LCD Video Monitor & Video Wall

Universal User Manual

Video Monitor Models

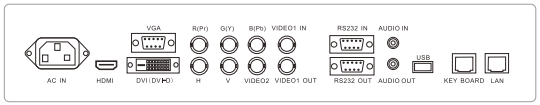
M82S1/M70S1/M65S1/M55S1/M46S1/M40S1/M32S1/M24S1/M19S2/M19S1

Video Wall Models

PD55N3/PD46N4/PD46N3/PD46N2/PD40N2

1. CONTROLS

1.1 Interface



Note: LAN port is not available for M series LCD Monitor

No	Description	Diagram
A	**AC IN**: AC POWER IN	
B	**RS232 INPUT/OUTPUT:** RS232C serial Port	
C	**BNC/RGB-HV IN: (**R, G, B, H, V)BNC Connector for VGA signal	
D	**DVI (DVI-D) IN:** DVI-D Connector for digital signal input	
E	**VGA2(D-SUB) IN**: VGA Connector for analogue signal input	
F	**BNC/VIDEO IN,VIDEO1 OUT:** BNC Connector for VIDO signal input and output.	
G	**KEYBOARD:** RJ45 connector for cable remote	
H	**LAN:** RJ45 Connector for network control (not available for M series)	
I	**HDMI**: HDMI Connector for digital signal input	

1.2 Introduction to Cable Remote Buttons

No	Description	Diagram
1	Left and Right buttons a) adjust volume b) select in OSD menu c) select in signals input d) adjust values	
2	Open/Close OSD Menu or Return to Previous Menu	Menu
3	Open source input list	Input
4	Select signal input / Down button	

1.3 Introduction to Remote Control

POWER

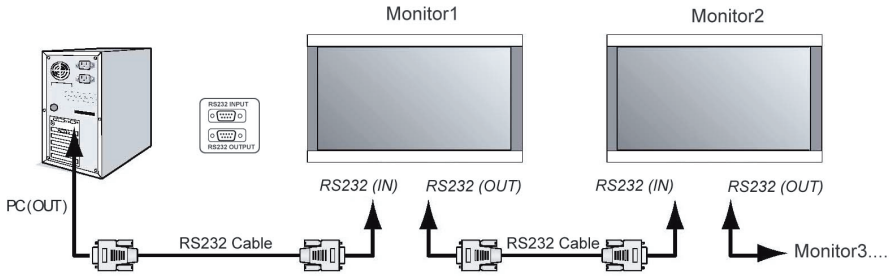
MODE
Select signal input!

Navigation Buttons
Press these buttons to select
preference and MENU for confirmation.!

2. CONNECTING

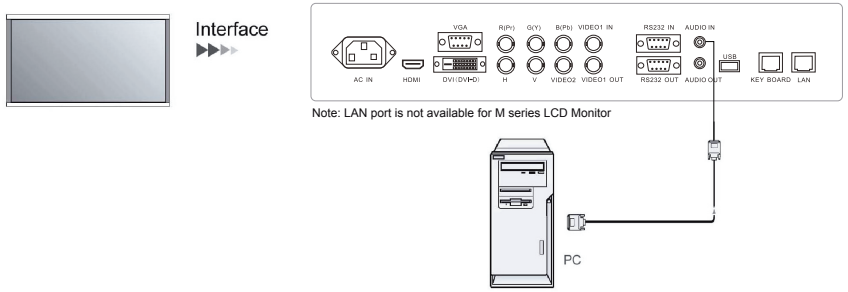
2.1 Control monitors through RS232

Monitors can be controlled by computer through RS232 cable. There are two RS232 connectors on the monitor. (One for signals input, the other for signals output). Every monitor needs a separate ID number to be able to be controlled via RS232.



2.2 Display DVI Signal

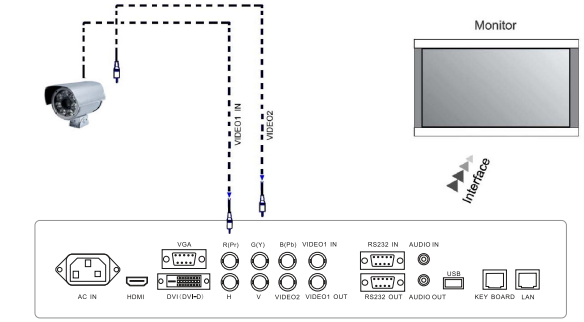
Connect the monitor and computer using a DVI-D cable, switch the signals input to DVI in menu. Use AUDIO IN3 connector for audio input, and AUDIO OUT for audio output.



2.3 Display Video signal

Video1 and Video2 signal input mode

Video device connected with the monitor by BNC connector. Set the signal input mode at Video1 or Video2.Press “mode” button on remote, then press “▲, ▼”to change signal input mode, and press“▶”to select the mode.



Note: LAN port is not available for M series LCD Monitor

3. ON SCREEN DISPLAY (OSD)

3.1 Instruction to signal input selection

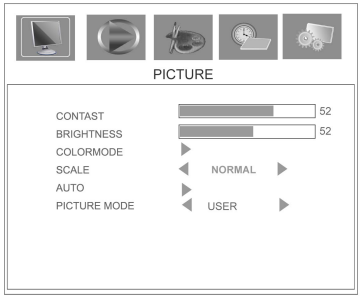
Press MODE button to enter signals input list and use navigation buttons to make a choice.

Mode	Description
PC	Analogue signal from computer
DVI	Digital signal from computer
AV1	VIDEO signal input 1
AV2	VIDEO signal input 2

3.2 Introduction to menu

■ **PICTURE:**

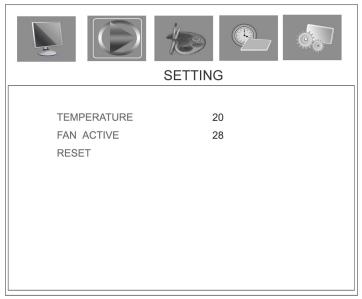
Press “MENU”button, following picture will show on the screen. Press“▲， ▼” to choose the item you want and press “ , ▶” to change parameters.



Press “ , ▶” to change parameters and press “MENU” to save your settings.

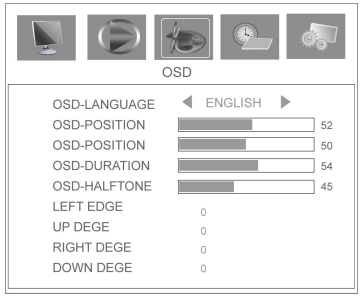
1. Contrast: Adjust the contrast ratio of the picture
2. Brightness: Change luminance of the picture.
3. Color mode: You can choose different Color mode, according to your prefer. It has four mode: USER, COLD, WARM, STANDARD
4. Aspect ratio mode: Normal, Center
5. Picture Mode: USER, STANDARD, SPORT, SOFT

■**SETTING:**



1. **TEMPERATURE -** Actual temperature inside the unit.
2. **FAN ACTIVE -** User according to the actual situation of environment to set a start temperature. When the actual temperature is higher than the set temperature, the fan will automatically run; when temperature inside the machine is lower than the set temperature, fan will shut down automatically.
3. **RESET**：recall the default settings.

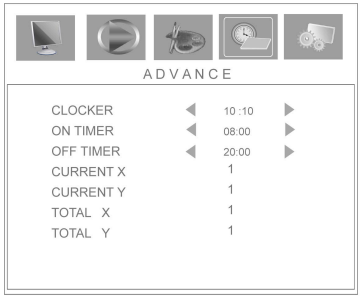
■ **OSD**:



1. **OSD LANGUAGE**：Press **“ ,▶”** to change the kind of language.
2. **MENU Display configuration** – horizontal position, vertical position, display time, transparence.
3. **Digital video wall adjust**：Stretch picture towards left /right/up/down**.** If the picture can’t be perfectly spliced by software, you can use this function to adjust the screen.

■ ADVANCE

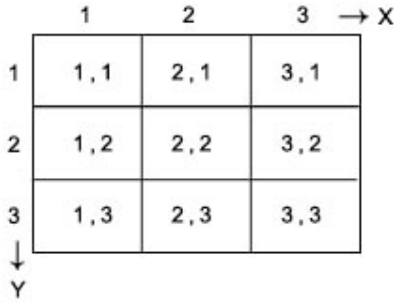
Press "◀ , ▶" to change parameters，Press "MENU" button to save settings



1. **CLOCK** - Set current time
2. **ON TIME** - Automatically power on as the time you set
3. **OFF TIME** - Automatically power off as the time you set
4. **CURRENT X** - Number of X on the video wall
5. **CURRENT Y** - Number of Y on the video wall
6. **TOTAL X** - Total number of monitors on X axis (maximum X = 12)
7. **TOTAL Y** - Total number of monitors on Y axis (maximum Y = 12)

Video signals via Video in and Video out can be daisy chained in a video wall environment, other inputs eg: DVI-D require a separate signal to each individual screen.

Take a 3×3 wall for example, The following sketch is for your reference.



Supported Resolutions

For screens with a native resolution of 1920 x 1080 : -

MODE		ASPECT RATIO HANDLING		INPUT SOURCE		
STANDARD	RESOLUTION	Full-Screen	AR Aspect Ratio	DVI	RGB	Composite Video
VESA	640x480@60,67,72,75Hz	1920x1080	16:9	Y	Y	N
IBM	720x400@70Hz	1920x1080	16:9	Y	Y	N
VESA	800x600@56,60,72,75Hz	1920x1080	16:9	Y	Y	N
VESA	1024x768@60,70,75Hz	1920x1080	16:9	Y	Y	N
VESA	1280x720@60Hz	1920x1080	16:9	Y	Y	N
VESA	1280x960@60Hz	1920x1080	16:9	Y	Y	N
VESA	1280x1024@60Hz	1920x1080	16:9	Y	Y	N
VESA	1600x900@60Hz	1920x1080	16:9	Y	Y	N
VESA	1600x1200@60Hz	1920x1080	16:9	Y	Y	N
VESA	1920x1080@60Hz	1920x1080	16:9	Y	Y	N

OVERSCAN - Video source overscan: 3~5% / PC(DVI&VGA): No over scan

For screens with a native resolution of 1366 x 768 : -

MODE		ASPECT RATIO HANDLING		INPUT SOURCE		
STANDARD	RESOLUTION	Full-Screen	AR Aspect Ratio	DVI	RGB	Composite Video
VESA	640x480@60,67,72,75Hz	1366x768	16:9	Y	Y	N
IBM	720x400@70Hz	1366x768	16:9	Y	Y	N
VESA	800x600@56,60,72,75Hz	1366x768	16:9	Y	Y	N
VESA	1024x768@60,70,75Hz	1366x768	16:9	Y	Y	N
VESA	1280x720@60Hz	1366x768	16:9	Y	Y	N
VESA	1280x960@60Hz	1366x768	16:9	Y	Y	N
VESA	1366x768@60Hz	1366x768	16:9	Y	Y	N
VESA	1280x1024@60Hz	1366x768	16:9	Y	Y	N
VESA	1600x900@60Hz	1366x768	16:9	Y	Y	N
VESA	1600x1200@60Hz	1366x768	16:9	Y	Y	N
VESA	1920x1080@60Hz	1366x768	16:9	Y	Y	N

OVERSCAN - Video source overscan: 3~5% / PC(DVI&VGA): No over scan

SERIAL CONTROL SPECIFICATION

RS-232 Control

Serial Control protocol specification

1. **Connection**

   1.1. Cabling

   The connecting cable required is a straight through from a 9-pin D-Sub female at the controller, to a 9-pin D-Sub male at the display.

Serial control cable configuration

Controller End – 9-pin Female	Signal	Display End – 9-pin Male
Pin 2	Controller RX – Display TX	Pin 2
Pin 3	Controller TX – Display RX	Pin 3
Pin 5	Signal GND	Pin 5

   1.2. Display Interconnection

   Each display buffers and repeats the control signal on a Serial OUT connector. The same cable configuration used in 1.1 is used to link from one display's Serial OUT connector to the next display's Serial IN connector.

2. **Controller port configuration**

Baud Rate	9600
Data Bits	8
Parity	None
Stop Bit	1
Flow Control	None

3. **Display Addressing**

Since the serial control to the display array is daisy chained, each display needs a unique address in order to control it. These addresses are set up using the on-screen menu in the SETTINGS menu, the maximum ID setting is 64.

4. **Control Protocol**

   4.1. Coding

   The protocol coding is implemented by transmitting a series of single byte (8-bit) codes. This is sometimes referred to as binary mode, or raw mode. All codes are shown here in hexadecimal. No CR or LF characters are required to terminate a command, except where shown in the power control commands.

   4.2. Power control

   To power ON all of the monitors the following code series needs to be sent:

   01 30 2A 30 41 30 43 02 43 32 30 33 44 36 30 30 30 31 03 18 0D

   To power OFF all of the monitors the following code series needs to be sent:

   01 30 2A 30 41 30 43 02 43 32 30 33 44 36 30 30 30 34 03 1D 0D

   4.3. Display Array configuration/Source selection

   The display array can be reconfigured, and input sources selected with the same set of codes:

   The message starts with a lead byte of FFh, followed by a count of ALL bytes in the message, including the lead byte, and the count itself.
   After the count comes a series of command blocks, one for each display in the array, each 4 bytes long in the following format:

   Display ID, Input source, Total array size, Display location in array

   The **Display ID** value varies from 41h for display ID 1, to 7Fh for display ID 64. (Display ID + 40h)

   The **Input Source** value is one of the following:

Input Selected	Input Source Value
CVBS 1	02h
VGA/PC	A2h
CVBS 2	22h
DVI	42h

   The **Total array size** value is made up of 2 parts. The first hexadecimal digit (upper 4 bits) represents the number of displays in the horizontal direction. The second hexadecimal digit (lower 4 bits) represents the number of displays in the vertical direction. Maximum array size is 12x12.

   Examples:
   For a 2x2 array the value is 22h, for a 3 wide by 2 high array the value is 32h, for a 10x10 array the value is AAh, and for a 12x12 array the value is CCh.

   The **Display location** value is made up in a similar manner, with the first hexadecimal digit (upper 4 bits) representing the display's horizontal position from the left of the array, and the second hexadecimal digit (lower 4 bits) representing the display's vertical position from the top.

   Consider the following display layout

Display ID: 1 Display Location 1,1	Display ID: 2 Display Location 2,1
Display ID: 3 Display Location 1,2	Display ID: 4 Display Location 2,2

   To switch the input sources for the array to DVI the code sequence is:

   FF 12 41 42 22 11 42 42 22 21 43 42 22 12 44 42 22 22

   FF is the start of message
   12 is the count of bytes in message (12h = 18 decimal)
   41 42 22 11 is the command block for the first display:
   41 – Display ID 1
   42 – Input Source = DVI
   22 – Total array size is 2x2
   11 – Display set to location 1,1 in the array
   the remaining sets of 4 byte command blocks are for the other 3 displays.