USER'S GUIDE



VDP-80

Digital Video Controller / Processor

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Two Year Limited Warranty For Video Processors and Controllers

Congratulations on your purchase of a Vidikron video product and welcome to the Vidikron family! With proper installation, setup and care, you should enjoy many years of unparalleled video performance.

This is a LIMITED WARRANTY as defined in the Magnuson-Moss Warranty Act. Please read it carefully and retain it with your other important documents.

WHAT IS <u>COVERED</u> UNDER THE TERMS OF THIS LIMITED WARRANTY:

<u>SERVICE LABOR</u>: Vidikron will pay for service labor by a Vidikron Authorized Service Center when needed as a result of manufacturing defect for a period of two (2) years from the effective date of delivery to the end user (excluding the lamp).

<u>PARTS:</u> Vidikron will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of two (2) years from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

WHAT IS NOT COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:

This Limited Warranty only covers failure due to defects in materials and workmanship that occur during normal use and does not cover normal maintenance. This Limited Warranty does not cover cabinets or any appearance items; failure resulting from accident, misuse, abuse, neglect, mishandling, misapplication, faulty or improper installation or setup adjustments; improper maintenance, alteration, improper use of any input signal; damage due to lightning or power line surges, spikes and brownouts; damage that occurs during shipping or transit; or damage that is attributed to acts of God. In the case of remote control units, damage resulting from leaking, old, damaged or improper batteries is also excluded from coverage under this Limited Warranty.

CAUTION: THIS LIMITED WARRANTY ONLY COVERS VIDIKRON PRODUCTS PURCHASED FROM VIDIKRON AUTHORIZED DEALERS. ALL OTHER PRODUCTS ARE SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY. MOREOVER, DAMAGE RESULTING DIRECTLY OR INDIRECTLY FROM IMPROPER INSTALLATION OR SETUP IS SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY.

RIGHTS, LIMITS AND EXCLUSIONS:

Vidikron limits its obligations under any implied warranties under state laws to a period not to exceed the warranty period. There are no express warranties. Vidikron also excludes any obligation on its part for incidental or consequential damages related to the failure of this product to function properly. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. So the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

EFFECTIVE WARRANTY DATE:

This Limited Warranty begins on the effective date of delivery to the end user. For your convenience, keep the original bill of sale as evidence of the purchase date.

IMPORTANT: WARRANTY REGISTRATION:

Please fill out and mail your warranty registration card. It is imperative that Vidikron knows how to reach you promptly if we should discover a safety problem or product update for which you must be notified.

CONTACT A VIDIKRON AUTHORIZED SERVICE CENTER TO OBTAIN SERVICE:

Repairs made under the terms of this Limited Warranty covering your Vidikron video product will be performed at the location of the product, during usual working hours, providing location of product is within normal operating distance from a Vidikron Authorized Service Center. In some instances it may be necessary for the product to be returned to the Vidikron factory for repairs. If, solely in Vidikron's judgment, location of product to be repaired is beyond normal operating distance of the closest Vidikron Authorized Service Center, or the repair requires the unit be returned to the Vidikron factory, it is the owner's responsibility to arrange for shipment of the product for repair. These arrangements must be made through the selling Vidikron dealer. If this is not possible, contact Vidikron will return product transportation prepaid in the United States, unless no product defect is discovered. In that instance, shipping costs will be the responsibility of the owner.

ADDITIONAL INFORMATION:

To locate the name and address of the nearest VIDIKRON authorized service location, or for additional information about this Limited Warranty, please call or write:

VIDIKRON Attn.: Customer Service Department 2900 Faber Street Union City, CA 94587 Ph: (510) 324-5900 Fax: (510) 324-5905 Toll Free: (888) 4-VIDIKRON

Introduction

Thank you for purchasing the Vidikron VDP-80 Video Processor. It has been designed to offer great video processing quality, while providing the best available value. We hope you find that the Vidikron VDP-80 Video Processor exceeds your expectations.

It is important to read and understand this manual, and the display's specifications, before programming the Vidikron VDP-80 Video Processor. Also, check with your Vidikron dealer for possible updates.

Features

The Vidikron VDP-80 Video Processor provides a cornerstone for the ultimate home theater experience. It is designed to adapt to your home theater needs, rather than having the designed-in limitations commonly found in today's video processors. Some notable features are listed below.

- Ten inputs (2 Composite/SVideo, 2 Composite/SVideo/SD-Component, 2 SD/HD Component/RGB, 2 DVI-D, and 2 SDI)
- Video processing/deinterlacing is supported for HDCP encrypted DVI-D inputs.
- Component/RGB analog and DVI-D input accept 720p and 1080i sources
- Transcoding (e.g. component to RGB) for digital and analog inputs.
- 3:2, 3:3 and 2:2 film pull-down frame-reconstruction for SD sources
- Per-pixel motion-adaptive video deinterlacing for SD sources
- Four independent input/output configuration memories for each input
- Black-level, contrast, calibration per memory
- Color, red-color-offset, green-color-offset calibration per memory
- Hue, red-hue-offset, green-hue-offset calibration per memory
- Y/C delay calibration with independent CB and CR delay
- Detail enhancing scaler
- Output programmable from 480p to 1080p, in scanline increments, plus 1080i
- Output width programmable in pixel increments
- Programmable output color format (SD and HD component, plus RGB)
- Programmable vertical refresh rate
- Programmable screen aspect ratio
- DVI-D output with HDCP encryption support
- BNC analog output
- Backlit infrared remote control with on-screen menu system
- RS232 serial interface for control and software-updates
- Silent operation (no fan)

Product Overview

The primary functions of the Vidikron VDP-80 are to act as a video switch, process the selected input, and output in the appropriate format and resolution. Standard definition (SD), enhanced-definition (ED), or high-definition (HD) video inputs are all supported in addition to a number of PC formats. Video inputs are converted to progressive video (if needed) and are then scaled the video output resolution.

Interlaced video has been in use for more than 50 years and is still the most common video format. It displays half of the lines of picture information each sixtieth (or fiftieth) of a second. Each half of the image is called a field and displays either all the even lines, or all the odd lines. So, an entire image, called a frame, takes a thirtieth (or twenty-fifth) of a second to display on the screen. An "i" suffix on the resolution specification is used to indicate interlaced formats.

In contrast, progressive video presents each frame as a whole. A "p" suffix on the resolution specification is used to indicate progressive formats. Converting interlaced video to progressive video is referred to as "deinterlacing."

The Vidikron VDP-80 is comprised of four major functional sections:

- Input selection, conversion to digital (if needed), and video decoding
- Deinterlacing
- Filtering and scaling
- Conversion to analog video, or output as digital DVI-D video.

These functional blocks are shown below.



Composite and SVideo inputs automatically select between NTSC, PAL and SECAM formats. Component/RGB and DVI-D inputs accept SD, ED and/or HD video at either 50 and 59.94 Hertz. HDCP encryption is supported for DVI-D inputs. If encrypted, DVI-D inputs are decrypted, processed, scaled and then re-encrypted for output as DVI-D (i.e not just a "pass-through" function). The digitized data is then decoded into a digital video format for further processing.

NOTE: HDCP encrypted DVI-D sources must be re-encrypted for output. So, the analog output is disabled in this case. Also the display must be HDCP capable to show these encrypted sources. If the video input is interlaced, it is first deinterlaced into a progressive format.

Proprietary scaling algorithms are used to scale the resulting progressive video to the optimal size for the display. Unlike many video processors, which are limited to a few, or even a single output resolution, the VDP-80 is programmable from 480 to 1080 active scanlines, in scanline increments. For analog outputs, video is over-sampled to provide the best possible image quality. For DVI-D outputs the resolution is programmable in both scanline increments vertically, and pixel increments horizontally.

As part of the scaling process, digital filtering is used to enhance the image detail. This enhancement allows standard definition inputs, such as DVDs, to appear to be much higher resolution, even when viewed on the large screen sizes common in home theaters.

When the digital processing is completed, video is converted to analog using digital-to-analog converters (DACs), or is output as DVI-D (digital) video.

To accommodate the various video formats, the output type is programmable. It can be set to analog YPrPb, RGBHV, RGBS or RGsB, with programmable sync type and polarities. YPrPb can be selected with either the SD or HD color formats. DVI-D video can use either the "PC" range (full range black to white), or "video range" (reduced range for black to white to allow for blacker-than-black and whiter-than-white levels).

An infrared remote control, or the serial RS232 port, is used for control and software update. Critical display setup parameters have direct commands. Other functions use an on-screen menu.

Every input has four independent configuration memories, to allow options such as ISF day/night specific modes.

ProntoNeo Remote Control Description



Controller Remote Selections



ON:Press to turn Controller onOFF:Press to turn Controller offAspect Ratio:Press to select the Aspect Ratio screenSource:Press to select the Source screenMenu:Press to select the Menu screen



▲▼◀►: OK: Menu: Exit: Navigates you in the direction of the arrows Press to enable sub menu of highlighted selection Press to select the *Menu* screen Press to return to the previous menu selection



Mon A 4/5 Vis	pr 05 ion 80	ctlr	2:06 pm
\square	4:	3	
\square	LETTE	RBO)	
\square	I-W	ide	
\square	16	:9	
Mode	Menu	Exit	Device

0-9:	Select to go to corresponding input
ISF Night:	Press to select the stored configuration
	of this memory
ISF Day:	Press to select the stored configuration
	of this memory

Press to select 4:3 aspect ratio
Press to select LETTERBOX aspect ratio
Press to select I-Wide aspect ratio
Press to select 16:9 aspect ratio

Mon Apr 05 2:06 pm 5/5 Vision 80 ctlr VIDIKRON			
2900 Faber St.			
Union City, Ca 94587			
www.vidikron.com			
Ph (510) 324-5900			
Fax (510) 324-5905			
Mode Menu Exit Device	J		

Content Specific Buttons Mode: Hold this k

Mode:	Hold this button down for 3 seconds to go into
	"Special mode" screen
Menu:	Press to select the Menu screen
Exit:	Press to return to the previous menu selection
Device:	Press to choose between controller or projector control

Vidikron Information Screen

Projector Remote Selections



ON:

OFF:

Hold this button down for 2 seconds to turn Projector on Hold this button down for 2 seconds to turn Projector off Press to select the Menu screen Menu:



▲▼◀▶:	Navigates you in the direction of the arrows
Enter:	Press to enable sub menu of highlighted
selection	
Menu:	Press to select the Menu screen
Exit:	Press to return to the previous menu selection
Mute:	Press to mute the on-screen image

Content Specific Buttons

Mode:	Hold this button down for 3 seconds to go into "Special mode" screen
Menu:	Press to select the Menu screen
Exit:	Press to return to the previous menu selection
Device:	Press to choose between controller or projector control



Vidikron Information Screen

Installer's Guide

Installation

Unpack the shipping container. Save the container and packing materials incase they are needed later. Place the Vidikron VDP-80 Video Processor on a component shelf and connect as described in the Rear Panel section. The cooling vents must be clear of obstructions to provide for convection cooling.

Install two AAA batteries in the remote control.

The following items should be included:

Vidikron VDP-80 Video Processor Infrared remote control External power supply User manual License agreement Warranty card Rack-mount ears.

Front Panel

The front panel has an Light-Emitting-Diode (LED) indicator light, which can show command activity (default), or be used as a "power-on" light (user selectable). When the LED is set to "activity" it illuminates for a short time after commands are received. When the LED is set to "power" it stays illuminated as long as the VDP-80 is on, turning off briefly when a command is received.

The front panel is shown below.



Rear Panel

All connections are made on the rear panel, which is shown below. You must use the supplied "Y" Cable for both the projector/controller RS-232 communication interconnection (to send commands from the controller to the projector) and for RS-232 system automation control connections. The projector/controller operation will not function properly without this special connector, regardless of whether an automation control system is used in the installation or not.

The short cable is always used to connect the VDP-80 Controller/Processor to the Vision Model 80 projector. If the home theater installation includes an automation system control box, the longer cable is used for connection to it.



The "Y" Cable (supplied) must be used for proper operation. The "Y" Cable may be extended with a standard serial cable. A null-modem cable should not be used to extend or substitute for the "Y" Cable.

The connections are:

- RS-232: Used for software updates and control.
- POWER: Connect to supplied external 5 Volt DC power supply.
- DVI-I Video output: Provides digital (DVI-D) video output.
- INPUT 1 to INPUT 10: Standard input connections.
 - Input 1 and 2: DVI-D with HDCP support
 - Input 3 and 4: SD/HD Component, or RGB
 - Input 5 and 6: SVideo or Composite (selectable)
- NOTE: When Input 3 or 4 is used for RGB connection, Input 5 and 6 function as the H and V Input to correspond with RGB Input 3 and 4. Input 7 and 8: SD Component, SVideo or Composite (selectable)
 - Input 9 and 10: SDI (Serial-Digital-Interface)
- NOTE: The Analog Video output is disabled. It reserved for future use only.
- Analog Video output: Provides analog RGB or component video output. The RS232 serial port allows the use of an external home theater RS232 controller. This is the same as a PC DB9 serial port, except no "flow-control" is used. For updates, connect to the PC using a DB9-F to DB9-F null-modem cable. Consult your Vidikron dealer for information on video cables.

Installer's Guide (continued)

Initial Setup — Step By Step

The VDP-80 remote-control setup sequence for typical configurations is shown below. For MENU commands, buttons are shown in bold. Press the MENU button, use arrow keys to select the next entry and press the OK button. An " \rightarrow " denotes next menu level. Not all options are shown here. See the Installation Commands section for additional options.

Proper setup and installation of the VDP-80 Controller assumes the installer/technician is trained in ISF procedures and/or familiar with them.

All picture adjustment parameters such as color balance, gray scale, etc. should be performed following prescribed ISF standards and procedures, using appropriate test discs, test patterns and measuring equipment. This is vital to achieving optimal picture quality.

First, familiarize yourself with the operation of the included Vidikron ProntoNeo remote control included with the system - see page 7. The remote is factory programmed to operate both the VDP-80 Controller and the Vision Model 80 projector.

NOTE: The very first time you power on both units, you must power up the projector using the projector power controls. Following that, each subsequent startup can be accomplished by simply turning on the VDP-80 Controller, which will in turn, automatically power up the projector as well.

In the event of a power outage, repeat the above steps to reprogram the VDP-80 to power up the projector.

• Connect video cables. Then connect power using the supplied external AC/DC power supply and turn all required components on.

To begin, the first step is to determine which inputs on the VDP-80 will be used and what type of signals will be supplied to each input.

Inputs 1 and 2 (DVI) and 3 and 4 (RGBHV/Component) are dedicated to HD signals only.

Inputs 5 through 8 are intended for interlaced SD material.

Please note that if you are using an RGBHV input, the RGB portion is connected to input 3 or 4, and the HV portion in this case is connected to input 5 or 6. RGBHV inputs would use either inputs 3 and 5 together, or 4 and 6 together. The input type selection for inputs 5 and 6 would be set to RGBHV.

To select:

```
\textit{MENU} \rightarrow \textit{INPUT} \rightarrow \textit{ISF DAY/NIGHT} \rightarrow \textit{SOURCE TYPE}.
```

VISION 80 IN1 ISF NIGHT INSTALLATION OPTIONS SAVE SETTINGS

SOURCE TYPE IMAGE ADJUST COPY SETTINGS The installing technician defines the input selections as well as determining ISF picture calibration parameters.

Once the inputs have been determined, the appropriate input type should be programmed into the VDP-80 for each input in use following this procedure:

Select the input type for both component/RGB inputs (Select desired input, then press MENU → INPUT# ISF DAY/NIGHT → SOURCE TYPE → (TOGGLE TO CORRECT TYPE), OK

After the appropriate inputs have been selected and the input types have been entered into the VDP-80, you can proceed to calibrating the proper ISF Day/Night settings for each input in use and for each aspect ratio used with those inputs.

IMPORTANT!!

Please keep in mind that all calibration adjustments made to the VDP-80 are held in temporary memory. There are four discrete memories available for each inputs. Once you have completed the calibration procedures for all inputs, you must select "SAVE SETTINGS" in the main menu, or all settings will be lost when you power down the unit!

• Set the video input levels. If unsure, use defaults. The commands are:

For analog inputs: $MENU-INPUT \rightarrow ISF DAY/NIGHT \rightarrow IMAGE ADJUST \rightarrow INPUT ADJUST \rightarrow VIDEO LEVEL \rightarrow 7.5 IRE/0 IRE$

For DVI-D inputs: $MENU-INPUT \rightarrow ISF DAY/NIGHT \rightarrow IMAGE ADJUST \rightarrow INPUT ADJUST \rightarrow VIDEO LEVEL \rightarrow VIDEO/PC$

Brightness and Contrast Adjust

NOTE: For the first input calibrated use the display's black-level and contrast adjustments. Then use these VDP-80 controls to correct for differences between inputs.

To set the black-level (also referred to as brightness) and white-level (also referred to as contrast) using the VDP-80 controls, go to:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{PICTURE ADJUST} \rightarrow \textit{BRIGHTNESS/CONTRAST} \end{array}$

PICTURE ADJUST	
INPUT ADJUST	
INPUT NAME	
DVI SETUP	

BRIGHTNESS CONTRAST COLOR SETTINGS CHROMA FILTER

Copy Input Settings

Copy the input setup (contrast, etc.) from the active memory, to the selected memory, or memories. Copying the first input memory calibrated to other memories and inputs can speed up the calibration process. The command format is:

$MENU \rightarrow INPUT \# ISF DAY/NIGHT \rightarrow COPY SETTINGS$

Color Settings

NOTE: Set the display's Color and Hue to their default values.

During color calibration it is also possible to access the service menu for WHITE BALANCE calibration.

$\begin{array}{l} \textit{MENU} \rightarrow 8 \rightarrow 6 \rightarrow 4 \rightarrow 2 \rightarrow \textit{ISF INPUT# DAY/NIGHT} \\ \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{PICTURE ADJUST} \rightarrow \textit{WHITE} \\ \textit{BALANCE} \end{array}$

Once you have calibrated white balance levels, save the settings. To exit this service menu you must then power off the VDP-80. When you power back on the service menu will no longer be accessible.

For SD inputs 3 and 4 only, it is possible to have the VDP-80 perform an auto calibration for white balance.

Select menu-0-9-6-6 to access this function. Upon completion, the unit will give you an exit option from this menu.

NOTE: Auto calibration will only work properly if you are feeding the input a "100 IRE WINDOW" during this process. Failure to do so will result in incorrect settings.

IRE	LUMA	RED	GRN	BLU	DEFAULT
100	100.0	100.0	100.0	100.0	

Follow ISF color setup procedures using appropriate test discs and test patterns.

To access color adjustment parameters:

 $\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \\ \rightarrow \textit{COLOR SETTINGS} \rightarrow (\textit{COLOR, TINT, COLOR RED,} \\ \textit{TINT RED, COLOR GREEN, TINT GREEN)} \end{array}$

Chroma Filter

Some digital video sources, such as DVD players, have an error in design that affects the color (Chroma) video quality. The Chroma filter can be enabled to mitigate this error. For high quality sources that do not have the Chroma artifact, disabling the Chroma filter may increase Chroma resolution. The Chroma filter is off by default. The command format is:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{PICTURE ADJUST} \rightarrow \textit{CHROMA FILTER} \rightarrow \textit{ON/OFF} \end{array}$

Y/C Delay

Adjust the horizontal Chroma timing in relation to Luma. The CB and CR channels are adjusted separately.

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{INPUT ADJUST} \rightarrow \textit{Y/C DELAY} \end{array}$

Sharpness

This command is used to adjust the sharpness for the composite and SVideo inputs. It is almost always best to leave this at the factory default setting. The command format is:

$\textit{MENU} \rightarrow \textit{INPUT# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{SHARPNESS}$

Video Level

This command specifies if an analog input has a black pedestal. For DVI inputs, it specifies if the DVI video uses video levels or PC levels. For analog inputs:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{INPUT ADJUST} \rightarrow \textit{VIDEO LEVEL} \rightarrow 7.5 \textit{ IRE/0 IRE} \end{array}$

For DVI input:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{INPUT ADJUST} \rightarrow \textit{VIDEO LEVEL} \rightarrow \textit{VIDEO/PC} \end{array}$

Input Name

Each input configuration memory can be named. Follow the onscreen directions. The \blacktriangleleft and \triangleright arrows select which input to change and then which character to change. The \blacktriangle and \blacktriangledown arrows change the selected character. The command format is:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{INPUT ADJUST} \rightarrow \textit{INPUT NAME} \end{array}$

Serial-Digital-Interface Video Inputs

The Serial-Digital-Interface (SDI) inputs provide two additional digital connections for a DVD, and/or other source, equipped with an SDI output. The setup is similar to other inputs, except SDI does not require some of the setup controls used for other inputs. The SDI input is set for a default cable length of \leq 10 meters. If a longer cable is used, enable the SDI cable equalization as follows:

MENU 0974 Toggle SDI cable equalization (default is off)

Input Configuration

Calibrate the DVD input first, and copy that configuration to all the other configuration memories (see the Copy Input Settings section). Then calibrate the other inputs.

To program an input memory, select the input, then select the configuration memory and use the menu system to configure. Each of the four input configuration memories is independent. So, for example, if memory A for an input is to be the same as memory B for that same input, the input configuration must be copied from one to the other.

Component/RGB Input Type Selection

The source type must be programmed for the component/RGB inputs (3 and 4). Select the input then program its type. For component input mode, either the standard-definition (SD) or high-definition (HD) color-space may be selected. The command format is:

$\textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{SOURCE TYPE}$

The analog-to-digital converter for these inputs is calibrated at the factory. However, since source levels vary these inputs should be calibrated with the intended source device to achieve optimal performance. This is possible if the source is capable of displaying a 100 IRE Window Pattern. Use the "Calibrate Component/RGB Input" command.

Installer's Guide (continued)

Standard Definition Input Type Selection

The source type must be programmed for the standard definition inputs (5 to 8). Inputs 5 and 6 can be composite, or SVideo. Inputs 7 and 8 can be composite, SVideo, or Component. The command format is:

$\textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{SOURCE TYPE}$

Linking an Input Memory to an Output Configuration

For HD capable inputs, each memory has four resolution "submemories" (PC, 480i/480p (or 576i/576p), 720p, 1080i). The PC memory is used for any single input resolution other than those listed above.

DVI input HDCP Capability Setting

Some DVI sources limit functionality when driving HDCP capable devices, such as disabling their analog outputs, even though they do not require HDCP capability. This command can disable HDCP capability for the current DVI input memory.

NOTE: When HDCP capability is disabled, HDCP encrypted sources are not displayed.

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{DVI SETUP} \rightarrow \textit{HDCP} \rightarrow \textit{ON/OFF} \end{array}$

DVI input EDID Display Information

DVI sources often read the display's capabilities directly from the display. With a VDP-80 video processor between the display and the source, it may be desirable to use the VDP-80 specific information, to pass the display's information to the source, or to not report EDID data at all. This command selects which option to use.

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \rightarrow \textit{DVI SETUP} \rightarrow \textit{EDID} \rightarrow \textit{DEFAULT/PASS/OFF} \end{array}$

DVI input Hotplug

Each VDP-80 DVI input sends a signal (Hotplug) back to the DVI source to inform the source to drive its DVI output. However, different sources behave differently to the Hotplug signal. This command selects how the VDP-80 DVI input Hotplug signal functions. The NORM option only asserts Hotplug when the respective input is selected. The ON option always asserts the Hotplug signal. Typically, NORM is used to connect to an HDCP encrypted source and ON is used to connect to a PC.

 $\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{IMAGE ADJUST} \\ \rightarrow \textit{DVI SETUP} \rightarrow \textit{HOTPLUG} \rightarrow \textit{NORMAL/ON} \end{array}$

Input Sizing

Input sizing can be used to compensate for source active image size differences. The size command does not affect the video output size or position. Rather, it affects which input pixels are captured for processing.

Use the TOPL command to select the top-left active input pixel. Use the BTMR command to select the last active pixel. For these commands, the respective corner is temporarily moved toward the center of the screen, to simplify calibration. Select the scanline using the \blacktriangle and \blacktriangledown arrows, and the pixel using the \blacktriangleleft and \blacktriangleright arrows. The command format is:

 $\begin{array}{l} \mbox{MENU} \rightarrow \mbox{INPUT \# ISF DAY/NIGHT} \rightarrow \mbox{IMAGE ADJUST} \\ \rightarrow \mbox{INPUT ADJUST} \rightarrow \mbox{TOPL/BTMR adjust left and right} \\ \mbox{positions with up/down arrows, adjust top and bottom} \\ \mbox{positions with right/left arrows.} \end{array}$

Miscellaneous Commands

Side Gray Bar Level/vertical Rate

The intensity of the side gray bars that are displayed when viewing 4:3 material can be adjusted for viewing comfort and to minimize the possibility of image burn-in.

MENU \rightarrow INPUT# ISF DAY/NIGHT \rightarrow INSTALLATION \rightarrow SIDE GRAY BAR LEVEL

In addition, for SD inputs 3 and 4 the vertical rate can be selected to correspond to PAL 50Hz or NTSC 60Hz signals:

MENU \rightarrow INPUT# ISF DAY/NIGHT \rightarrow INSTALLATION \rightarrow VERTICAL RATE \rightarrow 60HZ/50HZ

Power Management

When power is first connected the unit can be set to turn on (ON), or it can start in standby mode (STBY). The command format is:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{OPTIONS} \rightarrow \\ \textit{POWER MANAGEMENT} \rightarrow \textit{AUTO-ON/STANDBY} \end{array}$

Power-On Message

Change power-on message. The \triangleleft and \triangleright arrows select which character to change. The \blacktriangle and \bigtriangledown arrows change the selected character. The command format is:

 $\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{OPTIONS} \rightarrow \\ \textit{POWER MANAGEMENT} \rightarrow \textit{GREETING} (ENTER \\ \textit{CHARACTERS FOR STARTUP GREETING}) \end{array}$

Lock the Configuration

Each input configuration can be locked to prevent unintended changes. When locked, the input selection keys function normally, but setup parameters are fixed. The command format is:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{OPTIONS} \rightarrow \textit{LOCK} \rightarrow \textit{UNLOCK/LOCKED} \end{array}$

Front Panel LCD Indicator Operation

By default the front panel LCD is illuminated for a short time after a command. This behavior can be changed so the LCD stays on while the unit is on. The command is:

$\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{OPTIONS} \rightarrow \textit{LCD} \\ \textit{SETUP} \rightarrow \textit{BACKLIGHT} \rightarrow \textit{ON/OFF} \end{array}$

In addition, the contrast of the LCD display can be adjusted for optimum readability:

$\textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{OPTIONS} \rightarrow \textit{LCD}$ $\textit{SETUP} \rightarrow \textit{CONTRAST}$

Input Display

The front panel LCD display can also be programmed to display the selected input if desired:

 $\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{OPTIONS} \rightarrow \\ \textit{INPUT DISPLAY} \rightarrow \textit{ON/OFF} \end{array}$

Saving the Configuration

Save

NOTE: If a save command is not executed, any changes will be lost when the unit is put into standby power mode, or if power is interrupted.

Permanently save the current configuration. Note that, once saved, the configuration is retained even if the unit is disconnected from power. Configuration from previous save is retained to allow one-level of save-undo. The command format is:

 $\begin{array}{l} \textit{MENU} \rightarrow \textit{INPUT\# ISF DAY/NIGHT} \rightarrow \textit{SAVE SETTINGS} \\ \rightarrow \textit{SAVE SETTINGS/DEFAULTS} \end{array}$

Serial RS232 Command Interface

The RS232 serial interface is used to enter commands using the same command format as the infrared remote. The serial rate is

9600 BAUD with 8 data bits, no parity bit and one stop bit. No hardware or software flow-control is used. The ASCII commands are:

ASCII	Remote	Function	
%	ON	Power on	
\$	STBY	Power to standby	
М	MENU	Activate menu	
!		Force menu off	
Х	EXIT	Exit. Often acts as a cancel key	
k	ОК	Accept command	
<enter></enter>	ОК	Accept command (uses the PC "ENTER" keycode)	
<	•	Left arrow ("less-than" key on keyboard)	
>		Right arrow ("greater-than" key on keyboard)	
v	▼	Down arrow (lower-case v, as in "vote")	
^	A	Up arrow (shift 6 key on keyboard)	
0 - 9	0 - 9	Enter a digit 0 through 9	
n	4:3	Input is 4:3 format. Use previous zoom setting	
[Input is 4:3 format. No zoom	
1	LBOX	Input is 4:3 letter-box format (lower-case L). Use previous zoom setting	
]		Input is 4:3 letter-box format (lower-case L) . No zoom	
w	16:9	"Enhanced for 16:9 televisions" format. Use previous zoom setting	
*		"Enhanced for 16:9 televisions" format. No zoom	
j	1.85	Input is 1.85 format. Use previous zoom setting	
/		nput is 1.85 format. No zoom	
а	MEMA	Select MEMA	
b	МЕМВ	Select MEMB	
с	MENU, MEMA	Select MEMC	
d	MENU, MEMB	Select MEMD	
z		Freeze-frame. Any other character resumes	
Y		Output type is HD color-space YPrPb (component)	
R		Output type is RGBHV. < enter > completes command	
S		Output type is RGBS. < enter > completes command	
Т		Output type is RGsB. <enter> completes command</enter>	
А		Select Vertical Resolution = 480p	
В		Select Vertical Resolution = 540p	
С		Select Vertical Resolution = 600p	
D		Select Vertical Resolution = 720p	
E		Select Vertical Resolution = 768p	
F		Select Vertical Resolution = 840p	
G		Select Vertical Resolution = 1080p	
1		Select Vertical Resolution = 1080	
V		Set Vertical Resolution (e.g. V960 <enter></enter> , for 960p)	
~		Set Vertical rate (e.g. ~5994 <enter></enter> , for 59.94 Hz)	
Н		Set Horizontal Rate (e.g. H45000 <enter></enter> for 45KHz)	
=		Set Output aspect ratio (e.g. =178 <enter> for 16:9 displays)</enter>	

 $MENU \rightarrow$

$N \rightarrow$	
TYPE \rightarrow	Input type as appropriate for current input
DVI	Digital-Video-Interface
SDYPBPR	Component using the SDTV color-space
HDYPBPR	Component using the HDTV color-space
RGBHV	RGB with separate Horizontal and vertical sync
RGBS	RGB with separate composite sync
RGsB	RGB with composite sync on green
VID	Composite interlaced standard definition
SVID	SVideo interlaced standard definition
SDI	Serial Digital Interface
OUTSEL	If output in INDEP mode, select one of 8 output configurations
$CONFIG \rightarrow$	
$COLR \rightarrow$	
BLCK	Use display black for selected input
CONT	Use display contrast for selected input
$COLR \rightarrow$	
COLR	Color saturation (Use "blue" color bar pattern)
HUE	Hue (Use "blue" color bar pattern)
COLRED	Red Color saturation offset (Use "red" color bar pattern)
HUERED	Red Color Hue offset (Use "red" color bar pattern)
COLGRN	Green Color saturation offset (Use "green" color bar pattern)
HUEGRN	Green Hue offset (Use "green" color bar pattern)
CUE	Chroma-Upsample-Error mitigation filter
СТМР	Grayscale and gamma calibration (Service mode only)
$ADJ \rightarrow$	
$SIZE \rightarrow$	
TOPL	Position top-left of input
BTMR	Scale to position bottom-left corner of input
4:3	Select 4:3 input as normal or non-linear-stretch
YC-DLY	Y/C delay independently for CR and CB
SHARP	Composite and SVideo inputs only.
LEVEL	Black pedestal or DVI-D levels
NAME	Name input memory. Follow on-screen instructions
DVI	For DVI inputs, select modes
HDCP	Select if DVI input reports HDCP capability
EDID	Does EDID use VDP-80 values or monitor values?
HOTPLUG	Does "hotplug" remain asserted when input not selected?
COPY →	
ALL	Copy current input memory to all input memories
ALLMEMA	Copy current input memory to all MEMA input memories
ALLMEMB	Copy current input memory to all MEMB input memories
ALLMEMC	Copy current input memory to all MEMC input memories
ALLMEMD	Copy current input memory to all MEMD input memories
1A , etc.	Copy current input memory to selected input memory

Menu Tree (continued)

$MENU \rightarrow$	
$MISC \rightarrow$	
$LCD \rightarrow$	
BKLGHT	LCD backlight enable (VDP-80 only)
CNTRST	LCD contrast (VDP-80 only)
OSD	Toggle OSD-enable. Shows status when input selected if enabled
LOCK	Lock or unlock the configuration.
$POWR \rightarrow$	
Αυτο	Unit can go to either "ON" or "STBY" when power is applied
MSG	Change power-on message. Follow the on-screen instructions
ТРАТ	Test and warm-up patterns
PATS	Test patterns
WARMUP	Warm-up patterns
$MENU \rightarrow$	
$SAVE \rightarrow$	Note: Unsaved changes can be discarded by going to STBY
SAVE	Save current configuration to flash ROM.
UNDO	Toggle between current saved and previous saved configurations
FCTRY	Reset to factory defaults

Hints For Optimal Picture Quality

- Proper calibration is as important for attaining the best picture as are deinterlacing and scaling. If you don't have one, purchase a DVD setup disc, such as AVIA[™], or Digital Video Essentials[™] and watch the training lessons provided. Then follow the calibration instructions on the disc and in this manual.
- Using high-quality cables is a very important part of video quality.
- Use a power conditioner for the video source, video processor and the display. Power line noise is at least as important an issue for video as it is for audio.
- Use the DVI-D output if supported by the display. For analog displays, RGBHV is preferable to component.
- For display of PC generated data, such as spreadsheets, the PC resolution should be set to match the native resolution of the display.
- Avoid running video signals through the video switch inside receivers, as these tend to degrade video quality. The rule of thumb for a video switch is to have 10 times the bandwidth of the video being switched. This equates to about 50 MHz for SDTV switching, and 300 MHz for HDTV switching.
- Component inputs on some RPTVs and projectors do not work with standard width HSync pulses. When using component video to drive the display, if there is a "green cast" the likely cause is a design problem in the circuitry inside the display. Changing to bilevel sync, and/or making the HSync pulse narrower with the VDP-80 HSync Width command (**MENU 0940**) can help eliminate this problem.
- A system's "ground loop noise" can cause visible horizontal banding. This shows as a screen-width horizontal-band of intensity variation. Since the VDP-80 case "floats" with reference to ground, it may need to be grounded to the video source or display using an approximately 18-guage wire.

- Component DVD sources provide the best standard-definition picture quality, but SVideo sources are often a bigger challenge and therefore can show more improvement using the VDP-80. Since for many satellite receivers, and other video sources, SVideo is the best output, improved SVideo performance is important for many installations.
- For standard definition programming using cable/satellite set top boxes, it is best to have the set top output standard definition interlaced video (480i or 576i). If this is not supported, use 480p output for standard definition programming. This allows the VDP-80 to deinterlace and scale the video rather than the set top box.
- Each input has four configuration memories. These are memory A (MEMA), memory B (MEMB), Memory C (MEMC), memory D (MEMD). These memories can be used to have four independent configurations, such as for day (bright room) and night (dark room). For this example, the black level will be set higher for viewing in a bright room than for viewing in a darkened room. To use MEMA and MEMB for day/night, first setup MEMA normally, SAVE the settings. Then use the input copy command to copy the setup to MEMB. Then adjust MEMB as desired.

Troubleshooting

Following are some common problems, along with suggestions to help resolve them. Also, check the www.vidikron.com website for updated troubleshooting information.

No picture is visible:

Are all components properly connected to power, outlets switched on, and all components powered on?

Are all of the video cables connected to their respective inputs and outputs?

Is the menu visible when the **MENU** button is pressed? If it is, the problem is with the inputs. If it is not, the problem is with the output connections or settings.

Does the display support the programmed vertical and horizontal timings?

Is the correct output type (DVI-D, or analog) and color-space (RGB or YPBPR) selected?

For analog output, is the correct synchronization type and polarity selected?

For analog output, if used, are the separate horizontal and vertical sync signals misconnected? For VGA breakout cables, the signal order at the BNC connectors is generally red, green, blue, horizontal-sync and vertical-sync, but this may vary.

Is the source HDCP encrypted? Then the display must have HDCP capability.

If these steps fail to resolve the problem, contact your home theater specialist for assistance.

A PC will not drive the DVI input of the VDP-80 video processor:

The correct VDP-80 DVI input must be selected while booting the PC for the PC to be able to read the EDID data from the VDP-80 video processor.

Objects appear to be too tall or too wide:

Make sure the video output aspect ratio is programmed correctly.

Make sure the correct input aspect ratio is selected.

Make sure input size is adjusted correctly.

Make sure the "television aspect ratio" setting is 16:9 in the setup menu of all source devices that support this feature (DVD players, satellite receivers, etc.), even if the screen is not 16:9.

Colors appear incorrect:

Is the correct output color space (RGB, SD YPBPR, HD YPBPR) selected?

If input 3 or 4, and color have a slight color "cast": Has the input been calibrated using the "*Calibrate Component/RGB Input*" command?

Video Standards:	NTSC, PAL
Output Resolution:	1080p
Outputs:	(1) HD-R (Pr), G (Y), B (Pb), H, V, (1) DVI w/HDCP, (1) Monitor D-sub 15 pin
Inputs:	(1) Composite; (1) S-Video; (1) Component/RGB; (1) HDTV D-sub 15 pin; (1) DVI w/HDCP
Control Options:	Discrete infrared remote; (1) RS-232
12V Output:	(1) 12V DC, 100mA
Power Requirement:	100-240V AC (auto sensing) 50/60 Hz, 100W
Operating Environment:	41°-95°F (5°-35°C)
Dimensions:	Width: 17 7/16 in. (442.92 mm) Depth: 11 3/8 in. (288.92 mm) Height: 3 1/2 in. (88.90 mm) Weight: 15 lbs. (6.8 kg)
Regulatory Approvals:	FCC, CE, C-Tick
Limited Warranty:	(2) years parts and labor from the date of delivery to the end user.

All specifications subject to change without notice. Optional ceiling bracket available.

RUMA-011110 052705 Ver 1.0



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