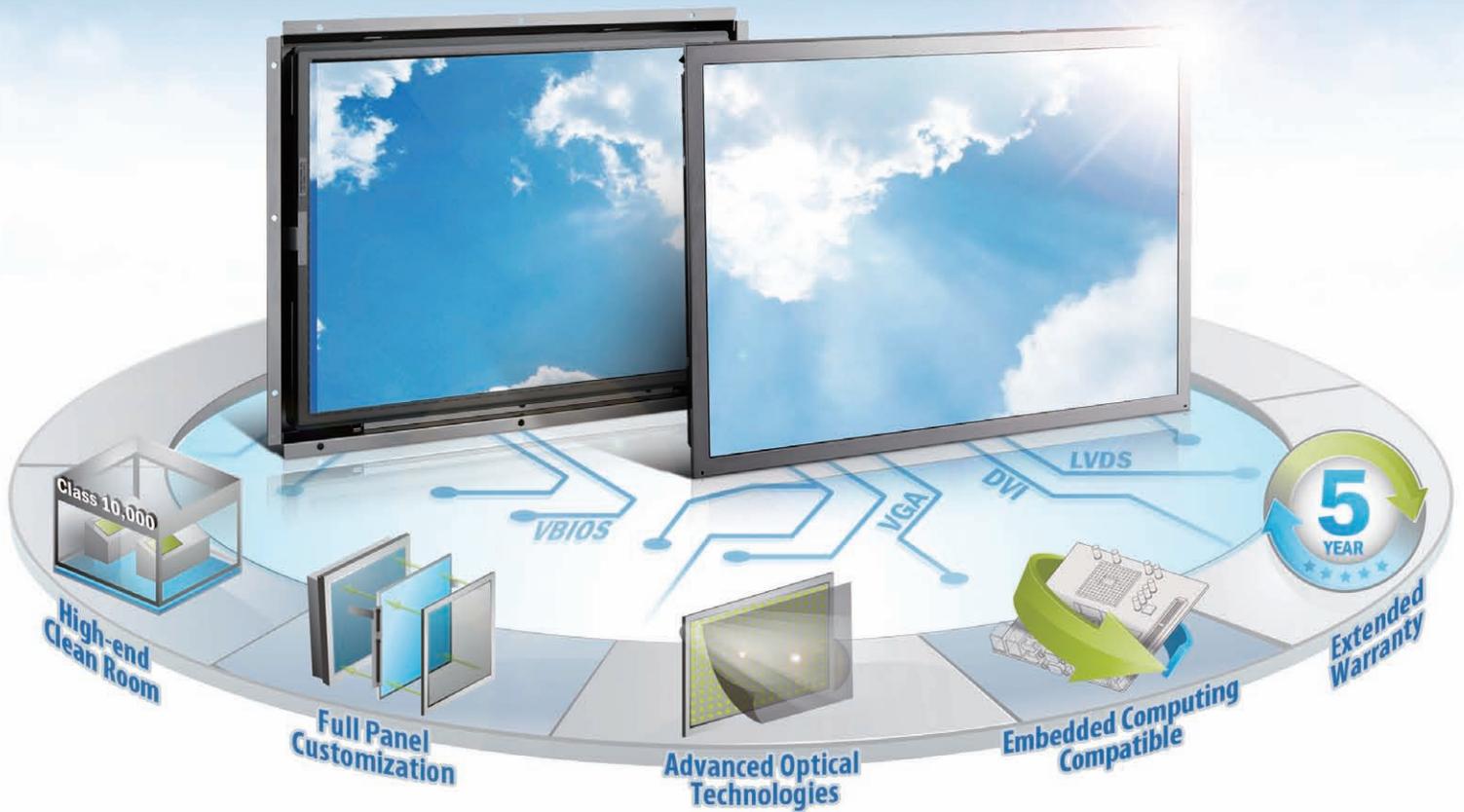# Industrial Display Solutions
Seamless Integration with Embedded Platforms

╱ **Core Values and Technologies**

╱ **Industrial Display Kit**

╱ **Open Frame Monitor**

╱ **Digital Signage Display**

╱ **Case Studies**

Class 10,000

VBIOS

VGA

DVI

LVDS

5 YEAR

High-end
Clean Room

Full Panel
Customization

Advanced Optical
Technologies

Embedded Computing
Compatible

Extended
Warranty

ADVANTECH **Industrial
Display Solutions**

www.advantech.com

Advantech Industrial Display Solutions

Advantech provides integrated industrial display solutions to deliver faster time-to-market for embedded system integrators. Not merely a hardware provider, Advantech also develops value-added complete solutions for a wide array of industrial display applications. Most important of all, Advantech provides compatible display solutions with embedded platforms.

ADVANTECH Industrial Display Solutions

Seamless Integration with Embedded Platforms

Full Integration Flexibility
Advantech provides comprehensive display products with different levels of integration. From pure industrial grade LCD panels, semi-integrated industrial monitors to front mount monitors, we offer full integration flexibility for different application needs.

Compatible Solutions
All displays are tested to work perfectly with Advantech embedded platforms with consolidated LVDS cables, ready V-BIOS setting and comprehensive touch driver support for all OS systems.

Value-added Solutions
Advantech has developed our in-house display technologies and Class 10,000 LCD cleanroom to deliver more value-added solutions for customers. These solutions include optical bonding, versatile touchscreen integration, high brightness and sunlight readable solutions.

Core Competency and Leading Technologies

Optical Bonding
A cover glass is directly affixed onto the LCD panel with optical glue to eliminate air gaps in between. The optical bonding solution reduces the reflectance to 0.2% and increases the contrast ratio by 10%, thus enhancing display sunlight readability. The technology can be applied to touch screens and AR glass for increased ruggedness.

High Brightness
Advantech designs low-power and highly efficient LED backlights with a combination of optical films to enhance display brightness up to 2000 nits. As a result, our solutions not only provides excellent sunlight readability and low power consumption, but also have low thermal profiles, with LCD surface temperatures below 40°C.

Sunlight Readable
The cost efficient sunlight readable solution laminates an anti-reflective film onto the LCD panel thus reducing reflectance to 2%, without needing mechanical changes and causing no power or heat loss.

Touch screen Integration
Advantech offers versatile touch screen integration services including resistive, capacitive, and projected capacitive touch technologies.

High-end Cleanroom and Capacity

Advantech is committed to the development of industrial display technologies and has built a Class 10,000 LCD clean room to develop our capabilities. With monthly capacity of 30,000 pieces and our in-house capabilities, we can bring high add-on value, cost-efficiency, and higher quality features to our products. Moreover, our LCD clean room is committed to the highest quality and reliability of our products and services. All of these manufacturing and solutions are processed in our Class 10,000 clean room with ISO certification. Among core display technologies, Advantech focuses on sunlight readable, ultra high brightness, optical bonding, and LCD repair capabilities. We also provide on-demand customization services and tailor-made industrial display solutions to fit and fulfill all customers' application needs.

ISO 9001 14001 Certified

5-Year Extended Warranty and Repair Services

5 YEAR

Advantech promises to provide long-term commitment to customers with an industry-leading warranty and services. We have designed a series of extended warranty service packages so customers can choose the right package with the right budget. In addition to the 2-year standard warranty, Advantech offers an extended warranty up to 5 years. Moreover, Advantech has built a dedicated technical team to support LCD display repair services. Our repair services cover drivers, ICs, polarizers, and backlights, all of which help prolong usable product lifespan.

Product Line-up

Industrial LCD Panels	Ultra High Brightness LCDs	Ultra Slim Open Frame Monitors

IDK-1000 Series
- 5.7"~21.5" size options
- Indoor applications
- LVDS signal interface

IDK-2000 Series
- 8.4"~31.5" size options
- Outdoor applications
- LVDS signal interface

IDS-3000 Series
- 6.5"~19" size options
- DVI/VGA interface
- Rear/VESA mounting

Digital Signage Displays	Stretched Digtal Signage Displays

DSD-3000 Series
- 32", 42", 55" size options
- HDMI/DVI/VGA interface
- Wall mount

DSD-5000 Series
- 28"(16:3), 38"(16:4.5) size options
- DVI/VGA interface
- Wall mount

Industrial Display Kits
IDK-1000/IDK-2000 Series

The Advantech industrial display kit series provides 5.7"~ 31.5" industrial grade LCD panels, which are developed specially to work with all Advantech embedded boards. To better serve our customers, Advantech provides two product offerings including IDK-1000 and the ultra high brightness IDK-2000 series to fulfill different application needs. Advantech also provides flexible customization services as follows: optical enhancement solutions, and LVDS cable customization, as well as on-demand technical support and panel repair services.
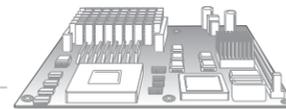
IDK-1000 Series
• 5.7"~21.5" options
• 200~450 nits brightness
• Resistive/Projected Capacitive Touch solutions
• LVDS signal interface

IDK-2000 Series (Outdoor Applications)
• 8.4"~31.5" options
• 1200-nit ultra high brightness
• Wide temperature support
• Optional resistive touch solution
• Optional auto-dimming function
• LVDS signal Interface

Compatible Solutions with Embedded Boards

Advantech provides helpful tools and services for System Integrators to choose seamless display solutions with Advantech embedded boards. We provide compatible cables, appropriate VBIOS settings and touch controller drivers for different OS platforms so system developers don't have to configure everything themselves and can focus their design efforts on adding their own core value. A smart selection wizard "Build Your Display" that can help you quickly find appropriate cable configurations is now on the Advantech website:
http://www.advantech.com/buildyourdisplay

Consolidated LVDS Cable Design
• 20-pin and 40-pin on board
• Customizable cable length

Ready Video BIOS Setting
• Compatibility testing
• VBIOS customization

Touch Driver Support
Supports versatile OS including all Windows and Linux

Smart Auto-Dimming Solution

Power management is an important issue for outdoor applications that run 24/7. IDK-2000 series not only consumes 20% less power than competing models but is also designed with a smart auto-sensor on the LED backlight. The display can automatically adjust its brightness to the external environment, thus significantly saving energy up to 50%.

Flexible Optical Enhancement Solutions
• Anti-reflection film lamination
• Optical bonding for harsh environment
• Tempered glass for protection

Ultra High Brightness Display for Electric Vehicle Charging System

To help protect the environment, more and more electric vehicles are becoming available on the market, and therefore the demand for electric vehicle charging is also rising. Fast charging systems are designed to deliver fast, reliable charging along well-traveled highways and stations throughout the city. The systems provide fast DC current charges and are usually designed with outdoor enclosures, multiple network communications and point-of-sales options.

Application Requirements

Several electrical vehicle charging stations needed to be installed in busy outdoor locations which would be exposed directly to sunlight. Therefore, clear visibility under strong sunlight was an essential priority. The stations also had to be able to resist fluctuating temperatures, sometimes extreme, with performance and stability unaffected.

Solutions

To solve sunlight readability issues, Advantech selected the IDK-2108, a 8.4" 1200-nit, high-brightness, industrial display kit able to withstand outdoor environmental conditions. The LCD kit solution gave the customer complete flexibility in integrating the device, and let them focus more on their system design. The IDK-2108's wide temperature operation of -20° C ~ 70° C and its low power consumption feature of just 5.35W made the device ideal for any location. IDK-2108 works perfectly with Advantech's wide temperature single board computer MIO-2261. With compatible LVDS and backlight cables, Advantech provides System Integrators with a highly integrated display solution, a foundation for efficient development.

Benefits
• 1200-nit ultra high brightness display provides superior visibility
• LED backlight panel for 20% power saving and environmental protection
• Integrated solution with MIO-2261, plus LVDS and backlight cables
• -20° C ~ 70° C wide range operating temperature support

CompactFlash
SQFlash
COM
Card Reader
LAN
Internet
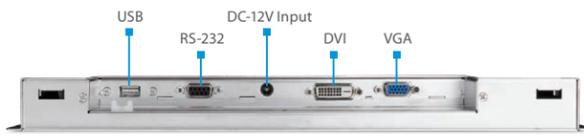USB
Printer
MIO-2261
LVDS
IDK-2108

Ultra Slim Open Frame Monitors
IDS-3000 Series

Advantech Ultra Slim Open Frame Monitor, IDS-3000 Series, provides 6.5"~19" industrial grade monitors with ultra slim and light design. The open front bezel architecture enables flexible and customized face plates for easy re-engineering and is ideal for any embedded applications. Moreover, the integrated brackets on the chassis edges make installation easier and more efficient.

Product Portfolio

USB   DC-12V Input
RS-232   DVI   VGA

USB   DC-12V Input
RS-232   VGA

IDS-3000 Series
• 6.5"~19" options
• DVI/VGA dual signal interface
• -20~60°C wide range of operating temperature
• Resistive touchscreen
• Optional ultra high brightness solution
• Optional Projected Capacitive Touch solution

IDS-3000E Series (Economic Version)
• 10.4"~17" options
• VGA signal interface only
• 0~45°C operating temperature
• Resistive touchscreen
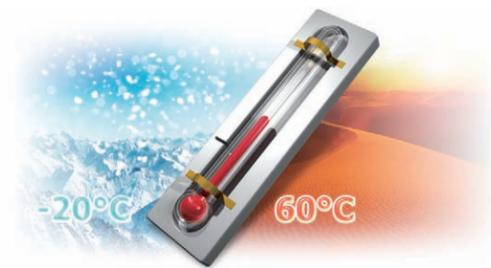• Optional Projected Capacitive Touch solution

Key Features

20%

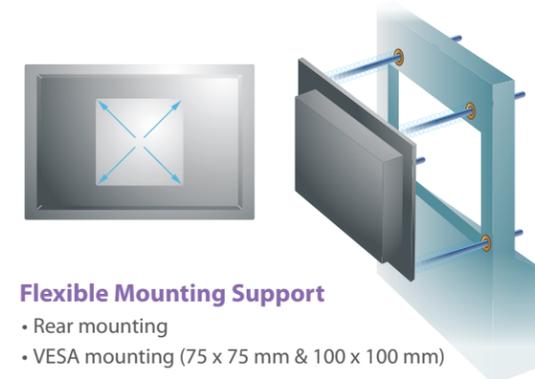### Slim and Light Design
Saving 20 % installation space

Integrated Bracket Design
Enabling efficient installation

-20°C   60°C

Wide Operating Temperature
-20~60°C wide temperature support

Flexible Mounting Support
• Rear mounting
• VESA mounting (75 x 75 mm & 100 x 100 mm)

Slim Open Frame Monitor for Retail Multimedia Kiosk

Multimedia kiosks have been widely used in many public places due to their accessibility and potential to deliver 24/7 service to large numbers of people. Our customer provides mobile phone, on-line and pay-TV services through multimedia kiosks located in many public places, such as retail stores and train stations, to promote its products and services.

Application Requirements

An important aspect of this kiosk enclosure was to promote brand recognition, so the system integrators designed and created a unique ID. The kiosk had to operate 24/7; thus maintenance and durability issues were critical in order to maximize its uptime. Also, the kiosks needed to be placed in different environments: some indoors, some semi- and some fully outdoors. It was crucial the kiosks could be clearly read under strong sunlight conditions as well as operating in a wide range of temperatures. Last but not least, in order to provide better interactivity with customers, a user-friendly touch solution with quick response times was required.

Solutions

Advantech IDS-3115, together with AIMB-252, more than satisfied all the customer's requirements. IDS-3115 uses an industrial grade 15" XGA, 1200-nit LED panel with excellent sunlight readability. Its bezel-less and open-frame architecture allows for customized face plate design and can easily be rear mounted into an enclosure. Its ultra slim and light-weight design optimizes space and makes for efficient system integration. The -20 ~ 60° C wide-range operating temperature is rugged enough to be applied for semi-outdoor and outdoor environments. Finally, a Projected Capacitive Touch solution was applied to bring quick and instant touch response and excellent user feedback experience. IDS-3115 worked perfectly with Advantech's AIMB-252 board, offering a complete ready-to-use, plug and play solution to customers.

Benefits:

• Open frame structure with slim design for easy integration
• 1200-nit LCD panel provides excellent sunlight readability
• Projected Capacitive Touch technology for instant touch response

• -20 ~ 60° C wide range operating temp support for semi-outdoor and outdoor environments
• Integrated bracket for easy installation

CompactFlash

LAN

SQFlash

Camera

LAN

Internet

USB

AIMB-252   **VGA**   IDS-3115   Touch Screen

Digital Signage Displays

Advantech Digital Signage Display series is designed especially for digital signage applications. Our large-format, professional displays are not only attractive, but rugged enough to withstand the constant interactivity inherent in public access venues. Moreover, our digital signage displays can be easily integrated with Advantech ARK-DS series, providing a total solution for digital signage applications. Built to meet all the professional applications, Advantech Digital Signage Displays offer a longer life and a richer digital signage experience.

Product Portfolio

DSD-3000 Series
Digital Signage Display Series

• 32", 42", 55" LCD size options
• Optical multi-touch option (Win7 & Win8)
• Wall mount solution (200 x 200 mm)
• Wide viewing angle
• Large format and high resolution
• Fanless design

DSD-5000 Series
Stretched Digital Signage Display Series

• 28" and 38 " with super wide ratio of 16:3 and 16:4.5
• Perfect for space limited applications
• High brightness: 700 nits and 800 nits
• Multiple signal interfaces of DVI/VGA
• RS232 remote control available
• Wall mount solution (200 x 100 mm)
• Fanless design

Key Features

Easy Installation
Supports wall mount solution

Vertical Image Capability
Supports horizontal/vertical installation

Better Image and Low Power(DSD-5000)
Compared to LED displays, stretched signage display delivers better resolution and requires 50% less power.

Recommended Signage Media Players

ARK-DS306
AMD G-Series Signage Media Player

• AMD G-series T40N (DC 1.0 GHz) + A50M FCH, 1 x DDR3 SO-DIMM, supports up to 4 GB
• DirectX® 11, 2D/3D acceleration, dual display: HDMI, VGA
• Built-in Mini PCIe slot for easy expansion e.g. WiFi

ARK-DS520
Advanced (ION2 based) Graphics Signage Media Player

• Integrated NVIDIA GT218 (ION2) graphic module for Full HD playback
• Rich video I/O combination supports dual display
• Intel® Atom™ D525 dual-core (fan) or Intel® Atom™ N455 single-core process (fanless)

ARK-DS762
3rd Generation Intel® Core™ i7/i5/i3 Processor-based Signage Media Player

• 3rd generation Intel® Core™ i7/i5/i3 processor-based up to 45W
• Supports for Direct X11, and OCL 1.1
• Independent display: 3 x HDMI

Case Study
Interactive Digital Signage in a Shopping Mall

Nowadays, digital signage is everywhere. It has become a popular marketing tool which can provide real time information, advertising and messages in rich multimedia formats to attract consumers. Interactive digital signage allows consumers to interact with the signage to enhance customer engagement and in-store sales. Among all public places, shopping malls are one of the ideal venues to utilize interactive digital signage.

Application Requirements

Since this interactive digital signage was to be deployed in a mall where it is crowded and noisy, the digital signage monitor had to be large enough, with good image quality, to draw people's attention. Moreover, fast, yet accurate touch responses were also required to build a reliable interactive interface. Lastly, the signage had to be rugged enough to withstand constant use and interactivity. Thus, reliability and longevity were key.

Solutions

Advantech DSD-3032 and ARK-DS520 were selected for the application. DSD-3032 provides 32" large format monitors supporting 1366 x768(HD) resolution and unparalleled image quality with configurable I/O. Unlike commercial grade monitors, the 32" digital monitor is designed with a metal frame and is fanless. Moreover, DSD-3032 is equipped with optical multi-touch solution which provides accurate 2-point touch with 4 mm tempered glass and anti-glare feature. Its versatile signal interface including HDMI, DVI, and VGA offers customers a wide range of signal options. The monitor also provides RS-232 and RS-485 for OSD (On Screen Display) remote control. Finally, DSD-3032 is fully integrated with ARK-DS520 providing our customer with a total solution for their digital signage applications.

Benefits:

• Optical multi-touch solution
• Wide viewing angle of 176°/176°
• Versatile signal interfaces of HDMI/DVI/VGA
• Wall mount solution with 200 x 200 mm

CompactFlash

SQFlash

Internet

LAN

ARK-DS520

HDMI

DSD-3032

Mini PCIe

WiFi Module

HD Audio Out

Audio

Product Selection

Industrial Display Kits IDK-1000 Series

Model	IDK-1105	IDK-1106	IDK-1107	IDK-1108	IDK-1110	IDK-1112	IDK-1115	IDK-1115P	IDK-1117	IDK-1119	IDK-1121
Size	5.7"	6.5"	7"	8.4"	10.4"	12.1	15"	15"	17"	19"	21"
Resolution	640 x 480	640 x 480	1024 x 600	800 x 600	800 x 600	800 x 600	1024 x 768	1024 x 768	1280 x 1024	1280 x 1024	1920 x 1080
Brightness	500 nits	800 nits	500 nits	450 nits	400 nits	450 nits	400 nits	400 nits	350 nits	350 nits	300 nits
Contrast Ratio	250:1	600:1	700:1	600:1	700:1	700:1	700:1	700:1	1000:1	1000:1	5000:1
Viewing Angle (U/D/L/R)	55°/45°/70°/70°	70°/70°/80°/80°	70°/75°/75°/75°	80°/60°/80°/80°	60°/80°/80°/80°	65°/75°/80°/80°	70°/70°/80°/80°	70°/70°/80°/80°	80°/80°/85°/85°	80°/80°/85°/85°	89°/89°/89°/89°
Signal Interface	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS	2 channel LVDS	2 channel LVDS	2 channel LVDS
Touchscreen	4W resistive	4W resistive	4W resistive	4W resistive	4W resistive	5W resistive	5W resistive	Projected Capacitive	5W resistive	5W resistive	5W resistive
LED Backlight MTBF	30K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs
Operating Temperature	-20~70 °C	-10~60 °C	-10~60 °C	-10~60 °C	-10~60 °C	-20~70 °C	-20~70 °C	-20~70 °C	-20~70 °C	0~50 °C	0~50 °C
Outline Dimension (mm)	127 x 98.4 x 9.1	153 x 120 x 13.2	165.5 x 104.44 x 10.52	203 x 142.6 x 10.3	243 x 184 x 10.6	276 x 209 x 11.3	326.5 x 253.5 x 14.4	323.5 x 259.7 x 14.6	358 x 296.5 x 20.9	396 x 324 x 21.7	496.5 x 292.2 x 21.25

High Brightness Display Kits IDK-2000 Series (Outdoor Applications)

Model	IDK-2108	IDK-2110	IDK-2112	IDK-2115	IDK-2117	IDK-2119	IDK-2121	IDK-2131
Size	8.4"	10.4"	12.1"	15"	17"	19"	21.5"	31.5"
Resolution	800 x 600	800 x 600	800 x 600	1024 x 768	1280 x 1024	1280 x 1024	1920 x 1080	1366 x 768
Brightness	1200 nits	1200 nits	1200 nits	1200 nits	1200 nits	1200 nits	1000 nits	1200 nits
Contrast Ratio	600:1	500:1	700:1	700:1	1000:1	1000:1	5000:1	3000:1
Viewing Angle (U/D/L/R)	80°/60°/80°/80°	60°/70°/80°/80°	65°/75°/80°/80°	70°/60°/80°/80°	80°/80°/85°/85°	80°/80°/85°/85°	89°/89°/89°/89°	89°/89°/89°/89°
Signal Interface	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS	2 channel LVDS	2 channel LVDS	2 channel LVDS	1 channel LVDS
Touchscreen	4W resistive	4W resistive	5W resistive	5W resistive	5W resistive	5W resistive	5W resistive	-
LED Backlight MTBF	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs
Operating Temperature	-20~70 °C	-20~70 °C	-20~70 °C	-20~70 °C	0~50 °C	0~50 °C	0~50 °C	0~50 °C
Outline Dimension (mm)	203 x 142.6 x 10.3	236 x 176.9 x 8.5	279 x 209 x 11.3	326.5 x 253.5 x 14.6	358.5 x 296.5 x 18.19	396 x 324 x 21.7	495.6 x 292.2 x 22.25	760 x 450 x 46.9

Smart Selection Wizard for IDK Series

The online "Build Your Display" function is a smart selection wizard that can help you quickly find appropriate cable configurations. With a simple click, you can get a solution package including: embedded board, IDK series, LVDS and backlight cable part numbers, so you can contact an Advantech sales person directly. The online". Build Your Display " wizard is now on the Advantech website:

http://www.advantech.com/buildyourdisplay

Slim Open Frame Monitors IDS-3000 Series

Model	IDS-3106	IDS-3110	IDS-3112	IDS-3115	IDS-3117	IDS-3119
Size	6.5"	10.4"	12.1"	15"	17"	19"
Resolution	640 x 480	800 x 600	800 x 600	1024 x 768	1280 x 1024	1280 x 1024
Brightness	800 nits	400 nits	450 nits	400 nits	350 nits	350 nits
Contrast Ratio	600 : 1	700 : 1	700 : 1	700 : 1	800 : 1	1000 :1
Viewing Angle (U/D/L/R)	70°/70°/80°/80°	60°/80°/80°/80°	65°/75°/80°/80°	70°/70°/80°/80°	80°/80°/85°/85°	80°/80°/85°/85°
Signal Interface	DVI/VGA	DVI/VGA	DVI/VGA	DVI/VGA	DVI/VGA	DVI/VGA
Touchscreen	4W resistive	5W resistive	5W resistive	5W resistive	5W resistive	5W resistive
LED Backlight MTBF	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs
Operating Temperature	0~50 °C	-20~60 °C	-20~60 °C	-20~60 °C	-20~60 °C	0~45 °C
Outline Dimension (mm)	215 x 160 x 30.5	279.4 x 220 x 30	320.2 x 252 x 30.7	362 x 288 x 32.8	400 x 344.7 x 33.4	438 x 369.7 x 34.3

Digital Signage Displays DSD-3000 Series

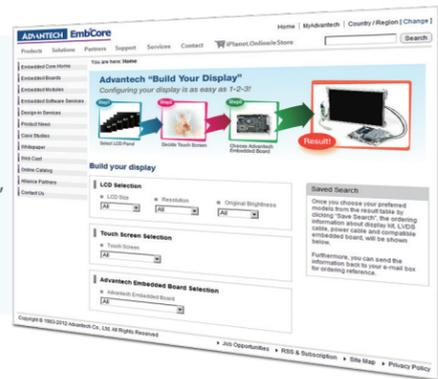| Model	DSD-3032	DSD-3042	DSD-3055
Size	32"	42"	55"
Resolution	1366 x 768	1920 x 1080	1920 x 1080
Brightness	480 nits	450 nits	500 nits
Contrast Ratio	3000 : 1	5000 :1	5000:1
Viewing Angle (U/D/L/R)	88°/88°/88°/88°	88°/88°/88°/88°	89°/89°/89°/89°
Signal Interface	HDMI/DVI/VGA	HDMI/DVI/VGA	HDMI/DVI/VGA
Touchscreen	Optical Touch	Optical Touch	Optical Touch
LED Backlight MTBF	50K hrs	50K hrs	50K hrs
Operating Temperature	0 ~ 35 °C	0 ~35 °C	5 ~35 °C
Outline Dimension(mm)	791.2 x 492.2 x 130	1022.2 x 615.2 x 135.4	1325.4 x 784.4 x 149

Stretched Digital Signage Displays DSD-5000 Series

Model	DSD-5028	DSD-5038
Size	28" (16:3)	38" (16:4.5)
Resolution	1366 x 254	1920 x 538
Brightness	700 nits	800 nits
Contrast Ratio	3000 :1	5000 : 1
Viewing Angle (U/D/L/R)	88°/88°/88°/88°	88°/88°/88°/88°
Signal Interface	DVI/VGA	DVI/VGA
Touchscreen	-	-
LED Backlight MTBF	50K hrs	50K hrs
Operating Temperature	0 ~40 °C	0 ~40 °C
Outline Dimension (mm)	736.6 x 167.3 x 43.6	980.9 x 303.2 x 43.6

Advantech Global Services and Support

Industrial grade products at competitive cost

Strict revision control and design reliability

Global logistics and RMA services with local support

Product longevity up to 3-5 years and superior warranty/service options

Customized embedded OS and BIOS services

Partnership with multiple software companies

Regional Service & Customization Centers

China
Kunshan
86-512-5777-5666

Taiwan
Taipei
886-2-2792-7818

Netherlands
Eindhoven
31-40-267-7000

Poland
Warsaw
48-22-33-23-740 / 741

USA
Milpitas, CA
1-408-519-3898

Worldwide Offices

Greater China

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Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Chengdu	86-28-8545-0198
Hong Kong	852-2720-5118

Taiwan	0800-777-111
Rueiguang	886-2-2792-7818
Yang Guang	886-2-2792-7818
Xindian	886-2-2218-4567
Taichung	886-4-2378-6250
Kaohsiung	886-7-229-3600

Asia Pacific

Japan	0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-6-6267-1887

Korea	080-363-9494
Seoul	82-2-3663-9494

Singapore	
Singapore	65-6442-1000

Malaysia	1800-88-1809
Kuala Lumpur	60-3-7724-3555
Penang	60-4-397-3788
	60-4-397-4188

Indonesia	
Jakarta	62-21-769-0525

Thailand	
Bangkok	66-2-248-3140

India	1800-425-5070
Bangalore	91-80-25450206

Australia	1300-308-531
Melbourne	61-3-9797-0100
Sydney	61-2-9476-9300

Europe

Europe	00800-2426-8080

Germany	
Münich	49-89-12599-0
Hilden	49-2103-97-885-0

France	
Paris	33-1-4119-4666

Italy	
Milano	39-02-9544-961

Benelux & Nordics	
Breda	31-76-5233-100
Roosendaal	31-165-550-505

UK	
Reading	44-0118-929-4540

Poland	
Warsaw	48-22-33-23-740/741

Russia	8-800-555-01-50
Moscow	7-495-232-1692

Americas

North America	1-800-866-6008
	1-888-576-9668
Cincinnati	1-513-742-8895
Milpitas	1-408-519-3898
Irvine	1-949-420-2500

South America	
Mexico	52-55-6275-2777

Brazil	0800-770-5355
São Paulo	55-11-5592-5355

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Enabling an Intelligent Planet

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