## WARRANTY

MicroImage Video Systems warrants that each MIR540 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 MIR540 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 |

# Video Mirror Controller Operation Manual

## Model MIR540

## MicroImage Video Systems
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# SPECIFICATIONS

| | | |
|---|---|---|
| **Input levels** | | |
| | Composite/B&W | 1Vpp composite 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 (5) |
| | S-Video | 4 pin mini-DIN female (1) |
| | Keyboard | 6 pin mini-DIN (1) [presently not used] |
| | Power | 1.3mm female coaxial power jack |
| | RS232 Remote | 3.5mm female 3 pin mini phone jack |
| **RS232 Interface** | | 9600 baud, 8 data bits, no parity, 1 stop bit. |
| **Memory** | | 64 megabits total |
| **Timebase Correction** | | Digital memory, frame aligned, one for each channel |
| **Decoding** | | 10 bit multi-standard digital decoding |
| **Processing** | | Digital |
| **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** | | 6Mhz typical |
| **Crosstalk** | | Greater than 48dB |
| **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 | +5VDC +/- 5%,  regulated, neg ground |
| | Consumption | 450mA typical (3W) |
| | Protection | Automatic electronic fuse, internal, self resetting |
| **Size** | | 7.25" W x 5.00" D x 1.60" H (184 x 127 x 40 mm) |
| **Weight** | | 19.5 oz. (550g) |
| **Power Module** | | |
| | Type | Switching power supply, UL, CUL/CSA, CE, TUV  approved |
| | Output | 5 VDC, 1000 to 2000mA, Regulated (no minimum load) |
| | Voltage In | 120VAC (USA) or 120 ~ 230 VAC, 50 - 60 Hz, 0.5A Max (RoHS) |
| | Input Cable | None, small wall mount |
| | Output Cable | 4ft. 2 wire, 1.3mm female coaxial barrel connector |
| | Size | 3.2" x 1.8" x 1.2" (82mm x 46mm x 31mm) |
| | Weight | 2.6 oz (74g) |

The MIR540 is manufactured in the USA by MicroImage Video Systems.

## RS232 REMOTE CONTROL

The MIR540 can be controlled or queried by a computer or process controller via the wired RS232 interface. The MIR540 uses a simple protocol to communicate with the host system. An interface manual is available on the MicroImage Video Systems website in the MIR540 section at www.mivs.com.

## 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 |

## DESCRIPTION

The MIR540 is designed to reverse the video image in either the horizontal, the vertical or both directions. Each input channel may be independently mirrored. Mirroring in both directions is the same as rotating the image 180 degrees.

The MIR540 will work with a variety of cameras or other video sources, either Black & White or Color. The MIR540 accepts composite video input signals and will operate with NTSC or PAL video systems (switch selectable)

Board Level and OEM versions of this product are also available. Please contact your dealer or MicroImage Video Systems for additional information.

## UNPACKING

The Video Mirror Controller package includes the following items:

> MIR540 Video Mirror Controller unit
> +5 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.

## INITIAL SETUP

Before the unit can be used, it must be set up for the proper video standard. This function is set with a DIP switch 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 MIR540 controller 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.

Switches 2 through 4 are presently unused and are reserved for future options.

## CONNECTIONS

### Power

Plug the small connector on the end of the power module cord into the power input connector on the MIR540 controller. Plug the power module into an appropriate power receptacle.

### Inputs

Connect the video output from video source A to the Input A connection on the MIR540 controller with a BNC cable.

Connect the B, C and D inputs with BNC cables as well (if used).

### Outputs

Connect a video cable from the MIR540 controller 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.

## OPERATIONS

Once connected properly, the MIR540 is easy to use. Following is a description of each switch and control.

**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. The power switch will remember its state if power is removed.

**A** Pressing the A switch will change the display to show the input A image. A Red indicator to the right of the switch will indicate this input is selected.
Connect the B, C and D inputs with BNC cables as well (if used).

**B** Pressing the B switch will change the display to show the input B image. A Red indicator to the right of the switch will indicate this input is selected.

**C** Pressing the C switch will change the display to show the input C image. A Red indicator to the right of the switch will indicate this input is selected.

**D** Pressing the D switch will change the display to show the input D image. A Red indicator to the right of the switch will indicate this input is selected.

**FLIP X** Pressing this key will cause the currently selected input to be mirrored horizontally. Pressing it s second time will change the direction back to normal. The MIR540 will retain the mirror settings for each of the four inputs channels independently.

**FLIP Y** Pressing this key will cause the currently selected input to be mirrored vertically. Pressing it a second time will change the direction back to normal. The MIR540 will retain the mirror settings for each of the four inputs channels independently.

**BARS** Pressing this key will enable the internal color bar generator for monitor and system tests. Selecting another display mode will cancel this setting.