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TWO-YEAR WARRANTY

REMOTE-HEAD MONOCHROME FRAME-TRANSFER CCD CAMERAS

6400 & 6700 SERIES

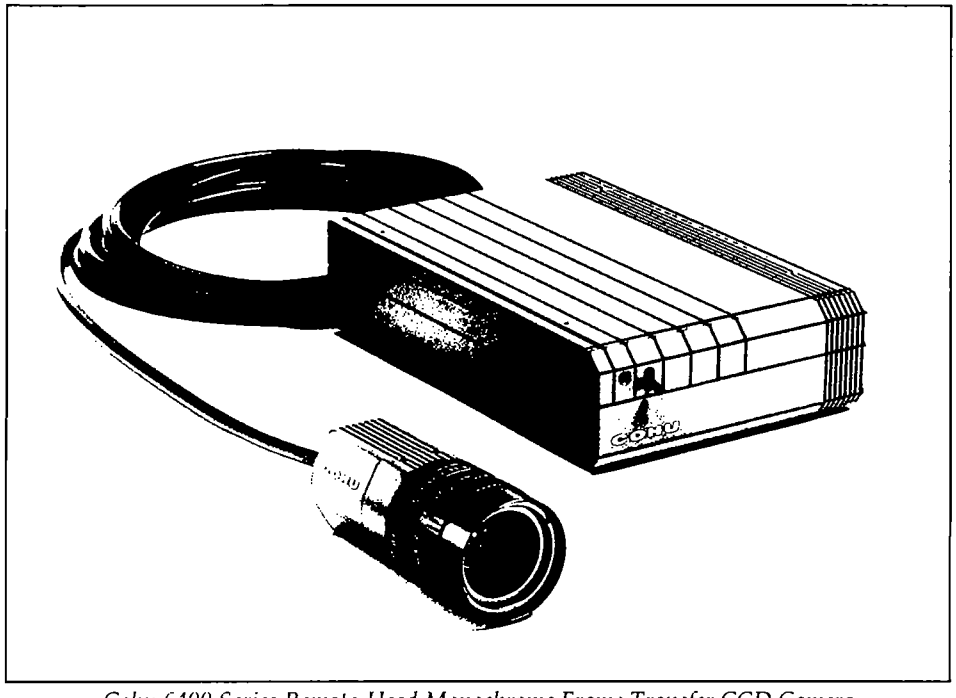
Compact, Lightweight Electronic Shutter

Cohu's Monochrome Remote-Head Frame-Transfer CCD Cameras offer all the outstanding performance characteristics of Cohu's 4800 and 4700 Series standard monochrome frame-transfer cameras, with the added benefits of a two-piece configuration, electronic shutter, and enhanced signal-to-noise characteristics. The lightweight remote camera head is ideally suited for mounting on microscopes, robots, and other equipment with size and weight limitations.

Both the 6400 Series RS-170 and the 6700 Series CCIR cameras provide high resolution and high sensitivity. The blemish-free CCD sensor provides pixel-to-pixel contrast variation of less than 5%, with zero geometric distortion and no lag or image retention.

Connected to the camera control unit by an integral 15-foot cable, the remote camera head weighs only 113 grams, and measures only 38mm in diameter and 51mm in length.

As with all Cohu CCD cameras, the 6400 and 6700 Series cameras are designed and manufactured in U.S.A., and are backed by a full two-year warranty.



Cohu 6400 Series Remote-Head Monochrome Frame Transfer CCD Camera

APPLICATIONS

- **Microscopy**
- **Machine Vision**
- **Medical Imaging**
- **Process Control**
- **Quality Control**
- **Image Analysis**
- **Security/Surveillance**

FEATURES AND BENEFITS

- **Compact, Lightweight Remote Head** — maximum flexibility for end users or OEMs
- **High Resolution** — for better definition, error-free results
- **Two-Speed Electronic Shutter** reduces blurred images of fast-moving objects.
- **High Sensitivity** permits operation over a broad range of light levels.
- **Genlock, H & V Drive, Pixel Clock Outputs** for machine vision interface
- **High Signal-to-Noise Ratio** for better dynamic range.
- **Auto Black** for contrast enhancement
- **100% Blemish-Free Frame-Transfer Image Sensor** — no dead pixels.
- **Made in U.S.A.** — direct factory support
- **No Lag or Image Retention** — provides fast, clean images
- **Zero Geometric Distortion** for consistent corner-to-corner linearity
- **Selectable AGC Ranges** for better control under varying light conditions
- **Optional IR Filter**
- **State-of-the-Art Design and Construction** for high performance, reliability and long life
- **Choice of RS-170 & CCIR Models**
- **Two-Year Warranty**
- **15' Remote Cable** facilitates system design and installation.
- **Special Configurations** for OEMs and end users

Designed and Manufactured in U.S.A.

COHU

Cohu, Inc./Electronics Division

6400 & 6700 SERIES REMOTE-HEAD FRAME-TRANSFER CCD CAMERAS

SPECIFICATIONS

ELECTRICAL

Imager Type
Single CCD using frame-transfer method

Image Area
6.4 x 4.8 mm (corresponding to ½" image tube)

Active Picture Elements
RS-170: 755H x 242V
CCIR: 699H x 288V

Cell Size
RS170: 8.5(H) x 19.5 (V) microns
CCIR: 9.2(H) x 16.8(V) microns

Resolution
RS170: 550 horizontal TV lines, 350 vertical TV lines
CCIR: 525 horizontal TV lines, 415 vertical TV lines

Sensitivity (faceplate) @2850 K
0.25 lux at full video, AGC off
0.009 lux at 80% video, AGC on

Contrast Variation
<5% overall at gamma 1, gain 0 dB

Electronic Shutter
Switch selectable, $\frac{1}{1,000}$ second, $\frac{1}{2,000}$ second, and Off

Video Output
1.0 V p-p @75 ohms, unbalanced

AGC
Switch selectable, Off/Low Gain/High Gain
Peak-average adjustable
Low Gain: 0 - 6 dB
High Gain: 0 - 20 dB

Auto Black
Maintain set-up level at 7.5 ±5 IRE units if picture contains at least 10% black

Signal-to-Noise Ratio
≥56 dB at gamma 1, gain 0 dB
38 dB at gamma 1, AGC On

Auto Lens
Separate lens video signal tracks AGC peak/average adjustment to eliminate AGC/auto lens interaction
Power: +9V, 100 mA maximum

Gamma
0.5 or 1.0 jumper selectable

Synchronization
Genlock, revert to crystal
Genlock, revert to phase adjustable line lock
External H & V Drive
Internal Clock Speeds
RS170: 14.31818 MHz
CCIR: 14.375 MHz

Power Requirements
4.5 watts dc (without lens)

MECHANICAL

Dimensions (less lens)
Camera Head: 1.50" dia. x 2.00" length (38.1 x 50.8 mm)
Cable: 15 feet (4.57 meters)
CCU: 1.7"(H) x 5.0"(W) x 7.3"(D) (43.7 x 127 x 189 mm)

Weight
Camera Head (less lens and cable): 4 ounces (113 grams)
Remote Cable: 17 ounces (483 grams)
CCU: 29 ounces (822 grams)

Lens Mount
Adjustable "C" mount, 16mm format

Connectors
BNC connector — Video Out
Switchcraft TB4M — Lens Drive
Switchcraft TB3M — Power In
Hirose SR30-10R-7S — Auxiliary

ENVIRONMENTAL

Ambient Temperature Limits
Operating: -10 to 50°C (14 to 122°F)
Storage: -30 to 70 °C (-22 to 157°F)

Humidity
Up to 95% relative humidity

Vibration
5 to 60 Hz with 0.082 inch total excusion (15 g's @ 60 Hz). From 60 to 1,000 Hz, 5 g's rms random vibration without damage.

Shock (less lens)
Remote head: Up to 30 g's.
CCU: Up to 15 g's in any axis under nonoperating conditions, MIL-E-5400T, paragraph 3.2.24.6

Altitude
Sea level to the equivalent of 3,000 meters or 10,000 feet (508mm/20 inches of mercury)

ORDERING INFORMATION

6X	1X	—	X	XXX	/ XXXX
Video Format	Power Options		Sync Options	Optical Filters	Lens Options
4 RS-170 (EIA) **7** CCIR	**2** 12V ac or dc **3** 230V ac, 50 Hz, with ac wall adapter (CCIR models) **5** 115V ac, 60 Hz, with ac wall adapter (RS-170 models)		**2** Genlock (revert to crystal) **3** Genlock (revert to phase adjustable line lock) **7** External H & V Drive (revert to crystal)	**000** None **100** IR Filter (non-removable)	**Manual Iris, C Mount** ***AL04** 4.5mm, f/2.0, 2/3" ***AL08** 8mm, f/1.4, 2/3" **AL09** 9mm, f/1.4, 2/3" **AL16** 16mm, f/1.4, 2/3" **AL26** 25mm, f/1.6, 2/3" **AL51** 50mm, f/1.8, 2/3" * Wide Angle **Auto Iris, C Mount** **ES04** 4.2mm, f/1.6, 1/2" **ES06** 6mm, f/1.2, 1/2" **ES08** 8mm, f/1.4, 2/3" **ES13** 12mm, f/1.2, 1/2" **ES16** 16mm, f/1.4, 2/3" **ES25** 25mm, f/1.4, 1" **EH35** 35mm, f/1.4, 2/3" NOTE: Auto iris lenses require auto iris cable assembly 8352-1, to be ordered separately.

COHU RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.

ADVANCED VIDEO TECHNOLOGY Made in the U.S.A.

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6400 Series 5/95 Printed in U.S.A.

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