USER'S MANUAL

P712

12.1" XGA TFT Railway Monitor

User's Manual

AXIOMTEK®

Disclaimers

This manual has been carefully checked and believed to contain accurate information. Axiomtek Co., Ltd. assumes no responsibility for any infringements of patents or any third party's rights, and any liability arising from such use.

Axiomtek does not warrant or assume any legal liability or responsibility for the accuracy, completeness or usefulness of any information in this document. Axiomtek does not make any commitment to update the information in this manual.

Axiomtek reserves the right to change or revise this document and/or product at any time without notice.

No part of this document may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Axiomtek Co., Ltd.

Safety Precautions

Before getting started, read the following important cautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.

2. Disconnect the power cords from the P712 Series before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could damage sensitive components. Make sure the P712 Series is properly grounded.

3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

    ■   Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on a human body.

    ■   When handling boards and components, wear a grounding wrist strap, available from most electronic component stores.

Trademarks Acknowledgments

Axiomtek is a trademark of Axiomtek Co., Ltd.

IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

AMI is a trademark of American Megatrend Inc.

Other brand names and trademarks are the properties and registered brands of their respective owners.

Table of Contents

Chapter 1
Introduction

This chapter contains general information and detailed specifications of the P712. Chapter 1 includes the following sections:

- **General Description**

- **Features**

- **Specifications**

- **Dimensions and Outlines**

- **I/O Outlets**

- **Package List**

1.1   General Description

The P712 is an industrial and rail grade 12.1 inches viewing area LCD monitor with slim, lightweight, and reliable design to replace traditional bulky CRT in the transportation market. Its unique and flat design fit for panel mounting and VESA mounting. The display interface offers DVI-D, HDMI and VGA for different image input sources from computer or multimedia system. That allows you to upgrade the display without changing your current configuration. The rugged LCD monitor is a perfect fit for train and other mobile vehicles.

This LCD monitor builds in color active matrix thin-film-transistor (TFT) liquid crystal display to provide superior display performance. A maximum resolution of 1024x768 is ideal for displaying complex graphics and high-definition images. Other outstanding designs to enhance the LCD monitor user experience include Plug & Play compatibility, OSD (On Screen Display) control pad and remote control. The remote control allows you to make setting adjustments via a computer from a distance.

1.2   Features

- **High contrast 12.1" XGA TFT LCD display supports resolution up to 1024x768**

- **Auto-dimming for changing environmental conditions adaption**

- **Flat design with front frame IP65-compliant**

- **Reliable resistive touch**

- **High Brightness and ultra-wide viewing angle with anti-glare feature**

- **VESA standard power management conformity**

- **Advanced OSD control for picture quality adjustment**

- **Remote OSD function control and management (refer to Appendix C)**

1.3   Specifications

- **12.1" XGA (1024x768) LCD with LED backlight**

- **Resistive touch**

- **Front bezel IP65-compliant**

- **Control: OSD (on-screen display) control pad**

- **Mounting: panel mounting and VESA mounting**

- **Net weight**
  - P712: 2.3 KGS

- **Dimension (main body size)**
  - P712: 330(W)*245(H)*50.2(D) mm

- **Operation temperature**
  - -25°C to 55°C

- **Relative humidity**
  - 20% to 90% @ 40°C, Non-condensing

- **Power input**
  - M12 A-coded Male 5 pin 24~110VDC power input

- **Audio**
  - 3W speaker x 2
  - Line-in for VGA / DVI-D

*NOTE: All specifications and images are subject to change without notice.*

1.4 Dimensions and Outlines

The following diagram show the dimensions and outlines of the P712.
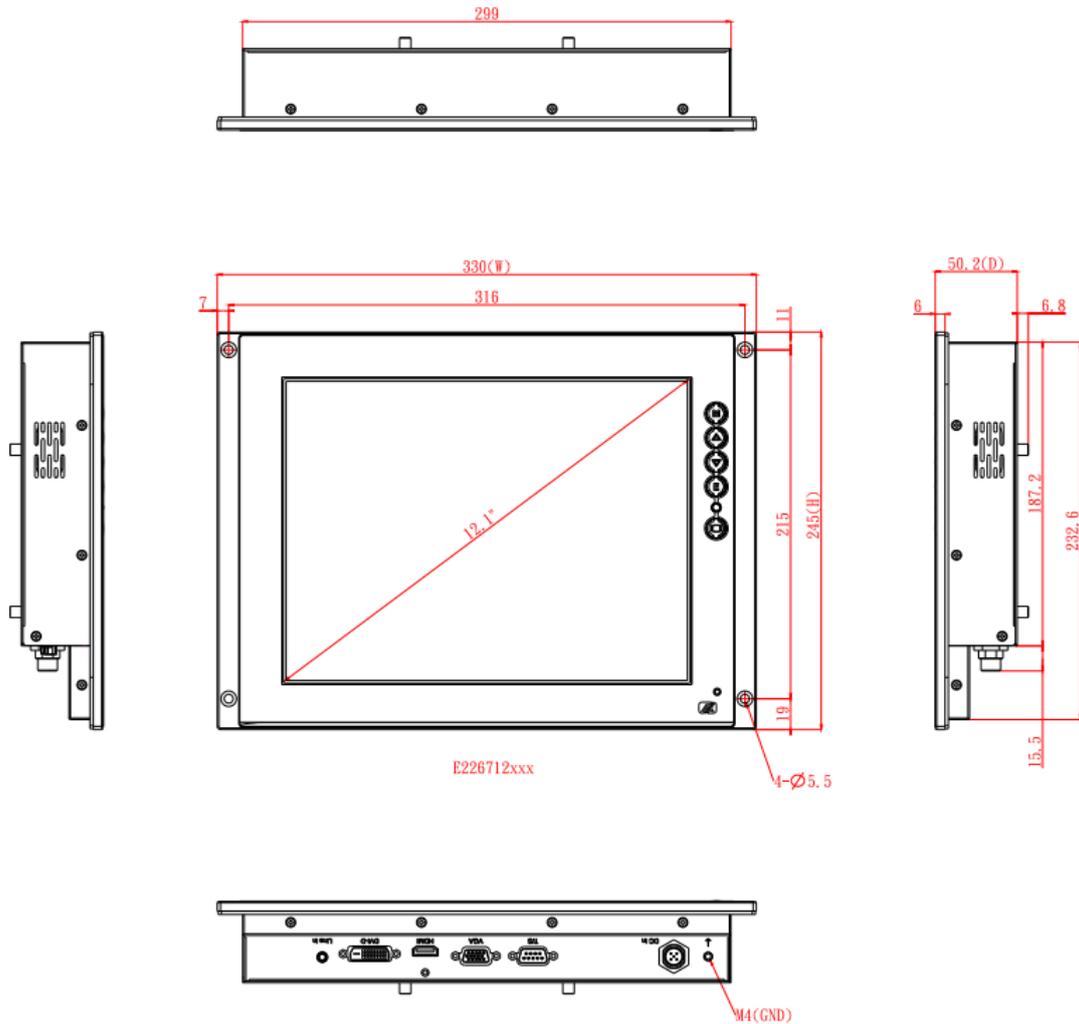
The following diagram show the VESA mounting and cut-out dimension of P712
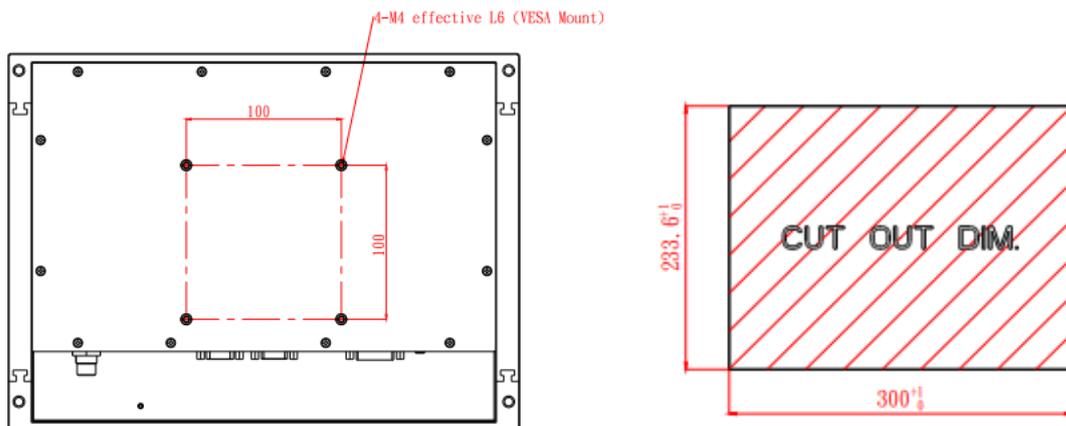
1.5   I/O Outlets

The following pictures show the I/O outlets of the P712.

No	Function	No	Function
1	Menu (Enter function)	8	M12 A-coded Male 5 pin DC power input
2	SEL+	9	Multi-function of T/S & remote control
3	SEL-	10	VGA
4	Exit	11	HDMI
5	Power LED	12	DVI-D
6	Power Switch	13	Line-in
7	M4 ground screw hole	14	Speaker

1.6   Packing List

When you receive the P712, the bundled package should contain the following items:

- **P712 unit x 1**
- **RS-232 cable x1 (for resisitve touch)**
- **HDMI bracket x1**
- **Cable tie x1**
- **Cable clamp x1**
- **Screw M3*5L x2**

If you cannot find the package or any items are missing, please contact Axiomtek distributors immediately.

This page is intentionally left blank.

Chapter 2
System Setup

This chapter details the system parts and components with figures. Sections include:

- **System Configuration**

- **Panel Mounting**

- **VESA Mounting**

- **I/O Pin Assignment**

    - **M12 A-coded Male 5 pin DC power input**

    - **Multi-function of T/S and remote control**

- **HDMI bracket & cable clamp installation**

- **Y cable for T/S and remote control**

2.1   System Configuration

The figure below shows the OSD on the side of the monitor.

1. **Menu:**

   a. Press to turn on/off the OSD (on-screen display) main menu.

   b. Press to execute selected items.

2. **SEL+:**

   a. Press to scroll up the menu.

   b. Press to increase the level of the selected item.

   c. When the menu is not on displayed the screen, press for brightness setting.

3. **SEL-:**

   a. Press to scroll down the menu.

   b. Press to decrease the level of the selected item.

   c. When the menu is not displayed on the screen, press for volume setting.

4. **Exit: menu exit / input switch**

   a. When the menu is displayed on the screen, short press to exit.

   b. When the menu is not displayed on the screen, press for Auto Adjust (VGA only).

5. **Status LED:**

   a. The light turns green when the power is on.

   b. The green light will be flashing when the monitor goes into standby mode.

6. **Power switch:**

   Press to turn on/off the monitor.

2.2   Panel Mounting

The P712 supports panel mounting. To mount the P712, the standard holes are on the front side of the P712.


M4 Screw (L=5mm or more) x 4 pcs
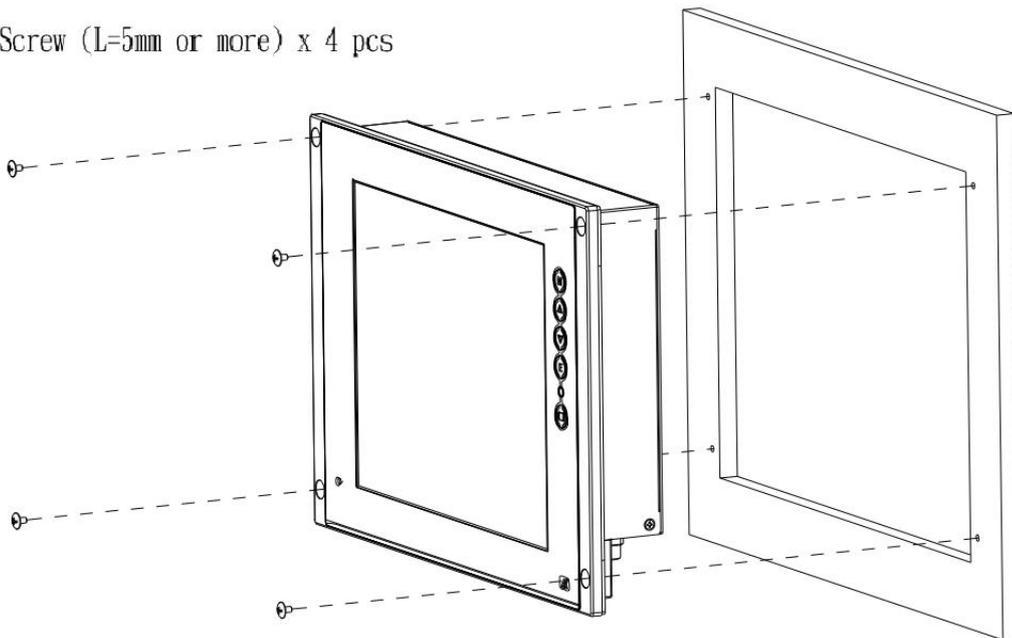
2.3 VESA Mounting

The P712 is VESA compliant. Tighten the four screws firmly to fix the kit on the back chassis.
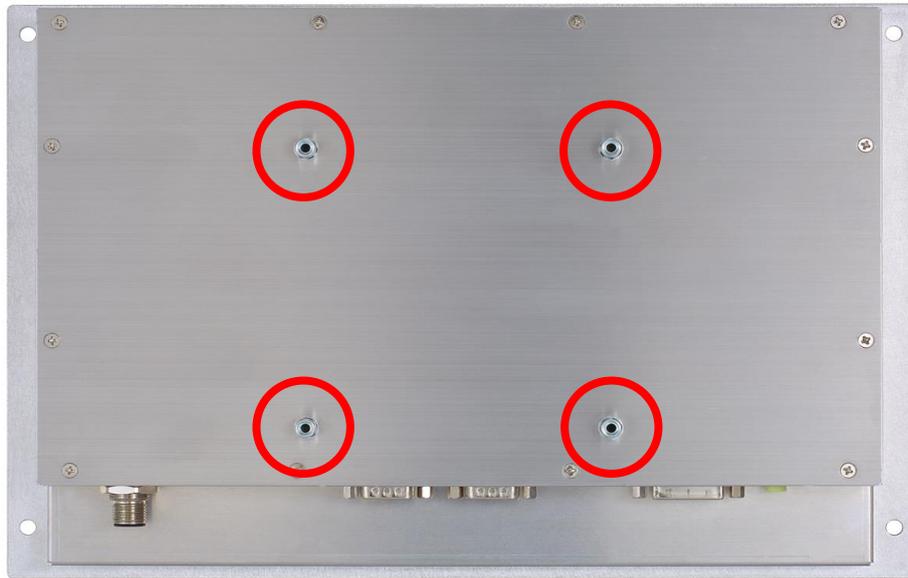
M4 Screw (L=5mm or more) x 4pcs
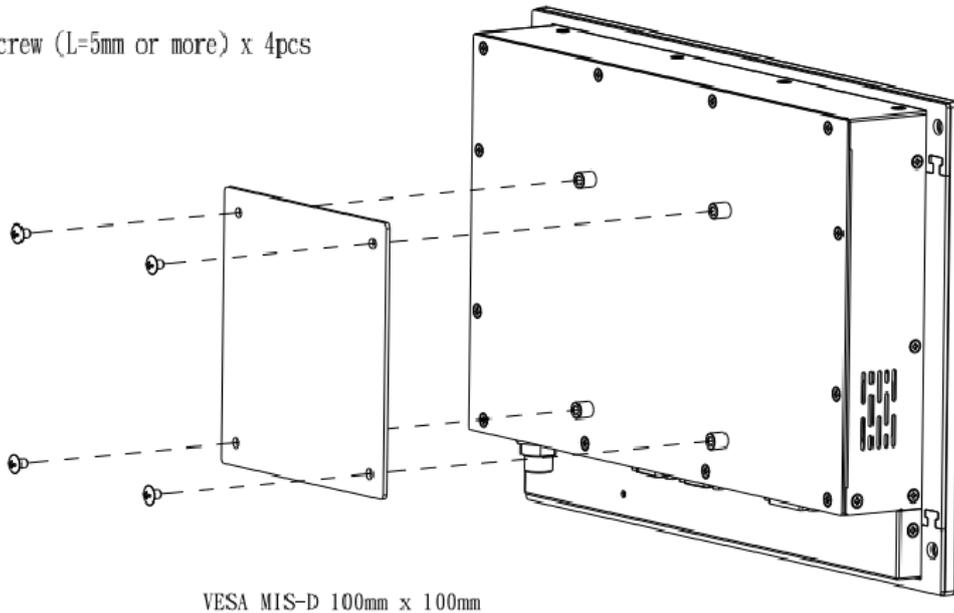
VESA MIS-D 100mm x 100mm

2.4   I/O Pin Assignment

The P712 supports M12 A-coded Male 5 pin power input connector, Multi-function of T/S & remote control, VGA, HDMI, DVI-D, and Line-in. The diagrams below show the detailed pin assignment.

2.4.1 DC power connector

M12 A-coded Male 5 pin power input：24~110Vdc

Pin	Signal
1.	Power input
2.	Power input
3.	GND
4.	GND
5.	Earth ground

2.4.2 Multi-function of T/S and remote control

Pin	Define	Pin	Define
1	Remote RXD	6	Touch DTR
2	Touch TXD	7	Touch RTS
3	Touch RXD	8	Remote TXD
4	Touch DSR	9	N.C.
5	Ground		
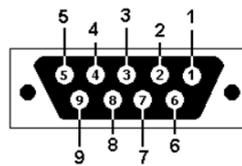
2.5   HDMI bracket & Cable clamp installation

2.5.1 HDMI bracket installation

Step 1   Align the hole on the bracket with the hole on the chassis, insert the M3 screw and fasten the screw tightly to the bracket, as the pictures shown below.

Step 2   Connect the HDMI cable to the port, insert the cable tie through the loop of the cable fixing plate to bind the HDMI connector with the bracket, as the picture shown below.


2.5.2 Cable clamp installation

Step 1
Align the hole on the clamp with the hole on the chassis, insert the screw into the hole, then tighten the screw to fix the HDMI cable, as the picture shown below.

2.6   Y cable for T/S and remote control (optional)

Y cable for resistive touch and remote control is optional, also available for self-made by referring to the following correspondence:
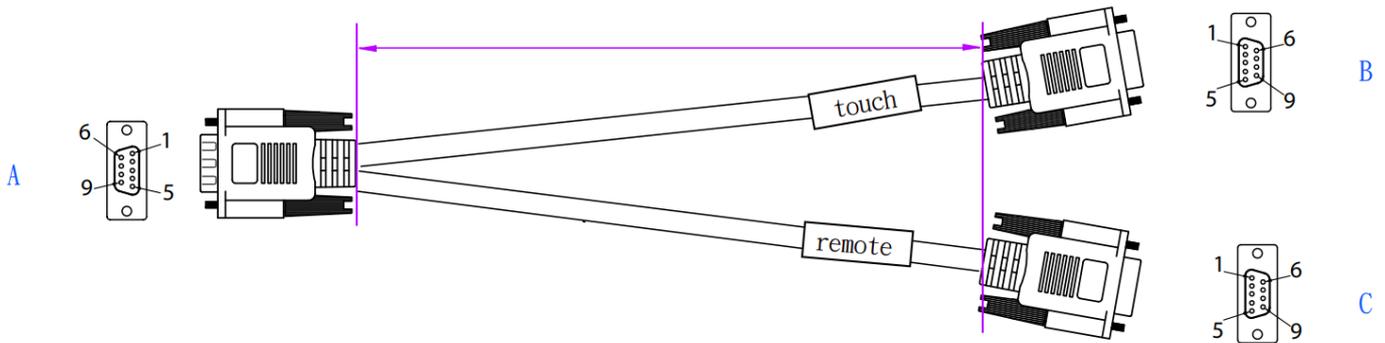
Wiring Table

Connector	A	B	C
Type	DB9-male	DB9-female	DB9-female
System	P710	PC-Touch	PC-Remote
Pin	1	N.C.	3 (Remote RXD)
	2	2 (Touch TXD)	N.C.
	3	3 (Touch RXD)	N.C.
	4	4 (Touch DSR)	N.C.
	5	5 (Ground)	5 (Ground)
	6	6 (Touch DTR)	N.C.
	7	7 (Touch RTS)	N.C.
	8	N.C.	2 (Remote TXD)
	9	N.C.	N.C.

This page is intentionally left blank.

Appendix A
Supported Input Timing Modes

VGA		HDMI		DVI-D	
Resolution	**Refresh rate**	**Resolution**	**Refresh rate**	**Resolution**	**Refresh rate**
640 x 480	60 Hz	640 x 480	60 Hz	640 x 480	60 Hz
640 x 480	72 Hz	640 x 480	72 Hz	640 x 480	72 Hz
640 x 480	75 Hz	640 x 480	75 Hz	640 x 480	75 Hz
720 x 400	70 Hz	720 x 400	70 Hz	720 x 400	70 Hz
800 x600	56 Hz	800 x600	56 Hz	800 x600	56 Hz
800 x600	60 Hz	800 x600	60 Hz	800 x600	60 Hz
800 x600	72 Hz	800 x600	72 Hz	800 x600	72 Hz
800 x600	75 Hz	800 x600	75 Hz	800 x600	75 Hz
1024 x 768	60 Hz	1024 x 768	60 Hz	1024 x 768	60 Hz
1024 x 768	70 Hz	1024 x 768	70 Hz	1024 x 768	70 Hz
1024 x 768	75 Hz	1024 x 768	75 Hz	1024 x 768	75 Hz

NOTE: Timing depends on LCD panel requirements.

This page is intentionally left blank.

Appendix B
OSD Operation

Function Description of OSD Menu

※ **The OSD layout and format are constructed as below.**

Level 0	Level 1	Level 2	Value
Picture	**Brightness**		**0-100**
	Contrast		**0-100**
	Sharpness		**1-4**
	Ambient Sense	**Off/Indoor/Outdoor**	**Off (default)**
Display	**Auto Adjust**		
	H Position		**0-100**
	V Position		**0-100**
	Clock		**0-100**
	Phase		**0-100**
	Rotate	**0°/180°**	**0° (default)**
Color	**Gamma**	**Off/1.8/2.2/2.2/2.4**	**Off (default)**
	Temperature	**5800/6500/7500/9300/User**	**6500 (default)**
	Color Effect	**Standard/Game/Move/ Photo/Vivid/User**	**Standard (default)**
	Hue		**0-100**
	Saturation		**0-100**
Advance	**Aspect Ratio**	**Full/16:9/4:3/5:4/1:1**	**Full (default)**
	DDCI/CI	**Off/On**	**Off (default)**
	Touch on/off	**Off/On**	**Off (default)**
Input	**Auto select**		
	VGA		
	HDMI		
	DVI		
Audio	**Volume**		**0-100**
	Mute	**Off/On**	**Off (default)**
Other	**Reset**		

|			
18	Menu Time		10-60 (seconds)
	OSD H Position		0-100
	OSD V Position		0-100
	Language	English Spanish France German Italy Portugal Russia Chinese	English (default)
	Transparency		0-255
	OSD Rotate	0°/90°/180°/270°	0° (default)
	Power On Status	On/Off/User	On (default)
Information	Input Source		
	Resolution		
	Timing Clock		
	FW Version		

This page is intentionally left blank.

Appendix C
Remote Control Utility

Files:
1. ADS_Client.exe: main application
2. ADS_RS-232_x32.dll / ADS_RS-232_x64.dll: library for application reference. The files must be manually copied to System Disk (C:):\Windows\System32 or installed with ADS_Client.exe


- UI
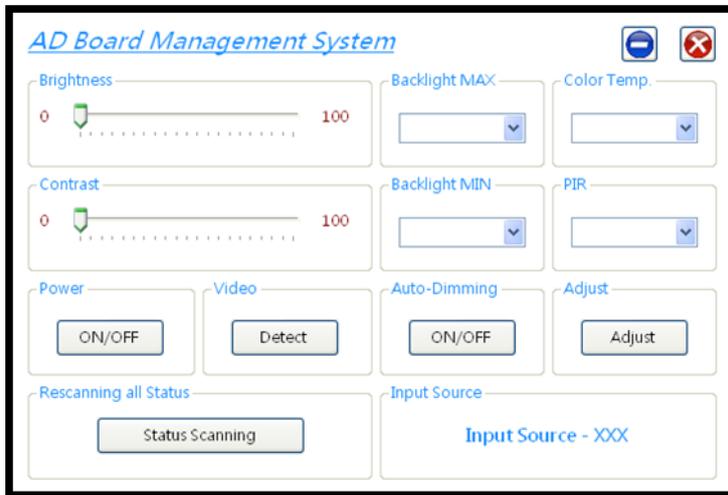
The remote control utility is for adjusting the system setting via multi-function port. The items are:
1. Get and set Brightness scale
2. Get and set Contrast scale
3. Get and set Color Temperature scale
4. Set Power on/off for the monitor
5. Get and set Auto-Dimming on/off and timer
6. Adjust the frame position on a monitor (only works with the monitor connecting to the VGA port)

● **Application UI and functions**
  ■ When you start the system, it will auto scan all the serial port to find out correct port you connect to.
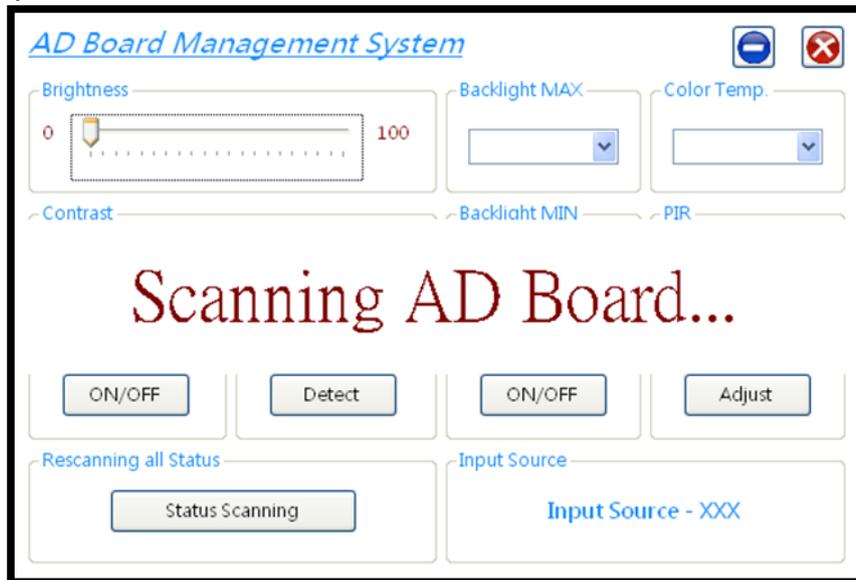
  ■ Control items
    1. Brightness
       ● Control: scroll bar
       ● Range: 0 ~ 100
       ● Remark: if the getting or setting fails, the application will show "Brightness - Failed"

    2. Contrast
       ● Control: scroll bar
       ● Range: 0 ~ 100
       ● Remark: if the getting or setting fails, the application will show "Contrast - Failed"

3. Color Temp.:
   - Control: drop-down list
   - Range: 6500, 7500 and 9300
   - Remark: if the getting or setting fails, the application will show "Color Temp. - Failed"
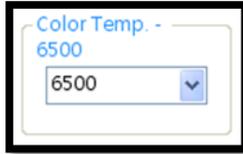
4. Power:
   - Control: button
   - Way: set only, ON and OFF
   - Remark: if the setting fails, the application will show "Power - Failed"

5. Dim: (Option)
   - Control: button
   - Way: ON and OFF
   - Remark: if the setting fails, the application will show "Auto-Dimming - Failed"
   - Remark: if there is no Auto-Dimming, it will show "Auto-Dimming - Disable"
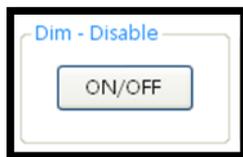

6. Adjust:
   - Control: button
   - Way: set only, Adjust
   - Remark: if the setting fails, the application will show "Adjust - Failed"
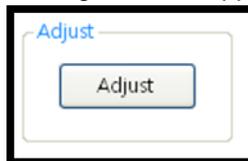
7. Rescanning all Status
   - Control: button
   - Remark: getting all status
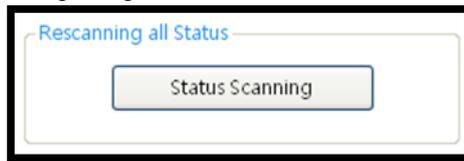
8. Input Source
   - Control: Text box
   - Remark: showing which one is input source (DVI/VGA/HDMI/DP)

This page is intentionally left blank.