

**CPR-27201**

**Rack Mount LCD Keyboard Drawer**

**20.1" UXGA LCD**



**Technical Reference**

Revision B



**Warranty**

The product is warranted against material and manufacturing defects for two years from date of delivery. Buyer agrees that if this product proves defective Chassis Plans' is only obligated to repair, replace or refund the purchase price of this product at Chassis Plans' discretion. The warranty is void if the product has been subjected to alteration, neglect, misuse or abuse; if any repairs have been attempted by anyone other than Chassis Plans; or if failure is caused by accident, acts of God, or her causes beyond the control of Chassis Plans. Chassis Plans reserves the right to make changes or improvements in any product without incurring any obligation to similarly alter products previously purchased.

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To obtain an RMA number, call us at 858-571-4330. We will need the following information:

- Return company address and contact
- Model name and model # from the label on the back of the display
- Serial number from the label on the back of the display
- Description of the failure

An RMA number will be issued. Mark the RMA number clearly on the outside of each box, include a failure report for each board and return the product(s) to our San Diego, CA facility:

- Chassis Plans.
- 8295 Aero Place
- Suite 200
- San Diego, CA 92123
- Attn: Repair Department

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## Description

The CPR-27201 is an ultra high performance rack mount 1U 20.1" TFT LCD display with UXGA 1600x1200 resolution. The display offers 250nit brightness, 500:1 contrast, and 89 degree viewing angle for exceptional viewability. An anti-glare hard coating minimizes reflections making images that much clearer. The aspect ratio is 4:3 with a Pixel Pitch of only 0.255mm. It will display 16.7 million colors (True Color 32-bit).

With only 27" of depth, the CPR-27201 (no KVM installed) is perfect for rack or transit case installations. It can be used in Industrial, Commercial, Military, or Broadcast applications. Its lightweight but rugged aluminum construction makes it perfect for mobile installations. A ruggedized version with enhanced rack retention is offered for severe environments.

A variety of keyboards can be installed offering trackball or Glidepoint mouse functions. A Sun Microsystems Type 5 Compatible keyboard provides all Sun function keys. A NEMA-4 keyboard with integrated pressure sensitive pointing device can be used in wet environments where chemicals or liquids may be spilled on the keyboard. Multiple language support is available.

The CPR-27201 provides multiple signal input options including aRGB, DVI-D, NTSC, Pal S-Video and Composite Video. Picture-In-Picture is supported with OSD control of the source.

An optional KVM is available to control multiple computers from this one keyboard/display system. The KVM option extends the minimum depth.

As with all Chassis Plans products, a wide variety of custom options are available including paint color, customer logo, transmissive daylight modification, hard coated vandal shields.

### **ENCLOSURE**

20.1" UXGA 1600x1200 TFT LCD  
 1U (1.71") x 27" deep  
 Rugged all aluminum construction  
 Designed to Satisfy Military, Industrial and  
 Commercial Requirements  
 Compact Enclosure for Limited Depth Installation

### **DISPLAY**

Largest LCD Panel that can fit within the standard  
 rack constraints in 1U.  
 20.1" Diagonal Active Matrix UXGA TFT LCD  
 Features LG Technology  
 1600 x 1200 @ 60Hz Native Resolution  
 89 deg Viewing Angle  
 500:1 Contrast Ratio  
 250cd/m2 Brightness

### **VIDEO CONTROLLER**

Standard aRGB, DVI-D, S-Video and Composite  
 Video Inputs  
 OSD (On Screen Display) for Monitor Setup and  
 Control  
 Picture-in-Picture  
 Audio Input and Output with Built-In Amplifier  
 (Speakers Not Included)

### **KEYBOARD**

Several options including Sun and Nema 4, trackball  
 or Glidepad

### **OPTIONAL FEATURES / OPTIONS**

Transflective LCD for Daylight Use  
 Enhanced Backlighting  
 Protective Glare Filters  
 Customer Specified Paint Color  
 Customer Logo

## Part Number Matrix

CPR-27201-K[U]-D

'K is the keyboard model  
 U indicates USB model (nothing if PS/2 interface)  
 D is the Display Interface option

### Keyboard Selection Options

	Keyboard Style	Pointing Device	Connection
<b>1</b>	Cherry Keyboard	Trackball	PS/2
<b>1U</b>	Cherry Keyboard	Trackball	USB
<b>5</b>	Nema 4	Pointer	PS/2
<b>5U</b>	Nema 4	Pointer	USB
<b>6</b>	Sun	Trackball	USB
<b>8</b>	Nema 4	Hula Point	PS/2
<b>8U</b>	Nema 4	Hula Point	USB
<b>9</b>	SPG6 Low Profile	Touch Pad	PS/2
<b>XX</b>	SPG6 Low Profile	Trackball	PS/2

### Display Interface Options

	aRGB	DVI-D	Composite	S-Video	SDI	KVM Ports	KVM Type	Audio
<b>B</b>	•					8	KVMS-08A	
<b>C</b>	•					16	KVMS-16A	
<b>D</b>	•	•						
<b>E</b>	•					8	KVMS-8800	
<b>G</b>		•				4	DVI-D Media Switch	•
<b>I</b>	•					8	KVMS-08U	
<b>J</b>	•					16	KVMS-16U	
<b>S</b>	•	•		•	•			
<b>V</b>	•	•	•	•				

## Keyboard Options

**1 - PS/2  
1U - USB**



Cherry 83 key Keyboard with high quality 16mm integrated trackball and two button pointing device. Featuring: Mechanical keys with gold crosspoint contacts for high-precision key action, Individual key life expectancy approximately 20 million cycles and a MTBF of 134,000 hours. Multiple language support available. PS/2 Interface and USB available.

**5 - PS/2  
5U - USB**



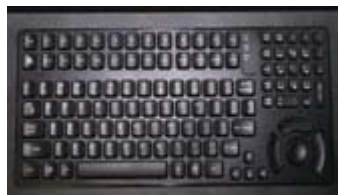
Nema 4 with integrated Pressure Sensitive Pointing Device from Staco Switch. This keyboard was designed for rugged duty computer applications where clean environments must be maintained. This keyboard features a wipeable surface, allowing for easy removal of dust, dirt, chemicals or foreign matter. All keys are evenly backlit. PS/2 or USB Interface. Can be viewed while wearing Night Vision Goggles.

**6 - PS/2**



Sun Microsystems Type 5 Compatible, 101 to 105 Key (depending on Language Variant) Keyboard with high quality 25 mm integrated trackball and three button pointing device. Featuring: Individual Key Life expectancy approximately 50 million cycles and a MTBF of 55,000 hours. USB Interface and Serial Variants to support new and legacy Sun Systems.

**8 - PS/2  
8U - USB**



Nema 4 industrial 113 Key Keyboard with integrated HulaPoint pointing device comes with 20 Function Keys, a 10-Key Number pad and is made of industrial silicone rubber. It has an operating temperature range of -40F to 194F (-40C to 90C) and a MTBF Greater than 10 Million Cycles. It can be ordered in MS Windows (PS/2 or USB) or SUN (USB only) configurations.

**9 - PS/2**



(SP6G) This touchpad keyboard has an enhanced slim design, which works with any IBM PS/2 compatible computer. Utilizing the latest in rubber mechanical key switch technology. Built-in touchpad with super sensing technology for precise tracking, 3 standard mouse buttons, excellent tactile key stroke. High quality rubber membrane key switches. PS/2 Interface. Works with KVM switches. 1,000,000 switch life cycles. Compatible OS: Win98SE/2000/ME/XP

## Display Interface Descriptions (Backs)



This Keyboard Video Mouse Switch (KVMS-08A) BACK is our High End 8 port unit with High Density connector containing aRGB Video, Mouse and Keyboard signals. With this unit you can connect the Console Drawer to 8 CPU's directly. You can also Cascade up to 504 CPU's using the dedicated cascading port. (You can daisy chain up to 31 stand alone 16 port KVMS-16A to this console.)



This BACK has an integrated KVMS-16A giving you all of the features of the "B" BACK (integrated KVMS-08A) Plus 8 more ports! This brings the total up to 16 CPU ports controlled directly and up to 512 total, when you cascade up to 31 stand alone KVMS-16A switches.



The D stands for DIGITAL, and this universal Non-KVM BACK delivers, with DVI-D (Digital Video Interface-Digital), aRGB Video, and PS/2 keyboard/mouse port. DVI-D delivers the cleanest and brightest picture. This BACK is only available on our RD1U-C24XX Series and can be ordered with optional USB Mouse/Keyboard Ports.



Lower Cost Integrated 8 port KVM (KVMS-8800A) Switch. Includes an OSD menu for up to 4 users, password protection, legacy connection (DB15, PS/2 Mouse/Keyboard), and Hot Key functionality.



First generation DVI-D Media switch BACK, gives complete control over 4 CPU's DVI-D Video, USB keyboard/mouse, speaker, microphone, and 2 USB devices (Printers, Scanners, Etc.) with Hot Key support.



KVMS-08U. Control 8 Pure USB computers with one USB K/B, one USB mouse, and one VGA monitor. Can Daisy Chain to Control up to 512 PC's. Supports multimedia USB keyboards (PC, Mac and Sun). Firmware upgrades to all the chained KVM switches at the same time via the daisy chain cable. OSD is mouse driven for quick and convenient navigation of the menu. OSD selection for OS and keyboard language. Security - administrator / user password authorization for enhanced security protection (PSP). Broadcast Mode: Operations simultaneously performed on all selected computers, software installation and upgrading, system wide shutdown....etc, OS Compatibility: WIN98, WIN ME, WIN 2K, WIN 2003, WIN XP, LINUX, Mac OS 8.6/9/10 and SUN Solaris 8/9.



KVMS-16U. Control 16 Pure USB computers with one USB K/B, one USB mouse, and one VGA monitor. Can Daisy Chain to Control up to 512 PC. Supports multimedia USB keyboards (PC, Mac and Sun). Firmware upgrades to all the chained KVM switches at the same time via the daisy chain cable. OSD is mouse driven for quick and convenient navigation of the menu. OSD selection for OS and keyboard language. Security - administrator / user password authorization for enhanced security protection (PSP). Broadcast Mode: Operations simultaneously performed on all selected computers, software installation and upgrading, system wide shutdown....etc, OS Compatibility: WIN98, WIN ME, WIN 2K, WIN 2003, WIN XP, LINUX, Mac OS 8.6/9/10 and SUN Solaris 8/9.



HD/SD-SDI Back: High Definition/ Standard Definition – Serial Digital Interface. Integrated into any of our 1U drawers will give you all the SDI video formats including NTSC, PAL, 720p, 1080p and 1080i. On screen Display along with remote will help you navigate between the Input Formats. Optional 4:4:4 12 bit Input via dual-link HD-SDI. INPUT: SDI - SMPTE 259M-C (270Mb/s), HD-SDI - SMPTE 292M (1.485, 1.485/1.001 Gb/s) DVI-D (via DVI-I connector), Analog RGB (via DVI-I connector) Dual-Link HD-SDI 4:4:4 SMPTE 372M.



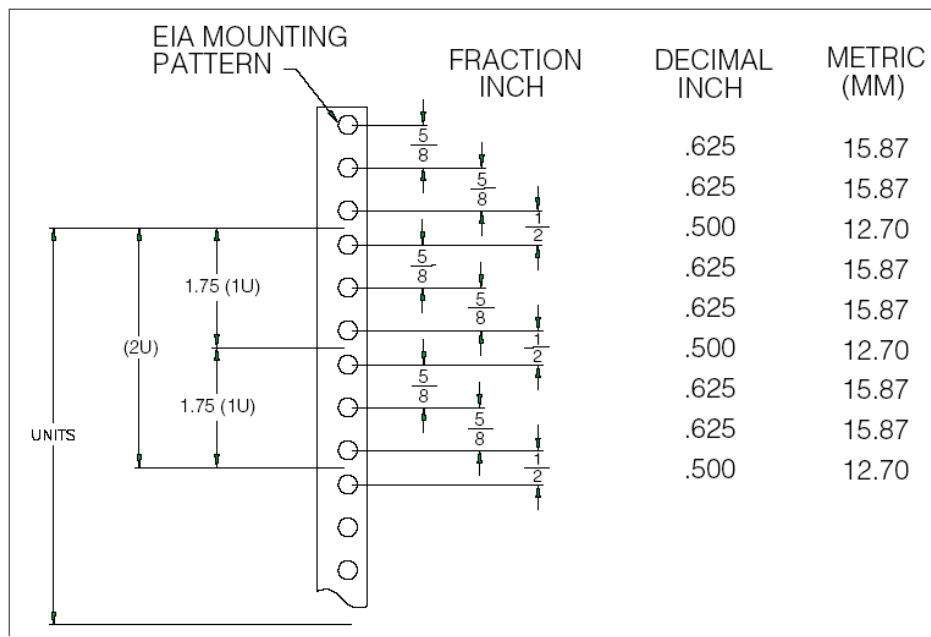
aRGB, DVI-D, S Video, CSV with BNC Post, and PS/ 2(option USB) keyboard / mouse. You can toggle between all of the video inputs sources right from the monitor's OSD keypad.

# Installation

To mount the CPR-27201 in a rack, it is first important you identify the correct holes to mount to. Please see the following illustration. Note that a 'U' starts between the holes that are 1/2" apart. One very common problem is trying to install into the wrong holes.

For most rack mount equipment, you can install the fixed rails in the rack and then slide the chassis into those rails. However, the CPR-27201 is an integrated unit and must be installed completely assembled. This is much easier if two people do the installation, one in front and one in back.

Because there are multiple styles of racks, we can't provide detailed instructions on mounting the equipment. However, there are general instructions at [http://www.chassis-plans.com/PDF/Rack\\_Slide\\_Use.pdf](http://www.chassis-plans.com/PDF/Rack_Slide_Use.pdf) for rack installation which should help.



**Illustration 1 - Rack Mounting Whole Spacing**

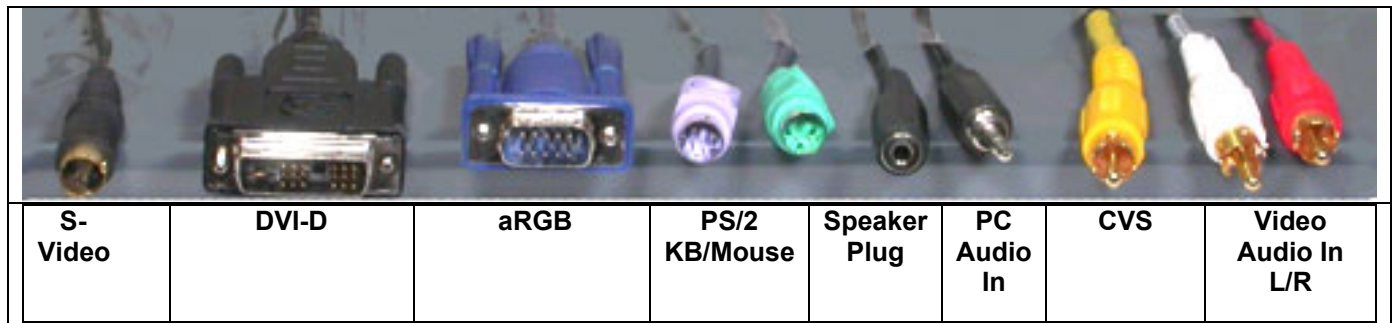
The rack ears are adjustable between 26.78" and 36.00" and provide for 2 10-32 screws on each ear.

## Connecting the Display

The CPR-27201 provides for analog, digital, composite and S-Video video inputs as well as connections for the keyboard and mouse, and audio input and output. The CPR-27201 without KVM provides cables for signal connections instead of jacks on the rear of the unit. Minimum cable length is approximately 54". Optional cable lengths, connectors, markings, etc. are available on special order. The CPR-27201 with KVM provides connectors mounted to the rear or the system and includes cables that connect to the user equipment.

Function	Connector
aRGB	15-pin high density DB15
DVI	DVI-D 19-pin Male
Composite	RCA Plug
S-Video In	4-Pin Mini Din
Audio In	RCA (x2)
Audio Out	3.5mm Mini Stereo Jack - Female
PC Audio In	3.5mm Mini Stereo Jack - Male
Keyboard	PS/2 Interface w/ Optional USB
Mouse	PS/2 Interface w/ Optional USB
DC Power In	2-Pin 2x5.5mm Power Plug Receptacle

**Table 1 - Video and Audio Connections – No KVM**



**Photo 1 – Signal Connectors – No KVM**

Legend	Function	Connector
Audio L / Audio R	Audio Inputs for CVS	RCA Plugs
CVI	Composite Video Input (CVS)	Recessed BNC.
S-Video	S-Video Input	4-Pin Mini Din
CPU1-4	aRGB Inputs to KVM plus Audio In/Out	HD15 w/ 3.5mm Female Mini Stereo Jacks (See Note 1 Below)
aRGB Console	KVM Output – Loop Back to Display	HD15 w/ 3.5mm Female Mini Stereo Jacks (See Note 2 Below)
F/W Upgrade	KVM Firm Ware Upgrade	RJ45 (See Note 3 Below)
USB	USB Output	USB Connector – Type A (See Note 4 Below)
DVI-D	DVI-D Video Input	DVI-D Connector
15VDC	Power Input, 15VDC	2-Pin 2x5.5mm Power Plug Receptacle
Not Marked	aRGB Video and Sound Input to Display from KVM	HD15 and 3.5mm Male Mini Stereo Plug

**Table 2 - Video and Audio Connections – w/ KVM**

- Note 1 – The CPR-27201xx with KVM provides for connecting to four separate computers using the included cables. Plug the **Gold** end of the cable with the Green and Red Audio Connectors into the appropriate CPU1 through CPU4 connector on the rear of the CPR-27201. The computer end of the cable provides a Blue HD15 connector for video, a Type A USB connector for the trackball/touch pad (mouse input) and Red and Green audio connectors. The CPR-27201 does not provide a microphone but provision is made on the rear of the display for a user provided microphone to be connected to the Red Audio Connector in the aRGB Console area.
- Note 2 – The output from the KVM is available at the aRGB Console connectors, outlined in Gold paint. The two cables protruding from the right on the rear panel provide aRGB Video Input and Audio Input to the display. These cables should be connected to the appropriate connectors in the aRGB Console area.
- Note 3 – The KVM provides for a Firm Ware upgrade using a special serial cable provided with the display. Please see the appropriate area of the KVM section of this manual for instructions. Leave the small switch in the Normal (right) position for operation.
- Note 4 – The KVM provides two USB ports on the rear of the display. These USB ports are connected to the selected CPU (1-4) when connected via the KVM. These USB ports can be connected by the user to any USB compatible device.



**Photo 2 – Signal Connectors – w/ KVM**

The CPR-27201 provides a front panel Source selection button for selecting which input signal is to be displayed. In addition, Picture-In-Picture is supported where the S-Video or Composite video inputs can be displayed as a small window on top of the aRGB or DVI-D inputs.

An audio amplifier is provided with a computer input source and 2 RCA audio inputs for right and left channel. The amplified output is available on a 3.5mm female Mini Stereo Jack. The audio channel can be selected via the OSD for the computer input or the RCA video input.

The KVM provides switching only for the aRGB inputs. The DVI-D, Composite and S-Video inputs are connected directly to the display.

**Picture-In-Picture (PIP)**

The CPR-27201 supports PIP. The PIP window can be sized to Small (approx 1.4x2.0”), Medium (2.9x4.0”) or Large (4.3x5.6”). There are 5 preset PIP window positions or the window can be moved to a user selected position through the OSD menus. The PIP window is used to put a smaller video feed window on top of a full computer display. The **Source** button on the front panel can be used to select the video feed to display and the size.

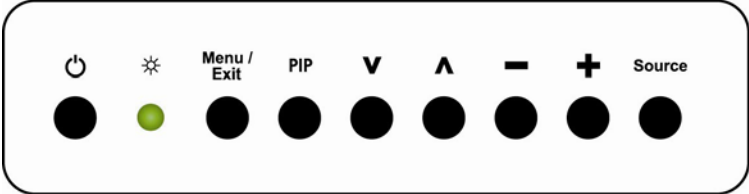
The PIP source can only be S-Video or Composite input on top of either aRGB or DVI-D. The display will not use either the aRGB or DVI-D as a PIP source. Setting the primary input to either Composite or S-Video disables the PIP function.

The PIP window turns off when the monitor enters sleep mode, is turned off with the front Power control or is stowed flat into the rack. To re-establish the PIP window, press the PIP button on the front panel and select the desired size using the + or – buttons

**Front Panel Controls**

The On Screen Display (OSD) is adjusted as follows:

1. Press the Menu Button (See Diagram 1) located on the front of the monitor.
2. Use the buttons described below to maneuver around the Menu.
3. Select the desired OSD Menu from the Menu Screen Shots below to make the desired adjustment(s).
4. Press the Menu Button to exit out of the OSD Menu when complete or wait for the OSD window to automatically close as set by the OSD Time Out setting.

<ul style="list-style-type: none"> <li>• <b>Power:</b> Turns the Unit On and Off</li> </ul> <p>LED: <span style="color: green;">●</span> Green-Normal Operation</p> <ul style="list-style-type: none"> <li>• <b>Menu/Exit:</b> Enters and Exits the menu and sub menus (Press once to enter main menu, press again to enter a sub menu, press again to exit).</li> <li>• <b>PIP:</b> Brings up the Picture-In-Picture Function Menu without having to enter the Menu Key.</li> <li>• <b>(▼) Arrow Down:</b> Moves you Down in the displayed menu</li> <li>• <b>(▲) Arrow Up:</b> Moves you Up in the displayed menu</li> <li>• <b>(-) Minus Sign:</b> Decreases a Function Level (Moves you Left in the displayed menu).</li> <li>• <b>(+) Plus Sign:</b> Increases Function Level (Moves you Right in the displayed menu).</li> <li>• <b>Source:</b> Scrolls through the different video sources. Includes aRGB (VGA), DVI-D, CVS (Composite), SVHS (S-Video), TV (not available).</li> </ul>	<p style="text-align: center;"><b>Diagram 1: OSD Keypad located on front of monitor</b></p> <div style="text-align: center; border: 1px solid black; border-radius: 10px; padding: 10px; margin: 10px auto; width: fit-content;">  </div> <p><b>Quick Menu's</b> A Quick Menu pops up by touching a single button. For example by touching the minus button you bring up the Volume's Quick Menu and subsequently can adjust the Monitor Volume level without have to go through the Main Menu, then scrolling to the Volume Tab, moving to the Volume Level and then making the adjustment.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 50%; padding: 5px;"> <p><b><u>Picture in picture Quick Menu.</u></b>  <b>PIP:</b> Brings up the PIP Menu  <b>(V)</b> Down Arrow: Toggles between PIP source and PIP On/Off/Size  <b>(-)</b> Minus Sign: Moves your selection of Source or Size Backward  <b>(+)</b> Plus Sign: Moves your selection of Source or Size Forward</p> </td> <td style="width: 50%; padding: 5px;"> <p><b><u>Volume Quick Menu</u></b>  <b>(+)</b> Brings up the Menu and increases volume level  <b>(-)</b> Brings up the Menu and decreases the volume level</p> </td> </tr> </table>	<p><b><u>Picture in picture Quick Menu.</u></b>  <b>PIP:</b> Brings up the PIP Menu  <b>(V)</b> Down Arrow: Toggles between PIP source and PIP On/Off/Size  <b>(-)</b> Minus Sign: Moves your selection of Source or Size Backward  <b>(+)</b> Plus Sign: Moves your selection of Source or Size Forward</p>	<p><b><u>Volume Quick Menu</u></b>  <b>(+)</b> Brings up the Menu and increases volume level  <b>(-)</b> Brings up the Menu and decreases the volume level</p>
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**Front Panel Controls**

To save your changes, press the front panel Menu/Exit button. Alternatively, changes are saved if no buttons are pressed and the OSD times out returning back to the display.

There is a Factory Reset function under the Global Adjustments Menu should you completely screw things up and want to start over. See the right most tab, More Options sub menu, Factory Reset.

#### Operation Notes

1. Sleep Mode – if the display does not have an input signal to the selected input mode, the unit will enter a Sleep Mode after about 6 seconds. When in sleep mode, the Power LED will flash. Pressing the Power button or Source button will exit the Sleep Mode and the display will scan the selected input port for a signal. If no signal is present, the display will once again enter Sleep Mode. Note that having a signal present on another port will not prevent the display from going into Sleep Mode if no signal is present on the scanned port. The display will only scan the selected port and does not auto-scroll through the other ports.

Note also that you can bring up the OSD menu when the display is brought out of Sleep Mode to scan a port but the OSD will disappear when the display again enters Sleep Mode after not finding a signal.

Press the Menu button to move out of the currently selected sub menu or to exit the OSD completely. When the Menu button is again pressed, it will take you to the last place in the OSD menu you were at. If you press Menu again to go to a sub-menu, you will return to the last selected adjustment.

## 'A' and 'D' Controller


### Description

The 'A' controller provides for only aRGB input while the 'D' controller provides for both aRGB and Digital DVI-D input. The OSD menus are different than those for the 'V' controller which provides for aRGB, Digital, Composite and S-Video inputs. Users with the 'V' controller should see the next section.

### Front Panel Controls

The On Screen Display (OSD) is adjusted as follows:

5. Press the **Menu** Button located on the front of the monitor.
6. Use the buttons described below to maneuver around the Menu.
7. Select the desired OSD Menu from the Menu Screen Shots below to make the desired adjustment(s).
8. Press the **Auto/Exit** button to exit out of the OSD Menu when complete or wait for the OSD window to automatically close as set by the OSD Time Out setting.

<ul style="list-style-type: none"> <li>• <b>Power:</b> Turns the Unit On and Off</li> </ul> <p><b>LED:</b> ● Green-Normal Operation</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><b>Green</b></td> <td>Normal Operation</td> </tr> <tr> <td><b>Red</b></td> <td>Power On but no input signal</td> </tr> <tr> <td><b>Amber</b></td> <td>Power On and either syncing to new input source or input source is out of range</td> </tr> <tr> <td><b>Off</b></td> <td>No power or display turned off</td> </tr> </table> <ul style="list-style-type: none"> <li>• <b>Menu/Select:</b> Enters the OSD menu and sub menus (Press once to enter main menu, press again to enter a sub menu) and accepts a display parameter change.</li> <li>• <b>Auto/Exit:</b> With no OSD showing, automatically adjusts the display parameters for Clock and Phase in aRGB mode. When the OSD is displayed, exits the current menu.</li> <li>• <b>Left/Decrease:</b> Moves a control bar to the left or the cursor down when selecting a menu.</li> <li>• <b>Right/Increase:</b> Moves a control bar to the right or the cursor up when selecting a menu.</li> <li>• <b>Source:</b> Alternates between the two video input sources - aRGB (VGA) and DVI-D.</li> </ul>	<b>Green</b>	Normal Operation	<b>Red</b>	Power On but no input signal	<b>Amber</b>	Power On and either syncing to new input source or input source is out of range	<b>Off</b>	No power or display turned off	 <p><b>Quick Menu's</b> A Quick Menu pops up by touching a single button.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Display Auto Adjust</b> Pressing <b>Auto/Exit</b> will perform a auto display adjustment when in aRGB mode. This automatically adjusts the Phase and Clock for the best displayed image.</p> </div>
<b>Green</b>	Normal Operation								
<b>Red</b>	Power On but no input signal								
<b>Amber</b>	Power On and either syncing to new input source or input source is out of range								
<b>Off</b>	No power or display turned off								

### Front Panel Controls

To save your changes, press the front panel Menu/Select button or Auto/Exit. Alternatively, changes are saved if no buttons are pressed and the OSD times out returning back to the display.

There is a Factory Reset function under the Misc Adjustments Menu (bottom left ETC symbol) should you completely screw things up and want to start over. Select the **RECALL** function in the Miscellaneous menu.

**Note** – Pressing **Source** with the OSD displayed will over-ride the OSD and change the input source. When a valid signal is detected, the front panel LED will turn green.

**Note** – Pressing **Source** with the 'A' input (aRGB only) will change the internal source to Digital. However, a digital input is not available and nothing will be displayed.

### ‘A’ and ‘D’ OSD

The CPR-27201 provides for On Screen Display (OSD) of the controls to adjust the display parameters such as brightness, contrast, etc. The display controller stores the settings in non-volatile memory so they are saved even when power is turned off or removed.

To enter the OSD, press the front panel **Menu/Select** button. Then use the **Left/Decrease** and **Right/Increase** buttons to scan between each of the menu choices. When the desired menu item is selected, again press **Menu/Select** to either bring up the control bar or the underlying sub menu.

If a control bar is brought up, use the **Right/Increase** or **Left/Decrease** buttons to change the level. Press **Menu/Select** to accept the change or simply press **Auto/Exit** to accept the change and exit that menu.

If a sub menu is brought up, use the **Left/Decrease** and **Right/Increase** buttons to navigate the sub menu and again use **Menu/Select** to change to the next menu or control.


Repeatedly pressing **Auto/Exit** will eventually exit the OSD or you can wait the number of seconds the OSD Timer is set for to automatically exit the OSD.


Note in the Main Menu, the current resolution, horizontal and vertical frequencies are displayed. The bottom of the Main Menu shows the controller firm ware revision.

### OSD Main Menu

The main OSD menu is shown below.



**Brightness** Underlying bar control to adjust the display brightness  


**Contrast** Underlying bar control to adjust the contrast or distinction of the display.  


**Color Control** Underlying menu to control the color balance of the display (aRGB only)



**User** Underlying sub menu to control Red, Green and Blue  
**Bluish** Select to make the display 'colder'  
**Reddish** Select to make the display 'warmer'

**Position** Underlying menus to control horizontal and vertical position of the display (aRGB only)



**H Position** Underlying bar control to change the overall horizontal position of the image.  
**V Position** Underlying bar control to change the overall vertical position of the image.

**Clock Phase** Underlying menu to control the clock rate and phase of the dot clock



**Phase** Underlying bar control to change the overall horizontal position of the image.  
**Clock** Underlying bar control to change the overall vertical position of the image.

**Miscellaneous** Underlying menus to control the display parameters versus image parameters



**Recall** Select to Recall the factory Default Settings  
**OSD Time** Underlying menu to select the OSD timeout setting  
**OSD Position** Underlying menus to move the OSD display horizontally and vertically  
**Auto Color** Select to automatically adjust the display color (aRGB only)  
**Auto Adjust** Select to automatically adjust display timing parameters for best fit to frequency, resolution, etc. Same effect as pressing front panel Auto/Exit button. (aRGB only)

**Language** Underlying menu to control select the OSD language



**Input Select** Underlying menu selects aRGB versus Digital input source. Same as Source button on front panel.



**Note** Two menus are grayed out between Language and Input Select as those features are not enabled on this display.

## 'V' Controller

### Description

The 'V' controller applies to high end displays with aRGB, Digital DVI-D, Composite and S-Video inputs. The 'A' controller provides for only aRGB input while the 'D' controller provides for both aRGB and Digital DVI-D input. Users with the 'A' and 'D' controller should see the previous section for OSD menus.

### Front Panel Controls

The On Screen Display (OSD) is adjusted as follows:

1. Press the **Menu** Button located on the front of the monitor.
2. Use the buttons described below to maneuver around the Menu.
3. Select the desired OSD Menu from the Menu Screen Shots below to make the desired adjustment(s).
4. Press the **Menu** Button to exit out of the OSD Menu when complete or wait for the OSD window to automatically close as set by the OSD Time Out setting.

<ul style="list-style-type: none"> <li>• <b>Power:</b> Turns the Unit On and Off</li> </ul> <p>LED: <span style="color: green;">●</span> Green-Normal Operation</p> <ul style="list-style-type: none"> <li>• <b>Menu/Exit:</b> Enters and Exits the menu and sub menus (Press once to enter main menu, press again to enter a sub menu, press again to exit).</li> <li>• <b>PIP:</b> Brings up the Picture-In-Picture Function Menu without having to enter the Menu Key.</li> <li>• <b>(▼) Arrow Down:</b> Moves you Down in the displayed menu</li> <li>• <b>(▲) Arrow Up:</b> Moves you Up in the displayed menu</li> <li>• <b>(-) Minus Sign:</b> Decreases a Function Level (Moves you Left in the displayed menu).</li> <li>• <b>(+) Plus Sign:</b> Increases Function Level (Moves you Right in the displayed menu).</li> <li>• <b>Source:</b> Scrolls through the different video sources. Includes aRGB (VGA), DVI-D, CVBS (Composite), SVHS (S-Video), TV (not available).</li> </ul>	<p style="text-align: center;"><b>Diagram 1: OSD Keypad located on front of monitor</b></p> <div style="text-align: center; border: 1px solid black; border-radius: 10px; padding: 10px; margin: 10px auto; width: fit-content;"> </div> <p><b>Quick Menu's</b> A Quick Menu pops up by touching a single button. For example by touching the minus button you bring up the Volume's Quick Menu and subsequently can adjust the Monitor Volume level without have to go through the Main Menu, then scrolling to the Volume Tab, moving to the Volume Level and then making the adjustment.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 50%; padding: 5px;"> <p><b><u>Picture in picture Quick Menu.</u></b>  <b>PIP:</b> Brings up the PIP Menu  <b>(V) Down Arrow:</b> Toggles between PIP source and PIP On/Off/Size  <b>(-) Minus Sign:</b> Moves your selection of Source or Size Backward  <b>(+) Plus Sign:</b> Moves your selection of Source or Size Forward</p> </td> <td style="width: 50%; padding: 5px;"> <p><b><u>Volume Quick Menu</u></b>  <b>(+)</b> Brings up the Menu and increases volume level  <b>(-)</b> Brings up the Menu and decreases the volume level</p> <p><b><u>Display Auto Adjust</u></b>                      Pressing <b>(+)</b> and <b>(-)</b> simultaneously will perform a auto display adjustment when in aRGB mode.</p> </td> </tr> </table>	<p><b><u>Picture in picture Quick Menu.</u></b>  <b>PIP:</b> Brings up the PIP Menu  <b>(V) Down Arrow:</b> Toggles between PIP source and PIP On/Off/Size  <b>(-) Minus Sign:</b> Moves your selection of Source or Size Backward  <b>(+) Plus Sign:</b> Moves your selection of Source or Size Forward</p>	<p><b><u>Volume Quick Menu</u></b>  <b>(+)</b> Brings up the Menu and increases volume level  <b>(-)</b> Brings up the Menu and decreases the volume level</p> <p><b><u>Display Auto Adjust</u></b>                      Pressing <b>(+)</b> and <b>(-)</b> simultaneously will perform a auto display adjustment when in aRGB mode.</p>
<p><b><u>Picture in picture Quick Menu.</u></b>  <b>PIP:</b> Brings up the PIP Menu  <b>(V) Down Arrow:</b> Toggles between PIP source and PIP On/Off/Size  <b>(-) Minus Sign:</b> Moves your selection of Source or Size Backward  <b>(+) Plus Sign:</b> Moves your selection of Source or Size Forward</p>	<p><b><u>Volume Quick Menu</u></b>  <b>(+)</b> Brings up the Menu and increases volume level  <b>(-)</b> Brings up the Menu and decreases the volume level</p> <p><b><u>Display Auto Adjust</u></b>                      Pressing <b>(+)</b> and <b>(-)</b> simultaneously will perform a auto display adjustment when in aRGB mode.</p>		

### Front Panel Controls

To save your changes, press the front panel Menu/Exit button. Alternatively, changes are saved if no buttons are pressed and the OSD times out returning back to the display.

There is a Factory Reset function under the Misc Adjustments Menu should you completely screw things up and want to start over. See the right most Misc tab, More Options sub menu, Factory Reset.

Note – Pressing **Source** with the OSD displayed will over-ride the OSD and change the input source. Source scans, in order, aRGB, DVI-D, TV, CVBS, SVHS. It is normal for the display to hang in the SVHS mode while trying to change the source as the controller scans available SVHS modes. When a valid signal is detected, a small window above the source indicator will display the resolution, frequency, and controller mode.

### **Sleep Mode**

The display will enter sleep mode (turn off) if there is no input signal to the selected input mode. The delay to enter Sleep Mode when the signal is not valid is approximately 6 seconds. When in sleep mode, the Power LED will flash green. Pressing the **Power** button or **Source** button will exit the Sleep Mode and the display will scan the selected input port for a signal. If no signal is present, the display will once again enter Sleep Mode. Note that having a signal present on another port will not prevent the display from going into Sleep Mode if no signal is present on the selected port. The display will only scan the selected port and does not auto-scroll through the other ports.

Note that you can bring up the OSD menu when the display is brought out of Sleep Mode port but the OSD will disappear when the display again enters Sleep Mode after not finding a signal.

Entering Sleep Mode will disable the PIP and revert to a TV PIP default. Use the front panel PIP to select the PIP source and size to again display the PIP window. Alternatively, use the OSD to enable PIP.

## 'V' OSD

The CPR-27201 provides for On Screen Display (OSD) of the controls to adjust the display parameters such as brightness, contrast, etc. The menus are context sensitive in that there are adjustments specifically for each Source Input type (analog aRGB, digital DVI-D, S-Video and Composite). This allows you to tune the display for each type of input without having to retune when changing the Source selection. The display controller stores the settings in non-volatile memory so they are saved even when power is turned off or removed.

In the following menus, there are many common features and selections between each type of input. However, some adjustments may not pertain to a particular input signal type so those adjustments are not shown.

### Note

The display controller provides a TV function which is not utilized in the CPPM-8U201. While the TV menu selections are available in the OSD, none of the TV functions work. Adverse display behavior may be observed if the TV settings are changed and it is advised they be left set to the default setting.

### OSD Menu Organization

While different adjustments are available for each of the different input types, the menus are similarly organized and the adjustments have the same effect.



**Display** Brightness (Fine and Course), Contrast, Phase, Frequency, H Position, V Position

**PIP** Brightness, Contrast, Sharpness, Color, Tint, PIP Source, PIP Size, PIP More Settings (sub menu)

**PIP More Settings** – H Position, V Position, PIP Position Preset

**OSD** OSD Background, OSD Time Out, OSD Position Preset, OSD H Position, OSD V Position, OSD Language, Controller Firmware Revision

**Audio** Volume, Treble, Bass, Balance, Audio Preset, Mute, Sound Swap

**Misc.** Auto Adjustment, Source, Sleep Time, Sleep Time Remaining Indicator, Room Lighting, Freeze Frame, Zoom Settings (sub menu), More Options (sub menu)

**Zoom Settings** – Zoom, Zoom H Pan, Zoom V Pan

**More Options** – Color Temp, Sharpness Filter, Scale Mode, Factory Reset

**Note** An additional TV tab will display on the right if TV is selected for the Main Source or PIP Source. It is recommended that TV not be selected or used for any adjustment.

A typical menu appears as follows:



**Display Menu**



Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
Brightness – Fine	•	•	•	•
Brightness – Course	•	•	•	•
Contrast	•	•	•	•
Phase	•			
Frequency	•			
H Position	•			
V Position	•			
Sharpness			•	•
Color			•	•
Tint			•	•

- Brightness** Top is Fine Adjustment and bottom is Course Adjustment. Adjusts the brightness of the screen. Image brightness (ADC for analog signals, PW for digital).
- Contrast** Adjusts distinction (Image noise clearness). Image contrast (ADC for analog, PW for digital).
- Phase** Adjusts the phase signal sample. Use it to fine tune to eliminate noise or overlapping lines.
- Frequency** Adjusts horizontal size of the screen by increasing or decreasing number of picture elements.
- H Position** Shifts displayed image left or right.
- V Position** Shifts displayed image down or up.
- Sharpness** Adjusts the sharpness of the picture.
- Color** Adjusts the display color saturation of the screen. (Video only, TV not available).
- Tint** Used to adjust the display hue adjustment of the screen. (Video only, TV not available).

**PIP Menu**



Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
Brightness	•	•		
Contrast	•	•		
Sharpness	•	•		
Color	•	•		
Tint	•	•		
PIP Source	•	•		
PIP Size	•	•		
PIP More Settings (sub menu)	•	•		

- Brightness** Adjusts the brightness of the PIP display.
- Contrast** Adjust distinction (Image noise clearness).
- Sharpness** Adjusts the sharpness of the PIP display.
- Color** Adjusts the display color saturation of the PIP display. (Video only, TV not available).
- Tint** Used to adjust the display hue adjustment of the screen. (Video only, TV not available).
- PIP Source** S-Video (SVHS) or Composite (CVS) (TV not available)
- PIP Size** Small, Medium, Large, and Off.
- PIP More Settings** See Below.

**PIP More Setting Sub Menu**

Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
H Position	•	•		
V Position	•	•		
PIP Position Preset	•	•		

- H Position** Move the PIP from Left Edge (0) to Right Edge (100)
- V Position** Move the PIP from Bottom Edge (0) to Top Edge (100)
- PIP Position Preset** Top Left, Top Right, Middle of Screen, Bottom Left, Bottom Right.

**Note** The PIP menus are not available (tab not shown) when the primary input source is set to CVHS or CVBS.

**OSD Menu**



Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
OSD Background	•	•	•	•
OSD Time Out	•	•	•	•
OSD Position Preset	•	•	•	•
OSD H Position	•	•	•	•
OSD V Position	•	•	•	•
OSD Language	•	•	•	•
Version 29A 1.00	•	•	•	•

- OSD Background**      Opaque or Translucent
- OSD Time Out**      Sets the time (5 to 60 seconds) the OSD will be displayed without any user input.
- OSD Position Preset**    Top Left, Top Right, Middle of Screen, Bottom Left, Bottom Right
- OSD H Position**      Move OSD from Left Edge (0) to Right Edge (100)
- OSD V Position**      Move OSD from Bottom Edge (0) to Top Edge (100)
- OSD Language**      English, French, Italian, German, two Asian languages
- Version 29A 1.00**      LCD Controller Firmware Revision

**Audio Menu**



Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
Volume	•	•	•	•
Treble	•	•	•	•
Bass	•	•	•	•
Balance	•	•	•	•
Audio Preset	•	•	•	•
Mute	•	•	•	•
Sound Swap	•	•		

- Volume**      Adjusts the audio output level.
- Treble**      Adjusts the midrange tone of the audio output.
- Bass**      Adjusts the base tone of the audio output.
- Balance**      Adjusts audio output to Right or Left bias.
- Audio Presets**      Select preset Treble and Base settings (User, Movie, News and Standard).
- Mute**      Silence audio output. Off allows sound output. On mutes the sound (sound off)
- Sound Swap**      Change audio input source from Main PC Audio in to PIP.

Audio Notes:

1. Treble and Bass will be 'grayed out' and not adjustable when Audio Preset is set to Movie, News or Standard.
2. Sound Swap is not available when CVHS or CVBS are selected as the input because PIP is disabled in that configuration.
3. A video signal must be present at CVHS or CVBS for the video sound input to function. Connecting an audio source to the either the Audio Left or Audio Right without a corresponding video input will not work.
4. Pressing the front panel + or – control will raise or lower the volume without invoking the OSD. There is no front panel Mute control.

**Misc Menu**



Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
Auto Adjustment	•			
Source	•	•	•	•
Sleep Time	•	•	•	•
Room Lighting	•	•	•	•
Freeze Frame	•	•	•	•
Zoom Settings (sub menu)	•	•	•	•
More Options (sub menu)	•	•		

- Auto Adjust** Automatically adjusts the screen resolution and sync to the incoming signal. (aRGB Source Only)
- Source** Selects the video input signal source (aRGB, DVI-D, S-Video, and Composite Video).
- Sleep Time** Adjust (5 to 120 minutes) to set a desired time for monitor to go to sleep.
- Sleep Time remaining** Indicates remaining time until monitor goes to sleep (Grayed out until sleep timer is activated).
- Room Lighting** Bright, Normal, Movie changes the display brightness slightly with Movie being lowest.
- Freeze Frame** Retains the image on the monitor, including PIP.
- Zoom Settings Menu** See Below
- More Options Menu** See Below

**Misc. Zoom Sub Menu**

Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
Zoom	•	•	•	•
Zoom H Pan	•	•	•	•
Zoom V Pan	•	•	•	•

- Zoom** Zooms into the center of the displayed image, including PIP. If the PIP is not located at the center of the display, it will be zoomed off the edge and will no longer be visible. The maximum zoom factor is approximately 16:1.
- Zoom H Pan** Pans the zoomed image left or right.
- Zoom V Pan** Pans the zoomed image up or down.

Notes:

1. Zoom H Pan and Zoom V Pan will be grayed out if Zoom is set to 0.

**Misc. More Options Sub Menu**

Adjustment	Applicability			
	aRGB	DVI-D	CVHS	CVBS
Color Temp	•	•	•	•
Red Temp	•	•	•	•
Green Temp	•	•	•	•
Blue Temp	•	•	•	•
Sharpness Filter	•	•	•	•
Scale Mode	•	•	•	•
Factory Reset	•	•	•	•

- Color temp** Adjust the Red/Green/Blue bias for Color Temperature (5500K, 7500K, 9300K and User). Default value is set at 7300K.
- User color** You can adjust red, green and blue setting for user Color Temperature (grayed out unless Color Temp set to User).
- Sharpness Filter** Adjust the picture Sharpness (Normal, Sharp, Sharpest, Soft, and Softest).
- Scale Mode** Adjust the output image size from the image scalar to be larger, smaller or same as the display device.
- Fill All** – fill screen.
- Fill Aspect** – fill screen but maintain aspect ratio.
- One To One** – display image in original size (no scaling).
- Zoom** – convert letterboxed video to full screen.
- Anamorphic** – Squeezes a 16:9 image into a 4:3 space. Available only for video inputs.
- Video Game Zoom** – Zooms display in slightly to remove game borders. Available only for video inputs.
- Factory Reset** – Resets all settings back to factor settings including OSD Language to English. Press **(+)** to reset.

## Video Controller Details

### Features

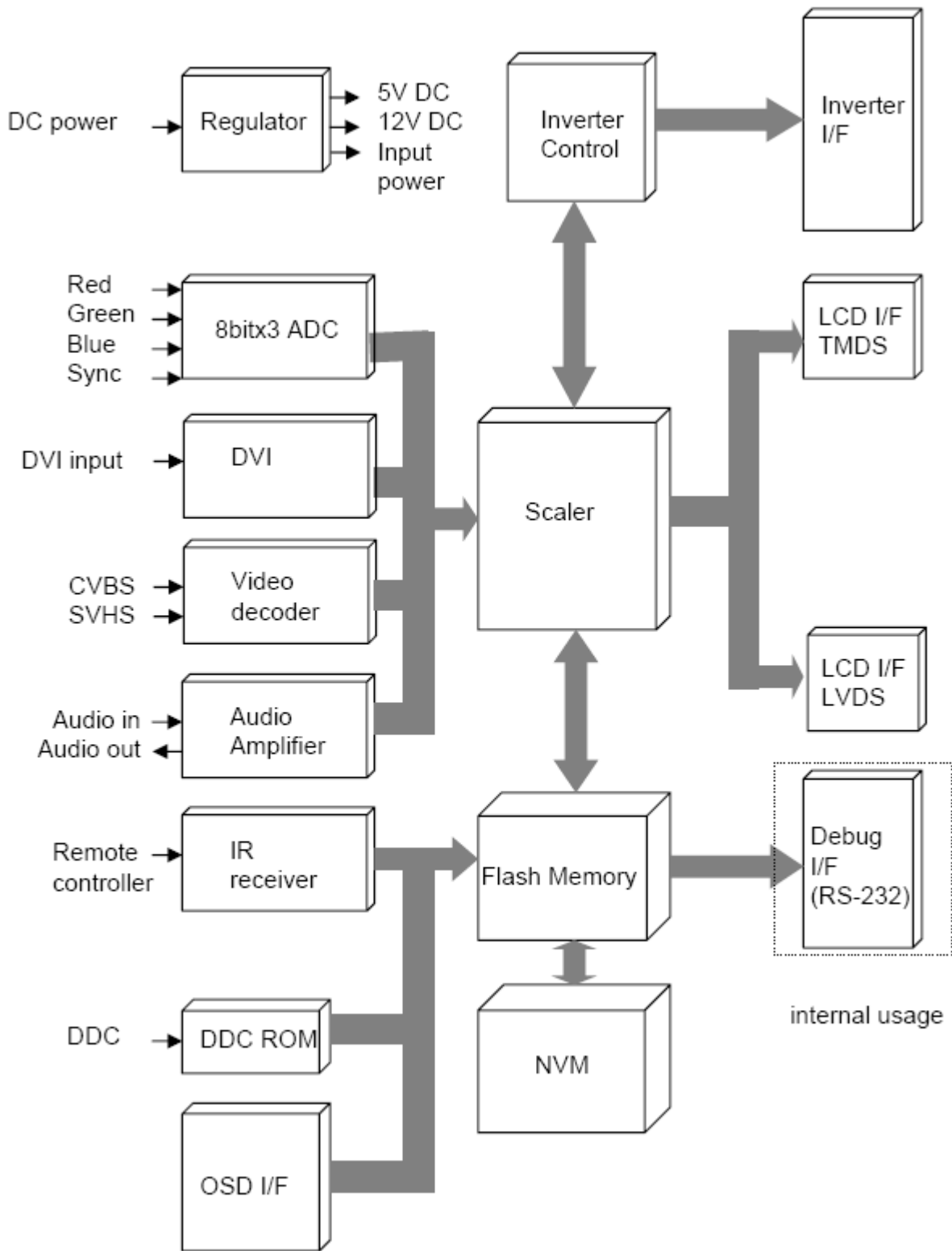
- State of the art high performance picture quality design
- Analog RGB / DVI / CVBS (x1) & SVHS (x1) with NTSC, PAL, SECAM /Audio input (x3) / TV / Remote control / Speaker out (x1)
- Optional input combination, e.g., PC Monitor only, PC Monitor with TV
- Full CRT multi-sync monitor compatibility
- Multi-sync capability up to UXGA resolution @ 75Hz, compatible standard DOS, VGA, SVGA, XGA and SXGA VESA timing
- Expand DOS, VGA, SVGA, XGA and SXGA to full screen display
- True color (16.7M) data processing and display driving
- Single control operated & transparent On-Screen-Display (hereafter 'OSD') user interface
- Full control of all relevant display and interface parameters via OSD
- Multi language support
- VESA DDC1/2B compliant
- Compatible with VESA DPMS power saving modes
- +12VDC single power: 48watts AC/DC power adapter recommended.
- Operating temperature: 0 to 50°C
- The 3watt x 2 ch. @ 7 ohms audio capability with treble, bass, volume and mute control through either OSD or remote controller.
- OSD & Power switch board
- Optional TV tuner : NTSC, PAL and SECAM
- LCD Voltage select on Board : 5.0V, Adapter V, 12V

### General Description

The DIT201001C Controller is an advanced TFT LCD Monitor Control Board. This design enables a full conventional CRT monitor and/or video & audio replacement with a large size Active Matrix LCD module. It is suitable for video resolution up to UXGA @ 75Hz in all video modes, the full display area of the module is used.

The DIT201001C Controller is designed to act as a full monitor and/or video & audio interface. Besides the main functionality of an analog and digital video interface, also CVBS (x1), SVHS (x1) and stereo audio amplifier with 4 inputs.

Controller Block Diagram



## Video Mode Support

The CPR-27201 monitor can support any video mode within the following input constraints:

- Signal sample frequency with the input  $\leq 80\text{kHz}$
- Horizontal sync frequency between  $30\text{kHz}$  and  $60\text{kHz}$ .

The modes are detected when presented to the input and previous alignments for setup are automatically recalled. True multi-sync monitor emulation is implemented.

The factory preset supported modes include:

Mode	Resolution	Refresh rate	H-freq.	Pixel freq.	Remarks
VGA	640 x 350	70Hz	31.47KHz	25.175MHz	VESA Standard
VGA	720 x 400	59.940HZ	31.469KHZ	25.175MHZ	IBM VGA 3H
VGA	640 x 480	60Hz	31.5KHz	25.175MHz	Industry Standard
VGA	640 x 480	72Hz	37.9KHz	31.500MHz	VESA Standard
VGA	640 x 480	75HZ	37.5KHZ	31.500MHZ	VESA Standard
SVGA	800 x 600	60Hz	37.9KHz	40.000MHz	VESA Guidelines
SVGA	800 x 600	72Hz	48.1KHz	50.000MHz	VESA Standard
SVGA	800 x 600	75HZ	46.9KHZ	49.500MHZ	VESA Standard
XGA	1024 x 768	60Hz	48.4KHz	65.000MHz	VESA Guidelines
XGA	1024 x 768	70Hz	56.5KHz	75.000MHz	VESA Standard
XGA	1024 x 768	75HZ	60KHZ	78.750MHZ	VESA Standard
SXGA	1280 x 1024	60Hz	64KHZ	108.000 MHZ	VESA Standard
SXGA	1280 x 1024	75HZ	80KHZ	135.000 MHZ	VESA Standard
UXGA	1600 x 1200	60HZ	75HZ	162.000 MHZ	VESA Standard

### Notes:

1. All mentioned modes are non-interlaced. The maximum and minimum frame rates are determined by the TFT LCD.
2. Factory preset modes are overwritten by additional user alignments for automatic recall. At all times it remains possible to recall the initial factory presets.

## Video Mode Support

## Specifications

### Enclosure

1U x 19" (wide) x 27" (deep)  
Fits 27"-36" Rack  
Weight: 29.0lbs (13.2Kgs)  
Color: Powder coated black, light texture  
(Custom colors and logos available)

### Display

LG.Phillips LM201U04 20.1" TFT LCD w/ antiglare hard coating  
Display area: 408mm x 306mm  
Display Colors: 16.7 Million  
Response Time: 16mS  
Viewing Angle: 89/89/89/89 deg  
Contrast Ratio: 500:1 typical  
Brightness: 250cd/m2 typical  
Pixel Pitch: 0.255mm x 0.255mm  
Power Management: EPA Energy Star, VESA DPMS

### Display Resolution

Max Resolution:  
D-Sub: Analog UXGA 1600 x 1200 @ 75Hz  
DVI: UXGA 1600 x 1200 @ 60Hz  
Recommended Resolution: DVI UXGA 1600 x 1200 @ 60Hz  
19 Display Modes VGA to UXGA  
Horizontal Frequency: 15-80KHz Automatic  
Vertical Frequency: 60-75Hz Automatic

### Contrast

Brightness  
Autosetting  
Clock / Phase  
Horizontal & Vertical Position / Expansion / OSD  
Text & Graph Mode Selection  
Color Temp  
Recall  
Audio Function  
PIP Source

### Keyboards

A variety of keyboards can be installed offering trackball or Glidepoint mouse functions. A Sun Microsystems Type 5 Compatible keyboard provides all Sun function keys. A NEMA-4 keyboard with integrated pressure sensitive pointing device can be used in wet environments where chemicals or liquids may be spilled on the keyboard. See Page 3 for details.

### Regulations

FCC-A, CE  
Optional UL, CSA, TUV

## Connectors

aRGB:	15-pin high density DB15
DVI:	DVI-I 23-pin female
Composite:	RCA Plug
S-Video In:	4-Pin Mini Din
Audio In:	RCA (x2)
Audio Out:	3.5mm Stereo Mini Jack Female
PC Audio In:	3.5mm Stereo Mini Jack Male
Keyboard:	PS/2 or Optional USB
Mouse:	PS/2 or Optional USB
DC Power In:	2-Pin 2x5.5 Power Plug

Note - The CPR-27201 provides cables for signal connections instead of jacks on the rear of the unit. Minimum cable length is approximately 54". Optional cable lengths, connectors, markings, etc. are available. Please contact your Sales Engineer for details.

## Power Consumption

Normal:	60W (front LED Green)
DPM Stand-by/Suspend:	<5W (front LED Amber)
DPM Off:	<3W (front LED Amber)
Power Key Off:	<3W (front LED Off)
Power Switch Off:	<1W (front LED Off)
Power Input:	100-240VAC, 50/60Hz 1.2A
Power Cord:	Wall-outlet type or PC-outlet type

The power supply is a Li Shin model LSE9901B1870 or equivalent "brick" measuring 2.5"(W) x 1.2"(H) x 4.3"(L). The output is 18VDC at 3.88A. The DC cord length is approximately 36".

## Environmental

### Operating conditions:

Temperature:	0 to 50 deg C
Humidity:	10% to 90% non-Condensing
Altitude:	12,000 feet

### Storage conditions:

Temperature:	-25 to 60 deg C
Humidity:	5% to 95% non-Condensing
Altitude:	40,000 feet

## Shipping

Weight:	34lbs
Shipping Box -	37" x 5.5" x 23"