Vivid Drive 23N

User Manual
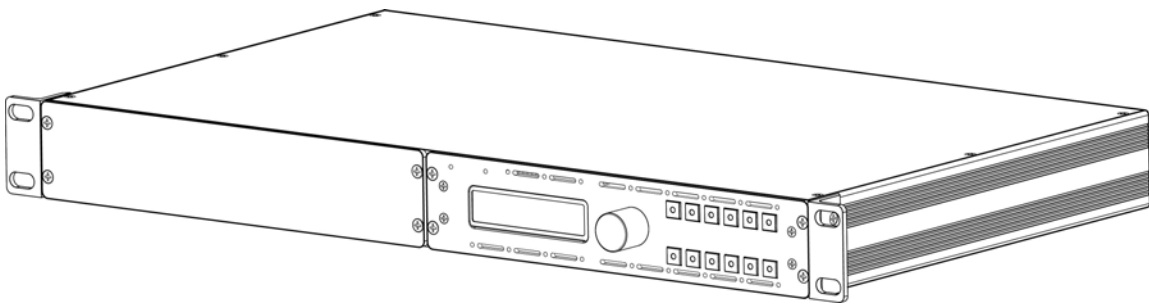
CHAUVET DJ

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1. Before You Begin

What Is Included

- Vivid Drive 23N
- Power Cord
- Rack Mount Adapter
- DVI-to-DVI Jumper

- USB Cable
- Warranty Card
- Quick Reference Guide

Unpacking Instructions

Carefully unpack the product immediately and check the container to make sure all the parts are in the package and are in good condition.

Claims

If the box or the contents (the product and included accessories) appear damaged from shipping, or show signs of mishandling, notify the carrier immediately, not Chauvet. Failure to report damage to the carrier immediately may invalidate your claim. In addition, keep the box and contents for inspection.

For other issues, such as missing components or parts, damage not related to shipping, or concealed damage, file a claim with Chauvet within 7 days of delivery.

Text Conventions

Convention	Meaning
1–512	A range of values
50/60	A set of values of which only one can be chosen
Settings	A menu option not to be modified
<ENTER>	A key to be pressed on the product's control panel
ON	A value to be entered or selected

Symbols

Symbol	Meaning
⚡	Electrical warning. Not following these instructions may cause electrical damage to the product, accessories, or the user.
⚠	Critical installation, configuration, or operation information. Not following these instructions may make the product not work, cause damage to the product, or cause harm to the operator.
ⓘ	Important installation or configuration information. The product may not function correctly if this information is not used.
📝	Useful information.

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Safety Notes

- Always connect the product to a grounded circuit to avoid the risk of electrocution.
- Always disconnect the product from the power source before cleaning or replacing the fuse.
- Avoid direct eye exposure to the light source while the product is on.
- Make sure the power cord is not crimped or damaged.
- Never disconnect the product from power cord by pulling or tugging on the cord.
- If mounting the product overhead, always secure to a fastening device using a safety cable.
- Make sure there are no flammable materials close to the product when operating.
- Do not touch the product's housing when operating because it may be very hot.

- Always make sure that the voltage of the outlet to which you are connecting the product is within the range stated on the decal or rear panel of the product.
- The product is for indoor use only! (IP20) To prevent risk of fire or shock, do not expose the product to rain or moisture.
- Always install the product in a location with adequate ventilation, at least 20 in (50 cm) from adjacent surfaces.
- Be sure that no ventilation slots on the product's housing are blocked.
- Never connect the product to a dimmer.
- Make sure to replace the fuse with another of the same type and rating.
- Never carry the product from the power cord or any moving part.
- The maximum ambient temperature (Ta) is 104 °F (40 °C). Do not operate the product at higher temperatures.
- In the event of a serious operating problem, stop using the product immediately.
- Never try to repair the product. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center.
- To eliminate unnecessary wear and improve its lifespan, during periods of non-use completely disconnect the product from power via breaker or by unplugging it.

Keep this User Manual for future use. If you sell the product to someone else, be sure that they also receive this document.

2. Introduction

Product Overview

Front Overview
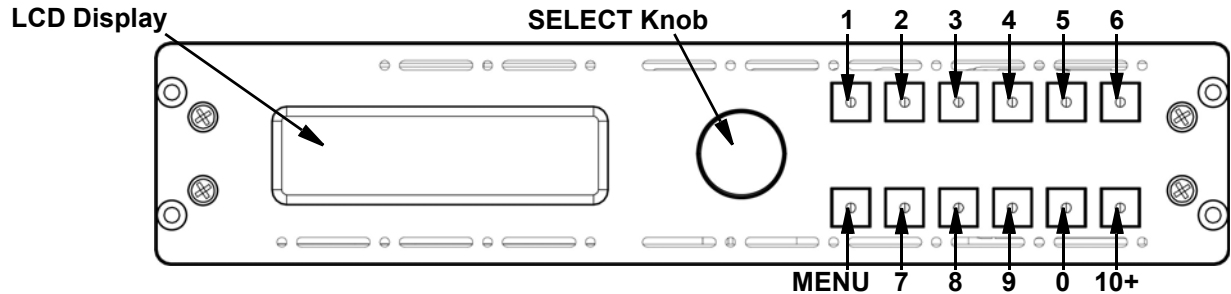
Control Panel Description

Button/Knob	Function
SELECT Knob	Rotate to navigate upwards or downwards through the menu list, and increase or decrease a selected numeric value. Push to enable the currently displayed menu option or set the currently selected value into the selected function.
<CV/1>	Selects CVBS input source, or enters the number 1 when editing a number value
<HDMI/2>	Selects HDMI input source, or enters the number 2 when editing a number value
<SDI/3>	Enters the number 3 when editing a number value
<VGA/4>	Selects VGA input source, or enters the number 4 when editing a number value
<YPbPr/5>	Selects YPbPr input source, or enters the number 5 when editing a number value
<BLACK/6>	Blacks out the video output, or enters the number 6 when editing a number value
<MENU>	Exits the current menu or function. Press and hold for 3 seconds to lock or unlock the control panel.
<SCALE/7>	Navigates directly to the Scale menu, or enters the number 7 when editing a number value
<SPLIT/8>	Navigates directly to the Split menu, or enters the number 8 when editing a number value
<COM/9>	Enters the number 9 when editing a number value
<SAVE/0>	Navigates directly to the Save menu, or enters the number 0 when editing a number value
<LOAD/10+>	Navigates directly to the Load menu

Rear Overview
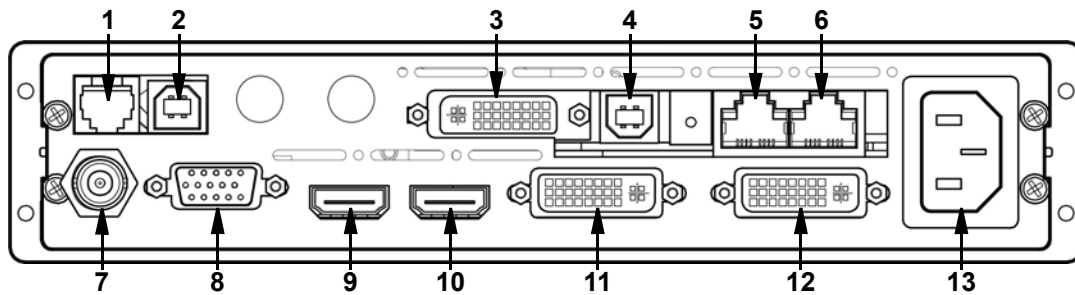
Rear Panel Description

#	Port	Function
1	RS232	RJ12 port for remote control system connection.
2	USB B 1	USB B port for firmware updates
3	DVI In	DVI input connector for video signal from DVI1 OUT (**11**) or a pre-scaled video source
4	USB B 2	USB B port for connecting to NovaLCT Mars
5	Ethernet Out 2	Ethernet ports for sending video signal to video panels (**6** is port 1, **5** is port 2)
6	Ethernet Out 1	
7	CVBS IN	BNC connector for CVBS input
8	VGA/YPbPr IN	DE-15 connector for video input from a VGA or YPbPr source
9	HDMI IN	HDMI input port to scaler. This port must be used to use the scaler.
10	HDMI LOOP	HDMI output port for sending non-scaled HDMI video signal to other devices
11	DVI1 OUT	DVI output connector for sending scaled video signal to the DVI In port (**3**). This port must be connected to DVI In (**3**) for the scaler to be used.
12	DVI2+VGA OUT	DVI output connector for sending scaled video signal to other devices
13	Power In	Power input socket for a voltage range of 100 to 240 VAC, 50/60 Hz

Product Dimensions

**9.8 in
250 mm**

**1.8 in
45 mm**

**8.6 in
219 mm**
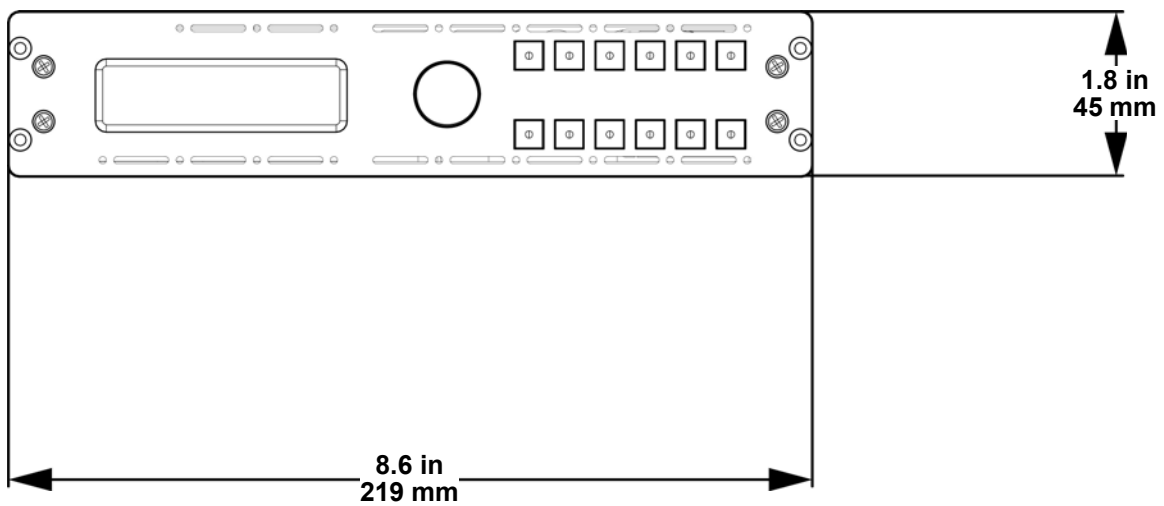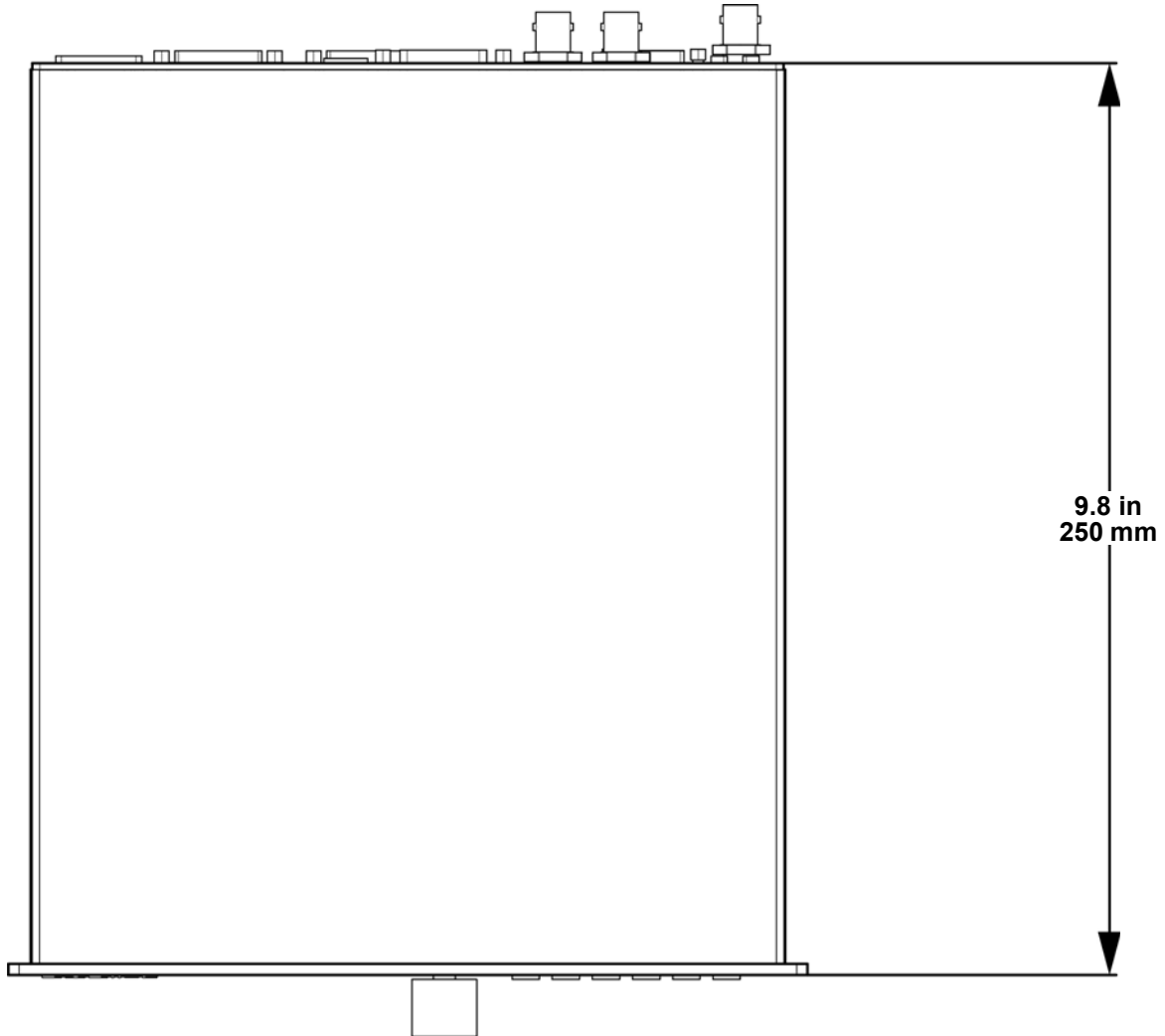
3. Setup
AC Power
The Vivid Drive 23N has an auto-ranging power supply and it can work with an input voltage range of 100 to 240 VAC, 50/60 Hz. To determine the product's power requirements (circuit breaker, power outlet, and wiring), use the current value listed on the label affixed to the product's back panel, or refer to the product's specifications chart. The listed current rating indicates the product's average current draw under normal conditions.

- **Always connect the product to a protected circuit (a circuit breaker or fuse). Make sure the product has an appropriate electrical ground to avoid the risk of electrocution or fire.**
- **To eliminate unnecessary wear and improve its lifespan, during periods of non-use completely disconnect the product from power via breaker or by unplugging it.**

Never connect the product to a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel serves only as a 0 to 100% switch.

Mounting
Before mounting the product, read and follow the safety recommendations indicated in the Safety Notes.
Orientation
The Vivid Drive 23N comes with a Rack Mount Adapter for mounting the product in a standard 19" rack.
Rigging
- Before deciding on a location, always make sure there is easy access to the product for maintenance and programming purposes.
- Make sure adequate ventilation is provided around the product.
- Make sure that the structure or surface onto which you are mounting the product can support the product's weight. (see the Technical Specifications)

Mounting Diagram

Rack Mount Adapter   **Empty Slot Cover**

Insert into slot and secure with screws
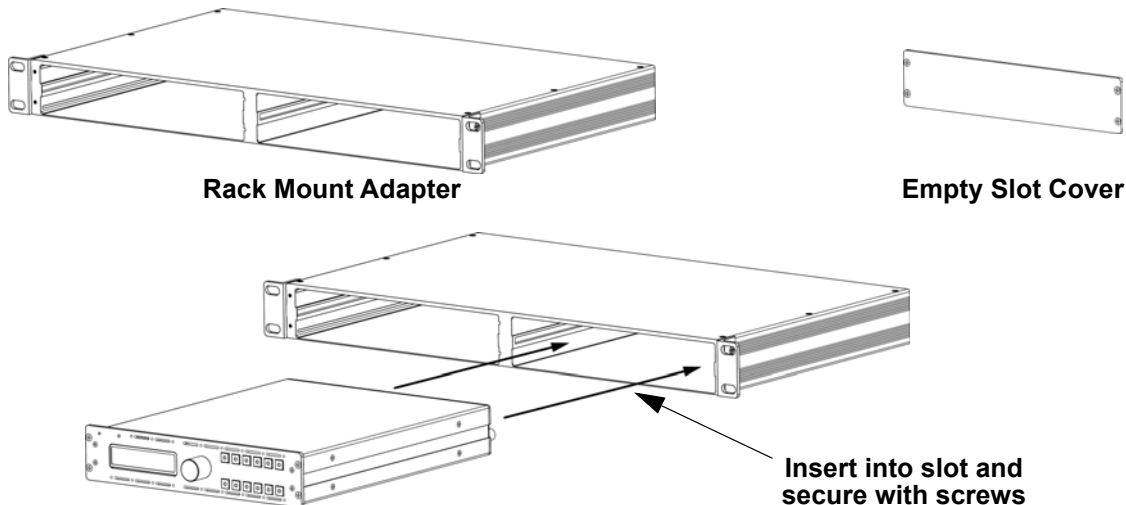
Signal Connections
The Vivid Drive 23N uses the NOVA control protocol to send video signal to the connected panels. The Vivid Drive 23N has USB and Ethernet ports for interfacing with a computer, an HDMI port for unscaled video input, a DVI port for scaled video input, as well as 2 ethernet out ports, and both HDMI and DVI out ports.
Video Source Connection
You can link the Vivid Drive 23N directly to a video source using a DVI connection (for pre-scaled video sources) or an HDMI connection (for unscaled video sources). There is also a BNC connector for CVBS input and a DE-15 connector for VGA or YPbPr input.
NovaLCTMars Connection
You can link the Vivid Drive 23N to a computer running the NovaLCTMars software using a USB (type B) connection. This will provide control and mapping options for the Vivid Drive 23N through a computer interface.
Preview Monitor Connection
You can link the Vivid Drive 23N to a monitor that will preview the LED output using a DVI cable plugged into the **DVI2+VGA OUT** port or an HDMI cable plugged into the **HDMI LOOP** port.

Connection Diagram

Data Connection for NovaLCTMars

Output to Panel Assembly

Pre-scaled Video Input

Vivid Drive 23N

Internal Scaler Output (DVI to DVI Jumper)

Unscaled Video Input

Unscaled Output

PC running NovaLCTMars and/or Video Software

Scaled Output

Unscaled Output to the next Vivid Drive 23N

Preview Monitor

Vivid 4 Panel Assembly
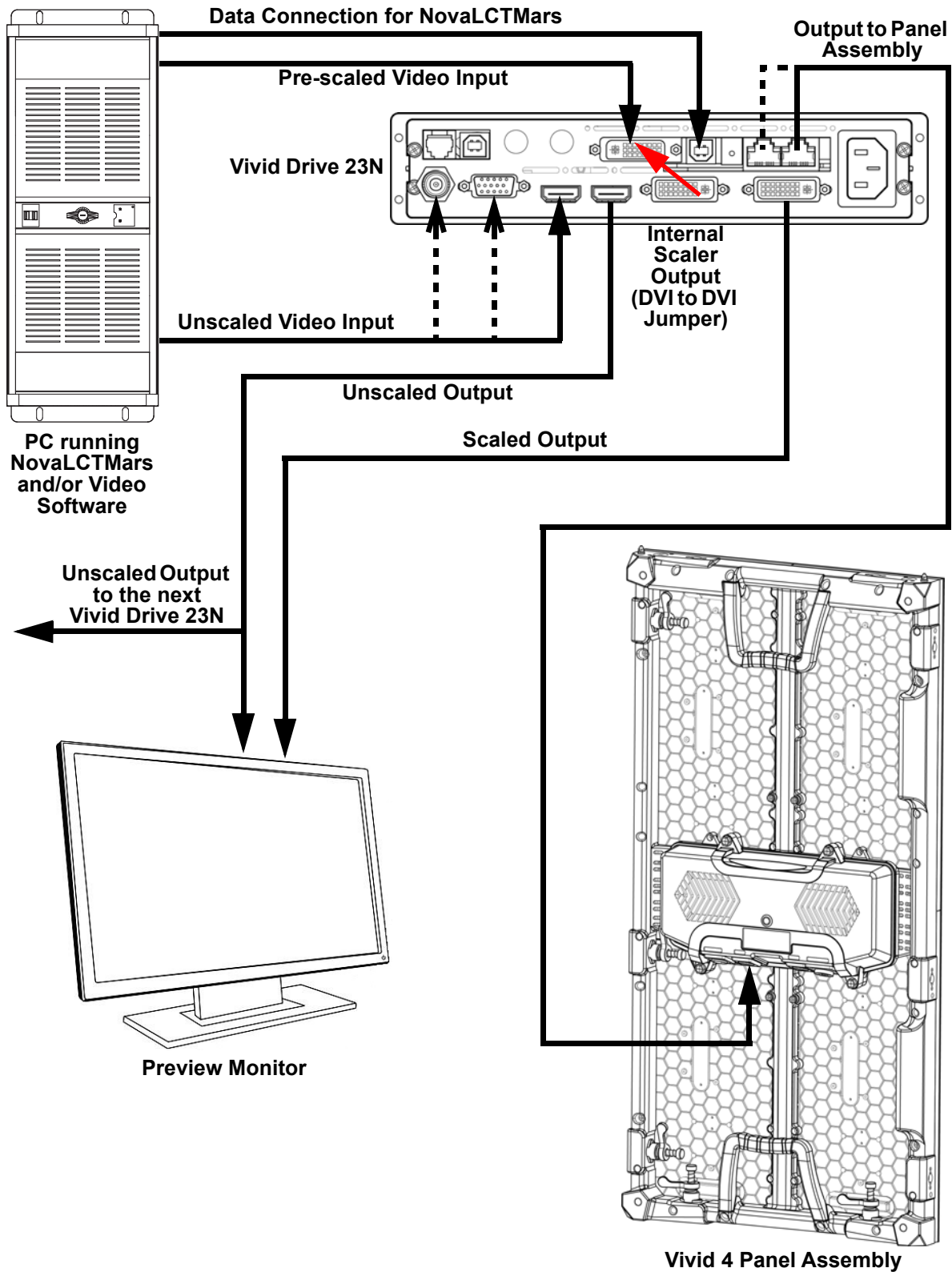
4. Operation

Control Panel Operation

Please refer to the Front Overview for a detailed description of the control panel.

Menu Map

PROGRAMMING LEVELS			DESCRIPTION
INPUT			**INPUT Main Level**
	INPUT DETAIL	_ _ _ _ _	Displays the currently selected input
INPUT / **ZOOM ADJUST**	**V UP**	**0–768**	Stretches the video upwards
	V DOWN	**0–768**	Stretches the video downwards
	V UP/DOWN	**0–384**	Stretches the video up and down
	H LEFT	**0–1024**	Stretches the video leftwards
	H RIGHT	**0–1024**	Stretches the video rightwards
	H LEFT/ RIGHT	**0–512**	Stretches the video left and right
	CENTER	**0–384**	Stretches the video in all directions
	RESET		Resets all Zoom Adjust settings
VGA ADJUST	**H POS**	**-100–100**	Adjusts horizontal position of VGA video
	V POS	**-100–100**	Adjusts vertical position of VGA video
	CLOCK	**-100–100**	Adjusts the VGA input signal clock
	PHASE	**-100–100**	Adjusts the VGA input signal phase
	AUTO ADJUST		Automatically adjusts VGA input signal
ADC ADJUST	**ADC AUTO ADJUST**	**YES <SEL>, NO <MENU>**	Automatically adjusts the brightness
	ADC RESET ALL	**YES <SEL>, NO <MENU>**	Resets the ADC setting
SDI ADJUST	**H POS**	**27–227**	Reserved for future use
	V POS	**27–227**	
	ANTI-ALIAS	**STEP_126**	
		STEP_7	
	RESET		
OUTPUT			**OUTPUT Main Level**
OUTPUT / **OUTPUT DETAIL**		_ _ _ _X_ _ _ _X_ _	Displays currently set output resolution and frequency, DVI mode, bit depth, data range, DE (VGA or YPbPr) signal status, position and size, and the horizontal and vertical polarity.
		DVI MODE: _ _ _	
		BIT DEPTH: _ _ **BIT**	
		DATA RANGE: _ _ _ _ _	
		DE: _ _ _	
		DE H POS: _ _ _ _ _	
		DE V POS: _ _ _ _ _	
		DE H SIZE: _ _ _ _ _	
		DE V SIZE: _ _ _ _ _	
		H POLARITY: _ _ _	
		V POLARITY: _ _ _	
OUTPUT FORMAT	**STANDARD**	**800x600x60**	Selects output resolution and frequency from preset options
		1024x768x60	
		1024x768x75	
		1280x720x60	
		1280x720x50	
		1280x768x60	
		1280x800x60	
		1280x1024x60	

PROGRAMMING LEVELS			DESCRIPTION
OUTPUT (cont.)			**OUTPUT Main Level** (cont.)
OUTPUT FORMAT (cont.)	**STANDARD** (cont.)	1360x768x60	Selects output resolution and frequency from preset options
		1366x768x60	
		1400x1050x60	
		1440x800x60	
		1440x900x60	
		1600x1200x60	
		1680x1050x60	
		1920x1080x60	
		1920x1080x50	
		1920x1120x60	
		1920x1200x60	
		2048x1152x60	
		2560x812x60	
		1560x816x60	
	CUSTOM	_ _ _ _ x _ _ _ _ x _ _	Sets custom resolution and frequency
OUTPUT (cont.)	**DVI MODE**	**DVI**	Sets the protocol to DVI (default)
		HDMI	Sets the protocol to HDMI
	BIT DEPTH	**8 BIT** (DVI) / **8–12 BIT** (HDMI)	Sets bit depth in HDMI mode
	DATA RANGE	**IMAGE**	RGB color space
		VIDEO	YUV color space
	OUTPUT ADJUST	**DE ADJUST** → **DE** → **OFF**	Enables or disables digital encoding
		DE ADJUST → **DE** → **ON**	
		H POS 0–_ _ _ _ _	Adjusts the horizontal position
		V POS 0–_ _ _ _ _	Adjusts the vertical position
		H SIZE 61–_ _ _ _	Adjusts the horizontal size (width)
		V SIZE 61–_ _ _ _	Adjusts the vertical size (height)
		H POLARITY **POS**	Sets the phase of the horizontal scan
		H POLARITY **NEG**	
		V POLARITY **POS**	Sets the phase of the vertical scan
		V POLARITY **NEG**	
		RESET	Resets all output adjust settings
	SCALE	**H SIZE** 61–_ _ _ _	Sets the width of DVI1 OUT
		V SIZE 61–_ _ _ _	Sets the height of DVI1 OUT
		H POS -100–_ _ _ _	Sets the horizontal position of DVI1 OUT
		V POS -16–_ _ _ _	Sets the vertical position of DVI1 OUT
		RESET	Resets scale settings
	SCREEN	**H SIZE** 61–_ _ _ _	Sets the width of DVI2+VGA OUT
		V SIZE 61–_ _ _ _	Sets the Height of DVI2+VGA OUT
		H POS 0–_ _ _ _	Sets the horizontal position of DVI2+VGA OUT
		V POS 0–_ _ _ _	Sets the vertical position of DVI2+VGA OUT
		MODE **FULL SIZE**	DVI2+VGA OUT outputs unscaled video
		MODE **SCREEN SIZE**	DVI2+VGA OUT outputs scaled video
		RESET	Resets screen settings
	RATIO	**4:3**	Sets the aspect ratio to 4:3
		16:9	Sets the aspect ration to 16:9
		NORMAL	Does not alter the aspect ratio
	PICTURE	**BRIGHTNESS** 0–100	Adjusts the brightness of the output
		CONTRAST 0–100	Adjusts the contrast of the output
		SATURATION 0–100	Adjusts the saturation of the output
		SHARPNESS 0–100	Adjusts the sharpness of the output

PROGRAMMING LEVELS				DESCRIPTION
OUTPUT (cont.)				**OUTPUT Main Level** (cont.)
PICTURE (cont.)	**COLOR RED**	0–100		Adjusts the overall red level
	COLOR GRN	0–100		Adjusts the overall green level
	COLOR BLUE	0–100		Adjusts the overall blue level
	RESET			Resets all picture settings
PIP	**PIP**	OFF		Enables or disables PIP
		ON		
	LAYOUT	PIP L+T		PIP appears at top left of output
		PBP L+R		Output is split vertically (left and right)
		PBP T+B		Output is split horizontally (top and bottom)
	SWAP IMAGE	OFF		Switches Image A with Image B
		ON		
	ALPHA	0–16		Sets transparency of PIP
	SELECT	IMAGE A		Enables scaling of Image A
		IMAGE B		Enables scaling of Image B
TEXT OVERLAY	**TEXT OVERLAY**	OFF		Enables or disables overlay
		ON		
	PRESET	User		Custom color
		WhOnBk1		White on black 1
		WhOnBk2		White on black 2
		BkOnWh1		Black on white 1
		BkOnWh2		Black on white 2
		GrnOnBk1		Green on black 1
		GrnOnBk2		Green on black 2
		GrnOnWh1		Green on white 1
		GrnOnWh2		Green on white 2
		RedOnBk1		Red on black 1
		RedOnBk2		Red on black 2
		RedOnWh1		Red on white 1
		RedOnWh2		Red on white 2
	BLEND MODE	MODE1		Text is solid, background is transparent
		MODE2		Text is transparent, no background
	BLEND LEVEL	0–15		Sets overlay transparency
	ABOVE/ BELOW	BELOW		Below mode
		ABOVE		Above mode
	AND/OR	OR		Or mode (left)
		AND		And mode (right)
	RED	0–248		Sets custom red level of overlay
	GREEN	0–252		Sets custom green level of overlay
	BLUE	0–248		Sets custom blue level of overlay
DISPLAY MODE	**MODE**	BLACK SCREEN		Blacks out the output
		LIVE IMAGE		Video output
		FREEZE IMAGE		Freezes the output on a single frame
		FLAT IMAGE		Displays a single color
		TEST PATTERN		Displays a test pattern
	TEST PATTERN	TEST PATTERN	1–66	Selects from 66 available test patterns
		AUTO SWITCH	OFF	Test patterns will not switch automatically
			1–10s	Sets the interval between test patterns

PROGRAMMING LEVELS				DESCRIPTION
OUTPUT (cont.)				**OUTPUT Main Level** (cont.)
DISPLAY MODE (cont.)	**TEST PATTERN** (cont.)	RED	0–255	Sets the color of test pattern 65
		GREEN	0–255	
		BLUE	0–255	
		HOR STEP	0–64	Sets the number of steps in test pattern 66
		VER STEP	0–64	
		COLOR	RED	Sets the color of test pattern 66
			GREEN	
			BLUE	
			WHITE	
	FLAT COLOR	RED	0–255	Sets the single color to be displayed in Flat Image mode
		GREEN	0–255	
		BLUE	0–255	
	GAMMA	LINEAR		Sets the gamma of the output
		sRGB		
		-1.2		
		1.2		
		-1.4		
		1.4		
		-1.6		
		1.6		
TRANSITION				**TRANSITION Main Level**
TRANSITION	**MODE**	CUT		No transition
		FADE		Video sources fade when transitioning
		POP L+T		Video source 2 enters from top left
		PUSH L+T		Video source 1 exits at top left
		POP R+T		Video source 2 enters from top right
		PUSH R+T		Video source 1 exits at top right
		POP L+B		Video source 2 enters from bottom left
		PUSH L+B		Video source 1 exits at bottom left
		POP R+B		Video source 2 enters from bottom right
		PUSH R+B		Video source 1 exits at bottom right
		POP CENT		Video source 2 expands from the center
		PUSH CENT		Video source 1 shrinks into the center
		POP LEFT		Video source 2 enters from the left
		PUSH LEFT		Video source 1 exits to the left
		POP RIGHT		Video source 2 enters from the right
		PUSH RIGHT		Video source 1 exits to the right
		POP TOP		Video source 2 enters from the top
		PUSH TOP		Video source 1 exits to the top
		POP BOTTOM		Video source 2 enters from the bottom
		PUSH BOTTOM		Video source 1 exits to the bottom
	FADE TIME	0.0–1.0s		Sets time a transition takes
	ALPHA	0–16		Sets transparency
	DEINTERLACE	ON		Enables or disables deinterlacing
		OFF		
SPLIT				**SPLIT Main Level**
SPLIT	**SPLIT**	OFF		Enable/Disable Split
		ON		
	H TOTAL	0–4096		Sets the size of the total panel assembly
	V TOTAL	0–4096		

PROGRAMMING LEVELS				DESCRIPTION
SPLIT (cont.)				**SPLIT Main Level** (cont.)
SPLIT	H POS	0–_ _ _ _		Sets the position of this driver's output on the panel assembly
	V POS	0–_ _ _ _		
	H SIZE	0–_ _ _ _		Sets the size of this driver's output on the panel assembly
	V SIZE	0–_ _ _ _		
SAVE SETUP				**SAVE SETUP Main Level**
	SAVE TO	SAVE 1–10		Saves the current settings
	LOAD FROM	SAVE 1–10		Loads the desired saved settings
	DELAY CALL	0–255s		Sets output delay for multi-driver chains
SYSTEM				**SYSTEM Main Level**
SYSTEM	SYSTEM INFO	MCU VER: _._ _		Displays system information
		VIDEO VER: _._ _		
		SN: _ _ _ _		
	TECH SUPPORT	SALES HOTLINE: (800) 762-1084		Displays phone numbers for assistance
		AFTER-SALE SERVICE:		
SYSTEM (cont.)				**SYSTEM Main Level** (cont.)
SYSTEM (cont.)	DATE&TIME	DATE: YYYY-MM-DD		Displays the current date
		TIME: HH:MM:SS		Displays the current time
		WORK TIME: _ _d:_ _h:_ _m		Displays how long the product has been running
		TOTAL TIME: _ _d:_ _h:_ _m		Displays the total time for which the product has run
		BOOT TIMES: _ _		Displays number of times the product has been turned on
		TIMING CONTROL	ON	Enables/Disables clock control
			OFF	
		CHANGE DATE	YYYY-MM-DD	Sets the date
		CHANGE TIME	HH:MM:SS	Sets the time
	LOCK FRONT PANEL	YES <SEL>, NO <MENU>		Locks the front panel (hold **<MENU>** for 3 seconds to unlock)
	LICENSE SETUP	ENTER PASSWORD 000000–999999		No function
	CAN USE TIME	NO LIMIT		No function
	HOT BACKUP	HOT BACKUP	OFF	Enables/Disables hot backup
			ON	
		BACKUP_1–5	CV1	Designates backup signals in order of priority
			HDMI	
			YPbPr	
			VGA	
			SDI	
	USB UPGRADE	YES <SEL>, NO <MENU>		Enables a scaler firmware update by USB
	EDID FOLLOW	OFF		Enables/Disables EDID following
		ON		
	LANGUAGE語言	ENG		Sets the language to English
		中文		Sets the language to Chinese
	FACTORY RESET	FACTORY RESET	YES <SEL>, NO <MENU>	Resets the product to factory settings
		SAVE IP RESET	YES <SEL>, NO <MENU>	Clears all saved settings

Operating Settings Configuration

INPUT Settings

The **INPUT** settings define the parameters of the video source to be edited by the internal scaler of the Vivid Drive 23N. To access the **INPUT** settings, do the following:
1.   Press the **<SELECT>** knob to enter the menu.
2.   Use the **<SELECT>** knob to select **INPUT**.
3.   Press the **<SELECT>** knob.

INPUT DETAIL

To view which input is currently selected, follow the instructions below.
1.   Access the INPUT Settings.
2.   Use the **<SELECT>** knob to select **INPUT DETAIL**.
3.   Press the **<SELECT>** knob.

ZOOM ADJUST

The **ZOOM ADJUST** settings select which portion of the video input to be processed by the internal scaler. To access and adjust the **ZOOM ADJUST** settings, do the following:
1.   Access the INPUT Settings.
2.   Use the **<SELECT>** knob to select **ZOOM ADJUST**.
1.   Press the **<SELECT>** knob.
2.   Use the **<SELECT>** knob to select which direction (or directions) to stretch the video input, from **V UP** (upwards), **V DOWN** (downwards), **V UP/DOWN** (both up and down), **H LEFT** (leftwards), **H RIGHT** (rightwards), **H LEFT/RIGHT** (both left and right), or **CENTER** (all 4 directions). To reset all zoom values, select **RESET**.
3.   Press the **<SELECT>** knob.
4.   Turn the **<SELECT>** knob to increase or decrease the selected zoom value.
5.   Press the **<SELECT>** knob.
6.   Repeat steps 2 to 5 until the zoom is set as desired.

VGA ADJUST

The VGA ADJUST settings adjust the position and synchronization of a VGA video source. To access and adjust the VGA ADJUST settings, follow the instructions below.
1.   Access the INPUT Settings.
2.   Use the **<SELECT>** knob to select **VGA ADJUST**.
3.   Press the **<SELECT>** knob.
4.   Use the **<SELECT>** knob to select which setting to adjust, from **H POS** (horizontal position), **V POS** (vertical position), **CLOCK** (input signal clock), or **PHASE** (input signal phase). To set the Vivid Drive 23N to automatically select the optimum settings, select **AUTO ADJUST**.
5.   Press the **<SELECT>** knob.
6.   If not using the **AUTO ADJUST** function, turn the **<SELECT>** knob to increase or decrease the selected value.
7.   Press the **<SELECT>** knob.
8.   Repeat steps 4 to 7 until the signal is adjusted as desired.

ADC ADJUST

The **ADC ADJUST** setting controls the analog to digital conversion. To set the **ADC ADJUST**, do the following:
1.   Access the INPUT Settings.
2.   Use the **<SELECT>** knob to select **ADC ADJUST**.
3.   Press the **<SELECT>** knob.
4.   Use the **<SELECT>** knob to select **ADC AUTO ADJUST** (to automatically adjust the ADC setting) or **ADC RESET ALL** (to reset the ADC setting).
5.   Press the **<SELECT>** knob.
6.   Press the **<SELECT>** knob to confirm, or **<MENU>** to cancel.

DATA RANGE

The **DATA RANGE** setting determines the color space of the output. To set the **DATA RANGE**, follow the instructions below.

1. Access the OUTPUT ADJUST settings.
2. Use the **<SELECT>** knob to select **DATA RANGE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **IMAGE** (RGB color space) or **VIDEO** (YUV color space).
5. Press the **<SELECT>** knob.

DE ADJUST

The **DE ADJUST** settings control the digital encoding. To access and adjust the **DE ADJUST** settings, do the following:

1. Access the OUTPUT ADJUST settings.
2. Use the **<SELECT>** knob to select **DE ADJUST**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **DE**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select **ON** (to enable the **DE ADJUST** settings) or **OFF** (to disable the **DE ADJUST** settings). This must be set to **ON** for the **DE ADJUST** settings to work.
7. Press the **<SELECT>** knob.

To set the position and size:

1. From the **DE ADJUST** menu level, use the **<SELECT>** knob to select from **H POS** (horizontal position), **V POS** (vertical position), **H SIZE** (horizontal size), or **V SIZE** (vertical size).
2. Press the **<SELECT>** knob.
3. Turn the **<SELECT>** knob to increase or decrease the selected value.
4. Press the **<SELECT>** knob.
5. Repeat steps 1 to 4 until the position and size is set as desired.

To set the phase/polarity:

1. From the **DE ADJUST** menu level, use the **<SELECT>** knob to select **H POLARITY** (horizontal phase) or **V POLARITY** (vertical phase).
2. Press the **<SELECT>** knob.
3. Use the **<SELECT>** knob to select either **POS** (positive) or **NEG** (negative).
4. Press the **<SELECT>** knob.
5. Repeat steps 1 to 4 until the polarities are set as desired.

If necessary, to reset the **DE ADJUST** settings:

1. From the **DE ADJUST** menu level, use the **<SELECT>** knob to select **RESET**.
2. Press the **<SELECT>** knob.

SCALE Settings

The **SCALE** settings control the size and position of the output from **DVI1 OUT**. To access and adjust the **SCALE** settings, follow the instructions below.

1. Access the OUTPUT Settings (or press **<SCALE/7>** and skip to step 4).
2. Use the **<SELECT>** knob to select **SCALE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select from **H SIZE** (horizontal size), **V SIZE** (vertical size), **H POS** (horizontal position), or **V POS** (vertical position). To reset the **SCALE** settings, select **RESET**.
5. Press the **<SELECT>** knob.
6. Turn the **<SELECT>** knob to increase or decrease the selected parameter, or enter the desired value using the number buttons.
7. Press the **<SELECT>** knob.
8. Repeat steps 4 to 7 until the **SCALE** is set as desired.

SCREEN Settings

The **SCREEN** settings control the size and position of the output to **DVI1 OUT** and **DVI2+VGA OUT**. To access and adjust the **SCREEN** settings, do the following:

1. Access the OUTPUT Settings.
2. Use the **<SELECT>** knob to select **SCREEN**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select from **H SIZE** (horizontal size), **V SIZE** (vertical size), **H POS** (horizontal position), or **V POS** (vertical position).
5. Press the **<SELECT>** knob.
6. Turn the **<SELECT>** knob to increase or decrease the selected parameter.
7. Press the **<SELECT>** knob.
8. Use the **<SELECT>** knob to select **MODE**.
9. Press the **<SELECT>** knob.
10. Use the **<SELECT>** knob to select either **FULL SIZE** (outputs unscaled video) or **SCREEN SIZE** (outputs scaled video).
11. Press the **<SELECT>** knob.
12. If necessary, to reset the **SCREEN** settings, use the **<SELECT>** knob to select **RESET** and press the **<SELECT>** knob.

RATIO

The **RATIO** setting sets the aspect ratio of the output from **DVI1 OUT**. To set the **RATIO** setting, follow the instructions below.

1. Access the OUTPUT Settings.
2. Use the **<SELECT>** knob to select **RATIO**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select an aspect ratio, from **4:3**, **16:9**, or **NORMAL** (does not alter the aspect ratio).
5. Press the **<SELECT>** knob.

PICTURE Settings

The **PICTURE** settings control the color balance and related aspects of the output from **DVI1 OUT**. To access and adjust the **PICTURE** settings, do the following:

1. Access the OUTPUT Settings.
2. Use the **<SELECT>** knob to select **PICTURE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select a setting to adjust, from **BRIGHTNESS**, **CONTRAST**, **SATURATION**, **SHARPNESS**, **COLOR RED**, **COLOR GRN**, or **COLOR BLUE**. To reset the **PICTURE** settings, select **RESET**.
5. Press the **<SELECT>** knob.
6. Turn the **<SELECT>** knob to increase or decrease the selected parameter.
7. Press the **<SELECT>** knob.
8. Repeat steps 4 to 7 until the product outputs as desired.

Picture In Picture

The Picture In Picture (**PIP**) settings allow 2 video inputs to display simultaneously. To access and enable or disable the **PIP** settings, follow the instructions below.

1. Access the OUTPUT Settings.
2. Use the **<SELECT>** knob to select **PIP**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **PIP**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select either **OFF** (disables **PIP**) or **ON** (enables **PIP**).
7. Press the **<SELECT>** knob.

PIP LAYOUT

The **LAYOUT** setting determines where the second video input will appear on the connected panel assembly. To set the **LAYOUT**, do the following:

1. Access and enable the Picture In Picture function.
2. Use the **<SELECT>** knob to select **LAYOUT**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select a layout arrangement, from **PIP L+T** (second input appears in the top left), **PBP L+R** (output is split left and right), or **PBP T+B** (output is split top and bottom).
5. Press the **<SELECT>** knob.

SWAP IMAGE

The **SWAP IMAGE** setting toggles which video input is set as the Picture In Picture input. To toggle **SWAP IMAGE**, follow the instructions below.

1. Access and enable the Picture In Picture function.
2. Use the **<SELECT>** knob to select **SWAP IMAGE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **OFF** (does not switch inputs) or **ON** (switches inputs).
5. Press the **<SELECT>** knob.

ALPHA

The **ALPHA** setting controls the transparency of the Picture In Picture image. To set the **ALPHA**, do the following:

1. Access and enable the Picture In Picture function.
2. Use the **<SELECT>** knob to select **ALPHA**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the transparency, from **0–16**.
5. Press the **<SELECT>** knob.

SELECT

The **SELECT** setting determines which video input can be scaled by the **SCALE** function. To select which input to scale, follow the instructions below.

1. Access and enable the Picture In Picture function.
2. Use the **<SELECT>** knob to select **SELECT**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **IMAGE A** or **IMAGE B**.
5. Press the **<SELECT>** knob.

TEXT OVERLAY

The **TEXT OVERLAY** function allows display areas to be defined for text output only. To access and enable or disable the **TEXT OVERLAY** function, do the following:

1. Access the OUTPUT Settings.
2. Use the **<SELECT>** knob to select **TEXT OVERLAY**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **TEXT OVERLAY**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select either **OFF** (disables **TEXT OVERLAY**) or **ON** (enables **TEXT OVERLAY**).
7. Press the **<SELECT>** knob.

TEXT OVERLAY PRESET

The **PRESET** setting selects a pre-set color scheme for the **TEXT OVERLAY**. To select a **PRESET**, follow the instructions below.

1. Access and enable the TEXT OVERLAY function.
2. Use the **<SELECT>** knob to select **PRESET**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **User** (see Custom Color), **WhOnBk1–2** (white on black 1 or 2), **BkOnWh1–2** (black on white 1 or 2), **GrnOnBk1–2** (green on black 1 or 2), **GrnOnWh1–2** (green on white 1 or 2), **RedOnBk1–2** (red on black 1 or 2) or **RedOnWh1–2** (red on white 1 or 2).
5. Press the **<SELECT>** knob.

BLEND MODE
The **BLEND MODE** determines which, the background or the text, of the **TEXT OVERLAY** is transparent.
To select the **BLEND MODE**, do the following:
1. Access and enable the TEXT OVERLAY function.
2. Use the **<SELECT>** knob to select **BLEND MODE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **MODE1** (the text is solid, the background is transparent) or **MODE2** (the text is transparent, no background).
5. Press the **<SELECT>** knob.

BLEND LEVEL
The **BLEND LEVEL** setting sets the transparency of the **TEXT OVERLAY**. To set the **BLEND LEVEL**, follow the instructions below.
1. Access and enable the TEXT OVERLAY function.
2. Use the **<SELECT>** knob to select **BLEND LEVEL**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the transparency, from **0–15**.
5. Press the **<SELECT>** knob.

ABOVE/BELOW
The **ABOVE/BELOW** setting selects the vertical location (**ABOVE** or **BELOW**) of the peripheral secondary content. To select the **ABOVE/BELOW** mode, do the following:
1. Access and enable the TEXT OVERLAY function.
2. Use the **<SELECT>** knob to select **ABOVE/BELOW**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **BELOW** or **ABOVE**.
5. Press the **<SELECT>** knob.

AND/OR
The **AND/OR** setting selects the horizontal location (left or right) of the peripheral secondary content. To select the **AND/OR** mode, follow the instructions below.
1. Access and enable the TEXT OVERLAY function.
2. Use the **<SELECT>** knob to select **AND/OR**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **OR** (left) or **AND** (right).
5. Press the **<SELECT>** knob.

Custom Color
To set a custom color for the **TEXT OVERLAY**, do the following:
1. Access and enable the TEXT OVERLAY function.
2. Use the **<SELECT>** knob to select a color level to set, from **RED**, **GREEN**, or **BLUE**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the value of the selected color.
5. Press the **<SELECT>** knob.
6. Repeat steps 2 to 5 until the **TEXT OVERLAY** is colored as desired.

DISPLAY MODE
The **DISPLAY MODE** settings determines what is output from **DVI1 OUT**. To access and select the **DISPLAY MODE**, follow the instructions below.
1. Access the OUTPUT Settings.
2. Use the **<SELECT>** knob to select **DISPLAY MODE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **MODE**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select a mode, from **BLACK SCREEN** (no output), **LIVE IMAGE** (video output), **FREEZE IMAGE** (freezes the output on a single frame), **FLAT IMAGE** (a single solid color), or **TEST PATTERN** (a test pattern).
7. Press the **<SELECT>** knob.

TEST PATTERN
To set the Vivid Drive 23N to output a specific test pattern from **DVI1 OUT**, do the following:
1. Access the <u>DISPLAY MODE</u> setting, and set the **MODE** to **TEST PATTERN**.
2. From the **DISPLAY MODE** menu level, use the **<SELECT>** knob to select **TEST PATTERN**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **TEST PATTERN**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select a test pattern, from **1–66**.
7. Press the **<SELECT>** knob.

To set if and how often the **TEST PATTERN** switches from one to the next:
1. From the first **TEST PATTERN** menu level, use the **<SELECT>** knob to select **AUTO SWITCH**.
2. Press the **<SELECT>** knob.
3. Use the **<SELECT>** knob to select from **OFF** (will not switch automatically between test patterns) or from **1–10s** (sets the interval between switches from 1 to 10 seconds).
4. Press the **<SELECT>** knob.

For **TEST PATTERN 65**, the color and number of vertical and horizontal steps can be customized. To do so:
1. From the first **TEST PATTERN** menu level, use the **<SELECT>** knob to select from **RED**, **GREEN**, **BLUE**, **HOR STEP** (horizontal steps), or **VER STEP** (vertical steps).
2. Press the **<SELECT>** knob.
3. Turn the **<SELECT>** knob to increase or decrease the selected parameter.
4. Press the **<SELECT>** knob.
5. Repeat steps 1 to 4 until the **TEST PATTERN** appears as desired.

For **TEST PATTERN 66**, the color can be chosen. To do so:
1. From the first **TEST PATTERN** menu level, use the **<SELECT>** knob to select **COLOR**.
2. Press the **<SELECT>** knob.
3. Use the **<SELECT>** knob to select from **RED**, **GREEN**, **BLUE**, or **WHITE**.
4. Press the **<SELECT>** knob.

FLAT COLOR
To set the Vivid Drive 23N to output a custom static color from **DVI1 OUT**, follow the instructions below.
1. Access the <u>DISPLAY MODE</u> setting, and set the **MODE** to **FLAT IMAGE**.
2. From the **DISPLAY MODE** menu level, use the **<SELECT>** knob to select **FLAT COLOR**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select which color level to adjust, from **RED**, **GREEN**, or **BLUE**.
5. Press the **<SELECT>** knob.
6. Turn the **<SELECT>** knob to increase or decrease the selected color value, from **0–255**.
7. Press the **<SELECT>** knob.
8. Repeat steps 4 to 7 until the color is set as desired.

GAMMA
To set the **GAMMA** correction, do the following:
1. Access the <u>OUTPUT Settings</u>.
2. Use the **<SELECT>** knob to select **GAMMA**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select from **LINEAR**, **sRGB**, **-1.2**, **1.2**, **-1.4**, **1.4**, **-1.6**, or **1.6**.
5. Press the **<SELECT>** knob.

TRANSITION Settings

The **TRANSITION** settings determine how the Vivid Drive 23N displays the switch when changing video sources. To access the **TRANSITION** settings, follow the instructions below.

1. Press the **<SELECT>** knob to enter the menu.
2. Use the **<SELECT>** knob to select **TRANSITION**.
3. Press the **<SELECT>** knob.

Transition MODE

The **MODE** determines the effect used when the Vivid Drive 23N transitions from one video source to another. To set the transition **MODE**, do the following:

1. Access the TRANSITION Settings.
2. Use the **<SELECT>** knob to select **MODE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select an effect, from:
   - **CUT** (no effect),
   - **FADE** (fade effect),
   - **POP L+T** (new video enters from top left),
   - **PUSH L+T** (old video exits at top left),
   - **POP R+T** (new video enters from top right),
   - **PUSH R+T** (old video exits at top right),
   - **POP L+B** (new video enters from bottom left),
   - **PUSH L+B** (old video exits at bottom left),
   - **POP R+B** (new video enters from bottom right),
   - **PUSH R+B** (old video exits at bottom right),
   - **POP CENT** (new video expands from the center),
   - **PUSH CENT** (old video shrinks into the center),
   - **POP LEFT** (new video enters from the left),
   - **PUSH LEFT** (old video exits to the left),
   - **POP RIGHT** (new video enters from the right),
   - **PUSH RIGHT** (old video exits to the right),
   - **POP TOP** (new video enters from the top),
   - **PUSH TOP** (old video exits to the top),
   - **POP BOTTOM** (new video enters from the bottom),
     or
   - **PUSH BOTTOM** (old video exits to the bottom).
5. Press the **<SELECT>** knob.

FADE TIME

The **FADE TIME** setting determines the length of time it takes for a transition to complete. To set the **FADE TIME**, follow the instructions below.

1. Access the TRANSITION Settings.
2. Use the **<SELECT>** knob to select **FADE TIME**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the amount of time, from **0.0–1.0s** (seconds).
5. Press the **<SELECT>** knob.

Transition ALPHA

The **ALPHA** setting controls the transparency of transitioning video sources. To set the **ALPHA**, do the following:

1. Access the TRANSITION Settings.
2. Use the **<SELECT>** knob to select **ALPHA**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the transparency, from **0–16**.
5. Press the **<SELECT>** knob.

DEINTERLACE

The **DEINTERLACE** function converts interlaced video signals to a non-interlaced format. To enable or disable deinterlacing, follow the instructions below.

1. Access the TRANSITION Settings.
2. Use the **<SELECT>** knob to select **DEINTERLACE**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **ON** (deinterlaces video signals) or **OFF** (does not deinterlace video signals).
5. Press the **<SELECT>** knob.

SPLIT Settings

The **SPLIT** settings split the video input into sections to output from 2 or more Vivid Drive 23N products onto the same connected panel assembly. This allows larger panel assemblies than can be controlled by a single Vivid Drive 23N. To access and enable or disable the **SPLIT** settings, do the following:

1. Press the **<SELECT>** knob to enter the menu.
2. Use the **<SELECT>** knob to select **SPLIT**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **SPLIT**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select either **OFF** (disables **SPLIT**) or **ON** (enables **SPLIT**).
7. Press the **<SELECT>** knob.

SPLIT Total

The **SPLIT** total settings **H TOTAL** and **V TOTAL** determine the total size of the connected panel assembly. To set the totals, follow the instructions below.

1. Access and enable the SPLIT Settings.
2. Use the **<SELECT>** knob to select either **H TOTAL** (total horizontal size) or **V TOTAL** (total vertical size).
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the selected parameter.
5. Press the **<SELECT>** knob.
6. Repeat steps 2 to 5 until the total size of the connected panel assembly is set accurately.

SPLIT Position and Size

The **SPLIT** position (**H POS** and **V POS**) and size (**H SIZE** and **V SIZE**) settings determine the location and size of a specific Vivid Drive 23N product's output on the connected panel assembly. To set the position and size, do the following:

1. Access and enable the SPLIT Settings.
2. Use the **<SELECT>** knob to select from **H POS** (horizontal position), **V POS** (vertical position), **H SIZE** (horizontal size), or **V SIZE** (vertical size).
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the selected parameter.
5. Press the **<SELECT>** knob.
6. Repeat steps 2 to 5 until the size and position are set as desired.

SAVE SETUP Settings

The **SAVE SETUP** settings allow up to 10 different configurations of the Vivid Drive 23N to be stored and reloaded. To access the **SAVE SETUP** settings, follow the instructions below.

1. Press the **<SELECT>** knob to enter the menu.
2. Use the **<SELECT>** knob to select **SAVE SETUP**.
3. Press the **<SELECT>** knob.

SAVE TO

The **SAVE TO** function saves the currently set configurations of the Vivid Drive 23N to one of 10 **SAVE** slots. To save the current configuration of the Vivid Drive 23N, do the following:

1. Access the SAVE SETUP Settings.
2. Use the **<SELECT>** knob to select **SAVE TO**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select a save slot, from **SAVE 1–10**.
5. Press the **<SELECT>** knob.

LOAD FROM

The **LOAD FROM** function loads previously saved configurations from one of the 10 **SAVE** slots. To load a saved configuration, follow the instructions below.

1. Access the SAVE SETUP Settings.
2. Use the **<SELECT>** knob to select **LOAD FROM**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select a save slot to load, from **SAVE 1–10**.
5. Press the **<SELECT>** knob.

DELAY CALL

The **DELAY CALL** setting is for use with multiple Vivid Drive 23N products, to offset start-up times. To set the **DELAY CALL**, do the following:

1. Access the SAVE SETUP Settings.
2. Use the **<SELECT>** knob to select **DELAY CALL**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the interval, from **0–255s** (seconds).
5. Press the **<SELECT>** knob.

SYSTEM Settings

The **SYSTEM** settings include various functions such as backup and firmware updates. To access the **SYSTEM** settings, follow the instructions below.

1. Press the **<SELECT>** knob to enter the menu.
2. Use the **<SELECT>** knob to select **SYSTEM**.
3. Press the **<SELECT>** knob.

SYSTEM INFO

To view the SYSTEM INFO, do the following:

1. Access the SYSTEM Settings.
2. Use the **<SELECT>** knob to select **SYSTEM INFO**.
3. Press the **<SELECT>** knob.

TECH SUPPORT

To view phone numbers with which sales support can be contacted, follow the instructions below.

1. Access the SYSTEM Settings.
2. Use the **<SELECT>** knob to select **TECH SUPPORT**.
3. Press the **<SELECT>** knob.

DATE&TIME

The **DATE&TIM**E menu displays the time and related statistics for the Vivid Drive 23N, and allows the date and time to be set. To access, view, and enable or disable control of this menu, do the following:

1. Access the SYSTEM Settings.
2. Use the **<SELECT>** knob to select **DATE&TIME**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **TIMING CONTROL**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select either **ON** (enables control) or **OFF** (disables control).
7. Press the **<SELECT>** knob.

CHANGE DATE

To set the date to be displayed by the Vivid Drive 23N, follow the instructions below.

1. Access the DATE&TIME menu and enable **TIMING CONTROL**.
2. Use the **<SELECT>** knob to select **CHANGE DATE**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the year.
5. Press the **<SELECT>** knob.
6. Turn the **<SELECT>** knob to increase or decrease the month.
7. Press the **<SELECT>** knob.
8. Turn the **<SELECT>** knob to increase or decrease the day.
9. Press the **<SELECT>** knob.
10. If necessary, repeat steps 2 to 9 until the date is set correctly.

CHANGE TIME

To set the time to be displayed by the Vivid Drive 23N, follow the instructions below.

1. Access the DATE&TIME menu and enable **TIMING CONTROL**.
2. Use the **<SELECT>** knob to select **CHANGE TIME**.
3. Press the **<SELECT>** knob.
4. Turn the **<SELECT>** knob to increase or decrease the hour.
5. Press the **<SELECT>** knob.
6. Turn the **<SELECT>** knob to increase or decrease the minute.
7. Press the **<SELECT>** knob.
8. Turn the **<SELECT>** knob to increase or decrease the second.
9. Press the **<SELECT>** knob.
10. If necessary, repeat steps 2 to 9 until the date is set correctly.

LOCK FRONT PANEL

To lock the front panel from use, do the following.

1. Access the SYSTEM Settings.
2. Use the **<SELECT>** knob to select **LOCK FRONT PANEL**.
3. Press the **<SELECT>** knob.
4. Press the **<SELECT>** knob to confirm, or **<MENU>** to cancel.

To unlock, hold **<MENU>** for 3 seconds.

HOT BACKUP

The **HOT BACKUP** function allows changes to settings to be preserved after power cycling without actively saving the configuration.

To enable or disable **HOT BACKUP**, follow the instructions below.

1. Access the SYSTEM Settings.
2. Use the **<SELECT>** knob to select **HOT BACKUP**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select **HOT BACKUP**.
5. Press the **<SELECT>** knob.
6. Use the **<SELECT>** knob to select either **OFF** (disables the function) or **ON** (enables the function).
7. Press the **<SELECT>** knob.

To designate the priority order of the input video signals, do the following:

1. Enable **HOT BACKUP**.
2. From the first **HOT BACKUP** menu, use the **<SELECT>** knob to select a backup, from **BACKUP_1–5** (1 is first, 5 is last).
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select which video source to designate as the selected priority, from **CV1**, **HDMI**, **YPbPr**, **VGA**, or **SDI**.
5. Press the **<SELECT>** knob.
6. Repeat steps 2 to 5 until the backups are set as desired.

EDID FOLLOW

The **EDID FOLLOW** function allows the Vivid Drive 23N to detect the specifications of connected panels.

To enable or disable **EDID FOLLOW**, do the following:

1. Access the SYSTEM Settings.
2. Use the **<SELECT>** knob to select **EDID FOLLOW**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **OFF** (disables the function) or **ON** (enables the function).
5. Press the **<SELECT>** knob.

LANGUAGE語言

The menu of the Vivid Drive 23N can be displayed in either English or Chinese. To select the language, follow the instructions below.

1. Press the **<SELECT>** knob to enter the menu.
2. Use the **<SELECT>** knob to select **LANGUAGE語言**.
3. Press the **<SELECT>** knob.
4. Use the **<SELECT>** knob to select either **ENG** (English) or **中文** (Chinese).
5. Press the **<SELECT>** knob.

FACTORY RESET

The **FACTORY RESET** functions can either completely reset the product back to factory settings, or rest only the saved configurations in the **SAVE** function. To access the **FACTORY RESET** menu, do the following:

1. Press the **<SELECT>** knob to enter the menu.
2. Use the **<SELECT>** knob to select **FACTORY RESET**.
3. Press the **<SELECT>** knob.

Total Reset

To perform a total FACTORY RESET, follow the instructions below.

1. Access the FACTORY RESET menu.
2. Use the **<SELECT>** knob to select **FACTORY RESET**.
3. Press the **<SELECT>** knob.
4. Press the **<SELECT>** knob to confirm, or press **<MENU>** to cancel.

SAVE IP RESET

To clear all saved configurations from the **SAVE** function, do the following:

1. Access the FACTORY RESET menu.
2. Use the **<SELECT>** knob to select **SAVE IP RESET**.
3. Press the **<SELECT>** knob.
4. Press the **<SELECT>** knob to confirm, or press **<MENU>** to cancel.

NovaLCTMars Software

The Vivid Drive 23N can be configured by a computer running the NovaLCTMars software, through a USB connection. You can download the NovaLCTMars software from www.chauvetdj.com/products/vivid-drive-23n/.

Software Setup

To install and access all functions of the NovaLCTMars software:
1. Download the NovaLCTMars software from www.chauvetdj.com/products/vivid-drive-23n/.
2. Run the setup file.
3. After installing the application and all included drivers, connect the Vivid Drive 23N and run the software.
4. Click **User (U)** in the menu running across the top of the window to open the drop-down menu.
5. Click **Advanced User Login (A)**.
6. Type **admin** into the password field, and press the **Login** button on the screen, or press the **Enter** key.

Connect the Vivid Drive 23N to the computer before running NovaLCTMars.

Screen Configuration

The NovaLCTMars software has many configuration settings for any panel assembly connected to the Vivid Drive 23N. The options are divided into 3 tabs that appear on a window after clicking **Screen Configuration**, selecting the product under **Current Operation Communication Port**, and clicking the **Next** button.

Sending Card Tab

On the Sending Card tab, the resolution and refresh rate can be set. From this tab the product's redundancy can be set, system configurations can be saved, and the product can also be restored to factory default settings.

Receiving Card Tab

On the Receiving Card tab, the parameters sent to the software the last time this tab was viewed will be displayed. This tab displays many options that can be edited, but Chauvet does NOT recommend altering any of them. From this tab the firmware for connected video panels can be uploaded and downloaded.

Screen Connection Tab

On the Screen Connection Tab, there are three options for configuring the size of the connected panel assembly, the distribution between video output ports, and the data flow: Simple, Standard, and Complex.
- Simple Screen mode selects from preset data paths.
- Standard Screen mode allows the data flow and port distribution to be programmed manually with a visual interface.
- Complex Screen mode allows the configuration to be entered in a flow chart by driver number, port, and panel number, as well as dimensions and offset coordinates in pixels.

Firmware Update

To update the firmware of the Vivid Drive 23N, follow the instructions below.

1. On a Windows PC, download the latest firmware update from www.chauvetdj.com/products/vivid-drive-23n/.
2. Plug the product into power, connect it to the computer, and open NovaLCTMars.
3. Click **User (U)** in the menu running across the top of the window to open the drop-down menu.
4. Click **Advanced User Login (A)**.
5. Type **admin** into the password field, and press the **Login** button on the screen, or press the **Enter** key.
6. Type **admin** again (There won't be a field for this, just type anywhere in the window). The Program Loading window will pop up.
7. If more than one Vivid Drive 23N is connected, select the one to be updated from the **Current Operation Communication Port** drop-down menu.
8. Click the button to the right of **Program Path**, and browse to find and select the firmware update file.
9. Select the **Sending Card** check-box.
10. Click **Update**.
11. On the Vivid Drive 23N, access the SYSTEM Settings.
12. Use the **<SELECT>** knob to select **USB UPGRADE**.
13. Press the **<SELECT>** knob.
14. Press the **<SELECT>** knob to confirm, or press **<MENU>** to cancel.

Video Panel Firmware Update

To update the firmware for a video panel connected to the Vivid Drive 23N, do the following:

1. Download the latest firmware update from the manufacturer website. For example, the latest firmware update for the Vivid 4 from CHAUVET DJ can be downloaded from www.chauvetdj.com.
2. Plug the video panel and Vivid Drive 23N into power, connect the products together and to the computer, and open NovaLCTMars.
3. Click **User (U)** in the menu running across the top of the window to open the drop-down menu.
4. Click **Advanced User Login (A)**.
5. Type **admin** into the password field, and press the **Login** button on the screen, or press the **Enter** key.
6. Type **admin** again (There won't be a field for this, just type anywhere in the window). The Program Loading window will pop up.
7. If more than one Vivid Drive 23N is connected, select the one connected to the panel to be updated from the **Current Operation Communication Port** drop-down menu.
8. Click the button to the right of **Program Path**, and browse to find and select the firmware update file.
9. Select the **Receiving Card FPGA** check-box.
10. Click **Update**.

Getting Started

To set up a new assembly of Vivid 4 video panels with a Vivid Drive 23N, follow the instructions below.

1. Download LCTMars (not Mac compatible) or SmartLCT from www.chauvetdj.com/products/vivid-drive-23n/.
2. Install the selected software.
3. Connect and cable the Vivid 4 panel assembly according to the Vivid 4 User Manual (available at www.chauvetdj.com).
4. Connect the Vivid 4 panel assembly to power
5. Connect the Vivid Drive 23N to power.
6. Connect the Vivid 4 panel assembly to Ethernet Out 1 on the Vivid Drive 23N. (See Rear Overview)
7. Connect the computer to USB B 2 on the Vivid Drive 23N. (See Rear Overview)
8. Run the software and follow instructions from LCTMars or SmartLCT to map the video panel assembly as desired.
9. Connect the video source to the Vivid Drive 23N.

   Using the internal scaler of the Vivid Drive 23N:
   a. Connect the DVI to DVI jumper as shown in Connection Diagram.
   b. Connect the video source to HDMI IN, VGA/YPbPr IN, or CVBS IN.
   c. Press the button that corresponds with the video source being used (**<HDMI/2>**, **<VGA/4>**, **<YPbPr/5>**, or **<CV/1>**). (See Front Overview)
   d. Send video signal to the Vivid Drive 23N.
   e. Follow the SCALE Settings instructions to fit the video output to the connected panel assembly.

   Using pre-scaled video, bypassing the internal scaler of the Vivid Drive 23N:
   a. Connect the video source to DVI In.
   b. Send video signal to the Vivid Drive 23N.

5. Maintenance

Product Maintenance

Dust build-up reduces performance and can cause overheating. This can lead to reduction of the product's life and/or mechanical wear. To maintain optimum performance and minimize wear, clean your products at least twice a month. However, be aware that usage and environmental conditions could be contributing factors to increase the cleaning frequency.

To clean the product, follow the instructions below:

1. Unplug the product from power.
2. Wait until the product is at room temperature.
3. Use a vacuum (or dry compressed air) and a soft brush to remove dust collected on the external surface/vents.
4. Clean all transparent surfaces with a mild soap solution, ammonia-free glass cleaner, or isopropyl alcohol.
5. Apply the solution directly to a soft, lint free cotton cloth or a lens cleaning tissue.
6. Softly drag any dirt or grime to the outside of the transparent surface.
7. Gently polish the transparent surfaces until they are free of haze and lint.

ⓘ   **Always dry the transparent surfaces carefully after cleaning them.**

6. Technical Specifications

Dimensions and Weight

Length	Width	Height	Weight
8.6 in (219 mm)	9.8 in (250 mm)	1.8 in (45 mm)	3.1 lb (1.4 kg)

Note: Dimensions in inches rounded to the nearest decimal digit.

Power

Power Supply Type	Range	Voltage Selection
Switching (internal)	100 to 240 VAC, 50/60 Hz	Auto-ranging

Parameter	120 V, 60 Hz	230 V, 50 Hz
Consumption	40 W	40 W
Operating Current	0.4 A	0.2 A
Fuse	F 1 A, 250 V	F 1 A, 250 V

Power I/O	U.S./Worldwide	UK/Europe
Power input connector	IEC	IEC
Power Cord plug	Edison (U.S.)	Local Plug

Video

Input	Purpose	Output	Purpose
1 BNC	CVBS	2x RJ45	Video Output
1 DE-15 VGA	VGA, YPbPr	1 HDMI	Preview/Loop Output
1 HDMI	HDMI, DVI	DVI1	Scaler Out, to Mapper
1 DVI	Mapper In, from Scaler	DVI2	Preview Output

Maximum Supported Panels	Maximum Supported LEDs
30 per RJ45	1,310,720

Connections

Input	Purpose	Output	Purpose
1 USB Type B	Firmware Updates	1 USB Type B	Software Connection
1 RJ12	RS-232 Linking		

Control

PC Software	Control Protocol
NovaLCTMars	NOVA

Thermal

Maximum External Temperature	Cooling System
104 °F (40 °C)	Convection

Ordering

Product Name	Item Code	UPC Number
Vivid Drive 23N	21081387	781462217358

RoHS

CE
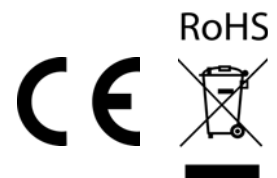
Returns

In case you need to get support or return a product:
- If you are located in the U.S., contact Chauvet World Headquarters.
- If you are located in the UK or Ireland, contact Chauvet Europe Ltd.
- If you are located in Benelux, contact Chauvet Europe BVBA.
- If you are located in France, contact Chauvet France.
- If you are located in Germany, contact Chauvet Germany.
- If you are located in Mexico, contact Chauvet Mexico.
- If you are located in any other country, DO NOT contact Chauvet. Instead, contact your local distributor. See www.chauvetdj.com for distributors outside the U.S., UK, Ireland, Benelux, France, Germany, or Mexico.

> **If you are located outside the U.S., UK, Ireland, Benelux, France, Germany, or Mexico, contact your distributor of record and follow their instructions on how to return Chauvet products to them. Visit our website www.chauvetdj.com for contact details.**

Call the corresponding Chauvet Technical Support office and request a Return Merchandise Authorization (RMA) number before shipping the product. Be prepared to provide the model number, serial number, and a brief description of the cause for the return.

To submit a service request online, go to www.chauvetdj.com/service-request.

Send the merchandise prepaid, in its original box, and with its original packing and accessories. Chauvet will not issue call tags.

Clearly label the package with the RMA number. Chauvet will refuse any product returned without an RMA number.

> **Write the RMA number on a properly affixed label. DO NOT write the RMA number directly on the box.**

Before sending the product, clearly write the following information on a piece of paper and place it inside the box:
- Your name
- Your address
- Your phone number
- RMA number
- A brief description of the problem

Be sure to pack the product properly. Any shipping damage resulting from inadequate packaging will be your responsibility. FedEx packing or double-boxing are recommended.

> **Chauvet reserves the right to use its own discretion to repair or replace returned product(s).**

Contact Us

General Information	Technical Support
World Headquarters	
Address: 5200 NW 108th Ave.	Voice: (844) 393-7575
Sunrise, FL 33351	Fax: (954) 756-8015
Voice: (954) 577-4455	Email: chauvetcs@chauvetlighting.com
Fax: (954) 929-5560	
Toll Free: (800) 762-1084	Website: www.chauvetdj.com
UK	
Address: Unit 1C	Email: UKtech@chauvetlighting.eu
Brookhill Road Industrial Estate	
Pinxton, Nottingham, UK	Website: www.chauvetdj.eu
NG16 6NT	
Voice: +44 (0) 1773 511115	
Fax: +44 (0) 1773 511110	
Benelux	
Address: Stokstraat 18	Email: BNLtech@chauvetlighting.eu
9770 Kruishoutem	
Belgium	Website: www.chauvetdj.eu
Voice: +32 9 388 93 97	
France	
Address: 3, Rue Ampère	Email: FRtech@chauvetlighting.fr
91380 Chilly-Mazarin	
France	Website: www.chauvetdj.eu
Voice: +33 1 78 85 33 59	
Germany	
Address: Bruno-Bürgel-Str. 11	Email: DEtech@chauvetlighting.de
28759 Bremen	
Germany	Website: www.chauvetdj.eu
Voice: +49 421 62 60 20	
Mexico	
Address: Av. de las Partidas 34 - 3B	Email: servicio@chauvet.com.mx
(Entrance by Calle 2)	
Zona Industrial Lerma	Website: www.chauvetdj.mx
Lerma, Edo. de México, CP 52000	
Voice: +52 (728) 690-2010	

Outside the U.S., U.K., Ireland, Benelux, France, Germany, or Mexico, contact the dealer of record. Follow the instructions to request support or to return a product. Visit our website for contact details.