

MODEL I HR
INSTRUCTION MANUAL

C1051 series
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Unpacking and Assembly Instructions

The MicroImage Model I HR consists of:

- Color High Resolution Camera
- Power Supply with camera power cable and AC cord
- Camera to Monitor BNC Video Cable

Unpack all items carefully.

Note the C-mount cover and carefully remove. This cover protects the image sensor from damage and dirt.

Screw in microscope adapter (dealer supplied).

Attach cable from power supply to camera power connector.

Mount camera on microscope.

Camera power cord should face rear of microscope.

For an NTSC Monitor, connect a BNC cable from the Video Output of the camera to the Video Input of the monitor. Place the TERM switch in the TERM or 75 position. If Monochrome, YC (S-Video) or multiple NTSC monitors are being used, see the CONNECTIONS section of this manual for information.

Operating Instructions

Plug power supply into AC outlet and turn on video monitor.

Set White Balance (Camera)

The Model I HR Camera supplies both manual and automatic white balance. In the AUTO mode, the camera adjusts the white balance of the picture. Auto white balance works best for most applications. If manual white balance is required, follow the steps below.

Manual White Balance

1. Set WHITE BALANCE Switch on rear of camera to manual position.
2. On rear of camera, note WHITE BALANCE control.
3. Use the white field of the microscope (without a slide) to set white balance.
4. Turn WHITE BALANCE control to obtain white picture on monitor.

NOTE: Correct setting should be near the center of the control.

If color adjustment is necessary to obtain a proper color display of the specimen, turn the WHITE BALANCE control clockwise for more red or counter-clockwise for more blue. The white balance switch must be in the manual position. Do not adjust the monitor to change color. World Video color monitors are factory set and marked accordingly on the color and

hue knobs.

Positive/Negative Video

The Model I HR is equipped with a POS/NEG video switch (also referred to as an INVERSE VIDEO SWITCH). Normally the camera will be used in the POS position. In the NEG position, the contrast of the image will be inverted. An object that appears white in the lens or scope, will appear black on the monitor. Blacks will be white. Colors will also become their complementary. Reds will become Cyan, Blues will become Yellow and Greens will become Magenta. NEG Video is similar to the way the colors of a 35mm NEGATIVE are reversed from the print.

AGC

With the AGC switch in the ON position, the camera will try to compensate changes in light level. With the AGC switch in the OFF position, the gain of the camera is fixed and will not change as the light going into the camera is changed.

Light

The amount of light transmitted through or reflected from the specimen is important. At lower magnifications when the light source on the microscope is generally set at a lower output, a blue filter placed on the light source will give better results. As magnification is increased, more light will be required and the blue filter will probably not be necessary. The blue filter should only be used in extreme cases.

As source light level is changed the automatic light compensation (AGC) feature of the MicroImage Camera will self-adjust to the new light level (AGC switch in the on position). This may appear as a brightness stepping process on your monitor.

NOTE: Best results have been obtained with microscopes utilizing a 60-40, 70-30, or greater beam splitter.

Connections

The Model I HR has been designed to provide several common video output standards. A monochrome output is provided for digitizing or when only a monochrome picture is required. A NTSC output is provided as it is compatible with the most equipment. The YC (S-Video) output provides a high resolution signal that is compatible with the new S-VHS type VCRs. This connection will provide the best signal quality when used with a YC (S-Video) monitor or S-VHS VCR.

Connecting the Model I HR to a Monitor

NTSC

Connect a BNC cable from the NTSC OUT connector on the camera to the VIDEO IN connector on the monitor. If this is the only monitor being used, place the TERM switch in the TERM or 75 position.

If a second monitor is being used, connect a BNC cable from the extra VIDEO INPUT jack on the first monitor to the VIDEO INPUT of the second monitor. Place the TERM switch in the high impedance position (not in the TERM or 75 position) on the first monitor (the one with two cables connected to the video input). Place the TERM switch on the second monitor in the TERM or 75 position. If more than two monitors are being used, only the last one connected (the one with only one NTSC cable connected to it) should be placed in the TERM or 75 position.

Monochrome

Connect a BNC cable from the B/W out connector on the camera to the Video Input on the Monochrome monitor. If only one monochrome monitor is being used, place the termination switch (TERM) in the TERM or 75 position.

If a second monochrome monitor is being used, connect a BNC from the extra Video Input connector on the first monochrome monitor to the Video Input of the second monochrome monitor. Place the TERM switch in the high impedance position (not in the 75 or TERM position) on the first monitor (the one with two cables connected to the video input). Place the TERM switch on the second monitor in the TERM or 75 position. If more than two monitors are being used, only the last one connected (the one with only one video cable on it) should be placed in the 75 or TERM position.

NOTE: DO NOT connect monitors or other equipment to the B/W and YC (S-Video) OUT connectors at the same time. A degraded image will result.

YC (S-Video)

Connect a YC Adapter cable (12 pin to 4 pin), from the YC OUT connector on the camera (12 pin) to the YC (S-Video) IN connector on the monitor (4 pin). If only one YC (S-Video) monitor is being used, place the YC (S-Video) TERM switch in the TERM position.

If a second YC (S-Video) monitor is being used, connect a YC (S-Video) cable (4 pin to 4 pin) from the YC LOOP connector on the first YC (S-Video) monitor to the YC (S-Video) IN connector on the second YC (S-Video) monitor. Place the YC TERM switch on the first monitor (the one with two YC (S-Video) cables connected to it) in the high impedance position (Not the 75 or TERM position). Place the TERM switch on the second monitor in the TERM or 75 position. If more than two YC (S-Video) monitors are being used, only the last one connected (the one with only one YC (S-Video) cable) should be in the TERM or 75 position.

NOTE: DO NOT connect monitors or other equipment to the B/W and YC OUT connectors at the same time. A degraded image will result.

Connecting the Model I HR to a VCR

The NTSC and YC (S-Video) signals may be recorded on videotape. High resolution VCRs such as the S-VHS type will give much better recordings than standard VCRs. Use of the YC (S-Video) signal with these VCRs will provide the highest quality signal.

NTSC

Connect a cable from the NTSC OUT connector on the camera to the VIDEO IN connector on the VCR. Note that adapters or special cables may be required.

Connect a cable from the VIDEO OUT connector of the VCR to the Video or NTSC INPUT connector of an NTSC monitor as described in the VCR instruction manual. If the VCR is connected to only one monitor, then place the TERM switch in the 75 or TERM position. If more than one monitor is used, **ONLY** the last monitor (the one with only one cable) should be placed in the TERM or 75 position. See Connecting the Model I HR to a monitor (above) for details.

DO NOT connect the above signals to the Antenna or ANT connectors on the VCR.

YC (S-Video)

Connect a YC (S-Video) cable from the camera or other video source to the YC INPUT connector on the VCR. Note that a special adapter cable may be required for some cameras. MicroImage Video Systems offers optional cables for YC (S-Video) connection to MicroImage cameras. Contact MicroImage Video Systems for more information.

Note that a VCR with YC (S-Video) capability such as an S-VHS VCR must be used.

Connect a YC (S-Video) cable from the S-Video OUTPUT connector on the VCR to the YC or S-Video INPUT connector on a YC (S-Video) monitor as described in the VCR instruction manual.

If the VCR has a switch to select NTSC(Video) or YC (S-Video), place the switch in the S-Video position. See the VCR operation manual for more information.

Monitor Operation with the Model I HR

Color and Hue Controls

World Video Monitors have been factory pre-set for correct Color and Hue. Use the White Balance adjustment on the MicroImage Camera to obtain appropriate coloring of your slides. Do not adjust the monitor to obtain proper colors. (See White Balance above)

Please consult the monitor instruction manual for additional information.

NOTE: The controls on MicroImage Video Monitors are factory set for best picture.

VCR Operation with the Model I HR

For normal use, the VCR may be left connected. However, the VCR (along with any other connected equipment) must have their power turned on in order to see a proper camera image on the video monitor. If the VCR is connected properly, it should pass the camera signal just like if the VCR was not connected. If PLAY is pressed on the VCR, then of course you would see the video tape picture instead of the current camera image.

The exact procedure for recording and playing tapes on a VCR varies between different models. It is impossible to describe all the methods here. Please refer to your VCR operation manual BEFORE calling MicroImage Video Systems. If calling MicroImage Video Systems for assistance on VCR connection problems, please have the VCR operation manual handy. Manuals for other equipment are also good to have at hand. Not all VCR related problems are the VCR.

Genlock

The Model I HR Camera is equipped with true Genlock capability. When Black Burst or composite video is connected to the Genlock Input, the Camera will automatically lock to it. Several Cameras may be Genlocked together by looping through the Genlock Inputs. Only the last camera connected should be placed in the TERM position. Cameras that are looped through must have the TERM switch placed in the left position.

NOTE: If the GENLOCK inputs are not being used, then the GENLOCK TERM switch MUST be placed in the TERM position.

Precautions

Do not point the camera directly into a strong light.

Do not touch the filter and image sensor when mounting the adapter.

Do not allow dust or moisture to enter camera.

Do not use the camera in a place with strong electric waves or magnetism if possible. Picture distortion may occur.

Do not open camera case.

Do not use camera in areas of high temperatures exceeding 50 degrees centigrade.

Do not wind the power cord, camera cable or monitor cable around camera while in use.

Do not clean camera with any volatile substance or the surface may be damaged.

For Technical Assistance Contact:

MicroImage Video Systems

div. World Video Sales Co., Inc.

P.O. Box 331

Boyertown, PA 19512

Attention: Customer Service

Phone: (610) 754-6800

Fax: (610) 754-9766

email: service@mivs.com

www.mivs.com

Specifications

Image sensor	2/3" single layer MOS color image sensor 760 (H) x 485 (V) pixels
Scanning area	8.8 (H) x 6.6 (V) mm ²
Scanning system	2:1 interlace
Scanning frequency	15.734Khz horizontal and 59.94Hz vertical
Chroma carrier frequency	3.579545Mhz
Sync system	Internal/external sync (automatic switching)
External sync input	VBS signal (1 Vpp/75Ω) or Black Burst signal Connector: BNC female
Video signal output	VS: 1.0 Vpp into 75Ω video: 0.714 Vpp positive polarity sync: 0.286 Vpp negative polarity burst: 0.286 Vpp, 8 cycles or more impedance: 75 ohms, unbalanced Connector: BNC female
B/W signal output	VS: 1.0 Vpp into 75Ω video: 0.714 Vpp positive polarity sync: 0.286 Vpp negative polarity impedance: 75 ohms, unbalanced Connector: BNC female
S/N ratio	46dB or higher (luminance channel, with subject under standard illumination)
Horizontal resolution:	520 lines (Y channel)
Minimum illumination of subject	15 lux, 3200°K
White balance adjustment	Automatic or manual (with selection switch)
Y/C output	(Y) video: 0.714 Vpp sync: 0.286 Vpp (C) burst: 0.286 Vpp, 8 cycles or more impedance: 75 ohms, unbalanced connector: 12 pin, HR10 type
Genlock in/out	See "External sync input" above.
Lens mount	C-mount
Operating temperature/humidity range	Range for operation: -10° to +50°C, 95% RH or less Range for rated performance: 0° to +40°C, 35-85 RH
Power input	12 Volts DC (operating range 11-14 VDC) Connector: 3 pin mini-DIN female
Current consumption	420 mA typical
External dimensions	62(W) x 68(H) x 131(D) mm
Weight	440g

Improvements may have been made which are not reflected in these specifications.

Warranty

World Video Sales Co. Inc. warrants that each MicroImage Model I HR Camera and power supply are free of defects due to faulty materials or improper workmanship. World Video Sales Co. Inc. further warrants that any part which proves defective in materials or workmanship within three years from the date of original purchase 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 World Video Sales Co. Inc. prepaid, insured and properly packaged. Prior return authorization must be obtained from World Video Sales Co. Inc.

NOTE

This warranty covers the MicroImage Model I HR Camera and power supply 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 World Video Sales Co. Inc.

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. World Video Sales Co. Inc. 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 World Video Sales Co. Inc. be liable for any consequential or collateral damages.

Please call for a RMA Number on all repairs.

WORLD VIDEO SALES CO., INC.

625 Hoffmansville Road, Suite 3

Bechtelsville, PA 19505

Attention: <RMA #>

Phone: (610) 754-6800

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