

Industrial Display Systems for AMR & Robotics



ADVANTECH

Enabling an Intelligent Planet

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.

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



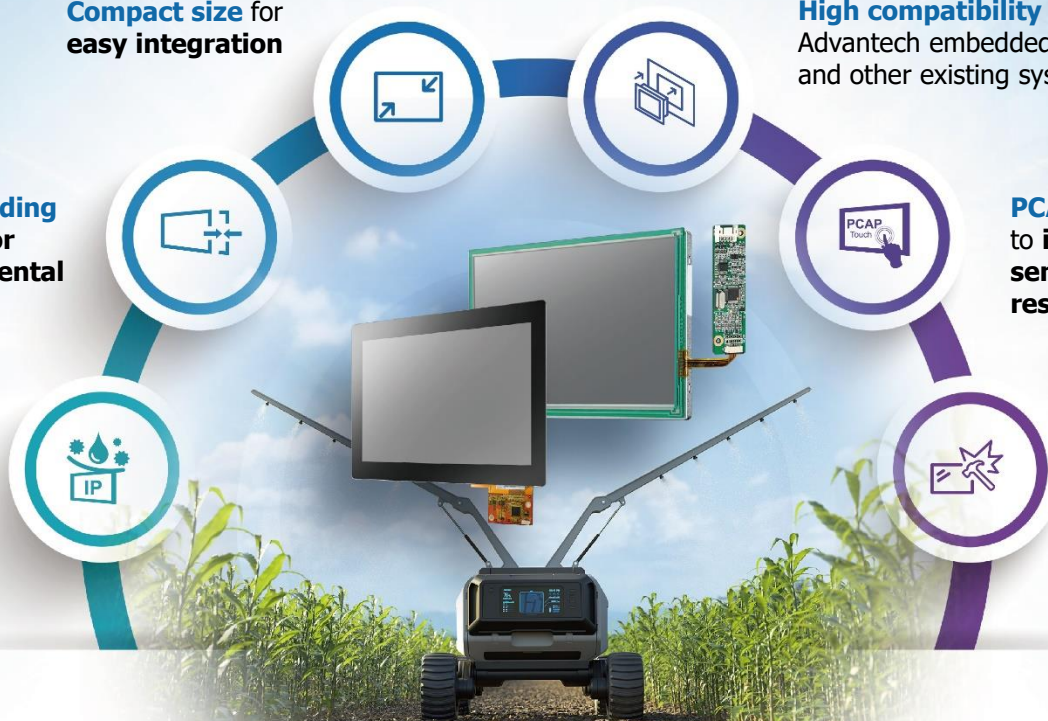
PCAP touch integrated
to **improve touch**
sensitivity and dust
resistance



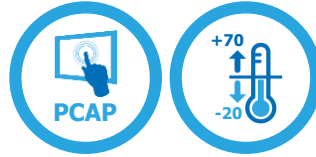
IP65-compatible design
with black frame for
seamless integration of
waterproof solutions



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



Recommended Products: Industrial Touch Panel Kits



Industrial Display Kit
IDK-1000 Series

High Brightness Display Kit
IDK-2000 Series

IDK-1110WP



IDK-1107W



IDK-2110WP

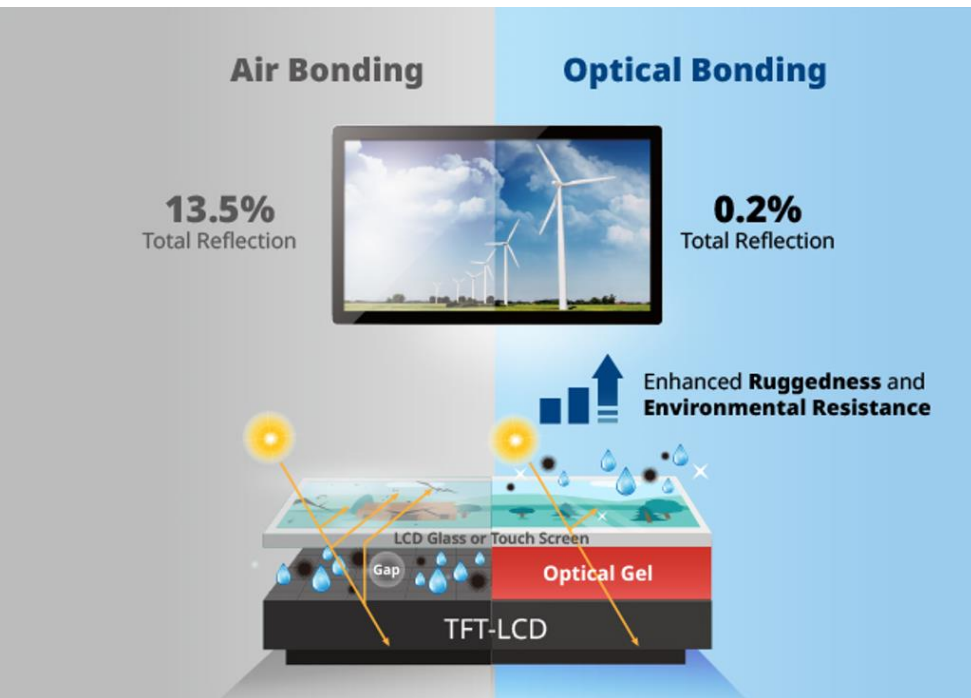


IDK-2107W



Leading Technologies & Customization Capabilities

Optical Bonding



Features

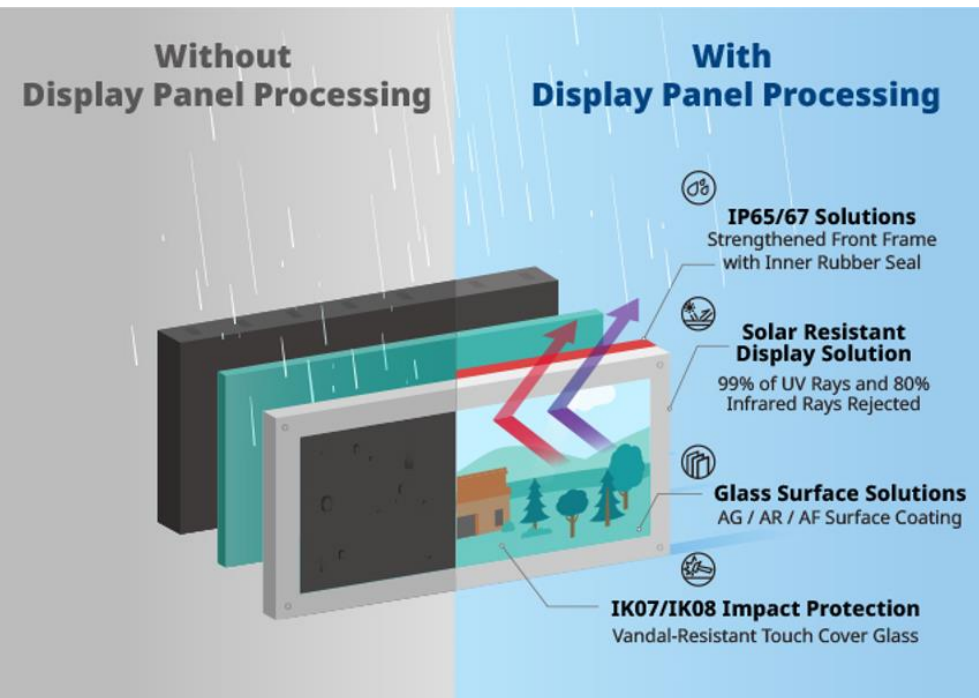
- Laminates LCD panels using optical glue without creating air gaps
- Proprietary materials and processes implemented **in-house**
- Wet and dry bonding processes available, based on required ruggedness

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

Leading Technologies & Customization Capabilities

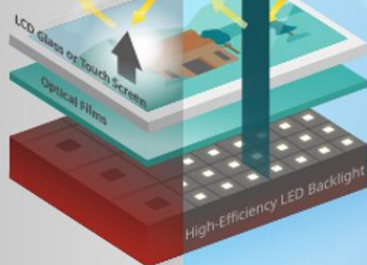
High Brightness

Normal 300 Nits Backlight

Ambient Sunlight Causes
Image Washout



☀ 300 nits



High Brightness Backlight

Greatly Enhances
Sunlight Readability

☀ 1200 nits

Less than 40°C

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

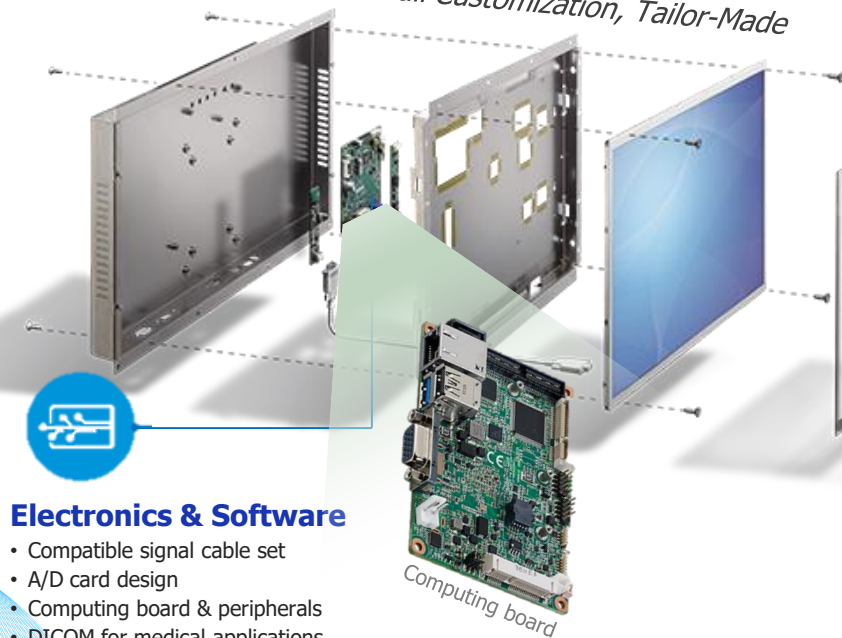
Benefits

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

Leading Technologies & Customization Capabilities

Industrial Display Design-to-Order Service

Full Customization, Tailor-Made



Electronics & Software

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

Computing board



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



Touch & Integration

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

Step Inside Our Factory

Discover In-House Manufacturing & Customization of Industrial Display Systems



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



[View More
Use Cases](#)



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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



[View More
Use Cases](#)



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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/m ²)	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/m ²)	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

Pick & Place

Multi-robotic Fleet Collaboration

- Collaborative Control
- Multi-robot Scheduling
- Cloud & Edge Computing

AGV

Navigation and Path Planning

- Point-to-point Transportation
- Fixed Route
- Standalone Operating

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



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Enabling an Intelligent Planet

Est. **1983**

Headquarters: Taipei, Taiwan

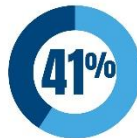
INDUSTRIES SERVEDIndustry 4.0, Industrial IoT,
Embedded Computing,
Medical, Retail, Logistics**\$10.61** MARKET
CAP (USD)
(Feb., 2024)**HONORS & AWARDS**

- No.5 in Best Taiwan Global Brands
- No.17 in Top 50 Global Automation Vendors
- No.9 in Top 100 Industrial IoT Companies
- Red Dot Product Design Award
- iF Product Design Award

Interbrand**CONTROL****WORLD'S LARGEST
IPC COMPANY**

Advantech IPC WW Market Share

- Advantech
- Other IPC Companies

Source: OMDIA – Market Share estimates for
Industrial PCs: World, 2022 Edition**\$2.07B** 2023
REVENUE
(USD)**KEY ECO-SYSTEM PARTNERS**

intel

Microsoft



Micron

AMD



arm

NXP

Qualcomm

MEDIATEK

and more...

QUALITY SYSTEMS IN PLACE

- ISO9001
- ISO14001
- ISO13485
- ISO17025
- ISO27001
- ISO45001
- TL9000
- ISO50001
- RoHS
- WEEE
- SONY GP
- REACH

1.8 MILLION+ sq. ft.**MANUFACTURING PLANTS**

Linkou, Taiwan



- 9 SMT lines, 16 system lines
- Engineering sample services
- Complex product lines
- Flexible & quick production

Kunshan, China



- 12 SMT lines, 13 system lines, 6 chassis lines
- Chassis design & production
- Mature product lines
- Cost-effective production

Nogata, Japan



- 4 SMT lines, 1 system line
- Japan design center, CTOS service, logistics center, repair center

WORLDWIDE OFFICES

Manufacturing	3
On-site service	4
Design centers	11
CTOS centers	16
Repair centers	17
Logistics centers	20

More than 90 offices globally!

8800+
EMPLOYEES

Transform Your Vision into Reality

Advantech is a leading provider of innovative products, services, and solutions. We offer comprehensive system integration, hardware, software, customer-centric design services, embedded systems, and global logistics support. We work closely with our partners to provide complete solutions for a wide range of applications in different vertical segments.

Ready to take the next step but unsure which industrial display solution best fits your applications? Contact us now to discuss your specific requirements or to get more information!



Sales Inquiry



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