



User Manual

DSD-3000 Series

Signage Display

ADVANTECH

Enabling an Intelligent Planet

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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

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.

Technical Support and Assistance

1. Visit the Advantech website at 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

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 non-essential 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.

Packing List

- 1 x US power cord (1.8 m)
- 1 x HDMI cable (1.8 m)
- 1 x USB cable (1.8 m)
- 1 x IR remote controller with batteries.

Note! The accessory cables listed above are subject to change for different SKUs.



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 this equipment in an environment with a storage temperature of below -20°C (-4°F) or above 55°C (140°F). This may damage the equipment. The equipment should be stored in a controlled environment.
16. There is a risk of a new battery 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 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 should 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

- Overview
- Features
- Applications
- Product Photographs
- Naming Conventions

1.1 Overview

The Advantech DSD-3000 series comes equipped with a 32"/42"/55" industrial-grade digital signage monitor. This series is also available with a flexible stand base (optional) and optical touch functions. The DSD-3000 series systems offer superior performance for semi-outdoor and indoor applications. This manual is intended for the DSD-3032N/T, DSD-3043N/T, and DSD-3055N/T models.

1.2 Features

- Backlight: LED
- Low power consumption
- Quick response time
- Wide viewing angle of 178 / 178 degrees
- Speaker: 10 W x 2
- Backlight life time: 50,000 hrs
- Display colors: 16.7M colors up to 1073M
- Touch options: Optical touch and dual-touch functionalities supported
- Fanless design

1.3 Application Scenarios

- Public information displays
- Airport flight information displays
- Public advertising
- Entertainment / gaming

1.4 Product Photographs

Front View



Rear View



Note! *Handles are not available for the DSD-3032N/3032T models.
Additionally, the VESA mounting dimensions vary between models.*



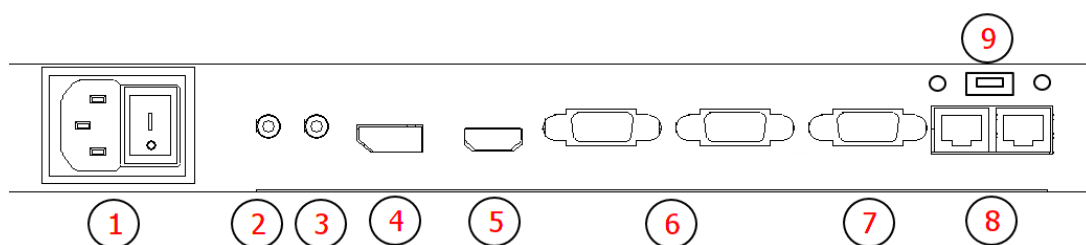
I/O (Underside) View



Note! *The I/O ports differ between the various models in the DSD-3000 series.
Please refer to the specifications sheet for further details.*

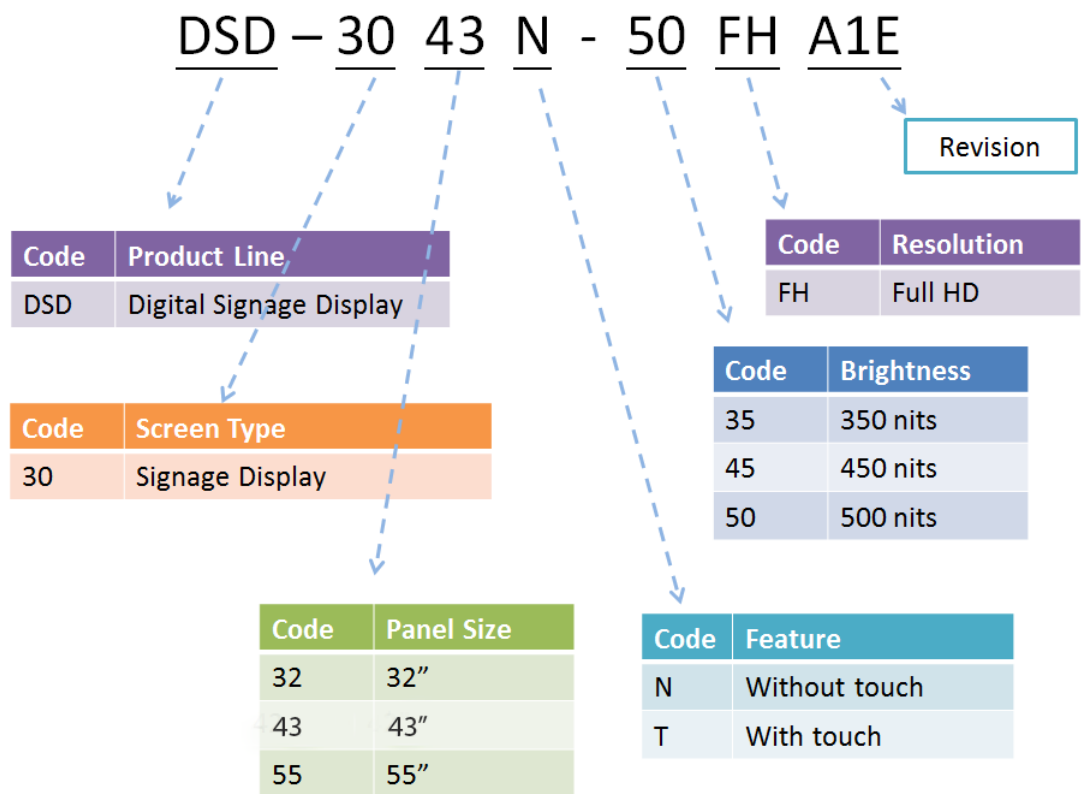


I/O Interface



- | | | | |
|----|--------------------------|----|-------------------------------|
| 1. | Power button / AC socket | 6. | VGA In/Out |
| 2. | Audio Out (Line-Out) | 7. | RS232 |
| 3. | Audio In | 8. | RS485 |
| 4. | DisplayPort | 9. | Touch USB (Touch Series Only) |
| 5. | HDMI | | |

1.5 Naming Conventions



Chapter 2

System Setup

- Specifications
- Dimensions
- Packing List
- Attaching and Removing a Table Stand (Optional)

2.1 Specifications

2.1.1 DSD-3032

	Model	DSD-3032N-35FHA1E	DSD-3032T-35FHA1E
Display	Display Size	32" LED backlight panel	32" LED backlight panel
	Resolution	1920 x 1080 (F-HD)	1920 x 1080 (F-HD)
	Viewing Angle (U/D/L/R)	89°/ 89°/ 89°/ 89°	89°/ 89°/ 89°/ 89°
	Brightness	350 (cd/m2)	350 (cd/m2)
	Contrast Ratio	3000:1	3000:1
	Response Time	8 ms	8 ms
	Colors	16.7M	16.7M
	Backlight Life	50,000 hrs	50,000 hrs
System	Power Input	100 ~ 240 V	100 ~ 240 V
	Consumption	80 W	80 W
	Interface	VGA, HDMI, Display-Port	VGA, HDMI, Display-Port
	OSD Control Function	RS232, RS485, remote control	RS232, RS485, remote control
	OSD Language	Simplified Chinese, Traditional Chinese, English, Japanese, French, German, Spanish	
	Source Auto Detect	Yes	Yes
Environment	Operating Temperature	5 ~ 45°C	
	Storage Temperature	-20 ~ 55°C	
	Humidity	20 ~ 80% RH	
Mechanical	Net Weight	14 kg	17 kg
	Gross Weight	17 kg	20 kg
	Dimensions (mm)	743.6 x 438.11 x 73	774.4 x 474.79 x 79.9
	Packing (mm)	895 x 610 x 200	895 x 610 x 200
	VESA Mounting (mm)	200 x 200	200 x 200
Optional Touch	Interface	N/A	USB 2.0
	Touch Type	N/A	optical touch
	Multi Touch	N/A	two points

2.1.2 DSD-3043

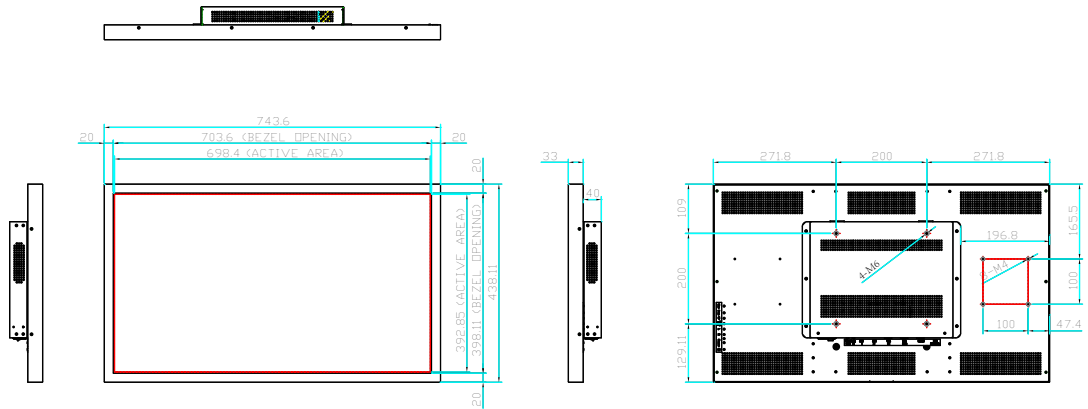
	Model	DSD-3043N-50FHA1	DSD-3043T-50FHA1
Display	Display Size	43" LED backlight panel	43" LED backlight panel
	Resolution	1920 x 1080 (F-HD)	1920 x 1080 (F-HD)
	Viewing Angle (U/D/L/R)	89°/ 89°/ 89°/ 89°	89°/ 89°/ 89°/ 89°
	Brightness	500 (cd/m2)	500 (cd/m2)
	Contrast Ratio	4000:1	4000:1
	Response Time	8 ms	8 ms
	Colors	16.7M	16.7M
	Backlight Life	50,000 hrs	50,000 hrs
System	Power Input	100 ~ 240 V	100 ~ 240 V
	Consumption	60 W	80 W
	Interface	VGA, HDMI, Display-Port	VGA, HDMI, Display-Port
	OSD Control Function	RS232, RS485, remote control	RS232, RS485, remote control
	OSD Language	Simplified Chinese, Traditional Chinese, English, Japanese, French, German, Spanish	
	Source Auto Detect	Yes	Yes
Environment	Operating Temperature	0 ~ 50°C	
	Storage Temperature	-20 ~ 60°C	
	Humidity	10 ~ 90% RH	
Mechanical	Net Weight	25 kg	29 kg
	Gross Weight	28 kg	32 kg
	Dimensions (mm)	971 x 573 x 71	1011 x 617 x 82
	Packing (mm)	1140 x 760 x 240	1140 x 760 x 240
	VESA Mounting (mm)	400 x 200	400 x 200
Optional Touch	Interface	N/A	USB 2.0
	Touch Type	N/A	optical touch
	Multi Touch	N/A	two points

2.1.3 DSD-3055

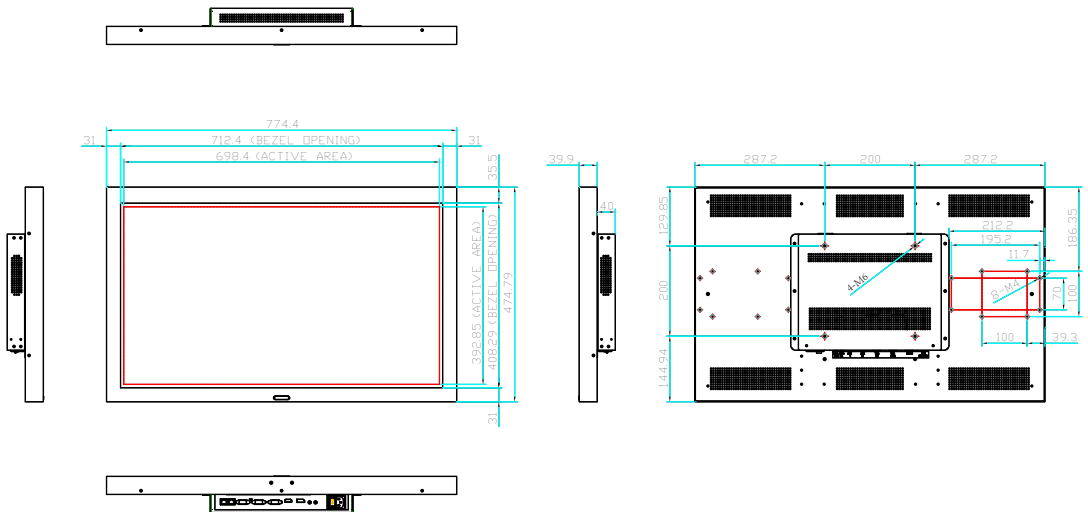
	Model	DSD-3055N-50UHA1	DSD-3055T-50UHA1
Display	Display Size	55" LED backlight panel	55" LED backlight panel
	Resolution	3840 x 2160 (UHD)	3840 x 2160 (UHD)
	Viewing Angle (U/D/L/R)	89°/ 89°/ 89°/ 89°	89°/ 89°/ 89°/ 89°
	Brightness	500 (cd/m ²)	500 (cd/m ²)
	Contrast Ratio	4000:1	4000:1
	Response Time	8.5 ms	8.5 ms
	Colors	1073M	1073M
	Backlight Life	50,000 hrs	50,000 hrs
System	Power Input	100 ~ 240 V	100 ~ 240 V
	Consumption	100 W	100 W
	Interface	VGA, HDMI, Display-Port	VGA, HDMI, Display-Port
	OSD Control Function	RS232, remote control	RS232, RS485, remote control
	OSD Language	Simplified Chinese, Traditional Chinese, English, Japanese, French, German	
	Source Auto Detect	Yes	Yes
Environment	Operating Temperature	5 ~ 45°C	
	Storage Temperature	-20 ~ 55°C	
	Humidity	20 ~ 80% RH	
Mechanical	Net Weight	31 kg	50 kg
	Gross Weight	36 kg	58 kg
	Dimensions (mm)	1238.6 x 709.4 x 73.4	1315.42 x 798.21 x 82.7
	Packing (mm)	1355 x 845 x 200	1400 x 900 x 250
	VESA Mounting (mm)	400 x 400	400 x 400
Optional Touch	Interface	N/A	USB 2.0
	Touch Type	N/A	optical touch
	Multi Touch	N/A	two points

2.2 Dimensions

2.2.1 DSD-3032N



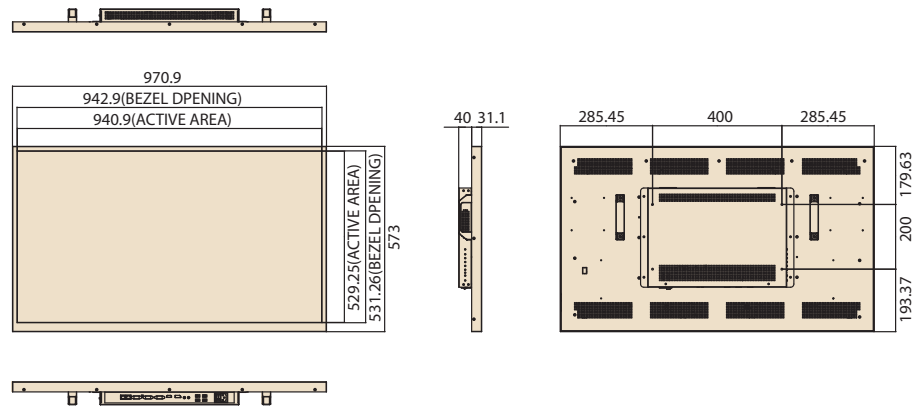
2.2.2 DSD-3032T



2.2.3 DSD-3043N

DSD-3043N-50FHA1

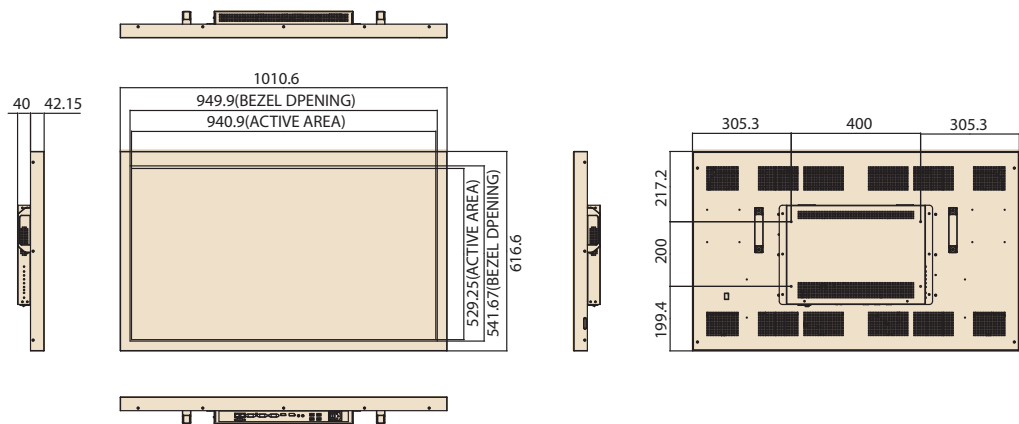
Unit: mm



2.2.4 DSD-3043T

DSD-3043T-50FHA1

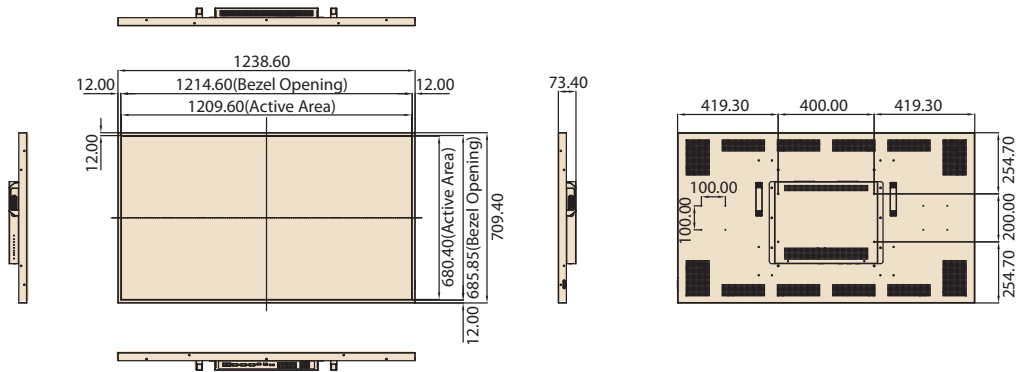
Unit: mm



2.2.5 DSD-3055N

DSD-3055N-50UHA1

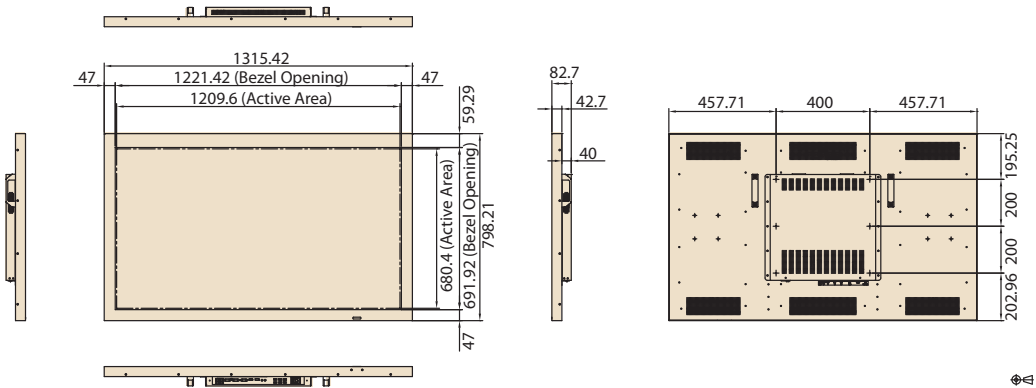
Unit: mm



2.2.6 DSD-3055T

DSD-3055T-50UHA1

Unit: mm



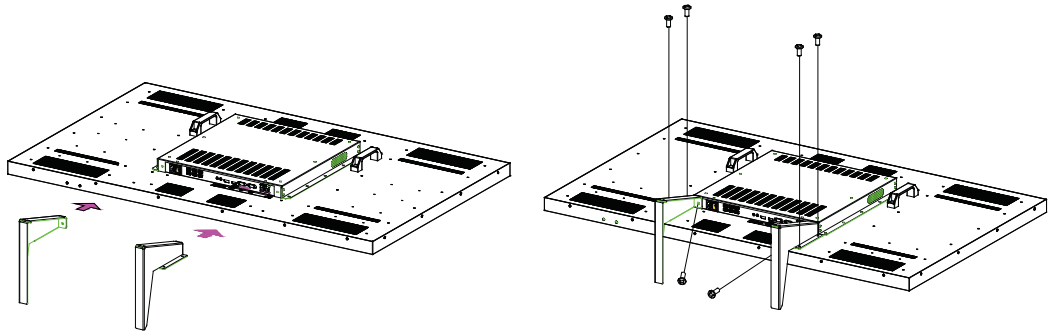
Note! Select the correct VESA mounting kit with an appropriate weight loading capability, and use M6 screws to affix the digital signage display to the mounting unit.



2.3 Attaching and Removing a Table Stand (Optional)

To attach a table stand:

1. Ensure the display is powered off.
2. Cover a flat surface with a protective sheet.



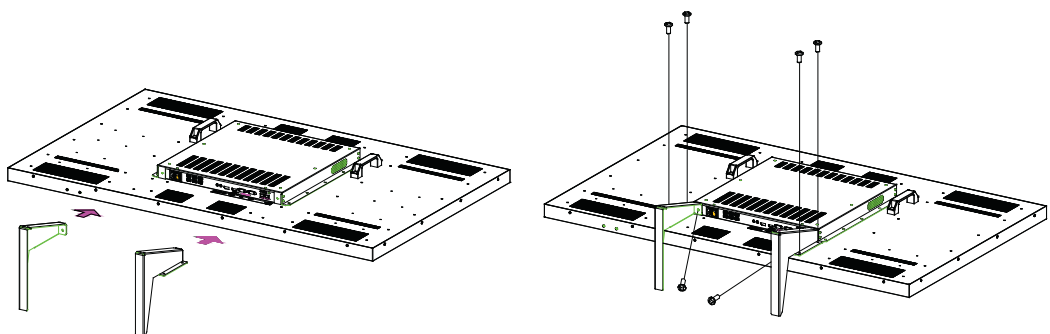
3. Gripping the carrying handles, place the display, with the screen facing down, on the protective sheet.
4. Align the screw holes of each table stand with those of the display. Then affix the stand to the display using the screws included with the table stand kit.

Note! *The longer side of the stand should be oriented to the front of the display.*



To remove a table stand:

1. Ensure the display is powered off.
2. Cover a flat surface with a protective sheet.



3. Gripping the carrying handles, place the display, with the screen facing down, on the protective sheet.
4. Using a screwdriver, remove the screws affixing the stand to the display. Store the screws in a safe place for reuse.

Chapter 3

Functions

- LED Indicator, Keypad, and Remote Control
- OSD Functions
- RS232 Remote Control
- Timing Table

3.1 LED Indicators

- None: Power off
- Solid Red: Standby
- Solid Green: Active
- Flashing Red/Orange: Alarm (backlight or power supply failure)

3.1.1 Keypad (Eight Keys)

The positions and functions of the keypad buttons are shown below.



Note! Keypads are not available for the DSD-3032T, DSD-3042T, and DSD-3055T models.



3.1.2 Remote Control



1. **Power:** Press to power on the display from standby mode. Press again to turn the power off and return the system to standby mode.
2. **Source:** Press to toggle through the Video Source Menu.
3. **Direction:**
 - a. Up: Press to move the selector up in the OSD menu.
 - b. Down: Press to move the selector down in the OSD menu.

- c. Right: Press to move the selection right in the OSD menu, or press to increase the value of an item in the OSD menu.
- d. Left: Press to move the selection left in the OSD menu, or press to decrease the value of an item in the OSD menu.
- 4. **OK**: Press to activate the setting in the OSD menu.
- 5. **Exit**: Press to return to the previous OSD menu.
- 6. **Menu**: Press to turn the OSD menu on/off.
- 7. **Volume+**: Press to increase the audio output level.
- 8. **Volume-**: Press to decrease the audio output level.
- 9. **Mute**: Press to turn the mute function on/off.

3.2 OSD Menu

OSD Tree		Default	
IMAGE	→Brightness	75	
	→Contrast	70	
	→Hue	(For HDMI only)	
	→Saturation	(For HDMI only)	
	→Sharpness	0	
	→Color	→Auto	
		→Color Temp	→4200K
			→5000K
			→6500K
			→7500K
		→9300K	√
	→User	→R (0~100)	100
		→G (0~100)	100
		→B (0~100)	100
	→Full Color		
DISPLAY	→Auto Adjust		
	→Phase		
	→Clock		
	→Display Position	→(↑ ↓ ← →)	
	→Display Mode	→Off	
		→Desktop	
	→Gaming		
	→Multimedia		
SOUND	→Volume		
	→Mute		
	→Output Select	→Speakers	

		→S/PDIF	
SYSTEM	→Input	→DisplayPort	
		→VGA	
		→DVI/HDMI	
		→Keypad	On
			Off (enable keypad operation)
		→Auto Scan	
	→OSD Setting	→Timer	→3 seconds
			→6 seconds
			→12 seconds
		→Rotation	→0° √
			→90°
			→180°
			→270°
		→Position	→(↑ ↓ ← →)
		→Transparency	0~100 8
	→Language	→English	√
		→Español	
		→Deutsch	
		→Français	
		→ 日本語	
		→ 繁體中文	
		→ 简体中文	
	→Reset		

3.3 RS232/RS485 Command

3.3.1 Environment

Interface	RS232, RS485
Baud Rate	19200
Data Bits	8
Stop Bits	1
Parity	No

3.3.2 Sample

STX	Address/ID		Type	Property/Command		Length	Data	ETX	Checksum
02	00	00	01	00	02	01	31	03	3A

General Command Form

- **STX**
The first character is the standard Start of Text (STX) character 02.
- **Address/RS485ID**
The second and third characters are the device address. If a device does not support addressing, the values for these characters should be 00 and 00 to act as the global address.
- **Type**
The fourth character is the command type. Four types of commands exist:
 - Command → 01
 - Ack → 02
- **Property/Command**
The fifth and sixth characters are the property identifier. With the use of two-byte identifiers, a possible 65,536 different identifiers exist. Although this may seem excessive, the maximum of 256 one-byte identifiers is insufficient for certain models.
- **Data Length**
The seventh character is the number of characters in the parameter data section.
- **Data**
The data parameter section follows the seventh character, and is as many characters long as specified by the seventh character. If the seventh character is 00 (as with the Reset command for example), then the parameter section will have no characters. The parameter section contains the value of the property.
- **ETX**
The last character is the standard End of Text (ETX) character 03.

In this example (changing the input source to VGA), the address characters are both 00, which is the global address for all devices connected to the serial port. The Type character is 01 to indicate that the transmission is a command.

The Property ID characters indicate a property identifier of 2, which is the value in this protocol.

The Length character is a 1, which indicates that there is one character of data associated with this command.

The Data character shows a value of 31, which is the value for VGA.

The ETX character is the command end code.

The last character is the Checksum.

$$\text{Checksum} = (0x02h + 0x00h + 0x00h + 0x01h + 0x00h + 0x02h + 0x01h + 0x31h + 0x03) \% 100h = 3Ah$$

Note: P → Property / Command

Com → Property / Command or ID Address / ID

E → ETX

C / Ck → Checksum

Command		S		ID	Type	P	Com	Ln	Data	E	c
		1	2	3	4	5	6	7	8	9	10
Input Source	VGA Response	02 02	00 00	00 00	01 02	00 00	02 02	01 01	31 31	03 03	3A 3B
	HDMI Response	02 02	00 00	00 00	01 02	00 00	02 02	01 01	32 32	03 03	3B 3C
	DisplayPort Response	02 02	00 00	00 00	01 02	00 00	02 02	01 01	34 34	03 03	3D 3E
Brightness	0% Response	02 02	00 00	00 00	01 02	00 00	04 04	01 01	00 00	03 03	0B 0C
	100% Response	02 02	00 00	00 00	01 02	00 00	04 04	01 01	64 64	03 03	6F 70
Contrast	0% Response	02 02	00 00	00 00	01 02	00 00	05 05	01 01	00 00	03 03	0C 0D
	100% Response	02 02	00 00	00 00	01 02	00 00	05 05	01 01	64 64	03 03	70 71
Sharpness	-4 Response	02 02	00 00	00 00	01 02	00 00	07 07	01 01	00 00	03 03	0E 0F
	4 Response	02 02	00 00	00 00	01 02	00 00	07 07	01 01	8 8	03 03	16 17
Sound Mute	OFF Response	02 02	00 00	00 00	01 02	00 00	09 09	01 01	00 00	03 03	10 11
	ON Response	02 02	00 00	00 00	01 02	00 00	09 09	01 01	01 01	03 03	11 12
Sound Volume	0% Response	02 02	00 00	00 00	01 02	00 00	0A 0A	01 01	00 00	03 03	11 12
	100% Response	02 02	00 00	00 00	01 02	00 00	0A 0A	01 01	64 64	03 03	75 76

Color Temp.	4200K Response	02 02	00 00	00 00	01 02	00 00	0C 0C	01 01	31 31	03 03	44 45
	5000K Response	02 02	00 00	00 00	01 02	00 00	0C 0C	01 01	32 32	03 03	45 46
	6500K Response	02 02	00 00	00 00	01 02	00 00	0C 0C	01 01	33 33	03 03	46 47
	7500K Response	02 02	00 00	00 00	01 02	00 00	0C 0C	01 01	34 34	03 03	47 48
	9300K Response	02 02	00 00	00 00	01 02	00 00	0C 0C	01 01	35 35	03 03	48 49
	User Response	02 02	00 00	00 00	01 02	00 00	0C 0C	01 01	36 36	03 03	49 4A
SET RS485 ID	ID:01(HEX) Response	02 02	00 00	00 00	01 02	00 00	0D 0D	01 01	01 01	03 03	15 16
	ID:FF(HEX) Response	02 02	00 00	00 00	01 02	00 00	0D 0D	01 01	FF FF	03 03	13 13
Remote Control	Source Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	20 20	03 03	32 33
	Up Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	21 21	03 03	33 34
	Down Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	22 22	03 03	34 35
	Left Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	23 23	03 03	35 36
	Right Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	24 24	03 03	36 37
	OK Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	25 25	03 03	37 38
	Menu Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	26 26	03 03	38 39
	Exit Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	27 27	03 03	39 3A
	Volume- Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	28 28	03 03	3A 3B
	Volume+ Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	29 29	03 03	3B 3C
	Mute Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	2A 2A	03 03	3C 3D
	Power Response	02 02	00 00	00 00	01 02	00 00	0B 0B	01 01	2B 2B	03 03	3D 3E

Power	OFF Response	02 02	00 00	00 00	01 02	00 00	0F 0F	01 01	00 00	03 03	16 17
	ON Response	02 02	00 00	00 00	01 02	00 00	0F 0F	01 01	01 01	03 03	17 18
Query All	ID:01 (HEX) Response	02 02	00 00	00 00	01 02	FE FE	0D 0D	01 09	00 Data (9 bytes)	03 03	16 ck

Query All:

Data*9: Byte 0 → Query Input Source

Byte 1 → Query Brightness

Byte 2 → Query Contrast

Byte 3 → Query Sharpness

Byte 4 → Query Mute

Byte 5 → Query Sound Volume

Byte 6 → Query Color Temp

Byte 7 → RS485ID

Byte 8 → Query System status

Bit 0:0 → Active

1 → Standby

Bit 1:0 → Power Supply Fail

1 → Power Supply OK

Bit 2:0 → Backlight Fail

1 → Backlight OK

3.4 Input Mode

■ VGA for VESA Standard Timing

No.	Resolution	fV (Hz)	fH (KHz)	Pixel Rate (MHz)
1	640x480	60	31.5	25.175
2	640x480	72	37.9	31.5
3	800x600	56	35.1	36
4	800x600	60	37.9	40
5	800x600	72	48.1	50
6	1024x768	60	48.4	65
7	1024x768	70	56.5	75
8	1280x720	60	44.8	74.5
9	1280x768	60	47.4	68.25
10	1280x1024	60	64	108
11	1360x768	60	47.7	85.5
12	1400x1050	60	64.7	101
13	1440x900	60	55.5	88.75
14	1600x1200	60	75	162
15	1600x1200	65	81.3	175.5
16	1680x1050	60	64.7	119

17	1920x1080	60	67.2	173
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■ HDMI Support Timing

No.	Resolution	fV (Hz)	fH (KHz)	Pixel Rate (MHz)
1	800x600	56	35.1	36
2	800x600	60	37.9	40
3	800x600	72	48.1	50
4	1024x768	60	48.4	65
5	1024x768	70	56.5	75
6	1280x720	60	44.8	74.5
7	1280x768	60	47.4	68.25
8	1280x960	60	60	108
9	1280x1024	60	64	108
10	1360x768	60	47.7	85.5
11	1366x768	60	47.7	85.5
12	1920x1080	60	67	148.5
13	3840x2160	60	135	594

■ DisplayPort Support Timing

No.	Resolution	fV (Hz)	fH (KHz)	Pixel Rate (MHz)
1	800x600	56	35.1	36
2	800x600	60	37.9	40
3	800x600	72	48.1	50
4	1024x768	60	48.4	65
5	1024x768	70	56.5	75
6	1280x720	60	44.8	74.5
7	1280x768	60	47.4	68.25
8	1280x960	60	60	108
9	1280x1024	60	64	108
10	1360x768	60	47.7	85.5
11	1366x768	60	47.7	85.5
12	1920x1080	60	67	148.5
13	3840x2160	60	135	594

Appendix **A**

Warnings and
Precautions

A.1 Warnings and Precautions

To prevent damage and fire or electric shock hazards, do not expose this equipment to rain or moisture.

Please follow these instructions when connecting and using this digital signage display:

- Unplug the display if the equipment will not be used for an extended period of time.
- Unplug the display before cleaning the equipment. Use a damp cloth to clean the equipment. However, the screen should only be wiped with a dry cloth when the power is off. Never apply alcohol, solvents, or ammonia-based liquids.
- Consult a service technician if the display is malfunctioning despite following the instructions provided in this manual.
- The casing cover should only be opened by qualified service personnel.
- Store the display away from direct sunlight, as well as away from stoves and any other heat sources.
- Ensure no materials are lodged in the casing vents or preventing sufficient cooling of the display's electronics.
- Do not block the ventilation holes on the casing.
- Keep the display dry. To avoid electric shock, do not expose the equipment to rain or excessive moisture.
- If turning off the display by detaching the power cable, wait for 6 seconds before re-attaching the power cable to ensure normal operation.
- To avoid electric shock or permanent damage to the equipment, do not expose the display to rain or excessive moisture.
- When positioning the display, ensure that the display plug and power outlet are easily accessible.
- **IMPORTANT:** Always activate a screen saver program for all applications. If a high-contrast still image remains onscreen for an extended period of time, it can leave an "afterimage" or "ghost image" on the screen. This is a well-known phenomenon that results from the inherent deficiencies of LCD technology. In most cases, the afterimage gradually disappears over time after the power has been switched off. Users should be aware that this afterimage phenomenon cannot be repaired and is not covered by our warranty service.

This device belongs to a class of information products that can cause radio interference when employed in a live environment. Should this occur, users are responsible for implementing appropriate countermeasures.

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