Taiwan 2025

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Asahi: V-shaped and curved cover lenses



Source: Omdia analyst photo, Touch Taiwan 2025

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Source: Omdia analyst photo, Touch Taiwan 2025

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Asahi: Decorative cover lens

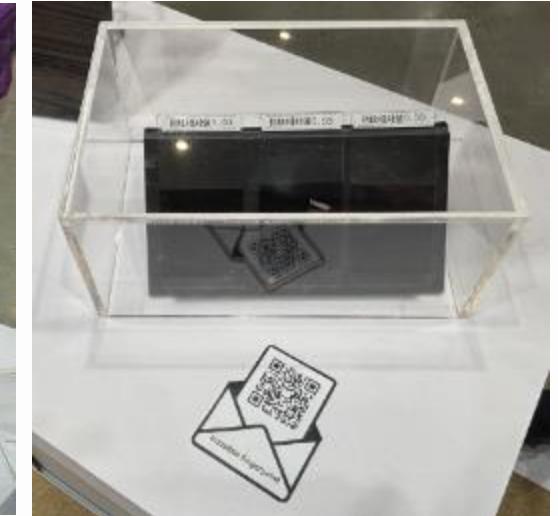


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Mantix: Automotive displays (1/2)



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Mantix: Automotive displays (2/2)



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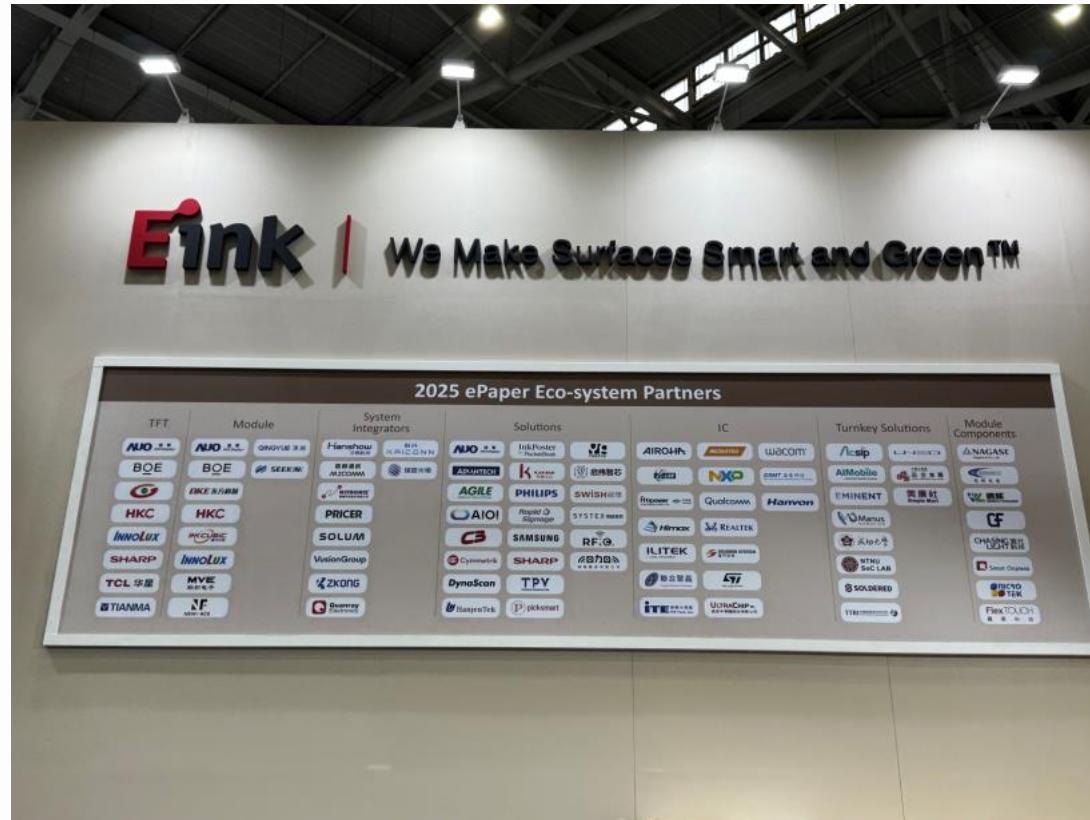
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3.0 Industrial, special displays, EPDs, and others

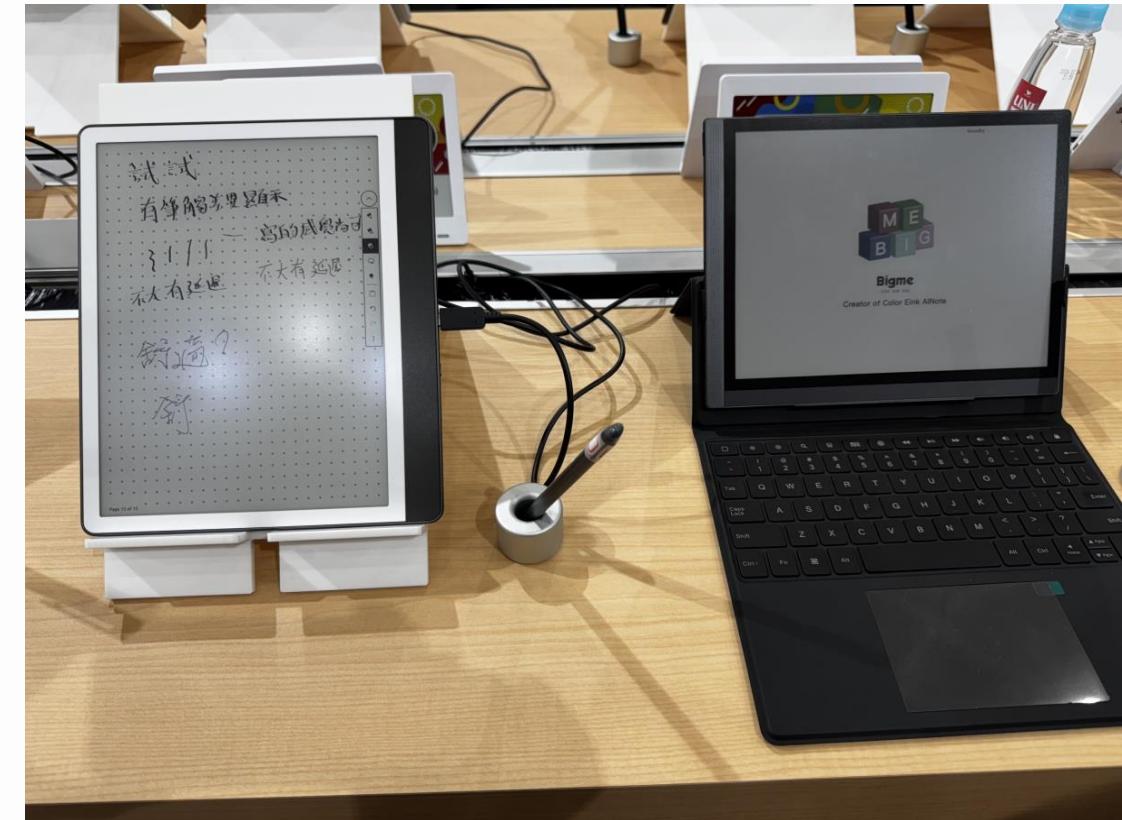
E Ink: Complete ecosystem for applications

- E Ink's success is due to a profitable supply chain with its partners and its critical volume products, including e-readers and ESLs (electronic shelf labels). Those partners helped the company to expand its business and coverage scope, allowing E Ink to keep improving its color technology.



Source: Omdia analyst photo, Touch Taiwan 2025

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Source: Omdia analyst photo, Touch Taiwan 2025

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E Ink: Color e-readers and phone cover decoration

- With color e-readers emerging, E Ink promoted two electrophoretic EPD technologies (Kaleido 3 and Gallery 3) at Touch Taiwan 2025. The former is a color filter solution, and the latter is a CMYW pigment solution. EPD-based applications can range from tiny to very large (75-inch) form factors.



Source: Omdia analyst photo, Touch Taiwan 2025

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E Ink: Front lighting beneath the cover lens

- Owing to its bi-stable and reflective display features, EPDs make use of the front light modules when the ambient light dims. The user can control the front light via the display brightness and warmth (from white to amber lighting) functions.



Source: Omdia analyst photo, Touch Taiwan 2025

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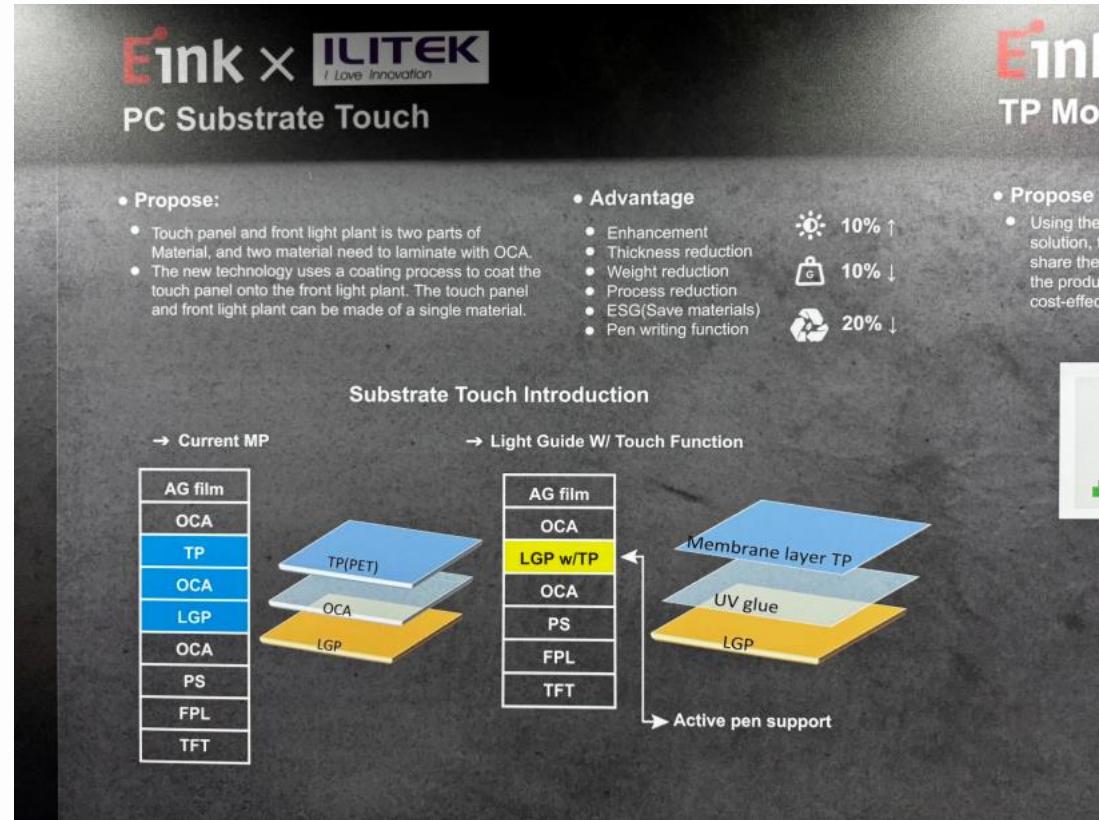


Source: Omdia analyst photo, Touch Taiwan 2025

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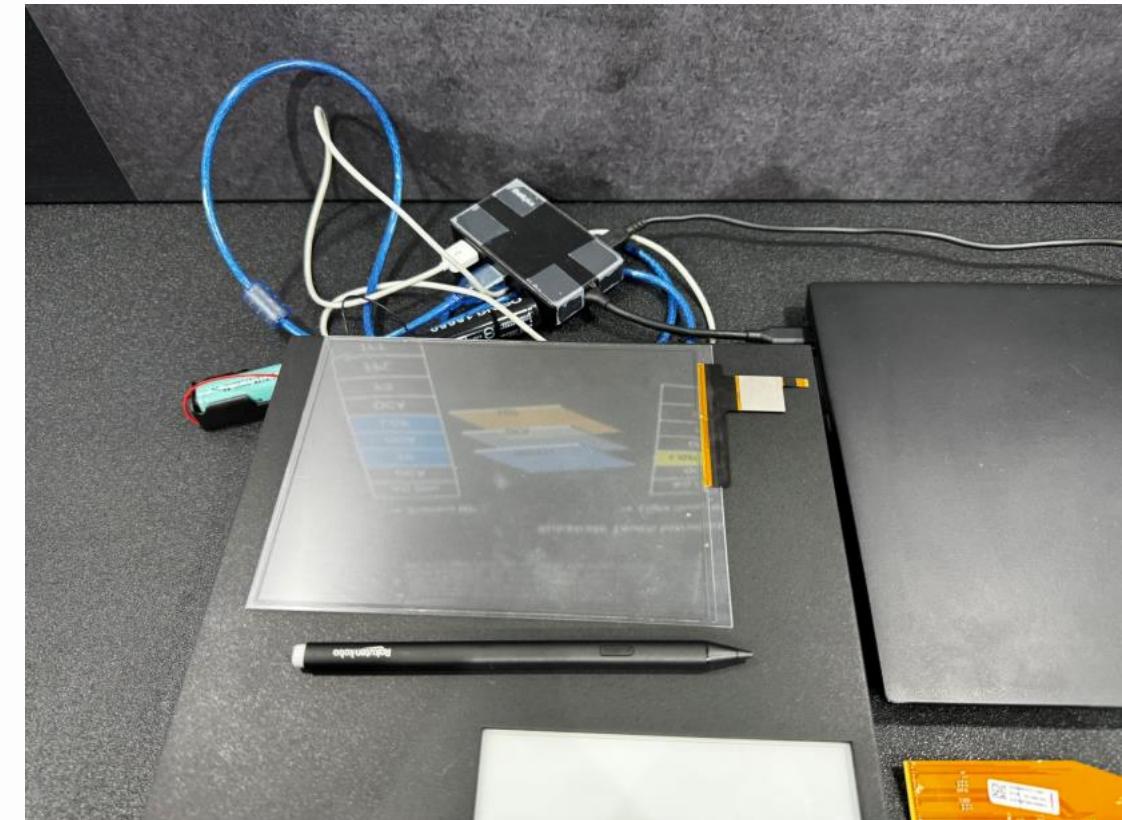
E Ink: Front lighting and touch sensor

- The front light module consists of a light guide plate (LGP, as in the image on the right) and several LEDs, and it is embedded beneath the edge-to-edge cover lens (plastic or film). ILITEK proposed a solution involving the integration of a touch sensor substrate and LGP to reduce the thickness.



Source: Omdia analyst photo, Touch Taiwan 2025

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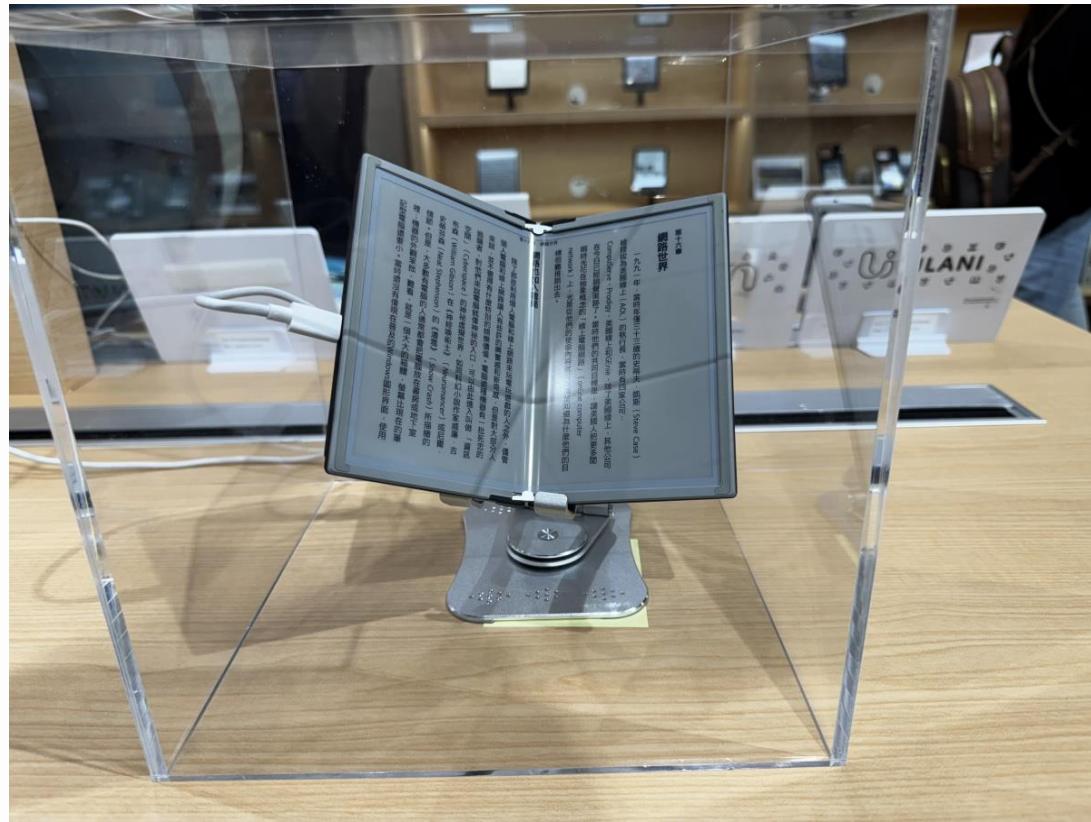


Source: Omdia analyst photo, Touch Taiwan 2025

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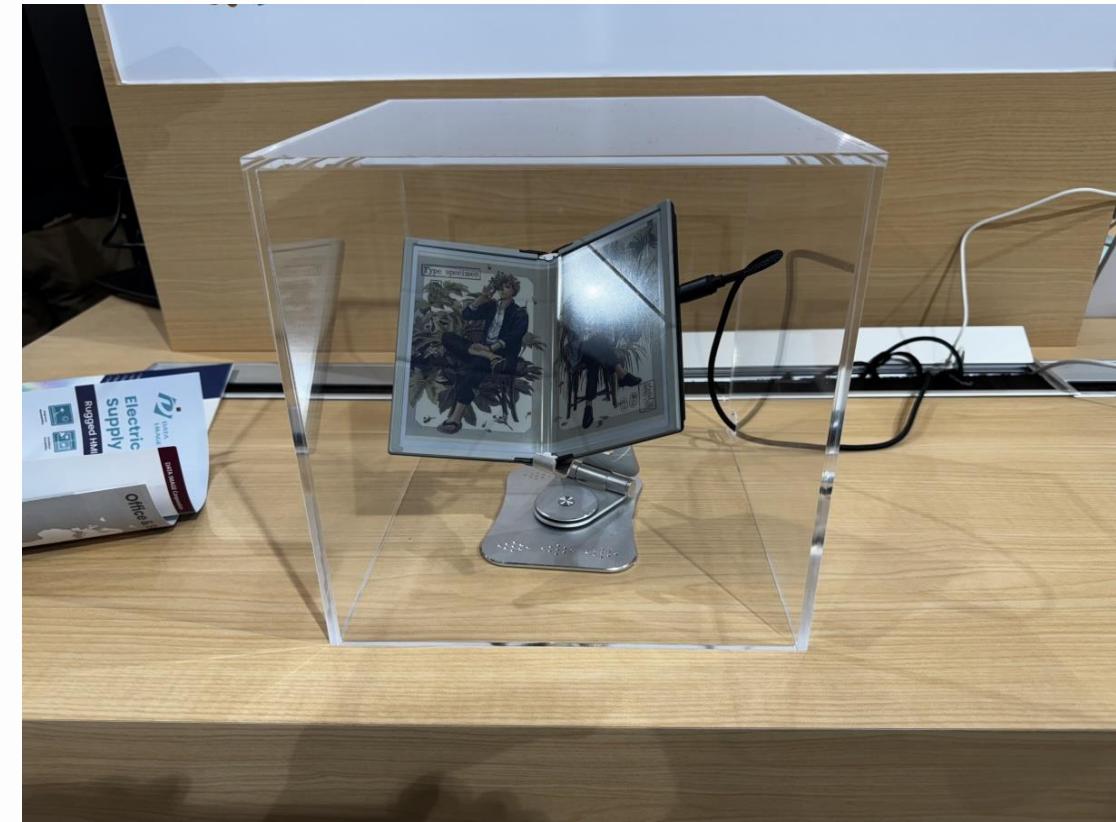
E Ink: The first foldable e-reader

- E Ink and Readmoo (e-reader brand) announced the foldable moolnk V (8-inch, 300 PPI, and 255g), which makes use of the Gallery 3 technology (CMYW pigments). Its foldability is better than that of the Kaleido 3 (popular in many e-readers) because it does not use a color filter.



Source: Omdia analyst photo, Touch Taiwan 2025

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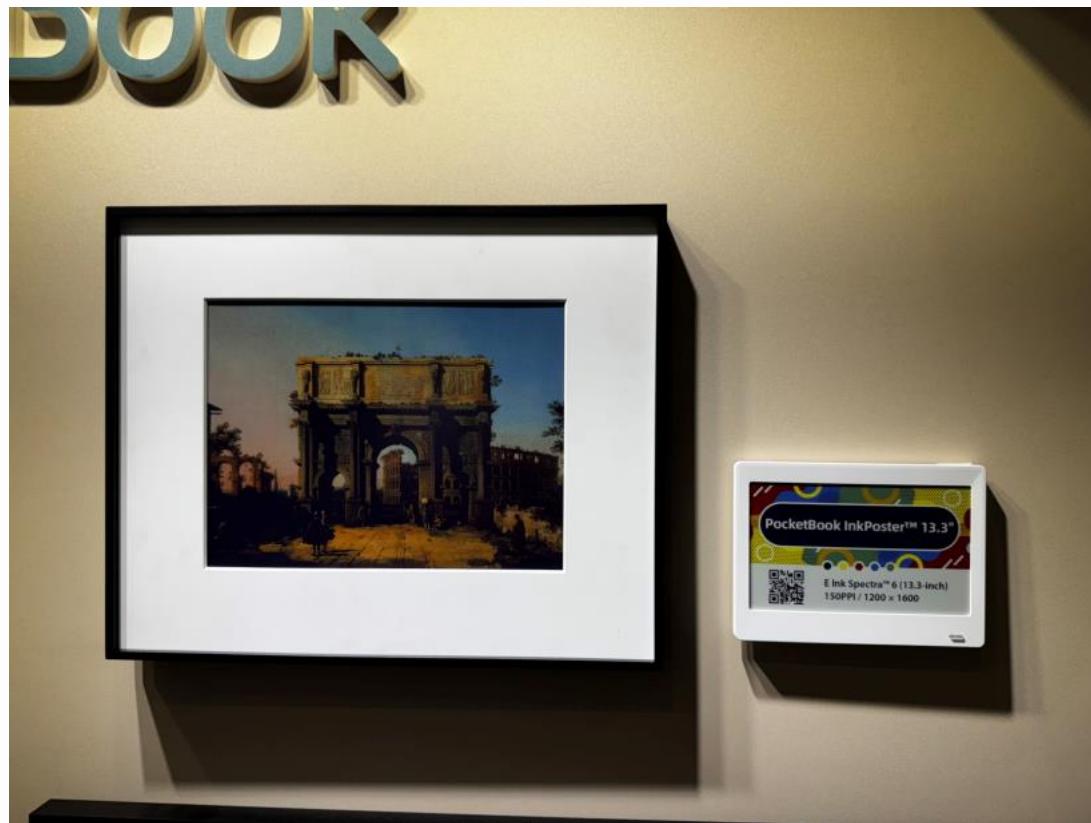


Source: Omdia analyst photo, Touch Taiwan 2025

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E Ink: Solutions for various applications

- E Ink Kaleido 3 is applied in e-readers, and it uses a color filter for RGB and monochrome microcapsules for 16 gray scales. Its Marquee (microcapsule), Gallery (microcup), and Spectra 6 (microcup) adopt CMYW pigments (like in screen printing) for better colors.



Source: Omdia analyst photo, Touch Taiwan 2025

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E Ink: EPD as IoT visualization use

- Left image: E Ink, National Taiwan Normal University (NTNU), and Realtek developed an IoT-based application with EPD-based visualization. Its update can be done through the cloud.
- Right image: Because of its pigments (in the microcapsule or microcup), the technology (such as Gallery) produces a dithering look for an improved performance.



Source: Omdia analyst photo, Touch Taiwan 2025

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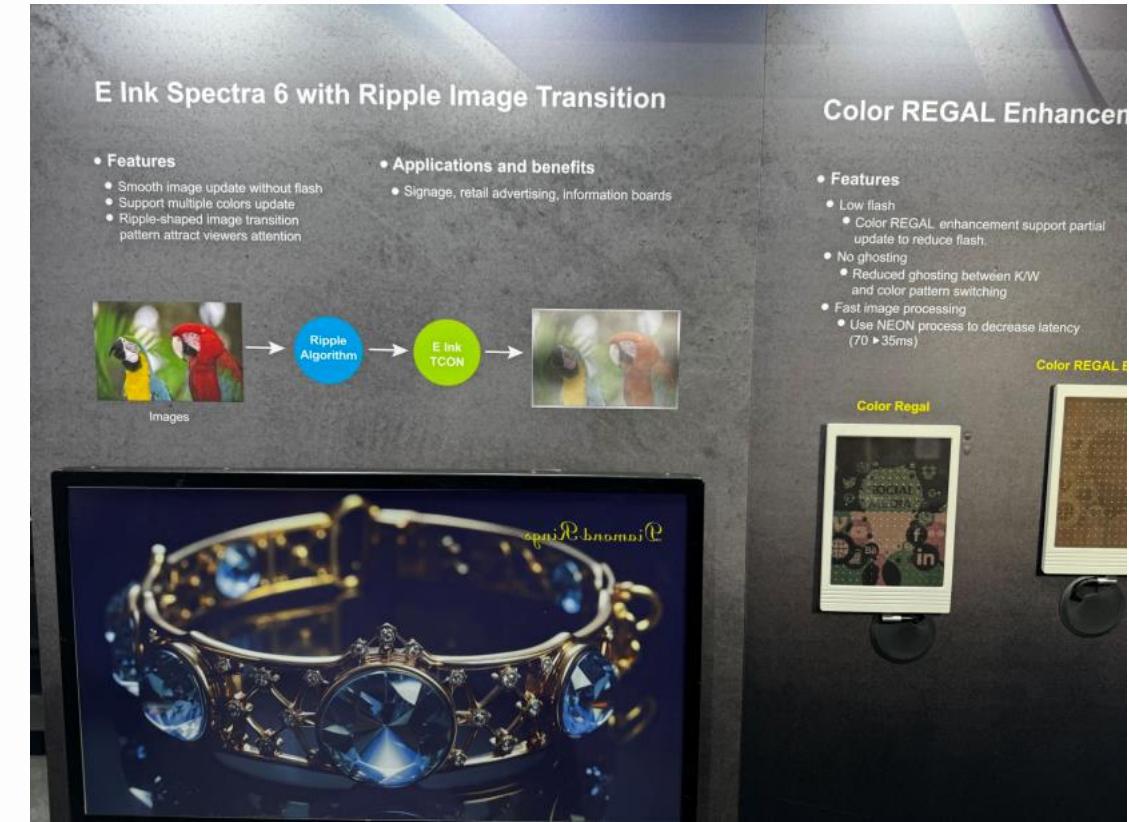
E Ink: Image algorithm continuously improved

- Left image: E Ink worked with NTNU to improve its EPD colors with a new algorithm.
- Right image: The ripple image transition was developed to make the frame update look better as a kind of special effect.



Source: Omdia analyst photo, Touch Taiwan 2025

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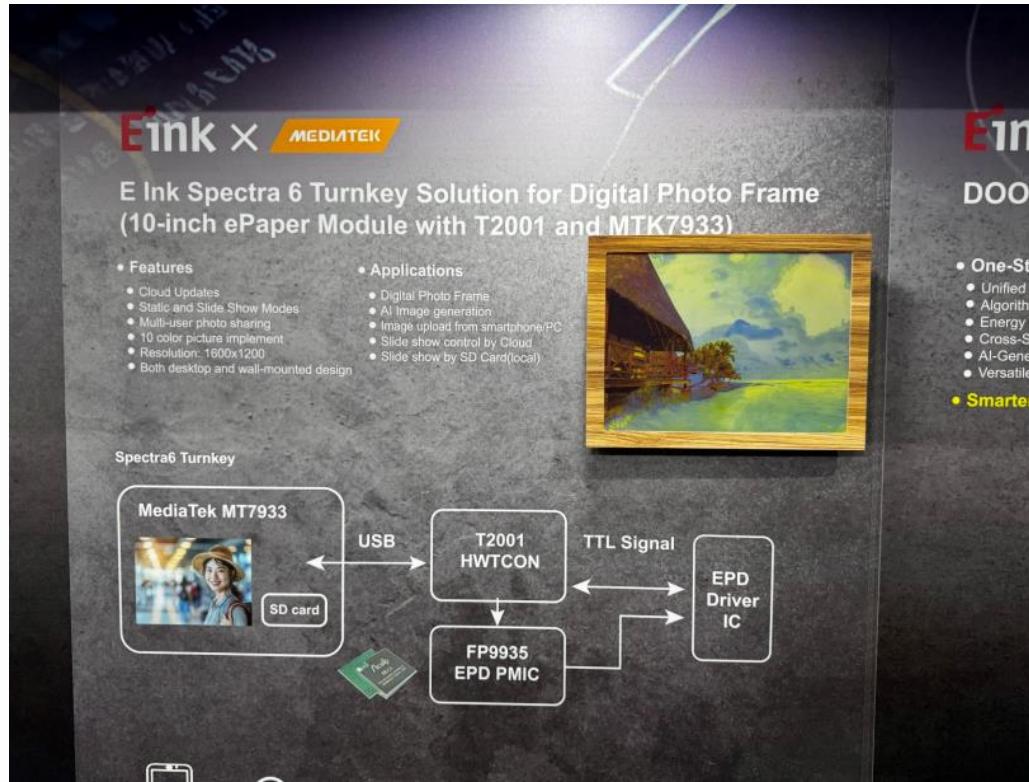


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E Ink: Cloud update for IoT-based frontends

- Left image: By means of the same mechanism demonstrated in the right image, a digital out-of-home (DOOH) cloud update can be applied.
- Right image: As an ESL application, E Ink worked with MediaTek to develop a ready-to-use (digital photo frame) turnkey for system makers; it also supports cloud updates.



Source: Omdia analyst photo, Touch Taiwan 2025

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Iris Optronics: Color mixture by RGB

- Iris's ChLCD has RGB layers vertically aligned and a support backlight or front light to improve the viewing quality. The blue layer (top) has the best light reflection, while the red layer (bottom) has the worst reflection. The compensation in the driving circuitry is necessary for better colors.



Source: Omdia analyst photo, Touch Taiwan 2025

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Iris Optronics: EPD with energy harvesting technology

- Benefiting from multiple natural colors, the ChLCD is suitable for signage use. Iris Optronics integrates its ChLCD and solar cells for self-sufficient energy harvesting. Thanks to its translucent RGB layers, the sunlight can reach the solar cells beneath the ChLCD.



Source: Omdia analyst photo, Touch Taiwan 2025

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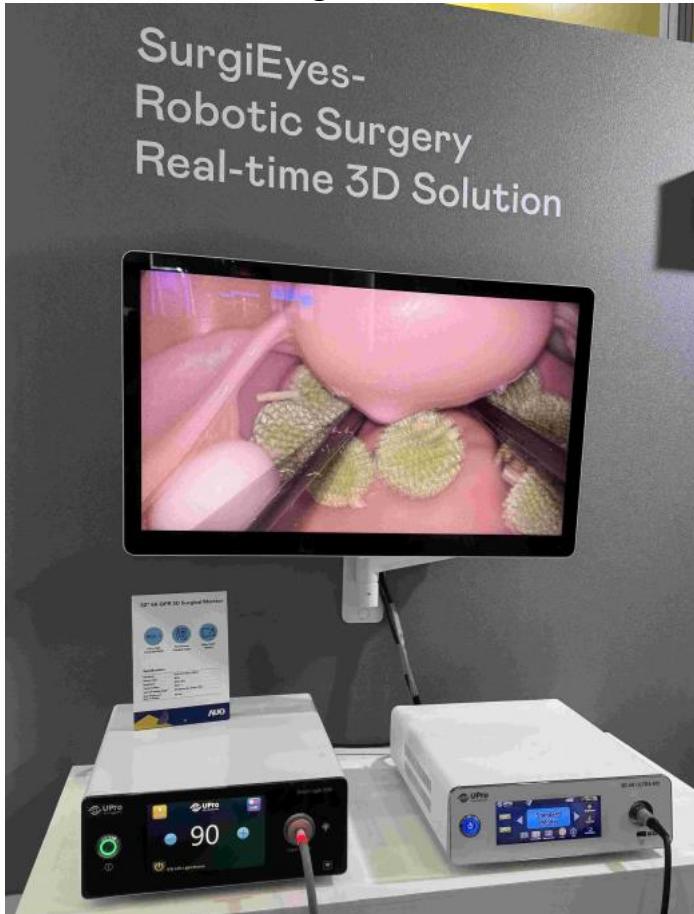


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AUO Display Plus – Medical display (1/7)

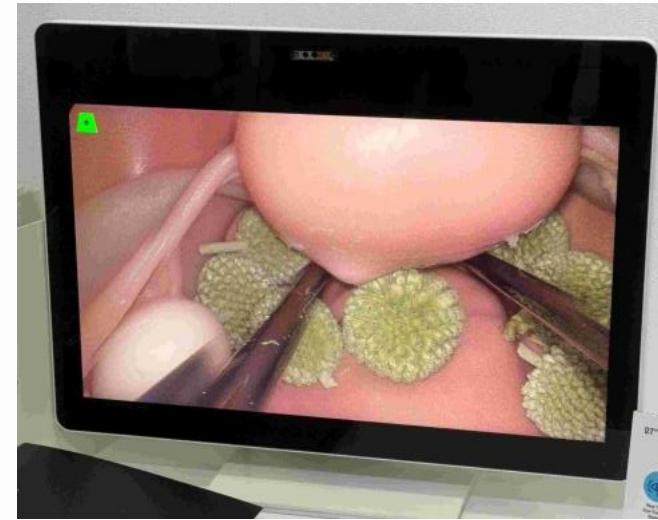
- 32-inch 4K 3D surgical monitor



Source: Omdia analyst photo, Touch Taiwan 2025

- Resolution: 3840x2160
- Brightness: 600 nits
- Vertical viewing angle: 33° up / 33° down (3D)
- Distance for 3D: 150cm

- 27-inch naked-eye 3D monitor



Source: Omdia analyst photo, Touch Taiwan 2025

- Resolution: 3840x2160
- Brightness: 800 nits
- 3D viewing angle (U/D/L/R): 20°/20°/20°/20°
- Distance for 3D: 90–120cm

AUO Display Plus – Signage display (2/7)

- 55-inch outdoor signage display



Source: Omdia analyst photo, Touch Taiwan 2025

- Resolution: 1920x1080
- Brightness: 3,500 nits
- IP level: IP56
- IK level: IK10
- Operating temperature: -30°C to 50°C

- 43-inch indoor signage display



Source: Omdia analyst photo, Touch Taiwan 2025

- Resolution: 3840x2160
- Brightness: 700 nits
- Operating system: Android 9
- Operating temperature: 0°C to 40°C

AUO Display Plus – Indoor LED display (3/7)

- Indoor LED display



- Cabinet resolution: 200x100
- Pixel pitch: 2.5mm
- LED configuration: SMD (GOB)
- Brightness: 1,000 nits
- IP level: IP30
- Power consumption: 170 w/m²
- It allows for a 45-degree L-shaped installation

Source: Omdia analyst photo, Touch Taiwan 2025

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AUO Display Plus – ESL solution (4/7)

- aecoTag ESL solution



- Size: 2.7-inch
- Resolution: 296x152
- Power supply : 2xCR2450
- Battery lifetime: 7 years
- Display technology: E Ink ePaper
- Operating temperature: 0°C to 40°C

- Size: 4.2-inch
- Resolution: 400x300
- Power supply: 3xCR2450
- Battery lifetime: 7 years
- Display technology: E Ink ePaper
- Operating temperature: 0°C to 40°C

Source: Omdia analyst photo, Touch Taiwan 2025

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AUO Display Plus – ePaper solution (5/7)

- aecoPost ePaper solution



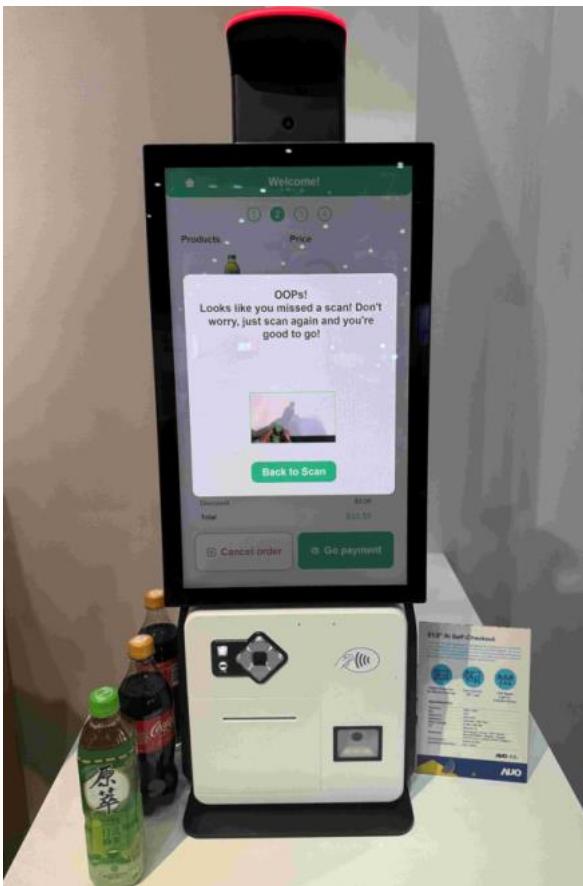
- Size: 31.5-inch
- Resolution: 2560x1440
- Connectivity:
 - Wi-Fi (on-premises model)
 - Bluetooth (cloud model)
- Power:
 - AC 100V 50/60Hz
 - DC 12V
- Display technology: E Ink Spectra 6

Source: Omdia analyst photos, Touch Taiwan 2025

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AUO Display Plus – AI self-checkout (6/7)

- 21.5-inch AI self-checkout



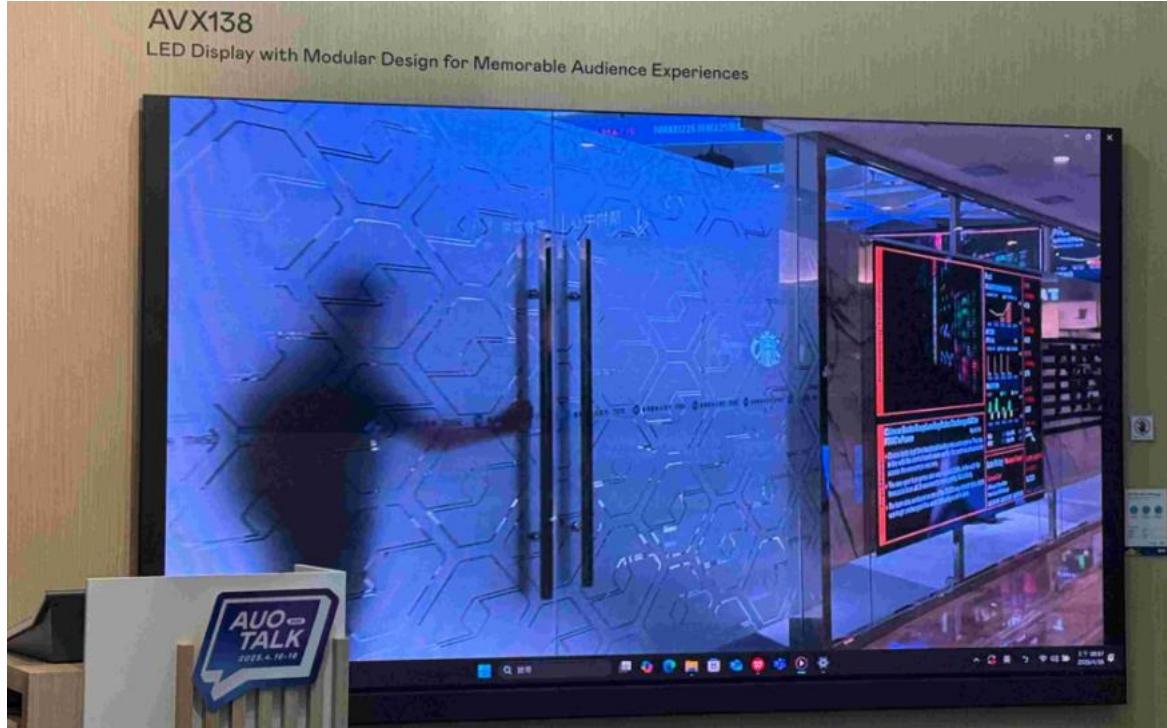
- Size: 21.5-inch
- Resolution: 1920x1080
- Brightness: 400 nits
- Mainboard: Alder Lake – N97 15W
- OS: Windows 10
- AI accelerator: Kneron KL720

Source: Omdia analyst photo, Touch Taiwan 2025

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AUO Display Plus – Enterprise display (7/7)

- 138-inch AIO LED display (P=1.58mm, brightness 500 nits)



Source: Omdia analyst photo, Touch Taiwan 2025

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- 92-inch interactive white board (aspect ratio: 21:9, brightness 450 nits)

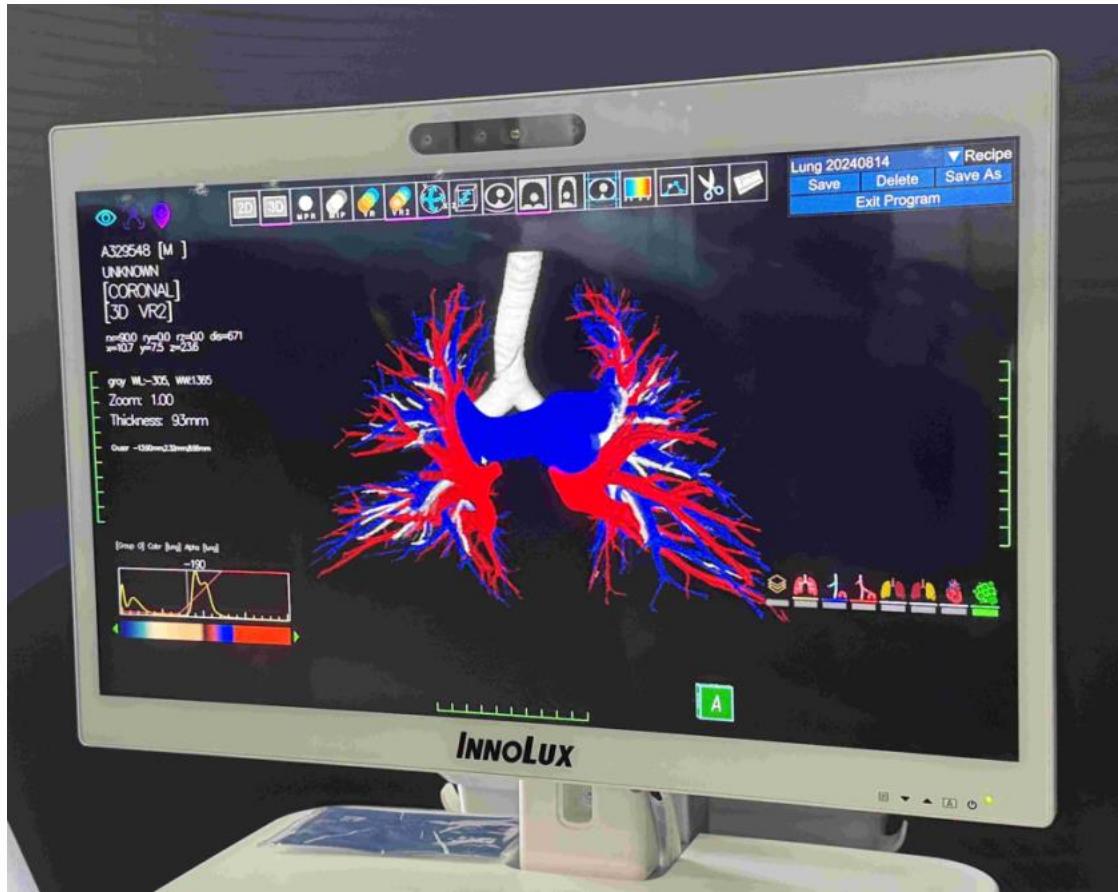


Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux – Medical display (1/7)

- 27-inch medical volume N3D system



Source: Omdia analyst photo, Touch Taiwan 2025

— The 3D images captured by CT and MRI scans typically require radiologists to manually construct the 3D visualizations, a process that takes several hours. However, Innolux has achieved a major breakthrough with its AI image segmentation platform. With its proprietary algorithm, the platform significantly enhances the training efficiency of AI models, enabling the reconstruction of a 3D lung model in just five minutes.

- Resolution: 3840x2160
- Perceived resolution: 1920x1080
- Tracking device: Eye tracking
- User number: Single user
- Input data: CT / MRI DICOM
- Scenario: Preoperative / postoperative / doctor-patient explanation

Innolux – InnoGallery display (2/7)

- 85-inch AI interactive InnoGallery display



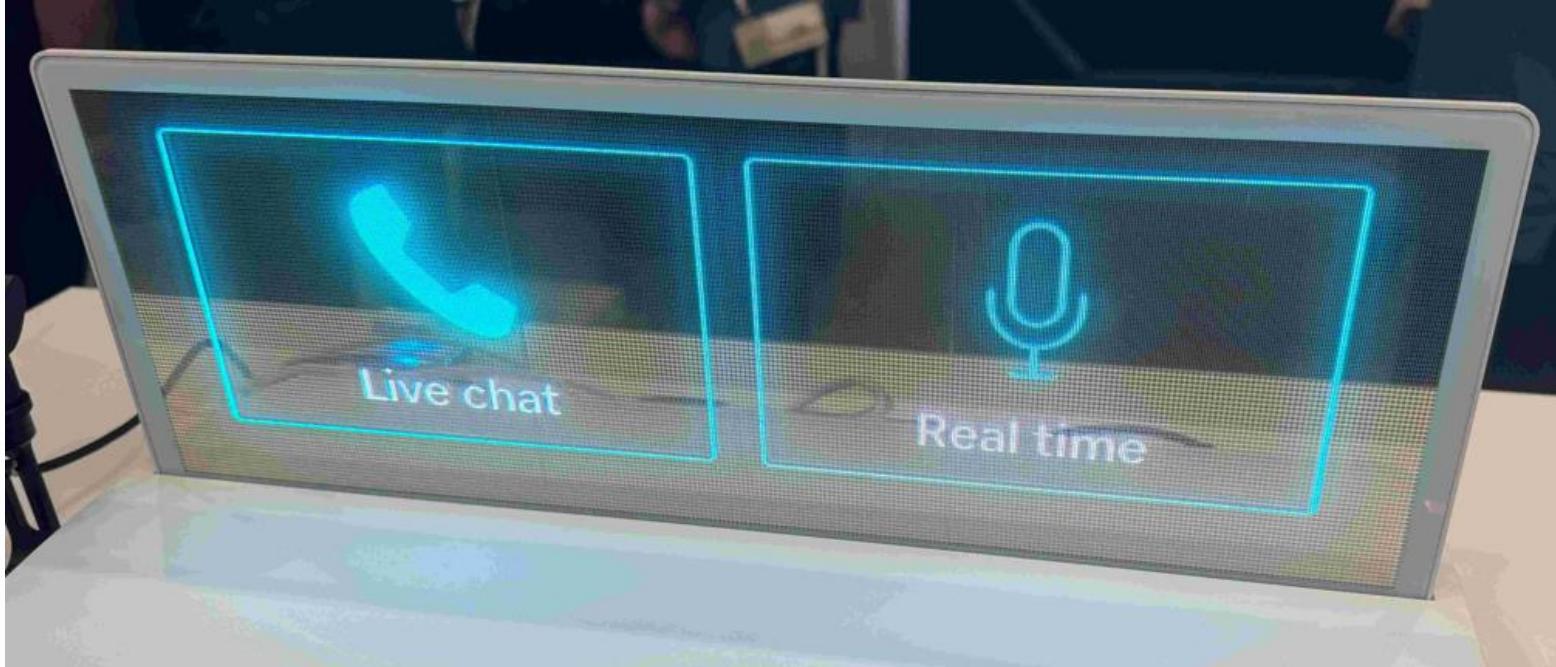
- Resolution: 3840x2160
- Technology: Mimetic painting display
- Ultra-low reflection and eye comfort
- Scenario: Gallery / museum

Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux – AM Mini LED display (3/7)

- 16.8-inch AI translator display



- Size: 16.8-inch
- Technology: AM Mini LED
- Resolution: 180x540
- Dot pitch: 0.75mm
- Power consumption: 45W
- Aperture ratio: 45%
- LED lifespan: > 40,000 hours

Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux – High-brightness display (4/7)

- 23.8-inch high-brightness Mini LED direct backlight display



- Size : 23.8-inch
- Technology: Mini LED direct BLU
- Resolution: 1920x1080
- Backlight power consumption: 182W @ 10,000 nits (including converter)

Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux – Marine display (5/7)

- 23.8-inch Mini LED direct BLU display
 - Resolution: 1920x1080, brightness 1,600 nits, and LED quantity: 9,600



Source: Omdia analyst photo, Touch Taiwan 2025

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- 17.3-inch Mini LED local dimming display
 - Resolution: 3840x2160, brightness 1,300 nits, and 1,440 zones



Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux – Micro LED display (6/7)

- 204-inch 8K AM Micro LED display



- This display leverages AI to enable responsive interaction with users by sensing human movements and reacting to the surrounding environment.
- Available in customizable sizes ranging from 25 to 204 inches.

Source: Omdia analyst photo, Touch Taiwan 2025

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Innolux – Reflective display (7/7)

- 13.3-inch InnoPaper display



- Size: 13.3 inch
- Display technology: Reflective LCD
- Resolution: 2144x1608
- Pixels per inch (PPI): 202
- Reflectivity: 30%
- Color gamut: 20% NTSC
- Applications: Digital signage, digital photo album

Source: Omdia analyst photo, Touch Taiwan 2025

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Apex Material Technology (AMT)

- Dual-screen optical bonding



- Optical bonding for 32-inch curved cover glass



- Optical bonding for TFT LCD / ePaper / ChLCD
- Supports optical bonding up to 42-inches
- Features an anti-UV and temperature-reduction solution to enhance outdoor performance

Source: Omdia analyst photo, Touch Taiwan 2025

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Corning

- 42-inch see-through transparent Micro LED display



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- Corning Gorilla for ASUS ROG Ally X



Source: Omdia analyst photo, Touch Taiwan 2025

- Corning Gorilla for MSI Claw



Darwin

- 30-inch transparent OLED display for interactive kiosk
- 50-inch J-curved display with adjustable curved back bezel
- 48-inch 4K bar-type display



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- 42-inch 2K bar-type display



- Application: Transportation
- Passed the EN50155 standard

Data Image

- Targeting outdoor application in 2025
- 32-inch outdoor rugged HMI monitor
 - Brightness: 1,500 nits
 - LED lifetime: 70,000 hours
 - Operating temperature: -30°C to 80°C
- 23.8-inch outdoor rugged HMI monitor
 - Brightness: 1,500 nits
 - With PCAP touch
 - Operating temperature: -30°C to 80 °C
- 21.5-inch rugged touch open frame
 - Brightness: 1,500 nits
 - LED lifetime: 70,000 hours
 - Operating temperature: -30°C to 80 °C



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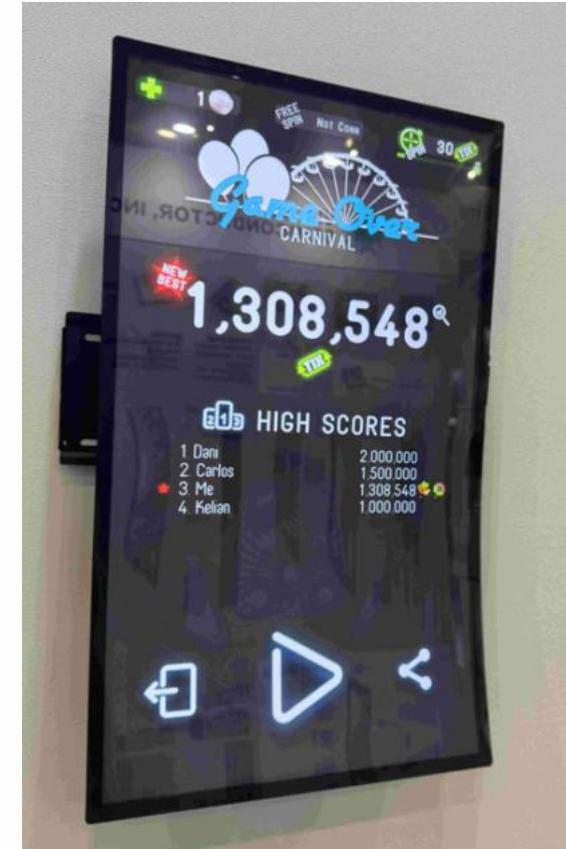
DISPLAX

- SKIN ZEETO PCAP touch solution



- From 7-inch to 32-inch
- Up to 20mm in cover glass thickness
- Resistant to rain, dust, ice, and UV exposure
- Applications: Outdoor kiosks, industrial machines

- 49-inch J-curved touch display with 18mm borders



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E Ink – (1/3)

- Brand: Spectra 6



Source: Omdia analyst photo, Touch Taiwan 2025

- Size: 75-inch
- Composed of a 3x2 video wall, the seam is 1mm
- Colors: 50–60K
- Screen refresh time: Less than 30s
- Operating temperature: 0°C to 50 °C
- Applications: Signage, poster, in-store advertising

E Ink – (2/3)

- Brand: Marquee
- 13.3-inch and 40.5-inch



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Source: Omdia analyst photo, Touch Taiwan 2025

- 75-inch



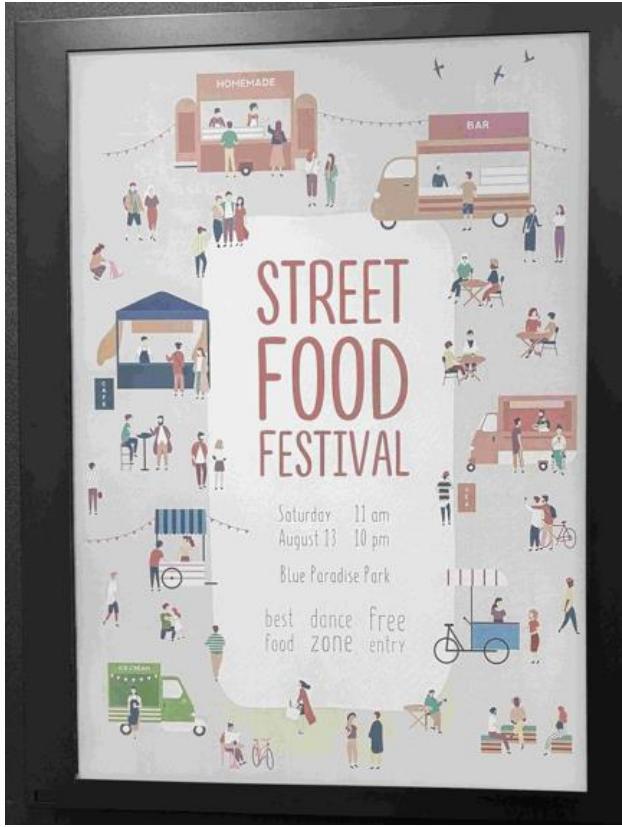
Page 86

- Size: 75-inch
- Colors: 30K
- Screen refresh time: 5–7s
- Operating temperature: -20°C to 65 °C
- Application: Digital out-of-home (DOOH)
- MP schedule: Before 2027

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E Ink – (3/3)

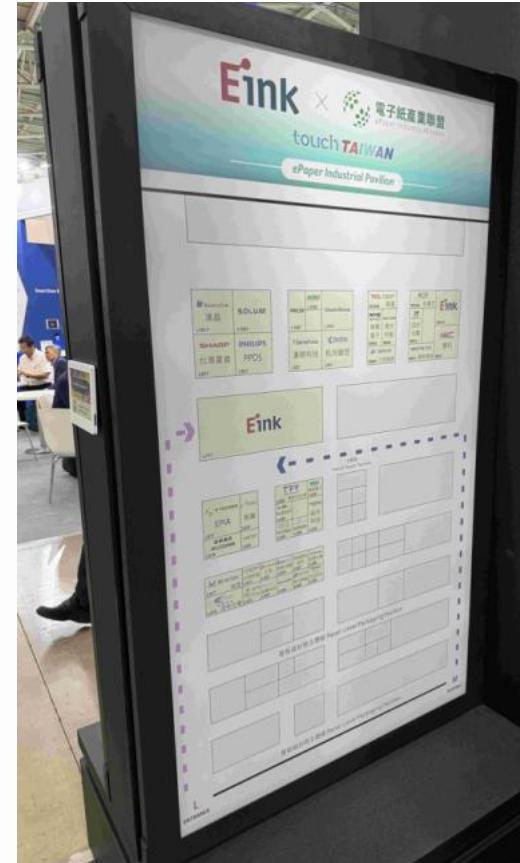
- Brand: Kaleido
- 40.5-inch



Source: Omdia analyst photo, Touch Taiwan 2025

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- 75-inch

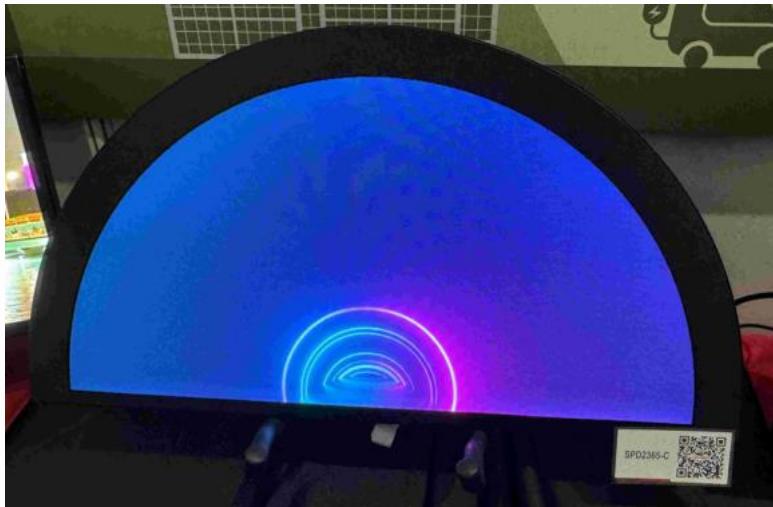


Source: Omdia analyst photo, Touch Taiwan 2025

- Size: 75-inch
- Colors: 20K
- Screen refresh time: 3s
- Operating temperature: -15°C to 65 °C
- Application: DOOH advertising signage

Litemax

- Litemax aims to cut displays into special shapes for niche market applications.
- Semicircle display - diagonal cut into 23.6-inch
 - Brightness: 1,000 nits
 - Scenario: Topper display of slot machines
- Triangle display - diagonal cut into 32-inch
 - Brightness: 1,000 nits
 - Scenario: Window display
- Triangle display - diagonal cut into 27-inch
 - Brightness: 1,000 nits
 - Scenario: Window display



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Iris Optronics

- Supports over 16 million colors with a wide operating temperature range.
- 27.6-inch ChLCD embedded solar
 - Colors: 16M
 - Operating temperature: -20°C to 70°C
- 13.3-inch and 10-inch CHLCD
 - Colors: 16M
 - Operating temperature: -20°C to 70°C



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4.0 Emerging Micro LED and XR applications

Ennostar: Transparent Micro LED and ADB

- Left image: Micro LED technology is maturing, and Micro LEDs have surpassed AMOLEDs in almost all display aspects (colors, flexibility, transparency, etc.) except for mass production at lower costs.
- Right image: Micro LEDs can replace Digital Light Processing (DLP) for automotive Adaptive Driving Beam (ADB) headlamps.



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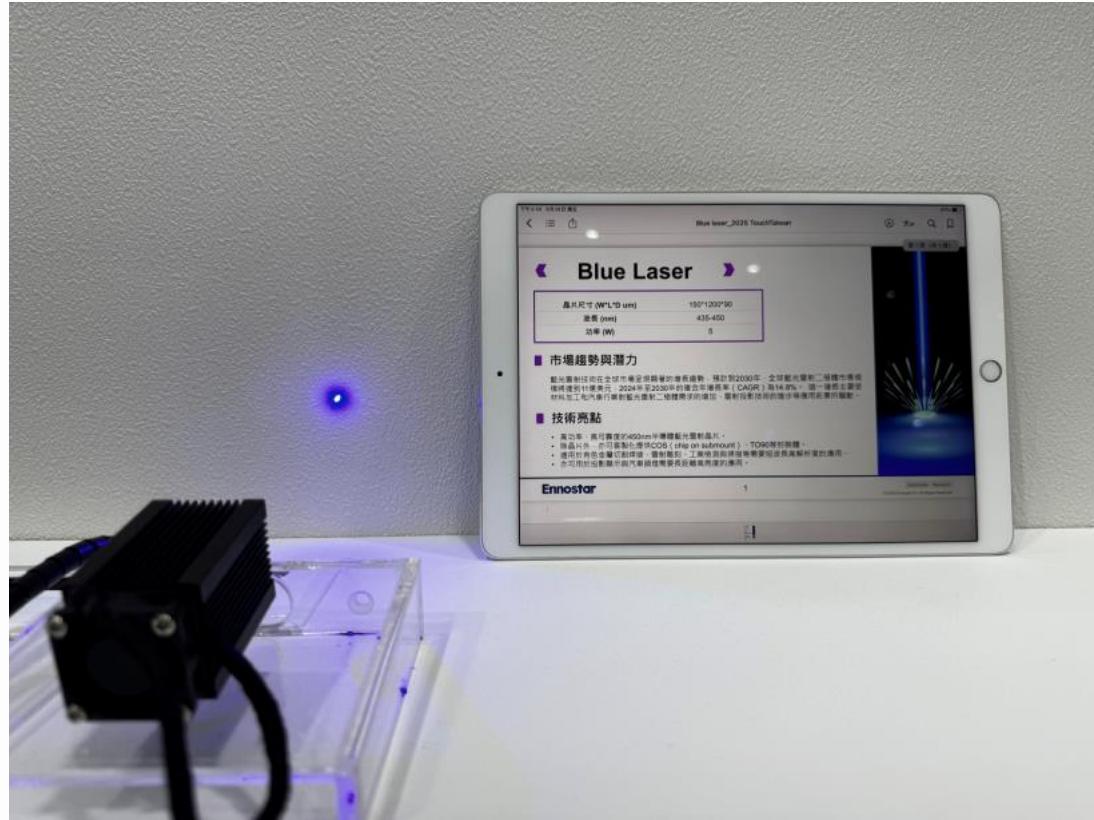


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Ennstar: LEDs as specific light sources

- Left image: LEDs are versatile. The developed blue laser (435–450nm) can be used for metallic cutting, engraving, inspection, specific lighting, and so on.
- Right image: Red LED emission is adopted in agricultural cultivation and it enhances the expected chemical reactions.



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Ennstar: LEDs as non-invasive biometrics

- Left image: The customized infrared LEDs are used to detect the driver's surroundings and help to make the driver feel more comfortable.
- Right image: LEDs are quite useful and suitable as biometric Tx light sources as they are not invasive to the human body.



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Ennstar: Light sources for detection and communication

- Left image: LEDs are used for blood glucose detection, which is an invasive procedure.
- Right image: In addition to normal lighting, display, biometric sensing, and industrial inspection, the latest promising field is light communication, which is riding the AI trend.



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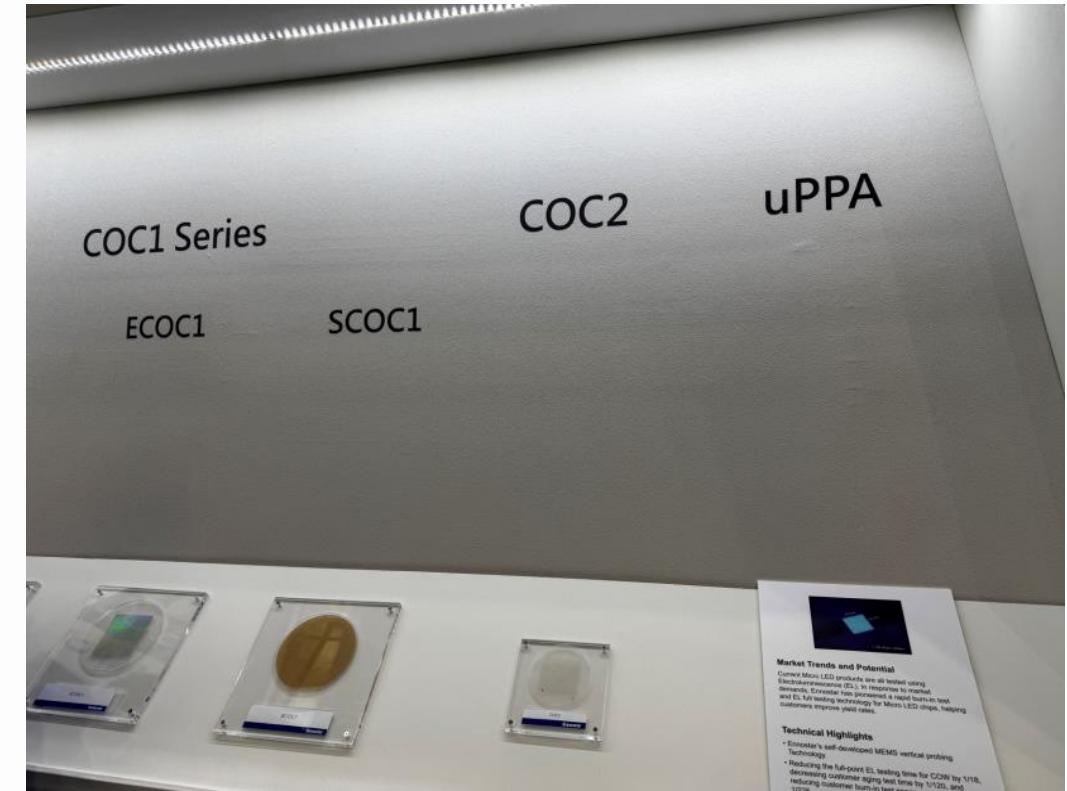
Ennstar: Micro LED display process

- Micro LEDs used for displays are maturing in various aspects, from the RGB LED materials used to the mass transfer process. The intermediate process using COC 1 (chip on carrier) and COC 2 is being continuously improved. The former is for transferring from LED wafers to carriers, while the latter is for RGB alignment.



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Ennstar: GaN epitaxy and system-in-package (SiP) with LEDs

- Left image: In addition to the sapphire substrate, gallium nitride can be crystallized on the silicon wafer with improved lattice matching. This helps to lower product costs.
- Right image: LEDs are commonly used as a Tx source, and they can be further packaged with other semiconductor chips via SiP.



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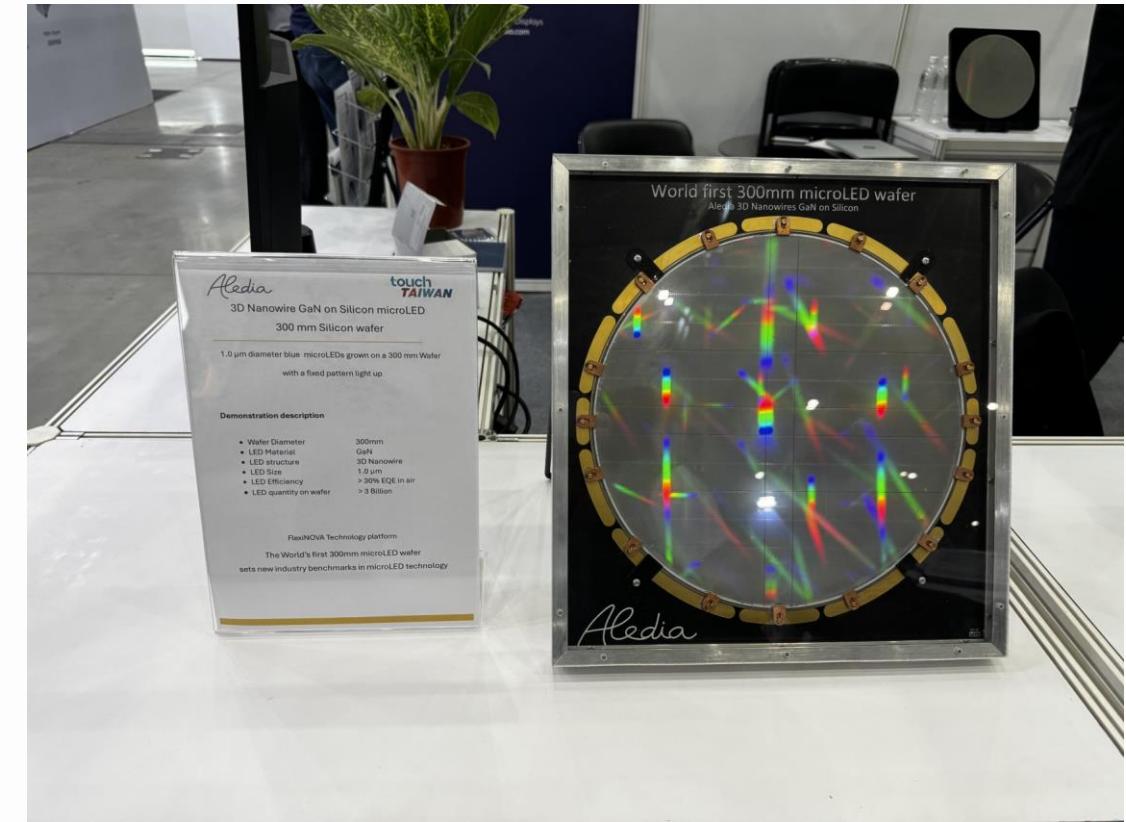
Aledia: French Micro LED supplier

- Right image: Aledia exhibited its Micro LED shrinking technology; the chips can be 1.5μm smaller with good external quantum efficiency (EQE). This is critical to reduce power and improve display performance. The Micro LED wafer is based on its proprietary 3D nanowire GaN technology.



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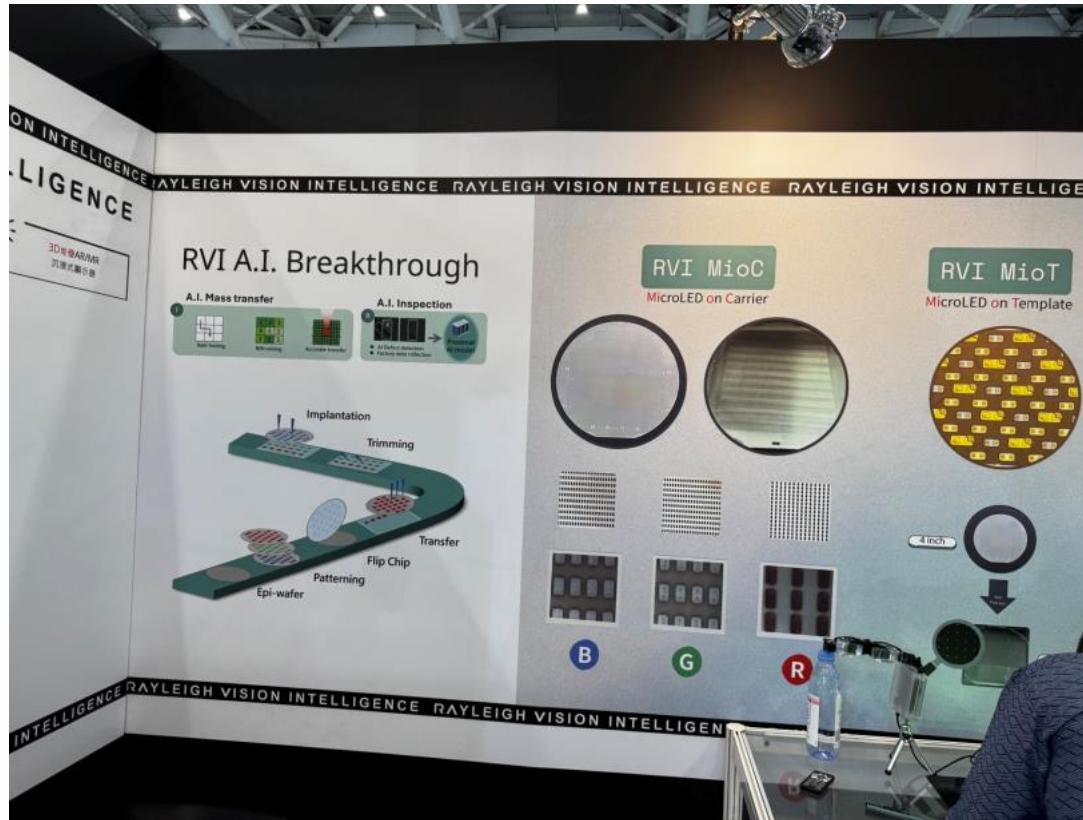


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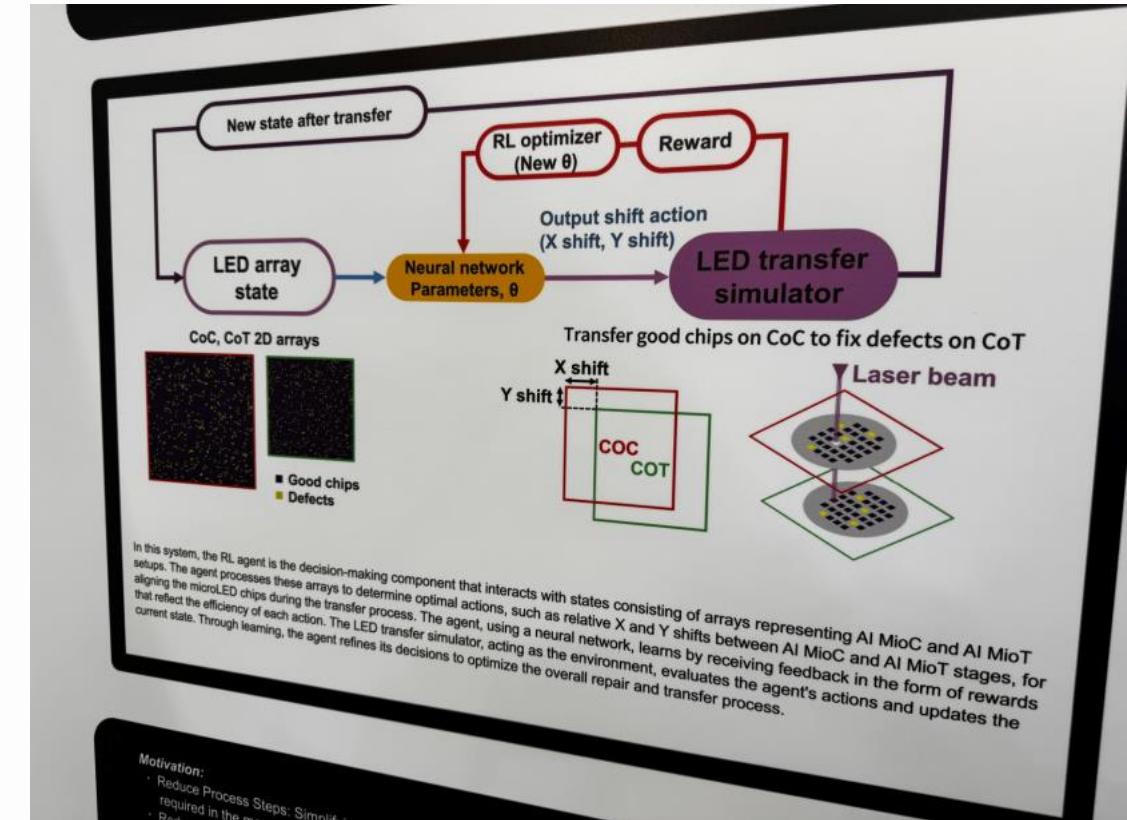
RVI: Emerging Taiwan Micro LED supplier

- Rayleigh Vision Intelligence (RVI) demonstrated its proprietary Micro LED technology and manufacturing process, including MioC (Micro LED on carrier) and MioT (Micro LED on template). The technologies included horizontal and vertical RGB alignment.



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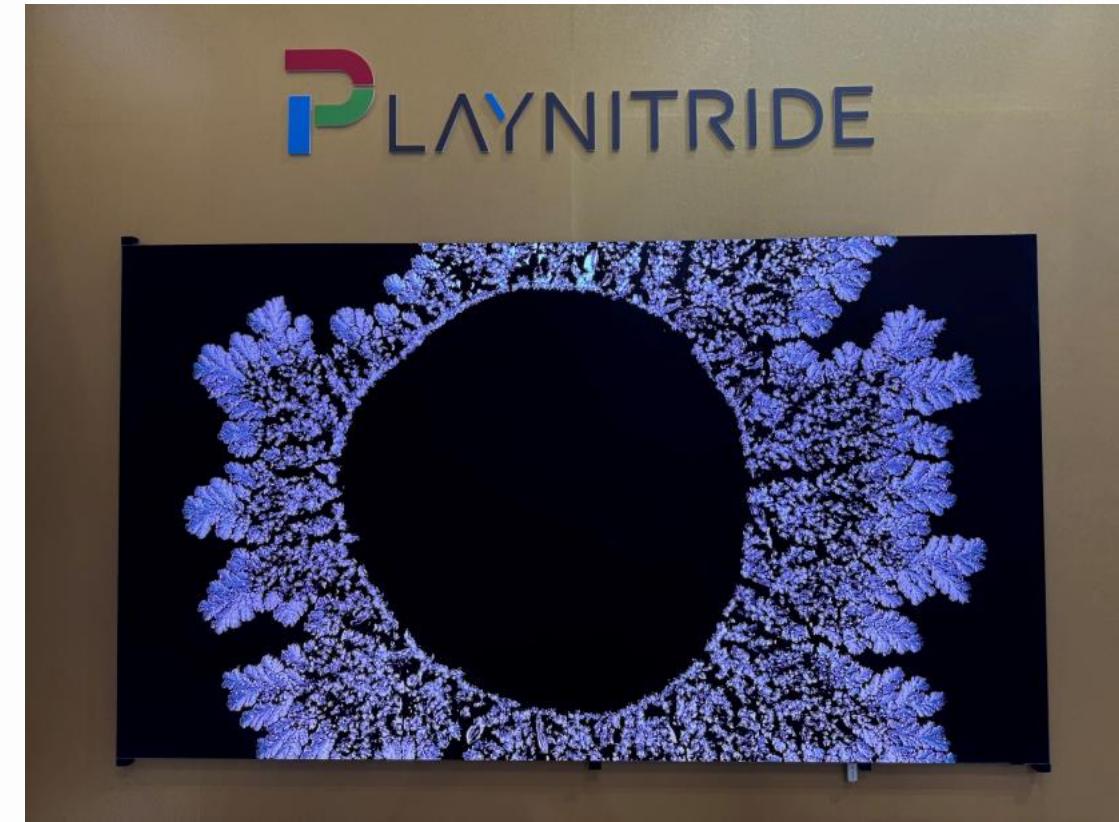
PlayNitride: TV-sized Micro LED displays

- PlayNitride is working with AUO to commercialize TV-sized Micro LED displays. Thanks to the stronger brightness and material lifetime, Micro LEDs have surpassed AMOLEDs as display resolutions continue to increase. AMOLED TVs are now being challenged by Mini LED–based LCD TVs.



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PlayNitride: Micro LEDs for TFT and silicon backplanes

- As AMOLEDs, Micro LEDs can be applied in TFT-based and silicon-based circuits. The former is advantageous in FPD applications such as automotive displays, and the latter can surpass OLEDoS in wearable XR applications.



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PlayNitride: Self-emissive LEDoS

- Left image: The optical engine modules for wearable XR applications are placed side by side for comparison purposes; those with external light sources (such as LCoS, DLP, and LBS) are much larger. LEDoS with three chips (X-cube solution) is also larger. Single-chip RGB LEDoS is expected to replace the three-chip solution.



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Realfiction: Naked-eye 3D display based on Micro LEDs

- Realfiction presented its 3D technology (at the PlayNitride booth) that was different from lenticular film. Specific liquid crystal cells were placed on the FPD (AMOLED or TFT LCD). The liquid crystals direct the light beams to the desired orientation without requiring half-cut resolution.



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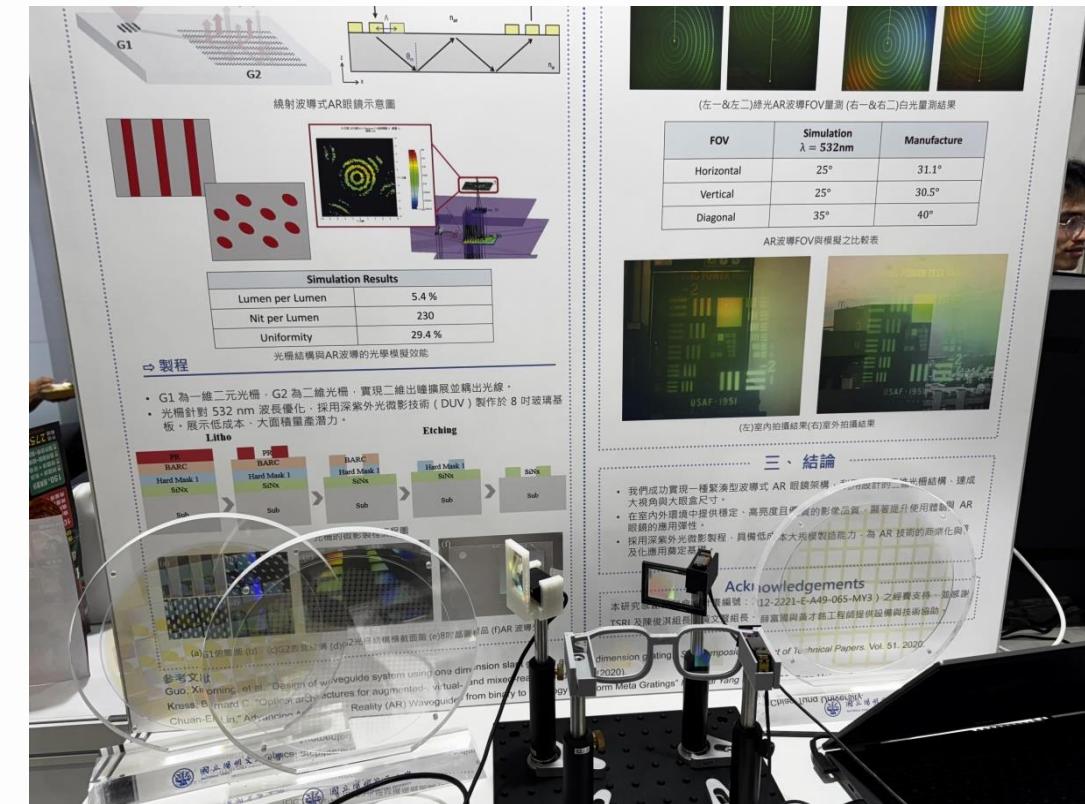
NYCU: Metalens approach to improve light coupling

- National Yang Ming Chiao Tung University (NYCU) is quite well-known in Taiwan, especially in engineering, semiconductor, medical, and computing fields. NYCU researchers presented a sample pair of AR glasses with green LEDoS and optimized waveguide based on their diffractive optical technology and customized metalens.



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5.0 Materials and others

AGC: Surface treatment and package substrate

- Left image: Since a cover lens is necessary for displays for aesthetic and protection purposes, the appropriate surface treatment can enhance the display performance.
- Right image: AGC has prepared glass-based substrate products to replace plastic materials in advanced packages.



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AGC: Carrier substrates for semiconductor applications

- Left image: The glass-based carrier substrates are used for the FO-WLP (fan-out wafer-label package) or PLP (panel-level package) process.
- Right image: The glass-based substrates are used as the carrier medium and then removed or lifted off after the process.



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Corning: Glass substrates for display and cover lens uses

- Left image: Glass substrates are used in transparent Micro LED displays.
- Right image: Cover glass is applied in automotive application, and decorations can be printed on the glass surface for aesthetic purposes.



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Corning: Glass substrates for semiconductor applications

- Left image: Corning recently featured more semiconductor applications at Touch Taiwan than display and cover lens applications.
- Right image: Glass substrates are emerging in semiconductor applications, including carrier and package; they are also replacing plastic substrates because they have better endurance.



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Corning: Glass substrates for semiconductor applications

- Left image: Specific glass substrates are appropriate for AR (augmented reality) applications, and their high index of refraction means improved efficiency via the waveguide.
- Right image: Glass substrates with TGV (through glass via) is emerging for advanced packaging such as RDL (redistribution layer).



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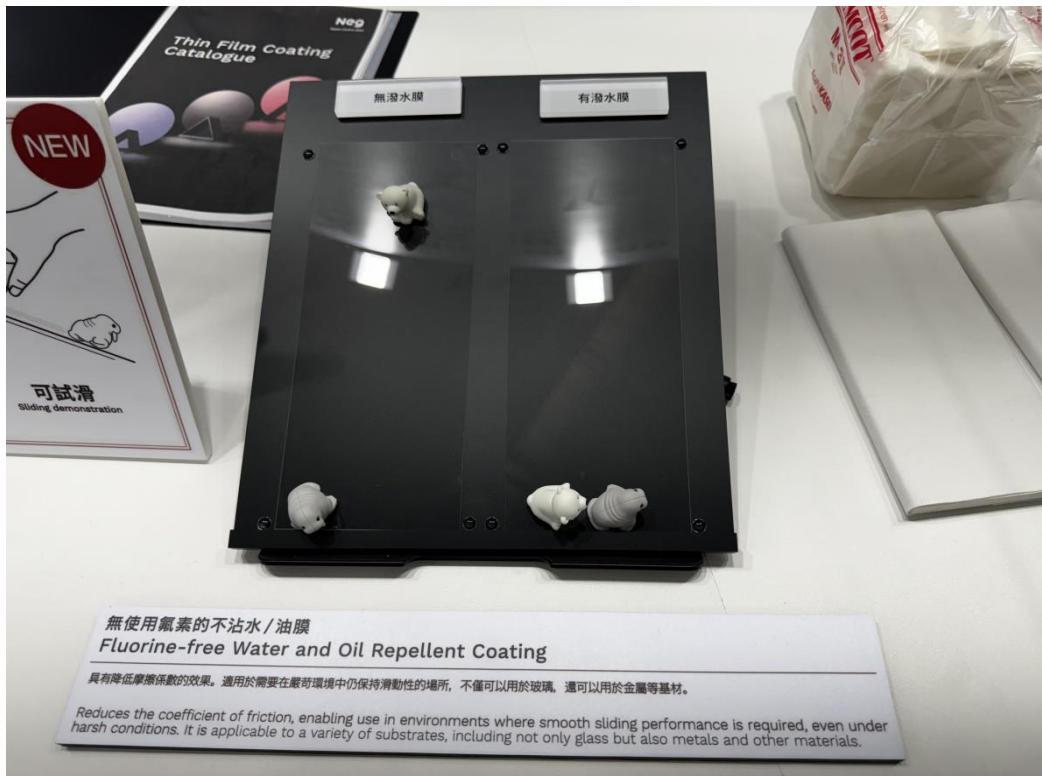


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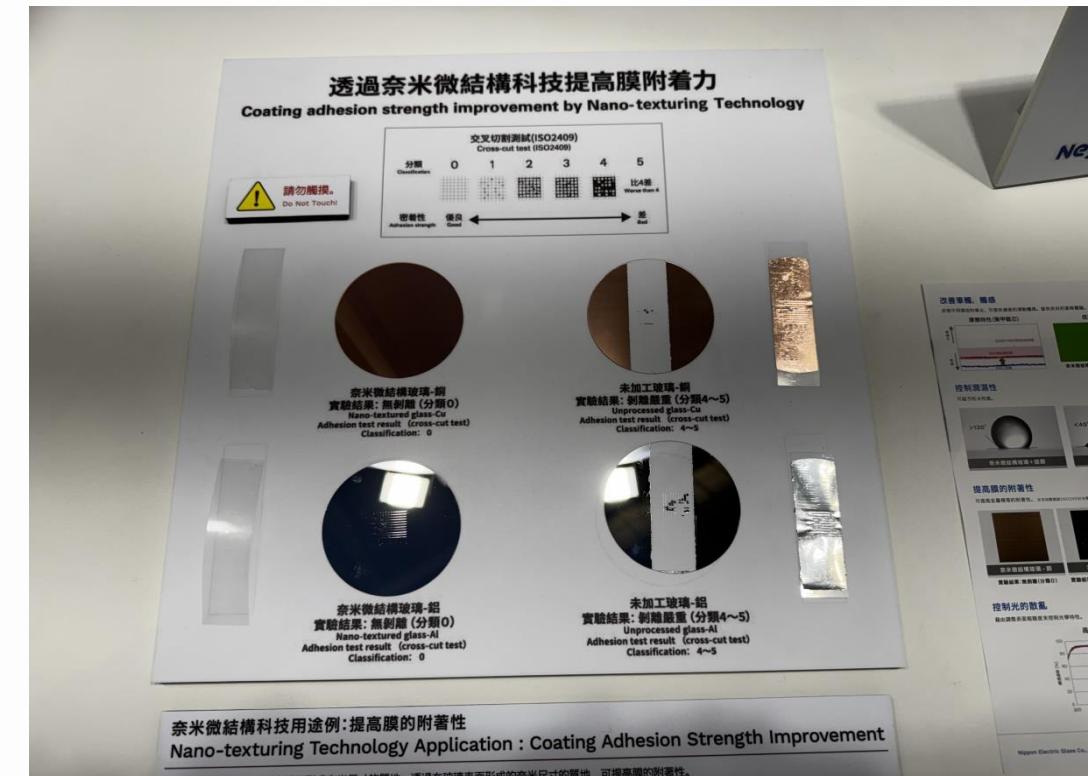
NEG: Advanced surface treatment on the glass

- Left image: Since the glass has been the surface or interface of many devices, the surface treatment (such as the repellent coating below) on the glass can serve specific purposes.
- Right image: The nano-texturing technology can improve the surface coating adhesion.



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NEG: Very thin and flexible glass substrate

- Left image: A very thin glass with a thickness of just 30μm was demonstrated.
- Right image: The demonstration indicated the excellence of glass bending.



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NEG: Invisible glass and ITO glass

- Left image: NEG applied surface treatment to the invisible glass, which deals with incidental light and makes the glass look invisible.
- Right image: The transparent ITO layer is coated onto the glass substrate.



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NEG: Flexible substrate and speaker membrane

- Left image: The flexible glass substrate is used in NIL (nano-imprinting lithography process); the mold and resin are applied onto the substrate.
- Right image: The thin and flexible glass substrate can be used as a speaker membrane because high endurance is required.



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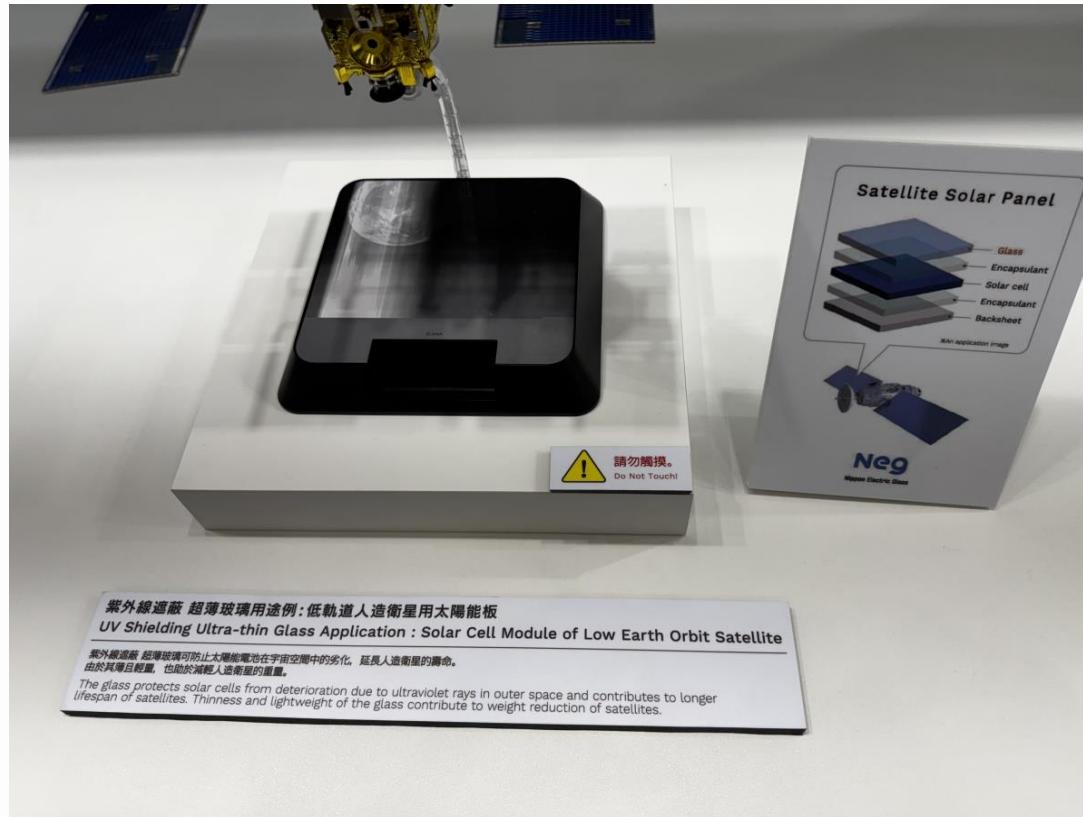


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NEG: UV shielding ultra-thin glass

- Left image: This professional glass product is applied onto the solar cells of satellites for effective UV shielding. Normal glass can filter nearly 90% of UV light, and but this product is even better owing to its recipe and technology.



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AMIT: Industrial touch bonding applications

- Since cover lens is necessary for projected capacitive touch displays, treatment and bonding can improve the optical performance.



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AMIT: Optical bonding for displays

- Left image: Projected capacitive touch has been upgraded for finger touch sensitivity, even in water.
- Right image: Optical bonding between the cover lens and display is a must for a good display performance.



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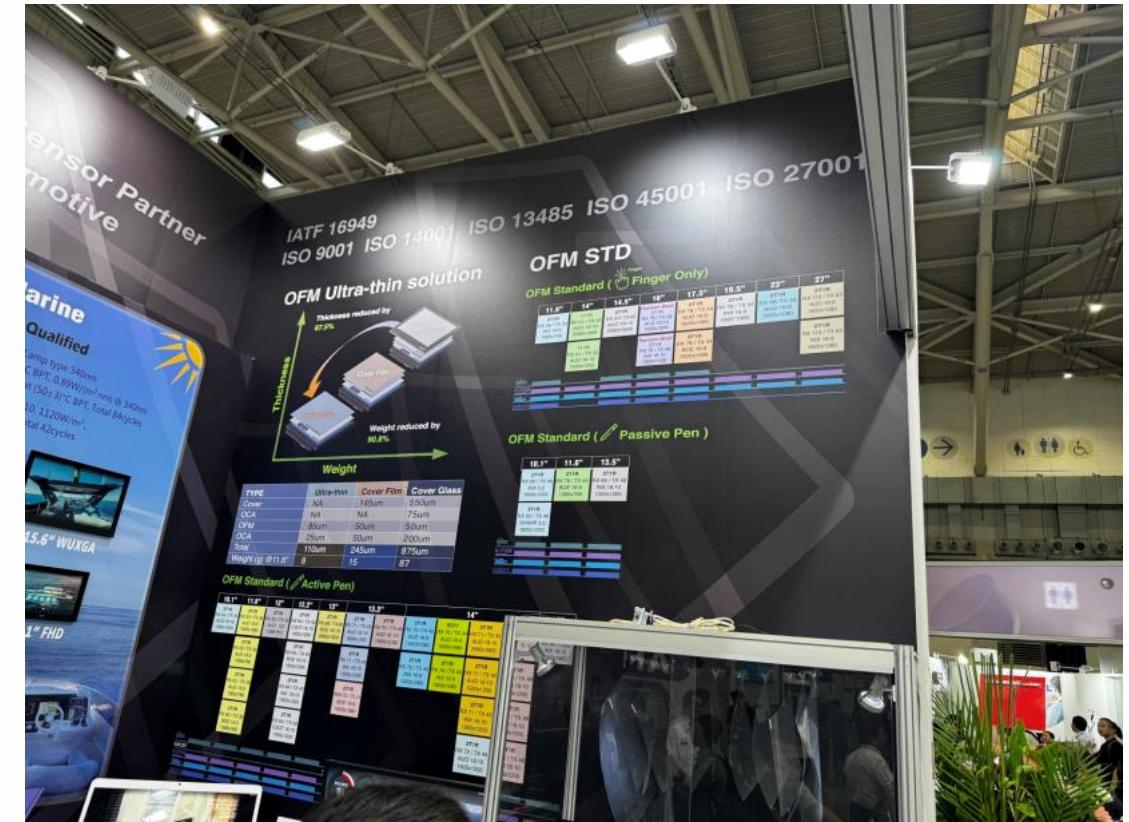
Henghao: Add-on touch solutions for notebook PCs

- Touch is only a nice-to-have feature in notebook PC application, so add-on touch solutions can be more flexible in terms of their stock management and display customization. Henghao proposed its improved metal mesh solution (OFM, one-film metal mesh based on MLOC stack).



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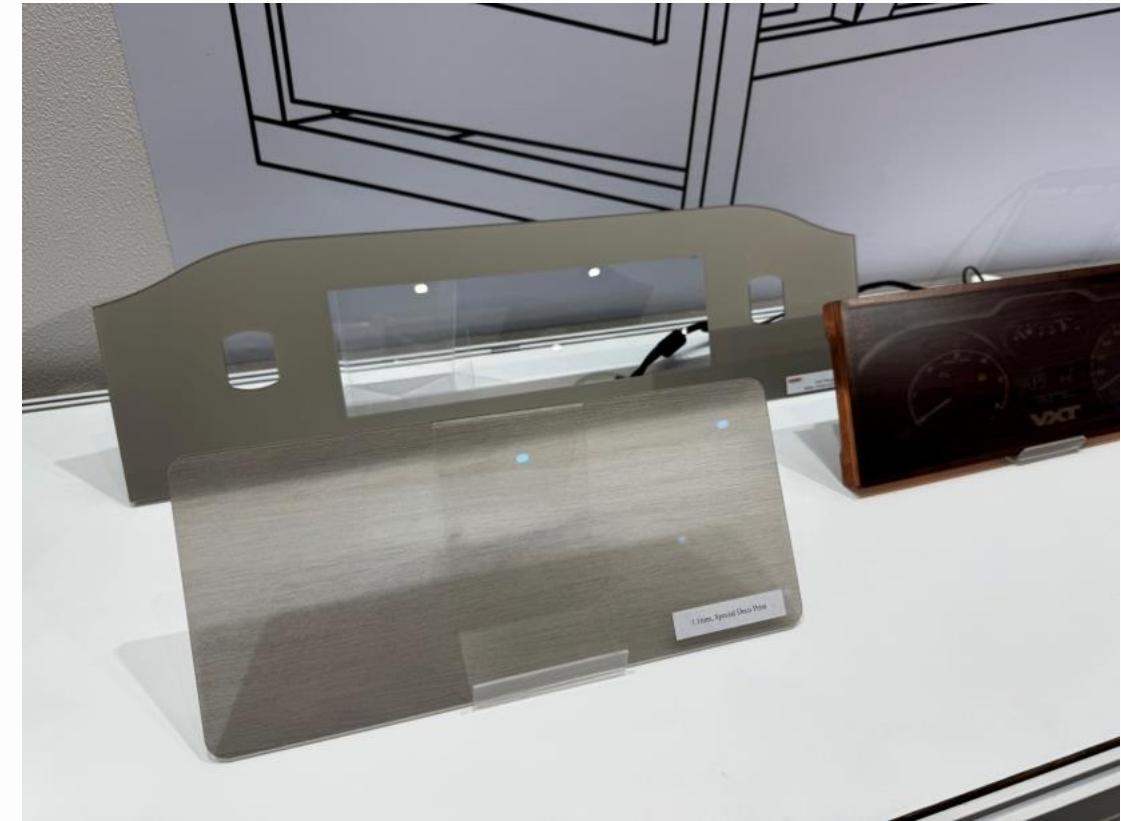
Hony: Expertise in glass forming and treatment

- Left image: This is an example of glass bending and optical bonding.
- Right image: In addition to shaping, cover glass can be printed with decorations.



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Eternal: Chemical silicone solutions

- Eternal proposed its silicone material solutions for encapsulation, which is useful in Mini LED and Micro LED applications.



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Eternal: Silicone for encapsulation

- Eternal proposed its silicone material solutions for encapsulation, which is useful in Mini LED and Micro LED applications.



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Eternal: Various solutions for Mini LEDs

- The silicone solution is applied for filling, dam, lens shape, lamination, and mass transfer uses.



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IITRI: Metalens and 5G transparent antenna

- Left image: Because microlens is adopted in the iPad Pro (TrueDepth module), microlens R&D is emerging in Taiwan. So far, metal lens still cannot replace conventional lenses for RGB cameras.
- Right image: Transparent antenna designs are good for FWA (fixed wireless access) products.



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ITRI: Transparent antenna into the building

- ITRI proposed transparent antenna solutions, which can be further blended into the buildings such as windows. This can improve the communication efficiency and device data rates such as when using smartphones at home or indoors.



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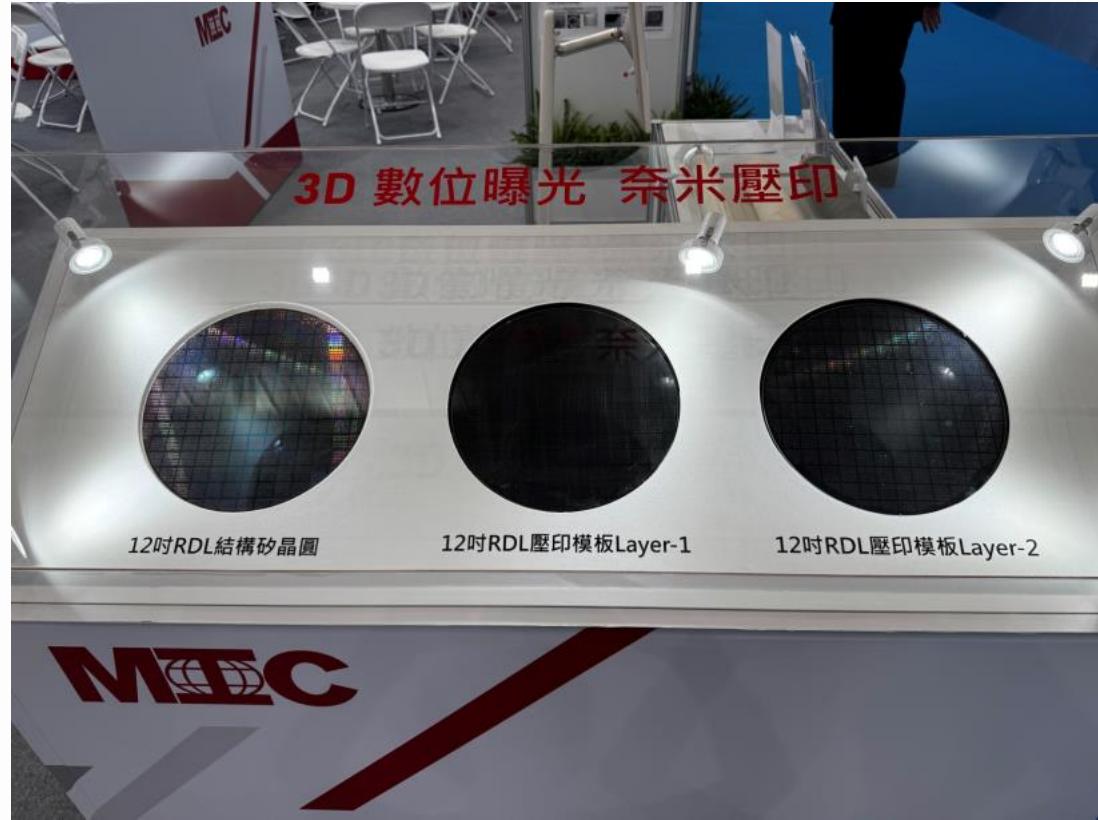
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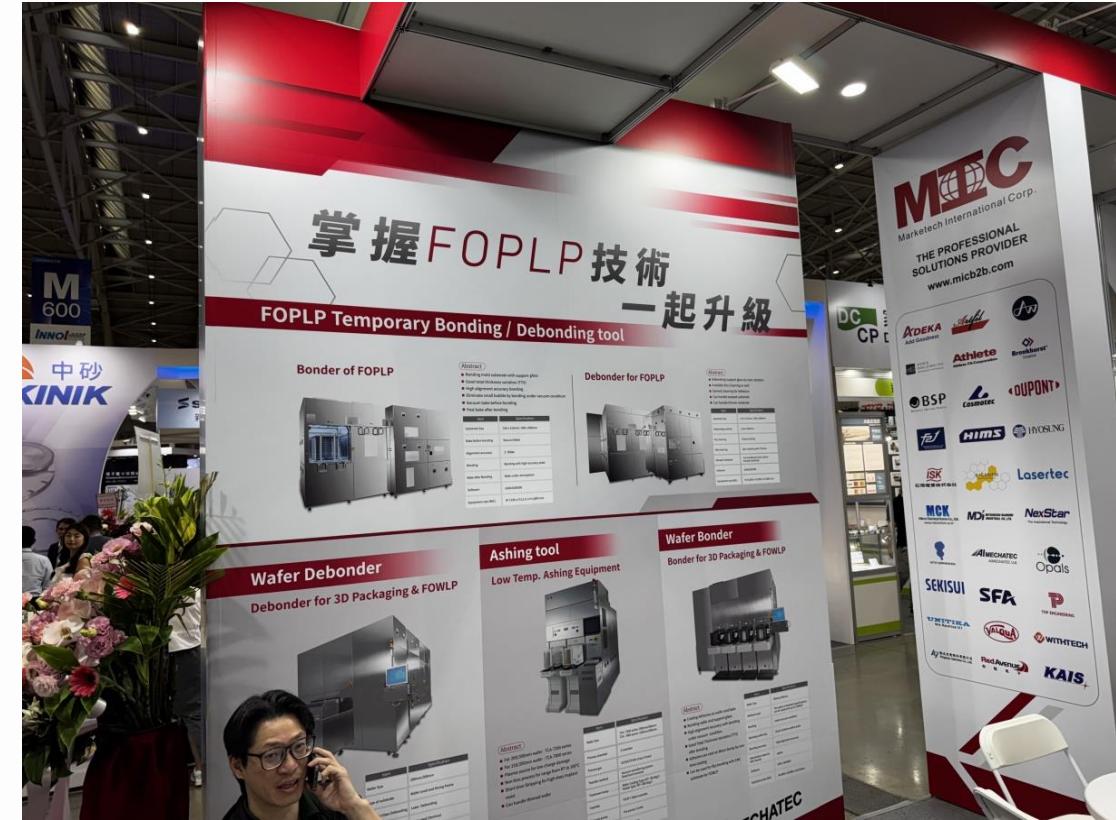
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MIC: Equipment for NIL and PLP solutions



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Manz: Equipment for PLP and RDL solutions



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E&R Engineering: Solutions for glass core and PLP

- Glass core and PLP are emerging technologies in the semiconductor application. The former can be used to replace plastic substrates, and the latter is efficient for arrangement in an advanced package process.



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Appendix

Appendix

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