

PremierViewPro-LED Operating Instructions

This manual explains how to operate your Premier View Pro (PVPro) image scaler. The PVPro is designed to provide users with a powerful and flexible method of driving large display devices.

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SAFETY WARNING:

1. THERE ARE NO USER SERVICEABLE PARTS WITHIN THE UNIT. REMOVAL OF THE TOP COVER WILL EXPOSE DANGEROUS VOLTAGES. DO NOT OPERATE THE UNIT WITHOUT THE TOP COVER INSTALLED.
2. ENSURE THAT ALL ELECTRICAL CONNECTIONS (INCLUDING THE MAINS PLUG AND ANY EXTENSION LEADS) ARE PROPERLY MADE AND COMPLY WITH ELECTRICAL SAFETY REGULATIONS.
2. ENSURE THAT THE INTEGRITY OF THE EQUIPMENT ISOLATION BARRIER IS MAINTAINED WHEN CONNECTING TO OTHER EQUIPMENT. THIS MEANS THAT ONLY LOW VOLTAGE ISOLATED CIRCUITS MAY BE CONNECTED TO THE SIGNAL INPUTS AND OUTPUTS. IF ANY DOUBT EXISTS CONSULT QUALIFIED SERVICE PERSONNEL.
3. TO PREVENT SHOCK OR FIRE HAZARD DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. IF SUCH EXPOSURE OCCURS, REMOVE THE PLUG FROM THE MAINS OUTLET AND HAVE THE EXPOSED UNIT CHECKED BY QUALIFIED SERVICE PERSONNEL.
4. DO NOT CONTINUE TO OPERATE THE EQUIPMENT IF YOU HAVE ANY DOUBT ABOUT IT WORKING NORMALLY, OR IF IT IS DAMAGED IN ANY WAY. WITHDRAW THE MAINS PLUG FROM THE MAINS OUTLET AND CONSULT QUALIFIED SERVICE PERSONNEL.
5. DO NOT REMOVE ANY FIXED COVERS UNLESS YOU ARE QUALIFIED TO DO SO AND EVEN THEN WITHDRAW THE MAINS PLUG FROM THE MAINS OUTLET BEFORE YOU START.
6. THIS EQUIPMENT CONTAINS NO USER SERVICEABLE PARTS. REFER ALL SERVICING AND MAINTENANCE TO QUALIFIED SERVICE PERSONNEL.
7. TO AVOID EXPLOSION, DO NOT OPERATE THIS EQUIPMENT IN AN EXPLOSIVE ATMOSPHERE

INTRODUCTION

1.1. General Introduction

PremierViewPro-LED is a very flexible image scaler developed specifically for driving full-colour LED displays from video or graphics sources. PremierViewPro-LED features best in class image quality and superb scaling quality. Video image stability and motion performance is best-in-class with outstanding motion compensated video processing and flicker reduction.

Output image sizing is very easily controlled for quick and simple configuration to drive any LED screen from 192x144 through to 1280x1024 active image size. The output image may also be zoomed and panned to select a particular area of interest. Actual minimum and maximum achievable image sizes are dependent on input and output resolutions selected.

PremierViewPro-LED uses a very flexible high performance video input front end including true component video support in analogue YPbPr and RGB colour space and SDI SMPTE259M digital formats as well as dual composite (CVBS) and one YC/S-Video input. A very high performance video decoder is utilised with 2x oversampling and active comb filter for outstanding video image clarity. Computer graphics inputs are also accepted in SVGA analogue and DVI digital formats.

The output format can be set to Video Frame Lock mode where it will automatically switch between 50Hz and 59.94Hz depending on the input signal type so as to allow the LED screen to be on-camera in live-TV situations, or can be set to a fixed output frame rate for driving basic LED screens which are not 50Hz-compatible.

An optional Genlock module can be fitted which allows any pre-defined output resolution to be vertically genlocked to a 625i or 525i sync signal applied via the S input on the rear panel. (Note: S input also doubles as sync input for RGBS/YPbPrS component video signals). When Genlock is enabled and a valid Genlock sync has been detected, the chosen Video I/O lock setting and chosen output refresh rate will be automatically overridden and the output will run locked to the field sync present on the Genlock signal.

Outputs are available in VGA analogue and DVI digital formats which are useable simultaneously so that one output can drive the LED screen while the other runs a local monitor for applications where the LED screen is not visible from where the scaler is situated.

System control is via a front-panel LCD menu controlled via an easy to use jog-wheel or through an intuitive 'Windows' application connected via a normal RS232 serial port.

1.2. Packing List

PremierViewPro-LED is supplied with the following

- 1) This manual
- 2) A CD which contains a PC based Windows software application which enables the user to configure PremierViewPro-LED via a standard RS232 link.
- 3) A 3 pin plug IEC mains cable
- 4) A 15Way High Density D type analog graphics cable
- 5) A DVI-D output cable
- 6) A standard RS232 serial cable wired pin to pin

PREMIERVIEWPRO-LED HARDWARE DESCRIPTION

2.1. Product Overview

The monitor is designed to accept the following input signals:

- 2x Composite video via BNC socket
- S-Video via 4-way mini_DIN socket
- RGB and YPbPr component video via 4x BNC sockets.
- SDI (Serial Digital Interface) via a BNC socket.
- RGB analog (computer interface) via 15-way HDD socket
- DVI (Digital Visual Interface) via DVI-D socket

2.2. Product Specification

This section provides technical details for all possible inputs. Please note that not all possible input options may be applicable to certain output modes.

Power Supply Requirement

90V - 264VAC 50/60Hz maximum power 60W connected via a standard IEC connector located on the rear panel . The power input socket contains a fuse which should only be replaced with the same type and rating for continued product safety. The correct type and rating of fuse is stated on a label on the side of the equipment.

2.2.1. Video Inputs

Signal formats	Composite (CVBS), S-Video (Y/C), Component (RGB and YPbPr 525i and 625i) SDI 525i and 625i.
Video Colour 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

2.2.2. Component Video Input

This may be RGB+sync, YPbPr +sync, RGB with sync-on-green or YPbPr with sync-on-Y.

Note: The S input on this channel provides the genlock sync input for models fitted with the optional Genlock module.

2.2.3. SDI Input

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

2.2.4. Computer (VGA and DVI-D) Inputs

Signal formats:	DOS	720 x 400	70Hz
	VGA	640 x 480	50Hz to 75Hz inclusive
	SVGA	800 x 600	50Hz to 75Hz inclusive
	XGA	1024 x 768	50Hz to 75Hz inclusive
	SXGA	1280 x 1024	50Hz to 75Hz inclusive
RGB video level	0.7V - 1.0V		
RGB input impedance	75 Ohms		
Sync formats	Separate H & V sync at TTL levels.		

2.2.5. DVI-D Input and VGA Input Connections.

The VGA and DVI-D inputs conform to the VESA standard pinouts for these signal types.

2.2.6. Display Output

Two output connectors are provided which are useable simultaneously. One is a DVI-D output and the other is a VGA style output. Both conform to normal VESA standards for connectors and pinouts for these signal types. The internal image processing format can be optimized for either DVI-D or VGA outputs, however both may be used, whichever has been selected as the preferred output type.

2.3. Genlock Option

An optional Genlock module can be fitted which allows any pre-defined output resolution to be vertically genlocked to a 625i or 525i sync signal applied via the S input on the rear panel. (Note: S input also doubles as sync input for RGBS/YPbPrS component video signals).

The input Genlock sync should be a composite (combined) sync or as a sync+black burst conforming to CCIR specifications for 625i 50Hz or 525i 60Hz television systems.

It is also possible to use a composite video signal or a luma+sync signal but image stability may be degraded depending on image content.

Genlock mode is compatible with Analog (VGA) and DVI LED screens. However it should be noted that the setting of the PLL Phase or tracking on an LED screen connected via Analog (VGA) may be more sensitive when Genlock is used, especially if the incoming Genlock sync contains any noise or is being provided as a composite video signal rather than a sync or sync+burst. Best Genlock performance is obtained using DVI signal connection between the PremierViewPro-LED and the LED screen.

Models with the Genlock module fitted will show whether Genlock is active via the front panel status indication on the right of the screen, provided that Genlock has been enabled on the menu. Models without Genlock fitted will not show the Genlock status indicator.

When Genlock is enabled and a valid Genlock sync has been detected, the chosen Video I/O lock setting and chosen output refresh rate will be automatically overridden and the output will run locked to the field sync present on the Genlock signal.

PREMIERVIEWPRO-LED FRONT PANEL CONTROL

3.1. Menu Tree

Boot up Screen

Main Menu

Input Select

Input

Auto configure (Analog inputs only)

SDI Equalisation (SDI inputs only)

Input Adjust

Input levels

Contrast

Black Level

Saturation (Video inputs only)

Hue (NTSC inputs only)

Clock/Position

Horiz Pos (Analog inputs only)

Vert Pos (Analog inputs only)

Clock (Analog inputs only)

Phase (Analog inputs only)

Zoom/Crop

Pan L/R

Tilt up/down

Zoom

Left Edge

Right Edge

Top Edge

Btm Edge

Input Features

Sharpness (video inputs apart from SDI)

VCR Mode (video inputs apart from SDI)

Output Adjust

Display Type

Output

H Polarity

V Polarity

Output Pref

Window

Window Left

Window Right

Window Top

Window Bottom

Gamma/Colour/Crush

Gamma Adjust

Set Col/Gam/Crush

Colour Temp

Native Temp

Black Crush

Scaler Sharpness

H Sharpen

V Sharpen

Miscellaneous

Test Pats

Reset Input

Factory Reset

Video I/O Lock

No Sync Colour

Copy Presets

Genlock

3.2. Introduction

The front panel displays information via a 4 line by 40 character display. All data entry is via a jog wheel and two select buttons which act as enter and back up the menu tree.

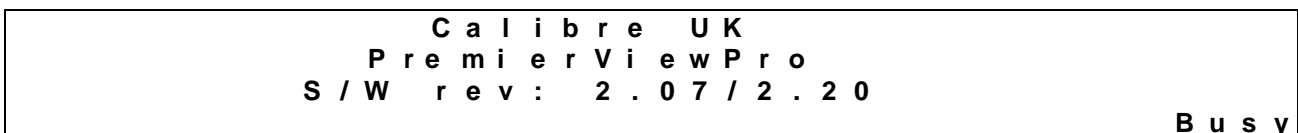
Certain adjustments take time for the unit to complete, this will be indicated by the display showing Busy in the bottom right hand corner as shown below. Further adjustments should not be attempted while the screen is showing Busy.

Values which have been entered are automatically saved when you go back up the menu tree.

Some adjustments take effect immediately, and some require the enter button to be pressed for them to take effect. This is indicated by the message "Press Enter to Select" at the bottom right hand corner of the screen.

Important: Your new settings are not saved into non-volatile memory until you press the Back-Up key to exit the menu item you have just changed.

3.3. Boot Up Screen



3.3.1. Description

This page is shown for the first 5 seconds after boot up, before automatically moving to the preset screen.

Important: PremierViewPro-LED contains inbuilt data recovery algorithms to guard against non-volatile memory corruption caused by power failure or brownouts during settings-save operations. Two shadow copies of the main data are maintained and a 'majority decision' algorithm is used to compare data and check for errors.

If potential data corruption is detected at power up, PremierViewPro-LED will check and attempt to automatically repair the whole of the data stored in non-volatile memory. In the unlikely event that data repair is not possible, it will automatically perform a Factory Reset to defaults to ensure the PremierViewPro-LED can be used.

Should serious data corruption have occurred, the PremierViewPro-LED may take 2-3 minutes to boot while it repairs its internal data. Do not power down the PremierViewPro-LED during this data repair operation or a Factory Reset to clear all your saved settings may become essential.

3.4. Screen 1 - Main Menu



3.4.1. Description

When accessing this page the currently selected menu is 'Input select', selecting other menus is done by turning the jog wheel. Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around. Note: "Genlocked" message does not appear on models without genlock option.

3.4.2. Selecting a menu

Scroll through the list and press 'enter' when the desired menu appears between the two arrows.

Sub menu Selections:-

Input selects take you to screen 2.

Input adjust takes you to screen 3.

Output adjust takes you to screen 8.

Miscellaneous takes you to screen 13.

To set up your PremierViewPro-LED it is recommended that you follow this procedure:

Choose the correct output mode and parameters to suit your LED screen and controller.

Select the correct input signal.

Set the correct output image size (via Window Size) on the output menu.

Set the input levels and features appropriately to optimize the appearance of your image.

Set any other parameters to suit your application.

Note: All Input parameters are specific to your chosen input channel and input signal type, they are not global to the unit. All Output and Miscellaneous parameters are global. All parameters are stored specifically for the current selected Preset no., settings on other presets will remain unchanged except when performing a Factory Reset which clears all presets.

There follows a list of all the available menu screens together with details of the parameters they contain:

3.5. Screen 2 Input Select

```

> I n p u t                C V B S 1  <  I n p u t :  C V B S 1
                               N T S C
                               E n t e r   t o   S e l e c t
  
```

3.5.1. Description

When accessing this page the currently selected menu is 'Input', selecting other menus is done by turning the jog wheel. To select the required input, press 'enter' when 'Input' appears between the two arrows. Once the new input source is set, the selected input side of the screen will be updated. Press 'back up' to make another selection on this screen, and 'back up' again to go back to screen 1.

The list of inputs are:- CVBS1 CVBS2, YC, RGB, RGBS YPbPr, YPbPrS, SDI, DVI and ANALOG.

An ANALOG input has the option of running Auto Configure to automatically optimize the input configuration for the input signal. Use of Auto Configure is strongly recommended.

An SDI input has the option of selecting SDI Equalisation to allow for different cable lengths. Input cables under 10m should have EQ turned off, Input cables 10m-100m should have EQ turned on.

3.6. Screen 3 Input Adjust

> Input Levels		< Input : CVBS 1
Clock / Position		NTSC
Zoom / Crop		Genlocked XXX
Input Features		

3.6.1. Description

When accessing this page the currently selected menu is 'Input Levels', selecting other menus is done by turning the jog wheel. Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

3.6.2. Selecting a menu

Scroll through the list and press 'enter' when the desired menu appears between the two arrows.

Menu 3 sub menu Selections:-

Input Levels take you to screen 4.

Input Crop takes you to screen 5 (not present for DVI).

Zoom takes you to screen 6.

Input Features takes you to screen 7 (not present for ANALOG, DVI or SDI)

3.7. Screen 4 Input Levels

> Contrast	XXX	< Input : CVBS 1
Black Level	XXX	NTSC
Saturation	XXX	Genlocked XXX
Hue	XXX	

3.7.1. Description

When accessing this page the currently selected default parameter is Contrast, selecting other parameters is done by turning the jog wheel . Clockwise scrolls down the list and anti clockwise scrolls up the list. . The menu will wrap around.

3.7.2. Selecting parameters

Scroll through the list and press 'enter' when the desired parameter appears between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

Parameter list when DVI or ANALOGUE is the selected input:- Contrast, Black level.

Parameter list when CVBS, YC or SDI is the selected input and NTSC is the video format: Contrast, Black level, Saturation and Hue.

Parameter list when component video when a PAL based signal is being used:- Contrast, Black level and Saturation.

3.8. Screen 5 Clock/Position

> H Pos	XXXX	< Input : ANALOG
V Pos	XXXX	640x480 60Hz
Clock	XXXX	Genlocked XXX
Phase	XXXX	

3.8.1. Description

When accessing this page the currently selected default parameter is Horizontal Pos, selecting other parameters is done by turning the jog wheel . Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

3.8.2. Selecting parameters

Scroll through the list and press 'enter' when the desired parameters appears between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

Parameter list when ANALOGUE is the selected input:- :- Horiz Pos, Vert Pos, Clock, Phase.

Note: Clock is used to remove vertical bands from an SVGA input image, Phase is used after setting Clock to remove any remaining image sampling noise. Prior to adjusting either control it is strongly recommended that Auto Configure be run from the Input Select menu.

This menu is only appears for Analogue SVGA input signals.

3.9. Screen 6 Zoom/Crop

> P a n L / R	X X X <	I n p u t : C V B S 1
T i l t u p / d o w n	X X X	N T S C
Z o o m	X X	G e n l o c k e d X X X
L e f t E d g e		

3.9.1. Description

When accessing this page the currently selected default parameter is Pan L/R, selecting other parameters is done by turning the jog wheel . Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

3.9.2. Selecting a parameter

Scroll through the list and press 'enter' when the desired parameters appear between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

Parameter list: Pan L/R, Tilt up/down, Zoom, Left Edge, Right Edge, Top Edge, Btm Edge.

3.10. Screen 7 Input Features

> S h a r p n e s s	X <	I n p u t : C V B S 1
V C R M o d e	X X X	N T S C
		G e n l o c k e d X X X

3.10.1. Description

When accessing this page the currently selected default parameter is Sharpness, selecting other parameters is done by turning the jog wheel . Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

3.10.2. Selecting a parameter

Scroll through the list and press 'enter' when the desired parameters appears between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

This menu only appears for CVBS, YC, RGB, RGBS, YPbPr and YPbPrS input signals.

VCR Mode can take the values Yes and No. VCR Mode should normally be disabled for optimum picture quality with good quality video input signals. When VCR Mode is disabled the motion-compensated de-interlacer and film-mode detection is automatically operational.

VCR mode should only be enabled for unstable video signals with noisy sync signals such as those from off-air TV with a lot of transmission interference or a domestic VCR. When VCR Mode is enabled, motion compensated de-interlacing and film-mode detection are disabled and conventional intra-field interpolation is used for video de-interlacing.

3.11. Screen 8 Output Adjust

> Display Type Window Gamma / Col / BlkCrush Scaler Sharpness	< Input : CVBS1 NTSC Genlocked XXX
--	--

3.11.1. Description

When accessing this page the currently selected menu is 'Display Type', selecting other menus is done by turning the jog wheel. Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

3.11.2. Selecting a menu

Scroll through the list and press 'enter' when the desired menu appears between the two arrows. The list of output menus are:- Display Type, Window, Gamma / Colour/Crush and Scaler Sharpness.

Menu 8 sub menu Selections:-

- Display Type takes you to screen 9.
- Window takes you to screen10.
- Gamma/Col/BlkCrush takes you to screen 11.
- Scaler Sharpness takes you to screen 12.

3.12. Screen 9 Display Type

> Output XXXXXXXXXX H Polarity XX V Polarity XXXXX Output Pref XXXXX	< Input : CVBS1 NTSC Genlocked XXX
---	--

3.12.1. Description

When accessing this page the currently selected default parameter is Output, selecting other parameters is done by turning the jog wheel. Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

Note: The minimum achievable window size is based on a combination of the input signal type and resolution and the output mode chosen. As the output resolution increases, the minimum window size also increases. Therefore it is VERY STRONGLY RECOMMENDED that the lowest output resolution large enough to support your LED screen is chosen. This gives best overall performance of your PremierViewPro-LED. There is no performance gain and potentially performance loss will be encountered by selecting an output mode in excess of that required for your LED screen size.

As a general rule, best performance is obtained on smaller LED screens using 640x480 60Hz output mode with Video I/O lock turned on. Should your LED screen have a resolution which requires an output format in excess of 640x480 then lowest suitable mode should be selected for best image performance.

3.12.2. Selecting a parameter

Scroll through the list and press 'enter' when the desired parameters appears between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

The available output settings are:-

- 640 x 480 @ 60Hz,
- 800 x 600 @ 60Hz,
- 1024 x 768 @ 60Hz,
- 1280 x 1024 @ 60Hz ,
- 640 x 480 @ 50Hz,

800 x 600 @ 50Hz,
1024 x 768 @ 50Hz,
1280 x 1024 @ 50Hz,
640 x 480 @ 75Hz,
800 x 600 @ 75Hz,
1024 x 768 @ 75Hz,
1280 x 1024 @ 75Hz

Note: When a 75Hz output mode is chosen, the maximum input resolution supported on the Analog (VGA) and DVI input channels is XGA. For 50Hz and 60Hz output modes, the maximum input resolution is SXGA.

H-Sync polarity and V-Sync polarity can each be set to Act Hi or Act Lo. These will be at the VESA standard for the chosen output mode unless changed by the user.

Output Pref can be set to Analogue which causes the unit to generate a 10 bit per colour output or DVI which causes the unit to generate an 8 bit per colour output. Both outputs are useable at all times, but optimum picture quality is obtained from the output chosen as the preferred output type using Output Pref.

Important: When Genlock is enabled and a valid Genlock sync has been detected, the chosen Video I/O lock setting and chosen output refresh rate will be automatically overridden and the output will run locked to the field sync present on the Genlock signal.

3.13. Screen 10 Window Adjust

>	W i n d o w L e f t	X X X X X	<	I n p u t : C V B S 1
	W i n d o w R i g h t	X X X X X		N T S C
	W i n d o w T o p	X X X X X		G e n l o c k e d X X X
	W i n d o w B o t t o m	X X X X X		

3.13.1. Description:-

When accessing this page the currently selected default parameter is Window left, selecting other parameters is done by turning the jog wheel. Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

These settings are used to adjust the image to the correct size and shape on your LED screen. Move each edge until the image is correct on your LED screen. It is best to do this using a full-screen image from a camera or a test pattern generator. Alternatively the PremierViewPro-LED internal test patterns can be selected via the Miscellaneous menu - these can then be used to set the correct image size to suit your LED screen.

Note: The minimum achievable window size is based on a combination of the input signal type and resolution and the output mode chosen. As the output resolution increases, the minimum window size also increases. Therefore it is VERY STRONGLY RECOMMENDED that the lowest output resolution large enough to support your LED screen is chosen. This gives best overall performance of your PremierViewPro-LED. There is no performance gain and potentially performance loss will be encountered by selecting an output mode in excess of that required for your LED screen size.

As a general rule, best performance is obtained on smaller LED screens using 640x480 60Hz or 50Hz output modes with Video I/O lock turned on. Should your LED screen have a resolution which requires an output format in excess of 640x480 then the lowest suitable mode should be selected for best image performance.

3.13.2. Selecting parameters

Scroll through the list and press 'enter' when the desired parameters appears between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

Parameter list:- Window Left, Window Right, Window Top , Window Bottom.

3.14. Screen 11 Gamma/Colour/Crush

>	G a m m a	A d j u s t	X X X X	<	I n p u t :	C V B S 1
	S e t	C o l / G a m / C r u s h	X X X		N T S C	
	C o l o u r	T e m p	X X X X X		G e n l o c k e d	X X X
	N a t i v e	T e m p	X X X X X			

3.14.1. Description:-

When accessing this page the currently selected default parameter is 'Gamma Adjust', selecting other parameters is done by turning the jog wheel. Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

3.14.2. Selecting a parameter

IMPORTANT: Adjusting either gamma, colour temp or Black Crush parameters does not result in immediate processing of these changes. This occurs only after Set Col/Gam/Crush is changed to YES and Enter is then pressed. It takes several seconds for this adjustment to be made, and the display will show Busy in the bottom right hand corner while this is happening.

i) Colour Temperature

The five preset values for colour temperature are:- 5500K, 6500K, 7500K, 9300K and User. This is the required overall colour temperature. The native colour temperature presets are identical minus the user selection. Native colour temperature is the colour temperature of the display, and is used to calculate the overall colour temperature settings.

For example, to map a 6500K display to 9300K to best suit your source material or operating environment, select 6500K as the Native Temperature and 9300K as the Colour Temperature.

Colour temperature mapping will be de-activated whenever the Native Temperature and Colour Temperature are selected as the same values.

ii) Gamma

Gamma can be re-mapped to modify the characteristics of your LED screen. A gamma value of 1.0 gives no change to the gamma curve of the screen. This value may be adjusted below or above 1.0 and is additive to the gamma of your screen as an algebraic power function. To get the calculate the actual gamma response of your image, subtract 1 from your chosen gamma setting and then add this answer to the native gamma response of your LED screen.

E.g if the native gamma of the LED screen is 2.5, then selecting a gamma value of 0.7 will give an actual gamma response of 2.2; selecting a gamma value of 1.3 will give an actual gamma response of 2.8

iii) Black Crush

Black Crush is a combined black level and gain control for the output stage of the PremierViewPro-LED. It modifies the black and peak white response of the gamma & colour curves to as to hide any black-level noise which may be apparent on the LED screen when high LED brightnesses are used.

Note: When Output Pref is set to DVI, or the DVI output channel is being used, the Black Crush setting only affects the viewed image in steps of 4, e.g. 0,4,8,12,16.

It is recommended to use a setting between 0 and 16 and not more than 20. If too high a setting is chosen, image solarization may be observed where dark image areas turn completely black or even change colour.

The input black level should have been optimized first prior to using Black Crush. It is not a replacement for correct input black level settings but is available to clean up any remaining black level noise on the signal which may become apparent on very bright LED screens.

For most LED screens the optimum settings for Black Crush are 0 or 4 for Analog (VGA) screens and 16 or 20 for DVI screens.

iv) VERY IMPORTANT: All the above changes do not have any effect on the image until the parameter Set Col/Gam/Crush is changed from No to Yes and then Enter is pressed. The actual update takes 20-30 seconds as new gamma and colour tables are calculated and written to non-volatile memory - be patient!

3.15. Screen 12 Scaler Sharpness

```

> H   S h a r p e n           X X X <   I n p u t :   C V B S 1
  H   S h a r p e n           X X X     N T S C
                                     G e n l o c k e d   X X X

```

3.15.1. Description:

When accessing this page the currently selected default parameter is H Sharpen, selecting other parameters is done by turning the jog wheel . Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around.

The scaler can be operated in non-sharpened or sharpened modes. There is little difference visible unless large zoom factors are used in which case enabling sharpening does enhance the image.

3.15.2. Selecting a parameter

Scroll through the list and press 'enter' when the desired parameter appears between the two arrows. Turning the jog wheel now will change the parameter between Yes and No.

3.16. Screen 13 Misc & Genlock

```

> T e s t   P a t s           X X X X X X X X X X X X <   I n p u t :   C V B S 1
  R e s e t   I n p u t           X X X     N T S C
  F a c t o r y   R e s e t           X X X     G e n l o c k e d   X X X
  V i d e o   I / O   L o c k           X X

```

3.16.1. Description:

When accessing this page the currently selected default parameter is Reset Input, selecting other parameters is done by turning the jog wheel . Clockwise scrolls down the list and anti clockwise scrolls up the list. The menu will wrap around. The list of parameters is: Test Pats, Reset Input, Factory Reset, Video I/O Lock, No Sync Colour, Genlock.

Note: Genlock menu item only shows on models with Genlock module fitted.

3.16.2. Selecting a parameter

Scroll through the list and press 'enter' when the desired parameters appears between the two arrows. Turning the jog wheel now will adjust the actual parameter value between its upper and lower limits.

Test patterns are enabled by selecting any pattern other than 'NONE'. To return to the normal input signal, you must choose None. Note: It may take 10-15 seconds to enter and exit test pattern mode.

Reset Input causes the settings associated with the current input to be reset.

Factory reset puts all settings in the unit back to factory defaults FOR ALL SETTINGS AND INPUTS.

No Sync Colour defines the output background colour when no valid input signal is detected on the current selected input. Options are Blue, Red, Green, White, Black. Default is Blue.

Video I/O Lock causes the output frame rate to track the incoming field rate based on the detected input standard when the input signal is a video signal. It has no effect when the input signal is VGA or DVI. When I/O lock is selected, for a 50Hz input signal, a time-base corrected 50Hz output mode is run, for a 59.94Hz input signal, a time-base corrected 59.94Hz output mode is run. The user's chosen output vertical rate is overridden by Video I/O when enabled.

Unless running Genlocked, use of Video I/O lock is strongly recommended unless the LED screen you are using is a very old Lighthouse model which does not support 50Hz modes, or where field/frame rate conversion is desirable, e.g. for showing 50Hz material in-camera on a 59.94Hz TV scenario.

Important: When Genlock is enabled and a valid Genlock sync has been detected, the chosen Video I/O lock setting and chosen output refresh rate will be automatically overridden and the output will run locked to the field sync present on the Genlock signal.

Genlock

An optional Genlock module can be fitted which allows any pre-defined output resolution to be vertically genlocked to a 625i or 525i sync signal applied via the S input on the rear panel. (Note: S input also doubles as sync input for RGBS/YPbPrS component video signals). When enabled via the Miscellaneous menu, the Genlock function operates automatically when a valid Genlock sync signal is detected. There are no further user adjustments required.

The input Genlock sync should be a composite (combined) sync or as a sync+black burst conforming to CCIR specifications for 625i 50Hz or 525i 60Hz television systems.

It is also possible to use a composite video signal or a luma+sync signal but image stability may be degraded depending on image content.

Genlock mode is compatible with Analog (VGA) and DVI LED screens. However it should be noted that the setting of the PLL Phase or tracking on an LED screen connected via Analog (VGA) may be more sensitive when Genlock is used, especially if the incoming Genlock sync contains any noise or is being provided as a composite video signal rather than a sync or sync+burst. Best Genlock performance is obtained using DVI signal connection between the PremierViewPro-LED and the LED screen.

Models with the Genlock module fitted will show whether Genlock is active via the front panel status indication on the right of the screen, provided that Genlock has been enabled on the menu. Models without Genlock fitted will not show the Genlock status indicator.

When Genlock is enabled and a valid Genlock sync has been detected, the chosen Video I/O lock setting and chosen output refresh rate will be automatically overridden and the output will run locked to the field sync present on the Genlock signal.

PC SOFTWARE INSTALLATION AND USE

4.1. Introduction

The control software runs under Windows 98®, NT4®, 2000 and XP®. The software communicates with the PremierViewPro-LED via a standard RS232 interface on COM1 (9600 baud 8 bit data, 1 stop bit no parity).

This manual details all the possible inputs and possible controls, for certain inputs some controls are not valid where this is the case the control will not be visible.

The software controls are split into two groups those which affect the input signal and those which affect the display to select the function you wish to adjust click on the tab.

In most cases pointing at a control without clicking on it will display a further information about that control.

When the PC software is in control of the PremierViewPro-LED setup the front panel controls are disabled and remain disabled until the PC is disconnected.

Important: All parameter functionality is exactly as the adjustments via the front panel menu system. If you are unsure of the operation of any particular parameter, please refer the Section 3 for details.

4.2. Installing the Software

Insert the CD, select the Software folder double click on the Setup application and follow the installation wizard instructions.

4.3. Software Operation

4.3.1. Application Start

Connect the PC's serial port to the PremierViewPro-LED using a 9-pin serial extension cable, that is one wired pin-pin with a male connector on one end and a female on the other. A null-modem or crossover cable should not be used.

When the application starts it polls the PremierViewPro-LED every 2 seconds via the RS232 link, once communication has been established the software waits for the PremierViewPro-LED to indicate that the power up sequence has been completed. When the PremierViewPro-LED is ready the software reads and displays the current panel information, it then determines if there is an input connected to the selected input port, if there is the data relevant to the input is read and displayed.

The status of the power up sequence is displayed on the initialisation screen. Should the input change or be disconnected or should the user change the standard panel timing then the software will display the initialisation screen as it gathers new data.

4.4. Toolbar Commands

The toolbar has four options

File

Serial Comms

Window

About

The File option allows the user to save the current PremierViewPro-LED settings to a PC, or load settings from a PC to PremierViewPro-LED. A progress bar is displayed while these two activities are taking place.

If you are using the software whilst not connected to the PremierViewPro-LED the regular polling activity can slow down the software and make it very hard to exit the application. In this mode select Stand Alone from the Serial Comms toolbar option – this will suspend polling making the software more responsive. Please note if you use any of the controls the software will still attempt to communicate with the PremierViewPro-LED which may take some time.

The Window toolbar command shows which windows are available and allows users to bring a desired window to the front, this is useful if the initialisation screen has been “lost behind” another window.

The About option displays the About box which contains information relating to the software issue, the PremierViewPro-LED software issue and access to you PC System information having this information available before calling your equipment supplier would be very helpful.

4.5. Altering Data in PremierViewPro-LED NVRAM

4.5.1. Introduction

At the bottom of the Input parameter and display parameter pages are a number of buttons which are used to control data storage within the PremierViewPro-LED NVRAM.

4.5.2. System Reset

This button is on both input and display pages. Clicking this button will result in the entire NVRAM of PremierViewPro-LED being restored to factory defaults. **All display and signal information previously saved will be lost.**

4.5.3. Reset Input Values

This is located on the input parameter page. Clicking this button will result in the currently selected signal input parameters being restored to factory default, no other parameters will be affected.

4.5.4. Reset Display Values

This is located on the display parameter page. Clicking this button will result in the display parameters being restored to factory default, no other parameters will be affected. *Note: This button has been removed from later issues of software.*

4.5.5. Save Values

This button is on both input and display pages. Clicking this button will result in the display and signal parameters being save to the PremierViewPro-LED NVRAM.

4.5.6. Escape Values

This is located on both the input and display parameter pages. Clicking this button will result in all parameters being restored to the values last saved to the PremierViewPro-LED NVRAM.

4.6. Input Parameters

4.6.1. Introduction

At the top of the input parameters screen the selected input is always displayed as control title bar. Just underneath the title bar information relating to the input is displayed, for video inputs this is the input field rate, for computer inputs the input resolution, line and field rate is displayed. If there is no signal on the selected input "No Input Detected" is displayed.

4.6.2. Input Select Tab

When the input select tab is clicked the user can select between video and computer inputs. Then further selection can be made to select the desired input.

It is possible to automatically save to the PremierViewPro-LED NVRAM any changes made to the input signal before changing the inputs to enable this feature select the "Save changes before changing input" located at the bottom of the input screen.

VCR Mode (H Sync Locking Mode on earlier issues of software)

Earlier software: Two modes can be selected "Fast Lock" and "TV" mode, it is recommended that "Fast Lock" should normally be set, "TV" mode should only be used if the signal source timing unstable.

Later software: VCR Mode can take the values Yes and No. VCR Mode should normally be disabled for optimum picture quality with good quality video input signals. When VCR Mode is disabled the motion-compensated de-interlacer and film-mode detection is automatically operational.

VCR mode should only be enabled for unstable video signals with noisy sync signals such as those from off-air TV with a lot of transmission interference or a domestic VCR. When VCR Mode is enabled, motion compensated de-interlacing and film-mode detection are disabled and conventional intra-field interpolation is used for video de-interlacing.

Long Cable EQ

The SDI input receiver incorporates equalisation to compensate for long input co-axial cables (up to 100 metres). This function should be disabled if the input cable is less than 10 metres in length.

4.6.3. Input Crop Tab

When an analog graphics signal is applied to the PremierViewPro-LED it is measured and if it has not been previously saved the input is placed in a default position on the display. The user should then select the Auto configure button at the bottom of the input page. This will normally place the input in the correct position on the display. Occasionally it is necessary to move the edges of the input to get a perfect position, this can be achieved using the controls on the geometry page.

For DVI inputs the signal will always be in the correct position and so the Input Crop tab is not selectable.

For video inputs the input will be in the correct place the controls are accessible to allow the configuration of a small amount of under or overscan to suit the needs of the data.

4.6.4. Zoom and Pan Tab

By using the zoom and pan controls a part of the input can be selected and used to fill the display window. Please note it is not possible to pan unless the zoom has been set to a non-zero value.

The "Reset Zoom and Pan to Default" button resets the zoom and pan to factory defaults for the displayed signal. This DOES NOT reset any other input related parameters and is intended to allow the user to return to a known starting point should the region of the input being displayed become unknown.

4.6.5. Colour Tab

This is only available for video inputs. The controls allow configuration of the video saturation and hue (NTSC only).

4.6.6. Contrast Tab

The contrast level for all inputs can be adjusted.

4.6.7. Black Level Tab

The black level for all inputs can be adjusted.

4.6.8. Sharpness Tab

For CVBS and YC video inputs there is a range of sharpness which can be set, to suit the installation and input signal. Please note excessive sharpness can result in distortion of the image.

For Composite video input (RGB and YUV) sharpness can either be enabled or disabled.

There is no sharpness control for SDI or computer inputs.

4.7. Output Parameters & Genlock

4.7.1. Introduction

At the top of the display parameters screen the selected display timing is always displayed as control title bar.

4.7.2. Active Window Size Tab

Within the active region of the display timing it is possible to define a window within which the display image will occur.

The minimum window size is governed by the input signal and the LED screen controller timing, if the window size will not adjust to the desired position it is most likely that a limit has been reached.

4.7.3. Display Sharpening Tab

Horizontal and vertical sharpening filters can be enabled and disabled to suit individual display requirements

4.7.4. Miscellaneous Tab

From this tab select the colour of screen if no signal is present and the type of connection between PremierViewPro-LED and the panel. Video I/O Lock and Genlock (optional) are also controlled from this tab.

Genlock and Video I/O Lock

When using standard VESA timings for the display it is possible to configure PremierViewPro-LED so that the output frame rate can be set to track the input frame rate e.g. for a PAL input the output frame rate would change to 50Hz, for NTSC it would run at 59.94Hz and override the chosen output refresh rate in the Display menu. This reduces motion artefacts on the display due to frame rate conversion.

This change does not show as a change in the standard panel timing but the exact timing being used for the panel is shown on the User Timings.

Unless running Genlocked, use of Video I/O lock is strongly recommended unless the LED screen you are using is a very old model which does not support 50Hz modes, or where field/frame rate conversion is desirable, e.g. for showing 50Hz material in-camera on a 59.94Hz TV scenario.

An optional Genlock module can be fitted which allows any pre-defined output resolution to be vertically genlocked to a 625i or 525i sync signal applied via the S input on the rear panel. (Note: S input also doubles as sync input for RGBS/YPbPrS component video signals). When enabled via the Miscellaneous menu, the Genlock function operates automatically when a valid Genlock sync signal is detected. There are no further user adjustments required.

The input Genlock sync should be a composite (combined) sync or as a sync+black burst conforming to CCIR specifications for 625i 50Hz or 525i 60Hz television systems.

It is also possible to use a composite video signal or a luma+sync signal but image stability may be degraded depending on image content.

Genlock mode is compatible with Analog (VGA) and DVI LED screens. However it should be noted that the setting of the PLL Phase or tracking on an LED screen connected via Analog (VGA) may be more sensitive when Genlock is used, especially if the incoming Genlock sync contains any noise or is being provided as a composite video signal rather than a sync or sync+burst. Best Genlock performance is obtained using DVI signal connection between the PremierViewPro-LED and the LED screen.

Models with the Genlock module fitted will show whether Genlock is active via the front panel status indication on the right of the screen, provided that Genlock has been enabled on the menu. Models without Genlock fitted will not show the Genlock status indicator.

When Genlock is enabled and a valid Genlock sync has been detected, the chosen Video I/O lock setting and chosen output refresh rate will be automatically overridden and the output will run locked to the field sync present on the Genlock signal.

4.7.5. Test Patterns Tab

Test patterns can be generated by PremierViewPro-LED without needing an input connected. Select the test pattern to be displayed and the colour of the foreground and background. PLEASE NOTE while test patterns are displayed it is not possible to alter the input parameters

4.7.6. Colour Temperature Tab

The colour temperature can be altered to suit the particular display. Several pre-programmed colour temperatures are available. It is also possible to set the individual colour temperatures. These are saved as user values.

When the colour temperature is set to the desired value click the "Load Colour Temp" button. The colour temperatures will then be programmed into the PremierViewPro-LED, this can take approximately 1 minute and during this time the picture may become discoloured.

4.7.7. Gamma & Black Crush Tab

The gamma correction and Black Crush can be altered to suit the particular display.

When the gamma correction is set to the desired value click the “Load Gamma” button.

When the Black Crush is set to the desired value click the “Load Black Crush” button.

Both changes can take approximately 30 second to program onto PremierViewPro-LED and during this time the picture may become discoloured.

4.7.8. Standard Timing Tab

A range of pre-programmed timings can be selected.

4.7.9. Sync Polarity Tab

The controls allow the polarity of the horizontal and vertical syncs to be changed. Note that when a new display type is selected, the horizontal and vertical sync polarities return to default values for that output format.

Environmental & EMC

5.1. Recommended Operating Conditions

Temperature 0°C to 40°C
Humidity (non condensing) 0% to 95%

5.2. Storage

Temperature -20°C to +70°C
Humidity (non condensing) 0% to 95%

5.3. CE and FCC Compliance

CE: This product complies with the requirements of 89/336/EEC Electromagnetic Compatibility Directive amended by 92/31/EEC and 93/68/EEC, and 73/23/EEC Low Voltage Directive. Compliance is to EN55022 Class A.

FCC: **WARNING:** This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at their own expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

It is suggested that the user use only shielded and grounded signal cables to ensure compliance with FCC rules.