

WARRANTY

MicroImage Video Systems warrants that each PXD510ET1 is free from defects due to faulty materials or improper workmanship for a period of one (1) year. MicroImage Video Systems further warrants that any part which proves defective in materials or workmanship within one (1) year, will be replaced or repaired at no cost to the user. Labor to replace defective parts will be done without charge, provided the equipment is returned to MicroImage Video Systems prepaid, insured and properly packaged. Prior return authorization must be obtained from MicroImage Video Systems.

NOTE

This warranty covers the MicroImage PXD510ET1 only.

CONDITIONS

This warranty is void if the warranted part has been altered or subjected to abuse or misuse. Defective parts must be returned to MicroImage Video Systems.

SOLE WARRANTY

This Warranty is in lieu of all other warranties expressed or implied including, without limitation, any implied warranty or any implied warranty of fitness for a particular purpose. MicroImage Video Systems shall have the final right to determination as to the existence and cause of any defect and its appropriate adjustment in accordance with the terms of this warranty. In no event shall MicroImage Video Systems be liable for any consequential or collateral damages.

RETURNS

All returns MUST have an RMA number. Please call, fax or email for an RMA form. The RMA form will have the proper shipping address for returns.

Phone 610-754-6800
Fax 610-754-9766
Email techsupport@mivs.com

PIX/2 DSP Operation Manual

Model PXD510E Advanced DSP Video Fade Controller

MicroImage Video Systems
division of World Video Sales Co., Inc

PO Box 331
Boyertown, PA 19512
Phone 610-754-6800
Fax 610-754-9766
sales@mivs.com

www.mivs.com

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Power Module

Type	Switching power supply, UL, CUL/CSA, CE, TUV approved
Output	12 VDC, 1000-2000mA, Regulated (no minimum load)
Voltage In	100 ~ 240 VAC, 47 - 63 Hz
Input Cable	Standard IEC-320 3 wire input connector, standard 6ft. Power cord for USA use included.
Output Cable	6ft. 2 wire, 2.1mm female coaxial barrel connector
Consumption	0.4A max
Size	Contact MicroImage Video Systems for current data
Weight	Contact MicroImage Video Systems for current data

The PXD510 series is manufactured in the USA by MicroImage Video Systems.

SPECIFICATIONS

Input Levels	
Composite/B&W	1Vpp composite 75 Ω
S-Video	Y (Luminance) 1Vpp 75 Ω, C (Chroma) 286mVpp Burst 75 Ω
Output Levels	
Composite Video	1Vpp into 75 Ω
S-Video (Y, C)	1Vpp Y, 286mV C (burst) into 75 Ω
Connectors	
Composite	BNC female
S-Video	4 pin mini-DIN female
Power	2.1mm female coaxial power jack
RS232 Remote	3.5mm female mini phone jack
RS232 Interface	9600 baud, 8 data bits, no parity, 1 stop bit.
Split Range	
Horizontal	0 to 53.3uS from start of active video, 256 steps greater than 98% of screen width typical
Vertical	NTSC/RS-170 - 0 to 485 lines, fully variable 100% screen height typical; PAL/CCIR - 0 to 586 lines, fully variable in, 100% screen height typical
Fade Range	A:B ratio: 100%/0% to 0%/100%, 256 steps
Difference Range	A:B ratio: 100%/-0% to 0%/-100%, 256 steps
Memory	10 megabits/channel (full frame X1 each input)
Timebase Correction	Digital memory, frame aligned
Decoding	9 bit multi-standard digital decoding
Processing	8 bit, 4:2:2, ITU-R601 and ITU-R656 standards
Encoding	Digital Modulation
Oversampling	2x (27MHz) output over-sampling
Output DACs	10 bit Digital to Analog converters
Input Filters	Analog anti-aliasing filters
Output Filters	Digital plus 4 th order analog anti-aliasing filters
Horizontal Freq.	
RS-170/NTSC	15.734KHz typical
CCIR/PAL	15.625KHz typical
Vertical Frequency	
RS-170/NTSC	59.94Hz typical
CCIR/PAL	50Hz typical
Bandwidth	6 Mhz typical
Crosstalk	Greater than 48dB
Gain Match A to B	Typically within 2%
Temperature	
Operating	0° ~ 40° C (32° ~ 104° F)
Storage	-40° ~ 60° C (-40° ~ 140° F)
Humidity	
Operating	10% ~ 90% (non-condensing)
Storage	5% ~ 95% (non-condensing)
Power	
Voltage	+10 to +20VDC (+12VDC typical), neg ground
Consumption	150mA typical (1.8W)
Protection	Automatic electronic fuse, internal, self resetting
Size	7.25" W x 5.50" D x 1.60" H (193 x 140 x 40 mm)
Weight	18.5 oz. (525g)

DESCRIPTION

The MicroImage PIX/2 DSP family of controllers is designed to combine the images from two video cameras into one image. The images can be split on the screen showing a portion of each image, or the two images may be mixed or faded together as an overlay.

The images can be split in either the horizontal or vertical direction. The A camera is normally displayed on the left or top and the B camera on the right or bottom. These positions may be interchanged at the touch of a button. The split position can typically be adjusted over 100% of the screen area with the front panel rotary control.

The Fade and Difference modes allow the two images to be added together or subtracted. The mix can be adjusted over the entire range from a full camera A image to a full camera B image.

The PIX/2 DSP family consists of several products to work with a variety of cameras or other video sources, either Black & White or Color. Each unit provides the proper signals and connectors to work correctly with the intended video standard(s).

Board Level and OEM PIX/2 DSP products are also available. Please contact your dealer or MicroImage Video Systems for additional information.

UNPACKING

The PIX/2 DSP package includes the following items:

PXD510E PIX/2 DSP control unit
+12 VDC Regulated Universal Power Module
This operation manual

Please inspect all items carefully and report damaged or missing items to your dealer or MicroImage Video Systems immediately.

INITIAL SETUP

Before the unit can be used, it must be set up for the proper video standard and input signal selections. These two functions (and the center split mode enable) are set with four DIP switches located on the rear of the unit. Each switch is numbered and OFF is in the UP position while ON is in the DOWN position. The following sections describe how to set these switches properly.

SIGNAL STANDARD SELECTION

The PIX/2 DSP products MUST be set to the proper video standard to work correctly. The choices are NTSC (RS170/60Hz) or PAL (CCIR/50Hz). NTSC is the common video standard for North America while PAL is common in Europe and other parts of the world. The factory default setting is NTSC (DIP switch number 1 off).

To set the unit for PAL operation, place the DIP switch in the LOWER (ON) position. The RAISED (OFF) position is for NTSC standard.

The unit must be set to the same standard as the video sources (cameras, VCRs, etc) and the monitor.

Save

After setting the desired separator width and color, pressing the FADE button will save the changes and return the unit to normal operation. The selected width and color choices will affect both the vertical and the horizontal split modes. The unit will remember these settings if power is removed.

COLOR BARS

The PIX2 DSP can produce color bars for use as a test signal. To activate the internal color bar generator, the unit should first be switched off. Depress and continue to hold in the FREEZE switch while turning the unit on again. The 3 LEDs just to the left of the MIX control should blink when the unit is producing color bars. You may then release the FREEZE switch. To deactivate the color bars, either press the EXCHANGE switch or turn the unit off. The unit will return to normal operation when it is turned on again. Color bars may also be enabled with the optional RS-232 remote control.

IN CASE OF DIFFICULTY

If you are experiencing problems with any MicroImage product, you can contact MicroImage Support using the following methods:

Phone	610-754-6800
Fax	610-754-9766
Email	techsupport@mivs.com
Web	www.mivs.com

Exchange Pressing this key will exchange the A and B inputs when the unit is in split screen mode. This will cause the image from camera A to appear on the right or bottom, rather than the top or left as normal. A Green indicator to the right of the switch will indicate this mode is selected.

Mix The MIX rotary control is used to adjust the position of the split or the ratio of the fade. This control has no effect when the Cam A or Cam B switches are pressed.

Note that the MIX control does not have any effect if the unit is set to H split or V Split and the Centered Camera Split Mode is enabled via DIP Switch number 2.

SEPERTAOR

The two images on either side of a split may be separated by a border stripe, or may be placed directly adjacent for easier comparison. This separator may be activated or changed from a Setup Mode. To enter Setup Mode, the unit should first be switched off. Depress and continue to hold in the EXCHANGE switch while turning the unit on again. The first 5 LEDs should blink while the unit is in this setup mode. You may then release the EXCHANGE switch.

Width The width of the separator may be selected by pressing the L/R switch or the T/B switch while in setup mode, to cycle up or down through the 3 available widths or off. The factory default setting is with the separator off.

Color The color of the separator may be selected by pressing either the CAM A or the CAM B switch while in setup mode, to cycle up or down through the list of 8 colors. These colors are Black, Blue, Red, Magenta, Green, Cyan, Yellow, and Gray. The border must be enabled to see the color.

INPUT SIGNAL SELECTION

Setting the PIX/2 DSP to accept the proper input signal is important for proper operation. A set of DIP switches on the rear panel is used to select either a composite video signal or an S-Video signal for each input.

Switch 4 should be in the RAISED position (OFF) for either a B&W or color composite signal (BNC connector) on Input A. This switch should be set to the LOWER (ON) position for an S-Video signal on the Input A mini-DIN connector.

Switch 3 should be in the RAISED position (OFF) for either a B&W or color composite signal (BNC connector) on Input B. This switch should be set to the LOWER (ON) position for an S-Video signal on the Input B mini-DIN connector.

CAMERA CENTER SPLIT MODE

When this mode is enabled via DIP Switch 2, the unit will show the center 50% of each camera image side by side or top/bottom when the split modes are enabled. This allows the same portion of each image to be evaluated. The normal split modes show a portion of the left/top of one image and the right/bottom of the other image.

When in the Centered Camera Split Modes, the MIX control does not have any effect, the split position is always set to 50% of each camera image.

To use Center Camera Split Mode, place DIP Switch number 2 on the rear panel to the LOWER (ON) position. To return to the standard split modes, place DIP Switch number 2 in the RAISED (OFF) position.

CONNECTIONS

Power

Plug the small connector on the end of the power module cord into the power input connector on the PIX/2 DSP controller. Plug the power module into an appropriate power receptacle.\

Inputs

Connect the video output from camera A to the Cam A input on the PIX/2 DSP controller with either a BNC or an S-Video cable. See 'Input Signal Selection'.

Connect the video output from camera B to the Cam B input on the PIX/2 DSP controller with either a BNC or an S-Video cable.

Outputs

Connect a video cable from the PIX/2 DSP to the video monitor or other display or recording devices using either the composite video output BNC connector, the S-Video output mini-DIN connector, or both.

OPERATION

Once connected properly, the PIX/2 DSP is easy to use. Following is a description of each switch and control. When first testing the PIX/2 DSP, place the MIX control near the center of its range.

Power Pressing the power switch will turn the power on or off. The green indicator next to the power switch will light to indicate power is on.

Cam A Pressing the Cam A switch will change the display to show 100% of the camera A image. A Red indicator to the right of the switch will indicate this mode is selected.

Cam B Pressing the Cam B switch will change the display to show 100% of the camera B image. A Red indicator to the right of the switch will indicate this mode is selected.

H Split Pressing this key will cause the screen to be split, adjusted by the MIX control. Camera A will normally be displayed on the left side and camera B on the right side. A Green indicator to the right of the switch will indicate this mode is selected. Note that the MIX control does not have any effect if the Centered Camera Split Mode is enabled via DIP Switch number 2.

V Split Pressing this key will cause the screen to be split, adjusted by the MIX control. Camera A will normally be displayed on the top and camera B on the bottom. A Green indicator to the right of the switch will indicate this mode is selected. Note that the MIX control does not have any effect if the Centered Camera Split Mode is enabled via DIP Switch number 2.

Fade Pressing this key will cause the camera images to be added together. The MIX control will adjust the amount of each image to be mixed, and can fade completely from camera A to camera B images. A Yellow indicator to the right of the switch will indicate this mode is selected.

Difference Pressing this key will cause the image from camera B to be subtracted from Camera A. The MIX control will allow the images from A and B to be canceled, highlighting any differences. A Red indicator to the right of the switch will indicate this mode is selected.

Freeze Pressing this key will freeze the image from camera B until the button is pressed again or power is removed. A Blue indicator to the right of the switch will indicate this mode is selected.