

# COHU DSP

## 3500 Series High Performance CCD Color Camera

Use the Cohu 3500 Series DSP camera for its outstanding picture quality as well as the versatile functions that digital signal processing can offer:

- Digitally processed signal with analog output for clear, consistent images
- Auto backlight compensation keeps images clear in the presence of strong incidental light
- Adjustable Edge enhancement for crisper horizontal and vertical edges
- Auto tracking or sample and hold white balance for precise exposure in both changing or static lighting conditions
- Integration and shuttering (remote controllable) for optimum exposure control
- Remote/Local camera setup and control for fast, convenient, and accurate user interface to the camera. Remote control can be with standard PC
- Built-in alphanumeric character ID generator for easy scene identification
- Auto or manual gain control up to 21 dB
- Made in U.S.A. by Cohu means product reliability and total customer support

### REMOTE SETUP & CONTROL



### BACKLIGHT COMPENSATION





The 3500 Series high performance CCD color camera utilizes Digital Signal Processing (DSP) to bring a new level of technology and performance to surveillance and imaging systems. This multi-purpose camera packages an interline transfer sensor imager and on-chip microlens sensor technology with advanced digital signal processing to produce an image of clear, sharp definition in a wide variety of lighting conditions. In addition, special features not found on ordinary cameras are now possible that extend the range of imaging possibilities.

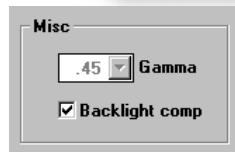
Setup and control of the 3500 Series camera is achieved manually through an easily-accessible side panel or remotely via an RS-232/RS-422 interface on the back panel. The remote control function, with Windows™-based graphical user interface, can be operated from a personal computer using Cohu supplied software. A special feature, distinctive to the 3500 Series camera, allows the operator to store different camera modes and settings, such as backlight compensation or manual gain, as presets. These camera presets can then be recalled from the menu to address different conditions.

Two sensor options, 1/4" or 1/2", expand your selection of lenses to achieve the highest performance and magnification for the application.

The Series 3500 DSP camera is available in Cohu's environmentally secure housing that today's surveillance conditions demand. Consult your Cohu representative for sealed and pressurized housing options.

## Backlight Compensation:

The Series 3500 keeps images clear and discernable even in the presence of strong incidental light. The backlight compensation setting increases the gain within the AGC range to expand the visibility of the dark areas within the scene.



## ID Generator:

Assign camera identification including 18 character on-screen display



## Remote Setup and Control:

Camera operation from a remote PC is a powerful control feature for the operator.

All setup and control features of the Cohu 3500 Series DSP Camera can be controlled with a standard PC via an RS-232/RS-422 link to the back of the camera.

Camera functions can also be operated from buttons located behind a conveniently located side panel.

Up to nine presets can be stored, each containing a unique set of operating modes and setup parameters. The presets can be recalled remotely to instantly adapt the Series 3500 to changing conditions or requirements.



## System Control:

The camera control screen can be integrated with a Cohu CCR camera control receiver and CAMS 2.1 system software.



Assign camera identification, including 18 character on-screen display

**DSP Camera Control**

Camera ID:   On  Top  Off  Bottom

Color Balance:  Auto  Manual

Shutter:  Auto  Manual

Gain:  Auto  Manual

Misc:  Gamma  Backlight comp

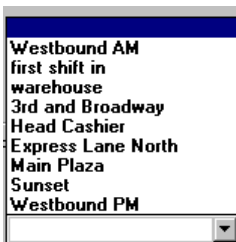
Preset:

Config:

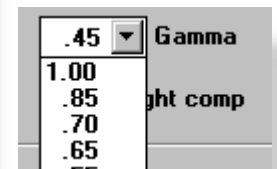
STX 01 cZm2 87 ETX

STX 01 cZm2 87 ETX

Store up to nine preset camera functions, and change them as needs require



Optimize camera setting for the scene



Fast and easy configuration of many cameras within the same system

Verify comm line status instantly

# 3500 Series High Performance CCD Color Camera

## Sensor

1/4" or 1/2" Interline transfer CCD with matrix filter (CYMG)

## Active picture elements

NTSC: 768 (H) x 494 (V)  
PAL: 752 (H) x 582 (V)

## Cell Size

1/2" NTSC: 8.40  $\mu\text{m}$  H x 9.80  $\mu\text{m}$  V  
1/4" NTSC: 4.75  $\mu\text{m}$  H x 5.55  $\mu\text{m}$  V  
1/2" PAL: 8.60  $\mu\text{m}$  H x 8.30  $\mu\text{m}$  V

## Input Power

12  $\pm$ 0.2 VDC, <0.4 V ripple

## Resolution

NTSC/YC: 470 (H) x 350 (V) TVL  
PAL/YC: 460 (H) x 415 (V) TVL

## Frame Rate

NTSC: 30 f/sec PAL: 25 f/sec

## Sensitivity (3200 K faceplate illumination)

1/4" sensor: 10 lux @ full video, AGC off; 0.8 lux @ 80% video, AGC on; 0.3 lux @ 30% video, AGC on

1/2" sensor: 5 lux @ full video, AGC off; 0.4 lux @ 80% video, AGC on; 0.15 lux @ 30% video, AGC on

## Shutter

1/60 sec (1/50 sec PAL) to 1/8,000 sec, manually or automatically controlled

## Shutter Mode

Allows automatic electronic shuttering to limit bright light

## Synchronization

Crystal

## Gain

AGC/Manual, selectable; 21 dB AGC range

## Gamma

0.3 to 1.0 selectable in 8 steps

## Auto Backlight Compensation

Compensates for contrast variations of backlit scenes

## Integration

Control via menu, remote serial interface; or external pulse. Requires external frame store

## Signal to Noise Ratio

>48 dB (minimum gain, unweighted, 6 MHz filter)

## Video Outputs (Analog)

NTSC or PAL in composite or S-video (Y-C)

## Auto Lens Output

Video or DC Iris Drive (selectable)

## White Balance

Manual; local & remote control, through the lens sample and hold, through the lens auto tracking

## Lens Mount

C/CS

## Dimensions

See illustration

## Weight

14.5 oz./406 g. (without lens)

## Remote Control

RS-232 and RS-422 selectable serial interface to PC; GUI provides setup and user control of DSP functions

## Local Control

Four momentary buttons with on-screen menu; menu provides setup and user control of DSP functions

## Operating/Setup Parameters

(remote or local control)

Gamma	Brightness
Color Balance	Contrast
Shutter/Integration	Average Picture level
Gain	Pregain
Backlight Compensation	Color/Monochrome
Color Saturation	Positive/negative Image

## Temperature Limits

Operating: -20° C (-4°F) to 70° C (158° F)

## Humidity

To 95% relative, non-condensing

## Connectors

Composite Video: BNC; YC: 4 circuit mini DIN; Remote Control: 15 pin "D"; Lens Drive: 4 circuit Chuomusen; Power: Switchcraft TB4M

## ID Generator

18 characters

## Approvals

FCC: Class B; CE: CISPR 22 Class B IEC 1000-2, -3, -4i

## ORDERING INFORMATION

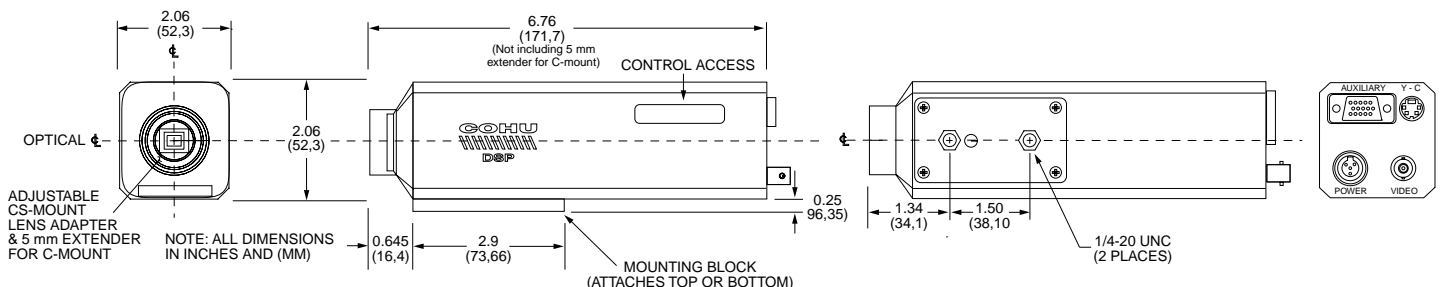
3512-1000 1/4" NTSC, crystal sync, 12 VDC power  
3522-1000 1/2" NTSC, crystal sync, 12 VDC power  
3582-5000 1/2" PAL, crystal sync, 12 VDC power

## LENSES

The versatility of this camera allows for a wide selection of lenses. Consult your Cohu Representative or Applications Engineer for guidance.

## ACCESSORIES

8405-3 Programming Software  
CTC-28 RS-232 Camera to Computer Cable  
8399-5 115 VAC to 12 VDC power supply



# COHU

Cohu, Inc. / Electronics Division

ISO-9001 Certified



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REPRESENTED WORLDWIDE

3500 Series 7-99  
Printed in U.S.A.