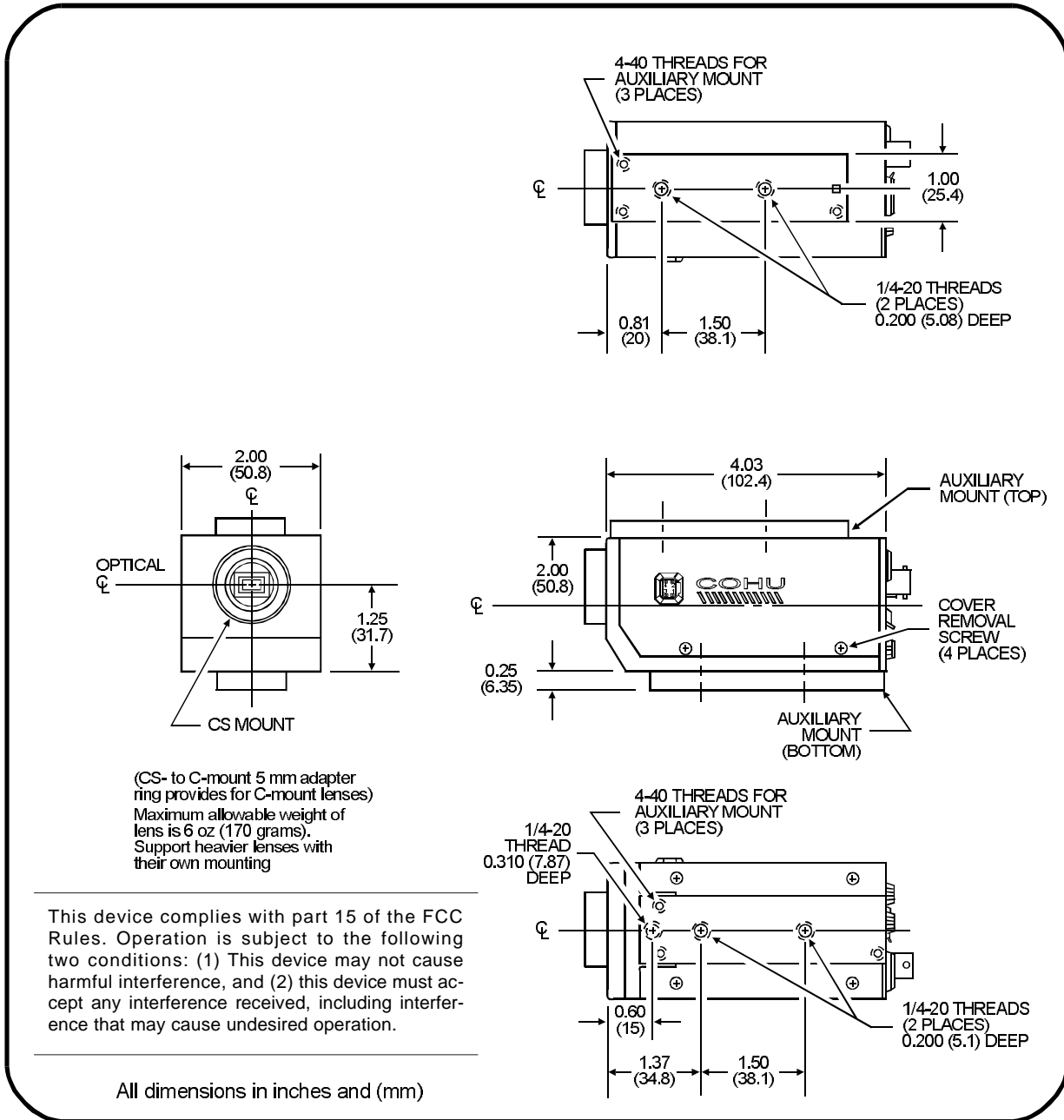


COHU, INC. Electronics Division

Installation and Operation Instructions

2200 SERIES NTSC/YC, PAL/YC, AND RGB COLOR CAMERAS



3912 CALLE FORTUNADA
 PHONE (858) 277-6700

SAN DIEGO, CA 92123-1827
 FAX (858) 277-0221

COHU
 Cohu, Inc. Electronics Division

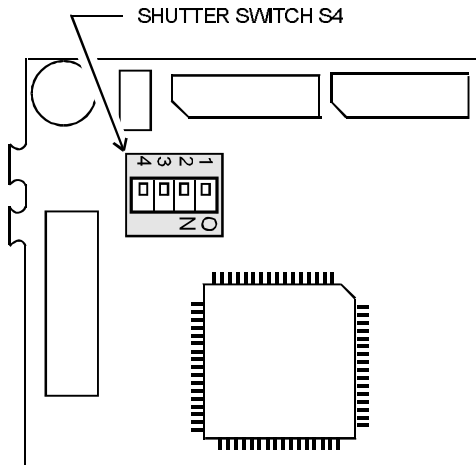
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

UL listed to Standard 1409, Video Equipment,
UL File Number E117248(S)

Complies with CE CISPR-22, Class B; EN 55022,
Class B; EN 50081-1; EN 50082-1

Complies with VDE, 0871, Class B Requirements



Shutter Switch Location

SPEED	SWITCH			
	4	3	2	1
Note 1				
Note 2	●			
1/125		●		
1/250			●	
1/500		●	●	
1/1,000				●
1/2,000		●		●
1/4,000			●	●
1/10,000		●	●	●

● = ON
 Note 1. Shutter off. NTSC 1/60;
 PAL 1/50
 Note 2. Flickerless: NTSC 1/100;
 PAL 1/120

Shutter Switch Settings

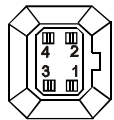
AUTO IRIS LENS

- | | |
|---|------------|
| 1 | LENS POWER |
| 2 | LENS VIDEO |
| 3 | GROUND |
| 4 | IRIS DRIVE |

DC IRIS LENS*

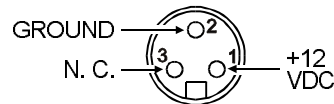
- | | |
|---|-----------|
| 1 | DAMPER LO |
| 2 | DAMPER HI |
| 3 | DRIVE |
| 4 | GND |

*Requires optional DC Iris Driver board



MATING VIEW OF PINS
LOOKING AT SIDE OF
CAMERA

Lens Connector Pin Functions



MATING VIEW OF PINS LOOKING
AT REAR PANEL OF CAMERA
(SAME AS THE WIRING VIEW OF PLUG
ON POWER SUPPLY CABLE)

Power Connector Pin Functions

Rear Panel Controls

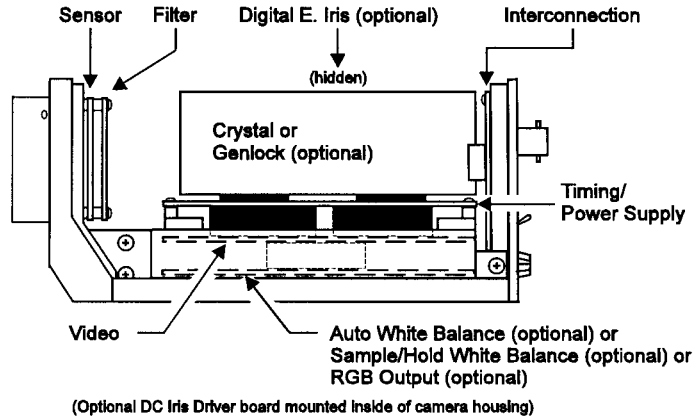
CONTROL NAME	CONTROL FUNCTION
GAIN control group	Provides methods of gain control for the Camera.
AUTO/MAN switch (auto/manual)	AUTO selects internal agc (automatic gain control). MAN selects the rear panel mounted GAIN control to set Camera gain (see below).
GAIN control (20 dB)	GAIN controls the video gain of the Camera when the related LCL and MAN modes have been selected.
WHT BAL Control Group	Provides methods of controlling color response of the Camera.
RMT/LCL switch (remote/local)	RMT activates the AUX (auxiliary) connector functions for the external white balance control, typically an auto/manual select switch and a potentiometer. LCL selects the rear panel AUTO/MANUAL switch (see below).
AUTO/MAN switch (auto/manual)	AUTO selects internal Camera circuits for automatic control of white balance (color response). MAN activates the related rear panel mounted WHT BAL control (see below).
WHT BAL control (white balance)	WHT BAL (white balance) controls color response of the Camera when the related LCL and MAN modes have been selected.
SYNC IN switch (GL option)	Selects either 75 ohms or High impedance for the AUX connector genlock input.
WHT BAL Set Group	(Sample/Hold white balance option)
SET switch	Depress to establish sample/hold white balance setting
OK indicator	Indicator illuminates to indicate that white balance has been established

Internal Adjustments and Settings

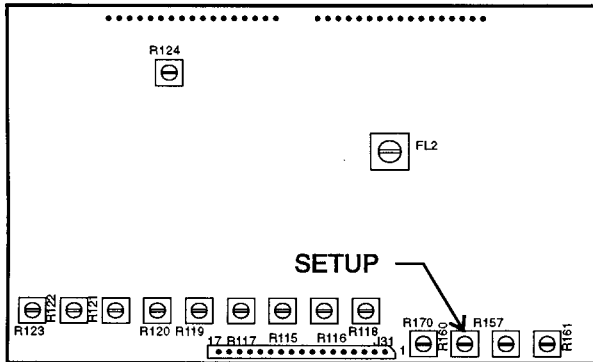
NAME	LOCATION	FUNCTION
JB1	Digital Elect. Iris Board	Turns board on and off
JB1	RGB Board	Add sync to green output when installed
R7	Genlock Board	Adjusts position of vertical in the output video in relation to input
R20 (OPTION)	Main Board	Sets camera gain when related switch S1 is in MAN
R160	Main Board	Adjusts setup. Typically set for 7.5 IRE units above blanking
S1 (OPTION)	Main Board	Selects either manual gain control (via R20) or agc
S4	Digital Elect Iris Board	Selects shutter speed settings. See related table.

CAUTION

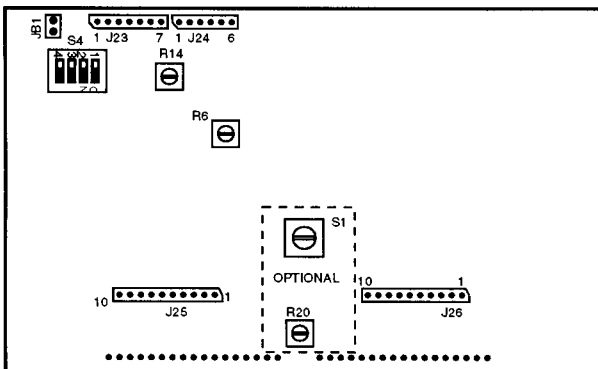
Be sure to maintain the correct pin to pin connections when plugging in the flexible jumper cables between the sensor board and the main board. Failure to do so will damage the camera. Also, replace the cable in the same orientation as it was when it was removed.



Location of Circuit Boards



Video Board



Refer to adjustments table for adjustment names

Timing Board

CAUTION

Cameras not in service or cameras being stored should always have their lens iris closed (or the lens opening to the sensor capped) to prevent strong light from bleaching the color dyes in the sensor.

WARRANTY

Cohu, Inc., Electronics Division, warrants equipment manufactured to be free from defects of material and workmanship. Any part or parts will be repaired or replaced when proven by Cohu examination to have been defective within two years from date of shipment to the original purchaser for standard CCD cameras and one year from date of shipment to the original purchaser for intensified CCD cameras and all other Cohu manufactured products.

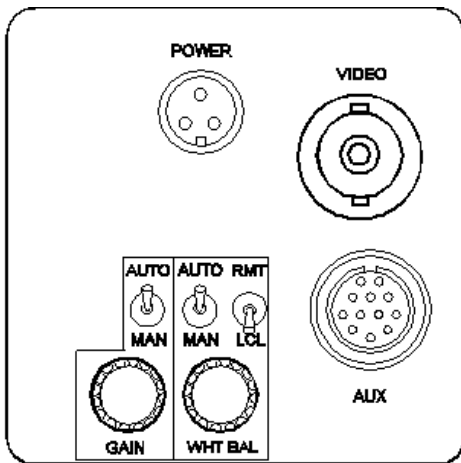
All warranty repairs will be performed at the factory or as otherwise authorized by Cohu in writing. Transportation charges to Cohu shall be prepaid by purchaser.

This warranty does not extend to Cohu equipment subjected to misuse, accident, neglect, or improper application, nor repaired or altered by other than Cohu or those authorized by Cohu in writing. **Television image pickup tubes, image intensifiers, lenses, and products manufactured by companies other than Cohu are warranted by the original manufacturer.** This warranty is in lieu of all other warranties expressed or implied. Cohu shall not be liable for collateral or consequential damages.

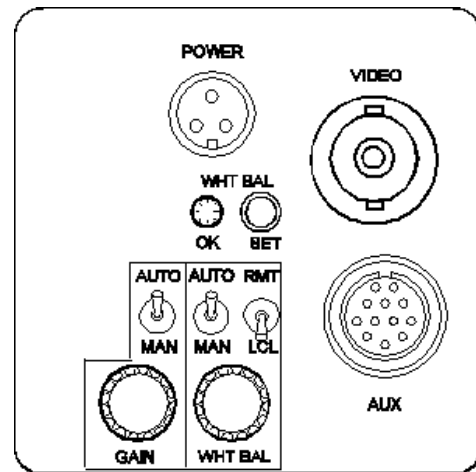
A Return Authorization (RA) number must be obtained from Cohu prior to returning any item for warranty repairs or replacement.

2200 COLOR CAMERA

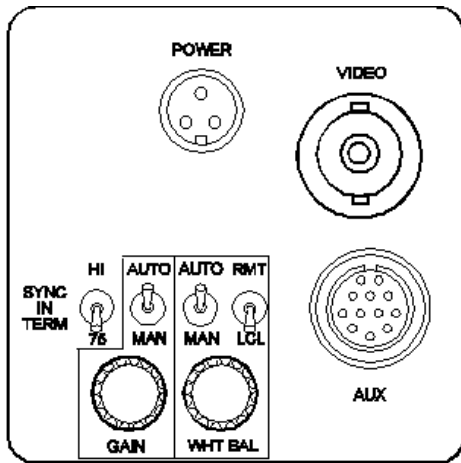
NTSC AND PAL



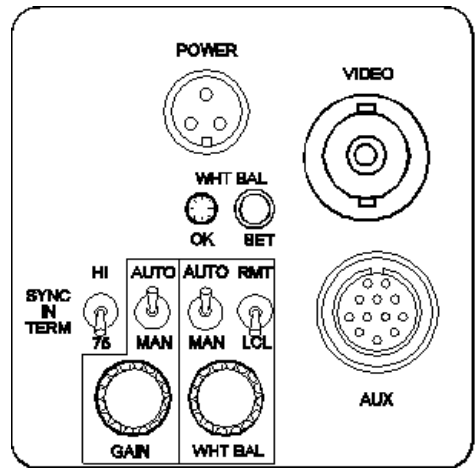
Crystal Sync Reference and Auto White Balance



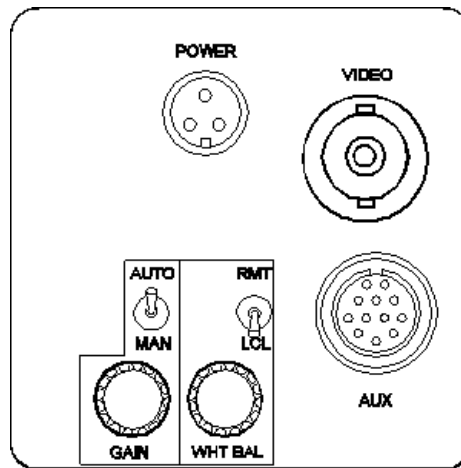
Crystal and Sample/Hold White Balance



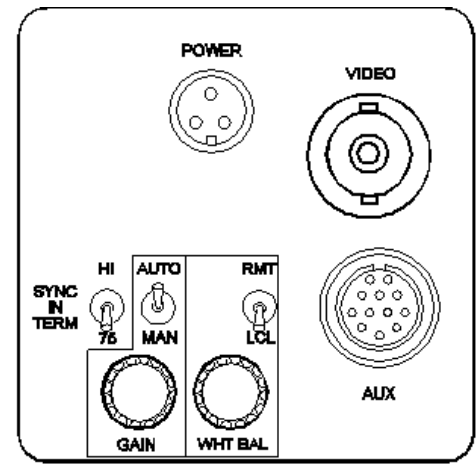
Genlock Sync Reference and Auto White Balance



Genlock and Sample/Hold White Balance



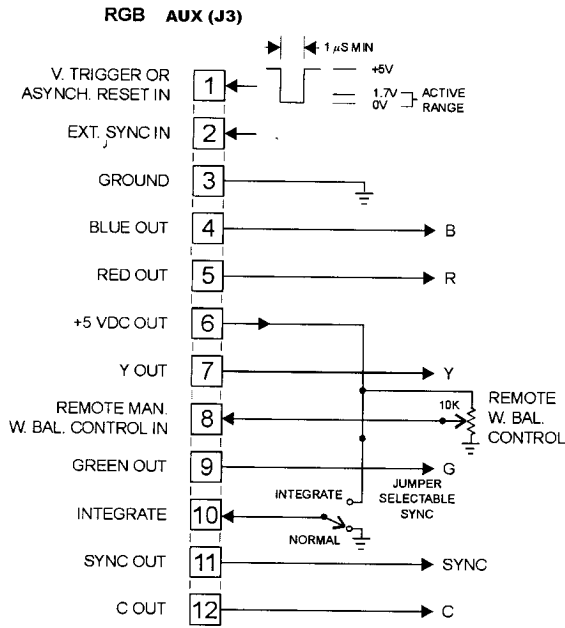
Crystal Sync Reference and RGB Output



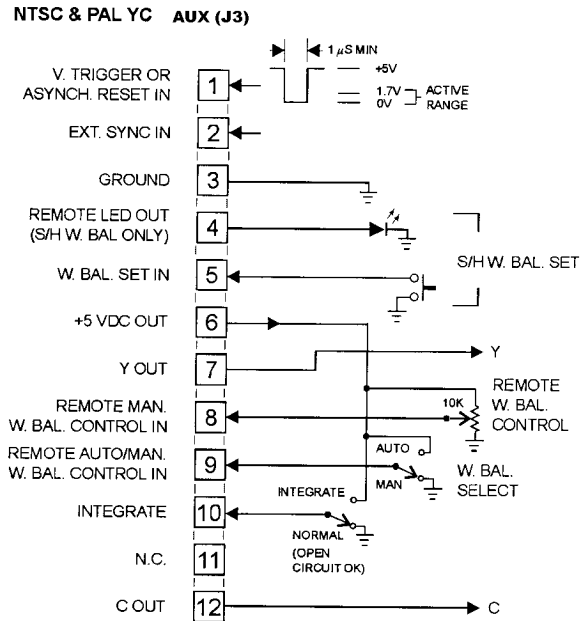
Genlock Sync Reference and RGB Output

2200 COLOR CAMERA

NTSC AND PAL

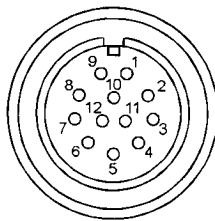


Aux Connector Functions for RGB Cameras



Aux Connector Functions for NTSC/YC & PAL/YC Cameras

MATING VIEW OF PINS LOOKING AT REAR PANEL OF CAMERA



Aux Connector Pinout

Interface Connectors

NAME	MATING CONNECTOR FOR CABLE	
	COHU P/N	MFG/DIST P/N
VIDEO	See note	BNC plug
AUX	1310398-012	Hirose HR10A-10TPA-12P
LENS	1310419-004	Chuomusen E4-191J-100
POWER	1310356-103	Switchcraft TA3F

Note: Use a locally available standard commercial plug



February 8, 1996
 Revision 1 November 21, 1996
 Revision 2 April 21, 1997
 Revision 3 September 21, 1997
 Revision 4 August 1, 2002