



***AXIOMTEK***

**P6125**

**12.1" XGA TFT Railway Monitor**

**User's Manual**



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## 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 P6125 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 P6125 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.

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# Chapter 1

## Introduction

This chapter contains general information and detailed specifications of the P6125. Chapter 1 includes the following sections:



- **General Description**
- **Features**
- **Specifications**
- **Dimensions and Outlines**
- **I/O Outlets**
- **Package List**

### 1.1 General Description

The P6125 is a 12.1-inch view area industrial LCD monitor that incorporates a slim, lightweight display to replace traditional bulky CRT monitors for Industrial applications, with a unique flat design specifically suited for panel mounting and VESA mounting. Its display interface supports DVI-D and HDMI digital input as well as VGA input for different input sources from PC systems or multimedia devices, allowing you to upgrade the display without having to change anything from your system. Protected by an anti-vibration design, its rugged HMI (human-machine interface) also works well on the train.

This LCD monitor features a color active matrix thin-film-transistor (TFT) liquid crystal display with 800 nits brightness and a maximum resolution of 1024x768, providing superior display performance and making the monitor ideal for presenting complex graphics and high definition images. Other outstanding designs that enhance the monitor's performance include its plug & play compatibility and OSD (On Screen Display) controls, which, in particular, allow you to adjust on-screen images with ease.

## 1.2 Features

- High contrast color 12.1" XGA TFT LCD display with supported resolution up to 1024x768
- Auto-dimming for different lighting environments
- Flat design with NEMA4/IP65 compliance
- Suitable for resistive touch
- High Brightness and ultra-wide viewing angle with anti-glare features.
- Power management system that conforms to VESA standard
- Advanced OSD control for picture quality adjustment
- Provide remote control for OSD adjustment (refer to Appendix C)

## 1.3 Specifications

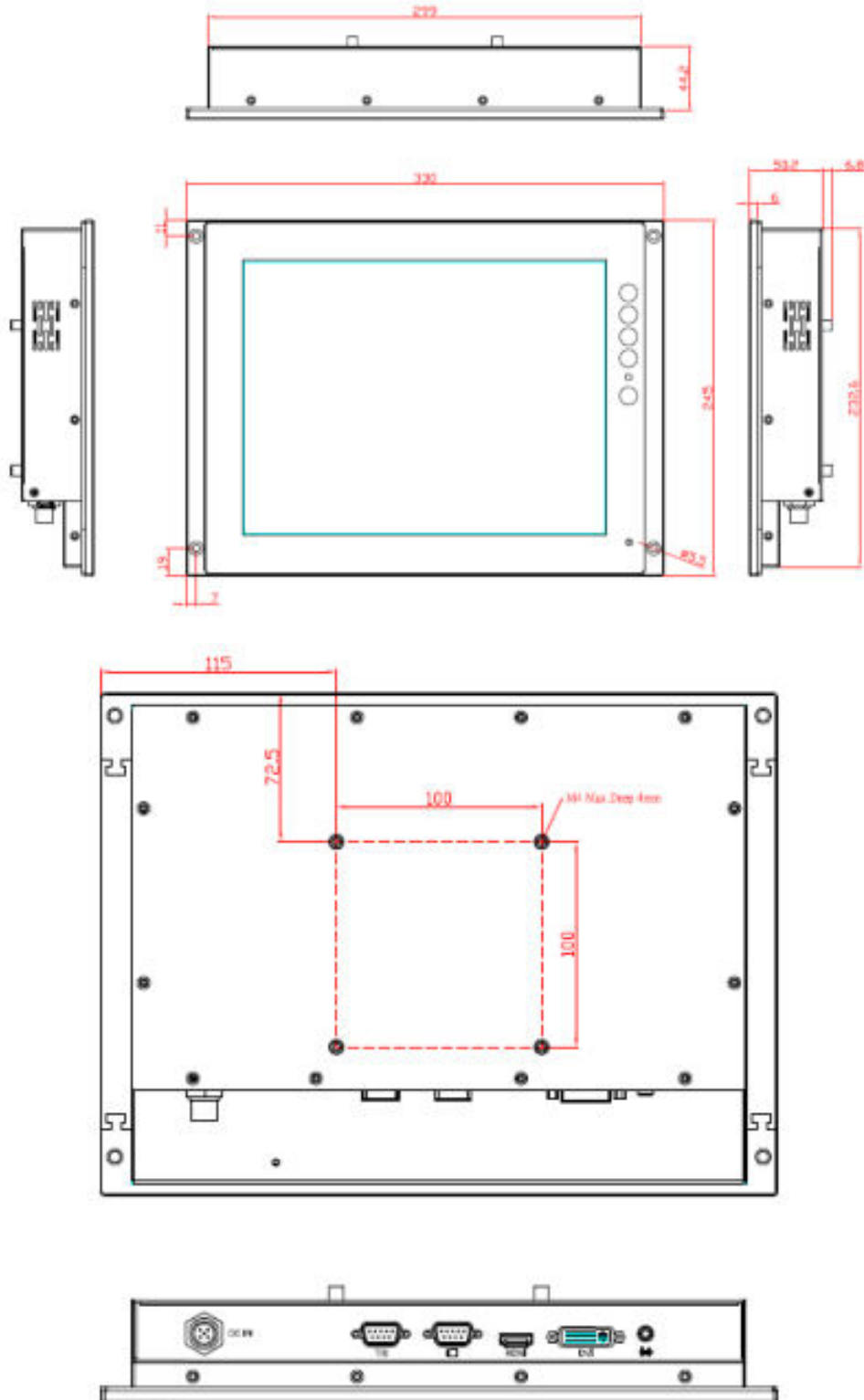
- 12.1" XGA(1024x768) LCD with LED backlight
- Resistive touch
- Front bezel design with NEMA4/IP65 compliance
- Control: OSD (on-screen display) control pad on the side
- Mounting: Supports panel mount and VESA arm mount
- Net weight
  - P6125: 2.2 KGS
- Dimension (main body size)
  - P6125: 330 x 245 x 57 mm
- Operation temperature
  - -25°C to 55°C
- Relative humidity
  - 20% to 90% @ 40°C, Non-condensing
- Power input
  - wide range 24~110VDC power input
  - Max power consumption: 33W
- Audio
  - 3W speaker x 2
  - Line-in for audio input from VGA / DVI-D



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

## 1.4 Dimensions and Outlines

The following diagrams show the dimensions and outlines of the P6125.



## 1.5 I/O Outlets

Please refer to the following illustrations for I/O locations of the P6125.



- I/O outlets with VGA input and speaker



No	Function	No	Function
1	Menu (Enter function)	8	Touch & remote control via RS-232
2	SEL+	9	VGA
3	SEL-	10	HDMI
4	Menu Exit / Input Switch	11	DVI-D
5	Status LED	12	Line-in
6	Power switch	13	Speaker
7	DC power input		



## 1.6 Packing List

When you receive the P6125 VGA input version, the bundled package should contain the following items:

- **P6125 unit x 1**
- **VGA cable x 1**
- **RS-232 cable x1 (for resistive touch)**

If you request a cable assembly for resistive touch and remote control, please refer to section 2.4: I/O Pin Assignment.

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

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# 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**
  - **DC power**
  - **Waterproof power cable**
  - **VGA port**
  - **RS-232 port: supports multi-function of T/S and remote**
  - **Y cable for RS-232 to resistive touch and remote**
  - **HDMI port**
  - **DVI-D port**

## 2.1 System Configuration

The figure below shows the side views of the P6125 series.



1. **Menu:**  
Press this button to turn on/off the OSD (on-screen display) main menu.  
Press this button to activate selected items.
2. **SEL+:**  
To scroll up the menu.  
To increase the value of a selected item.
3. **SEL-:**  
To scroll down the menu.  
To decrease the value of a selected item.
4. **Exit: menu exit / input switc**  
When the menu is on the screen, short press for Jump out selection icon.  
When the menu is not on the screen, long press for input switch (VGA->HDMI->DVI-D).  
When the menu is not on the screen, short press for Auto Adjust (VGA only).
5. **Status LED:**  
The light is green when the power is on; red light appears when the monitor goes into standby mode.
6. **Power switch:**  
Press this button to turn on/off the monitor.

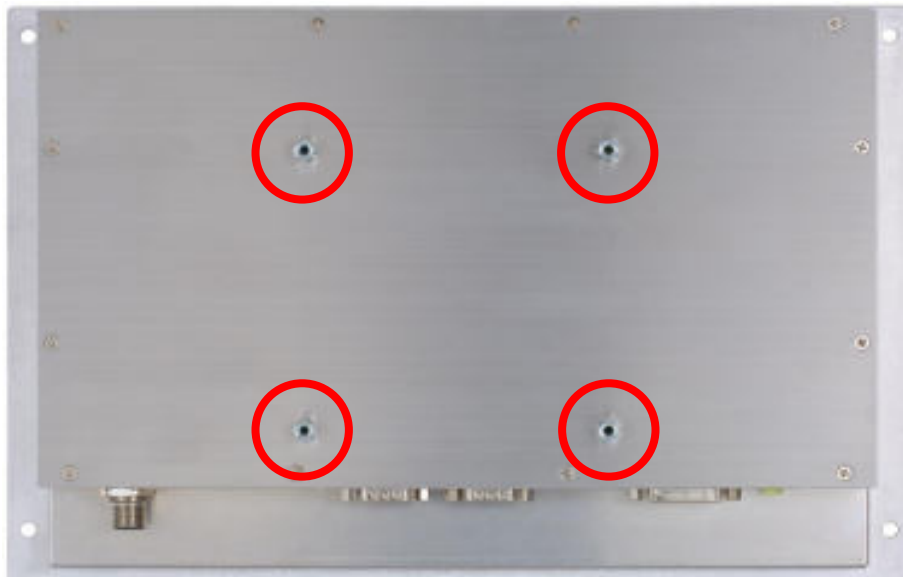
## 2.2 Panel Mounting

The P6125 is designed for panel mount applications. To mount the P6125, locate the standard holes on the front of P6125.



## 2.3 VESA Mounting

The P6125 provides VESA mount at the back of system. Screw four screws to fix the kit in the back chassis.



## 2.4 I/O Pin Assignment

The P6125 comes with a DC-in connector, T/S port, HDMI port, DVI-D port, and Line-In port. Please refer to following information for detailed pin assignment.

### 2.4.1 DC power jack w/ M12 connector, 24~110VDC power input


Pin	Signal
1. V+	power input
2. V+	power input
3	GND
4	GND
5	Earth ground



### 2.4.2 Waterproof power cable

Please follow the pin assignment for the power input.

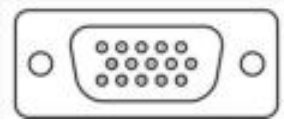


Pin	Signal
V+	power input
	Earth ground
GND	GND
GND	GND



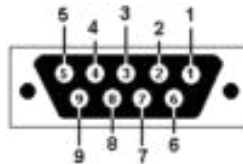
### 2.4.3 VGA port

Pin	Define	Pin	Define	Pin	Define
1	Red	6	Red GND	11	N.C.
2	Green	7	Green GND	12	DDC Data
3	Blue	8	Blue GND	13	H-Sync
4	N.C.	9	+5V (In)	14	V-Sync
5	Ground	10	Ground	15	DDC Clock



### 2.4.4 RS 232 port: supports multi-functions of T/S and remote

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		



## 2.4.5 Y cable for RS-232 to resistive touch and remote

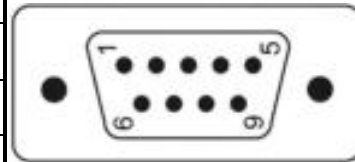
DB9: connects to P6125



Wiring Table								
P6125	1	2	3	4	5	6	7	8
Touch		2	3	4	5	6	7	
Remote	2				5			3

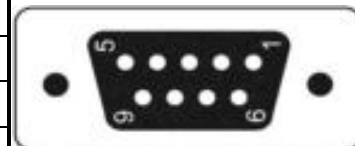
DB9 male: connects to P6125

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		



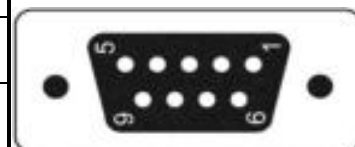
DB9 female: connects to PC for touch

Pin	Define	Pin	Define
1	N.C.	6	Touch DTR
2	Touch TXD	7	Touch RTS
3	Touch RXD	8	N.C.
4	Touch DSR	9	N.C.
5	Ground		



DB9 female: connects to PC for remote

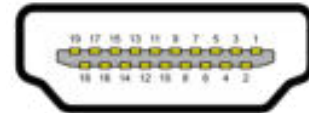
Pin	Define	Pin	Define
1	N.C.	6	N.C.
2	Remote RXD	7	N.C.
3	Remote TXD	8	N.C.
4	N.C.	9	N.C.
5	Ground		



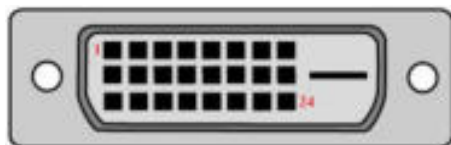


### 2.4.6 HDMI port

Pin	Define	Pin	Define	Pin	Define
1	TMDS2+	8	GND	15	DDC clock
2	Cable Detect (GND)	9	TMDS0-	16	DDC data
3	TMDS2-	10	TMDS clock+	17	GND
4	TMDS1+	11	GND	18	Vin (+5V)
5	GND	12	TMDS clock-	19	Hot plug detect
6	TMDS1-	13	N.C.		
7	TMDS0+	14	N.C.		



### 2.4.7 DVI-D port



Pin	Define	Pin	Define	Pin	Define	Pin	Define
1	TMDS2-	7	DDC data	13	N.C.	19	GND
2	TMDS2+	8	N.C.	14	Vin (+5V)	20	N.C.
3	GND	9	TMDS1-	15	GND	21	N.C.
4	N.C.	10	TMDS1+	16	Hot plug detect	22	GND
5	N.C.	11	GND	17	TMDS0-	23	TMDS clock+
6	DDC clock	12	N.C.	18	TMDS0+	24	TMDS clock-

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# Appendix A

## Supported Input Timing Modes

SPEC MODE	Pixel Freq.	Horizontal Timing				Vertical Timing			
		Sync Polar	Freq.	Total	Active	Sync Polar	Freq.	Total L	Active
	MHZ		KHz	Pixel	Pixel		Hz	Line	Line
640×480 @60Hz	25.175 VESA	N	31.469	800	640	N	59.940	525	480
640×480 @60Hz	25.175 VESA	N	31.469	800	640	N	59.940	525	480
800×600 @60Hz 0	40.000 VESA	P	37.879	1056	800	P	60.317	628	600

SPEC MODE	Pixel Freq.	Horizontal Timing				Vertical Timing			
		Sync Polar	Freq.	Total	Active	Sync Polar	Freq.	Total	Active
	MHZ		KHz	Pixel	Pixel		Hz	Line	Line
1024×768 @60Hz	65.000 VESA	N	48.363	1344	1024	N	60.005	806	768



**NOTE:** Timing depends on LCD panel requirements.





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# Appendix B

## OSD Operation

### Function Description of OSD Menu

※ The OSD layout and format depend on customer requests.

Icon	Description
 <p>Luminance</p>	Luminance: <ul style="list-style-type: none"> <li>• Brightness</li> <li>• Contrast</li> <li>• Sharpness</li> <li>• Ambient Sense</li> </ul>
 <p>Color</p>	Color: <ul style="list-style-type: none"> <li>• Color Temperature (9300,7500,6500,user)</li> <li>• Red</li> <li>• Green</li> <li>• Blue</li> </ul>
 <p>OSD</p>	OSD Settings: <ul style="list-style-type: none"> <li>• Horizontal</li> <li>• Vertical</li> <li>• Transparency</li> <li>• OSD Timeout</li> </ul>
 <p>Setup</p>	Setup: <ul style="list-style-type: none"> <li>• Language</li> <li>• Input</li> <li>• Reset</li> <li>• Touch On/Off</li> </ul>

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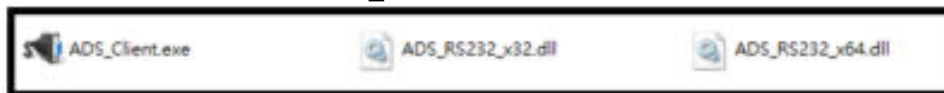
# Appendix C

## AD Board Management System

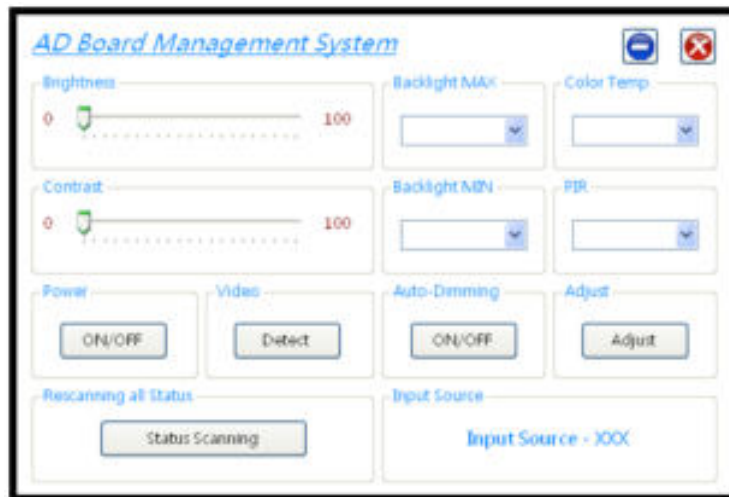
- **Digital Signage System Control Tool**

- 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



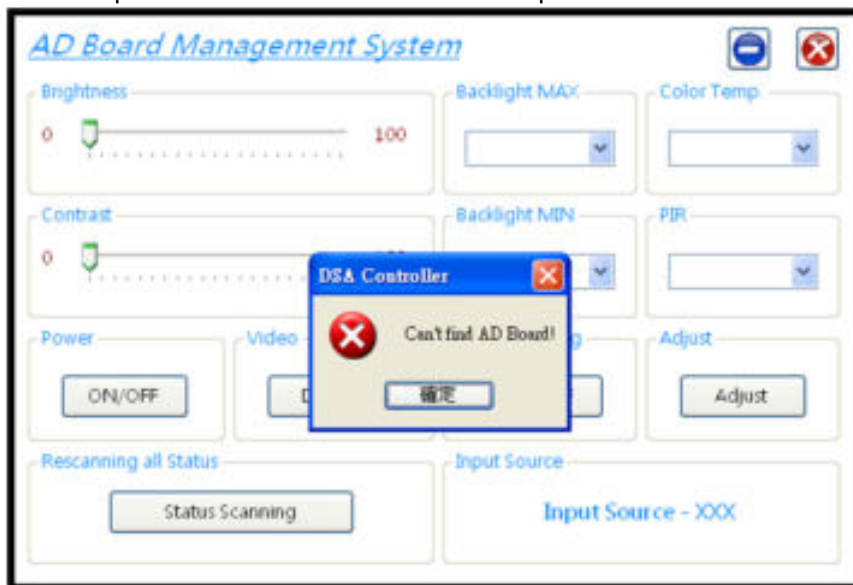
- The Digital Signage System Control Tool is used to control the following AD Board functions through a serial port (RS-232):
      1. Get and set Brightness scale
      2. Get and set Contrast scale
      3. Get and set Backlight MAX scale (works when Auto-Dimming is on)
      4. Get and set Backlight MIN scale (works when Auto-Dimming is on)
      5. Get and set Color Temperature scale
      6. Get and set PIR on/off and timer
      7. Set Power on/off for the monitor
      8. Get Video status
      9. Get and set Auto-Dimming on/off and timer
      10. Adjust the frame position on a monitor (only works with the monitor connecting to the VGA port)

- **Application UI and functions**

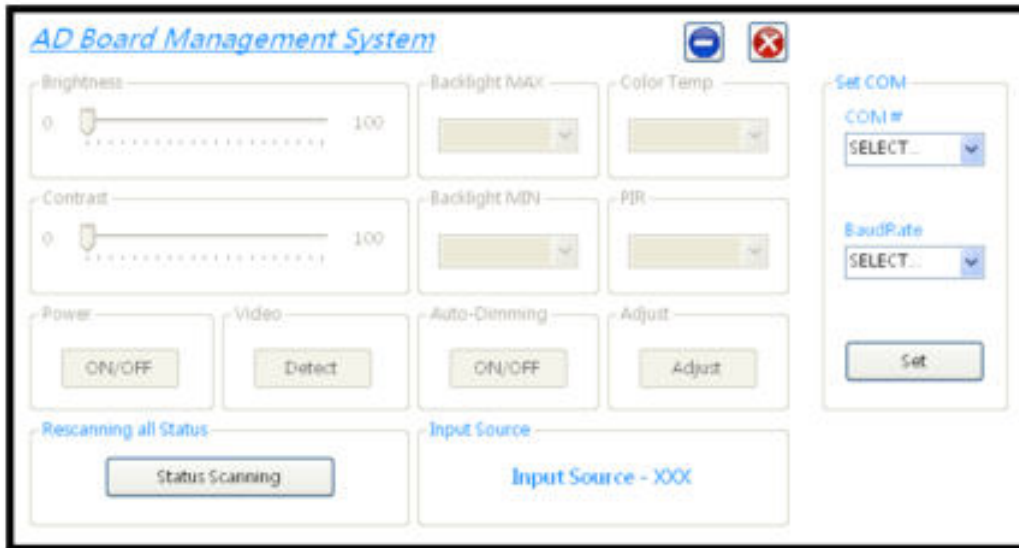
- When the application is executed, it will auto scan all serial ports to find the correct port to which you connect the AD Board.



- If the application cannot find the serial port the AD Board connects to, you need to select a port number and Baud Rate to set up connection.







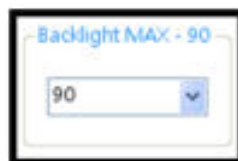
- Control items
  1. Brightness
    - Control: scroll bar
    - Range: 0 ~ 100
    - Remark: if getting or setting fails, the application will show "Brightness - Failed"



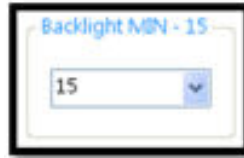
2. Contrast
  - Control: scroll bar
  - Range: 0 ~ 100
  - Remark: if getting or setting fails, the application will show "Contrast - Failed"



3. Backlight MAX:
  - Control: drop-down list
  - Range: 0 ~ 100
  - Remark: this value cannot be smaller than the value of Backlight MIN
  - Remark: if getting or setting fails, the application will show "Backlight MAX - Failed"



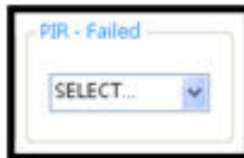
4. Backlight MIN:
- Control: drop-down list
  - Range: 0 ~ 100
  - Remark: this value cannot be bigger than value of Backlight MAX
  - Remark: if getting or setting fails, the application will show "Backlight MIN - Failed"



5. Color Temp.:
- Control: drop-down list
  - Range: 6500, 7500 and 9300
  - Remark: if getting or setting fails, the application will show "Color Temp. - Failed"



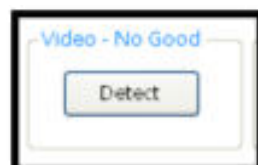
6. PIR: (Option)
- Control: drop-down list
  - Range: OFF, 5min., 10min., 20min. and 30min.
  - Remark: if getting or setting fails, the application will show "PIR - Failed"
  - Remark: if there is no PIR, it will show "PIR - Disable"



7. Power:
- Control: button
  - Way: set only, ON and OFF
  - Remark: if setting fails, the application will show "Power - Failed"



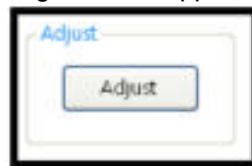
8. Video: (Option)
- Control: button
  - Way: get only, Normal and No Good
  - Remark: if setting fails, the application will show "Video - Failed"
  - Remark: if there is no Video Detect, it will show "Video - Disable"



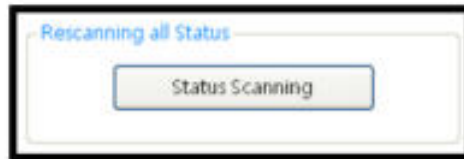
9. Dim: (Option)
- Control: button
  - Way: ON and OFF
  - Remark: if setting fails, the application will show "Auto-Dimming - Failed"
  - Remark: if there is no Auto-Dimming, it will show "Auto-Dimming - Disable"



10. Adjust:
- Control: button
  - Way: set only, Adjust
  - Remark: if setting fails, the application will show "Adjust - Failed"



11. Rescanning all Status
- Control: button
  - Remark: getting all status



12. Input Source
- Control: Text box
  - Remark: showing which one is input source (DVI/VGA/HDMI/DP)



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