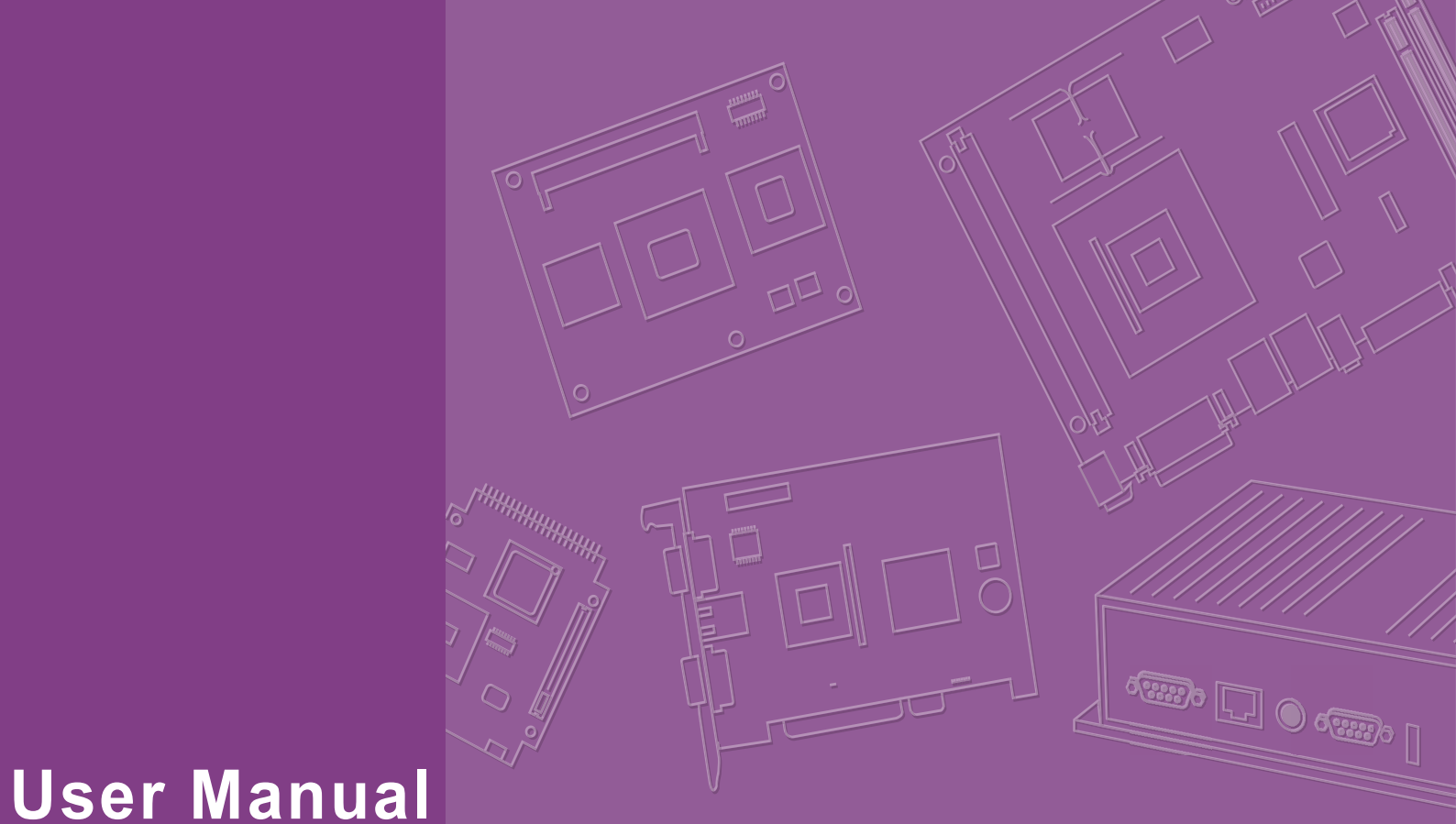




# User Manual

## DSD-5028 Series

28" Industrial Stretched Signage  
Display Monitor

**ADVANTECH**

*Enabling an Intelligent Planet*



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## Acknowledgments

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## Product Warranty (2 years)

Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe your product to be defective, follow the steps outlined below.

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain a return merchandise authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and a proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number clearly on the outside of the package and ship the package prepaid to your dealer.



# Declaration of Conformity

## CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This type of cable is available from Advantech. Please contact your local supplier for ordering information.

Test conditions for passing also include the equipment being operated within an industrial enclosure. In order to protect the product from damage caused by electrostatic discharge (ESD) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

## FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

## FM

This equipment has passed FM certification. According to the National Fire Protection Association, work sites are categorized into different classes, divisions, and groups based on hazard considerations. This equipment is compliant with the specifications for Class I, Division 2, Groups A, B, C, and D indoor hazards.

# Technical Support and Assistance

1. Visit the Advantech website at [www.advantech.com/support](http://www.advantech.com/support) to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before calling:
  - Product name and serial number
  - Description of your peripheral attachments
  - Description of your software (operating system, version, application software, etc.)
  - A complete description of the problem
  - The exact wording of any error messages



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## Warnings, Cautions, and Notes

**Warning!** *Warnings indicate conditions that if not observed can cause personal injury!*



**Caution!** *Cautions are included to help prevent hardware damage and data losses. For example,*



*“Batteries are at risk of exploding if incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.”*

**Note!** *Notes provide additional optional information.*



## Document Feedback

To assist us with improving this manual, we welcome all comments and constructive criticism. Please send all feedback in writing to [support@advantech.com](mailto:support@advantech.com).



# Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect the equipment from all power outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
5. Protect the equipment from humidity.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
8. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage.
12. Never pour liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If any of the following occurs, have the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated the equipment.
  - The equipment has been exposed to moisture.
  - The equipment is malfunctioning, or does not operate according to the user manual.
  - The equipment has been dropped and damaged.
  - The equipment shows obvious signs of breakage.
15. Do not leave the equipment in an environment with a storage temperature of below -20 °C (-4 °F) or above 60 °C (140 °F) as this may damage the components. The equipment should be kept in a controlled environment.
16. CAUTION: Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
17. In accordance with IEC 704-1:1982 specifications, the sound pressure level at the operator's position does not exceed 70 dB (A).

DISCLAIMER: These instructions are provided according to IEC 704-1 standards. Advantech disclaims all responsibility for the accuracy of any statements contained herein.





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# Chapter 1

## Overview

Sections include:

- Introduction
- Features
- Applications
- Product Photos
- Naming Rule



---

## 1.1 Introduction

The Advantech DSD-5028 are a series of innovative industrial stretched signage display monitor solutions that come in unique sizes/shapes and display resolution. DSD-5028 is designed to meet the needs of customers who want quick and easy integration with Advantech Embedded Box Computers — including the ARK and DS lines.

## 1.2 Features

- 28" (16:3) 1920 x 360, high resolution stretched display with LED backlight
- High brightness of 700 cd/m<sup>2</sup>
- High Contrast ration (1:1200)
- 0 ~ 45 °C (32 ~ 104 °F) operating temperature support
- Ultra wide viewing angle (178/178)
- Multi-signal interface with VGA/DVI/HDMI
- RS232 remote control available
- Audio output
- Wall mount: 200 x 100 mm (7.87 x 3.9 in)
- Fanless design

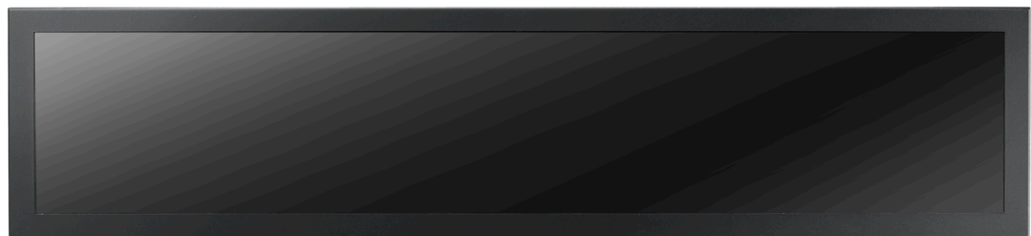
## 1.3 Applications

Application scenarios — public information displays, especially for narrow, limited public space applications:

- Bus/metro - route maps
- Station information displays (advertisements or schedules)
- Signage displays placed in elevators
- Advertisements in cafeterias and public venues
- Entertainment/gaming
- Public advertisement machines

## 1.4 Product Photos

**Front view**



Rear View



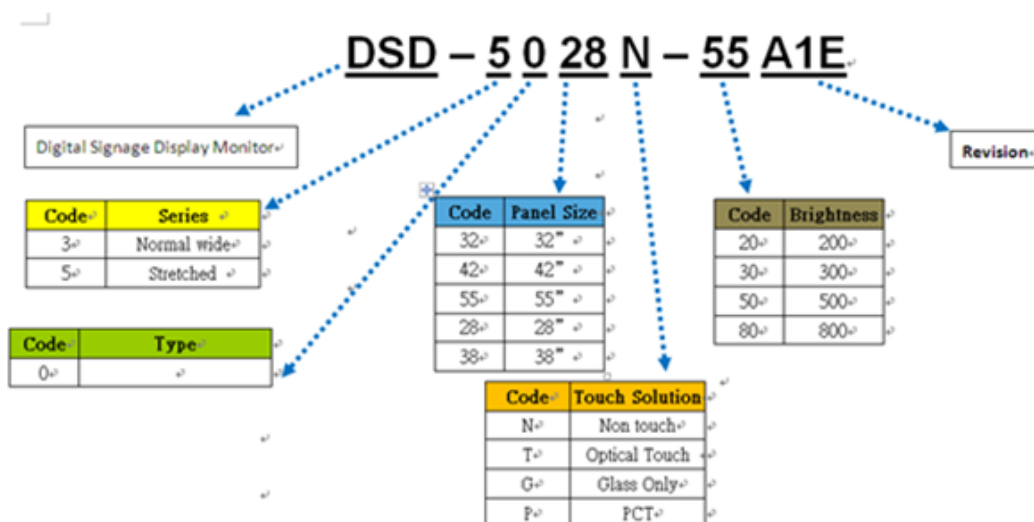
I/O (left/right) View



Keys View



## 1.5 Naming Rule





# Chapter 2

## System Setup

Sections include:

- Specifications
- Dimensions
- Accessory Packing



## 2.1 Specifications

**Note!** The DSD-5028 series offers the following features and meets precise specifications.



Unless otherwise noted, all the information listed below is subject to change without prior notification.

|             | Model                 | DSD-5028                                                                                                                                         |
|-------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Display     | Size                  | 28" Stretched LED panel                                                                                                                          |
|             | Resolution            | 1920 x 360 (16:3)                                                                                                                                |
|             | Viewing Angle         | 178° (H) /178°(V)                                                                                                                                |
|             | Brightness            | 700 (cd/m <sup>2</sup> )                                                                                                                         |
|             | Color Support         | 16.7 M colors                                                                                                                                    |
|             | Contrast Ratio        | 1200:1                                                                                                                                           |
|             | Response Time         | 6.5 [msec]                                                                                                                                       |
|             | Backlight Life        | 50,000 hrs                                                                                                                                       |
| Environment | Operating Temperature | 0~ 45 °C (32 ~ 113 °F)                                                                                                                           |
|             | Storage Temperature   | -20 ~ 60 °C (-4 ~ 140 °F)                                                                                                                        |
|             | Humidity              | 80%RH Max. (Ta ≤ 45° C), non-condensing                                                                                                          |
|             | Vibration             | 5-500Hz, 0.002G <sup>2</sup> /Hz, 1 Grms, 1 hour for X,Y and Z per axis                                                                          |
| System      | I/O                   | Input:1 x HDMI, 1 x VGA; 1 x DVI-D; 1 x RS232 (reserved for remote control); 24V DC power din<br>Output: 1 x Audio output; 12V DC Jack (Max 12W) |
|             | OSD                   | Source/Enter, Menu, Up, Down, Left, Right, Power on/off                                                                                          |
|             | Power                 | 120W power adapter, with AC100-240V input and DC +24V @ 5A output                                                                                |
|             | EMC Compliance        | CE/FCC/CCC                                                                                                                                       |



## 2.2 Dimensions

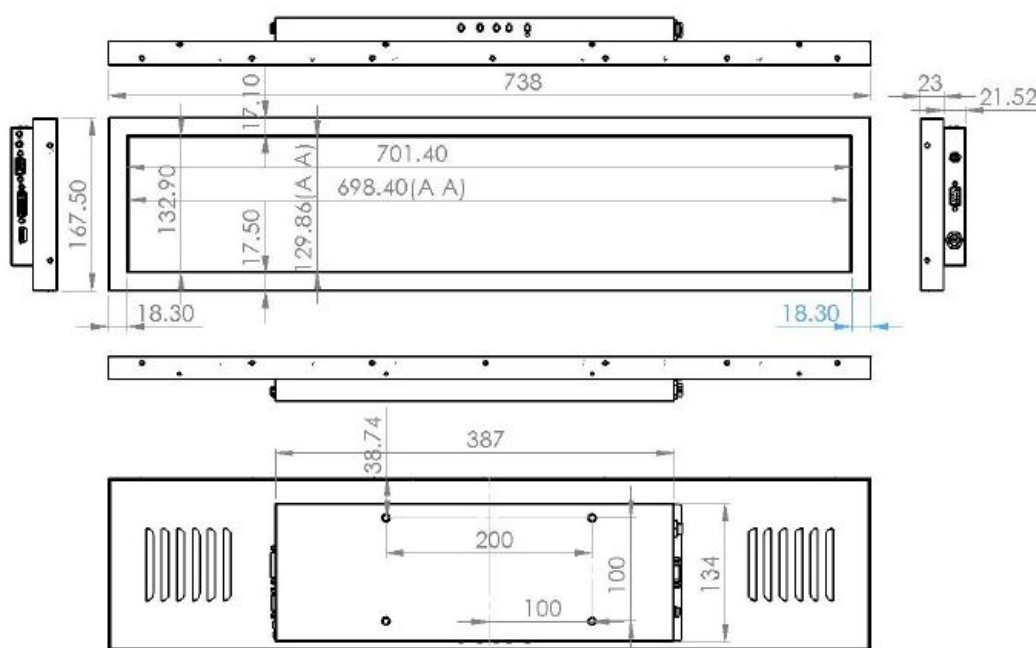


Figure 2.1 DSD-5028 Series Dimensions

## 2.3 Packing List

- 1 x 120W DC24V power adapter
- 1 x DVI cable 2.0 meter
- 1 x HDMI to DVI cable(1.5m)
- 1 x RS232 9P/9P 1.8M M/F cable (optional order)
- 1 x Power cord (optional order)

**Note!** The above accessory cables are subject to change, depending on SKU.



## 2.4 Power Output

DSD-5028 supports 12Vdc output, maximum loading is 12W, which is effective only if the monitor is turned on.



# Chapter 3

## OSD Key Functions

Sections include:

- OSD Functions



## 3.1 OSD Functions (DSD-5028 Series)

Ensure that content design is based on a resolution of 1920 x 360. The OSD key of the DSD-5028 display (1920 x 360 resolution) was selected to illustrate the examples below:

| Button                       | Description                                                                    |
|------------------------------|--------------------------------------------------------------------------------|
| Power                        | Turns the monitor power ON or OFF                                              |
| Menu                         | Activates the OSD menu<br>Exits menu                                           |
| Auto                         | Automatically adjusts the clock, phase<br>H-position and V-position            |
| Value Up/Down/Left/<br>Right | Moves the selector to option<br>Changes the gauge value of the selected option |

| LED Function |        |
|--------------|--------|
| DPMS ON      | Blue   |
| DPMS STANDBY | Orange |

## 3.2 RS-232 Remote Control

### 3.2.1 Configuration

BAUDRATE: 9600

PARITY: NONE

BITS: 8

STOPBIT: 1

### 3.2.2 Commands

| KEY       | COMMAND             |
|-----------|---------------------|
| MENU      | 0x69 0x97 0x01 0x00 |
| LEFT      | 0x69 0xA7 0x01 0x00 |
| RIGHT     | 0x69 0xB7 0x01 0x00 |
| EXIT      | 0x69 0xD6 0x01 0x00 |
| HDMI      | 0x69 0x67 0x01 0x00 |
| VGA       | 0x69 0xDA 0x01 0x00 |
| DVI       | 0x69 0xDB 0x01 0x00 |
| POWER ON  | 0x69 0xD1 0x01 0x00 |
| POWER OFF | 0x69 0xD0 0x01 0x00 |
| MUTE_ON   | 0x69 0xC1 0x01 0x00 |
| MUTE_OFF  | 0x69 0xC0 0x01 0x00 |
| VOL_UP    | 0x69 0xC2 0x01 0x00 |
| VOL_DOWN  | 0x69 0xC3 0x01 0x00 |



# Appendix A

## Troubleshooting



---

## A.1 Introduction

If you are experiencing trouble with this monitor, or if it fails to operate correctly, please refer to the instructions below before calling the Advantech service center. If you are unable to correct the faults using the instructions below, please contact the distributor or the service/repair center.

## A.2 Troubleshooting

### No image appears on screen

- Check to see that all the I/O and power connectors are installed correctly and connected. (Refer to 1.4, IO (left, right) view.)
- Make sure that none of the connectors are crooked, broken, or loose.
- Make sure that the OSD power on the LED is turned on.
- Make sure that brightness is not set to minimum.
- Make sure that the screen resolution is set to the correct setting for the type of LCD, and that the setting does not exceed the resolution specified for the particular model of LCD.

### The image is incorrectly displayed, or the full screen image does not appear

- Please make sure the screen resolution on the motherboard is correct.

### The position of screen is not in the center

- Adjust the H-position and V-position or perform "Auto".

### Out of Range

- When the message "Out of Range" appears onscreen, it indicates that the signal of the computer is not compatible with the LCD display; i.e. the resolution exceeds the specified resolution for the LCD.
- Adjust the BIOS setting to match the correct resolution.

### No signal

- The display is powered on, but can neither receive nor display any signal from the computer. Check all power switches, power cables and VGA signal cables to ensure that all are connected correctly on both sides.

### Going to sleep

- If the system goes to sleep, then the display has either been set to power-saving mode, or the display is experiencing a sudden signal disconnection problem. For the former, check the BIOS system settings, and/or Windows configuration. For the latter, check power cable connections to computer on both sides.







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## [www.advantech.com](http://www.advantech.com)

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