Industrial Display Systems for AMR & Robotics

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Industrial Display Systems:

Enhancing Operational Efficiency and the Accuracy of AMRs

Medication Delivery

Hospital AMRs with displays ensure accurate medication delivery with patient and dosage information.

Agricultural Operations

Field AMRs use sensors and displays for real-time data and recommendations for optimal crop management.

Manufacturing Plants

AMRs optimize assembly lines with displays for instructions, parts, and real-time production updates.

Retail Sites

The scrubber dryer is equipped with a touch display for easy setting and navigation.

Trends in AMR & Robotics Applications:
Small Displays

Focused Information

In many fields of application, AMRs often perform specific tasks with minimal interaction. Small displays **efficiently convey essential information** such as task instructions, battery levels, or navigation cues.

Space Constraints

Warehouse aisles, factory floors, and retail spaces often have limited space. Smaller displays **minimize their footprints and maintain a streamlined design**.

Cost Efficiency

Smaller displays are typically more affordable than their larger counterparts, making them a **budget-friendly option** for AMR deployment.

Key Considerations for Choosing Displays in AMR & Robotics

Input Methods

Touchscreen

Ideal for navigating menus and selecting options

Display Size and Resolution

Optimal Size: 7”~10.1”

Ideal for AMRs to balance the display of information within space constraints

High Resolution and Readability

Ensures clear text and graphics, even in challenging lighting conditions or when viewed from a distance

Durability and Environmental Resistance

IP Rating

Compliance with IP ratings against dust, water, and other environmental hazards

Shock and Vibration Resistance

Crucial for mobile applications to withstand shocks and vibrations encountered during operation

Operating Temp. Range

Verification of the display's ability to operate reliably within the temperature extremes of specific application fields

Key Considerations for Choosing Displays in AMR & Robotics

Industry-Specific Requirements

Warehouses

Displays must be bright enough for **visibility in dimly lit environments**, with **high resistance** to dust, debris, and impacts.

Factory Automation

Displays with a **wide operating temperature range** are essential to handle changes in **environmental conditions**.

Retail

Opt for displays with a **sleek, aesthetically pleasing design** that **integrate seamlessly** into retail spaces.

Smart Agriculture

Prioritize displays that **prevent ingress and function reliably in dusty or wet** environments.

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Recommended Products:
Industrial Touch Panel Kits

Compact size for **easy integration**

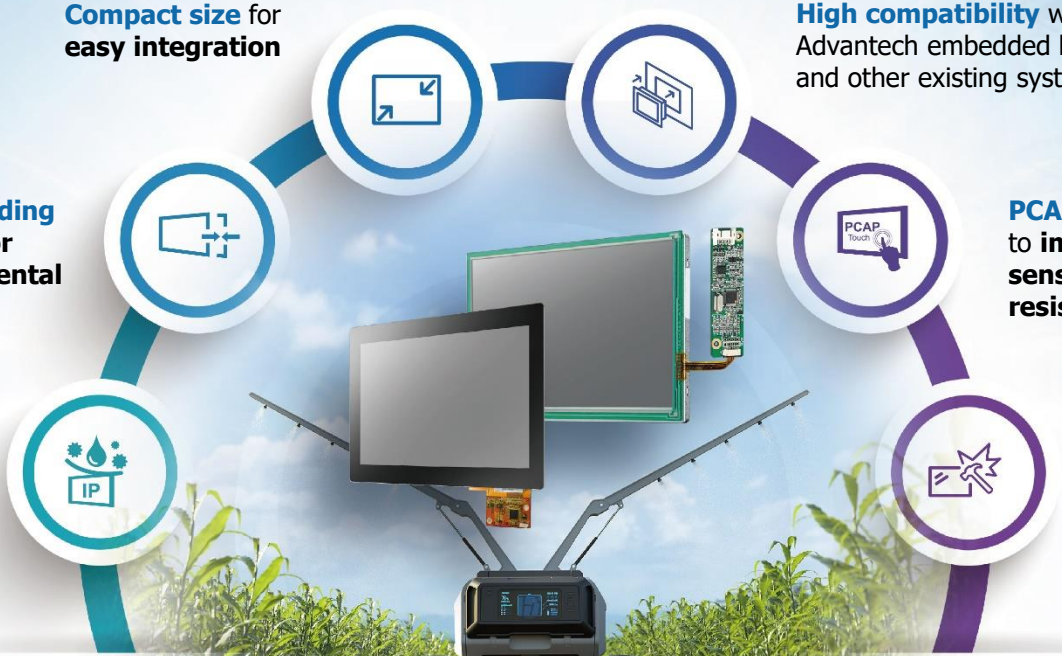
High compatibility with Advantech embedded boards and other existing systems

In-house optical bonding technology **for superior clarity and environmental resistance**

PCAP touch integrated to **improve touch sensitivity and dust resistance**

IP65-compatible design with black frame for seamless integration of **waterproof solutions**

Rugged design with bonding technology or toughened safety glass **reduces the risk of injury from surface breakage**



Recommended Products:
Industrial Touch Panel Kits

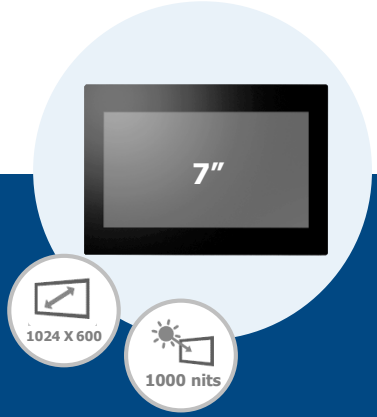
PCAP

+70
-20

Industrial Display Kit
IDK-1000 Series

IDK-1110WP

IDK-1107W



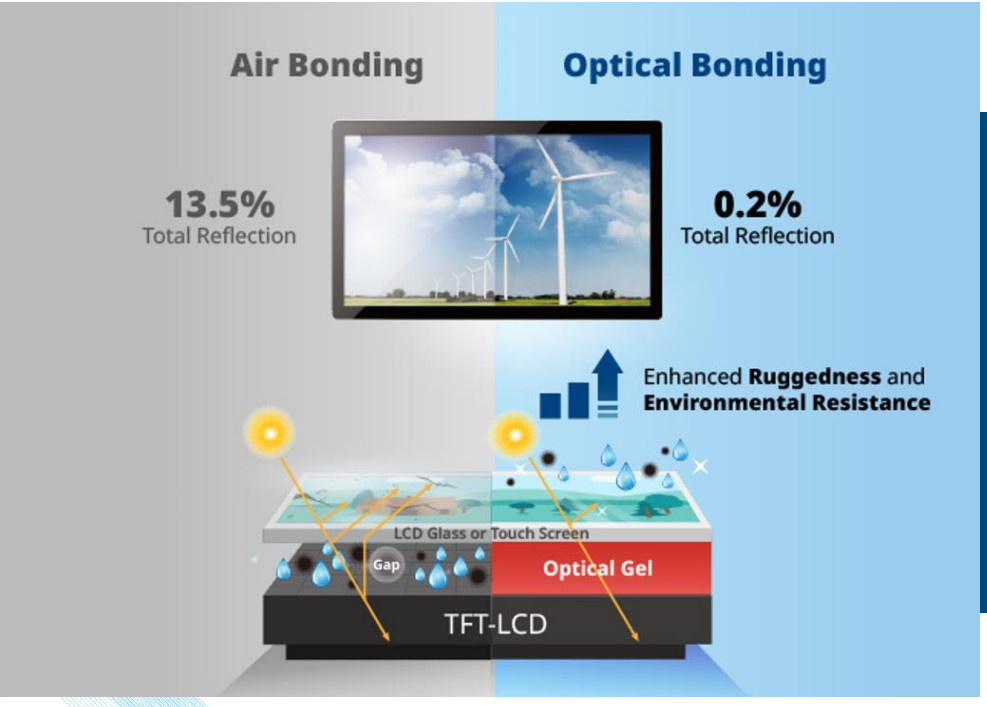
High Brightness Display Kit
IDK-2000 Series

IDK-2110WP

IDK-2107W

Leading Technologies & Customization Capabilities

Optical Bonding



Features

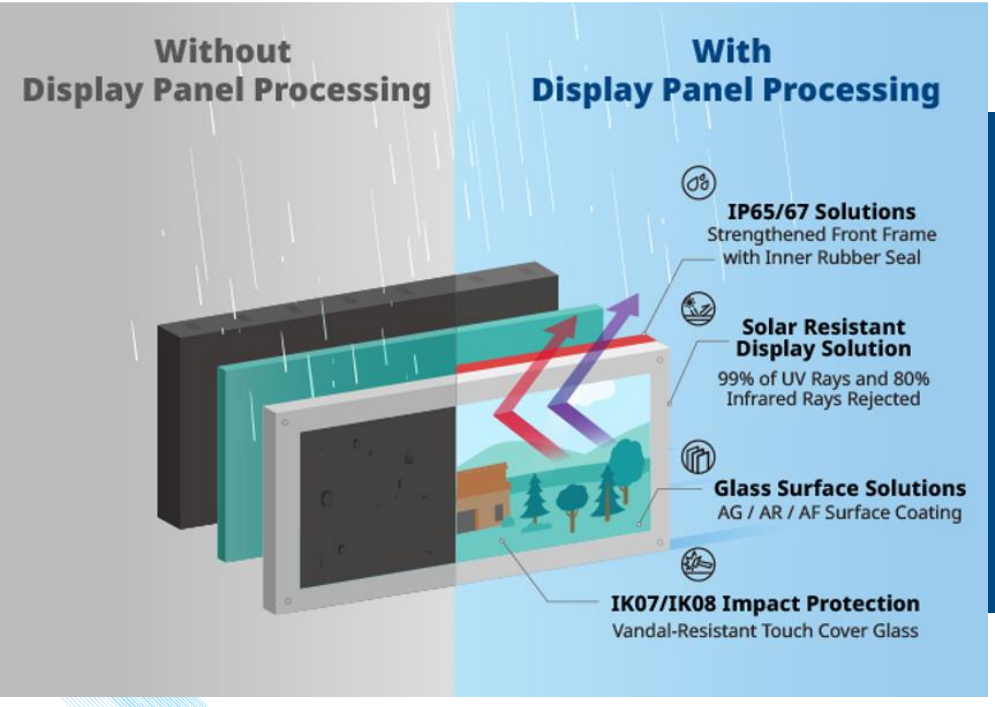
- Laminates LCD panels using optical glue without creating air gaps
- Proprietary materials and processes implemented in-house
- Wet and dry bonding processes available, based on required ruggedness

Benefits

- Reduces external light reflection and glare by increasing backlight transmittance
- Enhances visibility by 400% while delivering superior image quality
- Anti-moisture, anti-dust, and vandalism resistant

Leading Technologies & Customization Capabilities

Display Panel Processing



Features

- IP65/67-rated design (front frame)
- High brightness enhancement
- Supports touch cover glass with customized strength
- Multiple surface coating technologies available

Benefits

- Water-proof and dust-proof
- Anti-fingerprint, anti-reflective, and anti-glare
- Vandal-resistant

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Leading Technologies & Customization Capabilities

High Brightness

Features

- In-house backlight module enhancement
- Thermally optimized circuit design
- Auto-dimming function with light sensor
- Optional low dimming solution supporting brightness from 2 nits

Benefits

- High brightness with low power consumption
- Ensures optimal visibility and comfort in varying lighting conditions

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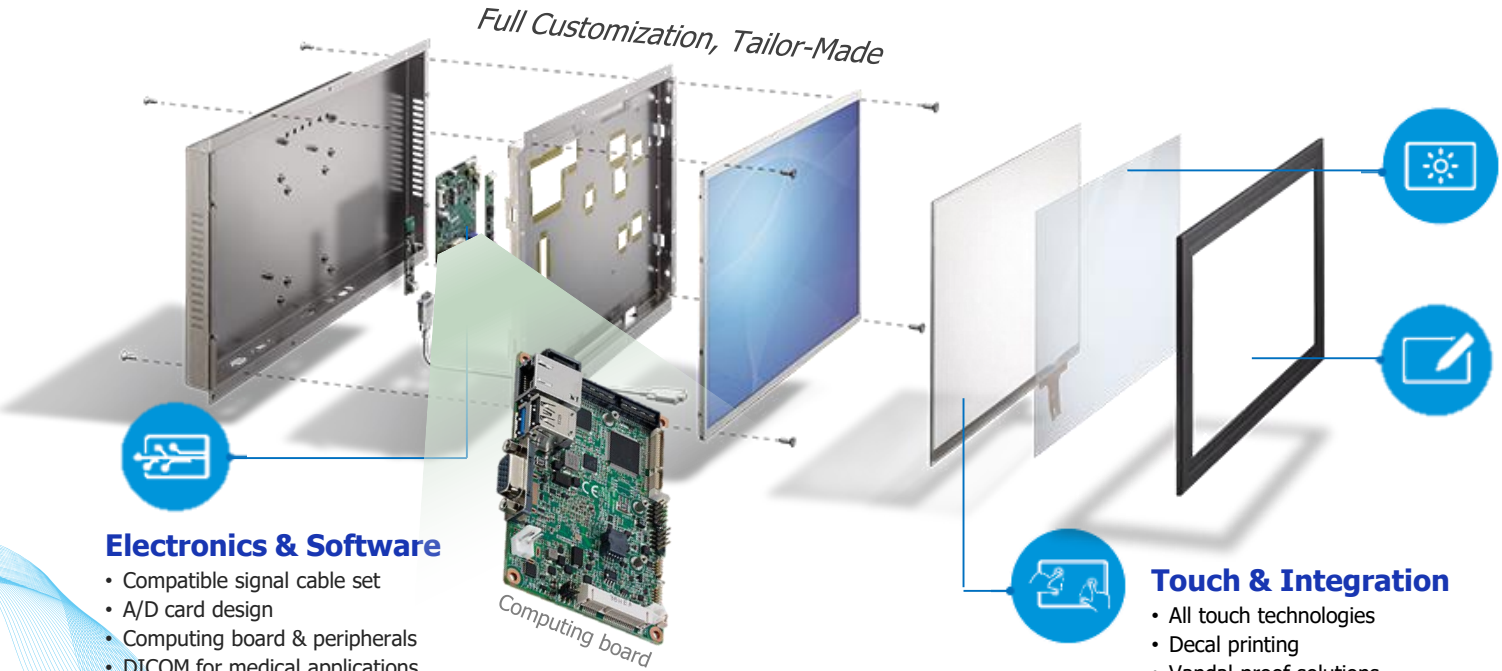
Leading Technologies & Customization Capabilities

Industrial Display Design-to-Order Service



Electronics & Software

- Compatible signal cable set
- A/D card design
- Computing board & peripherals
- DICOM for medical applications

Touch & Integration

- All touch technologies
- Decal printing
- Vandal-proof solutions
- Multi-touch & gesture control

Optical Enhancements

- High brightness up to 2,000 cd/m2
- Optical bonding
- Anti-glare (AG), Anti-Reflective (AR), and Anti-Fingerprint (AF) coating
- Privacy and polarizing filters

Mechanical Design

- Aluminum / steel / stainless chassis
- Open / closed frame / proflat designs
- Panel cutting
- Optional IP54/IP65 solutions

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Use Case

Autonomous Mobile Robots

IDK-1110WP

- 10.1” display with 1280x800 resolution and 500 nits brightness
- PCAP touch integration: Supports use with rubber gloves, and in wet environments
- A/D board kits: Compatible with VGA/DVI interfaces

Use Case

Collaborative Robots (Cobots)

IDK-1112P

- 12.1” display with 1280x800 resolution and 400 nits brightness
- LVDS interface: Easily integrates with system boards
- Wide viewing angles: 160°/160° performance
- PCAP touch integration: Supports quick response
- Wide temperature support: Operates from -20 to 70°C

Product Selection Guide

IDK-1000 Indoor LCD Kits

	IDK-1105	IDK-1106	IDK-1107W		IDK-1110W		IDK-1110	
Size	5.7"	6.5"	7"		10.1"		10.4"	
Resolution	640 x 480, VGA	640 x 480, VGA	800 x 480, WVGA	1024 x 600, WVGA	1024 x 600, WSVGA	1280 x 800, WXGA	800 x 600, SVGA	1024 x 768, XGA
Brightness (cd/m²)	500	800	500	500	500	500	400	500
Viewing Angle (H/V°)	140/100	160/140	178/178	178/178	140/120	170/170	160/130	176/176
Contrast Ratio	250:1	600:1	800:1	800:1	500:1	800:1	700:1	1000:1
Touchscreen	4-Wire Resistive	4-Wire Resistive	5-Wire Resistive and P-CAP	P-CAP	4-Wire Resistive	P-CAP	4-Wire Resistive	4-Wire Resistive and P-CAP
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS
Backlight Life (hrs)	30,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability (touches)	1 million	1 million	1 million	No limit	1 million	No limit	1 million	1 million
Op. Temperature	-20 ~ 70°C	-10 ~ 60°C	-5 ~ 60°C	-20 ~ 70°C	-5 ~ 60°C	-20 ~ 65°C	-10 ~ 60°C	-10 ~ 60°C

	IDK-1112	IDK-1115	IDK-1115WP	IDK-1121W	
Size	12.1"	15″	15.6"	21.5"	
Resolution	1024 x 768, XGA	1024 x 768, XGA	1920 x 1080, FHD	1920 x 1080, FHD	1920 x 1080, FHD
Brightness (cd/m²)	500	500	450	300	250
Viewing Angle (H/V°)	178/178	178/178	170/170	178/178	178/178
Contrast Ratio	1000:1	2500:1	800:1	5000:1	1000:1
Touchscreen	5-Wire Resistive and P-CAP	5-Wire Resistive and P-CAP	P-CAP	5-Wire Resistive	P-CAP
Signal Interface	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Life (hrs)	30,000	70,000	50,000	50,000	30,000
Durability (touches)	10 / No limit	10 / No limit	No limit	10 million	No limit
Op. Temperature	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	0 ~ 60°C	0 ~ 50°C

Product Selection Guide

IDK-2000 Outdoor LCD Kits

	IDK-2107W	IDK-2108	IDK-2110W	IDK-2110		IDK-2112P	IDK-2115	IDK-2115W	IDK-2121W
Size	7"	8.4"	10.1"	10.4"		12.1″	15"	15.6″	21.5"
Resolution	1024 x 600, WSVGA	800 x 600, SVGA	1280 x 800, WXGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1024 x 768, XGA	1920 x 1080, FHD	1920 x 1080, FHD
Brightness (cd/m2)	1000	1200	1500	1200	1000	1200	1200	1200	1200
Viewing Angle (H/V°)	170/170	160/140	170/170	160/130	176/176	178/178	178/178	170/170	178/178
Contrast Ratio	800:1	600:1	800:1	500:1	1000:1	1000:1	2500:1	800:1	5000:1
Touchscreen	P-CAP	4-Wire Resistive	P-CAP	4-Wire Resistive	P-CAP	P-CAP	5-Wire Resistive	PCAP	P-CAP
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability (touches)	No limit	1 million	No limit	1 million	No limit	No limit	10 million	No limit	No limit
Op. Temperature	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	-10 ~ 60°C	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	0 ~ 55°C	0 ~ 60°C

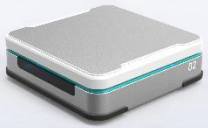
Empower Future-Proof
Autonomous Systems & Robotics

Standardized Solutions
A standardized form factor collaboratively developed with eco-partners to define common specifications for AS&R industry, accelerating the development of next-generation market products

Eco Partner Alliance
Empower partner resources to contribute to AS&R ecosystem community, driving product innovation and business opportunity.

Developer Community
Engage with key developer communities in the AS&R market to bring more value and influence to technological advancements

AGV
Navigation and Path Planning
- Point-to-point Transportation
- Fixed Route
- Standalone Operating



Pick & Place
Multi-robotic Fleet Collaboration
- Collaborative Control
- Multi-robot Scheduling
- Cloud & Edge Computing

Patrol Robot & Forklift
Unpredictable Obstacles and Dynamic Paths
- Self-Adjusting Decisions
- Inference and Recognize
- Sensor Fusion

Smart Agriculture
Outdoor Remote Management
- Ruggedized Design
- Non-interrupted Wireless Environment
- Functional Safety

AS&R Solution


AGV & AMR


Drone


Sensor Module

Camera Sensor


MIPI


GMSL


USB

Industrial Touch Panel Kit


IDK-1000 Series


IDK-2000 Series

Industrial Wireless


Industrial Wi-Fi Model


Outdoor 5G Model

Qualcomm NXP Rockchip intel. ORBBEC intel REALSENSE oToBrite D3 e-con Systems cogniteam TURING DRIVE THE AUTOWARE FOUNDATION APC TECHNOLOGY GROUP

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