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Premier View 4
Monitor Operating Manual

Issue 4.03

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Welcome to the Calibre LCD monitor Operating Manual

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PRODUCT DESCRIPTION

1.1. Introduction

This manual is intended to give an operator information to facilitate connection, setting up, and usage of the monitor which is fitted with a PremierView 4 flat-panel driver card. Its technical content is limited to that which is relevant to these functions; full technical information is given in the Technical Manual.

The figure below details all the possible input connections please check your monitor or product description to determine which inputs are fitted.
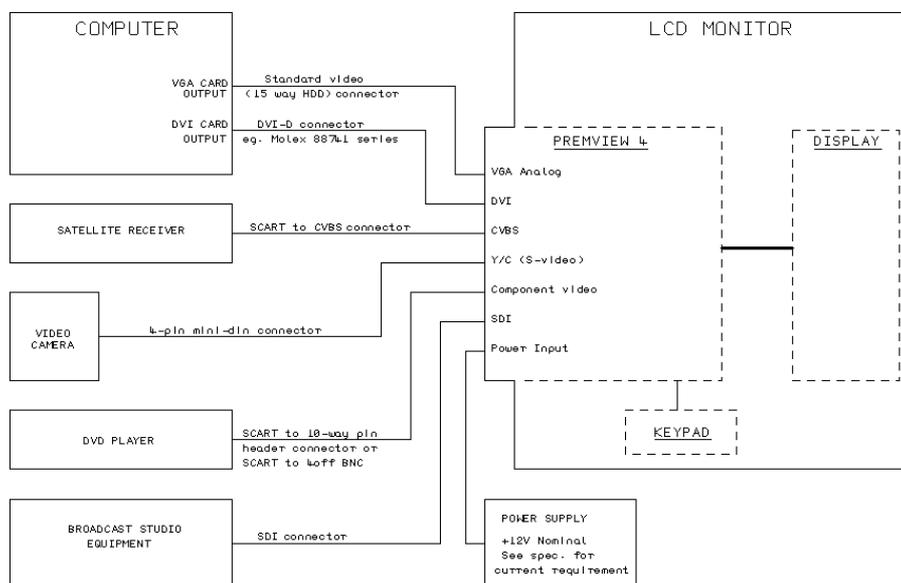
Installation Example

1.2. Product Overview

The monitor is designed to accept the following input signals:

- Composite video via BNC socket or 3-pin header

- S-Video via 4-way mini_DIN socket

- RGB and YUV component video via 10-pin header on open-chassis units or 4 off BNC sockets on cased units.

- SDI (Serial Digital Interface) via 3-pin header on open-chassis units or a BNC sockets on cased units.

- RGB analogue (computer interface) via 15-way HDD socket or 10-pin header

- DVI (Digital Visual Interface) via DVI socket (Molex 88741 series or similar)

These signals can be all displayed on the panel and ALL signals are displayed FULL SCREEN. "Near-optical quality" scaling means that the output signal is scaled with minimal loss of quality or image resolution irrespective of the resolution of the incoming signal.

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Factory defaults have been carefully chosen such that most users will not need to make any adjustments. A simple user interface (supplied) with On Screen Display allows the user to adjust a wide variety of parameters if necessary. Once the parameters are set they can be stored in non-volatile EEPROM, which ensures the set-up is retained when power to the unit is switched off.

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OPERATION

2.1.   Normal Operation

Normal operation of the interface consists of little more than connecting up the power supply, video and computer signals and switching on. Signals are scanned in accordance with the currently selected priority list and the highest priority valid signal is displayed. If the priority or any other picture parameter needs adjustment then the following section describes the user interface.

	VIDEO	**GRAPHICS**
Brightness	Controls backlight intensity	
Contrast	Controls video gain	
Geometry	Image edge adjust (size and position), Moire correction, aspect ratio. For SXGA, choice of Full scan, overscan or letter-box aspect ratios.	Image edge adjust (size and position), Moire correction, clock (tune), phase (sharpness)
Input Select	RGB, DVI,CVBS, Y/C, Component Video	
Colour	Colour, contrast, black level, hue (NTSC only), gamma correction	Contrast, black level, R+G+B gains, R+G+B levels, gamma correction
System	ESC, Save, Reset, OSD timeout, OSD X/Y position, Auto Centering	
Auto Setup	Not applicable	Yes/No (analogue graphics only)
Miscellaneous	Image flip horizontal	
	Some models allow the user to flip the image vertically NOTE for Graphics inputs SVGA is the maximum resolution which can be flipped vertically	

Function-dependent Menu Options.

2.2.   User Interface Buttons

The physical user control panel consists of five push buttons. One of these is dedicated to invoking the OSD Menu while the other four are dual purpose, as listed below:

- Menu: invokes OSD or next function level (equivalent to "enter" key on a PC)

- Con+: Direct contrast increase, also used to increment selected parameter

- Con-: Direct contrast decrease, also used to decrement selected parameter

- BR+: Direct backlight increase, also used to increment selected parameter

- BR-: Direct backlight decrease, also used to decrement selected parameter

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2.3.   User Controls.

2.3.1.   Direct Brightness Adjustment

Pressing the Br+ or BR- button controls the intensity of the backlight. After adjustment, the new Brightness value is displayed on the screen until the OSD timeout period expires (see para. 2.4.5). The new setting is then stored and the display returns to normal.

2.3.2.   Direct Contrast Adjustment

Pressing the Con+ or Con- button controls the contrast (video gain) of the picture. After adjustment, the new contrast value is displayed on the screen until the OSD timeout period expires. The new setting is then stored and the display returns to normal.

2.3.3.   Menu Select

Pressing this button displays picture identification information together with a menu of icons. To access lower-level functions, press Con+, Con-, Br+ or Br- to toggle through the menus available for the currently displayed signal type, then press MENU again to select that function. The MENU button has a similar function to the ENTER key on a computer keyboard. Exit from a menu is by selecting BACK which returns to the previous level. When leaving the main menu you will be prompted to save any changes, if you do not wish to save any changes select NO. Note that Con+ and Br+ have identical functions in this mode, as have Con- and Br-.

2.4.   OSD Menu

At the top of the menu is a line which identifies the type of signal currently displayed. For computer signals the same section displays the signal resolution, together with horizontal and vertical frequencies. If its setup has been saved, the user number of that signal is also displayed. These figures are for guidance only.

2.4.1.   Brightness and Contrast

These perform the same functions as the direct button operations in para. 2.3.1 and 2.3.2 above.

2.4.2.   The Geometry Menu

Geometry adjustments can be made for all types of input individually, so that if the input type changes, the geometry adjustment will change with it. Saved settings include one each for PAL, NTSC, SECAM, SDI and component video.

Additionally, a total of 25 settings may be stored for analogue graphics (RGB and DVI). If this graphics table is full, further stored settings will over-write the earliest so that the settings complement contains the latest 25.

1)   Edge Adjustment – Picture Size and Position Controls. The four "Edge" controls shift each edge within available limits. Note that the maximum available shift depends on the incoming video standard and the display panel type, and may be restricted vertically. This provides very flexible and easy to use image size and position control.

2)   Moire correction The user can choose from one of four correction tables.

3)   Clock (Analogue Graphics only). This sets the total number of input pixels per line to correspond with the input source, and will normally require adjustment only for unusual signals.

4)   Phase (Analogue Graphics only) This adjusts the internal clock to sample each pixel as near as possible to the centre. Phase will normally require adjustment for unusual types of signal.

5) <u>Aspect Ratio</u> (Video signals only for SXGA panels) This allows a user to select the displayed aspect ratio where the signal input is at variance with the display panel's natural aspect ratio. The format may be adjusted to either "Letter Box" (4:3 LB) or "Overscan" (4:3 OS). "Letter Box" effectively adjusts the height of the displayed image and "Overscan" effectively adjusts the width to achieve the desired 4:3 aspect ratio.

2.4.3.   <u>Input Select</u>

This allows the user to configure the preferred input selections. If a facility is not fitted, it will be displayed but not selectable. By pressing the Br+/Con+ and Br-/Con- keys, the following choices can be made:

1) Signal type priority: Video-graphics or Graphics-video

2) Video priority search order –

> CVBS – Y/C – SDI – Component
>
> Y/C – CVBS – SDI – Component
>
> SDI – Component – CVBS – Y/C
>
> Component – SDI – CVBS – Y/C

3) Graphics search – RGB-DVI or DVI-RGB

4) Component video type – RGB or YUV. Incorrect colours may be due to wrong selection here.

NOTE you can only select those inputs which your monitor is configured for.

2.4.4.   <u>The Colour Menu</u>

1) <u>Video Inputs</u> - The contrast (video gain) and brightness (black level) parameters, also colour saturation for PAL, NTSC and SECAM inputs can be accessed from this menu. For NTSC signals, there is an additional HUE option.

2) <u>Computer Inputs – Individual Colour Adjustments</u> - Red, green and blue levels can be thought of as individual brightness controls for each of red, green and blue. They should be adjusted for the desired colour balance and to minimise noise on low intensity colours and greys. Colour tints can be added as required.

Gains can be thought of as individual contrast controls for each of red, green and blue. They should be adjusted for the desired colour balance and lack of noise on high intensity colours and whites. For example, a block of white can be changed to a blue-tinge (clean) white or to a red-tinge (warm) white.

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2.4.5.   The System Menu

This selection contains functions which are more applicable to system operation than to picture adjustment:

1)   Esc: The Esc option returns to the last saved setup. It is useful if an adjustment has been made in error. After an Esc the menu is removed.

2)   Save: The Save option saves all the user adjustments for the displayed signal type. The new adjustments are stored in non-volatile memory and so are still valid from a power down - power up cycle. After a Save the menu is removed.

3)   Reset: The are two types of Reset option:

Selecting Reset from the menu restores the user adjustable parameters for the signal currently being display back to the factory defaults.

Simultaneously pressing four buttons Br+, Br–, Con+, Con– restores to factory default state all the user adjustments for the signal currently being displayed. This is useful if a picture set-up has become hopelessly lost or confused. The Reset option can also be accessed even if the OSD has been lost. After a Reset the menu is removed.

4)   OSD Timeout: This selection enables the user to control the time after which the OSD display is cancelled. It can be adjusted in 15-sec increments from 1 (=15 sec) to 4 (=1 min) approximately.

5)   OSD X and OSD Y: These functions control the position of the OSD display on the screen. Its default setting is such as to place the OSD in the centre of the screen, but the user can adjust its position with these functions.

6)   Auto Centering: This is simply a Yes/No selection. If an input signal changes, it is first measured and compared with stored selections. If its parameters are already stored, they are installed. If they are not stored, the "Auto Centering" selection is checked and if set to "No" the best fit is displayed. The user can then centre the picture using OSD auto setup. If Auto Centering is set to "Yes", centering is performed automatically, which may take more than 15 seconds. This could cause a problem if using Windows, wherein a resolution change is displayed only for 15 seconds and reverts to its previous selection if no acknowledgement is entered. For this reason, the default state is "No". NOTE this control only configures Analogue Graphics inputs.

7)   Computer / AV Mode: This option is only available on units fitted with the professional decoder and is valid when the input is RGB(S) connected via the component input port or an interlace graphics signal is connected via the analog computer input port. Computer Mode should be selected when the input comes from a computer generated source, this option provides reduced flicker for predominantly static data. AV Mode should be selected when the input comes from any source which contains moving images as it provides a smoother output.

2.4.6.   The Miscellaneous Menu

This selection offers several options the availability of these functions is dependant on the particular build configuration and the signal input.

1)   Image flip Horizontal: This is available on the majority of options and allows the user to flip the output image horizontally.

2)   Image Flip Vertical: This can only be used if the Frame Store option is fitted and the input signal resolution is either video or computer graphics (SVGA or lower).

3)   Text Enhanced / Normal: This text enhancement option can improve the appearance of fine text from a computer generated analog input signal. Please note this function will only be effective if the signal resolution is close to the resolution of the panel, no harm will be done to the unit by trying the enhanced and normal text options for other input resolutions.

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ENVIRONMENTAL AND SAFETY

3.1.   Operating

Temperature $0^{o}C$ to $50^{o}C$

Humidity (non condensing)   0% to 95%

3.2.   Storage

Temperature $-25^{o}C$ to $85^{o}C$

Humidity (non condensing)   0% to 95%

3.3.   Safety Issues

The display interface and keyboard are low voltage devices which do not generate any hazardous voltages. However, when designing an installation, bear the following points in mind:

Any mains operated power supply should comply with safety and EMC legislation in the country of operation. Any mains wiring should comply with the safety standards applicable in the country of operation.

The backlight inverter in most display panels generates potentially lethal voltages. Ensure that the installation offers adequate protection to the operator from this hazard.

PRODUCT SPECIFICATION

4.1.   Introduction

This section provides technical details for all possible inputs please refer to the model specification to determine which inputs can be displayed by the monitor.

4.6   Power Supply Requirement

Unless otherwise specified on the product the supply voltage **MUST** be from a clean 12V±1% supply.

The power supply rating depends on the requirements of the display panel, please refer to the model specification for details.

4.2.   Video Inputs

Signal formats	Composite (CVBS), S-Video (Y/C), SDI, DVI
Standards	NTSC, PAL, SECAM
Composite (CVBS) input level	1V p-p nominal inc. sync
Luminance (Y) input level	1V p-p nominal inc. sync
Chrominance (C) input level	0.6V p-p nominal
Input Impedance (all inputs)	75 Ohms

4.3.   Computer (RGB and DVI) Inputs

Signal formats:			
	DOS	720 x 400	70Hz
	VGA	640 x 480	50Hz to 75Hz inclusive
	MAC I	640 x 480	67Hz
	SVGA	800 x 600	50Hz to 75Hz inclusive
	MAC II	832 x 624	74.7Hz
	XGA	1024 x 768	50Hz to 75Hz inclusive
	MAC 2	1152 x 870	75Hz
	SXGA	1152 x 900	50Hz to 75Hz inclusive
	SXGA	1280 x 1024	50Hz to 75Hz inclusive
	UXGA	1600 x 1200	60Hz

RGB video level   0.7V - 1.0V
RGB input impedance   75 Ohms
Sync formats
        1.   Separate H & V sync at TTL levels.
        2.   Composite -ve sync at TTL levels.
        3.   Sync on green (an extra 0.3V -ve on the 0.7V 75 Ohm Green video signal)

4.4.   SDI Input
Format: Serial video data in SMPTE 270Mb/s format
Input impedance: 75 ohms.

4.5.   DVI Input

DVI input is via a Molex 88741 series or similar. Signals, which are in LVDS form are input via 100-ohm differential lines using TMDS coding. Maximum pixel clock rate is 165MHz, so that the maximum transition rate on the colour signals may exceed 1.5GHz.

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4.6.   Component Video Input

This may be RGB+sync, YUV+sync, RGB with sync-on-green or YUV with sync-on-Y. The unit will automatically search first for 4-wire (separate sync), then for 3-wire (sync-on-green or sync-on-Y).

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ABBREVIATIONS

This section expands abbreviations peculiar to video applications which may be used in this manual. Signal-name mnemonics are not included.

CVBS   Composite Video Baseband Signal (alternatively Chroma, Video, Blanking and Sync)

DVI   Digital Visual Interface

LVDS   Low-voltage differential signalling

NTSC   National Television Systems Committee (USA, Canada, Japan TV standard)

PAL   Phase Alternating Line (TV standard for UK and many other countries)

RGB   Red, Green, Blue analogue video

SDI   Serial Digital Interface

SECAM   Systeme Electronique Couleur Avec Memoire **-** TV broadcast standard used in France, Middle East and most of Eastern Europe.

SMPTE   Society of Motion Picture Television Engineers

SVGA   Super VGA – 800x600 pixels

SXGA   Super XGA – 1280x1024 pixels

TMDS   Transition-minimised differential signalling

UXGA   Ultra XGA – 1600x1200 pixels

VGA   Video graphics array – 640x480 pixels

XGA   Extended graphics array – 1024x768 pixels

Y/C   Luminance (Y) and Chrominance (C), also called S-video