AXIOMTEK

P6105

10.4” 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 P6105 Series before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the P6105 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 your body.

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

Trademarks Acknowledgments

Table of Contents

Chapter 1
Introduction

This chapter contains general information and detailed specifications of the P6105. Chapter 1 includes the following sections:

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

1.1 General Description

The P6105, a industrial 10.4 inches view area LCD Monitor comes with slim, light and reliable features to replace traditional bulky CRT for Industrial application. Its unique flat design is fit for panel mounting and VESA mounting. The display interface offers DVI-D, HDMI digital interfaces and VGA for different input source from PC system or multimedia system that let you upgrade the display don't change anything from your system. With a anti-vibration design, the rugged HMI can work well on the train.

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 that enhance this LCD monitor's performance are Plug & Play compatibility, and OSD (On Screen Display) controls, especially OSD, it made you ease adjustment on screen image.

1.2 Features

- **High contrast color 10.4" XGA TFT LCD display support resolution up to 1024x768**
- **Auto-dimming for different environment**
- **Flat design with NEMA4/IP65-compliant**
- **Suits with resistive touch**
- **High Brightness and Ultra-wide viewing angle with anti-glare features.**
- **Power management system conforms to VESA standard**
- **Advanced OSD control for picture quality adjustment**
- **Provide remote control for OSD adjustment (refer to Appendix C)**

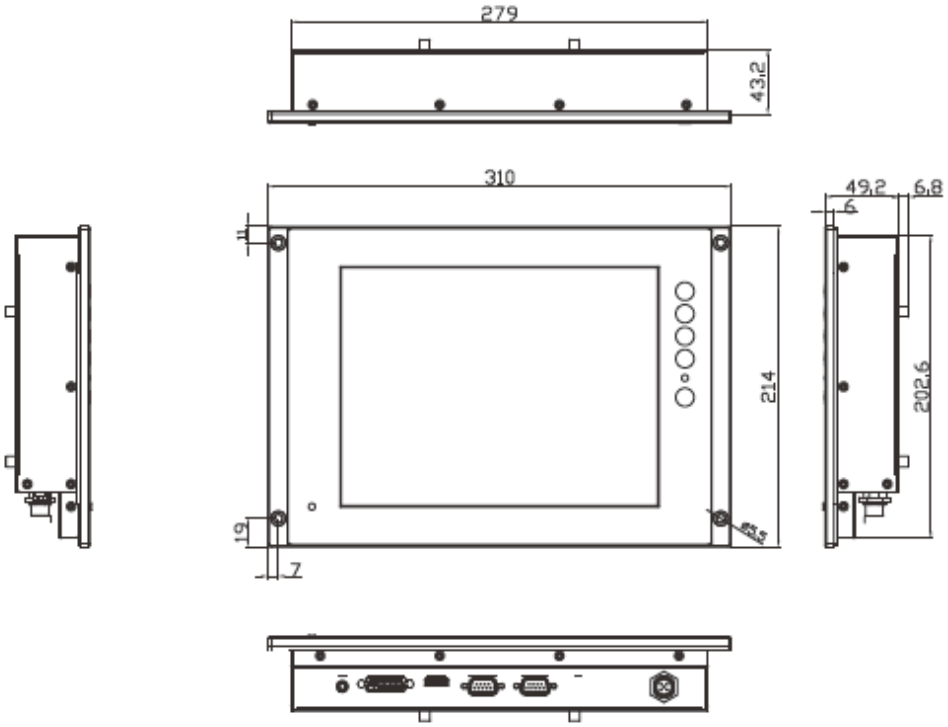
1.3 Specifications

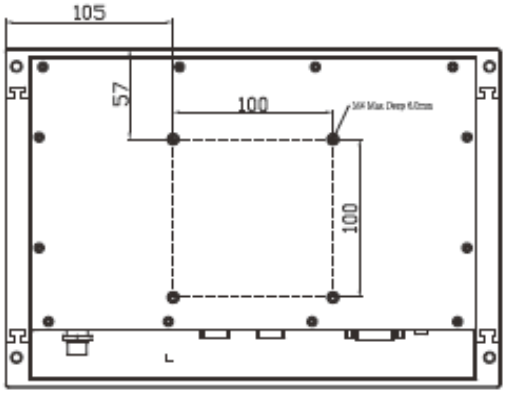
- **10" XGA(1024x768) LCD with LED backlight**
- **Resistive Touch**
- **Front bezel design with NEMA4/IP65**
- **Control: OSD (On Screen Display) control pad on the side**
- **Mounting: Support Panel mount and VESA arm mount**
- **Net Weight**
  - P6105: 2KGS
- **Dimension (Main Body Size)**
  - P6105: 310X214X49.2 mm
- **Operation Temperature**
  - -25℃ to 55℃
- **Relative Humidity**
  - 20% to 90% @ 40℃, Non-Condensing
- **Power input**
  - 24VDC or 110VDC power input
  - Max power consumption: 15.6W
- **Audio**
  - 3W speaker x 1
  - 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

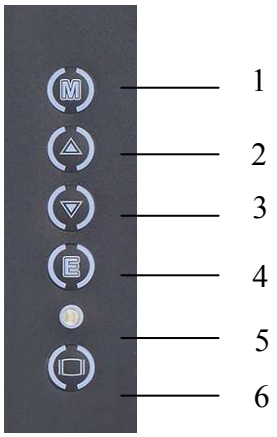
The following diagrams show the dimensions and outlines of P6105



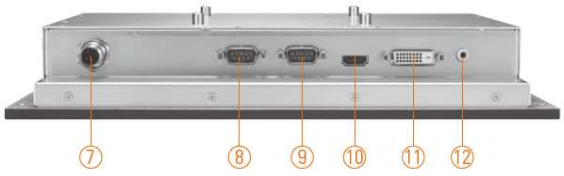


1.5 I/O Outlets

Please refer to the following illustration for I/O locations of the P6105.



- **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	Exit	11	DVI-D
5	Power LED	12	Line-in
6	Power Switch	13	Speaker
7	DC power input		

1.6 Packing List

When you receive the P6105 VGA input version, the bundled package should contain the following items:

- **P6105 unit x 1**
- **VGA cable x 1**
- **RS-232 cable x1 (for resisitve touch)**

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

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

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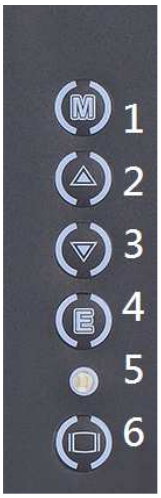
Chapter 2
System Setup

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, support 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 P6105 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 selected item.

3. **SEL-:**

   To scroll down the menu.

   To decrease the value of selected item.

4. **Exit:**

   Jump out the selection icon .

   Auto adjust.

5. **Power LED:**

   When the light is green, the power is on, red light when stand by.

6. **Power switch:**

   Press this button to turn on/off the monitor.

2.2 Panel Mounting

The P6105 is designed for panel mount application. To mount the P6105, the standard holes are on the front of P6105.

2.3 VESA Mounting

The P6105 provides rack mount at the back of system. Screw four screws to fix the kit in the back chassis.

2.4 I/O PIN ASSIGNMENT

The P6105 supports DC-in connector, T/S port, HDMI port, DVI-D port, and Line-In port. Detail pin assignment, please refer to following information.

2.4.1 DC power Jack w/ M12 connector, 24VDC or 110VDC power input

Pin	Signal
1	V+ (+24V)
2	V+ (+24V)
3	GND
4	GND
5	Earth Gound

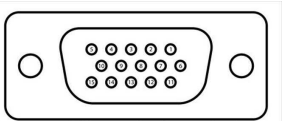
2.4.2 Waterproof Power Cable

Please follow the pin assignment for the power input.

Pin	Signal
V+	DC +24V power input
⏚	Earth Ground
GND	GND
GND	GND

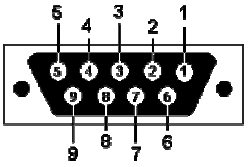
2.4.3 VGA PORT

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, support multi-function 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

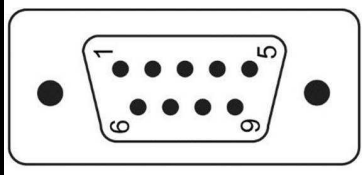
DB9 – Connect to P6105

Wiring Table

P6105	1	2	3	4	5	6	7	8
Touch		2	3	4	5	6	7	
Remote	2				5			3

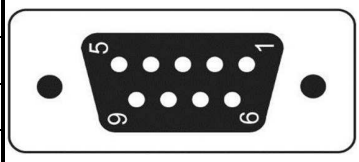
DB9 male, connect to P6105

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		



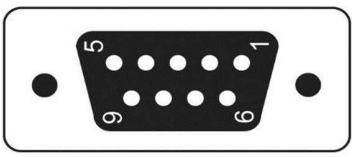
DB9 female, connect to PC for touch

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		



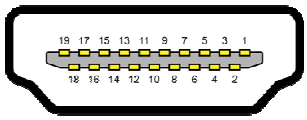
DB9 female, connect to PC for remote

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		

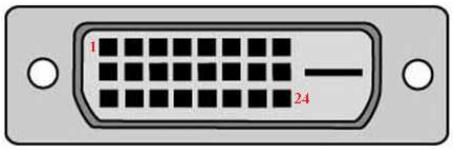


2.4.6 HDMI PORT

Pin	Define	Pin	Define	Pin	Define
1	TMDS2+	8	GND	15	DDC clock
2	Cable Detect (GND)	9	TMDS0-	16	DDC Date
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	Freq.	Total	Active	Sync	Freq.	Total	Active
	MHZ	Polar	KHz	Pixel	Pixel	Polar	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	Freq.	Total	Active	Sync	Freq.	Total	Active
	MHZ	Polar	KHz	Pixel	Pixel	Polar	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's requirement.

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Appendix B
OSD Operation

Function Description of OSD Menu

※The layout and format of OSD depends on customer's request.

c	Description
 Luminance	Luminance： ● Brightness ● Contrast ● Sharpness ● Ambient Sense
 Color	Color: ● Color Temperature (9300,7500,6500,user) ● Red ● Green ● Blue
 OSD	OSD Settings： ● Horizontal ● Vertical ● Transparency ● OSD Time out
 Setup	Setup: ● Language ● Input ● Reset ● Touch On/Off

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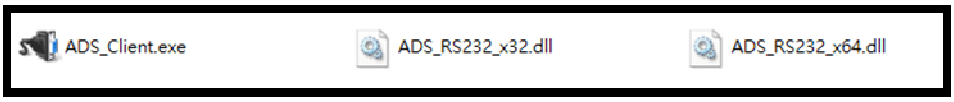
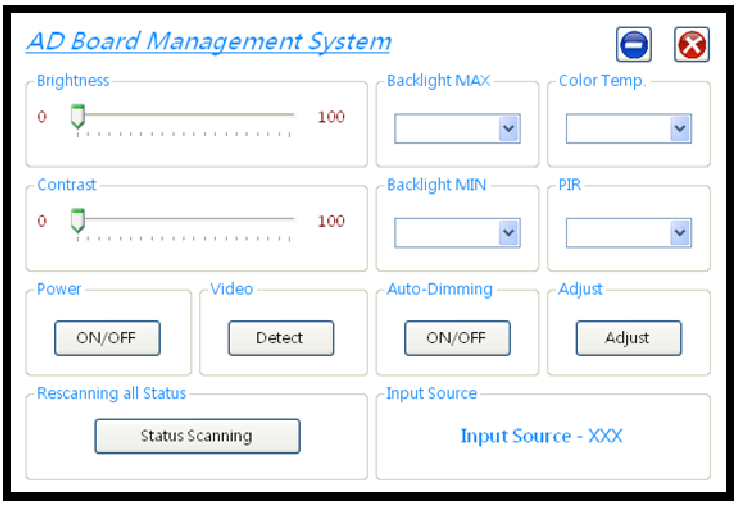
Appendix C
AD Board Management System

- **Digital Signage System Control Tool**
  - File:
    1. ADS_Client.exe: main application
    2. ADS_RS-232_x32.dll / ADS_RS-232_x64.dll: library for application reference, have to copy to System_Disk(C:):\Windows\System32 or with ADS_Client.exe

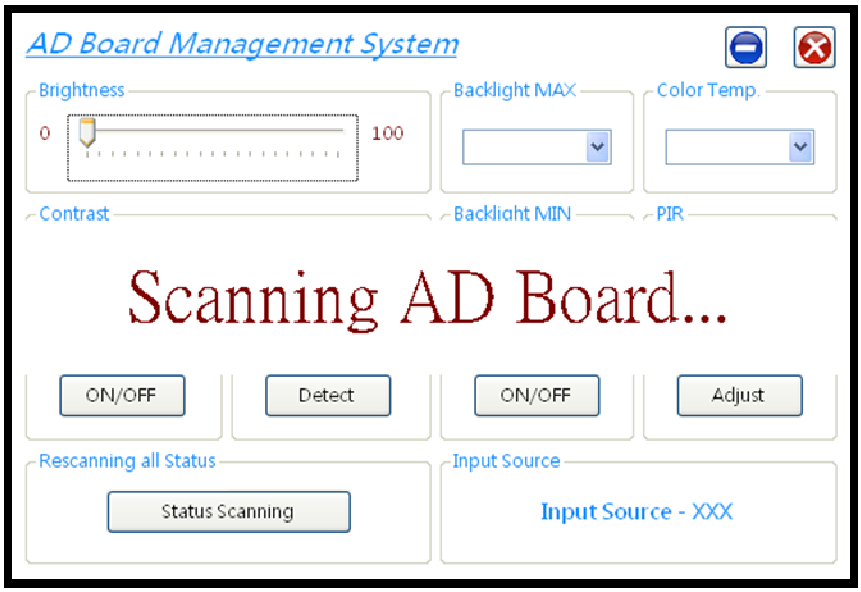


  - UI

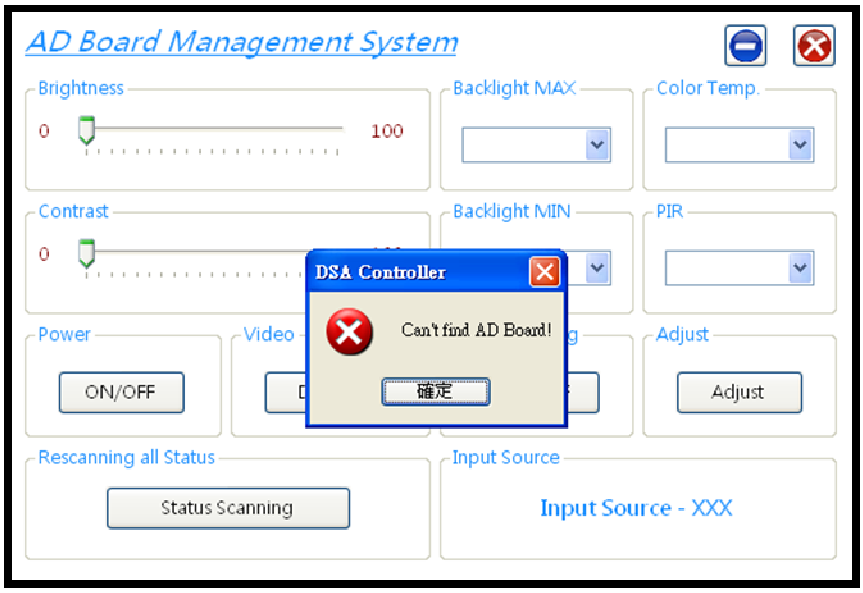


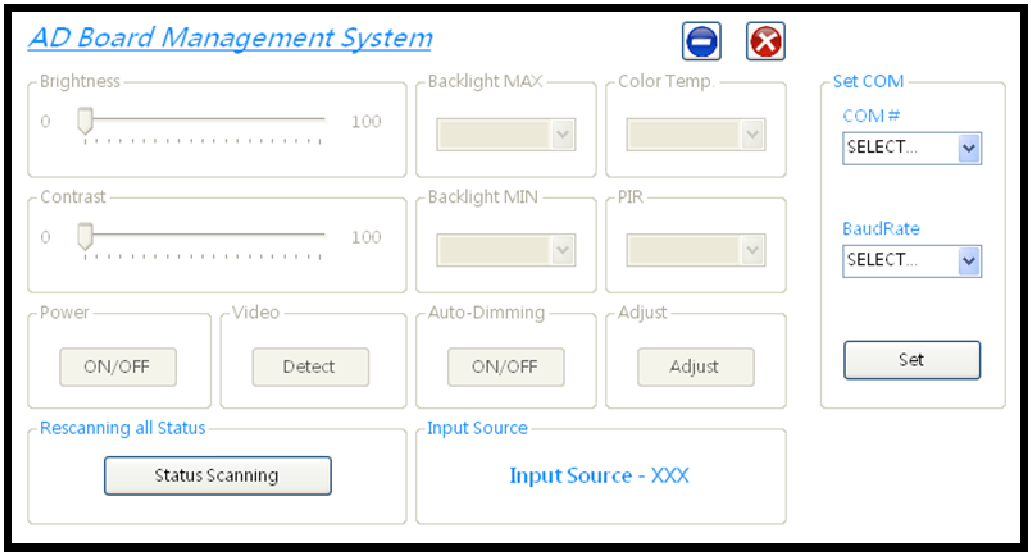
  - Digital Signage System Control Tool is for controlling 10 items of AD Board through serial port (RS-232). The items are:
    1. Brightness scale get and set
    2. Contrast scale get and set
    3. Backlight MAX scale get and set (works when Auto-Dimming is on)
    4. Backlight MIN scale get and set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

- **Functions and UI on application**
  - When application is executed, it will auto scan all serial port to find out correctly port you connect AD Board on.



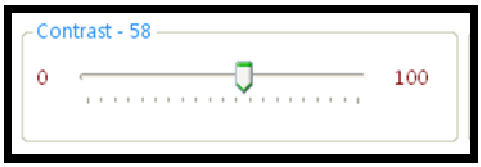
  - If application couldn't find out serial port to connect to AD Board, you need select port number and Baud Rate to setup connection.



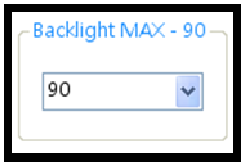


- Control Items
  1. Brightness
     - Control: scroll bar
     - Range: 0 ~ 100
     - Remark: if getting or setting is failed, it will show "Brightness - Failed"

  2. Contrast
     - Control: scroll bar
     - Range: 0 ~ 100
     - Remark: if getting or setting is failed, it will show "Contrast - Failed"



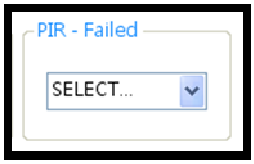
  3. Backlight MAX:
     - Control: drop-down list
     - Range: 0 ~ 100
     - Remark: this value can't smaller than value of Backlight MIN
     - Remark: if getting or setting is failed, it will show "Backlight MAX - Failed"



4. Backlight MIN:
   - Control: drop-down list
   - Range: 0 ~ 100
   - Remark: this value can't bigger than value of Backlight MAX
   - Remark: if getting or setting is failed, it will show "Backlight MIN - Failed"

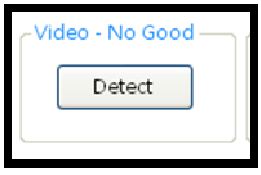
5. Color Temp.:
   - Control: drop-down list
   - Range: 6500, 7500 and 9300
   - Remark: if getting or setting is failed, it will show "Color Temp. - Failed"

6. PIR: (Option)
   - Control: drop-down list
   - Range: OFF, 5min., 10min., 20min. and 30min.
   - Remark: if getting or setting is failed, it 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 is failed, it will show "Power - Failed"

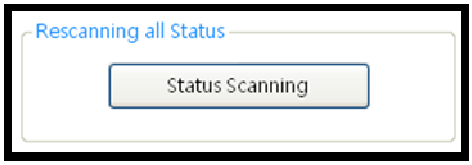
8. Video: (Option)
   - Control: button
   - Way: get only, Normal and No Good
   - Remark: if setting is failed, it will show "Video - Failed"
   - Remark: if there is no Video Detect, it will show "Video - Disable"



9. Dim: (Option)
   - Control: button
   - Way: ON and OFF
   - Remark: if setting is failed, it 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 is failed, it 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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